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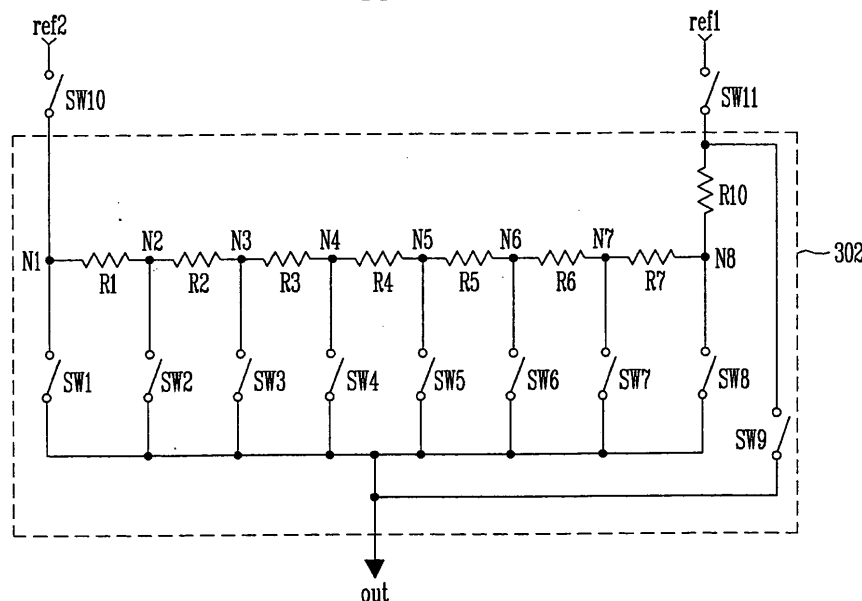
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(54) **Data driver, organic light emitting display, and method of driving the same**

(57) A data driver, including a first digital-to-analog converter configured to select two reference voltages of a plurality of reference voltages depending on upper bits of data, and a second digital-to-analog converter configured to divide the two reference voltages into a plurality of voltages and supply any one voltage of the two refer-

ence voltages and the divided voltages to an output terminal as a data signal depending on lower bits of the data, wherein the second digital-to-analog converter is configured to supply an intermediate gray scale voltage to the output terminal prior to supplying the data signal, the intermediate gray scale voltage having a voltage between the two reference voltages.

FIG. 5





EUROPEAN SEARCH REPORT

Application Number
EP 06 25 6141

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	GB 2 362 277 A (SHARP KK [JP]) 14 November 2001 (2001-11-14)	1-6,15	INV. G09G3/32
Y	* pages 5,7,8,13; figures 1,4,5,11 *	1,12-14	
Y	MATSUEDA Y ET AL: "6-BIT AMOLED WITH RGB ADJUSTABLE GAMMA COMPENSATION LTPS TFT CIRCUIT" 2005 SID INTERNATIONAL SYMPOSIUM DIGEST OF TECHNICAL PAPERS. BOSTON ,MA, MAY 24 - 27, 2005; [SID INTERNATIONAL SYMPOSIUM DIGEST OF TECHNICAL PAPERS], SAN JOSE, CA : SID, US, vol. VOL. 36, 1 January 2005 (2005-01-01), pages 1352-1355, XP001244365 * page 1353; figure 2 *	1,12-14	
			TECHNICAL FIELDS SEARCHED (IPC)
			G09G H03M
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 18 February 2009	Examiner Adarska, Veneta
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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EPO FORM 1503 03.82 (P04C01)



Application Number

EP 06 25 6141

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:

1-7, 11, 12-20 (group 1)

☐ 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

EP 06 25 6141

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: 1-7,11, 12-20 (group 1)

first invention: a data driver and a method improving the D/A conversion speed by generating and supplying an intermediate gray scale voltage to the output terminal of the data driver (prior to supplying the data signal) by using a capacitor with a first electrode connected to the output and second electrode driven by a variable voltage.

1.1. claims: 12-14

claims 12-14 are added in the group of the first invention

2. claims: 8-10 (group 2)

second invention: a data driver comprising a compensation resistor for compensating the switch resistances.

Please note that all inventions mentioned under item 1, although not necessarily linked by a common inventive concept, could be searched without effort justifying an additional fee.

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

EP 06 25 6141

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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18-02-2009

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		JP 3656833 B2	08-06-2005
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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)	数据驱动器，有机发光显示器及其驱动方法		
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申请号	EP2006256141	申请日	2006-11-30
[标]申请(专利权)人(译)	三星斯笛爱股份有限公司		
申请(专利权)人(译)	三星SDI CO. , LTD.		
当前申请(专利权)人(译)	三星DISPLAY CO. , LTD.		
[标]发明人	CHOI SANG MOO		
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IPC分类号	G09G3/32		
CPC分类号	G09G3/3225 G09G3/2011 G09G3/3291 G09G2300/0861 G09G2310/0248 G09G2310/027 G09G2320/0252 H03M1/682 H03M1/765		
优先权	1020050116001 2005-11-30 KR		
其他公开文献	EP1796071B1 EP1796071A2		
外部链接	Espacenet		

摘要(译)

一种数据驱动器，包括：第一数模转换器，被配置为根据数据的高位选择多个参考电压的两个参考电压；以及第二数模转换器，被配置为将两个参考电压分成a多个电压并将两个参考电压和分压的任何一个电压作为数据信号提供给输出端，取决于数据的低位，其中第二数模转换器配置为提供中间灰度级在提供数据信号之前，输出端子的电压，中间灰度电压具有两个参考电压之间的电压。

