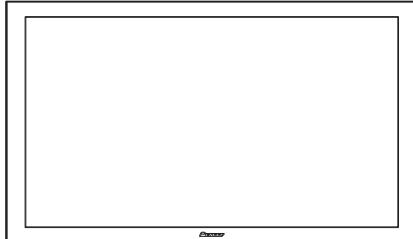


Service Manual



ORDER NO.
ARP3344

PDP-5000EX

PLASMA DISPLAY

PDP-5000EX

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
PDP-5000EX	TYV5	AC 110 to 240 V	

This service manual should be used together with the following manual(s).

Model No.	Order No.	Remarks
PDP-5000EX/TYV5	ARP3345	SCHEMATIC DIAGRAM, PCB CONNECTION DIAGRAM



For details, refer to "Important symbols for good services".

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1. NOTES ON SERVICE VISIT

1.1 SAFETY INFORMATION

A



This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

B This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 - Proposition 65

NOTICE

(FOR CANADIAN MODEL ONLY)

D Fuse symbols ━━ (fast operating fuse) and/or ━━ (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

C Les symboles de fusible ━━ (fusible de type rapide) et/ou ━━ (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

SAFETY PRECAUTIONS

NOTICE : Comply with all cautions and safety related notes located on or inside the cabinet and on the chassis.

The following precautions should be observed :

1. When service is required, even though the PDP UNIT an isolation transformer should be inserted between the power line and the set in safety before any service is performed.
2. When replacing a chassis in the set, all the protective devices must be put back in place, such as barriers, nonmetallic knobs, adjustment and compartment covershields, isolation resistor-capacitor, etc.
3. When service is required, observe the original lead dress. Extra precaution should be taken to assure correct lead dress in the high voltage circuitry area.
4. Always use the manufacturer's replacement components. Especially critical components as indicated on the circuit diagram should not be replaced by other manufacturer's.
- E Furthermore where a short circuit has occurred, replace those components that indicate evidence of overheating.
5. Before returning a serviced set to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the set by the manufacturer has become defective, or inadvertently defeated during servicing. Therefore, the following checks should be performed for the continued protection of the customer and servicetechnician.

6. Perform the following precautions against unwanted radiation and rise in internal temperature.

- Always return the internal wiring to the original styling.
- Attach parts (Gasket, Ferrite Core, Ground, Rear Cover, Shield Case etc.) surely after disassembly.
- 7. Perform the following precautions for the PDP panel.
- When the front case is removed, make sure nothing hits the panel face, panel corner, and panel edge (so that the glass does not break).
- Make sure that the panel vent does not break. (Check that the cover is attached.)
- Handle the FPC connected to the panel carefully. Twisting or pulling the FPC when connecting it to the connector will cause it to peel off from the panel.
- 8. Pay attention to the following.
- When the front case is removed, infrared ray is radiated and may disturb reception of the remote control unit.
- Pay extreme caution when the front case and rear panel are removed because this may cause a high risk of disturbance to TVs and radios in the surrounding.

F

Leakage Current Cold Check

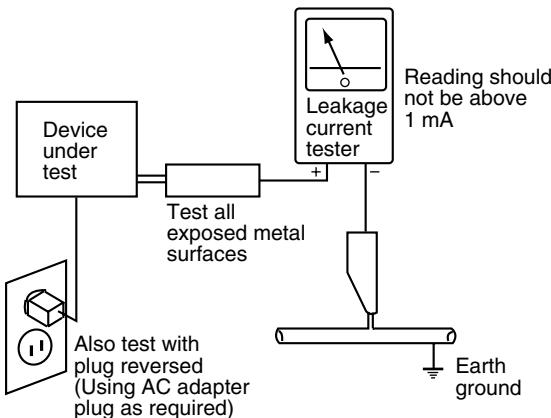
With the AC plug removed from an AC power source, place a jumper across the two plug prongs. Turn the AC power switch on. Using an insulation tester (DC 500V), connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part (input/output terminals, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistor reading of $4\text{ M}\Omega$. The below $4\text{ M}\Omega$ resistor value indicate an abnormality which require corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into an AC power source (do not use an isolation transformer for this check).

Turn the AC power switch on.

Using a "Leakage Current Tester (Simpson Model 229 equivalent)", measure for current from all exposed metal parts of the cabinet (input/output terminals, screwheads, metal overlays, control shaft, etc.), particularly any exposed metal part having a return path to the chassis, to a known earth ground (water pipe, conduit, etc.). Any current measured must not exceed 1mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE SET TO THE CUSTOMER.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in PIONEER set have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a Δ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

A ■ Charged Section

The places where the commercial AC power is used without passing through the power supply transformer.

If the places are touched, there is a risk of electric shock. In addition, the measuring equipment can be damaged if it is connected to the GND of the charged section and the GND of the non-charged section while connecting the set directly to the commercial AC power supply. Therefore, be sure to connect the set via an insulated transformer and supply the current.

- B 1. AC Power Cord
- 2. AC Inlet with Filter
- 3. Power Switch (S1)
- 4. Fuse (In the PANEL POWER SUPPLY Unit and MR POWER SUPPLY Unit)
- 5. STB Transformer and Converter Transformer
(In the PANEL POWER SUPPLY Unit and MR POWER SUPPLY Unit)
- 6. Other primary side of the PANEL POWER SUPPLY Unit and MR POWER SUPPLY Unit

C

 : Part is Charged Section.

 : Part is the High Voltage Generating Points other than the Charged Section.

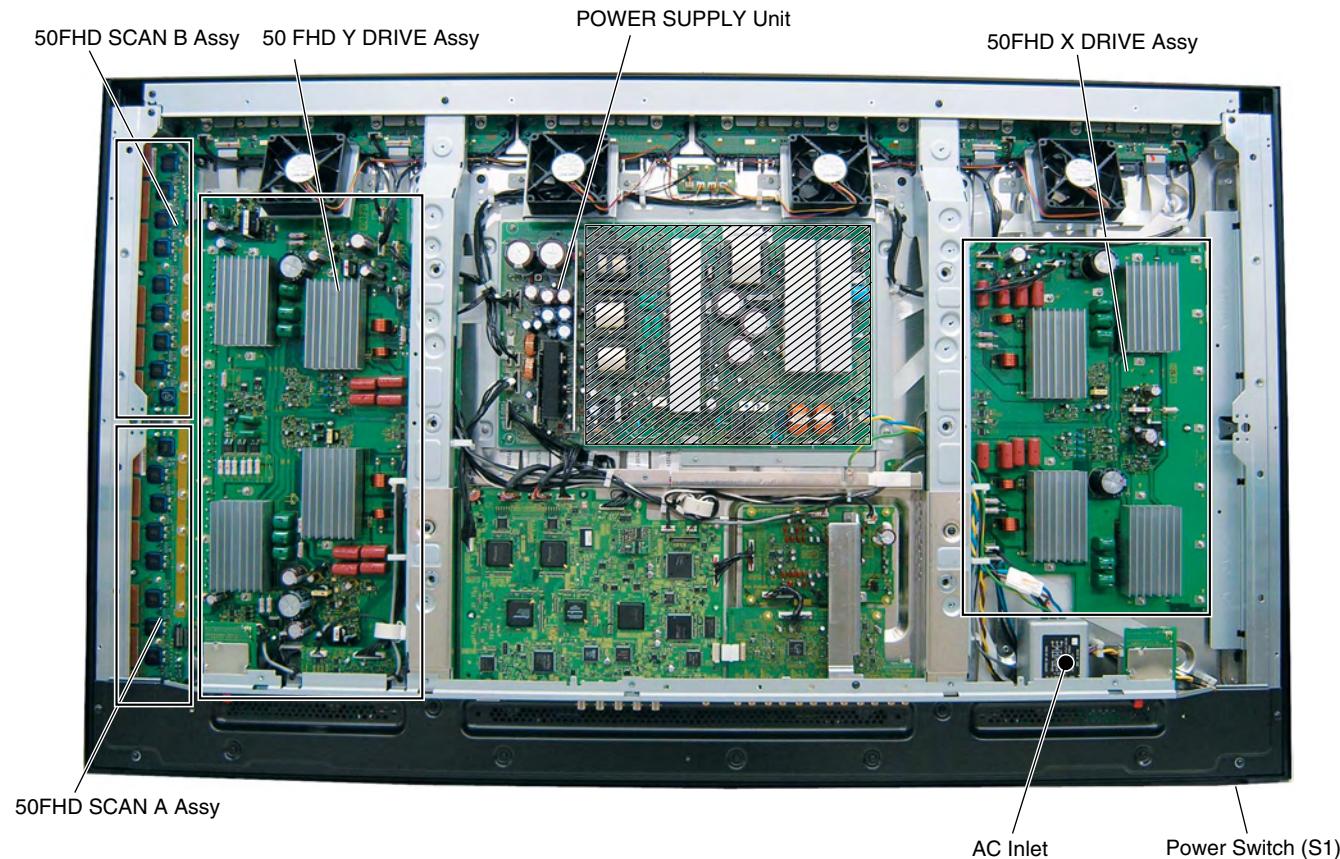


Fig.2 Charged Section and High Voltage Generating Point (Rear View)

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

- ① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

- ② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

- ③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

- ④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

- ⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

- ⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

- ⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

- ⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

- ⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

- ⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws



To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

A

B

C

D

E

F

1.2 QUICK REFERENCE UPON SERVICE VISIT

PDP-5000EX Quick Reference upon Service Visit ① Notes, PD/SD diagnosis, and methods for various settings

Notes when visiting for service

1. Notes when disassembling/reassembling

① Rear case

When reassembling the rear case, the screws must be tightened in a specific order. Be careful not to tighten them in the wrong order forcibly. For details, see "Rear Case" in "6. DISASSEMBLY".

② Attaching screws for the HDMI connector

When attaching the HDMI connector after replacing the Main Assy, secure the HDMI connector manually with a screwdriver, but not with an electric screwdriver. If you tighten the screws too tightly with an electric screwdriver, the screw heads may be damaged, in which case the screws cannot be untightened/tightened any more.

2. On parts replacement

① How to discharge before replacing the Assys

A charge of significant voltage remains in the Plasma Panel even after the power is turned off. Safely discharge the panel before replacement of parts, in either manner indicated below:

- Let the panel sit at least for 3 minutes after the power is turned off.
- Turn the Large Signal System off before the power is turned off then, after 1 minute, turn the power off.

For details, see "10.2 Power ON/OFF Function for the Large-Signal System."

② On the settings after replacement of the Assys

Some boards need settings made after replacement of the Assys. For details, see "7. ADJUSTMENT".

3. On various settings

① SR+

After a repair using a PC, be sure to restore the setting for the RS-232C connector to SR+.

② Setting in Factory mode

After a Mask indication into the panel is performed, be sure to set the Mask setting to "OFF" then exit Factory mode.

PD/SD		Change of settings	
	Item	No. of LEDs flashing	How to enter Factory mode using the supplied remote control unit
Panel section	Communication with the panel drive IC	Red	Blue 1
	Communication with the module IIC	Red	Blue 2
	DIGITAL-RST2	Red	Blue 3
	Panel high temperature	Red	Blue 4
	Audio	Red	Blue 5
	Communication with the Module microcomputer	Red	Blue 6
	Main 3-wire serial communication	Red	Blue 7
	Main IIC communication	Red	Blue 8
	Communication with the Main microcomputer	Red	Blue 9
	FAN	Red	Blue 10
	Unit high temperature	Red	Blue 11
	No corresponding item	Red	Blue 12
	MTB-RST2/RST4	Red	Blue 13
	POWER	Red 2	
Main section	SCAN	Red 3	
	SCN-5V	Red 4	
	Y-DRIVE	Red 5	
	Y-DCDC	Red 6	
	Y-SUS	Red 7	
	ADRS	Red 8	
	X-DRIVE	Red 9	
	X-DCDC	Red 10	
	X-SUS	Red 11	
	UNKNOWN	Red 15	

How to switch UART ① (Main menu)

- Start up the unit by pressing [STANDBY/ON].
- Press [HOME MENU].
- Select "Initial Setting" using [\downarrow], then press [ENTER].
- Select "SR+", using [\downarrow].
- Select "NO", using [\leftarrow] or [\rightarrow].
(The baud rate is 9600 bps.)

How to switch UART ② (During Standby)

- Enter Standby mode.
- Hold [Volume +] or [-] pressed for 3 seconds.
- Hold [SPLIT] pressed for 3 seconds.
- To set to 232C, press [ENTER].
- To set to SR+, press [HOME MENU].

Note: If switching is completed successfully, the red LED will flash twice.

Note 1: Use a remote control unit supplied with the 6th-generation models or later.

Note 2: Do not hold a key pressed for more than 5 seconds.

How to locate several items on the Factory menu

{ } : Item on the Factory menu
[] : Key on the remote control unit
" " : Screen indication

1. Confirmation of accumulated power-on time and power-on count

Select {INFORMATION} then {HOUR METER}.
(After entering Factory mode, press [\downarrow] three times.)

2. Confirmation of the Power-down and Shutdown histories

① Panel system

PD: Select {PANEL FACTORY} then {POWER DOWN}.
(After entering Factory mode, press [MUTING] once, then press [ENTER], then press [\downarrow] three times.)
SD: Select {PANEL FACTORY} then {SHUT DOWN}.
(After entering Factory mode, press [MUTING] once, then press [ENTER], then press [\downarrow] four times.)

② Main Assy

Select {INFORMATION} then {MAIN NG}.
(After entering Factory mode, press [\downarrow] once.)

3. How to display the Mask indication

① Mask indication in the panel side

1. Select {PANEL FACTORY} then {RASTER MASK SETUP}.
(After entering Factory mode, press [MUTING] once, then press [\downarrow] 8 times.)

2. Press [ENTER], then select a Mask indication, using [\uparrow] or [\downarrow].

② Mask (SG screen) indication in the Main Assy (MAIN VDEC)

1. Select either Input 5 or 6, to which no signal is input (black screen).
2. Select {INITIALIZE} then {SG MODE}. Press [\leftarrow]. (After entering Factory mode, press [MUTING] twice, then press [\downarrow] once.)
Then, the indication at the lower right of the screen changes from "OFF" to "ANA AD YCBCR".
3. You can change Mask patterns by pressing [\downarrow] to select {SG PATTERN} then using [\leftarrow] or [\rightarrow].

Note: When you switch "SG MODE" routes, some displays become monochrome, as they are in Y-signal only mode.

Adjustments and Settings after replacement of the Assys (Procedures in Factory mode)

1. Digital Video Assy: Transfer of backup data

- Select {PANEL FACTORY}, {ETC}, then {BACKUP DATA}. (After entering Factory mode, press [MUTING] once, press [ENTER], press [\downarrow] seven times, then press [ENTER].)
- Select {TRANSFER}, using [\rightarrow], then hold [ENTER] pressed for at least 5 seconds.
- After transfer of backup data is completed, {ETC} is automatically selected, and the LED on the front panel returns to normal lighting.

2. MAIN Assy: Execution of FINAL SETUP.

- Select {INITIALIZE} then {FINAL SETUP}, then press [ENTER]. (After entering Factory mode, press [MUTING] twice, then press [\downarrow] four times.)
- With a North American model, select "YES US", and with a European model, select "YES EU". Then hold [ENTER] pressed for at least 5 seconds.
- After "FINAL SETUP IS COMPLETE" is displayed on the screen, enter Standby mode.
- Press [HOME MENU] then, within 3 seconds, press [STANDBY].
- After the Integrator menu is displayed, select {ORBITER MODE} by pressing [\downarrow] twice.
- Select "ON" for {ORBITER MODE}, using [\rightarrow].
- Press [\downarrow] once to select {MASK CONTROL}.
- Select "ON" for {MASK CONTROL}, using [\rightarrow].
- Press [HOME MENU] to exit Integrator mode.

3. POWER SUPPLY Unit: Clearance of the accumulated power-on count and maximum temperature value

- Select {PANEL FACTORY}, {ETC}, then {P COUNT INFO}. (After entering Factory mode, press [MUTING] once, press [ENTER], press [\downarrow] seven times, press [ENTER], then press [\downarrow] six times.)
- Press [\rightarrow] to select "CLEAR". Hold [ENTER] pressed for at least 5 seconds.
After clearance is completed, "ETC" is automatically selected. Clear the maximum temperature value (MAX TEMP) in the same manner.

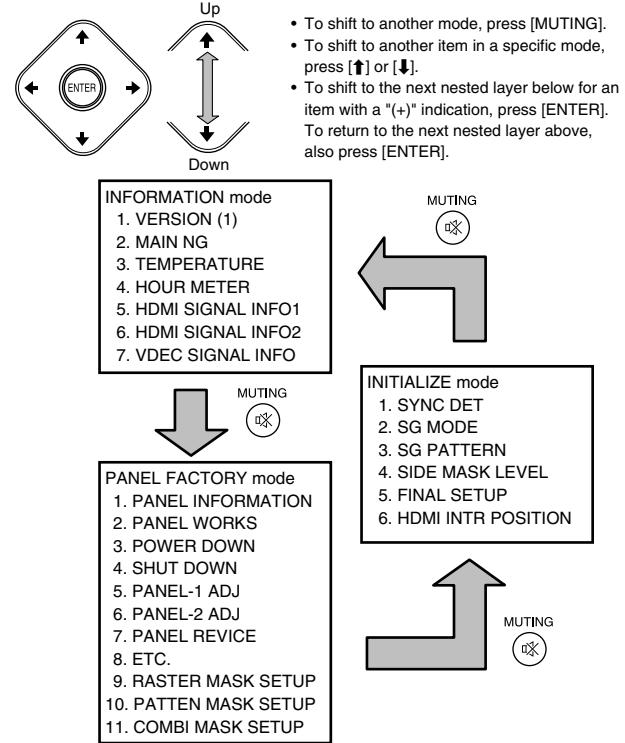
4. Other Assys: Clearance of the maximum temperature value

- Select {PANEL FACTORY}, {ETC}, then {MAX TEMP}. (After entering Factory mode, press [MUTING] once, press [ENTER], press [\downarrow] seven times, press [ENTER], then press [\downarrow] seven times.)
- Press [\rightarrow] to select "CLEAR". Hold [ENTER] pressed for at least 5 seconds.
After clearance is completed, "ETC" is automatically selected.

PDP-5000EX Quick Reference upon Service Visit ②

Mode transition and structure of layers in Service Factory mode

Mode transition in Service Factory mode



Structure of Layers in Service Factory Mode

INFORMATION mode

- 1. VERSION (1)
- 2. MAIN NG
 - 2-1.CLEAR
- 3. TEMPERATURE
- 4. HOUR METER
- 5. HDMI SIGNAL INFO 1
- 6. HDMI SIGNAL INFO 2
- 7. VDEC SIGNAL INFO

Version indications for the main system and panel system
Shutdown history for the main system (To shift to the CLEAR layer, press [SET].)

To clear data, select "YES", using [\leftarrow] or [\rightarrow], then hold [SET] pressed for several seconds.

Indications of converted temperature values for temperature sensors 1 and 2 and fan operation

Indications of the accumulated power-on time and power-on count of the panel

Items for use by engineers

Indications of data such as HDMI signal judgment (For details, see the corresponding page.)

Items for use by engineers

PANEL FACTORY mode

See "Structure of Layers in Panel Factory Mode."

INITIALIZE

- 1. SYNC DET (+)
- 2. SG MODE
- 3. SG PATTERN SG
- 4. SIDE MASK LEVEL (+)
 - 4-1. R MASK LEVEL
 - 4-2. G MASK LEVEL
 - 4-3. B MASK LEVEL
- 5. FINAL SETUP
 - 5-1. DATA RESET
- 6. HDMI INTR POSITION (+)

Items for use by engineers

ON/OFF of the SG signal from the MAIN VDEC (composite input signal required)
Selection of the SG signal

Items for use by engineers

Factory-preset items (Setup must be executed after replacement of the Main Assy.)

Items for use by engineers

Structure of Layers in Panel Factory Mode 1

- 1. PANEL INFORMATION Version indication of the panel
 - 2. PANEL WORKS Indications of the accumulated power-on time, pulse-meter count, and power-on count of the panel
 - 3. POWER DOWN Indication of the Power-down history
 - 4. SHUT DOWN Indication of the Shutdown history
 - 5. PANEL-1 ADJ (+)
 - 1. X-SUS B
 - 2. Y-SUS B
 - 3. Y-SUSTAIL T1
 - 4. Y-SUSTAIL T2
 - 5. Y-SUSTAIL W
 - 6. XY-RST W1
 - 7. XY-RST W2
 - 8. VOL SUS
 - 9. VOL OFFSET
 - 10. VOL RST P
 - 11. SUS FREQ.
 - 6. PANEL-2 ADJ (+)
 - 1. R-HIGH
 - 2. G-HIGH
 - 3. B-HIGH
 - 4. R-LOW
 - 5. G-LOW
 - 6. B-LOW
 - 7. ABL
- Modification not required because these items are basically for factory presetting
- Settings required after replacement of the panel
- For AM noise prevention (Depending on the mode, brightness of the screen changes.)
- Parameters for the WB adjustment of the panel, which are required during adjustment after panel replacement
- Setting of the power consumption. A setting table is available for each vertical signal.

To "Structure of Layers in Panel Factory Mode 2"

Structure of Layers in Panel Factory Mode 2

- 7. PANEL REVISE(+)
 - R-LEVEL
 - G-LEVEL
 - B-LEVEL
 - 8. ETC(+)
 - 1. BACKUP DATA For transferring backup data (after replacement of the DIGITAL Assy)
To clear data of the digital video
 - 2. DIGITAL EEPROM
 - 3. PD INFO.
 - 4. SD INFO.
 - 5. HR-MTR INFO.
 - 6. PM/B1-B5
 - 7. P COUNT INFO.
 - 8. MAX TEMP.
 - 9. RASTER MASK SETUP (+)
 - 1. MASK OFF
 - 2. RST MASK 01
 - • • •
 - 25. RST MASK 24
 - 10. PATTERN MASK SETUP (+)
 - 1. MASK OFF
 - 2. PTN MASK 01
 - • • •
 - 40. PTN MASK 39
 - 11. COMBI MASK SETUP (+)
 - 1. MASK OFF
 - 2. CMB MASK 01
 - • • •
 - 11. CMB MASK 10
- Items for use by engineers
- For clearance of data for the corresponding items. The clearing method is the same: Select "CLEAR", using [\leftarrow], then hold [SET] pressed for at least 5 seconds. After clearance is completed, (ETC) is automatically selected.
- For use while Raster Mask (full mask) is displayed. Use [\uparrow] or [\downarrow] to select the type of mask.
- For use while Pattern Mask is displayed. Use [\uparrow] or [\downarrow] to select the type of mask.
- For use while Combination Mask is displayed. Use [\uparrow] or [\downarrow] to select the type of mask.

1.3 JIGS LIST

■ Jigs list

A

Jig No.	Jig Name	Remarks
GGF1475	Communication jig	used for RS-232C command communication



■ Cleaning

B

Name	Part No.	Remarks
Cleaning liquid	GEM1004	Used to fan cleaning.
Cleaning paper	GED-008	Refer to "2.4 CHASSIS SECTION (1/2)", "6. DISASSEMBLY: 2-4 Fan Motor".

■ CONTENTS

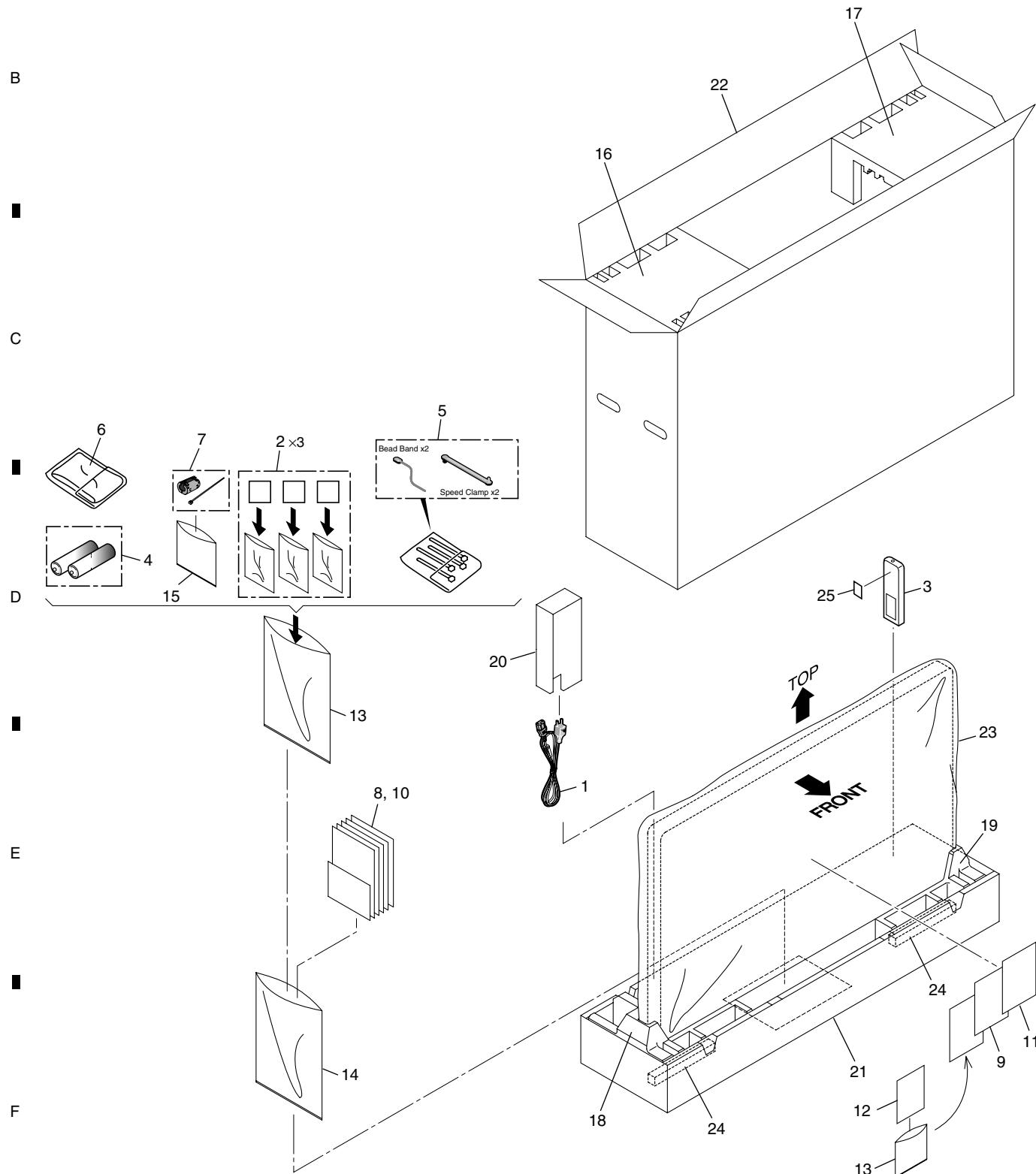
1.	NOTES ON SERVICE VISIT	2
1.1	SAFETY INFORMATION	2
1.2	QUICK REFERENCE UPON SERVICE VISIT	6
1.3	JIGS LIST	8
C	2. EXPLODED VIEWS AND PARTS LIST	10
2.1	PACKING SECTION	10
2.2	EXTERIOR SECTION	12
2.3	FRONT SECTION	14
2.4	CHASSIS SECTION (1/2)	16
2.5	CHASSIS SECTION (2/2)	18
2.6	PDP SERVICE ASSY (AWU1198)	20
2.7	MULTI BASE SECTION	22
3.	PCB PARTS LIST	24
4.	BLOCK DIAGRAM AND SCHEMATIC DIAGRAM	38
4.1	OVERALL WIRING DIAGRAM	38
4.2	OVERALL BLOCK DIAGRAM	40
D	4.2.1 MODULE SECTION	40
4.2.2	MULTI BASE SECTION	42
4.3	FHD MAIN ASSY	44
4.4	50FHD X DRIVE ASSY	46
4.5	50FHD Y DRIVE ASSY	48
4.6	FHD DIGITAL AND PANEL SENSOR ASSYS	50
4.7	FHD FUKUGO ASSY (1/2)	52
4.8	FHD FUKUGO ASSY (2/2)	53
4.9	POWER SUPPLY UNIT	54
4.10	CONNECTOR PIN DESCRIPTION	55
4.11	WAVEFORMS	67
E	5. DIAGNOSIS INFORMATION	71
5.1	THE FLOW OF DIAGNOSIS	71
5.1.1	FLOWCHART OF FAILURE ANALYSIS FOR THE WHOLE UNIT	71
5.1.2	FLOWCHART OF FAILURE ANALYSIS FOR THE POWER SUPPLY UNIT	72
5.1.3	FLOWCHART OF FAILURE ANALYSIS FOR THE DRIVE ASSY	73
5.1.4	FLOWCHART OF FAILURE ANALYSIS FOR THE DIGITAL ASSY	75
5.1.5	FLOWCHART OF FAILURE ANALYSIS FOR THE MAIN ASSY	76
5.1.6	FLOWCHART OF FAILURE ANALYSIS FOR THE AUDIO SYSTEM	80
5.2	POWER DOWN	81
5.2.1	BLOCK DIAGRAM OF THE POWER-DOWN SIGNAL	81
5.2.2	POWER DOWN OF FAILURE ANALYSIS	82
5.2.3	HOW TO IDENTIFY THE CAUSE OF A POWER-DOWN THAT IS INDICATED BY TWICE FLASHING OF THE RED LED	82
5.3	SHUT DOWN	85
5.3.1	SHUT DOWN SIGNAL BLOCK DIAGRAM	85
5.3.2	SHUT DOWN OF FAILURE ANALYSIS	86

5	6	7	8
5.4 INFOMATION WHICH IS NOT FAILURE.....88			
6. DISASSEMBLY90			
6.1 PCB LOCATION90			
6.2 FLOWCHART OF THE MAIN PARTS AND PC BOARDS EXCHANGE.....91			
7. ADJUSTMENT100			
7.1 PARTS CHANGE OF NOTES.....100			
7.2 POSSIBLE CASES WHERE READJUSTMENT IS REQUIRED			
7.3 BACKUP OF ADJUSTMENT VALUES FOR THE MAIN UNIT			
7.3.1 HOW TO COPY THE BACKUP DATA (when replacing the Assy with one for service)			
7.3.2 HOW TO COPY THE BACKUP DATA (when reusing a second-hand Assy)			
7.3.3 FORMATION OF A FHD DIGITAL ASSY (RE-SERVICE PART)			
7.4 EXCHANGE OF SERVICE PANEL ASSY			
7.4.1 ADJUSTMENTS WHEN THE SERVICE PANEL ASSY IS REPLACED.....104			
7.5 ADJUSTMENTS WHEN THE DRIVE ASSYS ARE REPLACED.....114			
7.6 HOW TO CLEAR VARIOUS LOGS.....117			
8. SERVICE FACTORY MODE			
8.1 SERVICE FACTORY MODE OUTLINE			
8.1.1 TRANSITION DIAGRAM OF SERVICE FACTORY MODE			
8.1.2 HOW TO ENTER/EXIT SERVICE FACTORY MODE.....118			
8.1.3 OPERATION OF SERVICE FACTORY MODE.....119			
8.1.4 REMOTE CONTROL CODE			
8.1.5 CONFIGURATION OF FACTORY MODE			
8.1.6 INDICATION (OSD) OF SERVICE FACTORY MODE.....121			
8.2 FACTORY MENU.....123			
8.2.1 INFORMATION.....123			
8.2.2 PANEL FACTORY (+)			
8.2.3 INITIALIZE.....139			
9. LIST OF RS-232C COMMANDS			
9.1 RS-232C COMMANDS OUTLINE			
9.1.1 DESCRIPTION OF RS-232C COMMANDS.....142			
9.1.2 COMMAND PROTOCOL.....143			
9.1.3 DEFINITION OF COMMAND			
9.2 RS-232C COMMAND TABLE			
9.3 OUTLINE OF COMMANDS.....151			
9.3.1 QS1			
9.3.2 QS2			
9.3.3 QIP			
9.3.4 QAJ			
9.3.5 QPW			
9.3.6 QPM			
9.3.7 QPD			
9.3.8 QSD			
9.3.9 QMT			
9.3.10 QNG			
9.3.11 QSI			
9.3.12 DRV			
10. GENERAL INFORMATION			
10.1 POWER SUPPLY PROCESS DIAGRAM			
10.2 POWER ON/OFF FUNCTION FOR THE LARGE-SIGNAL SYSTEM			
10.3 LED INFORMATION			
10.4 SPECIFICATIONS ON TEMPERATURE SENSOR DETECTION AND DRIVING OF THE FAN.....168			
11. SPECIFICATIONS			
11.1 MAIN SPECIFICATIONS			
11.2 ACCESSORIES			
11.3 PANEL FACILITIES.....171			
12. IC INFORMATION			

2. EXPLODED VIEWS AND PARTS LIST

- A**
- NOTES: • Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
• The \triangle mark found on some component parts indicates the importance of the safety factor of the part.
Therefore, when replacing, be sure to use parts of identical designation.
• Screws adjacent to ∇ mark on product are used for disassembly.
• For the applying amount of lubricants or glue, follow the instructions in this manual.
(In the case of no amount instructions, apply as you think it appropriate.)

2.1 PACKING SECTION



PACKING SECTION PARTS LIST

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
△ 1	Power Cord	ADG1214
2	BNC Conversion Connector	AKX1052
3	SR Remote Control Assy F (E)	AXD1535
NSP 4	Dry Cell Battery (R6P, AA)	VEM1031
5	Binder Assy	AEC1758
6	Wiping Cloth	AED1285
7	Ferrite Core	ATX1039
8	Operating Instructions (English /French/ German/ Italian/ Dutch/ Spanish)	ARE1424
9	Caution Sheet	ARM1232
10	Wiping Cloth Caution (11L)	ARM1283
11	Caution Sheet (7L)	ARM1309
NSP 12	Warranty	ARY1114
13	Catalogue Bag	AHG1340
14	Polyethylen Bag	AHG1336
15	Polyethylen Bag	AHG1337
16	Pad (50T-L)	AHA2546
17	Pad (50T-R)	AHA2547
18	Pad (50B-L)	AHA2548
19	Pad (50B-R)	AHA2549
20	Power Cord Case	AHC1073
21	Under Carton (505)	AHD3326
22	Upper Carton (50F_PE)	AHD3476
23	Mirror Mat	AHG1284
24	Protector	AHG1384
25	WEEE Label L	AAX3271

A

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C

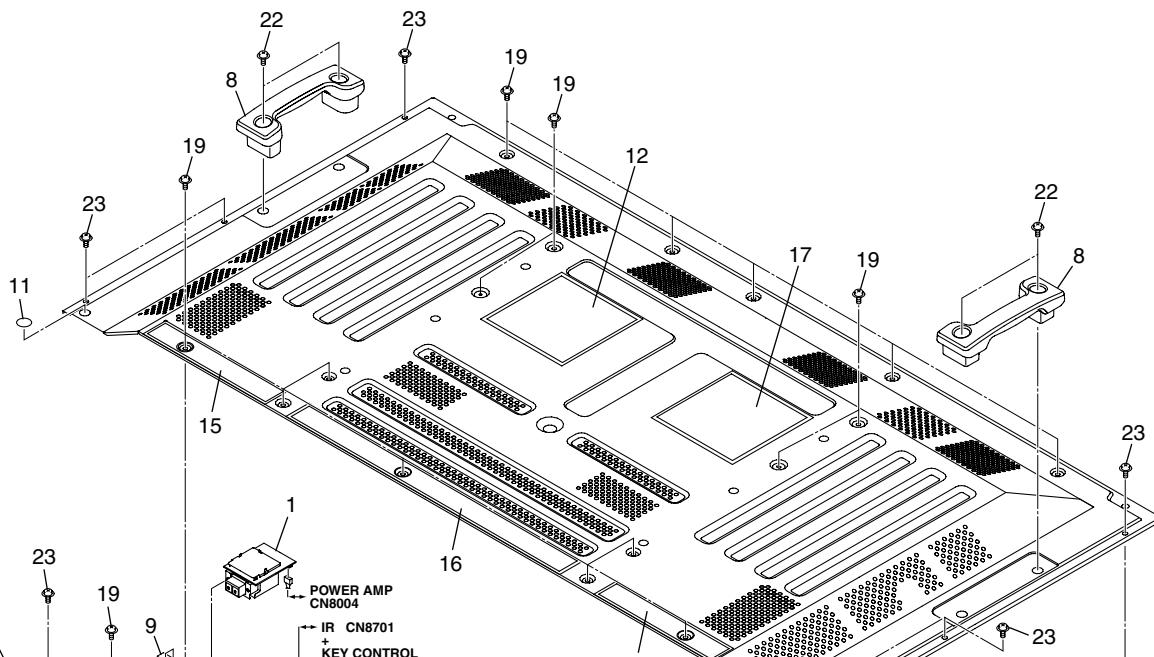
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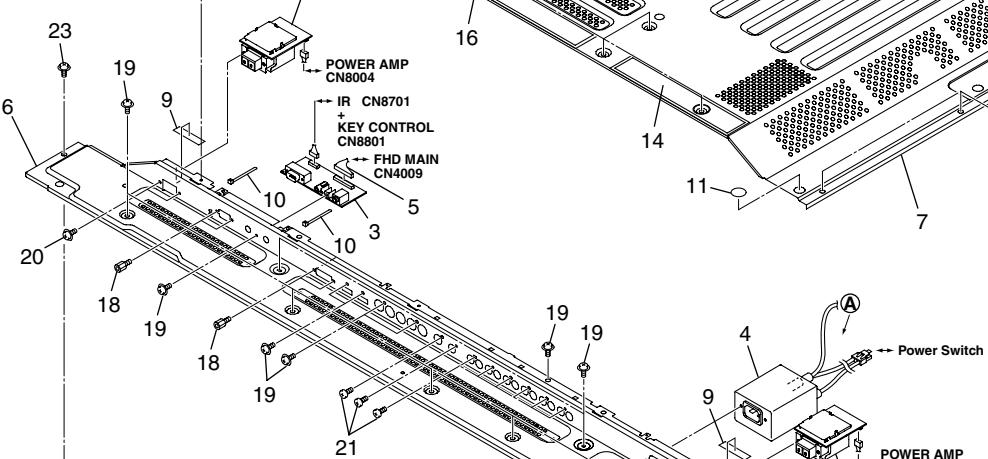
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2.2 EXTERIOR SECTION

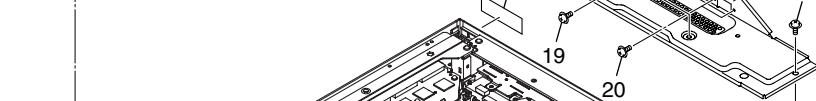
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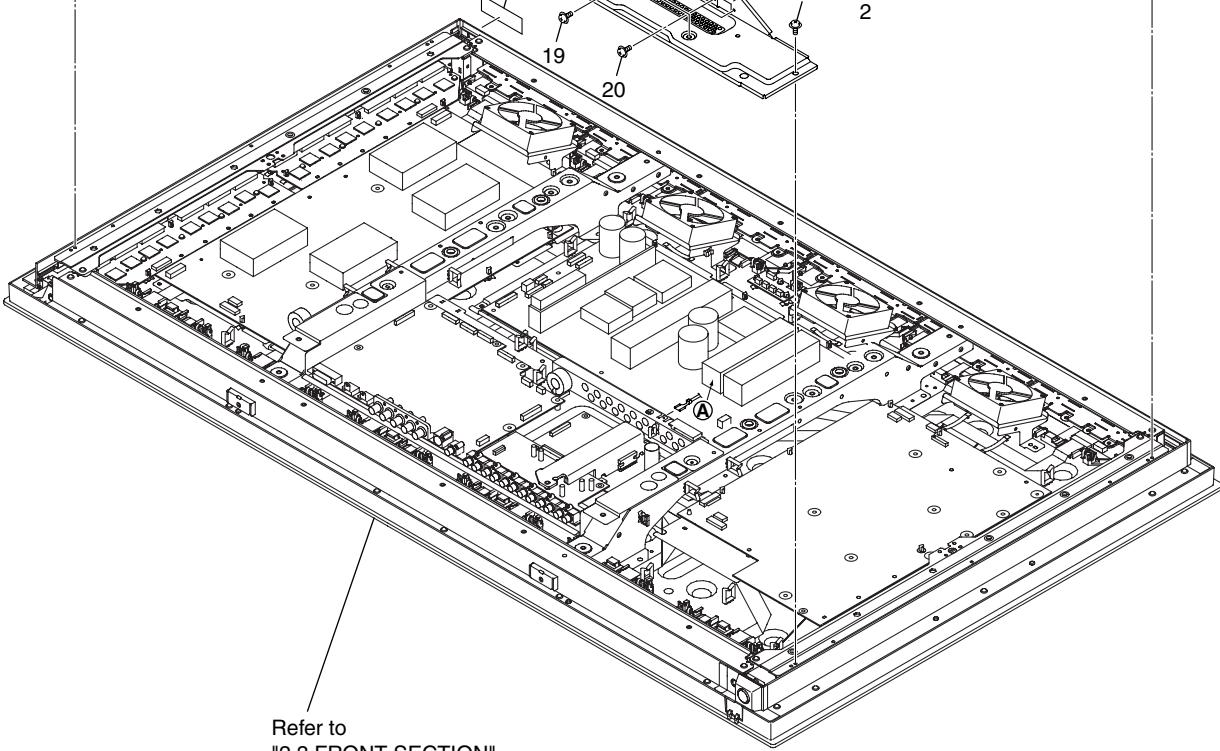
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Refer to
"2.3 FRONT SECTION".

EXTERIOR SECTION PARTS LIST

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	
1	FHD SP LR1 Assy	AWW1119	* 1. FHD SP LR1 Assy and 2. FHD SP LR2 Assy can be replaced.
2	FHD SP LR2 Assy	AWW1120	
3	FHD RS232C+SR Assy	AWW1126	
△ 4	AC Inlet (CN1)	AKP1297	A
5	14P Housing Wire (J119)	ADX3311	
6	Terminal Panel (F)	ANG2914	
7	Rear Case (F)	ANE1654	
8	Grip	AMR3380	
9	Gasket SP-T	ANK1750	
10	Binder	AEC-093	
11	Rear Corner Label (15)	AAX3081	
NSP 12	Name Label (50FE)	AAL2761	
13	Serial Seal	AAX3143	
14	Terminal Display Label L (50FE)	AAX3320	
15	Terminal Display Label R (50FE)	AAX3321	
16	Terminal Display Label C (50FE)	AAX3322	
17	Caution Label (50F)	AAX3323	
18	Hexagon Head Screw	BBA1051	
19	Screw	AMZ30P060FTB	
20	Screw	APZ30P080FTB	C
21	Screw	BPZ30P080FTB	
22	Screw	HMB50P140FTB	
23	Screw	TBZ40P080FTB	

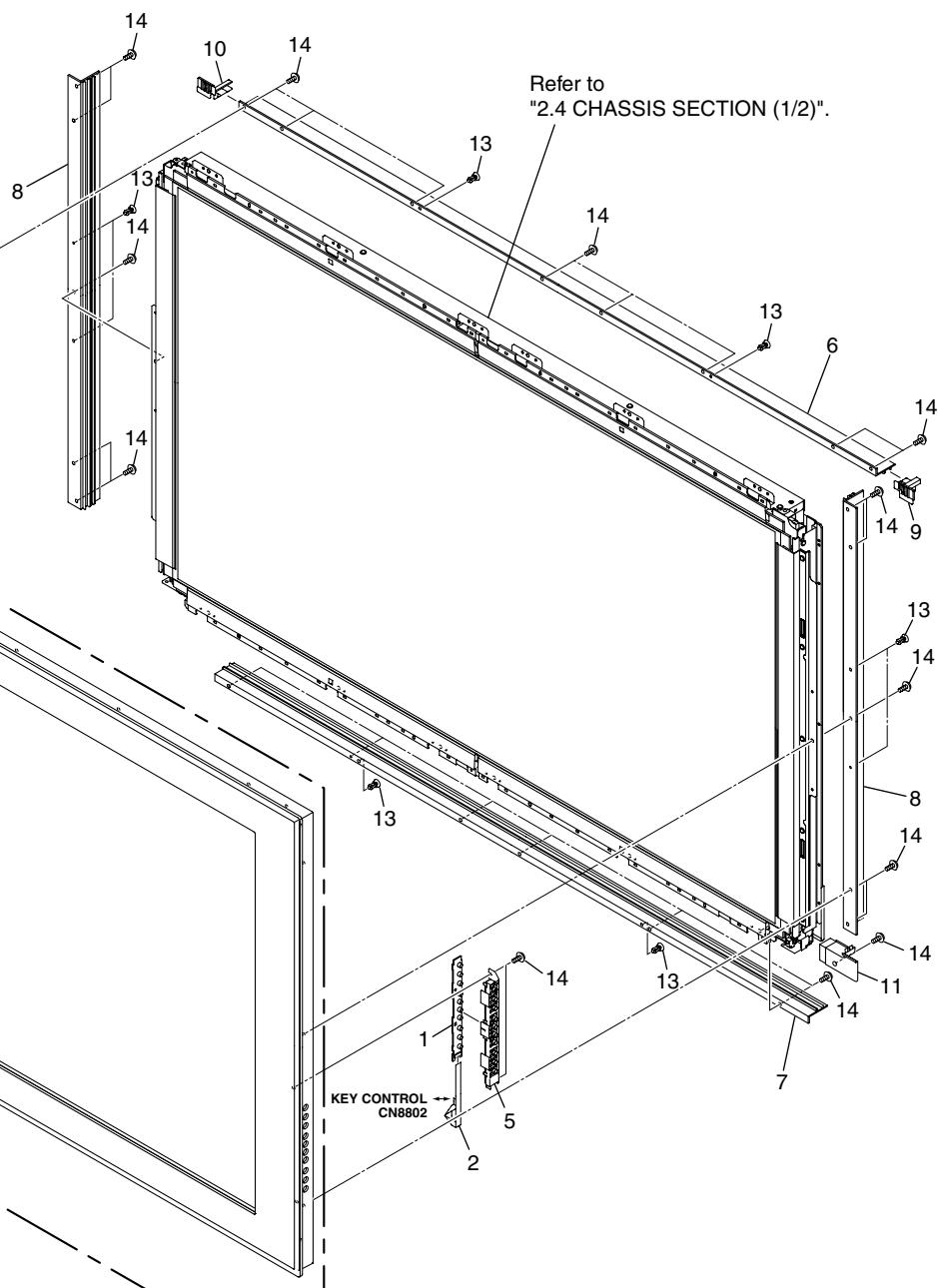
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2.3 FRONT SECTION

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FRONT SECTION PARTS LIST

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	FHD KEY Assy	AWW1124
2	Flexible Cable (J215)	ADD1414
3	Front Case Assy (50F)	AMB2902
4	Pioneer Name Plate	AAM1098
5	Operation Button (50FHD)	AAC1561
6	Sash T	AAK2883
7	Sash B	AAK2884
8	Sash S	AAK2885
9	Corner Holder L	AAK2889
10	Corner Holder R	AAK2890
11	Corner Holder B	AAK2891
12	•••••	
13	Nylon Rivet	AEC2086
14	Screw	APZ30P100FTB

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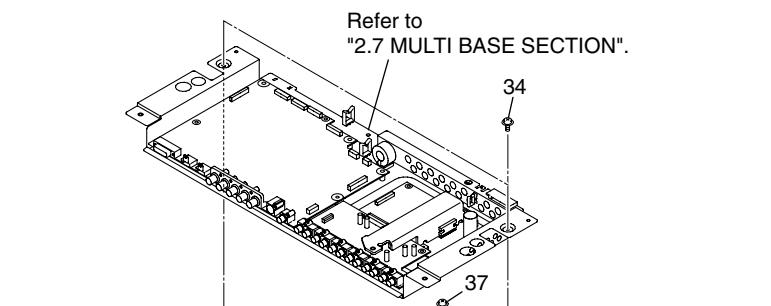
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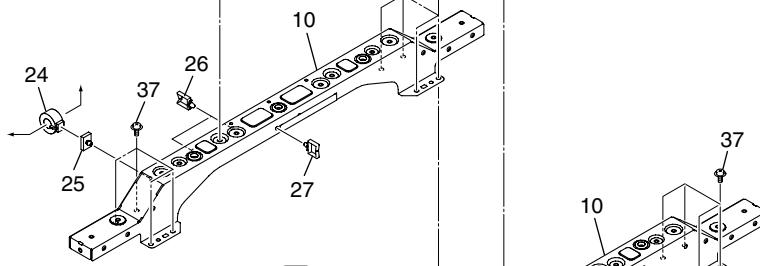
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2.4 CHASSIS SECTION (1/2)

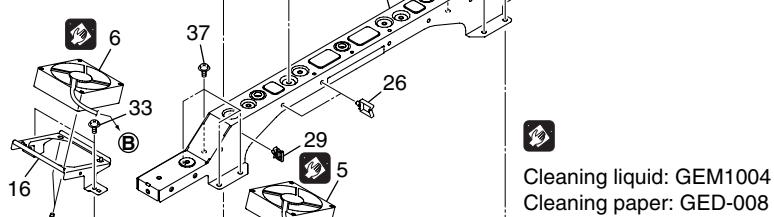
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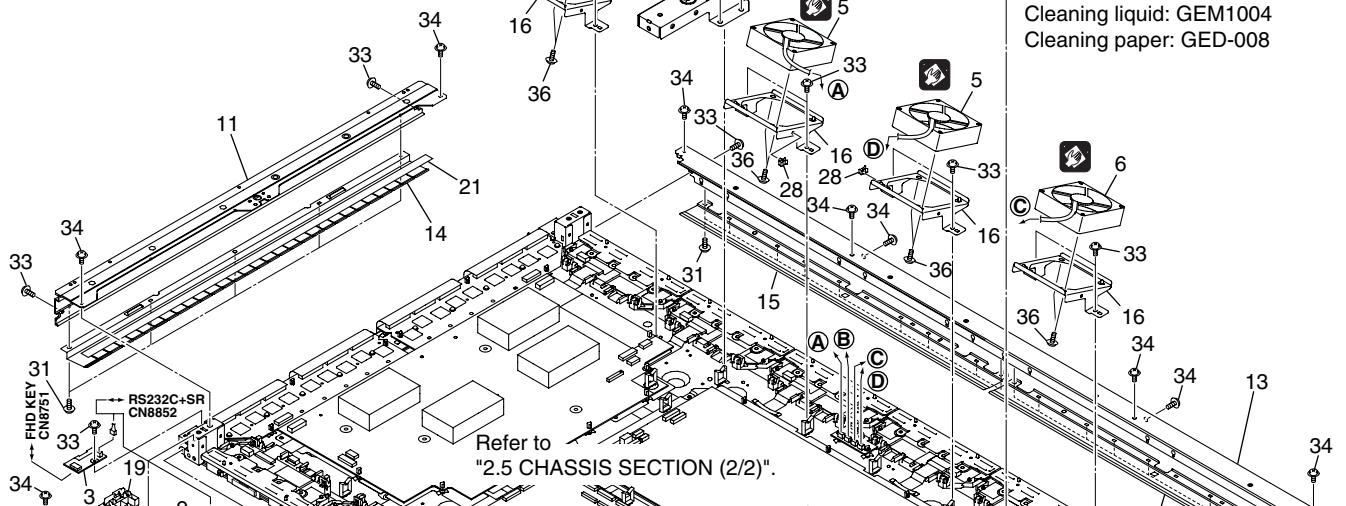


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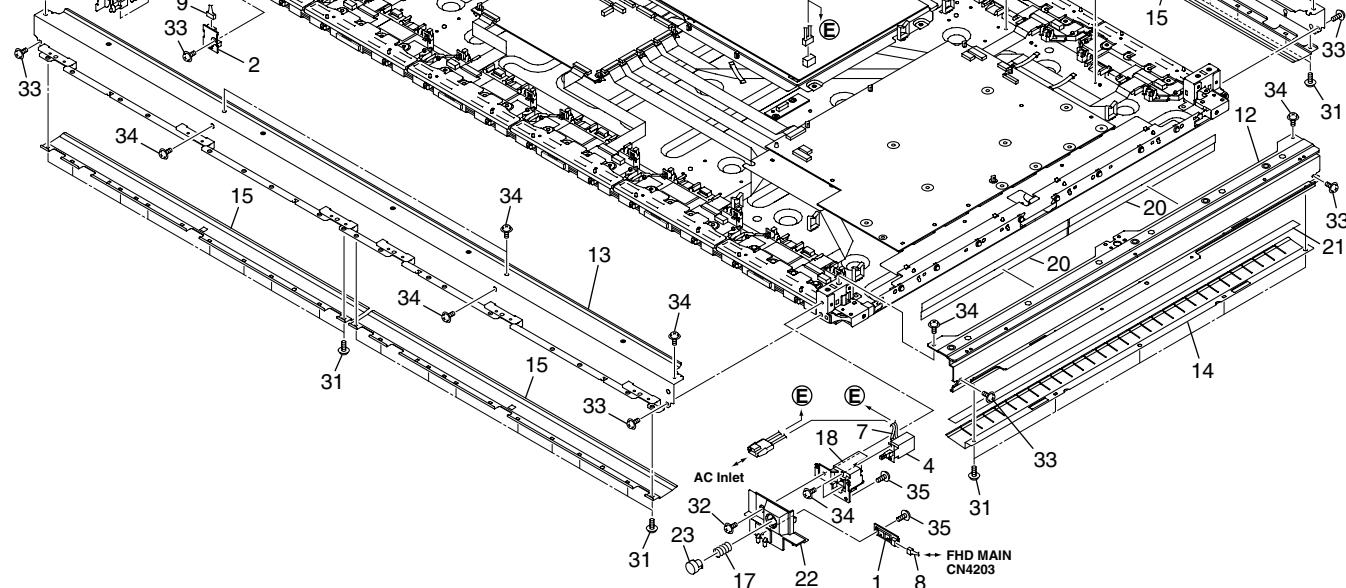


Cleaning liquid: GEM1004
 Cleaning paper: GED-008

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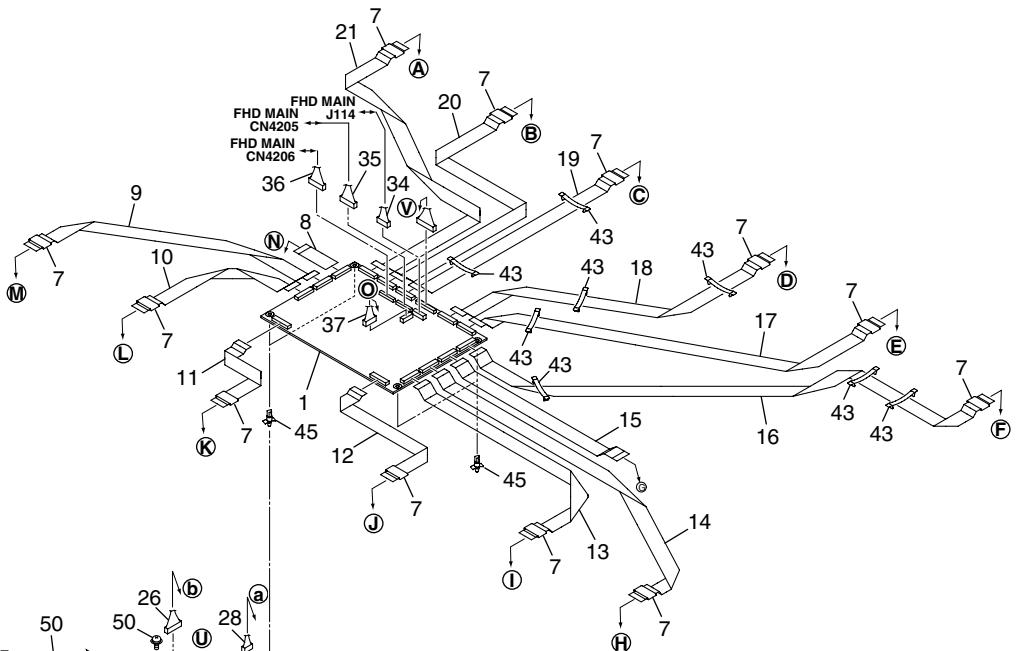
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CHASSIS SECTION (1/2) PARTS LIST

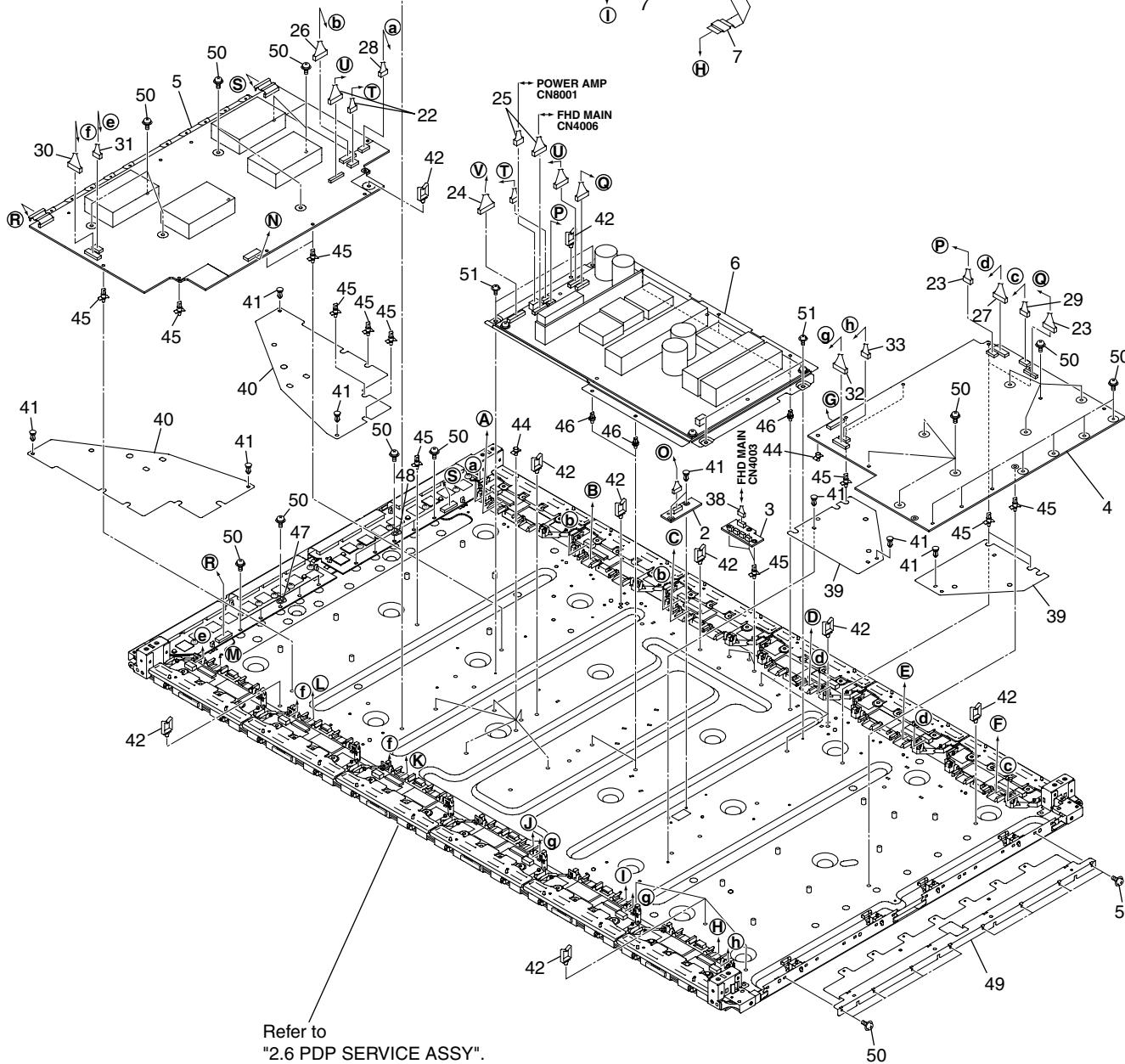
<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	
1	FHD LED Assy	AWW1121	
2	FHD IR Assy	AWW1123	A
3	FHD KEY CONTROL Assy	AWW1125	
△ 4	Power Switch (S1)	ASG1084	
5	Fan Motor 80 x 25L	AXM1055	
6	Fan Motor 80 x 25L	AXM1056	
7	Housing Wire (J103)	ADX3297	
8	3P Housing Wire (J121)	ADX3313	
9	6/4/3P Housing Wire (J124)	ADX3316	
10	Sub Frame (F)	ANA1937	
11	Front Chassis V Assy L	ANA1953	B
12	Front Chassis V Assy R	ANA1954	
13	Front Chassis H Assy (F)	ANA1957	
14	Panel Holder V (50)	ANG2663	
15	Panel Holder H Assy (50)	ANG2678	
16	Fan Holder (F)	ANG2908	
17	Coil Spring	ABH1114	
18	SW Holder	AMR3544	
19	IR Holder	AMR3549	
20	Cover	AMR3639	C
21	Gasket F	ANK1858	
22	Power Button Holder Assy	AAK2887	
23	Power Button	AAD4127	
24	Ferrite Core	ATX1044	
25	Ferrite Core Holder	AEC1818	
26	Wire Saddle	AEC1745	
27	Wire Saddle	AEC1797	
28	Mini Clamp	AEC2003	
29	Wire Saddle	AEC2031	D
30	•••••		
31	Screw	ABZ30P060FTC	
32	Screw	ABZ30P080FTB	
33	Screw	ABZ30P080FTC	
34	Screw	AMZ30P060FTB	
35	Screw	APZ30P060FTB	
36	Screw	PPZ50P100FTB	
37	Screw	TBZ40P080FTB	E

1 2 3 4
2.5 CHASSIS SECTION (2/2)

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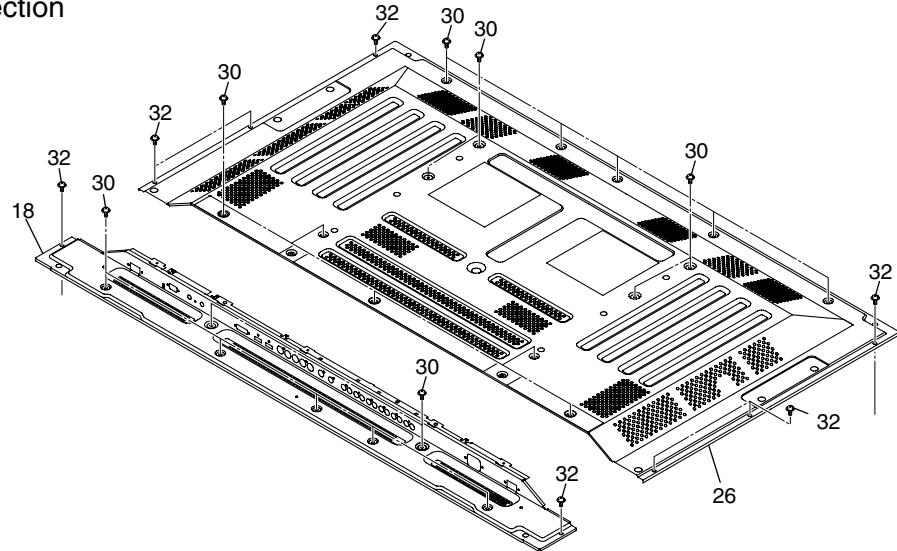
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CHASSIS SECTION (2/2) PARTS LIST

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	FHD DIGITAL Assy	AWW1115	46	PCB Spacer	AEC1947
2	FHD PANEL SENSOR Assy	AWW1116	47	Earth Lead with Resistor (R2781)	•••••
3	FHD FAN CONNECT Assy	AWW1122	48	Earth Lead with Resistor (R2881)	•••••
4	50FHD X DRIVE Assy	AWV2293	49	Conductive Plate X (F)	ANG2906
5	50FHD Y DRIVE Assy	AWV2294	50	Screw	ABA1364
△	6 POWER SUPPLY Unit	AXY1148	51	Screw	ABZ30P080FTC
7	Ferrite Core	ATX1048			
8	Flexible Cable (J201)	ADD1400			
9	Flexible Cable (J202)	ADD1401			
10	Flexible Cable (J203)	ADD1402			
11	Flexible Cable (J204)	ADD1403			
12	Flexible Cable (J205)	ADD1404			
13	Flexible Cable (J206)	ADD1405			
14	Flexible Cable (J207)	ADD1406			
15	Flexible Cable (J208)	ADD1407			
16	Flexible Cable (J209)	ADD1408			
17	Flexible Cable (J210)	ADD1409			
18	Flexible Cable (J211)	ADD1410			
19	Flexible Cable (J212)	ADD1411			
20	Flexible Cable (J213)	ADD1412			
21	Flexible Cable (J214)	ADD1413			
22	9P&7/6P Housing Wire (J101)	ADX3295			
23	8P&6P Housing Wire (J102)	ADX3296			
24	14P Housing Wire (J104)	ADX3298			
25	11P&3P Housing Wire (J105)	ADX3299			
26	10P/5P Housing Wire (J106)	ADX3301			
27	10P/5P Housing Wire (J107)	ADX3301			
28	5P Housing Wire (J108)	ADX3302			
29	5P Housing Wire (J109)	ADX3302			
30	10P/5P Housing Wire (J110)	ADX3303			
31	5P Housing Wire (J111)	ADX3304			
32	10P/5P Housing Wire (J112)	ADX3305			
33	5P Housing Wire (J113)	ADX3306			
34	7P Housing Wire (J114)	ADX3307			
35	31P Shield Cable (J115)	ADX3308			
36	31P Shield Cable (J116)	ADX3308			
37	5P Housing Wire (J117)	ADX3309			
38	5P Housing Wire (J120)	ADX3312			
39	Drive Sheet X	AMR3636			
40	Drive Sheet Y	AMR3637			
41	Nylon Rivet	AEC1671			
42	Wire Saddle	AEC1745			
43	Flat Clamp	AEC1879			
44	PCB Support	AEC1938			
45	PCB Spacer	AEC1941			

2.6 PDP SERVICE ASSY (AWU1198)

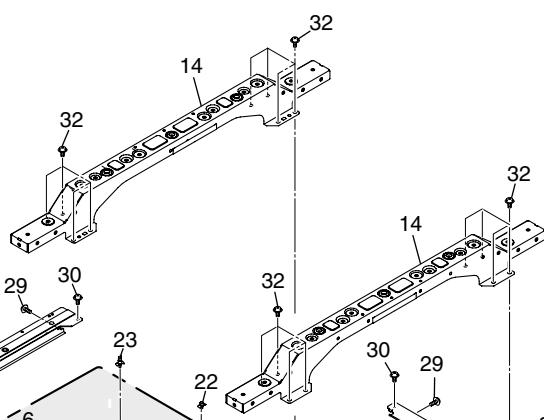
- A • PDP Service Panel section



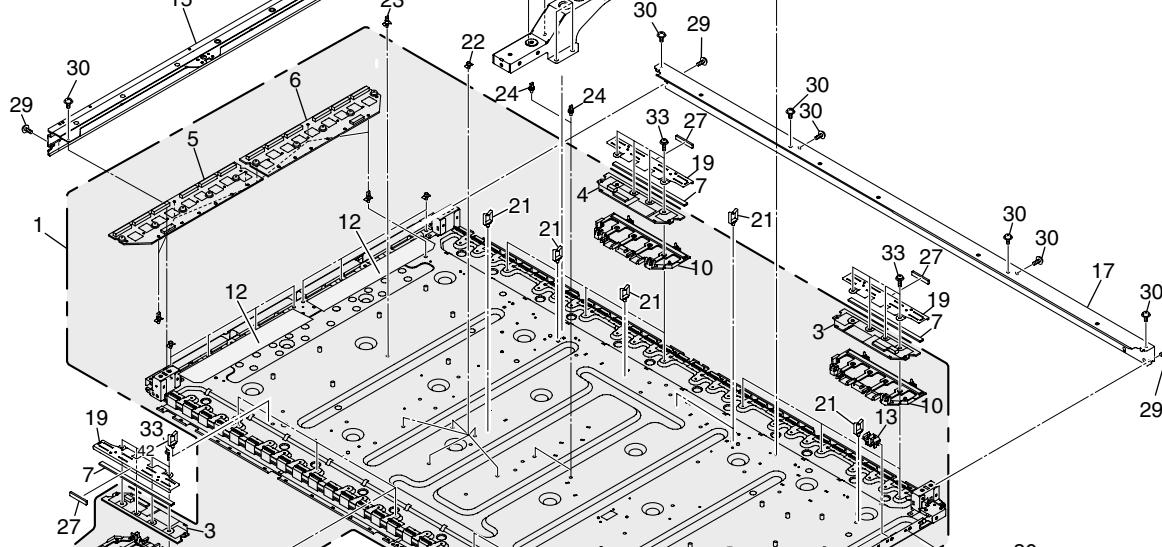
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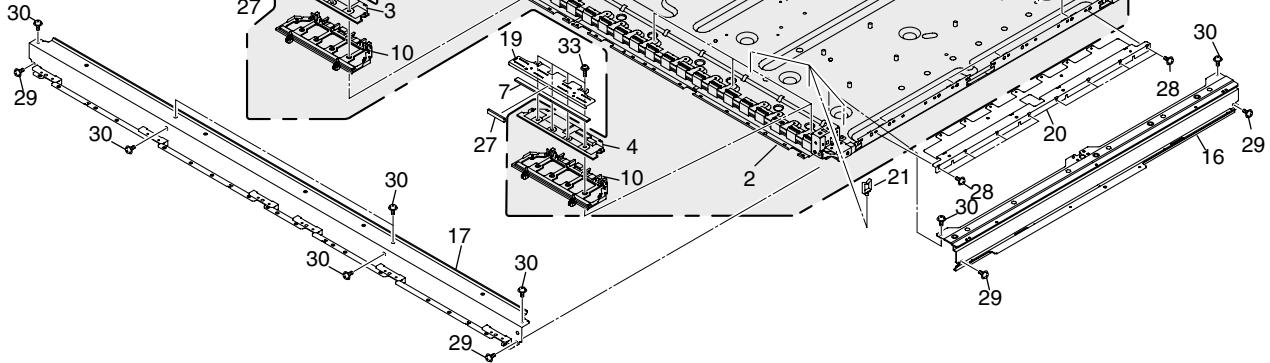
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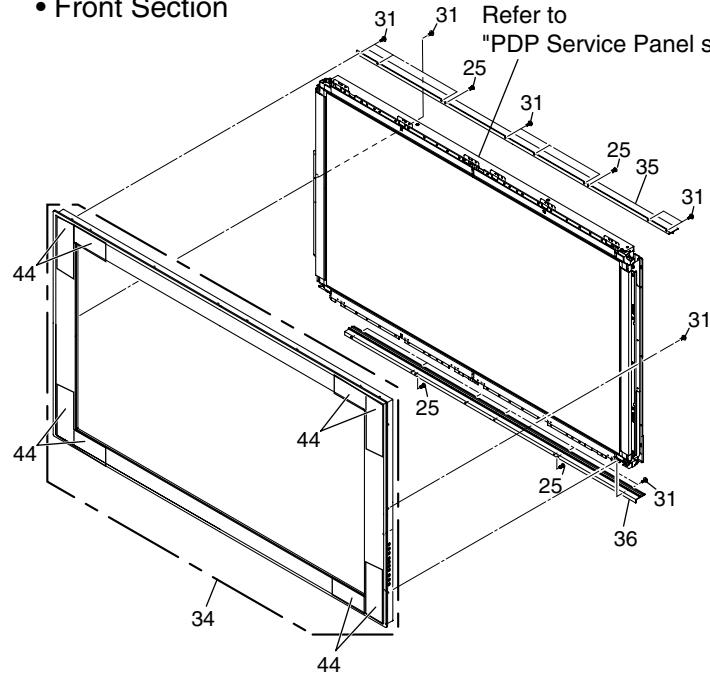


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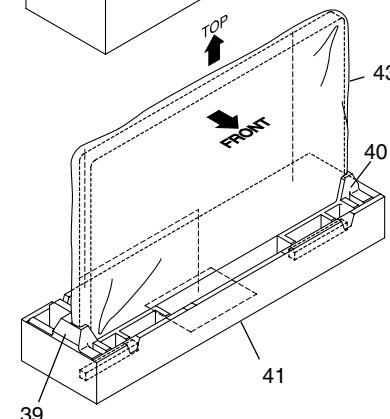
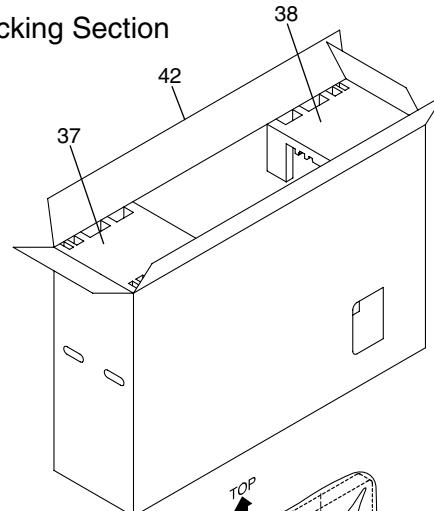
PDP SERVICE ASSY (AWU1198) PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
NSP 1	P. Chassis (F) Assy	AWU1201	23	PCB Spacer	AEC1941
NSP 2	Plasma Panel (50FH) Assy	AWU1158	24	PCB Spacer	AEC1947
NSP 3	50FHD ADDRESS A Assy	AWW1127	25	Nylon Livet	AEC2086
NSP 4	50FHD ADDRESS B Assy	AWW1128			
5	50FHD SCAN A Assy	AWW1229	26	Rear Case (F)	ANE1654
6	50FHD SCAN B Assy	AWW1230	27	Gasket ADH-FCH	ANK1850
7	Address Silicon (F)	AEH1104	28	Screw	ABA1364
8	•••••		29	Screw	ABZ30P080FTC
9	•••••		30	Screw	AMZ30P060FTB
10	Address Holder Assy (B)	AMR3547	31	Screw	APZ30P100FTB
11	•••••		32	Screw	TBZ40P080FTB
12	SCAN Sheet	AMR3638	33	Screw	BBB30P120FNI
13	Plate Holder	AMR3446	34	F.Case Assy S (50F)	AMB2960
14	Sub Frame (F)	ANA1937	35	Sassi T (Pls)	AAK2883
15	F Chassis V Assy L	ANA1953	36	Sassi B (Pls)	AAK2884
16	F Chassis V Assy R	ANA1954	37	Pad (50T-L)	AHA2546
17	Front Chassis Assy (F)	ANA1957	38	Pad (50T-R)	AHA2547
18	Terminal Panel (F)	ANG2914	39	Pad (50B-L)	AHA2548
19	Address Heatsink	ANH1651	40	Pad (50B-R)	AHA2549
20	Plate X (F)	ANG2906	41	Under Carton (505)	AHD3326
21	Wire Saddle	AEC1745	NSP 42	Upper Carton (505 SVC)	AHD3343
22	PCB Support	AEC1938	43	Mirror Mat	AHG1284
			44	Service Pad	AEC2105

• Front Section



• Packing Section



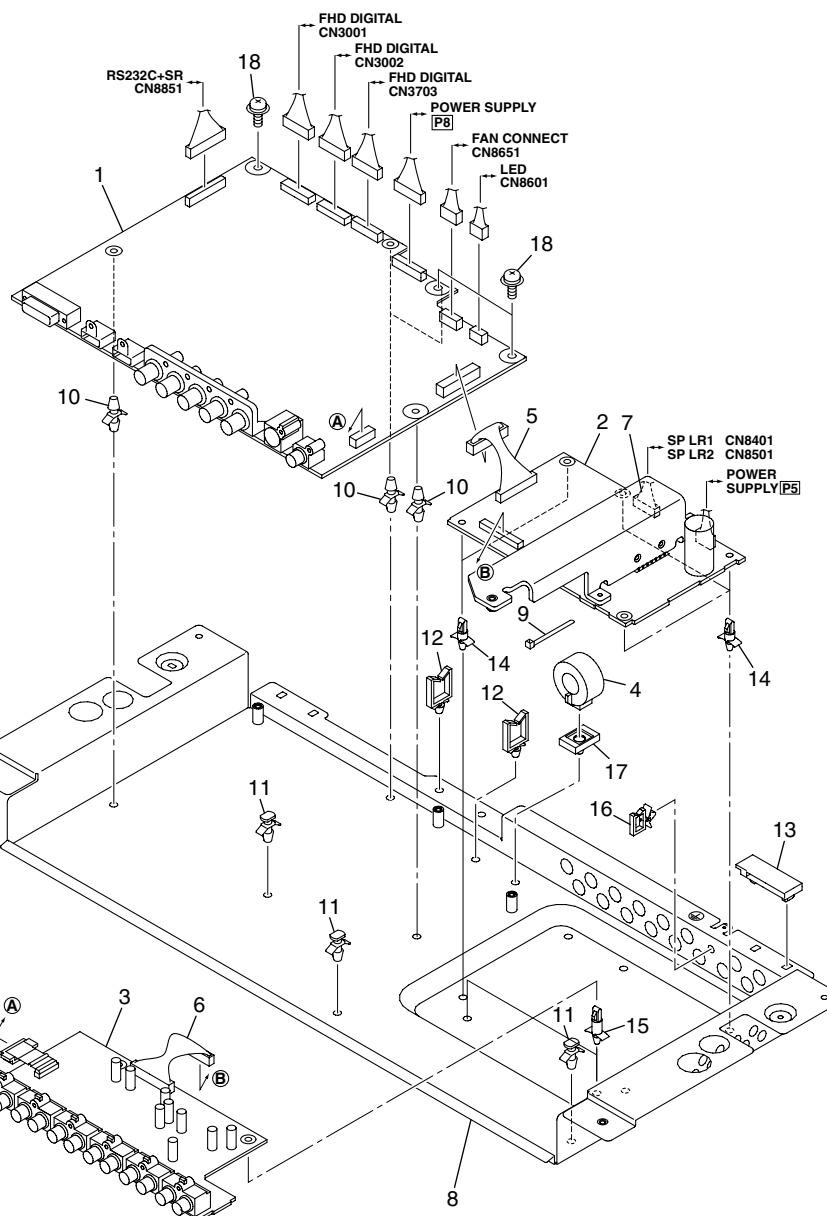
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2.7 MULTI BASE SECTION

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MULTI BASE SECTION PARTS LIST

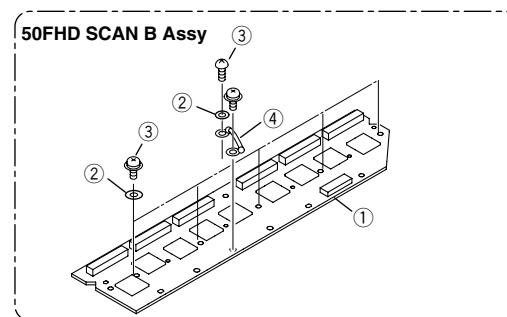
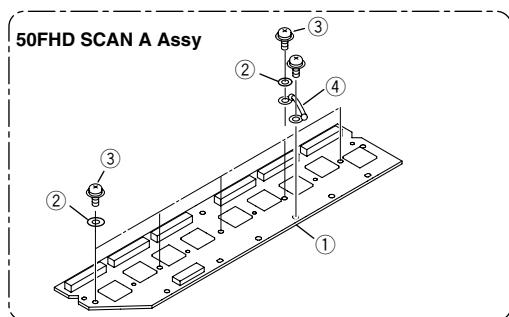
<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
E	1 FHD MAIN Assy	AWV2292	NSP	11 PCB Support	AEC1232
	2 FHD POWER AMP Assy	AWW1117		12 Wire Saddle	AEC1745
	3 FHD PRE AUDIO Assy	AWW1118		13 Clamp	AEC1884
	4 Ferrite Core	ATX1044		14 PCB Spacer	AEC1941
	5 14P Housing Wire (J118)	ADX3310		15 Circuit Board Spacer	AEC1960
	6 15P Housing Wire (J122)	ADX3314		16 Wire Saddle	AEC2031
	7 6P/3P Housing Wire (J123)	ADX3315		17 Ferrite Core Holder	AEC1818
	8 Multi Base (F)	ANA1936		18 Screw	ABA1364
	9 Binder	AEC-093			
	10 PCB Support	AEC1215			

[NOTES ON THE PANEL CHASSIS ASSY]

- There are two (new and old) types of the Panel Chassis Assys.

■ Differences in the old and new Panel Chassis Assys

	Panel chassis Assy	① 50FHD SCAN A Assy	① 50FHD SCAN B Assy	② Washer (ABF1040)	③ Heatsink screw	④ Earth lead with resistor (R2781, R2881)	Note
Old	AWU1152	AWW1129	AWW1130	Used	PMH30P080FNI	Used	Although there is a screw with the remove-this-screw mark near the ③ Heatsink screw, never remove this screw.
New	AWU1201	AWW1229	AWW1230	Not used	PMH30P060FNI	Not used	



Notes:

- ① The old type of the Panel Chassis Assys was mounted in about the first 1090 units produced.
(As for PRO-FHD1, the old type of the Panel Chassis Assys was mounted in about the first 10 units produced.)
- ② Either the old or new type of the SCAN Assy can be attached to a Panel Chassis Assy of the old type.
However, be careful of the following:
 - When the old type of the SCAN Assy (50FHD SCAN A Assy: AWW1129, 50FHD SCAN B Assy: AWW1130) is used, a ground wire with resistance is attached. After replacing the SCAN A/B Assy, be sure to secure the ground wire with resistance as it was originally. (Be careful not to mix up the washers.)
 - When the new type of the SCAN Assy (50FHD SCAN A Assy: AWW1229, 50FHD SCAN B Assy: AWW1230) is used, a ground wire with resistance is not attached. Attaching a ground wire with resistance is not required after replacement of the SCAN Assy.

3. PCB PARTS LIST

1

2

3

4

- A NOTES:**
- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
 - The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω	\rightarrow	56×10^1	\rightarrow	561	RDI/4PU[5 6 1]J
47k Ω	\rightarrow	47×10^3	\rightarrow	473	RDI/4PU[4 7 3]J
0.5 Ω	\rightarrow	R50			RN2H[R 5 0]K
1 Ω	\rightarrow	IRO			RS1P[I R 0]K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω	\rightarrow	562×10^1	\rightarrow	5621	RNI/4PC[5 6 2 1]F
----------------	---------------	-------------------	---------------	------	-------	-------------------

B	Mark No.	Description	Part No.	Mark No.	Description	Part No.
LIST OF ASSEMBLIES						
	NSP	1..50 FHD ADDRESS ASSY	AWV2295	C	2701,2702,2711,2712	ACG1088
	NSP	2..50FHD ADDRESS A ASSY	AWW1127	C	2703,2713,2723,2733	CKSRYB105K6R3
	NSP	2..50FHD ADDRESS B ASSY	AWW1128	C	2704,2706,2707,2714	CCSRCH390J50
				C	2708-2710,2718-2720	CCSRCH181J50
	NSP	1..50FHD SCAN ASSY	AWV2401	C	2716,2717,2724,2726	CCSRCH390J50
		2..50FHD SCAN A ASSY	AWW1229	C	2721,2722,2731,2732	ACG1088
		2..50FHD SCAN B ASSY	AWW1230	C	2727,2734,2736,2737	CCSRCH390J50
C	NSP	1..DIGITAL SENSOR ASSY	AWV2290	C	2728-2730,2738-2740	CCSRCH181J50
		2..FHD DIGITAL ASSY	AWW1115	C	2741,2742,2751,2752	ACG1088
		2..PANEL SENSOR ASSY	AWW1116	C	2743,2753,2763,2773	CKSRYB105K6R3
	NSP	1..FHD FUKUGO ASSY	AWV2291	C	2744,2746,2747,2754	CCSRCH390J50
		2..FHD POWER AMP ASSY	AWW1117	C	2748-2750,2758-2760	CCSRCH181J50
		2..FHD PRE AUDIO ASSY	AWW1118	C	2756,2757,2764,2766	CCSRCH390J50
		2..FHD SP LR1 ASSY	AWW1119	C	2761,2762,2771,2772	ACG1088
		2..FHD SP LR2 ASSY	AWW1120	C	2767,2774,2776,2777	CCSRCH390J50
		2..FHD LED ASSY	AWW1121	C	2768-2770,2778-2780	CCSRCH181J50
		2..FHD FAN CONNECT ASSY	AWW1122	C	2781,2782	ACG1088
		2..FHD IR ASSY	AWW1123	C	2783	CKSRYB105K6R3
		2..FHD KEY ASSY	AWW1124	C	2784,2786,2787	CCSRCH390J50
		2..FHD KEY CONTROL ASSY	AWW1125	C	2788-2790	CCSRCH181J50
D		2..FHD RS232C+SR ASSY	AWW1126			
	1..FHD MAIN ASSY	AWV2292	Unit Name: 50FHD SCAN B ASSY			
	1..50FHD X DRIVE ASSY	AWV2293				
	1..50FHD Y DRIVE ASSY	AWV2294	SEMICONDUCTORS			
E	Unit Name: 50FHD SCAN A ASSY			IC 2801-2809	SN755870KPZT-P	
	SEMICONDUCTORS			D 2801	1SS355	
	IC 2701-2709	SN755870KPZT-P		D 2802-2807	1SS302	
	D 2701	1SS355				
	D 2702-2707	1SS302				
	MISCELLANEOUS					
	CN2701	13P CONNECTER	CN2801	13P CONNECTER	AKP1261	
	CN2702-2707	90PIN CONNECTOR	CN2802-2807	90PIN CONNECTOR	AKM1358	
F	RESISTORS					
	R 2705,2710,2713,2716	RAB4C221J	R 2805,2810,2813,2816	RAB4C221J		
	R 2719,2722,2725,2728	RAB4C221J	R 2819,2822,2825,2828	RAB4C221J		
	R 2731	RAB4C221J	R 2831	RAB4C221J		
	R 2791	RS1/8SQ104J	R 2891	RS1/8SQ104J		
	R 2792	RS1/8SQ124J	R 2892	RS1/8SQ124J		
	Other Resistors	RS1/16S###J	Other Resistors	RS1/16S###J		
	CAPACITORS					
		C 2801,2802,2811,2812	C 2801,2802,2811,2812	ACG1088		
		C 2803,2813,2823,2833	C 2803,2813,2823,2833	CKSRYB105K6R3		
		C 2805-2807,2815-2817	C 2805-2807,2815-2817	CCSRCH390J50		
		C 2808-2810,2818-2820	C 2808-2810,2818-2820	CCSRCH181J50		
		C 2821,2822,2831,2832	C 2821,2822,2831,2832	ACG1088		

Mark No. **Description**

C 2825-2827,2835-2837
 C 2828-2830,2838-2840
 C 2841,2842,2851,2852
 C 2843,2853,2863,2873
 C 2845-2847,2855-2857
 C 2848-2850,2858-2860
 C 2861,2862,2871,2872
 C 2865-2867,2875-2877
 C 2868-2870,2878-2880
 C 2881,2882
 C 2883
 C 2885-2887
 C 2888-2890

Part No.

CCSRCH390J50
 CCSRCH181J50
 ACG1088
 CKSRYB105K6R3
 CCSRCH390J50
 CCSRCH181J50
 ACG1088
 CCSRCH390J50
 CCSRCH181J50
 ACG1088
 CKSRYB105K6R3
 CCSRCH390J50
 CCSRCH181J50

Mark No. **Description****CAPACITORS**

C 1501-1504,1507
 C 1505,1506
 C 1508,1509
 C 1510
 C 1512,1514

Part No.

CKSSYF104Z16
 CKSSYB102K50
 CKSRYB105K6R3
 CCSSCH101J50
 CCSSCH470J50

A

• Block Name: ADR CONNECT BLOCK**RESISTORS**

All Resistors

RS1/16SS###J

CAPACITORS

C 1551-1555

CKSSYF104Z16

B

Unit Name: 50FHD ADDRESS A ASSY**• Block Name: ADR RESONANCE BLOCK****SEMICONDUCTORS**

IC 1601
 Q 1601-1605
 Q 1606,1607
 Q 1608
 Q 1609,1610
 D 1601,1605,1609,1613
 D 1603,1607,1611,1615
 D 1604,1608,1612,1616
 D 1617
 D 1619
 D 1620
 D 1621

TND307TD
 HAT3041R
 QSZ2
 2SA1163
 RN1901
 EP05FA20
 UDZS15(B)
 1SS355
 EP05FA20
 UDZS15(B)
 1SS355
 1SS302

SEMICONDUCTORS

IC 1801
 Q 1801-1805
 Q 1806,1807
 Q 1808
 Q 1809,1810
 D 1801,1805,1809,1813
 D 1803,1807,1811,1815
 D 1804,1808,1812,1816
 D 1817
 D 1819
 D 1820
 D 1821

TND307TD
 HAT3041R
 QSZ2
 2SA1163
 RN1901
 EP05FA20
 UDZS15(B)
 1SS355
 EP05FA20
 UDZS15(B)
 1SS355
 1SS302

C

MISCELLANEOUS

L 1601-1605

ATH1199

MISCELLANEOUS

L 1801-1805

ATH1199

RESISTORS

R 1622,1623
 Other Resistors

RS1/16SS330J
 RS1/16S###J

RESISTORS

R 1822,1823
 Other Resistors

RS1/16SS330J
 RS1/16S###J

D

CAPACITORS

C 1601,1603,1605,1607
 C 1602,1604,1606,1608
 C 1609
 C 1610
 C 1611
 C 1612

ACG1135
 ACG1136
 ACG1135
 ACG1136
 ACG1098
 CKSYB105K16

CAPACITORS

C 1801,1803,1805,1807
 C 1802,1804,1806,1808
 C 1809
 C 1810
 C 1811
 C 1812

ACG1135
 ACG1136
 ACG1135
 ACG1136
 ACG1098
 CKSYB105K16

E

• Block Name: ADR LOGIC BLOCK**SEMICONDUCTORS**

IC 1501

PEE002A

SEMICONDUCTORS

IC 1701

PEE002A

MISCELLANEOUS

L 1501
 CN1501
 CN1502

QTL1013
 AKM1276
 AKM1348

MISCELLANEOUS

L 1701
 CN1701
 CN1702

QTL1013
 AKM1276
 AKM1348

RESISTORS

R 1501-1505
 R 1535,1536
 Other Resistors

RS1/16SS1000F
 RS1/16S0R0J
 RS1/16S###J

RESISTORS

R 1701-1705
 R 1735,1736
 Other Resistors

RS1/16SS1000F
 RS1/16S0R0J
 RS1/16S###J

F

1	2	3	4
	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
	CAPACITORS		Part No.
A	C 1701-1704,1707 C 1705,1706 C 1708,1709 C 1710 C 1712,1714	CKSSYF104Z16 CKSSYB102K50 CKSRYB105K6R3 CCSSCH101J50 CCSSCH470J50	L 2101,2151 L 2102,2152
	• Block Name: ADR CONNECT BLOCK		R 2109,2118,2152,2161 R 2113,2156 R 2114,2115,2157,2158 R 2116,2117,2159,2160 R 2121
	RESISTORS	All Resistors	RS1/16SS###J
	CAPACITORS	C 1751-1755	CKSSYF104Z16
B			R 2181,2184 R 2182,2185 R 2186,2187 Other Resistors
	Unit Name: 50 FHD Y DRIVE ASSY		CAPACITORS
	MISCELLANEOUS		C 2101,2181-2184 C 2102,2113,2162,2164 C 2103,2114 C 2104,2117,2151,2163 C 2107,2108,2154,2155
	2001 2002 2003 2004 2005	ANH1639 BMZ30P080FTC AEH1092 ANG2907 ABA1364	C 2115,2116,2160,2161 C 2118-2121,2186-2189 C 2185
	• Block Name: Y LOGIC BLOCK		• Block Name: Y SUS BLOCK
C	SEMICONDUCTORS		SEMICONDUCTORS
	IC 2001,2007 IC 2003,2004 IC 2005,2006 D 2090,2091	TC74ACT541FT TC74ACT540FT TC74VHC08FTS1 1SS355	IC 2202,2221,2232,2242 IC 2203,2211,2222,2231 IC 2241,2252 IC 2251 IC 2271
	MISCELLANEOUS	K 2010,2014 TEST PIN VR2010,2011 CN2001 40P CONNECTER	AKX1061 CCP1390 AKM1348
D	RESISTORS	R 2001,2003,2016,2022 R 2002,2004 R 2005,2006,2017,2026 R 2023 R 2027	RAB4C470J RAB4C101J RAB4C472J RAB4C470J RAB4C472J
	Other Resistors	RS1/16S###J	Q 2211 Q 2221,2232,2242,2243 Q 2222,2231,2241,2352 Q 2239,2271 Q 2240 Q 2251 Q 2281-2283
	CAPACITORS		Q 2290 Q 2291 Q 2351 D 2208,2221,2231,2241 D 2222,2223,2232,2233
	C 2001,2009 C 2002,2004-2008 C 2010,2011	CEHAT470M16 CKSRYB104K16 CCSRCH331J50	D 2242,2243,2281,2282 D 2251 D 2271 D 2272 D 2283,2289
E	• Block Name: Y RESONANCE BLOCK		D 2290 D 2351,2380
	SEMICONDUCTORS		MISCELLANEOUS
	IC 2101,2104 IC 2102 IC 2103,2151 IC 2181 Q 2101	TND307TD PS9117 AXF1159 BA10393F 2SC2412K	L 2351,2353,2354 L 2352,2355,2356 F 2301-2330 F 2351 K 2301,2351 TEST PIN
F	Q 2102,2103,2151,2152 Q 2181 D 2101 D 2105,2154 D 2110,2159	QSZ2 2SC4081 UDZS5R6(B) D1FL40 1SS302	BTH1134 ATH1186 ATX1062 CTF1449 AKX1061

Mark No. **Description**

KN2202-2208,2301-2307
 CN2351 CONNECTOR
 CN2353 CONNECTOR
 CN2354,2356 CONNECTOR
 CN2355,2357 CONNECTOR

RESISTORS

R 2202,2206
 R 2211,2214
 R 2275
 R 2288-2293
 R 2301,2303,2307,2308
 R 2302,2304
 R 2305,2311
 R 2351
 Other Resistors

CAPACITORS

C 2211,2223,2233,2243
 C 2212,2272
 C 2221,2231,2241,2253
 C 2222,2232,2242,2290
 C 2251
 C 2252,2362
 C 2256,2271,2291,2352
 C 2273,2281
 C 2284,2286
 C 2292
 C 2299
 C 2301,2305
 C 2302-2304,2306-2308
 C 2309,2310
 C 2351,2353,2361,2363
 C 2354,2359,2364,2380
 C 2356,2357
 C 2358
 C 2360
 C 2367,2368
 C 2369
 C 2381

• Block Name: Y SCAN BLOCK**SEMICONDUCTORS**

IC 2401,2403,2409
 IC 2402,2407,2421,2490
 IC 2404-2406,2408,2410
 IC 2481,2482

MISCELLANEOUS

L 2401
 L 2402,2403
 F 2401,2402
 CN2401,2402 15P CONNECTER

RESISTORS

R 2405,2417
 Other Resistors

CAPACITORS

C 2401,2407,2414
 C 2402,2403,2405,2406
 C 2404,2411
 C 2408-2410,2412,2413
 C 2415,2420,2421

Part No.

ANK1841
 B9B-EH
 AKM1277
 AKM1281
 AKM1276

RESISTORS

RS3LMF561J
 RS3LMF3R9J
 RS3LMF181J
 RS3LMF5R6J
 RS1/10S100J
 RS1/10S0R0J
 ACN1168
 ACN1162
 RS1/16S###J

CEHAT470M25
 CKSRYF104Z50
 CKSYB105K25
 CKSRYB104K16
 CCSRCH331J50
 CKSRYB105K10
 CEHAT470M25
 CEHAT2R2M2E
 ACE1163
 CKSYB105K25
 CKSRYB104K25
 ACH1445
 ACE1180
 CCG1186
 CEHAT470M16
 CKSRYB104K16
 ACH1449
 CEHAT101M10
 CKSRYB473K16
 CEHAT101M25
 CEHAT470M16
 CKSRYB104K16

RAB4C220J
 RS1/16S###J
 BTH1136
 BTH1134
 ATX1062
 AKM1200
 IC 2601
 IC 2605,2657
 IC 2651
 IC 2652,2654,2658
 IC 2653
 CEHAT101M10
 CKSRYB104K16
 ACH1413
 CKSRYB104K16
 CKSRYB104K16

Mark No.

C 2417,2418
 C 2481,2482

• Block Name: Y VH DD CON BLOCK**SEMICONDUCTORS**

IC 2501,2551
 IC 2502,2552
 IC 2508,2557
 IC 2553
 Q 2501
 Q 2551
 D 2501
 D 2502
 D 2503,2505,2555,2556
 D 2504,2551,2552,2554
 D 2506
 D 2507
 D 2558
 D 2559

MISCELLANEOUS

VR2501
 VR2551
 T 2501
 T 2551

RESISTORS

R 2509
 R 2551,2552
 R 2554
 R 2557,2560
 R 2564
 R 2565
 R 2566
 R 2567
 R 2568-2570
 Other Resistors

CAPACITORS

C 2502,2507,2553,2561
 C 2503,2554
 C 2505,2555
 C 2506
 C 2508

CEHAT470M25
 ACH1448
 ACH1451
 CKSRYF104Z50
 CKSRYB104K25

• Block Name: Y DD CON BLOCK**SEMICONDUCTORS**

C 2558
 C 2562
 IC 2509
 C 2551
 C 2552
 C 2556
 C 2557,2559,2560

PS2701A-1(L)
 TA76431FR
 MIP2E3DMU
 TLP181(P-GR)
 BA10358F

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>		
A	Q 2601,2681	2SD1898	• Block Name: X LOGIC BLOCK	SEMICONDUCTORS	TC74ACT541FT		
	Q 2602	2SA1576A			TC74ACT540FT		
	Q 2603,2684	HN1C01FU			TC74VHC00FTS1		
	Q 2604,2605,2685	DTC143EUA			1SS355		
	Q 2651	2SA2005					
	Q 2652	2SA1163					
	Q 2682,2683	2SC4081					
	D 2602,2651,2654,2656	CRH01					
	D 2603,2684	1SS301					
	D 2604,2606,2658,2659	1SS355					
B	D 2607,2608	UDZS4R7(B)					
	D 2653	CRF03					
	D 2682,2683	CRH01					
	D 2685,2689	UDZS5R6(B)					
	D 2686-2688	1SS355					
	D 2690	UDZS15(B)					
	MISCELLANEOUS						
	VR2651	CCP1390					
	T 2601	ATK1156					
	T 2651	ATK1163					
C	T 2681	ATK1162					
	RESISTORS						
	R 2610,2613,2662,2666	RS1/16S4701F					
	R 2615	RAB4C472J					
	R 2651	RS1/10S4702F					
	R 2653,2660	RS1/10S1501F					
	R 2654,2691	RS3LMF301J					
	R 2661	RS1/16S1002F					
	R 2667	RS1/16S4701F					
	R 2668-2670,2690	RS1/10S224J					
D	R 2694	RS1/16S5601F					
	R 2698	RS1/16S6801F					
	Other Resistors						
	RS1/16S###J						
	CAPACITORS						
	C 2602,2681,2686	CEHAT101M25					
	C 2603,2685	ACG1105					
	C 2604	CKSRYB102K50					
	C 2605	CEHAT221M10					
	C 2606,2607,2653,2684	CKSRYB104K16					
E	C 2652	ACH1449					
	C 2654	CEHAT101M16					
	C 2655,2660	CKSRYF104Z50					
	C 2656,2657	CEHAT221M35					
	C 2658	CKSRYB104K25					
	C 2659	CKSRYB105K10					
	C 2661	CCG1186					
	C 2682	CKSYB105K25					
	C 2683	CKSRYB103K50					
	C 2687,2688	CKSRYB104K16					
F	MISCELLANEOUS						
	1001	BMZ30P080FTC					
	1001	ANH1639					
	1002	AEH1092					
	Unit Name: 50 FHD X DRIVE ASSY						
	MISCELLANEOUS						
	1001	BMZ30P080FTC					
	1001	ANH1639					
	1002	AEH1092					

Mark No. **Description**
 • Block Name: X SUS BLOCK

SEMICONDUCTORS

IC 1201,1206
 IC 1202,1207,1208,1210
 IC 1203,1205
 IC 1204
 IC 1209

IC 1211
 Q 1201
 Q 1202,1205,1208,1209
 Q 1203
 Q 1204

Q 1206
 Q 1207
 Q 1251
 Q 1252
 D 1201,1205

D 1202,1203,1206,1210
 D 1204,1211
 D 1207
 D 1208
 D 1209

D 1251

MISCELLANEOUS

L 1201-1203
 L 1204-1206
 F 1201
 K 1201
 KN1201-1207,1210-1217

CN1201,1203 CONNECTER
 CN1202,1205 CONNECTER
 CN1204 CONNECTER
 CN1206 CONNECTER

RESISTORS

R 1210,1226,1253,1254
 R 1212
 R 1217,1232
 R 1220,1237
 R 1222

Other Resistors

CAPACITORS

C 1201,1211-1213,1238
 C 1202,1231,1237
 C 1203,1204
 C 1207,1216,1218,1219
 C 1208,1214,1246

C 1209,1215,1217,1233
 C 1210,1240,1244
 C 1221,1222
 C 1223,1224
 C 1225-1230

C 1232,1245,1250,1251
 C 1235
 C 1236
 C 1239
 C 1241-1243

C 1252

Part No.

PS9117
 TND307TD
 AXF1160
 PQ05DZ11
 TC7SH04FUS1

PQ09DZ11
 2SC2412K
 QSZ2
 HN1B04FU
 DTC124EUA

2SC4081
 R5009ANJ
 DTC143EK
 DTC123TKA
 UDZS5R6(B)

CRH01
 1SS355
 1SS302
 UDZS5R1(B)
 UDZS16(B)

UDZS8R2(B)

Mark No. **Description**

• Block Name: X DD CON BLOCK

SEMICONDUCTORS

IC 1321
 IC 1322
 IC 1327
 Q 1301
 Q 1302

Q 1331,1332
 D 1301,1324
 D 1302,1303,1325,1326
 D 1304
 D 1305

D 1306,1307,1331
 D 1321,1322
 D 1323
 D 1332,1333

MISCELLANEOUS

VR1321
 T 1301
 T 1321

RESISTORS

R 1321,1322
 R 1328
 R 1331
 Other Resistors

CAPACITORS

C 1301,1306,1326
 C 1302,1325
 C 1303
 C 1304,1307,1323
 C 1305

C 1321
 C 1322
 C 1324
 C 1327
 C 1328

Unit Name: FHD MAIN ASSY**SEMICONDUCTORS**

IC 4803
 IC 5005
 IC 6203

MISCELLANEOUS

• Block Name: BOARD IF A BLOCK

SEMICONDUCTORS

IC 4006
 Q 4001
 Q 4002
 D 4001,4003
 D 4002

MISCELLANEOUS

▲ F 4001,4003,4004
 ▲ F 4005-4010
 CN4003 CONNECTOR

Part No.

MIP2E3DMU
 PS2701A-1(L)
 TA76431FR
 2SD1898
 2SC4081

HN1C01FU
 D1FL40
 CRH01
 1SS301
 UDZS5R6(B)

1SS355
 CRF03
 U1ZB330
 UDZS8R2(B)

CCP1392
 ATK1162
 ATK1153

RS1/10S2203F
 RS1/16S5601F
 RAB4C472J
 RS1/16S###J

CEHAT101M25
 CKSYB105K25
 CKSRYB103K50
 CKSRYB104K16
 ACG1105

ACH1361
 ACH1452
 CEHAT101M16
 CKSRYB104K25
 CEHAT221M25

AGC1005
 AGC1012
 AGC1013

E

THC63LVD103F
 DTA124EUA
 2SA1586
 1SS355
 1SS301

CCG1162
 ATF1209
 AKM1276

	1	2	3	4		
	Mark No.	Description	Part No.	Mark No.	Description	Part No.
		RESISTORS			• Block Name: VIDEO SW BLOCK	
A	R 4001,4002,4025,4026 R 4094 Other Resistors		RS1/10S0R0J RS1/10S0R0J RS1/16SS###J		SEMICONDUCTORS	
	C 4001 C 4002,4003 C 4008-4012 C 4014		ACG7046 CEHVKW470M16 CKSSYF104Z16 CKSSYB103K16		IC 4601 Q 4601,4602	R2S11002AFT 2SA1586
		CAPACITORS			MISCELLANEOUS	
					JA4601 JACK CN4601 DIN SOCKET AU	VKB1156 AKP1298
		• Block Name: BOARDIF B BLOCK			RESISTORS	
B		SEMICONDUCTORS			R 4609,4610 R 4612,4614 R 4616,4631,4632 Other Resistors	RS1/16S5600F RS1/16S1800F RS1/16S75R0F RS1/16SS###J
	IC 4206 Q 4201 Q 4203		THC63LVD103F DTC124EUA RN2901		CAPACITORS	
		MISCELLANEOUS			C 4601-4610 C 4611,4612 C 4613 C 4621,4627,4628,4657 C 4622	CKSRYB105K10 CKSSYB103K16 CEHVKW101M6R3 CKSSYF104Z16 DCH1201
	△F 4201-4206 △F 4207 △F 4208-4210 CN4203 CONNECTOR CN4205,4206 31P CONNECTER		ATF1209 CCG1162 CTF1410 AKM1274 AKM1239		C 4623,4626 C 4632 C 4647 C 4653 C 4658	CKSSYB104K10 ACG7046 CKSSYB473K16 ACG1122 DCH1165
C		CAPACITORS			• Block Name: IF UCOM BLOCK	
	C 4201 C 4207-4211		ACG7046 CKSSYF104Z16		SEMICONDUCTORS	
		• Block Name: REG BLOCK			IC 4801 IC 4802 IC 4804	PST9230N TC7W126FU TC74VHC08FTS1
		SEMICONDUCTORS			MISCELLANEOUS	
D	IC 4401,4402 IC 4403 IC 4404 IC 4405 IC 4407,4409		MM1661JH PQ090DNA1ZPH PQ033ENA1ZPH PQ050DNA1ZPH BD6522F		X 4801 X 4802	ASS1168 ASS1172
	IC 4408 IC 4410 Q 4401 D 4401-4404,4406-4408 D 4410		NCP1117STT15 NCP1117STT18 DTC124EUA 1SS355 1SS355		RESISTORS	
		MISCELLANEOUS			R 4850-4853 Other Resistors	RAB4CQ103J RS1/16SS###J
	△F 4401,4402 U 4401		CCG1162 AXY1136		CAPACITORS	
					C 4801 C 4802,4803 C 4805 C 4806-4811	CKSSYB472K25 CCSSCH180J50 ACG7046 CKSSYF104Z16
E		RESISTORS			• Block Name: MAIN UCOM BLOCK	
	R 4401,4428 R 4403-4406,4410,4429 Other Resistors		RS1/10S1R5J RS1/10S0R0J RS1/16SS###J		SEMICONDUCTORS	
		CAPACITORS			IC 5001 IC 5002 IC 5003 IC 5006 IC 5007	BR24L64F-W MB91305PMC-G-BND PQ200WNA1ZPH PST3628UR TC74VHC125FTS1
F	C 4401,4402 C 4403 C 4404,4414,4443,4444 C 4405,4420,4427,4431 C 4406,4422,4432,4433		CKSSYB471K50 CKSRYB105K10 CKSSYF104Z16 DCH1165 ACG7046		IC 5008 Q 5001 Q 5003,5004 Q 5007 D 5001	NJM12904V 2SJ461A HN1K02FU 2SC4116 1SS355
	C 4419,4425,4430,4436 C 4439,4442,4445-4447 C 4449		DCH1201 ACG7046 ACG7046		D 5002	SML-311UT

Mark No. **Description****Part No.****Mark No.** **Description****Part No.****MISCELLANEOUS**

X 5001
CN5001 50P CONNECTER PBF

CSS1616
AKM1353

• Block Name: VDEC BLOCK**RESISTORS**

R 5001,5002
R 5075,5076
R 5084
R 5085
R 5092

R 5104
R 5105
R 5106
R 5108
Other Resistors

ACN1248
RS1/16S0R0J
RS1/16SS9101F
RS1/16SS3301F
RS1/10S0R0J

RS1/16SS1002F
RS1/16SS1501F
RS1/16SS8201F
RS1/16SS6801F
RS1/16SS###J

SEMICONDUCTORS

IC 5401
IC 5402
IC 5403

HY57V161610ETP-8
UPD64015AGM-UEU
TVP5150AM1PBS

CAPACITORS

C 5001
C 5002-5011,5047,5048
C 5012
C 5013,5016,5050
C 5017

C 5018,5019
C 5022-5046
C 5049

CCSRCH221J50
CCSSCH470J50
CKSSYB472K25
CKSSYB103K16
ACG7046

DCH1165
CKSSYF104Z16
CKSRYB105K10

RESISTORS

R 5401-5404
R 5405,5406
R 5407-5409
R 5426
R 5439

R 5440
R 5443
R 5445-5448
Other Resistors

ACN1246
BCN1067
RS1/16S0R0J
RS1/16SS6200D
RS1/16S334J

RS1/16SS2201D
RS1/16SS1001D
RAB4CQ220J
RS1/16SS###J

• Block Name: ADC BLOCK**SEMICONDUCTORS**

IC 5201
IC 5202
IC 5203
Q 5204-5206
D 5201-5203

D 5204,5205
D 5206

TC74VHC08FTS1
AD9985KSTZ-110
TC7WH123FU
2SC4116
1SS302

UDZS5R6(B)
1SS301

CAPACITORS

C 5401-5403
C 5404,5405
C 5406,5407
C 5408,5409
C 5414-5420,5422-5430

C 5432-5456,5461,5463
C 5457,5458,5494
C 5459,5460,5462
C 5464,5469,5472,5474
C 5465-5468,5470,5471

C 5473,5475,5477-5479
C 5476,5480,5482,5483
C 5481,5484-5486
C 5492,5493
C 5495,5496

CKSRYB105K10
CCSSCH100D50
CKSSYB103K16
CCSSCH8R0D50
CKSSYF104Z16

CKSSYF104Z16
ACG7046
CKSSYB104K10
CKSSYF104Z16
CKSSYB104K10

CKSSYB104K10
CKSSYF104Z16
CKSSYB104K10
CKSSYF104Z16
CEHVKW101M6R3

MISCELLANEOUS

△F 5201,5203
JA5201

CCG1162
AKX1059

• Block Name: RGB SW BLOCK**RESISTORS**

R 5201-5203
R 5210,5255
R 5211-5213
R 5234-5236
R 5256

Other Resistors

ACN1251
RS1/16S0R0J
RS1/16S75R0F
RS1/16S102J
RS1/16SS2701F

RS1/16SS###J

SEMICONDUCTORS

IC 5601

R2S11001FT

RESISTORS

All Resistors

RS1/16SS###J

CAPACITORS

C 5201,5202
C 5203-5205,5224
C 5206
C 5207
C 5208,5216,5217,5219

C 5211-5213,5220
C 5218,5222,5225
C 5221,5223,5226-5230
C 5232,5233,5241,5242
C 5240

CCSRCH220J50
CKSRYB105K10
CKSSYB823K10
CKSSYB822K16
CKSSYF104Z16

ACG7046
CKSSYB473K16
CKSSYF104Z16
CKSSYF104Z16
CKSSYB104K10

CAPACITORS

C 5601-5603
C 5604,5605
C 5606-5610,5612-5614
C 5616
C 5618-5623

C 5633,5634,5647,5655
C 5646,5654

CKSRYB105K10
CCSRCH680J50
CKSSYB103K16
CEHVKW101M6R3
CKSSYB103K16

CKSSYF104Z16
ACG7046

• Block Name: DSEL BLOCK**SEMICONDUCTORS**

IC 5801
IC 5802

TC74VCX541FT
PD6523A

	1	2	3	4		
	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
A		MISCELLANEOUS			CAPACITORS	
	△L 5801,5802		BTX1042	C 6206		ACG7046
	△F 5803,5804		ATF1211	C 6210-6241		CKSSYF104Z16
	X 5801		ASS1194			
					• Block Name: S BLOCK	
		RESISTORS			SEMICONDUCTORS	
	R 5801-5803		ACN1251	IC 6401		TC74VHC08FTS1
	R 5804-5806		BCN1067	IC 6402		PEG121B
	R 5830		RAB4CQ101J			
	R 5831		RAB4CQ470J			
	Other Resistors		RS1/16SS###J			
					MISCELLANEOUS	
B		CAPACITORS		△L 6401,6402,6404		BTX1042
	C 5803,5804,5806-5816		CKSSYF104Z16	△F 6403		CCG1162
	C 5818-5823		CKSSYF104Z16			
	C 5831		ACG7046			
	C 5832,5833		CKSSYB103K16			
	C 5834,5835		CKSRYB105K10			
					RESISTORS	
				R 6401-6404		BCN1070
				R 6405		BCN1071
				R 6406-6410		BCN1067
				R 6411-6414		ACN1246
				R 6456-6458		RAB4CQ103J
		• Block Name: IP BLOCK		R 6459		RAB4CQ220J
				Other Resistors		RS1/16SS###J
		SEMICONDUCTORS				
	IC 6001		PE5504B			
	IC 6002,6003		HY57V643220DTP-7			
		MISCELLANEOUS				
	△L 6001-6004		BTX1042			
C						
		RESISTORS				
	R 6001,6002,6004,6010		BCN1070			
	R 6003,6005-6007,6009		BCN1067			
	R 6008		BCN1071			
	R 6011-6017,6026		BCN1067			
	R 6018-6025		BCN1077			
					CAPACITORS	
	R 6027		ACN1246	C 6404		ACG7046
	R 6046,6048		RAB4CQ0R0J	C 6406-6436		CKSSYF104Z16
	R 6047,6049		RAB4CQ470J			
	Other Resistors		RS1/16SS###J			
D		CAPACITORS				
	C 6002,6007-6024		CKSSYF104Z16			
	C 6040-6063		CKSSYF104Z16			
	C 6064		ACG7046			
					• Block Name: FPGA BLOCK	
					SEMICONDUCTORS	
				IC 6601		EP2C20F484C8N
		MISCELLANEOUS		△L 6602-6604		BTX1042
E						
		RESISTORS				
	IC 6201		ACN1246			
	IC 6202		RAB4CQ0R0J	R 6601-6606,6610,6611		BCN1067
			RAB4CQ470J	R 6607-6609		ACN1251
			RS1/16SS###J	R 6660,6661		RAB4CQ470J
				R 6662		RAB4CQ680J
				Other Resistors		RS1/16SS###J
		CAPACITORS				
				C 6601-6645,6652-6654		CKSSYF104Z16
				C 6647-6650		CKSSYB102K50
				C 6651		ACG7046
		• Block Name: M BLOCK				
		SEMICONDUCTORS				
	IC 6201		TC74VHC08FTS1			
	IC 6202		PEG121B			
		MISCELLANEOUS				
E						
	△L 6202,6204,6206		BTX1042	IC 6801		SII9023CTU
	△F 6201,6205		CCG1162	IC 6802,6803		BR24L02FJ-W
				Q 6801-6803		DTC124EUA
				Q 6804-6806		DTA124EUA
				Q 6808,6809		RN1902
		RESISTORS				
	R 6201-6204		BCN1070	Q 6810,6811		HN1K02FU
	R 6205		BCN1071	D 6801,6802		DAN202U
	R 6206-6214,6216		BCN1067	D 6803		1SS301
	R 6219-6222		ACN1246	D 6809,6810		UDZS6R8(B)
	R 6287,6289,6291		RAB4CQ103J			
F						
		MISCELLANEOUS				
	R 6288,6290		RAB4CQ101J	△F 6801		CCG1162
	R 6292		RAB4CQ220J	JA6801,6802	HDMI CONNECTOR	AKP1278
	Other Resistors		RS1/16SS###J	X 6801		ASS1192
				CN6801	CONNECTOR 11P	AKP1299

Mark No. **Description**

RESISTORS

R 6801-6803
R 6846,6848
R 6852
R 6853,6854
Other Resistors

CAPACITORS

C 6801,6802
C 6803,6804
C 6806
C 6807,6808,6810,6812
C 6809,6811,6813,6815

C 6814,6816,6818
C 6817,6819,6827,6831
C 6820-6826,6828-6830
C 6832-6834,6836,6838
C 6835,6837,6839,6841

C 6840,6842,6844,6846
C 6843,6845,6847,6849
C 6848,6850,6852,6854
C 6851,6853,6855,6860
C 6856-6859,6861,6863

C 6862,6864,6866,6868
C 6865,6867,6870,6872
C 6869,6871,6873,6875
C 6874,6876,6878,6880
C 6877,6879,6887-6889

•Block Name: RX BLOCK

SEMICONDUCTORS

IC 7001
IC 7002
IC 7003,7004
Q 7001-7005
Q 7007

D 7001
D 7002,7003
D 7004

MISCELLANEOUS

▲L 7001
CN7001 DVI SOCKET (24P)

RESISTORS

R 7001-7003
R 7024
R 7038
Other Resistors

CAPACITORS

C 7001,7003,7004,7008
C 7002,7005-7007
C 7009
C 7010-7017
C 7018

C 7019-7022
C 7023-7040

Part No.

BCN1067
RS1/16S0R0J
RAB4CQ100J
RAB4CQ470J
RS1/16SS###J

CCSSCH120J50
DCH1201
ACG7046
CKSSYF104Z16
CCSSCH101J50

CKSSYF104Z16
CCSSCH101J50
CKSSYF104Z16
CKSSYF104Z16
CCSSCH101J50

CKSSYF104Z16
CCSSCH101J50
CKSSYF104Z16
CCSSCH101J50
CKSSYF104Z16
CCSSCH101J50

CKSSYF104Z16
CCSSCH101J50
CKSSYF104Z16
CCSSCH101J50
CKSSYF104Z16
CCSSCH101J50

CKSSYF104Z16
CCSSCH101J50
CKSSYF104Z16
CCSSCH101J50
CKSSYF104Z16
CCSSCH101J50

DAN202U
1SS302
UDZS6R8(B)

QTL1013
AKP1250

BCN1067
RS1/16S3900F
RAB4CQ472J
RS1/16SS###J

CCSRCH331J50
CKSRYB105K10
CCSRCH331J50
CCSSCH820J50
DCH1201

ACG7046
CKSSYF104Z16

Mark No. **Description**

Unit Name: FHD POWER AMP ASSY

SEMICONDUCTORS

IC 8001
IC 8002
IC 8003
IC 8006
IC 8007
LA4625
NJM7812FA
NJM7809FA
UPC4570G2-A
NJW1183GK1

Q 8001,8002,8005,8006
Q 8003,8004
Q 8007,8008
2SA1586
2SC4116
DTC124EUA

MISCELLANEOUS

8001 AUDIO HEATSINK (F)
8002-8005 SCREW
KN8001,8002 WRAPPING TERMINAL
CN8001 CONNECTOR
CN8003 PLUG(15P)
CN8004 CONNECTOR
ANH1650
VBB30P100FNI
VNF1084
B3P-VH
KM200NA15
B6B-EH

RESISTORS

R 8001-8004
R 8005-8008
R 8053-8056,8058
Other Resistors
RS1/16S6801F
RS1/16S3301F
RD1/2MMF2R2J
RS1/16S###J

CAPACITORS

C 8001,8027,8039,8045
C 8002,8040,8062,8064
C 8003,8004
C 8005,8006,8009,8010
C 8011-8016,8021,8023
CEHAT101M16
CKSRYB103K50
CEHAT470M16
CEHAT100M50
CFTLA104J50

C 8017,8020,8024-8026
C 8018
C 8019
C 8022,8035
C 8028,8058
C 8029,8033,8036
C 8031
C 8032,8034,8037,8038
C 8041,8042
C 8043,8044
CFTLA104J50
CFTLA223J50
CEHAT1R0M50
CEHAT100M50
CEHAT2R2M50

C 8046
C 8047
C 8048,8067
C 8053-8056
C 8057
C 8059,8060
C 8061
C 8063
C 8068
CEHAT220M50
CEHATR47M50
CEHAT101M16
CFTLA104J50
CEHAT472M25

C 8061
C 8063
C 8068
CEHAT4R7M50
CEHAT471M25
CEHAT331M16
CKSRYB103K50

Unit Name: FHD PRE AUDIO ASSY

SEMICONDUCTORS

IC 8201
IC 8202-8204
IC 8205,8209
IC 8206,8210
IC 8207
R2S11002AFT
UPC4570G2
PCM1754DBQ
NJM12904V
PCM1803DB

Mark No.	Description	Part No.	Mark No.	Description	Part No.
A	IC 8208	NJU26901E2	Unit Name: FHD SP LR1 ASSY	MISCELLANEOUS	
	Q 8201,8202	2SA1586		△ L 8402	ATF1206
	Q 8203,8204,8211,8212	2SC4116		CN8401 3P TOP POST	B3B-EH
	Q 8213	DTA124EUA		CN8402 SPEAKER TERMINAL 2-P	AKE1041
	Q 8215,8216	HN1B04FU		RESISTORS	
	D 8201	UDZS2R4(B)		R 8404,8408	RD1/2MMF100J
	MISCELLANEOUS	BTH1111		Other Resistors	RS1/16S###J
B	L 8211	PKB1029	CAPACITORS	C 8403,8404	CCSRCH101J50
	JA 8201-8206 JACK	ASS1204		C 8405	CKSRYB332K50
	X 8201 CRYSTAL	AKM1359		C 8406,8409,8410	CCSRCH221J50
	CN8201 CONNECTOR 11P	KM200NA15		C 8407	CKSRYF473Z50
	CN8202 PLUG(15P)			△ C 8411,8412	CCSRCH221J50
	RESISTORS	RS1/16S222J	MISCELLANEOUS		
	R 8241-8244,8334	RS1/16S102J	△ L 8502	ATF1206	
C	R 8247,8248,8343-8346	RS1/16S473J		CN8501 3P TOP POST	B3B-EH
	R 8249-8252	RS1/16S272J		CN8502 SPEAKER TERMINAL 2-P	AKE1041
	R 8255,8256	RS1/16S223J	RESISTORS	R 8504,8508	RD1/2MMF100J
	R 8257,8258,8320,8321			Other Resistors	RS1/16S###J
	R 8259-8262	RS1/16S3301F	CAPACITORS	C 8503,8504	CCSRCH101J50
	R 8263-8266	RS1/16S101J		C 8505	CKSRYB332K50
	R 8267-8275,8325,8326	RS1/16S0R0J		C 8506,8509,8510	CCSRCH221J50
D	R 8280	RAB4CQ103J		C 8507	CKSRYF473Z50
	R 8281,8322	RAB4CQ470J		△ C 8511,8512	CCSRCH221J50
	R 8301,8302,8335,8336	RS1/16S182J	Unit Name: FHD SP LR2 ASSY		
	R 8333	RS1/16S472J	MISCELLANEOUS		
	R 8349-8355	RS1/16S0R0J	△ L 8502	ATF1206	
	R 8356	RS1/16S470J		CN8501 3P TOP POST	B3B-EH
	Other Resistors	RS1/16SS###J		CN8502 SPEAKER TERMINAL 2-P	AKE1041
E	CAPACITORS	CKSRYB105K10	RESISTORS	R 8504,8508	RD1/2MMF100J
	C 8201-8212,8221-8224	CKSSYF104Z16		Other Resistors	RS1/16S###J
	C 8219,8234,8250,8253	DCH1165	CAPACITORS	C 8503,8504	CCSRCH101J50
	C 8220,8277,8278,8307	CKSRYB105K10		C 8505	CKSRYB332K50
	C 8235,8239,8285,8286	CEHAT101M10		C 8506,8509,8510	CCSRCH221J50
	C 8237,8287			C 8507	CKSRYF473Z50
	C 8238,8272,8296,8298	ACG7046		△ C 8511,8512	CCSRCH221J50
F	C 8254,8261,8263,8264	CKSSYF104Z16	Unit Name: FHD LED ASSY		
	C 8255-8258	CEHAT100M50	SEMICONDUCTORS	D 8601	TLRV1022
	C 8262	CEHAT220M50		D 8602	SML512BC4T
	C 8265-8268	CKSRYB102K50	MISCELLANEOUS	CN8601 L-PLUG(3P)	KM200NA3L
	C 8269,8271,8283,8284	CKSSYF104Z16			
	C 8270,8316	CEHAT101M16	RESISTORS	All Resistors	RS1/16S###J
	C 8274	ACG1122			
G	C 8279,8280	CCSRCH681J50	Unit Name: FHD FAN CONNECT ASSY		
	C 8281,8282	CCSRCH181J50	SEMICONDUCTORS	Q 8651,8652	DTC124EUA
	C 8289-8292,8317,8318	CKSRYB105K10		D 8651,8652	DAN202U
	C 8293,8294	CKSSYB681K50	MISCELLANEOUS		
	C 8295,8297,8299-8301	CKSSYF104Z16			
	C 8302,8304,8305	ACG7046	RESISTORS	All Resistors	RS1/16SS###J
	C 8303	CKSSYF104Z16			
H	△ C 8306	CCSSCH221J50			
	C 8308	DCH1165			
	C 8309,8310	CKSSYB152K50			
	C 8311,8312	CCSRCH331J50			
	C 8313-8315	CKSSYB104K10			

Mark No. **Description**
Unit Name: FHD IR ASSY

Part No.

SEMICONDUCTORS

Q 8701
D 8701

2SA1586
DA204U

MISCELLANEOUS

CN8701 CONNECTOR
U 8701 REMOTE RECEIVER UNIT

AKM1290
RPM7240-H5

RESISTORS

All Resistors

RS1/16SS###J

CAPACITORS

C 8701
C 8702
C 8703
C 8704

CEVV470M6R3
CKSRYB103K50
CKSSYB102K50
CKSSYF104Z16

Mark No. **Description**

Q 8853,8854,8856
D 8851-8854

MISCELLANEOUS

JA8852 MINI JACK(4P)
JA8853 JACK
CN8852 PLUG(6P)
CN8853 9P D-SUB SOCKET

RESISTORS

R 8881-8889
Other Resistors

CAPACITORS

C 8851-8855,8857,8858
C 8856,8859
C 8860
C 8861

DTC124EUA
1SS355

AKN1073
RKN1004
KM200NA6
AKP1213

RS1/16S0R0J
RS1/16SS###J

CKSSYF104Z16
CEHVWK100M16
CKSSYF104Z16
CKSRYB103K50

Unit Name: FHD KEY ASSY

MISCELLANEOUS

S 8751-8755,8757-8761
CN8751 8P CONNECTER

VSG1024
AKM1207

Unit Name: FHD KEY CONTROL ASSY

SEMICONDUCTORS

IC 8801
Q 8801
D 8801-8803,8805-8808
D 8804

PD5719A
2SC4116
1SS302
1SS355

MISCELLANEOUS

△ F 8801-8808
X 8801 CERALOCK
CN8802 8P CONNECTER

CTF1410
ASS1162
AKM1207

RESISTORS

R 8808
Other Resistors

RAB4C182J
RS1/16S###J

CAPACITORS

C 8801,8802
△ C 8803
C 8804
C 8805
△ C 8806-8808

CKSRYB472K50
CKSRYB472K50
CKSSYF104Z16
CEVV470M6R3
CCSRCH101J50

Unit Name: FHD DIGITAL ASSY

MISCELLANEOUS

• **Block Name: LVDS RX BLOCK**

SEMICONDUCTORS

IC 3001,3002
IC 3003
Q 3001
D 3001

THC63LVD104S
MM1562FF
DTC143EUA
1SS355

MISCELLANEOUS

L 3001-3004
F 3003-3014
CN3001,3002 31P CONNECTER

QTL1013
ATF1209
AKM1239

RESISTORS

R 3001-3018
R 3019-3021,3023-3025
R 3027-3029,3031-3033
R 3048,3050
Other Resistors

RAB4C220J
RS1/16SS1000F
RS1/16SS1000F
RS1/16S0R0J
RS1/16SS###J

CAPACITORS

C 3001-3006,3009-3011
C 3007,3008,3012,3013
C 3014-3016
C 3017

CKSSYB104K10
CKSRYB105K6R3
CKSSYB104K10
CCSRCH471J50

• **Block Name: ASIC VICTRIA BLOCK**

SEMICONDUCTORS

IC 3101

PE004A

MISCELLANEOUS

L 3101-3105
F 3101

QTL1013
CCG1162

RESISTORS

R 3113,3116,3118
R 3129-3148
Other Resistors

RAB4C103J
RAB4C220J
RS1/16SS###J

CAPACITORS

C 3101-3116,3127-3142
C 3143-3146
C 3147-3150

CKSSYB104K10
CKSSYB102K50
CKSSYB104K10

Unit Name: FHD RS232C+SR ASSY

MISCELLANEOUS

8851 SCREW TERMINAL

VNE1949

SEMICONDUCTORS

IC 8851
IC 8852
IC 8853
IC 8854
Q 8851,8852

TC74VHC00FTS1
MM1522XU
MAX3232CPW
TC74VHC125FTS1
2SA1586

Mark No. **Description**

Q 8853,8854,8856
D 8851-8854

JA8852 MINI JACK(4P)
JA8853 JACK
CN8852 PLUG(6P)
CN8853 9P D-SUB SOCKET

DTC124EUA
1SS355

AKN1073
RKN1004
KM200NA6
AKP1213

RS1/16S0R0J
RS1/16SS###J

	1	2	3	4		
	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
		• Block Name: SQ ASIC-L BLOCK			CAPACITORS	
A		SEMICONDUCTORS		C 3401-3403,3426 C 3405,3429-3431 C 3406,3407 C 3408-3410,3413-3425 C 3428		CKSRYB472K50 CCSRCH471J50 CKSSYB102K50 CKSSYB104K10 ACH1357
		MISCELLANEOUS			• Block Name: CN BLOCK	
	L 3201-3203 F 3201,3202		QTL1013 CCG1162		SEMICONDUCTORS	
B		RESISTORS	RAB4C101J RS1/16S5601F RS1/16SS###J	Q 3601,3602 D 3601-3604 D 3605-3608	DTC143EUA DAN202U 1SS355	
	R 3208,3212 R 3214 Other Resistors				MISCELLANEOUS	
		CAPACITORS	CKSSYB104K10 ACH1396 CKSRYB105K6R3	F 3601-3660 CN3601-3614 40P CONNECTER	ATF1209 AKM1348	
	C 3201-3227 C 3228-3231 C 3232-3247				RESISTORS	
		• Block Name: SQ ASIC-R BLOCK		R 3601,3604,3606,3609 R 3602,3605,3607 R 3603,3608 R 3610-3612 Other Resistors	RAB4C222J RAB4C101J RAB4C472J RAB4C101J RS1/16SS###J	
		SEMICONDUCTORS			CAPACITORS	
	IC 3301		PEG122C	C 3601-3620	CKSSYB102K50	
		MISCELLANEOUS			• Block Name: MODULE UCOM BLOCK	
C		L 3301-3303 F 3301,3302	QTL1013 CCG1162		SEMICONDUCTORS	
					IC 3701 IC 3702 IC 3703 IC 3704 IC 3705	BR24L04FJ-W TC7W126FU AGC1015 SN74AHC08PW TC74VCX08FT
		RESISTORS	RAB4C220J RAB4C101J RS1/16S5601F RS1/16SS###J			
	R 3301-3306,3309-3311 R 3308,3312 R 3314 Other Resistors				IC 3706 IC 3707,3708 IC 3709,3710 Q 3701 Q 3702	M62334FP TC74VHC123AFTS1 SN74AHC541PW RN2901 2SJ461A
		CAPACITORS	CKSRYB105K6R3 ACH1396 CKSSYB104K10			
	C 3301-3316 C 3317-3320 C 3321-3347					
D		• Block Name: ASIC FLASH BLOCK		D 3702-3706,3713,3716 D 3707,3708 D 3709-3712 D 3714 D 3715	DAN202U SML-310MT 1SS355 SML-311UT SML512BC4T	
		SEMICONDUCTORS	CY25561SXC PST3628UR PST3610UR SN74AHC08PW TC7W126FU			
	IC 3401 IC 3402,3404 IC 3403,3415 IC 3405 IC 3407,3408					
			AGC1014 SN74AHC541PW TC74VCX541FT HN1C01FU RN1901		MISCELLANEOUS	
E	IC 3409,3410 IC 3411,3412 IC 3413,3414 Q 3404,3405 Q 3406,3407			X 3701 CN3701 PLUG 8-P CN3702 CONNECTOR CN3703 CONNECTOR	CSS1616 AKM1225 AKM1276 AKM1278	
	Q 3408		DTC143EUA		RESISTORS	
				R 3701,3703 R 3702 Other Resistors	RAB4C101J RAB4C103J RS1/16SS###J	
		MISCELLANEOUS	QTL1013 ASS1188 AKM1232		CAPACITORS	
	L 3401 X 3401 CRYSTAL OSCILLATOR CN3401 PLUG 15-P			C 3701-3703,3726,3727 C 3707 C 3709-3711,3713-3723 C 3712 C 3725	CKSRYB105K6R3 ACH1357 CKSSYB104K10 CCSSCH101J50 CKSSYB104K10	
F		RESISTORS	RAB4C472J RAB4C101J RS1/16SS###J			
	R 3401,3461,3462 R 3402,3403 Other Resistors					

Mark No. **Description** **Part No.**

- Block Name: DIGITAL DD CON BLOCK

MISCELLANEOUS

U 3801	AXY1138
--------	---------

A

RESISTORS

R 3801	RAB4C101J
R 3837,3838	RS1/16S0R0J
Other Resistors	RS1/16SS###J

CAPACITORS

C 3804	CKSSYB102K50
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Unit Name: PANEL SENSOR ASSY

B

SEMICONDUCTORS

IC 3901	MM1522XU
IC 3902	BR24L02FJ-W
Q 3901	HN1B04FU

MISCELLANEOUS

CN3901 CONNECTOR	AKM1276
All Resistors	RS1/16SS###J

C

CAPACITORS

C 3901,3902	CKSSYB104K10
C 3903,3904	CKSSYB103K16
C 3906,3907	CKSRYB105K6R3

D

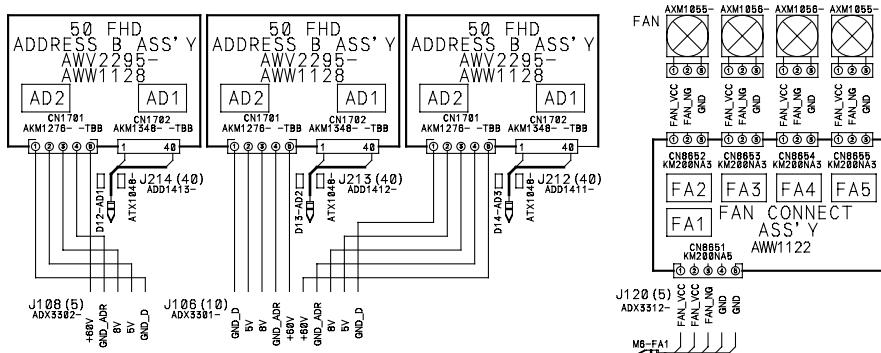
E

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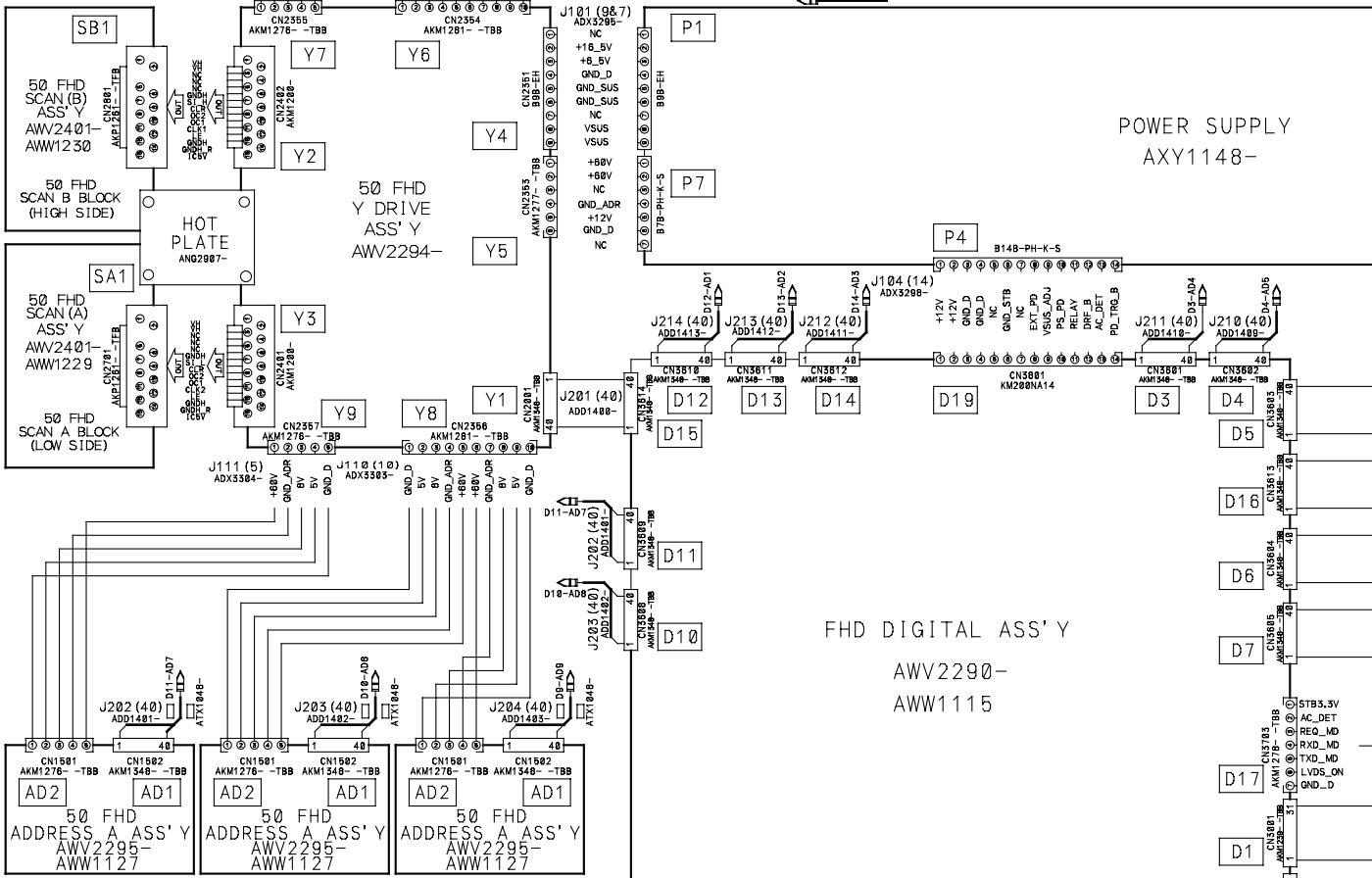
4. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

4.1 OVERALL WIRING DIAGRAM

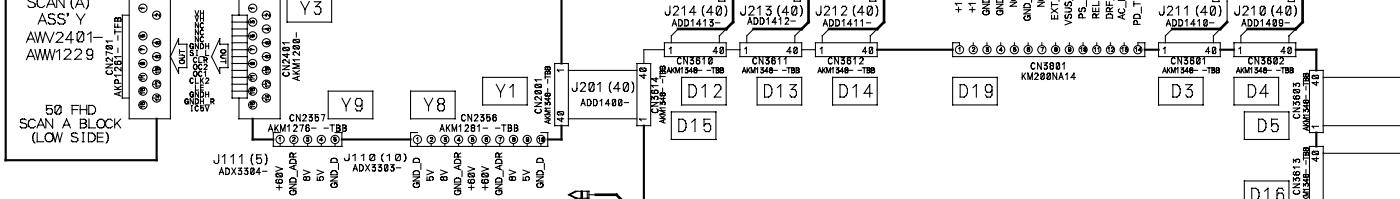
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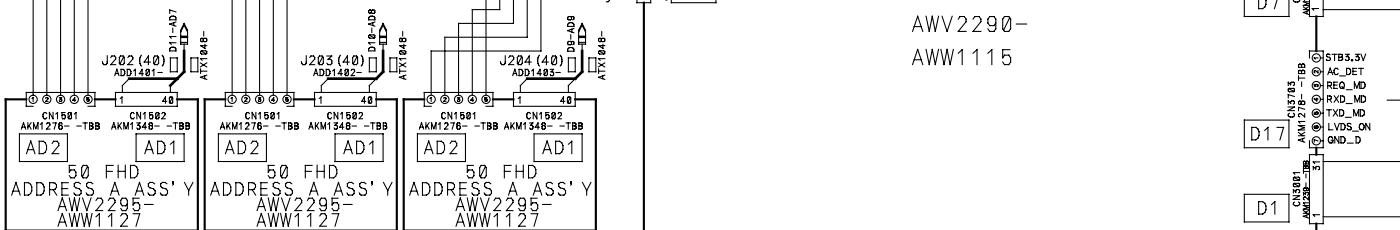
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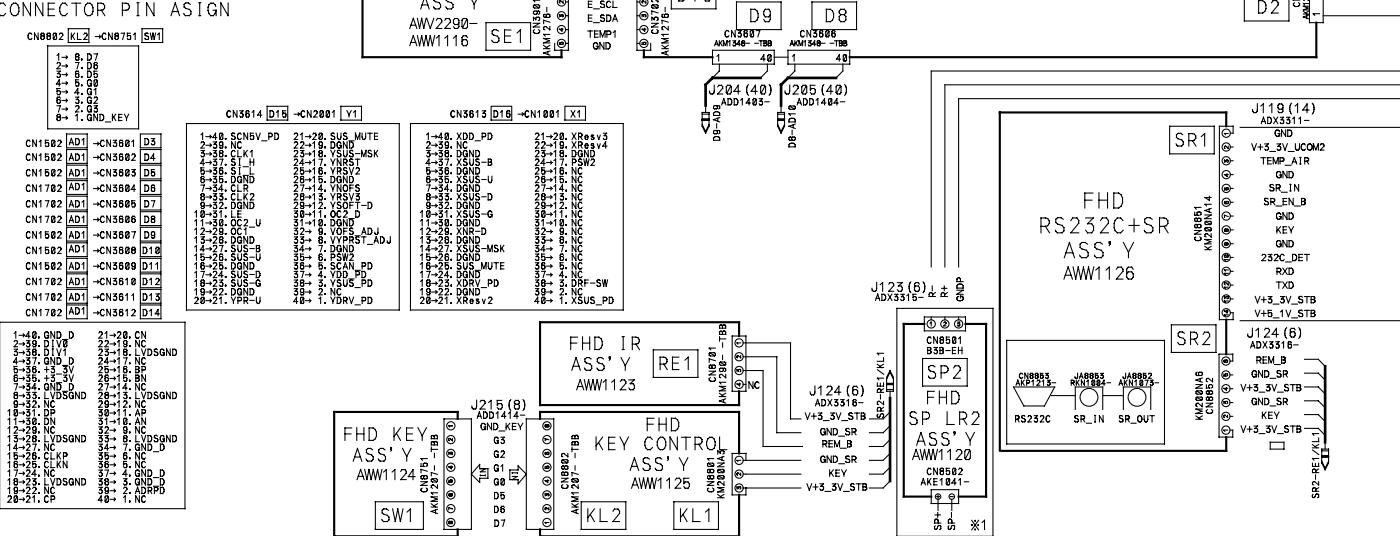
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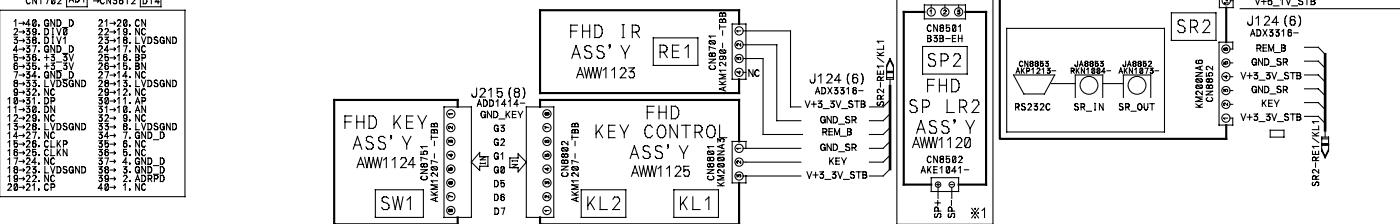
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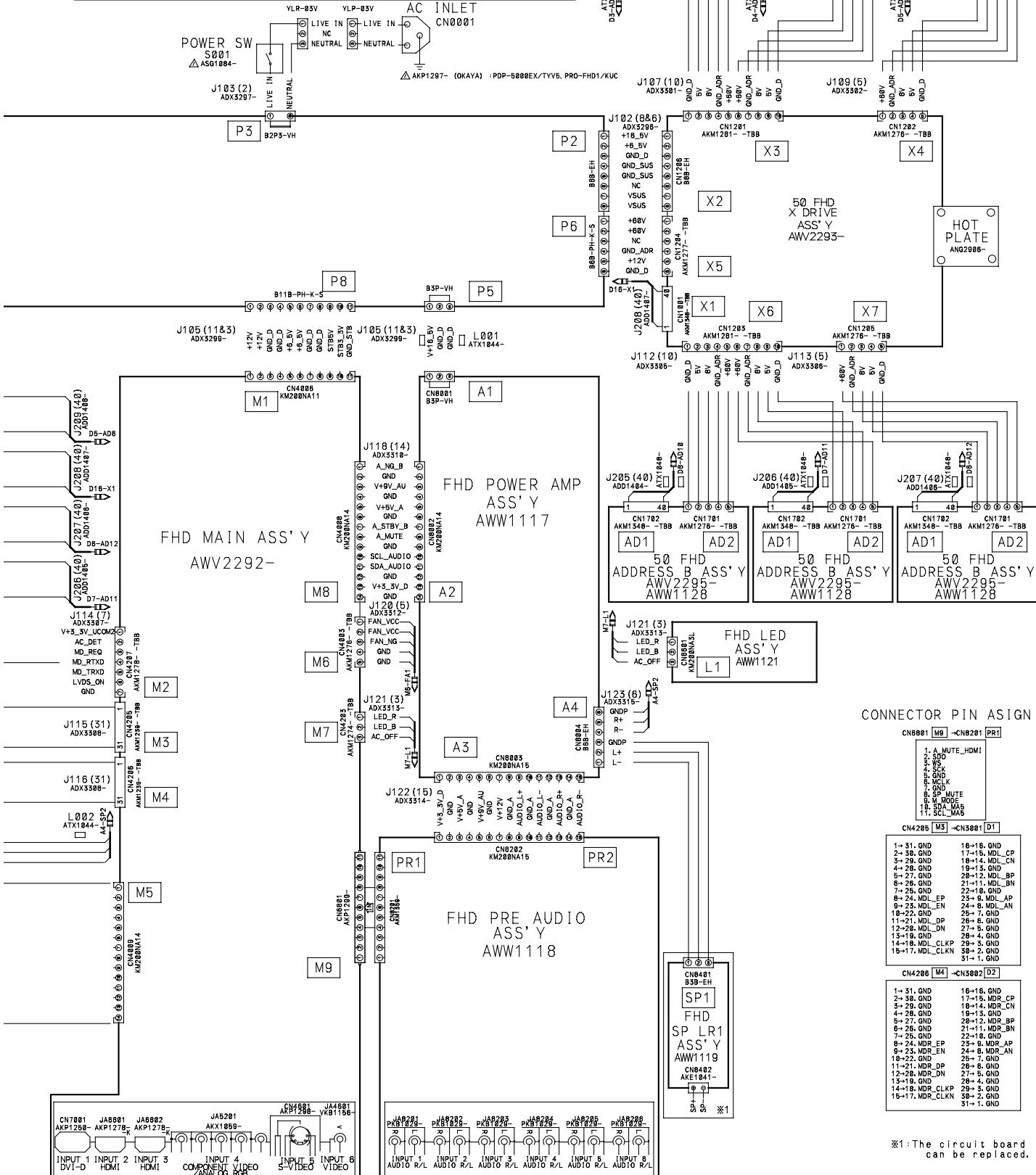
E



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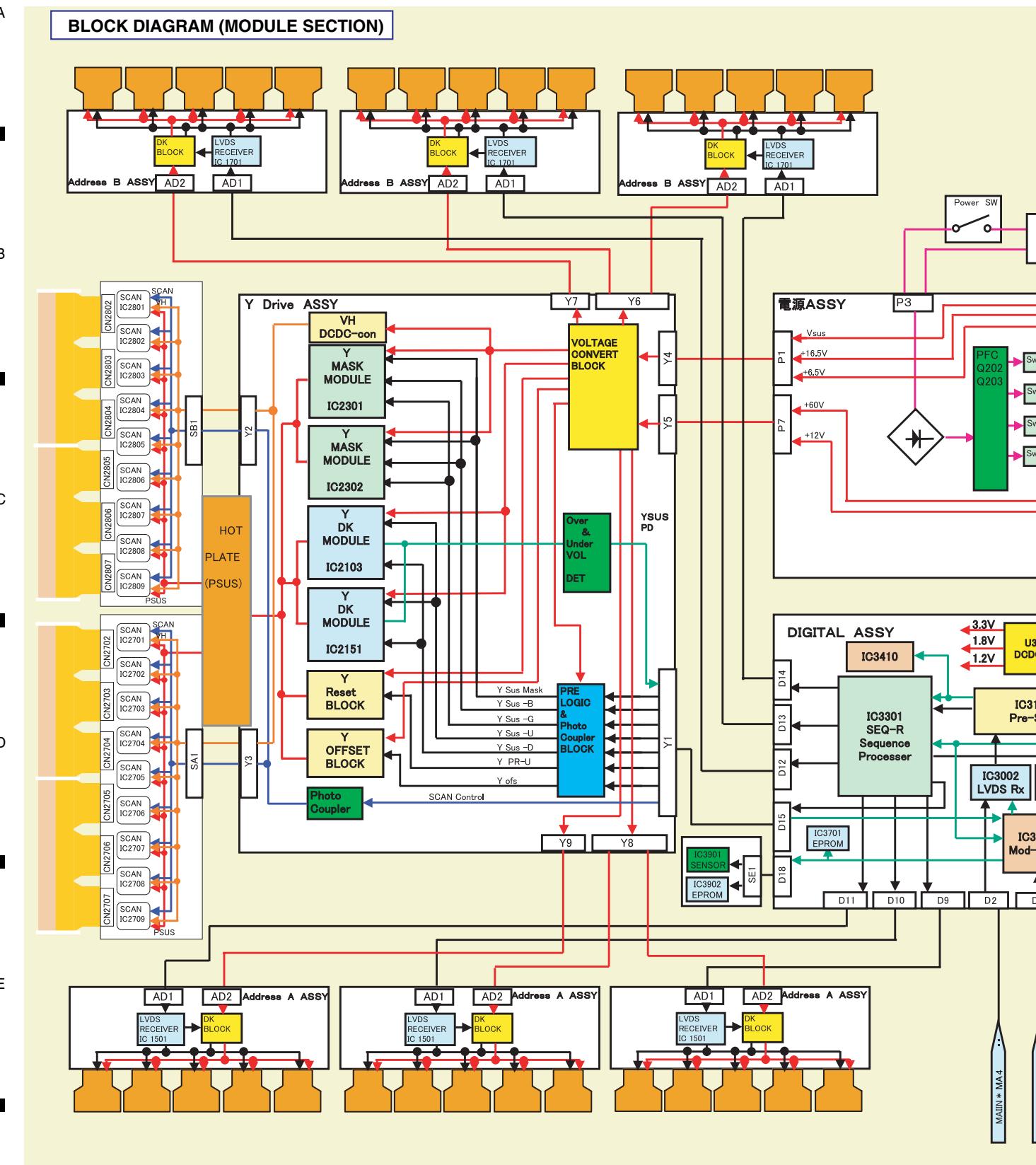


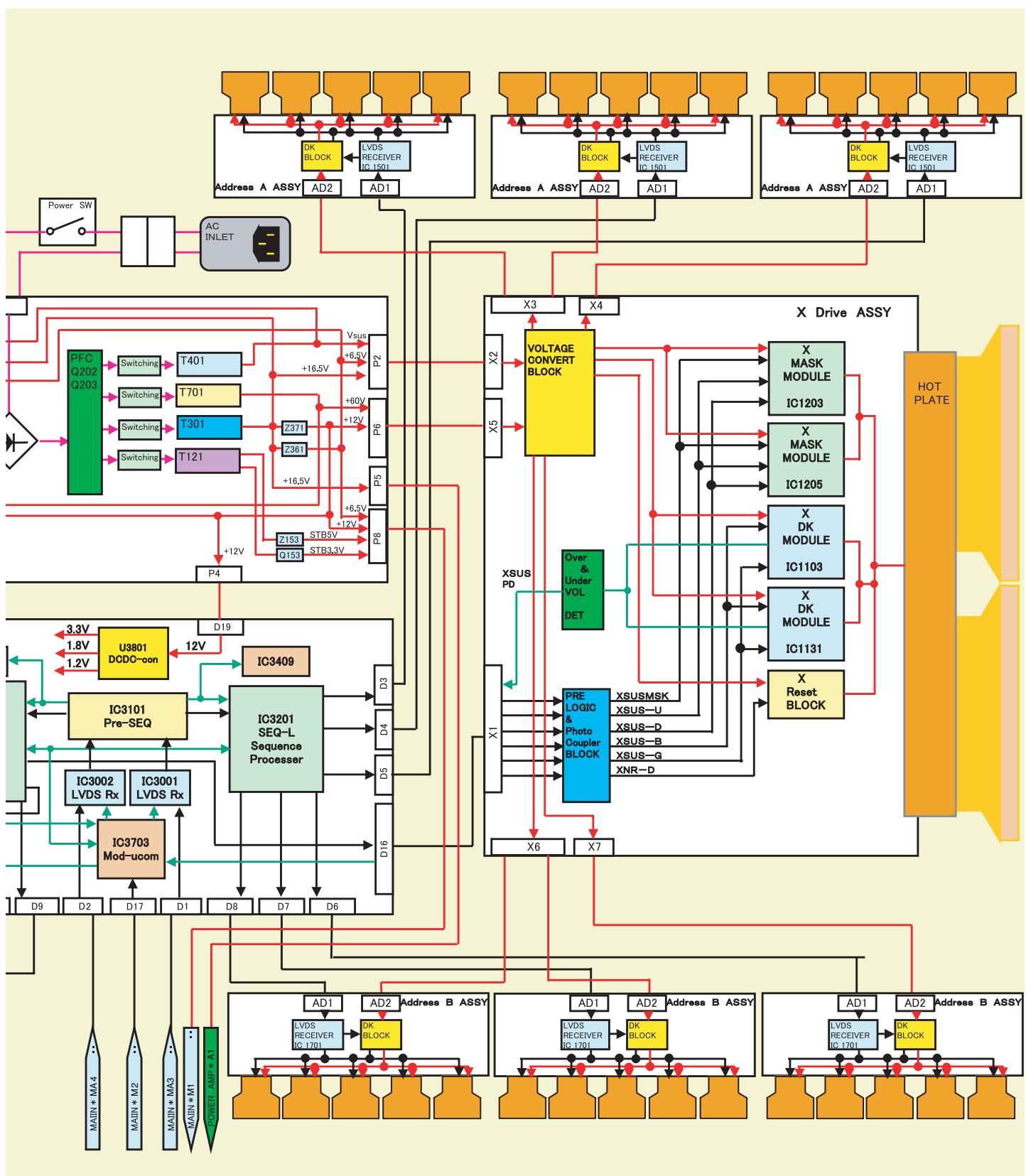
- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
 - The  mark found on some component parts indicates the importance of the safety factor of the part.
- Therefore, when replacing, be sure to use parts of identical designation.



4.2 OVERALL BLOCK DIAGRAM

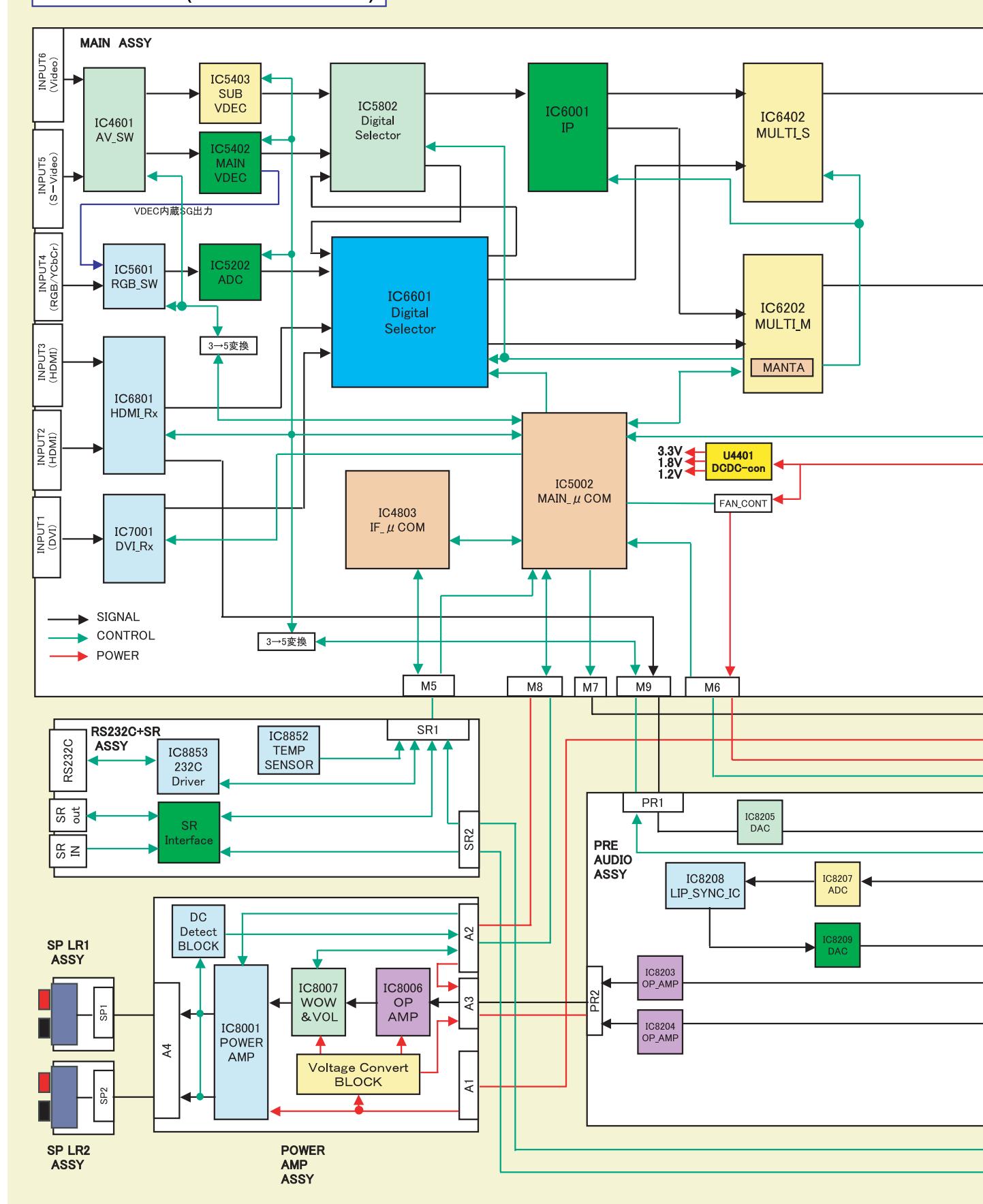
4.2.1 MODULE SECTION

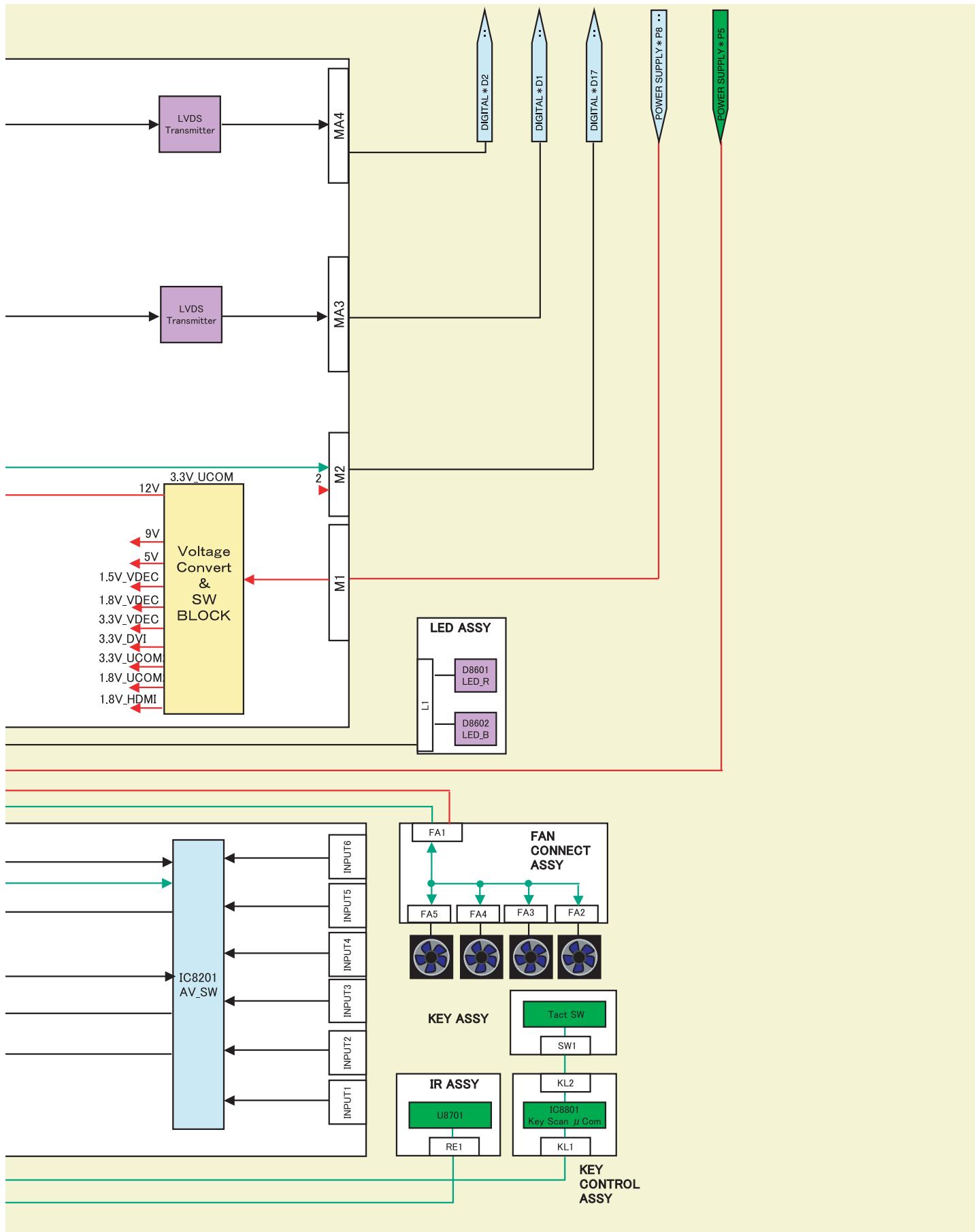




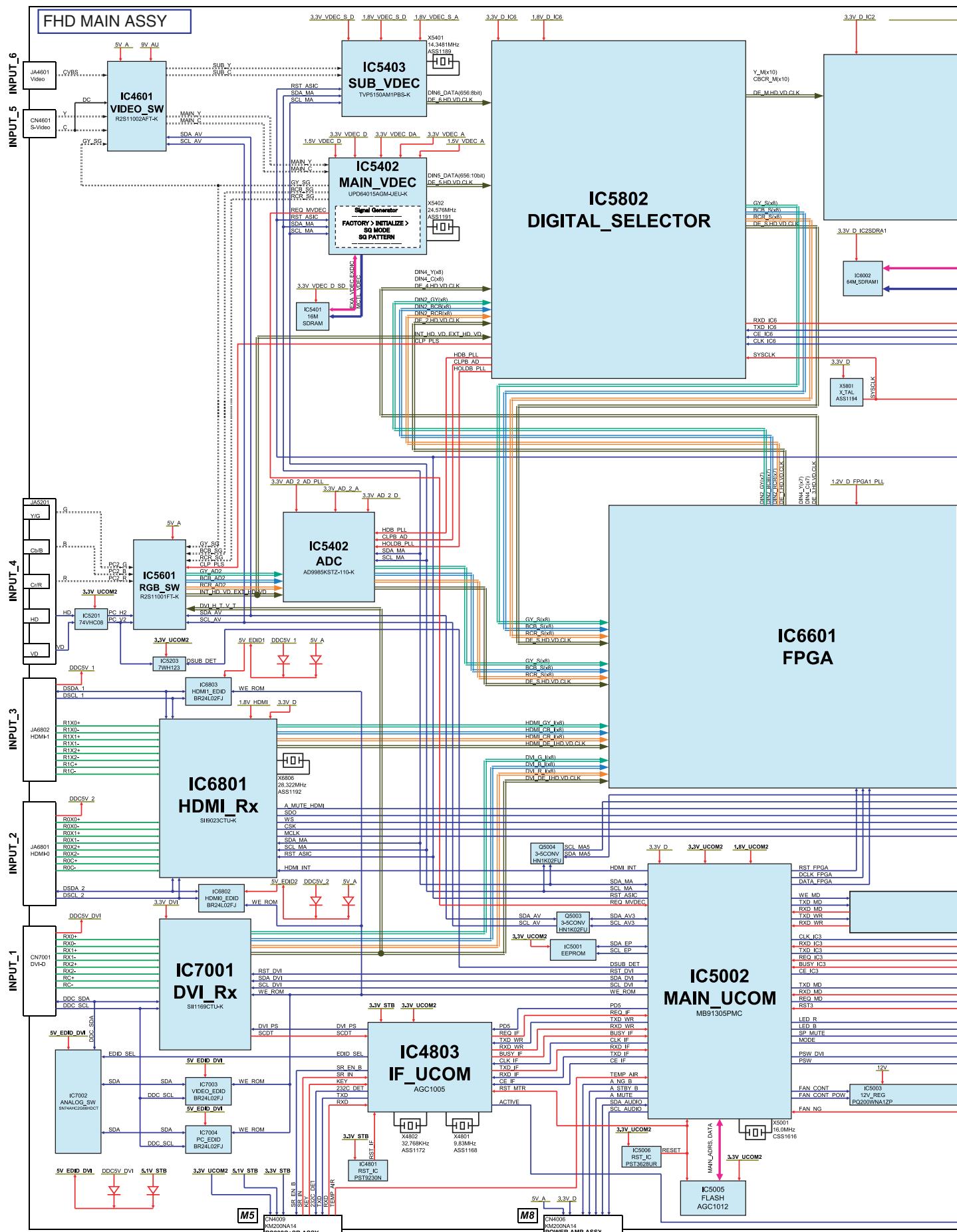
4.2.2 MULTI BASE SECTION

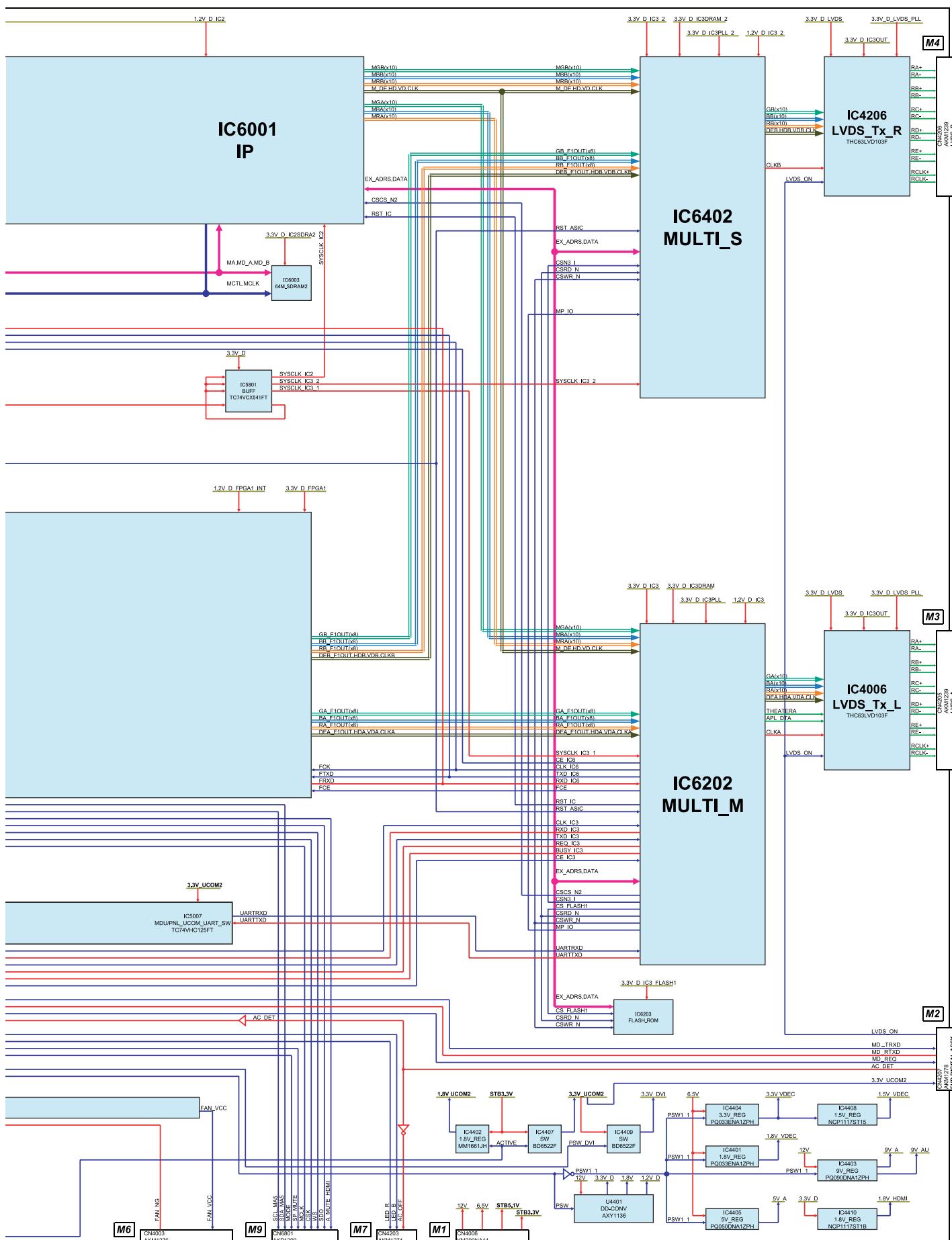
BLOCK DIAGRAM (MULTI BASE SECTION)





4.3 FHD MAIN ASSY

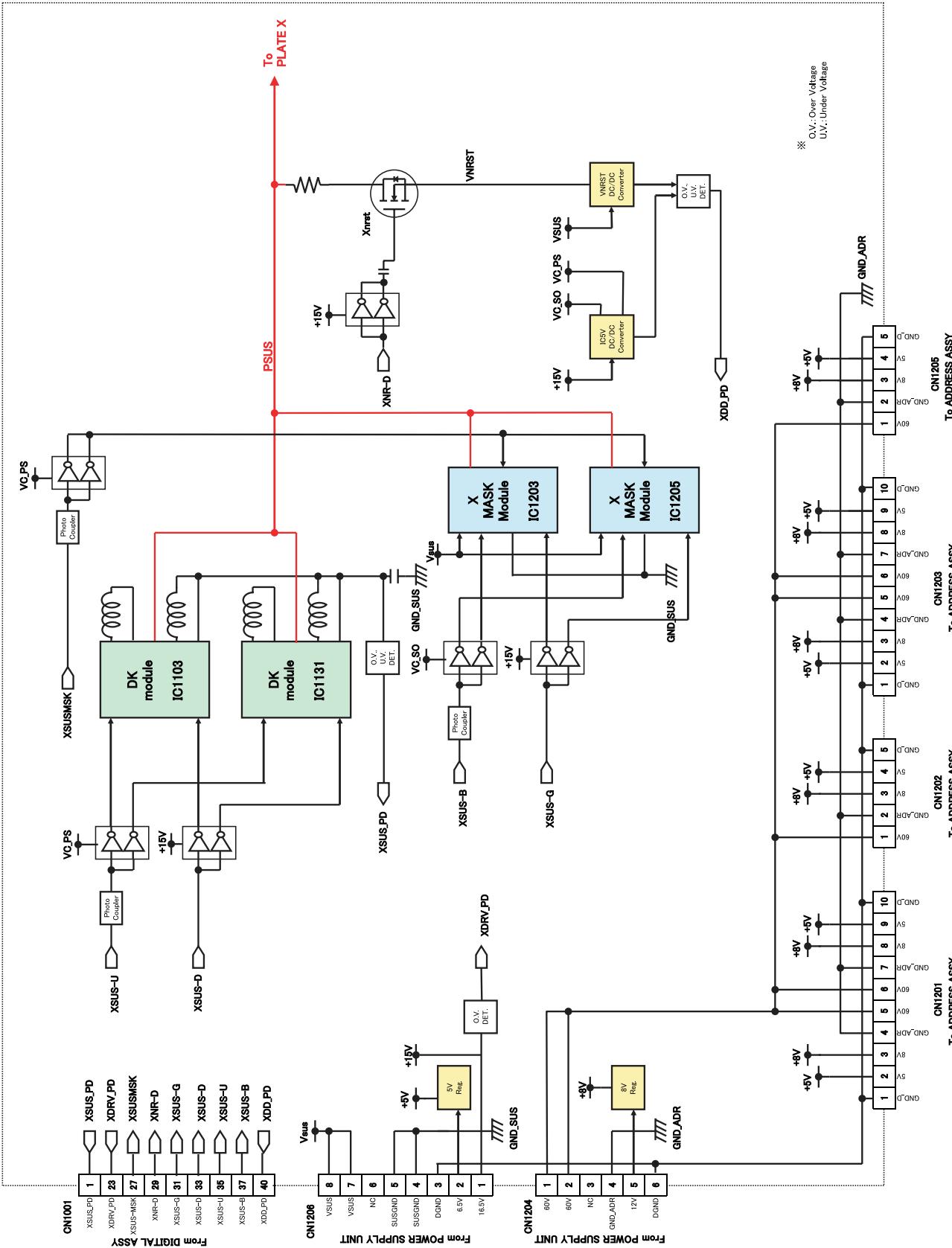




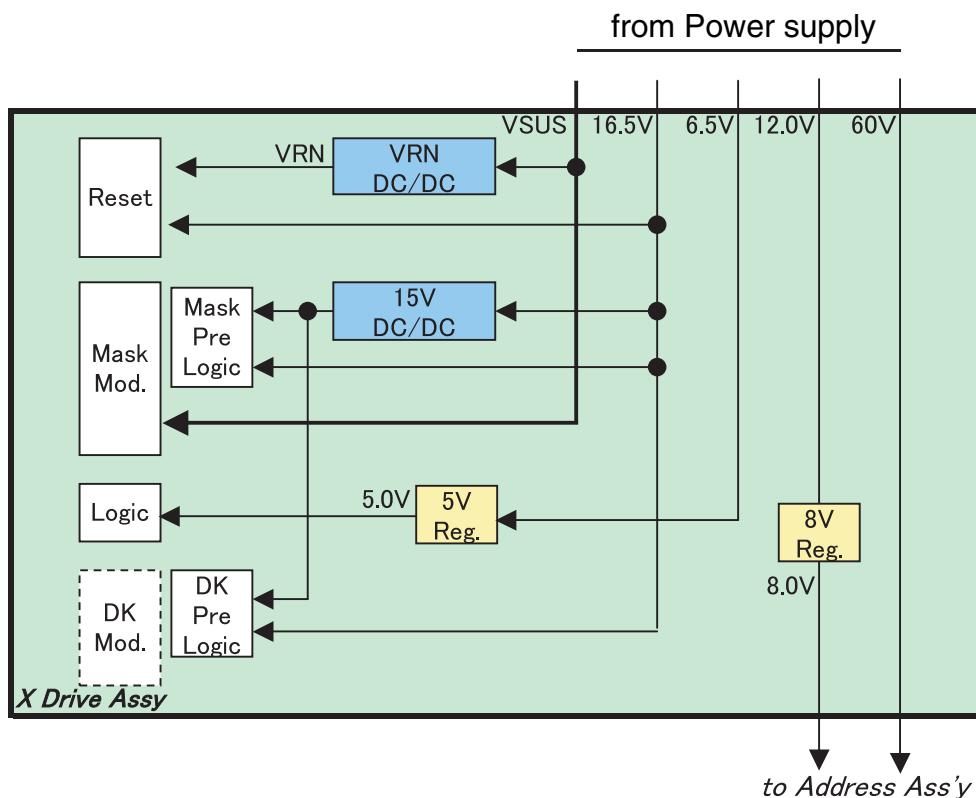
4.4 50FHD X DRIVE ASSY

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50FHD X DRIVE ASSY



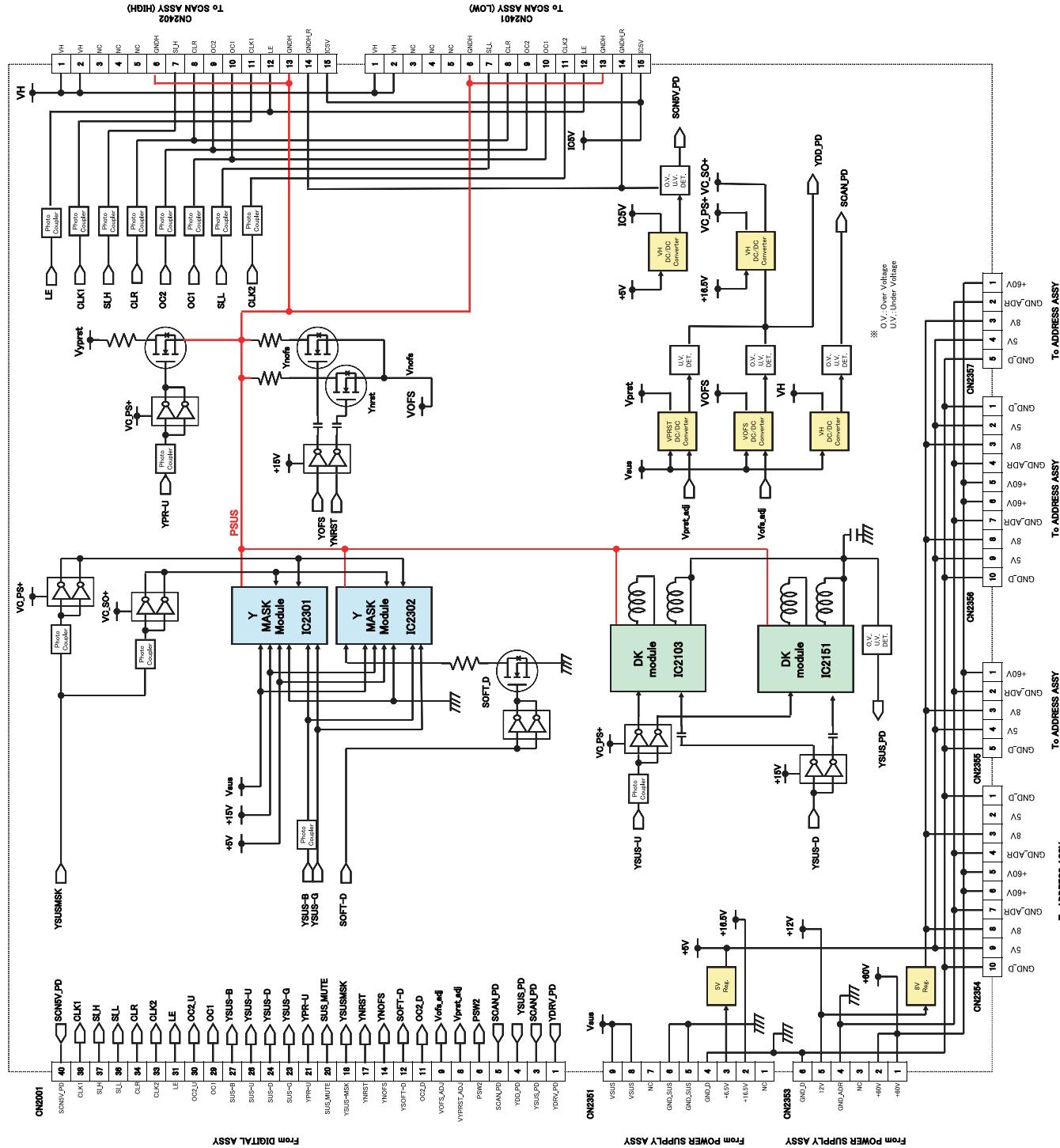
■ X Drive power supply map



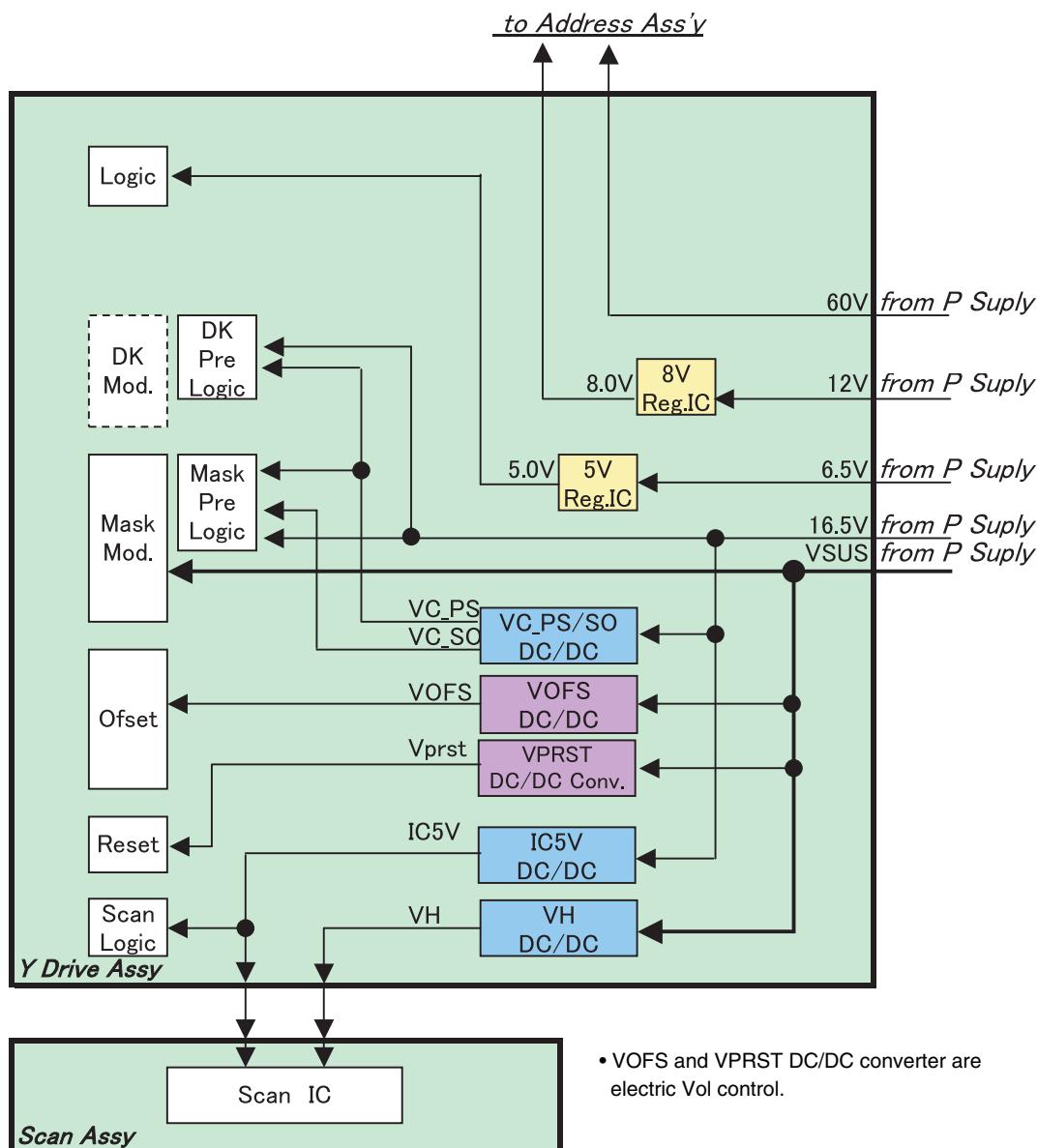
4.5 50FHD Y DRIVE ASSY

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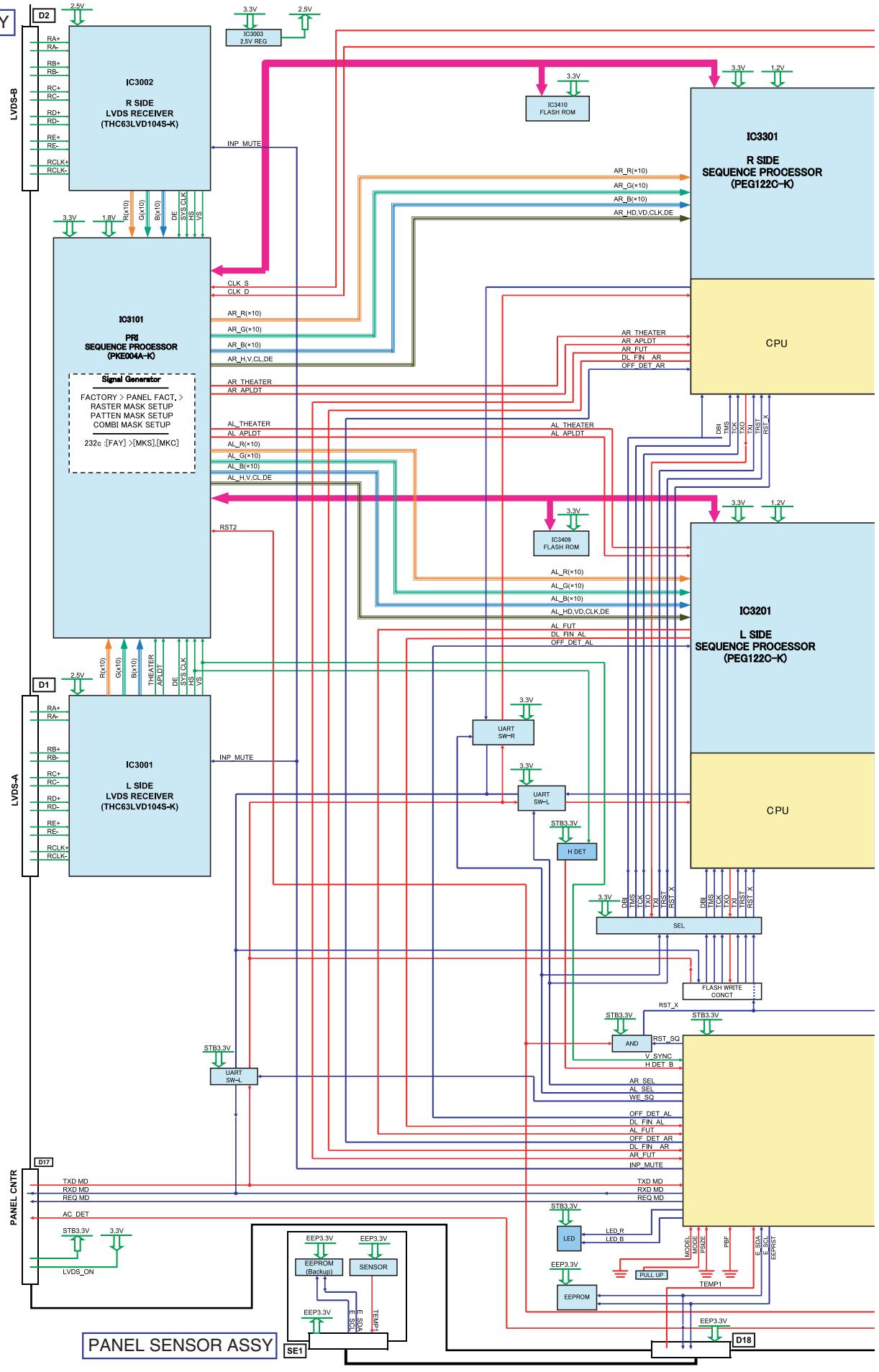
50FHD Y DRIVE ASSY

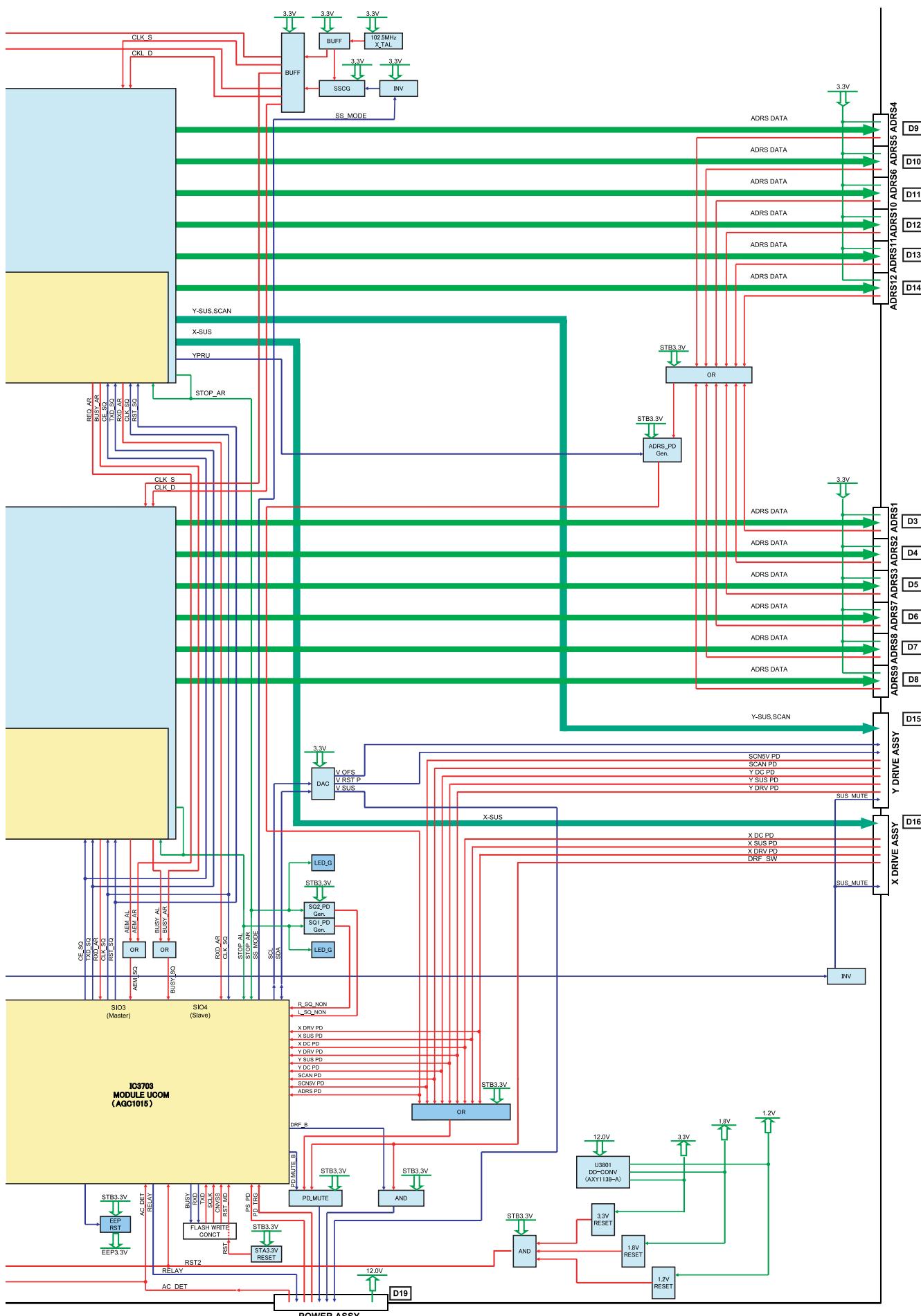


■ Y Drive power supply map



4.6 FHD DIGITAL AND PANEL SENSOR ASSYS





4.7 FHD FUKUGO ASSY (1/2)

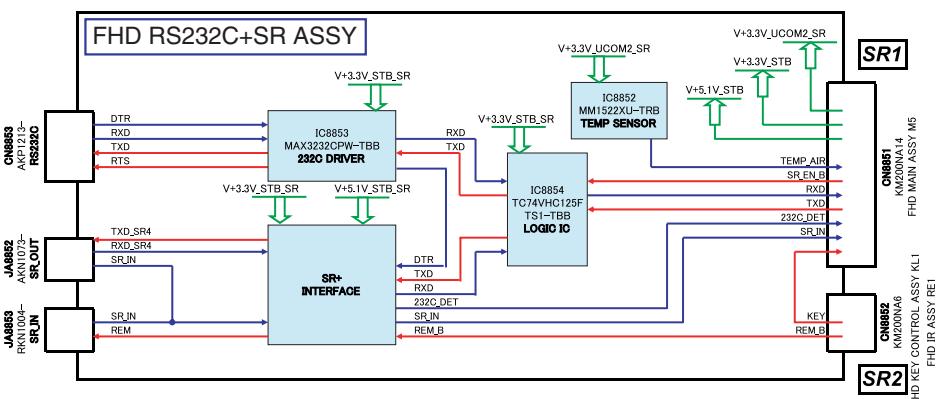
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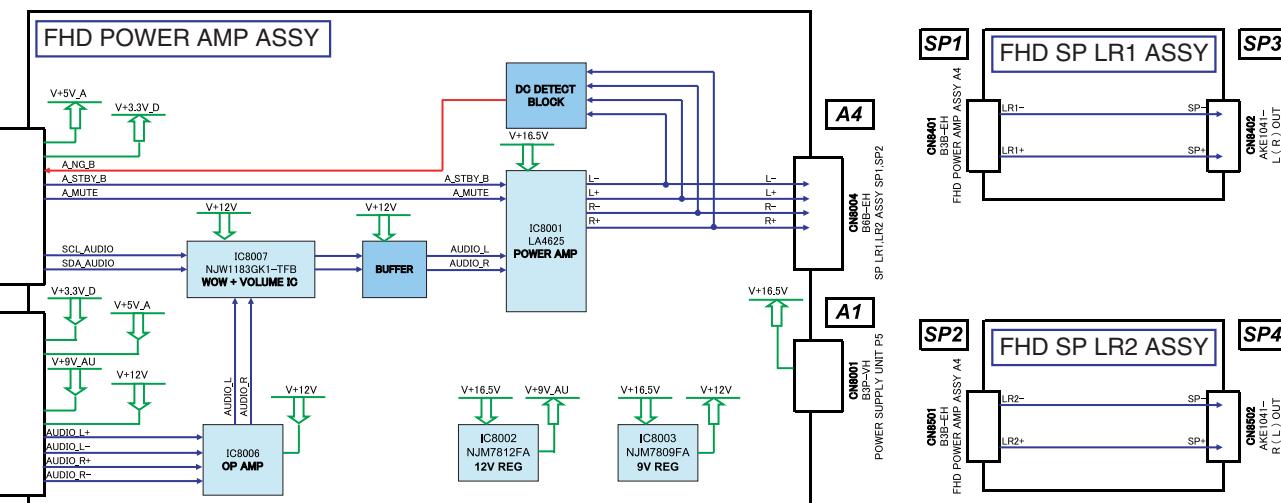
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4

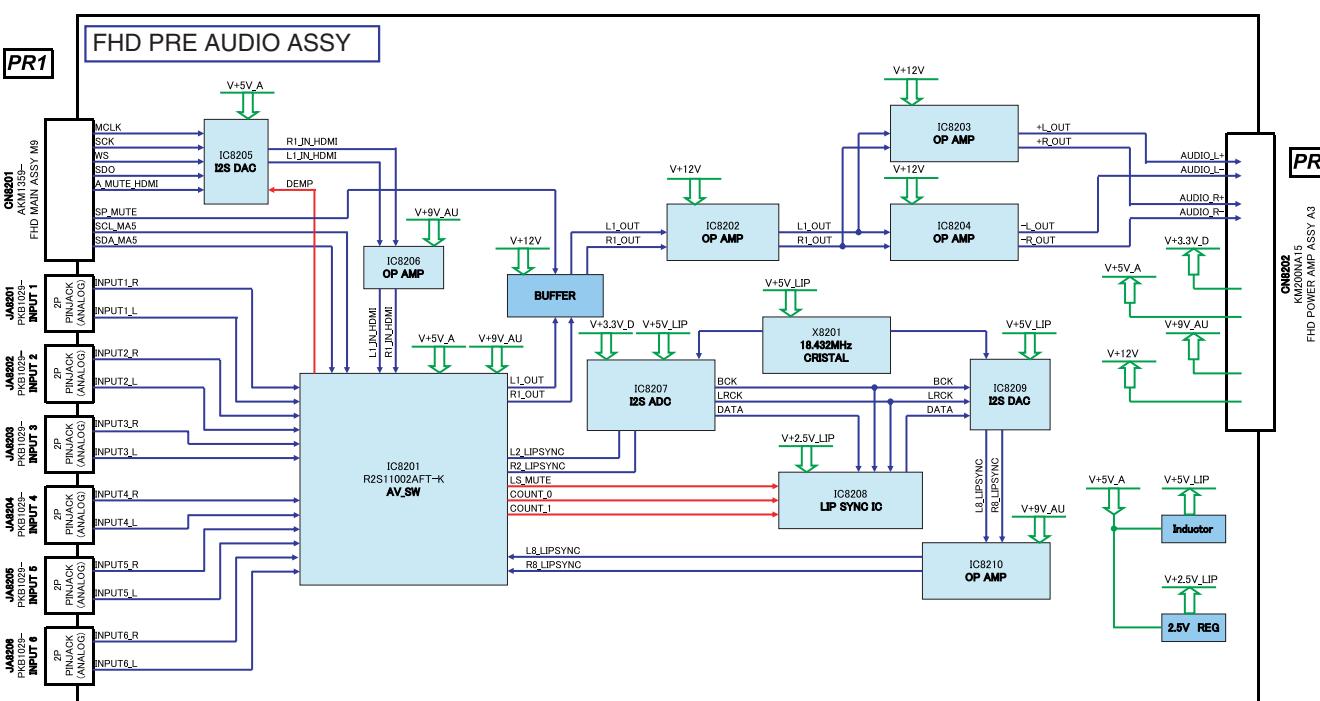
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PDP-5000EX

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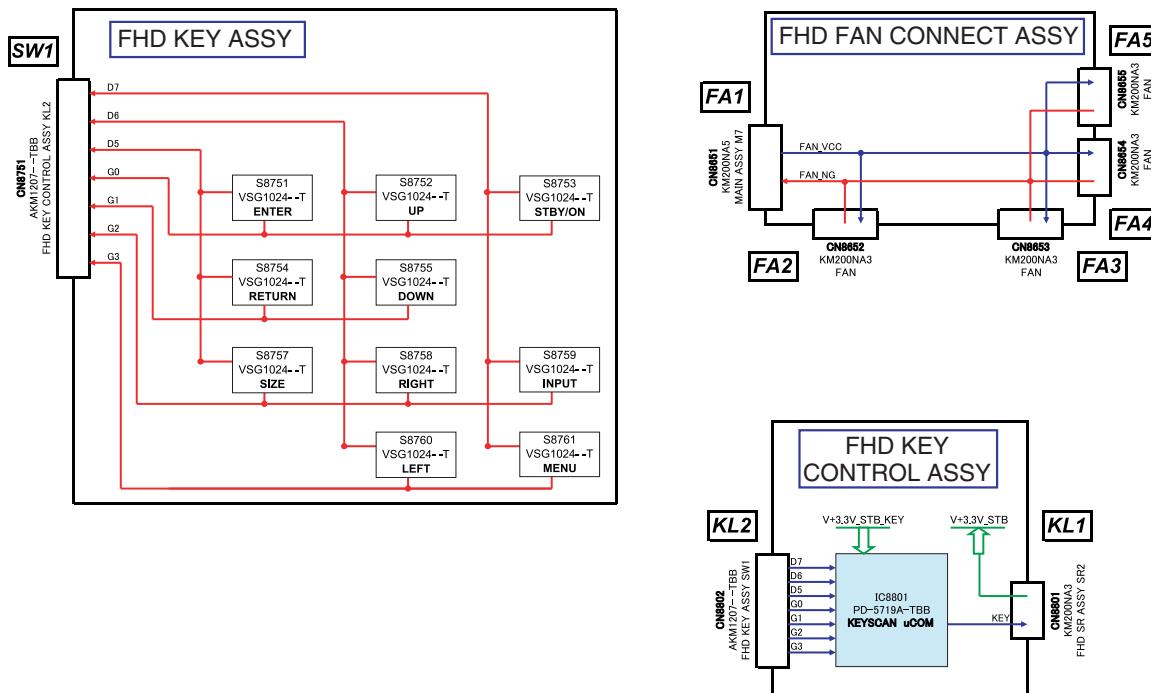
4

4.8 FHD FUKUGO ASSY (2/2)

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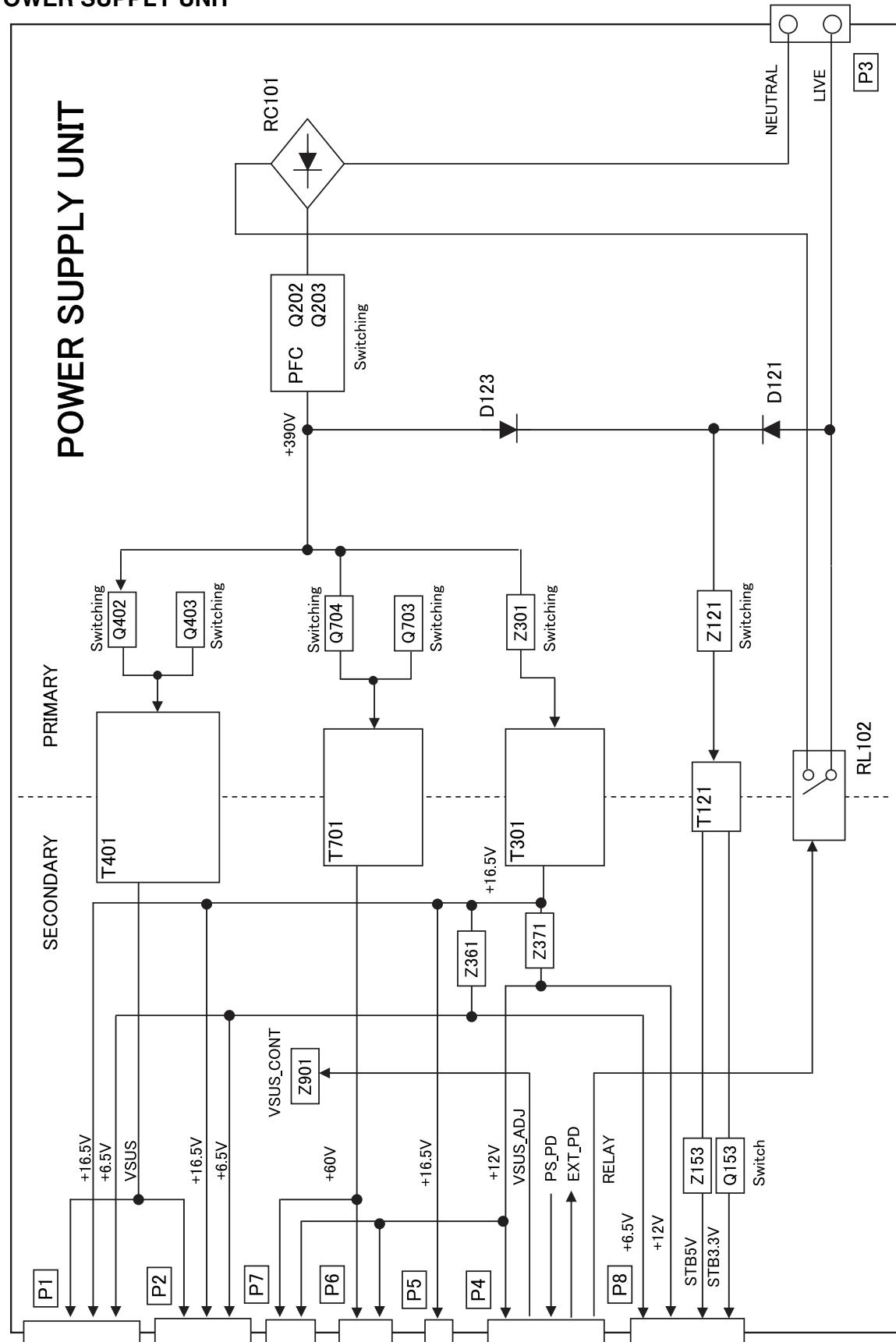
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4.9 POWER SUPPLY UNIT

■ POWER SUPPLY UNIT



4.10 CONNECTOR PIN DESCRIPTION

FHD DIGITAL ASSY

D3 : CN3601 (AKM1348)
D4 : CN3602 (AKM1348)
D5 : CN3603 (AKM1348)
D9 : CN3607 (AKM1348)
D10 : CN3608 (AKM1348)
D11 : CN3609 (AKM1348)

50FHD ADDRESS A ASSY

AD1 : CN1502 (AKM1348)

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	GND_D	0	GND_D	40	GND
2	DIV0	0 or 3.3	DIV0	39	Output timing control signal output
3	DIV1	0 or 3.3	DIV1	38	Output timing control signal output
4	GND_D	0	GND_D	37	GND
5	+3_3V	3.3	+3_3V	36	+3.3V power supply
6	+3_3V	3.3	+3_3V	35	+3.3V power supply
7	GND_D	0	GND_D	34	GND
8	LVDSGND	0	LVDSGND	33	GND
9	NC	-	NC	32	Non-connection terminal
10	DP	1 ~ 1.4	DP	31	LVDS differential signal D+ output
11	DN	1 ~ 1.4	DN	30	LVDS differential signal D- output
12	NC	-	NC	29	Non-connection terminal
13	LVDSGND	0	LVDSGND	28	GND
14	NC	-	NC	27	Non-connection terminal
15	CLKP	1 ~ 1.4	CLKP	26	LVDS differential signal CLK+ output
16	CLKN	1 ~ 1.4	CLKN	25	LVDS differential signal CLK- output
17	NC	-	NC	24	Non-connection terminal
18	LVDSGND	0	LVDSGND	23	GND
19	NC	-	NC	22	Non-connection terminal
20	CP	1 ~ 1.4	CP	21	LVDS differential signal C+ output
21	CN	1 ~ 1.4	CN	20	LVDS differential signal C- output
22	NC	-	NC	19	Non-connection terminal
23	LVDSGND	0	LVDSGND	18	GND
24	NC	-	NC	17	Non-connection terminal
25	BP	1 ~ 1.4	BP	16	LVDS differential signal B+ output
26	BN	1 ~ 1.4	BN	15	LVDS differential signal B- output
27	NC	-	NC	14	Non-connection terminal
28	LVDSGND	0	LVDSGND	13	GND
29	NC	-	NC	12	Non-connection terminal
30	AP	1 ~ 1.4	AP	11	LVDS differential signal A+ output
31	AN	1 ~ 1.4	AN	10	LVDS differential signal A- output
32	NC	-	NC	9	Non-connection terminal
33	LVDSGND	0	LVDSGND	8	GND
34	GND_D	0	GND_D	7	GND
35	NC	-	NC	6	Non-connection terminal
36	NC	-	NC	5	Non-connection terminal
37	GND_D	0	GND_D	4	GND
38	GND_D	0	GND_D	3	GND
39	ADRPD	0	ADRPD	2	Address PD signal input
40	NC	-	NC	1	Non-connection terminal

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FHD DIGITAL ASSY

D6 : CN3604 (AKM1348)
 D7 : CN3605 (AKM1348)
 D8 : CN3606 (AKM1348)
 D12 : CN3610 (AKM1348)
 D13 : CN3611 (AKM1348)
 D14 : CN3612 (AKM1348)

50FHD ADDRESS B ASSY

AD1 : CN1702 (AKM1348)



Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	GND_D	0	GND_D	40	GND
2	DIV0	0 or 3.3	DIV0	39	Output timing control signal output
3	DIV1	0 or 3.3	DIV1	38	Output timing control signal output
GND_D	37	GND			
5	+3_3V	3.3	+3_3V	36	+3.3V power supply
6	+3_3V	3.3	+3_3V	35	+3.3V power supply
7	GND_D	0	GND_D	34	GND
8	LVDSGND	0	LVDSGND	33	GND
9	NC	-	NC	32	Non-connection terminal
10	DP	1 ~ 1.4	DP	31	LVDS differential signal D+ output
11	DN	1 ~ 1.4	DN 3	0	LVDS differential signal D- output
12	NC	-	NC	29	Non-connection terminal
13	LVDSGND	0	LVDSGND	28	GND
14	NC	-	NC	27	Non-connection terminal
15	CLKP	1 ~ 1.4	CLKP	26	LVDS differential signal CLK+ output
16	CLKN	1 ~ 1.4	CLKN	25	LVDS differential signal CLK- output
17	NC	-	NC	24	Non-connection terminal
18	LVDSGND	0	LVDSGND	23	GND
19	NC	-	NC	22	Non-connection terminal
20	CP	1 ~ 1.4	CP	21	LVDS differential signal C+ output
21	CN	1 ~ 1.4	CN	20	LVDS differential signal C- output
22	NC	-	NC	19	Non-connection terminal
23	LVDSGND	0	LVDSGND	18	GND
24	NC	-	NC	17	Non-connection terminal
25	BP	1 ~ 1.4	BP	16	LVDS differential signal B+ output
26	BN	1 ~ 1.4	BN	15	LVDS differential signal B- output
27	NC	-	NC	14	Non-connection terminal
28	LVDSGND	0	LVDSGND 1	3	GND
29	NC	-	NC	12	Non-connection terminal
30	AP	1 ~ 1.4	AP	11	LVDS differential signal A+ output
31	AN	1 ~ 1.4	AN	10	LVDS differential signal A- output
32	NC	-	NC	9	Non-connection terminal
33	LVDSGND	0	LVDSGND	8	GND
34	GND_D	0	GND_D	7	GND
35	NC	-	NC	6	Non-connection terminal
36	NC	-	NC	5	Non-connection terminal
37	GND_D	0	GND_D	4	GND
38	GND_D	0	GND_D	3	GND
39	ADRPD	0	ADRPD	2	Address PD signal input
40	NC	-	NC	1	Non-connection terminal

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FHD DIGITAL ASSY

D16 : CN3613 (AKM1348)

50FHD X DRIVE ASSY

X1: CN1001 (AKM1348)

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	XDD_PD	0	XDD_PD	40	X DRIVE PD signal input
2	NC	-	NC	39	Non-connection terminal
3	DGND	0	DGND	38	GND
4	XSUS-B	0~3.3	XSUS-B	37	X DRIVE control signal output
5	DGND	0	DGND	36	GND
6	XSUS-U	0~3.3	XSUS-U	35	X DRIVE control signal output
7	DGND	0	DGND	34	GND
8	XSUS-D	0~3.3	XSUS-D	33	X DRIVE control signal output
9	DGND	0	DGND	32	GND
10	XSUS-G	0~3.3	XSUS-G	31	X DRIVE control signal output
11	DGND	0	DGND	30	GND
12	XNR-D	0~3.3	XNR-D	29	X DRIVE control signal output
13	DGND	0	DGND	28	GND
14	XSUS-MSK	0~3.3	XSUS-MSK	27	X DRIVE control signal output
15	DGND	0	DGND	26	GND
16	SUS_MUTE	0~5.0	SUS_MUTE	25	X DRIVE mute signal input
17	DGND	0	DGND	24	GND
18	XDRV_PD	0	XDRV_PD	23	X DRIVE PD signal input
19	DGND	0	DGND	22	GND
20	XResv2	-	XResv2	21	X DRIVE control signal output (Reserve)
21	XResv3	-	XResv3	20	X DRIVE control signal output (Reserve)
22	XResv4	-	XResv4	19	X DRIVE control signal output (Reserve)
23	DGND	0	DGND	18	GND
24	NC	-	NC	17	Non-connection terminal
25	NC	-	NC	16	Non-connection terminal
26	NC	-	NC	15	Non-connection terminal
27	NC	-	NC	14	Non-connection terminal
28	NC	-	NC	13	Non-connection terminal
29	NC	-	NC	12	Non-connection terminal
30	NC	-	NC	11	Non-connection terminal
31	NC	-	NC	10	Non-connection terminal
32	NC	-	NC	9	Non-connection terminal
33	NC	-	NC	8	Non-connection terminal
34	NC	-	NC	7	Non-connection terminal
35	NC	-	NC	6	Non-connection terminal
36	NC	-	NC	5	Non-connection terminal
37	NC	-	NC	4	Non-connection terminal
38	DRF_SW	0~3.3	DRF_SW	3	DRIVE OFF signal input
39	NC	-	NC	2	Non-connection terminal
40	XSUS_PD	0	XSUS_PD	1	X DRIVE PD signal input

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FHD DIGITAL ASSY

D15 : CN3614 (AKM1348)

50FHD Y DRIVE ASSY

Y1: CN2001 (AKM1348)

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	SCN5V_PD	0	SCN5V_PD	40	Y DRIVE PD signal input
2	NC	-	NC	39	Non-connection terminal
3	CLK1	0~3.3	CLK1	38	SCAN control signal output
4	SI_H	0~3.3	SI_H	37	SCAN control signal output
5	SI_L	0~3.3	SI_L	36	SCAN control signal output
6	DGND	0	DGND	35	GND
7	CLR	0~3.3	CLR	34	SCAN control signal output
8	CLK2	0~3.3	CLK2	33	SCAN control signal output
9	DGND	0	DGND	32	GND
10	LE	0~3.3	LE	31	SCAN control signal output
11	OC2_U	0~3.3	OC2_U	30	SCAN control signal output
12	OC1	0~3.3	OC1	29	SCAN control signal output
13	DGND	0	DGND	28	GND
14	YSUS-B	0~3.3	YSUS-B	27	Y DRIVE control signal output
15	YSUS-U	0~3.3	YSUS-U	26	Y DRIVE control signal output
16	DGND	0	DGND	25	GND
17	YSUS-D	0~3.3	YSUS-D	24	Y DRIVE control signal output
18	YSUS-G	0~3.3	YSUS-G	23	Y DRIVE control signal output
19	DGND	0	DGND	22	GND
20	YPR-U	0~3.3	YPR-U	21	Y DRIVE control signal output
21	SUS_MUTE	0~5.0	SUS_MUTE	20	Y DRIVE mute signal output
22	DGND	0	DGND	19	GND
23	YSUS-MSK	0~3.3	YSUS-MSK	18	Y DRIVE control signal output
24	YNRST	0~3.3	YNRST	17	Y DRIVE control signal output
25	YRSV2	-	YRSV2	16	Y DRIVE control signal output (Reserve)
26	DGND	0	DGND	15	GND
27	YNOFS	0~3.3	YNOFS	14	Y DRIVE control signal output
28	YRSV3	-	YRSV3	13	Y DRIVE control signal output (Reserve)
29	YSOFT-D	0~3.3	YSOFT-D	12	Y DRIVE control signal output
30	OC2_D	0~3.3	OC2_D	11	SCAN control signal output
31	DGND	0	DGND	10	GND
32	VOFS_ADJ	0~3.3	VOFS_ADJ	9	Vofs offset adjustment signal output
33	VYPRST_ADJ	0~3.3	VYPRST_ADJ	8	Reset voltage adjustment signal output
34	DGND	0	DGND	7	GND
35	NC	-	NC	6	Non-connection terminal
36	SCAN_PD	0	SCAN_PD	5	Y DRIVE PD signal input
37	YDD_PD	0	YDD_PD	4	Y DRIVE PD signal input
38	YSUS_PD	0	YSUS_PD	3	Y DRIVE PD signal input
39	NC	-	NC	2	Non-connection terminal
40	YDRV_PD	0	YDRV_PD	1	Y DRIVE PD signal input

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FHD MAIN ASSY**POWER SUPPLY UNIT**

M1 : CN4006 (KM200NA11)

P8: - (B11-PH-S)

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	V+12V	12.1	+12V	1	12V power supply
2	V+12V	12.1	+12V	2	12V power supply
3	GND	0	GND_D	3	GND
4	GND	0	GND_D	4	GND
5	V+6_5V	6.6	+6_5V	5	6.5V power supply
6	V+6_5V	6.6	+6_5V	6	6.5V power supply
7	GND	0	GND_D	7	GND
8	GND	0	GND_D	8	GND
9	STB5V	5.0	STB5V	9	Standby 5.1V power supply
10	STB3_3V	3.3	STB3_3V	10	Standby 3.3V power supply
11	GND STB	0	GND STB	11	GND

FHD MAIN ASSY**FHD DIGITAL ASSY**

M2 : CN4207 (AKM1278)

D17: CN3703 (AKM1278)

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	V+3_3V_UCOM2	3.3	STB3.3V	1	3.3V power supply for main microcomputer/module microcomputer
2	AC_DET	3.2	AC_DET	2	AC detected signal input
3	MD_REQ	0	REQ_MD	3	Communication demand on a Module microcomputer
4	MD_RTXD	0-3.3	RXD_MD	4	UART Communication data input demand with a Module microcomputer
5	MD_TRXD	0-3.3	TXD_MD	5	UART Communication data output demand with a Module microcomputer
6	LVDS_ON	3.0	LVDS_ON	6	LVDS IC output control signal
7	GND	0	GND_D	7	GND

FHD MAIN ASSY**FHD DIGITAL ASSY**

M3 : CN4205 (AKM1239)

D1: CN3001 (AKM1239)

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	GND	0	GND	31	GND
2	GND	0	GND	30	GND
3	GND	0	GND	29	GND
4	GND	0	GND	28	GND
5	GND	0	GND	27	GND
6	GND	0	GND	26	GND
7	GND	0	GND	25	GND
8	MDL_EP	1.1 ~1.5	MDL_EP	24	L for LVDS differential signal TE + output
9	MDL_EN	1.1 ~1.5	MDL_EN	23	L for LVDS differential signal TE - output
10	GND	0	GND	22	GND
11	MDL_DP	1.1 ~1.5	MDL_DP	21	L for LVDS differential signal TD + output
12	MDL_DN	1.1 ~1.5	MDL_DN	20	L for LVDS differential signal TD - output
13	GND	0	GND	19	GND
14	MDL_CLKP	1.1 ~1.5	MDL_CLKP	18	L for LVDS differential signal TCLK + output
15	MDL_CLKN	1.1 ~1.5	MDL_CLKN	17	L for LVDS differential signal TCLK - output
16	GND	0	GND	16	GND
17	MDL_CP	1.1 ~1.5	MDL_CP	15	L for LVDS differential signal TC + output
18	MDL_CN	1.1 ~1.5	MDL_CN	14	L for LVDS differential signal TC - output
19	GND	0	GND	13	GND
20	MDL_BP	1.1 ~1.5	MDL_BP	12	L for LVDS differential signal TB + output
21	MDL_BN	1.1 ~1.5	MDL_BN	11	L for LVDS differential signal TB - output
22	GND	0	GND	10	GND
23	MDL_AP	1.1 ~1.5	MDL_AP	9	L for LVDS differential signal TA + output
24	MDL_AN	1.1 ~1.5	MDL_AN	8	L for LVDS differential signal TA - output
25	GND	0	GND	7	GND
26	GND	0	GND	6	GND
27	GND	0	GND	5	GND
28	GND	0	GND	4	GND
29	GND	0	GND	3	GND
30	GND	0	GND	2	GND
31	GND	0	GND	1	GND

A

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F

FHD MAIN ASSY			FHD DIGITAL ASSY		
M4 : CN4206 (AKM1239)			D2: CN3002 (AKM1239)		
1	GND	0	GND	31	GND
2	GND	0	GND	30	GND
3	GND	0	GND	29	GND
4	GND	0	GND	28	GND
5	GND	0	GND	27	GND
6	GND	0	GND	26	GND
7	GND	0	GND	25	GND
8	MDR_EP	1.1-1.5	MDR_EP	24	R for LVDS differential signal TE+ output
9	MDR_EN	1.1-1.5	MDR_EN	23	R for LVDS differential signal TE- output
10	GND	0	GND	22	GND
11	MDR_DP	1.1-1.5	MDR_DP	21	R for LVDS differential signal TD+ output
12	MDR_DN	1.1-1.5	MDR_DN	20	R for LVDS differential signal TD- output
13	GND	0	GND	19	GND
14	MDR_CLKP	1.1-1.5	MDR_CLKP	18	R for LVDS differential signal TCLK+ output
15	MDR_CLKN	1.1-1.5	MDR_CLKN	17	R for LVDS differential signal TCLK- output
16	GND	0	GND	16	GND
17	MDR_CP	1.1-1.5	MDR_CP	15	R for LVDS differential signal TC+ output
18	MDR_CN	1.1-1.5	MDR_CN	14	R for LVDS differential signal TC- output
19	GND	0	GND	13	GND
20	MDR_BP	1.1-1.5	MDR_BP	12	R for LVDS differential signal TB+ output
21	MDR_BN	1.1-1.5	MDR_BN	11	R for LVDS differential signal TB- output
22	GND	0	GND	10	GND
23	MDR_AP	1.1-1.5	MDR_AP	9	R for LVDS differential signal TA+ output
24	MDR_AN	1.1-1.5	MDR_AN	8	R for LVDS differential signal TA- output
25	GND	0	GND	7	GND
26	GND	0	GND	6	GND
27	GND	0	GND	5	GND
28	GND	0	GND	4	GND
29	GND	0	GND	3	GND
30	GND	0	GND	2	GND
31	GND	0	GND	1	GND

FHD MAIN ASSY			FHD RS232C+SR ASSY		
M5 : CN4009 (KM200NA14)			SR1: CN8851 (KM200NA14)		
1	GND	0	GND	1	GND
2	V+3_3V_UCOM2	3.3	V+3_3V_UCOM2	2	3.3V power supply for main microcomputer
3	TEMP_AIR	0.4-0.9	TEMP_AIR	3	Outside temperature sensor DC input
4	GND	0	GND	4	GND
5	SR_IN	0-3.3	SR_IN	5	Remote control signal input
6	SR_EN_B	0-3.3	SR_EN_B	6	232C/SR+change signal
7	GND	0	GND	7	GND
8	KEY	0-3.3	KEY	8	Key signal input
9	GND	0	GND	9	GND
10	232C_DET	0~3.3	232C_DET	10	232C detected signal input
11	RXD	0~3.3	RXD	11	RS232C data input/ucom rewriting
12	TXD	0~3.3	TXD	12	RS232C data output/ucom rewriting
13	V+3_3V_STB	3.3	V+3_3V_STB	13	Standby 3.3V power supply
14	V+5_1V_STB	5.1	V+5_1V_STB	14	Standby 5.1V power supply

FHD MAIN ASSY			FHD FAN CONNECT ASSY		
M6 : CN4003 (AKM1276)			FA1: CN8651 (KM200NA5)		
1	FAN_VCC	6.5~11.8	FAN_VCC	1	Power supply for FAN
2	FAN_VCC	6.5~11.8	FAN_VCC	2	Power supply for FAN
3	FAN_NG	0	FAN_NG	3	FAN NG signal input
4	GND	0	GND	4	GND
5	GND	0	GND	5	GND

FHD MAIN ASSY**FHD LED ASSY**

M7 : CN4203 (AKM1274)

L1: CN8601 (KM200NA3L)

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	LED_R	0	LED_R	1	LED control signal (Standby)
2	LED_B	2.9	LED_B	2	LED control signal (power ON)
3	AC_OFF	0	AC_OFF	3	AC_OFF detected signal

FHD MAIN ASSY**FHD POWER AMP ASSY**

M8 : CN4008 (KM200NA14)

A2 : CN8002 (KM200NA14)

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	A_NG_B	2.8	A_NG_B	1	DC detected signal
2	GND	0	GND	2	GND
3	V+9V_AU	0	V+9V_AU	3	9V power supply for audio (Non-connection terminal)
4	GND	0	GND	4	GND
5	V+5V_A	5.0	V+5V_A	5	5V power supply for audio
6	GND	0	GND	6	GND
7	A_STBY_B	3.3	A_STBY_B	7	Audio amplifier standby control signal output
8	A_MUTE	0~2.8	A_MUTE	8	Audio amplifier mute signal output
9	GND	0	GND	9	GND
10	SCL_AUDIO	0~3.3	SCL_AUDIO	10	IIC communication for audios - clock output
11	SDA_AUDIO	0~3.3	SDA_AUDIO	11	IIC communication for audios - data input/output
12	GND	0	GND	12	GND
13	V+3_3V_D	3.3	V+3_3V_D	13	3.3V power supply for audio
14	GND	0	GND	14	GND

FHD MAIN ASSY**FHD PRE AUDIO ASSY**

M9 : CN6801 (AKP1299)

PR1 : CN8201 (AKM1359)

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	A_MUTE_HDMI	3.3	A_MUTE_HDMI	1	HDMI Voice mute signal
2	SDO	0~3.3	SDO	2	Audio digital data
3	WS	0~3.3	WS	3	Data latch eneburu
4	SCK	0~3.3	SCK	4	Audio data bit clock
5	GND	0	GND	5	GND
6	MCLK	0~3.3	MCLK	6	System clock
7	GND	0	GND	7	GND
8	SP_MUTE	0	SP_MUTE	8	Voice signal (mute signal)
9	M_MODE	0	M_MODE	9	Mode distinction signal of operation
10	SDA_MA5	0~5.0	SDA_MA5	10	IIC communication for audios - data input/output
11	SCL_MA5	0~5.0	SCL_MA5	11	IIC communication for audios - clock output

A

B

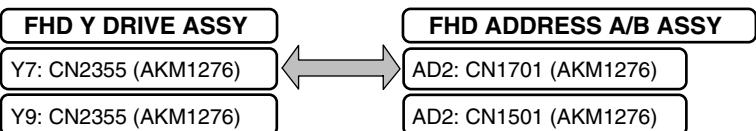
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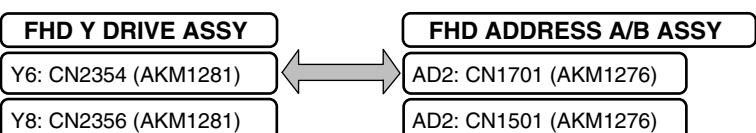
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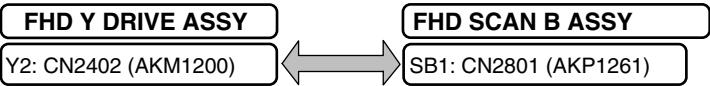
Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	+60V	60	+60V	5	60V power supply
2	GND_ADR	0	GND_ADR	4	GND
3	8V	8	8V	3	8V power supply
4	5V	5	5V	2	5V power supply
5	GND_D	0	GND_D	1	GND

B



Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	GND_D	0	GND_D	1	GND
2	5V	5	5V	2	5V power supply
3	8V	8	8V	3	8V power supply
4	GND_ADR	0	GND_ADR	4	GND
5	+60V	60	+60V	5	60V power supply
6	+60V	60	+60V	1	60V power supply
7	GND_ADR	0	GND_ADR	2	GND
8	8V	8	8V	3	8V power supply
9	5V	5	5V	4	5V power supply
10	GND_D	0	GND_D	5	GND

C



Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	VH	130	VH	1	Power supply for VH
2	VH	130	VH	2	Power supply for VH
3	NC	-	NC	3	Non-connection terminal
4	NC	-	NC	4	Non-connection terminal
5	NC	-	NC	5	Non-connection terminal
6	GNDH	-60 ~ 300	GNDH	6	GND(PSUS)
7	SI_H	-60 ~ 300	SI_H	7	SI_H signal
8	CLR	-60 ~ 300	CLR	8	CLR signal
9	OC2	-60 ~ 300	OC2	9	OC2 signal
10	OC1	-60 ~ 300	OC1	10	OC1 signal
11	CLK1	-60 ~ 300	CLK1	11	CLK1 signal
12	LE	-60 ~ 300	LE	12	LE signal
13	GNDH	-60 ~ 300	GNDH	13	GND(PSUS)
14	GNDH_R	-60 ~ 300	GNDH_R	14	GND(PSUS). Connector detection
15	IC5V	-60 ~ 300	IC5V	15	IC5V power supply

D

F

FHD Y DRIVE ASSY**FHD SCAN A ASSY**

Y3: CN2401 (AKM1200)

SA1: CN2701 (AKP1261)

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	VH	130	VH	1	Power supply for VH
2	VH	130	VH	2	Power supply for VH
3	NC	-	NC	3	Non-connection terminal
4	NC	-	NC	4	Non-connection terminal
5	NC	-	NC	5	Non-connection terminal
6	GNDH	-60 ~ 300	GNDH	6	GND(PSUS)
7	SI_L	-60 ~ 300	SI_L	7	SI_L signal
8	CLR	-60 ~ 300	CLR	8	CLR signal
9	OC2	-60~300	OC2	9	OC2 signal
10	OC1	-60~300	OC1	10	OC1 signal
11	CLK2	-60~300	CLK2	11	CLK2 signal
12	LE	-60~300	LE	12	LE signal
13	GNDH	-60~300	GNDH	13	GND(PSUS)
14	GNDH_R	-60~300	GNDH_R	14	GND(PSUS).Connector detection
15	IC5V	-60~300	IC5V	15	IC5V power supply

FHD Y DRIVE ASSY**POWER SUPPLY UNIT**

Y4: CN2351 (B9B-EH)

P1: (B9B-EH)

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	NC	-	NC	1	Non-connection terminal
2	+16_5V	16.5	+16_5V	2	16.5V power supply
3	+6_5V	6.5	+6_5V	3	6.5V power supply
4	GND_D	0	GND_D	4	GND
5	GND_SUS	0	GND_SUS	5	GND
6	GND_SUS	0	GND_SUS	6	GND
7	NC	-	NC	7	Non-connection terminal
8	VSUS	205	VSUS	8	VSUS power supply
9	VSUS	205	VSUS	9	VSUS power supply

FHD Y DRIVE ASSY**POWER SUPPLY UNIT**

Y5 : CN2353 (AKM1277)

P7: (B7B-PH-K-S)

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	+60V	60	+60V	1	60V power supply
2	+60V	60	+60V	2	60V power supply
3	NC	-	NC	3	Non-connection terminal
4	GND_ADR	0	GND_ADR	4	GND
5	+12V	12	+12V	5	12V power supply
6	GND_D	0	GND_D	6	GND
			NC	7	Non-connection terminal

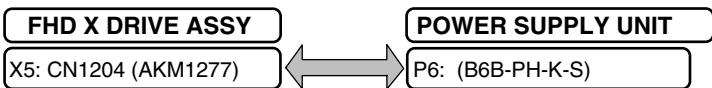
FHD X DRIVE ASSY**POWER SUPPLY UNIT**

X2: (CN1206 B8B-EH)

P2: (B8B-EH)

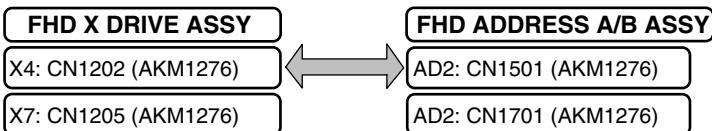
Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	+16_5V	16.5	+16_5V	1	16.5V power supply
2	+6_5V	6.5	+6_5V	2	6.5V power supply
3	GND_D	0	GND_D	3	GND
4	GND_SUS	0	GND_SUS	4	GND
5	GND_SUS	0	GND_SUS	5	GND
6	NC	-	NC	6	Non-connection terminal
7	VSUS	205	VSUS	7	VSUS power supply
8	VSUS	205	VSUS	8	VSUS power supply

A



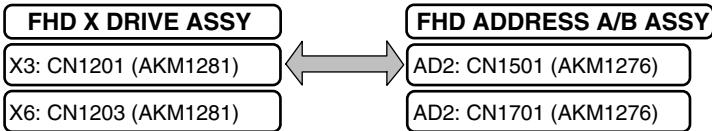
Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	+60V	60	+60V	1	60V power supply
2	+60V	60	+60V	2	60V power supply
3	NC	-	NC	3	Non-connection terminal
4	GND_ADR	0	GND_ADR	4	GND
5	+12V	12	+12V	5	12V power supply
6	GND_D	0	GND_D	6	GND

B



Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	+60V	60	+60V	5	60V power supply
2	GND_ADR	0	GND_ADR	4	GND
3	8V	8	8V	3	8V power supply
4	5V	5	5V	2	5V power supply
5	GND_D	0	GND_D	1	GND

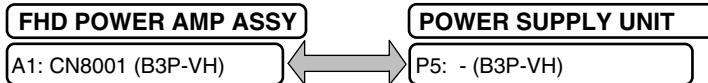
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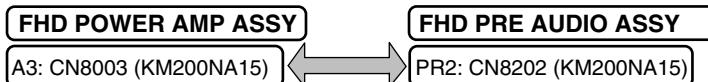
Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	GND_D	0	GND_D	1	GND
2	5V	5	5V	2	5V power supply
3	8V	8	8V	3	8V power supply
4	GND_ADR	0	GND_ADR	4	GND
5	+60V	60	+60V	5	60V power supply
6	+60V	60	+60V	1	60V power supply
7	GND_ADR	0	GND_ADR	2	GND
8	8V	8	8V	3	8V power supply
9	5V	5	5V	4	5V power supply
10	GND_D	0	GND_D	5	GND

E

F



Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	V+16_5V	16.5	16.5V	1	16.5V power supply
2	GNDP	0	GND-D	2	GND
3	GNDP	0	GND-D	3	GND



Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	V+3_3V_D	3.3	V+3_3V_D	1	3.3V power supply for audio
2	GND	0	GND	2	GND
3	V+5V_A	5	V+5V_A	3	5V power supply for audio
4	GND	0	GND	4	GND
5	V+9V_AU	9	V+9V_AU	5	9V power supply for audio
6	GND	0	GND	6	GND
7	V+12V	12	V+12V	7	12V power supply for audio
8	GND_A	0	GND_A	8	GND
9	AUDIO_L+	2.2 ~ 9.6	AUDIO_L+	9	small signal L+ ch
10	GND_A	0	GND_A	10	GND
11	AUDIO_L-	2.2 ~ 9.6	AUDIO_L-	11	small signal L- ch
12	GND_A	0	GND_A	12	GND
13	AUDIO_R+	2.2 ~ 9.6	AUDIO_R+	13	small signal R+ ch
14	GND_A	0	GND_A	14	GND
15	AUDIO_R-	2.2 ~ 9.6	AUDIO_R-	15	small signal R- ch



*SP LR1 ASS'Y and SP LR2 ASS'Y can be replaced.

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	L-	0	LR1-	1	POWER AMP output L-
2	L+	0	LR1+	2	POWER AMP output L+
3	GNDP	0	GNDP	3	GND



*SP LR1 ASS'Y and SP LR2 ASS'Y can be replaced.

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
4	R-	0	LR2-	1	POWER AMP output R-
5	R+	0	LR2+	2	POWER AMP output R+
6	GNDP	0	GNDP	3	GND



*SP LR1 ASS'Y and SP LR2 ASS'Y can be replaced.

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	SP-	0 ~ 16.5	-	-	SPEAKER output L-
2	SP+	0 ~ 16.5	-	-	SPEAKER output L+



*SP LR1 ASS'Y and SP LR2 ASS'Y can be replaced.

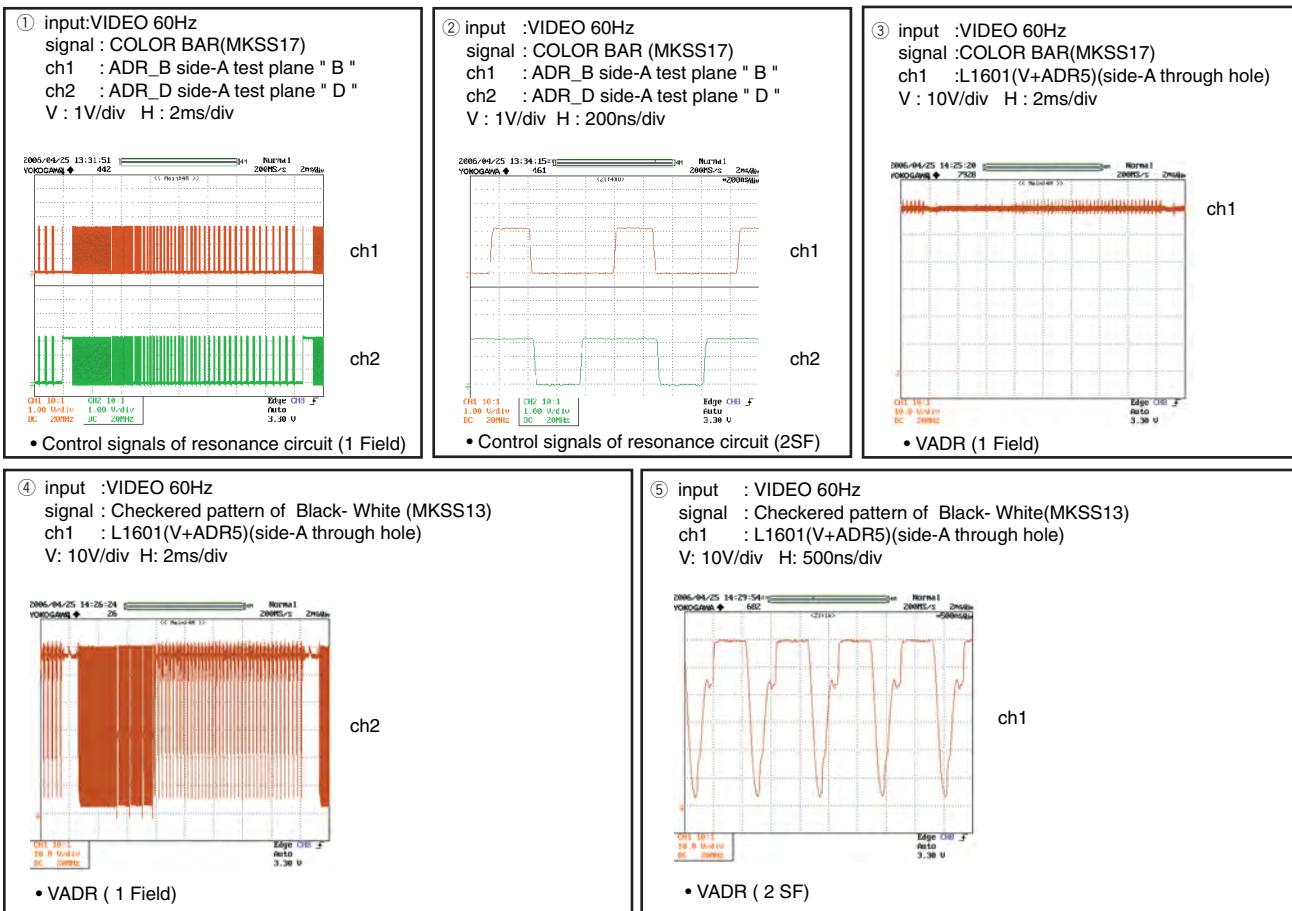
Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	SP-	0 ~ 16.5	-	-	SPEAKER output R-
2	SP+	0 ~ 16.5	-	-	SPEAKER output R+

FHD FAN CONNECT ASSY		FAN			
A FA2: CN8652 (KM200NA3)		AXM1055			
Pin No. Name Voltage [V] Name Pin No. Function					
1	FAN_VCC	6.5-11.8	FAN_VCC	1	Power supply for FAN
2	FAN_NG	0	FAN_NG	2	FAN NG signal input
3	GND	0	GND	3	GND
FHD FAN CONNECT ASSY		FAN			
B FA3: CN8653 (KM200NA3)		AXM1056			
Pin No. Name Voltage [V] Name Pin No. Function					
1	FAN_VCC	6.5-11.8	FAN_VCC	1	Power supply for FAN
2	FAN_NG	0	FAN_NG	2	FAN NG signal input
3	GND	0	GND	3	GND
FHD FAN CONNECT ASSY		FAN			
C FA4: CN8654 (KM200NA3)		AXM1056			
Pin No. Name Voltage [V] Name Pin No. Function					
1	FAN_VCC	6.5-11.8	FAN_VCC	1	Power supply for FAN
2	FAN_NG	0	FAN_NG	2	FAN NG signal input
3	GND	0	GND	3	GND
FHD RS232C+SR ASSY		FHD KEY CONTROL ASSY			
D SR2: CN8852 (KM200NA6)		KL1: CN8801 (KM200NA3)			
Pin No. Name Voltage [V] Name Pin No. Function					
1	V+3_3V_STB	3.3	V+3_3V_STB	1	Standby 3.3V power supply
2	KEY	0-3.3	KEY	2	Key signal input
3	GND_SR	0	GND_SR	3	GND
FHD RS232C+SR ASSY		FHD IR ASSY			
E SR2: CN8852 (KM200NA6)		RE1: CN8701 (AKM1290)			
Pin No. Name Voltage [V] Name Pin No. Function					
4	V+3_3V_STB	3.3	V+3_3V_STB	1	Standby 3.3V power supply
5	GND_SR	0	GND_SR	2	GND
6	REM_B	0-3.3	REM_B	3	Remote control signal input
-	-	-	NC	4	Non-connection terminal
FHD KEY CONTROL ASSY		FHD KEY ASSY			
F KL2: CN8802 (AKM1207)		SW1: CN8751 (AKM1207)			
Pin No. Name Voltage [V] Name Pin No. Function					
1	D7	0 ~ 3.3	D7	8	KEY SCAN signal
2	D6	0 ~ 3.3	D6	7	KEY SCAN signal
3	D5	0 ~ 3.3	D5	6	KEY SCAN signal
4	G0	0 ~ 3.3	G0	5	KEY SCAN signal
5	G1	0 ~ 3.3	G1	4	KEY SCAN signal
6	G2	0 ~ 3.3	G2	3	KEY SCAN signal
7	G3	0 ~ 3.3	G3	2	KEY SCAN signal
8	GND_KEY	0	GND_KEY	1	GND

4.11 WAVEFORMS

● 50FHD ADDRESS ASSY

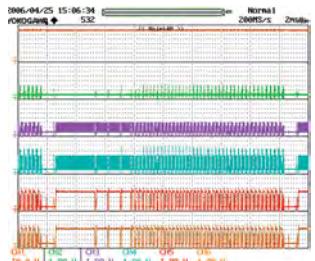
• ADR RESONANCE BLOCK



A ● 50FHD ADDRESS ASSY

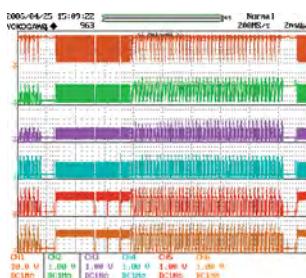
• ADR LOGIC BLOCK

① input:VIDEO 60Hz
 signal : COLOR BAR(MKSS17)
 ch1 : L1601(V+ADR5) (side-A through hole)
 V : 10V/div H : 2ms/div
 ch2 : IC1501 25pin (R_E) side-A test plane "R_E"
 V : 1V/div H : 2ms/div
 ch3 : IC1501 36pin (CLK) side-A test plane "CLK1"
 V : 1V/div H : 2ms/div
 ch4 : IC1501 29pin (LE_E) side-A test plane "LE_E"
 V : 1V/div H : 2ms/div
 ch5 : IC1501 43pin (HBLK) side-A test plane "HBLK"
 V : 1V/div H : 2ms/div
 ch6 : IC1501 42pin (LBLK) side-A test plane "LBLK"
 V : 1V/div H : 2ms/div



• Incoming signals of TCP(1Field)

② input: VIDEO 60Hz
 signal : Checkered pattern of Black- White (MKSS13)
 CH1 : L1601 (V+ADR5) (side-A through hole)
 V : 10V/div H : 2ms/div
 CH2 : IC1501 25pin (R_E) side-A test plane "R_E"
 V : 1V/div H : 2ms/div
 CH3 : IC1501 36pin (CLK) side-A test plane "CLK1"
 V : 1V/div H : 2ms/div
 CH4 : IC1501 29pin (LE_E) side-A test plane "LE_E"
 V : 1V/div H : 2ms/div
 CH5 : IC1501 43pin (HBLK) side-A test plane "HBLK"
 V : 1V/div H : 2ms/div
 CH6 : IC1501 42pin (LBLK) side-A test plane "LBLK"
 V : 1V/div H : 2ms/div



• Incoming signals of TCP (1Field)

③ input : VIDEO
 signal:Checkered pattern of Black- White (MKSS13)
 CH1 : L1601(V+ADR5)(side-A through hole)
 V : 10V/div H : 500ns/div
 CH2 : IC1501 25pin (R_E) side-A test plane "R_E"
 V : 1V/div H : 500ns/div
 CH3 : IC1501 36pin (CLK) side-A test plane "CLK1"
 V : 1V/div H : 500ns/div
 CH4 : IC1501 29pin (LE_E) side-A test plane "LE_E"
 V : 1V/div H : 500ns/div
 CH5 : IC1501 43pin (HBLK) side-A test plane "HBLK"
 V : 1V/div H : 500ns/div
 CH6 : IC1501 42pin (LBLK) side-A test plane "LBLK"
 V : 1V/div H : 500ns/div

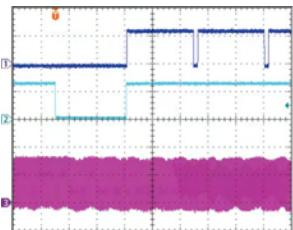


• Incoming signals of TCP (Resonance part)

● FHD DIGITAL ASSY

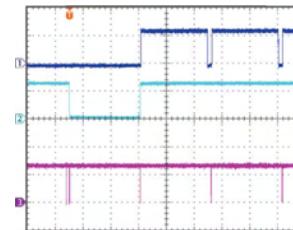
• LVDS RX BLOCK

- ① CH1 : IC3001 47pin (LVL_DE)
 CH2 : IC3001 45pin (LVL_VD)
 CH3 : IC3001 31pin (LVL_CLK)
 V : 2V/Div H : 4uS/Div



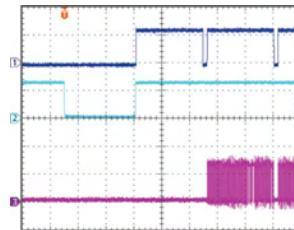
ch1
ch2
ch3

- ② CH1 : IC3001 47pin (LVL_DE)
 CH2 : IC3001 45pin (LVL_VD)
 CH3 : IC3001 46pin (LVL_HD)
 V : 2V/Div H : 4uS/Div



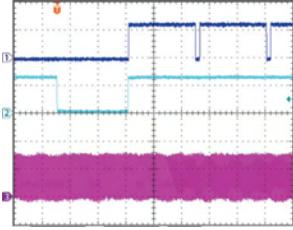
ch1
ch2
ch3

- ③ CH1 : IC3001 47pin (LVL_DE)
 CH2 : IC3001 45pin (LVL_VD)
 CH3 : IC3001 33pin (LVL_RA0)
 V : 2V/DIV H : 4uS/DIV



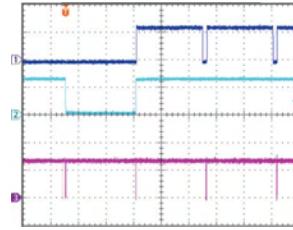
ch1
ch2
ch3

- ④ CH1 : IC3002 47pin (LVR_DE)
 CH2 : IC3002 45pin (LVR_VD)
 CH3 : IC3002 31pin (LVR_CLK)
 V : 2V/DIV H : 4uS/DIV



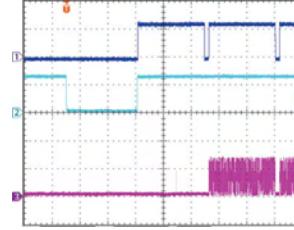
ch1
ch2
ch3

- ⑤ CH1 : IC3002 47pin (LVR_DE)
 CH2 : IC3002 45pin (LVR_VD)
 CH3 : IC3002 46pin (LVR_HD)
 V : 2V/DIV H : 4uS/Div



ch1
ch2
ch3

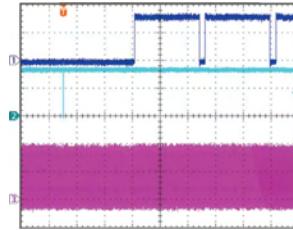
- ⑥ CH1 : IC3002 47pin (LVR_DE)
 CH2 : IC3002 45pin (LVR_VD)
 CH3 : IC3002 33pin (LVR_RA0)
 V : 2V/DIV H : 4uS/DIV



ch1
ch2
ch3

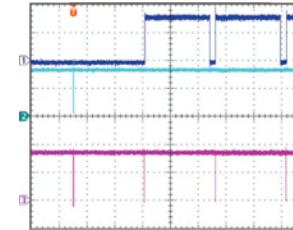
• SQ ASIC-L BLOCK

- ⑦ CH1 : R3129 3-4pin (AL_DE)
 CH2 : R3129 5-6pin (AL_VD)
 CH3 : R3154 (AL_CLK)
 V : 2V/DIV H : 4uS/DIV



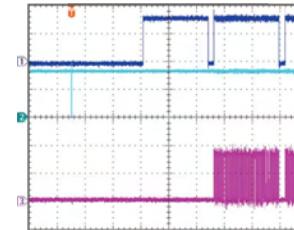
ch1
ch2
ch3

- ⑧ CH1 : R3129 3-4pin (AL_DE)
 CH2 : R3129 5-6pin (AL_VD)
 CH3 : R3129 7-8pin (AL_HD)
 V : 2V/DIV H : 4uS/DIV



ch1
ch2
ch3

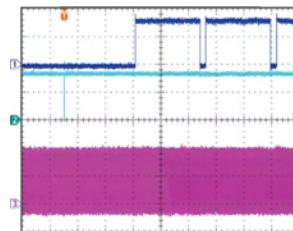
- ⑨ CH1 : R3129 3-4pin (AL_DE)
 CH2 : R3129 5-6pin (AL_VD)
 CH3 : R3132 5-6pin (AL_RA0)
 V : 2V/DIV H : 4uS/DIV



ch1
ch2
ch3

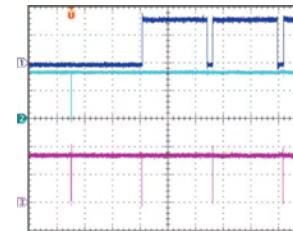
• SQ ASIC-R BLOCK

- ⑩ CH1 : R3148 5-6pin (AR_DE)
 CH2 : R3148 1-2pin (AR_VD)
 CH3 : R3155 (AR_CLK)
 V : 2V/DIV H : 4uS/Div



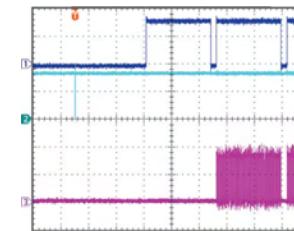
ch1
ch2
ch3

- ⑪ CH1 : R3148 5-6pin (AR_DE)
 CH2 : R3148 1-2pin (AR_VD)
 CH3 : R3148 3-4pin (AR_HD)
 V : 2V/Div H : 4uS/Div



ch1
ch2
ch3

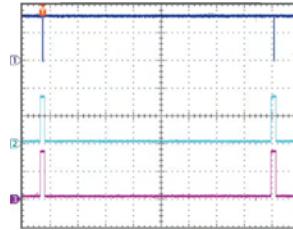
- ⑫ CH1 : R3148 5-6pin (AR_DE)
 CH2 : R3148 1-2pin (AR_VD)
 CH3 : R3145 5-6pin (AR_RA0)
 V : 2V/DIV H : 4uS/DIV



ch1
ch2
ch3

• MODULE UCOM BLOCK

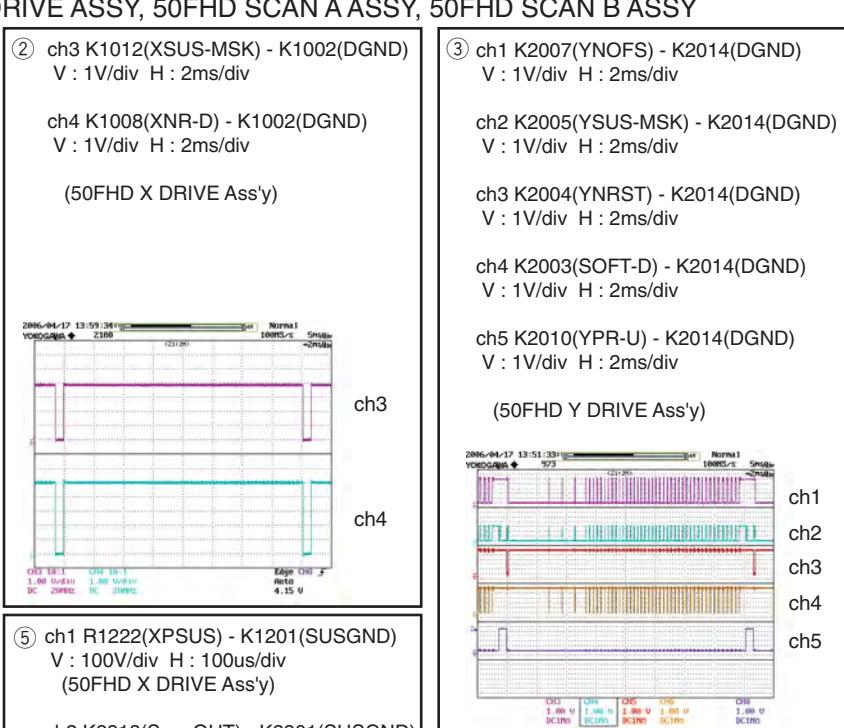
- ⑬ CH1 : IC3703 1pin (V_SYNC)
 CH2 : IC3704 11pin (AL_STOP_SQ)
 CH3 : IC3704 8pin (AR_STOP_SQ)
 V : 2V/DIV H : 2ms/Div



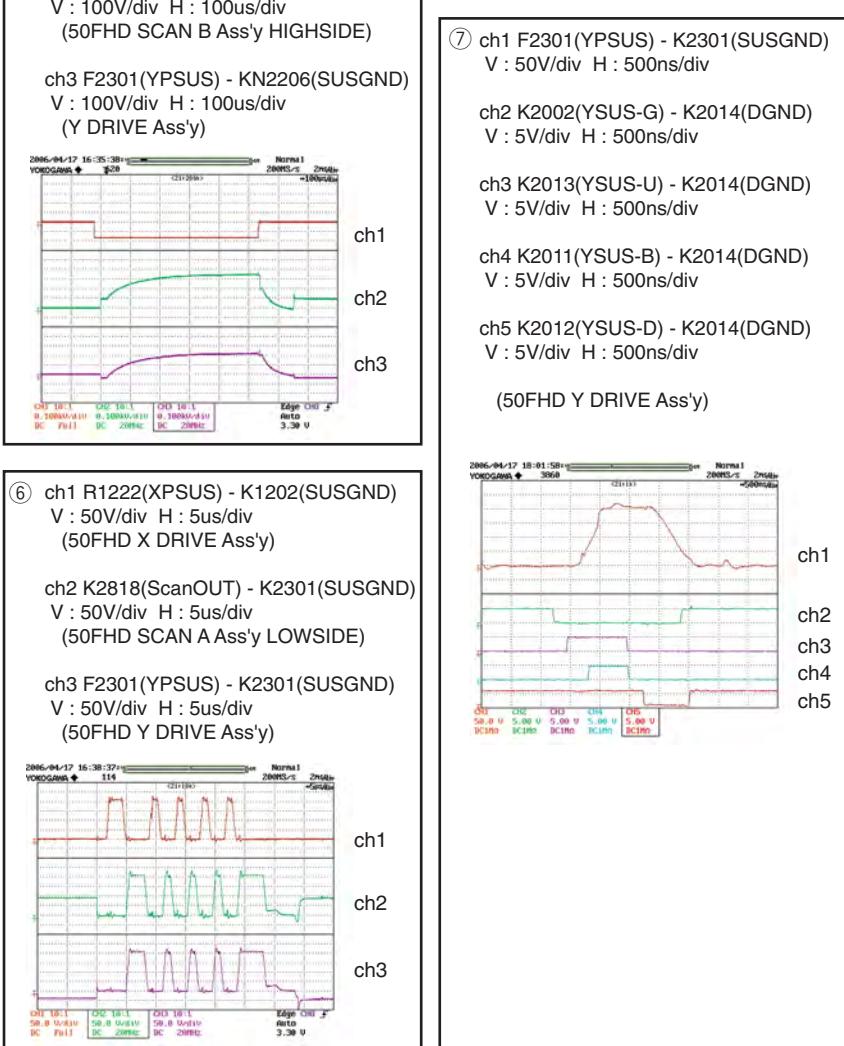
ch1
ch2
ch3

● 50FHD X DRIVE ASSY, 50FHD Y DRIVE ASSY, 50FHD SCAN A ASSY, 50FHD SCAN B ASSY

A	<p>① ch3 R1222(XPSUS) - K1201(SUSGND) V : 100V/div H : 2ms/div (50FHD X DRIVE Ass'y)</p> <p>ch4 K2818(ScanOUT) - K2301(SUSGND) V : 100V/div H : 2ms/div (50FHD SCAN B Ass'y HIGHSIDE)</p> <p>ch5 R2288(YPsus) - KN2203(SUSGND) V : 100V/div H : 2ms/div (50FHD Y DRIVE Ass'y)</p>
B	<p>ch3 ch4 ch5</p>
C	<p>④ ch1 R2401(LE) - K2014(DGND) V : 1V/div H : 2ms/div</p> <p>ch2 R2404(CLK2) - K2014(DGND) V : 1V/div H : 2ms/div</p> <p>ch3 R2406(SI_L) - K2014(DGND) V : 1V/div H : 2ms/div</p> <p>ch4 R2409(CLR) - K2014(DGND) V : 1V/div H : 2ms/div</p> <p>ch5 R2411(OC2_U) - K2014(DGND) V : 1V/div H : 2ms/div</p> <p>ch6 R2415(OC1) - K2014(DGND) V : 1V/div H : 2ms/div</p> <p>ch7 R2418(CLK1) - K2014(DGND) H : 2ms/div</p> <p>ch8 R2420(SI_H) - K2014(DGND) H : 2ms/div</p> <p>(50FHD Y DRIVE Ass'y)</p>



D	<p>④ ch1 R2401(LE) - K2014(DGND) V : 1V/div H : 2ms/div</p> <p>ch2 R2404(CLK2) - K2014(DGND) V : 1V/div H : 2ms/div</p> <p>ch3 R2406(SI_L) - K2014(DGND) V : 1V/div H : 2ms/div</p> <p>ch4 R2409(CLR) - K2014(DGND) V : 1V/div H : 2ms/div</p> <p>ch5 R2411(OC2_U) - K2014(DGND) V : 1V/div H : 2ms/div</p> <p>ch6 R2415(OC1) - K2014(DGND) V : 1V/div H : 2ms/div</p> <p>ch7 R2418(CLK1) - K2014(DGND) H : 2ms/div</p> <p>ch8 R2420(SI_H) - K2014(DGND) H : 2ms/div</p> <p>(50FHD Y DRIVE Ass'y)</p>
E	<p>⑥ ch1 R1222(XPSUS) - K1202(SUSGND) V : 50V/div H : 5us/div</p> <p>(50FHD X DRIVE Ass'y)</p> <p>ch2 K2818(ScanOUT) - K2301(SUSGND) V : 50V/div H : 5us/div</p> <p>(50FHD SCAN A Ass'y LOWSIDE)</p> <p>ch3 F2301(YPsus) - K2301(SUSGND) V : 50V/div H : 5us/div</p> <p>(50FHD Y DRIVE Ass'y)</p>
F	<p>ch1 ch2 ch3 ch4 ch5 ch6 ch7 ch8</p>

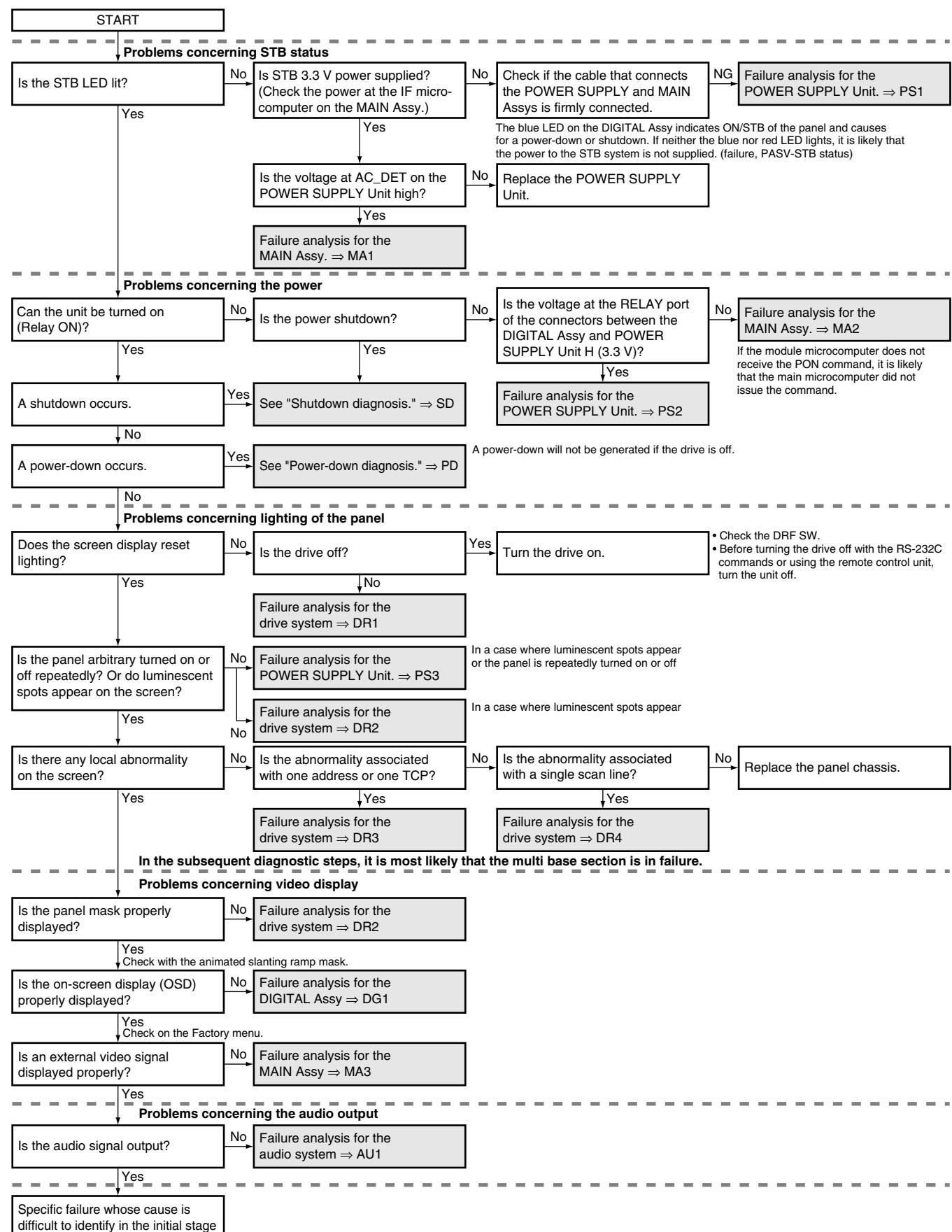


5. DIAGNOSIS INFORMATION

5.1 THE FLOW OF DIAGNOSIS

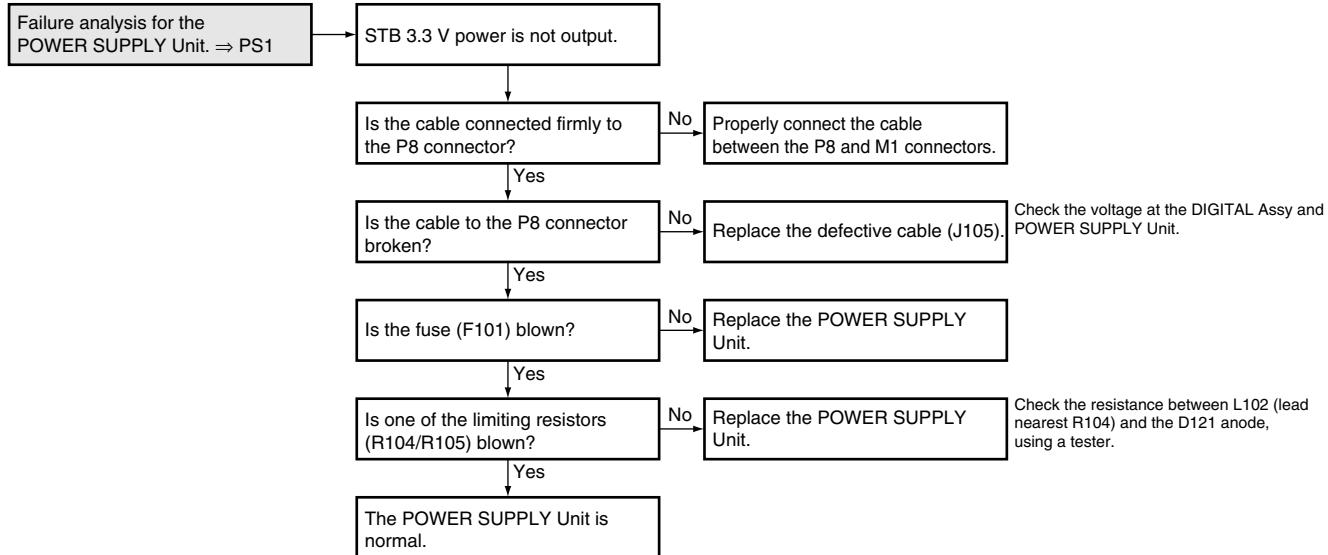
5.1.1 FLOWCHART OF FAILURE ANALYSIS FOR THE WHOLE UNIT

Flowchart of Failure Analysis for The Whole Unit



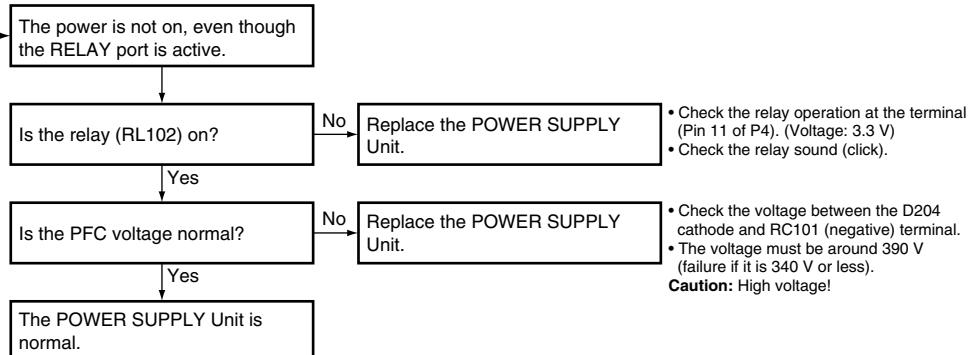
5.1.2 FLOWCHART OF FAILURE ANALYSIS FOR THE POWER SUPPLY UNIT

A Flowchart of Failure Analysis for The POWER SUPPLY Unit



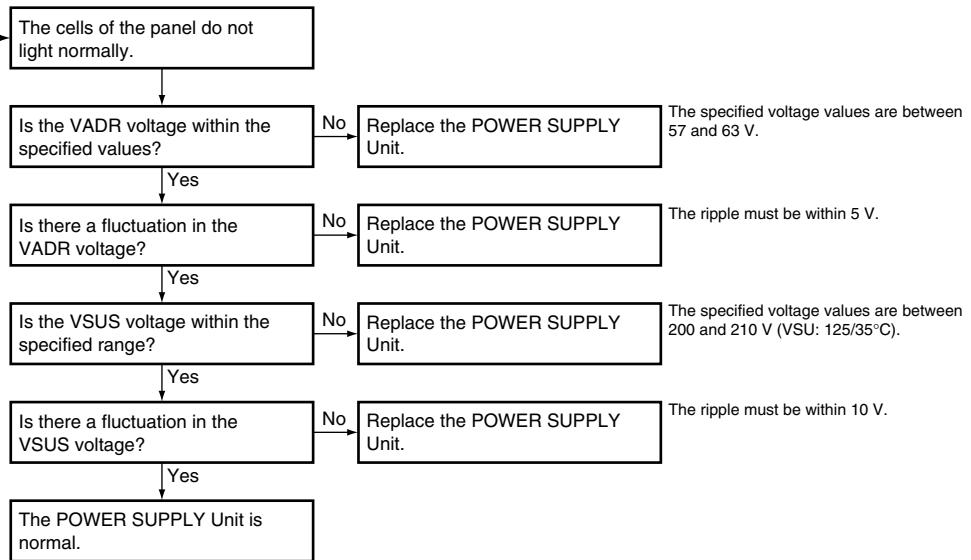
B

C Failure analysis for the POWER SUPPLY Unit. PS2



D

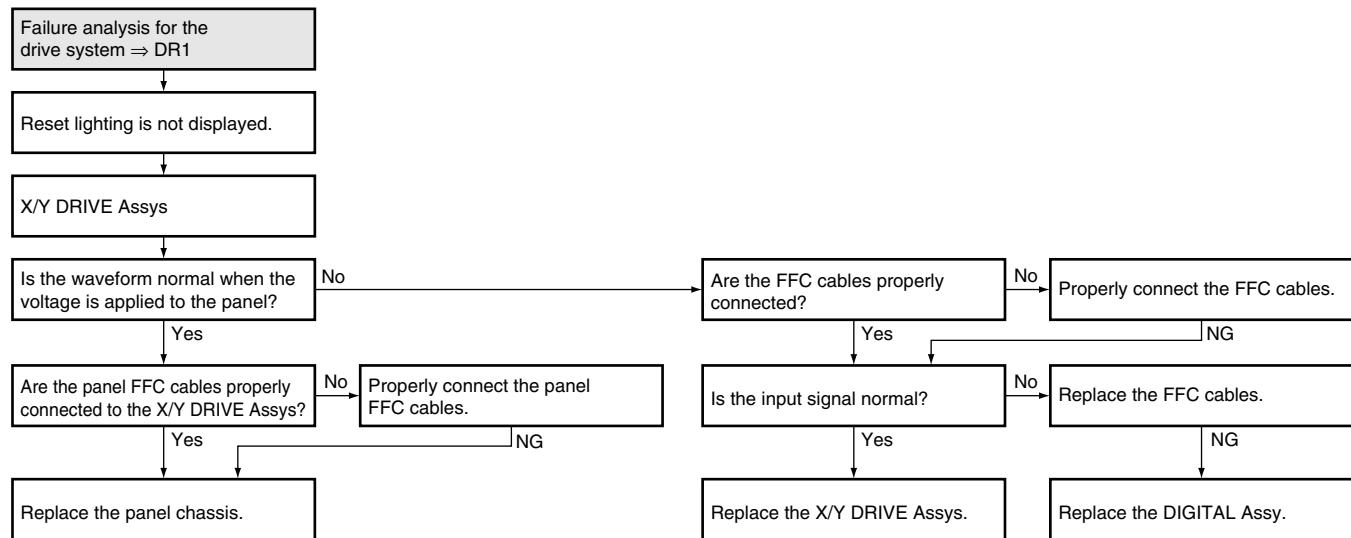
E Failure analysis for the POWER SUPPLY Unit. PS3



F

5.1.3 FLOWCHART OF FAILURE ANALYSIS FOR THE DRIVE ASSY

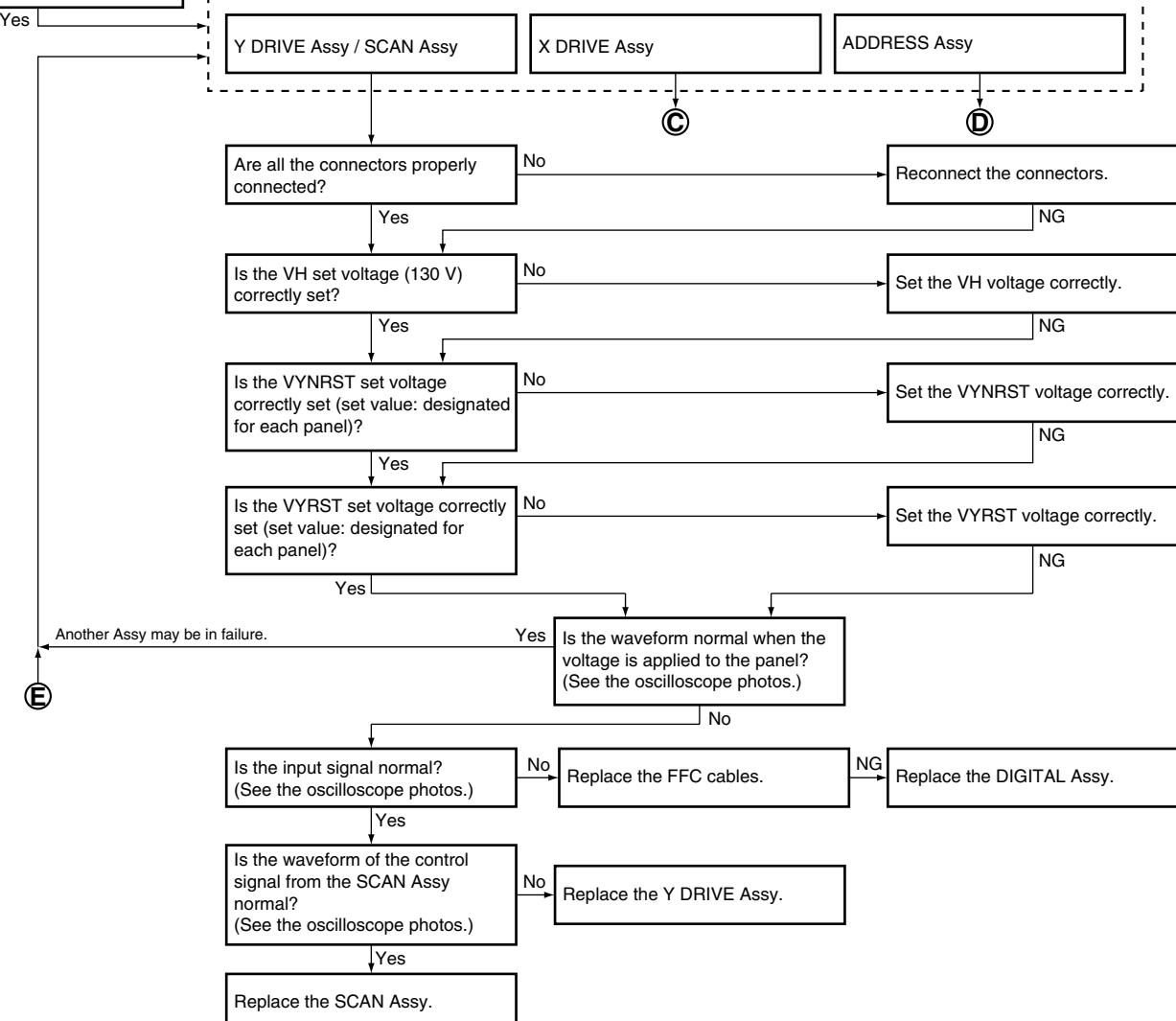
Flowchart of Failure Analysis for The Drive Assy (1)



Failure analysis for the drive system ⇒ DR2

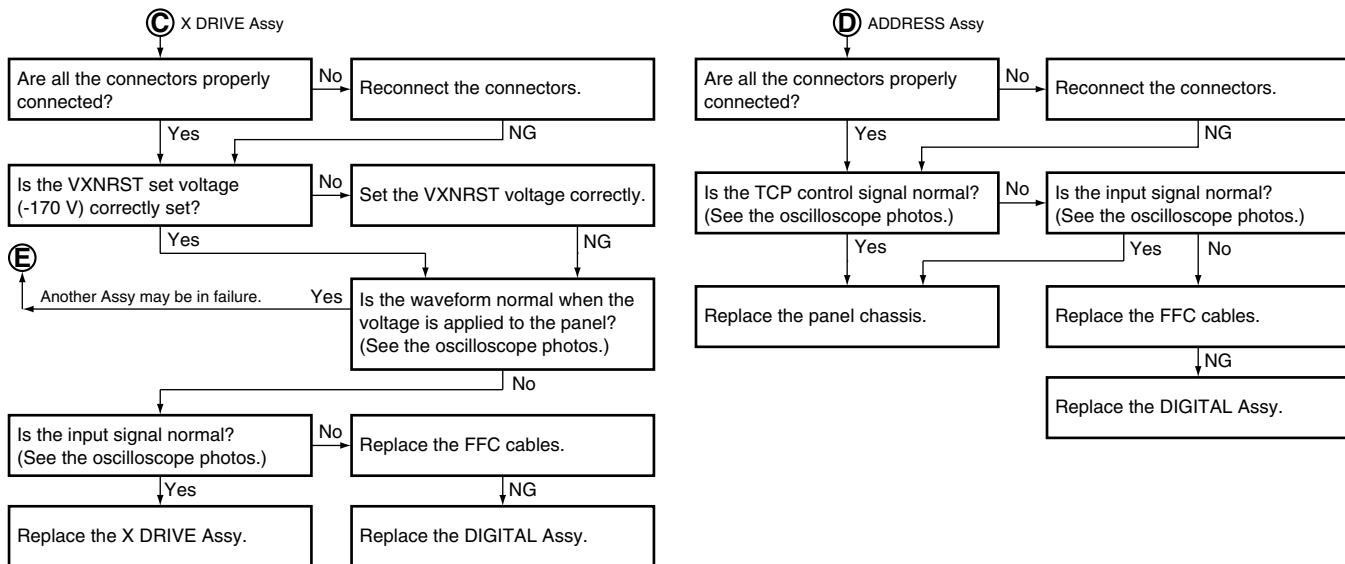
Abnormality across the whole screen, such as luminescent spots

Because it is difficult to identify which drive is in failure, follow the flowchart below to check each Assy.



A

Flowchart of Failure Analysis for The Drive Assy (2)



C

Failure analysis for the drive system ⇒ DR3

Diagnose the ADDRESS Assy.

The abnormality is associated with one address or one TCP?

Is the TCP control signal normal?

No → Are the FFC cables properly connected?

Yes → Properly connect the FFC cables.

Replace the panel chassis.

NG → Replace the DIGITAL Assy.

In most cases of damage on one line, the panel chassis must be replaced.

Failure analysis for the drive system ⇒ DR4

Diagnose the SCAN Assy.

The abnormality is associated with a single scan line.

Is the waveform normal when the voltage is applied to the panel?
(See the oscilloscope photos.)

No → Is the cable connected properly to the 15-pin connector?

Yes → Connect the cable properly.

NG → Replace the Y DRIVE Assy.

Is the cable connected properly to the 90-pin connector?

No → Connect the cable properly.
Care must be taken that no dirt or dust is attached or gets in.
(The SCAN IC may be damaged.)

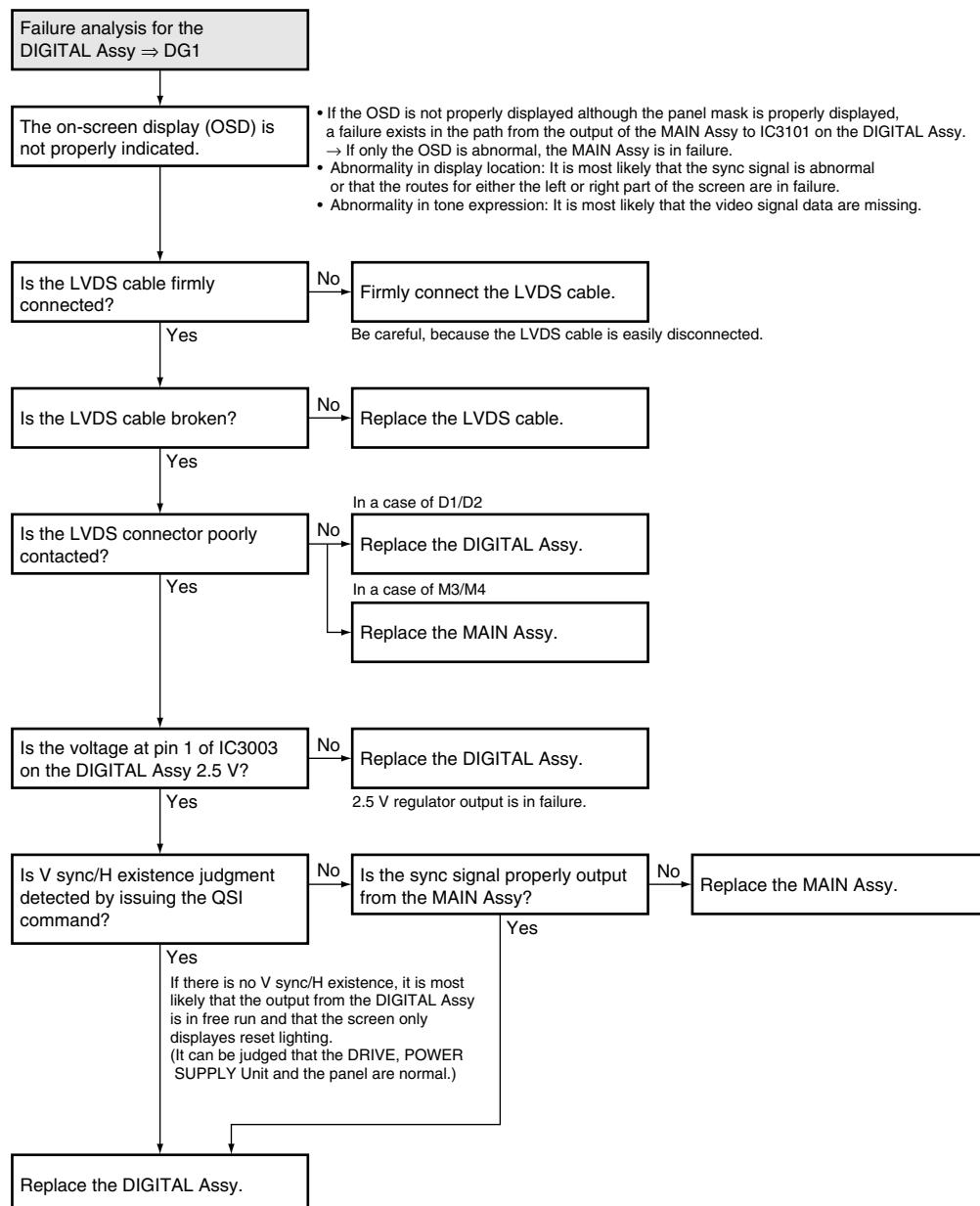
Yes → NG

Replace the SCAN Assy.

F

5.1.4 FLOWCHART OF FAILURE ANALYSIS FOR THE DIGITAL ASSY

Flowchart of Failure Analysis for The DIGITAL Assy



A

B

C

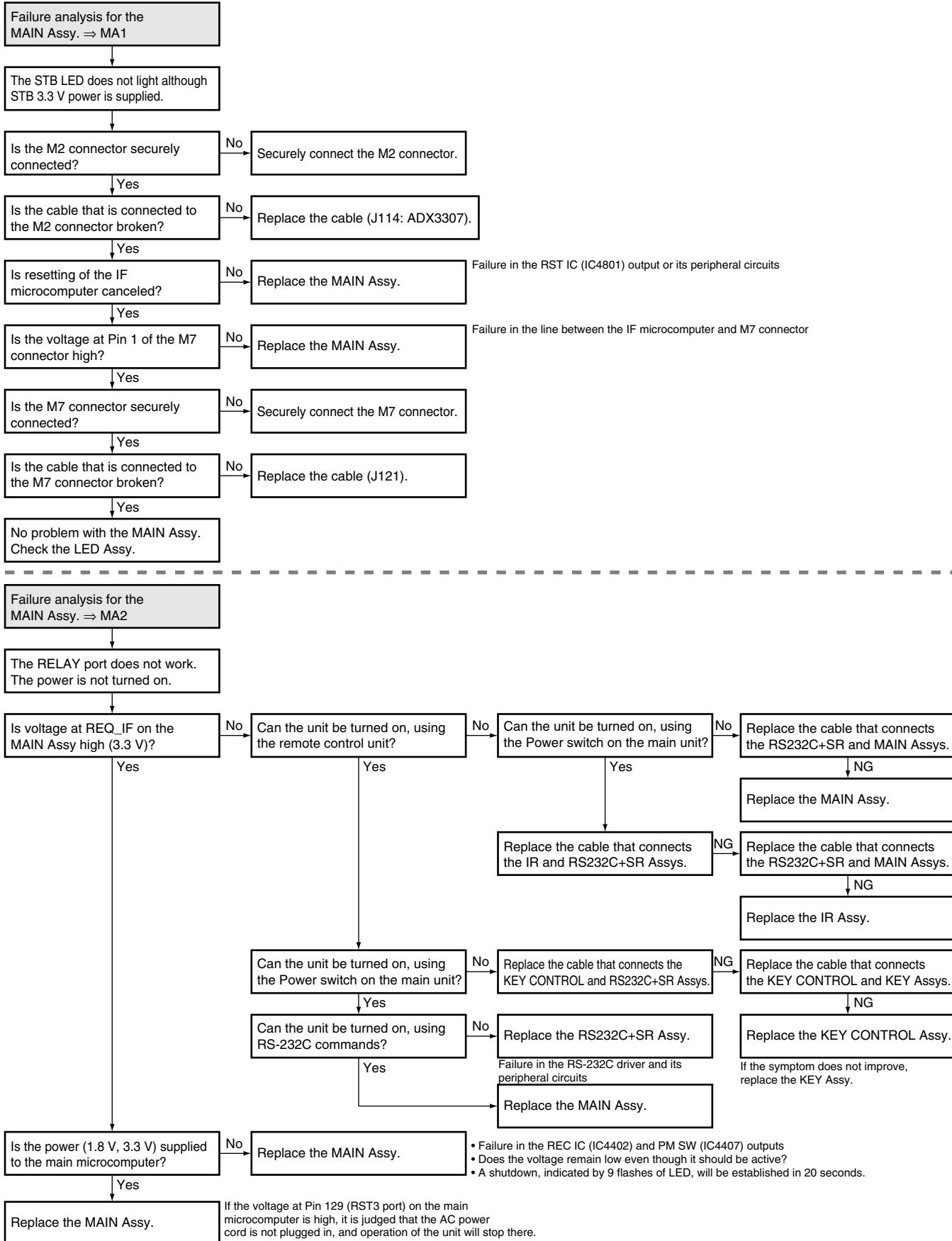
D

E

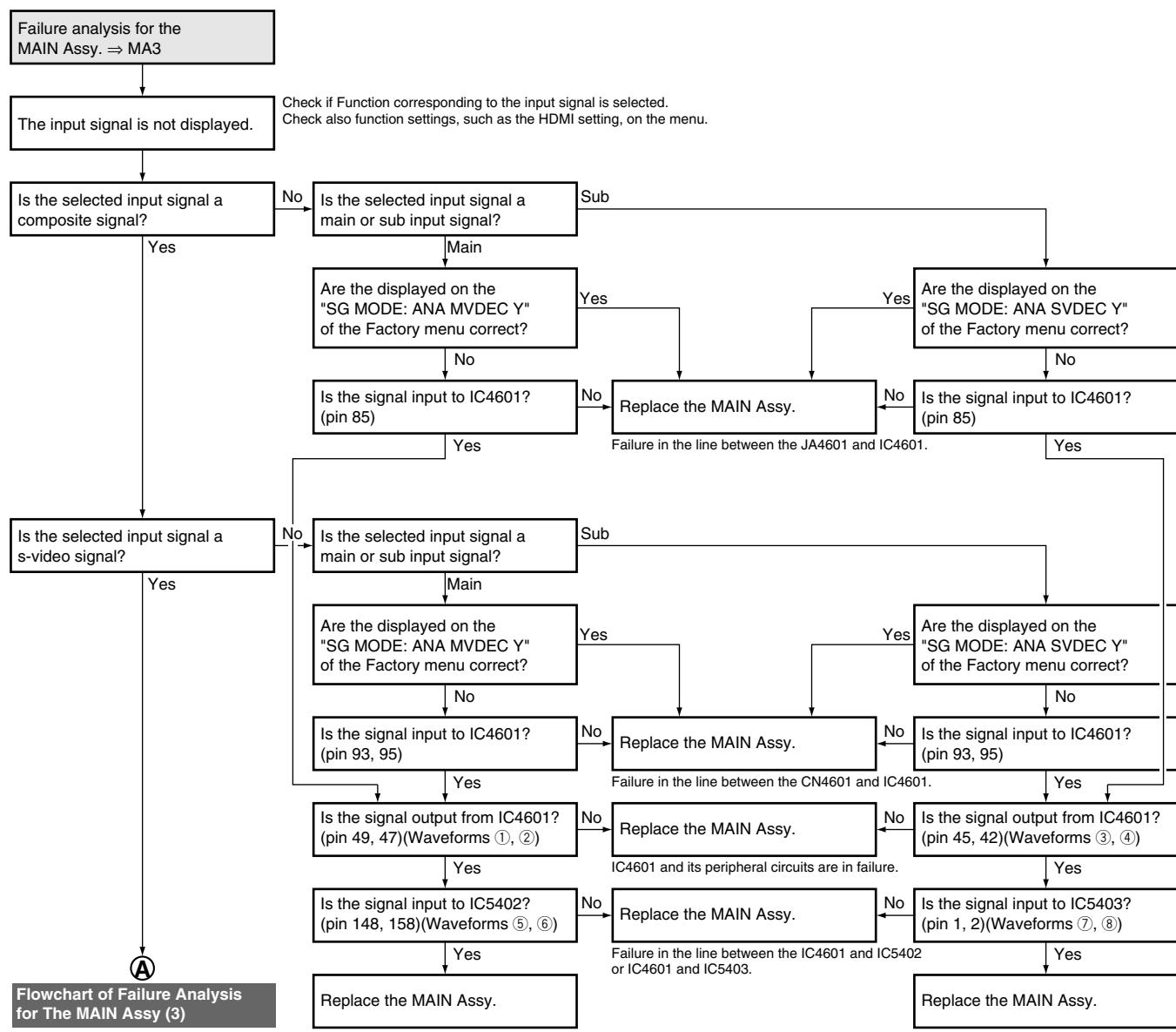
F

5.1.5 FLOWCHART OF FAILURE ANALYSIS FOR THE MAIN ASSY

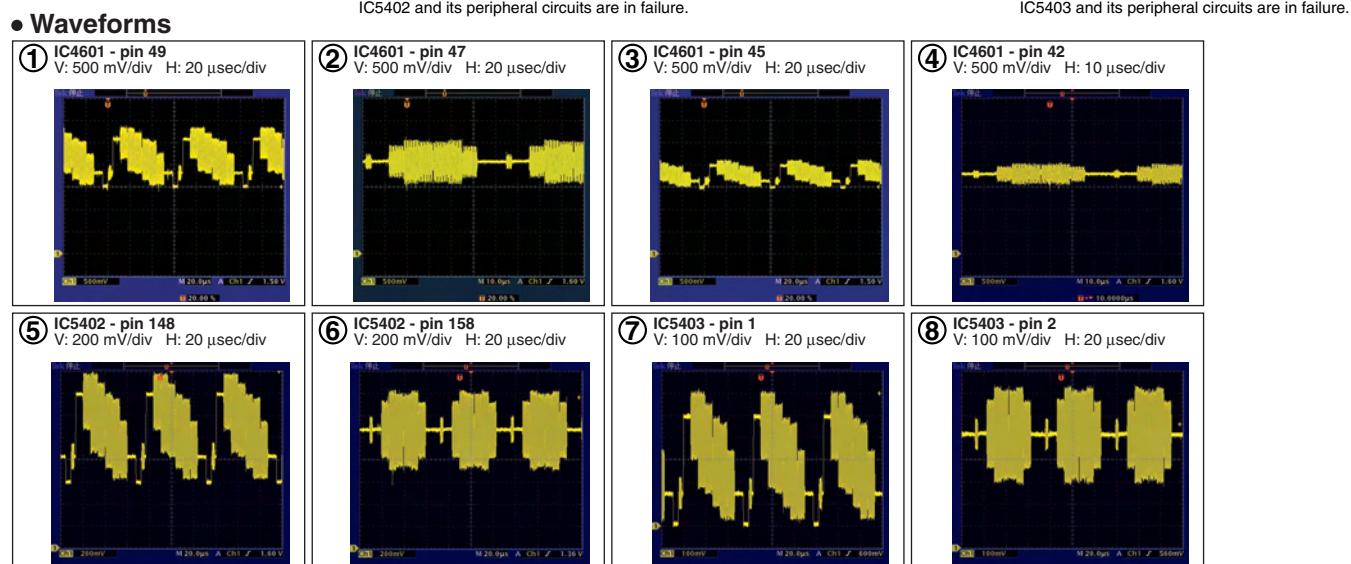
A Flowchart of Failure Analysis for The MAIN Assy (1)



Flowchart of Failure Analysis for The MAIN Assy (2)

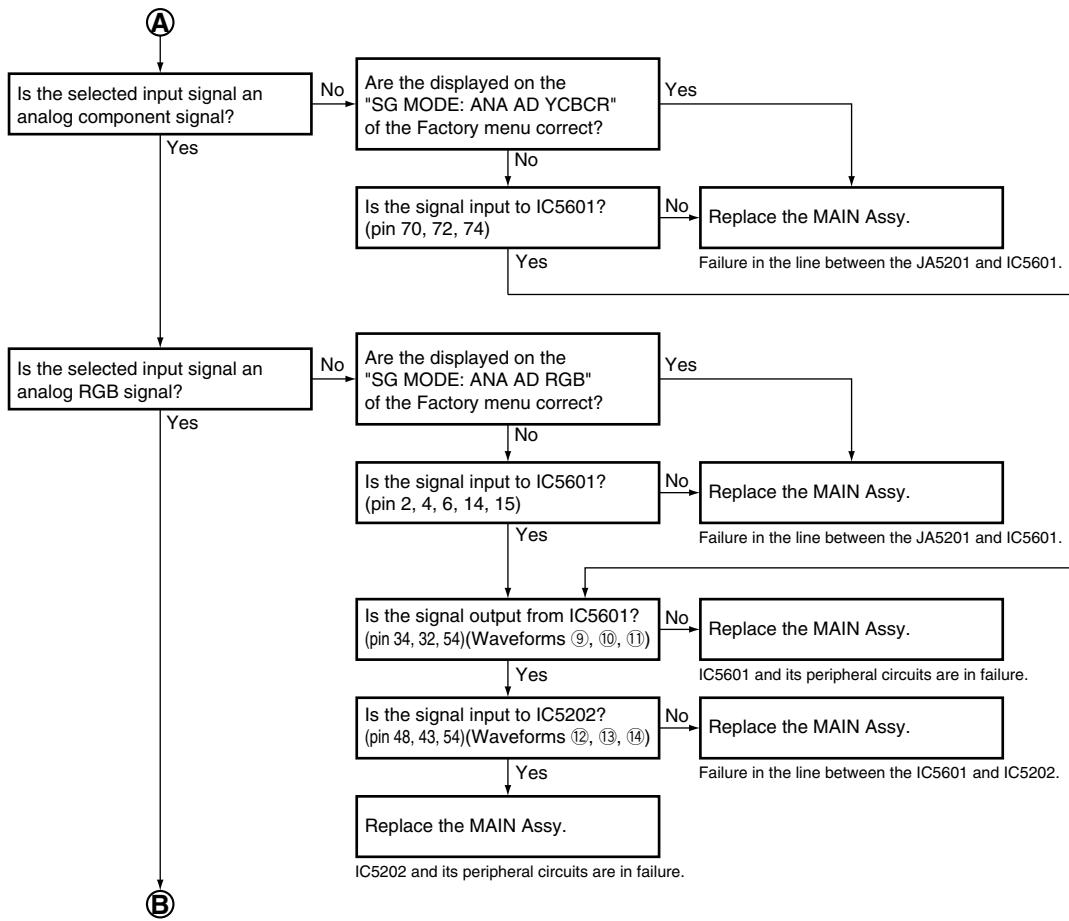


Flowchart of Failure Analysis for The MAIN Assy (3)

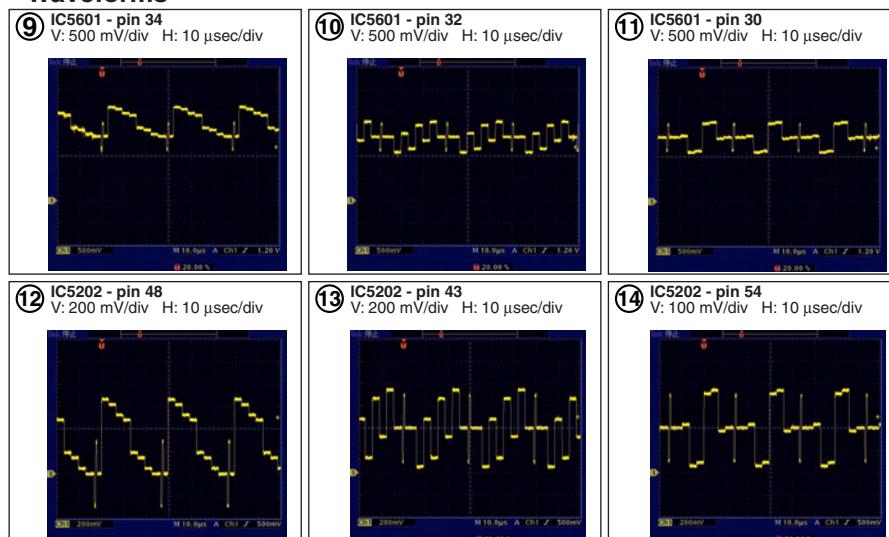


A

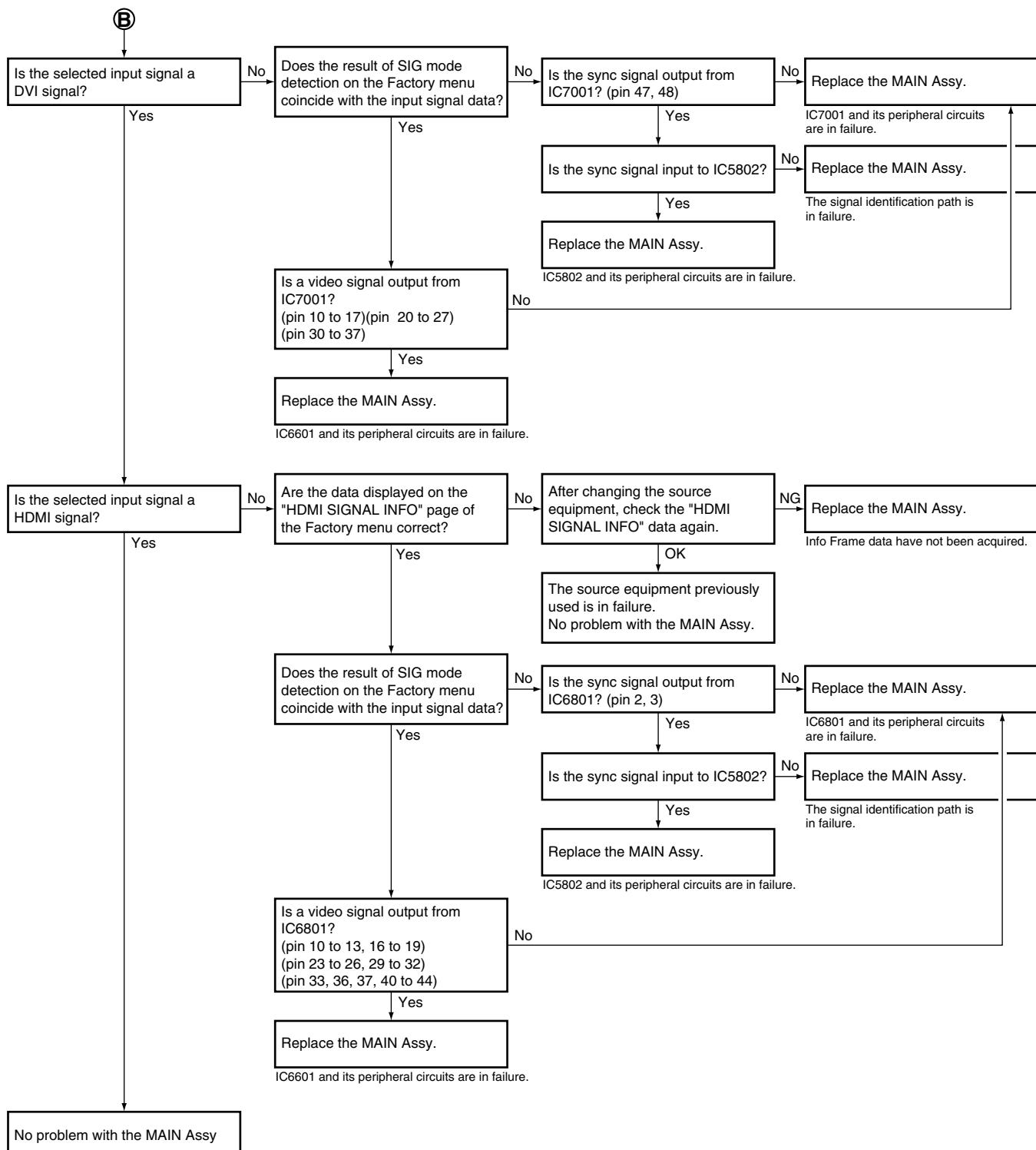
Flowchart of Failure Analysis for The MAIN Assy (3)



• Waveforms



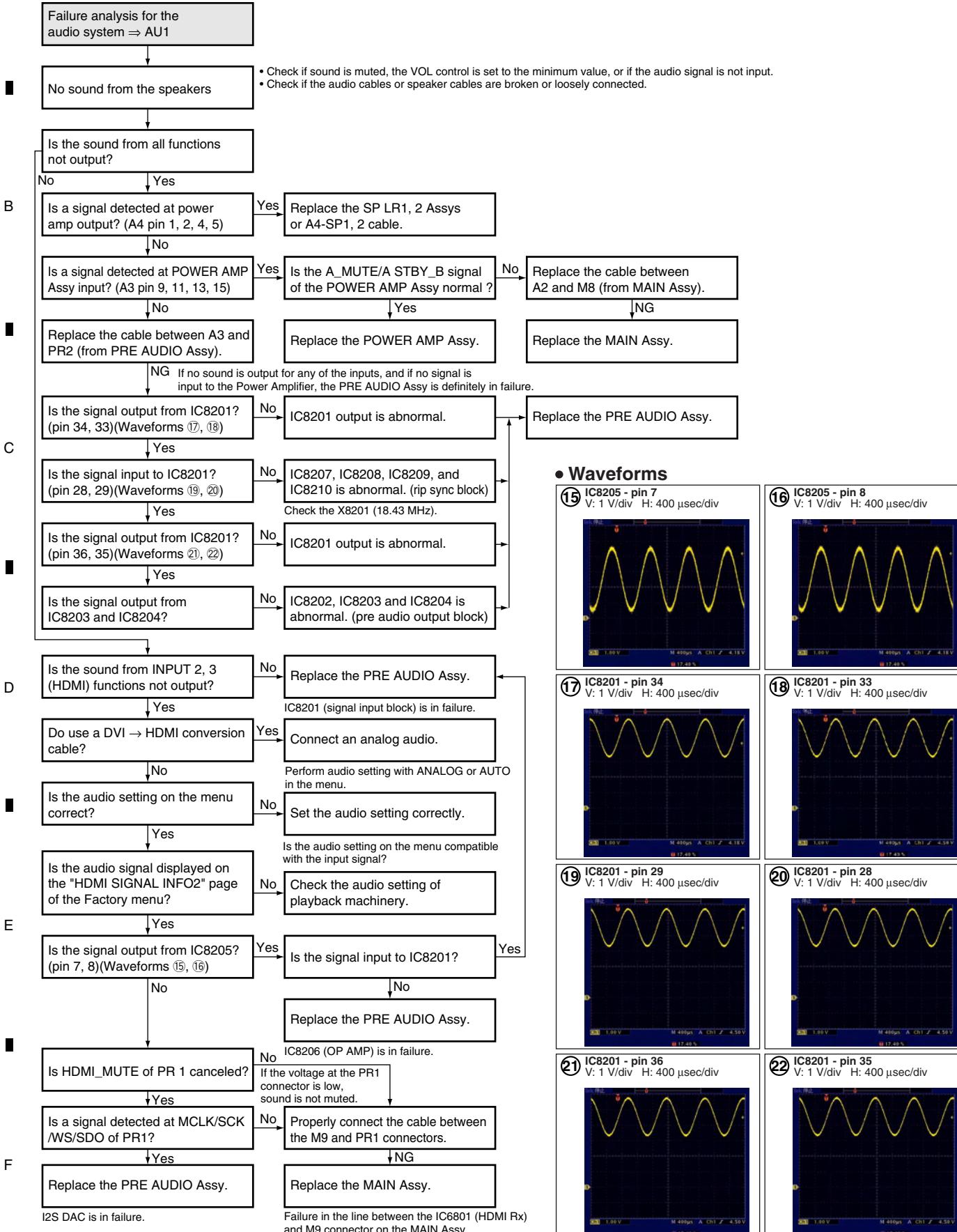
Flowchart of Failure Analysis for The MAIN Assy (4)



5.1.6 FLOWCHART OF FAILURE ANALYSIS FOR THE AUDIO SYSTEM

A

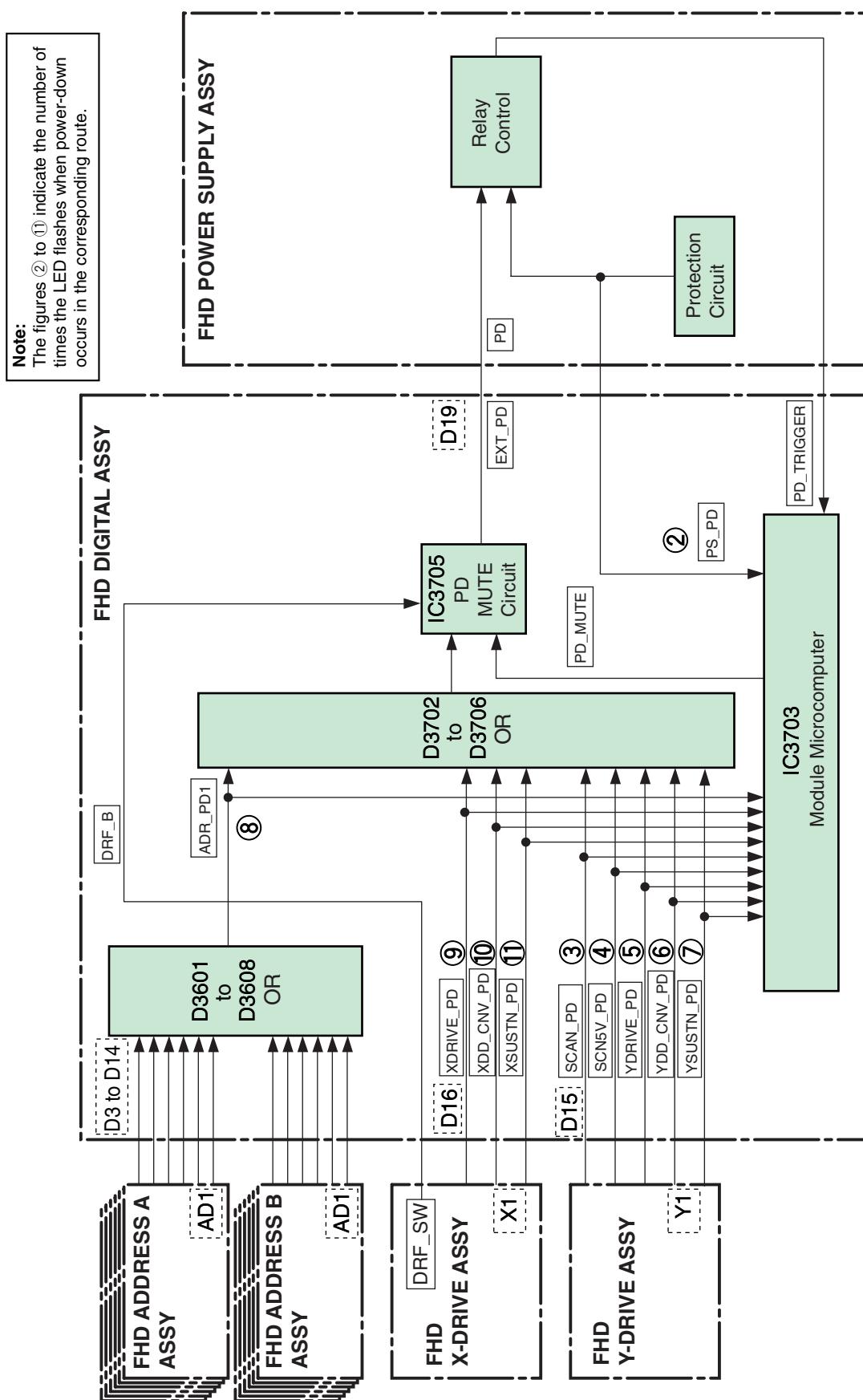
Flowchart of Failure Analysis for The Audio System



5.2 POWER DOWN

5.2.1 BLOCK DIAGRAM OF THE POWER-DOWN SIGNAL

Block diagram of the power-down signal



5.2.2 POWER DOWN OF FAILURE ANALYSIS

A PD (Power-down) diagnosis

■ Prediction of failure symptoms when a PD (power-down) is generated

LED Flashing Count	PD Circuit	Checkpoint	Main Cause
2	Power supply PD	POWER SUPPLY Unit	Failure in the POWER SUPPLY Unit
		X, Y DRIVE Assy	MSK_MOD is damaged (short-circuiting between VS and GND)
		Each Assy	16.5V/ 12V/ 6.5V/ 5.1V short-circuit within one of PCB.
3	SCAN PD	SCAN Assy	SCAN IC is damaged (short-circuiting between VH and GNDH)
		Y DRIVE Assy	Connectors disconnected between the POWER SUPPLY Unit and the Y DRIVE Assy
			Connectors disconnected between the DIGITAL and the Y DRIVE Assys
4	IC5V PD	SCAN Assy	Failure in the VH power
			SCAN IC is damaged (short-circuiting between IC5V and GNDH)
		Y DRIVE Assy	Disconnection of the scan-bridge (15-pin) connector
			Failure in the photo coupler
5	Y-DRIVE PD	Y DRIVE Assy	Abnormality in the IC5V DC/DC converter
6	Y DCDC PD	Y DRIVE Assy	Abnormality in the 16.5 V power
			MSK_MOD is damaged (short-circuiting of the mask switch)
			Abnormality in the VOFS DC/DC converter
			Abnormality in the VPRST DC/DC converter
7	Y SUS PD	Y DRIVE Assy	Abnormality in the VC_15V DC/DC converter
			Abnormality in the DK module
8	Address PD	ADDRESS Assy	Abnormality in the control signal line
			Short-circuiting of Vadr
9	X-DRIVE PD	X DRIVE Assy	TCP damaged
			Connectors disconnected between the DIGITAL and the X DRIVE Assys
10	X DCDC PD	X DRIVE Assy	Abnormality in the 16.5 V power
			Abnormality in VC_15V power
			Abnormality in VXNRST power
11	X SUS PD	X DRIVE Assy	Abnormality in the DK module
			Abnormality in the control signal line
			Connectors disconnected between the POWER SUPPLY Unit and the X DRIVE Assy

- List of detection of disconnected connectors

Assy Name	Connector	Connection Assy	Number of LED flashes	Screen Display
X DRIVE	CN1001	FHD DIGITAL Assy	11 (X DRIVE)	
	CN1204	POWER SUPPLY Unit (ADR system)	-	White screen
	CN1206	POWER SUPPLY Unit (drive system)	12 (X-SUS)	
	CN1201, CN1202, CN1203, CN1205	ADDRESS Assy	8 (ADR)	
Y DRIVE	CN2001	FHD DIGITAL Assy	3 (SCAN)	
	CN2351	POWER SUPPLY Unit (drive system)	3 (SCAN)	White screen
	CN2353	POWER SUPPLY Unit (ADR system)	-	
	CN2354, CN2355, CN2356, CN2357	ADDRESS Assy	8 (ADR)	
SCAN	CN2401, CN2402	SCAN Assy	4 (SCN-5V)	
	CN2701, CN2801	Y DRIVE Assy	4 (SCN-5V)	
ADDRESS	CN1502, CN1702	FHD DIGITAL Assy	8 (ADRS)	
	CN1501, CN1701	X/Y DRIVE Assy	8 (ADRS)	

5.2.3 HOW TO IDENTIFY THE CAUSE OF A POWER-DOWN THAT IS INDICATED BY TWICE FLASHING OF THE RED LED

■ How to identify the cause of a power-down that is indicated by twice flashing of the red LED

A power-down caused by the power supply and one caused by a damaged drive part are both indicated by twice flashing of the LED. The cause of a power-down that is indicated by twice flashing of the red LED can be identified by performing the steps 1 and 2 below:

- ① Tester check with the power off
- ② Checks with the power on

① Tester check with the power off

- Tester check between Vsus and SUSGND

Disconnect all cables from the X and Y DRIVE Assys and check if there is short-circuiting between Vsus and SUSGND in the X and Y DRIVE Assys.

- How to check if there is short-circuiting on the X DRIVE Assy:

Check between VSUS and SUSGND on the MSK_MOD with the tester. If they are short-circuited, the MSK_Mod (SUS-B/G) is damaged.

Check between the SUSOUT and PSUS connectors on the MSK_MOD with the tester. If they are short-circuited, the MSK_Mod (MSK) is damaged.

Check other elements to see if they are short-circuited.

- How to check if there is short-circuiting on the Y DRIVE Assy:

Check between VSUS and SUSGND in the MSK_MOD with the tester. If they are short-circuited, the MSK_Mod (SUS-B/G) is damaged.

Check between the SUSOUT and MSK-S connectors on the MSK_MOD with the tester. If they are short-circuited, the MSK_Mod (MSK-R) is damaged.

Check other elements to see if they are short-circuited.

- Check for short-circuiting in the power supply.

Note that at the beginning of measuring with a tester, charging of an electrolytic capacitor may cause a phenomenon like short-circuiting. However, the resistance will soon rise if there is no short-circuiting.

② Check immediately after the unit is turned on before a power-down occurs.

If the Vsus voltage does not increase, the power supply is in failure.

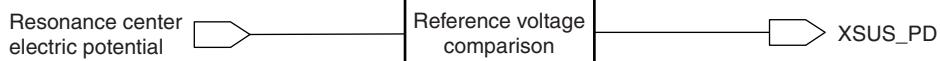
③ Check the PD detection circuit.

If no problem is detected in Steps ① and ②, a power-down occurs even though the voltage is normal.

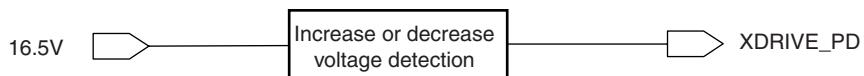
Therefore, the PD detection circuit may be in failure.

By following the above procedures, the real cause of a power-down can be judged.

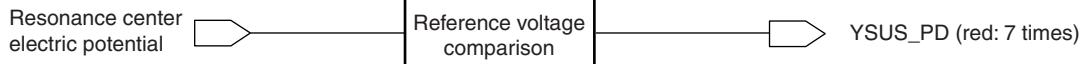
A

X Drive PD system (FHD)


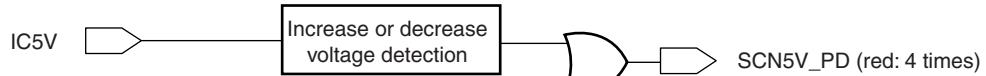
B



C

Y Drive PD system (FHD)


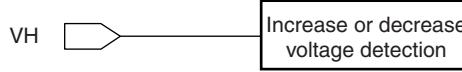
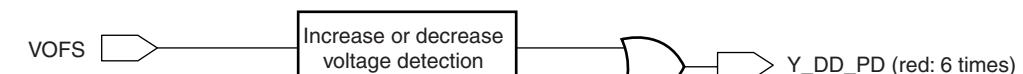
D



SCAN bridge (upper)
connector disconnection
detection

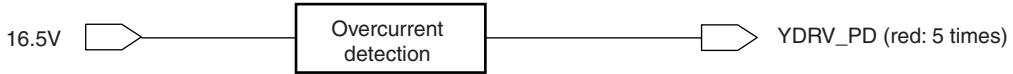
SCAN bridge (lower)
connector disconnection
detection

E



→ SCAN_PD (red: 3 times)

F

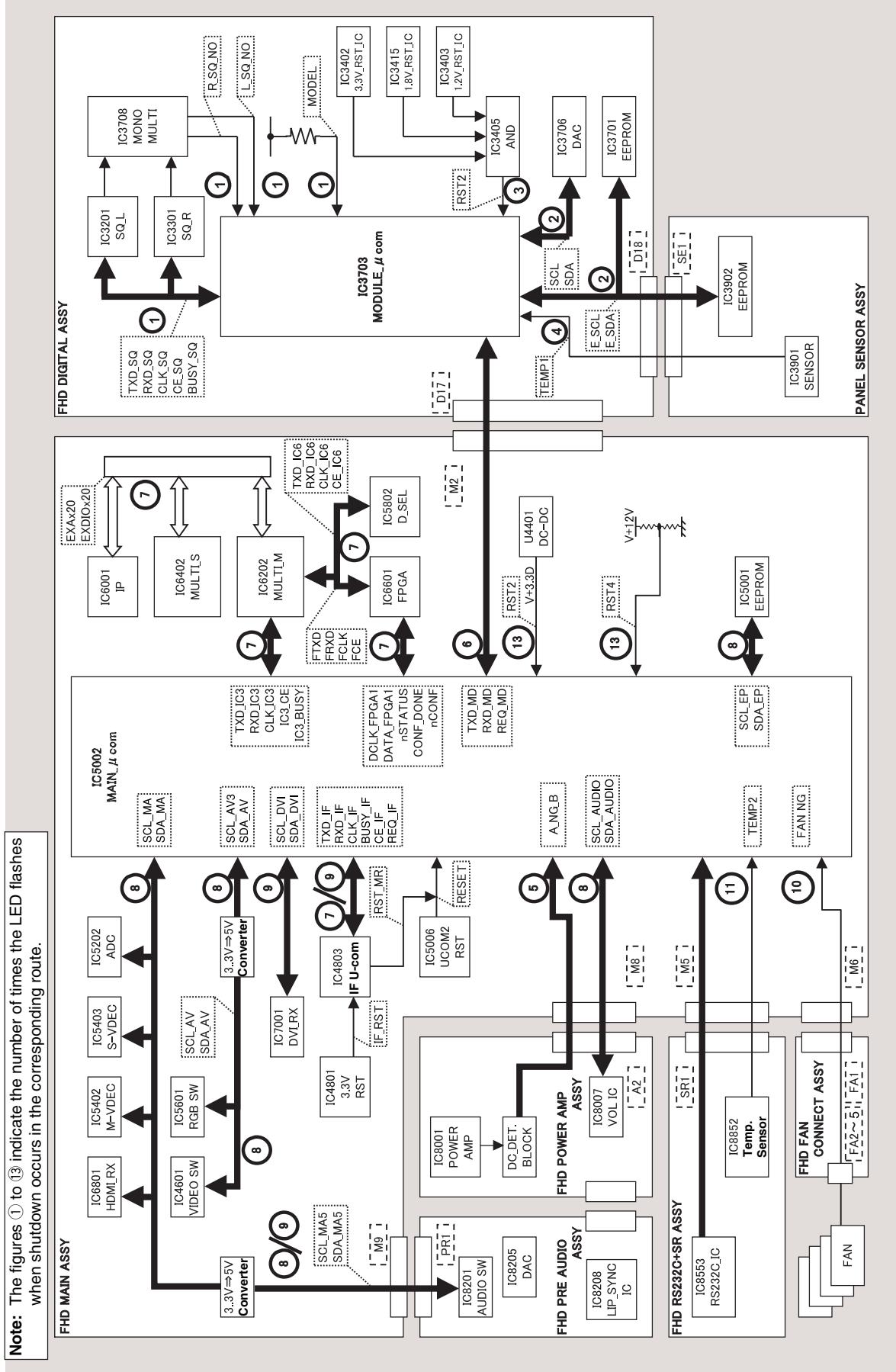


5.3 SHUT DOWN

5.3.1 SHUT DOWN SIGNAL BLOCK DIAGRAM

Shut Down Signal Block Diagram

Note: The figures ① to ⑬ indicate the number of times the LED flashes when shutdown occurs in the corresponding route.



SD (SHUTDOWN) DIAGNOSIS (1/2)

Frequency of LED Flashing	Major Type	Detailed Type	Checkpoint		Possible Defective Part	Remarks
			Main	Sub		
Blue 1	Abnormality in the Sequence Processors	Communication error with the left and right Sequence Processors	RTRY	CLK_SQ/TXD_SQ, etc.	IC3201, IC3301, IC3703	The communication between IC and the left and right Sequence Processors is not established. (It is likely that IC3703 [sender] is in failure, because communication is not established, neither that for the left nor right Sequence Processor.)
		Drive stop with the left and right Sequence Processors	SQNO	Check if the video sync signal is input to IC3101.	CN3001, CN3002, IC3001, IC3002, IC3101	If signal detection by the module microcomputer is properly performed, the unit operates on an external sync. (Or both sides of the right part of the screen, whose sync is not monitored, may be abnormal.)
		Busy	BUSY_SQ		IC3201, IC3301, IC3703	If BUSY_SQ remains high, a shutdown is generated. ("RXD_AL" has not been transmitted to the module microcomputer) It is likely that IC3201 is not normally started.
		Communication error with the left Sequence Processor	RTRY/L	RXD_AL	IC3201, IC3409, IC3703	
		Drive stop with the left Sequence Processor	SQNO/L	Check if the video sync signal is input to IC3201.	CN3001, CN3002, IC3002, IC3101, IC3201, IC3409	A shutdown is generated if IC3201 is not normally started (communication error with IC3409 [flash memory]). (Or both sides of the right part of the screen, whose sync is not monitored, may be abnormal.)
		Incoherent version (hardware, software)	VER-HS	Check the model number of the Digital Assy and the destination of the sequence processors.	IC3101, IC3301	The written SQ_PRCG is incoherent with data on the DIGITAL Assy.
		Incoherent version (software, with the left and right Sequence Processors)	VER-LR	Check the versions of the left and right sequence programs.	—	Different sequence programs are written on the left and right Sequence Processors.
		Communication error with the right Sequence Processor	RTRY/R	RXD_AR	IC3301, IC3410, IC3703	"RXD_AR" has not been transmitted to the module microcomputer It is likely that IC3301 is not normally started.
		Drive stop with the right Sequence Processor	SQNO/R	Check if the video sync signal is input to IC3302.	CN3001, CN3002, IC3002, IC3101, IC3301, IC3410	A shutdown is generated if IC3301 is not normally started (communication error with IC3410 [flash memory]). (Or both sides of the right part of the screen, whose sync is not monitored, may be abnormal.)
		DIGITAL Assy EEPROM PANEL SENSOR Assy EEPROM DAC	MD-IIC	EEPROM BACKUP DAC	IC3701, IC3703	Check the pull-up resistor of the IIC control line and the power to the corresponding IC.
Blue 2	Failure in IIC communication with the module microcomputer	RST2	—	Is the output voltage of the DC-DC converter low? The 12V power is not output.	AXY1138 POWER SUPPLY Unit	If FST2 does not become high after the unit is turned on, a shutdown will be generated in several seconds. Check if V + 12V is started.
		TMP_NG	TEMP1	Ambient temperature	—	If TEMP1 that is read by the module microcomputer is 75°C or higher, a shutdown will be generated.
Blue 3	Abnormality in RST2 power decrease	—	—	Abnormality in the panel temperature sensor Speaker terminals AUDIO_AMP	IC3901 CN8402, CN8502 IC8001, IC5002	Check the connection with the PANEL SENSOR Assy. Check if any speaker cable is in contact with the chassis. Check if the AMP output is short-circuited.
		—	—	Periphery of the cable between A2 and M8 Communication line between MAIN and MOD	CN8002, CN4008 IC3/03, IC5002	Check if cables are firmly connected. Check the communication lines (TXD_MOD/RXD_MOD/REQ_MOD).
Blue 4	High temperature of the panel	—	MODULE	—	CN3703, CN4207 IC4803, IC5002	Check if cables are firmly connected. Check the communication lines (TXD_IF/RXD_IF/BUSY_IF/CE_IF/REQ_IF).
		—	IF	Communication line between IF and MAIN	IC6202, IC5002	Check the communication lines (TXD_IC3/CLK_IC3/CE_IC3_BUSY).
Blue 5	Short-circuiting of the speakers	—	MULTI	Communication line between MULTI_M and MAIN	IC6001, IC6402, IC6202	Check the communication lines (EXA/EXDIO).
		—	I/P	Bus communication line between I/P and MULTI_M	IC5802, IC6202	Check the communication lines (TXD_IC6/CLK_IC6/CE_IC6).
		MA_SR/L	D_SEL	Communication line between D_SEL and MULTI_M	IC6001, IC6402, IC6202	Check the communication lines (EXA/EXDIO).
		—	SLAVE	Bus communication line between MULTI_S and MULTI_M	IC6602, IC6202	Check the communication lines (EXA/EXDIO).
Blue 6	Failure in communication with the module microcomputer	—	FPGA2	Communication line between FPGA and MULTI_M	IC6601, IC5002	Check the communication lines (FTXDI/FRXD/FCLK/FIFCE).
		IF microcomputer	FPGA1	Config. communication line between FPGA and MAIN	nSTATUS/CONEF_DONE/nCONF,	Check the communication lines (DCLK_FPGA1/DATA_FPGA1/nCONFI).
Blue 7	Failure in main microcomputer 3-wire serial communication	MULTI				
		—				

PDP-5000EX

■ SD (SHUTDOWN) DIAGNOSIS (2/2)

Frequency of LED Flashing	Major Type	Detailed Type	Log indication in Factory Mode		Checkpoint	Possible Defective Part	Remarks
			MAIN	SUB			
Blue 8	Failure in IIC communication with the main microcomputer	AV switch	AV-SW	IIC communication line between AV_SW and MAIN	IC4601, IC5002		Check the communication lines (SCL_AV3/SDA_AV3 or SCL_AV/SDA_AV).
		RGB switch	RGB-SW	IIC communication line between RGB_SW and MAIN	IC5601, IC5002		Check the communication lines (SCL_AV3/SDA_AV3 or SCL_AV/SDA_AV).
		Main VDEC	M-VDEC	IIC communication line between M_VDEC and MAIN	IC5401, IC5002		Check the communication lines (SCL_MA/SDA_MA).
		Sub VDEC	S-VDEC	IIC communication line between S_VDEC and MAIN	IC5403, IC5002		Check the communication lines (SCL_MA/SDA_MA).
		A/D/PLL	ADC	IIC communication line between ADC and MAIN	IC5202, IC5002		Check the communication lines (SCL_MA/SDA_MA).
		HDMI	HDMI	IIC communication line between HDMI_RX and MAIN	IC6801, IC5002		Check the communication lines (SCL_MA/SDA_MA).
		64k EEPROM	MA-EEP	IIC communication line between EEPROM and MAIN	IC5001, IC5002		Check the communication lines (SCL_EP/SDA_EP).
		VOLUME IC	AUDIO	IIC communication line between VOL_IC and MAIN	IC8007, IC5002		Check the communication lines (SCL_AUDIO/SDA_AUDIO).
		VOLUME IC		Periphery of the cable between A2 and M8	CN8002, CN14008		Check if cables are firmly connected.
		AUDIO SW		Periphery of the cable between PR1 and M9	CN8201, CN146801		Check if cables are firmly connected.
Blue 9	Failure in communication with the main microcomputer and unknown	MAIN	-	Communication line between IF and MAIN	IC4803, IC5005		Check the communication lines (TxD_IF/RxD_IF/CE_IF/REQ_IF).
		DVI receiver	DVI	IIC communication line between DVI_RX and MAIN	IC7001, IC5002		Check the communication lines (SCL_DVI/SDA_DVI).
		AUDIO SW	MA_IIC	IIC communication line between AUDIO_SW and MAIN	IC8201, IC5002		Check the communication lines (SCL_MA/SDA_MA or SCL_MA5/SDA_MA5).
Blue 10	FAN NG			Periphery of the cable between PR1 and M9	CN8201, CN146801		Check if cables are firmly connected.
		FAN	-	Dirt attached to the fan motor	-		Check the fan motor
				Periphery of the FAN CONNECT Assy	FAN_CONNECT Assy		
Blue 11	High temperature of the unit			Periphery of the cable between FA1 and M6 or FA2 and M5	CN8651 to CN8655, CN4003		Check if cables are firmly connected.
				Periphery of the fan control regulator	IC5003, IC5008		
Blue 13	Failure in the POWER SUPPLY Unit			Temperature sensor or its periphery	IC8852	-	A shutdown is generated if TEMP2 becomes higher than 59°C
				Periphery of the temperature sensor	IC8851, CN14009		Check if cables are firmly connected.
		DC-DC converter power decrease	M-DCDC	Periphery of the cable between SR1 and M5	U4401		Check if V + 3.3 V is started.
Blue 14	Failure in the POWER SUPPLY Unit	POWER SUPPLY	MA-PWR	DC-DC converter or its periphery, RST2	The 12 V power is not output, RST4		Check if V + 12 V is started.
		RELAY		Periphery of the cable between P8 and M1	CN4006	-	Check if cables are firmly connected.

5.4 INFORMATION WHICH IS NOT FAILURE

A 1. Function of lowering the luminance level (Information on symptoms that are not failure)

■ High-temperature protection function 1

If the temperature reaches 70 °C, the limit of the maximum count of plasma discharge is gradually lowered, in order to prevent overheating.

- Temperature control is performed based on the temperature value of TEMP1.
- The maximum count of plasma discharge is decreased by 8 every 5 seconds.
- The lowest limit of the maximum count of plasma discharge is about 700.
- The maximum count of plasma discharge will increase gradually once the temperature of the unit is lowered to a specified temperature.

■ High-temperature protection function 2 (Only for the FHD panel)

B Because the heat value with the PDP-5000EX panel during lighting of cells is somewhat greater than with other models, the count of plasma discharge with regard to the input APL is lowered if the temperature of the unit reaches 45°C. In actuality, the ABL adjustment value is offset.

- Temperature control is performed based on the temperature of TEMP1.
- The ABL adjustment value is decreased by one step every 30 seconds.
- The ABL adjustment value will increase gradually once the temperature of the unit is lowered to a specified temperature.

■ Panel Protection Function 1 (for preventing burn-in during Still Picture mode)

If Still Picture mode is continued for 3 minutes or more, the limit of the maximum count of plasma discharge is gradually lowered, in order to reduce burn-in on the display.

- Whether the image displayed is a still picture or not is detected, and the Panel Protection Function will be activated (Even if the mouse pointer is moved on a still picture, that picture is judged as a still picture.)
- The maximum count of plasma discharge is decreased by 8 every 5 seconds.
- The lowest limit of the maximum count of plasma discharge is about 700. (It takes about 15 minutes to reach the lowest limit, although it depends on what is displayed on the screen.)
- If the image is changed to an animated picture, the maximum count of plasma discharge is gradually increased.

Note: How to lower the luminance level is the same as that for the high-temperature protection function 1.

■ Panel Protection Function 2 (for protecting the SCAN IC)

If a particular load is added on the SCAN IC locally, as shown in the figure on the right, the limit of the maximum count of plasma discharge is gradually lowered.

Note: How to lower the luminance level is the same as that for the high-temperature protection function 1.

D ■ Panel Protection Function 3

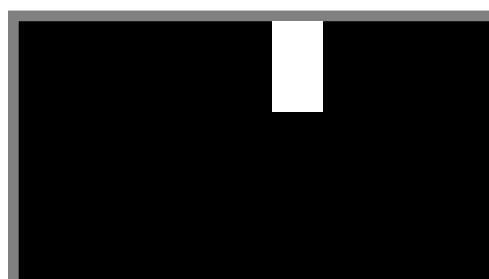
(for protecting the panel from cracking)

The heating value for a bright window part on the screen, as shown in the figure on the right, is high. So, if such a pattern is recognized, the limit of the maximum count of plasma discharge is gradually lowered.

Note: How to lower the luminance level is the same as that for the high-temperature protection function 1.

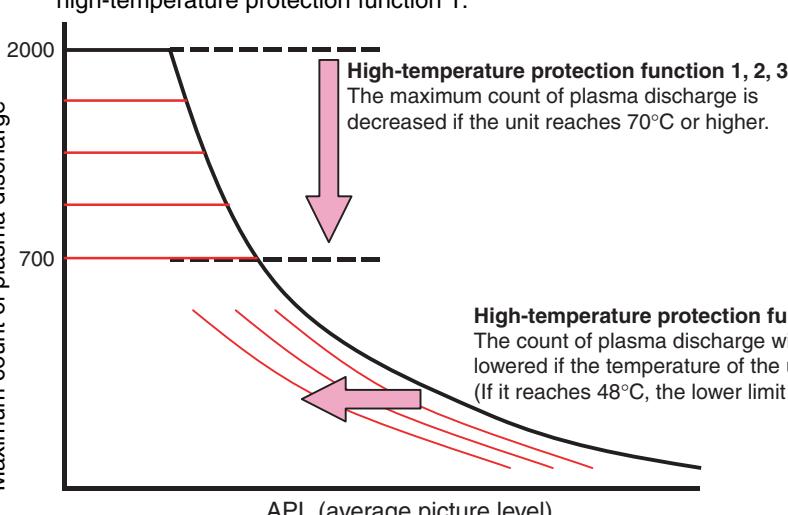


Example: A display with which the SCAN IC protection function is to be activated



Example: A display with which the panel-cracking protection function is to be activated

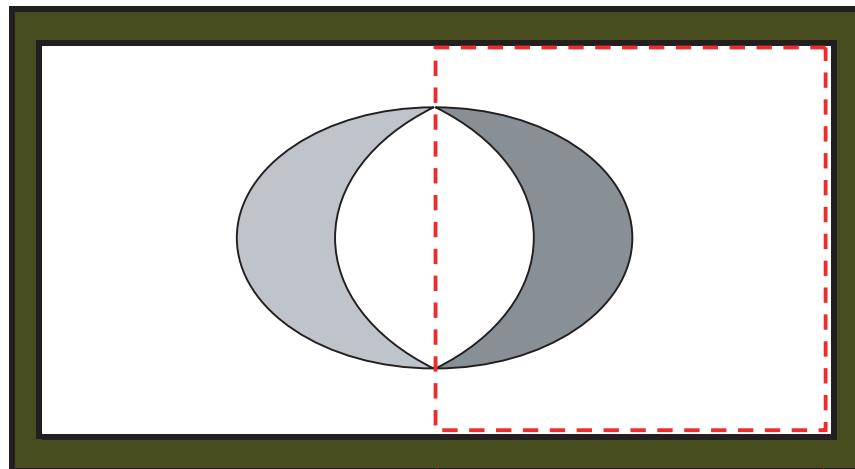
E Maximum count of plasma discharge
F



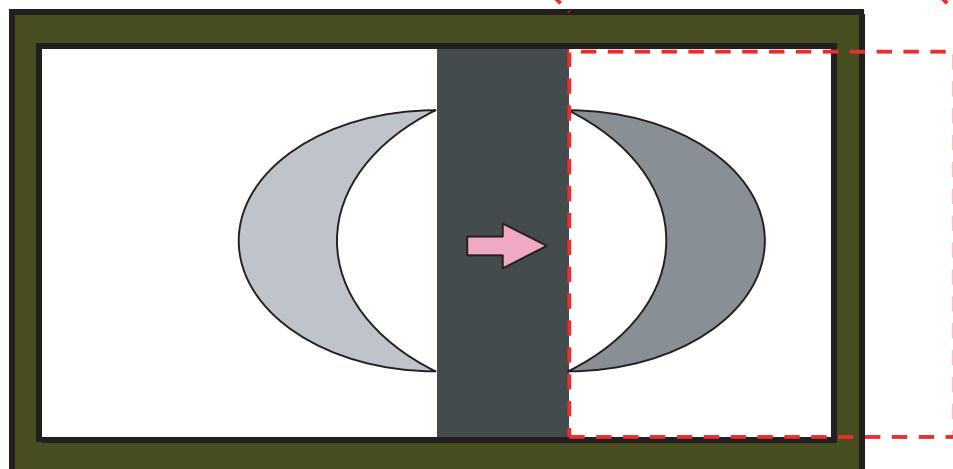
2. On dislocation of the mask indication, which is generated on the right side of the screen

With the application-specific integrated circuit (ASIC) designed for the FHD panel, the mask indication may be dislocated. When the unit is turned on with the panel mask indication ON, the mask indication is dislocated on approximately one unit out of three hundred. As end users basically do not use panel mask indications, this is not a problem in normal usage. Dislocation may be generated during failure analysis or when turning the unit off then back on during voltage margin adjustment.

Normal mask indication



Dislocation of mask indication

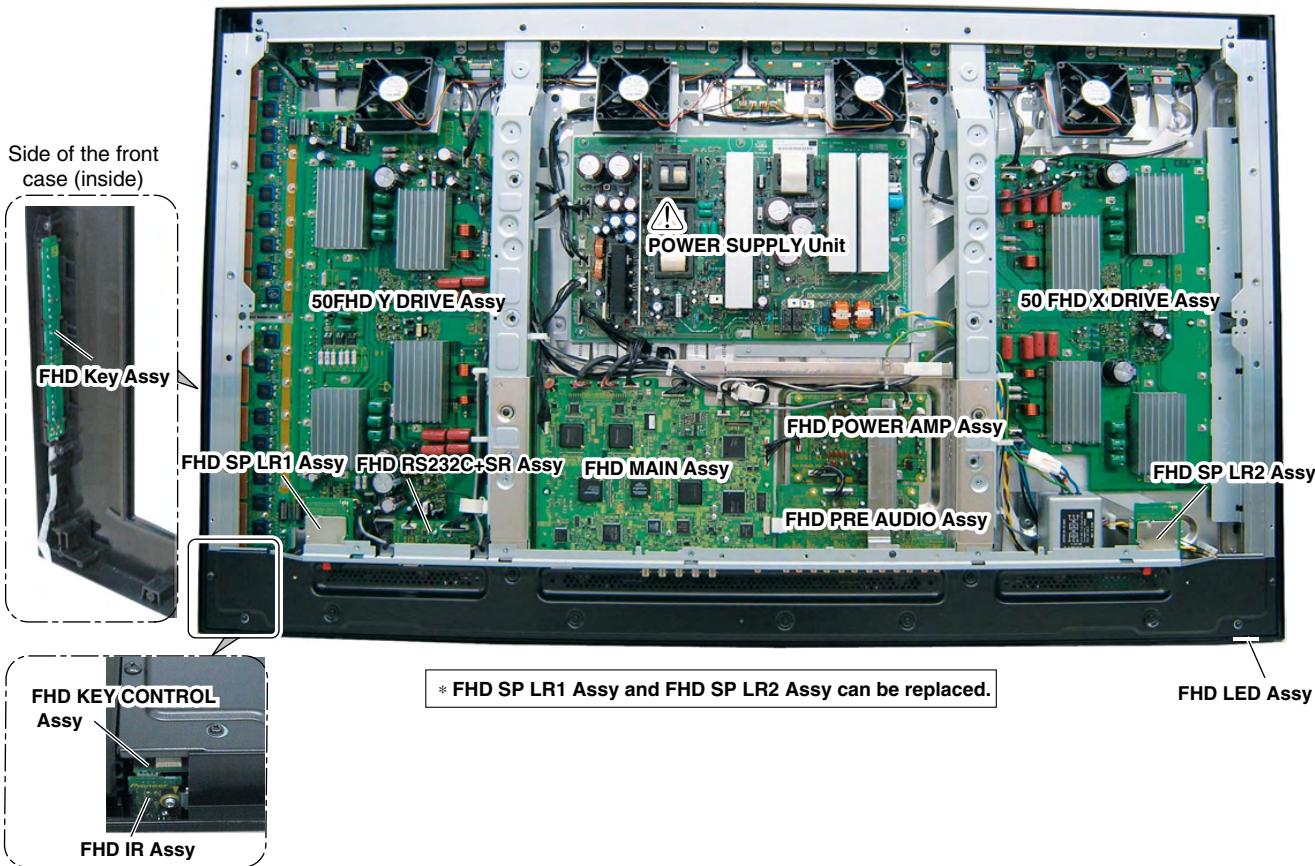


Note: The mask indication pattern indicated above is not a real pattern.

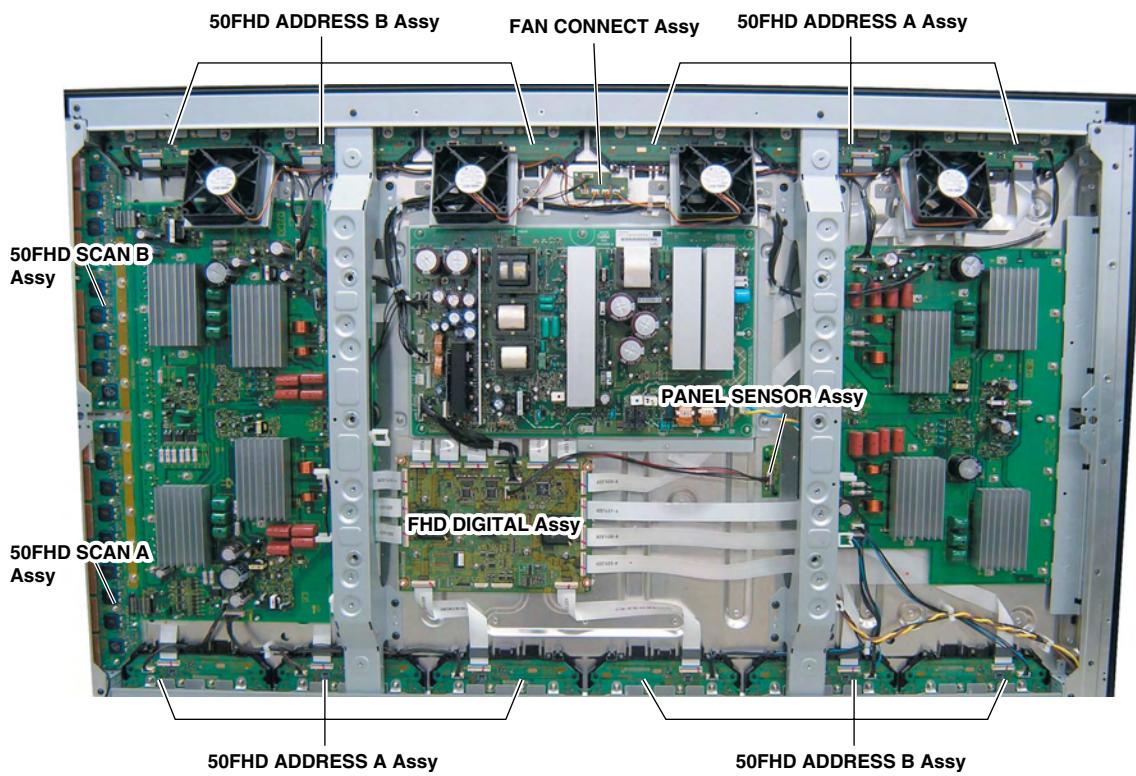
6. DISASSEMBLY

6.1 PCB LOCATION

A



D



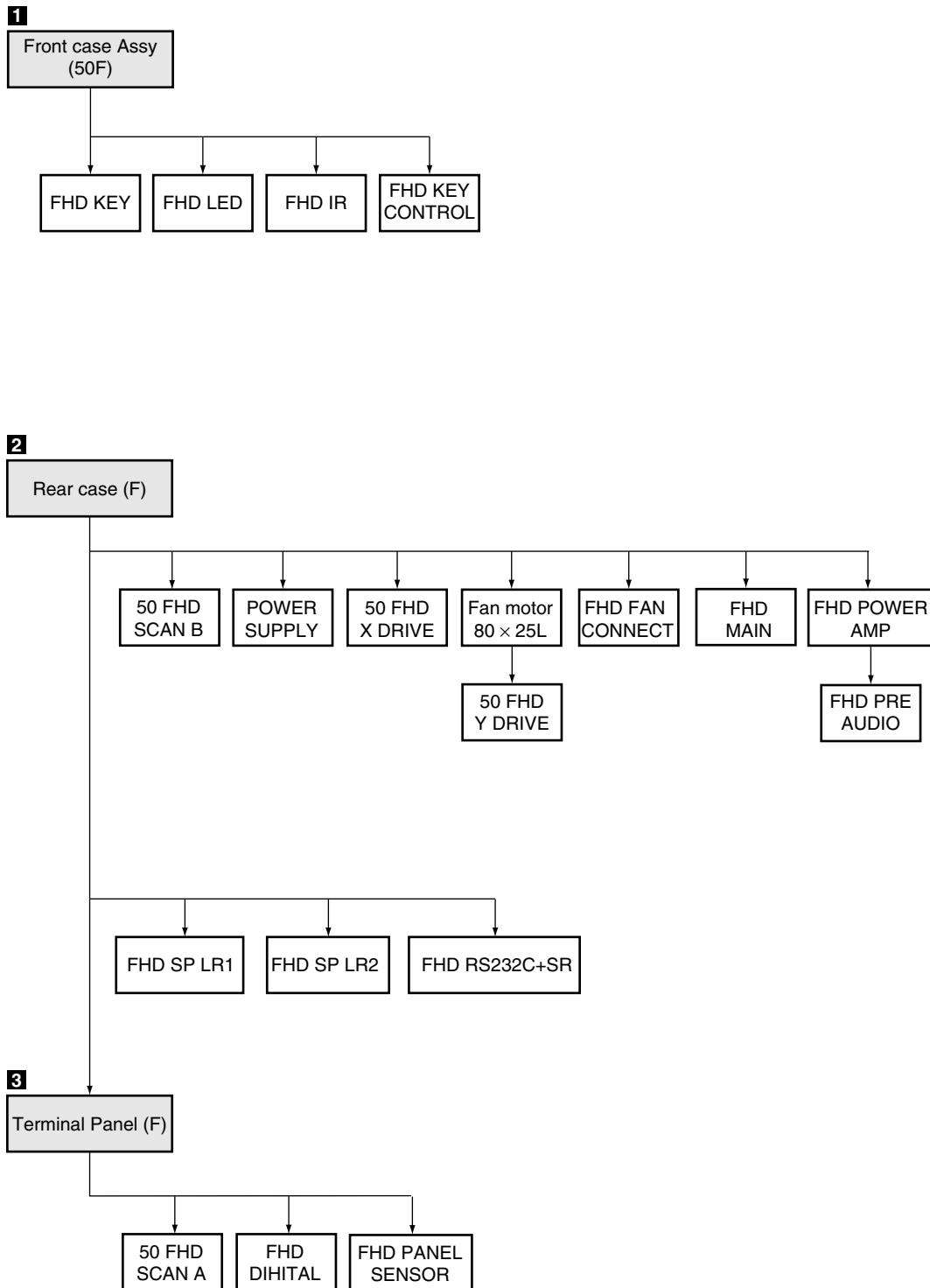
F

6.2 FLOWCHART OF THE MAIN PARTS AND PC BOARDS EXCHANGE

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

Flowchart of the main parts and PC Boards removal

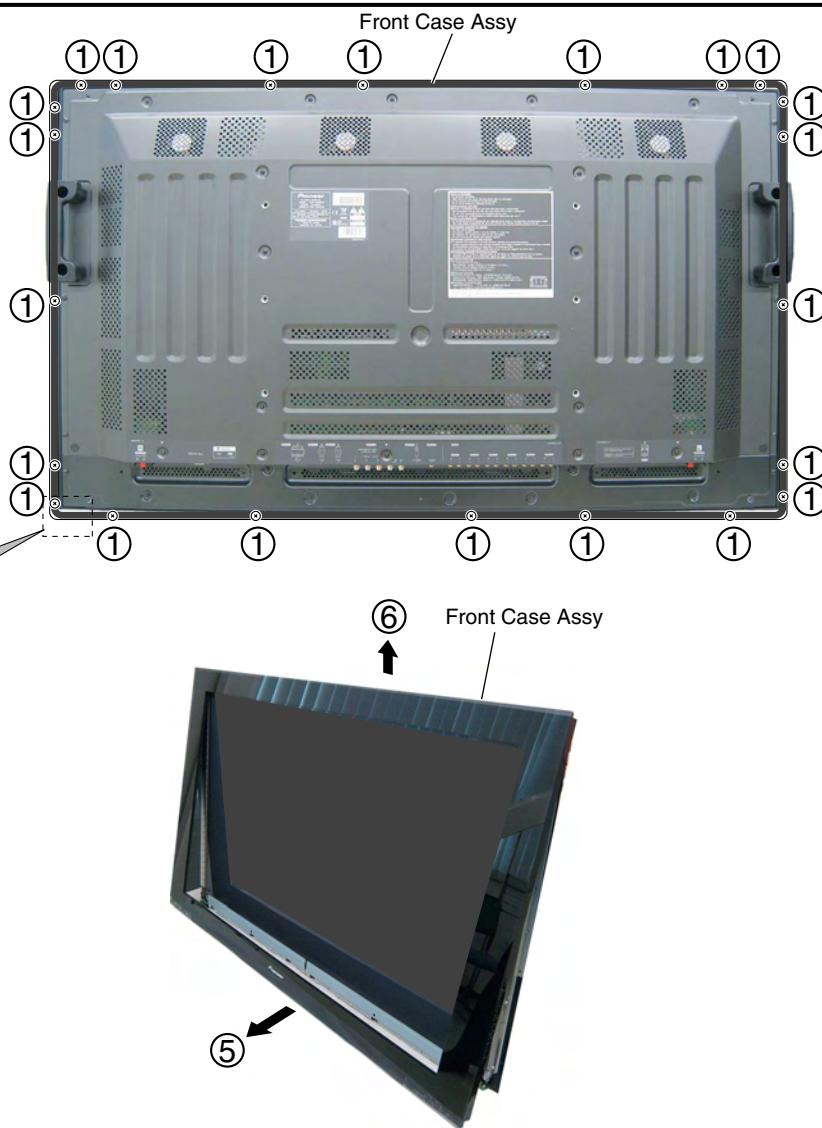
It is effective when removing the main parts and PC Boards by the following step.



A Disassembly (1)

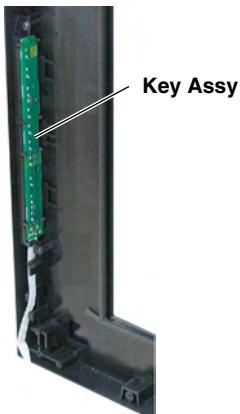
1 Front Case Assy

- ① Remove the 22 screws. (APZ30P100FTB)
- ② Remove the corner Holder B.
- ③ Disconnect the flexible cable.
- ④ Remove the front case assy.



1 -1 FHD Key Assy, FHD IR Assy, FHD KEY CONTROL Assy

E • FHD Key Assy

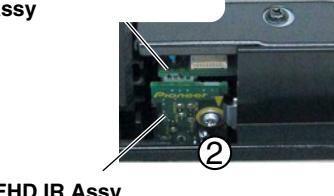


E • FHD IR Assy, FHD KEY CONTROL Assy

- ① Remove the Terminal Panel (F). (refer to "Terminal Panel")
- ② Remove the one screw
- ③ Remove the IR Assy, KEY CONTROL Assy.



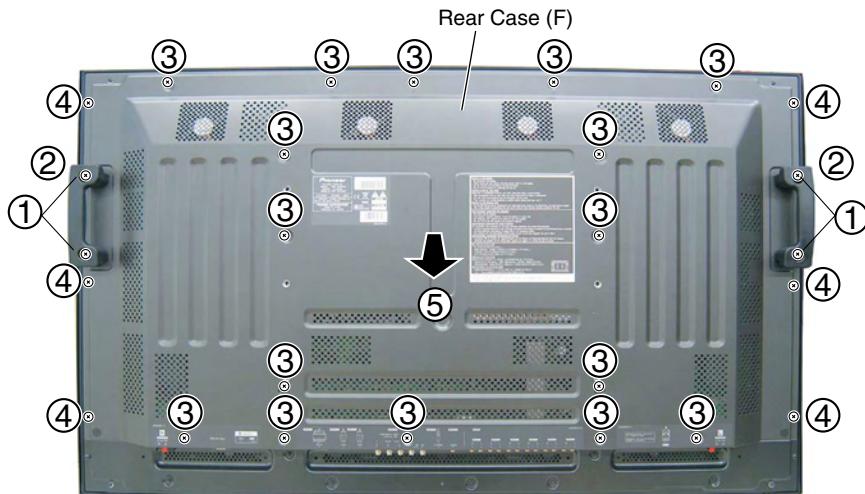
FHD KEY CONTROL
Assy



Disassembly (2)

2 Rear Case (F)

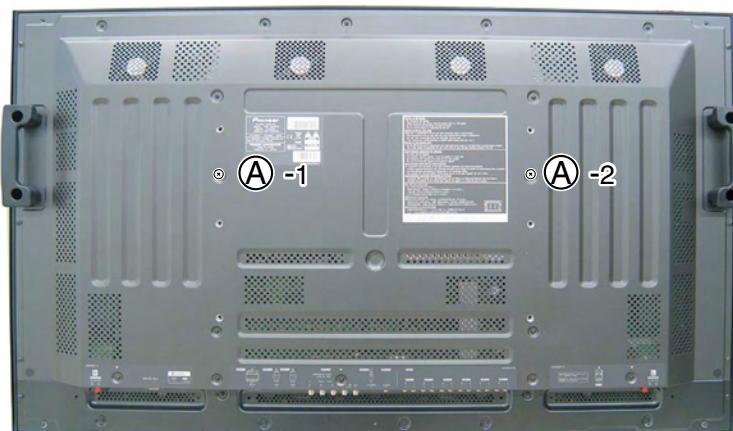
- ① Remove the four screws. (HMB50P140FTB)
- ② Remove the 2 grips.
- ③ Remove the 16 screws.(AMZ30P060FTB)
- ④ Remove the six screws.(TBZ40P080FTB)
- ⑤ Remove the rear case (F).



● About reattachment

For easy reattachment, be sure to install the screws for the Rear case in the order indicated in the photo. After securing those screws in place, the other screws

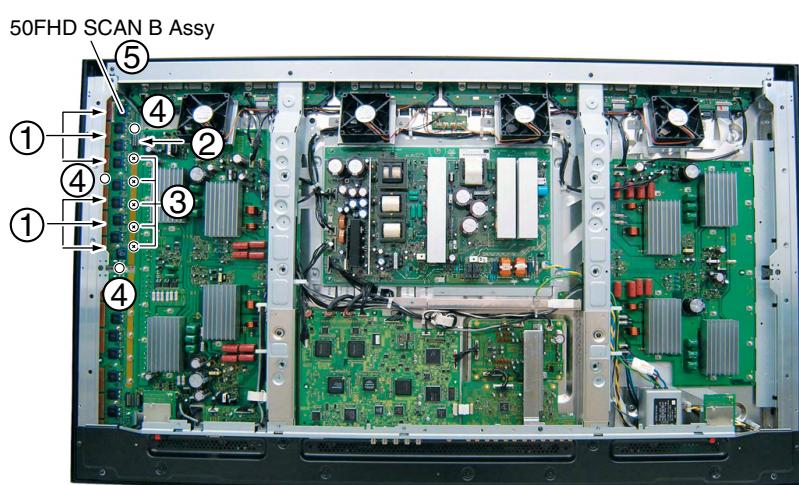
- (A) -1 one screw. (AMZ30P060FTB)
- (A) -2 one screw. (AMZ30P060FTB)



A

2 -1 50FHD SCAN B

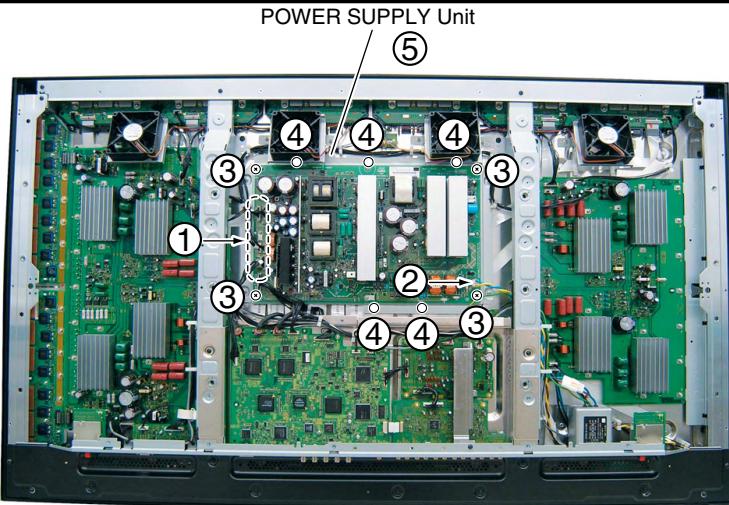
- ① Disconnect the six connectors.
- ② Disconnect the one connectors.
- ③ Remove the five screws.
- ④ Unhook the three hooks.
- ⑤ Remove the 50FHD SCAN B Assy.



B

2 -2 POWER SUPPLY Unit

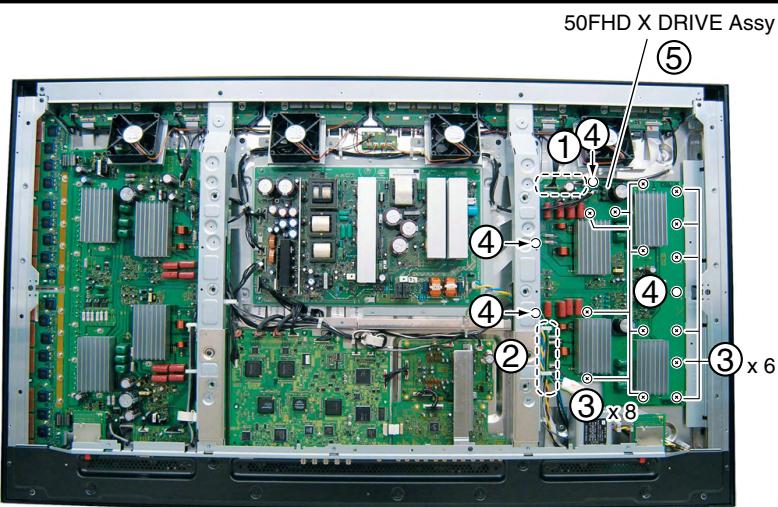
- ① Disconnect the seven connectors.
- ② Disconnect the one connectors.
- ③ Remove the four screws.
- ④ Unhook the five hooks.
- ⑤ Remove the POWER SUPPLY Unit.



C

2 -3 50FHD X DRIVE Assy

- ① Disconnect the four connectors.
- ② Disconnect the three connectors.
- ③ Disconnect the 14 screws.
- ④ Unhook the five hooks.
- ⑤ Disconnect the 50FHD X DRIVE ASSY.



2 -4 Fan Motor

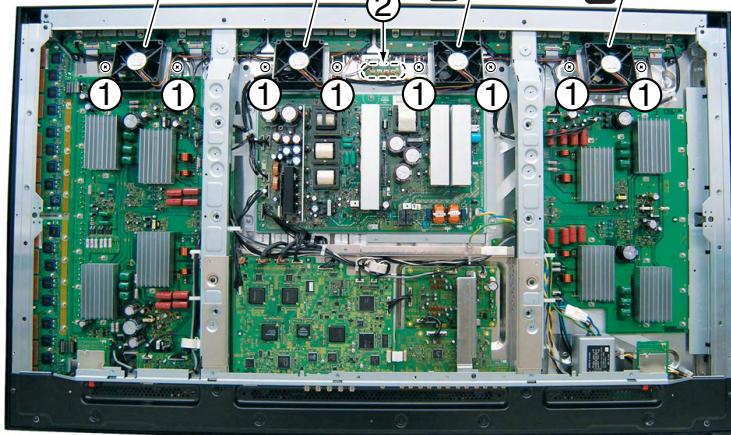
Fan Motor (1) (2) (3) (4)

- ① Remove the two screws.
- ② Disconnect the one connector.



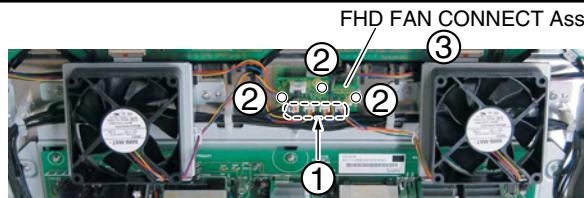
Cleaning liquid: GEM1004
Cleaning paper: GED-008

Fan Motor (1) Fan Motor (2) Fan Motor (3) Fan Motor (4)



2 -5 FHD FAN CONNECT Assy

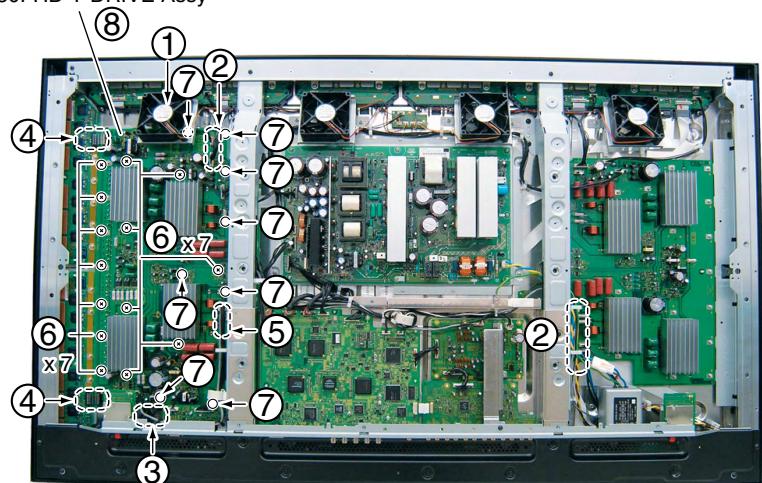
- ① Disconnect the five connectors.
- ② Unhook the three hooks.
- ③ Remove the FHD FAN CONNECT.



2 -6 50FHD Y DRIVE Assy

- ① Remove the Fan Motor 1. (refer to " Fan Motor")
- ② Disconnect the four connectors.
- ③ Disconnect the two connectors.
- ④ Disconnect the two connectors.
- ⑤ Disconnect the flexible cable.
- ⑥ Remove the 14 screws.
- ⑦ Unhook the 8 hooks.
- ⑧ Remove the 50FHD Y DRIVE Assy.

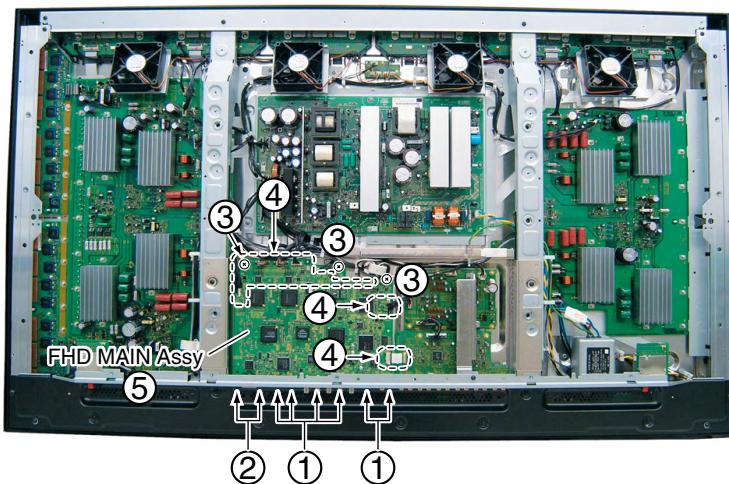
50FHD Y DRIVE Assy



A

2 -7 FHD MAIN Assy

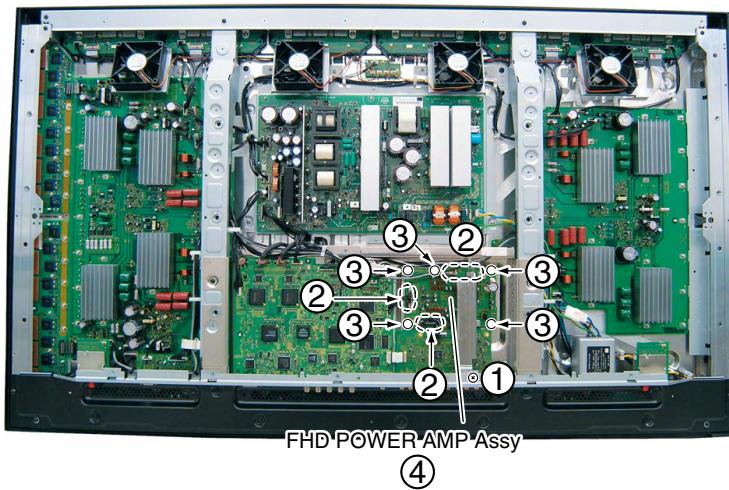
- ① Remove the six screws.
- ② Remove the hix two head screws.
- ③ Remove the three screws.
- ④ Disconnect the 9 connectors.
- ⑤ Remove the FHD MAIN Assy.



B

2 -8 FHD POWER AMP Assy

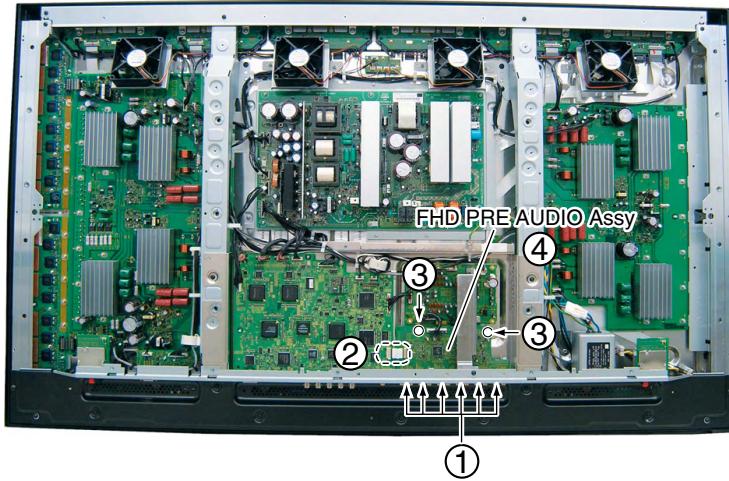
- ① Remove the one screws.
- ② Disconnect the four connectors.
- ③ Unhook the five hooks.
- ④ Remove the FHD POWER AMP Assy.



D

2 -9 FHD PRE AUDIO Assy

- ① Remove the six screws.
- ② Disconnect the one connector.
- ③ Unhook the two hooks.
- ④ Remove the FHD PRE AUDIO Assy.



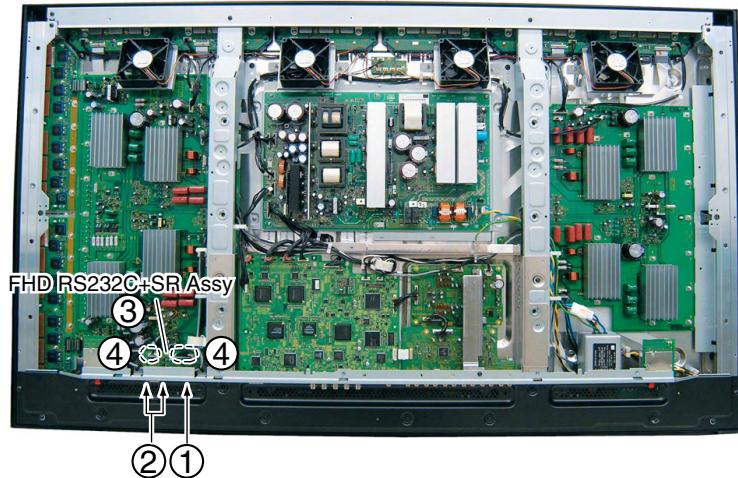
2 -10 FHD SP1, FHD SP2 Assys

- ① Remove the two screws.
- ② Remove the FHD SP1 Assy (FHD SP2 Assy).
- ③ Disconnect the one connectors.



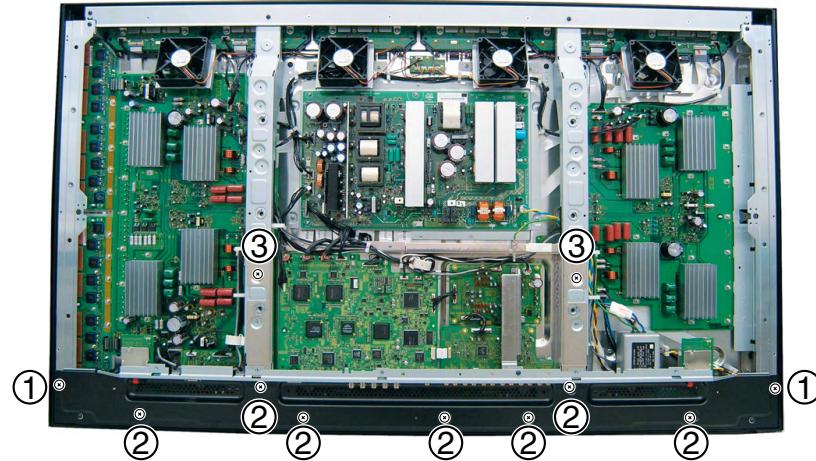
2 -11 FHD RS232C+SR Assy

- ① Remove the one screws.
- ② Remove the two hex head screws.
- ③ Remove the FHD RS232C+SR Assy.
- ④ Disconnect the two connectors.

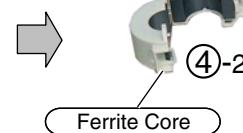
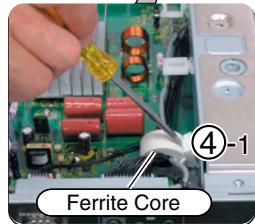
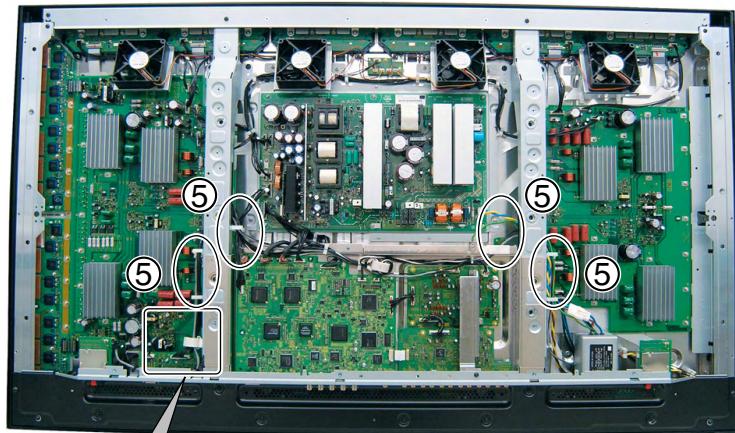


A Disassembly (3)

- 3 Terminal Panel (F)**
- ① Remove the two screws.(TBZ40P080FTB)
 - ② Remove the seven screws.(AMZ30P060FTB)
 - ③ Remove the two screws.(AMZ30P060FTB)



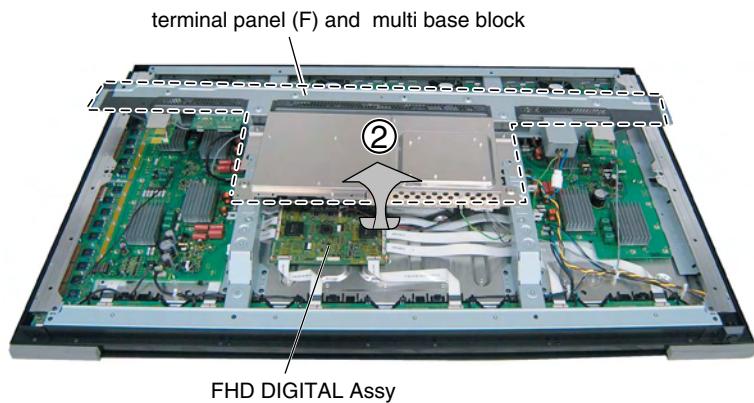
- ④ Remove the Ferrite Core.
⑤ Remove the cable from the wire saddle.



3 -1 FHD DIGITAL Assy

- ① Remove the terminal panel (F) (refer to " Terminal Panel")
- ② terminal panel (F) and multi base block is caused.

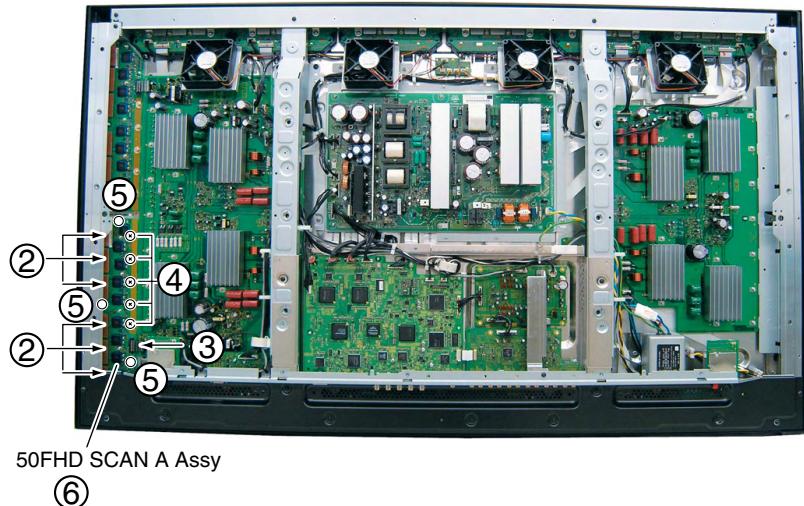
Diagnosis of FHD DIGITAL Assy section



3 -2 50FHD SCAN B

- ① Remove the terminal panel (F) (refer to " Terminal Panel")
- ② Disconnect the six connectors.
- ③ Disconnect the one connectors.
- ④ Remove the five screws.
- ⑤ Unhook the three hooks.
- ⑥ Remove the 50FHD SCAN A Assy.

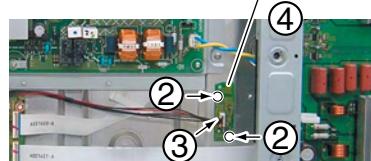
Remove the two screws.(AMZ30P060FTB)



3 -3 FHD PANEL SENSOR Assy

- ① Remove the terminal panel (F) (refer to " Terminal Panel")
- ② Remove the two nyron rivet.
- ③ Disconnect the one connectors.
- ④ Remove the FHD PANE SENSOR Assy.

FHD PANEL SENSOR Assy



7. ADJUSTMENT

7.1 PARTS CHANGE OF NOTES



1. At shipment, the unit is adjusted to its best conditions. Normally, it is not necessary to readjust even if an assembly is replaced. If the adjustment is shifted or if it becomes necessary to readjust because of part replacement, etc., perform the adjustment as described below.
2. Any value changed in Service/Factory mode will be stored in memory as soon as it is changed. Before readjustment, take note of the original values for reference in case you need to restore the original settings.
3. Use a stable AC power supply.

7.2 POSSIBLE CASES WHERE READJUSTMENT IS REQUIRED

B ■ When any of the following assemblies is replaced

POWER SUPPLY Unit	→	No adjustment required
FHD MAIN Assy	→	Refer to "8.2.3.5 FINAL SETUP"
FHD DIGITAL Assy	→	Refer to "7.3 BACKUP OF ADJUSTMENT VALUES FOR THE MAIN UNIT"
50FHD X DRIVE Assy	→	No adjustment required
50FHD Y DRIVE Assy	→	No adjustment required
50FHD SCAN A Assy	→	No adjustment required
50FHD SCAN B Assy	→	No adjustment required
Service Panel Assy	→	Refer to "7.4.1 ADJUSTMENTS WHEN THE SERVICE PANEL ASSY IS REPLACED" and "7.6 HOW TO CLEAR VARIOUS LOGS."
Other assemblies	→	No adjustment required

D ■ When any part in the following assemblies is replaced

POWER SUPPLY Unit	→	The assembly must be replaced as a unit, and no part replacement is allowed.
FHD DIGITAL Assy	→	No adjustment required
50FHD X DRIVE Assy	→	After any of the parts shown below on the 50FHD X DRIVE or 50FHD Y DRIVE Assy are replaced, a waveform adjustment is required.
50FHD Y DRIVE Assy	→	

E Object parts

Assy	Ref. No.	Part Category	Part No.
50FHD X DRIVE Assy	IC1206	Photo Coupler	PS9117-TLB
	IC1207	FET Driver	TND307TD-TBB
	IC1210	FET Driver	TND307TD-TBB
50FHD Y DRIVE Assy	IC2242	Photo Coupler	PS9117-TLB
	IC2241	FET Driver	TND307TD-TBB
	IC2252	FET Driver	TND307TD-TBB

Refer to "7.5 ADJUSTMENTS WHEN THE DRIVE ASSY ARE REPLACED".

Other assemblies	→	No adjustment required
------------------	---	------------------------

■ Nonreplaceable parts

A

FHD DIGITAL Assy

Ref. No.	Part Category	Part No.	Remarks
IC3701	4K EEPROM	BR24L04FJ-W-TBB	Replaceable if backup data are to be copied to the part after replacement

PANEL SENSOR Assy

Ref. No.	Part Category	Part No.	Remarks
IC3902	2K EEPROM	BR24L02FJ-W-TBB	Replaceable if the FHD DIGITAL Assy is not replaced simultaneously

FHD MAIN Assy

Ref. No.	Part Category	Part No.	Remarks
IC4601	CVBS SW IC	R2S11002AFT-K	
IC4803	FLASH UCOM	AGC1005- -PI-K	The program for the microcomputer is written on it.
IC5001	64K EEPROM	BR24L64F-W-TBB	Adjustment data that are specific to the Assy are written on it.
IC5005	FLASH MEMORY IC	AGC1012- -PI-K	The program for the microcomputer is written on it.
IC5202	A/D CONVERTER	AD9985KSTZ-110-K	
IC5402	3D Y/C SEPA & VDEC IC	UPD64015AGM-UEU-K	
IC5403	VIDEO DECODER	TVP5150AM1PBS-K	
IC5601	RGB SW IC	R2S11001FT-K	
IC6203	FLASH MEMORY IC	AGC1013- -PI-K	The program for the microcomputer is written on it.
IC6802	2K EEPROM	BR24L02FJ-W-TBB	EDID data are written on it.
IC6803	2K EEPROM	BR24L02FJ-W-TBB	EDID data are written on it.
IC7003	2K EEPROM	BR24L02FJ-W-TBB	EDID data are written on it.
IC7004	2K EEPROM	BR24L02FJ-W-TBB	EDID data are written on it.

B

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7.3 BACKUP OF ADJUSTMENT VALUES FOR THE MAIN UNIT

■ Outline

- A Adjustment data are stored in the EEPROM (IC3701/4K) on the FHD DIGITAL Assy in the production process.
Those adjustment data are also automatically stored in the EEPROM (for backup: IC3902/2K) on the PANEL SENSOR Assy.

■ Backed up data

- Voltage margin adjustment value
- Electricity upper limit adjustment value
- Panel white balance adjustment value
- Drive waveform adjustment value
- PD/SD histories
- Hour-meter count
- Pulse-meter count
- Serial No.
- P-ON counter value

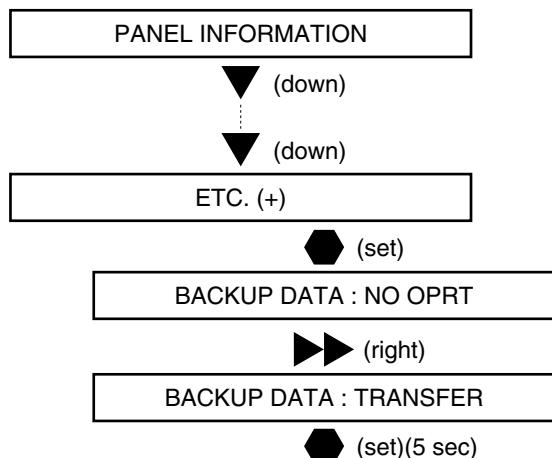
B

7.3.1 HOW TO COPY THE BACKUP DATA (when replacing the Assy with one for service)

When replacing the FHD DIGITAL Assy with one for service, copy the backup data, as shown below:

- Command:** BCP command
(Be effective between FAY command)

C ■ Factory Menu:



Note:

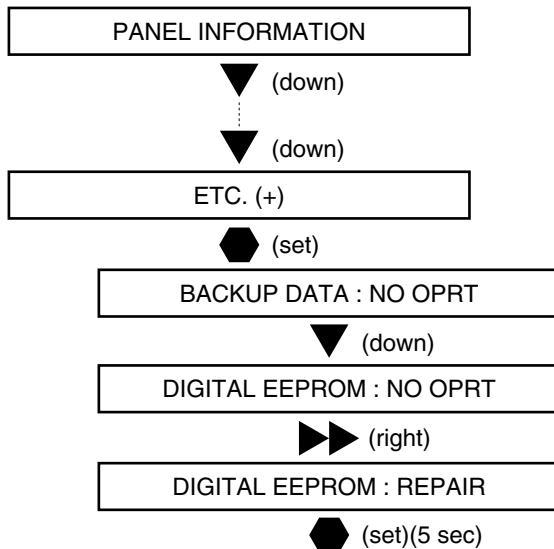
- E If copying of the backup data fails in the above procedure, the red LED lights, and the blue LED flashes, as a warning that no backup data were copied.

7.3.2 HOW TO COPY THE BACKUP DATA (when reusing a second-hand Assy)

When replacing the FHD DIGITAL Assy with one that was mounted on another product, copy the backup data, as shown below:

- **Command:** FAJ command
(Be effective between FAY command)

■ Factory Menu:



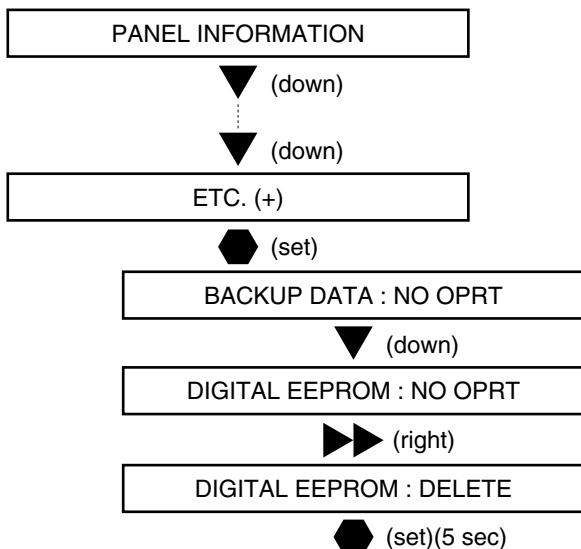
7.3.3 FORMATION OF A FHD DIGITAL ASSY (RE-SERVICE PART)

- **How to adjust the FHD DIGITAL Assy that is mounted on one product so that it can be mounted on another product**

When adjusting the FHD DIGITAL Assy that is mounted on one product so that it can be mounted on another product, proceed as follows:

- **Command:** UAJ command
(Be effective between FAY command)

■ Factory Menu:



Note:

If the secondhand FHD DIGITAL Assy is mounted in the product then the unit is turned on then back off again, the data in the EEPROM on the FHD DIGITAL Assy are copied over the EEPROM in the PANEL SENSOR Assy.

7.4 EXCHANGE OF SERVICE PANEL ASSY

7.4.1 ADJUSTMENTS WHEN THE SERVICE PANEL ASSY IS REPLACED

A

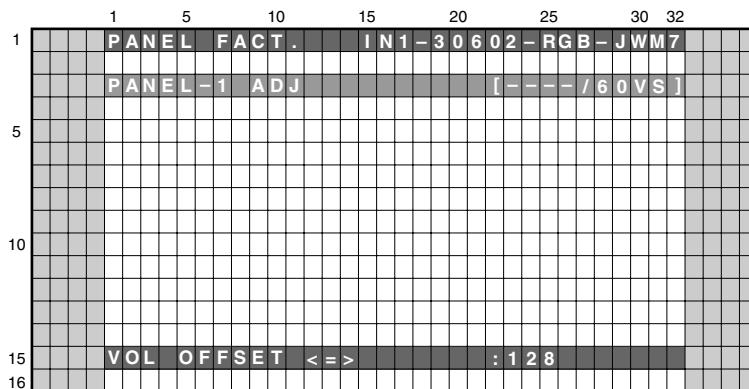
■ Flow for panel replacement

Voltage margin adjustment is required after the Panel Assy is replaced with one for service.

[Preparations]

- Basically, the Panel Factory menu is used for the voltage margin adjustment.
- The 60-Hz video sequence is used as the drive sequence.
- While adjusting the voltage margin using the Panel Factory menu, the current drive sequence is indicated on the screen, as shown below. Make sure that 60VS is always indicated during adjustment.

B



Example of an OSD during Panel Factory mode

[Supplement]

- When the Raster Mask for margin adjustment is displayed during Panel Factory mode, the Panel White Balance setting value is default, and the Panel Gamma setting is "Straight" in the PANEL-1 ADJ layer. The third line of the OSD during Panel Factory mode is "----/****," where "****" is the type of drive sequence set.
- D • If you wish to adjust using RS-232C commands, note that the commands are different from those used during Factory mode. The commands for this are indicated below:
PAV S00: To switch from Panel Drive mode to Panel Factory mode
VFQ S03: To switch the Drive Sequence to Video 60 H
WBI S01: To temporarily reset the Panel WB adjustment value to default (To cancel resetting, issue WBI then S00.)
PGM S00: To switch the Gamma setting to "Factory"

Note: If the power is shut down during the adjustment procedure, issue the above commands again.

E

F

OVERVIEW

Operation switch

When the voltage is to be adjusted, do the following:

Enter Factory mode.
Display RST MASK 05 (black).

FAY
MKS S55

Voltage setting

Set VOL SUS and VOL RST P, and set temporary VOL OFFSET, as indicated below:

VOL SUS: 125
VOL RST P: Set voltage as shown at panel label.
VOL OFFSET: Set voltage as shown at panel label.

VSU125
VRP***
VOS

Aging

Aging process for 3 minutes with RST MASK 01 (white)

To prevent an error caused by the temperature characteristics, raise the panel temperature to a certain extent beforehand. But do not perform aging more than 20 minutes.

MKS S51

Vofs actual adjustment (② to ④)

Signals to be measured

VOL OFFSET lower limit:

VOL OFFSET_min1 "light purple"
VOL OFFSET_min2 "light blue"
VOL OFFSET_min3 "violet"

MKS S59
MKS S62
MKS S63
MKS S64
MKS S66
MKS S67

VOL OFFSET upper limit:

VOL OFFSET_max1 "red 582"
VOL OFFSET_max2 "green 850"
VOL OFFSET_max3 "blue 850"

Vofs setting

Set according to the table for Vofs setting values.

VOF***

CA check with black

With RST MASK 05 (black) displayed, check if there are stationary or horizontally moving luminescent spots.

MKS S55

Operation switch

Do the following after the voltage adjustment is completed:

MKS S00
FAN

CA check

Check that the picture is properly displayed.

Use DVD, LD, and broadcast signals for checking.

Ranges of the adjustable voltages

(Variable voltage ranges when the upper and lower limit of each voltage are to be checked in this flowchart)

Vsus = 205 [V]
Vofs = 15 to 60 [V]
Vyrst = 220 to 271 [V]
Vxrst = 170 [V]
Vh = 130 [V]
Vadr = 60 [V]

Ranges of the voltage settings

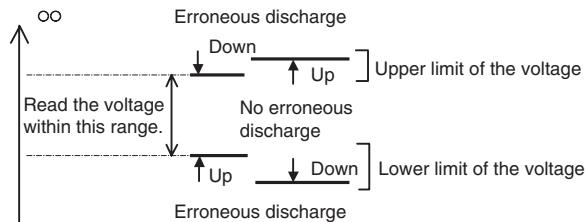
(Ranges of the voltage settings for the unit)

Vsus = 205 [V]
Vofs = 28 to 46 [V]
Vyrst = 220 to 271 [V]
Vxrst = 170 [V]
Vh = 130 [V]
Vadr = 60 [V]

When calculating the voltage, round off the fractional part.
(For circuit protection, it is desirable to set the voltage to a lower value.)

In the following text, voltage is described in absolute values.

For margin measuring, read the voltage within the hysteresis (stricter value), as shown below:



The Definition of Abnormal Cells

Abnormal bright cells: Within five cells on screen.
(only one cell within a radius of 1 cm)

Abnormal dark cells: Under fifteen cells on screen.
(under two cells within a radius of 1 cm)

Count abnormal cells at a distance of 1 cm from panel.
If abnormal cells won't occur longer than one second, do not count the abnormal cells.
Do not count still dark cells and bright cells.

Shipment standards for the unit:

VOL SUS setting = 125/205 V
Vofs setting = 28 to 46 V
Vofs_max-Vofs setting: 10 V or more
Vofs setting-Vofs_min: 9 V or more
Vyrst setting = 220 to 271 V

Definition of tones for the measuring signals

(Digital Raster signal, Video-60 Hz sequence, ABL_ON)

White	Black	Light purple	Light blue	Violet	Red 582	Green 850	Blue 850
R 1023	R 0	R 277	R 464	R 1023	R 582	R 0	R 0
G 1023	G 0	G 130	G 1023	G 464	G 0	G 850	G 0
B 1023	B 0	B 277	B 1023	B 1023	B 0	B 1023	B 1023

A ━━━━ ① **Preparations** ━━━━

Initial setting

Enter Factory mode. FAY

with command
PAV S00
VFQ S03
WBI S01
PGM S00

B ━━━━ Display RST MASK 05 (black). MKS S55

Voltage setting

C ━━━━ Set VOL SUS to 125 (Vsus = 205 V). VSU 125

D ━━━━ VOL OFFSET: The Vyprst voltage value currently displayed on the service panel is changed and set as a setting value.
(See the conversion table for the electronic VR.) VRP***

E ━━━━ VOL OFFSET: The Vofs voltage value currently displayed on the service panel is changed and set as a Temporary setting value.
(See the conversion table for the electronic VR.) VOF***

Aging

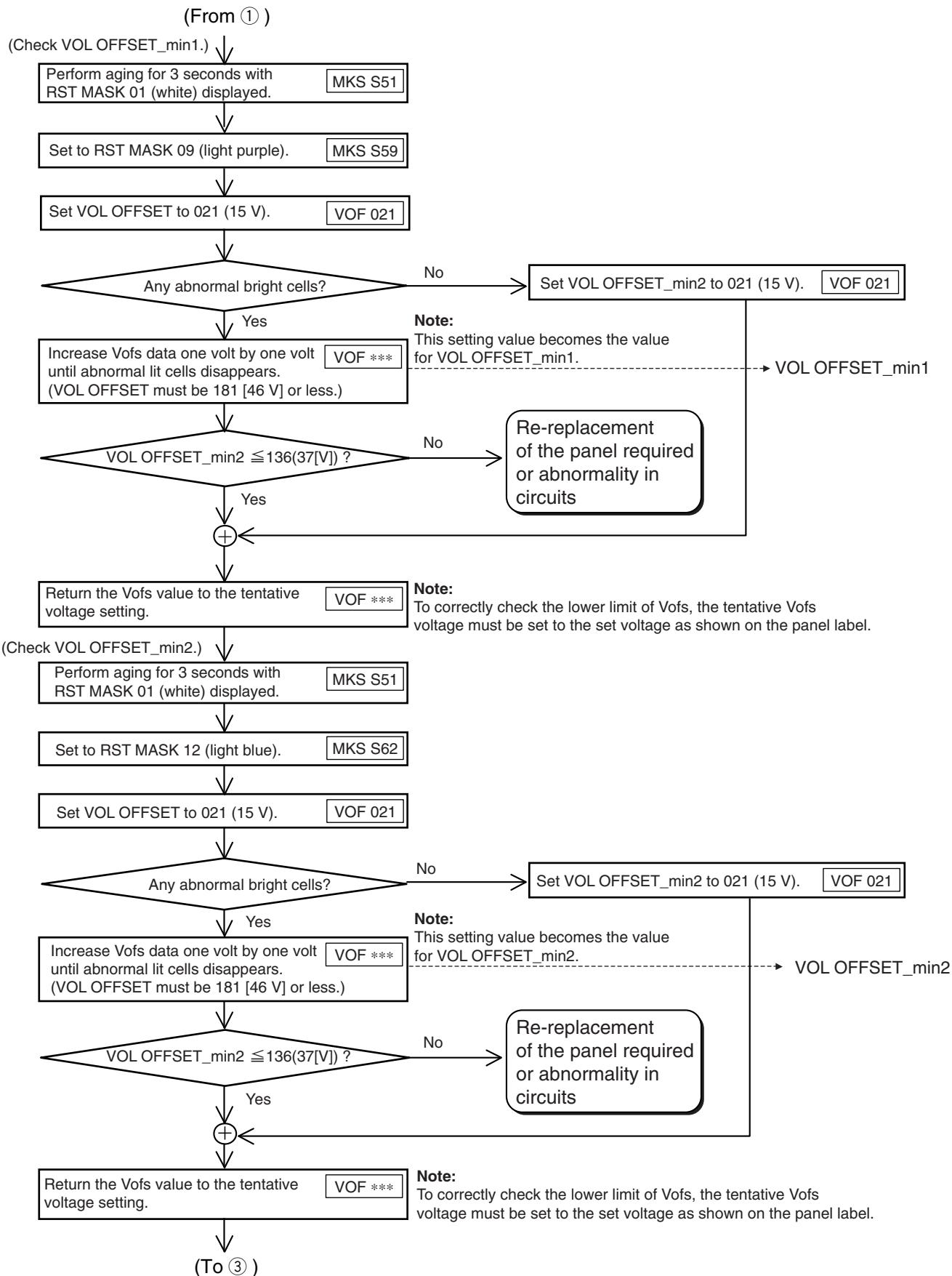
F ━━━━ Perform aging for 3 minutes with RST MASK 01 (white) displayed. MKS S51

Note:

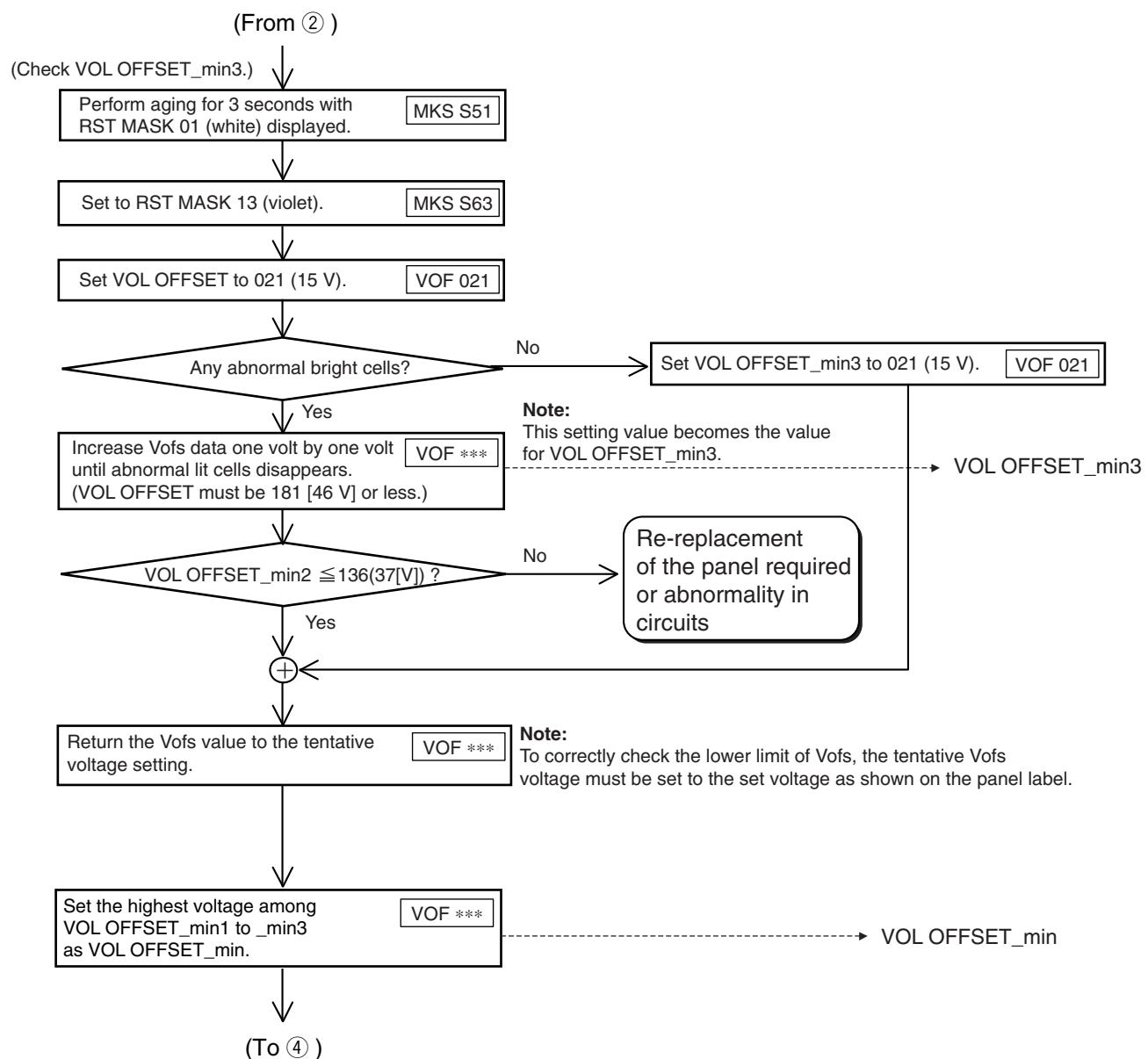
Be sure not to perform aging for more than 20 minutes.

G ━━━━ (To ②)

② Actual Vofs adjustment (1)

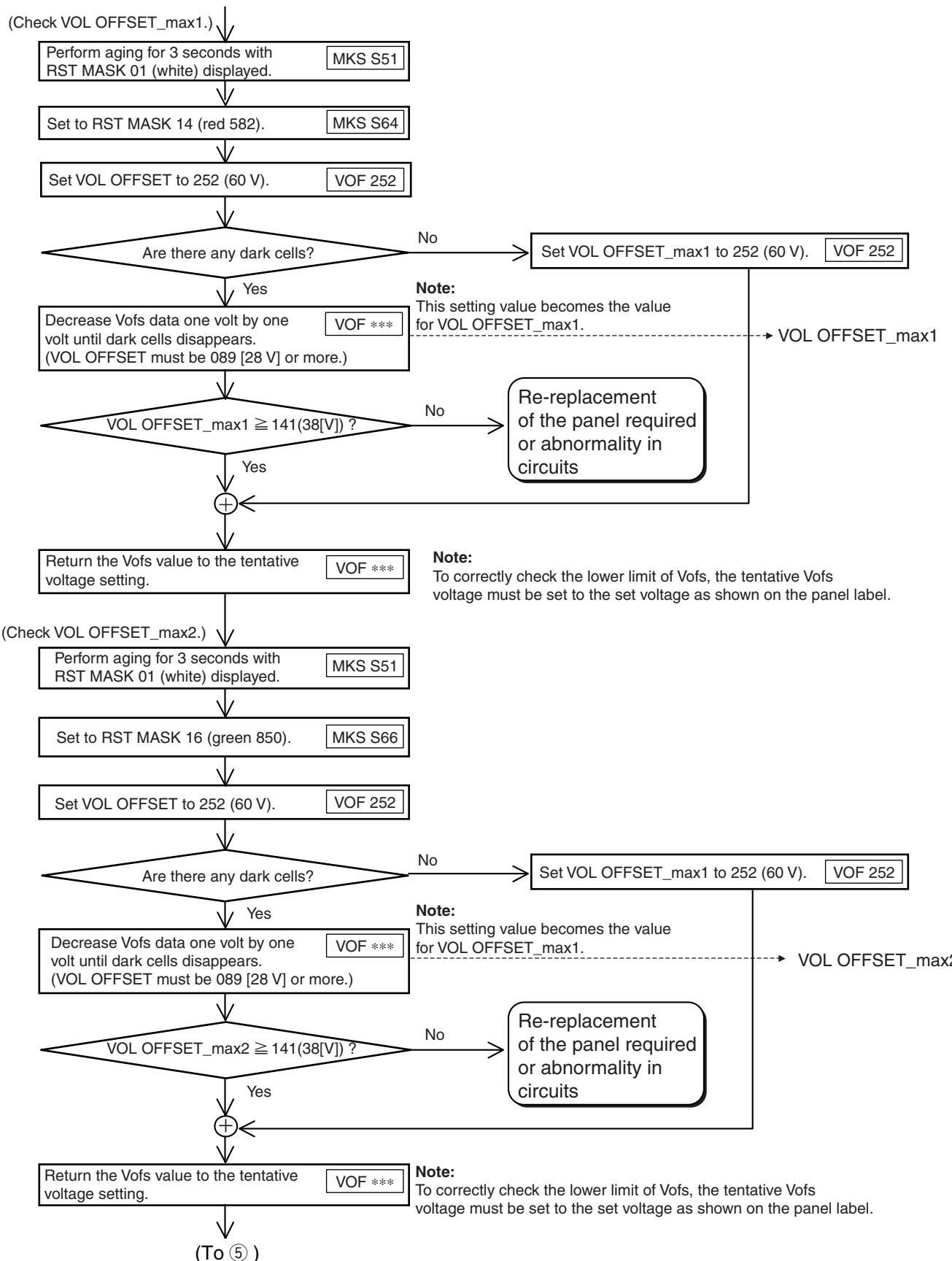


(3) Actual Vofs adjustment (2)

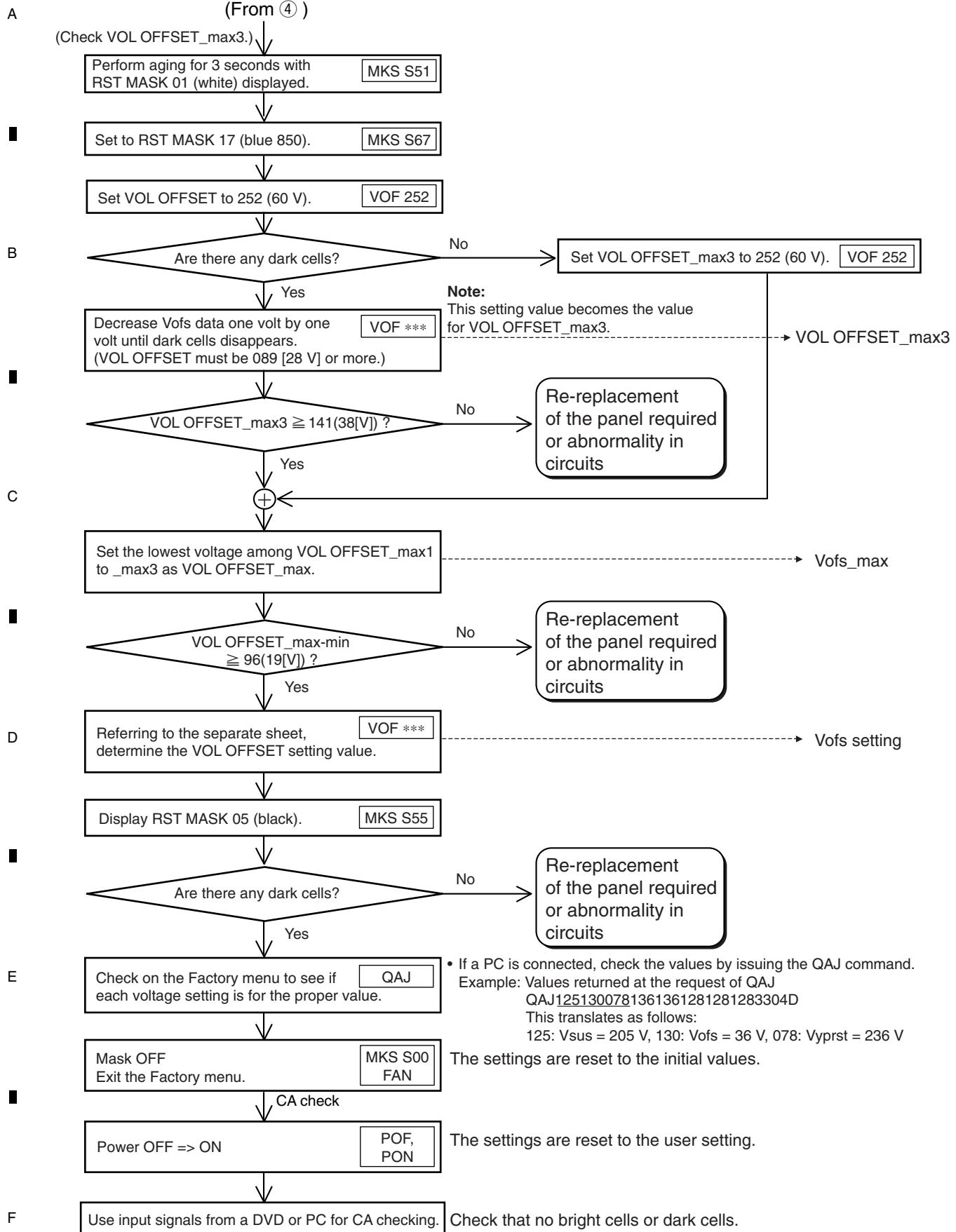


④ Actual Vofs adjustment (3)

(From ③)



⑤ Actual Vofs adjustment (4)



■ Conversion charts for electronic VRs

Vofs (V)	Setting Value (Step)
14	15
15	21
16	26
17	31
18	36
19	42
20	47
21	52
22	58
23	63
24	68
25	73
26	79
27	84
28	89
29	94
30	99
31	104
32	110
33	115
34	120
35	125
36	130
37	136
38	141
39	146
40	151
41	155
42	160
43	165
44	170
45	175
46	180
47	185
48	191
49	196
50	201
51	206
52	211
53	216
54	222
55	227
56	232
57	237
58	242
59	248
60	255

Vprst (V)	Setting Value (Step)
213	3
214	6
215	9
216	12
217	16
218	18
219	21
220	25
221	28
222	31
223	35
224	38
225	41
226	45
227	48
228	51
229	55
230	58
231	62
232	64
233	68
234	71
235	74
236	78
237	81
238	84
239	88
240	91
241	95
242	98
243	101
244	105
245	108
246	112
247	115
248	119
249	121
250	124
251	128
252	131
253	135
254	138
255	141
256	145
257	148
258	152
259	155

Vprst (V)	Setting Value (Step)
260	158
261	162
262	165
263	168
264	171
265	174
266	177
267	181
268	184
269	188
270	191
271	195
272	198
273	201
274	205
275	208
276	211
277	214
278	217
279	221
280	224

A

B

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D

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Vofs Setting Values

A

		Vofs upper limit																							
		141	146	151	155	160	165	170	175	180	185	191	196	201	206	211	216	222	227	232	237	242	248	255	
Vofs lower limit	21	89	89	89	89	94	94	99	99	104	104	110	110	115	115	120	120	125	125	130	125	130	125	130	
	26	89	89	89	94	94	99	99	104	104	110	110	115	115	120	120	125	125	125	130	125	130	125	130	
	31	89	89	94	94	99	99	104	104	110	110	115	115	120	120	125	125	130	125	130	125	130	125	130	
	36	89	94	94	99	99	104	104	110	110	115	115	120	120	125	125	125	130	125	130	125	130	125	130	
	42	94	94	99	99	104	104	110	110	115	115	120	120	125	125	130	125	130	125	130	125	130	125	130	
	47	-	99	99	104	104	110	110	115	115	120	120	125	125	130	125	130	125	130	125	130	130	130	130	
	52	-	-	104	104	110	110	115	115	120	120	125	125	130	125	130	125	130	130	130	130	130	136	136	
	58	-	-	-	110	110	115	115	120	120	125	125	125	130	125	130	125	130	130	136	136	136	141		
	63	-	-	-	-	115	115	120	120	125	125	130	125	130	125	130	130	136	136	141	141	141	141		
	68	-	-	-	-	-	120	120	125	125	130	130	125	130	130	130	136	136	136	141	141	141	146	146	
	73	-	-	-	-	-	-	125	125	130	130	130	130	130	136	136	136	141	141	141	146	146	151		
	79	-	-	-	-	-	-	-	125	130	130	130	136	136	136	141	141	141	146	146	146	151	151		
	84	-	-	-	-	-	-	-	-	130	136	136	136	14	141	141	146	146	146	151	151	155	155		
	89	-	-	-	-	-	-	-	-	-	136	141	141	141	146	146	146	151	151	151	155	155	160		
	94	-	-	-	-	-	-	-	-	-	-	141	146	146	146	151	151	151	155	155	160	160	160		
	99	-	-	-	-	-	-	-	-	-	-	-	146	151	151	151	155	155	155	160	160	165	165		
	104	-	-	-	-	-	-	-	-	-	-	-	-	-	151	155	155	155	160	160	165	165	170		
	110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	155	160	160	160	165	165	170	170		
	115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	160	165	165	165	170	170	170	175		
	120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	165	170	170	170	175	175	180		
	125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	170	175	175	175	180	180	180		
	130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	175	180	180	180	180	180	180		
	136	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	180	180	180	180	180		

D

E

F

■ Transition of the Ofs voltage during adjustment of VOL OFFSET_min

A

Example:

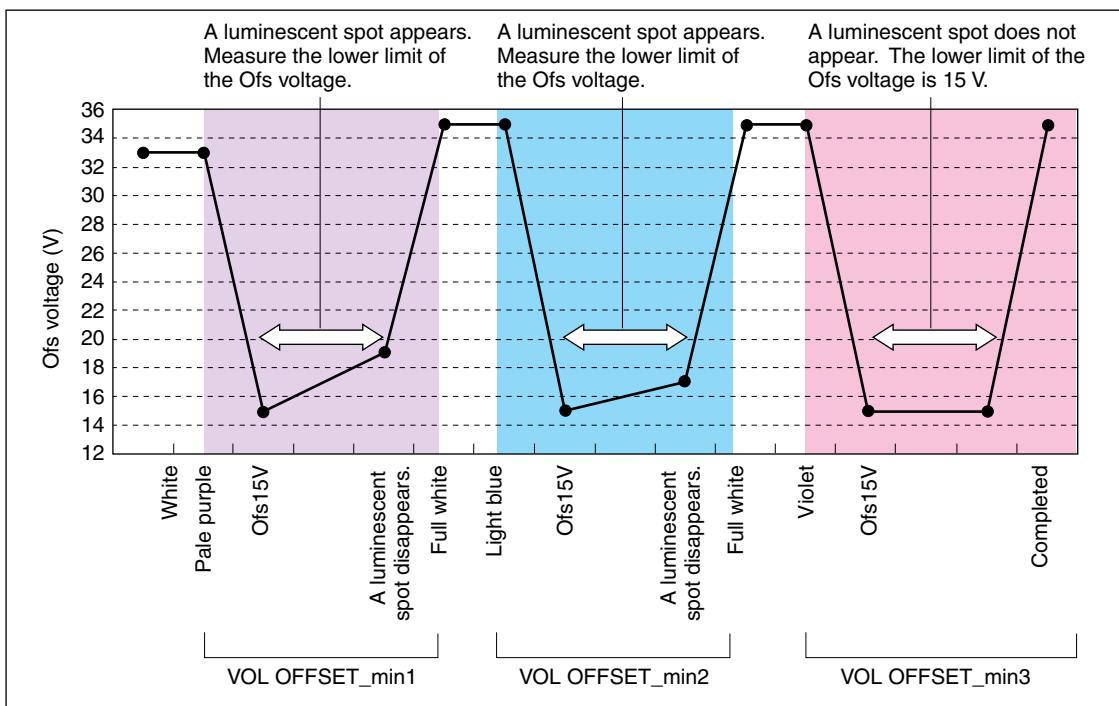
Initial value of the set Ofs: 33 V

Tentative set value of Ofs (Ofs set value for the panel inspection): 35 V

VOL OFFSET_min1 (pale purpl): 19 V

VOL OFFSET_min2 (light blue): 17 V

VOL OFFSET_min3 (violet): 15 V



- The transition process for VOL OFFSET_max is the same as the above.

B

C

D

E

F

7.5 ADJUSTMENTS WHEN THE DRIVE ASSYS ARE REPLACED

A ■ 50 FHD X DRIVE Assy

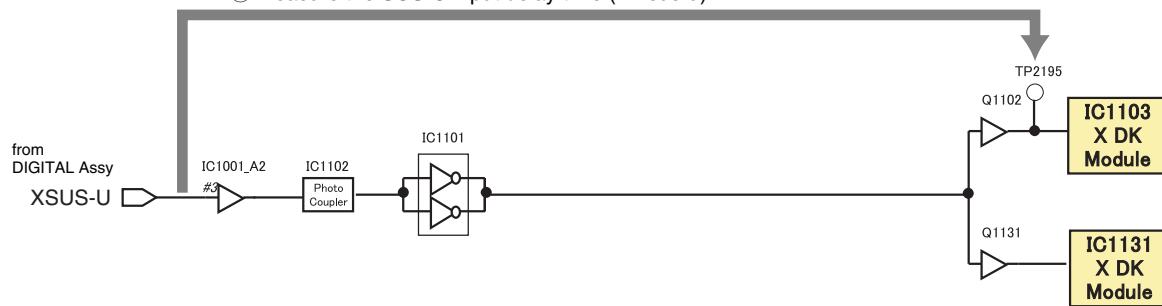
Object parts

Ref. No.	Part Category	Part No.
IC1206	Photo Coupler	PS9117-TLB
IC1207	FET Driver	TND307TD-TBB
IC1210	FET Driver	TND307TD-TBB

SUS-B ADJUSTMENT

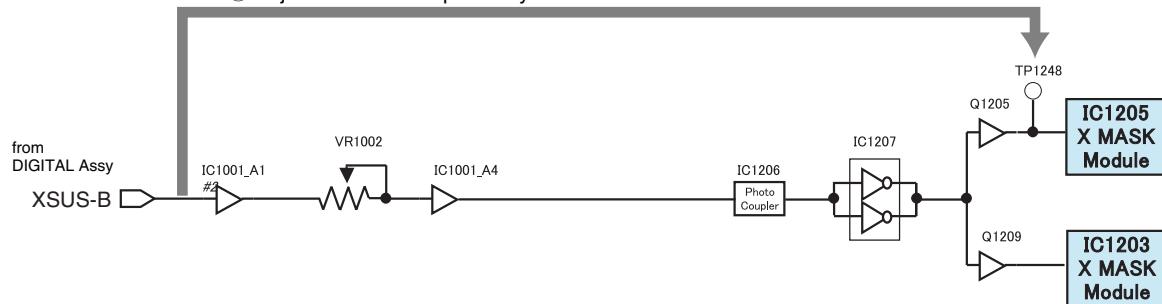
B

- ① Measure the SUS-U input delay time (ΔT_{sus-u}).



C

- ② Adjust the SUS-B input delay time so that it becomes " $\Delta T_{sus-u} + \alpha \pm 5 \text{ nsec}$ ".

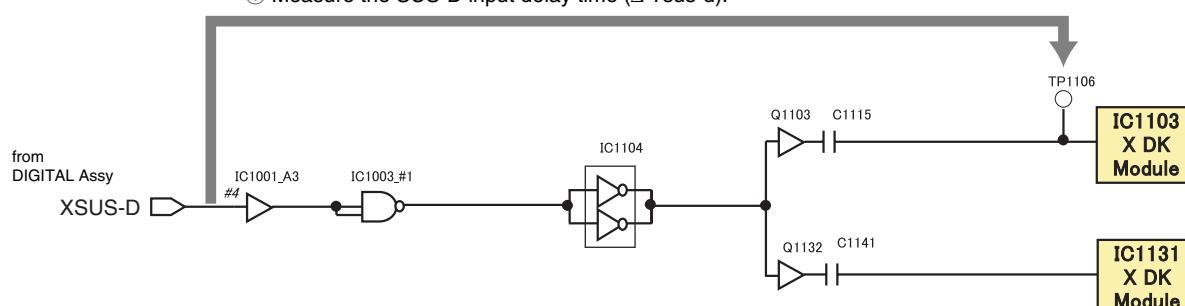


D

SUS-G ADJUSTMENT

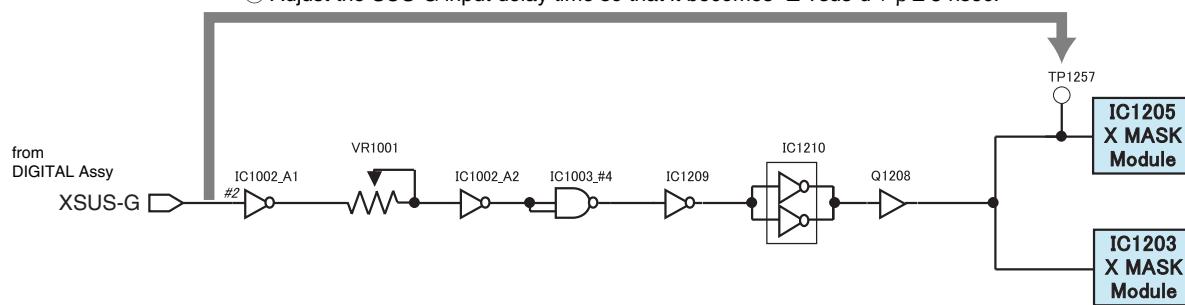
E

- ① Measure the SUS-D input delay time (ΔT_{sus-d}).



F

- ② Adjust the SUS-G input delay time so that it becomes " $\Delta T_{sus-d} + \beta \pm 5 \text{ nsec}$ ".



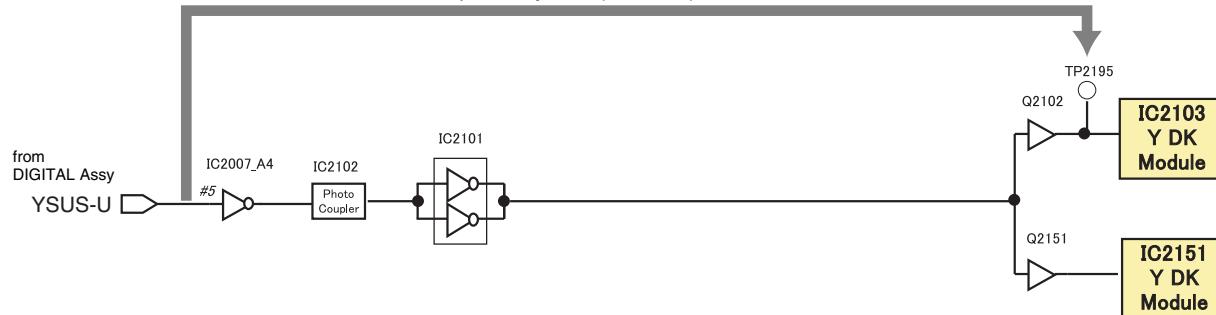
■ 50FHD Y DRIVE Assy

Object parts

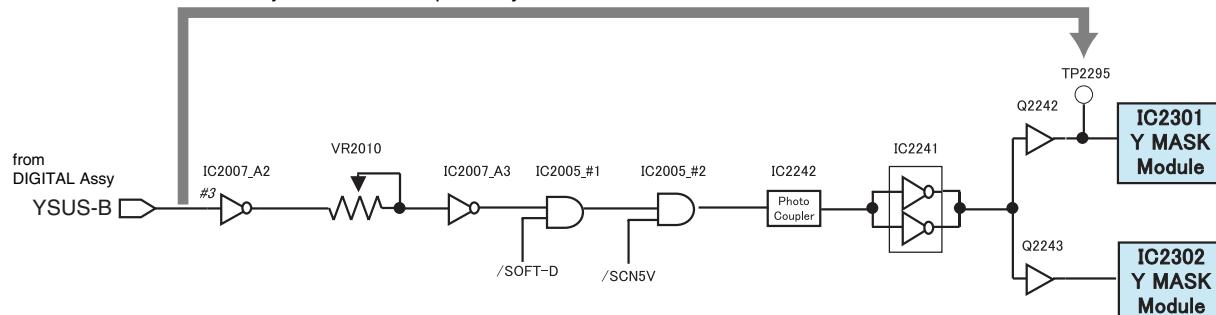
Ref. No.	Part Category	Part No.
IC2242	Photo Coupler	PS9117-TLB
IC2241	FET Driver	TND307TD-TBB
IC2252	FET Driver	TND307TD-TBB

SUS-B ADJUSTMENT

① Measure the SUS-U input delay time (ΔT_{sus-u}).

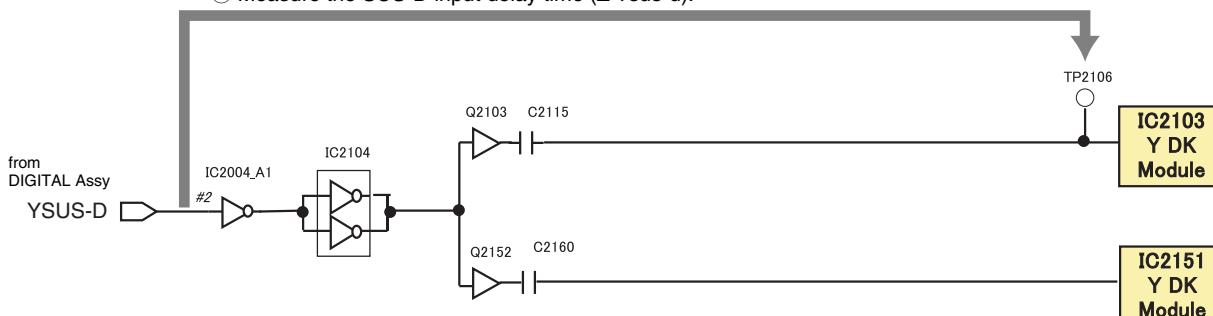


② Adjust the SUS-B input delay time so that it becomes " $\Delta T_{sus-u} + \alpha \pm 5 \text{ nsec.}$ "

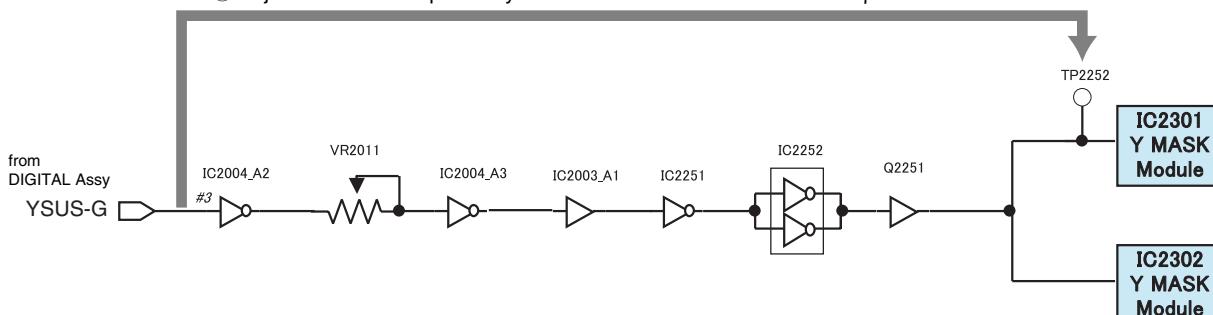


SUS-G ADJUSTMENT

① Measure the SUS-D input delay time (ΔT_{sus-d}).



② Adjust the SUS-G input delay time so that it becomes " $\Delta T_{sus-d} + \beta \pm 5 \text{ nsec.}$ "

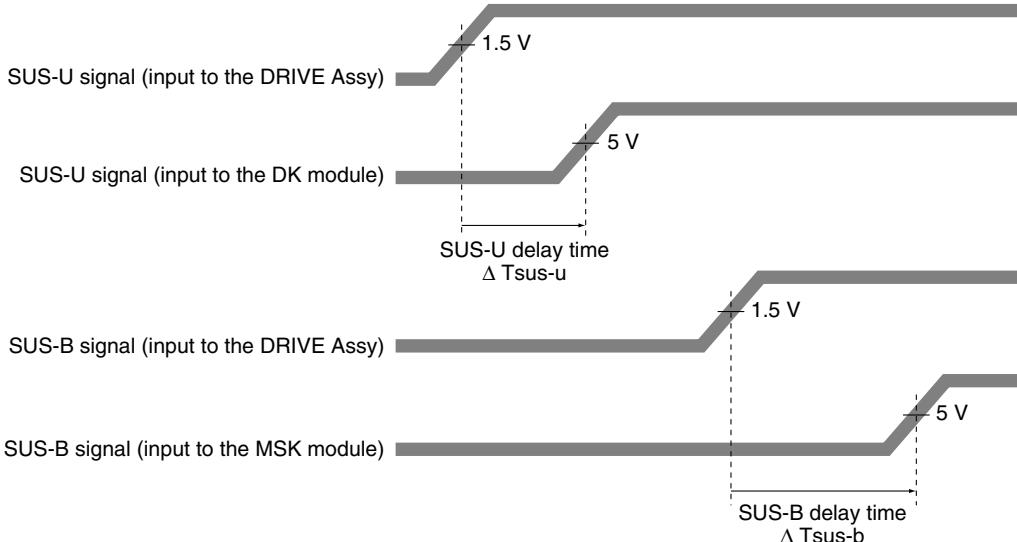


A DELAY ADJUSTMENT OF THE CONTROL SIGNAL (SUS-B)

- ① Measure the delay time for the SUS-U signal.
- ② Check the delay time for the SUS-B signal.

Adjust the variable control so that the SUS-B delay time becomes "SUS-U delay time + $\alpha \pm 5$ nsec."

Note: For details on measuring points of waveform, see the figure below.



SUS-B delay time: $\Delta Tsus-b$

Adjust so that " $\Delta Tsus-b = \Delta Tsus-u + \alpha \pm 5$ nsec," using the variable controls shown in the table below:

Value of α

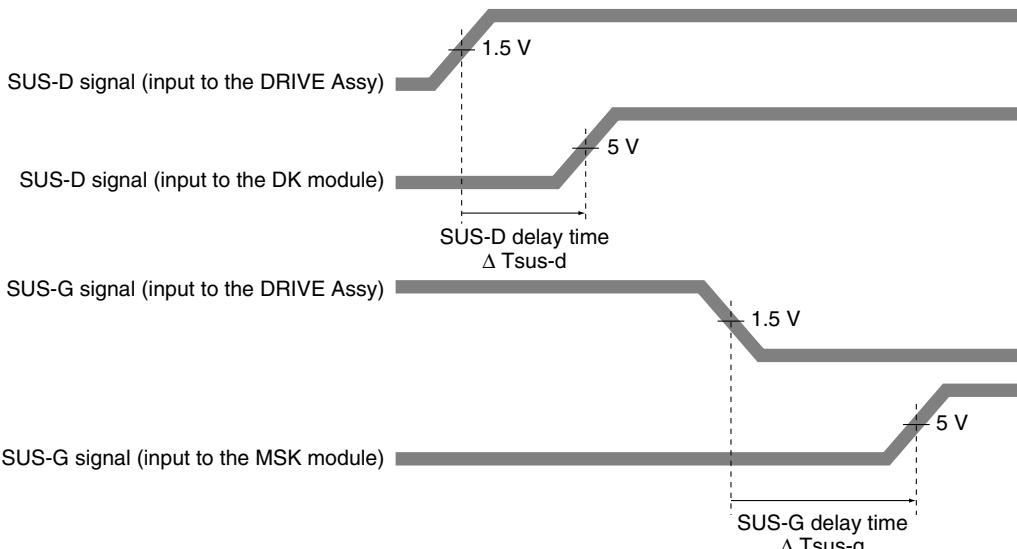
Assy	VR	Time
X DRIVE	VR1002	70 nsec
Y DRIVE	VR2010	85 nsec

D DELAY ADJUSTMENT OF THE CONTROL SIGNAL (SUS-G)

- ① Measure the delay time for the SUS-D signal.
- ② Check the delay time for the SUS-G signal.

Adjust the variable control so that the SUS-G delay time becomes "SUS-D delay time + $\beta \pm 5$ nsec."

Note: For details on measuring points of waveform, see the figure below.



SUS-G delay time: $\Delta Tsus-g$

Adjust so that " $\Delta Tsus-g = \Delta Tsus-d + \beta \pm 5$ nsec," using the variable controls shown in the table below:

Value of β

Assy	VR	Time
X DRIVE	VR1001	120 nsec
Y DRIVE	VR2011	100 nsec

7.6 HOW TO CLEAR VARIOUS LOGS

■ Clearance of various logs after the Assys are replaced

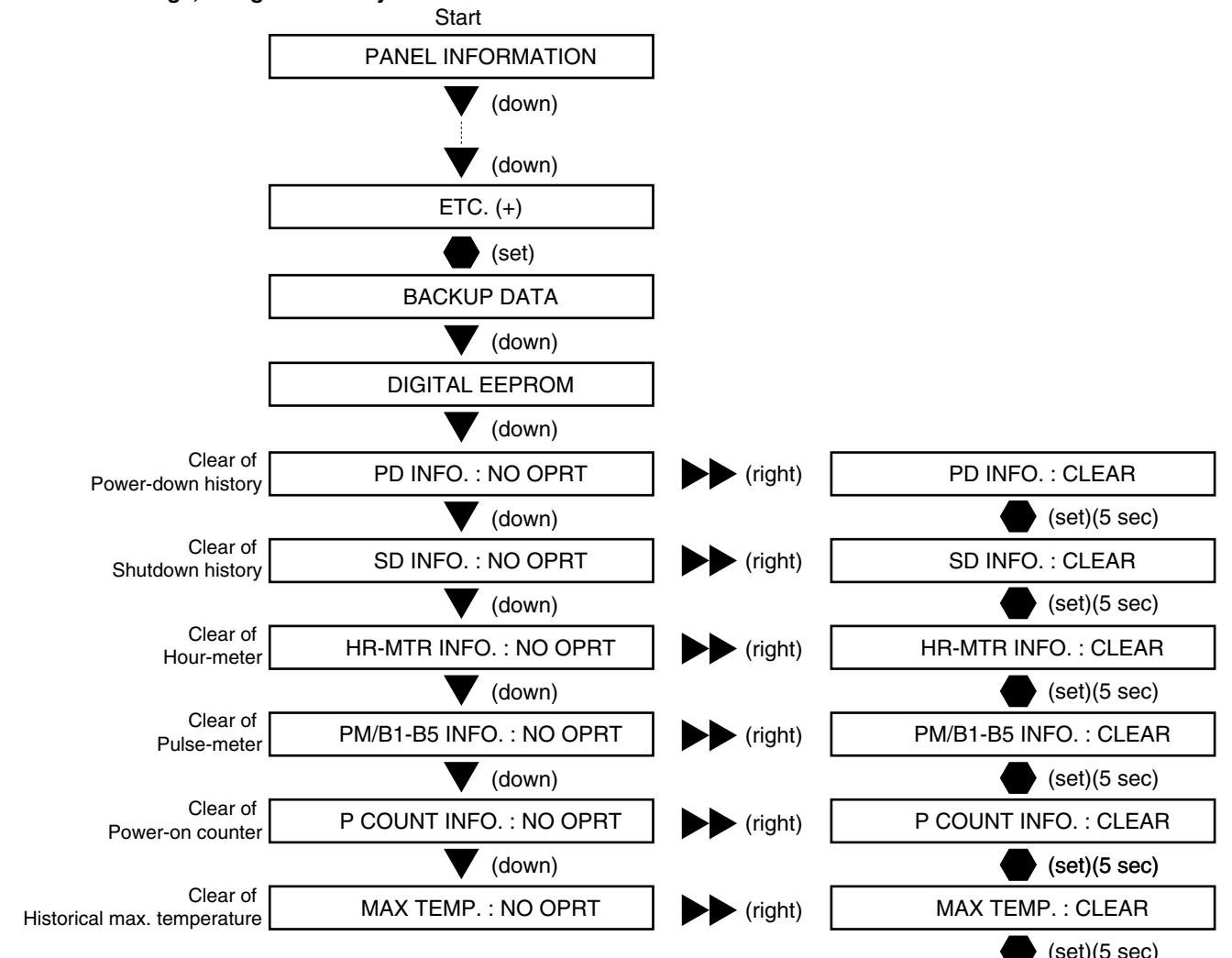
Besides adjustment data, data on accumulated power-on time and logs on defective parts of the product are backed up. Some of those data must be cleared after the Assys are replaced for service.

Clearance of logs, using the RS-232C commands

Item	Content	When the Panel is replaced	When the POWER SUPPLY Unit is replaced	When the Other parts is replaced	RS-232C Commands
Hour-meter	Accumulated power-on time	Must be cleared	No need to be cleared	No need to be cleared	CHM
Shutdown history	Cause of an SD and hour-meter count	Must be cleared	No need to be cleared	No need to be cleared	CSD
Power-down history	Cause of an PD and hour-meter count	Must be cleared	No need to be cleared	No need to be cleared	CPD
Pulse-meter	Accumulated number of pulses emitted (five blocks)	Must be cleared (mandatory)	No need to be cleared	No need to be cleared	CPM
Power-on counter	Relay-on count	No need to be cleared	Must be cleared (mandatory)	No need to be cleared	CPC
MAX_TEMP	Historical max. temperature	Must be cleared	Must be cleared	Must be cleared	CMT

- Notes:**
- As the pulse-meter count is used for each correction function, it must be cleared when an Assy relevant to correction functions is replaced.
 - When clearing logs, using the RS-232C commands, first enter Factory mode (by issuing FAY or PFY), then issue the corresponding command.

Clearance of logs, using the Factory menu

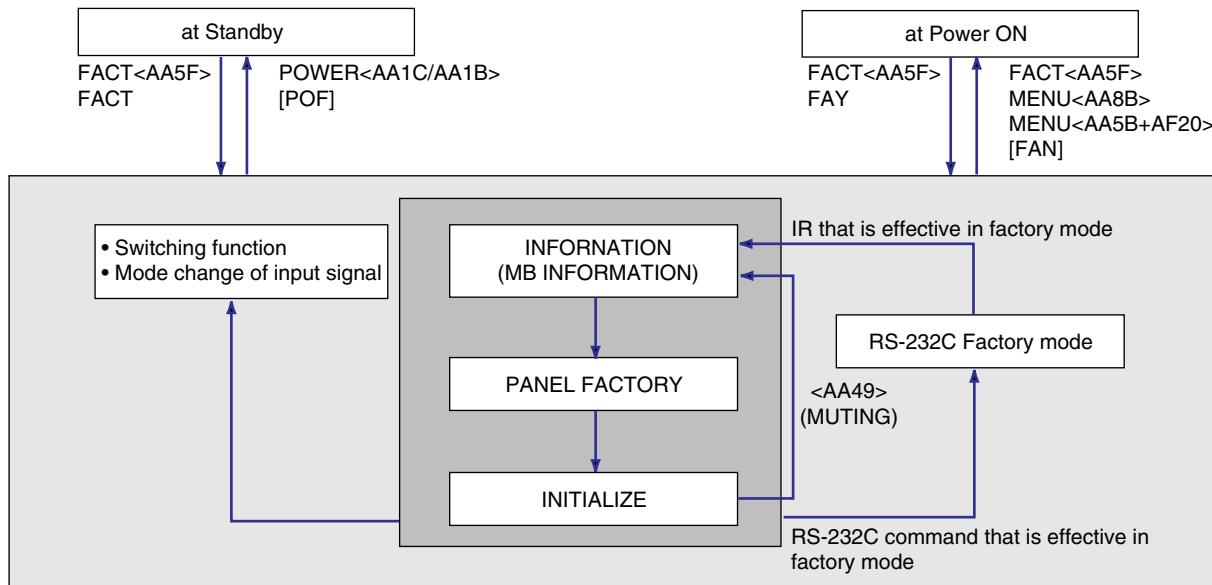


8. SERVICE FACTORY MODE

8.1 SERVICE FACTORY MODE OUTLINE

- A Operations during Service/Factory mode are described here.

8.1.1 TRANSITION DIAGRAM OF SERVICE FACTORY MODE



8.1.2 HOW TO ENTER/EXIT SERVICE FACTORY MODE

■ How to enter Service Factory mode

- D By using a remote control unit for servicing:

- Press the FACTORY1 key on the remote control unit for servicing.

By issuing RS-232C commands:

- During normal Standby mode: Issue "PON" then "FAY."
- During normal operation mode: Issue "FAY."

■ How to exit Service Factory mode

By using a remote control unit for servicing:

- Remote control unit for servicing: Press the FACTORY1 key.
- Remote control unit supplied: Press the HOME MENU key.

By issuing RS-232C commands:

- Issue "FAN."

8.1.3 OPERATION OF SERVICE FACTORY MODE

● Functions whose settings are set to OFF

The following functions are set to off when Service Factory mode is entered (including when the FAY command is received).

Table 1. Functions whose settings are set to OFF

Function	Remarks	Function	Remarks
2-screen operation	The main input signal is displayed.	ORBITER	Center-value operation
Mask control	Panel mask		

● User data

User data will be treated as follows:

- User data on picture- and audio-quality adjustments are not reflected, and factory-preset data are output (user data will be retained in memory). When the unit enters Factory mode, the current audio-quality adjustment data will still be retained in memory.
- As to data on various settings, user data will be applied to the items that are associated with signal format change (screen size switching, etc.).
- Data on screen (i.e., screen position; meaning clock dividers, and not including data on screen size) are reset to the default values (data stored in memory will be retained). Screen size will be retained.

8.1.4 REMOTE CONTROL CODE

Table 2. Functions of the keys on the remote control unit while in Service Factory mode

SR Function	Main Function	Remarks
Muting	Switching the main items	Shifting to the next main item (top)
(▲) UP	Switching the sub items	Shifting upward to the next upper layer
(▼) DOWN	Switching the sub items	Shifting downward to the next subtitled item
(◀) LEFT	Decreasing the adjustment value	Decreasing the adjustment value/Modify setting of selections.
(▶) RIGHT	Increasing the adjustment value	Increasing the adjustment value/Modify setting of selections.
SET	Switching layers	Shifting downward or upward to the next lower or upper layer/Decision
INPUT	Selecting input	Shifting the input to the next function
INPUT **	Selecting input	Switching the input to (**=1 to 6)
POWER	Power OFF	Turning the power off
FACTORY	Factory OFF	Turning Service Factory mode off (Factory remote control)
MENU	Menu ON	Turning Service Factory mode off and Menu mode on
DRIVE ON/OFF	DRIVE OFF	Turning the Drive mode off (Factory remote control)
VOLUME+	Volume UP.	Increasing 10 the adjustment value. (PANEL FACTORY)
VOLUME-	Volume DOWN.	Increasing 10 the adjustment value. (PANEL FACTORY)



Factory remote control unit

8.1.5 CONFIGURATION OF FACTORY MODE

■ Configuration of Factory Mode

A	Uppermost Layer Item	Middle Layer Item	Lower Nested Layer Item	Variable / Adjustment Range	Remarks
B	8.2.1 INFORMATION				
	8.2.1.1 VERSION (1)				
	8.2.1.2 MAIN NG	CLEAR <=>		NO <=> YES	
	8.2.1.3 TEMPERATURE				
	8.2.1.4 HOUR METER				
	8.2.1.5 HDMI SIGNAL INFO 1 and 2				
	8.2.1.6 VDEC SIGNAL INFO				
C	8.2.2 PANEL FACTORY (+)				
	8.2.2.1 PANEL INFORMATION				
	8.2.2.2 PANEL WORKS				
	8.2.2.3 POWER DOWN				
	8.2.2.4 SHUT DOWN				
D	8.2.2.5 PANEL-1 ADJ (+)	X-SUS B <=> Y-SUS B <=> Y-SUSTAIL T1 <=> Y-SUSTAIL T2 <=> Y-SUSTAIL W <=> XY-RST W1 <=> XY-RST W2 <=> VOL SUS <=> VOL OFFSET <=> VOL RST P <=> SUS FREQ. <=>	120 to 136 120 to 136 120 to 136 120 to 136 120 to 136 120 to 136 120 to 136 000 to 255 000 to 255 000 to 255 MODE 1 to MODE 8		Equivalent to XSB Equivalent to YSB Equivalent to YTG Equivalent to YTB Equivalent to YTW Equivalent to RSW Equivalent to RYW Equivalent to VSU Equivalent to VOF Equivalent to VRP Equivalent to SFR
E	8.2.2.6 PANEL-2 ADJ (+)	R-HIGH <=> G-HIGH <=> B-HIGH <=> R-LOW <=> G-LOW <=> B-LOW <=> ABL <=>	000 to 511 000 to 511 000 to 511 000 to 999 000 to 999 000 to 999 000 to 255		Equivalent to PRH Equivalent to PGH Equivalent to PBH Equivalent to PRL Equivalent to PGL Equivalent to PBL Equivalent to ABL
F	8.2.2.7 PANEL REVISE (+)	R-LEVEL <=> G-LEVEL <=> B-LEVEL <=>	LV-0 to LV-7 LV-0 to LV-7 LV-0 to LV-7		Equivalent to RRL Equivalent to RGL Equivalent to RBL
	8.2.2.8 ETC. (+)	BACKUP DATA <=> DIGITAL EEPROM <=> PD INFO. <=> SD INFO. <=> HR-MTR INFO. <=> PM/B1-B5 <=> P COUNT INFO. <=> MAX TEMP. <=>	NO OPRT <=> TRANSFER or ERR NO OPRT <=> DELETE/REPAIR NO OPRT <=> CLEAR NO OPRT <=> CLEAR		Equivalent to BCP Equivalent to FAJ/UAJ Equivalent to CPD Equivalent to CSD Equivalent to CHM Equivalent to CPM Equivalent to CPC Equivalent to CMT
	8.2.2.9 RASTER MASK SETUP (+)	MASK OFF RST MASK 01 <=> ... RST MASK 24 <=>		<=> 48V <=> 50V <=> 60V <=> 60P <=> 70P <=> 72P <=> 75V <=>	Equivalent to MKS+S00 Equivalent to MKS+S51 ... Equivalent to MKS+S74
	8.2.2.10 PATTEN MASK SETUP (+)	MASK OFF PTN MASK 01 <=> ... PTN MASK 39 <=>		<=> 48V <=> 50V <=> 60V <=> 60P <=> 70P <=> 72P <=> 75V <=>	Equivalent to MKS+S00 Equivalent to MKS+S01 ... Equivalent to MKS+S10
	8.2.2.11 COMBI MASK SETUP (+)	MASK OFF CMB MASK 01 <=> ... CMB MASK 10 <=>		<=> 48V <=> 50V <=> 60V <=> 60P <=> 70P <=> 72P <=> 75V <=>	Equivalent to MKC+S00 Equivalent to MKC+S01 ... Equivalent to MKC+S10
	8.2.3 INITIALIZE				
	8.2.3.1 SYNC DET (+)				for the technical use
	8.2.3.2 SG MODE		SG OFF <=> ...		
	8.2.3.3 SG PATTERN		SG PATTERN <=> COLOR BAR 1 ...		
	8.2.3.4 SIDE MASK LEVEL (+)	R MASK LEVEL <=> G MASK LEVEL <=> B MASK LEVEL <=>	000 to 255 000 to 255 000 to 255		Not available. Changing of the SIDE MASK LEVEL is possible in Integrator mode.
	8.2.3.5 FINAL SETUP (+)	DATA RESET <=>	OFF <=> JP ON <=> US ON <=> EU ON		
	8.2.3.6 HDMI INTR POSITION (+)	INTR-POS1 (0x75) <=>	001		for the technical use

8.1.6 INDICATION (OSD) OF SERVICE FACTORY MODE

- With the 6th- and 7th-generation models, the OSD indication in Factory mode is in white on a green background.

A

1	5	10	15	20	25	30	35	40
INFORMATION	VD1-30101-NTV-JWM7							
VERSION (1)								
I / F	- 1 2 A							
MAIN	- 0 2 M				0 1 J			
MULTI PRS	- 0 2 M				0 1 A			
MODULE	- 0 3 A				0 1 A			
SEQ PRS	- 0 2 Y				0 1 A			
15								
16								

Main-items

Subtitled-items

Main-item indications

B

C

D

E

F

① Input function

Input Functions	On-Screen Display
INPUT 1-6	IP1 - 6

② Input signal mode and screen size

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

③ Color system and signal type

Input Signal Type	Color System	On-Screen Display
Composite input	NTSC	NTV
	PAL	PLV
	PAL M	PMV
	PAL N	PNV
	SECAM	SCV
	4.43 NTSC	4NV
	BLACK/WHITE	BWV
S terminal input	NTSC	NTS
	PAL	PLS
	PAL M	PMS
	PAL N	PNS
	SECAM	SCS
	4.43 NTSC	4NS
	BLACK/WHITE	BWS
Y/Cb/Cr Input		CBR
		PBR
		RGB
		DIG
Y/Pb/Pr Input		CBR
		PBR
		RGB
		DIG
RGB Input		CBR
		PBR
Digital Input		CBR
		PBR

④ Destination

Destination	On-Screen Display
FullHD monitor (for Japan)	JWM7*
FullHD monitor (for North America)	AWM7*
FullHD monitor (for Europe)	EWM7*
7th-generation model	***7

● Input signal-Mode Table

- A **1st and 2nd charecters** : Resolutin of the input signal (numerics for the video signals, and alphabetics for the PC signals)
3rd and 4th charecters : Refresh rate of the input signal
5th charecter : Selection of the screen size

Input signal mode table for video signals (resolutions and V frequencies)

1st and 2nd	3rd and 4th	Signal Type	Fv (Hz)	Fh (kHz)
10	50	SDTV*625i	50.000	15.625
20	50	SDTV*625p	50.000	31.250
30	50	HDTV*1125i	50.000	28.125
40	50	HDTV*750p	50.000	37.500
10	60	SDTV*525i	60.000	15.734
20	60	SDTV*525p	60.000	31.469
30	60	HDTV*1125i	60.000	33.750
40	60	HDTV*750p	60.000	45.000
50	24	HDTV*1125p	24.000	27.000
50	50	HDTV*1125p	50.000	56.25
50	60	HDTV*1125p	60.000	67.5

Fv: Vertical Frequency, Fh: Horizontal Frequency

Input signal mode table for PC signals (resolutions and V frequencies)

1st and 2nd	3rd and 4th	Signal Type	Fv (Hz)	Fh (kHz)
C1	70	720 x 400	70.08	31.46
C2	60	640 x 480	60.00	31.50
	72		72.80	37.90
	75		75.00	37.50
	56		56.00	35.20
C4	60	800 x 600	60.00	37.90
	72		72.00	48.10
	75		75.00	46.90
	60		60.00	44.70
C6	60	1280 x 720	60.00	44.70
	60		60.00	48.40
	70		70.00	56.50
	75		75.00	60.00
C8	56	1280 x 768	56.25	45.10
	60		59.87	47.80
	70		69.84	56.10
	75		75.025	79.976
D1	75	1152 x 864	75.00	67.50
D4	60	1600 x 900	59.8	55.93
D5	60	1280 x 960	60.00	60.00
D6	60	1280 x 1024	60.02	63.981
	75		75.025	79.976
D7	60	1400 x 1050	59.978	65.317
	75		74.867	82.278
D8	60	11680 x 1050	59.954	65.29
D9	60	1920 x 1080	60	67.5
E0	60	1600 x 1200	60	75
E1	60	1920 x 1200	59.95	74.038

Fv: Vertical Frequency, Fh: Horizontal Frequency

Current selection of the screen size

5th	Description on GUI	VIDEO	PC	Remarks
0	DOT BY DOT	●	●	
1	4:3	●	●	
2	FULL (FULL1)	●	●	
3	ZOOM	●	—	
4	CINEMA	●	—	
5	WIDE	●	—	
6	FULL 14:9	●	—	
7	CINEMA 14:9	●	—	
8	FULL2	●	—	For Japan only

●: available, —: not available

8.2 FACTORY MENU

● Operation items

No.	Display Item	Content	RS-232C Command
1	VERSION (1)	The software version for each flash memory is displayed.	QS1
2	MAIN NG	The data on a shutdown generated in the Main side and its time are displayed.	QNG, CNG
3	TEMPERATURE	The current temperature and the rotation status of the fan are displayed.	QMT
4	HOUR METER	The HOUR METER/P-COUNT information are displayed.	—
5	HDMI SIGNAL INFO 1	The data on the Status Register of the HDMI Receiver are displayed in hexadecimal notation.	—
6	HDMI SIGNAL INFO 2	Display the Signal Information on VDEC.	—
7	VDEC SIGNAL INFO	Display the Signal Information on VDEC.	—

A

B

8.2.1 INFORMATION

8.2.1.1 VERSION (1)

The software versions for each microcomputer is displayed.

1	5	10	15	20	25	30	35	40
1		INFORMATION		VD1-30101-NTV-JWM7				
		VERSION (1)						
5	I / F			-12A				
	MAIN			-02M		01A		
	MULTI PRS			-02M		01A		
10	MODULE			-03A_M		01A		
	SEQ PRS			-02Y		01A		
15						P		
16								

Screen: VERSION (1)

C

D

Microcomputer	On-Screen Display	Display Example (Execution program block)	Display Example (Boot block)
I/F microcomputer	I/F	-12A	—
Main microcomputer	MAIN	-02M	01A
Multiprocessor program	MULTI PRS	-02M	01A
Module microcomputer	MODULE	-03A_M	01A
Sequence processor program	SEQ PRS	-02Y	01A

Note: MULTI PRS stands for MULTI PROCESSOR and SEQ PRS stands for SEQUENCE PROCESSOR.

29 to 32 rows: Boot version of each device is displayed.

19 to 24 rows: The version of the execution program is displayed.

E

F

8.2.1.2 MAIN NG

SHUTDOWN information that is detected by the Main microcomputer is displayed.

A

	1	5	10	15	20	25	30	35	40
	INFORMATION				VD1-30601-NTV-JWM7				
	MAIN NG				MAIN SUB 00151H21M				
	MAIN IIC S-VDEC 00031H50M				MAIN IIC M-VDEC 00013H03M				
	1	MA-IIC	S-VDEC	00031H50M	2	MA-IIC	M-VDEC	00013H03M	
	3	MA-SRL	FPGA1	00002H52M	4	MAIN	---	00001H58M	
	5	TEMP2	---	00000H07M	6				
	7				8				
	15				16				

Screen: MAIN NG

B

OSD: MAIN	OSD: SUB	Cause of Shutdown
AUDIO	----	Speaker short-circuit
MODULE	----	Abnormality in Module microcomputer communication
MA-SRL		Abnormality in 3-wire Serial Communication of the Main microcomputer.
	IF	Communication failure of IF microcomputer
	MULTI1	Multiprocessor communication failure (MULTI1)
	IP	Multiprocessor I/P processor communication failure
	D-SEL	Digital selector communication failure
	SLAVE	Communication failure between master Multiprocessor and SLAVE Multiprocessor
	FPGA1	Communication failure between MAIN and FPGA
	FPGA2	Communication failure between Multiprocessor and FPGA
MA-IIC		Abnormality in Main microcomputer IIC communication
	AV-SW	AV Switch
	RGB-SW	RGB Switch
	M-VDEC	Main VDEC
	S-VDEC	SUB VDEC
	ADC	AD/PLL
	HDMI	HDMI
	MA-EEP	64K EEPROM
	DVI	DVI receiver
	AUD-SW	Audio SW
POWER	VOLUME	VOLUME IC
	MAIN	Communication failure between IF and Main microcomputer & UNKNOWN
	FAN	Fan stopped
	TEMP2	High temperature of the unit.
POWER		Abnormality in the power
	M-DCDC	Abnormality in the ASIC power (DC-DC)

F

8.2.1.3 TEMPERATURE

A

The current temperature and fan rotation state are displayed.

1	5	10	15	20	25	30	35	40
1	I	N	F	O	R	M	I	N
5				V	D	1	-	3
10				0	6	0	1	-
15								
16								

Screen: TEMPERATURE (For Japan and Europe)

1	5	10	15	20	25	30	35	40
1	I	N	F	O	R	M	I	N
5				V	D	1	-	3
10				0	6	0	1	-
15								
16								

Screen: TEMPERATURE (For North America)

C

D

• Display

Temperature indications

TEMP1: The temperature of the sensor in the panel is indicated in Celsius (models for Japan and Europe) or in Fahrenheit (models for North America).

TEMP2: The A/D input value at Pin 76 (AN0) of the main microcomputer is converted to the temperature value and indicated in Celsius (models for Japan and Europe) or in Fahrenheit (models for North America). The 10-bit A/D value is also indicated.
(Note: A shutdown process starts when the sensor temperature exceeds the specified maximum [C].)

Fan output indication

One of the following indications is displayed:

STOP : The fan stops.

LOW : The fan rotates at a low speed.

MIDDLE : The fan rotates at a medium speed.

HIGH : The fan rotates at a high speed.

E

Note: According to where and how the unit is installed, there may be a difference between the measured sensor temperature and the ambient temperature. Also, the quality of the sensor varies within tolerable limits from product to product.
So use the sensor temperature only as a guide.

Note: Press the [**↑**] and [**↓**] keys to update the temperature because the sensor temperature is not automatically updated.

F

8.2.1.4 HOUR METER

A

HOUR METER and P-COUNT informations are displayed.

	1	5	10	15	20	25	30	35	40	
1			INFORMATION		VD1-30601-NTV-JWM7					
5			HOUR METER							
10			PANEL			00151H	21M			
15			PANEL COUNT / SERIAL							
16			P-COUNT		00000095	TIMES				
			SERIAL							

Screen: HOUR METER

B

Meaning	On-screen Display	Display Example	RS-232C Command
HOUR METER (PANEL-side)	PANEL	00151H 21M	QIP
POWER ON COUNTER	P-COUNT	00000095 TIMES	QIP
SYSTEM SERIAL	SERIAL		QIP

Note 1: SERIAL (serial number of the system) is indicated only for FHD panels.

Note 2: The data on the Hour Meter and P-Count for the panel are obtained from the panel.

D

E

F

8.2.1.5 HDMI SIGNAL INFO 1

Signal information that was input to HDMI is displayed.

1	5	10	15	20	25	30	35	40
1		INFORMATION		VD1-10601-NTV-JWM7				
5		HDMI SIGNAL INFO 1						
10		0x60 - 4E:80 - 4F:07 - 50:1c - 51:02 - 55:07		0x68 - 46:00 - 47:05 - 48:00		- 84:00 - 87:00		
15		0x68 - 2A:00 - 30:02 - 31:0a - 44:51 - 45:98		0x60		- 88:00 - 3A:98 - 3B:08 - 3C:33 - 3D:02		
16								

Screen: HDMI SIGNAL INFO 1

1	5	10	15	20	25	30	35	40
1		INFORMATION		VD1-10601-NTV-JWM7				
5		HDMI SIGNAL INFO 2						
10		H RES: 2200 V RES: 0563 H DE: 1920 V DE: 0540		COL SP: 422 COLMET: 709 ASPECT: 16: ACTIVE: INTRL: INT V POL: POS H POL: POS AUDIO: 48k PCM 20bit		Same as pict V FMT: 1920x1080i@60 PIX RP: 00 SOURCE: PIONEER DVR-DT90		
15								
16								

Screen: HDMI SIGNAL INFO 2

HDMI SIGNAL INFO 1

Device	SA	Content
0x60	4Eh	Status register
	4Fh	Signal distinction result 1
	50h	Signal distinction result 2
	51h	Flag detection output
	55h	Noise level detection 1
0x68	2Ah	Audio information: PCM/non PCM, existence of copyright protection, etc.
	30h	Audio information: Sampling frequency
	31h	Audio information: The number of quantization bit
	44h	Video information: Color space
	45h	Video information: Aspect ratio
	46h	Video information: Scaling
	47h	Video information: Video format
	48h	Video information: Pixel count
	84h	Audio information: Channel count
	87h	Audio information: Speaker allocation
	88h	Audio information: Downmix inhibit flag
	3Ah	Video information: Valid horizontal pixel number (lower bit)
	3Bh	Video information: Valid horizontal pixel number (upper bit)
0x60	3Ch	Video information: Valid vertical lines (lower bit)
	3Dh	Video information: Valid vertical lines (upper bit)

HDMI SIGNAL INFO 2

Display Item	Display Example
H RES	Horizontal pixel number (decimal numeral)
V RES	Vertical lines (decimal numeral)
H DE	Valid horizontal pixel number (decimal numeral)
V DE	Valid vertical lines (decimal numeral)
INTRL	Interlace or progressive
V POL	VSYNC polarity
H POL	HSYNC polarity
AUDIO (first line)	Sampling frequency
AUDIO (second line)	Audio format
AUDIO (third line)	Quantization bit
COL SP	Color space (AVI Info)
COLMET	Color metry (AVI Info)
ASPECT	Aspect ratio (AVI Info)
ACTIVE	Active format (AVI Info)
V FMT	Video format (AVI Info)
PIX RP	Pixel count
SOURCE (first line)	Vendor name of the emission device
SOURCE (second line)	Model name of the emission device

Correspondence of display and resolution of HDMI FACTORY
When the screen is not displayed, confirm the five following items.

Input Signal	Display of FACTORY				
	H RES	V RES	H DE	V DE	V FMT
480i (525i)	858	262 or 263	720	240	720x480i @ 60
480p (525p)	858	525	720	480	720x480p @ 60
1080i (1125i)	2200	562 or 563	1920	540	1920x1080i @ 60
720p (750p)	1650	750	1280	720	1280x720p @ 60

8.2.1.6 VDEC SIGNAL INFO

A

Signal state that is input to VDEC is displayed.

	1	5	10	15	20	25	30	35	40
1			INFORMATION		VD1-30601-NTV-JWM7				
2			VDEC SIGNAL INFO						
3			MVDEC -00:00		MVDEC -1D:00				
4			-01:00						
5			-02:00		SVDEC -88:00				
6			-15:00		-89:00				
7			-16:00		-8A:00				
8			-17:00		-8B:00				
9			-18:00		-8C:00				
10			-19:00						
11			-1A:00						
12									
13									
14									
15									
16									

Screen: VDEC SIGNAL INFO

B

C	Device	SA	Content
MVDEC	MVDEC	00h	Signal distinction result 1
		01h	Signal distinction result 2
		02h	Flag detection output
		15h	Noise level detection 1
		16h	Noise level detection 2
		17h	Non-standard decision output
		18h	Subcarrier signal detection
		19h	ACC data output
		1Ah	ACC processing information output
		1Dh	Input mode setting
D	SVDEC	88h	Status register 1 (TV/VCR status)
		89h	Status register 2 (Macrovision detection, etc.)
		8Ah	Status register 3 (Front-end AGC gain value)
		8Bh	Status register 4 (Subcarrier to horizontal (SCH) phase)
		8Ch	Status register 5 (Signal distinction result)

E

F

8.2.2 PANEL FACTORY (+)

The factory menu section of the panel side is displayed.

A

● Operation items

No.	Display Item	Content	RS-232C Command
1	PANEL INFORMATION	The software version and backup status of the DIGITAL Assy are displayed.	QST
2	PANEL WORKS	The counts of the Pulse Meter and Hour Meter are indicated.	QIP
3	POWER DOWN	The power-down history is indicated.	QPD
4	SHUT DOWN	The shutdown history, as detected by the Module Microcomputer, is displayed.	QSD
5	PANEL-1 ADJ (+)	The SUS waveform and drive power can be adjusted.	—
6	PANEL-2 ADJ (+)	The panel white balance and ABL can be adjusted.	—
7	PANEL REVISE (+)	The panel degradation correction level can be set.	—
8	ETC (+)	Copying of backup data and clearance of various data can be done.	—
9	RASTER MASK SETUP (+)	The mask screen (PASTER) is displayed.	MKS
10	PATTEN MASK SETUP (+)	The mask screen (PATTERN) is displayed.	MKS
11	COMBI MASK SETUP (+)	The mask screen (COMBI) is displayed.	MKC

■ Panel Factory Function

C

Displays the Factory menu, which enables adjustment of the panel via the screen display.

1. Character display area

- **Mask indication during Panel Factory mode**

If the Mask indication is set during Panel Factory mode, the GUI indication is displayed for 1 second at one layer of the panel factory menu, followed by switching to the mask and drive sequence that have been set. For details on the communication format with the main microcomputer.

D

E

F

8.2.2.1 PANEL INFORMATION

- A • Data on the microcomputer version of the panel, product serial number, and the status of memory for adjustment data of the unit and for backup are sent back.

	1	5	10	15	20	25	30	32
1	PANEL	FACT.		BSD-30602-DIG-JHB7				
5	PANEL	INFORMATION						
10	MODULE	-01A M		01A				
15	SEQ-PRG	-01Y		02A				
20	VD-SEQ	520Y						
25	PC-SEQ	520Y						
30	SERIAL							
32	DIG. EEP	ADJUSTED						
15	BACKUP	NO DATA!						
16								

No other layers are nested below this layer. There is no adjustment item.

■ Key operation

- <DOWN> : Shifting to PANEL WORKS
- <UP> : Shifting to COMBI MASK SETUP (+)
- <L/R> : Updating displayed information

B

8.2.2.2 PANEL WORKS

- C • Data on operations, such as the accumulated pulse-meter counts, hour-meter count, power-on count, and temperature detected by the sensor, are sent back. No other layers are nested below this layer.

	1	5	10	15	20	25	30	32
1	PANEL	FACT.		BSD-30602-DIG-JHB7				
5	PANEL	WORKS						
10	PM-B1	00000715 M						
15	PM-B2	00000607 M						
20	PM-B3	00000852 M						
25	PM-B4	00000668 M						
30	PM-B5	00000733 M						
32	HR-MTR	000025H 20M						
15	P-COUNT	00000095 TIMES						
16	TEMP1	+27.4 / +70.8						

■ Key operation

- <DOWN> : Shifting to POWER DOWN
- <UP> : Shifting to PANEL INFORMATION
- <L/R> : Updating displayed information

D

- E • No other layers are nested below this layer. There is no adjustment item.
 • PM-B1 to B5: Pulse-meter counts for the 5 blocks on the screen.
 • TEMP1: The current panel temperature and the historical maximum temperature recorded in memory are indicated. The range of temperature indication is from -50.0 to +99.9.

F

8.2.2.3 POWER-DOWN

- The power-down history is sent back.

Up to 8 log items with the accumulated power-on time upon generation were also indicated.

	1	5	10	15	20	25	30	32
1	P	A	N	E	L	F	A	C
	P	O	W	E	R	D		
	1	S	T					
	2							
	3							
	4							
	5							
	6							
	7							
	8							
15								
16								

■ Key operation

<DOWN> : Shifting to SHUT DOWN

<UP> : Shifting to PANEL WORKS

<L/R> : Updating displayed information

- No other layers are nested below this layer. There is no adjustment item.
- When a power-down is generated, the power-down point is indicated in the column labeled 1ST and the most likely next power-down point is indicated in the column labeled 2ND.
- A log for the same power-down point or with the same accumulated power-on time upon generation is not recorded.

8.2.2.4 SHUT DOWN

- The history of shutdowns generated in the FHD DIGITAL Assy is displayed.

Up to 8 log items with the accumulated power-on time upon generation were also indicated.

	1	5	10	15	20	25	30	32
1	P	A	N	E	L	F	A	C
	P	O	W	E	R	D		
	SH	U	T	D	W			
	M	A	I	N	S	U		
	1	T	E	M	P	1		
	2	S	Q	-	I	C		
	3	M	D	-	I	I		
	4	S	M	-	I	C		
	5							
	6							
	7							
	8							
15								
16								

■ Key operation

<DOWN> : Shifting to PANEL-1 ADJ (+)

<UP> : Shifting to POWER DOWN

<L/R> : Updating displayed information

- No other layers are nested below this layer. There is no adjustment item.
- When a shutdown is generated, if data on defective places are available, they are indicated in the column labeled SUB.

C

D

E

F

8.2.2.5 PANEL-1 ADJ (+)

A

- Timing and voltage for the driving pulse are set. At the upper right of the screen, the wb table and frequency table indicating operation status are displayed, and at the lower left of the screen, the item for the upper nested layer (PANEL-1 ADJ [+]) is displayed. Pressing the SET key shifts the screen to the next nested layer below for item selection.

1	5	10	15	20	25	30	32
PANEL	FACT.	BSD-30602-DIG-JHB7					
		[TBL1 / 60VS]					
5							
10							
15	PANEL-1 ADJ (+)						
16							

■ Key operation

- <DOWN> : Shifting to PANEL-2 ADJ (+)
 <UP> : Shifting to SHUT DOWN
 <SET> : Shifting to the next nested layer

B

- When the screen is shifted to the next nested layer below, a subitem is indicated on the 3rd line, and detailed data are indicated on the 15th line.

C

1	5	10	15	20	25	30	32
PANEL	FACT.	BSD-30602-DIG-JHB7					
		PANEL-1 ADJ		[---- / 60VS]			
5							
10							
15	VOL	OFFSET	<=>	: 128			
16							

■ Key operation

- <DOWN> : Shifting to the next item
 <UP> : Shifting to the previous item
 <RIGHT> : Adding by one to the adjustment value
 <LEFT> : Subtracting by one from the adjustment value
 <VOL+> : Adding by 10 to the adjustment value
 <VOL-> : Subtracting by 10 from the adjustment value
 <SET> : Determining the adjustment value and shifting to the upper layer

D

- When the screen is shifted to the next nested layer below, a subitem is indicated on the 3rd line, and detailed data are indicated on the 15th line.
- When the screen is shifted to this layer while the RASTER MASK is selected, the Panel W/B setting is temporarily set to default.

<Lower-layer items of PANEL-1 ADJ>

No.	Items	Adjustment/Setting Value	RS-232C Command
1	X-SUS B <=>	120 to 136	XSB
2	Y-SUS B <=>	120 to 136	YSB
3	Y-SUSTAIL T1 <=>	120 to 136	YTG
4	Y-SUSTAIL T2 <=>	120 to 136	YTB
5	Y-SUSTAIL W <=>	120 to 136	YTW
6	XY-RST W1 <=>	120 to 136	RSW
7	XY-RST W2 <=>	120 to 136	RYW
8	VOL SUS <=>	000 to 255	VSU
9	VOL OFFSET <=>	000 to 255	VOF
10	VOL RST P <=>	000 to 255	VRP
11	SUS FREQ. <=>	MODE1 to MODE8	SFR

8.2.2.6 PANEL-2 ADJ (+)

A

	1	5	10	15	20	25	30	32
1	PANEL	FACT.		BSD-30602-DIG-JHB7				
5				[TBL1/60VS]				
10								
15	PANEL-2	ADJ	(+)					
16								

RGB gain adjustment can be performed. Pressing the SET key shifts the screen to the next nested layer below for item selection.

	1	5	10	15	20	25	30	32
1	PANEL	FACT.		BSD-30602-DIG-JHB7				
5				[TBL1/60VS]				
10								
15	R-HIGH	<=>		: 256				
16								

The ABL/WB adjustment values are divided into 4 tables for each drive sequence. The table No. and adjustment value of the current drive sequence are indicated at right on the 3rd line on the screen.

■ Key operation

- <DOWN> : Shifting to PANEL REVISE
- <UP> : Shifting to PANEL-1 ADJ (+)
- <SET> : Shifting to the next nested layer

B

■ Key operation

- <DOWN> : Shifting to the next item
- <UP> : Shifting to the previous item
- <RIGHT> : Adding by one to the adjustment value
- <LEFT> : Subtracting by one from the adjustment value
- <VOL+> : Adding by 10 to the adjustment value
- <VOL-> : Subtracting by 10 from the adjustment value
- <SET> : Determining the adjustment value and shifting to the upper layer

C

Sequence and Adjustment value

Sequence	Video 50 Hz	Video 60 Hz	Video 72 Hz	Video 75 Hz	PC 70 Hz
Adjustment value table	TBL 2	TBL 1	TBL 1	TBL 3	TBL 4

<Lower-layer items of PANEL-2 ADJ>

No.	Items	Adjustment/Setting Value	RS-232C Command
1	R-HIGH <=>	000 to 511	PRH
2	G-HIGH <=>	000 to 511	PGH
3	B-HIGH <=>	000 to 511	PBH
4	R-LOW <=>	000 to 999	PRL
5	G-LOW <=>	000 to 999	PGL
6	B-LOW <=>	000 to 999	PBL
7	ABL <=>	000 to 255	ABL

E

F

8.2.2.7 PANEL REVISE (+)

A

- The degradation compensation level for white balance can be set.

	1	5	10	15	20	25	30	32	
	PANEL	FACT.	BSD	-3	0	6	02	-DIG-	JHB7
									[TBL1 / 60VS]
	5								
	10								
	15								
B	16								
	PANEL	REVISE	(+)						

■ Key operation

- <DOWN> : Shifting to ETC.(+)
 <UP> : Shifting to PANEL-2 ADJ (+)
 <SET> : Shifting to the next nested layer

B

	1	5	10	15	20	25	30	32	
	PANEL	FACT.	BSD	-3	0	6	02	-DIG-	JHB7
									[TBL1 / 60VS]
	5								
	10								
	15								
C	16								
	R-LEVEL	<=>							: LV-0

■ Key operation

- <DOWN> : Shifting to the next item
 <UP> : Shifting to the previous item
 <RIGHT> : Adding by one to the adjustment value
 <LEFT> : Subtracting by one from the adjustment value
 <SET> : Determining the setting value and shifting to the upper layer

D

<Lower-layer items of PANEL REVISE (+)>

No.	Items	Adjustment/Setting Value	RS-232C Command
1	R-LEVEL <=>	LV-0 to LV-7	RRL
2	G-LEVEL <=>	LV-0 to LV-7	RGL
3	B-LEVEL <=>	LV-0 to LV-7	RBL

E

F

8.2.2.8 ETC. (+)

A

- Settings concerning backup of adjustment values and clearance of the histories can be made.

	1	5	10	15	20	25	30	32
1	PANEL	FACT.		BSD-30602-DIG-JHB7				
5				[TBL 1 / 60 VS]				
10								
15	ETC .	(+)						
16								

■ Key operation

- <DOWN> : Shifting to RASTER MASK SETUP (+) ■
 <UP> : Shifting to PANEL REVISE (+)
 <SET> : Shifting to the next nested layer

B

	1	5	10	15	20	25	30	32
1	PANEL	FACT.		BSD-30602-DIG-JHB7				
5	ETC .			[TBL 1 / 60 VS]				
10								
15	BACKUP DATA <=>			: NO OPRT				
16								

■ Key operation

- <DOWN> : Shifting to the next item
 <UP> : Shifting to the previous item
 <RIGHT> : Adding by one to the adjustment value
 <LEFT> : Subtracting by one from the adjustment value
 <SET> : Determining the setting value and shifting to the upper layer

C

<Lower-layer items of ETC.>

No.	Items	Adjustment/Setting Value	RS-232C Command
1	BACKUP DATA <=>	NO OPRT <=> TRANSFER or ERR	BCP
2	DIGITAL EEPROM <=>	NO OPRT <=> DELETE/REPAIR	FAJ/UAJ
3	PD INFO. <=>	NO OPRT <=> CLEAR	CPD
4	SD INFO. <=>	NO OPRT <=> CLEAR	CSD
5	HR-MTR INFO. <=>	NO OPRT <=> CLEAR	CHM
6	PM/B1-B5 <=>	NO OPRT <=> CLEAR	CPM
7	P-COUNT INFO. <=>	NO OPRT <=> CLEAR	CPC
8	MAX TEMP. <=>	NO OPRT <=> CLEAR	CMT

E

F

8.2.2.9 RASTER MASK SETUP (+)

A

- Setting of RASTER MASK and setting of drive sequence during Raster Mask mode can be made.

1	5	10	15	20	25	30	32
1	PANEL	FACT.	BSD-30602-DIG-JHB7				
5			[TBL1 / 60VS]				
10							
15	RASTER	MASK	SETUP	(+)			
16							

■ Key operation

- <DOWN> : Shifting to PATTEN MASK SETUP
 <UP> : Shifting to ETC. (+)
 <SET> : Shifting to the next nested layer

B

1	5	10	15	20	25	30	32
1	PANEL	FACT.	BSD-30602-DIG-JHB7				
5			RASTER	MASK	SETUP	[TBL1 / 60VS]	
10							
15	RST	MASK	0 1		: 60V		
16							

■ Key operation

- <DOWN> : Shifting to the next MASK
 <UP> : Shifting to the previous MASK
 <RIGHT> : Changing MASK sequence (+)
 <LEFT> : Changing MASK sequence (-)
 <SET> : Determining the setting value
 and shifting to the upper layer

C

D

<Lower-layer items of RASTER MASK SETUP>

No.	Items	Adjustment/Setting Value	RS-232C Command
1	MASK OFF		MKS+S00
2	PTN MASK 01 <=>	<=> 48V <=> 50V <=> 60V <=> 60P <=> 70P <=> 72V <=> 75V <=>	MKS+S51
3	•••	(Each sequence can be selected.)	•••
4	PTN MASK 24 <=>		MKS+S74

- The MASK indication sequence can be changed among 48V, 50V, 60V, 72V, 75V, 60P, and 70P, using the Right or Left key. The selected sequence and the ABL/WB table are retained until the mask is turned off.
- 48V and 60P are represented by 50V and 60V, respectively. The ABL/WB table is changed to the PC table.

E

F

8.2.2.10 PATTERN MASK SETUP (+)

A

- Setting of PATTERN MASK and setting of drive sequence during Pattern Mask mode can be made.

	1	5	10	15	20	25	30	32
1	PANEL	FACT.	BSD	-3	0	6	02	-DIG-JHB7
5	[TBL1/60VS]							
10								
15	PATTERN MASK SETUP (+)							
16								

■ Key operation

- <DOWN> : Shifting to COMBI MASK (+)
 <UP> : Shifting to RASTER MASK SETUP (+)
 <SET> : Shifting to the next nested layer

B

	1	5	10	15	20	25	30	32
1	PANEL	FACT.	BSD	-3	0	6	02	-DIG-JHB7
5	PATTERN MASK SETUP [TBL1/60VS]							
10								
15	PTN MASK 01 : 60V							
16								

■ Key operation

- <DOWN> : Shifting to the next MASK
 <UP> : Shifting to the previous MASK
 <RIGHT> : Changing MASK sequence (+)
 <LEFT> : Changing MASK sequence (-)
 <SET> : Determining the setting value and shifting to the upper layer

C

<Lower-layer items of PATTERN MASK SETUP (+)>

No.	Items	Adjustment/Setting Value	RS-232C Command
1	MASK OFF		MKS+S00
2	RST MASK 01 <=>	<=> 48V <=> 50V <=> 60V <=> 60P <=> 70P <=> 72V <=> 75V <=> (Each sequence can be selected.)	MKS+S01
3	•••		•••
4	RST MASK 39 <=>		MKS+S39

- The MASK indication sequence can be changed among 48V, 50V, 60V, 72V, 75V, 60P, and 70P, using the Right or Left key. The selected sequence and the ABL/WB table are retained until the mask is turned off.
- 48V and 60P are represented by 50V and 60V, respectively. The ABL/WB table is changed to the PC table.

E

F

8.2.2.11 COMBI MASK SETUP (+)

A

- Setting of COMBI MASK and setting of drive sequence during Combi Mask mode can be made.

1	5	10	15	20	25	30	32
PANEL	FACT.		BSD-30602-DIG-JHB7				
			[TBL1/60VS]				
5							
10							
15	COMBI	MASK	SETUP	(+)			
16							

■ Key operation

- <DOWN> : Shifting to PANEL INFORMATION
(+)
<UP> : Shifting to RASTER MASK SETUP
(+)
<SET> : Shifting to the next nested layer

B

1	5	10	15	20	25	30	32
PANEL	FACT.		BSD-30602-DIG-JHB7				
			[TBL1/60VS]				
5							
10							
15	CMB	MASK	01		: 60V		
16							

■ Key operation

- <DOWN> : Shifting to the next MASK
<UP> : Shifting to the previous MASK
<RIGHT> : Changing MASK sequence (+)
<LEFT> : Changing MASK sequence (-)
<SET> : Determining the setting value
and shifting to the upper layer

C

D

<Lower-layer items of COMBI MASK SETUP (+)>

No.	Items	Adjustment/Setting Value	RS-232C Command
1	MASK OFF		MKC+S00
2	CMB MASK 01 <=>	<=> 48V <=> 50V <=> 60V <=> 60P <=> 70P <=> 72V <=> 75V <=>	MKC+S01
3	...	(Each sequence can be selected.)	...
4	CMB MASK 10 <=>		MKC+S10

- The MASK indication sequence can be changed among 48V, 50V, 60V, 72V, 75V, 60P, and 70P, using the Right or Left key. The selected sequence and the ABL/WB table are retained until the mask is turned off.
- 48V and 60P are represented by 50V and 60V, respectively. The ABL/WB table is changed to the PC table.

E

F

8.2.3 INITIALIZE

● Operation items

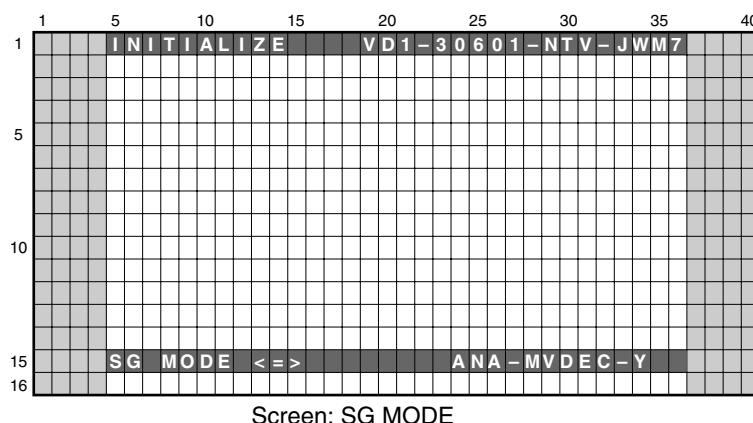
No.	Function/Display	Content	RS-232C Command
1	SYNC DET (+)	Only for the technical use.	–
2	SG MODE <=>	Paired SG_MODE with SG_PATTERN. Set SG Route.	–
3	SG PATTERN <=>	Paired SG_PATTERN with SG_MODE. Set SG Pattern.	–
4	SIDE MASK LEVEL	Color setup of side mask.	BSL GSL RSL
5	FINAL SETUP (+)	Initialize flash memories on virgin product status	FST
6	HDMI INTR POSITION (+)	Only for the technical use.	–

8.2.3.1 SYNC DET (+)

- As this is an item for technical engineers, no information on servicing is available.

8.2.3.2 SG MODE

SG MODE (selection of the SG routes) and SG PATTERN (selection of signal patterns) are used in combination. The SG route must be first selected in SG MODE. Then the SG pattern of a signal that is to be transmitted to the selected route must be selected.



Screen: SG MODE

No.	Function/Display	Content
1	SG OFF	SG is set to OFF
2	ANA AD RGB	AD: RGB
3	ANA AD YCBCR	AD: Ycbcr
4	ANA SVDEC Y	SUB VDEC: Y (Analog output mode: SG VDEC feedback setting) *
5	ANA MVDEC Y	MAIN VDEC: Y (Analog output mode: SG VDEC feedback setting)
6	DIG MVDEC YCBCR	MAIN VDEC: YCbCr (color difference digital output mode)

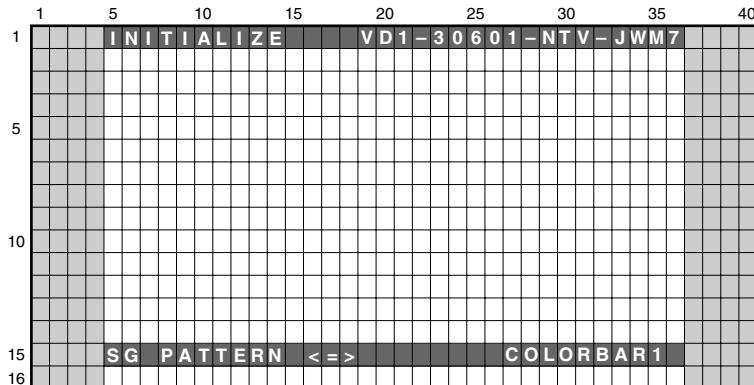
Note *: The screen shifts to split-screen display, with the SG MODE screen displayed on the right (sublevel). Check on the block diagram for the SG generation point and signal routes.

■ Important notice of the SG MODE and SG PATTERN

- When the unit is in SG MODE, do NOT input signals to INPUTS 4-6.
- The setting of the Y/C separation function should be set to the NTSC during the VDEC SG mode.
- Only the component and RGB signals can be output during SG mode, so only the Y signal is input at the CVBS signal mode, thus the picture is composed in black and white color. This isn't a failure.
- ANA AD RGB (the route for inputting the 525i RGB signal to AD) in SG MODE is a setting for a nonexistent route for the unit. Therefore, there is no setting value at the stages after the MVDEC. For this reason, there may be discoloration of the color bars or slow change of the luminance after SG MODE is set to ANA AD RGB, but it is not a failure.

8.2.3.3 SG PATTERN

A



Screen: SG PATTERN

B

No.	Function/Display	SG Pattern (Brightness IRE Level/Color)	No.	Function/Display	SG Pattern (Brightness IRE Level/Color)
1	COLOR BAR1	Colorbar (75%)	11	RASTER4	Raster (75% Green)
2	COLOR BAR2	Colorbar (100%)	12	RASTER5	Raster (75% Magenta)
3	RAMP1	Ramp (100% white)	13	RASTER6	Raster (75% Red)
4	RAMP2	Ramp (100% Yellow)	14	RASTER7	Raster (75% Blue)
5	RAMP3	Ramp (75% Green)	15	RASTER8	Raster (- % Black)
6	RAMP4	Ramp (75% Red)	16	10STEP1	10STEP (100% white)
7	RAMP5	Ramp (75% Blue)	17	10STEP2	10STEP (100% Yellow)
8	RASTER1	Raster (100% White)	18	10STEP3	10STEP (75% Green)
9	RASTER2	Raster (75% Yellow)	19	10STEP4	10STEP (75% Red)
10	RASTER3	Raster (75% Cyanide)	20	10STEP5	10STEP (75% Blue)

C

■ Important notice of the SG MODE and SG PATTERN

D

- When the unit is in SG MODE, do NOT input signals to INPUTs 4-6.
- The setting of the Y/C separation function should be set to the NTSC during the VDEC SG mode.
- Only the component and RGB signals can be output during SG mode, so only the Y signal is input at the CVBS signal mode, thus the picture is composed in black and white color. This isn't a failure.
- ANA AD RGB (the route for inputting the 525i RGB signal to AD) in SG MODE is a setting for a nonexistent route for the unit. Therefore, there is no setting value at the stages after the MVDEC. For this reason, there may be discoloration of the color bars or slow change of the luminance after SG MODE is set to ANA AD RGB, but it is not a failure.

E

F

8.2.3.4 SIDE MASK LEVEL (+)

- Not available.
- Changing of the SIDE MASK LEVEL is possible in Integrator mode.

A

8.2.3.5 FINAL SETUP (+)

Various memory data are reset to factory-preset values. Data on destination are also written in. As factory-preset values are different according to the destination, select an appropriate setting:

Kind of (YES**)

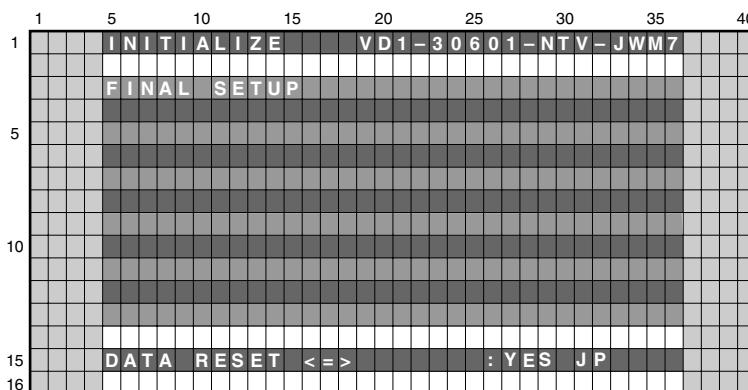
YES JP : For Japan

YES US : For North America

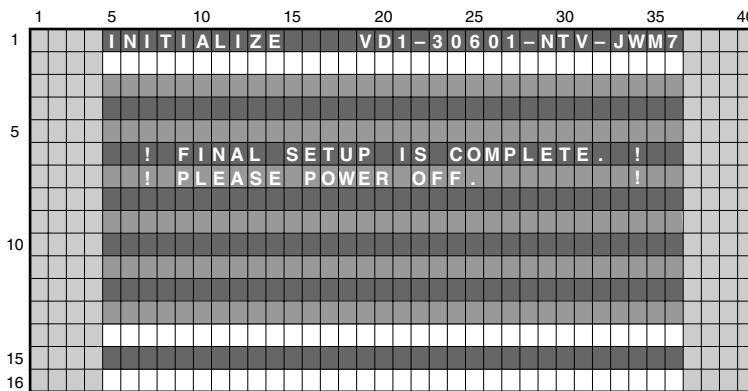
YES EU : For Europe and others

B

To reset various memory data to factory-preset values, hold the SET key pressed for about 5 seconds while an appropriate destination (YES **) is selected.



Screen: FINAL SETUP



Screen: Message when FINAL SETUP is completed.

C

D

E

IMPORTANT!

After the FINAL SETUP is finished, be sure to proceed to the following steps, in order to turn the Orbiter function and Mask Control function on.

1. Enter Standby mode.
2. Press the HOME MENU key, then within 3 seconds press the Standby key to enter Integrator mode. Or turn the unit on then press the Integrator key on the remote control unit for servicing.
3. Move to ORBITER MODE, using the Up or Down key, then select ON, using the Right or Left key.
4. Move to MASK CONTROL, using the Up or Down key, then select ON, using the Right or Left key.

8.2.3.6 HDMI INTR POSITION (+)

F

- As this is an item for technical engineers, no information on servicing is available.

9. LIST OF RS-232C COMMANDS

9.1 RS-232C COMMANDS OUTLINE

9.1.1 DESCRIPTION OF RS-232C COMMANDS

A

With the PDP-5000EX/PRO-FHD1, the serial port is commonly used by the RS-232C and SR+ connectors. Although the setting upon shipment is RS-232C, it can be changed to SR+, using the Home menu. If SR+ is selected, to use the RS-232C commands during servicing to control the unit the setting must be returned to RS-232C.

•How to switch between SR+ and RS-232C

There are two ways to switch: (1) by using the remote control unit during Standby mode, and (2) by using the Home menu.

(1) Switching by using the remote control unit during Standby mode

B • From SR+ to RS-232C

With the unit in normal Standby mode, press a key other than the Standby key. Then within 10 seconds, hold the Volume + (or -) key pressed for 3 to 10 seconds.

Then hold the sprit key pressed for 3 to 10 seconds. Then within 3 seconds, press the Enter key.

The Standby LED flashes twice.

Then the setting is switched to RS-232C, and the baud rate becomes 9600 bps.

• From RS-232C to SR+

With the unit in normal Standby mode, press a key other than the Standby key. Then within 10 seconds, hold the Volume + (or -) key pressed for 3 to 10 seconds.

Then hold the sprit key pressed for 3 to 10 seconds. Then within 3 seconds, press the HOME MENU key.

The Standby LED flashes twice.

C Then the setting is switched to SR+.

(2) Switching by using the Home menu

• From SR+ to RS-232C

Press the HOME MENU key. Move the cursor to Initial Setting, using the Up or Down key, then press the Enter key.

Move the cursor to SR+, by using the Up or Down key. Move the cursor to "Off," using the Left or Right key.

Press the HOME MENU key to exit the Home menu.

Then the setting is switched to RS-232C, and the baud rate becomes 9600 bps.

• From RS-232C to SR+

Press the HOME MENU key. Move the cursor to Initial Setting, by using the Up or Down key, and press the Enter key.

Move the cursor to SR+, by using the Up or Down key. Move the cursor to "On," by using the Left or Right key.

Press the HOME MENU key to exit from the Home menu.

Then the setting is switched to SR+.

•About RS-232C commands during Standby mode

During Standby mode (while the power to the main microcomputer is off), RS-232C commands (excluding some, such as PON) are not valid. If you wish to send invalid commands, such as DRV, during Standby mode, proceed in the following way:

E

During Standby



ZACS00 (Although this is a command for aging, it is used for starting up the main microcomputer, in this case.)



(Within 10 seconds)

DRVSO0 (To turn the drive off)



(Within 10 seconds)

F

PON

9.1.2 COMMAND PROTOCOL

● Command format

■Communication protocol : Asynchronous serial communication by RS-232C

Start bit length	: 1 bit
Data width	: 8 bit (ASCII code/ no distinction between upper case and lower case)
Parity	: None
Stop bit length	: 1 bit
Baud rate	: 9600 bps

A

■Adjustment function

Direct effectivity of numbers : When a number is transmitted after a command, an adjustment value can be directly set.

■Data format

The format of the control signal transmitted from the user side controller is as described below.

STX (02Hex) is arranged at the time of communication start and ETX (03Hex) is arranged at the time of data transmission complete, and ID, command and parameter are arranged in between. Data consists of ASCII type alphanumeric characters, and there is no distinction between the upper case and the lower case.

B

■In the case of command only [single function command]

STX	ID	Command	ETX
0x02	**	□□□	0x03

■When setting/adjustment data is accompanied [setting/adjustment command]

STX	ID	Command	Parameter	ETX
0x02	**	□□□	△△△	0x03

■Command processing

Command processing starts as soon as the command is entered.

ID shall be the two asterisks, "##".

C

■Confirmation of reception

The main microcomputer will make judgment to the command received, and if the command is judged to be an effective one, processing will be executed. When the system is in the standby status for the next command after completion of the processing, a reply to the received command is sent out. The data to be responded is a data in the upper case after deleting the ID code from the received command.

■When setting/adjustment data is accompanied

Data transmitted by PC

STX	ID	Command	Parameter	ETX
0x02	**	□□□	△△△	0x03

Reply data

STX	Command	Parameter	ETX
0x02	□□□	△△△	0x03

■In the case of command only

Data transmitted by PC

STX	ID	Command	ETX
0x02	**	□□□	0x03

Reply data

STX	Command	ETX
0x02	□□□	0x03

When responding, ERR is sent back if the command is unknown, and XXX is sent back if the command itself is valid but it cannot be processed because of its status.

■In the case of invalid command

Data transmitted by PC

STX	ID	Command	ETX
0x02	**	□□□	0x03

Reply data

STX	Command	ETX
0x02	ERR	0x03

■In the case of a command not executable due to its status

Data transmitted by PC

STX	ID	Command	ETX
0x02	**	□□□	0x03

Reply data

STX	Command	ETX
0x02	XXX	0x03

E

■Processing in the case of an error

If a communication error occurs between STX and ETX, processing of that command is stopped, and the reception buffer is cleared.

In the command reception process, the character string transmitted after the receipt of STX are continued to be stored in the register, and by receipt of ETX, the character string sandwiched between STX and ETX is recognized as a command. If the prepared character string storage buffer (24 bytes including STX, ID and ETX) is exceeded, a reply will not be sent out.

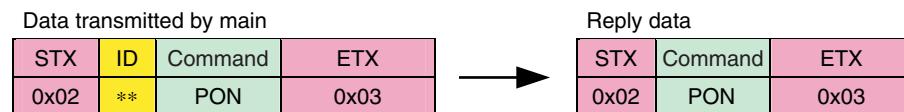
F

9.1.3 DEFINITION OF COMMAND

● Definition of command

■ Single function command

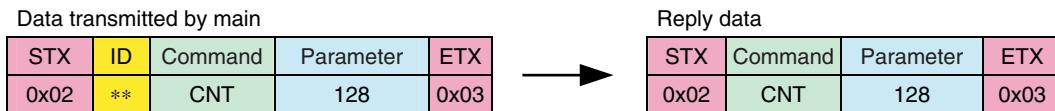
- A It is a command that a command alone will complete an operation, and the command section consists of three characters.



■ Adjustment command and adjustment value

It is a command, accompanied by an adjustment value, to change the parameter value, and the command section is also three characters as in the case of a single function command. The adjustment value is a three character decimal numerical data within the range of 000-999. Incidentally, the adjustable range will be different depending on the function to be adjusted. (Be careful as it is not always up to 999.)

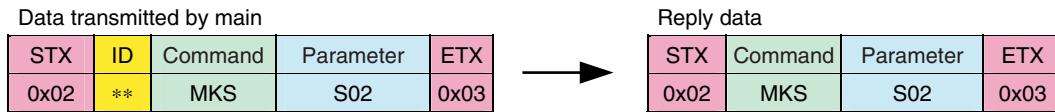
B



- * XXX will be transmitted if the received command is exceeding the adjustable range of the adjustment value.
- * When the same setting value is transmitted consecutively for two times or more, the setting is overwritten without responding with XXX even though the command is invalid, and an ACK after deleting the ID is sent back.

■ Setting command and setting value

- C It is a command, accompanied by a setting value, to change the setting value of the parameter, and the command section consists of three characters. The setting value consists of three characters, and the first character is fixed to S and the remaining two characters are decimal numbers within the range of S00-S99.



- * XXX will be transmitted if the received command does not exist as a setting value.
- * When the same setting value is transmitted consecutively for two times or more, the setting is overwritten without responding with XXX even though the command is invalid, and an ACK after deleting the ID is sent back.

D ■ Status acquisition (QUEST) command

This is a command to report the operational status and the setting value.

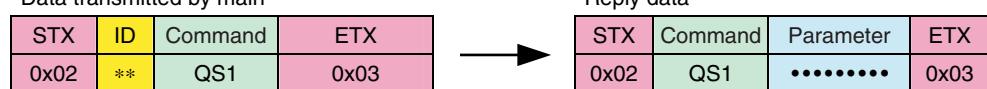
When a command is received, an applicable content depending on the type of command is read out from the memory and sent back.

The command section consists of three characters, and the first character is fixed to Q. The second character and on are set depending on the content of the information.

When sending back a reply data, the received command, various data converted to ASCII code and checksum of that data are added and sent.

The data length will be subject to each individual specification as the content of a reply will be different depending on the type of QUEST command.

E Data transmitted by main



F

9.2 RS-232C COMMAND TABLE

If SR+ is set to ON, RS-232C commands cannot be received.

To switch the setting to RS-232C ON during Standby mode using the remote control unit, see 6.2 "RS-232C COMMANDS."

[Description of the items in the table]

① Division: Classification of commands by definition

ADJ: Commands for adjustment

FNC: Commands for function setting

SGL: Commands for a single function

SUB: Auxiliary commands

② Command Reception Point:

Classification by the microcomputer (main or module [Mod]) that receives a command to execute

③ Effective Commands during Factory Mode:

Classification of commands that are effective only in Factory mode (status after the command FAY is received)

The commands that are effective only in Factory mode return ERR during normal operation mode.

Command	Division	Function	command Reception Point		Last Memory	Only FAY is Effective	Remarks
			Mod	Main			
A							
ABL	***	ADJ	Adjusting the upper limit of the power	●		Mod	●
AMT	S00	FNC	Canceling audio muting		●		
	S01	FNC	Executing audio muting				
APW	S00	FNC	WB correction interlocked with APL: OFF	●			●
	S01	FNC	WB correction interlocked with APL: ON	●			●
B							
BCP		SGL	Copying the backup data in the EEPROM	●			●
BHI	***	ADJ	User white balance : BLUE highlight	●	●	Main	
BLW	***	ADJ	User white balance : BLUE lowlight	●	●	Main	
BRT	***	ADJ	User brightness	●	●	Main	
BSM	S00	FNC	After image/Burning safe mode: OFF	●			
	S01	FNC	After image/Burning safe mode: ON	●			
C							
CBU		SGL	Clearing backup data	●			●
CHM		SGL	Clearing data of the hour meter	●			●
CNT	***	ADJ	User contrast	●	●	Main	
CMT		SGL	Clearing data of the maximum temperature	●			●
CPC		SGL	Clearing power-on count data	●			●
CPD		SGL	Clearing power-down history	●			●
CPM		SGL	Clearing data of the pulse meter	●			●
CSD		SGL	Clearing shutdown history	●			●
D							
DRV	S00	FNC	Main power off	●			
	S01	FNC	Main power on	●			
DW*		SUB	To subtract *** to the adjustment value (***) = 000 to 999, designated by a function command)		●		
E							
ESV	S00	FNC	Setting Power Consumption mode to normal sequence and normal curve	●			
	S01	FNC	Setting Power Consumption mode to silent sequence and normal curve	●			
	S02	FNC	Setting Power Consumption mode to silent sequence and power-saving curve	●			
	S10	FNC	Setting Power Consumption mode to normal sequence and normal curve	●			
	S11	FNC	Setting Power Consumption mode to silent sequence and normal curve	●			
	S12	FNC	Setting Power Consumption mode to silent sequence and power-saving curve	●			

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	Command	Division	Function	command Reception Point		Last Memory	Only FAY is Effective	Remarks
				Mod	Main			
F								
	FAJ	SGL	Determining the flag of the unit adjustment in "adjustment is completed"	●			●	
	FAN	SGL	Factory mode off	●	●		●	
	FAY	SGL	Factory mode on	●	●			
	FST	S01	FNC Set each memory setting of MTB side to the shipment state of Japan.		●		●	
		S02	FNC Set each memory setting of MTB side to the shipment state of North America.		●		●	
		S03	FNC Set each memory setting of MTB side to the shipment state of Europe.		●		●	
G								
B	GHI	***	ADJ User white balance : GREEN highlight	●	●	Main		
	GLW	***	ADJ User white balance : GREEN lowlight	●	●	Main		
I								
	INP	S01	FNC Input switch: INPUT 1		●	Main		
		S02	FNC Input switch: INPUT 2		●	Main		
		S03	FNC Input switch: INPUT 3		●	Main		
		S04	FNC Input switch: INPUT 4		●	Main		
		S05	FNC Input switch: INPUT 5		●	Main		
		S06	FNC Input switch: INPUT 6		●	Main		
M								
C	MKC	S00	FNC MASK off	●		Mod	●	
		S01	FNC H ramp (slant 1) M	●		Mod	●	
		S02	FNC H ramp (slant 4) M	●		Mod	●	
		S03	FNC Slanting ramp M	●		Mod	●	
		S04	FNC 30 for aging	●		Mod	●	
		S05	FNC 05 for aging	●		Mod	●	
		S06	FNC Erasing afterimage 1	●		Mod	●	
		S07	FNC Erasing afterimage 2 (RGB: zigzag, V: reverse)	●		Mod	●	
		S08	FNC White (change in luminance level)	●		Mod	●	
		S09	FNC PEAK SEEK RASTER	●		Mod	●	
		S10	FNC For technique evaluation 1	●		Mod	●	
D	MKS	S00	FNC MASK off	●		Mod		
		S01	FNC H ramp (slant 1)	●		Mod	●	
		S02	FNC H ramp (slant 4)	●		Mod	●	
		S03	FNC V ramp (slant 1)	●		Mod	●	
		S04	FNC Slanting ramp	●		Mod	●	
		S05	FNC Window (Hi= 870, Lo= 102)	●		Mod	●	
		S06	FNC Window (Hi= 1023, Lo= 102)	●		Mod	●	
		S07	FNC Window (Hi= 1023)	●		Mod	●	
		S08	FNC Window (Hi= 1023) 4 %	●		Mod	●	
		S09	FNC Window (Hi= 1023) 1.25 %	●		Mod	●	
		S10	FNC Window (1/7 LINE)	●		Mod	●	
		S11	FNC STRIPE (MGT/GRN)	●		Mod	●	
		S12	FNC STRIPE (GRN/MGT)	●		Mod	●	
		S13	FNC B & W, checker (1 line)	●		Mod	●	
		S14	FNC B & W, checker (2 lines)	●		Mod	●	
		S15	FNC B & W, checker (4 lines)	●		Mod	●	
		S16	FNC B & W, checker (8 lines)	●		Mod	●	
		S17	FNC COLOR BAR	●		Mod	●	

Command	Division	Function	Command Reception Point		Last Memory	Only FAY is Effective	Remarks
			Mod	Main			
MKS	S18	FNC Slanting lines	●		Mod	●	
	S19	FNC Red & black, checker (1 line)	●		Mod	●	
	S20	FNC Red & black, checker (2 lines)	●		Mod	●	
	S21	FNC Red & black, checker (4 lines)	●		Mod	●	
	S22	FNC Red & black, checker (8 lines)	●		Mod	●	
	S23	FNC RGB zigzag, V reverse	●		Mod	●	
	S24	FNC SUS 2000 pulses (black raster)	●		Mod	●	
	S25	FNC Window (Hi= 870, Lo= 102) Pattern	●		Mod	●	
	S26	FNC Window (Hi= 1023, Lo= 102) Pattern	●		Mod	●	
	S27	FNC Window (Hi= 1023) Pattern	●		Mod	●	
	S28	FNC Window (Hi= 1023) 4 % Pattern	●		Mod	●	
	S29	FNC Window (Hi= 1023) 1.25 % Pattern	●		Mod	●	
	S30	FNC Window (1/7 LINE) Pattern	●		Mod	●	
	S31	FNC Noise ON - White	●		Mod	●	
	S32	FNC Noise ON - Red	●		Mod	●	
	S33	FNC Noise ON - Green	●		Mod	●	
	S34	FNC Noise ON - Blue	●		Mod	●	
	S35	FNC Noise ON - Black	●		Mod	●	
	S36	FNC For technique evaluation 1	●		Mod	●	
	S37	FNC For technique evaluation 2	●		Mod	●	
	S38	FNC For technique evaluation 3	●		Mod	●	
	S39	FNC For technique evaluation 4	●		Mod	●	
	S51	FNC Raster - White	●		Mod	●	
	S52	FNC Raster - Red	●		Mod	●	
	S53	FNC Raster - Green	●		Mod	●	
	S54	FNC Raster - Blue	●		Mod	●	
	S55	FNC Raster - Black	●		Mod	●	
	S56	FNC Raster - Cyan	●		Mod	●	
	S57	FNC Raster - Magenta	●		Mod	●	
	S58	FNC Raster - Yellow	●		Mod	●	
	S59	FNC Raster - Light purple 1	●		Mod	●	
	S60	FNC Raster - Sky blue 1	●		Mod	●	
	S61	FNC Raster - Yellow egg color	●		Mod	●	
	S62	FNC Raster - Light blue	●		Mod	●	
	S63	FNC Raster - Indigo blue	●		Mod	●	
	S64	FNC Raster - Red 582	●		Mod	●	
	S65	FNC Raster - Red 850	●		Mod	●	
	S66	FNC Raster - Green 850	●		Mod	●	
	S67	FNC Raster - Blue 850	●		Mod	●	
	S68	FNC Raster - Gray 850	●		Mod	●	
	S69	FNC Raster - Beige	●		Mod	●	
	S70	FNC Raster - Green 582	●		Mod	●	
	S71	FNC Raster - Cyan 464	●		Mod	●	
	S72	FNC Raster - Sky blue 2	●		Mod	●	
	S73	FNC Raster - Light purple 2	●		Mod	●	
	S74	FNC Raster - Gray 362	●		Mod	●	

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Command		Division	Function	command Reception Point		Last Memory	Only FAY is Effective	Remarks
				Mod	Main			
MST	S00	FNC	Single screen display		●			
	S01	FNC	PsideP (main size is normal)		●			
	S08	FNC	SWAP (swapping pictures between the main screen and subscreen)		●	Main		
O								
OSD	S00	001	Turning OSD setting to off		●	Main		
	S01	001	Turning OSD setting to off		●	Main		
P								
PAV	S**	FNC	Switching panel functions interlocked with the AV selection	●				
PBH	***	ADJ	Panel white balance adjustment - Blue highlight	●		Mod	●	UP/DW key not effective
PBL	***	ADJ	Panel white balance adjustment - Blue low light	●		Mod	●	UP/DW key not effective
PDM	S00	FNC	Passing PD signals to the Power SUPPLY Unit => Power-down	●				
	S01	FNC	Not passing PD signals to the Power SUPPLY Unit => No power-down	●				
PFN		SGL	(Panel) Factory mode: off	●			●	
PFS		SGL	Setup at shipment	●			●	
PFY		SGL	(Panel) Factory mode: on	●			●	The MASK setting and picture-quality settings of the MB remain the same.
PGH	***	ADJ	Panel white balance adjustment - Green highlight	●		Mod	●	UP/DW key not effective
PGL	***	ADJ	Panel white balance adjustment - Green low light	●		Mod	●	UP/DW key not effective
PGM	001	FNC	Setting of the gamma table	●				
PMT	S00	FNC	Canceling panel muting	●				
	S01	FNC	Panel muting	●				
POF		SGL	Power off	●	●	Main		
PON		SGL	Power on	●	●	Main		
PPT	S00	FNC	Panel protection: off	●			●	
	S01	FNC	Panel protection: on	●			●	
PRH	***	ADJ	Panel white balance adjustment - Red highlight	●		Mod	●	UP/DW key not effective
PRL	***	ADJ	Panel white balance adjustment - Red low light	●		Mod	●	UP/DW key not effective
PUC	S00	FNC	Pure cinema: off	●	●	Main	●	
	S01	FNC	Pure cinema: standard	●	●	Main	●	
	S02	FNC	Pure cinema: advanced	●	●	Main	●	
Q								
QAJ		QST	Acquiring various adjustment values	●				
QIP		QST	Acquiring various input signal data	●				
QMT		QST	Acquiring temperature of MTB side and Fan speed		●			
QNG		QST	Acquiring shut-down information of MTB side		●			
QPD		QST	Acquiring logs of power-down points	●				
QPM		QST	Acquiring data of the pulse meter	●				
QPW		QST	Acquiring panel white balance adjustment values	●				
QS1		QST	Acquiring unit data, such as the software version common to all models, regardless of destination	●	●			
QS2		QST	Acquiring data on the status of the unit, such as temperature	●				
QSD		QST	Acquiring data on shutdown	●				
QSI		QST	Acquiring data related with signals of panel side	●				

Command	Division	Function	Command Reception Point		Last Memory	Only FAY is Effective	Remarks
			Mod	Main			
R							
RBL	S**	FNC	Setting of blue level for panel degradation correction	●		Mod	●
RGL	S**	FNC	Setting of green level for panel degradation correction	●		Mod	●
RHI	***	ADJ	User white balance - Red highlight	●	●	Main	UP/DW key not effective
RLW	***	ADJ	User white balance - Red low light	●	●	Main	UP/DW key not effective
RRL	S**	FNC	Setting of red level for panel degradation correction	●		Mod	●
RSW	***	ADJ	Adjustment of the width of XY reset pulse 1	●		Mod	●
RYW	***	ADJ	Adjustment of the width of XY reset pulse 2	●		Mod	●
S							
SDM	S00	FNC	Shutdown enabled	●			
	S01	FNC	Shutdown prohibited	●			
SFR	S01	FNC	Measures against AM radio noise - Pattern 1	●		Mod	●
	S02	FNC	Measures against AM radio noise - Pattern 2	●		Mod	●
	S03	FNC	Measures against AM radio noise - Pattern 3	●		Mod	●
	S04	FNC	Measures against AM radio noise - Pattern 4	●		Mod	●
	S05	FNC	Measures against AM radio noise - Pattern 5	●		Mod	●
	S06	FNC	Measures against AM radio noise - Pattern 6	●		Mod	●
	S07	FNC	Measures against AM radio noise - Pattern 7	●		Mod	●
	S08	FNC	Measures against AM radio noise - Pattern 8	●		Mod	●
SMM	S**	FNC	Setting of the effective area during streaking correction	●			●
SN0	***	ADJ	Setting of the serial No. 0 (panel)	●		Mod	●
SN1	***	ADJ	Setting of the serial No. 1 (panel)	●		Mod	●
SN2	***	ADJ	Setting of the serial No. 2 (panel)	●		Mod	●
SN3	***	ADJ	Setting of the serial No. 3 (panel)	●		Mod	●
SN4	***	ADJ	Setting of the serial No. 4 (panel)	●		Mod	●
SSI	S01	FNC	Sub input switch: INPUT 1		●	Main	
	S02	FNC	Sub input switch: INPUT 2		●	Main	
	S03	FNC	Sub input switch: INPUT 3		●	Main	
	S04	FNC	Sub input switch: INPUT 4		●	Main	
	S05	FNC	Sub input switch: INPUT 5		●	Main	
	S06	FNC	Sub input switch: INPUT 6		●	Main	
SSM	S00	FNC	Turning the external SSCG operation off	●			●
	S01	FNC	Turning the external SSCG operation on (normal operation)	●			●
SZM	S00	FNC	Setting the screen size to Dot by Dot or PARTIAL		●	Main	
	S01	FNC	Setting the screen size to 4 : 3		●	Main	
	S02	FNC	Setting the screen size to FULL or FULL 1080i		●	Main	
	S03	FNC	Setting the screen size to ZOOM		●	Main	
	S04	FNC	Setting the screen size to CINEMA		●	Main	
	S05	FNC	Setting the screen size to WIDE		●	Main	
	S06	FNC	Setting the screen size to FULL 14 : 9		●	Main	
	S07	FNC	Setting the screen size to CINEMA 14 : 9		●	Main	
	S08	FNC	Setting the screen size to FULL 1035i		●	Main	

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A	Command	Division	Function	command Reception Point		Last Memory	Only FAY is Effective	Remarks
				Mod	Main			
U								
	UAJ		SGL Determining the flag for the unit adjustment in "not adjusted"	●				
	UP*		SUB To add *** to the adjustment value *** = 000 to 999 With DW0, the adjustment value is added by 10.		●			
V								
B	VFQ	S01	FNC Setting the frequency in Mask mode to VD-48 Hz	●		Mod	●	
		S02	FNC Setting the frequency in Mask mode to VD-50 Hz	●		Mod	●	
		S03	FNC Setting the frequency in Mask mode to VD-60 Hz	●		Mod	●	
		S05	FNC Setting the frequency in Mask mode to VD-72 Hz	●		Mod	●	
		S06	FNC Setting the frequency in Mask mode to VD-75 Hz	●		Mod	●	
		S13	FNC Setting the frequency in Mask mode to PC-60 Hz	●		Mod	●	
		S14	FNC Setting the frequency in Mask mode to PC-70 Hz	●		Mod	●	
		S22	FNC Setting the frequency in Mask mode to VD-50 Hz (nonstandard)	●		Mod	●	
		S23	FNC Setting the frequency in Mask mode to VD-60 Hz (nonstandard)	●		Mod	●	
		S25	FNC Setting the frequency in Mask mode to VD-72 Hz (nonstandard)	●		Mod	●	
		S26	FNC Setting the frequency in Mask mode to VD-75 Hz (nonstandard)	●		Mod	●	
C	VOF	***	ADJ Adjustment of the reference value of Vofs voltage	●		Mod	●	UP/DW key not effective
	VOL	UP*, DW*, ***	ADJ To adjust the volume (to be used in combination with UP*/DW*) *** = 000 to 060		●	Main		
	VRP	***	ADJ Adjustment of the reference value of Vrst-p voltage	●		Mod	●	UP/DW key not effective
	VSU	***	ADJ Adjustment of the reference value of Vsus voltage	●		Mod	●	UP/DW key not effective
W								
D	WBI	S00	FNC Panel WB standard output mode: off	●			●	
		S01	FNC Panel WB standard output mode: on	●			●	
X								
	XSB	***	ADJ X-SUS-B ADJ	●		Mod	●	UP/DW key not effective
Y								
E	YSB	***	ADJ Y-SUS-B ADJ	●		Mod	●	UP/DW key not effective
	YTB	***	ADJ Y-SUSTAIL T2 ADJ	●		Mod	●	UP/DW key not effective
	YTG	***	ADJ Y-SUSTAIL T1 ADJ	●		Mod	●	UP/DW key not effective
	YTW	***	ADJ Y-SUSTAIL W ADJ	●		Mod	●	UP/DW key not effective
Z								
	ZME	SGL		Initializing the video EEPROM data		●	●	
	ZPR	SGL		Initializing the setting data to which no adjustment command is provided	●		●	

9.3 OUTLINE OF COMMANDS

9.3.1 QS1

■ Acquisition of panel statuses ••• [QS1]

The command QS1 is for acquiring data necessary for authentication of both the main unit's microcomputer and the module's microcomputer.

Command Format	Effective Operation Modes	Function	Remarks
[QS1]	Continually	To acquire data on product status	Return data: 105 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QS1
1	Resolution/size	1 Byte	F
2	Generation	1 Byte	7
3	Destination	1 Byte	*
4	Grade	1 Byte	*
5	Product type	1 Byte	M
6	MDUcom-Boot	3 Byte	01A
7	MDUcom-PRG	8 Byte	001A_M "space × 2"
8	ASTRA-Boot	3 Byte	01A
9	ASTRA-PRG	8 Byte	001Y "space × 4"
10	SQ-VIDEO	4 Byte	001Y
11	SQ-PC	4 Byte	001Y
12	Panel type 1	1 Byte	P
13	Reserved	7 Byte	*****
14	, (comma)	1 Byte	
15	MTB generation	1 Byte	7
16	MTB destination	1 Byte	*
17	MTB grade	1 Byte	W
18	MTB product type	1 Byte	M
19	IF microcomputer	4 Byte	
20	Main microcomputer	8 Byte	
21	Main microcomputer boot	4 Byte	
22	Multi processor	8 Byte	
23	Multi processor boot	4 Byte	
24	Reserved	24 Byte	
CS		2 Byte	7B

1: Resolution/size	
3	1024*768-42
4	1024*768-43
5	1280*768-50
6	1365*768-50
7	1365*768-60
F	1920*1080-50

2: Generation	
6	G6
7	G7
8	G8
9	G9
0	G10

3: Destination	
*	Common
A	North America (Reserved)
E	Europe (Reserved)
J	Japan (Reserved)

4: Grade	
*	Common

5: Product type	
S	System model
B	Integrated TV
M	Monitor
D	Standard module

12: Panel type 1	
P	Conventional panel
F	High-efficiency panel

16: Destination of MTB	
J	Japan
A	North America
E	Europe

18: Product type of MTB	
S	System model
B	Integrated TV
M	FHD

15, 17, 19 to 23: Product type of MTB	
IF microcomputer	Version of IF microcomputer
Main microcomputer	Common version of Main microcomputer
Main microcomputer boot	Boot version of Main microcomputer
Multi processor	Common version of Multi processor
Multi processor boot	Boot version of Multi processor

9.3.2 QS2

■ Acquisition of panel operation data ••• [QS2]

The command QS2 is for acquiring data on the panel's operations. Basically, this command is used for the module's microcomputer to inform the main unit's microcomputer of changes in panel operation.

Command Format	Effective Operation Modes	Function	Remarks
[QS2]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+23(DATA)+2(CS)= 28 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QS2
1	Notification of mode shifting to STB	1 Byte	1
2	Flag for adjustment of the main unit	1 Byte	0
3	Flag for adjustment-data backup	1 Byte	0
4	"1st PD" data	1 Byte	0
5	"2nd PD" data	1 Byte	0
6	Still picture detection	1 Byte	0
7	Reserved	2 Byte	**
8	Temperature data (TEMP 1)	3 Byte	128
9	SD main data	1 Byte	0
10	SD subdata	1 Byte	0
11	Operation status induced by SD	1 Byte	0
12	Data from the hour meter	8 Byte	00000259
13	MASK indication	1 Byte	0
CS		2 Byte	4A

Note : "00000259" of "Data from the hour meter" means 2 hours 59 minutes.

1: Notification of mode shifting to Standby	4, 5: PD data	6: Still picture detection	9: SD main data	10-1: SD-Sub (SQ-IC)	10-2: SD-Sub (IIC)	10-3: SD-Sub (TEMP)
0 Entering Standby mode failed	0 No PD data	0 Normal screen	0 No SD	0 No SD-Sub data	0 No SD-Sub data	0 No SD-Sub data
1 Entering Standby mode succeeded	1 Not used	1 Still picture	1 SQ-IC	1 Communication error (LR/G7)	1 Communication error (LR/G7)	1 Communication error (LR/G7)
	2 POWER		2 MDU-IIC	2 Drive stop (LR/G7)	2 Drive stop (LR/G7)	2 Drive stop (LR/G7)
	3 SCAN		3 RST2	3 BUSY	3 Incoherent versions (H/S)	3 Incoherent versions (H/S)
	4 SCN-5V		4 TEMP	4 Communication error (L)	4 Communication error (L)	4 Communication error (L)
	5 Y-DRV			5 Drive stop (L)	5 Drive stop (L)	5 Drive stop (L)
	6 Y-DCDC			6 Incoherent versions (L/R)	6 Incoherent versions (L/R)	6 Incoherent versions (L/R)
	7 Y-SUS			7 Not used	7 Not used	7 Not used
	8 ADRS			8 Communication error (R)	8 Communication error (R)	8 Communication error (R)
	9 X-DRV			9 Drive stop (R)	9 Drive stop (R)	9 Drive stop (R)
	A X-DCDC					
	B X-SUS					
	C Not used					
	D Not used					
	E Not used					
	F UNKNOWN					
2: Adjustment of the main unit		11: Operation status induced by SD		13: MASK indication		
0 Adjustment completed		0 Normal		0 MASK-OFF		
1 Adjustment not completed		1 Relay-off completed		1 MASK-ON		
		2 During warning indication				
3: Adjustment-data backup						
0 With backup data						
1 No data						

- If no power-down is generated, 00 is transmitted. If a power-down is generated, data on power-down points are transmitted, with upper-level point as 1st PD and lower-level point as 2nd PD.
- The TEMP1 input value (10 bits) is transmitted in 3 bytes in decimal notation (range: 000-999) as temperature data. Values of 1000-1023 are handled as 999. (During Standby mode, the value retained in RAM is transmitted.)
- As to data on the hour-meter count, minute data (3 bytes) stored in the EEPROM are converted to hour data and described in 6 characters. These 6 characters and 2 characters representing minute are transmitted. The maximum recording time is 279,620 hours 16 minutes.

9.3.3 QIP

■ Acquisition of other data on the panel ••• [QIP]

The command QIP is for acquiring data other than those available with QS1 (data necessary before turning the power on) and QS2 (data to inform of operational status change).

Command Format	Effective Operation Modes	Function	Remarks
[QIP]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+58(DATA)+2(CS)= 63 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QIP
1	SERIAL	15 Byte	-----
2	HOUR METER	8 Byte	00000000
3	TOTAL HR MTR	8 Byte	00000000
4	PON COUNTER	8 Byte	00000000
5	TEMP1 acquisition (Temperature value)	5 Byte	+23.5
6	TEMP0 acquisition (Not used)	5 Byte	+00.0 (Fixation)
7	MAX-TEMP1 acquisition (Temperature value)	5 Byte	+78.3
8	Reserved	4 Byte	****
CS		2 Byte	94

- Data for the Hour Meter and Backup Hour Meter are transmitted according to the same rules as for QS2.
- Data for TEMP1 and MAX_TEMP1 are output in 5 characters. The first character is assigned to + or -, and the fourth character is assigned as the decimal point. The maximum output value is +99.9. If an AD value greater than +99.9 is acquired, +99.9 will be retained.

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9.3.4 QAJ

■ Acquisition of panel adjustment data (common data) ••• [QAJ]

A The command QAJ is for acquiring data on the panel's factory-preset items that are common to the main unit and that share the same memory.

Command Format	Effective Operation Modes	Function	Remarks
[QAJ]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+41(DATA)+2(CS)= 46 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QAJ
B	1	V-SUS adjustment value	3 Byte
	2	V-OFT adjustment value	3 Byte
	3	V-RST-P adjustment value	3 Byte
	4	Reserved	3 Byte
	5	XSB adjustment value	3 Byte
	6	YSB adjustment value	3 Byte
	7	YTG adjustment value	3 Byte
	8	YTW adjustment value	3 Byte
	9	RSW adjustment value	3 Byte
C	10	YTB adjustment value	3 Byte
	11	RYW adjustment value	3 Byte
	12	R-REVISE setting value	1 Byte
	13	G-REVISE setting value	1 Byte
	14	B-REVISE setting value	1 Byte
	CS	2 Byte	B7

- For each REVISE setting value, the level set for RRL, RGL, or RBL is transmitted as one character.

D

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9.3.5 QPW

■ Acquisition of ABL/WB adjustment data ••• [QPW]

The command QPW is for acquiring data on the panel's factory-preset items whose memory tables are changed in sequence.

Command Format	Effective Operation Modes	Function	Remarks
[QPW]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+35(DATA)+2(CS)= 40 Byte
Data Arrangement			
ECO	3 Byte	QPW	1: Drive sequence
1 Drive sequence	3 Byte	60V	48V Video 48 Hz
2 Standard/nonstandard	1 Byte	S	50V Video 50 Hz
3 Type of ABL/WB tables	2 Byte	T2	60V Video 60 Hz
4 ABL adjustment value	3 Byte	128	72V Video 72 Hz
5 R-HIGH adjustment value	3 Byte	256	75V Video 75 Hz
6 G-HIGH adjustment value	3 Byte	256	60P PC 60 Hz
7 B-HIGH adjustment value	3 Byte	256	70P PC 70 Hz
8 R-LOW adjustment value	3 Byte	512	
9 G-LOW adjustment value	3 Byte	512	
10 B-LOW adjustment value	3 Byte	512	
11 Gamma setting	1 Byte	A	12, 15: Setting for Items 12 and 15
12 Streaking correction	1 Byte	1	0 OFF
13 Peripheral luminance correction	1 Byte	0	1 ON
14 Reserved	1 Byte	*	13: Peripheral luminance correction
15 WB interlocked with APL	1 Byte	0	0 OFF
16 Transition of protective operations	1 Byte	0	2 ON (interlocked with APL)
17 Reserved	2 Byte	**	
CS	2 Byte	37	16: Transition of brightness by protective operations
3: Type of ABL/WB tables			
Tn	n: 1 to 4		0 Upper limit state for brightness
			1 Brightness being reduced
			2 Lower limit state for brightness
			3 Brightness being increased
11: Gamma setting			
n	0 to F		

9.3.6 QPM

A ■ Acquisition of parameters ••• [QPM]

The command QPM is for acquiring the accumulated number of pulses for each of 5 blocks from the EEPROM.

Command Format	Effective Operation Modes	Function	Remarks
[QPM]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+40(DATA)+2(CS)= 45 Byte

Data Arrangement		Data Length	Output Example
ECO		3Byte	QPM
1	Pulse meter B 1	8Byte	00000000
2	Pulse meter B 2	8Byte	00000000
3	Pulse meter B 3	8Byte	00000000
4	Pulse meter B 4	8Byte	00000000
5	Pulse meter B 5	8Byte	00000000
CS		2Byte	E7

- The high-order 3 bytes stored in memory as pulse-meter counts for the 5 blocks are multiplied by 256 to be converted to decimal, then the high-order 8 digits (the low-order 2 digits rounded off) are transmitted (the unit for response value is million pulses).

C

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9.3.7 QPD

■ Acquisition of PD logs ••• [QPD]

The command QPD is for acquiring data from the 8 latest power-down (PD) logs.

A

Command Format	Effective Operation Modes	Function	Remarks
[QPD]	All operations	To acquire data on the power-down logs	Return data: 3 (ECO)+80(DATA)+2(CS)= 85 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QPD
1	Latest "1st PD" data	1 Byte	A
2	Latest "2nd PD" data	1 Byte	2
3	Data from the hour meter for the latest PD	8 Byte	00010020
4	Second latest "1st PD" data	1 Byte	E
5	Second latest "2nd PD" data	1 Byte	9
6	Data from the hour meter for the second latest PD	8 Byte	00008523
7	Third latest "1st PD" data	1 Byte	4
8	Third latest "2nd PD" data	1 Byte	3
9	Data from the hour meter for the third latest PD	8 Byte	00004335
10	Fourth latest "1st PD" data	1 Byte	2
11	Fourth latest "2nd PD" data	1 Byte	0
12	Data from the hour meter for the fourth latest PD	8 Byte	00000945
13	Fifth latest "1st PD" data	1 Byte	4
14	Fifth latest "2nd PD" data	1 Byte	0
15	Data from the hour meter for the fifth latest PD	8 Byte	00000715
16	Sixth latest "1st PD" data	1 Byte	A
17	Sixth latest "2nd PD" data	1 Byte	2
18	Data from the hour meter for the sixth latest PD	8 Byte	00000552
19	Seventh latest "1st PD" data	1 Byte	A
20	Seventh latest "2nd PD" data	1 Byte	0
21	Data from the hour meter for the seventh latest PD	8 Byte	00000213
22	Eighth latest "1st PD" data	1 Byte	D
23	Eighth latest "2nd PD" data	1 Byte	0
24	Data from the hour meter for the eighth latest PD	8 Byte	000001A7
CS		2 Byte	27

1, 2, 4, 5: PD data	
0	No PD
1	Not used
2	P-POWER
3	SCAN
4	SCN-5V
5	Y-DRIVE
6	Y-DCDC
7	Y-SUS
8	Address
9	X-DRIVE
A	X-DCDC
B	X-SUS
C	Not used
D	Not used
E	Not used
F	UNKNOWN

B

C

D

E

F

9.3.8 QSD

■ Acquisition of SD logs ••• [QSD]

The command QSD is for acquiring the data from the 8 latest shutdown (SD) logs on the FHD DIGITAL Assy.

Command Format	Effective Operation Modes	Function	Remarks
[QSD]	All operations	To acquire data on the shutdown logs	Return data: 3 (ECO)+80(DATA)+2(CS)= 85 Byte

Data Arrangement		Data Length	Output Example
ECO		3Byte	QSD
1	Latest SD data	1byte	1
2	Latest SD subcategory data	1byte	0
3	Data from the hour meter for the latest SD	8byte	00752013
4	Second latest SD data	1byte	5
5	Second latest SD subcategory data	1byte	0
6	Data from the hour meter for the second latest SD	8byte	00495204
7	Third latest SD data	1byte	2
8	Third latest SD subcategory data	1byte	3
9	Data from the hour meter for the third latest SD	8byte	00100355
10	Fourth latest SD data	1byte	2
11	Fourth latest SD subcategory data	1byte	5
12	Data from the hour meter for the fourth latest SD	8byte	00075620
13	Fifth latest SD data	1byte	1
14	Fifth latest SD subcategory data	1byte	0
15	Data from the hour meter for the fifth latest SD	8byte	00000852
16	Sixth latest SD data	1byte	2
17	Sixth latest SD subcategory data	1byte	5
18	Data from the hour meter for the sixth latest SD	8byte	000000451
19	Seventh latest SD data	1byte	0
20	Seventh latest SD subcategory data	1byte	0
21	Data from the hour meter for the seventh latest SD	8byte	00000000
22	Eighth latest SD data	1byte	0
23	Eighth latest SD subcategory data	1byte	0
24	Data from the hour meter for the eighth latest SD	8byte	00000000
CS		2Byte	7D

● SD data	
0	No SD
1	SQ-IC
2	MDU-IIC
3	RST2
4	TEMP

● SD subcategory (SQ-IC)	
0	No SD-Sub data
1	Communication error (LR)
2	Drive stop (LR)
3	BUSY
4	Communication error (L)
5	Drive stop (L)
6	Incoherent versions (H/S)
7	Incoherent versions (L/R)
8	Not used
9	Communication error (R)
A	Drive stop (R)

● SD subcategory (MDU-IIC)	
0	No SD-Sub data
1	EEPROM
2	BACKUP
3	DAC

● SD subcategory (TEMP)	
0	No SD-Sub data
1	TEMP1
2	Reserved

E

F

9.3.9 QMT

QMT: Returning information of the main side temperature and FAN operation.

Command	Effective Operation Modes	Function	Remarks
QMT	Continually	Status output	Return data : 9 byte

Data Content		Size	Example
ECO		3 byte	QMT only
1	TEMP2	3 byte	000
2	FAN (rotary speed)	1 byte	0

FAN (rotary speed)	
0	STOP
1	LOW
2	HIGH
3	MIDDLE

A

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9.3.10 QNG

QNG: Returning data (logs keep on Main microcomputer) on shutdown of the main microcomputer.

A

Command	Effective Operation Modes	Function	Remarks
QNG	Continually	Status output	Return data : 101 byte

B

Order	Data	Size	Context
ECO		3 byte	QNG only
1	Latest NG data	1 byte	0
2	Data of subcategory for the latest NG	1 byte	0
3	Data of Hour meter for the latest NG	7 byte	0000000
4	Data of temperature (TEMP2) for the latest NG	3 byte	000
5	2nd latest NG data	1 byte	0
6	Data of subcategory for the 2nd latest NG	1 byte	0
7	Data of Hour meter for the 2nd latest NG	7 byte	0000000
8	Data of temperature (TEMP2) for the 2nd latest NG	3 byte	000
9	3rd latest NG data	1 byte	0
10	Data of subcategory for the 3rd latest NG	1 byte	0
11	Data of Hour meter for the 3rd latest NG	7 byte	0000000
12	Data of temperature (TEMP2) for the 3rd latest NG	3 byte	000
13	4th latest NG data	1 byte	0
14	Data of subcategory for the 4th latest NG	1 byte	0
15	Data of Hour meter for the 4th latest NG	7 byte	0000000
16	Data of temperature (TEMP2) for the 4th latest NG	3 byte	000
17	5th latest NG data	1 byte	0
18	Data of subcategory for the 5th latest NG	1 byte	0
19	Data of Hour meter for the 5th latest NG	7 byte	0000000
20	Data of temperature (TEMP2) for the 5th latest NG	3 byte	000
21	6th latest NG data	1 byte	0
22	Data of subcategory for the 6th latest NG	1 byte	0
23	Data of Hour meter for the 6th latest NG	7 byte	0000000
24	Data of temperature (TEMP2) for the 6th latest NG	3 byte	000
25	7th latest NG data	1 byte	0
26	Data of subcategory for the 7th latest NG	1 byte	0
27	Data of Hour meter for the 7th latest NG	7 byte	0000000
28	Data of temperature (TEMP2) for the 7th latest NG	3 byte	000
29	8th latest NG data	1 byte	0
30	Data of subcategory for the 8th latest NG	1 byte	0
31	Data of Hour meter for the 8th latest NG	7 byte	0000000
32	Data of temperature (TEMP2) for the 8th latest NG	3 byte	000
CS		2 byte	77

C

D

E

- Details on the NG data and subcategory

Data	Cause of Shutdown	Remarks
0	Normal	
1	Communication failure of Module microcomputer	
2	3-wire Serial Communication failure of Main microcomputer.	Subcategory ⇒ 1
3	IIC Communication failure of Main microcomputer	Subcategory ⇒ 2
4	Communication failure of Main microcomputer & Unknown Error	
5	Fan stopped	
6	Abnormally high temperature of MTB section	
8	Abnormally in ASIC power (POWER)	Subcategory ⇒ 3
B	Short circuit the speaker	

F

Subcategory of NG

=> 1: Data on Subcategories for failure in 3-wire serial communication of Main microcomputer

Data	Cause of Shutdown	Remarks
2	Multi processor main communication failure (MULIT1)	
4	Multi processor communication failure (I/P)	
6	Multi processor sub communication failure (SLAVE)	
7	Main communication failure (FPGA1)	
8	Multi processor communication failure (FPGA2)	

Subcategory of NG

=> 2: Data on Subcategories for failure in IIC communication of Main microcomputer

Data	Cause of Shutdown	Remarks
0	Non subcategory	
4	AV Switch	
5	RGB Switch	
8	Main VDEC	
9	Sub VDEC	
A	AD/PLL	
B	HDMI	
G	64K EEPROM	
H	AUDIO IC	
K	DVI Receiver	
L	AUDIO Switch	
M	VOLUME IC	

Subcategory of NG

=> 3: Data on Subcategories for failure in the ASIC power (POWER)

Data	Cause of Shutdown	Remarks
1	DCDC converter reduce voltage (M-DCDC)	
2	Relay power reduce voltage (RELAY)	

A

B

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9.3.11 QSI

■ Acquisition of input signal data ••• [QSI]

The command QSI is for acquiring all data on input video signals.

Command Format	Effective Operation Modes	Function	Remarks
[QSI]	All operations	To acquire all data on input video signals	Return data: 3 (ECO)+66(DATA)+2(CS)= 71 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QSI
1	Type of drive sequence	3 Byte	60V
2	Standard/nonstandard	1 Byte	S
3	Type of ABL/WB tables	2 Byte	T1
4	Total value of PCN	4 Byte	0256
5	Total value of PRH	4 Byte	0256
6	Total value of PGH	4 Byte	0256
7	Total value of PBH	4 Byte	0256
8	Total value of PBR	4 Byte	0512
9	Total value of PRL	4 Byte	0512
10	Total value of PGL	4 Byte	0512
11	Total value of PBL	4 Byte	0512
12	Total value of ABL	3 Byte	128
13	Detection of V frequency	4 Byte	6002
14	Detection of existence of H	1 Byte	Y
15	Reserved	3 Byte	***
16	Obtained APL data	4 Byte	1023
17	Number of SUS pulses	4 Byte	0457
18	Result of detection of still picture	1 Byte	1
19	Result of detection of cracking in the panel	1 Byte	1
20	Result of detection for scanning protection	1 Byte	1
21	Result of detection for external protection	1 Byte	1
22	Transition of protection operation	1 Byte	0
23	Reserved	4 Byte	****
CS		2 Byte	27

14: Detection of existence of H	
N	No H
Y	H detected

18 to 20: Each protection operation status	
0	Setting OFF
1	Setting ON (waiting)
2	Setting ON (during operation)

22: Transition of brightness by protection operation	
0	Upper limit state for brightness
1	Brightness being reduced
2	Lower limit state for brightness
3	Brightness being increased

- If data for an item cannot be obtained during Standby mode, the return data for that item will be ".*."
- The types of data for Items 1-3 in the table (drive sequence, standard/nonstandard, and type of ABL/WB tables) are the same as with the command QPW.
- Each total value for Items 4-11 represents that of panel WB, user WB, and degradation correction, and the actual data being sent to the ASTRA are output.
- E • Detection of V frequency: The V signal input to the panel is measured in the range of 30.51 to 99.99 Hz. The measured value is multiplied by 100 and then output.
- Number of SUS pulses : The number is calculated from data from APL and the drive sequence. The output value must be between 0174 and 2752.
- APL value: The APL value for the input video signal (or mask indication) will be output in the range of 0000 to 1023.

9.3.12 DRV

● **DRV**

Drive ON/OFF: To turn on or off only the high-power system

A

Command	Effective Operation Modes	Operation	Remarks
DRV+S00	For details on how to issue a command during normal operation modes, including Standby mode, see 9.2.	Drive OFF	Issue the next command within 10 seconds after the DRV+S00 commands are issued.
DRV+S01		Drive ON	

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10. GENERAL INFORMATION

10.1 POWER SUPPLY PROCESS DIAGRAM

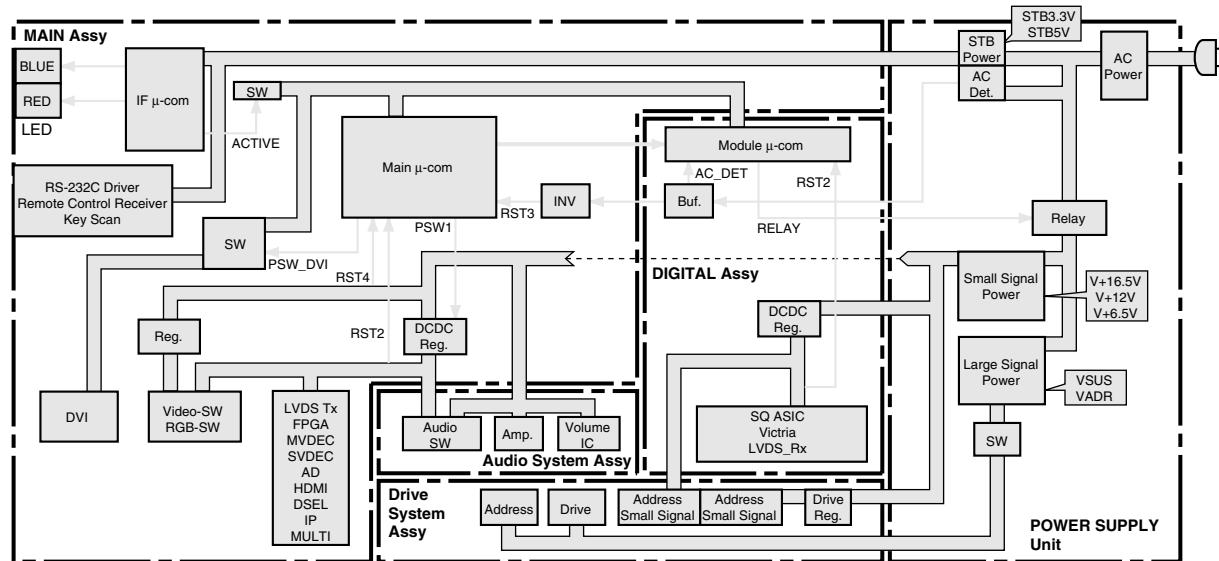
A ■ Configuration of the Power System -Power-on status in each mode-

① Unplugging of the AC power cord and/or power shutoff at the MAIN POWER switch

Status: No AC power is supplied to the unit at all.

Transition to another mode:

- Plugging in of the AC power cord (AC power is supplied): Shifting to status ③.
- Setting of the MAIN POWER switch to ON (AC power is supplied): Shifting to status ③.



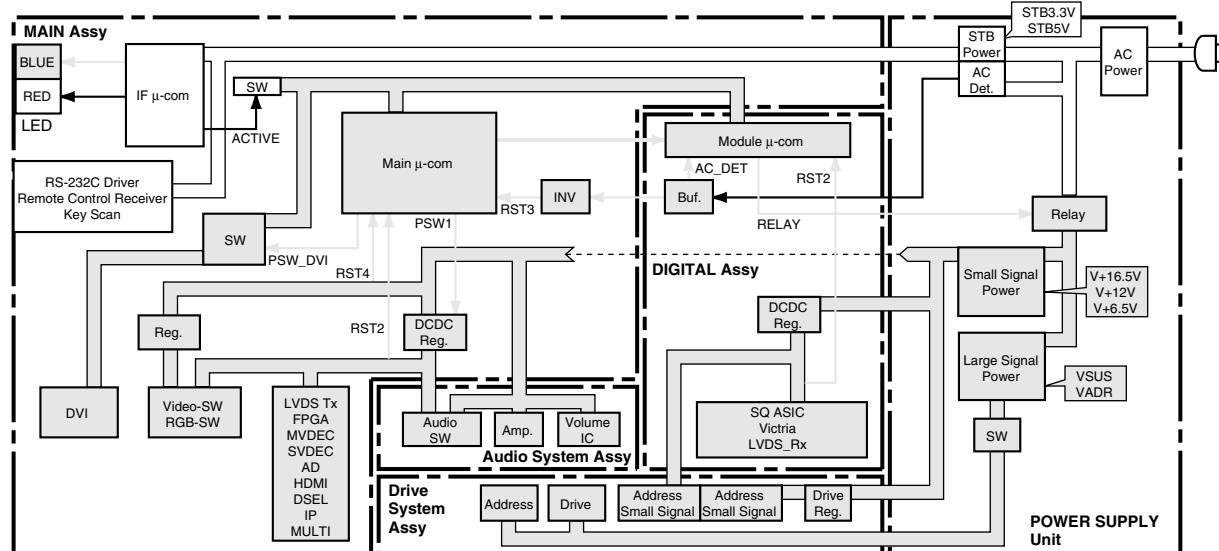
② Passive Standby mode

Status: Power is supplied to only the IF microcomputer and part of its surrounding circuits. The standby mode in most cases is Passive Standby mode.

Operation: The IF microcomputer deactivates the Active port to "L" (OFF) and the SW to OFF, in order to turn off the power to the Main microcomputer and the Module microcomputer.

Transition to another mode:

- Unplugging of the AC power cord: Shifting to status ①.
- Setting of the MAIN POWER switch to OFF: Shifting to status ①.
- User operation (using a remote control unit or a side key): Shifting to status ③ (to notify the Main microcomputer). Then, shifting to status ④, if required



③ Active Standby mode

Status: Power is supplied to the IF microcomputer, Main microcomputer, Module microcomputer, and their surrounding circuits.

Operation:

In a case of shifting from status ②:

The IF microcomputer activates the ACTIVE port to "H" (ON) and the SW to ON, in order to supply power to the Standby circuitry.

In a case of shifting from status ④:

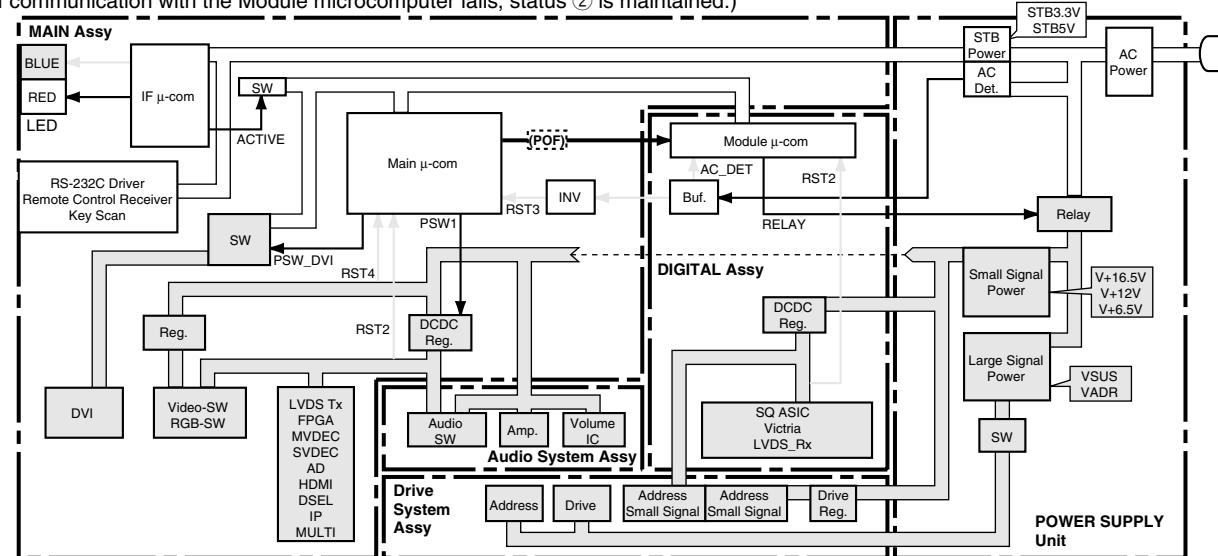
Main microcomputer: It issues the POF command to the Module microcomputer.

Module microcomputer: After receiving the POF command from the Main microcomputer, it deactivates the RELAY port to "L" (OFF) in order to turn off the relay circuit in the POWER SUPPLY Unit.

Transition to another mode:

- Unplugging of the AC power cord: Shifting to status ①.
- Setting of the MAIN POWER switch to OFF: Shifting to status ①.
- Setting of the POWER switch to ON: Shifting to status ④.
- No user operation for about 10 seconds: Shifting to status ②. However, after a shutdown or power-down, Active Standby mode will be maintained in the absence of any user operation for more than 10 seconds.

(If communication with the Module microcomputer fails, status ② is maintained.)



④ POWER ON

Status: Power is supplied to all circuits. Normal operation mode

Operation:

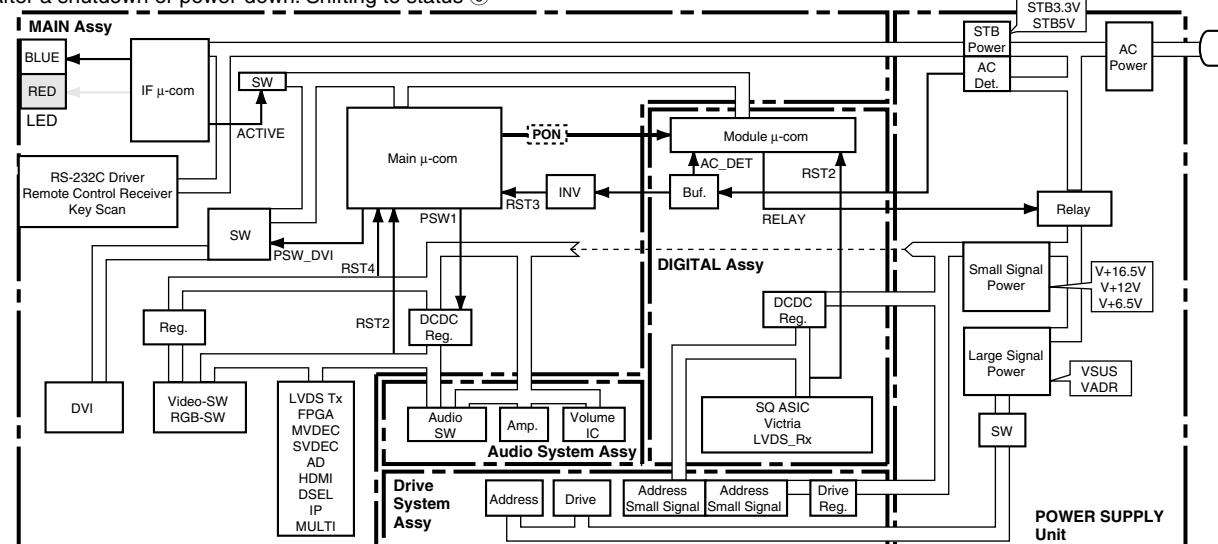
In a case of shifting from status ③:

Main microcomputer: It issues the PON command to the Module microcomputer. It activates the PSW1 port to "L" (ON) in order to supply power to all the circuits in the MAIN Assy.

Module microcomputer: After receiving the PON command from the Main microcomputer, it activates the RELAY port to "H" (ON) in order to turn on the relay circuit in the POWER SUPPLY Unit and supply power to all the circuits in the DIGITAL Assy.

Transition to another mode:

- Unplugging of the AC power cord: Shifting to status ①.
- Setting of the MAIN POWER switch to OFF: Shifting to status ①.
- Setting of the POWER switch to OFF: Shifting to status ② via status ③.
- After a shutdown or power-down: Shifting to status ③.



10.2 POWER ON/OFF FUNCTION FOR THE LARGE-SIGNAL SYSTEM

Function:

- A To prevent a power-down from being generated, operation of only the digital-signal processing is enabled, and power is not supplied to the panel driving system (large-signal system).

Usage:

1. In a case where a check is required of signals' being correctly output to the driving systems during a repair, etc.
2. In a case where diagnosis is required for judging whether the power-down occurred in the large-signal system or small-signal system.

Procedures:

1. Set the slider switch on the 50FHD X DRIVE Assy (see Fig) to the far right position.
2. Issue the "DRV S00" RS-232C command. (To cancel, use the "DRV S01" command.)
- B For details on how to issue an RS-232C command during Standby mode, see "About RS-232C commands during Standby mode," 9.1.1 DESCRIPTION OF RS-232C COMMAND."
3. Proceed as follows, using the remote control unit for servicing:

Press any key other than the Standby key during Standby mode.

(This is because the main microcomputer does not accept the first keypress.)

↓ (Within 10 seconds)

Press the DRIVE ON/OFF key.

↓ (Within 10 seconds)

Press the Standby key to start up the unit.

C

Notes:

- When the power to the large-signal system is off, as the PD signal is muted, power-downs other than PS_PD are not activated.
- Although the "DRV S00/S01" RS-232C commands are valid during Standby mode, once the main power is turned off, the unit will return to "DRV S01" (for canceling the function). Some special procedures are required. See "9.1.1 DESCRIPTION OF RS-232C COMMAND."
- To turn the drive off using the remote control unit for servicing, press the DRIVE ON/OFF key twice within 10 seconds, then within 10 seconds press the POWER key to turn the unit on.
- The remote control unit for servicing only turns off the drive but cannot turn it on.
- D It is possible to turn the drive off (either by using the remote control unit for servicing or by issuing the appropriate RS-232C command) while the unit has a picture displayed. However, as it may damage the unit, turn the drive off during Standby mode activated using the remote control unit. (A power-down may occur.)
- NEVER turn on the large signal system by using the Drive OFF switch while the power is ON, as doing so would damage the unit.

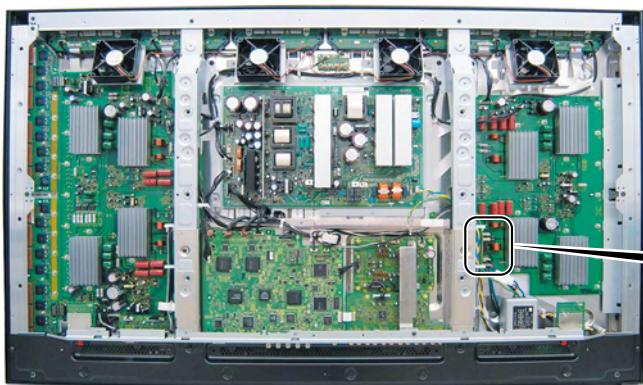
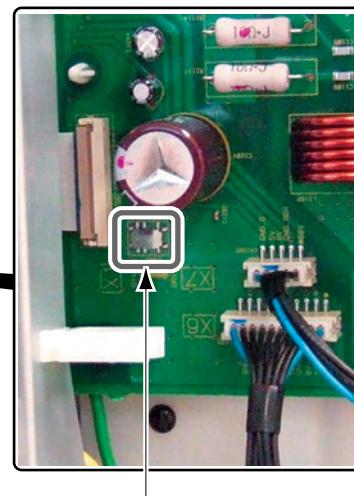


Fig. Drive OFF Position



Drive OFF switch

F

10.3 LED INFORMATION

■ LED Pattern

State	LED Pattern	
	POWER ON	STANDBY
Main Power OFF	Blu Red	
Standby	Blu Red	
Power management	Blu Red	1000 msec
Power ON	Blu Red	
Power-down	Blu Red	1 time 500 msec 2 time n time 2.5 sec
Shutdown	Blu Red	1 time 500 msec 2 time n time 2.5 sec
No digital adjustment data copied for backup	Blu Red	200 msec
In the process of rewriting the program of the microcomputer	Blu Red	100 msec/100 msec
Switching between RS-232C and SR+	Blu Red	200 msec

■ 1 ■ 2 ■ 3 ■ 4 ■ 10.4 SPECIFICATIONS ON TEMPERATURE SENSOR DETECTION AND DRIVING OF THE FAN

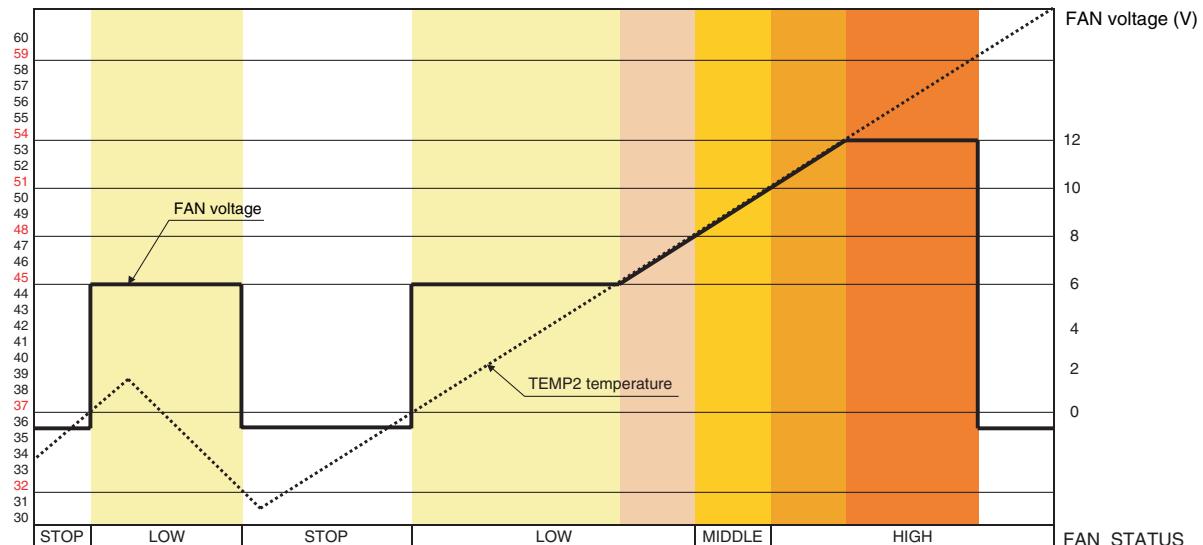
A

Specifications on temperature sensor detection and driving of the fan

- The power must be turned on or off with hysteresis.
- The measured value of the sensor inside the panel is indicated.
According to where and how the unit is installed, there may be a difference between the measured sensor temperature and the ambient temperature.

[Reading of the sensor and driving of the fan]

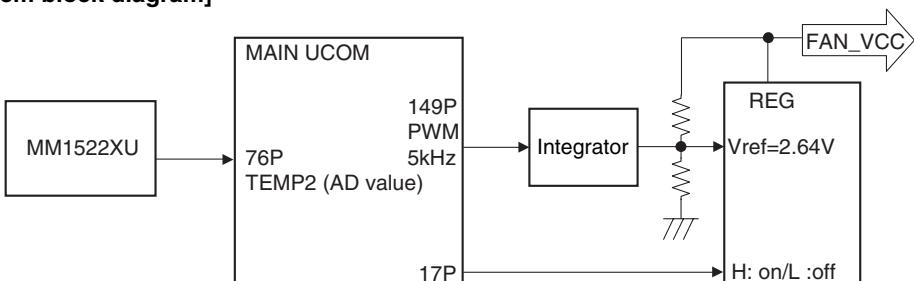
B



C

[System block diagram]

D



[Conversion formulae]

$$\begin{aligned} \text{TEMP2 (Celsius: C)} &= 0.32258 \times \text{A/D value (10 bit_data)} - 52 \\ \text{TEMP2 (Fahrenheit: F)} &= 1.8 \times \text{TEMP2 (Celsius: C)} + 32 \end{aligned}$$

E

[FAN_CONT operation]

- OFF to ON: If the A/D value of the detected temperature is more than 275, the fan is turned on.
ON to OFF: If the A/D value of the detected temperature is less than 261, the fan is turned off.

[FAN_STATUS operation]

- STOP: The fan is not activated if the A/D value of the detected temperature is less than 276.
The fan stops rotating if the A/D value of the detected temperature falls to below 261.
- LOW: The fan starts rotating at a low speed if the A/D value of the detected temperature becomes 276 or more but 309 or less.
The rotation speed becomes low if the A/D value of the detected temperature falls to 261 or more but 309 or less.
- MIDDLE: The fan starts rotating at a medium speed if the A/D value of the detected temperature becomes 310 or more but 319 or less.
- HIGH: The fan starts rotating at a high speed if the A/D value of the detected temperature becomes 320 or more but 344 or less.

F

11. SPECIFICATIONS

11.1 MAIN SPECIFICATIONS

Number of Pixels	1920 x 1080 pixels
Audio Amplifier	13 W + 13 W (1 kHz, 10 %, 8 W)
Surround System	SRS/FOCUS/TruBass
Power Requirement	110 V to 240 V AC, 50 Hz/60 Hz, 420 W (0.4 W Standby)
Dimensions	1282 mm (W) x 750.5 mm (H) x 98 mm (D)
Weight	39.8 kg
Color System	PAL/SECAM/NTSC 3.58/NTSC 4.43/PAL 60
Terminals	
INPUT1	DVI (DVI-D)
INPUT2	HDMI*1
INPUT3	HDMI*1
INPUT4	BNC (COMPONENT VIDEO or ANALOG RGB)
INPUT5	S-VIDEO
INPUT6	VIDEO

*1 This conforms to HDMI1.1 and HDCP1.1.

HDMI (High Definition Multimedia Interface) is a digital interface that handles both video and audio using a single cable.

HDCP (High-bandwidth Digital Content Protection) is a technology used to protect copyrighted digital contents that use the Digital Visual Interface (DVI).

- Design and specifications are subject to change without notice.

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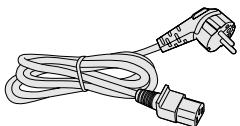
F

11.2 ACCESSORIES

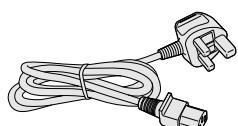
● Accessories

A

- Power cord
(ADG1214)



(For Europe, except UK and Eire)



(For UK and Eire)

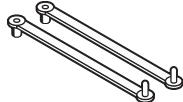
- Wiping cloth
(AED1285)



- Binder Assy (AEC1758)

Bead band × 2

Speed clamp × 2



B

- Ferrite Core
(ATX1039)



- Cable Tie



- Remote control unit
(AXD1535)



C

- BNC Conversion Connector
(AKX1052)



- AA size battery × 2
(Alkaline battery)
(VEM1031)



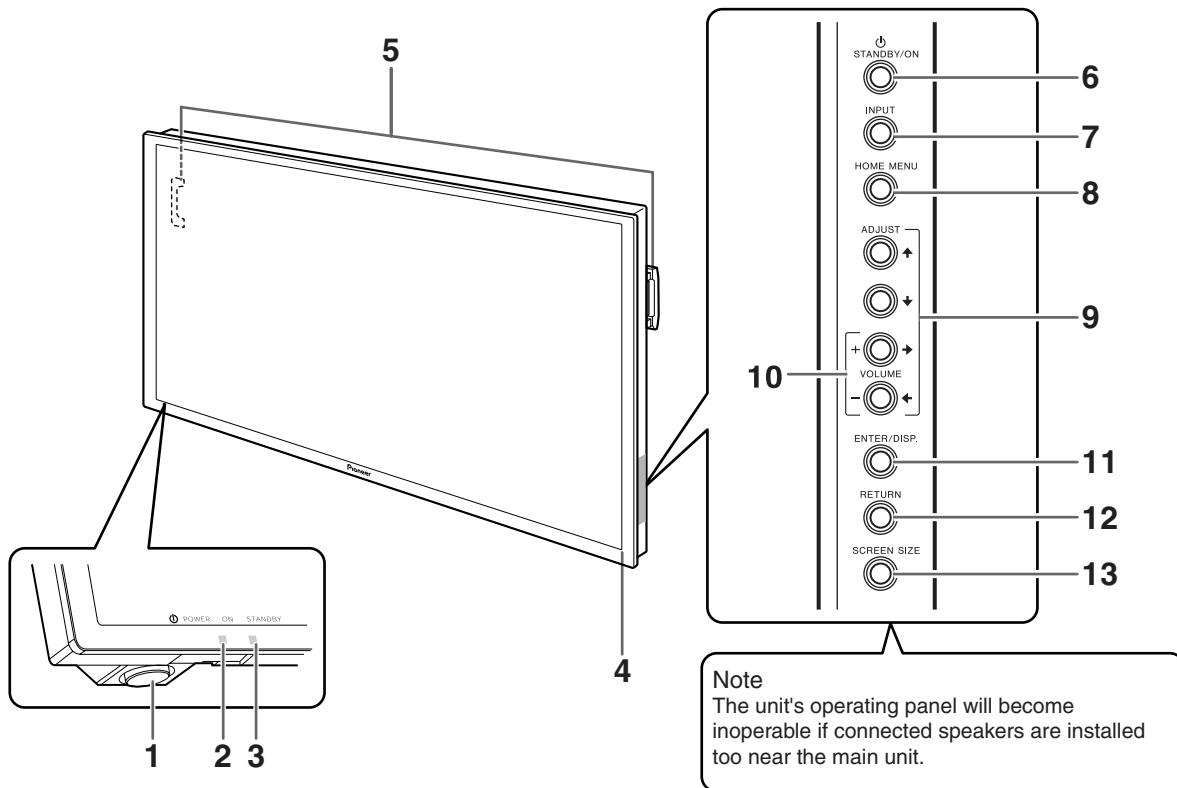
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11.3 PANEL FACILITIES

- Main unit



1 MAIN POWER switch

Use to switch the main power of the unit on and off.

2 ON indicator

3 STANDBY indicator

4 Remote control sensor

5 Handles

6 Ⓛ STANDBY/ON button

7 INPUT button

8 HOME MENU button

9 ADJUST (↑/↓/→/←) buttons

10 VOLUME +/- buttons

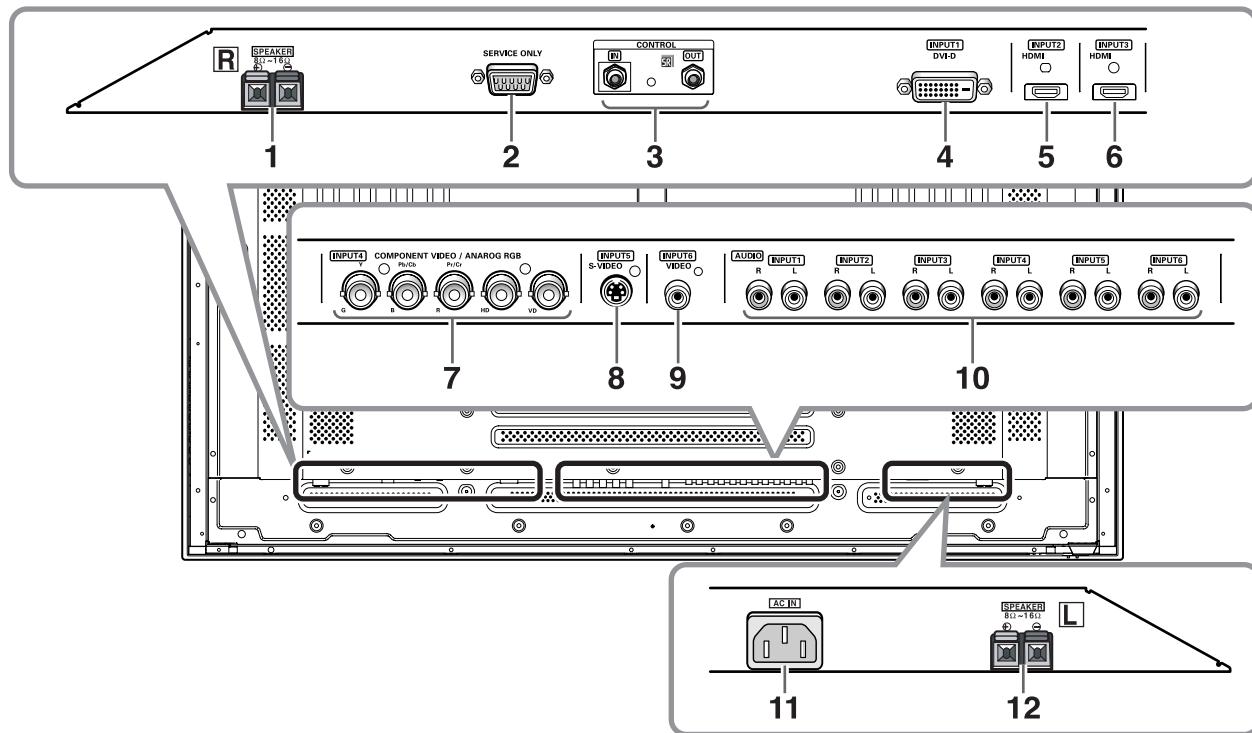
11 ENTER/DISP. button

12 RETURN button

13 SCREEN SIZE button

A

- Connection panel



D

1 SPEAKER (R) terminals

For connection of an external right speaker.

Connect a speaker that has an impedance of 8 Ω to 16 Ω.

2 Terminal for Service Adjustments (used for factory setup)

Never connect any component to these connectors without first consulting your Pioneer installation technician.

These connectors are used for Plasma Display setup adjustments.

3 CONTROL IN/OUT terminals
4 INPUT1 terminal (DVI-D)
E 5 INPUT2 terminal (HDMI)
6 INPUT3 terminal (HDMI)
7 INPUT4 terminals

(COMPONENT VIDEO: Y, Pb/Cb, Pr/Cr,
ANALOG RGB : G, B, R ,HD, VD)

8 INPUT5 terminal (S-VIDEO)

For connection of components that have an S-video output jack such as a decoder, VCR, game console or camcorder.

9 INPUT6 terminal (VIDEO)
10 AUDIO INPUT terminals

Audio input connectors corresponding to INPUT1 to INPUT6 video input connectors.

11 AC IN

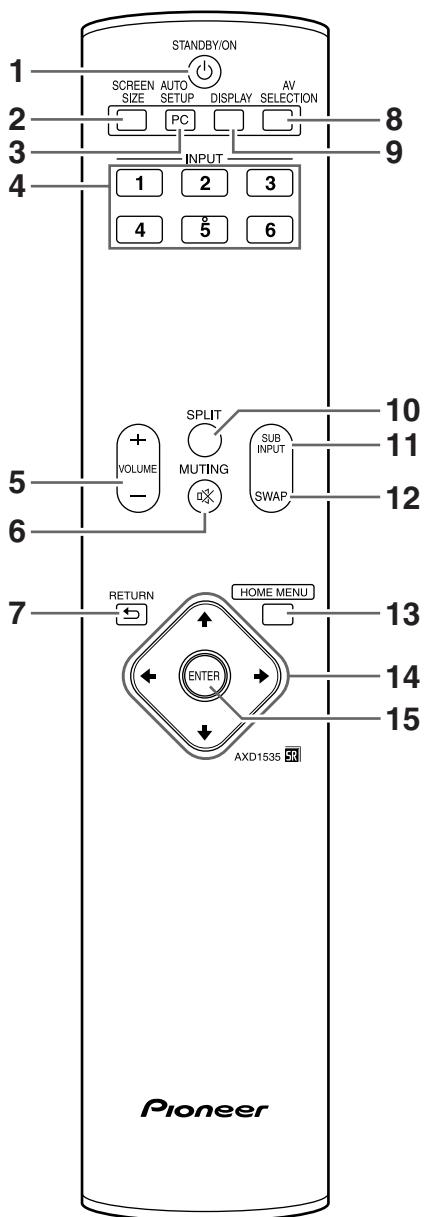
Use to connect the supplied power cord to an AC outlet.

12 SPEAKER (L) terminals

For connection of an external left speaker. Connect a speaker that has an impedance of 8 Ω to 16 Ω.

F

• Remote control unit



1 STANDBY/ON button

Press to put the unit in operation or standby mode .

2 SCREEN SIZE button

Press to select the screen size .

3 PC AUTO SET UP button

When using computer signal input, automatically sets the "Position", "Clock" and "Phase" to optimum values .

4 INPUT 1 to 6 buttons

Press to select the input.

5 VOLUME (+/-) buttons

Use to adjust the volume .

6 MUTING button

Press to mute the volume.

7 RETURN button

Restores the previous menu screen.

8 AV SELECTION button

Use to select the AV function .

9 DISPLAY button

Press to view the unit's current input and setup mode.

10 SPLIT button

Press to switch to multi-screen display.

11 SUB INPUT button

During multi-screen display, use this button to change inputs to subscreens .

12 SWAP button

During multi-screen display, use this button to switch between main screen and subscreen .

13 HOME MENU button

Press to open and close the on-screen menu .

14 ADJUST ($\uparrow/\downarrow/\leftarrow/\rightarrow$) buttons

Use to navigate menu screens and to adjust various settings on the unit.

15 ENTER button

Press to adjust or enter various settings on the unit .

12. IC INFORMATION

- A • The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

● List of IC

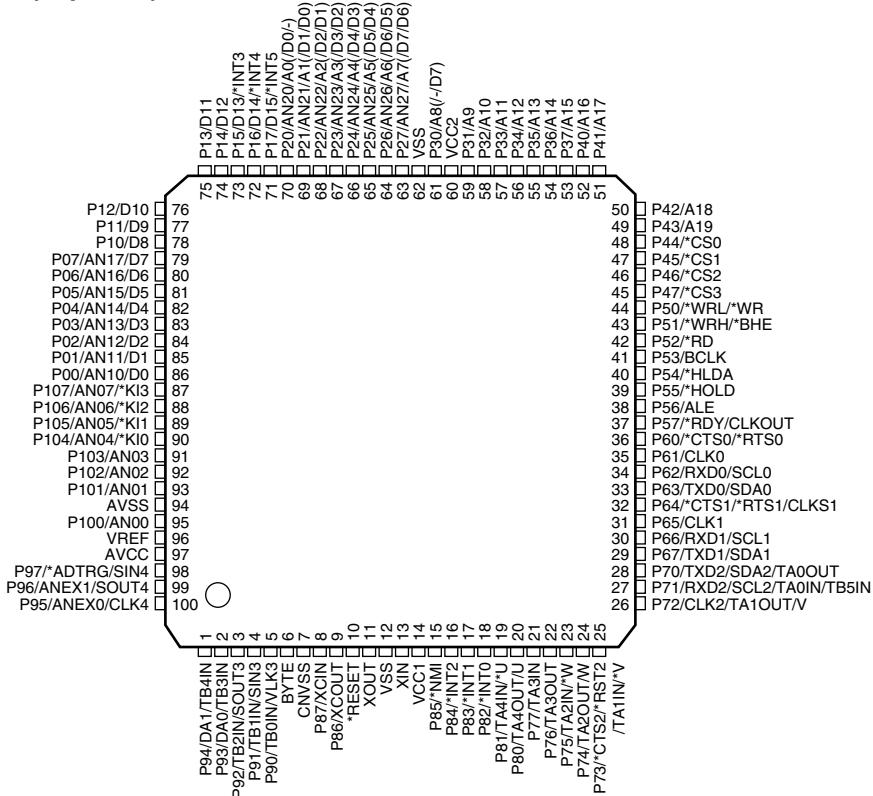
AGC1015, CY25561SXC, PEE004A, THC63LVD104S, AGC1005, AXY1136, EP2C20F484C8N, MB91305PMC-G-BND
SII9023CTU-K, NJU26901E2, AXF1159, AXF1160, AXF1161

■ AGC1015 (FHD DIGITAL ASSY: IC3703)

- Module Microcomputer

● Pin Arrangement (Top view)

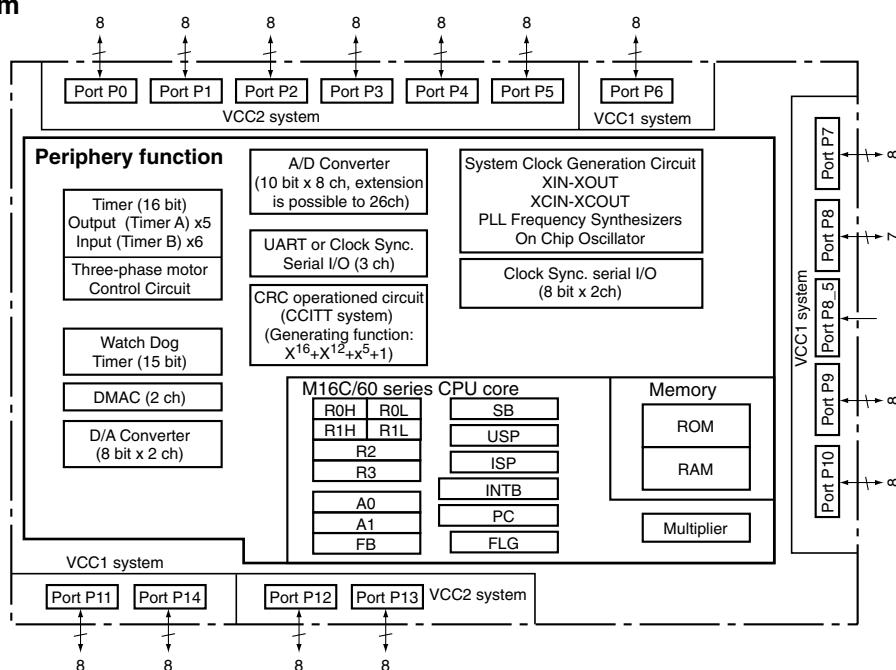
B



C

● Block Diagram

D



E

F

● Pin Function

No.	Mark	Pin Name	I/O	Active	Pin Function
1	P94/DA1/TB4IN	V_SYNC	I	L	V sync distinction
2	P93/DA0/TB3IN	—	O	—	
3	P92/TB2IN/SOUT3	TXD_SQ	O	—	Serial communication with SQ IC (IC3201 and IC3301) Data transmission
4	P91/TB1IN/SIN3	RXD_AL	I	—	Serial communication with SQ IC (IC3201) Data reception
5	P90/TB0IN/VLK3	CLK_SQ	O	—	Serial communication with SQ IC (IC3201 and IC3301) Clock output
6	BYTE	BYTE	I	—	(GND connection)
7	CNVSS	CNVSS	I	—	For processor mode setting
8	P87/XCIN	—	O	—	
9	P86/XCOUT	—	O	—	
10	*RESET	RST_MD	I	L	Reset input
11	XOUT	XOUT	O	—	Output for main clock
12	VSS	VSS	—	—	GND
13	XIN	XIN	I	—	Input for main clock
14	VCC1	VCC1	—	—	STB3.3V
15	P85/*NMI	NMI	I	—	(Pull-up with power)
16	P84/*INT2	—	O	—	
17	P83/*INT1	AEM_SQ	I	H	Address emergency input
18	P82/*INT0	RST2	I	L	Reset detection of SQ IC (IC3201 and IC3301)
19	P81/TA4IN/*U	STOP_AR	I	H	Drive stopping monitor of SQ IC (IC3301)
20	P80/TA4OUT/U	AR_FUT	I	H	(Reserved) Input for SQ IC (IC3301)
21	P77/TA3IN	STOP_AL	I	H	Drive stopping monitor of SQ IC (IC3201)
22	P76/TA3OUT	—	O	—	
23	P75/TA2IN/*W	—	O	—	
24	P74/TA2OUT/W	—	O	—	
25	P73/*CTS2/*RST2/TA1IN/*V	—	O	—	
26	P72/CLK2/TA1OUT/V	EEPRST	O	H	EEPROM power SW
27	P71/RXD2/SCL2/TA0IN/TB5IN	E_SCL	O	—	IIC clock output for EEPROM
28	P70/TXD2/SDA2/TA0OUT	E_SDA	I/O	—	IIC data input/output for EEPROM
29	P67/TXD1/SDA1	TXD	O	—	Communication with flash ROM writer Data transmission
30	P66/RXD1/SCL1	RXD	I	—	Communication with flash ROM writer Data reception
31	P65/CLK1	SCLK	I	—	Communication with flash ROM writer Clock input
32	P64/*CTS1/*RTS1/CLKS1	BUSY	O	—	Communication with flash ROM writer busy output
33	P63/TXD0/SDA0	RXD_MD	O	—	UART communication with main microcomputer Data transmission
34	P62/RXD0/SCL0	TXD_MD	I	—	UART communication with main microcomputer Data reception
35	P61/CLK0	AL_FUT	I	H	(Reserved) Input for SQ IC (IC3201)
36	P60/*CTS0/*RTS0	REQ_MD	O	H	Communication request to the main microcomputer
37	P57/*RDY/CLKOUT	INP_MUTE	O	L	Output mute of LVDS receiver
38	P56/ALE	—	O	—	
39	P55/*HOLD	EPM	I	—	Flash rewriting mode setting (pull-down)
40	P54/*HLDA	DRF_B	O	L	High power system OFF
41	P53/BCLK	RELAY	O	H	Power ON control
42	P52/*RD	—	O	—	
43	P51/*WRH/*BHE	—	O	—	
44	P50/*WRL/*WR	CE	I	—	Flash rewriting mode setting (pull-up)
45	P47/*CS3	MODEL	I	—	Product distinction (FHD: L)
46	P46/*CS2	SCL	O	—	IIC clock output for DAC
47	P45/*CS1	SDA	I/O	—	IIC data input/output for DAC
48	P44/*CS0	PD_MUTE_B	O	L	Power down mute
49	P43/A19	LED_B	O	L	Power ON/SD information (For Assy)
50	P42/A18	LED_R	O	L	Power STBY/PD information (For Assy)

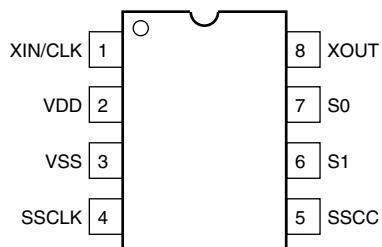
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No.	Mark	Pin Name	I/O	Active	Pin Function
51	P41/A17	H_DET_B	I	L	H existence distinction
52	P40/A16	AL_SEL	O	H	UART switch (For IC3201 selection)
53	P37/A15	RST_SQ	O	L	SQ IC (IC3201 and IC3301) forced reset
54	P36/A14	CE_SQ	O	L	Enable for SQ IC (IC3201 and IC3301) communication
55	P35/A13	BUSY_SQ	I	H	Busy for SQ IC (IC3201 and IC3301) communication
56	P34/A12	—	O	—	—
57	P33/A11	—	O	—	—
58	P32/A10	AR_SEL	O	H	UART switch (For IC3301 selection)
59	P31/A9	WE_SQ	O	H	Switching signal of Flash rewriting path for SQ IC
60	VCC2	VCC2	—	—	STB 3.3 V
61	P30/A8(/-D7)	PD_TRG	I	L	EXT_PD confirmation
62	VSS	GND	—	—	GND
63	P27/AN27/A7(/D7/D6)	SCAN_PD	I	H	SCAN decrease voltage PD
64	P26/AN26/A6(/D6/D5)	YDRV_PD	I	H	Y drive PD
65	P25/AN25/A5(/D5/D4)	YSUS_PD	I	H	Y-SUS PD
66	P24/AN24/A4(/D4/D3)	YDCDC_PD	I	H	DCDC converter PD of Y drive
67	P23/AN23/A3(/D3/D2)	SCN5V_PD	I	H	SCAN5V decrease voltage PD
68	P22/AN22/A2(/D2/D1)	Xsus_PD	I	H	X-SUS PD
69	P21/AN21/A1(/D1/D0)	XDCDC_PD	I	H	DCDC converter PD of X drive
70	P20/AN20/A0(/D0/-)	XDRV_PD	I	H	X drive PD
71	P17/D15/*INT5	—	I	—	—
72	P16/D14/*INT4	—	I	—	—
73	P15/D13/*INT3	AC_DET	I	L	AC power monitor
74	P14/D12	PBF	I	—	Panel distinction of High-efficiency/Conventional (FHD: L)
75	P13/D11	—	I	—	—
76	P12/D10	—	I	—	—
77	P11/D9	—	I	—	—
78	P10/D8	—	I	—	—
79	P07/AN17/D7	ADRS_PD	I	H	Address PD
80	P06/AN16/D6	—	I	—	—
81	P05/AN15/D5	—	I	—	—
82	P04/AN14/D4	SS_MODE	O	L	SSCG operation L: SSCG ON, H: SSCG OFF
83	P03/AN13/D3	R_SQ_NON	I	H	Drive stop detection of SQ IC (IC3301)
84	P02/AN12/D2	DDC_PD	I	H	DCDC converter PD
85	P01/AN11/D1	PS_PD	I	H	PD in the POWER SUPPLY Unit
86	P00/AN10/D0	L_SQ_NON	I	H	Drive stop detection of SQ IC (IC3201)
87	P107/AN07/*K13	OFF_DET_AR	O	L	Drive stop output to SQ IC (IC3301)
88	P106/AN06/*K12	DL_FIN_AR	I	H	Rewriting completion signal of SQ IC (IC3301)
89	P105/AN05/*K11	OFF_DET_AL	O	L	Drive stop output to SQ IC (IC3201)
90	P104/AN04/*K10	DL_FIN_AL	I	H	Rewriting completion signal of SQ IC (IC3201)
91	P103/AN03	—	O	—	—
92	P102/AN02	TEMP1	I	—	Panel temperature sensor input
93	P101/AN01	MODE	I	—	Assy operation mode setting
94	AVSS	GND	I	—	GND
95	P100/AN00	PSIZE	I	L	G7 size distinction (FHD: L)
96	VREF	VREF	I	—	Reference voltage for A/D input
97	AVCC	AVCC	I	—	STB 3.3 V
98	P97/*ADTRG/SIN4	RXD_AR	I	L	Serial communication with SQ IC (IC3301) Data reception
99	P96/ANEX1/SOUT4	—	O	—	—
100	P95/ANEX0/CLK4	CLK_SQ	I	—	Serial communication with SQ IC (IC3201 and IC3301) Clock input

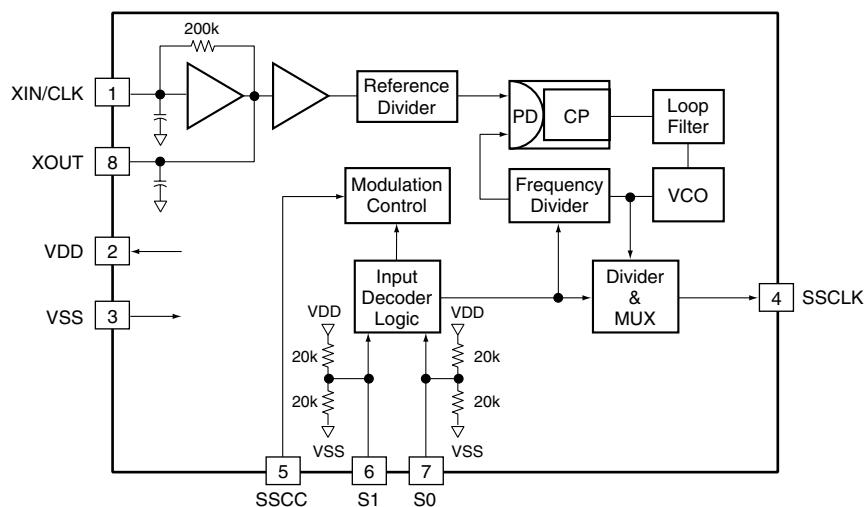
■ CY25561SXC (FHD DIGITAL ASSY: IC3401)

- SSCG IC

● Pin Arrangement (Top view)



● Block Diagram



● Pin Function

No.	Pin Name	I/O	Pin Function
1	XIN/CLK	I	Oscillator input/clock input
2	VDD	-	Power supply
3	VSS	-	Ground
4	SSCLK	O	SSCG clock output
5	SSCC	I	SSCG function ON/OFF input L: Disable, H: Enable
6	S1	I	Modulation frequency and band width select
7	S0	I	Modulation frequency and band width select
8	XOUT	O	Oscillator output

■ PEE004A (FHD DIGITAL ASSY: IC3101)

• LSI for PDP Video Processing (Sequence Processor)

● Pin Arrangement (Top view)

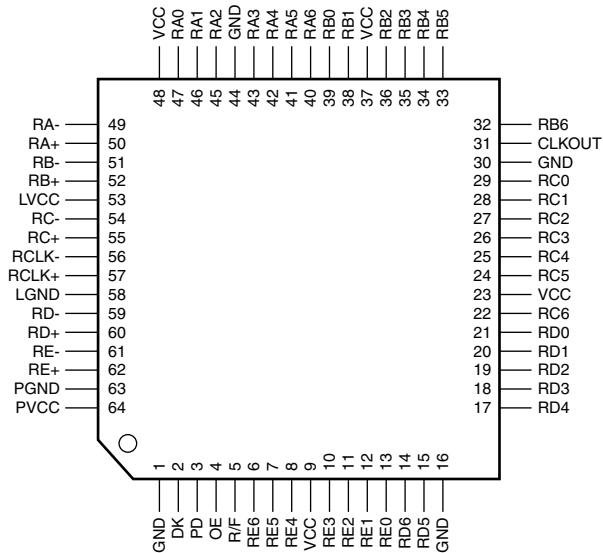
	AB	AA	Y	W	V	U	T	R	P	N	M	L	K	J	H	G	F	E	D	C	B	A
1	GND	OVDDW	THBB7	THBB9	THGB8	THRB2	THR84	F _E __ THDE1	THL __ CLK	GNDP	NC	THBA0	THB4	THBA8	THGA0	THGA2	THGA8	THRA3	OVDDW	GND		
2	OVDDW	GND	THBB6	THBB8	THGB7	THRB1	THR83	F _E __ THDE2	THID1	VDDP	TC _K	TH	THEATER	THBA3	THBA7	THGA1	THGA7	THRA2	GND	OVDDW	2	
3	AR __ BB0	THBB4	THBB2	THBB5	GND	THSB0	GND	THRB8	IVDDW	OVDDW	GND	THBA2	GND	THG46	THGA9	THRA5	NC	NC	DLL MODE0	THR46		
4	AR __ BB2	AR __ BB1	THBB1	THBB3	NC	NC	OVDDW	THGB9	THRB0	THRB7	GND	NC	THBA1	THG45	GND	THRA4	NC	NC	THRA8	THR47	4	
5	AR __ BB5	AR __ BB4	AR __ BB3	THBB0	GND	THGB2	THRB6	THRB9	TH	APLDT	TDO	TDI	THBA6	THGA4	THRA0	GND	CVDD	NC	GND	AL __ CSCSN2	THR49	
6	AR __ BB8	AR __ BB7	BB6	OVDDW	GND	CVDD	THGB1	THGB5	F _E __ THHD2	NC	TMS	THBA6	THG43	THRA1	GND	CVDD	NC	OVDDW	TRST	AL __ EXA19		
7	AR __ GB1	AR __ GB0	BB5	GND	AR __ BB9	CVDD	CVDD	OVDDW	GND	CVDD	GND	OVDDW	CVDD	GND	AL __ EXA18	AL __ EXA17	GND	AL __ EXA16	AL __ EXA15	7		
8	AR __ GB4	AR __ GB3	AR __ GB2	AR __ TRNSEND	CVDD	CVDD	GND	CVDD	CVDD	CVDD	GND	CVDD	CVDD	RXD_SQ	AL __ EXA14	AL __ EXA13	GND	AL __ EXA12	AL __ EXA11	8		
9	AR __ GB8	AR __ GB7	AR __ GB6	AR __ THEATER	AR __ APLDT	O	GND	CVDD	CVDD	CVDD	GND	OVDDW	CS10TXD	AL __ SEL	AL __ EXA10	AL __ EXA1	AL __ EXA0	AL __ EXA9	AL __ EXA8	9		
10	AR __ RB0	AR __ GB9	GND	OVDDW	UART_RXD	GND	CVDD	GND	CVDD	GND	CVDD	GND	GND	GND	AL __ GP102	OVDDW	GND	GND	AL __ EXA7	AL __ EXA6	10	
11	AR __ RB3	AR __ RB2	OVDDW	AR __ RB1	UART_RXD	GND	CVDD	GND	CVDD	GND	CVDD	GND	GND	GND	AL __ GP101	AL __ EXA6	IVDDW	AL __ EXA4	AL __ EXA3	11		
12	AR __ RB5	AR __ RB4	IVDDW	CLKD	NC	CLK	FBIN	CVDD	CVDD	CVDD	GND	CVDD	CVDD	GND	AL __ GP100	NC	NC	OVDDW	NC	KNE __ TEST		
13	AR __ RB7	GND	OVDDW	AR __ GPIO0	GND	CVDD	GND	CVDD	GND	CVDD	GND	CVDD	CVDD	GND	AL __ UARTRXD	OVDDW	GND	GND	AL __ EXA2	AL __ EXA1		
14	AR __ RB8	AR __ DEI	AR __ VIDI	AR __ HD1	OVDDW	GND	CVDD	CVDD	CVDD	GND	CVDD	GND	OVDDW	AL __ UARTXD	AL __ EXDIO8	AL __ EXDIO1	AL __ EXDIO2	AL __ EXDIO10	AL __ EXDIO14			
15	AR __ DC1	AR __ EXDIO7	AR __ EXDIO15	AR __ CSRDN	AR __ GPIO2	CVDD	GND	CVDD	GND	CVDD	GND	GND	GND	AL __ TRANSD	AL __ Q	AL __ EXDIO3	AL __ EXDIO11	GND	AL __ EXDIO4	EXDIO12		
16	AR __ EXDIO13	AR __ EXDIO6	GND	AR __ EXDIO14	GND	CVDD	OVDDW	GND	CVDD	GND	OVDDW	CVDD	CVDD	GND	AL __ EXDIO5	GND	AL __ EXDIO13	AL __ EXDIO16	AL __ EXDIO14	AL __ EXDIO15		
17	RESETX __ N	AR __ EXDIO5	OVDDW	GND	CVDD	GND	UART_RXD	NC	NC	AR __ CSRDXD	AL __ CON1L	CON1R	TRNSEND1	CVDD	GND	OVDDW	AL __ EXDIO7	AL __ EXDIO14	AL __ EXDIO15	17		
18	AR __ EXDIO3	AR __ EXDIO11	AR __ EXDIO12	GND	NC	AR __ EXA11	PLLEN	NC	PLL __ BYPASS	NC	AL __ BA4	AL __ GA3	AL __ BA9	GND	NC	NC	GND	AL __ CSRDN	AL __ DCLK			
19	AR __ EXDIO9	AR __ EXDIO2	AR __ EXDIO10	GND	NC	AR __ CSRWN	OVDDW	AR __ EXA12	AR __ EXA15	GND	AL __ BA0	AL __ BA1	GND	AL __ GA2	OVDDW	GND	NC	AL __ VDI	AL __ RA9			
20	AR __ EXDIO0	AR __ EXDIO8	NC	AR __ EXA6	GND	CVDD	OVDDW	AR __ EXA16	NC	IVDDW	GND	GND	AL __ BA7	AL __ RA8	AL __ THEATER	AL __ RA3	AL __ RA7	AL __ RA6	20			
21	OVDDW	GND	AR __ EXA3	AR __ EXA4	AR __ EXA7	AR __ EXA9	AR __ EXA13	AR __ EXA17	AR __ CSCSN2	NC	CLKS	AL __ BA3	AL __ GA1	AL __ RA0	AL __ GA8	AL __ RA5	GND	OVDDW	21			
22	GND	OVDDW	AR __ EXA2	AR __ EXA6	AR __ EXA8	AR __ EXA10	AR __ EXA14	AR __ EXA18	AR __ EXA19	NC	AL __ BA2	AL __ GA5	AL __ GA0	AL __ GA4	AL __ GA7	AL __ RA1	AL __ RA4	OVDDW	GND	22		
4	AB	AA	Y	W	V	U	T	R	P	N	M	L	K	J	H	G	F	E	D	C	B	A

PDP-5000EX

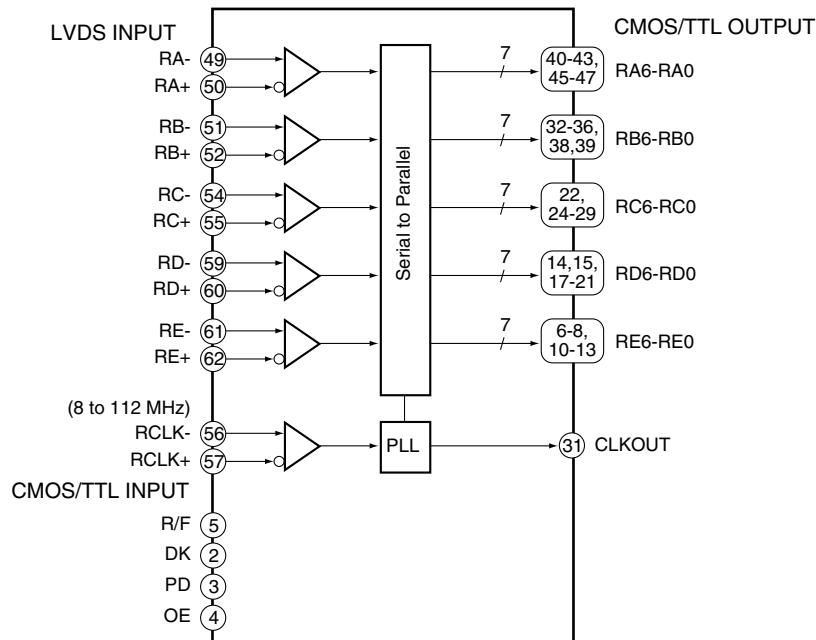
■ THC63LVD104S (FHD DIGITAL ASSY: IC3001, IC3002)

- LVDS Receiver IC

● Pin Arrangement (Top view)



● Block Diagram



A ■ AGC1005 (FHD MAIN ASSY: IC4803)

- IF Microcomputer

● Pin Function

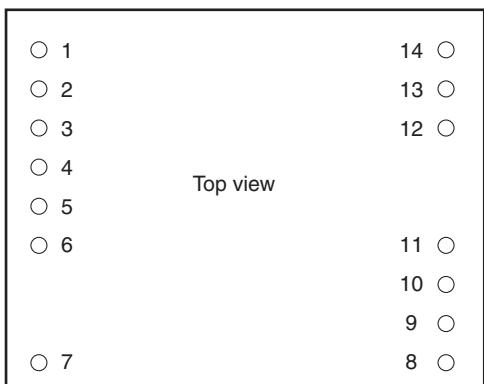
No.	Mark	Pin Name	I/O	Pin Function	Active
1	PB6/AN6	PD5	I	Writing detection input of the master microcomputer (WD_MTR) old PN2	H
2	PB7/AN7			N.C.	
3	AVcc		I	Power supply STB3.3 V	
4	X2		O	Output for sub clock (32.768 kHz) Set to open when do not use.	
5	X1		I	Input for sub clock Connect to VCL or VSS (GND) when do not use.	
6	Vcl			Internal voltage drop power supply (0.1μF)	
7	*RES	RST	I	Reset input	L
8	TEST		I	Normally pull-down (H input when writing with the writer mode)	
9	Vss		I	GND	
10	OSC2		O	Output for main clock	
11	OSC1		I	Input for main clock	
12	Vcc		I	Power supply STB3.3 V	
13	P50/*WKP0	AC_OFF	I	AC off detection of P side in two units. (from MDR)	H
14	P51/*WKP1	AC_DET	I	N.C.	H
15	P34	EXP_A4	I	SCDT, DVI sync ditekuto	
16	P35	EXP_A5	O	DVI_PS, DVI power save	
17	P36	EXP_A6	O	EDID_SEL, DVI EDIT select	
18	P37	EXP_A7		N.C.	
19	P52/*WKP2	CE_IF	I	Chip enable for Ucom communication at the master side	L
20	P53/*WKP3	RST_MTR	O	Reset signal output of the Ucom at the master side	L
21	P54/*WKP4	PON_TRG	I	N.C.	L
22	P55/*WKP5/*ADTRG	REQ_IF		Communication request to the Ucom at the master side	H
23	P10/TMOW	BUSY_IF	O	Communication inhibit to the Ucom at the master side	H
24	P11/PWM	EXP_B0		N.C.	
25	P12	WE_MTR	O	For rewriting of the other flash by the external PC	H
26	P56/SDA	SDA_IF	I/O	N.C.	L
27	P57/SCL	SCL_IF	O	N.C.	L
28	P74/TMRIV	EXP_B1		N.C.	
29	P75/TMCIV	EXP_B2		N.C.	
30	P76/TMOV	EXP_B3		N.C.	
31	P24	AV_LINK_OUT	O	N.C.	H
32	P63/FTIODO0	LED_3	O	N.C.	L
33	P62/FTIOC0	LED_2	O	For logotype mark	L
34	P61/FTIOB0	LED_1	O	For power ON (blue) LED_ON	L
35	*NMI		I	L setting at writing in the boot mode (Normally pull-up)	
36	P60/FTIOA0	LED_0	O	For power OFF (red) LED_OFF	L
37	P64/FTIOA1	EXP_B4		N.C.	
38	P65/FTIOB1	EXP_B5		N.C.	
39	P66/FTIOC1	EXP_B6		N.C.	
40	P67/FTIOD1	EXP_B7		N.C.	
41	P85		I	H setting at writing in the boot mode	
42	P86			For emulator	
43	P87			For emulator	
44	P20/SCK3	SCK	I	Clock for ROM writer writing	L
45	P21/RXD	RXD	I	Reception data line of RS-232C for user/ For ROM writer writing	L

No.	Mark	Pin Name	I/O	Pin Function	Active
46	P22/TXD	TXD	O	Transmission data line of RS-232C for user/ For ROM writer writing	L
47	P23	ACTIVE	O	Power supply for the master side Ucom ON/OFF	H
48	P70/SCK3_2	CLK_IF	I	Clock input for the master side Ucom	L
49	P71/RXD_2	RXD_IF	I	Reception data for the master side Ucom	L
50	P72/TXD_2	TXD_IF	O	Transmission data for the master side Ucom	L
51	P14/*IRQ0	KEY_SCAN	I	KEY code input	L
52	P15/*IRQ1/TMIB1	SR_IN	I	Remote control code input (Integrated unit: directly, Separate unit: use MDR cable)	L
53	P16/*IRQ2	AV_LINK_IN	I	N.C.	L
54	P17/*IRQ3/TRGV	SR_EN_B		SR_EN_B	
55	P33	EXP_A3		N.C.	
56	P32	EXP_A2		N.C.	
57	P31	EXP_A1	Hold	N.C.	
58	P30	EXP_A0		N.C.	
59	PB3/AN3	232C_DET	I	232C_DET	H
60	PB2/AN2	TEST1	I	Operation mode switch for Assy checker (H: NORMA, L: Assy unit, M: Port check)	-
61	PB1/AN1		I	N.C.	-
62	PB0/AN0	KEY_ST	I	KEY(A/D) setting	-
63	PB4/AN4	KEY_AD1	I	Key voltage input of KEY(A/D)1	-
64	PB5/AN5	KEY_AD2	I	Key voltage input of KEY(A/D)2	-

A ■ AXY1136 (FHD MAIN ASSY: U4401)

- DC-DC Converter Unit

● Pin Arrangement (Top view)



● Pin Function

No.	Pin Name	Pin Function
1	Vin	Input terminal
2	Vin	Input terminal
3	GND	Input GND terminal
4	GND	Input GND terminal
5	ON/OFF	ON/OFF
6	GND	Output GND terminal
7	Vo3	Output terminal (1.8 V)
8	Vo1	Output terminal (3.3 V)
9	Vo1	Output terminal (3.3 V)
10	GND	Output GND terminal
11	GND	Output GND terminal
12	GND	Output GND terminal
13	Vo2	Output terminal (1.2 V)
14	Vo2	Output terminal (1.2 V)

■ EP2C20F484C8N (FHD MAIN ASSY: IC6601)

- FPGA

● Pin Function

No.	F484	Pin Name	I/O	Pin Function
1	A1	GND	-	Connect to GND
2	B1	VCCIO2	-	V+3_3V_D_FPGA1
3	C1	Y2_O[1]	O	to Triton IN4 Y4_I1
4	D1	Y2_O[4]	O	to Triton IN4 Y4_I4
5	E1	C2_O[1]	O	to Triton IN4 C4_I1
6	F1	C2_O[4]	O	to Triton IN4 C4_I4
7	G1	NC	-	N.C.
8	H1	V2_O	O	to Triton IN4 V4_I
9	J1	SCLK	I	from M_Carrera FCK
10	K1	nCE	-	Configuration
11	L1	CLK3_I	I	DATACK (AD)
12	M1	CLK1_I	I	CLKB_O (Triton)
13	N1	MONITOR[0]	O	TEST_0 (probe land)
14	P1	RCR1_I[0]	I	from Triton side B output RCRB_O0
15	R1	RCR1_I[4]	I	from Triton side B output RCRB_O4
16	T1	GY1_I[1]	I	from Triton side B output GYB_O1
17	U1	GY1_I[5]	I	from Triton side B output GYB_O5
18	V1	BCB1_I[1]	I	from Triton side B output BCBB_O1
19	W1	BCB1_I[4]	I	from Triton side B output BCBB_O4
20	Y1	V1_I	I	from Triton side B output VB_O
21	AA1	VCCIO1	-	V+3_3V_D_FPGA1
22	AB1	GND	-	Connect to GND
23	AB2	VCCIO8	-	V+3_3V_D_FPGA1
24	AB3	RCR1_O[7]	O	to Triton IN2 RCR2_I7
25	AB4	RCR1_O[5]	O	to Triton IN2 RCR2_I5
26	AB5	RCR1_O[2]	O	to Triton IN2 RCR2_I2
27	AB6	GY1_O[7]	O	to Triton IN2 GY2_I7
28	AB7	GY1_O[3]	O	to Triton IN2 GY2_I3
29	AB8	GY1_O[0]	O	to Triton IN2 GY2_I0
30	AB9	BCB1_O[4]	O	to Triton IN2 BCBB_I4
31	AB10	BCB1_O[0]	O	to Triton IN2 BCBB_I0
32	AB11	H1_O	O	to Triton IN2 H2_I
33	AB12	FLDA_O	O	to Carrera FLDI
34	AB13	HA_O	O	to Carrera SHDI
35	AB14	BCBA_O[5]	O	to Carrera SBAI (5)
36	AB15	BCBA_O[1]	O	to Carrera SBAI (1)
37	AB16	GYA_O[5]	O	to Carrera SGAI (5)
38	AB17	GYA_O[1]	O	to Carrera SGAI (1)
39	AB18	RCRA_O[5]	O	to Carrera SRAI (5)
40	AB19	RCRA_O[3]	O	to Carrera SRAI (3)
41	AB20	RCRA_O[1]	O	to Carrera SRAI (1)
42	AB21	VCCIO7	-	V+3_3V_D_FPGA1
43	AB22	GND	-	Connect to GND
44	AA22	VCCIO6	-	V+3_3V_D_FPGA1
45	Y22	HB_O	O	to Carrera SHDI

A

B

C

D

E

F

● Pin Function

No.	F484	Pin Name	I/O	Pin Function
46	W22	BCBB_O[6]	O	to Carrera SBAI (6)
47	V22	BCBB_O[3]	O	to Carrera SBAI (3)
48	U22	GYB_O[7]	O	to Carrera SGAI (7)
49	T22	GYB_O[3]	O	to Carrera SGAI (3)
50	R22	RCRB_O[7]	O	to Carrera SRAI (7)
51	P22	NC	-	N.C.
52	N22	RCRB_O[2]	O	to Carrera SRAI (2)
53	M22	GND+	-	Connect to GND
54	L22	CLK4_I	I	ODCK (DVI_Rx)
55	K22	V4_I	I	from DVI_Rx VSYNC
56	J22	RCR4_I[5]	I	from DVI_Rx QE21/R5
57	H22	NC	-	N.C.
58	G22	RCR4_I[1]	I	from DVI_Rx QE17/R1
59	F22	GY4_I[7]	I	from DVI_Rx QE15/G7
60	E22	GY4_I[3]	I	from DVI_Rx QE11/G3
61	D22	BCB4_I[7]	I	from DVI_Rx QE7/B7
62	C22	BCB4_I[3]	I	from DVI_Rx QE3/B3
63	B22	VCCIO5	-	V+3_3V_D_FPGA1
64	A22	GND	-	Connect to GND
65	A21	VCCIO4	-	V+3_3V_D_FPGA1
66	A20	V2_I	I	from HDMI VSYNC
67	A19	BCB2_I[0]	I	from HDMI Q0/B0
68	A18	BCB2_I[3]	I	from HDMI Q3/B3
69	A17	BCB2_I[6]	I	from HDMI Q6/B6
70	A16	GY2_I[1]	I	from HDMI Q9/G1
71	A15	GY2_I[5]	I	from HDMI Q13/G5
72	A14	RCR2_I[1]	I	from HDMI Q17/R1
73	A13	RCR2_I[7]	I	from HDMI Q23/R7
74	A12	CLK2_I	I	ODCK (HDMI_Rx)
75	A11	BCB3_I[1]	I	from AD BLUE (1)
76	A10	BCB3_I[5]	I	from AD BLUE (5)
77	A9	GY3_I[1]	I	from AD GREEN (1)
78	A8	GY3_I[5]	I	from AD GREEN (5)
79	A7	RCR3_I[1]	I	from AD RED (1)
80	A6	RCR3_I[5]	I	from AD RED (5)
81	A5	RCR3_I[7]	I	from AD RED (7)
82	A4	INT_V3_I	I	from RGB SW INT_VD_OUT2
83	A3	GND*	-	N.C. (probe land)
84	A2	VCCIO3-	-	V+3_3-1_8V_D_FPGA1
85	B2	GND	-	Connect to GND
86	C2	Y2_O[0]	O	to Triton IN4 Y4_I0
87	D2	Y2_O[3]	O	to Triton IN4 Y4_I3
88	E2	C2_O[0]	O	to Triton IN4 C4_I0
89	F2	C2_O[3]	O	to Triton IN4 C4_I3
90	G2	NC	-	N.C.
91	H2	DE2_O	O	to Triton IN4 DE4_I
92	J2	DATAO	bidir	from M_Carrera FRXD
93	K2	TCK	I	Configuration
94	L2	GND+	-	Connect to GND
95	M2	GND+	-	Connect to GND

● Pin Function

No.	F484	Pin Name	I/O	Pin Function
96	N2	MONITOR[1]	O	TEST_1 (probe land)
97	P2	RCR1_I[1]	I	from Triton side B output RCRB_O1
98	R2	RCR1_I[5]	I	from Triton side B output RCRB_O5
99	T2	GY1_I[2]	I	from Triton side B output GYB_O2
100	U2	GY1_I[6]	I	from Triton side B output GYB_O6
101	V2	BCB1_I[0]	I	from Triton side B output BCBB_O0
102	W2	BCB1_I[5]	I	from Triton side B output BCBB_O5
103	Y2	H1_I	I	from Triton side B output HB_O
104	AA2	GND	-	Connect to GND
105	AA3	GND*	-	Standby (probe land)
106	AA4	RCR1_O[6]	O	to Triton IN2 RCR2_I6
107	AA5	RCR1_O[3]	O	to Triton IN2 RCR2_I3
108	AA6	RCR1_O[0]	O	to Triton IN2 RCR2_I0
109	AA7	GY1_O[4]	O	to Triton IN2 GY2_I4
110	AA8	GY1_O[1]	O	to Triton IN2 GY2_I1
111	AA9	BCB1_O[5]	O	to Triton IN2 BCBB_I5
112	AA10	BCB1_O[1]	O	to Triton IN2 BCBB_I1
113	AA11	V1_O	O	to Triton IN2 V2_I
114	AA12	DEA_O	O	to Carrera SDEI
115	AA13	VA_O	O	to Carrera SVDI
116	AA14	BCBA_O[4]	O	to Carrera SBAI (4)
117	AA15	BCBA_O[0]	O	to Carrera SBAI (0)
118	AA16	GYA_O[4]	O	to Carrera SGAI (4)
119	AA17	GYA_O[0]	O	to Carrera SGAI (0)
120	AA18	RCRA_O[4]	O	to Carrera SRAI (4)
121	AA19	RCRA_O[2]	O	to Carrera SRAI (2)
122	AA20	RCRA_O[0]	O	to Carrera SRAI (0)
123	AA21	GND	-	Connect to GND
124	Y21	DEB_O	O	to Carrera SDEI
125	W21	BCBB_O[7]	O	to Carrera SBAI (7)
126	V21	BCBB_O[4]	O	to Carrera SBAI (4)
127	U21	BCBB_O[0]	O	to Carrera SBAI (0)
128	T21	GYB_O[4]	O	to Carrera SGAI (4)
129	R21	GYB_O[0]	O	to Carrera SGAI (0)
130	P21	NC	-	N.C.
131	N21	RCRB_O[3]	O	to Carrera SRAI (3)
132	M21	GND+	-	Connect to GND
133	L21	GND+	-	Connect to GND
134	K21	DE4_I	I	from DVI_Rx DE
135	J21	RCR4_I[4]	I	from DVI_Rx QE20/R4
136	H21	NC	-	N.C.
137	G21	RCR4_I[0]	I	from DVI_Rx QE16/R0
138	F21	GY4_I[6]	I	from DVI_Rx QE14/G6
139	E21	GY4_I[2]	I	from DVI_Rx QE10/G2
140	D21	BCB4_I[6]	I	from DVI_Rx QE6/B6
141	C21	BCB4_I[2]	I	from DVI_Rx QE2/B2
142	B21	GND	-	Connect to GND
143	B20	H2_I	I	from HDMI HSYNC
144	B19	DE2_I	I	from HDMI DE
145	B18	BCB2_I[2]	I	from HDMI Q2/B2

● Pin Function

No.	F484	Pin Name	I/O	Pin Function
146	B17	BCB2_I[5]	I	from HDMI Q5/B5
147	B16	GY2_I[3]	I	from HDMI Q11/G3
148	B15	GY2_I[4]	I	from HDMI Q12/G4
149	B14	RCR2_I[0]	I	from HDMI Q16/R0
150	B13	RCR2_I[5]	I	from HDMI Q21/R5
151	B12	GND+	-	Connect to GND
152	B11	BCB3_I[0]	I	from AD BLUE (0)
153	B10	BCB3_I[6]	I	from AD BLUE (6)
154	B9	BCB3_I[7]	I	from AD BLUE (7)
155	B8	GY3_I[6]	I	from AD GREEN (6)
156	B7	RCR3_I[2]	I	from AD RED (2)
157	B6	RCR3_I[6]	I	from AD RED (6)
158	B5	H3_I	I	from AD HSOUT
159	B4	EXT_V3_I	I	from RGB SW EXT_VD_OUT2
160	B3	GND*	-	Standby (probe land)
161	C3	*~nCSO~/GND*	O	Configuration
162	D3	GND*	-	Standby (probe land)
163	E3	Y2_O[7]	O	to Triton IN4 Y4_I7
164	F3	C2_O[2]	O	to Triton IN4 C4_I2
165	G3	C2_O[7]	O	to Triton IN4 C4_I7
166	H3	GND*	-	Connect to GND
167	J3	NC	-	N.C.
168	K3	GND	-	Connect to GND
169	L3	VCCIO2	-	V+3_3V_D_FPGA1
170	M3	VCCIO1	-	V+3_3V_D_FPGA1
171	N3	MONITOR[2]	O	TEST_2 (probe land)
172	P3	GND*	-	Connect to GND
173	R3	GND	-	Connect to GND
174	T3	GY1_I[3]	I	from Triton side B output GYB_O3
175	U3	GND*	-	Connect to GND
176	V3	GND	-	Connect to GND
177	W3	BCB1_I[6]	I	from Triton side B output BCBB_O6
178	Y3	DE1_I	I	from Triton side B output DEB_O
179	Y4	FLD1_I	I	from Triton side B output FLDB_O
180	Y5	RCR1_O[4]	O	to Triton IN2 RCR2_I4
181	Y6	RCR1_O[1]	O	to Triton IN2 RCR2_I1
182	Y7	GND*	-	Connect to GND
183	Y8	GND	-	Connect to GND
184	Y9	BCB1_O[6]	O	to Triton IN2 BCB2_I6
185	Y10	GND*	-	Connect to GND
186	Y11	VCCIO8	-	V+3_3V_D_FPGA1
187	Y12	VCCIO7	-	V+3_3V_D_FPGA1
188	Y13	GND*	-	Connect to GND
189	Y14	BCBA_O[3]	O	to Carrera SBAI (3)
190	Y15	GND	-	Connect to GND
191	Y16	GND*	-	Connect to GND
192	Y17	RCRA_O[7]	O	to Carrera SRAI (7)
193	Y18	VB_O	O	to Carrera SVDI
194	Y19	CLKB_O	O	to Carrera SCLKI
195	Y20	FLDB_O	O	to Carrera FLDI

● Pin Function

No.	F484	Pin Name	I/O	Pin Function
196	W20	*LVDS91p/nCEO/GND*	O	Standby (probe land)
197	V20	BCBB_O[5]	O	to Carrera SBAI (5)
198	U20	GND*	-	Connect to GND
199	T20	GND	-	Connect to GND
200	R20	GND*	-	Connect to GND
201	P20	NC	-	N.C.
202	N20	nSTATUS	-	Configuration
203	M20	VCCIO6	-	V+3_3V_D_FPGA1
204	L20	VCCIO5	-	V+3_3V_D_FPGA1
205	K20	GND*	-	Connect to GND
206	J20	RCR4_I[3]	I	from DVI_Rx QE19/R3
207	H20	GND	-	Connect to GND
208	G20	GND*	-	Connect to GND
209	F20	GY4_I[5]	I	from DVI_Rx QE13/G5
210	E20	GY4_I[1]	I	from DVI_Rx QE9/G1
211	D20	BCB4_I[5]	I	from DVI_Rx QE5/B5
212	C20	BCB4_I[1]	I	from DVI_Rx QE1/B1
213	C19	BCB4_I[0]	I	from DVI_Rx QE0/B0
214	C18	BCB2_I[1]	I	from HDMI Q1/B1
215	C17	BCB2_I[4]	I	from HDMI Q4/B4
216	C16	GND*	-	Connect to GND
217	C15	GND	-	Connect to GND
218	C14	GY2_I[7]	I	from HDMI Q15/G7
219	C13	GND*	-	Connect to GND
220	C12	VCCIO4	-	V+3_3V_D_FPGA1
221	C11	VCCIO3	-	V+3_3-1_8V_D_FPGA1
222	C10	GND*	-	Connect to GND
223	C9	GY3_I[2]	I	from AD GREEN (2)
224	C8	GND	-	Connect to GND
225	C7	GND*	-	Connect to GND
226	C6	VCCIO3-	-	V+3_3-1_8V_D_FPGA1
227	C5	GND	-	Connect to GND
228	C4	*ASDO/GND*	O	Configuration
229	D4	GND*	-	Standby (probe land)
230	E4	Y2_O[6]	O	to Triton IN4 Y4_I6
231	F4	GND*	-	Connect to GND
232	G4	GND	-	Connect to GND
233	H4	CLK2_O	O	to Triton IN4 CLK4_I
234	J4	DATA1	I	from M_Carrera FTXD
235	K4	DATA0	I	Configuration
236	L4	nCONFIG	-	Configuration
237	M4	GND	-	Connect to GND
238	N4	RCR1_I[2]	I	from Triton side B output RCRB_O2
239	P4	NC	-	N.C.
240	R4	NC	-	N.C.
241	T4	VCCIO1	-	V+3_3V_D_FPGA1
242	U4	GY1_I[7]	I	from Triton side B output GYB_O7
243	V4	BCB1_I[2]	I	from Triton side B output BCBB_O2
244	W4	BCB1_I[7]	I	from Triton side B output BCBB_O7
245	W5	BCB1_I[3]	I	from Triton side B output BCBB_O3

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● Pin Function

No.	F484	Pin Name	I/O	Pin Function
246	W6	VCCIO8	-	V+3_3V_D_FPGA1
247	W7	GY1_O[5]	O	to Triton IN2 GY2_I5
248	W8	GY1_O[2]	O	to Triton IN2 GY2_I2
249	W9	BCB1_O[2]	O	to Triton IN2 BCB1_I2
250	W10	GND	-	Connect to GND
251	W11	DE1_O	O	to Triton IN2 DE2_I
252	W12	GND+	-	Connect to GND
253	W13	GND	-	Connect to GND
254	W14	BCBA_O[2]	O	to Carrera SBAI (2)
255	W15	GYA_O[7]	O	to Carrera SGAI (7)
256	W16	GND*	-	N.C.
257	W17	VCCIO7	-	V+3_3V_D_FPGA1
258	W18	NC	-	N.C.
259	W19	GND	-	Connect to GND
260	V19	GND*	-	Standby (probe land)
261	U19	BCBB_O[1]	O	to Carrera SBAI (1)
262	T19	VCCIO6	-	V+3_3V_D_FPGA1
263	R19	GYB_O[1]	O	to Carrera SGAI (1)
264	P19	NC	-	N.C.
265	N19	GND	-	Connect to GND
266	M19	RCRB_O[0]	O	to Carrera SRAI (0)
267	L19	H4_I	I	from DVI_Rx HSYNC
268	K19	GND	-	Connect to GND
269	J19	RCR4_I[7]	I	from DVI_Rx QE23/R7
270	H19	RCR4_I[2]	I	from DVI_Rx QE18/R2
271	G19	VCCIO5	-	V+3_3V_D_FPGA1
272	F19	GND	-	Connect to GND
273	E19	GY4_I[0]	I	from DVI_Rx QE8/G0
274	D19	BCB4_I[4]	I	from DVI_Rx QE4/B4
275	D18	GND	-	Connect to GND
276	D17	VCCIO4	-	V+3_3V_D_FPGA1
277	D16	GY2_I[0]	I	from HDMI Q8/G0
278	D15	GY2_I[2]	I	from HDMI Q10/G2
279	D14	GY2_I[6]	I	from HDMI Q14/G6
280	D13	GND	-	Connect to GND
281	D12	RESETX	I	RESET input
282	D11	BCB3_I[2]	I	from AD BLUE (2)
283	D10	GND	-	Connect to GND
284	D9	GY3_I[3]	I	from AD GREEN (3)
285	D8	GY3_I[7]	I	from AD GREEN (7)
286	D7	RCR3_I[3]	I	from AD RED (3)
287	D6	Y2_O[5]	O	to Triton IN4 Y4_I5
288	D5	Y2_O[2]	O	to Triton IN4 Y4_I2
289	E5	VCCD_PLL3	-	V+1_2_D_FPGA1_PLL
290	F5	GNDG_PLL3	-	Connect to GND
291	G5	C2_O[6]	O	to Triton IN4 C4_I6
292	H5	H2_O	O	to Triton IN4 H4_I
293	J5	NC	-	N.C.
294	K5	TDI	I	Configuration
295	L5	TDO	O	Configuration

● Pin Function

No.	F484	Pin Name	I/O	Pin Function
296	M5	GND*	—	N.C.
297	N5	NC	—	N.C.
298	P5	RCR1_I[6]	I	from Triton side B output RCRB_O6
299	R5	RCR1_I[7]	I	from Triton side B output RCRB_O7
300	T5	GY1_I[4]	I	from Triton side B output GYB_O4
301	U5	GNDD_PLL1	—	Connect to GND
302	V5	GNDG_PLL1	—	Connect to GND
303	V6	GND	—	Connect to GND
304	V7	GNDA_PLL1	—	Connect to GND
305	V8	GY1_O[6]	O	to Triton IN2 GY2_I6
306	V9	BCB1_O[7]	O	to Triton IN2 BCB2_I7
307	V10	VCCIO8	—	V+3_3V_D_FPGA1
308	V11	CLK1_O	O	to Triton IN2 CLK2_I
309	V12	GND+	—	Connect to GND
310	V13	VCCIO7	—	V+3_3V_D_FPGA1
311	V14	BCBA_O[6]	O	to Carrera SBAI (6)
312	V15	GYA_O[3]	O	to Carrera SGAI (3)
313	V16	GNDA_PLL4	—	Connect to GND
314	V17	GND	—	Connect to GND
315	V18	GNDG_PLL4	—	Connect to GND
316	U18	BCBB_O[2]	O	to Carrera SBAI (2)
317	T18	GYB_O[6]	O	to Carrera SGAI (6)
318	R18	GYB_O[5]	O	to Carrera SGAI (5)
319	P18	RCRB_O[4]	O	to Carrera SRAI (4)
320	N18	CONF_DONE	—	Configuration
321	M18	RCRB_O[1]	O	to Carrera SRAI (1)
322	L18	GND*	—	N.C.
323	K18	NC	—	N.C.
324	J18	RCR4_I[6]	I	from DVI_Rx QE22/R6
325	H18	GND*	—	N.C.
326	G18	GND*	—	N.C.
327	F18	GNDD_PLL2	—	Connect to GND
328	E18	GY4_I[4]	I	from DVI_Rx QE12/G4
329	E17	GNDG_PLL2	—	Connect to GND
330	E16	GNDA_PLL2	—	Connect to GND
331	E15	GND*	—	N.C.
332	E14	RCR2_I[3]	I	from HDMI Q19/R3
333	E13	VCCIO4	—	V+3_3V_D_FPGA1
334	E12	GND+	—	Connect to GND
335	E11	BCB3_I[3]	I	from AD BLUE (3)
336	E10	VCCIO3	—	V+3_3V_D_FPGA1
337	E9	GY3_I[4]	I	from AD GREEN (4)
338	E8	RCR3_I[0]	I	from AD RED (0)
339	E7	RCR3_I[4]	I	from AD RED (4)
340	E6	VCCA_PLL3	—	V+1_2_V_D_FPGA1_PLL
341	F6	GNDD_PLL3	—	Connect to GND
342	G6	C2_O[5]	O	to Triton IN4 C4_I5
343	H6	SENB	I	from M_Carrera FCE
344	J6	NC	—	N.C.
345	K6	TMS	I	Configuration

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● Pin Function

No.	F484	Pin Name	I/O	Pin Function
346	L6	DCLK	-	Configuration
347	M6	GND*	-	N.C.
348	N6	MONITOR[3]	O	TEST_3 (probe land)
349	P6	RCR1_I[3]	I	from Triton side B output RCRB_O3
350	R6	GY1_I[0]	I	from Triton side B output GYB_O0
351	T6	GND*	-	N.C.
352	U6	VCCD_PLL1	-	V+1_2_D_FPGA1_PLL
353	U7	VCCA_PLL1	-	V+1_2_D_FPGA1_PLL
354	U8	GND*	-	N.C.
355	U9	BCB1_O[3]	O	to Triton IN2 BCB2_I3
356	U10	GND*	-	N.C.
357	U11	GND+	-	Connect to GND
358	U12	GND+	-	Connect to GND
359	U13	BCBA_O[7]	O	to Carrera SBAI (7)
360	U14	GND*	-	N.C.
361	U15	GYA_O[6]	O	to Carrera SGAI (6)
362	U16	VCCA_PLL4	-	V+1_2_D_FPGA1_PLL
363	U17	VCCD_PLL4	-	V+1_2_D_FPGA1_PLL
364	T17	GNDD_PLL4	-	Connect to GND
365	R17	GYB_O[2]	O	to Carrera SGAI (2)
366	P17	RCRB_O[5]	O	to Carrera SRAI (5)
367	N17	MSEL1	-	Configuration
368	M17	MSEL0	-	Configuration
369	L17	NC	-	N.C.
370	K17	NC	-	N.C.
371	J17	GND*	-	N.C.
372	H17	GND*	-	N.C.
373	G17	GND*	-	N.C.
374	F17	VCCD_PLL2	-	V+1_2_D_FPGA1_PLL
375	F16	VCCA_PLL2	-	V+1_2_D_FPGA1_PLL
376	F15	GND*	-	N.C.
377	F14	RCR2_I[2]	I	from HDMI Q18/R2
378	F13	RCR2_I[4]	I	from HDMI Q20/R4
379	F12	RCR2_I[6]	I	from HDMI Q22/R6
380	F11	BCB3_I[4]	I	from AD BLUE (4)
381	F10	GY3_I[0]	I	from AD GREEN (0)
382	F9	GND*	-	N.C.
383	F8	GND*	-	N.C.
384	F7	GNDA_PLL3	-	Connect to GND
385	G7	GND*	-	N.C.
386	H7	GND*	-	N.C.
387	J7	VCCIO2	-	V+3_3V_D_FPGA1
388	K7	GND	-	Connect to GND
389	L7	NC	-	N.C.
390	M7	NC	-	N.C.
391	N7	GND	-	Connect to GND
392	P7	VCCIO1	-	V+3_3V_D_FPGA1
393	R7	GND*	-	N.C.
394	T7	GND*	-	N.C.
395	T8	GND*	-	N.C.

● Pin Function

No.	F484	Pin Name	I/O	Pin Function
396	T9	VCCIO8	-	V+3_3V_D_FPGA1
397	T10	GND	-	Connect to GND
398	T11	GND*	-	N.C.
399	T12	GND*	-	N.C.
400	T13	GND	-	Connect to GND
401	T14	VCCIO7	-	V+3_3V_D_FPGA1
402	T15	GND*	-	N.C.
403	T16	RCRA_O[6]	O	to Carrera SRAI (6)
404	R16	GYA_O[2]	O	to Carrera SGAI (2)
405	P16	VCCIO6	-	V+3_3V_D_FPGA1
406	N16	GND	-	Connect to GND
407	M16	NC	-	N.C.
408	L16	NC	-	N.C.
409	K16	GND	-	Connect to GND
410	J16	VCCIO5	-	V+3_3V_D_FPGA1
411	H16	GND*	-	N.C.
412	G16	BCB2_I[7]	I	from HDMI Q7/B7
413	G15	GND*	-	N.C.
414	G14	VCCIO4	-	V+3_3V_D_FPGA1
415	G13	GND	-	Connect to GND
416	G12	GND*	-	N.C.
417	G11	GND*	-	N.C.
418	G10	GND	-	Connect to GND
419	G9	VCCIO3	-	V+3_3V_D_FPGA1
420	G8	GND*	-	N.C.
421	H8	GND*	-	N.C.
422	J8	NC	-	N.C.
423	K8	NC	-	N.C.
424	L8	GND*	-	N.C.
425	M8	NC	-	N.C.
426	N8	NC	-	N.C.
427	P8	GND*	-	N.C.
428	R8	GND*	-	N.C.
429	R9	GND*	-	N.C.
430	R10	GND*	-	N.C.
431	R11	GND*	-	N.C.
432	R12	GND*	-	N.C.
433	R13	GND*	-	N.C.
434	R14	CLKA_O	O	to Carrera SCLKI
435	R15	GND*	-	N.C.
436	P15	RCRB_O[6]	O	to Carrera SRAI (6)
437	N15	GND*	-	N.C.
438	M15	NC	-	N.C.
439	L15	NC	-	N.C.
440	K15	NC	-	N.C.
441	J15	GND*	-	N.C.
442	H15	GND*	-	N.C.
443	H14	GND*	-	N.C.
444	H13	GND*	-	N.C.
445	H12	GND*	-	N.C.

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● Pin Function

No.	F484	Pin Name	I/O	Pin Function
446	H11	GND*	-	N.C.
447	H10	GND*	-	N.C.
448	H9	GND*	-	N.C.
449	J9	NC	-	N.C.
450	K9	VCCINT	-	V+1_2V_D_FPGA1_INT
451	L9	VCCINT	-	V+1_2V_D_FPGA1_INT
452	M9	VCCINT	-	V+1_2V_D_FPGA1_INT
453	N9	VCCINT	-	V+1_2V_D_FPGA1_INT
454	P9	GND*	-	N.C.
455	P10	VCCINT	-	V+1_2V_D_FPGA1_INT
456	P11	VCCINT	-	V+1_2V_D_FPGA1_INT
457	P12	VCCINT	-	V+1_2V_D_FPGA1_INT
458	P13	VCCINT	-	V+1_2V_D_FPGA1_INT
459	P14	NC	-	N.C.
460	N14	VCCINT	-	V+1_2V_D_FPGA1_INT
461	M14	VCCINT	-	V+1_2V_D_FPGA1_INT
462	L14	VCCINT	-	V+1_2V_D_FPGA1_INT
463	K14	VCCINT	-	V+1_2V_D_FPGA1_INT
464	J14	GND*	-	N.C.
465	J13	VCCINT	-	V+1_2V_D_FPGA1_INT
466	J12	VCCINT	-	V+1_2V_D_FPGA1_INT
467	J11	VCCINT	-	V+1_2V_D_FPGA1_INT
468	J10	VCCINT	-	V+1_2V_D_FPGA1_INT
469	K10	GND	-	Connect to GND
470	L10	GND	-	Connect to GND
471	M10	GND	-	Connect to GND
472	N10	GND	-	Connect to GND
473	N11	GND	-	Connect to GND
474	N12	GND	-	Connect to GND
475	N13	GND	-	Connect to GND
476	M13	GND	-	Connect to GND
477	L13	GND	-	Connect to GND
478	K13	GND	-	Connect to GND
479	K12	GND	-	Connect to GND
480	K11	GND	-	Connect to GND
481	L11	GND	-	Connect to GND
482	M11	GND	-	Connect to GND
483	M12	GND	-	Connect to GND
484	L12	GND	-	Connect to GND

■ MB91305PMC-G-BND (FHD MAIN ASSY: IC5002)

- Main Microcomputer

● Pin Function

No.	Mark	Pin Name	I/O	Pin Function	Active
1	VCEE		-	Power supply (+3.3 V)	
2	VSS		-	GND	
3	VCCI		-	Power supply (+1.8 V)	
4	D24	DQ8		External data bus	
5	D25	DQ9		External data bus	
6	D26	DQ10		External data bus	
7	D27	DQ11		External data bus	
8	D28	DQ12		External data bus	
9	D29	DQ13		External data bus	
10	D30	DQ14		External data bus	
11	D31	DQ15		External data bus	
12	VCEE		-	Power supply (+3.3 V)	
13	VSS		-	GND	
14	VCCI		-	Power supply (+1.8 V)	
15	RDX	OE	O	External bus read strobe output	
16	WR0X/DQMUU	WE	O	External bus write strobe output	
17	WR1X/DQMUL/P30	FAN_CONT	O	TP: FAN power SW (ON/OFF)	H
18	CS0X/P31	CE		External bus chip enable	
19	CS1X/P32	CE_IF	O	3-wires serial communication with the UIF microcomputer, enable old IF_CE	L
20	CS4X/P33	SP_MUTE	O	Small signal system MUTE No DELAY time	H
21	CS5X/P34	A_AMP_MUTE	O	Mute for POWER AMP ON: no DELAY, OFF: Delay of about 400 msec	H
22	CS6X/P35	PSW_DVI	O	Power SW for DVI	H
23	CS7X/P36	NC	O		-
24	RDY/P37	BUSY_IC3	I	3-wires serial communication with the Carrera, busy old IC3_BUSY	H
25	BGRNTX/P40	BUSY_IF	I	3-wires serial communication with the UIF microcomputer, busy old IF_BUSY	H
26	BRQ/P41	WE_IC3	O	UART path SW for Carrera	L
27	SYSCLK/P42	WATCH_DOG	O	Pin for examination with TP	-
28	MCLKE/P43	PSW1	O	Power SW1 (DCDC converter output mute)	L
29	MCLK/P44	SD_DET	O	Pin for examination with TP	-
30	ASX/LBAX/SRASX/P45	RST_DVI	O	DVI RST(When the function is STB, DVI exists.)	H
31	BAAX/SCASX/P46	WE_ROM	O	EDID_ROM write protect for PC/HDMI	H
32	WRX/SWRX/P47	CE_IC3	O	3-wires serial communication with the Carrera, enable old IC3_CE	L
33	VCEE		-	Power supply (+3.3 V)	
34	VSS		-	GND	
35	VCCI		-	Power supply (+1.8 V)	
36	A00	NC		N.C. setting	
37	A01	A0		External address bus	
38	A02	A1		External address bus	
39	A03	A2		External address bus	
40	A04	A3		External address bus	
41	A05	A4		External address bus	
42	A06	A5		External address bus	
43	A07	A6		External address bus	
44	A08	A7		External address bus	
45	A09	A8		External address bus	

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● Pin Function

No.	Mark	Pin Name	I/O	Pin Function	Active
46	A10	A9		External address bus	
47	A11	A10		External address bus	
48	A12	A11		External address bus	
49	A13	A12		External address bus	
50	A14	A13		External address bus	
51	A15	A14		External address bus	
52	VCEE		-	Power supply (+3.3 V)	
53	VSS		-	GND	
54	VCCI		-	Power supply (+1.8 V)	
55	A16/P50	A15		External address bus	
56	A17/P51	A16		External address bus	
57	A18/P52	A17		External address bus	
58	A19/P53	A18		External address bus	
59	A20/P54	A19		External address bus	
60	A21/P55	NC	O		
61	A22/P56	ELITE_DET	I	ELITE model (North America)/ADVANCE model (Europe)/China model (General)/HDD (country) distinction	H
62	A23/P57	APPLI_ON	I	Detect connection of the ASIC examination jig	L
63	VCEE		-	Power supply (+3.3 V)	
64	X0		I	Clock input	
65	VSS		-	GND	
66	X1		O	Clock output	
67	VCCI		-	Power supply (+1.8 V)	
68	INTX	RESET	I	External reset input	
69	MD0	MD0	I	Operation mode setting L fixing	
70	MD1	MD1	I	Operation mode setting H fixing (not USB)	
71	MD2	MD2	I	Operation mode setting L: Normal, H: at writing	
72	MD3	MD3	I	Operation mode setting L fixing	
73	AVCC		-	Power supply for A/D	
74	AVRH		-	Reference power supply for A/D	
75	AVSS/AVRL		-	GND for A/D	
76	AN0	TEMP2	I	(A/D) Temperature sensor Outside temperature	AD
77	AN1	NC	I	-	AD
78	AN2/PF0	MODE	I	(A/D) Operation mode distinction	AD
79	AN3/PF1	NC	O	-	L
80	AN4/PF2	RST_FPGA	O	Initialization of F.F. in the FPGA (after CONF_DONE)	L
81	AN5/PF3	NC	O	-	L
82	AN5/PF4	RST4	I	For abnormal operation detection Monitor V+12V	L
83	AN7/PF5	DSUB_DET	I	PC V sync. signal detection	H
84	AN8/PF6	A_STBY_B	O	AUDIO power AMP ON/OFF	H
85	AN9/PF7	REQ_MVDEC	I	Modification information of the various detection result as the frequency judgments	L
86	ICSO	ICSO		Status output for development tool	
87	ICS1	ICS1		Status output for development tool	
88	ICS2	ICS2		Status output for development tool	
89	ICD0	ICD0		Data output for development tool	
90	ICD1	ICD1		Data output for development tool	
91	ICD2	ICD2		Data output for development tool	
92	ICD3	ICD3		Data output for development tool	
93	IBREAK	IBREAK		Break for development tool	
94	ICLK	ICLK		Clock for development tool	
95	TRSTX	TRSTX		Reset for development tool	

● Pin Function

No.	Mark	Pin Name	I/O	Pin Function	Active
96	VCEE		-	Power supply (+3.3 V)	
97	VSS		-	GND	
98	VCCI		-	Power supply (+1.8 V)	
99	SIN0/P60	RXD_WR	I	External PC/flash ROM writer/PC Card sharing	L
100	SOUT0/P61	TXD_WR	O	External PC/flash ROM writer/PC Card sharing	L
101	SCK0/P62	CLK_WR	I	Communication with the flash ROM writer, clock input	L
102	SIN1/P63	NC	I	-	L
103	SOUT1/P64	DATA_FPGA1	O	For FPGA configuration	L
104	SCK1/P65	DCLK_FPGA1	O	For FPGA configuration	L
105	SIN2/P70	RXD_IF	I	3-wires serial communication with the UIF microcomputer, data input	L
106	SOUT2/P71	TXD_IF	O	3-wires serial communication with the UIF microcomputer, data output	L
107	SCK2/P72	CLK_IF	O	3-wires serial communication with the UIF microcomputer, clkok output	L
108	SIN3/P73	RXD_MD	I	UART communication with the module microcomputer, data input	L
109	SOUT3/P74	TXD_MD	O	UART communication with the module microcomputer, data output	L
110	SCK3/P75	RST ASIC	O	ASIC forced reset	L
111	SIN4/P80	RXD_IC3	I	3-wires serial communication with the Carrea, data input	L
112	SOUT4/P81	TXD_IC3	O	3-wires serial communication with the Carrea, data output	L
113	SCK4/P82	CLK_IC3	O	3-wires serial communication with the Carrea, clock output	L
114	SCL0/P83	SCL_AV3	O	When a function is STB, IIC communication for active device, clock output	L
115	SDA0/P84	SDA_AV3	I/O	When a function is STB, IIC communication for active device, data I/O	L
116	SCL1/P90	SCL_MA	O	When a function is STB, IIC communication for defective device, clock output	
117	SDA1/P91	SDA_MA	I/O	When a function is STB, IIC communication for defective device, data I/O	L
118	SCL2/P92	SCL_AUDIO	O	Audio preamplifier control	L
119	SDA2/P93	SDA_AUDIO	I/O	Audio preamplifier control	L
120	SCL3/P94	SCL_DVI	O	IIC communication for DVI_PM mode, clock output	L
121	SDA3/P95	SDA_DVI	I/O	IIC communication for DVI_PM mode, data I/O	L
122	SCL4/P96	SCL_EP	O	IIC communication for EEPROM, clock output	L
123	SDA4/P97	SDA_EP	I/O	IIC communication for EEPROM, data I/O	L
124	VCEE		-	Power supply (+3.3 V)	
125	VSS		-	GND	
126	VCCI		-	Power supply (+1.8 V)	
127	NMIX	NC	-	N.C.	
128	INT0/PA0	RST2	O	For abnormal operation detection Monitor V+3_3V_D	L
129	INT1/PA1	RST3	I	(Interrupt) Outage detection of AC	↑
130	INT2/PA2	HDMI_INT	I	(Interrupt) HDMI information packet modification interrupt (HDMI 1)	L
131	INT3/PA3	REQ_IF	I	Communication request from the UIF microcomputer	H
132	INT4/PA4	REQ_IC3	I	Communication request from the Carrera (Signal mode modification) old IC3_REQ	H
133	INT5/PA5	NC	O	Reserved (interruption)	
134	INT6/PA6	REQ_MD	I	Communication request from the module microcomputer old REQ	H
135	INT7/PA7	A_NG_B	I	Speaker DC detection	L
136	INT8/PB0	NC	O	-	L
137	INT9/PB1	NC	O	-	L
138	INT10/ATRG/PB2	NC	O	-	L
139	INT11/FRCK/PB3	NC	O	-	L
140	INT12/ICU0/PB4	nSTATUS	I	Configuration state	L
141	INT13/ICU1/PB5	CONF DONE	I	Configuration state	H
142	INT14/ICU2/PB6	REQ_PEAK_M	I	Communication request from the Carrera (Peak detection at Silvia side in the Triton)	H
143	INT15/ICU3/PB7	REQ_PEAK_S	I	Communication request from the Carrera(Peak detection at Carrera in the Triton)	H
144	VCEE		-	Power supply (+3.3 V)	
145	UDP		-	USB plus terminal (not used)	

A ● Pin Function

No.	Mark	Pin Name	I/O	Pin Function	Active
146	UDM			USB minus terminal (not used)	
147	VSS		-	GND	
148	VCCI		-	Power supply (+1.8 V)	
149	PPG0/PC0	FAN_CONT_POW0	O	FAN_PWM control output 6 V to 11 V control	PWM
150	PPG1/PC1	HOT_P1	O	Hot plug information for HDMI to return to the transmitter side INPUT3	L
151	PPG2/PC2	HOT_P2	O	Hot plug information for HDMI to return to the transmitter side INPUT2	L
152	PPG3/PC3	RELAY	O	MR power ON relay	H
153	TOUT0/TRG0/PC4	WE_MD	O	UART path change SW for the module microcomputer	L
154	TOUT1/TRG1/PC5	HOT_P3	O	Operate hot plug information for DVI to return to the transmitter side	L
155	TOUT2/PC6	FAN_NG1	I	NG signal detection from the FAN	H
156	RIN/PC7	NC	O	-	L
157	DREQ0/PD0		I	GND	L
158	DACK0/PD1	LVDS_ON	O	LVDS output control (not used)	H
159	DEOP0/PD2	FAN_CONT_POW1	O	Standby circuit for four stages FAN control (not used)	H
160	DREQ1/TIN0/PD3	NC	I	GND	-
161	DACK1/TIN1/PD4	NC	I	GND	-
162	DEOP1/TIN2/PD5	PD5	I	Detect in rewriting from a flash ROM writer (sync ⇔ asynchronous)	L
163	DREQ2/TRG1/PE0	nCONFIG	O	FPGA hardware reset	L
164	DACK2/TRG2/PE1	DEMP	O	-	L
165	DEOP2/TRG3/PE2	EEPRST	O	Power reset SW of EEPROM	L
166	VCEE		-	Power supply (+3.3 V)	
167	VSS		-	GND	
168	VCCI		-	Power supply (+1.8 V)	
169	D16/P20	DQ0		External data bus	
170	D17/P21	DQ1		External data bus	
171	D18/P22	DQ2		External data bus	
172	D19/P23	DQ3		External data bus	
173	D20/P24	DQ4		External data bus	
174	D21/P25	DQ5		External data bus	
175	D22/P26	DQ6		External data bus	
176	D23/P27	DQ7		External data bus	

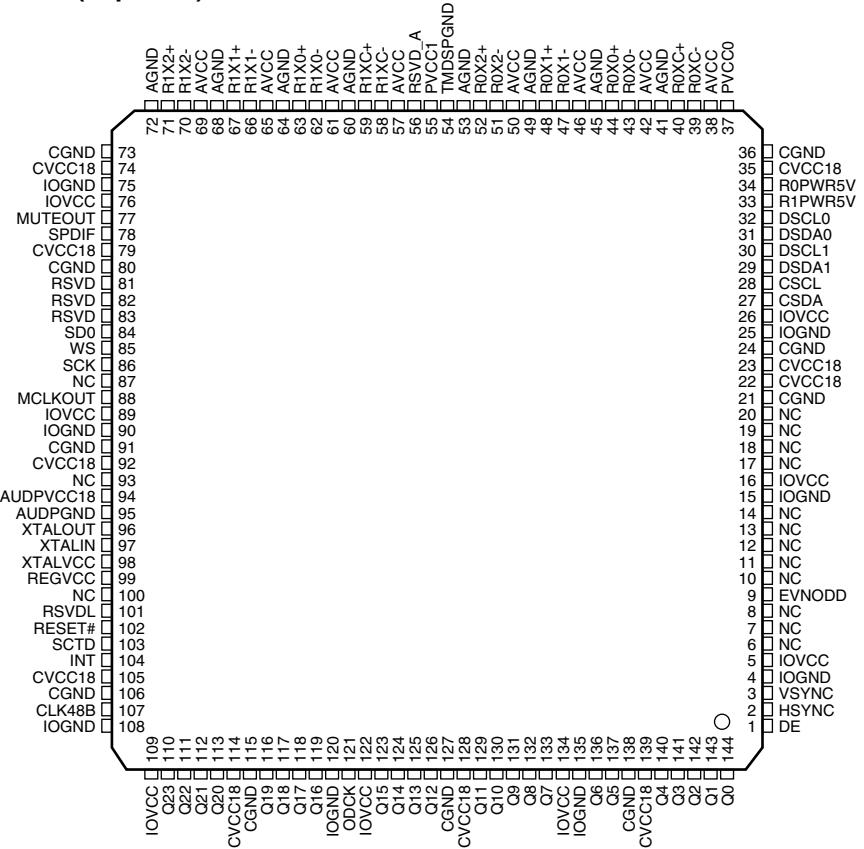
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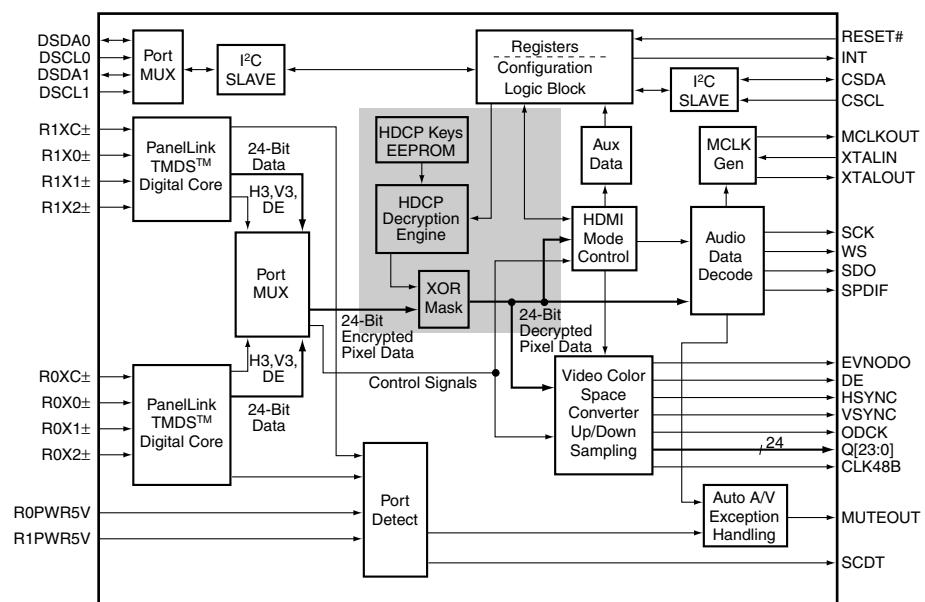
■ Si9023CTU-K (FHD MAIN ASSY: IC6801)

- HDMI Rx

● Pin Arrangement (Top view)



● Block Diagram



● Pin Function

No.	Pin Name	I/O	Pin Function
1	DE	O	Data enable
2	HSYNC	O	H. sync. output control
3	VSYNC	O	V. sync. output control
4	IOGND	-	I/O GND
5	IOVCC	-	I/O VCC
6	NC	-	Non connection
7	NC	-	Non connection
8	NC	-	Non connection
9	EVNODD	O	EVEN/ODD field indicator
10	NC	-	Non connection
11	NC	-	Non connection
12	NC	-	Non connection
13	NC	-	Non connection
14	NC	-	Non connection
15	IOGND	-	I/O GND
16	IOVCC	-	I/O VCC
17	NC	-	Non connection
18	NC	-	Non connection
19	NC	-	Non connection
20	NC	-	Non connection
21	CGND	-	Digital logic GND
22	CVCC18	-	Digital logic VCC (1.8 V)
23	CVCC18	-	Digital logic VCC (1.8 V)
24	CGND	-	Digital logic GND
25	IOGND	-	I/O GND
26	IOVCC	-	I/O VCC
27	CSDA	I/O	Configuration I2C data
28	CSCL	I	Configuration I2C clock
29	DSDA1	I/O	DDC I2C data for port 1
30	DSCL1	I	DDC I2C clock for port 1
31	DSDAO	I/O	DDC I2C data for port 0
32	DSCL0	I	DDC I2C clock for port 0
33	R1PWR5V	I	Port 1 transfer detection
34	R0PWR5V	I	Port 0 transfer detection
35	CVCC18	-	Digital logic VCC (1.8 V)
36	CGND	-	Digital logic GND
37	PVCC0	-	TMDS port 0 PLL VCC
38	AVCC	-	TMDS analog VCC
39	R0XC-	I	TMDS input clock
40	R0XC+	I	TMDS input clock
41	AGND	-	TMDS analog GND
42	AVCC	-	TMDS analog VCC
43	R0X0-	I	TMDS input data
44	R0X0+	I	TMDS input data
45	AGND	-	TMDS analog GND
46	AVCC	-	TMDS analog VCC
47	R0X1-	I	TMDS input data
48	R0X1+	I	TMDS input data
49	AGND	-	TMDS analog GND
50	AVCC	-	TMDS analog VCC

● Pin Function

No.	Pin Name	I/O	Pin Function
51	R0X2-	I	TMDS input data
52	R0X2+	I	TMDS input data
53	AGND	-	TMDS analog GND
54	TMDSPGND	-	TMDS PLL GND
55	PVCC1	-	TMDS port 1 PLL VCC
56	RSVD_A	-	Reserved
57	AVCC	-	TMDS analog VCC
58	R1XC-	I	TMDS input clock
59	R1XC+	I	TMDS input clock
60	AGND	-	TMDS analog GND
61	AVCC	-	TMDS analog VCC
62	R1X0-	I	TMDS input data
63	R1X0+	I	TMDS input data
64	AGND	-	TMDS analog GND
65	AVCC	-	TMDS analog VCC
66	R1X1-	I	TMDS input data
67	R1X1+	I	TMDS input data
68	AGND	-	TMDS analog GND
69	AVCC	-	TMDS analog VCC
70	R1X2-	I	TMDS input data
71	R1X2+	I	TMDS input data
72	AGND	-	TMDS analog GND
73	CGND	-	Digital logic GND
74	CVCC18	-	Digital logic VCC (1.8 V)
75	IOGND	-	I/O GND
76	IOVCC	-	I/O VCC
77	MUTEOUT	O	Audio output mute
78	SPDIF	O	S/PDIF audio output
79	CVCC18	-	Digital logic VCC (1.8 V)
80	CGND	-	Digital logic GND
81	RSVD	O	-
82	RSVD	O	-
83	RSVD	O	-
84	SD0	O	I2C serial data output
85	WS	O	I2C word select output
86	SCK	O	I2C serial clock output
87	NC	-	Non connection
88	MCLKOUT	O	Audio master clock output
89	IOVCC	-	I/O VCC
90	IOGND	-	I/O GND
91	CGND	-	Digital logic GND
92	CVCC18	-	Digital logic VCC (1.8 V)
93	NC	-	Non connection
94	AUDPVCC18	-	ACR PLL VCC
95	AUDPGND	-	ACR PLL GND
96	XTALOUT	O	Crystal clock output
97	XTALIN	I	Crystal clock input
98	XTALVCC	-	ACR PLL crystal input VCC
99	REGVCC	-	ACR PLL regulator VCC
100	NC	-	Non connection

A ● Pin Function

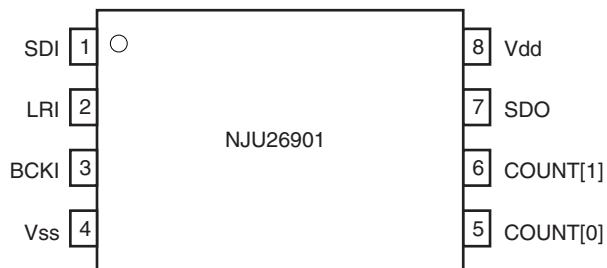
No.	Pin Name	I/O	Pin Function
101	RSVDL	I	Reserved, Low fixing
102	RESET#	I	Reset, active Low
103	SCTD	O	Display active video with the HDMI input port
104	INT	O	Interruption output
105	CVCC18	-	Digital logic VCC (1.8 V)
106	CGND	-	Digital logic GND
107	CLK48B	I/O	Data bus latch enable
108	IOGND	-	I/O GND
109	IOVCC	-	I/O VCC
110	Q23	O	24-bit output, pixel data bus
111	Q22	O	24-bit output, pixel data bus
112	Q21	O	24-bit output, pixel data bus
113	Q20	O	24-bit output, pixel data bus
114	CVCC18	-	Digital logic VCC (1.8 V)
115	CGND	-	Digital logic GND
116	Q19	O	24-bit output, pixel data bus
117	Q18	O	24-bit output, pixel data bus
118	Q17	O	24-bit output, pixel data bus
119	Q16	O	24-bit output, pixel data bus
120	IOGND	-	I/O GND
121	ODCK	O	Output data clock
122	IOVCC	-	I/O VCC
123	Q15	O	24-bit output, pixel data bus
124	Q14	O	24-bit output, pixel data bus
125	Q13	O	24-bit output, pixel data bus
126	Q12	O	24-bit output, pixel data bus
127	CGND	-	Digital logic GND
128	CVCC18	-	Digital logic VCC (1.8 V)
129	Q11	O	24-bit output, pixel data bus
130	Q10	O	24-bit output, pixel data bus
131	Q9	O	24-bit output, pixel data bus
132	Q8	O	24-bit output, pixel data bus
133	Q7	O	24-bit output, pixel data bus
134	IOVCC	-	I/O VCC
135	IOGND	-	I/O GND
136	Q6	O	24-bit output, pixel data bus
137	Q5	O	24-bit output, pixel data bus
138	CGND	-	Digital logic GND
139	CVCC18	-	Digital logic VCC (1.8 V)
140	Q4	O	24-bit output, pixel data bus
141	Q3	O	24-bit output, pixel data bus
142	Q2	O	24-bit output, pixel data bus
143	Q1	O	24-bit output, pixel data bus
144	Q0	O	24-bit output, pixel data bus

■ NJU26901E2 (FHD PRE AUDIO ASSY: IC8208)

A

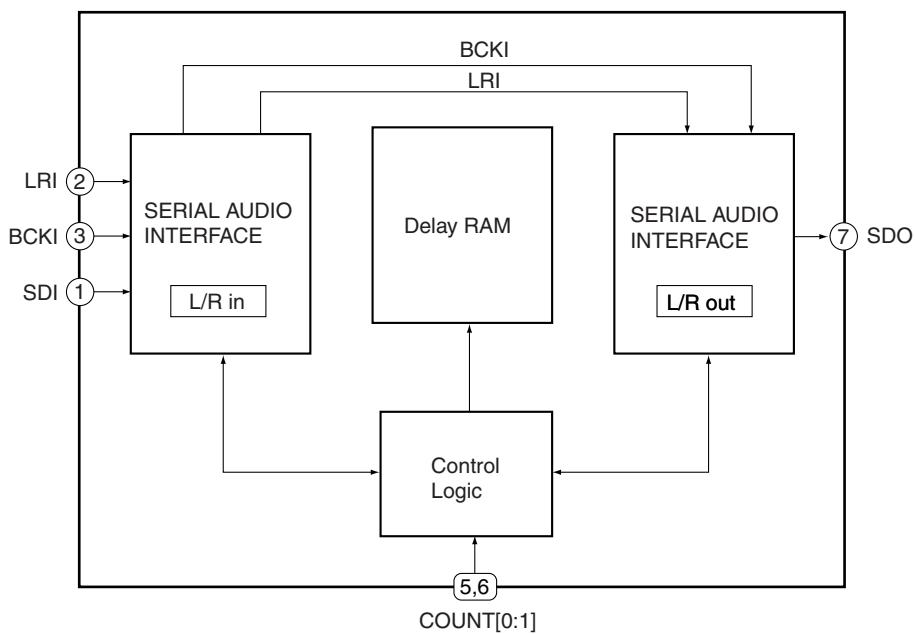
- LIP Sync IC

● Pin Arrangement (Top view)



B

● Block Diagram



C

D

● Pin Function

No.	Pin Name	I/O	Pin Function
1	SDI	I	Serial audio data input
2	LRI	I	LR clock input
3	BCKI	I	Serial clock input
4	Vss	-	- power supply (Normally: GND)
5	COUNT[0]	I*	Delay time setting 0
6	COUNT[1]	I*	Delay time setting 1
7	SDO	O	Serial audio data output
8	Vdd	-	+ power supply (Normally: +2.5 V)

E

* with pull up

● Delay Time

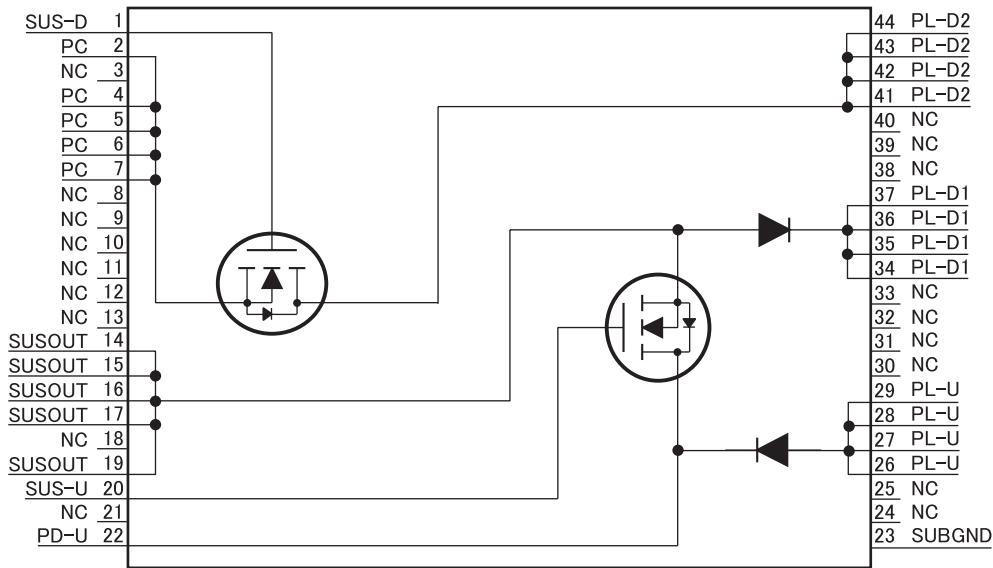
Sampling Frequency (fs)	4/4 (COUNT[1:0]=11)	3/4 (COUNT[1:0]=01)	1/2 (COUNT[1:0]= 10)	1/4 (COUNT[1:0]= 00)
48KHz	85ms	64ms	43ms	21ms

F

A ■ AXF1159 (50FHD Y DRIVE ASSY: IC2103, IC2151) (50FHD X DRIVE ASSY: IC1103, IC1131)

- DK Mod.

● Block Diagram



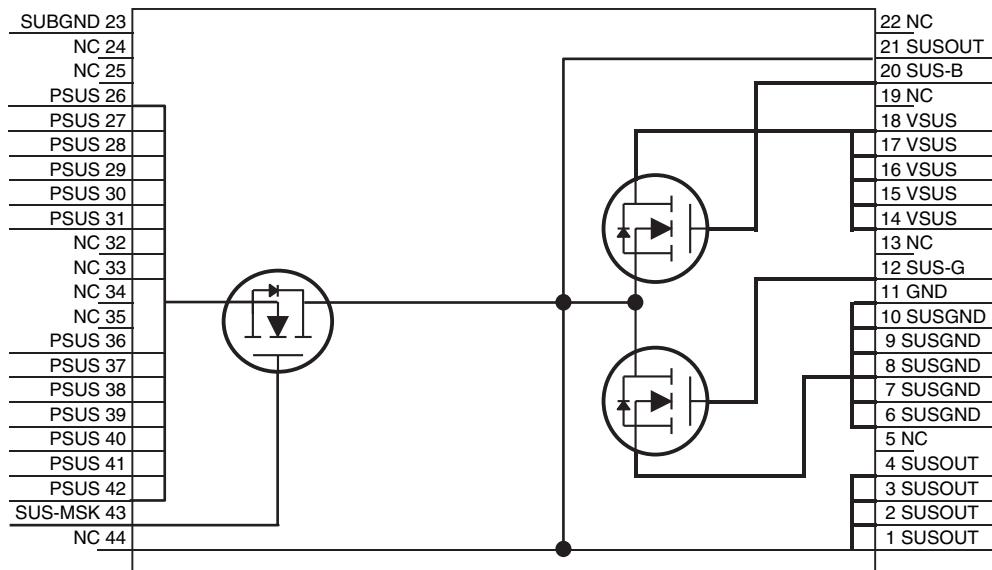
● Pin Function

PIN No.	NAME	I/O	FUNCTION
1	SUS-D	I	SUS-D signal terminal
2	PC	O	PC terminal (center point capacitor potential)
4	PC	O	PC terminal (center point capacitor potential)
5	PC	O	PC terminal (center point capacitor potential)
6	PC	O	PC terminal (center point capacitor potential)
7	PC	O	PC terminal (center point capacitor potential)
14	SUSOUT	O	SUSOUT output terminal
15	SUSOUT	O	SUSOUT output terminal
16	SUSOUT	O	SUSOUT output terminal
17	SUSOUT	O	SUSOUT output terminal
19	SUSOUT	O	SUSOUT output terminal
20	SUS-U	I	SUS-U signal terminal
22	PD-U	O	PD-U terminal
23	SUBGND	I	GND fixed terminal
26	PL-U	O	PL-U terminal
27	PL-U	O	PL-U terminal
28	PL-U	O	PL-U terminal
29	PL-U	O	PL-U terminal
34	PL-D1	O	PL-D1 terminal
35	PL-D1	O	PL-D1 terminal
36	PL-D1	O	PL-D1 terminal
37	PL-D1	O	PL-D1 terminal
41	PL-D2	O	PL-D2 terminal
42	PL-D2	O	PL-D2 terminal
43	PL-D2	O	PL-D2 terminal
44	PL-D2	O	PL-D2 terminal

■ AXF1160 (50FHD X DRIVE ASSY : IC1203, IC1205)

- X MASK MOD.

● Block Diagram



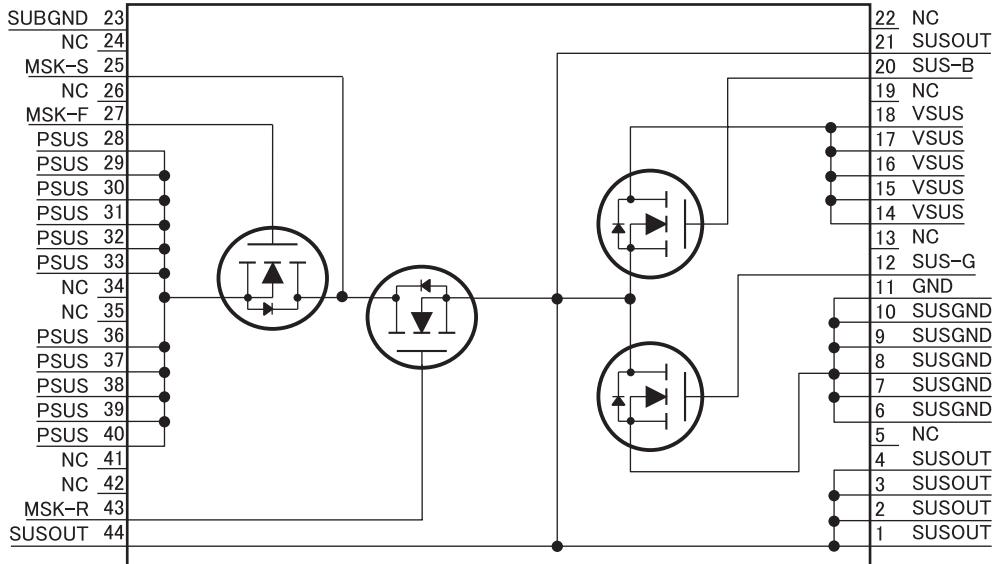
● Pin Function

PIN No.	NAME	I/O	FUNCTION
1	SUSOUT	O	SUSOUT output terminal
2	SUSOUT	O	SUSOUT output terminal
3	SUSOUT	O	SUSOUT output terminal
4	SUSOUT	O	SUSOUT output terminal
6	SUSGND	-	SUSGND terminal
7	SUSGND	-	SUSGND terminal
8	SUSGND	-	SUSGND terminal
9	SUSGND	-	SUSGND terminal
10	SUSGND	-	SUSGND terminal
11	GND	-	GND terminal
12	SUS-G	I	SUS-G signal terminal
14	VSUS	I	VSUS power terminal
15	VSUS	I	VSUS power terminal
16	VSUS	I	VSUS power terminal
17	VSUS	I	VSUS power terminal
18	VSUS	I	VSUS power terminal
20	SUS-B	I	SUS-B signal terminal
21	SUSOUT	O	SUSOUT terminal
23	SUBGND	-	GND fixed terminal
26	PSUS	O	PSUS terminal
27	PSUS	O	PSUS terminal
28	PSUS	O	PSUS terminal
29	PSUS	O	PSUS terminal
30	PSUS	O	PSUS terminal
31	PSUS	O	PSUS terminal
36	PSUS	O	PSUS terminal
37	PSUS	O	PSUS terminal
38	PSUS	O	PSUS terminal
39	PSUS	O	PSUS terminal
40	PSUS	O	PSUS terminal
41	PSUS	O	PSUS terminal
42	PSUS	O	PSUS terminal
43	SUS-MSK	I	SUS-MSK signal terminal

A ■ AXF1161 (FHD Y DRIVE ASSY: IC2301, IC2302)

- Y Mask Mod.

- Block Diagram



C ● Pin Function

PIN No.	NAME	I/O	FUNCTION
1	SUSOUT	O	SUSOUT output terminal
2	SUSOUT	O	SUSOUT output terminal
3	SUSOUT	O	SUSOUT output terminal
4	SUSOUT	O	SUSOUT output terminal
6	SUSGND	-	SUSGND terminal
7	SUSGND	-	SUSGND terminal
8	SUSGND	-	SUSGND terminal
9	SUSGND	-	SUSGND terminal
10	SUSGND	-	SUSGND terminal
11	GND	-	GND terminal
12	SUS-G	I	SUS-G signal terminal
14	VSUS	I	VSUS power terminal
15	VSUS	I	VSUS power terminal
16	VSUS	I	VSUS power terminal
17	VSUS	I	VSUS power terminal
18	VSUS	I	VSUS power terminal
20	SUS-B	I	SUS-B signal terminal
21	SUSOUT	-	SUSOUT output terminal
23	SUBGND	-	GND fixed terminal
25	MSK-S	I	MSK-S signal terminal
27	MSK-F	I	MSK-F signal terminal
28	PSUS	-	PSUS output terminal
29	PSUS	-	PSUS output terminal
30	PSUS	-	PSUS output terminal
31	PSUS	-	PSUS output terminal
32	PSUS	-	PSUS output terminal
33	PSUS	-	PSUS output terminal
36	PSUS	-	PSUS output terminal
37	PSUS	-	PSUS output terminal
38	PSUS	-	PSUS output terminal
39	PSUS	-	PSUS output terminal
40	PSUS	-	PSUS output terminal
43	MSK-R	I	MSK-R signal terminal
44	SUSOUT	-	SUSOUT output terminal