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- **Kim, Hee-Seop**
Hwaseong-si, Gyeonggi-do (KR)
- **Kim, Hyang-Yul**
Hwaseong-si, Gyeonggi-do (KR)
- **Jang, Joo-Nyung**
Seongnam-si, Gyeonggi-do (KR)
- **Woo, Hwa-Sung**
Asan-si, Chungcheongnam-do (KR)
- **Shin, Cheol**
Hwaseong-si, Gyeonggi-do (KR)
- **Shin- Dong-Chul**
Eunpyeong-gu, Seoul (KR)

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(71) Applicant: **Samsung Electronics Co., Ltd.**
Yeongtong-gu
Suwon-city, Gyeonggi-do
442-742 (KR)

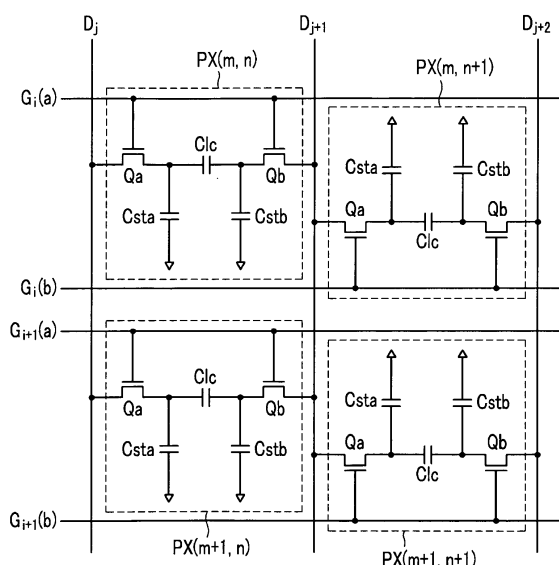
(72) Inventors:
• **Kim, Sung-Woon**
Suwon-si, Gyeonggi-do (KR)

(74) Representative: **Dr. Weitzel & Partner**
Patentanwälte
Friedenstrasse 10
89522 Heidenheim (DE)

(54) **Liquid crystal display**

(57) A liquid crystal display includes: first and second gate lines disposed on the first substrate and which respectively transmit first and second gate signals; first, second and third data lines disposed on the first substrate; a first switching element connected to the first gate line and the first data line; a second switching element connected to the first gate line and the second data line; a third switching element connected to the second gate line and the second data line; a fourth switching element connected to the second gate line and the third data line; first and second pixel electrodes respectively connected to the first and second switching and which form a first liquid crystal capacitor; and third and fourth pixel electrodes respectively connected to the third and fourth switching elements and which form a second liquid crystal capacitor.

FIG. 5





EUROPEAN SEARCH REPORT

 Application Number
EP 10 00 0787

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 2006/034125 A1 (KIM SUNG-MAN [KR] ET AL) 16 February 2006 (2006-02-16)	1,8	INV. G02F1/1362 G02F1/1343 G02F1/139	
Y	* paragraphs [0026] - [0032], [0045]; figures 1,3,5 *	2-7,9		
Y	US 2006/186913 A1 (KIM DONG-GYU [KR]) 24 August 2006 (2006-08-24) * paragraphs [0191] - [0216]; figures 16-18 *	2-4,7		
Y	EP 0 837 445 A1 (CANON KK [JP]) 22 April 1998 (1998-04-22) * columns 6-11; figures 8-9 *	5-7		
Y	US 2006/215066 A1 (UEDA KAZUYA [JP] ET AL) 28 September 2006 (2006-09-28) * figure 24 *	9		
A	US 2007/002253 A1 (KIM HYUN-WUK [KR] ET AL) 4 January 2007 (2007-01-04) * paragraphs [0148] - [0152], [0174] - [0175], [0216]; figures 8,9,10 *	1-9		
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A	US 2007/120797 A1 (LIN YUNG-LUN [TW] ET AL) 31 May 2007 (2007-05-31) * figure 10 *	16-20		
The present search report has been drawn up for all claims				
Place of search Munich		Date of completion of the search 12 November 2010	Examiner Queneuille, Julien	
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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Application Number

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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).



**LACK OF UNITY OF INVENTION
SHEET B**

Application Number

EP 10 00 0787

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: 1-9

Liquid crystal display with a TFT array substrate having a two pixel electrode and two TFT per pixel structure and having a reduced number of data lines compared to a conventional wiring of a TFT array substrate with such a pixel structure

2. claims: 10-15

Liquid crystal display with a TFT array substrate having a two pixel electrodes and two TFT per pixel structure and having an additional TFT element provided in each pixel in order to load the data line voltage on one pixel electrode once the regular scanning line is set to an OFF potential

3. claims: 16-20

Liquid crystal display with a TFT array substrate having a two pixel electrode and two TFT per pixel structure and provided with a step-up capacitor for each pixel

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

EP 10 00 0787

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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12-11-2010

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专利名称(译)	液晶显示器		
公开(公告)号	EP2256543A3	公开(公告)日	2010-12-22
申请号	EP2010000787	申请日	2010-01-27
[标]申请(专利权)人(译)	三星电子株式会社		
申请(专利权)人(译)	SAMSUNG ELECTRONICS CO. , LTD.		
当前申请(专利权)人(译)	SAMSUNG ELECTRONICS CO. , LTD.		
[标]发明人	KIM SUNG WOON KIM HEE SEOP KIM HYANG YUL JANG JOO NYUNG WOO HWA SUNG SHIN CHEOL SHIN DONG CHUL		
发明人	KIM, SUNG-WOON KIM, HEE-SEOP KIM, HYANG-YUL JANG, JOO-NYUNG WOO, HWA-SUNG SHIN, CHEOL SHIN- DONG-CHUL		
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代理机构(译)	DR.威猛和合作伙伴		
优先权	1020090047425 2009-05-29 KR		
其他公开文献	EP2256543A2		
外部链接	Espacenet		

摘要(译)

一种液晶显示器，包括：第一和第二栅极线，设置在第一基板上，分别传输第一和第二栅极信号；第一，第二和第三数据线设置在第一基板上；第一开关元件，连接到第一栅极线和第一数据线；第二开关元件，连接到第一栅极线和第二数据线；第三开关元件，连接第二栅极线和第二数据线；第四开关元件，连接第二栅极线和第三数据线；第一和第二像素电极分别连接到第一和第二开关并形成第一液晶电容器；第三和第四像素电极分别连接到第三和第四开关元件，并形成第二液晶电容器。

FIG. 5

