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(71) Applicant: **Nichia Corporation**
Anan-shi, Tokushima 774-8601 (JP)

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(72) Inventor: **Tsuji, Ryuhei**
c/o Nichia Corporation
Anan-shi
Tokushima 774-8601 (JP)

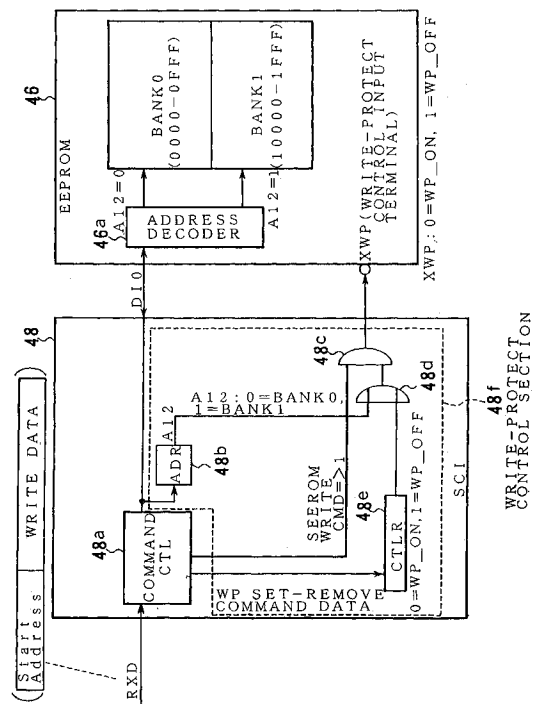
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(74) Representative: **Menges, Rolf**
Ackmann, Menges & Demski,
Patentanwälte
Postfach 14 04 31
80454 München (DE)

(54) **LED characteristic memory for LED display apparatus**

(57) The image display apparatus comprises: a display section (21) of LEDs, which are pixel elements, arranged in an m-line by n-column matrix; a correction data memory section (26) which stores correction data corresponding to the LED for each respective pixel; and control and driver circuitry which corrects input image data based on the correction data and displays an image on said display section (21) using the corrected image data. The correction data memory section (26) comprises a single memory device provided with a first memory bank which forbids writing to memory and holds pre-stored first correction data, and a second memory bank which allows writing to memory.

FIG. 7





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 0 702 347 A (TOKYO SHIBAURA ELECTRIC CO) 20 March 1996 (1996-03-20)	1	INV. G09G3/32
Y	* abstract * * column 5, line 39 - column 7, line 24; figures 3,4 * * column 7, line 49 - column 8, line 19; figure 8 *	2	
Y	----- PATENT ABSTRACTS OF JAPAN vol. 1995, no. 11, 26 December 1995 (1995-12-26) -& JP 07 199861 A (TAKIRON CO LTD), 4 August 1995 (1995-08-04) * abstract *	2	
Y	----- US 4 825 201 A (IMAMURA TOSHIHARU ET AL) 25 April 1989 (1989-04-25) * column 4, line 40 - column 5, line 7; figure 3 *	2	
A	----- PATENT ABSTRACTS OF JAPAN vol. 018, no. 050 (P-1683), 26 January 1994 (1994-01-26) -& JP 05 273939 A (SHARP CORP), 22 October 1993 (1993-10-22) * abstract *	1-9	
A	----- PATENT ABSTRACTS OF JAPAN vol. 017, no. 038 (M-1358), 25 January 1993 (1993-01-25) -& JP 04 257464 A (RICOH CO LTD), 11 September 1992 (1992-09-11) * abstract *	1-9	G09G
		----- -/--	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 8 November 2007	Examiner Morris, David
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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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	PATENT ABSTRACTS OF JAPAN vol. 1998, no. 03, 27 February 1998 (1998-02-27) -& JP 09 305146 A (PIONEER ELECTRON CORP), 28 November 1997 (1997-11-28) * abstract; figure 9 * * figures 1-4 *	1	
P,A	-& US 5 923 309 A (PIONEER ELECTRONIC CORPORATION) 13 July 1999 (1999-07-13) * column 4, line 8 - column 4, line 27; figure 4 * * column 4, line 37 - column 5, line 4 * * column 5, line 43 - column 6, line 32; figures 7-9 * -----	1	
			TECHNICAL FIELDS SEARCHED (IPC)
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 8 November 2007	Examiner Morris, David
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	

4
EPO FORM 1503 03 82 (P04C01)

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

EP 05 01 2345

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.

08-11-2007

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0702347	A	20-03-1996	JP 8030231 A	02-02-1996
			US 5717417 A	10-02-1998

JP 07199861	A	04-08-1995	NONE	

US 4825201	A	25-04-1989	NONE	

JP 05273939	A	22-10-1993	JP 3268001 B2	25-03-2002

JP 04257464	A	11-09-1992	NONE	

JP 09305146	A	28-11-1997	JP 3547561 B2	28-07-2004
			US 5923309 A	13-07-1999

US 5923309	A	13-07-1999	JP 3547561 B2	28-07-2004
			JP 9305146 A	28-11-1997

专利名称(译)	用于LED显示装置的LED特性存储器		
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[标]发明人	TSUJI RYUHEI C O NICHIA CORPORATION		
发明人	TSUJI, RYUHEI C/O NICHIA CORPORATION		
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优先权	1999194551 1999-07-08 JP 1999302493 1999-10-25 JP 1999303134 1999-10-25 JP		
其他公开文献	EP1594117A2 EP1594117B1		
外部链接	Espacenet		

摘要(译)

该图像显示装置包括：作为像素元件的LED的显示部分（21），以m行×n列矩阵排列；校正数据存储部分（26），其存储对应于每个相应像素的LED的校正数据；以及控制和驱动器电路，其基于校正数据校正输入图像数据，并使用校正的图像数据在所述显示部分（21）上显示图像。校正数据存储部分（26）包括具有禁止写入存储器并保持预存储的第一校正数据的第一存储体的单个存储器装置和允许写入存储器的第二存储体。

FIG. 7

