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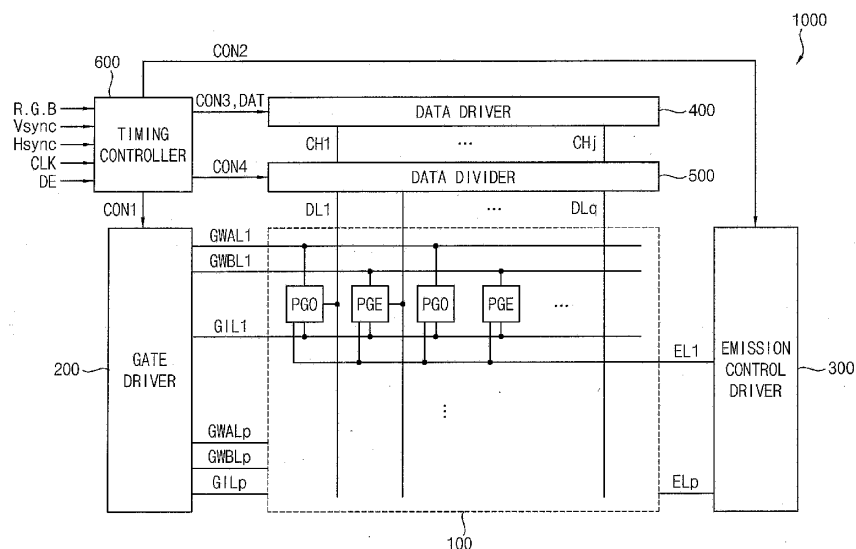
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(54) **ORGANIC LIGHT EMITTING DISPLAY DEVICE**

(57) An organic light emitting display device includes a display panel including pixel groups, each including a plurality of sub-pixels for each of pixel rows. A gate driver is configured to sequentially provide an initialization signal to the pixel rows, to provide a first group gate signal to first pixel groups of the pixel groups, to provide a second group gate signal overlapping at least a part of the first group gate signal to second pixel groups of the pixel

groups, to sequentially provide the first group gate signal to the pixel rows, and to sequentially provide the second group gate signal to the pixel rows. An emission control driver is configured to sequentially provide an emission control signal to the pixel rows. A data driver is configured to output a data voltage. A data divider is configured to selectively provide the data voltage to data lines connected to the sub-pixels.

FIG. 1





EUROPEAN SEARCH REPORT

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EP 18 18 7383

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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 2014/035974 A1 (JINTA SEIICHIRO [JP] ET AL) 6 February 2014 (2014-02-06) * paragraph [0044] - paragraph [0128]; figures 1-12 * -----	1-5, 11-15	INV. G09G3/3233 G09G3/3266 G09G3/3291
			TECHNICAL FIELDS SEARCHED (IPC)
			G09G
1 The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
Munich		4 October 2018	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			

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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, 11-15

☐ 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, 11-15

a (k)th even-numbered group gate signal corresponding to a (k)th pixel row is delayed by a 1/2 horizontal period from a (k)th odd-numbered group gate signal corresponding to the (k)th pixel row, where k is an integer greater than 0, solving the problem of implementing the signal timing.

2. claims: 6-10

each of the sub-pixels included in the first pixel groups includes: a first transistor connected between one of the data lines and a first node, the first transistor including a gate electrode configured to receive the odd-numbered group gate signal; a driving transistor connected between the first node and a second node, the driving transistor including a gate electrode connected to a third node; a second transistor connected between the second node and the third node, the second transistor including a gate electrode configured to receive the odd-numbered group gate signal; a third transistor connected between the third node and an initialization power source, the third transistor including a gate electrode configured to receive the initialization signal; a fourth transistor connected between a first power source and the first node, the fourth transistor including a gate electrode configured to receive the emission control signal; a fifth transistor connected between the second node and a fourth node, the fifth transistor including a gate electrode configured to receive the emission control signal; a sixth transistor connected between the initialization power source and the fourth node, the sixth transistor including a gate electrode configured to receive the initialization signal; a capacitor connected between the first power source and the third node; and an organic light emitting diode (OLED) connected between the fourth node and a second power source configured to provide a voltage lower than a voltage of the first power source, solving the problem of implementing the sub-pixel circuitry.

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

EP 18 18 7383

5 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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04-10-2018

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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		JP 5939076 B2	22-06-2016
		JP 2014029437 A	13-02-2014
		US 2014035974 A1	06-02-2014

专利名称(译)	有机发光显示装置		
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IPC分类号	G09G3/3233 G09G3/3266 G09G3/3291		
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审查员(译)	GARTLAN , MICHAEL		
优先权	1020170098728 2017-08-03 KR		
其他公开文献	EP3438960A2		
外部链接	Espacenet		

摘要(译)

有机发光显示装置包括显示面板，该显示面板包括像素组，每个像素组包括用于每个像素行的多个子像素。栅极驱动器被配置为顺序地向像素行提供初始化信号，以向像素组的第一像素组提供第一组栅极信号，以提供与第一组栅极信号的至少一部分重叠的第二组栅极信号。在像素组的第二像素组中，向像素行依次提供第一组栅极信号，并向像素行依次提供第二组栅极信号。发射控制驱动器被配置为顺序地向像素行提供发射控制信号。数据驱动器配置为输出数据电压。数据分配器被配置为选择性地数据电压提供给连接到子像素的数据线。

FIG. 1

