

(19)  
(12)

(KR)  
(A)

(51) 。 Int. Cl.7  
G02F 1/133

(11)  
(43)

10-2004-0042402  
2004 05 20

(21) 10-2002-0070693  
(22) 2002 11 14

(71) . 20

(72) 2 1027-3

(74)  
:

(54)

4 , 3 , 가

7

1

2 (Lay out)

3

4

5 4

6

7

8

9 8

10 9 (Magenta), (Yellow), (Cyan)

< >

11 : 12 :

13 : 14 :

15 : 60 :

62 : 64 :

66 : 68 :

70 :

가 가

CRT(cathode-ray tube)  
가 가

(LCD: Liquid Crystal Display unit) 가

, 2

TN(Twisted Nematic) STN(Super - Twisted Nematic)  
TN (Active matrix) STN (passive matrix  
) (Thin Film Transistor ;  
TFT)

가 (panel unit), 가 (Driving Integrat  
ed Circuit), (back light unit) . CRT, PDP(Plasma Display Panel), FED(Field Emissio  
n Display) 가 가 가

가 가 (Light guide plate) 가 (Wedge type)

1 가 (11) (12) 가 (12) (11)  
 가 (12) 가 (13) (12) (14) 가 (13)  
 (12) 가 (12) (14) (14) 가  
 , (15)가 ,

ED: Light Emitting Diode), (CCFL: Cold Cathode Fluorescence Lamp) 가 (L  
 가 5V DC (invertor) EL,

2 (Lay out)  
 2 (R: Red), (G: Green), (B: Blue) 가  
 가 (turn on) (turn off) 가

1 (line) (R) -> 2 (R) ->3 (R) -> 1 (G) -> 2 (G) -> 3  
 (G) -> 1 (B) -> 2 (B) -> 3 (B)

3  
 3 , 2 가 3 (R), (G), (B) 3 가  
 3 (sub frame) , 3 (frame)  
 (turn on) (R), (G), (B)  
 (G)  
 (B) 가 3 (R), (G),  
 가 180[Hz], 5.5[ms]가 60[Hz], 16.7[ms]

), 3 (R), (G), (B) 3 가 (R)  
 (G), (B) , (G)  
 (R) (B) 가  
 (White Balbnce)

4 가  
 4  
 Lumileds  
 Lumileds (W) 4  
 , 2 (G) , 1 (B) 1 4 (R)  
 3  
 (R) (B) 3  
 (G) (G)

5 4  
 5 , 4 (R), (G), (M: M)  
 B) agenta) , (C: Cyan), (Y: Yellow) 가 5 가 (M)  
 가 4 (M)

(C), (Y) 가  
 (M) (cell) (black) , (R), (G), (B) (G)  
 (b) (b) (R) 가  
 (B) 가 5 가 (R)  
 (shift) . 가 (R)  
 white) , ( (6  
 6 .  
 6 가 , 20 μ sec 가 (on) 20 μ sec 가 , (step response) 가  
 , 1 . 가

$$(C_{lc} + C_{st})V = (C_{lc}' + C_{st})V'$$

$$\Delta V = -\frac{\Delta C_{lc}}{C_{st} + C_{lc}'} V$$

$$\Delta V = -\frac{\Delta C_{lc}}{C_{st} + C_{lc} + \Delta C_{lc}} V$$

1 , C<sub>lc</sub> C<sub>lc</sub> , C<sub>lc</sub>' (saturation) C<sub>lc</sub> .  
 가 , (C) (B) , (Y) (G)  
 가 (R), (G), (B) 3 (M), (C), (Y)

가 4 3

4 1 가 , 2 , 3 ,

가

3 4

3

가, 2 가, 3 가, 4 1

가

7 10

7 TFT가 (60) , (60) (DL) (GL) (62) ,  
 (H,V)가 (60) (66) , (70R), (70G) (64) , (70B)  
 (68)

(60) TFT (64) (60) (Clc)  
 TFT TFT (Clc)

(66) 1 (R), (G), (B) (G) 4 (6)  
 0) (62) (62)

(66) (R), (G) (B) (66) (RGB) (H,V)  
 (62) (62) (66) (DCS) / (GCS) (DCS)

(Dclk), (SSC), (SOE), (POL) (GSC),  
 (62) (GCS) (GSP), (66) 가  
 (GOE) (64) (70R), (70G), (70B) (70G)가  
 (68)

(62) (66) (DCS)

1

(64) (66) (GCS) (GSP)

(68) (BLC) 가 (68) (66)

(70) (74R), (74G) (74B) 가

(70G) (70) (W) 1 (R) (70R) , 1 (G)  
 , 1 (B) (70B) (W) , 1 (R) 4 Lumileds (G)  
 ) 1 (R) , 1 (B) (70R) , 1 (G) , 1 (70G) , 1 (B) (70B)  
 (70G)가 1 (W) (G) (70G) (G)

가

8

(turn on) (frame) 4 (sub frame)  
 (70B) (R), (G), (B), (G) (70R) (B)  
 4 (70G) (G) (70G) 가

180[Hz], 5.5[ms]가 45[Hz], 22.2[ms] 45[Hz] 가

9 8 , 10 9 , ,

G), 10 (B) , 3 (R), (

(M: Magenta) , (C: Cyan), (Y: Yellow)

(M) , (R), (G), (B) (R), (B) (cell) (black)  
 shift) (R), (B) 가 (cell) (color)  
 가

(C) , (R), (G), (B) (R), (B) (cell) (black)  
 2 (G) (G) 1/2 (G)

(Y) , (Y) (R), (G), (B) (R), (B) (

cell) (black) (G) 2 (G) 1/2 (

(G)

R), (G), (B), (G) 4  
가  
R), (G), (B), (G) 4

(  
가  
가  
가

(57)

1.

, 3 ,  
4  
가

2.

1 ,  
4 1 가 , 2 , 3 ,

3.

1 ,  
가

4.

, 3 ,  
4 ,  
3

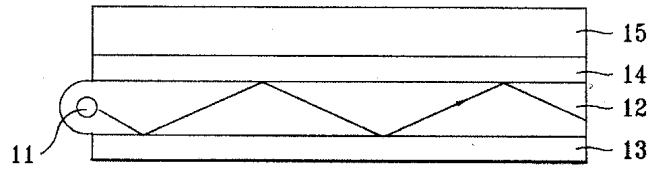
5.

4 ,  
4 1 가 , 2 가 , 3 ,  
가

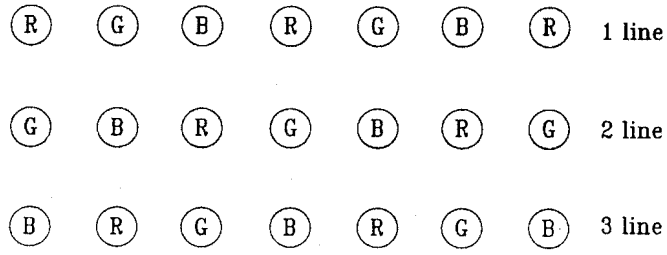
6.

4 ,

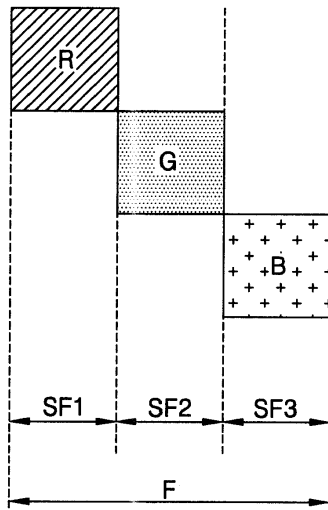
1



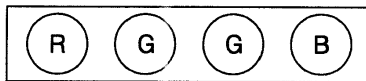
2



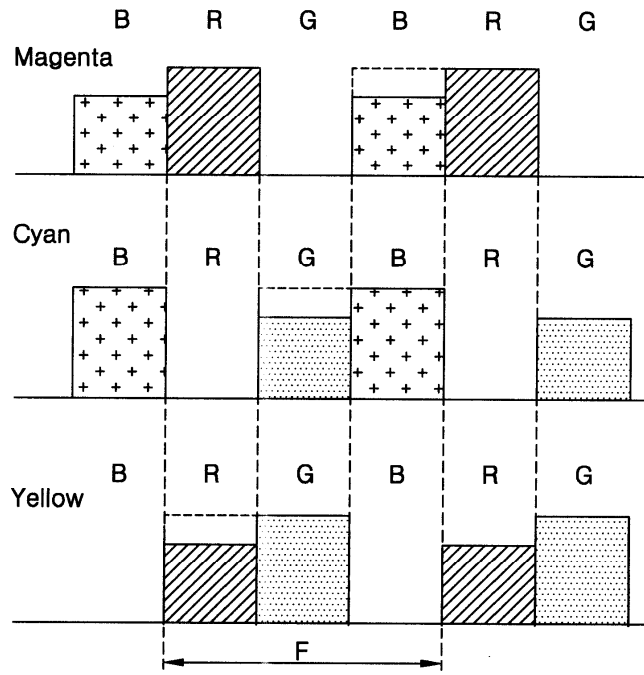
3



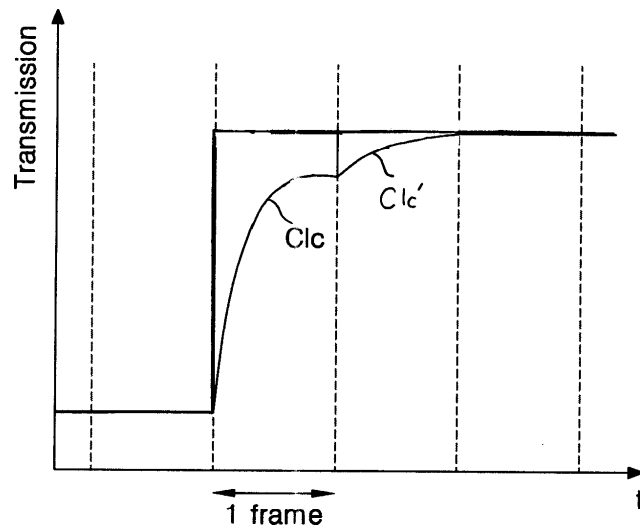
4



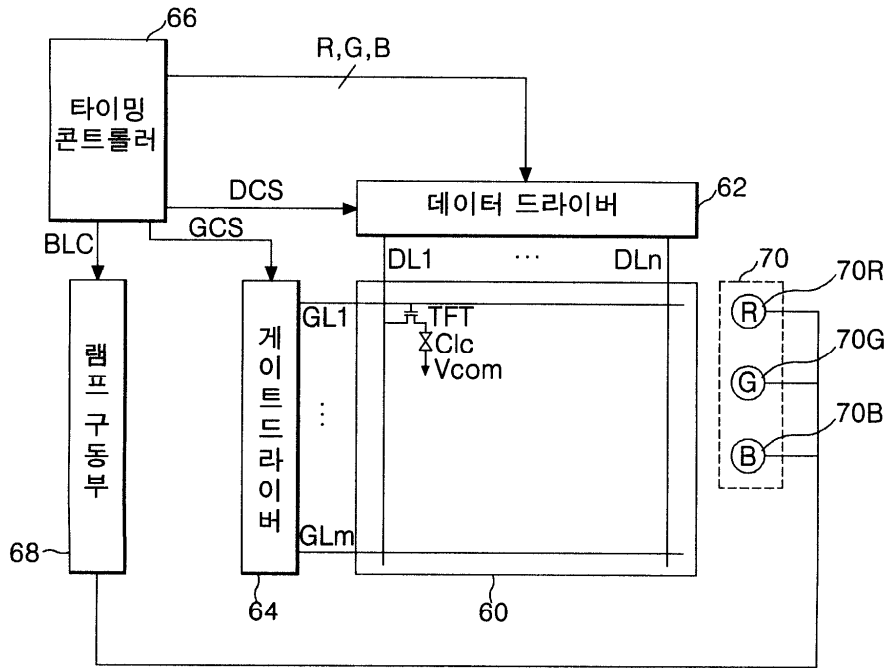
5



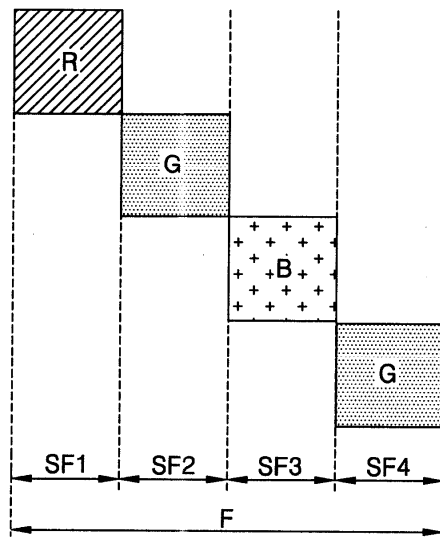
6



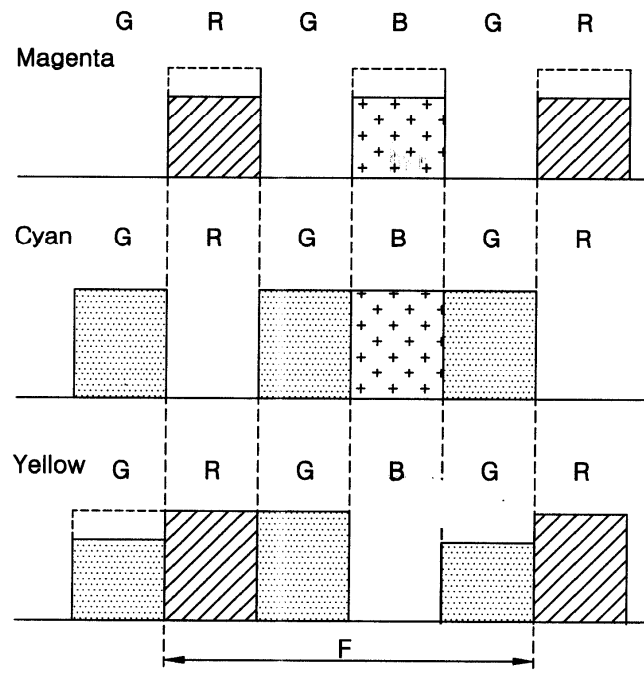
7



8



9



10

