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(74)

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(54) 4-

The diagram illustrates the relationships between different color models and their components. The models shown are RGB, RGBW, IC, and RG. The diagram is composed of text labels and connecting lines, with some labels in Korean (가, , B, , 1, , , 4-). The connections suggest a hierarchy or flow of information, with RGB being a primary model and RGBW, IC, and RG being derived or related models. The Korean labels likely represent specific components or steps in the process.

3

4, 4-, , , , , OELD

1 4- .
 2 4- .
 3 .
 4 3 4- .
 5a 5b .
 6 3 4- .
 7 .
 8a 8c 4- .
 9 1 .
 10 2 .
 11 3 .
 12 4 .
 < >
 10 : 4- 11, 16 :
 12 : 13, 17 :
 14, 18 : 15, 19 :
 20 : 30 :
 40 : 125 :
 130 : 135 :
 145, 245, 345, 445 : 150, 250, 350, 450 :
 360, 460 : 16R, 26R :
 16G, 26G : 16B, 26B :
 170, 370 : 280, 480 :
 270, 470 :

4- ,

4-

(LCD) (R), (G), (B) (W) 가 4

가 , , 가 .

R, G 가 RG-

1 4-

1 , RG- 0, R, G RG

, Y) 가 RGY- 가 (

가 2 가 , ,

RG-

가 , RG

Y- R, R'G, R'G'. RG', G

0, R'G, R'G', RG' 1 () 2

() 2 (') 2

, RGY- 0, R1, RG, G1 2

가 , 0, R, R1 , 0, G, G1 가 가

RGY- RG-

(W) RG- RGY- (B) RGB (B) 가 가

RGBW-

4-

4-

4-

4- RGB

; (b) , (a) RGB

(c)

(d)

RGBW

RGBW

가

1

4-

RGB

RGB

RGBW

RGBW

1

4-

RGB

RGBW

가

W

RGB

RGBW

가

1

4-

RGB

W

4-

IC

RGBW

가

R, G, B

가

가

가

가

가

가

MOELD; Active Matrix OELD) ITO

가

가

가

4-

1

(S)

2

(A)

2 RGBW , RGB W , 4-
가 (S) 가 ,
, 0, R, R'G, R'G', RG' G 1 4
- RGB RGBW , RGBW
, R, R' R'G , G, RG' G' RGBW
1 4-
, RGB IC ,
1 4- RGBW 6 7
8 RGB 가 6 RGBW IC
1 2 () 2 1 2 (')
, 2 () 2 (')
, 2 (')
1 2 RGBW
1 RGBW IC 4- RGBW
, 1 4- RGBW
, RGB W , RGB W , 4- W
RGBW W 가 RGBW 가 1 가
3
3 , 4- (10), (20), (30)
(40)
4- RGBW (10) (R', G', B', W') , RGBW (R', G', B', W') (R, G, B) (,
20) , RGBW (R', G', B', W') W 가 가
(20) RGBW (R', G', B', W') (D1, D2
, ..., Dm) (40)
(30) (S1, S2, ..., Sn) (40)
(40) (D1, D2, ..., Dm) (DL) , (,
S1, S2, ..., Sn) (GL) , 가 (,
VDDL)
, (40) , 1 (DL) , 2 (QS
) , (GL) , 3 / (EL) , 1 (,
(EL) , 2 (VDDL) , 2 (,
QS) 3 / 1 2 (QD)
1 (EL) (QD)

R,G,B,W

가 R,G,B,W

4 3 4-
4 3), (14) (15) (10) RGB (11), 4- (12), RGBW (1
(11) (R_y, G_y, B_y) RGB (12) 1 RGB

$$\begin{aligned} R_x &= aR^x \\ G_x &= aG^x \\ B_x &= aB^x \end{aligned}$$

, R_y, G_y, B_y R, G, B (normalized luminance),
가 RGB, a (1/Gmax)^y, R_y, G_y, B_y R, G, B
, Gmax (gray level) , - 가 64 Gmax 63
(12) RGB (R_y, G_y, B_y) 2
(14) RGB (R'_y, G'_y, B'_y) (13)

$$\begin{aligned} R_x' &= S R_x \\ G_x' &= S G_x \\ B_x' &= S B_x \end{aligned}$$

, S

R,G,B

R,G,B,W

(13) RGB (R'_y, G'_y, B'_y)
(14)

x y, 5a, aGmax^y RGB (R'_y, G'_y, B'_y) aGma
B 가 aGmax^y (14)

, 5b, RGB (R'_y, G'_y, B'_y) aGmax^y
(14) B 가 aGmax^y

$$W'_x = aGmax^x, \quad \text{if, } Min(R'_x, G'_x, B'_x) \geq a \cdot Gmax^x$$

$$W'_x = Min(R'_x, G'_x, B'_x), \text{ others}$$

$$\begin{matrix} (14) & & (13) \\ \text{RGBW} & & \text{RGBW} \\ * & & \end{matrix} \begin{matrix} (R^*_y, G^*_y, B^*_y) \\ (15) \end{matrix}$$

$$\begin{aligned} R^*_x &= R'_x - W'_x \\ G^*_x &= G'_x - W'_x \\ B^*_x &= B'_x - W'_x \\ W^*_x &= W'_x \end{aligned}$$

$$\begin{matrix} (15) & & (20) \end{matrix} \begin{matrix} (R', G', B', W') \end{matrix}$$

$$\begin{aligned} R' &= \left(\frac{R^*_x}{a} \right)^{1/x} \\ G' &= \left(\frac{G^*_x}{a} \right)^{1/x} \\ B' &= \left(\frac{B^*_x}{a} \right)^{1/x} \\ W' &= \left(\frac{W^*_x}{a} \right)^{1/x} \end{aligned}$$

$$\begin{matrix} (13) & & (14) \end{matrix} \begin{matrix} \text{RGB} \\ \text{aGmax} \end{matrix}$$

$$\begin{matrix} (14) & & (15) \end{matrix} \begin{matrix} \text{RGB} \\ \text{aGmax} \end{matrix}$$

4, 4, 2 RGB 2
 RGBW IC, 6
 4 IC 7 가 IC 6 가 , 70 80 64
 IC 7 가 .
 , IC 가 RGBW
 .
 6 3 4-
 6 , 4- (10) (16), (17),
 (18) (19) , RGB 4- RGBW
 (16) RGB 6 , RGB
 (R_y, G_y, B_y) (17) (18) .

$$R_x = aR^x$$

$$G_x = aG^x$$

$$B_x = aB^x$$

, R_y, G_y, B_y R, G, B (normalized luminance),
 가 RGB , a ($\frac{1}{G_{max}}$)^γ , R_y, G_y, B_y R, G, B
 , G_{max} (gray level) , - 가 64 , 0 63
 G_{max} 63 .
 (17) RGB (R_y, G_y, B_y)
 (18) , 64 가 , 64 , 1
 /2 32 가 , 7 , 46 7
 , (18) .

$$W_x = a \cdot 46^x \quad \text{if, } \text{Min}(R_x, G_x, B_x) \geq a \cdot 46^x$$

$$W_x = \text{Min}(R_x, G_x, B_x), \text{ others}$$

, 8 , RGB (R_y, G_y, B_y)
 , (18) .

$$W_x = \text{Min}(R_x, G_x, B_x)$$

GBW (18) , (17) RGBW (R'_y, G'_y, B'_y, W'_y) 9 , R
 (15)

9

$R_x' = R_x - W_x$

$G_x' = G_x - W_x$

$B_x' = B_x - W_x$

$W_x' = W_x$

(19) (18)

RGBW
RGBW

(R' γ, G' γ, B' γ, W' γ)
(R', G', B', W')

10

(20)

10

$R' = (\frac{R_x'}{a})^{1/\gamma}$

$G' = (\frac{G_x'}{a})^{1/\gamma}$

$B' = (\frac{B_x'}{a})^{1/\gamma}$

$W' = (\frac{W_x'}{a})^{1/\gamma}$

(13)

RGB

(R γ, G γ, B γ)

a46 γ (64

(14)

5b

(14)

RGB

(R γ,

G γ, B γ)

4-

4-

8a

8c

8a

, 4-

RGB

(R, G, B, W)

3
W

RGB

가

RGBW

RGBW

8b

(R, G, B, W)

2*2

8c

(R, G, B, W)

(R1, R2)

(G1, G2)

2

1

2*3

2*3
2 (R1, R2, G1, G2)

4- RGBW

9 1

9 가 (105) (110) (105)

(110) (110) 가
(SiO_xNy

x y)

(110) (112), (114), (116)
((), (112) (116)
(120), (120) (125), (125)
(120) (112) (116) 1 (127), 1
(127) (130), 1 (127)
(135)

(125)
(130) 1 (135) 1
2 () (12

5) (127) 2 (130) (140) (135) 1
(145) (135) 2 (140) (145) (150)

(150) (150) (145) R R
(16R), G G (16G), B B (16B) W W
(16W) R (16R), G (16G), B (16B) W (

16W) R, G, B, W (16R, 16G, 16B, 16W)
(145)

(170) R, G, B, W (16R, 16G, 16B, 16W) R,
G, B, W (16R, 16G, 16B, 16W)

R, G, B, W (170)
R, G, B, W 가 (Mg), (Li), (Ca)

1 W , R, G, B

1 R, G, B, W
R, G, B, W (105)
2

10 2

10 가 , (205) (210) , (210)
(212), (214), (216)
(212) (216)
(220), (220) (216) (225), (225) (220)
(212) (216) 1 (227), 1 (227)
(230), , 1 (227)
(235)

(230) , (235) , 1
(227) 2 (240)

(245) , 2 (240)
(235) (245) (250)

(250) , (250) (245) R R
(26R), G G (26G), B B (26B) W W
(26W) R (26R), G (26G), B (26B) W (

(270) R, G, B, W (26R, 26G, 26B, 26W)
(280) (270)

2 , (R), (G)
(B) (W)

1 2 RGBW 4-
RGBW

3 4

11 3

11 가 , (305) (310) , (310)
(312), (314), (316)
(312) (316)
320), (320) (325), (325) (320) (

(312) (316) 1 (327), 1 (327)
(330), , 1 (327)
(335) .

(327) (340) (330) , (340) R , G (335) , 1 , W
, ,

(342) , (342)
, , BCB()

(345) , (342) (340)
(335) (345) R, G, B, W

(350)

(350) (350) (345) EL (360),

(370) (360) , (360)
EL

(360) (360) 가 , (Mg), (Li), (Ca) ,

11 W W W W 2 , W
(342)

3 ,
가 EL , , ,

12 4 ,

12 , (405) (410) , (410)
가 , (412), (414), (416)
(412) (416) ()
420), (420) (425), (425) (420)
(412) (416) 1 (427), 1 (427)
(430), , 1 (427)
(435) .

1 (427) (430) (435) 2 (440)

(427) 2 (430) , (435) , 1
(440)

(445) , 2 (440)
(435) (445) R, G, B, W

(450) .

(450) (450) (460) (445) EL (460),
(470) (460) (270) (Encapsulation)(480)
(490) R , G , B , W ,
가 4 EL , , , ,
, EL 가 가 .

RGB, RGB, RGBW, IC, RGB, RGBW, 1, RGBW

(57)

1.

(a) RGB ;

(b) RGB , ;

(c) RGB RGBW ;

(d) RGBW RGBW 가 RGBW 4- .

2.

1 , (b) ,

(b-1) RGB ;

(b-2) RGB 4-

2 , (c) RGB W
RGB 4- .

4. 2 , (b-2) ,
RGB ,
RGB 4- . RGB

5. 1 , (b) ,
RGB 1 ,
RGB 1
4- .

6. 1 , (b) RGB
4- .

7. RGB ;
RGB ;
RGB ;
RGB RGB ,
; ,
RGBW RGBW RGBW
가 1
4- .

8. 7 , ,
RGB ,
RGB 4- . RGB

9. RGB ;
RGB ;
RGB W ;
RGB

RGBW RGBW RGBW 가 1 ,
4- .

10. 9 , ,
RGB 1 , 1
RGB 1
4- .

11. 가 , ;
;
;
;
RGB 4- RGB W .

12. 11 , , RGB 가 가
IC ,
IC RGBW 가 가 ,
RGBW .

13. 11 , 4- RGBW 가
1 .

14. 11 , 4- ,
RGB ;
RGB ;
RGB ;
RGB RGB ,
;
RGBW RGBW .

15. 11 , 4- ,
RGB ;
RGB ;

RGB W RGB
RGBW RGBW
11 16.
11
1
2
3
4
16

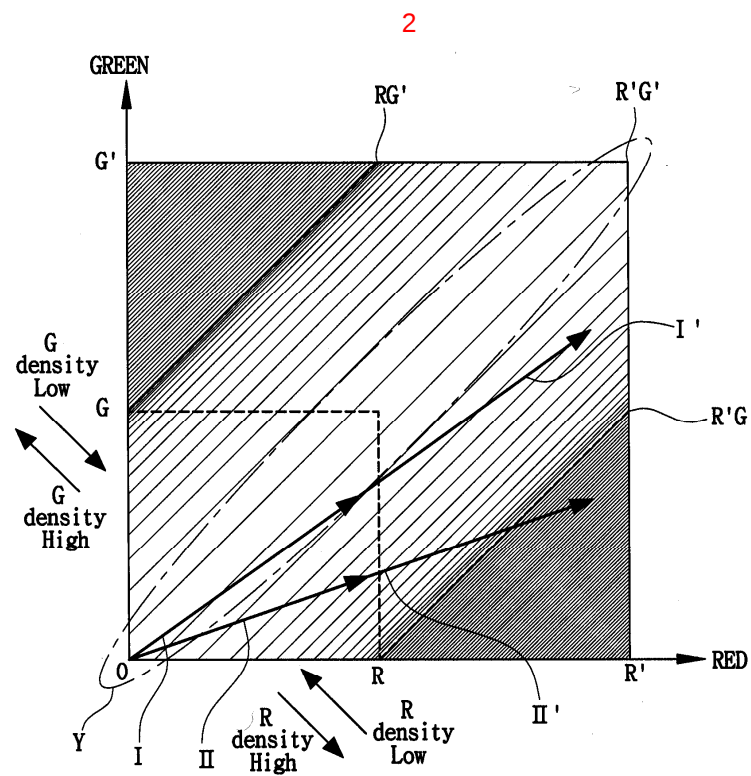
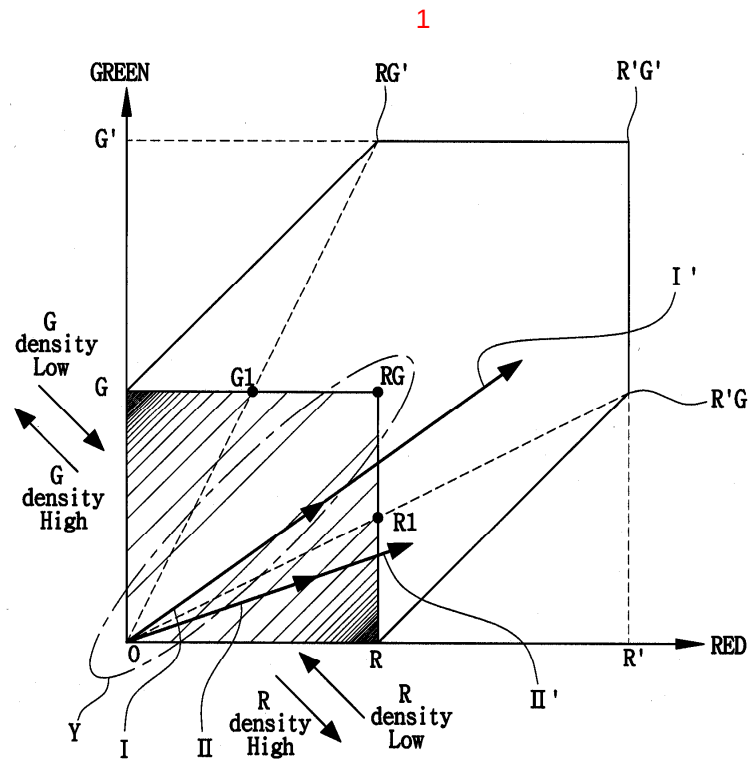
17.
16
18.
16
19.
16

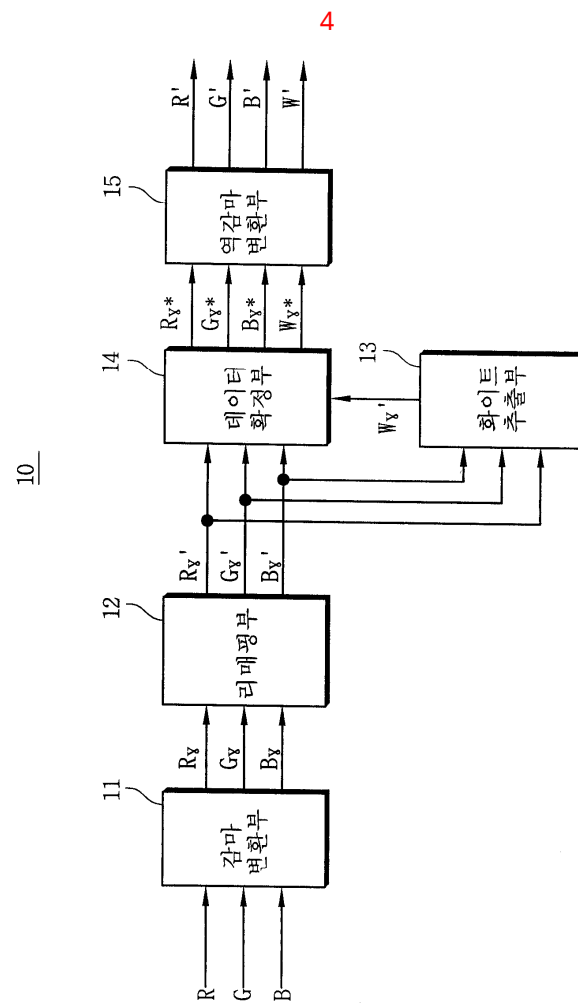
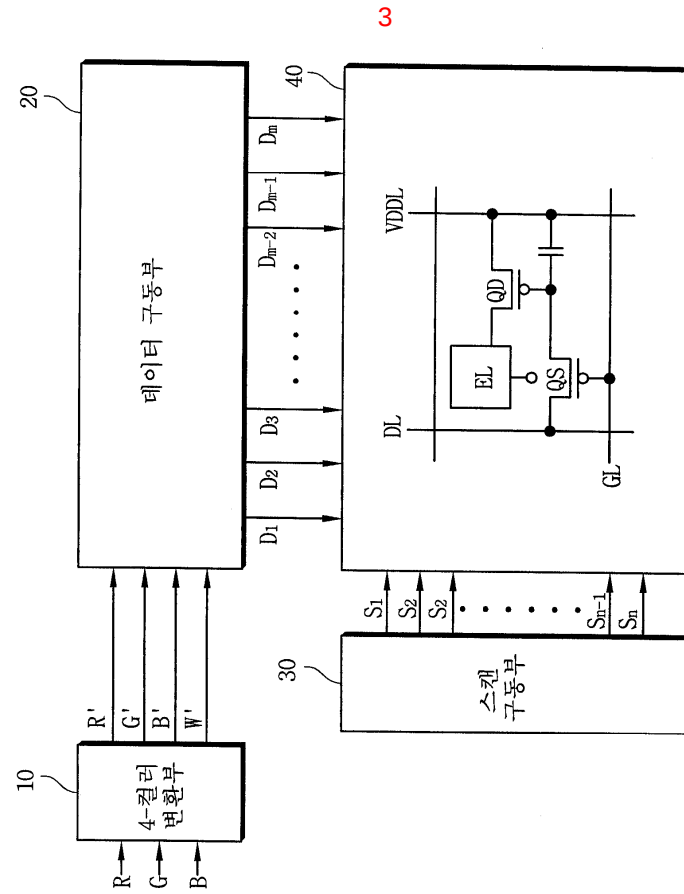
20.

16

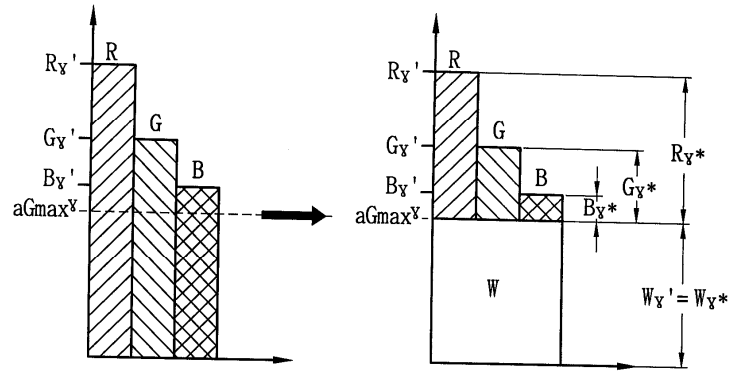
21.

16

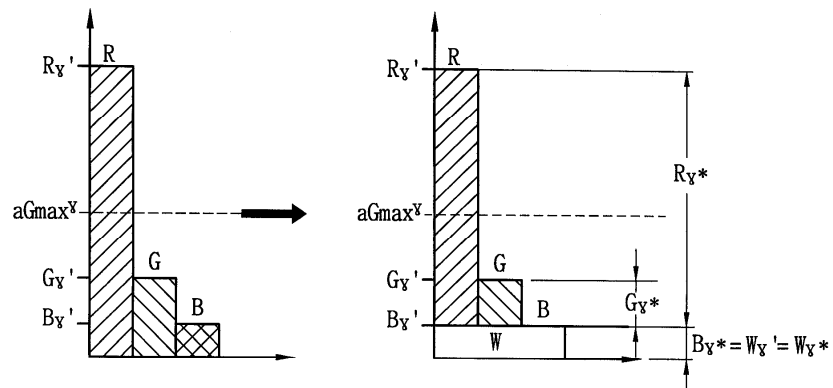




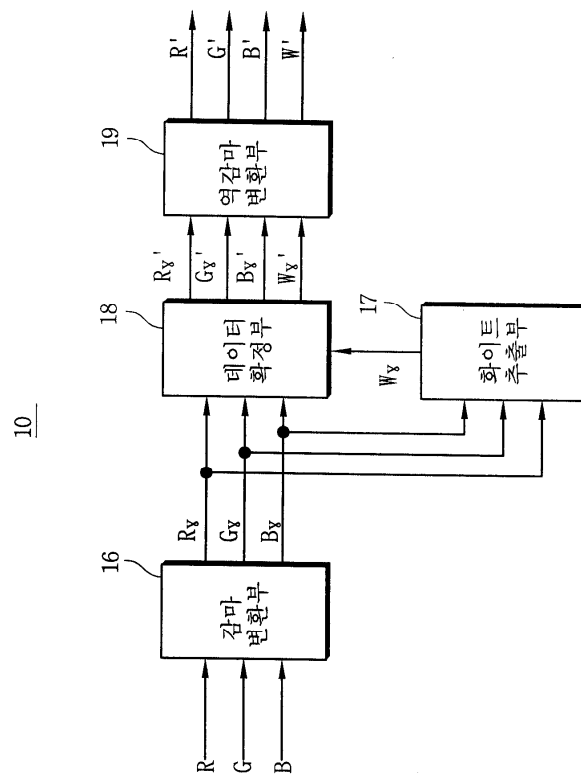
5a



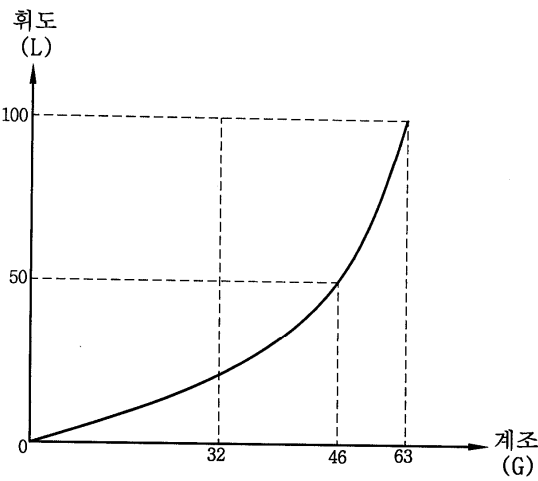
5b



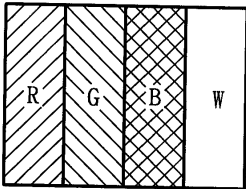
6



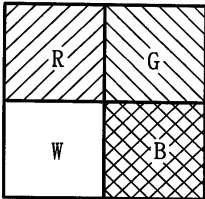
7



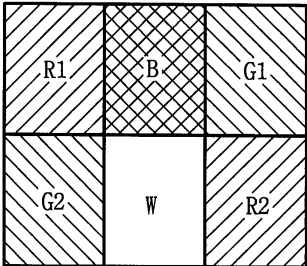
8a

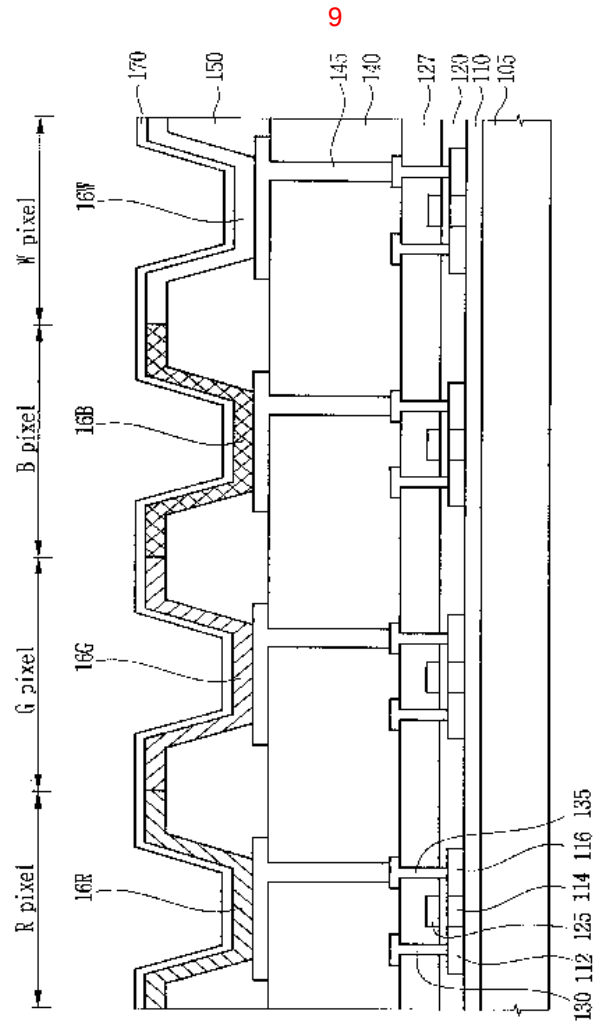


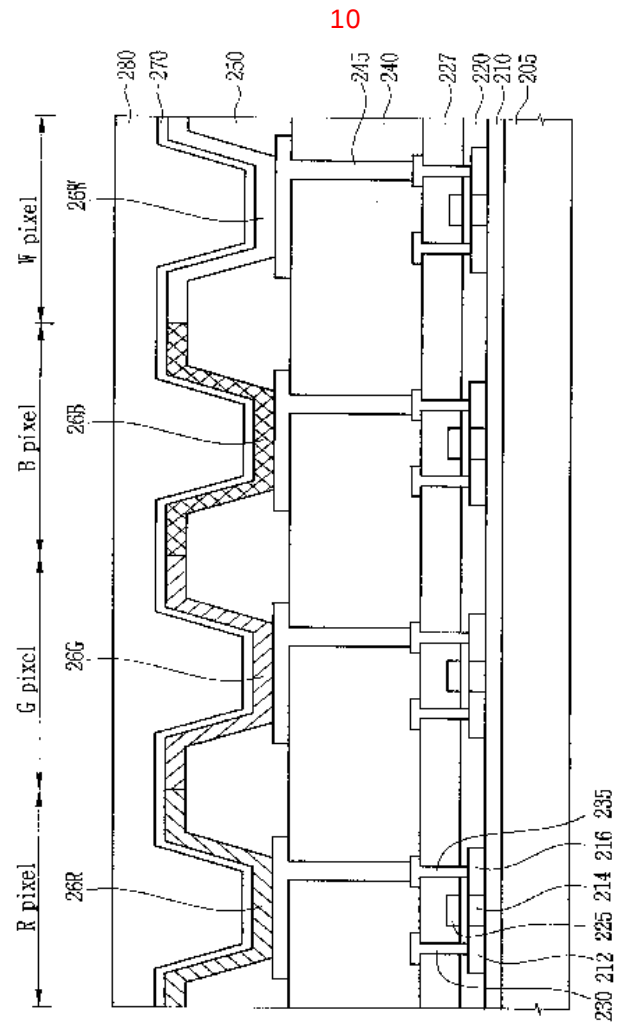
8b

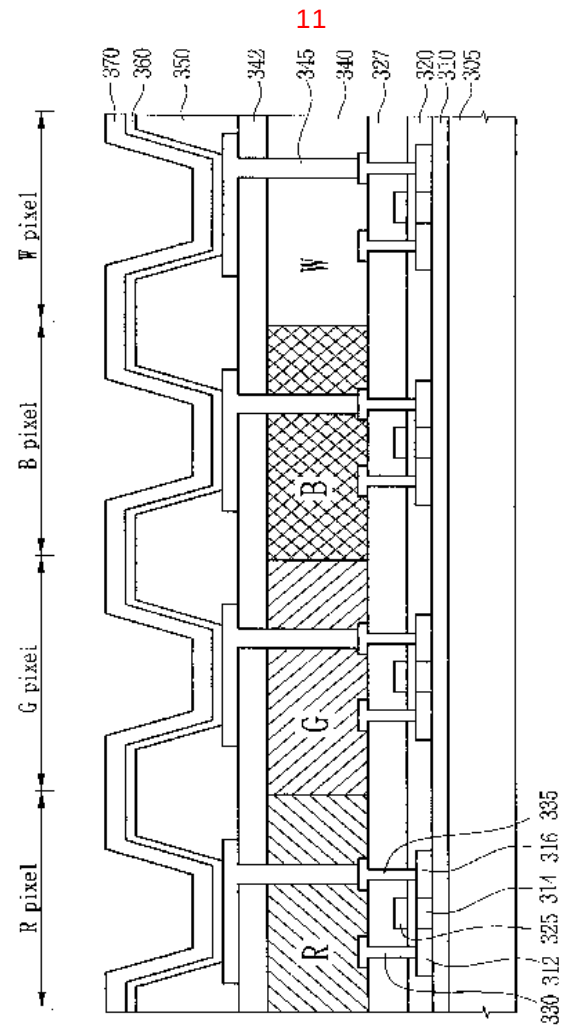


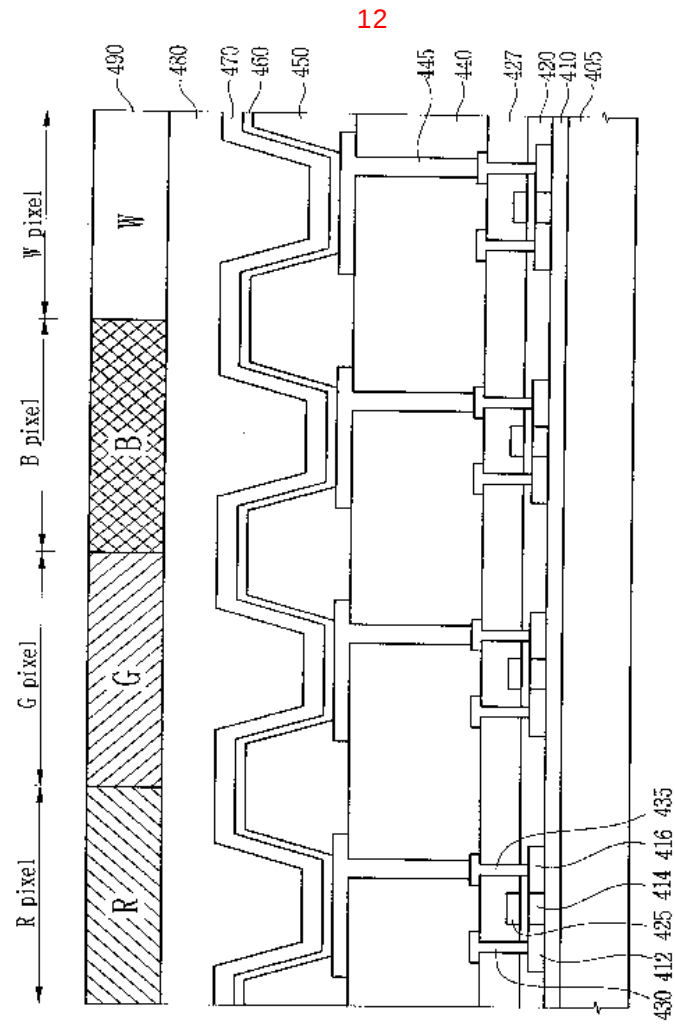
8c











专利名称(译)	4色转换方法和装置以及使用其的有机发光显示器		
公开(公告)号	KR1020040096273A	公开(公告)日	2004-11-16
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代理人(译)	PARK, YOUNG WOO		
其他公开文献	KR100943273B1		
外部链接	Espacenet		

摘要(译)

本发明公开了一种有机电致发光显示装置及其装置，该有机电致发光显示装置使用其降低亮度和用于防止未混色的颜色感降低的四色转换方法，提高了显示器的光效率。关于RGB分级数据的伽玛转换，其中输入伽马转换器。缩放因子在RGB分级数据处倍增，其中重新映射部分伽马被转换并重新映射。并且最小值被定义为RGB分级数据中的白色分量，其中白色提取单元被重新映射并且它被提取。数据定义部分用于建立校正RGBW分级数据，它转换RGBW每个数据，其中反向伽马转换部分用反向伽玛确定，它通过新的RGB分级数据和考虑RGB分级数据和重新映射的白色分量的新白色数据来确认。此时，在校正RGBW分级数据的每个灰度级接近未混合的颜色或者缩放因子是固定的情况下，使用比特的数据驱动集成电路来扩展灰度级，其大于原始RGB分级数据的比特。以这种方式，即使在接近未混合的颜色的情况下，每个灰度等级的校正RGBW分级数据也可以增加亮度和颜色感。4色驱动，4色，有机电场装置，扩展，未混色，亮度，刻度，OLED。

