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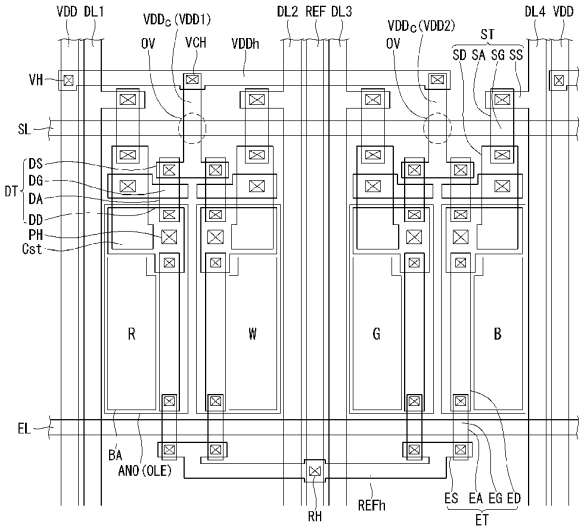
(54) LARGE AREA ULTRA HIGH DENSITY FLAT DISPLAY HAVING HIGH APERTURE RATIO

(57) The present disclosure relates to a large area ultra high density flat panel display having high aperture ratio. The present disclosure provides a flat panel display comprising: a driving current line (VDD) and a sensing line (REF) disposed in a first direction on a substrate; a scan line (SL) and a sensing gate line (EL) disposed in a second direction on the substrate; a horizontal current line (VDDh) disposed at upper side of the scan line (SL) in the second direction and connected to the driving current line (VDD); a horizontal sensing line (REFh) disposed at lower side of the sensing gate line (EL) in the second direction and connected to the sensing line (REF); a common current line (VDDc) branched from the horizontal current line (VDDh) and crossing the scan line (SL); and a first pixel area and a second pixel area disposed between the driving current line (VDD) and the sensing line (REF) as having a bi-symmetic shape with each other based on the common current line (VDDc).

FIG. 7



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EUROPEAN SEARCH REPORT

Application Number
EP 17 20 1815

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	US 2014/184579 A1 (KIM JIHUN [KR] ET AL) 3 July 2014 (2014-07-03) * figure 16 *	1	
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	14 September 2018	Pichon, Jean-Michel

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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A : technological background
O : non-written disclosure
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T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
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& : member of the same patent family, corresponding document

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EUROPEAN SEARCH REPORT

Application Number
EP 17 20 1815

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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TECHNICAL FIELDS SEARCHED (IPC)

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
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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 1815

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, 9, 10

   a sensing thin film transistor connected to the driving drain electrode

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2. claim: 8

   a white pixel

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 17 20 1815

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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)	具有高孔径比的大面积超高密度平板显示器		
公开(公告)号	EP3324392A3	公开(公告)日	2018-11-07
申请号	EP2017201815	申请日	2017-11-15
[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 EUNJI OH KILHWAN LEE KIHYUNG		
发明人	PARK, EUNJI OH, KILHWAN LEE, KIHYUNG		
IPC分类号	G09G3/3225 H01L27/32		
CPC分类号	G09G3/3225 G09G2310/02 H01L27/3276 G09G2300/0426 G09G2300/043 G09G2300/0452 G09G2320/0219 G09G2320/0295 H01L27/124 H01L27/3213 H01L27/326 G09G2300/0814 H01L27/3246 H01L27/3262		
审查员(译)	PICHON , JEAN-MICHEL		
优先权	1020160155266 2016-11-21 KR		
其他公开文献	EP3324392A2		
外部链接	Espacenet		

摘要(译)

本公开涉及具有高孔径比的大面积超高密度平板显示器。本发明提供一种平板显示器，包括：驱动电流线（VDD）和沿第一方向设置在基板上的感测线（REF）;扫描线（SL）和在基板上沿第二方向设置的感测栅极线（EL）;水平电流线（VDDh），沿第二方向设置在扫描线（SL）的上侧，并连接到驱动电流线（VDD）;水平传感线（REFh），沿第二方向设置在传感栅极线（EL）的下侧，并连接到传感线（REF）;公共电流线（VDDc）从水平电流线（VDDh）分支并与扫描线（SL）交叉;第一像素区域和第二像素区域设置在驱动电流线（VDD）和感测线（REF）之间，基于公共电流线（VDDc）彼此具有双对称形状。