Pioneer
sound. vision. soul

Product Update Guide
5th Generation Plasma Models

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Pioneer
SERVICE

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Preface

This technical training guide will address the disassembly and adjustments of the Pioneer Generation 5 Plasma Display models.

This guide was designed as a servicing aid and is not intended to replace the service manual. The student should have the appropriate service manual on hand when when using this guide. Data in the service manual for this unit contains specific information on safety, parts and adjustments.

Safety information

Important safety data for this Pioneer model is contained in the service manual. Before returning the unit to the customer, complete all product safety obligations and tests. Technicians who bypass safety features or fail to carry out safety checks may expose themselves and others to possible injury, and may be liable for any resulting damages.

For more information on electronic circuits and block diagrams refer to the Service manual.

Lead in the solder used in this product is a known reproductive toxicant which may cause birth defects or other reproductive harm. (California Health and Safety Code Section 25249.5).

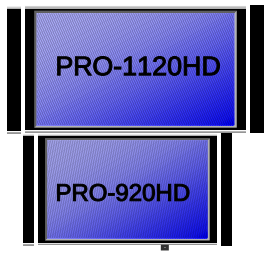
When servicing this or handling circuit boards and other components which contain solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

Plasma Products (North America)

2004

ELITE

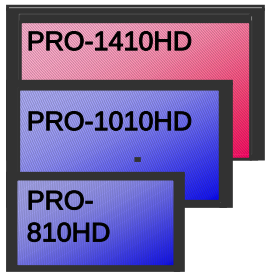
Systems



Panel :PRO-435P/ PRO-505P

MR :PRO-R05U

Monitors



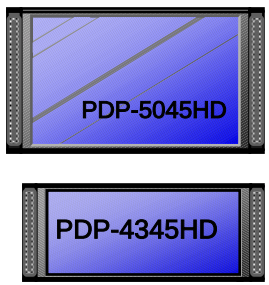
PRO-1410HD ---- Made by NPD

PRO-1010HD ---- base model: PDP-504CMX

PRO-810HD ---- base model: PDP-434CMX

Regular Line

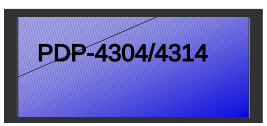
Systems



Panel :PDP-434P/ PDP-504P

MR :PDP-R05U

Monitors



PDP-5004 / 5014 ---- base model: PDP-504CMX

PDP-4304 / 4314 ---- base model: PDP-434CMX

Pioneer Plasma

All the great technologies of the previous models

- Pure Drive
- ACE II
- 3:3 Pull Down
- Deep Encased Cell Structure
- Pure Color Filter

Now including

- Digital Cable Tuner

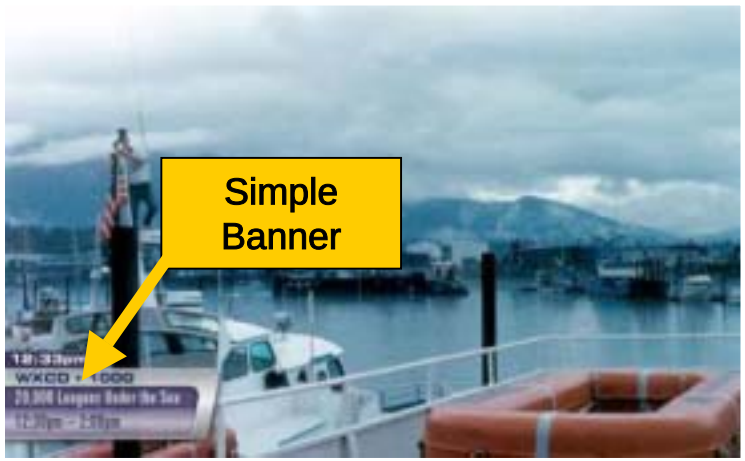
PDP-5045HD

PDP-4345HD

New PIONEER – Built in Cable Tuner

Digital Cable Tuner

- Passport EPG (banner only) Regular line
- POD slot (**P**oint **O**f **D**eployment - Host Interface Card)
- Seamless operation between digital and analog tuners
- DTV closed captioning



PDP-5045HD

50” HDTV Wide screen Plasma Television

Best in Class Picture Quality

ACE II for over 1 Billion Colors, Advanced Pure Cinema with 3:3 Pull-Down

Pure Drive Signal Processing

Pure Digital Process, Pioneer Exclusive Chipset, ATSC Tuner, DCR with Cable CARD

Specifications:

- 16 x 9 Wide screen Aspect Ratio
- WXGA 1280 x 768p Resolution
- 1,000 cd/m^2 Brightness
- Integrated ATSC Tuner
- Pure Drive Image Processing
- Deep Encased Cell Structure
- ACE II for over 1 billion colors
- Advanced Pure Cinema with 3:3 Pull down
- Vertical or Horizontal Mount Media Receiver
- Advanced PIP Capability
- Dual HDMI Inputs
- Energy Star Certified
- 2-Way Speakers with Framed or Under Mount
- Swivel Table Top Stand

PDP-4345HD

43” HDTV Wide screen Plasma Television

Best in Class Picture Quality

ACE II for over 1 Billion Colors, Advanced Pure Cinema with 3:3 Pull-Down

Pure Drive Signal Processing

Pure Digital Process, Pioneer Exclusive Chipset, ATSC Tuner, DCR with Cable CARD

Specifications:

- 16 x 9 Wide screen Aspect Ratio
- XGA 1024 x 768p Resolution
- 1,100 cd/m^2 Brightness
- Integrated ATSC Tuner
- Pure Drive Image Processing
- Deep Encased Cell Structure
- ACE II for over 1 billion colors
- Advanced Pure Cinema with 3:3 Pull down
- Vertical or Horizontal Mount Media Receiver
- Advanced PIP Capability
- Dual HDMI Inputs
- Energy Star Certified
- 2-Way Speakers with Framed or Under Mount
- Swivel Table Top Stand

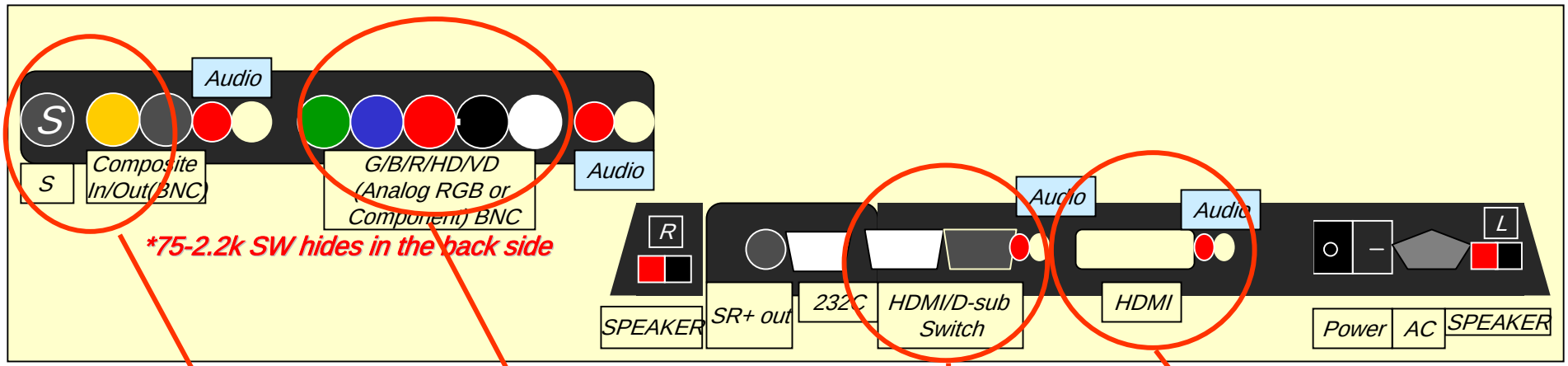
50” & 43” ELITE Monitors

- Pure Drive
- ACE II
- 3:3 Pull Down
- Pure Color Filter II
- Dual HDMI inputs
- 2nd Generation ISF
- New Cosmetics

PRO-1010HD
PRO-810 HD

50” & 43” ELITE Monitors

Terminal Layout (50” & 43”)



Input - 4	Input - 3	Input - 2	Input - 1
Composite S- Terminal	RGB HV Component	HDMI D- sub 15	HDMI
BNC Terminal	BNC Terminal	Switchable	

PRO-1010HD

50” HDTV Wide screen Plasma Monitor

Best in Class Picture Quality

ACE II for over 1 Billion Colors, Advance Pure Cinema with 3:3 Pull-Down, ISF C^3, Color Management

Pure Drive Signal Processing

Pure Digital Process, Pioneer Exclusive Chipset

Specifications:

- 16 x 9 Wide screen Aspect Ratio
- WXGA 1280 x 768p Resolution
- 1,000 cd/m^2 Brightness
- Pure Drive Image Processing
- Deep Encased Cell Structure
- ACE II for over 1 billion colors
- Elite Color Management
- ISF C^3 Certified
- Black Stripe Coating
- Advanced Pure Cinema with 3:3 Pull down
- Advanced PIP Capability
- Pure Color Filter II
- Dual HDMI Inputs
- Energy Star Certified
- NEW Cosmetic Design

PRO-810HD

43” HDTV Wide screen Plasma Monitor

Best in Class Picture Quality

ACE II for over 1 Billion Colors, Advance Pure Cinema with 3:3 Pull-Down, ISF C^3, Color Management

Pure Drive Signal Processing

Pure Digital Process, Pioneer Exclusive Chipset

Specifications:

- 16 x 9 Wide screen Aspect Ratio
- XGA 1024 x 768p Resolution
- 1,100 cd/m^2 Brightness
- Pure Drive Image Processing
- Deep Encased Cell Structure
- ACE II for over 1 billion colors
- Elite Color Management
- ISF C^3 Certified
- Black Stripe Coating
- Advanced Pure Cinema with 3:3 Pull down
- Advanced PIP Capability
- Pure Color Filter II
- Dual HDMI Inputs
- Energy Star Certified
- NEW Cosmetic Design

ELITE Plasma TV

Everything that is in the current model PLUS!!!

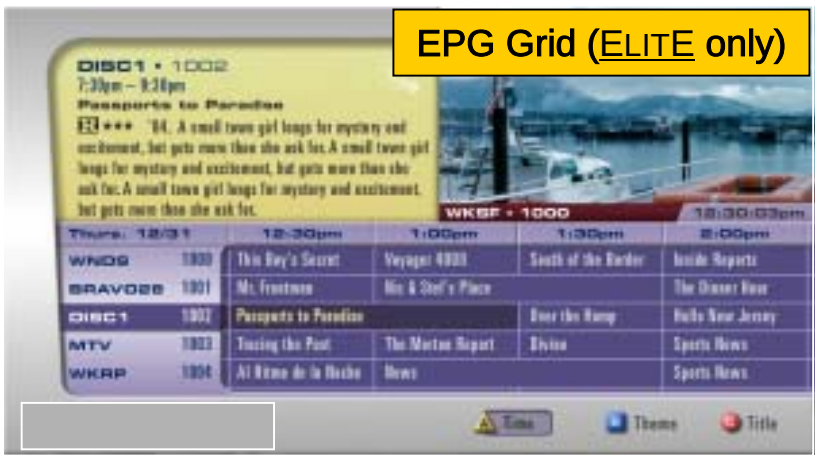
- Digital Cable Tuner (w/ expanded Passport EPG)
- 2nd Generation ISF Mode
- New 1st Surface Pure Color Filter
- Improved Pure Drive
- New Speaker System

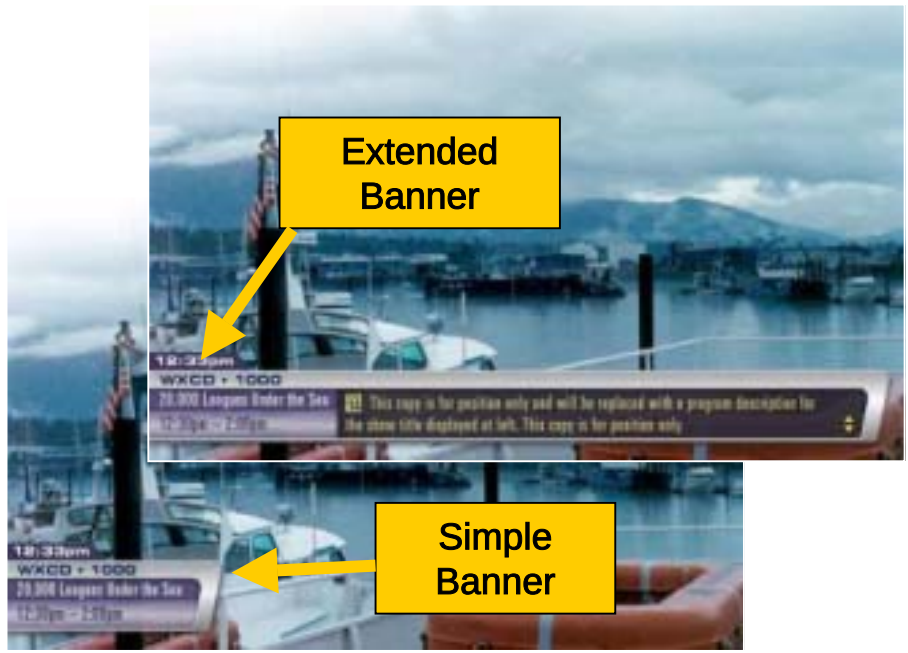
PRO-1120HD
PRO-920HD

New ELITE – Built in Cable Tuner

Unidirectional Digital Cable Tuner

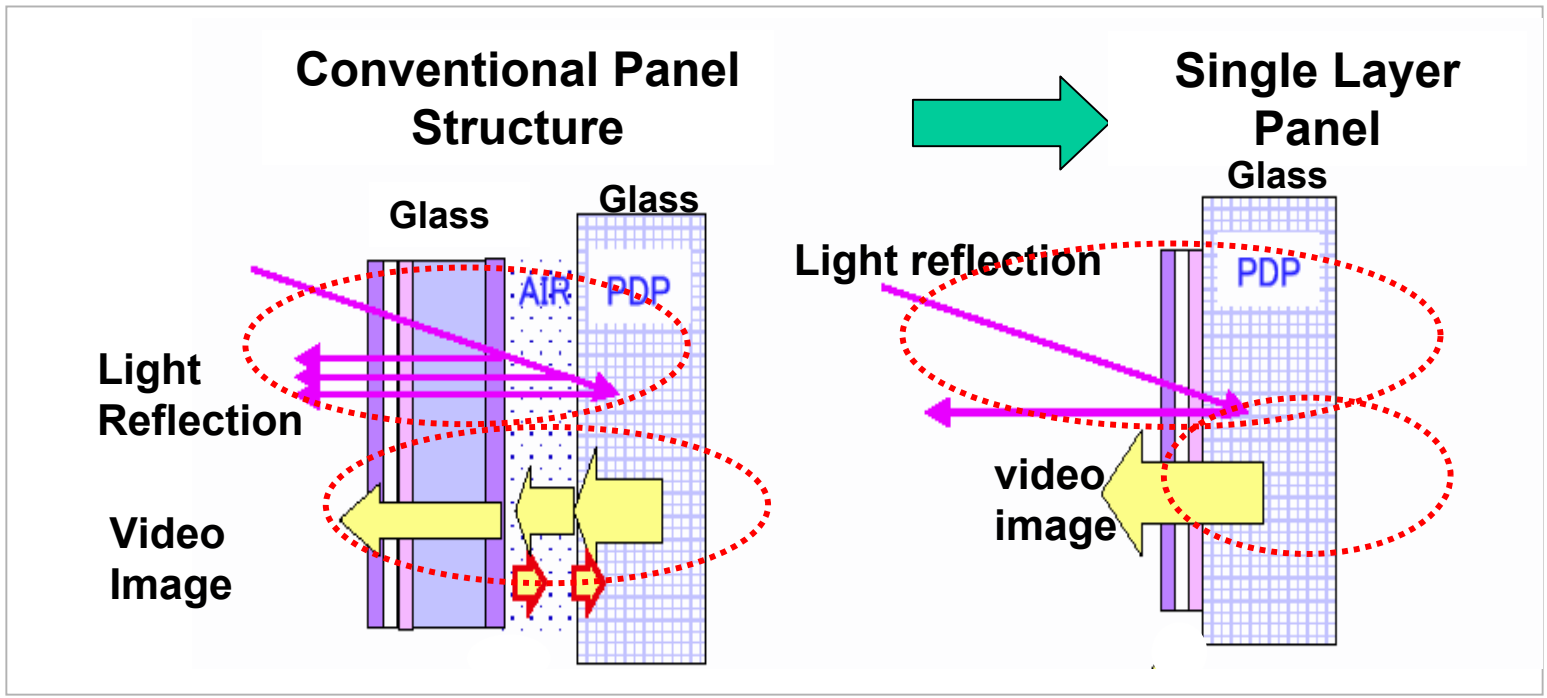
- Passport EPG (grid & banner)
- POD slot (Host Interface)
- Seamless operation between digital and analog tuners
- DTV closed captioning





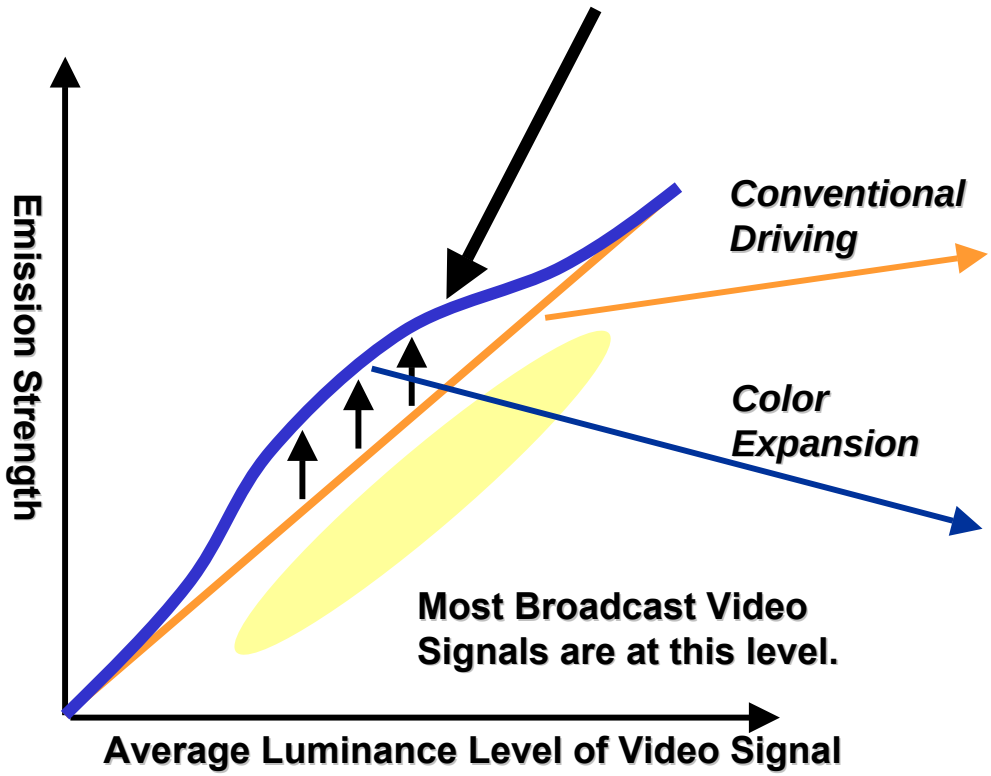
ELITE 1st Surface Pure Color Filter

- First in the industry to have this type of filter construction
- Reduces ambient light reflection
- Video image does not reflect back into the panel from the filter
- 20% improvement in contrast ratio in bright environments



Color Expansion

The darker 1st Pure Color Filter works in conjunction with the driving circuitry



New Speaker Design

PRO-1120HD

50” HDTV Wide screen Plasma Television

Best in Class Picture Quality

ACE II for over 1 Billion Colors, Advance Pure Cinema with 3:3 Pull-Down, ISF C^3, Color Management

Pure Drive Signal Processing

Pure Digital Process, Pioneer Exclusive Chipset, ATSC Tuner, DCR with Cable CARD, Passport EPG

Next Generation Glass

Deep Encased Cell Structure, Black Stripe Coating, Energy Star Certified

Specifications:

- 16 x 9 Wide screen Aspect Ratio
- WXGA 1280 x 768p Resolution
- 1,100 cd/m^2 Brightness
- Integrated ATSC Tuner
- Pure Drive Image Processing
- Deep Encased Cell Structure
- ACE II for over 1 billion colors
- Elite Color Management
- ISF C^3 Certified
- Passport EPG
- Advanced Pure Cinema with 3:3 Pull down
- Vertical or Horizontal Mount Media Receiver
- Advanced PIP Capability
- Pure Color Filter II
- Dual HDMI Inputs
- Improved Amplifier
- Energy Star Certified
- NEW ELITE Television Cosmetic Design

PRO-920HD

43” HDTV Wide screen Plasma Television

Best in Class Picture Quality

ACE II for over 1 Billion Colors, Advance Pure Cinema with 3:3 Pull-Down, ISF C^3, Color Management

Pure Drive Signal Processing

Pure Digital Process, Pioneer Exclusive Chipset, ATSC Tuner, DCR with Cable CARD, Passport EPG

Next Generation Glass

Deep Encased Cell Structure, Black Stripe Coating, Energy Star Certified

Specifications:

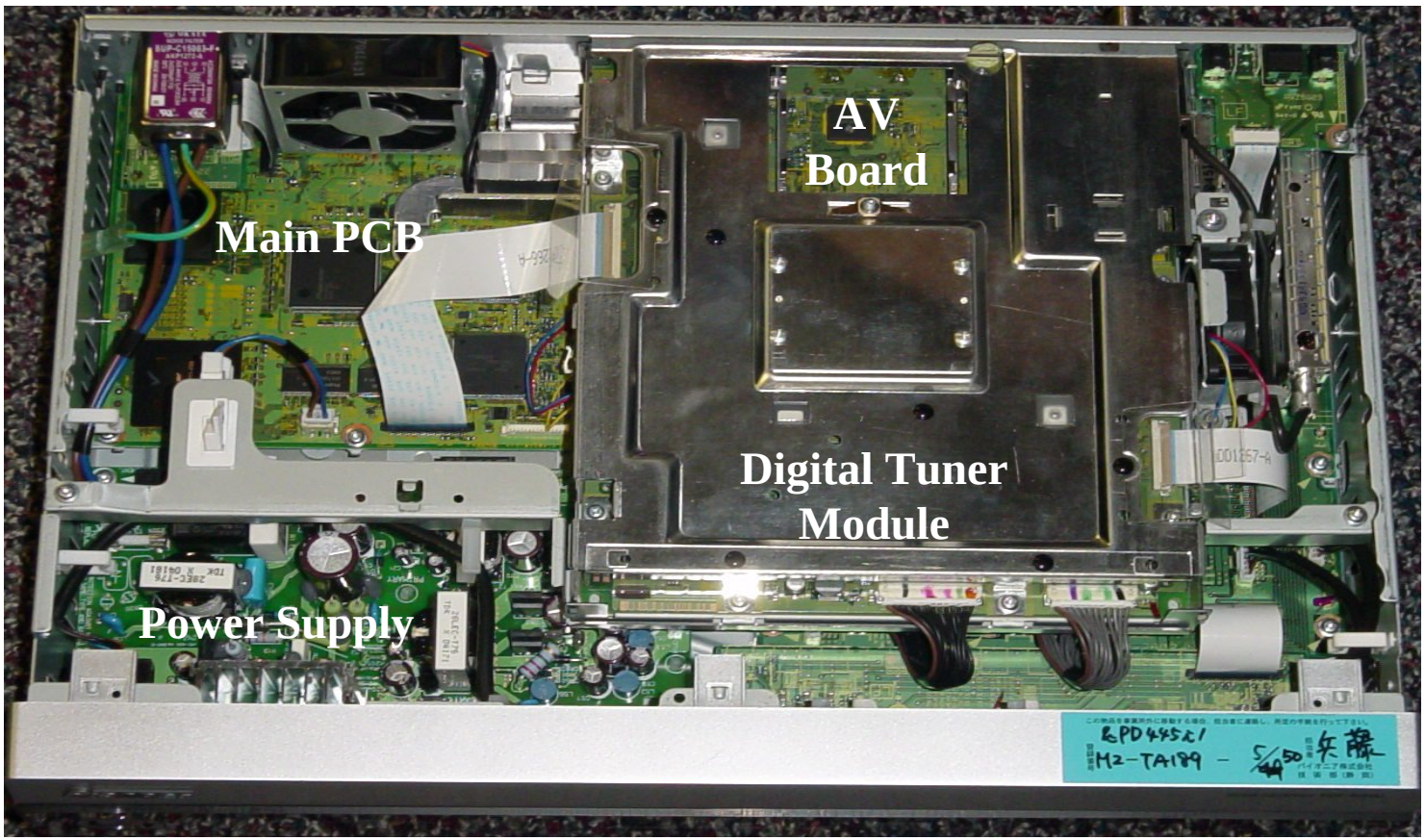
- 16 x 9 Wide screen Aspect Ratio
- XGA 1024 x 768p Resolution
- 1,100 cd/m^2 Brightness
- Integrated ATSC Tuner
- Pure Drive Image Processing
- Deep Encased Cell Structure
- ACE II for over 1 billion colors
- Elite Color Management
- ISF C^3 Certified
- Passport EPG
- Advanced Pure Cinema with 3:3 Pull down
- Vertical or Horizontal Mount Media Receiver
- Advanced PIP Capability
- Pure Color Filter II
- Dual HDMI Inputs
- Improved Amplifier
- Energy Star Certified
- NEW ELITE Television Cosmetic Design

2nd Generation ISF

- The ISF calibrator's information can now be input and shown on screen
- Built for bragging rights, and to show who or what store did the calibration
- This information must be added in order to finalize an ISF calibration
- Added adjustments in ISF calibration list

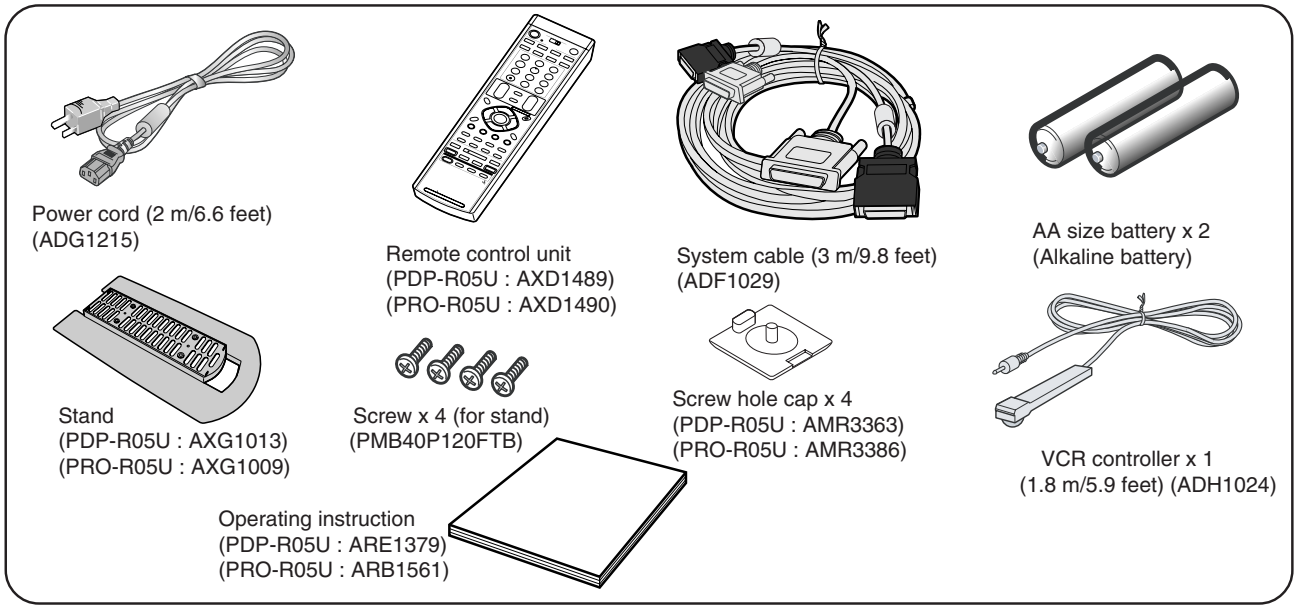
PDP-R05U or PRO-R05U

Media Receiver Section



Item			Media Receiver , Model: PDP-R05U
Reception System (Digital)			ATSC Digital TV system
	Circuit type		8VSB/64QAM/256QAM/QPSK demodulation
	Tuner	VHF/UHF	VHF 2-13ch, UHF 14-69ch
		CATV	2-135ch
	Audio format		Dolby Digital
Reception System (Analog)			American TV standard NTSC system
	Circuit type		Video signal detection PLL full synchronous detection, PLL digital synthesizer system
	Tuner	VHF/UHF	VHF 2-13ch, UHF 14-69ch
		CATV	ANTENNA/CABLE A IN: 1-135ch Cable: 1-125ch
	Audio multiplex		BTSC system
Terminals	Rear	ANTENNA/CABLE A IN	75Ω UNBAL, F Type for DTV/VHF/UHF/CATV in
		ANTENNA B	75Ω UNBAL, F Type for VHF/UHF/CATV in Loop out
		i.LINK (TS)	S400 (2)
		INPUT 1	COMPONENT VIDEO in, S-VIDEO in, VIDEO in, AUDIO in, HDMI in
		INPUT 2	S-VIDEO in, VIDEO in, AUDIO in
		INPUT 3	COMPONENT VIDEO in, AUDIO in, HDMI in
		Monitor Out	S-VIDEO out, VIDEO out, AUDIO out
		Digital Audio Output	Optical (1)
		VCR Control Output	1
		CONTROL IN	1
		CONTROL OUT	1
		Cable CARD	Point of Deployment
	Front	INPUT 4	COMPONENT VIDEO in, S-VIDEO in, VIDEO in, AUDIO in
		PC	Analog RGB in, AUDIO in
OSD			English/French/Spanish
Power Requirement			120 V AC, 60 Hz, 43.3 W (31 W Standby ,120 V)
Dimensions			420 (W) · 90 (H) · 295 (D) mm (16 9/16 (W) · 3 9/16 (H) · 11 10/16 (D) inches)
Weight			5.8 kg (12.8 lbs.)

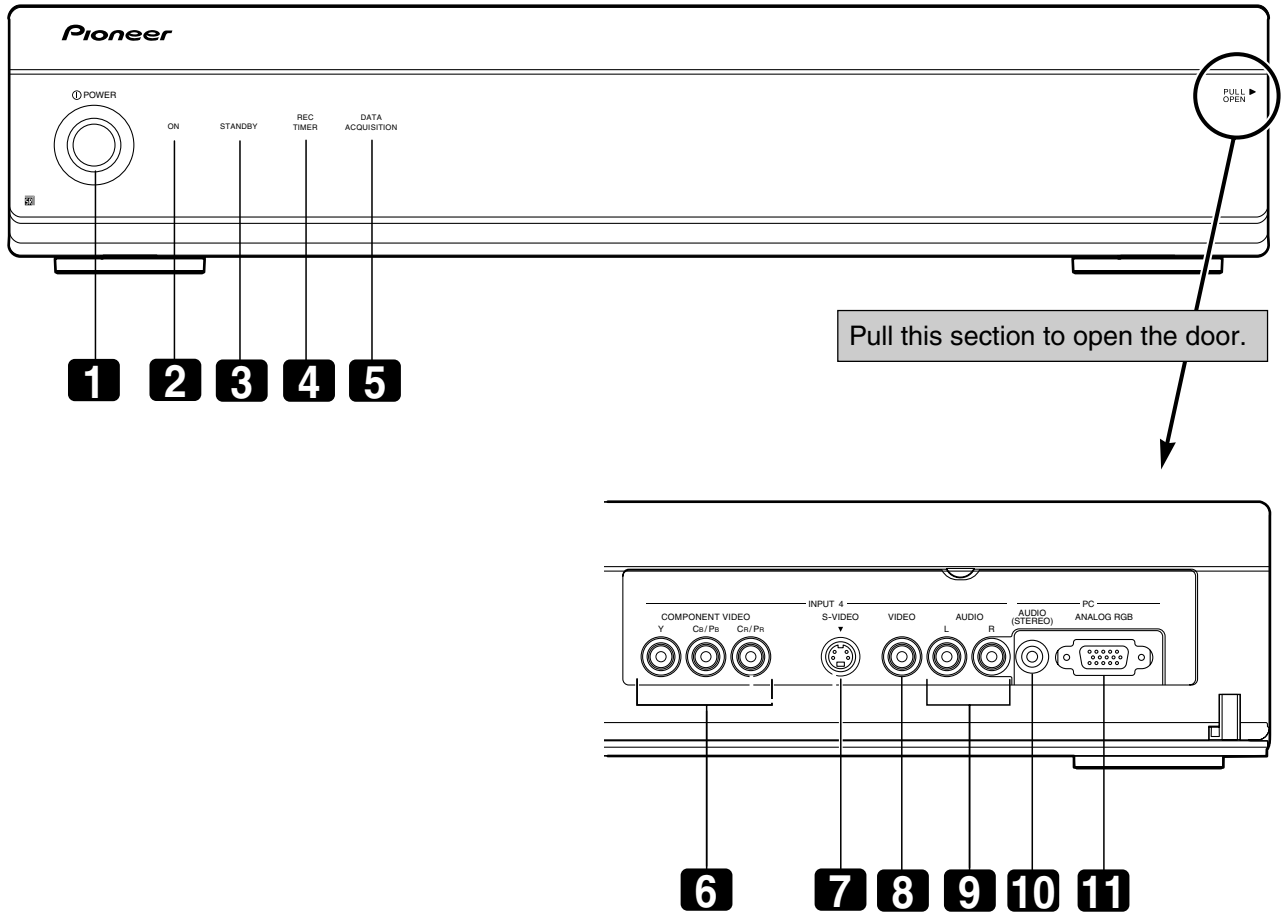
- Design and specifications are subject to change without notice.



PANEL FACILITIES

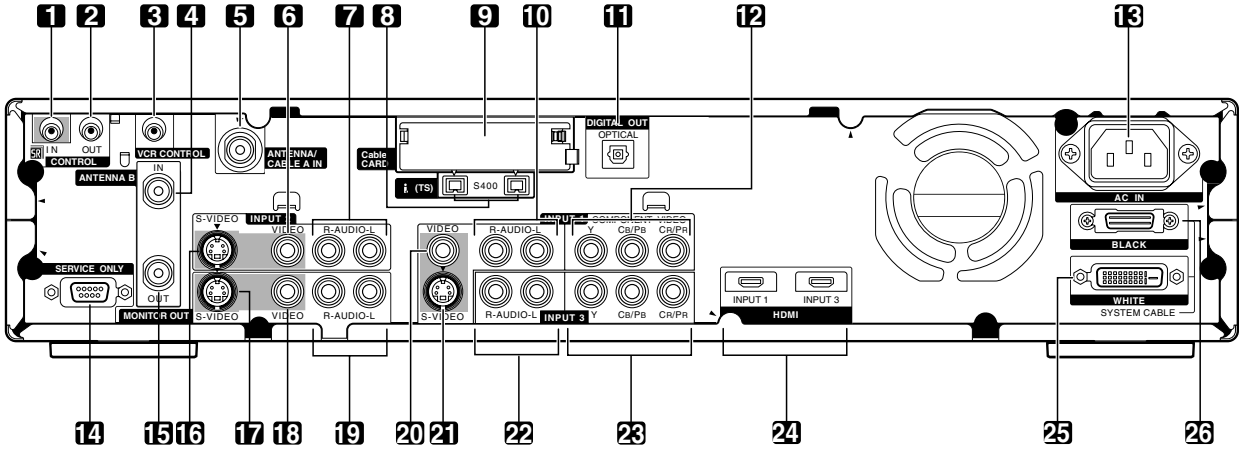
Media Receiver

Front view



1 **POWER** button
2 POWER ON indicator
3 STANDBY indicator
4 REC TIMER indicator
5 DATA ACQUISITION indicator
6 INPUT 4 terminals (COMPONENT VIDEO: Y, C_B/P_B, C_R/P_R)
7 INPUT 4 terminal (S-VIDEO)
8 INPUT 4 terminal (VIDEO)
9 INPUT 4 terminals (AUDIO)
10 PC INPUT terminal (AUDIO)
11 PC INPUT terminal (ANALOG RGB)

Rear view

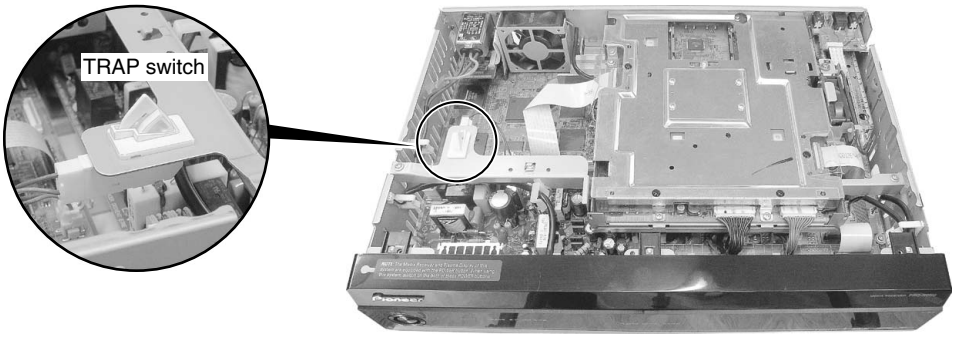


1 CONTROL IN terminal
2 CONTROL OUT terminal
3 VCR CONTROL terminal
4 ANTENNA B IN terminal
5 ANTENNA/CABLE A IN terminal
6 INPUT 2 terminal (VIDEO)
7 INPUT 2 terminals (AUDIO)
8 i.LINK terminals
9 Cable CARD slot
10 INPUT 1 terminals (AUDIO)
11 DIGITAL OUT terminal (OPTICAL)
12 INPUT 1 terminals (COMPONENT VIDEO: Y,C_B/P_B, C_R/P_R)
13 AC IN terminal
14 RS-232C terminal (used for factory setup)
15 ANTENNA B OUT terminal
16 INPUT 2 terminal (S-VIDEO)
17 MONITOR OUT terminal (S-VIDEO)
18 MONITOR OUT terminal (VIDEO)
19 MONITOR OUT terminals (AUDIO)
20 INPUT 1 terminal (VIDEO)
21 INPUT 1 terminal (S-VIDEO)
22 INPUT 3 terminals (AUDIO)
23 INPUT 3 terminals (COMPONENT VIDEO: Y,C_B/P_B, C_R/P_R)
24 HDMI terminals (INPUT1/INPUT3)
25 SYSTEM CABLE terminal (WHITE)
26 SYSTEM CABLE terminal (BLACK)

Trap Switch Location (Media Receiver).

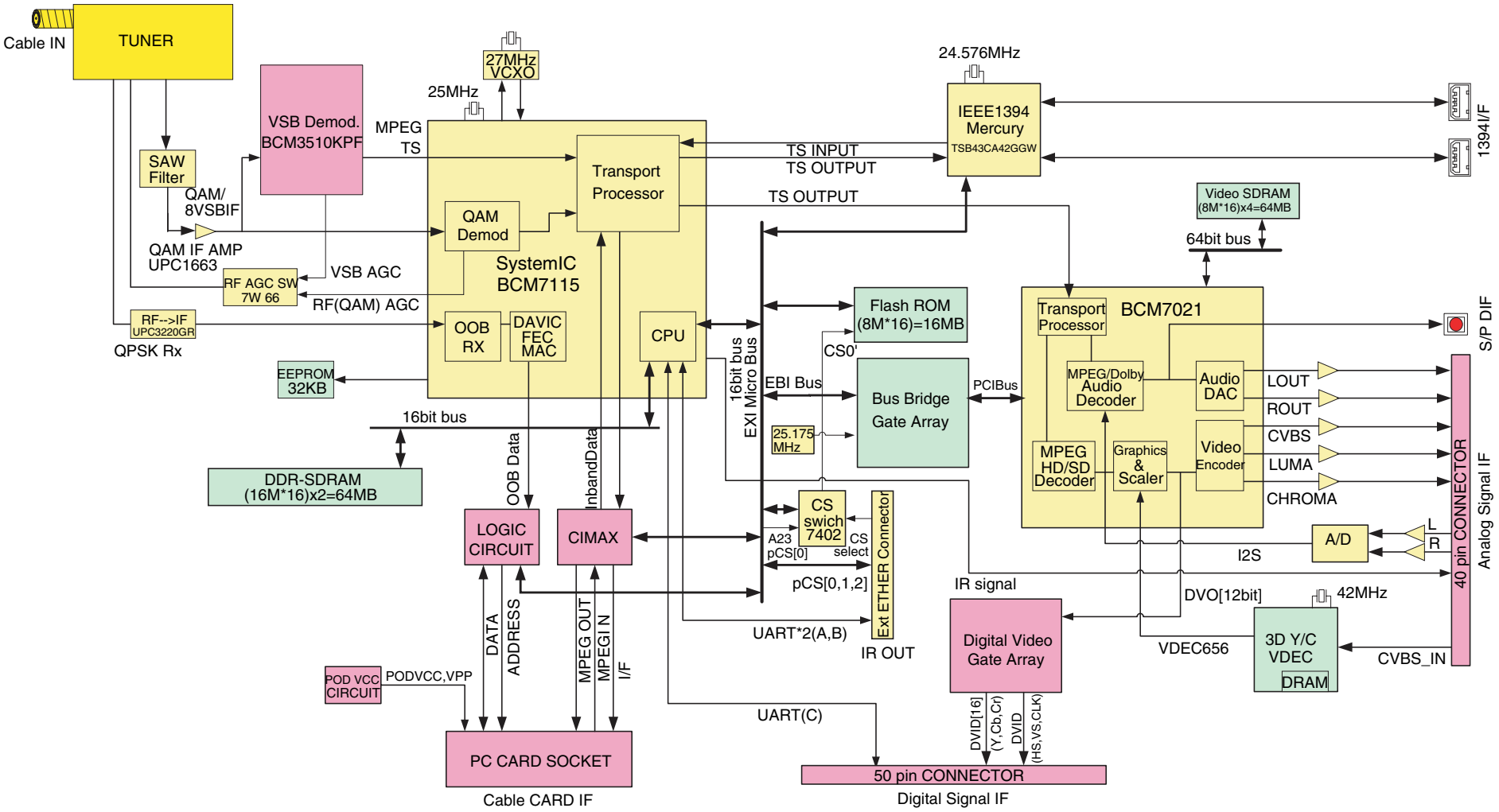
For video data transmission from the Media Receiver to the PDP-435HD and PDP-505HD-series Plasma Displays, digital signals are used. Therefore, this unit adopts the HDCP (High-bandwidth Digital Content Protection) system for copyright protection. This unit is also provided with a detection switch (TRAP switch) that will prohibit the unit from being turned on again

The TRAP switch is disabled while the unit is turned off.
When performing internal diagnosis, fix the switch to the OFF position using adhesive tape before turning on the unit. After servicing, be sure to remove the adhesive tape.

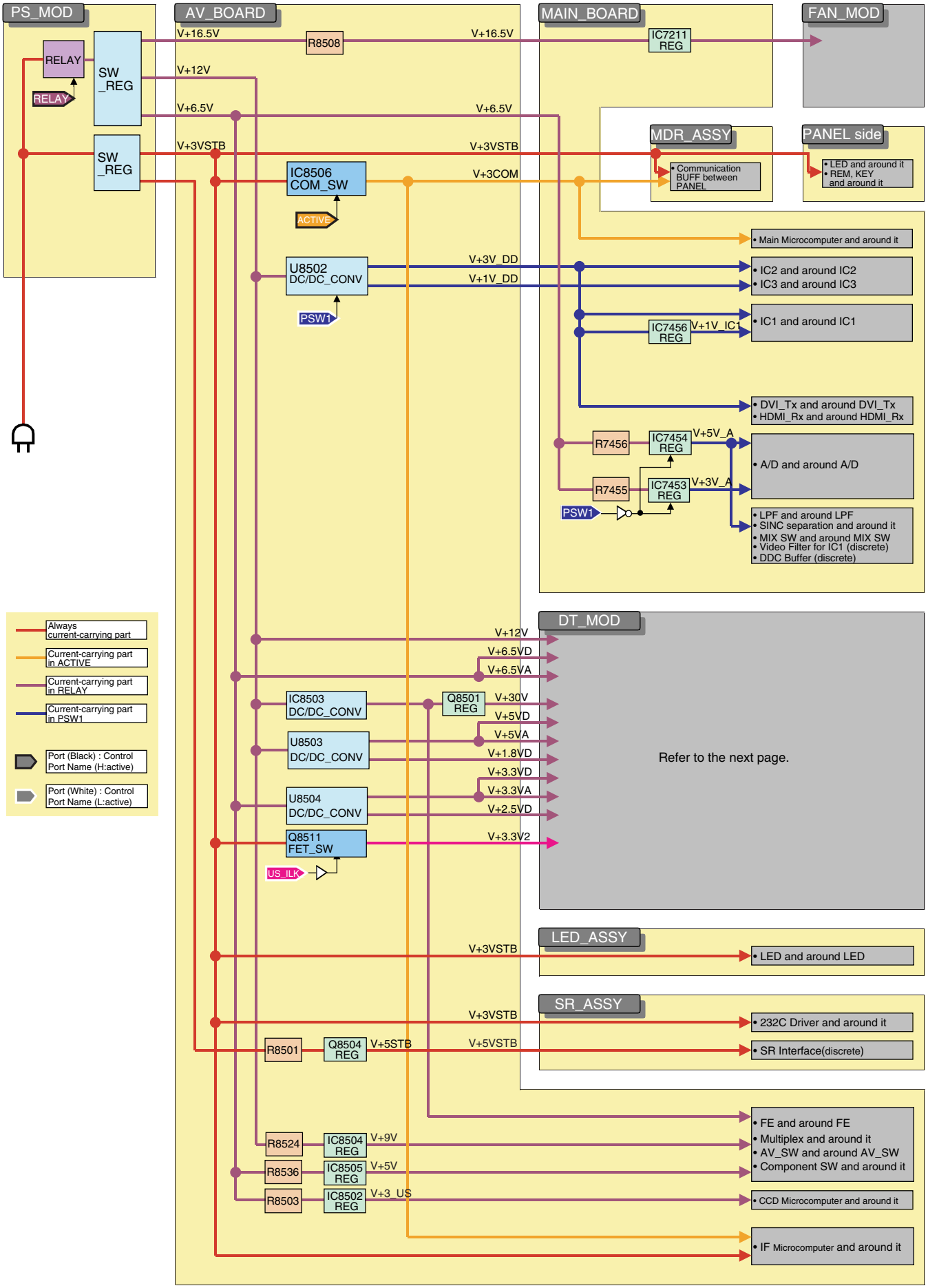


To Release an Activated Trap Switch:
1. Enter Factory Service mode
2. Select initialize mode
3. Hold down Display Key on Remote for 5 seconds.

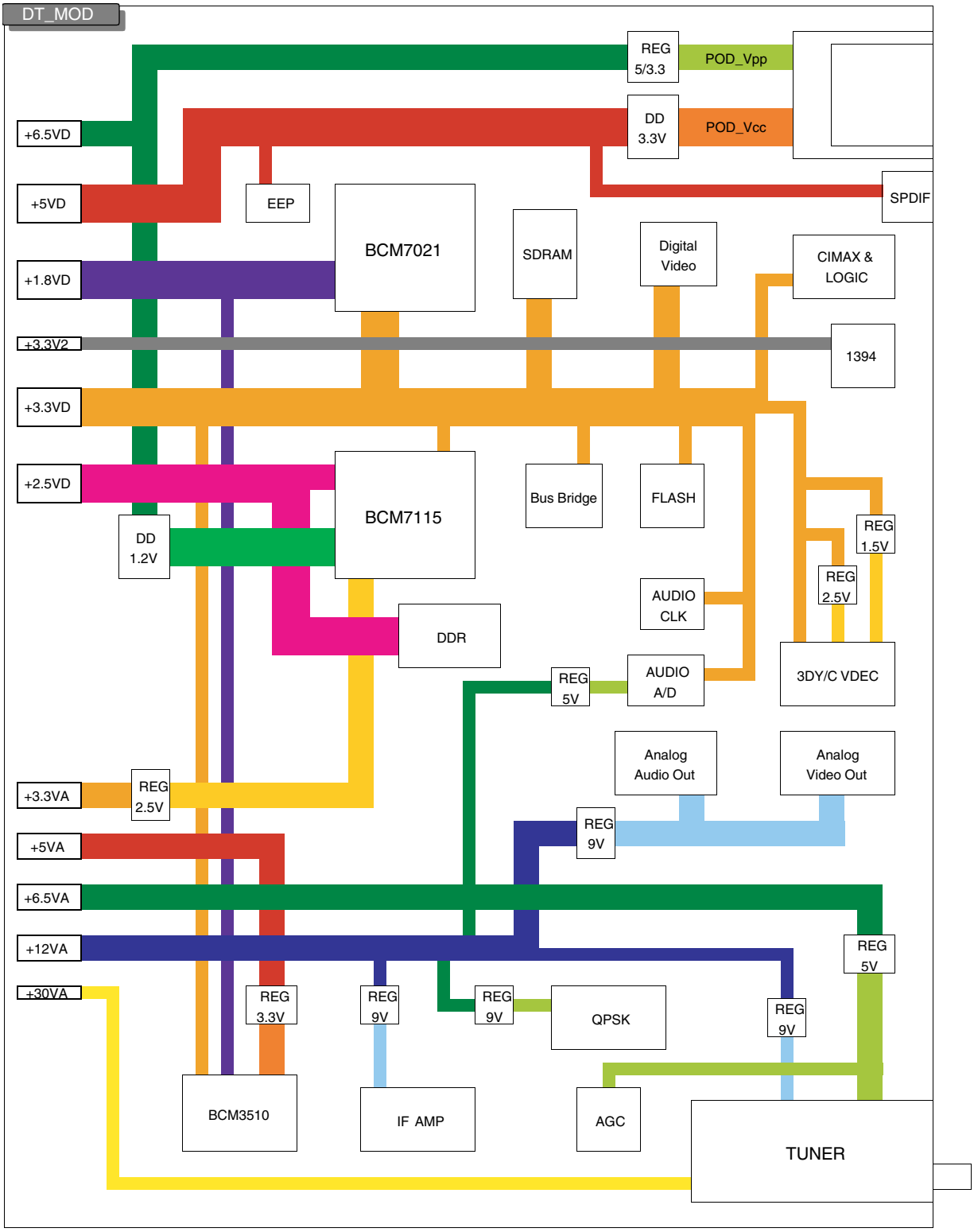
Digital Tuner Board Assembly



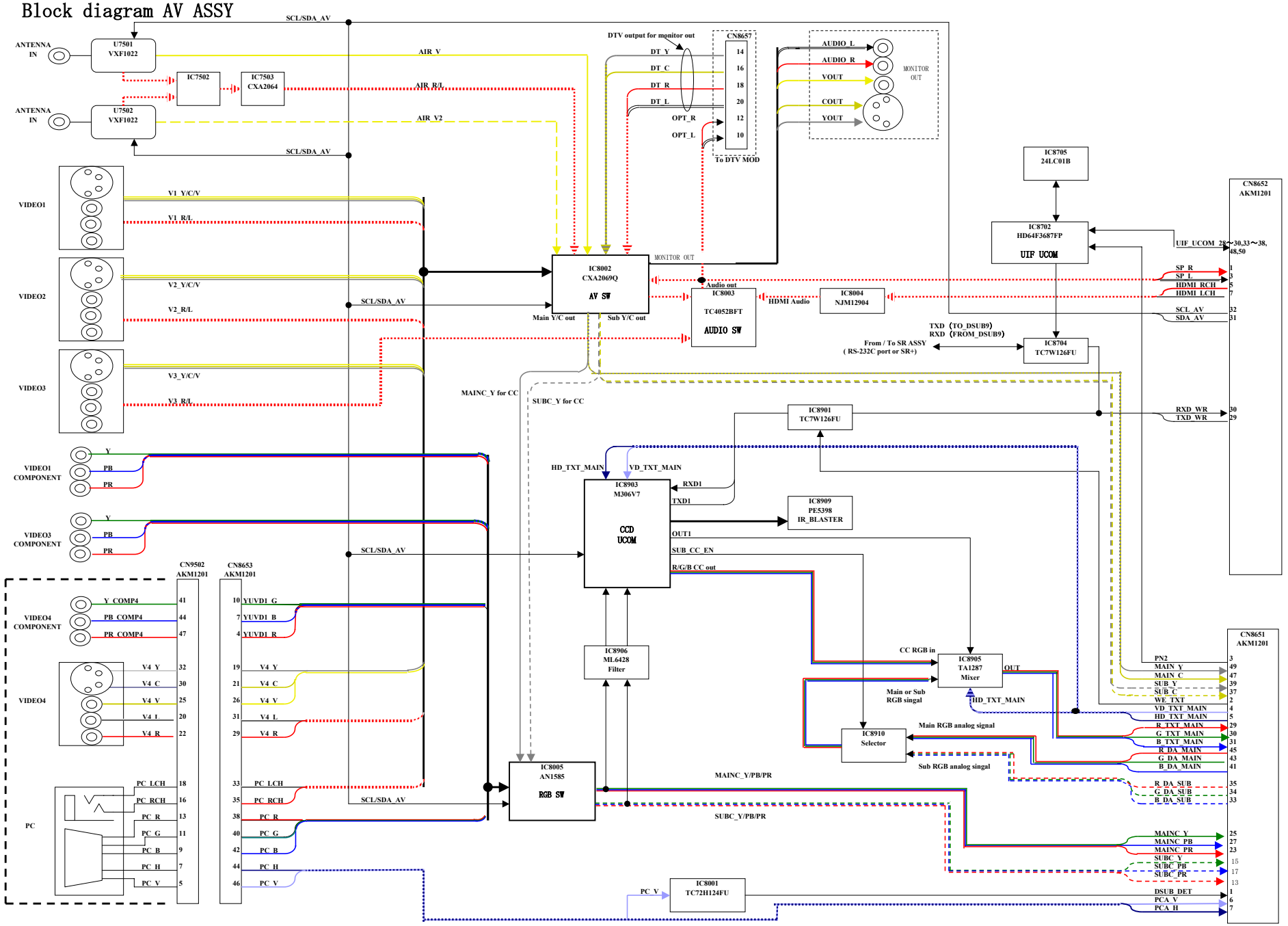
Power Supply Assembly



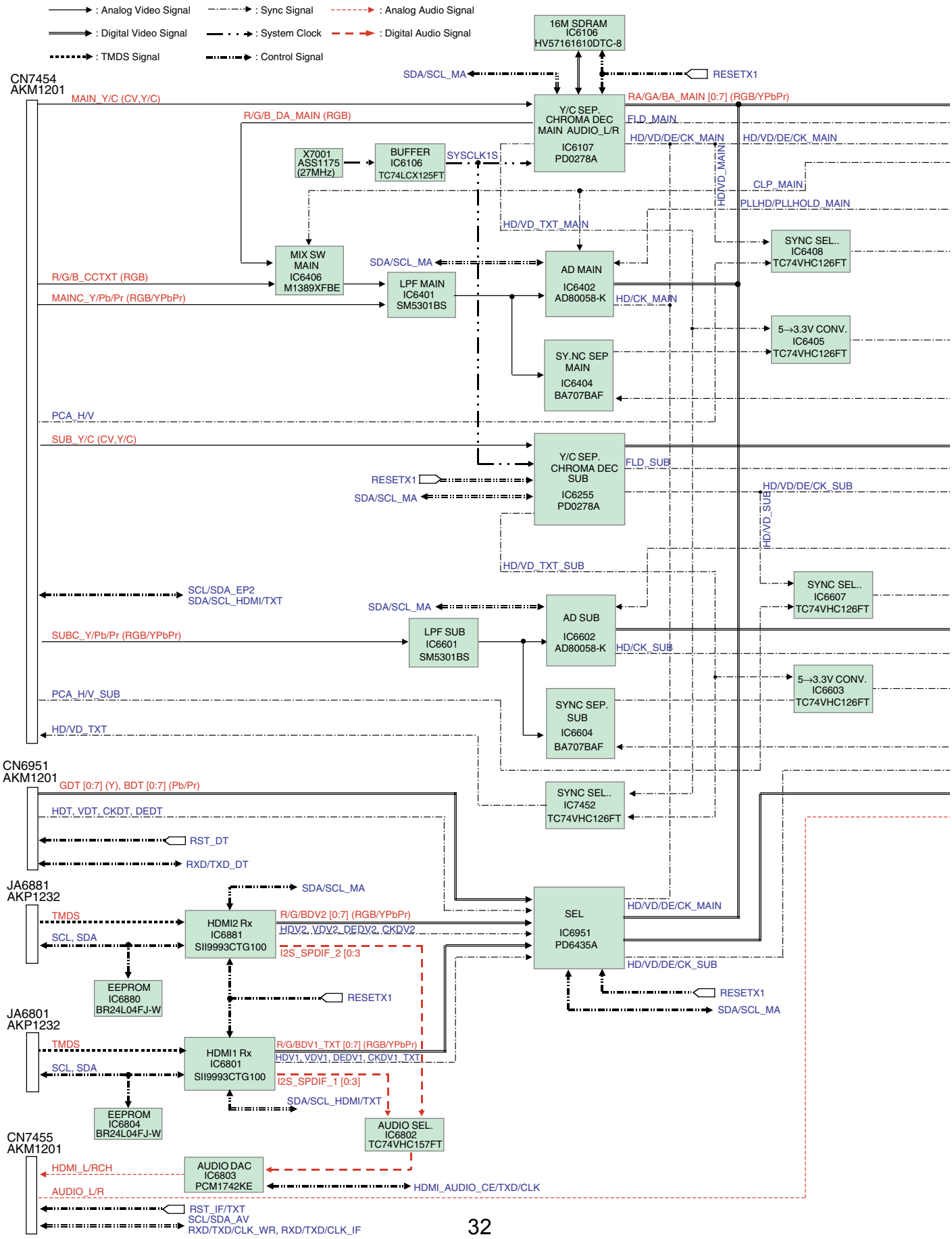
Digital Tuner Module

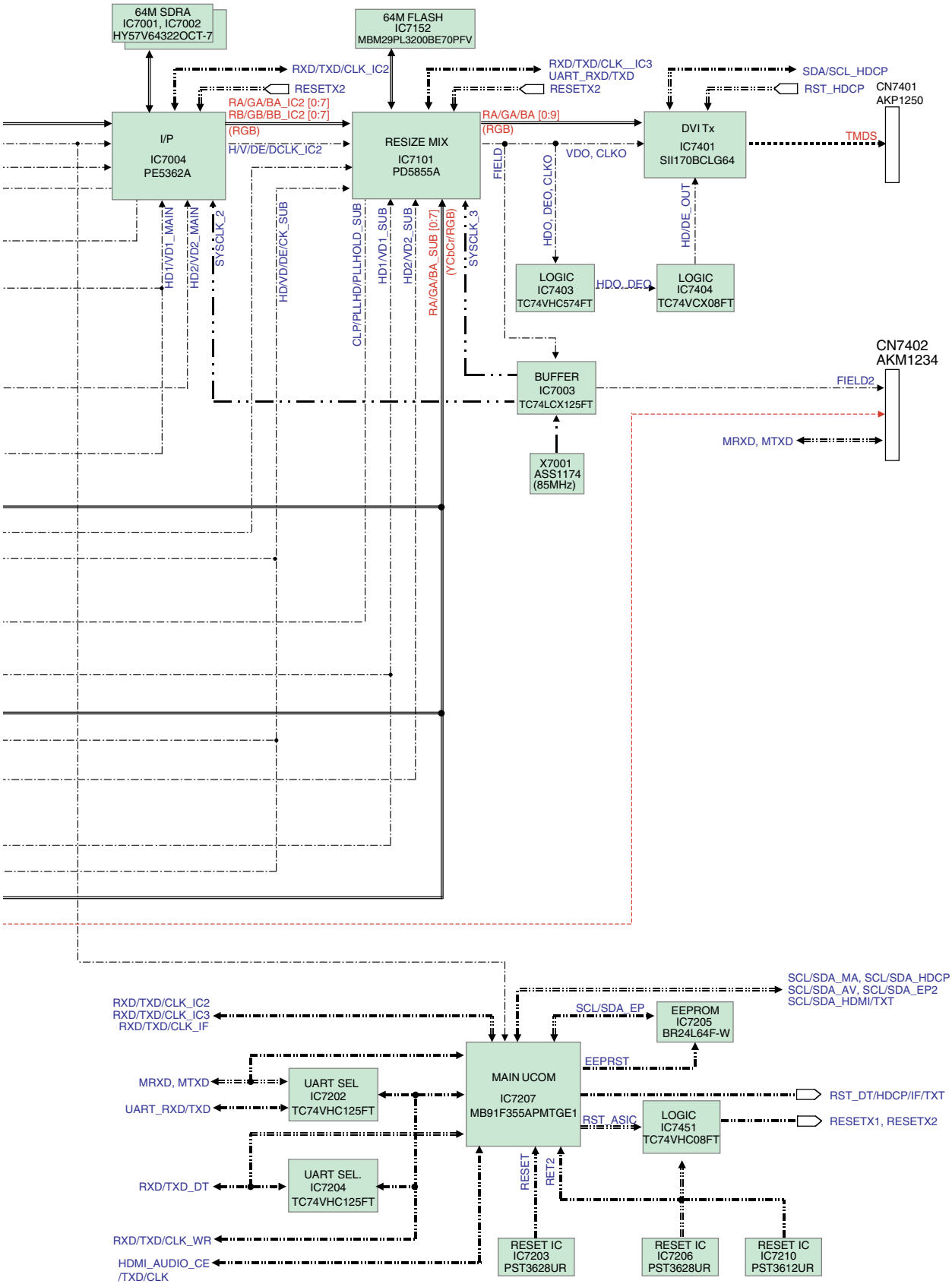


Block diagram AV ASSY



Main Board Assembly




64M SDRA
IC7001, IC7002
HY57V64322OCT-7
64M FLASH
IC7152
MBM29PL3200BE70PFV
RXD/TXD/CLK_IC2
RESETX2
RA/GA/BA_IC2 [0:7]
RB/GB/BB_IC2 [0:7]
(RGB)
H/V/DE/DCLK_IC2
RXD/TXD/CLK__IC3
UART_RXD/TXD
RESETX2
RA/GA/BA [0:9]
(RGB)
SDA/SCL_HDCP
RST_HDCP
CN7401
AKP1250
TMDS
I/P
IC7004
PE5362A
RESIZE MIX
IC7101
PD5855A
DVI Tx
IC7401
SII170BCLG64
FIELD
VDO, CLKO
HDO, DEO, CLKO
HD/DE_OUT
HD1/VD1_MAIN
HD2/VD2_MAIN
SYSCLK_2
HD/VD/DE/CK_SUB
CLP/PLLHD/PLLHOLD_SUB
HD1/VD1_SUB
HD2/VD2_SUB
RA/GA/BA_SUB [0:7]
(YCbCr/RGB)
SYSCLK_3
LOGIC
IC7403
TC74VHC574FT
HDO, DEO
LOGIC
IC7404
TC74VCX08FT
CN7402
AKM1234
BUFFER
IC7003
TC74LCX125FT
FIELD2
MRXD, MTXD
X7001
ASS1174
(85MHz)
SCL/SDA_MA, SCL/SDA_HDCP
SCL/SDA_AV, SCL/SDA_EP2
SCL/SDA_HDMI/TXT
RXD/TXD/CLK_IC2
RXD/TXD/CLK_IC3
RXD/TXD/CLK_IF
SCL/SDA_EP
EEPROM
IC7205
BR24L64F-W
EEPRST
MRXD, MTXD
UART_RXD/TXD
UART SEL
IC7202
TC74VHC125FT
MAIN UCOM
IC7207
MB91F355APMTGE1
RST_DT/HDCP/IF/TXT
RST_ASIC
LOGIC
IC7451
TC74VHC08FT
RESETX1, RESETX2
RXD/TXD_DT
UART SEL.
IC7204
TC74VHC125FT
RESET
RET2
RXD/TXD/CLK_WR
HDMI_AUDIO_CE
/TXD/CLK
RESET IC
IC7203
PST3628UR
RESET IC
IC7206
PST3628UR
RESET IC
IC7210
PST3612UR

DISASSEMBLY

Note: Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

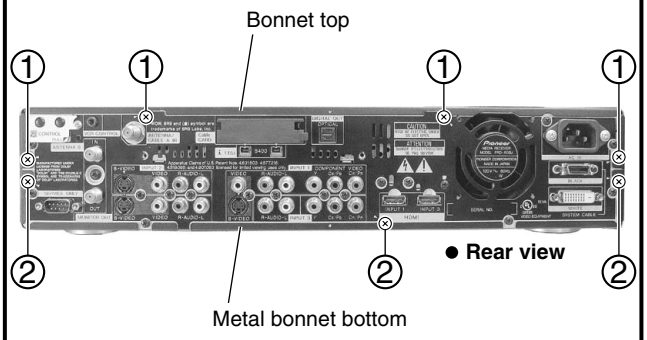
1 Bonnet top and metal bonnet bottom

① Remove the bonnet top by removing the eight screws.

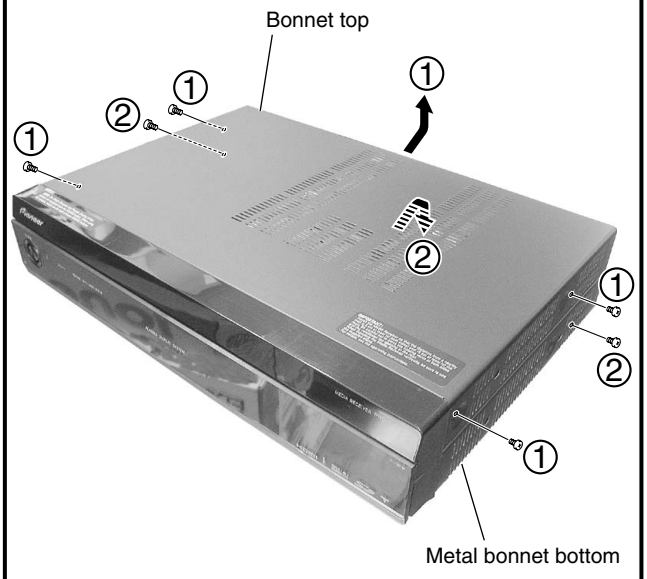
② Remove the metal bonnet bottom by removing the five screws.

Caution :

Please remove it by pulling it in a rear direction as bonnet top and metal bonnet bottom are tightly fitted.



● **Rear view**



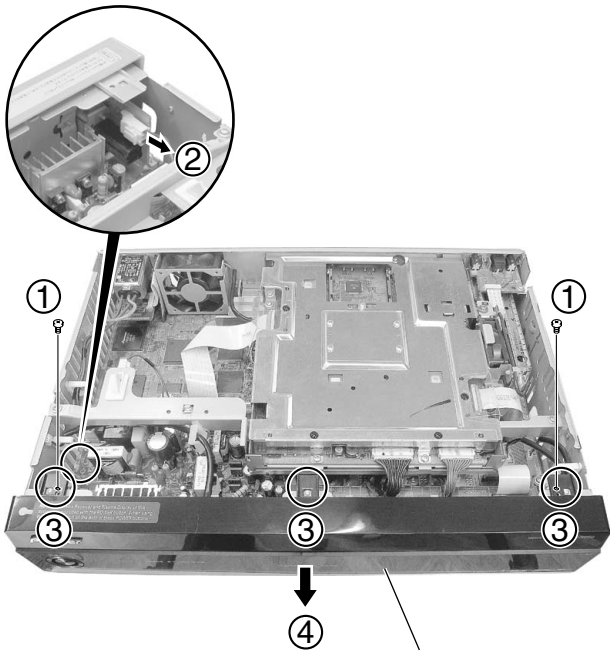
2 Front panel section

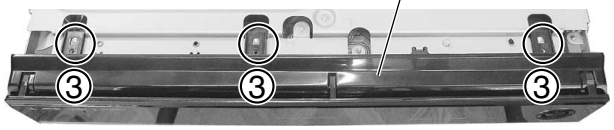
① Remove two screws.

② Disconnect the one connector.

③ Unhook six hooks.

④ Remove front panel section.

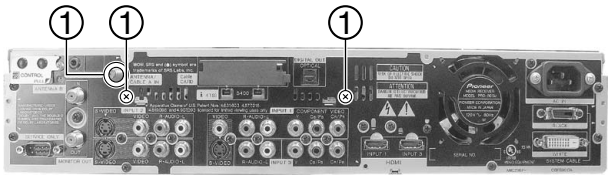




● **Bottom view**

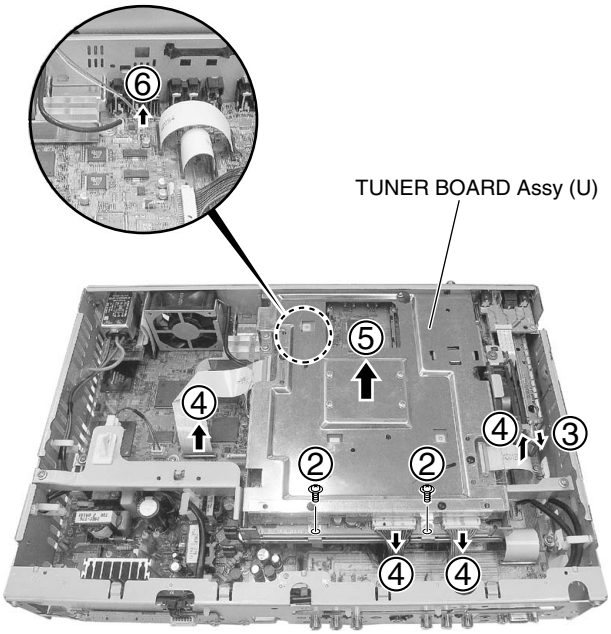
3 TUNER BOARD Assy (U)

① Remove one washer and two screws.

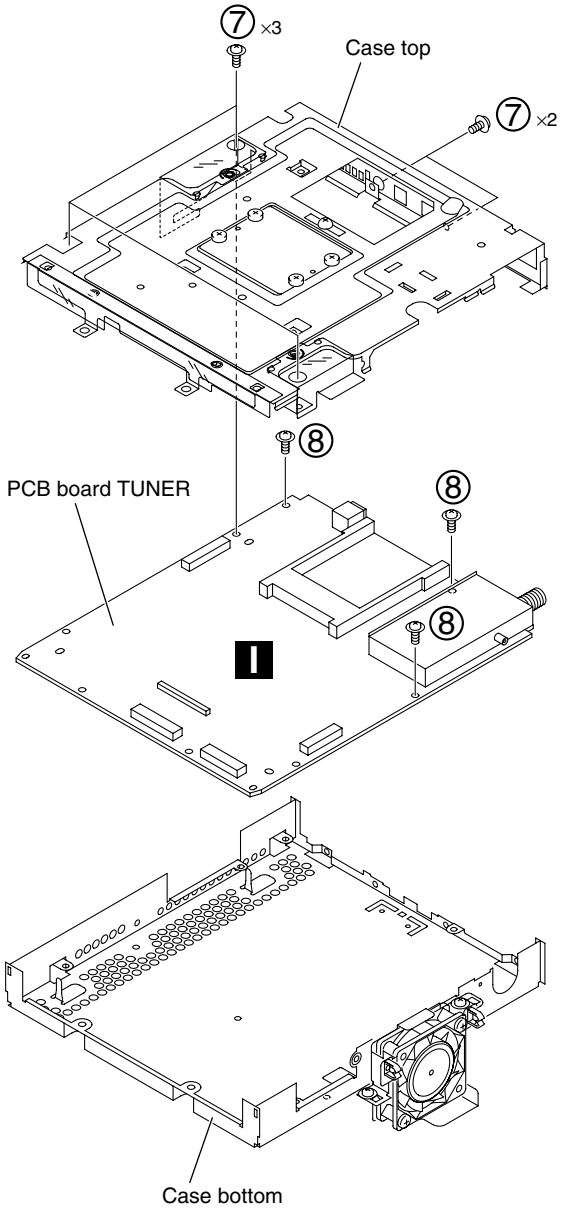


● **Rear view**

② Remove two screws.
③ Disconnect one plug cord.
④ Disconnect flexible cables and two connectors.
⑤ Remove TUNER BOARD Assy (U).
⑥ Disconnect one connector.



⑦ Remove five screws.
⑧ Remove three screws.

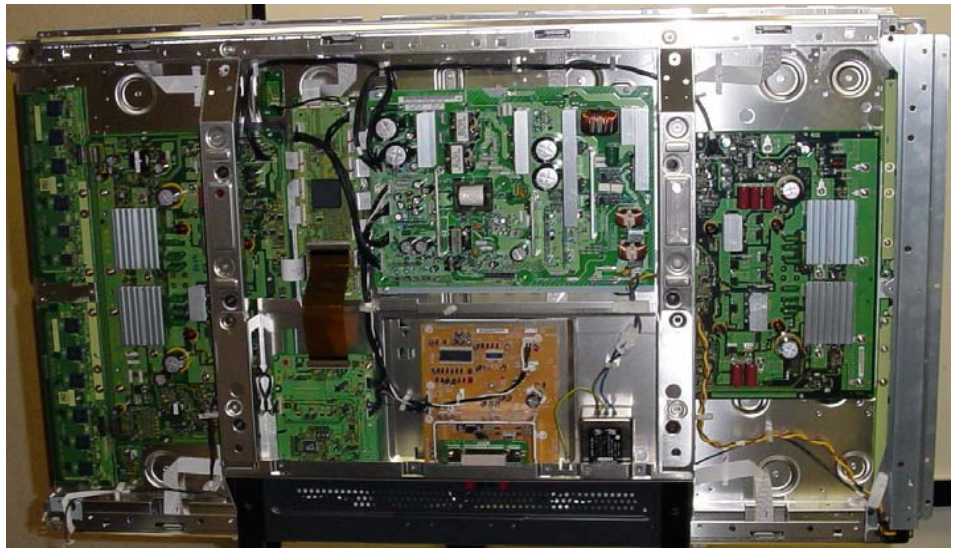


New G-5 Panel Section

G-5 Panel

PRO920HD

PRO-1120HD



Media Receiver
PRO-RO5U

G-4 Panel

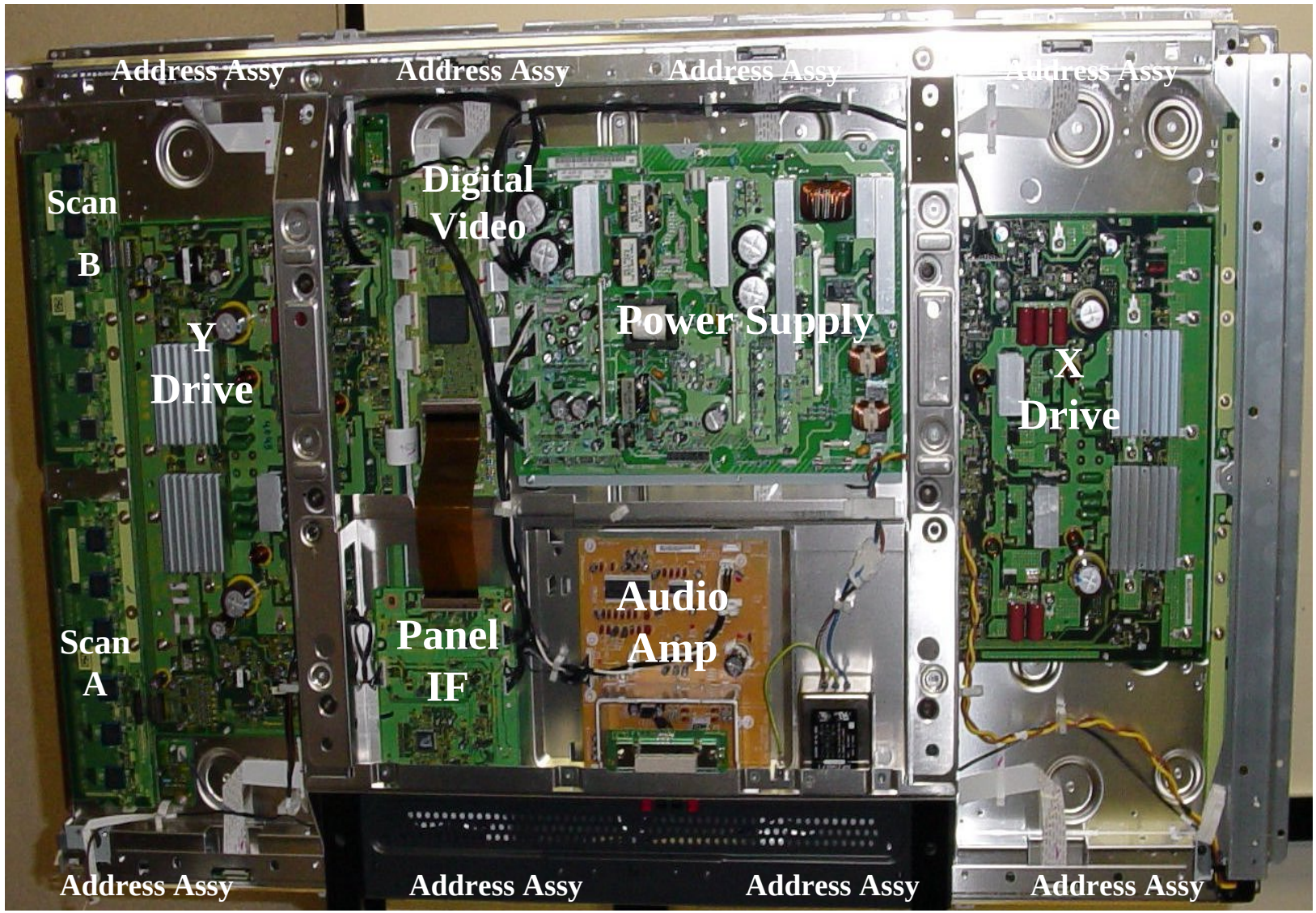
PDP-4345HD

PDP-5045HD

Media Receiver
PDP-RO5U

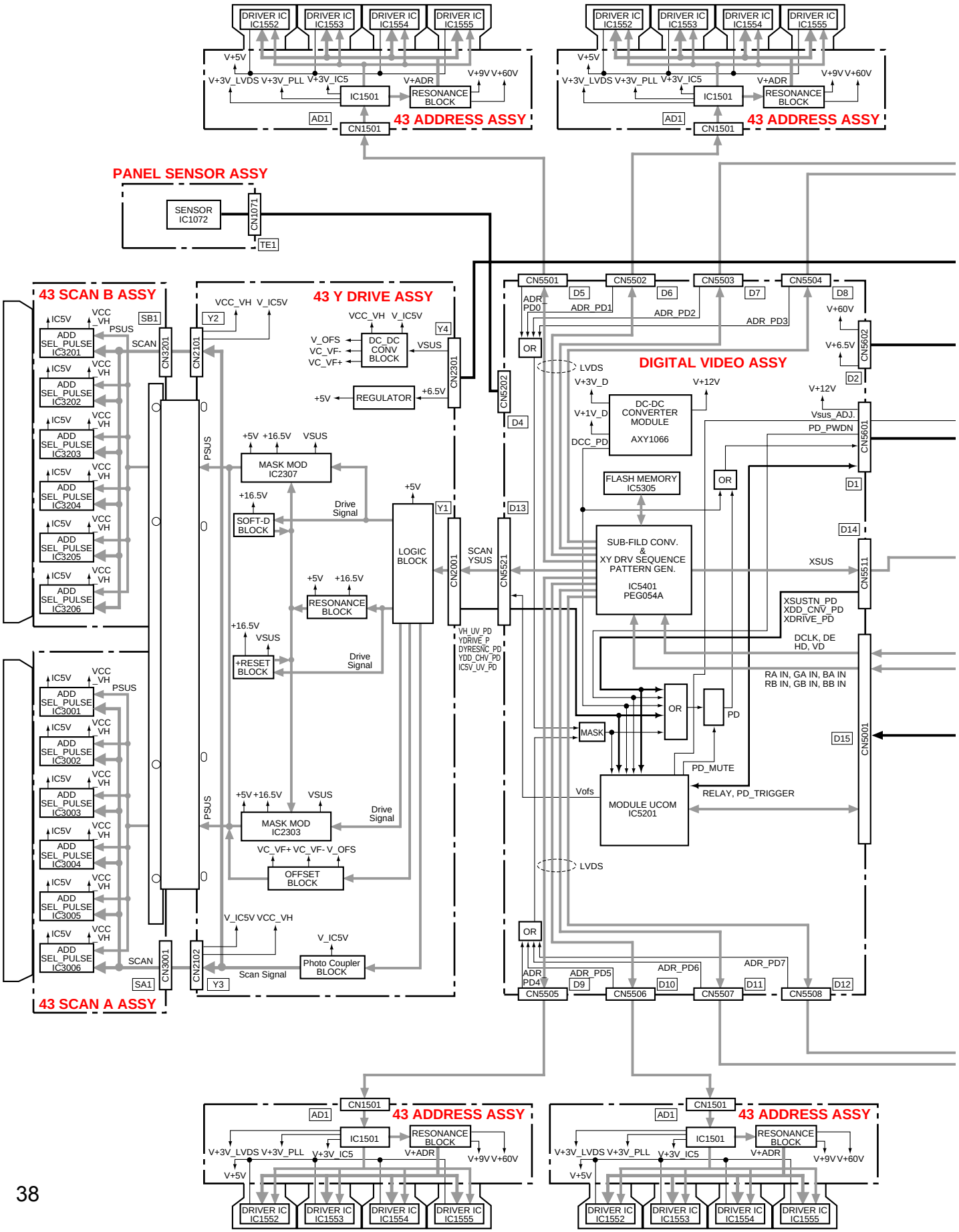
Although similar in PCB layout design, boards are not interchangeable

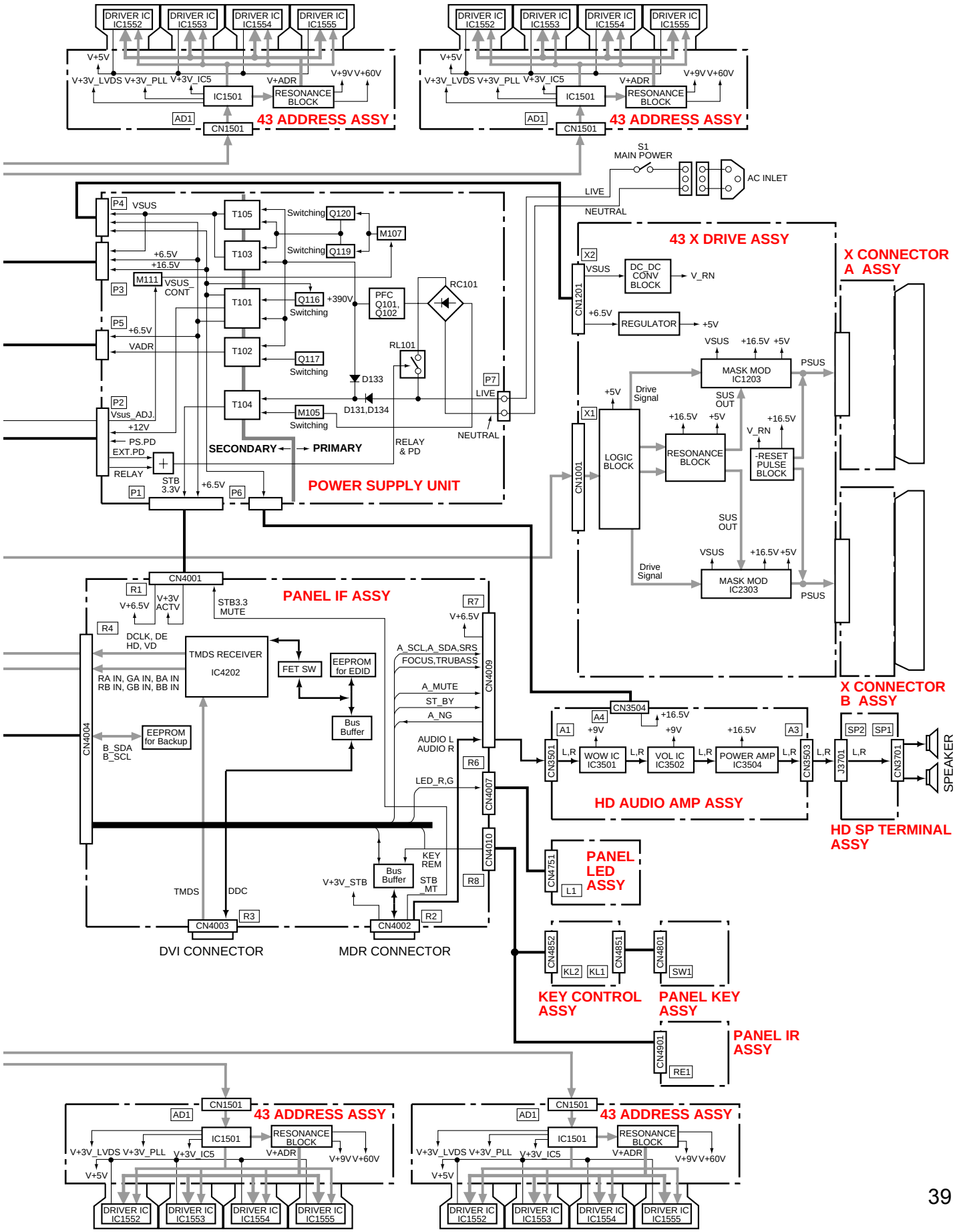
Circuit Board Locations



BLOCK DIAGRAM

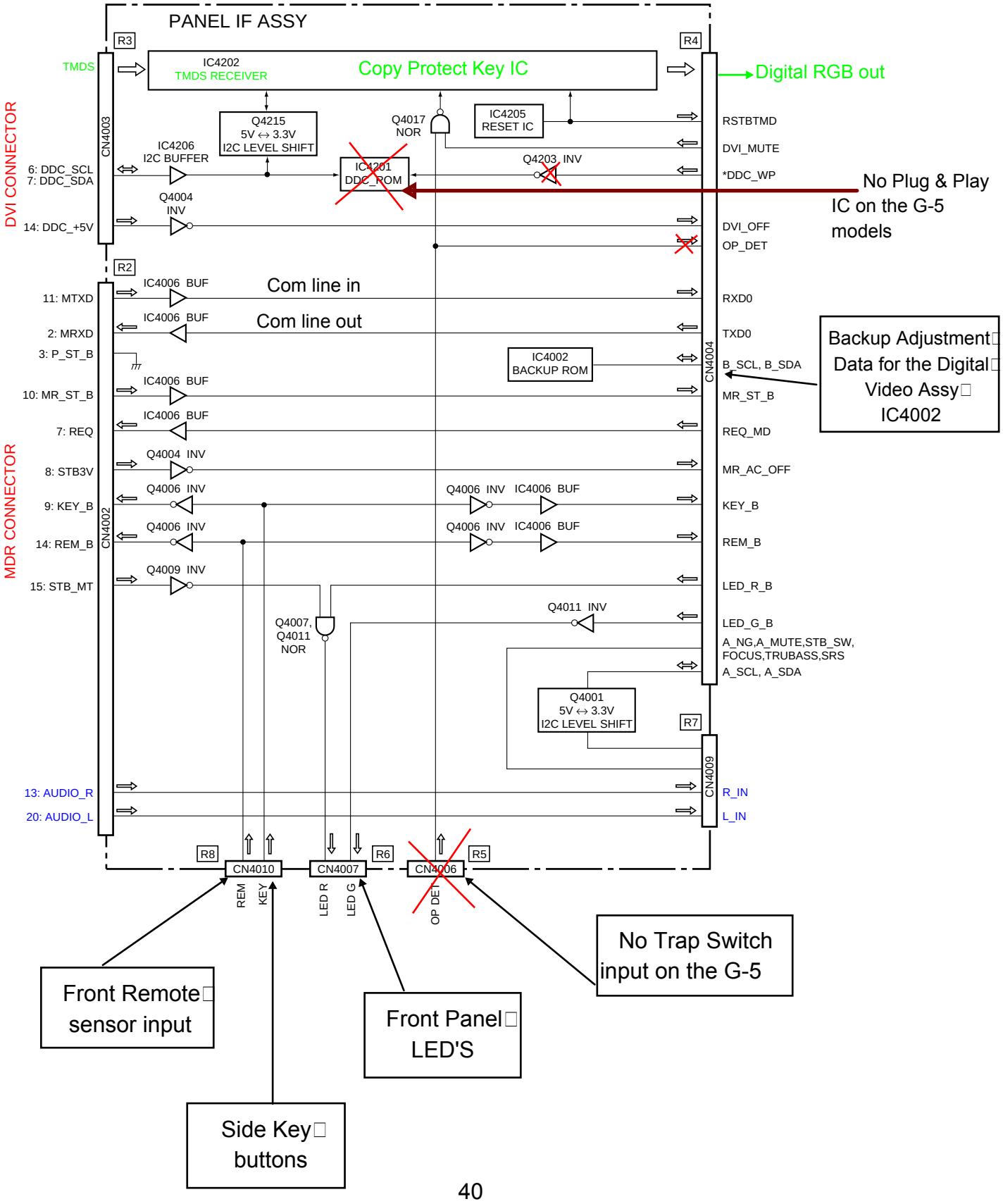
OVERALL BLOCK DIAGRAM




DRIVER IC IC1552
DRIVER IC IC1553
DRIVER IC IC1554
DRIVER IC IC1555
V+5V
V+3V_LVDS V+3V_PLL V+3V_IC5
V+ADR
V+9V V+60V
IC1501
RESONANCE BLOCK
AD1
CN1501
43 ADDRESS ASSY
S1
MAIN POWER
AC INLET
LIVE
NEUTRAL
43 X DRIVE ASSY
X CONNECTOR A ASSY
X2
CN1201
VSUS
DC_DC CONV BLOCK
V_RN
+6.5V
REGULATOR
+5V
MASK MOD IC1203
PSUS
SUS OUT
+16.5V
Drive Signal
X1
CN1001
LOGIC BLOCK
RESONANCE BLOCK
-RESET PULSE BLOCK
MASK MOD IC2303
X CONNECTOR B ASSY
P4
P3
P5
P2
P1
P6
P7
T105
T103
T101
T102
T104
Switching
Q120
Q119
Q116
Q117
M105
M107
M111
VSUS_ CONT
+390V
PFC Q101, Q102
RC101
RL101
D133
D131,D134
VADR
Vsus_ADJ.
+12V
PS.PD
EXT.PD
RELAY
STB 3.3V
SECONDARY
PRIMARY
RELAY & PD
POWER SUPPLY UNIT
CN4001
PANEL IF ASSY
R1
V+6.5V
V+3V ACTV
STB3.3 MUTE
R4
DCLK, DE
HD, VD
TMDS RECEIVER IC4202
FET SW
EEPROM for EDID
Bus Buffer
RA IN, GA IN, BA IN
RB IN, GB IN, BB IN
CN4004
EEPROM for Backup
B_SDA
B_SCL
R7
CN4009
A_SCL,A_SDA,SRS
FOCUS,TRUBASS
A_MUTE
ST_BY
A_NG
AUDIO L
AUDIO R
R6
CN4007
LED_R,G
CN4010
KEY REM
STB _MT
R8
TMDS
DDC
V+3V_STB
R3
R2
CN4003
CN4002
DVI CONNECTOR
MDR CONNECTOR
CN3504
A4
A1
A3
+9V
WOW IC IC1501
VOL IC IC3502
POWER AMP IC3504
L,R
CN3501
CN3503
J3701
SP2
SP1
CN3701
SPEAKER
HD AUDIO AMP ASSY
HD SP TERMINAL ASSY
CN4751
L1
PANEL LED ASSY
CN4852
KL2
KL1
CN4851
CN4801
SW1
KEY CONTROL ASSY
PANEL KEY ASSY
CN4901
RE1
PANEL IR ASSY

PANEL IF ASSY

Block Diagram



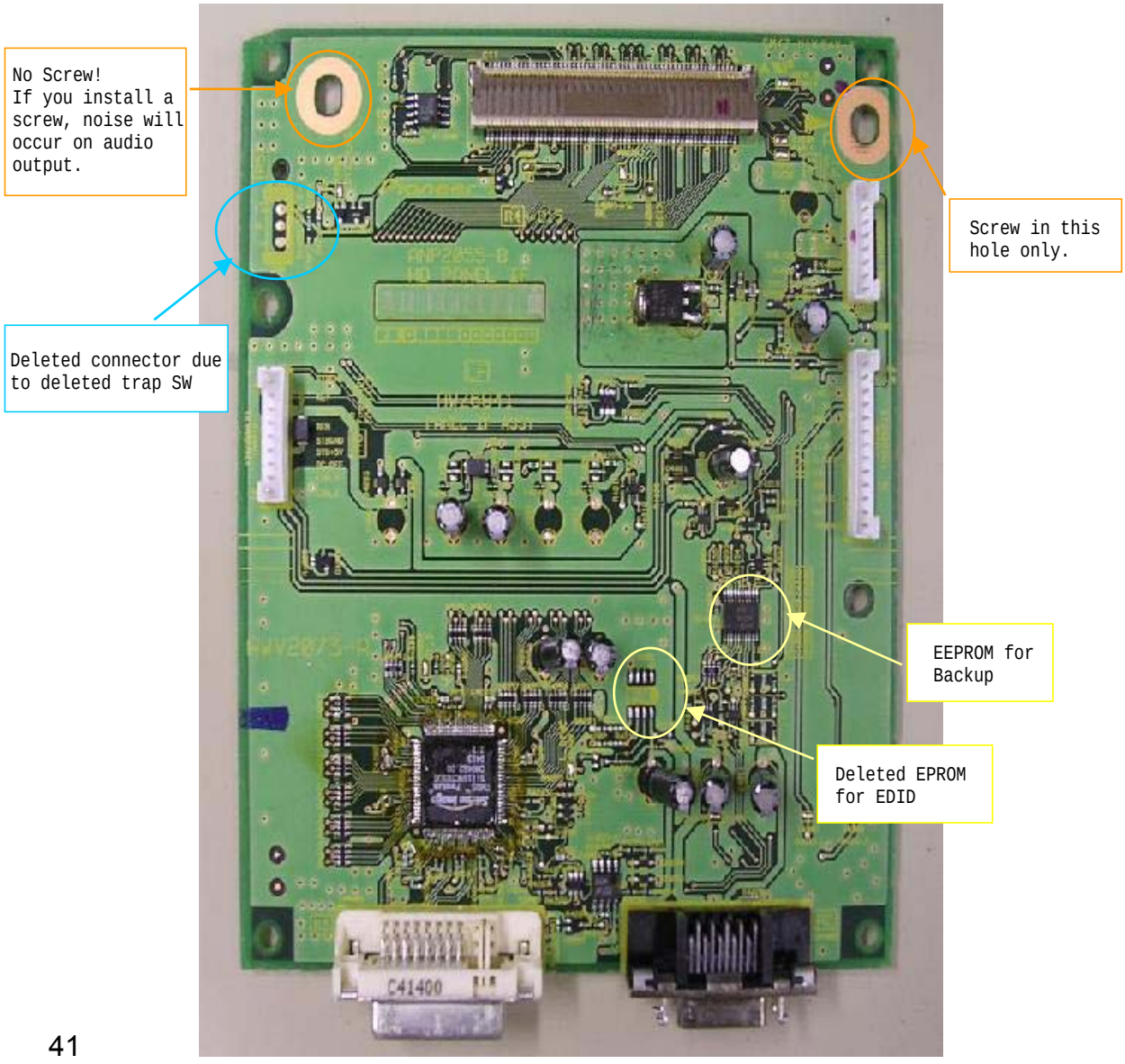
Panel IF Assy Explanation

Differences between G4 and G5

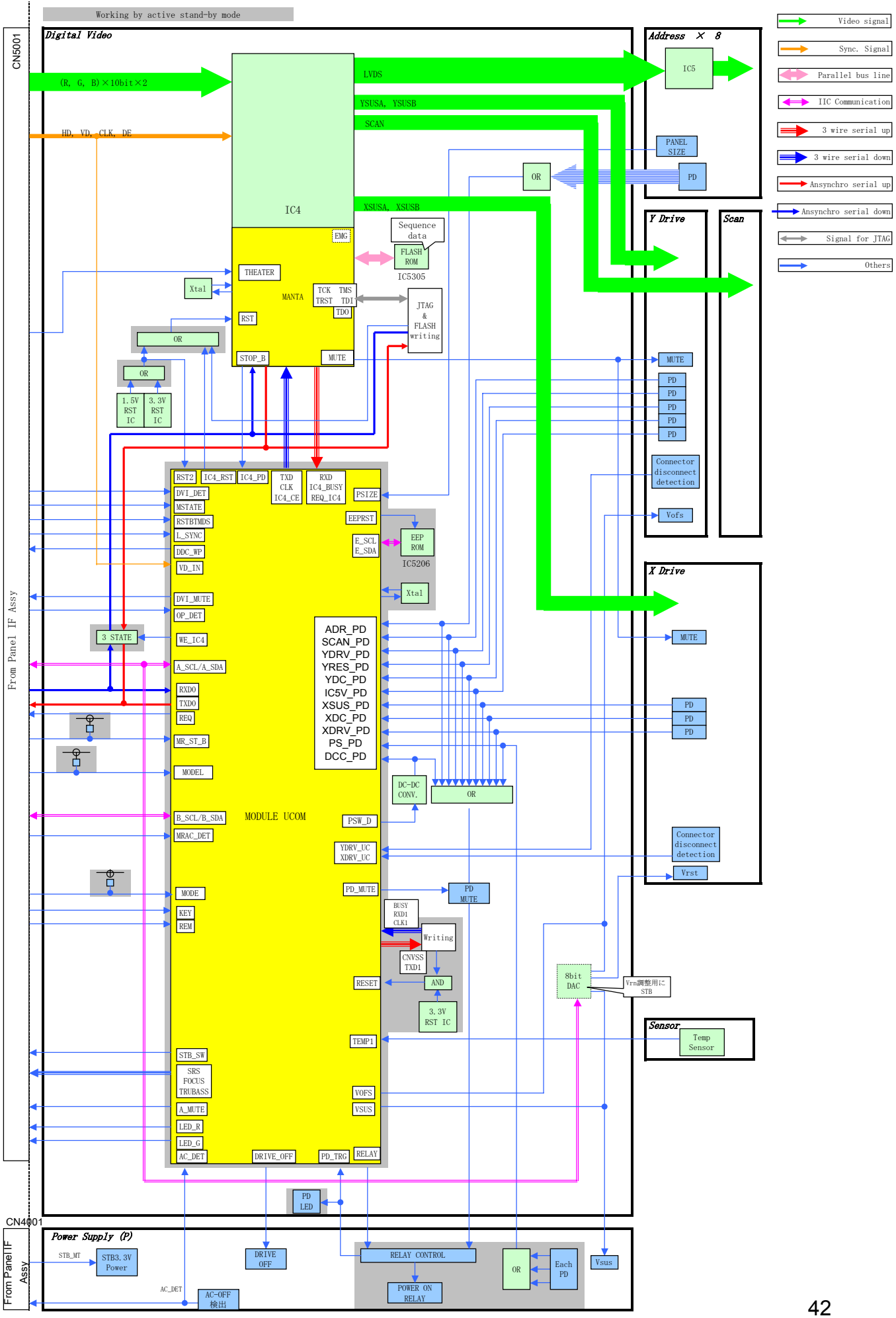
Item	G4 Panel	G5 Panel
TMDS RECEIVER IC	SII169 Same	SII169 Same
EEPROM for EDID	Yes	No
Trap S W	Yes	No
Connecton between HD IF Assy and Digital Video Assy	114pin F P C FCC pin line : No chnge Length: 135mm	Length: 155mm
Board size	(x) 119.5 × (y) 160.5mm	(x) 119.5 × (y) 143.5mm
DVI & MDR connector spec	No change	

435P / 505P diffrences None (same board)

Compatibility with G4 and G5 None



Digital Video Assy Block Diagram

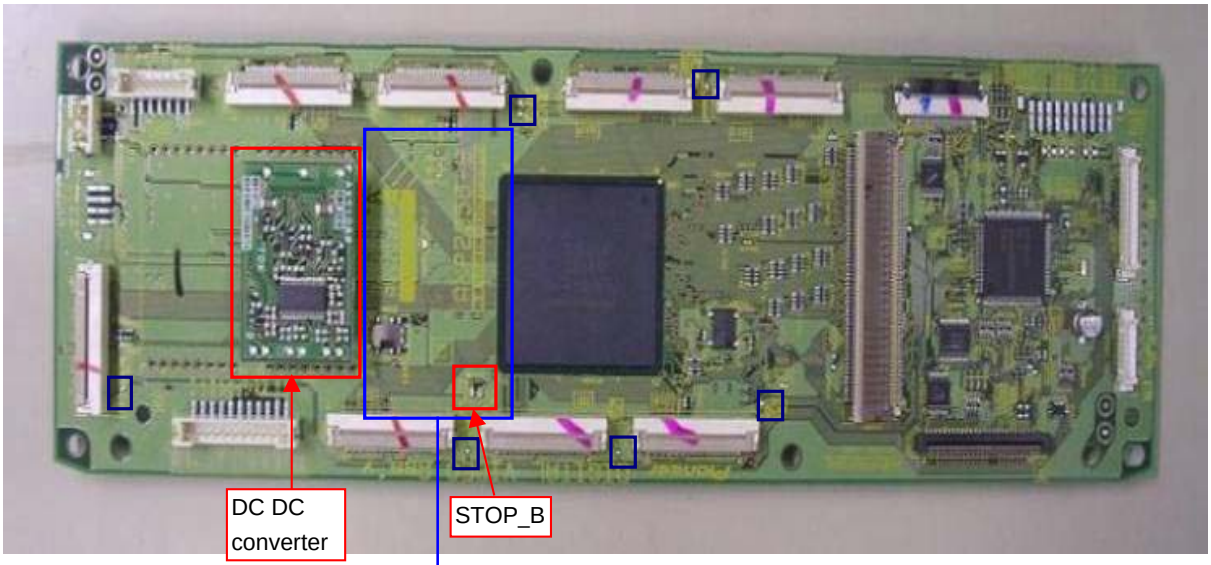


DIGITAL VIDEO ASSY

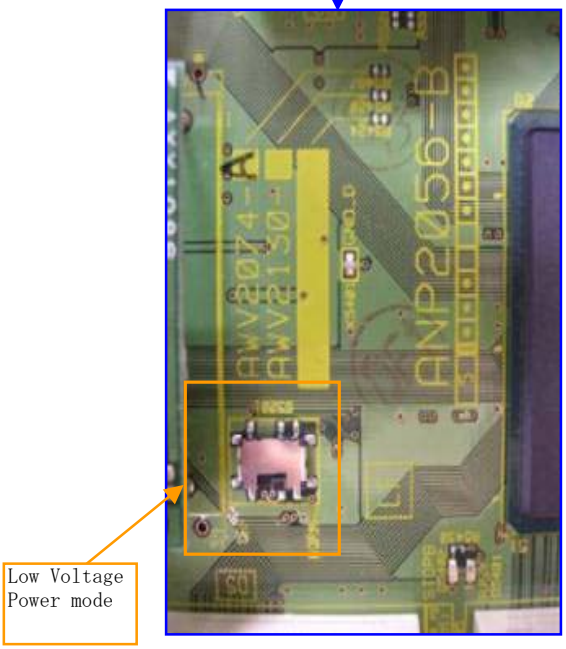
Differences between G4 and G5

	G4 PDP	G5 PDP
Module ucon (IC5201) (Changing Capacitor)	M30626FHPGP (384K)	M30622F8PGP (64K)
Input / Output Connectors	Same	
DC DC converter	AXY1066 (Output:1.5V, 2.5V, 3.3V)	AXY1086 (Output: 1.5V, 3.3V)
ADR_PD lines	No checking points	Added check points. (Now possible to judge which Address Assy is defective when ADR_PD occurs)
IC4_Power Down	None (When sequence is stopped, Red 7 times or 11 times PD occurs)	Added (Red ×13 times PD) (STOP_B line watched by module ucom)

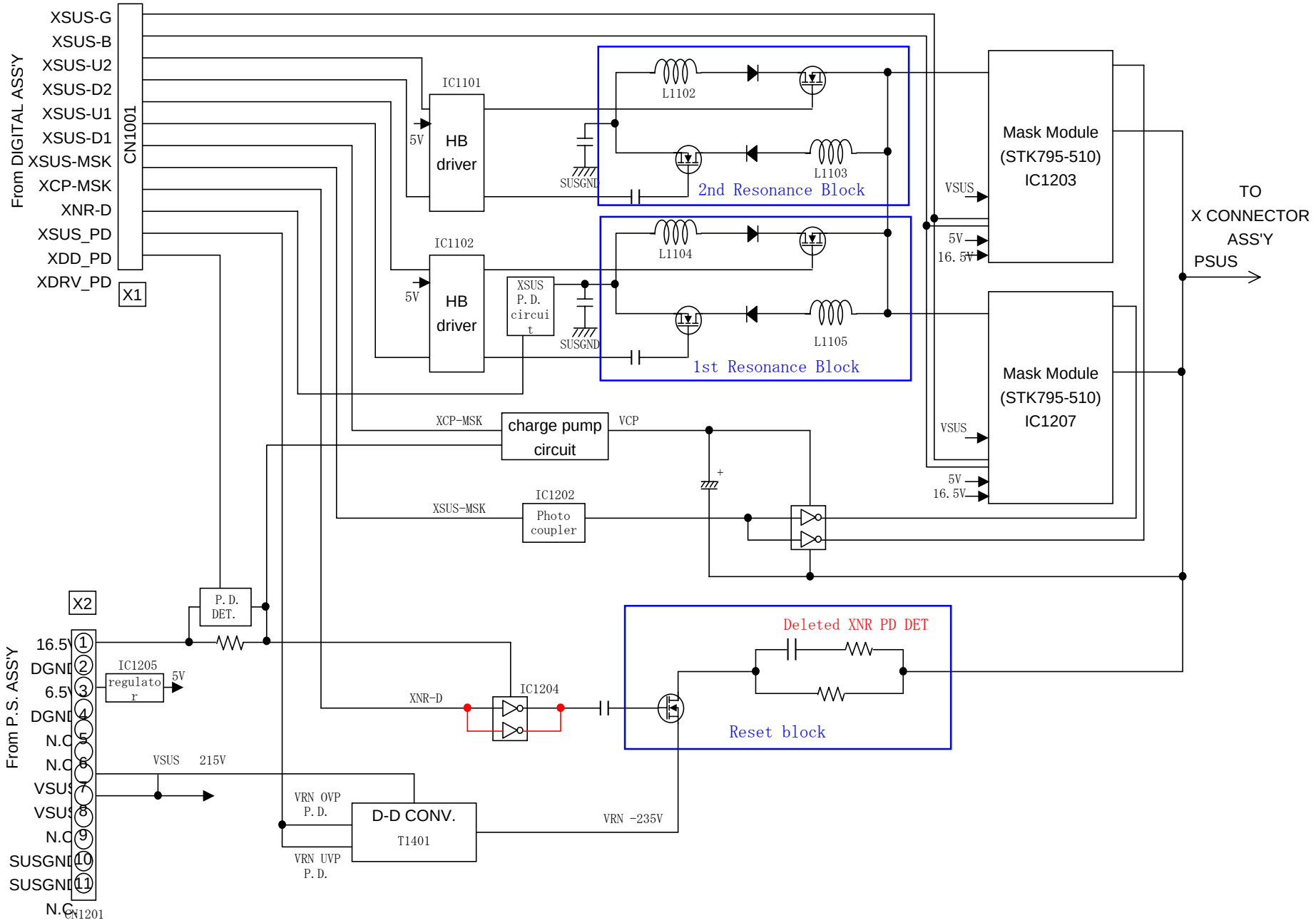
Differences between 435P and 505P	None (Same board)
Compatibility with G4 and G5	None

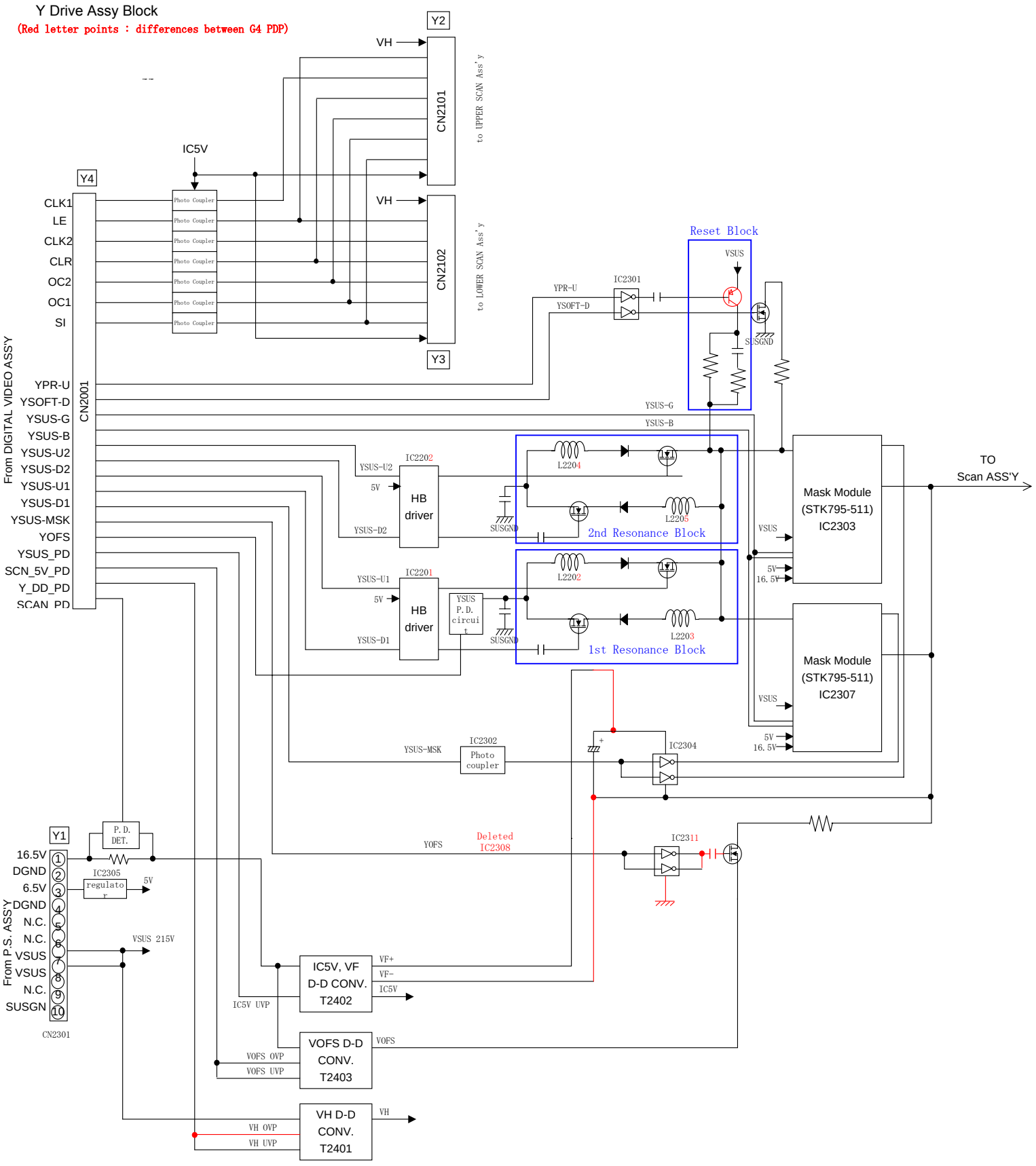


Address PD line's check points (High Active)

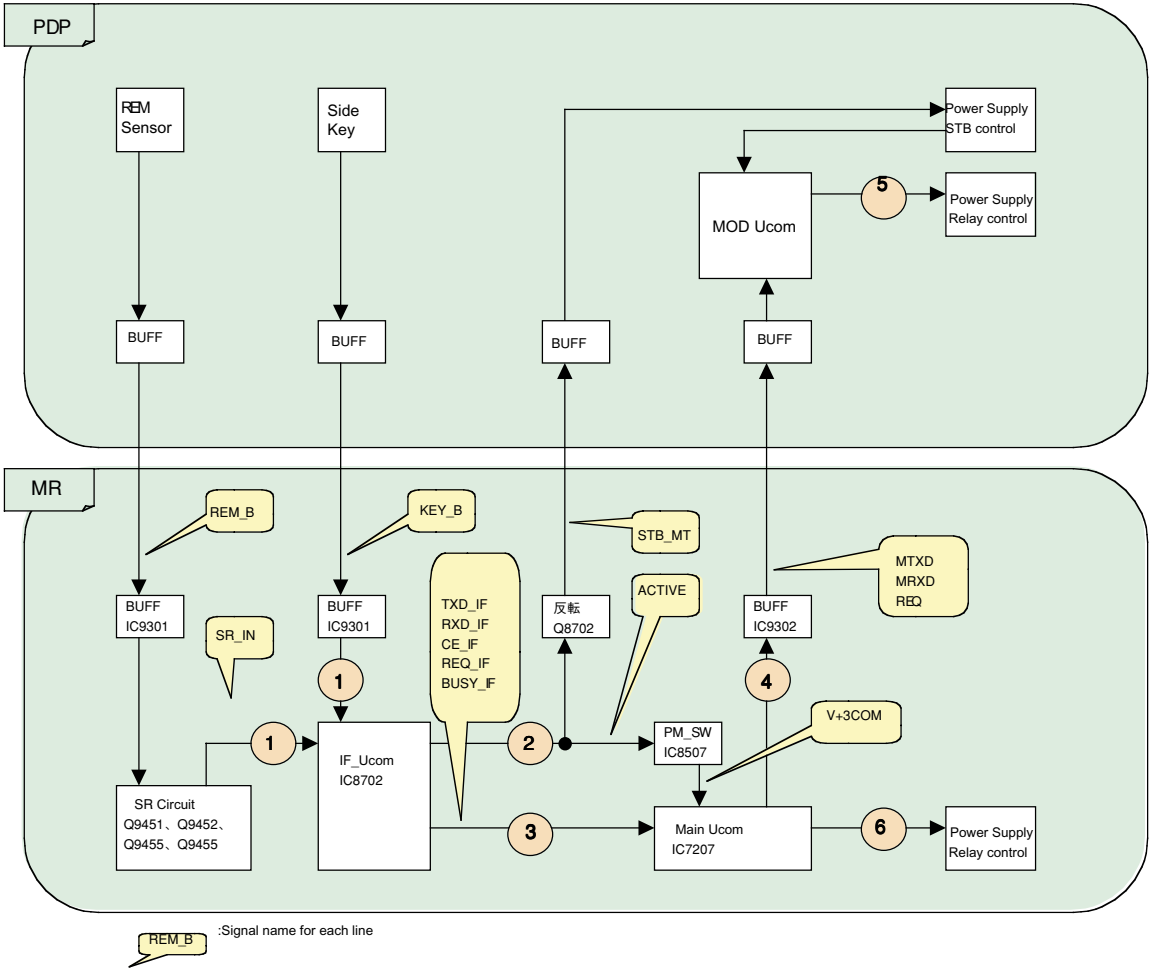


G5 X Drive Assy Block (Red letter points : differences between G4 PDP)




Y Drive Assy Block
(Red letter points : differences between G4 PDP)
Y2
VH
CN2101
to UPPER SCAN Ass'y
IC5V
Y4
CLK1
LE
CLK2
CLR
OC2
OC1
SI
Photo Coupler
VH
CN2102
to LOWER SCAN Ass'y
Y3
From DIGITAL VIDEO ASS'Y
CN2001
YPR-U
YSOFT-D
YSUS-G
YSUS-B
YSUS-U2
YSUS-D2
YSUS-U1
YSUS-D1
YSUS-MSK
YOFS
YSUS_PD
SCN_5V_PD
Y_DD_PD
SCAN_PD
IC2301
Reset Block
VSUS
SUSGND
IC2202
HB driver
2nd Resonance Block
L2204
L2205
IC2201
1st Resonance Block
L2202
L2203
YSUS P.D. circuit
Mask Module (STK795-511) IC2303
Mask Module (STK795-511) IC2307
TO Scan ASS'Y
5V
16.5V
IC2302
Photo coupler
YSUS-MSK
IC2304
IC2311
Deleted IC2308
Y1
P.D. DET.
IC2305 regulator
From P.S. ASS'Y
16.5V
DGND
6.5V
DGND
N.C.
N.C.
VSUS
VSUS
N.C.
SUSGN
CN2301
VSUS 215V
IC5V, VF D-D CONV. T2402
VF+
VF-
IC5V
IC5V UVP
VOFS D-D CONV. T2403
VOFS
VOFS OVP
VOFS UVP
VH D-D CONV. T2401
VH
VH OVP
VH UVP

Outline of Power On Sequence for G-5 Series



1: Remote signal or key sginal is input to IF Ucom on AV board.
2: IF Ucom supplys power to Main Ucom on Main board and Module Ucom on D. Video board
3: IF Ucom communicates remote control (or KEY) info to Main Ucom.
4: Main Ucom outputs starting up command to Module Ucom.
5: Module Ucom turns on power lines in panel by controlling relay on power supply board on panel.
6: Main Ucom turns on power lines in MR by controlling relay on power supply board on MR.

Disassembly

Rear Case and Front Case Assy

① Remove ten screws.

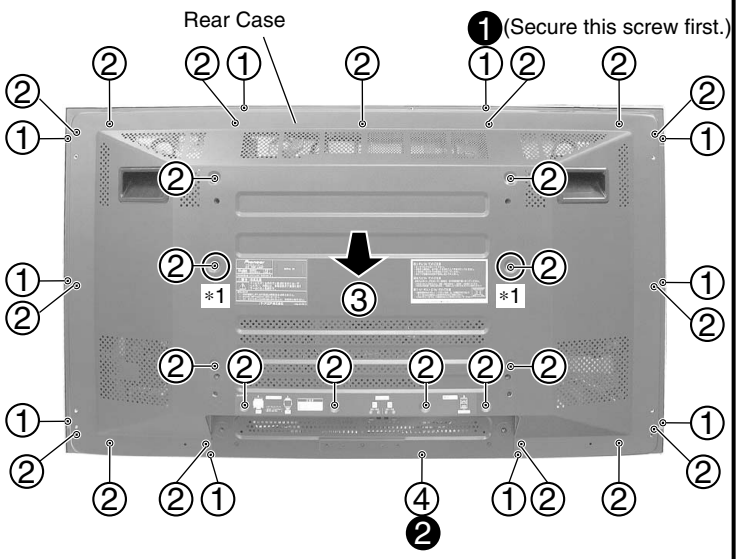
② Remove 25 screws.

∗1:
When reassembling, first secure the screws for these holes to position the Rear Case correctly.

③ Remove the Rear Case.

④ Remove one screw.

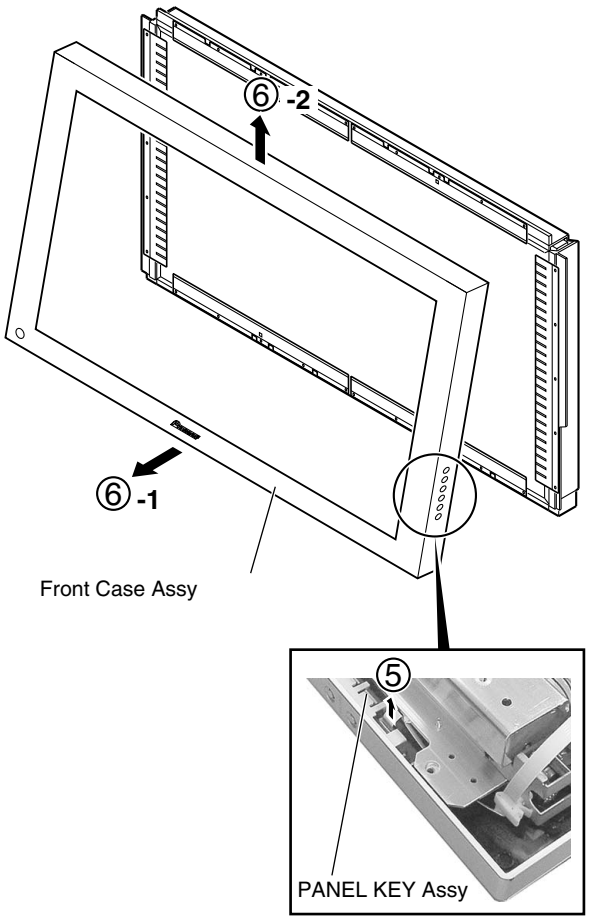
When reassembling the Front Case Assy
Secure the screws in the order of ❶ and ❷.
Then secure the screws on the upper side, the sides, then the lower side.



⑤ Remove the flexible cable on the PANEL KEY Assy.

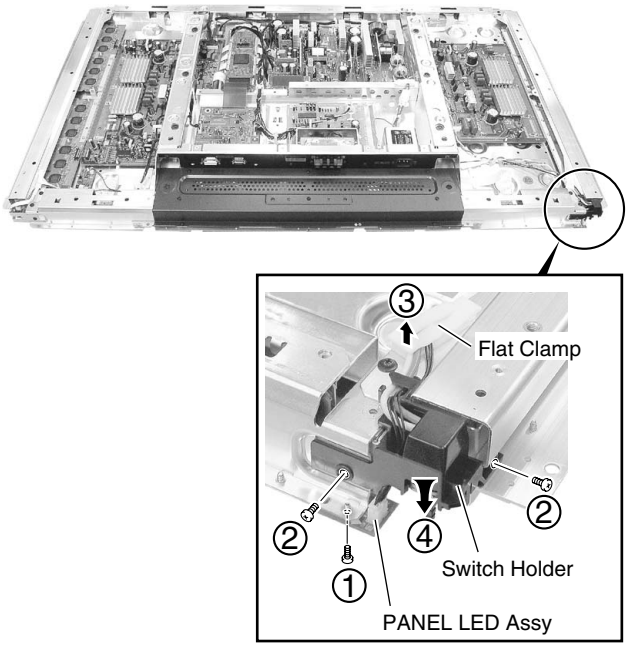
⑥ Remove the Front Case Assy .

Note: If you wish to remove only the Front Case Assy, you can remove it in the order of ①, ④, ⑤, and ⑥.

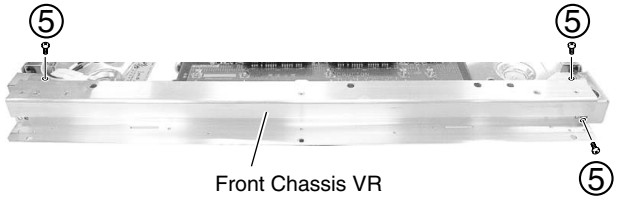


X CONNECTOR A and B Assy's

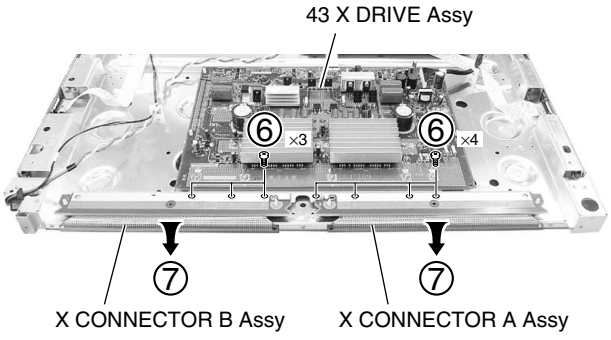
① Remove the PANEL LED Assy by removing one screw.
② Remove two screws.
③ Remove flat clamp and remove the wires.
④ Remove Switch Holder.



⑤ Remove three screws to remove the Front Chassis VR

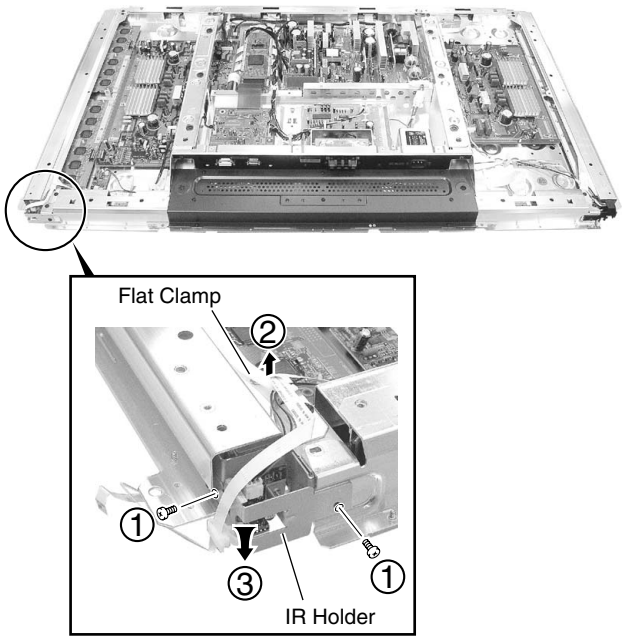


⑥ Remove the seven screws.
⑦ Remove the X CONNECTOR A and B Assy's.

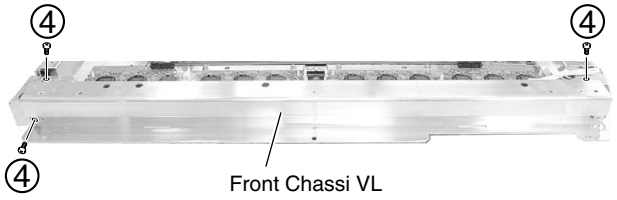


SCAN A and B Assy's

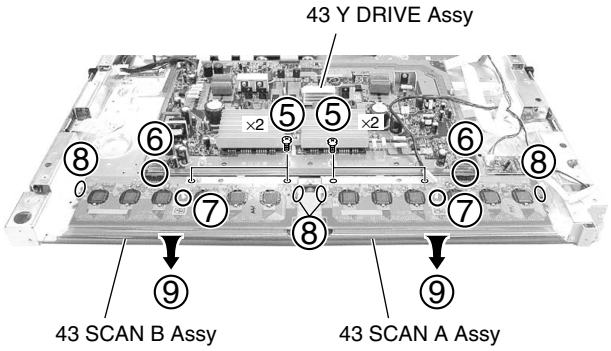
① Remove two screws.
② Remove flat clamp and remove the wires.
③ Remove IR Holder.



④ Remove three screws to remove the Front Chassis VL .



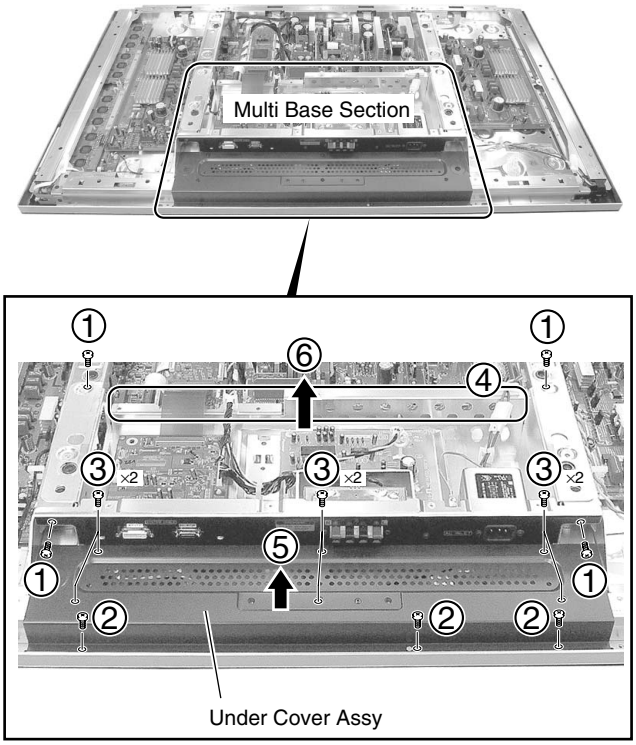
⑤ Remove four screws.
⑥ Disconnect two pin connectors.
⑦ Remove two PCB spacers.
⑧ Remove four edge card spacers.
⑨ Remove SCAN A and B Assy's.

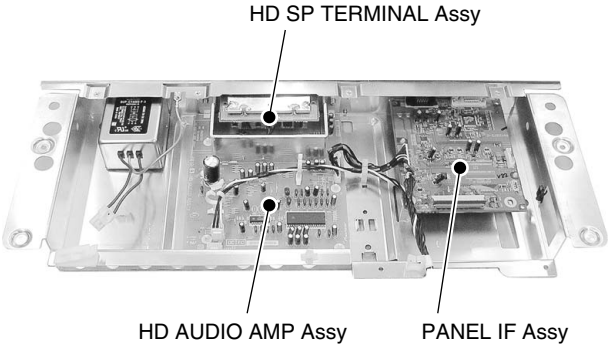


MULTI BASE SECTION

Note:
To access the Multi Base Section, only the Rear Case must be removed. No other parts need to be removed.

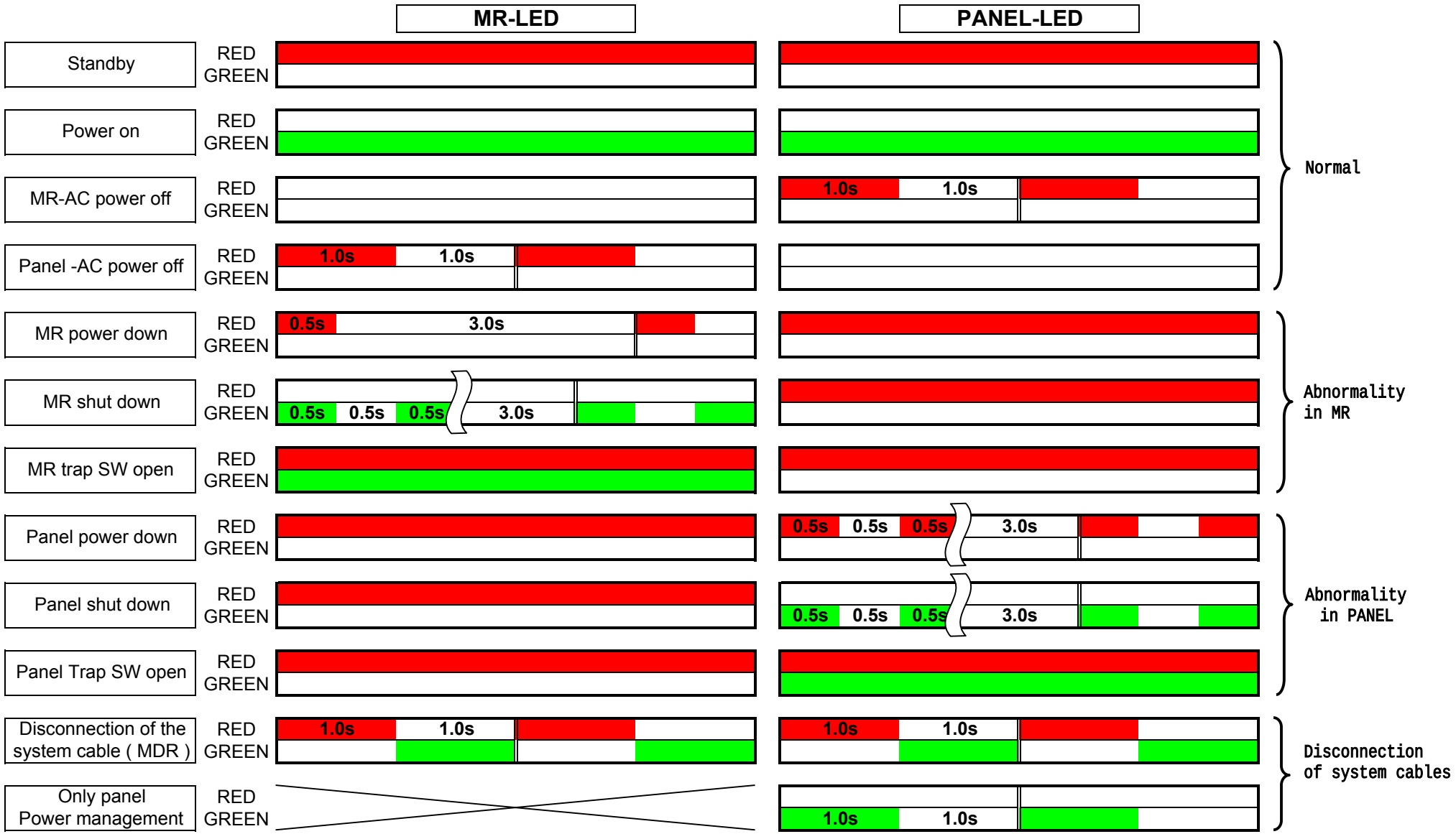
① Remove four screws.
② Remove three screws.
③ Remove six screws.
④ Disconnect the connectors.
⑤ Remove the Under Cover Assy.
⑥ Remove the Multi Base Section.



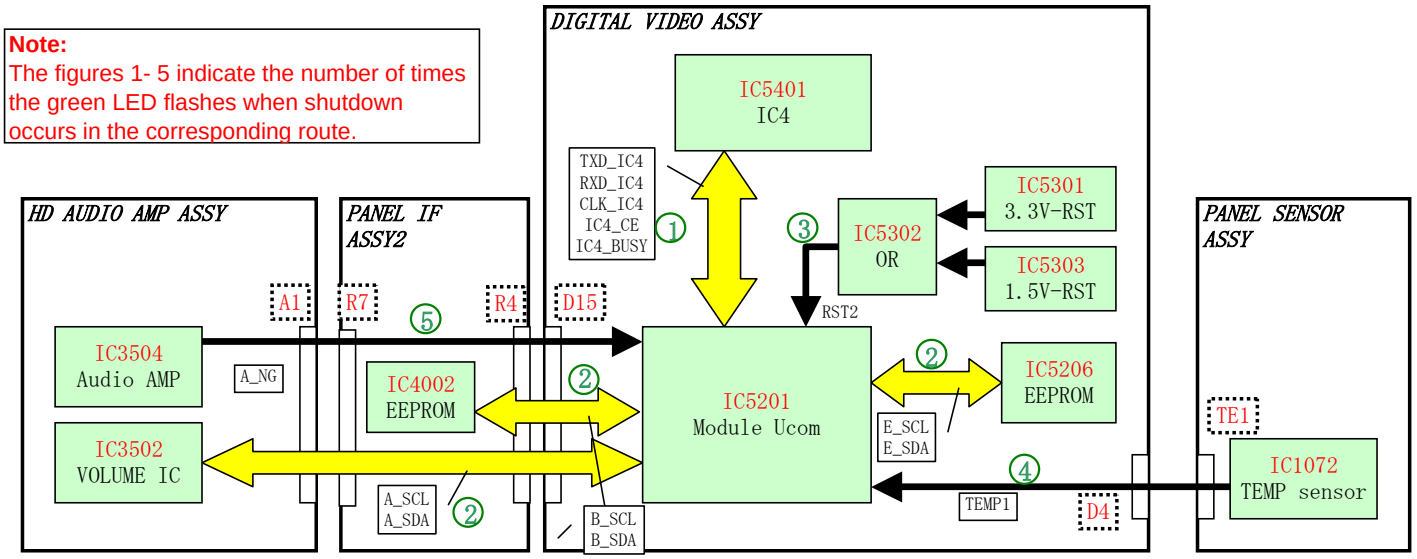


Trouble shooting
Operation statuses indicated by LEDs

G-5 Models



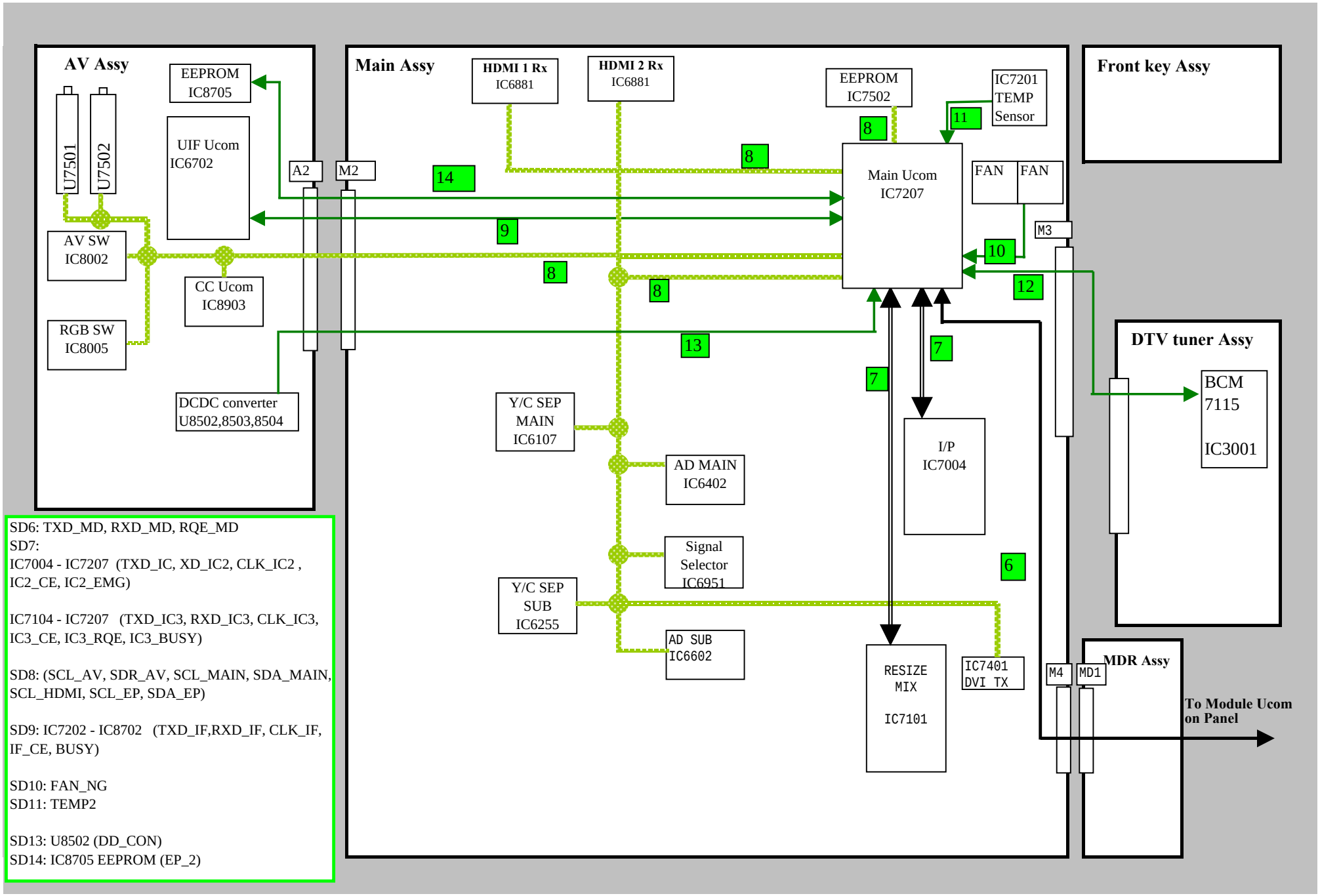
Block diagram of the shutdown signal system on the PDP panel



• Diagnosis of shutdown

LED	SD Circuit in Operation	Defective Assy	Reason for Shutdown	Point to be Checked	Possible Defective Part	Remarks
1 time	Communication failure of the panel-drive IC	DIGITAL VIDEO	Communication failure of IC4	IC4 BLOCK, PANEL FLASH BLOCK	IC5401, IC5305	
			Writing failure of IC4			After turning the unit on again, check if the data on the version can be read with the GS1 command.
2 times	Communication failure of the module IIC (Check the shutdown subcategory on the Factory menu.)	DIGITAL VIDEO	Communication failure of the EEPROM (4K)	MODULE UCOM BLOCK	IC5206	
		PANEL IF	Communication failure of the EEPROM (2K)	PANEL IF BLOCK	IC4002	
			Disconnection of cable	CN4009 - CN3501		Check if the cable is disconnected or not securely connected.
		HD AUDIO	Defective volume IC	HD AUDIO AMP Assy	IC3502	
			Defective 114-pin FPC	CN4004 - CN5001	ADY1081	Check if the 114-pin FPC is broken or not securely connected.
3 times	Power decrease of DIGITAL-DC-DC	DIGITAL VIDEO	Defective DC-DC converter	DIGITAL DD CON BLOCK	U5601	Check if 3.3 V, 2.5 V, and 1.5 V are activated.
			Defective RST IC	PANEL FLASH BLOCK	IC5301, IC5302, IC5303	
		POWER SUPPLY	No startup of 12 V			
4 times	Panel having higher temperature	DIGITAL VIDEO	Cable disconnected	CN5202 - CN1071		
			Panel having higher temperature	Surrounding temperature		Shutdown occurs when the sensor temperature becomes 77°C or more (PDP-434P) or 83°C or more (PDP-504P).
5 times	Audio failure		Speaker short-circuited	Speaker terminals		Check if the speaker cables are in contact with the chassis, etc.
		HD AUDIO	Defective AMP IC	HD AUDIO AMP ASSY	IC3504	
		HD AUDIO	Disconnection of cable	CN4009 - CN3501		Check if the cable is disconnected or not securely connected.

Media Receiver Shut Down Block



SD6: TXD_MD, RXD_MD, RQE_MD
SD7:
IC7004 - IC7207 (TXD_IC, XD_IC2, CLK_IC2 , IC2_CE, IC2_EMG)

IC7104 - IC7207 (TXD_IC3, RXD_IC3, CLK_IC3, IC3_CE, IC3_RQE, IC3_BUSY)

SD8: (SCL_AV, SDR_AV, SCL_MAIN, SDA_MAIN, SCL_HDMI, SCL_EP, SDA_EP)

SD9: IC7202 - IC8702 (TXD_IF,RXD_IF, CLK_IF, IF_CE, BUSY)

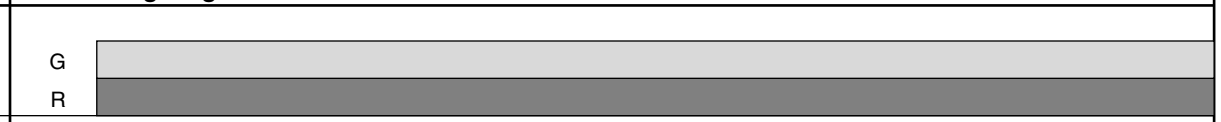
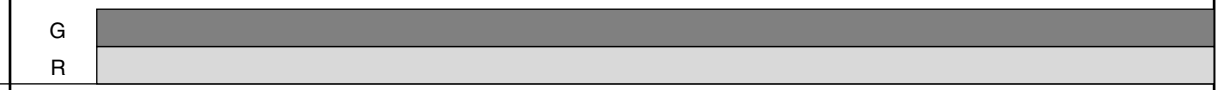
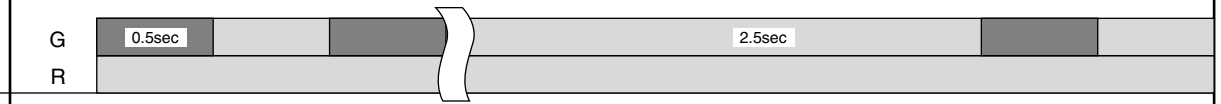
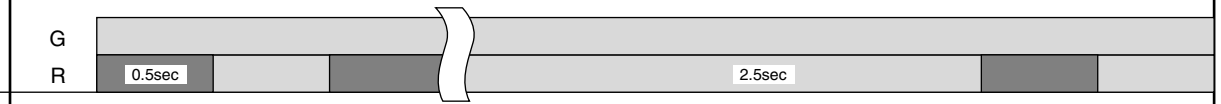
SD10: FAN_NG
SD11: TEMP2

SD13: U8502 (DD_CON)
SD14: IC8705 EEPROM (EP_2)

Defective locations assumed from the number of LED Flashing

LED Blink number				SD/PD	Detected location	Possible failure location Explanation of expected failure parts	OSD comment when detecting SD
Panel LED		MR LED					
RED	GRN	RED	GRN				
RED			GRN6	SD	Module Ucom	Short circuit of system cable Module Ucom on panel or around this Ucom Main Ucom (IC7207) Communication line error between Module Ucom on panel and IC7207 (TXD_MD、RXD_MD、REQ_MD)	None
RED			GRN7		Main Ucom 3 serial lines	IC7004 (IP Process IC) or around this IC Communication line error between IC7004 and IC7207 Main Ucom (TXD_IC2, RXD_IC2, CLK_IC2, IC2_CE, IC2_EMG) IC7101(RESIZE MIX IC) or around this IC Communication line error between IC7101and IC7207 Main Ucom (TXD_IC3, RXD_IC3, CLK_IC3, IC3_CE, C3_REQ, IC3_BUSY)	None
RED			GRN8		IIC bus line	IC8903 (CC Ucom) or around this IC IC6107 (CD_MAIN) or around this IC IC6255 (CD_SUB) or around this IC IC6402 (AD_MAIN) or around this IC IC6602 (AD_SUB) or around this IC IC6801 (HDMI_1) or around this IC IC6881 (HDMI_2) or around this IC IC6951 (BUS_SW) or around this IC IC7401 (TX) or around this IC U7501 (TU) or around this IC IC8002 (AV_SW) or around this IC IC8005 (RGB_SW) or around this IC IC7205 (E2P) or around this IC Communication line error between the above ICs and IC7202 Main Ucom (SCL_AV, SDA_AV, SCL_MAIN, SDA_MAIN, SCL_HDMI, SDA_HDMI, SCL_EP, SDA_EP)	None
RED			GRN9		Main Ucom	IC7202 (Main Ucom) Flexible cable failure between Main board and AV board Communication line error between IC7202 Main Ucom and IC8702 IF Ucom (TXD_IF, RXD_IF, CLK_IF, IF_CE, IF_BUSY)	None
RED			GRN10		FAN	Stop FAN due to fan failure or something is stuck in the fan	None
RED			GRN11		MR or PDP having high temperature	Using units in high temperature location	Turn of the unit due to high temperature. Confirm temperature around MR [SD11]
RED			GRN13		ASIC Power (DC-DC)	Failure in U8502 (DD_CON on AV) or short circuit on another location	None
RED			GRN14		IF_E2P	Defective IC8705 (IF_E2P) or its peripheral circuits	None
RED		RED 1		PD	MR PWR	MR power Assy in failure or short circuit on another location	None

LED-lighting patterns

Status of the Unit		LED-lighting Pattern
Standby, power management	Lit in red	
Power on	Lit in green	
PDP's power not on	Flashing in red (at 1-sec intervals)	
System cable disconnected *	Flashing alternately in red and green (at 1-sec intervals)	
Waiting for start of rewriting by the microcomputer		
Waiting for finish of rewriting by the microcomputer		
Shutdown (circuit protection)	Flashing in green n times (initially at 0.5-sec intervals then 2.5-sec intervals)	
Power-down (circuit protection)	Flashing in red for n times (initially at 0.5-sec intervals then 2.5-sec intervals)	
TRAP switch operation		

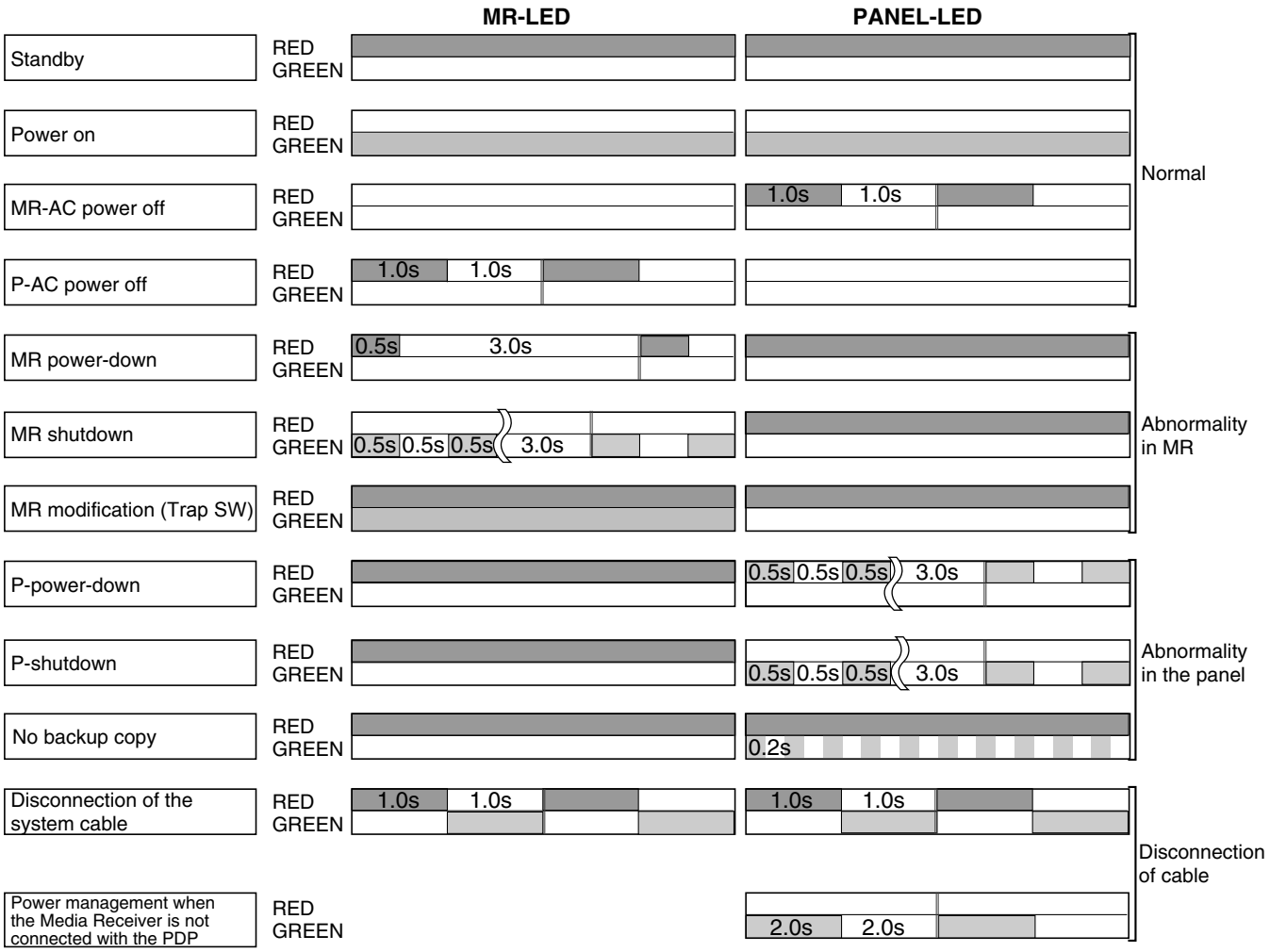
* In this case, the red and green areas on the screen of the panel flash alternately.

Defective points assumed from the number of times of LED flashing

No. of times of LED flashing				Category ∗1	Site detected as defective	Possible defective points (representative examples)	OSD when detected (warning message)
LEDs on the panel		LEDs on the MR					
RED	GRN	RED	GRN				
	Green 1	Red		SD	Panel drive IC	∗2	None
	Green 2	Red			Module section IIC	∗2	None
	Green 3	Red			Power decrease of DIGITAL-DC-DC	∗2	None
	Green 4	Red			Panel having abnormally high temperature	∗2	The power is shut down, because the internal temperature has risen. Check the temperature surrounding the PDP. (SD04)
	Green 5	Red			Short-circuiting of the speakers	∗2	The power is shut down, because the protection circuit inside the unit is activated. Check if the speaker cables are short-circuited. (SD05)
Red			Green 6		Module microcomputer	Disconnection of the system cable Defective module microcomputer or its peripheral circuits of the panel (Refer to the service manual of the PDP-434PU or PDP-504PU.) Defective main microcomputer (IC7207) Failure in communication (TXD_MD, RXD_MD, REQ_MD) between the panel's module microcomputer and IC7207 (main microcomputer)	None
Red			Green 7		3-wire serial connection of the main section	Defective IC7004 or its peripheral circuits Failure in communication (TXD_IC, XD_IC2, CLK_IC2, IC2_CE, IC2_EMG) between IC7004 and IC7207 (main microcomputer) Defective IC7101 or its peripheral circuits Failure in communication (TXD_IC3, RXD_IC3, CLK_IC3, IC3_CE, IC3_REQ, IC3_BUSY) between IC7101 and IC7207 (main microcomputer)	None
Red			Green 8		IIC of the main section	Defective IC6107 (CD_MAIN) or its peripheral circuits Defective IC6255 (CD_SUB) or its peripheral circuits Defective IC6402 (AD_MAIN) or its peripheral circuits Defective IC6602 (AD_SUB) or its peripheral circuits Defective IC6881 (HDMI_2) or its peripheral circuits Defective IC6951 (BUS_SW) or its peripheral circuits Defective IC7401 (TX) or its peripheral circuits Defective U7501 (TU) or its peripheral circuits Defective U7502 (TU) or its peripheral circuits Defective IC8002 (AV_SW) or its peripheral circuits Defective IC8005 (RGB_SW) or its peripheral circuits Defective IC7205 (E2P) or its peripheral circuits Failure in communication (SCL_AV, SDA_AV, SCL_MAIN, SDA_MAIN, SCL_HDMI, SDA_HDMI, SCL_EP, SDA_EP) between one of the above devices and IC7207 (main microcomputer)	None
Red			Green 9		Main microcomputer	Defective IC7207 (main microcomputer) Defective flexible cable for communication between the MR MAIN BOARD Assy and the AV BOARD Assy Failure in communication (TXD_IF, RXD_IF, CLK_IF, IF_CE, IF_BUSY) between IC7207 (main microcomputer) and IC8702	None
Red			Green 10		Fan	Failure in the fan motor, or the fan stopped because of dust attached to the fan	None
Red			Green 11		MR or unit having abnormally high temperature	The Media Receiver or the unit being used at high temperature	The power is shut down, because the internal temperature has risen. Check the temperature surrounding the Media Receiver. (SD11)
Red			Green 12		Digital tuner (U.S. model)	Defective DTV tuner Failure in communication (TXD_DT, RXD_DT) between the digital tuner and IC8202 (main microcomputer)	None
Red			Green 13		ASIC power supply (DC-DC)	Defective U8502 (DD_CON) or short-circuiting elsewhere	None
Red			Green 14		IF_E2P	Defective IC8705 (IF_E2P) or its peripheral circuits	None
Red		Red 1		PD	MR PWR	Defective Power Supply Assy of the Media Receiver, or power short-circuiting in another Assy	None
Red 2		Red			POWER	∗2	None
Red 3		Red			SCAN	∗2	None
Red 4		Red			SCN-5V	∗2	None
Red 5		Red			Y-DRIVE	∗2	None
Red 6		Red			Y-DCDC	∗2	None
Red 7		Red			Y-SUS	∗2	None
Red 8		Red			ADRS	∗2	None
Red 9		Red			X-DRIVE	∗2	None
Red 10		Red			X-DCDC	∗2	None
Red 11		Red			X-SUS	∗2	None
Red 12		Red			D-DCDC	∗2	None
Red 13		Red			IC4	∗2	None

∗1: Shutdown (SD) is a protective operation controlled by the microcomputer, and you can turn on the unit again using the remote control unit. Power-down (PD) is a protective operation activated by the circuitry and can be reset after AC power is off for about 1 minute.
∗2: Refer to the service manual of the PDP-435PU or PDP-505PU.

• Operation statuses indicated by LEDs



Note: "P" stands for panel.

: Lit in red

: Lit in green

: Not lit

• Identification of locations having abnormality by the number of times the LEDs flash

On Shutdown and power-down

Shutdown

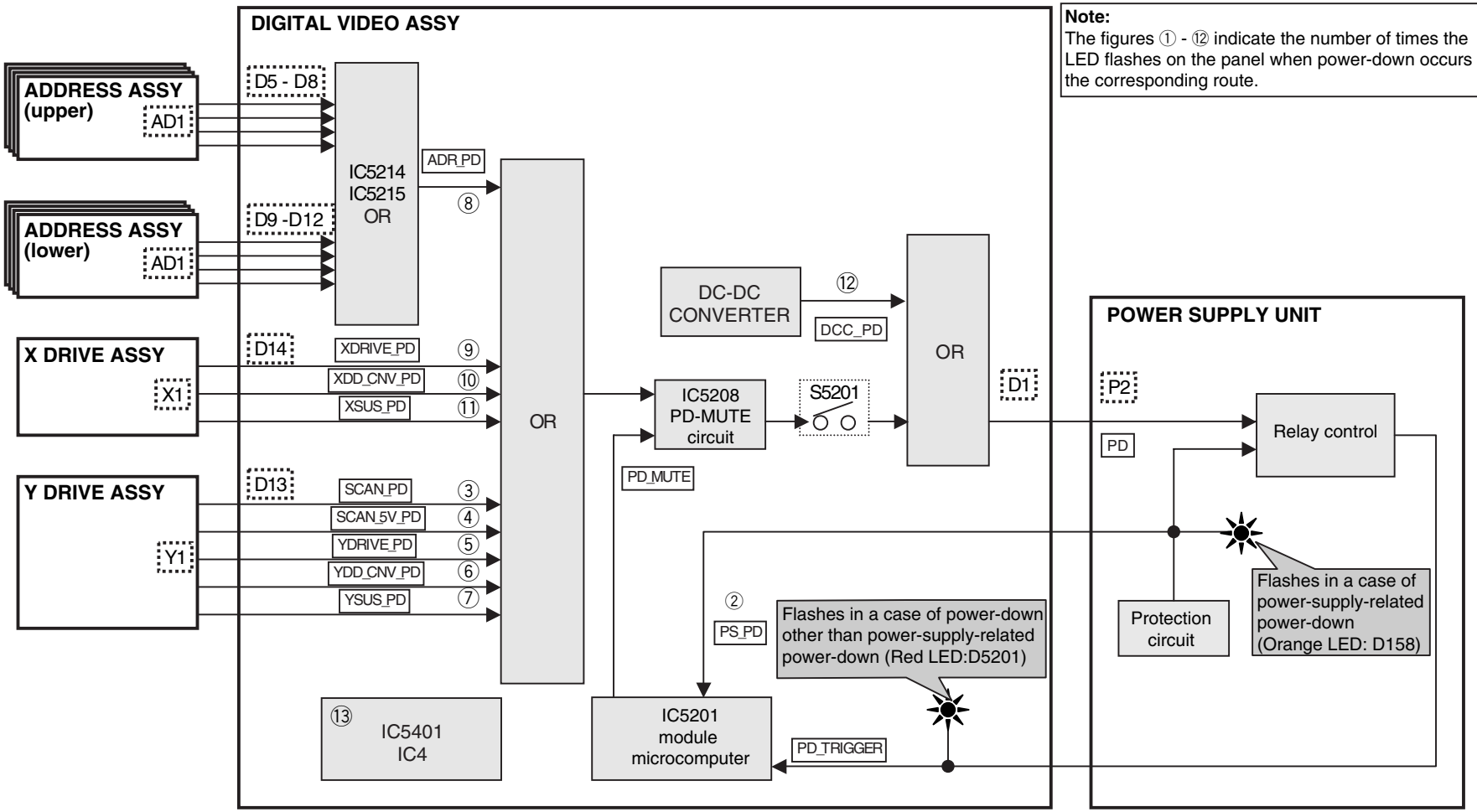
• Operation: When the microcomputer detects any abnormality, it forcibly turns off the unit.
• LED indication: The green LED flashes.

Power-down

• Operation: When the unit is in emergency status, a protection circuit is activated, and the power is turned off.
• LED indication: The red LED flashes.

Category	MR-LED		PANEL-LED		Content	Unit's operation	Warning indication when the MR is connected
	STB	ON	STB	ON			
SD	Lit			1 time	Communication failure of the panel-drive IC	Immediate shutdown	
	Lit			2 times	Communication failure of the module IIC	Immediate shutdown	
	Lit			3 times	Power decrease of the digital DC-DC converter	Immediate shutdown	
	Lit			4 times	Panel having high temperature	Shutdown 30 seconds after warning	Powering off. Internal temperature is too high. Check temperature around PDP. [SD04]
	Lit			5 times	Audio failure	Shutdown 3 seconds after warning	Powering off. Internal protection circuits turns power off. Is the speaker cable short-circuited ? [SD05]
		6 times	Lit		Communication failure of the module microcomputer	Immediate shutdown	Is there a short in speaker cable ?
		7 times	Lit		Main 3-wire serial communication in failure	Immediate shutdown	
		8 times	Lit		Communication failure of the main IIC	Immediate shutdown	
		9 times	Lit		Communication failure of the main microcomputer	Immediate shutdown	
		10 times	Lit		Fan in failure	Immediate shutdown	
		11 times	Lit		MR or unit having higher temperature	Shutdown 30 seconds after warning	Powering off. Internal temperature is too high. Check temperature around media receiver. [SD11]
		12 times	Lit		Communication failure of the digital tuner	Immediate shutdown	
		13 times	Lit		MR-ASIC power (DC-DC) in failure	Immediate shutdown	
PD	1 time		Lit		MR power supply	Immediate power-down	
	Lit		2 times		Panel-POWER SUPPLY	Immediate power-down	
	Lit		3 times		SCAN	Immediate power-down	
	Lit		4 times		SCAN-5V	Immediate power-down	
	Lit		5 times		Y-DRIVE	Immediate power-down	
	Lit		6 times		Y-DCDC	Immediate power-down	
	Lit		7 times		Y-SUS	Immediate power-down	
	Lit		8 times		ADDRESS	Immediate power-down	
	Lit		9 times		X-DRIVE	Immediate power-down	
	Lit		10 times		X-DCDC	Immediate power-down	
	Lit		11 times		X-SUS	Immediate power-down	
	Lit		12 times		DIGITAL-DCDC	Immediate power-down	
	Lit		13 times		IC4 Manta IC	Immediate power-down	
	Lit		15 times		UNKNOWN **	Immediate power-down	

* If the power-down circuit for X-SUS/Y-SUS is activated because output of the drive waveform for IC4 is stopped, IC4-PD is displayed.
** If the unit cannot identify which protection circuit was activated, even if a power-down had been detected, the red LED may flash 15 times.


DIGITAL VIDEO ASSY
ADDRESS ASSY (upper)
AD1
D5 - D8
ADDRESS ASSY (lower)
AD1
D9 -D12
IC5214
IC5215
OR
ADR_PD
⑧
X DRIVE ASSY
X1
D14
XDRIVE_PD
⑨
XDD_CNV_PD
⑩
XSUS_PD
⑪
Y DRIVE ASSY
Y1
D13
SCAN_PD
③
SCAN_5V_PD
④
YDRIVE_PD
⑤
YDD_CNV_PD
⑥
YSUS_PD
⑦
OR
DC-DC CONVERTER
⑫
DCC_PD
OR
D1
IC5208
PD-MUTE
circuit
S5201
PD_MUTE
②
PS_PD
Flashes in a case of power-down other than power-supply-related power-down (Red LED:D5201)
⑬
IC5401
IC4
IC5201
module
microcomputer
PD_TRIGGER
POWER SUPPLY UNIT
P2
PD
Relay control
Protection circuit
Flashes in a case of power-supply-related power-down (Orange LED: D158)
Note:
The figures ① - ⑫ indicate the number of times the LED flashes on the panel when power-down occurs in the corresponding route.

SERVICE FACTORY MODE

To operate in Service Factory mode, use the supplied remote control unit.

How to enter Service Factory Mode

With the remote controler from Standby: Press **Display**, **Left, Up, Left, Right, Power** (Same as G-4 Models)

Operation in Service Factory mode

● Functions whose settings are set to OFF

The settings for the following functions are set to OFF when Service Factory mode is entered (including when the "FAY" command is received):

- Two-screen operations (input function set on the main side is selected)
- P ZOOM
- STILL
- Detection of the TRAP switch (The log in the EEPROM is retained.)

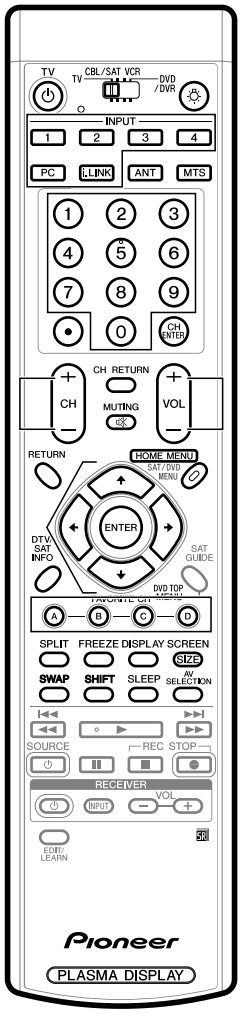
● User data

User data will be treated as follows:

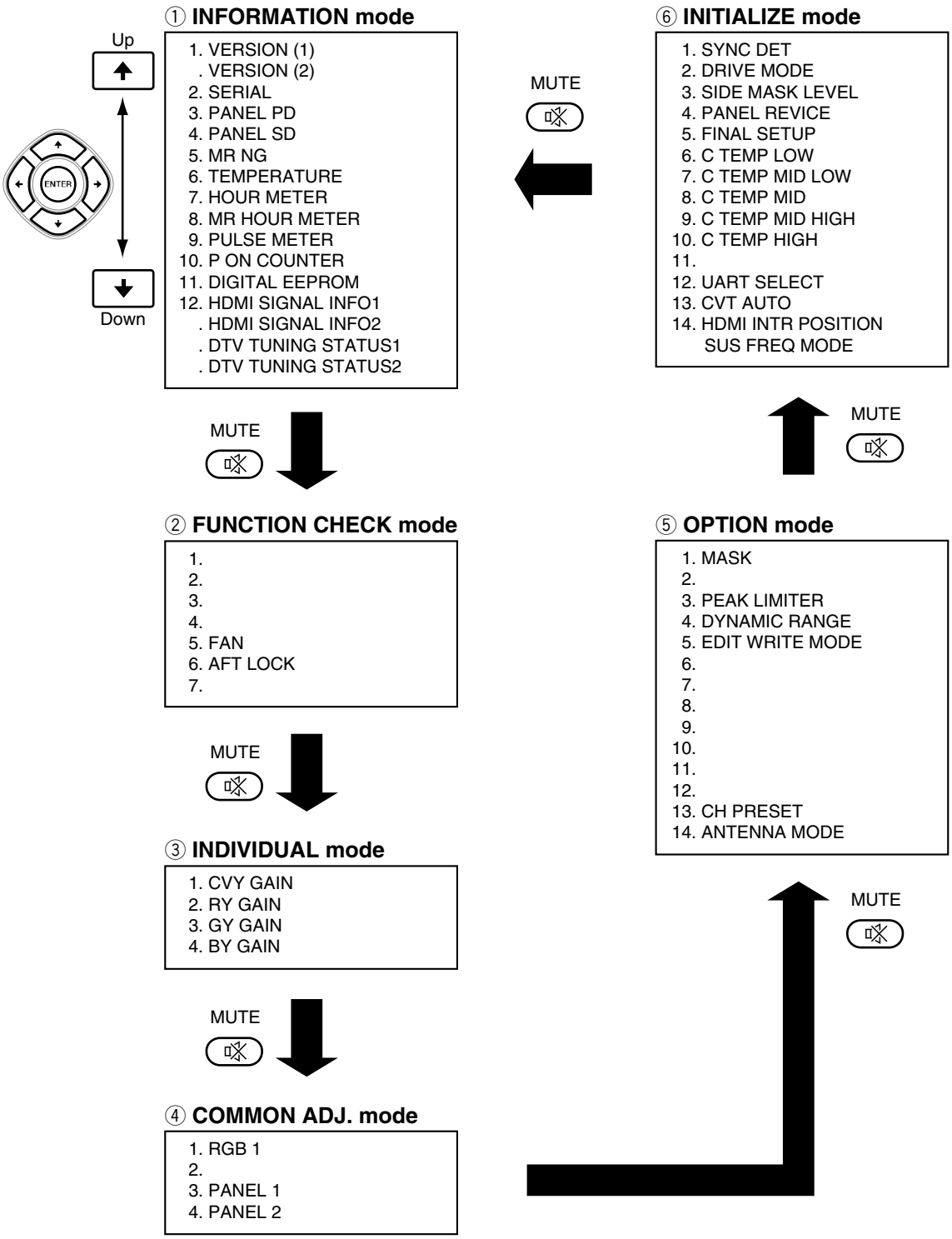
- User data on picture- and audio-quality adjustments are not reflected (data stored in memory will be retained).
- Data on screen position are reset to the default values (data stored in memory will be retained).

Remote control codes in Service Factory mode

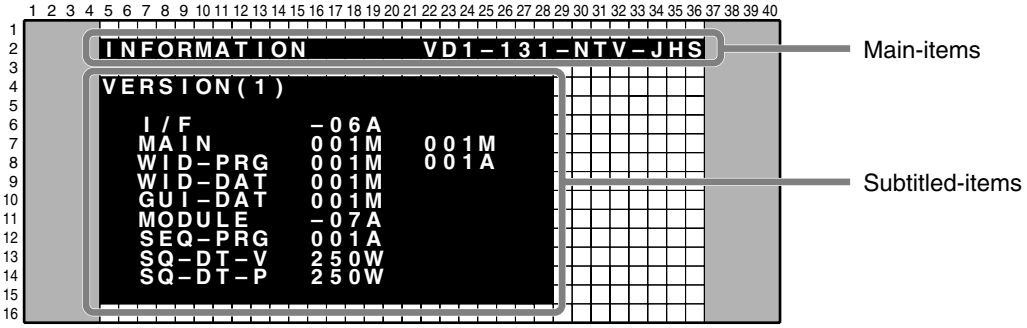
SR Function	Main Function	Remarks
Muting	Switching the main items	Shifting to the next main item
DOWN	Switching the subtitled items	Shifting downward to the next subtitled item
UP	Switching the subtitled items	Shifting upward to the next upper layer
LEFT	Increasing the adjustment value	Increasing the adjustment value
RIGHT	Decreasing the adjustment value	Decreasing the adjustment value
SET	Switching layers	Shifting downward or upward to the next lower or upper layer
INPUT	Selecting input	Shifting the input to the next function
INPUTxx	Selecting input	Switching the input to xx
CH+	Increasing the channel number	Advancing a preset channel (effective when Function is set to TV)
CH-	Decreasing the channel number	Turning a preset channel backward (effective when Function is set to TV)
Numeric keys	Function: TV	Function: TV (previously selected channel number is selected)
POWER	Power OFF	Turning the power off
FACTORY	Factory OFF	Turning Service Factory mode off
MENU	Menu ON	Turning Service Factory mode off and Menu mode on



Service Factory menus

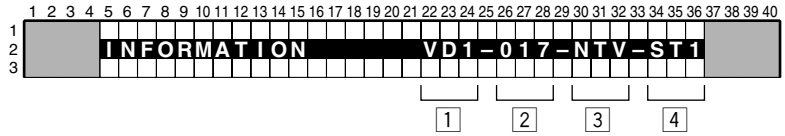


Indications in Service Factory mode



Main-item indications

Four parameters are displayed:



1 Input function

Input Functions	On-Screen Display
VIDEO1	VD1
Terrestrial wave A	ARA
Terrestrial wave B	ARB
CABLE A	CBA
CABLE B	CBB

2 SIG mode and screen size

Note: See SIG-Mode Tables. (See next page.)

3 Color system and signal type

Color System and Signal Type		On-Screen Display
NTSC	Composite input/ S-connector input	NTV
BLACK/WHITE		BWV
Y / CB / CR		CBR
Y / PB / PR		PBR
RGB		RGB
Digital video signal		DIG

4 Option (Destination, etc.)

Options	On-Screen Display
HD system in North America(Regular)	ATS
HD system in North America(ELITE)	AHS

● SIG-Mode Table

The signal mode is displayed in three characters:
First character: Resolution of the input signal (numerics for the video signals, and alphabetics for the PC signals)
Second character: Grouping of the V frequencies

SIG-Mode table for video signals (resolutions and V frequencies)

SIG-Mode	Signal Type	Vertical Frequency fv (Hz)	Horizontal Frequency fh (kHz)
13*	SDTV • 525i	60.000	15.750
21*	SDTV • 625i	50.000	15.625
33*	SDTV • 525p	60.000	31.500
41*	HDTV • 1125i	50.000	28.125
43*	1080I	60.000	33.750
51*	SDTV • 625p	50.000	31.250
61*	HDTV • 750p	50.000	37.500
63*	720P	60.000	45.000

SIG-Mode table for PC signals (resolutions and V frequencies)

SIG-Mode	Signal Type	Vertical Frequency fv (Hz)	Horizontal Frequency fh (kHz)
A2*	720 × 400	56.000	24.825
A5*		70.087	31.469
A8*		85.050	37.861
B3*	640 × 480	59.940	31.469
B4*		66.666	35.000
B6*		72.809	37.861
B7*		75.000	37.500
B8*		85.000	43.300
C3*	852 × 480	60.000	31.680
D2*	800 × 600	56.250	35.1556
D3*		60.317	37.879
D6*		72.188	48.077
D7*		75.000	46.875
D8*		85.061	53.674
E7*	832 × 624	74.550	49.725
F3*	1024 × 768	60.004	48.363
F5*		70.069	56.476
F7*		75.029	60.023
F8*		84.997	68.677
G2*	1280 × 768	56.250	45.113
G3*		59.833	47.986
G5*		70.000	56.137

2nd Character	Reference V Frequency	Remarks
–	–	No signal
1	50	
2	56	
3	60	
4	66	
5	70	
6	For interpolation of 72-Hz area	For distinguishing between 70-Hz or 75-Hz area
7	75	
8	85	
9 (spare)	–	
?	–	Out of range

Third character: Selection of the screen size by the user is displayed.
(○: available, ×: not available)

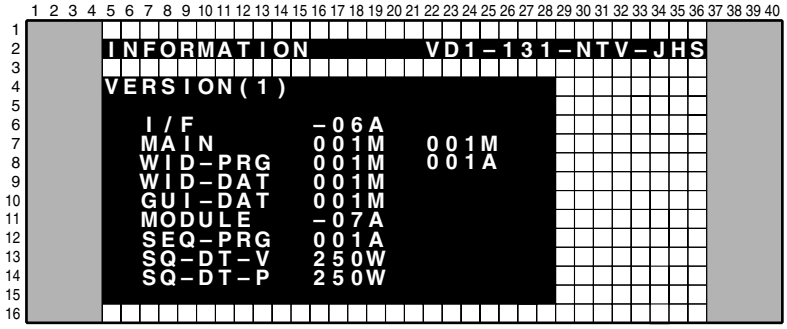
3rd Character	Description on GUI	VIDEO	PC	Remarks
0	DOT BY DOT	×	○	
1	4 : 3	○	○	
2	FULL (FULL1)	○	○	
3	ZOOM	○	×	
4	CINEMA	○	×	
5	WIDE	○	×	Indude WIDE-HD
6	FULL 14 : 9	○	×	
7	CINEMA 14 : 9	○	×	
8	FULL2	○	○	HDTV1035i
9	OVERSCAN	○	×	

① INFORMATION mode

● Operation items

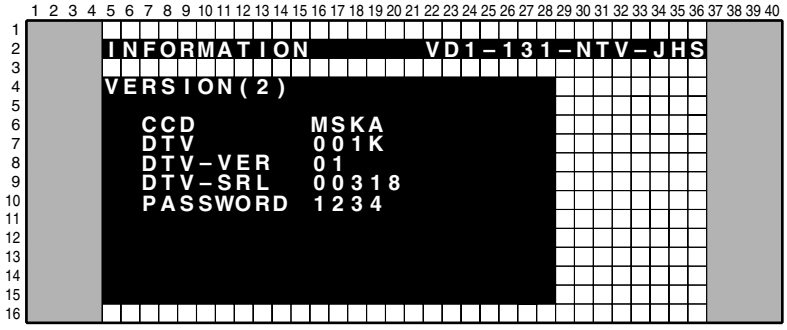
No.	Function / Display	Content
1	VERSION (1)	The flash memory versions for each device are displayed. (common part)
2	VERSION (2)	The flash memory versions for each device are displayed. (individual part)
3	SERIAL	For displaying the serial number of the product (not used)
4	PANEL PD	Power-down generated on the panel side and its time of occurrence are displayed.
5	PANEL SD	Shutdown generated on the panel side and its time of occurrence are displayed.
6	MR NG	Power-down and/or shutdown generated on the Media Receiver side and their/its time of occurrence are displayed.
7	TEMPERATURE	Information on temperature is displayed.
8	HOUR METER	Cumulative power-on time to the panel is displayed.
9	MR HOUR METER	Cumulative power-on time to the Media Receiver is displayed.
10	PULSE METER	The pulse meter value on the panel side is displayed.
11	P ON COUNTER	The number of times the power to the panel was turned on is displayed.
12	DIGITAL EEPROM	The status of the backup data for the module microcomputer is displayed.
13	HDMI SIGNAL INFO.	The file information of HDMI series are displayed.
14	DTV TUNING STATUS	Information of DTV Tuning Status are displayed.

1. VERSION (1)



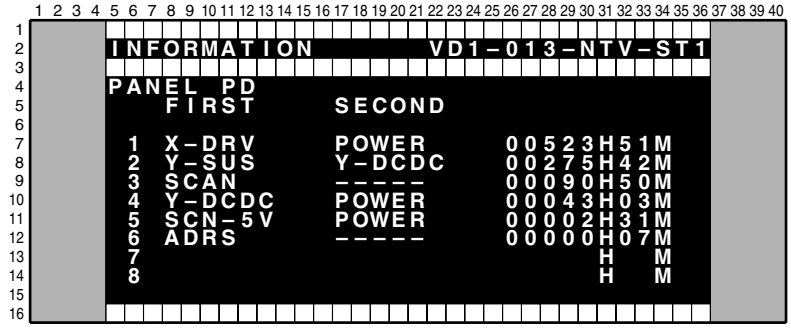
Flash memory of Device	On-Screen Display
User IF microcomputer (MR: IC8702)	I / F
Main microcomputer (MR: IC7207)	MAIN
Program for IC 3 (MR: IC7101)	WID–PRG
Enhanced data for IC 3 (MR: IC7101)	WID–DAT
GUI data for IC 3 (MR: IC7101)	GUI–DAT
Module microcomputer (for the PDP)	MODULE
Program for IC 4 (for the PDP)	SEQ–PRG
Sequence data for IC 4 Video	SQ–DT-V
Sequence data for IC 4 PC	SQ–DT-P

2. VERSION (2)



Device	Name Display	Version Display	Remarks
CCD-UCOM	CCD	4 character	
DTV Software Version	DTV	4 character	
DTV hardware Version	DTV-VER	2 character	
DTV hardware Serial	DTV-SRL	6 character	
USER Password	PASSWORD	4 character	

4. PANEL PD

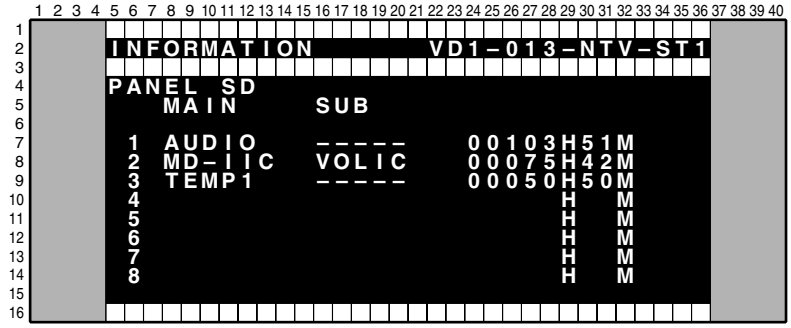


Power-down information only on the panel side is displayed.

• Panel power-down information

No.	Type of Power-down	On-Screen Display	No.	Type of Power-down	On-Screen Display
1	No corresponding item	- - - - -	8	Power-down of the address system	ADRS
2	Power-down of the main power supply system	POWER	9	Power-down of the X-DRIVE circuitry	X-DRV
3	Power-down of the scanning system	SCAN	A	Power-down of the X-DC/DC converter	X-DCDC
4	Power-down in the path between the scanning system and 5-V power supply	SCN-5V	B	Power-down of the X-SUS system	X-SUS
5	Power-down of the Y-Drive system	Y-DRV	C	Power-down of the driving IC power supply system	D-DCDC
6	Power-down of the Y-DC/DC converter	Y-DCDC	D	Power-down of the driving stopped	IC4 (IC5401)
7	Power-down of the Y-SUS system	Y-SUS	F	Power-down point unidentified	UNKNOWN

5. PANEL SD

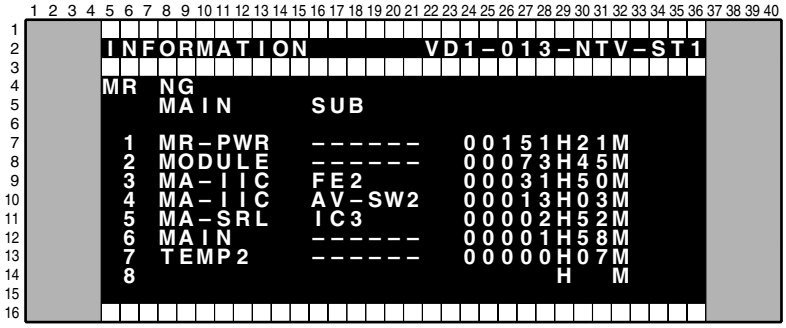


The shutdown log only on the panel side is displayed.

• Panel shutdown information

No.	Type of Shutdown	On-Screen Display (MAIN)	Remarks
1	Abnormality in IC 4 communication	IC4	
2	Abnormality in module microcomputer IIC communication	MD-IIC	Subcategories exist. (EROM4K : IC5206, EROM2K : IC402, VOLIC : IC3502)
3	Abnormality in RST2	RST2	
4	Abnormality in panel temperature	TEMP1	
5	Short-circuiting of the speakers	AUDIO	

6. MR NG



Information on power-down and shutdown of the Media Receiver side is displayed.

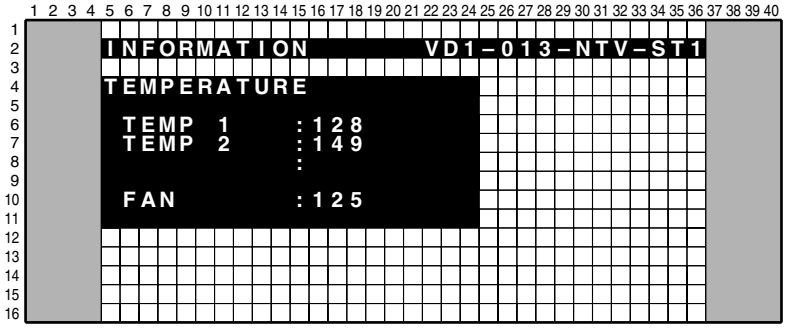
• Media Receiver NG information

No.	Type of Failure	On-Screen Display (MAIN)	Remarks
1	Abnormality in module microcomputer communication	MODULE	
2	Abnormality in 3-wire serial communication of the main microcomputer	MA-SRL	Subcategories exist.
3	Abnormality in main microcomputer IIC communication	MA-IIC	Subcategories exist.
4	Abnormality in main microcomputer communication	MAIN	
5	Abnormality in temperature of the Media Receiver	TEMP2	
6	Fan stopped.	FAN	
7	Abnormality in communication of the digital tuner	UART	Subcategories exist.
8	Abnormality in the ASIC power supply on the MR side	M-DCDC	

• Subcategory information

Type of Shutdown	Subcategory	Remarks
MA-SRL	IF microcomputer (IC8702), IC2 (IC7004), IC3 (IC7101)	
MA-IIC	MA-EEP (IC7205), IC1-M (IC6107), IC1-S (IC6255), HDMI1 (IC6801), HDMI2 (IC6881)*2, AD-M (IC6402), AD-S (IC6602), IC6 (IC6951), CCD (IC8903)*2, FE1 (U7501), FE2 (U7502)*2, AV-SW1 (IC8002), AV-SW2 (IC8005), TX-COM (IC8904)*3, MPX (IC7502)*3, TX-BSY(IC8904)*3	*2 : U.S. model only *3 : Europe model and General area model
Interval UART Communication	PS/RST	No power, or reset status continued
	RETRY	The signal 0x02 (ready) has not been received.
	DEVICE	Receive System Query Request Command
	CD-COM	PC Card Module Communication
	CD-DEV	PC Card Module
	CD-RST	PC Card Reset NG

7. TEMPERATURE

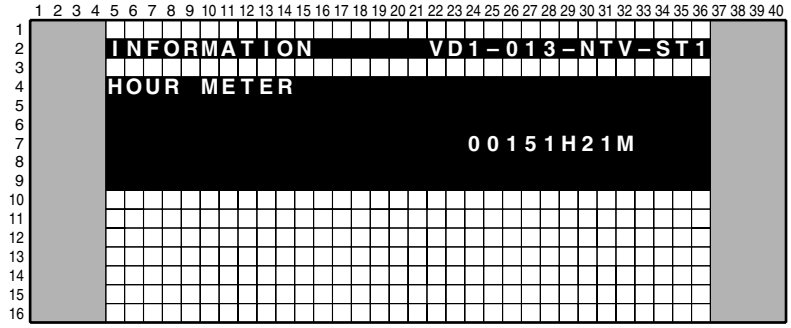


TEMP1: The value read from the temperature sensor built into the panel is displayed in the range of 000-255.
Note: Refer to the service manual of the panel.

TEMP2: The value read from the temperature sensor built into the Media Receiver is displayed in the range of 000-255. For reference, the approximate value for 60°C is 86 and for 35°C is 67.
Reference: When TEMP2 exceeds 100 (about 78°C), SD LED flash 11 times.

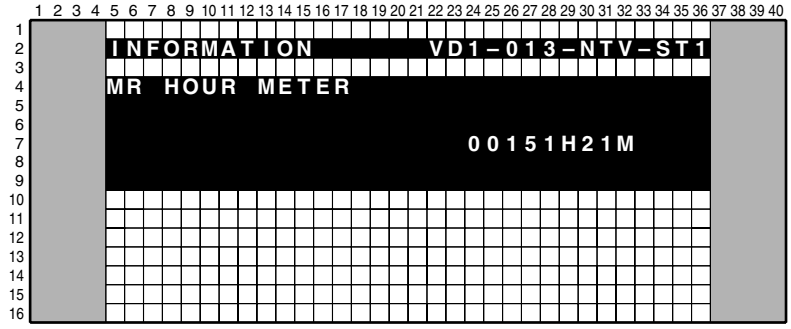
FAN: The value of the Fan output is displayed. At shipment, the output is controlled in 2 steps, and the value for strong output is set to about 131, and the value for weak output is set to about 93.

8. HOUR METER



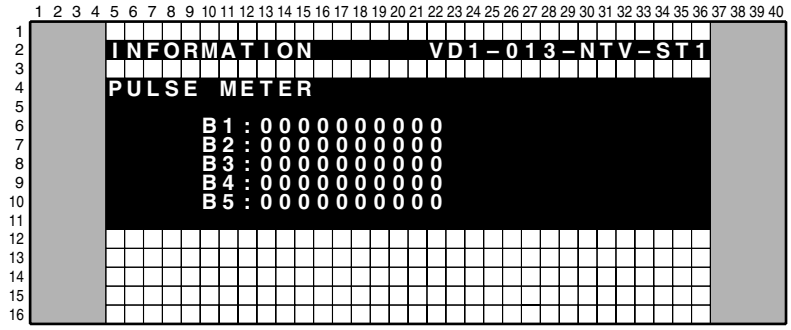
The cumulative power-on time of the panel is displayed.

9. MR HOUR METER



The cumulative power-on time of the Media Receiver is displayed.

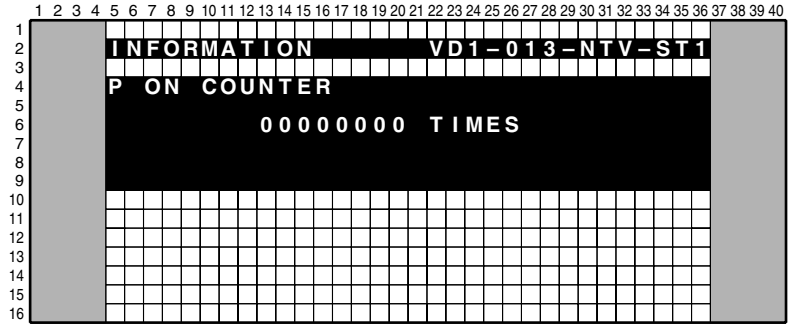
10. PULSE METER



The cumulative number of pulses of the panel is displayed.

Note : Dividing screen into sixteen times sixteen and counting five different locations on a screen. Each item, it's counted total 3840 pixels (for 50 inch) or 3072 pixels (for 43 inch) discharging. (1280/16 x 768/16 = 3840, 1204/16 x 768/16 = 3072)

11. P ON COUNTER

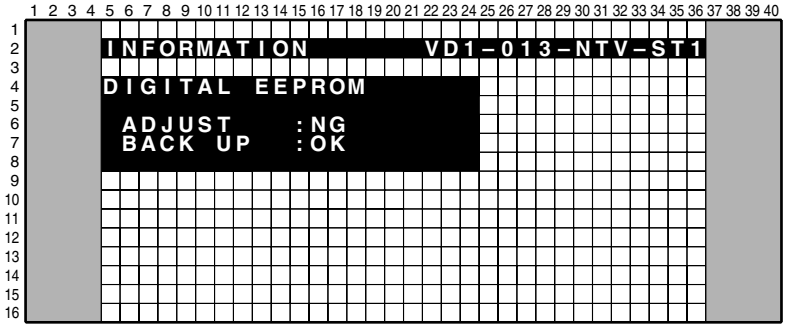


The cumulative number of times the panel was turned on is displayed.

12. DIGITAL EEPROM

When the DIGITAL Assy of the PDP is to be replaced, the adjustment values in it can be temporarily stored in the ROM then be written on the new Assy after replacement.

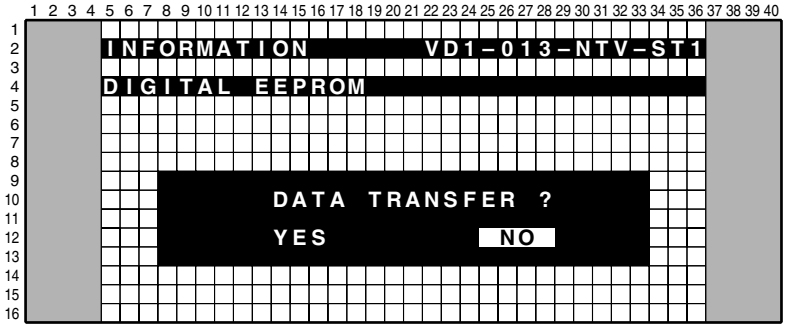
Whether adjustment has been made on the DIGITAL Assy of the PDP or not (i.e., in the state of a new service part), and whether the data on any adjustment values are retained in the backup ROM or not are displayed.



• Downloading the data from the backup ROM

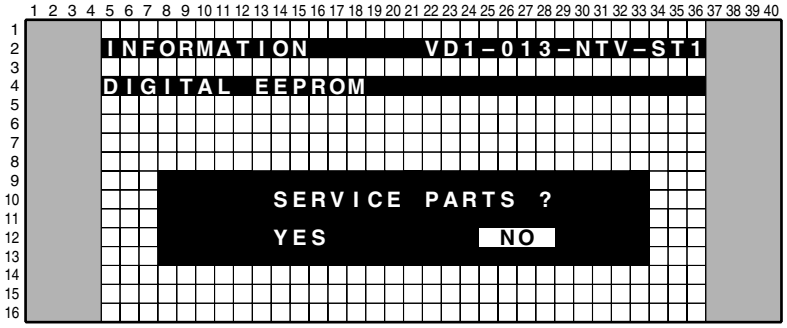
(This must be performed after the DIGITAL Assy is replaced.)

To download the data from the backup ROM, press the ENTER key while the above screen is displayed. The display changes as shown below. Move the cursor to YES then press the ENTER key. The data in the backup ROM are downloaded into the new Assy.



• Clearing the data in the ROM of the DIGITAL Assy

The display below is automatically displayed after either YES or NO is selected on the display shown above. Move the cursor to YES then press the ENTER key. Then all data on adjustment values in the ROM of the DIGITAL Assy are cleared.



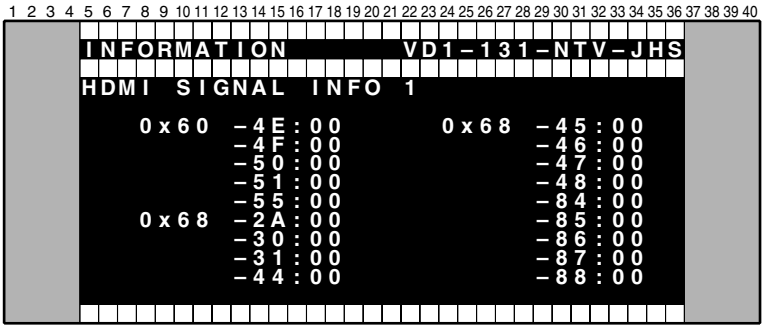
Replacement or test of Digital Video Assembly

	NEW DIGITAL VIDEO ASSY TO TEST	NEW DIGITAL VIDEO ASSY TO STAY IN UNIT	USED DIGITAL VIDEO ASSY TO TEST		USED DIGITAL VIDEO ASSY TO STAY IN UNIT		USED DIGITAL VIDEO ASSY TO GO BACK TO STOCK	ACTION
Display of Screen before the following set "ADJUSTMENT"	NG	NG	Pattern1 OK	Pattern2 OK	STEP1 OK	STEP2 NG	OK	
"BACKUP"	OK	OK	OK	OK	OK	OK	OK	
DOWNLOAD DATA	**NO**	**YES**	**NO**	**NO**	**No**	**Yes**	**NO**	**IF "YES", PANEL IF ASSY WILL RESTORE DATA TO DIGITAL VIDEO ASSY**
SERVICE PARTS	**NO**	**NO**	**NO**	**YES**	**YES**	**No**	**YES**	**IF "YES", DATA WILL BE ERASED FROM DIGITAL VIDEO ASSY.**
Display of Screen after the above set "ADJUSTMENT"	NG	OK	OK	NG	NG	OK	NG	
"BACKUP"	OK	OK	OK	OK	OK	OK	OK	
Attention points			You should power off by main power SW or unplug power cord, otherwise original backup data is gone.	You can power off the unit with standby mode	After selecting as STEP1"NO, YES", select again as STEP2 " YES, NO"			

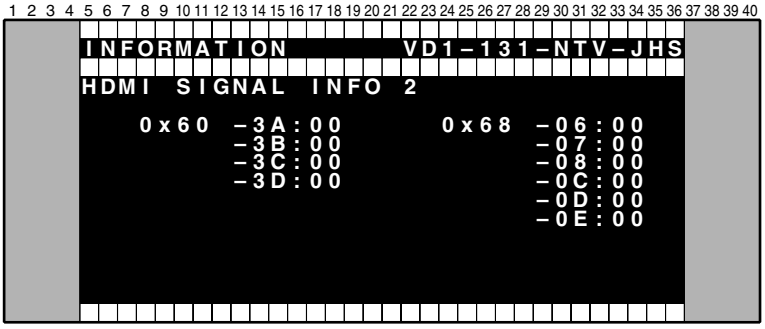
Either one is OK but need to follow the attention points

NOTE: IF "DOWNLOAD DATA" IS "NO" AND DIGITAL VIDEO ASSY HAS NO DATA, THERE WILL BE NO AUTOMATIC BACKUP AT POWER OFF.

13. HDMI SIGNAL INFO

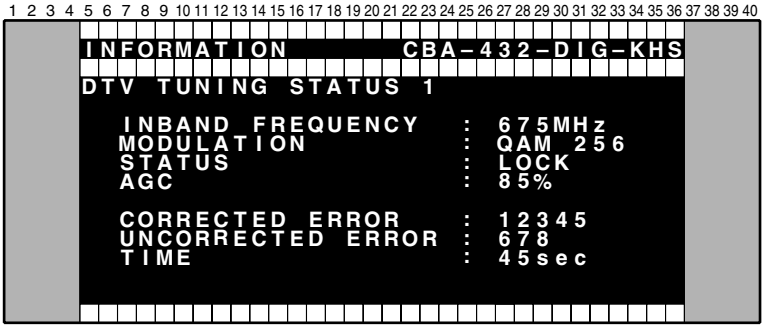


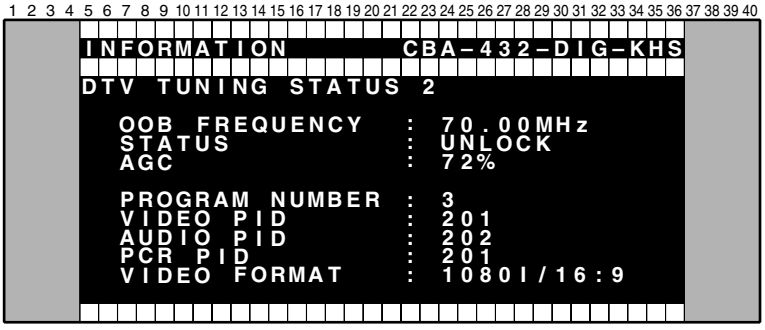
Technical examination display
(Reading status registers in HDMI receiver and displaying them by HEX value.)



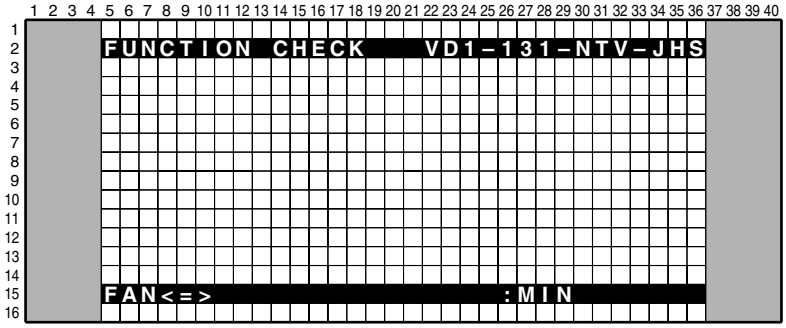
For technical discussion

14.DTV TUNING STATUS





② FUNCTION CHECK



No last memory in this menu

No.	Display	Detail	Remarks	232C Command
1	FAN <=>	MIN ⇔ CNT ⇔ MAX		*1
2	AFT <=>	UNLOCKED ⇔ LOCKED	For Factory use	AFT

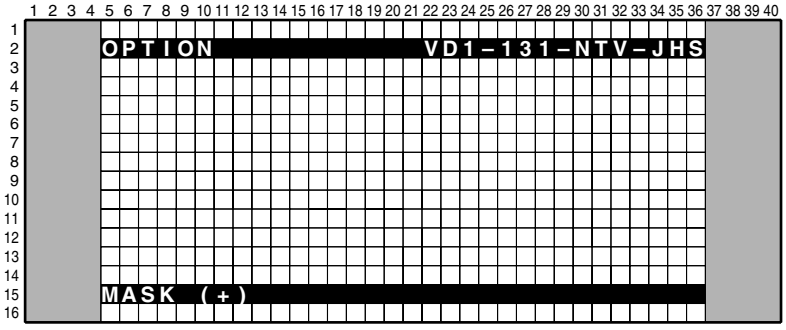
2.1 FAN

Controls FAN speed by force. (MIN : STOP, CNT : Follows movement specifications, MAX : High)
Temp sensor is working only displaying data value in service factory mode.
After getting off service factory mode, this function is set to normal automatically.

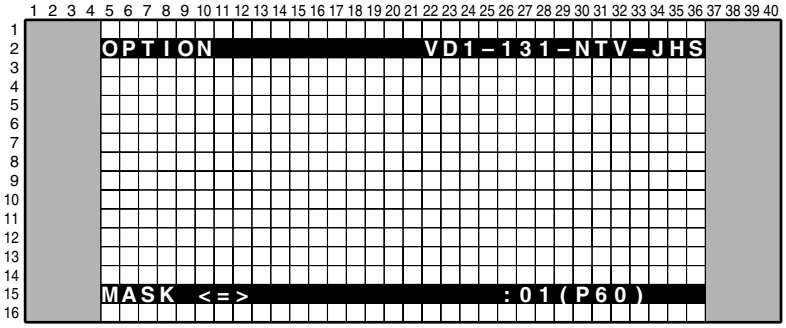
2.2 AFT LOCK

For production line use only
Stop AFT tuner received function and receive a center frequency.
After turning off a unit (including stand-by mode), this setting is set normal (AFT function) automatically.
It's performed to two tuner and DTV tuner to U.S. model.

⑤ OPTION mode



No.	Function/Display	Content	Corresponding RS-232C Command
1	MASK (+)	Selecting the pattern mask of IC4	MSK
2	PEAK LIMITTER	ON ⇔ OFF	PLT
3	DYNAMIC RANGE	ON ⇔ OFF	DYR
4	EDID WRITE MODE	DISABLE ⇔ ENABLE	EPA
5	CH PRESET	FACTORY ⇔ USER	



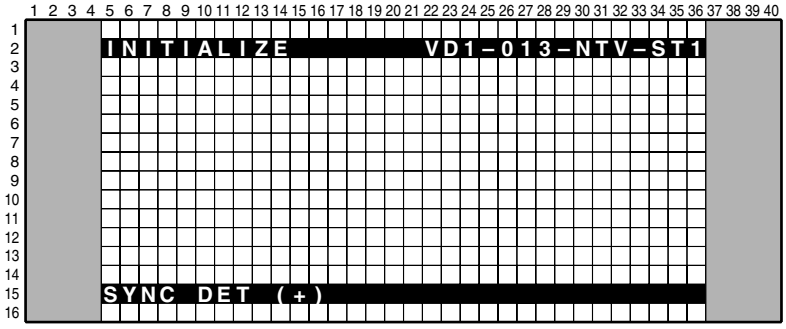
The mask frequency can be cyclically changed (see the table below) by pressing the left or right cursor key. The mask pattern can be cyclically changed by pressing the up or down cursor key. Approximately 2 seconds after either the up or down cursor key is pressed, the mask screen will appear.

• Frequency selection while the mask is displayed

No.	Function/Display	Content	Corresponding RS-232C Command
0	V50	Video 50-Hz sequence	F50
1	V60 (initial value)	Video 60-Hz sequence	F60
2	P60	PC 60-Hz sequence	F61
3	P70	PC 70-Hz sequence	F70
4	V72	Video 72-Hz sequence	F72
5	V75	Video 75-Hz sequence	F75

⑥ INITIALIZE mode

(For managing switching of the initial settings and destination setting)



No.	Function/Display	Content
1	SYNC DET (+)	
2	DRIVE MODE (+)	
3	SIDE MASK LEVEL (+)	
4	PANEL REVICE (+)	
5	FINAL SETUP (+)	
6	C TEMP LOW (+)	
7	C TEMP MID LOW (+)	
8	C TEMP MID (+)	
9	C TEMP MID HIGH (+)	
10	C TEMP HIGH (+)	
11	UART SELECT <=>	1200-232C ⇔ ••• ⇔ 38400-232C ⇔ 9600-SR+
12	CVT AUTO <=>	DISABLE ⇔ ENABLE (For Factory use)
13	HDMI INTR POSITION(+)	
14	SUS FREQ MODE<=>	000⇔ ••• ⇔ 007

- When there is a modification log, if the “Display” key is held pressed for at least 3 seconds while the above display is displayed, the modification log will be cleared.

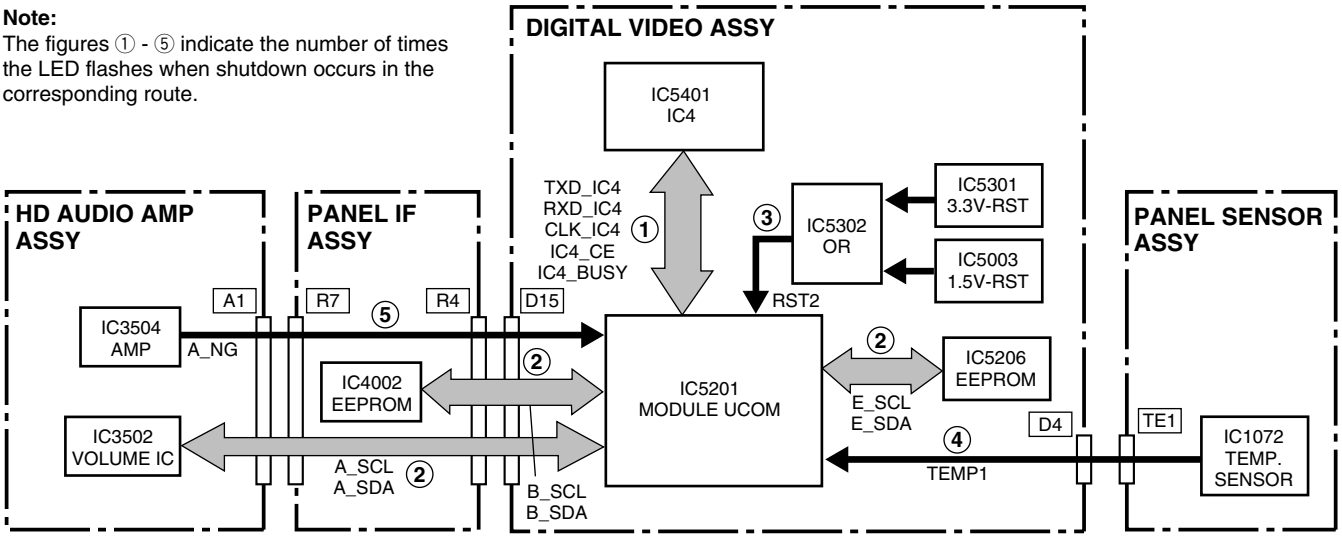
• UART SELCT

Option No.	Function / Display	Operation / Control	Remarks
1 (initial setting)	9600-SR+	To set to SR+ (9600 BPS)	For switching external communication between RS-232C and SR+
2	1200-232C	To set to RS-232C (1200 BPS)	
3	2400-232C	To set to RS-232C (2400 BPS)	
4	4800-232C	To set to RS-232C (4800 BPS)	
5	9600-232C	To set to RS-232C (9600 BPS)	
6	19200-232C	To set to RS-232C (19200 BPS)	
7	38400-232C	To set to RS-232C (38400 BPS)	

Tips: How to change the SR+/RS-232C setting without entering Service Factory mode
Refer to "6.3 USING RS-232C COMMANDS".

• Block diagram of the shutdown signal system

Note:
The figures ① - ⑤ indicate the number of times the LED flashes when shutdown occurs in the corresponding route.



• Diagnosis of shutdown

LED	SD Circuit in Operation	Defective Assy	Reason for Shutdown	Point to be Checked	Possible Defective Part	Remarks
1 time	Communication failure of the panel-drive IC	DIGITAL VIDEO	Communication failure of IC4	IC4 BLOCK, PANEL FLASH BLOCK	IC5401, IC5305	
			Writing failure of IC4			After turning the unit on again, check if the data on the version can be read with the GS1 command.
2 times	Communication failure of the module IIC (Check the shutdown subcategory on the Factory menu.)	DIGITAL VIDEO	Communication failure of the EEPROM (4K)	MODULE UCOM BLOCK	IC5206	
		PANEL IF	Communication failure of the EEPROM (2K)	PANEL IF BLOCK	IC4002	
			Disconnection of cable	CN4009 - CN3501		Check if the cable is disconnected or not securely connected.
			Defective 114-pin FPC	CN4004 - CN5001	ADY1081	Check if the 114-pin FPC is broken or not securely connected.
		HD AUDIO	Defective volume IC	HD AUDIO AMP Assy	IC3502	
3 times	Power decrease of DIGITAL-DC-DC	DIGITAL VIDEO	Defective DC-DC converter	DIGITAL DD CON BLOCK	U5602	Check if 3.3 V and 1.5 V are activated.
			Defective RST IC	PANEL FLASH BLOCK	IC5301, IC5302, IC5303	
		POWER SUPPLY	No startup of 12 V			
4 times	Panel having higher temperature	DIGITAL VIDEO	Cable disconnected	CN5202 - CN1071		
			Panel having higher temperature	Surrounding temperature		Shutdown occurs when the sensor temperature becomes 74°C or more (PDP-435PE) or 74°C or more (PDP-505PE).
5 times	Audio failure		Speaker short-circuited	Speaker terminals		Check if the speaker cables are in contact with the chassis, etc.
		HD AUDIO	Defective AMP IC	HD AUDIO AMP ASSY	IC3504	
		HD AUDIO	Disconnection of cable	CN4009 - CN3501		Check if the cable is disconnected or not securely connected.

	PD Circuit in operation	Defective Assy	Reason for Power-down	Point to be Checked	Possible Defective Part	Remarks
1	MR POWER					
2	POWER	POWER SUPPLY Unit				If the elapsed time from relay-on until the LED in the power supply unit lights is about 2-4 seconds, the defective assembly may be the 43 X or Y DRIVE.
		43 X DRIVE Assy	VSUS UVP	X SUS BLOCK	IC1203, IC1207 (mask module)	
		43 Y DRIVE Assy	VSUS UVP	Y SUS BLOCK	IC2303, IC2307 (mask module)	
3	SCAN	43 SCANA, B Assy or Y 43 DRIVE Assy	VH UVP	SCAN IC	SCAN IC	
			VH UVP	VH DC/DC	IC2401, IC2402, IC2410, L2401	
			VH OVP	VH DC/DC	IC2402, IC2410	
			Disconnection of cable detected	CN2001, CN2301		
4	SCN-5V	43 SCANA, B Assy or Y 43 DRIVE Assy	Disconnection of cable detected	CN2101, CN2102, CN2301		
			IC5V UVP	SCAN IC, IC5V DC/DC Y SUS BLOCK	SCAN IC, Q2401, Q2402, IC2304,	
			IC5V OVP	IC5V DC/DC	IC2403, IC2411	
5	Y-DRIVE	43 Y DRIVE Assy	+16.5V OCP	Y SUS BLOCK	IC2303, IC2307 (mask module), IC2301, IC2304, IC2305, R2332	
6	Y-DCDC	43 Y DRIVE Assy	VOFS UVP	VOFS DC/DC	IC2404, IC2412, Q2404, Q2407, Q2312	
			VOFS OVP	VOFS DC/DC	IC2404, IC2412	
7	Y-SUS	43 Y DRIVE Assy	Power-down caused by detection of middle-point voltage	Y RESONANCE BLOCK	Q2202, Q2203, Q2214, Q2205, Q2206, Q2208, Q2209, Q2212, IC2201, IC2202, D2201, D2206, D2220, D2211, D2225, D2230, Control signal series resistors	
8	ADRS	43 ADDRESS Assy	Disconnection of cable detected	CN1501		
			Power-down caused by detection of a power surge	ADR RESONANCE BLOCK	R1631, Q1601, D1602	
9	X-DRIVE	43 X DRIVE Assy	Disconnection of cable detected	CN1001, CN1201		
			+16.5V OCP	X SUS BLOCK	IC1203, IC1207 (mask module), IC1204, IC1206, R1230, IC1205	
			VRN OCP	X SUS BLOCK	Q1205, R1226, R1251	
10	X-DCDC	43 X DRIVE Assy	VRN OVP	VRN DC/DC	IC1403, IC1404	
			VRN UVP	VRN DC/DC	IC1402, IC1403, IC1404	
				X SUS BLOCK	Q1205, R1226, R1251	
11	X-SUS	43 X DRIVE Assy	Power-down caused by detection of middle-point voltage	X RESONANCE BLOCK	Q1102, Q1103, Q1114, Q1105, Q1108, Q1109, Q1111, Q1112, IC1101, IC1102, D1103, D1113, D1118, D1125, D1129, D1130, Control signal series resistors	
12	DIG-DCDC	DIGITAL VIDEO Assy	DCDC +3.3V, +1.5V OVP	DC DC CONVERTER BLOCK	U5602 (DC DC CONVERTER Module)	
13	IC4	DIGITAL VIDEO Assy	IC4 Drive STOP	IC4 BLOCK	IC5401	

OVP: **O**ver **V**oltage **P**rotection UVP: **U**nder **V**oltage **P**rotection OCP: **O**ver **C**urrent **P**rotection

• Diagnosis with the aid of Factory mode

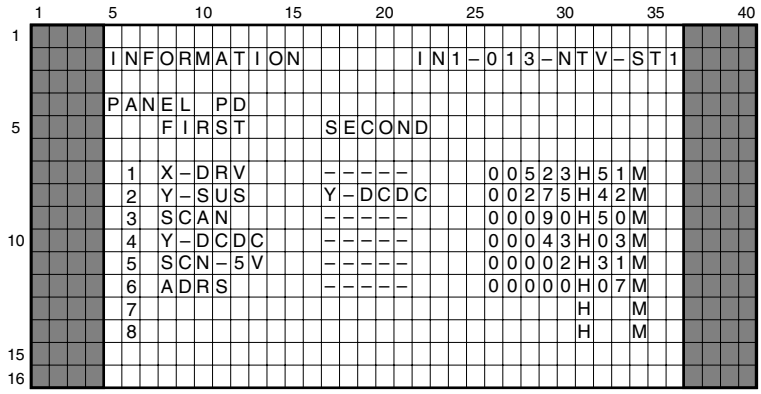
When the Media Receiver is connected, the power-down and shutdown logs can be referred to with OSD. Only the items useful when servicing the PDP-435PE/PRO-435PU are described here.

How to enter Factory mode using the remote control unit

With the remote controler from Standby: Press Display, Left, Up, Left, Right, Power (Same as G-4 Models)

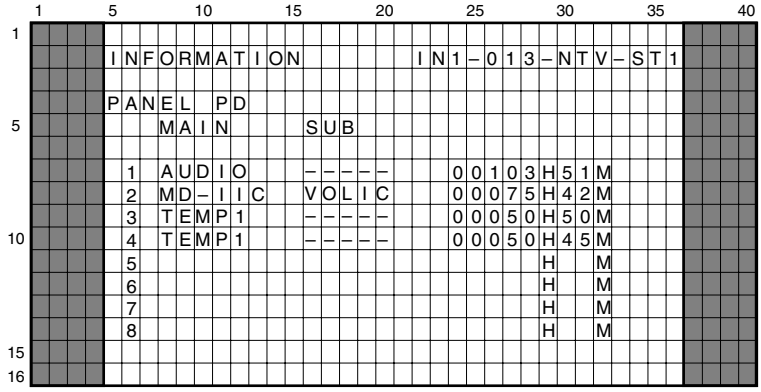
Power-down log (INFORMATION-PANEL PD)

The last 8 power-down records are held, with the latest power-down displayed at the top. In the FIRST column, the location where the PD circuit was activated first (location indicated by flashing of the LED during power-down) is indicated, and in the SECOND column, the location where the PD circuit was activated second is indicated.
Note: There may not be a SECOND PD.



Shutdown log (INFORMATION-PANEL SD)

The last 8 shutdown records are held, with the latest shutdown displayed at the top. If a shutdown occurred because of "MD-IIC" (communication failure of the module microcomputer IIC), the subcategory is indicated to inform you of with which device the microcomputer was in the process of communicating when a failure occurred.



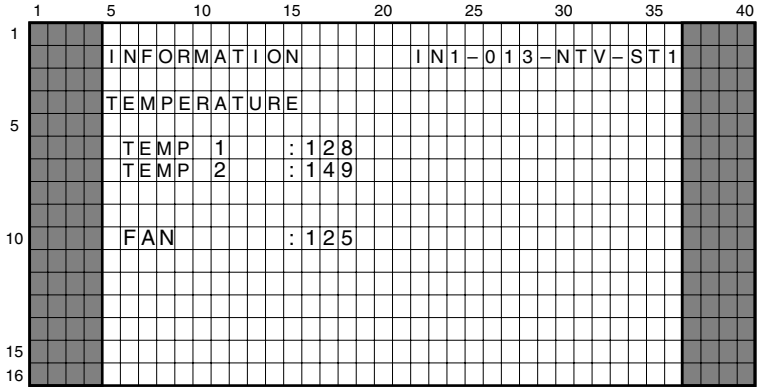
[Data on MD-IIC subcategories]

OSD	Defective communication part
EROM4K	IC5206: Module microcomputer EEPROM
EROM2K	IC4002: EEPROM for backup
VOLIC	IC3502–Volume IC

Data on temperature (INFORMATION-TEMPERATURE)

The data on the current temperatures are displayed.
The temperature at the PANEL SENSOR ASSY of the PDP-435PE/PRO-435PU is indicated as the TEMP 1 value (000-255), which should be converted using the following formula:
Current temperature (°C) ≒ 0.65 × TEMP 1 value - 52

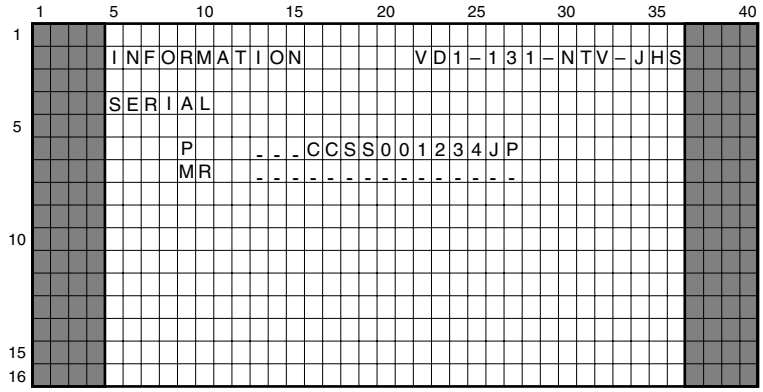
Note: Shutdown caused by high TEMP 1 value
PDP-435PE: TEMP 1 value > 195 (≒ 74°C)
PRO-435PU: TEMP 1 value > 195 (≒ 74°C)



Note: To update the data on temperature, use the Left and Right keys on the remote control unit.

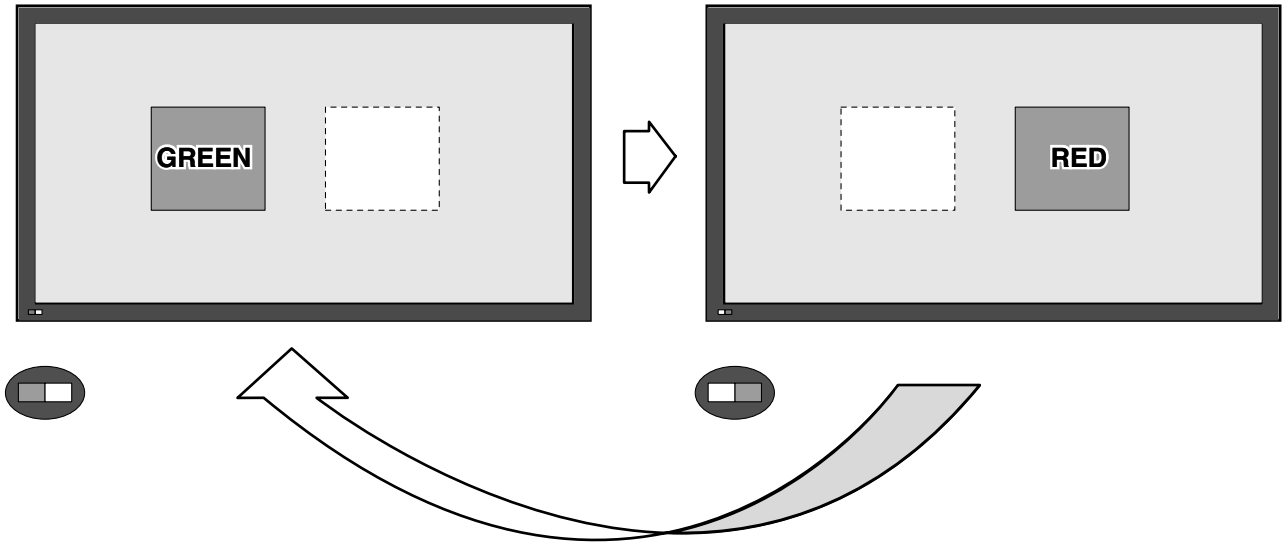
Reference: Serial-number information (INFORMATION-SERIAL)

You can check the serial number of the product on the Factory menu.



As the connection conditions of the system cables (MDR cable, DVI cable) are usually detected, if no connection, such as cable disconnection, is detected, a warning indication (alternate flashing of the red and green areas) is displayed on the mask screen, and the red and green LEDs flash alternately. Then after about 30 seconds, the power is automatically turned off.

Note: Only when the power is turned on again, a warning indication on the mask screen restarts. During standby, only the red and green LEDs flash alternately.



Alternate flashing at intervals of about 1 second

To operate the panel without the Media Receiver, there are the following two ways:

1. Operation-without-the-Media-Receiver mode

Input the "SCN" RS232C command. The status of the LEDs changes to that in normal operation mode.

Note: Turning the AC switch to OFF then ON also maintains this mode. However, once the unit is connected with the Media Receiver using the MDR cable, this mode is automatically canceled.

2. DVI mode

Turn the unit on while DVI SG signals are being input with only the DVI connecter connected. After a warning is displayed for about 5 seconds, the unit is ready to display the screen of the input signal. (Green LED lit)

Notes:
- Although the output from XGA (43 inch) and WXGA (50 inch) can be input to the unit, this is not a mode open to general users. (With some signals, errors such as power-down may occur.)
- If a DE signal from the SG is not input during DVI mode, the green LED flashes (at intervals of 2 sec) for about 8 seconds, then the unit shifts to Power Management mode (the green LED lights).
- Although the PC signal data are displayed for the PDP-434P series panels, for the PDP-435P series panels this is not possible, because the EDID-ROM has not been provided.

Function: To control the DRIVE-system voltage according to the temperature (Temperature compensation functions such that the voltage is lowered on the lower-temperature side and the voltage becomes higher on the higher-temperature side.)

Purpose: For improving the yield by compensating for the temperature characteristics of the panel

Note: Temperature compensation is performed only for the VSUS voltage, and not for the VOFS voltage. This compensation is controlled by the software.

Function: Only the power for the low voltage lines (16 V, 12 V, and 6.5 V) is on, and the power for the high voltage lines (VSUS, VADR) is off.

Usage: 1. Use when only an operational check for the low voltage lines is required, such as when making repairs.
2. Use when rewriting of a program for each microcomputer is required.

Methods: 1 Set the slide switch (S5201) on the DIGITAL VIDEO Assy to its upper position (See Fig. below).
2. Send the "DRF" RS232C command to turn the large-signal system off.
3. Send the "DRN" RS232C command to turn the large-signal system on.

Notes:

- As the unit enters Power-Down and Muting On mode when Methods 1 and 2 are performed, and power-downs other than those caused by the power (PS_PD) and DC-DC-converter (DIGITAL_DC-DC) circuits are not activated.
- If the slide switch is set from OFF to ON while the power is on, a power-down will occur. Be sure to turn the power off before switching the slide switch.
- When using the RS232C commands, as with the slide switch, do not use the "DRN" command (DRIVE ON) while the power is on, although doing so will not cause a power-down.
- Although the "DRF" RS232C command is enabled during Standby, if the power is turned on then turned off, the unit will return to "DRN" mode.

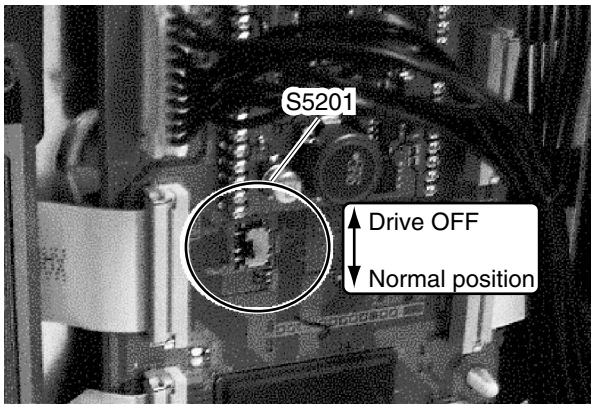


Fig. Drive OFF switch

Outline

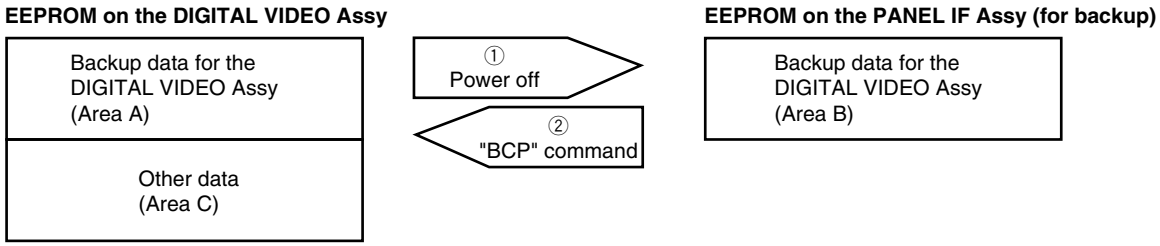
The data on the adjustment values for the main unit are stored in an EEPROM (IC5206, 4 kbits) on the DIGITAL VIDEO Assy. Part of the data (area A in the figure below) are automatically copied to an EEPROM (IC4002, 2 kbits) mounted on the PANEL IF Assy for backup. When the DIGITAL VIDEO Assy is replaced, the backup data on the adjustment values for the main unit stored in the PANEL IF Assy can be copied to the new DIGITAL VIDEO Assy, thus enabling you to omit newly performing adjustments on the main unit. The logs for the product (power-down log, etc.) can also be copied.

Data to be backed up in the digital EEPROM (area A)

- Margin adjustment values (Vsus, Vofset)
- Power upper-limit adjustment value (ABL)
- PANEL white-balance adjustment values
  (PANEL-R HIGH, PANEL-G HIGH, PANEL-B HIGH, PANEL-R LOW, PANEL-G LOW, PANEL-B LOW)
- Drive waveform adjustment values
  (X-SUS-U1, X-SUS-U2, X-SUS-D1, X-SUS-D2, Y-SUS-U1, Y-SUS-U2, Y-SUS-D1, Y-SUS-D2, Y-SUS-D3, Y-SUS-D4)
- Hour meter
- Pulse meter
- Serial Number
- Number of times the power has been turned on
- PD/SD logs

Basic flow of automatic backup

Using a keyword, the data in areas A and B are judged as to whether they have been adjusted or not, then copying is performed.



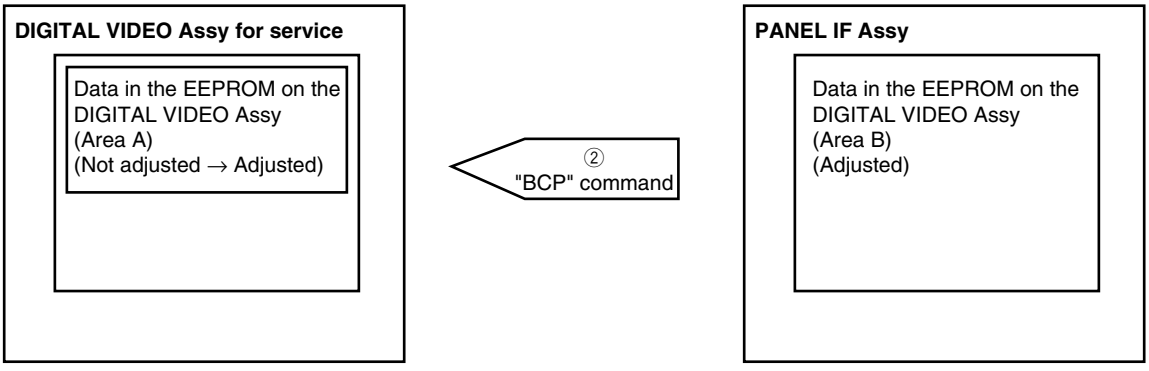
① The keyword on the DIGITAL VIDEO Assy is checked when the power is turned off, and if it is "adjusted", automatic backup is performed.
② If the keyword on the PANEL IF Assy (Area B) is "adjusted," copying can be performed with the "BCP" RS232C command.

Actual automatic backup operations by RS-232C command

1. When the DIGITAL VIDEO Assy is replaced with a new DIGITAL VIDEO Assy for service

Changing of keywords is not required. Replace the DIGITAL VIDEO Assy with an Assy for service, and send the "BCP" RS232C command. Thus, the backup data in the EEPROM on the PANEL IF Assy are copied to the EEPROM on the DIGITAL VIDEO Assy for service.

Note: To remind you to send the "BCP" command after replacing the DIGITAL VIDEO Assy with one for service, a warning by the LEDs (the red LED lit and the green LED flashing at intervals of 200 ms) is indicated until the "BCP" command is issued.



2. When a repaired DIGITAL VIDEO Assy is mounted on another unit (reuse of the repaired DIGITAL VIDEO Assy)

The keyword of the DIGITAL VIDEO Assy to be reused must be changed to "not adjusted" using the "UAJ" RS232C command.

Note 1: If a repaired DIGITAL VIDEO Assy is mounted in another unit (Unit 2) without this change of keyword, and the power to the unit 2 is turned off, the data in force before the repair of the DIGITAL VIDEO Assy will be copied to Area B of the PANEL IF Assy of Unit 2, overwriting the data necessary for Unit 2. Once overwritten, the original data will not be restored.

3. When a repaired DIGITAL VIDEO Assy is mounted on the original unit (reuse of the repaired DIGITAL VIDEO Assy)
Changing of keywords is not required. After the repaired DIGITAL VIDEO Assy is mounted in the original unit, the unit can operate with its latest adjustment values.

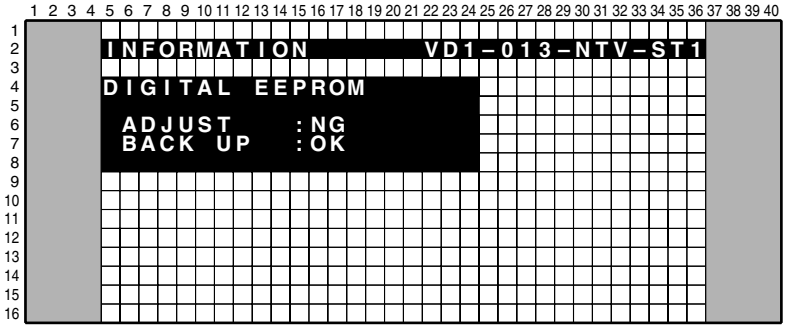
4. When both the DIGITAL VIDEO Assy and PANEL IF Assy are simultaneously replaced with other assemblies
The automatic backup function of this unit will not work properly.

Note 2: Readjustment of the main unit is required.
Note 3: After readjustment of the main unit, send the "FAJ" RS232C command to change the keyword of the DIGITAL VIDEO Assy to "adjusted." Thus, when the unit is turned off, automatic backup of adjustment data is performed properly.
Note 4: If readjustment of the main unit is totally impossible, it can be omitted by installing the EEPROM (IC5206, 4 kbits) originally mounted on the DIGITAL VIDEO Assy for service.

Automatic backup operations in Service/Factory mode

[Status confirmation]

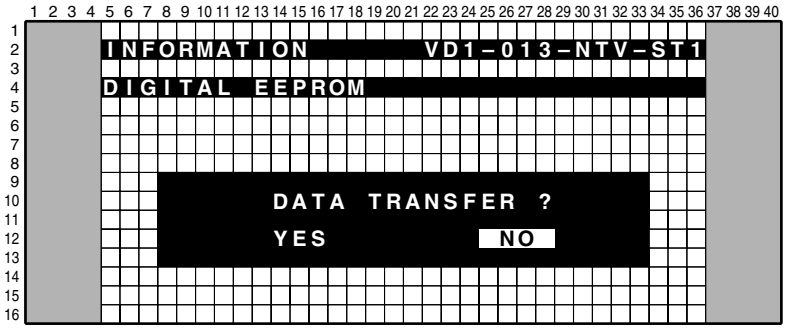
Display the screen page shown below to check if the DIGITAL VIDEO Assy has been adjusted or a new service part might have been installed without adjustment being performed, and if the adjustment values have been stored in the backup ROM.
If the DIGITAL VIDEO Assy has not been adjusted (NG), the red LED lights, and the green LED flashes at intervals of 200 ms. In such a case, be sure to download the data from the backup ROM.



[Downloading the adjustment data from the backup ROM]
(Required after the DIGITAL VIDEO Assy is replaced)

After the DIGITAL VIDEO Assy is replaced, enter Service/Factory mode to copy the data from the backup ROM. Display the screen page shown above after entering Service/Factory mode then press the Enter key. The indication below is displayed. Move the cursor to YES then press the Enter key to start copying the data from the backup ROM to the new DIGITAL VIDEO Assy.

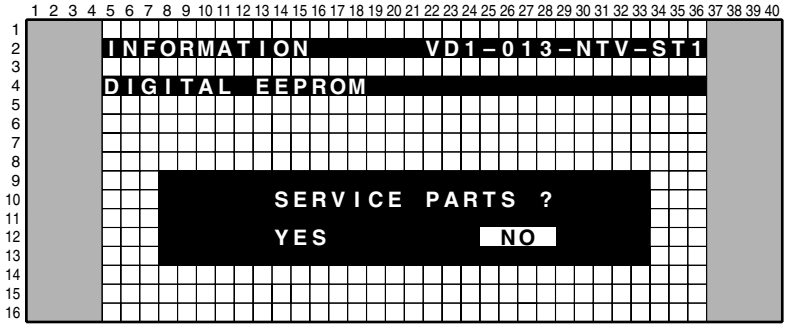
Note: Be sure to perform this operation when the DIGITAL VIDEO Assy is replaced with a new service part.



[Clearing the data in the ROM of the DIGITAL VIDEO Assy]

After either YES or NO is selected on the display shown above, the indication shown below is automatically displayed. Move the cursor to YES then press the Enter key. The data in the ROM of the DIGITAL VIDEO Assy become those for a service part (not adjusted).

Notes: • Use this operation after the DIGITAL VIDEO Assy in failure is repaired and is to be reused as a service part.
• In normal replacement of the Assy with a new service part, this operation is not required. Select NO after replacement with a service part.



When either YES or NO is selected on the above display, the display will automatically return to that for status confirmation shown above.

Miscellaneous

If the white balance (W/B) value is largely shifted because of aging, etc., W/B adjustment is required. (As this may be a rare case, the adjustment procedures are described below, just for your reference.)

[W/B-adjustment procedures]

The W/B adjustment can be performed with the RS232C commands with the Media Receiver not connected to this unit. The GGF1475 special communication tool and a Minolta CA-100 color difference meter are required.

① Enter Operation-without-the-Media-Receiver mode with the "SCN" RS232C command.

② Set the keyword for the DIGITAL VIDEO Assy to "not adjusted" with the "UAJ" RS232C command.

③ Obtain the current adjustment values in the two adjustment tables (see "6.3.1 RS232C commands").
• Shifting to Table 1: Send the "M51" and "F60" commands. Obtaining the adjustment values: Send the "GPW" command.
• Shifting to Table 2: Send the "M51" and "F75" commands. Obtaining the adjustment values: Send the "GPW" command.

④ Make settings for various functions.
Send the "PPN," "SDN," "SPN," and "WAY" commands.
Note: After adjustment, when the POWER switch is set to OFF, these settings will be reset to the initial values.

⑤ For each table, set the brightness.
• Adjustment in Table 1: After sending the "F60" command, perform adjustment.
• Adjustment in Table 2: After sending the "F75" command, perform adjustment.
For each table, change the RGB parameters so that the values measured using a Minolta color difference meter (CA-100) become as indicated below. In this case, any one of PRH, PGH, or PBH must be set to 256.

	Right side of Mask H
x	285
y	289

"PRH***" : 000 - 511
"PGH***" : 000 - 511
"PBH***" : 000 - 511

⑥ Check after adjustment
• Shifting to Table 1: Send the "F60" command. Obtaining the adjustment values: Send the "GPW" command.
• Shifting to Table 2: Send the "F75" command. Obtaining the adjustment values: Send the "GPW" command.
Check that the adjustment data have been changed.

⑦ Change the keyword for the DIGITAL VIDEO Assy to "adjusted" by sending the "FAJ" RS232C command.

Note: Use a Minolta CA-100 color difference meter or the equivalent for measurement. Otherwise, the specifications of the product cannot be assured.

Note: To cancel adjusted data and return to the values before adjustment, send the "BCP" RS232C command. Turn the AC power off then turn it back on before setting the unit to Standby OFF. The backup values are then retrieved.

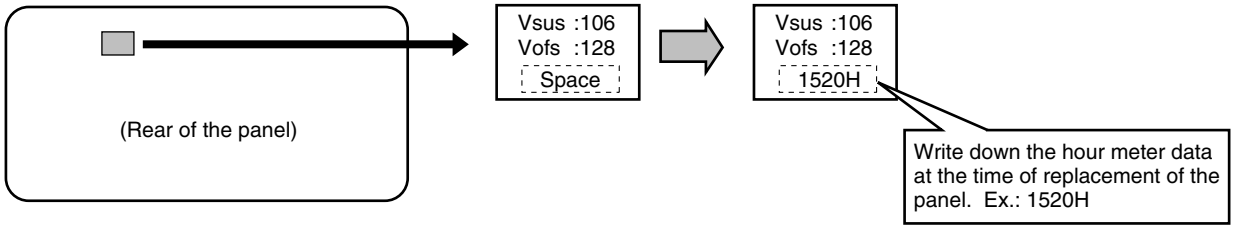
[Diagnosis of abnormalities other than shutdown and power-down]

Symptom	Defective Assy	Possible Cause	Check Point	Possible Defective Part	Remarks
No power (both red and green LEDs unlit)		Cable disconnection	CN4001		Check if the connection between the POWER SUPPLY and PANEL IF assemblies is properly made.
No power (green LED not lit)		Defective 114-pin FPC	CN4004 - CN5001	ADY1081	Check if the FPC is broken or not securely inserted.
The power is (sometimes) interrupted.		Defective system cables	CN4002, CN4003		Check if the system cables are securely connected. (See "7.1.4 Operation when the Media Receiver is not connected.")
The power is interrupted, and the red and green warning indications appear on the screen.		System cables not connected			Check connection of the system cables. (See "7.1.4 Operation when the Media Receiver is not connected.")
While the red LED remains lit, the green LED begins flashing (200 ms).		No backup copy			The backup copy process was not performed when the Digital Assy was replaced. (See "7.1.7 Backup when the main unit is adjusted".)
Key input not effective		Cable disconnection	CN4801 - CN4851	ADD1225	Check if the FPCs are properly connected. Check if imparting vibration to the unit affects key inputs. Check if a pulse is output when the key corresponding to Pin 2 of the CN4852 is pressed.
		Cable disconnection	CN4852 - CN4010		Check if the cables are disconnected or not securely connected. Check if a pulse is output when the key corresponding to Pin 8 of the CN4010 is pressed.
	KEY CONTROL	Defective KEY SCAN IC	KEY CONTROL Assy	IC4851	Check if a pulse is output when the key corresponding to Pin 2 of the CN4852 is pressed.
Remote control unit not effective		Cable disconnection	CN4901 - CN4010		Check if the cables are not connected or securely connected.
	PANEL IR	Defective infrared receiver	PANEL IR	U4901	Check if a pulse is output when the key corresponding to Pin 3 of the CN4010 is pressed.
Abnormality in a one-eighth area of the screen	DIGITAL VIDEO	Defective IC4	IC4 BLOCK	IC5401	Check if an abnormal area in the screen changes when the FPC connected to the address corresponding to the abnormal area is replaced with the one corresponding to the next address.
	ADDRESS				Check that an abnormal area in the screen does not change when the FPC connected to the address corresponding to the abnormal area is replaced with the one corresponding to the next address.
Abnormal screen (Data of every other dot are abnormal)		Defective 114-pin FPC	CN4004 - CN5001	ADY1081	Check if the FPC is broken or not securely inserted.

The following adjustments and operations are required when the Panel Assy is replaced for servicing.

Adjustments of the Vsus and Vofs voltages

Input the reference adjustment values that are described on the service panel for the Vsus and Vofs voltages, with the RS232C commands or on the Factory menu.

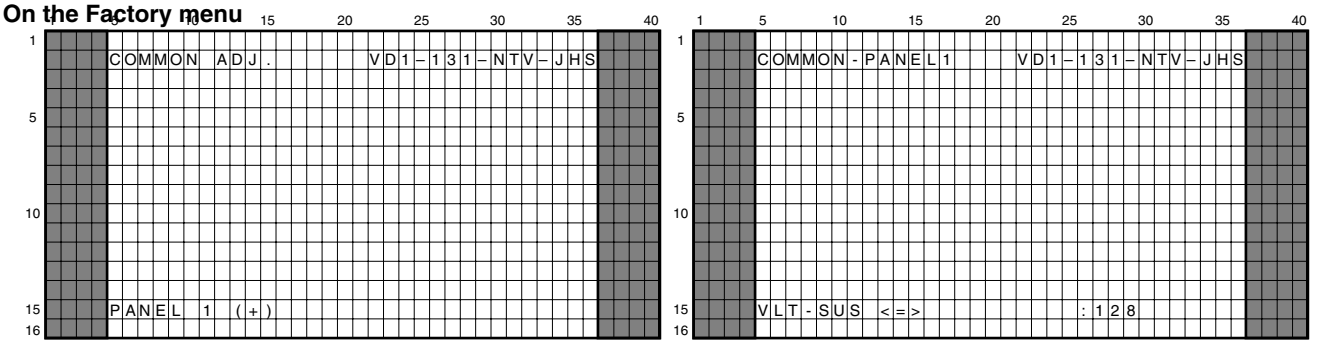


• With the RS232C commands

Input the adjustment values described on the label attached on the rear of the panel:

- Reference adjustment of the Vsus voltage : [VSU***] Ex. : [VSU106]
- Reference adjustment of the Vofs voltage : [VOF***] Ex. : [VOF128]

• On the Factory menu



Using the MUTE key, select the main item "COMMON ADJ." Select the subitem "PANEL 1" then "VLT-SUS" or "VLT-OFS," using the ▲ or ▼ key and SET key. Enter the value, using the ◄ or ► key.

Clearing various logs for the panel, such as that for the hour meter

It is necessary to clear various logs, such as that for the hour meter, to match the driving hours of the panel before and after replacement. Write down the hour-meter data at the time of replacement of the panel on the label attached to the rear of the panel.

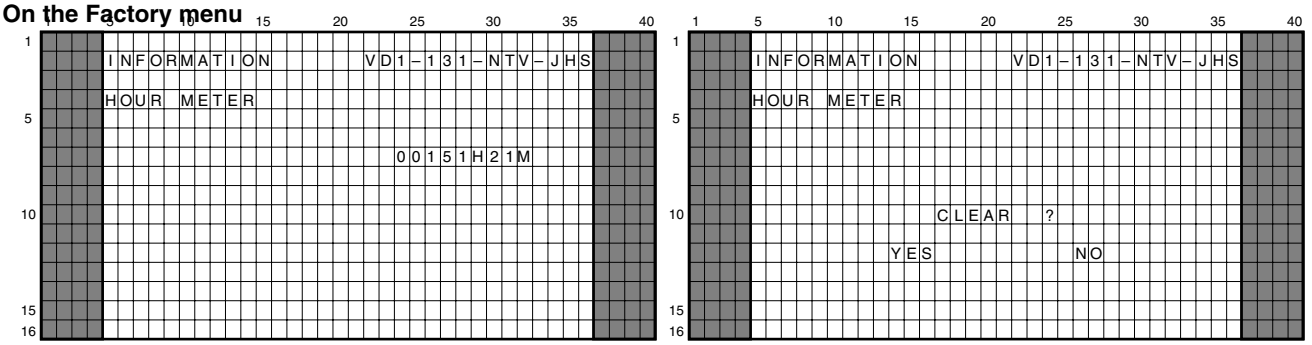
Notes: • For clearing, use the RS232C commands or the Factory menu.
• There are two hour meters. Be careful not to mistake the MR hour meter for the hour meter for the panel.

• With the RS232C commands

You can obtain the accumulated power-on time data of the product itself with the "GS2" RS232C command.
(See "6.3 COMMANDS: Command description".)

1 For clearing the hour meter (for the panel) : CHM
2 For clearing the pulse meter : CPM
3 For clearing the shutdown (SD) log : CSD
4 For clearing the power-down (PD) log : CPD

• On the Factory menu



Using the MUTE key, select the main item "INFORMATION." Select the subitem "HOUR METER," using the ▲ or ▼ key and SET key. Clear the hour-meter data.
In the same way, select the subitem "PULSE METER," "PANEL SD," or "PANEL PD" under the main item "INFORMATION" then clear the data.

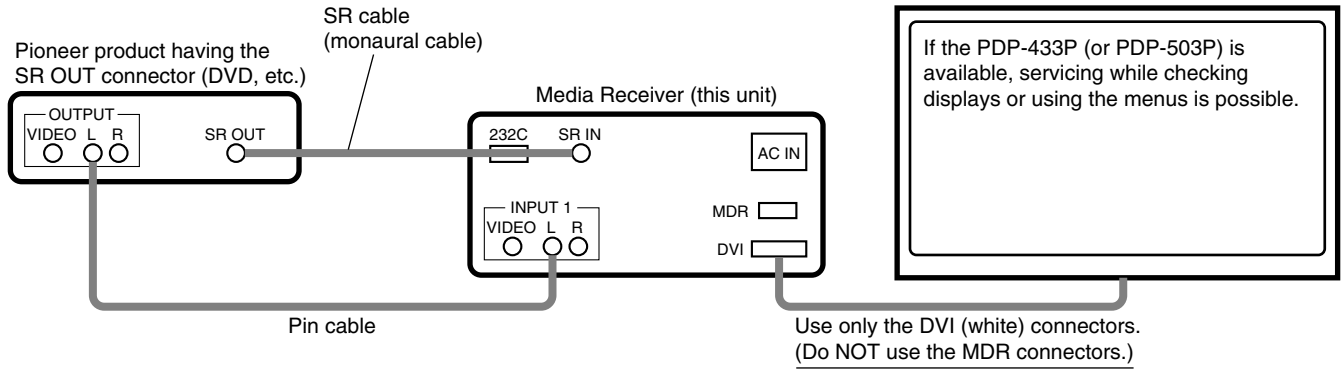
SERVICING USING ONLY THE MEDIA RECEIVER

For servicing of the PDP-435HD and PDP-505HD-series Plasma Display using only the Media Receiver, the following two methods can be used:

● Remote controlling using SR connections

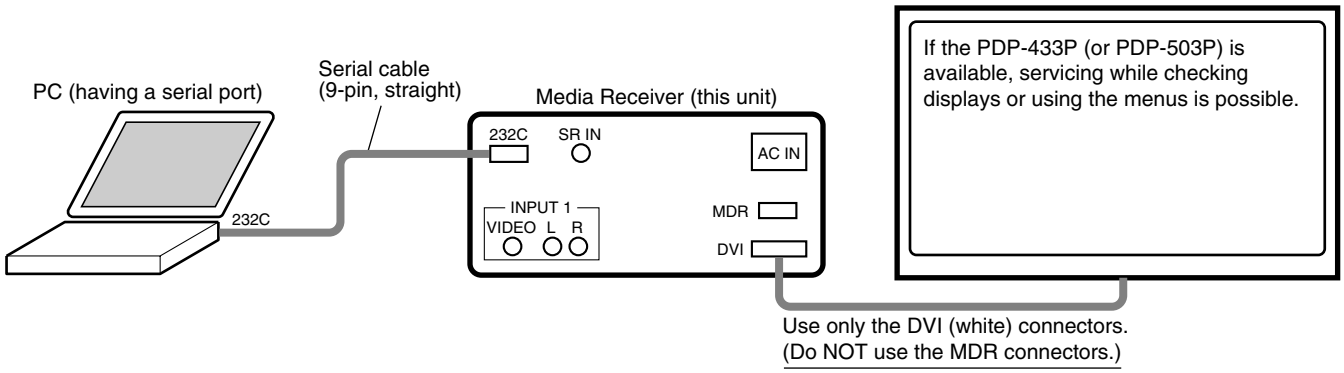
About connections

- Connect the SR OUT connector of a Pioneer product having that connector (a DVD in the following example) and the SR IN connector of the Media Receiver, using the SR cable. As the remote control sensor is not provided with the Media Receiver, this connection is required for using the remote control unit if the panel is not available. In this case, aim the remote control unit at the remote control sensor of the device (DVD in this case).
- Connect either the audio or the video output of the device (DVD in the example) and the corresponding audio or video input of the Media Receiver, using a cable with phono plugs. This connection is required in order to use ground in common with the SR cable, because with the SR cable connection the ground connection for signal reference is not available. In the example, the audio L channel is used, but the audio R channel or video can be used instead.
- If the plasma display for a previous model, such as the PDP-433P or PDP-503P, is available, servicing while checking displays or using the menus is possible. For this, connect only the DVI connectors (white) of the Media Receiver and the plasma display. The MDR connector of the Media Receiver must not be used, even though it has the same shape and number of pins, because signals assigned to the connectors differ. Using the MDR connector may damage the unit.



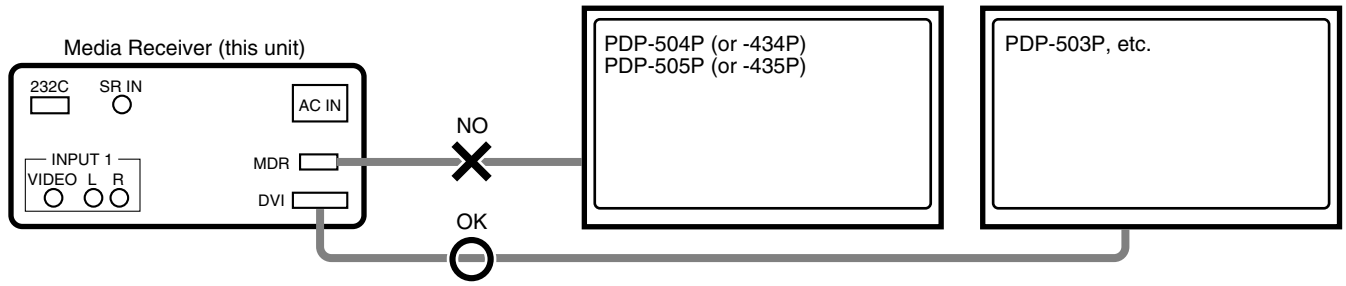
● RS-232C control using a PC

In this case the setting is RS-232C 38400bps, and the setting of "6.3. USING RS-232C COMMANDS" is not related.
Please set baud rate of PC in 38400bps.
For connection with the PC, use a straight cable.



● Note on connection

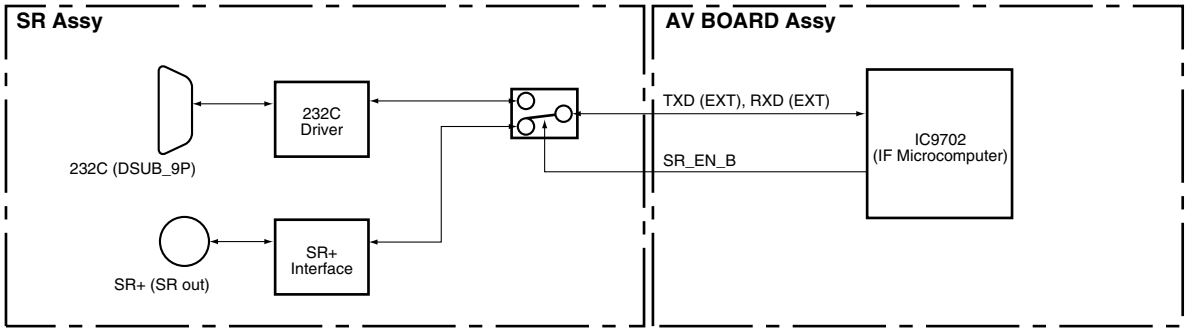
If the MDR connector of the PDP-434HD or -504HD-series is used, it is considered that the PDP-434P (or -504P) is connected, and the Media Receiver operates on such precondition, **which may result in a failure of the Media Receiver. Be sure not to connect to the MDR connector.** (Do NOT use the MDR connector when servicing the Media Receiver alone.)



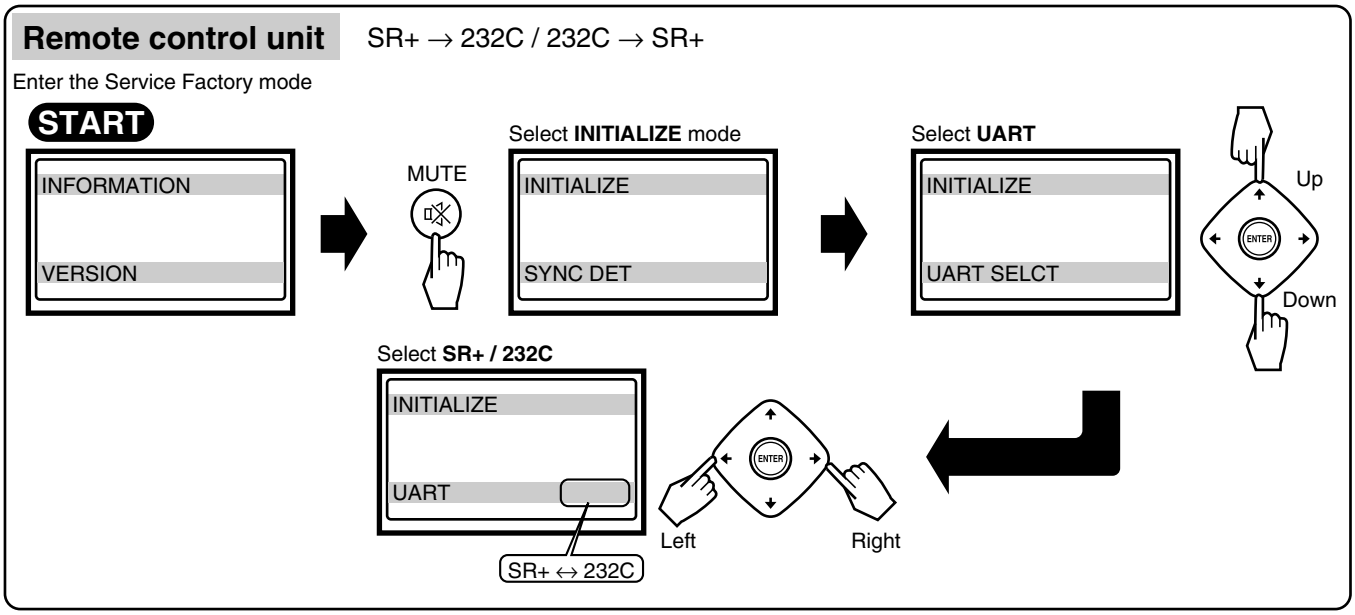
USING RS-232C COMMANDS

For the PDP-435HD and PDP-505HD series Plasma Displays, the circuitry is structured as shown in the diagram below to support the SR+ system. Controlling with either the SR+ system or RS-232C commands can be selected. As the SR+ system is selected at shipment, to control with RS-232C commands in servicing it is necessary to switch the paths. After servicing, be sure to return the setting to the SR+ system.

● Rough diagram of switching between SR+ and RS-232C



● How to switch from SR+ to RS-232C



Tips: How to change the SR+/RS-232C setting without entering Service Factory mode
Hold the **VOLUME** ◿+ or ◿– key on the remote control unit pressed for 3-10 seconds during Standby mode.
Then within 3 seconds after the key is released, hold the **2-screen** ◑ key on the remote control unit pressed for 3-10 seconds.
Then within 3 seconds after the key is released, use the **SET** key on the remote control unit to set to RS-232C (the baud rate last selected is chosen) or the **HOME MENU** key to set to SR+.

Refer to the Service Manual for a complete list of RS232 Commands.