



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:  
**31.10.2012 Bulletin 2012/44**

(51) Int Cl.:  
**G09G 3/32<sup>(2006.01)</sup> G11C 27/02<sup>(2006.01)</sup>**

(43) Date of publication A2:  
**03.10.2012 Bulletin 2012/40**

(21) Application number: **12174463.5**

(22) Date of filing: **12.11.2010**

(84) Designated Contracting States:  
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR**  
Designated Extension States:  
**BA ME**

(30) Priority: **12.11.2009 CA 2684818**  
**07.12.2009 CA 2687477**  
**17.02.2010 CA 2694086**  
**11.11.2010 US 944477**  
**11.11.2010 US 944488**  
**11.11.2010 US 944491**

(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC:  
**10829593.2 / 2 499 633**

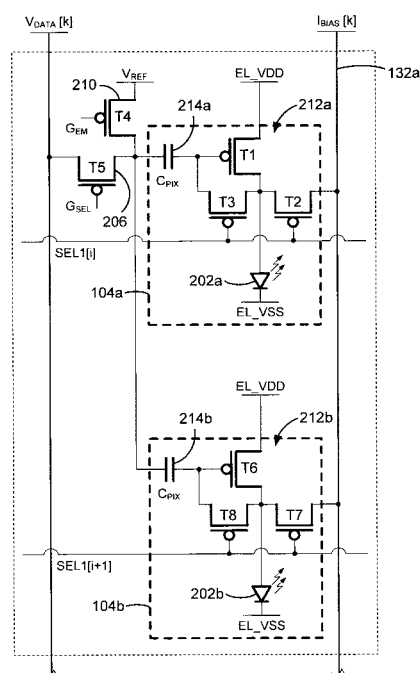
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(54) **Efficient programming and fast calibration schemes for light-emitting displays and stable current source/sinks for the same**

(57) A circuit and driving technique to improve the display resolution of an AMOLED display. Sharing of switch transistors between several sub-pixels in the display leads to improved manufacturing yield by minimizing the number of transistors used. The method also allows for conventional sequential scan driving to be used. A technique to implement a stable and high impedance current sink or source onto a display substrate using a single device is also disclosed. Finally, a technique is disclosed for improving the spatial and/or temporal uniformity of a light-emitting display by providing a faster calibration of reference current sources and reducing the noise effect by improving the dynamic range, despite instability and non-uniformity of the transistor devices.



**FIG. 3a**

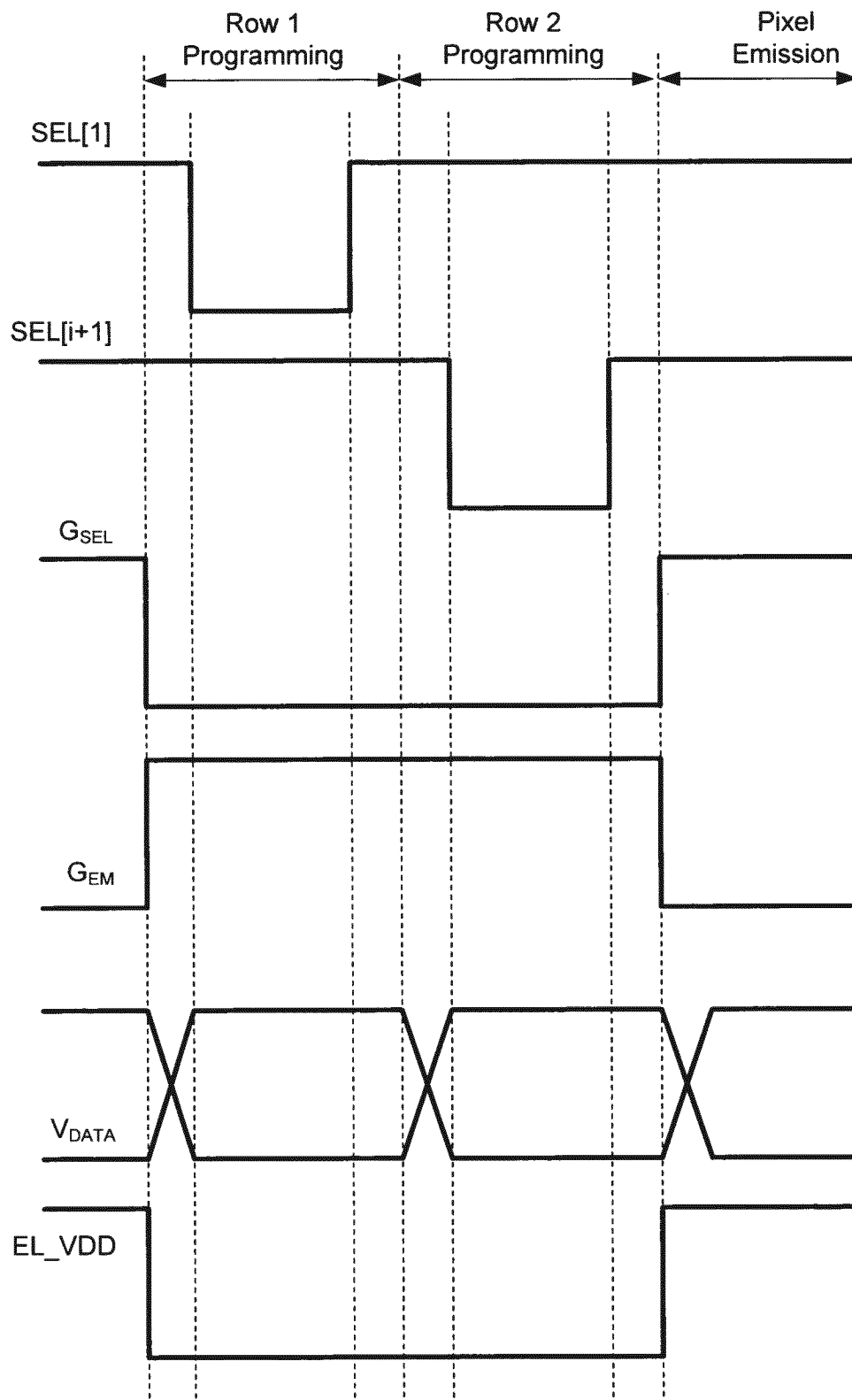


FIG. 3b



## EUROPEAN SEARCH REPORT

Application Number  
EP 12 17 4463

| 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 0 925 588 B1 (ATMEL CORP [US])<br>27 November 2002 (2002-11-27)                                                  | 1-5,7-9, 14                                           | INV.<br>G09G3/32                        |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | * paragraph [0042] - paragraph [0068];<br>figures 6,7 *                                                             | 6,12,13                                               | G11C27/02                               |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                     |                                                       | G11C<br>G05F<br>G09G                    |
| The present search report has been drawn up for all claims                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                     |                                                       |                                         |
| Place of search<br>The Hague                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                     | Date of completion of the search<br>25 September 2012 | Examiner<br>Fanning, Neil               |
| <p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone<br/>Y : particularly relevant if combined with another document of the same category<br/>A : technological background<br/>O : non-written disclosure<br/>P : intermediate document</p> <p>T : theory or principle underlying the invention<br/>E : earlier patent document, but published on, or after the filing date<br/>D : document cited in the application<br/>L : document cited for other reasons<br/>.....<br/>&amp; : member of the same patent family, corresponding document</p> |                                                                                                                     |                                                       |                                         |

2

EPO FORM 1503 03.82 (P/M/C01)

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

EP 12 17 4463

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.

25-09-2012

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|                |                                                                                                                                                              |         |            |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------|
| 专利名称(译)        | 用于发光显示器的高效编程和快速校准方案以及用于发光显示器的稳定电流源/吸收器                                                                                                                       |         |            |
| 公开(公告)号        | <a href="#">EP2506242A3</a>                                                                                                                                  | 公开(公告)日 | 2012-10-31 |
| 申请号            | EP2012174463                                                                                                                                                 | 申请日     | 2010-11-12 |
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| 申请(专利权)人(译)    | IGNIS创新INC.                                                                                                                                                  |         |            |
| 当前申请(专利权)人(译)  | IGNIS创新INC.                                                                                                                                                  |         |            |
| [标]发明人         | CHAJI GHOLAMREZA<br>NATHAN AROKIA<br>LAI JACKSON CHI SUN                                                                                                     |         |            |
| 发明人            | CHAJI, GHOLAMREZA<br>NATHAN, AROKIA<br>LAI, JACKSON, CHI SUN                                                                                                 |         |            |
| IPC分类号         | G09G3/32 G11C27/02                                                                                                                                           |         |            |
| CPC分类号         | G09G3/3283 G09G3/3291 G09G2300/0465 G09G2300/0814 G09G2300/0819 G09G2300/0852<br>G09G2310/0218 G09G2310/0262 G09G2320/0233 G09G2320/0693 G09G3/3225 G09G5/18 |         |            |
| 代理机构(译)        | GRÜNECKER , KINKELDEY , STOCKMAIR & SCHWANHÄUSSER                                                                                                            |         |            |
| 审查员(译)         | 范宁 , NEIL                                                                                                                                                    |         |            |
| 优先权            | 2684818 2009-11-12 CA<br>2687477 2009-12-07 CA<br>2694086 2010-02-17 CA<br>12/944477 2010-11-11 US<br>12/944488 2010-11-11 US<br>12/944491 2010-11-11 US     |         |            |
| 其他公开文献         | EP2506242A2                                                                                                                                                  |         |            |
| 外部链接           | <a href="#">Espacenet</a>                                                                                                                                    |         |            |

# 摘要(译)

一种改善AMOLED显示器显示分辨率的电路和驱动技术。通过最小化所使用的晶体管的数量，在显示器中的几个子像素之间共享开关晶体管导致提高的制造产量。该方法还允许使用传统的顺序扫描驱动。还公开了使用单个器件在显示基板上实现稳定且高阻抗的电流吸收器或源的技术。最后，公开了一种技术，通过提供更快的参考电流源校准并通过改善动态范围来降低噪声效应来改善发光显示器的空间和/或时间均匀性，尽管晶体管不稳定和不均匀。设备。

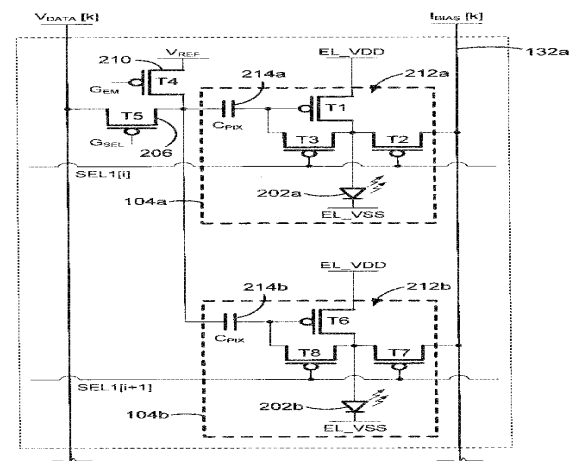


FIG. 3a