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Declaration under Rule 4.17:

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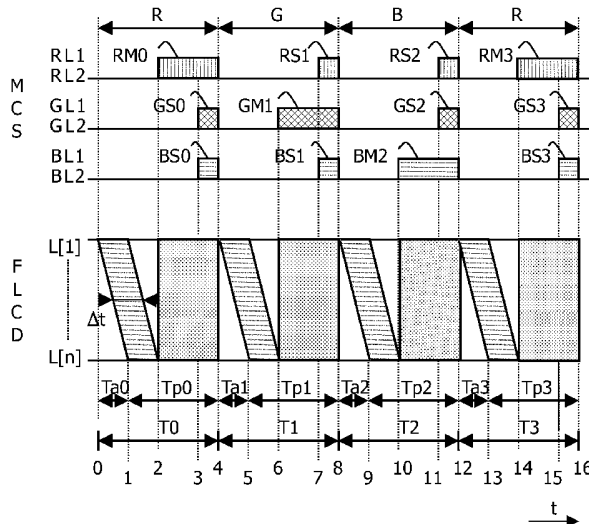
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(54) Title: COLOR-SEQUENTIAL DISPLAY DEVICE



(57) Abstract: A color-sequential display device comprises a plurality of pixel elements (FLCD) that have controllable light-transfer characteristics. A display driver controls the plurality of pixel elements in accordance with a color component (R) during a control interval (TO) that is assigned to the color component. The display driver causes a color-light source (RL1, RL2) to apply a color light, which corresponds to the color component, to the plurality of pixel elements during a main interval (RMO). The main interval is comprised in the control interval that is assigned to color component. The light-source controller also causes the color-light source to apply the color light during a spillover interval (RSI, RS2). The spillover interval is comprised in another control interval (TI) that is assigned to another color component (G).

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

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According to International Patent Classification (IPC) or to both national classification and IPC				
B. FIELDS SEARCHED				
Minimum documentation searched (classification system followed by classification symbols) G09G				
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Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal				
C. DOCUMENTS CONSIDERED TO BE RELEVANT				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
X Y	EP 1 347 652 A (HEWLETT-PACKARD COMPANY) 24 September 2003 (2003-09-24) paragraph [0003] paragraph [0006] - paragraph [0007] paragraph [0010] - paragraph [0011] paragraph [0015] paragraph [0020] - paragraph [0027] figures 4,5 -----	1-4,6, 10-12 8		
X Y	US 2002/063670 A1 (YOSHINAGA HIDEKI ET AL) 30 May 2002 (2002-05-30) paragraph [0002] paragraph [0013] paragraph [0023] paragraph [0066] - paragraph [0070] paragraph [0088] ----- -/--	1,3-5, 9-11 8		
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. </td> <td style="width: 50%; border: none;"> <input checked="" type="checkbox"/> See patent family annex. </td> </tr> </table>			<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.	<input checked="" type="checkbox"/> See patent family annex.
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/060662 A1 (HONG HYUNG-KI) 23 May 2002 (2002-05-23)	1,3,7, 9-11
Y	paragraph [0003] paragraph [0006] paragraph [0019] paragraph [0030] paragraph [0051] paragraph [0068] figures 6,13	8
Y	----- GB 2 335 776 A (* CENTRAL RESEARCH LABORATORIES LIMITED) 29 September 1999 (1999-09-29) page 1, line 7 - line 9 page 2, line 3 - line 15 -----	8

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2006/050199

Patent document cited in search report	A	Publication date	US	Patent family member(s)	Publication date
EP 1347652	A	24-09-2003	US	2003179192 A1	25-09-2003
US 2002063670	A1	30-05-2002	JP	3450842 B2	29-09-2003
			JP	2002229531 A	16-08-2002
			US	2005237288 A1	27-10-2005
US 2002060662	A1	23-05-2002	JP	2002251175 A	06-09-2002
			KR	2002039963 A	30-05-2002
GB 2335776	A	29-09-1999	EP	1066619 A1	10-01-2001
			WO	9950817 A1	07-10-1999
			JP	2002510073 T	02-04-2002
			TW	452752 B	01-09-2001