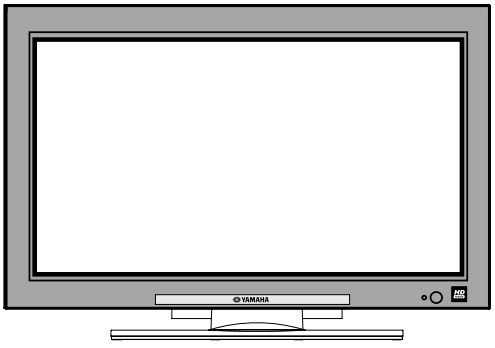
PLASMA MONITOR

PDM-4220

SERVICE MANUAL



Caution

Be sure to read this manual before servicing. To assure safety from fire, electric shock, injury, harmful radiation and materials, various measures are provided in this Plasma display.
Be sure to read cautionary items described in the manual to maintain safety before servicing.

Service Warning

1. Since Panel Module and front Filter are made of glass, handling the broken Module and Filter shall be taken care sufficiently in order not to be injured.
2. Replacing work shall be started after the Panel Module and the AC/DC Power supply become sufficiently cool.
3. Special care shall be taken to the display area in order not to damage its surface.
4. The Panel Module shall not be touched with bare hand to protect its surface from stains.
5. It is recommended to use clean soft gloves during the replacing work in order to protect not only the display area of the Panel Module but also a serviceman himself.
6. The Chip Tube of Panel Module (located upper left of the back and surrounded by frame) and flexible cables connecting Panel glasses to drive circuit PWBs are very weak, so shall be taken care sufficiently not to break. If you break Chip Tube, the Panel doesn't display anything forever.

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100985

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'05.10

PRECAUTIONS

How to clean the plasma screen panel of the monitor

Before cleaning the monitor, turn off the monitor and disconnect the power plug from the power outlet.
To prevent scratching or damaging the plasma screen face, do not knock or rub the surface with sharp or hard objects. Clean the screen with a soft cloth moistened with warm water and dry with a soft cloth. If it is not enough, then use a cloth with mild detergent. Do not use harsh or abrasive cleaners.

How to clean the cabinet of the monitor

Use a soft cloth to clean the cabinet and control panel of the monitor. When excessively soiled dilute a neutral detergent in water, wet and wring out the soft cloth and afterward wipe with a dry soft cloth.
Never use acid/alkaline detergent, alcoholic detergent, abrasive cleaner, powder soap, OA cleaner, car wax, glass cleaner, etc. especially because they would cause discoloration, scratches or cracks.

■ *Features*

Large-screen, high-definition plasma display panel

The 42-inch color plasma display panel, with a resolution of 1024 (H) x 1024 (V) pixels, creates a high-definition, large-screen(aspect ratio : 16:9) and low-profile flat display. Free from electromagnetic interferences from geomagnetic sources and ambient power lines, the panel produces high-quality display images free from color misconvergence and display distortion.

High Performance Digital Processor

A wide range of input signals can be handed,including composite, component,and HDMI.High Definition Digital Processor creates the fine-textured image with dynamic contrast. In addition, it corresponds to a broad array of personal computer signals, from 640 x 400 and 640 x 480 VGA to 1600 x 1200 UXGA.(Analog Input)

Easy-to-use remote control and on screen display system

The remote control included eases the work of setting display controls. Further, the on-screen display system, displays the status of signal reception and display control settings in an easy-to-view fashion.

Power saving system

When connected to a VESA DPMS-compliant PC, the monitor cuts its power consumption while it is idle.

Connecting to an Audio Visual Device

· Three SCART terminals, a composite/S Terminal*1, a component terminal*2, a HDMI terminal and have been added. A composite video output terminal is also provided as a monitoring output.

*1 A composite/S terminal = A side input

· A wide range of devices other than personal computers can also be connected.

· A RGB input is possible to switch to component signal from the Menu screen.

Power Swivel Feature

It allows to turn the plasma display left or right within ± 30 degree using the remote control.

■ *Specifications*

Panel	Display dimensions	Approx. 42 inches (922 (H) x 522 (V) mm, diagonal 1059mm)
	Resolution	1024(H) x 1024 (V) pixels
Net dimensions (excluding Speakers/Stand)		1030 (W) x 636 (H) x 104 (D) mm
Net weight (excluding Speakers/Stand)		36.0kg
Ambient conditions	Temperature	Operating : 5 °C to 35 °C, Storage : 0 °C to 40 °C
	Relative humidity	Operating : 20% to 80%, Storage : 20% to 90% (non-condensing)
Power supply		AC100 - 240V, 50/60Hz
Power consumption/at standby		380W / <3W
Audio output		speaker 12W + 12W (6Ω)
(RGB input)		
Input terminals		RGB1 DVI input terminal (DVI-D) RGB1 audio input terminal (3.5mm Stereo Mini Jack) RGB2 analog RGB input terminal (D-sub 15-pin) RGB2 audio input terminal (3.5mm Stereo Mini Jack)
Input signals		0.7 V/1.0 Vp-p, analog RGB (Recommended Signal) 480i, 576i, 480p, 576p, 1080i/50, 1080i/60, 720p/50*1, 720p/60
Sync signals		H/V separate, TTL level [2KΩ] H/V composite, TTL level [2KΩ] Sync on green, 0.3 Vp-p [75Ω]
(Video input)		
Input terminals		AV1: composite video/S video/L/R audio input terminal (SCART) AV2: composite video/RGB/L/R audio input terminal (SCART) AV3: composite video/RGB/L/R audio input terminal (SCART) AV4: composite video/Y/P_B/P_R video/L/R audio input terminal (RCA) AV5: composite video/S video/L/R audio input terminal (RCA) AV6: HDMI input terminal
Input signals		AV1: PAL, SECAM, NTSC3.58, NTSC4.43 AV2: PAL, SECAM, NTSC3.58, NTSC4.43, RGB AV3: PAL, SECAM, NTSC3.58, NTSC4.43, RGB AV4: PAL, SECAM, NTSC3.58, NTSC4.43 AV4: 480i, 576i, 480p, 576p, 720p/50, 720p/60, 1080i/50, 1080i/60, AV5: PAL, SECAM, NTSC3.58, NTSC4.43 AV6: HDMI input signal
Output Signal		OUTPUT (MONITOR): composite video monitor-output terminal (RCA) OUTPUT (MONITOR): L/R audio monitor- output terminal (RCA) OUTPUT (HEADPHONE): L/R audio monitor- output terminal (3.5mm Stereo Mini Jack)
(RF input)		
Input terminals		ANT : 75Ω Unbalanced
RF Video System		PAL B, G, H / I / D, K SECAM B, G / K1 / L, Lí / (D, K)*2

*1 720/50 is supported by RGB1(DVI-STB)

*2 The SECAM D,K system might not be normally received, depending on the model.

Applicable video signals for each input terminal

Terminal	RCA/S-video/SCART				HDMI	DVI		D-sub	
Signal	CVBS	S-video	Component	SCART (RGB)		PC	STB	RGB	Component
AV1	○	○							
AV2	○			○					
AV3	○			○					
AV4	○		○						
AV5	○	○							
AV6					○				
RGB1						○	○		
RGB2								○	○

(○:Available)

■ *Service points*

● Lead free solder

This product uses lead free solder (unleaded) to help preserve the environment. Please read these instructions before attempting any soldering work.

Caution: Always wear safety glasses to prevent fumes or molten solder from getting into the eyes. Lead free solder can splatter at high temperatures (600 °C).

■ Lead free solder indicator

Printed circuit boards using lead free solder are engraved with an "F."

■ Properties of lead free solder

The melting point of lead free solder is 40-50 °C higher than leaded solder.

■ Servicing solder

Solder with an alloy composition of Sn-3.0Ag-0.5Cu or Sn-0.7Cu is recommended.
Although servicing with leaded solder is possible, there are a few precautions that have to be taken. (Not taking these precautions may cause the solder to not harden properly, and lead to consequent malfunctions.)

Precautions when using leaded solder

- Remove all lead free solder from soldered joints when replacing components.
- If leaded solder should be added to existing lead free joints, mix in the leaded solder thoroughly after the lead free solder has been completely melted (do not apply the soldering iron without solder).

■ Servicing soldering iron

A soldering iron with a temperature setting capability (temperature control function) is recommended.
The melting point of lead free solder is higher than leaded solder. Use a soldering iron that maintains a high stable temperature (large heat capacity), and that allows temperature adjustment according to the part being serviced, to avoid poor servicing performance.

Recommended soldering iron:

- Soldering iron with temperature control function (temperature range: 320-450 °C)

Recommended temperature range per part:

Part	Soldering iron temperature
Mounting (chips) on mounted PCB	320 °C±30 °C
Mounting (chips) on empty PCB	380 °C±30 °C
Chassis, metallic shield, etc.	420 °C±30 °C

The PWB assembly which has used lead free solder

FILTER PWB, SW PWB, LED/RECEIVER PWB, SP TERMINAL(L/R) PWB
AUDIO PWB, JOINT PWB, Swievel PWB, HDMI PWB, control PWB
VIDEO PWB
TUNER PWB

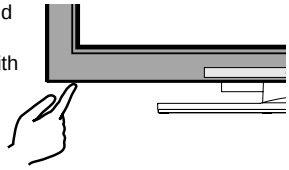
■ Readjustment Power supply voltage

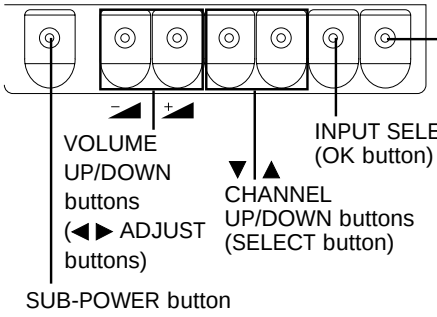
When a PANEL or a Power Unit is exchanged, power supply voltage needs to be adjusted. Please adjust to make the values of Va and Vs of as should on the label currently stuck on the panel back upper parts.Adjustment is performed by VR in the power supply unit. Please refer to the procedures of "Va" and "Vs" adjustments on 17page.

■ *Component names*

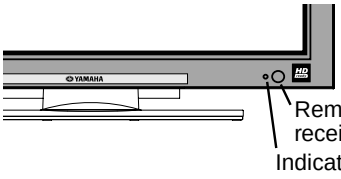
[Main unit]

- Adjustment buttons are located on the bottom.
- The back cover is provided with indications to distinguish the adjustment buttons.



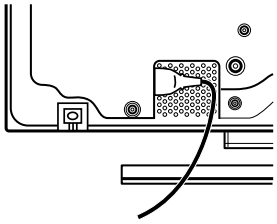


- ( ) indicates the function while the MENU is displayed on the screen.

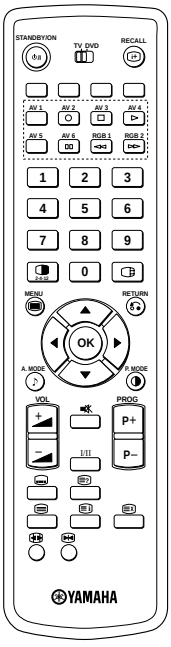


- The main power switch is located at the back, on the lower surface.

Main power switch



[Remote control]



■ *Adjustment*

• How to get to Adjustment mode

Using the front control buttons with the set turned off (standby) can activate it.

Press the SUB-POWER(⏻) button, INPUT SELECT(⏎) button and ▼ button at the same time, and hold for more than 5 seconds.

The set turns on in adjustment mode with OSD.

• Changing data and Selecting Adjustment code

When the set is in adjustment mode, the cursor ◀ , ▶ , ▲ , ▼ and OK buttons of the remote control or front panel may be used as the adjustment keys.

▲ , ▼ buttons are used for selecting adjustment code.

◀ , ▶ buttons are used for changing data values.

OK button is used for confirming the data.

After finishing the necessary adjustment press MENU button. Adjustment mode is released and the set returns to normal condition.

• Memory Initialize operation

NOTE: The execution of this function returns the adjustment codes to the preset values, therefore, adjustment data will be lost.

Procedure

(1) Enter Adjustment Mode.

(2) Select MEMORY INIT adjustment code (No.658) and change the data value from 0 to 1.

(3) Activate MEMORY INIT by pressing OK button for more than 3 seconds.

(4) Select No.525 and change data value from 1 to 0.

(5) Check that the receiving channel goes to P1. Unit is set to preset values.

● Service adjustment items by I²C-bus control (MAIN Part)

○: shoule be adjusted
△: should be followed previous data

ADJ No	Function		Max. value	Default	Changed Component			
	ADJ. Items	Mode			FORMATTER PWB	VIDEO PWB	TUNER PWB	PDP PANEL
0	SUB_CONTRAST (RF)	Main	15	8				
1	SUB_CONTRAST (AV1)	Main/Sub Composite mode	15	8				
2	SUB_CONTRAST (AV2)	Main/Sub Composite mode	15	8				
3	SUB_CONTRAST (AV3)	Main/Sub Composite mode	15	8				
4	SUB_CONTRAST (AV4)	Main/Sub Composite mode	15	8				
5	SUB_CONTRAST (AV5)	Main/Sub Composite mode	15	8				
6	SUB_CONTRAST (RF)	Sub	15	8				
7	Sub Color	Main	15	8				
8	Sub Color	Sub	15	8				
9	TINT (RF)	Main	63	33				
10	TINT (VIDEO)	Main	63	33				
11	TINT (RF)	Sub	63	33				
12	TINT (VIDEO)	Sub	63	33				
13	Free							
14	Free							
15	Free							
16	Free							
17	Reference Amplitude(RGB_AMP)	RF/VIDEO	254	127				
18	Reference Amplitude(RGB_AMP)	PC	254	127				
19	Reference Amplitude(RGB_AMP)	Multi Picture mode	254	130				
20	Display for Max. Amplitude Level	Main	-	-				
21	Display for Max. Amplitude Level	Sub	-	-				
22	Offset Value(+/-) of Upper Limit (for FC :RGB-AMP)	Multi Picture mode	18	2				
23	Offset Value(+/-) of Upper Limit (for TB1274:SUB-CONT)	Single Picture mode	18	2				
24	Offset Value(+/-) of Upper Limit (for TB1274:Sub Color)		18	2				
25	Terget value of White peak Adj.	Single Picture mode	237	235				
26	Terget value of Color Level Adj. (for TB1274:Sub Color)		237	235				
27	Set Blue Gamma gain On/Off 0:Off, 1:On (For 55V)	For 55V	1	1				
28	Contrast mode<Dynamic> SW (TV) 0:Dynamic, 1:Dynamic+Auto	RF	1	1				
29	Select for WIDE Mode		1	1				
30	PinP Function (for PC) 0:PinP, 1:Infomation1, 2:Infomaiton Split		2	0				
31	Black Level(RGB_AMP)	RF/VIDEO	254	127				
32	Black Level(RGB_AMP)	PC	254	127				
33	Black Level(RGB_AMP)	HDMI	254	127				
34	Black Level(RGB_AMP)	For USA NTSC/480i	254	127				
35	YNR Input Level for AV1-5 Mode	RF	7	7				
36	YNR Input Level for AV1-5 Mode	VIDEO	7	7				
37	YNR Input Level for AV1-5 Mode	Scart-RGB(50/60Hz)	7	7				
38	YNR Input Level for AV1-5 Mode	480i/576i	7	7				
39	YNR Input Level for AV1-5 Mode	480p/576p	7	7				
40	YNR Input Level for AV1-5 Mode	1080i-50/60/720p	7	7				
41	YNR Input Level for DVI-STV Mode	480i/480p/576i/576p/VGA	7	7				
42	YNR Input Level for DVI-STV Mode	1080i-50/60/720p	7	7				
43	CNR Input Level at Low level for AV1-5 Mode	RF/VIDEO	7	4				
44	CNR Input Level at Low level for AV1-5 Mode	Scart-RGB(50/60Hz)	7	4				
45	CNR Input Level at Low level for AV1-5 Mode	480i/576i	7	4				
46	CNR Input Level at Low level for AV1-5 Mode	480p/576p	7	4				
47	CNR Input Level at Low level for AV1-5 Mode	1080i-50/60/720p	7	4				
48	CNR Input Level at Low level for DVI-STV Mode	480i/480p/576i/576p/VGA	7	2				
49	CNR Input Level at Low level for DVI-STV Mode	1080i-50/60/720p	7	2				
50	CNR Input Level at Low level for Dsub Comp. Mode	480i/576i	7	2				
51	CNR Input Level at Low level for Dsub Comp. Mode	480p/576p	7	2				
52	CNR Input Level at Low level for Dsub Comp. Mode	1080i-50/60/720p	7	2				
53	main/sub YFRNR level [MYNRP0]	NTSC/PAL/ Multi picture	7	1				
54	main/sub YFRNR level [MYNRP5]	NTSC/PAL-VIDEO	7	0				
55	main/sub YFRNR level [MYNRP6']	Scart-RGB(50/60Hz)	7	0				
56	main/sub YFRNR level [MYNRP6]	480i/576i(Except HDMI)	7	0				
57	main/sub YFRNR level [MYNRP7]	480p/576p(Except HDMI)	7	0				
58	main/sub YFRNR level [MYNRP8]	1080i-50/60/720p(Except HDMI)	7	0				
59	main/sub CFRNR level [MCNRP0]	NTSC/PAL/ Multi	7	0				
60	main/sub CFRNR level [MCNRP5]	NTSC/PAL-VIDEO	7	0				
61	main/sub CFRNR level [MCNRP6']	Scart-RGB(50/60Hz)	7	0				
62	main/sub CFRNR level [MCNRP6]	480i/576i	7	0				
63	main/sub CFRNR level [MCNRP7]	480p/576p	7	0				
64	main/sub CFRNR level [MCNRP8]	1080i-50/60/720p	7	0				
65	B-Y/B R-Y/R (VER. Enhancer Gain) [CVEG0]	NTSC/PAL/480i/576i/ Multi picture	15	15				
66	B-Y/B R-Y/R (VER. Enhancer Gain) [CVEG1]	480p/576p/1080i-50/60/720p	15	9				
67	DSB Gain of Vertical for B-Y/B R-Y/R [CVDSBG0]	NTSC/PAL/480i/576i/ Multi picture	3	0				
68	DSB Gain of Vertical for B-Y/B R-Y/R [CVDSBG1]	480p/576p/1080i-50/60/720p	3	0				
69	DSB coring of Vertical for B-Y/B R-Y/R [CVDSBC0]	NTSC/PAL/480i/576i/ Multi picture	7	0				
70	DSB coring of Vertical for B-Y/B R-Y/R [CVDSBC1]	480p/576p/1080i-50/60/720p	7	0				
71	B-Y/B R-Y/R (VRE. Enhancer) CLIP 0:CTI [CVECLP0]	NTSC/PAL/480i/576i/ Multi picture	1	0				
72	B-Y/B R-Y/R (VRE. Enhancer) CLIP 0:CTI [CVECLP1]	480p/576p/1080i-50/60/720p	1	0				
73	Horizontal HPF Peek Freq. SW for B-Y/B,R-Y/R [CHHPF0]	NTSC/PAL/480i/576i/ Multi picture	3	2				
74	Horizontal HPF Peek Freq. SW for B-Y/B,R-Y/R [CHHPF1]	480p/576p/1080i-50/60/720p	3	2				
75	Horizontal Enhancer Gain for B-Y/B,R-Y/R [CHEG0]	NTSC/PAL/480i/576i/ Multi picture	15	15				
76	Horizontal Enhancer Gain for B-Y/B,R-Y/R [CHEG1]	480p/576p/1080i-50/60/720p	15	9				
77	Horizontal DSB Gain for B-Y/B,R-Y/R [CHDSBG0]	NTSC/PAL/480i/576i/ Multi picture	3	0				
78	Horizontal DSB Gain for B-Y/B,R-Y/R [CHDSBG1]	480p/576p/1080i-50/60/720p	3	0				
79	Horizontal DSB Coring for B-Y/B,R-Y/R [CHDSBC0]	NTSC/PAL/480i/576i/ Multi picture	7	0				
80	Horizontal DSB Coring for B-Y/B,R-Y/R [CHDSBC1]	480p/576p/1080i-50/60/720p	7	0				
81	Horizontal Enhancer Clip for B-Y/B,R-Y/G 0:CTI [CHECLP0]	NTSC/PAL/480i/576i/ Multi picture	1	0				
82	Horizontal Enhancer Clip for B-Y/B,R-Y/G 0:CTI [CHECLP1]	480p/576p/1080i-50/60/720p	1	0				
83	B-Y Clamp offset	NTSC/PAL/480i/576i/480p/576p	255	128				
84	R-Y Clamp offset	NTSC/PAL/480i/576i/480p/576p	255	128				
85	B-Y Clamp offset	1080i-50/60	255	128				
86	R-Y Clamp offset	1080i-50/60	255	128				
87	B-Y Clamp offset	720p	255	128				
88	R-Y Clamp offset	720p	255	128				
89	B-Y Clamp offset [DVI-STB]	480i/576i/480p/576p/VGA	255	128				
90	R-Y Clamp offset [DVI-STB]	480i/576i/480p/576p/VGA	255	128				
91	B-Y Clamp offset [DVI-STB]	1080i-50/60	255	128				
92	R-Y Clamp offset [DVI-STB]	1080i-50/60	255	128				
93	B-Y Clamp offset [DVI-STB]	720p	255	128				
94	R-Y Clamp offset [DVI-STB]	720p	255	128				
95	P/N ID	Main	1	0				
96	P/N ID	Sub	1	0				
97	Sharpness Gain(RF/NR)	Main/Sub	15	2				
98	Free							
99	Free							

○: shoule be adjusted
△: should be followed previous data

ADJ No	Function		Max. value	Default	Changed Component			
	ADJ. Items	Mode			FORMATTER PWB	VIDEO PWB	TUNER PWB	PDP PANEL
100	Free							
101	Free							
102	Free							
103	Free							
104	Free							
105	Free							
106	Free							
107	Free							
108	Free							
109	Free							
110	Sharpness Gain(RF) BG/DK/I	Sub	15	8				
111	Sharpness Gain(RF) M	Sub	15	8				
112	Sharpness Gain(RF) L	Sub	15	8				
113	Sharpness Gain(RF) L'	Sub	15	8				
114	Sharpness Gain(VIDEO) PAL	Sub	15	8				
115	Sharpness Gain(VIDEO) NTSC3.58	Sub	15	8				
116	Sharpness Gain(VIDEO) SECAM,B/W	Sub	15	8				
117	Sharpness Gain(VIDEO) NTSC4.43	Sub	15	8				
118	Sharpness Gain(VIDEO) N-PAL	Sub	15	8				
119	Sharpness Gain(VIDEO) M-PAL	Sub	15	8				
120	Sharpness Gain(S.VIDEO)	Sub	15	10				
121	Free							
122	Sharpness f0(RF) BG/DK/I	Main/Sub	3	2				
123	Sharpness f0(RF) M	Main/Sub	3	2				
124	Sharpness f0(RF) L	Main/Sub	3	2				
125	Sharpness f0(RF) L'	Main/Sub	3	2				
126	Sharpness f0(VIDEO) PAL	Main/Sub	3	2				
127	Sharpness f0(VIDEO) NTSC3.58	Main/Sub	3	2				
128	Sharpness f0(VIDEO) SECAM,B/W	Main/Sub	3	2				
129	Sharpness f0(VIDEO) NTSC4.43	Main/Sub	3	2				
130	Sharpness f0(VIDEO) N-PAL	Main/Sub	3	2				
131	Sharpness f0(VIDEO) M-PAL	Main/Sub	3	2				
132	Free							
133	Y Out Level M (4.5)	Main	63	15				
134	Y Out Level B/G (5.5)	Main	63	13				
135	Y Out Level D/K (6.5)	Main	63	16				
136	Y Out Level I (6.0)	Main	63	14				
137	Y Out Level L (6.5)	Main	63	13				
138	Y Out Level L' (6.5)	Main	63	16				
139	Y Out Level (VIDEO)	Main	63	15				
140	Y Out Level (TEXT)	Main	63	0				
141	Free							
142	Y Out Level M (4.5)	Sub	63	19				
143	Y Out Level B/G (5.5)	Sub	63	13				
144	Y Out Level D/K (6.5)	Sub	63	12				
145	Y Out Level I (6.0)	Sub	63	13				
146	Y Out Level L (6.5)	Sub	63	12				
147	Y Out Level L' (6.5)	Sub	63	15				
148	Y Out Level (VIDEO)	Sub	63	13				
149	Y Out Level (TEXT)	Sub	63	4				
150	Free							
151	C Out Level M (4.5)	Main	63	7				
152	C Out Level B/G (5.5)	Main	63	7				
153	C Out Level D/K (6.5)	Main	63	7				
154	C Out Level I (6.0)	Main	63	7				
155	C Out Level L (6.5)	Main	63	8				
156	C Out Level L' (6.5)	Main	63	8				
157	C Out Level (VIDEO)	Main	63	15				
158	C Out Level (TEXT)	Main	63	6				
159	Free							
160	C Out Level M (4.5)	Sub	63	3				
161	C Out Level B/G (5.5)	Sub	63	8				
162	C Out Level D/K (6.5)	Sub	63	8				
163	C Out Level I (6.0)	Sub	63	7				
164	C Out Level L (6.5)	Sub	63	7				
165	C Out Level L' (6.5)	Sub	63	7				
166	C Out Level (VIDEO)	Sub	63	10				
167	C Out Level (TEXT)	Sub	63	8				
168	Free							
169	BPF_Q (4.43MHz)	Main/Sub	3	3				
170	BPF_f0 (4.43MHz)	Main/Sub	3	1				
171	C_TRAP_SW (COMB=OFF-PAL/NTSC4.43/NTSC3.58)	Main/Sub	1	0				
172	LPF	Main/Sub	1	0				
173	SECAM D-Trap	Main/Sub	1	1				
174	FILTER SW(RF)	Main/Sub	1	0				
175	Y_DL (4.5MHz)	Main	10	6				
176	Y_DL (5.5MHz PAL/NTSC4.43)	Main	10	4				
177	Y_DL (5.5MHz SECAM)	Main	10	0				
178	Y_DL (6.0PAL/NTSC4.43)	Main	10	8				
179	Y_DL (6.0SECAM)	Main	10	9				
180	Y_DL (6.5PAL/NTSC4.43)	Main	10	6				
181	Y_DL (6.5SECAM)	Main	10	10				
182	Y_DL (L)	Main	10	5				
183	Y_DL (L')	Main	10	5				
184	Y_DL (VIDEO PAL/NTSC4.43)	Main	10	6				
185	Y_DL (VIDEO SECAM)	Main	10	8				
186	Y_DL (VIDEO NTSC)	Main	10	6				
187	Y_DL (4.5MHz)	Sub	10	5				
188	Y_DL (5.5MHz PAL/NTSC4.43)	Sub	10	2				
189	Y_DL (5.5MHz SECAM)	Sub	10	0				
190	Y_DL (6.0PAL/NTSC4.43)	Sub	10	7				
191	Y_DL (6.0SECAM)	Sub	10	5				
192	Y_DL (6.5PAL/NTSC4.43)	Sub	10	5				
193	Y_DL (6.5SECAM)	Sub	10	5				
194	Y_DL (L)	Sub	10	5				
195	Y_DL (L')	Sub	10	5				
196	Y_DL (VIDEO PAL/NTSC4.43)	Sub	10	5				
197	Y_DL (VIDEO SECAM)	Sub	10	5				
198	Y_DL (VIDEO NTSC)	Sub	10	5				
199	NTSC Comb(Comb off)	Sub	1	1				

○: shoule be adjusted
△: should be followed previous data

ADJ No	Function		Max. value	Default	Changed Component			
	ADJ. Items	Mode			FORMATTER PWB	VIDEO PWB	TUNER PWB	PDP PANEL
200	Cb offset1	Main	15	8				
201	Free							
202	Cr offset1	Main	15	8				
203	Free							
204	Cb offset1	Sub	15	8				
205	Free							
206	Cr offset1	Sub	15	8				
207	Free							
208	MVM (VIDEO)		1	0				
209	AFC_GAIN (AV00)		3	0				
210	AFC_GAIN (AV1)		3	0				
211	AFC_GAIN (AV2)		3	0				
212	AFC_GAIN (AV3)		3	0				
213	AFC_GAIN (AV4)		3	0				
214	AFC_GAIN (AV5)		3	0				
215	AFC_GAIN (Except AV00)		3	0				
216	S_B-Y_ADJ	Main	15	8				
217	S_R-Y_ADJ	Main	15	8				
218	S_B-Y_ADJ	Sub	15	8				
219	S_R-Y_ADJ	Sub	15	8				
220	BELL_f0	Main/Sub	1	0				
221	S_INHBT		1	0				
222	S_ID		1	0				
223	S_GP		3	0				
224	S_V_ID		1	0				
225	BELL/HPF		3	3				
226	HS Phase	Main	1	0				
227	HS Phase	Sub	1	0				
228	Bandwidth 1	NTSC/PAL/480i/576i	3	2				
229	Bandwidth 1	480p/576p	3	2				
230	Bandwidth 1	1080i-50/60/720p	3	0				
231	Bandwidth 2	NTSC/PAL/480i/576i	3	2				
232	Bandwidth 2	480p/576p	3	2				
233	Bandwidth 2	1080i-50/60/720p	3	0				
234	Sub Contrast 1	Except HDMI	15	0				
235	Sub Contrast 1	HDMI	15	0				
236	Sub Contrast 2	Except HDMI	15	0				
237	Sub Contrast 2	HDMI	15	0				
238	Sub Color 1	Except HDMI	15	0				
239	Sub Color 1	HDMI	15	0				
240	Sub Color 2	Except HDMI	15	0				
241	Sub Color 2	HDMI	15	0				
242	HV THRU 1	NTSC/PAL/480i/576i/480p/576p	1	0				
243	HV THRU 1	1080i-50/60/720p	1	0				
244	HV THRU 2	NTSC/PAL/480i/576i/480p/576p	1	0				
245	HV THRU 2	1080i-50/60/720p	1	0				
246	H_SEP 1	RF/VIDEO	1	0				
247	H_SEP 1	480i/576i	1	0				
248	H_SEP 1	480p/576p	1	0				
249	H_SEP 1	1080i_50	1	0				
250	H_SEP 1	1080i_60/720p	1	0				
251	H_SEP 2	RF/VIDEO	1	0				
252	H_SEP 2	480i/576i	1	0				
253	H_SEP 2	480p/576p	1	0				
254	H_SEP 2	1080i_50	1	0				
255	H_SEP 2	1080i_60/720p	1	0				
256	V_SEP 1	RF/VIDEO	1	0				
257	V_SEP 1	480i/576i	1	0				
258	V_SEP 1	480p/576p	1	0				
259	V_SEP 1	1080i_50	1	0				
260	V_SEP 1	1080i_60/720p	1	0				
261	V_SEP 2	RF/VIDEO	1	0				
262	V_SEP 2	480i/576i	1	0				
263	V_SEP 2	480p/576p	1	0				
264	V_SEP 2	1080i_50	1	0				
265	V_SEP 2	1080i_60/720p	1	0				
266	AFC MODE 1	RF	3	0				
267	AFC MODE 1	VIDEO	3	0				
268	AFC MODE 2	RF	3	0				
269	AFC MODE 2	VIDEO	3	0				
270	N_LVL 1	RF	1	0				
271	N_LVL 1	VIDEO	1	0				
272	N_LVL 2	RF	1	0				
273	N_LVL 2	VIDEO	1	0				
274	Free							
275	HD POSITION 1	480i/576i	15	0				
276	HD POSITION 1	480p/576p	15	0				
277	HD POSITION 1	1080i_50	15	0				
278	HD POSITION 1	1080i_60/720p	15	0				
279	Free							
280	HD POSITION 2	480i/576i	15	0				
281	HD POSITION 2	480p/576p	15	0				
282	HD POSITION 2	1080i_50	15	0				
283	HD POSITION 2	1080i_60/720p	15	0				
284	Y LPF 1	RF	1	1				
285	Y LPF 1	VIDEO	1	1				
286	Y LPF 2	RF	1	1				
287	Y LPF 2	VIDEO	1	1				
288	Gain 1		1	1				
289	Gain 2		1	1				
290	YCS MODE	NTSC3.58	3	0				
291	3D DET		7	7				
292	AFC Gain	NTSC3.58	3	0				
293	2D-CNR k		3	0				
294	2D-CNR Lim		3	0				
295	GMCON		1	0				
296	Y-NC		1	0				
297	Y-NC Lim		3	0				
298	2D-YNR k		3	0				
299	2D-YNR Gain		3	0				

○: shoule be adjusted
△: should be followed previous data

ADJ No	Function		Max. value	Default	Changed Component			
					FORMATTER	VIDEO	TUNER	PDP
	ADJ. Items	Mode			PWB	PWB	PWB	PANEL
300	2D-YNR Lim		3	0				
301	BLK EXP		3	0				
302	CKILL		1	0				
303	Output Clamp		1	0				
304	Input Clamp auto		1	1				
305	Int Clamp Manual		1	0				
306	C-ENHA		1	0				
307	YC-MIX		1	0				
308	Video2 RGB Mode ON		1	0				
309	HSWINV		1	0				
310	Free							
311	V-ENHA Gain	NTSC3.58	3	2				
312	V-ENHA NL	NTSC3.58	3	2				
313	H-ENHA Gain	NTSC3.58	3	1				
314	3DNR Corr for 3DYCS		1	0				
315	Burst ON for 2DYCS????		1	0				
316	MDMPL		1	0				
317	MDMBL		1	0				
318	H-MaskOut		7	0				
319	V-MaskOut		7	0				
320	Input Y-Delay (Main RF mode) for 3DYCS		7	4				
321	Input Y-Delay (Main Video mode) for 3DYCS		7	4				
322	Output-Y-Delay (Main RF Mode) for 3DYCS		15	8				
323	Output-Y-Delay (Main Video Mode) for 3DYCS		15	8				
324	V-ENHA Core	NTSC3.58	3	0				
325	Input Clamp Key	NTSC3.58	1	1				
326	Burst Gate Key	NTSC3.58	1	1				
327	Sync sep LPF	NTSC3.58	1	0				
328	H-WST	NTSC3.58	7	3				
329	HD Amp 1	NTSC3.58	7	6				
330	HD Gain V	NTSC3.58	31	13				
331	HD Amp 2	NTSC3.58	7	1				
332	HD Gain 1	NTSC3.58	31	8				
333	HD Amp 3	NTSC3.58	7	5				
334	HD Gain 2	NTSC3.58	31	4				
335	ACMSLP	NTSC3.58	3	1				
336	ACSSLP	NTSC3.58	3	2				
337	AYMSLP	NTSC3.58	3	2				
338	AYSSLP	NTSC3.58	3	2				
339	ACMESET	NTSC3.58	3	3				
340	ACMFSET	NTSC3.58	3	3				
341	ACSESET	NTSC3.58	3	2				
342	ACSFSET	NTSC3.58	3	2				
343	AYMESET	NTSC3.58	3	3				
344	AYMFSET	NTSC3.58	3	3				
345	AYSESET	NTSC3.58	3	1				
346	AYSFSET	NTSC3.58	3	3				
347	BCMSLP	NTSC3.58	3	3				
348	BCSSLP	NTSC3.58	3	3				
349	BYMSLP	NTSC3.58	3	3				
350	BYSSLP	NTSC3.58	3	2				
351	BCMESET	NTSC3.58	3	2				
352	BCMFSET	NTSC3.58	3	2				
353	BCSESET	NTSC3.58	3	2				
354	BCSFSET	NTSC3.58	3	2				
355	BYMESET	NTSC3.58	3	3				
356	BYMFSET	NTSC3.58	3	3				
357	BYSESET	NTSC3.58	3	3				
358	BYSFSET	NTSC3.58	3	3				
359	BCMUP	NTSC3.58	1	1				
360	CECMP	NTSC3.58	7	4				
361	CSCMP	NTSC3.58	15	0				
362	F1HER	NTSC3.58	3	1				
363	F1VER	NTSC3.58	3	1				
364	MREF	NTSC3.58	15	2				
365	CDEYE	NTSC3.58	3	2				
366	YDEYE	NTSC3.58	3	2				
367	MDS	NTSC3.58	1	0				
368	F-TBC OFF MDMPL	NTSC3.58	1	0				
369	REC:C_DEC	Except NTSC3.58	1	0				
370	V-ENHA Gain	Except NTSC3.58	3	2				
371	V-ENHA NL	Except NTSC3.58	3	1				
372	H-ENHA Gain	Except NTSC3.58	3	1				
373	3D-CNR Lim for 2DYCS		7	0				
374	3D-CNR k for 2DYCS		3	0				
375	3D-CNR Gain for 2DYCS		7	0				
376	3D-YNR Lim for 2DYCS		7	0				
377	3D-YNR k for 2DYCS		3	0				
378	3D-YNR Gain for 2DYCS		7	0				
379	YCS MODE	Except NTSC3.58	3	0				
380	AFC Gain	Except NTSC3.58	3	0				
381	Free							
382	Free							
383	V-ENHA Core	Except NTSC3.58	3	0				
384	Input Clamp Key	Except NTSC3.58	1	1				
385	Burst Gate Key	Except NTSC3.58	1	1				
386	Sync sep LPF	Except NTSC3.58	1	0				
387	H-WST	Except NTSC3.58	7	3				
388	HD Amp 1	Except NTSC3.58	7	6				
389	HD Gain V	Except NTSC3.58	31	13				
390	HD Amp 2	Except NTSC3.58	7	1				
391	HD Gain 1	Except NTSC3.58	31	8				
392	HD Amp 3	Except NTSC3.58	7	5				
393	HD Gain 2	Except NTSC3.58	31	4				
394	ACMSLP	Except NTSC3.58	3	2				
395	ACSSLP	Except NTSC3.58	3	2				
396	AYMSLP	Except NTSC3.58	3	0				
397	AYSSLP	Except NTSC3.58	3	0				
398	ACMESET	Except NTSC3.58	3	3				
399	ACMFSET	Except NTSC3.58	3	3				

○: shoule be adjusted
△: should be followed previous data

ADJ No	Function		Max. value	Default	Changed Component			
	ADJ. Items	Mode			FORMATTER PWB	VIDEO PWB	TUNER PWB	PDP PANEL
400	ACSESET	Except NTSC3.58	3	2				
401	ACSFSET	Except NTSC3.58	3	2				
402	AYMESET	Except NTSC3.58	3	3				
403	AYMFSET	Except NTSC3.58	3	3				
404	AYSESET	Except NTSC3.58	3	1				
405	AYSFSET	Except NTSC3.58	3	3				
406	BCMSLP	Except NTSC3.58	3	3				
407	BCSSLP	Except NTSC3.58	3	3				
408	BYMSLP	Except NTSC3.58	3	3				
409	BYSSLP	Except NTSC3.58	3	2				
410	BCMESET	Except NTSC3.58	3	2				
411	BCMFSET	Except NTSC3.58	3	2				
412	BCSESET	Except NTSC3.58	3	2				
413	BCSFSET	Except NTSC3.58	3	2				
414	BYMESET	Except NTSC3.58	3	3				
415	BYMFSET	Except NTSC3.58	3	3				
416	BYSESET	Except NTSC3.58	3	3				
417	BYSFSET	Except NTSC3.58	3	3				
418	BCMUP	Except NTSC3.58	1	1				
419	CECMP	Except NTSC3.58	7	4				
420	CSCMP	Except NTSC3.58	15	0				
421	F1HER	Except NTSC3.58	3	1				
422	F1VER	Except NTSC3.58	3	1				
423	MREF	Except NTSC3.58	15	2				
424	CDEYE	Except NTSC3.58	3	2				
425	YDEYE	Except NTSC3.58	3	2				
426	MDS	Except NTSC3.58	1	0				
427	F-TBC OFF MDMPL	Except NTSC3.58	1	0				
428	SEPA_LEVEL_DSUB	480i/576i	3	2				
429	SEPA_LEVEL_DSUB	480p/576p	3	2				
430	SEPA_LEVEL_DSUB	1080i_50	3	2				
431	SEPA_LEVEL_DSUB	1080i_60/720p	3	2				
432	HD-PHASE_DSUB	480i/576i	63	20				
433	HD-PHASE_DSUB	480p/576p	63	20				
434	HD-PHASE_DSUB	1080i_50	63	20				
435	HD-PHASE_DSUB	1080i_60/720p	63	20				
436	Heat APC function (HAPC) available		1	1				
437	Y-select(0:1.0, 1:2.2, 2:2.8)	RF/VIDEO	2	1				
438	Y-select(0:1.0, 1:2.2, 2:2.8)	DVI-PC/DVI-STB/DSUB-RGB	2	1				
439	Select for APC function		1	0				
440	CCFMD function	RF/VIDEO	1	0				
441	CCFMD function	DVI-PC/DVI-STB/DSUB-RGB	1	0				
442	NTSC/EBU(CCFORM)	SD(YCbCr)/Scart-RGB	1	0				
443	NTSC/EBU(CCFORM)	HD(YPbPr)	1	0				
444	NTSC/EBU(CCFORM)	DVI-PC/DVI-STB/DSUB-RGB	1	0				
445	Correction for Tracking (DCBON)	RF/VIDEO-Color Temp. Cool	1	1				
446	Correction for Tracking (DCBON)	RF/VIDEO-Color Temp. Nor/War	1	1				
447	Correction for Tracking (DCBON)	DVI-PC/DVI-STB/DSUB-RGB	1	1				
448	Color Temp. Correction		3	2				
449	Brightness Limitted Function of PANEL [APSON]		1	1				
450	Dynamic Back Light Correction	For LCD	1	1				
451	Dynamic Contrast Correction		1	1				
452	Histogram Color Management		1	1				
453	Histogram Gradation Amp.		1	1				
454	Histogram Enhancer		1	1				
455	Dynamic Enhancer		1	1				
456	FC6 THROUGH 0:OFF, 1:THROUGH ON		1	0				
457	APL Enhancer 0:OFF, 1:ON	For Dynamic mode	1	1				
458	ATC INPUT RED SELECT		1	0				
459	HD/VD OUTPUT LEVEL		1	1				
460	ISM Control for WVGA	For WVGA	1	1				
461	Free							
462	WVGA BRIGHTNESS	For WVGA	1	0				
463	Black insert function 0:Not available, 1:Available	For LCD Dynamic mode or Day	1	0				
464	Dynamic Backlight function 0:No, 1:Yes	For LCD	1	1				
465	DVI-STB Setup 0:None VGA/Others Yes, 1:All none 2:All have	DVI-STB	2	0				
466	HSYNC De-Jitter 0:Low(Disabled), 1:High(Enabled)	DVI-PC	1	0				
467	HSYNC De-Jitter 0:Low(Disabled), 1:High(Enabled)	DVI-STB	1	0				
468	Free							
469	AUTO_FM/AM (D11-D8)		15	2				
470	AUTO_FM/AM (D 7-D0)		254	189				
471	A2_THRESHOLD (D11-D8)		15	0				
472	A2_THRESHOLD (D 7-D0)		254	112				
473	PRE_AM	Except 4.5MHz (Except Dual/Stereo mode)	254	17				
474	VOL_SCART1 (D15-D8)		254	115				
475	VOL_SCART1 (D 7-D5)		7	0				
476	PRE_SCART		254	31				
477	PRE_FM	4.5MHz(JAPAN)	254	34				
478	PRE_FM	4.5MHz(Except BTSC-SAP mode)	254	32				
479	PRE_FM	4.5MHz(BTSC-SAP)	254	60				
480	PRE_FM	4.5MHz(Except KOREA Dual/Stereo mode)	254	36				
481	PRE_FM	4.5MHz(KOREA Dual/Stereo)	254	34				
482	PRE_FM	Except 4.5MHz(Except Dual/Stereo mode)	254	17				
483	PRE_FM	Except 4.5MHz(Dual/Stereo mode)	254	27				
484	PRE_NICAM		254	57				
485	CM_THRESHOLD (D15-D8)		254	0				
486	CM_THRESHOLD (D7 -D0)		254	36				
487	AGC_LEVEL AGCL		3	0				
488	TEXT H sync delay		127	0				
489	TEXT V sync delay		127	50				
490	TEXT_H_POSITION		254	42				
491	TEXT_V_POSITION		254	39				
492	Select for APC output [Except Europe model]	Main RF	2	1				
493	L_PLL.GAIN		1	0				
494	Free							
495	HDMI EDID WRITE ENABLE	0:Disenable, 1:Enable	1	1				
496	BPMA : Back Porch Mode,Field2		1	1				

○: shoule be adjusted
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ADJ No	Function		Max. value	Default	Changed Component			
	ADJ. Items	Mode			FORMATTER PWB	VIDEO PWB	TUNER PWB	PDP PANEL
497	VCORA : VCO range select		3	0				
498	CRNTA : change pump current select		7	0				
499	TESTA : Matching Test to allow increment of stability counter.		1	1				
500	PRMB : preamble criteria		31	6				
501	HDCP : HDCP enable criteria		31	12				
502	SMPLING	For CCD	255	0				
503	POLLING	For CCD	255	15				
504	START	For CCD	7	2				
505	TIMEOUT	For CCD	30	5				
506	STATUS	For CCD	7	2				
507	CCD-HP	For CCD	79	40				
508	CCD-CLK	For CCD	79	57				
509	Horizontal Position of OSD		15	7				
510	Vertical Position of OSD		15	7				
511	Free							
512	Typical Value of Contrast OSD	DYNAMIC	31	31				
513	Free							
514	Temperature for Fun start (Temp_High)		254	58				
515	Temperature for Fun stop (Temp_Low)		254	55				
516	Display of internal temperature °C (Temperature)		125	-				
517	Display of Panel map version		255	-				
518	Accumulation time for Panel (hours)		65535	-				
519	Reset function of accumulation time for WVGA/LCD Panel	0:Normal 1:Reset	1	0				
520	Power Save/Screen Saver On/Off Setting at Initialize, Reset and Shipping	P.S/S.S 0:Off/20m 1:On/Off 2:Off/Off	2	0				
521	PC Power Save function (0:Impossible, 1:Possible)		1	1				
522	Screen Saver-Picture shift amount 0:1pixel 1:2pixel 2:3pixel		2	0				
523	Screen Saver-Picture shift Direction 0:dia /1:cross /2:up/down /3:left/right		3	0				
524	Waite Time for POWER SAVE function (s)	VIDEO/PC	254	15				
525	BURN-IN enable/ disenable	0:Disenable, 1:Enable	1	1				
526	BURN-IN mode		2	2				
527	Recovery to an error of OSC frequency of Ceramic resonator for timer		62	34				
528	EURO DK-SECAM MASK(V=60) 0:Normal 1:Mask(V=60)		1	0				
529	Set Sound System at Auto mode of Sound Sys. (0:auto, 1:4.5MHz)	Main	1	0				
530	Power condition at power save mode of PC mode after done RESET function	0:Keep last condition, 1:Return to normal condition	1	0				
531	Select Wide mode for Europe model (Normal= 5mode/ For Service= 10 mode)	0:Normal, 1:For service	1	0				
532	Thermo sensor function available or not 0:None, 1:Yes		1	0				
533	Video Input function available or not at RGB1 & RGB2 mode	0:Not Available, 1:Available	1	1				
534	EURO SOUND SYSTEM DK Disable 0:Enable 1:Disable		1	0				
535	Remote Function available 0:NO, 1:YES		1	1				
536	Key Function available 0:NO, 1:YES		1	1				
537	DVI-STB/RGB-COMPONENT Function available 0:NO, 1:YES		1	0				
538	Terminal Mode Function available 0:Not Available, 1:Available	RS232C	1	1				
539	Select color control (0:Asia, 1:South America)	Main/Sub	1	0				
540	Language (Refer to below)		6	0				
541	Hotel Mode(0:No, 1:Yes)		2	0				
542	Analog Data (0:Keep EEPROM, 1:Not Keep to EEPROM)		1	0				
543	Maximum Volume Limit		63	63				
544	Power Mode(0:Last mode, 1:Pos1, 2-7:V1-6, 8-9:RGB1-2)		9	0				
545	Free							
546	Channel Select (0:CCIR, 1:CHINA)		1	0				
547	Auto_sound 4.5 (0:Korea, 1:BTSC, 2:Japan)		2	0				
548	T/TEXT(0:None, 1:Yes)		1	1				
549	Free							
550	Channel Preset(0:VESTEL, 1:GIFU, 2:HAMA, 3:HFDM, 4:AUSTRALIA)		4	1				
551	V FREQ 60Hz Force (0:None, 1:Yes)		1	0				
552	Offset value of adjusted TINT	For COMPAL factory	20	11				
553	Use "TINT Offset ↑" 0:No, 1:Yes	For COMPAL factory	1	0				
554	PDP-BLK ON/OFF	1:ON, 0:OFF	1	0				
555	IIC BUS Data/Clock Open(0:Close, 1:Open)		1	0				
556	Protect for Image Retention 0:Off, 1:7%, 2:14%, 3:21%, 4:AUTO	Dynamic mode	4	4				
557	Protect for Image Retention 0:Off, 1:7%, 2:14%, 3:21%, 4:AUTO	Natural mode	4	4				
558	Protect for Image Retention 0:Off, 1:7%, 2:14%, 3:21%, 4:AUTO	Cinema mode	4	4				
559	Dispersion Time of Sustain current 0:2 Times, 1:4 times	For Dynamic mode	1	0				
560	Dispersion Time of Sustain current 0:2 Times, 1:4 times	For Natural mode	1	1				
561	Dispersion Time of Sustain current 0:2 Times, 1:4 times	For Cinema mode	1	1				
562	Dispersion Time of Sustain current 0:2 Times, 1:4 times	For PC mode	1	1				
563	Dispersion Time of Sustain current 0:2 Times, 1:4 times	For PC-Movie mode	1	1				
564	Q mode 0:Freeze, 1:Move 1, 2:Move 2	For 50Hz[Dynamic] mode	2	1				
565	Q mode 0:Freeze, 1:Move 1, 2:Move 2	For 50Hz[Natural] mode	2	1				
566	Q mode 0:Freeze, 1:Move 1, 2:Move 2	For 50Hz[Cinema] mode	2	1				
567	Q mode 0:Freeze, 1:Move 1, 2:Move 2	For 60Hz[Dynamic] mode	2	1				
568	Q mode 0:Freeze, 1:Move 1, 2:Move 2	For 60Hz[Natural] mode	2	1				
569	Q mode 0:Freeze, 1:Move 1, 2:Move 2	For 60Hz[Cinema] mode	2	1				
570	Q mode 0:Freeze, 1:Move 1, 2:Move 2	For 70Hz(PC)	2	0				
571	Main/Sub YFRNR passage level [MYNRP6]	480i/576i (HDMI)	7	0				
572	[MYNRP7]	480p/576p (HDMI)	7	0				
573	[MYNRP8]	1080i-50/720p-50 (HDMI)	7	1				
574	[MYNRP8']	1080i-60/720p-60 (HDMI)	7	0				
575	Dummy575		-	-				
576	Gray level of BM	Index	31	4				
577	Display of BM version		127	-				
578	TA1391: SYNC SW Change	0:SYNC, 1:HDVD1&2	1	0				
579	Free							
580	Free							
581	Counting time for discrimination of fH(M30625/TA1370)		31	2				
582	Counting time for discrimination of fV(M30625/TA1370)		31	2				
583	Counting time for discrimination of fV(TB1274)		31	2				
584	Lower Limits value for Sync Detect of 2ms interval	For AFC at TV mode	254	25				
585	Lower Limits value for Sync Detect of 2ms interval	For Free Running at TV mode	254	30				
586	Lower Limits value for Sync Detect of 2ms interval	For AUTO OFF at TV mode	254	25				
587	Lower Limits value for Sync Detect of 2ms interval	For Free Running at AV mode	254	30				
588	Lower Limits value for Sync Detect of 2ms interval	For Power Save at AV mode	254	5				
589	Upper Limits Value for Sync Detect of 2ms interval	For AFC at TV mode	254	40				
590	Upper Limits Value for Sync Detect of 2ms interval	For Free Running at TV mode	254	45				
591	Upper Limits Value for Sync Detect of 2ms interval	For AUTO OFF at TV mode	254	35				

○: shoule be adjusted
△: should be followed previous data

ADJ No	Function		Max. value	Default	Changed Component			
	ADJ. Items	Mode			FORMATTER PWB	VIDEO PWB	TUNER PWB	PDP PANEL
592	Upper Limits Value for Sync Detect of 2ms interval	For Free Running at AV mode	254	45				
593	Upper Limits Value for Sync Detect of 2ms interval	For Power Save at AV mode	254	200				
594	V detection(Format PWB) 0:out of range, 128:NO V(or out of spec),	50/60(Hz)	255	-				
595	H detection(Format PWB) 0:out of range, 128:NO H(or out of spec),	15/28/31/33/45(kHz)	255	-				
596	V detection(VideoPWB) 0:out of range, 128:NO V(or out of spec), 255:interrupt	50/60(Hz)	255	-				
597	H detection(Video PWB) 0:out of range, 128:NO H(or out of spec),	15/28/31/33/45(kHz)	255	-				
598	COLOR SYSTEM CONTROL-MODE(0:BW, 2:3.58NTSC, 3:4.43NTSC, ⋯)	Main	-	-				
599	COLOR SYSTEM CONTROL-MODE(0:BW, 2:3.58NTSC, 3:4.43NTSC, ⋯)	Sub	-	-				
600	Counting Value of 2ms Sync.Detect	Main	-	-				
601	Counting Value of 2ms Sync.Detect	Sub	-	-				
602	TB1274 Read Data(00h)	Main	-	-				
603	TB1274 Read Data(01h)	Main	-	-				
604	TB1274 Read Data(00h)	Sub	-	-				
605	TB1274 Read Data(01h)	Sub	-	-				
606	MSP Read Data (CNTROL) (D15-D8)		-	-				
607	MSP Read Data (CNTROL) (D 7-D0)		-	-				
608	MSP Read Data (STANDARD_RES) (D15-D8)		-	-				
609	MSP Read Data (STANDARD_RES) (D 7-D0)		-	-				
610	MSP Read Data (STATUS) (D15-D8)		-	-				
611	MSP Read Data (STATUS) (D 7-D0)		-	-				
612	TA1391FG Read Data(00h)		-	-				
613	TA1391FG Read Data(01h)		-	-				
614	TA1391FG Read Data(02h)		-	-				
615	TA1391FG Read Data(03h)		-	-				
616	TA1391FG Read Data(04h)		-	-				
617	TA1391FG Read Data(05h)		-	-				
618	TA1391FG Read Data(06h)		-	-				
619	TA1391FG Read Data(07h)		-	-				
620	TA1370G Read Data(00h)		-	-				
621	TA1370G Read Data(01h)		-	-				
622	Sil9993 Read Data SYNC1 : VSYNC/Clock detect/Sync detect 1		-	-				
623	Sil9993 Read Data NHRDL1 : N hardware value 1		-	-				
624	Sil9993 Read Data NHRDM1 : N hardware value 1		-	-				
625	Sil9993 Read Data NHRDH1 : N hardware value 1		-	-				
626	Sil9993 Read Data CHRDL1 : CTS hardware value 1		-	-				
627	Sil9993 Read Data CHRDM1 : CTS hardware value 1		-	-				
628	Sil9993 Read Data CHRDH1 : CTS hardware value 1		-	-				
629	Sil9993 Read Data ACR1 : ACR PLL hardware value 1		-	-				
630	Sil9993 Read Data ACRS1 : ACR PLL hardware value 1		-	-				
631	Sil9993 Read Data SFREQ1 : "Extracted Sampling Frequency 1 channel status b24-27(same value at 0x30)"		-	-				
632	Sil9993 Read Data CLKFRQ1: Clock Accuracy/Sampling Frequency 1			-				
633	Sil9993 Read Data ALNG1 : Audio length/Audio length max 1		-	-				
634	Sil9993 Read Data MT_MD1 : AV mute/HDMI mode 1		-	-				
635	Sil9993 Read Data VTYP1 : AVI infoframe type code 1		-	-				
636	Sil9993 Read Data VVER1 : AVI infoframe version code 1		-	-				
637	Sil9993 Read Data VINFO11: AVI infoframe data 1		-	-				
638	Sil9993 Read Data VINFO21:		-	-				
639	Sil9993 Read Data VINFO31:		-	-				
640	Sil9993 Read Data VINFO41:		-	-				
641	Sil9993 Read Data VINFO51:		-	-				
642	Sil9993 Read Data ATYP1 : AUDIO InfoFrame Type Code 1		-	-				
643	Sil9993 Read Data AVER1 : AUDIO InfoFrame Version Code 1		-	-				
644	Sil9993 Read Data AINFO11: AUDIO InfoFrame Data Bytes 1		-	-				
645	Sil9993 Read Data AINFO21:		-	-				
646	Sil9993 Read Data AINFO31:		-	-				
647	Sil9993 Read Data AINFO41:		-	-				
648	Sil9993 Read Data AINFO51:		-	-				
649	Initialize function for EEPROM of Video PWB board		1	0				
650	Check condition of EEPROM of Video PWB board	0:Normal, 1:Abnormal(Fail or no assembly)	1	-				
651	W/B Initialize		1	-				
652	Gain adjustment of RGB amplifier (FLAON)	Main	-	-	○			
653	Gain adjustment of RGB amplifier	Sub	-	-	○			
654	Automatic White Peak Adj	Single Picture mode	-	-				
655	Automatic Color Level Adj. (TB1274BF)	Main PAL/NTSC(COMPOSITE)	-	-				
656	Automatic Color Level Adj. (TB1274BF)	Sub PAL/NTSC(COMPOSITE)	-	-				
657	Automatic White Peak Adj.	Multi Picture mode	-	-				
658	EEPROM Initialize(0:No, 1:Yes)		1	0				
659	Enter to SUB adjust menu		-	-				
660	Enter to service menu of FC sub mi-con		-	-				

● Service adjustment items by I²C-bus control (SUB adjust menu)

(*The change to a sub menu. press "ok" key after no.659 with a main menu)

○: shoule be adjusted
△: should be followed previous data

ADJ No.	Function		Max. Value	Default	Changed Component			
	ADJ. Items	Mode			FORMATTER PWB	VIDEO PWB	TUNER PWB	PDP PANEL
0	R DRIVE1 [RF/VIDEO/DSUB-COMP]	COOL	255	255	△			○
1	G DRIVE1 [RF/VIDEO/DSUB-COMP]	COOL	255	255	△			○
2	B DRIVE1 [RF/VIDEO/DSUB-COMP]	COOL	255	255	△			○
3	R DRIVE2 [RF/VIDEO/DSUB-COMP]	NORMAL	255	255	△			○
4	G DRIVE2 [RF/VIDEO/DSUB-COMP]	NORMAL	255	255	△			○
5	B DRIVE2 [RF/VIDEO/DSUB-COMP]	NORMAL	255	255	△			○
6	R DRIVE3 [RF/VIDEO/DSUB-COMP]	WARM	255	255	△			○
7	G DRIVE3 [RF/VIDEO/DSUB-COMP]	WARM	255	255	△			○
8	B DRIVE3 [RF/VIDEO/DSUB-COMP]	WARM	255	255	△			○
9	R DRIVE4 [RF/VIDEO/DSUB-COMP]	BLACK & WHITE	255	255	△			○
10	G DRIVE4 [RF/VIDEO/DSUB-COMP]	BLACK & WHITE	255	255	△			○
11	B DRIVE4 [RF/VIDEO/DSUB-COMP]	BLACK & WHITE	255	255	△			○
12	R DRIVE1 [DVI-PC/DVI-STB/DSUB-RGB]	COOL	255	255	△			○
13	G DRIVE1 [DVI-PC/DVI-STB/DSUB-RGB]	COOL	255	255	△			○
14	B DRIVE1 [DVI-PC/DVI-STB/DSUB-RGB]	COOL	255	255	△			○
15	R DRIVE2 [DVI-PC/DVI-STB/DSUB-RGB]	NORMAL	255	255	△			○
16	G DRIVE2 [DVI-PC/DVI-STB/DSUB-RGB]	NORMAL	255	255	△			○
17	B DRIVE2 [DVI-PC/DVI-STB/DSUB-RGB]	NORMAL	255	255	△			○
18	R DRIVE3 [DVI-PC/DVI-STB/DSUB-RGB]	WARM	255	255	△			○
19	G DRIVE3 [DVI-PC/DVI-STB/DSUB-RGB]	WARM	255	255	△			○
20	B DRIVE3 [DVI-PC/DVI-STB/DSUB-RGB]	WARM	255	255	△			○
21	R DRIVE4 [DVI-PC/DVI-STB/DSUB-RGB]	BLACK & WHITE	255	255	△			○
22	G DRIVE4 [DVI-PC/DVI-STB/DSUB-RGB]	BLACK & WHITE	255	255	△			○
23	B DRIVE4 [DVI-PC/DVI-STB/DSUB-RGB]	BLACK & WHITE	255	255	△			○
24	Brightness Center (CM)	NTSC/PAL/ Multi picture	254	128				
25	Brightness Center (CM)	Scart-RGB(50/60Hz)	254	128				
26	Brightness Center (CM)	480i/576i/480p/576p	254	128				
27	Brightness Center (CM)	1080i-50/60/720p	254	124				
28	Brightness Center (CM)	DVI-PC	254	128				
29	Brightness Center (CM)	DVI-STB	254	128				
30	Brightness Center (CM)	DSUB-RGB	254	128				
31	Brightness Center (CM)	Expand DSUB-RGB (Reserved)	254	128				
32	Brightness Center (CM)	HDMI	254	128				
33	Brightness center (CM) offset	AV1	254	127				
34	Brightness center (CM) offset	AV2	254	127				
35	Brightness center (CM) offset	AV3	254	127				
36	Brightness center (CM) offset	AV4	254	127				
37	Brightness center (CM) offset	AV5	254	127				
38	Brightness center (CM) offset	DSUB-COMP	254	127				
39	Color Center (CM)	SD(YCbCr)(50Hz)	127	72				
40	Color Center (CM)	SD(YCbCr)(60Hz)	127	68				
41	Color Center (CM)	Scart-RGB(50/60Hz)	127	70				
42	Color Center (CM)	HD(YPbPr)(50/60Hz)	127	70				
43	Color Center (CM)	DVI-PC	127	64				
44	Color Center (CM)	DVI-STB (480i/576i/480p/576p)	127	62				
45	Color Center (CM)	DVI-STB (1080i-50/60/720p)	127	62				
46	Color Center (CM)	DVI-STB (VGA)	127	62				
47	Color Center (CM)	DSUB-RGB	127	64				
48	Tint Center (CM)	PAL	254	125				
49	Tint Center (CM)	Scart-RGB(50Hz)	254	121				
50	Tint Center (CM)	Scart-RGB(60Hz)	254	120				
51	Tint Center (CM)	SD(YCbCr)(50Hz)	254	123				
52	Tint Center (CM)	SD(YCbCr)(60Hz)	254	130				
53	Tint Center (CM)	HD(YPbPr)(50/60Hz)	254	135				
54	Tint Center (CM)	DVI-PC	254	128				
55	Tint Center (CM)	DVI-STB (480i/576i/480p/576p)	254	128				
56	Tint Center (CM)	DVI-STB (1080i-50/60/720p)	254	128				
57	Tint Center (CM)	DVI-STB (VGA)	254	128				
58	Tint Center (CM)	DSUB-RGB	254	128				
59	Center of Sharpness (Y-Enhancer Gain for HV)	RF	31	10				
60	Center of Sharpness (Y-Enhancer Gain for HV)	VIDEO	31	15				
61	Center of Sharpness (Y-Enhancer Gain for HV)	Scart-RGB(50/60Hz)	31	14				
62	Center of Sharpness (Y-Enhancer Gain for HV)	480i/576i	31	10				
63	Center of Sharpness (Y-Enhancer Gain for HV)	480p/576p	31	15				
64	Center of Sharpness (Y-Enhancer Gain for HV)	720p	31	6				
65	Center of Sharpness (Y-Enhancer Gain for HV)	1080i-50/60	31	10				
66	Center of Sharpness (Y-Enhancer Gain for HV)	TEXT(for split)	31	19				
67	Center of Sharpness (Y-Enhancer Gain for HV)	DVI-STB (480i/576i)	31	14				
68	Center of Sharpness (Y-Enhancer Gain for HV)	DVI-STB (480p/576p)	31	10				
69	Center of Sharpness (Y-Enhancer Gain for HV)	DVI-STB (720p)	31	6				
70	Center of Sharpness (Y-Enhancer Gain for HV)	DVI-STB (1080i-50/60)	31	10				
71	Center of Sharpness (Y-Enhancer Gain for HV)	DVI-STB (VGA)	31	10				
72	Contrast Center (CM)	RF	254	137				
73	Contrast Center (CM)	AV1	254	137				
74	Contrast Center (CM)	AV2	254	137				
75	Contrast Center (CM)	AV3	254	137				
76	Contrast Center (CM)	AV4	254	137				
77	Contrast Center (CM)	AV5	254	137				
78	Contrast Center (CM)	DVI-PC	254	128				
79	Contrast Center (CM)	DVI-STB (With Setup)	254	149				
80	Contrast Center (CM)	DVI-STB (Without Setup)	254	128				
81	Contrast Center (CM)	DSUB-RGB	254	128				
82	Contrast Center (CM)	Expand DSUB-RGB (Reserved)	254	128				
83	Contrast Center (CM)	DSUB-COMP	254	137				
84	Maximum Value of Contrast at REAL/NORMAL mode		254	188				
85	Offset Value of Contrast data at SPLIT mode		120	53				
86	Offset value of gain for Black Stretch function	Except OFF/LOW/HIGH mode	63	32				
87	Horizontal Enhance	TEXT	3	3				
88	Vertical Enhance	TEXT	3	3				
89	Horizontal filter SW [HHPF0]	NTSC/480i	1	0				
90	(Enhancer Gain) [HHPF1]	PAL/576i	1	0				
91	[HHPF2]	480p/576p/1080i-50/60/720p	1	0				

○: shoule be adjusted
△: should be followed previous data

ADJ No.	Function		Max. Value	Default	Changed Component			
	ADJ. Items	Mode			FORMATTER PWB	VIDEO PWB	TUNER PWB	PDP PANEL
92	Horizontal Coring Level [HECOR1]	NTSC-RF	15	3				
93	(Enhancer Gain) [HECOR2]	PAL-RF/ Multi picture	15	2				
94	[HECOR3]	NTSC-VIDEO	15	1				
95	[HECOR4]	PAL-VIDEO	15	1				
96	[HECOR5']	Scart-RGB(50/60Hz)	15	15				
97	[HECOR5]	480i/576i	15	2				
98	[HECOR6]	480p/576p	15	1				
99	[HECOR7]	1080i-50/60/720p	15	1				
100	[HECORPC]	PC	15	1				
101	Vertical Coring Level [VECOR1]	NTSC-RF	15	1				
102	(Enhancer Gain) [VECOR2]	PAL-RF/ Multi picture	15	8				
103	[VECOR3]	NTSC-VIDEO	15	1				
104	[VECOR4]	PAL-VIDEO	15	1				
105	[VECOR5']	Scart-RGB(50/60Hz)	15	15				
106	[VECOR5]	480i/576i	15	0				
107	[VECOR6]	480p/576p	15	15				
108	[VECOR7]	1080i-50/60/720p	15	15				
109	[VECORPC]	PC	15	0				
110	Enhancer gain of VH for C	TEXT	31	0				
111	Coring Amplitude for Y/G [YC0R0]	NTSC/PAL-RF/ Multi picture	7	7				
112	[YC0R1]	NTSC/PAL-VIDEO	7	5				
113	[YC0R2]	480i/576i/Scart-RGB(50/60Hz)	7	4				
114	[YC0R3]	480p/576p	7	1				
115	[YC0R4]	1080i-50/60/720p	7	1				
116	[YC0R5]	NTSC/PAL S-input	7	4				
117	Coring Amplitube for B-Y/B,R-Y/R [CC0R0]	NTSC/PAL/480i/576i/ Multi picture	7	1				
118	[CC0R1]	480p/576p/1080i-50/60/720p	7	1				
119	YFRNR input Gain(Main) 2pictures [MYNRG0]	HD-except HD	7	1				
120	HD-NTSC, HD-PAL (sub) [MYNRG1]	HD-HD	7	4				
121	4pictures [MYNRG2]	NT-* /PAL-*	7	1				
122	[MYNRG3]	HD-*	7	4				
123	YFRNR input Gain(Sub) [YCNRG0]	2pictures	7	4				
124	[YCNRG1]	4pictures/12pictures	7	1				
125	CFRNR input Gain(Main) 2pictures [MCNRG0]	HD-except HD	7	3				
126	HD-NTSC, HD-PAL (SUB) [MCNRG1]	HD-HD	7	4				
127	[MCNRG2]	NT-* /PAL-*	7	4				
128	[MCNRG3]	HD-*	7	4				
129	CFRNR input Gain(Sub) [SCNRG0]	2pictures	7	3				
130	[SCNRG1]	4pictures/12pictures	7	4				
131	Vertical Enhancer Gain for Y/G [YVEG0]	NTSC/PAL(-except RF)/480i/576i	15	15				
132	[YVEG1]	480p/576p	15	4				
133	[YVEG2]	1080i-50/60/720p	15	15				
134	[YVEG3]	PAL(-RF)/ Multi picture	15	15				
135	Vertical DSB Gain for Y/G [YVDSBG0]	NTSC/PAL/480i/576i/ Multi picture	3	3				
136	[YVDSBG1]	480p/576p	3	0				
137	[YVDSBG2]	1080i-50/60/720p	3	2				
138	Vertical DSB Coring for Y/G [YVDSBC0]	NTSC/PAL/480i/576i/ Multi picture	7	7				
139	[YVDSBC1]	480p/576p/1080i-50/60/720p	7	0				
140	Vertical Enhancer Clip for Y/G 0:LTI [YVECLP0]	NTSC/PAL/480i/576i/ Multi picture	1	1				
141	[YVECLP1]	480p/576p/1080i-50/60/720p	1	0				
142	Vertical Clip Offset Level [YVECLPL0]	NTSC/PAL/480i/576i/ Multi picture	15	15				
143	[YVECLPL1]	480p/576p/1080i-50/60/720p	15	8				
144	Vertical Non Linear Peaking for Y/G [YVNLP0]	NTSC/PAL/480i/576i/ Multi picture	63	0				
145	[YVNLP1]	480p/576p/1080i-50/60/720p	63	0				
146	Horizontal Enhancer Gain for Y/R [YHEG0]	NTSC/PAL(-except RF)/480i/576i	15	15				
147	[YHEG1]	480p/576p	15	15				
148	[YHEG2]	1080i-50/60/720p-60	15	15				
149	[YHEG3]	PAL(-RF)/ Multi picture	15	15				
150	Horizontal DSB Gain for Y/R [YHDSBG0]	NTSC/PAL/480i/576i/ Multi picture	3	2				
151	[YHDSBG1]	480p/576p	3	0				
152	[YHDSBG2]	1080i-50/60/720p	3	2				
153	Horizontal DSB Coring for Y/R [YHDSBC0]	NTSC/PAL/480i/576i/ Multi picture	7	7				
154	[YHDSBC1]	480p/576p/1080i-50/60/720p	7	7				
155	Horizontal Enhancer Clip for Y/R 0:LTI [YHDSBC0]	NTSC/PAL/480i/576i/ Multi picture	1	0				
156	[YHDSBC1]	480p/576p/1080i-50/60/720p	1	0				
157	Horizontal Clip Offset Level for Y/R [YHECLPL0]	RF/ Multi picture	15	4				
158	[YHECLPL1]	NTSC/PAL-VIDEO	15	4				
159	[YHECLPL3]	480i/576i/Scart-RGB(50/60Hz)	15	10				
160	[YHECLPL2]	480p/576p/1080i-50/60/720p	15	1				
161	Horizontal Non Linear Peaking for Y/G [YHNLP0]	NTSC/PAL/480i/576i/ Multi picture	63	0				
162	[YHNLP1]	480p/576p/1080i-50/60/720p	63	0				
163	Horizontal HPF Peak Freq. SW for Y/R [YHHPF0]	NTSC/PAL/480i/576i/ Multi picture	3	2				
164	[YHHPF1]	480p/576p	3	2				
165	[YHHPF2]	1080i-50/60/720p	3	2				
166	Initial value of Contrast	Extend 1 of Panel Life function	127	93				
167	Interval time of correction time	Extend 1 of Panel Life function	127	10				
168	Additional value of Contrast	Extend 1 of Panel Life function	127	1				
169	Initial value of Contrast	Extend 2 of Panel Life function	127	63				
170	Interval time of correction time	Extend 2 of Panel Life function	127	6				
171	Additional value of Contrast	Extend 2 of Panel Life function	127	1				
172	Menu Init. Contrast (-31[0] ~ +40[71])	For Dynamic	71	62				
173	Menu Init. Contrast (-31[0] ~ +40[71])	For Natural	71	62				
174	Menu Init. Contrast (-31[0] ~ +40[71])	For Cinema	71	51				
175	Menu Init. Brightness (-31[0] ~ +31[62])	For Dynamic	62	31				
176	Menu Init. Brightness (-31[0] ~ +31[62])	For Natural	62	31				
177	Menu Init. Brightness (-31[0] ~ +31[62])	For Cinema	62	33				
178	Menu Init. Color (-31[0] ~ +31[62])	For Dynamic	62	36				
179	Menu Init. Color (-31[0] ~ +31[62])	For Natural	62	31				
180	Menu Init. Color (-31[0] ~ +31[62])	For Cinema	62	21				
181	Menu Init. Sharpness (-15[0] ~ +15[30])	For Dynamic	30	20				
182	Menu Init. Sharpness (-15[0] ~ +15[30])	For Natural	30	15				
183	Menu Init. Sharpness (-15[0] ~ +15[30])	For Cinema	30	10				

○: shoule be adjusted
△: should be followed previous data

ADJ No.	Function		Max. Value	Default	Changed Component			
	ADJ. Items	Mode			FORMATTER PWB	VIDEO PWB	TUNER PWB	PDP PANEL
184	Menu Init. Color Temp.(Cool[0]/Normal[1]/Warm[2]/B&W[3])	For Dynamic	3	0				
185	Menu Init. Color Temp.(Cool[0]/Normal[1]/Warm[2]/B&W[3])	For Natural	3	1				
186	Menu Init. Color Temp.(Cool[0]/Normal[1]/Warm[2]/B&W[3])	For Cinema	3	2				
187	Menu Init. Black stretch (Off[0]/Low[1]/Mid.[2]/High[3])	For Dynamic	3	2				
188	Menu Init. Black stretch (Off[0]/Low[1]/Mid.[2]/High[3])	For Natural	3	1				
189	Menu Init. Black stretch (Off[0]/Low[1]/Mid.[2]/High[3])	For Cinema	3	0				
190	Menu Init. YNR (Off[0]/Low[1]/High[2])	For Dynamic	2	0				
191	Menu Init. YNR (Off[0]/Low[1]/High[2])	For Natural	2	0				
192	Menu Init. YNR (Off[0]/Low[1]/High[2])	For Cinema	2	0				
193	Menu Init. LTI (Off[0]/Low[1]/Mid.[2]/High[3])	For Dynamic	3	2				
194	Menu Init. LTI (Off[0]/Low[1]/Mid.[2]/High[3])	For Natural	3	1				
195	Menu Init. LTI (Off[0]/Low[1]/Mid.[2]/High[3])	For Cinema	3	0				
196	Center of Sharpness (HV Enhancer Gain for Y)	HDMI (480i/576i)	31	10				
197	Center of Sharpness (HV Enhancer Gain for Y)	HDMI (480p/576p)	31	10				
198	Center of Sharpness (HV Enhancer Gain for Y)	HDMI (720p)	31	6				
199	Center of Sharpness (HV Enhancer Gain for Y)	HDMI (1080i-50/60)	31	6				
200	Center of Sharpness (HV Enhancer Gain for Y)	HDMI (VGA)	31	10				
201	Color Center (CM)	HDMI-YCbCr(50Hz:576i/576p)	127	65				
202	Color Center (CM)	HDMI-YCbCr(60Hz:480i/480p)	127	65				
203	Color Center (CM)	HDMI-YPbPr(1080i-50/60/720p)	127	65				
204	Tint Center (CM)	HDMI-YCbCr(50Hz:576i/576p)	254	126				
205	Tint Center (CM)	HDMI-YCbCr(60Hz:480i/480p)	254	126				
206	Tint Center (CM)	HDMI-YPbPr(1080i-50/60/720p)	254	126				
207	Sharpness Gain(RF) BG/DK/I	Main	15	8				
208	Sharpness Gain(RF) M	Main	15	8				
209	Sharpness Gain(RF) L	Main	15	8				
210	Sharpness Gain(RF) L'	Main	15	8				
211	Sharpness Gain(VIDEO) PAL	Main	15	10				
212	Sharpness Gain(VIDEO) NTSC3.58	Main	15	10				
213	Sharpness Gain(VIDEO) SECAM,B/W	Main	15	8				
214	Sharpness Gain(VIDEO) NTSC4.43	Main	15	8				
215	Sharpness Gain(VIDEO) N-PAL	Main	15	8				
216	Sharpness Gain(VIDEO) M-PAL	Main	15	8				
217	Sharpness Gain(S.VIDEO)	Main	15	7				
218	Horizontal HPF Peak Frequency	720p-50	15	5				

● Factory Reset

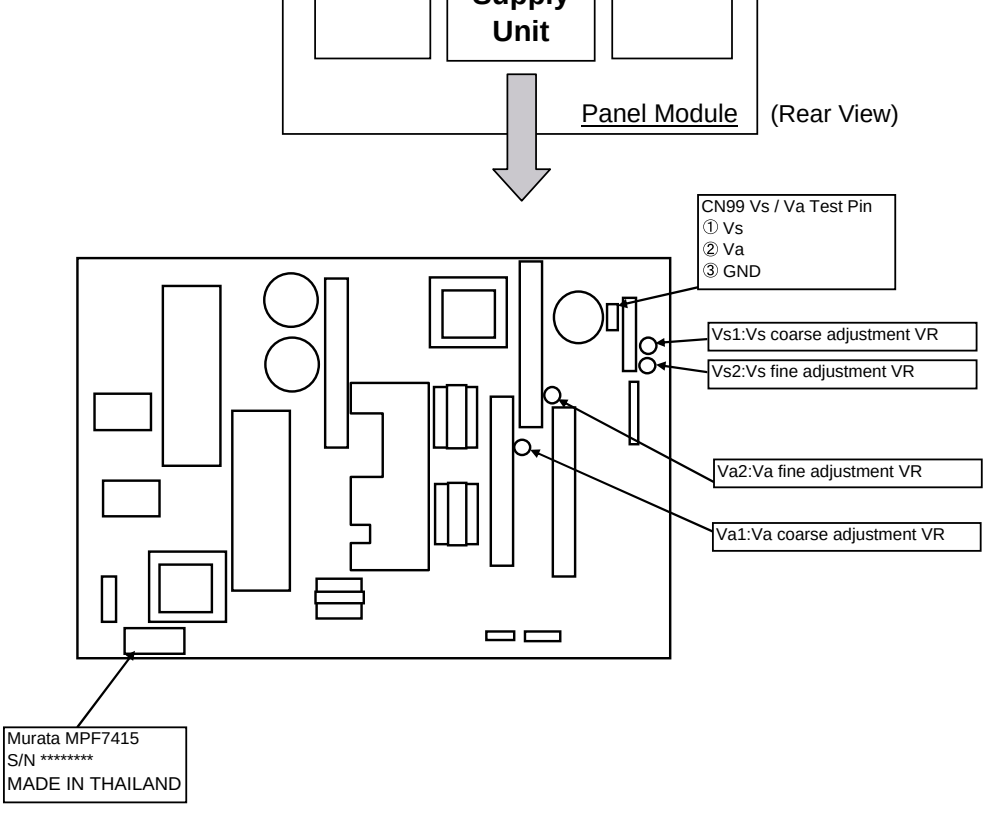
After all of the adjustments of main chassis are finished, perform FACTORY RESET.

Press the SUB-POWER(⏻) button, INPUT SELECT(⮆) button and ▲ button at the same time, and hold for more than 5 seconds.

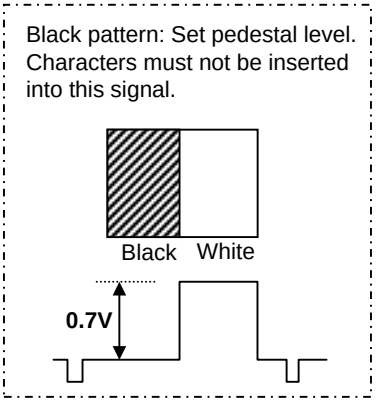
The unit is set to factory settings.

Item	Power Unit Vs, Va Adjustment
Applicable Model	All models

Preparation		Procedure	
(1)	Turn on the set and perform pre-heat run more than 1 min on burn-in screen.	(1)	Turn Vs ADJ to adjust Vs voltage to be within ±0.1V of the value specified in the label on the panel. ① Adjust within ± 1V at Vs1 ② Adjust within ± 0.1V at Vs2
(2)	Receive full back pattern signal (or Video silence signal; but it will be automatically turned off after a few seconds by power save function.)	(2)	Turn Va ADJ to adjust Va voltage to be within ±0.2V of the value specified in the label on the panel. ① Adjust within ± 1V at Va1 ② Adjust within ± 0.2V at Va2
(3)	Connect voltmeter leads to Vs (or Va) and GND test points of the power unit.	(3)	Reconfirm that Vs voltage remains within ±0.1V of the specified value. Readjust if itís outside of the margin. Label example <LOT>N6 Vs= 80.0V Va=60.0V Vw=140.0V Vx=60.0V

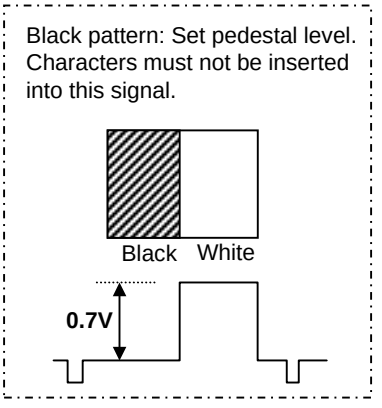


Item	RGB Amplitude Adjustment (PC D-Sub input)
Applicable Model	All models

Preparation		Procedure	
(1)	Input RGB amplitude adjustment signal of VGA (60Hz) into RGB2 [D-sub] terminal. 	(1) (2)	Receive PC signal (VGA [60Hz]), and indicate Service Adjustment Menu.(Main) Select No.652 of Service Adjustment Menu. Press [OK] key more than 2 seconds to start the automatic adjustment. The adjustment completes when the OSD reappears.

[Note] Never adjust without use of the specified signal.
If that were done by mistake, the picture would become abnormal in black level, contrast and color.
In this case, it will be recovered by re-adjustment in the specified way.

Item	RGB Amplitude Adjustment (Main/Sub)
Applicable Model	All models

Preparation		Procedure	
(1)	Input 576p or 480p adjustment signal into AV4 terminal. 	(1) (2) (3)	Receive 576p or 480p adjustment signal on AV4 terminal input. Indicate Service Adjustment Menu. Select No.652 (RGB amplitude gain adjustment Main) of Service Adjustment Menu. Press [OK] key more than 2 seconds to start the automatic adjustment. The adjustment completes when the indication [Auto Mode] at the bottom of the screen disappears. Select No.653 (RGB amplitude gain adjustment Sub) of Service Adjustment Menu. Press [OK] key more than 2 seconds to start the automatic adjustment. The adjustment completes when the indication [Auto Mode] at the bottom of the screen disappears.

[Note] Never adjust without use of the specified signal.
If that were done by mistake, the picture would become abnormal in black level, contrast and color.
In this case, it will be recovered by re-adjustment in the specified way.

Item	Video Color Temperature Adjustment (Cool)
Applicable Model	All models

Adjustment Preparations		Adjustment Procedures	
(1)	Set the signal generator output as All White.	(1)	Perform the following adjustment with the remote control
(2)	Component signal (480i) Video level : 0.700Vp-p Sync level : 0.300Vp-p Setup level : 0V	(2)	Set the CRT color analyzer (CA100) at the center of the panel.
(3)	Picture Menu is set as [RESET].	(3)	Ensure that the service adjustment menu (sub menu) No. 0, 1, 2, are all set as 255.
(4)	Confirm that the mode is set as Factory Adjustment mode.	(4)	After receiving the video signal, step down the two (or one) among adjustment No. 0, 1, 2 and adjust the values as shown below. Note) At least one of the data shoud be 255. Specification Video color temperature (Cool) x=0.258±0.005 y=0.273±0.005

Item	Video Color Temperature Adjustment (Normal)
Applicable Model	All models

Preparation		Procedure	
(1)	Set signal generator output as All White (Window ratio: 100%).	(1)	Perform the following adjustment with the remote control.
(2)	Component signal (480i) Video level : 0.700Vp-p Sync level : 0.300Vp-p Setup level : 0V	(2)	Set the CRT Color Analyzer (CA-100) at the center of the panel.
(3)	Check that Picture Menu is set as [RESET] mode.	(3)	Ensure that service adjustment menu (sub) No. 3, 4, 5 are all set as 255.
(4)	Set into Factory Adjustment mode.	(4)	After receiving the video signal, step down the two (or one) among adjustment No. 3, 4, 5 and adjust the values as shown below. (Note) At least one of the data should be 255. <Specification> Video color Color temperature (Normal) x=0.285±0.005 y=0.293±0.005

Item	Video Color Temperature Adjustment (Warm)
Applicable Model	All models

Preparation		Procedure	
(1)	Set signal generator output as All White (Window ratio: 100%).	(1)	Perform the following adjustment with the remote control.
(2)	Component signal (480i) Video level : 0.700Vp-p Sync level : 0.300Vp-p Setup level : 0V	(2)	Set the CRT Color Analyzer (CA100) at the center of the panel.
(3)	Check that Picture Menu is set as [RESET] mode.	(3)	Ensure that service adjustment menu (submenu) No. 6, 7, 8 are all set as 255.
(4)	Set into Factory Adjustment mode.	(4)	After receiving the video signal, step down the two (or one) among adjustment No. 6, 7, 8 and adjust the values as shown below. (Note) At least one of the data should be 255. <Specification> Video color Color temperature (Warm) x=0.314±0.005 y=0.327±0.005

Item	Video Color Temperature Adjustment (B&W)
Applicable Model	All models

Preparation		Procedure	
(1)	Set signal generator output as All White (Window ratio: 100%).	(1)	Perform the following adjustment with the remote control.
(2)	Component signal (480i) Video level : 0.700Vp-p Sync level : 0.300Vp-p Setup level : 0V	(2)	Set the CRT Color Analyzer (CA-100) at the center of the panel.
(3)	Check that Picture Menu is set as [RESET] mode.	(3)	Ensure that service adjustment menu (sub menu) No. 9, 10, 11 are all set as 255.
(4)	Set into Factory Adjustment mode.	(4)	After receiving the video signal, step down the two (or one) among adjustment No. 9, 10, 11 and adjust the values as shown below. (Note) At least one of the data should be 255. <Specification> Video color Color temperature (B&W) x=0.335±0.005 y=0.343±0.005

Item	PC Color Temperature Adjustment
Applicable Model	All models

Preparations		Procedures	
(1)	Perform after the video color temperature adjustment.	(1)	Perform the following adjustment with the remote control
(2)	Set into Factory Adjustmentmode.	(2)	Write the results of the video color temp.adjustment (Dynamic/Normal/Warm/B&W) No. 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23 data into Adjustment No. 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 data. * at service Adjustment sub menu. Ex.) Video adjustment → PC adjustment No.0 data → No.12 data No.1 data → No.13 data No.2 data → No.14 data ⋮ ⋮

■ *Troubleshooting*

● How to get to Burn-in mode

This mode displays the test patterns of some single color raster in turn. These signals are from built-in generator of PDP panel. So it can be presumed that maybe the panel has some trouble when the screen of Burn-in mode is abnormal.

Using the front control buttons with the set turned off (standby) can activate this mode.

Press the SUB-POWER(⏻) button, INPUT SELECT(⮌) button and VOLUME DOWN(−) button at the same time, and hold for more than 5 seconds.

The set turns on with single color raster and the OSD of [BURN IN: ON].

To escape from this mode, press the SUB-POWER(⏻) button, INPUT SELECT(⮌) button and ▲ button at the same time, and hold for more than 5 seconds. Burn-in mode will be released.

● How to recover the remote and front key function

If remote and front key cannot operate after miss set special function by front keys, these functions can recover by below method.

Press the SUB-POWER(⏻) button, INPUT SELECT(⮌) button and ▼ button at the same time, and hold for more than 5 seconds.

The set turns on the service menu mode.

Select No.535 and data set from [0] to [1], and select No.536 and data set from (0) to (1).

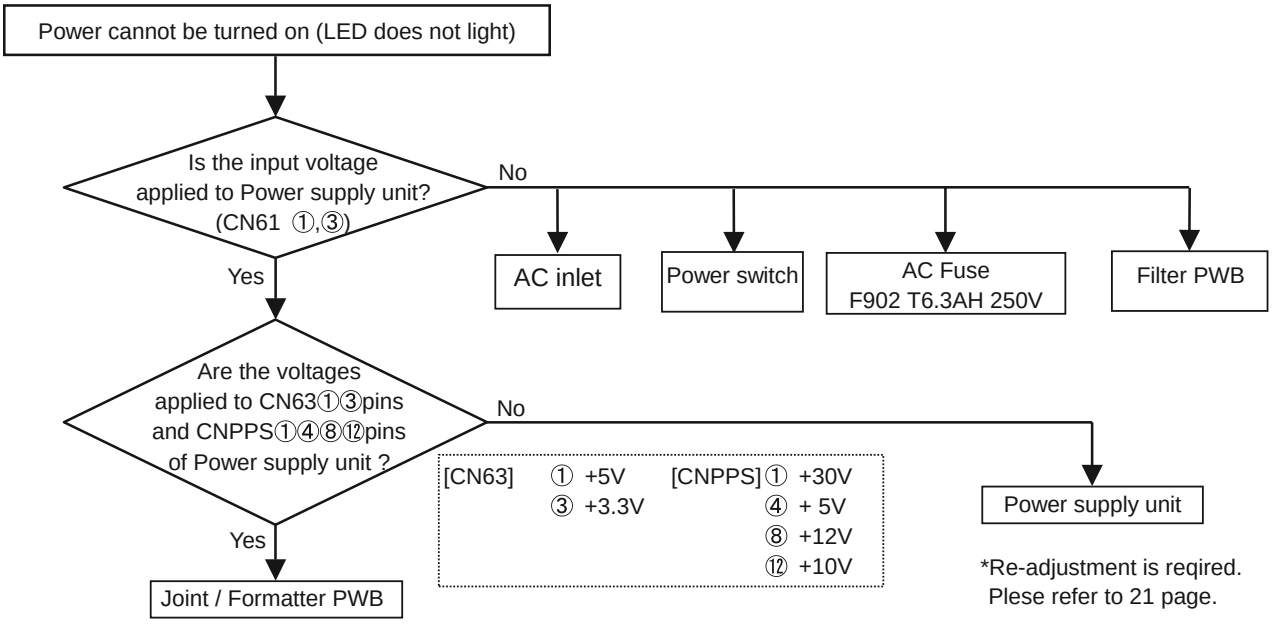
Or

Press the SUB-POWER(⏻) button and ▼ button at the same time, and hold for more than 5 seconds.

● How to check method of the use accumulation time for panel.

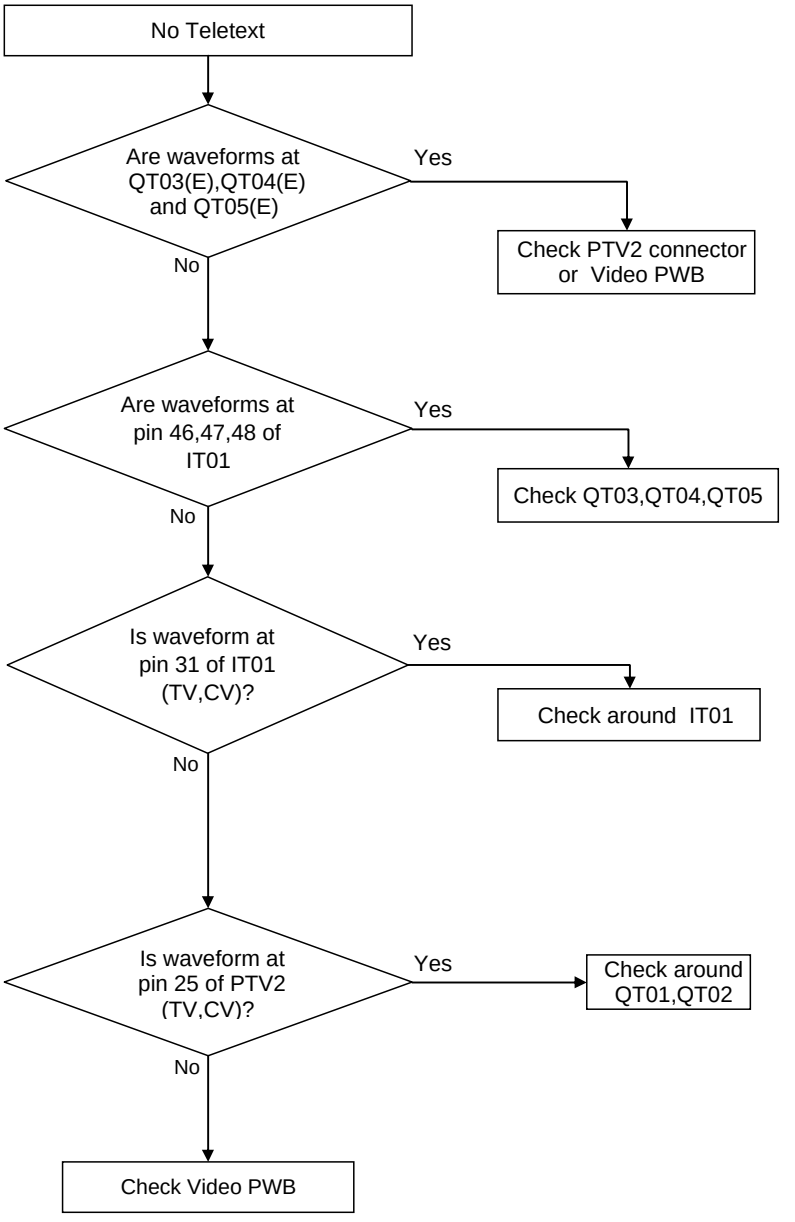
Select No.518 of Service Adjustment Menu.

Power


Power cannot be turned on (LED does not light)
Is the input voltage applied to Power supply unit? (CN61 ①,③)
No
AC inlet
Power switch
AC Fuse F902 T6.3AH 250V
Filter PWB
Yes
Are the voltages applied to CN63①③pins and CNPPS①④⑧⑫pins of Power supply unit ?
No
[CN63] ① +5V ③ +3.3V
[CNPPS] ① +30V ④ + 5V ⑧ +12V ⑫ +10V
Power supply unit
*Re-adjustment is reqired. Plese refer to 21 page.
Yes
Joint / Formatter PWB

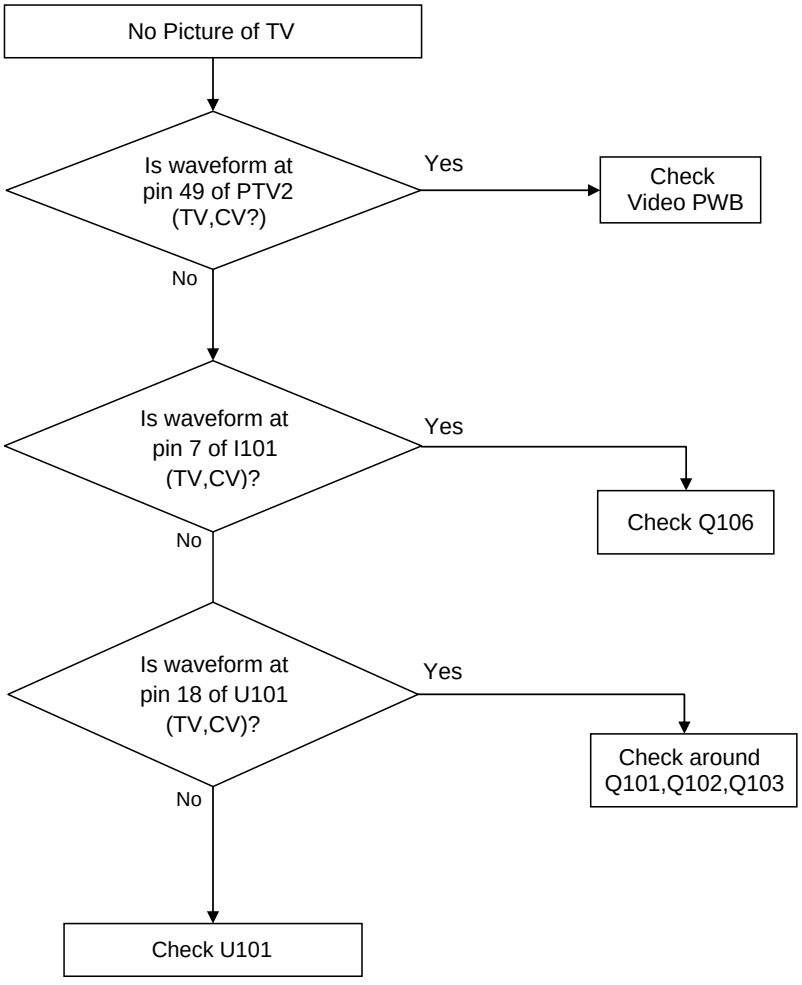
Teletext

[Tuner PWB Circuit]



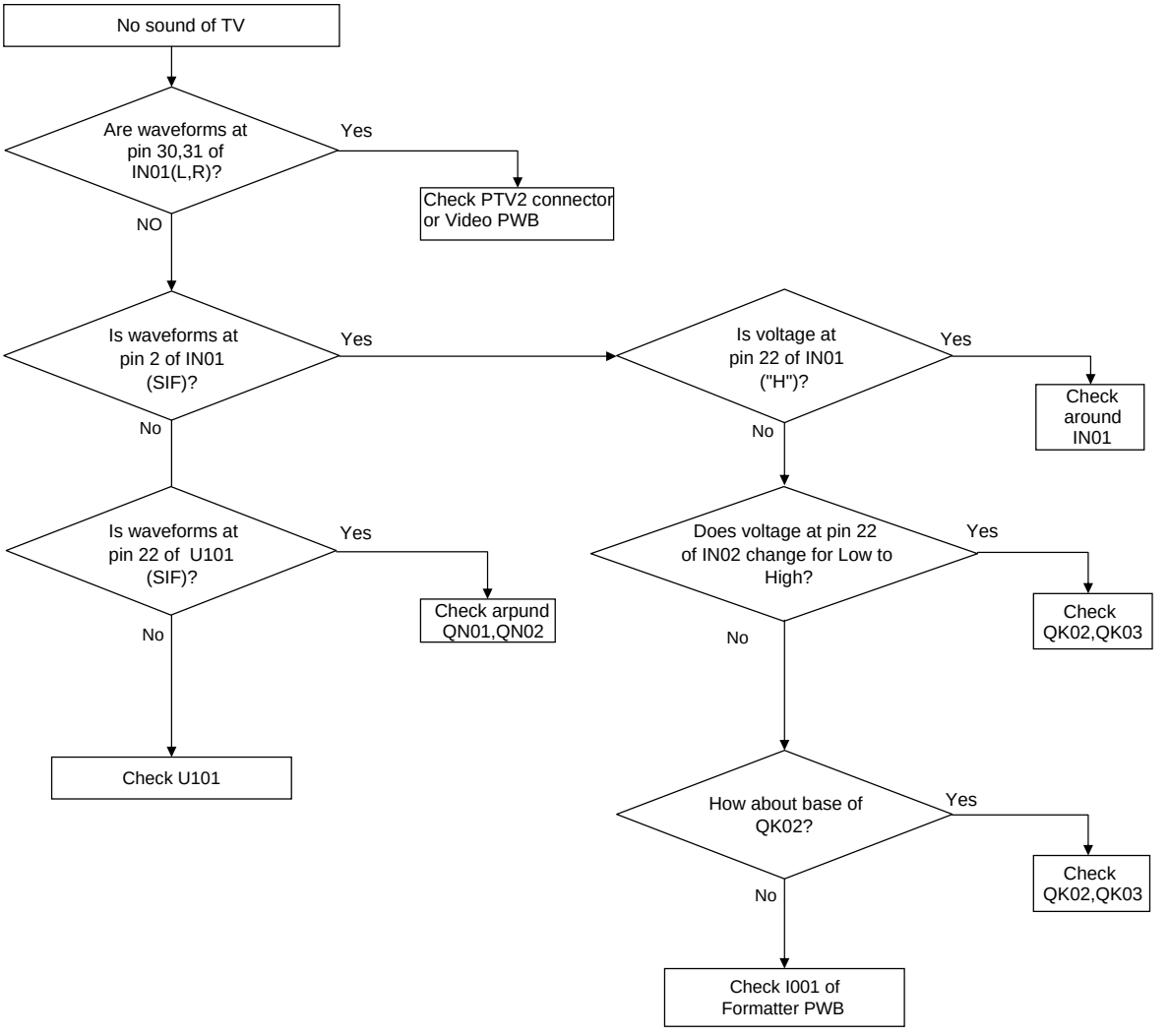
TV Signal

[Tuner PWB Circuit]



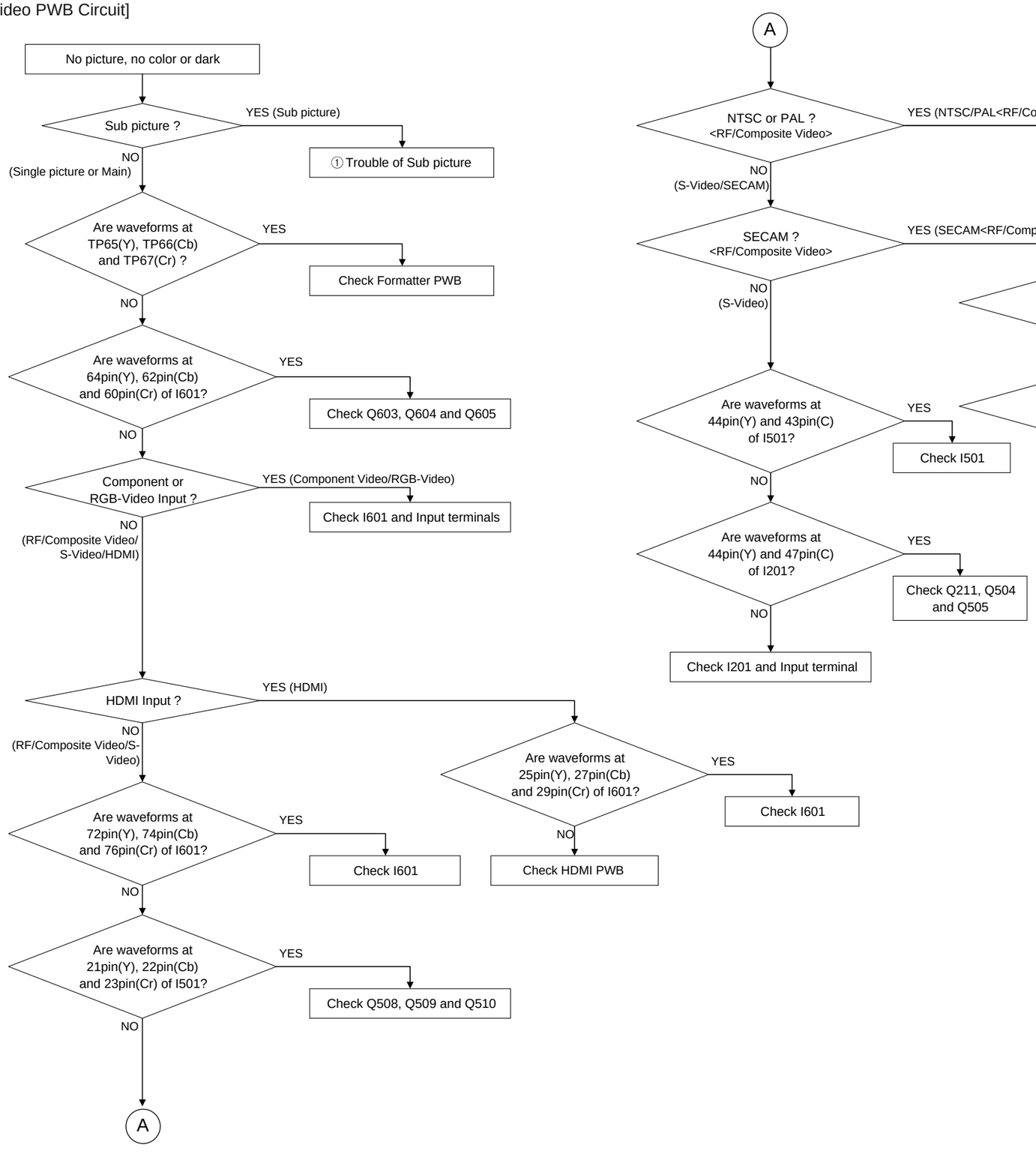
TV Sound

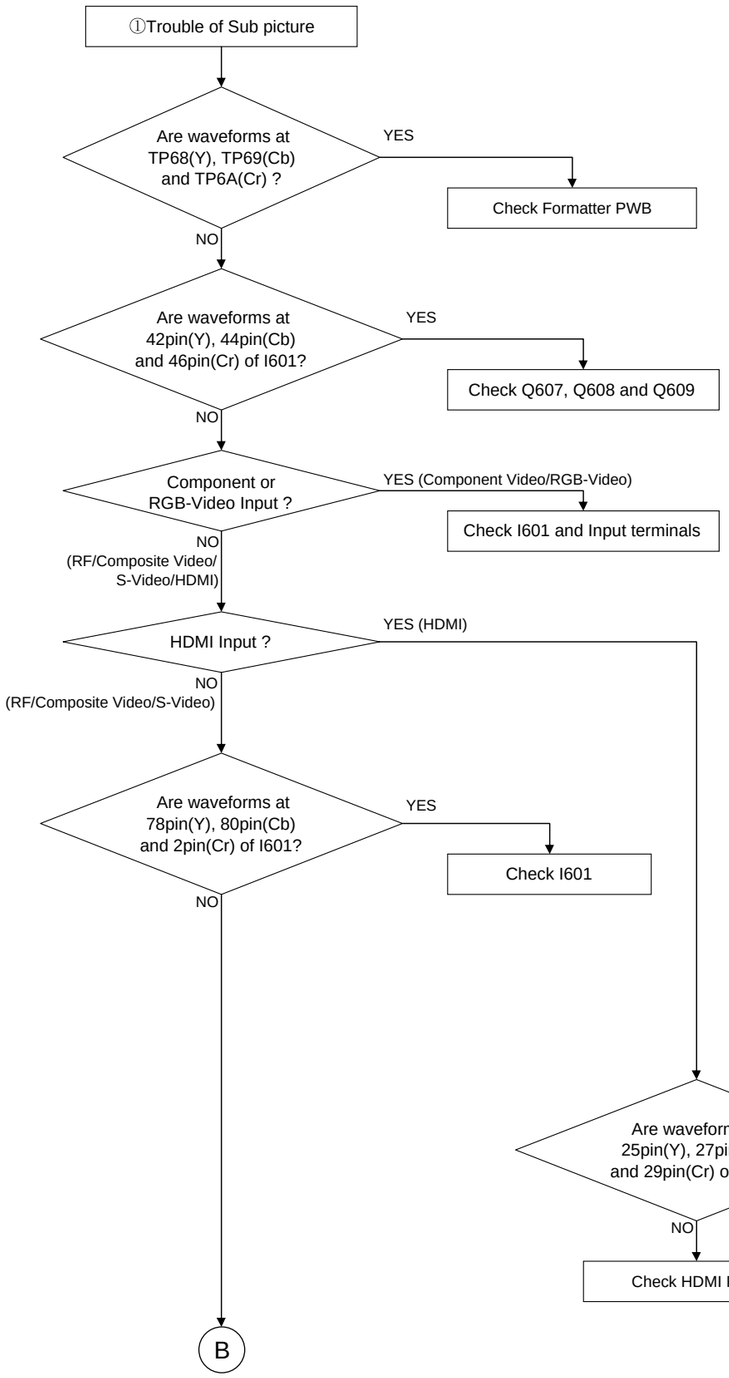
[Tuner PWB Circuit]

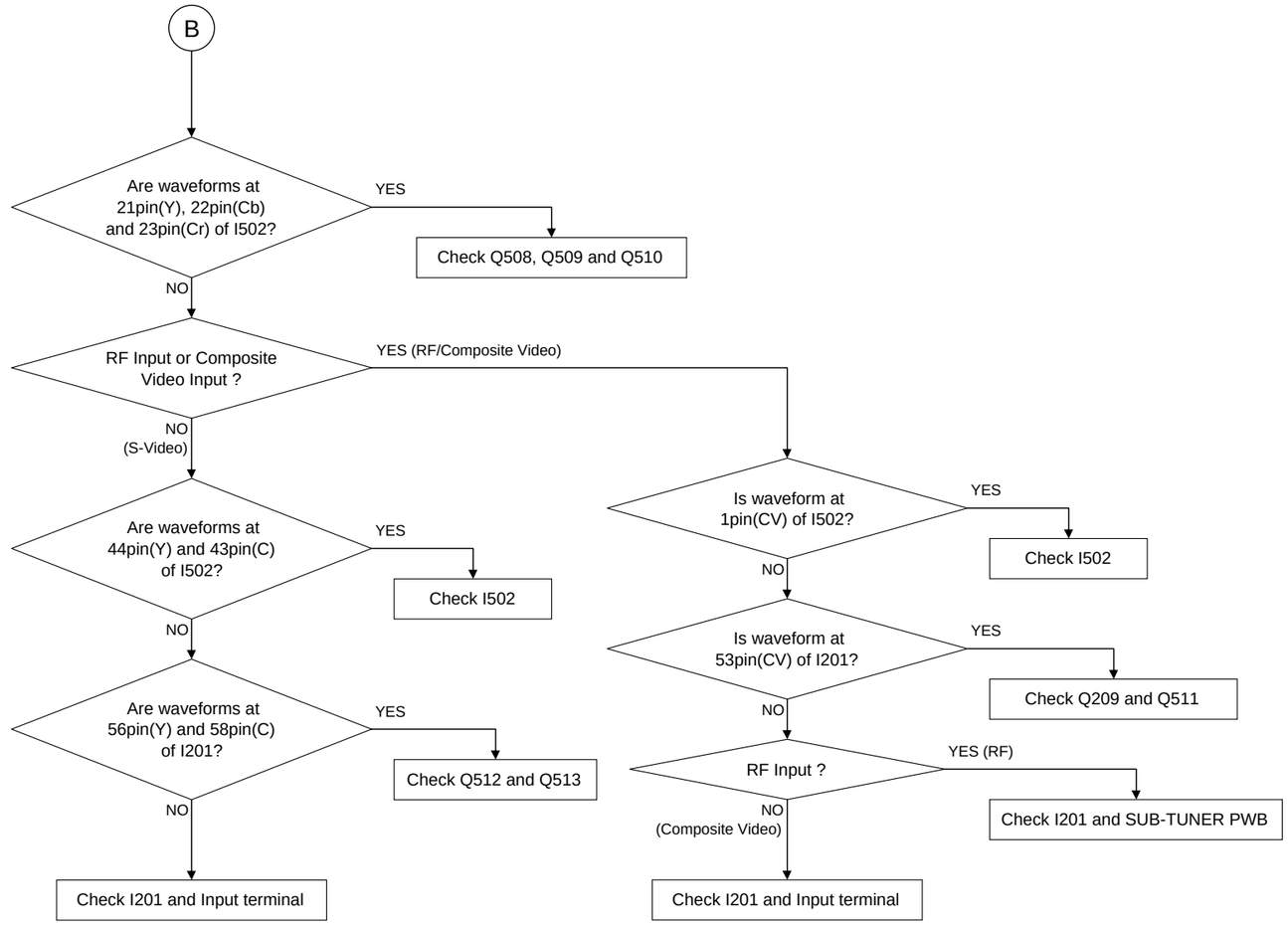


Picture

[Video PWB Circuit]

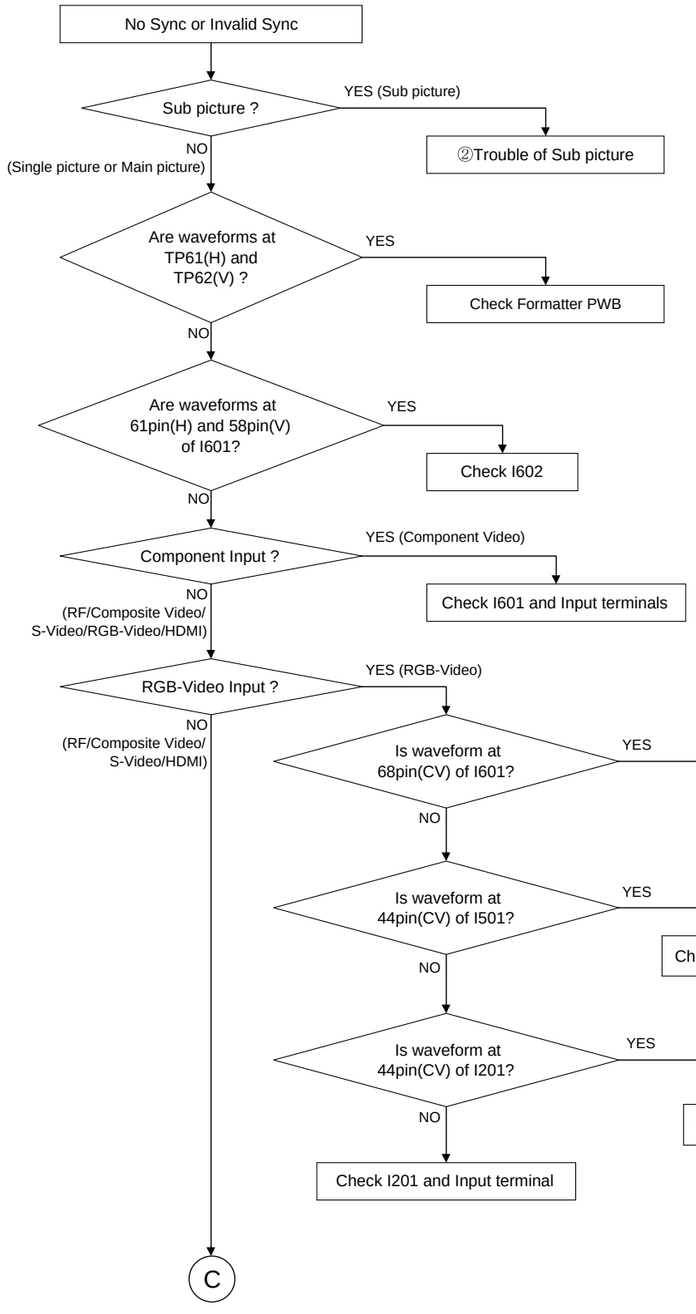


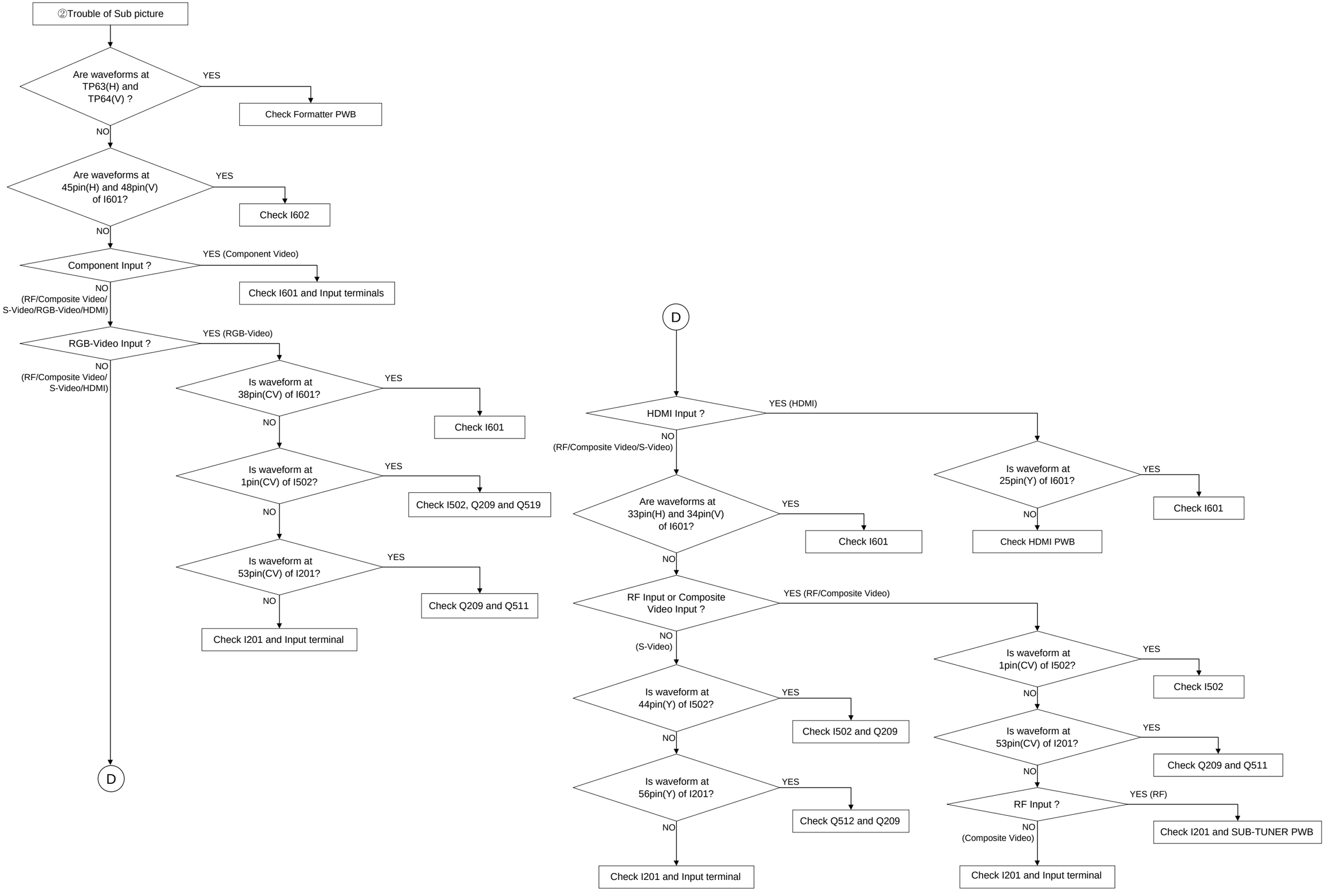

①Trouble of Sub picture
Are waveforms at TP68(Y), TP69(Cb) and TP6A(Cr) ?
YES
Check Formatter PWB
NO
Are waveforms at 42pin(Y), 44pin(Cb) and 46pin(Cr) of I601?
YES
Check Q607, Q608 and Q609
NO
Component or RGB-Video Input ?
YES (Component Video/RGB-Video)
Check I601 and Input terminals
NO (RF/Composite Video/ S-Video/HDMI)
HDMI Input ?
YES (HDMI)
NO (RF/Composite Video/S-Video)
Are waveforms at 78pin(Y), 80pin(Cb) and 2pin(Cr) of I601?
YES
Check I601
NO
B
Are waveforms at 25pin(Y), 27pin(Cb) and 29pin(Cr) of I601?
YES
Check I601
NO
Check HDMI PWB


B
Are waveforms at 21pin(Y), 22pin(Cb) and 23pin(Cr) of I502?
YES
Check Q508, Q509 and Q510
NO
RF Input or Composite Video Input ?
YES (RF/Composite Video)
NO (S-Video)
Are waveforms at 44pin(Y) and 43pin(C) of I502?
YES
Check I502
NO
Are waveforms at 56pin(Y) and 58pin(C) of I201?
YES
Check Q512 and Q513
NO
Check I201 and Input terminal
Is waveform at 1pin(CV) of I502?
YES
Check I502
NO
Is waveform at 53pin(CV) of I201?
YES
Check Q209 and Q511
NO
RF Input ?
YES (RF)
Check I201 and SUB-TUNER PWB
NO (Composite Video)
Check I201 and Input terminal

Synchronization

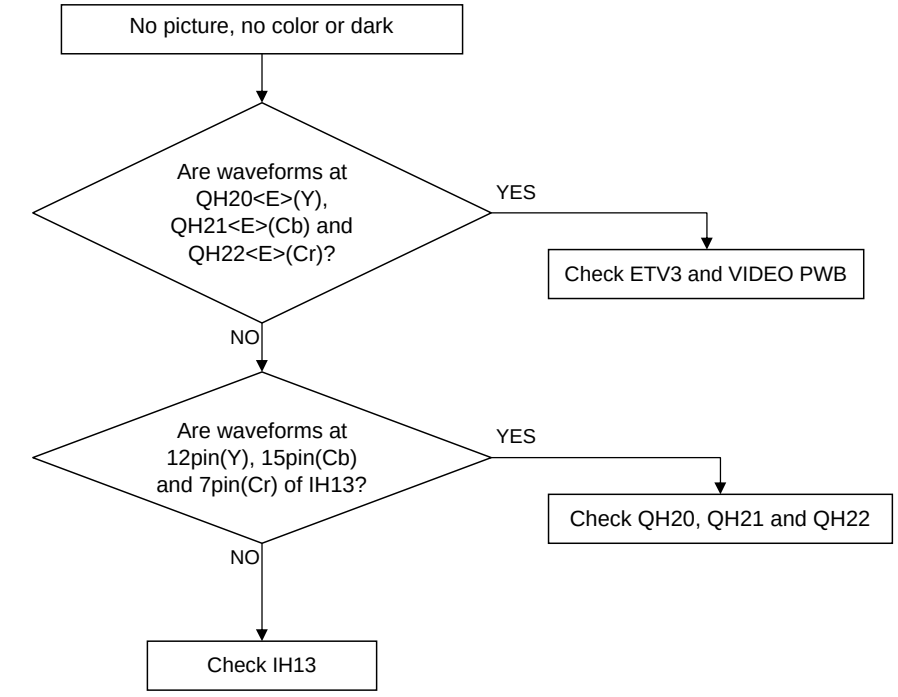
[Video PWB Circuit]

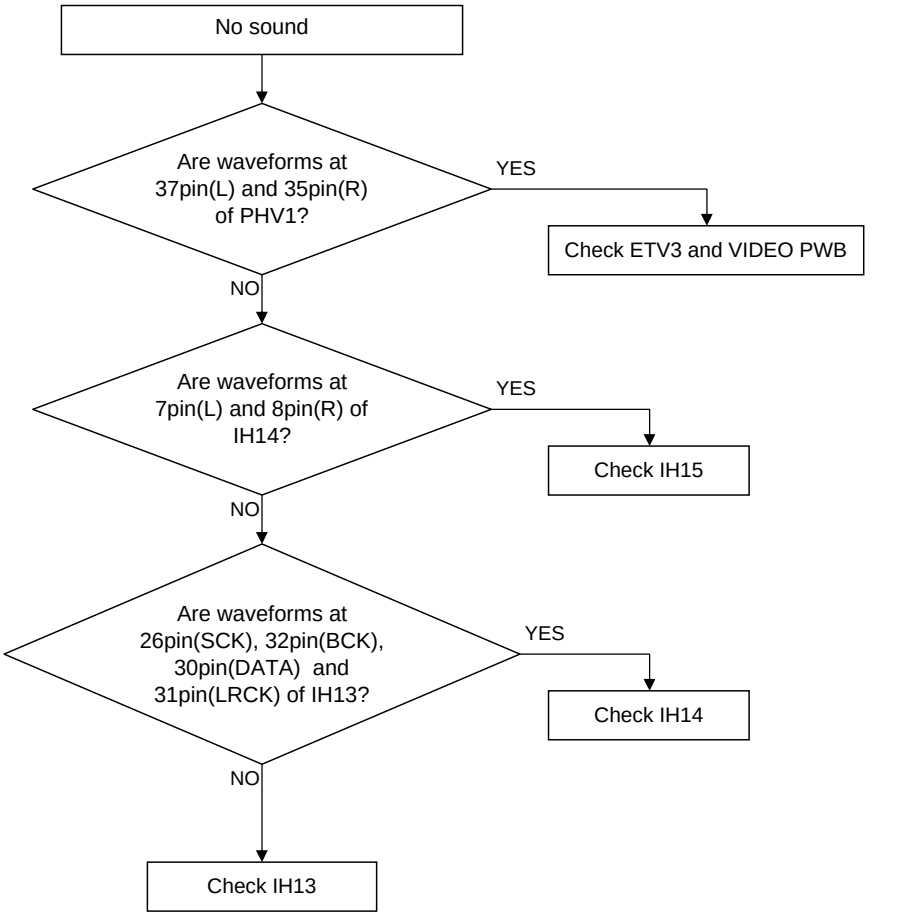



②Trouble of Sub picture
Are waveforms at TP63(H) and TP64(V) ?
YES
Check Formatter PWB
NO
Are waveforms at 45pin(H) and 48pin(V) of I601?
YES
Check I602
NO
Component Input ?
YES (Component Video)
Check I601 and Input terminals
NO (RF/Composite Video/ S-Video/RGB-Video/HDMI)
RGB-Video Input ?
YES (RGB-Video)
NO (RF/Composite Video/ S-Video/HDMI)
Is waveform at 38pin(CV) of I601?
YES
Check I601
NO
Is waveform at 1pin(CV) of I502?
YES
Check I502, Q209 and Q519
NO
Is waveform at 53pin(CV) of I201?
YES
Check Q209 and Q511
NO
Check I201 and Input terminal
D
D
HDMI Input ?
YES (HDMI)
NO (RF/Composite Video/S-Video)
Are waveforms at 33pin(H) and 34pin(V) of I601?
YES
Check I601
NO
RF Input or Composite Video Input ?
YES (RF/Composite Video)
NO (S-Video)
Is waveform at 44pin(Y) of I502?
YES
Check I502 and Q209
NO
Is waveform at 56pin(Y) of I201?
YES
Check Q512 and Q209
NO
Check I201 and Input terminal
Is waveform at 25pin(Y) of I601?
YES
Check I601
NO
Check HDMI PWB
Is waveform at 1pin(CV) of I502?
YES
Check I502
NO
Is waveform at 53pin(CV) of I201?
YES
Check Q209 and Q511
NO
RF Input ?
YES (RF)
Check I201 and SUB-TUNER PWB
NO (Composite Video)
Check I201 and Input terminal

HDMI

[HDMI PWB Circuit]





■ *Self-Diagnosis Function*

This chassis has 2 modes of self-diagnosis function.

(1) PDP panel check mode: It indicates the one latest record of the PDP panel failure with blinking of the power indication light (LED).

(2) Signal circuit check mode: It indicates the check result on some points of the signal circuit and the history of them with On-Screen Display (OSD).

● PDP panel self-diagnosis function

This function is for a PDP panel failure with no picture.

To enter to this Self-Diagnosis mode, follow the next steps:

Preparation:

1) The Power Cord should be connected to AC line and the Main Power switch should be turned on.

2) Turn the power off by the SUB-POWER(⏻) button of the monitor or the remote control.

Procedure:

1) Press the SUB-POWER(⏻) button and ▼ button on the bottom of the monitor at the same time, and keep it for more than 5 seconds after the power turned on.

2) It generates red blinking series of the power indicator light.

3) Any operation would cancel the Self -Diagnosis mode.

4) The next table shows the PDP PWB in which failure most probably would be allocated according to the number of blinks.

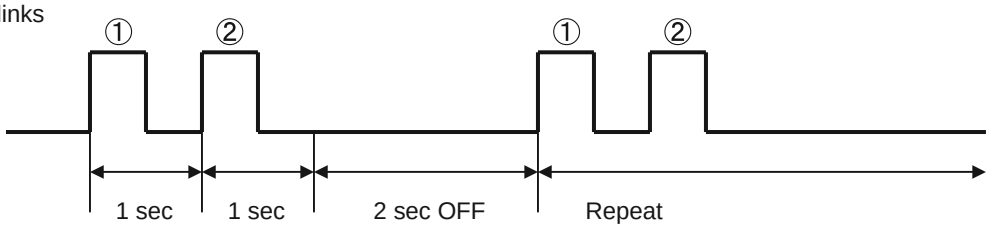
Number of red blinks of power indication light	Presumed failing PWB of PDP panel
1	Logic
2	X-SUS
3	Y-SUS, SDM
4	X-SUS, Y-SUS, SDM, PSU
5	ABUS, ADM, PSU
6	ADM temperature
7	ADM temperature
8	All of above-mentioned PWB's

SDM: Scan Driver Module
PSU: Power Supply Unit
ADM: Address Driver Module

Note) SDM is permanently contacted to glass part

[Blinking condition of power indication light]

Ex. 2 blinks



● Signal circuit self-diagnosis function

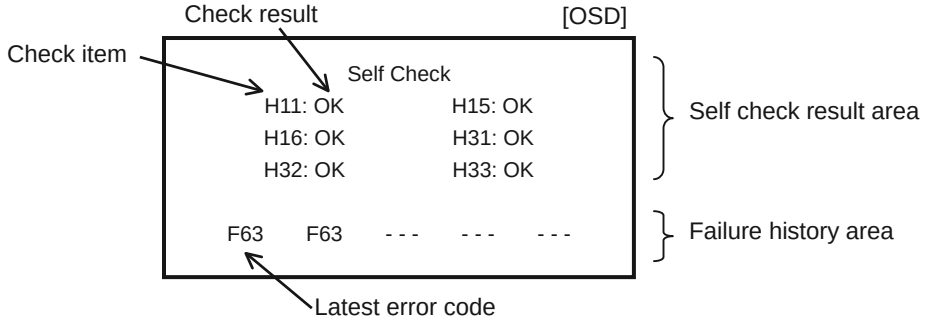
This function is for the failure of the signal circuit, for example the phenomenon as below:
"Sometimes power turns off abnormally." "Sometimes picture disappears abnormally."
To enter to this Self-Diagnosis mode, follow the next steps:

Preparation:

1) The Power Cord should be connected to AC line and the Main Power switch should be turned on.
2) Turn the power off by the SUB-POWER(⏻) button of the monitor or the remote control.

Procedure:

1) Press the SUB-POWER(⏻) button and ▲ button on the bottom of the monitor at the same time, and keep it for more than 5 seconds after the power turned on.
2) The monitor will be turned on, and it will display On-Screen Display of the Self-check result and the failure history as below.
3) Any operation would cancel the Self -Diagnosis mode.
4) The following table shows the OSD symbols and contents of failure PWB in which failure most probably would be allocated according to the number of blinks.

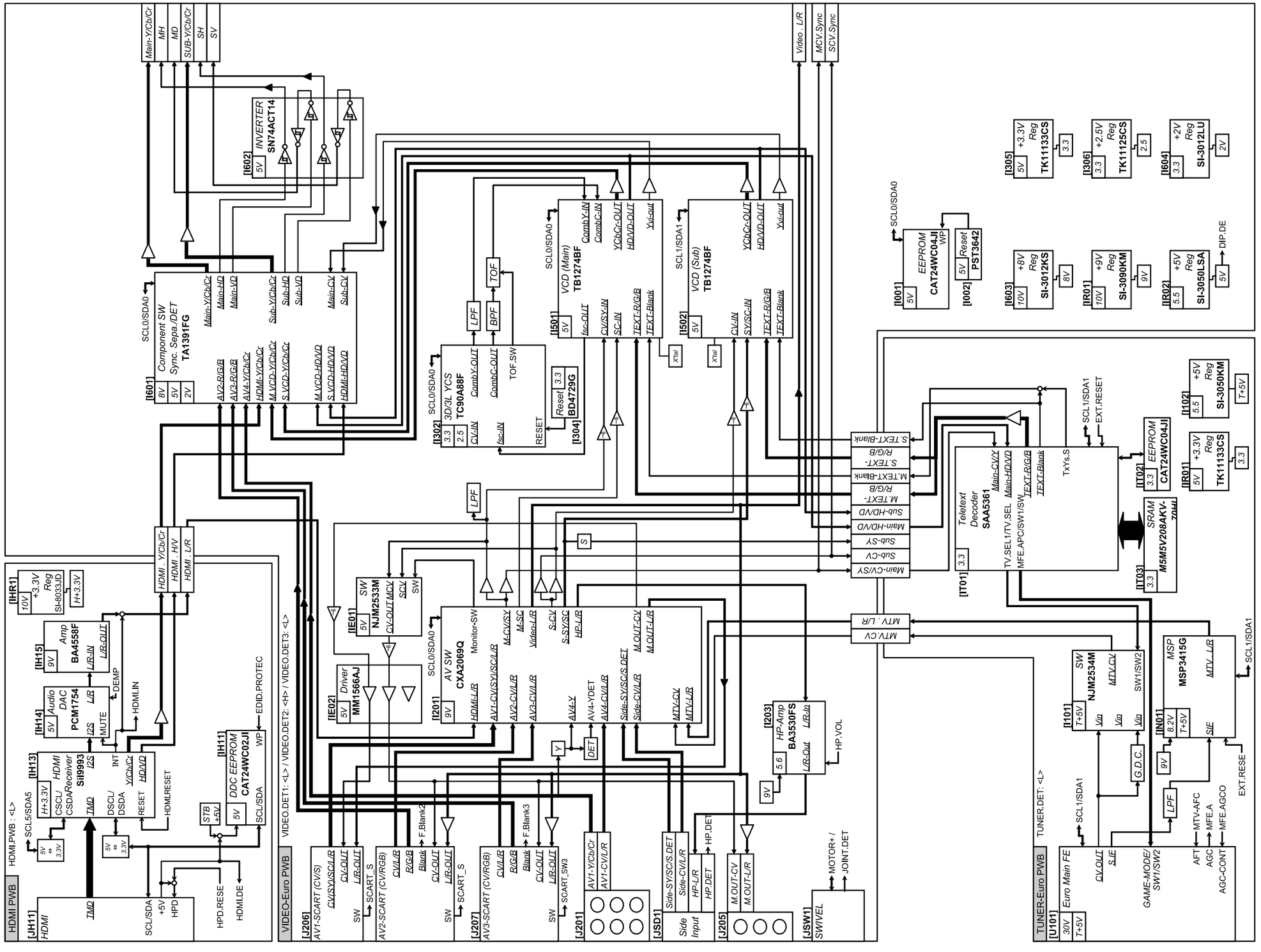


Code	stored up in failure history	Self checking item	Problem	Phenomenon	Cause
C10	–	–	No sync. (Snow noise)	OSD of " ! Check Antenna " appears.	No connection of ANT cable Preset tuning is not yet
H11	–	○	Tuner problem	Cannot receive the main signal from antenna	Communication error of U101
H15	–	○	Composite video SW IC problem	Cannot receive picture and audio Cannot change input mode	Communication error of I201
H16	–	○	Component video SW IC problem	No component picture Cannot change input mode	Communication error of I202
H31	–	○	Color demodulator IC problem	Abnormal color Dark picture	Communication error of I501
H32	–	○	Sync. separator IC problem	Unsynchronized picture	Communication error of I601
H33	–	○	3D Y/C separator IC problem	Abnormal color Dark picture / No picture	Communication error of I302
F63	○	–	I^2C-bus latch problem	Cannot store setting data (Ex. Channel, Volume etc.)	SCL3/SDA3 latched up

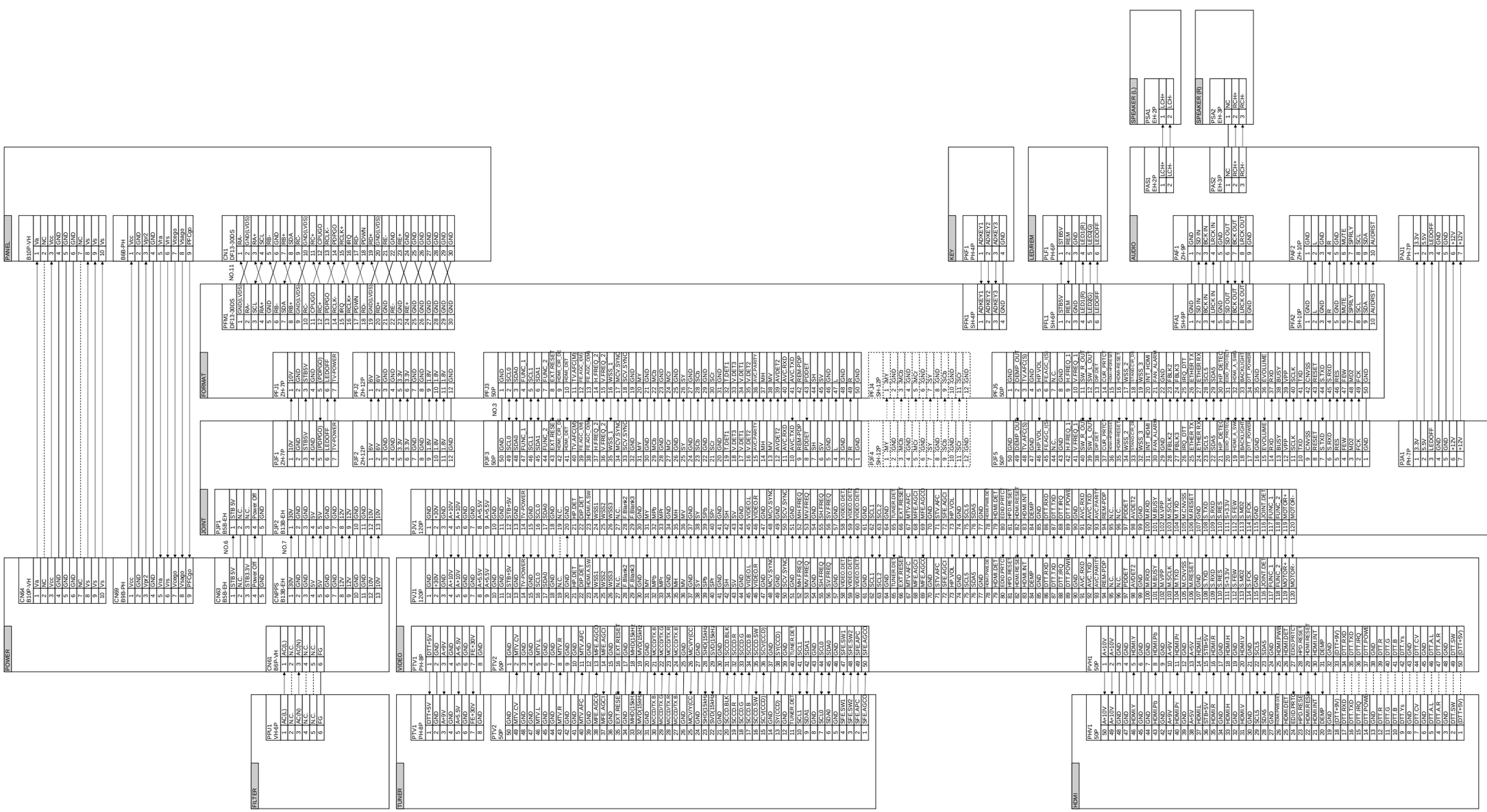
If you clear history of failure, make FACTORY RESET: enter the factory setting mode; press the SUB-POWER(⏻) button, INPUT SELECT(⏎) button and ▲ button on the bottom of the monitor at the same time. And keep it for more than 5 seconds after the power turned on.

MEMO

■ *Block diagram*

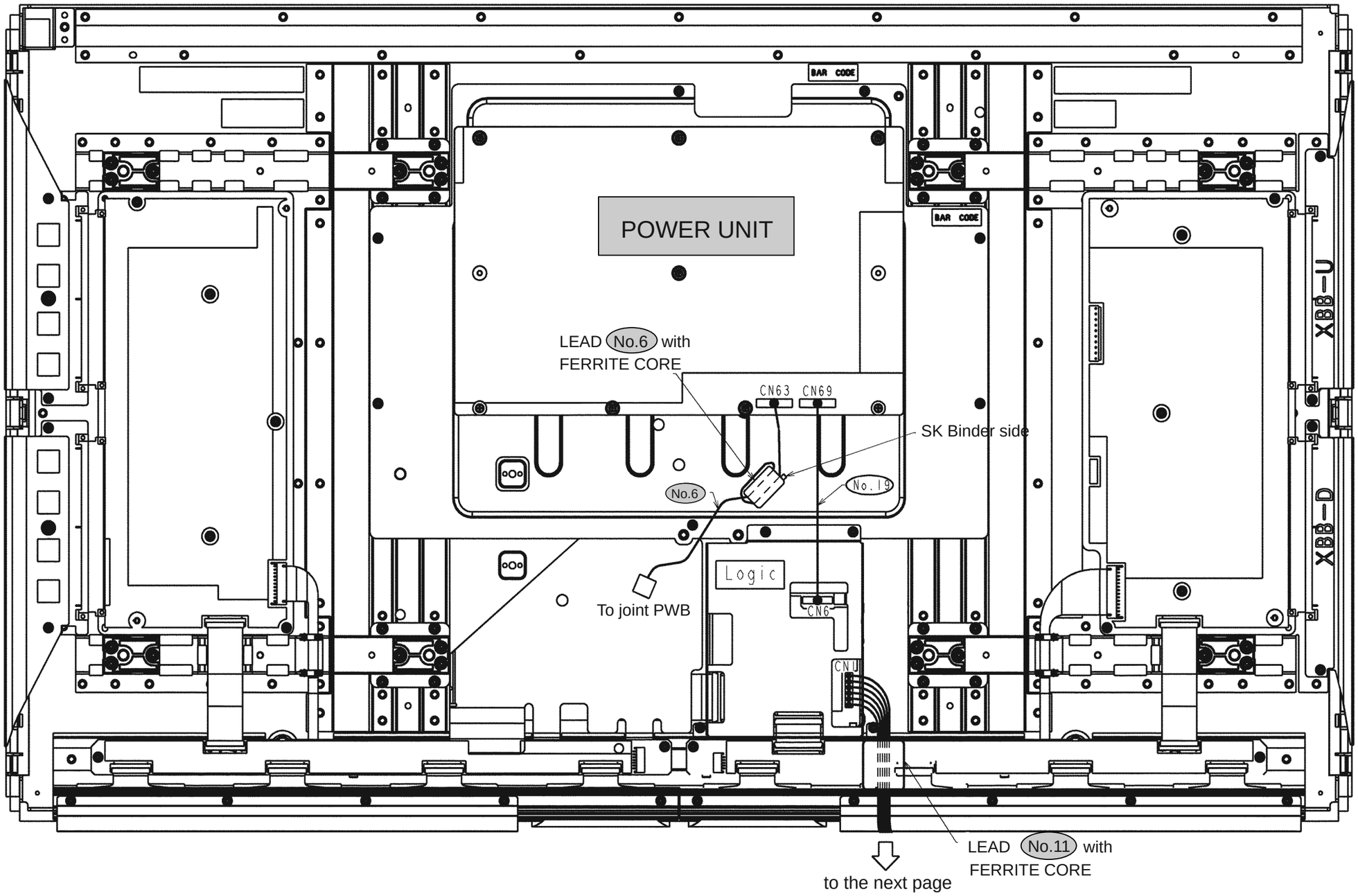


■ *Connection diagram*



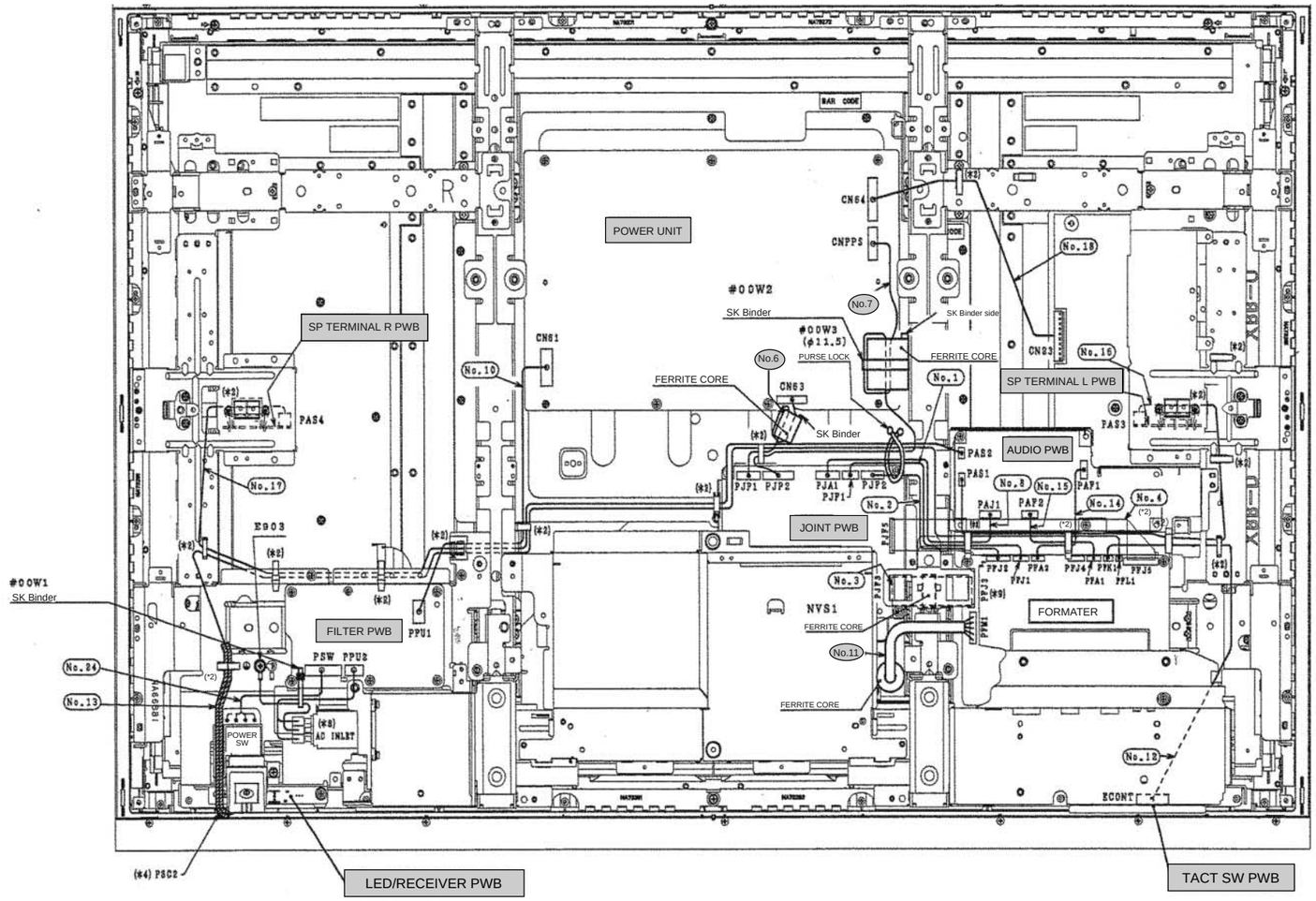
■ *Wiring diagram*

wiring diagram 1/2



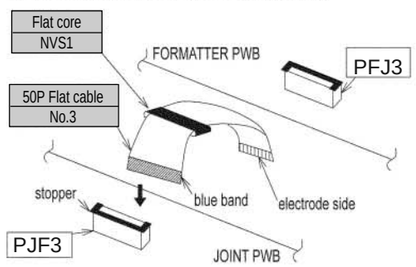
: **Replacement parts are available for the shaded parts.**

wiring diagram 2/2

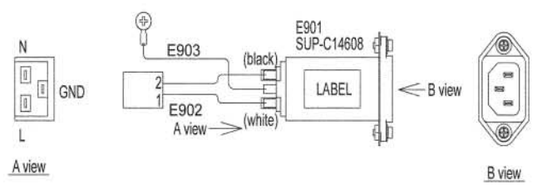


Detail (*2)
Clamp the wire as wiring diagram.

Detail of (*9)
Pass No.12 connector through NVS1.
Insert it in EJF3/EFJ3 and push the stopper down to lock.



Detail of (*8)

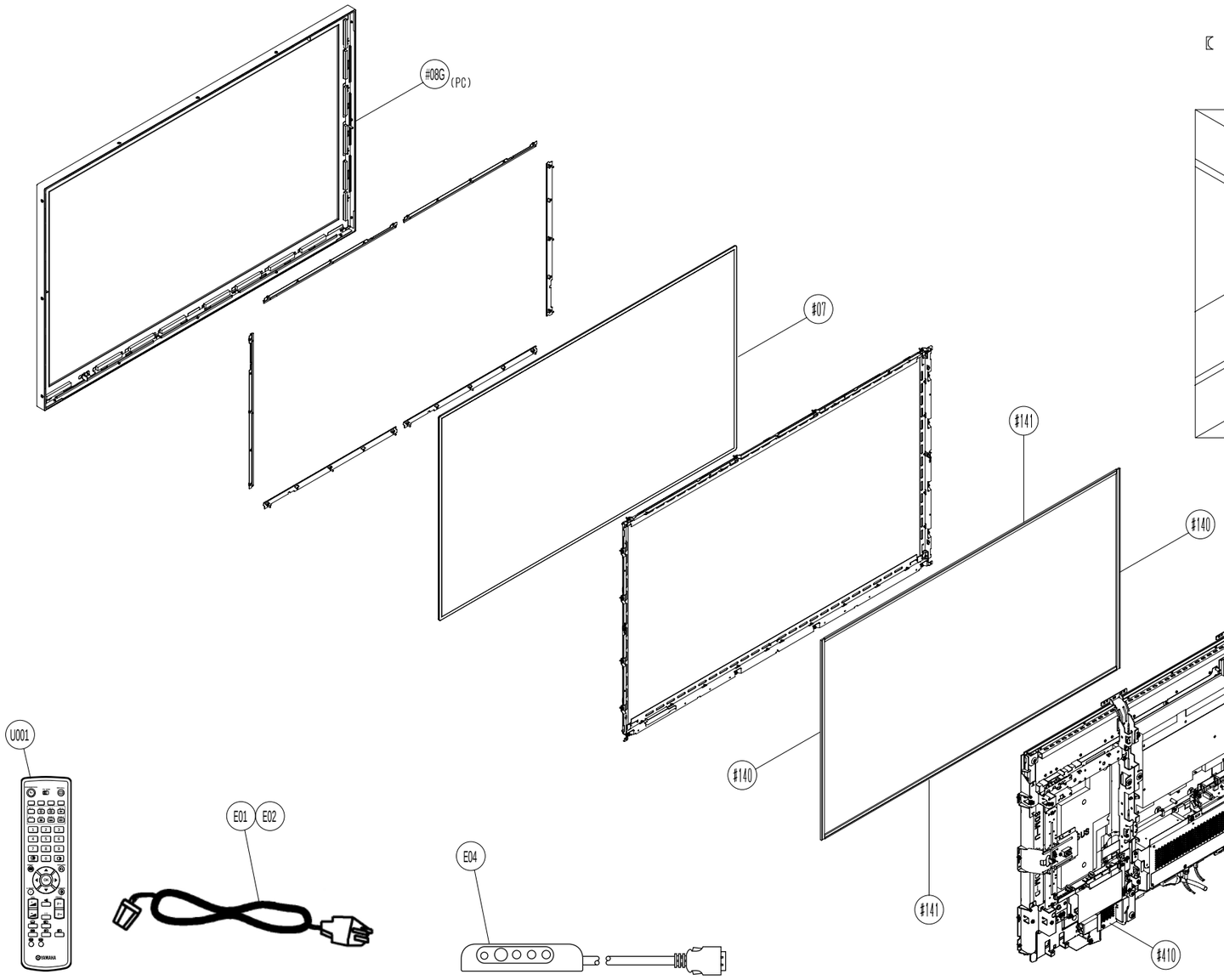


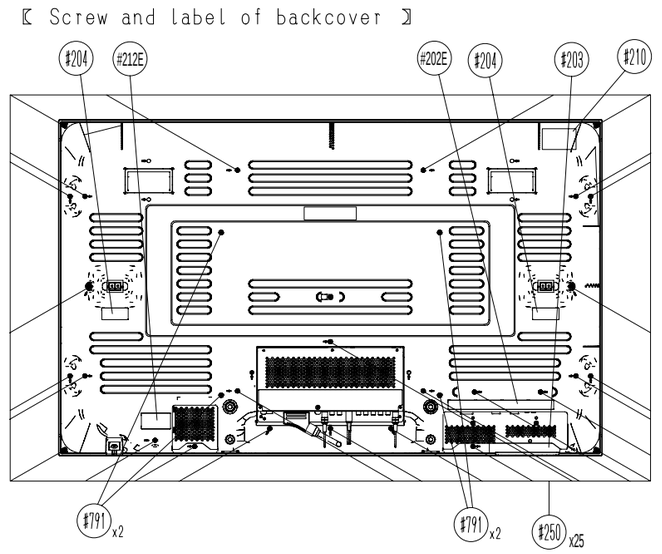
Faston connector with Lock:
Connect it completely to be locked.
Disconnect it pushing the button to release the lock.

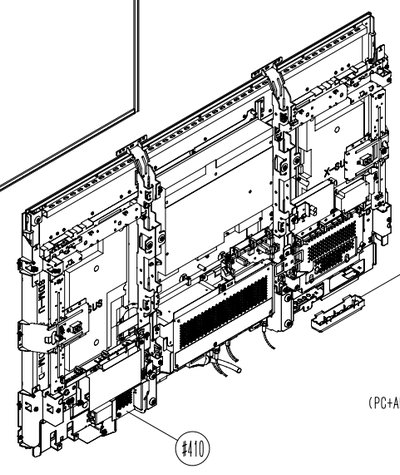
Detail of (*4)

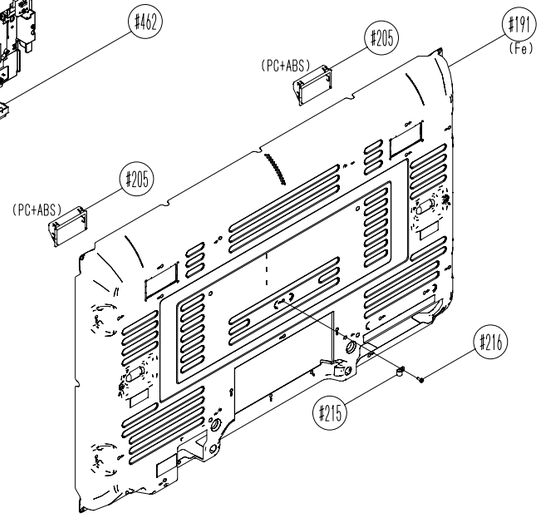
: Replacement parts are available for the shaded parts.

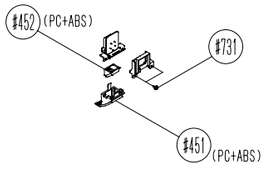
■ *Disassembly diagram*

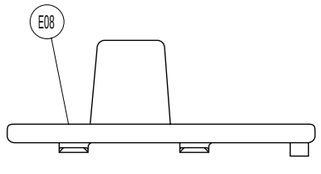










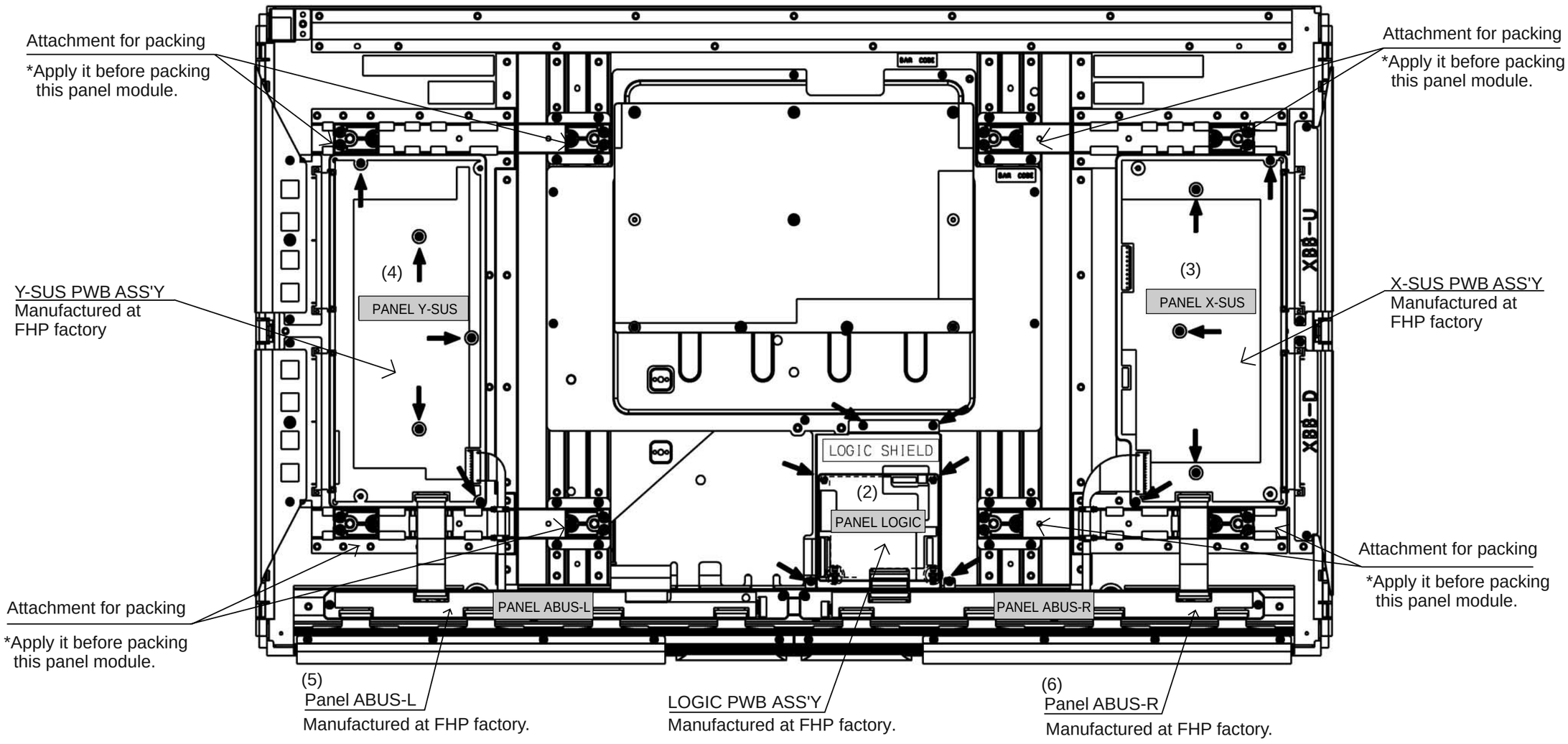


The codes in brackets shown in the disassembly diagram express the name of materials.
The key o the codes and materials is shown on the table below.

Code	Material
ABS	Acrylonitrile Butadiene Styrene
Fe	Steel
PS	Polystyrene
PC+ABS	Polycarbonate+Acrylonitrile Butadiene Styrene

The figure of FHP Panel Module

(Rear view
The state of a panel simple substance.)



No.	Parts No.	Spare Part Name	FHP Spare Part No.	Remarks
1	-	Panel Module	FPF42C128128UD-55	-
2	AAX71930	LOGIC A2 PWB ASS'Y	FPF28R-LGC0045	TS05771
3	AAX71860	X-SUS A2 PWB ASS'Y	FPF28R-XSS0026	TS05772
4	AAX71870	Y-SUS A2 PWB ASS'Y	FPF28R-YSS0027	TS05773
5	AAX71820	A-BUS L A2 PWB ASS'Y	FPF28R-ABL0019	TS05774
6	AAX71830	A-BUS R A2 PWB ASS'Y	FPF28R-ABR0020	TS05775

■ *Replacement parts list*

	Ref. No.	Part No.	Description	Remarks	Markets
*		AAX71880	PSA PW2 AUDIO VESTEL	JP08052	
*		AAX71910	PSA PW2 VIDEO EUROPE	JP08092	
*		AAX71890	PSA PW2 JOINT/SWIVEL	JP08063	
*		AAX71900	PSA PW2 TUNER EUROPE	JP08112	
*		AAX71850	PSA PW2 HDMI VESTEL	JP08122	
*		AAX71920	PSA PW2 FILTER (YAMAHA)	JP08075	
*		AAX71840	HCP227 VESTEL ASS'Y	CS00877	
⚠*		AAX72070	POWER UNIT MPF7415	HA01481	
	N03	AAX53960	CONNECTOR 50P FFC	EK01433	
*	N06	AAX71800	CONNECTOR 5P WITH CORE	EF24212C	
*	N07	AAX71790	CONNECTOR 13P WITH CORE	EF24198C	
*	N11	AAX71810	CONNECTOR 30P WITH CORE	EF24231C	
	NVS1	AAX54380	FERRITE CORE	BZ10611	
*	E901	AAX72020	JACK 3P	EP00014	
*	F902	AAX72080	FUSE HT 250V 6.3A M5.2X20mm	FN00439	
	#07	AAX54430	FRONT FILTER	KS06551	
*	#08G	AAX72100	BEZEL ASS'Y	QD50153	
	#140	AAX54070	AIR FILTER 10-5-572	MN06552A	
	#141	AAX54060	AIR FILTER 10-5-966	MN06551A	
*	#191	AAX72060	BACK COVER	QA02686	
*	#202E	AAX72090	PW2 FORMATER LABEL E	QL23975	
	#203	AAX54090	PW1 KEY SW LABEL	QL23981	
	#204	AAX54210	SPEAKER LABEL CL42	QL21193	
	#205	AAX54260	BACK COVER GRIP	PH31101	
	#210	AAX54460	TEMP CAUTION LABEL E/F	QL21403	
	#212E	AAX53940	AC LABEL CL32	QL21001	
	#215	AAX54170	CABLE CLAMP	3705264	
*	#216	AAX72050	4X10 SCREW D3 BIND CP-GRIP	MJ03895	
*	#250	AAX72050	4X10 SCREW D3 BIND CP-GRIP	MJ03895	
*	#410	AAX71780	AC INLET COVER	QA02524	
	#451	AAX54330	POWER BUTTON PANEL	PH31142	
	#452	AAX54320	POWER BUTTON	PC05361	
*	#462	AAX72120	CONTROL BUTTON HOLDER ASS'Y	NJ08552	
*	#731	AAX72030	3X8 CE KNURL SCREW	MJ03629	
*	#791	AAX72040	SCREW M3M 6*12PN+	MJ03844	
			ACCESSORIES		
*	U001	AAX72110	REMOTE CONTROL (RPD-342)	HL02182	
⚠*	E01	AAX72130	CORD POWER SUPPLY (3m)	EV01964	B
⚠*	E02	AAX72140	CORD POWER SUPPLY (3m)	EV01965	G
*	E04	AAX71940	SIDE INPUT UNIT (1m)	EW08353	
*	E08	AAX71950	SIDE INPUT HOLDER	UK07731	
			FHP PANEL MODULE		
*		AAX71930	LOGIC A2 PWB ASS'Y	TS05771	
*		AAX71860	X-SUS A2 PWB ASS'Y	TS05772	
*		AAX71870	Y-SUS A2 PWB ASS'Y	TS05773	
*		AAX71820	ABUS-L A2 PWB ASS'Y	TS05774	
*		AAX71830	PWB ASS'Y ABUS-R A2	TS05775	
*		AAX71980	CABLE LOGIC-ABUSL A2	TE02162	
*		AAX71990	CABLE LOGIC-ABUSR A2	TE02163	
*		AAX72000	CABLE ABUS-SUS A2	TE02167	
*		AAX72010	CABLE XSUS-ABUS, YSUS A2	TE02168	

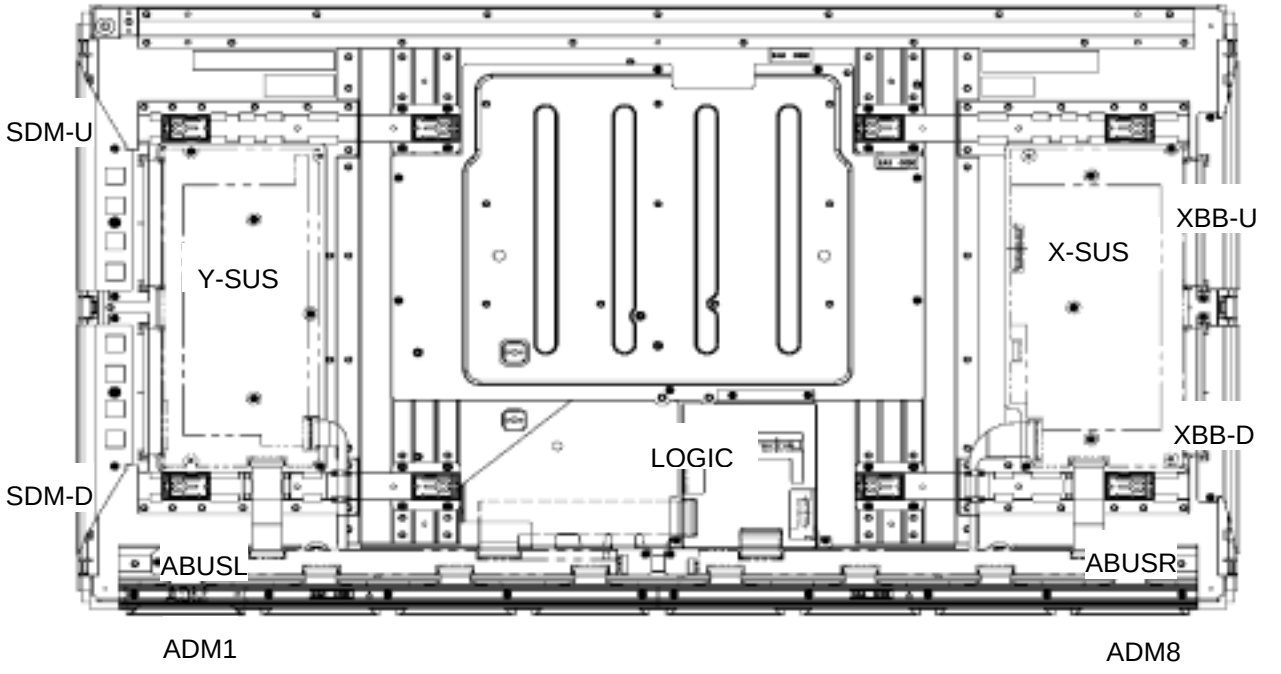
* New Parts

■ *Diagnosis of the Panel module*

NAME and FUNCTION

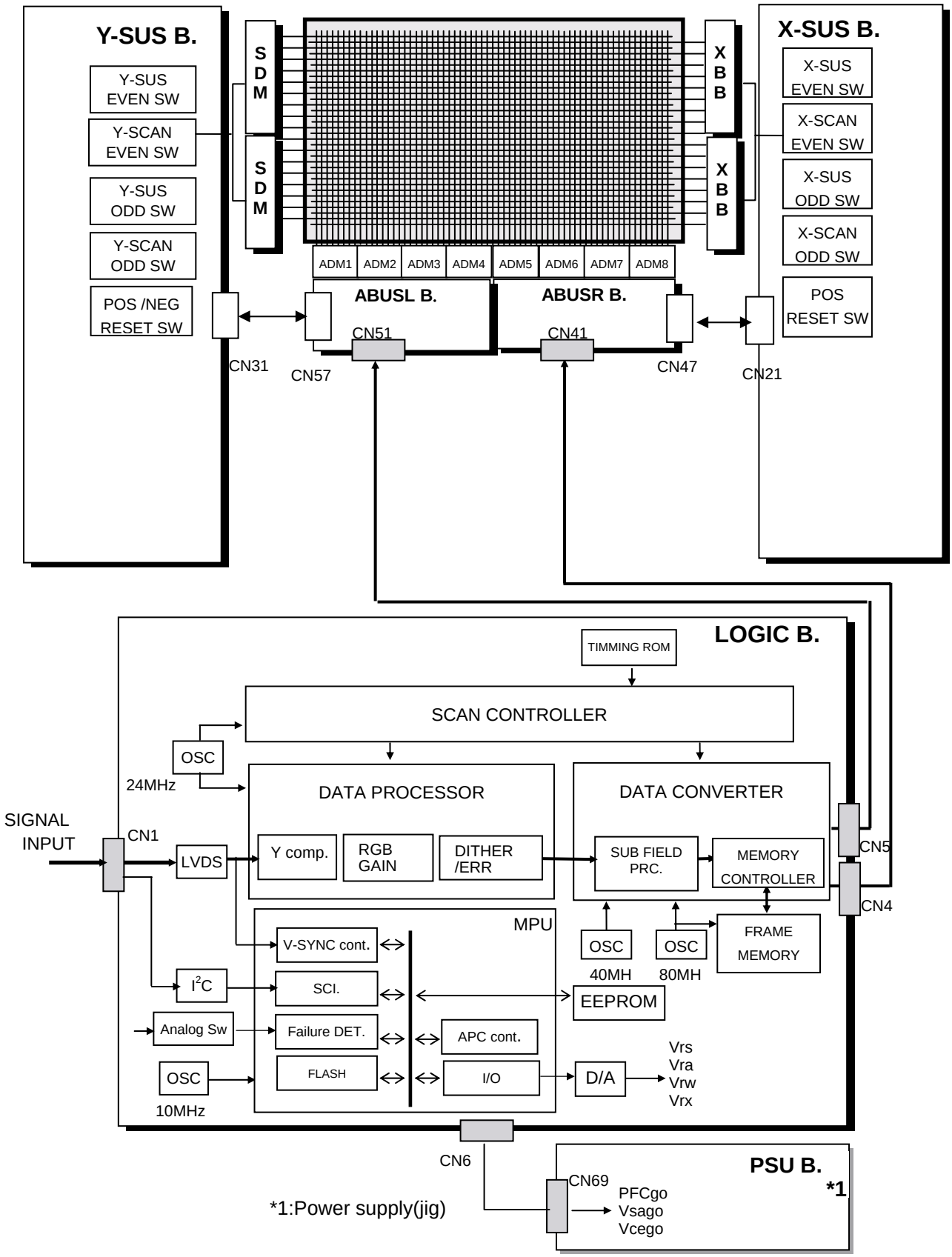
CONFIGURATION

- FPF42C128128UD-55 (LOGIC set out right side)

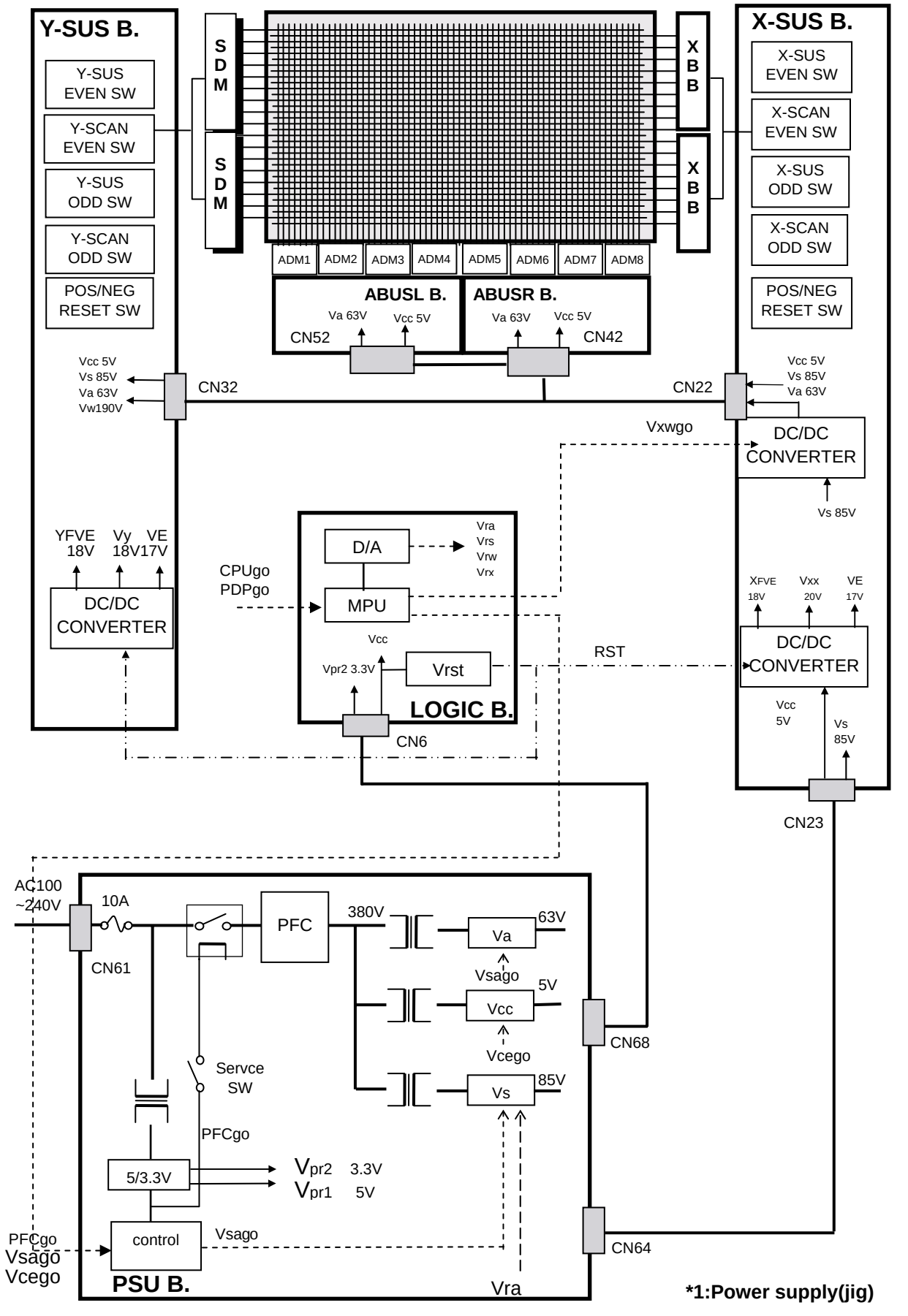


BLOCK DIAGRAMS

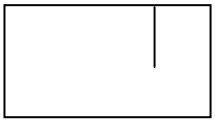
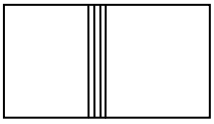
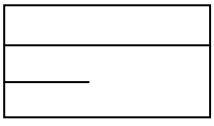
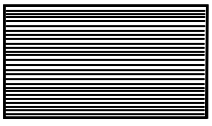
Signal Diagrams

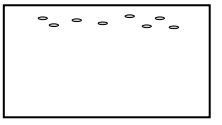


Power Diagrams



FAULT SYMPTOM

NO	Fault contents	Fault status		Suspected fault location	Analysis procedure and measure
1	Entire screen does not light.	After momentarily going on, the screen becomes black immediately or after a few seconds. (Main power is turned off.)		X-SUS Y-SUS PSU Panel chassis LOGIC ABUSL ABUSR	Refer to Chapter 4.6.1
2		Screen lights dimly even on the back screen.		LOGIC	Replace LOGIC board
3	Vertical line	Single vertical line (of different color)		Panel chassis LOGIC	Refer to Chapter 4.6.2
4		Vertical line from the middle of effective scan area (Vertical line of different color)		Panel chassis	Replace panel chassis
5	Vertical bar	Bar width of 1/7 of horizontal size or in multiples of 1/7, is displayed. Abnormal display.		Panel chassis ABUSL ABUSR LOGIC Above boards are connected.	Refer to Chapter 4.6.2
6		Bar width of 3/7 or 4/7 of the screen width, is displayed. Abnormal display. (Vertical line of different color)		ABUSL ABUSR LOGIC Above boards are connected.	Refer to Chapter 4.6.2
7	Horizontal line	Single horizontal line (No light) or single horizontal line does not light among the effective scanning area. Single horizontal line does not light.		Panel chassis	Replace panel chassis
8		Every other line(No light) Entire screen		X-SUS Y-SUS ABUSL ABUSR	Replace X-SUS Y-SUS Board

NO	Fault contents	Fault status		Suspected fault location	Analysis procedure and measure
9	Horizontal bar	Bar width of 1/8 or multiples of 1/8 of the screen height, is displayed. Abnormal (Screen does not light)		Panel chassis	Replace panel chassis
10		Bar width of 1/2 of the screen height. Abnormal display (Screen does not light)		Panel chassis Y-SUS X-SUS Above boards are connected.	Refer to Chapter 4.6.3
11	Image sticking	Fixed display contents are always displayed.		Panel chassis	Perform all white heat run. After judgment, replace panel chassis
12	Stains	Oval-shaped points having abnormal luminance are scattered in the upper or lower part of screen.		Panel chassis	Perform all white heat run. After judgment, replace panel chassis
13	Twinkle	The entire screen momentarily becomes brighter or darker.			
14	Flicker	The entire screen flickers continuously.		Poor connector contact (CN2,3,21,31)	Connector / cable re-connection or Cable exchange
15	Luminance is abnormal	Screen is too dark or too bright. (Out of specifications)			
16	Chrominance is abnormal	Colors cannot be displayed correctly.		LOGIC	Replace LOGIC board
17	Syncis disturbed			LOGIC	Replace LOGIC board
18	Picture distorted			LOGIC	Replace LOGIC board
19	Steps of gradation are skipped	Luminance linearity is poor.		LOGIC	Replace LOGIC board
20	Abnormal sound			PSU X-SUS Y-SUS (Core is broken, or transformer is abnormal.)	Locate cause of abnormality from listening and viewing. Replace the cause of problem.

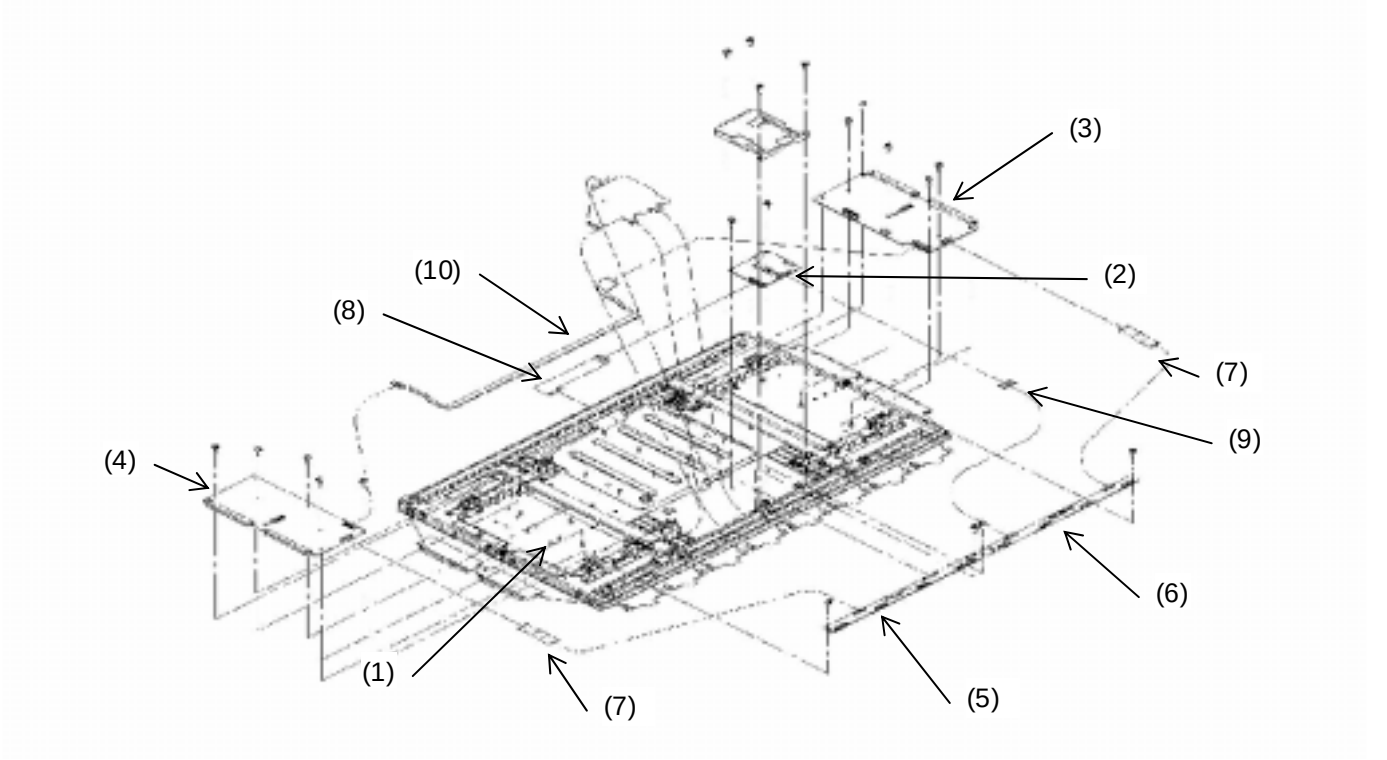
NO	Fault contents	Fault status		Suspected fault location	Analysis procedure and measure
21	Control on external communication is abnormal	Contrast, color temperature adjustment and Υ cannot be changed.		LOGIC	Replace LOGIC board

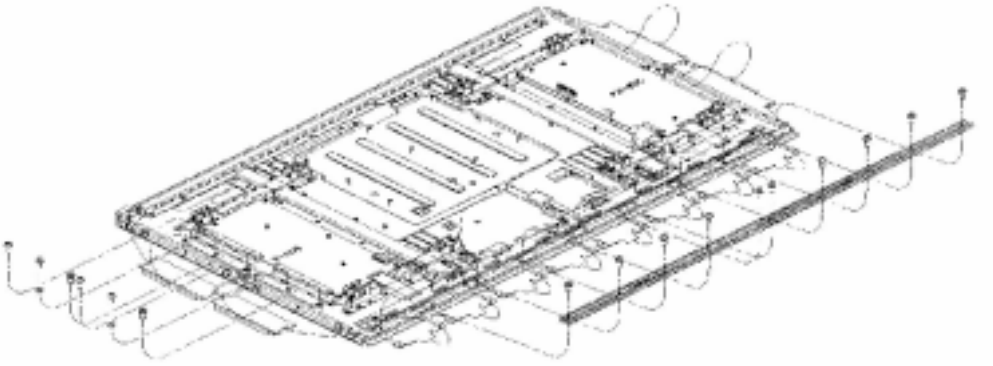
DISASSEMBLING AND REASSEMBLING

Unless otherwise specified, use the torque screwdriver for screw tightening, following the tightening torques below.

Screw size	Tightening torque
M 3	69±0.049Nm (7±0.5kg·cm)
M 4	1.18±0.098Nm (12±1.0kg·cm)

EXPLODED VIEW





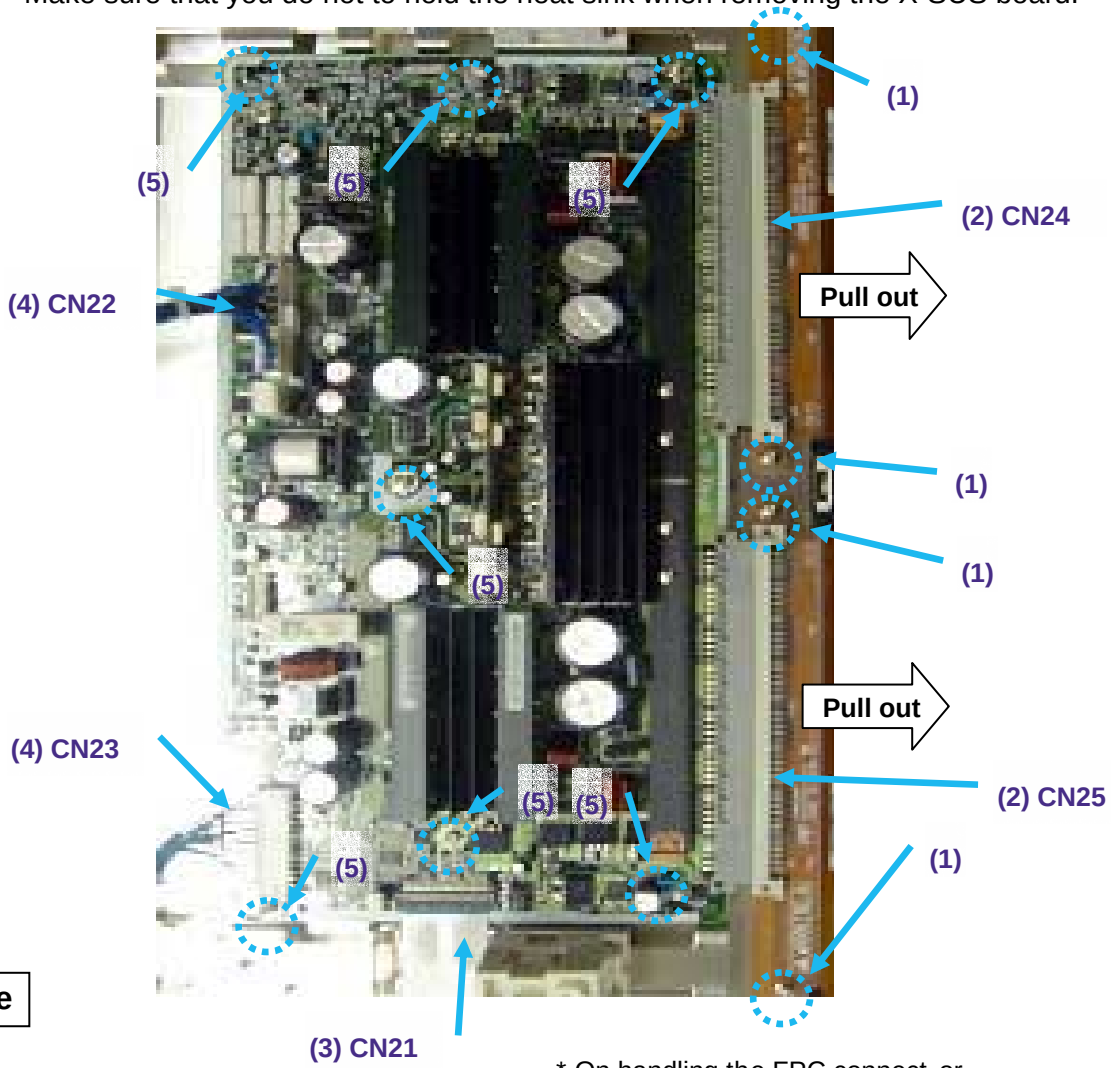
X-SUS CIRCUIT BOARD REMOVAL/INSTALLATION PROCEDURE

Note

When removing the circuit board after the main power is turned on/off, wait for at least one minute before starting to remove the circuit board.
If the circuit board removal is started immediately after turning off the main power, it can result in electric shock or damage to the circuit due to residual electric charge.

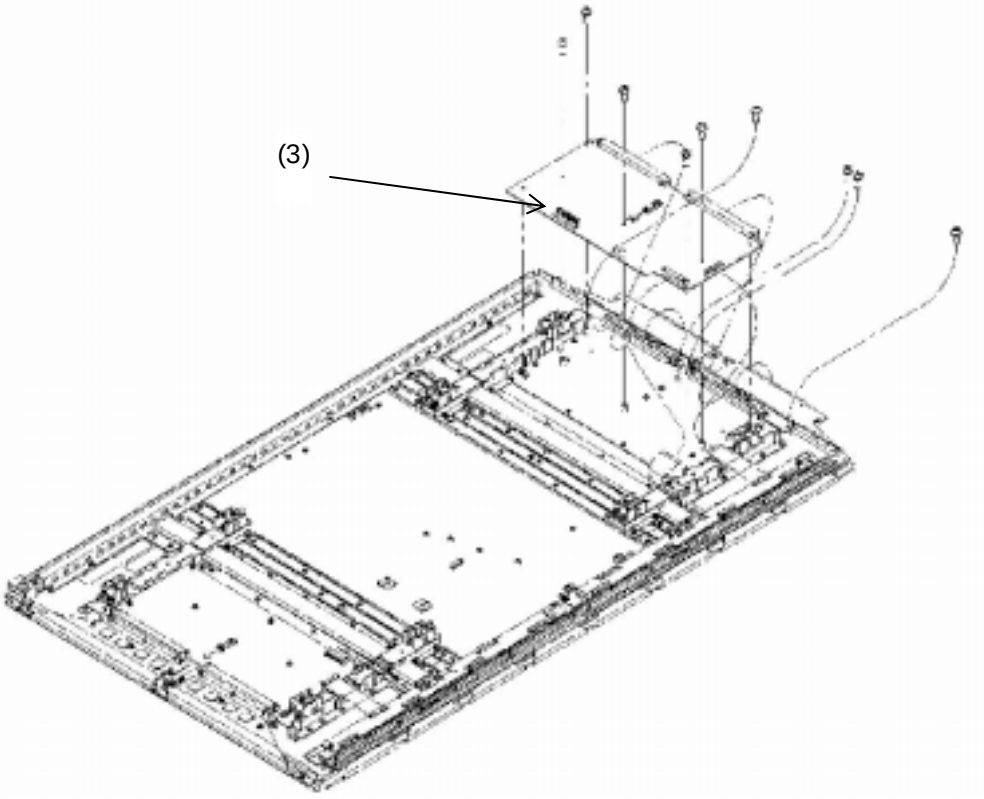
Remove the circuit board following the steps below. To install the circuit board, reverse the removal procedure.

(1) Remove the fixing screws (M3x8) fixing XBB at 4 locations.
(2) Pull out the XBB board horizontally and disconnect the connectors (CN24, CN25).
(3) Release the lock of the FPC connector (CN21) and disconnect the signal cable.
(4) Disconnect the cables from the VH connectors (CN22, CN23).
(5) Remove the fixing screws (M3x8) fixing XSUS at 5 locations and rod at 2 locations.
(6) Remove the X-SUS board.
Make sure that you do not to hold the heat sink when removing the X-SUS board.



Note

* On handling the FPC connect or
To release the lock, release it by gently flipping it with the nail of the thumb or forefinger.
Never pinch the lock lever with fingers or hook on it (especially with a fingernail). Doing so might damage the lock lever.


(3)

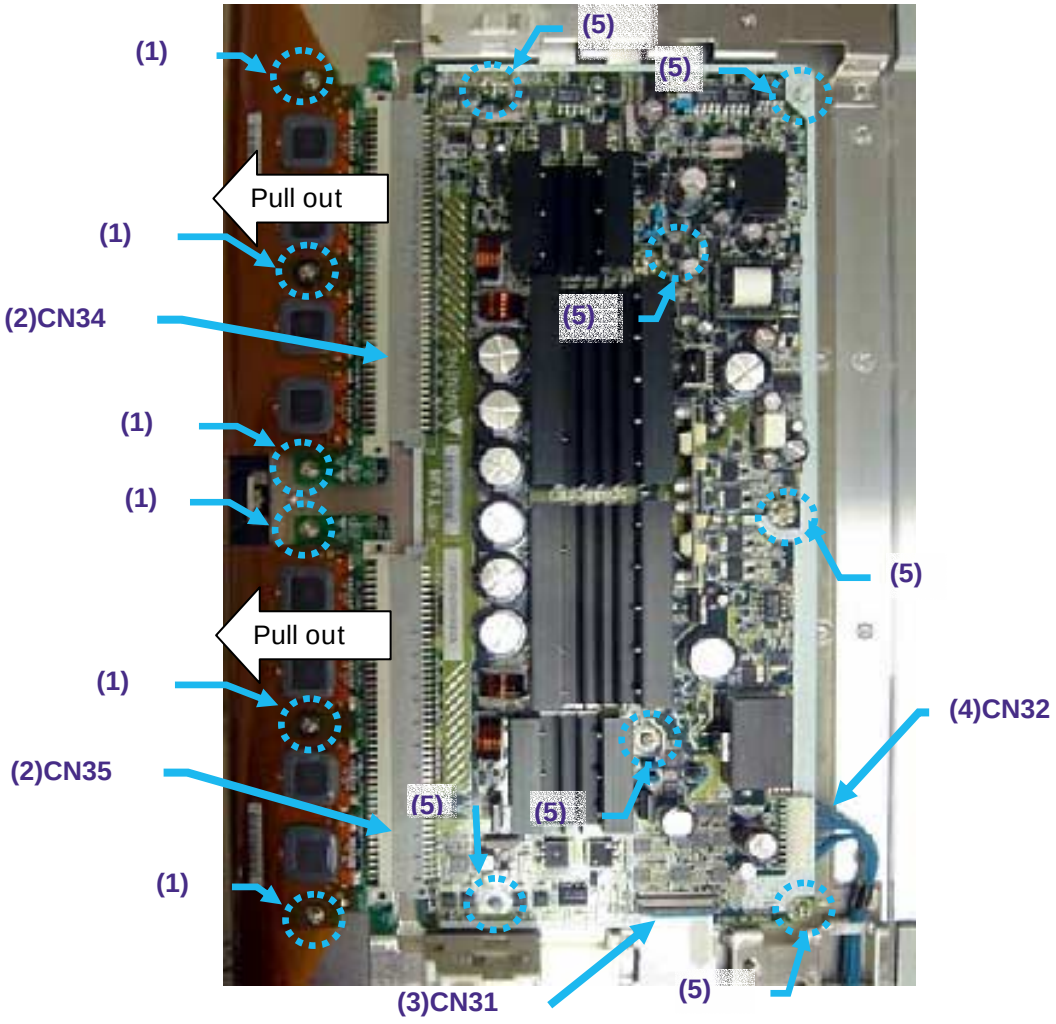
Y-SUS CIRCUIT BOARD REMOVAL/INSTALLATION PROCEDURE

Note

When removing the circuit board after the main power is turned on/off, wait for at least one minute before starting to remove the circuit board.
If the circuit board removal is started immediately after turning off the main power, it can result in electric shock or damage to the circuit due to residual electric charge.

Remove the circuit board by following the steps below. To install the circuit board, reverse the removal procedure.

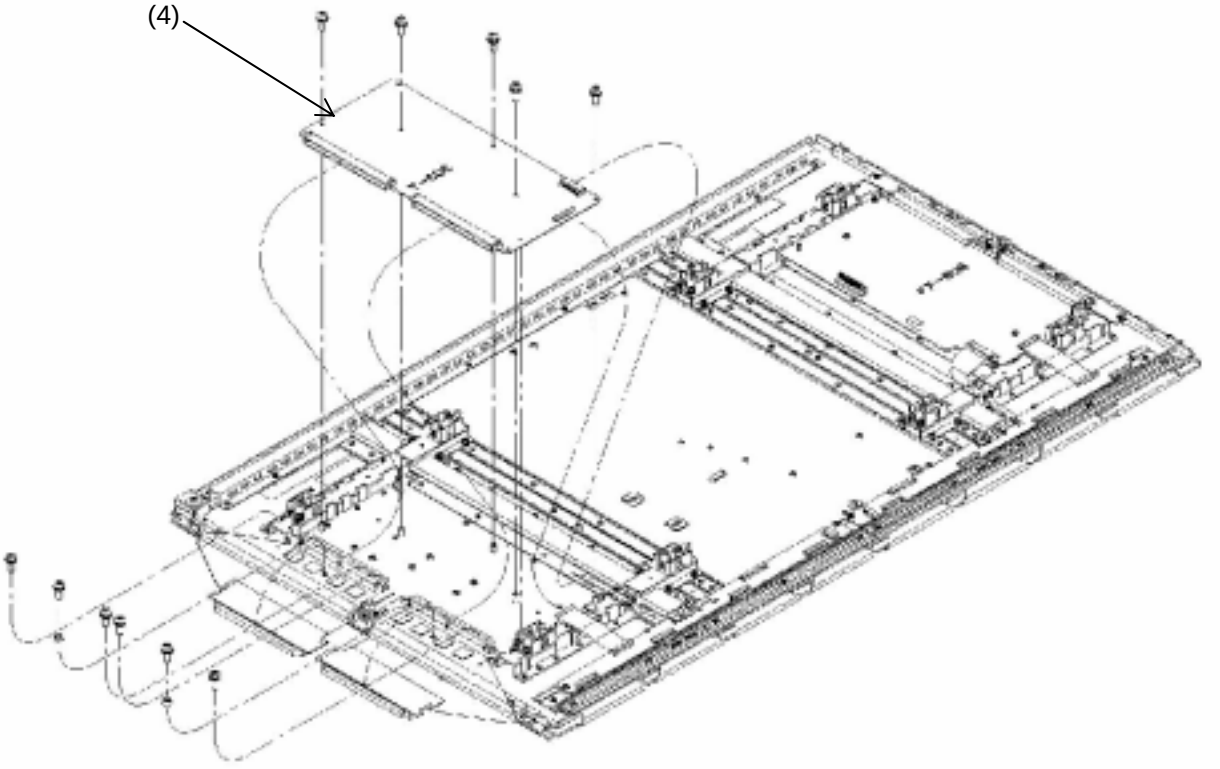
(1) Remove the fixing screws (M3x8) fixing SDM at 6 locations.
(2) Pull out the SDM board horizontally and disconnect the connectors (CN34, CN35).
(3) Release the lock of the FPC connector (CN31) and disconnect the signal cable.
(4) Disconnect the cables from the VH connectors (CN32).
(5) Remove the fixing screws (M3x8) fixing YSUS at 5 locations and rod at 2 locations.
(6)Remove the Y-SUS board. Make sure that you do not to hold the heat sink when removing the Y-SUS board.



Note

* On handling the FPC connect or

To release the lock, release it by gently flipping it with the nail of the thumb or forefinger. Never pinch the lock lever with fingers or hook onto it (especially with fingernails). Doing so might damage the lock lever.


(4)

ABUS-L CIRCUIT BOARD REMOVAL/INSTALLATION PROCEDURE

Note

When removing the circuit board after the main power is turned on/off, wait for at least one minute before starting to remove the circuit board.
If the circuit board removal is started immediately after turning off the main power, it can result in electric shock or damage of the circuit due to residual electric charge.

Remove the circuit board by following the steps below. To install the circuit board, reverse the removal procedure.

(1) Disconnect the connector CN52 from the ABUS-L board.

(2) Raise the lock of the FPC connectors CN53, CN54, CN55, CN56 and CN57 to release it and remove the ADM flexible board

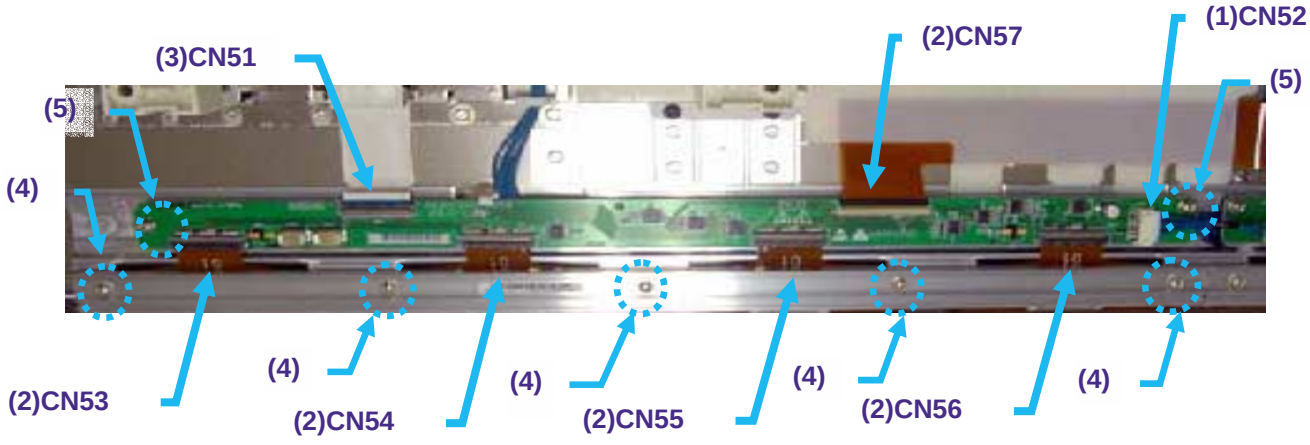
(3) Release the lock of the FPC connector CN51 and disconnect the signal cable (FPC).

(4) Remove the screws (M3x8) fixing the Radiator Plate at the 5 locations.

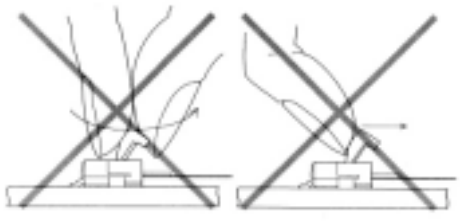
(5) Remove the screws (M3x8) fixing the ABUS-L board at the 2 location.

(6) Remove the ABUS-L board

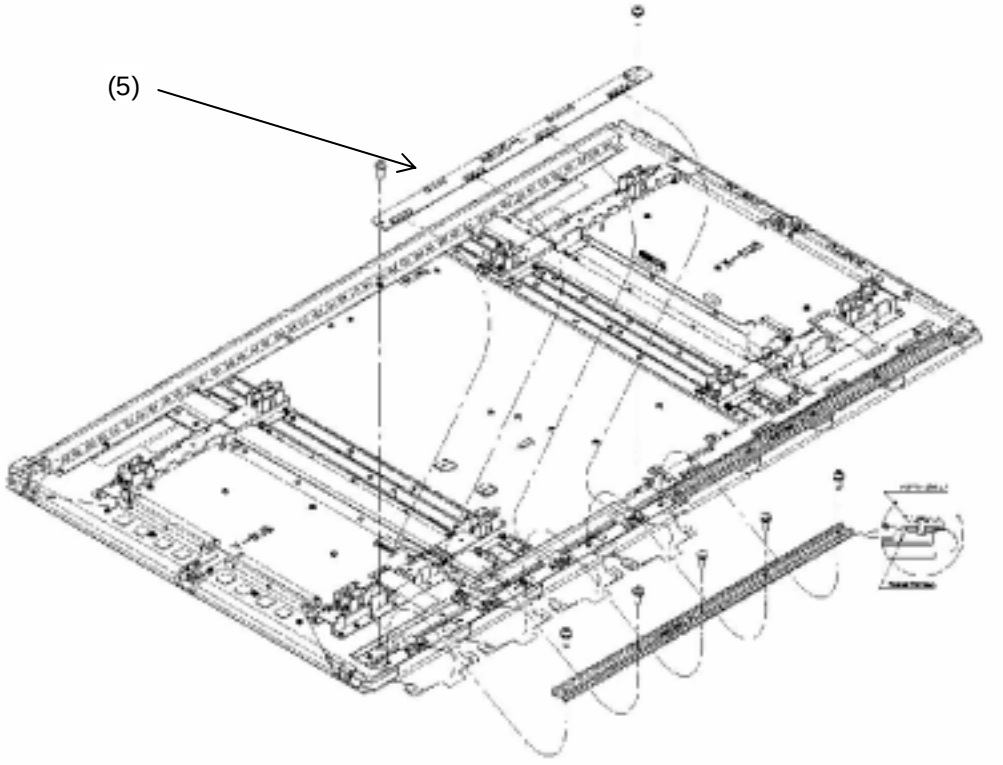
(7) When installing the ABUS-L board, place it so that the ABUS-L board is locked by the tabs for fixing it in position.



Note



* On handling the FPC connect or
To release the lock, release it by pulling up the lever.
Never pinch the lock lever with the fingers or push hard on it without a cable in it.
Doing so might damage the lock lever.


(5)

ABUS-R CIRCUIT BOARD REMOVAL/INSTALLATION PROCEDURE

Note

When removing the circuit board after the main power is turned on/off, wait for at least one minute before starting to remove the circuit board.
If the circuit board removal is started immediately after turning off the main power, it can result in electric shock or damage of the circuit due to residual electric charge.

Remove the circuit board by following the steps below. To install the circuit board, reverse the removal procedure.

(1) Disconnect the connector CN42 on the ABUS-R board.

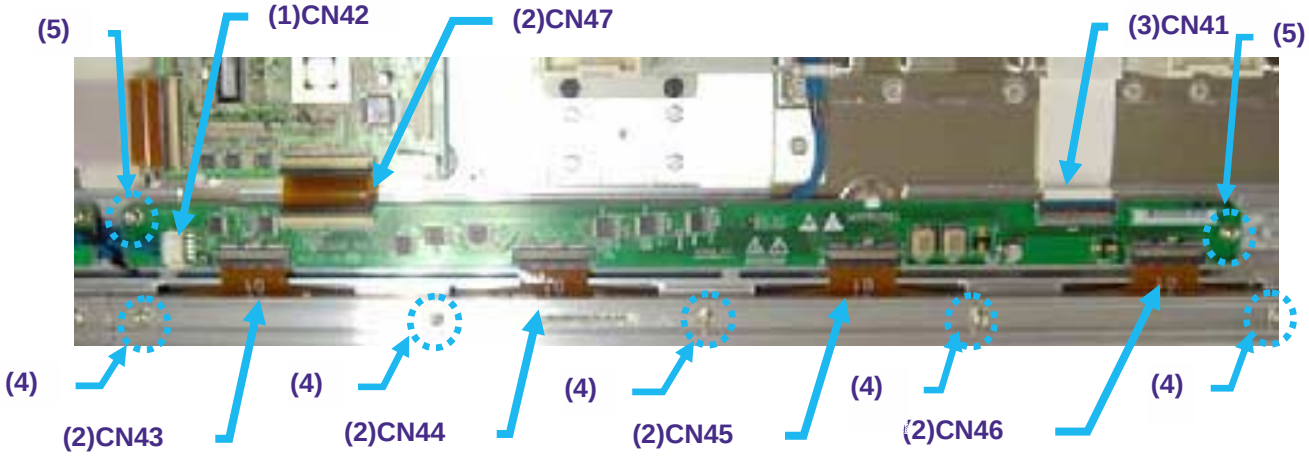
(2) Raise the lock of the FPC connectors CN43, CN44, CN45, CN46 and CN47 to release it and disconnect the ADM flexible board.

(3) Release the lock of the FPC connector CN41 and disconnect the signal cable (FPC).

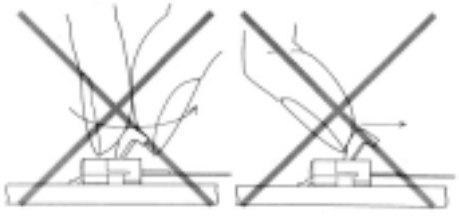
(4) Remove the screws (M3X8) fixing the Radiator Plate at the 5 locations.

(5) Remove the screws (M3X8) fixing the ABUS-R board at the 2 locations.

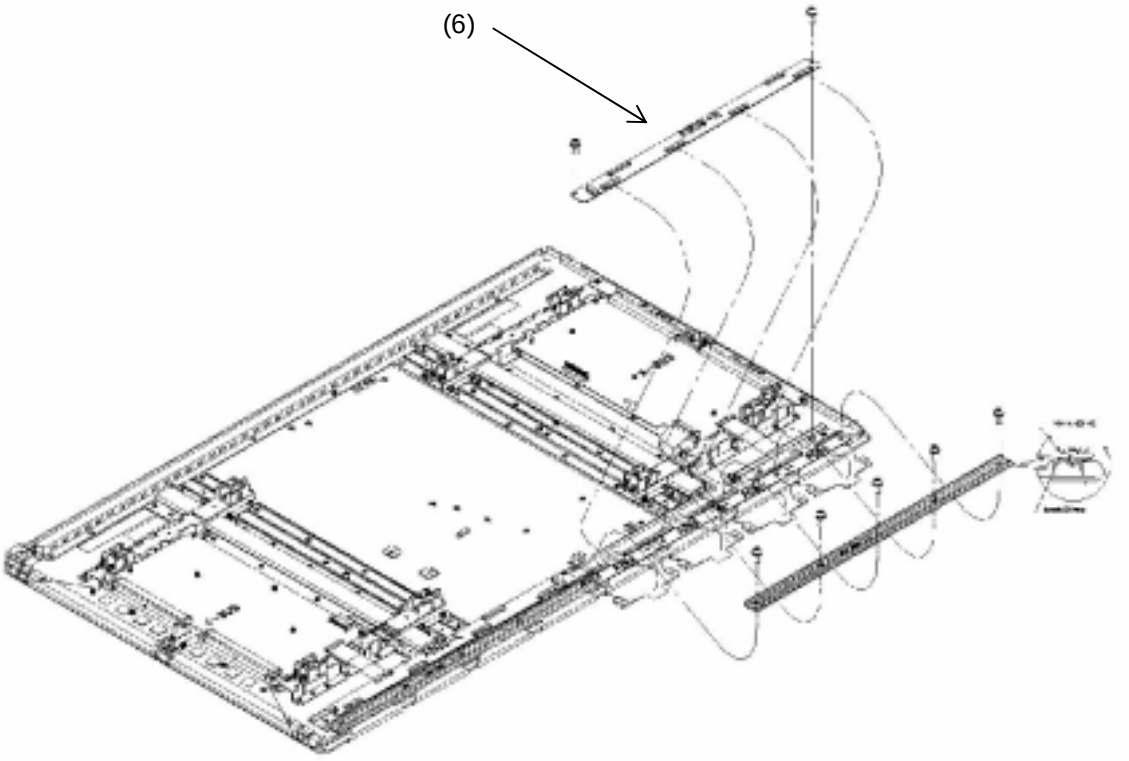
(6) Remove the ABUS-R board.
When installing the ABUS-R board, place it so that the ABUS-R board is locked by the tabs for fixing it in position.



Note



* On handling the FPC connect or
To release the lock, release it by pulling up the lever. Never pinch the lock lever with the fingers or push hard on it without a cable in it. Doing so might damage the lock lever.


(6)

LOGIC BOARD REMOVAL/INSTALLATION PROCEDURE

Remove the circuit board by following the steps below. To install the circuit board, reverse the removal procedure.

(1) Disconnect the EH connector CN6.

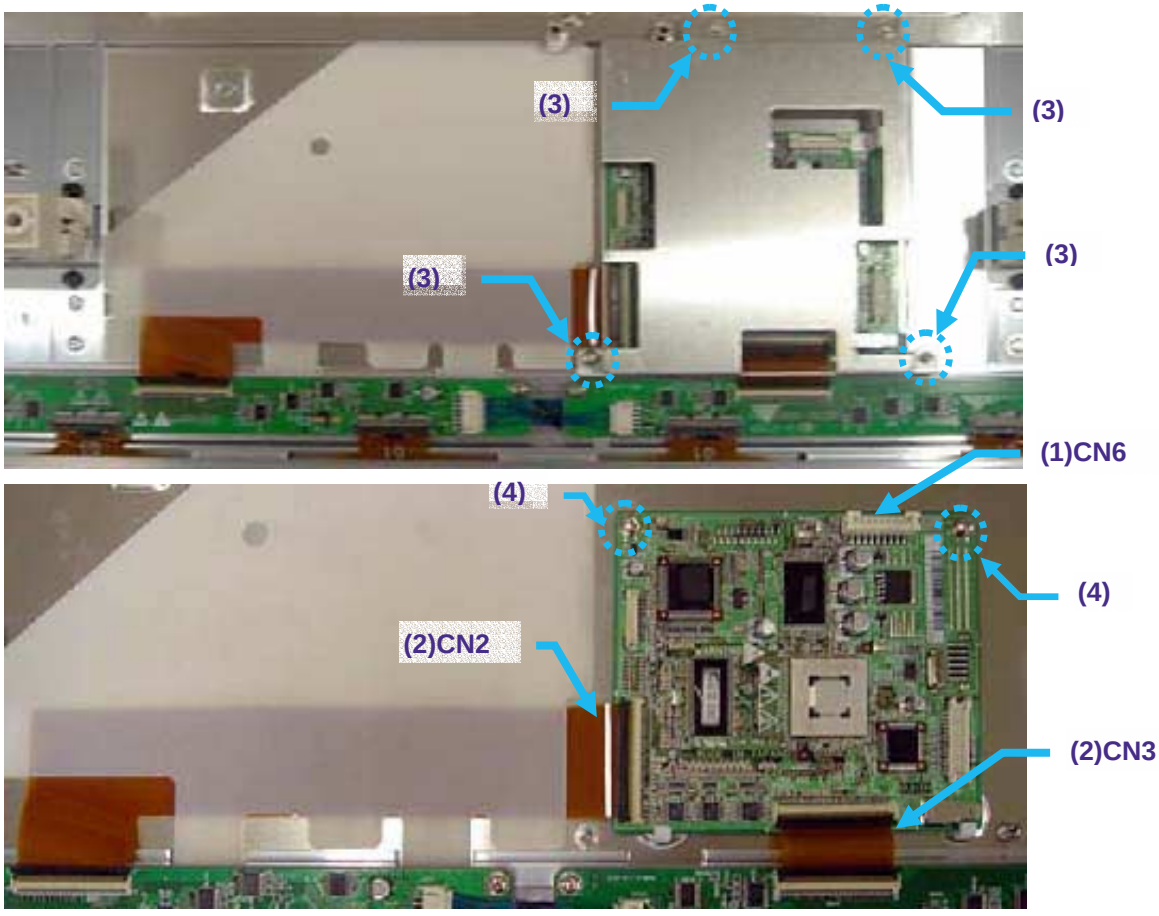
(2) Release the lock of the FPC connectors CN2, CN3 and disconnect the signal cable (FPC).

(3) Remove the screws (M3x8) fixing the shield Plate in position at 4 locations.

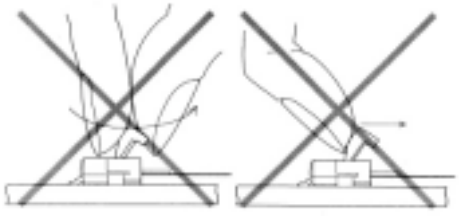
(4) Remove the screws (M3x8) fixing the LOGIC board in position at 2 locations.

(5) Remove the LOGIC board.

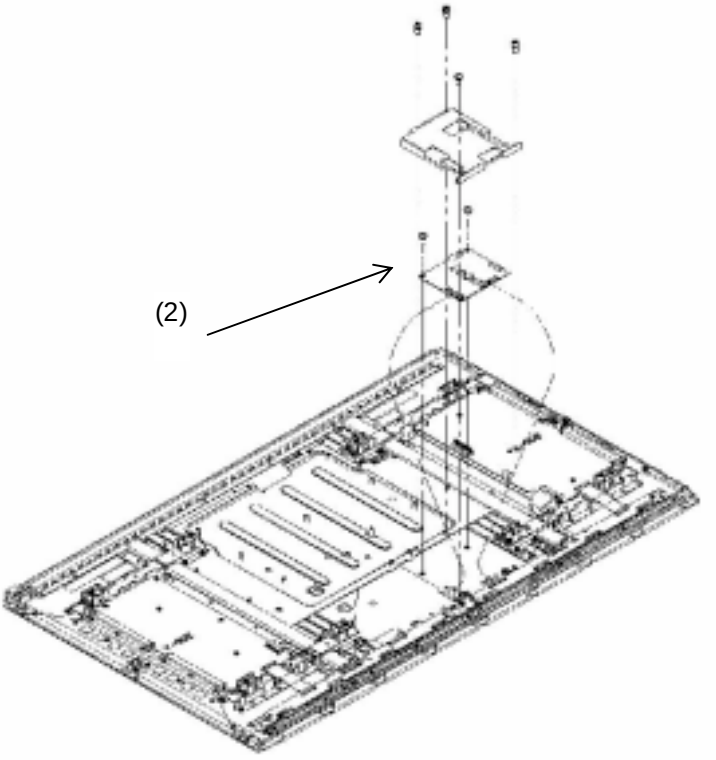
(6) When installing the LOGIC board, place it so that the LOGIC board is locked by the tabs for fixing it in position (at 3 locations).



Note



* On handling the FPC connect or
To release the lock, release it by gently flipping it.
Never pinch the lock lever with the fingers or hook onto it (especially with fingernails).
Doing so might damage the lock lever.


(2)