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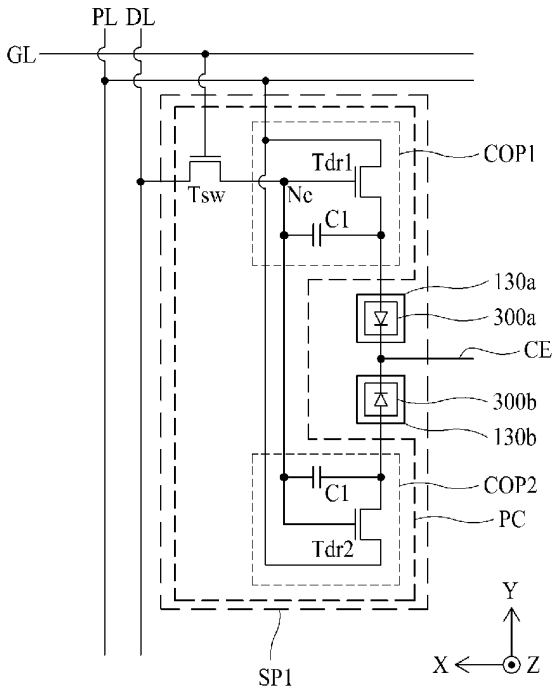
(54) LIGHT EMITTING DIODE DISPLAY DEVICE

(57) Disclosed is a light emitting diode display device for minimizing a screen defect caused by a defect of a light emitting diode device. The light emitting diode display device includes a plurality of subpixels (SP1) which each include first to Nth (where N is a natural number equal to or greater than two) light emitting diode devices (300a, 300b) emitting light with the data current and a pixel circuit (PC) including first to Nth driving transistors (Tdr1, Tdr2) respectively supplying the data current corresponding to a data signal to the first to Nth light emitting diode devices.

FIG. 3



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EUROPEAN SEARCH REPORT

Application Number
EP 17 20 8323

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 2011/074838 A1 (YAMAMOTO TETSURO [JP] ET AL) 31 March 2011 (2011-03-31) * paragraph [0210] - paragraph [0253]; figures 12-16 *	1,2,6, 10,13-15 3-5,7-9, 11,12	INV. G09G3/3233
X	US 2006/061525 A1 (KIM EUN-AH [KR] ET AL) 23 March 2006 (2006-03-23) * paragraph [0039] - paragraph [0051]; figure 5 *	1,2,6, 10,13-15	
X	US 2015/332628 A1 (REN LIJUN [CN] ET AL) 19 November 2015 (2015-11-19) * paragraphs [0005], [0047]; figure 5 *	1,2,10, 13-15	
Y	CN 104 952 899 A (AU OPTRONICS CORP) 30 September 2015 (2015-09-30) * figures 4-6 * & US 2016/372514 A1 (CHANG CHENG-CHIEH [TW] ET AL) 22 December 2016 (2016-12-22) * paragraphs [0035] - [0040]; figures 4-6 *	3-5,8,9	
			TECHNICAL FIELDS SEARCHED (IPC)
Y	US 2014/367633 A1 (BIBL ANDREAS [US] ET AL) 18 December 2014 (2014-12-18) * paragraph [0074]; figure 1D *	7	G09G
Y	EP 1 591 993 A1 (SAMSUNG SDI CO LTD [KR]) 2 November 2005 (2005-11-02) * paragraph [0036]; figures 3,4 *	11,12	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	10 September 2018	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:

☐ 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 17 20 8323

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, 2, 6, 10, 13-15

A light emitting diode display device comprising: a plurality of subpixels displaying an image based on a data current based on a data signal, the plurality of subpixels each including: first to Nth light emitting diode devices emitting light based on the data current, where N is a natural number equal to or greater than two; and a pixel circuit including first to Nth driving transistors respectively supplying the data current corresponding to the data signal to the first to Nth light emitting diode devices, wherein one of the first to Nth light emitting diode devices is used as a redundancy light emitting diode device.

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2. claims: 3-5, 7-9

A light emitting diode display device comprising: a plurality of subpixels displaying an image based on a data current based on a data signal, the plurality of subpixels each including: first to Nth light emitting diode devices emitting light based on the data current, where N is a natural number equal to or greater than two; and a pixel circuit including first to Nth driving transistors respectively supplying the data current corresponding to the data signal to the first to Nth light emitting diode devices, wherein each of the first to Nth light emitting diode devices is a micro light emitting diode device.

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3. claims: 11, 12

A light emitting diode display device comprising:a plurality of subpixels displaying an image based on a data current based on a data signal, the plurality of subpixels each including:first to Nth light emitting diode devices emitting light based on the data current, where N is a natural number equal to or greater than two; anda pixel circuit including first to Nth driving transistors respectively supplying the data current corresponding to the data signal to the first to Nth light emitting diode devices, wherein the pixel circuit comprises: a switching transistor supplying the data signal to a first node;a storage capacitor, a first current output part including a first driving transistor,a second current output part including a second driving transistor anda voltage initialization part initializing a voltage of a first node and a voltage of a second node, wherein, the first node is disposed between the switching transistor and the storage capacitor, and the second node is shared by the first current output part and the second current output

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LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 17 20 8323

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:

part.

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 17 20 8323

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

10-09-2018

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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)	发光二极管显示装置		
公开(公告)号	EP3336831A3	公开(公告)日	2018-10-24
申请号	EP2017208323	申请日	2017-12-19
[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	KIM JINYEONG SON HYEONHO KANG HANSAEM		
发明人	KIM, JINYEONG SON, HYEONHO KANG, HANSAEM		
IPC分类号	G09G3/3233		
CPC分类号	G09G3/32 G09G3/3233 G09G2300/0819 G09G2300/0852 G09G2300/0861 G09G2310/0251 G09G2310/0262 G09G2330/08 G09G2330/10 G09G3/3241 G09G2300/0426 G09G2300/0814 G09G2300/0842 H01L27/156 H01L33/06 H01L33/32 H01L33/42 H01L33/60		
优先权	1020160173807 2016-12-19 KR		
其他公开文献	EP3336831A2		
外部链接	Espacenet		

摘要(译)

公开了一种发光二极管显示装置，用于最小化由发光二极管装置的缺陷引起的屏幕缺陷。发光二极管显示装置包括多个子像素（SP1），每个子像素包括发射具有数据电流的光的第一至第N（其中N是等于或大于2的自然数）的发光二极管装置（300a，300b）。像素电路（PC），包括分别向第一至第N发光二极管器件提供对应于数据信号的数据电流的第一至第N驱动晶体管（Tdr1，Tdr2）。