



(11) **EP 1 783 738 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
26.12.2007 Bulletin 2007/52

(51) Int Cl.:
G09G 3/32^(2006.01)

(43) Date of publication A2:
09.05.2007 Bulletin 2007/19

(21) Application number: **06255680.8**

(22) Date of filing: **03.11.2006**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK YU

(30) Priority: **04.11.2005 KR 20050105699**

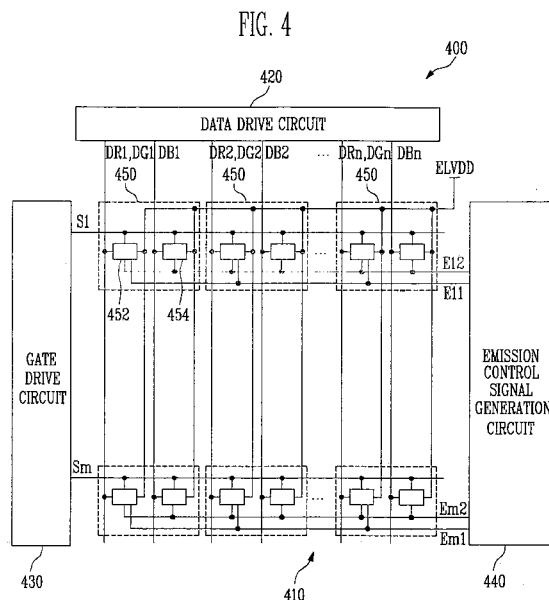
(71) Applicant: **Samsung SDI Co., Ltd.**
Suwon-si,
Gyeonggi-do (KR)

(72) Inventors:
• **Kwak, Won Kyu**
c/o Samsung SDI Co., Ltd.
Yongin-si
Gyeonggi-do (KR)
• **Naoaki, Komiya**
c/o Samsung SDI Co., Ltd.
Yongin-si
Gyeonggi-do (KR)

(74) Representative: **Mounteney, Simon James**
Marks & Clerk
90 Long Acre
London WC2E 9RA (GB)

(54) **Organic light emitting display device and driving method thereof**

(57) An organic light emitting diode (OLED) display device and a driving method using a time division control drive method for OLEDs having a relatively longer life time and a general drive method for OLEDs having a relatively shorter life time. A gate drive circuit provides scan signals in sub-frames to scan lines. A data drive circuit provides a data signal to data lines. An emission control signal generation circuit provides first and second emission control signals to control the OLEDs. A display region includes pixels arranged in a matrix and connected to the scan lines, data lines, emission control lines, and power lines. The pixels include a first and a second unit pixel portion. The first unit pixel portion performs a time division control drive by driving a plurality of organic light emitting diodes by one shared pixel circuit. In the second unit portion one organic light emitting diode is driven by an independent pixel circuit.



EP 1 783 738 A3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 25 5680

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	EP 1 536 406 A (SAMSUNG SDI CO LTD [KR]) 1 June 2005 (2005-06-01) * abstract; figures 4,6,8,10,12,14,15,17 * * paragraph [0051] - paragraph [0076] * * paragraph [0080] - paragraph [0090] *	1-10,12, 18-28	INV. G09G3/32
Y	-----	11,13-17	
Y	EP 1 496 495 A (SAMSUNG SDI CO LTD [KR]) 12 January 2005 (2005-01-12) * abstract; figure 3 * * paragraph [0031] - paragraph [0037] *	13-17	
Y	US 2005/200573 A1 (KWAK WON-KYU [KR]) 15 September 2005 (2005-09-15) * abstract; figures 7,8 * * paragraph [0060] - paragraph [0069] *	11	
			TECHNICAL FIELDS SEARCHED (IPC)
			G09G
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 13 November 2007	Examiner Njibamum, David
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	

3
EPO FORM 1503 03.82 (P04C01)

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

EP 06 25 5680

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.

13-11-2007

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1536406	A	01-06-2005	AT 366976 T	15-08-2007
			CN 1622723 A	01-06-2005
			JP 2005157258 A	16-06-2005
			US 2005110723 A1	26-05-2005

EP 1496495	A	12-01-2005	CN 1577453 A	09-02-2005
			JP 2005031630 A	03-02-2005
			KR 20050005646 A	14-01-2005
			US 2005017934 A1	27-01-2005

US 2005200573	A1	15-09-2005	CN 1670800 A	21-09-2005
			EP 1577871 A1	21-09-2005
			JP 2005266770 A	29-09-2005
			KR 20050092208 A	21-09-2005

专利名称(译)	有机发光显示装置及其驱动方法		
公开(公告)号	EP1783738A3	公开(公告)日	2007-12-26
申请号	EP2006255680	申请日	2006-11-03
[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SDI CO. , LTD.		
发明人	KWAK, WON KYU C/O SAMSUNG SDI CO., LTD. NAOAKI, KOMIYA C/O SAMSUNG SDI CO., LTD.		
IPC分类号	G09G3/32		
优先权	1020050105699 2005-11-04 KR		
其他公开文献	EP1783738A2 EP1783738B1		
外部链接	Espacenet		

摘要(译)

有机发光二极管 (OLED) 显示装置和使用时分控制驱动方法的驱动方法，用于具有相对较长寿命的OLED，以及用于具有相对较短寿命的OLED的一般驱动方法。栅极驱动电路在子帧中提供扫描信号以扫描线。数据驱动电路向数据线提供数据信号。发射控制信号产生电路提供第一和第二发射控制信号以控制OLED。显示区域包括以矩阵排列并连接到扫描线，数据线，发射控制线和电源线的像素。像素包括第一和第二单位像素部分。第一单位像素部分通过一个共用像素电路驱动多个有机发光二极管来执行时分控制驱动。在第二单元部分中，一个有机发光二极管由独立的像素电路驱动。

