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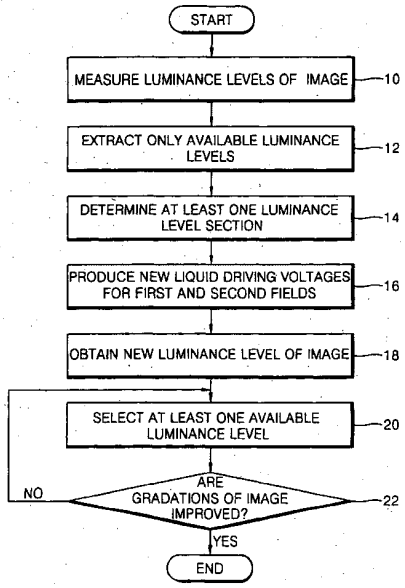
(54) Method for improving gradation of image, and image display apparatus for performing the method

(57) Provided are a method of improving the gradation of an image, and an image display apparatus for performing the method. The method is to improves gradations of an image carried out by a liquid crystal display including a liquid crystal driving unit for generating a liquid crystal driving signal in response to voltage, which is selected in accordance with the size of an image signal from liquid crystal driving voltages each classified by first and second fields which constitutes a unit frame, and a liquid crystal display panel for being driven in response to the liquid crystal driving signal and displaying the image, the method includes (a) measuring luminance levels of an image displayed on the liquid crystal display panel while changing the liquid crystal driving voltage per frame; (b) determining at least one luminance level section whose gradations needs to be improved from the measured luminance levels; (c) producing new liquid crystal driving voltages to be increased or decreased centering around the liquid crystal driving voltage related to lowest luminance level per the first and second fields in each determined luminance level section; (d) obtaining new luminance levels using the produced new liquid crystal driving voltages; (e) selecting at least one available first luminance level from the new luminance levels; and (f) checking whether the gradations of the image are improved using the first luminance level, and/or returning back to step (e) if the gradations are not improved. According to this method, it is possible to increase the number of gradations of an image and make irregular difference between luminance levels of gradations regular, thereby improving the quality of the image.

FIG. 1



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EUROPEAN SEARCH REPORT

Application Number
EP 02 25 7343

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	15 October 2004	Vázquez del Real, D

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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专利名称(译)	用于改善图像灰度的方法和用于执行该方法的图像显示装置		
公开(公告)号	EP1315141A3	公开(公告)日	2004-12-29
申请号	EP2002257343	申请日	2002-10-23
[标]申请(专利权)人(译)	三星电子株式会社 三星电机株式会社		
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优先权	1020010067625 2001-10-31 KR		
其他公开文献	EP1315141B1 EP1315141A2		
外部链接	Espacenet		

摘要(译)

提供了一种提高图像的灰度的方法和用于执行该方法的图像显示装置。该方法是改进由液晶显示器执行的图像的灰度，该液晶显示器包括液晶驱动单元，用于响应于根据来自液晶驱动的图像信号的大小而选择的电压产生液晶驱动信号由构成单位帧的第一和第二场分类的电压，以及响应于液晶驱动信号被驱动并显示图像的液晶显示面板，所述方法包括：（a）测量所显示的图像的亮度水平，在改变每帧的液晶驱动电压的同时改变液晶显示面板；（b）从所测量的亮度级确定需要改进其灰度的至少一个亮度级部分；（c）产生以每个确定的亮度级部分中的每个第一和第二场的最低亮度级相关的液晶驱动电压为中心增加或减少的新的液晶驱动电压；（d）使用产生的新的液晶驱动电压获得新的亮度级；（e）从新的亮度级中选择至少一个可用的第一亮度级;和（f）使用第一亮度级检查图像的灰度是否改善，和/或如果灰度没有改善，则返回步骤（e）。根据该方法，可以增加图像的灰度的数量，并且使灰度的亮度水平之间的不规则差异规则，从而提高图像的质量。