

(19)
(12)(KR)
(A)(51) 。 Int. Cl. ⁷
G09G 3/36(11)
(43)2002 - 0003275
2002 01 12(21) 10 - 2001 - 0027111
(22) 2001 05 18

(30) 2000 - 146603 2000 05 18 (JP)

(71) 가 가
가
가 4 6
가 가
3681(72) 2003 - 1
가 460
486
1215 - 216
579

(74)

:

(54)

가

		1	2	2	1	
					1	
2						
11						
1		1				
2	1					
3	2					
4	3		가 50%가	(fi)	가 50%	(
fo)가						
5	2					
6	5	DLL				
7	6					
8	6					
9	5		가 50%가	(fi)	가 50%	(
fo)가						
10		1				
11	10			1		
12	11		(CLL 2)			
13						
14		1			(Y)	
15	10		(22)			
16	10		(25)			
17						

18	10	(51)	.
19	10	(51)	.
20		FPC	.
21		1	.
22			.
23		2	.
24		3	.
25		3	.
26		3	.
27		3	(CL 2) .
28		4	(CL 2) .
29		4	(CL 2) .
30		5	.
31	30		.
32			.

< >

1 ~ 10 : D . 21 ~ 26 :

31 ~ 32, 235A, 235B, 236A, 236B :

41, 41 : , 51 :

52 :

61, 62, 63, 64, 351 : 71, 72 :

100 : 110 :

120 :

130, 130a, 130b, 130c :

131 : 132 :

133 : 134 :
 135 : (1) 136 : (2)
 137, 311, 237A, 237B : 138, 238A, 238B :
 139 : 140 :
 150 : (FPC)
 200 : 210 :
 211 : 212 :
 213 : VCO 214 : m
 200 : DLL 221, 222 : 2
 239 : 310 :
 312, 350 : 320, 322 :
 321, 323 : 324 :
 333 : 331 : (CLL 2)
 SUB 1 : R :
 DEL : HIZ :
 PIX : TFT :
 G : ()
 D, Y : () CST :
 CL : EOL :

()

STN(SuperTwistedNematic) TFT(ThinFilmTransister)

가

1

2

2

1

1

2

1

2

가

가

가

가

가

1

1

2

1

2

2

1

가

가

가

(全圖)

[1]

1

1

(120)

(130)

(140)

(1001)

(110)

(, FPC .)(150)

(100) (PIX), (TFT) TFT , ,

, .

(PIX) (TFT) () (G)

() (D) .

, (PIX) (CST) .

CL (CST) (Vcom) .

, (CL) (G) 가 .

(TFT) 가 (PIX) (D) 가

(G) (PIX) () .

, 가 (D)

. .

(110) (130) (140) (100) TFT

() .

(110) ()

(130) (130) (130)

(130) ()

(130) (120) FPC (150)

(130) .

(110) () (140)

(140) (140) ()

(140) .

, (120) (140)

(140) (140) ()

(140) .

(110) 1 (LSI)

, , (R · G · B)

(130) (140) .

1 (110) (FLM) (CL 3)

(100) (G) High .

(100) (G) (TFT)가 1

. .

2 1 (130)

(130) o , 2 i

(130) (130) .

CL 2i
 (130) (CL 2o (130) (130)
 (200) (CL 2i) 가 50
 0% (, High Low)(CLL 2)
 (1)(135) (132)
 (133)
 (133) (134)
 (132) (131) (CLL 2)
 (2)(136) (131) (CL 1) (1)(1
 35) (137)
 (137) (139) 64 (2)(136)
 (138) (137) (138)
 (138) (137) () (D)(Yi)
 (100)
 (137) (138)
 (139) (V0 ~ V4)
 64 64 (V5 ~ V9)
 3 2 (200)
 3 (200) (, , PLL .)
 PLL ,
 3 (210) (211) (212) (,
 , VCO)(213) m (214)
 PLL (fi) m (214) (fo)
 (210)
 (INC) (fi) (fo) (fo)
 (DEC) (fo)

(212) (211) (INC) (DEC)

(DEC) (INC) ,

(Emitter) (Multivibrator) VCO (213)

(fm) 가 .

(fi) (fo) .

4 3 PLL 가 50%가 (fi) 가 50

% (fo)가 .

4 VCO (213)가 (fi) 2 (fm) m

(214)가 .

4 가 50%가 (fi) (fo)가 VCO

(213) (fi) 2 (fm)가 .

(fm) 2 (fo)가 (fo) (fm)

() High Low Low High 가 (fm)

(fo) 가 50% 가 .

, VCO (213) 가 50% (fm)가 3 PLL

m (214) 가 50% (fo) .

5 2 (200) .

5 (200) (, DLL .)

DLL PLL

가 가 가

가 .

5 DLL (220) 2 (221, 222) (EOR) .

6 5 DLL (220) 7 6 (310)

. .

, 8 6 .

6 DLL (220) (312) (IN) OUT 2(D

WN) High , OUT 3(UP) LOW +1 .

(311) (312) (310)

(HIZ) (DEL) 가 (310)

가 .

(IN) OUT 2(DWN) Low , OUT 3(UP) High

(312) - 1 .

	(311) (HIZ)		(312)		(DEL)		(310)
	(IN)		OUT 2(DWN), OUT 3(UP) (312)		Low		
	OUT 2		(fi)		180 °		(ft)가
	9	5			50%가		(fi)가 50%
	(fo)가						
9	(ft)가	DLL	(220)		50%가		(fi) 180 °
	(fi) 2		221		180 °		(ft) 2 222 2
	가						
(fi))	(2)		2 High		Low Low		2 High (, 가
					가 50%		가
2	(221, 222) 2						(EOR)
(fi)	가 50%		(fo)가				
	3		(200)				
	5		(200)				가
			(200)				가
2	(133)		(133)		(134)		10
			(134)				
10	(134)		(AA)		(133)		(
BB			(134)				
10	(134)		(133)		(21, 22, 23)		(31)
			(24, 25, 26)		(32, 33)		(41, 42) (51)
	10				(130)		
11	10 (CLL 2)		1			12	11

, 11 (21, 22, 24, 25) .

12 (CLL 2) (D1) D .
 (, .)(1) .

, (CLL 2) (D2) . (3)
 (B) . (1) (D1) . (2)
 (A) .

가 .

, 2 .

(A, B) (130) ,
 (CLL 2)

(CLL 2) (D1) . (4)
 (D2) . (5)

(4) . (5) () (41)

.

(74 (1999 8)

31 ~ 34)
 가 가 2 가 가

(CL 2) 가

1 가 .

, 10 (130)
 13
 (130)

13 (130) 36 (6 × 4(R, G, B
) × 2 = 36) (130)

(130)

13

가 .

10 가 (21, 22) .

1 (110) (13) (130)
 () 가 .

3 ($\times 6 = 18$) 가 9 가 High 가 9 가 Low
3 가 18 가

(110) (2
POL) 18 18

(130) (21) 3 ($\times 6 = 18$)
가 9 가 High 9 가 Low 3 가

(2) 1 (2 POL)가 [0]
(2 POL)가 [1]

[1]

		A
0	0	0
0	1	1
1	0	1
1	1	0

(22)

(100)

(, n)
가 가

14 (130) (Yi, Yi + 1)/

14 235A, 235B 2 (1)(135) 236A, 236B
2 (2)(136)

, 237A, 237B 2 (137) 237A
237B

238A, 238B 2 (138) , 237A
237B

39)

(2

(Yi) , (Yi+1) 가

(238B) (239) (Yi) (238A) (Yi + 1)
 가 (Yi) (Yi + 1)
 (Yi + 1) (238A) (Yi) (238B)

(235B) 10 (235) 10 (D)
 (E)

i) (Yi) (D) (Y
 (Yi)
 가 (E) (Yi)

(22) 10 (D) (E)

[0] (22) (61, 62) (61) (2 M) [1]
 (3) (2)
 (D)

(2) (62) (2 M) [0] [1]
 (3) (E)

(62) (M) (61) (M)
 (D) 가 (3)((2)) (3))
 (E) (2)(

가

(22) 15

(24) (21)

(24) 2 (D, E)
 (21) , (21)

(25) (M) 2 (D, E)
 (41)

(4) (5)

(25) 16

16 (25) (M)가 [0] (D) → (E)
 → (D) → (E) (M)가 [1] (E) →
 (24) (21) 가

(6) ~ (8) (CLL 2)
(M) 2 (D, E)
(23) (63, 64)
(7), (8) (J, K)
(J, K) 가 (24) 2 (D, E)
(CLL 2) (J, K) (9)
(10) (26) (42) (9) (10)
(J, K)
(51)
17 (CLL 2)
가
12 (41)
(CLL 2)
(130) (1 ~ 3) 가
(51) (CLL 2)
18 17 (51)
18 n (n)
(CLL 2) 17 (CLL
2) (90 °)가
19 17 (51)
19 6 8 OUT 1 90 °
(ft)
20 (130) FPC (150)
20 (321) → (SUB 1) (130) FPC (150) (320) → (SUB 1)
(130) (324) (322) → (SUB 1) (323) → ()
21 ((41))
(331) ((51)) (332)
(331) (332) (333)

, 21 (130) 22
 (R) () (130) (321) → (322) → (323) →
 (324) .
 22 (331) 22 (332) (331)
 (41) 가 (R) 가
 (332) (CLL 2) .
 , (331) (332)
 (CLL 2) 가 . (332)
 (332) (331) 가
 .
 [2]
 23 2 .
 (200) (134) 1 .
 (130) (200) (51)
 , (130) (CLL 2)
 (CL 2) .
 , (200) 1 (130) (130)
 (130) (CLL 2)가 (130) (200)
 가 .
 [3]
 24 3 .
 (130) (200) 25
 () (52) (CL 2)가 가 가 .
 CMOS MOS (Vth)가
 (, High)가 .
 가 가 (CL 2) 가 (130) (CL 2)
 가 (130) (CL 2) 가
 (130) (130) (CL 2) 가
 (130) (CL 2) 가 .

(CL 2) 가 .

, (130) (CLL 2)
(CL 2) .

((74 (1999 9 8) 31 ~ 34) , (C
(CL 2) L 2) .

.

, 가 가 가 가 가

(CL 2)

가 가 가 가 .

, (CL 2) 가
(CL 2) 가 .

(轉) (CL 2) (正)

26 (130) (90
°) .

26 (130) (CL 2)
(130) .

26 (130) (1)
(130) 90°
(130) (1)

,
가 .

(, 74 (1999 8), 31 ~ 34)
가 가 가 .

[4]

27 (CL 2) .

1

(CL 2)가 H

(CL 2) L

(CL 2) H

2

가

,
130a, 130c)
가

(CL 2)
가

가

(
27 130c)

27

28

4

(CL 2)

2)

(CL 2(B))

(130a, 130b, 130c)

(CL 2)

(CL (T))

(CL

(CL 2(T))

(CL 2(B))

가

가

, 28

(CL 2(T))

(CL 2(B))

3

가
L 2(B))

가

(
130a)
(
130b)

(CL 2(T))

(CL 2(B))
(CL 2(T))

(C

(CL 2)

(CL 2(T))

(CL 2(B))

가

(CL 2(T))

(CL 2(B))

(

)

130a)

(
130b)
(CL 2(B))

(CL 2(B))

(130a)

(CL 2(T))

(130b)

(CL 2(T))

(130a, 130b, 130c)

(CL 2(T))

(CL 2)

2

29

(CL 2(T))

(CL 2(B))가
(CL 2(T))

(130a, 130b, 130c)

(130b)

(
(CL 2(B))

130a)

130b) (CL 2(T)) (130a) (CL 2(B)) (

[5]

30 5 (133) (134)

30 (AA) (133) (BB

) (134)

30 (71, 72) 가 10

1 (133) (134)

(21, 22, 23) 가

(71, 72) 가

(21, 22, 23) (21, 22, 23)

31 30 (71)

31 (71) (350) (

가 (CLL2)

(350) 가 (351)

(350) 가 (351) (High

Low)(Vbb)

(21) 1

, (72) (71)

(가 가

가 가

(가

(130)가

가 (130)가

가

가

가

(1) (IC) (IC)

(IC) 가 .

(2) 가 .

(3) 가 .

(57)

1.

,

,

가

,

가

,

1

1

2

,

,

가

,

.

2.

1 ,

.

3.

1 ,

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4.

1 ,

2

.

5.

1 1 2 2

가

6.

5

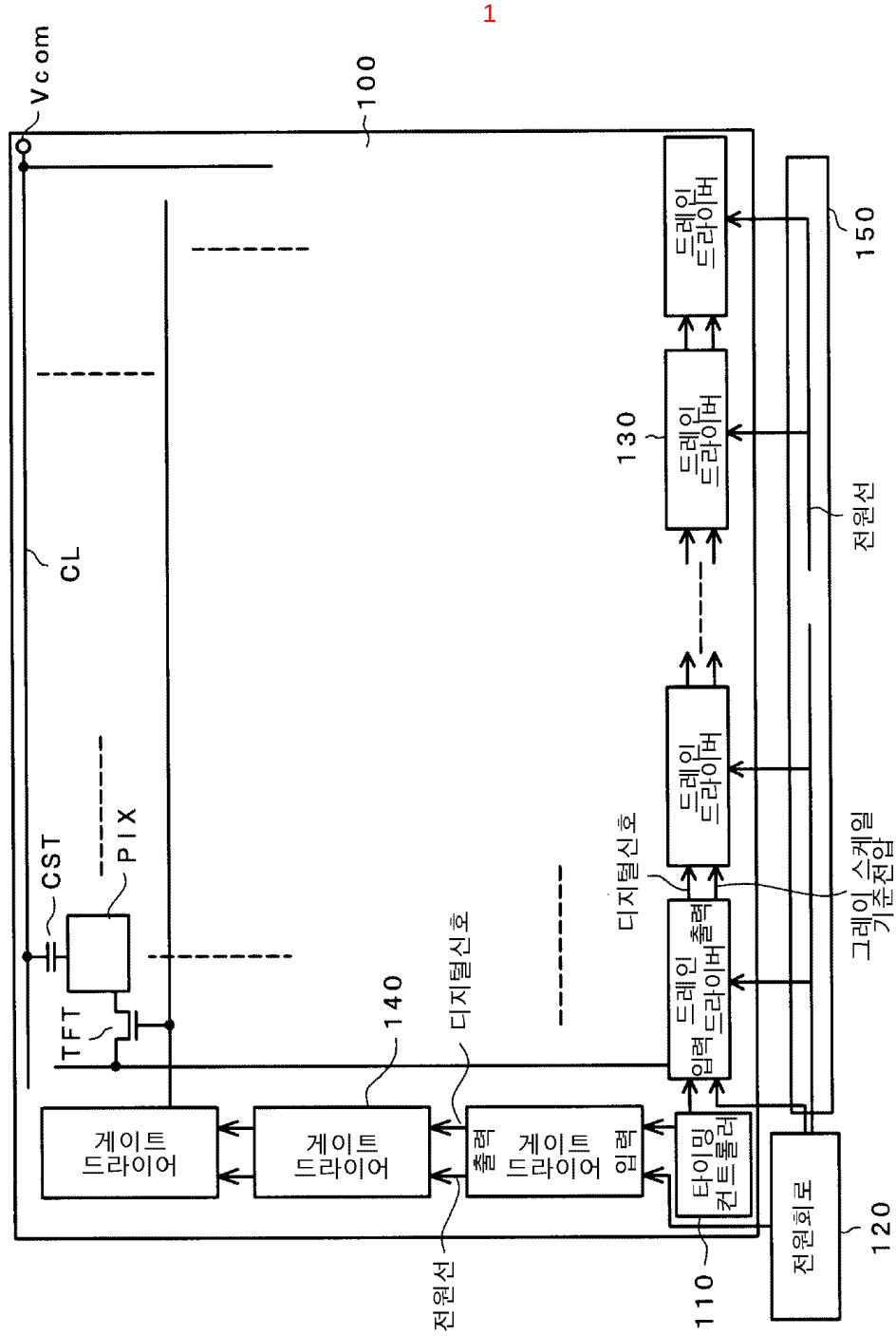
7.

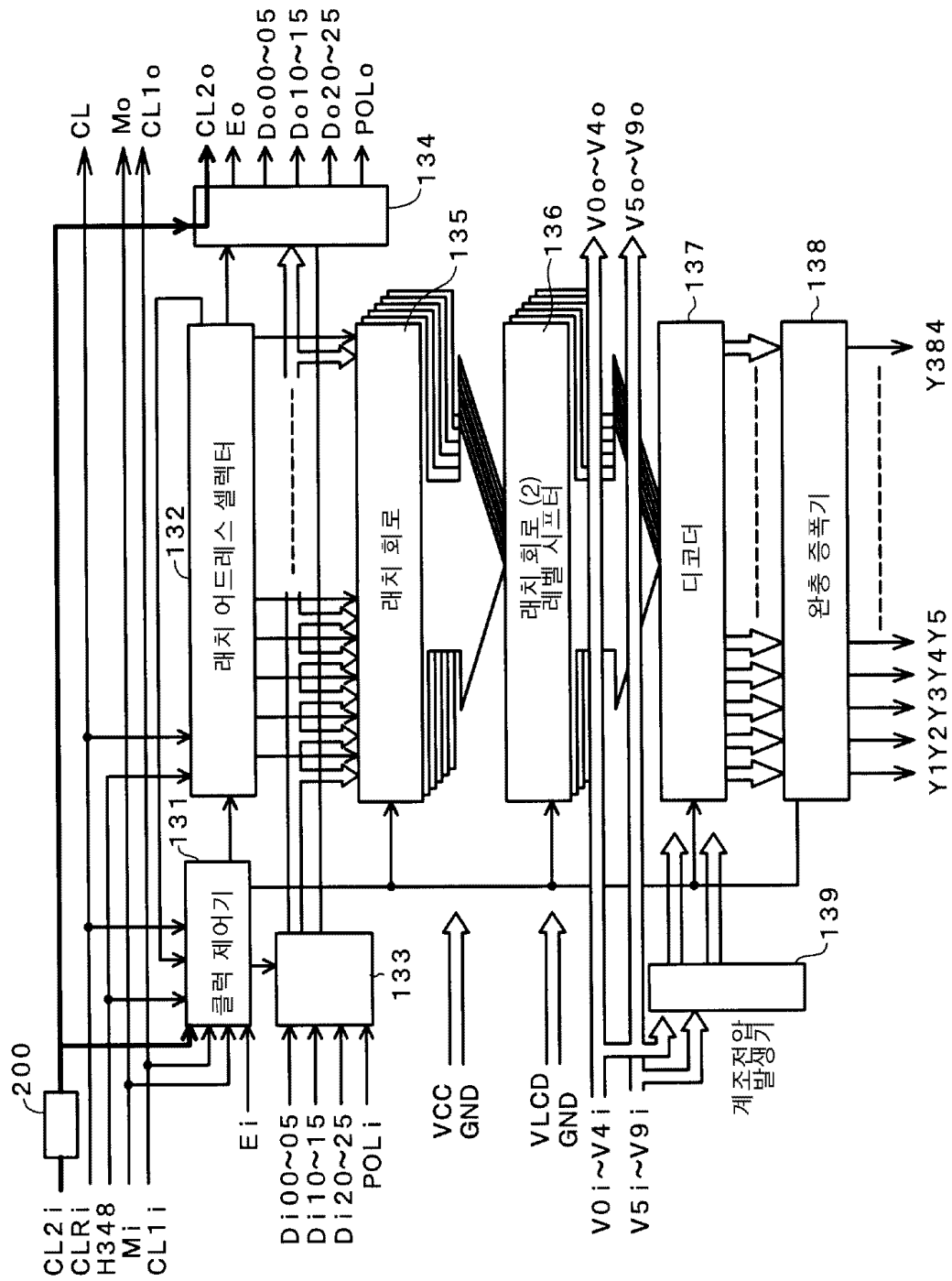
5

8.

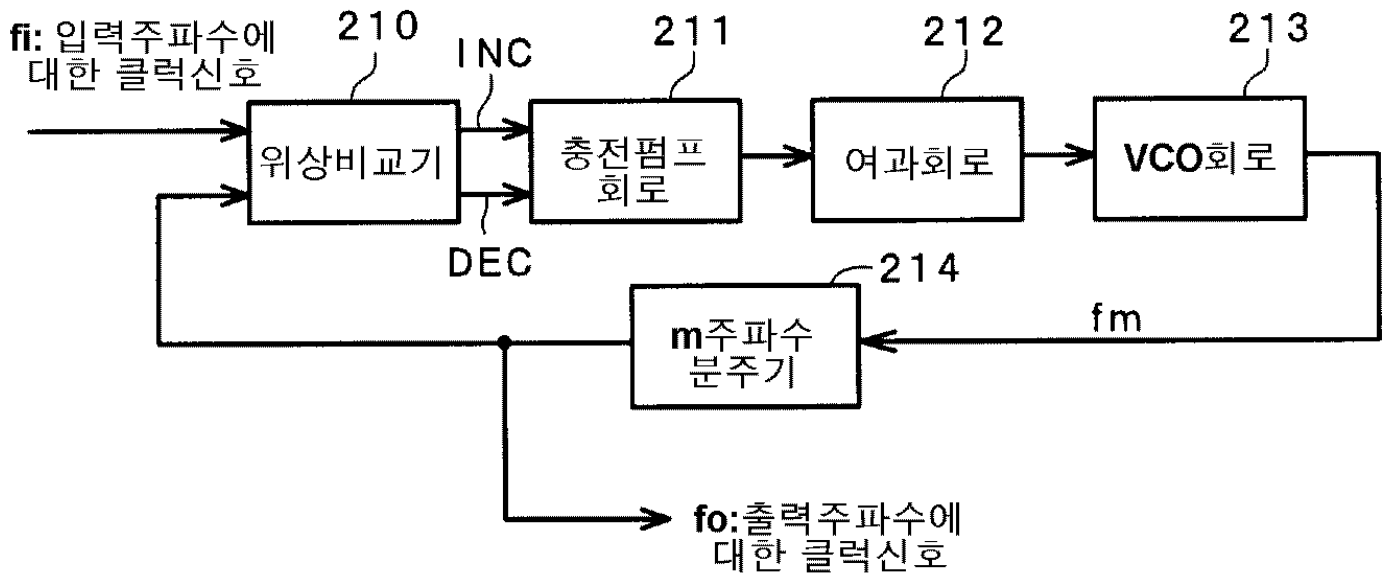
5

2

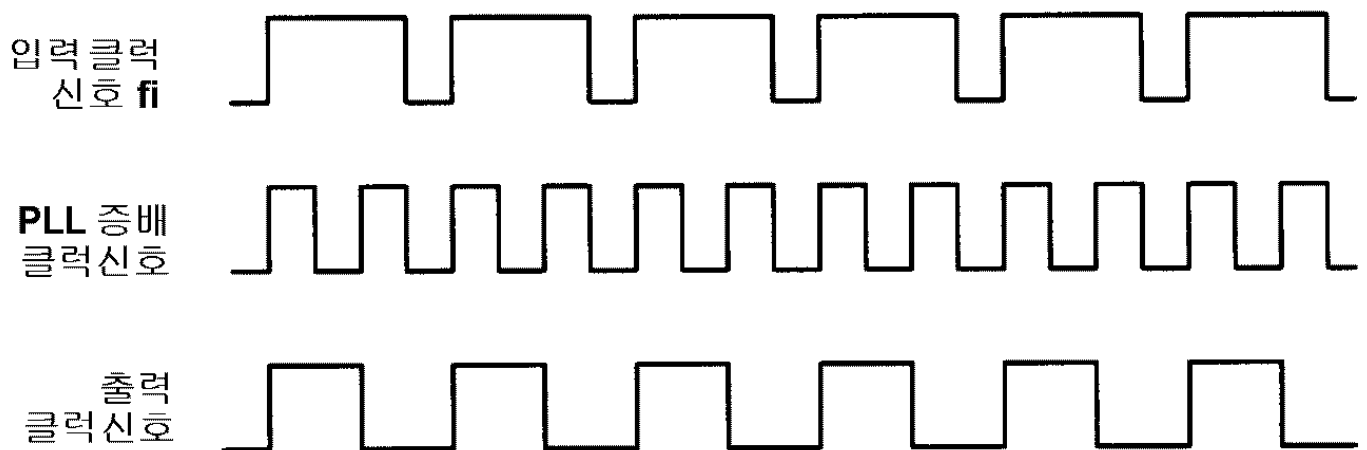




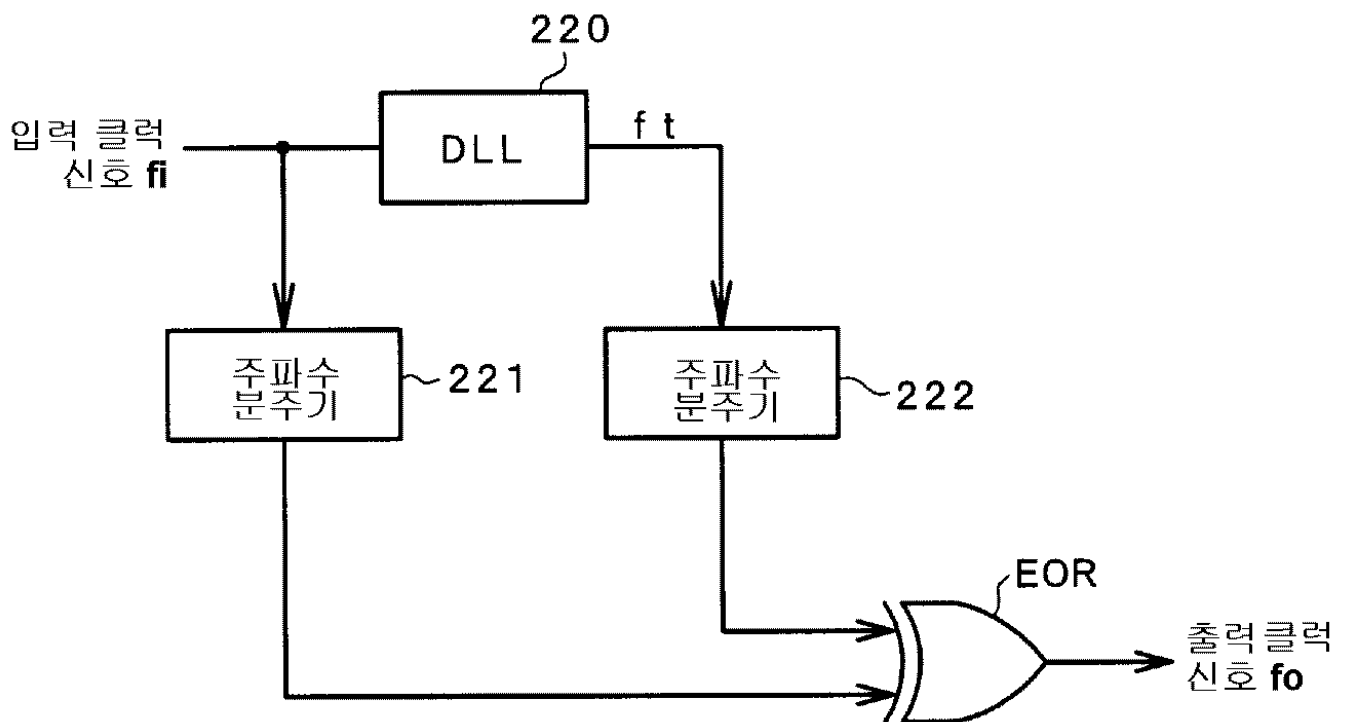
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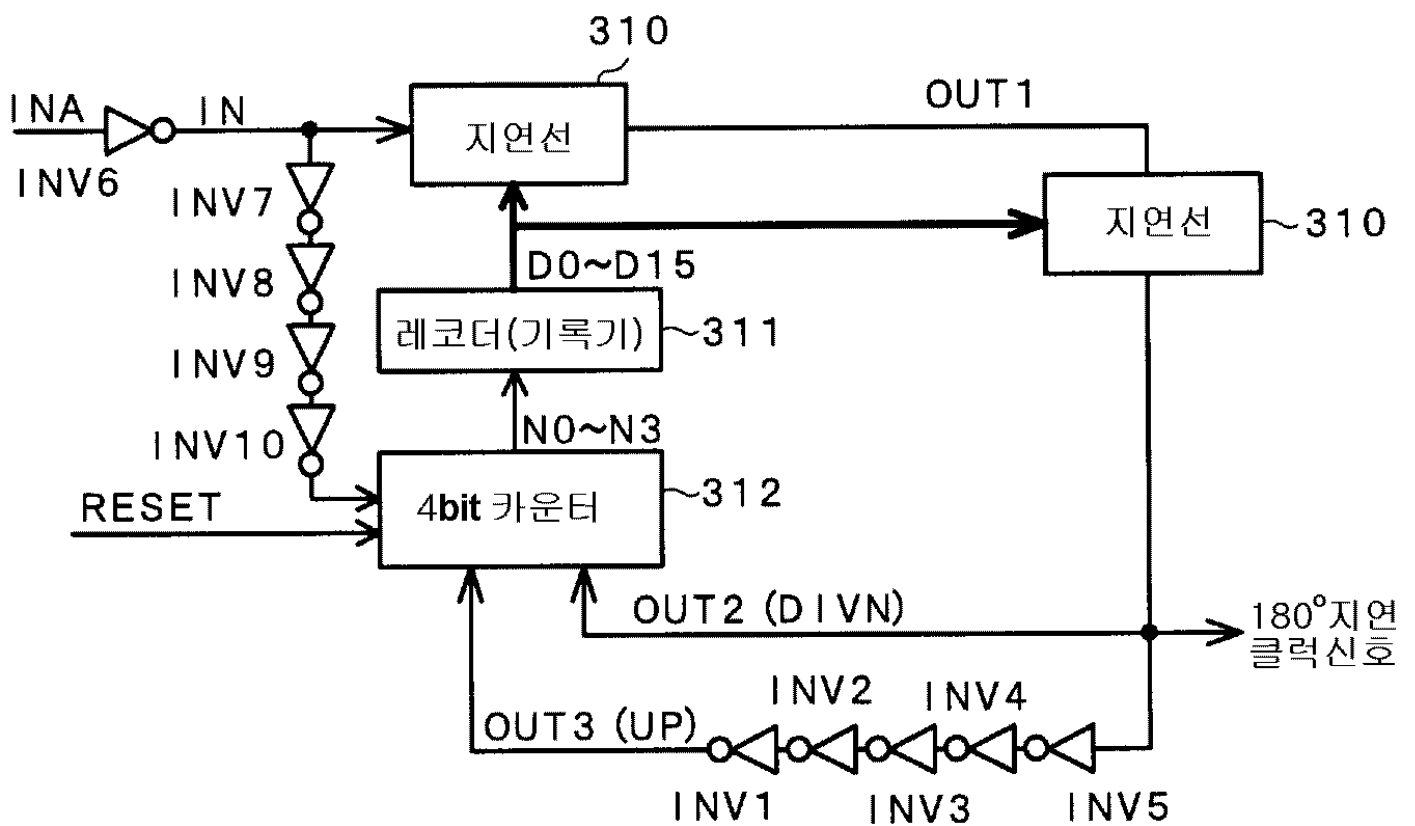
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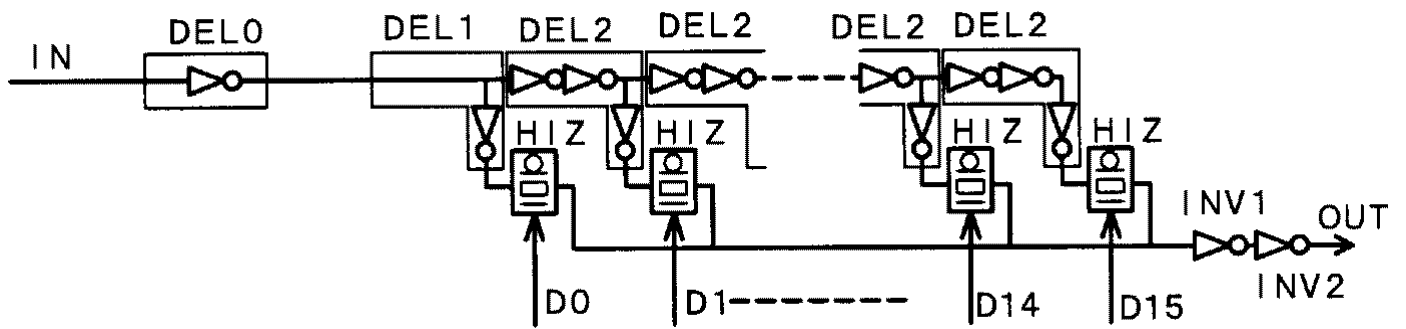
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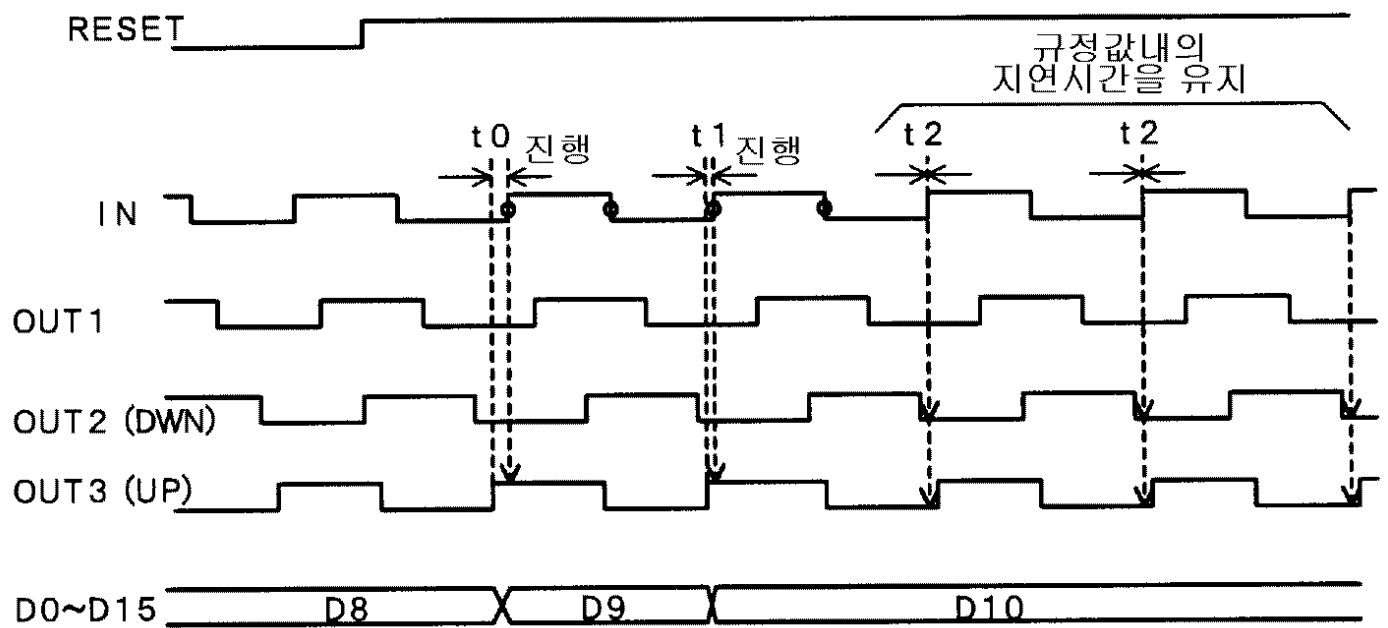
6



7



8



9

입력클럭
신호 **fi**



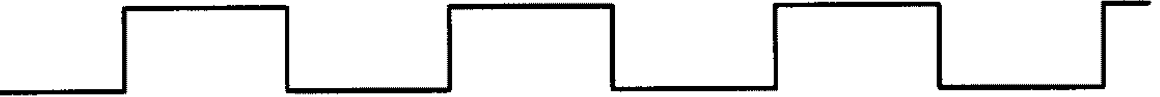
180° 지연
클럭신호



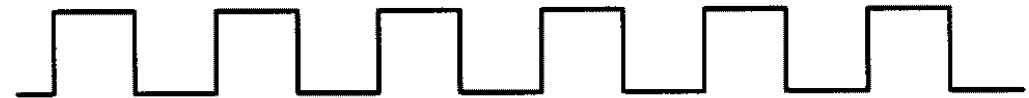
2분할 주파기
입력 클럭신호



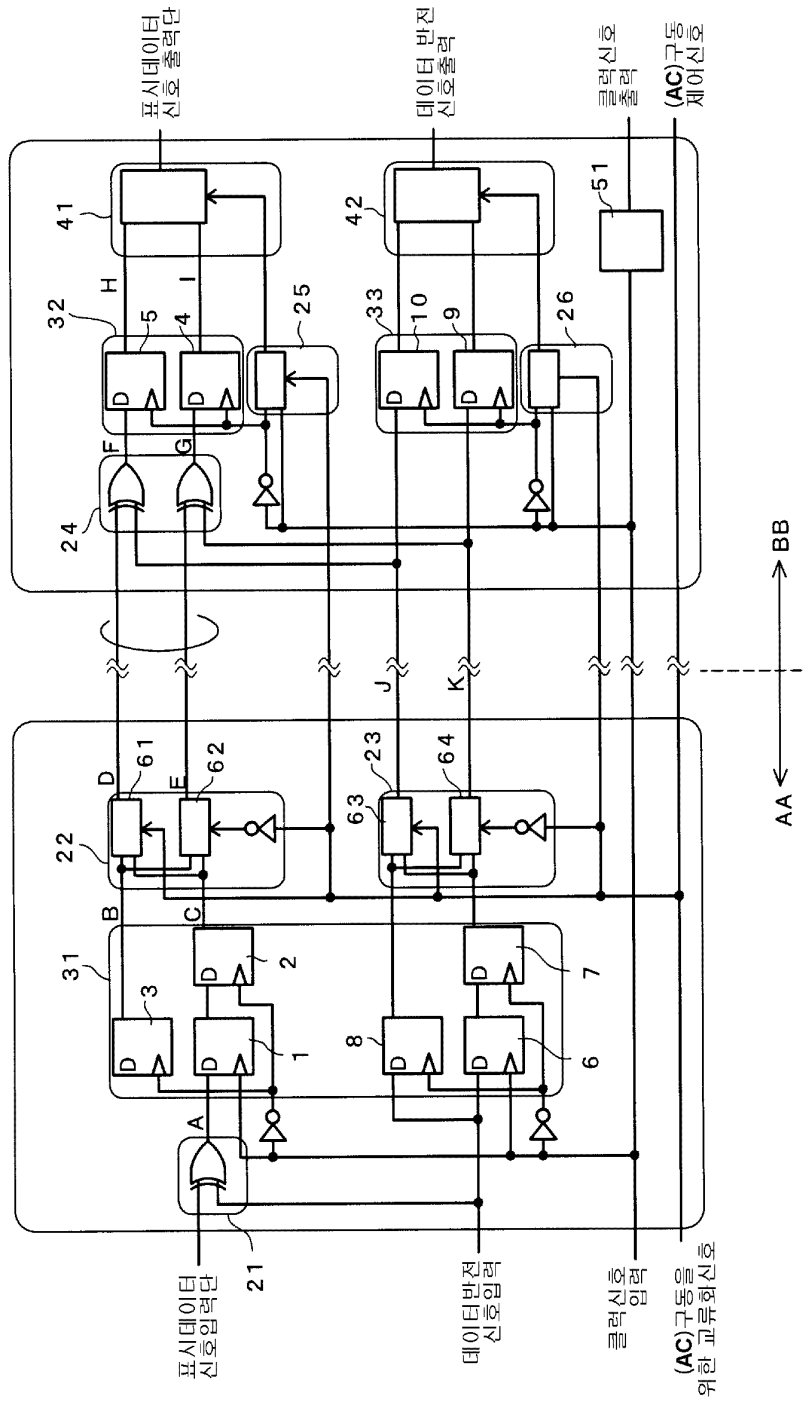
2분할 주파기
180° 클럭신호



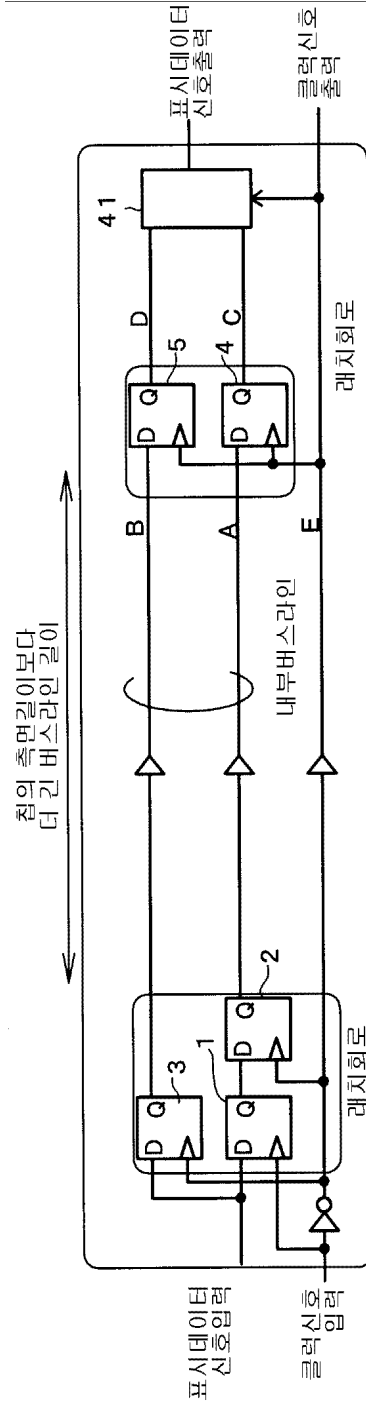
출력 클럭
신호 **fo**



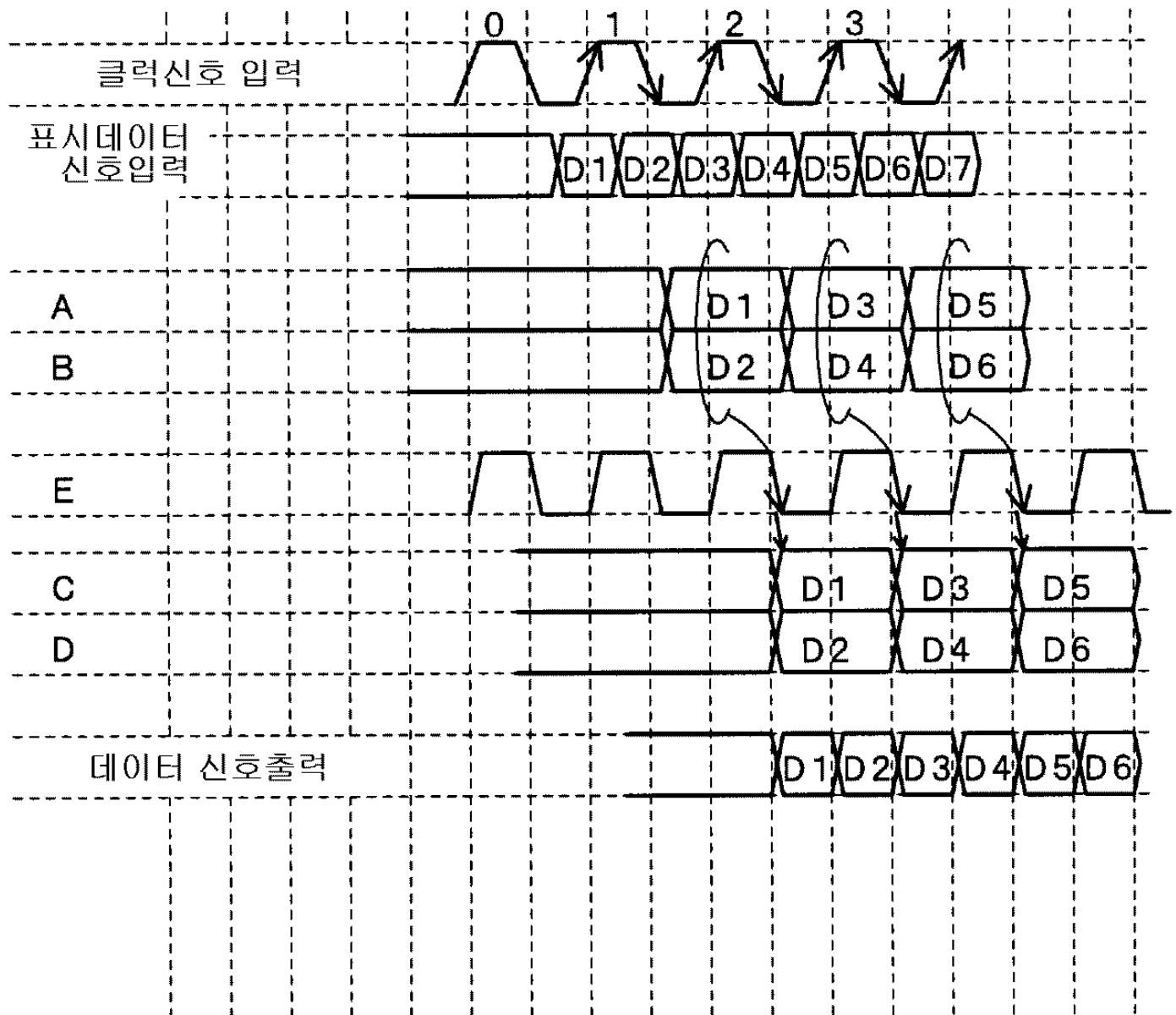
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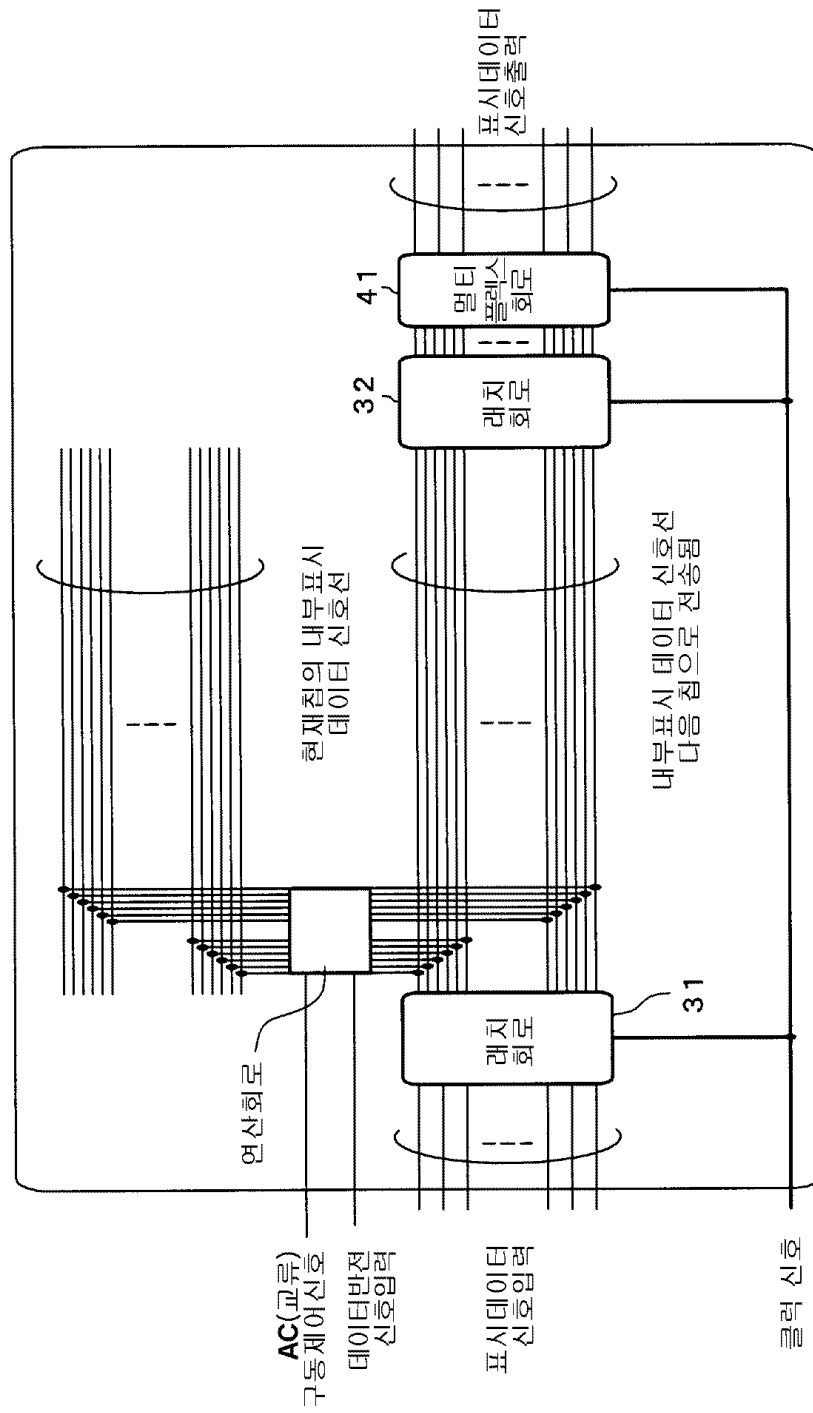
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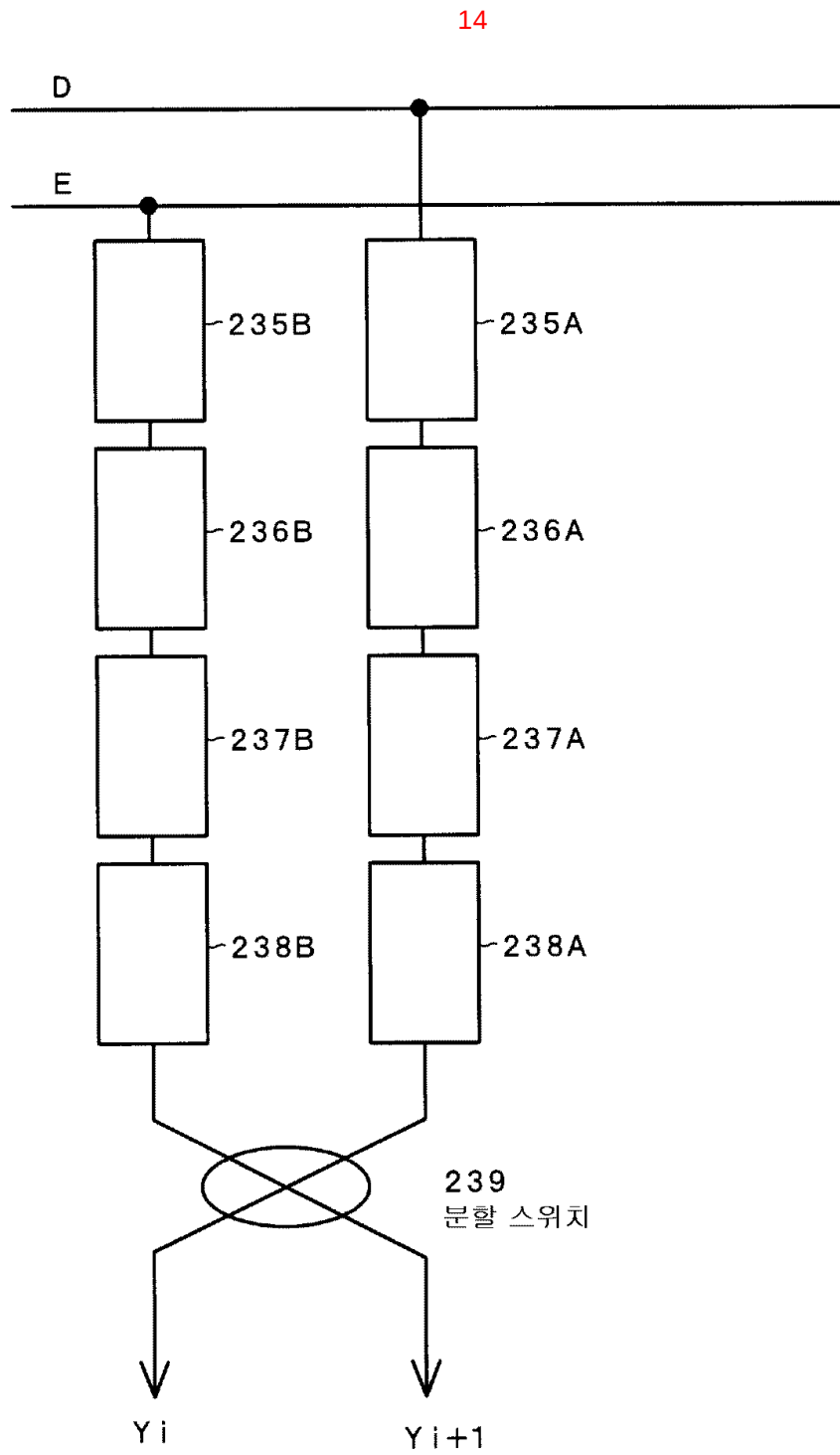


12

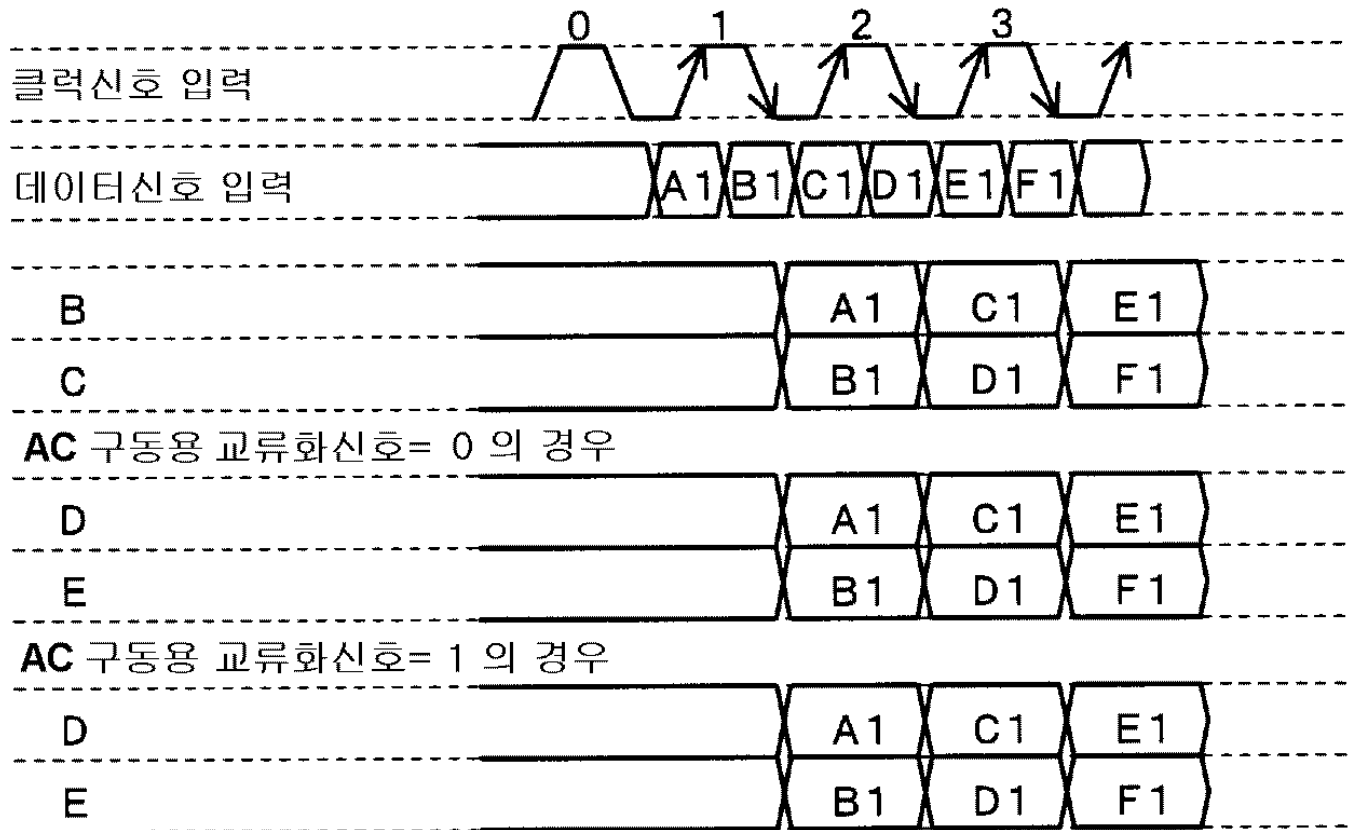


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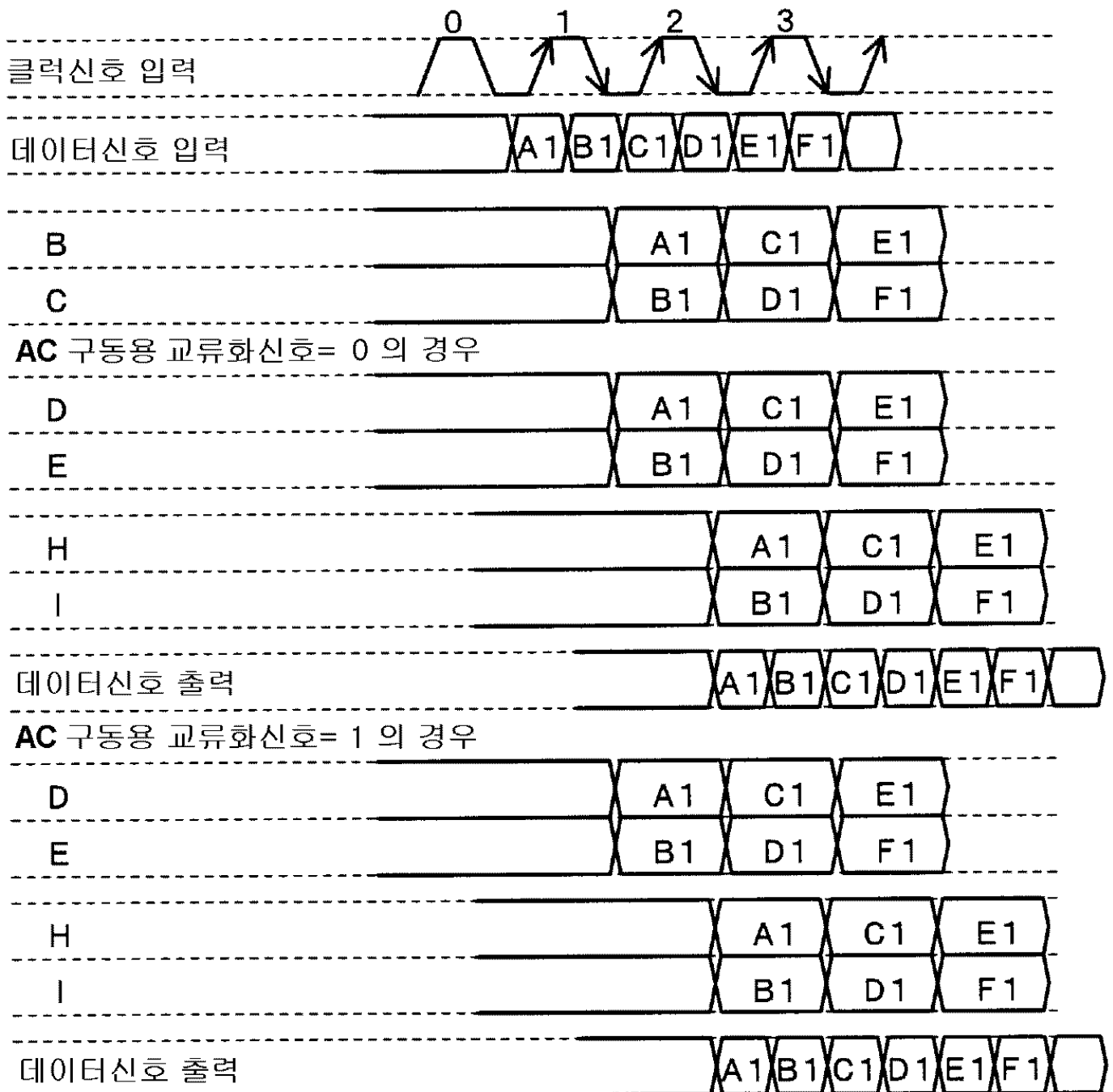




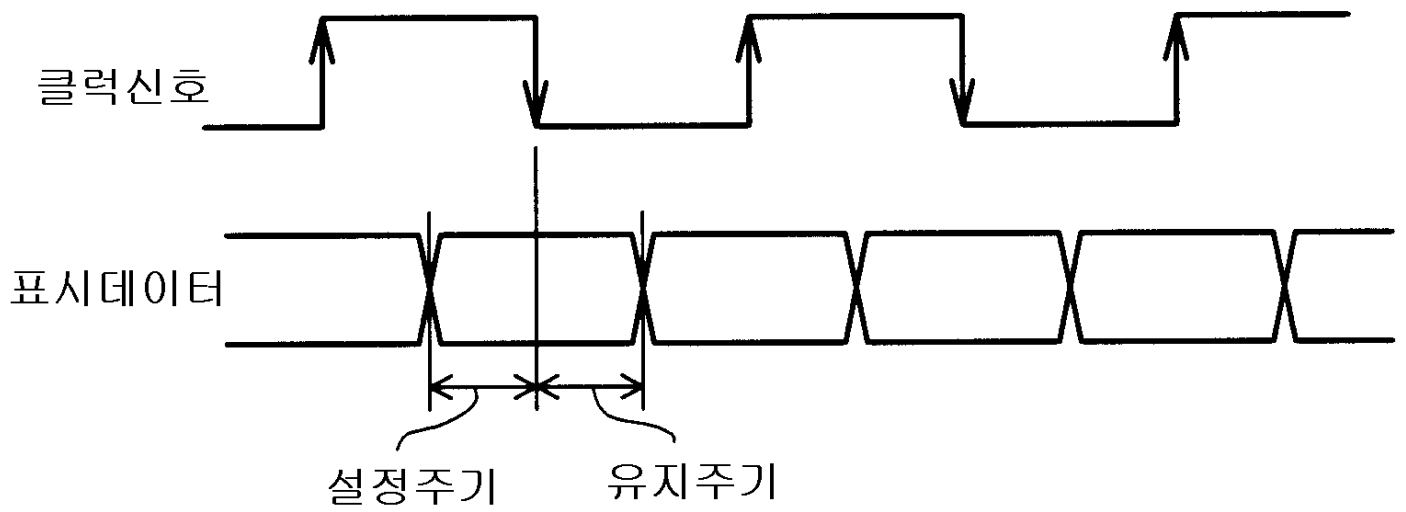
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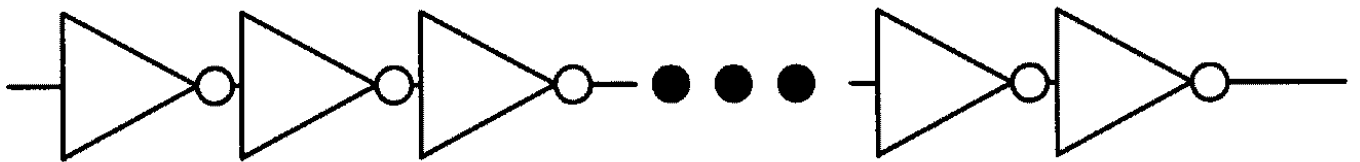
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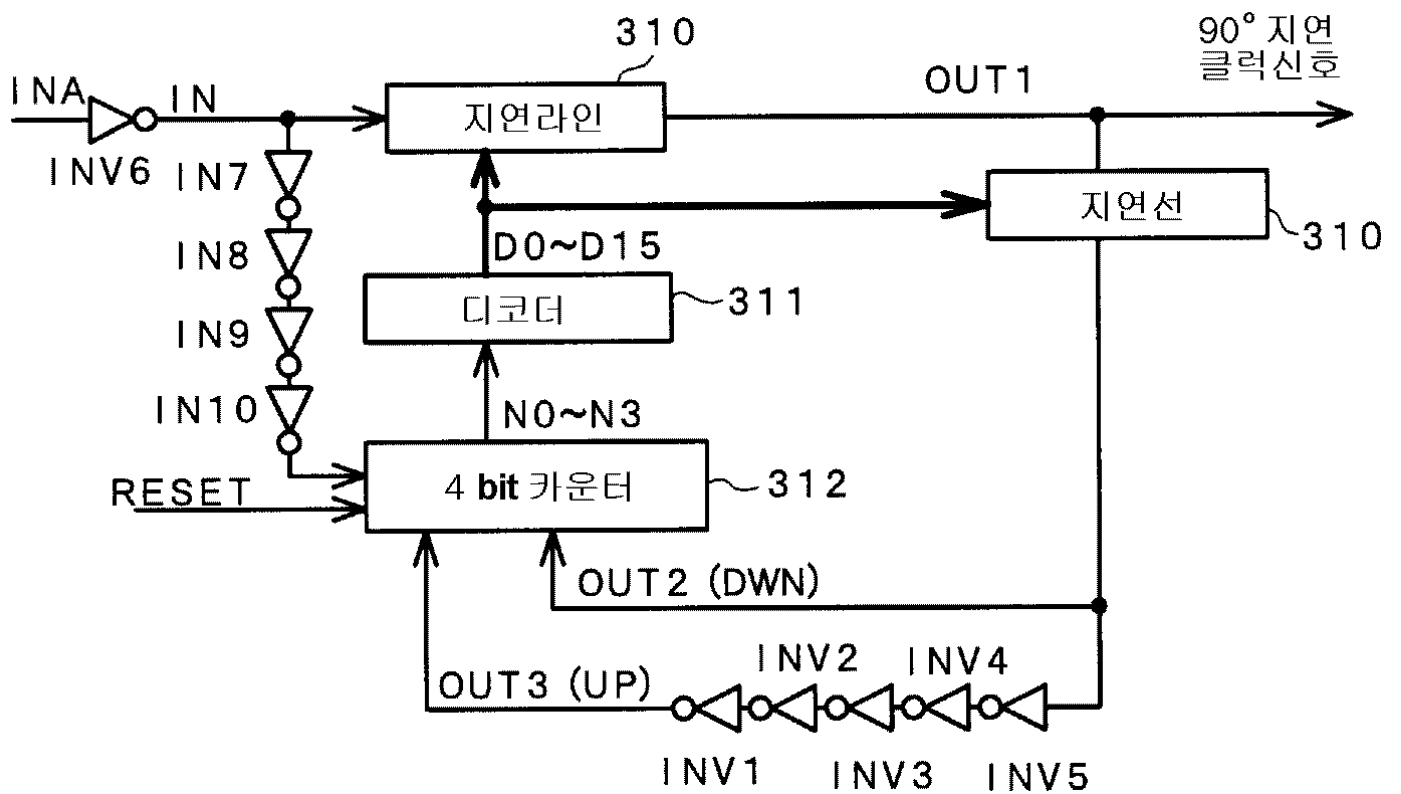
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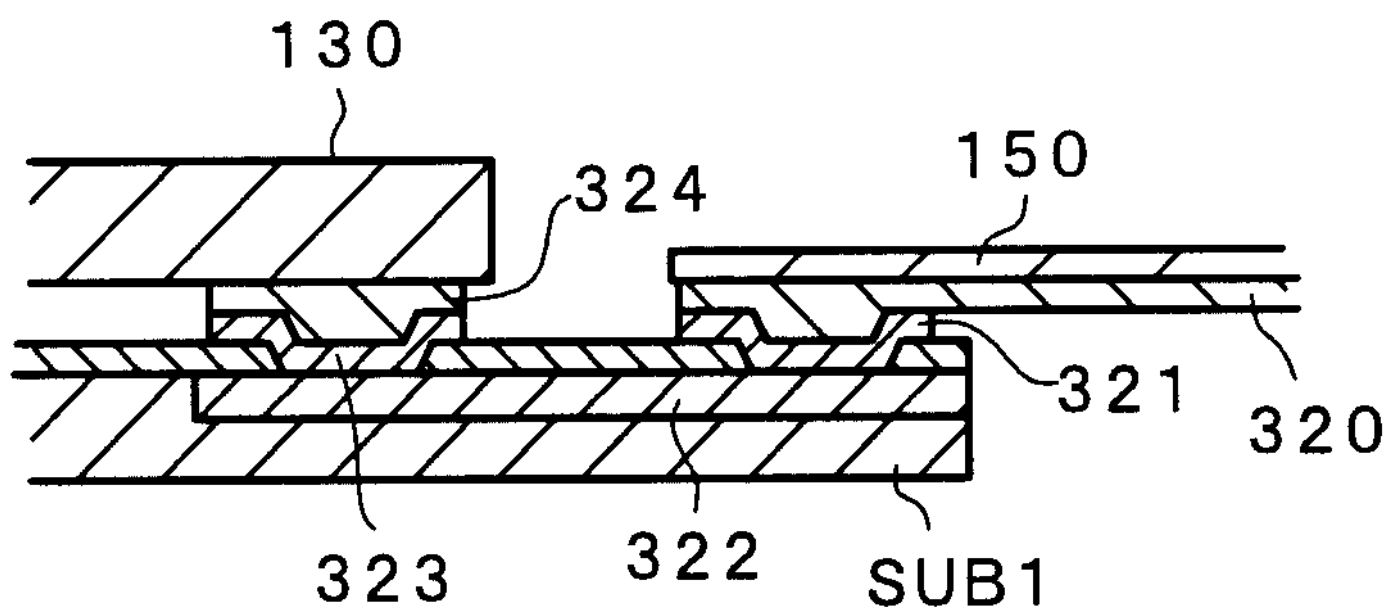
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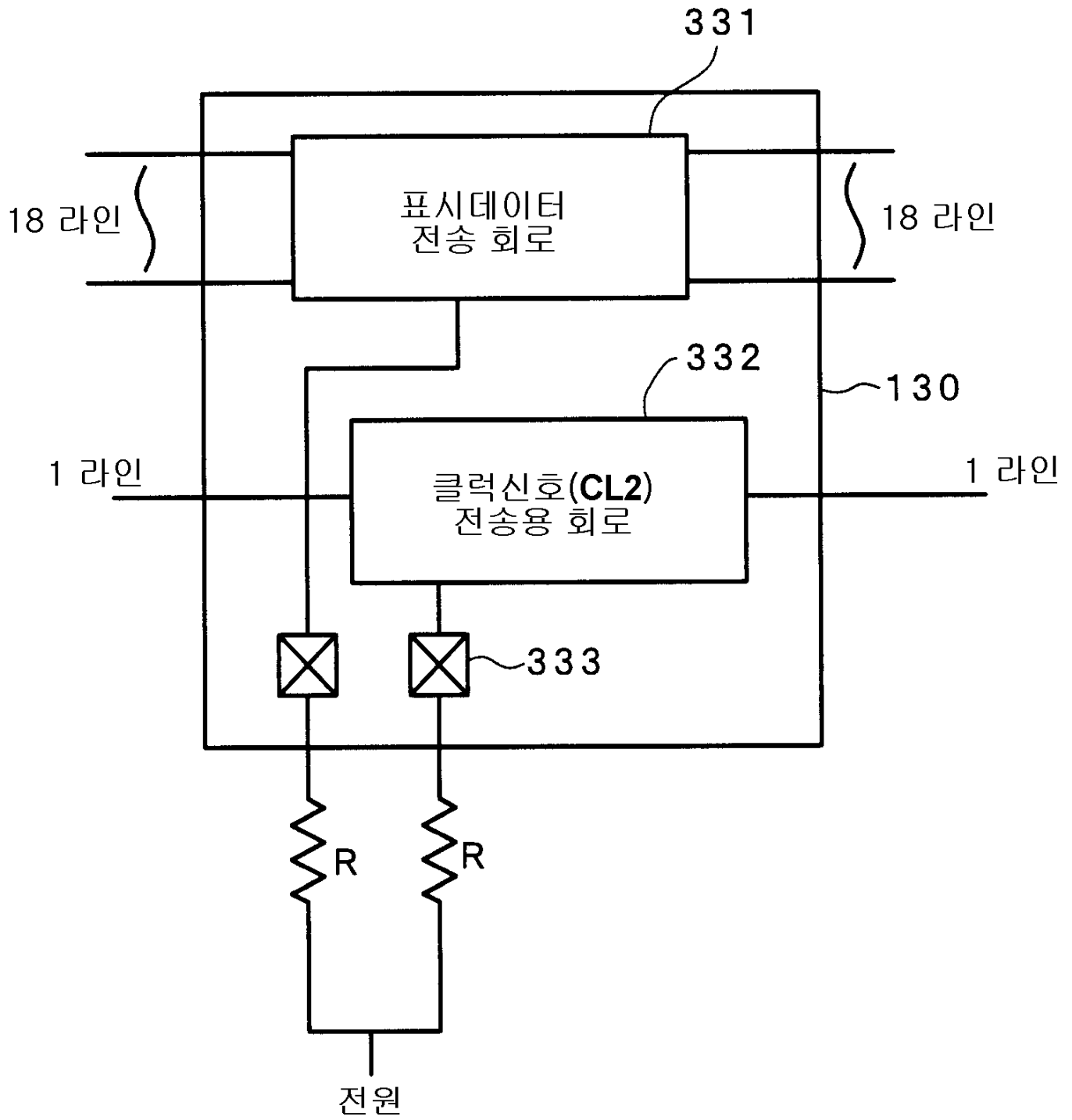
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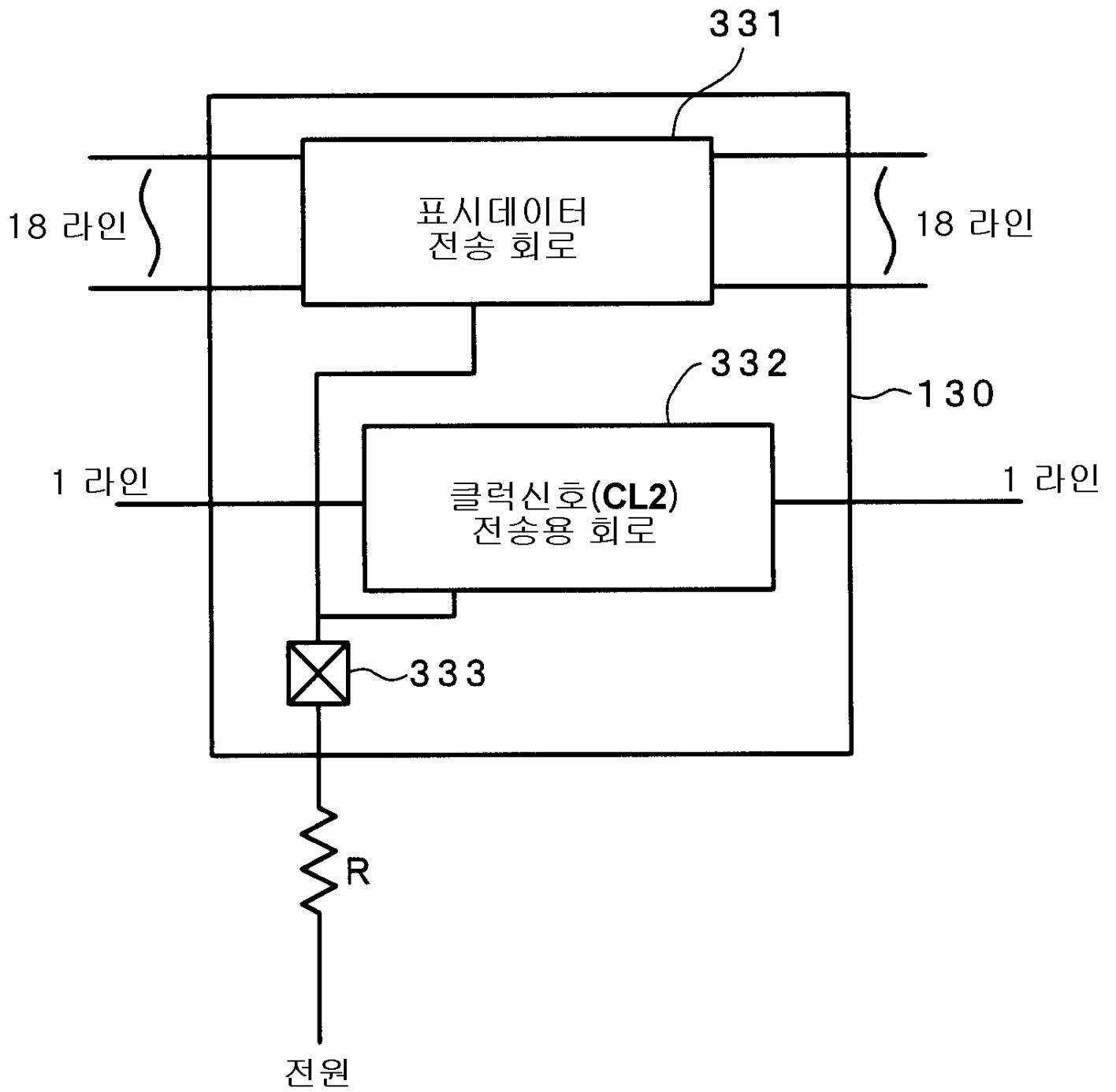
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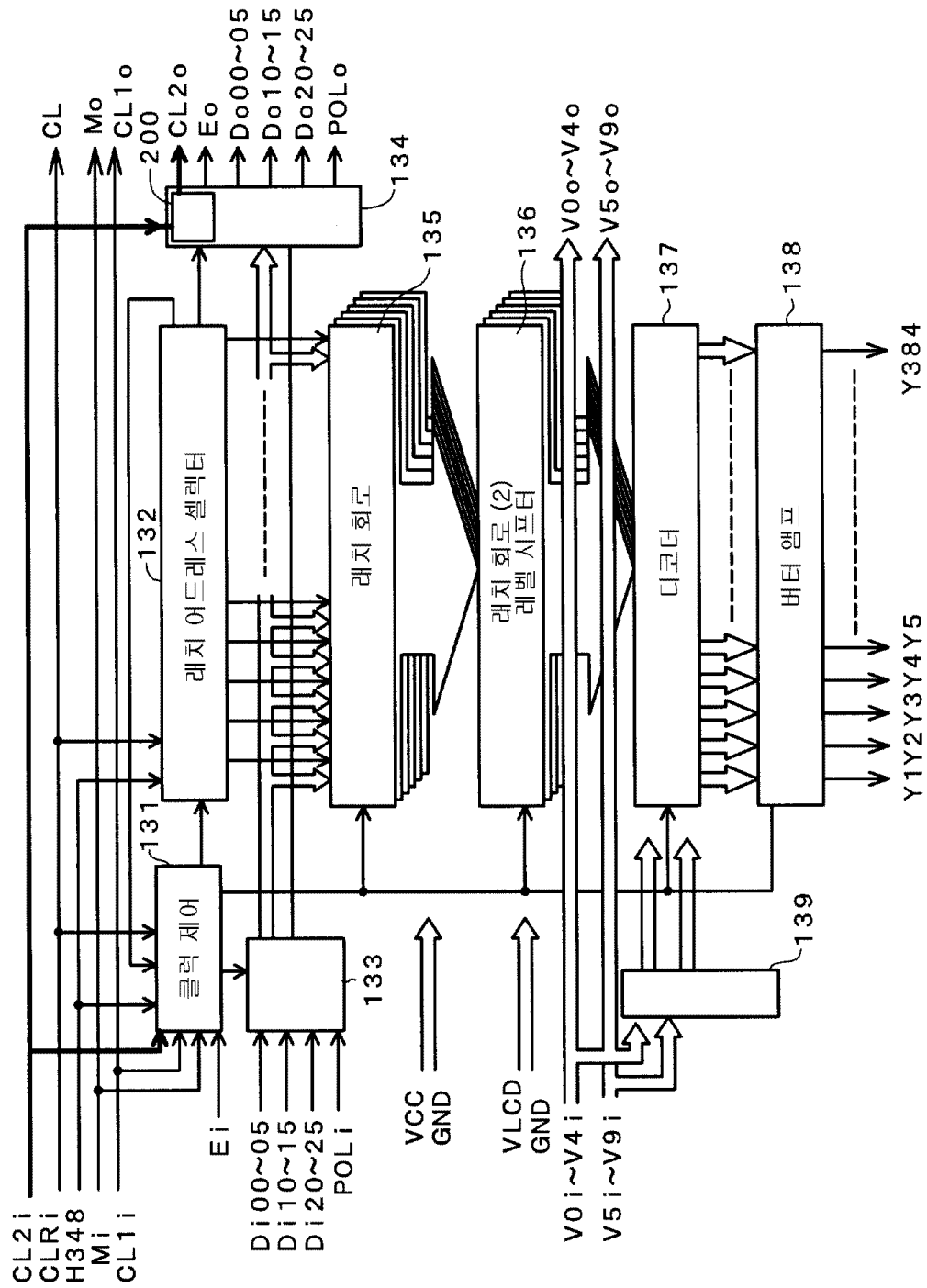


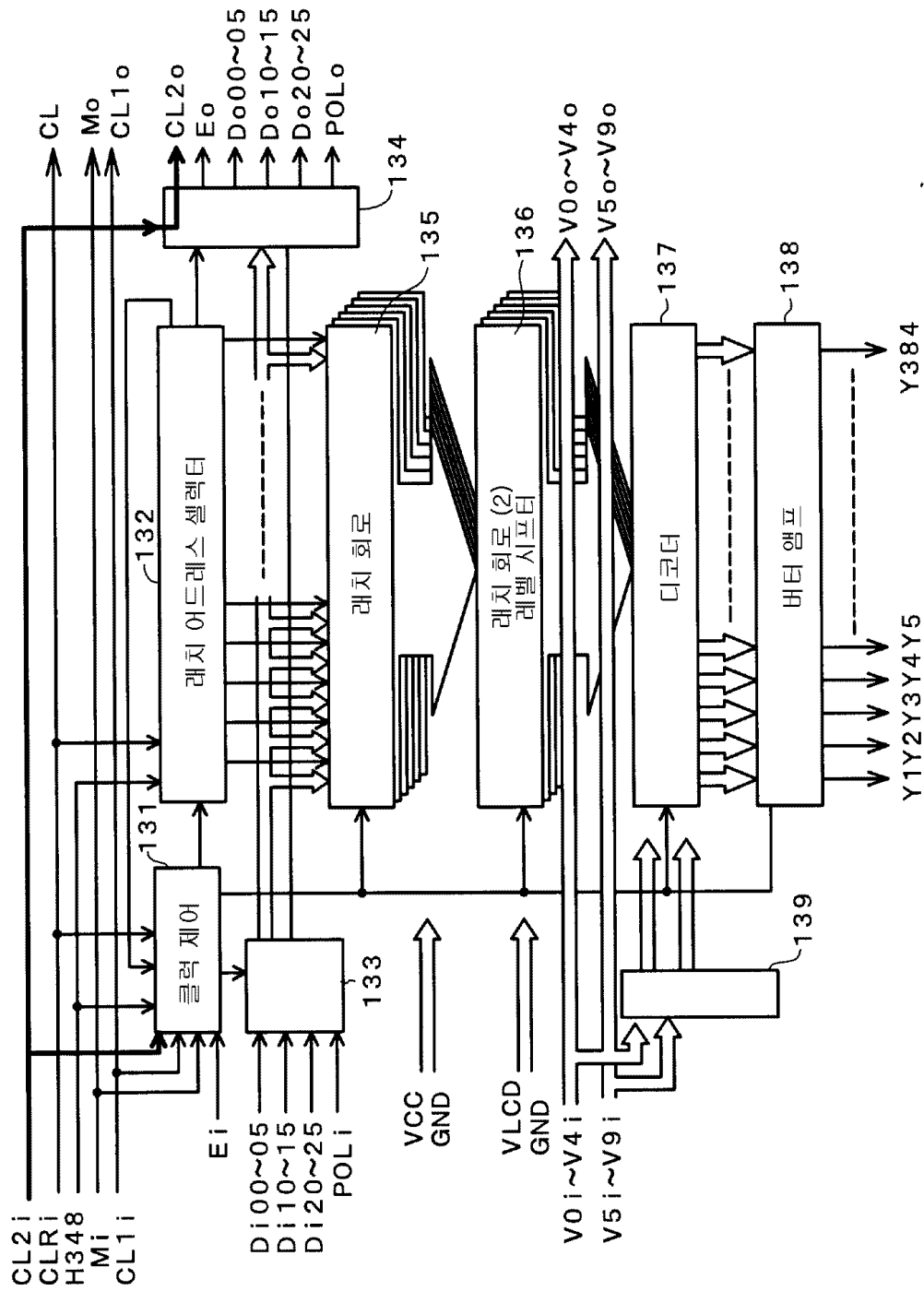
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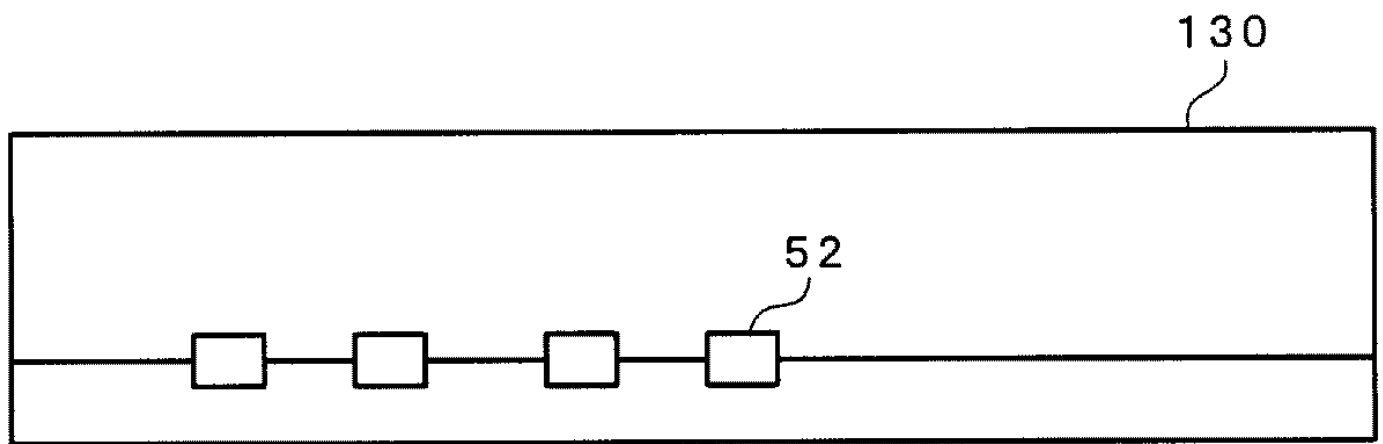
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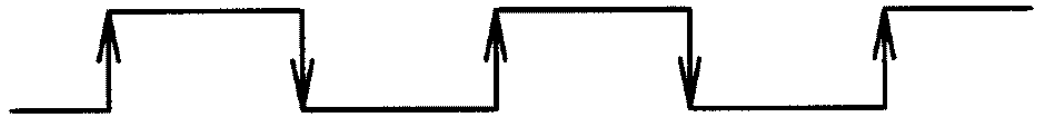


25



26

클럭 신호



표시데이터

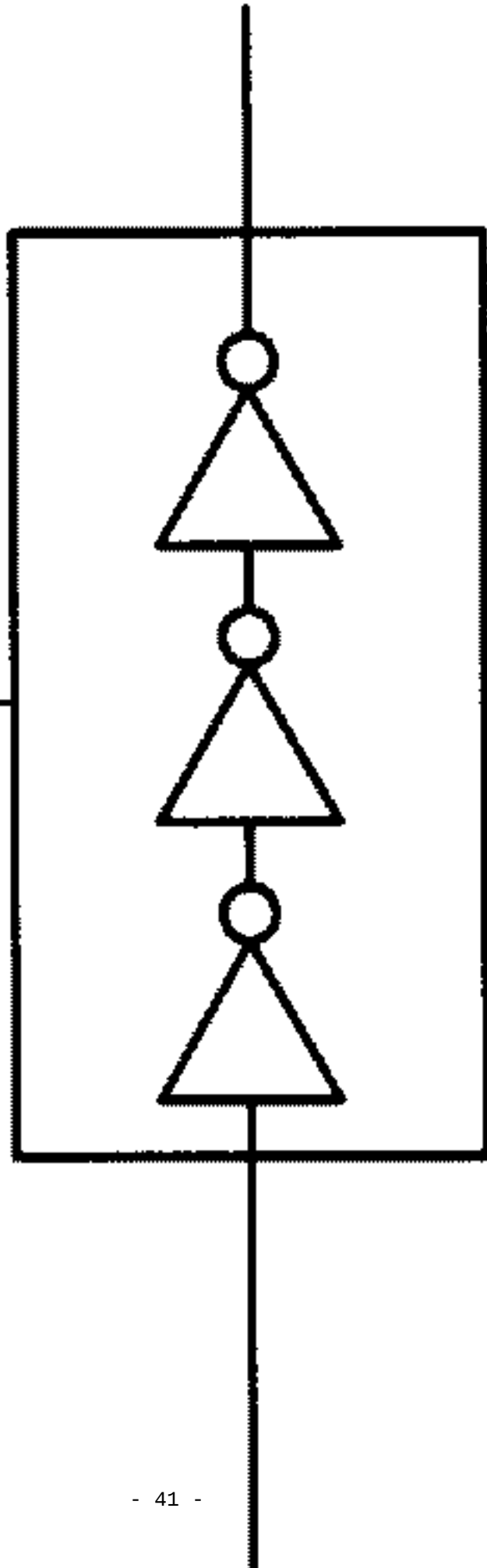
클럭 신호
(반전클럭)

표시데이터

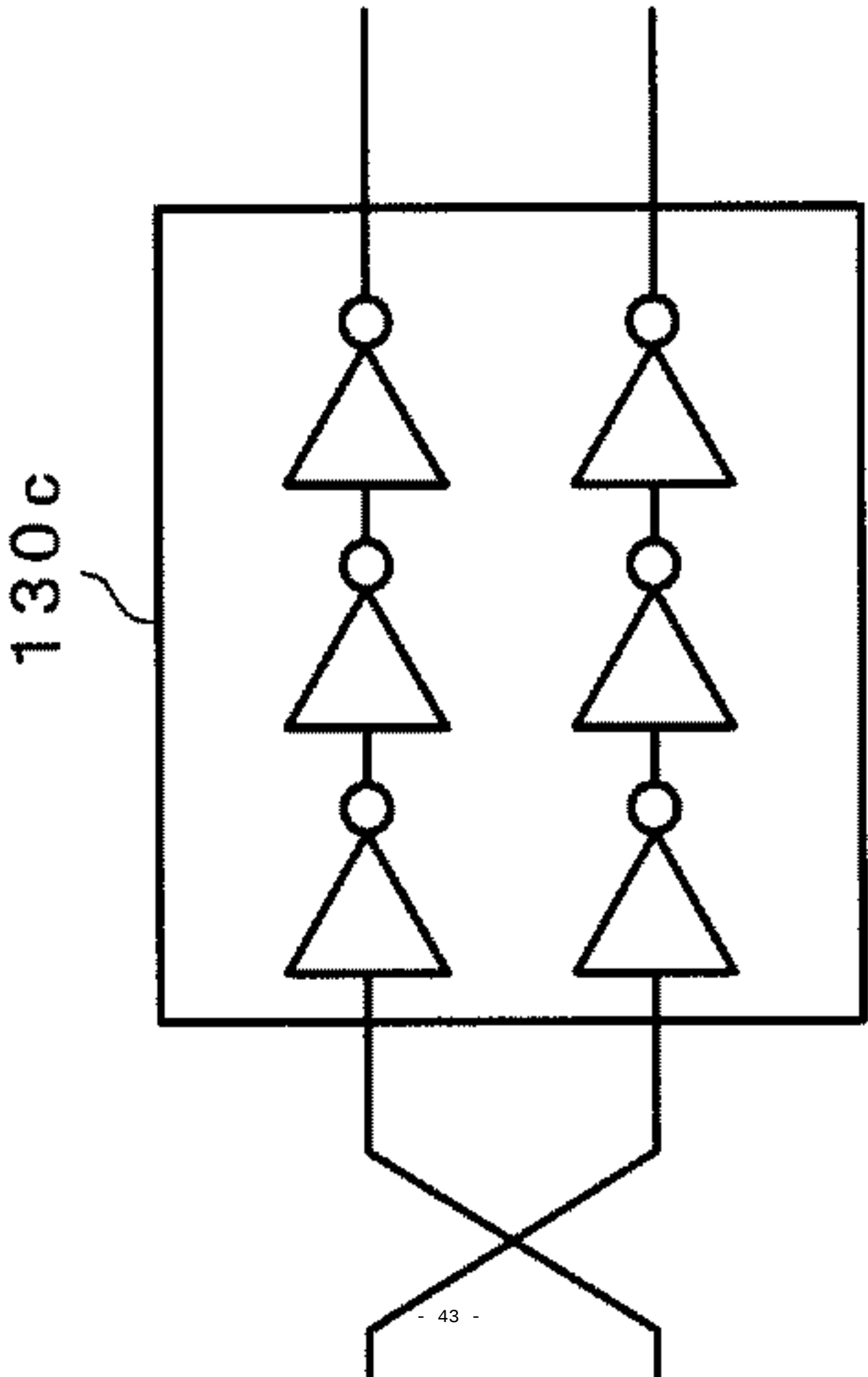


27

130c

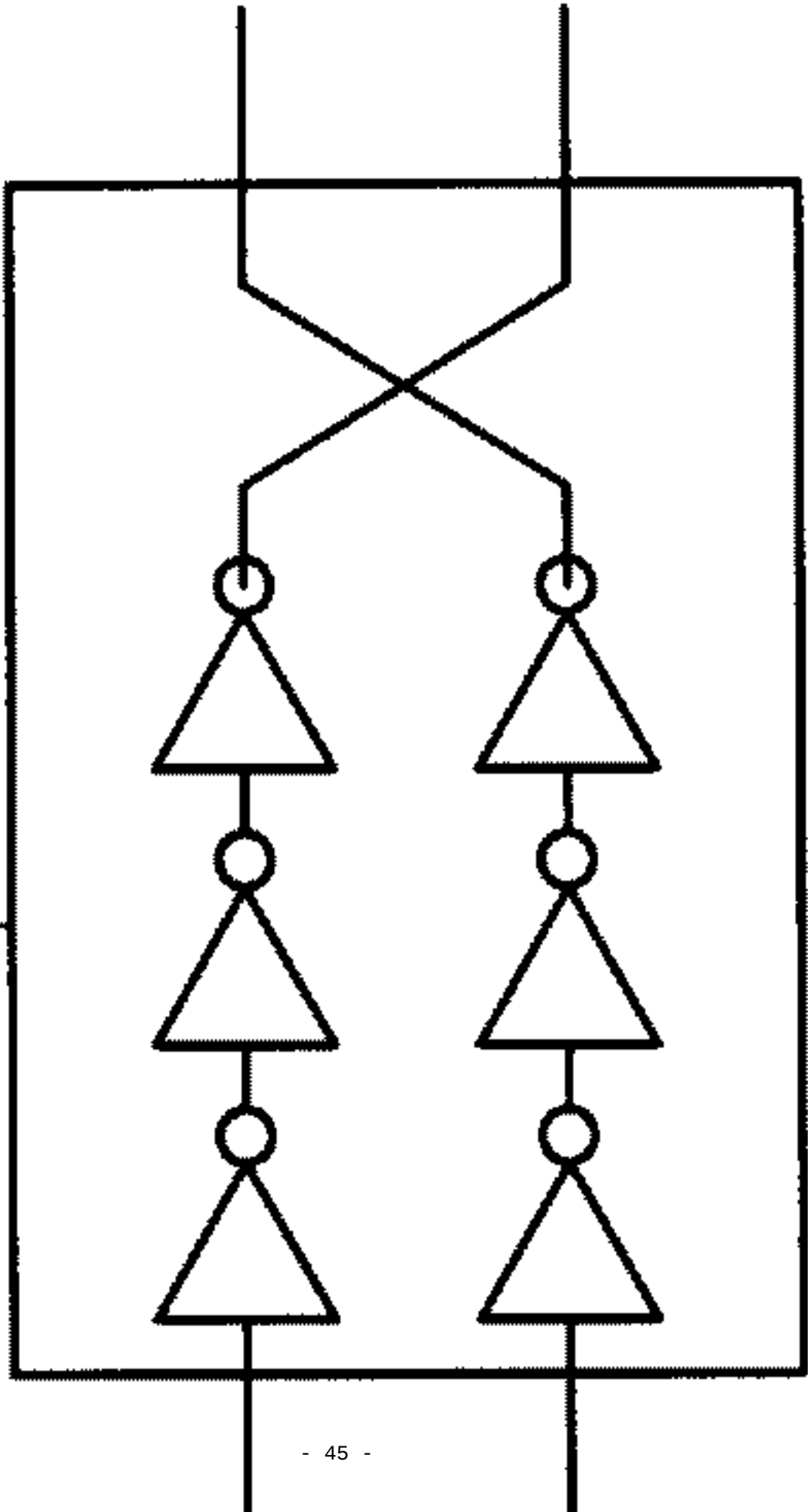


28

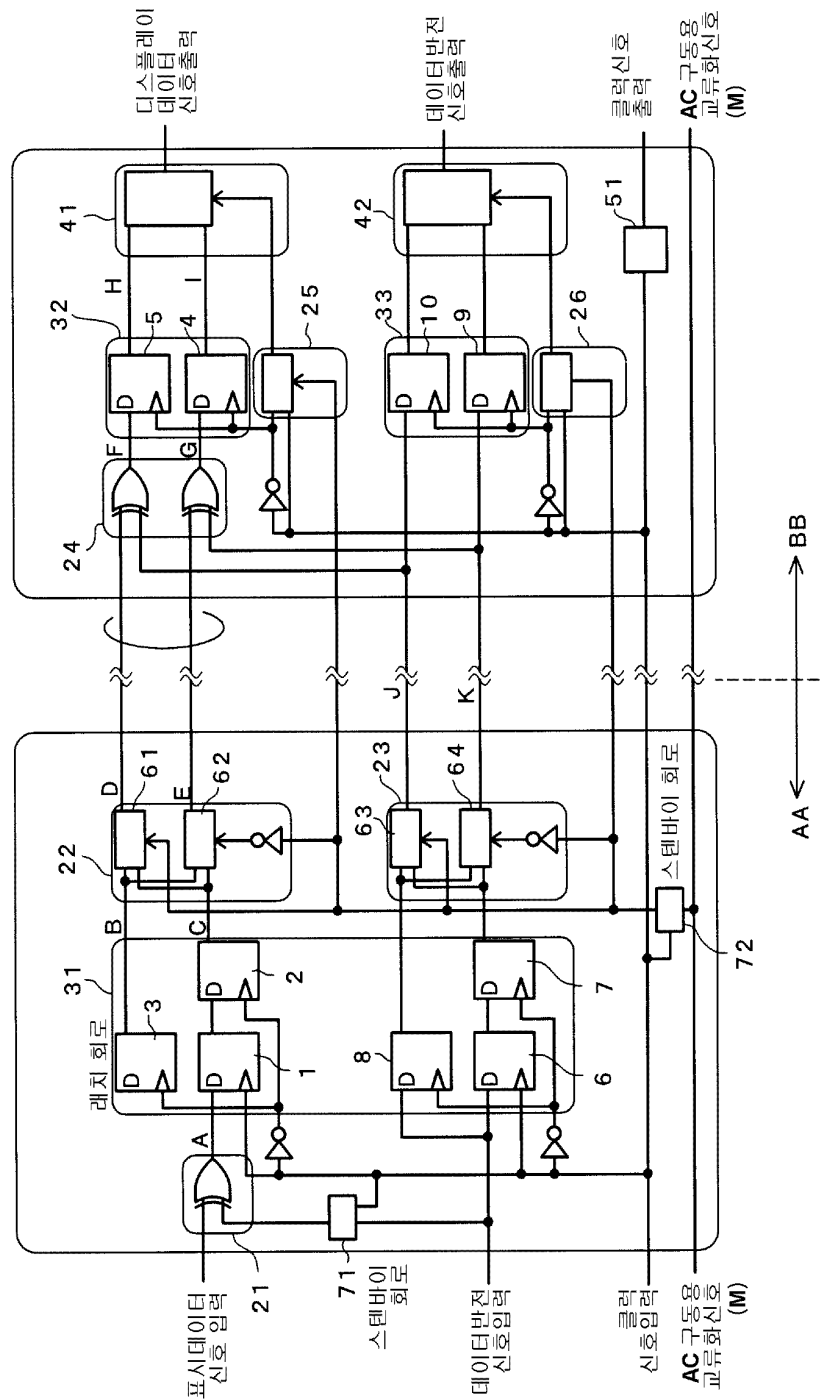


29

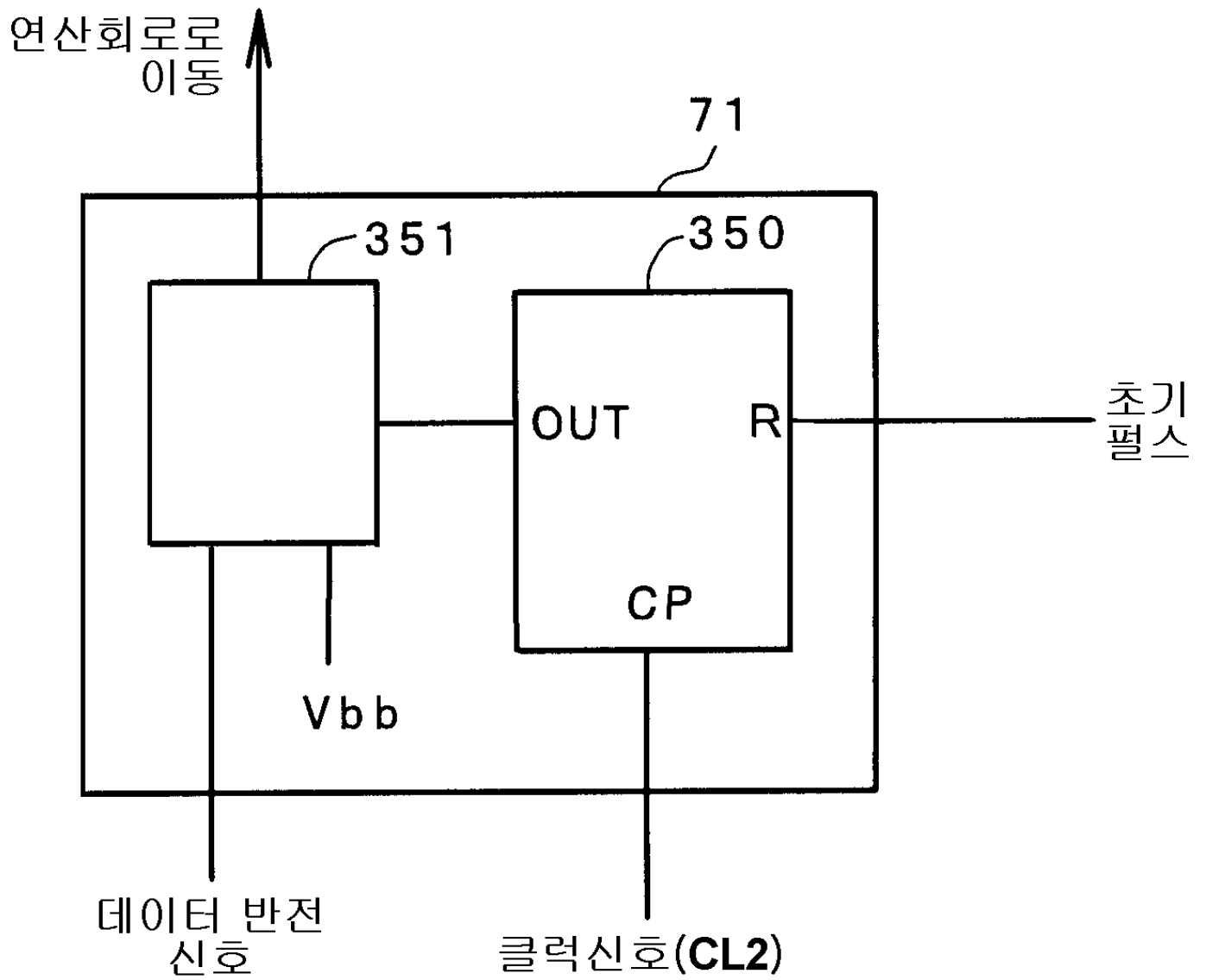
130c



30

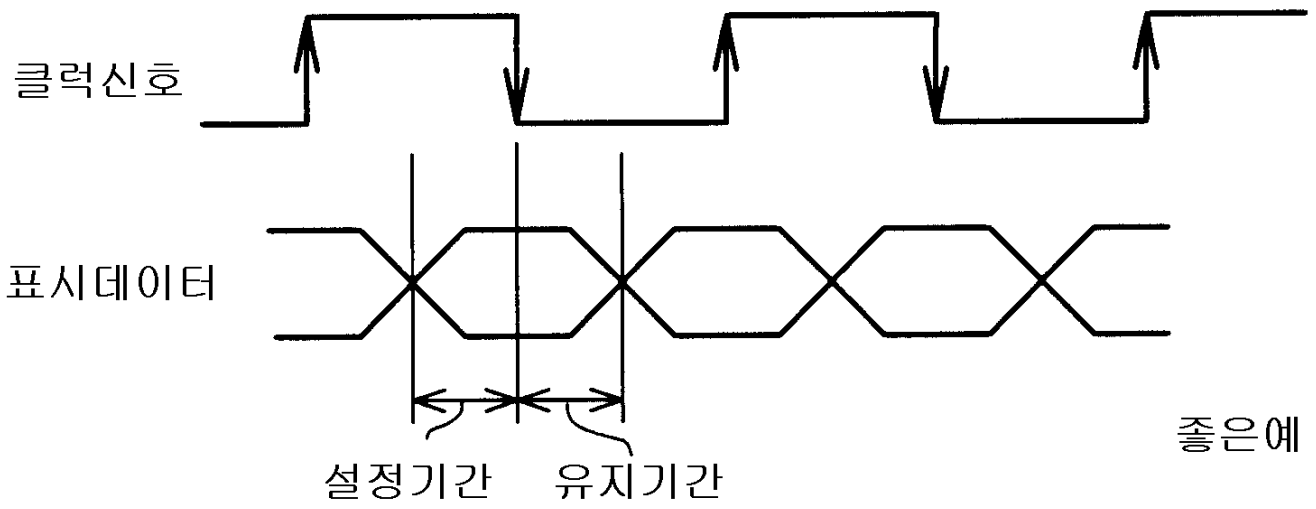


31

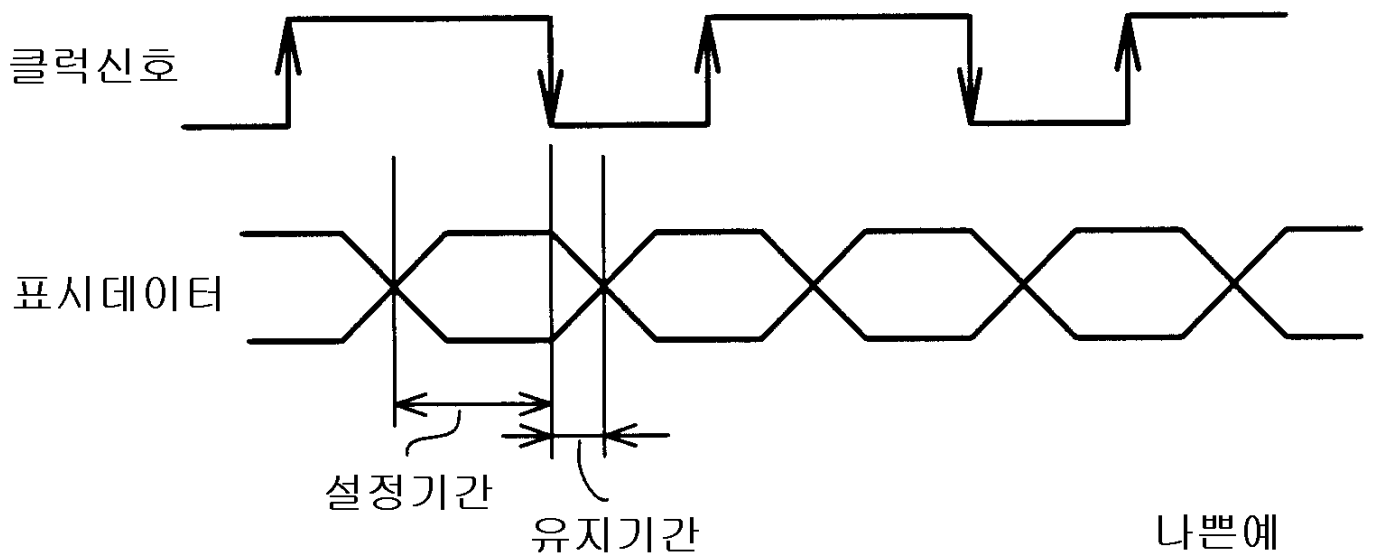


32

(A)



(B)



专利名称(译)	液晶显示器		
公开(公告)号	KR1020020003275A	公开(公告)日	2002-01-12
申请号	KR1020010027111	申请日	2001-05-18
[标]申请(专利权)人(译)	日立HITACHI SEISAKUSHODBA 日立器件工程株式会社		
申请(专利权)人(译)	株式会社日立制作所 히타치디바이스엔지니어링가부시키키가이샤		
当前申请(专利权)人(译)	株式会社日立制作所 히타치디바이스엔지니어링가부시키키가이샤		
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IPC分类号	G09G3/36 G09G3/20 G09G5/18 H04N5/66 G02F1/133		
CPC分类号	G09G5/18 G09G3/2011 G09G3/3688 G09G2370/08		
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优先权	2000146603 2000-05-18 JP		
其他公开文献	KR100424426B1		
外部链接	Espacenet		

摘要(译)

本发明涉及一种液晶显示器，该液晶显示器可以补偿输入到液晶驱动电路的时钟信号的占空比的变化，并且通常可以实现图像信号的输入并提高显示质量，并且它包括液晶显示装置和液晶驱动电路。液晶驱动电路是从内部时钟信号的第一级切换到第二级切换到第一级的定时的输入图像信号，或者可以参考液晶驱动电路的第二级的液晶驱动电路。时钟信号选择用于驱动液晶显示装置的电压，从输入到总线的总线中的输入图像信号，并包括外部时钟信号的第一电平周期和第二电平周期，其中内部时钟信号是通过时钟补偿电路向液晶驱动电路输入相应的预定值。

