DENON

Service Manual Ver. 6

INTEGRATED NETWORK AV RECEIVER

AVR-X6300H

Click here!

On-line service parts list

http://dmedia.dmglobal.com/Document/DocumentDetails/23012

Online Parts List (P5 to P7)

WEB owner's manual

http://manuals.denon.com/AVRX6300H/NA/EN/index.php

http://manuals.denon.com/AVRX6300H/EU/EN/index.php

Please refer to the MODIFICATION NOTICE.

- For purposes of improvement, specifications and design are subject to change without notice.
- Please use this service manual with referring to the operating instructions without fail.
- Some illustrations using in this service manual are slightly different from the actual set.

CAUTION IN SERVICING

SAFETY PRECAUTIONS

NOTE FOR SCHEMATIC DIAGRAM

NOTE FOR PARTS LIST

INSTRUCTIONS FOR HANDLING SEMICONDUCTORS AND OPTICAL UNIT

CAUTION IN SERVICING.

SAFETY PRECAUTIONS

The following items should be checked for continued protection of the customer and the service technician.

Leakage current check

Before returning the set to the customer, be sure to carry out either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 460 kohms, the set is defective.
Be sure to test for leakage current with the AC plug in both polarities, in addition, when the set's power is in each state (on, off and standby mode), if applicable.

CAUTION **Please heed the following cautions and instructions during servicing and inspection.**

◎ Heed the cautions!

Cautions which are delicate in particular for servicing are labeled on the cabinets, the parts and the chassis, etc. Be sure to heed these cautions and the cautions described in the handling instructions.

◎ Cautions concerning electric shock!

(1) An AC voltage is impressed on this set, so if you touch internal metal parts when the set is energized, you may get an electric shock. Avoid getting an electric shock, by using an isolating transformer and wearing gloves when servicing while the set is energized, or by unplugging the power cord when replacing parts, for example.
(2) There are high voltage parts inside. Handle with extra care when the set is energized.

◎ Caution concerning disassembly and assembly!

Through great care is taken when parts were manufactured from sheet metal, there may be burrs on the edges of parts. The burrs could cause injury if fingers are moved across them in some rare cases. Wear gloves to protect your hands.

◎ Use only designated parts!

The set's parts have specific safety properties (fire resistance, voltage resistance, etc.). Be sure to use parts which have the same properties for replacement. The burrs have the same properties. In particular, for the important safety parts that are indicated by the ⚠ mark on schematic diagrams and parts lists, be sure to use the designated parts.

◎ Be sure to mount parts and arrange the wires as they were originally placed!

For safety seasons, some parts use tapes, tubes or other insulating materials, and some parts are mounted away from the surface of printed circuit boards. Care is also taken with the positions of the wires by arranging them and using clamps to keep them away from heating and high voltage parts, so be sure to set everything back as it was originally placed.

◎ Make a safety check after servicing!

Check that all screws, parts and wires removed or disconnected when servicing have been put back in their original positions, check that no serviced parts have deteriorate the area around. Then make an insulation check on the external metal connectors and between the blades of the power plug, and otherwise check that safety is ensured.
(Insulation check procedure)
Unplug the power cord from the power outlet, disconnect the antenna, plugs, etc., and on the power. Using a 500V insulation resistance tester, check that the insulation resistance value between the inplug and the externally exposed metal parts (antenna terminal, headphones terminal, input terminal, etc.) is 1M Ω or greater. If it is less, the set must be inspected and repaired.

CAUTION **Concerning important safety parts**

Many of the electric and the structural parts used in the set have special safety properties. In most cases these properties are difficult to distinguish by sight, and the use of replacement parts with higher ratings (rated power and withstand voltage) does not necessarily guarantee that safety performance will be preserved. Parts with safety properties are indicated as shown below on the wiring diagrams and the parts list in this service manual. Be sure to replace them with the parts which have the designated part number.

(1) Schematic diagrams Indicated by the ⚠ mark.
(2) Parts lists Indicated by the ⚠ mark.
The use of parts other than the designated parts could cause electric shocks, fires or other dangerous situations.

NOTE FOR SCHEMATIC DIAGRAM

WARNING:

Parts indicated by the ⚠ mark have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

CAUTION:

Before returning the set to the customer, be sure to carry out either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 460 kohms, the set is defective.

WARNING:

DO NOT return the set to the customer unless the problem is identified and remedied.

NOTICE:

ALL RESISTANCE VALUES IN OHM. k=1,000 OHM / M=1,000,000 OHM
ALL CAPACITANCE VALUES ARE EXPRESSED IN MICRO FARAD, UNLESS OTHERWISE INDICATED. P INDICATES MICRO-MICRO FARAD. N INDICATES NANO FARAD. EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION. CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

NOTE FOR PARTS LIST

1. Parts indicated by "**nsp**" on this table cannot be supplied.
2. When ordering a part, make a clear distinction between "1" and "I" (i) to avoid mis-supplying.
3. A part ordered without specifying its part number can not be supplied.
4. Part indicated by "**@**" mark is not illustrated in the exploded view.

WARNING: Parts indicated by the ⚠ mark have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

INSTRUCTIONS FOR HANDLING SEMICONDUCTORS AND OPTICAL UNIT

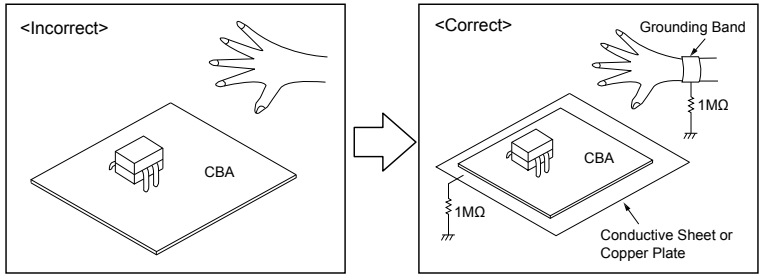
Electrostatic breakdown of the semi-conductors or optical pickup may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

1. Ground for Human Body

Be sure to wear a grounding band (1 M ohm) that is properly grounded to remove any static electricity that may be charged on the body.

2. Ground for Workbench

Be sure to place a conductive sheet or copper plate with proper grounding (1 M ohm) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing

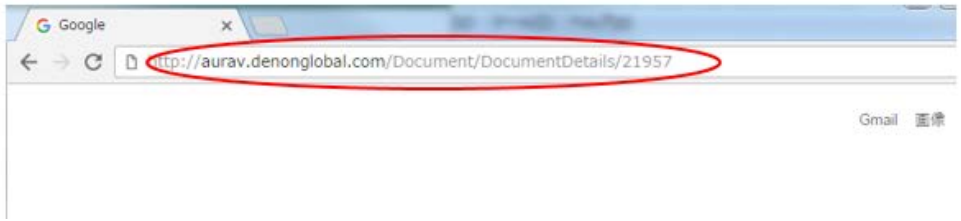


Online Parts List

Accessing the Parts List

(1) Click the URL link on the cover of the service manual.
Examples of display

NOTE : If the web browser does not open automatically, copy the URL and paste it into the address bar of the web browser and then press Enter.



(2) When the login screen is displayed, enter your username and password.
(3) Enter the 5 letters shown as the blue CAPTCHA code as single-byte characters.
If the text is unclear, click "**Refresh**" to change the CAPTCHA code, and enter it again.

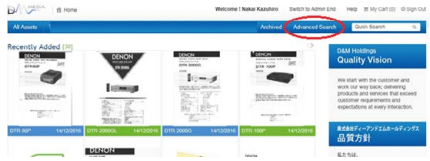
(4) Press the "**Login**" button.

Logging in to New SDI and Accessing the Parts List

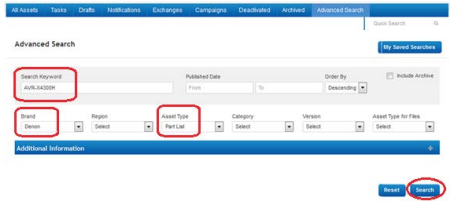
(1) Access New SDI from the URL below.
<http://dmedia.dmglobal.com>

(2) When the login screen is displayed, enter your username and password.
(3) Enter the 5 letters shown as the blue CAPTCHA code as single-byte characters.
If the text is unclear, click "**Refresh**" to change the CAPTCHA code, and enter it again.

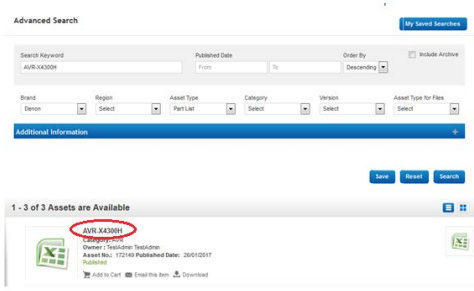
(4) Press the "**Login**" button.
(5) When the Home screen is displayed, click "**Advanced Search**".



(6) Enter the following search conditions and click "**Search**".
Keyword : Model name Brand : brand name Asset Type : Part list

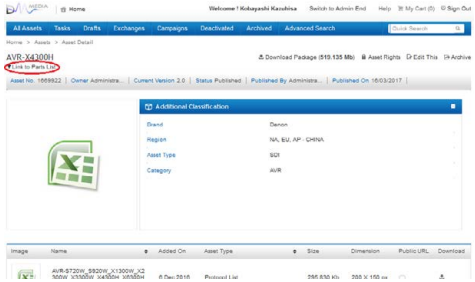


(7) Click the model name when the search results are displayed.



Accessing the Part List from the Model Asset Screen

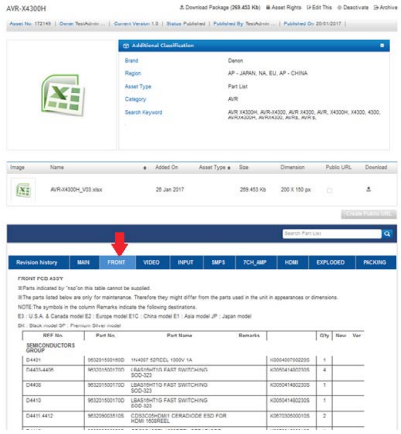
(1) Display Model Asset from New SDI.
(2) Click the section displayed as ▼ Link to Part Lists under the model name.



NOTE : If the ▼ Link to Parts List section is not displayed, download the parts table from the Asset list.

PRINTED CIRCUIT BOARDS Parts Table

(1) Display the Parts List. Click the PCB name in the blue bar to display the parts list for the board.

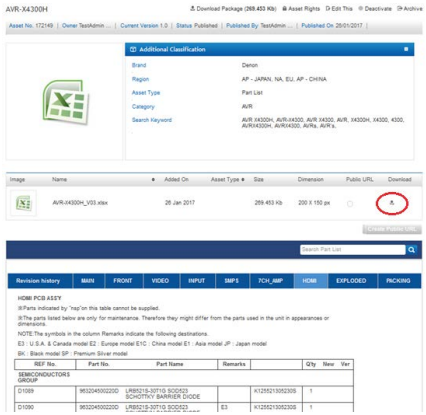


Left and right arrow icons are displayed if the circuit board name does not fit in the blue bar.
Click these icons to display a different part of the name when necessary.

← Icons to move the circuit board name left and right in the blue bar

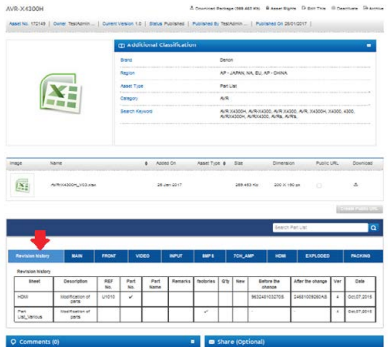
Downloading the Parts List as an Excel File

(1) Displays the Parts List. Click the Download icon.



Revision History

(1) Click "**Revision history**" in the blue bar.



The following details are displayed.

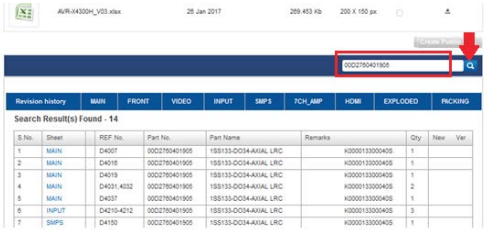
Sheet : Name of the changed sheet
Description : Description of the changes
Remarks : Destination, color information
Factories : Factory number
Ver : Version number after revision if changes were made to the parts list
Date : Date of changes

Searching Part Numbers or Ref. Numbers

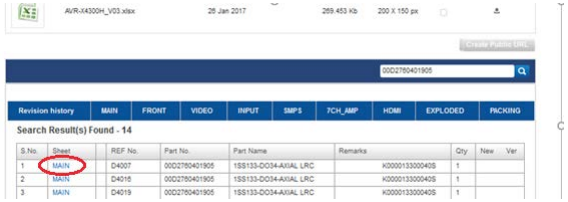
You can search a Parts List for part numbers or Ref. numbers.

(1) Enter the part number or Ref. number in the search window of the Parts List, and press the search button.

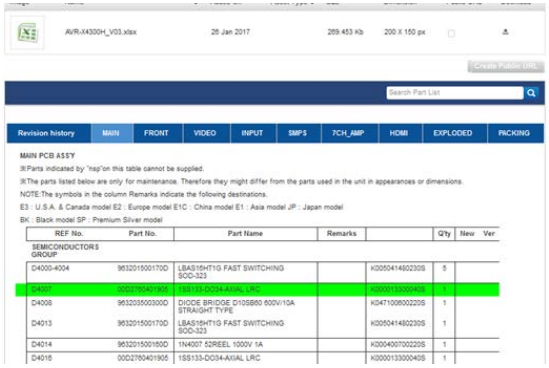
(2) The search results are displayed.
The name of the sheet in which the search part is used and the part's line are displayed.



(3) Next, click the "**Sheet**" section of the search results.



(4) The Board Part Table opens and the line on which the searched part number appears is highlighted.



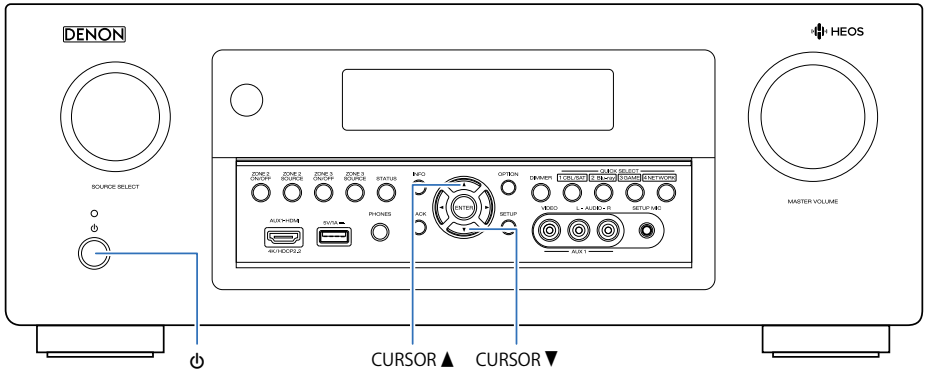
CAUTION IN SERVICING.

Initializing This Unit

Make sure to initialize this unit after replacing the microcomputer or any peripheral equipment, or the digital PCB.

1. Press the power button to turn off the power.
2. While holding down buttons "**CURSOR ▲**" and "**CURSOR ▼**" simultaneously, press the power button to turn on the power.
3. Release the buttons after confirming that the display flashes at 1-second intervals.
   ＊ The unit is initialized.
   Use network initialization mode to initialize the network related settings.

NOTE：
- If the unit fails to enter the service mode in step 3, repeat the procedure from step 1.
- Initializing the device restores the customized settings to the factory settings. Write down your settings in advance and reconfigure the settings after initialization.



JIG FOR SERVICING

Use the following jigs (extension cable kit) when repairing the PCBs.
Order with your dealer for the jigs your dealer if necessary.

8U-110084S ： EXTENSION UNIT KIT　　：　　1 Sets

(See JIG FOR SERVICING)

ELECTRICAL

SCHEMATIC DIAGRAMS

PRINTED CIRCUIT BOARDS

LEVEL DIAGRAM

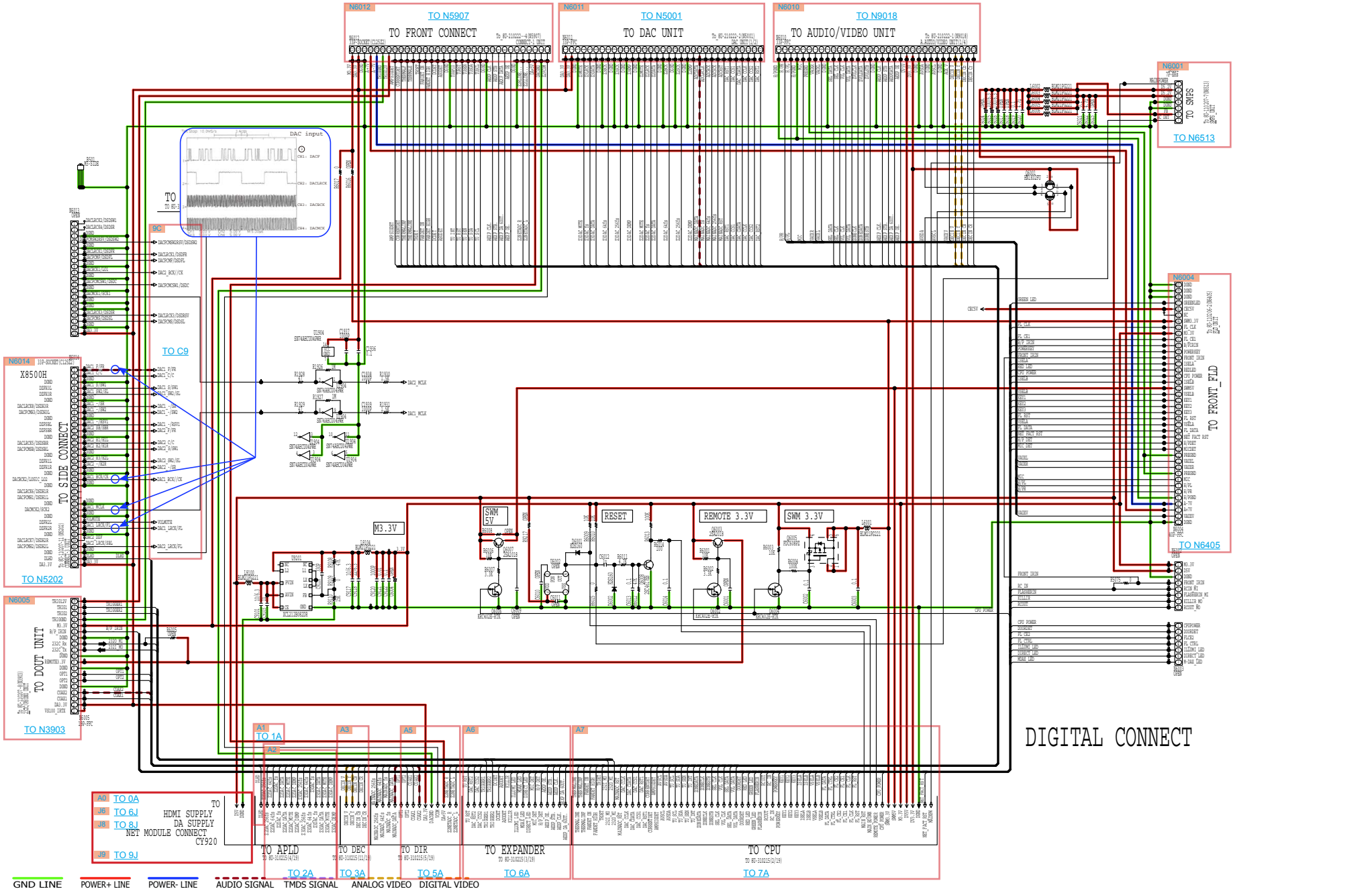
BLOCK DIAGRAM

POWER DIAGRAM

SEMICONDUCTORS

SCH01_DIGITAL CONNECT

All Ref.No. has been described in the parts list are four digits.
But there are less than four digits of printed Ref.No. on the PCB, and they have become four digits after the header by adding "0" in the parts list.



SCH02_MAIN CPU

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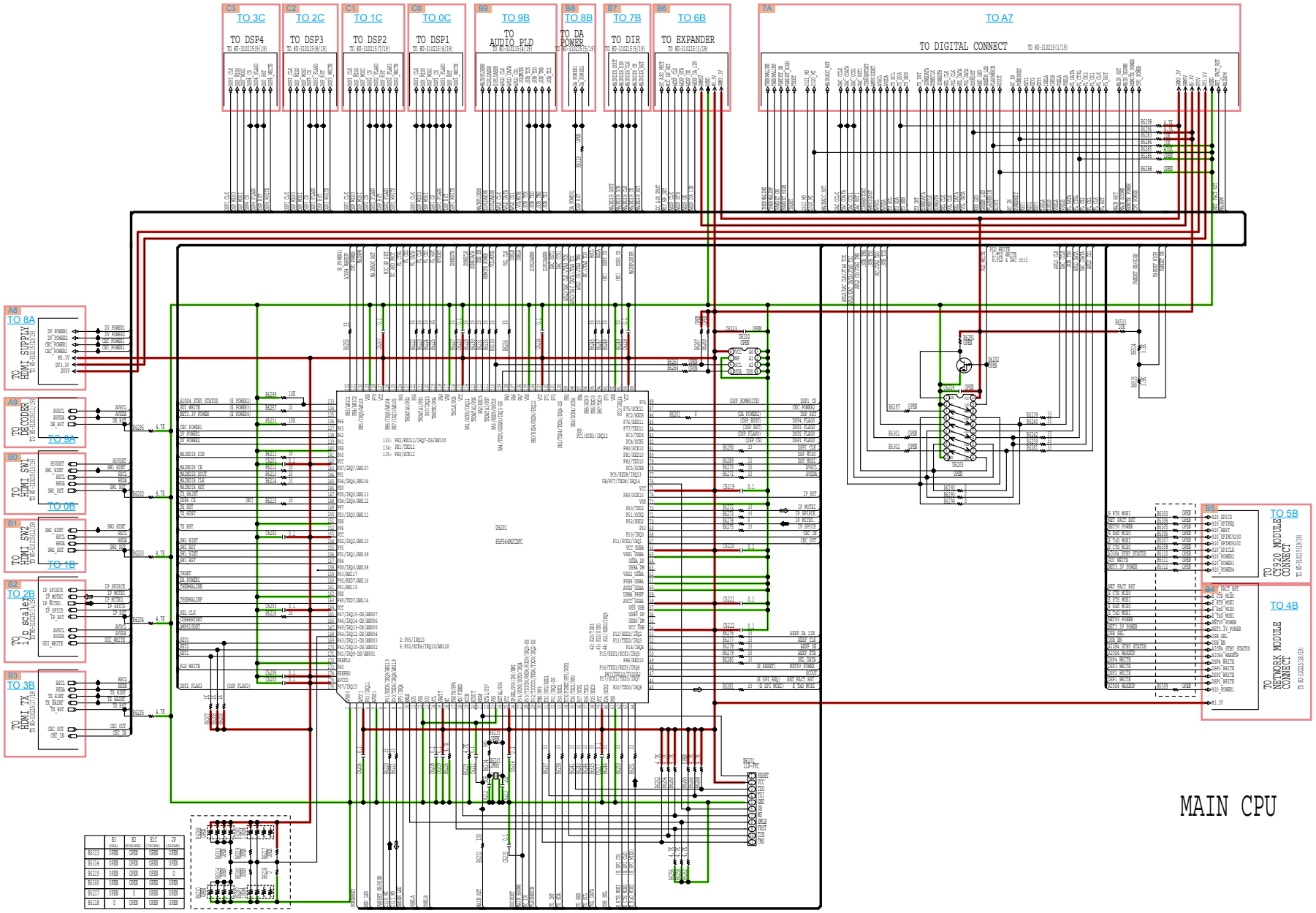

GND LINE POWER+ LINE POWER- LINE AUDIO SIGNAL TMDS SIGNAL ANALOG VIDEO DIGITAL VIDEO

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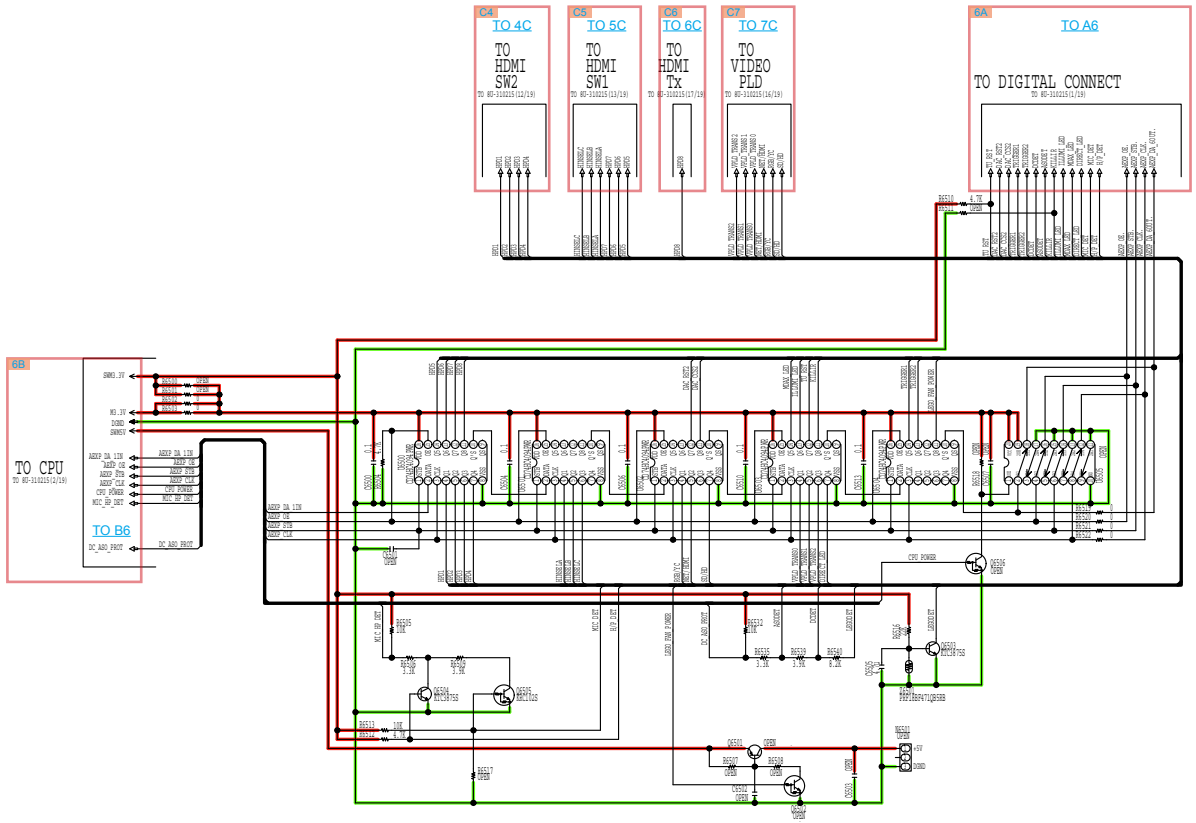

EXPANDER

GND LINE POWER+ LINE POWER- LINE AUDIO SIGNAL TMDS SIGNAL ANALOG VIDEO DIGITAL VIDEO

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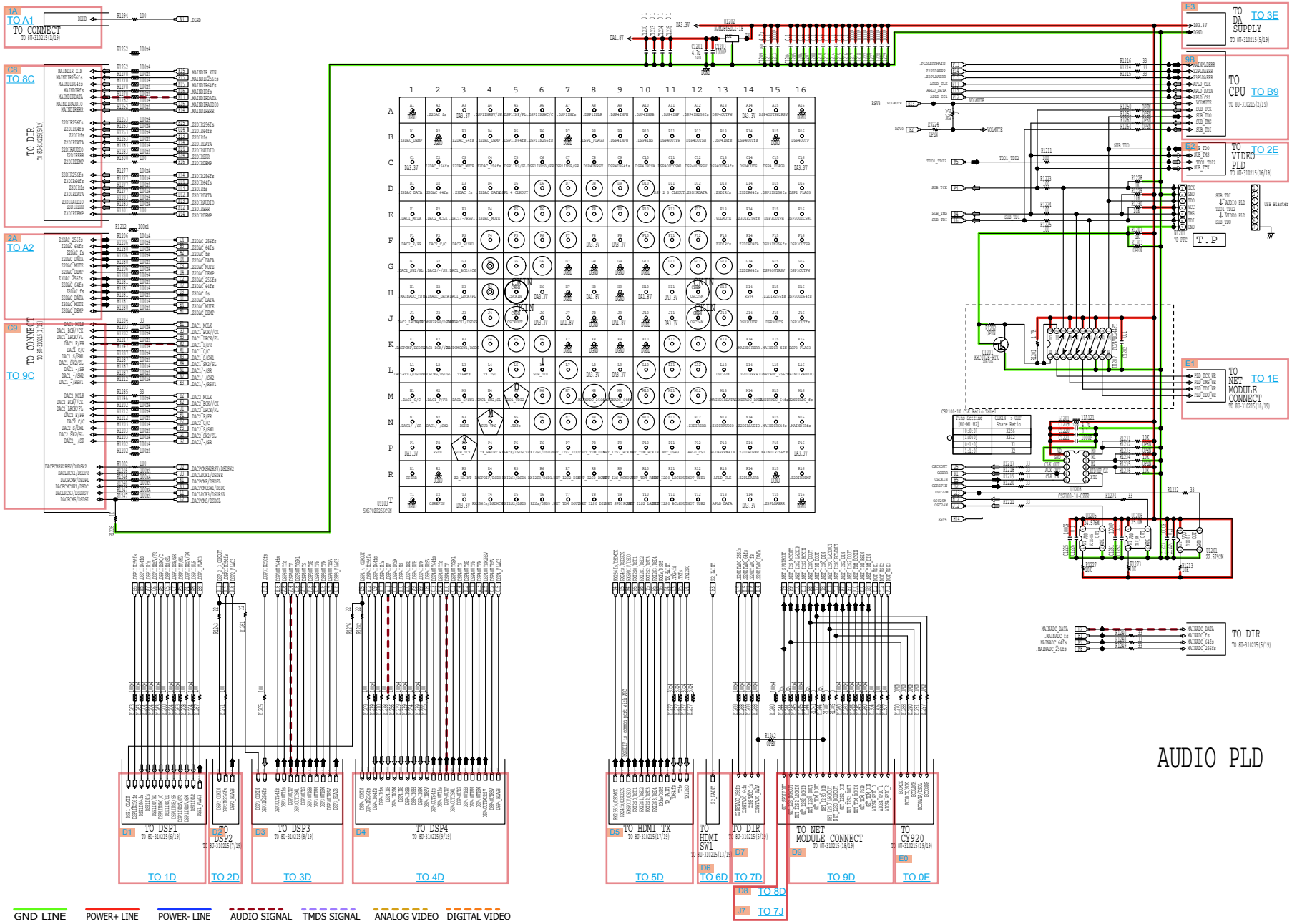

SCH05_DIR DA SUPPLY

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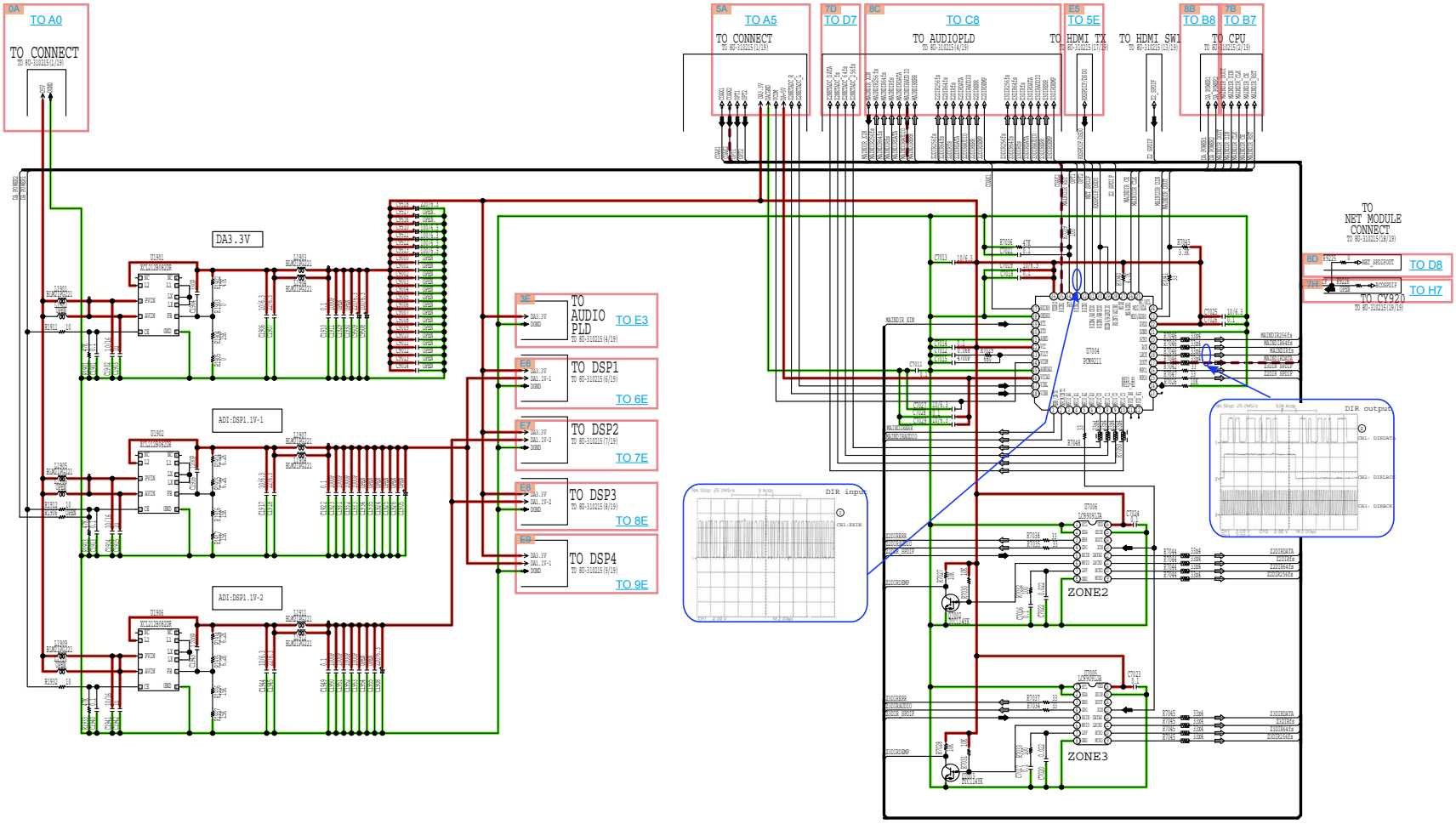

DIR/DA SUPPLY

GND LINE POWER+ LINE POWER- LINE AUDIO SIGNAL TMDS SIGNAL ANALOG VIDEO DIGITAL VIDEO

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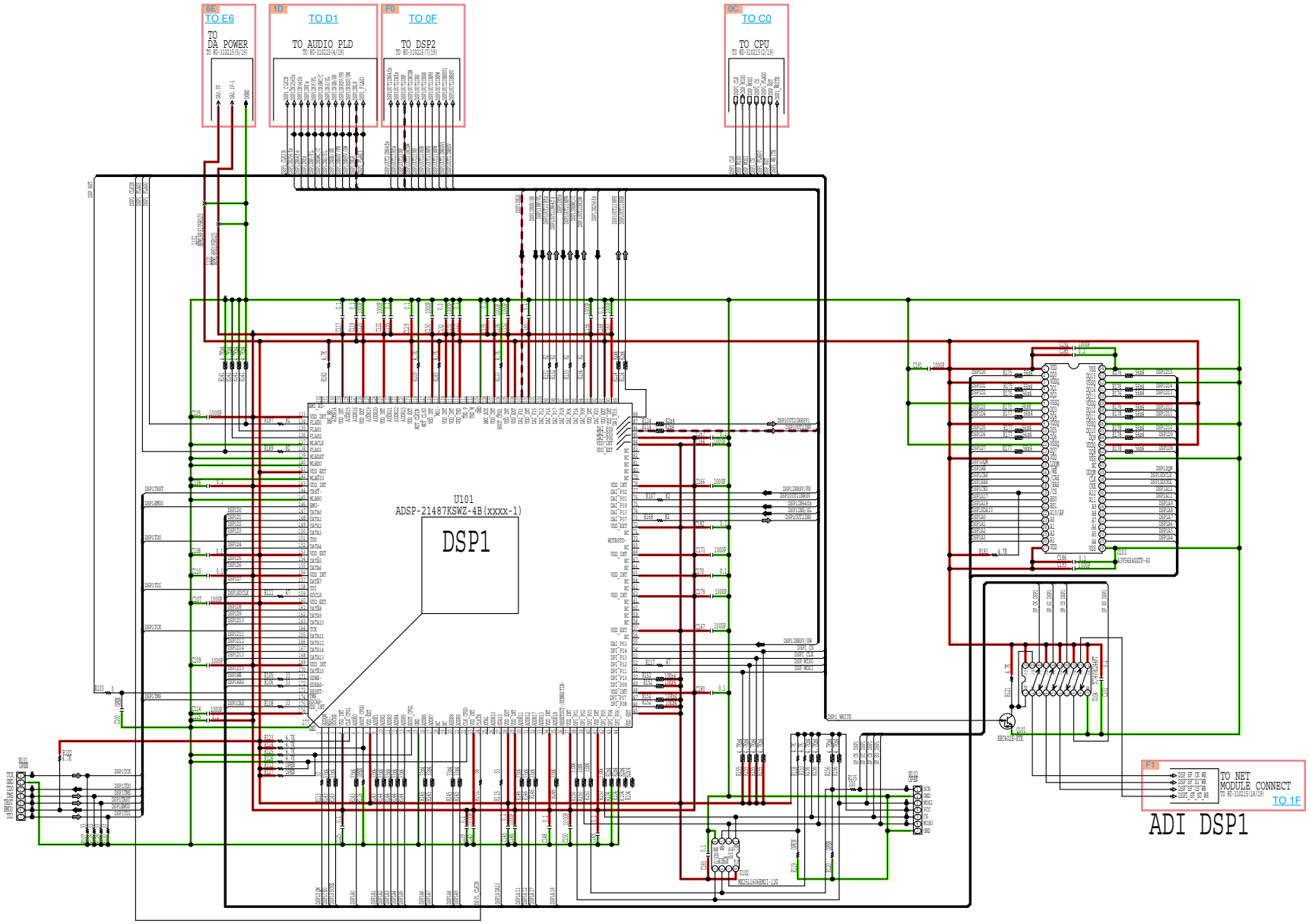

GND LINE POWER+ LINE POWER- LINE AUDIO SIGNAL TMDS SIGNAL ANALOG VIDEO DIGITAL VIDEO

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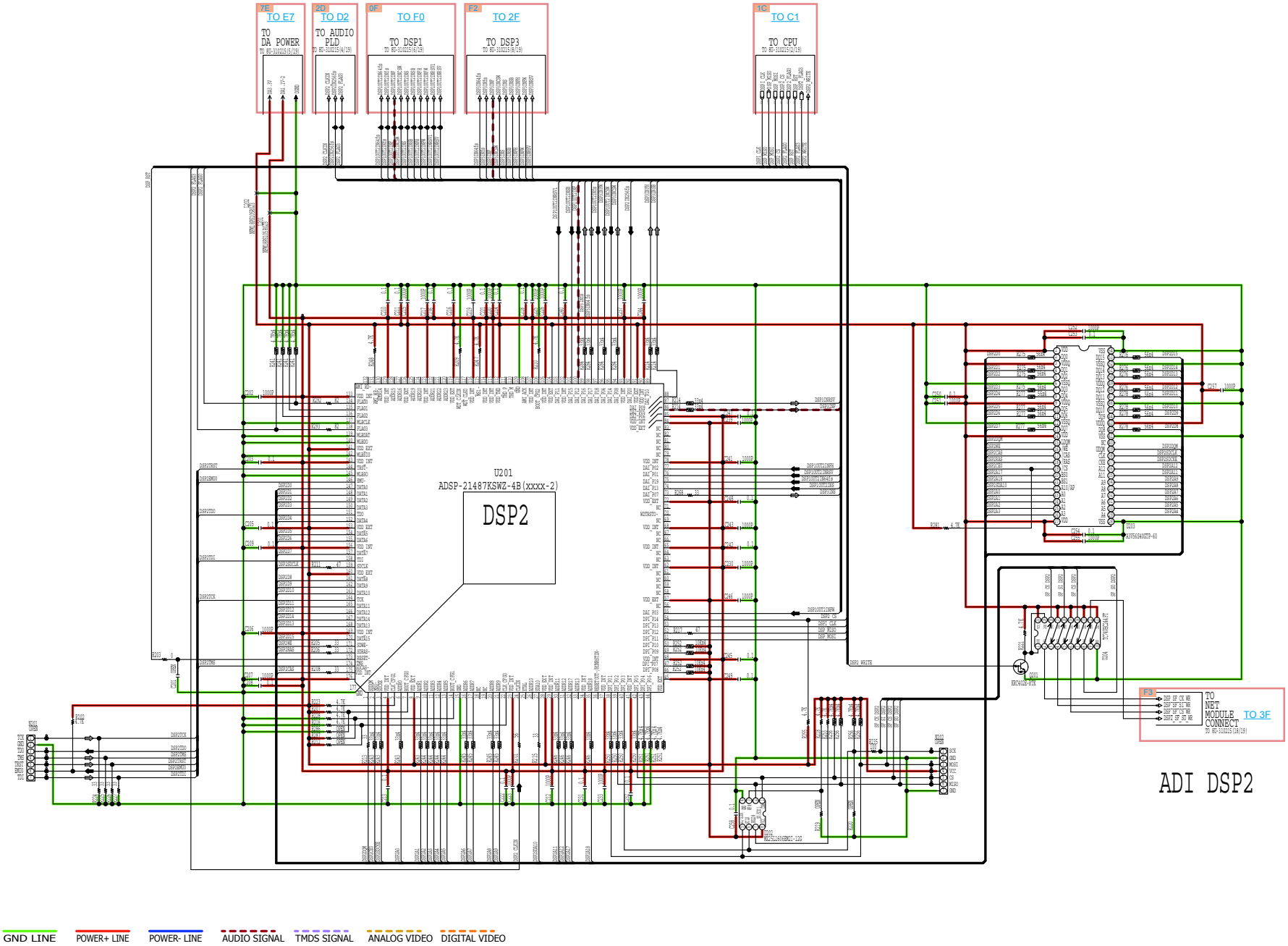

GND LINE POWER+ LINE POWER- LINE AUDIO SIGNAL TMDS SIGNAL ANALOG VIDEO DIGITAL VIDEO

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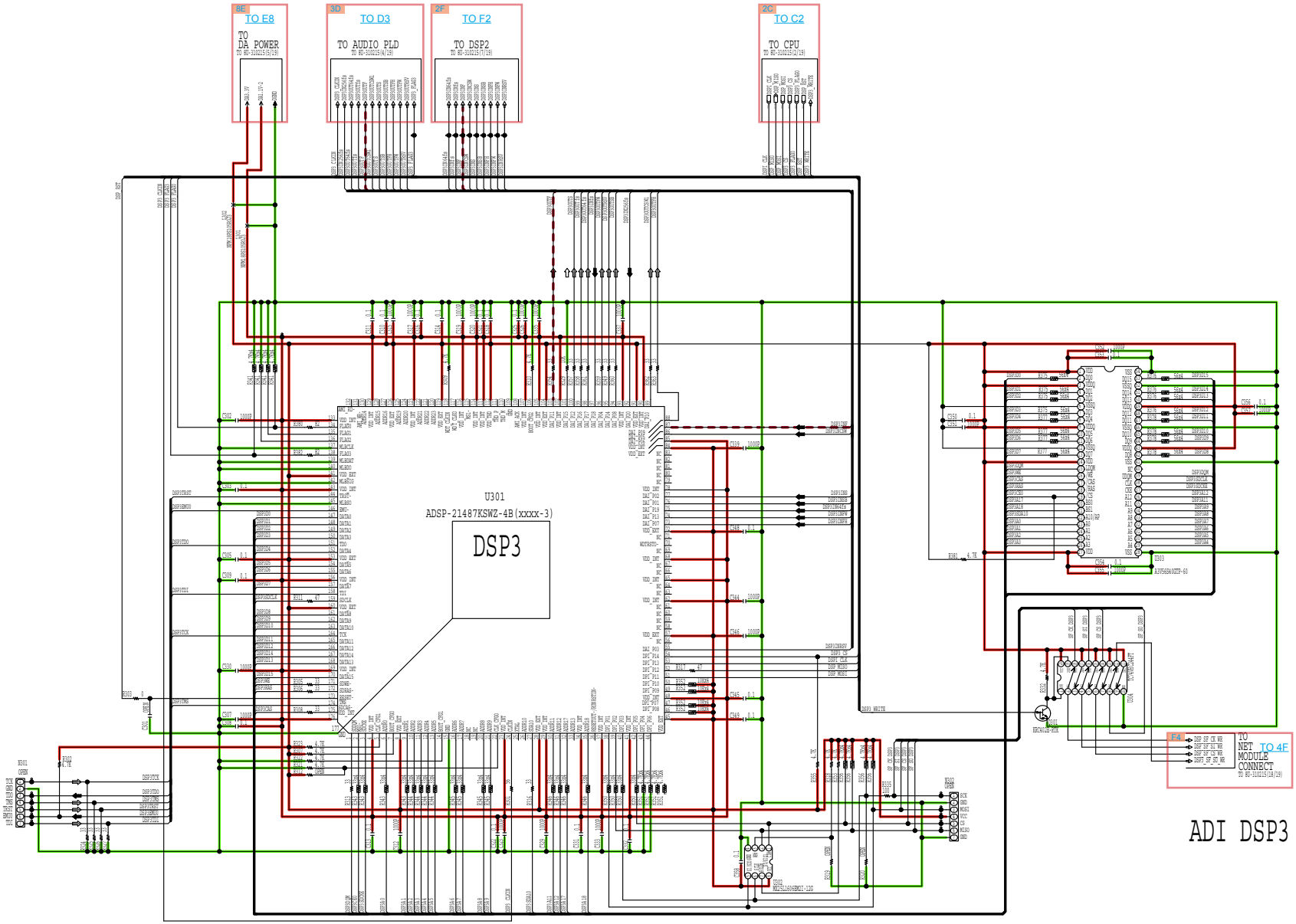

GND LINE POWER+ LINE POWER- LINE AUDIO SIGNAL TMDS SIGNAL ANALOG VIDEO DIGITAL VIDEO

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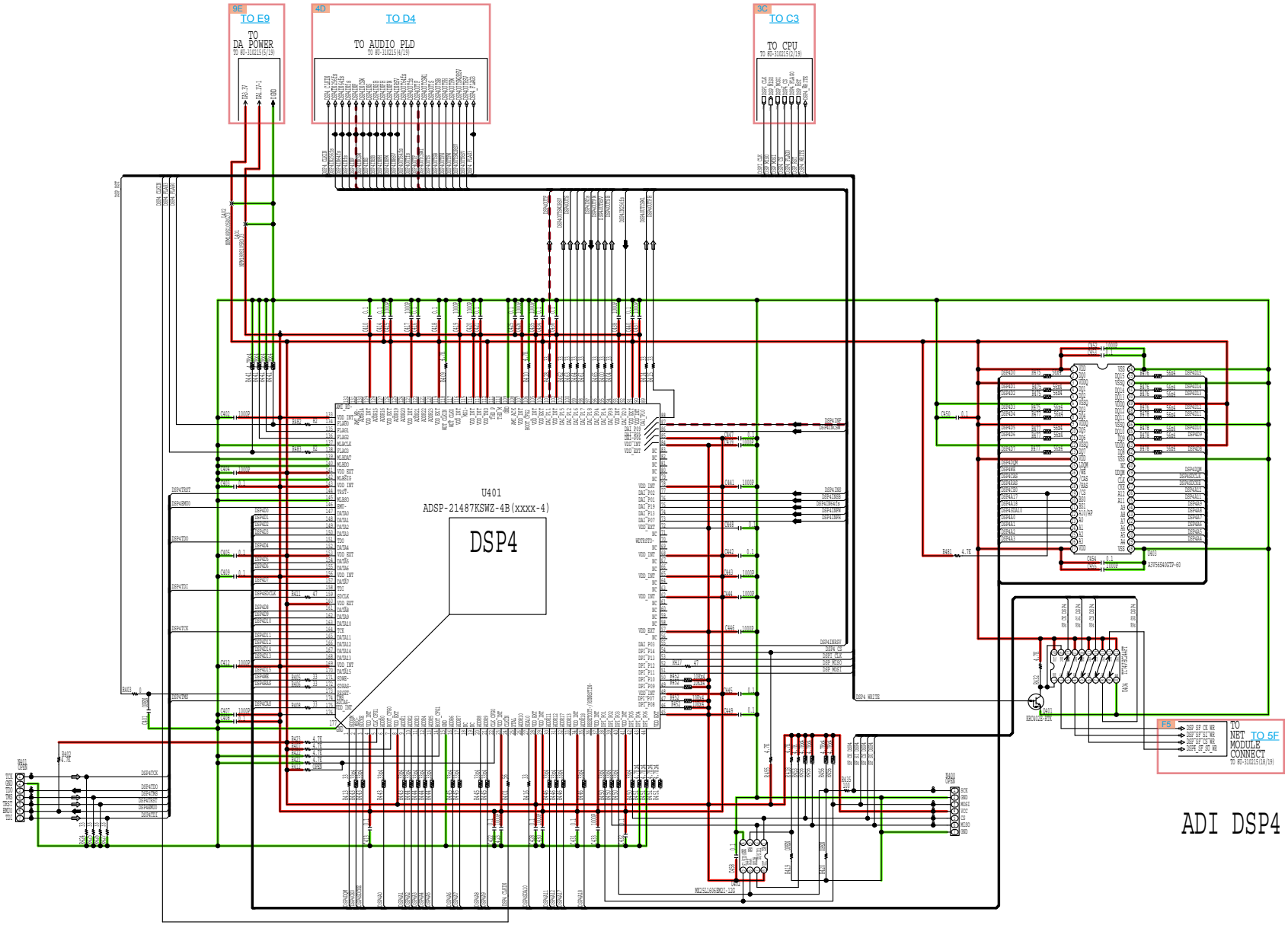

GND LINE POWER+ LINE POWER- LINE AUDIO SIGNAL TMDS SIGNAL ANALOG VIDEO DIGITAL VIDEO

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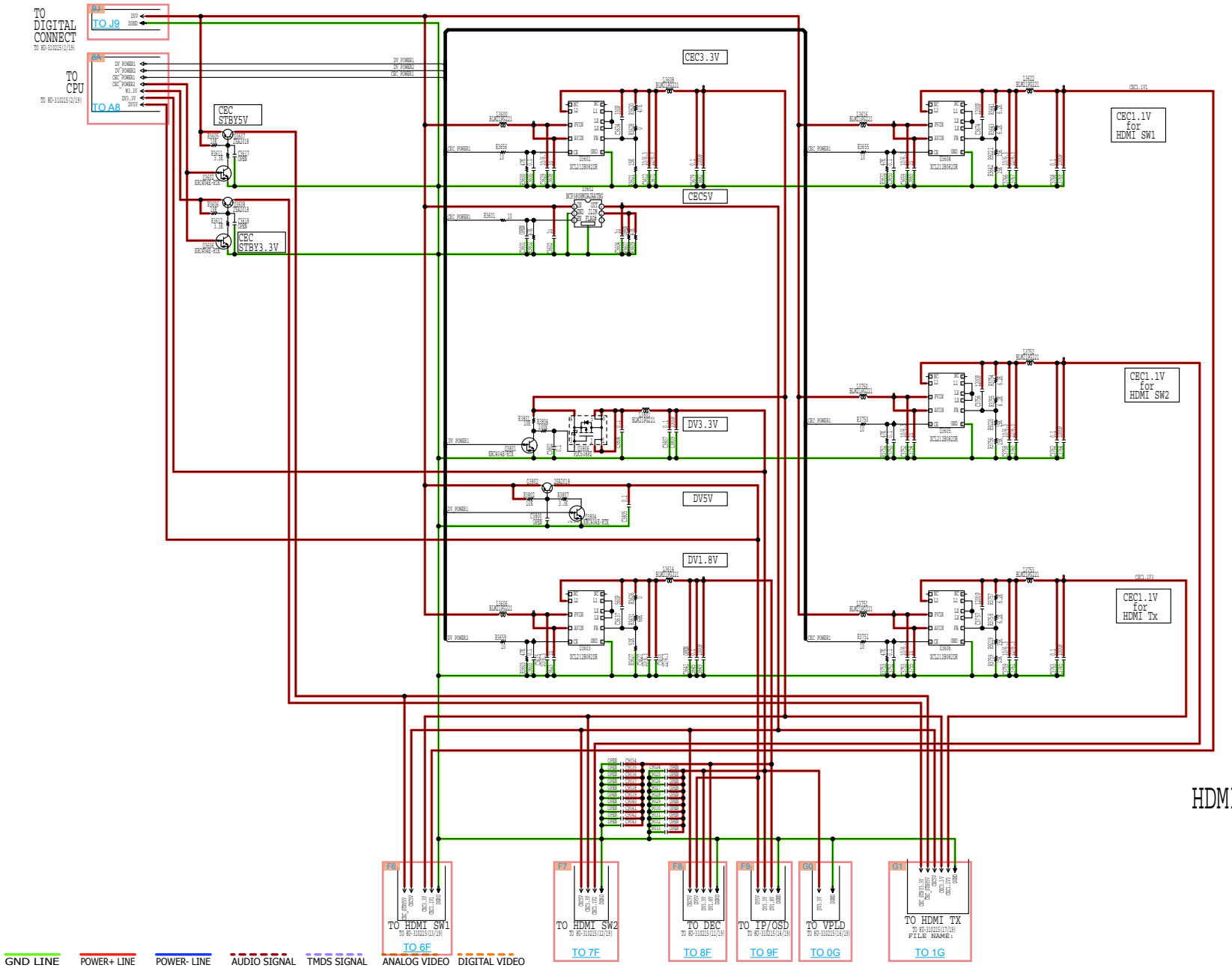

HDMI SUPPLY

All Ref.No. has been described in the parts list are four digits.
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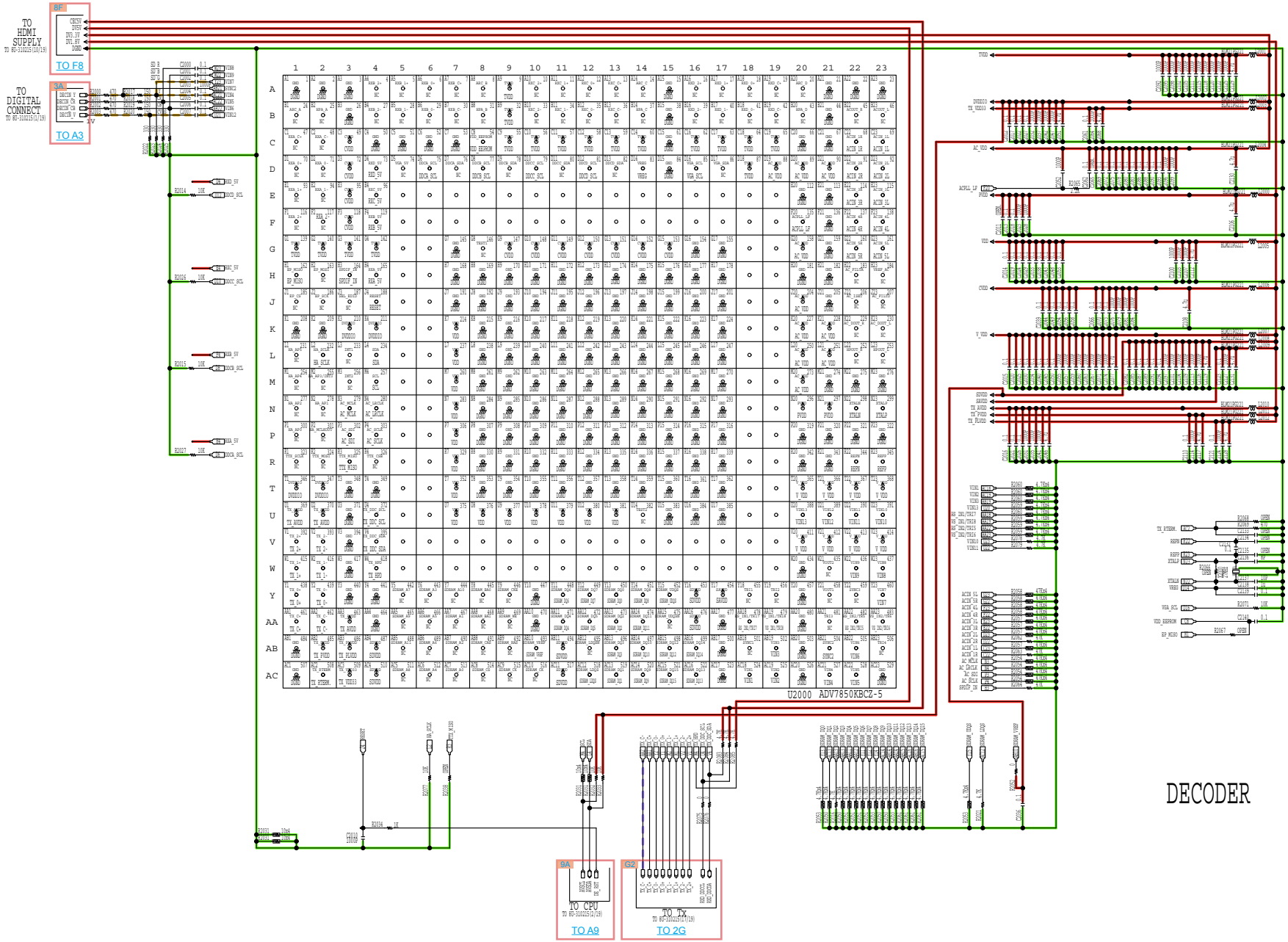

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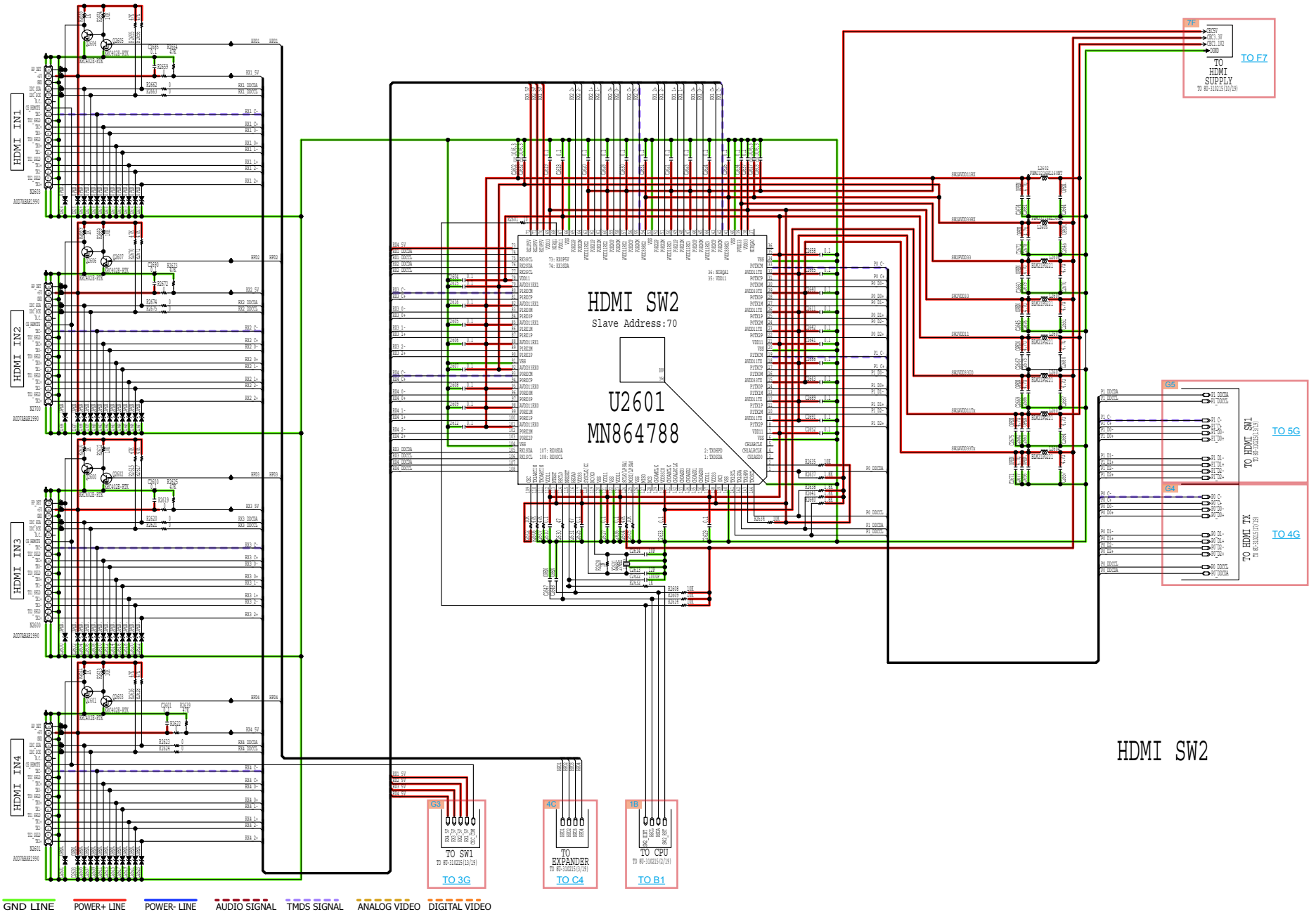

HDMI SW2

SCH13_HDMI SW1

All Ref.No. has been described in the parts list are four digits.
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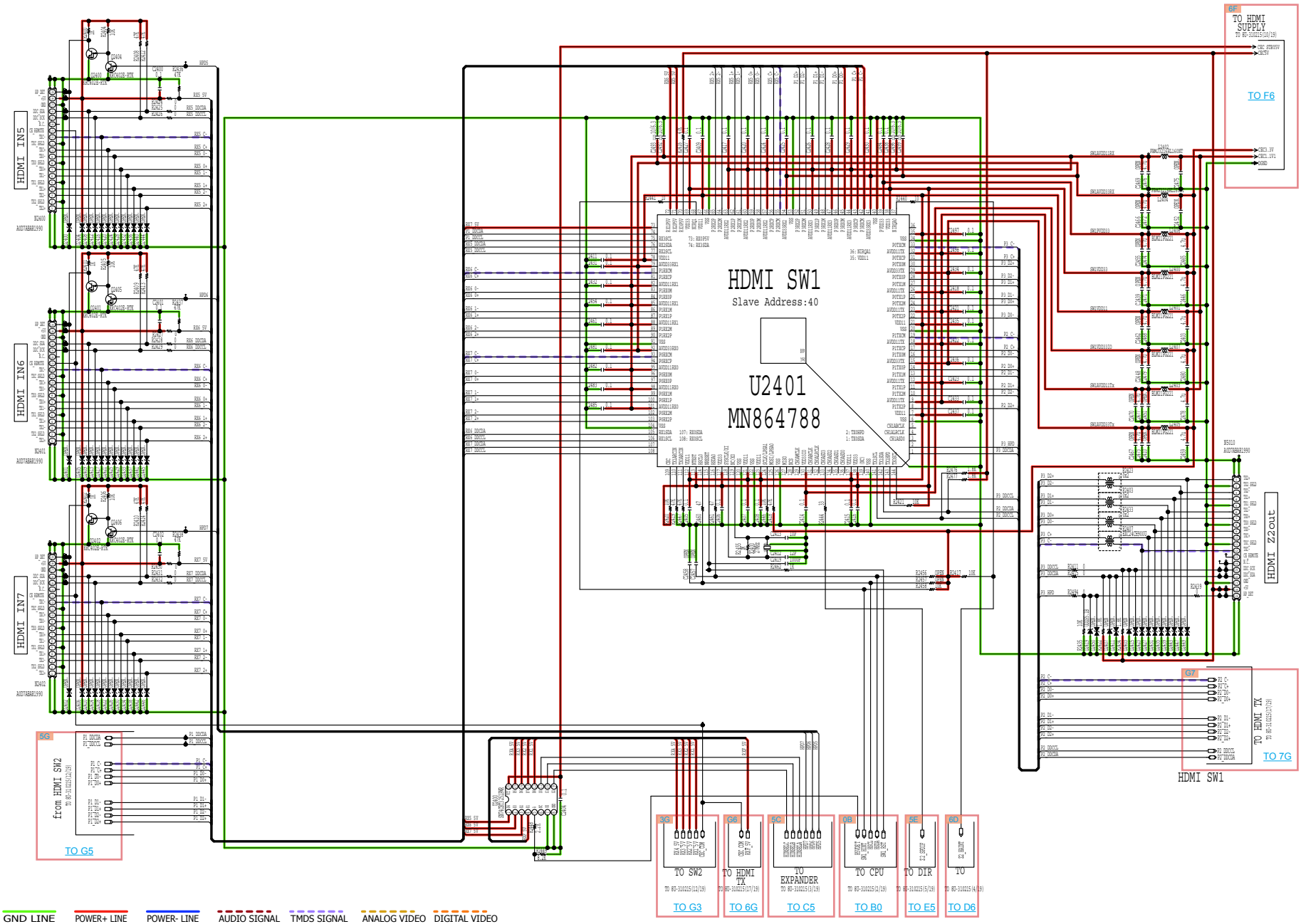

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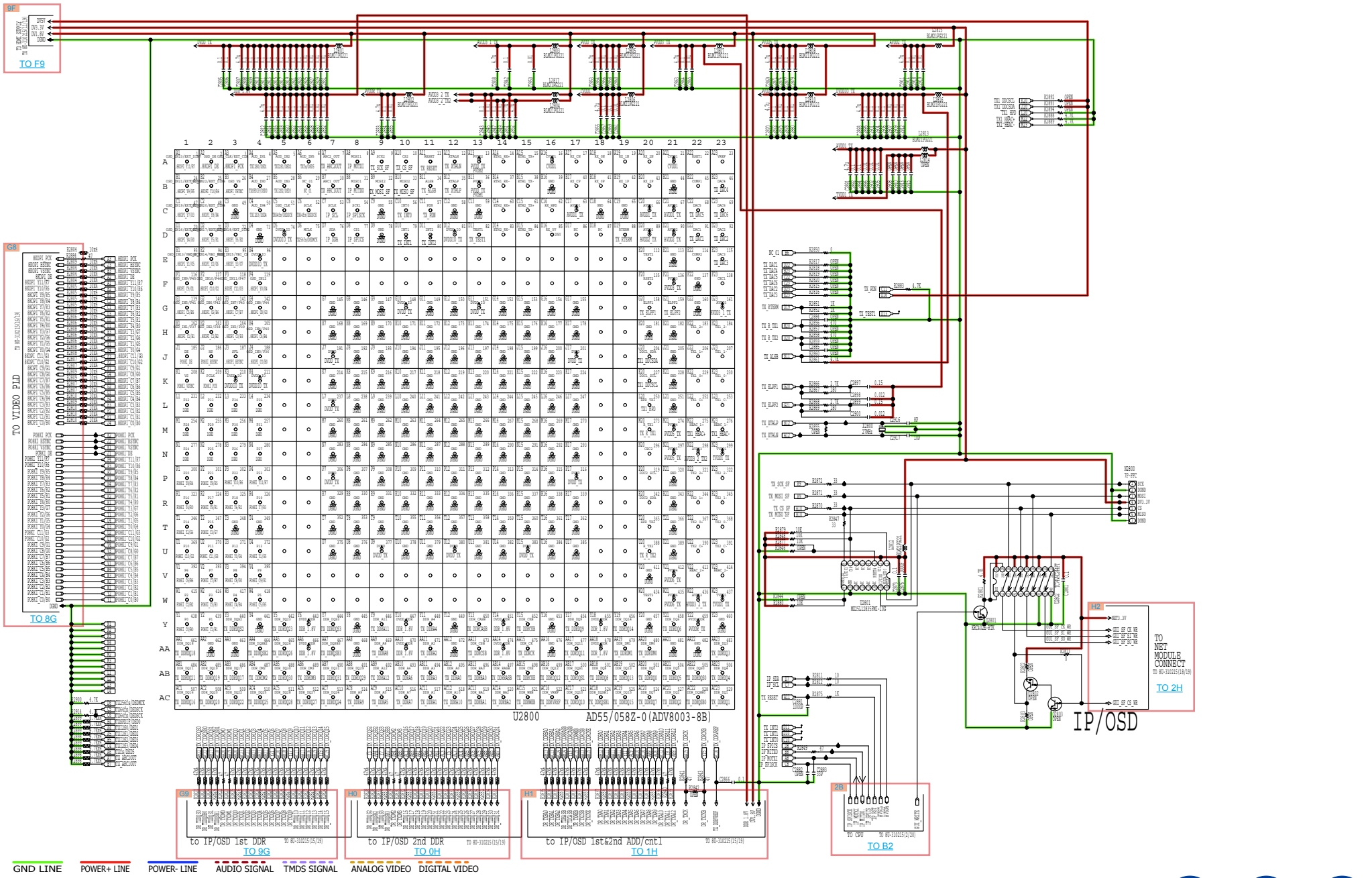

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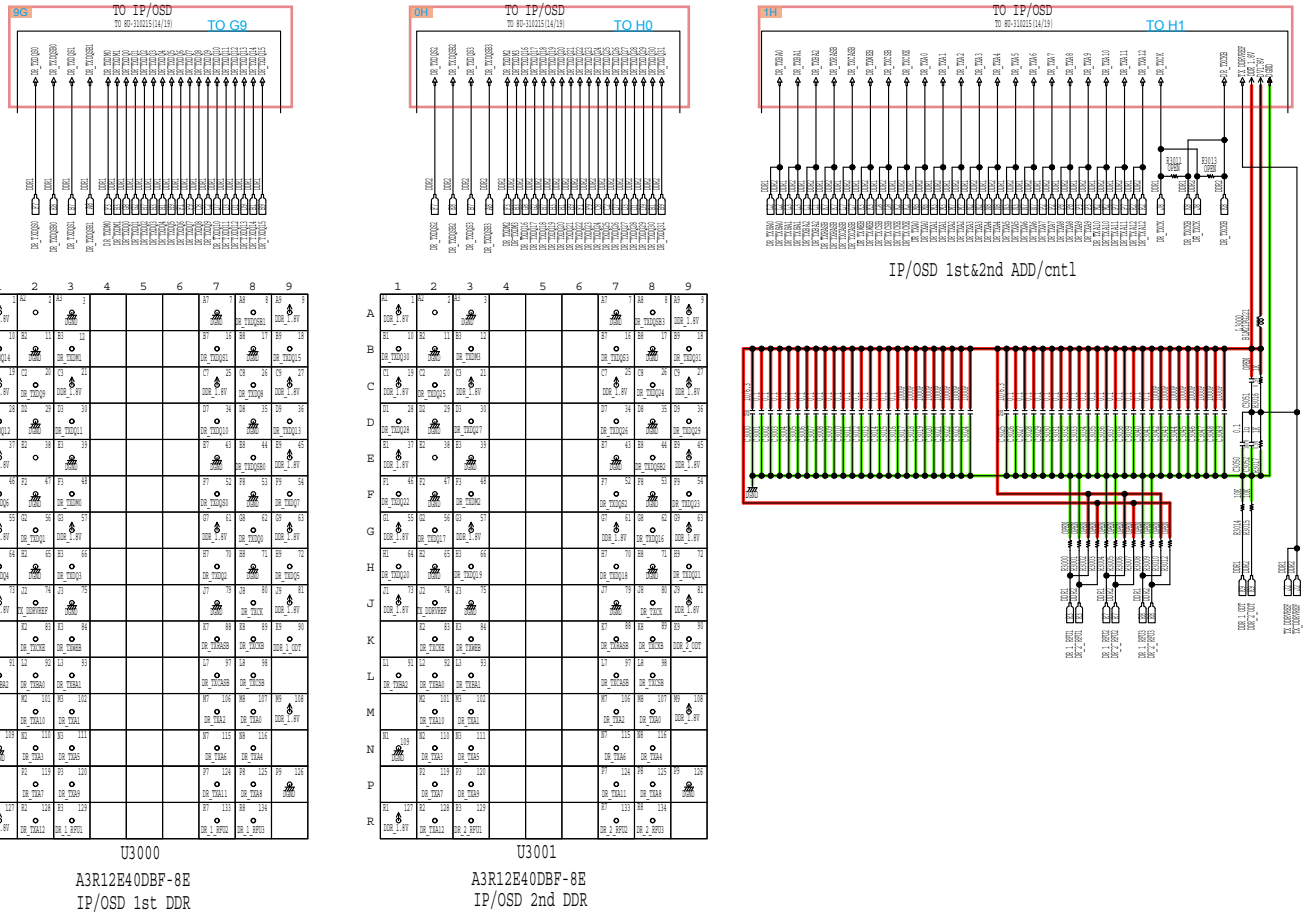

IP/OSD DDR

GND LINE POWER+ LINE POWER- LINE AUDIO SIGNAL TMDS SIGNAL ANALOG VIDEO DIGITAL VIDEO

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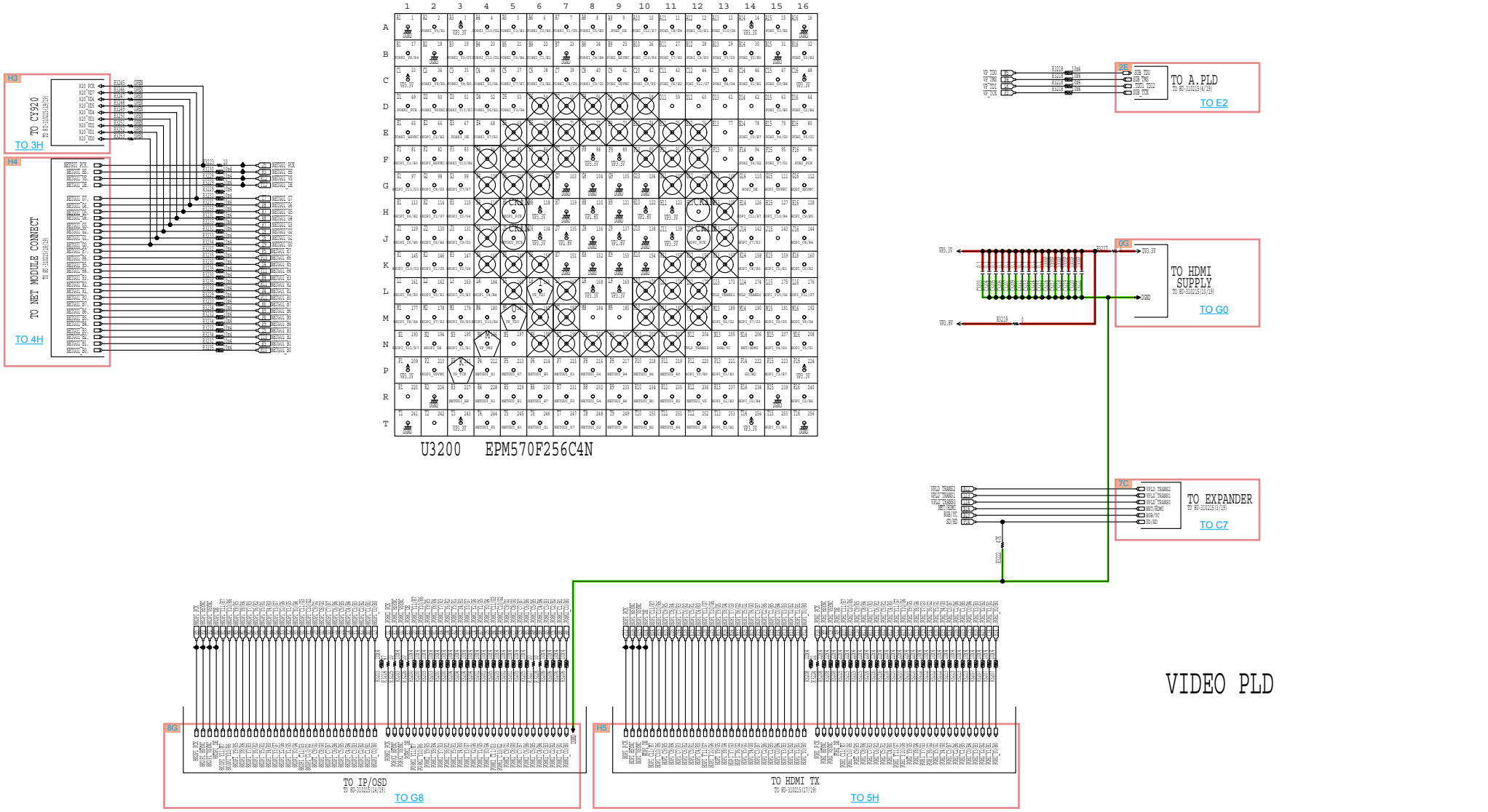

SCH17_HDMI TX

All Ref.No. has been described in the parts list are four digits.
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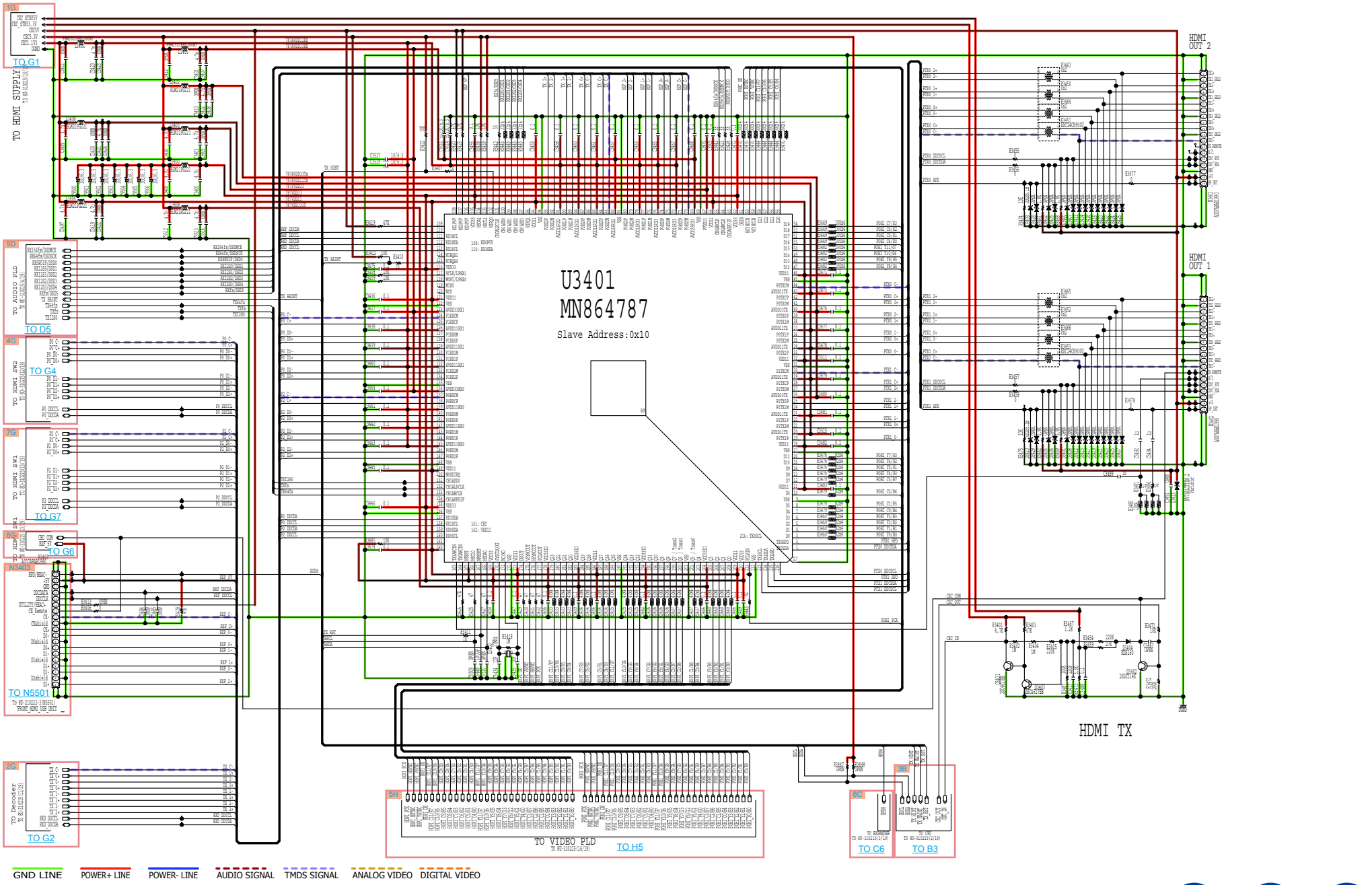

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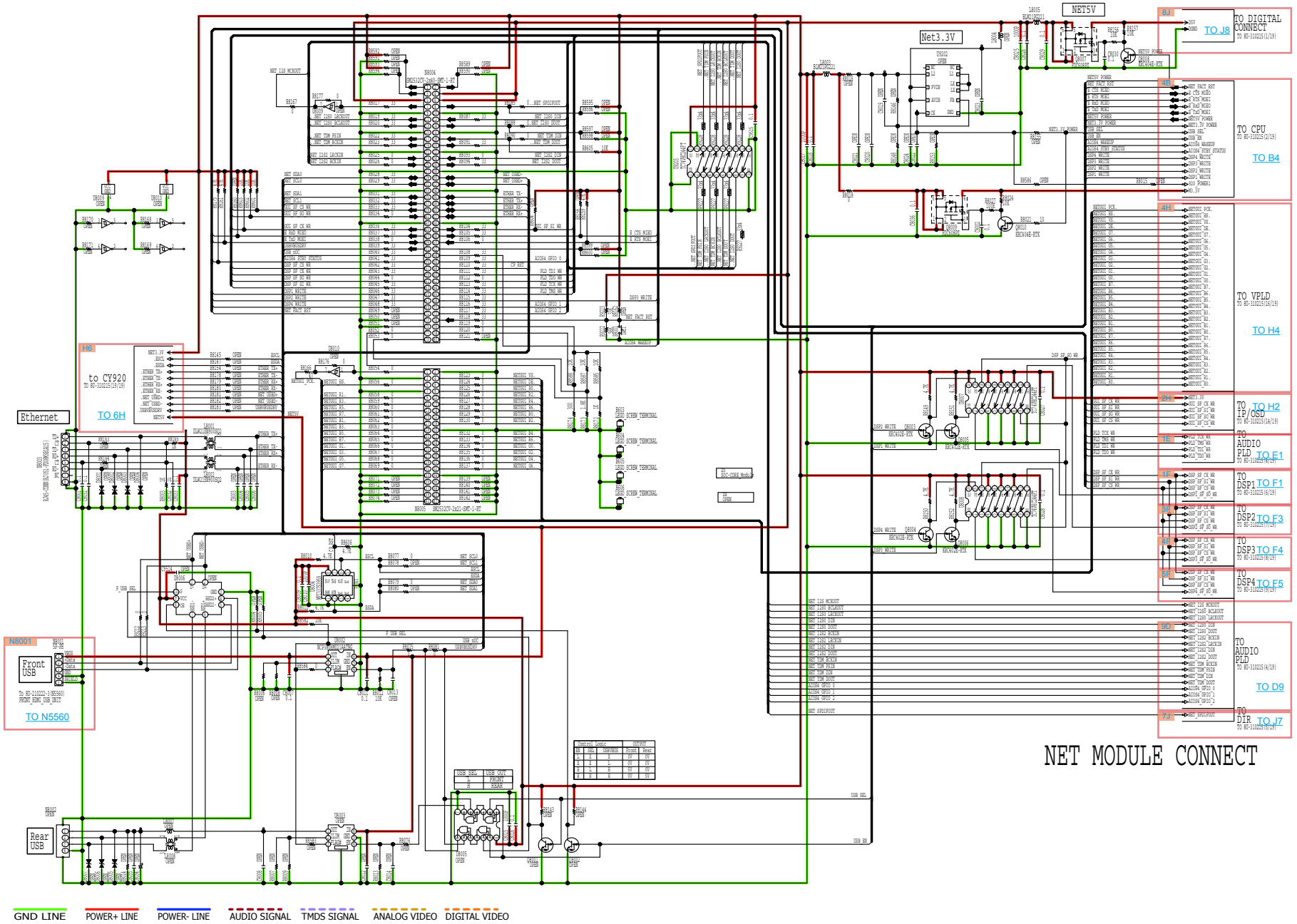
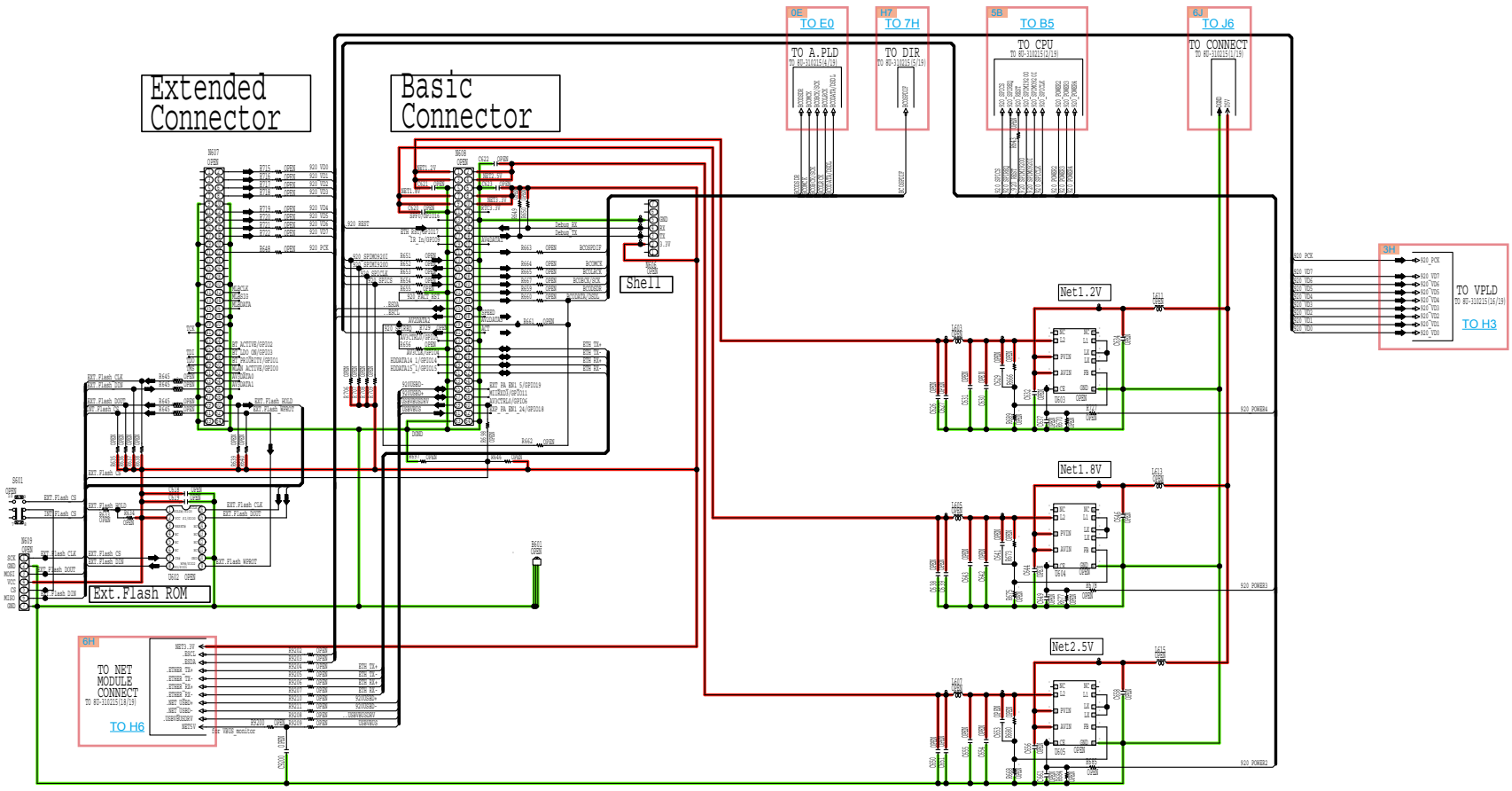


All Ref.No. has been described in the parts list are four digits.
But there are less than four digits of printed Ref.No. on the PCB, and they have become four digits after the header by adding "0" in the parts list.



CY920(all OPEN)

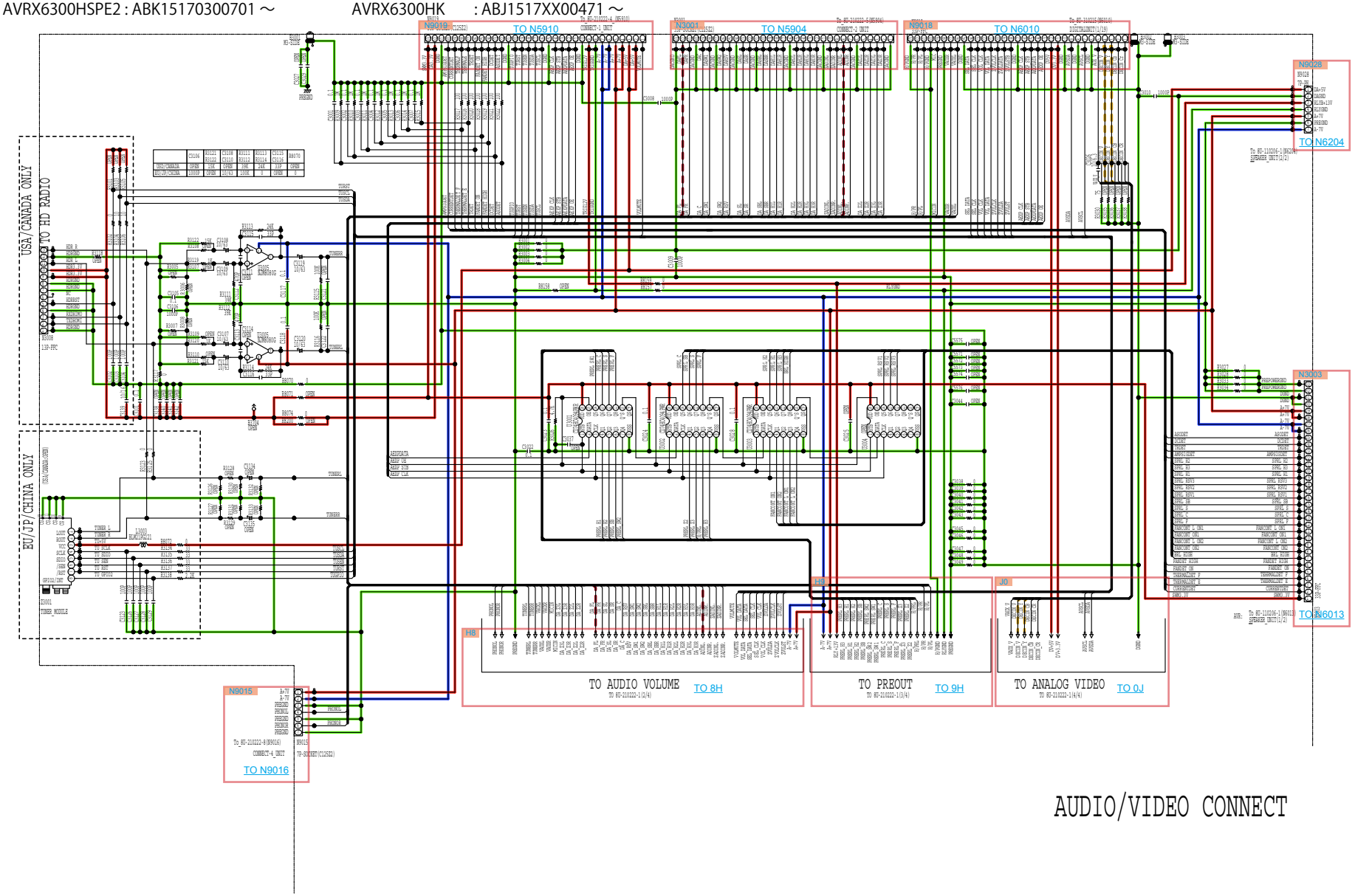
GND LINE POWER+ LINE POWER- LINE AUDIO SIGNAL TMDS SIGNAL ANALOG VIDEO DIGITAL VIDEO

SCH20_AUDIO/VIDEO CONNECT

All Ref.No. has been described in the parts list are four digits.
But there are less than four digits of printed Ref.No. on the PCB, and they have become four digits after the header by adding "0" in the parts list.

⚠5 See "SCHEMATIC DIAGRAMS_Appendix" for products with the serial numbers below [SCH20_AUDIO/VIDEO CONNECT]

AVRX6300HBKE3 : AMU15170302861 ～　　AVRX6300HBKE2 : ABH15170302511 ～
AVRX6300HSPE2 : ABK15170300701 ～　　AVRX6300HK　　: ABJ1517XX00471 ～

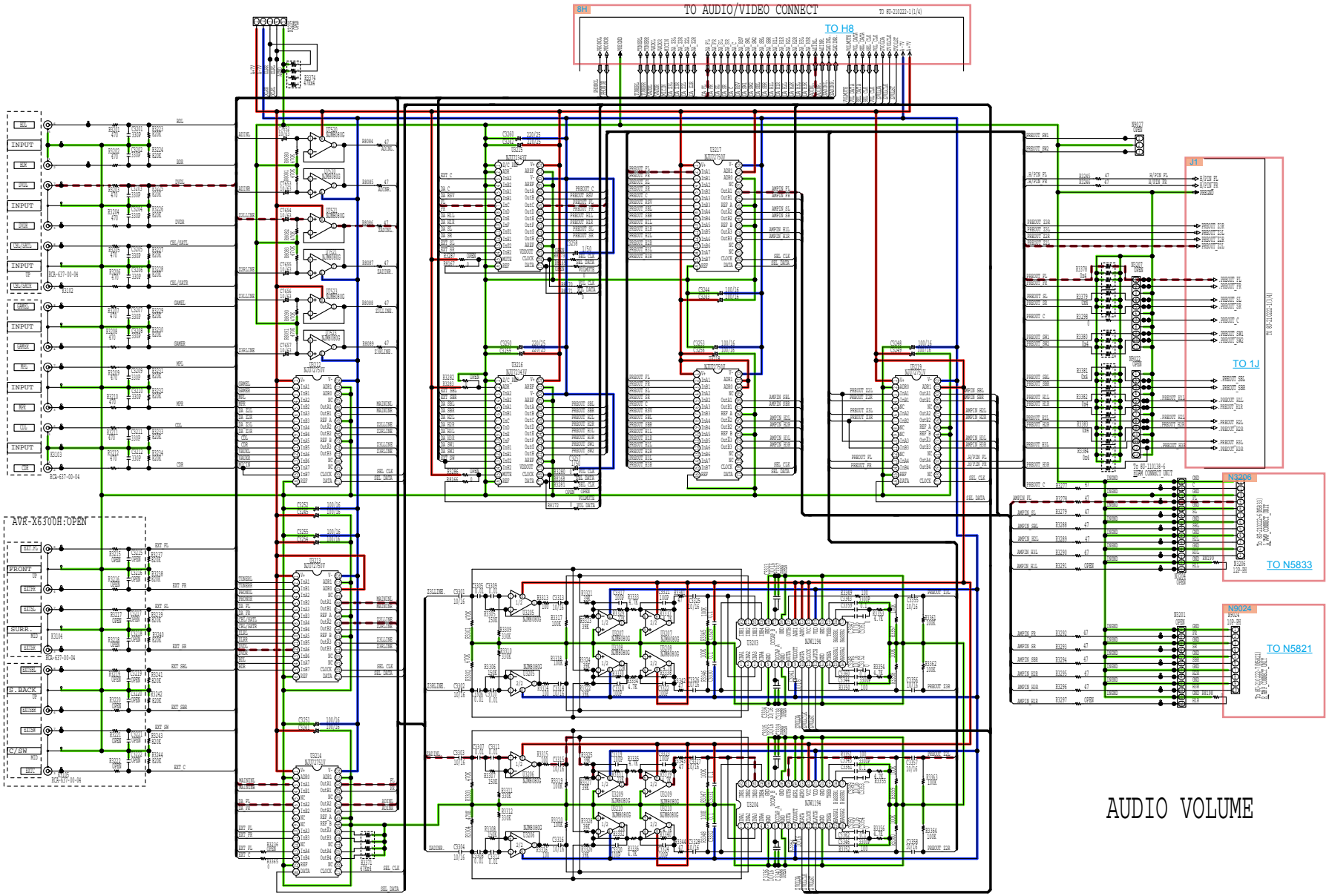


AUDIO/VIDEO CONNECT

GND LINE　POWER+ LINE　POWER- LINE　AUDIO SIGNAL　TMDS SIGNAL　ANALOG VIDEO　DIGITAL VIDEO

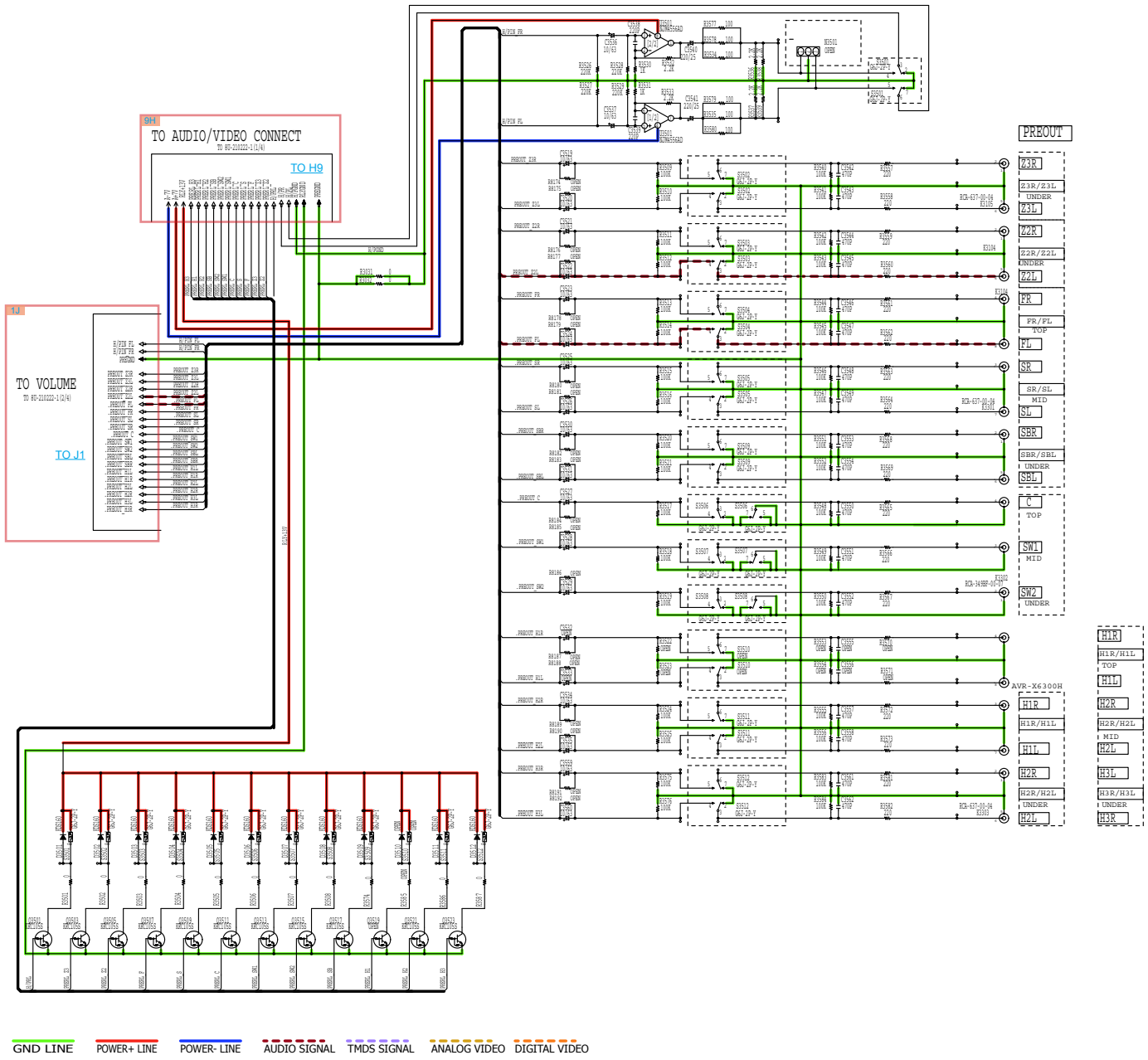
SCH21_AUDIO VOLUME

All Ref.No. has been described in the parts list are four digits.
But there are less than four digits of printed Ref.No. on the PCB, and they have become four digits after the header by adding "0" in the parts list.



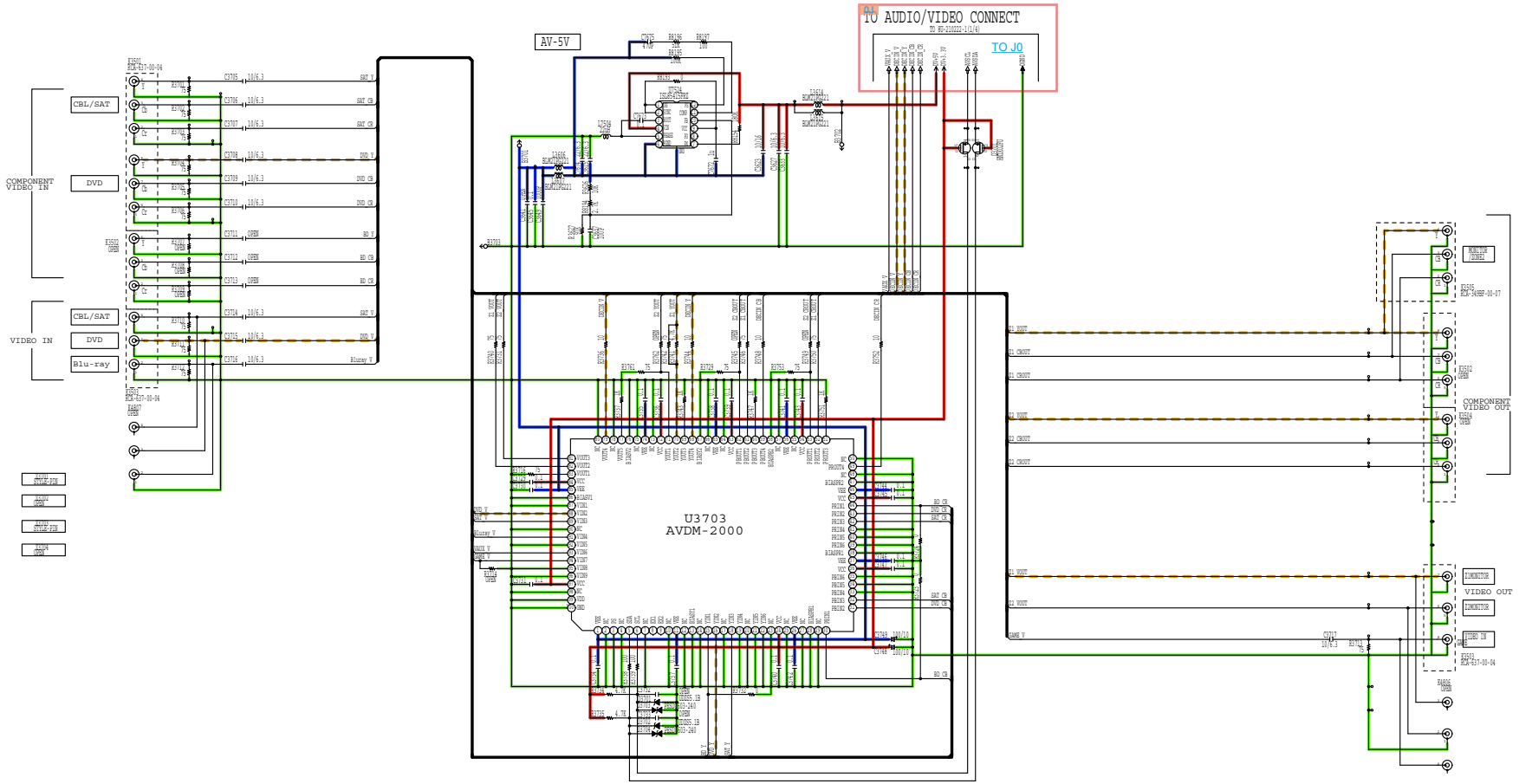
GND LINE POWER+ LINE POWER- LINE AUDIO SIGNAL TMDS SIGNAL ANALOG VIDEO DIGITAL VIDEO

All Ref.No. has been described in the parts list are four digits.
But there are less than four digits of printed Ref.No. on the PCB, and they have become four digits after the header by adding "0" in the parts list.



PREOUT

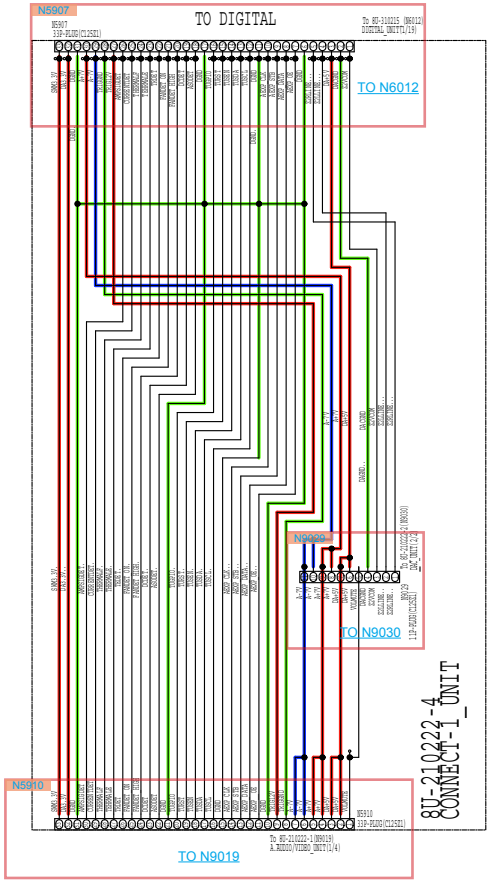
All Ref.No. has been described in the parts list are four digits.
But there are less than four digits of printed Ref.No. on the PCB, and they have become four digits after the header by adding "0" in the parts list.

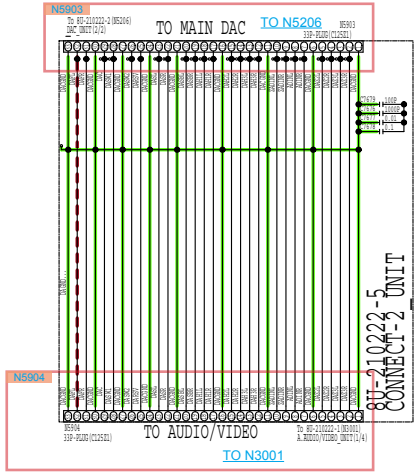


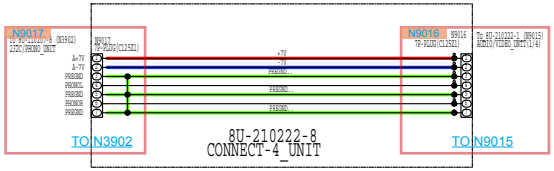
VIDEO SELECTOR

GND LINE POWER+ LINE POWER- LINE AUDIO SIGNAL TMDS SIGNAL ANALOG VIDEO DIGITAL VIDEO

All Ref.No. has been described in the parts list are four digits.
But there are less than four digits of printed Ref.No. on the PCB, and they have become four digits after the header by adding "0" in the parts list.



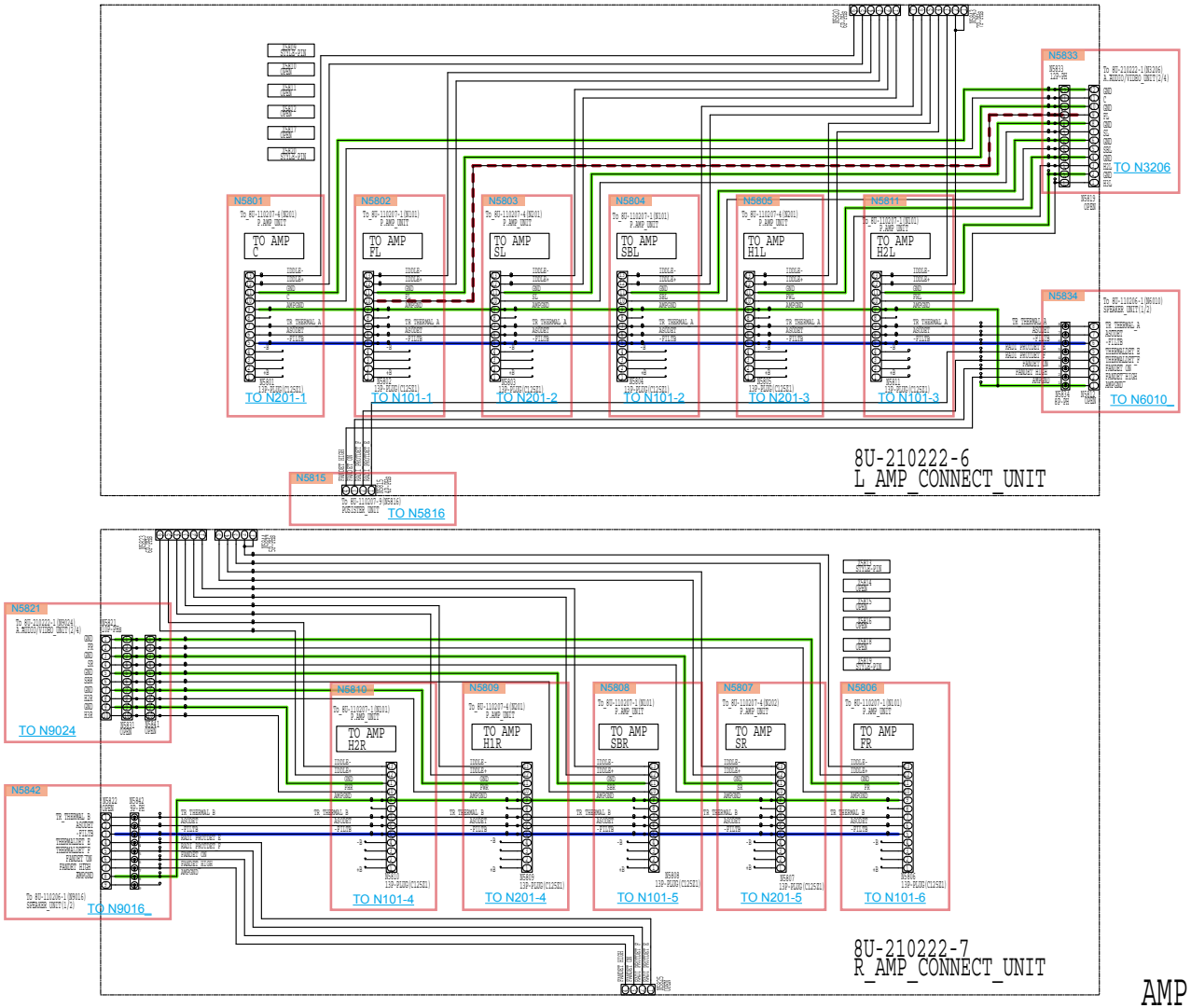




CONNECT

GND LINE POWER+ LINE POWER- LINE AUDIO SIGNAL TMDS SIGNAL ANALOG VIDEO DIGITAL VIDEO

All Ref.No. has been described in the parts list are four digits.
But there are less than four digits of printed Ref.No. on the PCB, and they have become four digits after the header by adding "0" in the parts list.



AMP CONNECT

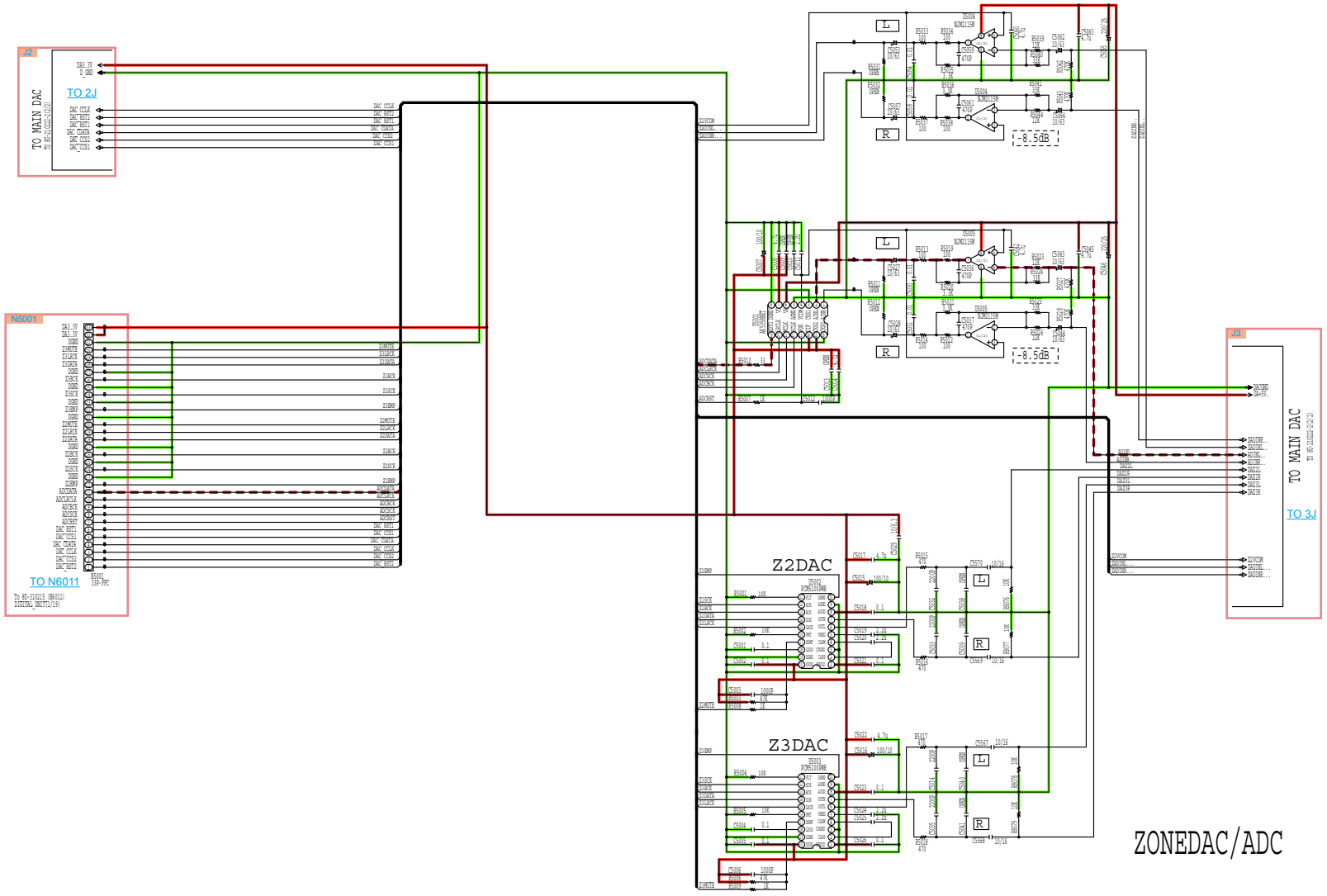
GND LINE POWER+ LINE POWER- LINE AUDIO SIGNAL TMDS SIGNAL ANALOG VIDEO DIGITAL VIDEO

SCH26_ZONEDAC ADC

All Ref.No. has been described in the parts list are four digits.
But there are less than four digits of printed Ref.No. on the PCB, and they have become four digits after the header by adding "0" in the parts list.

⚠5 See "SCHEMATIC DIAGRAMS_Appendix" for products with the serial numbers below [SCH26_ZONEDAC ADC]

AVRX6300HBKE3 : AMU15170302861 ～　　AVRX6300HBKE2 : ABH15170302511 ～
AVRX6300HSPE2 : ABK15170300701 ～　　AVRX6300HK　: ABJ1517XX00471 ～



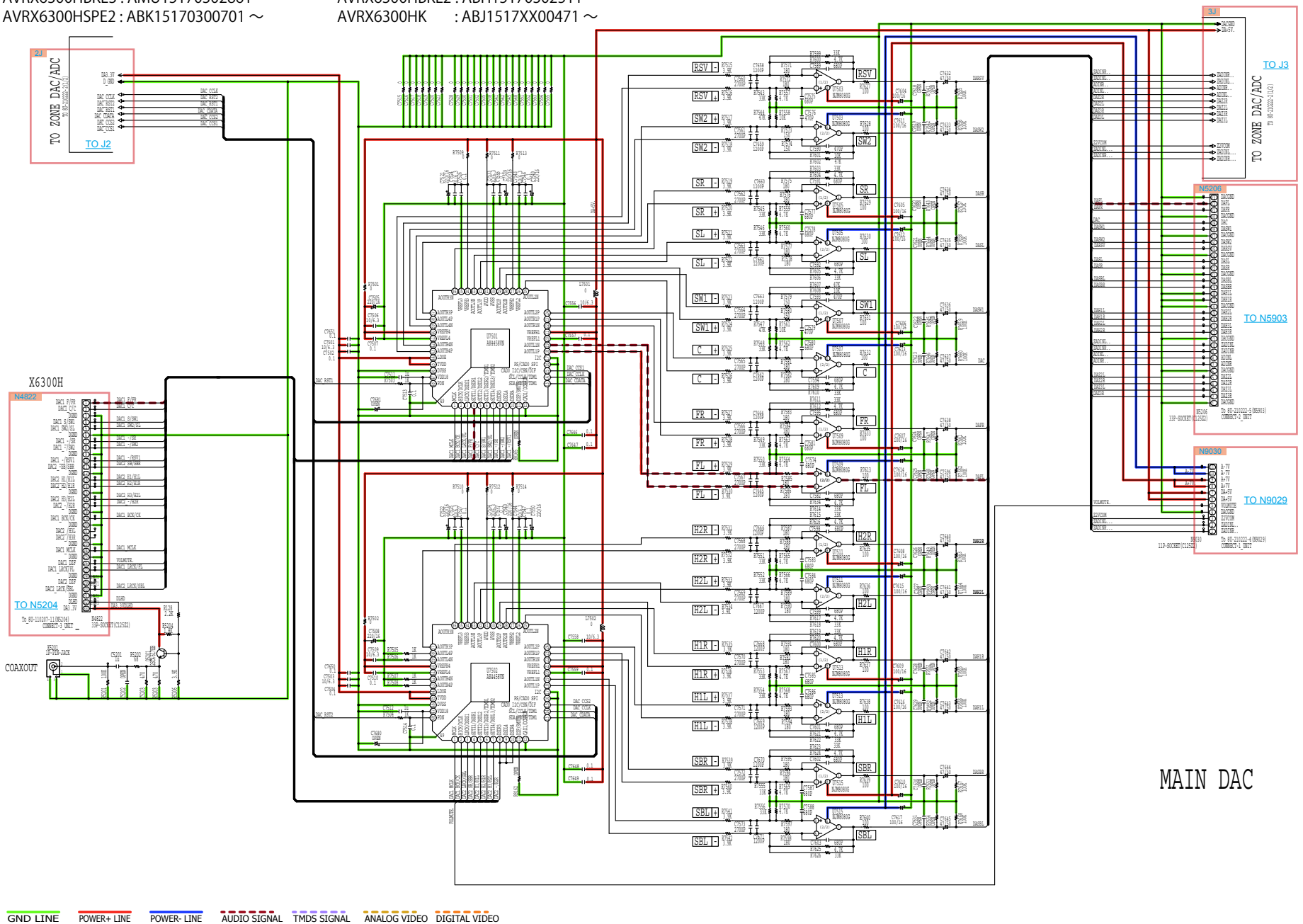
GND LINE　POWER+ LINE　POWER- LINE　AUDIO SIGNAL　TMDS SIGNAL　ANALOG VIDEO　DIGITAL VIDEO

SCH27_MAIN DAC

All Ref.No. has been described in the parts list are four digits.
But there are less than four digits of printed Ref.No. on the PCB, and they have become four digits after the header by adding "0" in the parts list.

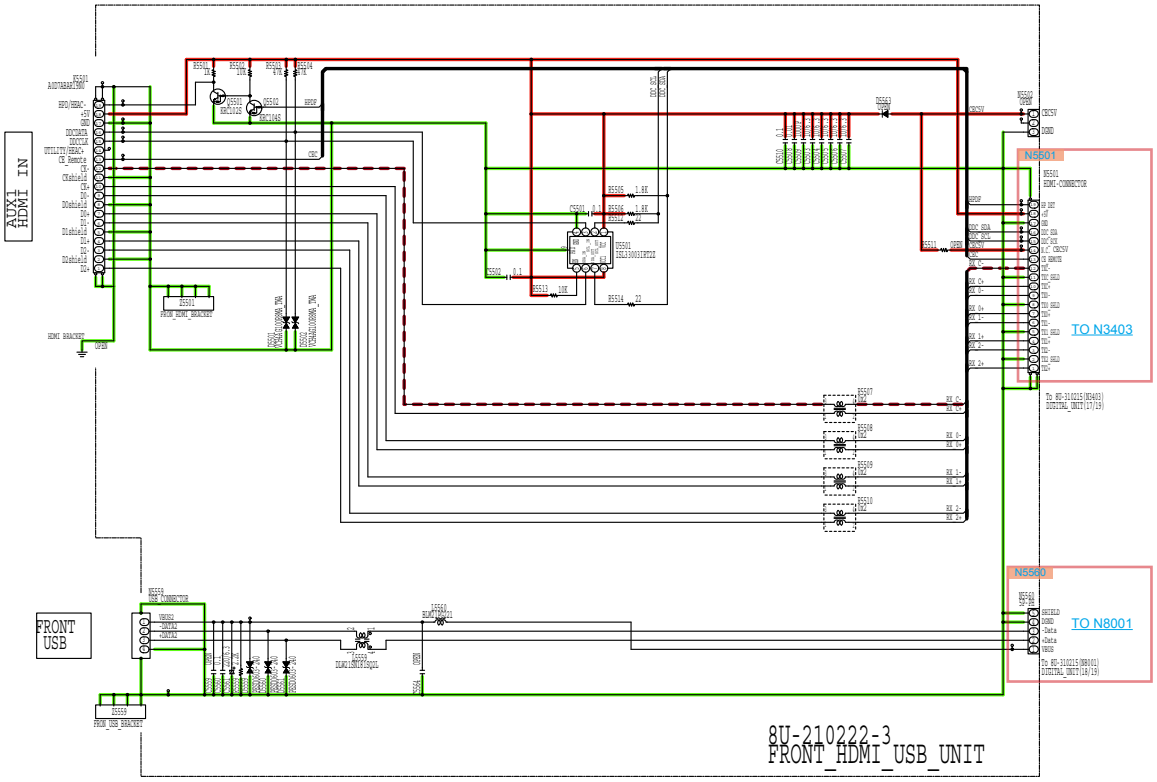
⚠5 See "SCHEMATIC DIAGRAMS_Appendix" for products with the serial numbers below [SCH27_MAIN DAC]

AVRX6300HBKE3 : AMU15170302861 ～　　AVRX6300HBKE2 : ABH15170302511 ～
AVRX6300HSPE2 : ABK15170300701 ～　　AVRX6300HK　　: ABJ1517XX00471 ～



GND LINE　POWER+ LINE　POWER- LINE　AUDIO SIGNAL　TMDS SIGNAL　ANALOG VIDEO　DIGITAL VIDEO

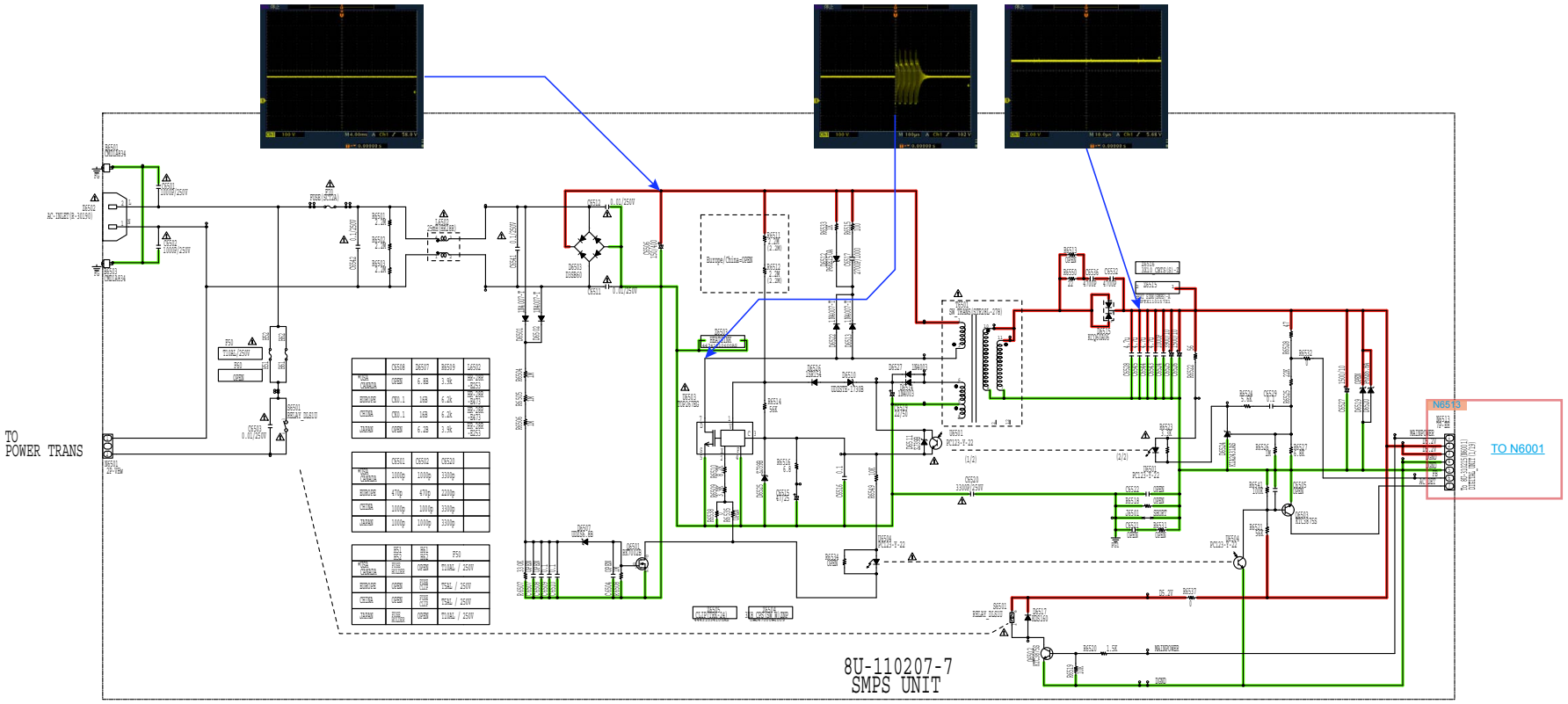
All Ref.No. has been described in the parts list are four digits.
But there are less than four digits of printed Ref.No. on the PCB, and they have become four digits after the header by adding "0" in the parts list.



FRONT HDMI/USB

GND LINE POWER+ LINE POWER- LINE AUDIO SIGNAL TMDS SIGNAL ANALOG VIDEO DIGITAL VIDEO

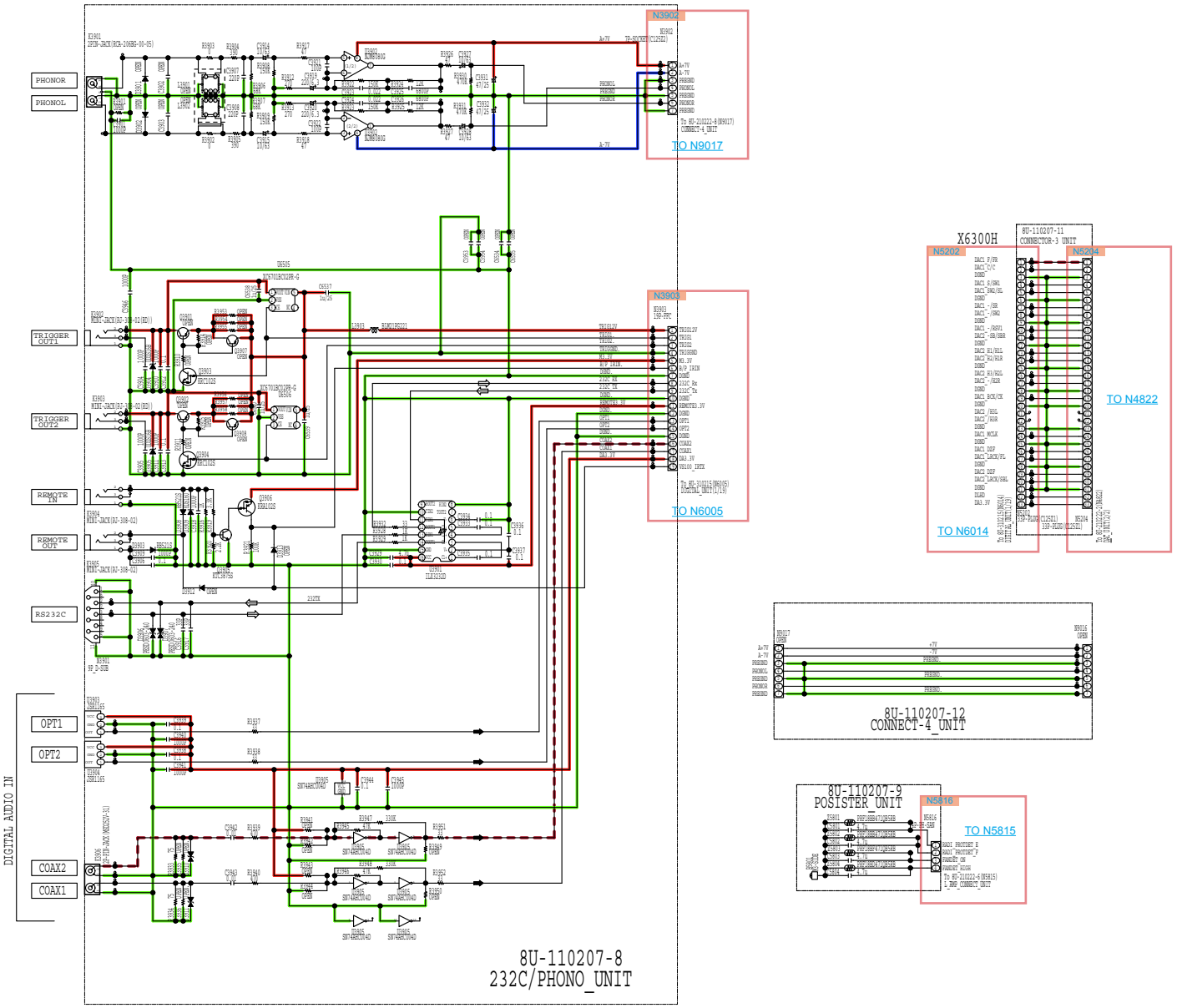
All Ref.No. has been described in the parts list are four digits.
But there are less than four digits of printed Ref.No. on the PCB, and they have become four digits after the header by adding "0" in the parts list.



SMPS

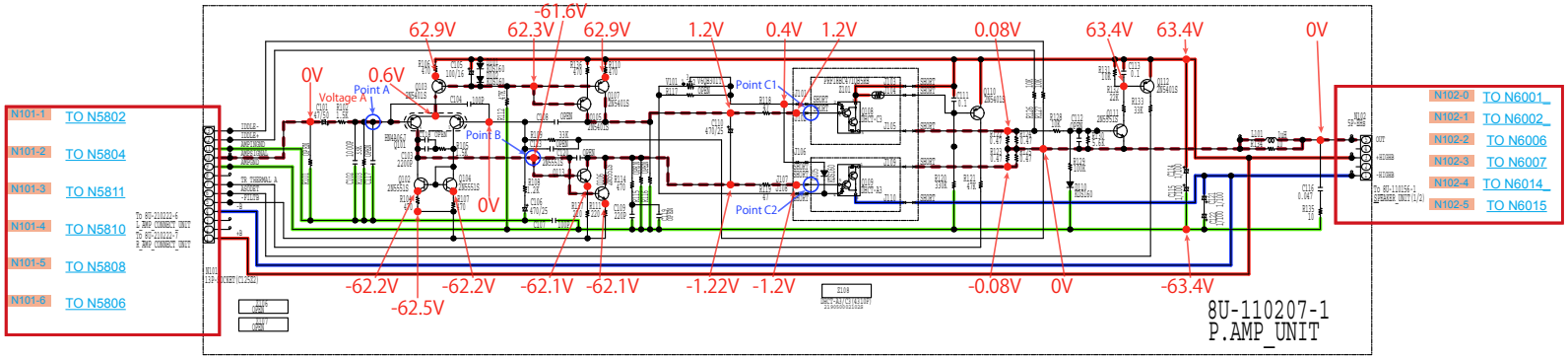
GND LINE POWER+ LINE POWER- LINE AUDIO SIGNAL TMDS SIGNAL ANALOG VIDEO DIGITAL VIDEO

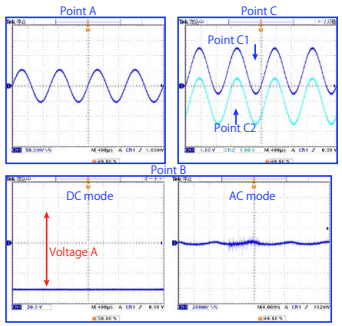
All Ref.No. has been described in the parts list are four digits.
But there are less than four digits of printed Ref.No. on the PCB, and they have become four digits after the header by adding "0" in the parts list.



GND LINE POWER+ LINE POWER- LINE AUDIO SIGNAL TMDS SIGNAL ANALOG VIDEO DIGITAL VIDEO

All Ref.No. has been described in the parts list are four digits.
But there are less than four digits of printed Ref.No. on the PCB, and they have become four digits after the header by adding "0" in the parts list.



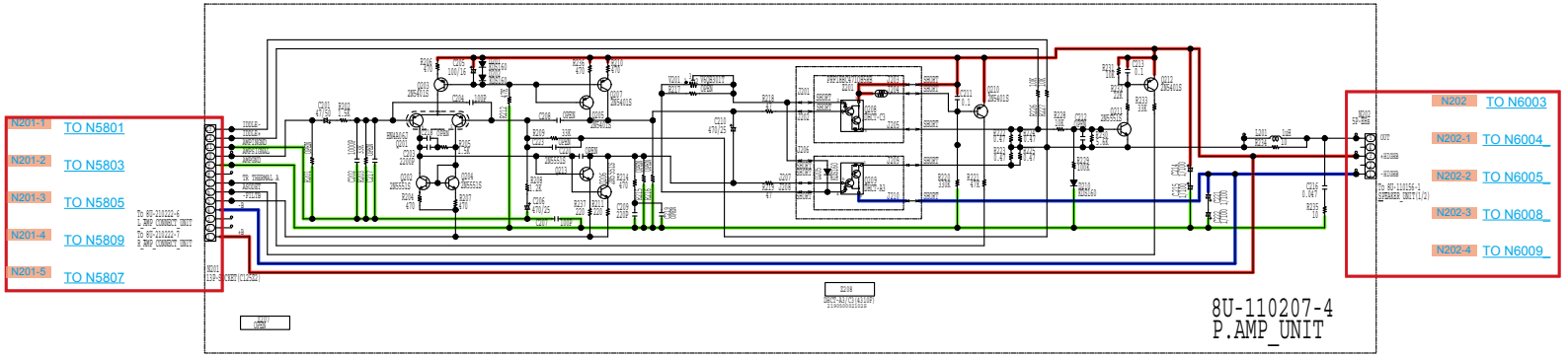


Measurement condition
・Voltage measurement : No signal
・Waveform measurement
INPUT: 200mVrms / 1KHz (ANALOG)
Surround mode: MCh Stereo
VOL: 70
Speaker load: 8ohms

POWER AMP

GND LINE POWER+ LINE POWER- LINE AUDIO SIGNAL TMDS SIGNAL ANALOG VIDEO DIGITAL VIDEO

All Ref.No. has been described in the parts list are four digits.
But there are less than four digits of printed Ref.No. on the PCB, and they have become four digits after the header by adding "0" in the parts list.

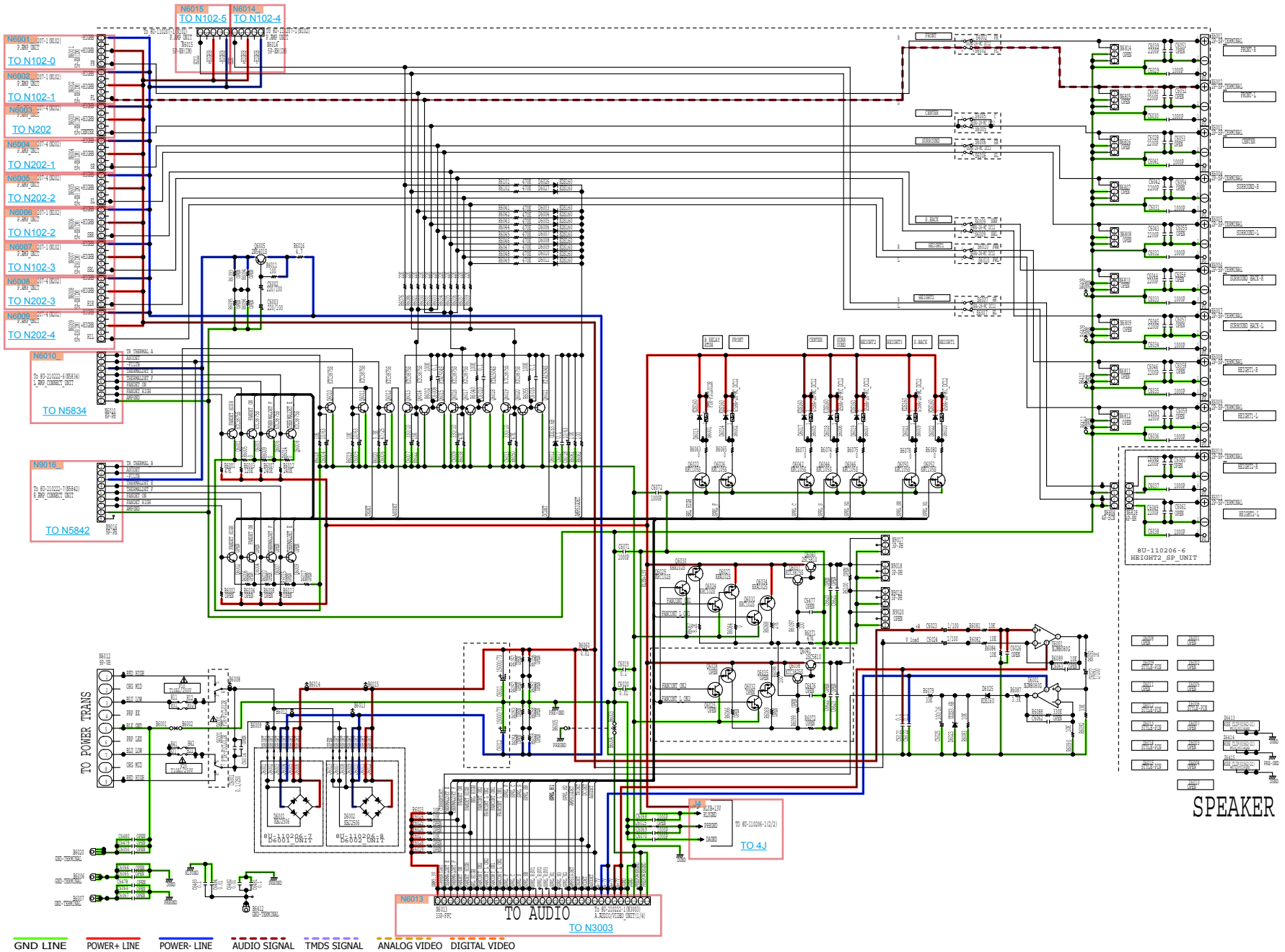


POWER AMP

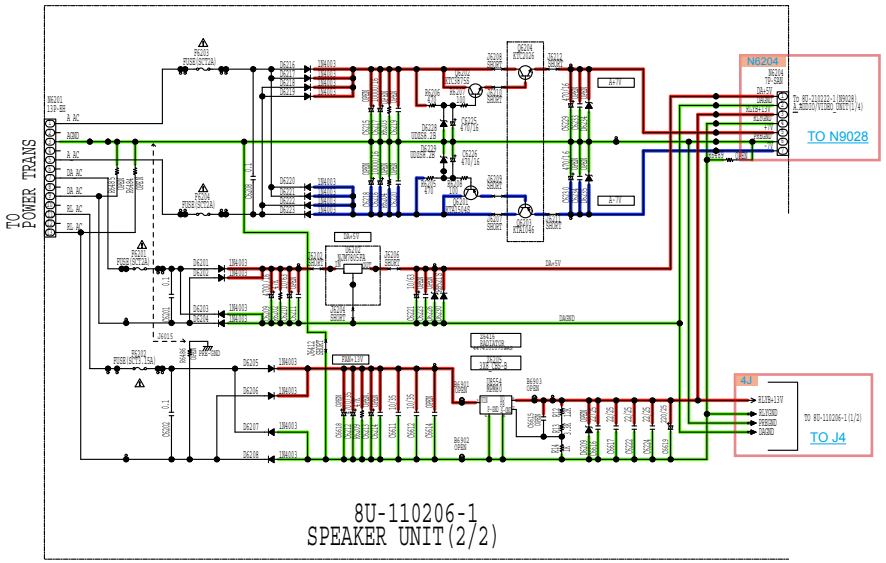
GND LINE POWER+ LINE POWER- LINE AUDIO SIGNAL TMDS SIGNAL ANALOG VIDEO DIGITAL VIDEO

SCH33_SPEAKER

All Ref.No. has been described in the parts list are four digits.
But there are less than four digits of printed Ref.No. on the PCB, and they have become four digits after the header by adding "0" in the parts list.



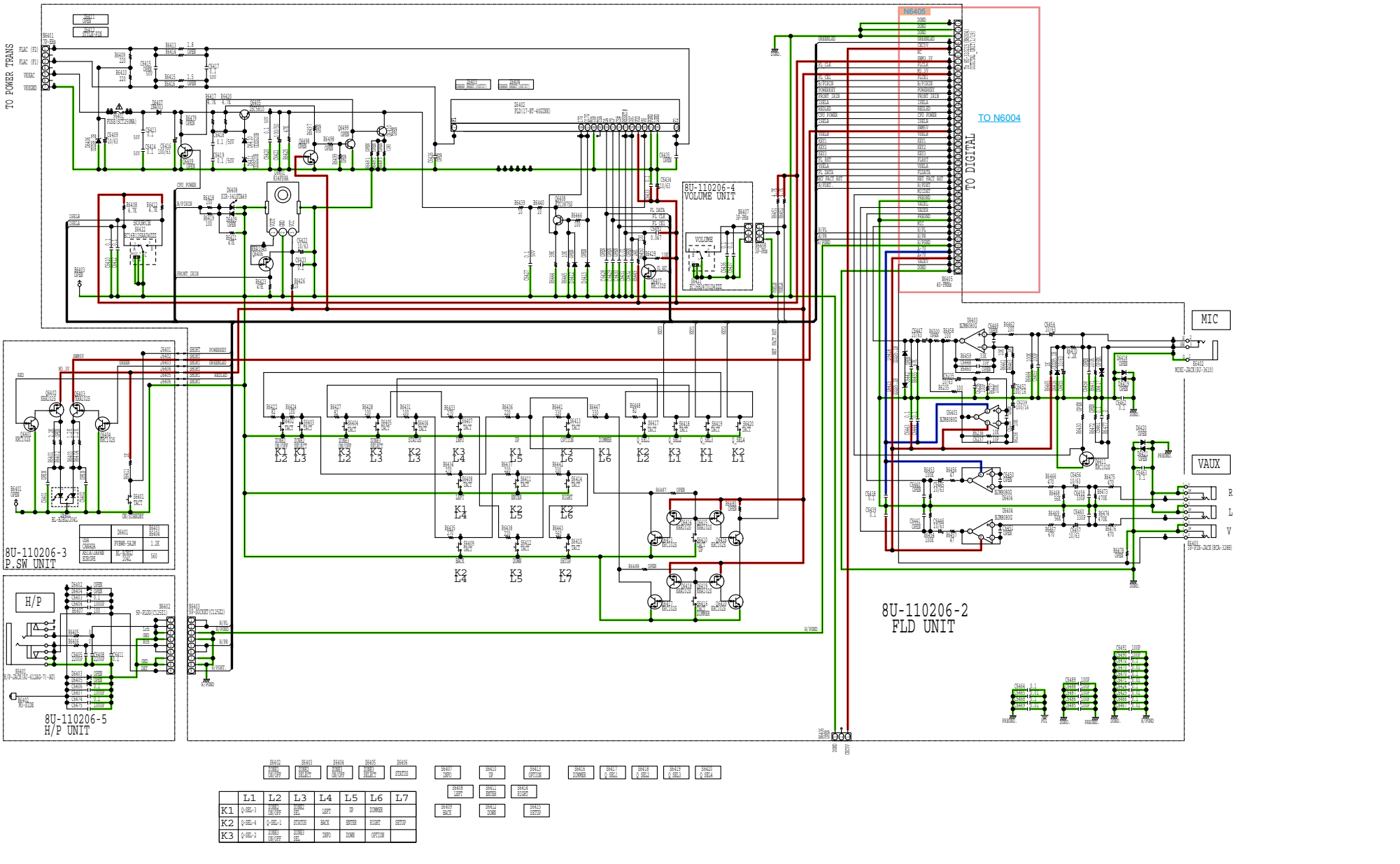
All Ref.No. has been described in the parts list are four digits.
But there are less than four digits of printed Ref.No. on the PCB, and they have become four digits after the header by adding "0" in the parts list.



REG

GND LINE POWER+ LINE POWER- LINE AUDIO SIGNAL TMDS SIGNAL ANALOG VIDEO DIGITAL VIDEO

All Ref.No. has been described in the parts list are four digits.
But there are less than four digits of printed Ref.No. on the PCB, and they have become four digits after the header by adding "0" in the parts list.

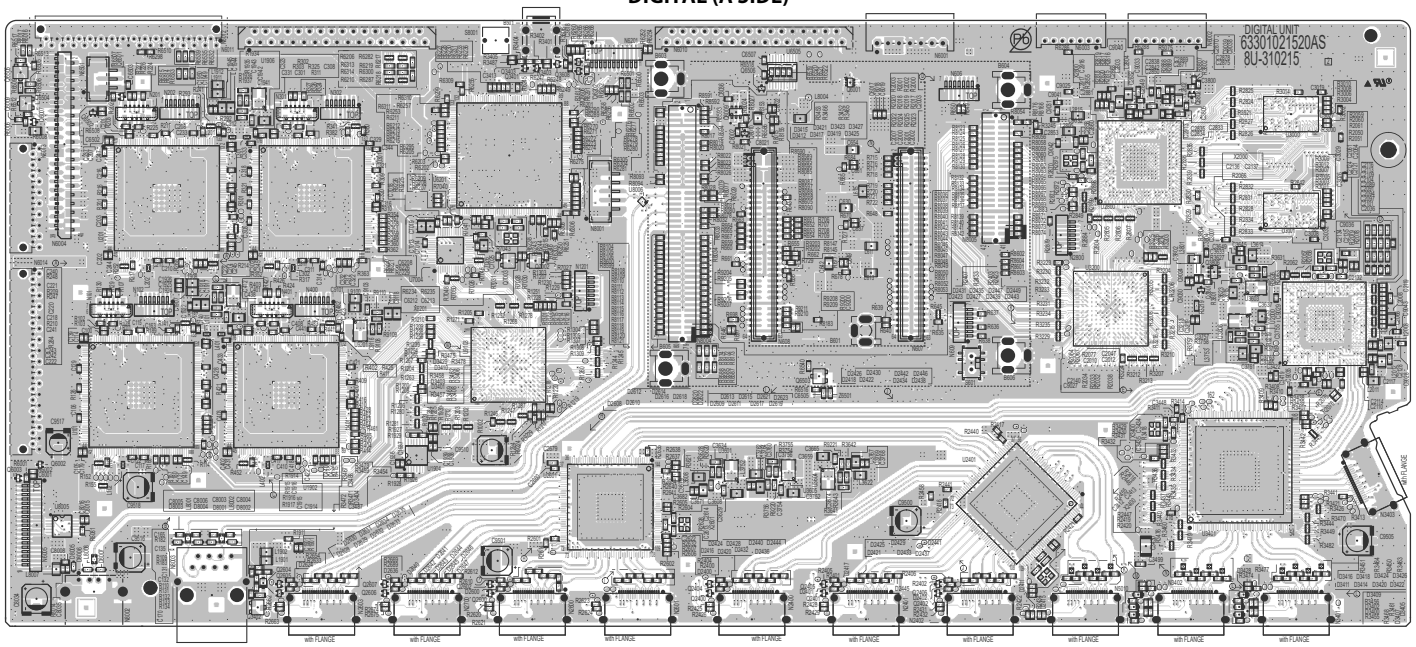


	L1	L2	L3	L4	L5	L6	L7
K1	Q-SEL-3	DIMMER ON/OFF	DIMMER SEL	LEFT	UP	DIMMER	
K2	Q-SEL-4	Q-SEL-1	STATUS	BACK	ENTER	RIGHT	SETUP
K3	Q-SEL-2	DIMMER ON/OFF	DIMMER SEL	INFO	DOWN	OPTION	

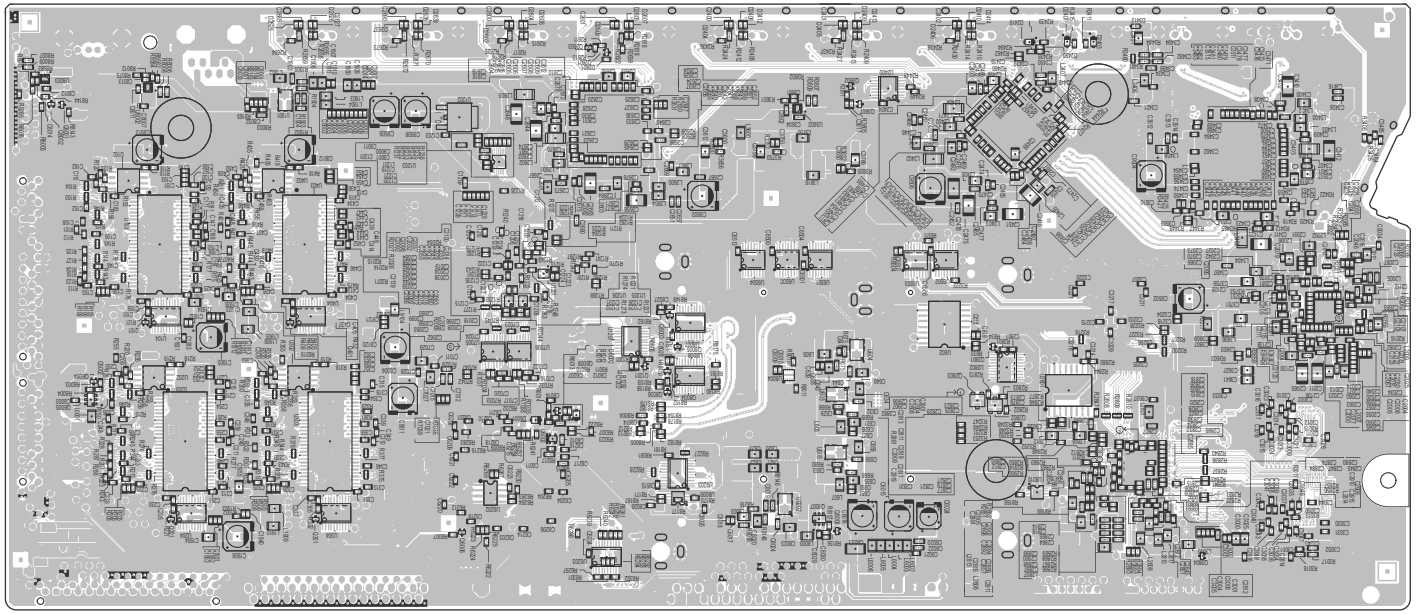
DIGITAL

Lead-free Solder
When soldering, use the Lead-free Solder (Sn-Ag-Cu).

DIGITAL (A SIDE)

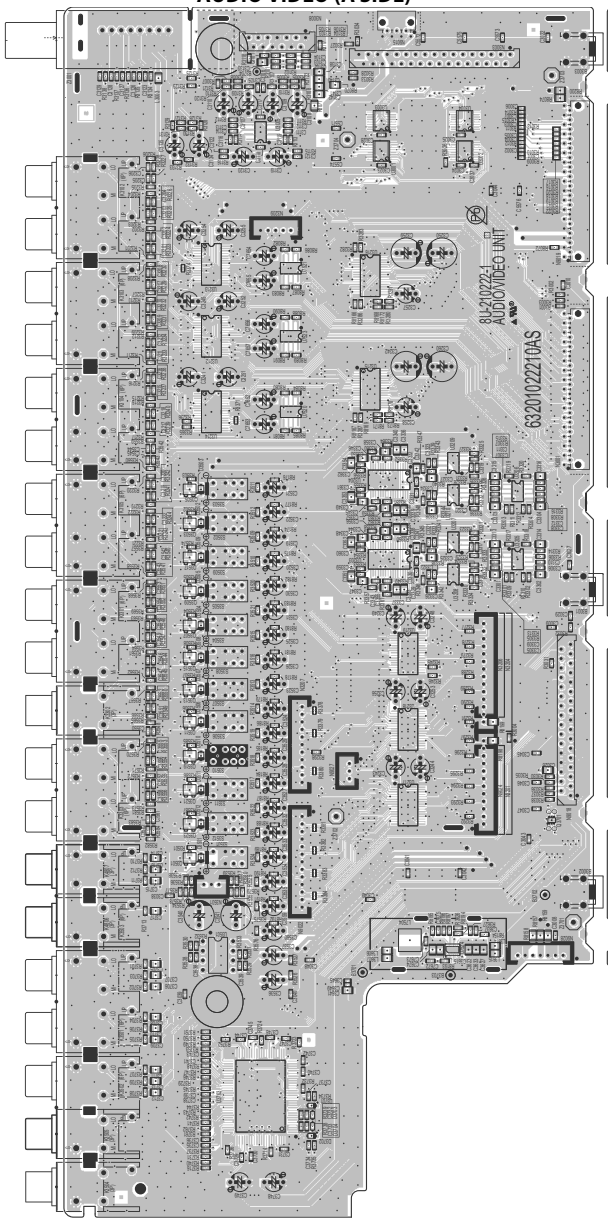


DIGITAL (B SIDE)

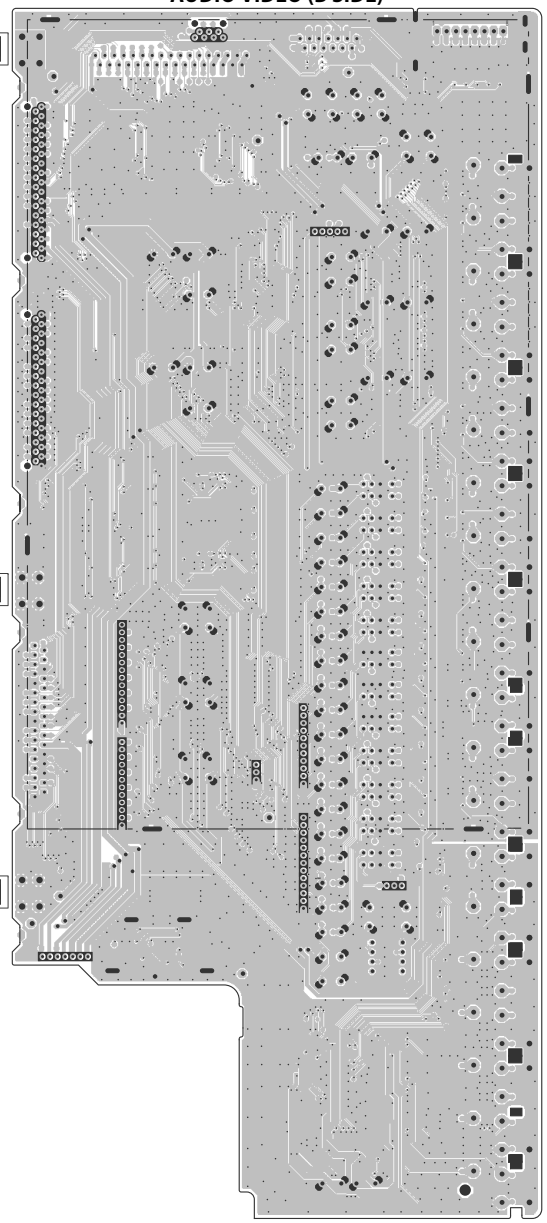


AUDIO VIDEO, FRONT HDMI USB, CONNECT-1, CONNECT-2, CONNECT-4

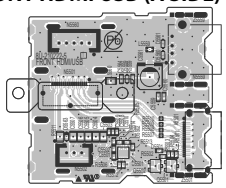
AUDIO VIDEO (A SIDE)



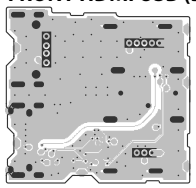
AUDIO VIDEO (B SIDE)



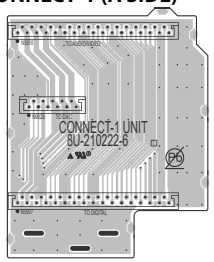
FRONT HDMI USB (A SIDE)



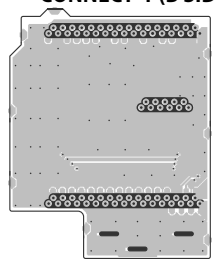
FRONT HDMI USB (B SIDE)



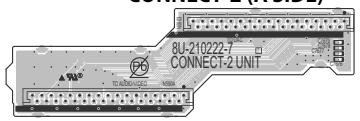
CONNECT-1 (A SIDE)



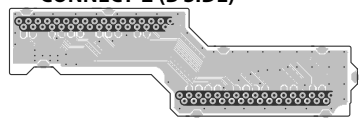
CONNECT-1 (B SIDE)



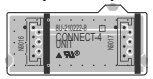
CONNECT-2 (A SIDE)



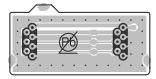
CONNECT-2 (B SIDE)



CONNECT-4 (A SIDE)



CONNECT-4 (B SIDE)



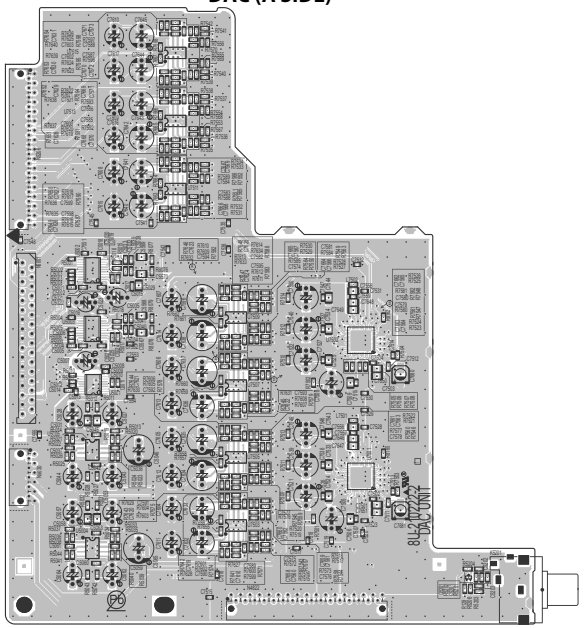
⚠5 See "PRINTED CIRCUIT BOARDS_Appendix" for products with the serial numbers below [AUDIO VIDEO PCB]

AVRX6300HBKE3 : AMU15170302861 ～　　AVRX6300HBKE2 : ABH15170302511 ～

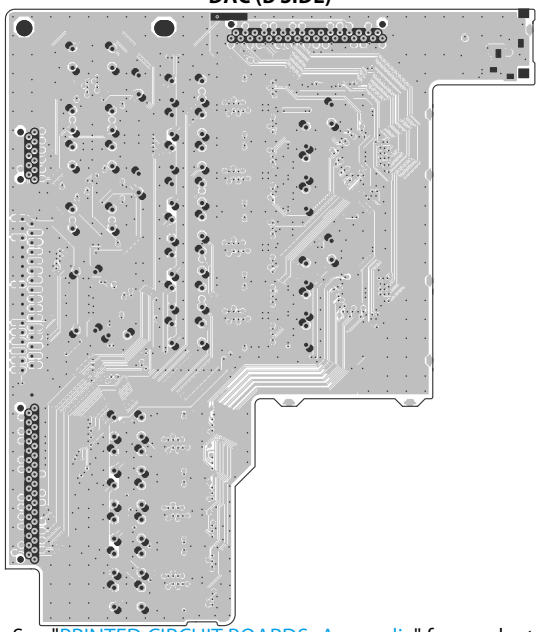
AVRX6300HSPE2 : ABK15170300701 ～　　AVRX6300HK : ABJ1517XX00471 ～

DAC, L AMP CONNECT, R AMP CONNECT, FRONT

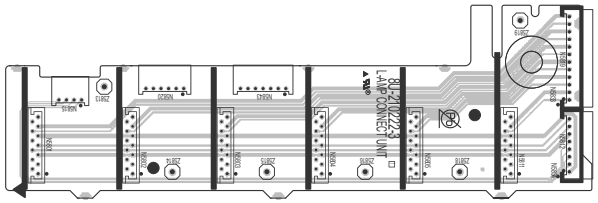
DAC (A SIDE)



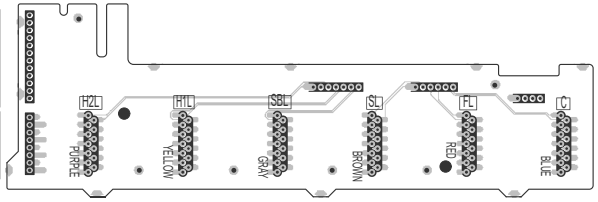
DAC (B SIDE)



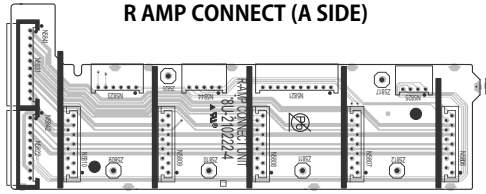
L AMP CONNECT (A SIDE)



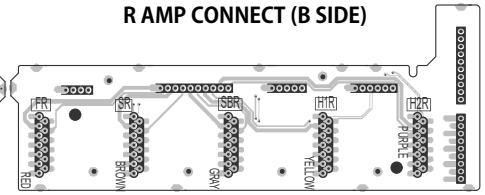
L AMP CONNECT (B SIDE)



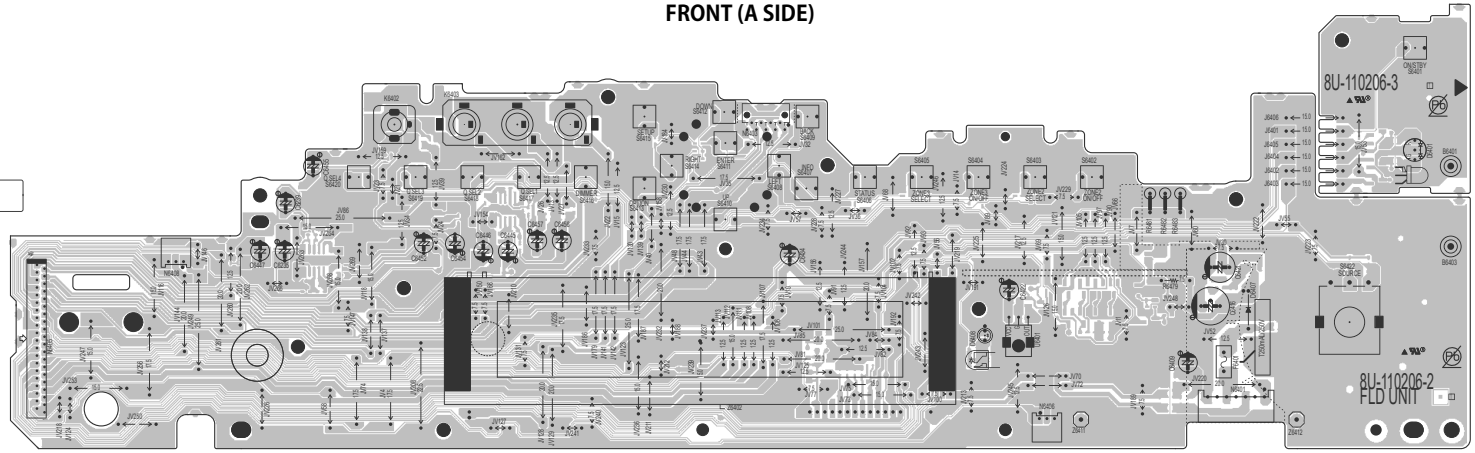
R AMP CONNECT (A SIDE)



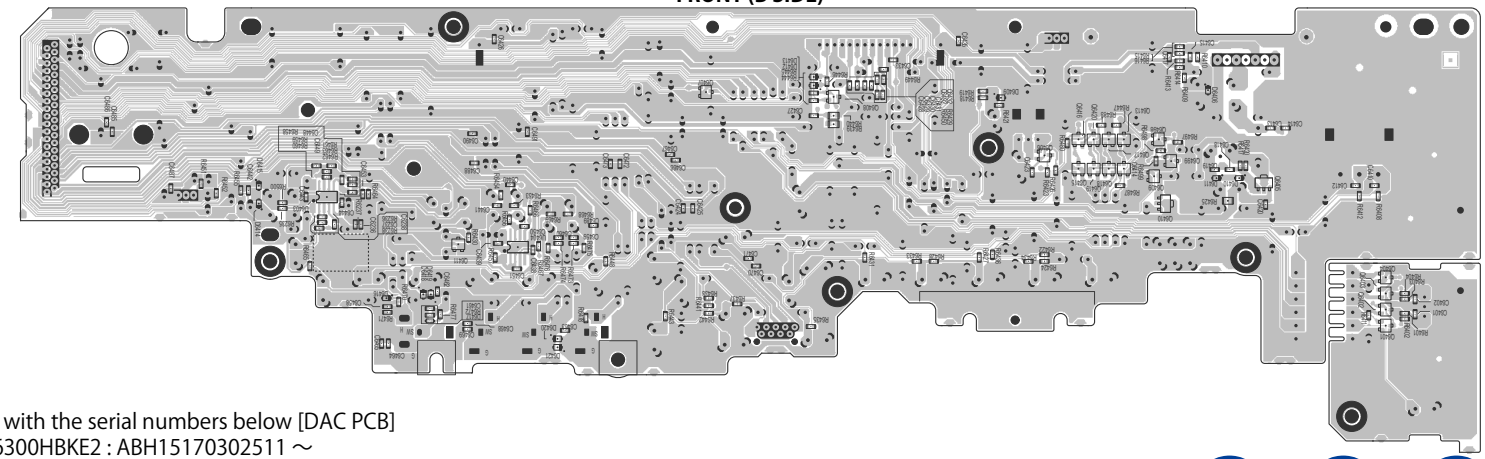
R AMP CONNECT (B SIDE)



FRONT (A SIDE)



FRONT (B SIDE)



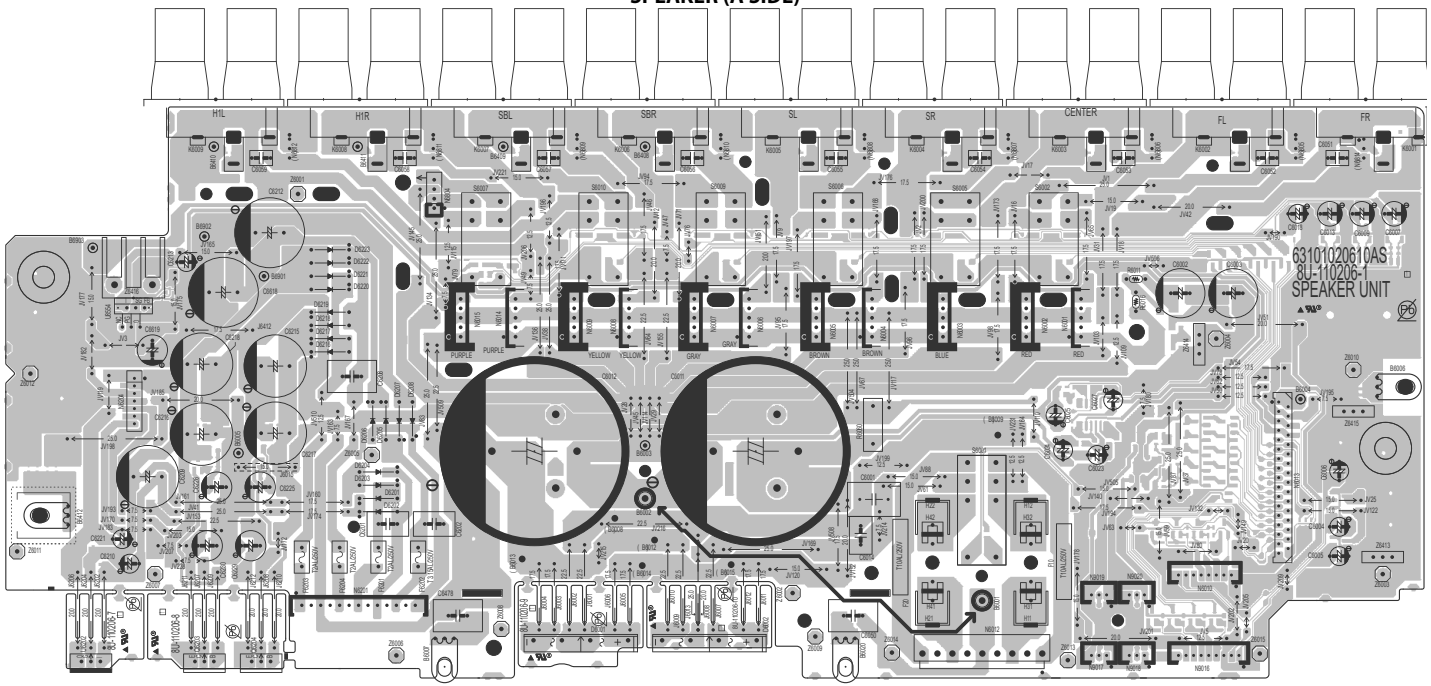
△5 See "PRINTED CIRCUIT BOARDS_Appendix" for products with the serial numbers below [DAC PCB]

AVRX6300HBKE3 : AMU15170302861 ～　　AVRX6300HBKE2 : ABH15170302511 ～

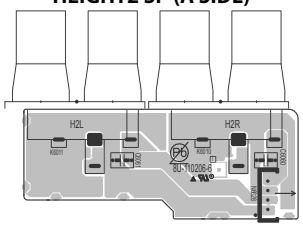
AVRX6300HSPE2 : ABK15170300701 ～　　AVRX6300HK : ABJ1517XX00471 ～

SPEAKER, HEIGHT2 SP, HP, P.SW

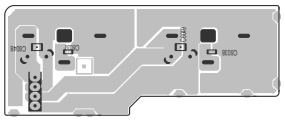
SPEAKER (A SIDE)



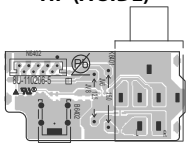
HEIGHT2 SP (A SIDE)



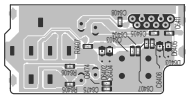
HEIGHT2 SP (B SIDE)



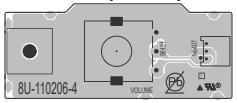
HP (A SIDE)



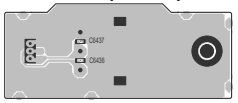
HP (B SIDE)



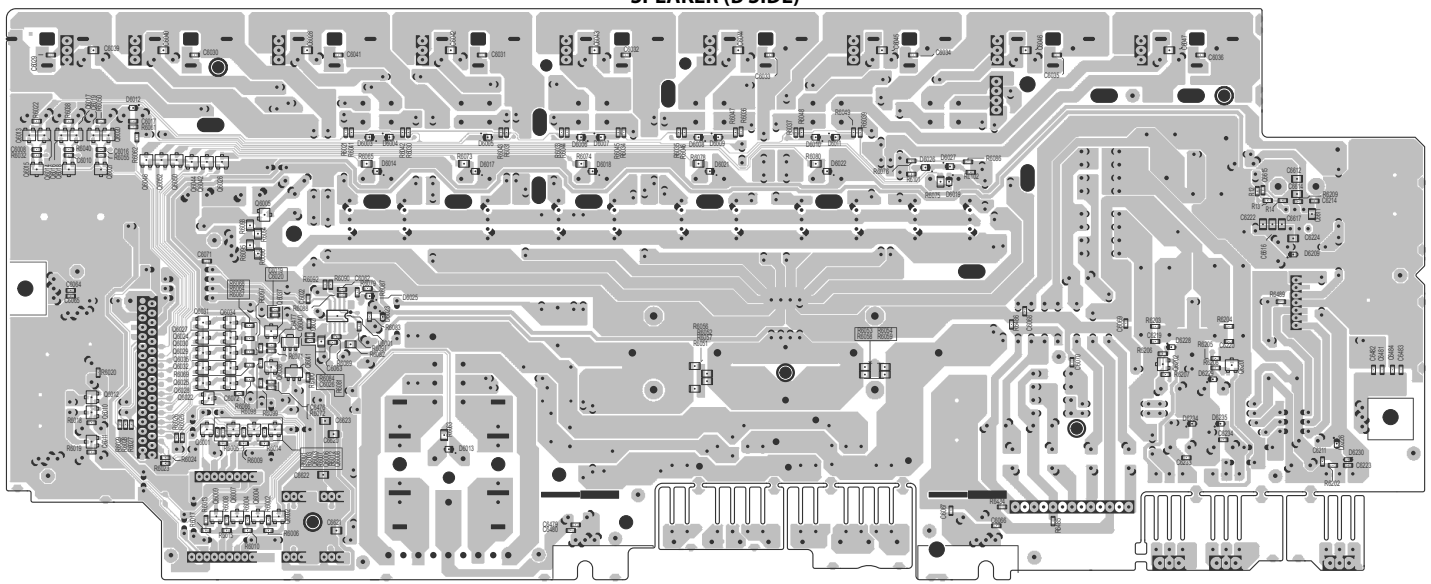
P.SW (A SIDE)



P.SW (B SIDE)

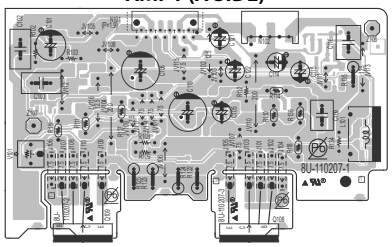


SPEAKER (B SIDE)

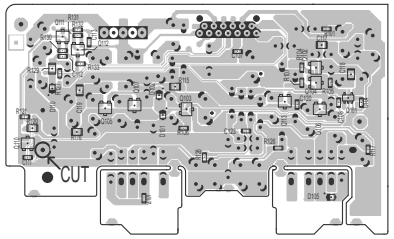


AMP1, AMP2, SMPS, 232C PHONO, CONNECT-3, POSISTER, RADIATOR COVER

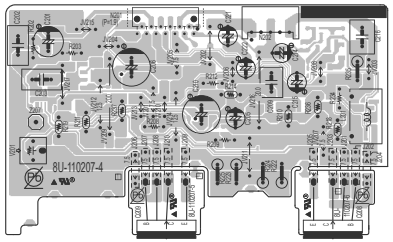
AMP1 (A SIDE)



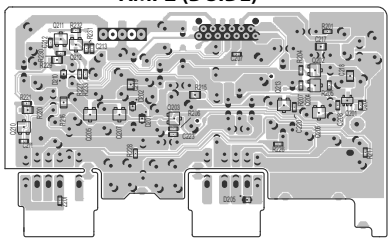
AMP1 (B SIDE)



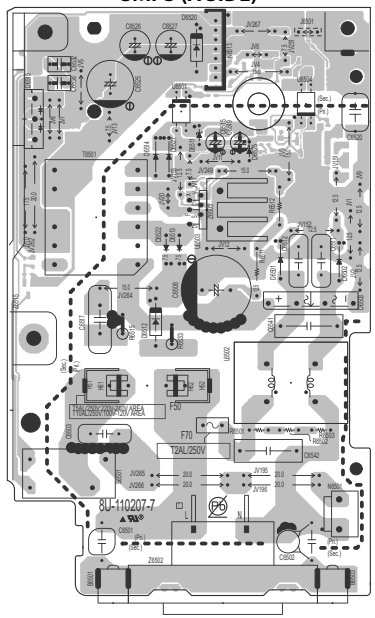
AMP2 (A SIDE)



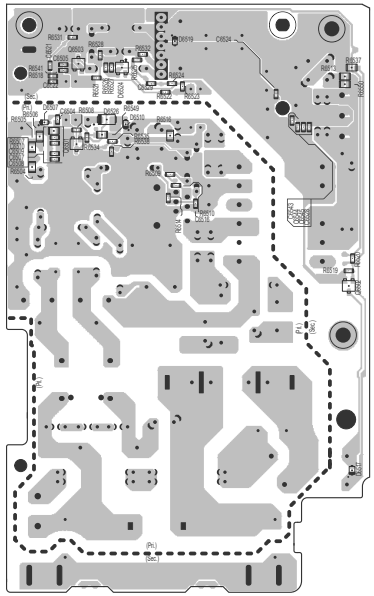
AMP2 (B SIDE)



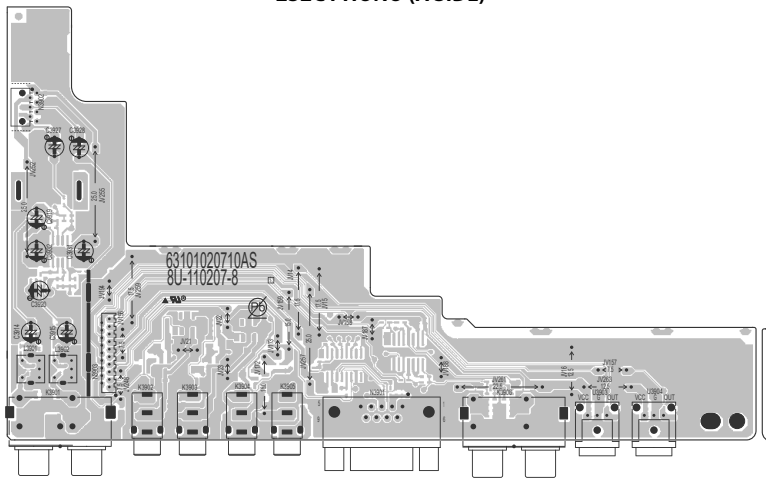
SMPS (A SIDE)



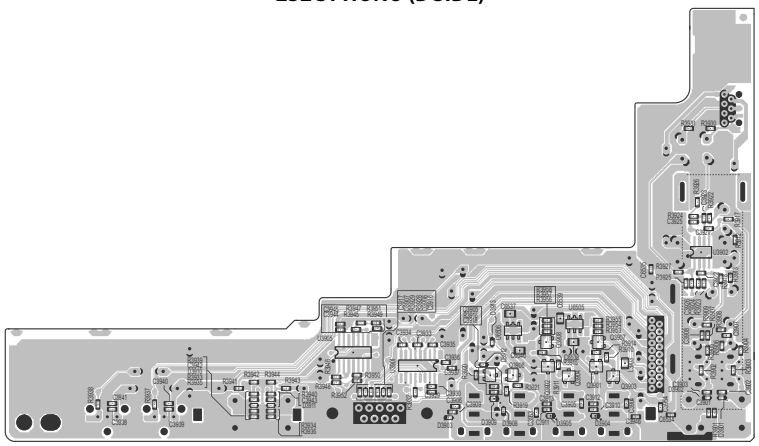
SMPS (B SIDE)



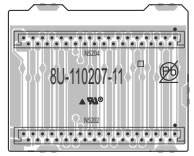
232C PHONO (A SIDE)



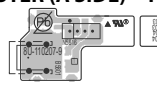
232C PHONO (B SIDE)



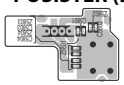
CONNECT-3 (A SIDE)



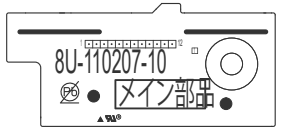
POSISTER (A SIDE)



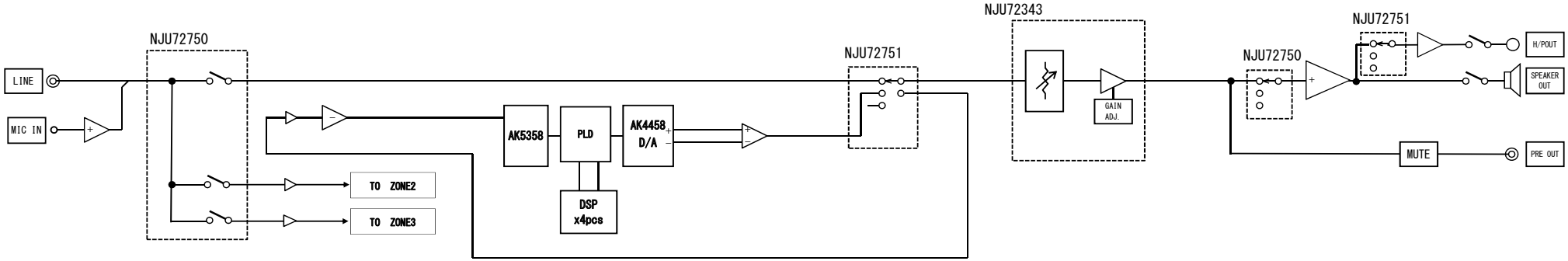
POSISTER (B SIDE)

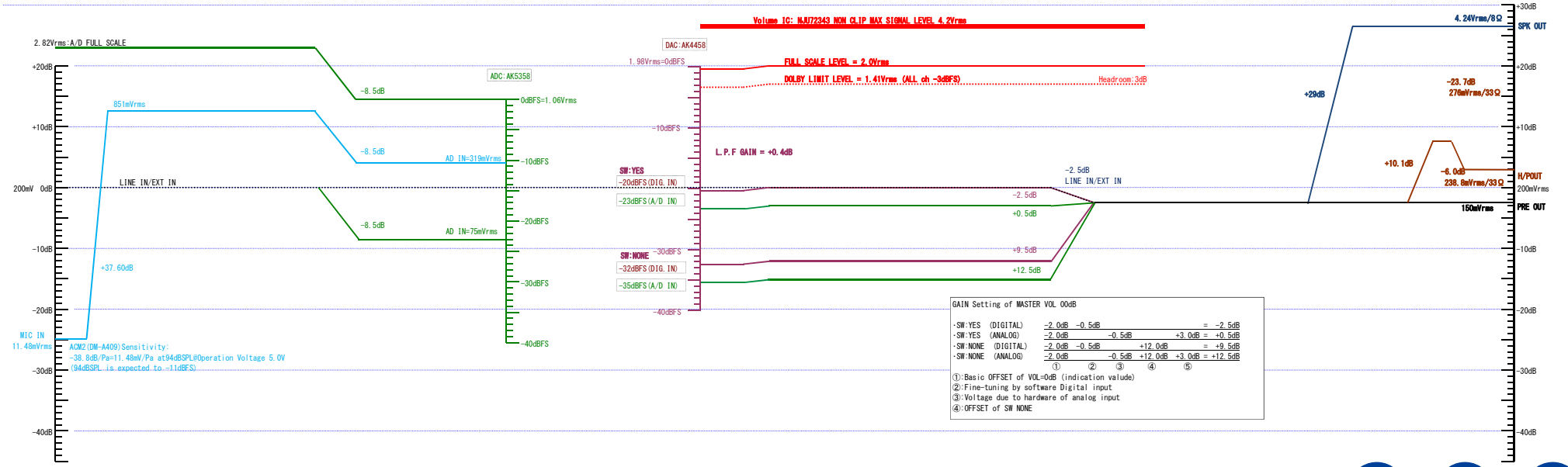


RADIATOR COVER (A SIDE)

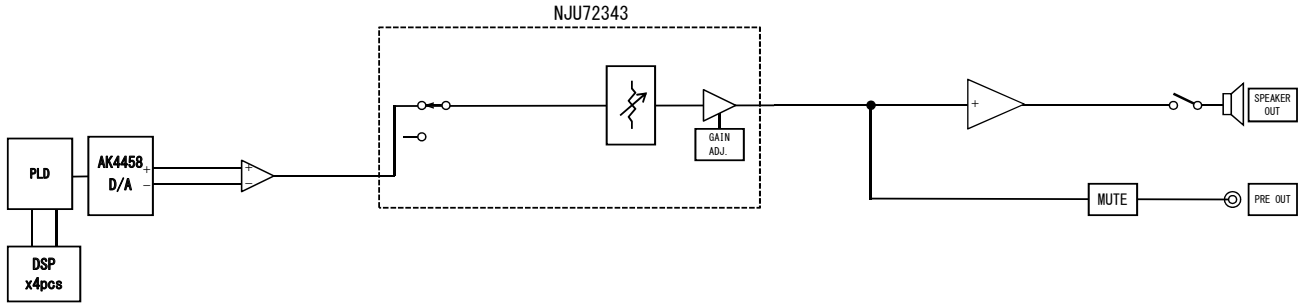


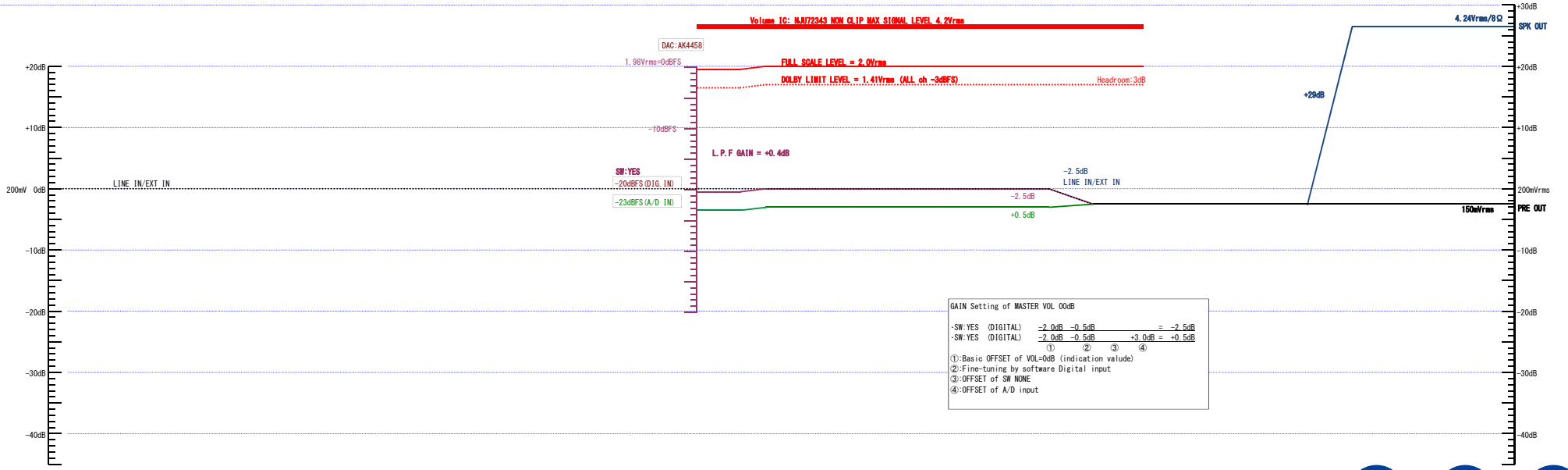
AVR-X6300H
LEVEL DIAGRAM
FRONT ch



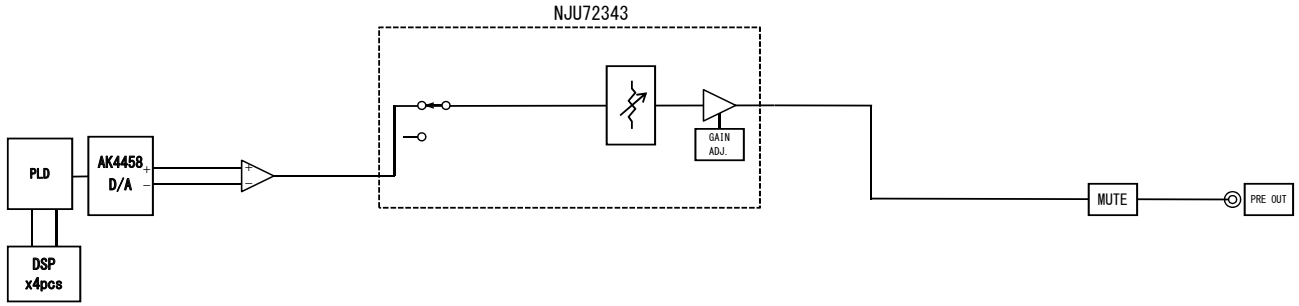


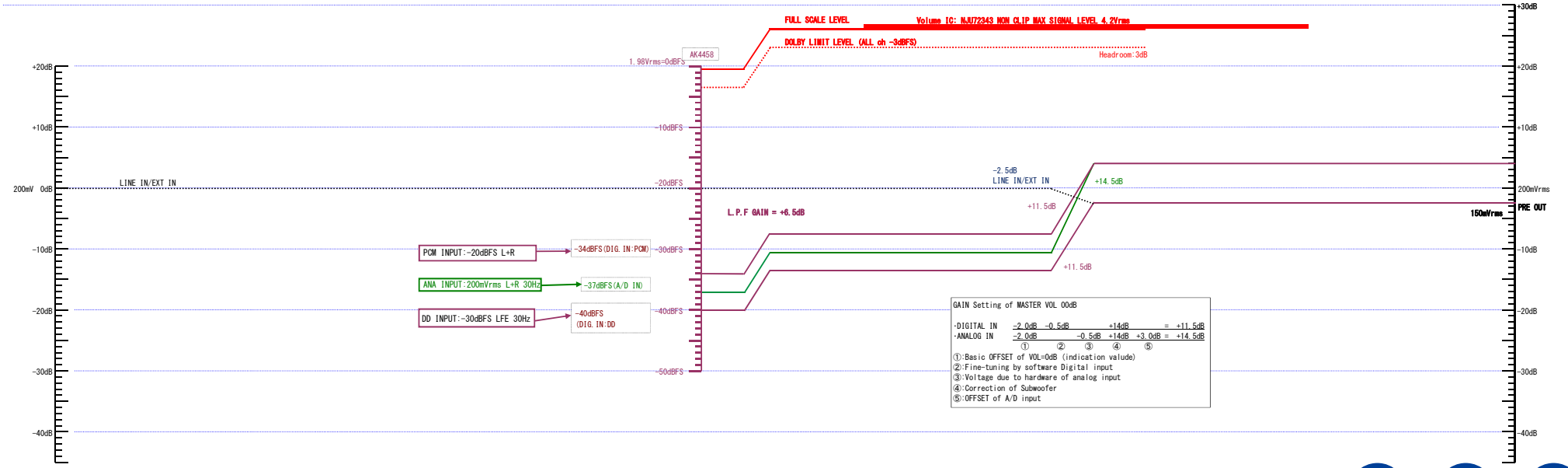
AVR-X6300H
LEVEL DIAGRAM
CENTER/SURROUND ch



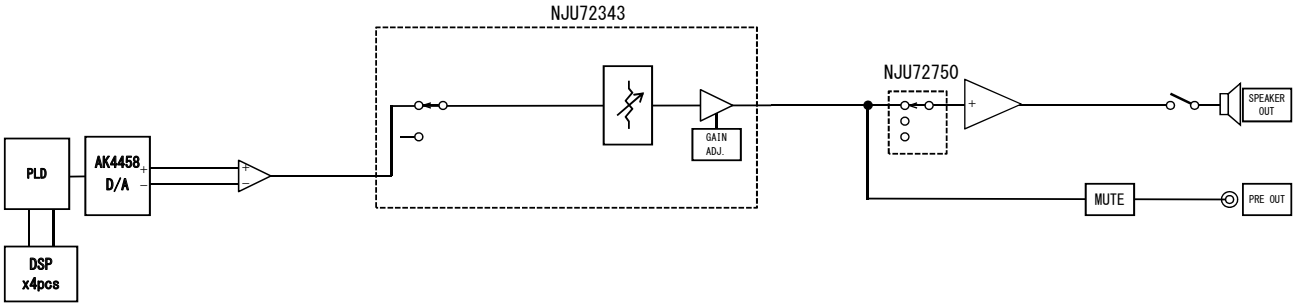


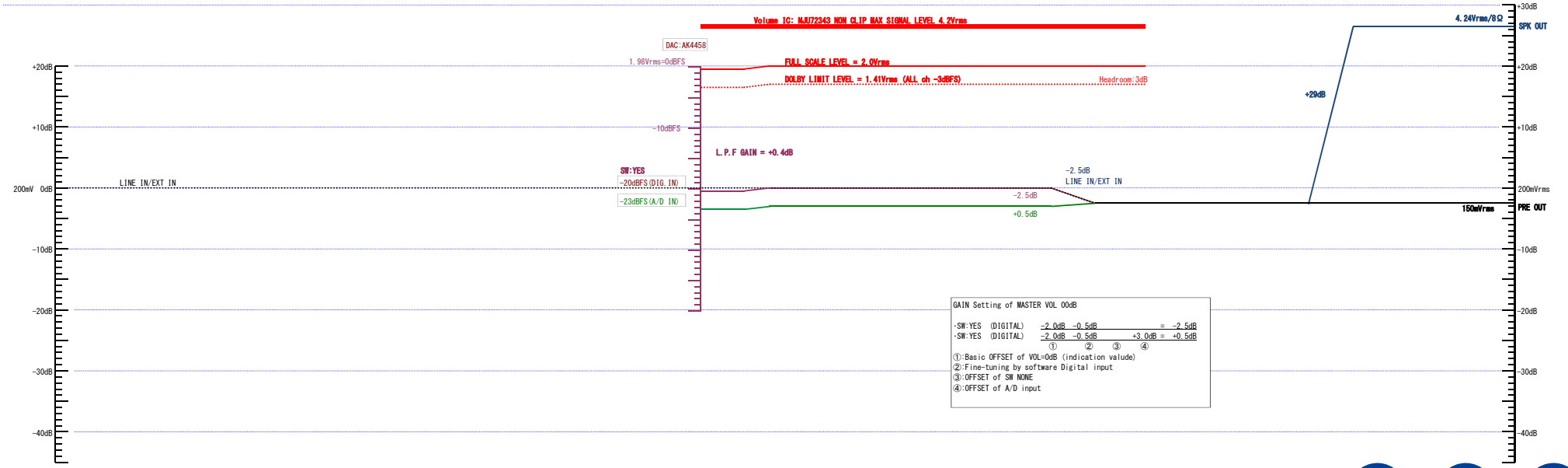
AVR-X6300H
LEVEL DIAGRAM
SUB WOOFER ch



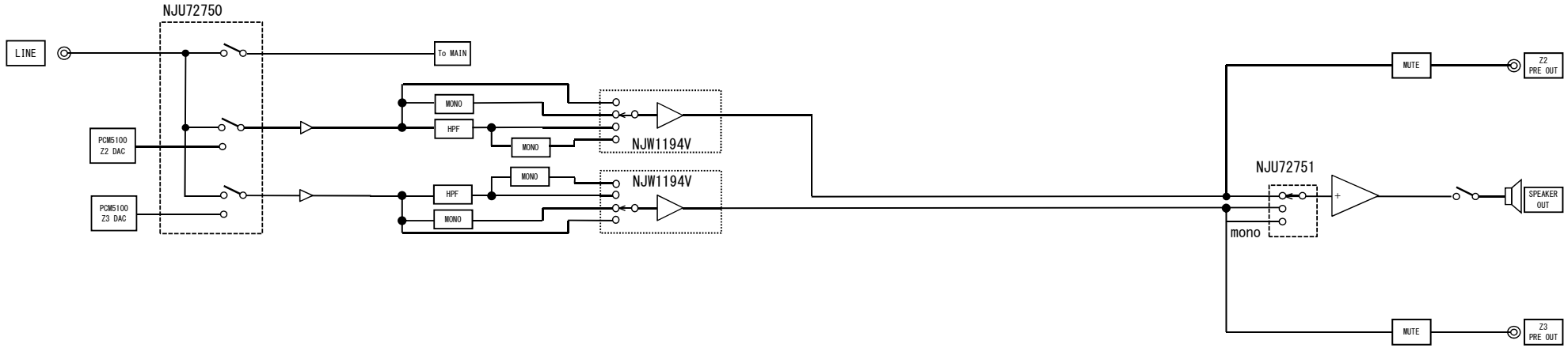


AVR-X6300H
LEVEL DIAGRAM
SURROUND BACK/HEIGHT1/HEIGHT2 ch



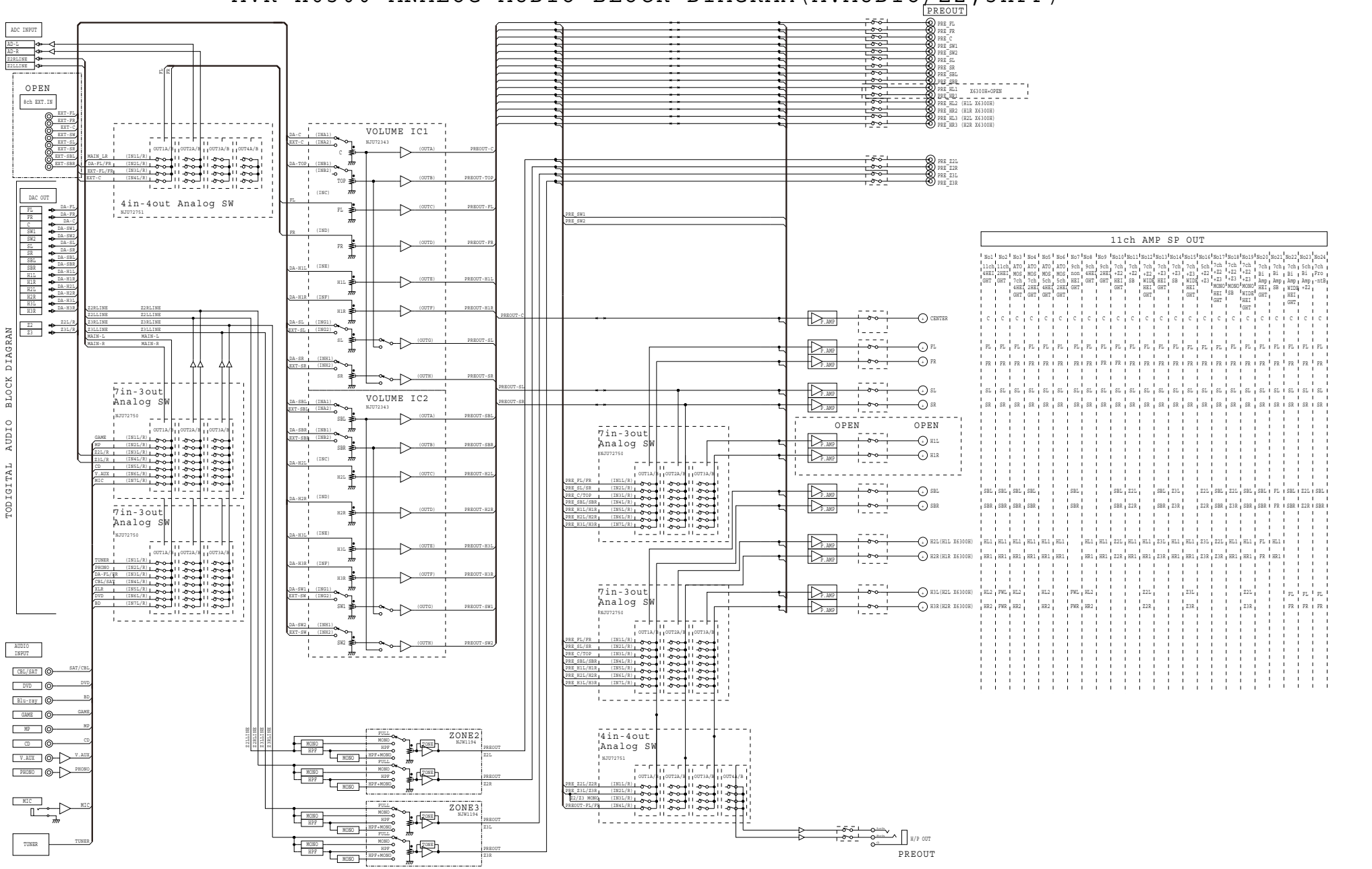


AVR-X6300H
LEVEL DIAGRAM
ZONE2/ZONE3

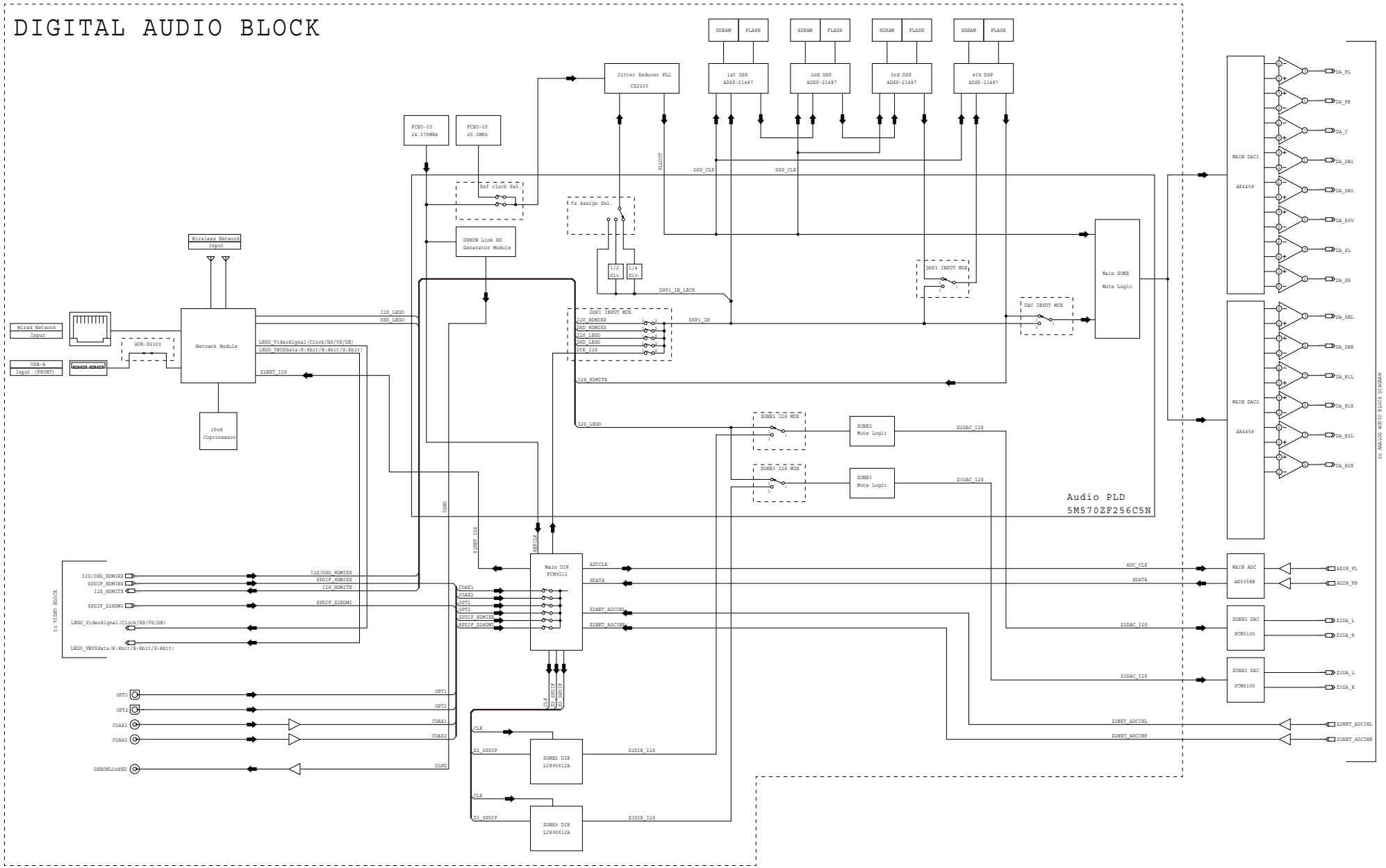


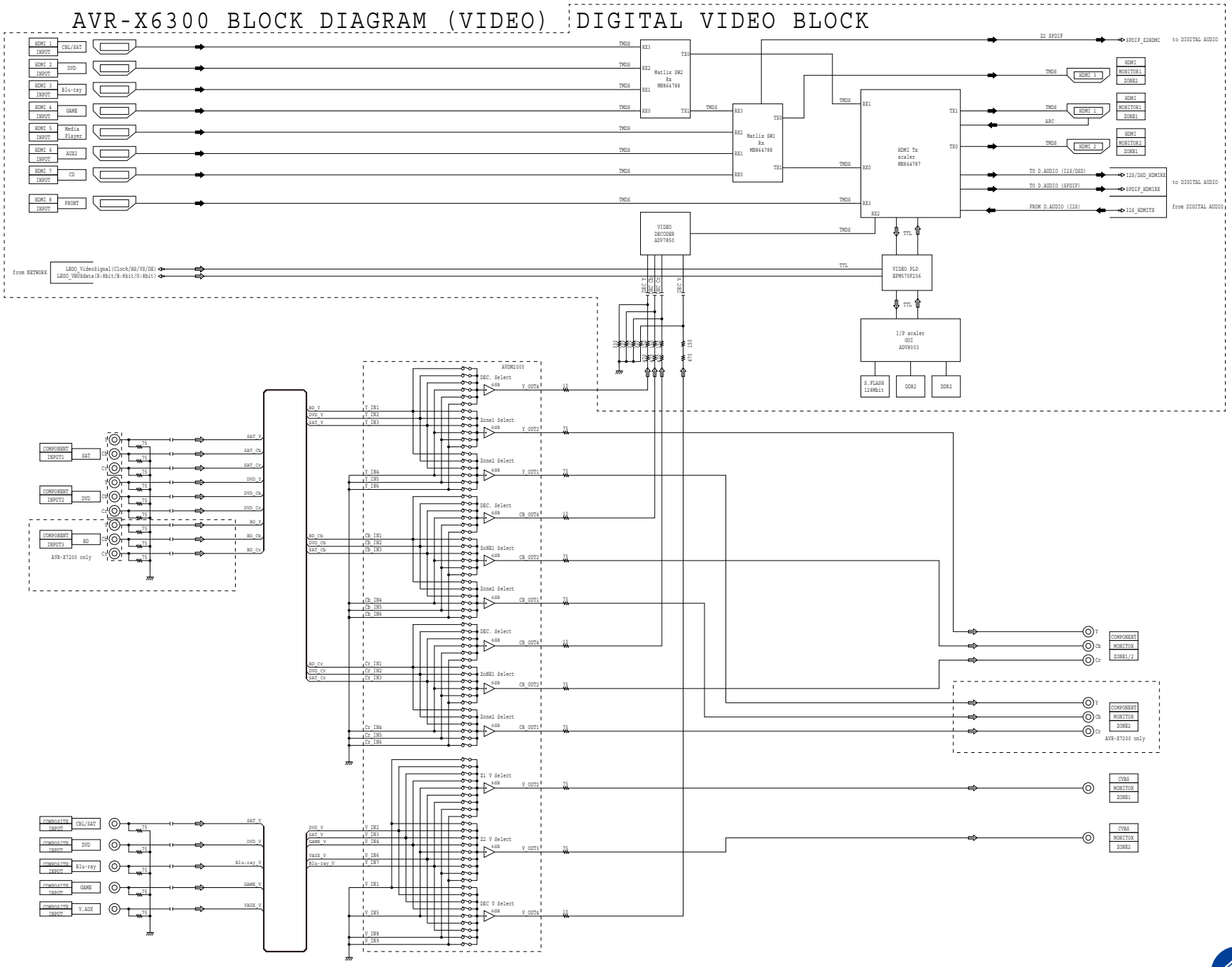
ANALOG AUDIO DIAGRAM

AVR-X6300 ANALOG AUDIO BLOCK DIAGRAM(A.AUDIO/Z2,3HPF)

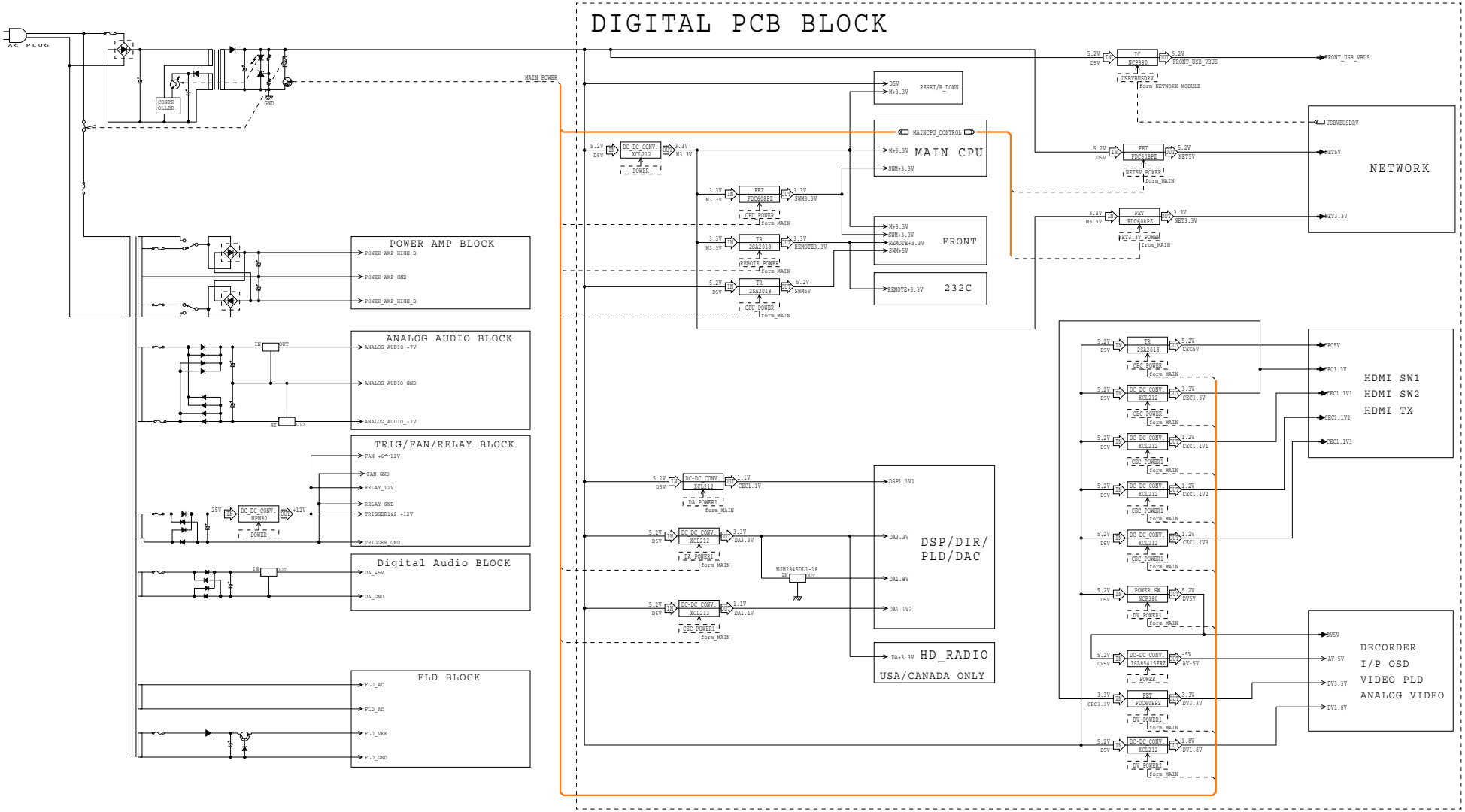


AVR-X6300H DIGITAL AUDIO/NETWORK BLOCK DIRAGRAM




AVR-X6300 BLOCK DIAGRAM (VIDEO)
DIGITAL VIDEO BLOCK
HDMI 1 INPUT
CBL/SAT
HDMI 2 INPUT
DVD
HDMI 3 INPUT
Blu-ray
HDMI 4 INPUT
GAME
HDMI 5 INPUT
Media Player
HDMI 6 INPUT
AUX2
HDMI 7 INPUT
CD
HDMI 8 INPUT
FRONT
TMDS
Matrix SW2 Rx MN864788
Matrix SW1 Rx MN864788
HDMI Tx scaler MN864787
Z2 SPDIF
SPDIF_E2HDMI
to DIGITAL AUDIO
HDMI 3
HDMI 1
HDMI 2
ARC
HDMI MONITOR1 ZONE2
HDMI MONITOR1 ZONE1
HDMI MONITOR2 ZONE1
TO D.AUDIO (I2S/DSD)
TO D.AUDIO (SPDIF)
FROM D.AUDIO (I2S)
I2S/DSD_HDMIRX
SPDIF_HDMIRX
I2S_HDMITX
from DIGITAL AUDIO
VIDEO DECODER ADV7850
TTL
VIDEO PLD EPM570F256
I/P scaler GUI ADV8003
8.FLASH 128Mbit
DDR2
from NETWORK
LEGO_VideoSignal(Clock/HS/VS/DE)
LEGO_VBSdata(R:8bit/B:8bit/G:8bit)
AVDM2000
DEC. Select
Zone1 Select
Zone2 Select
2nME1 Select
A1 V Select
A2 V Select
DEC V Select
6dB
Y_OUT4
Y_OUT2
Y_OUT1
CB_OUT4
CB_OUT2
CB_OUT1
CR_OUT4
CR_OUT2
CR_OUT1
V_OUT2
V_OUT3
V_OUT4
COMPONENT INPUT1 SAT
COMPONENT INPUT2 DVD
COMPONENT INPUT3 BD
AVR-X7200 only
COMPONENT MONITOR ZONE1/2
COMPONENT MONITOR ZONE2
CVBS MONITOR ZONE1
CVBS MONITOR ZONE2
COMPOSITE INPUT CBL/SAT
COMPOSITE INPUT DVD
COMPOSITE INPUT Blu-ray
COMPOSITE INPUT GAME
COMPOSITE INPUT V.AUX

AVR-X6300H BLOCK DIAGRAM (P.SUPPLY)

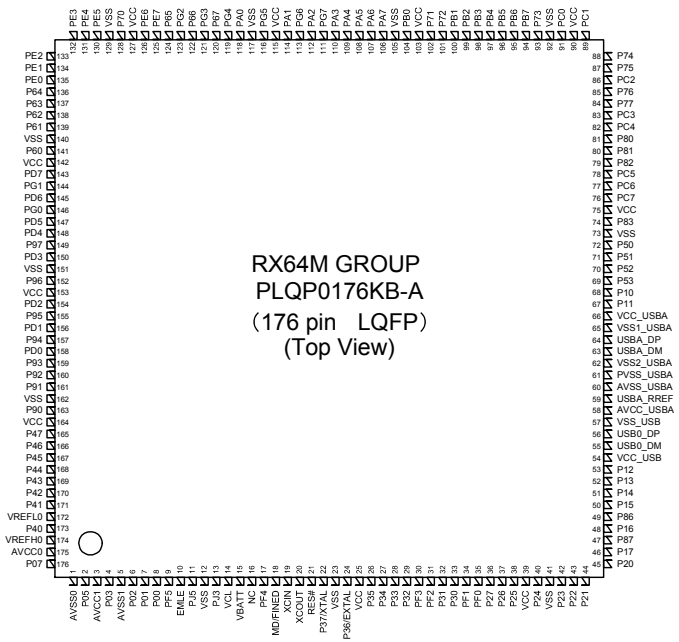


SEMICONDUCTORS

Only major semiconductors are shown, general semiconductors etc. are omitted to list.
The semiconductor which described a detailed drawing in a schematic diagram are omitted to list.

1. IC's

R5F564MJCDFC (DIGITAL : U6201)



R5F56108VNFP Terminal Functions

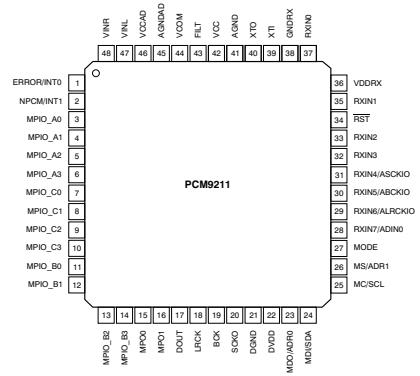
Pin	Pin Name	Symbol	I/O	Pu/Pd	STBY	STOP	CEC STBY	Function
1	AVSS0	AVSS0	-		-	-	-	Ground pin
2	P05/IRQ13	POWER KEY	I	M3VPu	I	I	I	Detect Power switch (Release from Wait Mode,Set to interrupt)
3	AVCC1	AVCC1	-		-	-	-	Power supply pin
4	P03/IRQ11	RED LED	O		L/H	L	H	POWER/STANDBY LED control pin
5	AVSS1	AVSS1	-		-	-	-	Ground pin
6	P02/SCK6/IRQ10/ AN120	FANDET_ON/ HIGH	I	SW3VPu	I	I	I	Thermally detection input pin (for FAN control)(A/D converter)
7	P01/RXD6/IRQ9/ AN119	RXD MI232O	I	Pd	I	I	I	External data input port (for AMX/FW update via 232C) :Connector is FFC
8	P00/TXD6/IRQ8/ AN118	TXD MO232I	O		L	L	L	External data output port (for AMX/FW update via 232C) :Connector is FFC
9	PF5/IRQ4	WHITE LED(NA)/ GREEN LED(EU/CH/ JP)	O		L	L	L	POWER LED control pin
10	EMLE	EMLE	I	Pd	-	-	-	E20 Emulator control pin (On chip Emulator is used,this pin should be High. Not used,it should be Low)
11	PJ5	VSEL A	I		I	I	I	Master Volume (Rotary encoder) signal input pin
12	VSS	VSS	-		-	-	-	Ground pin
13	PJ3	VSEL B	I		I	I	I	Master volume (Rotary encoder) signal input pin
14	VCL	VCL	I		-	-	-	Smoothing capacitor connection pin
15	VBATT	VBATT	-		-	-	-	Power supply pin
16	NC	NC	I	Pd	-	-	-	NC(Pull down)
17	TRST#/PF4	TRST#/ NC(NORMRAL)	I/I	Pd	I/I	I/I	I/I	E20 Emulator control pin/When normal operating mode,set to input.
18	MD/FINED	MD	I	M3VPu	I	I	I	Pins for setting the operating mode(select the Boot Mode or User Boot Mode,Single Chip Mode)
19	XCIN	XCIN	I	Pd	-	-	-	NC(Pull down)
20	XCOUT	XCOUT	I		-	-	-	NC(open)
21	RES#	RESET	I		-	-	-	Reset signal input pin
22	XTAL/P37	XTAL	I		-	-	-	Pins for a crystal resonator (Xin=12MHz × 10)
23	VSS	VSS	-		-	-	-	Ground pin
24	EXTAL/P36	EXTAL	-		-	-	-	Pins for a crystal resonator (Xin=12MHz × 10)
25	VCC	VCC	-		-	-	-	Power supply pin
26	UPSEL/P35(IN)/NMI	NC	I	M3VPu	I	I	I	NC
27	P34/SCK6/SCK0/ IRQ4	BDOWN	I		I	I	I	Detect power down
28	P33/TIOCD0/RXD6/ RXD0/IRQ3-DS	RC IN	I		I	I	I	Remote input
29	P32/TIOCC0/TXD6/ TXD0/IRQ2-DS	NC	O		L	L	L	NC
30	TMS/PF3	TMS/ NC(NORMRAL)	I/I	M3VPu	-/I	-/I	I	E20 Emulator control pin/When normal operating mode,set to input.
31	TDI/PF2/RXD1	TDI/RXD MITSUBISHI	I/I/I	M3VPu	-/-/I	-/-/I	I	E20 Emulator control pin/Mitsubishi writter control pin/ When normal operating mode,set to input.
32	P31/IRQ1-DS	NC(NA)/TU GPO2_INT(EU/ CH/JP)	O/I		L	L	L	TUNER control
33	P30/RXD1	HDRADIO MIHO(NA)/TU SDIO(EU/CH/ JP)	I/I_O		L	L	L	HDRADIO/TUNER control
34	TCK/FINEC/PF1/ SCK1	TCK/ NC(NORMRAL)	I/I	M3VPu	-/I	-/I	I	E20 Emulator control pin//When normal operating mode,set to input.
35	TD0/TXD1/PF0	TDO/TXD MITSUBISHI	O/O/I	M3VPu	-/-/I	-/-/I	I	E20 Emulator control pin/Mitsubishi writter control pin/ When normal operating mode,set to input.
36	P27/SCK1	NC(NA)/TU SEN(EU/CH/ JP)	O		L	L	L	TUNER control
37	P26/TXD1	HDRADIO MOHI(NA)/TU SCLK(EU/CH/ JP)	O/O		L	L	L	HDRADIO/TUNER control
38	P25/RXD3	VOL DATA	O		L	L	L	Volume control pin (NJU72343)
39	VCC	VCC	-		-	-	-	Power supply pin
40	P24/SCK3	NC/(USB_SEL)	O		L	L	L	NC
41	VSS	VSS	-		-	-	-	Ground pin
42	P23/TXD3/CTS0#/ RTS0#	E RTS MOEI / (E SPI CS)	O	N3VPu	L	L	L	Ethernet(LEGO) control pin/ (Case of using CY920)
43	P22/SCK0	E CTS MIEO / (E SPI CLK)	I/(O)	N3VPu	I	I	I	Ethernet(LEGO) control pin/ (Case of using CY920)
44	P21/RXD0/IRQ9	E RxD MIEO / (E SPI MIEO)	I	N3VPu	I	L	I	Ethernet(LEGO) control pin/ (Case of using CY920)
45	P20/TXD0/IRQ8	E TxD MOEI / (E SPI MOEI)	O	N3VPu	L	L	L	Ethernet(LEGO) control pin/ (Case of using CY920)

Pin	Pin Name	Symbol	I/O	Pu/Pd	STBY	STOP	CEC STBY	Function
46	P17/SCK1/TXD3/ IRQ7	NET FACT RST / (E SPI REQ)	O(ODR) / (I)	N5VPu	Z	Z	Z	Ethernet(LEGO) control pin/ (Case of using CY920)
47	P87/TXD10/TIOCA2	NC	O		L	L	L	NC
48	P16/TXD1/RXD3/ IRQ6	NET5V POWER / (E RESET)	O/ (ODR)	N3VPu	L	L	L	Ethernet power supply (Net5V) control pin/ (Case of using CY920)
49	P86/RXD10	SEL_DATA	O		L	L	L	Audio selector control pin (NJU72750/72751)
50	P15/RXD1/SCK3/ IRQ5	AEXP STB	O		L	L	L	Expander (MC14094) control pin
51	P14/IRQ4	AEXP OE	O		L	L	L	Expander (MC14094) control pin
52	P13/TXD2/IRQ3	AEXP CLK	O		L	L	L	Expander (MC14094) control pin
53	P12/RXD2/IRQ2	AEXP DATA	O		L	L	L	Expander (MC14094) control pin
54	VCC_USB	VCC_USB	-		-	-	-	Power supply pin
55	USB0_DM	USB0_DM	-		-	-	-	NC(open)
56	USB0_DP	USB0_DP	-		-	-	-	NC(open)
57	VSS_USB	VSS_USB	-		-	-	-	Ground pin
58	AVCC_USBA	AVCC_USBA	-		-	-	-	Power supply pin
59	USBA_PREF	USBA_PREF	-		-	-	-	NC(open)
60	AVSS_USBA	AVSS_USBA	-		-	-	-	Ground pin
61	PVSS_USBA	PVSS_USBA	-		-	-	-	Ground pin
62	VSS2_USBA	VSS2_USBA	-		-	-	-	Ground pin
63	USBA_DM	USBA_DM	-		-	-	-	NC(open)
64	USBA_DP	USBA_DP	-		-	-	-	NC(open)
65	VSS1_USBA	VSS1_USBA	-		-	-	-	Ground pin
66	VCC_USBA	VCC_USBA	-		-	-	-	Power supply pin
67	P11/SCK2/IRQ1	CEC_OUT	O		L	L	-	CEC-D control pin
68	P10/IRQ0	CEC_IN	I	SW3VPu	I	I	I	CEC-D control pin
69	P53	ADV8003 SPI CS	O		L	L	L	GUI control pin(ADV8003)
70	P52/RXD2	ADV8003 SPI MI	I		L	L	L	GUI control pin(ADV8003)
71	P51/SCK2	ADV8003 SPI CLK	O		L	L	L	GUI control pin(ADV8003)
72	P50/TXD2	ADV8003 SPI MO	O		L	L	L	GUI control pin(ADV8003)
73	VSS	VSS	-		-	-	-	Ground pin
74	P83/SCK10	IP_RST	O	Pd	I	I	L	Scaler w/ GUI (ADV8003) Reset control pin
75	VCC	VCC	-		-	-	-	Power supply pin
76	UB/PC7/TXD8/ IRQ14	UB	I	Pd	-	-	-	Pins for setting the boot mode(select the Boot Mode or User Boot Mode)
77	PC6/RXD8/IRQ13	AVSDA	I/O	DV-3VPu	O/L	O/L	L	VIDEO I2C control pin for ADV8003/ ADV7850/ ADVM2000
78	PC5/SCK8	AVSCL	I/O	DV-3VPu	O/L	O/L	L	VIDEO I2C control pin for ADV8003/ ADV7850/ ADVM2000
79	P82/TXD10	DSP MOSI	O	DA3VPu	L	L	L	DSP(ADI) control pin
80	P81/RXD10	DSP MISO	I	DA3VPu	L	L	L	DSP(ADI) control pin
81	P80/SCK10	DSP CLK	O	DA3VPu	L	L	L	DSP(ADI) control pin
82	PC4/SCK5	DSP1FLAG0 / (DSP CS)	I	Pd	L	L	L	DSP(ADI) interrupt signal input pin/(Case of using CIRRUS)
83	PC3/TXD5	DSP2FLAG0 / (DSP FLAG0)	I	Pd	L	L	L	DSP(ADI) interrupt signal input pin/(Case of using CIRRUS)
84	P77/TXD11	DSP3FLAG0 / (DSP RST)	I	Pd	L	L	L	DSP(ADI) interrupt signal input pin/(Case of using CIRRUS)
85	P76/RXD11	DSP4FLAG0 / (DSP BUSY)	I	Pd	L	L	L	DSP(ADI) interrupt signal input pin/(Case of using CIRRUS)
86	PC2/RXD5	DSP RST / (DA POWER2)	O		L	L	L	DSP(ADI) reset control pin/(Case of using CIRRUS)
87	P75/SCK11	CEC POWER2	O		L	L	L	CEC standby power control (for CEC Standby Mode 3)
88	P74	DSP1CS / (DSP ROM WRITE)	O	DA3VPu	L	L	L	DSP(ADI) control pin/(Case of using CIRRUS&CY920)
89	PC1/SCK5/IRQ12	DAC.PLD ERR	I		L	L	L	Detect PLD error (from Audio PLD)

Pin	Pin Name	Symbol	I/O	Pu/Pd	STBY	STOP	CEC STBY	Function
90	VCC	VCC	-		-	-	-	Power supply pin
91	PC0/IRQ14	DSP2CS / (NC)	O	DA3VPu	L	L	L	DSP(ADI) control pin/(Case of using CIRRUS)
92	VSS	VSS	-		-	-	-	Ground pin
93	P73	DSP3CS / (NC)	O	DA3VPu	L	L	L	DSP(ADI) control pin/(Case of using CIRRUS)
94	PB7/TXD9	HSDA	I/O	CE-C3VPu	L	L	L	HDMI I2C control pin for MN864787/MN864788
95	PB6/RXD9	HSCL	I/O	CE-C3VPu	L	L	L	HDMI I2C control pin for MN864787/MN864788
96	PB5/SCK9	NC / (JTAG TDO)	O		L	L	L	NC/(Case of using CY920)
97	PB4	APLD CS/ (JTAG TMS)	O		L	L	L	Audio PLD (5M80ZT100C5N) control pin/(Case of using CY920)
98	PB3/SCK4/SCK6	APLD DATA/ DAC DATA/ (JTAG TDI)	O		L	L	L	Audio PLD (5M80ZT100C5N) control pin/DAC (AK4458) control pin/(Case of using CY920)
99	PB2	APLD CLK/ DAC CLK/ (JTAG TCK)	O		L	L	L	Audio PLD (5M80ZT100C5N) control pin/DAC (AK4458) control pin/(Case of using CY920)
100	PB1/TXD4/TXD6/ IRQ4-DS	DAC MS	O		L	L	L	DAC (AK4458) control pin
101	P72	DAC RST	O		L	L	L	DAC (AK4458) control pin
102	P71	Z2PLD ERR	I	-	L	L	L	Detect PLD error (from Audio PLD)
103	VCC	VCC	-		-	-	-	Power supply pin
104	PB0/RXD4/RXD6/ IRQ12	Z3PLD ERR	I	-	L	L	L	Detect PLD error (from Audio PLD)
105	VSS	VSS	-		-	-	-	Ground pin
106	PA7	ISEL A	I		I	I	I	Input selector (Rotary encoder) signal input pin
107	PA6	ISEL B	I		I	I	I	Input selector (Rotary encoder) signal input pin
108	PA5	VOL CLK	O		L	L	L	Volume control pin (NJU72343)
109	PA4/TXD5/SSDA5/ IRQ5-DS	(Debug pin for data flash)	O		L	L	L	NC (Debug pin for data flash of MCU.Write:High)
110	PA3/RXD5/SSCL5	MVOL MUTE	O		L	L	L	Volume control pin (NJU72343)
111	TRDATA3/PG7	REMOTE POWER(232C)	O		L	L	L	232C power supply (REMOTE 3.3V) control pin
112	PA2/RXD5	NC/(USB_EN)	O		L	L	L	NC
113	TRDATA2/PG6	ZVOL DATA	O		L	L	L	ZONE2 volume control pin (NJW1194)
114	PA1/SCK5/IRQ11	ZVOL CLK	O		L	L	L	ZONE2 volume control pin (NJW1194)
115	VCC	VCC	-		-	-	-	Power supply pin
116	TRCLK/PG5	ZVOL STB	O		L	L	L	ZONE2 volume control pin (NJW1194)
117	VSS	VSS	-		-	-	-	Ground pin
118	PA0	H5V DET	I	-	I	I	I	HDMI IN 5V detect signal pin
119	TRSYNC/PG4	FL RST	O		L	L	L	FL display control pin
120	P67/IRQ15	FL CE	O		L	L	L	FL display control pin
121	TRDATA1/PG3	FL CLK	O		L	L	L	FL display control pin
122	P66	FL DATA	O		L	L	L	FL display control pin
123	TRDATA0/PG2	NC	O		L	L	L	NC
124	P65	NC	O		L	L	L	NC
125	PE7/IRQ7/AN105	ASO/DC DET	I		I	I	I	Protection detect signal input pin (for ASO and DC) (A/D converter)
126	PE6/IRQ6/AN104	MIC DET/ H/P DET	I		I	I	I	Headphone insert detect pin/Microphone insert detect pin (A/D converter)
127	VCC	VCC	-		-	-	-	Power supply pin
128	P70	ADC RST	O		I	L	I	A/D convertor(AK5358) reset control pin
129	VSS	VSS	-		-	-	-	Ground pin
130	PE5/IRQ5/AN103	MAIN POWER	O		L	L	L	Power supply control pin
131	PE4/AN102	CPU POWER	O		L	L	L	CPU power supply control pin
132	PE3/AN101	AIOS4_ WAKEUP / (E POWER1)	O		L	L	L	Ethernet(LEGO) control pin for Standby(High:Normal,Low:Deep Standby)/ (Case of using CY920)

Pin	Pin Name	Symbol	I/O	Pu/Pd	STBY	STOP	CEC STBY	Function
133	PE2/RXD12/IRQ7-DS/AN100	AIOS4_STBY_STATUS / (E POWER2)	O		L	L	L	Status pin for UART communication with LEGO(L:not-available, H：available)/(Case of using CY920)
134	PE1/TXD12	GUI_WRITE / (E POWER3)	O		L	L	L	GUI flash rom writing control/(Case of using CY920)
135	PE0/SCK12	NET3.3V POWER / (E POWER4)	O		L	L	L	Ethernet power supply control(Net3.3V)/(Case of using CY920)
136	P64	D5V POWER	O		L	L	H	Digital 5V power supply control pin(3.3V and 1.8V generate from 5V)
137	P63	CEC_POWER	O		L	L	※	CEC standby power supply control(CEC5V,CEC3.3V,CEC1.8V)
138	P62	DV_POWER1	O		L	L	L	Digital video power supply (DV5V,DV3.3V) control pin
139	P61	DV_POWER2	O		L	L	L	Digital video power supply (DV1.8V) control pin
140	VSS	VSS	-		-	-	-	Ground pin
141	P60	DIR DIN	O		L	L	L	DIR (PCM9211) control pin
142	VCC	VCC	-		-	-	-	Power supply pin
143	PD7/IRQ7/AN107	DIR CE	O		L	L	L	DIR (PCM9211) control pin
144	PG1	DIR DOUT	I	DA3.3Pu	I	I	I	DIR (PCM9211) control pin
145	PD6/IRQ6/AN106	DIR CLK	O		L	L	L	DIR (PCM9211) control pin
146	PG0	DIR RST	O		L	L	L	DIR (PCM9211) control pin
147	PD5/IRQ5/AN113	787_HAINT	I	-	Z		-	HDMI Rx (MN864787) audio interrupt signal det
148	PD4/IRQ4/AN112	DSP4CS/ (NC)	O	-	Pd	Z	L	DSP(ADI) control pin/(Case of using CY920)
149	P97	DE_RST	O	Pd	Z		L	Video decoder (ADV7850) reset control pin
150	PD3/IRQ3/AN111	787_HINT	I	-	Z		-	HDMI Tx (MN864787) interrupt signal input pin
151	VSS	VSS	-		-	-	-	Ground pin
152	P96	787_RST	O	Pd	Z		※	HDMI Tx (MN864787) reset control pin
153	VCC	VCC	-		-	-	-	Power supply pin
154	PD2/IRQ2/AN110	788_2_HINT	I	-	Z		-	HDMI Rx (MN864788) interrupt signal input pin
155	P95	788_2_RST	O	Pd	Z		※	HDMI Rx (MN864788) reset control pin
156	PD1/IRQ1/AN109	788_1_HINT	I	-	Z		-	HDMI Rx (MN864788) interrupt signal input pin
157	P94	788_1_RST	O	Pd	Z		※	HDMI Rx (MN864788) reset control pin
158	PD0/IRQ0/AN108	NC	O		L	L	L	NC
159	P93/AN117	THERMAL A	I	SW3VPu	I	L	I	Protection detect signal input pin (for power TR)
160	P92/RXD7/AN116	DA_POWER1	O		L	L	L	Digital audio power supply (DA3.3V,DA1.2V) control pin
161	P91/AN115	THERMAL E	I	SW3VPu	I	L	I	Protection detect signal input pin (for Heat sink)
162	VSS	VSS	-		-	-	-	Ground pin
163	P90/TXD7/AN114	THERMAL F	I	SW3VPu	I	L	I	Protection detect signal input pin (for Heat sink)
164	VCC	VCC	-		-	-	-	Power supply pin
165	P47/IRQ15-DS/AN007	SEL CLK	O		L	L	L	Audio selector control pin (NJU72750/72751)
166	P46/IRQ14-DS/AN006	CURRENT DET	I		I	L	I	Current level monitor pin (A/D converter)
167	P45/IRQ13-DS/AN005	AMPSIGDET	I		I	L	I	Signal level monitor pin (AD converter)
168	P44/IRQ12-DS/AN004	MODE	I		I	I	I	Region setting pin
169	P43/IRQ11-DS/AN003	KEY3	I	M3VPu	I	I	I	Key control signalinput pin (When standby mode,set to inturrupt)
170	P42/IRQ10-DS/AN002	KEY2	I	M3VPu	I	I	I	Key control signalinput pin (When standby mode,set to inturrupt)
171	P41/IRQ9-DS/AN001	KEY1	I	M3VPu	I	I	I	Key control signalinput pin (When standby mode,set to inturrupt)
172	VREFL0	VREFL0	-		-	-	-	Ground pin
173	P40	NC/ (PLD WRITE)	O		L	L	L	NC /(Case of using CY920)
174	VREFH0	VREFH0	-		-	-	-	Power supply pin
175	AVCC0	AVCC0	-		-	-	-	Power supply pin
176	P07/IRQ15	DSP2FLAG3 / (DSP FLAG3)	I	Pd	L	L	L	DSP(ADI) control pin/(Case of using CIRRUS)

PCM9211 (DIGITAL : U7004)

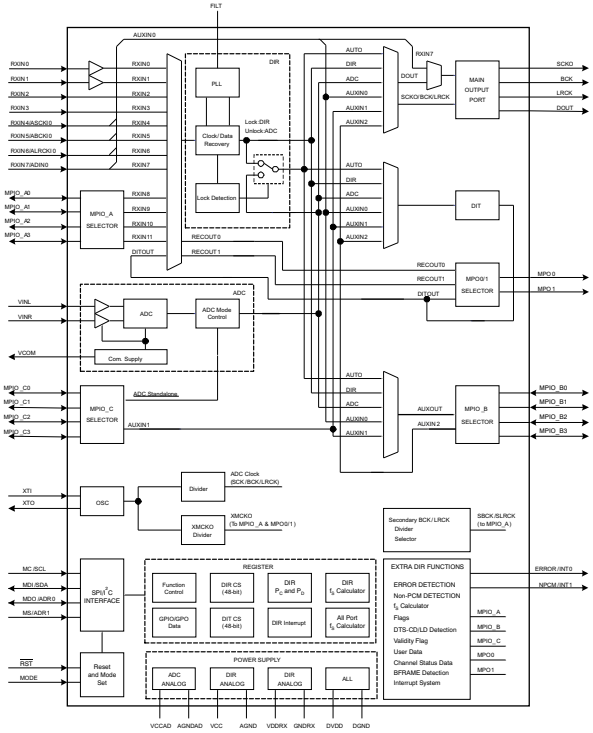


PIN Functions

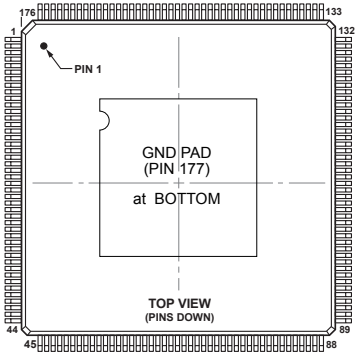
PIN				DESCRIPTION
NO.	NAME	I/O	5-V TOLERANT	
1	ERROR/INT0	O	No	DIR Error detection output / Interrupt0 output
2	NPCM/INT1	O	No	DIR Non-PCM detection output / Interrupt1 output
3	MPIO_A0	I/O	Yes	Multipurpose I/O, Group A(1)
4	MPIO_A1	I/O	Yes	Multipurpose I/O, Group A(1)
5	MPIO_A2	I/O	Yes	Multipurpose I/O, Group A(1)
6	MPIO_A3	I/O	Yes	Multipurpose I/O, Group A(1)
7	MPIO_C0	I/O	Yes	Multipurpose I/O, Group C(1)
8	MPIO_C1	I/O	Yes	Multipurpose I/O, Group C(1)
9	MPIO_C2	I/O	Yes	Multipurpose I/O, Group C(1)
10	MPIO_C3	I/O	Yes	Multipurpose I/O, Group C(1)
11	MPIO_B0	I/O	Yes	Multipurpose I/O, Group B(1)
12	MPIO_B1	I/O	Yes	Multipurpose I/O, Group B(1)
13	MPIO_B2	I/O	Yes	Multipurpose I/O, Group B(1)
14	MPIO_B3	I/O	Yes	Multipurpose I/O, Group B(1)
15	MPO0	O	No	Multipurpose output 0
16	MPO1	O	No	Multipurpose output 1
17	DOUT	O	No	Main output port, serial digital audio data output
18	LRCK	O	No	Main output port, LR clock output
19	BCK	O	No	Main output port, Bit clock output
20	SCKO	O	No	Main output port, System clock output
21	DGND	–	–	Ground, for digital
22	DVDD	–	–	Power supply, 3.3 V (typ.), for digital
23	MDO/ADR0	I/O	Yes	Software control I/F, SPI data output / I2C slave address setting0(2)
24	MDI/SDA	I/O	Yes	Software control I/F, SPI data input / I2C data input/output(2) (3)
25	MC/SCL	I	Yes	Software control I/F, SPI clock input / I2C clock input(2)
26	MS/ADR1	I	Yes	Software control I/F, SPI chip select / I2C slave address setting1(2)
27	MODE	I	No	Control mode setting, (see the Serial Control Mode section, Control Mode Pin Setting)
28	RXIN7/ADIN0	I	Yes	Biphase signal, input 7 / AUXIN0, serial audio data input(2)
29	RXIN6/ALRCKI0	I	Yes	Biphase signal, input 6 / AUXIN0, LR clock input(2)
30	RXIN5/ABCKI0	I	Yes	Biphase signal, input 5 / AUXIN0, bit clock input(2)
31	RXIN4/ASCKI0	I	Yes	Biphase signal, input 4 / AUXIN0, system clock input(2)
32	RXIN3	I	Yes	Biphase signal, input 3(2)
33	RXIN2	I	Yes	Biphase signal, input 2(2)
34	RST	I	Yes	Reset Input, active low(2) (4)
35	RXIN1	I	Yes	Biphase signal, input 1, built-in coaxial amplifier
36	VDDRX	–	–	Power supply, 3.3 V (typ.), for RXIN0 and RXIN1.
37	RXIN0	I	Yes	Biphase signal, input 0, built-in coaxial amplifier
38	GNDRX	-	-	Ground, for RXIN
39	XTI	I	No	Oscillation circuit input for crystal resonator or external XTI clock source input(5)
40	XTO	O	No	Oscillation circuit output for crystal resonator
41	AGND	–	–	Ground, for PLL analog
42	VCC	–	–	Power supply, 3.3 V (typ.), for PLL analog
43	FILT	O	No	External PLL loop filter connection terminal; must connect recommended filter
44	VCOM	O	No	ADC common voltage output; must connect external decoupling capacitor
45	AGNDAD	–	–	Ground, for ADC analog
46	VCCAD	–	–	Power supply, 5.0 V (typ.), for ADC analog
47	VINL	I	No	ADC analog voltage input, left channel
48	VINR	I	No	ADC analog voltage input, right channel

(1) Schmitt trigger input
(2) Schmitt trigger input
(3) Open-drain configuration in I2C mode
(4) Onboard pull-down resistor (50 k Ω , typical)
(5) CMOS Schmitt trigger input

PCM9211 BLOCK DIAGRAM



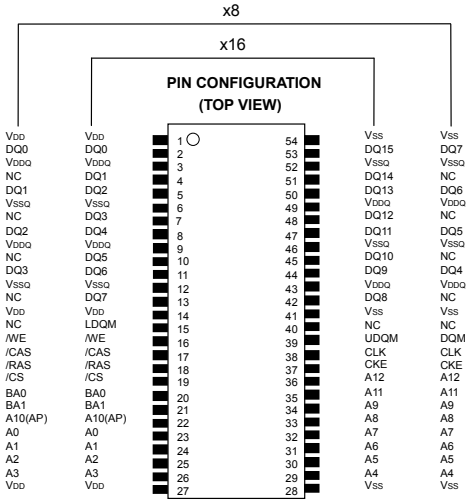
ADSP21487KSWZ4B (DIGITAL : U101, U201, U301, U401)



ADSP21487KSWZ3B Terminal Function

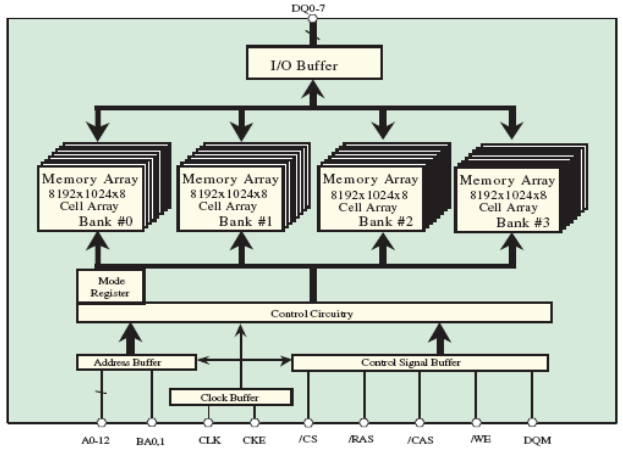
Pin Name	Pin No.	Pin Name	Pin No.	Pin Name	Pin No.	Pin Name	Pin No.
SDDQM	1	V_{DD_EXT}	45	DAI_P10	89	V_{DD_INT}	133
$\overline{MS0}$	2	DPI_P08	46	V_{DD_INT}	90	FLAG0	134
SDCKE	3	DPI_P07	47	V_{DD_EXT}	91	FLAG1	135
V_{DD_INT}	4	V_{DD_INT}	48	DAI_P20	92	FLAG2	136
CLK_CFG1	5	DPI_P09	49	V_{DD_INT}	93	NC	137
ADDR0	6	DPI_P10	50	DAI_P08	94	FLAG3	138
BOOT_CFG0	7	DPI_P11	51	DAI_P14	95	NC	139
V_{DD_EXT}	8	DPI_P12	52	DAI_P04	96	NC	140
ADDR1	9	DPI_P13	53	DAI_P18	97	V_{DD_EXT}	141
ADDR2	10	DPI_P14	54	DAI_P17	98	NC	142
ADDR3	11	DAI_P03	55	DAI_P16	99	V_{DD_INT}	143
ADDR4	12	NC	56	DAI_P12	100	$\overline{TRST}$	144
ADDR5	13	V_{DD_EXT}	57	DAI_P15	101	NC	145
BOOT_CFG1	14	NC	58	V_{DD_INT}	102	$\overline{EMU}$	146
GND	15	NC	59	DAI_P11	103	DATA0	147
ADDR6	16	NC	60	V_{DD_EXT}	104	DATA1	148
ADDR7	17	NC	61	V_{DD_INT}	105	DATA2	149
NC	18	V_{DD_INT}	62	BOOT_CFG2	106	DATA3	150
NC	19	NC	63	V_{DD_INT}	107	TDO	151
ADDR8	20	NC	64	AMI_ACK	108	DATA4	152
ADDR9	21	V_{DD_INT}	65	GND	109	V_{DD_EXT}	153
CLK_CFG0	22	NC	66	THD_M	110	DATA5	154
V_{DD_INT}	23	NC	67	THD_P	111	DATA6	155
CLKIN	24	V_{DD_INT}	68	V_{DD_THD}	112	V_{DD_INT}	156
XTAL	25	NC	69	V_{DD_INT}	113	DATA7	157
ADDR10	26	$\overline{WDTRSTO}$	70	V_{DD_INT}	114	TDI	158
SDA10	27	NC	71	$\overline{MST}$	115	SDCLK	159
V_{DD_EXT}	28	V_{DD_EXT}	72	V_{DD_INT}	116	V_{DD_EXT}	160
V_{DD_INT}	29	DAI_P07	73	WDT_CLKO	117	DATA8	161
ADDR11	30	DAI_P13	74	WDT_CLKIN	118	DATA9	162
ADDR12	31	DAI_P19	75	V_{DD_EXT}	119	DATA10	163
ADDR17	32	DAI_P01	76	ADDR23	120	TCK	164
ADDR13	33	DAI_P02	77	ADDR22	121	DATA11	165
V_{DD_INT}	34	V_{DD_INT}	78	ADDR21	122	DATA12	166
ADDR18	35	NC	79	V_{DD_INT}	123	DATA14	167
$\overline{RESETOUT/RUNRSTIN}$	36	NC	80	ADDR20	124	DATA13	168
V_{DD_INT}	37	NC	81	ADDR19	125	V_{DD_INT}	169
DPI_P01	38	NC	82	V_{DD_EXT}	126	DATA15	170
DPI_P02	39	NC	83	ADDR16	127	$\overline{SDWE}$	171
DPI_P03	40	V_{DD_EXT}	84	ADDR15	128	$\overline{SDRAS}$	172
V_{DD_INT}	41	V_{DD_INT}	85	V_{DD_INT}	129	$\overline{RESET}$	173
DPI_P05	42	DAI_P06	86	ADDR14	130	TMS	174
DPI_P04	43	DAI_P05	87	$\overline{AMI\_WR}$	131	$\overline{SDCAS}$	175
DPI_P06	44	DAI_P09	88	$\overline{AMI\_RD}$	132	V_{DD_INT}	176
						GND	177*

A3V56S40GTP-60 (DIGITAL : U103, U203, U303, U403)

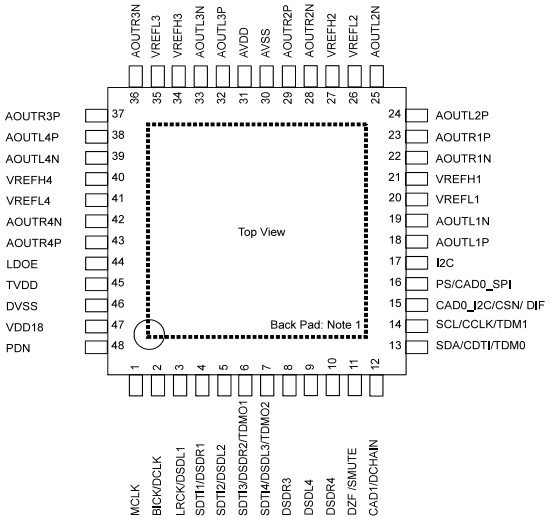


CLK	: Master Clock	DQM	: Output Disable / Write Mask (A3V56S30GTP)
CKE	: Clock Enable	U,L DQM	: Output Disable / Write Mask (A3V56S40GTP)
/CS	: Chip Select	A0-12	: Address Input
/RAS	: Row Address Strobe	BA0,1	: Bank Address
/CAS	: Column Address Strobe	VDD	: Power Supply
/WE	: Write Enable	VDDQ	: Power Supply for Output
DQ0-7	: Data I/O (A3V56S30GTP)	VSS	: Ground
DQ0-15	: Data I/O (A3V56S40GTP)	VSSQ	: Ground for Output

Block Diagram



AK4458VN (DAC : U7501, U7502)

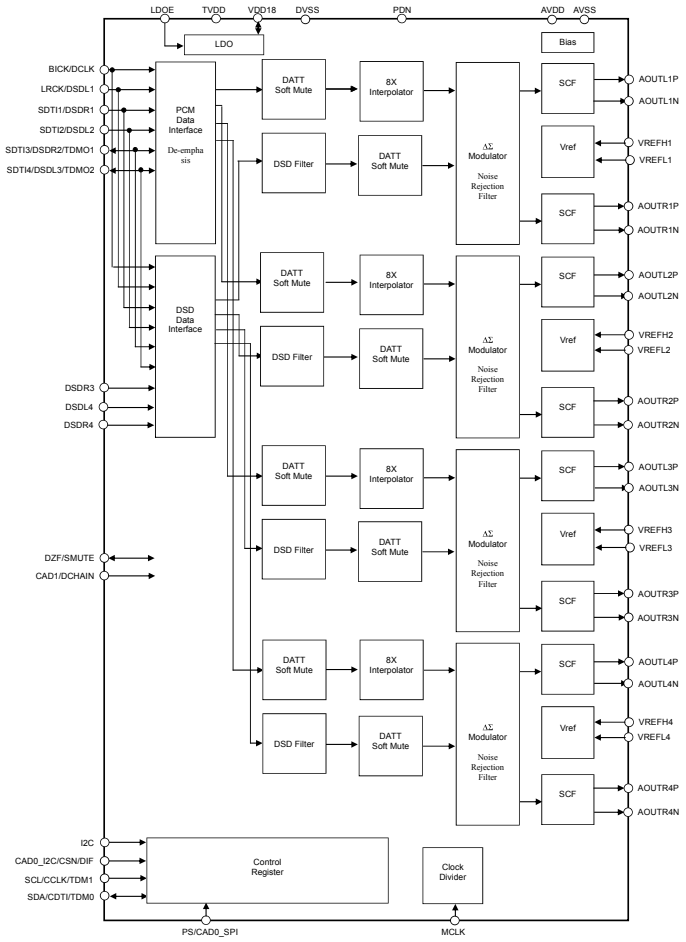


Pin Function

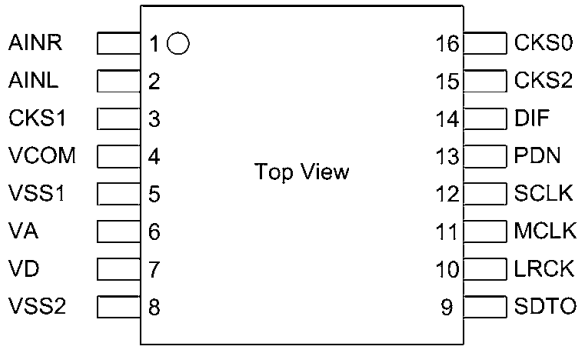
No.	Pin Name	I/O	Function	PD State
1	MCLK	I	External Master Clock Input Pin	Hi-Z
2	BICK	I	Audio Serial Data Clock Pin in PCM mode	Hi-z
	DCLK	I	DSD Clock Pin in DSD mode	
3	LRCK	I	Input Channel Clock Pin in PCM mode	Hi-Z
	DSDL1	I	Audio Serial Data Input in DSD mode	
4	SDTI1	I	Audio Serial Data Input in PCM mode	Hi-Z
	DSDR1	I	Audio Serial Data Input in DSD mode	
5	SDTI2	I	Audio Serial Data Input in PCM mode	Hi-Z
	DSDL2	I	Audio Serial Data Input in DSD mode	
6	SDTI3	I	Audio Serial Data Input in PCM mode	100k Ω Pull down
	DSDR2	I	Audio Serial Data Input in DSD mode	
	TDMO1	O	Audio Serial Data Output in Daisy Chain mode	
7	SDTI4	I	Audio Serial Data Input in PCM mode	100k Ω Pull down
	DSDL3	I	Audio Serial Data Input in DSD mode	
	TDMO2	O	Audio Serial Data Output in Daisy Chain mode	
8	DSDR3	I	Audio Serial Data Input in DSD mode	Hi-Z
9	DSDL4	I	Audio Serial Data Input in DSD mode	Hi-Z
10	DSDR4	I	Audio Serial Data Input in DSD mode	Hi-Z
11	DZF	O	Zero Input Detect in I2C Bus or 3-wire serial control mode	100k Ω Pull down
	SMUTE	I	Soft Mute Pin in Parallel control mode. When this pin is changed to "H", soft mute cycle is initiated. When it is returning to "L", the output mute is released.	
12	CAD1	I	Chip Address 0 Pin in I C Bus or 3-wire serial control mode	Hi-Z
	DCHAIN	I	Daisy Chain Mode select pin in Parallel control mode.	
13	SDA	I/O	Control Data Pin in I2C Bus serial control mode	Hi-Z
	CDTI	I	Control Data Input Pin in 3-wire serial control mode	
	TDM0	I	TDM Mode select pin in Parallel control mode.	
14	SCL	I	Control Data Clock Pin in I2C Bus serial control mode	Hi-Z
	CCLK	I	Control Data Clock Pin in 3-wire serial control mode	
	TDM1	I	TDM Mode select pin in Parallel control mode.	
15	CAD0_I2C	I	Chip Address 0 Pin in I2C Bus serial control mode	Hi-Z
	CSN	I	Chip Select Pin in 3-wire serial control mode	
	DIF	I	Audio Data Format Select in Parallel control mode. "L": 32-bit MSB, "H": 32-bit I2S	
16	PS	I	(I2C pin = "H") Control Mode Select Pin "L": I2C Bus serial control mode, "H": Parallel control mode.	Hi-Z
	CAD0_SPI	I	(I2C pin = "L") Chip Address 0 Pin in 3-wire serial control mode	
17	I2C	I	Control Mode Select Pin "L": 3-wire serial control mode "H": I2C Bus serial control mode or Parallel control mode.	Hi-Z
18	AOUTL1P	O	Lch Positive Analog Output 1 Pin	Hi-Z
19	AOUTL1N	O	Lch Negative Analog Output 1 Pin	Hi-Z
20	VREFL1	I	Negative Voltage Reference Input Pin, AVSS	Hi-Z
21	VREFH1	I	Positive Voltage Reference Input Pin, AVDD	Hi-Z
22	AOUTR1N	O	Rch Negative Analog Output 1 Pin	Hi-Z
23	AOUTR1P	O	Rch Positive Analog Output 1 Pin	Hi-Z
24	AOUTL2P	O	Lch Positive Analog Output 2 Pin	Hi-Z
25	AOUTL2N	O	Lch Negative Analog Output 2 Pin	Hi-Z
26	VREFL2	I	Negative Voltage Reference Input Pin, AVSS	Hi-Z
27	VREFH2	I	Positive Voltage Reference Input Pin, AVDD	Hi-Z
28	AOUTR2N	O	Rch Negative Analog Output 2 Pin	Hi-Z
29	AOUTR2P	O	Rch Positive Analog Output 2 Pin	Hi-Z
30	AVSS	-	Analog Ground Pin	—
31	AVDD	-	Analog Power Supply Pin, 3.0V-5.5V	—
32	AOUTL3P	O	Lch Positive Analog Output 3 Pin	Hi-Z
33	AOUTL3N	O	Lch Negative Analog Output 3 Pin	Hi-Z
34	VREFH3	I	Positive Voltage Reference Input Pin, AVDD	Hi-Z
35	VREFL3	I	Negative Voltage Reference Input Pin, AVSS	Hi-Z
36	AOUTR3N	O	Rch Negative Analog Output 3 Pin	Hi-Z
37	AOUTR3P	O	Rch Positive Analog Output 3Pin	Hi-Z
38	AOUTL4P	O	Lch Positive Analog Output 4 Pin	Hi-Z
39	AOUTL4N	O	Lch Negative Analog Output 4 Pin	Hi-Z
40	VREFH4	I	Positive Voltage Reference Input Pin, AVDD	Hi-Z
41	VREFL4	I	Negative Voltage Reference Input Pin, AVSS	Hi-Z
42	AOUTR4N	O	Rch Negative Analog Output 4 Pin	Hi-Z
43	AOUTR4P	O	Rch Positive Analog Output 4 Pin	Hi-Z
44	LDOE	I	Internal LDO Enable Pin. "L": Disable, "H": Enable	Hi-Z
45	TVDD	-	Digital Power Supply Pin, 3.0V-3.6V	—
46	DVSS	-	Digital Ground Pin	—
47	VDD18	O	LDO Output Pin (LDOE pin = "H") This pin should be connected to DVSS with 1.0µF.	(Note 4)
		I	1.8V Power Input Pin (LDOE pin = "L")	
48	PDN	I	Power-Down & Reset Pin When this pin is "L", the AK4458 is powered-down and the control registers are reset to default state.	Hi-Z

Note 2. All input pins except internal pull-up/down pins should not be left floating.
Note 3. PCM mode and DSD mode are controlled by registers. Daisy Chain mode is controlled by both registers and pins.
Note 4. This pin outputs DVSS when the LDOE pin = "H" and Hi-z when the LDOE pin = "L".

FUNCTIONAL BLOCK DIAGRAM



AK5358BET (DIGITAL : U5001)



AK5358BET Pin Function

No.	Pin Name	I/O	Function
1	AINR	I	Rch Analog Input Pin
2	AINL	I	Lch Analog Input Pin
3	CKS1	I	Mode Select 1 Pin
4	VCOM	O	Common Voltage Output Pin, VA/2 Bias voltage of ADC input.
5	VSS1	-	Ground Pin
6	VA	-	Analog Power Supply Pin, 4.5 ~ 5.5V
7	VD	-	Digital Power Supply Pin, 2.7 ~ 5.5V
8	VSS2	-	Ground Pin
9	SDTO	O	Audio Serial Data Output Pin "L" Output at Power-down mode.
10	LRCK	I/O	Output Channel Clock Pin "L" Output in Master Mode at Power-down mode.
11	MCLK	I	Master Clock Input Pin
12	SCLK	I/O	Audio Serial Data Clock Pin "L" Output in Master Mode at Power-down mode.
13	PDN	I	Power Down Mode & Reset Pin "H": Power up, "L": Power down & Reset
14	DIF	I	Audio Interface Format Pin "H": 24bit I^2S Compatible, "L": 24bit MSB justified
15	CKS2	I	Mode Select 2 Pin
16	CKS0	I	Mode Select 0 Pin

PCM5100 (DIGITAL : U5002, U5003)

PCM510X (top view)

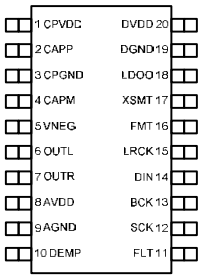


Table 2. TERMINAL FUNCTIONS, PCM510x

TERMINAL NAME	TERMINAL NO.	I/O	DESCRIPTION
CPVDD	1	-	Charge pump power supply, 3.3V
CAPP	2	O	Charge pump flying capacitor terminal for positive rail
CPGND	3	-	Charge pump ground
CAPM	4	O	Charge pump flying capacitor terminal for negative rail
VNEG	5	O	Negative charge pump rail terminal for decoupling, -3.3V
OUTL	6	O	Analog output from DAC left channel
OUTR	7	O	Analog output from DAC right channel
AVDD	8	-	Analog power supply, 3.3V
AGND	9	-	Analog ground
DEMP	10	I	De-emphasis control for 44.1kHz sampling rate(1): Off (Low) / On (High)
FLT	11	I	Filter select : Normal latency (Low) / Low latency (High)
SCK	12	I	System clock input
BCK	13	I	Audio data bit clock input
DIN	14	I	Audio data input
LRCK	15	I	Audio data word clock input
FMT	16	I	Audio format selection : I^2S (Low) / Left justified (High)
XSMT	17	I	Soft mute control : Soft mute (Low) / soft un-mute (High)
LDOO	18	-	Internal logic supply rail terminal for decoupling
DGND	19	-	Digital ground
DVDD	20	-	Digital power supply, 3.3V

PCM5100 Block Diagram

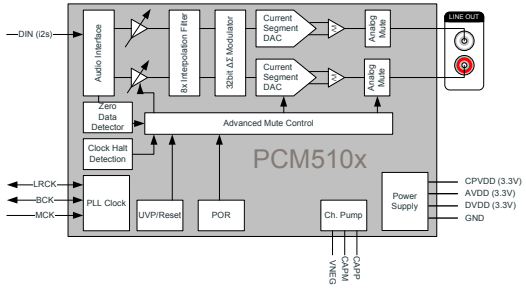
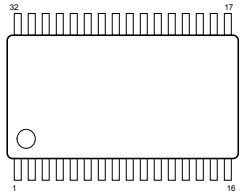


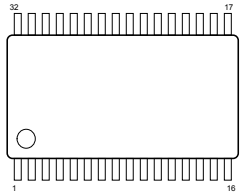
Figure 1. PCM510x Functional Block Diagram

NJU72343 (A.AUDIO/VIDEO : U3215, U3216)



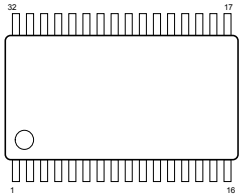
No.	Symbol	Function	No.	Symbol	Function
1	AREF	Analog reference potential	17	DATA	IC control data input
2	ADR	Address selection	18	CLOCK	IC control clock input
3	InA2	Ach input2	19	VDDOUT	Digital power supply output
4	InB2	Bch input2	20	AREF	Analog reference potential
5	InA1	Ach input1	21	OutH	Hch output
6	InB1	Bch input1	22	OutG	Gch output
7	InC	Cch input	23	OutF	Fch output
8	InD	Dch input	24	OutE	Ech output
9	InE	Ech input	25	OutD	Dch output
10	InF	Fch input	26	OutC	Cch output
11	InG1	Gch input1	27	OutB	Bch output
12	InH1	Hch input1	28	OutA	Ach output
13	InG2	Cch input2	29	AREF	Analog reference potential
14	InH2	Dch input2	30	V-	Power supply(-)
15	MUTE	External mute control	31	AREF	Analog reference potential
16	REF	Digital reference potential	32	V+	Power supply(+)

NJU72750 (A.AUDIO/VIDEO : U3212, U3213, U3217, U3218)



No.	Symbol	Function	No.	Symbol	Function
1	V+	Power supply(+)	17	DATA	IC control data input
2	InA1	Ach input1	18	CLOCK	IC control clock input
3	InB1	Bch input1	19	NC	-
4	InA2	Ach input2	20	NC	-
5	InB2	Bch input2	21	OutB3	Bch output3
6	InA3	Ach input3	22	OutA3	Ach output3
7	InB3	Bch input3	23	REF_B	Bch reference potential
8	InA4	Ach input4	24	OutB2	Bch output2
9	InB4	Bch input4	25	OutA2	Ach output2
10	InA5	Ach input5	26	REF_A	Ach reference potential
11	InB5	Bch input5	27	OutB1	Bch output1
12	InA6	Ach input6	28	OutA1	Ach output1
13	InB6	Bch input6	29	NC	-
14	InA7	Ach input7	30	ADR0	Address selection pin 0
15	InB7	Bch input7	31	ADR1	Address selection pin 1
16	REF	BIAS reference potential	32	V-	Power supply(-)

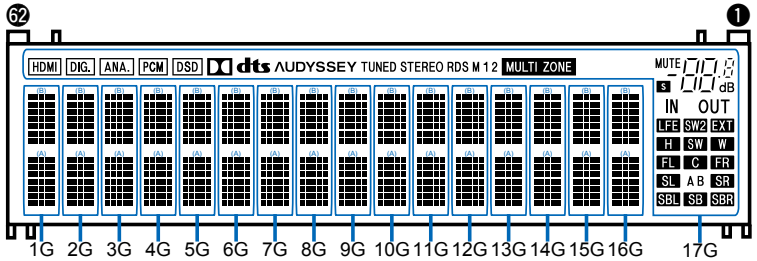
NJU72751 (A.AUDIO/VIDEO : U3214, U3219)



No.	Symbol	Function	No.	Symbol	Function
1	V+	Power supply(+)	17	CLOCK	IC control clock input
2	ADR0	Address selection pin 0	18	NC	-
3	InA1	Ach input1	19	OutB4	Bch output4
4	InB1	Bch input1	20	OutA4	Ach output4
5	NC	-	21	NC	-
6	InA2	Ach input2	22	OutB3	Bch output3
7	InB2	Bch input2	23	OutA3	Ach output3
8	NC	-	24	REF_B	Bch reference potential
9	NC	-	25	REF_A	Ach reference potential
10	InA3	Ach input3	26	OutB2	Bch output2
11	InB3	Bch input3	27	OutA2	Ach output2
12	NC	-	28	NC	-
13	InA4	Ach input4	29	OutB1	Bch output1
14	InB4	Bch input4	30	OutA1	Ach output1
15	REF	BIAS reference potential	31	ADR1	Address selection pin 1
16	DATA	IC control data input	32	V-	Power supply(-)

2. FL DISPLAY

FLD (17-BT-40GINK) (FRONT : Z6402)



PIN CONNECTION

CONNECTION	PIN NO.
F2	62
NX	61
NP	60
NP	59
LGND	58
PGND	57
VH	56
VDD	55
OSC	54
RESET	53
CS	52
CP	51

CONNECTION	PIN NO.
DA	50
TSA	49
TSB	48
Q17G	47
17G	46
NX	45
NX	44
NX	43
NX	42
NX	41
NX	40
NX	39
NX	38
NX	37
NX	36
NX	35
NX	34
NX	33
NX	32
NX	31
NX	30
NX	29
NX	28
NX	27
NX	26
NX	25
NX	24
NX	23
NX	22
NX	21
NX	20
NX	19
NX	18
NX	17
NX	16
NX	15
NX	14
NX	13
NX	12
NX	11
NX	10
NX	9
NX	8
NX	7
NX	6
NX	5
NP	4
NP	3
NX	2
F1	1

NOTE

1) F1, F2 ----Filament
2) NP ------No pin
3) DL ------Datum Line
4) NX ------No extend pin
5) 17G ----Grid
6) Q17G ----Driver Output Port.
7) LGND ----Logic GND pin
8) PGND ----Power GND pin
9) VH ------High Voltage Supply pin
10) VDD ------Logic Voltage Supply pin
11) OSC ----Pin for self-oscillation
12) $\overline{\text{RESET}}$ --Reset Input
13) $\overline{\text{CS}}$ ------Chip Select Input pin
14) CP ----Shift Register Clock
15) DA ----Serial Data Input
16) TSA, B --Test pin
17) Solder composition is Sn-3Ag-0.5Cu.
18) Field of vision is a minimum of 21.8° from the lower side.

PATTERN DETAIL

1G-16G				
1-1	2-1	3-1	4-1	5-1
1-2	2-2	3-2	4-2	5-2
1-3	2-3	3-3	4-3	5-3
1-4	2-4	3-4	4-4	5-4
1-5	2-5	3-5	4-5	5-5
1-6	2-6	3-6	4-6	5-6
1-7	2-7	3-7	4-7	5-7

ANODE CONNECTION

	1G-16G	17G
D0A	1-1A	-
D1A	2-1A	-
D2A	3-1A	-
D3A	4-1A	-
D4A	5-1A	-
D5A	1-2A	-
D6A	2-2A	-
D7A	3-2A	-
D8A	4-2A	-
D9A	5-2A	-
D10A	1-3A	dB
D11A	2-3A	Dp
D12A	3-3A	3d
D13A	4-3A	3e
D14A	5-3A	3c
D15A	1-4A	3g
D16A	2-4A	3f
D17A	3-4A	3b
D18A	4-4A	3a
D19A	5-4A	2d
D20A	1-5A	2e
D21A	2-5A	2c
D22A	3-5A	2g
D23A	4-5A	2f
D24A	5-5A	2b
D25A	1-6A	2a
D26A	2-6A	1d
D27A	3-6A	1e
D28A	4-6A	1c
D29A	5-6A	1g
D30A	1-7A	1f
D31A	2-7A	1b
D32A	3-7A	1a
D33A	4-7A	S1
D34A	5-7A	s

	1G-16G	17G
D0B	1-1B	HDMI
D1B	2-1B	DIG.
D2B	3-1B	ANA.
D3B	4-1B	PCM
D4B	5-1B	DSD
D5B	1-2B	DTS
D6B	2-2B	dts
D7B	3-2B	AUDYSSEY
D8B	4-2B	TUNED
D9B	5-2B	STEREO
D10B	1-3B	RDS
D11B	2-3B	M
D12B	3-3B	1
D13B	4-3B	2
D14B	5-3B	MULTI ZONE
D15B	1-4B	INDEXING
D16B	2-4B	MUTE
D17B	3-4B	IN
D18B	4-4B	OUT
D19B	5-4B	LFE
D20B	1-5B	SW2
D21B	2-5B	EXT
D22B	3-5B	H
D23B	4-5B	SW
D24B	5-5B	W
D25B	1-6B	FL
D26B	2-6B	C
D27B	3-6B	FR
D28B	4-6B	SL
D29B	5-6B	A
D30B	1-7B	B
D31B	2-7B	SR
D32B	3-7B	SBL
D33B	4-7B	SB
D34B	5-7B	SBR

MECHANICAL

DISASSEMBLY

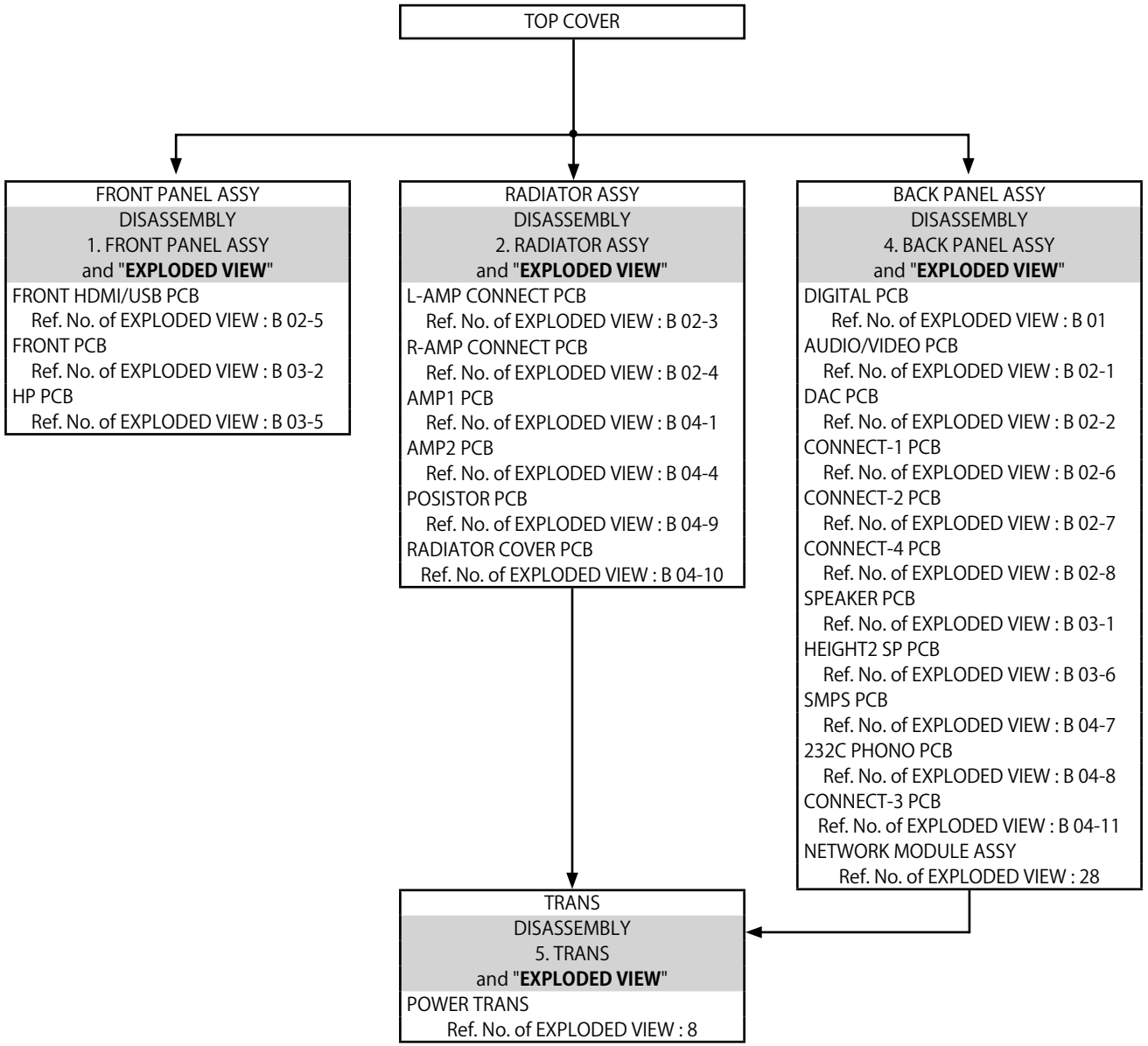
EXPLODED VIEW

PACKING VIEW

DISASSEMBLY

Flowchart

- Remove each part following the flow below.
- Reassemble the removed parts in the reverse order.
- Read "SAFETY PRECAUTIONS" before reassembling the removed parts.
- If wire bundles are removed or moved during adjustment or part replacement, reshape the wires after completing the work. Failure to shape the wires correctly may cause problems such as noise.
- See "EXPLODED VIEW"

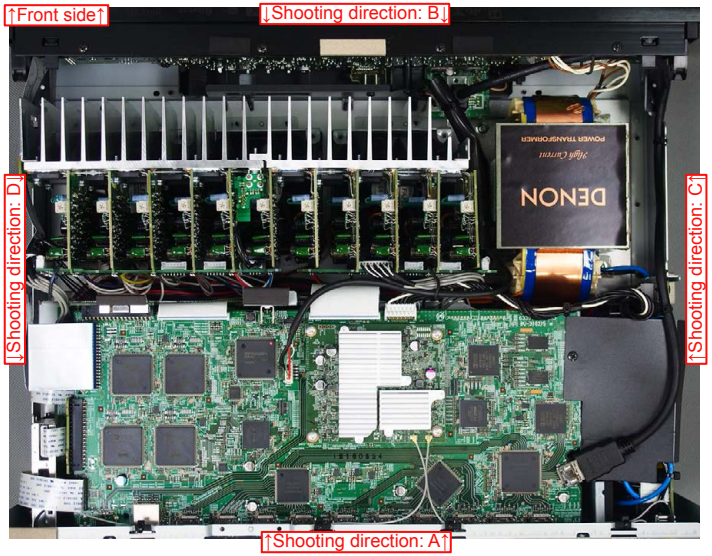


Explanatory Photos for DISASSEMBLY

- For the shooting direction of each photos used in this manual, see the photo below.
- **A, B, C and D** in the photo below indicate the shooting directions of photos.
- The photographs with no shooting direction indicated were taken from the top of the unit.
- Photos of AVR-X6300H E3 are used in this manual.

The viewpoint of each photograph

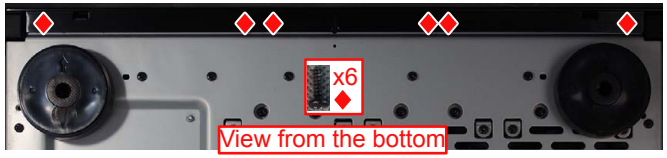
(Shooting direction : X) [View from the top]



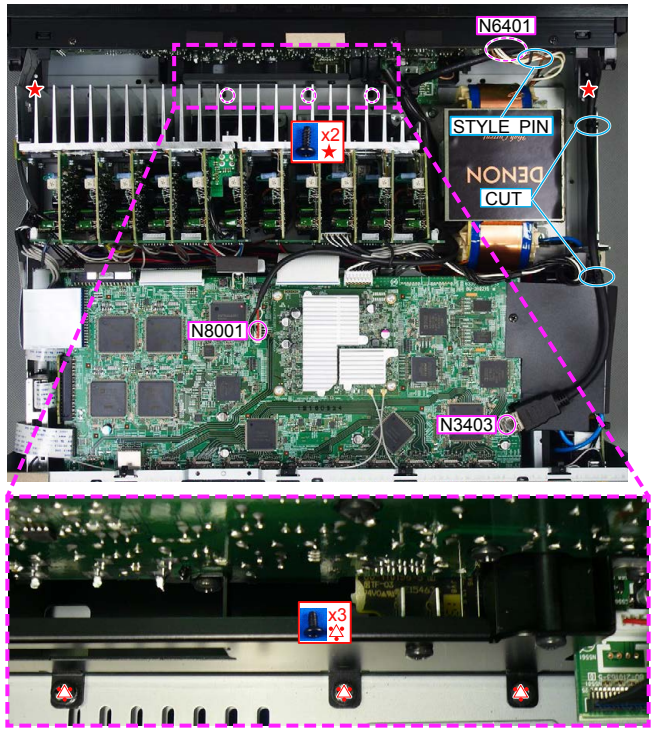
1. FRONT PANEL ASSY

Proceeding : TOP COVER → FRONT PANEL ASSY

(1) Remove the screws.



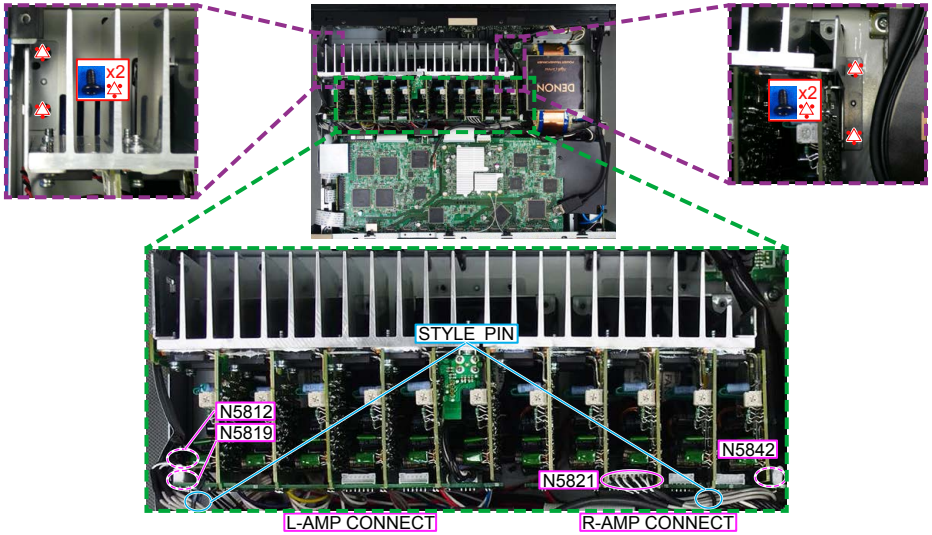
(2) Remove the screws. Cut the wire clamp, then remove the STYLE PIN and connector.



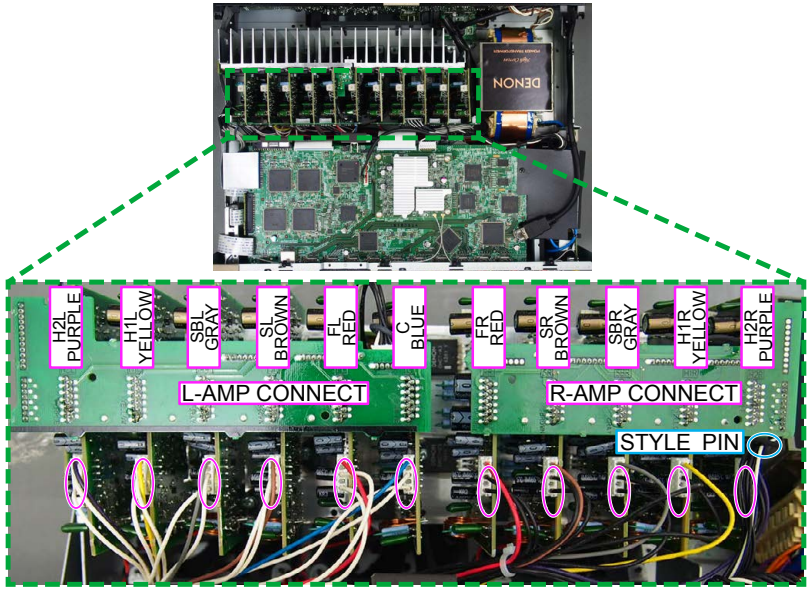
2. RADIATOR ASSY

Proceeding : TOP COVER → FRONT PANEL ASSY → RADIATOR ASSY

(1) Remove the screws. Remove the STYLE PIN and connectors.



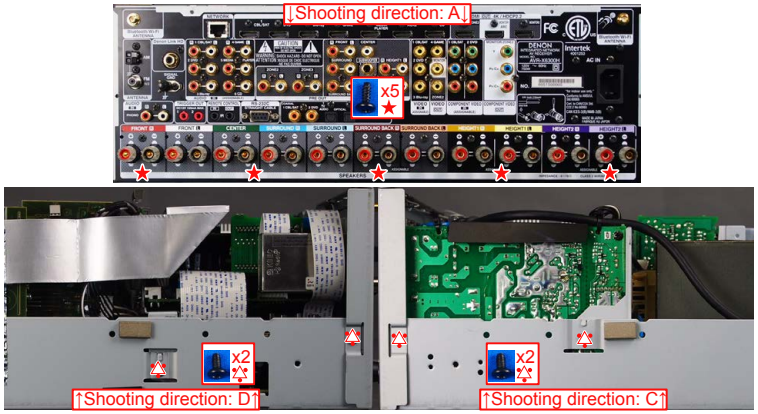
(3) Remove the connector.



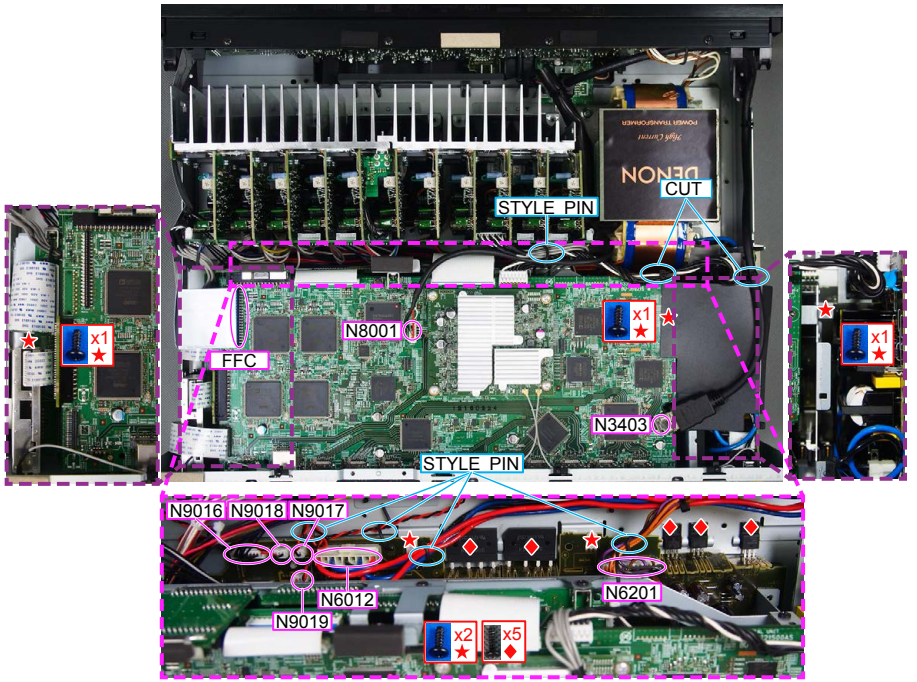
3. BACK PANEL ASSY

Proceeding : TOP COVER → BACK PANEL ASSY

(1) Remove the screws.

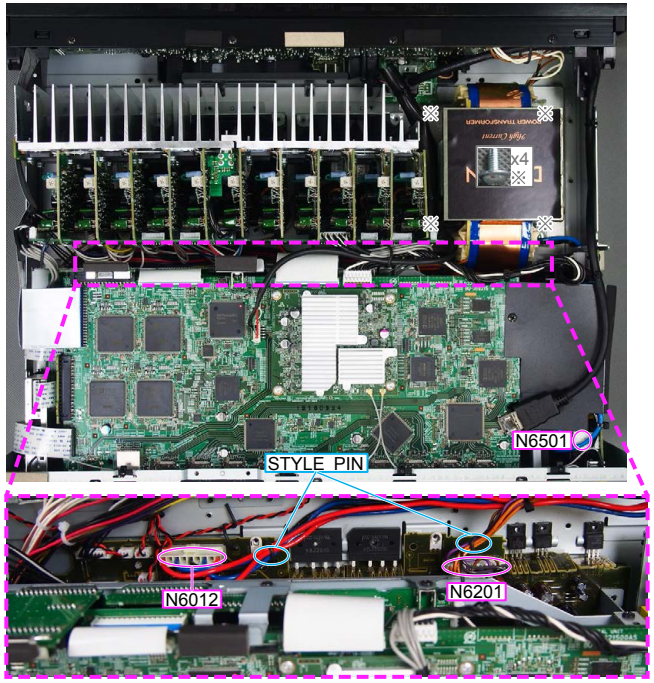


(2) Cut the wire clamps, then remove the STYLE PINs and connectors.
Remove the FFC. Remove the screws.



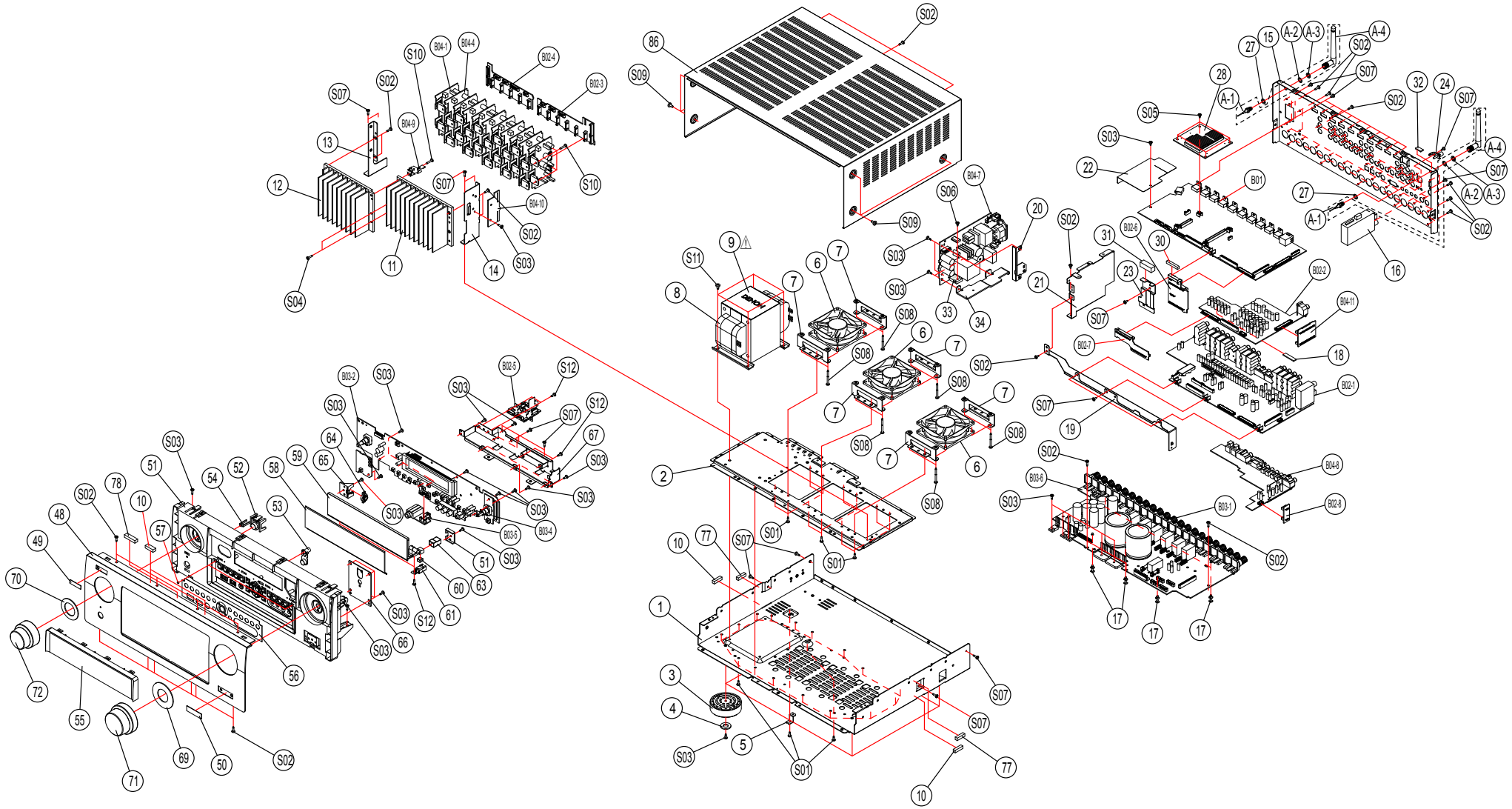
4. TRANS

Proceeding : TOP COVER → RADIATOR ASSY or BACK PANEL ASSY → TRANS



EXPLODED VIEW

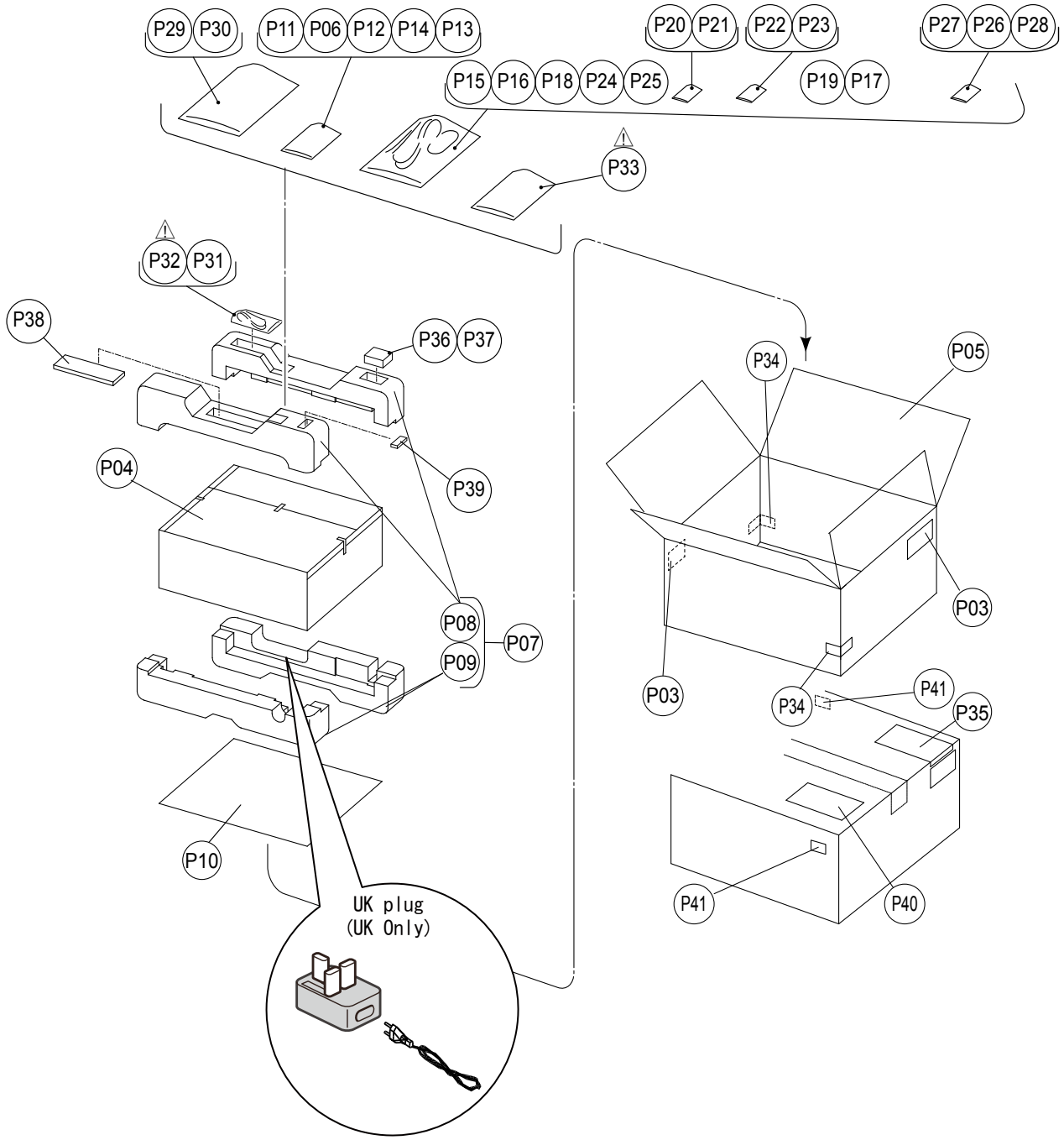
Parts List : http://dmedia.dmglobal.com/Document/DocumentDetails/23012



WARNING:
Parts marked with this symbol ⚠ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

PACKING VIEW

Parts List : http://dmedia.dmglobal.com/Document/DocumentDetails/23012



REPAIR INFORMATION

TROUBLE SHOOTING

AUDIO CHECK PASS

HDMI "Rx/Tx" Failure Detection

CLOCK FLOW & WAVE FORM IN DIGITAL BLOCK

SPECIAL MODE

PROTECTION DIAGRAM

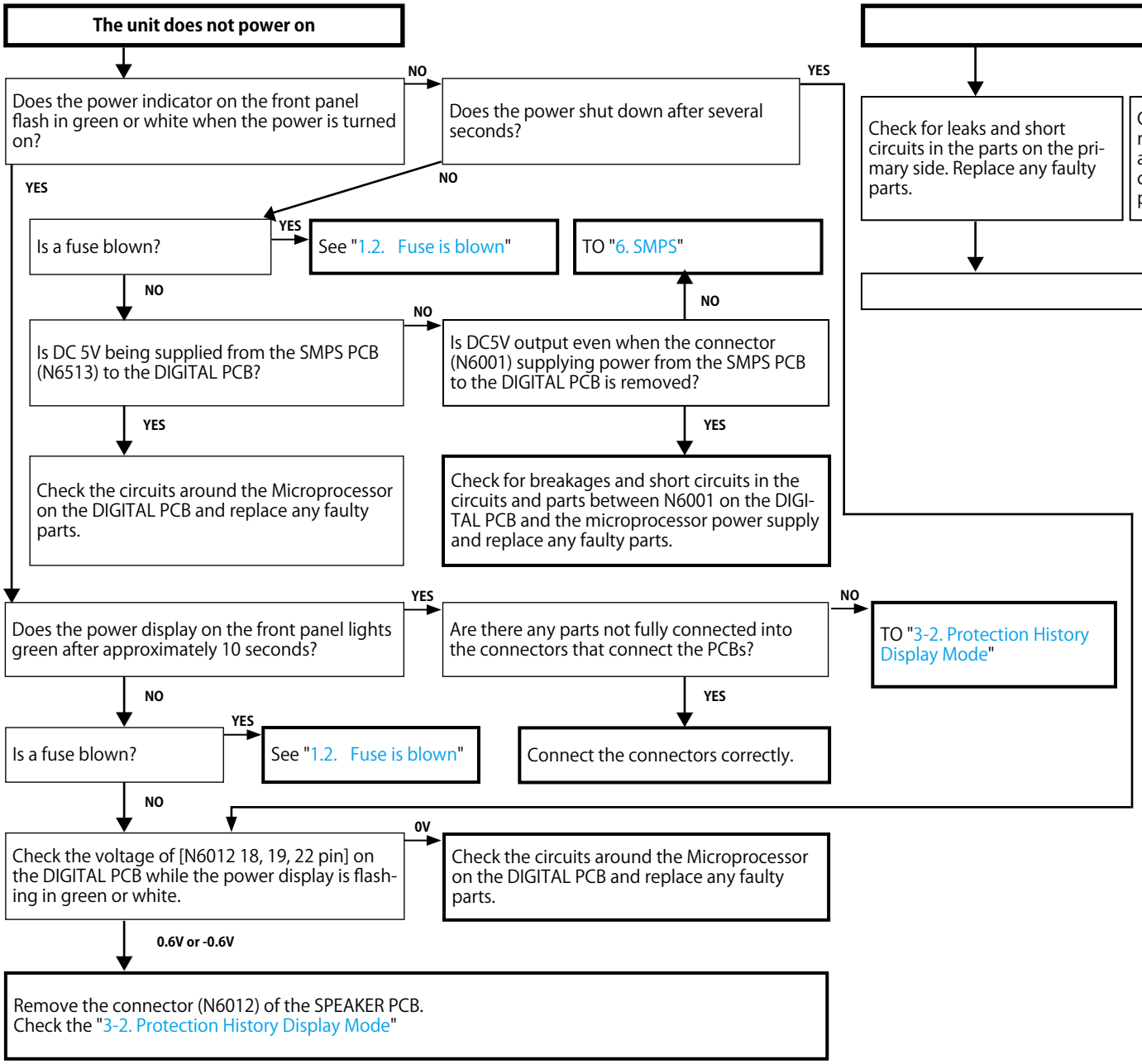
DIAGNOSTIC MODE

JIG FOR SERVICING

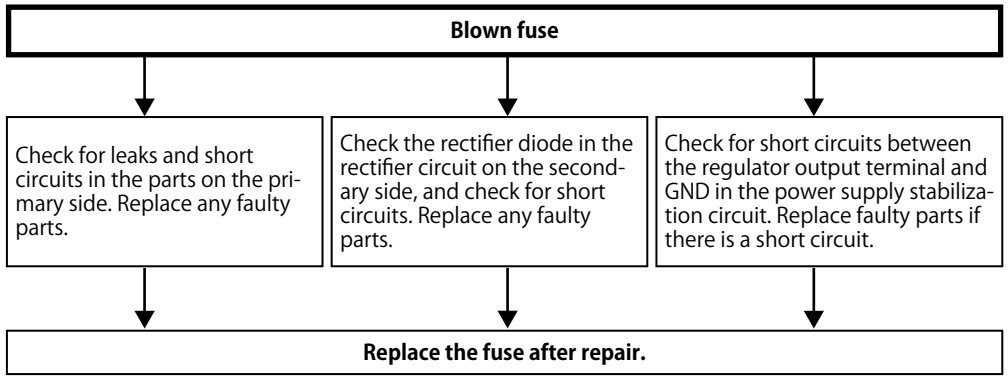
ADJUSTMENT

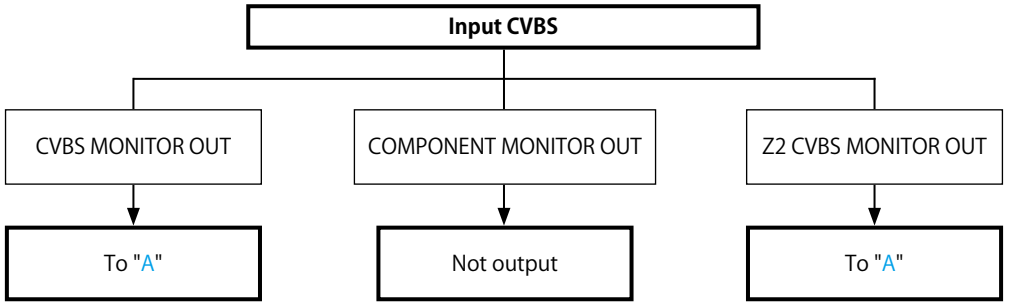
1. POWER

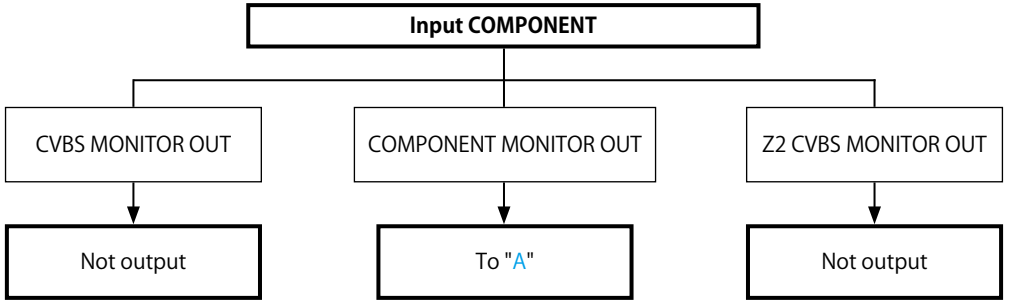
1.1. The unit does not power on



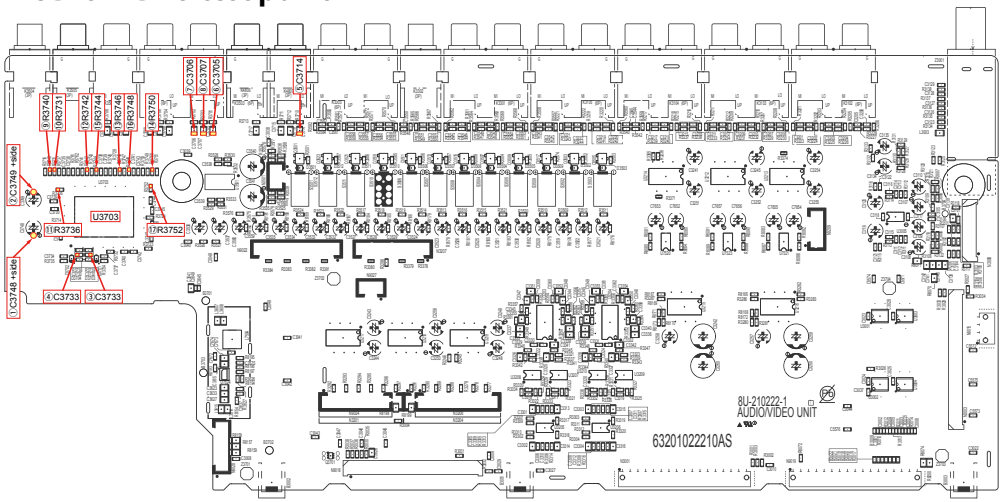
1.2. Fuse is blown







AUDIO VIDEO test point



A

Use a jig to extend the DIGITAL PCB

↓

①

Check the power supply voltage.
AUDIO/VIDEO PCB
V+3.3V : C3748 + ①
V-5V : C3749 - ②

NO → FFC connection error or contact failure. (N9018)
Power IC (U7524) failure (V-5V).
DIGITAL PCB DV+3.3V, DV5V

YES ↓

②

Check the I2C line of the video selector IC(U3703)
CONNECT-2 PCB
I2C(SCL) : C3732 ③
I2C(SDA) : C3733 ④
See the sample waveform

NO → FFC connection error or contact failure.
(Between N90181 and DIGITAL PCB (N6010))
DIGITAL PCB faulty.

YES ↓

③

Does the signal input to the video selector IC (U3703)?
V : C3714 ⑤
Component-Y : C3705 ⑥
Component-Cb : C3706 ⑦
Component-Cr : C3707 ⑧

NO → Input terminal (K3503 / K3501) faulty, or a fault occurs between video select IC (U3703).

YES ↓

④

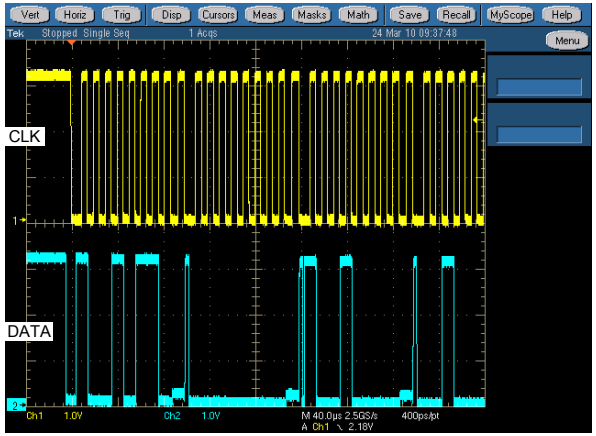
Does the signal output to the video selector IC (U3703)?
V (to Monitor out) : R3740 ⑨
V (to Z2 Monitor out) : R3731 ⑩
V (to DIGITAL PCB) : R3736 ⑪
Componnet-Y (to Monitor out) : R3742 ⑫
Componnet-Cb (to Monitor out) : R3746 ⑬
Componnet-Cr (to Monitor out) : R3750 ⑭
Componnet-Y (to DIGITAL PCB) : R3744 ⑮
Componnet-Cb (to DIGITAL PCB) : R3748 ⑯
Componnet-Cr (to DIGITAL PCB) : R3752 ⑰

NO → Input terminal (K3503 / K3501) faulty, or a fault occurs between video select IC (U3703).

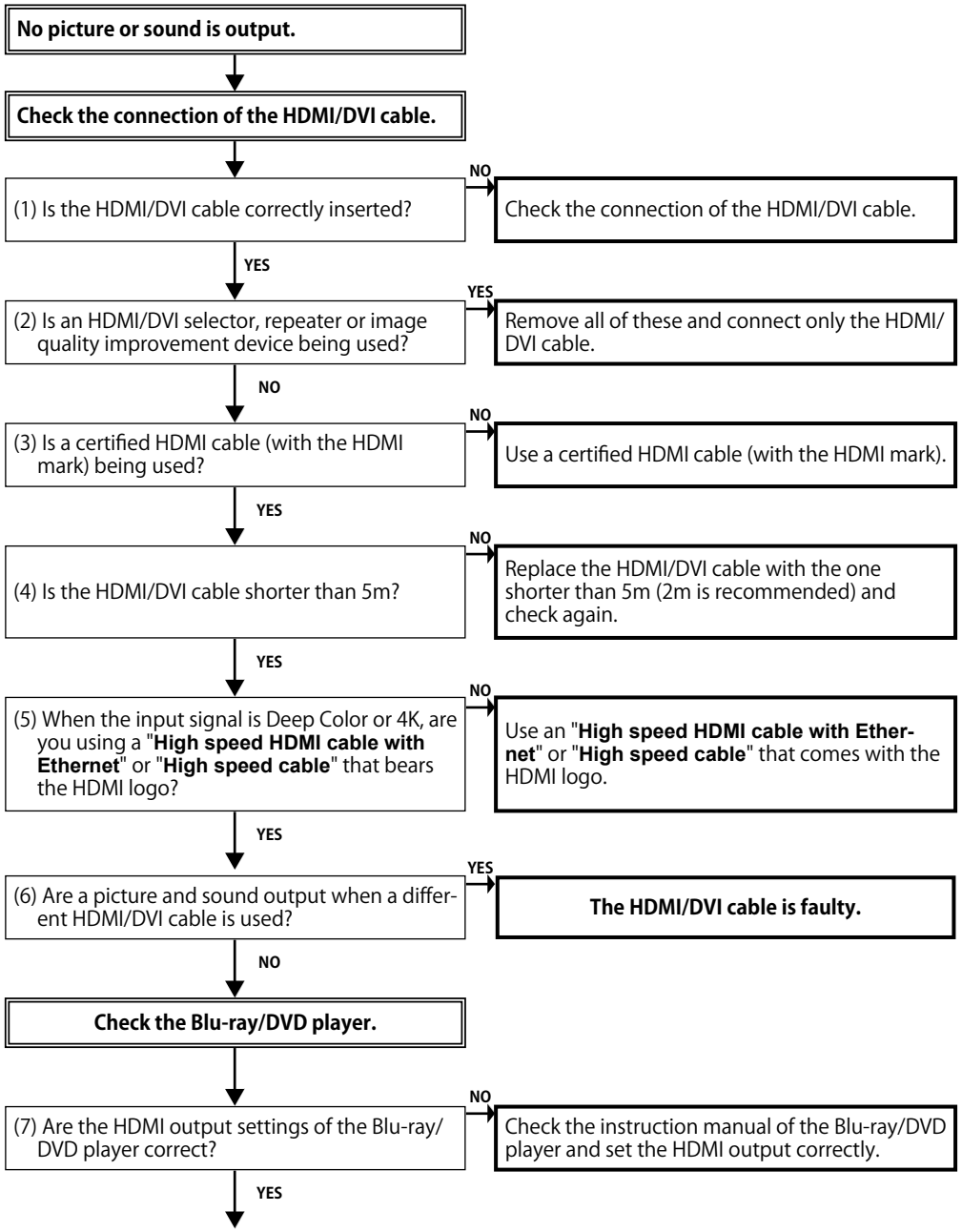
YES ↓

Output terminal (K3503 or K3505) faulty.
TV monitor connection error or contact failure.

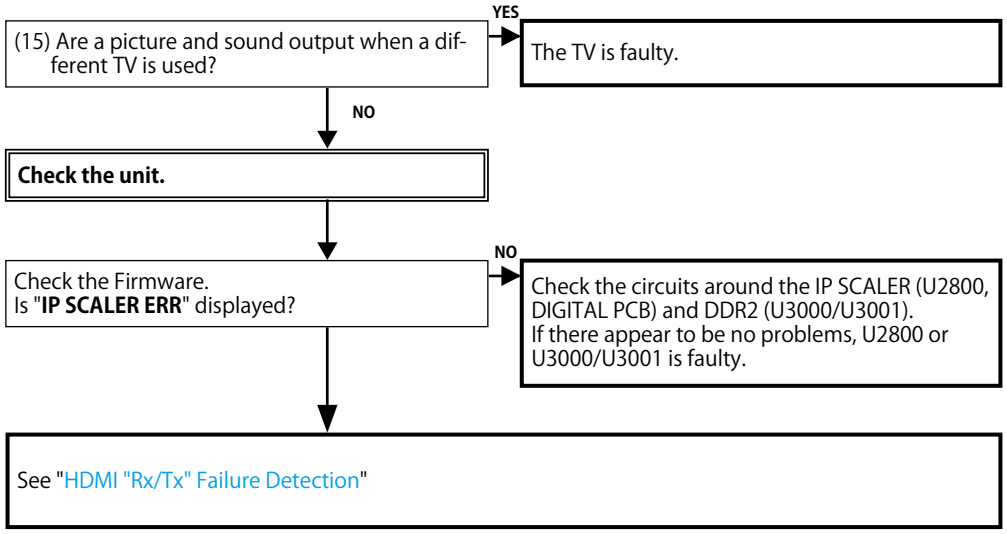
I2C communication wave form (sample)



3.1. No picture or sound is output (HDMI to HDMI)



Go to next page.


(15) Are a picture and sound output when a different TV is used?
YES
The TV is faulty.
NO
Check the unit.
Check the Firmware.
Is "IP SCALER ERR" displayed?
NO
Check the circuits around the IP SCALER (U2800, DIGITAL PCB) and DDR2 (U3000/U3001).
If there appear to be no problems, U2800 or U3000/U3001 is faulty.
See "HDMI "Rx/Tx" Failure Detection"

4.1. AUDIO CHECK

No audio output

See "AUDIO CHECK PASS"

CHECK 1	INPUT	SURROUND MODE	SOURCE
Audio output OK?	ANALOG 2CH	DIRECT	ANALOG

NO → Check the ANALOG AUDIO BLOCK

YES

CHECK 2	INPUT	SURROUND MODE	SOURCE
Audio output OK?	COAX or OPT	-	Legacy (PCM or DolbyDigital or dts…)

NO → Check the DIGITAL AUDIO BLOCK

YES

CHECK 3	INPUT	SURROUND MODE	SOURCE
Audio output OK?	ANALOG 2CH	MULTICH STEREO	ANALOG

NO → Check the ADC BLOCK

YES

CHECK 4	INPUT	SURROUND MODE	SOURCE
Audio output OK?	HDMI	-	Legacy (PCM2ch or DolbyDigital or dts…)

NO → Check the HDMI BLOCK

YES

CHECK 5	INPUT	SURROUND MODE	SOURCE
Audio output OK?	HDMI	-	HBR audio (DolbyTrueHD or dtsHD MA)

YES (DIGITAL AUDIO BLOCK is OK) → Check for other causes

NO

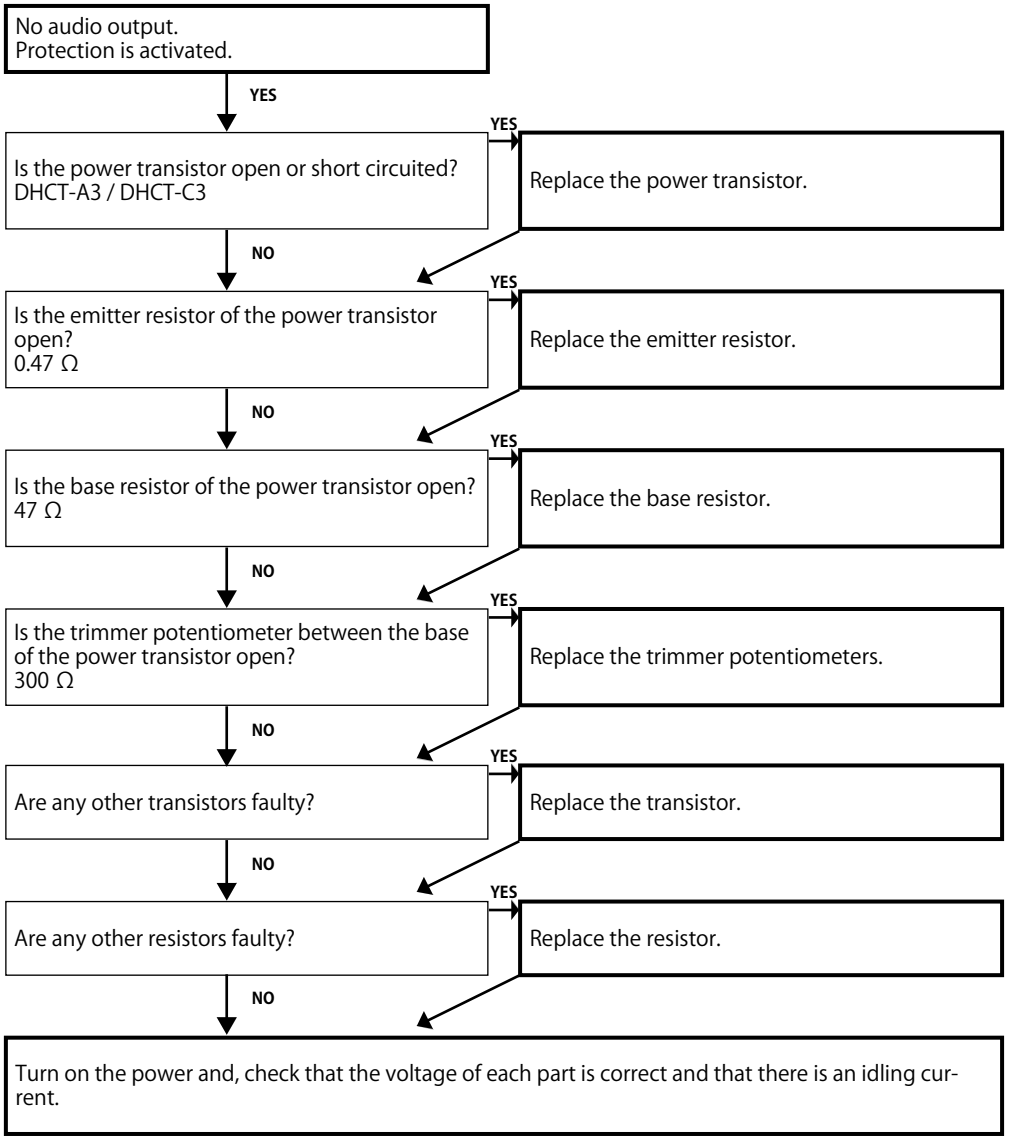
CHECK 6	INPUT	Connect	
AVR's (connected in HDMI) audio output OK?	HDMI	This unit's HDMI OUT → Other AVR's HDMI IN	
	Setting	SURROUND MODE	SOURCE
	CEC STANDBY	-	HBR audio(DolbyTrueHD or dtsHD MA)

YES → Check the DIGITAL AUDIO BLOCK

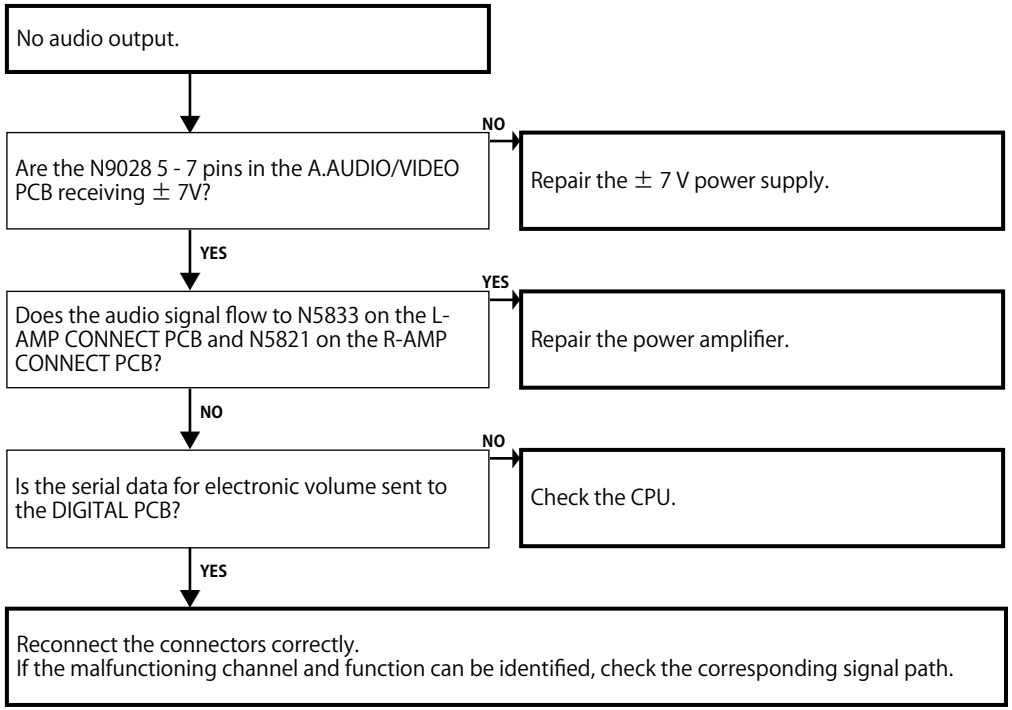
NO → Check the HDMI BLOCK

See "Service Path Check Mode"

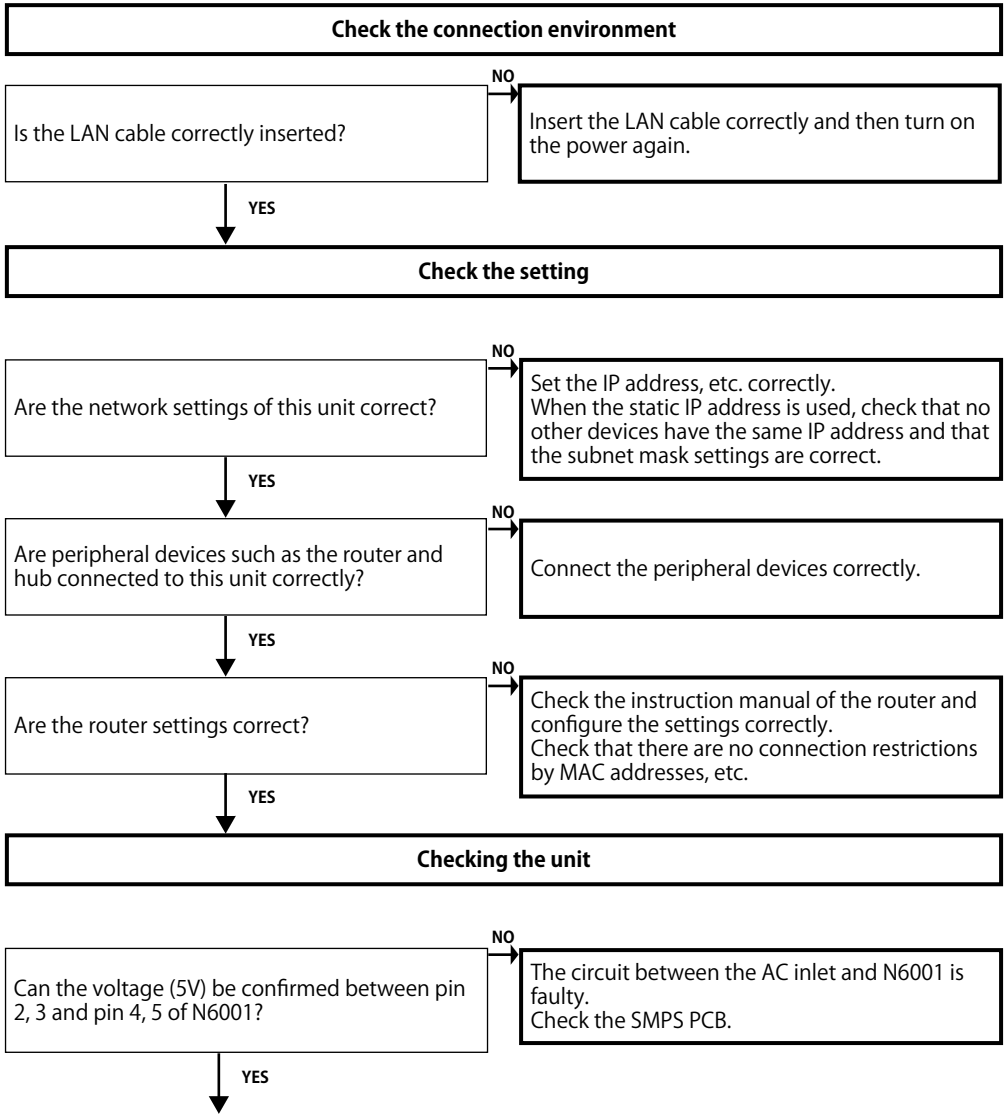
4.2. Power AMP (AMP PCB)

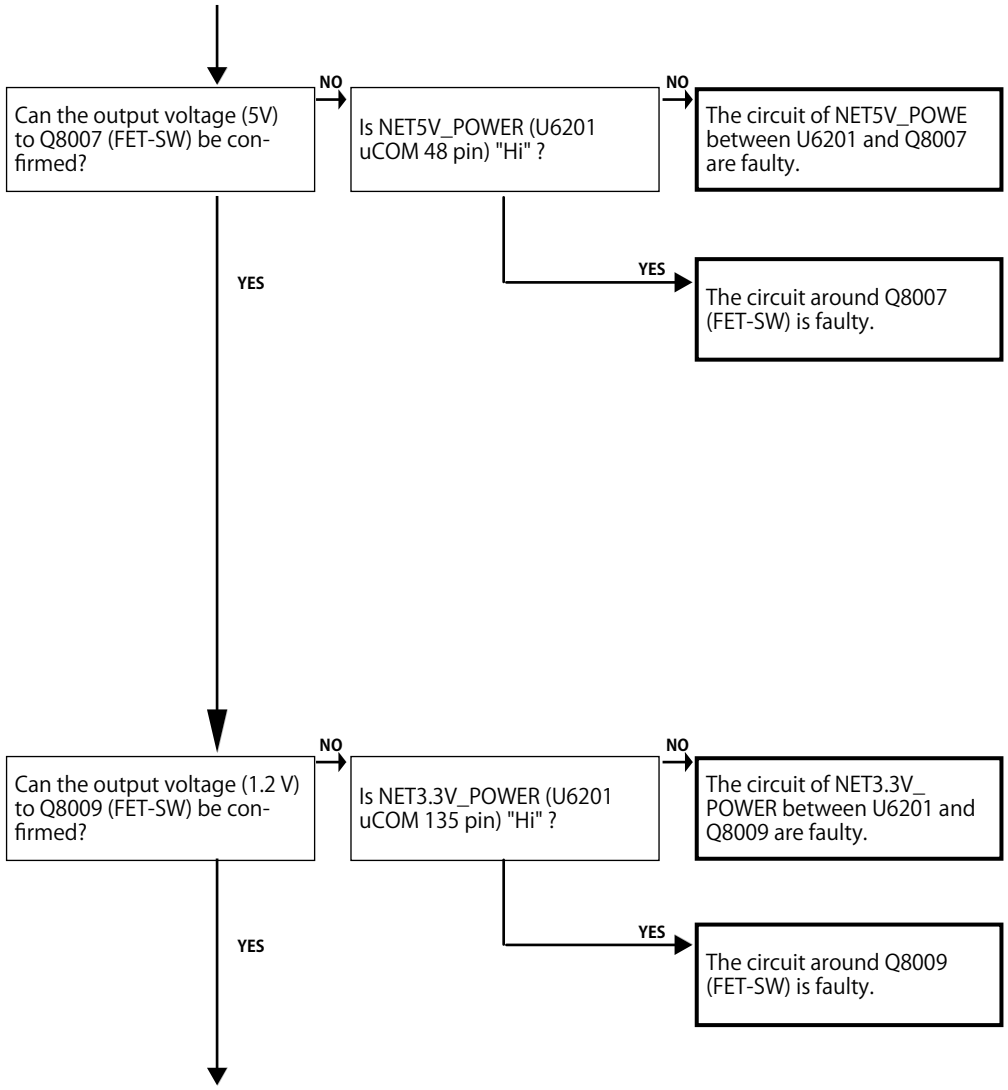


4.3. Analog audio

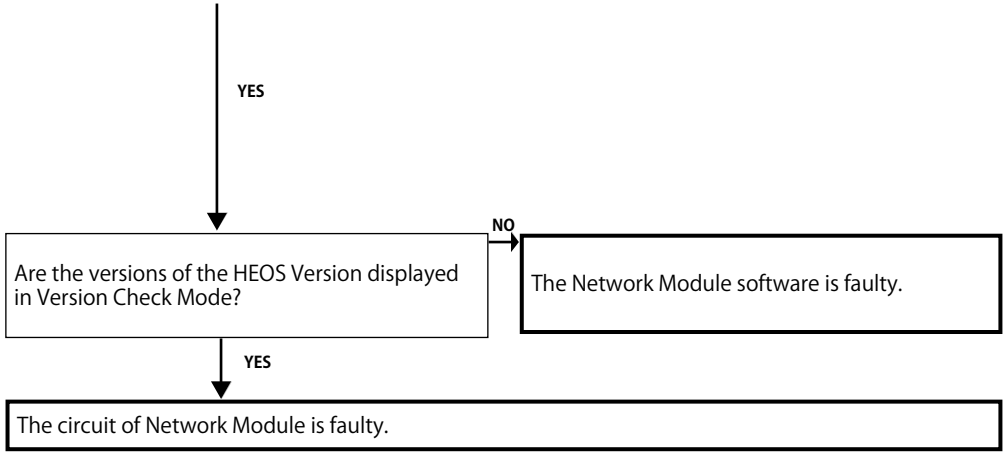


5.1. Cannot connect to the network

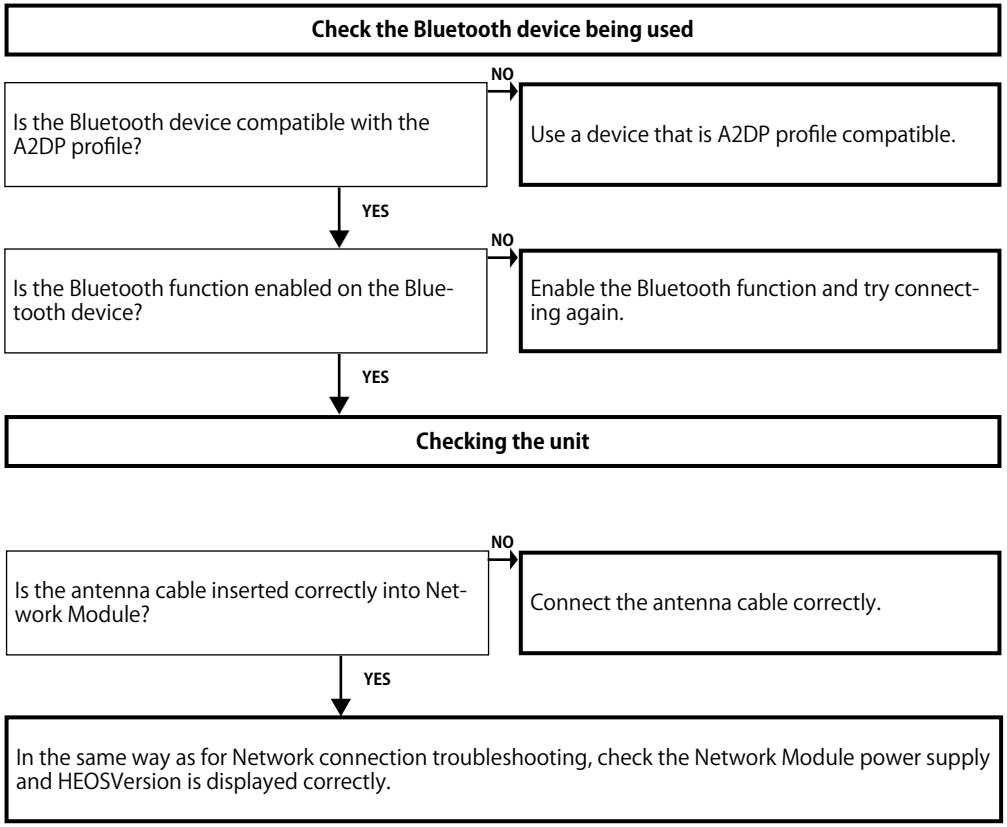




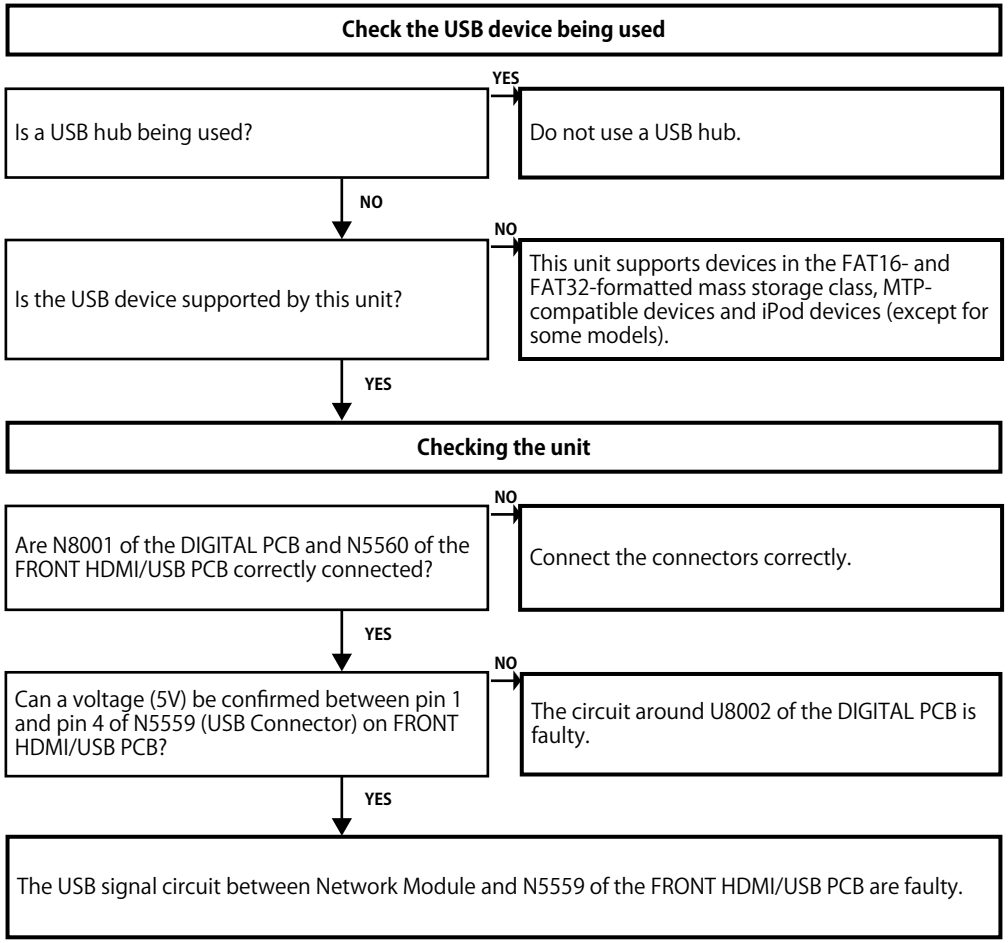
Go to next page.



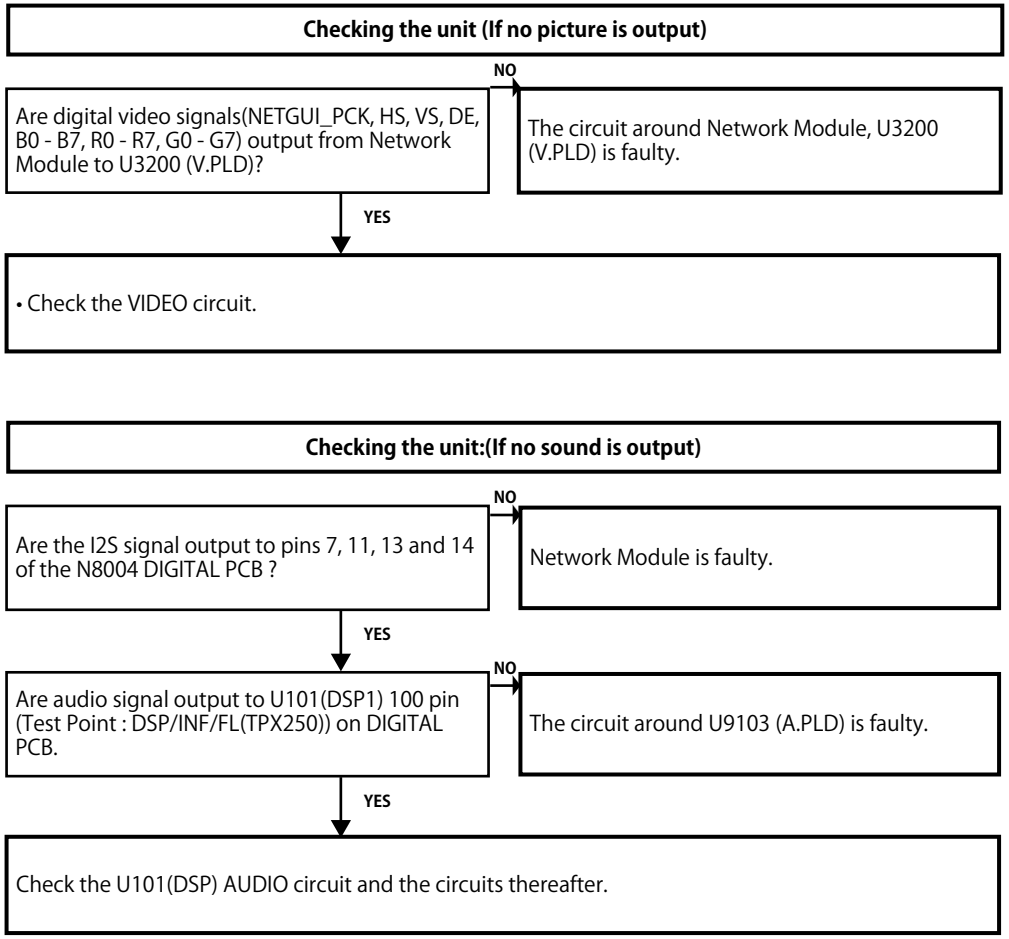
5.2. Cannot establish a Bluetooth connection



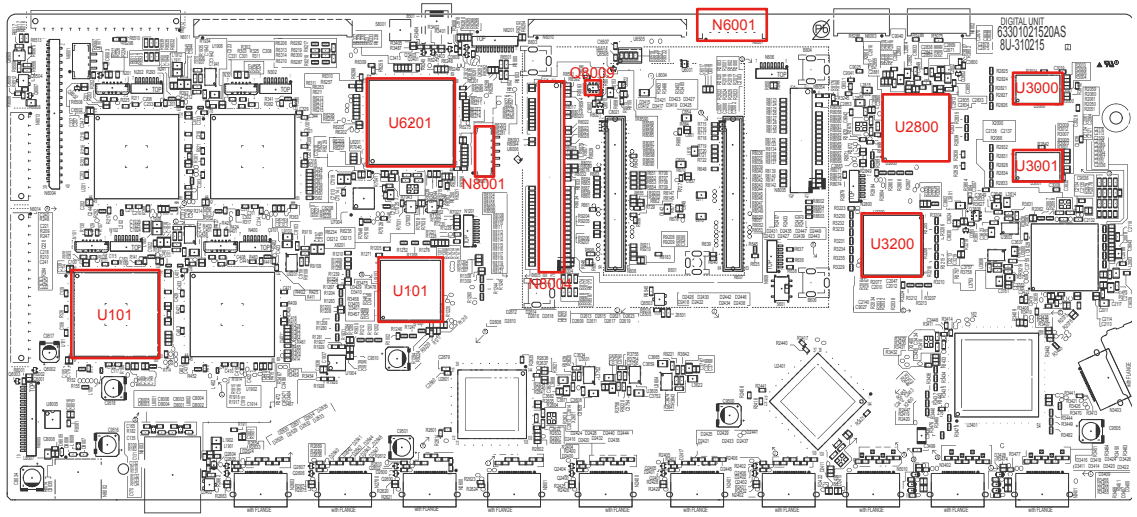
5.3. Cannot recognize the connected USB device



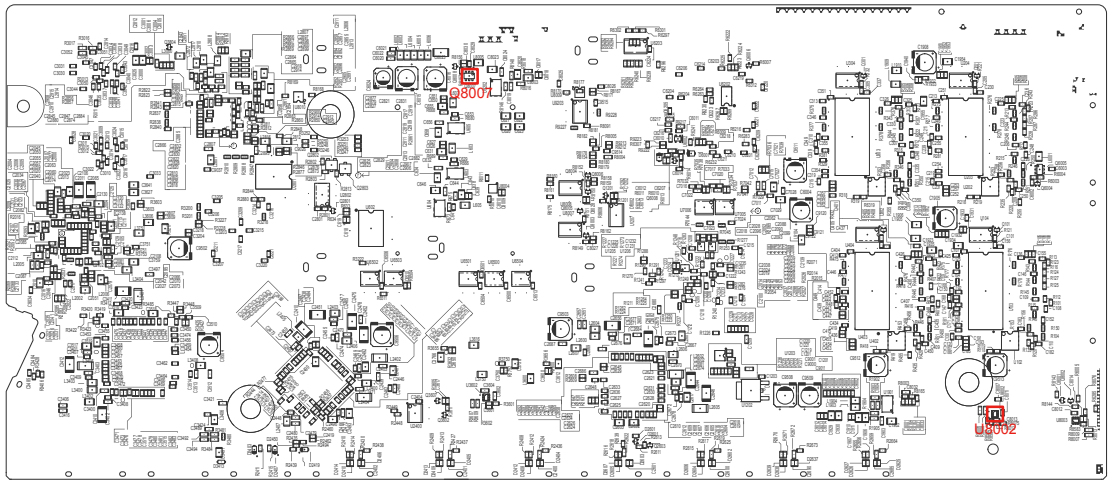
5.4. No picture or sound is output



DIGITAL test point

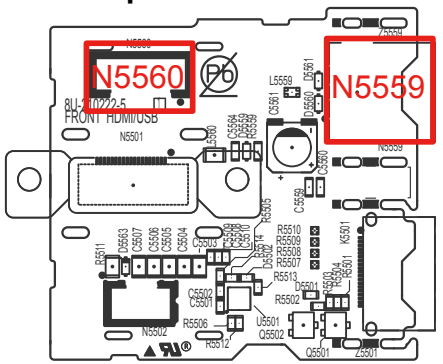


(A SIDE)



(B SIDE)

USB test point

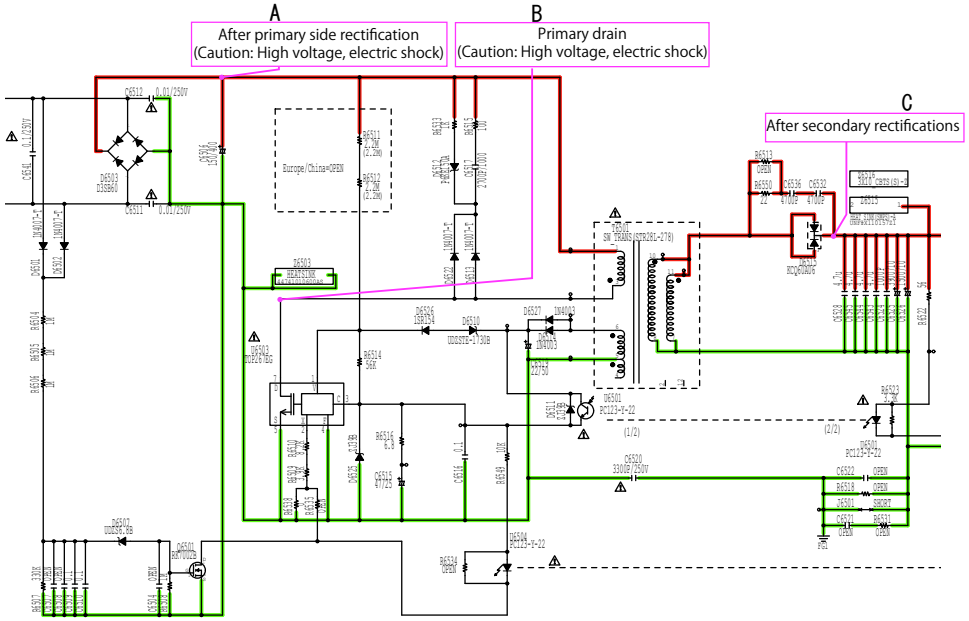


(A SIDE)

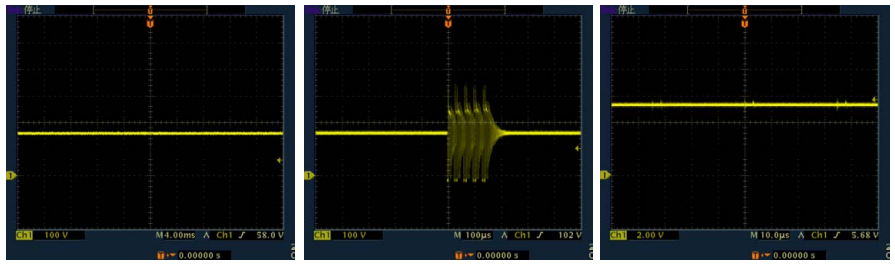
DC 5V is not output.

Is U6503 (TOP267EG) damaged?
- YES → Replace the U6503 (TOP267EG) and D6503.
- NO → Is the fuse (F70) functioning properly?
  - YES → Is U6503(TPO267EG), D6503 or C6506 damaged?
    - YES → Replace the damaged part.
  - NO → Are there any short circuits caused by the soldering on the PCB?
    - YES → Repair the short circuited area on the PCB.
    - NO → Are any parts damaged?
      - YES → Check the damaged parts.
        - YES → Replace the damaged part.

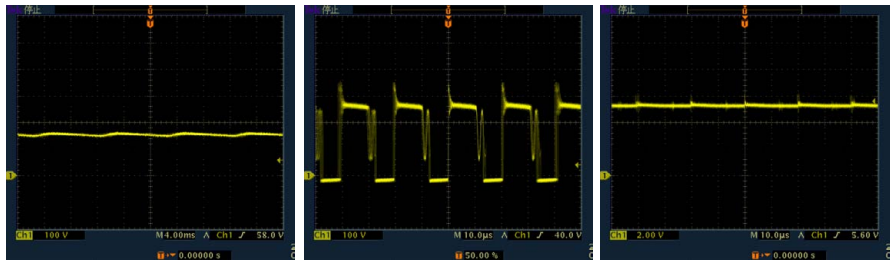
Operation waveform for each part



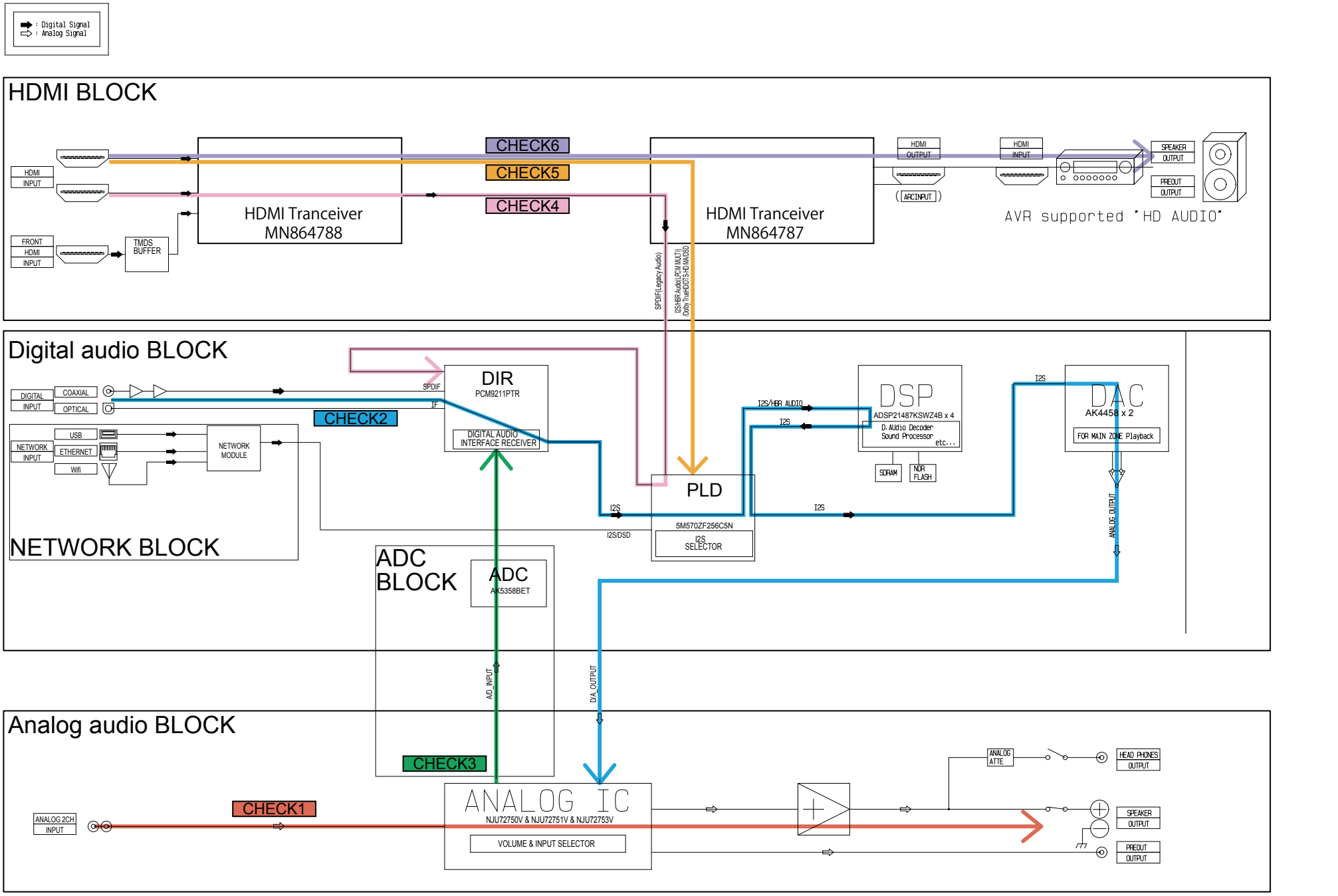
SMPS unit (Unloaded)



Set



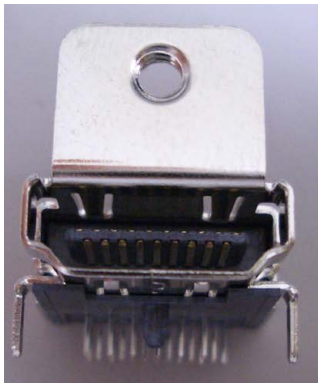
AUDIO CHECK PASS



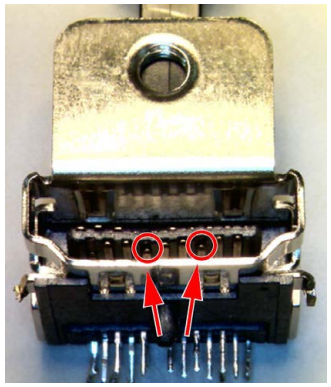
HDMI "Rx/Tx" Failure Detection

1. Prior checking

Check item (0) : Checking the HDMI connector
Checking the condition of the HDMI pin (rear/front).



OK



NG

Check for deformed pins.

There are deformed pins.

Replace the HDMI connector.

None of the pins are deformed.

3. Check by following the flow chart for starting detection of the points of failure.

2. Preparations for checking HDMI Switcher reception/transmission register

2-1. Necessary devices

1) Check the product settings.
2-a) Player with an HDMI terminal
2-b) TV with an HDMI terminal (* NOTE : Do not use a computer monitor.)
3) Windows PC
4) Serial communication software "termite.exe"
(Download the software from http://www.compuphase.com/software_termite.htm and install it.)
5) HDMI cable
6) RS-232C Straight cable
7) 8U-2120100S WRITING KIT
8) oscilloscope

2-2. Device Connection Method

Connect the TV and the AVR to the player using an HDMI cable and connect the AVR to the PC through an RS-232C cable as shown in Figure 1.

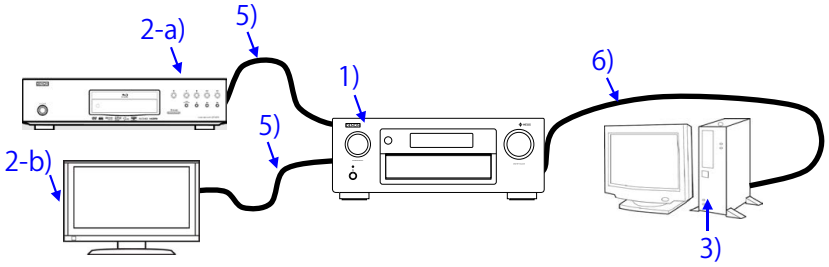


Figure 1-1 Device Connection Method (AVR-X6300H)

2-3. Device configuration method

PC settings : Execute the serial communication program, Termite.exe.

After executing Termite.exe, click [Settings].

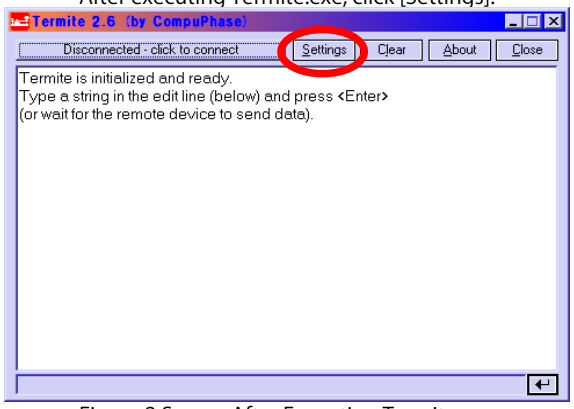


Figure 2 Screen After Executing Termite.exe

The serial port setup screen will be displayed.
Configure the settings as shown in Figure 3 and click the [OK] button.

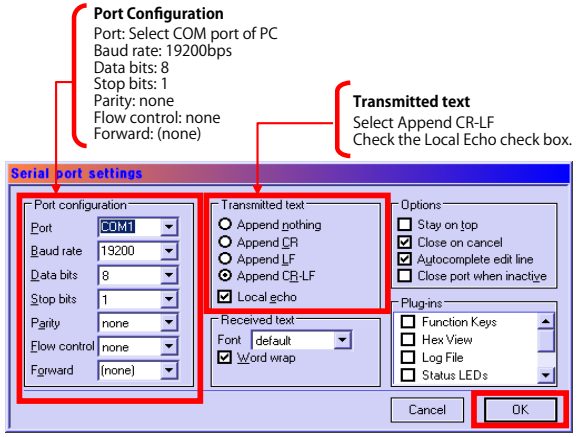


Figure 3 Serial Port Setup Screen

Click the [click to connect] button to start communication.
After a connection is established successfully, the display of the button name will change as shown in Figure 4.

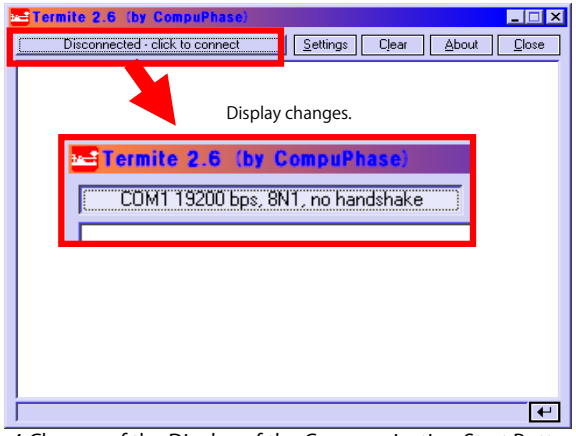


Figure 4 Change of the Display of the Communication Start Button Name

TV settings : Switch to the HDMI input in the AVR connection.
Player settings : Turn the unit power on and configure it to play disks.
AVR settings : While the power is On, hold down buttons "CURSOR ▼" and "STATUS" for at least 3 seconds.
(Continue to press and hold the buttons until all segments of the FLD volume illuminate.)
※ When the power is turned on after initialization, "Setup Assistant" will be displayed.
After exiting "Setup Assistant" execute the above.

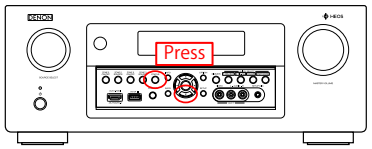


Figure 6-1. AVR settings (AVR-X6300H)

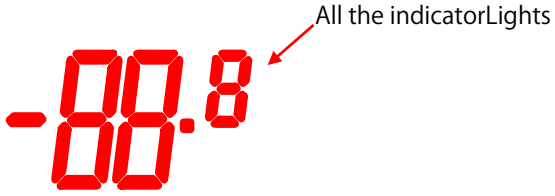


Figure 6 FLD Display When Set

When the settings are correct, the following message will be displayed in the window of Termite.
[00]Start Sub CPU Log Mode
****
(**** is a version of Sub CPU.)

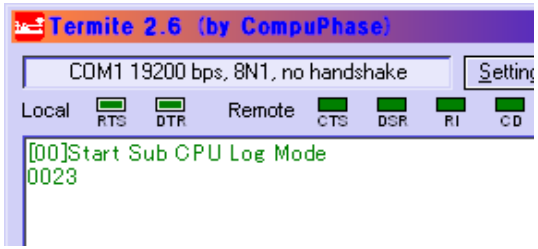


Figure 7 Display of Termite When AVR is Set

The setup is now complete.

Method for sending commands
Enter the command in the transmission command entry section, click the [Send] button and send the command.

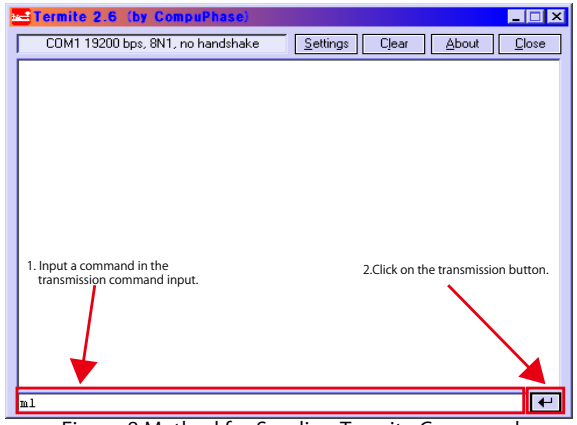


Figure 8 Method for Sending Termite Commands

3. Starting detecting the point of failure

3-1 Check the "HDMI/DVI" item in troubleshooting.

Check item(1).
Check that the version of the AVR can be read correctly.
Is the GUI version readable correctly?

NO → Is the GUI version readable correctly?
Go to check item (66)
GUI IC (ADV8003) failure detection procedure

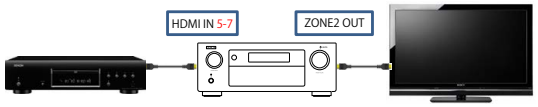
YES ↓

Check item(2).
Are all versions readable correctly without displaying IP SCALER ERR 01 or IP SCALER ERR 02?

NO → Check soldering of IP SCALER (U2800), DDR2 (U3000/U3001) and its peripheral circuits.
Check soldering of the resistors (R2821 to R2841, R2843)) between IP SCALER and DDR2.
If there is no problem with soldering, U2800/U3000/U3001 is defective. Replace their IC. Or replace the substrate.

YES ↓

Check item(3). : Does a video signal come from HDMI ZONE2 OUT to TV correctly?

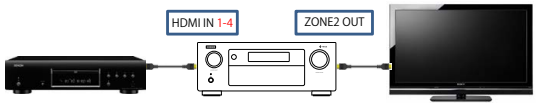


When the HDMI input terminal (HDMI 5, 6, 7) are connected in order to the player, are the audio and video from the player played back on the TV correctly in each case?

NO → Go to check item (7)
(Switcher1 failure detection procedure)

YES ↓

Check item(4). : Does a video signal come from HDMI ZONE2 OUT to TV correctly?

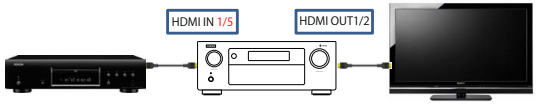


When the HDMI input terminal (HDMI 1, 2, 3, 4) are connected in order to the player, are the audio and video from the player played back on the TV correctly in each case?

NO → Go to check item (26)
(Switcher2 failure detection procedure)

YES ↓

Check item(5). Does a video signal come from HDMI OUT1 to TV correctly?



Turn Video Conversion "OFF" on the setup menu.
(SETUP MENU-> Video-> Output Settings-> Video Conversion = Off)
When the player is connected in order to the HDMI input terminals (HDMI 1, 5), in each case is the player video played back on the TV connected to the HDMI output terminal (HDMI OUT 1,2)?

NO → Go to check item (38)
(Tx failure detection procedure)

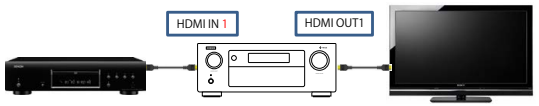
YES ↓

When the HDMI input terminal (HDMI8) is connected to the player, the video from the player will be played back on the TV?
Use any of Dolby TrueHD/DTSHD MA/PCM 8ch for the playback audio format.

NO → Is the "DIG" indicator illuminated on the FLD?
When the "DIG" indicator is illuminated, the DIGITAL AUDIO block is faulty.
If the "DIG" indicator is not illuminated, go to check item (59).
(HDMI DDC Buffer (ISL33003) failure detection procedure)

YES ↓

Check item(6). Does a video signal come from HDMI OUT1 to TV correctly?



Turn Video Conversion "ON" on the setup menu.
(SETUP MENU-> Video-> Output Settings-> Video Conversion = On)
When the HDMI input terminal (HDMI 1) is connected to the player, the video from the player will be played back on the TV?

NO → Go to check item (75)
(GUI and PLD failure detection procedure)

YES ↓

There are no problems with the HDMI device.

3-2 Switcher1 failure detection procedure

Checking device. (HDMI Switcher1)

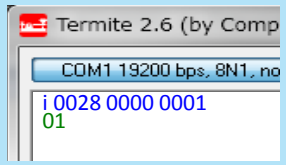
Check communication between CPU and the HDMI Switcher1 device.

Check item (7). Check communication between CPU and the HDMI Switcher1 device. :
Check by reading device ID and revision of each device.
Check communication between HDMI Switcher1 (U2401) and CPU (U6201) .

Send the following command from Termite.exe.
Send the command "i 0028 0000 0001".

Is the return value "01" ?

Example :



If it is normal, "01" is returned.

If the communication results are not OK → Go to check item (8)

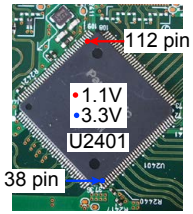
If the communication results are OK → Go to check item (13)

When the results of check item (7) are "the communication results are not OK"

Checking device. (HDMI Switcher1)

Check the power supply voltage. (HDMI Switcher1)

Check item(8). Check the power supply voltage. :
Does the power supply voltage of the HDMI Switcher1 (U2401) indicate the correct voltage (1.1V, 3.3V)?
The test points are as follows.



YES

NO

Check item(9). Check the power supply voltage. :
Check the power components (U3601/U3604) and the pattern on the substrate.
If there is no problem, remove the HDMI Switcher1 (U2401) from the substrate and measure the voltage at the test point of check item (8).
Is the voltage correct (1.1 V or 3.3 V)?

YES

HDMI Switcher1(U2401) device is failure.
Replace with a new device.

NO

The power supply circuit is faulty.
Replace the PCB.

Recheck from check item (3).
If it does not work, replace the PCB.

Go to next page.

Checking the reset waveform. (HDMI Switcher1)

Check item(10). Checking the reset waveform :
Check the waveform.
Is the TP waveform of the TP near the HDMI Switcher1 (U2401) correct (like the one shown in the diagram) when the power is turned on?


Examples of confirmation waveform

NO

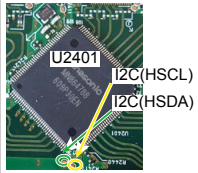
Check the reset circuit between CPU (U6201) and HDMI Switcher1 (U2401).
If there is no problem, the HDMI Switcher1 (U2401) is faulty.
Replace with a new device.
Recheck from check item (3).
If it does not work, replace the PCB.

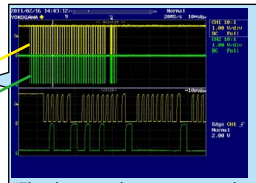
YES

Check the I2C communication line. (HDMI Switcher1)

YES

Check item(11). Check the I2C communication line :
Check the CPU.
Is the TP waveform of the TP near the HDMI Switcher1 (U2401) correct (like the one shown in the diagram) when the power is turned on?




*The diagram shows an example.
(Signal patterns vary depending on the timing.)
Points for checking waveforms
- Crest value (3.3 V normally)
- Signal change
- SCL frequency (400 kHz normally)

NO

Check item(12). Check the I2C communication line :
Check HDMI Switcher1, 2 (U2401 or U2601), HDMI Tx (U3401) and CPU (U6201) patterns as well as soldering.
If there is no problem, go to the next step.

YES

HDMI Switcher1 (U2401) is faulty.
Replace with a new device.

YES

Recheck from check item (3).
If it does not work, replace the PCB.

Check the HDMI Switcher1
Remove the damping resistor (R2460/R2461) of (U2401).
Is the "I2C" waveform correct?

NO

Check the HDMI Switcher2
Remove the damping resistor (R2630/R2631) of (U2601).
Is the "I2C" waveform correct?

NO

Check the HDMI Tx.
Remove the damping resistor (R3425/R3427) of (U3401).
Is the "I2C" waveform correct?

YES

HDMI Switcher1 (U2401) is faulty.
Replace with a new device.

YES

HDMI Switcher2 (U2601) is faulty.
Replace with a new device.

YES

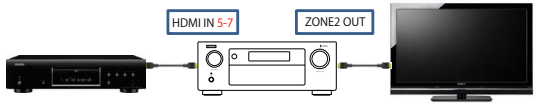
HDMI Tx (U3401) is faulty.
Replace with a new device.

NO

The CPU(U6201) is faulty.
Replace with a new device.

Recheck from check item (3).
If it does not work, replace the PCB.

When the results of check item (7) are "the communication results are OK"



※ In order to check, connect the player to the HDMI terminal and configure the player as AVR source.
Next, turn on the power for the player and TV and start playback on the player.

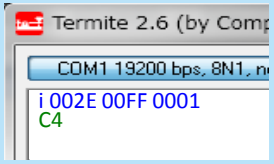
Checking the +5V/DDC status register (HDMI Switcher1)

Check item(13). Checking the 5V status register :
Send the following command from Termite.exe.

Send the command "i 002E 00FF 0001".

Case of IN5
Is the return value "C4 or C0" ?
(IN6 : "A2 or A0", IN7 : "91 or 90")

Example



YES

NO

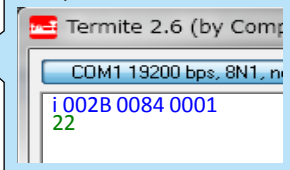
Go to check item (15)

Check item(14). Checking the DDC status register :
Send the following command from Termite.exe.

Case of IN5
Send the command "i 002B 0084 0001".
Case of IN6
Send the command "i 002B 0054 0001".
Case of IN7
Send the command "i 002B 0024 0001".

Move to the branch destination according to the value returned.

Example



"00 or 04"
(Detection of DDC is not OK.)

Go to check item (16)

"22 or 11"
(Detection of DDC is OK)

Go to check item (17)

When the results of check item (13) are "NO"
(Detection of 5V is not OK)

Check the +5V voltage. (HDMI IN5 - 7)

Check item(15). Check the +5V voltage.
Does the test point near HDMI input terminal (N2400/N2401/N2402) indicate 5V?

YES

HDMI Switcher1 (U2401) is faulty.
Replace with a new device.

NO

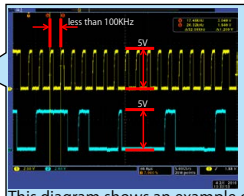
Check the 5V line for soldering faults and the 5V Switch IC (U2400).
If there is no problem, the HDMI Switcher1 (U2401) or the 5 V Switch IC (U2400) is faulty
Replace with a new device.

Recheck from check item (3).
If it does not work, replace the PCB.

When the results of check item (14) are "00 or 04"
(Detection of DDC is not OK.)

Check the DDC line. (HDMI IN5 - 7)

Check item(16). Check the DDC line :
Are waveforms of "DDCCL" and "DDCDA" observed at the test point near the HDMI input terminal(N2400/N2401/N2402)?



This diagram shows an example of the DDC communication waveform.
-The high level voltage is 5V.
-The frequency of the DDC CLK is 100 KHz or less.
Check at each test point.

YES

HDMI Switcher1 (U2401) is faulty.
Replace with a new device.

NO

Check for a short circuit in the DDC line.
If there is no problem, the HDMI Switcher1 (U2401) is faulty.
Replace with a new device.

Recheck from check item (3).
If it does not work, replace the PCB.

When the results of check item (14) are "22 or 11"
(Detection of DDC is OK.)

Checking the TMDS status register (HDMI Switcher1)

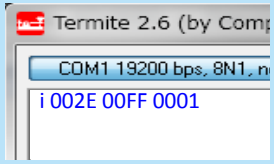
Check item(17). Checking register of the TMDS CLK detection status register :
Send the following command from Termite.exe.

Send the command "i 002E 00FF 0001".

When the following value is returned, go to Yes.
HDMI IN5 "C4", HDMI IN6 "A2", HDMI IN7 "91"

When the following value is returned, go to No.
HDMI IN5 "C0", HDMI IN6 "A0", HDMI IN7 "90"

Example



NO

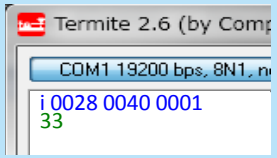
YES

Checking the HPD/RXSENSE status register. (HDMI ZONE2 OUT)

Check item(19). Check the HPD and RXSENSE register value of the device.
Send the following command from Termite.exe.
Send the command "i 0028 0040 0001".

Check the value.
Move to the branch destination according to the value returned.

Example



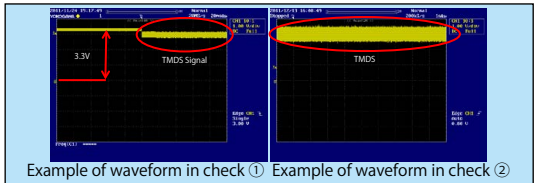
If it is normal, "33" is returned.
The correct resistor value cannot be checked if the AVR and TV are not connected by HDMI.

"33 or 23 or 13 or 03"
(Detection of HPD is OK / Detection of RXSENSE is OK)
→ Go to check item (20)

"31 or 21 or 11 or 01"
(Detection of HPD is OK / Detection of RXSENSE is not OK)
→ Go to check item (23)

"32 or 22 or 12 or 02"
(Detection of HPD is not OK / Detection of RXSENSE is OK)
→ Go to check item (24)

"30 or 20 or 10 or 00"
(Detection of HPD is not OK / Detection of RXSENSE is not OK)
→ Go to check item (25)



Example of waveform in check ① Example of waveform in check ②

Check item (18). Checking the TMDS input waveform. :
Check the TMDS waveform at the following test point.
Is the waveform like the sample?

HDMI IN5
55/56/58/59/61/62/64/65 pin

HDMI IN6
80/81/83/84/86/87/89/90 pin

HDMI IN7
93/94/96/97/99/100/102/103 pin

YES

HDMI Switcher1 (U2401) is faulty.
Replace with a new device.

NO

Check for a short circuit in the pattern of the TMDS line of the HDMI Switcher1 (U2401) from the HDMI input terminal.
If there is no problem, the HDMI Switcher1 (U2401) is faulty.
Replace with a new device.

Recheck from check item (3).
If it does not work, replace the PCB.

When the results of check item (19) are "33 or 23 or 13 or 03"
(Detection of HPD is OK / Detection of RXSENSE is OK)

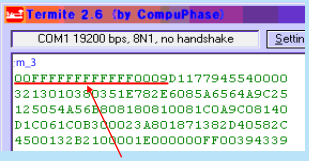
↓

Checking the EDID register. (HDMI ZONE2 OUT)

↓

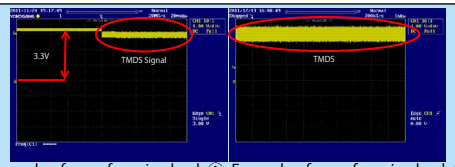
Check item(20). Check the Monitor EDID :
① Unplug the AC cord. Plug the AC cord into a power outlet.
② Send the transmission command "m_3" from Termite.exe.
Are the first eight bytes of the returned value "00FFFFFFFFFFFF00"?

Example



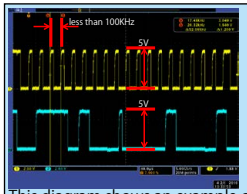
The first eight bytes are normally "00FFFFFFFFFFFF00".
The correct resistor value cannot be checked if the AVR and TV are not connected by HDMI.

YES



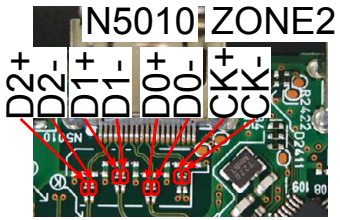
Example of waveform in check ① Example of waveform in check ②

NO

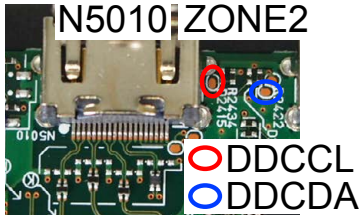


This diagram shows an example of the DDC communication waveform.
-The high level voltage is 5V.
-The frequency of the DDC CLK is 100 KHz or less.
Check at each test point.

Check item(21). Checking the TMDS :
Check the TMDS waveform at the following test point.



Check item(22). Check the communication :
Do "CL" and "DA" indicate (5V) at the test point near HDMI output connector (N5010)?



YES

NO

Check for a short circuit in the TMDS line.
If there is no problem, the HDMI Switcher1 (U2401) is faulty.
Replace with a new device.

HDMI Switcher1 (U2401) is faulty.
Replace with a new device.

YES

NO

Check for a short circuit in the DDC line.
If there is no problem, the HDMI Switcher1 (U2401) is faulty.
Replace with a new device.

HDMI Switcher1 (U2401) is faulty.
Replace with a new device.

Recheck from check item (3).
If it does not work, replace the PCB.

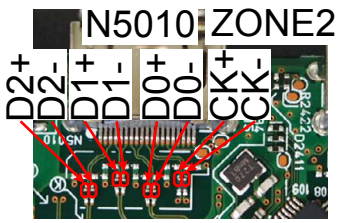
When the results of check item (19) are "31 or 21 or 11 or 01"
(Detection of HPD is OK / Detection of RXSENSE is not OK)

↓

Check the TMDS. (HDMI ZONE2 OUT)

↓

Check item(23). Checking the RXSENSE. :
Does the test point near HDMI output terminal (N5010) indicate (3.3V)?



YES ↓ NO

NO: Check for a short circuit in the TMDS line.
If there is no problem, the HDMI Switcher1 (U2401) is faulty.
Replace with a new device.

YES: ↓

HDMI Switcher1 (U2401) is faulty.
Replace with a new device.

↓

Recheck from check item (3).
If it does not work, replace the PCB.

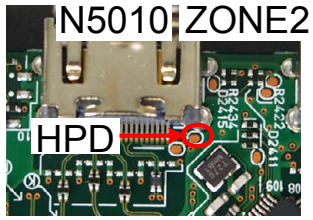
When the results of check item (19) are "32 or 22 or 12 or 02"
(Detection of HPD is not OK / Detection of RXSENSE is OK)

↓

Check the HPD. (HDMI ZONE2 OUT)

↓

Check item(24). Checking the HPD. :
Does the test point near HDMI output terminal (N5010) indicate Hi(3-5V)?



YES ↓ NO

NO: Check for a short circuit in the HPD line.
If there is no problem, the HDMI Switcher1 (U2401) is faulty.
Replace with a new device.

YES: ↓

HDMI Switcher1 (U2401) is faulty.
Replace with a new device.

↓

Recheck from check item (3).
If it does not work, replace the PCB.

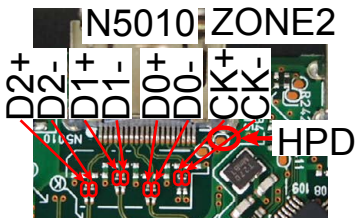
When the results of check item (19) are "30 or 20 or 10 or 00"
(Detection of HPD is not OK / Detection of RXSENSE is not OK)

↓

Check the TMDS/HPD. (HDMI ZONE2 OUT)

↓

Check item(25). Checking the HPD and RXSENSE. :
Does the test point near HDMI output terminal (N5010) indicate (3.3V)?
Does the test point (HPD) near HDMI output terminal (N5010) indicate "Hi(3-5V)"?



YES ↓ NO

NO:
Check for a short circuit in the TMDS/ HPD line.
If there is no problem, the HDMI Switcher1 (U2401) is faulty.
Replace with a new device.

YES:
HDMI Switcher1 (U2401) is faulty.
Replace with a new device.

↓

Recheck from check item (3).
If it does not work, replace the PCB.

3-3 Switcher2 failure detection procedure

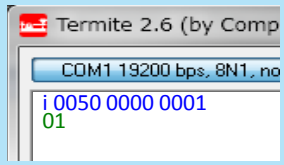
Checking device. (HDMI Switcher2)

Check communication between CPU and the HDMI Switcher2 device.

Check item (26). Check communication between CPU and the HDMI Switcher2 device. :
Check by reading device ID and revision of each device.
Check communication between HDMI Switcher2 (U2601) and CPU (U6201) .

Send the following command from Termite.exe.
Send the command "i 0050 0000 0001".
Is the return value "01" ?

Example :



If it is normal, "01" is returned.

If the communication results are not OK → Go to check item (27)

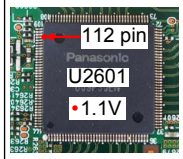
If the communication results are OK → Go to check item (30)

When the results of check item (26) are "the communication results are not OK"

Checking device. (HDMI Switcher2)

Check the power supply voltage. (HDMI Switcher2)

Check item(27). Check the power supply voltage. :
Does the power supply voltage of the HDMI Switcher2 (U2601) indicate the correct voltage (1.1V, 3.3V)?
The test points are as follows.



NO

Check item(28). Check the power supply voltage. :
Check the power components (U3605) and the pattern on the substrate.
If there is no problem, remove the HDMI Switcher2 (U2601) from the substrate and measure the voltage at the test point of check item (27).
Is the power supply voltage correct (1.1V)?

YES → HDMI Switcher2(U2601) device is failure.
Replace with a new device.

NO → The power supply circuit is faulty.
Replace the PCB.

YES

Recheck from check item (4).
If it does not work, replace the PCB.

Go to next page.

Checking the reset waveform. (HDMI Switcher2)

Check item(29). Checking the reset waveform :
Check the waveform.
Is the TP waveform of the TP near the HDMI Switcher2 (U2601) correct (like the one shown in the diagram) when the power is turned on?


Examples of confirmation waveform

NO

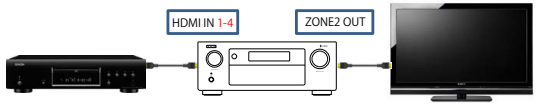
Check the reset circuit between CPU (U6201) and HDMI Switcher2 (U2601).
If there is no problem, the HDMI Switcher2 (U2601) is faulty.
Replace with a new device.
Recheck from check item (4).
If it does not work, replace the PCB.

YES

Replace (R2630/R2631) with new resistors and check the I2C communication again.
Check item (26) If the result is not OK, the HDMI Switcher2 (U2601) is faulty.
Replace with a new device.

Recheck from check item (4).
If it does not work, replace the PCB.

When the results of check item (26) are "the communication results are OK"



※ In order to check, connect the player to the HDMI terminal and configure the player as AVR source.
Next, turn on the power for the player and TV and start playback on the player.

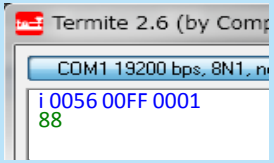
Checking the +5V/DDC status register (HDMI Switcher2)

Check item(30). Checking the 5V status register :
Send the following command from Termite.exe.

Send the command "i 0056 00FF 0001".

Case of IN1
Is the return value "88 or 80" ?
(IN2 : "44 or 40", IN3 : "22 or 20", IN4 : "11 or 10")

Example



YES

NO

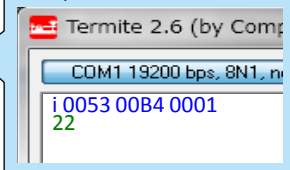
Go to check item (32)

Check item(31). Checking the DDC status register :
Send the following command from Termite.exe.

Case of IN1
Send the command "i 0053 00B4 0001".
Case of IN2
Send the command "i 0053 0084 0001".
Case of IN3
Send the command "i 0053 0054 0001".
Case of IN4
Send the command "i 0053 0024 0001".

Move to the branch destination according to the value returned.

Example



"00 or 04"
(Detection of DDC is not OK.)

Go to check item (33)

"22 or 11"
(Detection of DDC is OK)

Go to check item (34)

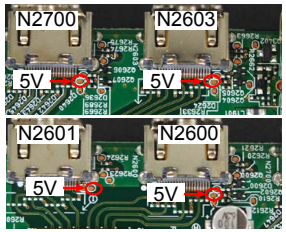
When the results of check item (30) are "NO"
(Detection of 5V is not OK)

↓

Check the +5V voltage. (HDMI IN1 - 4)

↓

Check item(32). Check the +5V voltage.
Does the test point near HDMI input terminal (N2603/N2700/N2600/N2601) indicate 5V?



YES

HDMI Switcher2 (U2601) is faulty.
Replace with a new device.

NO

Check the 5V line for soldering faults and the 5V Switch IC (U2400).
If there is no problem, the HDMI Switcher2 (U2601) or the 5 V Switch IC (U2400) is faulty
Replace with a new device.

Recheck from check item (4).
If it does not work, replace the PCB.

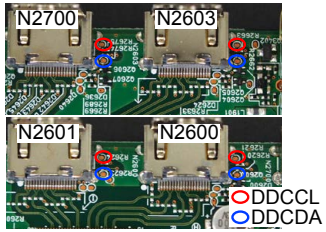
When the results of check item (31) are "00 or 04"
(Detection of DDC is not OK.)

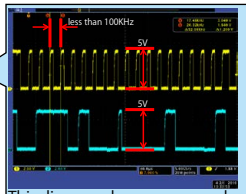
↓

Check the DDC line. (HDMI IN1 - 4)

↓

Check item(33). Check the DDC line :
Are waveforms of "DDCCL" and "DDCDA" observed at the test point near the HDMI input terminal(N2603/N2700/N2600/N2601)?





This diagram shows an example of the DDC communication waveform.
-The high level voltage is 5V.
-The frequency of the DDC CLK is 100 KHz or less.
Check at each test point.

YES

HDMI Switcher2 (U2601) is faulty.
Replace with a new device.

NO

Check for a short circuit in the DDC line.
If there is no problem, the HDMI Switcher2 (U2601) is faulty.
Replace with a new device.

Recheck from check item (4).
If it does not work, replace the PCB.

When the results of check item (31) are "22 or 11"
(Detection of DDC is OK.)

Checking the TMDS status register (HDMI Switcher2)

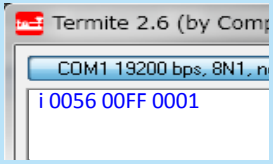
Check item(34). Checking register of the TMDS CLK detection status register :

Send the following command from Termite.exe.
Send the command "i 0056 00FF 0001".

When the following value is returned, go to Yes.
HDMI IN1 "88", HDMI IN2 "44", HDMI IN3 "22", HDMI IN4 "11"

When the following value is returned, go to No.
HDMI IN1 "80", HDMI IN2 "40", HDMI IN3 "20", HDMI IN4 "10"

Example



NO

YES

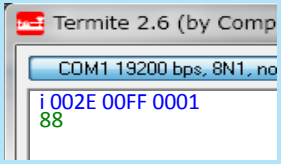
Checking the TMDS status register (HDMI Switcher2 -> HDMI Switcher1)

Check item(36). Check the TMDS CLK detection status of the register.

Send the following command from Termite.exe.
Send the command "i 002E 00FF 0001".

Is the return value "88" ?

Example :



If it is normal, "88" is returned.

NO

YES

HDMI Switcher1 (U2401) is faulty.
Replace with a new device.

Recheck from check item (4).
If it does not work, replace the PCB.

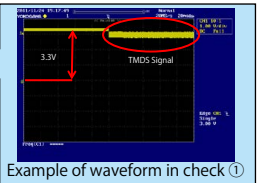
Check item (35). Checking the TMDS input waveform. :
Check the TMDS waveform at the following test point.
Is the waveform like the sample?

HDMI IN1
42/43/45/46/48/49/51/52 pin

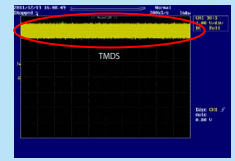
HDMI IN2
55/56/58/59/61/62/64/65 pin

HDMI IN3
80/81/83/84/86/87/89/90 pin

HDMI IN4
93/94/96/97/99/100/ 102/103 pin



Example of waveform in check ①



Example of waveform in check ②

YES

HDMI Switcher2 (U2601) is faulty.
Replace with a new device.

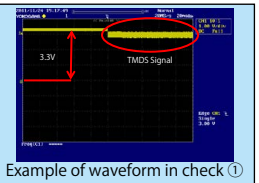
NO

Check for a short circuit in the pattern of the TMDS line of the HDMI Switcher2 (U2601) from the HDMI input terminal.
If there is no problem, the HDMI Switcher2 (U2601) is faulty.
Replace with a new device.

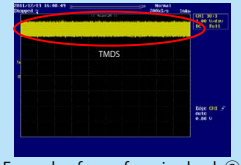
Recheck from check item (4).
If it does not work, replace the PCB.

Check item (37). Checking the TMDS input waveform. :
Check the TMDS waveform at the following test point.
Is the waveform like the sample?

42/43/45/46/48/49/51/52 pin



Example of waveform in check ①



Example of waveform in check ②

YES

NO

Check for a short circuit in the TMDS line.
If there is no problem, the HDMI Switcher2 (U2601) is faulty.
Replace with a new device.

3-4 Tx failure detection procedure

Check the output terminal.

Check item(38). Check the video output port for failure. :
Check the Monitor 1 output video signal is correct.

After checking the Monitor 1, change the HDMI cable connection from OUT1 to OUT2.
Turn off the AV AMP and turn it on again.
To check under the same conditions, use the same procedure as that for checking Monitor 1 when checking the Monitor 2 output.

No video signal is output from both Monitor 1 and Monitor 2. → Go to check item (39)

No video signal is output from Monitor 1 only. → Go to check item (45)

No video signal is output from Monitor 2 only. → Go to check item (52)

No video signal is output from both Monitor 1 and Monitor 2.

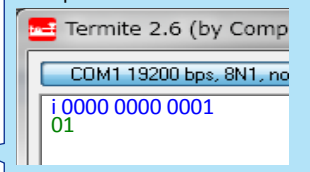
Checking device. HDMI (Tx)

Check the I2C communication line.

Check item (39). Check communication between CPU and the HDMI Tx device. :
Send the following command from Termite.exe.

Send the command "i 0000 0000 0001".
Is the return value "01" ?

Example :



If it is normal, "01" is returned.

If the communication results are not OK → Go to check item (40)

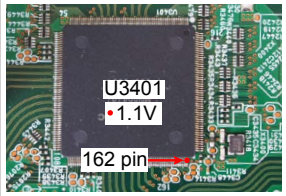
If the communication results are OK → Go to check item (43)

When the results of check item (39) are "the communication results are not OK"

Checking device. (HDMI Tx)

Check the power supply voltage.

Check item(40). Check of power supply voltage of HDMI Tx IC :
Is the voltage at the test point of each power supply pin correct? (1.1 V)
The test points are as follows.



NO

Check item(41). Check the power supply voltage.
Check the power supply components (U3606) on the substrate and peripheral pattern.
If there is no problem, remove the HDMI Tx (U3401) from the substrate and measure the voltage at the test point of check item (40).
Is the power supply voltage correct? (1.1 V)

YES

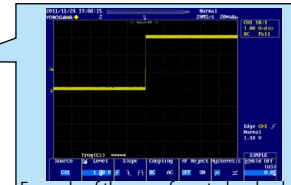
HDMI Tx (U3401) is faulty.
Replace with a new device.

NO

The power supply circuit is faulty.
Replace the PCB.

Recheck from check item (5).
If it does not work, replace the PCB.

Check item(42). Check the reset of HDMI Tx.
Check the waveform .
Is the waveform at the test point TP (U3401) correct when power is turned on?


Example of the waveform to be checked

YES

Replace (R3425 and R3427) with new resistors and check the I2C communication again.
Check item (42) If the result is not OK, the HDMI Tx (U3401) is faulty. Replace with a new device.

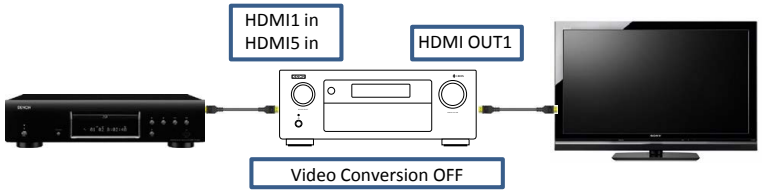
NO

Check the reset circuit between CPU (U6201) and HDMI Tx (U3401).
If there is no problem, the HDMI Tx (U3401) is faulty.
Replace with a new device.

Recheck from check item (5).
If it does not work, replace the PCB.

When the results of check item (39) are "the communication results are OK"

Checking operation between the HDMI (SW) device and the HDMI device (Tx).
Checking operation between the HDMI (Tx) device and TV.



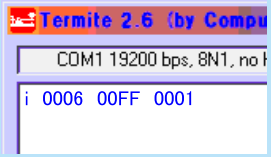
Checking the TMDS status register (Switcher1/2 -> HDMI Tx)

Check item(43). Check the TMDS CLK detection status of the register.
Send the following command from Termite.exe.

Send the command "i 0006 00FF 0001".
When checking the signal path from HDMI1 to HDMI OUT1
"72" : Go to Yes.
"74" : Go to No.

When checking the signal path from HDMI5 IN to HDMI OUT1
"71" : Go to Yes.
"74" : Go to No.

Example

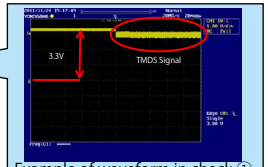


YES → The first operation : Checking between Monitor 1 and the TV.
Go to check item (45)
Next operation : Checking between Monitor 2 and the TV.
Go to check item (52)

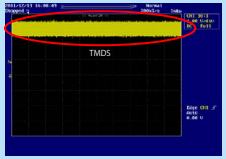
NO

Check item (44). Checking the TMDS input. :
TMDS waveform at the following points.

HDMI IN1
124/125/127/128/130/131/133/134 pin
HDMI IN5
137/138/140/141/143/144/146/147 pin



Example of waveform in check ①



Example of waveform in check ②

NO

HDMI Tx (U3401) is faulty.
Replace with a new device.

YES

Recheck from check item (5).
If it does not work, replace the PCB.

NO

Case of HDMI IN1
HDMI Switcher2 (U2601) is faulty.
Replace with a new device.

Case of HDMI IN5
HDMI Switcher1 (U2401) is faulty.
Replace with a new device.

Checking between Monitor1 and the TV.
Connect Monitor1 to the TV and check the following items with the TV turned on.

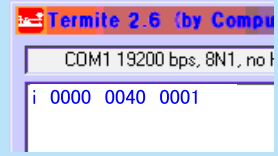
Checking the HPD/RXSENSE status register. (HDMI TX -> Monitor)

Check item(45). Check the HPD and RXSENSE register value of the HDMI TX device. :
Send the following command from Termite.exe.

Send the command "i 0000 0040 0001".

Move to the branch destination according to the value returned.

Example



"30"
(Detection of HPD is OK / Detection of RXSENSE is OK) → Go to check item (46)

"10"
(Detection of HPD is OK / Detection of RXSENSE is not OK) → Go to check item (49)

"20"
(Detection of HPD is not OK / Detection of RXSENSE is OK) → Go to check item (50)

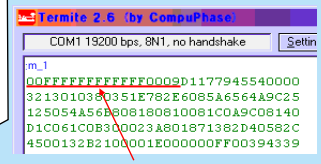
"00"
(Detection of HPD is not OK / Detection of RXSENSE is not OK) → Go to check item (51)

When the results of check item (45) are "30"
(Detection of HPD is OK / Detection of RXSENSE is OK)

Checking the EDID register. (Monitor1)

Check item(46). Check the Monitor EDID :
① Unplug the AC cord. Plug the AC cord into a power outlet.
② Send the transmission command "m_1" from Termite.exe.
Are the first eight bytes of the returned value "00FFFFFFFFFFFF00"?

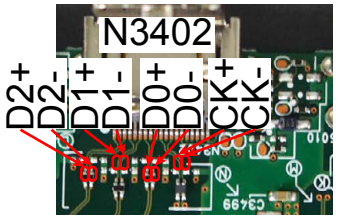
Example



The first eight bytes are normally "00FFFFFFFFFFFF00".
*If the AVR and the TV are not connected via HDMI, the correct register value cannot be verified.

YES

Check item(47). Checking the TMDS :
Check the TMDS waveform at the following test point.



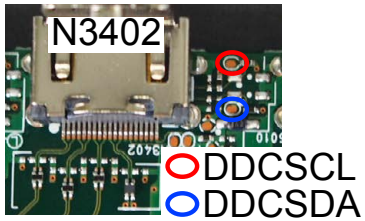
YES

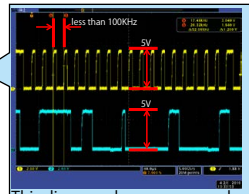
Check for a short circuit in the TMDS line.
If there is no problem, the HDMI Tx (U3401) is faulty.
Replace with a new device.

HDMI Tx (U3401) is faulty.
Replace with a new device.

NO

Check item(48). Check the communication :
Are waveforms of "DDCSCL" and "DDCSDA" observed at the test point near the HDMI output terminal (N3402)?





This diagram shows an example of the DDC communication waveform.
-The high level voltage is 5V.
-The frequency of the DDC CLK is 100 KHz or less.
Check at each test point.

YES

Check for a short circuit in the DDC line.
If there is no problem, the HDMI Tx (U3401) is faulty.
Replace with a new device.

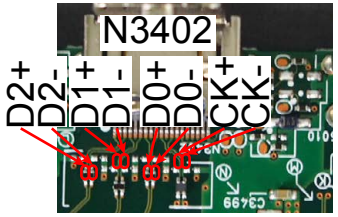
HDMI Tx (U3401) is faulty.
Replace with a new device.

Recheck from check item (5).
If it does not work, replace the PCB.

When the results of check item (45) are "10"
(Detection of HPD is OK / Detection of RXSENSE is not OK)

Check the RXSENSE. (Monitor1)

Check item(49). Checking the RXSENSE. :
Does the test point of RXSENSE close to the HDMI output terminal (N3402) indicate the (3.3V)?



YES

NO

Check for a short circuit in the TMDS line.
If there is no problem, the HDMI Tx (IC431) is faulty.
Replace with a new device.

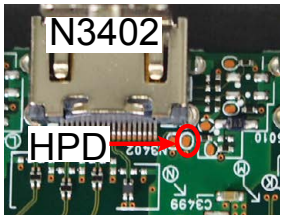
HDMI Tx (U3401) is faulty.
Replace with a new device.

Recheck from check item (5).
If it does not work, replace the PCB.

When the results of check item (45) are "20"
(Detection of HPD is not OK / Detection of RXSENSE is OK)

Check the HPD. (Monitor1)

Check item(50). Checking the HPD. :
Does the voltage of HPD test point close to the HDMI output terminal (N3402) indicate "Hi" (3-5 V)?



YES

NO

Check for a short circuit in the HPD line.
If there is no problem, the HDMI Tx (U3401) is faulty.
Replace with a new device.

HDMI Tx (U3401) is faulty.
Replace with a new device.

Recheck from check item (5).
If it does not work, replace the PCB.

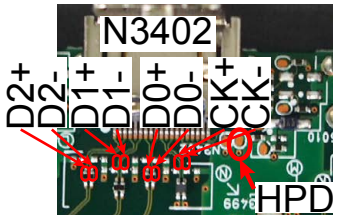
When the results of check item (45) are "00"
(Detection of HPD is not OK / Detection of RXSENSE is not OK)

↓

Check the RXSENSE/HPD. (Monitor1)

↓

Check item(51). Checking the HPD and RXSENSE. :
Does the test point of RXSENSE close to the HDMI output terminal (N3402) indicate the (3.3V)?
Does the test point of HPD close to the HDMI output terminal (N3402) indicate the "Hi"(3-5V)?



YES ↓ NO

Check for a short circuit in the TMDS/ HPD line.
If there is no problem, the HDMI Tx (U3401) is faulty.
Replace with a new device.

HDMI Tx (U3401) is faulty.
Replace with a new device.

↓

Recheck from check item (5).
If it does not work, replace the PCB.

Checking between Monitor 2 and the TV.
Connect Monitor 2 to the TV and check the following items with the TV turned on.

↓

Checking the HPD/RXSENSE status register. (Monitor2)

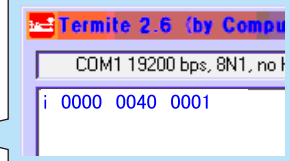
↓

Check item(52). Check the HPD and RXSENSE register value of the HDMI TX device. :
Send the following command from Termite.exe.

Send the command "i 0000 0040 0001".

Move to the branch destination according to the value returned.

Example



"03"
(Detection of HPD is OK / Detection of RXSENSE is OK)
→ Go to check item (53)

"01"
(Detection of HPD is OK / Detection of RXSENSE is not OK)
→ Go to check item (55)

"02"
(Detection of HPD is not OK / Detection of RXSENSE is OK)
→ Go to check item (57)

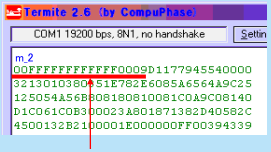
"00"
(Detection of HPD is not OK / Detection of RXSENSE is not OK)
→ Go to check item (58)

When the results of check item (52) are "03"
(Detection of HPD is OK / Detection of RXSENSE is OK)

Checking the EDID register. (Monitor2)

Check item(53). Check the Monitor EDID :
① Unplug the AC cord. Plug the AC cord into a power outlet.
② Send the transmission command "m_2" from Termite.exe.
Are the first eight bytes of the returned value "00FFFFFFFFFFFF00"?

Example

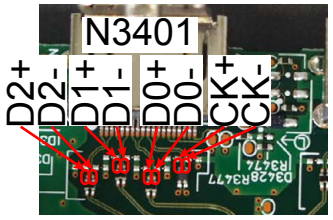


The first eight bytes are normally "00FFFFFFFFFFFF00".
*If the AVR and the TV are not connected via HDMI, the correct register value cannot be verified.

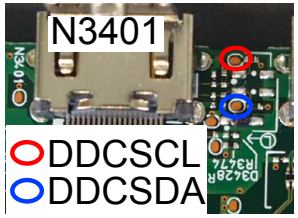
YES

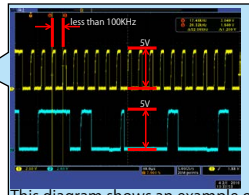
NO

Check item(54). Checking the TMDS :
Check the TMDS waveform at the following test point.



Check item(55). Check communication with the monitor :
Are waveforms of "DDCSCL" and "DDCSDA" observed at the test point near the HDMI output terminal (N3401)?





This diagram shows an example of the DDC communication waveform.
-The high level voltage is 5V.
-The frequency of the DDC CLK is 100 KHz or less.
Check at each test point.

YES

NO

Check for a short circuit in the TMDS line.
If there is no problem, the HDMI Tx (U3401) is faulty.
Replace with a new device.

HDMI Tx (U3401) is faulty.
Replace with a new device.

YES

NO

HDMI Tx (U3401) is faulty.
Replace with a new device.

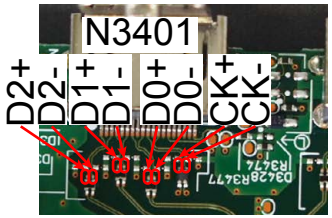
HDMI Tx (U3401) is faulty.
Replace with a new device.

Recheck from check item (5).
If it does not work, replace the PCB.

When the results of check item (52) are "01"
(Detection of HPD is OK / Detection of RXSENSE is not OK)

Check the RXSENSE. (Monitor2)

Check item(56). Checking the RXSENSE. :
Does the test point of RXSENSE close to the HDMI output terminal (N3401) indicate the 3.3 V?



YES

NO

Check for a short circuit in the TMDS line.
If there is no problem, the HDMI Tx (U3401) is faulty.
Replace with a new device.

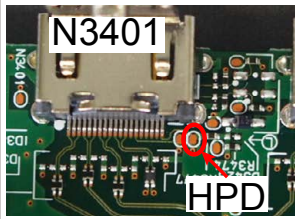
HDMI Tx (U3401) is faulty.
Replace with a new device.

Recheck from check item (5).
If it does not work, replace the PCB.

When the results of check item (52) are "02"
(Detection of HPD is not OK / Detection of RXSENSE is OK)

Check the HPD. (Monitor2)

Check item(57). Checking the HPD. :
Does the voltage of HPD test point close to the HDMI output terminal (N3401) indicate "Hi" (3-5 V)?



YES

NO

Check for a short circuit in the HPD line.
If there is no problem, the HDMI Tx (U3401) is faulty.
Replace with a new device.

HDMI Tx (U3401) is faulty.
Replace with a new device.

Recheck from check item (5).
If it does not work, replace the PCB.

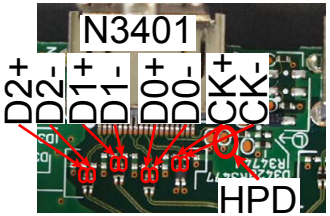
When the results of check item (52) are "00"
(Detection of HPD is not OK / Detection of RXSENSE is not OK)

↓

Checking the HPD/RXSENSE status register. (Monitor2)

↓

Check item(58). Checking the HPD and RXSENSE. :
Does the test point of RXSENSE close to the HDMI output terminal (N3401) indicate the (3.3 V)?
Does the voltage of HPD test point close to the HDMI output terminal (N3401) indicate "Hi" (3-5 V)?



YES ↓ NO

NO:
Check for a short circuit in the TMDS/ HPD line.
If there is no problem, the HDMI Tx (U3401) is faulty.
Replace with a new device.

YES:
HDMI Tx (U3401) is faulty.
Replace with a new device.

↓

Recheck from check item (5).
If it does not work, replace the PCB.

3-5 HDMI DDC Buffer (ISL33003) failure detection procedure

Checking operation between the HDMI (HDMI DDC Buffer) and the player

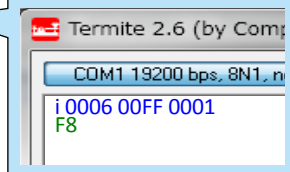
※ In order to check, connect the player to the HDMI terminal and configure the player as AVR source.
Check the sound output while turning on the player.

Checking the +5V/DDC status register (HDMI DDC Buffer)

Check item(59). Checking the 5V status register :
Send the following command from Termite.exe.
Send the command "i 0006 00FF 0001".

Check the value.
Move to the branch destination according to the value returned.

Example



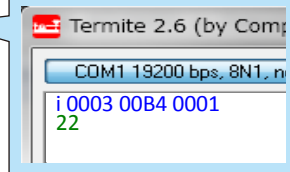
"78 or 70"
(Detection of 5V is not OK.)
→ Go to check item (61)

"F8 or F0"
(Detection of 5V is OK)

Check item(60). Checking the status register :
Send the following command from Termite.exe.
Send the command "i 0003 00B4 0001".

Check the value.
Move to the branch destination according to the value returned.

Example



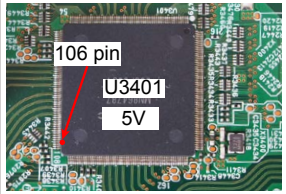
"00 or 04"
(Detection of DDC is not OK.)
→ Go to check item (62)

"22"
(Detection of DDC is OK)
→ Go to check item (63)

When the results of check item (59) are "78 or 70"
(Detection of 5V is not OK.)

Check the +5V voltage. (HDMI DDC Buffer)

Check item(61). Check the +5V voltage.
Does the HDMI Tx (U3401) test point indicate (5V)?
The test points are as follows.



NO → Check the 5V line for soldering faults, the Front HDMI cable and the 5V Switch (U2400).
If there is no problem, the HDMI Tx (U3401) or the 5 V Switch (U2400) is faulty.
Replace with a new device.

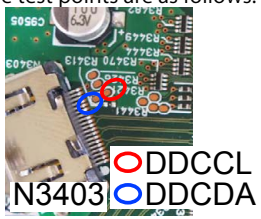
YES → HDMI Tx (U3401) is faulty.
Replace with a new device.

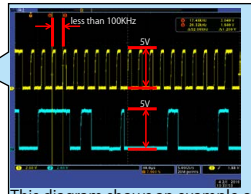
Recheck from check item (5).
If it does not work, replace the PCB.

When the results of check item (60) are "00 or 04"
(Detection of DDC is not OK.)

Check the DDC Line. (HDMI DDC Buffer)

Check item(62). Check the DDC line :
Are the "DDCCL" and "DDCDA" waveforms for the HDMI Tx (U3401) signal correct (as shown in the figure)?
The test points are as follows.





This diagram shows an example of the DDC communication waveform.
-The high level voltage is 5V.
-The frequency of the DDC CLK is 100 KHz or less.
Check at each test point.

NO → Check the DDC line for soldering faults and the Front HDMI cable.
If there is no problem, the HDMI DDC Buffer (U5501) is faulty.
Replace with a new device.

YES → HDMI Tx (U3401) is faulty.
Replace with a new device.

Recheck from check item (5).
If it does not work, replace the PCB.

When the results of check item (60) are "22"
(Detection of DDC is OK)

↓

Checking the TMDS status register (HDMI DDC Buffer)

↓

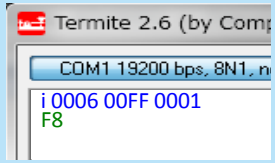
Check item(63). Check the TMDS CLK detection status of the register.

Send the following command from Termite.exe.
Send the command "i 0006 00FF 0001".

When the following value is returned, go to Yes.
"F8"

When the following value is returned, go to No.
"F0"

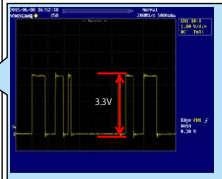
Example



NO

YES

Check item(65). Check the AUDIO signal output :
Check the AUDIO signal waveform at the following test point.
Is the waveform like the sample?
(MCK/64FS/FS/I2S0/I2S1/I2S2/I2S3/SPDIF)



The diagram shows an example of the waveform of I2S0.
Waveform check points
- Crest value (3.3 V normally)
- Signal change
Check the waveform of each pin.

YES

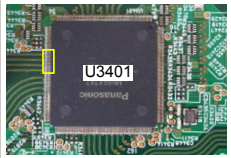
The DIGITAL AUDIO block is faulty.
Check the DIGITAL AUDIO device.
Check "AUDIO" in troubleshooting.
If it does not work, replace the PCB.

NO

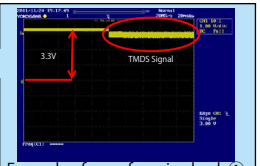
HDMI Tx (U3401) is faulty.
Replace with a new device.

Recheck from check item (5).
If it does not work, replace the PCB.

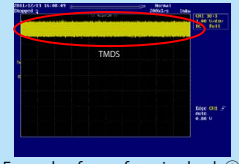
Check item (64). Checking the TMDS input waveform. :
Check the TMDS waveform at the following test point.
Is the waveform like the sample?



70/71/73/74/76/77/79/80 pin



Example of waveform in check ①



Example of waveform in check ②

YES

HDMI Tx (U3401) is faulty.
Replace with a new device.

NO

Check the TMDS line and Front HDMI connector for soldering faults.
If there is no problem, the HDMI Tx (U3401) is faulty.
Replace with a new device.

Recheck from check item (5).
If it does not work, replace the PCB.

3-6 GUI (ADV8003) failure detection procedure

Check item(66).
Rewrite to the GUI ROM.
After writing, is the GUI version readable correctly?

YES → Go to check item (3)

NO ↓

Checking device. (GUI)

↓

Check the I2C communication line. (GUI)

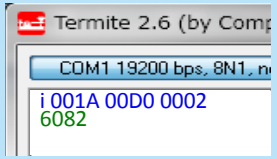
↓

Check item (67). Check communication between CPU and device.

Send the following command from Termite.exe.
Send the command "i 001A 00D0 0002".

Is the return value "6082" ?

Example



If it is normal, "6082" is returned.

If the communication results are not OK → Go to check item (70)

If the communication results are OK

Check item(68).
Replace the GUI Rom(U2801).
Is the GUI version readable correctly?

YES → Go to check item (3)

NO ↓

Check item(69).
Replace the GUI(U2800).
Is the GUI version readable correctly?

YES → Go to check item (3)

NO ↓

Replace the PCB.

When the results of check item (67) are "the communication results are not OK"

↓

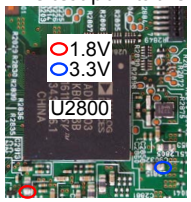
Checking device. (GUI)

↓

Check the power supply voltage. (GUI)

↓

Check item(70). Check the power supply voltage.
:
Does the GUI (U2800) power voltage indicate an appropriate voltage (1.8V or 3.3V)?
The test points are as follows.



NO → Check item(71). Check the power supply voltage.
:
Check the power supply components (Q3806/U3603) on the substrate and peripheral pattern.
If there is no problem, remove the GUI (U2800) from the substrate and measure the voltage at the test point of check item (70).
Is the voltage correct (1.8 V or 3.3 V)?

YES ↓

NO → The power supply circuit is faulty.
Replace the PCB.

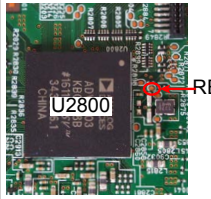
The GUI (U2800) is faulty.
Replace with a new device.

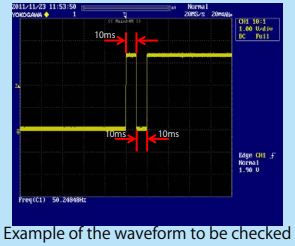
Recheck from check item (1).
If it does not work, replace the PCB.

Go to next page.

Checking the reset waveform.

Check item(72). Checking the reset :
Check the CPU.
Is the waveform of the TP near the GUI (U2800) correct (like the one shown in the diagram) when the power is turned on?





Example of the waveform to be checked

YES

NO

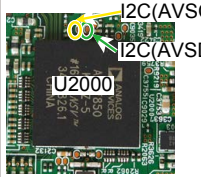
Check the reset circuit between CPU (U6201) and GUI (U2800).
If there is no problem, the GUI (U2800) is faulty.
Replace with a new device.

Recheck from check item (1).
If it does not work, replace the PCB.

Check the I2C communication line.

YES

Check item(73). Check the I2C communication line :
Check the CPU.
Is the TP waveform of the TP near the HDMI Decoder (U2000) correct (like the one shown in the diagram) when the power is turned on?




*The diagram shows an example.
(Signal patterns vary depending on the timing.)
Points for checking waveforms
- Crest value (3.3 V normally)
- Signal change
- SCL frequency (400 kHz normally)

YES

NO

Check item(74). Check the I2C communication line :
Check GUI (U2800), HDMI Decoder (U2000) and CPU(U6201) patterns as well as soldering.
If there is no problem, go to the next step.

Check the HDMI Decoder.
Remove the damping resistor (R2031) of HDMI Decoder (U2000).
Is the "I2C" waveform correct?

NO

The GUI (U2800) is faulty.
Replace with a new device.

YES

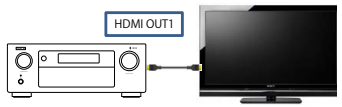
HDMI Decoder (U2000) is faulty.
Replace with a new device.

The GUI (U2800) is faulty.
Replace with a new device.

Recheck from check item (1).
If it does not work, replace the PCB.

3-7 GUI and PLD failure detection procedure

Check item(75). Does a video signal come from HDMI OUT1 to TV correctly? :



Turn Video Conversion "ON" on the setup menu.
(SETUP MENU-> Video-> Output Settings-> Video Conversion = On)
When the "SETUP" button on a remote control is pressed, is "MENU" displayed on TV which is connected to the HDMI output terminal on the AVR?

NO → Go to check item (76)

YES → Go to check item (79)

When the results of check item (75) are "NO"
(When the menu display is not OK)

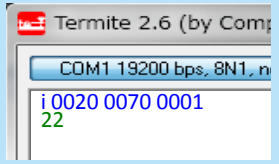
Check the Video signal line. (GUI -> HDMI Tx)

Check item(76). Check the format of the resistor video signal :

Send the following command from Termite.exe.
Send the command "i 0020 0070 0001".

Is the return value "22/21/20/1F/15/14/13/11/10/06/05/04/02" ?

Example



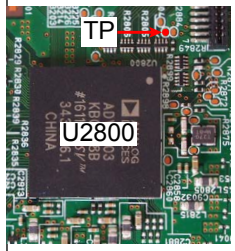
NO

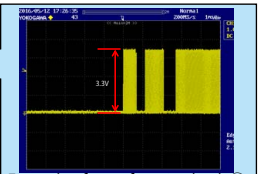
YES → HDMI Tx (U3401) is faulty.
Replace with a new device.

Recheck from check item (6).
If it does not work, replace the PCB.

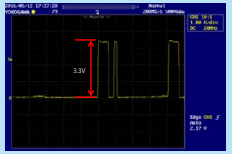
Check the Video signal line. (GUI -> PLD)

Check item(77). Check the PLD video signal line from the GUI :
Check the video signal waveform at the following test point.
Is the waveform like the sample?





Example of waveform in check ①



Example of waveform in check ②

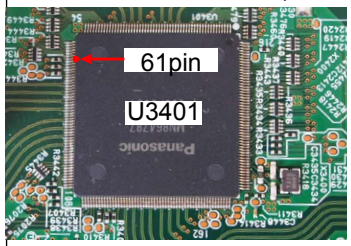
NO

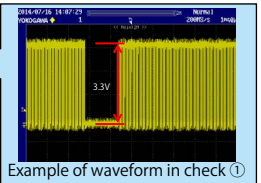
Check the peripheral pattern between the GUI (U2800) and PLD (U3200).
If there is no problem, the GUI (U2800) is faulty.
Replace with a new device.

Recheck from check item (6).
If it does not work, replace the PCB.

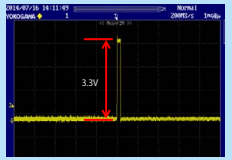
Check the Video signal line. (PLD -> HDMI Tx)

Check item(78). Check the HDMI Tx video signal line from the PLD :
Check the video signal waveform at the following test point.
Is the waveform like the sample?





Example of waveform in check ①



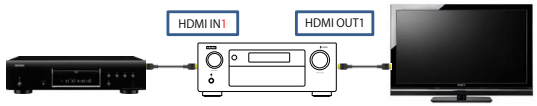
Example of waveform in check ②

YES → HDMI Tx (U3401) is faulty.
Replace with a new device.

NO → Check the peripheral pattern between the PLD (U3200) and HDMI Tx (U3401).
If there is no problem, the PLD (U3200) is faulty.
Replace with a new device.

Recheck from check item (6).
If it does not work, replace the PCB.

When the results of check item (75) are "YES"
(When the menu display is OK)

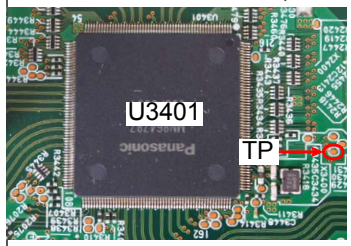


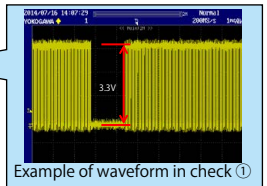
Turn Video Conversion "ON" on the setup menu.
(SETUP MENU-> Video-> Output Settings-> Video Conversion = On)
In order to check, connect the player to the HDMI terminal and configure the player as AVR source.
Next, turn on the power for the player and TV and start playback on the player.

Check the Video signal line. (HDMI Tx -> GUI)

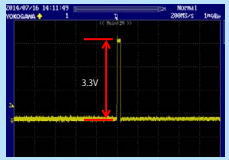
Check the Video signal line. (HDMI Tx -> PLD)

Check item(79). Check the HDMI Tx video signal line from the HDMI Tx :
Check the video signal waveform at the following test point.
Is the waveform like the sample?





Example of waveform in check ①



Example of waveform in check ②

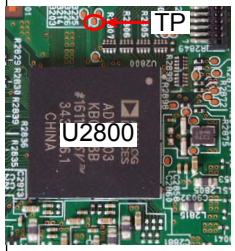
NO

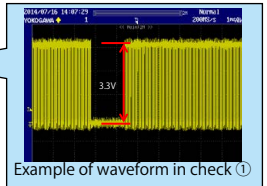
Check the peripheral pattern between the HDMI Tx (U3401) and PLD (U3200).
If there is no problem, the HDMI Tx (U3401) is faulty.
Replace with a new device.

Recheck from check item (6).
If it does not work, replace the PCB.

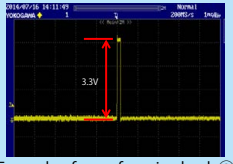
Check the Video signal line. (PLD -> GUI)

Check item(80). Check the GUI video signal line from the PLD :
Check the video signal waveform at the following test point.
Is the waveform like the sample?





Example of waveform in check ①



Example of waveform in check ②

YES

The GUI (U2800) is faulty.
Replace with a new device.

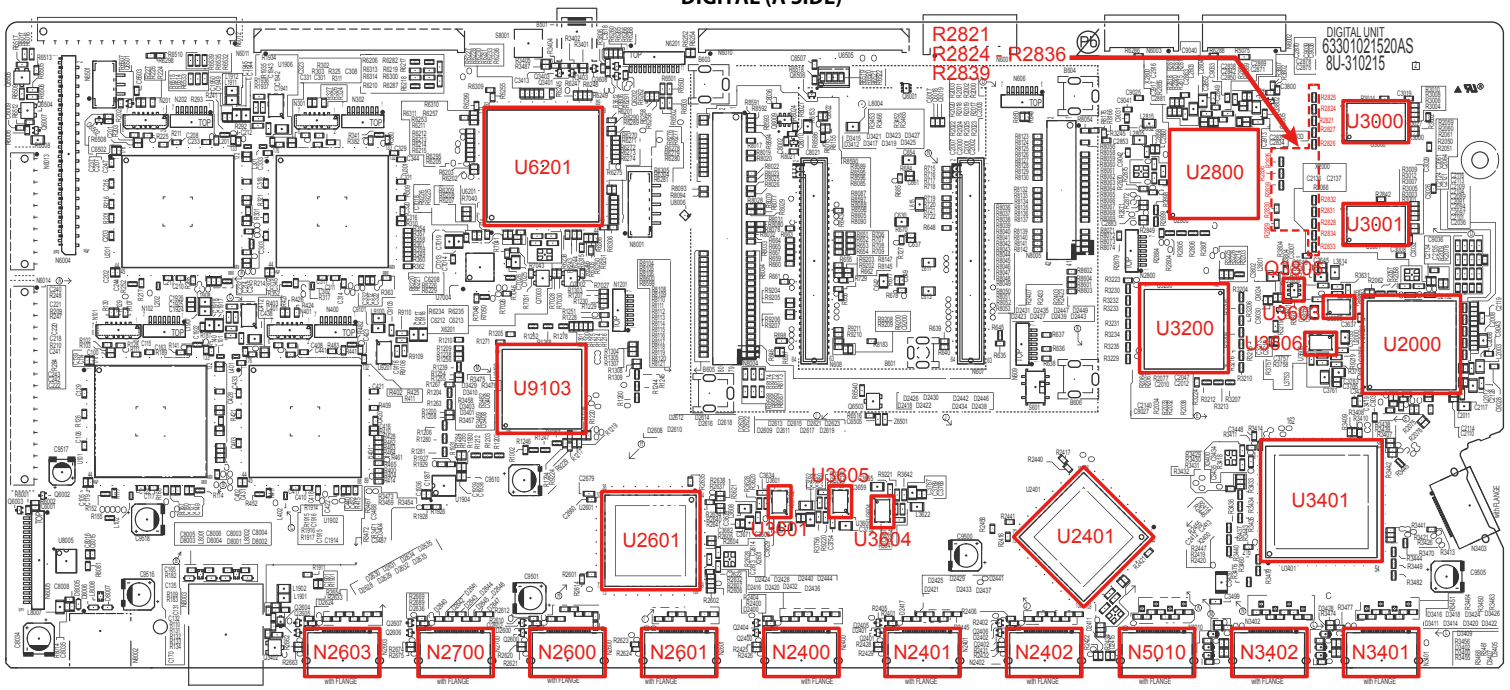
NO

Check the peripheral pattern between the PLD (U3200) and GUI (U2800).
If there is no problem, the PLD (U3200) is faulty.
Replace with a new device.

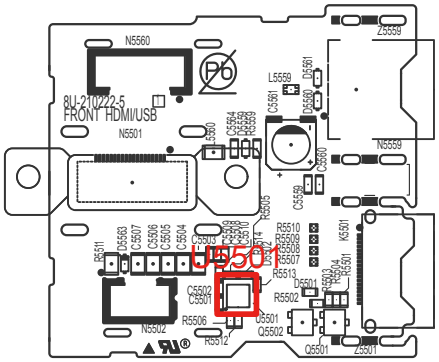
Recheck from check item (6).
If it does not work, replace the PCB.

4.Device implementation location

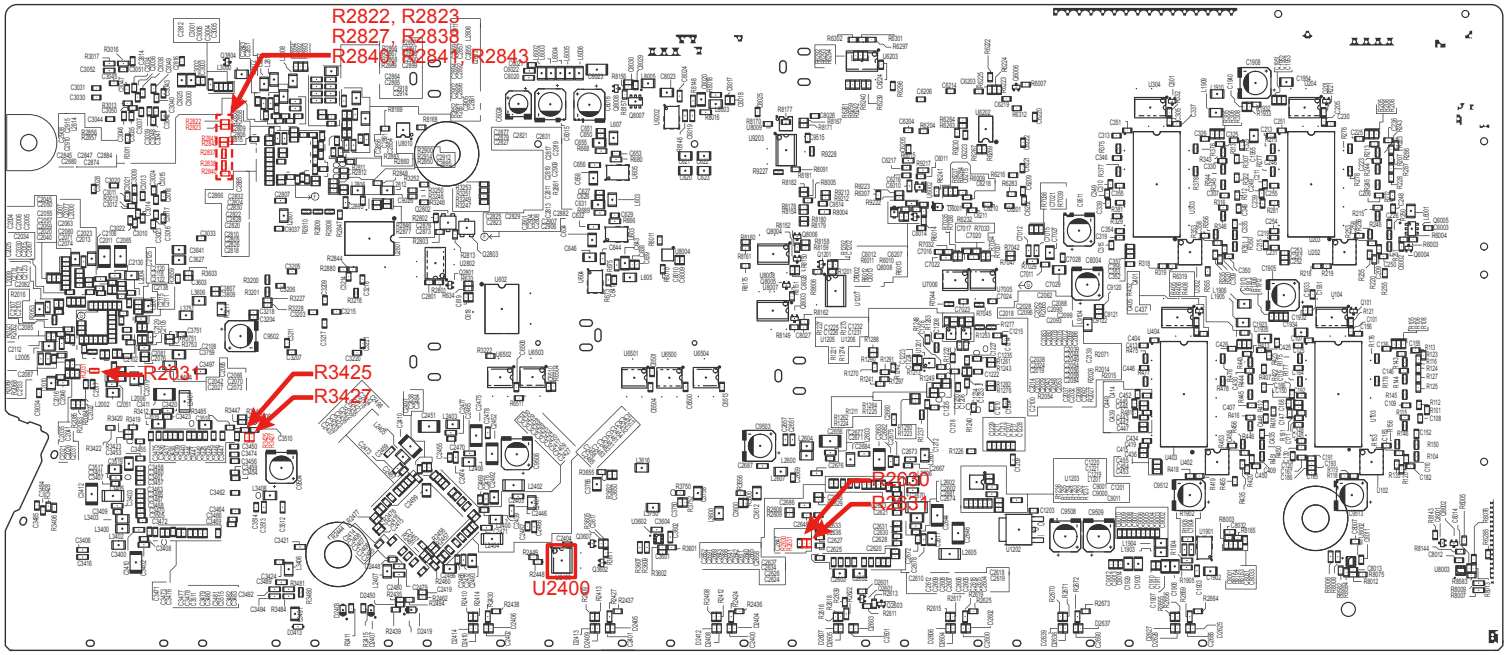
DIGITAL (A SIDE)



F HDMI (A SIDE)

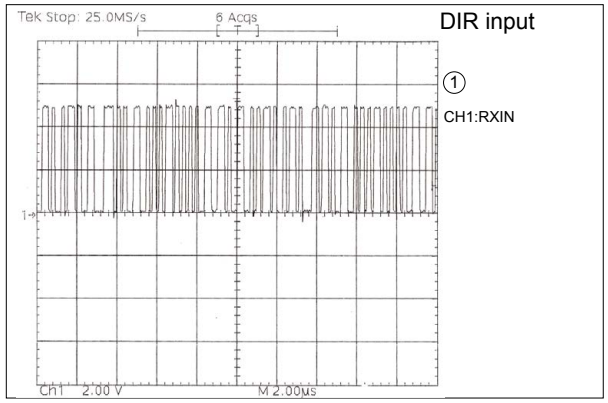


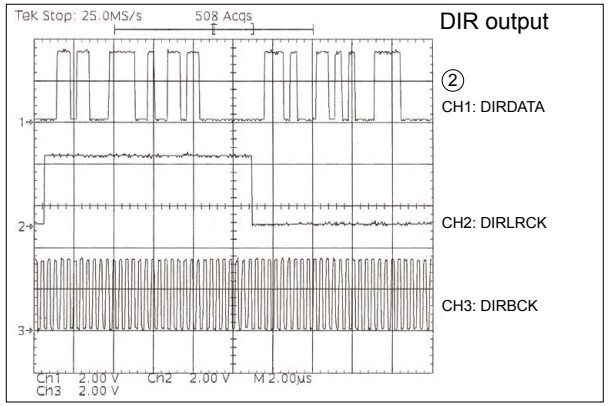
DIGITAL (B SIDE)

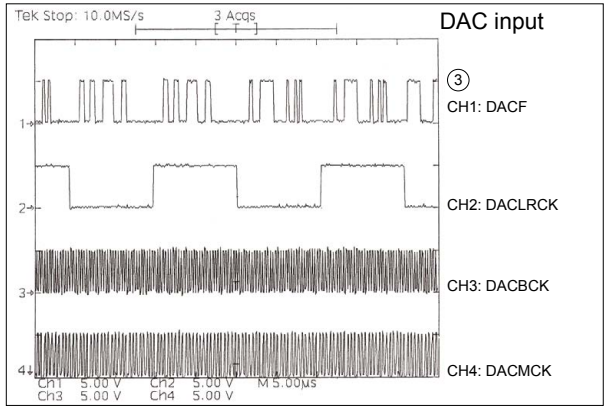


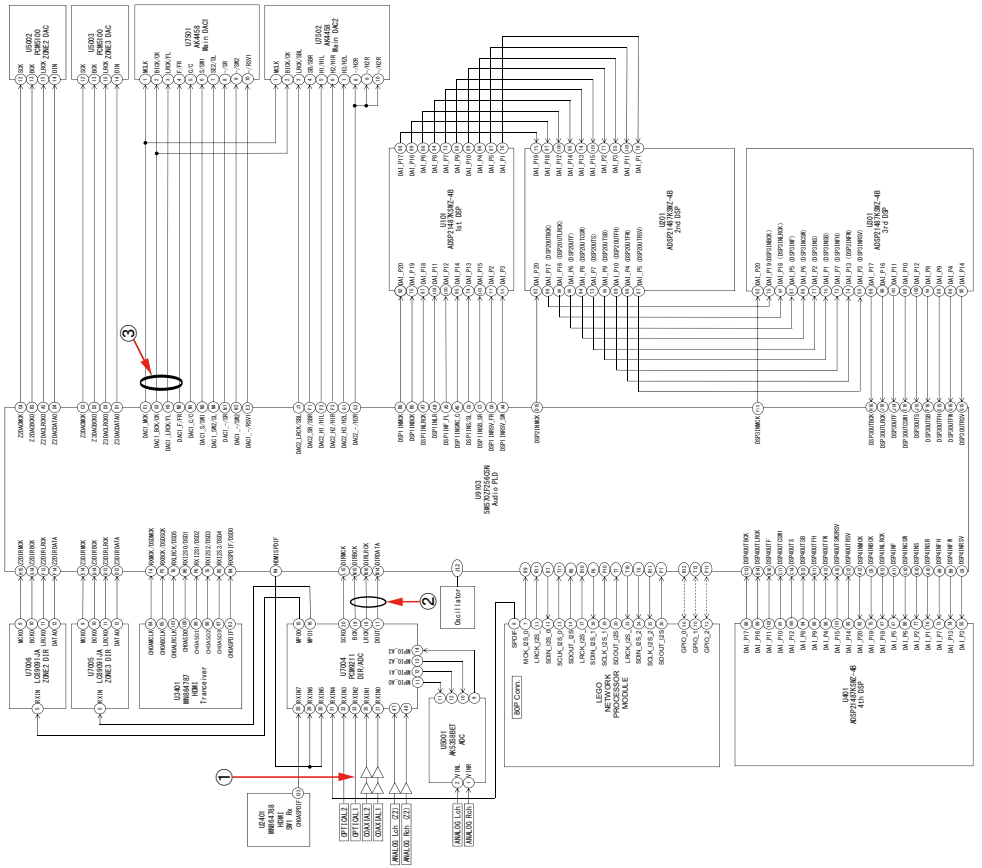
CLOCK FLOW & WAVE FORM IN DIGITAL BLOCK

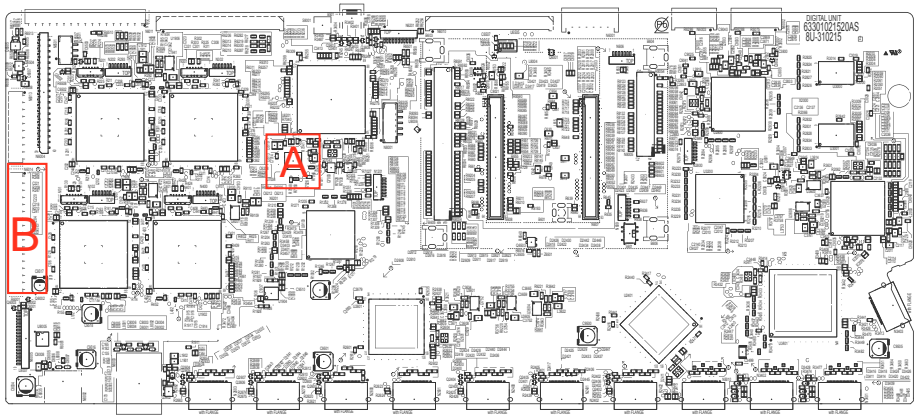
WAVE FORM

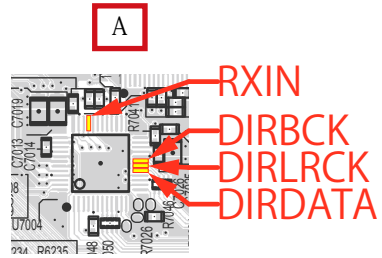


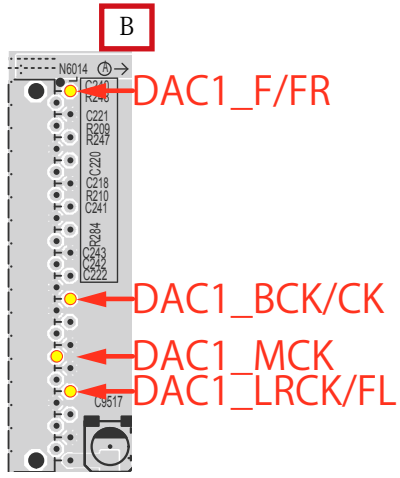












SPECIAL MODE

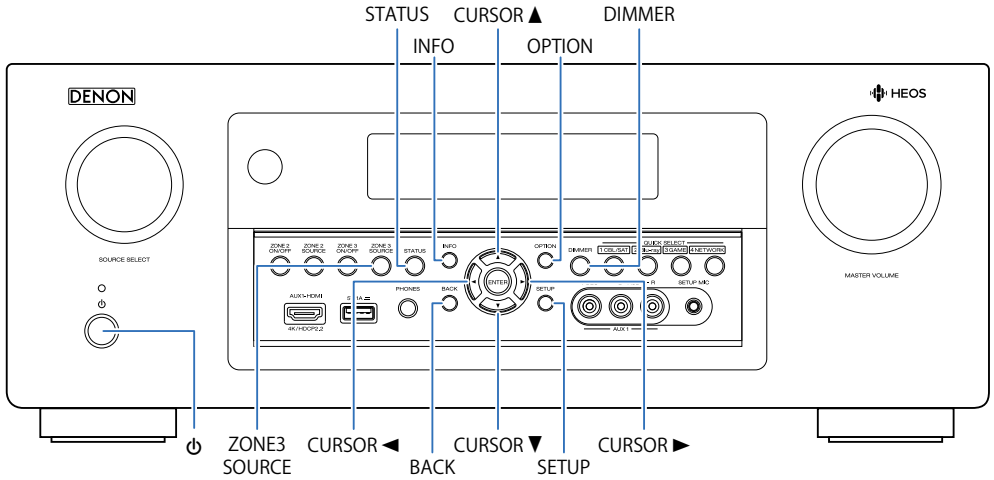
Special mode setting button

※ No. 1 - 4, 6 - 8 : While holding down buttons "**A**", "**B**" and "**C**" simultaneously, press the power button to turn on the power.
※ No. 5 : While the power is on, hold down buttons "**A**" and "**B**" for at least 3 seconds .

No.	Mode	Button A	Button B	Button C	Descriptions
1	Version Display (u-COM / DSP Error Display)	SETUP	OPTION	-	Displays the version of firmware such as the main firmware or DSP. Errors that have occurred are displayed. (See 1. Version Display Mode)
2	PANEL / REMOTE LOCK Selection Mode	STATUS	INFO	-	Start this unit in the PANEL/REMOTE LOCK selection mode so that PANEL LOCK and Remote Lock can be switched between On and Off. (See 2. PANEL / REMOTE LOCK Selection Mode) PANEL LOCK MODE : No. 2 - 1 - No. 2 - 3
2-1	PANEL LOCK Mode (with Volume)	↑	↑	-	Disables reception from all keys and encoders on the front panel except the power button (including the volume).
2-2	PANEL LOCK Mode (without Volume)	↑	↑	-	Disables reception from all keys and encoders on the front panel except the power button and volume encoder.
2-3	PANEL LOCK mode is turned off	↑	↑	-	Releases the PANEL LOCK.
3	Selecting the Mode for Service-related	ZONE3 SOURCE	STATUS	-	This is a display for turning on each service-related mode. Service-related modes: No. 3-1 - No. 3-4 (See 3-1. Selecting the Mode for Service-related)
3-1	Check the Video/Audio path Mode	↑	↑	-	This is a special mode for service confirmation used during repair work to simplify the confirmation work for the Audio channel / video channel. (See Service Path Check Mode)
3-2	Protection history display mode	↑	↑	-	Displays the protection occurrence history. (See 3-2. Protection History Display Mode)
3-3	232C Standby Clear Mode	↑	↑	-	Switches from 232C standby mode to normal standby mode. (See 3-3. 232C Standby Clear Mode)
3-4	Operation Info Mode	↑	↑	-	Displays the accumulated operating time of the unit, the number of times the power was switched on, and the number of occurrences of each protection. (See 3-4. Operation Info Mode)
3-5	TUNER STEP Mode (E2 model only)	↑	↑	-	Enables reception STEP of the ANALOG TUNER to be changed. (See 3-5. TUNER STEP mode (E2 only))
3-6	Remote ID Setup Mode	↑	↑	-	If there are multiple DENON AV receivers in the same area, this mode prevents other AV receivers from being operated concurrently with this device. (See 3-6. Remote ID Setup Mode)
4	Protection Pass Mode	ZONE3 SOURCE	STATUS	CURSOR ◄	Enables the power to be turned on when protection detection is disabled. (See 4. Protection Pass Mode)
5	Network Initialization Mode	CURSOR ►	DIMMER	-	Network module backup data is initialized. (See 5. Network Initialization Mode)
6	User Initialization Mode	BACK	INFO	-	Initialize the backup data for the MCU and network module. (Settings for the Installer Setup are not initialized.)
7	Factory Initialization Mode	CURSOR ▲	CURSOR ▼	-	Initialize the backup data only for MCU. (Settings for the Installer Setup are initialized) (Network function settings are not initialized.) (See Initializing This Unit)
8	Clearing the Operation Info	OPTION	DIMMER	-	Clear the accumulated operating time of the unit, the number of times the power was switched on, and the number of occurrences of each protection. (See 6. Clearing the Operation Info)

⚠6 **NOTE :** When the volume indicator displays " -88 ", the unit has entered a special mode for developers. In this case, the RS-232C communication is not available.
To release this special mode, press and hold the "**STATUS**" and "**CURSOR ▼**" buttons for 3 seconds or more while the power is ON. When the volume indicator returns to the normal display, the RS-232C communication is available.

Go to next page.


STATUS
CURSOR ▲
DIMMER
INFO
OPTION
DENON
HEOS
SOURCE SELECT
MASTER VOLUME
ZONE3 SOURCE
CURSOR ◄
BACK
CURSOR ▼
SETUP
CURSOR ►

1. Version Display Mode

1.1. Actions

Version information is displayed when the device is started in this mode.

1.2. Starting up

While holding down buttons "**SETUP**" and "**OPTION**" simultaneously, press the power button to turn on the power.
then press the "**STATUS**" button to display the information in section 1.3 on the display.
※ The version list is also displayed on GUI while the version is displayed on the display.

1.3. Display Order

Error information (See "1.4. Error display") → ① Model destination information, Serial Number → ② Firmware Package → ③ Main µ-com, Main 1st Boot Loader → ④ DSP1/2/3/4 ROM → ⑤ Audio, Video PLD → ⑥ GUI SFLASH → ⑦ HEOS Version → ⑧ HEOS Build → ⑨ HEOS Module → ⑩ HEOS Configuration → ⑪ HEOS Locale → ⑫ Ether Mac Address → ⑬ WiFi Mac Address → ⑭ BT Mac Address → ⑮ HD Radio Version → ⑯ Audyssey App Interface Version

①Model destination information, Serial Number :

L1	AVR-X6300H \ \ \
L2	S/N. **********

\ : Region (E3, E2, JP)

②Firmware Package :

L1	Firm. Package
L2	Ver.:*****

③Main µ-com, Main 1st Boot Loader :

L1	Main :**.**
L2	Main FBL :**.**

④DSP 1/2/3/4 ROM :

L1	DSP1 :**.**
L2	DSP2 :**.**

L1	DSP3 :**.**
L2	DSP4 :**.**

⑤Audio, Video PLD :

L1	Audio PLD:**.**
L2	Video PLD:**.**

⑥GUI SFLASH :

L1	GUI :@@$****

@ : Model code
$: Brand code (Non=0, De=1, Mz=2, Mc=3)
\ : Region code (E3=1, E2=2, E1C=5, JP=4, ALL=0)
* : version

⑦HEOS Version :

L1	HEOS Version
L2	*.***.***

⑧HEOS Build :

L1	HEOS Build
L2	*******

⑨HEOS Module :

L1	HEOS Module
L2	***

⑩HEOS Configuration :

L1	HEOS Config
L2	Development

Production

⑪HEOS Locale :

L1	HEOS Locale
L2	*****

⑫Ether Mac Address :

L1	*Ether MAC
L2	******-******

⑬WiFi Mac Address :

L1	*Wi-Fi MAC
L2	******-******

⑭BT Mac Address :

L1	*BT MAC Address
L2	******-******

⑮HD Radio Version (E3 only) :

L1	*HD :*********-
L2	*****.***

⑯Audyssey App Interface Version :

L1	Audy IFVer:**.**
L2	

1.4. Error display

See the table below for descriptions of the displayed errors and countermeasures for these.
If multiple errors occur, only one item is displayed.
The priority order is ②, ③, ④, ⑤, ⑥, ①.

Condition	States	Display	TROUBLE SHOOTING
① Firm Check NG (# : 1/2/3/4)	The model name, brand name and region information written in the firmware are compared to the region settings in the PCB. This error is displayed if the information does not match. " ▲ " is displayed as the first character if the firmware is not correct (see the illustrations on the right).	FIRM ERROR ▲Main :**:** ▲Main FBL :**.** ▲DSP# :**.** ▲Audio PLD:**.** ▲Video PLD:**.** ▲GUI :********	•Check the resistor for setting the region(R6217, R6218, R6219, DIGITAL PCB). •Write the firmware for the correct region.
② IP SCALER NG	An error occurs in Loop back Test of the DDR memory which is performed during the initial setting of i/p Scaler(ADV8003).	IP SCALER ERR 01	•Check the circuits around the IP SCALER (U2800, DIGITAL PCB) and DDR2 (U3000/U3001). If there appear to be no problems, U2800 or U3000/U3001 is faulty.
	During the initial setting of i/p Scaler (ADV8003) , there is not the reply of the Loop back Test result of the DDR memory .	IP SCALER ERR 02	
③ GUI Serial Flash NG	If the Main CPU version is not supported by the GUI Serial Flash (ADV8003). " ▼ " is displayed as the first character of the GUI firmware version.	GUI VER. ERROR ▼GUI :********	•Check the firmware version.
④ DIR NG	This error is displayed if there is no response from the DIR.	DIR ERROR 01	•Check the DIR (U7004, DIGITAL PCB) and surrounding circuits.
⑤ DSP# NG (# : 1/2/3/4)	The DSP FLAG0 port does not enter "**Hi**" status while booting a DSP code even after resetting DSP.	DSP# ERROR 01	•Check the DSP (U101, U201, U301, U401, DIGITAL PCB) and surrounding circuits.
	The DSP FLAG0 port does not enter "**Hi**" status before issuing a DSP command.	DSP# ERROR 02	
	Setting WRITE to "**Lo**" does not set ACK to "**Hi**" during DSP data reading.	DSP# ERROR 03	
	Setting REQ to "**Lo**" does not set ACK to "**Lo**" during DSP data reading.	DSP# ERROR 04	
	Setting WRITE to "**Hi**" does not set ACK to "**Hi**" during DSP data writing.	DSP# ERROR 05	
	Setting REQ to "**Lo**" does not set ACK to "**Lo**" during DSP data writing.	DSP# ERROR 06	
⑥ EEPROM NG	An error occurred in a checksum of the EEPROM(*** is a block address number).	BACKUP ERROR	

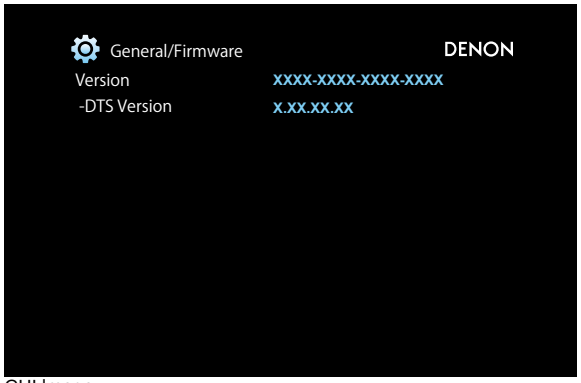
Go to next page.

1.5. Version Display in the Setup Menu

Follow the steps below to display the firmware information.

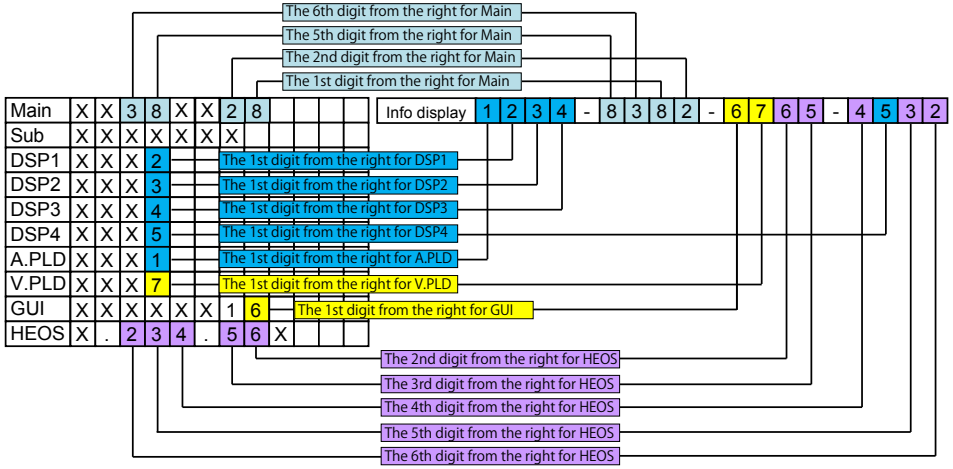
(1) Press the "**SETUP**" button on the remote control.
(2) Select "**General** - **Information** - **Firmware**".

The version information is displayed as a 16-digit number as shown in the screenshot below.



GUI Image

This 16-digit number comprises a part of the version number of each device and module.
Numerics and version numbers correspond as shown below.



※ The firmware version numbers and this 16-digit version information are written in the Service Information.
※ Replace as follows for the 5th to 7th digits of HEOS version.

X.XXX.X → X.XXX.00X
X.XXX.XX → X.XXX.0XX
X.XXX.XXX → X.XXX.XXX

2. PANEL / REMOTE LOCK Selection Mode

2.1. Actions

Switch the PANEL LOCK and REMOTE LOCK modes between on and off.

2.2. Starting up

While holding down buttons "**STATUS**" and "**INFO**" simultaneously, press the power button to turn on the power.
Select the desired mode using the "**CURSOR ▼/▲**" button, then press the "**ENTER**" button to confirm.

2.3. Displaying and Selecting Each Mode

The information shown on the display switches each time the "**CURSOR ▼/▲**" button is pressed.
Press the "**ENTER**" button to set the currently displayed mode and restart the device.
The setting with "✳" is selected for each mode.

①

L1	▶FP/VOL LOCK✳On
L2	FP LOCK On

The buttons on the unit and the master volume knob does not function.

↓

②

L1	FP/VOL LOCK✳On
L2	▶FP LOCK On

The buttons on the unit does not function.

↓

③

L1	FP LOCK On
L2	▶FP LOCK Off

The PANEL LOCK mode is turned off.

↓

④

L1	FP LOCK Off
L2	▶RC LOCK On

The device cannot be operated by the remote control.

↓

⑤

L1	RP LOCK On
L2	▶RC LOCK Off

The REMOTE LOCK mode is turned off.

3-1. Selecting the Mode for Service-related

3-1.1. Actions

Select diagnostic mode (service path check mode), protection history display mode, or 232C standby clear mode.

3-1.2. Starting up

While holding down buttons "**ZONE3 SOURCE**" and "**STATUS**" simultaneously, press the power button to turn on the power.
Select the desired mode using the "**CURSOR ▼/▲**" button, then press the "**ENTER**" button to confirm.

3-1.3. Displaying and Selecting Each Mode

The information shown on the display switches each time the "**CURSOR ▼/▲**" button is pressed.
Press the "**ENTER**" button to set the currently displayed mode and restart the device.

①

L1	▶1.SERVICE CHECK
L2	2.PROTECTION

Service Path Check Mode：See "DIAGNOSTIC MODE"
The Video and Audio paths can be checked.
This function is convenient for confirming problem paths in the product and checking the paths after repairing.

↓

②

L1	1.SERVICE CHECK
L2	▶2.PROTECTION

The protection history can be checked.

↓

③

L1	2.PROTECTION
L2	▶3.RS232C RESET

Switches from 232C standby mode to normal standby mode.

↓

④

L1	3.RS232C RESET
L2	▶4.OP INFO

Operation Info for the unit can be checked.

↓

⑤

L1	4.OP INFO
L2	▶5.TUNER FRQ SET

Enables reception STEP of the ANALOG TUNER to be changed.

↓

⑥

L1	5.TUNER FRQ SET
L2	▶6.REMOTE ID

This function is for operating only the desired AV receiver.

3-1.4. Canceling the selected mode

Press the power button to turn off the power.

3-2. Protection History Display Mode

3-2.1. Actions

This mode enables the unit to record and display the event when the THERMAL, ASO or DC protection is activated.
If protections have been activated multiple times, the latest protection operation is recorded.

3-2.2. Starting up

While holding down buttons "**ZONE3 SOURCE**" and "**STATUS**" simultaneously, press the power button to turn on the power.
Select the "**2. PROTECTION**" using the "**CURSOR ▼/▲**" button, then press the "**ENTER**" button to confirm.

3-2.3. Protection information and displays

· Press the "**STATUS**" button in Protection History Display Mode.
· The protection history can be checked.

(a) If no protections has occurred.

L1	PROTECT HISTORY
L2	:NO PROTECT

(b) ASO (if the last protection is ASO)

L2	:ASO

Cause A short circuit occurred between the speaker terminals, or speakers with an impedance outside the rating were connected.
Note : Short circuits in speaker terminals or speakers can be identified.
If the power is turned on in the abnormal state, protection is activated after around 6 seconds and the power is turned off.

(c) DC (if the last protection is DC)

L2	:DC

Cause : DC output of the power amplifier is abnormal.
If the power is turned on in the abnormal state, protection is activated after around 6 seconds and the power is turned off.

(d) THERMAL (if the last protection is THERMAL(E) or THERMAL(F))

L2	:THERMAL E
L2	:THERMAL F

Cause : Abnormal heat sink temperature.
If the power is turned on in the abnormal state, protection is activated after around 180 seconds and the power is turned off.

(e) Case of CURRENT (when the last protection incident is CURRENT protection)

L2	:CURRENT

Cause : An over current flowed in power amp.
If the power is turned on in the abnormal state, protection is activated after around 90 seconds and the power is turned off.

Caution : These protections may also be activated due to other factors such as disconnection of connectors or operations around the microcomputer.
After viewing the above protection history, press the "**STATUS**" button to return to the normal display.

3-2.4. Clearing the Protection History

There are two ways to clear the protection history.

(a) Activate Protection History Display Mode. Press the "**STATUS**" button to display the protection history. Press and hold the "**ENTER**" button for 3 seconds.

L1	PROTECT HISTORY
L2	:DC

Press and hold the "**ENTER**" button for 3 seconds.

↓

L2	CLEAR

The above message is displayed and the protection history is cleared.

↓

L2	:NO PROTECT

(b) Initialize this unit. (See "Initializing This Unit")

※ Use the method in **3-2.4. (a)** if you do not want to erase your settings from this unit.

Warning Displays by POWER LED

If the power is turned Off while a protection is being detected, the POWER LED flashes in red to warn you depending on the protection status as follows.

(a) ASO/DC protection: Flashes at 0.5-second intervals (0.25 seconds lit, 0.25 seconds unlit)
(b) THERMAL (E/F) protection: Flashes at 2-second intervals (1 seconds lit, 1 seconds unlit)
(c) CURRENT protection: Flashes at 4-second intervals (2 seconds lit, 2 seconds unlit)

3-3. 232C Standby Clear Mode

3-3.1. Actions

Switches from 232C standby mode to normal standby mode.

3-3.2. Starting up

While holding down buttons "**ZONE3 SOURCE**" and "**STATUS**" simultaneously, press the power button to turn on the power.
Select the "**3.RS232C RESET**" using the "**CURSOR ▼/▲**" button, then press the "**ENTER**" button to confirm.

L1	2.PROTECTION
L2	▶3.RS232C RESET

3-4. Operation Info Mode

3-4.1. Actions

This mode enables the unit to display the accumulated operating time, power On count and each protection count.

3-4.2. Starting up

While holding down buttons "**ZONE3 SOURCE**" and "**STATUS**" simultaneously, press the power button to turn on the power.
Select the "**4. OP INFO**" using the "**CURSOR ▼/▲**" button, then press the "**ENTER**" button to confirm.

3-4.3. Operations

Press the "**STATUS**" button after starting up this device in Operation Info mode.
The following information is displayed in the following order.

(a) Accumulated operating time

L1	Operation Time
L2	Total: _____H

↑ Time display

"**STATUS**"

(b) Power On count

L1	Power On Time
L2	Total: _____H

↑ Count display

"**STATUS**"

(c) DC / ASO Protection count

L1	Protection Time
L2	DC:___/ASO:___

"**STATUS**"

(d) Thermal Protection (E) count

L1	Protection Time
L2	THM E:___/F:___

"**STATUS**"

(e) Current Protection count

L1	Protection Time
L2	Current:___

"**STATUS**"

(Returns to normal display)

3-5. TUNER STEP mode (E2 only)

3-5.1. Actions

This is a special mode for enabling reception STEP of the ANALOG TUNER to be changed.

3-5.2. Starting up

While holding down buttons "**ZONE3 SOURCE**" and "**STATUS**" simultaneously, press the power button to turn on the power.
Select the "**5. TUNER FRQ SET**" using the "**CURSOR ▼/▲**" button, then press the "**ENTER**" button to confirm.

3-5.3. Displays

Start up this unit in TUNER STEP mode, select the desired option using the "**CURSOR ◄/►**" button, then enter using the "**ENTER**" button.
The following information is displayed in the following order.

(a) AM9 kHz / FM50 kHz is selected

L1	*TUNER FRQ Set
L2	< AM9/FM50 >

"**CURSOR ◄**" "**CURSOR ►**"

(b) AM10 kHz / FM200 kHz is selected

L2	< AM10/FM200 >

"**ENTER**"

(c) Press the power button to turn off the power.
(d) Press the power button to turn on the power.

3-6. Remote ID Setup Mode

3-6.1. Actions

This function allows only the desired AV receiver to be operated if multiple DENON AV receivers are used in the same room.

3-6.2. Starting up

While holding down buttons "**ZONE3 SOURCE**" and "**STATUS**" simultaneously, press the power button to turn on the power.
Select the "**6. REMOTE ID**" using the "**CURSOR ▼/▲**" button, then press the "**ENTER**" button to confirm.

3-6.3. Operations

(a) When Remote ID Setup mode is activated, the following message is displayed.

L1	
L2	REMOTE ID ?

(b) Press the desired "**QUICK SELECT 1 - 4**" button.

Button	Display
QUICK SELECT 1	L2 REMOTE ID 1
QUICK SELECT 2	L2 REMOTE ID 2
QUICK SELECT 3	L2 REMOTE ID 3
QUICK SELECT 4	L2 REMOTE ID 4

(c) Press the power button to turn off the power.
(d) Press the power button to turn on the power.

※ Only "**QUICK SELECT 1 - 4**" and the POWER button on the unit can be used in Remote ID Setup Mode.

3-6.4. Setting the Remote control unit

(a) Press and hold the "**DEVICE MENU**" button for at least 3 seconds until the "**DEV.**", "**TU**" and "**AVR**" indicators flash.
(b) Press "**MAIN**" button.
The "**DEV.**", "**TU**" and "**AVR**" indicators flash twice.
(c) Press the "**1**", "**2**", "**3**" or "**4**" button.
The "**DEV.**", "**TU**" and "**AVR**" indicators flash twice.

NOTE :
If the ID of the unit and remote control do not match, "**AVAMP∗**" appears on the display of the unit when the remote control is used
(∗ : own remote control ID).

4. Protection Pass Mode

4.1. Actions

• This mode allows the power to be turned on without activating protections.
• This mode functions in the same way as normal power-on, except that protections are not activated.

4.2. Operations

While holding down buttons "**ZONE3 SOURCE**", "**STATUS**" and "**CURSOR ◄**" simultaneously, press the power button to turn on the power.

The device returns to the normal display message after the following is displayed.

L1	Protection Pass

This is displayed for 5 seconds before returning to the normal display.

5. Network Initialization Mode

5.1. Actions

The following items are initialized.

(1) Network setup
(2) Friendly Name
(3) Auto Update setting
(4) Allow Update setting
(5) Time Zone setting
(6) Queue list
(7) Internet Radio recently played station
(8) Quick Select playback station
(9) AirPlay Password
(10) Bluetooth Pairing History
(11) Crestron Connected Setup

5.2. Operations

When the power is on and the input source is Online Music, press and hold the "**CURSOR ►**" and "**DIMMER**" buttons for more than 3 seconds.

Initializing Display

L1	Network Reset...

Complete Display

L1	Completed

This is displayed for 5 seconds before returning to the normal display.

6. Clearing the Operation Info

6.1. Actions

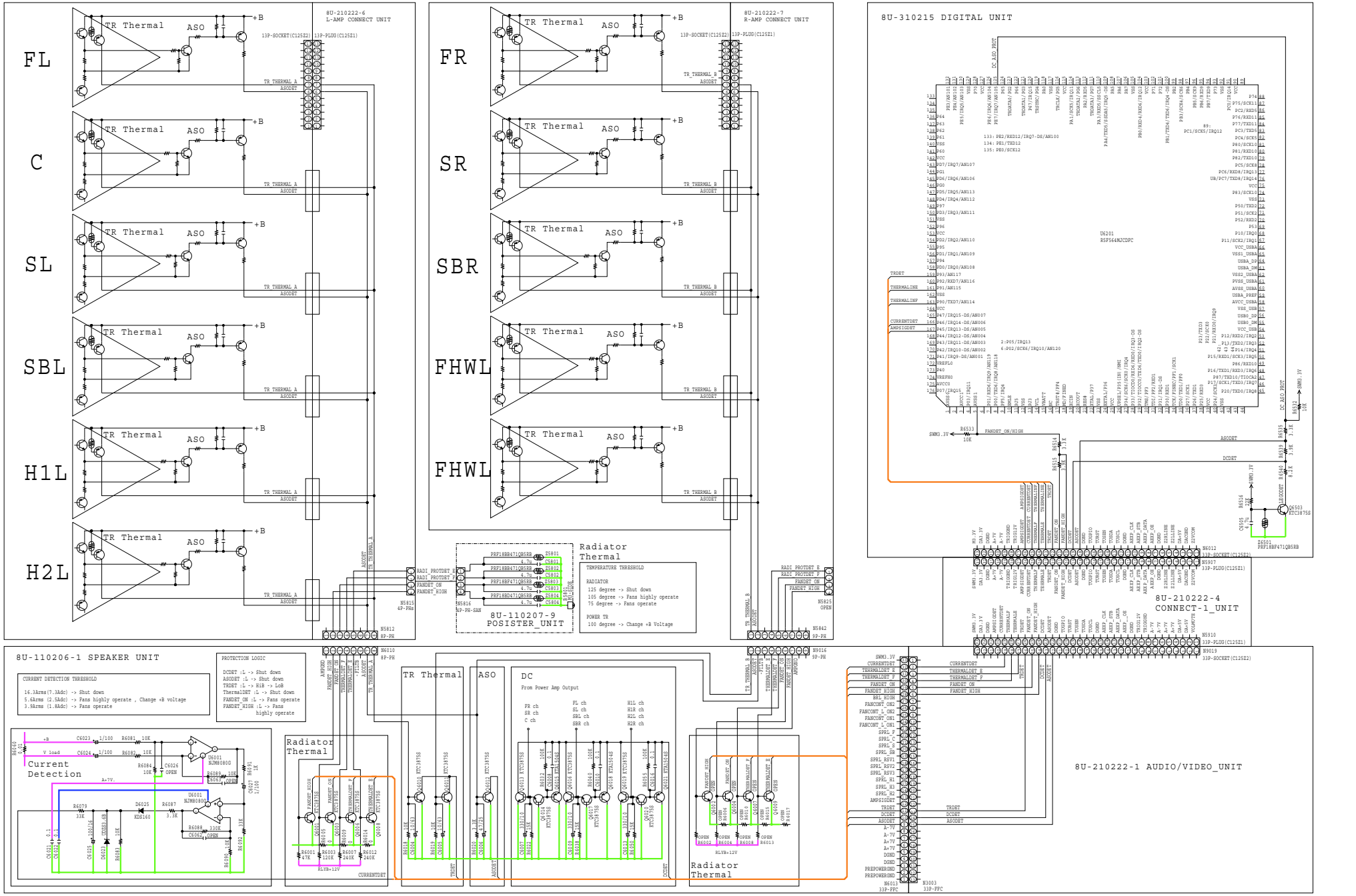
• Displays the accumulated operating time of the unit, the number of times the power was switched on, and the number of occurrences of each protection.

6.2. Operations

Remove all input/output terminals and the AC plug.
Connect the AC plug again and place the product in standby mode.
While holding down buttons "**OPTION**" and "**DIMMER**" simultaneously, press the power button to turn on the power.

Release the buttons when "**PRODUCT MODE**" is displayed.
Press the "**ZONE2 ON/OFF**" and "**ZONE3 ON/OFF**" buttons.
Press the power button to switch the product to STANDBY.

AVR-X6300 ASO/DC/THERMAL PROTECTION DIAGRAM



Service Path Check Mode

1.1. Actions

This function is convenient for confirming problem paths in the product and checking the paths after repairing.
The Video and Audio paths can be checked.
The backup data is not rewritten.

1.2. Starting up

While holding down buttons "**ZONE3 SOURCE**" and "**STATUS**" simultaneously, press the power button to turn on the power.
Select the "**1. SERVICE CHECK**" using the "**CURSOR ▼/▲**" button, then press the "**ENTER**" button to confirm.
The "**TUNED**", "**STEREO**" and "**RDS**" segments are lit in this mode.

1.3. Canceling diagnostic mode

Press the power button to turn off the power.

1.4. Selecting items to check

Press the ① button to switch between video items and audio items.
Press the ② or ③ button to select the previous or next item.

	The unit			Remote control unit		
Actions	①	②	③	①	②	③
	Audio ⇔ Video	PREVIOUS	NEXT	Audio ⇔ Video	PREVIOUS	NEXT
Button	DIMMER	CURSOR ◄	CURSOR ►	SLEEP	CURSOR ◄	CURSOR ►

1.5. Audio system confirmation items

See the block diagram fig.XXth.

Paths to be confirmed			Display	Settings	What to confirm
1	Analog	fig.01	A01:ANALOG PASS	Input Source : CBL/SAT Input Mode : Analog (fixed) Sound mode : DIRECT Amp assign : 11.1ch Floor Layout : 5.1&SB Height Sp : 4ch Dolby Sp : None Height Layout : Front Height/Rear Height MAIN ZONE : On ZONE2 : Off ZONE3 : Off	• Analog input ⇒ Speaker output (Front L/R) • Analog input ⇒ Pre OUT output (Front L/R) (※ The input source can be switched to any source except CBL/SAT.)
2	DIGITAL (MAIN)	fig.02a fig.02b	A2:DIGITAL	Input Source : CBL/SAT Input Mode : DIGITAL (fixed) Sound mode : MULTI CH STEREO Amp assign : 11.1ch Floor Layout : 5.1&SB Height Sp : 4ch Dolby Sp : None Height Layout : Front Height/Rear Height Speaker Select : Floor Speaker Config ALL Speaker = Small / SW = Yes(2ch) MAIN ZONE : On ZONE2 : Off ZONE3 : Off	• Digital input ⇒ Speaker output (Front L/R, Center, Surround L/R, S.Back L/R) • Digital input ⇒ Pre output (Front L/R, Center, Surround L/R, S.Back L/R, SubWoofer1/2) (※ The input source can be switched to any source except CBL/SAT.)

Paths to be confirmed			Display	Settings	What to confirm
3	DIGITAL (ZONE2)	fig.03a fig.03b fig.03c	A03:DIGITAL-Z2	Input Source : Online Music Input Mode : Auto Sound mode : STEREO Amp assign : 9.1ch + ZONE2 Speaker for ZONE2 : S.Back Floor Layout : 5ch Height Sp : 2ch Dolby Sp : None Height Layout : Front Height/Rear Height MAIN ZONE : On ZONE2 : On ZONE3 : Off	• Digital(PCM) input ⇒ Speaker output (S.Back (ZONE2) L/R) • Digital(PCM) input ⇒ Pre OUT output (ZONE2 L/R) (※ The input source can be switched to any source except Online Music.)
4	DIGITAL (ZONE3)	fig.04a fig.04b	A04:DIGITAL-Z3	Input Source : Online Music Input Mode : Auto Sound mode : STEREO Amp assign : 9.1ch + ZONE3 Speaker for ZONE3 : Height2 Floor Layout : 5ch Height Sp : 2ch Dolby Sp : None Height Layout : Front Height/Rear Height MAIN ZONE : On ZONE2 : Off ZONE3 : On	• Digital(PCM) input ⇒ Amp Assign Speaker output (Height2 (ZONE3) L/R) • Digital(PCM) input ⇒ Pre OUT output (ZONE3 L/R) (※ The input source can be switched to any source except Online Music.)
5	HDMI	fig.05a fig.05b fig.05c	A05:HDMI	Input Source : CBL/SAT Input Mode : HDMI (fixed) Sound mode : STEREO Amp assign : 11.1ch Floor Layout : 5ch&SB Height Sp : 4ch Dolby Sp : None Height Layout : Front Height/Rear Height MAIN ZONE : On ZONE2 : Off ZONE3 : Off	• HDMI input ⇒ Speaker output (Front L/R) • HDMI input ⇒ Pre OUT output (Front L/R) (※ The input source can be switched to any source except CBL/SAT.)
6	Analog AD (MAIN ZONE)	fig.06a fig.06b	A06:AD	Input Source : CBL/SAT Input Mode : Analog (fixed) Sound mode : MULTI CH STEREO Amp assign : 11.1ch Floor Layout : 5ch&SB Height Sp : 4ch Dolby Sp : None Height Layout : Front Height/Rear Height Speaker Select : Floor Speaker Config ALL Speaker = Small/SW = Yes(2ch) MAIN ZONE : On ZONE2 : Off ZONE3 : Off	• Analog input ⇒ Speaker output (Front L/R, Center, Surround L/R, S.Back L/R, Height1 L/R) • Analog input ⇒ Pre OUT output, SW(20Hz) (Front L/R, Center, Surround L/R, S.Back L/R, Sub-Woofer) (※ The input source can be switched to any source except CBL/SAT.) (※ Volume 60 is the value when Absolute settings are used. The value is -20 when Relative settings are used)
7	Analog Amp Assign (Amp Assign : ZONE2)	fig.07	A07:ASSIGN-Z2	Input Source : CBL/SAT Input Mode : Auto Sound mode : STEREO Z2 Source : Source Amp assign : 9.1ch + ZONE2 Speaker for ZONE2 : S.Back Floor Layout : 5ch Height Sp : 4ch Dolby Sp : None Height Layout : Front Height/Rear Height MAIN ZONE : On ZONE2 : On ZONE3 : Off	• Analog input ⇒ Speaker output (S.Back (ZONE2) L/R) • Analog input ⇒ Pre OUT output (ZONE2 L/R) (※ The input source can be switched to any source except CBL/SAT.) (※ Volume 60 is the value when Absolute settings are used. The value is -20 when Relative settings are used)

Paths to be confirmed			Display	Settings	What to confirm
8	Analog Amp Assign (Amp Assign : ZONE3)	fig.08	A08:ASSIGN-Z3	Input Source : CBL/SAT Input Mode : Auto Sound mode : STEREO Z3 Source : Source Amp assign : 9.1ch + ZONE3 Speaker for ZONE3 : Height2 Floor Layout : 5ch Height Sp : 4ch Dolby Sp : None Height Layout : Front Height/Rear Height MAIN ZONE : On ZONE2 : Off ZONE3 : On	• Analog input ⇒ Speaker output (Height 2 (ZONE3) L/R) • Analog input ⇒ Pre OUT output (ZONE3 L/R) (※ The input source can be switched to any source except CBL/SAT.) (※ Volume 60 is the value when Absolute settings are used. The value is -20 when Relative settings are used)
9	Analog Amp Assign (Amp Assign : ZONE2/ZONE3-MONO)	fig.09	A09:ASSIGN-Z2/3M	Input Source : CBL/SAT Input Mode : Auto Sound mode : STEREO Z2 Source : Source Z3 Source : Source Amp assign : 9.1ch + ZONE2/3 Speaker for ZONE2/3 : Height2 Floor Layout : 5ch&SB Height Sp : 2ch Dolby Sp : None Height Layout : Front Height/Rear Height MAIN ZONE : On ZONE2 : On ZONE3 : On	• Analog input ⇒ Speaker output (Height2 (ZONE2 MONO L), Height2 (ZONE3 MONO) R) • Analog input ⇒ Pre OUT output (ZONE2 L/R MONO, ZONE3 L/R MONO) (※ The input source can be switched to any source except CBL/SAT.) (※ Volume 60 is the value when Absolute settings are used. The value is -20 when Relative settings are used)
10	Amp Assign (Amp Assign : BiAMP)	fig.10a fig.10b	A11:ASSIGN-Bi AMP	Input Source : CBL/SAT Input Mode : Auto Sound mode : MULTI CH STEREO Amp assign : 9.1ch + BiAMP Speaker for Bi-Amp : S.Back Floor Layout : 5ch Height Sp : 4ch Dolby Sp : None Height Layout : Front Height/Rear Height MAIN ZONE : On ZONE2 : Off ZONE3 : Off	• Analog input ⇒ Speaker output (S.Back L/R) (※ The input source can be switched to any source except CBL/SAT.) (※ Volume 60 is the value when Absolute settings are used. The value is -20 when Relative settings are used)
11	Front Height	fig.11a fig.11b	A14:FRONT HEIGHT	Input Source : CBL/SAT Input Mode : Auto Sound mode : MULTI CH STEREO Amp assign : 11.1ch Floor Layout : 5ch&SB Height Sp : 4ch Dolby Sp : None Height Layout : Top Front & Top Rear Speaker Select=Floor & Height MAIN ZONE : On ZONE2 : Off ZONE3 : Off	• Analog input ⇒ Speaker output (Height1 L/R (Top Front), Height2 L/R (Top Rear)) • Analog input ⇒ Pre OUT output (Height1 L/R (Top Front), Height2 L/R (Top Rear)) • Pre OUT output (※ The input source can be switched to any source except CBL/SAT.) (※ Volume 60 is the value when Absolute settings are used. The value is -20 when Relative settings are used)

1.6. Confirmation items for the video system

See the block diagram fig.XXth.

Paths to be confirmed			Display	Settings	What to confirm
1	Analog Video pass	fig.12	V01:VIDEO PASS	Input Source : CBL/SAT Video Convert (IP Scaler) : "OFF" All sources MAIN ZONE : On ZONE2 : On	• Component input ⇒ Component output (※ The input source can be switched to any source except CBL/SAT.)
2	Video Convert (Analog or HDMI ⇒ HDMI)	fig.13	V02:V.CONVERT	Input Source : CBL/SAT Video Conversion (IP Scaler) : "ON" All sources IP Scaler : "Analog & HDMI", All sources Resolution : "Auto", All sources MAIN ZONE : On ZONE2 : Off ZONE3 : Off	• HDMI input ⇒ IP Scaler ⇒ HDMI output. • ETHERNET input ⇒ IP Scaler ⇒ HDMI output. • CVBS input ⇒ IP Scaler ⇒ HDMI output. • Component input ⇒ IP Scaler ⇒ HDMI output. (※ The input source can be switched to any source except CBL/SAT.)
3	HDMI pass (MAIN ZONE)	fig.14	V03:HDMI PASS	Input Source : CBL/SAT Video Convert (IP Scaler) : "OFF" All sources MAIN ZONE : On ZONE2 : Off ZONE3 : Off	• HDMI input (MAIN function) ⇒ HDMI output (MAIN) (※ The input source can be switched to any source except CBL/SAT.)
4	HDMI CEC (Control Monitor : HDMI Monitor1)	fig.15	V04:HDMI CEC	Input Source : CBL/SAT HDMI Control : On Control Monitor : Monitor1 (if checking the HDMI Monitor Out1) MAIN ZONE : On ZONE2 : Off ZONE3 : Off	• When the power supply of a TV is put in the standby mode, make sure that the power supply of this unit is also put in the standby mode. (※ The input source can be switched to any source except CBL/SAT.) • The ARC path can also be checked (check this using the TV input source).
5	HDMI Audio (Audio : AVR)	fig.16a fig.16b fig.16c	V05:H-AUDIO-AVR	Input Source : CBL/SAT HDMI Control : Off HDMI Audio : AVR (if checking the audio output from AVR)	• HDMI input (PCM, DolbyDigital, DTS) ⇒ Speaker output. • HDMI input(HD audio) ⇒ Speaker output. (※ The input source can be switched to any source except CBL/SAT.)
6	HDMI Audio (Audio : TV)	fig.17a fig.17b	V06:H.AUDIO-TV	HDMI Audio : TV (if checking the audio output from TV)	• HDMI input (PCM, DolbyDigital, DTS) ⇒ HDMI output (audio output from connected TV) (※ The input source can be switched to any source except CBL/SAT.)
7	GUI	fig.18	V07:GUI MENU ON	Input Source : CBL/SAT Video Conversion (IP Scaler) : ON, All sources IP Scaler : "Analog & HDMI", All sources Resolution : "AUTO", All sources Setup Menu : On MAIN ZONE : On ZONE2 : Off ZONE3 : OFF	• GUI display ⇒ HDMI output. (※ The input source can be switched to any source except CBL/SAT.)
8	HDMI pass (ZONE2)	fig.19	V08:ZONE2 HDMI	Input Source : CBL/SAT Z2 Source : Source MAIN ZONE : On ZONE2 : On ZONE3 : Off	• HDMI input (ZONE2 Function) ⇒ HDMI output (ZONE2) (※ The input source can be switched to any source except CBL/SAT.)

fig.01

AVR-X6300 ANALOG AUDIO BLOCK DIAGRAM(A.AUDIO/Z2,3HPF)

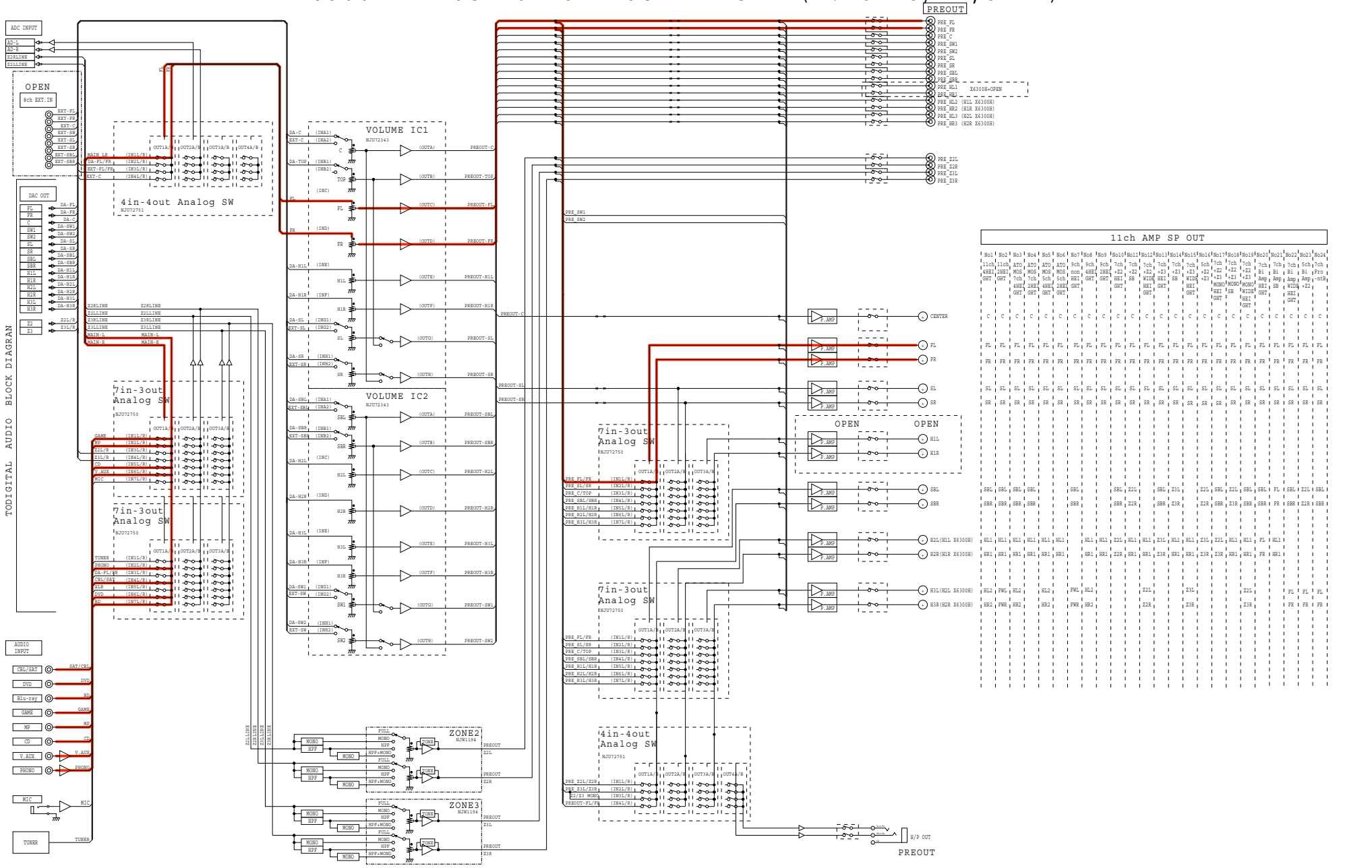


fig.02a

AVR-X6300H DIGITAL AUDIO/NETWORK BLOCK DIRAGRAM

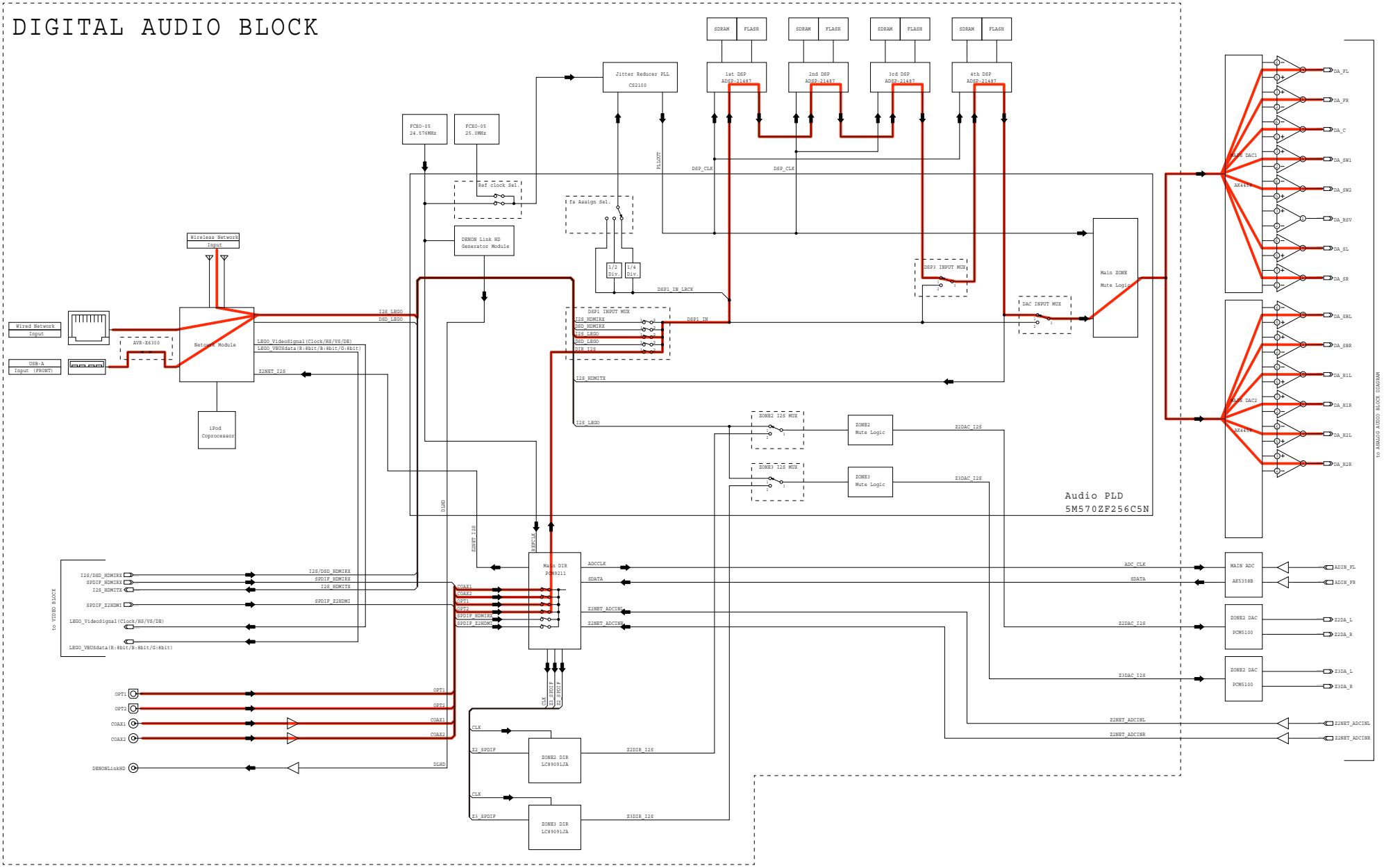


fig.02b

AVR-X6300 ANALOG AUDIO BLOCK DIAGRAM(A.AUDIO/Z2,3HPF)

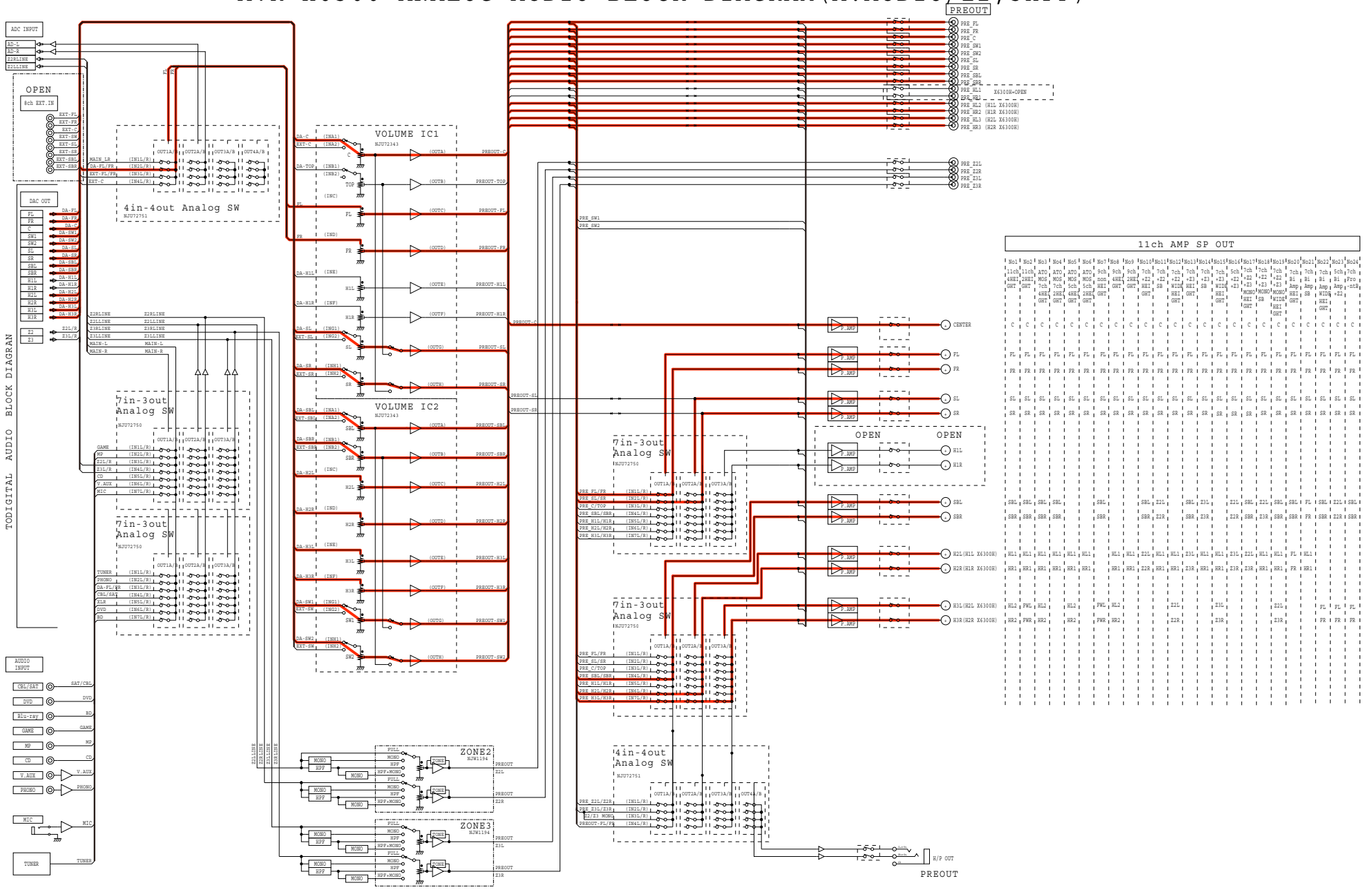


fig.03a

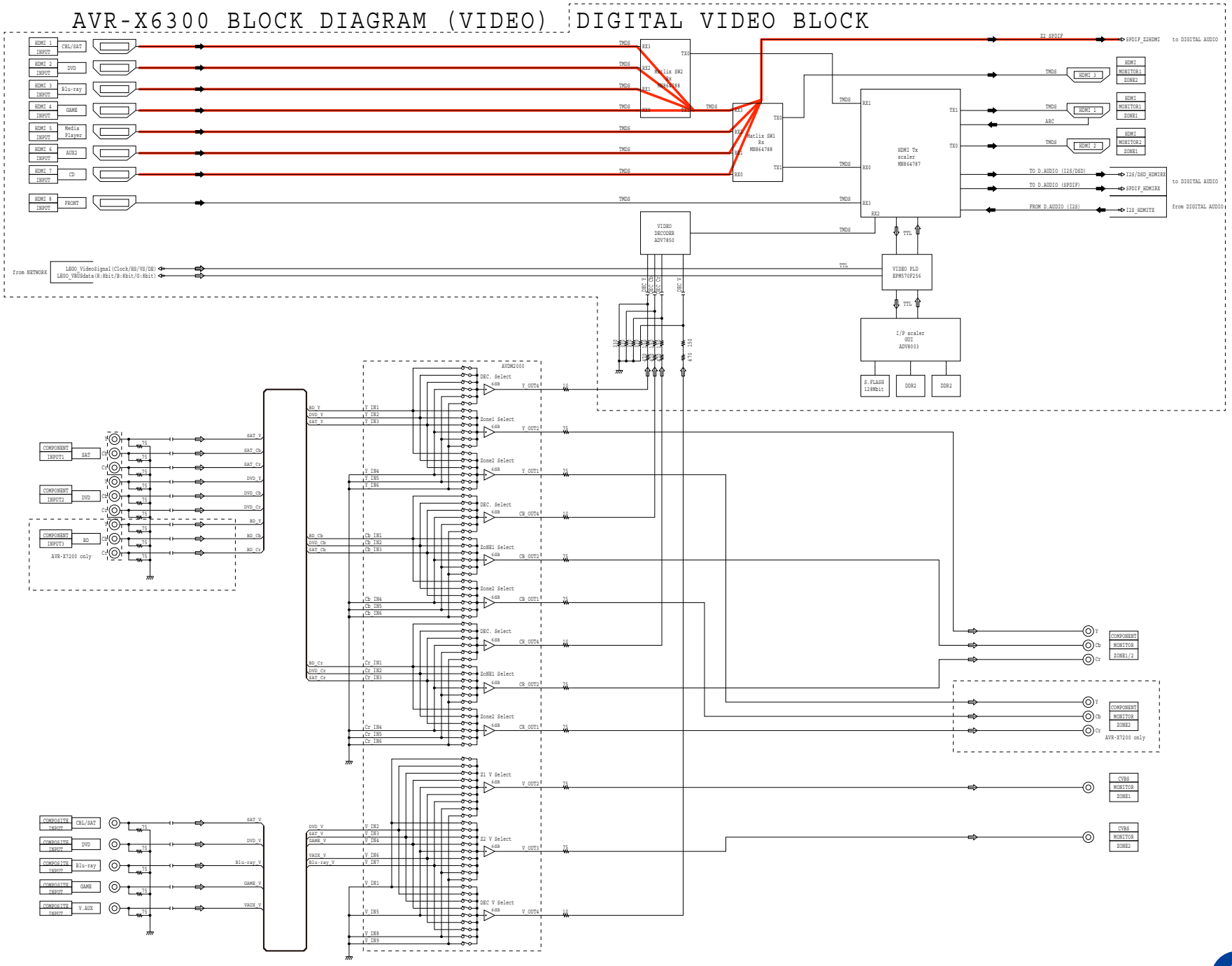

AVR-X6300 BLOCK DIAGRAM (VIDEO)
DIGITAL VIDEO BLOCK
HDMI 1 INPUT
CBL/SAT
HDMI 2 INPUT
DVD
HDMI 3 INPUT
Blu-ray
HDMI 4 INPUT
GAME
HDMI 5 INPUT
Media Player
HDMI 6 INPUT
AUX2
HDMI 7 INPUT
CD
HDMI 8 INPUT
FRONT
from NETWORK
LBDO_VideoSignal(Clock/HS/VS/DE)
LBDO_VBUSdata(R:8bit/B:8bit/G:8bit)
Matlix SW2 Rx MN864788
Matlix SW1 Rx MN864788
HDMI Tx scaler MN864787
VIDEO DECODER ADV7850
VIDEO PLD EPM570F256
I/P scaler GUI ADV8003
S.FLASH 128Mbit
DDR2
DDR2
Z2 SPDIF
SPDIF_Z2HDMI
to DIGITAL AUDIO
HDMI MONITOR1 ZONE2
HDMI MONITOR1 ZONE1
HDMI MONITOR2 ZONE1
TO D.AUDIO (I2S/DSD)
I2S/DSD_HDMIRX
TO D.AUDIO (SPDIF)
SPDIF_HDMIRX
FROM D.AUDIO (I2S)
I2S_HDMITX
from DIGITAL AUDIO
AVDM2000
COMPONENT INPUT1 SAT
COMPONENT INPUT2 DVD
COMPONENT INPUT3 BD
AVR-X7200 only
COMPOSITE INPUT CBL/SAT
COMPOSITE INPUT DVD
COMPOSITE INPUT Blu-ray
COMPOSITE INPUT GAME
COMPOSITE INPUT V.AUX
COMPONENT MONITOR ZONE1/2
COMPONENT MONITOR ZONE2
AVR-X7200 only
CVBS MONITOR ZONE1
CVBS MONITOR ZONE2

fig.03b

AVR-X6300H DIGITAL AUDIO/NETWORK BLOCK DIRAGRAM

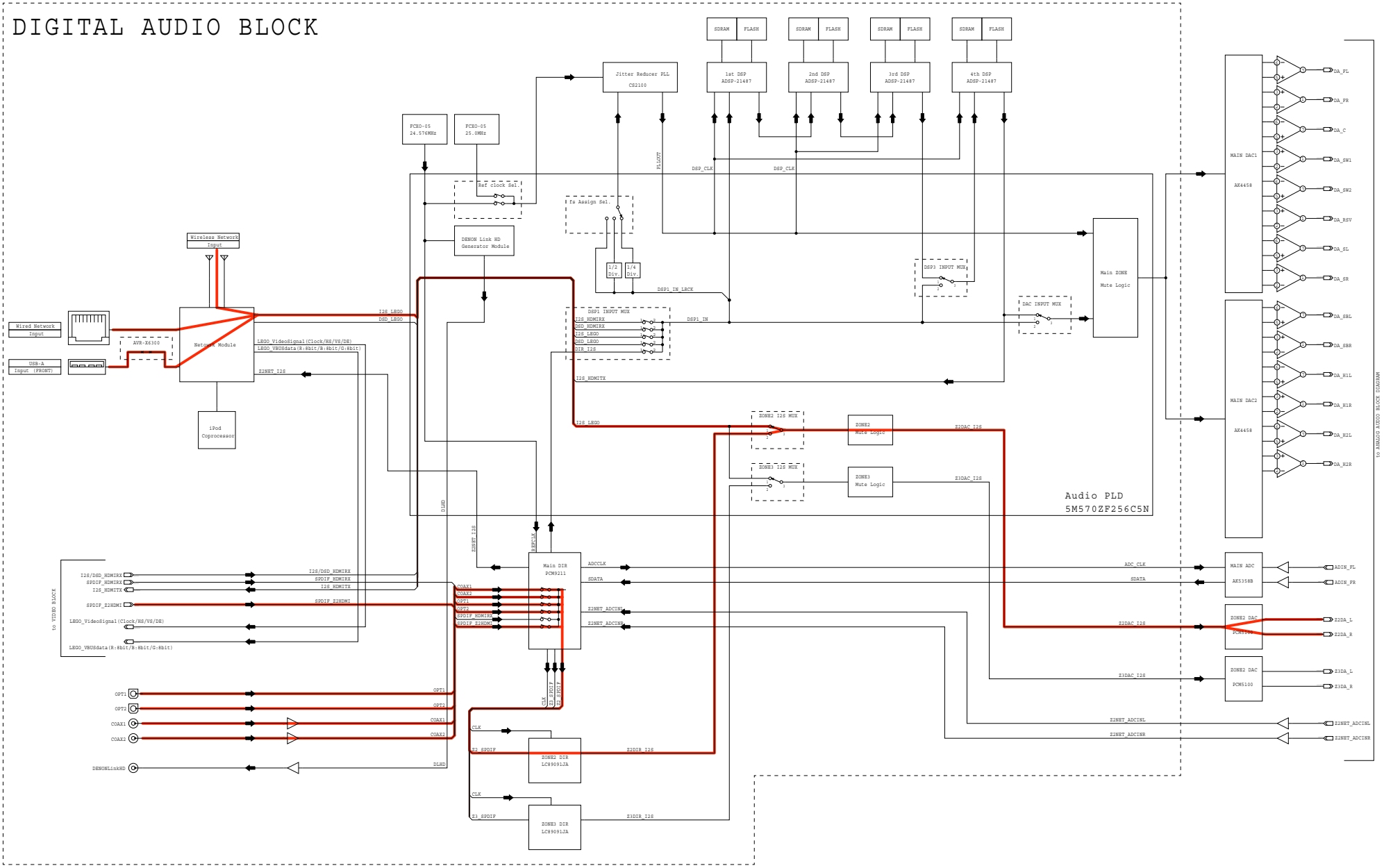


fig.03c

AVR-X6300 ANALOG AUDIO BLOCK DIAGRAM(A.AUDIO/Z2,3HPF)

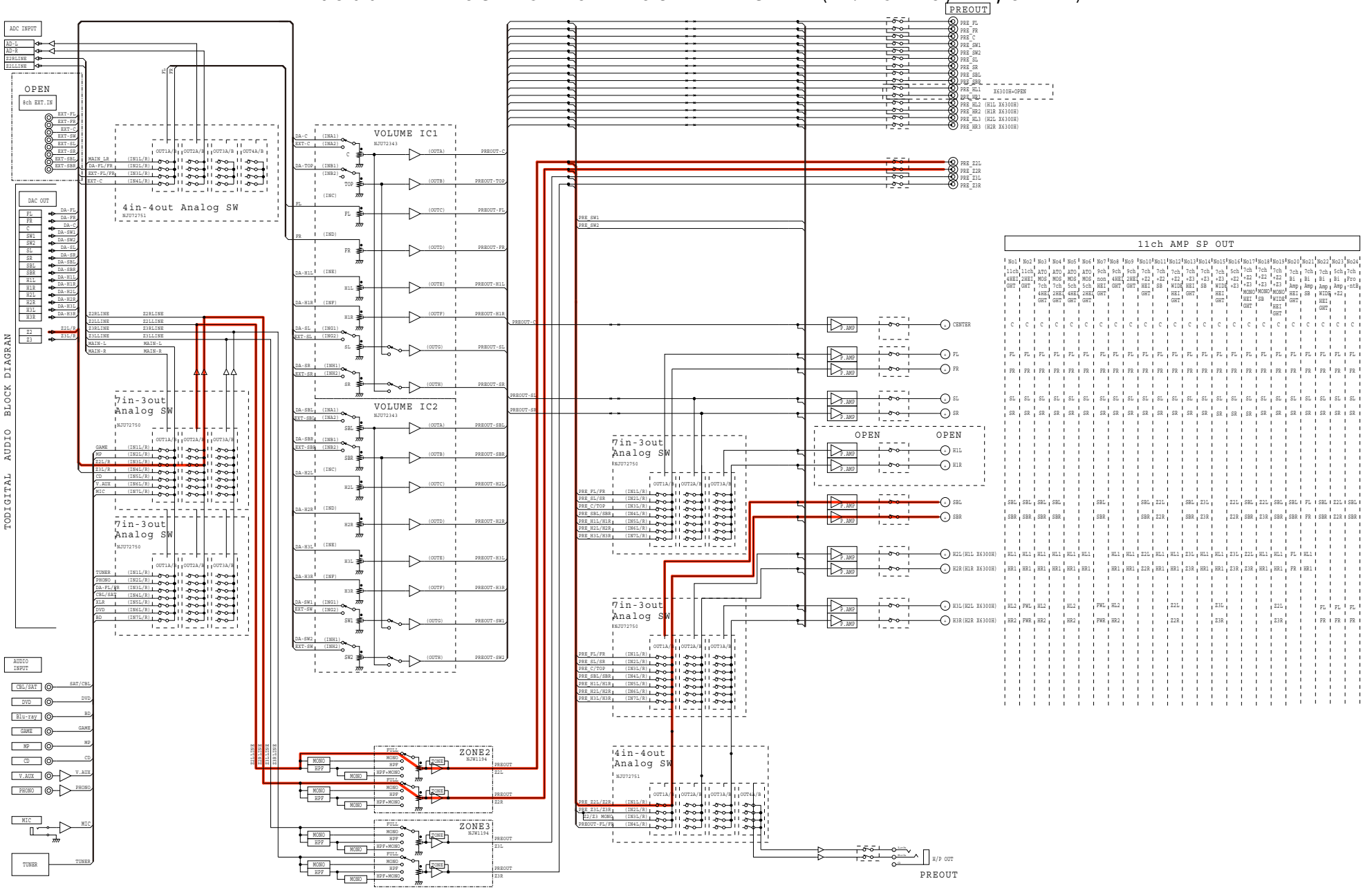


fig.04a

AVR-X6300H DIGITAL AUDIO/NETWORK BLOCK DIRAGRAM

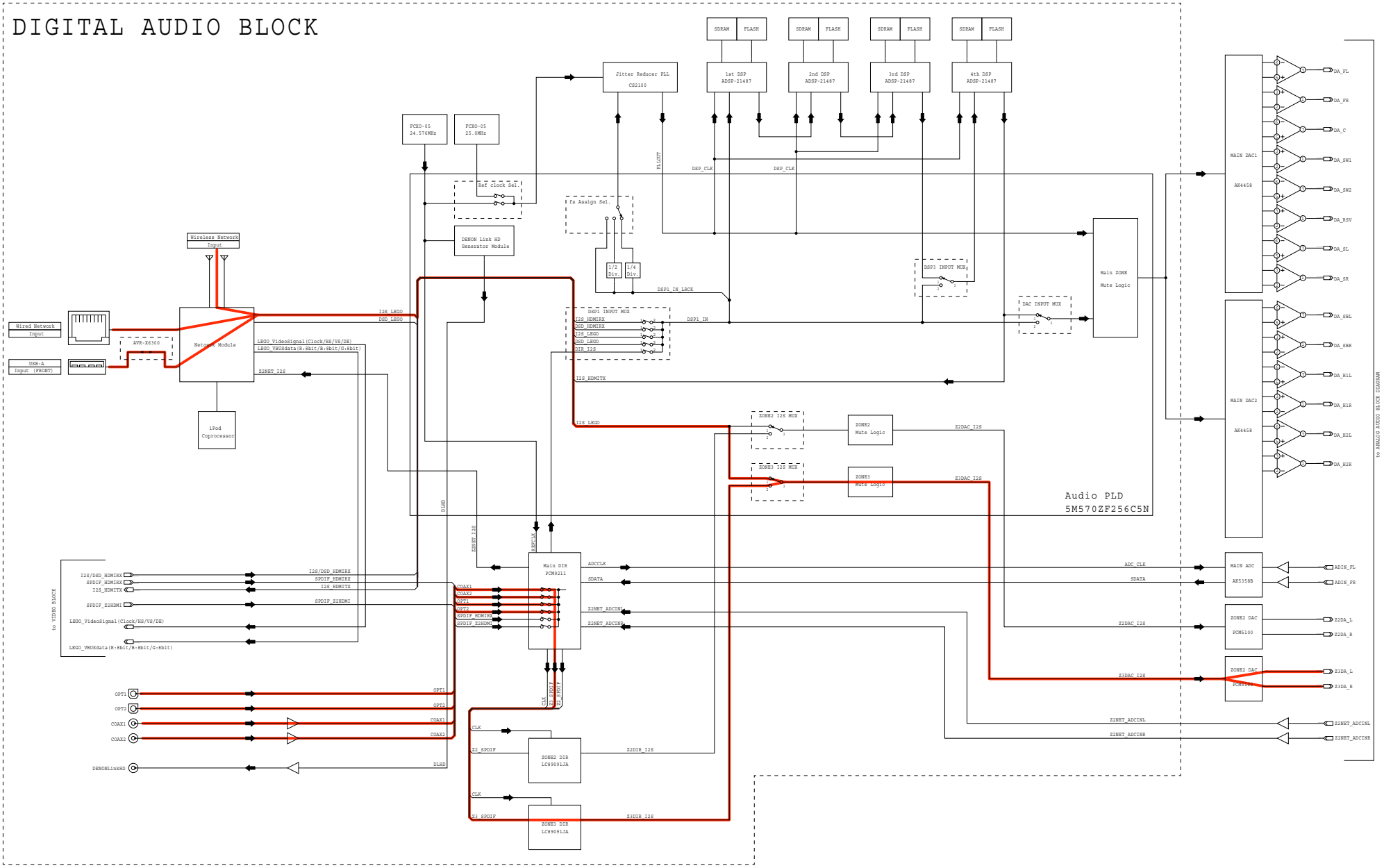


fig.04b

AVR-X6300 ANALOG AUDIO BLOCK DIAGRAM(A.AUDIO/Z2,3HPF)

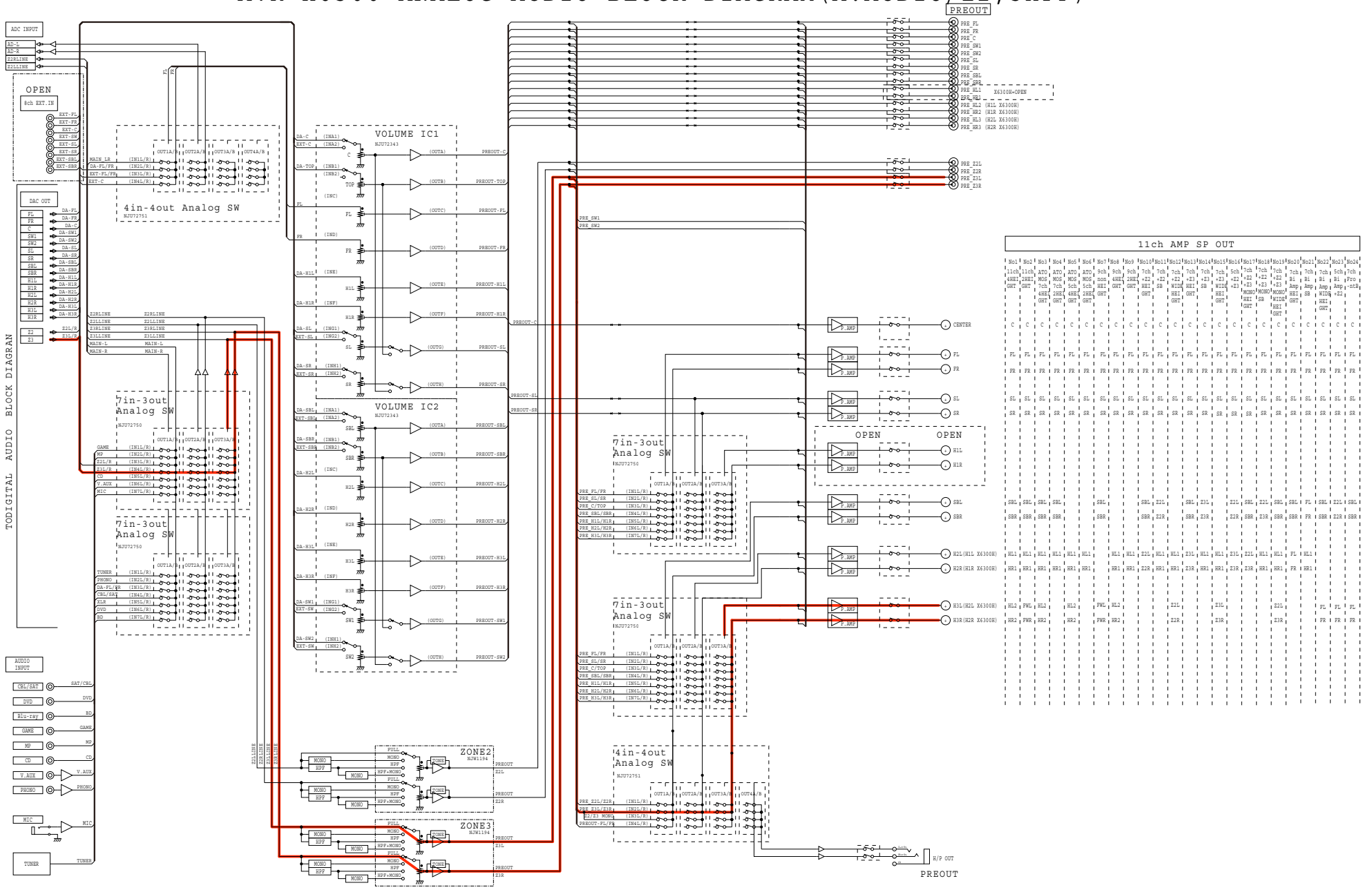


fig.05a

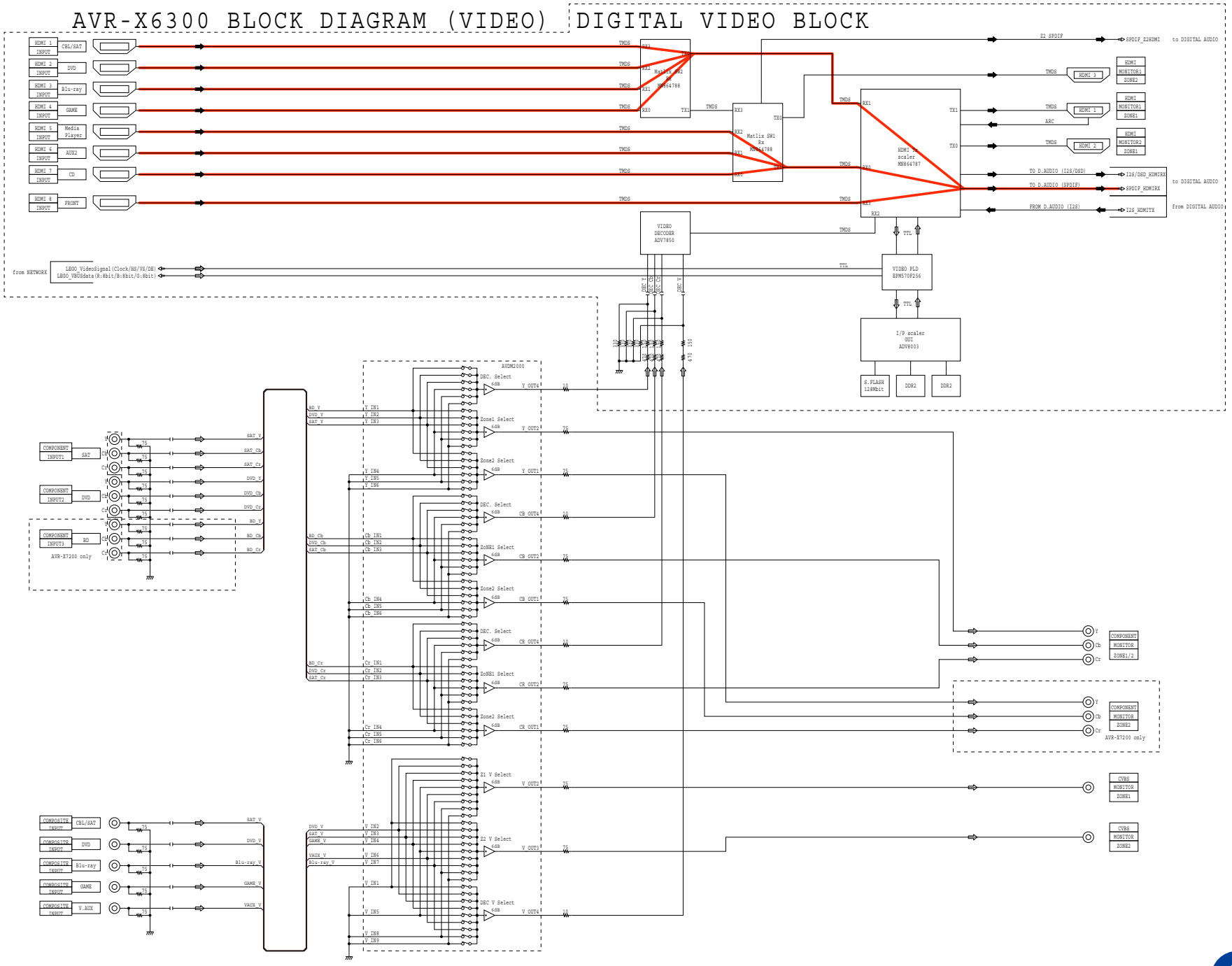

AVR-X6300 BLOCK DIAGRAM (VIDEO)
DIGITAL VIDEO BLOCK
HDMI 1 INPUT
CBL/SAT
HDMI 2 INPUT
DVD
HDMI 3 INPUT
Blu-ray
HDMI 4 INPUT
GAME
HDMI 5 INPUT
Media Player
HDMI 6 INPUT
AUX2
HDMI 7 INPUT
CD
HDMI 8 INPUT
FRONT
from NETWORK
LBDO_VideoSignal(Clock/HS/VS/DE)
LBDO_VBGSdata(R:8bit/B:8bit/G:8bit)
Matrix SW1 Rx MN864788
Matrix SW2 Rx MN864788
HDMI TX scaler MN864787
VIDEO DECODER ADV7850
VIDEO PLD EPM570F256
I/P scaler GUI ADV8003
S.FLASH 128Mbit
DDR2
DDR2
Z2 SPDIF
SPDIF_Z2HDMI
to DIGITAL AUDIO
HDMI MONITOR1 ZONE2
HDMI MONITOR1 ZONE1
HDMI MONITOR2 ZONE1
HDMI 3
HDMI 1
HDMI 2
ARC
TO D.AUDIO (I2S/DSD)
I2S/DSD_HDMIRX
TO D.AUDIO (SPDIF)
SPDIF_HDMIRX
FROM D.AUDIO (I2S)
I2S_HDMITX
from DIGITAL AUDIO
AVDM2000
COMPONENT INPUT1 SAT
COMPONENT INPUT2 DVD
COMPONENT INPUT3 BD
AVR-X7200 only
COMPOSITE INPUT CBL/SAT
COMPOSITE INPUT DVD
COMPOSITE INPUT Blu-ray
COMPOSITE INPUT GAME
COMPOSITE INPUT V.AUX
COMPONENT MONITOR ZONE1/2
COMPONENT MONITOR ZONE2
CVBS MONITOR ZONE1
CVBS MONITOR ZONE2

fig.05b

AVR-X6300H DIGITAL AUDIO/NETWORK BLOCK DIRAGRAM

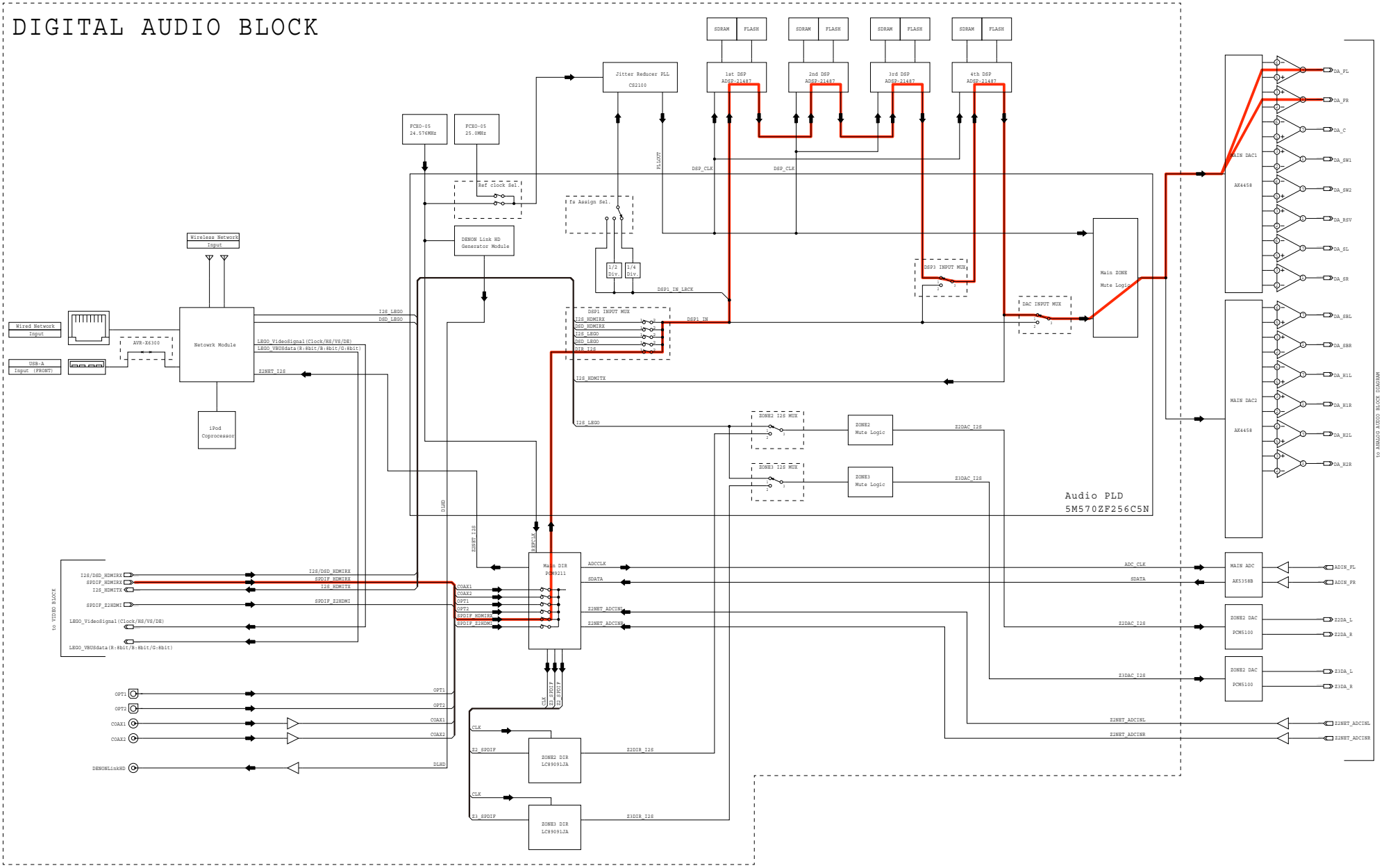


fig.05c

AVR-X6300 ANALOG AUDIO BLOCK DIAGRAM(A.AUDIO/Z2,3HPF)

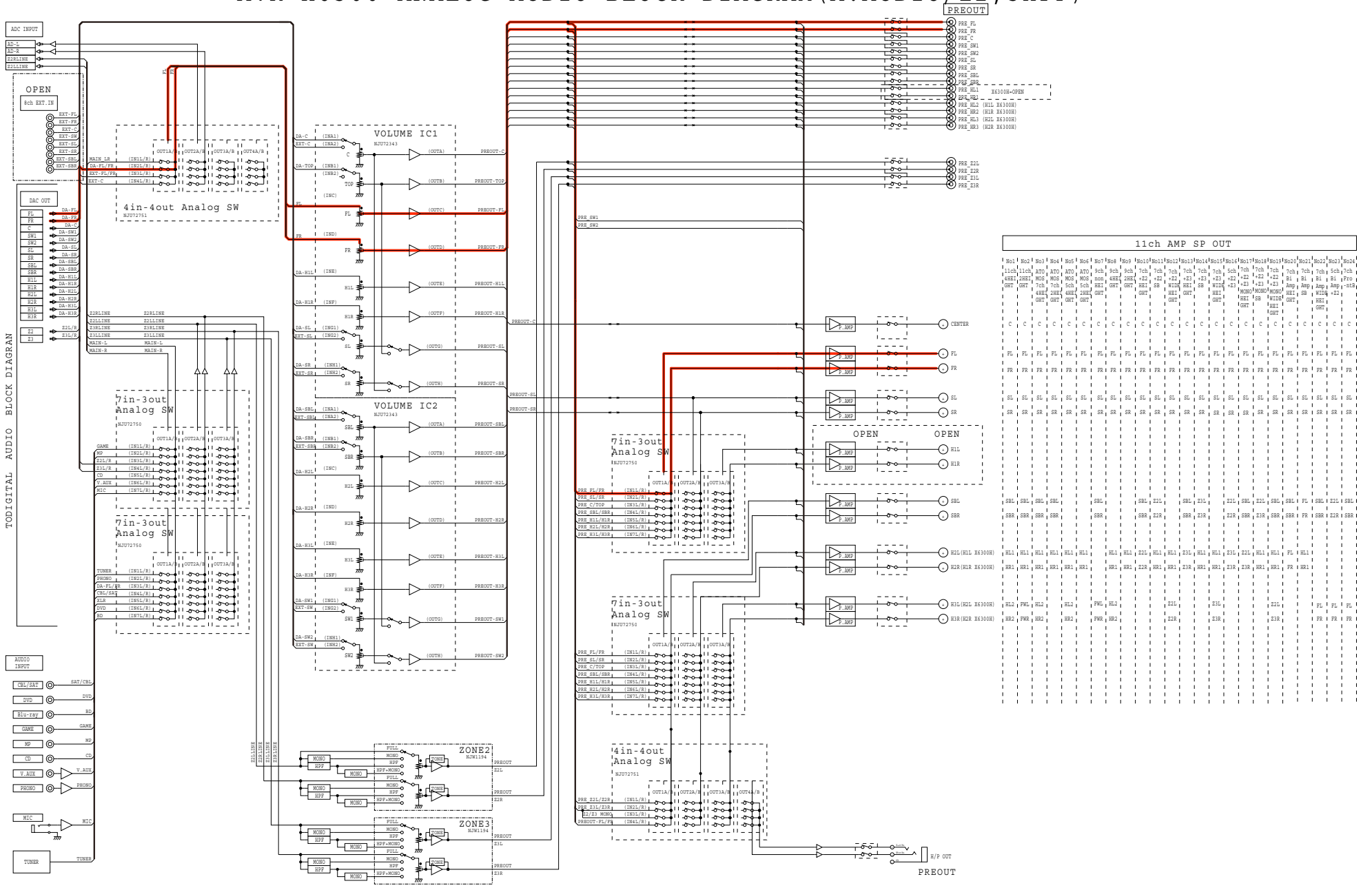


fig.06a

AVR-X6300H DIGITAL AUDIO/NETWORK BLOCK DIRAGRAM

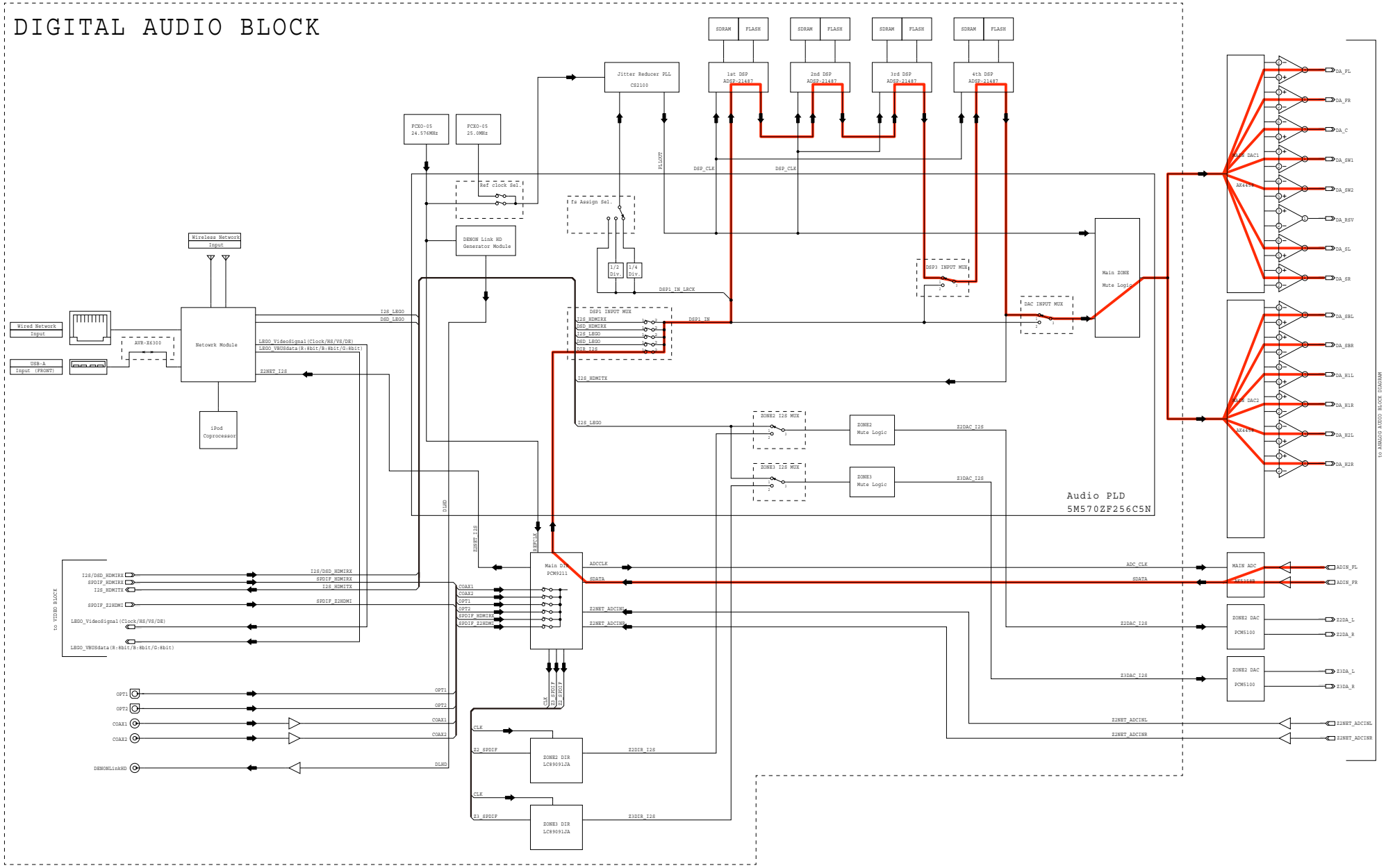


fig.06b

AVR-X6300 ANALOG AUDIO BLOCK DIAGRAM(A.AUDIO/Z2,3HPF)

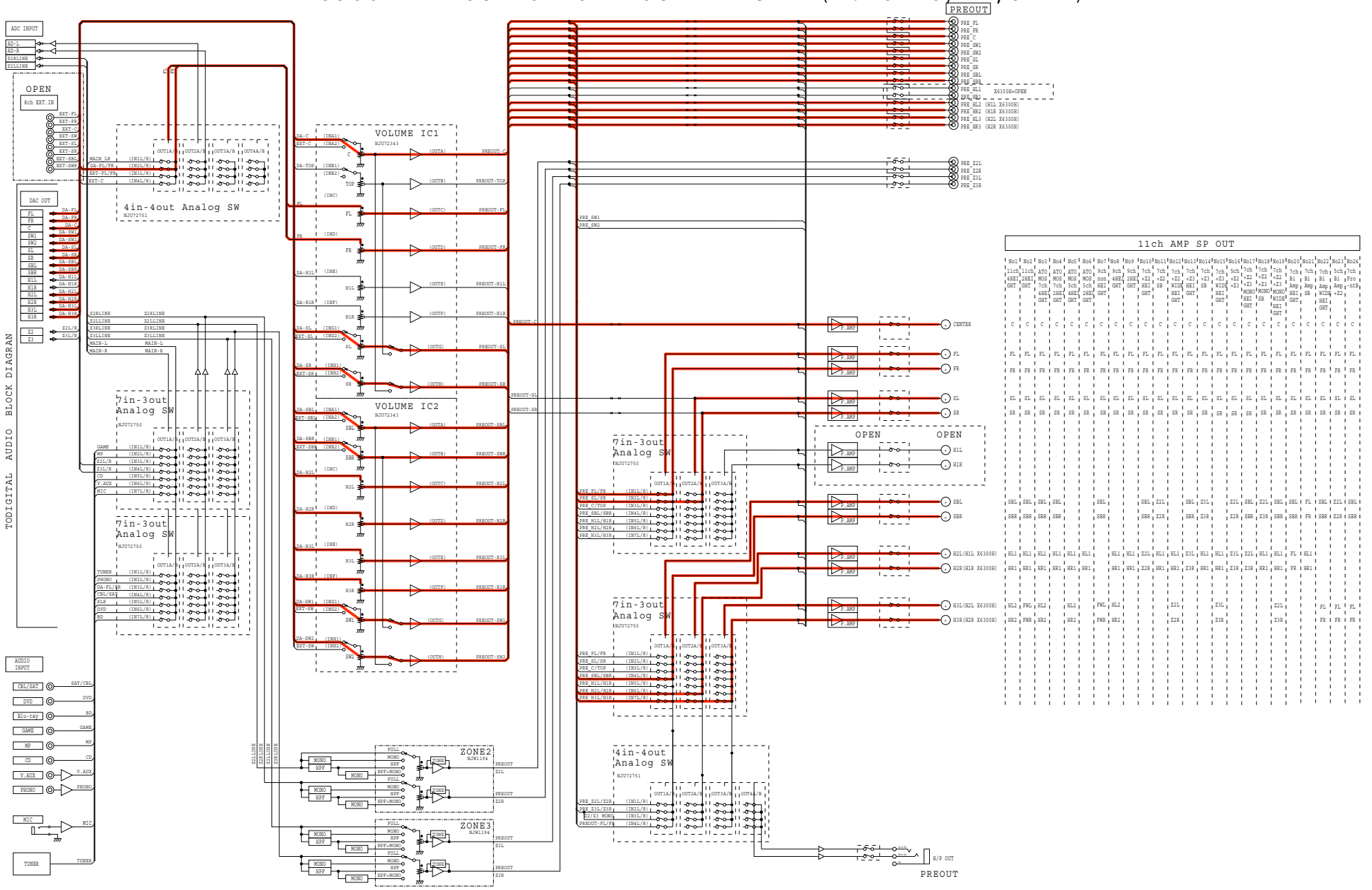


fig.07

AVR-X6300 ANALOG AUDIO BLOCK DIAGRAM(A.AUDIO/Z2,3HPF)

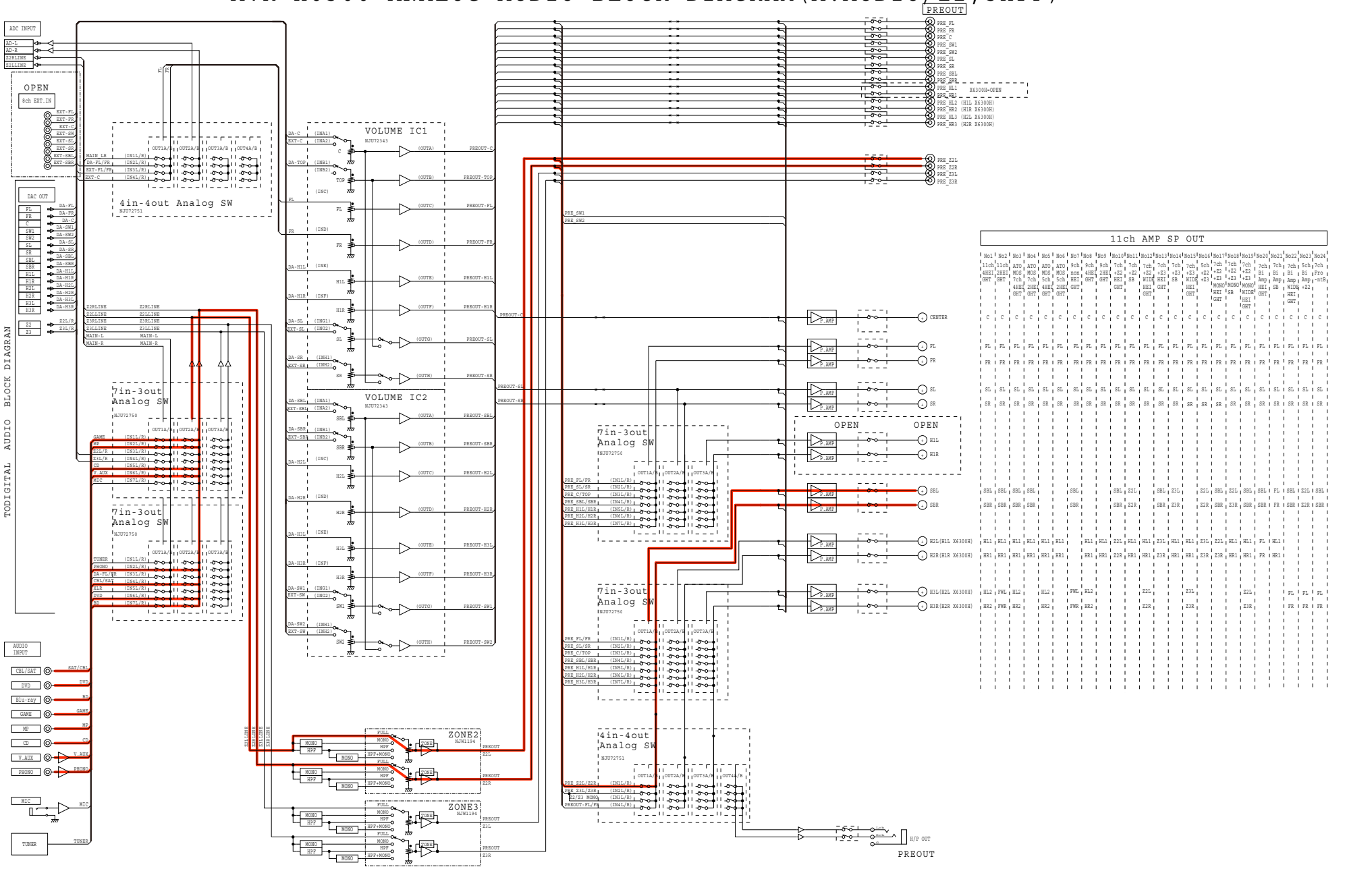


fig.08

AVR-X6300 ANALOG AUDIO BLOCK DIAGRAM(A.AUDIO/Z2,3HPF)

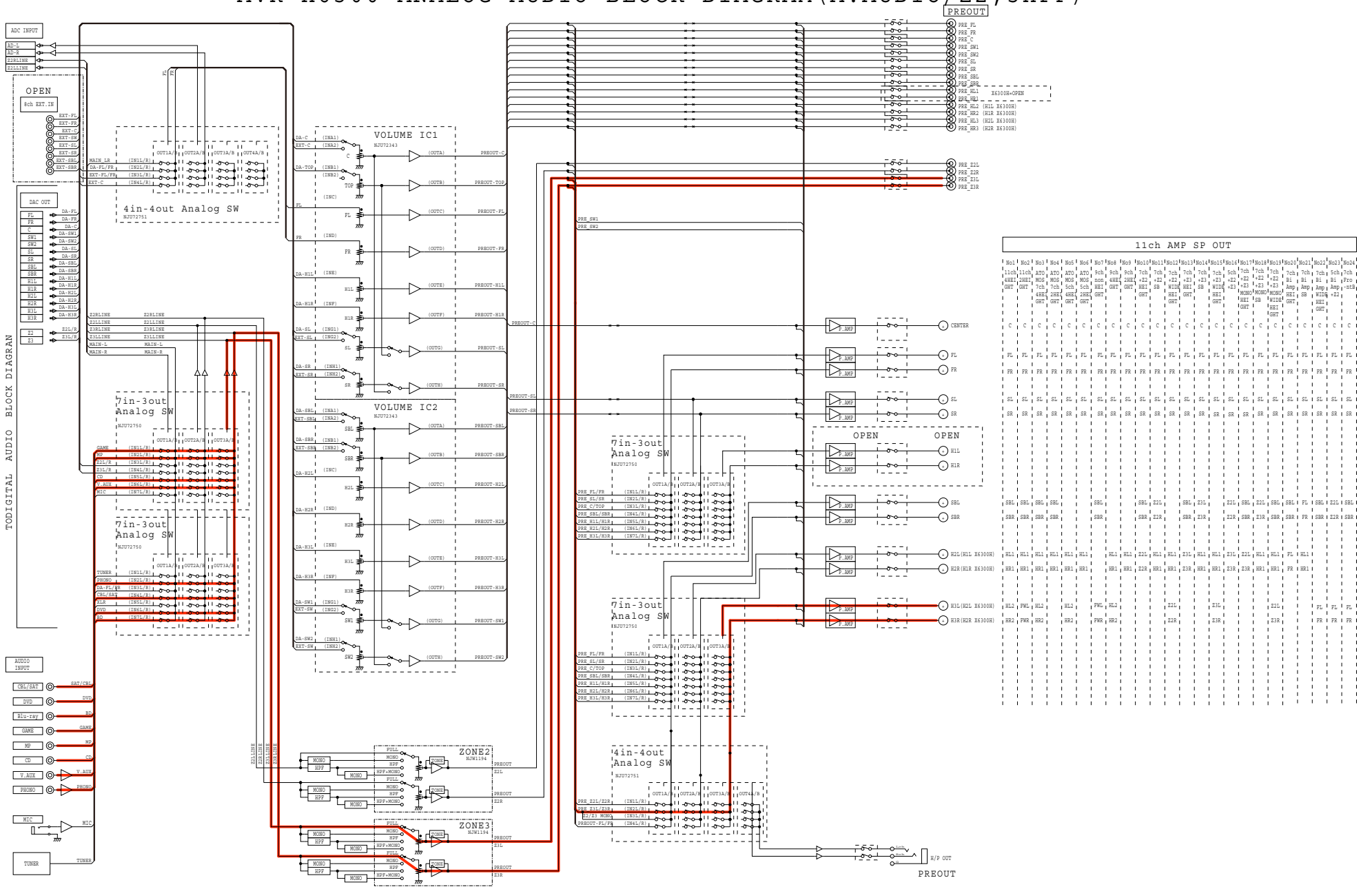


fig.09

AVR-X6300 ANALOG AUDIO BLOCK DIAGRAM(A.AUDIO/Z2,3HPF)

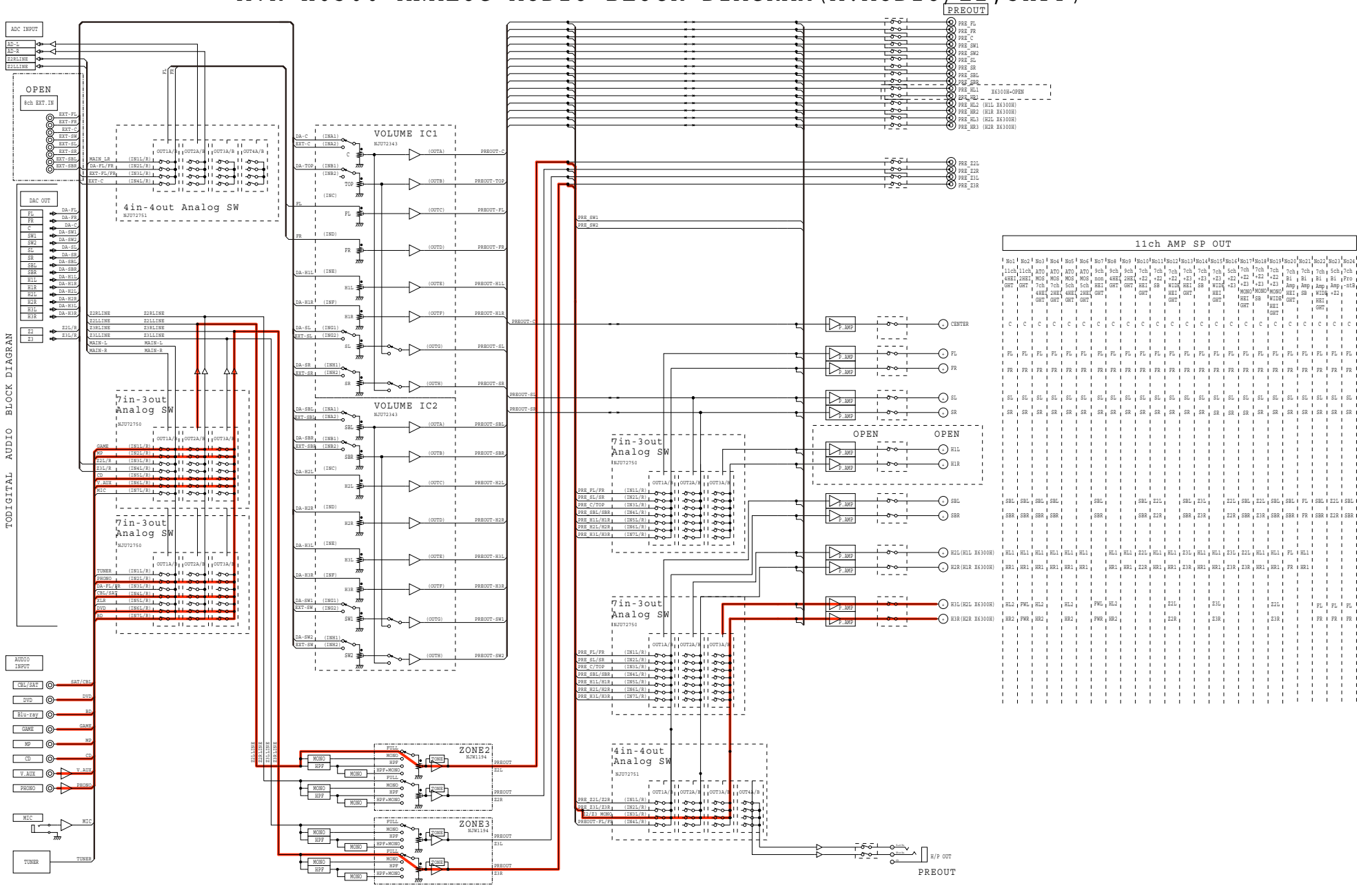


fig.10a

AVR-X6300H DIGITAL AUDIO/NETWORK BLOCK DIRAGRAM

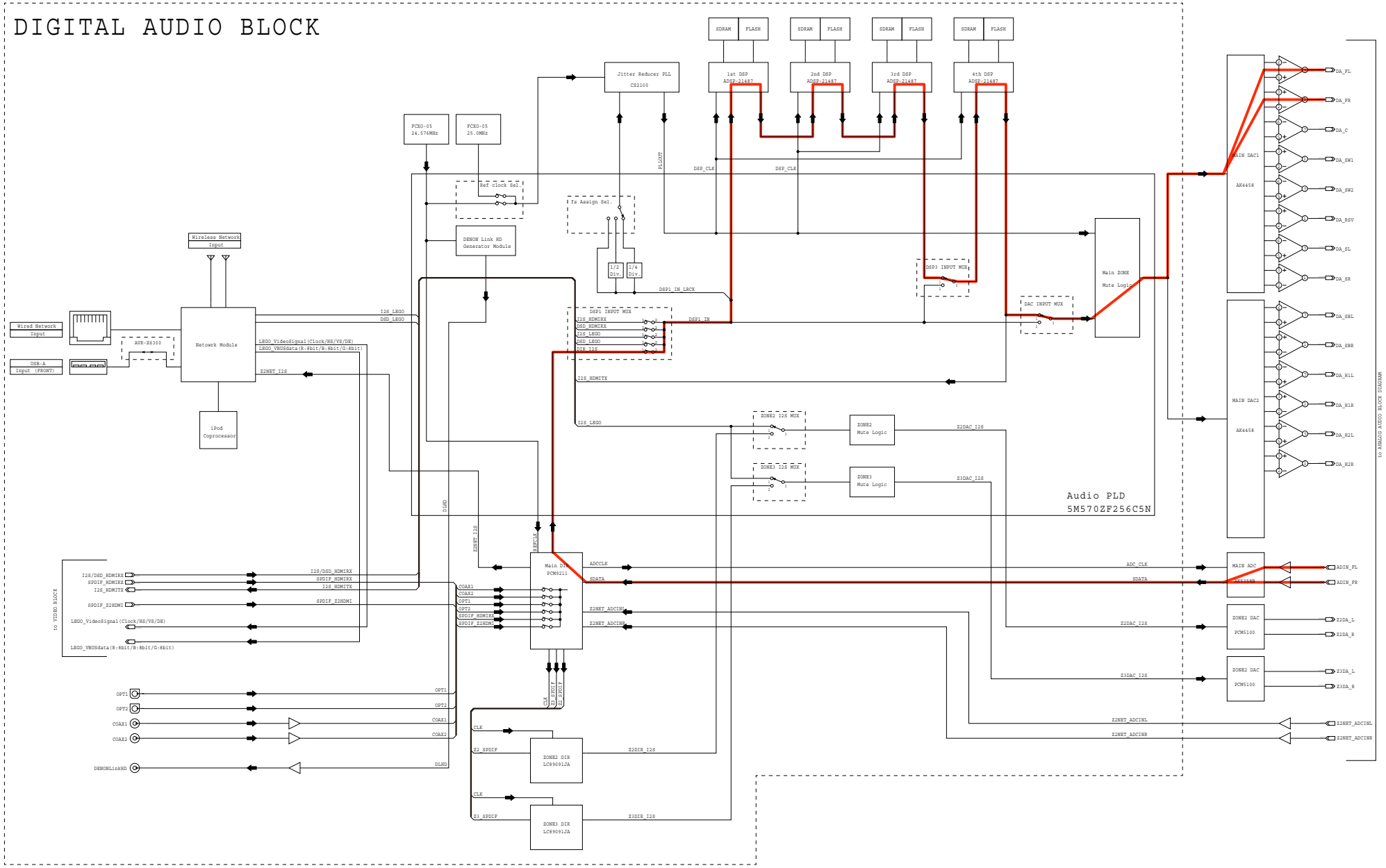


fig.10b

AVR-X6300 ANALOG AUDIO BLOCK DIAGRAM(A.AUDIO/Z2,3HPF)

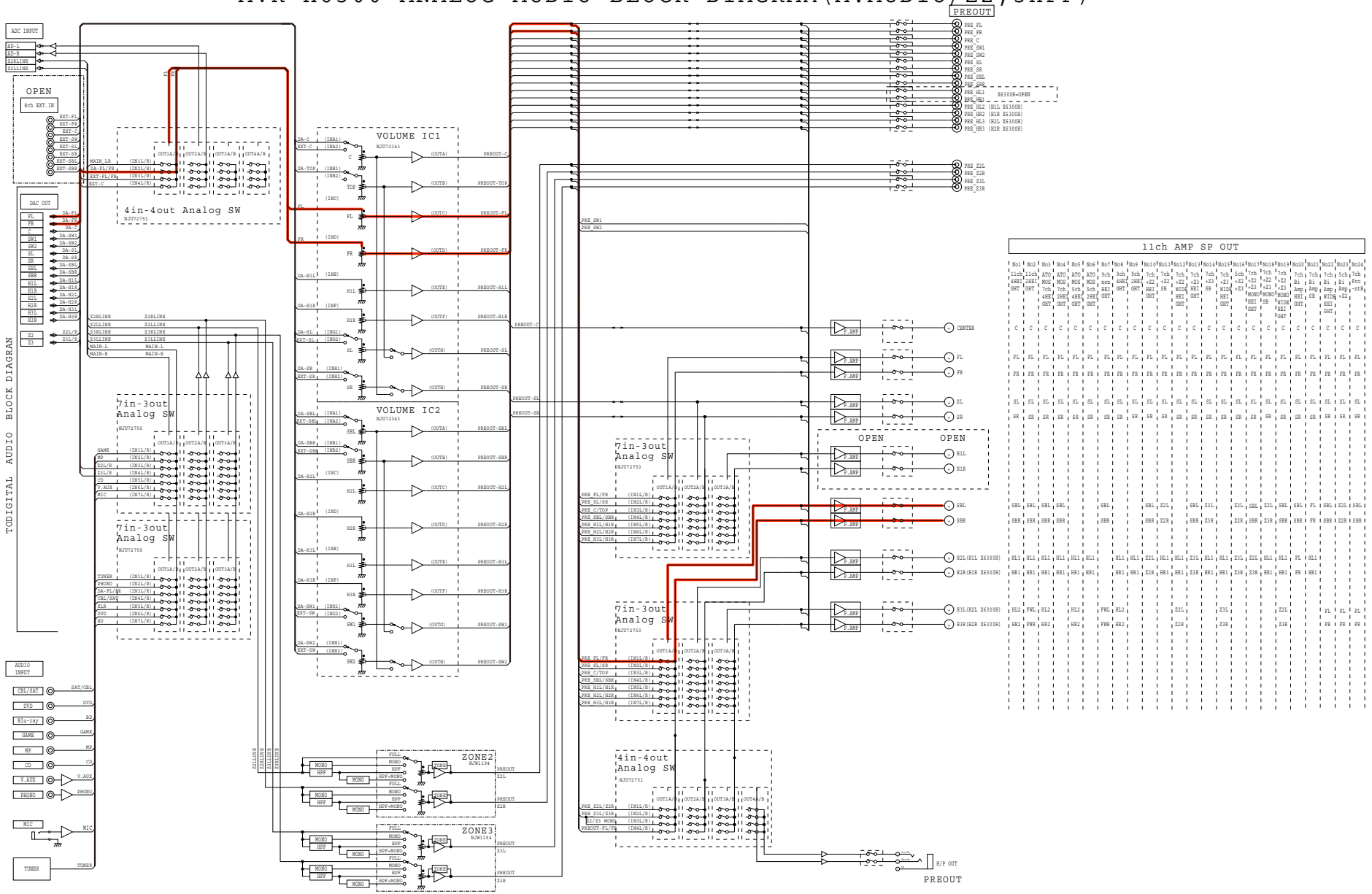


fig.11a

AVR-X6300H DIGITAL AUDIO/NETWORK BLOCK DIRAGRAM

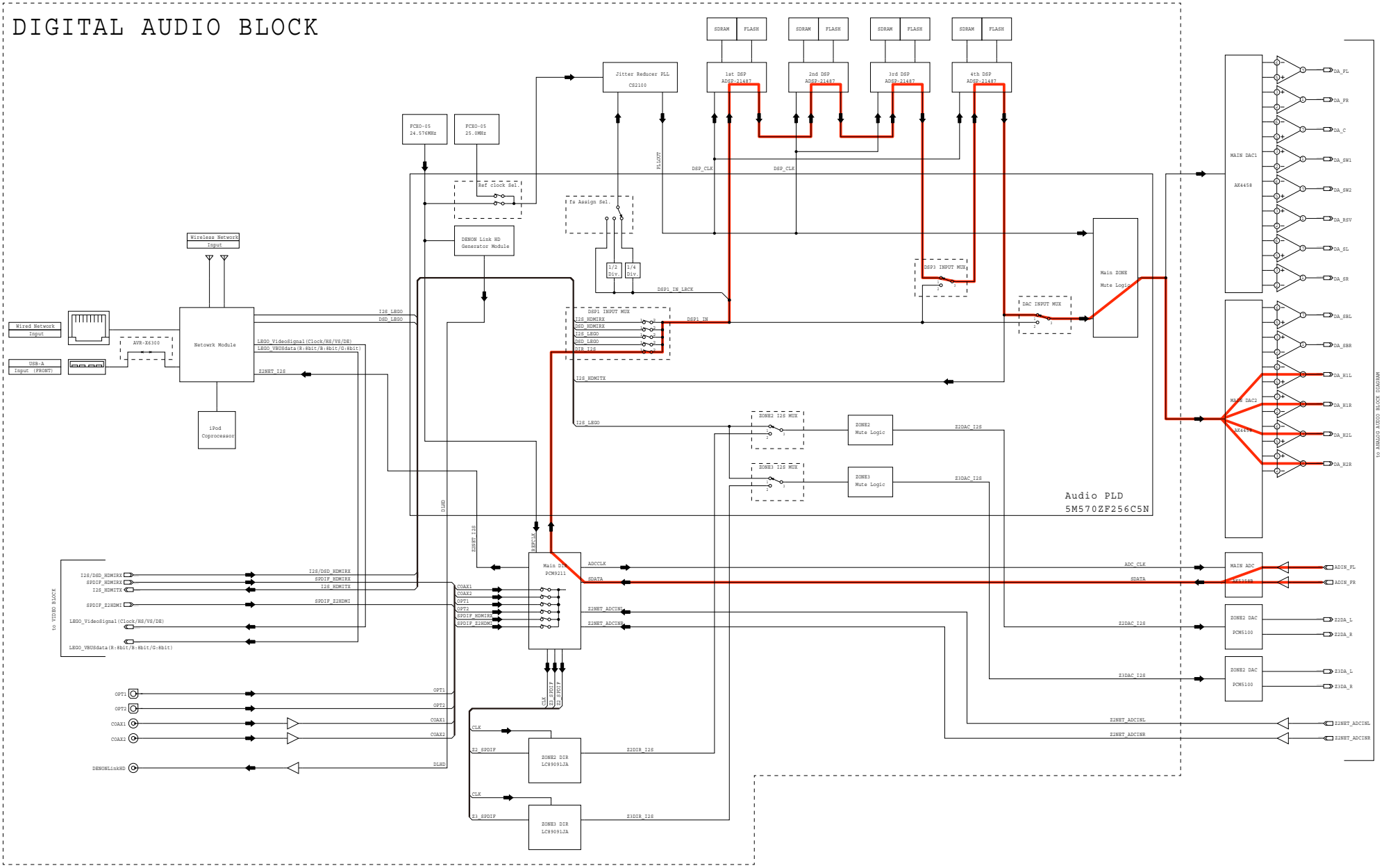


fig.11b

AVR-X6300 ANALOG AUDIO BLOCK DIAGRAM(A.AUDIO/Z2,3HPF)

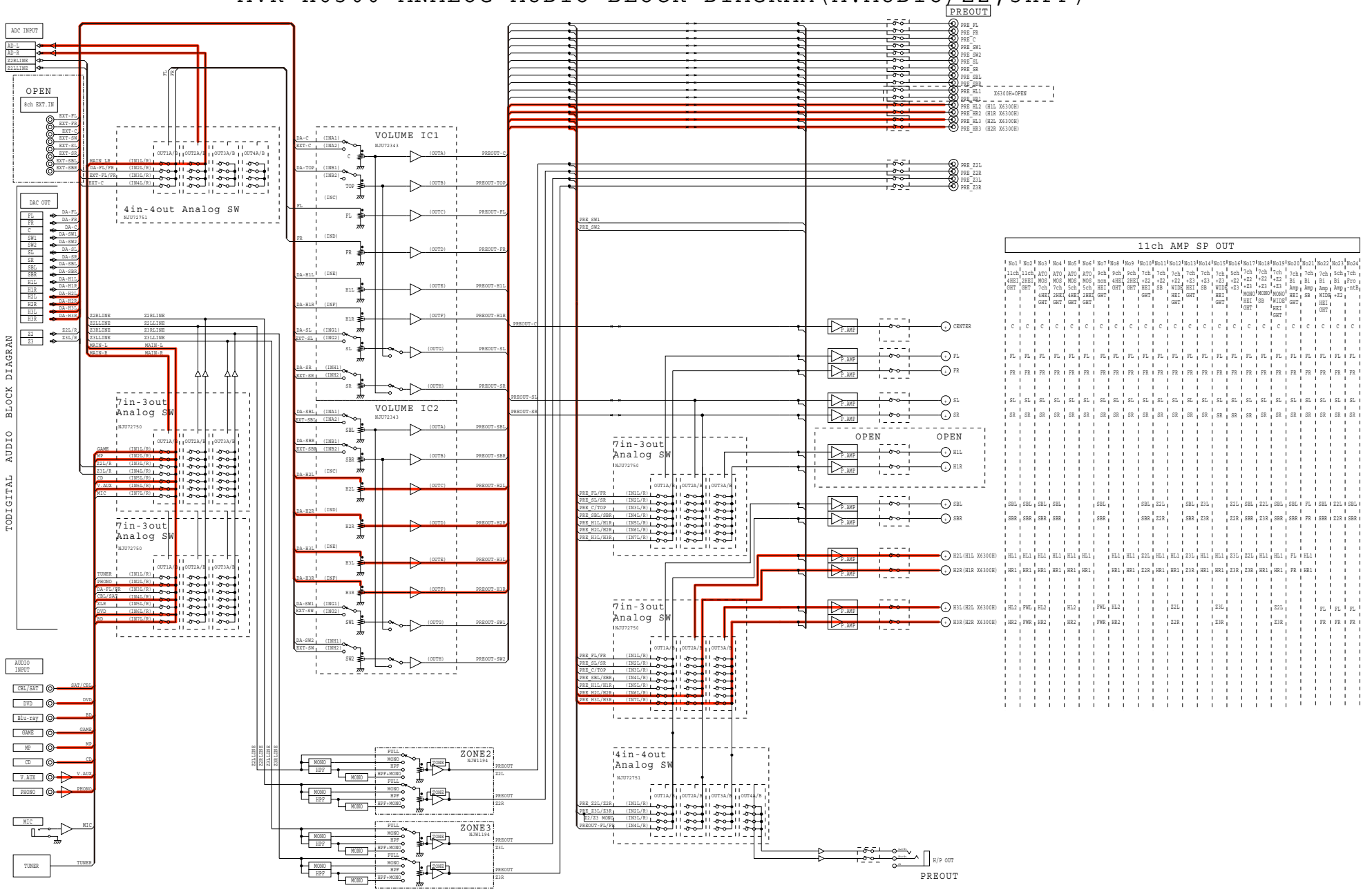


fig.12

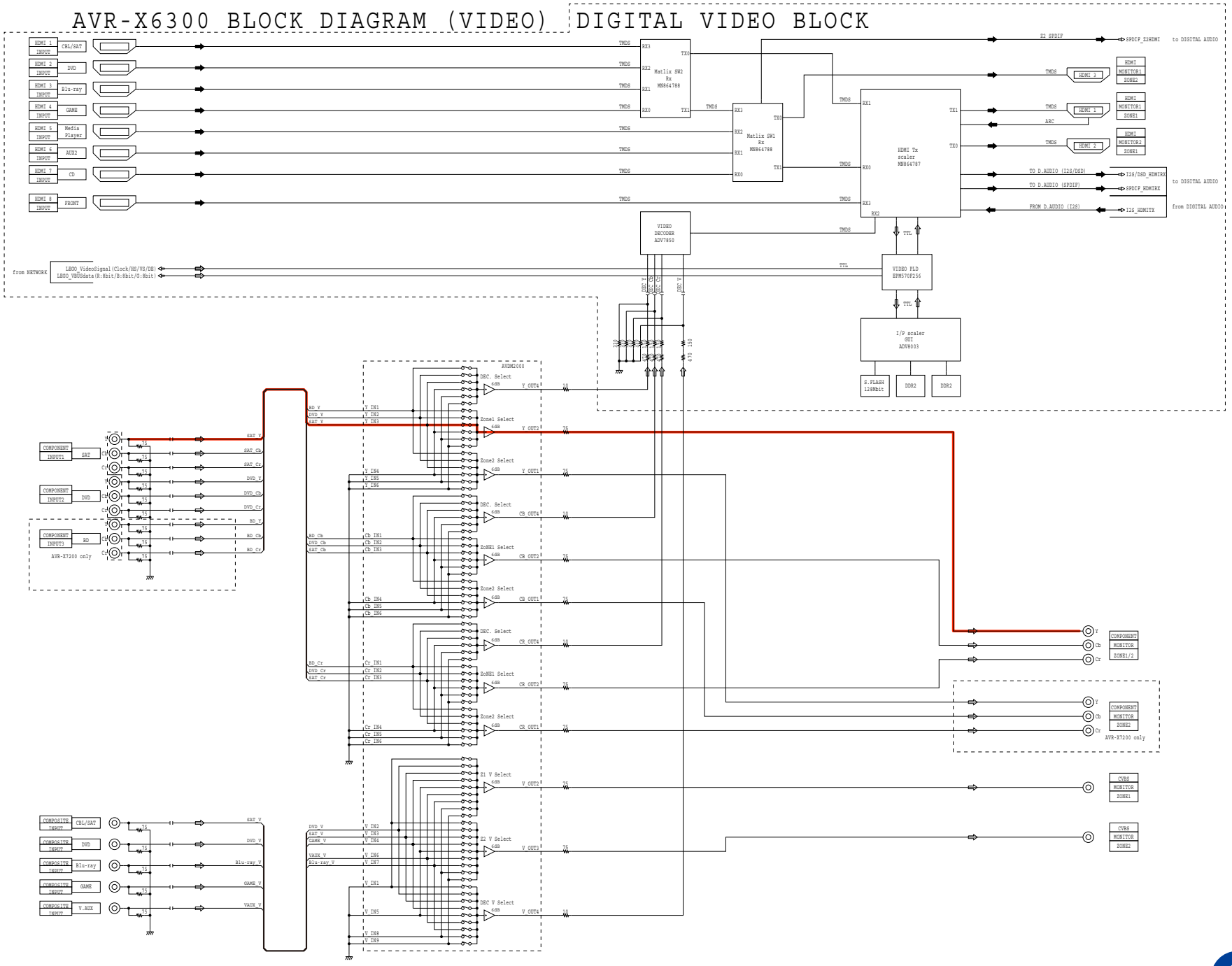

AVR-X6300 BLOCK DIAGRAM (VIDEO)
DIGITAL VIDEO BLOCK
HDMI 1 INPUT
CBL/SAT
HDMI 2 INPUT
DVD
HDMI 3 INPUT
Blu-ray
HDMI 4 INPUT
GAME
HDMI 5 INPUT
Media Player
HDMI 6 INPUT
AUX2
HDMI 7 INPUT
CD
HDMI 8 INPUT
FRONT
from NETWORK
LBDO_VideoSignal(Clock/HS/VS/DE)
LBDO_VBUSdata(R:8bit/B:8bit/G:8bit)
Matlix SW2 Rx MN864788
Matlix SW1 Rx MN864788
HDMI Tx scaler MN864787
VIDEO DECODER ADV7850
VIDEO PLD EPM570F256
I/P scaler GUI ADV8003
S.FLASH 128Mbit
DDR2
DDR2
Z2 SPDIF
SPDIF_Z2HDMI
to DIGITAL AUDIO
HDMI MONITOR1 ZONE2
HDMI MONITOR1 ZONE1
HDMI MONITOR2 ZONE1
ARC
TO D.AUDIO (I2S/DSD)
I2S/DSD_HDMIRX
TO D.AUDIO (SPDIF)
SPDIF_HDMIRX
FROM D.AUDIO (I2S)
I2S_HDMITX
from DIGITAL AUDIO
COMPONENT INPUT1 SAT
COMPONENT INPUT2 DVD
COMPONENT INPUT3 BD
AVR-X7200 only
COMPOSITE INPUT CBL/SAT
COMPOSITE INPUT DVD
COMPOSITE INPUT Blu-ray
COMPOSITE INPUT GAME
COMPOSITE INPUT V.AUX
AVDM2000
COMPONENT MONITOR ZONE1/2
COMPONENT MONITOR ZONE2
AVR-X7200 only
CVBS MONITOR ZONE1
CVBS MONITOR ZONE2

fig.13

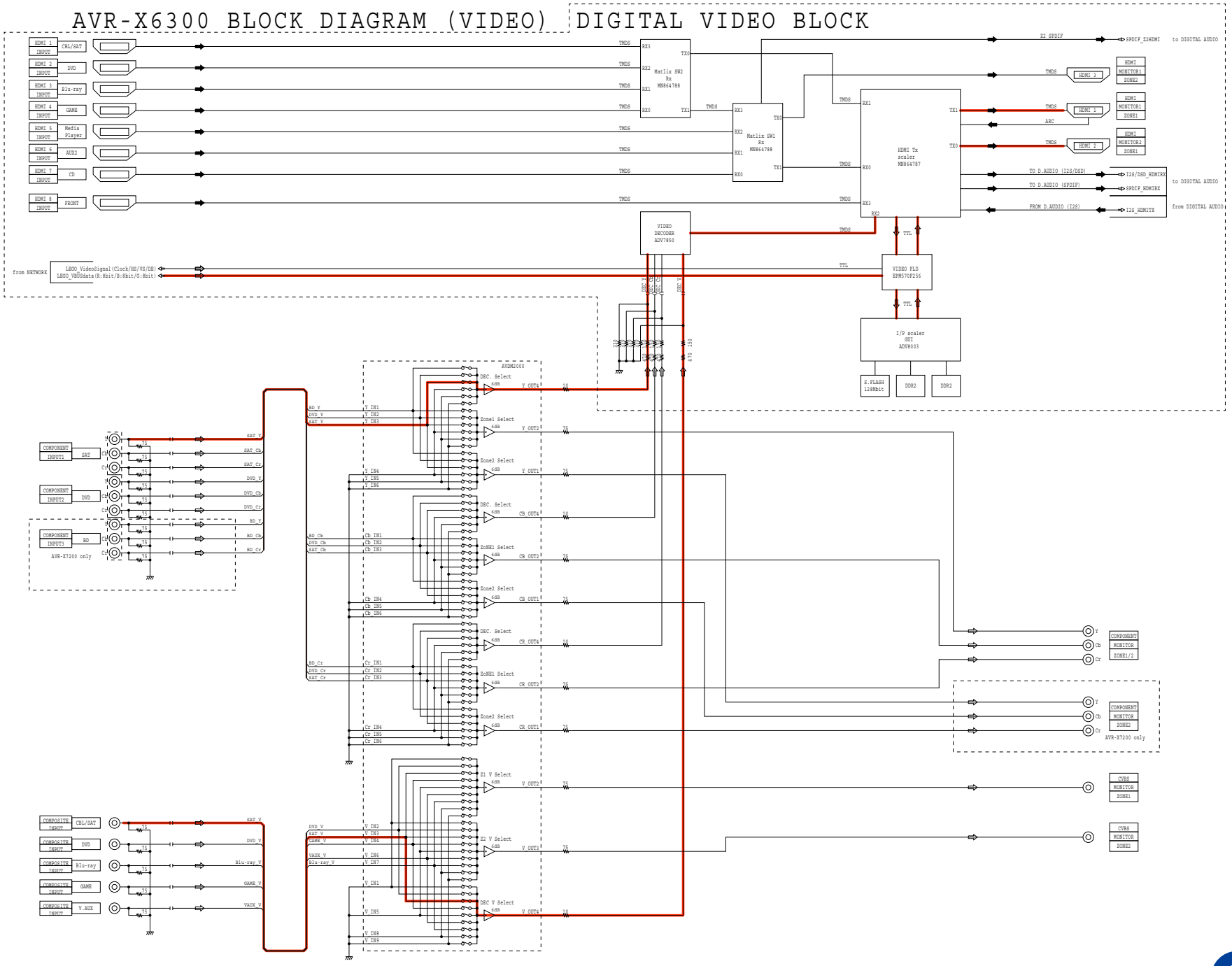

AVR-X6300 BLOCK DIAGRAM (VIDEO)
DIGITAL VIDEO BLOCK
HDMI 1 INPUT
CBL/SAT
HDMI 2 INPUT
DVD
HDMI 3 INPUT
Blu-ray
HDMI 4 INPUT
GAME
HDMI 5 INPUT
Media Player
HDMI 6 INPUT
AUX2
HDMI 7 INPUT
CD
HDMI 8 INPUT
FRONT
from NETWORK
LBDO_VideoSignal(Clock/HS/VS/DE)
LBDO_VBUSdata(R:8bit/B:8bit/G:8bit)
Matlix SW2 Rx MN864788
Matlix SW1 Rx MN864788
HDMI Tx scaler MN864787
VIDEO DECODER ADV7850
VIDEO PLD EPM570F256
I/P scaler GUI ADV8003
S.FLASH 128Mbit
DDR2
DDR2
Z2 SPDIF
SPDIF_Z2HDMI
to DIGITAL AUDIO
HDMI MONITOR1 ZONE2
HDMI MONITOR1 ZONE1
HDMI MONITOR2 ZONE1
ARC
TO D.AUDIO (I2S/DSD)
I2S/DSD_HDMIRX
TO D.AUDIO (SPDIF)
SPDIF_HDMIRX
FROM D.AUDIO (I2S)
I2S_HDMITX
from DIGITAL AUDIO
AVDM2000
COMPONENT INPUT1 SAT
COMPONENT INPUT2 DVD
COMPONENT INPUT3 BD
AVR-X7200 only
COMPOSITE INPUT CBL/SAT
COMPOSITE INPUT DVD
COMPOSITE INPUT Blu-ray
COMPOSITE INPUT GAME
COMPOSITE INPUT V.AUX
COMPONENT MONITOR ZONE1/2
COMPONENT MONITOR ZONE2
AVR-X7200 only
CVBS MONITOR ZONE1
CVBS MONITOR ZONE2

fig.14

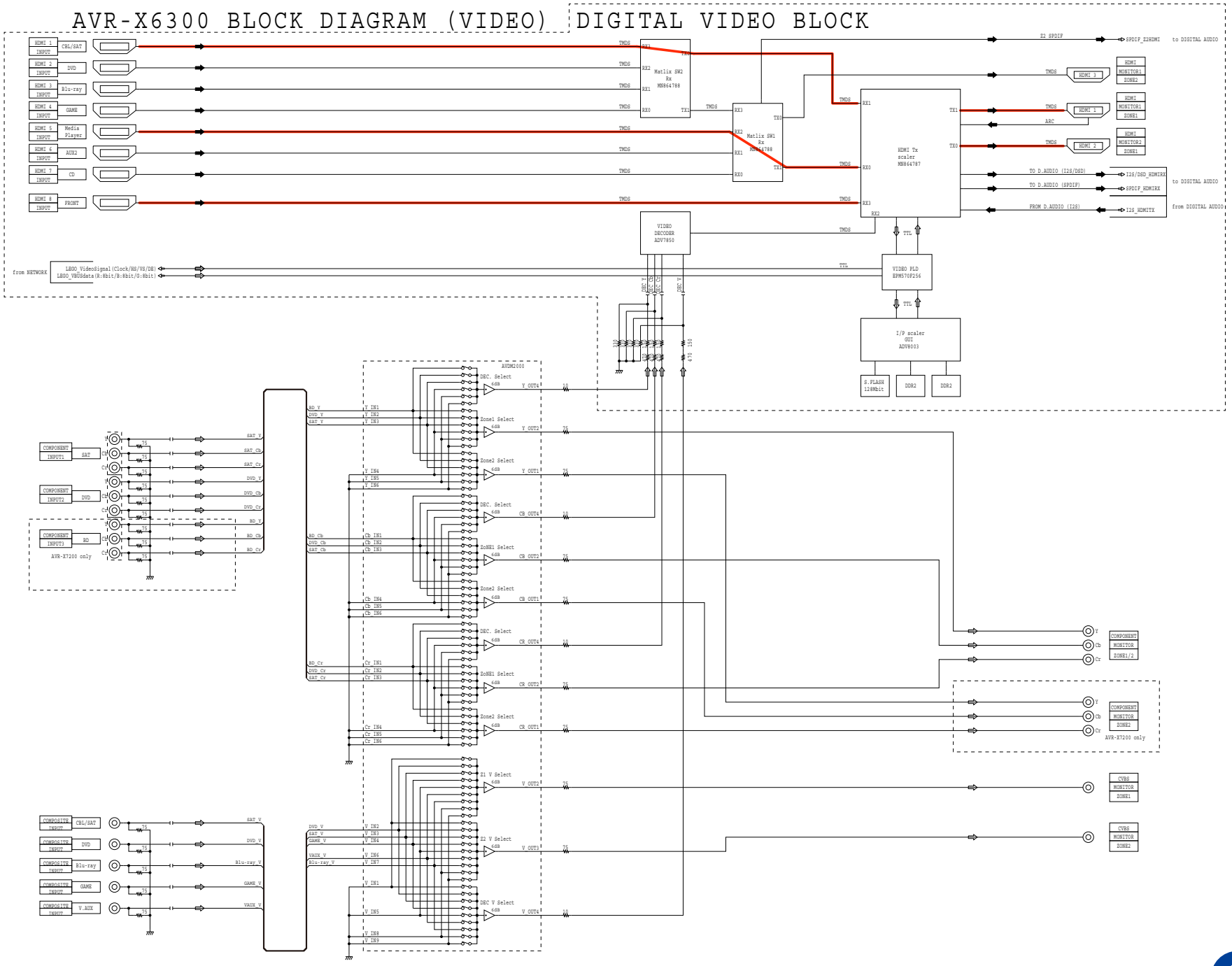

AVR-X6300 BLOCK DIAGRAM (VIDEO)
DIGITAL VIDEO BLOCK
HDMI 1 INPUT
CBL/SAT
HDMI 2 INPUT
DVD
HDMI 3 INPUT
Blu-ray
HDMI 4 INPUT
GAME
HDMI 5 INPUT
Media Player
HDMI 6 INPUT
AUX2
HDMI 7 INPUT
CD
HDMI 8 INPUT
FRONT
Matlix SW2 Rx MN864788
Matlix SW1 Rx MN864788
HDMI Tx scaler MN864787
VIDEO DECODER ADV7850
VIDEO PLD EPM570F256
I/P scaler GUI ADV8003
S.FLASH 128Mbit
DDR2
DDR2
from NETWORK
LBDO_VideoSignal(Clock/HS/VS/DE)
LBDO_VBUSdata(R:8bit/B:8bit/G:8bit)
AVDM2000
HDMI MONITOR1 ZONE2
HDMI MONITOR1 ZONE1
HDMI MONITOR2 ZONE1
to DIGITAL AUDIO
from DIGITAL AUDIO
COMPONENT INPUT1 SAT
COMPONENT INPUT2 DVD
COMPONENT INPUT3 BD
AVR-X7200 only
COMPOSITE INPUT CBL/SAT
COMPOSITE INPUT DVD
COMPOSITE INPUT Blu-ray
COMPOSITE INPUT GAME
COMPOSITE INPUT V.AUX
COMPONENT MONITOR ZONE1/2
COMPONENT MONITOR ZONE2
CVBS MONITOR ZONE1
CVBS MONITOR ZONE2

fig.15

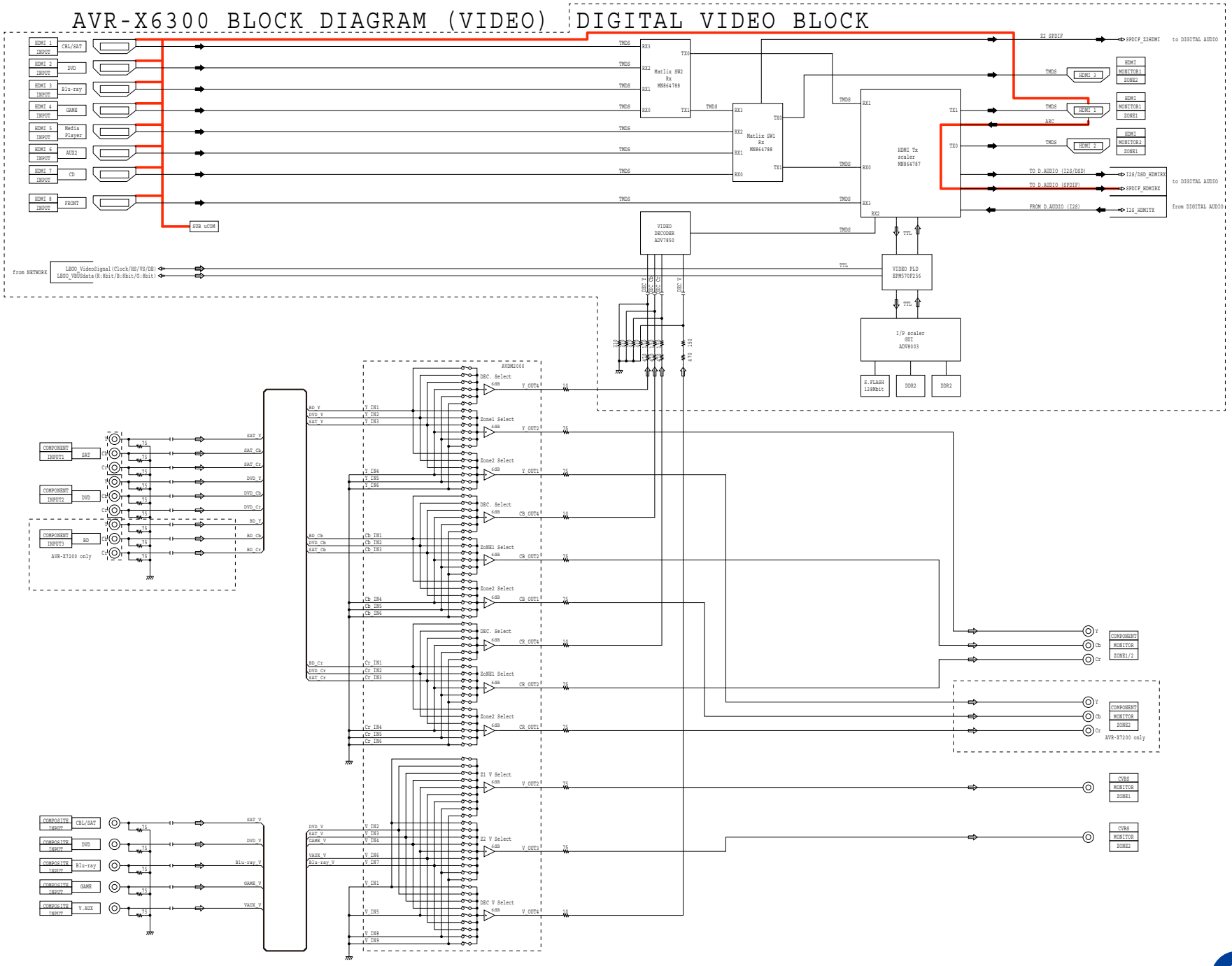

AVR-X6300 BLOCK DIAGRAM (VIDEO)
DIGITAL VIDEO BLOCK
HDMI 1 INPUT
CBL/SAT
HDMI 2 INPUT
DVD
HDMI 3 INPUT
Blu-ray
HDMI 4 INPUT
GAME
HDMI 5 INPUT
Media Player
HDMI 6 INPUT
AUX2
HDMI 7 INPUT
CD
HDMI 8 INPUT
FRONT
SUB uCOM
from NETWORK
LBDO_VideoSignal(Clock/HS/VS/DE)
LBDO_VBUSdata(R:8bit/B:8bit/G:8bit)
Matlix SW2 Rx MN864788
Matlix SW1 Rx MN864788
HDMI Tx scaler MN864787
VIDEO DECODER ADV7850
VIDEO PLD EPM570F256
I/P scaler GUI ADV8003
S.FLASH 128Mbit
DDR2
DDR2
TMDS
TTL
Z2 SPDIF
SPDIF_EZHDMI
to DIGITAL AUDIO
HDMI MONITOR1 ZONE2
HDMI MONITOR1 ZONE1
HDMI MONITOR2 ZONE1
ARC
TO D.AUDIO (I2S/DSD)
I2S/DSD_HDMIRX
TO D.AUDIO (SPDIF)
SPDIF_HDMIRX
FROM D.AUDIO (I2S)
I2S_HDMITX
from DIGITAL AUDIO
AVDM2000
DEC. Select
Zone1 Select
Zone2 Select
Z1 V Select
Z2 V Select
DEC V Select
COMPONENT INPUT1
SAT
COMPONENT INPUT2
DVD
COMPONENT INPUT3
BD
AVR-X7200 only
COMPOSITE INPUT
CBL/SAT
DVD
Blu-ray
GAME
V.AUX
COMPONENT MONITOR ZONE1/2
COMPONENT MONITOR ZONE2
CVBS MONITOR ZONE1
CVBS MONITOR ZONE2

fig.16a

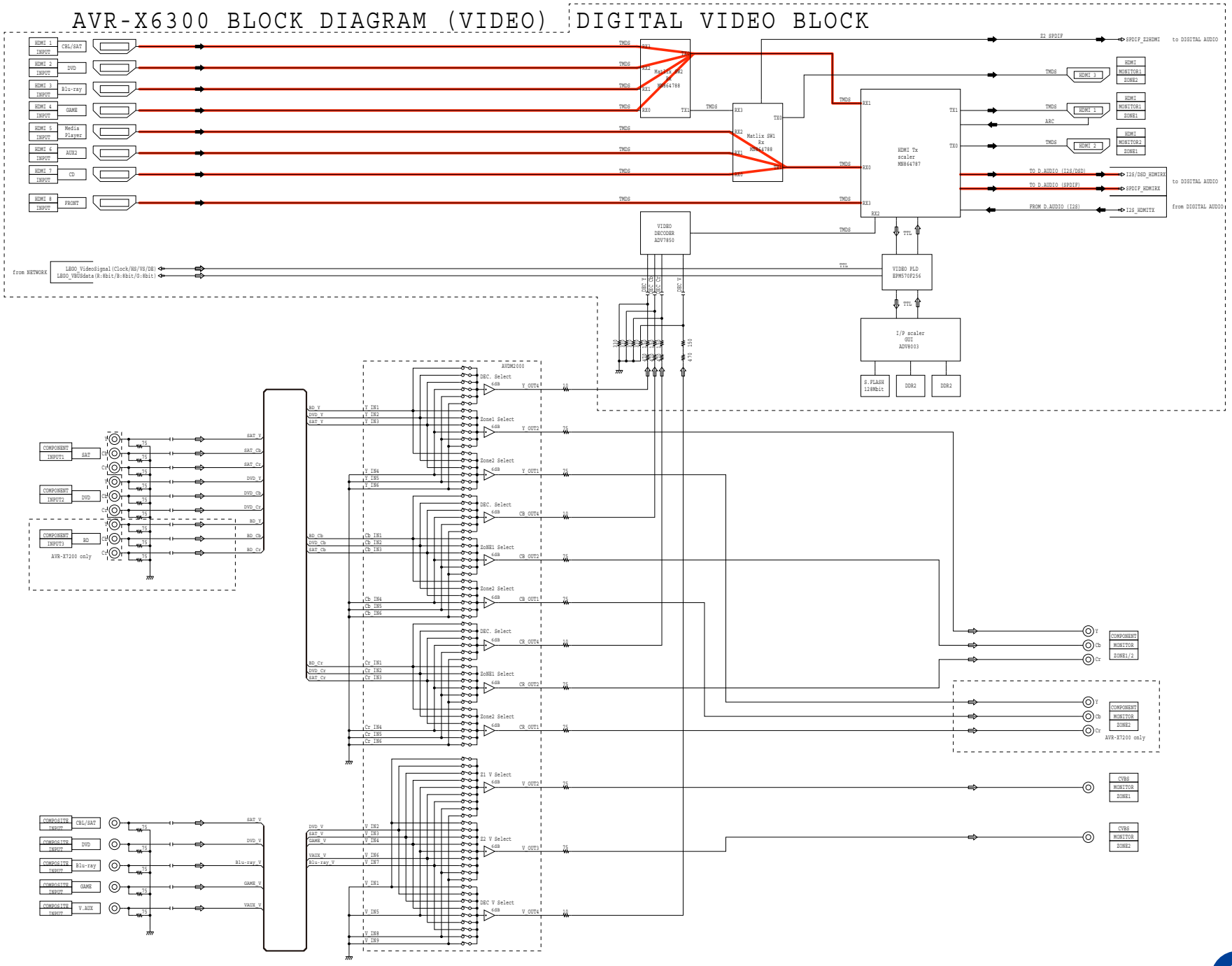

AVR-X6300 BLOCK DIAGRAM (VIDEO)
DIGITAL VIDEO BLOCK
HDMI 1 INPUT
CBL/SAT
HDMI 2 INPUT
DVD
HDMI 3 INPUT
Blu-ray
HDMI 4 INPUT
GAME
HDMI 5 INPUT
Media Player
HDMI 6 INPUT
AUX2
HDMI 7 INPUT
CD
HDMI 8 INPUT
FRONT
TMDS
Matrix SW2 Rx MN864788
Matrix SW1 Rx MN864788
HDMI Tx scaler MN864787
VIDEO DECODER ADV7850
VIDEO PLD EPM570F256
I/P scaler GUI ADV8003
S.FLASH 128Mbit
DDR2
DDR2
TTL
Z2 SPDIF
SPDIF_Z2HDMI
to DIGITAL AUDIO
HDMI MONITOR1 ZONE2
HDMI MONITOR1 ZONE1
HDMI MONITOR2 ZONE1
ARC
TO D.AUDIO (I2S/DSD)
TO D.AUDIO (SPDIF)
FROM D.AUDIO (I2S)
I2S/DSD_HDMIRX
SPDIF_HDMIRX
I2S_HDMITX
from DIGITAL AUDIO
from NETWORK
LBDO_VideoSignal(Clock/HS/VS/DE)
LBDO_VBGSdata(R:8bit/B:8bit/G:8bit)
AVDM2000
DEC. Select
Zone1 Select
Zone2 Select
Z1 V Select
Z2 V Select
DEC V Select
COMPONENT INPUT1
SAT
COMPONENT INPUT2
DVD
COMPONENT INPUT3
BD
AVR-X7200 only
COMPOSITE INPUT
CBL/SAT
DVD
Blu-ray
GAME
V.AUX
COMPONENT MONITOR ZONE1/2
COMPONENT MONITOR ZONE2
CVBS MONITOR ZONE1
CVBS MONITOR ZONE2

fig.16b

AVR-X6300H DIGITAL AUDIO/NETWORK BLOCK DIRAGRAM

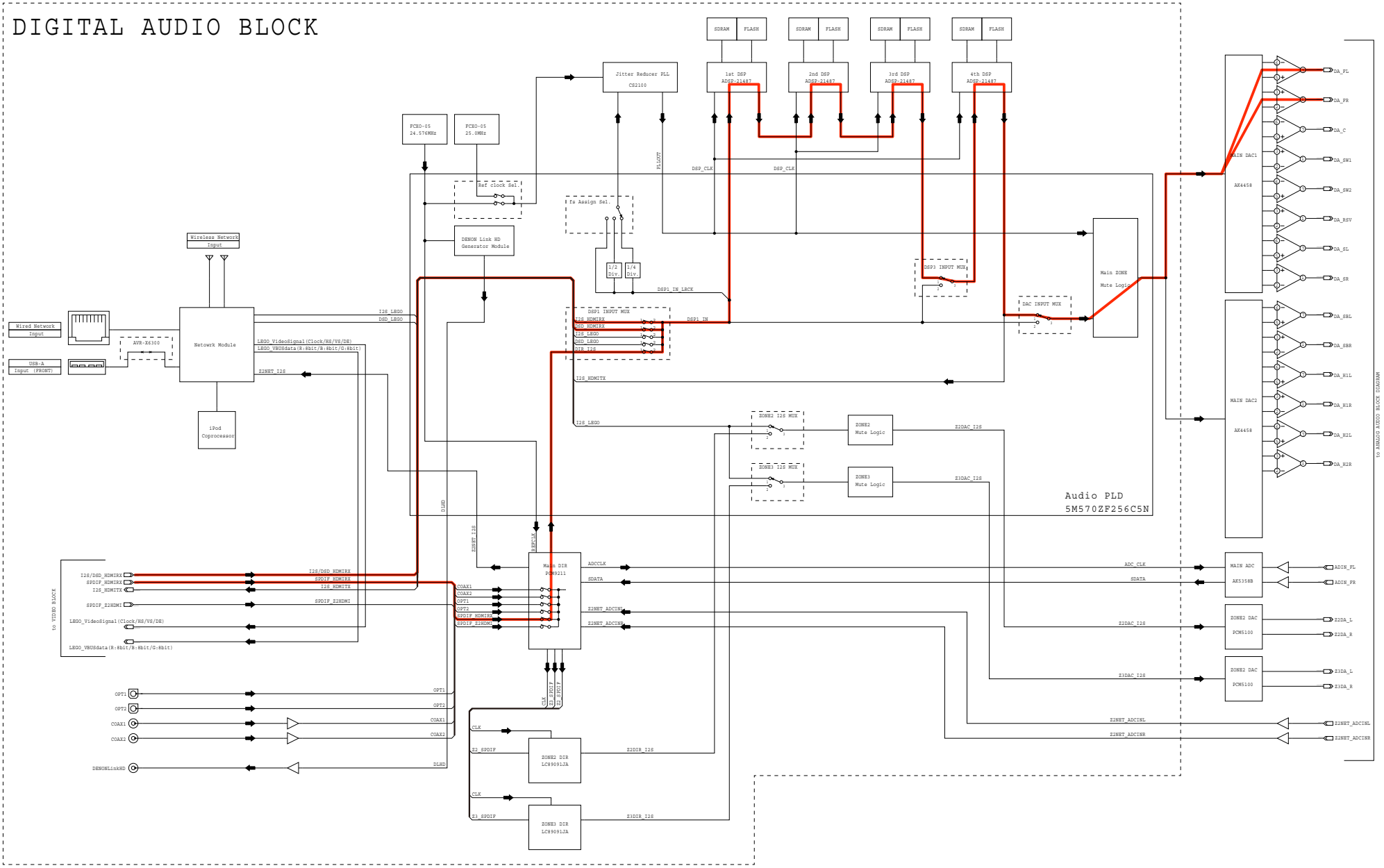


fig.16c

AVR-X6300 ANALOG AUDIO BLOCK DIAGRAM(A.AUDIO/Z2,3HPF)

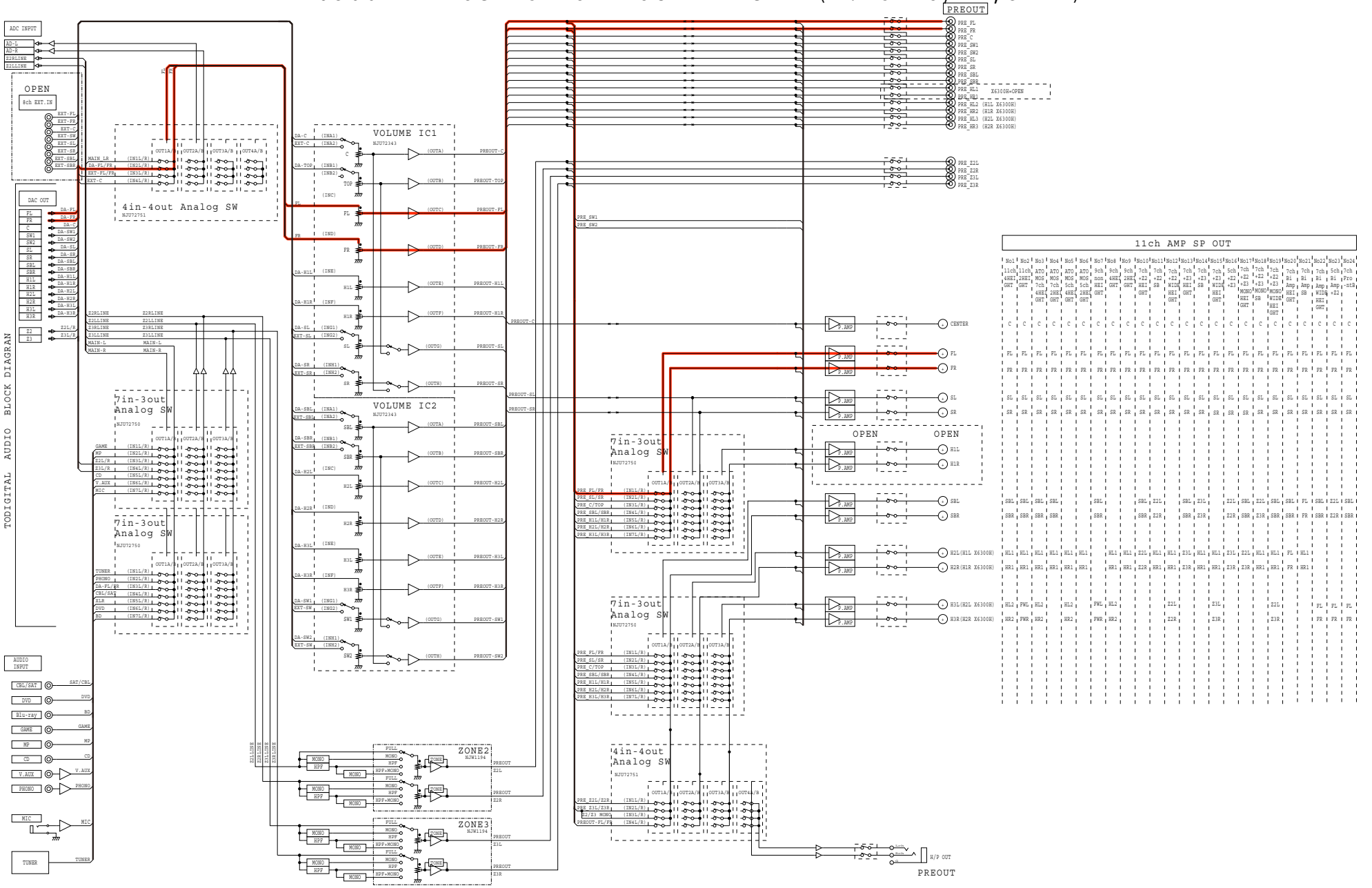


fig.17a

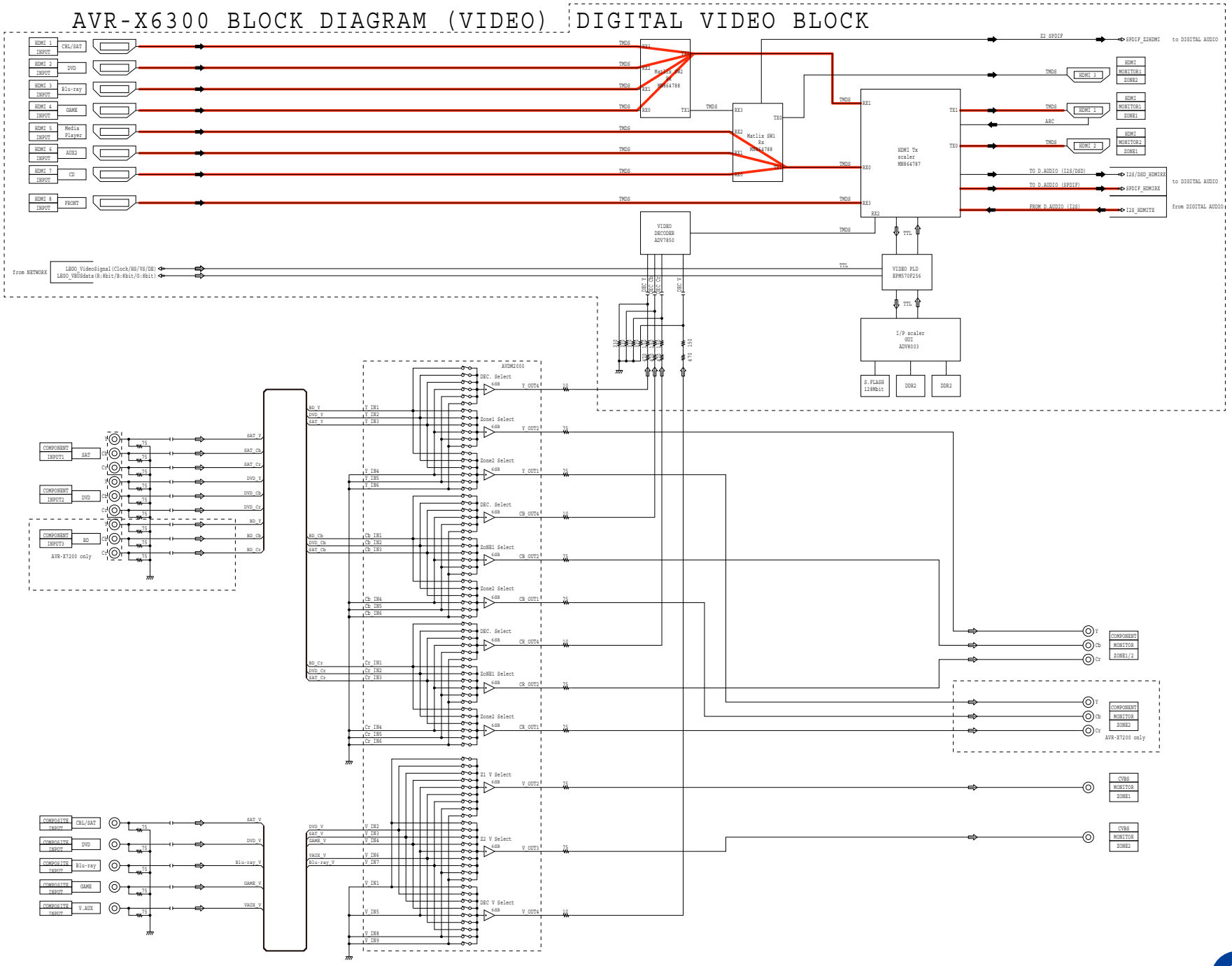

AVR-X6300 BLOCK DIAGRAM (VIDEO)
DIGITAL VIDEO BLOCK
HDMI 1 INPUT
CBL/SAT
HDMI 2 INPUT
DVD
HDMI 3 INPUT
Blu-ray
HDMI 4 INPUT
GAME
HDMI 5 INPUT
Media Player
HDMI 6 INPUT
AUX2
HDMI 7 INPUT
CD
HDMI 8 INPUT
FRONT
TMDS
Matrix SW2 Rx MN864788
Matrix SW1 Rx MN864788
HDMI Tx scaler MN864787
VIDEO DECODER ADV7850
VIDEO PLD EPM570F256
I/P scaler GUI ADV8003
S.FLASH 128Mbit
DDR2
DDR2
TTL
ARC
Z2 SPDIF
SPDIF_Z2HDMI
to DIGITAL AUDIO
HDMI MONITOR1 ZONE2
HDMI MONITOR1 ZONE1
HDMI MONITOR2 ZONE1
TO D.AUDIO (I2S/DSD)
I2S/DSD_HDMIRX
TO D.AUDIO (SPDIF)
SPDIF_HDMIRX
FROM D.AUDIO (I2S)
I2S_HDMITX
from DIGITAL AUDIO
from NETWORK
LBDO_VideoSignal(Clock/HS/VS/DE)
LBDO_VBUSdata(R:8bit/B:8bit/G:8bit)
AVDM2000
DEC. Select
Zone1 Select
Zone2 Select
Z1 V Select
Z2 V Select
DEC V Select
COMPONENT INPUT1
SAT
COMPONENT INPUT2
DVD
COMPONENT INPUT3
BD
AVR-X7200 only
COMPOSITE INPUT
CBL/SAT
DVD
Blu-ray
GAME
V.AUX
COMPONENT MONITOR ZONE1/2
COMPONENT MONITOR ZONE2
CVBS MONITOR ZONE1
CVBS MONITOR ZONE2

fig.17b

AVR-X6300H DIGITAL AUDIO/NETWORK BLOCK DIRAGRAM

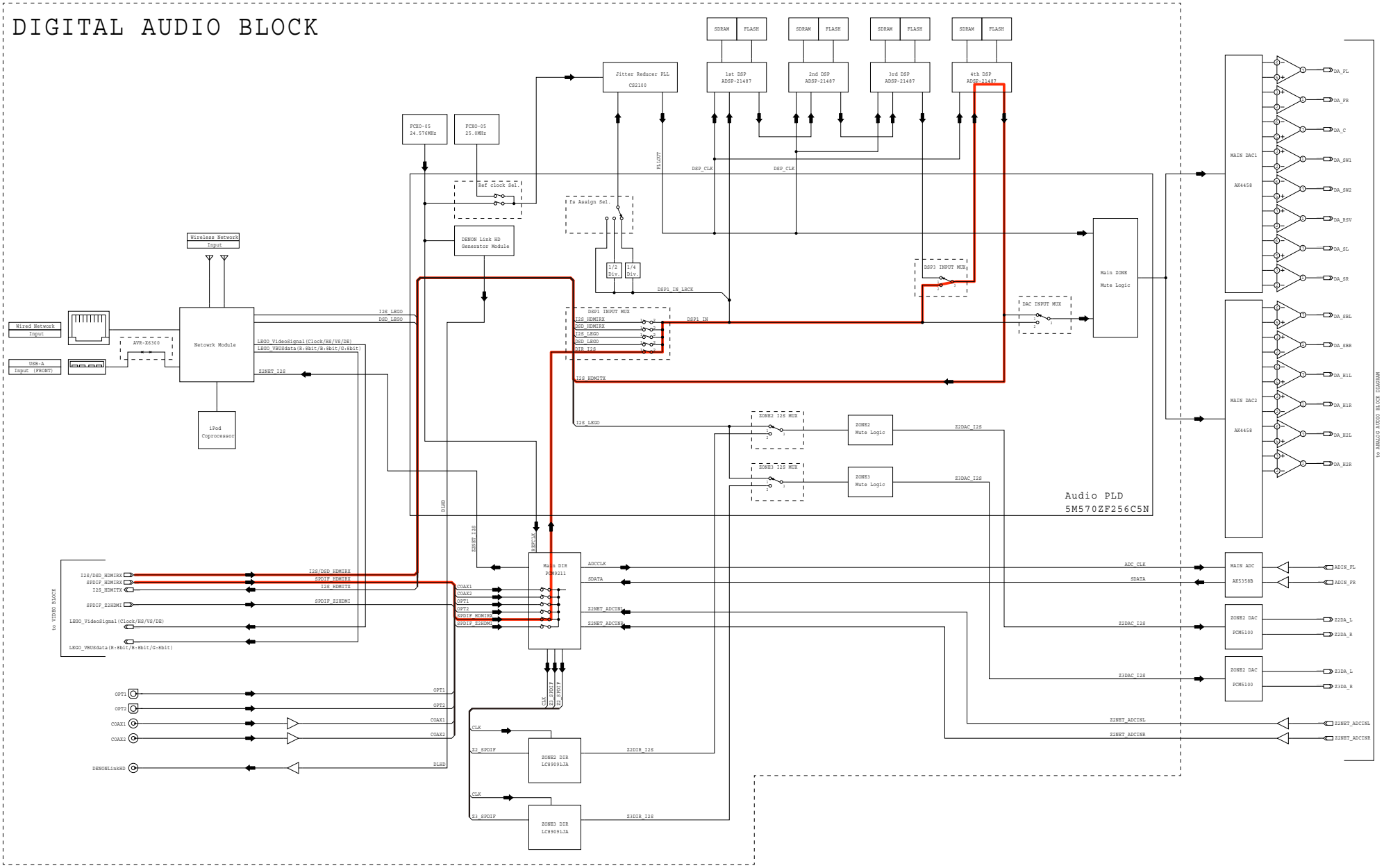


fig.18

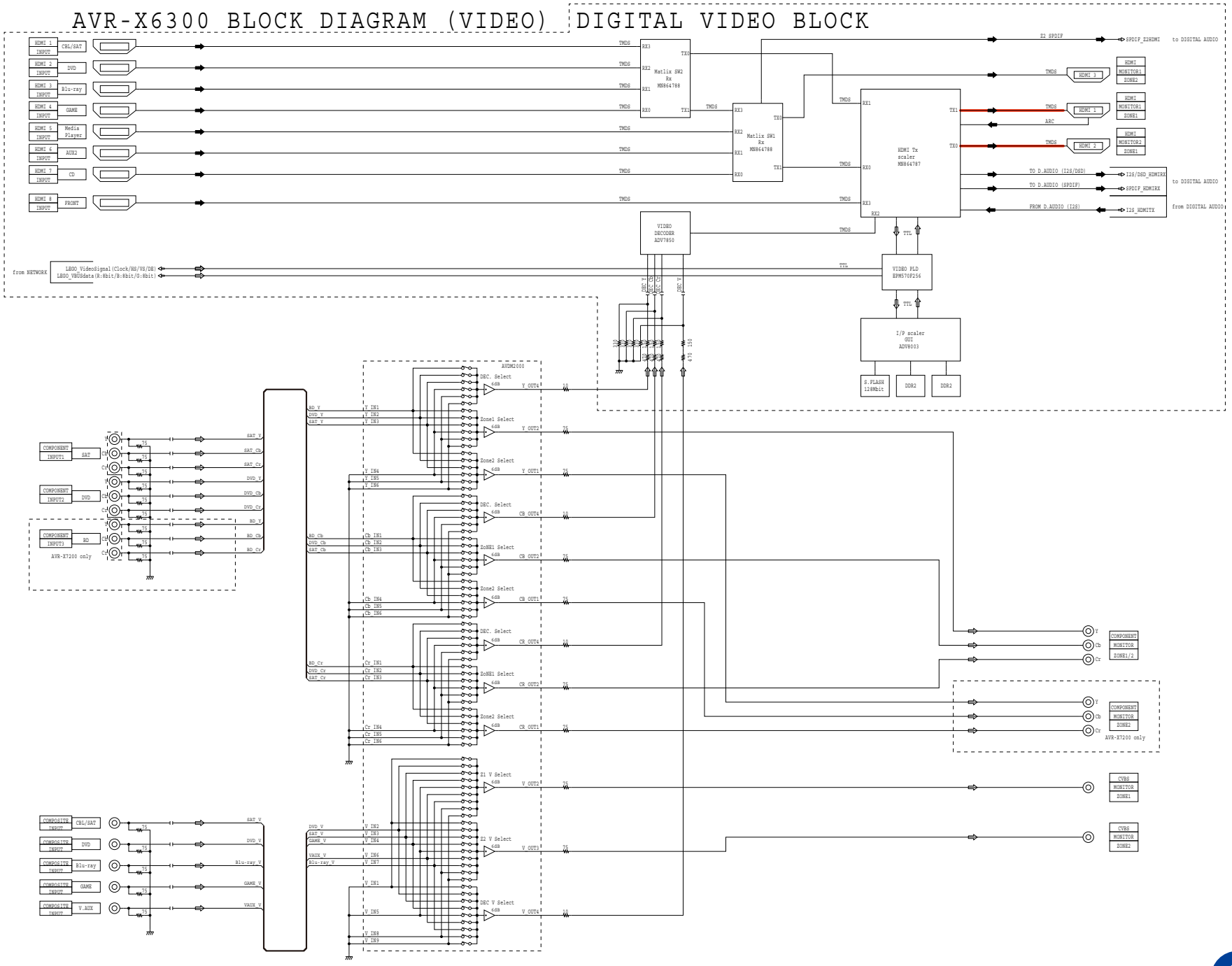
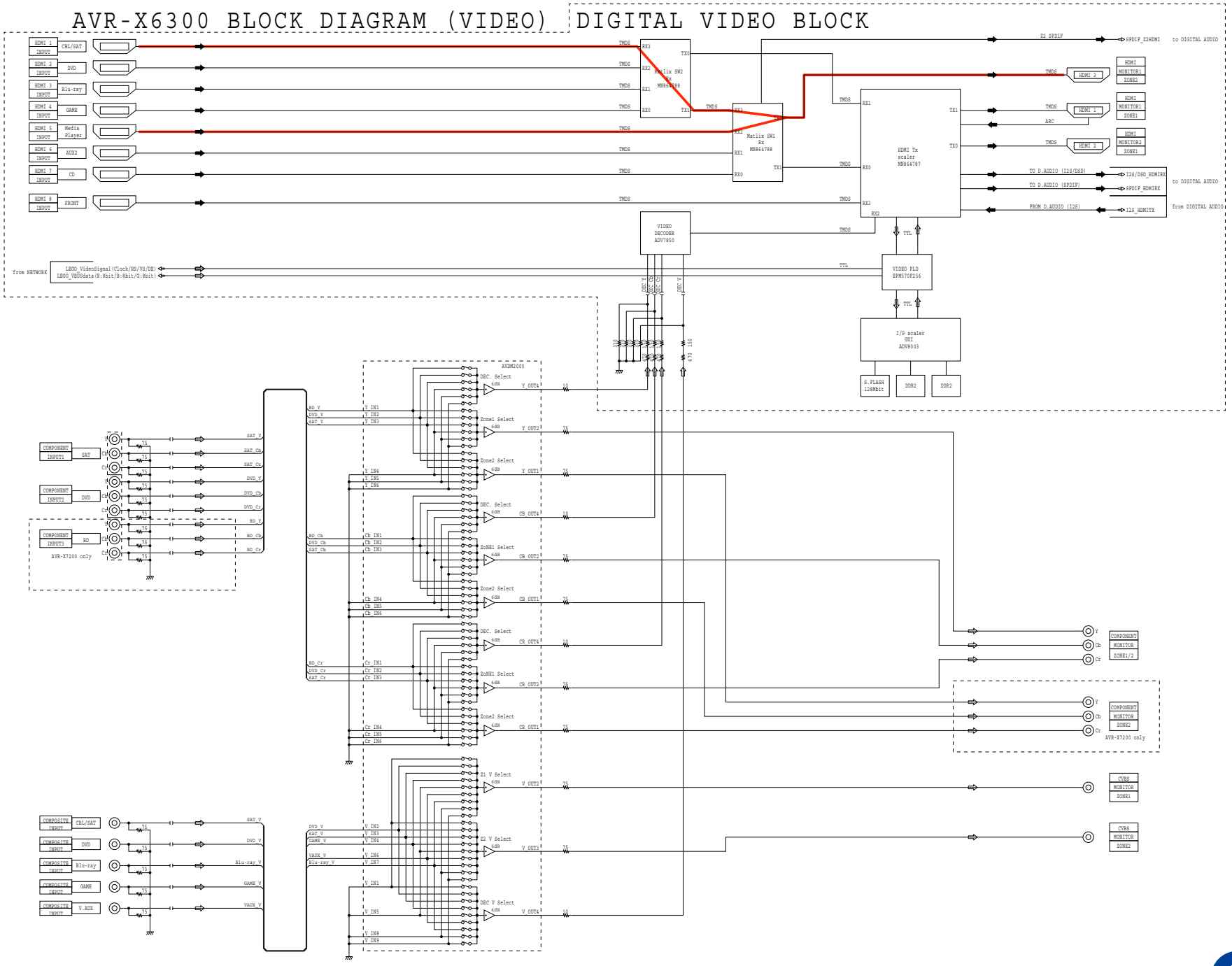

AVR-X6300 BLOCK DIAGRAM (VIDEO)
DIGITAL VIDEO BLOCK
HDMI 1 INPUT
CBL/SAT
HDMI 2 INPUT
DVD
HDMI 3 INPUT
Blu-ray
HDMI 4 INPUT
GAME
HDMI 5 INPUT
Media Player
HDMI 6 INPUT
AUX2
HDMI 7 INPUT
CD
HDMI 8 INPUT
FRONT
from NETWORK
LBDO_VideoSignal(Clock/HS/VS/DE)
LBDO_VBUSdata(R:8bit/B:8bit/G:8bit)
Matlix SW2 Rx MN864788
Matlix SW1 Rx MN864788
HDMI Tx scaler MN864787
VIDEO DECODER ADV7850
VIDEO PLD EPM570F256
I/P scaler GUI ADV8003
S.FLASH 128Mbit
DDR2
DDR2
Z2 SPDIF
SPDIF_Z2HDMI
to DIGITAL AUDIO
HDMI MONITOR1 ZONE2
HDMI MONITOR1 ZONE1
HDMI MONITOR2 ZONE1
ARC
TO D.AUDIO (I2S/DSD)
I2S/DSD_HDMIRX
TO D.AUDIO (SPDIF)
SPDIF_HDMIRX
FROM D.AUDIO (I2S)
I2S_HDMITX
from DIGITAL AUDIO
AVDM2000
COMPONENT INPUT1 SAT
COMPONENT INPUT2 DVD
COMPONENT INPUT3 BD
AVR-X7200 only
COMPOSITE INPUT CBL/SAT
COMPOSITE INPUT DVD
COMPOSITE INPUT Blu-ray
COMPOSITE INPUT GAME
COMPOSITE INPUT V.AUX
COMPONENT MONITOR ZONE1/2
COMPONENT MONITOR ZONE2
AVR-X7200 only
CVBS MONITOR ZONE1
CVBS MONITOR ZONE2

fig.19


AVR-X6300 BLOCK DIAGRAM (VIDEO)
DIGITAL VIDEO BLOCK
HDMI 1 INPUT
CBL/SAT
HDMI 2 INPUT
DVD
HDMI 3 INPUT
Blu-ray
HDMI 4 INPUT
GAME
HDMI 5 INPUT
Media Player
HDMI 6 INPUT
AUX2
HDMI 7 INPUT
CD
HDMI 8 INPUT
FRONT
from NETWORK
LBDO_VideoSignal(Clock/HS/VS/DE)
LBDO_VBGSdata(R:8bit/B:8bit/G:8bit)
Matlix SW2 Rx MN864788
Matlix SW1 Rx MN864788
HDMI Tx scaler MN864787
VIDEO DECODER ADV7850
VIDEO PLD EPM570F256
I/P scaler GUI ADV8003
S.FLASH 128Mbit
DDR2
DDR2
Z2 SPDIF
SPDIF_Z2HDMI
to DIGITAL AUDIO
HDMI MONITOR1 ZONE2
HDMI MONITOR1 ZONE1
HDMI MONITOR2 ZONE1
TO D.AUDIO (I2S/DSD)
TO D.AUDIO (SPDIF)
FROM D.AUDIO (I2S)
I2S/DSD_HDMIRX
SPDIF_HDMIRX
I2S_HDMITX
from DIGITAL AUDIO
AVDM2000
COMPONENT INPUT1 SAT
COMPONENT INPUT2 DVD
COMPONENT INPUT3 BD
AVR-X7200 only
COMPOSITE INPUT CBL/SAT
COMPOSITE INPUT DVD
COMPOSITE INPUT Blu-ray
COMPOSITE INPUT GAME
COMPOSITE INPUT V.AUX
COMPONENT MONITOR ZONE1/2
COMPONENT MONITOR ZONE2
CVBS MONITOR ZONE1
CVBS MONITOR ZONE2

JIG FOR SERVICING

Use the following jigs (extension cable kit) when repairing the PCBs.
Order with your dealer for the jigs your dealer if necessary.

CAUTION : Incorrect connections may cause malfunction.

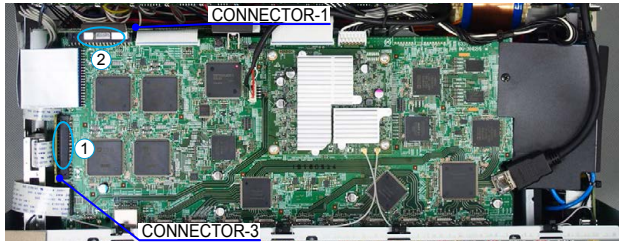
Connection of Jig for DIGITAL PCB
---Items to Be Prepared---
8U-1100845 : EXTENSION UNIT KIT : 1 Set
Insulation sheet (Not supplied) : 1 sheet
Ground lead (Not supplied) : 1 pc

-Proceeding-
(1) Remove the screws.

(2) Remove the connector PCB.

(3) Remove the DIGITAL PCB from the chassis and turn it over.
Place an insulation sheet larger than the PCB underneath the DIGITAL PCB.
※ Connect the earth of the PCB to the chassis using an earth wire, etc.

(4) Connect the expansion cables.



Board-to-Board Connections

No.	Pin	Ref. No.	PCB		Ref. No.	PCB
①	33pin	N5202	CONNECT-3	⟷	N6014	DIGITAL
②	33pin	N5907	CONNECT-1	⟷	N6012	DIGITAL

Adjusting Idling Current

1. Preparation

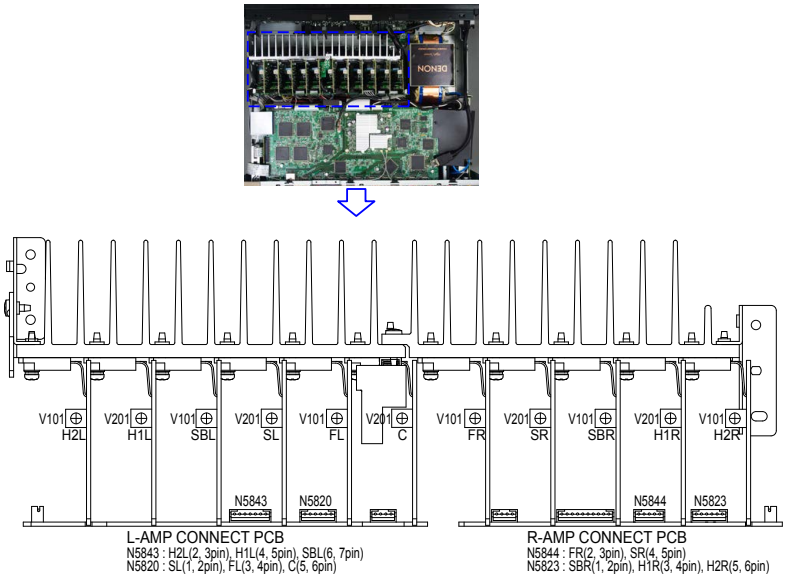
(1) Prepare a DC voltmeter.
(2) Place the unit under normal usage conditions, away from highly ventilated areas such as next to an air conditioning machine or electric fan.
The set requires an ambient temperature of 15℃ to 30℃ and standard humidity.
(3) Settings of This Unit
• POWER (Power source switch) STANDBY
• SPEAKER (Speaker terminal) No load
(Do not connect equipment such as speakers or dummy resistors.)

2. Adjustment Procedure

(1) Remove the top cover and turn "**V101/V201**"(ALL Channel) of the AMP PCB counterclockwise(↺) as far as possible.
(2) Connect the DC Voltmeter to the test points.

FRONT Lch	: N5820 3, 4pin	: V101
FRONT Rch	: N5844 2, 3pin	: V201
CENTER ch	: N5820 5, 6pin	: V101
SURROUND Lch	: N5820 1, 2pin	: V101
SURROUND Rch	: N5844 4, 5pin	: V201
SURROUND-BACK Lch	: N5843 6, 7pin	: V101
SURROUND-BACK Rch	: N5823 1, 2pin	: V201
HEIGHT1 Lch	: N5843 4, 5pin	: V101
HEIGHT1 Rch	: N5823 3, 4pin	: V201
HEIGHT2 Lch	: N5843 2, 3pin	: V101
HEIGHT2 Rch	: N5823 5, 6pin	: V201

(3) Connect the power cord to an outlet. Next, press the power button to turn on the power.
(4) Set this unit as follows.
MASTER VOLUME : "---" (↺ min.) : turn counterclockwise to the lowest position.
SPEAKER (Speaker terminal) : No load
(Do not connect equipment such as speakers or dummy resistors.)
MODE : Multi Ch Stereo
FUNCTION : DVD
(5) Turn "**V101/V201**" clockwise (↻) and adjust the voltage of the test point to "**8.0mV ± 0.5mV DC**" within 2 minutes.
(6) 10 minutes after the preliminary adjustment, turn **V101/V201** and set the voltage to "**8.0mV ± 0.5mV DC**".
(7) Adjust the variable resistance of each channel using the same method.



UPDATING

PROCEDURE AFTER REPLACING THE DIGITAL PCB.

PROCEDURE AFTER REPLACING THE U-COM, ETC.

FIRMWARE UPDATE PROCEDURE

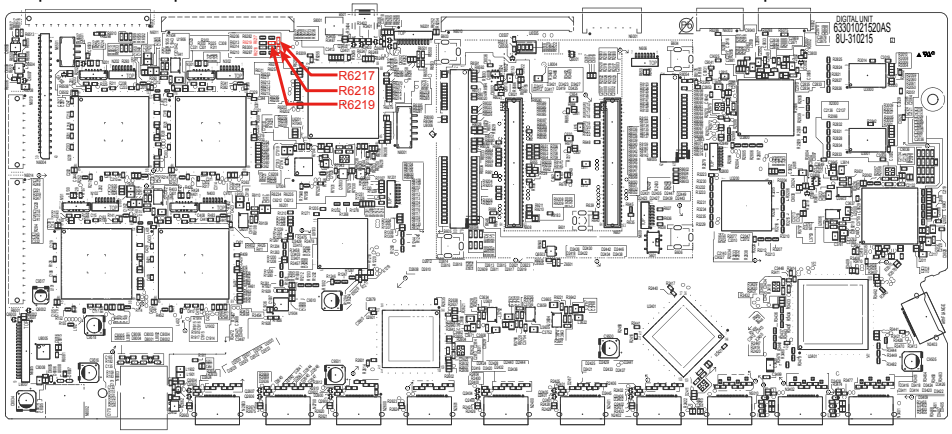
PROCEDURE AFTER REPLACING THE DIGITAL PCB.

The procedure after replacing the DIGITAL PCB is as follows.
(1) Change the resistor for setting the region.

Model Area	DIGITAL PCB		
	R6217	R6218	R6219
North America (E3)	OPEN	0	OPEN
Europe (E2)	0	OPEN	OPEN
Japan (JP)	OPEN	OPEN	0

See the PCB below.

(2) Be sure to replace the software with the latest version.
Implement the update method when the DIGITAL PCB or network module is replaced.



PROCEDURE AFTER REPLACING THE U-COM, ETC.

The procedure after replacing the u-COM (microprocessor), flash ROM, etc. is as follows.
Implement the update method when the DIGITAL PCB or network module is replaced.

PCB Name	Ref. No.	Description	Procedure after Replacement	Remark
DIGITAL	U6201	R5F564MJCDFC	B	SOFTWARE : Main
DIGITAL	U0102 U0202 U0302 U0402	MX25L1606EM2I-12G	B	SOFTWARE : DSP1/2/3/4 ROM
DIGITAL	U2801	MX25L12835FMI-10G	B	SOFTWARE : GUI ROM
DIGITAL	U9103	5M570ZF256C5N	C	SOFTWARE : AUDIO PLD
DIGITAL	U3200	EPM570F256C4N	C	SOFTWARE : VIDEO PLD
MODULE	28	NETWORK MODULE	D	SOFTWARE : Network

Procedure after Replacement
A : The software has been written. The software is not written at the time of replacement.
B : The software has been written. The software may need to be rewritten by version updates. Check the version.
C : The software has not been written. The software needs to be written after replacement.
See "FIRMWARE UPDATE PROCEDURE" for information on writing the software.
D : ""The software has been written. Be sure to replace the software with the latest version.
See "3. Update method when the DIGITAL PCB or network module is replaced (Using a USB flash drive)" for information on writing the software.

FIRMWARE UPDATE PROCEDURE

1. Items necessary for update

Items necessary for update are as follows.

Update Type	Needed Part for Update	Requirement	Offered / not Offered		
			Standard Service Equipment Not offered by D&M	Purchase from D&M Article code	Download from SDI
Via USB	USB flash drive (USB 2.0 : Min 1GB) • We recommend a USB memory device that has an LED installed.	Formatting FAT16 or FAT 32	X	-	"Table 1" or "Table 2"
Via OTA	Internet Connection by Broadband Circuit	-	X	-	-
	Modem	-	X	-	-
	Router	-	X	-	-
	Ethernet cable (CAT-5 or greater is recommended)	-	X	-	-

Table 1

Update download file when the DIGITAL PCB or network module is replaced

Model Name	Model Area	Download from SDI
AVR-X6300H	ALL	avr_40.prod.update.factory.xxxx.zip

Table 2

Update download file when the firmware is updated (Two files, "HW component" and "LEGO component")

Model Name	Model Area	Download from SDI		
		For HW component		For LEGO component
AVR-X6300HE3	North America (E3)	Product ID : 000100940100	DPMS_AVR-X6300HE3_LEGO_PopupNone.zip	heos_40.prod_x.xxx.xx.zip
AVR-X6300HE2	Europe (E2)	Product ID : 000100940200	DPMS_AVR-X6300HE2_LEGO_PopupNone.zip	
AVR-X6300HJP	Japan (JP)	Product ID : 000100940400	DPMS_AVR-X6300HJP_LEGO_PopupNone.zip	

2. Update preparation with a USB flash drive

You can update the firmware by downloading the latest version with USB flash drive.

2.1. Connecting to the USB flash drive

(1) Preparation

・Windows PC

・USB flash drive format : Prepare a USB flash drive formatted in FAT16 or FAT32.
※We recommend a USB flash drive that has an LED installed.

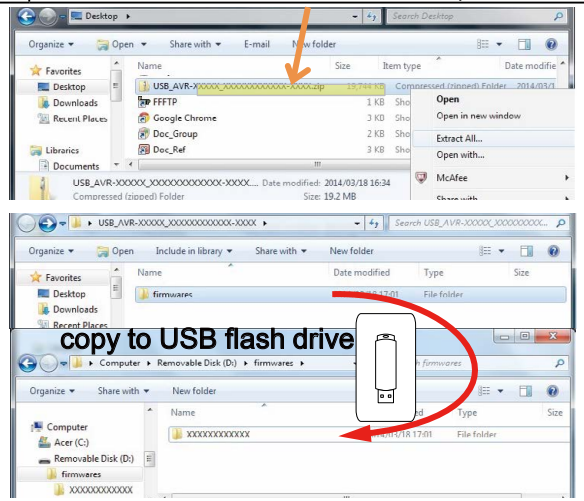
NOTE :

- Use a memory that supports USB2.0.
- Do not run the USB flash drive through a hub.
- Do not connect a computer to the USB port of this unit using a USB cable.
- Do not use an extension cable when connecting the USB flash drive.
- Save the update file on a blank USB flash drive for use.
- If a USB flash drive cannot be updated, replace it with a different USB flash drive and perform the update again.

2.2. Unzipping the Downloaded File

Unzip the downloaded file on your computer.

XXXXXXXXXXX	xxxxxxxxxx_xxxxxxxx.zip



There are folders or files after unzipping.
Copy these folders or files onto the USB flash drive.
The folders or files must be placed in the root directory of the USB flash drive.

3. Update method when the DIGITAL PCB or network module is replaced (Using a USB flash drive)

3.1. File structure on USB flash drive

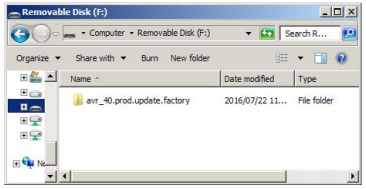
DIGITAL PCB or network module is replaced onto the USB flash drive in the following structure.

After unzipping the files, store them in the root of the same USB flash drive.

Model Area	Download from SDI
ALL	avr_40.prod.update.factory.xxxx.zip

USB flash drive root

+ avr_40.prod.update.factory
  + AV7xxxN.ota-download
  + AV7xxxU.ota-download
  + AVR-4xxxxE2.ota-download
  + AVR-4xxxxE3.ota-download
  + AVR-4xxxxJP.ota-download
  + AVR-6xxxxE2.ota-download
  + AVR-6xxxxE3.ota-download
  + AVR-6xxxxJP.ota-download
  + SR7xxxN.ota-download
  + SR7xxxU.ota-download
  + heos_40.prod.update.factory



3.2. Start the update.

NOTE :

- Remove the LAN cable from this unit when updating.
  (Do not connect to a wired or wireless network.)
- The GUI menu setting details and image quality adjustment setting details are initialized when Firmware Factory Restore is performed. Therefore, take a note of the setting details beforehand and reconfigure the settings after update.

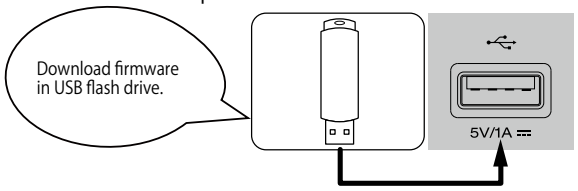
△3 • For Auro3D upgrades, quit (10) before upgrading to Auro3D.

(1) Press the power button to turn on the power.
(2) Wait for this unit to start up.
(3) Set the input source to Online Music.

L1	▶TuneIn Internet Radio	or	No Network Connection
L2	HEOS Favorites		

L1 : Content of the display is scrolled.

(4) Insert the USB flash drive into the USB port.



(5) USB Update starts automatically.
The Standby LED lights red.
Display during USB update

L1	Please wait▶▶▶▶▶

↓

L1	Updating▶▶▶ xx%
L2	xxmin

↓

L1	Update Completed

It takes a maximum of approximately 25 minutes for update to complete.

(6) The unit restarts when update is complete.
※When update is complete, the folder name on the USB flash drive changes to "**avr_40.prod.update.factory.done**". To use the files again, delete the "**.done**" part.

(7) Execute Firmware Factory Restore.
While holding down buttons "**SETUP**" and "**DIMMER**" simultaneously, press the power button to turn on the power.
Display during Firmware Factory Restore

L1	Restoring FW...

↓

L1	Restore ▶▶▶ xx%
L2	xxmin

↓

L1	Completed

It takes approximately 15 minutes for Firmware Factory Restore to complete.

(8) Execute Service Region Settings.
See "4. Update Method for Service Region Settings"

(9) Check that the version is the specified version. See "1. Version Display Mode"

△2 •If it takes more than 90 seconds to display the HEOS Version, perform "**(7) Execute Firmware Factory Restore.**" again.

△2 △4 (10)If necessary, use OTA or the USB flash drive to update the firmware to the newest version.
※If product is upgraded Auro-3D, please update the new firmware by USB not OTA.
See "5. Normal Firmware Update Method from USB Flash Drive" or "6. Normal Firmware Update Method from OTA"

---Cautions on Firmware Update---

- Do not remove the USB flash drive until updating is completed.
- Do not turn off the power until updating is completed.
- It takes a maximum of approximately 25 minutes for update to complete.

Once an update is started, normal operations cannot be performed until it is completed.

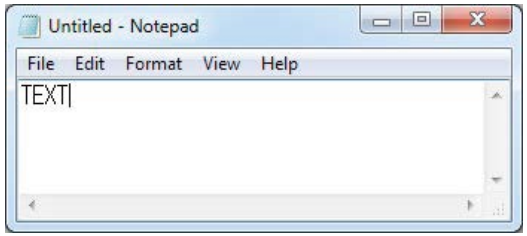
4. Update Method for Service Region Settings

Copy the Service Region Settings from the USB flash drive to this unit.

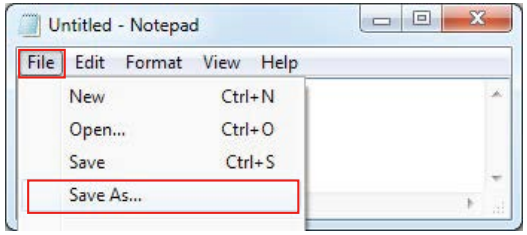
4.1. Creating a Service Region Settings file

(1) Click [Start button] - [Accessories] - [notepad] on the PC to launch the notepad.

(2) Enter "**TEXT**".



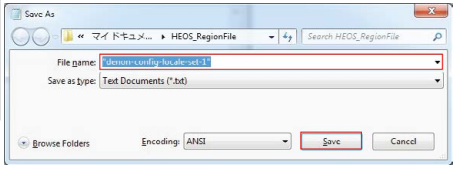
(3) Click "**File**", and then click "**Save As...**".



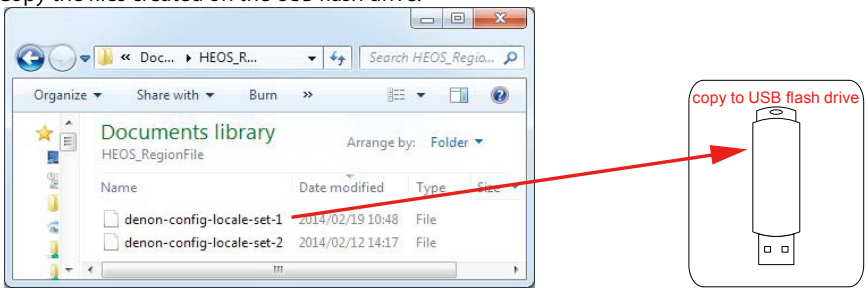
(4) Enter the file name and click the Save button.
NOTE : Enter the file name in double quotation marks. (The file extension is not required.)

△6

Service Region	File name
North America	"denon-config-locale-set-1"
Europe	"denon-config-locale-set-2"
Japan	"denon-config-locale-set-3"
Australia	"denon-config-locale-set-4"
Korea	"denon-config-locale-set-5"
China	"denon-config-locale-set-6"
Israel	"denon-config-locale-set-7"



(5) Copy the files created on the USB flash drive.



4.2. Starting Service Region Settings

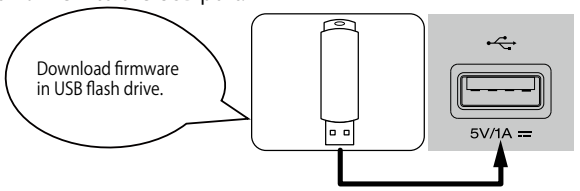
NOTE :
- Remove the LAN cable from this unit when updating.
  (Do not connect to a wired or wireless network.)
- We recommend a USB memory device that has an LED installed.

(1) Press the power button to turn on the power.
(2) Wait for this unit to start up.
(3) Set the input source to Online Music.

L1	▶TuneIn Internet Radio	or	No Network Connection
L2	HEOS Favorites		

L1 : Content of the display is scrolled.

(4) Insert the USB flash drive into the USB port.



(5) Wait for at least 10 seconds before removing the USB flash drive.
(If the USB flash drive has an LED, this LED will be flashing. Remove the USB flash drive when the LED stops flashing.)

5. Normal Firmware Update Method from USB Flash Drive

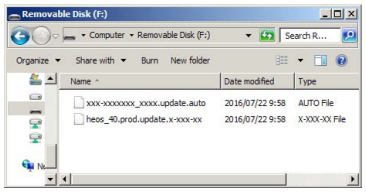
5.1. File structure on USB flash drive

Copy the normal update files onto the USB flash drive in the following structure.

After unzipping the HW component USB update files for the target model and LEGO USB update files, store them in the root of the same USB flash drive.

Model Area	Download from SDI	
	For HW component	For LEGO component
North America (E3)	DPMS_AVR-X6300HE3_LEGO_PopupNone.zip Product ID : 000100940100	heos_40.prod_x.xxx.xx.zip
Europe (E2)	DPMS_AVR-X6300HE2_LEGO_PopupNone.zip Product ID : 000100940200	
Japan (JP)	DPMS_AVR-X6300HJP_LEGO_PopupNone.zip Product ID : 000100940400	

USB flash drive root
+ AVR-X6300Hxx_xxxx.update.auto
+ heos_40.prod.update.x-xxx-xx



5.2. Start normal update

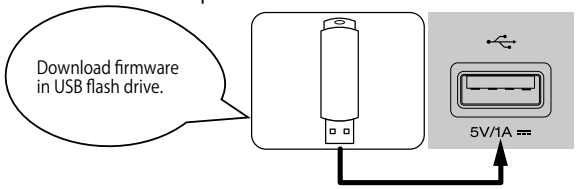
NOTE :
- Remove the LAN cable from this unit when updating.
  (Do not connect to a wired or wireless network.)

(1) Press the power button to turn on the power.
(2) Wait for this unit to start up.
(3) Set the input source to Online Music.

L1	▶TuneIn Internet Radio	or	No Network Connection
L2	HEOS Favorites		

L1 : Content of the display is scrolled.

(4) Insert the USB flash drive into the USB port.



(5) USB Update starts automatically.
The Standby LED lights red.
Display during USB update

L1	Please wait▶▶▶▶▶

↓

L1	Updating▶▶▶ xx%
L2	xxmin

↓

L1	Update Completed

It takes a maximum of approximately 25 minutes for update to complete.

(6) The unit restarts when update is complete.

(7) After updating the firmware, check the version.
See "1. Version Display Mode"

⚠2 •If it takes more than 90 seconds to display the HEOS Version, perform "**Firmware Factory Restore**" and then perform "**5.2. Start normal update**" again.
See "(7) Execute Firmware Factory Restore." in 3.2. Start the update.

---Cautions on Firmware Update---

- Do not remove the USB flash drive until updating is completed.
- Do not turn off the power until updating is completed.
- It takes a maximum of approximately 25 minutes for update to complete.

Once an update is started, normal operations cannot be performed until it is completed.
The GUI menu settings and image adjustment settings of this unit may be initialized.
Note down the settings before updating, and set them again after updating.

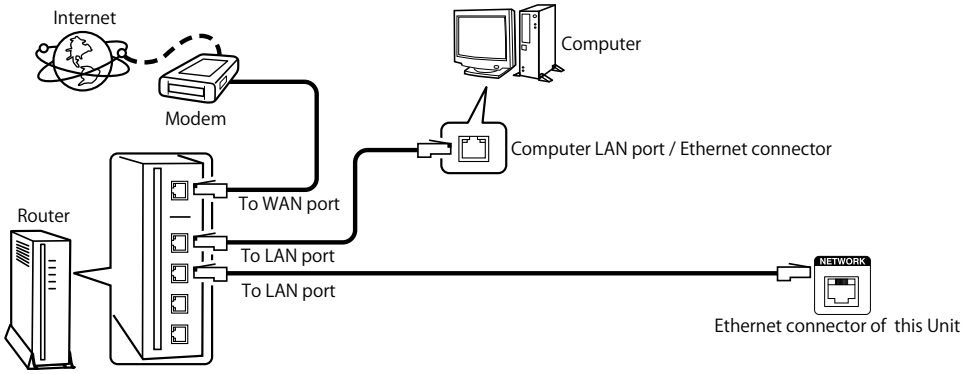
6. Normal Firmware Update Method from OTA

Download the latest firmware from our website and update the firmware.

6.1. Network Connection

(1) System Requirements
- Internet Connection by Broadband Circuit
- Modem
- Router
- Ethernet cable (CAT-5 or greater is recommended)

(2) Setting



6.2. Check and update the firmware

Check if there is a firmware update available. It is also possible to check approximately how long the update will take.

(1) Press the "**SETUP**" button on the remote control to display the GUI menu.

(2) Press the cursor button to select "**General**" → "**Firmware**" → "**Update**" → "Check for Update".

(3) Check update
- If the firmware version is anything other than the latest version, select "**Update Now**" to update the firmware.
- "**No update required. Latest version installed.**" is displayed when the firmware version is up to date.

(4) OTA Update starts automatically.
The Standby LED lights red.

Display during OTA update

L1	Please wait▶▶▶▶▶

↓

L1	Updating▶▶▶ xx%
L2	xxmin

↓

L1	Update Completed

It takes a maximum of approximately 25 minutes for update to complete.

(5) The unit restarts when update is complete.

(6) After updating the firmware, check the version.
See "1. Version Display Mode"

---Cautions on Firmware Update---

- For the update procedure, a proper broadband Internet connection environment and settings are required.
- Do not turn off the power until updating is completed.
- It takes a maximum of approximately 25 minutes for update to complete.

Once an update is started, normal operations cannot be performed until it is completed.
The GUI menu settings and image adjustment settings of this unit may be initialized.
Note down the settings before updating, and set them again after updating.

7. About the error codes

See the table below for details on error codes and solutions when updating the firmware.
Error codes are displayed in 4 digits, YYXX(YY : DeviceID, XX : ErrorCode).

L1	Updating▶▶▶ 25%
L2	***min

↓

L1	Update ErrorYYXX
L2	Please check you

L2 : Content of the display is scrolled.

Remedies

Error Code (YYXX)	Remedies
000A	"Connection failed. Please check your network, then try again."
0009	"Update failed. Please check your network, then try again."
0009	"Upgrade failed. Please check your network, then try again."
YY00 YY01 YY02 YY03 YY04 YY07	"Please check your network, unplug and reconnect the power cord, and try again."
YY00 YY01 YY02 YY03 YY04 YY07	"Please unplug and reconnect the power cord, and try again."
0005	"Incompatible update file found on the USB device. Please check the file."
0006	"Update file is corrupted. Please check the file."
000B	"Please contact customer service in your area." ※ Check the power supply and communication lines of each device.

Device ID table

Device ID (YY)	Device Name
00	General
01	Main CPU
0B	Main FBL (No used)
11	DSP1
12	DSP2
13	DSP3
19	DSP4
15	Audio PLD
22	Video PLD
2A	GUI (ADV8003)
33	LEGO

Error Code table

Type code (XX)	Description
00	Logical error
01	Error during erasing
02	Error during writing
03	Error during verifying
04	No access for the component
05	Package mismatched. Product ID, package version un-matched of the package manifest
06	Unpack dis-available of component package file
07	Time out
08	Latest firmware has already installed.
09	Error during download
0A	Error connection
0B	Hardware Error

---Checking the Firmware Version After the Update---

After updating the firmware, check the version.
See "1. Version Display Mode"

Appendix

Scope of Application

This Appendix describes products for which Service Bulletin DZ16-108 durability compatibility has been implemented.
Applicable serial numbers

AVRX6300HBKE3	AMU15170302861 ～
AVRX6300HBKE2	ABH15170302511 ～
AVRX6300HSPE2	ABK15170300701 ～
AVRX6300HK	ABJ1517XX00471 ～

NOTE :
For durability compatibility for products with an earlier serial number than those above, please arrange 9U-210222-E3 (North America), 9U-210222A-E2 (Europe) or 9U-210222B-JP (Japan).
Replace the circuit boards with those below at the same time.
8U-210222-1 : AUDIO/VIDEO UNIT
8U-210222-2 : DAC UNIT

Applicable SCHEMATIC DIAGRAMS

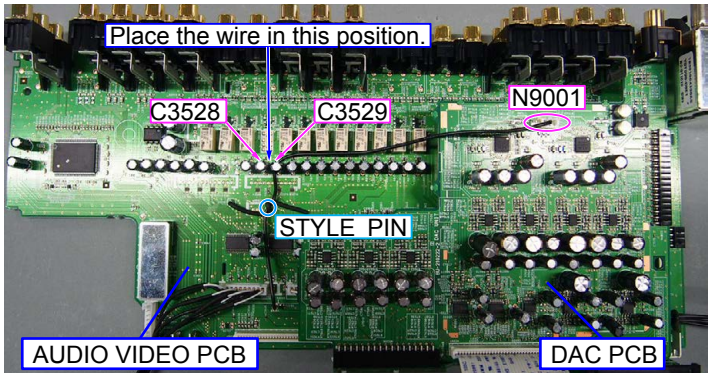
SCH20_AUDIO/VIDEO CONNECT_Appendix
SCH26_ZONEDAC ADC_Appendix
SCH27_MAIN DAC_Appendix

Applicable PRINTED CIRCUIT BOARDS

AUDIO VIDEO, DAC
NOTE : When replacing the AUDIO VIDEO PCB and DAC PCB, refer to "**Confirmation Method when Replacing the AUDIO VIDEO and DAC PCB**".

Precautions for Assembly

Be sure to shape wires correctly during assembly.
(1) Push the wire into the circuit board with the STYLE PIN.



Confirmation Method when Replacing the AUDIO VIDEO and DAC PCB

1. Required Equipment

- TV Monitor (with HDMI input (enable to receive 720p or over))
- DBT-3313UD (Required for DENON LINK HD)
- BD Player (ANALOG RCA audio output, Optical output and COMPONENT output)
- BD Disc (with DTS-HD fs = 96 kHz/7.1 ch sound recorded on it)
- CD Disc
- Pre-main Amplifier (with ANALOG RCA stereo audio input)
- Loudspeakers
- HEOS Speaker
- Active Subwoofer
- USB memory device (formatted with FAT16 or FAT32 file system and including 44.1kHz/16 bits wav format file)
- iPhone or other Bluetooth supported music player
- HEOS App installed iOS Device or Android Device.
- Wireless LAN Router (that also can be connected with a wired LAN)
- LAN cable
- DLNA Server (NAS) (with music loaded on it)
- FM antenna and antenna cable (only for models that are equipped with a TUNER)

2. Confirmation Method

1) Connect the speakers to the Pre-main Amplifier.

2) Connect the TV Monitor to "**HDMI OUT1**" terminal of the AV amplifier.

4) Connect the DBT-3313UD outputs (HDMI Out DENON LINK HD) to the "**HDMI IN3 (Blu-lay)**" terminal, and "**DENON LINK HD**" terminal respectively.

3) Connect the BD Player outputs (HDMI OUT & Component Out & Analog Audio Out & Optical Audio Out) to the "**AUX1-HDMI**" terminal, "**COMPONENT IN2 (DVD)**" terminal, "**AUDIO IN DVD**" terminal, and "**DIGITAL AUDIO IN CD**" terminal respectively.

4) Connect the USB memory device to the FRONT USB port.

5) Connect AV amplifier to the Router via Wireless LAN.

6) Connect the DLNA Server to the Router with a LAN cable.

7) Connect the HEOS Speaker to the Router.

8) Connect the FM antenna to the antenna terminal of the AV amplifier with an antenna cable (only for models that are equipped with a TUNER).

9) While simultaneously pressing "**Cursor Up**" and "**Cursor Down**" buttons, press "**POWER ON/OFF**" button to turn the power ON. After confirming that FL tube starts flushing at intervals of about 1 second, release the two buttons.

10) Press "**MENU**" button and confirm that GUI is displayed on the TV screen. Use the cursor key to select "**Speakers>Manual Setup>Amp Assign**" and set "**Assign Mode**" to "**11.1ch**". and set "**-Height Sp**" to "**4ch**".

11) Press "**MENU**" button and confirm that GUI is displayed on the TV screen. Use the cursor key to select "**Speakers>Manual Setup>Speaker Config**" and set "**Subwoofer**" to "**2spkers**".

12) Set the BD disc to the DBT-3313UD.

13) Turn "**SOURCE SELECT**" knob, and set Source to "**AUX1**". Play the track with DTS-HD fs=96 kHz/7.1 ch sound recorded in it with the DBT-3313UD, and press "**Music**" button on the remote, and select "**Multi Ch Stereo**".
After that, confirm below.
(A) The video is output on TV.
(B) The sound is output from all the terminals when FR, FL, C, SR, SL, SBR, SBL, Hight1R, Hight1L, Hight2R, and Hight2L of the PREOUT output (RCA terminal) are connected to the Pre-main Amplifier.
(C) The sound is output from all the terminals when the subwoofer is connected to "**SW1 and SW2**".
(D) Denon Link HD indicator on BD Player lights up.

14) Set the BD disc to the BD Player.

15) Set the BD Player resolution to 720p or over.

16) Turn "**SOURCE SELECT**" knob, and set Source to "**AUX1**". Play the track with DTS-HD fs=96 kHz/7.1 ch sound recorded in it with the BD Player, and press "**Music**" button on the remote, and select "**Multi Ch Stereo**".
After that, confirm below.
(A) The video is output on TV.
(B) The sound is output from all the terminals when FR, FL, C, SR, SL, SBR, SBL, Hight1R, Hight1L, Hight2R, and Hight2L of the PREOUT output (RCA terminal) are connected to the Pre-main Amplifier.
(C) The sound is output from all the terminals when the subwoofer is connected to "**SW1 and SW2**".

17) Turn "**SOURCE SELECT**" knob, and set Source to "**DVD**". Play the BD Player, and press "**Music**" button on the remote, and select "**Multi Ch Stereo**".
After that, confirm below.
(A) The video is output on TV.
(B) The sound is output from all the speaker terminals.

18) Change the disc for BD Player to CD Disc, and Turn "**SOURCE SELECT**" knob, and set Source to "**CD**". Play the BD Player, and press "**Music**" button on the remote, and select "**Stereo**".
Tune Zone2 and Zone3 ON.
After that, confirm below.
(A) The sound is output from FL and FR speaker terminals.
After confirmation, connect speakers to FL and FR speaker terminals.
(B) The sound is output from all the terminals when Zone2R, Zone2L, Zone3R, and Zone3L of the PREOUT output (RCA terminal) are connected to the Pre-main Amplifier.

19) Via HEOS App, Operate HEOS speaker to start playing CD input source of the AVR.
After that, confirm below.
(A) The music that playing by BD Player can be played on HEOS speaker.

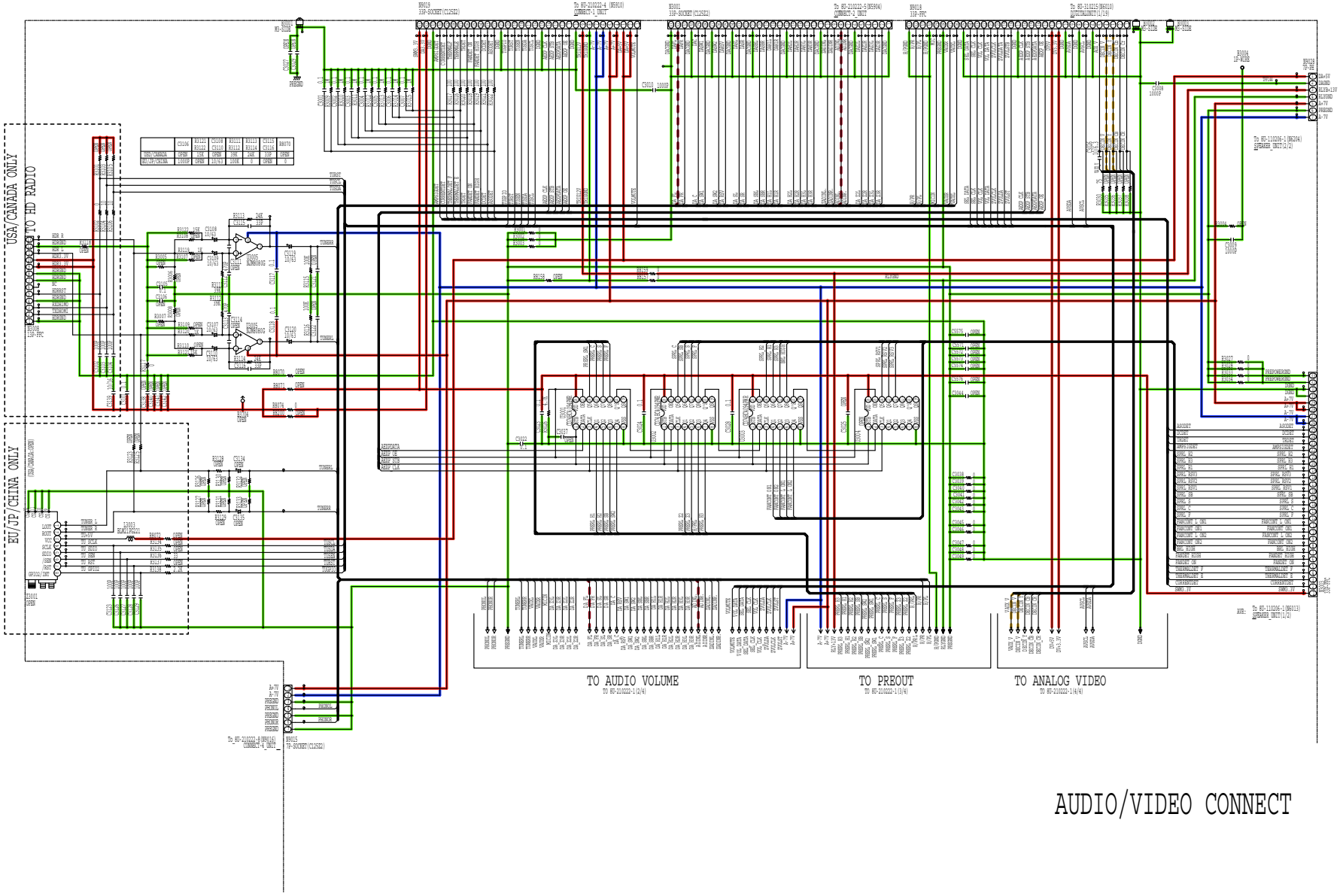
20) Turn "**SOURCE SELECT**" knob, and set Source to "**TUNER (FM)**". Confirm that the FM radio can be heard (only for models that are equipped with a TUNER).

21) Turn "**SOURCE SELECT**" knob, and set Source to "**Online Music**". Connect to the Network and confirm below.
(A) The music in the DLNA server can be played.
(B) The music in the USB memory device can be played.

22) Connect Bluetooth music player and confirm below.
(A) The music in the Bluetooth music player device can be played.

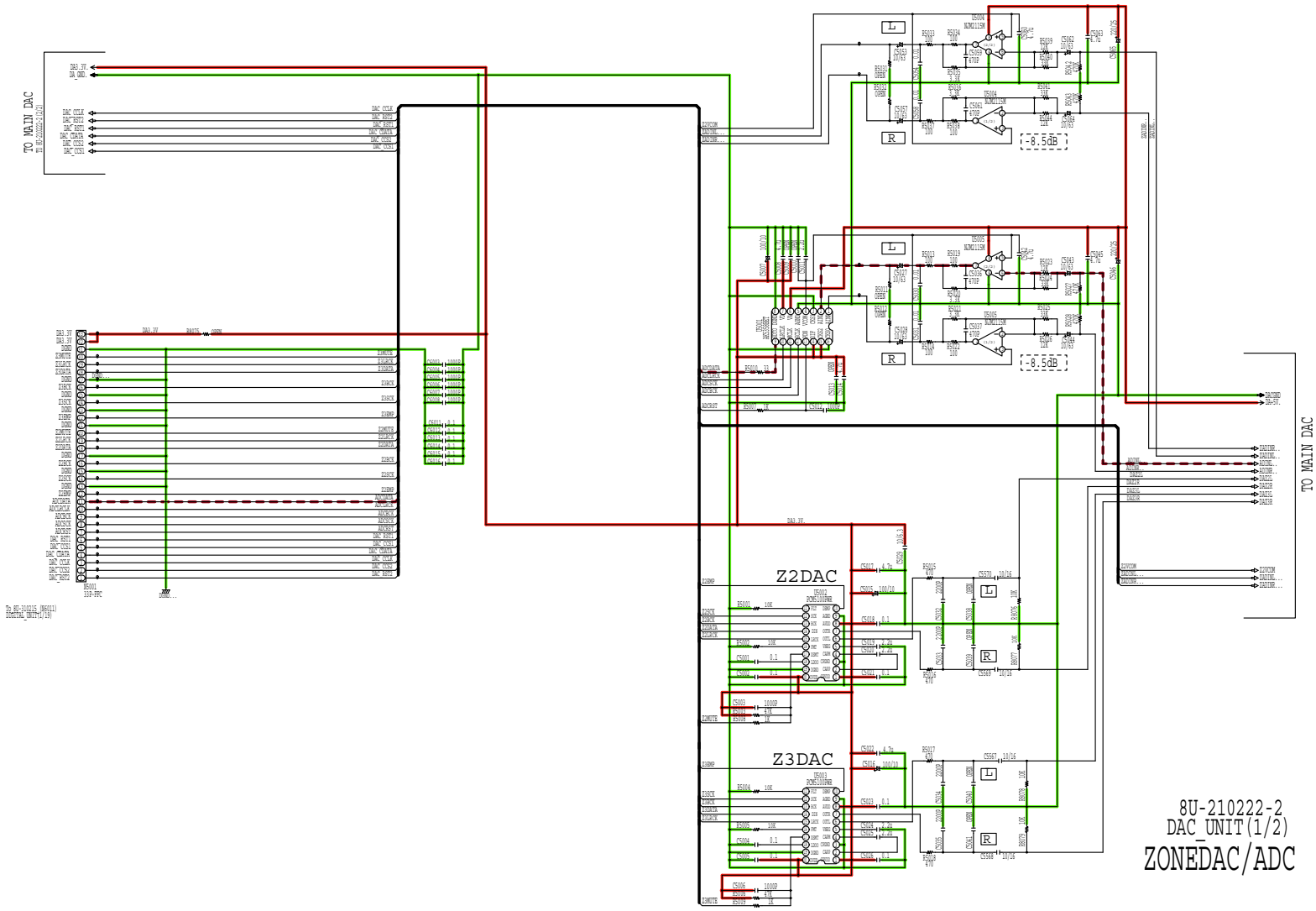
23) After turning the power OFF with "**POWER ON/OFF**" button, press "**POWER ON/OFF**" button while simultaneously pressing "**STANDARD**" and "**HOME THX CINEMA**" buttons to turn the power ON. After confirming that FL tube starts flushing at intervals of about 1 second, release the two buttons. Then, press "**POWER ON/OFF**" button to turn the power OFF.

SCH20_AUDIO/VIDEO CONNECT_Appendix

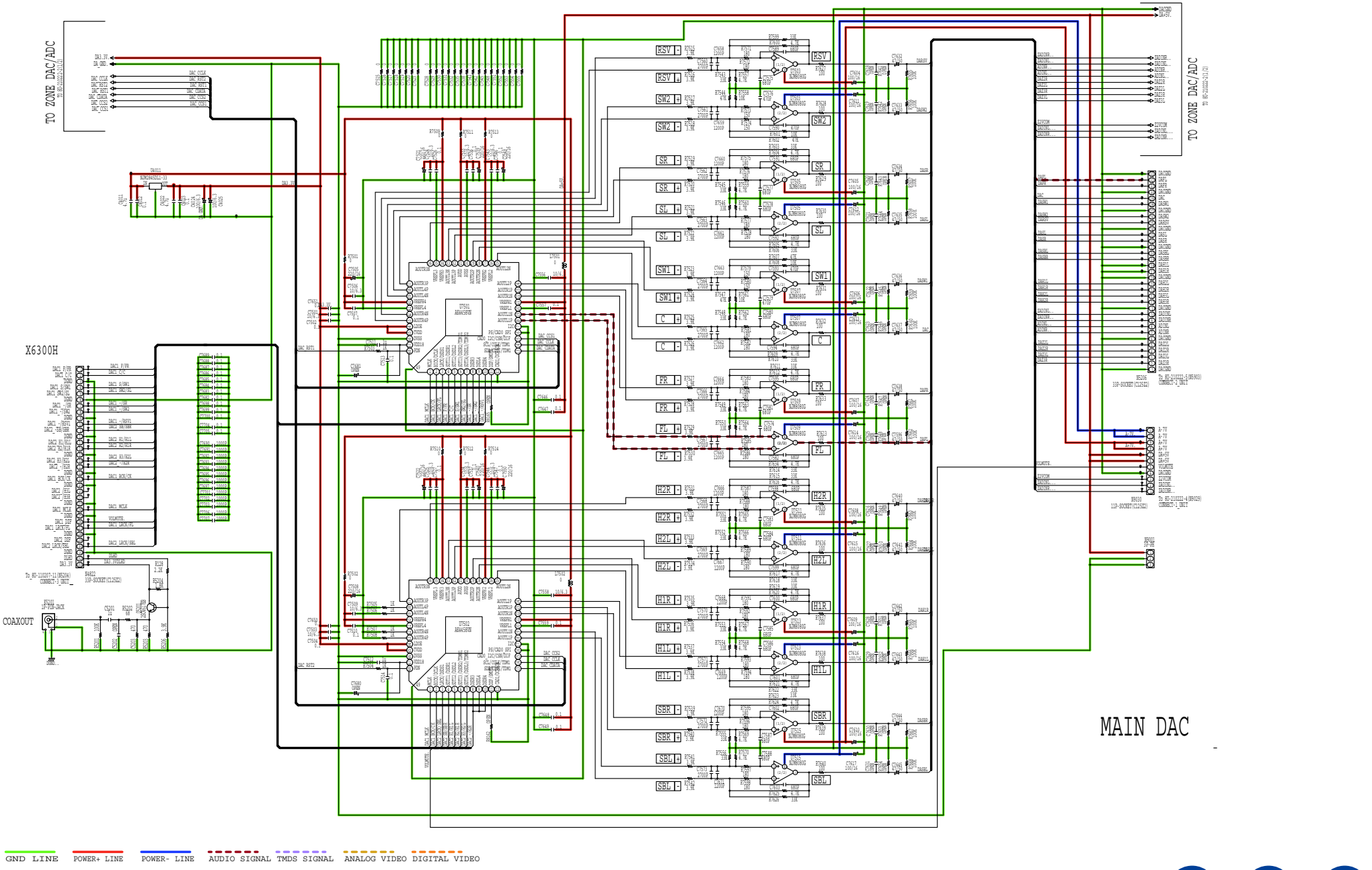


AUDIO/VIDEO CONNECT

GND LINE POWER+ LINE POWER- LINE AUDIO SIGNAL TMDS SIGNAL ANALOG VIDEO DIGITAL VIDEO



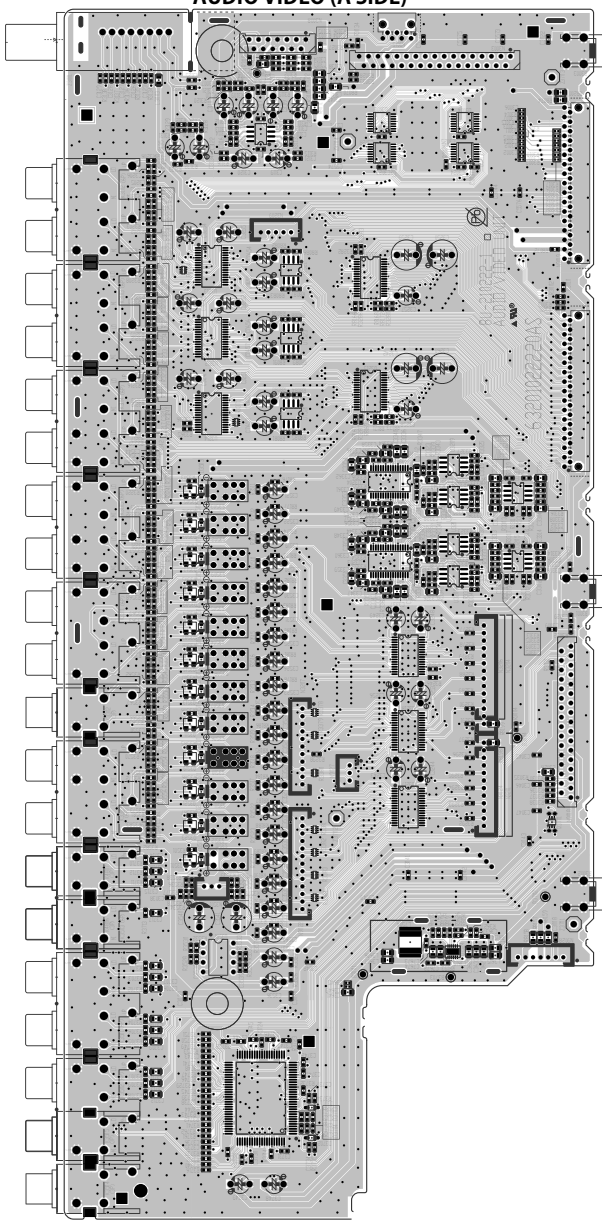
GND LINE POWER+ LINE POWER- LINE AUDIO SIGNAL TMDS SIGNAL ANALOG VIDEO DIGITAL VIDEO


TO ZONE DAC/ADC
X6300H
COAXOUT
MAIN DAC
GND LINE
POWER+ LINE
POWER- LINE
AUDIO SIGNAL
TMDS SIGNAL
ANALOG VIDEO
DIGITAL VIDEO

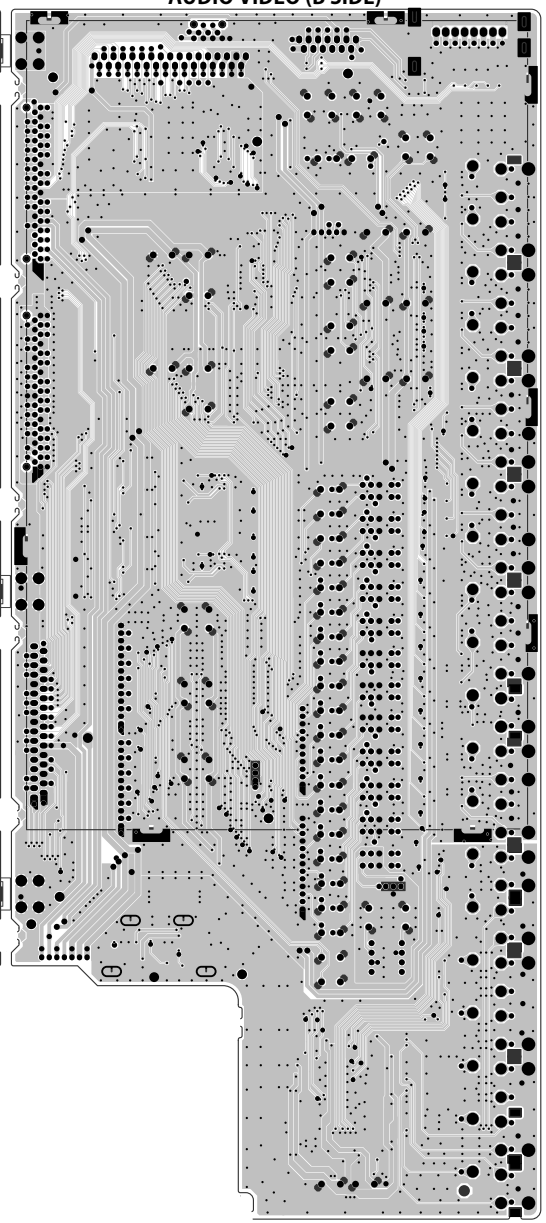
AUDIO VIDEO, DAC

Lead-free Solder
When soldering, use the Lead-free Solder (Sn-Ag-Cu).

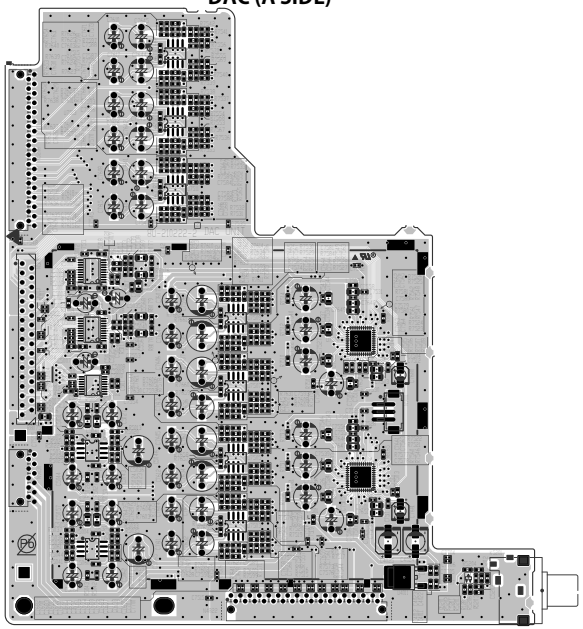
AUDIO VIDEO (A SIDE)



AUDIO VIDEO (B SIDE)



DAC (A SIDE)



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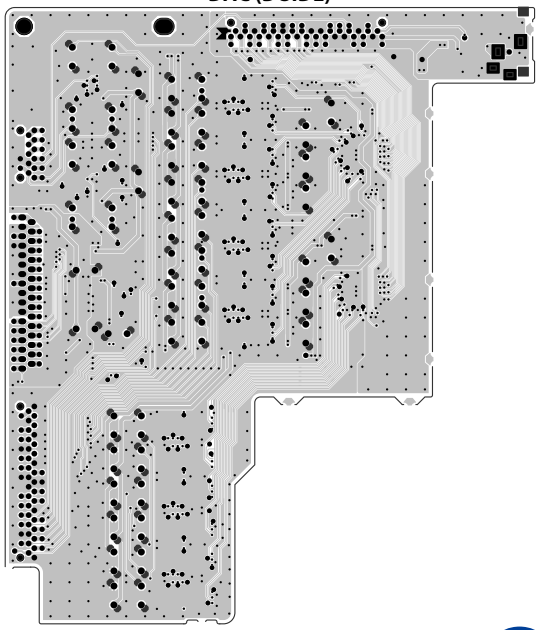

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