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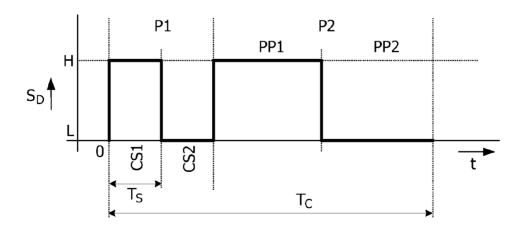
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#### **Declaration under Rule 4.17:**

as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

[Continued on next page]

(54) Title: DRIVING A LIGHT SOURCE



# **FIG. 12A**

(57) Abstract: A method for driving a light source (11, 12, 13) is described, wherein the light source is alternately switched ON and OFF in an ON/OFF pattern, wherein the duty cycle of the ON/OFF pattern is varied to vary the average light intensity of the light source, and wherein the shape of the ON/OFF pattern is varied to transmit data. Thus, a control signal for the light source comprises data information as well as duty cycle information. The duty cycle is varied within a range from almost zero to almost 100%, and data is varied and transmitted without affecting the duty cycle.



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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

#### EPO-Internal

C. DOCUM	ENTS CONSIDERED TO BE RELEVANT	
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 02/13490 A (COLOR KINETICS INC [US]) 14 February 2002 (2002-02-14) page 8; figures 1-3	1-22
X	WO 2006/111930 A (KONINKL PHILIPS ELECTRONICS NV [NL]; VEGTER KLAAS [NL]; LINNARTZ JOHAN) 26 October 2006 (2006-10-26) the whole document	1–22
P,X	WO 2008/032236 A (KONINKL PHILIPS ELECTRONICS NV [NL]; DRAAIJER MAURICE H J [NL]; COLAK) 20 March 2008 (2008-03-20) page 7	1
	-/	
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### INTERNATIONAL SEARCH REPORT

International application No PCT/IB2008/052819

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT									
Α	EP 1 635 617 A (AGILENT TECHNOLOGIES INC [US] AVAGO TECH ECBU IP SG PTE LTD [SG]) 15 March 2006 (2006-03-15) paragraphs [0011] - [0014], [0024], [0027], [0031]	1-22							
A	EP 1 447 951 A (FREE SYSTEMS PTE LTD [SG]) 18 August 2004 (2004-08-18) paragraphs [0009] - [0011], [0033] -	1-22							
	[0040] figures 5-7 								
		·							

### **INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No
PCT/IB2008/052819

Patent document cited in search report		Publication date	,	Patent family member(s)	Publication date
WO 0213490	A	14-02-2002	AU	8540801 A	18-02-2002
WO 2006111930	Α	26-10-2006	JP US	2008537306 T 2008185969 A1	11-09-2008 07-08-2008
WO 2008032236	Α	20-03-2008	NONE		
EP 1635617	A	15-03-2006	CN JP KR US	1746948 A 2006079099 A 20060051100 A 2006054776 A1	15-03-2006 23-03-2006 19-05-2006 16-03-2006
EP 1447951	Α	18-08-2004	JP SG SG US	2004229288 A 123592 A1 143980 A1 2004141568 A1	12-08-2004 26-07-2006 29-07-2008 22-07-2004