

(19)
(12)

(KR)
(B1)

(51) 。 Int. Cl. 7
G09G 3/36

(45)
(11)
(24)

2003 06 02
10-0386387
2003 05 22

(21) 10-2001-0004019
(22) 2001 01 29

(65) 2001-0100777
(43) 2001 11 14

(30) 2000-20817 2000 01 28 (JP)
2000-87147 2000 03 27 (JP)
2000-304983 2000 10 04 (JP)

(73) 가 가 2 4-1

(72) 가 392-8502 3 3-5 가 가

(74)

:

(54) , ,

, ROM () , 가
(DHr) , (DHr)
, X, Y , (DHr)
, 4 (DHr1 DHr4)
, (Dh) . 가 (Dh) 가 , (Dh) 가

1
2
3
4
5
6 ROM 3
7
8
9
10 2
11
12 ROM
13 R
14 3
15 W-LUT
16 B-LUT
17
18

* *
10 : X 11 : Y
12 : ROM(1 ,) 13 : (1)
14R : (2) 15R : (2)
16R : 가 17R :
103 : () 300 :
301 : 322 : W-LUT()
342 : B-LUT() 324, 344 :
331 334, 351 354 :
DR, DG, DB :
Dref :
DH(Dhr, Dhg, Dhb) : (1)
Dh : (2)
DCLK : (1)
HCLK : (2)
Dx, Dy : X , Y

(Thin Film Transistor:
「TFT」)
()
90 가
가 가 90 가 가
[(normally white mode)
, 가 가
], 가 가 [(白)]가 가
가 [(黑)]가

가 () , ,
 가 , TFT (面内)
 (, 3-18822
).
 (, 5-641
 10).

가 , 가 ,
 가 , 가 ,
 가 ,
 , 1 , 가
 , , 가
 , 1 , 1 , 1 , 가
 , 2 , 1 , 2 , 가
 , 가 , 가 , 가 , 1 ,
 가 , 가 , 1 , 가 , 2 , 가 ,
 , , 가 ,
 , 2 , 가 ,
 가 1 , 1 , 2 , 2 , 1 , 1 ,
 1 , 2 , 2 , 1 , 가 , 가 , 2 ,
 , , 가 , 가
 가 , 3 , 가

<1-2: >

(1102) (1100) (1102) 가 (1104) 4 (1106) 2 (1108) RGB (100R, 100B 100G) (100R, 100B 100G) (VIDr1 VIDr6, VIDg1 VIDg6, VIDb1 VIDb6)가 ;300) R, G, B (100R, 100G, 100B) , RGB (1112) 3 (1112) , R B 90 , G (1114) (100R, 100B, 100G) (1108) , R, G, B

<1-3: >

(302) 3 , (302) , X (10), Y (11), ROM(Read Only Memory;12), (13) (UR, UG, UB) X (10) , (DCLK) X (Dx) , Y (11) , (HCLK) Y (Dy) , X (Dx) Y (Dy) () (Dref) , ROM(12) (1100) , RGB (Dref) , (103) 1024 x 76 8 3 (8 x 6) , (103) 1024 x 76 , RGB) , 가 가 가 1 ()

가 가 가 1 ()

ROM(12) , 3 (Dref) , 3 (Dref) , 5 , 가 () (W) , (Dref) 가 가 ()가 (W) , 가 가 (V1) , 가 가 (V3) , (V4) , 가 가 (V0) , 가 가 (V1, V 2 V3) , (W) (Dref) , (V1, V3) (W) (V2) , 50%가 (V1) , (V1) , 가 가 (V3) (Dref) , (V1, V3) (W) (V0 V4) (Dref) , (W) (V1, V3) 50%가 (V2) ,

(V1), (V2), (V3)

(Dref)

ROM(12), ROM(12), ROM(12), ROM(12)

1, 2, 3, 4, 5, 6, 7, 8, 9

「D」, 「w」, 「R」, 「G」, 「B」, 「c」, 「i, j」, 「b」

「DRc256, 1」, R() (256, 1)

G, Dref, Drefg, B, Drefb, RGB, R, Drefr

(Dref)

(1000), (1100), CCD, (500), (600)

(S), CCD, (500), (1100), (600), (S), (Vs), (V)

(Dref), (1000), (DG', DB'), (V4), R, (DR')

(S), 1, CCD, (500), (Vs), 1, (Vs), 4, 6 x 8

(600), 1, 2, 4

(600), (Dref), (600), (V2)), (V3) 가, 63, R

(Drefr), (DR', DB'), (V4), G, (600), G, (DG')

(Drefg) 가, (DR', DG'), G, (V4)

B, (DB'), (Drefb), (Drefr, Drefg, Drefb)가, (1100), ROM(12)

3, (13), (DH), RGB, (Dref)

(Dref), (13), (DH), (DH)

ref) 가, (Dref), (DH), (DH)

(Va; , V1<Va<V2), (i, j), R, (DH), (DH), DH=(DRwi,

j) · (Va - V1)/(V2 - V1) + (DRci, j) · (V2 - Va)/(V2 - V1)

(13), (DH)가, (; V1), (; V3)

(DH), DHr, DHg, DHb, (UR, UG, UB), (13), RGB

(DR', DG', DB'), DA, (VIDR,

VIDG, VIDB), (UR, UG, UB), (14R), (15R), 가, (16R),

(17R) DA (18R)

(14R), (13), (DHR), 4, (DHR1
DHR4)가
(14R) 8, 「m」
(V1), 「n」 (V3)
(DHR) 1 2 「i, j」 (DHR) 3
「X」 (m+2), DHR1, 128(m+2), (1, 128),
(17R), X (Dx), Y (Dy), (DR')
(17R), X (Dx) Y (Dy)
가 (64, 64) (4), 4 (1, 1), (128, 1), (1, 128), (128, 128) 1
(17R), (DR') 가
(DR') 「m+1」, 2 (DR')가 「m」
1 (DR')가 「n」 「n」
(17R), 4 4
(14R), (14R) (DHR) 4
(DHR1 DHR4)가 (DR')가 「m+1」, X (Dx) Y
(Dy) 가 (64, 64), 8 DHR1, 1(m+1), DHR128, 1(m+1), Dh
r1, 128(m+1), DHR128, 128(m+1) (DHR1 DHR4) (14R)
x) Y 3 (Dy) (15R), 4 (DHR1 DHR4), X (D
h) (DR') (Dh) (Dh) (DHR1 DHR4) (D
, X (Dx) Y (Dy), (15R), 4 (DHR1 DHR4)
, 가 (16R), (DR') (Dh) 가 (VIDR)
, R() , DA (18R) (DR') 가 , G() (DG')
B() (DB') 가 (VIDG,
VIDB)
<1-4: >
(302) 9
, R , B, G 가
(1100) (S1), ROM(12) (Dre
f; Drefr, Drefg, Drefb)가 (S2), (13), (Dref) (Dre
) (DHR, DHg, DHb) (S3), (D
Drefr, Drefg, Drefr), 63 3 (V1, V2, V3) (DHR, DHg, DHb)
(V1) (V3)
(UR, UG, UB)
(DHR, DHg, DHb)가 (DCLK)가 X (10), (HCLK)가 Y
(11), (S4), (DR', DG', DB')가
, X (10) X (Dx) Y (11) Y (Dy)
가 (DR', DG', DB')가,
가 4 (DHR1 DHR4)가, X (Dx) Y
(Dy), (DR') (14R) (S5).
(DHR1 DHR4)가, X (Dx) Y (Dy), (15R)
(S6), (Dh)가 (S7). (Dh) (DR')
가 (16R) 가 (S8), DA (18R), R() (VIDG, VIDB)
VIDR) . G() B() 가 , (VIDG, VIDB)

1, V2, V3) (302) , , 3 (V
(Dref) , (DH)가
) 가 , 4 (Dhr1 Dh)가 , X (Dx) Y (Dy
(Dh)가 . (DR', DG', DB')
가 , (Dh) (DR', DG', DB') , R
) 가 10 G, B , (DR', DG', DB'
(Dh) 4 가 , (DR', DG', DB'
가 , ROM(12) (14R) 가 , 2
, X (10), Y (11), ROM(12) (13) , (UR, UG, UB)
, 가 (301) (302)
, (DR, DG, DB) (302)
<2: 2 >
, 2 . 2 , 2 1
(302') , 1 3 (302) 1
<2-1: >
10 2 (302') (302')
(Dref; Drefr, Drefg, Drefb) (13)
(DHr, DHg, DHb)
(VIDR, VIDG, VIDB) , 1 (302
) (302') , ROM(12) ROM(12')
(14R, 14B) (14R', 14B') , 1
(302)
, R() , B() G() 가 , , G
G가 가 , R B R B , RGB
, G R B , RGB
, (Drefr, Drefg, Drefb)
ROM(12')
가 , ROM(12') 가 ,
, ROM(12') (Drefr, Drefg, Drefb)
, ROM(12') ROM(12') (14R', 14B')
, 11 , 2 (103)
, (103) 1024 x 768
, 8 x 6)가, G , R B , 2 (20 . ,
R, B , G (Drefr) B (Drefb) , 20
, R , 63 (Drefg)
20/63(1/3) ROM(12') (Drefr, Drefg, Drefb)가
, 12 , ROM(12') , G , R
(DGwi, j , DGci, j , DGbi, j) 가, 63 , ROM(12') , B
, (DRwi, j , DRci, j , DRbi, j) 가, 20 , 가 , B
, (DBw i, j , DBci, j , DBbi, j) 가, 20
, (Drefr, Drefb) , 11 1 (1, 1), (128, 1), ...,
(1024, 1) , (1, 1), (256, 1), (512, 1), (768, 1), (1024, 1)
, 3 1 2 가 , 가 , ROM(12')
, (1 ROM(12)) , (20+63+20)/(63+63+

63), 54% , ROM(12')
 (Drefr) (DHr)가, (1
 4R') , 13
 (14R') , (DHr)가, 20 , 1 (V1) n
 (V3) , R, G, B , 63 (Drefr, D
 refb) , 1 (DHr, DHb) (Drefr, D
 , 2 , R, B , 20 (Drefr, Drefb)
 , (DHr, DHb) , 1 (DHr, DHb) , 2
 (14R', 14B') 1/3 . ,
 <2-2: >
 , 2 (302')
 , ROM(12') , G 63 (Drefg)가
 , R B 20 (Drefr, Drefb)가
 (13) , (Drefg, Drefr, Drefb)
 (DHr, DHg, DHb) , (14R', 14G', 14B') , X (10)
 (DCLK) , Y (11) (HCLK) , X
 가 Dx=64가 , Y 가 Dy= 64가 . , 11 , (64, 64)
 (DR', DG', DB')
 가 , R 4 (Dhr1 Dhr4)
 가, X (Dx) Y (Dy) , (14R')
 G 4 가 , B 4
 가 (14B')
 , G , (1, 1), (128, 1), (1, 128), (128, 128) 가
 , R , (1, 1), (256, 1), (1, 256), (256, 256) 가
 , (15R, 15G, 15B) , X (Dx) Y (Dy) ,
 4 , 가
 가 , (Dh) , G가 R B
 , R B G 가 , G
 , RGB
 , 2 , (Drefr, Drefg, Drefb)
 (Drefr, Drefg, Drefb) , Drefg 10 ,
 Drefr Drefb 5
 <3: 3 >
 1 2 , (;V1) (;V3)
 (14R, 14G, 14B) (DHr, DHg, DHb) (13) (V1) , ,
 (V3) , () , 가 ,
 (V1) V3 (Dref) , (V1)
 , (V1) (Dref)
 , 가
 , (V3) 3 , (V1) (V3) , (V1) ()
 V3) , (V1) , (Dref) , (V
 1) , 가 (V0) (V1) , (V1)
) (Dref) , 「1」 , (V3) , (V3) , (Dr
 ef) , (V3) (V3) 가 (V3)
 , (V4) , (V3) (Dref) , 「1」 , (V3)

, 1 2 (17R;17G, 17B) , (14R;14G, 14B)
 , (DR'; DG', DB')가 (V1) , 1 ,
 , 4 (DR'; DG', DB')가 (V3) (V1) , n , ,
 4 (V1, V3) (V3) , 3 , 3
 (14R) (15R) , 3 ,
 <3-1: >
 4 , 3 (302) . 1
 14R) (15R) 가 , 3 , (,
 (;V1) , (324) , (DR') () ,
 (;W-LUT(;322) (kw) ,
 , W-LUT(322) , 15 (V1) ,
 「1」 (V0, Vw1, Vw2, V1) 4 (kw
 max, kw1, kw2, kwmin) (V0) (;V1)
 (DR') , 2 , W-LUT(322
) , (Vw1) (Vw2) , (Vw1) (kw1) ,
 (Vw2) (kw2) 2 (324) , W-LUT(32
 2) (kw) , (331 334) ,
 가 , B-LUT(342) (344) , (DR') () , (;V3)
 , (kb) , B-LUT(342) ,
 16 (V3) (V3) , 「1」 ,
 (V3, Vb1, Vb2, V4) 4 (kbmin, kb1, kb2, kbmax)
 (;V3) , (V4) (DR') ,
 2 (Vb2) , B-LUT(342) , (Vb2) (V4)
 (kb2) , (V4) (kbmax) 2
 , (344) , B-LUT(342) 2
 , (V3) (DR') (kb) , (351 354)
 , W-LUT(322) B-LUT(324)
 , 5 ,
 (14R) 4 , (DHr1) , 3
 , 2 , (DHr1) , 1 (331)
 , 3 (370) (b) , 3 (351)
 , (DHr2, DHr3, DHr4) 가 , 1
 , (332, 333, 334) , 2 , (37
 0) (b) , 3 (352, 353, 354)
 , (331 334) , (370) (a) , ,
 (351 354) , (370) (c) ,
 , 4 (370) , (sel) , (a, b, c) ,
 , (360) , (DR') () , 4 (370)
 (sel) , (360) , (DR')가, (V1)
 (a) , (V1) (V3) (b) ,
 (V3) (c) (sel) , (15R) , 4
 (370) , X (Dx) Y (Dy)
 (DR')) (Dh)
 1 2 , R (DR') (Dh) , G
 (DG') B (DB') .
 <3-2: >
 가 3 (302) ,
 (DR') 4 (DHr1 DHr4)가, X (Dx) Y (Dy) ,
 가 , (14R) (9 S5) , 1
 Dy) 가 , (15R)가, 4 , X (Dx) Y (Dy) (,
 가 (Dh) 1

(15R) (14R) 4 (DHr1 DHr4)가

<3-2-1: V1 >

(DR') (V1)

(324) 2 (DR') 2 (DR')

(kw)

(DHr1 DHr4) (V1) (14R) 4

(Dx) Y (Dy)

(331 334) (DR')

(V1) 4 (V1)

(15R) (331 334) (370) (a) (360)

(DR') (Dh)

(DG') R (DR') (Dh) (Dh) 가 G

(DB')

<3-2-2: V1 V3 >

(DR') (V1)

(V3) (14R) 4 (DHr1 DHr4) X

(Dx) Y (Dy)

(b) (360) (15R) (370) (14) 4

(DHr1 DHr4) (DR')

(Dh) (V3) (DR') 1

(V1) 1

<3-2-3: V3 >

(DR') (V3)

(344) 2 (DR') 2 (DR')

(kb)

(DHr1 DHr4) (V3) X (Dx) Y (14R) 4

(Dy)

(331 334) (DR')

(V3) 4 (V3)

(15R) (351 354) (370) (c) (360)

(DR') (Dh)

(DG') R (DR') (Dh) (Dh) G

(DB') (DR') (Dh) 가

3 (DR') (V3) V1

(V3) (Dh) (V1) 가

3 2 1 (3 ;302)

3 (10 ;302') 가

B-LUT(342) (V1) W-LUT(322) (V3)

(kw kb)가 「1」 (V1) (V3)

가 (V1) (V3)

1 , 1 2 ,
1 1 2 ,
2 1 , ,

1 , ,
2 2 1 2 가 , 가 ,

3.

가 , , , 가

1 , , ,
1 1 , ,

1 , ,
2 2 가 가 ,

4.

3 , , X , Y ,
가 , ,

X X 1 , X ,
Y X 2 , Y ,
X Y Y Y Y

X , Y ,
X Y , ,

5.

4 , ,
RGB ,
RGB , X Y , RGB ,
가 , RGB

6.

3 , , X , Y ,
가 가 ,

1 2 1 , 1 2 ,
2 1 2

7.

6 , ,
1 2 , 1 ,

1 , 1 , 1 ,

2 , 1 , 2

1 , 2 ,

1 , 1

1 2 ,

2 , 2

8.

7

1 , 2 ,

1 2 , 1 2 ,

1

9.

8

가 1 (look-up) , 2 , 2

10.

3

RGB
RGB
RGB

가 1 , RGB

11.

10
G

R B

12.

11
R

B , G

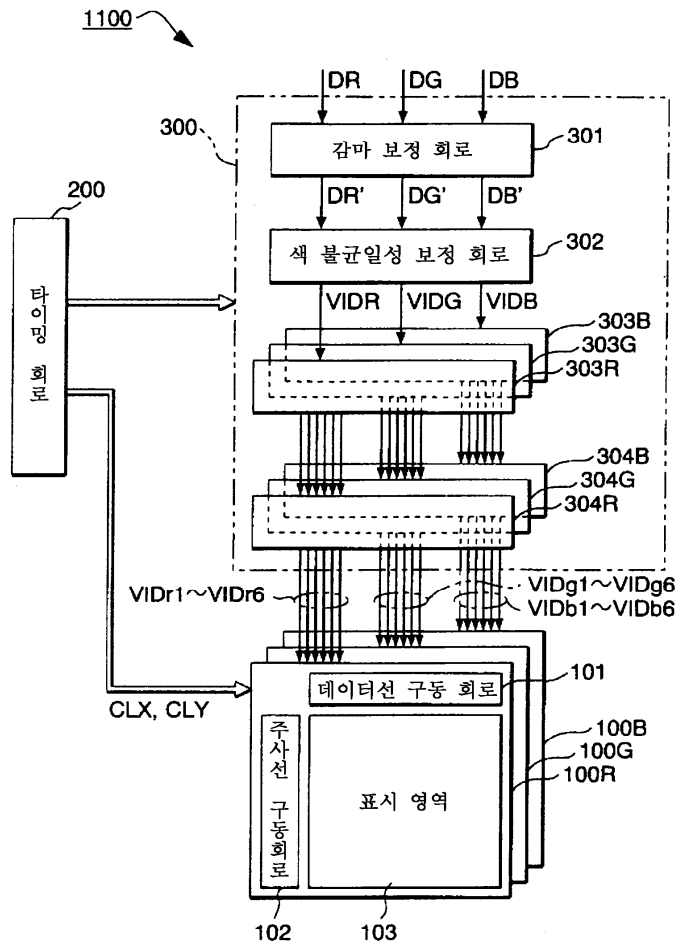
13.

3

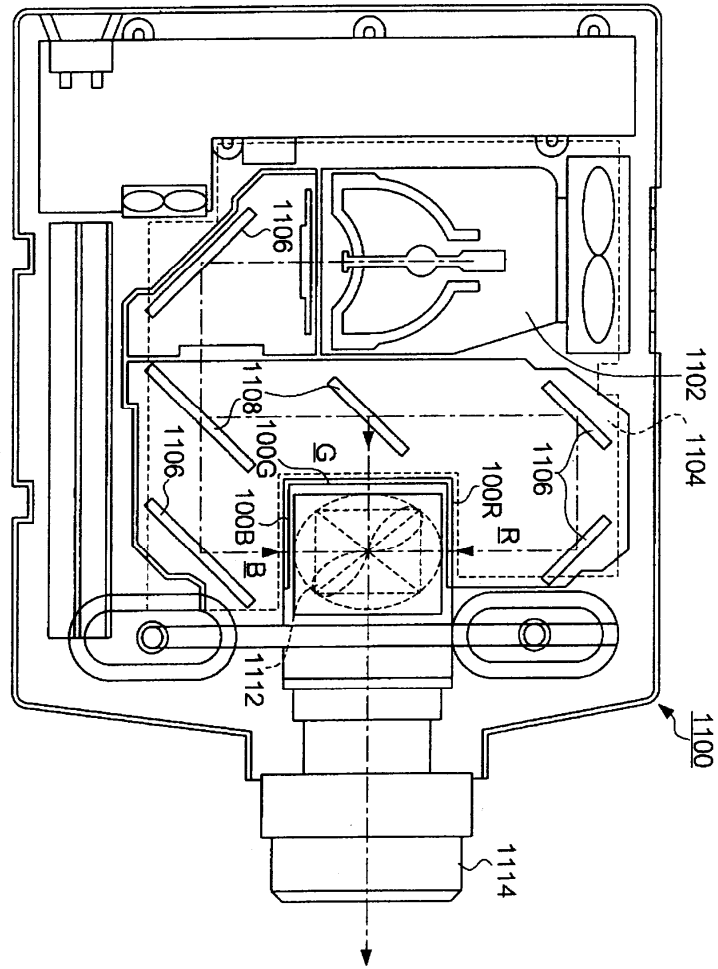
14.

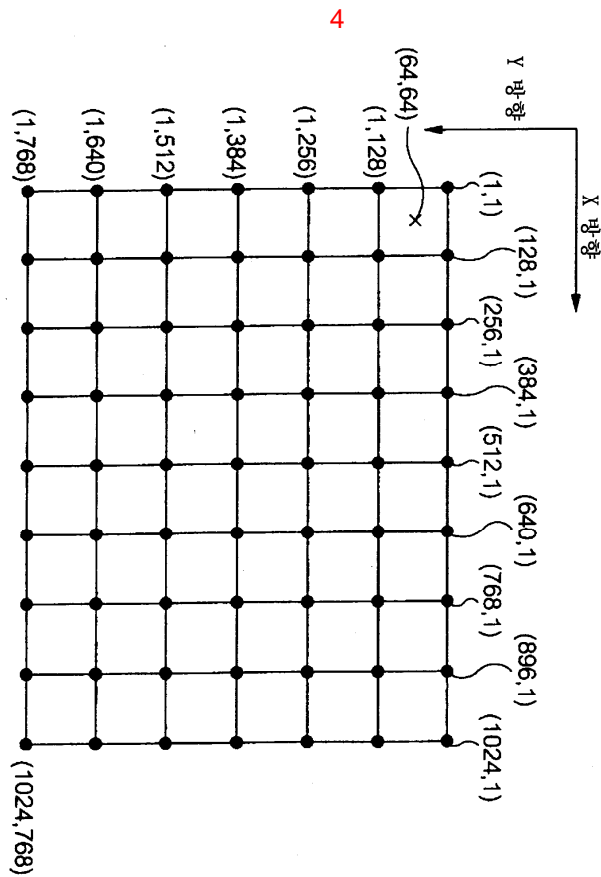
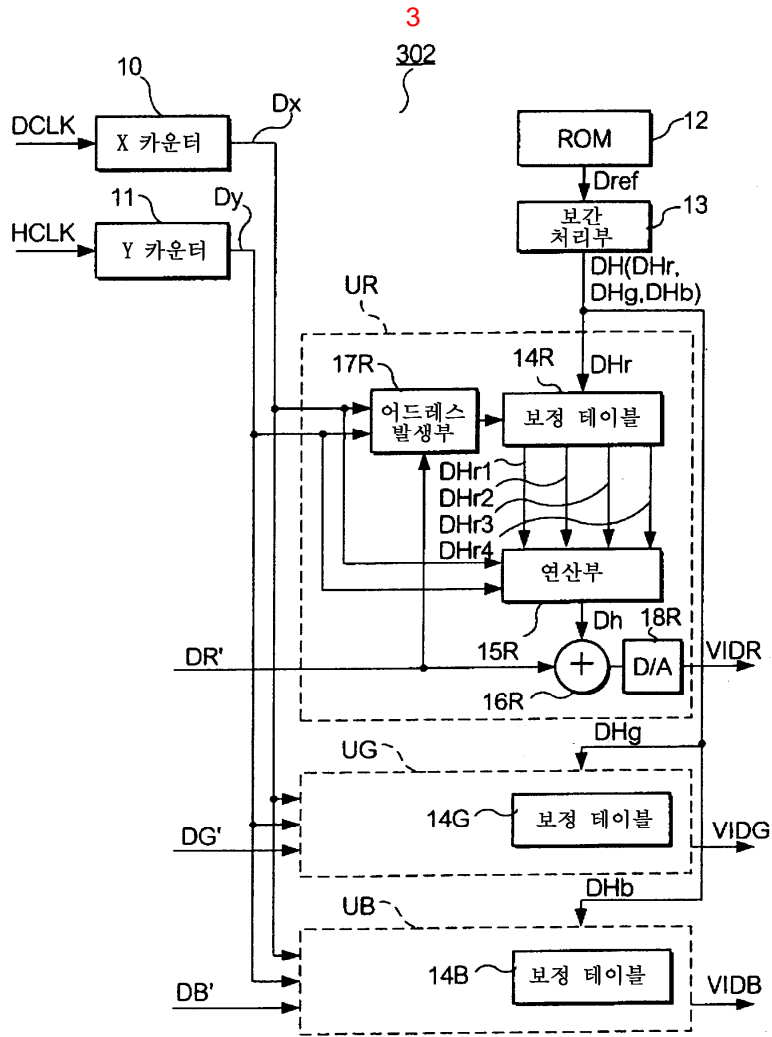
13

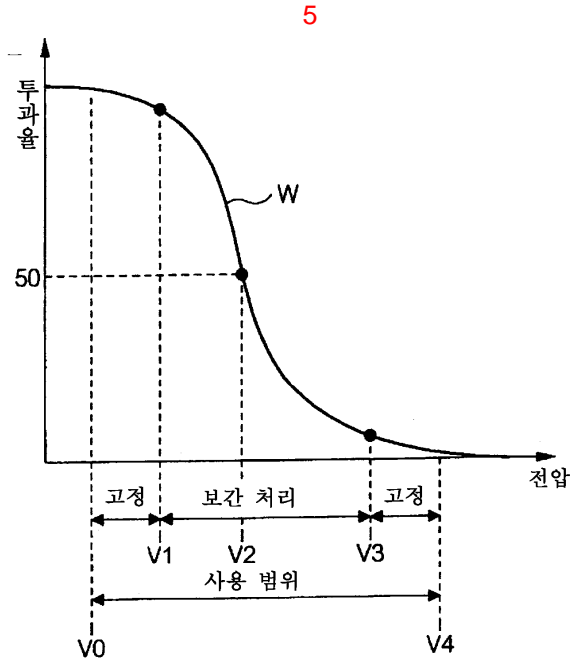
1



2





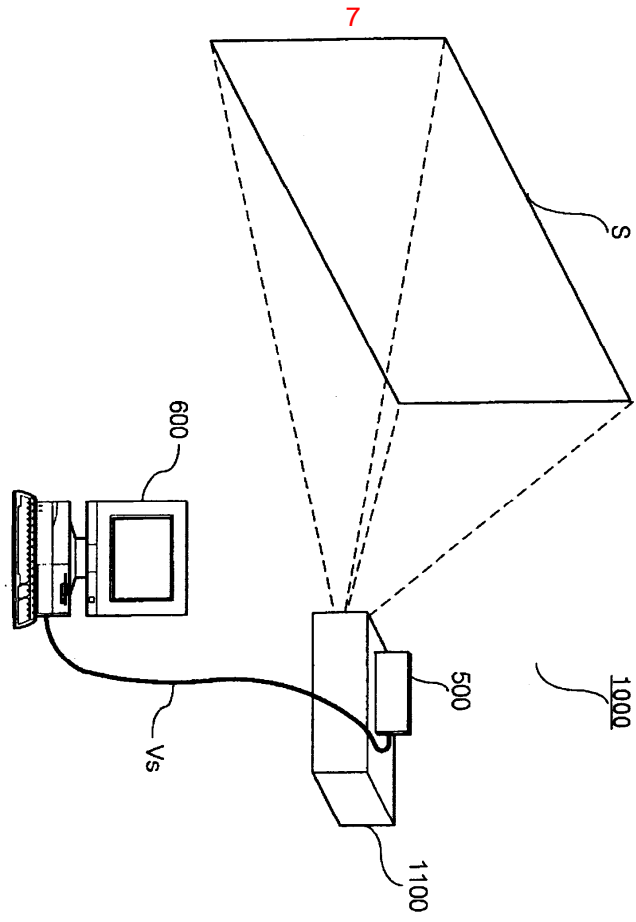


6

63
개

(X, Y)	R:Drefr			G:Drefg			B:Drefb		
	DRw1,1	DRc1,1	DRb1,1	DGw1,1	DGc1,1	DGb1,1	DBw1,1	DBc1,1	DBb1,1
(1, 1)	DRw128,1	DRc128,1	DRb128,1	DGw128,1	DGc128,1	DGb128,1	DBw128,1	DBc128,1	DBb128,1
(128, 1)	DRw256,1	DRc256,1	DRb256,1	DGw256,1	DGc256,1	DGb256,1	DBw256,1	DBc256,1	DBb256,1
(256, 1)	DRw1024,1	DRc1024,1	DRb1024,1	DGw1024,1	DGc1024,1	DGb1024,1	DBw1024,1	DBc1024,1	DBb1024,1
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
(i, j)	DRw _{i,j}	DRc _{i,j}	DRb _{i,j}	DGw _{i,j}	DGc _{i,j}	DGb _{i,j}	DBw _{i,j}	DBc _{i,j}	DBb _{i,j}
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
(1024, 768)	DRw1024,768	DRc1024,768	DRb1024,768	DGw1024,768	DGc1024,768	DGb1024,768	DBw1024,768	DBc1024,768	DBb1024,768

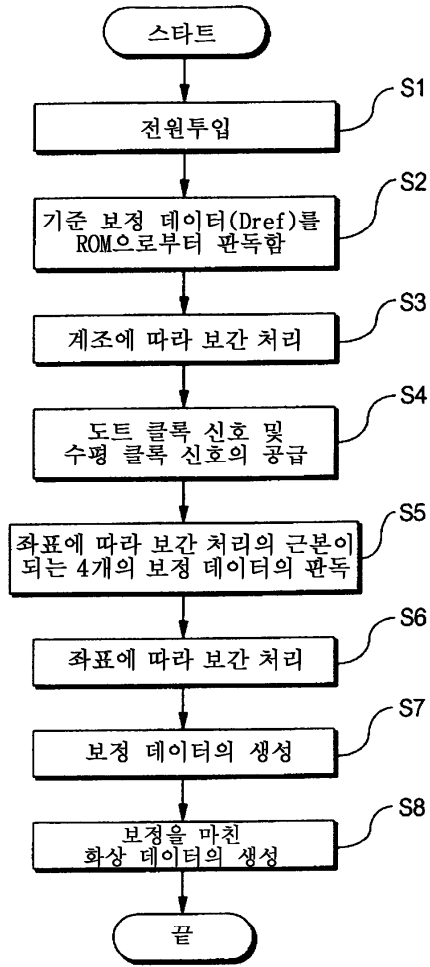
12

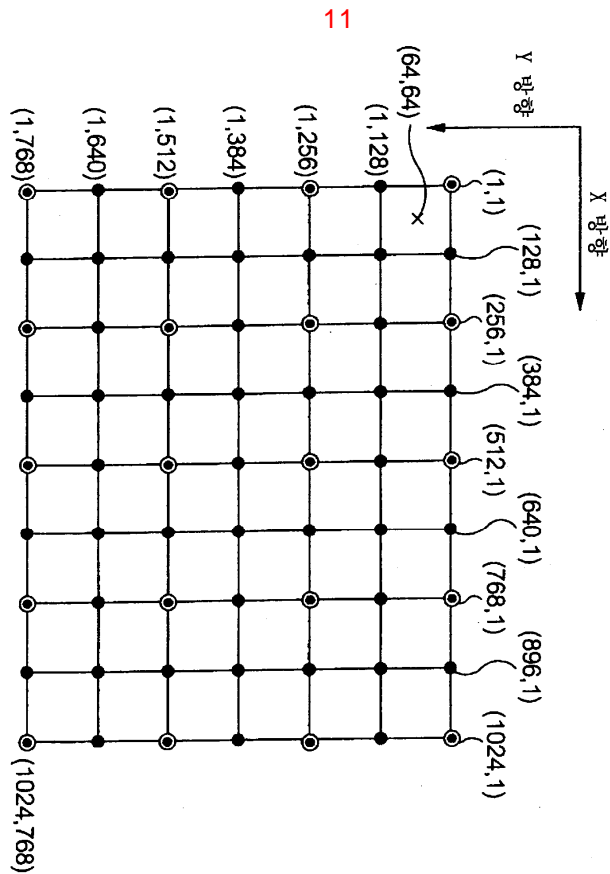
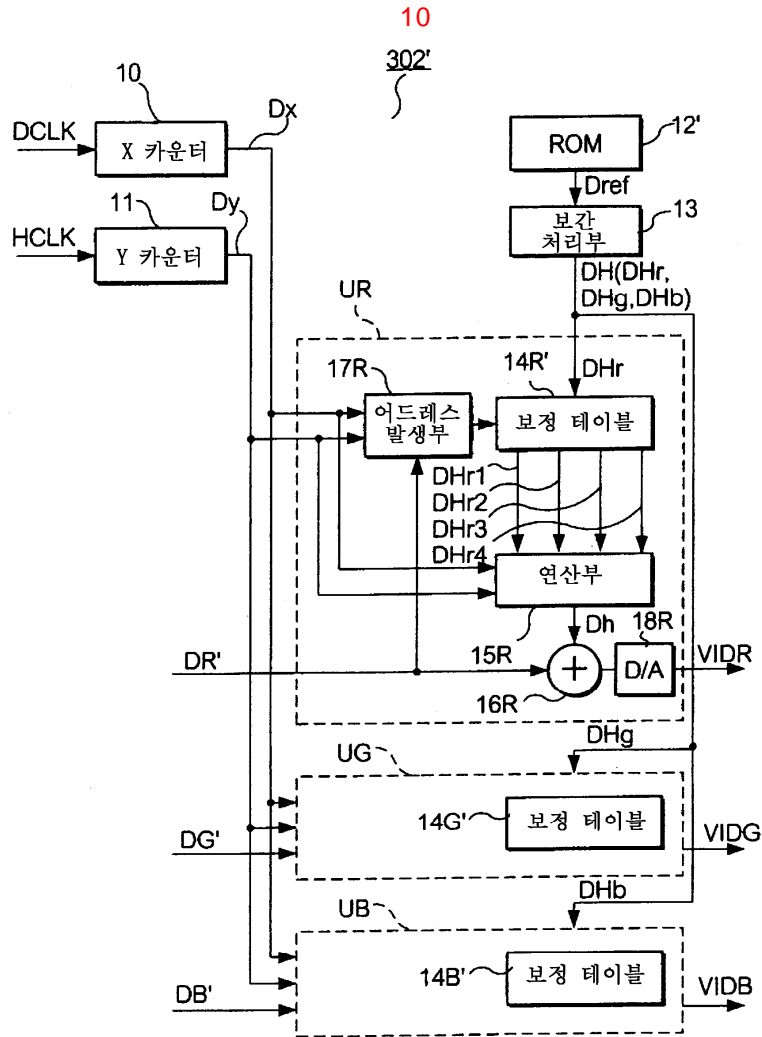


14B

	계 1 열	계 2 열	계 3 열	...	계 n-1 열	계 n 열
(X, Y)	m	m+1	m+2	...	n-1	n
계 1 행 (1, 1)	DHr1, 1(m)	DHr1, 1(m+1)	DHr1, 1(m+2)	...	DHr1, 1(n-1)	DHr1, 1(n)
계 2 행 (128, 1)	DHr128, 1(m)	DHr128, 1(m+1)	DHr128, 1(m+2)	...	DHr128, 1(n-1)	DHr128, 1(n)
...
계 10 행 (1, 128)	DHr1, 128(m)	DHr1, 128(m+1)	DHr1, 128(m+2)	...	DHr1, 128(n-1)	DHr1, 128(n)
계 11 행 (128, 128)	DHr128, 128(m)	DHr128, 128(m+1)	DHr128, 128(m+2)	...	DHr128, 128(n-1)	DHr128, 128(n)
...
계 63 행 (1024, 768)	DHr1024, 768(m)	DHr1024, 768(m+1)	DHr1024, 768(m+2)	...	DHr1024, 768(n-1)	DHr1024, 768(n)

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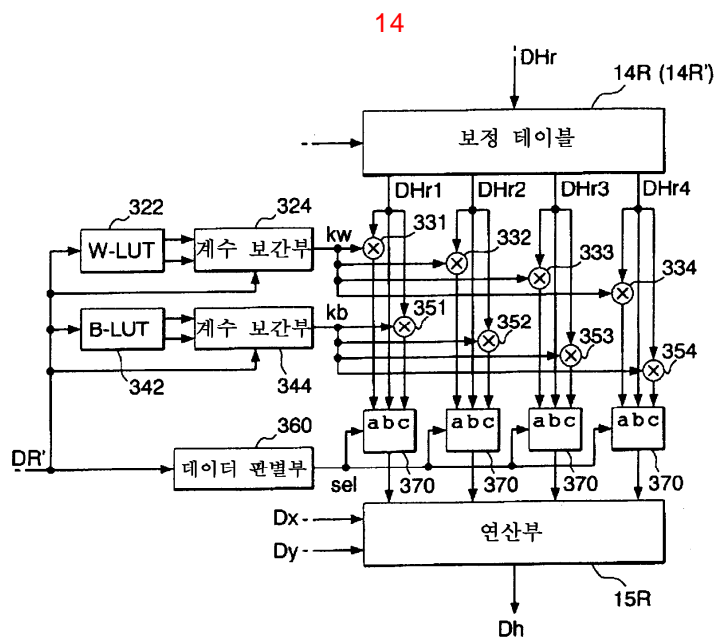


(X,Y)	R:Dreifr			G:Dreifg			B:Dreiftb		
	DRw1,1	DRc1,1	DRb1,1	DGW1,1	DGc1,1	DGb1,1	DBw1,1	DBc1,1	DBb1,1
(1,1)	DRw1,1	DRc1,1	DRb1,1	DGW1,1	DGc1,1	DGb1,1	DBw1,1	DBc1,1	DBb1,1
(128,1)	-	-	-	DGW128,1	DGc128,1	DGb128,1	-	-	-
(256,1)	DRw256,1	DRc256,1	DRb256,1	DGW256,1	DGc256,1	DGb256,1	DBw256,1	DBc256,1	DBb256,1
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
(1,128)	-	-	-	DGW1,128	DGc1,128	DGb1,128	-	-	-
(128,128)	-	-	-	DGW128,128	DGc128,128	DGb128,128	-	-	-
(256,128)	-	-	-	DGW256,128	DGc256,128	DGb256,128	-	-	-
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
(1024,128)	-	-	-	DGW1024,128	DGc1024,128	DGb1024,128	-	-	-
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
(1024,768)	DRw1024,768	DRc1024,768	DRb1024,768	DGW1024,768	DGc1024,768	DGb1024,768	DBw1024,768	DBc1024,768	DBb1024,768

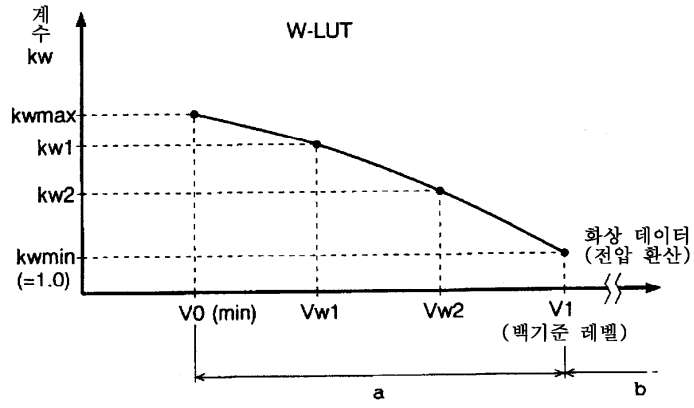
12

14R'

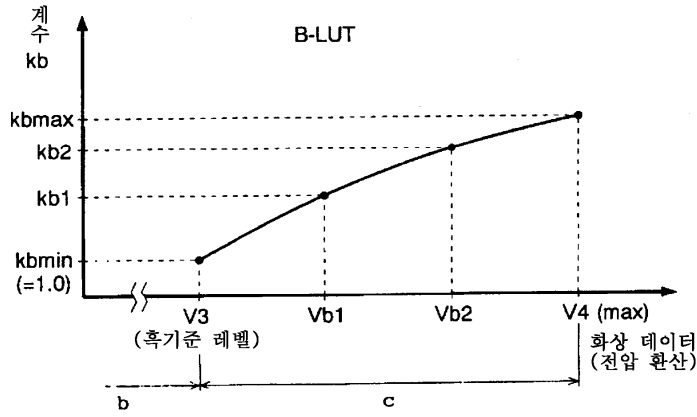
	계 1 열	계 2 열	계 3 열	...	계 n-1 열	계 n 열
(X, Y)	m	m+1	m+2	...	n-1	n
계 1 행 (1, 1)	DHr1, 1(m)	DHr1, 1(m+1)	DHr1, 1(m+2)	...	DHr1, 1(n-1)	DHr1, 1(n)
계 2 행 (256, 1)	DHr256, 1(m)	DHr256, 1(m+1)	DHr256, 1(m+2)	...	DHr256, 1(n-1)	DHr256, 1(n)
계 5 행 (1024, 1)	DHr1024, 1(m)	DHr1024, 1(m+1)	DHr1024, 1(m+2)	...	DHr1024, 1(n-1)	DHr1024, 1(n)
계 6 행 (1, 256)	DHr1, 256(m)	DHr1, 256(m+1)	DHr1, 256(m+2)	...	DHr1, 256(n-1)	DHr1, 256(n)
계 20 행 (1024, 768)	DHr1024, 768(m)	DHr1024, 768(m+1)	DHr1024, 768(m+2)	...	DHr1024, 768(n-1)	DHr1024, 768(n)



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