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2003 09 19

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(72) 70 4 210-404

(74) :

(54)

1H IC 1 1 2 2 1 2 가 가 가

13

， ， ， ，

- 1 poly-TFT LCD TFT
- 2 a-Si LCD TFT
- 3 a-Si TFT
- 4 a-Si TFT LCD TFT
- 5 4

6 4 .

7 .

8 1 2 .

9 6 .

10 .

11 .

12 11 .

13 1 .

14 2 .

15 14 가 .

16 3 .

17 4 .

18 17 가 .

19a 4 1 2 , 19b 1

2

20 .

< >

10 : 12 :

14 : 16 :

18 : 20 :

100 : 110 :

120 : 130 :

140 : 112 :

120 : 164 :

190 : 192 :

194 : 196 :

210 : 220 :

230 : 240 :

250 : 260 :

가

가 CRT
가 가

가

2

TN(Twisted Nematic)
TN
(passive matrix)

STN(Super - Twisted Nematic)
(Active matrix) STN

TFT - LCD , TFT L

CD

TFT - LCD a-Si TFT LCD , poly-Si TFT LCD
a-Si TFT TFT

poly-Si TFT LCD , 가
poly-Si TFT LCD IMT-2000

a-Si TFT LCD PC, LCD , HDTV

1 poly - TFT LCD TFT , 2 a-Si LCD TFT

1 , poly-Si TFT LCD 가 (10) (12)
(14) , (16) (20) (18)

가

2 , a-Si TFT LCD (32) COF(CHIP ON FILM)
(34) , (32) (36)
(38) COF (40)

(40) (42)

a-Si TFT , 1H

가

1

2

1 2 ; 1

1H

IC 가 1H

3 a-Si TFT

3 (140) (100) (110), (120), (130)

(110) (112), (116), (118)
(112) TFT (112a) (112b) TFT (112a) a-Si TFT (1

12b) TFT (112a) (112b)

(116) (116) (118) TFT (112a)

TFT (112a)

(120) (122), (124), (126), (128) (129)

4 a-Si TFT LCD TFT

4 TFT (112a) (150), (160),
(170), (162, 163), (172)가 TFT

(150) m (DL1~DLm) n
(GL1~GLn)

2 525(176 × 3) × 192 가

(ST)가 (STi)

(DLi) (GLi) (STi)
(PE) (PE) (112b) (CE)

(LC)

(PE) (CE) 가

(160) (SWT) 66 8 (164) 528 (BL1~BL8) (SWT) 528
 (BLi) 66 66 (163) 66 (164) 8
 , 66 가
 528 (SWT) 가 , 66 a-Si TFT MOS
 , 528 66 8 (164) 8
 (STH) (164) 3 (162) 1 (CKH), 2 (CKHB),
 (164)
 5 4
 5 (OUT)가 (164) 9 (SRH1~SRH9)
 8 (SRH1~SRH8) (IN)
 (OUT), (CT), (SRH9)
 (SRH1~SRH8) (CK), 1 (VSS), 2 (VDD) 가 (IN),
 (BL1~BL8) (DE1~D
 E8)
 (SRH1, SRH3, SRH5, SRH7, SRH9) 1 (CKH) (SR
 C2, SRC4, SRH6, SRH8) 2 (CKHB) 1 (CKH) 2 (CKHB)
 가 CKH, CKHB 1/66ms
 (CT) 가 (CT)
 (CT) 가
 , () 가
 (SRH9) (SRH8) (CT)
 6 4
 6 4 (170)
 (IN) (SRC1~SRC193)
 (SRC193) 192 (OUT)가
 (VSS), 2 (VDD) 가 (SRC1~SRC192)
 (CT), (CK),
 (SRC1) (IN) (STV)가 (STV)
 (Vsync)
 (GOUT1~GOUT192)
 SRC3, ...) 1 (CKV) (SRC2, SRC4, ...) 2 (CKVB)
 1 (CKV) 2 (CKVB) 가 1 (CKV) 2 (C
 KVB) 16.6/192ms
 (170) , (164)
 8

(SRC1, SRC2, SRC3, ...) (CT) (SRC2, SRC3, SRC4, ...) (G
OUT2, GOUT3, GOUT4)가 (CT) . , (CT)

가 .

() 가 ,

7 , 4 .

7 (164, 170) (190), (192), (194)
(196) .

(190) (CK) , 3 (N3) 가 , (OUT)
가 NMOS (NT11) .

(192) (OUT) , 4 (N4) 가 , 가 1 (VSS) NMOS (NT12) .

(194) (C), NMOS (NT13~NT15) . (C) 3 (N3)
(OUT) , 3 (N3) 가 (NT13) 2 (VDD) , (IN)
(CT) , 3 가 (N3) 가 1 (VSS) (NT14) 3 (N3) ,
(NT13) , 4 (N4) 가 1 (VSS) (NT15) 3 (N3)
(NT15) 2 .

(196) NMOS (NT16, NT17) . (NT16) 2 (VDD) 가 , 4 (N4) 가 1 (NT17) 4 (N4) , 3 (N3) 가 , 16 (VSS) . ,
(NT16) (NT17)

8 , 1 2 (CKV, CKVB) (ST)가 (170) ,
(STV) 1 (CKV) (Tdr1)
(GOUT1) .

(ST) 1 (CKV) 1/4 가 .
(ST) , (Ts1)
(Ts2) .

(GOUT1) (Ts2) 2~4 μ s ,
가 , 1 (CKV) , Tdr1 (GOUT)

(194) (C)가 (ST) (NT13)
(C) (NT11)가 - , 1 (CKV) (NT11)

(GOUT) , (C) (BOOTST NMOS
RAP) (NT11) (VDD) ,
(NT11)가 (FULL) . (NT13)
(NT15) 2 (ST) (NT15)가 -
(NT11) - .

(196) (NT17)가 - 4 (N4)가 2 (VD
(NT12) - (OUT) 1 (VS
(NT17)가 - 4 (N4) 가 1 (V
(N16)가 - (N17) 가 (N16)

16 (NT12) - 4 (N4) 1 (VSS) ,

(GOUT) (OUT1) 1 (CK)

(GOUT) (VOFF=VSS) (NT17)가 -

(N4) 1 (NT16) 4 (N4) 2 (VDD) 4 (N4) 4 가

(VSS) 2 (VDD) (NT15)가 - (NT11) -

(CT) 가 - (NT14) (NT15) 2 3 (N

T14)가 N3) (NT15) - 1 (VSS) .

(VON) 2 (NT11) (VDD) - (VOFF) (NT12) - (GOUT) -

(CT) 가 (NT16) 2 가 (NT14)가 - 3

4 (N3) (N4) - (NT15) 1 (VDD) (VSS) .

4 (N4) 가 2 (VDD) (NT12)가 -

가

(GOUT1~GOUT4)가 8

9 6

9 (CKV) , 2H 1 1 (CKV) 1 TFT-LCD

(CKVB) 1 2 가 (CKV, CKVB) a-TFT

() 0 3V , -8 24V

1 2 (CKV CKVB) (OP AMP)

10

10 2H , 50% (OP AMP) 가 V1 () (R1/R2)

(CKV-opamp) 0 3V

1 2 (CKV CKVB) ,

(GOUT[N-1]) (C)가 (192, 194)

(CKV) 가 (NT14) (C

)

(CKV CKVB) 가 가 1

(NT15) nF (VOFF) 가 VOFF

가 (VOFF)

1H 1H

6, 7

1H

가 1 6 가 (DCON) (Gout[n+1])

11 IC

11 (210), (220), (230), (240), (250), (260) (STV) (2

(STV) 가 ()

11 7 (230) 7 (190) (192) 11 (210), (220), (240) 7 (250) (260) 7 (196) (194)

(210) 가 (VON)

(220) (210) (C)

(230) (CK) , 3 (N3) 가 , 4 (N4) (OUT) 가 (Q2) , (Q3) NMOS (Q5, Q6) (260) (230) (Q3) (Q6) (Q5) (Q5) 가 (210) (VOFF) (DCON) (VO

(250) (210) 가 (DCON) (VO

FF) (Q4) (DCON) ()

(260) (C) 가 (240) 가 (VOFF) (Q7)

11 12

12 11

11 12 , N () (GOUT[1], GOUT[2], ... GOUT[N])
 (174) N .

1 (CKV) 1 () (STV), / (VON/VOFF),
 (GOUT[1]) (DCON1) (IN) 1

/ (VON/VOFF), 1 (GOUT[1]) , ()
 2 (GOUT[2]) (CKVB) 2 (DCON2) (IN) .

] , () N-1 / (VON/VOFF), (N-1) (GOUT[N-1]
 (DCON2) N (CKVB) 2 (GOUT[N]) (OUT)

, IC 2H
 (DCON1, DCON2)가 , 1 (DCON1)가 , 2
 (DCON2) .

13 1 , 11 12

11 13 (GOUT[N-1]) 1H 2 (C
 KVB) 2 (DCON2) (DCON2) OE(OUTPUT ENABLE) 2 (CKVB) (C) 2
 , 가

1) , (GOUT[N]) 1H 1 (CKV) 1 (DCON
 1 (CKV) (C1) 1 (DCON1) OE(OUTPUT ENABLE)
 가 .

1 , (C)
 , 1H
 (1D) .

(DCON2) 1 , 2H 가 1 (DCON1) 2
 1H 가 TFT -

.

(C)가 , 1
 가

(C)

1 1H 가
 , 6, 7 .

14 2 .

6, 7 14 , 1 (CKV) (VOFF) (VON) (VON)
 1 (V1) , (VON) (VOFF)
 2 (V2) , 1 (V1) (VOFF)

(Q4) (Vth) .
 , 2 (CKVB) (VON) (VOFF) (VON) (VOFF) (VON) (VOFF) (CKV) 2 (Q4) (CKVB) (Vth)
 2 (V2) 1 (V1) , 1 (V1) 1 (V2) 가 (Q4) (Vth)
 (Q4) (Vth) (VON) 2 (V2) 가 (CKV) 2 (Q4) (CKVB) (Vth)
 14 1 2 가 15
 15 14 가
 6, 7, 14 15 , (C) (CKVB) (CKVB)
 (GOUT[N-1]) (CKV) 가 (190) (CKV)
 (NT14, NT15)가 (Gout[N+1]) 1 (V1) (C)
 (VON) (Gout[N]) 1 (V1)
 / 2 1 2 /
 2 , 1 2 / 1
 2 가
 16 3
 6, 7 16 (CKV, CKVB) IC 1 2 (V1, V2(=V1)) 가 1
 N/VOFF) / (VOFF/VON) 3 , 14 15 (VO
 2
 17 가 4 , 18 17
 6, 7, 17 18 , (Gout[N+1]) 1 (V1) (C)
 (NT14, NT15)가 (Gout[N]) 1 (V1)
 (C)가 (CKV) 2 (V2) (VON) 2
 (V2)
 (CKV, CKVB) T1+T2 = 1H , T2 1 2 (CKV, 가
 (CHARGE SHARING) 가
 T2 (C)
 KV, CKVB)
 가 4 , 1 2 (CKV, CKVB)
 가 ,

19a 4 1 2 , 19b 1
2 , 20

19a, b , (VON)
가 가 ,

가 20 1H 가
TFT LCD .

,
 .

, 1H IC
 .

, IC
 .

, IC
 ,

가 ,
 .

가 , ,
 .

(57)

1. , 가 ,

가 1 1 , 1 1
2 , 2 1
2 가 ,

1 2 ;

1 ;

1 2 , -
 - ;

2 , - , 1¹
1H

2.

1 , ;

1 , 가 , 가
1 ;

2 ; , 가 , 가 1

가 1 3 , 가 1 2 , .

3.

1 , , 1 2 .

4.

, 가 , ,
1 , 1
2 , 1

1 2 ;
1 ;

, - ,
- ;
 , - ,
1H

5.

4 , 1 2 1 , 1 2 2 ,
1 , 1 .

6.

4 , 1 2 .

7.

4 ,
1 1 , 1 2 ,

2 1 , 2 2 ,
1 .

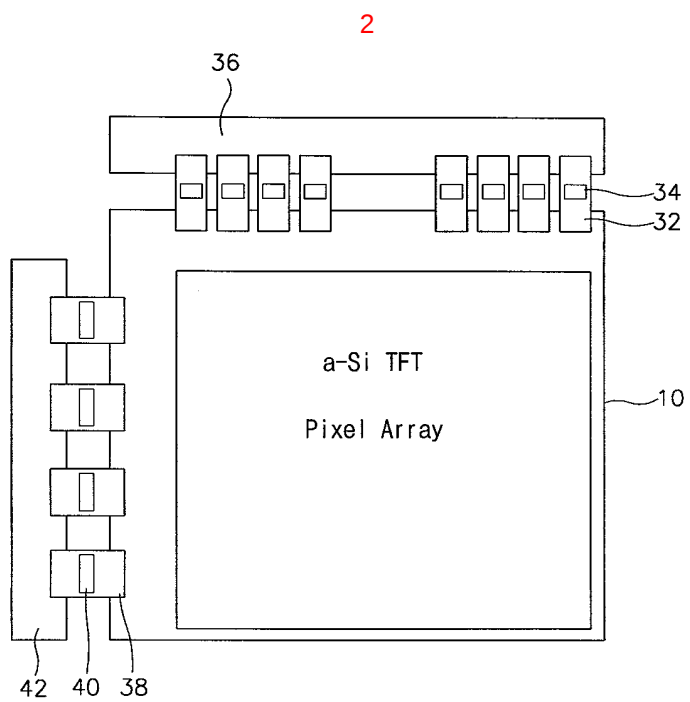
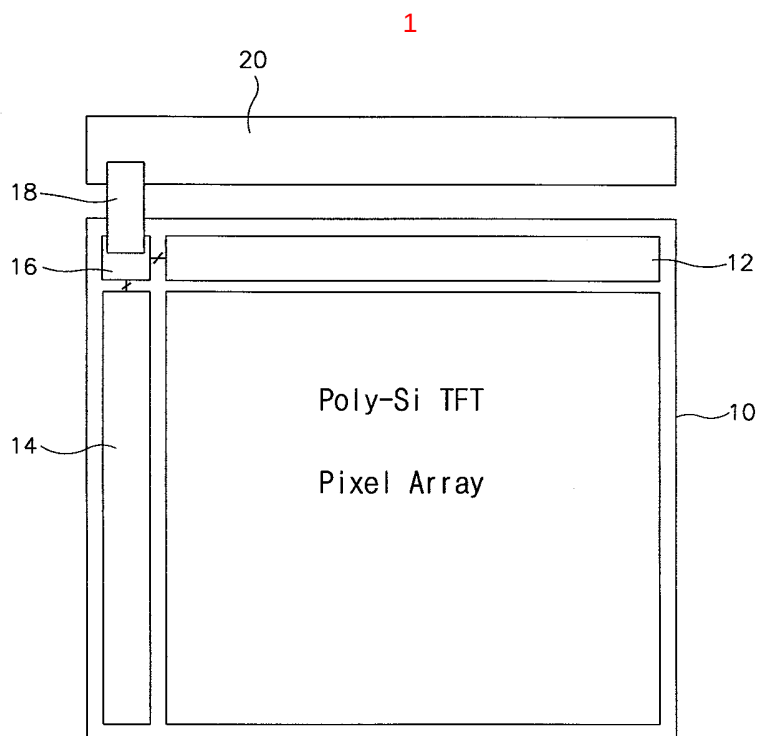
8.
7 , 1 2 1 2 .

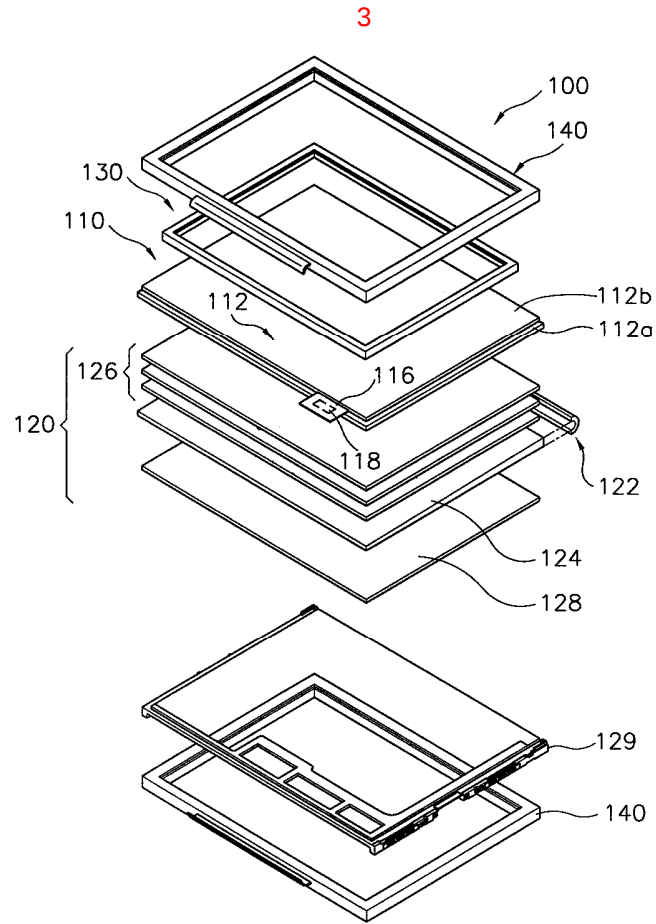
9.
7 , 1
가 1 .

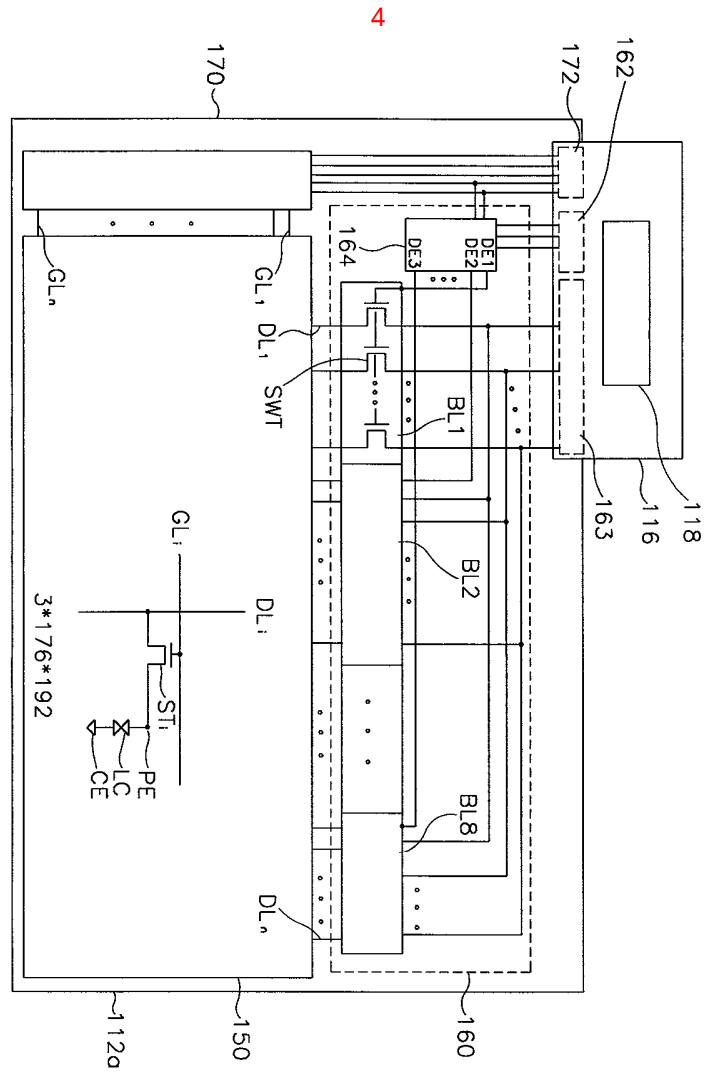
10.
 , , ,
 , ,
 , 가
 , 1 1 ,
 1 가 2 , 가 1
 2 , 2

1 2 ;
1 ;
1 2 , - ,
1 2 - ;
1 2 - , 1H
 .

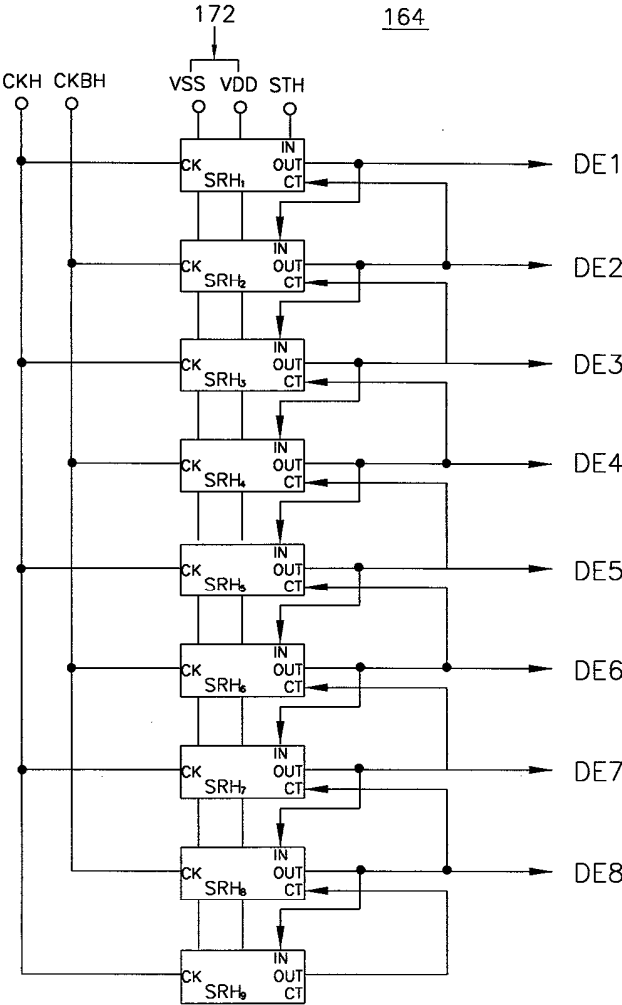
11.
 , , ,
 , ,
 , 가
 , 1 , 1
 2 ,
 1 2 ;
1 ;
 , - ;
 , - 1H ,
 .

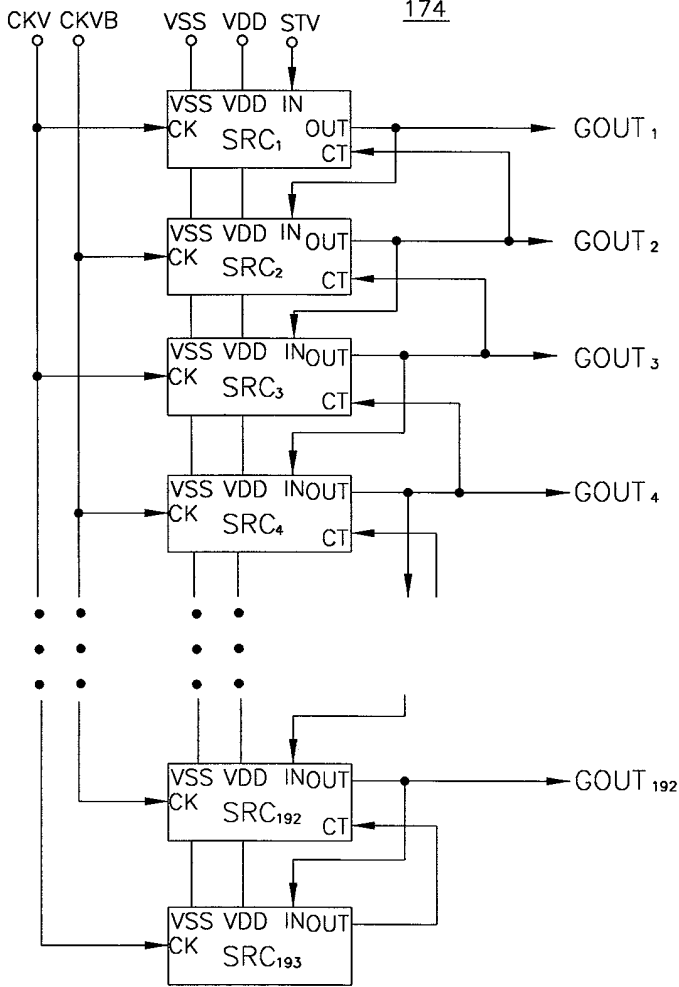


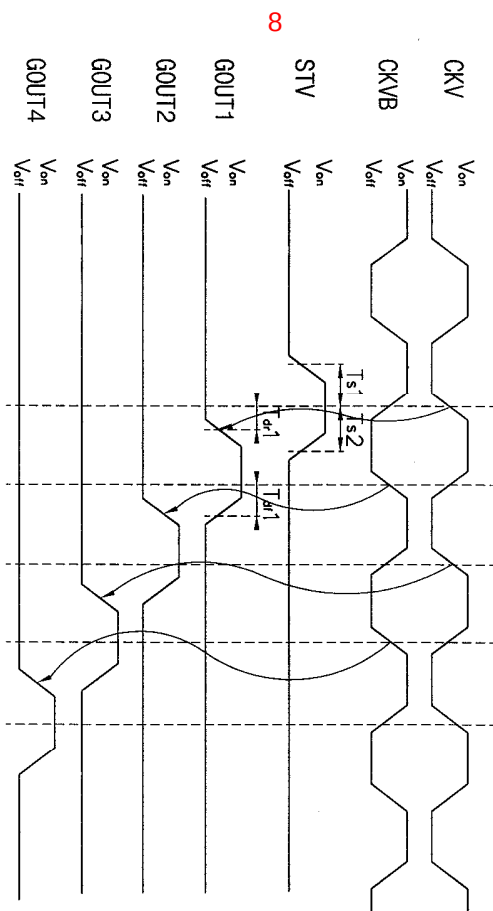
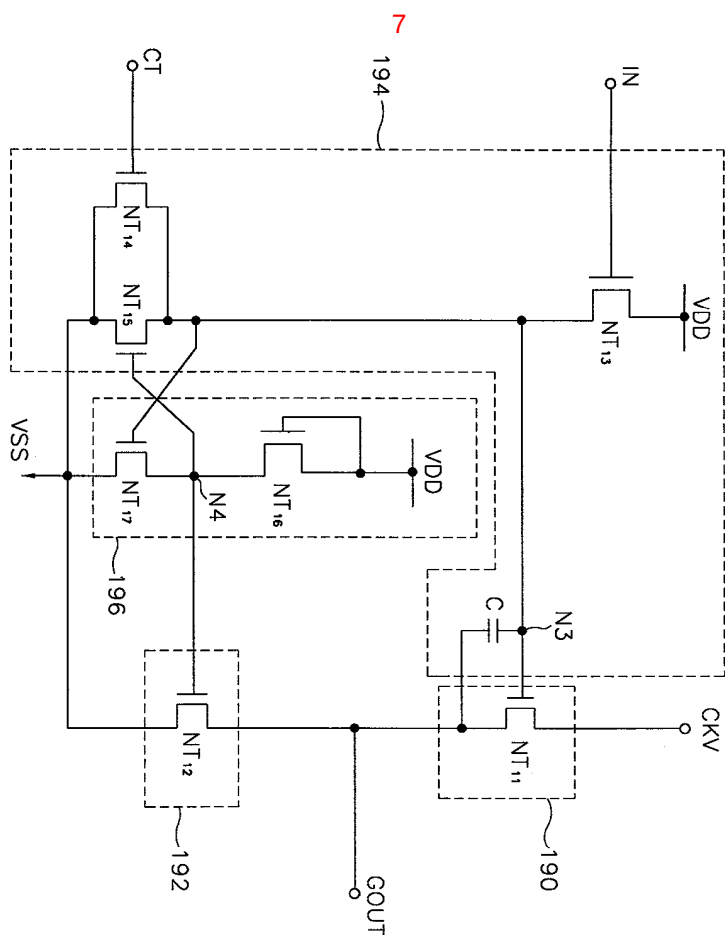




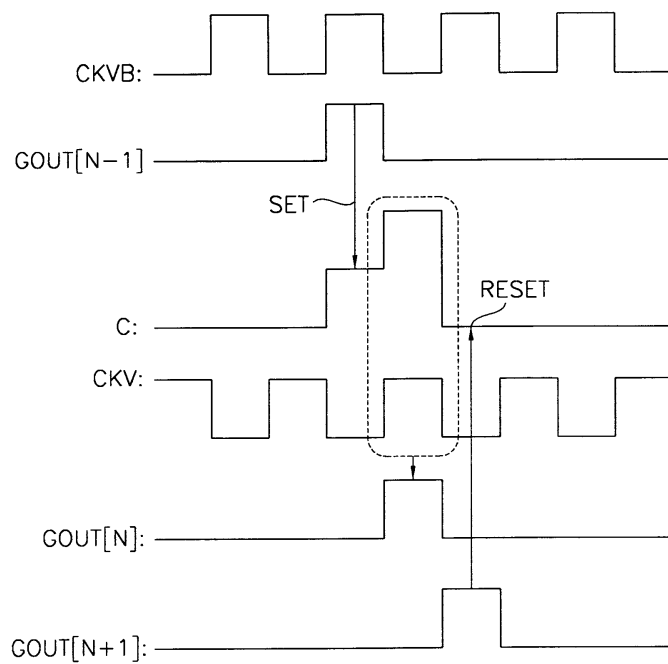
5



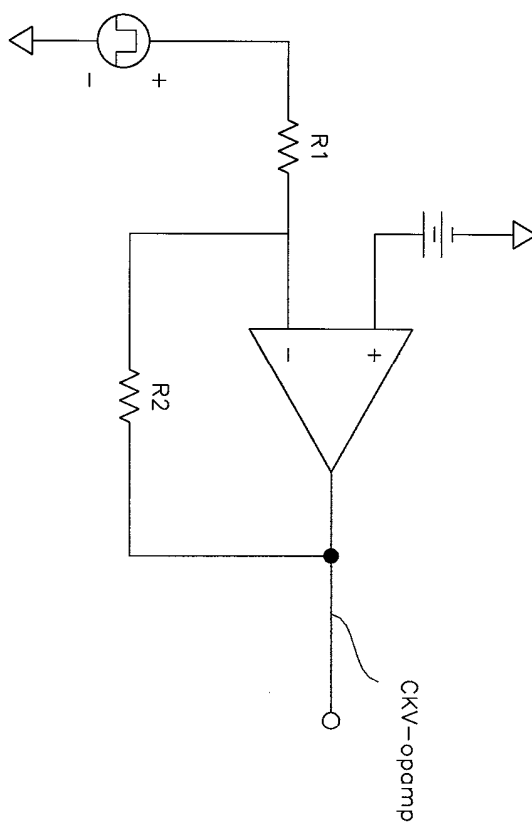




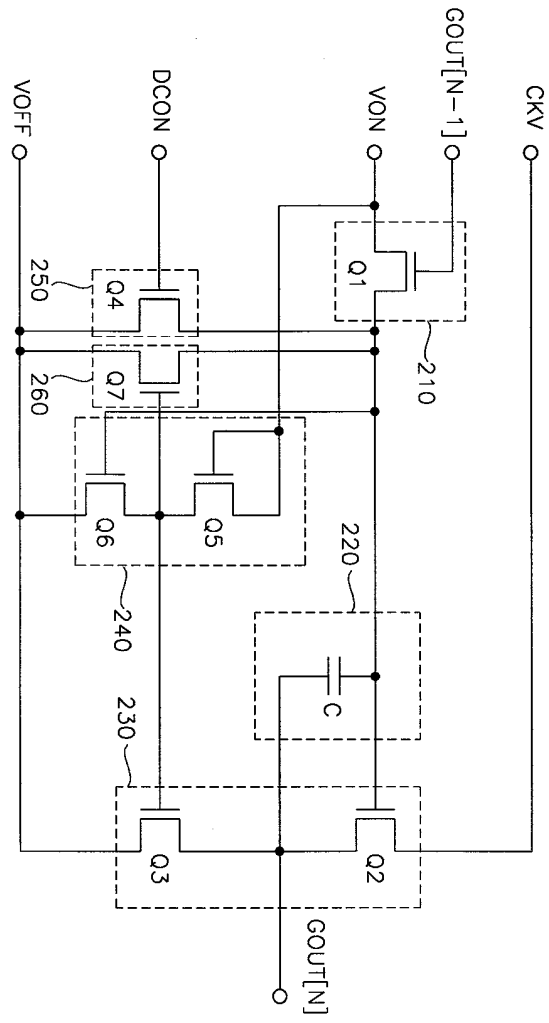
9



10

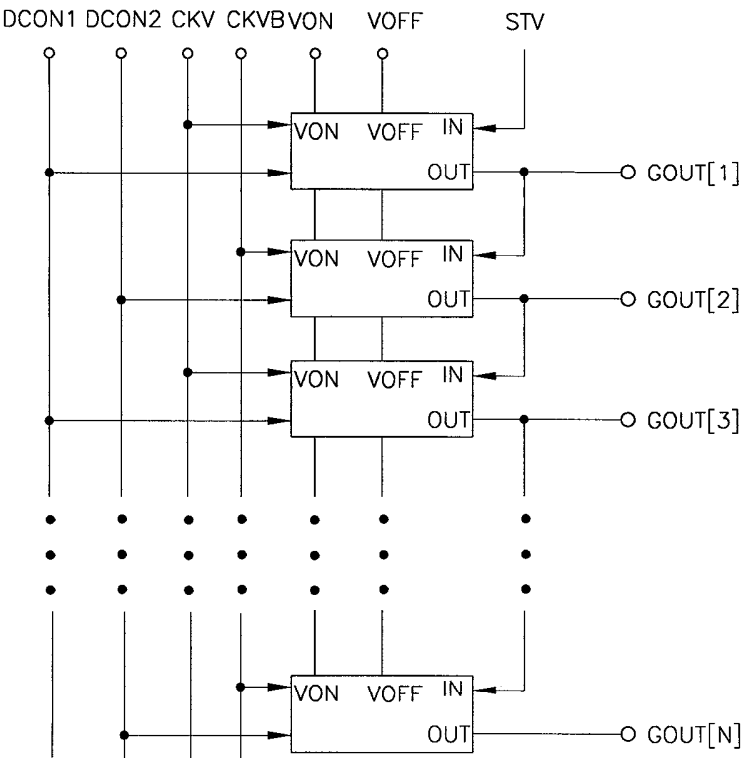


11

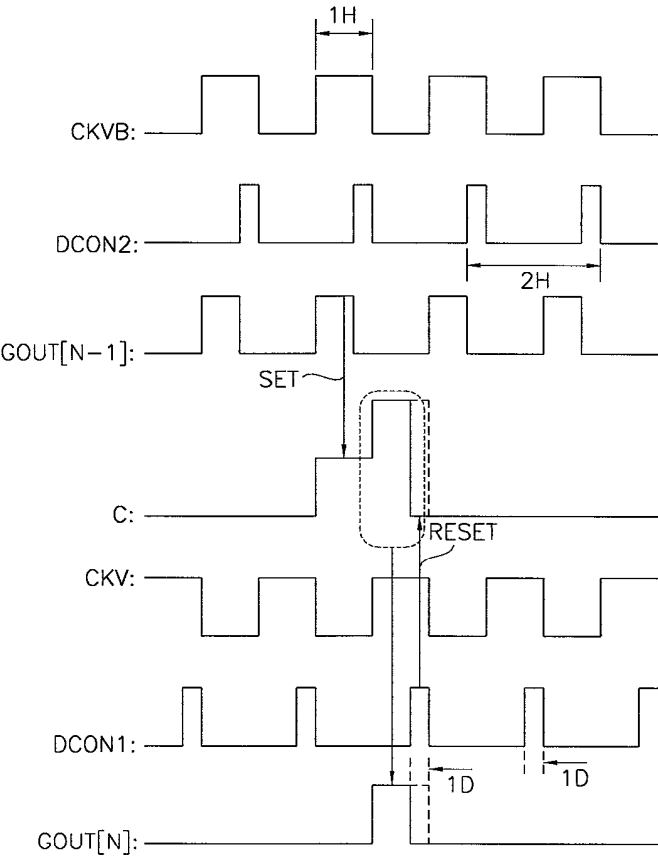


12

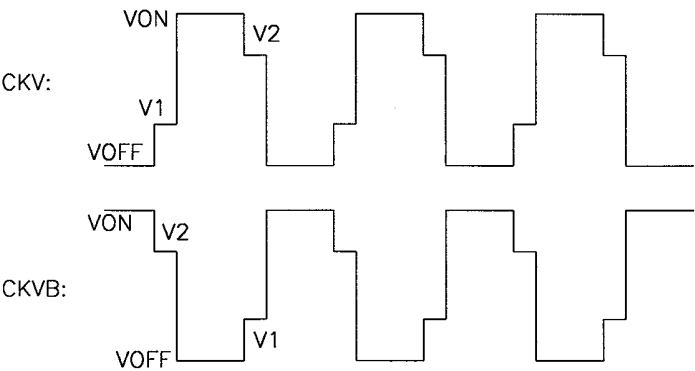
174



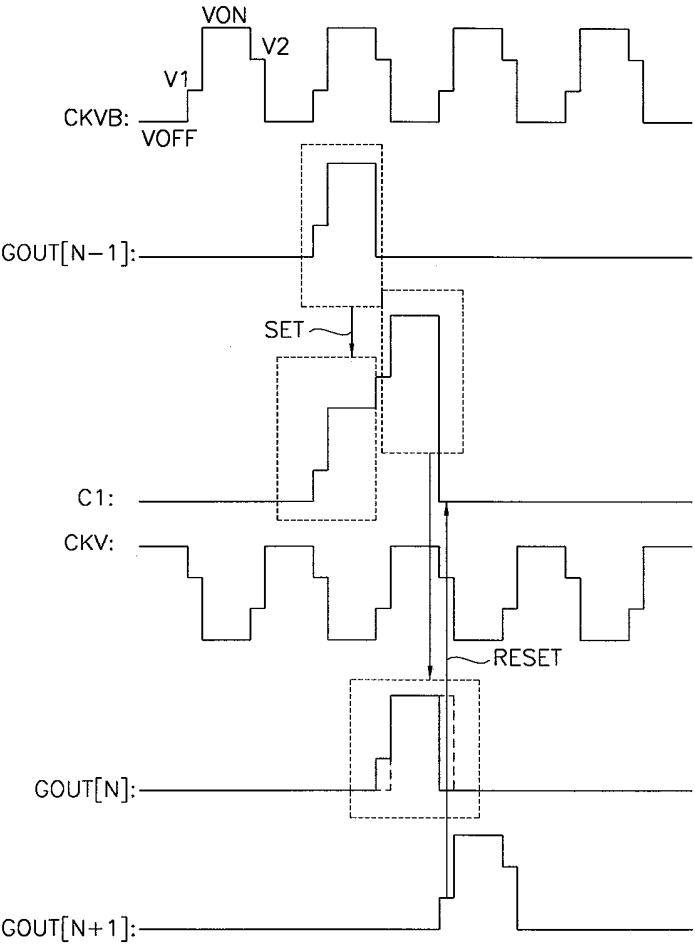
13



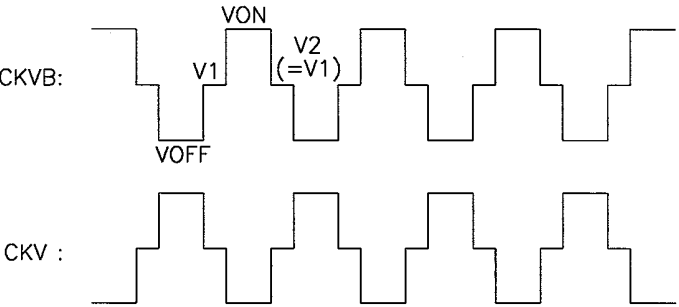
14



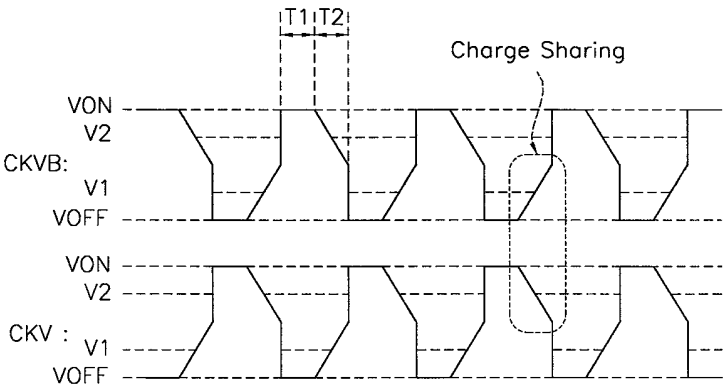
15



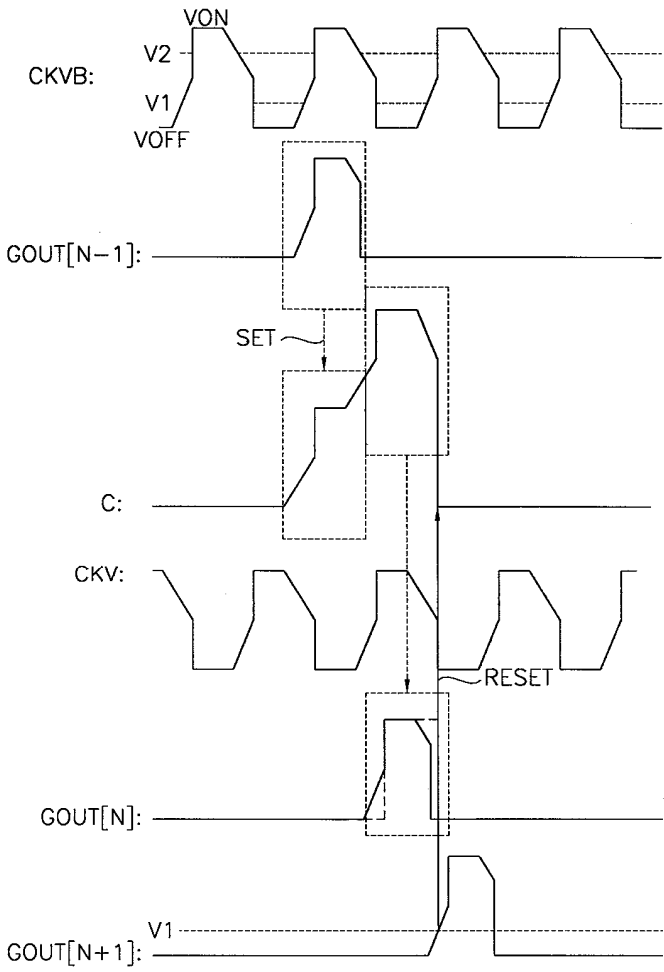
16

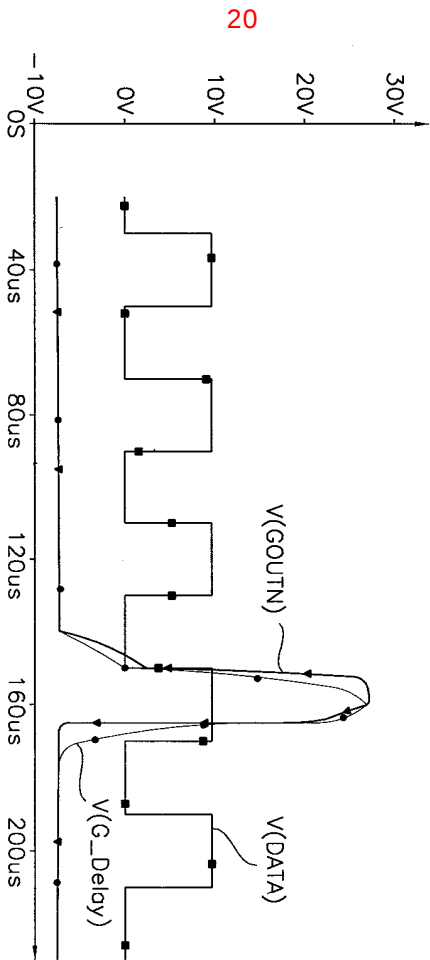
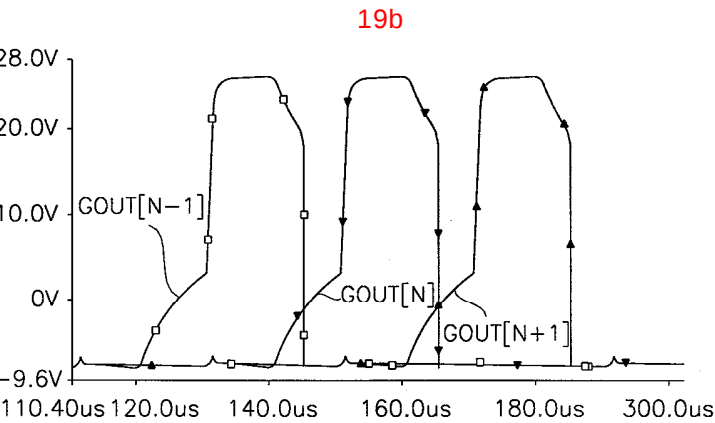
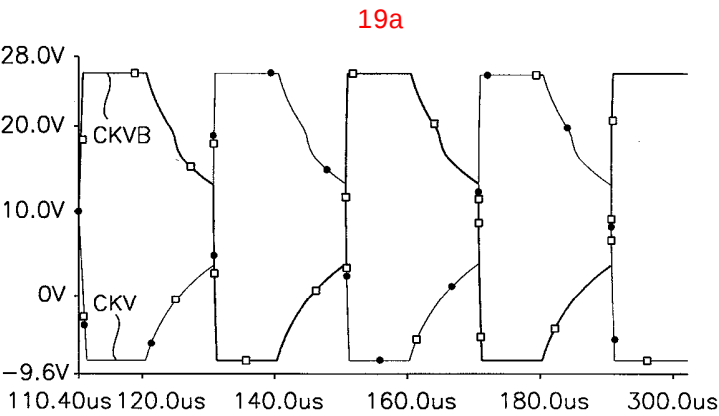


17



18





专利名称(译)	移位寄存器和具有它的液晶显示器件		
公开(公告)号	KR1020030072701A	公开(公告)日	2003-09-19
申请号	KR1020020011861	申请日	2002-03-06
[标]申请(专利权)人(译)	三星电子株式会社		
申请(专利权)人(译)	三星电子有限公司		
当前申请(专利权)人(译)	三星电子有限公司		
[标]发明人	MOON SEUNGHWAN 문승환		
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IPC分类号	G09G3/36		
代理人(译)	PARK , YOUNG WOO		
其他公开文献	KR100789153B1		
外部链接	Espacenet		

摘要(译)

公开了用于输出减小的脉冲长度的栅极信号的移位寄存器和包括该移位寄存器的液晶显示器。具有小于1H的脉冲长度的栅极信号用于减小相移的第二时钟的充电时间的第二控制信号，并且第二时钟以偶数编号的转向级提供给第一时钟用于减少充电的第一控制信号输出第一时钟的时间，并且在移位寄存器的奇数级中提供第一时钟。因此，具有变换的脉冲形状的时钟被提供给操作到栅极驱动器集成电路的移位寄存器的每个级。以这种方式，它从移位寄存器输出，并且连续施加的栅极信号的脉冲长度可以减小到小于液晶面板的栅极线中的1H。液晶，移位寄存器，时钟，脉冲长度，电荷。

