

Service Manual

High Definition Plasma Display

Model No. **TH-85VX200W**

GPF13DMONV Chassis



WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

IMPORTANT SAFETY NOTICE


There are special components used in this equipment which are important for safety. These parts are marked by  in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

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1 Safety Precautions

1.1. General Guidelines

1. When conducting repairs and servicing, do not attempt to modify the equipment, its parts or its materials.
2. When wiring units (with cables, flexible cables or lead wires) are supplied as repair parts and only one wire or some of the wires have been broken or disconnected, do not attempt to repair or re-wire the units. Replace the entire wiring unit instead.
3. When conducting repairs and servicing, do not twist the Faston connectors but plug them straight in or unplug them straight out.
4. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
5. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
6. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

1.2. Touch-Current Check

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a measuring network for touch currents between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use Leakage Current Tester (Simpson 228 or equivalent) to measure the potential across the measuring network.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reserve the AC plug in the AC outlet and repeat each of the above measure.
6. The potential at any point (TOUCH CURRENT) expressed as voltage U_1 and U_2 , does not exceed the following values:

For a. c.: $U_1 = 35 \text{ V}$ (peak) and $U_2 = 0.35 \text{ V}$ (peak);

For d. c.: $U_1 = 1.0 \text{ V}$,

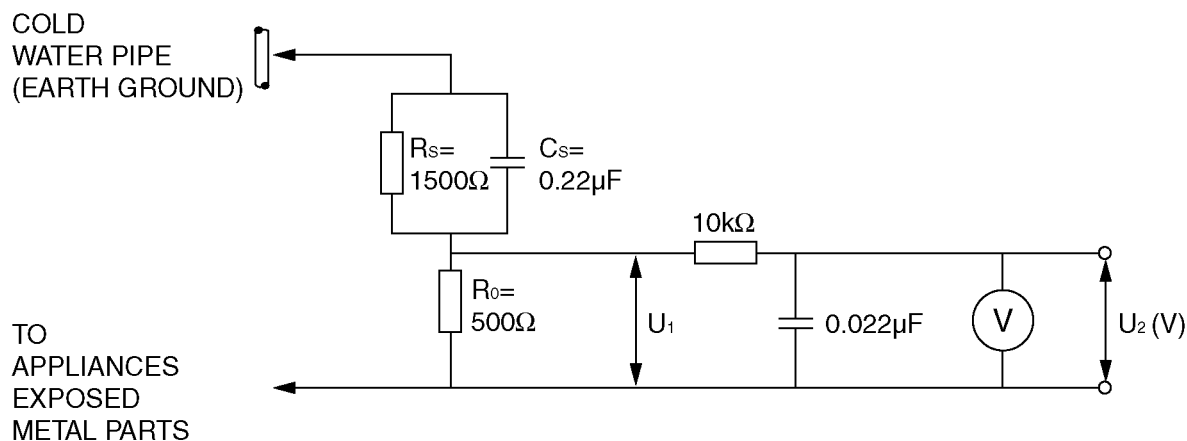
Note:

The limit value of $U_2 = 0.35 \text{ V}$ (peak) for a. c. and $U_1 = 1.0 \text{ V}$ for d. c. correspond to the values 0.7 mA (peak) a. c. and 2.0 mA d. c.

The limit value $U_1 = 35 \text{ V}$ (peak) for a. c. correspond to the value 70 mA (peak) a. c. for frequencies greater than 100 kHz .

7. In case a measurement is out of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

Measuring network for TOUCH CURRENTS



Resistance values in ohms (Ω)

V: Voltmeter or oscilloscope
(r.m.s. or peak reading)

Input resistance: $\geq 1 \text{ M}\Omega$

Input capacitance: $\leq 200 \text{ pF}$

Frequency range: 15 Hz to 1 MHz and d.c. respectively

NOTE - Appropriate measures should be taken to obtain the correct value in case of non-sinusoidal waveforms.

Figure 1

2 Warning

2.1. Prevention of Electrostatic Discharge (ESD) to Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor [chip] components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as [anti-static (ESD protected)] can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

Caution

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise ham less motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

2.2. About lead free solder (PbF)

Note: Lead is listed as (Pb) in the periodic table of elements.

In the information below, Pb will refer to Lead solder, and PbF will refer to Lead Free Solder.

The Lead Free Solder used in our manufacturing process and discussed below is (Sn+Ag+Cu).

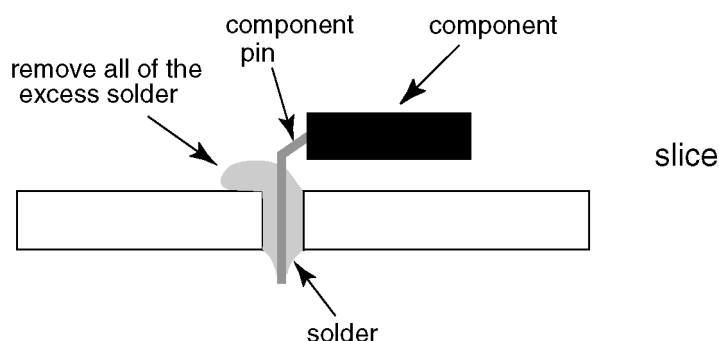
That is Tin (Sn), Silver (Ag) and Copper (Cu) although other types are available.

This model uses Pb Free solder in it's manufacture due to environmental conservation issues. For service and repair work, we'd suggest the use of Pb free solder as well, although Pb solder may be used.

PCBs manufactured using lead free solder will have the PbF within a leaf Symbol **PbF** stamped on the back of PCB.

Caution

- Pb free solder has a higher melting point than standard solder. Typically the melting point is 50 ~ 70 °F (30~40 °C) higher. Please use a high temperature soldering iron and set it to 700 ± 20 °F (370 ± 10 °C).
- Pb free solder will tend to splash when heated too high (about 1100 °F or 600 °C).
If you must use Pb solder, please completely remove all of the Pb free solder on the pins or solder area before applying Pb solder. If this is not practical, be sure to heat the Pb free solder until it melts, before applying Pb solder.
- After applying PbF solder to double layered boards, please check the component side for excess solder which may flow onto the opposite side. (see figure below)



Suggested Pb free solder

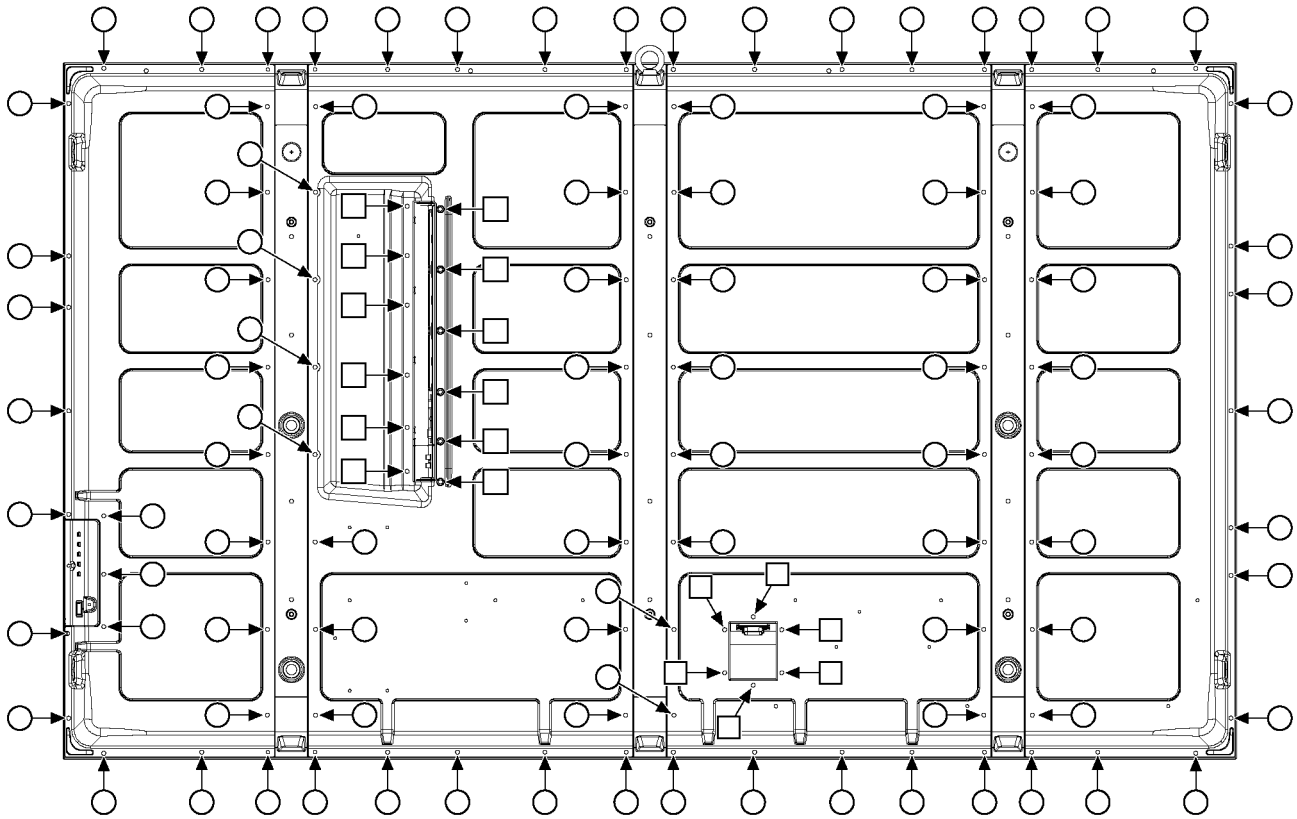
There are several kinds of Pb free solder available for purchase. This product uses Sn+Ag+Cu (tin, silver, copper) solder. However, Sn+Cu (tin, copper), Sn+Zn+Bi (tin, zinc, bismuth) solder can also be used.

0.3mm X 100g	0.6mm X 100g	1.0mm X 100g

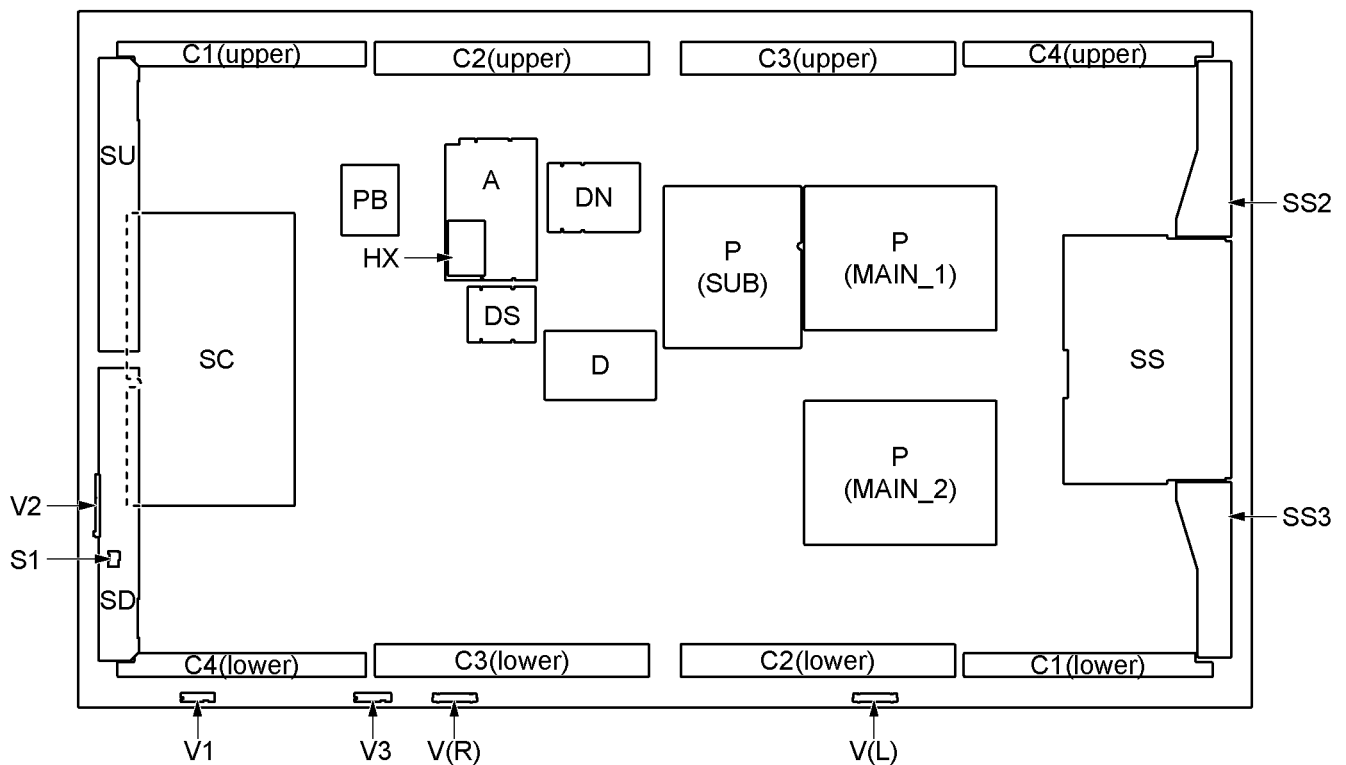
3 Service Navigation

3.1. Service Hint

Remove the Rear Cover



Remove : 97 screws (○) THEL065Z
18 screws (□) THEL0429



Board Name	Function	Board Name	Function
A	Digital Signal Processor, Microcomputer	V3	Remote receiver
DN	3D Digital Signal Processor, Microcomputer	S1	Power switch
D	Format Converter, Plasma AI Processor Sub-Field Processor	C1 (upper)	Data drive (1) (upper)
		C2 (upper)	Data drive (2) (upper)
DS	Slot Interface (Audio / Video / Sync Input Switch), Sync Processor, Audio Processor, DC-DC Converter	C3 (upper)	Data drive (3) (upper)
		C4 (upper)	Data drive (4) (upper)
SC	Scan drive	C1 (lower)	Data drive (1) (lower)
SU	Scan out (Upper)	C2 (lower)	Data drive (2) (lower)
SD	Scan out (Lower)	C3 (lower)	Data drive (3) (lower)
SS	Sustain drive	C4 (lower)	Data drive (4) (lower)
SS2	Sustain out (Upper)	P(MAIN_1)	Power supply
SS3	Sustain out (Lower)	P(MAIN_2)	Power supply
V	3D Eyeware Transmitter	P(SUB)	Power supply
V1	LED-G, R	PB	Fan Control
V2	Key switch	HX	PC / RS-232C

3.2. Applicable signals

*Mark: Applicable input signal

	Signal name	Horizontal frequency (kHz)	Vertical frequency (Hz)	COMPONENT / RGB IN / PC IN (Dot clock (MHz))	HDMI 1-4
1	525 (480) / 60i	15.73	59.94	* (13.5)	*
2	525 (480) / 60p	31.47	59.94	* (27.0) *5	*
3	625 (575) / 50i	15.63	50.00	* (13.5)	
4	625 (576) / 50i	15.63	50.00		*
5	625 (575) / 50p	31.25	50.00	* (27.0)	
6	625 (576) / 50p	31.25	50.00		*
7	750 (720) / 60p	45.00	60.00	* (74.25)	*
8	750 (720) / 50p	37.50	50.00	* (74.25)	*
9	1,125 (1,080) / 60p	67.50	60.00	* (148.5) *1	*
10	1,125 (1,080) / 60i	33.75	60.00	* (74.25) *1	*
11	1,125 (1,080) / 50p	56.26	50.00	* (148.5) *1	*
12	1,125 (1,080) / 50i	28.13	50.00	* (74.25) *1	*
13	1,125 (1,080) / 24sF	27.00	48.00	* (74.25) *2	
14	1,125 (1,080) / 30p	33.75	30.00	* (74.25) *1	
15	1,125 (1,080) / 25p	28.13	25.00	* (74.25) *1	
16	1,125 (1,080) / 24p	27.00	24.00	* (74.25) *1	*
17	1,250 (1,080) / 50i	31.25	50.00	* (74.25) *3	
18	2,048 × 1,080 / 24sF *7	27.00	48.00		
19	2,048 × 1,080 / 24p *7	27.00	24.00		
20	640 × 400 @70 Hz	31.46	70.07	* (25.17)	
21	640 × 480 @60 Hz	31.47	59.94	* (25.18) *6	*
22	640 × 480 @72 Hz	37.86	72.81	* (31.5)	
23	640 × 480 @75 Hz	37.50	75.00	* (31.5)	
24	640 × 480 @85 Hz	43.27	85.01	* (36.0)	
25	800 × 600 @56 Hz	35.16	56.25	* (36.0)	
26	800 × 600 @60 Hz	37.88	60.32	* (40.0)	*
27	800 × 600 @72 Hz	48.08	72.19	* (50.0)	
28	800 × 600 @75 Hz	46.88	75.00	* (49.5)	
29	800 × 600 @85 Hz	53.67	85.06	* (56.25)	
30	852 × 480 @60 Hz	31.47	59.94	* (33.54) *6	
31	1,024 × 768 @50 Hz	39.55	50.00		
32	1,024 × 768 @60 Hz	48.36	60.00	* (65.0)	*
33	1,024 × 768 @70 Hz	56.48	70.07	* (75.0)	
34	1,024 × 768 @75 Hz	60.02	75.03	* (78.75)	
35	1,024 × 768 @85 Hz	68.68	85.00	* (94.5)	
36	1,066 × 600 @60 Hz	37.64	59.94	* (53.0)	
37	1,152 × 864 @60 Hz	53.70	60.00		
38	1,152 × 864 @75 Hz	67.50	75.00	* (108.0)	
39	1,280 × 768 @60 Hz	47.70	60.00	* (80.14)	
40	1,280 × 960 @60 Hz	60.00	60.00	* (108.0)	
41	1,280 × 960 @85 Hz	85.94	85.00	* (148.5)	
42	1,280 × 1,024 @60 Hz	63.98	60.02	* (108.0)	*
43	1,280 × 1,024 @75 Hz	79.98	75.03	* (135.0)	
44	1,280 × 1,024 @85 Hz	91.15	85.02	* (157.5)	
45	1,366 × 768 @50 Hz	39.55	50.00		
46	1,366 × 768 @60 Hz	48.36	60.00	* (86.71)	
47	1,400 × 1,050 @60 Hz	65.22	60.00		
48	1,600 × 1,200 @60 Hz	75.00	60.00	* (162.0)	
49	1,600 × 1,200 @65 Hz	81.25	65.00	* (175.5)	
50	1,920 × 1,080 @60 Hz	67.50	60.00	* (148.5) *4	
51	1,920 × 1,200 @60 Hz	74.04	59.95		
52	Macintosh13" (640 × 480)	35.00	66.67	* (30.24)	
53	Macintosh16" (832 × 624)	49.72	74.54	* (57.28)	
54	Macintosh21" (1,152 × 870)	68.68	75.06	* (100.0)	

*1: Based on SMPTE 274M standard.

*2: Based on SMPTE RP211 standard.

*3: Based on SMPTE 295M standard.

*4: The input signal is recognized as 1,125 (1,080) / 60p.

*5: When selected the RGB format and 525p signal input to the PC IN terminal, it is recognized as VGA 60Hz signal.

*6: When inputted VGA 60Hz format signal from the other than PC IN terminal, it is recognized as 525p signal.

*7: Based on SMPTE 292M and 372M standards. These signals can be received when the Dual Link HD-SDI Terminal Board (TY-FB11DHD) is installed.

Note: Signals without above specification may not be displayed properly.


4 Specifications

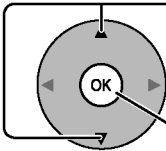
Power Source	200 - 240 V AC, 50/60 Hz
Power Consumption	
Power on	1,200 W
Stand-by condition	0.5 W
Power off condition	0.3 W
Plasma Display panel	Drive method: AC type 85-inch, 16:9 aspect ratio
Screen size	1,889 mm (W) × 1,062 mm (H) × 2,167 mm (diagonal)
(No. of pixels)	2,073,600 (1,920 (W) × 1,080 (H)) [5,760 × 1,080 dots]
Operating condition	
Temperature	0 °C - 40 °C
Humidity	20 % - 80 %
Applicable signals	
Colour System	NTSC, PAL, PAL60, SECAM, Modified NTSC
Scanning format	525 (480) / 60i • 60p, 625 (575) / 50i • 50p, 750 (720) / 60p • 50p, 1125 (1080) / 60i • 60p • 50i • 50p • 24p • 25p • 30p • 24sF, 1250 (1080) / 50i
PC signals	VGA, SVGA, XGA, SXGA UXGA (compressed) Horizontal scanning frequency 15 - 110 kHz Vertical scanning frequency 48 - 120 Hz
Connection terminals	
LAN	RJ45 10BASE-T/100BASE-TX, compatible with PLink™
COMPONENT / RGB IN	
	Y / G (RCA Pin jack) with sync 1.0 Vp-p (75-ohm)
	P _B /C _B /B (RCA Pin jack) 0.7 Vp-p (75-ohm)
	P _R /C _R /R (RCA Pin jack) 0.7 Vp-p (75-ohm)
	AUDIO L-R (RCA Pin jack × 2) 0.5 Vrms
PC IN	(High-Density Mini-D-sub 15 Pin) Y or G with sync 1.0 Vp-p (75-ohm) Y or G without sync 0.7 Vp-p (75-ohm) P _B / C _B / B: 0.7 Vp-p (75-ohm) P _R / C _R / R: 0.7 Vp-p (75-ohm) HD / VD: 1.0 - 5.0 Vp-p (high impedance) with picture 1.0 Vp-p (high impedance) without picture 0.3 Vp-p (high impedance) 0.5 Vrms
	VBS (use HD port)
AV IN	AUDIO (Stereo mini jack (M3) × 1) HDMI 1-4 (TYPE A Connector × 4) HDMI (Version 1.4 with 3D)
SERIAL	External Control Terminal (D-sub 9 Pin) RS-232C compatible
3D SHUTTER OUT	(M3 jack × 1, for 3D IR TRANSMITTER)
AUDIO OUT	L-R (RCA Pin Jack × 2 (L / R))
	Output level : Variable (-∞ - 0 dB) [INPUT 1 kHz / 0 dB, 10 kohm Load]
Accessories Supplied	
Remote Control Transmitter	N2QAYB000562
Batteries	R6 (UM3) Size × 2
Fixing band	TMME203 × 2
Clamper	TMM15412-2 × 1
Dimensions (W × H × D)	2,015 mm × 1,195 mm × 99 mm
Mass (weight)	approx. 117.0 kg net

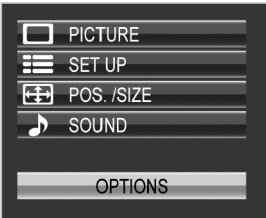
Notes:

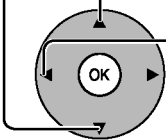
- Design and specifications are subject to change without notice. Mass and dimensions shown are approximate.
- This equipment complies with the EMC standards listed below.
EN55022, EN55024, EN61000-3-2, EN61000-3-3.


5 Operating Instructions

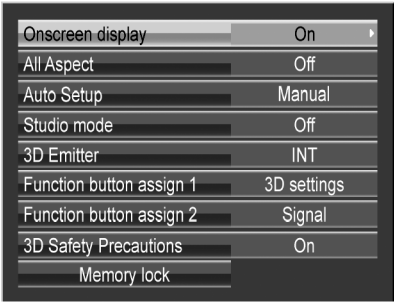
1  Press to display the menu screen.

2  Press to select [OPTIONS].
Press for more than 3 seconds.



3  Press to select your preferred menu.
Press to adjust the menu.

4  Press to exit from Options menu.



Option Menu for GPF13DMONV series

GPF13DMONV chassis series have special function and operation setting facility called Option Menu. This Option Menu is useful for special function required customers. This should be set at the installation stage.

Option menus	default setting	Contents
Onscreen display	On	Enable/Disable to display input mode indication after power on and no signal indication.
All Aspect	Off	Sets All Aspect mode (advanced aspect setting) or default aspect mode.
Auto Setup	Manual	Sets the operational mode of the automatic position adjustment in the POS./SIZE menu.
Studio mode	Off	Switching functions in setting menus used for television studio applications.
3D Emitter	INT	Set the infrared transmitter for the 3D Eyewear.
Function button assign 1	3D settings	Set the function to operate when the FUNCTION button 1 to 2 on the remote control is pressed.
Function button assign 2	Signal	
3D Safety Precautions	On	Set show/hide 3D Safety Precautions during power ON.
Memory lock		Locks or unlocks saved profiles. Also for setting passwords.

6 Service Mode

6.1. CAT (Computer Aided Test) mode

CAT mode menu

CAT panel sys. 8.2		
IIC Mode	◀	
CD Mode	◀	
NW Mode	◀	
SD Mode	◀	
MS Mode	◀	
ID Mode	◀	

Remote control

Mode	Function	Access button
IIC	Service Alignment	OK
CD (Complete Diagnostics)	Software version information EEPROM edit	[5] more than 3 seconds
NW Mode	LAN terminal check	OK
SD (Status Display)	MTBF parameter	OK
MS Mode	Market Select	[5] more than 3 seconds
ID Mode	LSI Check	[5] more than 3 seconds

How to access the CAT mode.

Press and hold the **▼** button on the front panel of the unit and press the **RECALL** button on the remote control 3 times quickly within 2 second, this will place the unit into the CAT mode.

To exit the **CAT mode**, access the **ID mode** and switch off the main power.

6.1.1. IIC mode

Select the IIC mode by **Up/Down** button on the remote control at the front page of CAT mode and then press the **OK** button on the remote control.

OSD

1024x768/60Hz	
16:9 DYNAMIC Hi	
PANEL W/B Adj.	◀ Subject
R DRIVE	◀ Item
C0	◀ New data
▲	Original data

How to use the IIC mode.

1. Select the alignment **Subject** by **Up/Down** buttons on the remote control.
2. Select the alignment **Item** by **Left/Right** buttons on the remote control.
3. Adjust **optimum setting** by **[8],[0]** buttons on the remote control.
4. The **data is memorized** when press the **RETURN** button on the remote control or change the alignment Subject (or Items).

Subject and item are mentioned on [IIC mode structure].

To exit the IIC mode, press the **RETURN** button on the remote control.

6.1.2. CD mode

Select the CD mode by **Up/Down button** on the remote control at the front page of CAT mode and then press the **[5] button** on the remote control more than 3 seconds.

CD

MONITOR-MCU	1. 0100X20	OK	Factory use
MONITOR-EEPROM	83. 01 31	4C 9D	
MONITOR-EEPROM Change Addr	00	01	New data
Data	01	01	
MONITOR-SUB MCU	1. 0000X20		Original data
MONITOR-FPGA1/FPGA2	01. 00	01. 00	
MONITOR-FPC	03. 03. A3. 02		
MONITOR-MIHO	11. 0C. 00. 64		
LAN-MCU	-, -----		
LAN-MAC ADDRESS	00:00:00:00:00:00		
PANEL-MCU	3. 50		
PANEL-EEPROM	97. 60		
PANEL-DCC	A5. 80		
PANEL-PDROM	97. 60		
SLOT BOARD EEPROM	-- --		
SLOT BOARD --/--/--	-- -- -- --		
PTCT	01. 02. 03. 04. 05.		SOS history

Memory data change

Address

00

Change by **Up/Down buttons** on the remote control.

Change by **Left/Right buttons** on the remote control.

Data

00

Change by **[8],[0] buttons** on the remote control.

The data is memorized when switch off the main power.

To exit the CD mode, press the **RETURN button** on the remote control.

6.1.3. NW mode

Note :

To use the network function, set each [Network Setup] setting and make sure to set the [Control I/F Select] to [LAN].

Select the NW mode by **Up/Down button** on the remote control at the front page of CAT mode and then press the **OK button** on the remote control.

NW

TEST

OK

Version

XX.XXXX

MAC Address

XX:XX:XX:XX:XX:XX

Press the **OK button** to start TEST (Check of Ping).

Check to show [OK] in TEST column.

If [G_NG] shows, it is failure for Ping process.

If [L_NG] shows, it is failure for Link process.

Software Version

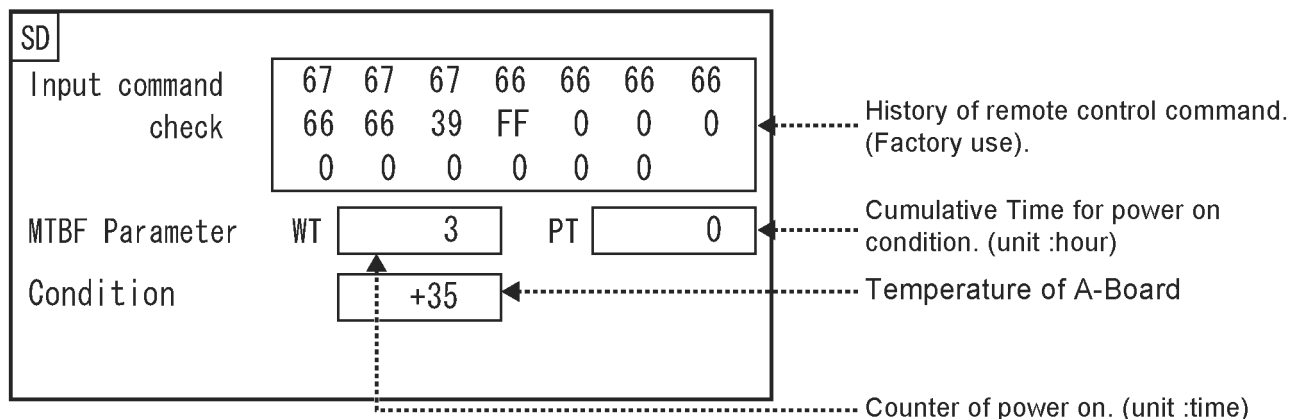
Mac address

To exit the NW mode, press the **RETURN button** on the remote control.

6.1.4. SD mode

Select the SD mode by **Up/Down button** on the remote control at the front page of CAT mode and then press the **OK button** on the remote control.

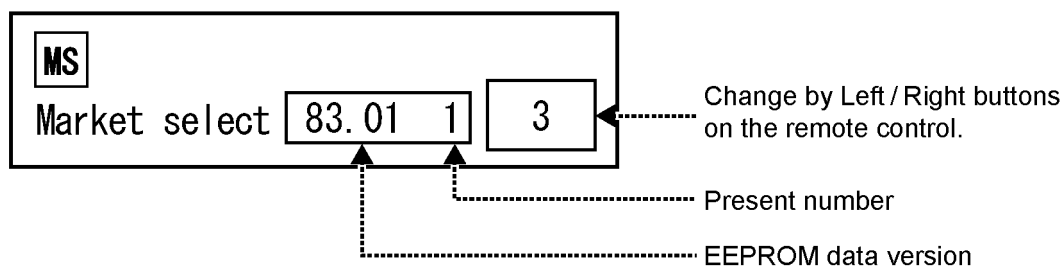
OSD



To exit the SD mode, press the **RETURN button** on the remote control.

6.1.5. MS mode

Select the MS mode by **Up/Down button** on the remote control at the front page of CAT mode and then press the **[5] button** on the remote control more than 3 seconds.



To exit the MS mode, press the **RETURN button** on the remote control.

Caution:

Market Select should be set after exchange of A-Board.

Destination number

Number	Destination	Number	Destination
0	Japan	16	--
1	North America	17	--
2	Europe	18	China
3	Others	19	China (Hotel)
4	Britain	20	Russia
5	Taiwan	21	Russia (Hotel)
6	Thailand	22	Hong Kong
7	--	23	--
8	Japan (Hotel)	24	--
9	North America (Hotel)	25	--
10	Europe (Hotel)	26	--
11	--	27	--
12	Britain (Hotel)	28	Middle East/Hong Kong
13	--	29	Middle East/Hong Kong (Hotel)
14	Thailand (Hotel)	30	Australia
15	--	31	Australia (Hotel)

Default setting

Number	Destination
1	North America

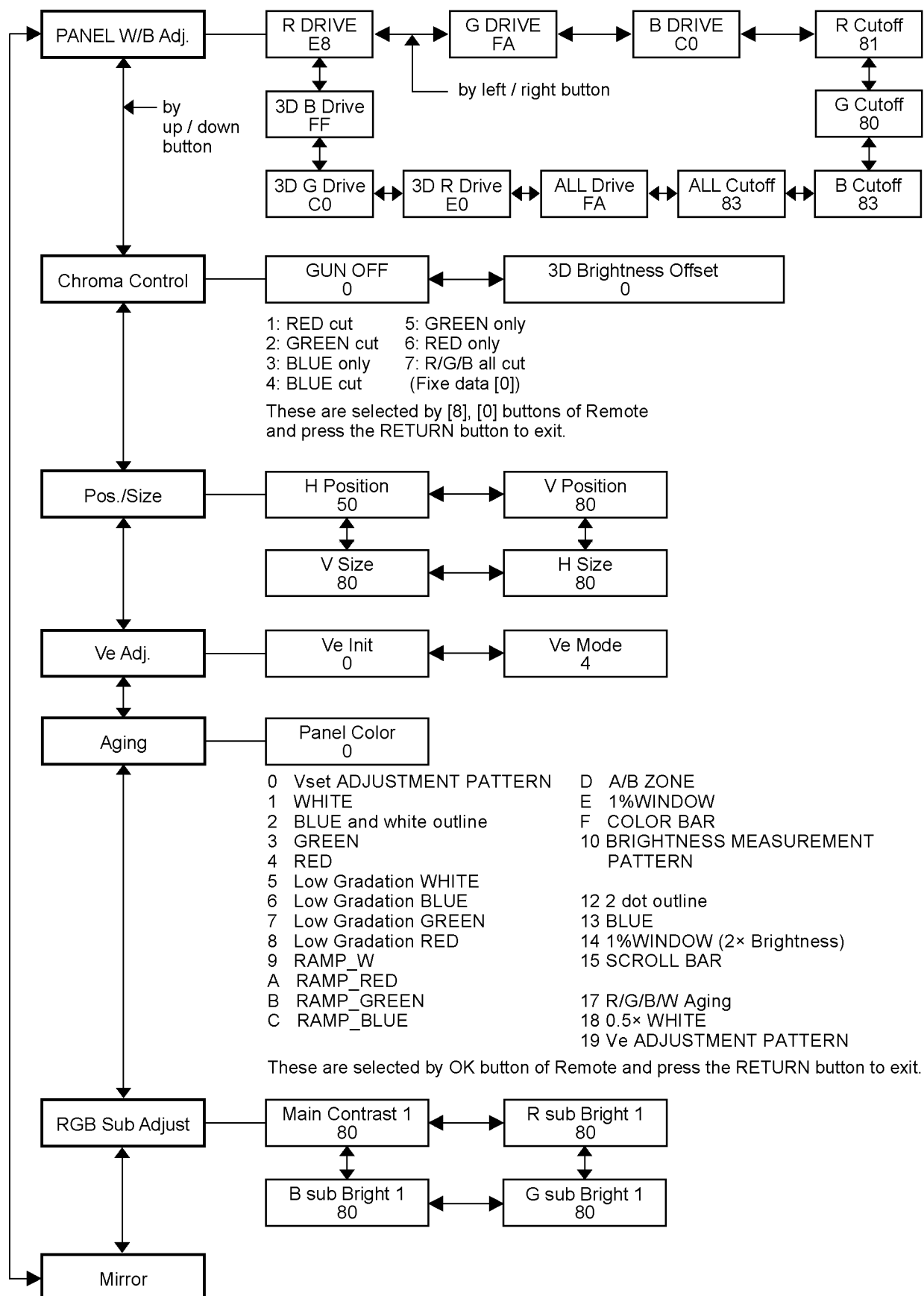
6.1.6. ID mode

Select the ID mode by **Up/Down button** on the remote control at the front page of CAT mode and then press the **[5] button** on the remote control more than 3 seconds.

ID	II C1	II C2	II C3	II C4	SLAVE		
A	IC4004	OK	H90	DN	IC5001	OK	H53
	IC2301	OK	H22		IC5201	OK	H56
	IC2108	OK	H65		IC5501	OK	H58
	IC2509	OK	H61				
	IC8201	OK	H57	D	PANEL	OK	
	IC4001	OK	H62				
	IC8001	OK	H56				
	IC4501	OK	H91				
	PTCT	00	H09				

To exit the ID mode, press the **RETURN button** on the remote control.

6.2. IIC mode structure (following items value is sample data)



7 Troubleshooting Guide

7.1. Self Check

7.1.1. Display Indication

- 1. Self-check is used to automatically check the bus line controlled circuit of the Plasma display.
- 2. To get into the Self-check mode, press the ▼ button on the customer controls at the bottom of the set, at the same time pressing the **OFF-TIMER** button on the remote control, and the screen will show.

If the IIC ports have been checked and found to be incorrect Or not located then [- -] will appear in place of [OK]
[01] in the line of the [PTCT] means the number of blinks of the Power LED is 1. (Reference to 7.1.2)
[H09] in the line of the [PTCT] is the error code.

To exit the CAT mode switch off the main power.

Note:
The line of the [PTCT] displays when you get into the Self-check mode for the first time only after the Power LED blinks.

ID	IIC1	IIC2	IIC3	IIC4	SLAVE		
A	IC4004	OK	H90	DN	IC5001	OK	H53
	IC2301	OK	H22		IC5201	OK	H56
	IC2108	OK	H65		IC5501	OK	H58
	IC2509	OK	H61				
	IC8201	OK	H57		D	PANEL	OK
	IC4001	OK	H62				
	IC8001	OK	H56				
	IC4501	OK	H91				
	PTCT	00	H09				

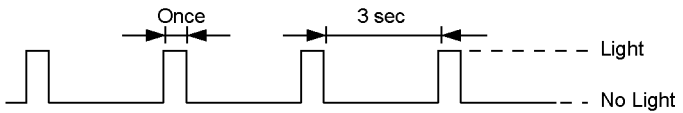
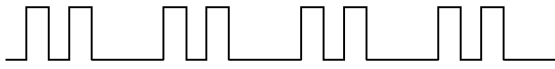



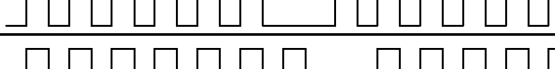
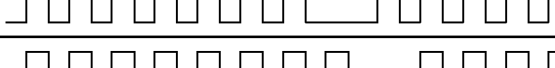




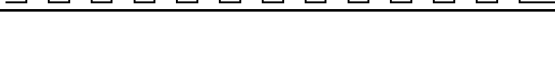


7.1.2. Power LED Blinking timing chart

1. Subject

Information of LED Blinking timing chart.

2. Contents

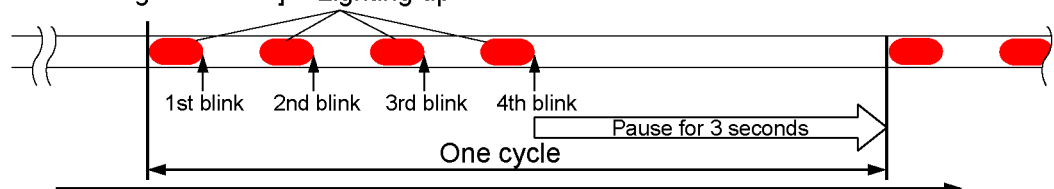
When an abnormality has occurred to the unit, the protection circuit operates and resets to the stand by mode. At this time, the defective block can be identified by the number of blinks of the Power LED on the front panel of the unit.

Blinking times	Blinking timing	Contents & Check point	Check point
1		(PTCT 01 H09) (PTCT E1 H09) No particular check point	D-Board A-Board
2		(PTCT 02 H09) (PTCT E2 H09) (PTCT F2 H09) P+15VSOS F+15V,A+15VSOS	P-Board A-Board DS-Board D-Board
3		(PTCT 03 H09) P+3.3VSOS	D-Board
4		(PTCT 04 H09) Power SOS	P-Board
5		(PTCT 05 H09) P+5V SOS	P-Board
6		(PTCT 06 H09) Driver SOS1	SC-Board
7		(PTCT 07 H09) Driver SOS2	SC-Board SU-Board SD-Board
8		(PTCT 08 H09) Driver SOS3	SS-Board SS2-Board SS3-Board
9		(PTCT 09 H09) Discharge control SOS	D-Board
10		(PTCT 0A H09) Terminal Board SOS	Terminal Board DS-Board
11		(PTCT 0B H 09) FAN SOS	FAN PB-Board A-Board
12		(PTCT 1C H 09 - PTCT 5C H 09) FPGA config SOS	A-Board DN-Board
13		(PTCT 0D H09) * A+9V,A+3.3V,A+1.8V SOS (PTCT 1D H09) * A+5V SOS (PTCT 2D H09) * A+1.2V_M,A+1.2V_S, SUB+3.3V SOS (PTCT 3D H09) * A-Board Microcomputer Communication SOS	A-Board
14		(PTCT 0E H09) LED_10V,3.3V,1.2V, 1.05V SOS	DN-Board

* Refer to 7.1.1 Display Indication

About blinking LED

[When blinking four times] Lighting up

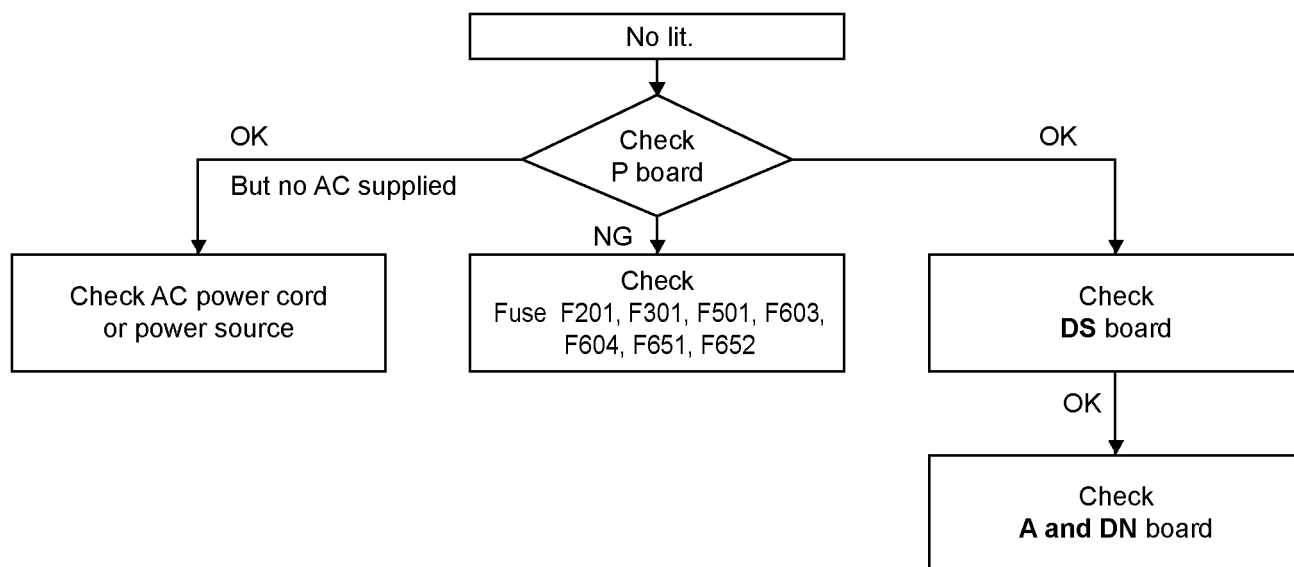


7.2. No Power

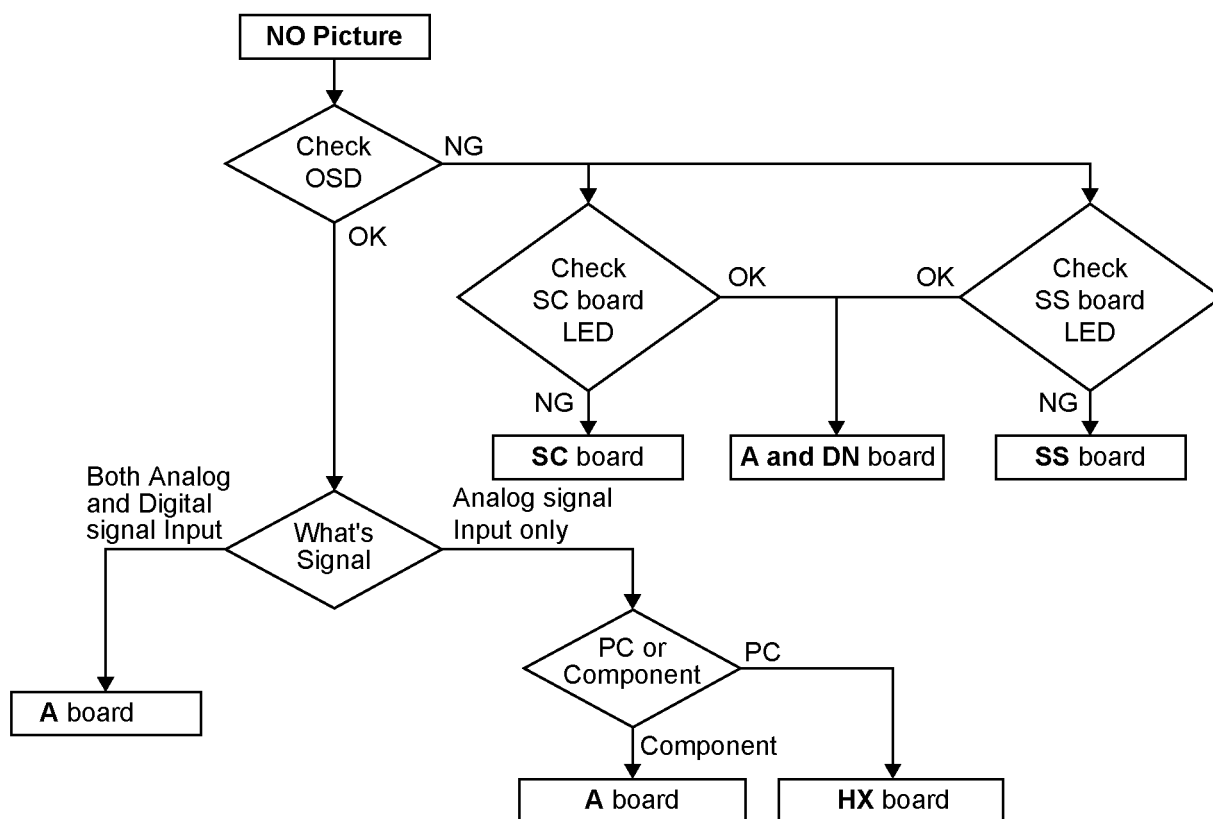
First check point

There are following 3 states of No Power indication by power LED.

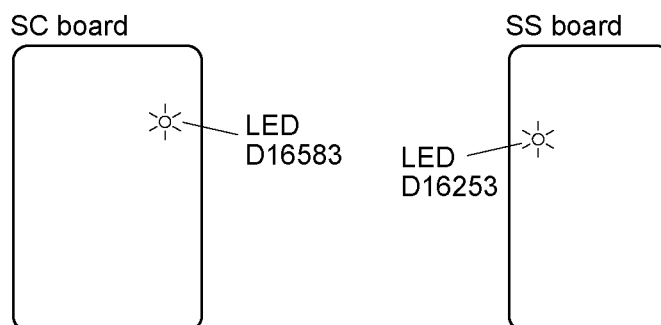
1. No lit.
2. Green is lit then turns red blinking a few seconds later.
3. Only red is lit.



7.3. No Picture

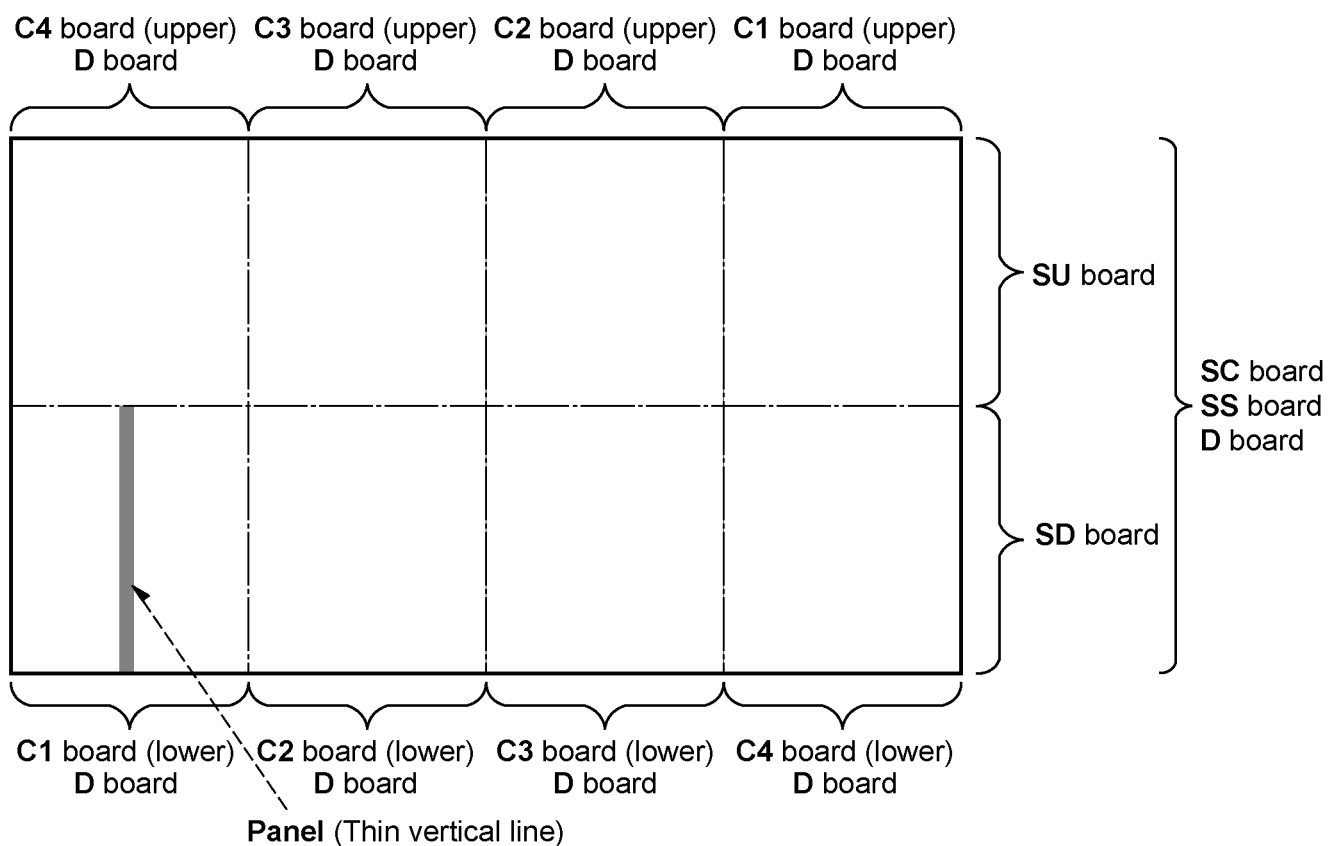


Drive circuits LED indicator



7.4. Local screen failure

Plasma display may have local area failure on the screen. Fig - 1 is the possible defect P.C.B. for each local area.



< Local screen failure chart >

Fig - 1

8 Service Fixture & Tools

8.1. Service Stand

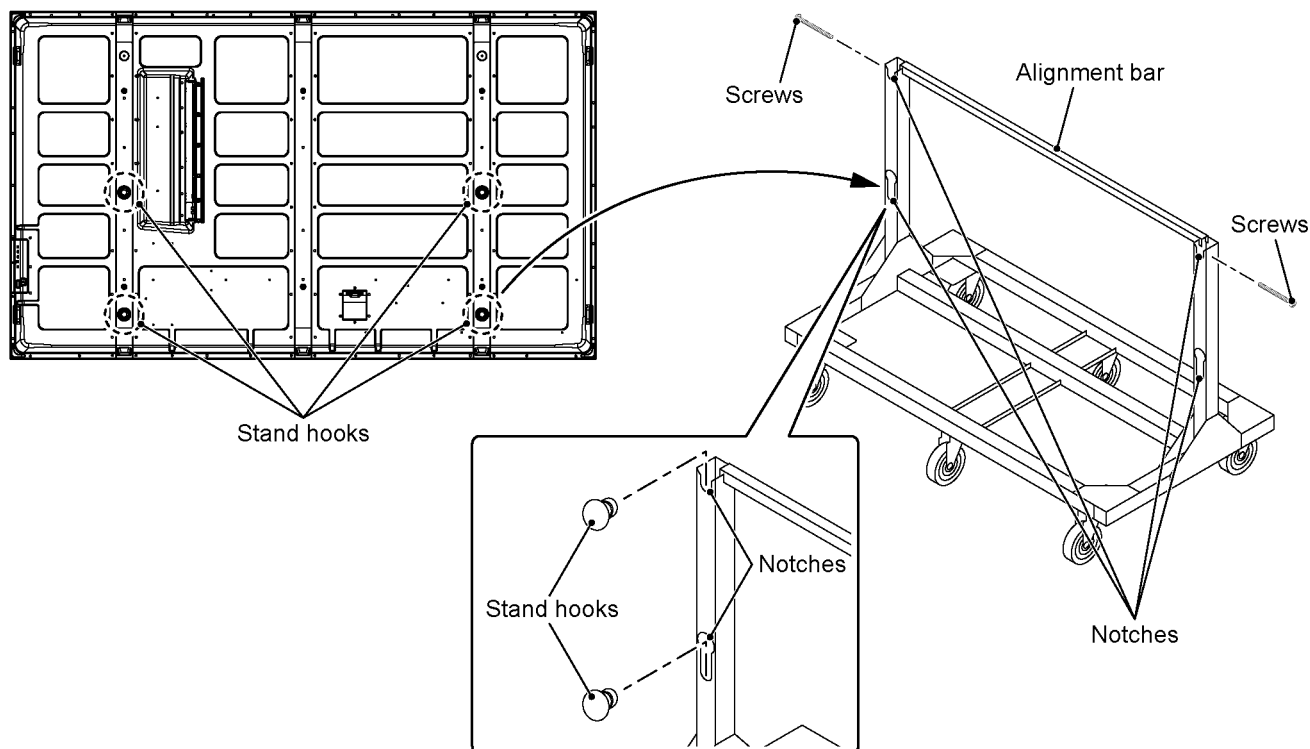
When conducting repairs and servicing, install the Plasma Display to the Service Stand.

Part number:

TZSA07021

Installation of plasma display:

1. Lock 2 casters.
2. Check that the Alignment bar is set to the Service Stand.
3. Remove 2 screws.
4. Join the stand hooks to the 4 notches on the Service Stand.



5. Tighten 2 screws.
6. Remove the Alignment bar, then start conducting repairs and servicing.
7. After conducting repairs and servicing, remove the plasma display from the Service Stand in reverse order.

Note: Do not over-tighten the screws, as this could cause the fixtures to deform the Service Stand.

8.2. SC jig

Purpose:

To find the failure board (SC or SU/SD) when the power LED is blinking 7 times.

SC jig:

Jumper connector to connect to SC50 connector on SC board

Part number:

TZSC09187

How to use:

Caution: Remove SC jig from SC board after inspection.

1. Remove all connector between SC board and SU/SD board to isolate SC board from both SU and SD board electrically.

Note: The board will be damaged if all connector is not removed (for example; remove connector only for SU board and stay connecting with SD board. The board will be damaged.)

2. Connect SC jig to connector SC50 at left bottom side of SC board.

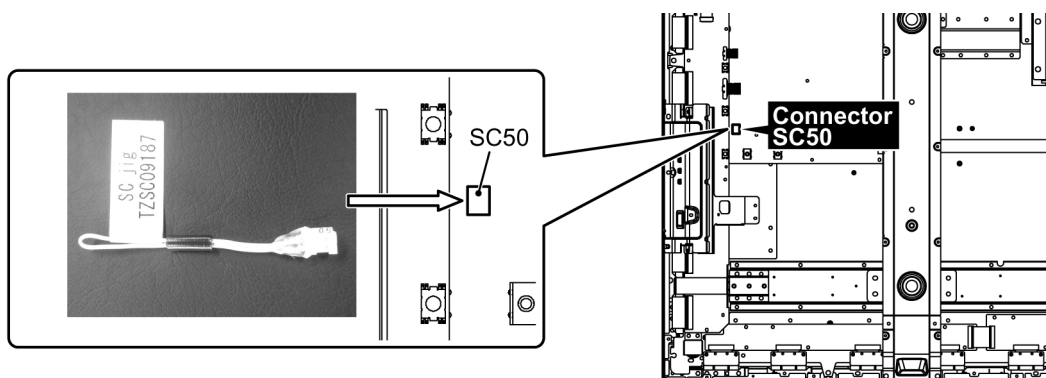
3. Turn on the TV/Display Unit and confirm the power LED blinking.

LED blinking: Possible cause of failure is in SC board

No LED blinking (Lighting or no lighting): Possible cause of failure is in SU or SD board

4. After inspection, turn off the TV/Display Unit and wait a few minutes to discharge.

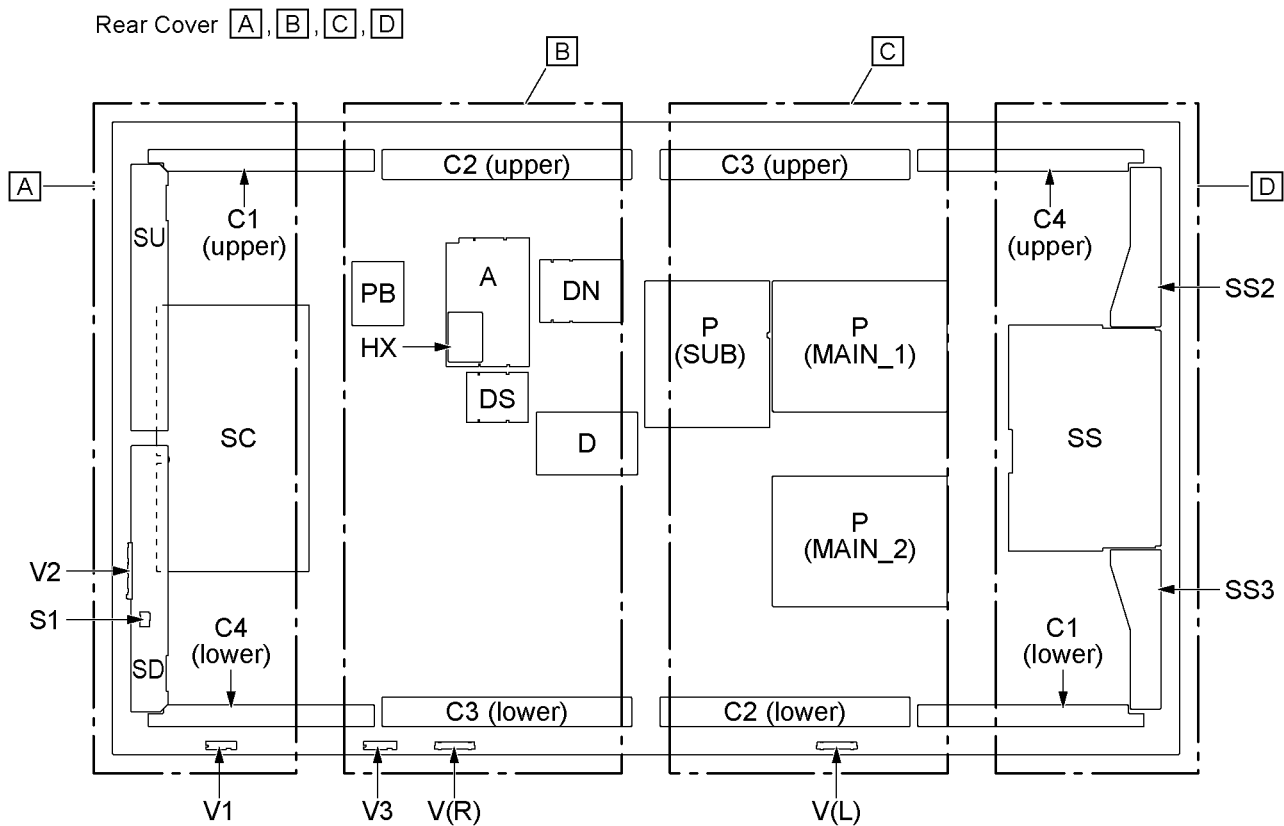
5. Remove SC jig from SC board.



9 Disassembly and Assembly Instructions

- To disassemble P.C.B., wait for 10 minute after power was off for discharge from electrolysis capacitors.
- ○, □, ▲, ▴ and ▴ marks indicate screw positions.

9.1. Rear Cover and Board

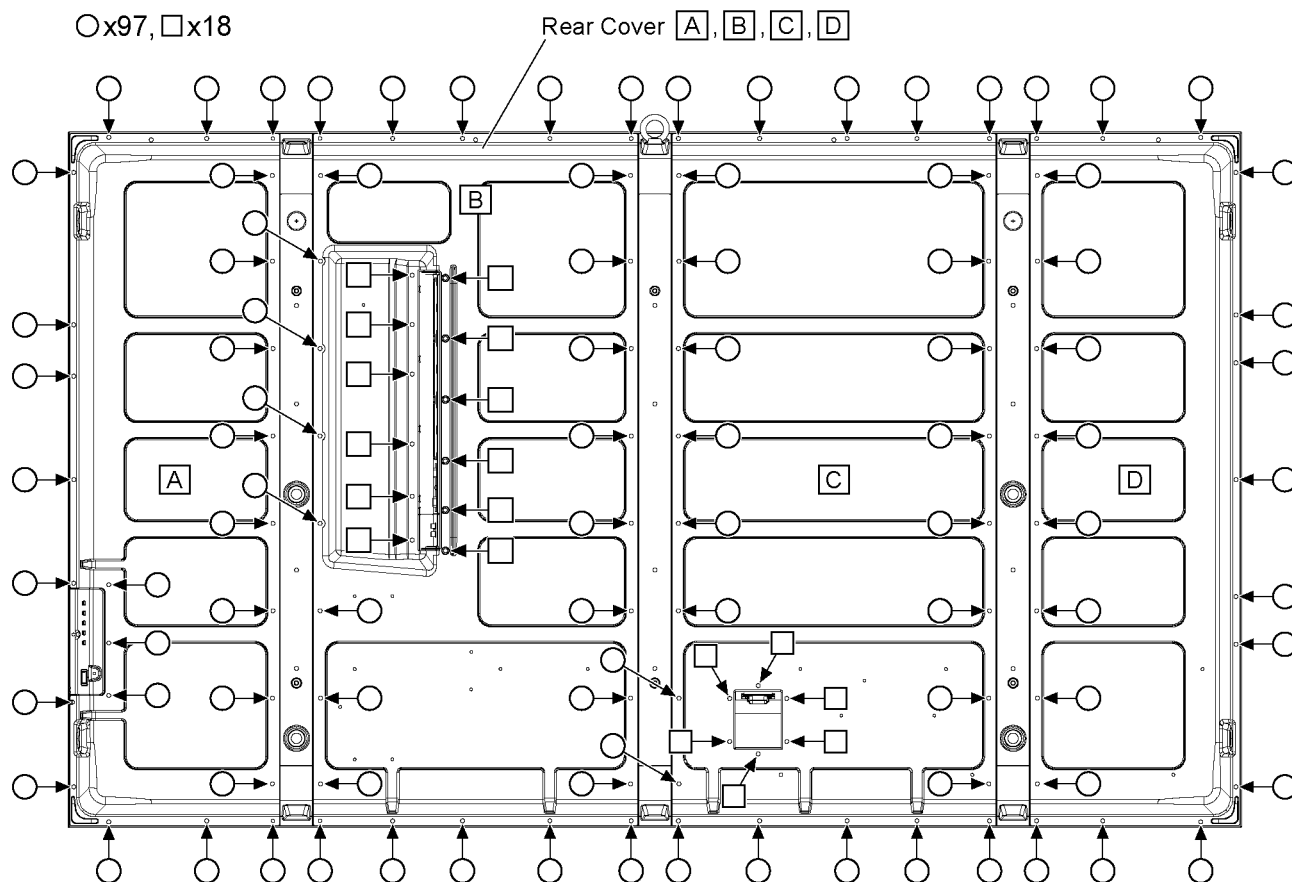


Rear Cover required to remove for each board exchange.

Board Name	Rear Cover
A-Board	<u>B</u>
D-Board	<u>B</u> , <u>C</u>
DS-Board	<u>B</u>
SS-Board	<u>D</u>
SC-Board	<u>A</u>
SU-Board	<u>A</u>
SD-Board	<u>A</u>
C1-Board (upper)	<u>A</u> , <u>B</u>
C2-Board (upper)	<u>B</u> , <u>C</u>
C3-Board (upper)	<u>B</u> , <u>C</u>
C4-Board (upper)	<u>C</u> , <u>D</u>
C1-Board (lower)	<u>C</u> , <u>D</u>
C2-Board (lower)	<u>B</u> , <u>C</u>
C3-Board (lower)	<u>B</u> , <u>C</u>
C4-Board (lower)	<u>A</u> , <u>B</u>
S1-Board	<u>A</u>
SS2-Board	<u>D</u>
SS3-Board	<u>D</u>
V1-Board	<u>A</u> , <u>B</u> , <u>C</u> , <u>D</u>
V2-Board	<u>A</u>
V3-Board	<u>A</u> , <u>B</u> , <u>C</u> , <u>D</u>
PB-Board	<u>B</u>
P-Board (MAIN_1)	<u>C</u>
P-Board (MAIN_2)	<u>C</u>
P-Board (SUB)	<u>B</u> , <u>C</u>
HX-Board	<u>B</u>
DN-Board	<u>B</u>

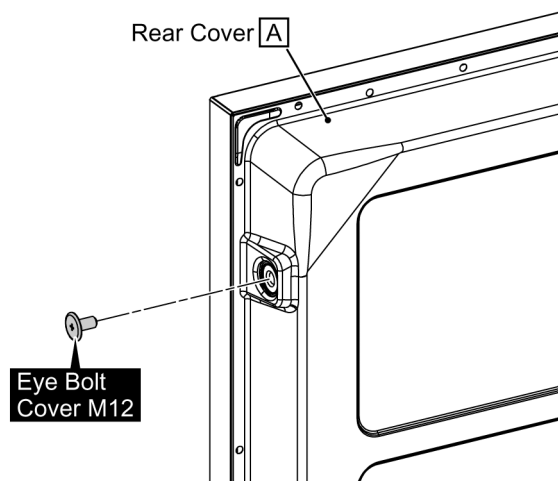
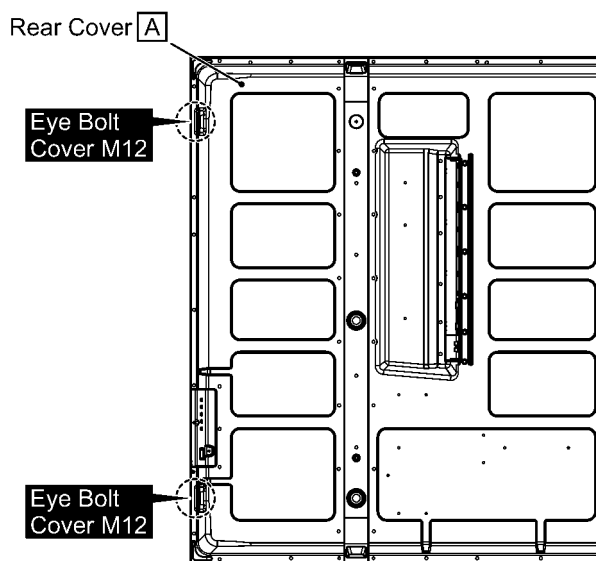
Board Name	Rear Cover
V-Board (L)	C
V-Board (R)	B

9.2. Location of Rear Cover screws

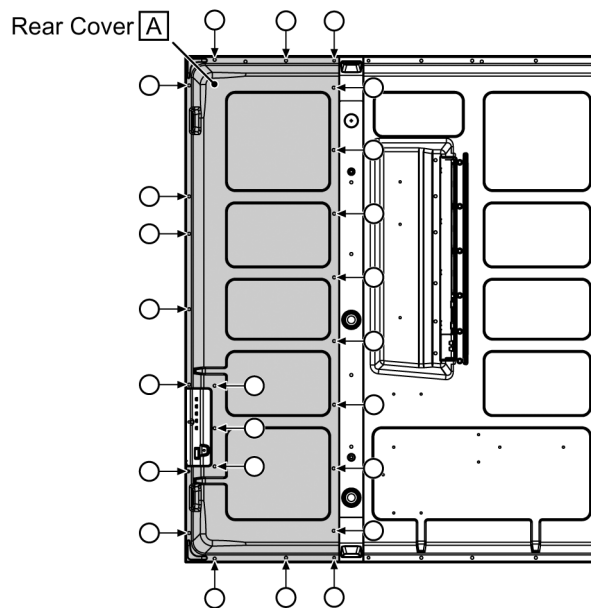


9.2.1. Removal of Rear Cover (A)

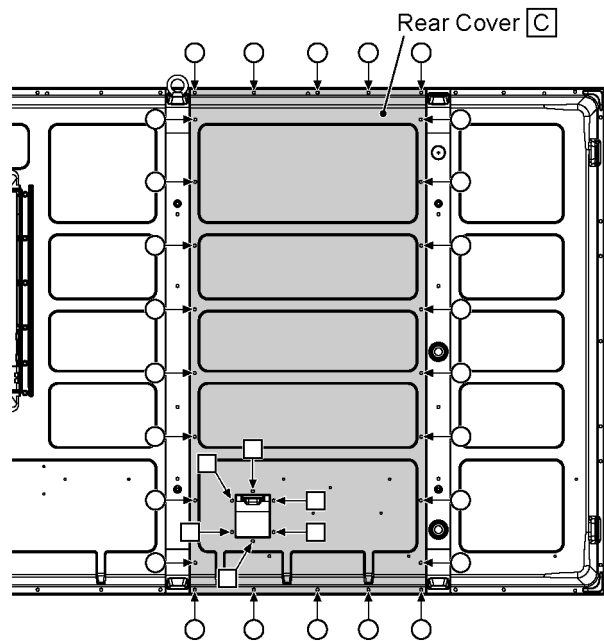
1. Remove Eye Bolt Covers M12.



2. Remove screws (×24 ○) and then remove the Rear Cover (**A**).

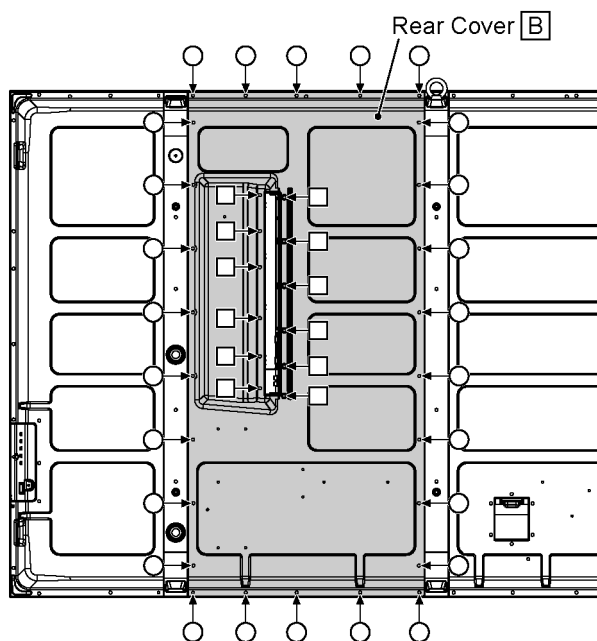


Rear Cover (**C**).



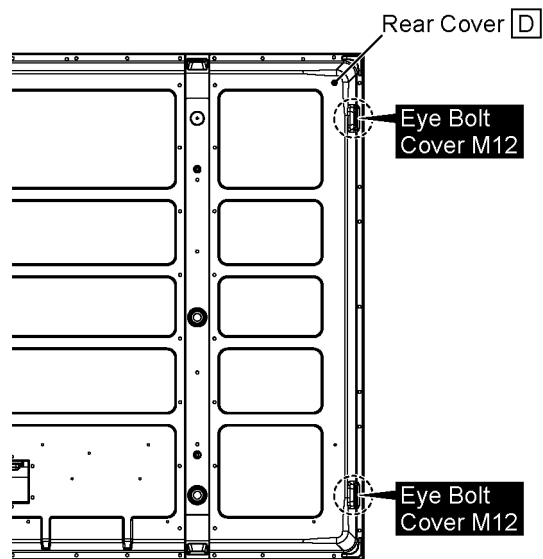
9.2.2. Removal of Rear Cover (**B**)

1. Remove screws (×26 ○, ×12 □) and then remove the Rear Cover (**B**).



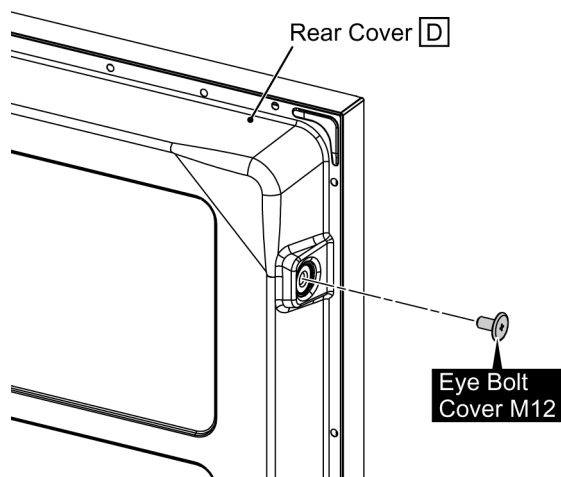
9.2.4. Removal of Rear Cover (**D**)

1. Remove Eye Bolt Covers M12.

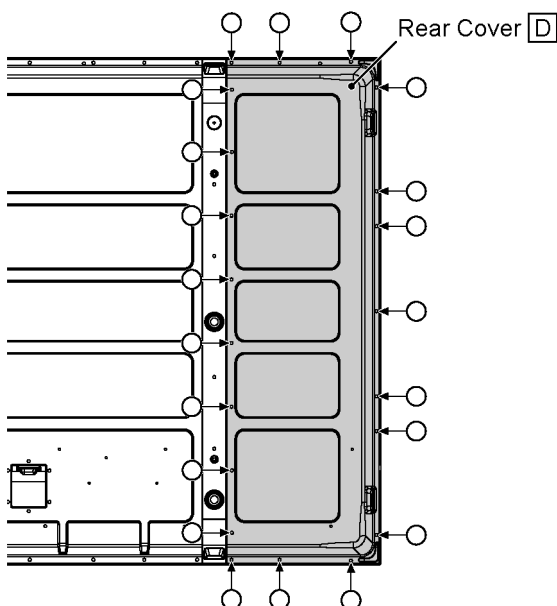


9.2.3. Removal of Rear Cover (**C**)

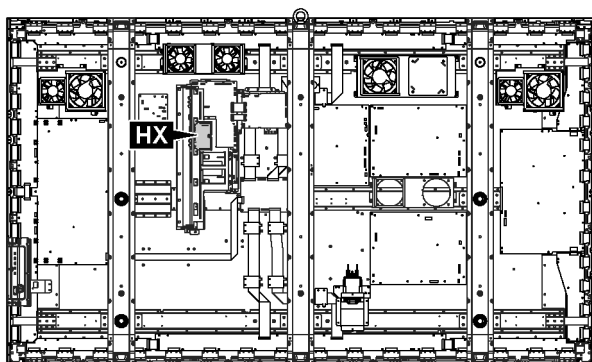
1. Remove screws (×26 ○, ×6 □) and then remove the



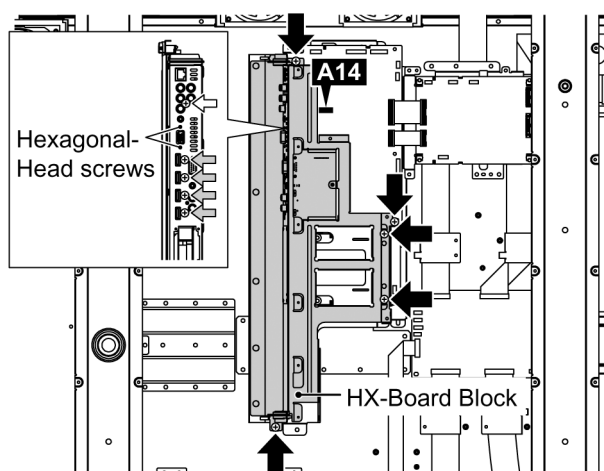
2. Remove screws (×21 ○) and then remove the Rear Cover (□).



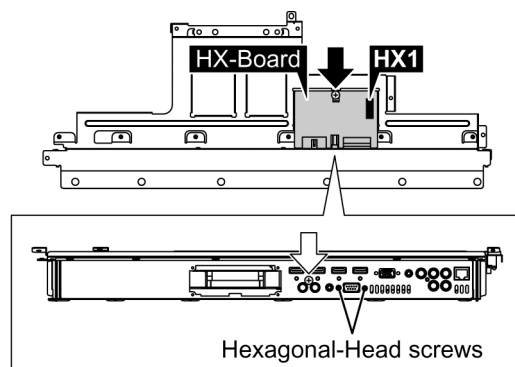
9.3. Removal of HX-Board



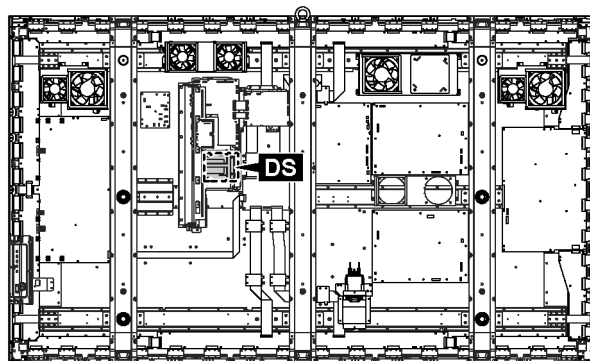
1. Disconnect the connector (A14).
2. Remove 2 Hexagonal-Head screws, 5 screws (⬆), 1 screw (⬇) and 4 screws (⬇) and then remove the HX-Board Block.



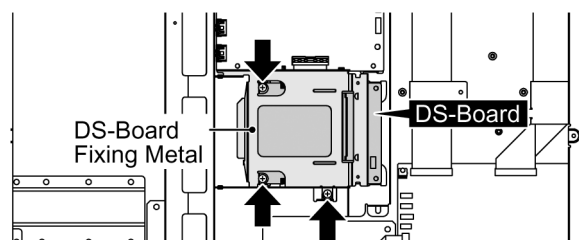
3. Turn over the HX-Board Block.
4. Disconnect the connector (HX1).
5. Remove 2 Hexagonal-Head screws, 1 screw (⬆) and 1 screw (⬇) and then remove HX-Board.



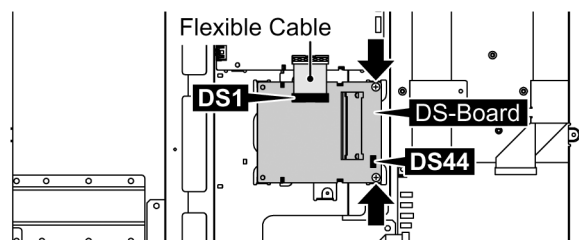
9.4. Removal of DS-Board



1. Remove HX-Board Block.
(Refer to Removal of HX-Board)
2. Remove 3 screws and then remove the DS-Board Fixing Metal.

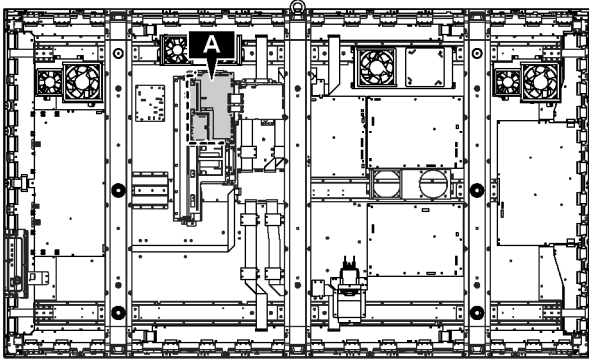


3. Disconnect the connector (DS44).
4. Remove the flexible cable from the connector (DS1).
5. Remove 2 screws and then remove DS-Board.

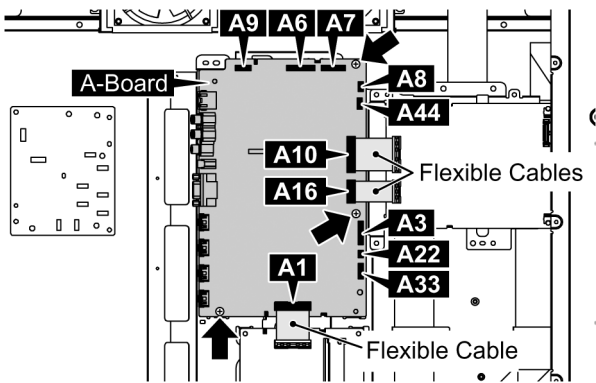


9.5. Removal of A-Board

Check that no bright points appears by Ve Life adjustment after both D and A board exchange.



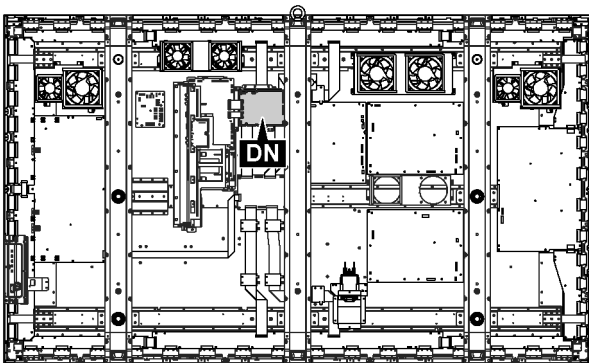
1. Remove HX-Board Block.
(Refer to Removal of HX-Board)
2. Remove the DS-Board Fixing Metal.
(Refer to Removal of DS-Board)
1. Disconnect the connectors (A3, A6, A7, A8, A9, A22, A33, A44).
2. Remove the flexible cables from the connectors (A1, A10, A16).
3. Remove 3 screws and then remove A-Board.



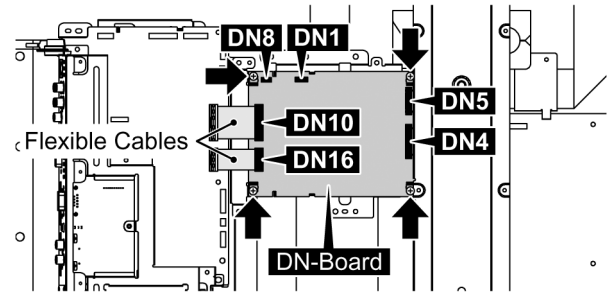
Note:

A re-setup of the destination is performed by MS mode after A-Board exchange.

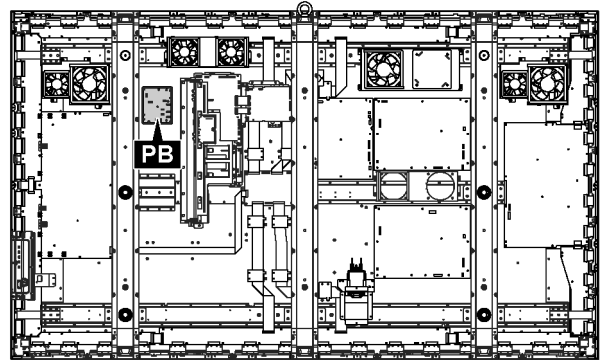
9.6. Removal of DN-Board



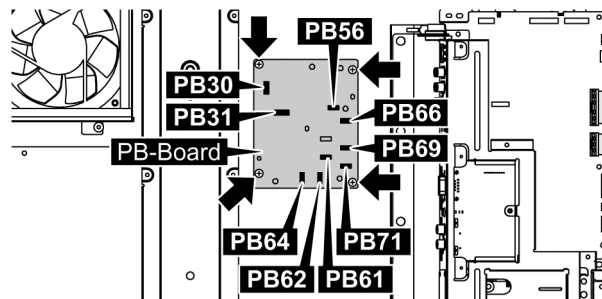
1. Disconnect the connectors (DN1, DN4, DN5, DN8).
2. Remove the flexible cables from the connectors (DN10, DN16).
3. Remove 4 screws and then remove DN-Board.



9.7. Removal of PB-Board

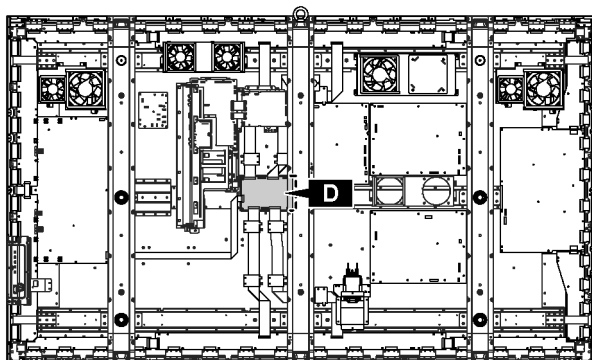


1. Disconnect the connectors (PB30, PB31, PB56, PB61, PB62, PB64, PB66, PB69, PB71).
2. Remove 4 screws and then remove PB-Board.

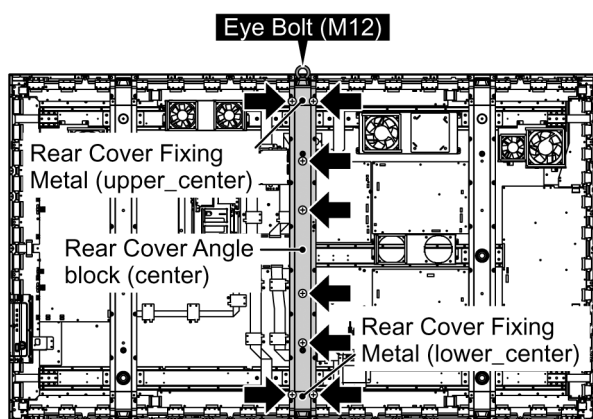


9.8. Removal of D-Board

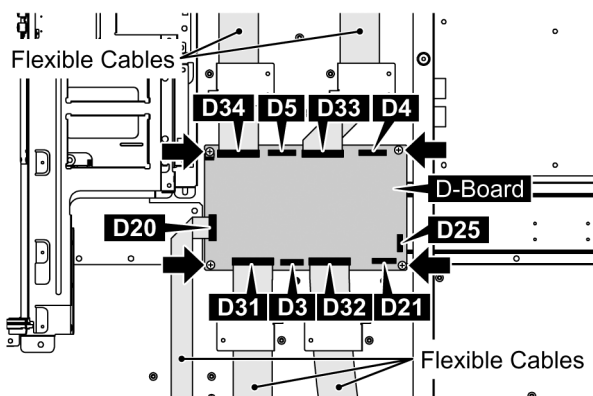
Check that no bright points appears by Ve Life adjustment after both D and A board exchange.



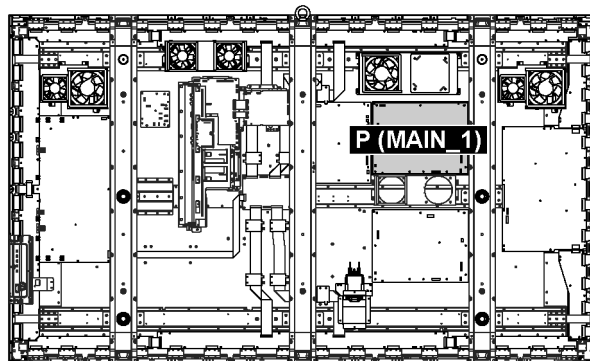
1. Remove the Eye Bolt (M12).
2. Remove 4 screws and then remove the Rear Cover Fixing Metals (upper_center, lower_center).
3. Remove 4 screws and then remove the Rear Cover Angle block (center).



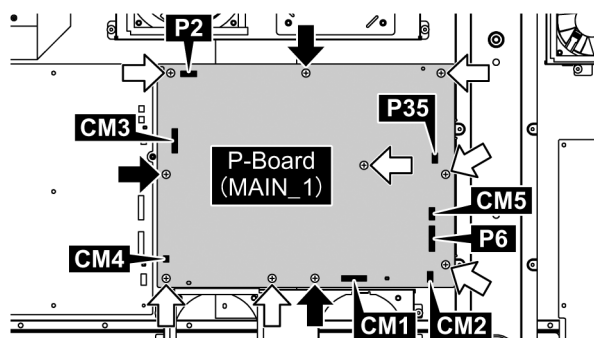
4. Disconnect the connectors (D3, D4, D5, D21, D25).
5. Remove the flexible cables from the connectors (D20, D31, D32, D33, D34).
6. Remove 4 screws and then remove D-Board.



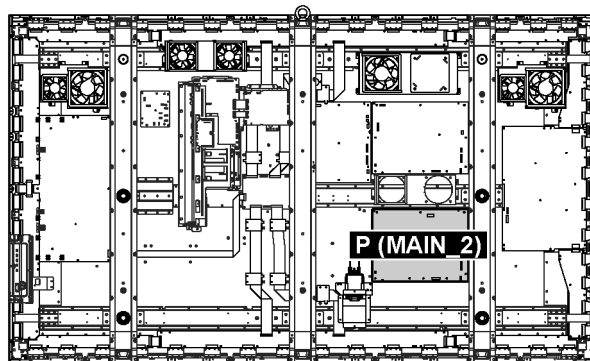
9.9. Removal of P-Board (MAIN_1)



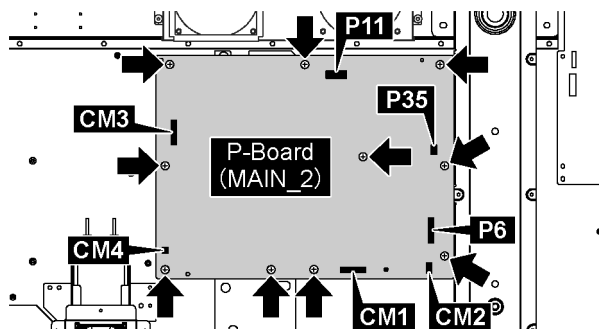
1. Disconnect the connectors (CM1, CM2, CM3, CM4, CM5, P2, P6, P35).
2. Remove 3 screws (↑) and then remove P-Board protect spacers.
3. Remove 7 screws (⇅) and then remove P-Board (MAIN_1).



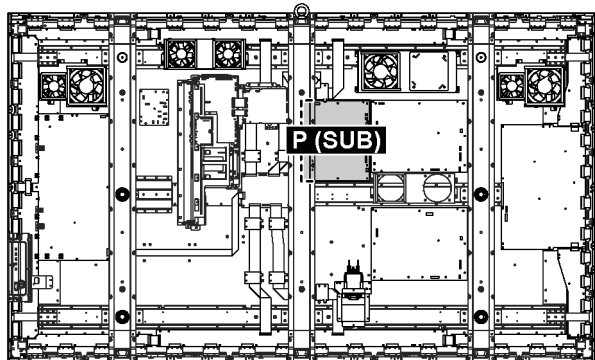
9.10. Removal of P-Board (MAIN_2)



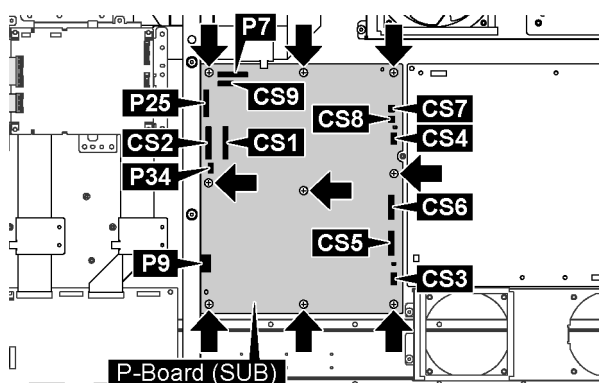
1. Disconnect the connectors (CM1, CM2, CM3, CM4, P6, P11, P35).
2. Remove 3 screws (↑) and then remove P-Board protect spacers.
3. Remove 7 screws (⇧) and then remove P-Board (MAIN_2).



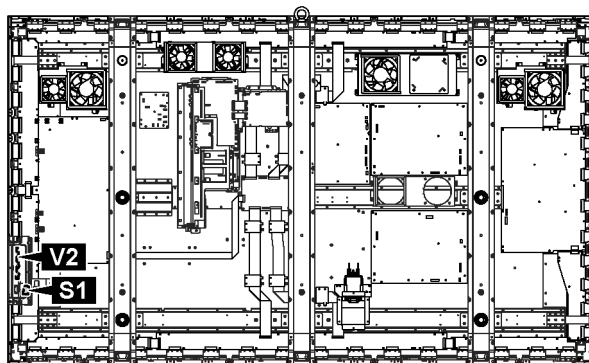
9.11. Removal of P-Board (SUB)



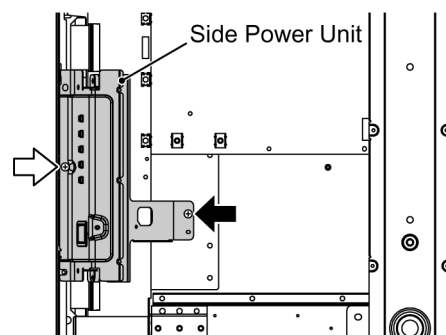
1. Remove the Rear Cover Angle block (center).
(Refer to Removal of D-board)
2. Disconnect the connectors (CS1, CS2, CS3, CS4, CS5, CS6, CS7, CS8, CS9, P7, P9, P25, P34).
3. Remove 9 screws and then remove P-Board (SUB).



9.12. Removal of S1-Board and V2-Board

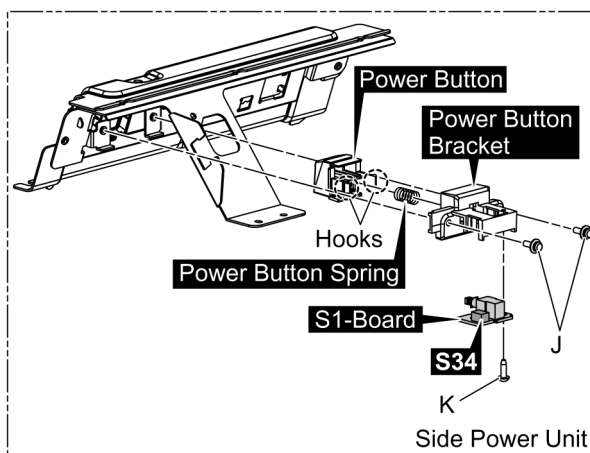


1. Remove 1 screw (↑).
2. Remove 1 screw (⇧) and then remove the Side Power Unit.



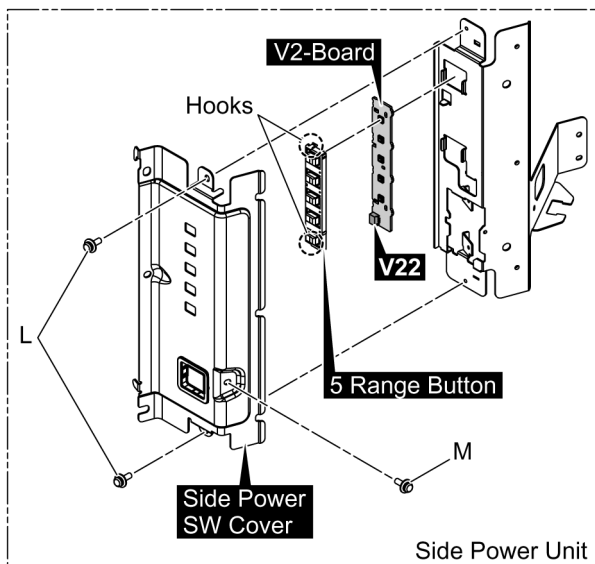
9.12.1. Removal of S1-Board

1. Remove 2 screws (J) and then remove the Power Button Bracket.
2. Remove 1 screw (K).
3. Disconnect the connector (S34) and then remove S1-Board.
4. Remove 2 hooks and then remove the Power Button and Power Button Spring.

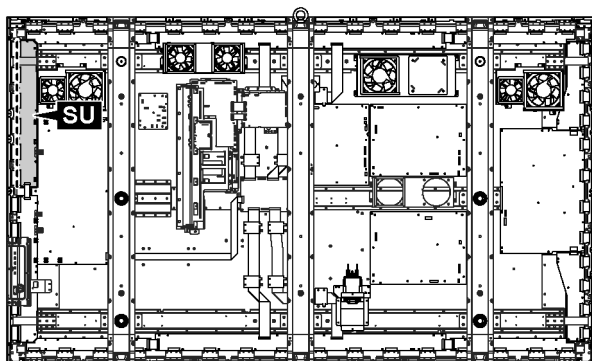


9.12.2. Removal of V2-Board

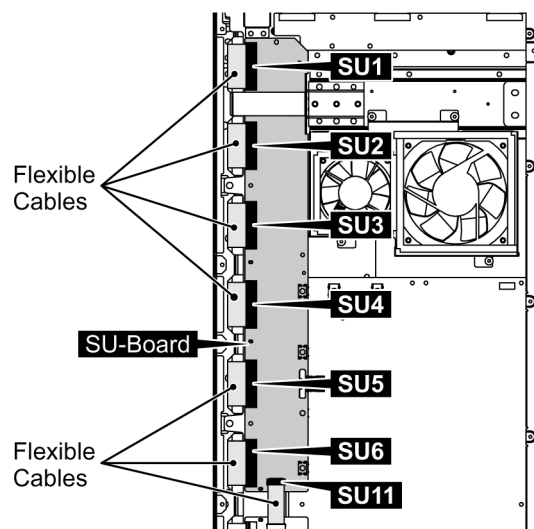
1. Remove 2 screws (L).
2. Remove 1 screw (M) and then remove the Side Power SW Cover.
3. Disconnect the connector (V22) and then remove V2-Board.
4. Remove 2 hooks and then remove the 5 Range Button from V2-Board.



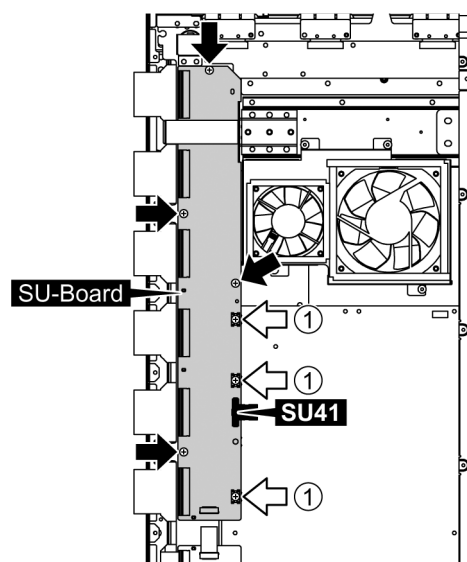
9.13. Removal of SU-Board



1. Remove the flexible cables from the connectors (SU1, SU2, SU3, SU4, SU5, SU6, SU11).



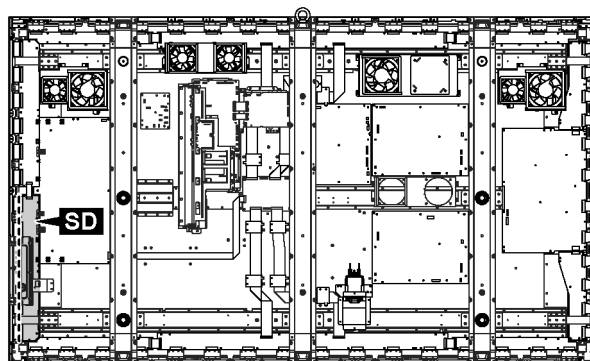
2. Disconnect the connector (SU41).
3. Remove 4 screws (↑).
4. Remove 3 screws (⇧) and then remove SU-Board.



Note: when fixing SU-Board

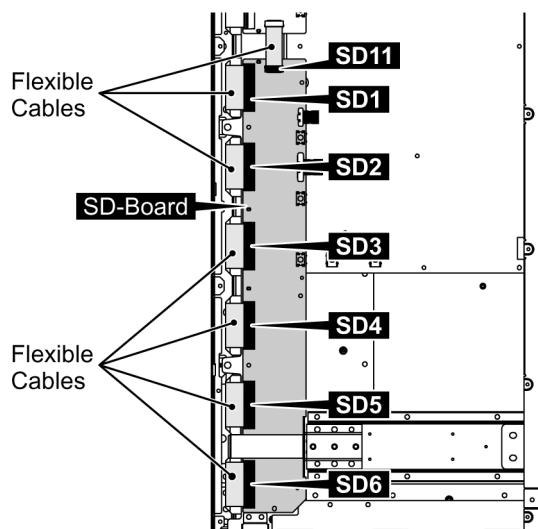
- Screw on 3 screws (⇧) firstly.

9.14. Removal of SD-Board

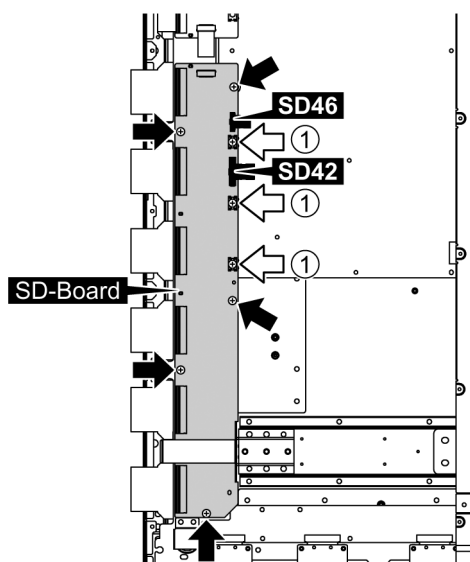


1. Remove the Side Power Unit.
(Refer to Removal of S1-Board and V2-Board)

2. Remove the flexible cables from the connectors (SD1, SD2, SD3, SD4, SD5, SD6, SD11).

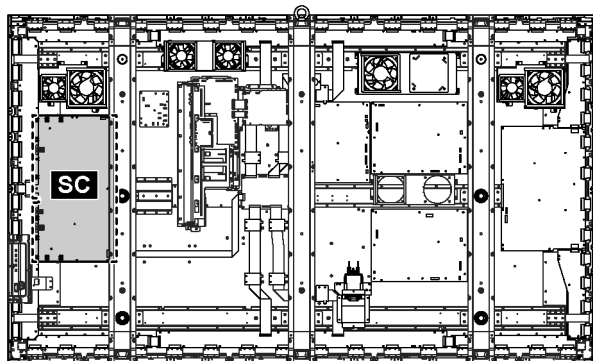


3. Disconnect the connectors (SD42, SD46).
4. Remove 5 screws (▲).
5. Remove 3 screws (⤵) and then remove SD-Board.



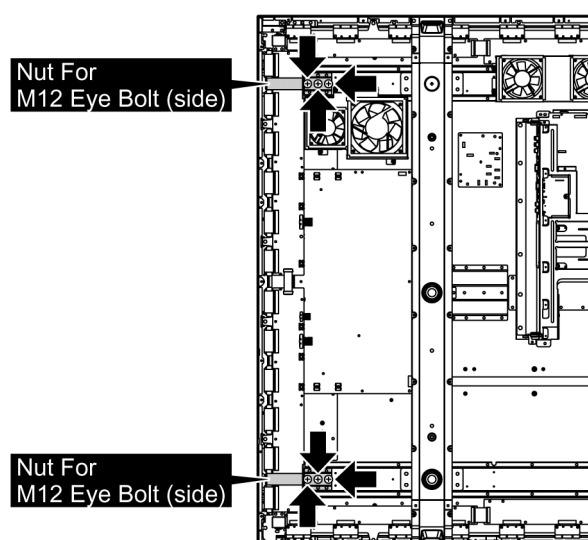
Note: when fixing SD-Board
 • Screw on 3 screws (⤵) firstly.

9.15. Removal of SC-Board



1. Remove the Side Power Unit.
 (Refer to Removal of S1-Board and V2-Board)

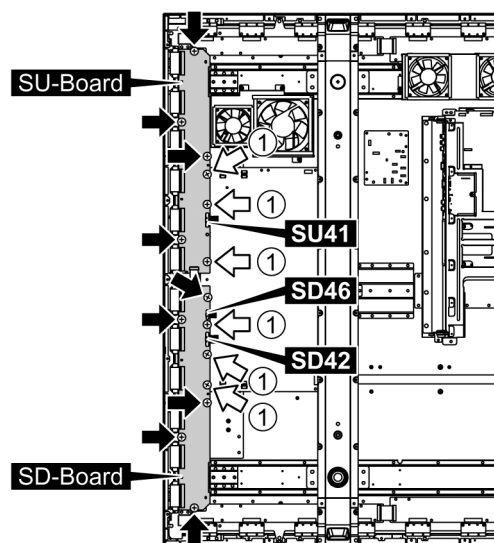
2. Remove 6 screws and then remove the Nuts For M12 Eye Bolt (side).



3. Disconnect the connectors (SU41, SD42, SD46).
4. Remove 9 screws (▲).
5. Remove 6 screws (⤵) and then turn over SU-Board and SD-Board to the left.

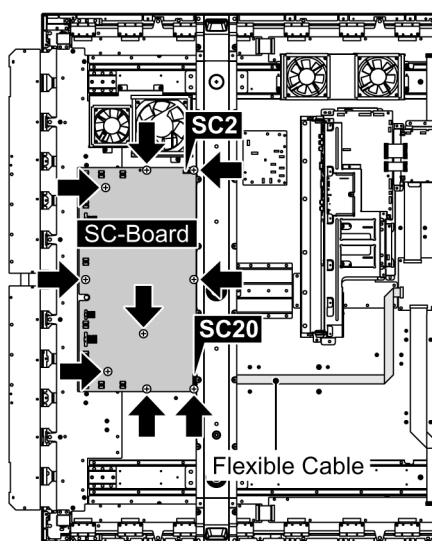
Note:

Do not damage the Flexible Cables of SU-Board and SD-Board, and the parts on SC-Board.

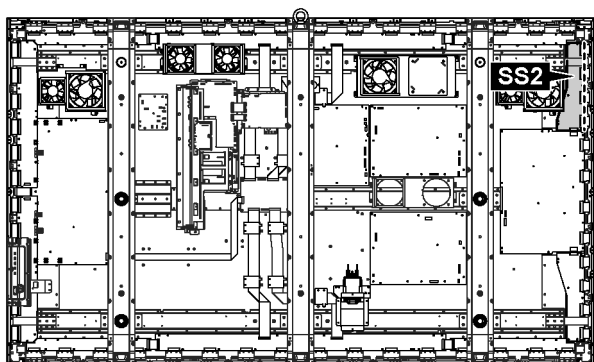


Note: when fixing SU-Board and SD-Board
 • Screw on 6 screws (⤵) firstly.

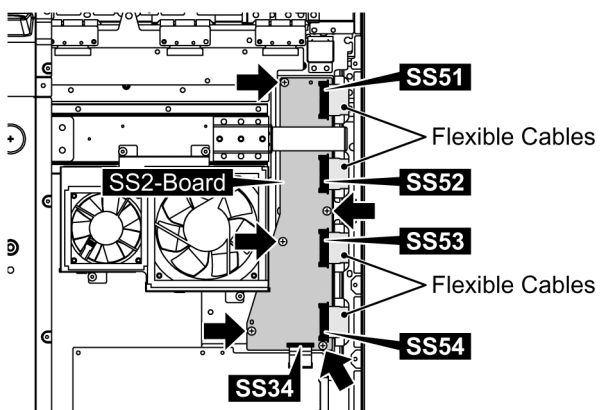
6. Disconnect the connector (SC2).
7. Remove the flexible cable from the connector (SC20).
8. Remove 9 screws and then remove SC-Board.



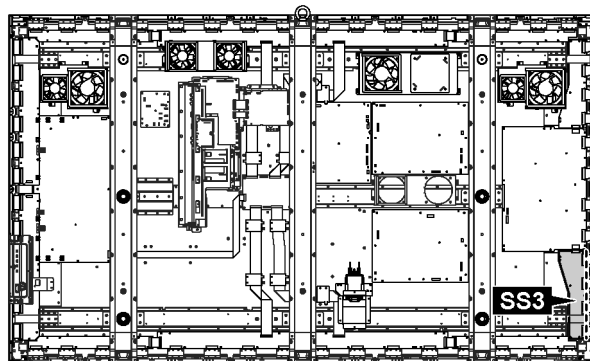
9.16. Removal of SS2-Board



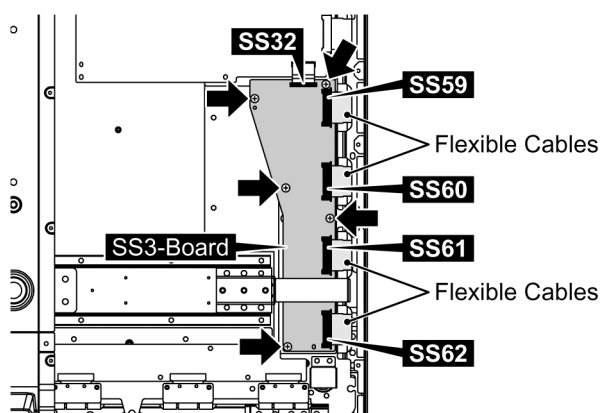
1. Disconnect the connector (SS34).
2. Remove the flexible cables from the connectors (SS51, SS52, SS53, SS54).
3. Remove 5 screws and then remove SS2-Board.



9.17. Removal of SS3-Board

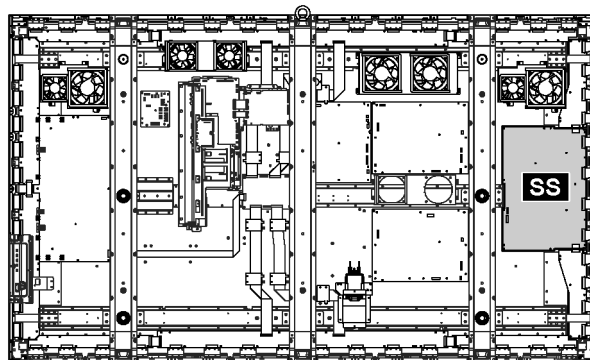


1. Disconnect the connector (SS32).
2. Remove the flexible cables from the connectors (SS59, SS60, SS61, SS62).
3. Remove 5 screws and then remove SS3-Board.

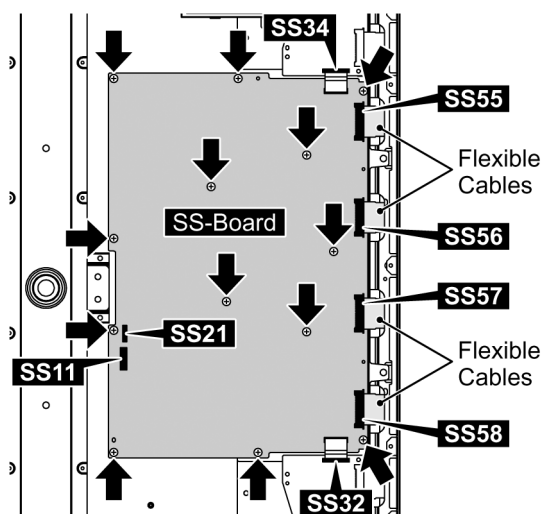


9.18. Removal of SS-Board

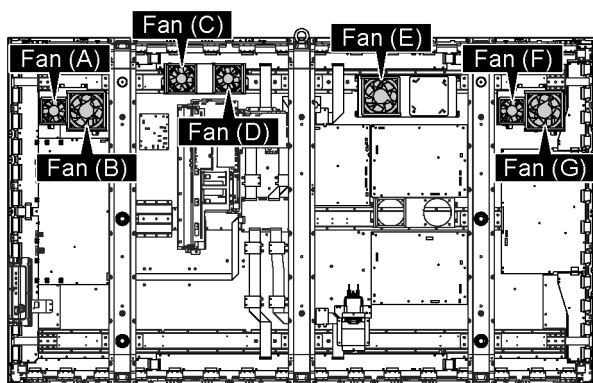
Ve adjustment is performed by IIC mode after SS board exchange.



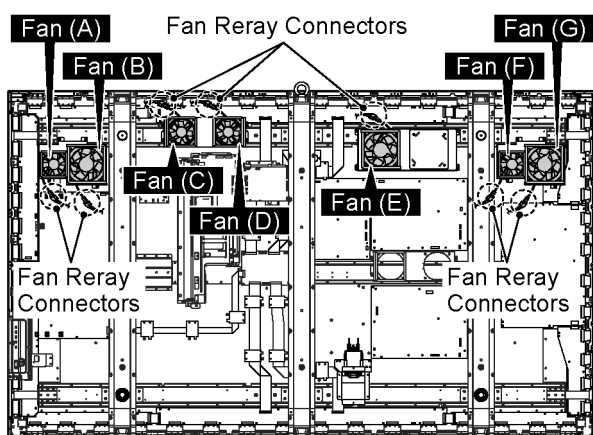
1. Disconnect the connectors (SS11, SS21, SS32, SS34).
2. Remove the flexible cables from the connectors (SS55, SS56, SS57, SS58).
3. Remove 13 screws and then remove SS-Board.



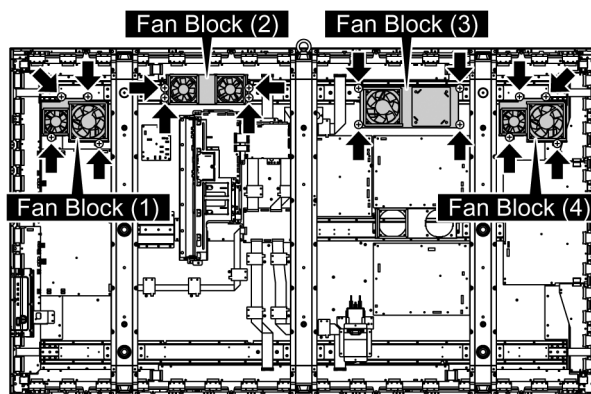
9.19. Removal of Fan



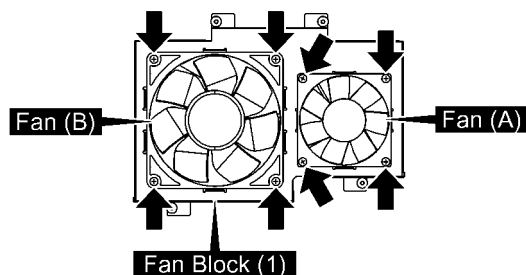
1. Disconnect the Fan Relay Connectors.



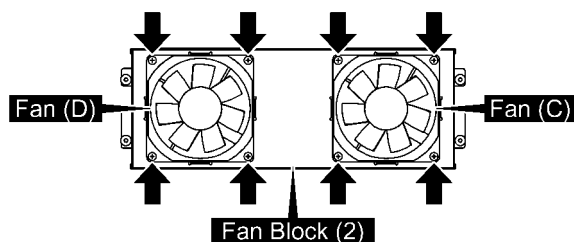
2. Remove 16 screws and then remove the Fan Blocks (1, 2, 3, 4).



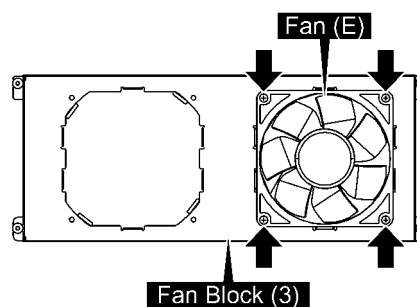
3. Remove 8 screws and then remove the Fan (A, B).



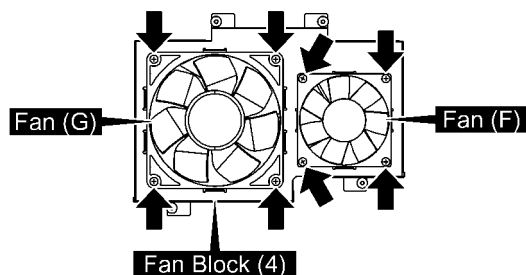
4. Remove 8 screws and then remove the Fan (C, D).



5. Remove 4 screws and then remove the Fan (E).

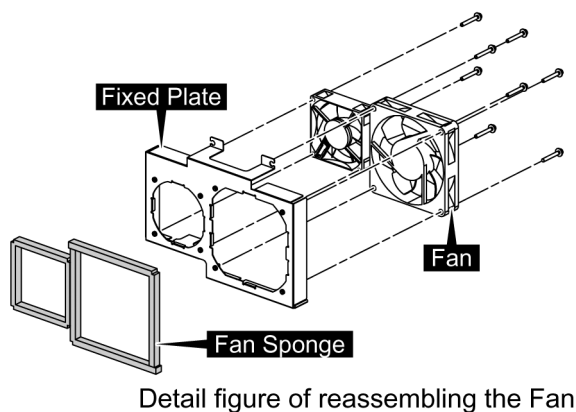


6. Remove 8 screws and then remove the Fan (F, G).



7. Reassemble the Fans in reverse order.

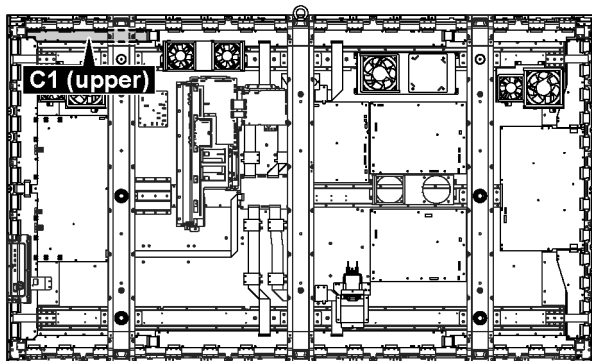
8. Stick the Fan Sponge around the Fan.



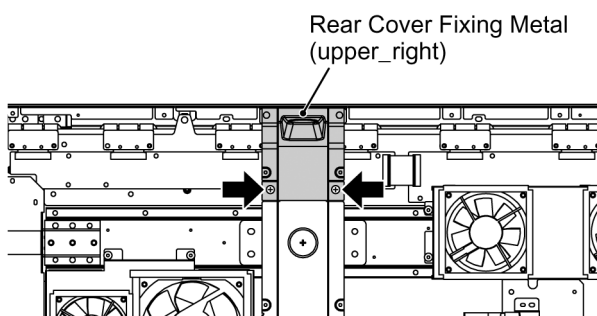
Note:

The Fan Sponge is not re-usable.
Please use a new one when Fan exchange.

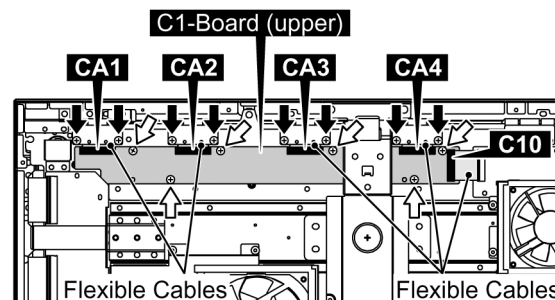
9.20. Removal of C1-Board (upper)



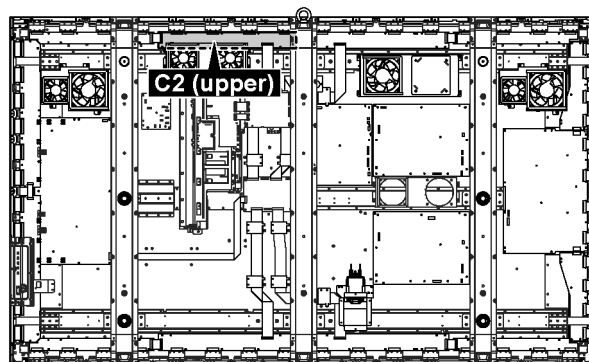
1. Remove 2 screws and then remove the Rear Cover Fixing Metal (upper_right).



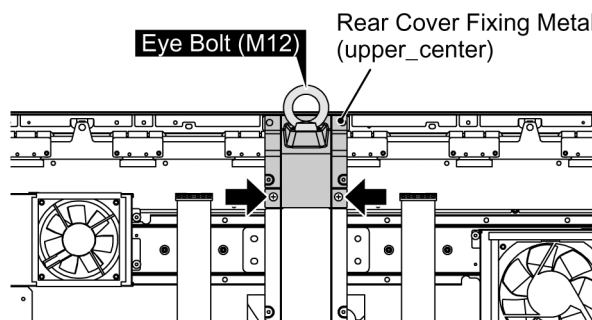
2. Remove the flexible cable from the connector (C10).
3. Remove 8 screws (↑) and then remove the flexible cables from the connectors (CA1, CA2, CA3, CA4).
4. Remove 6 screws (⇅) and then remove C1-Board (upper).



9.21. Removal of C2-Board (upper)

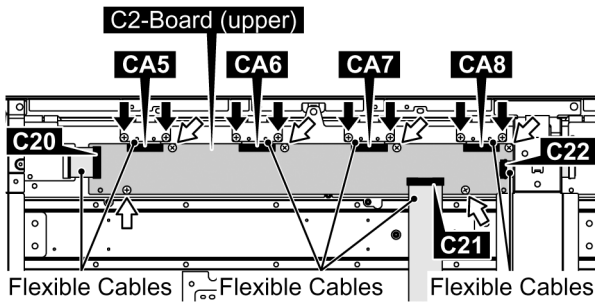


1. Remove the Eye Bolt (M12).
2. Remove 2 screws and then remove the Rear Cover Fixing Metal (upper_center).

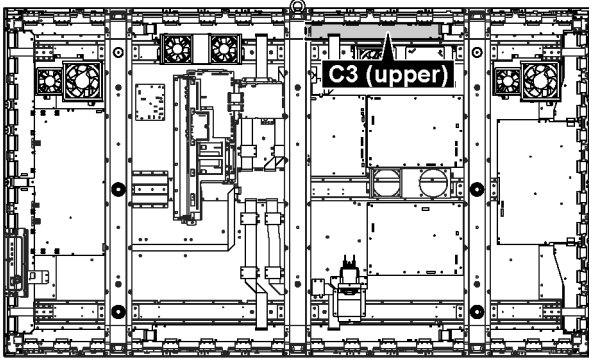


3. Remove the Fan Block (2).
(Refer to Removal of Fan)

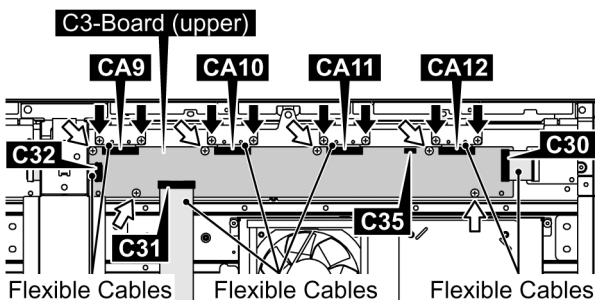
4. Remove the flexible cables from the connectors (C20, C21, C22).
5. Remove 8 screws (↑) and then remove the flexible cables from the connectors (CA5, CA6, CA7, CA8).
6. Remove 6 screws (⇅) and then remove C2-Board (upper).



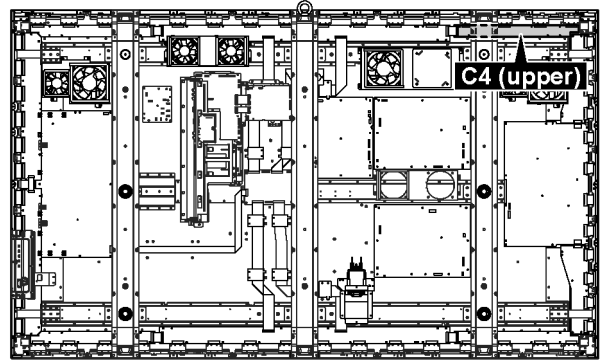
9.22. Removal of C3-Board (upper)



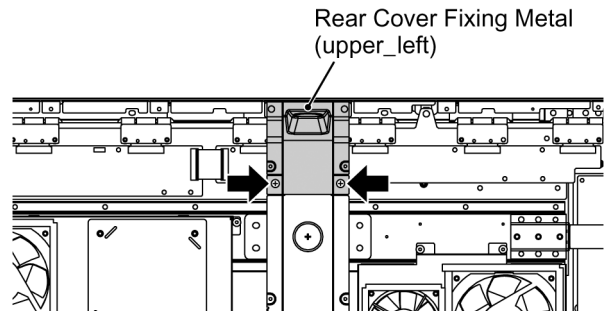
1. Remove the Rear Cover Fixing Metal (upper_center). (Refer to Removal of C2-Board (upper))
2. Disconnect the connector (C35).
3. Remove the flexible cables from the connectors (C30, C31, C32).
4. Remove 8 screws (↑) and then remove the flexible cables from the connectors (CA9, CA10, CA11, CA12).
5. Remove 6 screws (⇅) and then remove C3-Board (upper).



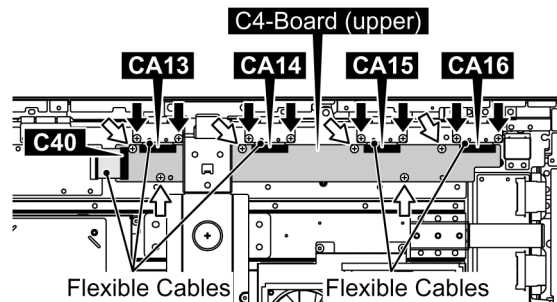
9.23. Removal of C4-Board (upper)



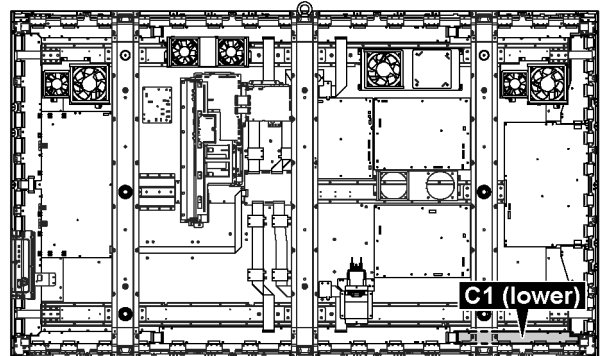
1. Remove 2 screws and then remove the Rear Cover Fixing Metal (upper_left).



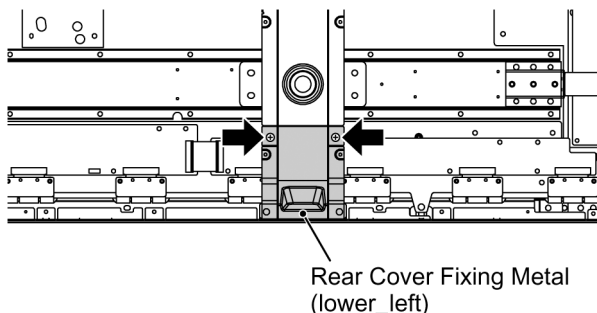
2. Remove the flexible cable from the connector (C40).
3. Remove 8 screws (↑) and then remove the flexible cables from the connectors (CA13, CA14, CA15, CA16).
4. Remove 6 screws (⇅) and then remove C4-Board (upper).



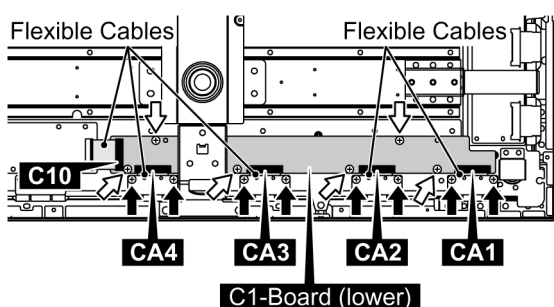
9.24. Removal of C1-Board (lower)



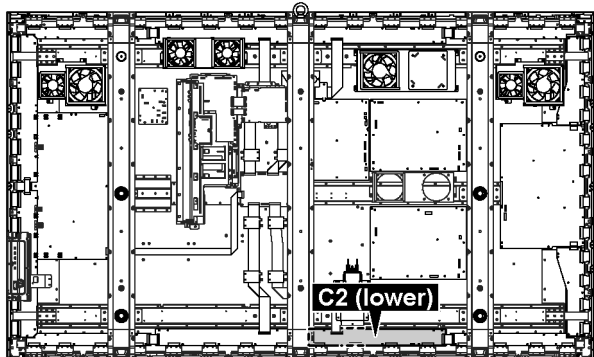
1. Remove 2 screws and then remove the Rear Cover Fixing Metal (lower_left).



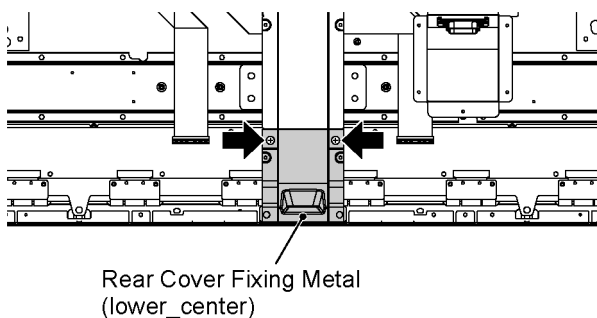
2. Remove the flexible cable from the connector (C10).
3. Remove 8 screws (⬆) and then remove the flexible cables from the connectors (CA1, CA2, CA3, CA4).
4. Remove 6 screws (⬆) and then remove C1-Board (lower).



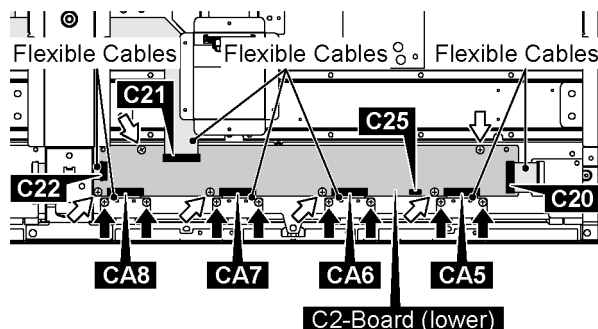
9.25. Removal of C2-Board (lower)



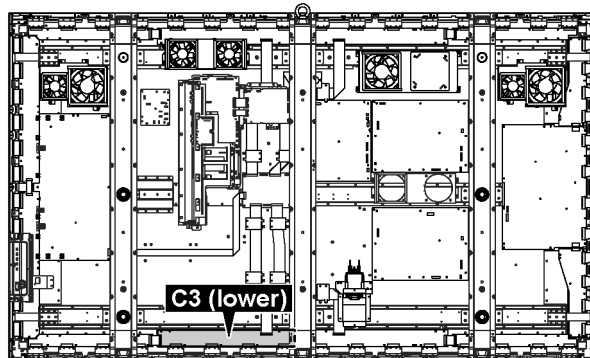
1. Remove 2 screws and then remove the Rear Cover Fixing Metal (lower_center).



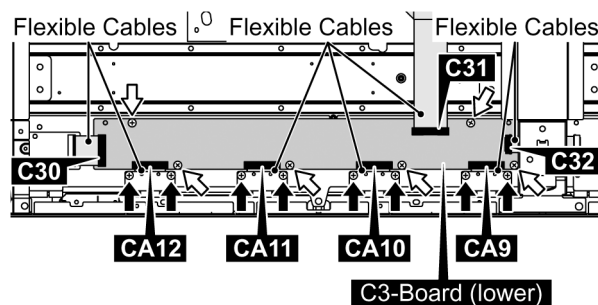
2. Disconnect the connector (C25).
3. Remove the flexible cables from the connectors (C20, C21, C22).
4. Remove 8 screws (⬆) and then remove the flexible cables from the connectors (CA5, CA6, CA7, CA8).
5. Remove 6 screws (⬆) and then remove C2-Board (lower).



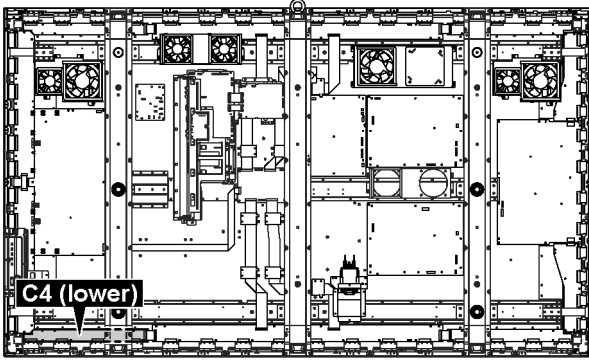
9.26. Removal of C3-Board (lower)



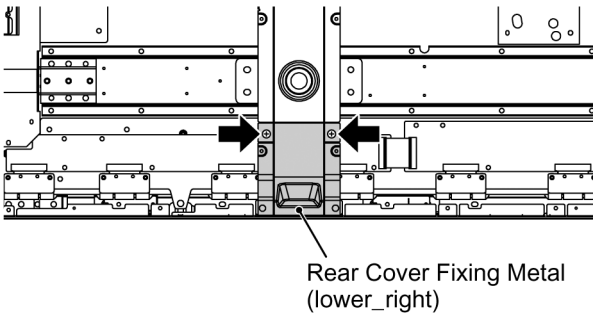
1. Remove the Rear Cover Fixing Metal (lower_center). (Refer to Removal of C2-Board (lower))
2. Remove the flexible cables from the connectors (C30, C31, C32).
3. Remove 8 screws (⬆) and then remove the flexible cables from the connectors (CA9, CA10, CA11, CA12).
4. Remove 6 screws (⬆) and then remove C3-Board (lower).



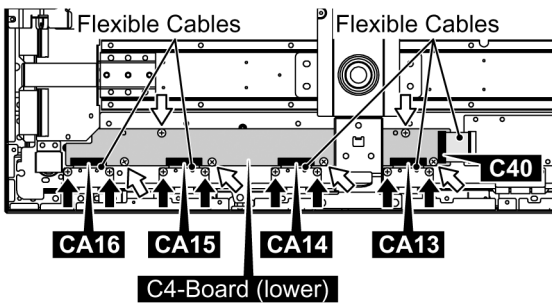
9.27. Removal of C4-Board (lower)



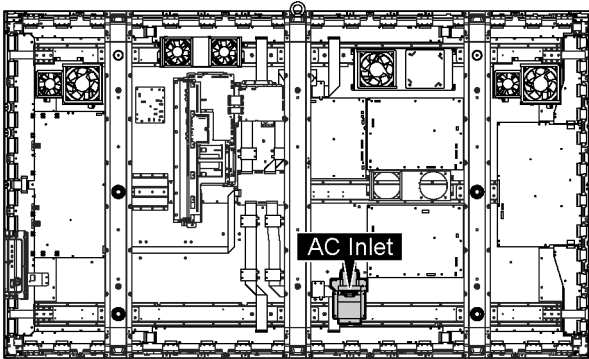
1. Remove 2 screws and then remove the Rear Cover Fixing Metal (lower_right).



2. Remove the flexible cable from the connector (C40).
3. Remove 8 screws (↑) and then remove the flexible cables from the connectors (CA13, CA14, CA15, CA16).
4. Remove 6 screws (↻) and then remove C4-Board (lower).

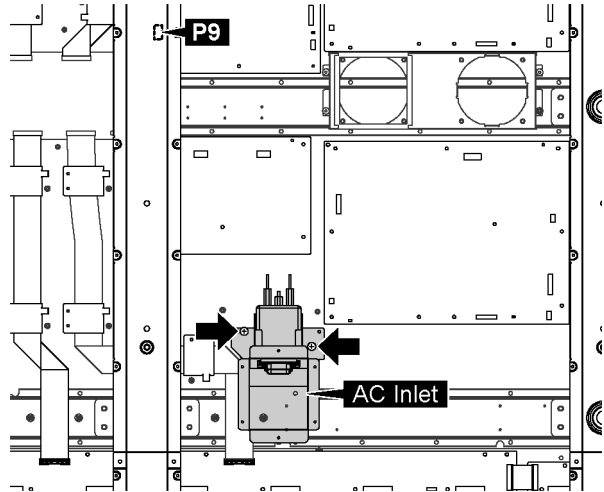


9.28. Removal of AC Inlet



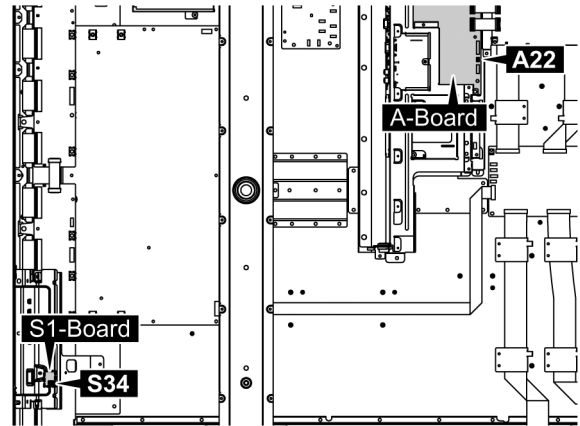
1. Disconnect the connector (P9).

2. Remove 2 screws and then remove the AC Inlet.

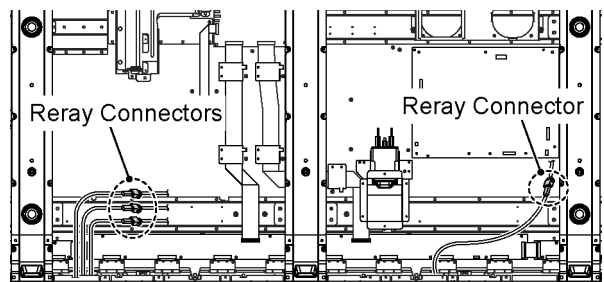


9.29. Removal of Front Glass, V1, V3, V-Board and Cabinet Assy

1. Disconnect the connectors (A22, S34).

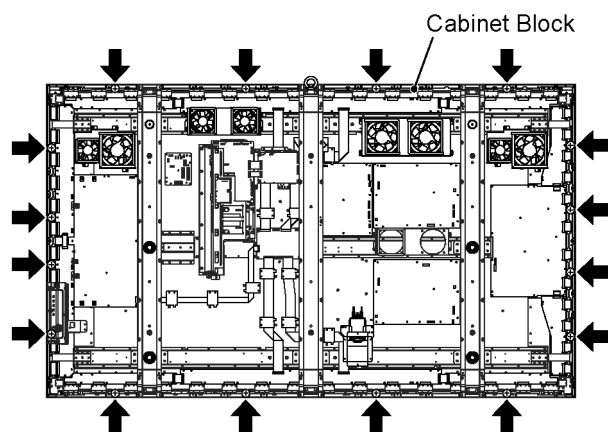


2. Disconnect 4 Relay Connectors.



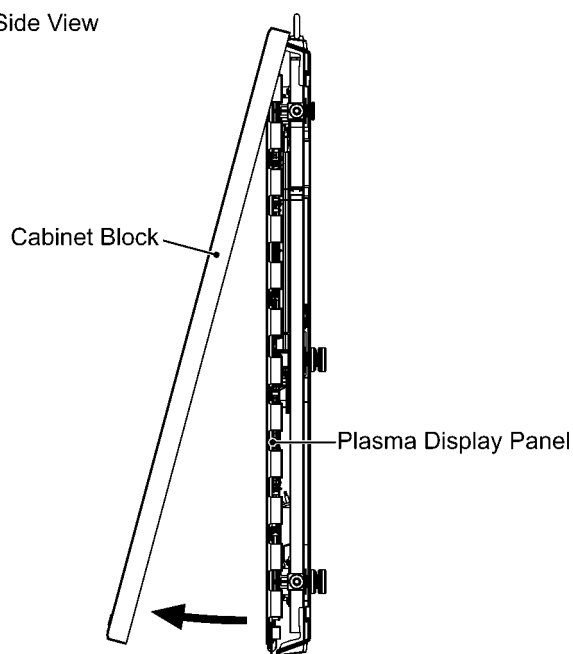
3. Remove the Side Power Unit.
(Refer to Removal of S1-Board and V2-Board)

4. Remove 16 screws and then remove Cabinet Block.



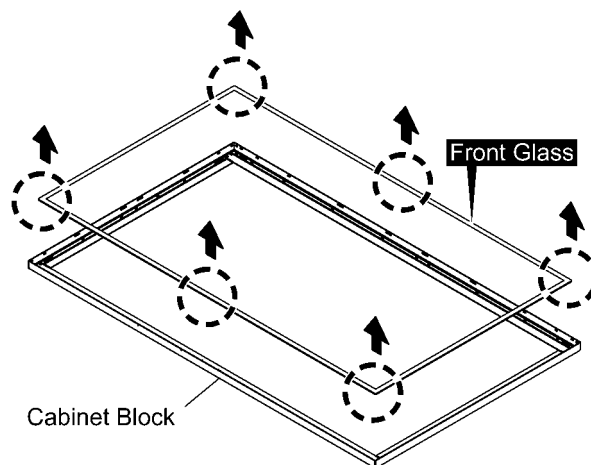
5. Pull the bottom of the Cabinet Block forward and lift.
6. Remove the Cabinet Block.

Side View



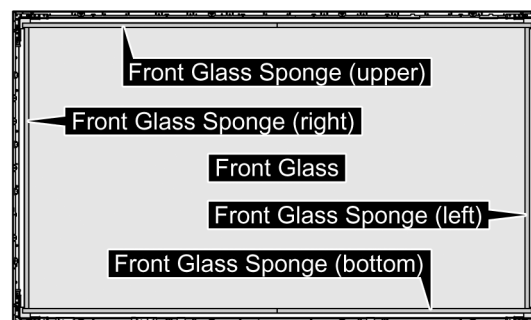
(Note)

- When removing the Front Glass from Cabinet, there is a risk of the glass center bending damage.
- Be sure to lift the instruction six positions of the figure, when remove the Front Glass.



Note: when Front Glass is exchanged

- Paste the Sponges in order along each Fixed Angles (upper, bottom, left, right).



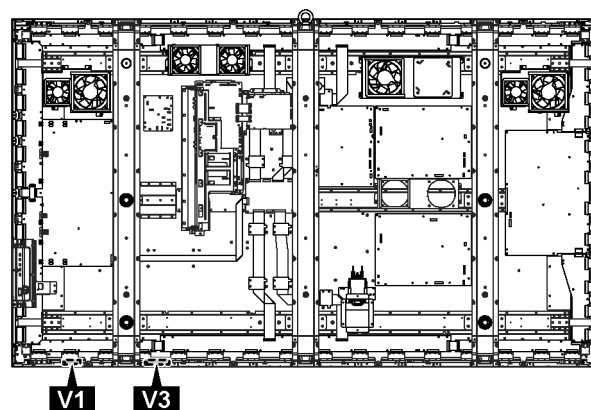
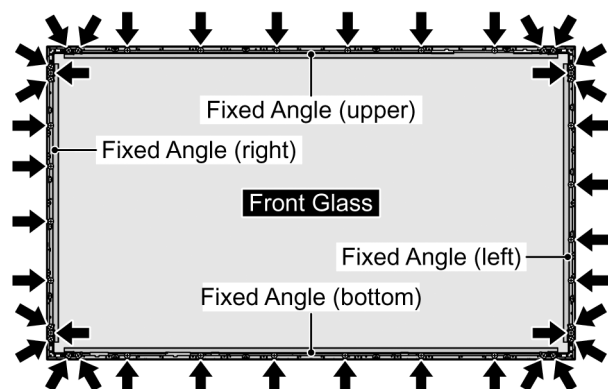
Note

- The sponges are parts which cannot be recycled. Please use the new article when you exchange the Front Glass.

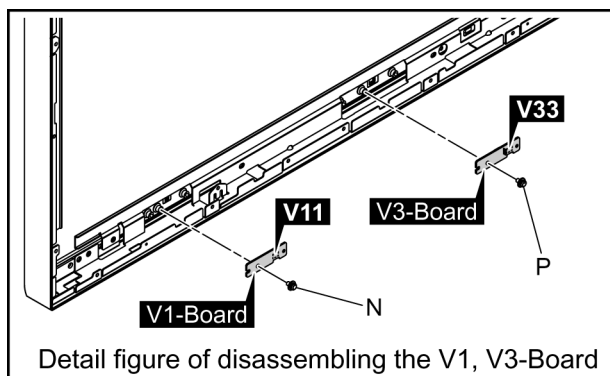
9.29.2. Removal of V1-Board and V3-Board

9.29.1. Removal of Front Glass

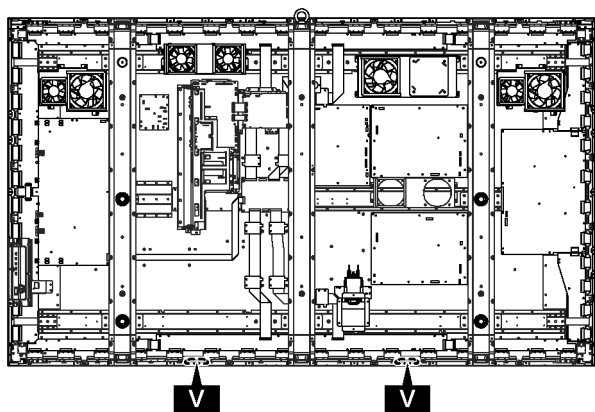
1. Remove 40 screws and then remove the Fixed Angles (left, right, upper, bottom).
2. Remove the Front Glass.



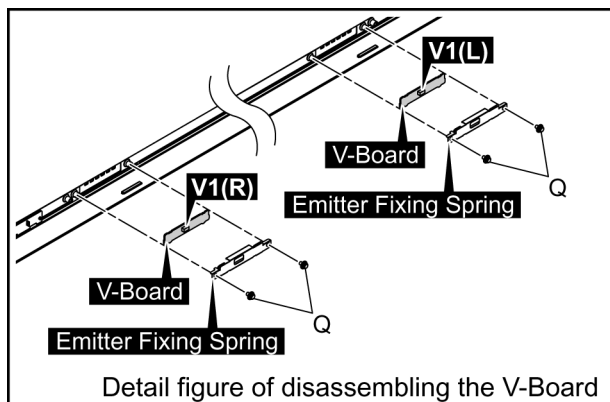
1. Remove 1 screw (N).
2. Disconnect the connector (V11) and then remove V1-Board.
3. Remove 1 screw (P).
4. Disconnect the connector (V33) and then remove V3-Board.



9.29.3. Removal of V-Board

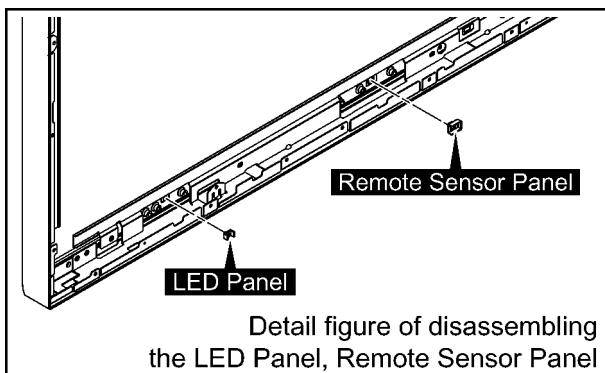


1. Remove the Fixed Angle (bottom).
(Refer to Removal of Front Glass)
2. Disconnect the connectors (V1(L), V1(R)).
3. Remove 4 screws (Q).
4. Remove the V-Board Fixing Metals and then remove V-Board.

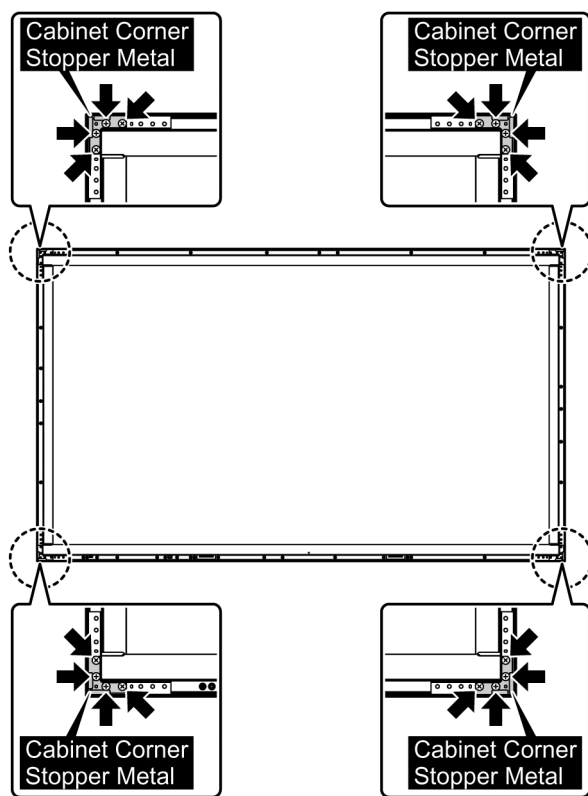


9.29.4. Removal of Cabinet Assy

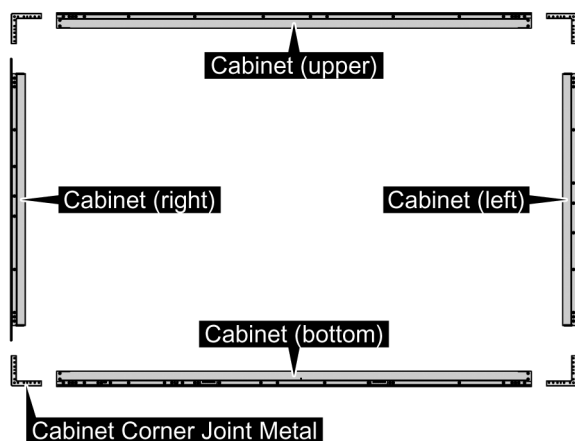
1. Remove the Front Glass.
(Refer to Removal of Front Glass)
2. Remove V1-Board and V3-Board.
(Refer to Removal of V1-Board and V3-Board)
3. Remove the LED Panel and Remote Sensor Panel.



4. Remove 16 screws and then remove the Cabinet Corner Stopper Metals.

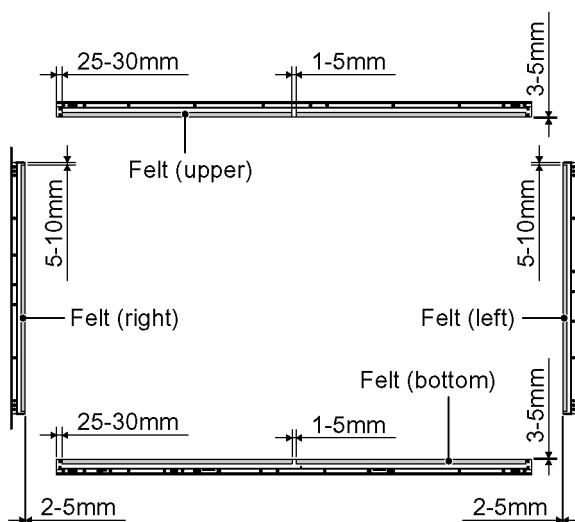


5. Remove the Cabinet Corner Joint Metals and Cabinets (left, right, upper, bottom)



Note: when Cabinet is exchanged

- Paste the felts in order along each Fixed Angles (left, right, upper, bottom).
- Make sure the felts do not protrude from the edge of the cabinet.



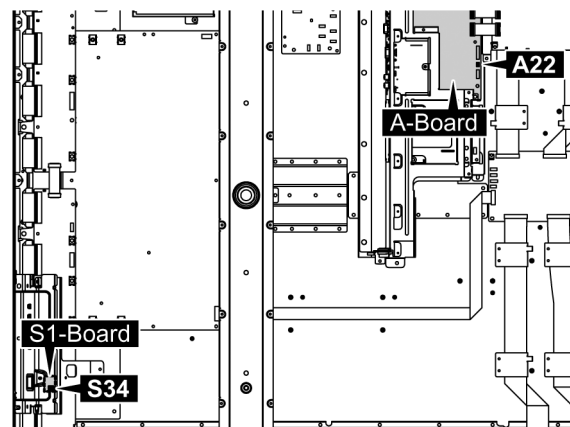
Note

- The felts are parts which cannot be recycled. Please use the new article when you exchange the Cabinet.

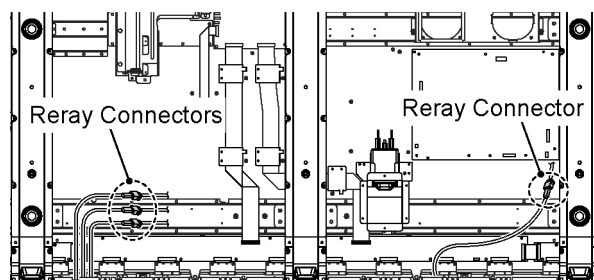
9.30. Removal of Plasma Display Panel

The C1 (upper, lower), C2 (upper, lower), C3 (upper, lower), C4 (upper, lower), SS, SS2, SS3, SC, SU, SD Boards and, flexible cables between D-C Boards and D-SC Boards, are connected with the Plasma Display Panel for the repair.

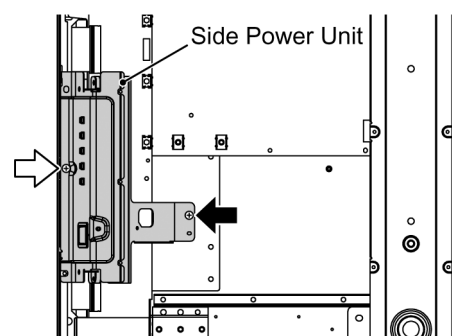
1. Remove the Rear Covers.
(Refer to Removal of Rear Cover)
2. Disconnect the connectors (A22, S34).



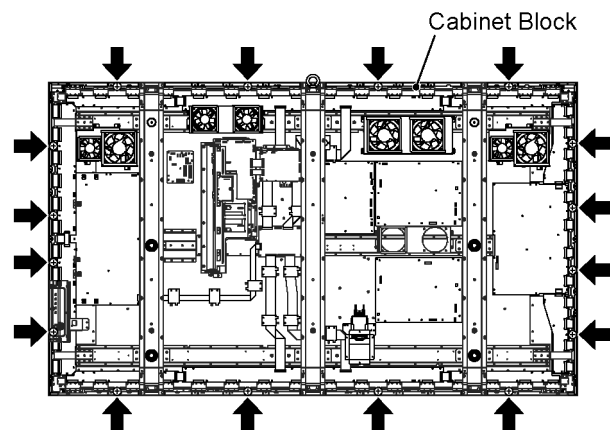
3. Disconnect 4 Relay Connectors.



4. Remove 1 screw (↑).
5. Remove 1 screw (⇧) and then remove the Side Power Unit.

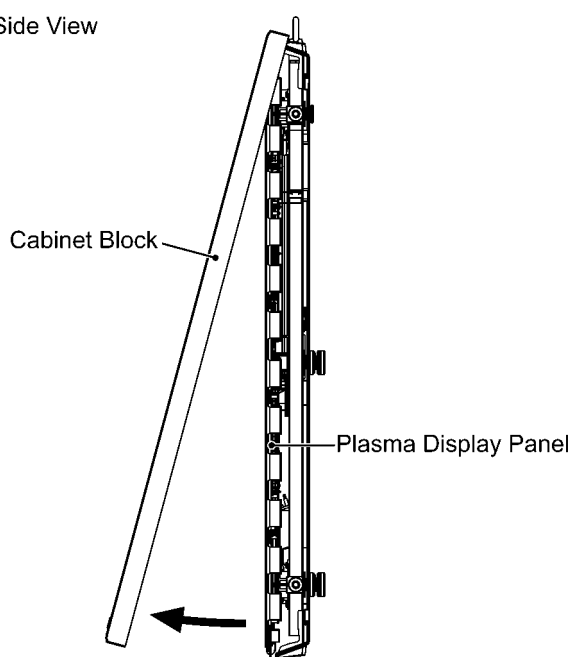


6. Remove 16 screws and then remove Cabinet Block.

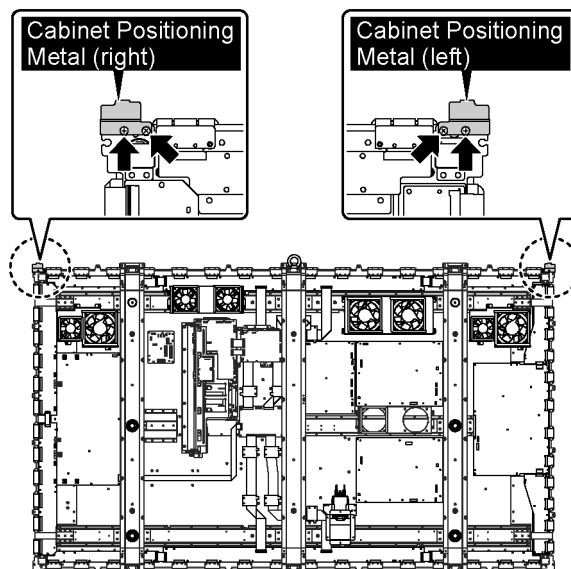


7. Pull the bottom of the Cabinet Block forward and lift.
8. Remove the Cabinet Block.

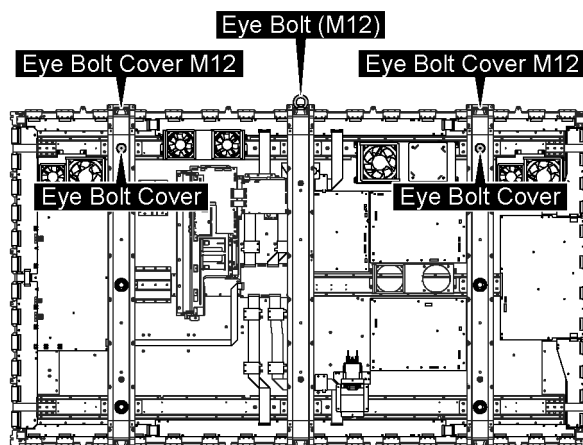
Side View



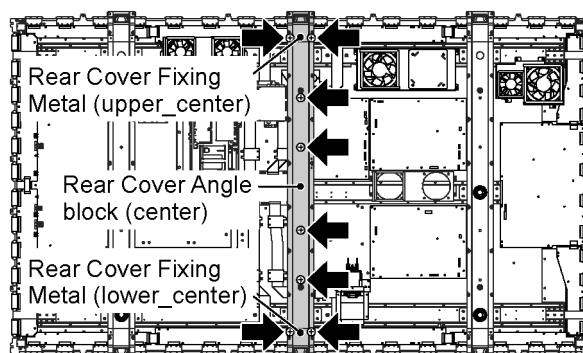
9. Remove 4 screws and then remove the Cabinet Positioning Metals (left, right).



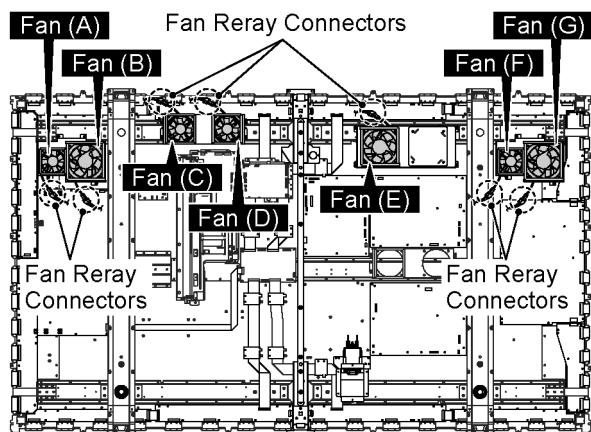
10. Remove 1 Eye Bolt (M12).
11. Remove 2 Eye Bolt Covers M12.
12. Remove 2 Eye Bolt Covers.



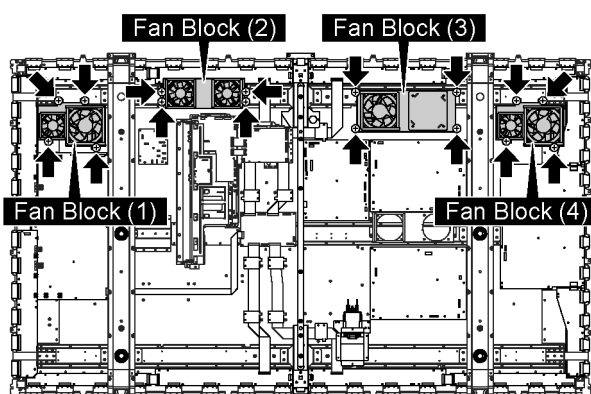
13. Remove 4 screws and then remove the Rear Cover Fixing Metals (upper_center, lower_center).
14. Remove 4 screws and then remove the Rear cover Angle Block (center).



15. Disconnect the Fan Relay Connectors.



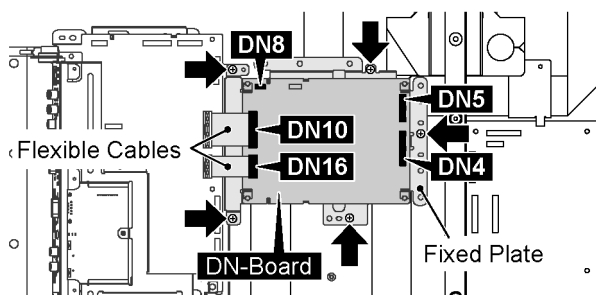
16. Remove 16 screws and then remove the Fan Blocks (1, 2, 3, 4).



17. Disconnect the connectors (DN4, DN5, DN8).

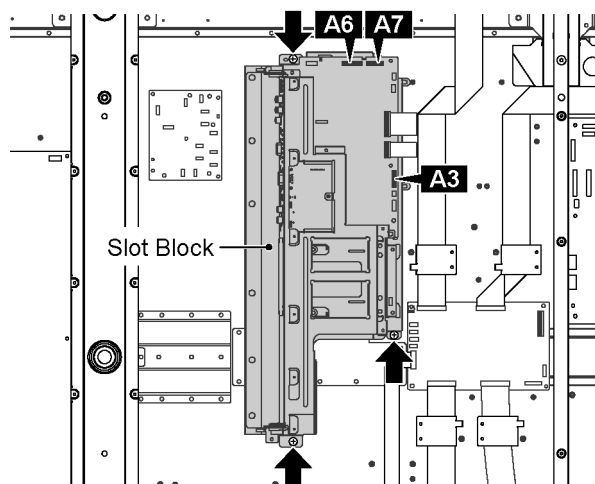
18. Remove the flexible cables from the connectors (DN10, DN16).

19. Remove 5 screws and then remove DN-Board and Fixed Plate.



20. Disconnect the connectors (A3, A6, A7).

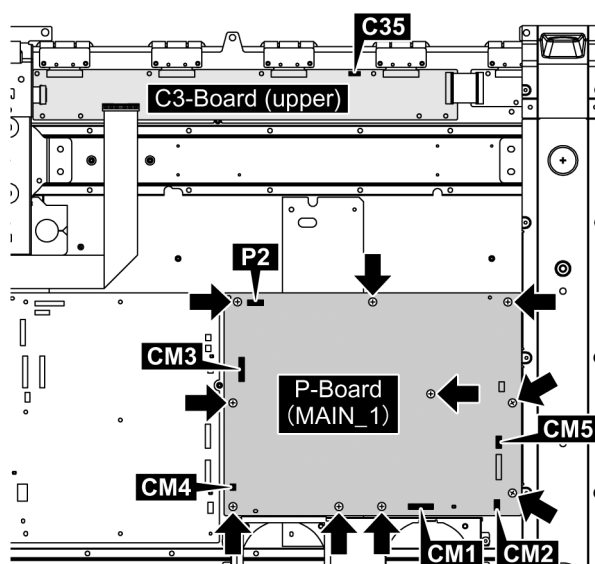
21. Remove 3 screws and then remove the Slot Block.



22. Disconnect the connectors of P-Board (Main_1) (CM1, CM2, CM3, CM4, CM5, P2).

23. Disconnect the connector of C3-Board (upper) (C35).

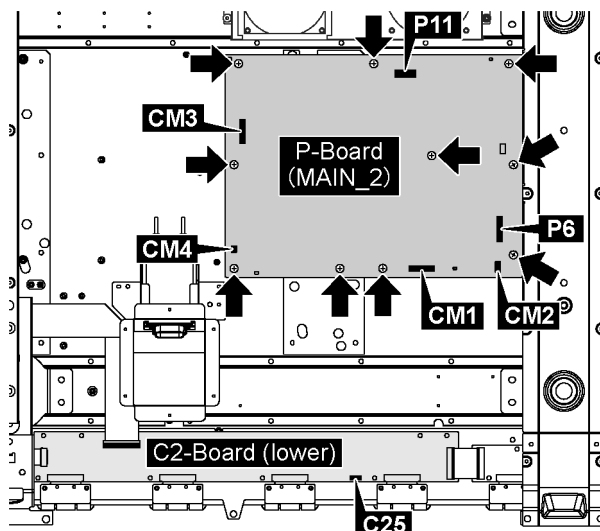
24. Remove 10 screws and then remove P-Board (MAIN_1).



25. Disconnect the connectors of P-Board (Main_2) (CM1, CM2, CM3, CM4, P6, P11).

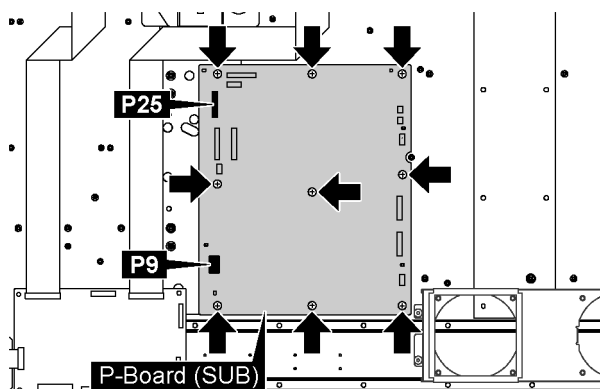
26. Disconnect the connector of C2-Board (lower) (C25).

27. Remove 10 screws and then remove P-Board (MAIN_2).



28. Disconnect the connectors (P9, P25).

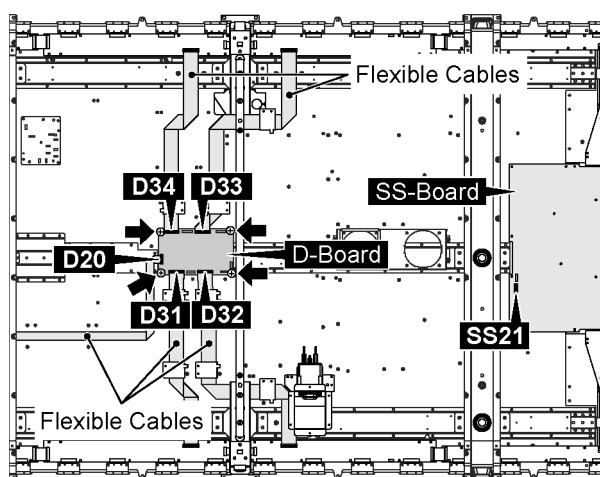
29. Remove 9 screws and then remove P-Board (SUB).



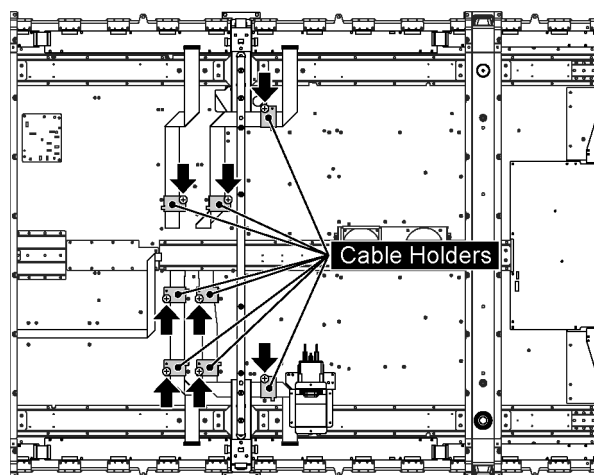
30. Disconnect the connector (SS21).

31. Remove the flexible cables from the connectors (D20, D31, D32, D33, D34).

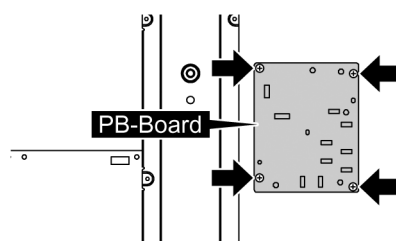
32. Remove 4 screws and then remove D-Board.



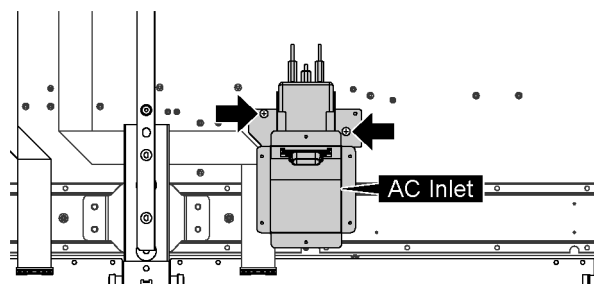
33. Remove 8 screws and then remove the Cable Holders.



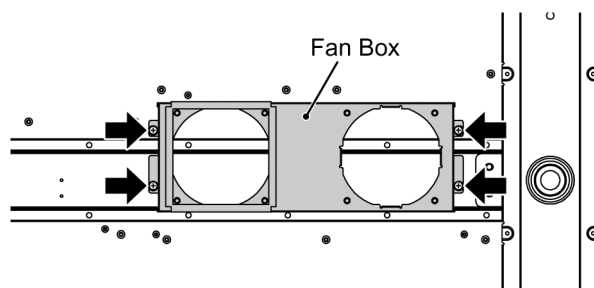
34. Remove 4 screws and then remove PB-Board.



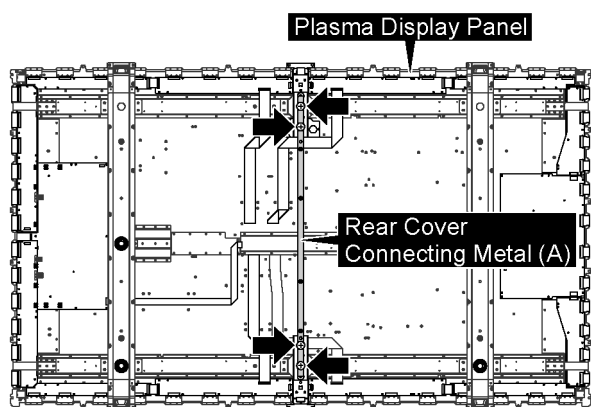
35. Remove 3 screws and then remove the AC Inlet.



36. Remove 4 screws and then remove the Fan Box.



37. Exchange the Plasma Display Panel.



10 Measurements and Adjustments

10.1. Adjustment Procedure

10.1.1. Driver Set-up

10.1.1.1. Item / Preparation

- 1. Set Aging pattern (white pattern signal) by IIC mode.
- 2. Set the picture controls as follows.
Picture menu: Standard
Picture: +25
Aspect: Full

Caution

- 1. First perform Vsus adjustment.
- 2. Confirmation of Vscn voltage should be performed after confirmation of Vad adjustment.
When Vad=-135V, Voltage of Vscn is +10V ±4V.

10.1.1.2. Adjustments

Adjust driver section voltages. (Refer to the panel data on the Panel Label).

Check or adjust the following voltages with the multimeter.

Name	Test Point	Voltage	Volume	Remarks
Vsus (SC side)	TPVSUS (SC)	Vsus ± 2V	VR251 (P_Main_1)	*
Vsus (SS side)	TPVSUS (SS)	Vsus ± 2V	VR251 (P_Main_2)	*
Ve**	TPVE (SS)	Ve ± 1V	VR16001 (SS)	*
Vda	TP9 (P_Main_1)	70V +1V, -2V	Fixed	
	TP9 (P_Main_2)	70V +1V, -2V	Fixed	
Vad	TPVAD (SC)	-135V ± 1V	VR16600 (SC)	
Vscn	TPVSCN (SC)	Vad_base: +145V±4V GND_base: +10V±6V	Fixed	

*See the Panel Label.

**See chap. 10.1.6.

Panel Label information

Panasonic
MC 2010
Serial No.
Ve : V , Vsus : V
MADE IN JAPAN TQF

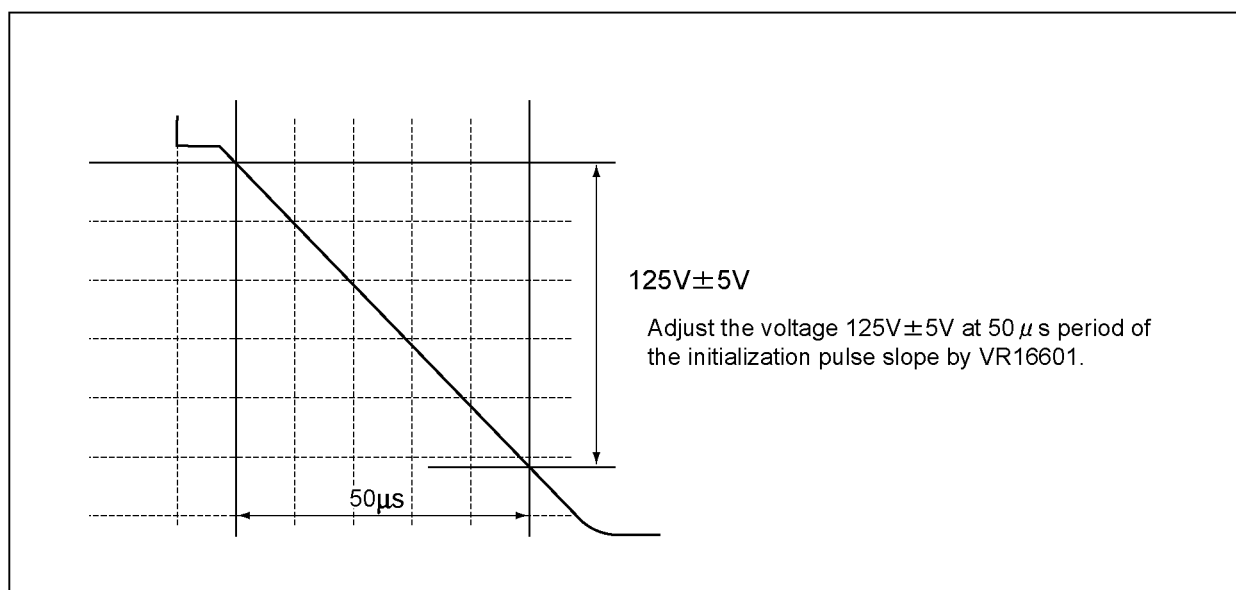
Adjustment voltage ←

10.1.2. Initialization Pulse Adjust

1. Set Aging pattern (white pattern signal) by IIC mode.
2. Set the picture controls as follows.
Picture menu: Standard
Picture: +25
Aspect: Full
3. Connect Oscilloscope to TPSC1 and adjust VR16601 for $125V \pm 5V$.

Test Point	Volume	Level
TPSC1 (SC)	VR16601 (SC)	$125V \pm 5V$ at $50 \mu s$ period on the down slope.

TPSC1



10.1.3. P.C.B. (Print Circuit Board) and Plasma Display Panel exchange

10.1.3.1. Quick adjustment after P.C.B. and Panel exchange

1. To remove P.C.B., wait 10 minute after power was off for discharge from electrolysis capacitors.

10.1.3.2. Quick adjustment after P.C.B. exchange

Adjust the following voltages with the multimeter.

P.C.B.	Name	Test Point	Voltage	Volume	Remarks
P Board (Main_1)	Vsus	TPVSUS (SC)	Vsus \pm 2V	VR251 (P_Main_1)	*
	Vda	TP9 (P_Main_1)	70V +1V, -2V	Fixed	
P Board (Main_2)	Vsus	TPVSUS (SS)	Vsus \pm 2V	VR251 (P_Main_2)	*
	Vda	TP9 (P_Main_2)	70V +1V, -2V	Fixed	
SC Board	Vad	TPVAD (SC)	-135V \pm 1V	VR16600 (SC)	
	Vscn	TPVSCN (SC)	Vad_base: +145V \pm 4V GND_base: +10V \pm 6V	Fixed	
SS Board	Ve**	TPVE (SS)	Ve \pm 1V	VR16001 (SS)	*
D, DS Board	White balance and Sub brightness for NTSC, PAL, HD, PC and 625i signals				
A Board	Set Market Select Number to correct destination by MS mode. (See chap. 6.1.4)				
D, A Board	Set Ve Mode until bright points disappears by IIC mode.				

*See the Panel Label.

**See chap. 10.1.6.

***See chap. 10.1.7.1.

10.1.3.3. Quick adjustment after Plasma Display Panel exchange

Adjust the following voltages with the multimeter.

Name	Test Point	Voltage	Volume	Remarks
Vsus (SC Side)	TPVSUS (SC)	Vsus \pm 2V	VR251 (P_Main_1)	*
Vsus(SS Side)	TPVSUS (SS)	Vsus \pm 2V	VR251 (P_Main_2)	*
Ve Life	Check Ve Mode. (See chap. 10.1.7.2.)			

*See the Panel Label.

10.1.4. Vsus adjustment

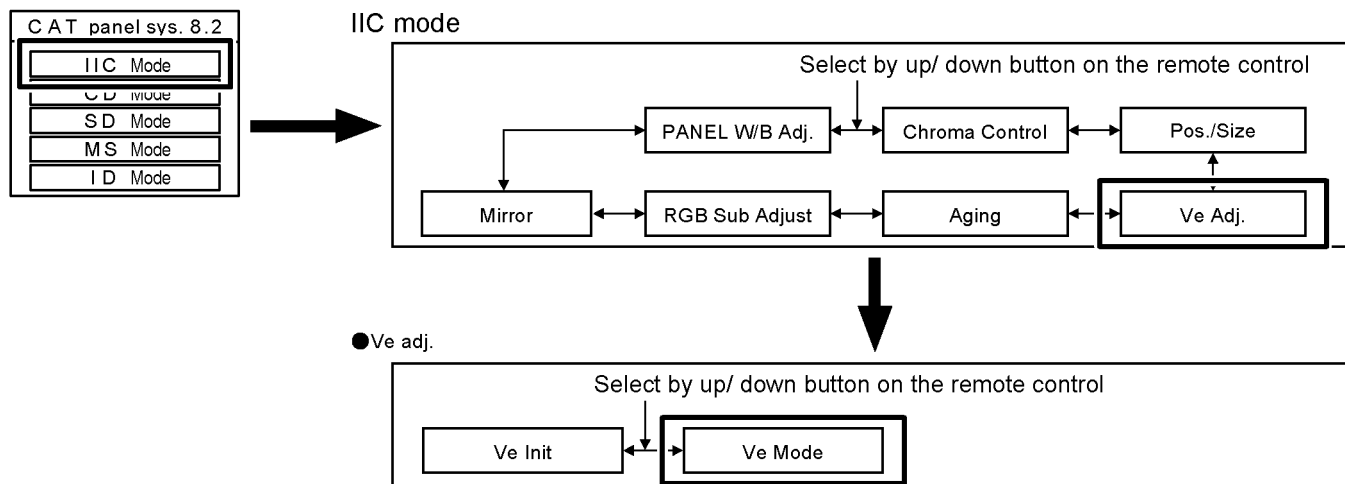
After exchange P board or Plasma Display Panel, see the Panel Label and check TPVSUS and adjust the volume.

10.1.5. Vad adjustment

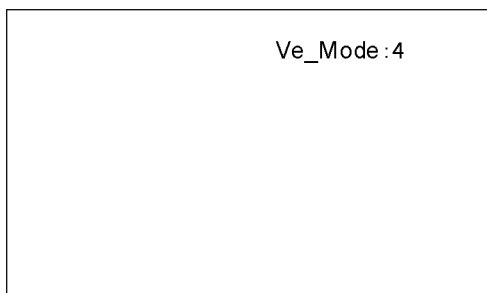
After exchange SC board, check TP9 and adjust the volume.

10.1.6. Ve adjustment

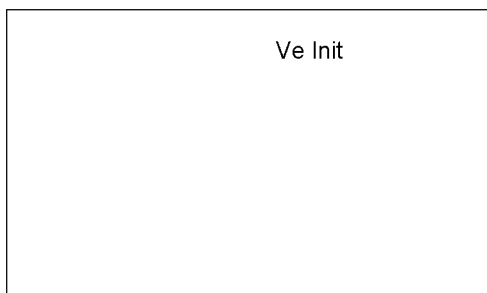
1. After exchange SS board, connect the multimeter to the testpoint TPVE(SS).
2. Select Ve Mode by IIC mode. (See chap. 6.1.1., and 6.2.)



3. Check that the Ve Mode is set to 4.



4. Press RETURN button and then select and display Ve Init.



5. Check TPVE and adjust the volume.
6. Exit the IIC mode.

10.1.7. Ve Life adjustment

10.1.7.1. After exchange both D board and A board

1. Select Ve Mode by IIC mode. (See chap. 10.1.6.)
2. Check that no bright points appears on the display.
3. If bright points appears, change Ve Mode until bright points disappears.
4. Exit the IIC mode.

Note: If bright/ nolit points still appears, set Ve Mode to 4.

10.1.7.2. After exchange Plasma Display Panel

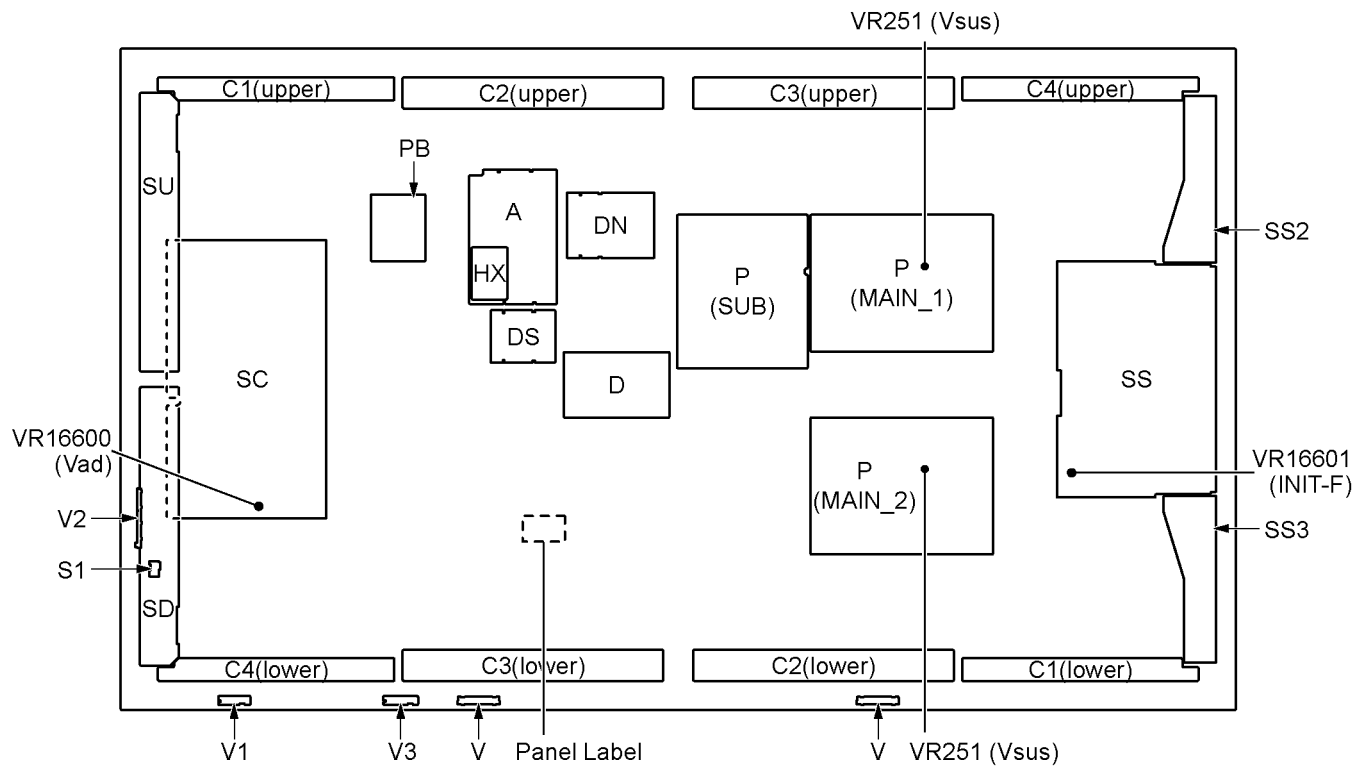
1. Select Ve Mode by IIC mode. (See chap. 10.1.6.)
2. Check that the Ve Mode is set to 4.
3. Check that no bright/nolit points appears on the display.
4. Exit the IIC mode.

10.1.8. Bright or Nolit appears on the display

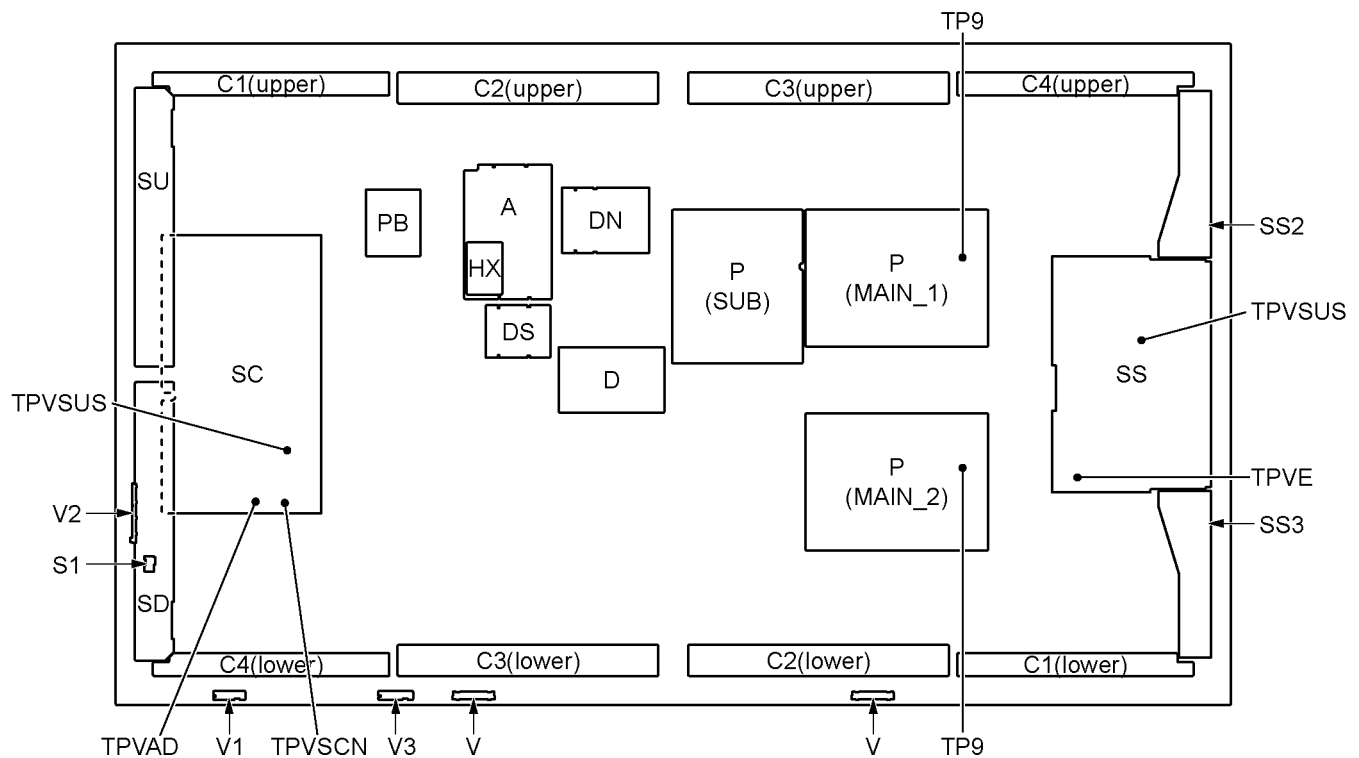
1. Select Ve Mode by IIC mode. (See chap. 10.1.6.)
2. Check and remember the value of Ve Mode.
3. If bright points appears, change Ve Mode lower until bright points disappears.
4. If nolit points appears, change Ve Mode upper until nolit points disappears.
5. Check that no bright/nolit points appears on the display, then exit the IIC mode.

Note: If bright / nolit points still appears, set back Ve Mode to the value you remembered above.

10.1.9. Adjustment Volume Location



10.1.10. Test Point Location



10.2. Adjustment

10.2.1. RGB white balance adjustment

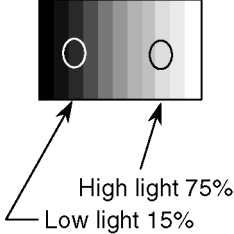
Instrument Name	Connect to	Setting												
<ul style="list-style-type: none"> • RGB VGA60 W / B pattern • Color analyzer (Minolta CA-100 or equivalent) 	PC IN terminal Panel surface	Picture menu: STANDARD User setting: Normal except PICTURE: max 30												
Steps		Remarks												
<p>[Condition]</p> <ul style="list-style-type: none"> • Make sure the front panel to be used on the final set is fitted. • Make sure a color signal is not being shown before adjustment. • Put the color analyzer where there is little color variation. <p>[Adjustment]</p> <ol style="list-style-type: none"> 1. Set COMPONENT / RGB-IN SELECT to RGB. 2. Select the IIC mode [PANEL W / B Adj.] item. 3. Check that the color temperature is [COOL (Hi)]. 4. Output a white balance pattern. 5. Touch the signal receiver of color analyzer to the highlight window's center. 6. Fix G drive at E0h and adjust B drive and R drive so x, y become the [Color temperature COOL (Hi)] in the below table. Adjust it again after it lowers of 08h data when the adjustment is NG. (In addition, adjust it after it lowers by 08h data for NG.) 7. Adjust R/G/B together by multiplication so the maximum drive value in R/G/B becomes FCh with the gain ratio kept. (ALL-DRIVE) 8. Set color temperature to [NORMAL (Mid)]. 9. Fix G drive at E0h and adjust B drive and R drive so the highlight window's x, y becomes the [Color temperature NORMAL (Mid)] in the below table. Adjust it again after it lowers of 08h data when the adjustment is NG. (In addition, adjust it after it lowers by 08h data for NG.) 10. Adjust R/G/B together by multiplication so the maximum drive value in R/G/B becomes FCh with the gain ratio kept. (ALL-DRIVE) 11. Set color temperature to [WARM (Low)]. 12. Set G drive to E0h and adjust B drive and R drive so the highlight window's x, y become the [Color temperature WARM (Low)] shown in the below table. Adjust it again after it lowers of 08h data when the adjustment is NG. (In addition, adjust it after it lowers by 08h data for NG.) 13. Adjust R/G/B together by multiplication so the maximum drive value in R/G/B becomes FCh with the gain ratio kept. (ALL-DRIVE) 14. Copy the R drive, G drive and B drive data in NTSC, PAL DVI region. <p>Table 1 W/B adjustment values</p> <table border="1"> <thead> <tr> <th>Color temperature</th><th>x</th><th>y</th></tr> </thead> <tbody> <tr> <td>COOL(Hi)</td><td>0.276</td><td>0.276</td></tr> <tr> <td>NORMAL(Mid)</td><td>0.288</td><td>0.296</td></tr> <tr> <td>WARM(Low)</td><td>0.313</td><td>0.329</td></tr> </tbody> </table> <p>Adjustment target Hi-light: $x \pm 0.003$ $y \pm 0.003$ Hi-light is target of the number at drive adjustment in the hi-light windows. Therefore, it is not target of the hi-light number at after adjustment white balance.</p>		Color temperature	x	y	COOL(Hi)	0.276	0.276	NORMAL(Mid)	0.288	0.296	WARM(Low)	0.313	0.329	<p>Picture Menu: Standard User setting: Normal except PICTURE: max 30 Aspect: Full (16 : 9) Position and size: Normal</p> <ul style="list-style-type: none"> • [7] key : color temperature select. • [9] key : Picture menu select. • Highlight section Signal amplitude 75% <p>RGB VGA W/B Pattern</p>  <ul style="list-style-type: none"> • Drive standard G: E0h
Color temperature	x	y												
COOL(Hi)	0.276	0.276												
NORMAL(Mid)	0.288	0.296												
WARM(Low)	0.313	0.329												

Table 2 Drive data addresses (PC/RGB)

Color temperature	R	G	B
COOL(Hi)	A0-11AD	A0-11AE	A0-11AF
NORMAL(Mid)	A0-11B0	A0-11B1	A0-11B2
WARM(Low)	A0-11B3	A0-11B4	A0-11B5

Table 3 Drive data addresses (nonuse, dummy)

Color temperature	R	G	B
COOL(Hi)	A0-1180	A0-1181	A0-1182
NORMAL(Mid)	A0-1183	A0-1184	A0-1185
WARM(Low)	A0-1186	A0-1187	A0-1188

Table 4 Drive data addresses (nonuse, dummy)

Color temperature	R	G	B
COOL(Hi)	A0-1189	A0-118A	A0-118B
NORMAL(Mid)	A0-118C	A0-118D	A0-118E
WARM(Low)	A0-118F	A0-1190	A0-1191

Table 5 Drive data addresses (nonuse, dummy)

Color temperature	R	G	B
COOL(Hi)	A0-11B6	A0-11B7	A0-11B8
NORMAL(Mid)	A0-11B9	A0-11BA	A0-11BB
WARM(Low)	A0-11BC	A0-11BD	A0-11BE

10.2.2. YUV white balance adjustment

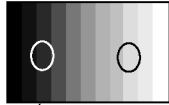
Instrument Name	Connect to	Setting												
<ul style="list-style-type: none"> • HD(1125/60i) W / B pattern (COMPONENT Output) • Color analyzer (Minolta CA-100 or equivalent) 	PC IN terminal Panel surface	Picture menu: STANDARD User setting: Normal except PICTURE: max 30												
Steps	Remarks													
<p>[condition]</p> <ul style="list-style-type: none"> • Make sure the front panel to be used on the final set is fitted. • Make sure a color signal is not being shown before adjustment. • Put the color analyzer where there is little color variation. <p>[Adjustment]</p> <ol style="list-style-type: none"> 1. Set COMPONENT / RGB-IN SELECT to COMPONENT. 2. Select the IIC mode [PANEL W / B Adj.] item. 3. Check that the color temperature is [COOL (Hi)]. 4. Output a white balance pattern. 5. Touch the signal receiver of color analyzer to the highlight window's center. 6. Fix G drive at E0h and adjust B drive and R drive so x, y become the [Color temperature COOL (Hi)] in the below table. Adjust it again after it lowers of 08h data when the adjustment is NG. (In addition, adjust it after it lowers by 08h data for NG.) 7. Adjust R/G/B together by multiplication so the maximum drive value in R/G/B becomes FCh with the gain ratio kept. (ALL-DRIVE) 8. Set color temperature to [NORMAL (Mid)]. 9. Fix G drive at E0h and adjust B drive and R drive so the highlight window's x, y becomes the [Color temperature NORMAL (Mid)] in the below table. Adjust it again after it lowers of 08h data when the adjustment is NG. (In addition, adjust it after it lowers by 08h data for NG.) 10. Adjust R/G/B together by multiplication so the maximum drive value in R/G/B becomes FCh with the gain ratio kept. (ALL-DRIVE) 11. Set color temperature to [WARM (Low)]. 12. Set G drive to E0h and adjust B drive and R drive so the highlight window's x, y become the [Color temperature WARM (Low)] shown in the below table. Adjust it again after it lowers of 08h data when the adjustment is NG.(In addition, adjust it after it lowers by 08h data for NG.) 13. Adjust R/G/B together by multiplication so the maximum drive value in R/G/B becomes FCh with the gain ratio kept. (ALL-DRIVE) 14. Copy the R drive, G drive and B drive data in YUV1_525ip, YUV3_625ip region. <p>Table 6 W/B adjustment values</p> <table border="1"> <thead> <tr> <th>Color temperature</th><th>x</th><th>y</th></tr> </thead> <tbody> <tr> <td>COOL(Hi)</td><td>0.276</td><td>0.276</td></tr> <tr> <td>NORMAL(Mid)</td><td>0.288</td><td>0.296</td></tr> <tr> <td>WARM(Low)</td><td>0.313</td><td>0.329</td></tr> </tbody> </table> <p>Adjustment target Hi-light: $x \pm 0.003$ $y \pm 0.003$ Hi-light is target of the number at drive adjustment in the hi-light windows. Therefore, it is not target of the hi-light number at after adjustment white balance.</p>	Color temperature	x	y	COOL(Hi)	0.276	0.276	NORMAL(Mid)	0.288	0.296	WARM(Low)	0.313	0.329	<p>Picture Menu: STANDARD User setting: Normal except PICTURE: max 30 Aspect: Full (16 : 9) Position and size: Normal</p> <ul style="list-style-type: none"> • [7] key : color temperature select. • [9] key : Picture menu select. • Highlight section Signal amplitude 75% <p>HD W/B Pattern (COMPONENT Output)</p>  <p>High light 75% Low light 15%</p> <ul style="list-style-type: none"> • Drive standard G: E0h 	
Color temperature	x	y												
COOL(Hi)	0.276	0.276												
NORMAL(Mid)	0.288	0.296												
WARM(Low)	0.313	0.329												

Table 7 Drive data addresses (YUV2_HD)

Color temperature	R	G	B
COOL(Hi)	A0-119B	A0-119C	A0-119D
NORMAL(Mid)	A0-119E	A0-119F	A0-11A0
WARM(Low)	A0-11A1	A0-11A2	A0-11A3

Table 8 Drive data addresses (YUV1_525ip)

Color temperature	R	G	B
COOL(Hi)	A0-1192	A0-1193	A0-1194
NORMAL(Mid)	A0-1195	A0-1196	A0-1197
WARM(Low)	A0-1198	A0-1199	A0-119A







Table 9 Drive data addresses (YUV3_625ip)

Color temperature	R	G	B
COOL(Hi)	A0-11A4	A0-11A5	A0-11A6
NORMAL(Mid)	A0-11A7	A0-11A8	A0-11A9
WARM(Low)	A0-11AA	A0-11AB	A0-11AC

11 Block Diagram

11.1. Diagram Notes

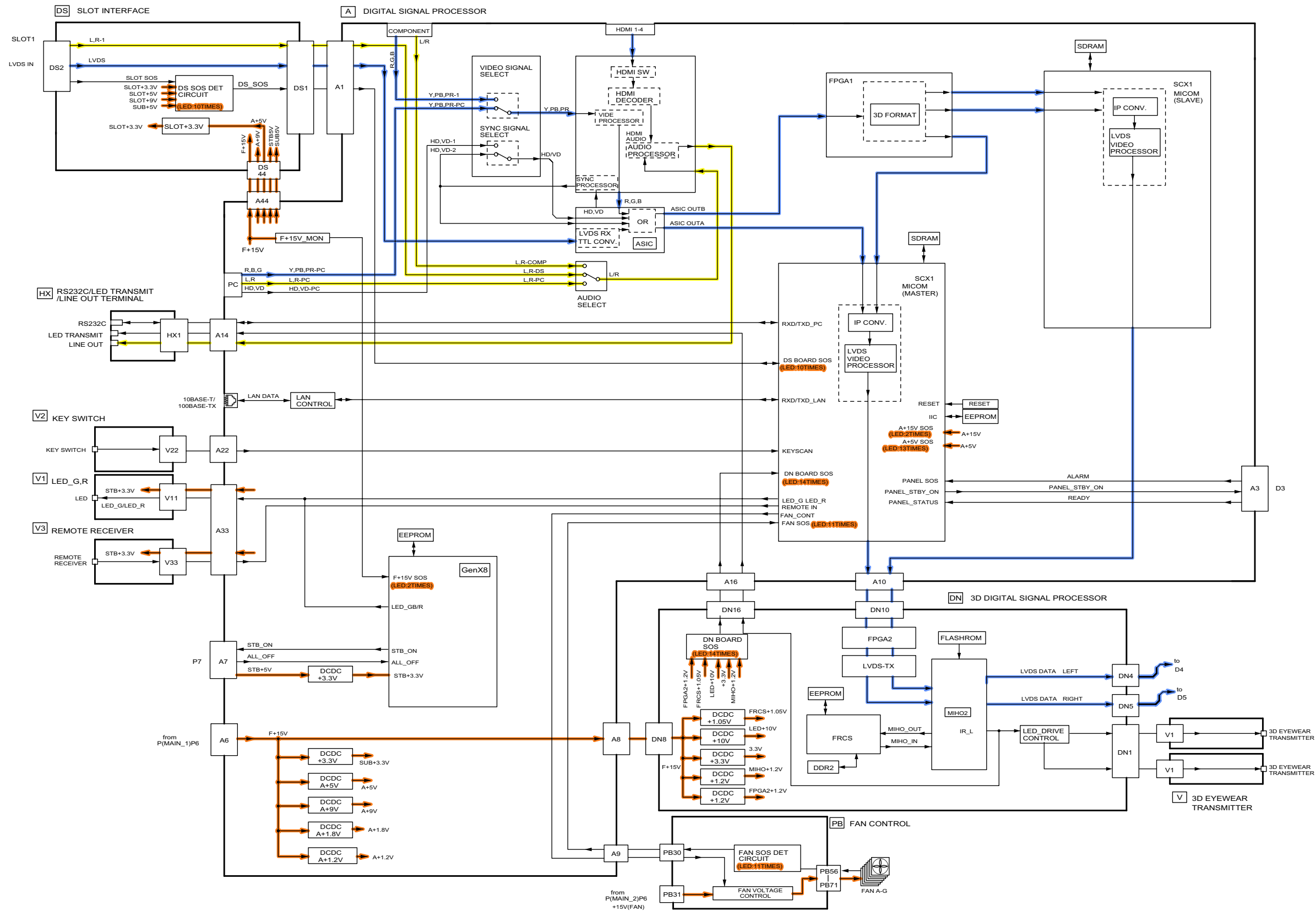
Notes:

- 1. **Resistor**
Unit of resistance is OHM [Ω] (K=1,000, M=1,000,000).
- 2. **Capacitor**
Unit of capacitance is μ F, unless otherwise noted.
- 3. Coil
Unit of inductance is H, unless otherwise noted.
- 4. Test Point
 : Test Point position
- 5. Earth Symbol
 : Chassis Earth (Cold)  : Line Earth (Hot)
- 6. Voltage Measurement
Voltage is measured by a DC voltmeter.
Conditions of the measurement are the following:
Power Source AC200-240V, 50/60Hz
Receiving Signal Color Bar signal (RF)
All customer's controls Maximum positions
- 7. When arrow mark () is found, connection is easily found from the direction of arrow.
- 8. Indicates the major signal flow. : Video  Audio 
- 9. This block diagram is the latest at the time of printing and subject to change without notice.

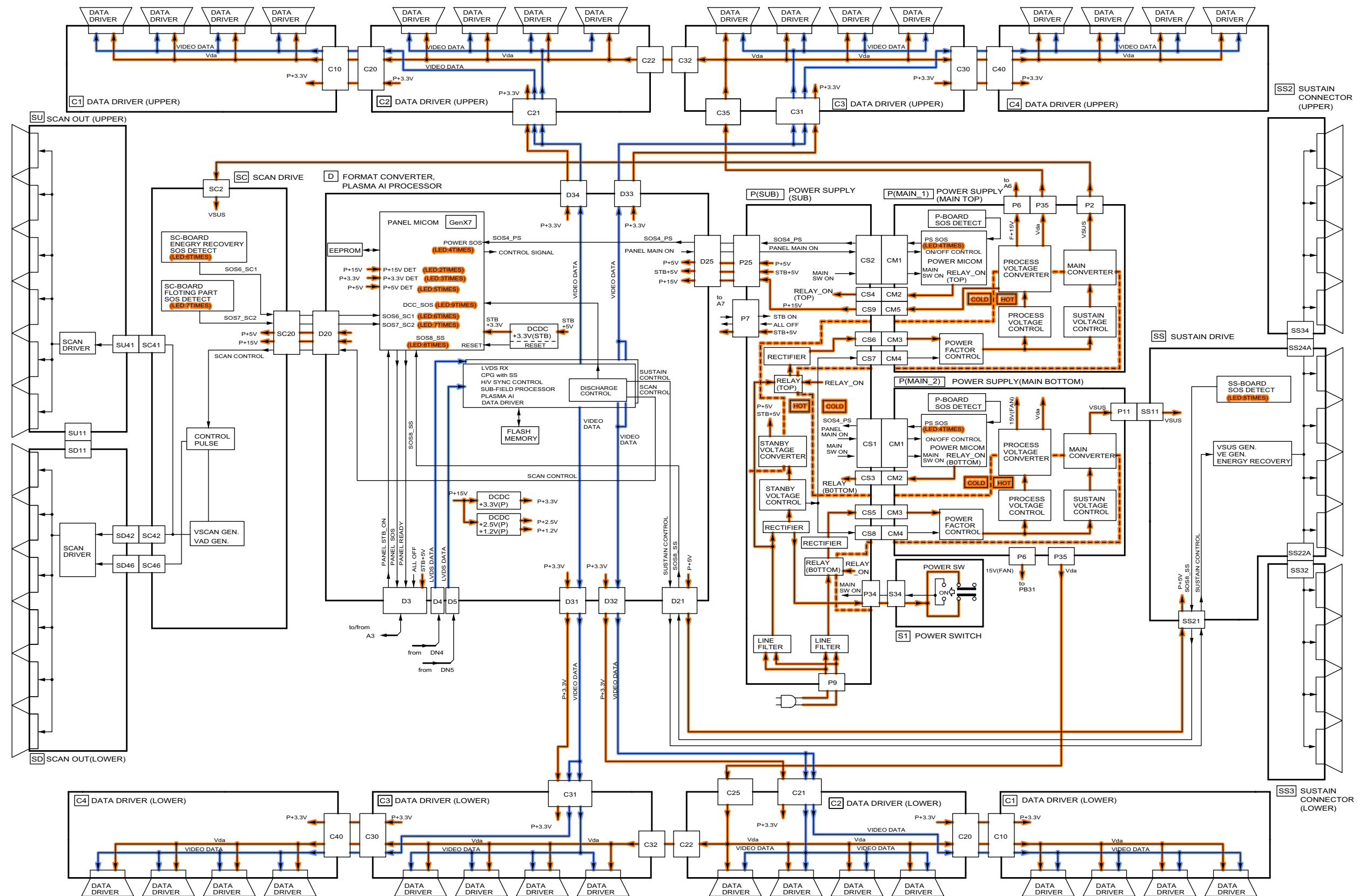
Remarks:

- 1. The Power Circuit contains a circuit area which uses a separate power supply to isolate the earth connection.
The circuit is defined by HOT and COLD indications in the schematic diagram. Take the following precautions.
All circuits, except the Power Circuit, are cold.
Precautions
 - a. Do not touch the hot part or the hot and cold parts at the same time or you may be shocked.
 - b. Do not short- circuit the hot and cold circuits or a fuse may blow and parts may break.
 - c. Do not connect an instrument, such as an oscilloscope, to the hot and cold circuits simultaneously or a fuse may blow.
Connect the earth of instruments to the earth connection of the circuit being measured.
 - d. Make sure to disconnect the power plug before removing the chassis.

11.2. Main Block (1 of 2) Diagram

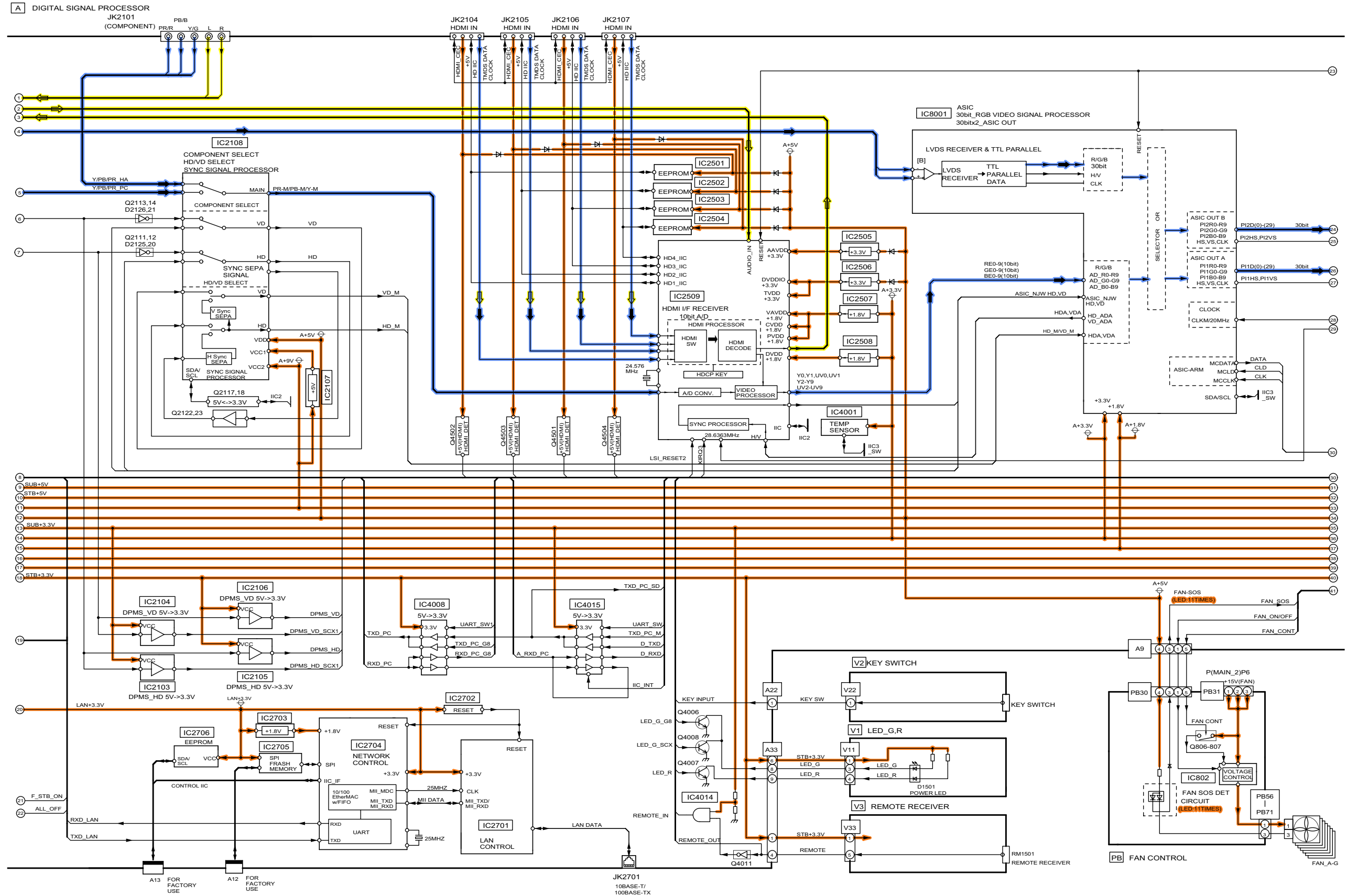


11.3. Main Block (2 of 2) Diagram



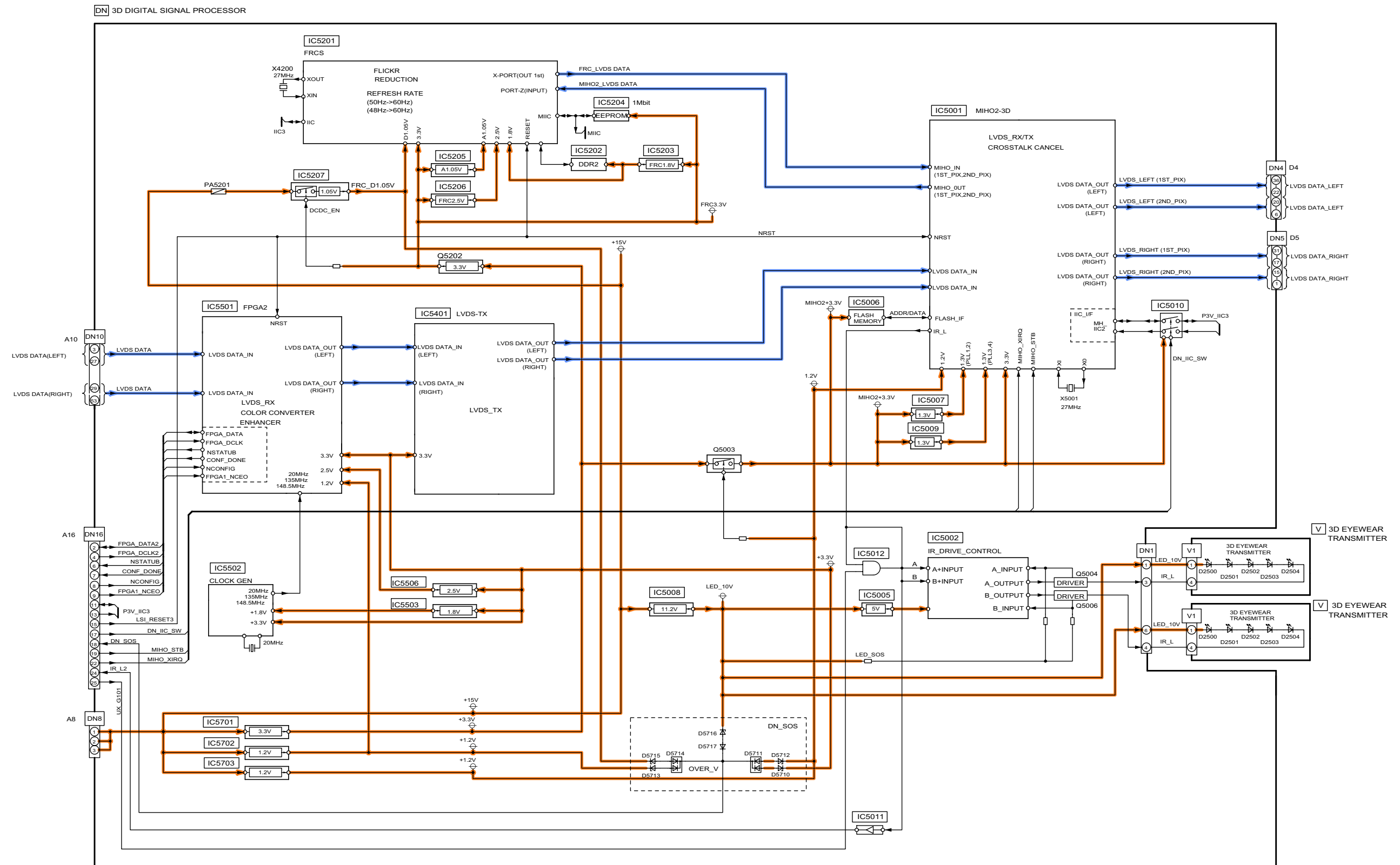


11.5. Block (2 of 8) Diagram

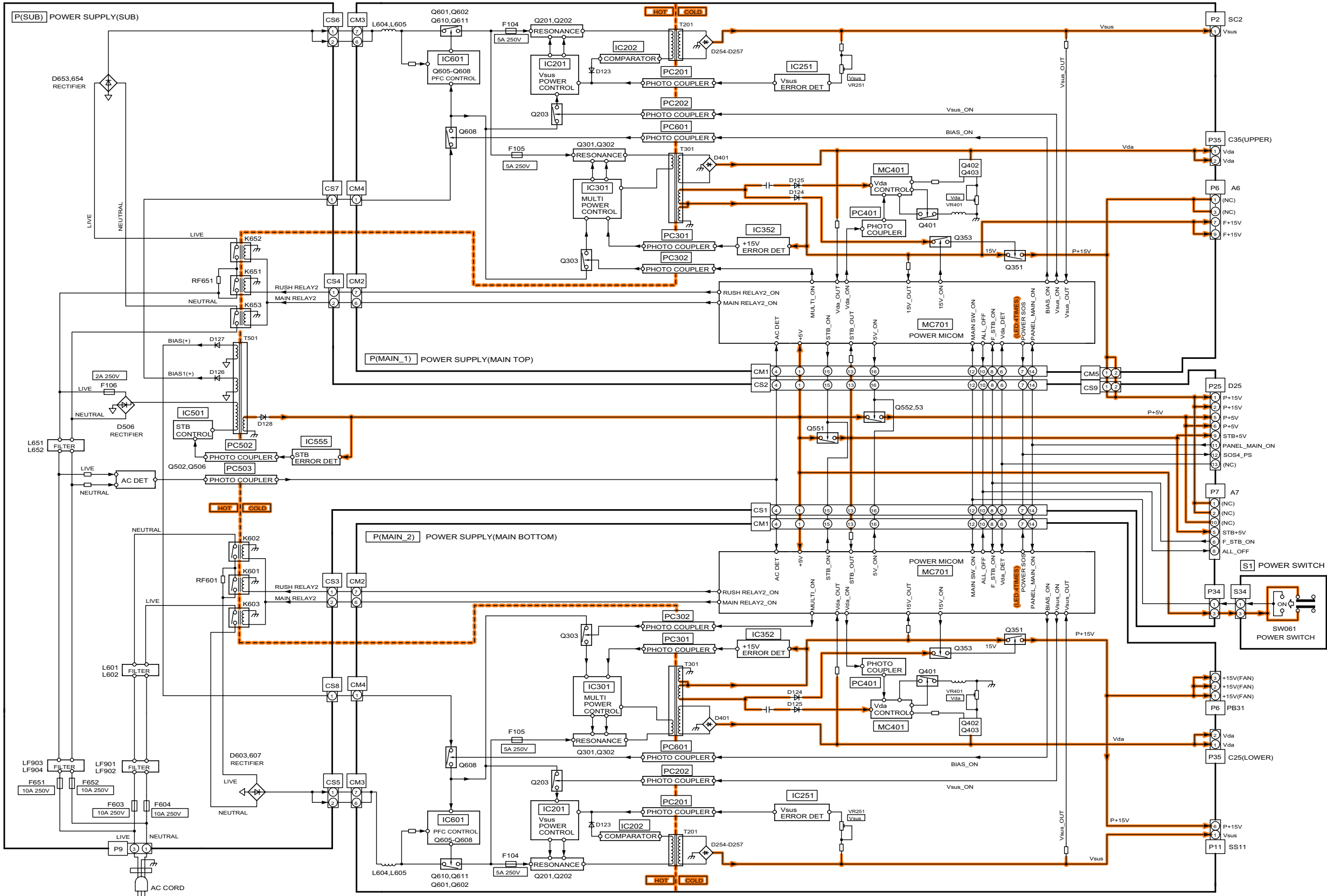




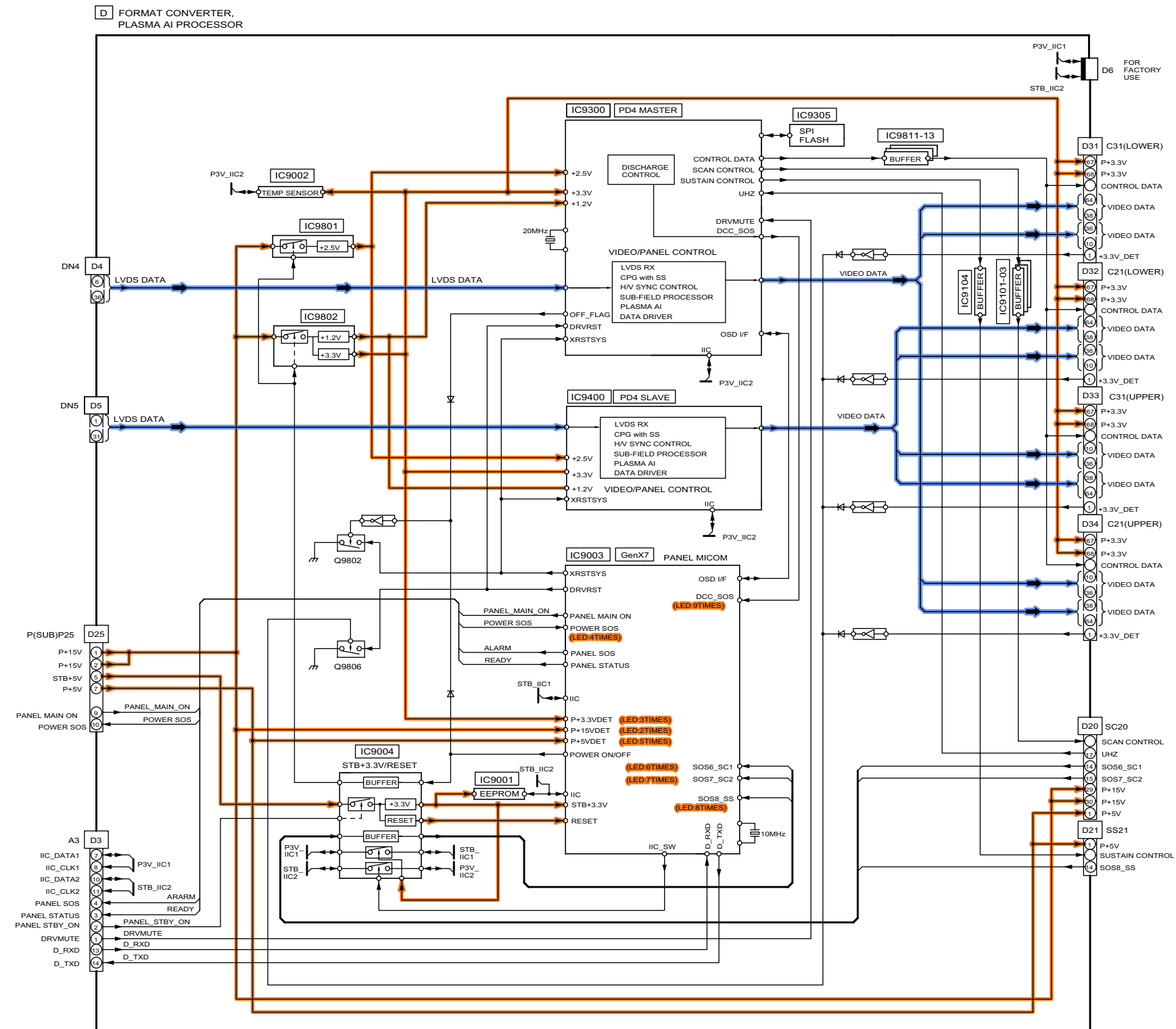
11.7. Block (4 of 8) Diagram



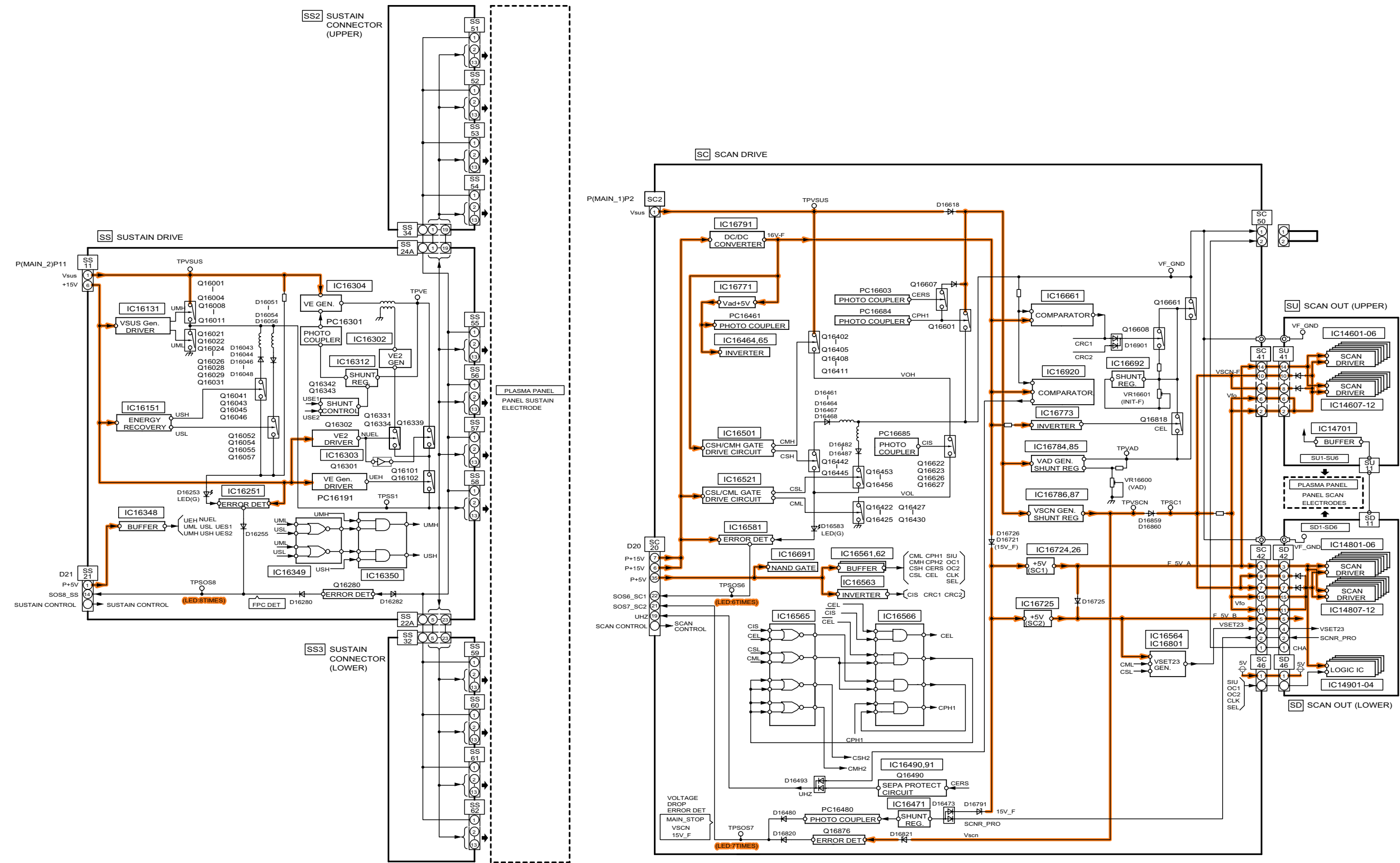
11.8. Block (5 of 8) Diagram



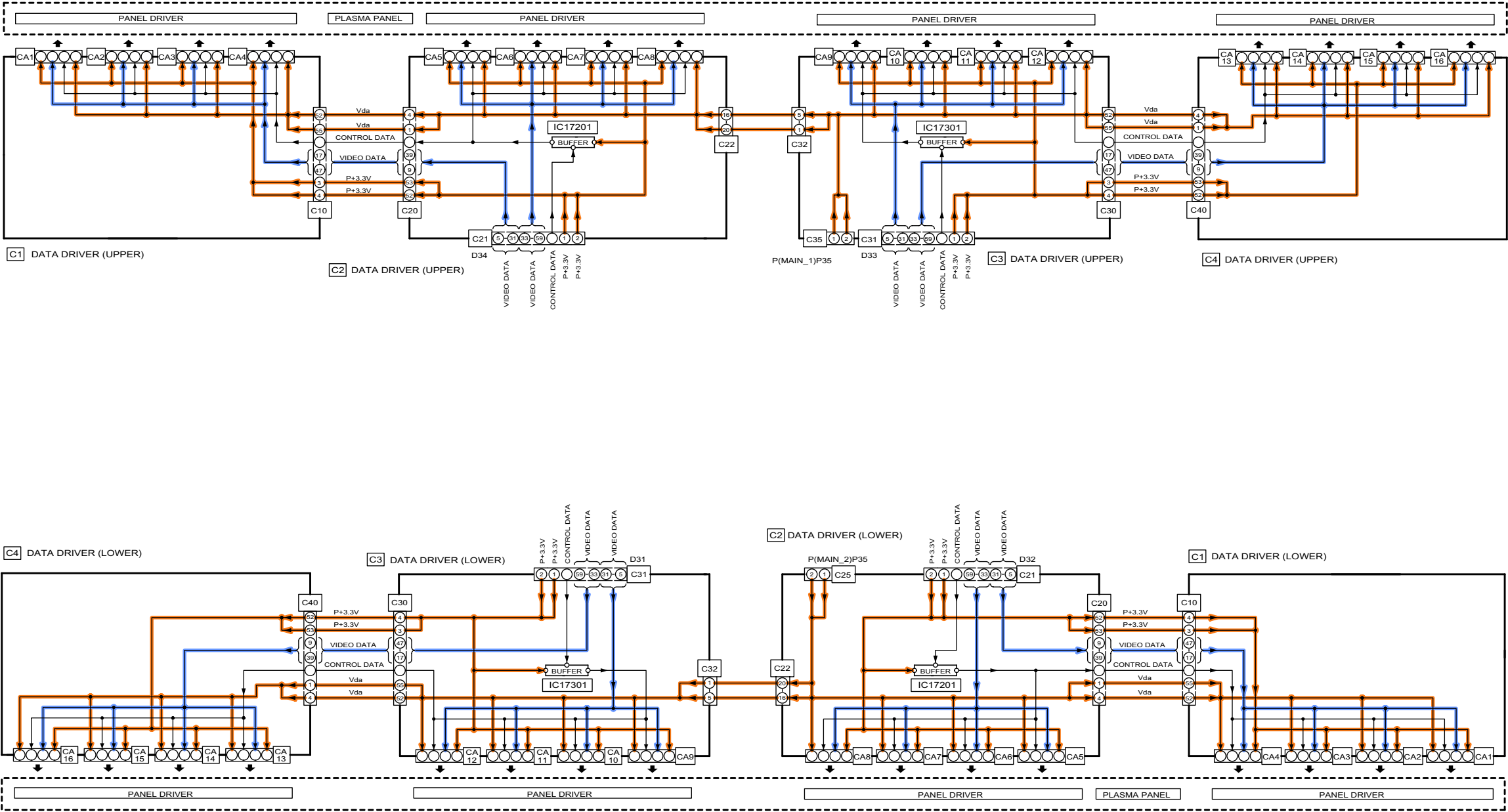
11.9. Block (6 of 8) Diagram



11.10. Block (7 of 8) Diagram

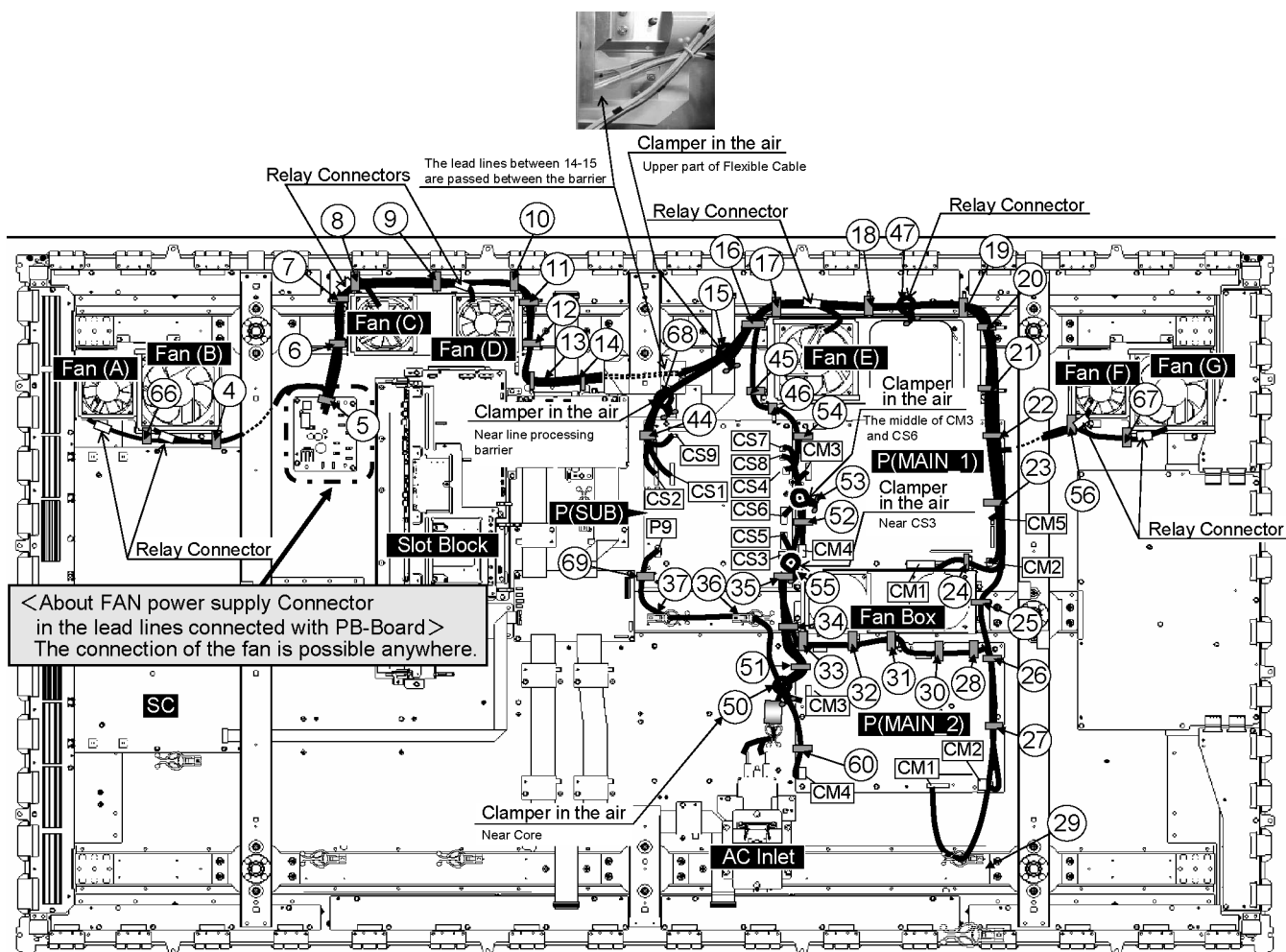


11.11. Block (8 of 8) Diagram



12 Wiring Connection Diagram

12.1. Wiring (1)

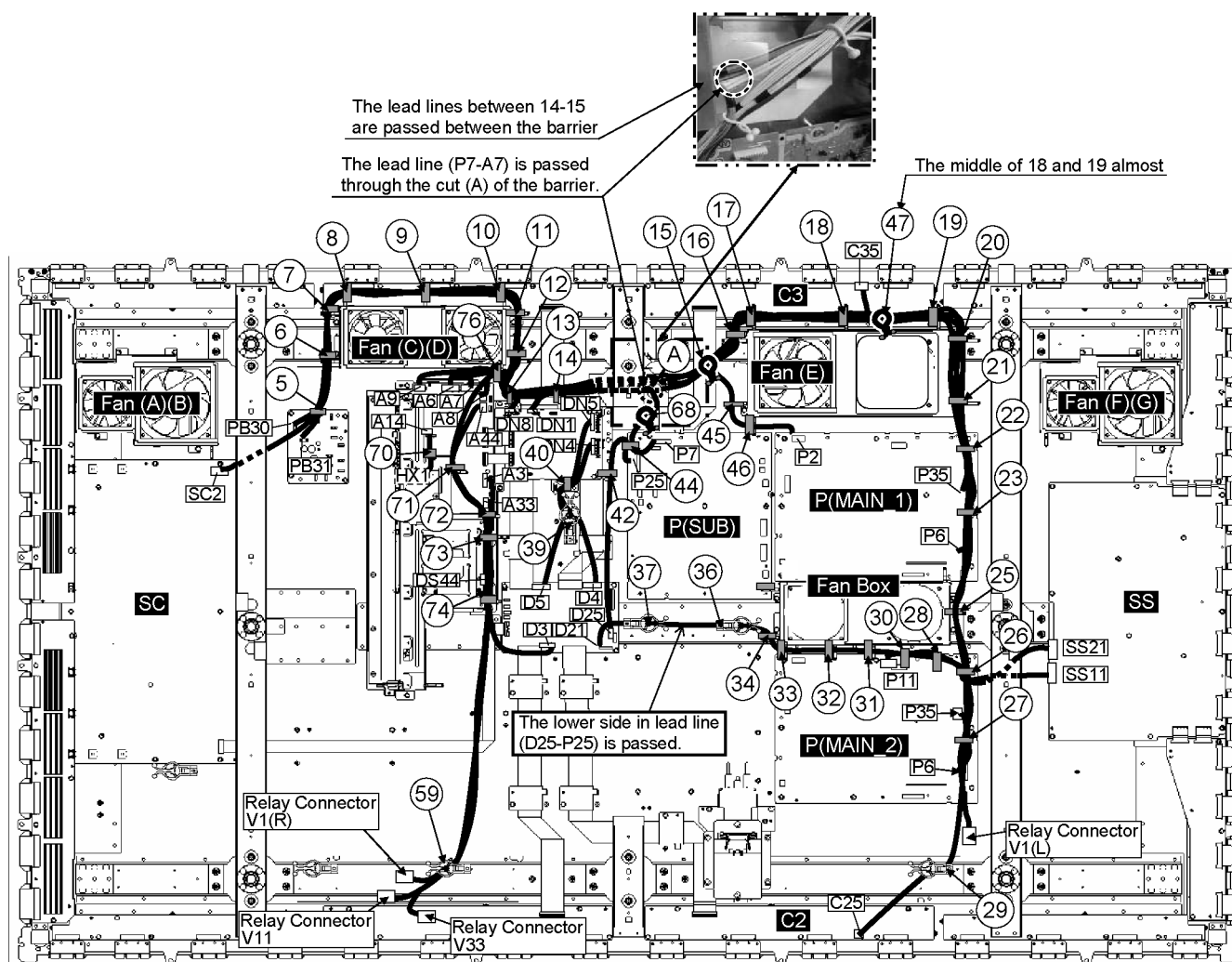


Clamp position

CON:No - CON:No	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	44	45	46	47	50	51	52	53	54	55	60	65	
CS1 - CM1(P MAIN_2)	●	●	●	●	●	●	●	●	●		●	●	●		●							●			●								●	
CS2 - CM1(P MAIN_1)	●	●	●	●	●		●	●	●	●												●			●								●	
CS3 - CM2(P MAIN_2)												●	●	●		●	●	●	●	●	●			●							●		●	
CS4 - CM2(P MAIN_1)		●	●	●	●	●	●	●	●															●	●	●					●			
CS5 - CM3(P MAIN_2)																				●	●						●	●				●		
CS6 - CM3(P MAIN_1)																																		
CS7 - CM4(P MAIN_1)																																		
CS8 - CM4(P MAIN_2)																				●	●						●	●	●	●		●	●	
CS9 - CM5(P MAIN_1)	●	●	●	●	●	●	●	●	●													●			●		●	●	●	●				●

CON:No - CON:No	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯	⑰	⑱	⑲	⑳	㉑	㉒	㉓	㉔	㉕	㉖	㉗	㉘	㉙	㉚	㉛	㉜	㉝	㉞	㉟		
Fan (A) - PB**	●	●																																
Fan (B) - PB**	●	●																														●		
Fan (C) - PB**		●	●	●	●																													
Fan (D) - PB**		●	●	●	●	●																												
Fan (E) - PB**		●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●												
Fan (F) - PB**		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			●		●							
Fan (G) - PB**		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			●		●						●	
AC Inlet - F1																							●	●		●			●			●		●

12.2. Wiring (2)

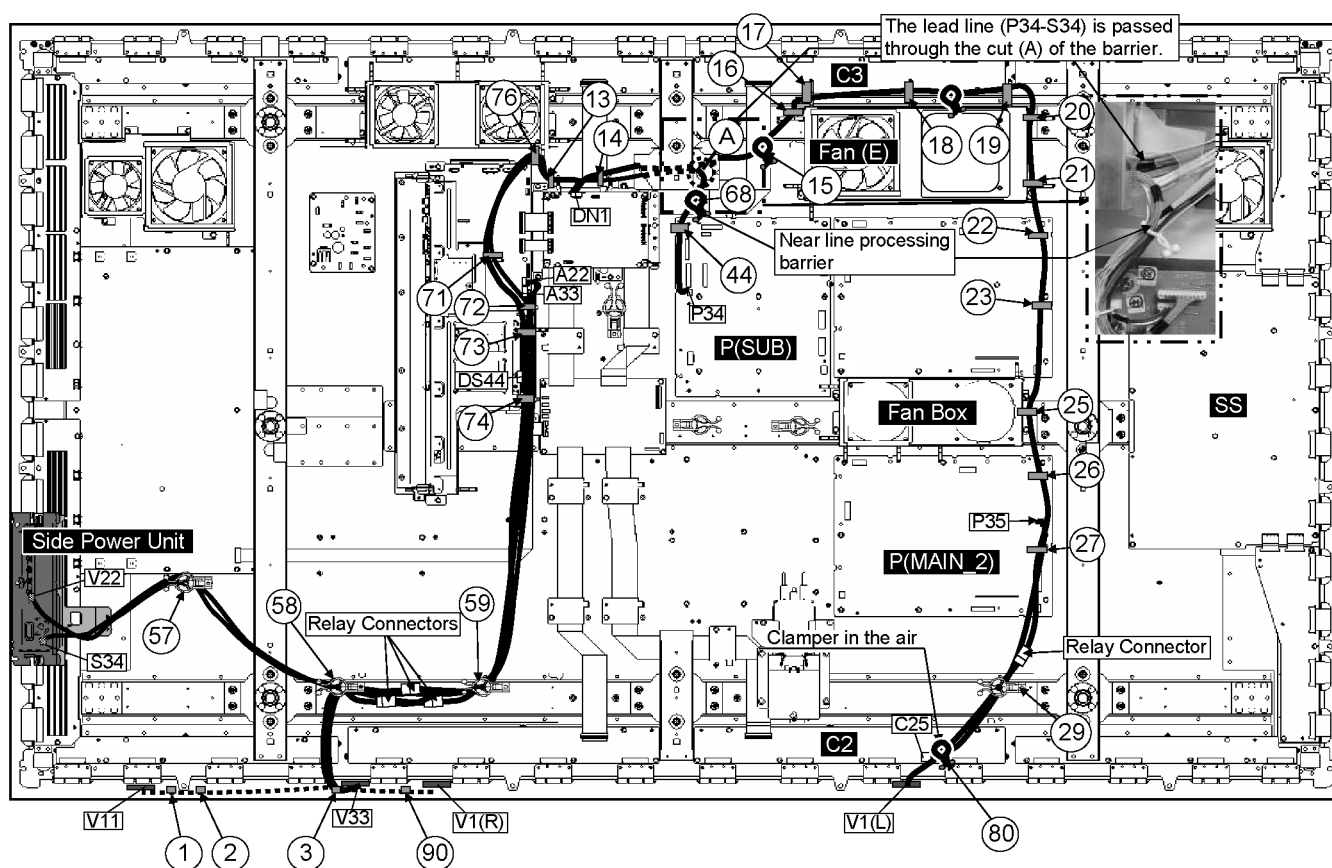


Clamp position

CON:No - CON:No	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	25	26	27	29	45	46	47	59	71	72	73	74	76
P2(P MAIN_1) - SC2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
P35(P MAIN_1) - C35(L)																																
P6(P MAIN_2) - PB31	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
A6 - P6(P MAIN_1)																																
A9 - PB30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
DN1 - V1(R)																																
DN1 - V1(L)																																
A33 - V33																																

CON:No - CON:No	13	14	26	27	28	29	30	31	32	33	34	36	37	39	40	42	44	68	A	70	71	72	73	74	76
P11(P MAIN_2) - SS11			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
P35(P MAIN_2) - C25(T)			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
D21 - SS21			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
D25 - P25(P SUB)																									
A7 - P7(P SUB)	●	●																							
A3 - D3																									
DN4 - D4																									
DN5 - D5																									
HX1 - A14																									
A44 - DS44																									
A8 - DN8	●																								

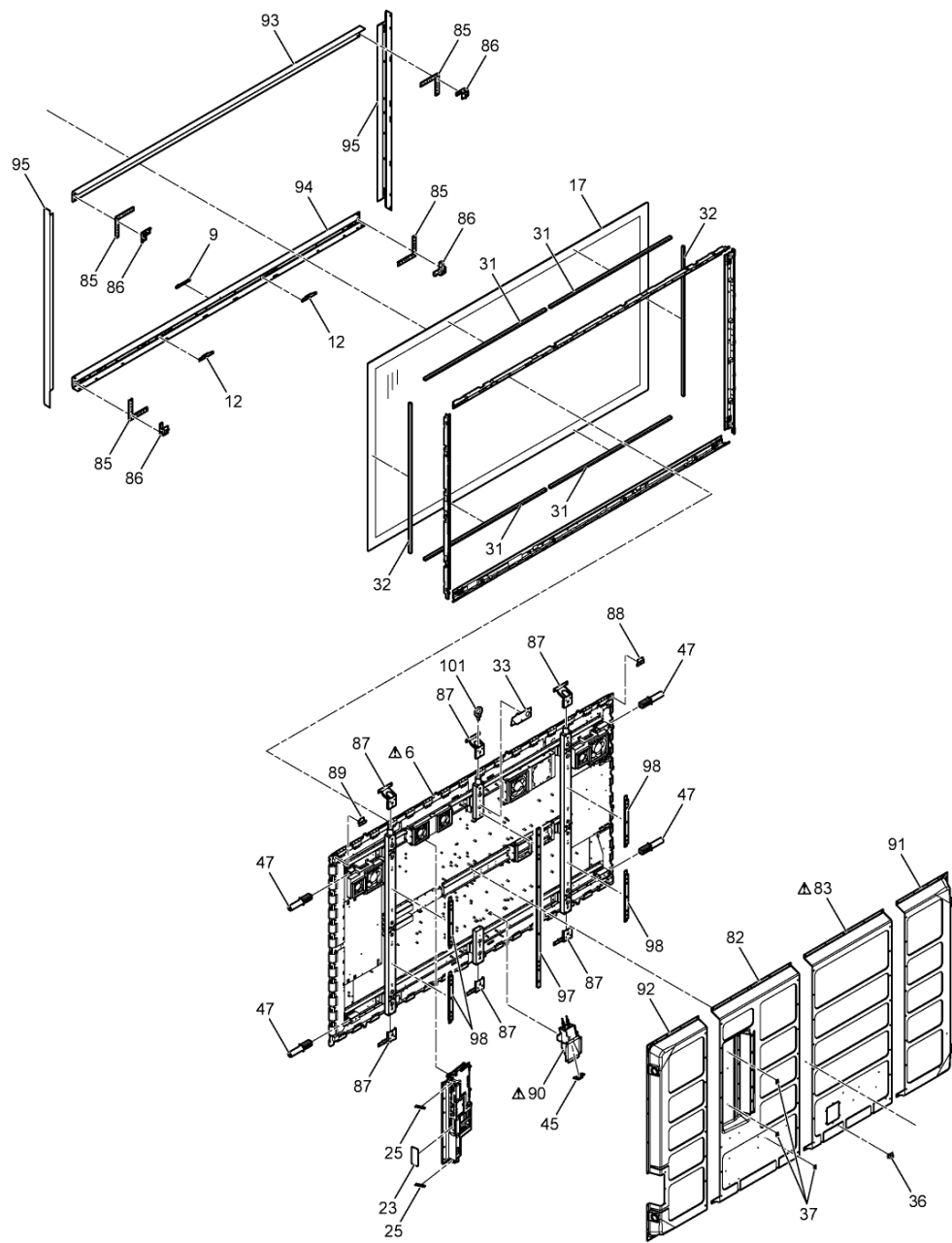
12.3. Wiring (3)



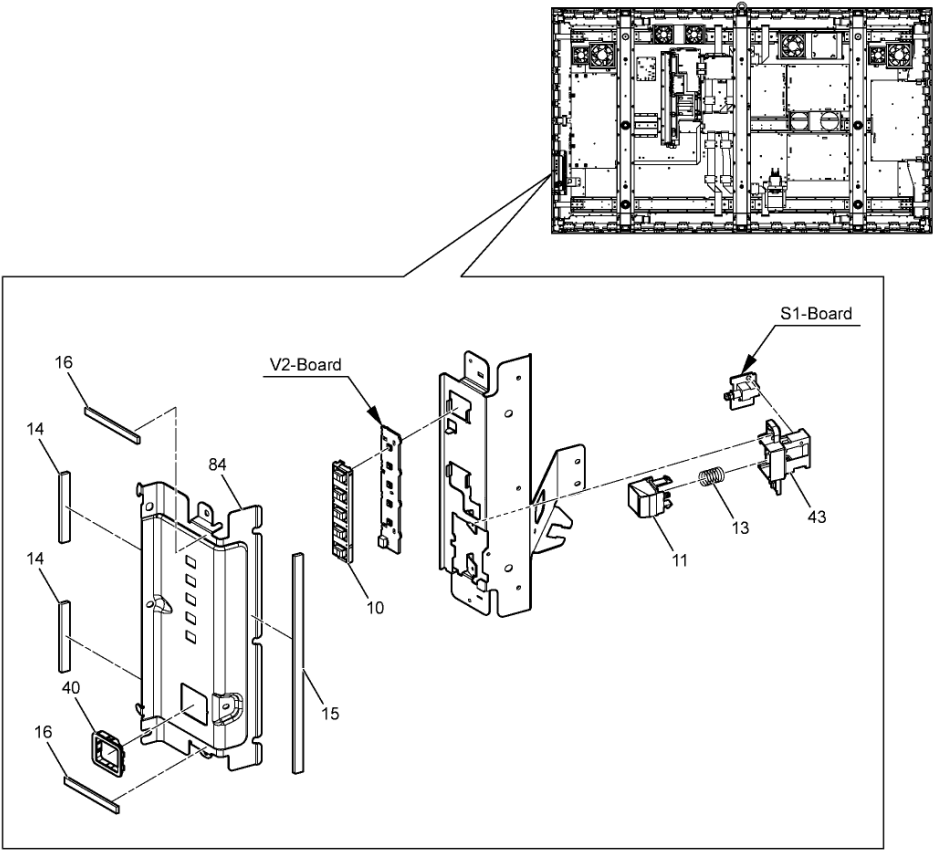
Clamp position

CON:No - CON:No	①	②	③	⑬	⑭	⑮	⑯	⑰	⑱	⑲	⑳	㉑	㉒	㉓	㉔	㉕	㉖	㉗	㉘	㉙	㉚	㉛	㉜	㉝	㉞	㉟	㊱	㊲	㊳	㊴	㊵	㊶	㊷	㊸	㊹	㊺	㊻	㊼	㊽	㊾	㊿	A		
V22 - A22																																												
S34 - P34																																												
V11 - A33																																												
V33 -																																												
DN1 - V1(R)																																												
DN1 - V1(L)																																												
P35(P MAIN_2) - C25(UNDER)																																												

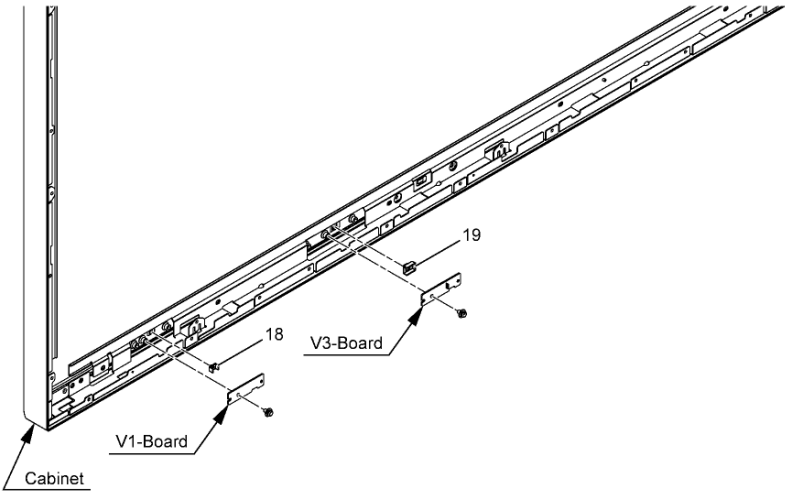
Model No. : TH-85VX200W Exploded View



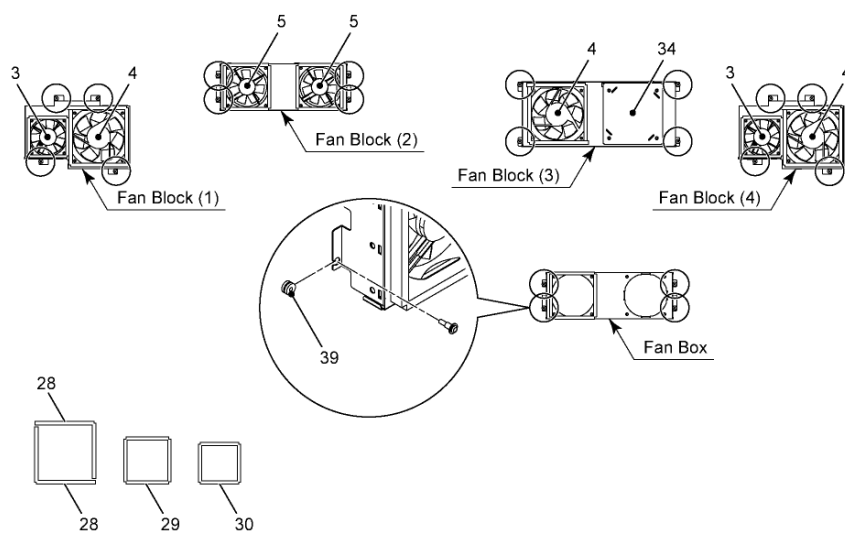
Model No. : TH-85VX200W Side Power part location



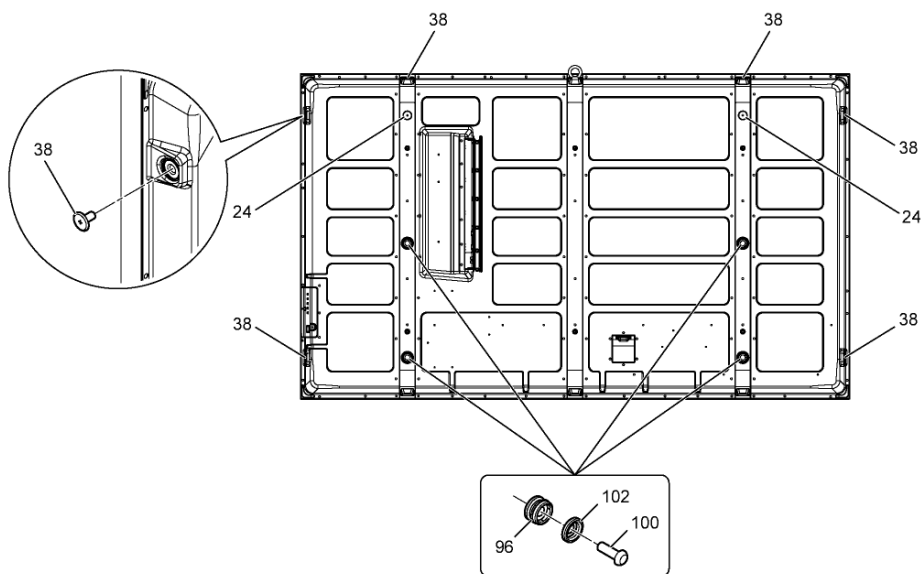
Model No. : TH-85VX200W Cabinet part location



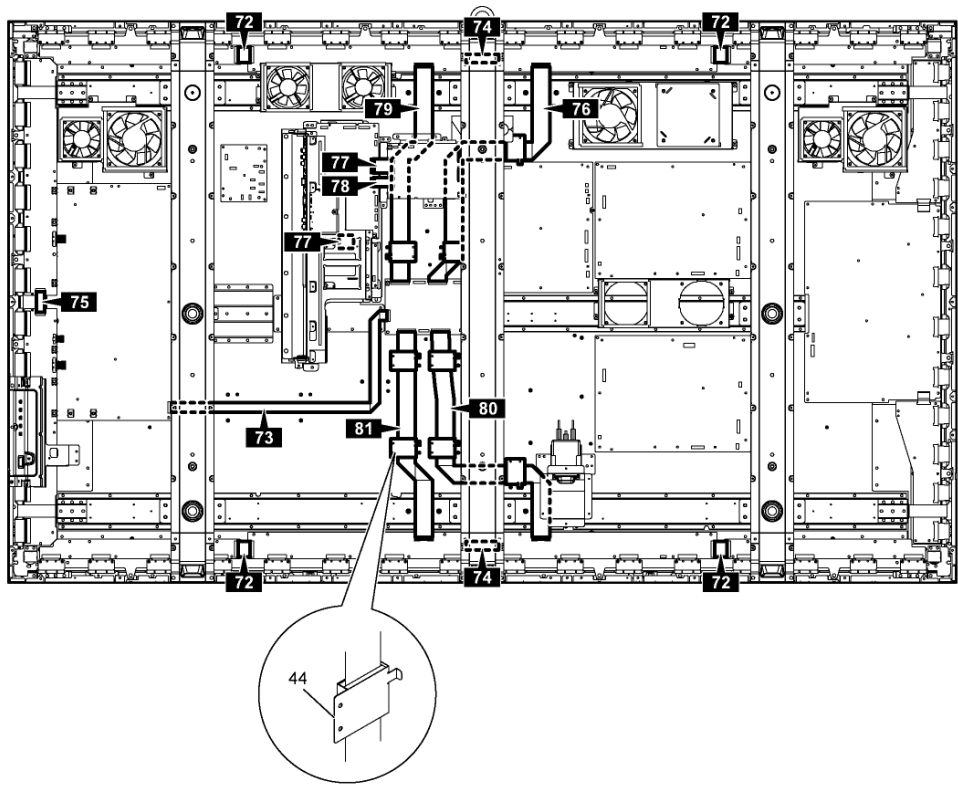
Model No. : TH-85VX200W Fan part location



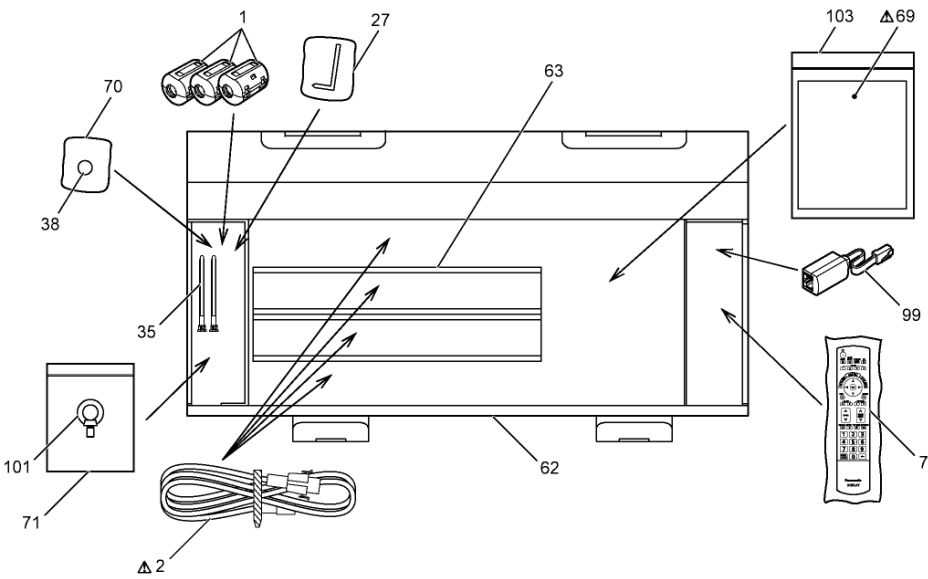
Model No. : TH-85VX200W Rear cover location



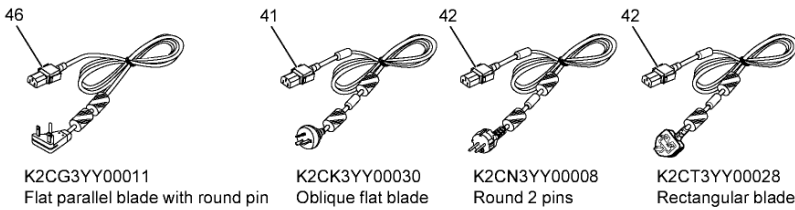
Model No. : TH-85VX200W Print Circuit Board

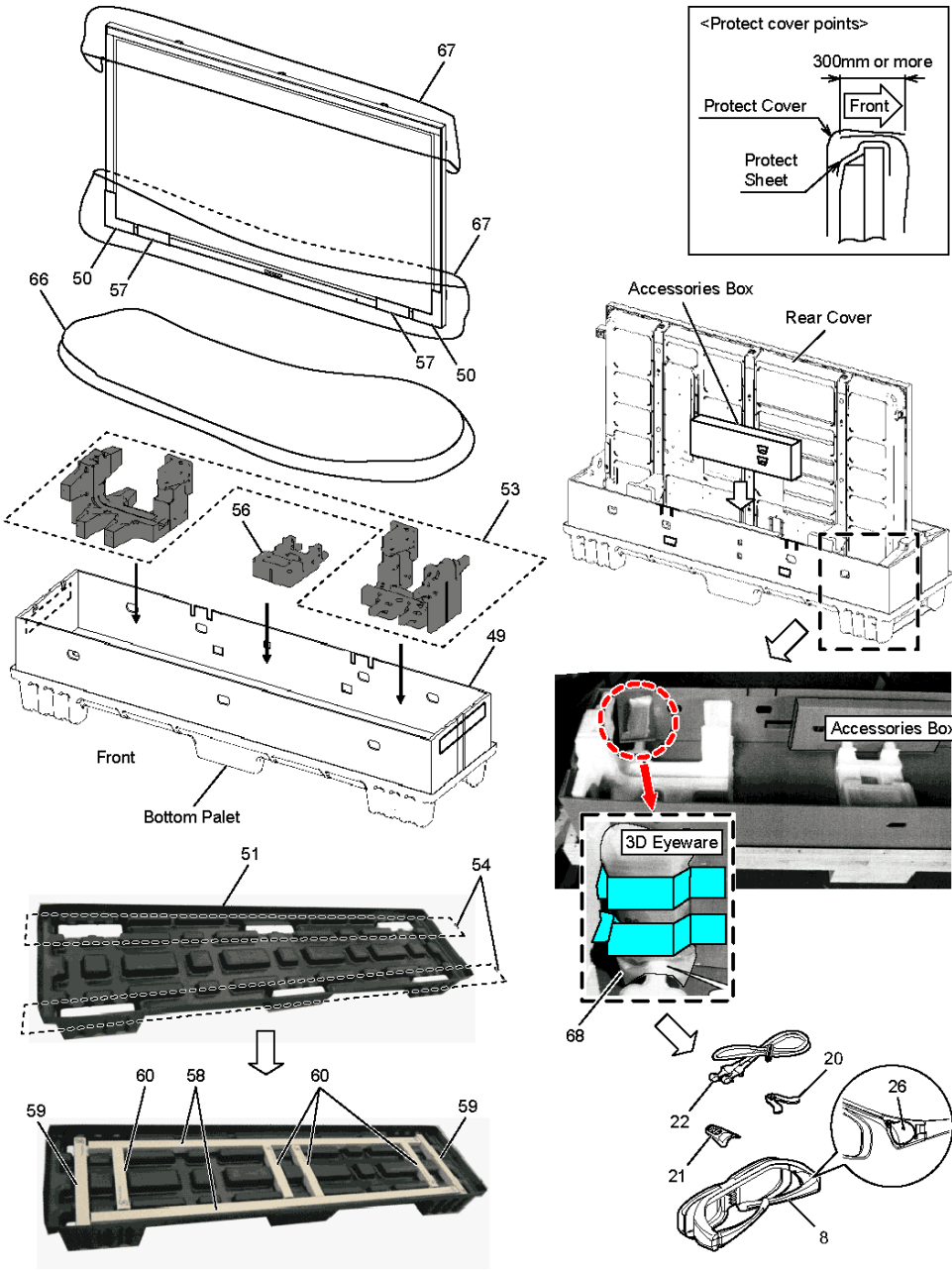


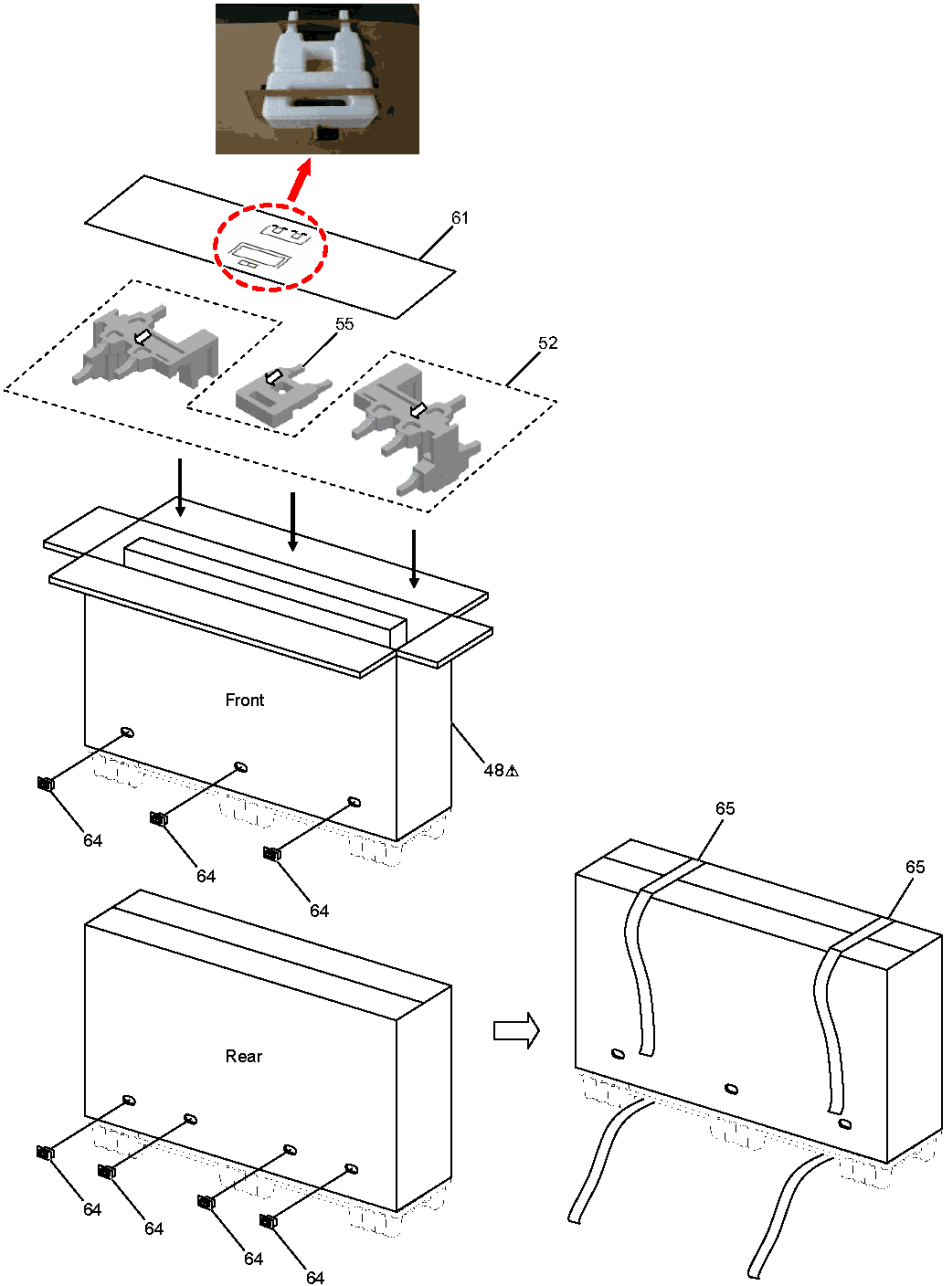
Model No. : TH-85VX200W Packing and Accessories (1)








<AC power cord>







Model No. : TH-85VX200W Parts List

Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
	1	J0KG00000014	FILTER	3	
	2	K2CG3YY00011	AC CORD	1	
	2	K2CK3YY00030	AC CORD	1	
	2	K2CN3YY00008	AC CORD	1	
	2	K2CT3YY00028	AC CORD	1	
	3	L6FAYYYH0030	FAN UNIT (80)	2	
	4	L6FAYYYH0031	FAN UNIT (120)	3	
	5	L6FAYYYH0133	FAN UNIT (92)	2	
	6	MD85F13S1J	PLASMA DISPLAY PANEL	1	
	7	N2QAYB000562	REMOTE CONTROL	1	
	8	N5ZZ00000204	3D EYEWEAR	1	WITHOUT BATTERY
	9	TBMA379	PANASONIC BADGE	1	
	10	TBXA46703A	5 RANGE BUTTON	1	
	11	TBXA50001	POWER BUTTON	1	
	12	TESA356	EMITTER FIXING SPRING	2	
	13	TESD031	POWER BUTTON SPRING	1	
	14	TEWA034	GASKET(T2X5X50) (SIDE POWER SW COVER)	2	
	15	TEWA051	GASKET(T2X5X200) (SIDE POWER SW COVER)	1	
	16	TEWA202	GASKET(T1X5X45) (SIDE POWER SW COVER)	2	
	17	TKGA5657	FRONT GLASS	1	
	18	TKKC5213-1	LED PANEL	1	
	19	TKKC5276	REMOTE SENSOR PANEL	1	
	20	TKKH5122	NOSE PAD A	1	(3D EYEWEAR)
	21	TKKH5123	NOSE PAD B	1	(3D EYEWEAR)
	22	TKKH5124	BAND	1	(3D EYEWEAR)
	23	TKKL5266-1	BLANK PLATE	1	
	24	TKKL5370	EYE BOLT COVER	2	
	25	TKKL5428	SIDE COVER	2	
	26	TKKL5520	BATTERY COVER	1	(3D EYEWEAR)
	27	TKKX0015	HEXAGONAL WRENCH	1	
	28	TMKG405	SPONGE (FAN)	6	
	29	TMKG685	SPONGE (FAN)	3	
	30	TMKH135	FAN SPONGE	2	
	31	TMKH163	SPONGE (FRONT GLASS/UPPER/BOTTOM)	4	
	32	TMKH164	SPONGE (FRONT GLASS/LEFT/RIGHT)	2	
	33	TMKY884	WIRE BARRIER	1	
	34	TMKY922	FAN BLIND SHEET	1	
		TMM15412-2	CLAMPER	1	
		TMM15414-2	CLAMPER	1	
		TMM16473-1	CLAMPER	8	
		TMM17499	CLAMPER	1	
		TMM6428-1	CLAMPER	3	
		TMM6496-1	CLAMPER	5	










Model No. : TH-85VX200W Parts List

Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		TMM7464-2	CLAMPER	2	
		TMM7468-1	CLAMPER	1	
		TMMD010	CLAMPER	6	
		TMME061	CLAMPER	2	
		TMME088	CLAMPER	10	
		TMME185	NYLON RIVET	3	
		TMME190	CLAMPER	8	
	35	TMME203	CLAMPER	2	
	36	TMME226	AC CORD CLAMPER	1	
	37	TMME228	BAND HOLDER	3	
		TMME237	CABLE CLAMPER	9	
		TMME261	CLAMPER	3	
		TMME291	EDGE SADDLE	7	
		TMME292	CLAMPER	5	
		TMME293	CLAMPER	1	
		TMME300	CLAMPER	2	
		TMME307	EDGE SADDLE	1	
		TMME332	CLAMPER	1	
	38	TMME375-1	EYE BOLT COVER M12	7	
	39	TMMJ068	RUBBER (FAN)	20	
		TMMK255	RUBBER WASHER	6	
	40	TMMX157	POWER BUTTON EDGE GUARD	1	
	41	TMMX168-1	AC CORD CLAMPER B	1	
	42	TMMX169	AC CODE CLAMPER B	2	
	43	TMWC016-1	POWER BUTTON BRACKET	1	
	44	TMXX034	CABLE HOLDER	8	
	45	TMXX035	AC CORD CLAMPER A	1	
	46	TMXX036	AC CORD CLAMPER B	1	
	47	TMZX5173	NUT FOR M12 EYE BOLT (SIDE)	4	
	48	TPCC70609	CARTON BOX TOP	1	
	49	TPCC70701	CARTON BOX BOTTOM	1	
	50	TPDA1153	CUSHION (COÖNER)	2	
	51	TPDA2136	BOTTOM PALLET	1	
	52	TPDA2137	CUSHION TOP	1	
	53	TPDA2138	CUSHION BOTTOM	1	
	54	TPDA2139	BOTTOM SKID	2	
	55	TPDA2158	CUSHION TOP CENTER	1	
	56	TPDA2159	CUSHION BOTTOM CENTER	1	
	57	TPDA2160	PROTECTION CENTER BOTTOM	2	
	58	TPDF2376	PAPER TUBE A	2	
	59	TPDF2377	PAPER TUBE B	2	
	60	TPDF2378	PAPER TUBE C	4	
	61	TPDF2379	TOP PAD	1	















Model No. : TH-85VX200W Parts List

Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
	62	TPDF2394	ACCESSORIES BOX	1	
	63	TPDF2450	PARTITION	1	
	64	TPDX0007	JOINT	7	
	65	TPDX0056	BAND	2	
	66	TPEH468	PROTECTION BAG	1	
	67	TPEH469	FRONT PROTECTION COVER	2	
	68	TPEH528	PROTECT BAG (FOR 3D EYEWEAR)	1	
	69	TQBC2604	INSTRUCTION BOOK (ENGLISH)	1	
	69	TQBC2605	INSTRUCTION BOOK (FRENCH)	1	
	69	TQBC2606	INSTRUCTION BOOK (SPANISH)	1	
	69	TQBC2607	INSTRUCTION BOOK (GERMAN)	1	
	69	TQBC2608	INSTRUCTION BOOK (DUTCH)	1	
	69	TQBC2609	INSTRUCTION BOOK (ITALIAN)	1	
	69	TQBC2610	INSTRUCTION BOOK (SWEDISH)	1	
	69	TQBC2611	INSTRUCTION BOOK (DANISH)	1	
	69	TQBC2612	INSTRUCTION BOOK (ARABIC)	1	
	69	TQBC2613	INSTRUCTION BOOK (RUSSIAN)	1	
	69	TQBC2614	INSTRUCTION BOOK (UKRAINIAN)	1	
	69	TQBC2615	INSTRUCTION BOOK (KAZAKHSTAN)	1	
	69	TQBC9009	INSTRUCTION BOOK (CD-ROM)	1	
	70	TQEF035	POLY BAG (EYE BOLT COVER M12)	1	
	71	TQEF035	POLY BAG (EYE BOLT M12)	1	
	72	TSXL737	CABLE (C10-C20/C30-C40)	4	
	73	TSXL863	CABLE (SC20-D20)	1	
	74	TSXL864	CABLE (C22-C32)	2	
	75	TSXL927	CABLE (SU11-SD11)	1	
	76	TSXM175	CABLE (D33-C31)	1	
	77	TSXM199	CABLE (DS1-A1/DN10-A10)	2	
	78	TSXM200	CABLE (DN16-A16)	1	
	79	TSXM220	CABLE (D34-C21)	1	
	80	TSXM221	CABLE (D32-C21)	1	
	81	TSXM222	CABLE (D31-C31)	1	
	82	TTUA2482	REAR COVER C/R COMPLETE	1	
	83	TTUA2494	REAR COVER C/L COMPLETE	1	
	84	TUWC074	SIDE POWER SW COVER	1	
	85	TUXJ709	CABINET CORNER JOINT METAL	4	
	86	TUXJ710	CABINET CORNER STOPPER METAL	4	
	87	TUXJ711	CABINET FIXING METAL	6	
	88	TUXJ712	CABINET POSITIONING METAL L	1	
	89	TUXJ713	CABINET POSITIONING METAL R	1	
	90	TXAJS0101MB	AC INLET ASSY	1	
	91	TXFKU0101MB	REAR COVER L ASSY	1	
	92	TXFKU0201MB	REAR COVER R ASSY	1	

Model No. : TH-85VX200W Parts List

Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
	93	TXFKY021LEJ	CABINET UPPER ASSY	1	
	94	TXFKY031LEJ	CABINET LOWER ASSY	1	
	95	TXFKY041LEJ	CABINET SIDE ASSY	2	
	96	TXFMM0101NB	STAND HOOK ASSY	4	
	97	TXFUX1501MB	REAR COVER CONNECTING METAL (A)	1	
	98	TXFUX1601MB	REAR COVER CONNECTING METAL (B)	4	
		TXJDN41LEJ	LVDS CABLE (DN4-D4)	1	
		TXJDN51LEJ	LVDS CABLE (DN5-D5)	1	
	99	TXZDM011MBE	EMC FILTER KIT	1	
		THEA068N	SCREW	4	
	100	THEA215	M16 BOLT	4	
		THEL0239	SCREW	4	
		THEL0429	SCREW	19	
		THEL057J	SCREW	2	
		THEL065Z	SCREW	126	
		THTA0419	HOOK SCREW	4	
		THTD013N	STEP SCREW	20	
		THTD0179	STEP SCREW (P-SPACER)	6	
		THTF011N	SCREW	251	
		XSB3+6FJ	SCREW	4	
		XTV3+10JFJ	SCREW	3	
	101	XVN12+22FJ	EYE BOLT (M12)	2	
	102	XWB16BVJ	M16 SPRING WASHER	4	
		XYN3+F10FJ	SCREW	4	
		XYN3+F6FJK	SCREW	14	
		XYN3+F8FJ	SCREW	4	
		XYN3+J10FJ	SCREW	109	
		XYN3+J12FJ	SCREW	4	
		XYN4+E8FJ	SCREW	68	
		XYN4+F15FJK	SCREW	9	
		XYN4+F32FJ	SCREW	20	
		XYN4+F8FJ	SCREW	46	
		XYN5+F15FJ	SCREW	12	
	103	XZBT6506	POLY BAG (INSTRUCTION BOOK)	1	
	104	ETX2MM779MG	CIRCUIT BOARD P (MAIN)	2	
	105	ETX2MM779MGA	CIRCUIT BOARD P (SUB)	1	
	106	TNPA5009	CIRCUIT BOARD SS2	1	
	107	TNPA5014	CIRCUIT BOARD SS3	1	
	108	TNPA5015	CIRCUIT BOARD SU	1	
	109	TNPA5016	CIRCUIT BOARD SD	1	
	110	TNPA5017	CIRCUIT BOARD C1	2	
	111	TNPA5018	CIRCUIT BOARD C4	2	
	112	TNPA5019	CIRCUIT BOARD C2	2	

Model No. : TH-85VX200W Parts List

Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
	113	TNPA5020	CIRCUIT BOARD C3	2	
	114	TNPA5233	CIRCUIT BOARD PB	1	
	115	TNPA5237	CIRCUIT BOARD V1	1	
	116	TNPA5238	CIRCUIT BOARD V2	1	
	117	TNPA5239	CIRCUIT BOARD V3	1	
	118	TNPA5240	CIRCUIT BOARD S1	1	
	119	TNPA5304	CIRCUIT BOARD V	2	
	120	TXNSC101MB	CIRCUIT BOARD SC	1	
	121	TXNSS101MB	CIRCUIT BOARD SS	1	
	122	TZTNP011LEJ	CIRCUIT BOARD D	1	
	123	TZTNP021LEJ	CIRCUIT BOARD A	1	
	124	TZTNP031LEJ	CIRCUIT BOARD DN	1	
	125	TZTNP041LEJ	CIRCUIT BOARD HX	1	
	126	TZTNP051LEJ	CIRCUIT BOARD DS	1	
	RM1501	B3RAD0000168	REMOTE SENSOR	1	