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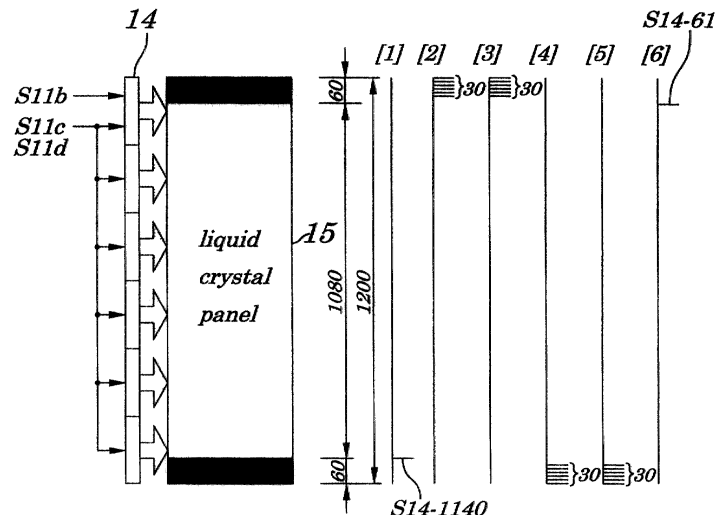
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(54) **Liquid crystal display and driving method for liquid crystal display**

(57) For an image display area, a scanning signal circuit (14) sequentially outputs scanning signals (S14-61 to S14-1140) once for one horizontal period of an image input signal (lin), and pixel data signals (S13-1 to S13-m) are input from a display signal circuit (13) to a liquid crystal panel (15). For a blanking area, a plurality of input pulses (S11b) are input to the scanning signal circuit (14) synchronously with a high speed clock signal (S11c), and the input pulses (S11b) transfer to the blanking area. After writing blanking lines to thirty odd lines

at an upper side of the liquid crystal panel (15) at a same time, blanking lines are written into thirty even lines at the upper side at a same time. Similarly, after writing blanking lines to thirty odd lines at a lower side of the liquid crystal panel (15) at a same time, blanking lines are written into thirty even lines at the lower side at a same time. With this operation, when a number of scanning signal lines (X1 to Xn) of the liquid crystal panel (15) is larger than a number of scanning lines of one vertical period of the image input signal (lin), the blanking area is made completely.

FIG.2B





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EUROPEAN SEARCH REPORT

Application Number
EP 00 12 5689

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	WO 98 21707 A (ISHII KENYA ;SEIKO EPSON CORP (JP)) 22 May 1998 (1998-05-22)	1,2,4,5,7-9,13,14,16	G09G3/36
Y	* figures 14-16 *	6	
L	-& US 6 225 969 B1 (SEIKO EPSON CORPORATION) 1 May 2001 (2001-05-01) * column 17, line 16 - column 18, line 21; figures 14-16 * * column 18, line 66 - column 19, line 29 *		

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Y	* column 7, line 12 - column 7, line 26; figures 1B,3,8A,8B *	5,6,8,9	
X	* column 11, line 54 - column 12, line 20; figures 10,11 * * column 12, line 54 - column 13, line 7; figure 14 *	1,3,13,15,17	

D,Y	US 5 867 141 A (OKUMURA FUJIO ET AL) 2 February 1999 (1999-02-02)	1,2,4,13,14,16	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
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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
MUNICH		17 February 2003	Morris, D
CATEGORY OF CITED DOCUMENTS		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	
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		& : member of the same patent family, corresponding document	

EPO FORM 1503 03/82 (P/4C01)

**CLAIMS INCURRING FEES**

The present European patent application comprised at the time of filing more than ten claims.

- Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims 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 the first ten claims.

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:



European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 12 5689

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
Place of search	Date of completion of the search	Examiner	
MUNICH	17 February 2003	Morris, D	
CATEGORY OF CITED DOCUMENTS		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	
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			

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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: 1-2, 4-9, 13-14, 16

Directed to subject matter of a liquid crystal crystal display in which, when a number of scanning lines is larger than a number of scanning lines of an image input signal, writes complete blanking areas at the upper and lower side of the image display area, said writing in the blanking area involving the outputting of a plurality of scanning lines at the same time.

2. Claims: 3 (dependent on claim 1), 10-12,
15 (dependent on claim 13), 17

Directed to subject matter of a liquid crystal crystal display in which, when a number of scanning lines is larger than a number of scanning lines of an image input signal, writes complete blanking areas at the upper and lower side of the image display area, said writing in the image display area involving the outputting of a plurality of scanning lines at the same time in order to enlarge said image.

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

EP 00 12 5689

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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17-02-2003

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EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82