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(30) 60/272,176 2001 02 28 (US)

(71) 46

(72) , , 46280, , 10736

, , 46224, , 763

, , 46122, , . . 362324

(74)

:

(54)



가,

가

1

2

3 2

4

5

1 가 , 4 , NTSC ,

(VCR) (1105) IF (1130) RF (1102) (RF\_IN) (VIDEO IN)가 (1100)

(VIDEO) IF (1130) (RF\_IN) (1102) (1105)

(1130) (RF\_IN) 2 RF IF (1102) (1105)

1 (1105), PIP(picture-in-picture) (1140), (1155), Star Sight™ (mP)(1110)

(1110) I<sup>2</sup>C I<sup>2</sup>C BUS, mP(1110)

(CPU)(1112) IR (1125) IR (1122)

(1125) EEPROM(1127) (CHANNEL UP)' CPU(1112) (1105) (scan)

I<sup>2</sup>C EEPROM(1127) 가

4 5 ( ) (upload) (download)

(1110) (1113) (1113)

1

CPU(1112) mP(1110) (1119) mP(1110) , CPU(1112) (1115) (OSD) (1117) (1115)

15) StarSight™ PIPV

가 StarSight™

StarSight™ StarSight™

StarSight™ CPU(1112) StarSight™

StarSight™ ( , 2:00) StarSight™ CPU(1112) StarSight™ 16 (1115)

I<sup>2</sup>C CPU(1112) StarSight™ (1160) StarSight™ (1115)

} StarSight™ EPG { , 가 (1125) StarSight™ EP

G StarSight™ (1160) I<sup>2</sup>C , CPU(1112) OSD (1117)

OSD (1117) , ( ) , (R), (G), (B) 4 5 - (OSD\_RGB)

OSD (1117) - 가 (fast switch)  
(OSD\_RGB) (FSW) (enable) , OSD (1117) (1127) -  
(1125) (OSD\_RGB) EPG , CPU(1112) (1117) 가  
(FSW) (OSD\_RGB) (1117) EPG가 가  
(VSP)(1155) (kinescope) VSP(1155) LCD  
( 1 ) OSD (1117) /  
(1110) OSD (1117) (FSW)  
VSP(1155) PIP (1140) (PIPV) 가 PIP  
(PIPV) { (pix)} ( ) . PIP 가  
(PIPV) 가 (PIPV) . PIP (1140)  
(ADC), RAM, (DAC) (1140)  
, EPG OSD (1117)  
(FSW) VSP(1155) 가 (1125)  
(1110)가 EPG StarSight™ (1160) EPG OSD (1117)  
(1110) VSP(1155)가 EPG (FSW) OSD  
(1117) EPG . EPG  
EPG 가 (1110) EEPROM(1127) EPG  
EPG (1125) / (monitor)  
(1110) (click)  
EPG 가 (1110)  
가 , EPG EEPROM(1127)  
, 1 가 (1125) EPG , EP  
G CPU(1112)가 EPG 가 EPG , CPU  
(1112) StarSight™ (1160) EPG I<sup>2</sup>C (ac  
cess) . EEPROM(1127) EPG , CPU(1112) EPG EPG  
(1117) OSD (OSD\_RGB) OSD (1117) OSD  
. VSP(1155) (FSW) EPG OSD (VSP)(1155)  
, CPU(1112) ) 가 EPG VSP(1155)  
(FSW) (set) EPG  
1 mP(1110)  
(SGS-Thomson Microelectronics) ST9296  
; PIP (1140) PIP (Sanyo) (Mitsubishi)  
M65616 PIP ; VSP(1155) LA7612

2  
가 , 4 , 2

MPEG MPEG

, 2 , -MPEG 가 'PCTV'

(DVD) MPEG ,

가,

2 (carrier) (10)

(15) (20) (3

0) (30) (125) (25)

) (25) 가 ,

(85 80) (25)

(75) (25)

(HDTV) (2

5) (105) (90) (90)

(25)

(105)

2 (10) (1)

5) (15) (RF) (IF) (mixer) 가

(20) (30) (30) (25)

가

(33) (mux)(37) (30) (descrambling) (40)

가 (30) (35) (40) ISO 7816

가 (NRSS : National Renewable Security Standards) (NRSS

EIA IS-679, PN-3639 ) (smart)

(40) (35) 가 , 가

mux(37) (40) mux(37) (35) (30)

(40) 가 (premium) NRSS

(40) (130){ (130) } NRSS

(25)

(35) mux(37) MPEG 2.4 MPEG

가

(PID)

mbling) PID (asse

(PSI : Program Specific Information) (25)

(90) (116)

가 (115) 가

가 (PID)

2 가 - (OSD : on-screen dis

play) 가 (EPG) . OSD

OSD (O

SD) 가 , / 4 5 /

가 /

(115) (115)

(125) OSD (115) PSI (25) mux(37)

115) (25) (120) (115) (25) mux(37)

(45, 47, 50, 55, 65 95) (C) (25)

110) (C) , mux(37) (35) (95) 가

(90) (45) PID (45) (55) PID

(50) 가 (45) (47) (50) PID

(47) mux(110)

(40 50) NRSS 가

(45 47) mux(37) PID (115) (45 47) PID

- PID (45 47) - (look-up) PID - (look-up) (map)

PID - PID (45 47) (45 47) PID

(45) PID - (45 47) - PID (60) (50)

ISO 7816-3 (115) PID (45 47) -

(1989) (130) ISO 7816-3 /

(45 47) (50) (Department of Commerce) 가 (N

ational Technical Information Service) (FIPS : Federal Information Standards)

(46, 74 81) (DES : Data Encryption Standard)

(50) (45 47)

(45) (50) (55) (50) mux(110)

(47)

(60) (115) 가 4 (115)

(115) (70) (75, 80 85) (60) 4

(65) (45) (45)

(flag) (65) (65) (60) (60) (FIFO : First-In-

가 First-Out) (60) (60) (pointer)

0) (60) (115) (45 5 7)

0)가

(45 50) (55) MPEG 2.4.3.2  
 (MPEG) (header) (55) (adaptation field)  
 (PCR) : Program Clock Referen  
 ces) (55) (timing) (interrupt) (115)  
 (60) (65) (55) (65) (65) (55) (60)  
 (55) (115) PCR (115) PCR (27 MHz) (115)  
 (115) (115) (25) (oscillator) (115)  
 (reset)  
 (55) (45 50) (caption), (60)  
 (70) (60) (75, 80 85) (115)  
 (80 85) (75) (85) (85) (HDTV  
 가  
 (formatting) (85) (HDTV  
 (75) 가  
 PSI (60) (115) (45) PSI (55)  
 (65) (45, 50) (115) PSI (60)  
 (115) PSI(CPSI) PSI (45) CPSI 가 (47) PID, (115)  
 (65) (115)  
 16) (115) 1 (1113) (1  
 (116) (116) 2  
 3 2 3  
 (Hughes Electronics) DIRECTV™ (Thomson Consumer Electronics)  
 (set-top box)  
 3 (301) 950-1450 MHz 가 RF (317)  
 (302) (filtering) (conditioning), (link) (302)  
 DATA (302) (301) (I\_out O\_out) 가  
 (302) (IC) IC (Grenoble  
 ST 15339-610  
 (302) DATA (303) 가 가  
 2

DIRECTV™ 가 (class)

( , , )

(303) 2 (25)

(303) MPEG PID , 가 MPEG (304)

(303) RISC Microprocessor)(315) . ARM (315) RISC ROM(308) (ARM : Advanced RISC

OSD , 4 5

(303) IC , ST 15273-810 , 15103-65C

(303) MPEG (303) MPEG MPEG (304) (304) 가 (DAC)(305) 가

가 가 NTSC (306) (304) NTSC (306) NTSC (306)

ST I3520 MPEG IC

MPEG (304) OSD (320)가 . OSD (320) SDRAM(316) . O

SD , SDRAM(316) OSD / OSD (315) OSD /

(translucency)

OSD , 가 ARM (315) 가 , ARM (315) 가 , 가

SD (320) 가 가 OSD MPEG / (303) (304) OSD O

(330) VCR IR- (Blaster)( )

가 VCR , IR (emulator) , 가 3 VCR VCR , O

N' 'RECORD'

3 가 (116)

(307) (CAM)(309) 2 (116)

NRSS (40) (wideband) (310) 2 H

DTV 312) (75) /IR (

) (120

/O (100) AV (313) VCR DVD 2 I

5 1 3 , (high-level)

CTV), , 가 ( , VCR), (hybrid)( , P

1 3  
5 4 2  
(70) (115) 4 가  
(125) 가  
(115) (70) ( )  
70) (11)( 4)  
4 (400)가 (18)  
(11) (115) (125)  
(400) (125)  
(400) (400) (125)  
(400)  
(403 406), (400) (401), (402),  
(407) (408) 가 가 (401 407)  
(408) 가 가 (408)  
(401) 가 (408)  
(125) 가 (408)  
(403 406) 가 (408)  
(125)  
가 (403 406)  
(402) (402) (402) ( ) 4  
가 (409) (408) (408) (125) (409)  
(410) (410)  
가 ( ) (403 406)  
/ 가  
가  
1 7  
10 2 2  
가 가

5 530) . 5 2 4 (115) , (500

가

(57)

1.

2.

3.

4.

5.

6.

(processor agent)

7.

8.

9.

1

(parental)

10.

11.

10

12.

10

13.

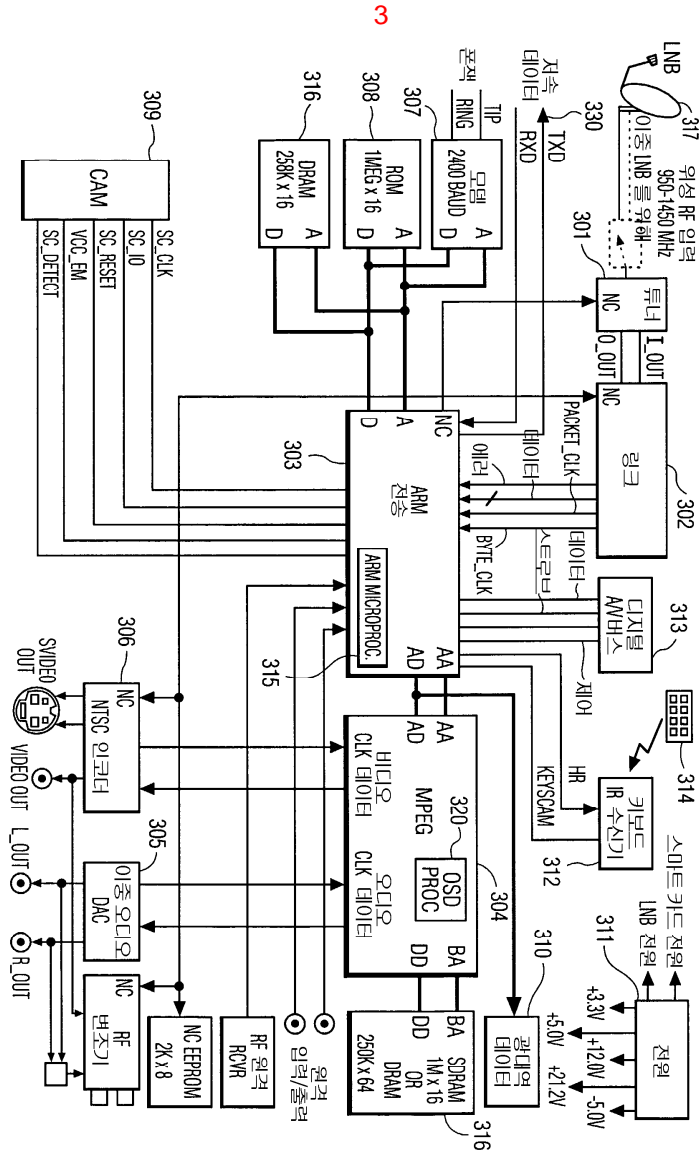
12

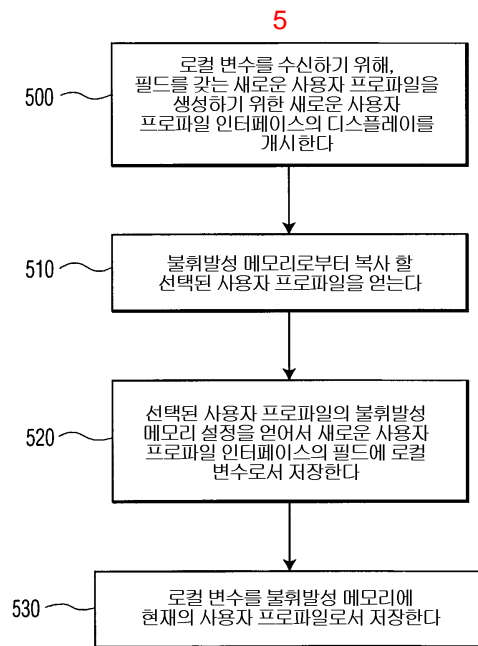
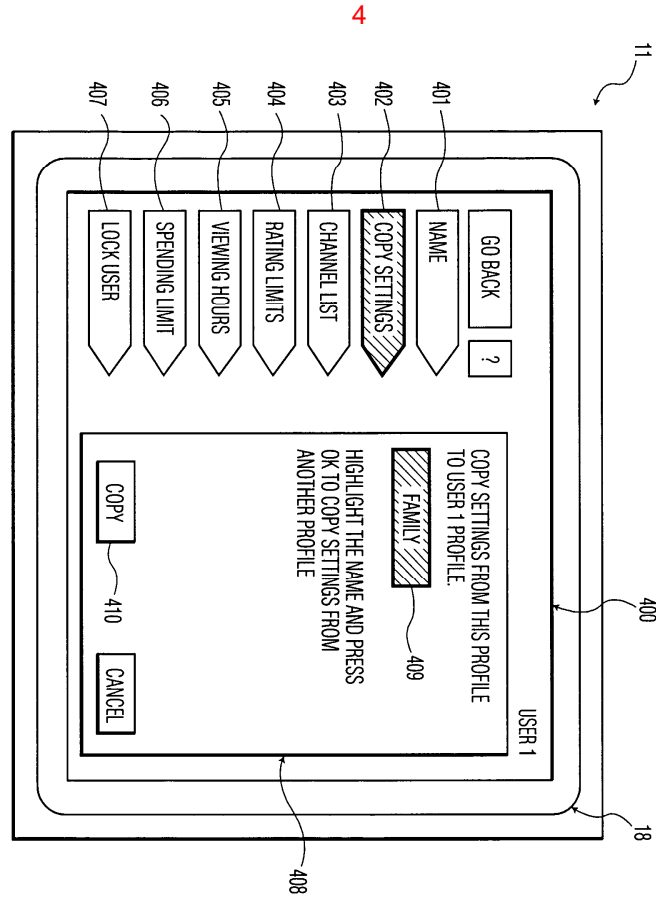
14.

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설정 스크린 복사를 위한 코드 경로