



(11) **EP 1 675 097 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
23.01.2008 Bulletin 2008/04

(51) Int Cl.:
G09G 3/34^(2006.01) G09G 3/36^(2006.01)

(43) Date of publication A2:
28.06.2006 Bulletin 2006/26

(21) Application number: **05257116.3**

(22) Date of filing: **18.11.2005**

(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

(30) Priority: **19.11.2004 JP 2004336572**
10.08.2005 JP 2005232385

(71) Applicant: **Sony Corporation**
Tokyo (JP)

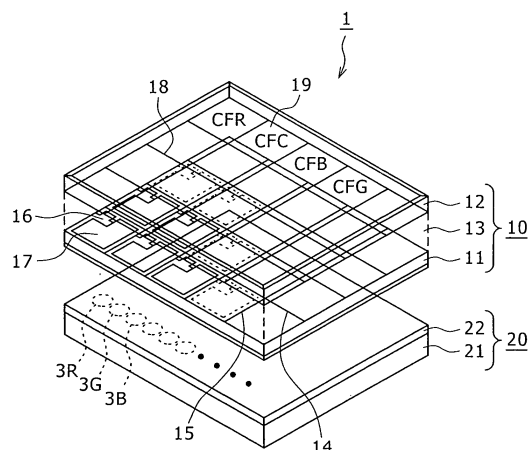
(72) Inventors:
• **Ichikawa, Hiroaki**
c/o Sony Corporation
Tokyo (JP)
• **Kikuchi, Kenichi**
c/o Sony Corporation
Tokyo (JP)
• **Hatajiri, Kimio**
c/o Sony Corporation
Tokyo (JP)

(74) Representative: **Leppard, Andrew John**
D Young & Co,
120 Holborn
London EC1N 2DY (GB)

(54) **Backlight device, method of driving backlight and liquid crystal display apparatus**

(57) Embodiments of the present invention prevents extension of the time period from powering on a device to convergence of chromaticity of emitted white light on a certain chromaticity, irrespective of the temperature when the device is powered on. A color liquid crystal display apparatus includes a liquid crystal display unit, a backlight employing LEDs of red, green and blue as its light source, a drive unit for driving the LEDs of each color, a temperature sensor for sensing the temperature of the LEDs, and a chromaticity sensor for sensing the chromaticity of white light emitted from the LEDs. The drive unit supplies a current to the LEDs to drive them, and implements feedback control of the amount of current for the LEDs of each color based on a value sensed by the chromaticity sensor so that the white light has a certain chromaticity. Furthermore, upon powering on the backlight, the drive unit retrieves initial current values of the LEDs of each color from a non-volatile memory, and corrects the initial current values according to a value sensed by the temperature sensor to activate the LEDs of each color with the corrected value.

FIG. 1



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European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 05 25 7116

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	US 2003/230991 A1 (MUTHU SUBRAMANIAN [US] ET AL) 18 December 2003 (2003-12-18) * paragraphs [0010] - [0019]; figure 1 * -----	1-11	INV. G09G3/34 G09G3/36
Y	US 2003/214242 A1 (BERG-JOHANSEN ROAR [US]) 20 November 2003 (2003-11-20) * paragraph [0059] * -----	1,2,4,6,9	
Y	WO 03/075617 A (SHARP KK [JP]; IWAUCHI KENICHI [JP]; YAMANAKA ATSUSHI [JP]; SEO MITSUY) 12 September 2003 (2003-09-12) * page 1, line 1 - page 3, line 9; figure 13 * -----	3,5,7,8,10,11	
P,Y	-& EP 1 482 770 A1 (SHARP KK [JP]) 1 December 2004 (2004-12-01) * paragraphs [0002] - [0010]; figure 13 * -----	3,5,7,8,10,11	
			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 14 December 2007	Examiner Harke, Michael
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)

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

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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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14-12-2007

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2003230991 A1	18-12-2003	AU 2003239305 A1	31-12-2003
		CN 1662949 A	31-08-2005
		EP 1516312 A1	23-03-2005
		WO 03107319 A1	24-12-2003
		JP 2005530312 T	06-10-2005

US 2003214242 A1	20-11-2003	AU 2003234465 A1	02-12-2003
		WO 03098585 A1	27-11-2003

WO 03075617 A	12-09-2003	AU 2003211809 A1	16-09-2003
		CN 1650673 A	03-08-2005
		EP 1482770 A1	01-12-2004
		JP 3733553 B2	11-01-2006
		US 2005117190 A1	02-06-2005

EP 1482770 A1	01-12-2004	AU 2003211809 A1	16-09-2003
		CN 1650673 A	03-08-2005
		WO 03075617 A1	12-09-2003
		JP 3733553 B2	11-01-2006
		US 2005117190 A1	02-06-2005

专利名称(译)	背光装置，驱动背光的方法和液晶显示装置		
公开(公告)号	EP1675097A3	公开(公告)日	2008-01-23
申请号	EP2005257116	申请日	2005-11-18
[标]申请(专利权)人(译)	索尼公司		
申请(专利权)人(译)	索尼公司		
当前申请(专利权)人(译)	索尼公司		
[标]发明人	ICHIKAWA HIROAKI C O SONY CORPORATION KIKUCHI KENICHI C O SONY CORPORATION HATAJIRI KIMIO C O SONY CORPORATION		
发明人	ICHIKAWA, HIROAKI C/O SONY CORPORATION KIKUCHI, KENICHI C/O SONY CORPORATION HATAJIRI, KIMIO C/O SONY CORPORATION		
IPC分类号	G09G3/34 G09G3/36 C10M109/00 G02F1/133 G02F1/13357 G09G3/20 H01L33/00 H05B37/02		
CPC分类号	G09G3/3413 G02F1/133611 G09G3/342 G09G2320/041 G09G2320/0633 G09G2320/064 G09G2320/0666 G09G2330/026 G09G2360/145		
优先权	2005232385 2005-08-10 JP 2004336572 2004-11-19 JP		
其他公开文献	EP1675097A2		
外部链接	Espacenet		

摘要(译)

本发明的实施例防止时间段从器件上电延伸到发出的白光在特定色度上的色度的收敛，而与器件通电时的温度无关。彩色液晶显示装置包括液晶显示单元，采用红色，绿色和蓝色LED作为其光源的背光，用于驱动每种颜色的LED的驱动单元，用于检测LED温度的温度传感器，和色度传感器，用于检测从LED发出的白光的色度。驱动单元向LED提供电流以驱动它们，并且基于由色度传感器感测的值实现对每种颜色的LED的电流量的反馈控制，使得白光具有特定的色度。此外，在打开背光源时，驱动单元从非易失性存储器中检索每种颜色的LED的初始电流值，并根据温度传感器检测到的值校正初始电流值，以激活每种颜色的LED。具有修正值。

