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(54) **ORGANIC LIGHT EMITTING DIODE DISPLAY AND METHOD FOR SENSING CHARACTERISTIC THEREOF**

(57) An organic light emitting diode (OLED) display and a method for sensing device characteristics of the OLED display are disclosed. The OLED display includes a display panel including data lines, scan lines, and pixels, a data driver configured to supply a data signal to the data lines, a gate driver configured to supply a scan signal to the scan lines, a sensing unit configured to sense changes in device characteristics of the pixels, an image analyzer configured to analyze an input image and select a sensing location and a sensing interval, and a timing controller configured to control the data driver and the gate driver. Pixels of the sensing location among the pixels are directly sensed by the sensing unit, and changes in device characteristics of remaining pixels are calculated based on sensing values from the sensing unit.

FIG. 2

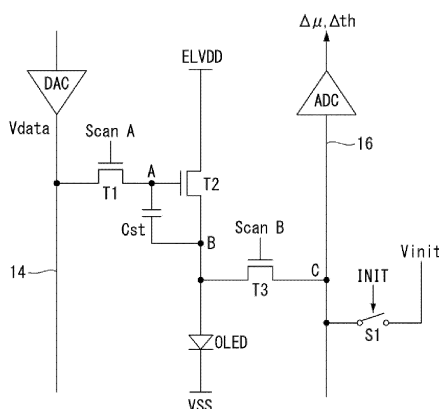
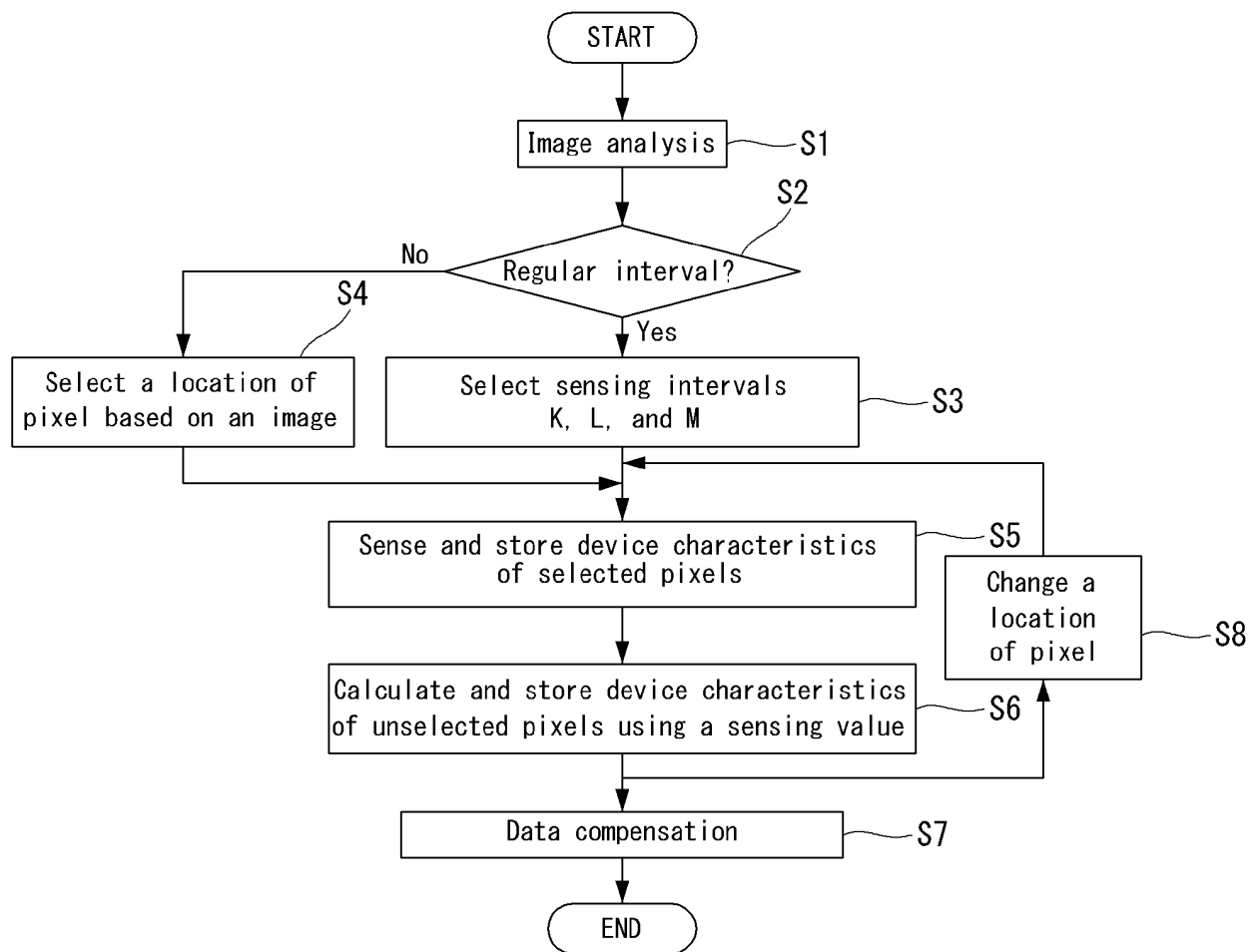


FIG. 6



EUROPEAN SEARCH REPORT

Application Number
EP 15 20 0323

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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	WO 2006/063448 A1 (IGNIS INNOVATION INC [CA]; NATHAN AROKIA [CA]; CHAJI GHOLAMREZA REZA []) 22 June 2006 (2006-06-22)	1-5, 9-12, 15	INV. G09G3/3233
Y	* paragraphs [0049], [0061], [0069],	4,7	
A	[0103]; figures 1,2 *	6,8,13, 14	
Y	----- WO 2014/140522 A2 (UNIV EDINBURGH [GB]) 18 September 2014 (2014-09-18)	4,7	
A	* page 5, line 11 * * page 12, line 1 - line 8 * -----	6,8,13, 14	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC) G09G
Place of search Munich		Date of completion of the search 23 June 2016	Examiner Gundlach, Harald
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 03/02 (P04C01)



Application Number

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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).



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, 9-12, 15

An organic light emitting diode display according to claim 1, wherein, according to claim 4, the selected plurality of pixels are pixels in one frame and the sensing interval includes a spatial distance between the pixels in the one frame.

The claims that are not patentable with regard to the prior art at hand, and thus cannot have any special technical features, are sorted to the first invention.

2. claims: 6, 13, 14

An organic light emitting diode display according to claim 1, wherein, according to claim 6, the image analyzer divides the input image into a plurality of blocks and analyzes one or more of complexity, gray level distribution, and a motion of an image assigned to each block, and wherein the image analyzer selects the sensing interval of each block based on the result of an analysis of the image.

3. claims: 7, 8

An organic light emitting diode display according to claim 1, wherein, according to claim 7, the image analyzer reduces the sensing interval in an image having large complexity and increases the sensing interval in a monotonous image having small complexity, and wherein the image analyzer reduces the sensing interval in an image having a large gray level difference and increases the sensing interval in an image having a small gray level difference.

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

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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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23-06-2016

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WO 2006063448 A1	22-06-2006	EP 1836697 A1	26-09-2007
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WO 2014140522 A2	18-09-2014	NONE	

专利名称(译)	有机发光二极管显示器及其感测特性的方法		
公开(公告)号	EP3038091A3	公开(公告)日	2016-08-03
申请号	EP2015200323	申请日	2015-12-16
[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	PARK DONGWON HONG HEEJUNG		
发明人	PARK, DONGWON HONG, HEEJUNG		
IPC分类号	G09G3/3233		
CPC分类号	G09G3/3258 G09G3/3233 G09G3/3266 G09G3/3275 G09G2300/043 G09G2310/0278 G09G2310/08 G09G2320/02 G09G2320/0233 G09G2320/0285 G09G2320/029 G09G2320/0295 G09G2320/043 G09G2320/045 G09G2320/103 G09G2330/021 G09G2360/145		
审查员(译)	GUNDLACH , HARALD		
优先权	1020140188873 2014-12-24 KR		
其他公开文献	EP3038091A2		
外部链接	Espacenet		

摘要(译)

公开了一种有机发光二极管 (OLED) 显示器和用于感测OLED显示器的器件特性的方法。 OLED显示器包括：显示面板，包括数据线，扫描线和像素;数据驱动器，被配置为向数据线提供数据信号;栅极驱动器，被配置为向扫描线提供扫描信号;感测单元，被配置为感测像素的器件特性的变化，图像分析器被配置为分析输入图像并选择感测位置和感测间隔，以及定时控制器，被配置为控制数据驱动器和栅极驱动器。感测单元直接感测像素中的感测位置的像素，并且基于来自感测单元的感测值来计算剩余像素的装置特性的变化。

FIG. 2

