

(19)
(12)(KR)
(A)(51) 。 Int. Cl. ⁷
G09G 3/36(11)
(43)2002 - 0005419
2002 01 17(21) 10 - 2001 - 0033230
(22) 2001 06 13

(30) 2000 - 177928 2000 06 14 (JP)

(71) 가 가
가 가 6 7 35(72) 가 가 6 7 35 가 가
가 가 6 7 35 가 가

(74)

:

(54)

位) (FPCG) (precharge gray) 2
 Cs (横尾) (点順次) 2
 (前段) (電

1 - 2

2

3

4

5

6

7

8

9

10

11

12

13 2

(点順次)

가 (LCD; liquid cryst
al display) , 1 (1)
1H

1H (, Cs) , Cs (Vcom)
sitic capacitance) , Cs (para
가 (oscillate) , 가

가 1H(H) .
 , 1H , / ,
 , 가 .
 , 가 , Cs
 1H () .
 , 가 .
 , 2 , 2
 .
 가 1H 가
 , 가 ,
 .
 1H
 . 가 (vertical fringe)
 . 가
 ,
 , 가 가
 .
 , 가 (optical leakage)
 가 .
 가 ,
 ,
 ,
 가 .
 (trade off) .
 2 2 2
 가 8
 .
 8 , (100) , (101) (102) 가
 HCKX) (101) (PST)가 (逆相) (HCK,
 (PST) () , (段, S/R)
 (PCC1, PCC2, ...)

(PCC1, PCC2, ...) , (102) (103o) (PsigBo)가, (103e) (PsigBe)가, (104o) ((PsigGe)가, ... (PsigGo)가, (104e)

(102) , (105 - 1) (103o) (106 - 1b)가, (105 - 1) (104o) (106 - 1g)가, (105 - 2) (103e) (106 - 2b)가, (105 - 2) (104e) (106 - 2g)가

(PCC1, PCC2, ...)가 (101)

(106 - 1b) (PSD1b) 1 (PCC1) (106 - 1g) (PSD1g) 3 (PCC3)가, (106 - 2b) (PSD2b) 2 (PCC2)가, (106 - 2g) (PSD2g) 4 (PCC4)가, ... 가

9 (PST), (HCK), (PSD1b, PSD2b,...) (PSD1g, PSD2g,...)

10 (trail,) 가) ()

가 (Vcom) (正負) 1H H , 11 L 11 (Vcom)

가 가 12 G , B

13 2 10V, L 5V, H 9V, L 6V, 13V, L 2V 13V, L 2V

13 H → N+1 H N L → H → L → L → N+1 L N H →

, N , +7, - 11 가

(Vcom) Cs

, 12 ,
가 , Cs

-

가
2 가 1 , 1 가
가 2
2
3
1 2
2

1 - 2 . 6 4 . 1 6
1
(dummy pixel)
1 , 6 × 4 (11)가 , 1 , 6
(TFT) , (TFT) (holding) (Cs) (LC) , (TFT)

(11) , (12 - 1 12 - 4)
, (13 - 1 13 - 5) 가 2 ,
2 (2) 2 (蛇行)

, (13 - 1) 1 1 , 2 2 , 1 3 , 2 4
(13 - 2) 2 1 , 3 2 , 2 3 , 3 4 (1
3 - 3, 13 - 4, 13 - 5) 가 2

(11) , (TFT) () , (12 - 1 12 - 4) (LC) (Cs) (Cs) (14) (14) (Vcom) 가 .

, (13 - 1 13 - 5) (1 5) (13 - 1 13 - 5) (1 , 3) (TFT) (1 3 - 1 13 - 5) , (2 , 4) (2 6) 1 (1 3 - 1 13 - 5) (TFT) .

, (11)가 (11) (12 - 1 12 - 4) (13 - 1 13 - 5) 2 , 2 (15)가 . (15) , (1 3 - 1 13 - 5) (15) , (16)

(16) 1 () (13 - 1 13 - 5) 2 (11) (16) (13 - 1) (Vg1)가 가 1 1 , 2 2 , 1 3 , 2 4 가 .

(13 - 2) 가 (Vg2)가 가 2 1 , 3 2 , 2 3 , 3 4 가 가 (13 - 3, 13 - 4, 13 - 5) (Vg3, Vg4, Vg5)가 가 () (16)

(15) , (17)가 (17) , 2 (video 1, 2) 1H (16) (15) (17)가 . (11) . 2 (video 1, 2) , 1H (Vcom) 가 (H, 正極性), (L, 負極性) .

(video 1) (18 - 1) (15) , (12 - 1, 12 - 3) , (SW1, SW3)가 (video 2) (12 - 1, 18 - 2) (15) (12 - 2, 12 - 4) (SW2, SW4)가 .

, (SW1 SW4) , 2 (SW1 SW2, SW3 SW4) , (17) (Vh1, Vh2) (on) , 2 (video 1, 2) 2 (2) (12 - 1 12 - 4) .

(15) , (19)가 (19) (video 1, 2) , (video 1, 2) 2 (19) .

, 2
 , 3 2 d 6 × 4
 , 1 (16) (Vg1)가 , (Vg1)가
 (13 - 1) (d - 1, 1 - 2, d - 3, 1 - 4) (TFT) 가 ,
 (d - 1, 1 - 2, d - 3, 1 - 4)가 .
 (video 1, 2)가 (18 - 1, 18 - 2) (17)
 (Vh1, Vh2)가 , (SW1 SW2, SW3 SW4)
 .
 (video 1, 2)가 , (SW1, SW2) (12 - 1, 12 - 2) 가 .
 (d - 1) (3 L) (video 1)가, (1 - 2) (3 H
) (video 2)가 , (video 1)
 (d - 1)
 , (SW3, SW4) (12 - 3, 12 - 4) (video 1, 2)가 가 .
 , (d - 3) (video 1)가, (1 - 4) (video 2)가
 . , (video 1) 가 (d - 3) 가 .
 , 2 (16) (Vg2)가 , (Vg2)가 (13
 - 2) (1 - 1, 2 - 2, 1 - 3, 2 - 4) (TFT) 가 , (1 - 1,
 2 - 2, 1 - 3, 2 - 4)가 . 2 (video 1, 2)
 , 1 (video 1)가 , (video 2)가 , 2 (17)
 video 1)가 , (video 2)가
 (Vh1, Vh2)가 (SW1 SW2, SW3 SW4)가 .
 (video 1, 2)가, (SW1, SW2) (12 - 1, 12 - 2) 가 .
 (1 - 1) (video 1)가, (2 - 2) (video 2)가
 , (SW3, SW4) (12 - 3, 12 - 4) (video 1, 2)가 가 .
 (1 - 3) (video 1)가, (2 - 4) (video 2)가
 .
 , (video 1, 2)가 1H
 , (16) () , (17) (13 - 5) (video 2)
) 가 , (d - 2, d - 4)
 , 2 (video 1, 2)
 (video 1, 2) , 2 (2)
 , 3 , 가 .
 , 2 (Vh1, Vh2)가 , (SW1 SW2,
 SW3 SW4)가 , (12 - 1 12 - 2, 12 - 3 12 - 4)
 (video 1, 2)가 가 ,

, Cs (14)
 4) Cs (14)
 가 ,
 ,
 (11)
 (video 1, 2)
 , (video 1, 2)가
 (Cs)
 Cs (12 - 1 12 -
 (14)
 , Cs (14)
 .

,
 , (TFT) /
 (12 - 1 12 - 4) 1H
 가 ,
 ,
 가 .
 (12 - 1 12 - 4)
 (TFT) /
 (video 1, 2) 가 ,
 (video 1, 2)

,
 , (video 1, 2)
 , 2 (2) 1 (1) 1
 , 3 ,
 , 가 ,
 , 가
 , 가 .
 , 가

,
 , 2m(m) 2 (video 1, 2)
 , 2 (video 1, 2) 2
 ,
 ,
 .

,
 ,
 , (latch) ,
 가 .

,
 - 2
 (19)
 .

4 (19) (19) (21), (22) 4 (23) 가
 .

(21) (PST) , (17)
 (HCK, HCKX)
 (PST)가 , (HCK, HCKX) (21)
 (S/R) (PCC1, PCC2, ...) (PST)
 .

(PCC1, PCC2, ...) (22)
 (FPCG)가 (24) (FPCG) (22)
 .
 (22) , (15) (12 - 1, 12 - 2, ...) NAND (22
 1 - 1, 221 - 2, ...) (222 - 1, 222 - 2, 222 - 3, ...) 가 .

(S/Rs) (22) , NAND (221 - 1, 221 - 2, ...) , 1 (24)
(FPCG)가 가 , 2 (21) 3
(PCC3, PCC4, ...)가 가 .

1 , (FPCG)가 L , NAND (221 - 1, 221 - 2, ...) (21) 3
H , 2 H . (221 - 1, 221 - 2, ...)가 , NAND (221 - 1, 221 - 2, ...) H
2, ...) 2 L 가 가 , NAND (221 - 1, 221 - 2, ...) H
가 .

(23) (25o) (PsigBo)가,
(25e) (PsigBe)가, (26o)
(PsigGo)가, (26e) (PsigGe)가 .

(23) , (15) (12 - 1) (25o)
(27 - 1b)가, (12 - 1) (26o) (27 - 1g)가,
(12 - 2) (25e) (27 - 2b)가, (12 - 2)
(26e) (27 - 2g)가 .

(PCC1, PCC2, PCC3, ...) (21)
가 . (22) NAND (221 - 1, 221 - 2, 221 - 3, ...)

g) , (27 - 1b) (PSD1b) 1 (PCC1)가,
(27 - 1g) (PSD1g) NAND (221 - 1) 가,
(27 - 2b) (PSD2b) 2 (PCC2)가, (27 - 2
(PSD2g) NAND (221 - 2) 가 가 .

5 (ENB, enable pulse), (FPCG), (PST), (H
CK), (PSD1b, PSD2b, ...) (PSD1g, PSD2g, ...)
가 .

(ENB) 1H , (16) , H
1 (video 1, 2) , L
(11) , (video 1, 2) (TFT) (off)
6 , (ENB) L , VCK
6 , HST , VCK
, FRP (video 1, 2) .

(FPCG) (ENB) L
(VCK) H (FPCG)
. .

(19) (17) , (video 1,

2)가 (12 - 1, 12 - 2, ...) , (video
1) (PsigBo) (PsigGo) , (video 2)
(PsigBe) (PsigGe) (12 - 1, 12 - 2, ...)
2 .

(19) , 5 .
(FPCG)가 , (FPCG)가 (ENB) L
(221 - 1, 221 - 2, ...) (22) NAND
(27 - 1g, 27 - 2g, ...) 가 (PSD1g, PSD2g, ...)

(27 - 1g, 27 - 2g, ...)가 (前段)
(12 - 1, 12 - 2, ...) , (PsigGo, PsigGe)가
, 6 (FPCG) (E
NB) (trailing edge)
(FRP) (leading edge) 가 .

7 . ,
H 10v, L 5v, H 13v, L 2v ,
H 10v, L 5v
H 9v, L 6v, H 13v, L 2v .
가
(12 - 1, 12 - 2, ...) , (, H 10v, L 5v)
(Vcom) (12 - 1, 12 - 2, ...) ,

(12 - 1, 12 - 2, ...) 가, +
8V, -8V , (12 - 1, 12 - 2, ...) Cs (1
4) (13 - 1, 13 - 2, ...) , Cs .
가 ,

N , -1V, -3V
(12 - 1, 12 - 2, ...) Cs (14) (13 - 1,
13 - 2, ...) 가 가 , Cs .
(TFT))가 ,
가 , Cs .

(5V)

가

가 , 2 . (PST)가 (21)
 가 , (21) (HCK, HCKX) (
 PCC1, PCC2, PCC3, ...)가 .

(PCC1, PCC2, ...)가 (PSD1b, PSD2b, ...) , NAND
 (221 - 1, 221 - 2, ...) 가 (PSD1g, PSD2g, ...) ,
 (27 - 1b, 27 - 2b, ...) (27 - 1g, 27 - 2g, ...) 가 .

(16) ,
 (video 1, 2)가 , (video 1) (PsigBo)
 (PsigGo) , (video 2) (PsigBe)
 (PsigGe)가 2 .

, , -
 가 .

, , - ,
 , 2 , ,
 Cs , ,

(57)

1.

가 , , 2
 ;

, 가 1 ;

1 가 가 ,
 2 ;

2 , (blanking)
 (precharge) ,

3 ,

2.

1 ,

3 가 ,

3.

1 ,

가 ,

4.

3 ,

(grey) .

5.

1 ,

가 .

6.

2

7.

6 ,

가 (off) ,

8.

6 ,

가 ,

9.

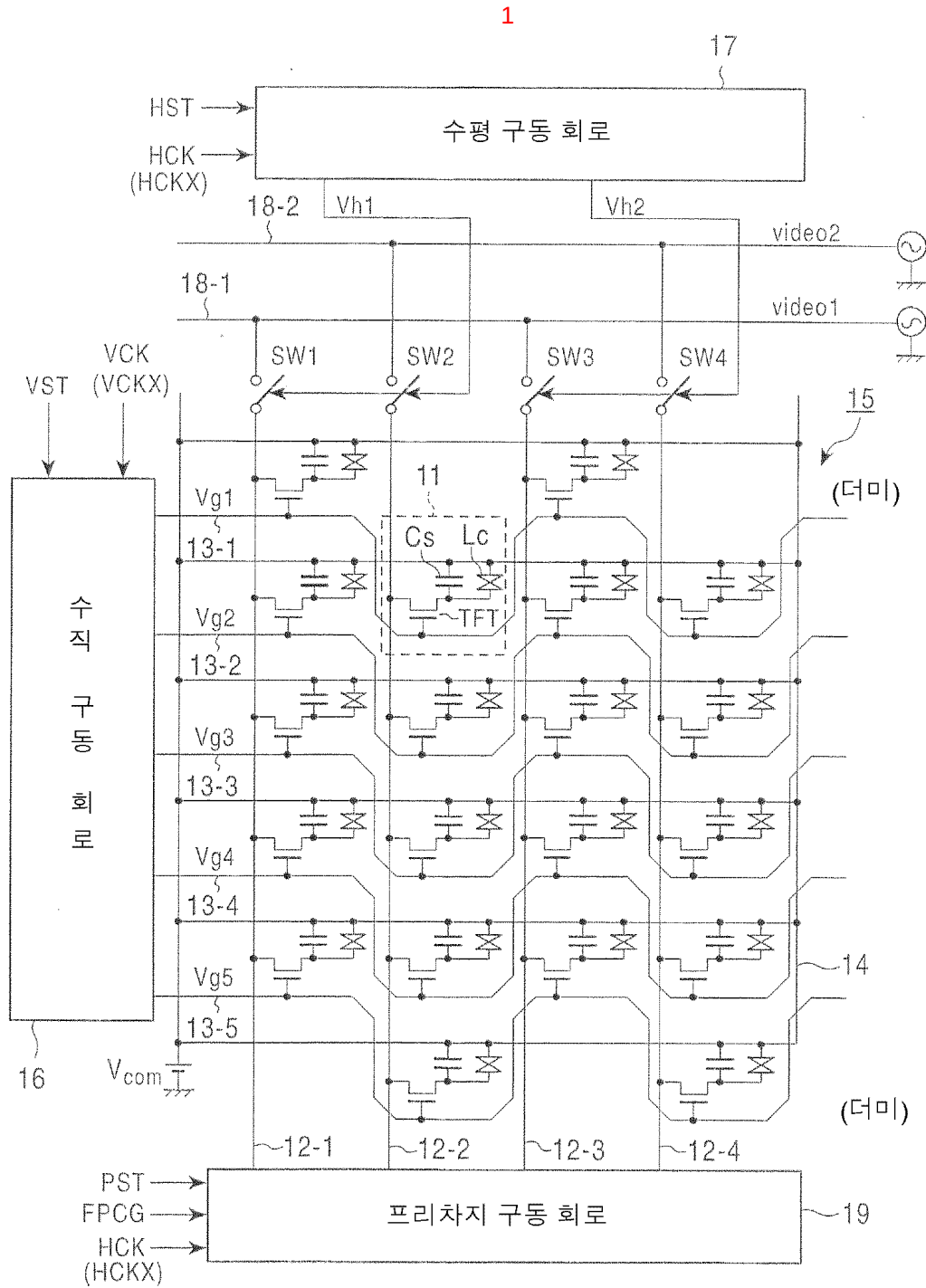
8 ,

.

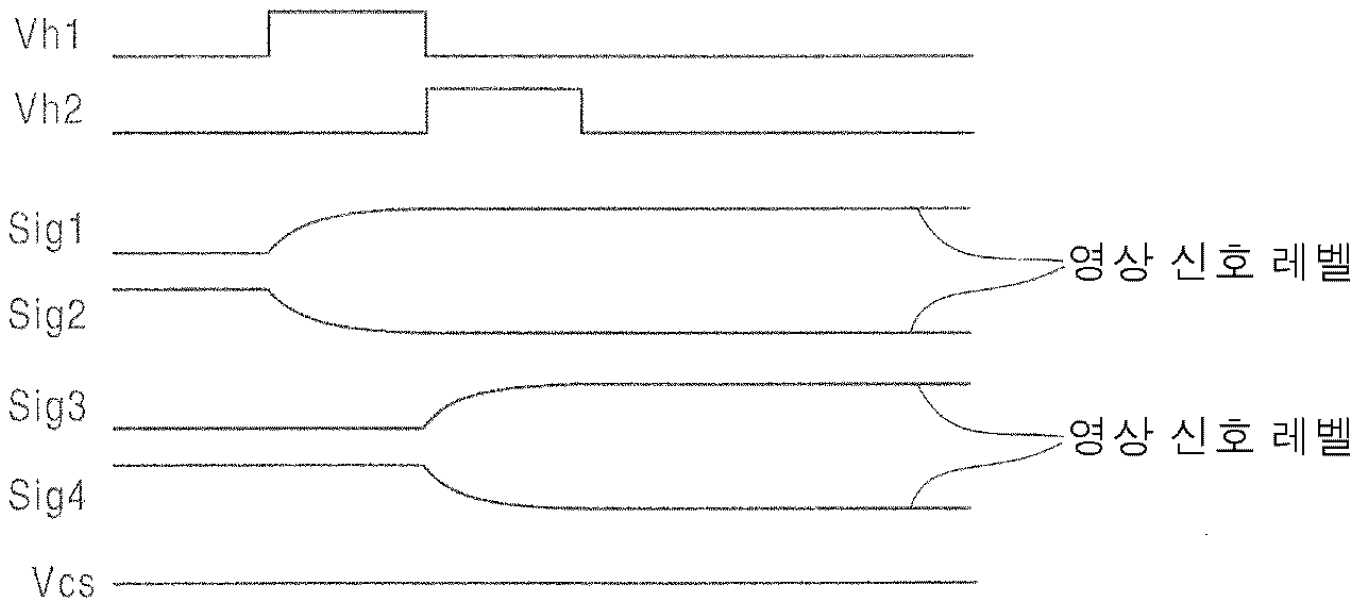
10.

6 ,

, 가 .

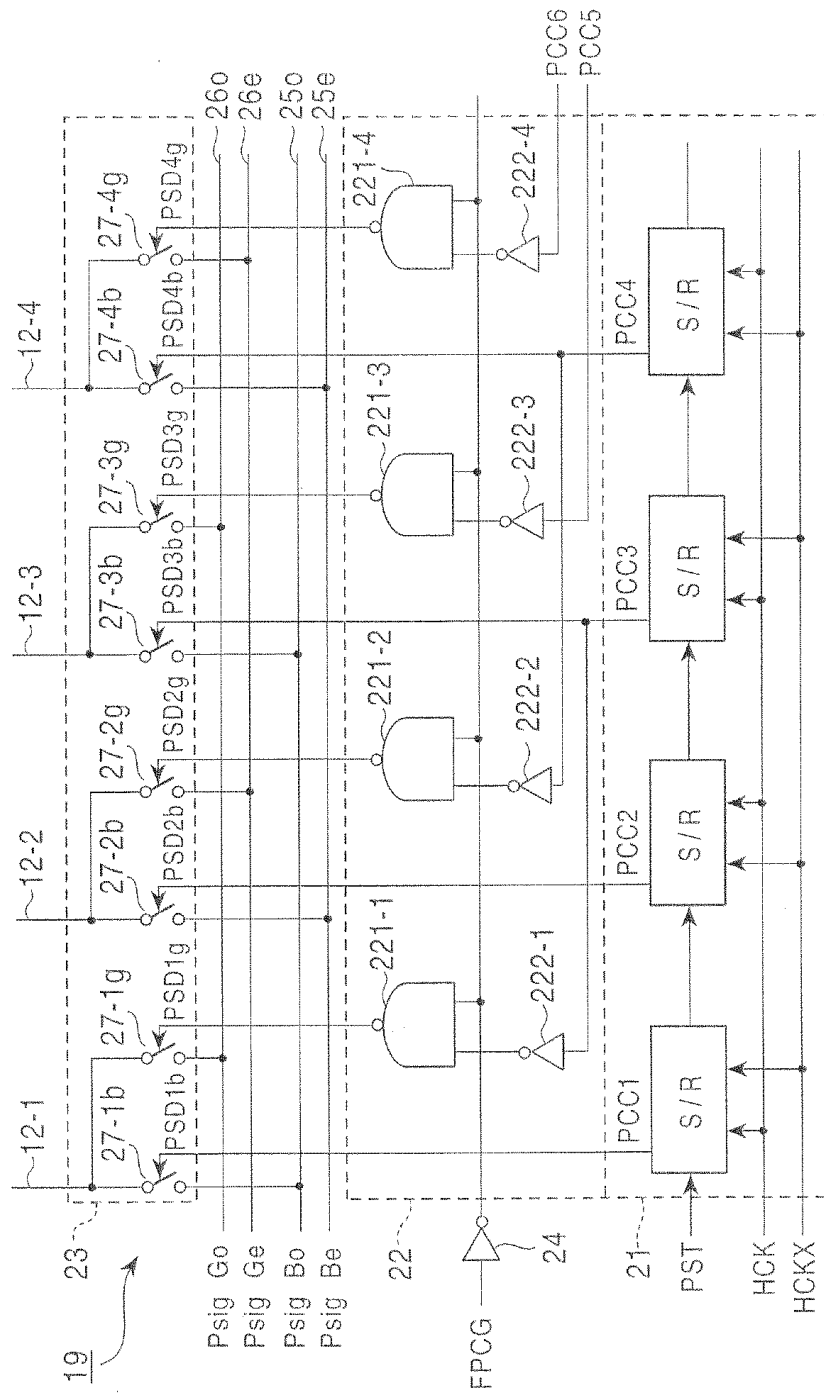


2

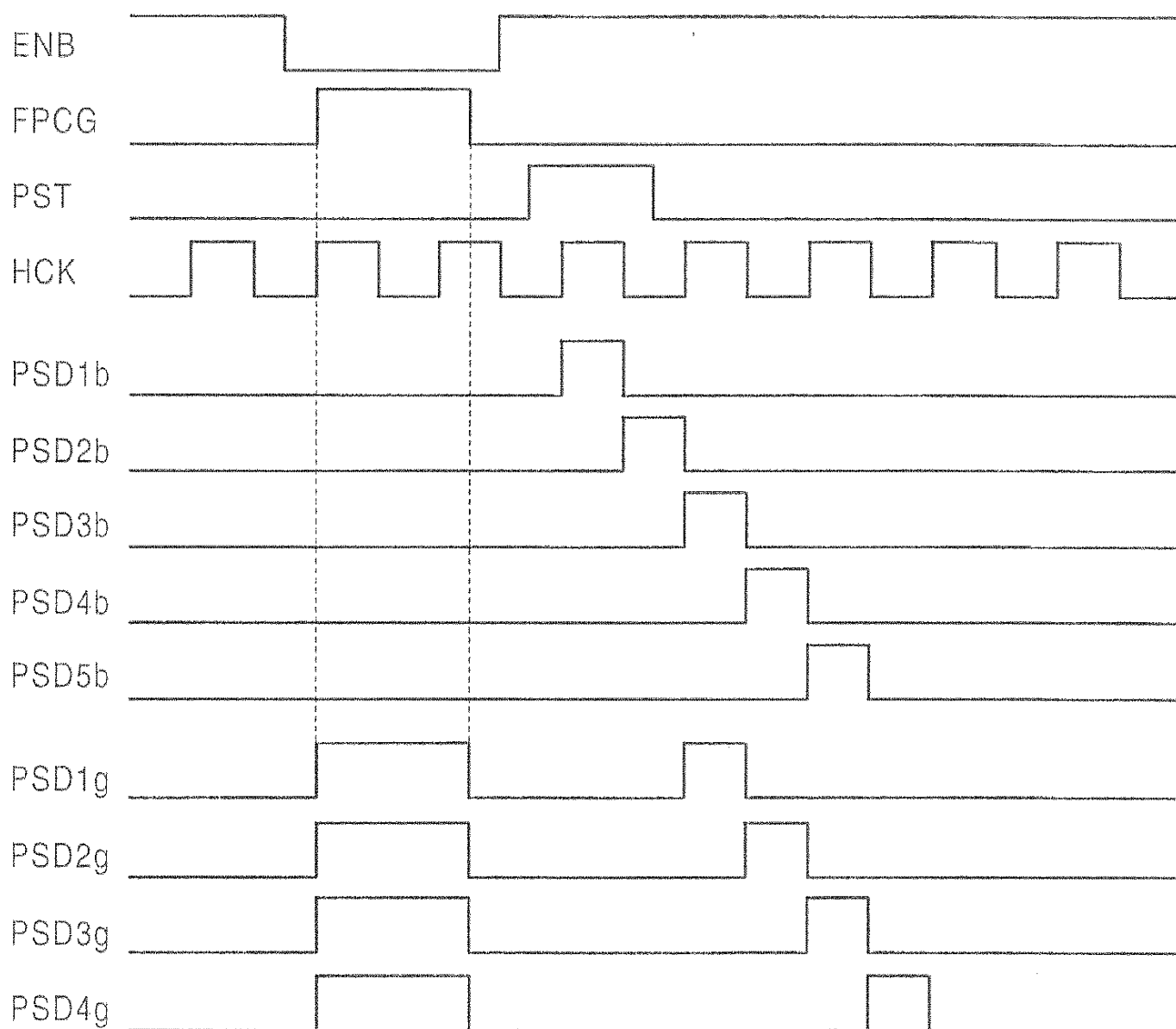


3

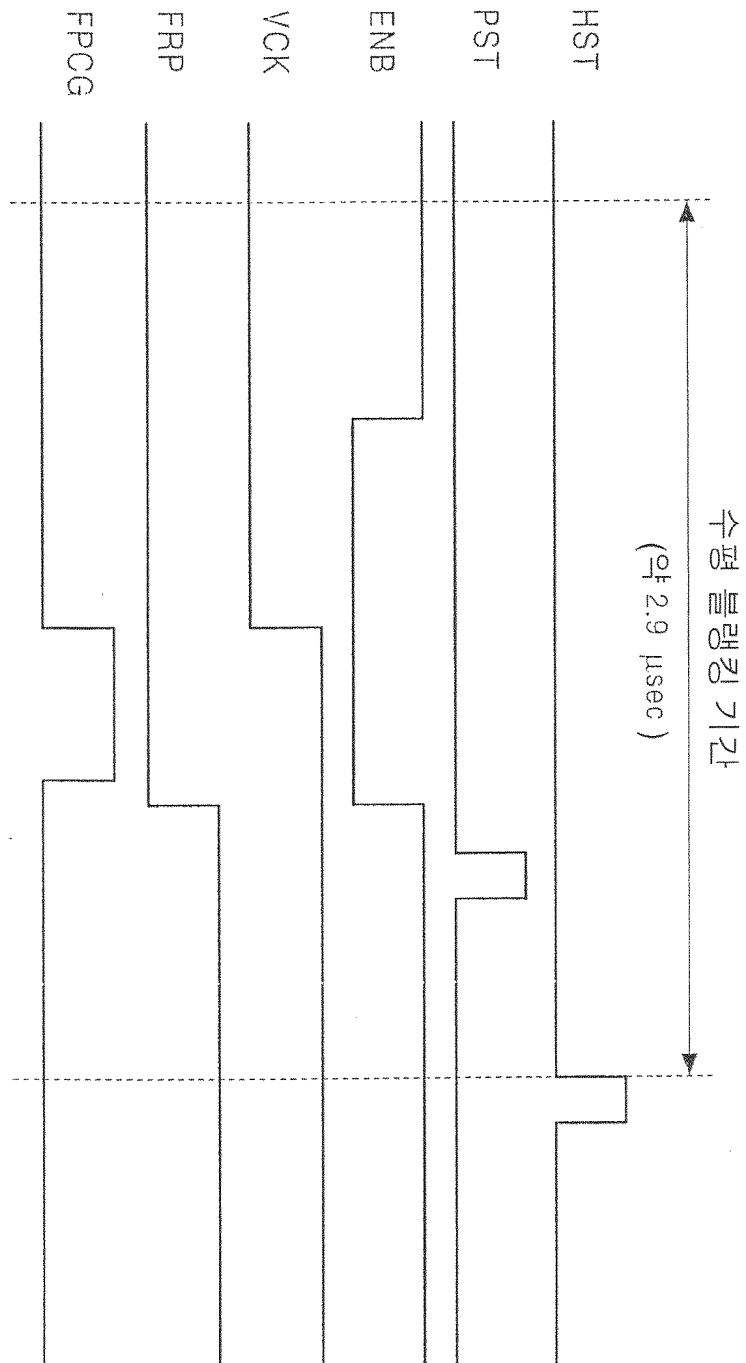
(d-1) L		(d-3) L		(더미)
(1-1) H	(1-2) H	(1-3) H	(1-4) H	1행째
(2-1) L	(2-2) L	(2-3) L	(2-4) L	2행째
(3-1) H	(3-2) H	(3-3) H	(3-4) H	3행째
(4-1) L	(4-2) L	(4-3) L	(4-4) L	4행째
	(d-2) H		(d-4) H	(더미)



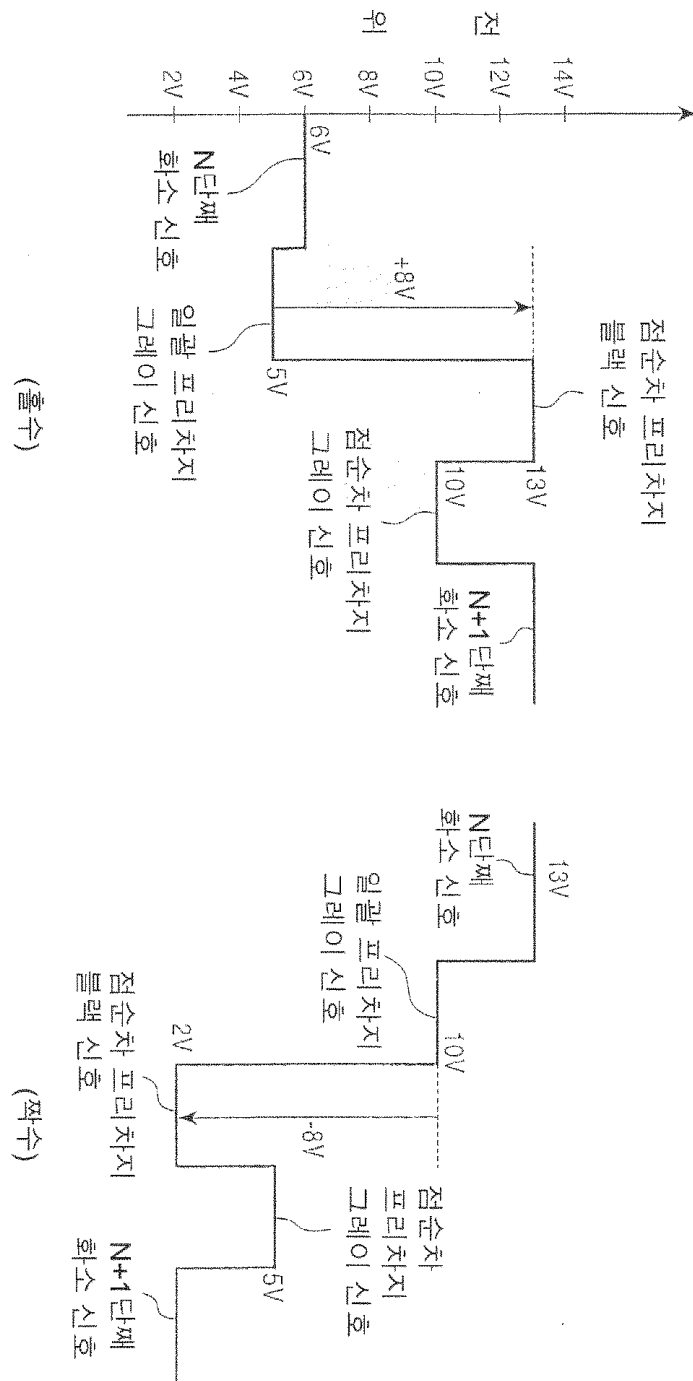
5

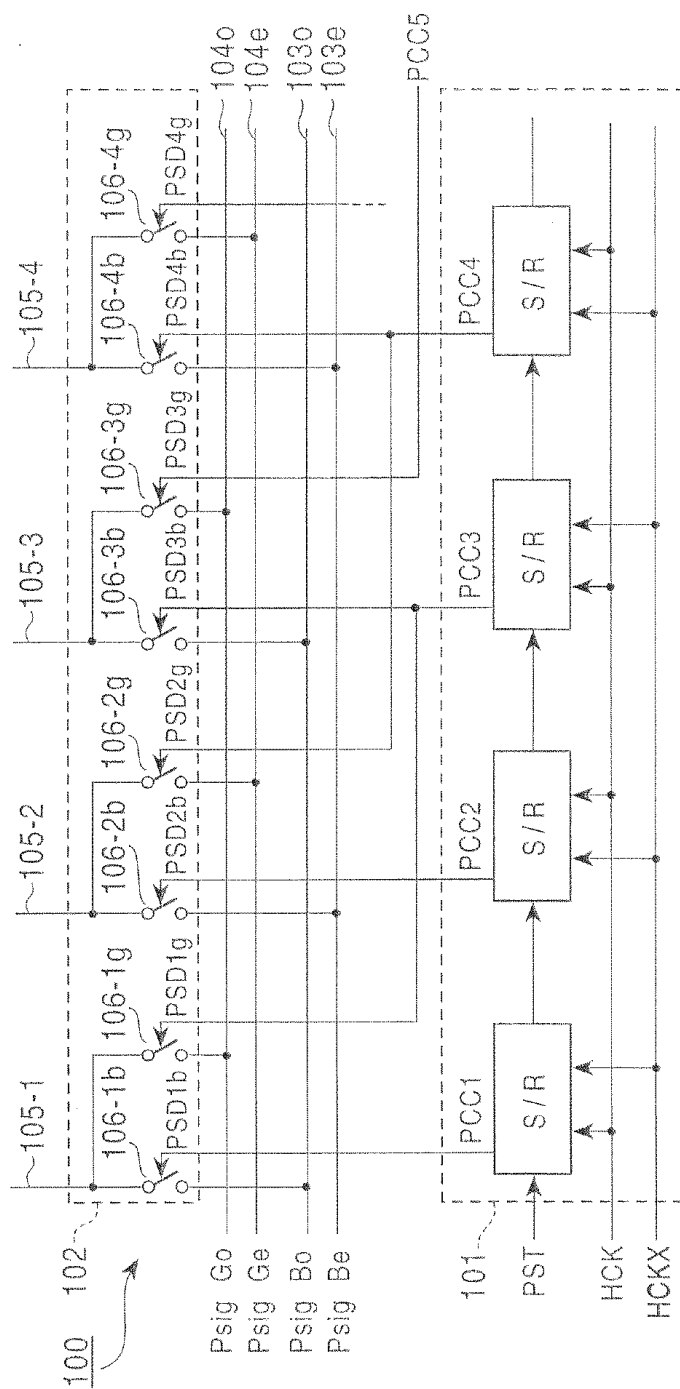


6

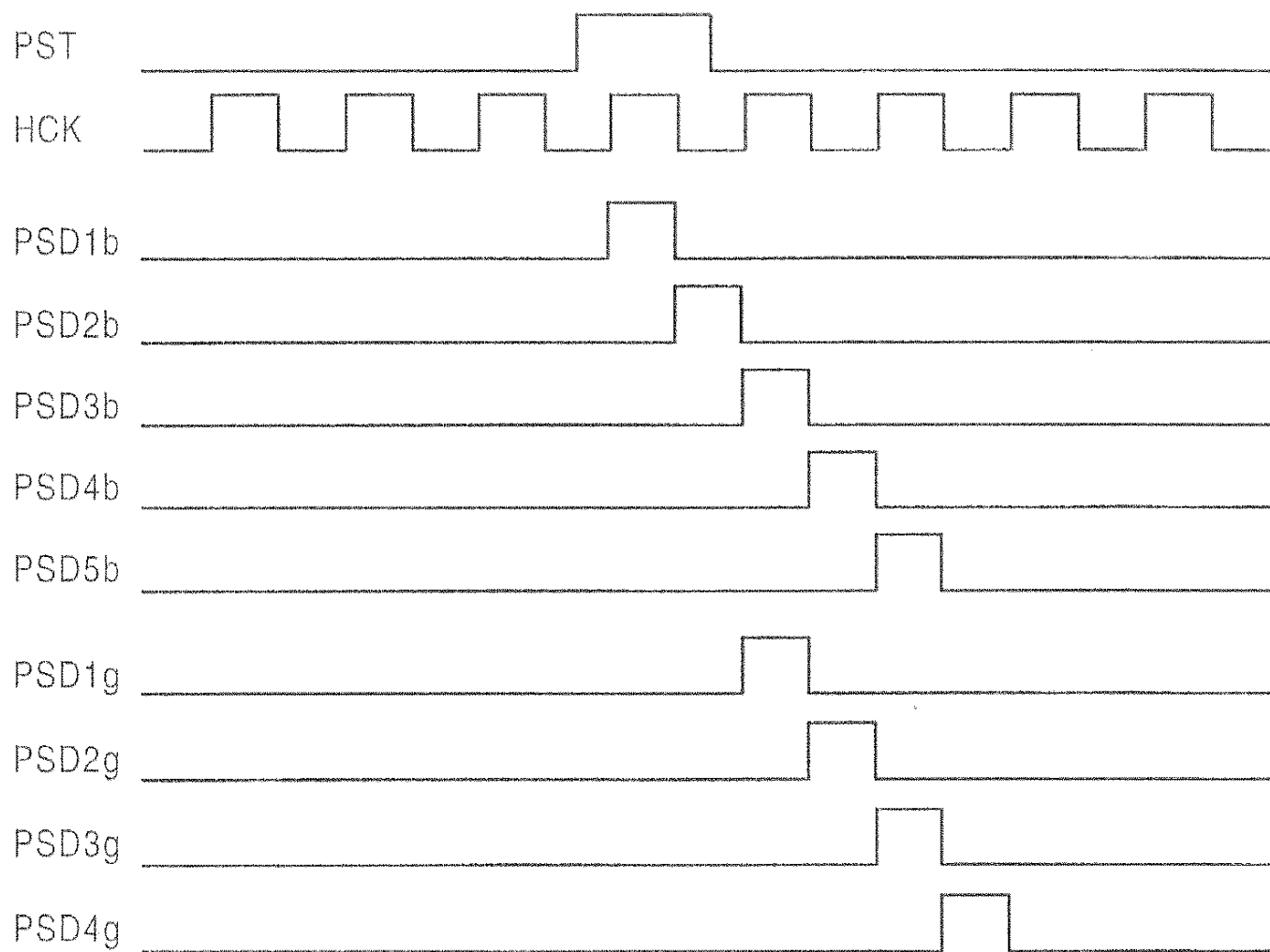


7

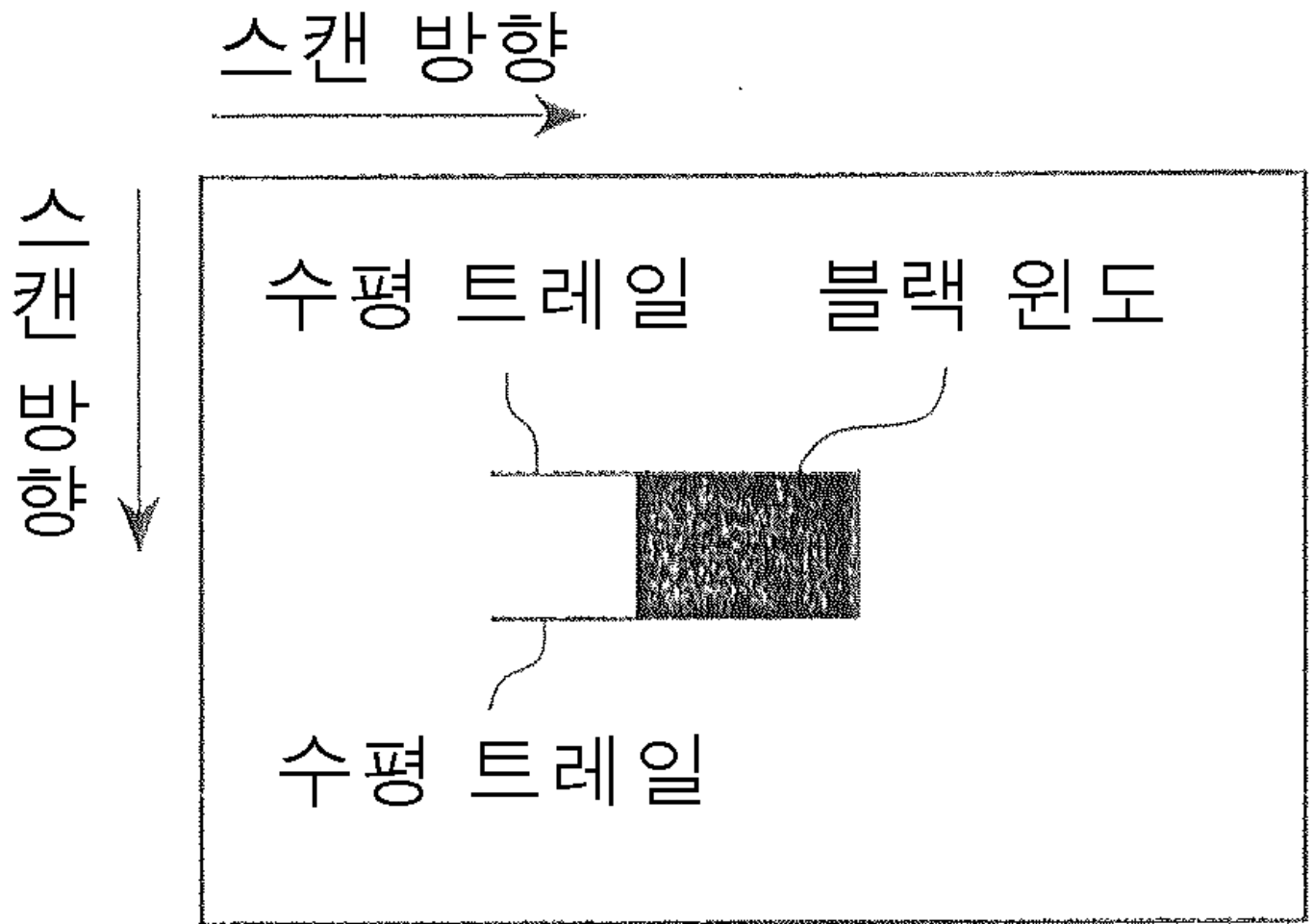




9

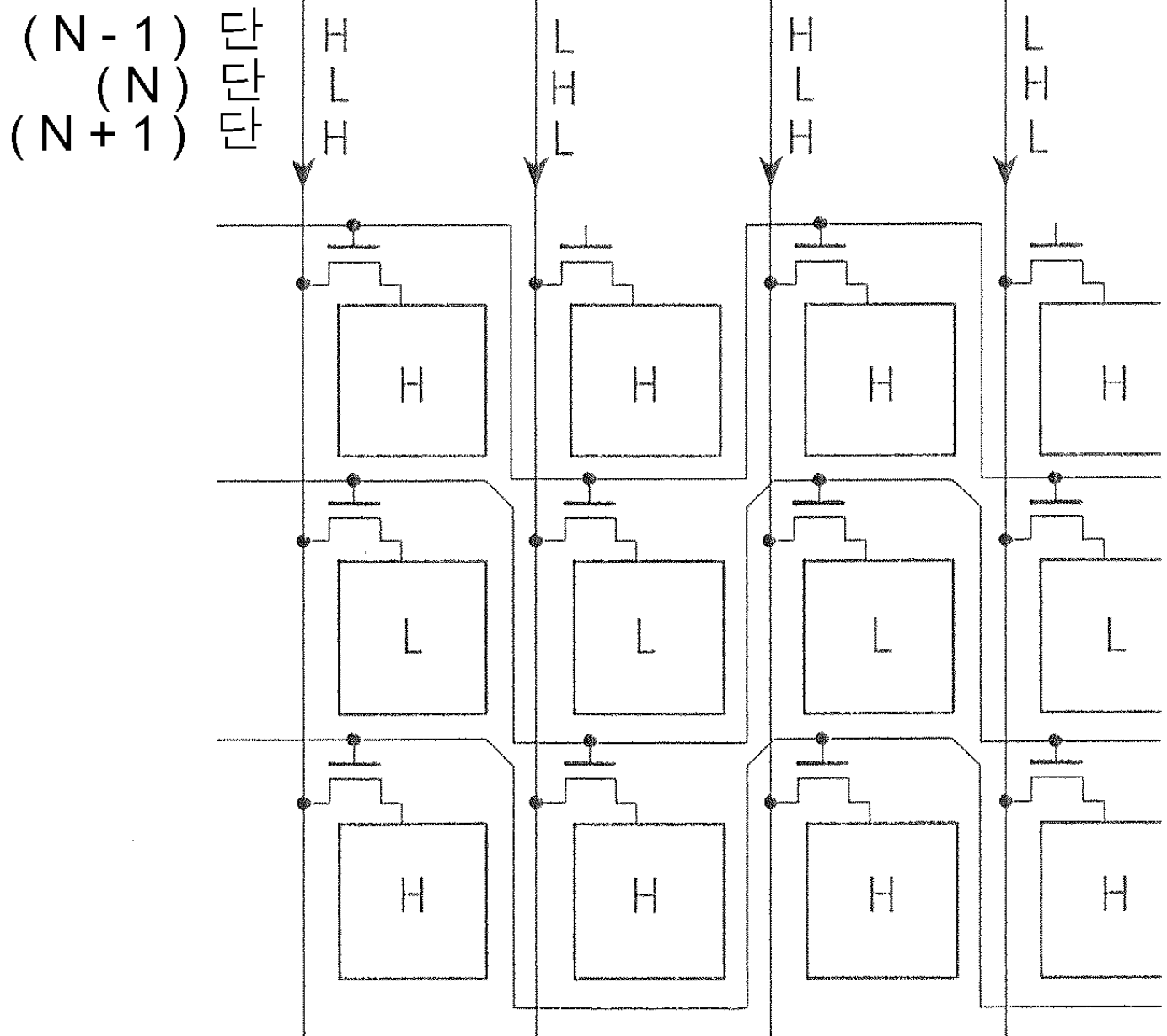


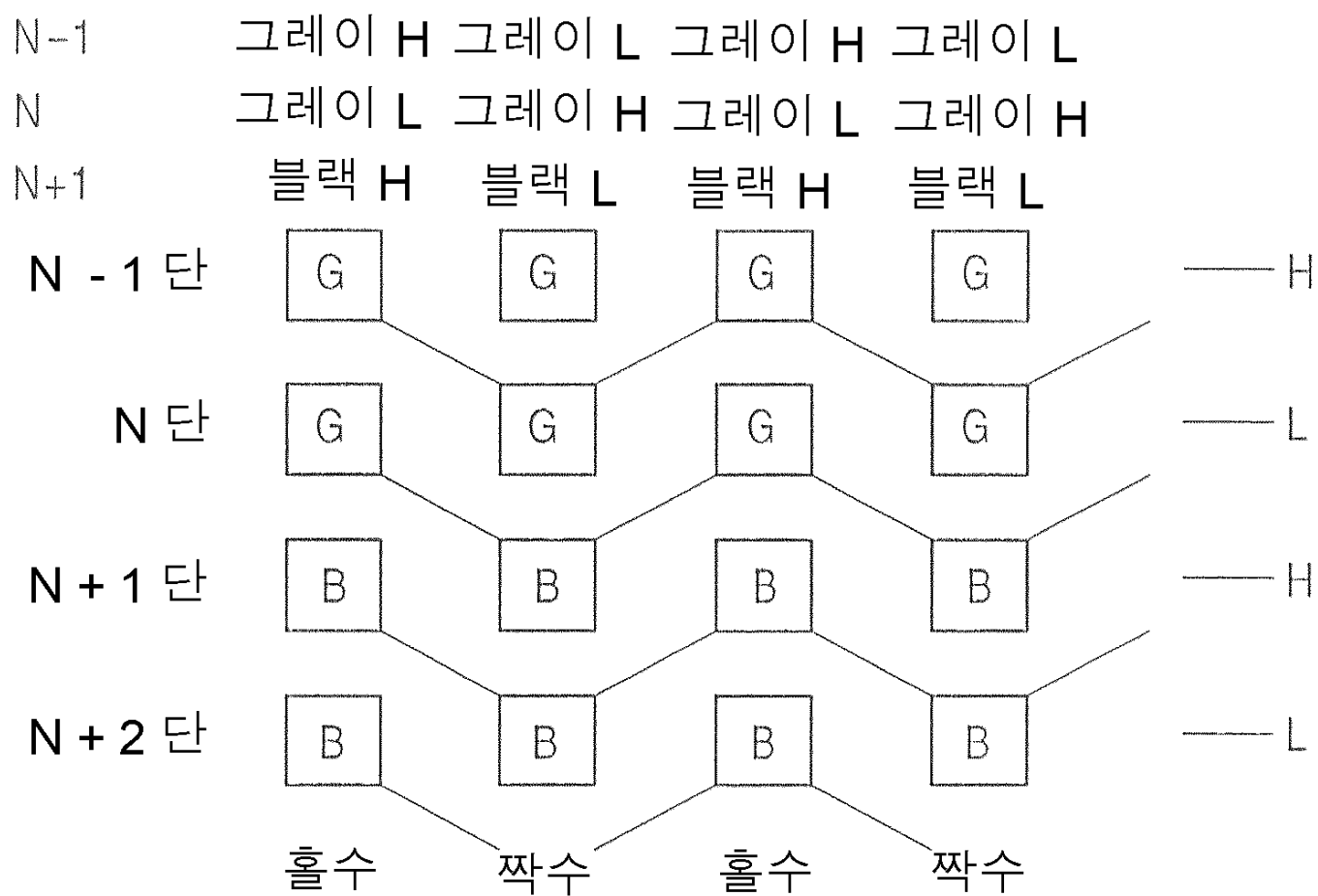
10



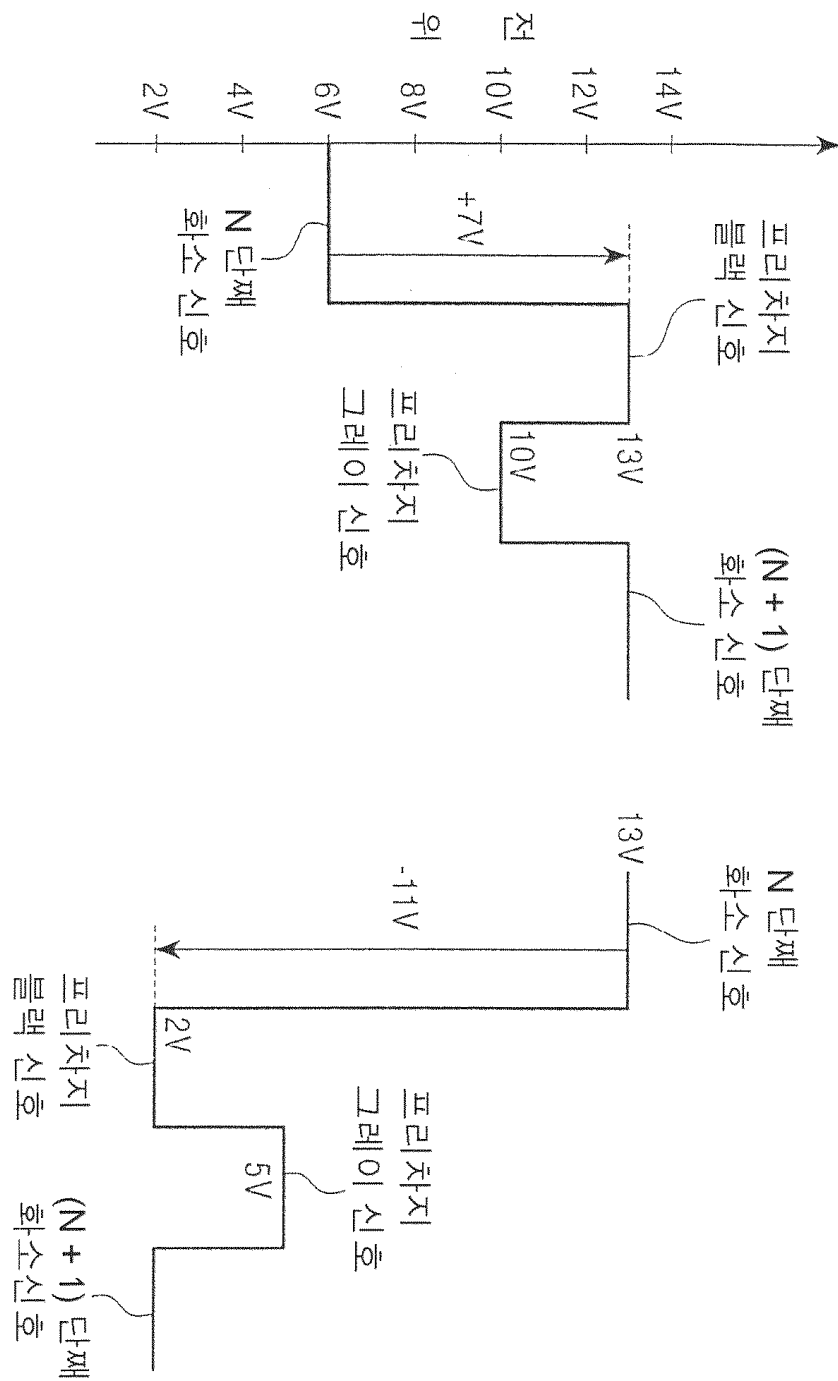
11

데이터





13



专利名称(译)	显示装置及其驱动方法		
公开(公告)号	KR1020020005419A	公开(公告)日	2002-01-17
申请号	KR1020010033230	申请日	2001-06-13
[标]申请(专利权)人(译)	索尼公司		
申请(专利权)人(译)	索尼公司		
当前申请(专利权)人(译)	索尼公司		
[标]发明人	YAMASHITA JUNICHI 야마시타준이치 KASHIMA TOMOHIRO 가시마도모히로		
发明人	야마시타준이치 가시마도모히로		
IPC分类号	G09G3/36 G09G3/20 G02F1/133		
CPC分类号	G09G3/3688 G09G2320/0209 G09G2310/0297 G09G3/3614 G09G3/3648 G09G2310/0248		
代理人(译)	您是我的专利和法律公司 KIM , JAE MAN		
优先权	2000177928 2000-06-14 JP		
其他公开文献	KR100768117B1		
外部链接	Espacenet		

摘要(译)

目的：为了解决这样的问题，即在写入预充电黑色信号的情况下，当从信号线到Cs线和栅极线发生耦合时，这种耦合会导致在显示诸如黑色窗口时边界部分的水平拖尾 和黑线。 组成：在点反转-点顺序两步式预充电驱动液晶显示装置中，在水平消隐期间，在将反向视频信号提供给水平信号线之前，在一批水平中产生预充电脉冲FPCG 扫描，并基于该批预充电脉冲FPCG，分批写入与先前像素电势极性相同的预充电灰度信号，然后，预充电黑信号和预充电灰度 通过两步写入与每个极性相反的视频信号具有相同极性的信号。

