



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
18.04.2001 Bulletin 2001/16

(51) Int Cl.⁷: **G09G 3/36**

(43) Date of publication A2:
06.12.2000 Bulletin 2000/49

(21) Application number: **00112042.7**

(22) Date of filing: **02.06.2000**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

(72) Inventor: **Kwon, Oh-Kyong**
Seoul, 138-240 (KR)

(74) Representative: **Riebling, Peter, Dr.-Ing.**
Patentanwalt
Postfach 31 60
88113 Lindau (DE)

(30) Priority: **04.06.1999 KR 9920721**

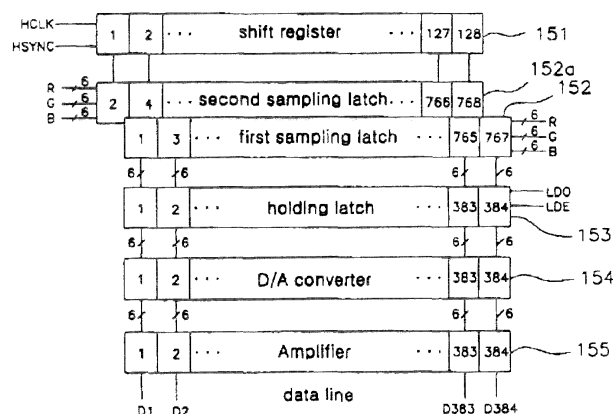
(71) Applicant: **Kwon, Oh-Kyong**
Seoul, 138-240 (KR)

(54) **Data driver for a liquid crystal display**

(57) A source driver of the liquid crystal display comprising: an (n/3)-clock shift register for shifting a horizontal synchronous signal pulse, to output a latch clock; a first sampling latch for sampling and latching digital video signals corresponding to odd-numbered column lines among 2n column lines according to the latch clock sent from the shift register; a second sampling latch for sampling and latching digital video signals corresponding to even-numbered column lines among 2n column lines according to the latch clock outputted from the shift register; a holding latch for receiving and latching the

data stored in the first sampling latch according to a first load signal, and for receiving and latching the data stored in the second sampling latch according to a second load signal; a D/A converter for converting the digital video signals corresponding to the odd-numbered column lines or the digital video signals corresponding to the even-numbered column lines, stored in the holding latch, into analog data signals; and an amplifier for amplifying the analog video signals corresponding to the odd-numbered column lines or the analog video signals corresponding to the even-numbered column lines, supplied from the D/A converter.

FIG.15A





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 11 2042

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)
A	DE 198 09 221 A (LG ELECTRONICS) 24 September 1998 (1998-09-24) * column 1, line 40 - line 58; figure 1 * ---	1,3	G09G3/36
A	US 5 337 070 A (HIYAMA IKUO ET AL) 9 August 1994 (1994-08-09) * column 7 - column 8, line 12; figure 8 * ---	1,3	
A	EP 0 368 572 A (SHARP) 16 May 1990 (1990-05-16) * column 29 - column 30, line 30 * * column 38 - column 40 * ---	1,3	
A	US 4 822 142 A (YASUI) 18 April 1989 (1989-04-18) * column 6, line 35 - column 7, line 23; figure 8 * ---	1,3	
A	US 5 313 222 A (LEE) 17 May 1994 (1994-05-17) * column 1, line 53 - column 2, line 9 * * column 3, line 12 - line 68; figure 2 * ---	1,3	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
A	EP 0 293 048 A (PHILIPS) 30 November 1988 (1988-11-30) * column 2, line 27 - column 4, line 52 * ---	1,3	G09G
A	EP 0 686 960 A (CANON) 13 December 1995 (1995-12-13) * column 17, line 15 - column 18, line 19 * ---	1,3	
A	US 5 648 792 A (SATO ET AL.) 15 July 1997 (1997-07-15) * column 2, line 10 - line 28 * ---	1,3	
		-/--	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 26 February 2001	Examiner Lange, J
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			

EPO FORM 1503 03.92 (P44C01)



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 11 2042

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)
A	PATENT ABSTRACTS OF JAPAN vol. 009, no. 099 (E-311), 27 April 1985 (1985-04-27) & JP 59 225683 A (SUWA SEIKOSHA), 18 December 1984 (1984-12-18) * abstract * -----	1, 3	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 26 February 2001	Examiner Lange, J
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			

EPO FORM 1503 03 82 (P04001)

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

EP 00 11 2042

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.

26-02-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 19809221 A	24-09-1998	KR 236333 B	15-12-1999
		FR 2760561 A	11-09-1998
		GB 2322958 A,B	09-09-1998
		GB 2338817 A,B	29-12-1999
		JP 10254418 A	25-09-1998
US 5337070 A	09-08-1994	JP 5035200 A	12-02-1993
EP 0368572 A	16-05-1990	JP 2126285 A	15-05-1990
		JP 2170784 A	02-07-1990
		DE 68923683 D	07-09-1995
		DE 68923683 T	15-02-1996
		KR 9209029 B	12-10-1992
		US 5192945 A	09-03-1993
US 4822142 A	18-04-1989	NONE	
US 5313222 A	17-05-1994	AT 182228 T	15-07-1999
		AU 671181 B	15-08-1996
		AU 5569894 A	19-07-1994
		BR 9307740 A	31-08-1999
		CA 2150223 A	07-07-1994
		CN 1090652 A,B	10-08-1994
		DE 69325666 D	19-08-1999
		DE 69325666 T	24-02-2000
		DK 676078 T	21-02-2000
		EP 0676078 A	11-10-1995
		ES 2138655 T	16-01-2000
		WO 9415327 A	07-07-1994
		GR 3031175 T	31-12-1999
		JP 2996428 B	27-12-1999
		JP 6347754 A	22-12-1994
		RU 2121170 C	27-10-1998
EP 0293048 A	30-11-1988	GB 2205191 A	30-11-1988
		JP 63311388 A	20-12-1988
		US 4931787 A	05-06-1990
EP 0686960 A	13-12-1995	JP 8054861 A	27-02-1996
		KR 224536 B	15-10-1999
		US 6072457 A	06-06-2000
US 5648792 A	15-07-1997	JP 7253767 A	03-10-1995
		KR 142131 B	15-07-1998
JP 59225683 A	18-12-1984	NONE	

EPO FORM P0459

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

专利名称(译)	用于液晶显示器的数据驱动器		
公开(公告)号	EP1058232A3	公开(公告)日	2001-04-18
申请号	EP2000112042	申请日	2000-06-02
[标]申请(专利权)人(译)	KWON OH KYONG		
申请(专利权)人(译)	KWON , OH-KYONG		
当前申请(专利权)人(译)	SAMSUNG ELECTRONICS CO. , LTD.		
[标]发明人	KWON OH KYONG		
发明人	KWON, OH-KYONG		
IPC分类号	G02F1/133 G09F9/30 G09G3/20 G09G3/36		
CPC分类号	G09G3/3677 G09G3/3614 G09G3/3648 G09G3/3659 G09G3/3688 G09G2300/0814 G09G2310/0251 G09G2310/027 G09G2310/0297 G09G2310/06		
优先权	1019990020721 1999-06-04 KR		
其他公开文献	EP1058232B1 EP1058232A2		
外部链接	Espacenet		

摘要(译)

一种液晶显示器的源极驱动器，包括： $(n/3)$ 时移位寄存器，用于移位水平同步信号脉冲，输出锁存时钟；第一采样锁存器，用于根据从移位寄存器发送的锁存时钟对 $2n$ 列线中的奇数列线对应的数字视频信号进行采样和锁存；第二采样锁存器，用于根据从移位寄存器输出的锁存时钟，对 $2n$ 列线中的偶数列线对应的数字视频信号进行采样和锁存；保持锁存器，用于根据第一负载信号接收和锁存存储在第一采样锁存器中的数据，并根据第二负载信号接收和锁存存储在第二采样锁存器中的数据；D/A转换器，用于将对应于奇数列线的数字视频信号或对应于存储在保持锁存器中的偶数列线的数字视频信号转换成模拟数据信号；和放大器，用于放大与D/A转换器提供的对应于奇数列线或对应于偶数列线的模拟视频信号的模拟视频信号。

FIG.15A

