

(19)
(12)

(KR)
(B1)

(51) 。 Int. Cl. ⁶
G09G 3/36

(45)
(11)
(24)

2001 10 26
10 - 0296203
2001 05 08

(21) 10 - 1998 - 0022460
(22) 1998 06 16

(65) 1999 - 0007004
(43) 1999 01 25

(30) 9 - 172567 1997 06 27 (JP)

(73) 가 가
가 가
가 22 22

(72) 632 - 4 - - 2613 - 1
630 - 0224 - 5 - 1 - 2 - 303
635 - 0818 - - 107 - 4

(74)

:

(54)

(31) , 8 (31a 31h) , 가
D , 4 (SRA SRD) , SRA, SRB, SRC SR
가 . , 가

- 1 , .
- 2 , 1 가 .
- 3 , 1 .
- 4 , 1 .
- 5 , 1 , 8 8 가
- 6 , 1 , 8 가
- 7 , 1 , 8 4 가
- 8 , 1 , 4 가
- 9a 9b , 7 , 1 가 .
- 10 , , .
- 11 , 10 .
- 12 , , .
- 13 , 12 , 8 8 가
- 14 , 12 , 8 가
- 15 12 , 8 4 가
- 16 , 12 , 4 가
- 17 , 15 , 12 가 .
- 18 , .

19 , 18

20 , 2 2

21 , 20

MOS

(, TFT)

TFT

가

가
가

TFT

18 ,

2

18 ,

(101) (S₁ S_N) (G₁ G_N)
 (102) (S₁ S_N) (G₁ G_N)
 (102)가 (102)가 (103)가 (104)가
 (102) (S_n)(1 ≤ n ≤ N) (G_m)(1 ≤ m ≤ M)
 1 (120)가 (120) 2 (120)
 (S_n) (G_m)
 (S_n) 가 (D1, D2, ...) 가 (20a) ,
 (20b) (20c) (20b) ,

(103) , 18 (S₁ S_N) 가 (video , wid
 2 (131a~131b), (131a 131b) (S₁ S_N)
 (132) , (132) 2
 (SRa, SRb)

(S₁ S_{N-1}) (131a) (Video I)가 가
 (S₂ S_N) (131b) (Video II)가 가 (132)
 (131a, 131b) (Video I, Video II)

2 SRa, SRb (S₁ S_N) SRa SRb
 (S₁ S_{N-1}) (132) () , SRa SRb
 (S₂ S_N) (132) .
 (103) 가 (101) .
 19 18 (103) . 18 19 ,
 (103) .
 2 (SRa, SRb) , 19 SP .
 SRa (ø A, /ø A) , SRb (ø B, /ø B)
 (ø A) (ø B) 1/4 (ø A, /ø A, ø B, /ø B)
 t₀ 가 .
 , 2 (SRa, SRb) t₀
 (132) .
 2 (131a, 131b) (Video) t₀
 (D1, D2, ...) 2t₀ (Video I, video II)가 (Vi
 deo I, Video II) .
 , (SRa, SRb) 1 2 (132)
 (131a, 131b) , 19 (Video I, Video II) (D
 1, D2, ...) (132) (SRa, SRb)
 , (SRa, SRb) 1 1 (132)가 4t₀
 .
 (132)가 , (Video I, Video II) , (S₁ S_N)
 (132) 2 (S₁ S_N)
 (132) (131a, 131b) , 2 (S₁ S_N)
 2 (S₁ S_N) (132) 2t₀ , 2t₀ (Vi
 deo I, Video I
 I)가 .
 가 , (S₁ S_N) t₀ (D1, D2, ...) .
 , (Video) 가 (Video I, Video II) 2
 0 . 20 , .
 t₀ (Video)가 , (Video) A/D ,
 A/D (141) () (142)가 (142)
 가 , (Video)
 143c)가 (142) (142) 2 (143b, (143b,
 , (143c) (143b) D/A (144b) (145b)가
 , (145b, 145c) D/A (144c) (145c)가
 Video II) (Video I, Video II) 2 (Video I,
 (146)가 .

21

21

(Video)가 A/D (141) , A/D (141) , (Vid
eo) A/D , 21 , t₀ , (D1, D2, ...)
A/D (141) (142)

(143b, 143c) , 2 (143b, 143c) . 2
t₀ (CKb, CKc) (D1, D2, ...)가
t₀ 2 (143b)
(D1, D3, ...)가 , (143c) (D2, D4, ...)
가

2 (143b, 143c) , D/A (144b, 144c) . D/A
(144b, 144c) (CKd, CKe) , (D1, D2, ...)가 t₀
(145b, 145c)

가 (Video I, Video II) .
, 2 (SRa, SRb) 2 (131a, 131b)
(18), , 2 (Video I, Vide
o II) , (2) (143b, 143c), D/A (1
44b, 144c), (145b, 145c)가 (20).

(SRa, SRb) , 가
(∅ A, /∅ A, ∅ B, /∅ B)

(∅ A, /∅ A, ∅ B, /∅ B)

가 , 2 가 ,
1 , D/A 가 , 1 ,
가 가 , 가 ,
가 가 ;

가 ,

graphics array)

1024 x 768 XGA(extended
NTSC(National Television Systems Committee)

가

가,

1

가

가

가

가

가

가

가

가

가

가

가

1

1

가

1

1

가

2

2

3

3

가

4

4

(1 4)

가

가
가

[1]

1
(S_1, S_N)
(G_1, G_M)
(1) (S_1, S_N) (2)가 (2)가 (S_1, S_N)
(3)가 (G_1, G_M) (G_1, G_M)
(S_n) ($1 \leq n \leq N$) (20)가 (1) (3) (4) (S_1, S_N)
가 (20) (G_m) ($1 \leq m \leq M$) (2) (20)
(capacitor) (20b), (20a), (S_n) 가 가 (20c)

(3), 1 (S_1, S_N) 8
(31a-31h) (S_1, S_N) 가 31 (S_1, S_N). (31a-31h) (S
1, S_N) 2 (S_1, S_N) 4 N (33), (33)
SRA, SRB, SRC SRD

(S_{1+8k}) ($k=0, 1, 2, \dots$) (31a), (S_{2+8k}) ($k=0, 1, 2, \dots$) (3
1b), (S_{3+8k}) ($k=0, 1, 2, \dots$) (31c), (S_{4+8k}) ($k=0, 1, 2, \dots$) (
31d) (S_{5+8k}) ($k=0, 1, 2, \dots$) (31e), (S_{6+8k})
($k=0, 1, 2, \dots$) (31f), (S_{7+8k}) ($k=0, 1, 2, \dots$) (31g), (S_{8+8k})
($k=0, 1, 2, \dots$) (31h)

1 (33), 3, 2 (31a-31b, 31c-31d, 31e-31f, 31g-31h), 31
g 31h), 2 (S_n, S_{N+1}) 2 (32) , 3
, 2 (31a, 31b) (32) (31a-31h)
(S_1, S_N) (31a-31h)

4 (SRA, SRD) 2 (S_1, S_N) (33)
(33) (SRA, SRB, SRC, SRD)
가 (SRA, SRD), (33) 2 (32)

4 (SRA SRD) , 1 , 2
 (36a, 36b) ,

(35)

4 (SRA SRD) , 4
 1 6 (10 15) (10, 12, 14, 15) (,
 CLK) (/CLK)가 (10, 12, 14, 15)
 (, 1) 1
 (S_n, S_{N+1}) , 1 , 4 (SRA SRD)가 , 2
 N/8 가 (32) (SRA SRD)

o') , 가 가 (Video) (Vide

1) , 5 , (Video) , 8 (31a
 31h) (Video)

5 , 8 (31a 31h) , (Video)
 8 (Video 1 Video 8) (SRA)
 MHz (ø A, /ø A) , (SRB) MHz (ø B, /
 ø B) , (SRC) MHz (ø C, /ø C) , (SRD)
 MHz (ø D, /ø D) , , 4 (SRA SRD)
 (SPA SPD)

6 (ø A, /ø A, ø B, /ø B, ø C, /ø C, ø D, /ø D) (SPA SPD)
 t₀ (ø A, , ø B, ø C, ø D) 1/4 (Video)
 t₀ (SPA SPD)

t₀ (ø A, /ø A, ø B, /ø B, ø C, /ø C, ø D, /ø D) , 4 (SRA SRD)
 2 t₀ (32)가 4t₀ 2 (31) , (33)
 (S₁ S_N) 2 (31)

2) , 7 , (Video')

(Video') (Video 1' Video 4') 4
 , 7 , 8 (31a 31h) 2 (31a 3
 1e) 4 (31)
 a 31e) (Video 1') , (31b, 31f) (Video 2') , (31c, 31g)
 (Video 3') , (31d, 31h) (Video 4')

(SRC) (SRA) (SRB) ($\emptyset A', / \emptyset A'$) , ($\emptyset C',$
 $/ \emptyset C'$) (SRD) ($\emptyset A', / \emptyset A'$) 2t₀ (SPA')
 (8). (SRC) (SRB) (SPA') 2t₀'
 (SPC')

t₀' (Viedo') ()
 ($\emptyset A', / \emptyset A'$) ($\emptyset A, / \emptyset A$) 가 .

(SRA) ($\emptyset A', / \emptyset A', \emptyset C', / \emptyset C'$) , 4 (SRA SRD) ,
 (SRB)가 (SRC) (SRD)가
 (SRA, SRB) (SRC, SRD) 2t₀'
 (33) (8).

4 , 2 (33)가 , 9a
 (31a 31d) 가 , 4 (31a 31d) 4 (Video 1' Video 4')
 9b , 4 (32) (37)
 4

(Video') 4 (Video 1' Video 4')
 , D/A , 4 가

(31) , (31) ,
 , 가 가 가

(SRD) (SRA) (3) (SRB) (SRA SRD)
 (SPA) ($\emptyset A, / \emptyset A$) (SPC) ($\emptyset C, / \emptyset C$) (SRC)

(SRA SRD)
 (31a 31h)

가

가 가 F (8), P (4) , F, P, X
 2), X(4)
 가 F ≧ P ≧ 1, F ≧ X ≧ 1

, F, P, X 2 j (j ≧ 2), 2 h (h ≧ 1) 3 , X=F/P

(3) (4)가 (1)

[2]

10 11

1 (3) 4 (SRA
SRD) 2 (36a, 36b) (35) 8 (31a 31h)
20 가

(1)(40)가 , 10 , 8 (31a 31h)

11 (40) (40) 8
(31a 31h) 8 (SW1 SW8) (3)
(4)가 (1) (10).

(SW1) ON (31a) (31e) (SW2) ON
(31b) (31f) (SW3) ON (31c) (31g)
(SW4) ON (31d) (31h)

(SW5 SW8) (31a 31h) , ON (31f
31h) (41) , OFF (31f 31h)
(SW3) (41) (SW1) (SW5), (SW2) (SW6),
(SW7), (SW4) (SW8)가

(40) (SW1 SW8) (SELECT)
, (SELECT)가 " High" , (SW1 SW4)가 ON , (SW5 SW8)가
OFF , 8 (31a 31h) 4 (SELECT)가 " Low"
, (SW1 SW4)가 OFF , (SW5 SW8)가 ON , 8 (31a 31h)

(40) R ,
(8 (31a 31h)) , (S
ELECT) (42)

(40) 1
, 가 (SELECT) (40)
8 (31a 31h) , (3) 1
7

4, 8 (31a 31h) (40),
 (SRA SRD) (36a, 36b) (35),
 (3)

[3]

2 12 17 1

12

12

12 1 (3) 4
 (SRA SRD), 4 (28a S8d) L[(S) N 2](28a S8
 d), (28a S8d) (SCA(SCA₁ SCA_L) SCD(SCD₁ SCD_L),
] (30)가

(39) (28a 28d) (30) (28a 28d) 가
 SCA(SCA₁ SCA_L) SCD(SCD₁ SCD_L)

(30) 4 (28a 28d) 4 N/8
 N/2 (SSCC₁ SSCC_{N/8}) (30) (SSCA₁ SSCA_{N/8}), (SSCB₁ SSCB_{N/8})
 N/8), (SSCC₁ SSCC_{N/8}) (SSCD₁ SSCD_{N/8}) 가 가 (Video) (Vide
 o')

1) 13 (31a 31h) (Video) (Video)가 8

13 (28) 8 (31a 31h) 8 (Video1 Video8)
 (ø A) (28b) MHz (ø B)
 (28c) MHz (ø C) (28d) MH
 z (ø D)

14 (ø A, /ø B, ø C, /ø D) (ø A, /ø B, ø C, /ø D)
 1/4 (Video) t₀()

(ø A, /ø B, ø C, /ø D) 4 (28a 28d) 14
 (ø AD ø DD)가 (SCA ACD) (30)

(30) t₀ (33) (1
 4), (33) 2 (S₁ S_N) 2 (32)(3)가 4t₀ 2

2) , 15 (Video')

(Video') (Video 1' Video 4') 4
 15 , 8 (31a 31h) 2 (31a, 31e), (31b 31f), (31c 31g) (31d 31h) 4
 (31a 31e) (Video 1') , (31b 31f) (Video 2') , (31c 31g) (Video 3') ,
 (31d 31h) (Video 4')

(28c) (28a) (28b) ($\emptyset A'$) ,
 (28d) ($\emptyset A'$) $2t_0'$ ($\emptyset C'$)
 (16). , t_0' (Video') ($\emptyset A, \emptyset C$) (14) 가 ,
) , ($\emptyset A', \emptyset C'$)

($\emptyset A', \emptyset C'$) , (30) SSCA (SSCA₁ SSCA_{N/8}) SSCB (SSCB₁ SSCB_{N/8}) ON , SSCC (SSCC₁ SSCC_{N/8}) SSDD (SSCD₁ SSCD_{N/8}) ON , SSCA SSCB , SS
 CC SSDD 가 $2t_0'$ ON (33)
 (16).

2 (33)가 , , 17
 a 31d) 가 , 4 (31a 31d) 4 (Video 1 4') , 4 (31
 (32) (37)(9b) 4

1 (Video') 4 (Video 1' Video 4')
 , D/A , 4 ,
 , 가
 , 1

가 F (8),
 P (2), X(4) , F, P, X가
 $F \geq P \geq 1, F \geq X \geq 1$ 가 , , F, P, X 2 (j ≥ 2), ,
 2 h (h ≥ 1) 3 , X=F/P

(3) (4)가 (1)

, 8 (31a 31h) (28a 28d) 4
 (39) 2 (40) (4)

가

5.

,

,

가

,

1

,

1

6.

5 , 가 ,

2

7.

6 ,

,

3

8.

5 , 가 ,

4

9.

5 , ,

가 .

10.

,

,

가

,

가

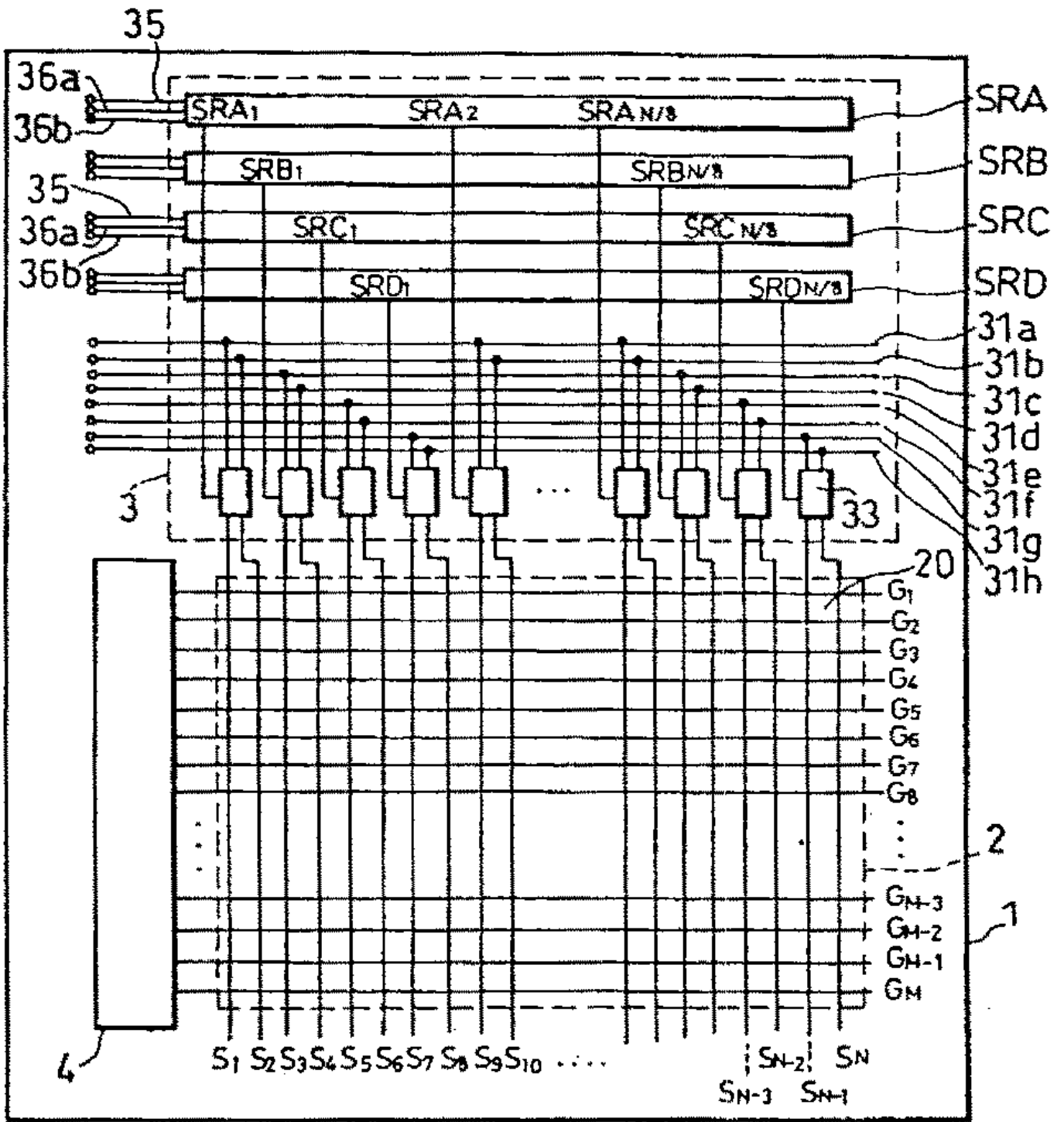
가

11.

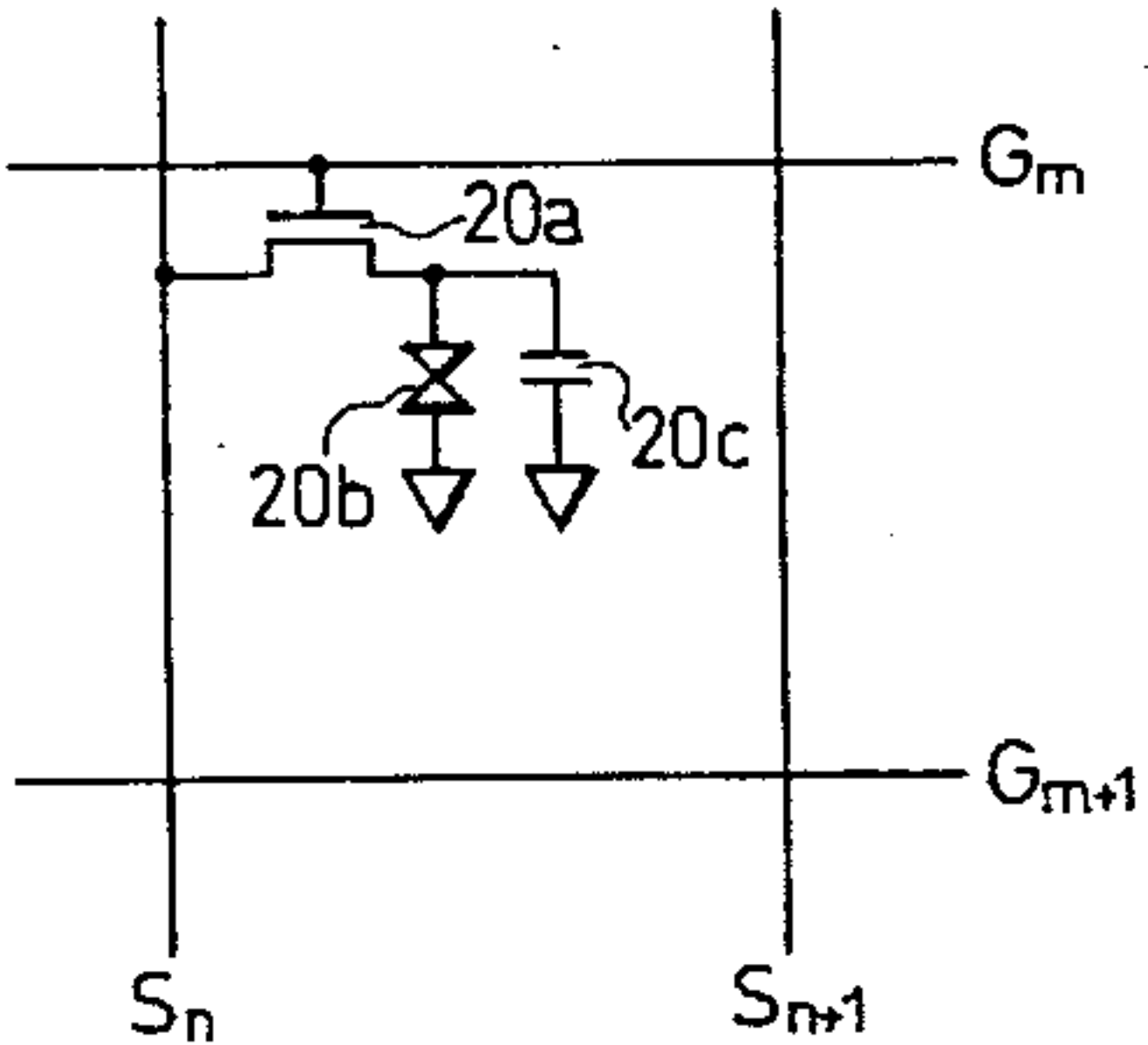
가

1

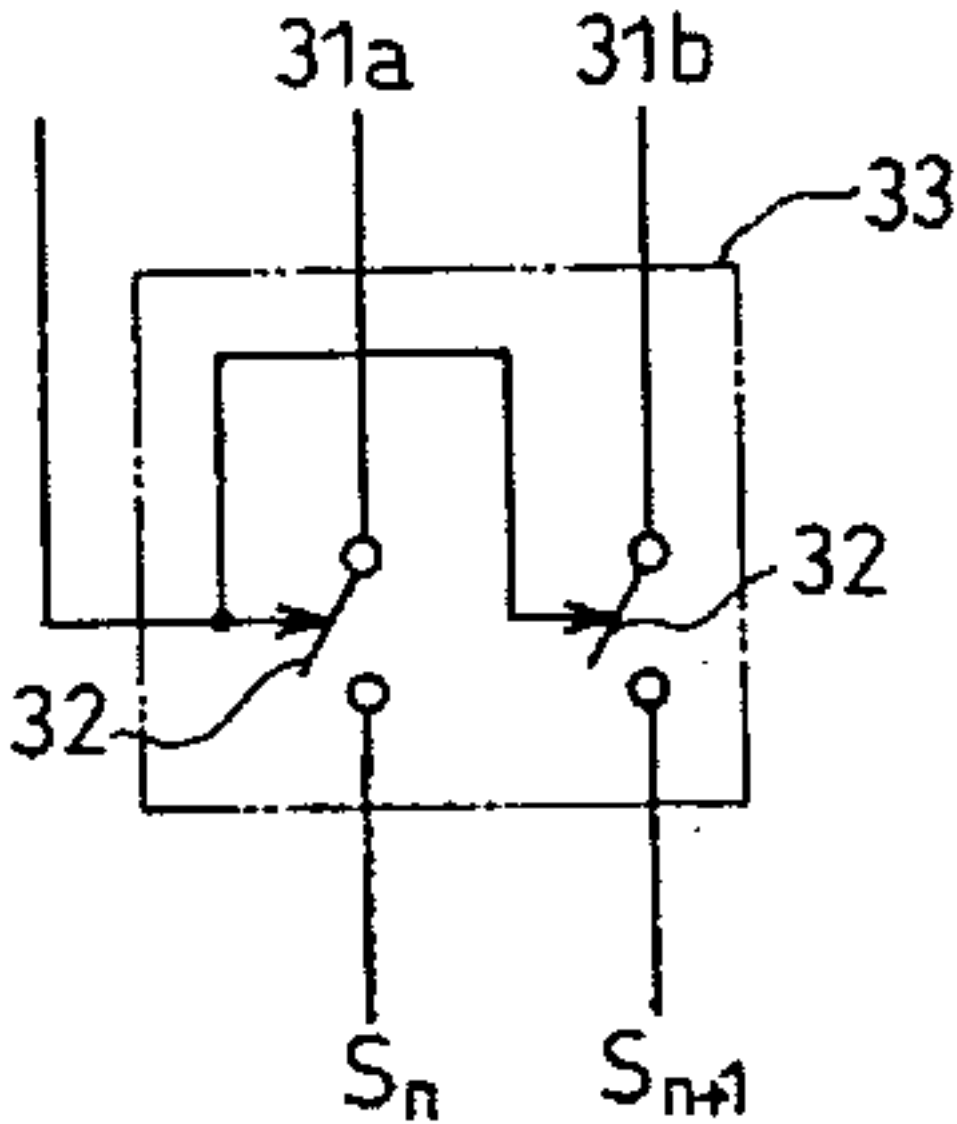
1



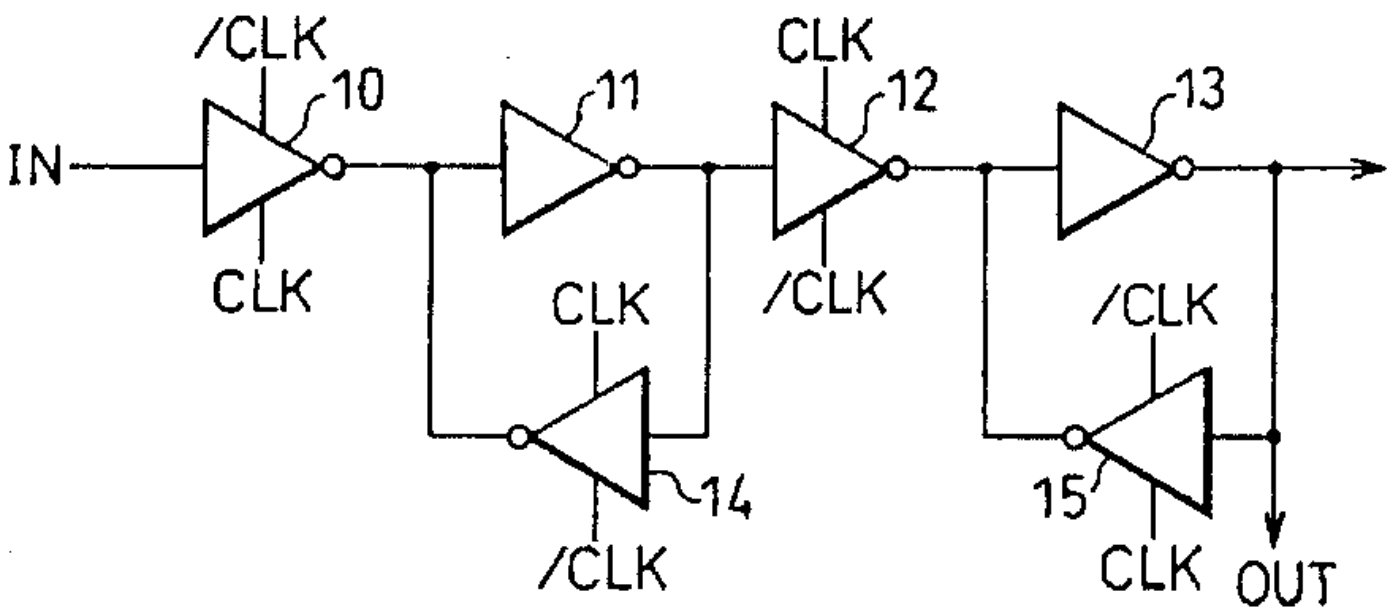
2

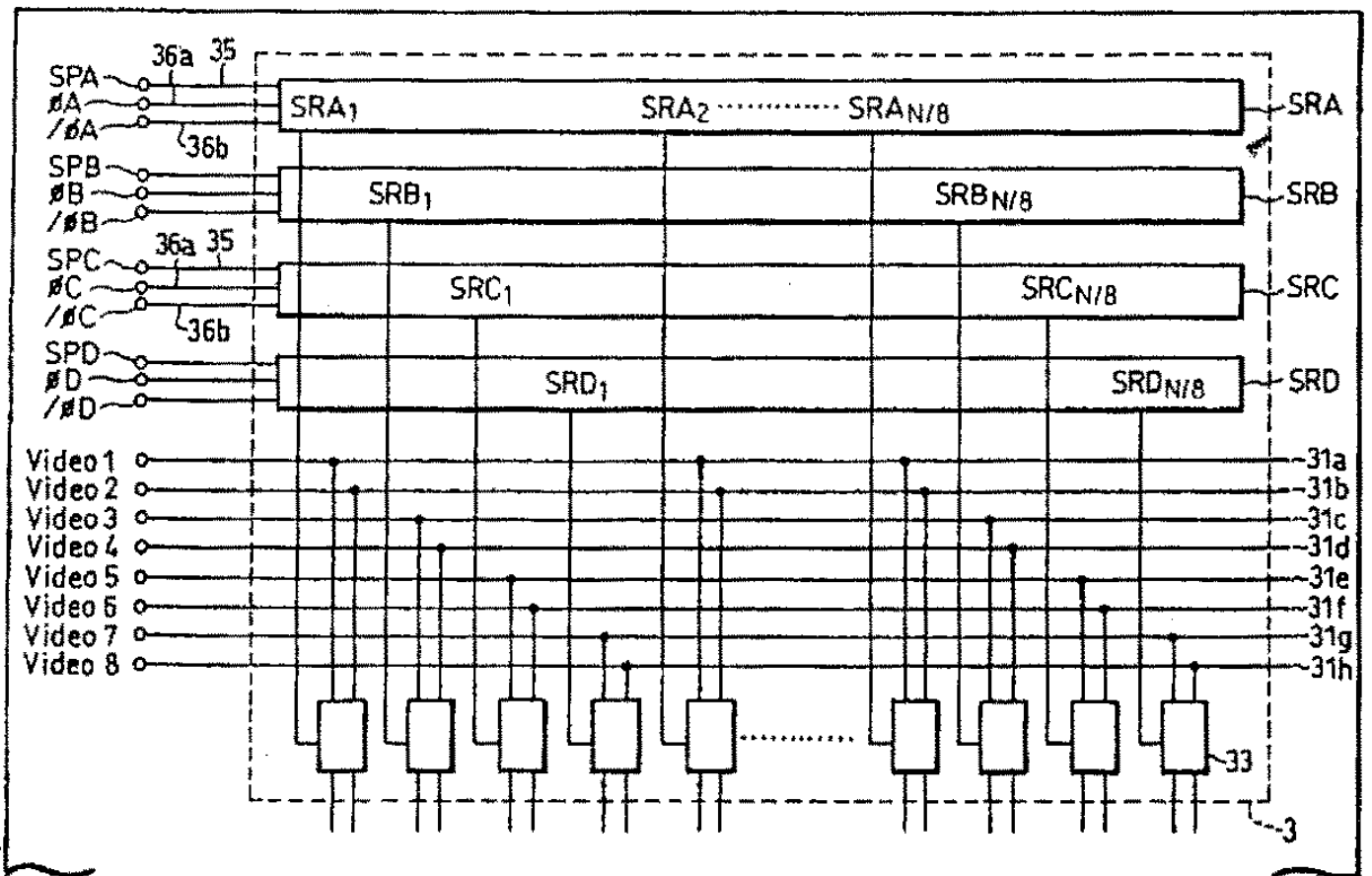


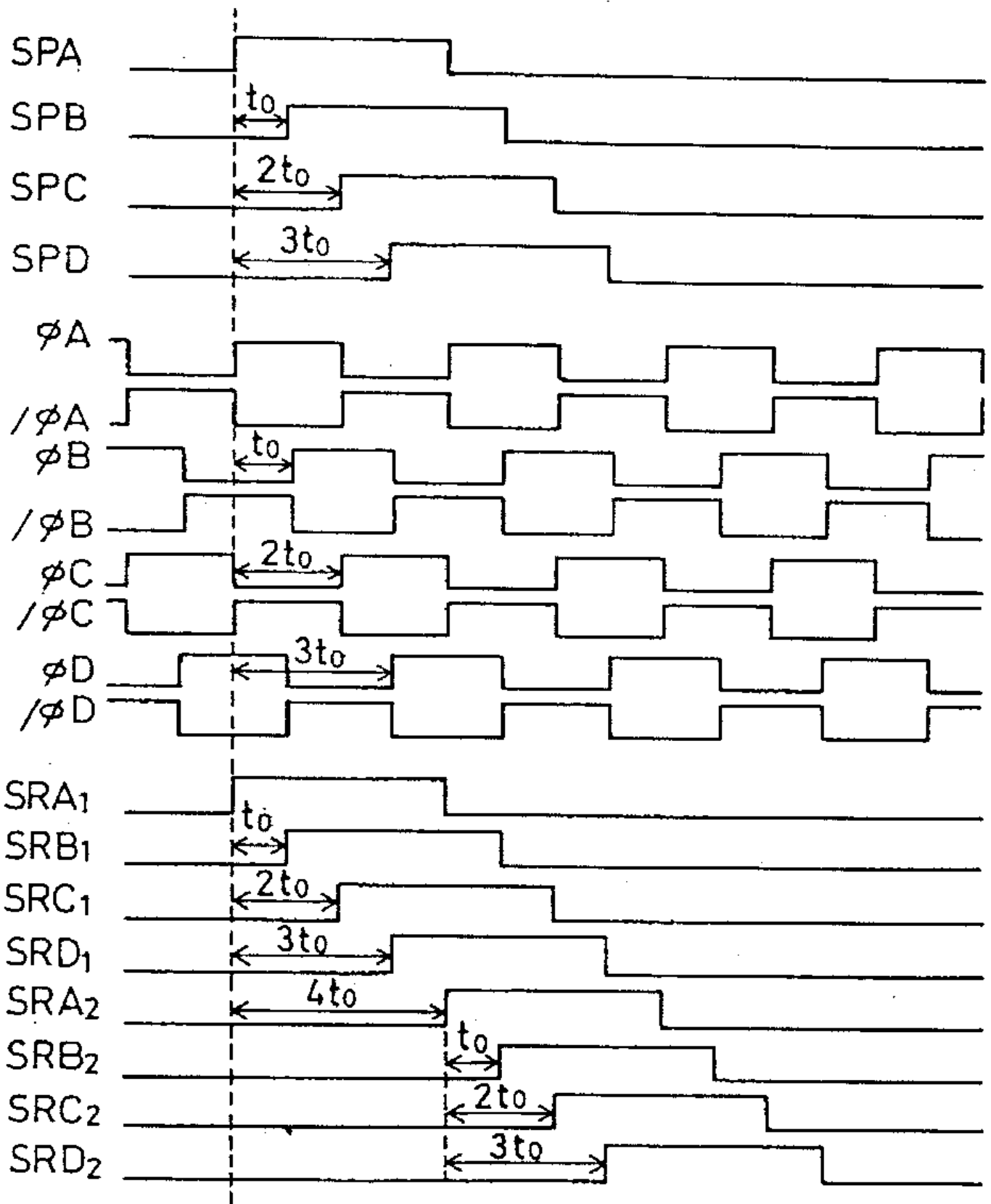
3

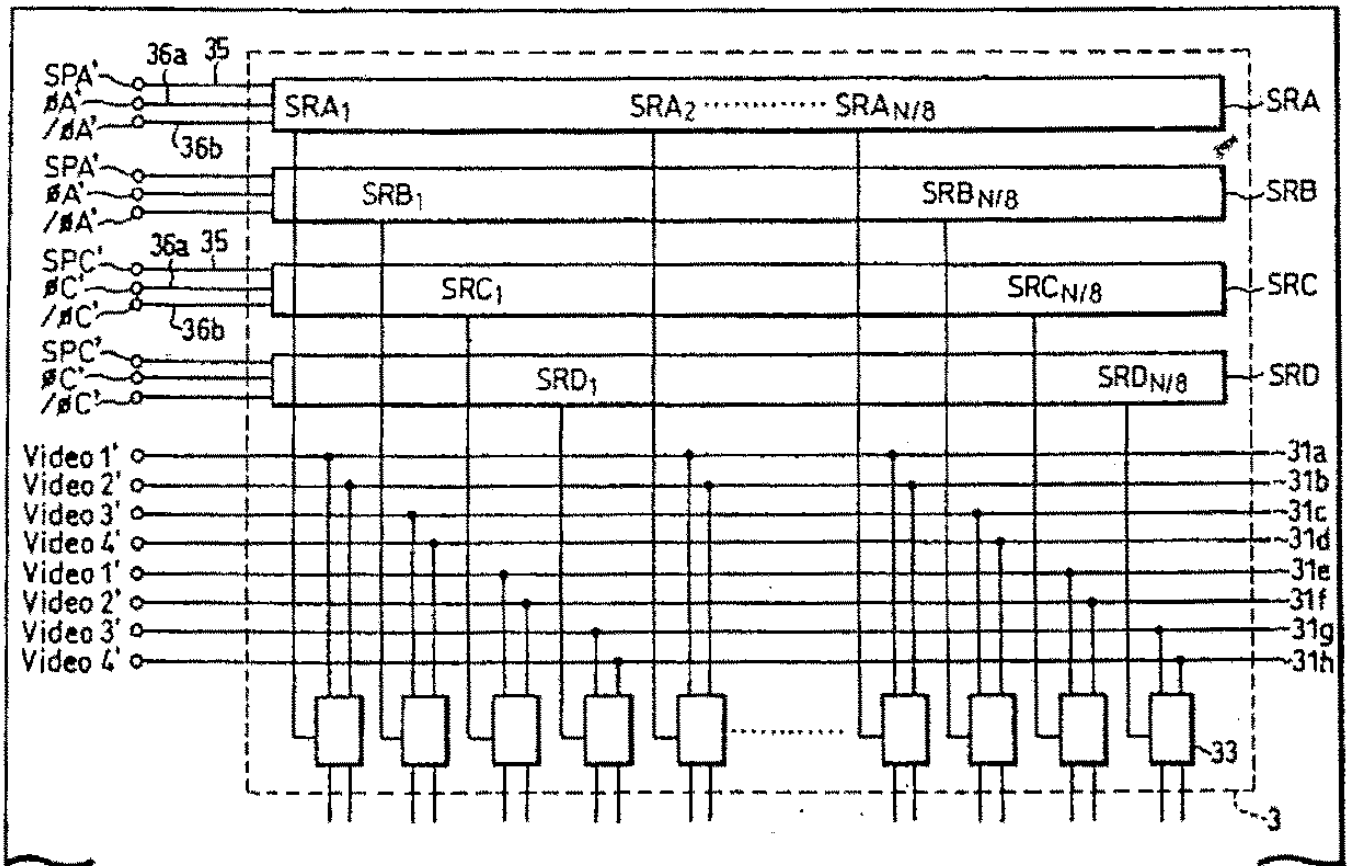


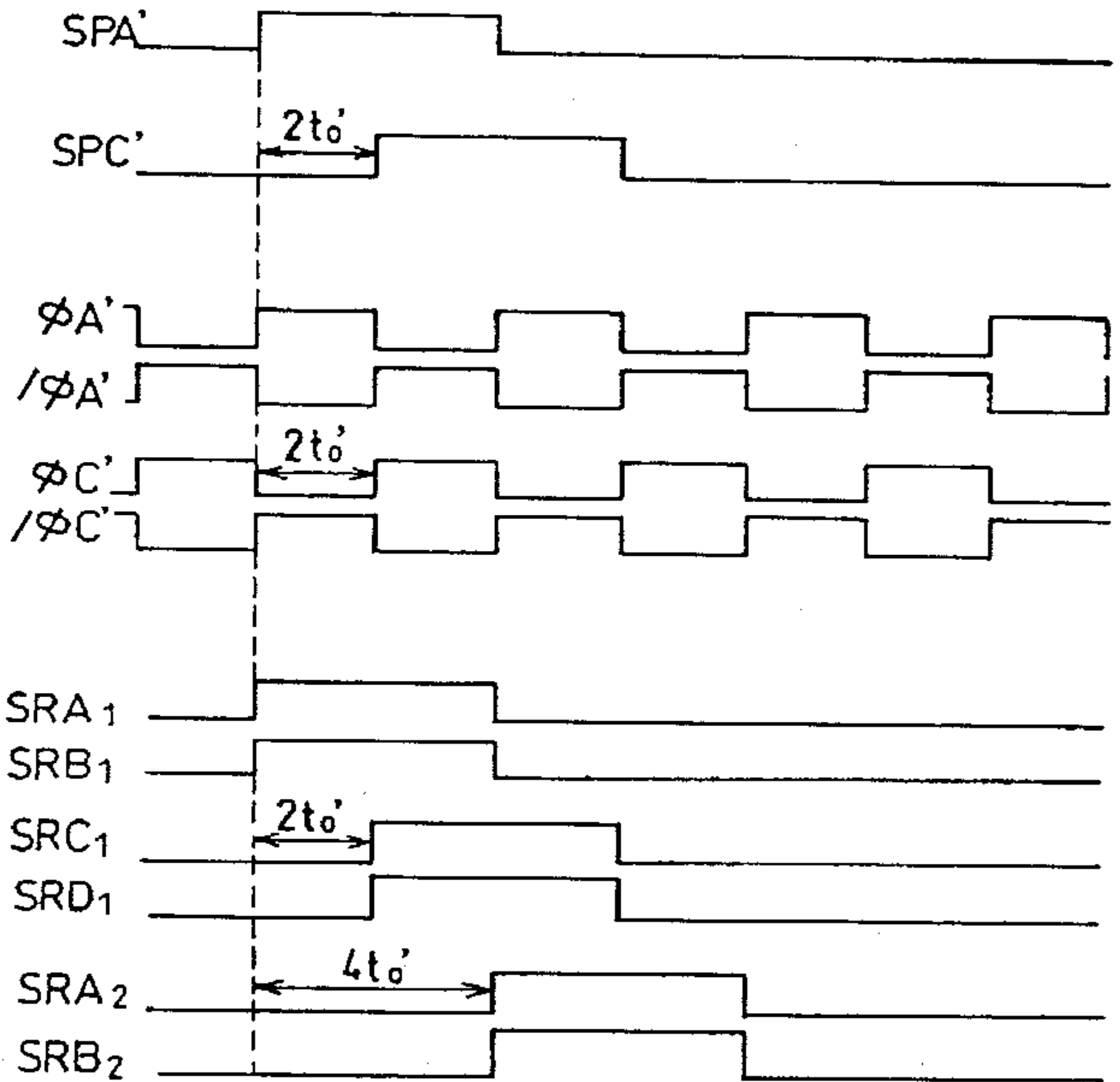
4



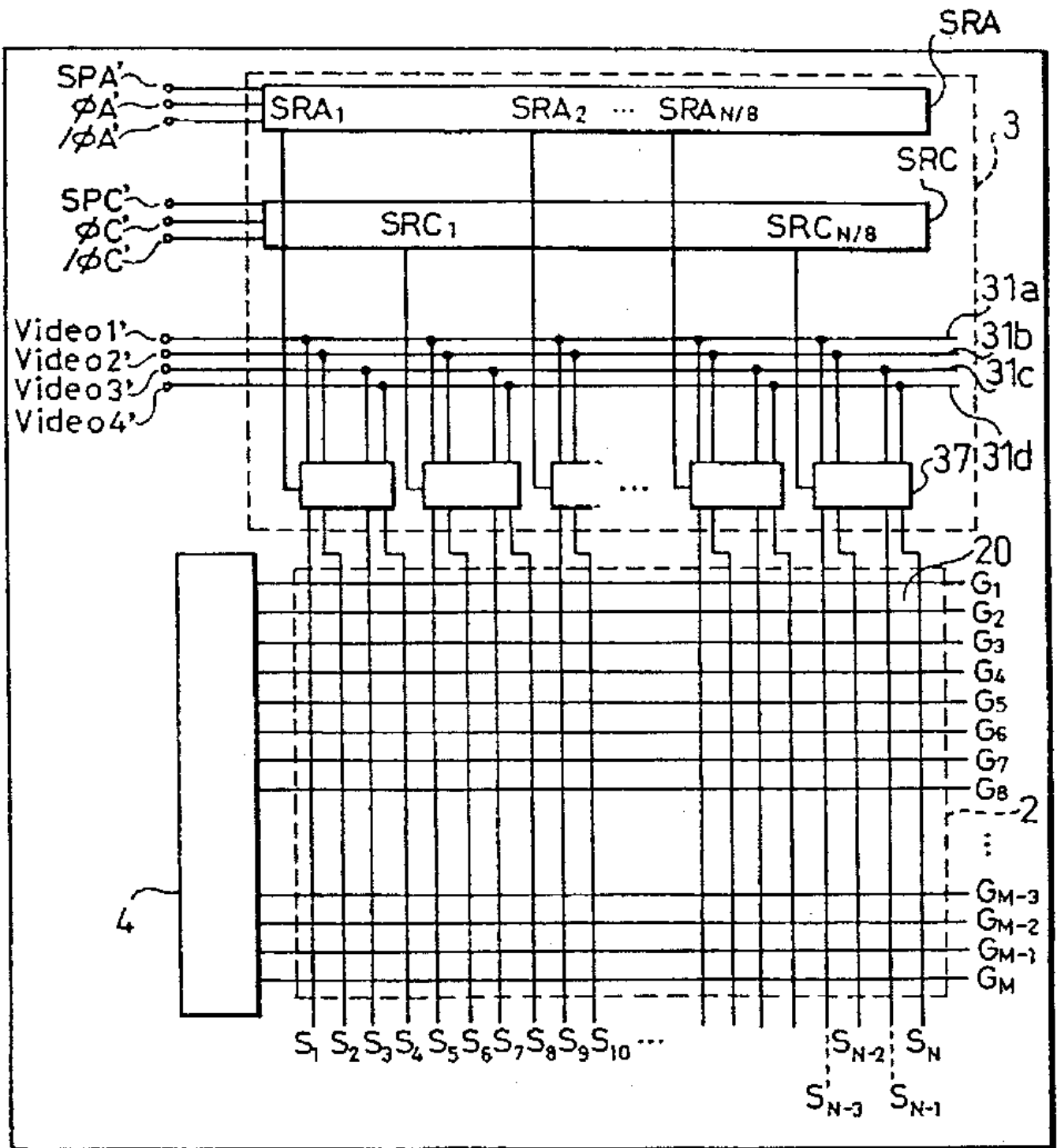




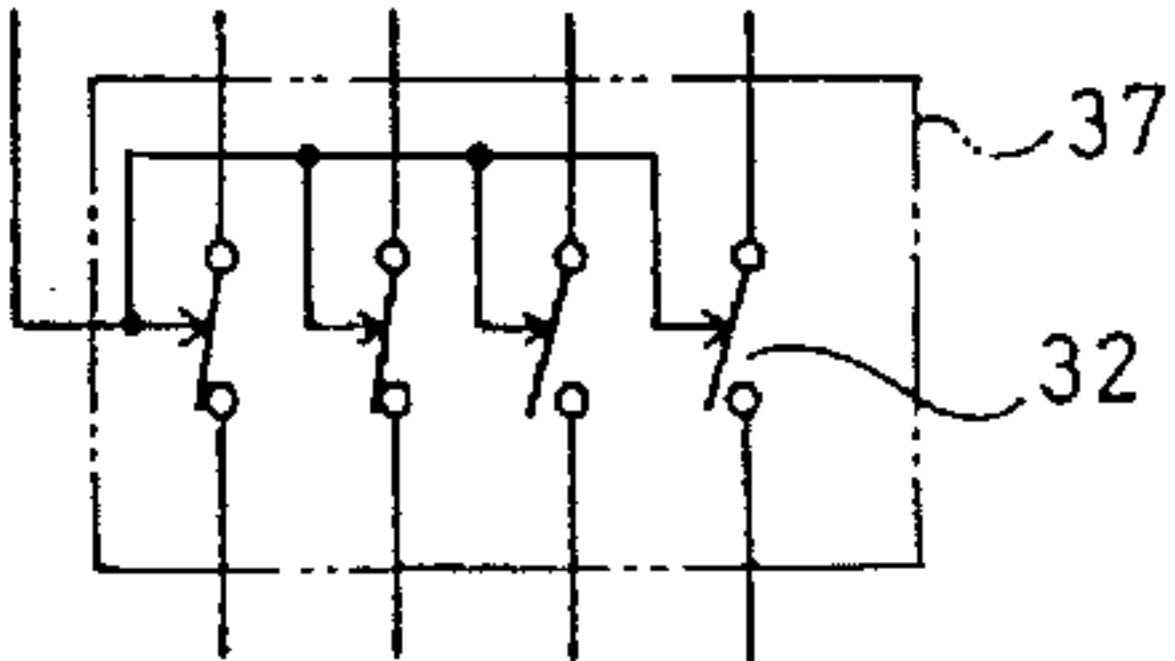


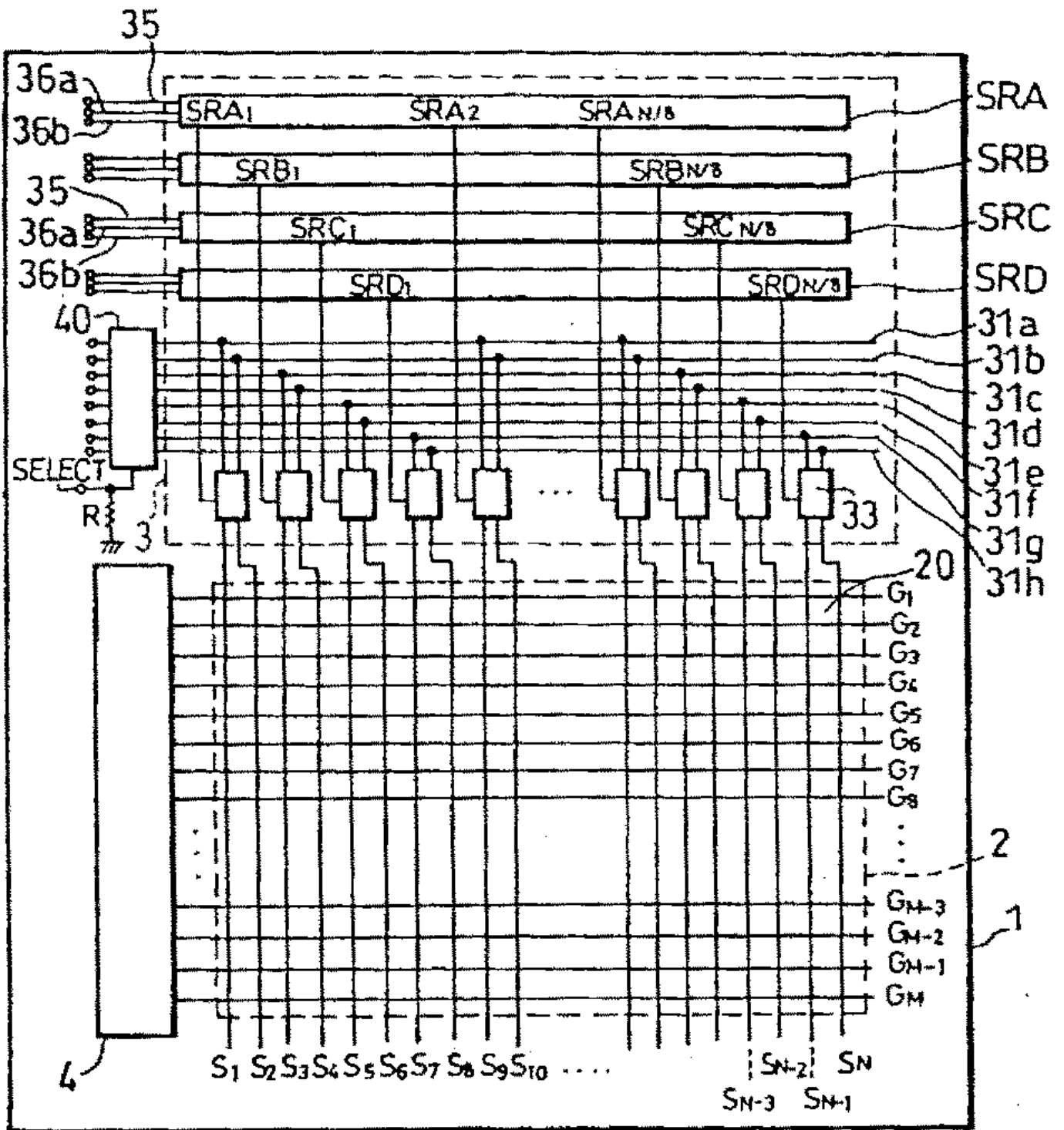


9a



9b





11

