



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
23.04.2008 Bulletin 2008/17

(51) Int Cl.:
G09G 3/20 (2006.01) G09G 3/36 (2006.01)

(43) Date of publication A2:
05.01.2005 Bulletin 2005/01

(21) Application number: **04015094.8**

(22) Date of filing: **28.06.2004**

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

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(30) Priority: **01.07.2003 FR 0307932**

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(54) **Method of processing a video image sequence in a liquid crystal display panel**

(57) The present invention relates to a method of processing a video image sequence in a liquid crystal display panel and to a device for implementing this method. According to the invention, at least one motion-compensated image is generated for each group of m consecutive images of the sequence, m being greater or equal to 2, in order to obtain a group of n consecutive images, with $n > m$. Said group of n consecutive images replaces the group of m consecutive images into the sequence. Next, for each pixel having in a current image

of the new sequence a current grey level and in the next image a different target grey level, an intercalary grey level is calculated which is higher or lower than said target grey level depending on whether said target grey level is respectively higher or lower than the current grey level of the pixel. Next, in the current image, the current grey level of the pixels is replaced with said calculated intercalary level. This method makes it possible to correct the blurring effects due to the mode of display and to the high response time of the LCD panel.

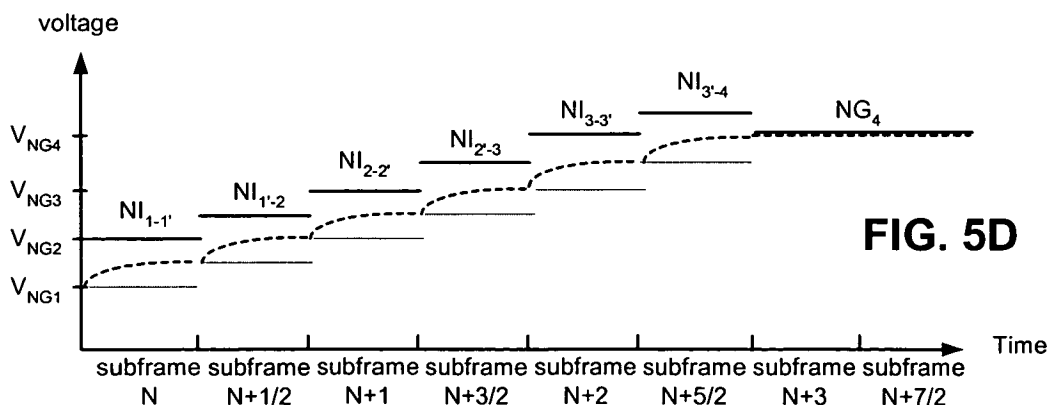


FIG. 5D



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 04 01 5094

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 2003/058264 A1 (TAKAKO ADACHI [JP] ET AL) 27 March 2003 (2003-03-27) * paragraphs [0012], [0013], [0016], [0017], [0127] *	1-3,5,7,8	INV. G09G3/20 G09G3/36
Y	US 2003/098839 A1 (LEE BAEK-WOON [KR]) 29 May 2003 (2003-05-29) * abstract; figures 1a,1b,4,5,7,8 * * paragraphs [0002], [0011], [0081] - [0088] *	1-3,5,7,8	
Y	US 6 008 865 A (FOGEL SERGEI [US]) 28 December 1999 (1999-12-28) * abstract; figures 2,5a,5b *	1-3,5,7,8	
Y	US 2002/044115 A1 (JINDA AKIHITO [JP] ET AL) 18 April 2002 (2002-04-18) * abstract; figures 5-7,9,14,16 * * paragraphs [0007] - [0010], [0013], [0016] *	1-3,5,7,8	
			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 March 2008	Examiner Fulcheri, Alessandro
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.**

EP 04 01 5094

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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14-03-2008

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2003058264 A1	27-03-2003	JP 2003172915 A	20-06-2003
		KR 20030027738 A	07-04-2003
		TW 270039 B	01-01-2007

US 2003098839 A1	29-05-2003	AU 2002348676 A1	10-06-2003
		CN 1613104 A	04-05-2005
		EP 1449193 A1	25-08-2004
		JP 2003208142 A	25-07-2003
		WO 03046881 A1	05-06-2003
		KR 20030042976 A	02-06-2003
		TW 548616 B	21-08-2003

US 6008865 A	28-12-1999	NONE	

US 2002044115 A1	18-04-2002	CN 1345161 A	17-04-2002
		JP 2002116743 A	19-04-2002
		KR 20020013724 A	21-02-2002
		TW 513684 B	11-12-2002
		US 2006022922 A1	02-02-2006

专利名称(译)	在液晶显示面板中处理视频图像序列的方法		
公开(公告)号	EP1494196A3	公开(公告)日	2008-04-23
申请号	EP2004015094	申请日	2004-06-28
[标]申请(专利权)人(译)	汤姆森特许公司		
申请(专利权)人(译)	汤姆森许可S.A.		
当前申请(专利权)人(译)	汤姆森许可		
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IPC分类号	G09G3/20 G09G3/36 G02F1/133 H04N5/66		
CPC分类号	G09G3/20 G09G3/2011 G09G3/2025 G09G3/3611 G09G2320/0252 G09G2320/0261 G09G2320/106 G09G2340/0435 G09G2340/16		
代理机构(译)	LE DANTEC , CLAUDE		
优先权	2003007932 2003-07-01 FR		
其他公开文献	EP1494196A2		
外部链接	Espacenet		

摘要(译)

本发明涉及一种在液晶显示板中处理视频图像序列的方法和一种用于实现该方法的装置。根据本发明，为序列的每组m个连续图像生成至少一个运动补偿图像，m大于或等于2，以便获得n个连续图像的组，其中 $n > m$ 。所述n个连续图像组将m个连续图像组替换为序列。接下来，对于在新序列的当前图像中具有当前灰度级并且在下一图像中具有不同目标灰度级的每个像素，根据所述目标是否计算出高于或低于所述目标灰度级的插入灰度级。灰度级分别高于或低于像素的当前灰度级。接下来，在当前图像中，用所述计算的插入级别替换像素的当前灰度级。该方法使得可以校正由于显示模式和LCD面板的高响应时间引起的模糊效果。

