

(19) (KR)  
(12) (A)

(51) 。 Int. Cl.<sup>7</sup> (11) 10-2004-0043485  
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(21) 10-2002-0071742  
(22) 2002 11 18

(71) . 20

(72) 2 1027-3  
16-109  
2 930-43

(74) .

(54)

가 . , .

4

, , , , ,

1(a) 1(d) IPS .  
2 IPS .  
3 2- IPS .

4 IPS

5 4 I-I'

6 IPS

7(a) 7(d) IPS

\* \*

101 : 103 :

105 : 106 :

107 : 108 :

110,120 : 112 :

114 : 115 :

116 : 117 :

118 : 119 :

130 : 132,133 :

140 : 150 :

, 가

, (Mobile Phone), PDA, 가  
(Flat Panel Display Device) 가  
LCD(Liquid Crystal Display), PDP(Plasma Display Panel), FED(Field Emission Display), VFD(Vacuum  
Fluorescent Display)  
(LCD)가

가 TN 가 가 TN  
가 가 가  
(refractive anisotropy) 가

가 , (wide viewing angle characteristic)  
(In Plane Switching Mode) 가  
IPS 가  
, 1 2

1 2 (0°) 90° < θ<sub>R</sub> < 180° (30) (θ<sub>R</sub>)  
 (40) (θ<sub>PL1</sub>) 0° < θ<sub>PL1</sub> < 90° , 1 (10)  
 20) 1(a) 1(b) (50) 90° < θ<sub>PL2</sub> < 180° , 2 (32) (θ<sub>R</sub>) 가  
 , .

c) , 1 (10) (32a) (34) 가 1(  
 2 (20) (32b) 90° 180°  
 , 1(d) X,Y (BLUE)  
 (YELLOW) .

3 IPS 가 (IPS  
 1996-23115 ). (domain) (6) (1) (7)  
 (3) 가 2 (5) (I,II) (8) (6)  
 ) 가 2 .

(1) (3) (16), (17), (18)  
 (19) 가 가 (15)가 가 (7) 가  
 , .

IPS (θ<sub>R</sub>) (3) 1 (I)  
 (5) (7) 2 (II) (5) (7) , 1 (I) 2 (II)  
 (5) (7) (6) (1) , 1 (I) 2 (II)  
 .

IPS 가 , 3  
 (3) (1) (5) (7) (1)  
 , 가 가 (3) (7) (a,b,c,d) , (a,b,c,d)  
 IPS (dead area) 가 .

가 가  
 .

Da 1 , 1 , θ<sub>Db</sub>  
 , .

2 1 2 1  
 70° 80° .  
 1 2 (θ<sub>R</sub>) θ<sub>R</sub> = 90° , 가 1 2  
 .

가 IPS

가 ( , ) , 가 .

IPS

2 가

2

IPS

4 IPS

$$\frac{2}{5} \cdot \frac{4}{(100a, 100b)} \cdot \frac{1}{2} \cdot \frac{6}{IP}$$

S

가

3) (100a,100b) (101) (103) (10) (101) (θ<sub>G</sub> = 0°) 0° < θ<sub>Da</sub> < 90° (θ<sub>Da</sub> = 70° 80°) 2 (100b) (103) (θ<sub>Db</sub>) 270° < θ<sub>Db</sub> < 360° (θ<sub>D</sub> < 0°, θ<sub>Db</sub> = -80° -70°) 1 (100a) (103) (θ<sub>Da</sub>) 2 (100b) (103) (θ<sub>Db</sub>) (101) (θ<sub>Da</sub> = -θ<sub>Db</sub>). (115a,115b)† (115a,115b) (101) (116a,116b) (116a,116b) (117a,117b) (103) (117a,117b) (118a,118b) (119a,119b)

$\theta_{ELa}$   $\theta_{ELb}$   $\theta_{ELa} = -\theta_{ELb}$

$$\begin{array}{ccccccc} \text{(100a)} & \text{(103)} & \text{(105a,105b)} & \text{(107a,107b)} & \text{(100a)} & \text{(105a)} & \text{(107a)} \\ (\theta_{ELa}) & (\theta_{Da} = \theta_{ELa}) & (\theta_{Da}) & 1 & (\theta_{Db}) & (\theta_{Db}) & 1 \\ \text{(105b)} & \text{(107b)} & (\theta_{ELb}) & \text{(100b)} & \text{(103)} & \text{(100b)} & \text{(100b)} \end{array}$$
$$\begin{array}{ccccccc} & & (\theta_R) & (101) & (\theta_G) & & \\ & (\theta_R) & 1 & (100a) & (105a) & (107a) & (\theta_{ELa}) \quad 90^\circ - \theta_{ELa} \\ 10^\circ & 20^\circ & & & & & (105b) \\ & (\theta_{ELb}) & \theta_{ELa} - 270^\circ & (\theta_R) & 2 & (100b) & \\ & & & -10^\circ & -20^\circ & & (107b) \end{array}$$
[illegible]

|              |               |                        |                        |             |
|--------------|---------------|------------------------|------------------------|-------------|
| (105,105b)   | (115)         | (118)                  | Cu, Mo, Ta, Cr, Ti, Al | Al          |
| (sputtering) | (evaportaion) |                        | ,                      | (107a,107b) |
| (118)        | (119)         | (116)                  | (112)                  | (107a,107b) |
| (112)        | (114)         | Cr, Mo, Ta, Cu, Ti, Al | Al                     |             |

[illegible]

(57)

1. 1 ; ; ; ; .
2. 1 , .
3. 2 , , ; ; ; ; ; .
4. 1 , 가 2 ; 1 2 가 .
5. 4 , 1 2 1 2 .
6. 5 , .
7. 6 , .
8. 1 , , ; .
9.

,  $\theta_{Da}$  1 ; ,

1 , ,  $\theta_{Db}$  2 ,

.

9 10. ,  $\theta_{Da} = - \theta_{Db}$  .

9 11. ,  $\theta_{Db} = 70^\circ \sim 80^\circ$  .

9 12. , 1 2 ( $\theta_R$ )  $\theta_R = 90^\circ$  .

13. ;  
 , ;  
 ;

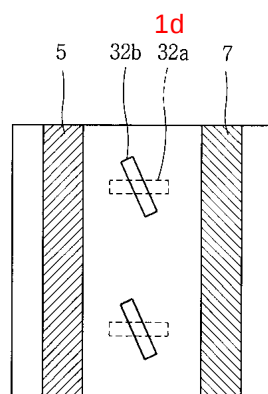
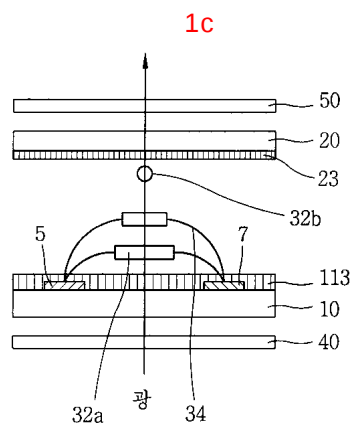
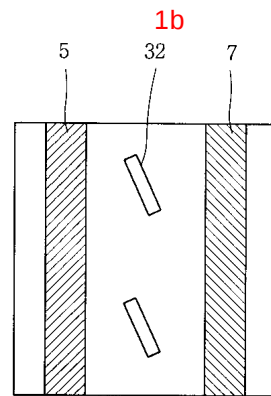
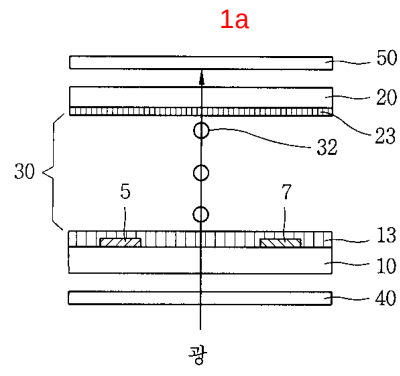
13 14. , .

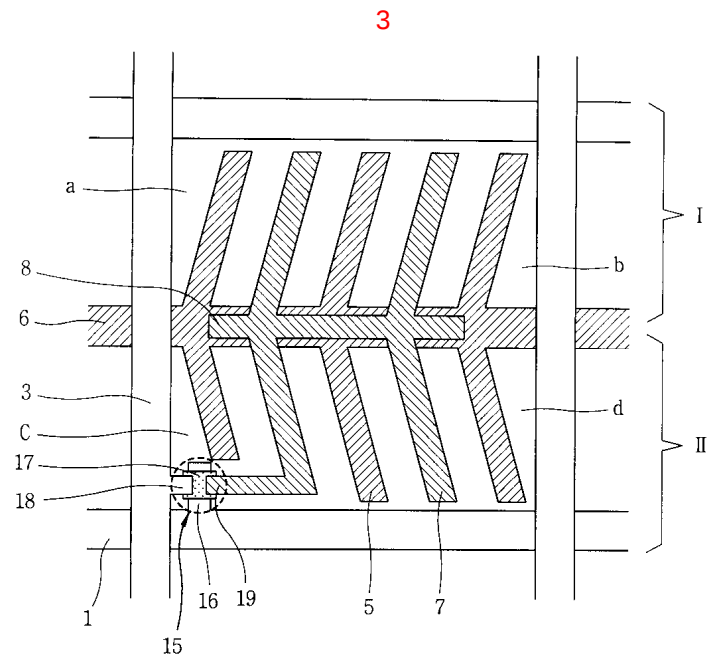
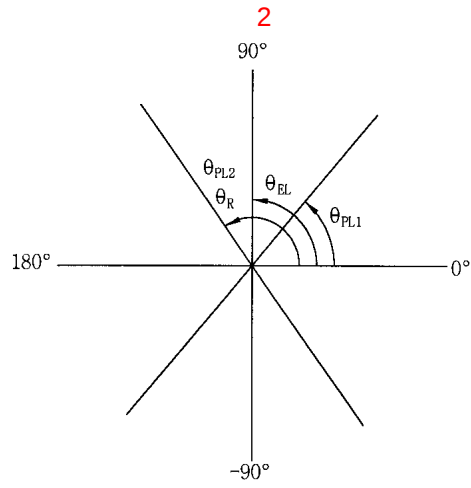
15. ;  
 ;

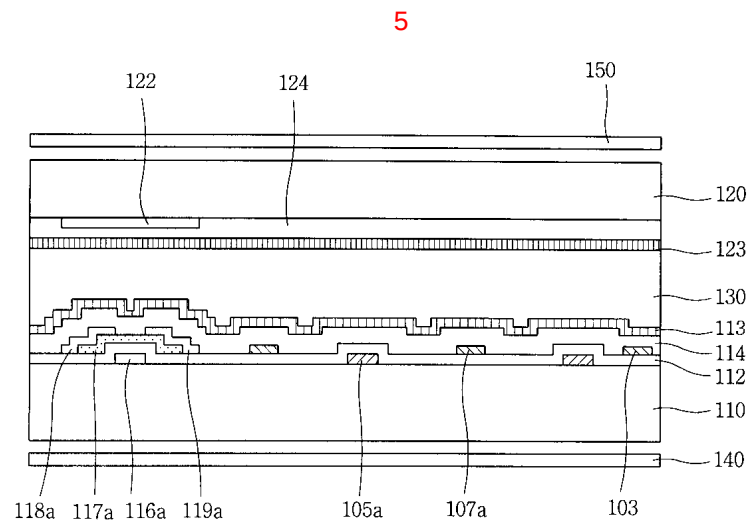
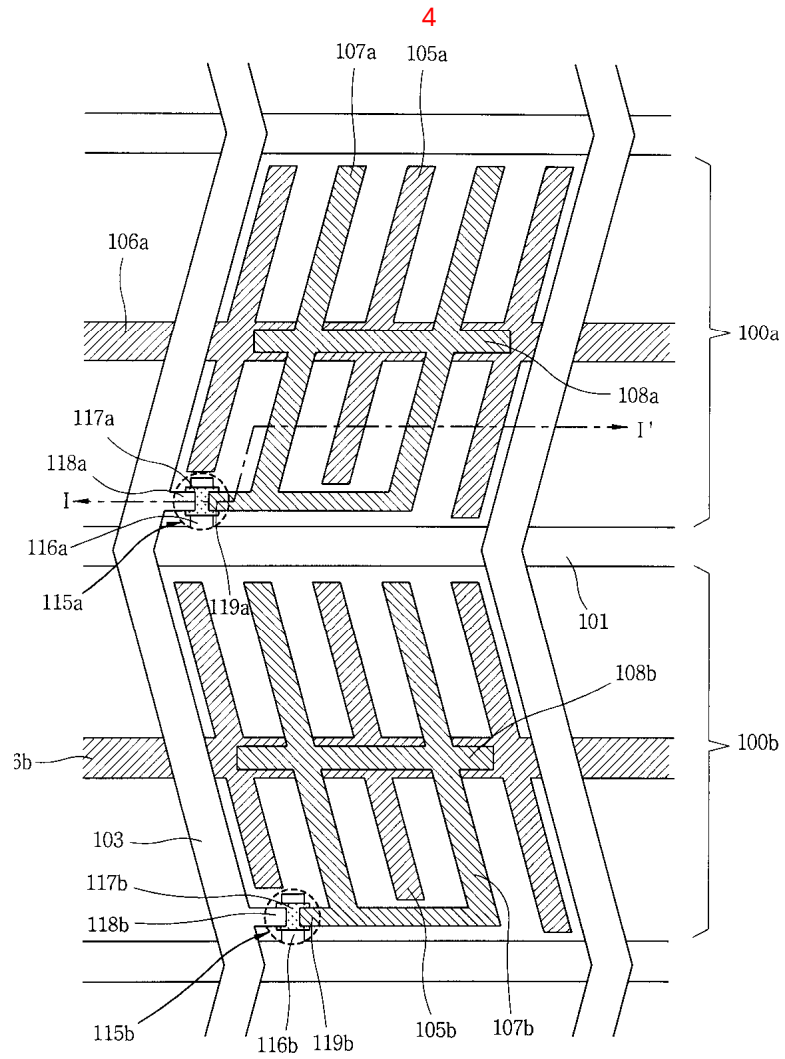
15 16. , 가 .

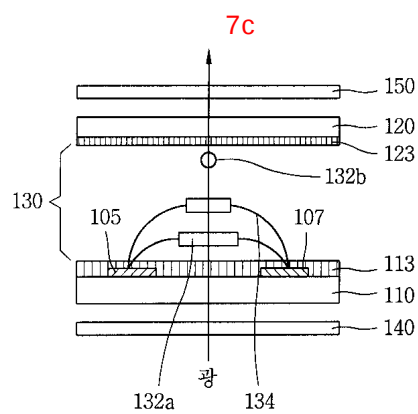
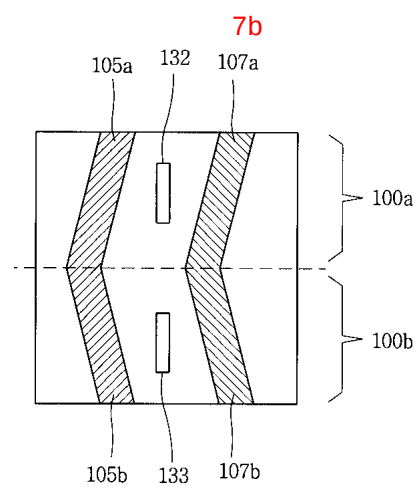
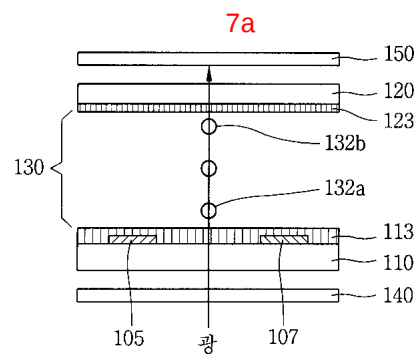
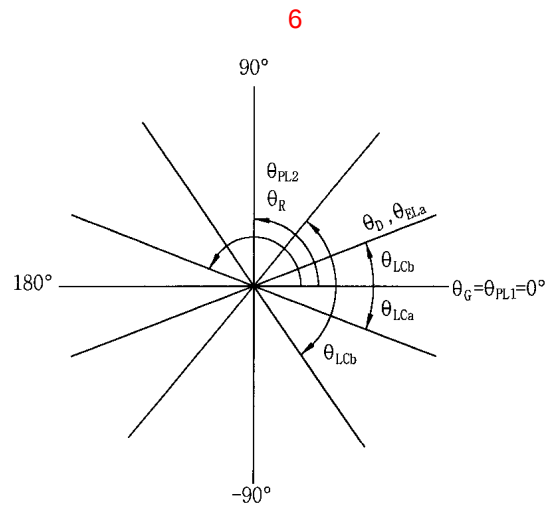
16 17. , .

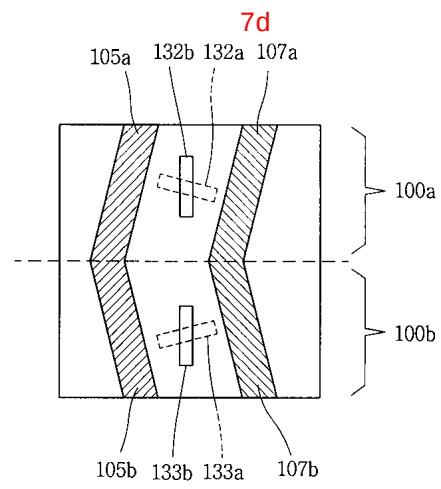
17 18. ,  $70^\circ \sim 80^\circ$  .











|                |                                                                                                           |         |            |
|----------------|-----------------------------------------------------------------------------------------------------------|---------|------------|
| 专利名称(译)        | 横向电场模式液晶显示元件                                                                                              |         |            |
| 公开(公告)号        | <a href="#">KR1020040043485A</a>                                                                          | 公开(公告)日 | 2004-05-24 |
| 申请号            | KR1020020071742                                                                                           | 申请日     | 2002-11-18 |
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| 当前申请(专利权)人(译)  | LG显示器有限公司                                                                                                 |         |            |
| [标]发明人         | BAEK HEUMEIL<br>백흠일<br>CHUNG JINYOUL<br>정진열<br>KIM GIHONG<br>김기홍                                          |         |            |
| 发明人            | 백흠일<br>정진열<br>김기홍                                                                                         |         |            |
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| CPC分类号         | G02F1/1337 G02F1/134363 G02F1/136286 G02F2001/136222 G02F2001/136295 G02F2201/121 G02F2201/123 H01L29/786 |         |            |
| 代理人(译)         | PARK , JANG WON                                                                                           |         |            |
| 其他公开文献         | KR100899627B1                                                                                             |         |            |
| 外部链接           | <a href="#">Espacenet</a>                                                                                 |         |            |

#### 摘要(译)

在本发明的横向电场模式液晶显示元件中，相邻的像素形成Z字形。因此，相邻像素的公共电极和像素电极相对于栅极线对称布置，从而改善了视角特性，并且数据线以与公共电极和像素电极平行的Z字形布置。4 指数方面 横向电场模式，锯齿形，数据线，对称性，视角，孔径比

