

2

LCD

가 LCD

가 LCD

m n RLCD , m - n (intersection)
 () , , (cell site)
 , , " " 가
 가 (light) (dark) (gra
 y shade)

RLCD (capacitive load) , ,
 (pulsed voltage ramp) (spike) .
 , , 가
 (terminating) (track - and - hold) 가 ,

(frame activity) LCD m
 , (Gillette) (4,766,430)

가 , , (ramped)
 8 13

, LCD

(cross - talk)

- LCD

1

egrating Digital - to - Analog Converter)

RLCD

RLCD

(IDAC: Int

, RLCD

IDAC ,

6

AM: Random Access Memory)

(LUT: Look - Up - Table)

(R

가

- LCD

1

가

- LCD

17

- LCD

1

2

RLCD

3

RLCD

(BV)

4

RLCD

1

(10)
(review)

(10)

가

()
(timed series)

(triggered)

(12)

(12)

(RAM)(14)

256
(LUT)

13 (8192 가). / (DAC)(
 16) , (16) (18)

640 RLCD (20) (charging source) ,

(26) (22) (turn off) , (28) (24) ,

ns , " (flight back)" 가 , 50

2 RLCD , 1280 1024 ,

2 , (monotonic) , 1) DA
 (30) (background) LUT ,
 C(16)가 DAC(IDAC) ; 2) RAM(14)가 8
 RAM ; 3) (26) 가
 (OTA: Operational Transconductance Amplifier)

(10)

C , RAM IDAC RLCD (20) , IDA
 , (10) LUT (32) , (28)
 2 (34)

(36) , (32) (40)
 (38) , (40) 3가
 (gates) , (38) , (

34) (20) LUT

3 RLCD BV 3 , 1 (60) -
 , 2 (62) - , 3 (64) -
 (ΔV_{min}) IDAC ,
 (256) RLCD , DAC 1

1

$$N_{dac} = \left\{ \log_2 \frac{V_{max} - V_{min}}{\Delta V_{min}} \right\} + 1 = 11 \text{ 비트}$$

IDAC가 가 , IDAC 가 , 2 ,

2

$$\Delta V_{idac} = \Delta t \frac{I}{C_{col}}$$

, I C_{col} , t , I .

, IDAC , 1
 , BV , RLCD . 3

3

$$N_{idac} = \left\{ \log_2 \frac{\Delta V_{max}}{\Delta V_{min}} \right\} + 1 = 6 \text{ 비트}$$

IDAC .

IDAC가 가 (binary weighted currents) , LUT , 4 3
 BV RLCD .

4

$$V_{out}(t) = \int_0^t \frac{I_{idac}(t) dt}{C_{col}} - V_{ref}$$

5

$$I_{idac}(t) = \sum_{k=0}^7 2^k b_k(t) I_o$$

, V_{ref} , I_o , b_k(t)
 , k=0...7 .

, k=0...255 (k) , b_k(t) 6

6

$$\left| \Gamma_k - \frac{I_o}{C_{col}} \tau \sum_{j=0}^k \sum_{m=0}^7 2^m b_m(j) \right| \leq \epsilon$$

, 2 가 () , RLCD

, 256 LUT (ring) , 8

4 RLCD

(42) 1 (latching) (envelope) , (46) RAM(14) LUT (44) (44) OTA 가 , 가 (48) , (50)

, 가

가

LCD

(57)

1.

(20)

LCD ;

LCD ,

LCD ,

(20) ,

(36)

LCD

2.

1 , ,

(14) (12) ,

LCD (brightness) (look - up table) (14) -

3. LCD .

2 , LCD 8 2 (binary word) 256 .

4.

2 , LCD (36) (38) .

5.

2 , LCD $\{b_m(j)\}$ $\{ |\Gamma_k - \frac{I_o}{C_{col}} \tau \sum_{j=0}^k \sum_{m=0}^j 2^m b_m(j) | \leq \epsilon \}$.

6.

2 , LCD (20) / / (14) (14) , LCD .

7.

1 , (20) , LCD .

8.

7 , (20) , LCD . (12)

9.

1 , MOS , LCD .

10.

(36) (40) ,

LCD (32) ,

LCD (32) ,

(38) (36)

, LCD .

11.

10 가 , (36) , , ,

, LCD .

12.

10 , $\{ |\Gamma_k - \frac{I_0}{C_{col}} \tau \sum_{j=0}^k \sum_{m=0}^j 2^m b_m(j)| \leq \epsilon \}$, LCD .

13.

(20)

(14) / , (14)
 / (20) ,
 (14) / ,

, LCD .

14.

13 , 1280 (20) 1024 , LCD .

15.

13 , (20) , LCD (14) .

16.

13 , / , LCD .

17.

13

LCD

18.

a)

b)

c)

d)

e)

a d

f)

(20)

LCD

19.

18
(28)

LCD

LCD

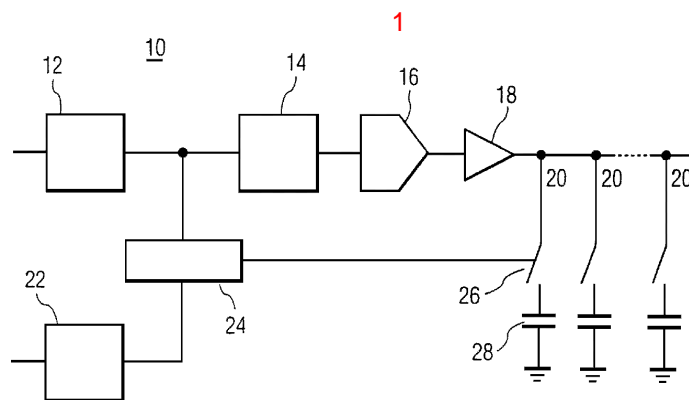
20.

19
}

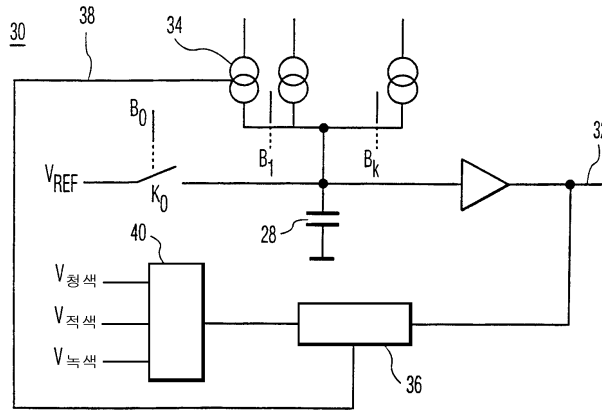
LCD

$\{b_m(j)\}$

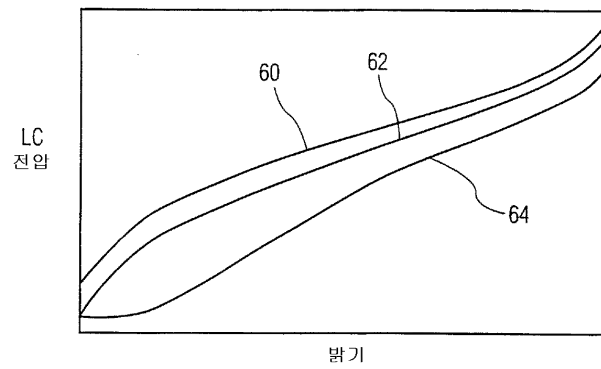
$$\left\{ \left| \Gamma_k - \frac{I_0}{C_{\text{est}}} + \sum_{j=0}^k \sum_{m=0}^j 2^m b_m(j) \right| \leq \epsilon \right\}$$



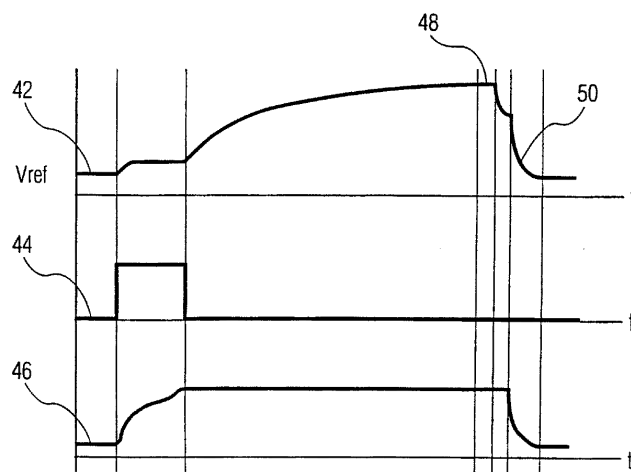
2



3



4



专利名称(译)	用于反射式液晶显示器的数字控制电流积分器		
公开(公告)号	KR1020020057801A	公开(公告)日	2002-07-12
申请号	KR1020017015223	申请日	2001-03-15
[标]申请(专利权)人(译)	皇家飞利浦电子股份有限公司		
申请(专利权)人(译)	科宁欣克利凯恩菲利普斯日元.V.		
当前申请(专利权)人(译)	科宁欣克利凯恩菲利普斯日元.V.		
[标]发明人	ALBU LUCIAN R 알부루시안알 JANSSEN PETER 얀센페터		
发明人	알부, 루시안, 알. 얀센, 페터		
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CPC分类号	G09G3/3685 G09G2310/027 G09G2320/0209 G09G2320/0276		
代理人(译)	MOON , KYOUNG金		
优先权	09/537825 2000-03-29 US		
外部链接	Espacenet		

摘要(译)

本发明涉及一种使用电流源而不是电压源在RLCD中产生图像以降低噪声和功耗的系统。电流由多个RAM驱动的理想DAC提供。每个IDAC利用多个OTA中的一个驱动多个RLCD列中的一个。每个RAM中的查找表接受对应于在伽马校正曲线中获得的值的时间导数值的多个6位数字值。通过自动补偿，在每个显示周期结束时自动校正LUT值。 - 1 - 2

