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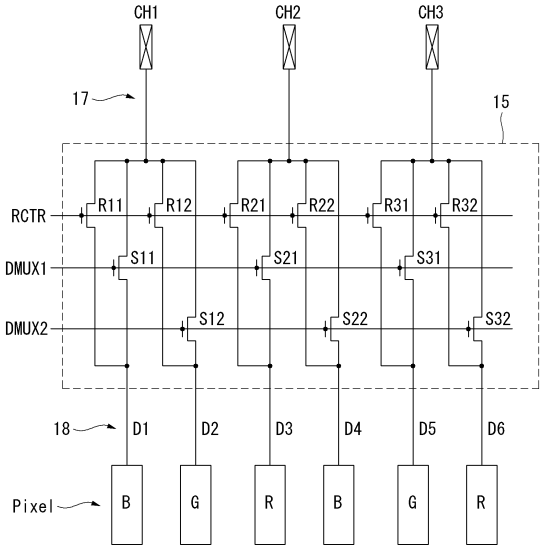
(54) Organic light emitting display

(57) An organic light emitting display includes a display panel including first pixels displaying a first color, second pixels displaying a second color, and third pixels displaying a third color, a data driving circuit generating a data voltage, a demultiplexer (demux) switching circuit, which includes first to Nth demux switches connected to each output channel of the data driving circuit, where N is a positive integer equal to or greater than 2, and time-division supplies the data voltage to N data lines of the display panel, and a control signal generator generating first to Nth demux control signals for controlling operations of the first to Nth demux switches. The first to Nth demux control signals sequentially rise to an on-level and then sequentially fall to an off-level in a programming period, in which a scan signal is held at the on-level.

FIG. 6



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EUROPEAN SEARCH REPORT

Application Number
EP 14 17 9248

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	US 2005/281127 A1 (OKUNO HARUMI [JP] ET AL) 22 December 2005 (2005-12-22) * paragraphs [0063] - [0085]; figures 1,2 * -----	1-3,8	INV. G09G3/32
X	JP 2008 233454 A (EPSON IMAGING DEVICES CORP) 2 October 2008 (2008-10-02) * paragraphs [0007] - [0029]; figures 1,3 * -----	1-3,8	
X	US 2006/151745 A1 (KIM YANG W [KR] ET AL) 13 July 2006 (2006-07-13) * paragraphs [0042] - [0117]; figures 3-16 * -----	4-7,9-11	
X	US 2009/251455 A1 (PARK OK-KYUNG [KR] ET AL) 8 October 2009 (2009-10-08) * paragraphs [0032] - [0057]; figures 3-9 * -----	4-7,9-11	
X	US 2011/164015 A1 (KIM YANG-WAN [KR]) 7 July 2011 (2011-07-07) * paragraphs [0047] - [0080]; figures 2-8 * -----	4-7,9-11	TECHNICAL FIELDS SEARCHED (IPC) G09G
E	GB 2 510 481 A (LG DISPLAY CO LTD [KR]) 6 August 2014 (2014-08-06) * figure 6 * -----	4	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	19 November 2015	Vázquez del Real, S

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:

☐ 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 14 17 9248

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: 1-3, 8

   OLED display that in order to avoid the influence of the kickback voltage in the display of colors a demux switching control circuit is incorporated such that the number of times of influence of a kickback voltage on the pixels displaying the same color are equal to each other in a demux driving method.

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2. claims: 4-7, 9-11

   OLED display that ensures enough application of the scan signals in a demux driving method comprising a threshold voltage compensation period wherein the horizontal period is relatively shorter as the resolution is increased.

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 14 17 9248

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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19-11-2015

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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)	有机发光显示器		
公开(公告)号	EP2833351A3	公开(公告)日	2015-12-30
申请号	EP2014179248	申请日	2014-07-31
[标]申请(专利权)人(译)	乐金显示有限公司		
申请(专利权)人(译)	LG DISPLAY CO. , LTD.		
当前申请(专利权)人(译)	LG DISPLAY CO. , LTD.		
[标]发明人	LEE JUNGMIN KANG CHANGHEON		
发明人	LEE, JUNGMIN KANG, CHANGHEON		
IPC分类号	G09G3/32		
CPC分类号	G09G3/3258 G09G3/3291 G09G2300/0852 G09G2300/0861 G09G2300/0876 G09G2310/0216 G09G2310/0297 G09G2310/06 G09G2320/0219 G09G2320/0233 G09G2320/0242 G09G2320/045 G09G2310/0289 G09G2310/08 H04J3/047 H04Q11/04		
优先权	1020130091060 2013-07-31 KR		
其他公开文献	EP2833351A2		
外部链接	Espacenet		

摘要(译)

有机发光显示器包括显示面板，该显示面板包括显示第一颜色的第一像素，显示第二颜色的第二像素，显示第三颜色的第三像素，产生数据电压的数据驱动电路，多路分解器（demux）切换电路，包括连接到数据驱动电路的每个输出通道的第一至第N解复用开关，其中N是等于或大于2的正整数，并且时分将数据电压提供给显示面板的N条数据线，以及控制信号发生器产生第一至第N解复用控制信号，用于控制第一至第N解复用开关的操作。第一至第N解复用控制信号顺序地上升到接通电平，然后在编程周期中顺序地下降到关断电平，其中扫描信号保持在接通电平。

FIG. 6