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(22) 1999 05 25 (43) 2000 12 15

(73) 3 416
(72) 417 201 1504
(74)

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(54)

/ 가 .
/ ,
APC .
APC 가 ,
 ,

1

2

3 DVD - RAM /

4(a) 4(b) 2

5 2

/ (Laser Diode)

,

MO

DD(Magnetic Optical Disc Driver), DVD - ROM(Digital Video Disc Read Only Memory), DVD - RAM
(Digital Versatile Disc Random Access Memory)

가

/ (Laser Diode)
(Auto laser diod Power Control; APC)

1 APC 1 , 1
20 (180)
, 140 (120) (160)
(120) NRZI(Non Return to Zero I
nverted) , DVD - RAM (first pulse), (last pulse),
(cooling pulse), (multi - train pulse)

APC (200) (Photo Diode;PD)(202), 가 (Variable Gain Amplifier ; VGA)(204),
(206), / (up/down counter)(208), / (Digital/Analog Converter ; DAC)
(210)

(202) (180)
, 가 (Variable Gain Amplifier ; VGA)(204)
(gain) (206) 가 (202) (204) (Vr
ef)

/ (208) (206) 가 가 (204) (Vref) (208)
(206) 가 가 (204) 가 가 (204)

(Vref) (208) D/A (210) 가) (140) 가 . /
 (140) D/A (210) 가 (160)

1 APC (200) (202) (160)
 ,

1 APC (200) / 가
 (160) /
 , APC (200)가 .

APC

, ; ; / ; / ;

DVD - RAM / , CD
 , 2 ,

2 , , 가
 ;
 / ; / ;
 ;

/ / ,
 , DVD - RAM / APC , CD

2 APC . 2 1
 가

2 300 APC , 310 .

APC (300) APC D/A (210) A
 PC SUB APC (SUB - APC), APC(Average APC) , SUB - APC 가 . SUB A
 PC 가 DVD - RAM (MIRROR) (GAP)

APC D/A (210)
 (140) .

SUB - APC 가 ()

(310) () , / 가 가 APC (300)
 . , /

3 DVD - RAM . DVD - RAM

(402),
 가 , (402)
 , (404)

3 (402) , (4
 04)

4(a) 4(e) 2

4(a) / , 4(b) 1 APC
 , SUB APC , 4(c) 4(e) 2
 , SUB - APC

4(c) SUB APC / /
 . 4(d) APC 4(e) SUB - APC /
 /

SUB APC SUB - APC 2 (/
) APC , 가 (MIRROR) (GAP)
 APC 가

APC 2 가 가
 . , APC

5 2 APC . 5 , 1

가 (204) 가 (WR, ER) 가 .

(206) 1 (206a) 2 (206b) , 1 (206a) ,
 2 (206b) .
 / (208) 5 (208a 208e) . 1 / (208a)
 , 2 / (208b) , 3 / (208c)
 , 4 / (208d) , 5 / (208e)
 (208e) (groove) .
 D/A (210) 3 D/A (210a 210c) . 1D/A (210a) ,
 2D/A (210b) , 3D/A (210c) .
 / / / 2 5 (208b 208e) 2D/A 3D/A (2
 10b 210c) (212a, 212b)가 .
 1 (212a) 2 3 (208b 208c) 2D/A (210b)
 . 2 (212b) 4 5 (208d 208e) 3D/A
 (210c) .
 (214) 3 (214a 214c) , D/A (210a 210c) ,
 (140) . 1 (214a) 1D/A (210a)
 (140) . 2 (214b) 2D/A (210b)
 (140) . 3 (214c) 3D/A (210c)
 (140) .
 (216, 217), D/A (218, 219), (220, 221), (222) (206) (V
 ref1, Vref2) .
 (216) () 4D/A (218a) (216)
 D/A . 4 (220a) D/A (218a)
 (Vref1) 1 (206a) .
 (217) () . 1
 (217a) , 2 (217b) ,
 3 (217c) , 4 (217d) .
 3 (222) / / / (217a 217d) D/A (219)
 .
 5D/A (219) 3 (222) D/A . 5 (221) 5D/A (219)
 (Vref2) 2 (206b) . ,
 / , D/A , .
 APC (300) () APC D/A (210) .
 (310) () , / 가 가 APC (300) .

(320) (clk) DVD - RAM
 / (310) (320)
 APC (300) APC
 (320) 가 가 APC

5

1) SUB APC

SUB APC 5 APC , /
 / 가
 SUB APC () (310) A
 PC (300)가 SUB APC , / 가 가 APC
 (300)가
 APC (300) / (208),
 (212) / 8
 APC (300) D/A (210) (214) (140)
 가
 SUB APC APC (300) / 가 가 (160)
 / 가 가

2) APC

APC 5 (140)
 APC () (310) APC
 (300)가 APC
 APC (300) / (208), (212)
 D/A (210) (214) (140)
 가
 APC APC (300)
 APC APC
 가 가 APC APC

3) SUB - APC

SUB - APC 5 APC , /
 /

SUB - APC () (310) AP
C (300)가 SUB - APC , / 가 가 A
PC (300)가 .

APC (300) / / (208),
(212) , . / 8

APC (300) D/A (210) (214) (140)
가 .

SUB APC APC (300) / 가 가 (160)
/ / 가 가 .

, APC (300) / 가 가 ,
APC .

4)

(216), 3D/A (218), 4 (220), 1 (206a), 1 / (20
8a), APC (300), 1D/A (210a), 1 (214a), (140), (16
0), (202), 가 (204) (loop) APC .
(216) (216)
가 .

4D/A (218a) (216) D/A . 4 (220a) 3D/A (218a)
(Vref1) 1 (206a) . 1 (206a)
1 / (208a) . 1 / (208a) 1D/A
(210a) , 1 (214a) (1
40) .

(160) (140)
(202) . 가 (204) 1 (206a)

(160) (216) 1 (206a) 가
, 1 / (208a) 1 . , (140) 가
, (160) . (160)
216() 1 (206a) 가 , 1 /
(208a) 1 . , (140) 가 가 ,
(160) 가 .

(160) (216)

5)

(206b), 2 3 / (214b), APC (217), 3 (208a, 208b), 1 (140), (222), 5D/A (212a), APC (160), (218b), 5 (221), 2 (300), 2D/A (210b), (202), 가 (204)

(217) (216)

가

, DVD - RAM (/)

1 (217a) 2 (217b)

3 (222) 1 (217a) 2 (217b) /

5D/A (219) 3 (222) D/A 5 (221) 5D/A ((219) (Vref2) 2 (206b) 2 (206b)

/ (208) 2 / (208b) 3 /

(208c) 가 1 (212a) 2 / (208b) 2 / (208b) 3

/ (208c)

/ (208b 208c) 2D/A (210b) , 2 (214 b) (140)

(160) (140)

(202) 가 (204) 2 (206b)

6)

(206b), 4 5 / (214c), APC (217), 3 (208d, 208e), 2 (140), (222), 5D/A (212b), APC (160), (219), 5 (221), 2 ((206b), 3 (214c), (208d, 208e), 2 (140), (222), 5D/A (212b), APC (160), (219), 5 (221), 2 (300), 3D/A (210c), (202), 가 (204)

(217) (216)

가

, DVD - RAM (/)

3 (217c) 4 (217d)

3 (222) 3 (217c) 4 (217d)

5D/A (219) 3 (222) D/A 5 (221) 5D/A ((219) (Vref2) 2 (206b) 2 (206b)

/ (208)

/ (208) 4 / (208d) 5 /
 (208e) 가 . 2 (212b) 4 / (208d) 5
 / (208e) .
 / (208d 208e) 3D/A (210c) , 3 (214
 c) (140) .
 (160) (140)
 (202) 가 (204) 2 , (206b)
 .
 SUB APC , APC , SUB - APC
 1 APC
 APC
 가 , 가
 , /

(57)

1.

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/

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/

;

.

2.

3.

1 , 2 , /
 .

4.

3 , /
2 ,
가 .

5.

1 , DVD - RAM ,
DVD - RAM
.

6.

1 , DVD - RAM ,
DVD - RAM
.

7.

1 ,
CD(Compact Disc) ,
CD
.

8.

7 , 가 가 .

9.

10.

11.

12.

;

;

/ ;

/ ;

/ / , APC
/ , .

13.

12 , APC /
2 , .

14.

13 , APC /
2 , ,
가 .

15.

12 , DVD - RAM ,
DVD - RAM
.

16.

12 , DVD - RAM ,
DVD - RAM
.

17.

12 ,
CD(Compact Disc) ,
.

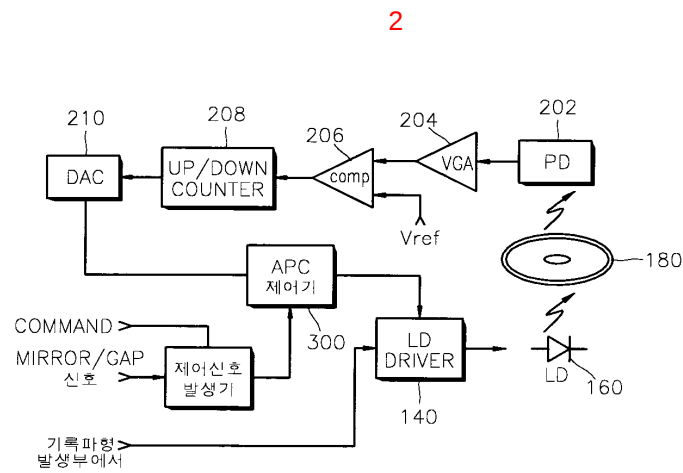
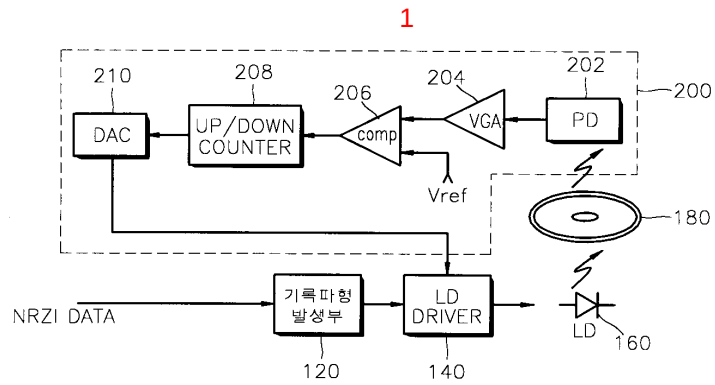
18.

17 , 가 가 .

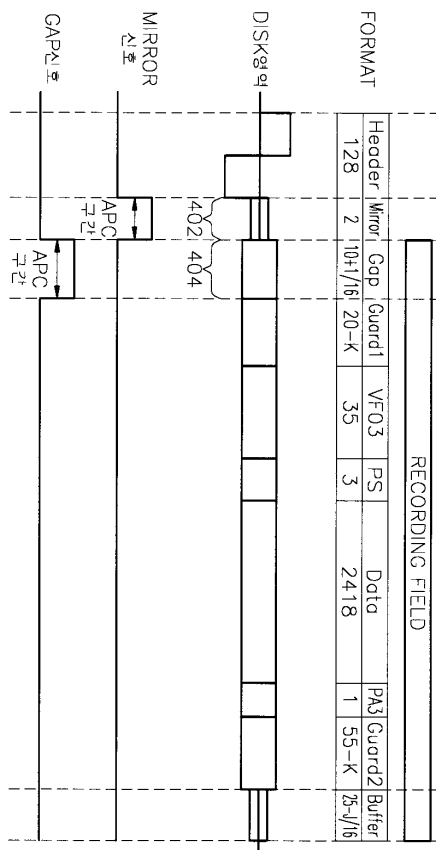
19.

20.

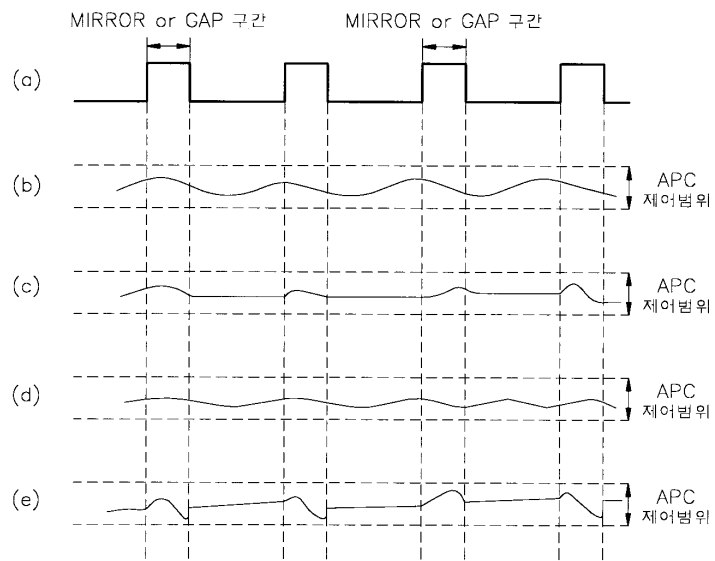
21.



3



4



5

