



(11) **EP 1 624 437 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
15.07.2009 Bulletin 2009/29

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

(43) Date of publication A2:
08.02.2006 Bulletin 2006/06

(21) Application number: **05106488.9**

(22) Date of filing: **14.07.2005**

(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

(72) Inventors:

- **Peng, Du-Zen**
Hsinchu Hsien (TW)
- **Huang, Shih-Feng**
Taichung City (TW)

(30) Priority: 02.08.2004 US 598168 P
07.12.2004 US 634401
01.07.2005 US 173820

(74) Representative: **2K Patentanwälte Blasberg
Kewitz & Reichel
Partnerschaft
Corneliusstraße 18
60325 Frankfurt am Main (DE)**

(71) Applicant: **Toppoly Optoelectronics Corp.**
Chu-Nan 350,
Miao-Li County (TW)

(54) **Pixel Driving circuit with threshold voltage compensation**

(57) A pixel driving circuit with threshold voltage and EL power compensation. The pixel circuit includes a storage capacitor, a transferring circuit, a driving element, and a switching circuit. The transferring circuit transfers a data signal or a variable reference signal to a first node of the storage capacitor. The driving element has a first terminal coupled to a first fixed potential and a second terminal coupled to a second node of the storage capacitor. The switching circuit is coupled to a third terminal of the driving element and the second node of the storage capacitor. The switching circuit can be controlled to make the driving element diode-connected in one time period and allowing a driving current to be output to a display element in another time period.

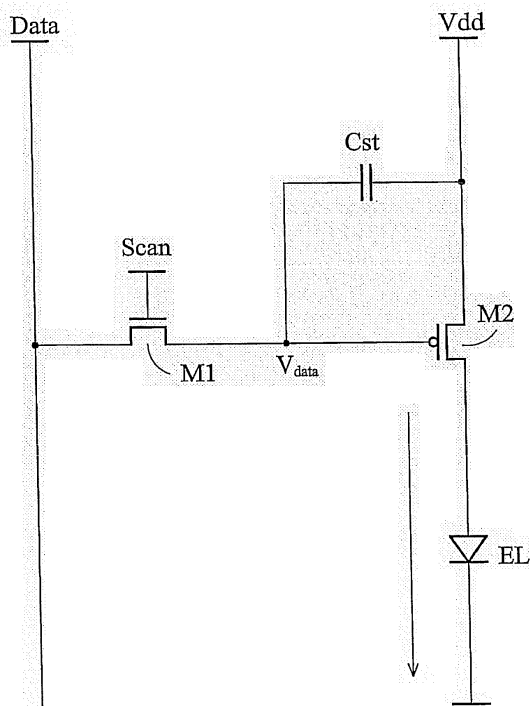


FIG. 1



EUROPEAN SEARCH REPORT

Application Number
EP 05 10 6488

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	US 2003/067424 A1 (AKIMOTO HAJIME [JP] ET AL) 10 April 2003 (2003-04-10) * paragraphs [0042] - [0055] * * figures 1-3 *	1-18,30,31	INV. G09G3/32
X	US 2004/070557 A1 (ASANO MITSURU [JP] ET AL) 15 April 2004 (2004-04-15) * paragraphs [0063] - [0076], [0103] * * figures 1,2 *	1-9,12-18,30,31	
X	US 2003/095087 A1 (LIBSCH FRANK R [US] ET AL) 22 May 2003 (2003-05-22) * paragraphs [0034] - [0044] * * figures 1,2 *	21,28,29	
A	CHOI S-M ET AL: "AN IMPROVED VOLTAGE PROGRAMMED PIXEL STRUCTURE FOR LARGE SIZE AND HIGH RESOLUTION AM-OLED DISPLAYS" 2004 SID INTERNATIONAL SYMPOSIUM DIGEST OF TECHNICAL PAPERS. SEATTLE, WA, MAY 25 - 27, 2004; [SID INTERNATIONAL SYMPOSIUM DIGEST OF TECHNICAL PAPERS], SAN JOSE, CA : SID, US, vol. 35, no. 1, 25 May 2004 (2004-05-25), pages 260-263, XP001222795 * paragraph [0003] * * figure 4 *	1-31	TECHNICAL FIELDS SEARCHED (IPC) G09G
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 3 June 2009	Examiner Ladiray, Olivier
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	

2

EPO FORM 1503 03.82 (P04C01)

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

EP 05 10 6488

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.

03-06-2009

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2003067424 A1	10-04-2003	CN 1412854 A	23-04-2003
		CN 101241674 A	13-08-2008
		JP 3899886 B2	28-03-2007
		JP 2003122301 A	25-04-2003
		KR 20030030846 A	18-04-2003
		TW 556349 B	01-10-2003
		US 2009102761 A1	23-04-2009
US 2004070557 A1	15-04-2004	JP 3832415 B2	11-10-2006
		JP 2004133240 A	30-04-2004
		KR 20040033248 A	21-04-2004
		TW 241552 B	11-10-2005
US 2003095087 A1	22-05-2003	NONE	

专利名称(译)	具有阈值电压补偿的像素驱动电路		
公开(公告)号	EP1624437A3	公开(公告)日	2009-07-15
申请号	EP2005106488	申请日	2005-07-14
[标]申请(专利权)人(译)	统宝光电股份有限公司		
申请(专利权)人(译)	统宝光电股份有限公司.		
当前申请(专利权)人(译)	统宝光电股份有限公司.		
[标]发明人	PENG DU ZEN HUANG SHIH FENG		
发明人	PENG, DU-ZEN HUANG, SHIH-FENG		
IPC分类号	G09G3/32		
CPC分类号	G09G3/3233 G09G3/3266 G09G2300/0819 G09G2300/0842 G09G2300/0861 G09G2320/043 G09G2330/02 G09G2330/028		
优先权	60/598168 2004-08-02 US 60/634401 2004-12-07 US 11/173820 2005-07-01 US		
其他公开文献	EP1624437A2		
外部链接	Espacenet		

摘要(译)

具有阈值电压和EL功率补偿的像素驱动电路。像素电路包括存储电容器，传输电路，驱动元件和开关电路。传输电路将数据信号或可变参考信号传输到存储电容器的第一节点。驱动元件具有耦合到第一固定电位的第一端子和耦合到存储电容器的第二节点的第二端子。开关电路耦合到驱动元件的第三端子和存储电容器的第二节点。可以控制开关电路以使驱动元件在一个时间段内二极管连接并允许驱动电流在另一个时间段输出到显示元件。

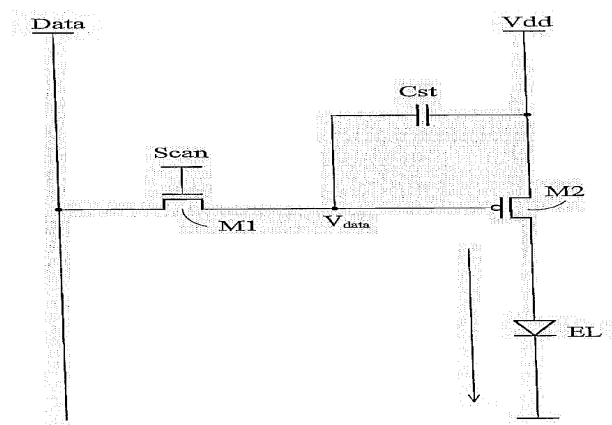


FIG. 1