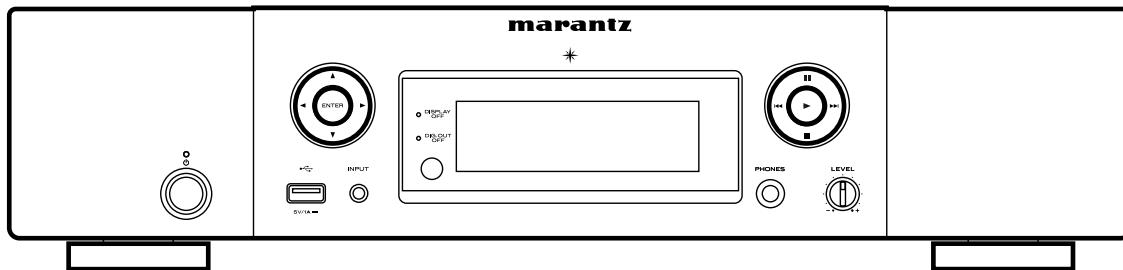


Service Manual

NA6005 /N1B, N1SG, U1B, K1B, FN

Network Audio Player



• 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.

marantz®

NA6005

Ver. 4

Please refer to the
MODIFICATION NOTICE.

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ABOUT THIS MANUAL

Read the following information before using the service manual.

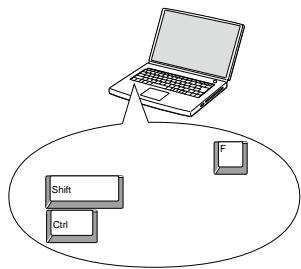
What you can do with this manual

Search for a Ref. No. (phrase) (Ctrl+Shift+F)

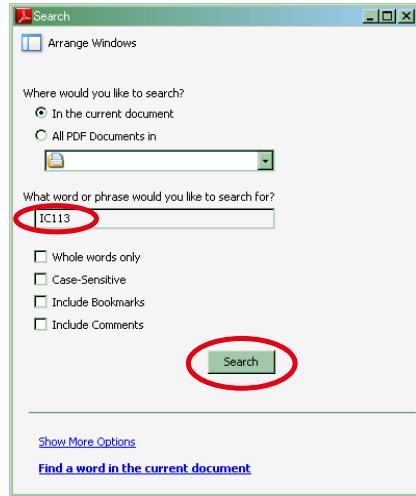
You can use the search function in Acrobat Reader to search for a Ref. No. in schematic diagrams, block diagrams, and parts lists.

1. Press **Ctrl+Shift+F** on the keyboard.

- The Search window appears.



2. Enter the Ref. No. you want to search for in the Search window, and then click the **Search** button.
• A list of search results appears.



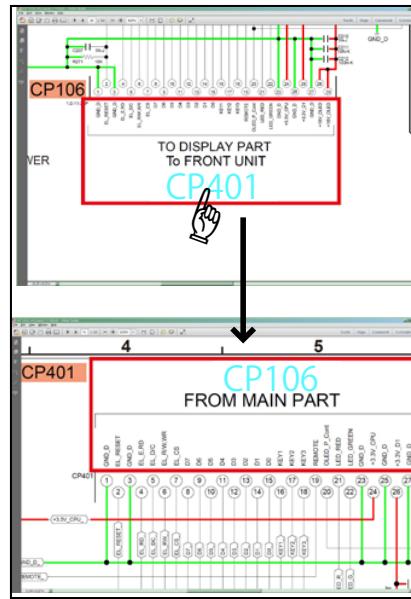
3. Click an item on the list.

- The screen jumps to the page for that item, and the search phrase is displayed.

Jump to the target of a schematic diagram connector

Click the Ref. No. of the target connector in the red box around a schematic diagram connector.

- The screen jumps to the target connector.



• Page magnification stays the same as before the jump.

Using Adobe Reader (Windows version)

Add notes to this data (Sign)

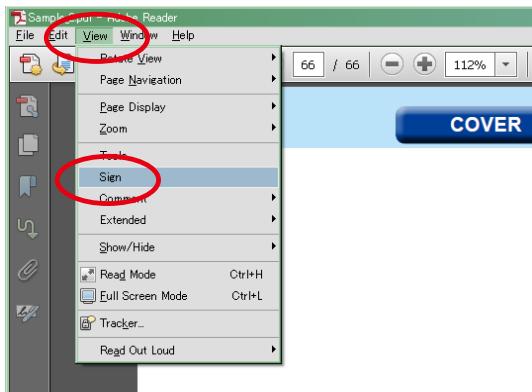
The Sign function lets you add notes to the data in this manual.

Save the file once you have finished adding notes.

[Example using Adobe Reader X]

On the "View" menu, click "Sign".

- The Sign pane appears.



[Example using Adobe Reader 9]

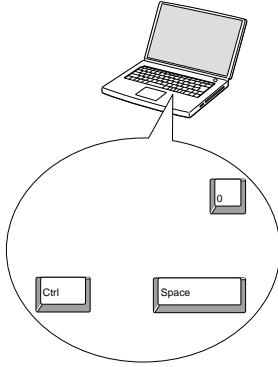
On the "Document" menu, click "Sign".

Magnify schematic / printed wiring board diagrams - 1

(Ctrl+Space, mouse operation)

Press **Ctrl+Space** on the keyboard and drag the mouse to select the area you want to view.

- The selected area is magnified.

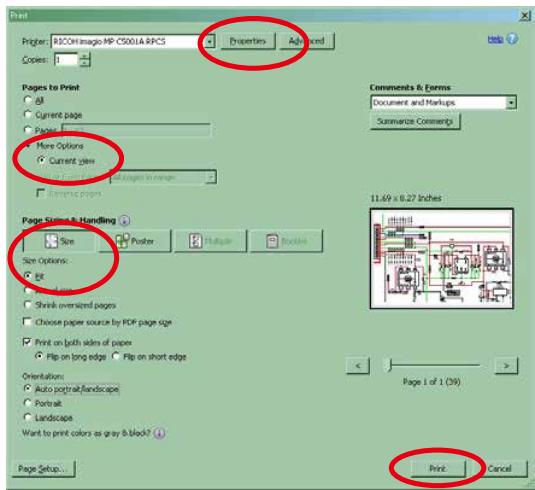


- When you want to move the area shown, hold down **Space** and drag the mouse.
- When you want to show a full page view, press **Ctrl+0** on the keyboard.

Print a magnified part of the manual

The Properties dialog box and functions will vary depending on your printer.

- Drag the mouse to magnify the part you want to print.
- On the "File" menu, click "Print".
- Configure the following settings in the Print dialog box.



- Click the **Print** button to start printing.

• Properties

Click this button and check that the printer is set to a suitable paper size.

• Page to print

Select the following checkbox.

"**More Options**" : "**Current View**"

• Page Sizing & Handling

Select the following checkbox.

"**Size**" / "**Size Options**" : "**Fit**"

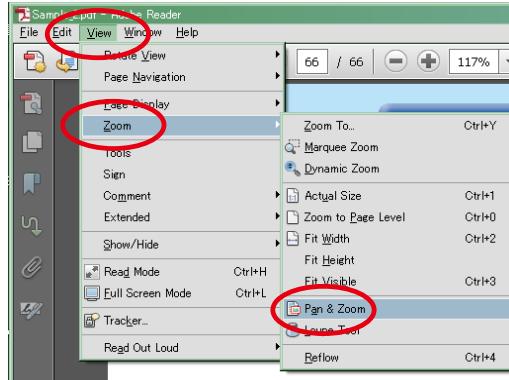
Magnify schematic / printed wiring board diagrams - 2

(Pan & Zoom function)

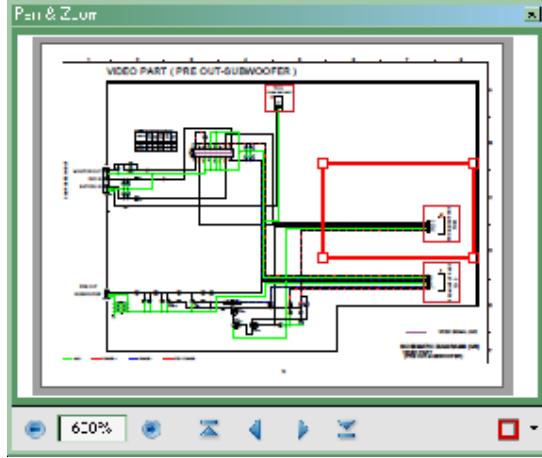
The Pan & Zoom function lets you see which part of a magnified diagram is being shown in a separate window.

[Example using Adobe Reader X]

On the "View" menu, point to "Zoom", and then click "Pan & Zoom".



- The Pan & Zoom window appears on the screen.



[Example using Adobe Reader 9]

On the "Tools" menu, point to "Select & Zoom", and then click "Pan & Zoom Window".

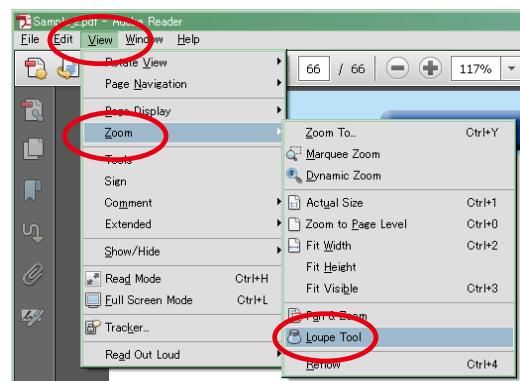
Magnify schematic / printed wiring board diagrams - 3

(Loupe Tool function)

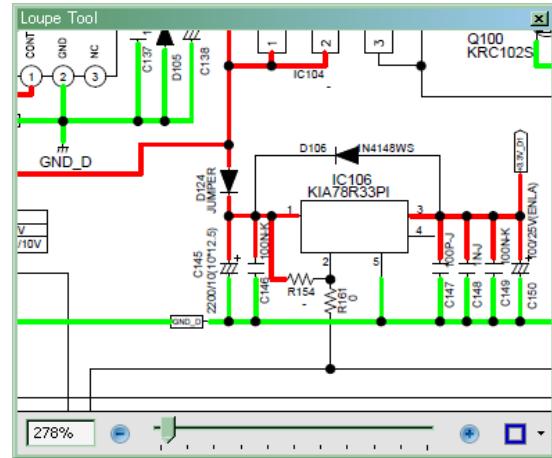
The Loupe Tool function lets you magnify a specific part of a diagram in a separate window.

[Example using Adobe Reader X]

On the "View" menu, point to "Zoom", and then click "Loupe Tool".



- The Loupe Tool window appears on the screen.



[Example using Adobe Reader 9]

On the "Tools" menu, point to "Select & Zoom", and then click "Loupe Tool Window".

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 millamps, 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 \triangle 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 $1M\Omega$ 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 \triangle mark.
- (2) Parts lists.....Indicated by the \triangle 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 millamps, 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. 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 SEMI-CONDUCTORS AND OPTICAL UNIT

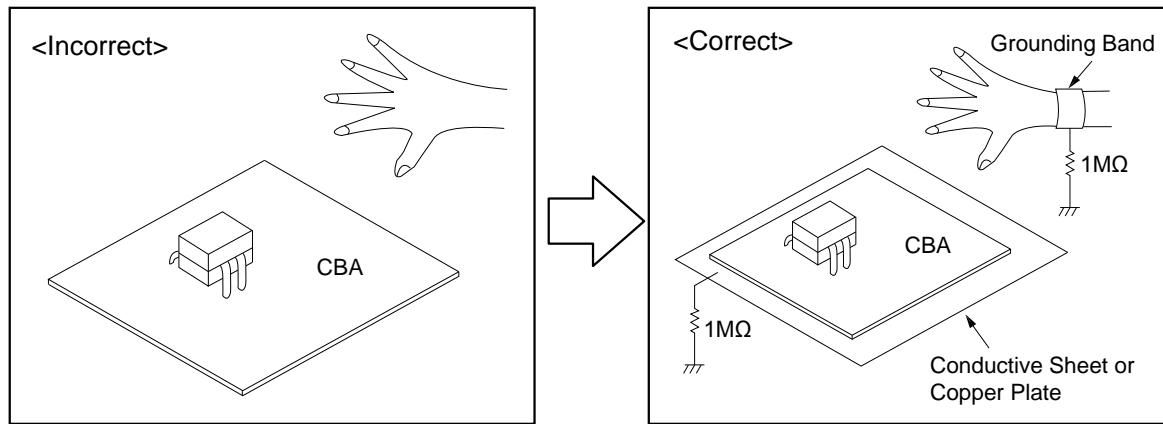
Electrostatic breakdown of the semi-conductors or optical pickup may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

1. Ground for Human Body

Be sure to wear a grounding band ($1 M\Omega$) 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 ($1 M\Omega$) 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.



Personal notes:

TECHNICAL SPECIFICATIONS

Audio section

	<input type="checkbox"/> [PCM]	<input type="checkbox"/> [DSD]
• Analog output		
Channels:	2-channels	2-channels
Playable frequency range:	2 Hz – 96 kHz	2Hz – 100kHz
Playable frequency response:	2 Hz – 96 kHz Sampling frequency: 192 kHz 2 Hz – 20 kHz (PCM sampling frequency: 44.1 kHz)	2 Hz – 50 kHz (-3 dB)
S/N:	110 dB (Audible range)	110 dB (Audible range)
Dynamic Range:	100 dB (Audible range)	105 dB (Audible range)
Harmonic Distortion:	0.0020% (1 kHz, Audible range)	0.0010% (1 kHz, Audible range)
• Output Level	2.1 Vrms	1.5 Vrms
• H/P Output Level	100 mW/32 Ω/ohms (variable maximum)	70 mW/32 Ω/ohms (variable maximum)
• Digital output		
Output:	-21 – -15 dBm	–

Tuner section

	[FM]	[AM]
Receiving Range:	87.5 MHz – 107.9 MHz	520 kHz – 1710 kHz
Effective sensitivity:	1.2 μV / 75 Ω/ohms	20 μV
FM Channel separation:	42 dB (1 kHz)	
FM S/N ratio:	Monaural : 70 dB Stereo : 70 dB	
Distortion:	Monaural : 0.5 % (1 kHz) Stereo : 0.5 % (1 kHz)	

Wireless LAN

Network type (wireless LAN standards):	Conforming to IEEE 802.11b Conforming to IEEE 802.11g Conforming to IEEE 802.11n (Wi-Fi® compliant)*
Security:	WEP 64 bit, WEP 128 bit WPA/WPA2-PSK (AES) WPA/WPA2-PSK (TKIP)
Radio frequency:	2.4 GHz
No. of channels:	1 – 13 ch

*(Wi-Fi® CERTIFIED) Logo and the Wi-Fi CERTIFIED On-Product Logo are registered trademarks of the Wi-Fi Alliance.

Bluetooth section

Communications system:	Bluetooth Version 2.1 + EDR (Enhanced Data Rate)
Transmission power:	Maximum 2.5 mW (Class 2)
Maximum communication range:	Approx. 10 m in line of sight* ²
Frequency band:	2.4 GHz band
Modulation scheme:	FHSS (Frequency-Hopping Spread Spectrum)
Supported profiles:	A2DP (Advanced Audio Distribution Profile) 1.2 AVRCP (Audio Video Remote Control Profile) 1.4
Corresponding codec:	SBC, AAC
Transmission range (A2DP):	20 Hz - 20,000 Hz

*²The actual communication range varies depending on the influence of such factors as obstructions between devices, electromagnetic waves from microwave ovens, static electricity, cordless phones, reception sensitivity, antenna performance, operating system, application software etc.

General

Power supply voltage/frequency:	AC 230 V, 50/60 Hz(N), AC 120 V 60 Hz(U), AC 100 V 50/60 Hz(F), AC 220 V, 50 Hz(K)
---------------------------------	---

Power consumption: 35 W

Power consumption in standby mode: 0.4 W

Power consumption in "Network Control" 4.0 W

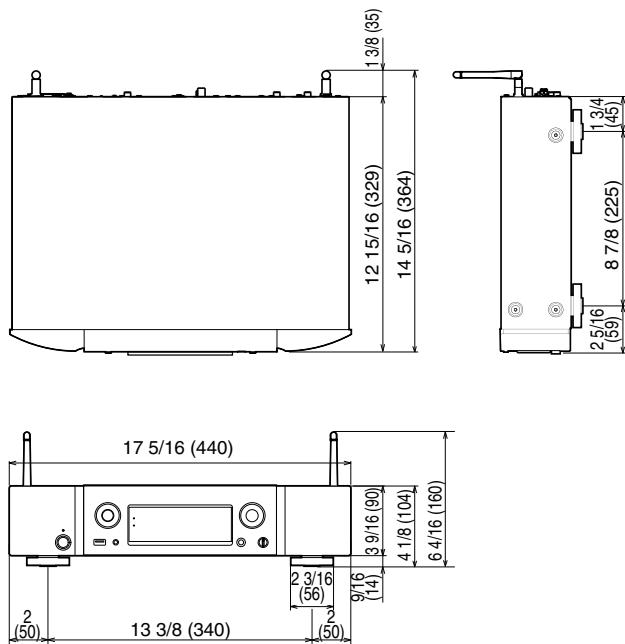
– "On" mode:

For the purpose of improvement, the specifications and design are subject to change without notice.

DIMENSION

Unit : in. (mm)

Weight : 13 lbs 4 oz (6.0 kg)



CAUTION IN SERVICING

Updating this unit

- When you replace the IC101, you need firmware updates. See "FIRMWARE UPDATE PROCEDURE".
- When you replace the WLAN MODULE, you need firmware updates. And MAC Address seal replacement is required. See "FIRMWARE UPDATE PROCEDURE".

Initializing this unit (Initialization for the factory)

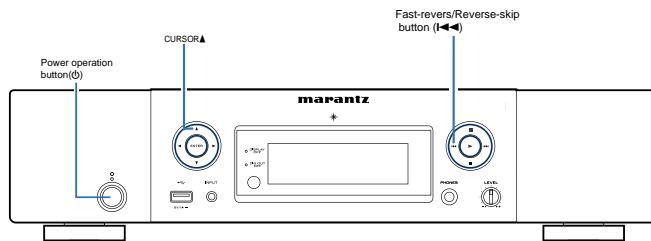
This unit initialization should be performed when the μcom, peripheral parts of μcom, and WLAN MODULE are replaced.



1. Press the power operation button "○" to turn off the power, and remove the AC plug from the socket.
2. While holding down buttons "**CURSOR ▲**" and "**INPUT**" simultaneously, insert the AC plug into the wall outlet to turn on the power. (Factory Reset)
3. Press the power operation button to place this unit on standby.
4. While holding down buttons "**CURSOR ▼**" and "**◀◀**" simultaneously, press the power button to turn on the power. (Initialized)
5. Wait for more than 90 seconds after "**Initialized**" is displayed and then turn the power off.
(During this time, start and initialize the network devices.)

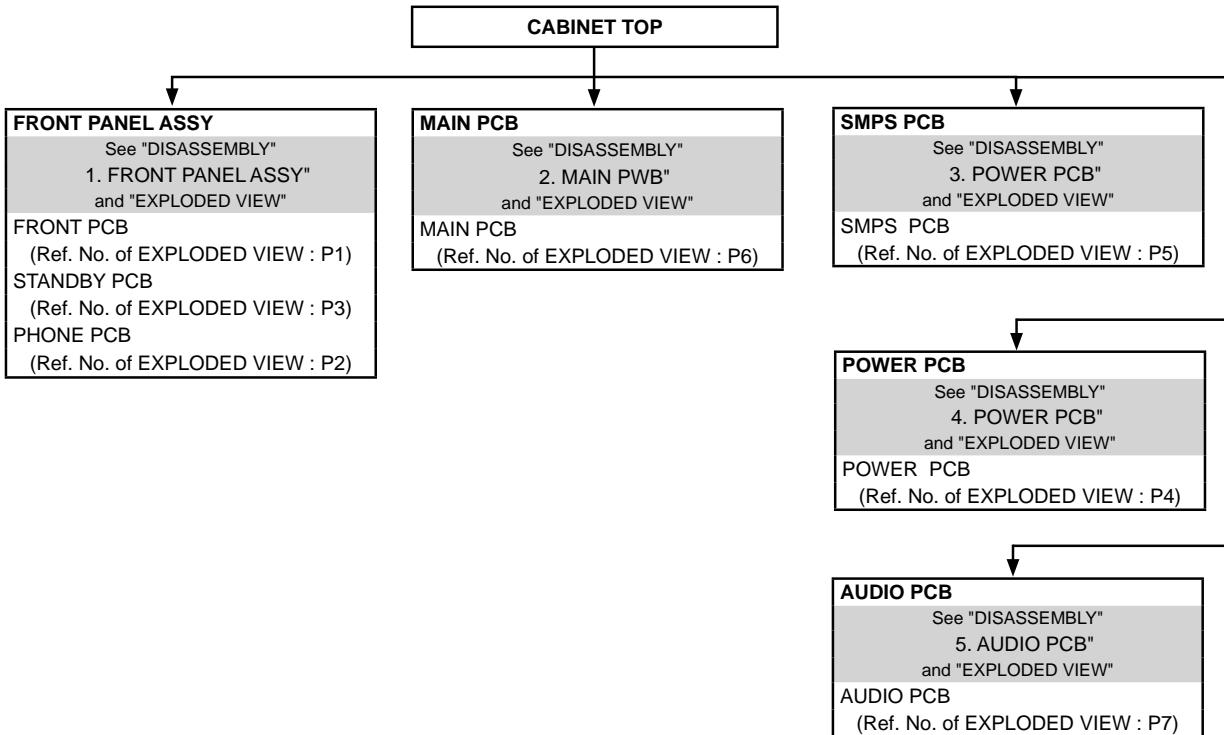
NOTE: • If step 5 fails, start over from step 1.

- All user settings will be lost and the factory setting will be recovered after the set is initialized.
So make sure to note down your setting beforehand for restoring after the initialization.



DISASSEMBLY

- Remove each part in the order of the arrows below.
- Reassemble removed parts in the reverse order.
- Read "Precautions During Work" before reassembling 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.

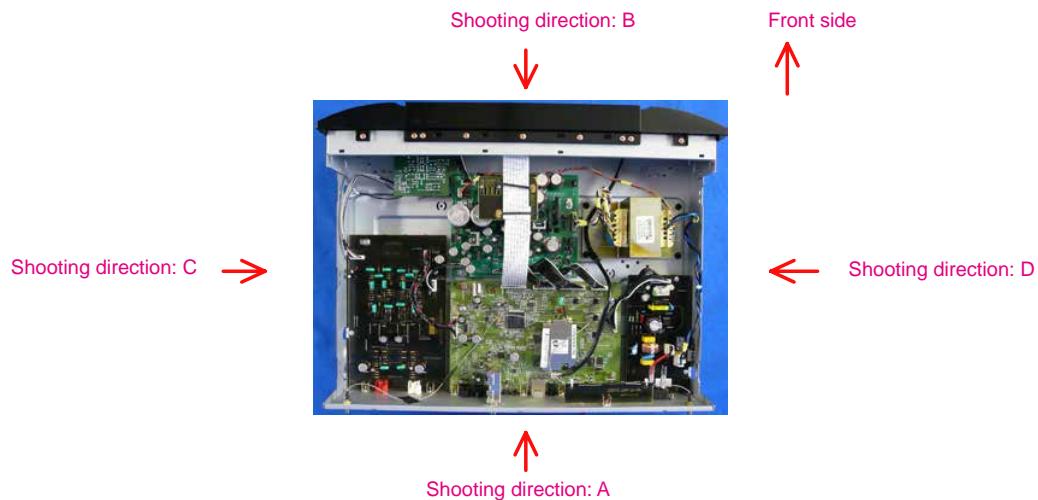


Explanatory Photos for DISASSEMBLY

- The angles from which the photos are taken are shown by "Photo angle : A, B, C, D".
- See the diagram below about the shooting direction of each photograph.
- Photographs with no shooting direction indicated were taken from the top of the unit.
- The photograph is NA6005U1B model.

The viewpoint of each photograph

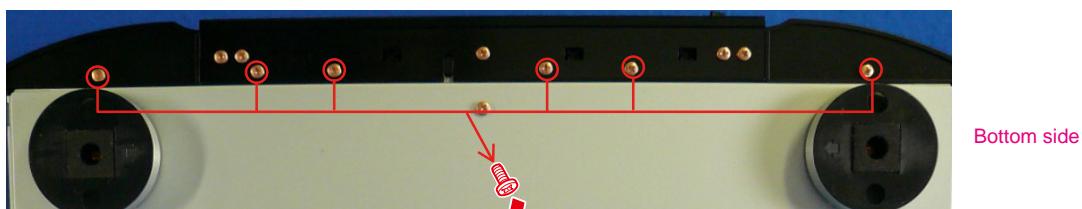
(Shooting direction:X)[View from the top]



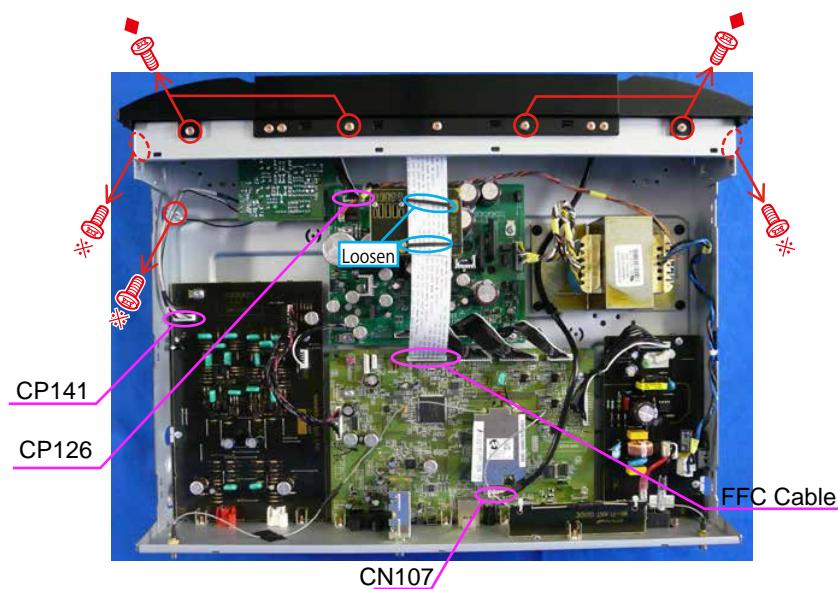
1. FRONT PANEL ASSY

Proceeding: CABINET TOP → FRONT PANEL ASSY

- (1) Remove the screws.



- (3) Remove the connector wires and FFC. Remove the screws.

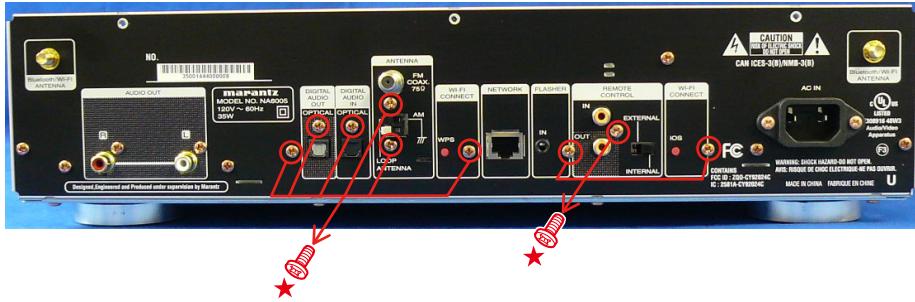


See "EXPLODED VIEW" for instructions on how to remove each PCB of the FRONT PANEL ASSY.

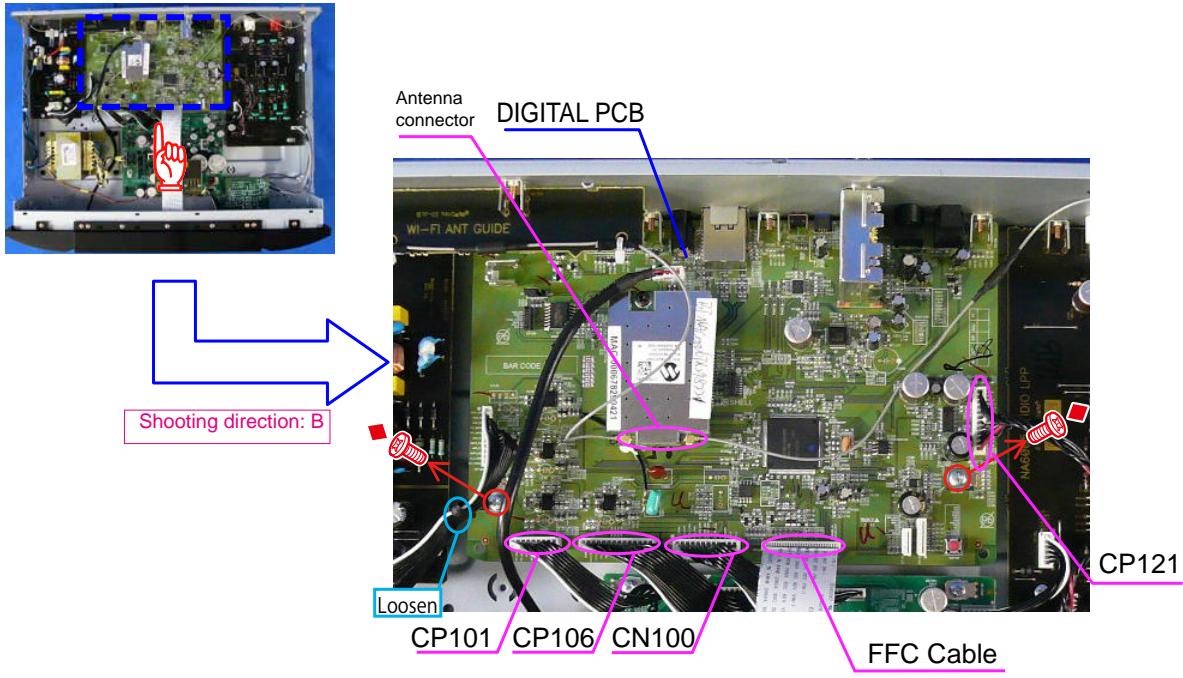
2. MAIN PCB

Proceeding: CABINET TOP → MAIN PCB

- (1) Remove the screws.



- (2) Remove the screws. Remove the connector wires and FFC.



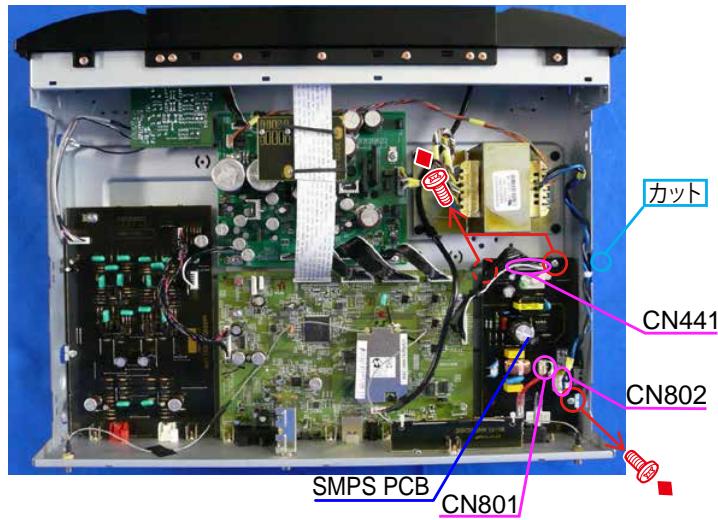
3. SMPS PCB

Proceeding: CABINET TOP → SMPS PCB

- (1) Remove the screw.



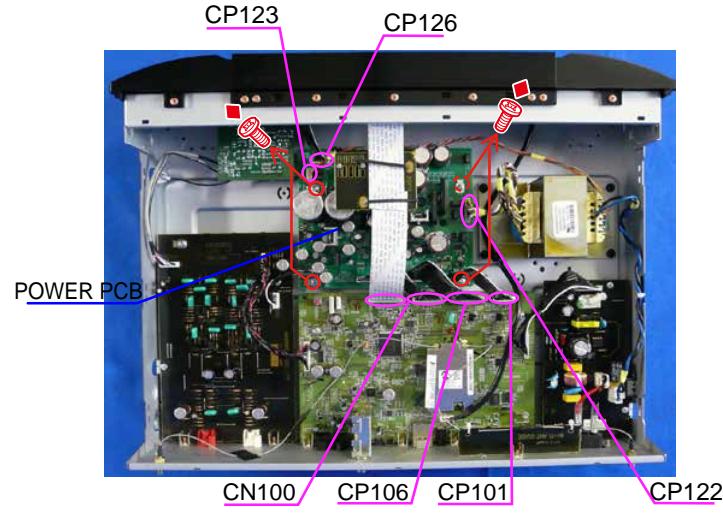
- (2) Remove the screws. Remove the connector wires and FFC.



4. POWER PCB

Proceeding: CABINET TOP → POWER PCB

- (1) Remove the screws. Remove the connector wires and FFC.



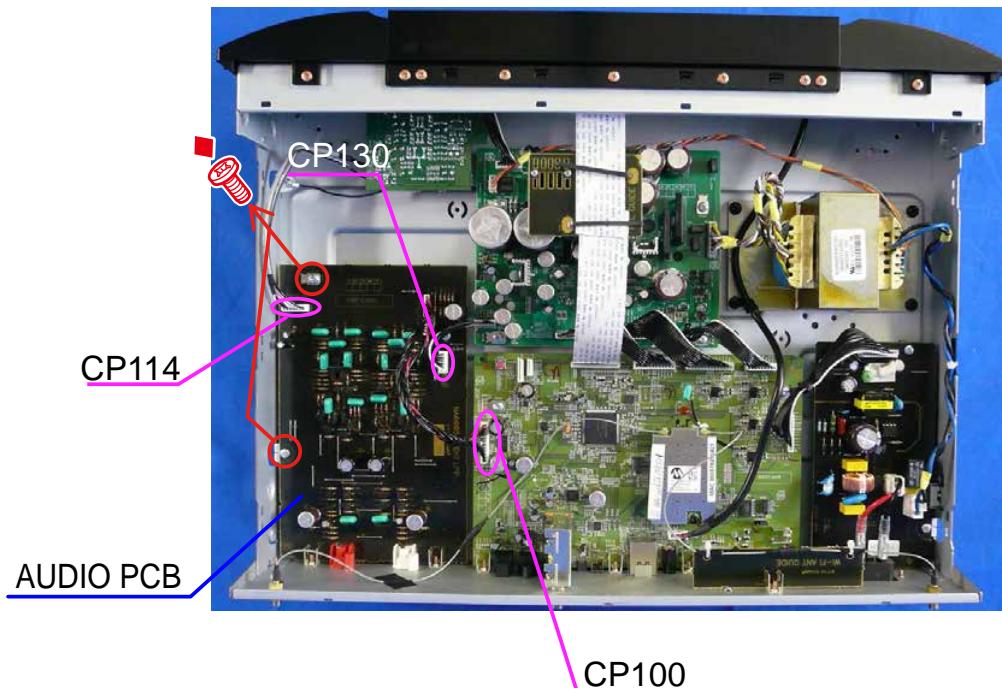
5. AUDIO PCB

Proceeding: CABINET TOP → AUDIO PCB

- (1) Remove the screws.



- (2) Remove the connector wires and remove the screws.



SPECIAL MODE

Special mode setting button

No.2, 6, 11, 15 : 

Hold down buttons **A** button and **B** button at the same time and press the "POWER" button to turn on the power.

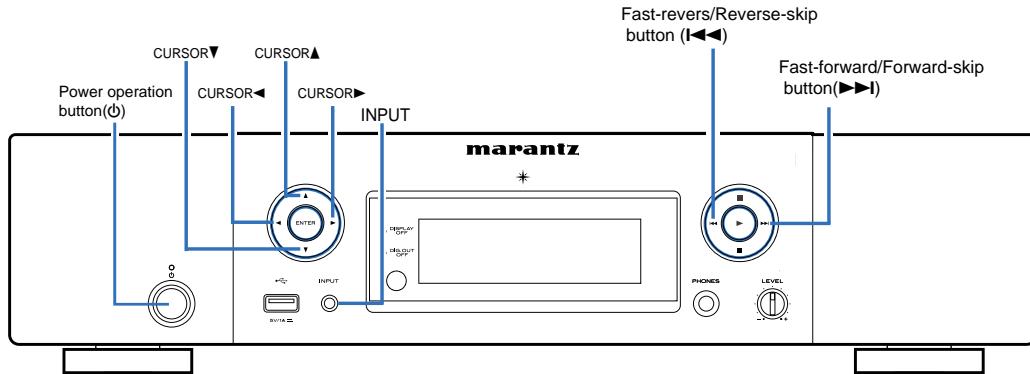
No.1, 4, 5, 7, 8, 9, 10, 12, 13, 14 : 

Hold down buttons **A** button and **B** button at the same time and connect the power cord to an outlet. Each button continue to press until the turning on POWER LED.

No.3 :

Hold down the Power button for at least 3 seconds while pressing the A button.

No.	Mode	Button A	Button B	Contents
1	Initialization for the factory	CURSOR ▲	INPUT 	The setting value to default. ※ Be sure to do the "Owner's Manual described Initialization" after the "Factory Initialization". 
2	Owner's Manual described initialization	CURSOR ▼	◀◀	The differences between this operation and restoring the factory default are as follows.  <ul style="list-style-type: none"> • Does not clear the version information such as rewriting failed log. • Does not clear the history of protection. • Network devices are started and initialized.
3	Version check	CURSOR ▲	-	Version Display.
4	Product mode 1	CURSOR ►	-	Development/Factory use. Not for service.
5	Product mode 2	CURSOR ◀	-	Development/Factory use. Not for service.
6	Protection history	CURSOR ◀	◀◀	Protection history view and reset.
7	"DPMS" force update	CURSOR ►	INPUT	Forced updated by DPMS.
8	"232C" force update	CURSOR ◀	INPUT	Development/Factory use. Not for service.
9	MAC Address rewrite	CURSOR ▼	INPUT	Development/Factory use. Not for service.
10	Access to development server mode	CURSOR ▲	◀◀	Development/Factory use. Not for service.
11	USB update	CURSOR ►	◀◀	Updated by USB
12	"USB" force update	CURSOR ◀	◀◀	Forced updated by USB
13	920 rewrite	CURSOR ▼	◀◀	Development/Factory use. Not for service.
14	Factory rewrite	CURSOR ▼	-	Development/Factory use. Not for service.



1. Initialization for the factory mode

Backup data initialization is carried out. See Initialization Items.

After initialization, move on to nomal mode.

CAUTION

Version information (such as rewriting failed log) Clear.

Clear the history of protection.

Operation

While holding down buttons "**CURSOR ▲**" and "**INPUT**" simultaneously, insert the AC plug into the wall outlet to turn on the power. 

Startup display

All lights display (2 seconds) - All off display (2 seconds)

Lighting of all LEDs on the unit (4 second)

"**Factory Reset**" displayed for 5 seconds.



Factory Reset

Initialization Items (Default setting)

	Setting
Source	Internet Radio
DIMMER	100%
Sleep	OFF
REPEAT/RANDOM	OFF
Favorite list	Clear all
iPod mode	Remote Mode
Setup Menu/Network	Set to Initial value, all
Protection history	NO PROTECT
Version up information	Clear all

2. Owner's Manual described initialization mode (User Reset)

Backup data initialization is carried out. Refer to Initialization Items.

After initialization, move on to nomal mode.

CAUTION

The differences between this operation and restoring the factory default are as follows.

- Does not clear the version information such as rewriting failed log.
- Does not clear the history of protection.
- Network devices are started and initialized 

Operation

In "**STANDBY**" status, press and hold the "**CURSOR ▼**" and "**◀◀**" buttons along with the power operation button to turn on the power.

Startup display

"**Initialized**" displayed for 5 seconds.



Initialized

Wait for more than 90 seconds after "**Initialized**" is displayed and then turn the power off. 
(During this time, start and initialize the network devices.)

3. Version check

Menu items appear in the Add Version.Otherwise, normal operation.

To exit this mode, unplug the power cord.

Display order

System u-com → System u-com (Boot loader) → Network u-com (Boot loader) → Network u-com (Image) → Serial No. → Bluetooth Mac Address

Operation

In standby status, hold down the Power button for at least 3 seconds while pressing the "CURSOR ▲" button.

Startup display

"Version" displayed for 5 seconds.



How to Display Version

Press the "INPUT" button and select the "Setup".



Press ENTER button.

The version of the system- μ Processor.



Press CURSOR ▼.

The version of the boot loader(system- μ Processor).



Press CURSOR ▼.

The version of the boot loader(network- μ Processor).



Press CURSOR ▼.

The version of the image(network-μ Processor).



Starting the CY920 is not completed.



Press CURSOR ▼

Serial No. displayed.



Press CURSOR ▼

Bluetooth Mac Address displayed.



4. Product Mode 1

Startup display

"Product Mode1" displayed for 5 seconds.



Not for service.

To exit this mode, unplug the power cord.

5. Product Mode 2

Startup display

"Product Mode2" displayed for 5 seconds.



Not for service.

To exit this mode, unplug the power cord.

6. Protection history display mode

To exit this mode, unplug the power cord.

Startup display

"Detect Protection" displayed for 5 seconds.



Detect Protection

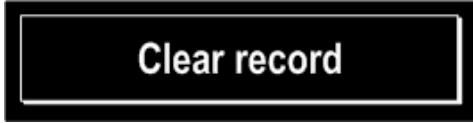
No history found.



[Detect Protection]
NO PROTECT

Clear the Protection History.

When the Cursor ▲ button is pressed for over 5 seconds while the protection history is displayed, clear the protection history.



Clear record

After clearing, will display "NO PROTECT". .



[Detect Protection]
NO PROTECT

NOTE : Protection history is cleared, even when the set is Initialization for the factory mode.

7. "DPMS" force update mode

Update the firmware of DPMS.

Operation

Hold down buttons "CURSOR▶" button and "INPUT" button at the same time and connect the power cord to an outlet.
See "**PROCEDURE FOR UPGRADING THE VERSION OF THE FIRMWARE**".

Error code table

- Preparation operation rewritten, Update error code checking.

ErrCode	DPMS Update	
Hex	The occurred event	FL Message
01	Login failed (DPMS Access Login Incorrect notification)	Login failed 01
02	Login failed (DPMS Access Server Busy information)	Server is busy 02
03	Login failed (DPMS Access link failure information)	Connection fail 03
04	Firmware Individual information acquisition failure	Connection fail 04
05	Firmware Individual information acquisition TimeOut	Connection fail 05
06	Firmware all information acquisition failure	Connection fail 06
07	Firmware all information acquisition TimeOut	Connection fail 07
08	Error notification received at the time of Firmware Info request	Connection fail 08
09	Firmware Info response acquisition Time Out	Connection fail 09
0A	Firmware Down Load failed ((NG) information received)	Download fail 0A
0B	Firmware Down Load failed ((ServerBusy) information received)	Download fail 0B
0C	Firmware Down Load failed ((Connection failed) information received)	Download fail 0C
0D	Received Package Version is wrong	Connection fail 0D
20	Transition to the Boot Loader Mode (Failure to acquire the IP Address (AutoIP))	Connection fail 20
21	Transition to the Boot Loader Mode (Failure to acquire the IP Address (TimeOut))	Connection fail 21
22	Transition to the Boot Loader Mode (DDPMS Access Login Incorrect notification)	Login failed 22
23	Transition to the Boot Loader Mode (DPMS Access Server busy information)	Server is busy 23
24	Transition to the Boot Loader Mode (DPMS Access connection failed information received)	Connection fail 24
25	Transition fails to Boot Loader Mode	Connection fail 25
27	Write failure to the Boot Loader Mode to transition after the EEPROM	Connection fail 27

- Firm error codes at the main microprocessor rewritten.

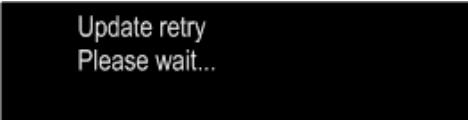
ErrCode	DPMS Update	
Hex	The occurred event	FL Message
10	Firm Info response acquisition Time Out (Main rewrite Firmware received failure (Time Out))	Updating fail 10
11	Firm Info response acquisition received error (Main rewrite Firmware received failure (Error))	Updating fail 11
12	Firm Info response acquisition received error (Main rewrite Firmware received data incorrect (Check Sum Error))	Updating fail 12
13	Rewrite failure (Block Erase failed before Main rewriting)	Erase fail 13
14	Rewrite failure (Block Write failed before Main rewriting)	Updating fail 14
15	Rewrite failure (Verify incorrect after Main rewriting)	Updating fail 15
22	Transition to the Boot Loader Mode (DPMS Access Login Incorrect notification)	Login failed 22
23	Transition to the Boot Loader Mode (DPMS Access Server busy information)	Server is busy 23
24	Transition to the Boot Loader Mode (DPMS Access connection failed information)	Connection fail 24
39	Login failure (DPMS Access access Time Out)	Connection fail 39
3A	Down Load failure (Download error (NG)information received)	Download fail 3A
3B	Down Load failure (Download error (Server Busy) information received)	Server is busy 3B
3C	Down Load failure (Download error (connection failed)information received)	Connection fail 3C
3D	Transition to the Boot Loader Mode (Failure to acquire the IP Address (Auto IP))	Connection fail 3D
3E	Transition to the Boot Loader Mode (Failure to acquire the IP Address (Time Out))	Connection fail 3E
3F	Fail in moving into Boot Loader Mode.	Connection fail 3F

- CX920 error codes when firmware rewriting.

ErrCode	DPMS Update	
Hex	The occurred event	FL Message
A0	Failure to acquire the IP Address (AutoIP)	Connection fail A0
A1	Failure to acquire the IP Address (TimeOut)	Connection fail A1
A2	Login failed (DPMS Access Login Incorrect notification)	Login failed A2
A3	Login failed (DPMS Access Server busy information)	Server is busy A3
A4	Login failed (DPMS Access connection failed information)	Connection fail A4
A6	Error notification received at the time of Firmware Info request	Updating fail A6
A7	Firmware Info response acquisition Time Out	Updating fail A7
AE	Down Load failure (Download error (NG)information received)	Download fail AE

AF	Down Load failure (Download error (Server Busy) information received)	Download fail AF
B0	Down Load failure (Download error (connection failed)information recived)	Download fail B0
B1	Down Load failure (Error at the time of Download (TimeOut))	Download fail B1
B2	Firmware Down Load failed	Updating fail B2
B4	Transition fails to Boot Loader Mode	Updating fail B4
B5	Transition fails to Application Mode	Updating fail B5

Failure to update, After the move again CX920 selfe display retry processing.



8. "232C" force update mode

Development / Factory use.

9. MAC Address rewrite mode

Development / Factory use.

10. Access to development server mode

Development / Factory use.

11. USB update mode

Operation

Hold down buttons "◀◀" button and "CURSOR▶" button at the same time and press the "POWER" button to turn on the power.

See "Firmware Update Procedure".

12. "USB" force update mode

Operation

Hold down buttons "◀◀" button and "CURSOR◀" button at the same time and connect the power cord to an outlet.

See "Firmware Update Procedure".

13. 920 rewrite mode

Development / Factory use.

14. Factory rewirte mode

Development / Factory use.

PROCEDURE AFTER REPLACING THE MICROPROCESSOR, ETC

The procedure after replacing the u-COM (Microprocessor), flash ROM, etc. is as follows.

PWB Name	Ref. No.	Description	After replaced	Remark
MAIN	IC101	R5F56108VNFP	B	
EXPLODED▲	P11▲	MODULE CY920-24C NA6005	D	
MAIN	IC100	GD25Q32B	A	K1B
MAIN	IC109	MX25L25635FMI-10G	C	

After replacing

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 UpdateProcedure" for information on writing the software.

D : The software has been written. Be sure to rewrite with the latest software for your service region. See "Firmware Update Procedure" for information on writing the software.

FIRMWARE UPDATE PROCEDURE

1. Updating by DPMS

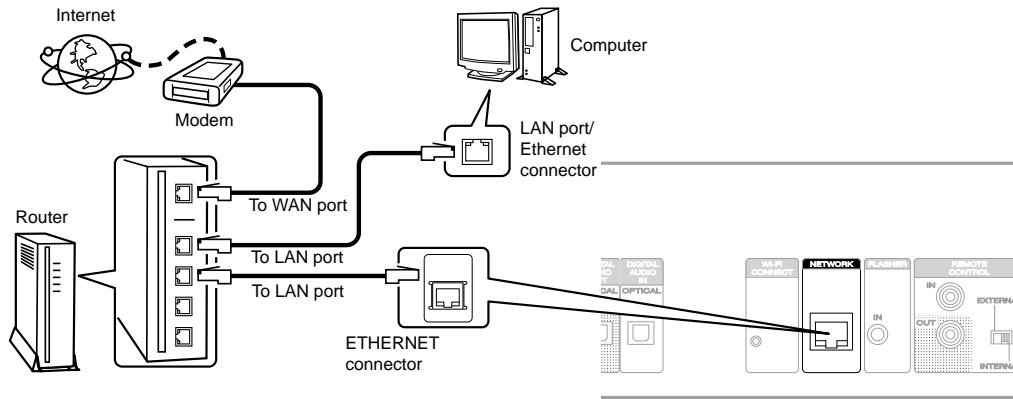
Download the latest firmware from the internet and update the firmware.

1.1. Network Connection

(1) System requirements

- A broadband internet connection
- Modem
- Router
- Ethernet cable (CAT-5 or greater recommended)

(2) Settings



1.2. Check and update the firmware

Check whether new firmware is available. It is also possible to check approximately how long the update will take.

- (1) Press POWER button to turn on power.
- (2) Press INPUT button to display menu.
 - Press CURSOR ▲ / ▼ buttons select to General. Press the ENTER.
 - Press CURSOR ▲ / ▼ buttons select to Firmware Update. Press the ENTER.
 - Press CURSOR ▲ / ▼ buttons select to UPDATE.
 - Press CURSOR ▲ / ▼ buttons select to CHECK For UPDATE.
- (3) Press the ENTER button.
 - If the latest firmware has been already installed, press the SOURCE button to close the Update menu.
- (4) Press ENTER button. Select YES, then press ENTER button.
- (5) To start the update.
- (6) When rewriting is completed, this unit restarts itself automatically.
- (7) Press the POWER button to turn off the power.
- (8) Hold down the POWER button for at least 3 seconds while pressing the CURSOR ▲ button.
This unit sets the version display mode.
Please confirm the firmware version.
- (9) Check MAC Address.
Setup → Network → Network Info → MAC Address
- (10) The back panel of the unit, MAC Address seals, please change new one.
Please confirm the MAC Address display is corresponding to the seal.
- (11) Hold down buttons "CURSOR ▲" button and "◀◀" button at the same time and press the "POWER" button to turn on the power. (Initialization for the factory)

--- Precautions for Updates ---

- The environment and settings must allow connection to broadband Internet for updates.
- Never turn off the power before an update is completed.
- It takes around 1 hour to complete the update.

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

The menu settings of this unit may be initialized.

Take note of your settings beforehand and reconfigure them after the update.

FIRMWARE UPDATE PROCEDURE

2. Updating by USB

The latest firmware can be downloaded to a USB memory for updates.

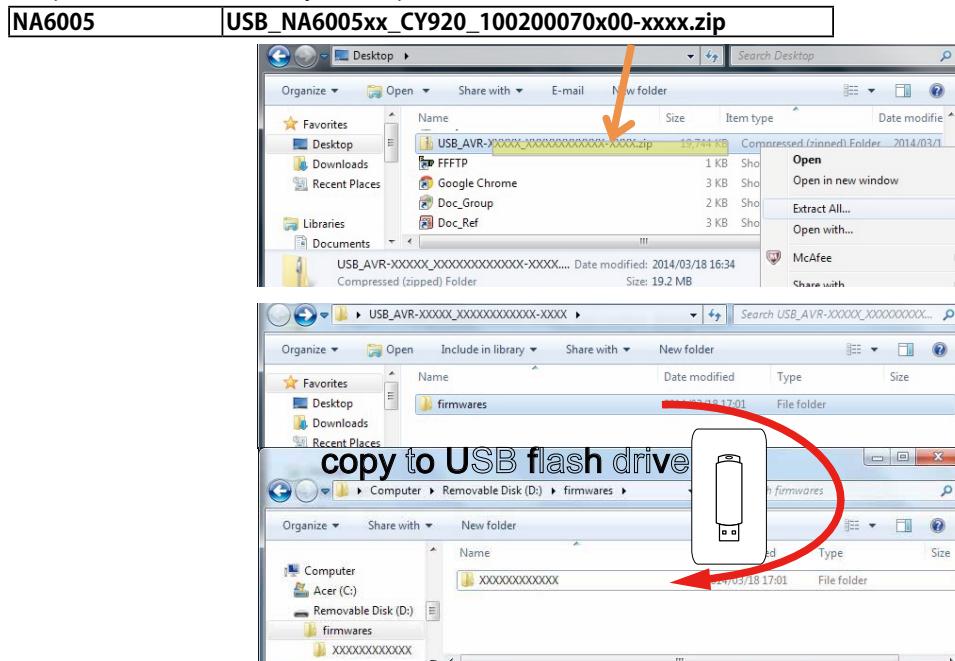
2.1. Connecting to the USB Memory

(1) Preparation

- USB format : Prepare a USB memory formatted in FAT16 or FAT32.
- USB flash drive (memory), use the USB2.0.
- Do not run the USB memory 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 unit.

2.2. Unzip Download File

Unzip the downloaded file on your computer.



You can find "**firmwares**" folder after unzipped.

Copy that folder to USB flash drive.

You have to put "**firmwares**" folder on root directly on USB flash drive(memory).

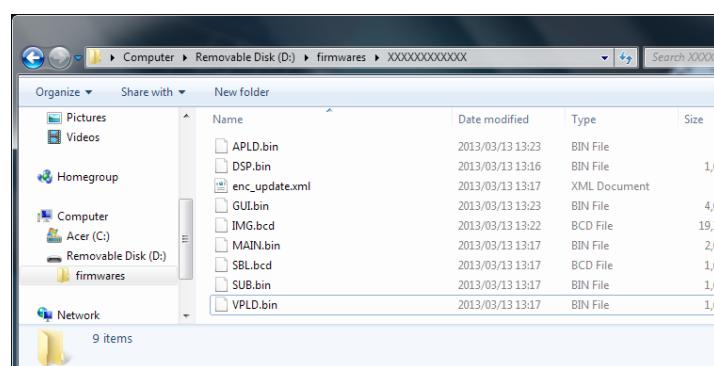
2.3. File structure on USB Memory

Copy the update files to the USB memory with the following structure:

USB memory root

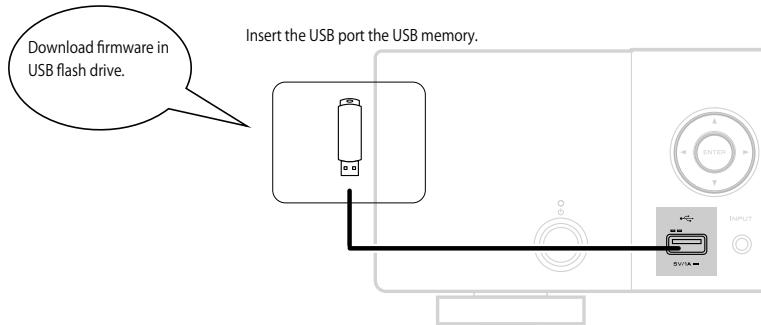
Model Name	Model Area	Product ID
NA6005	North America (U)	100200070100
	Europe (N)	100200070200
	Japan (F)	100200070400
	China (K)	100200070500

+ firmwares
+ 00020013XXXX
+ enc_update.xml
+ IMG.bcd
+ SYS.bin
+ SBL.bcd



2.4. Insert the USB memory in the USB port

NOTE : Remove the LAN cable from this unit when performing updates.



2.5. Start the update

Hold down buttons CURSOR ► button and ▶◀ button at the same time and press the "POWER" button to turn on the power.

2.6. Display during USB update

The following message appears on the display:

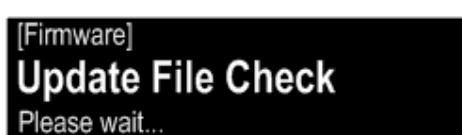
Display



2.7. Press the "ENTER" key on the remote control unit or this unit

Then start Firmware Update.

Display



2.8. The firmware update finishes

Update after restart.

After updating the firmware, check the version.

--- Precautions for Updates ---

- Wait for 60 seconds before turning the power back on(AC ON→OFF→ON).
- Never remove the USB memory before the update is finished.
- Never turn off the power before an update is completed.
- It takes around 30 minutes to complete the update.

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

Also, the settings of the unit may be initialized.

Take note of your settings beforehand and reconfigure them after the update.

3. "USB" force update mode

Mode used when this unit cannot be recovered.

Forcibly switches this unit to USB update mode.

3.1. Operation

Hold down buttons CURSOR ◀ button and ▶◀ button at the same time and connect the power cord to an outlet.

NOTE : It waits for the plug of AC plug until the electric charge inside a set is completely discharged for about 2 minutes, when AC plug is pulled out immediately before.

3.2. Display during USB update

The following message appears on the display:

Display



3.3. The firmware update finishes

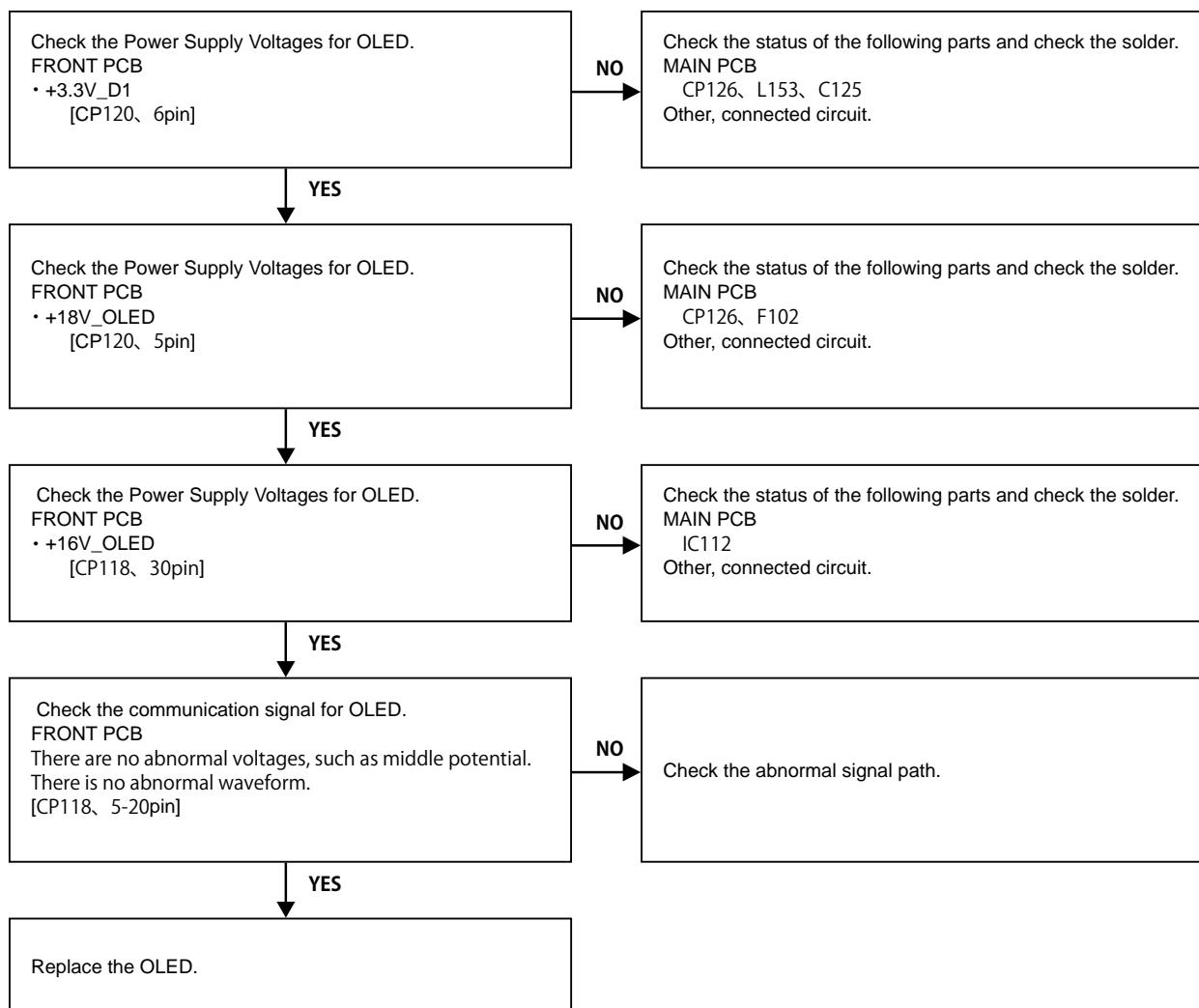
The update after the restart, all devices will be updated.

After updating the firmware, check the version.

Personal notes :

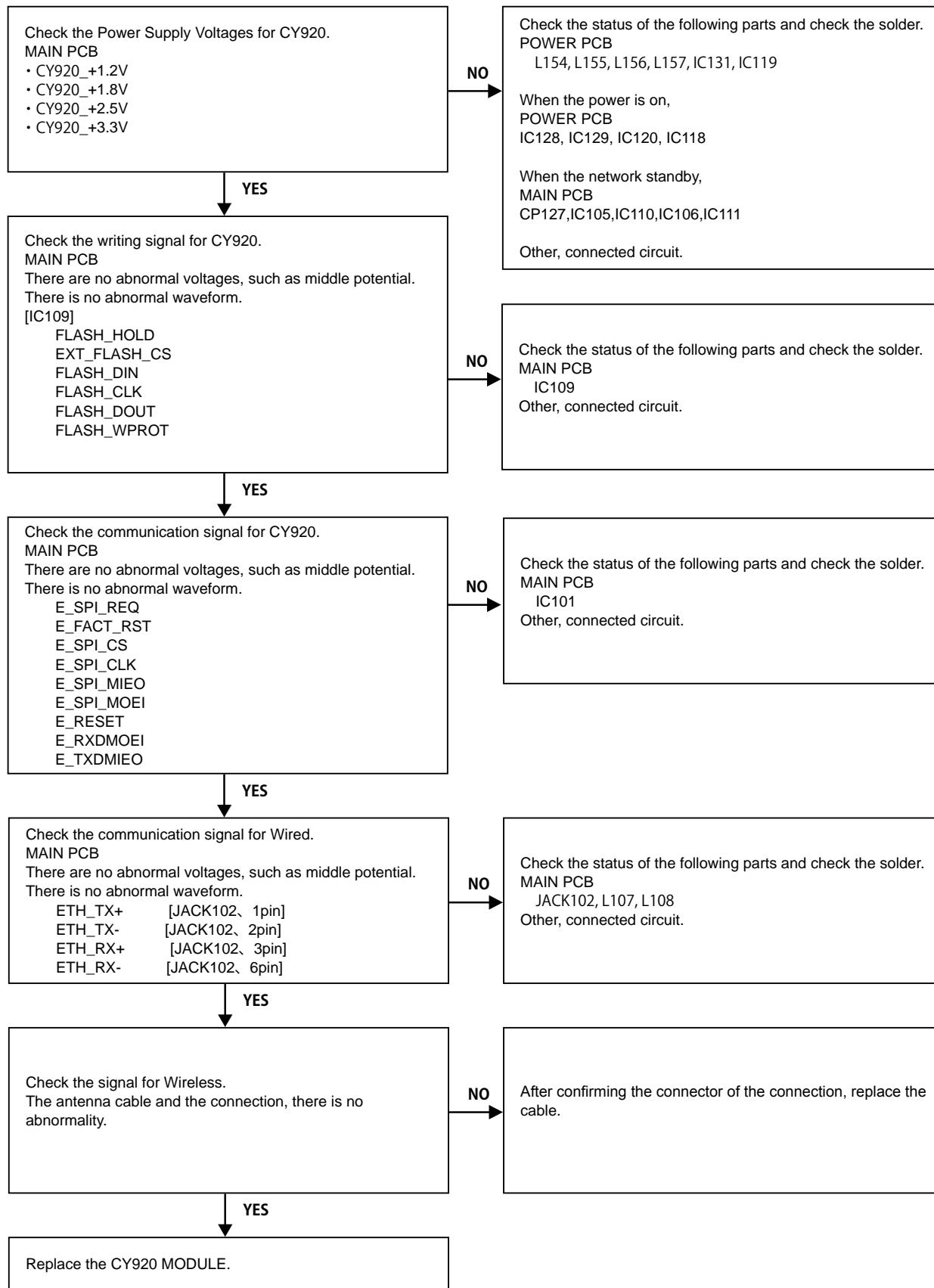
TROUBLE SHOOTING

1. OLED doesn't light

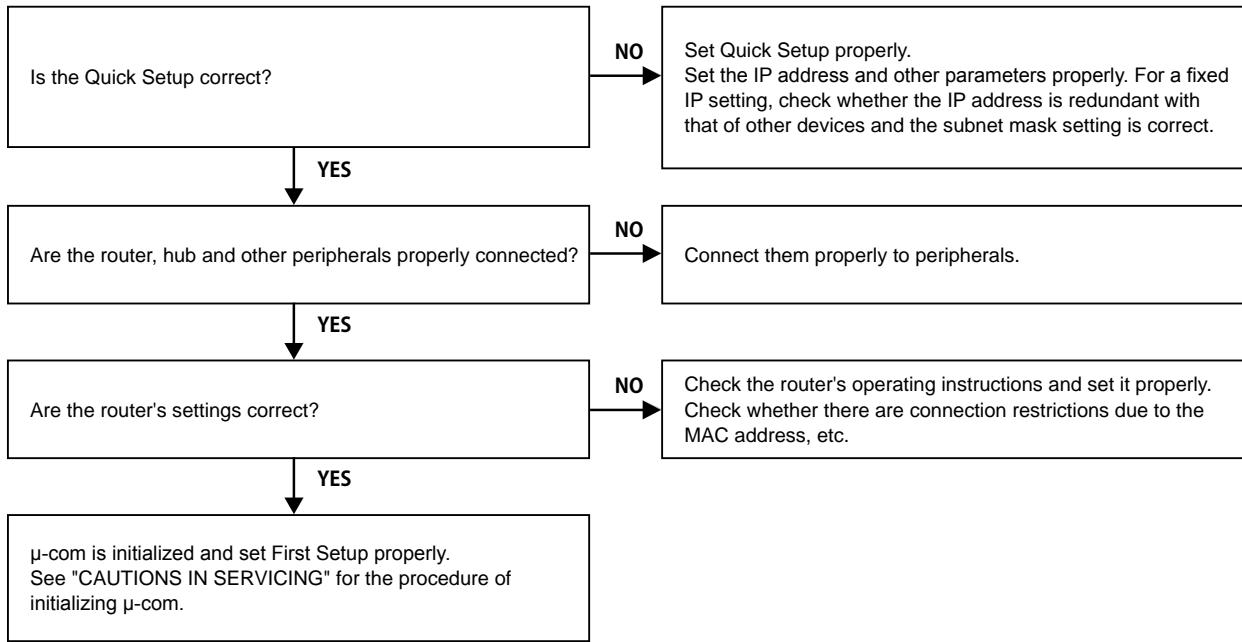


2. Cannot connect to network. / Cannot connect to Bluetooth.

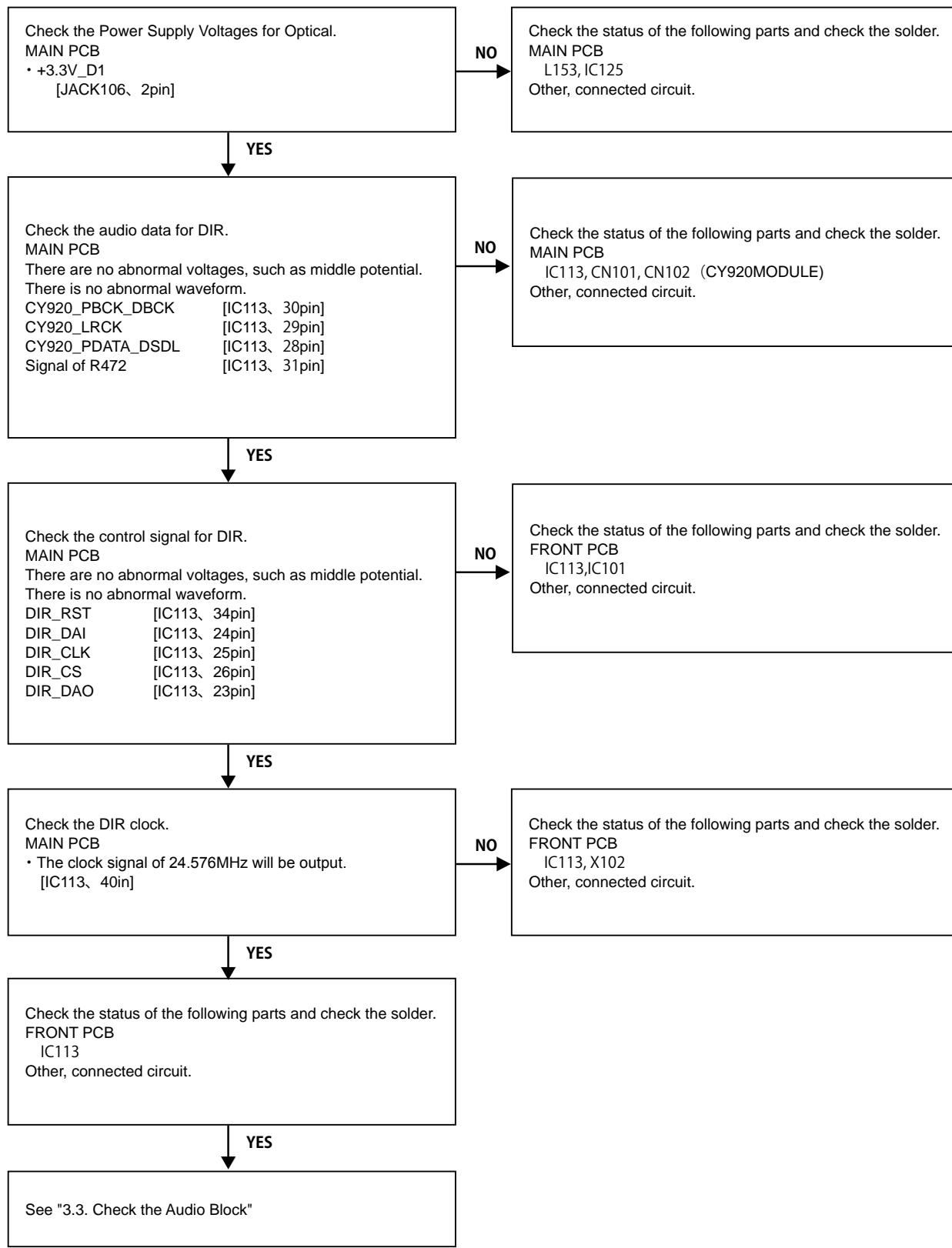
2.1. First Setup doesn't operate normally, Ethernet doesn't playback, Bluetooth doesn't.



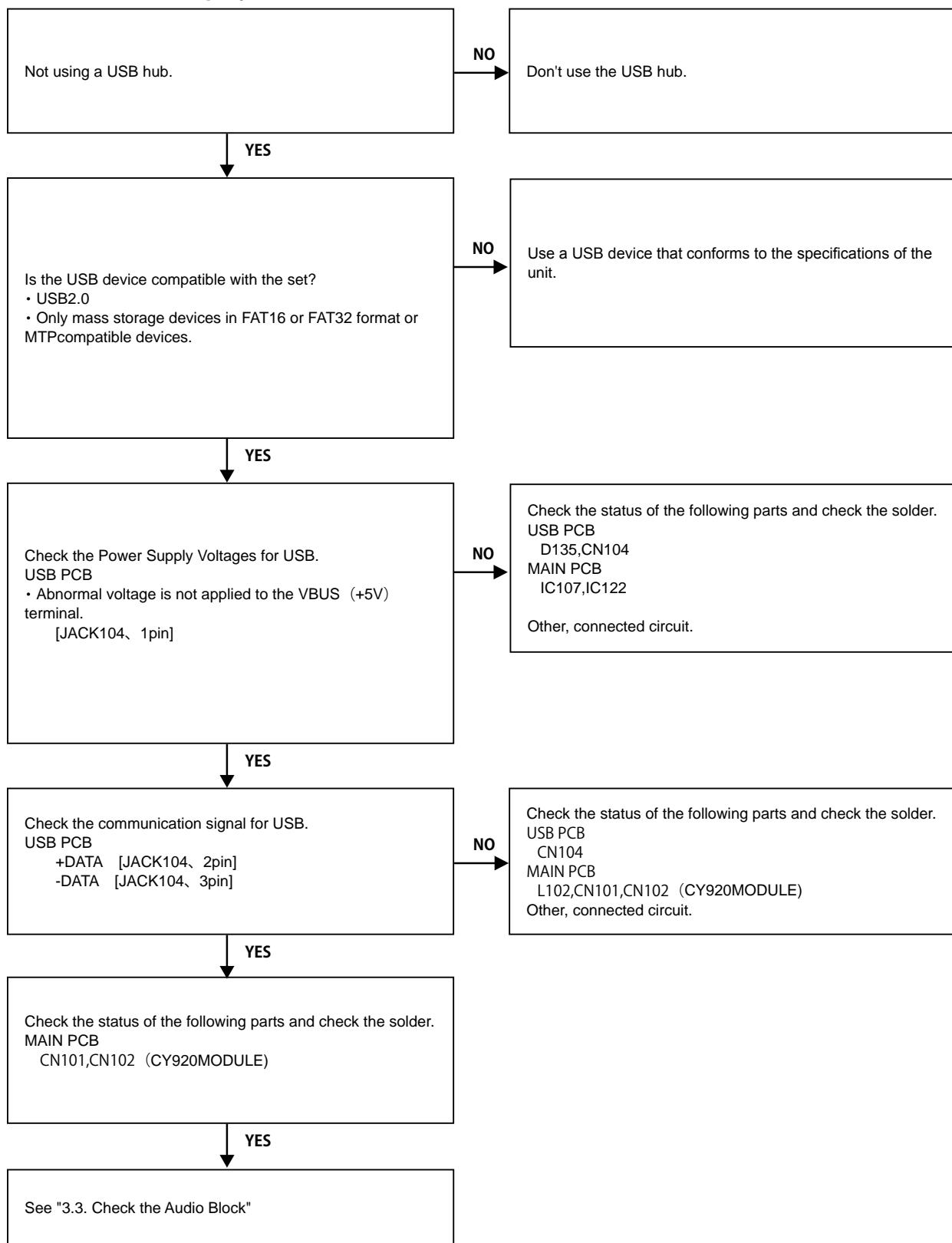
2.2. Cannot connect to network



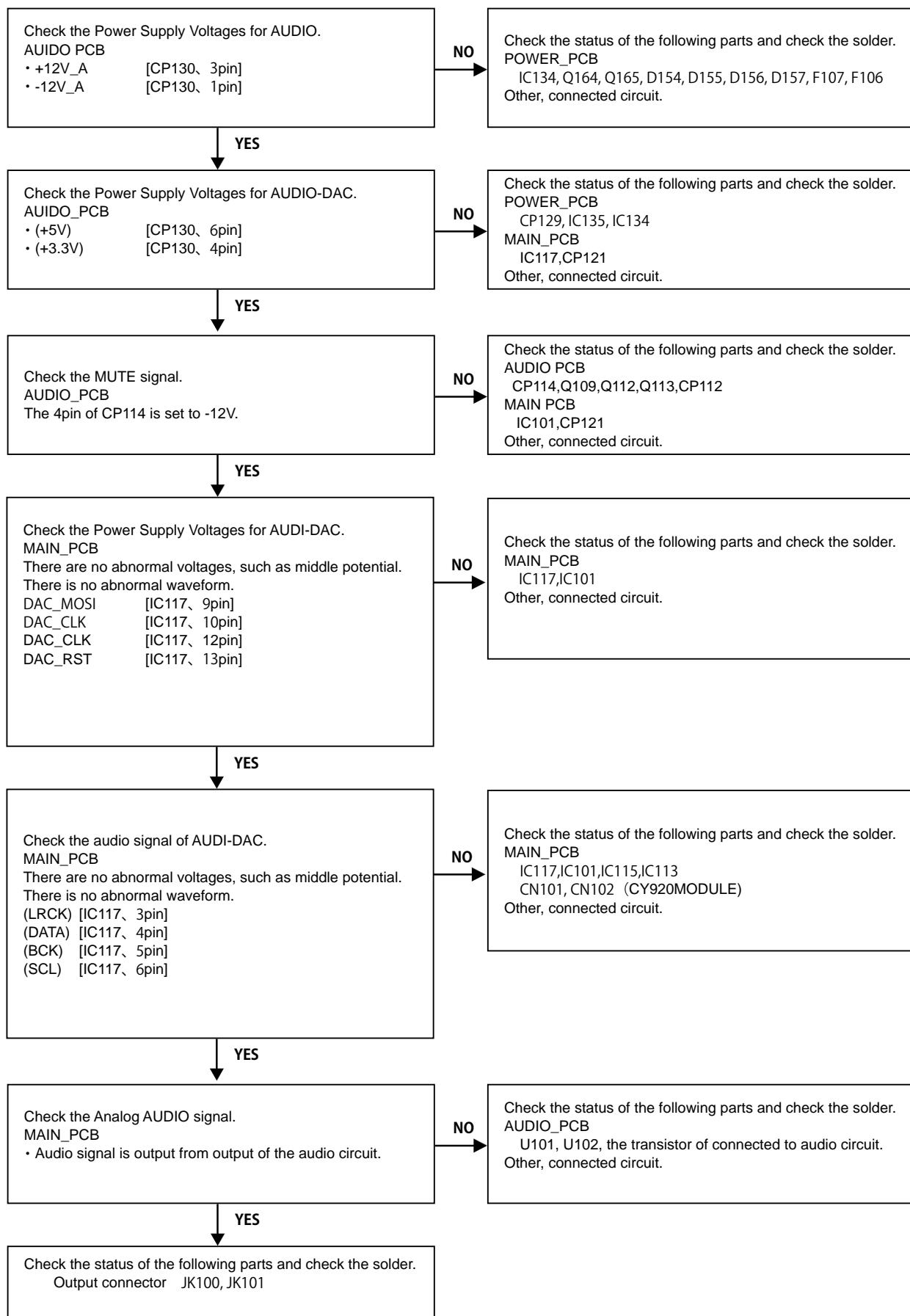
3.1. Optical Output



3.2. USB doesn't playback



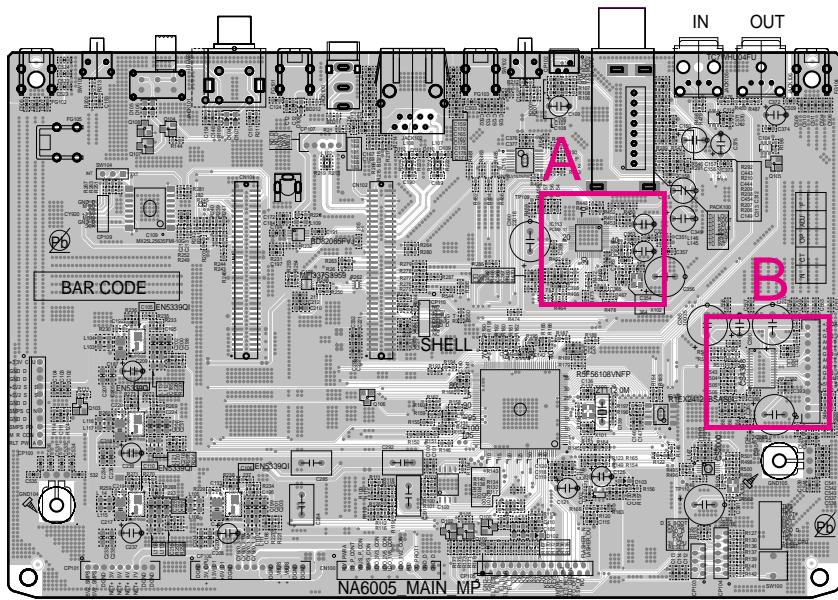
3.3. Check the Audio Block



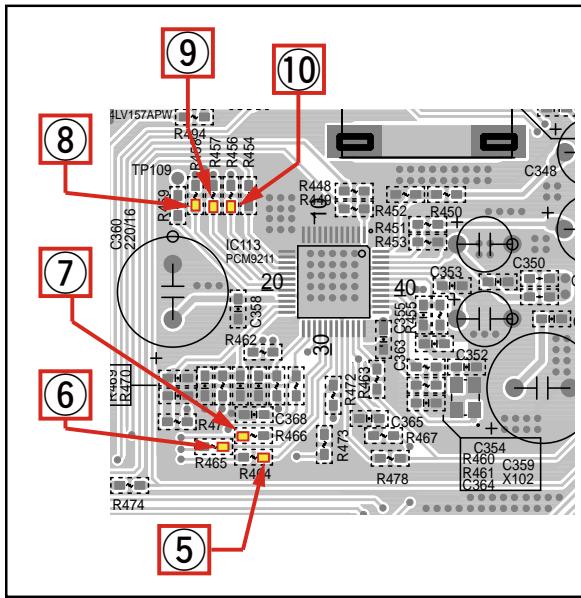
MEASURING METHOD AND WAVEFORMS

(It is better to use wires for extending between the probe and test points.)

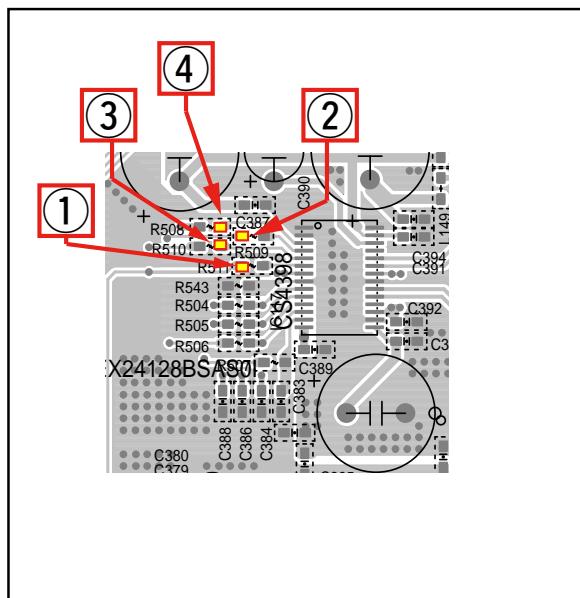
MAIN PCB: TEST POINT



Detailes A



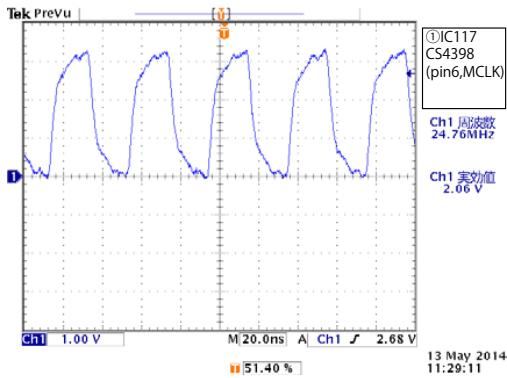
Detailes B:



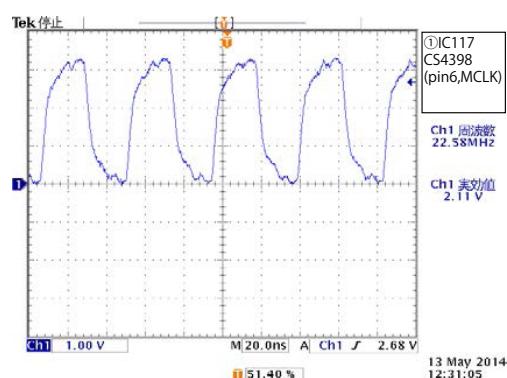
①	IC117	6pin	CS4398	(MCLK)	R511
②	IC117	4pin	CS4398	(SCLK)	R509
③	IC117	5pin	CS4398	(LRCK)	R510
④	IC117	3pin	CS4398	(SDIN)	R508
⑤	IC113	30pin	PCM9211	CY920_PBCK_DBCK	R464
⑥	IC113	29pin	PCM9211	CY920_LRCK	R465
⑦	IC113	28pin	PCM9211	CY920_PDATA_DSDL	R466
⑧	IC113	19pin	PCM9211	DIR_BCKOUT	R458
⑨	IC113	18pin	PCM9211	DIR_LRCKOUT	R457
⑩	IC113	17pin	PCM9211	DIR_DATAOUT	R456

WAVEFORMS

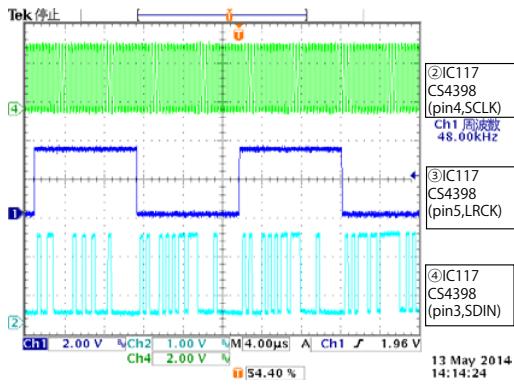
1. MASTER CLOCK (ex. PCM Playback from COAX IN, FS=48K)



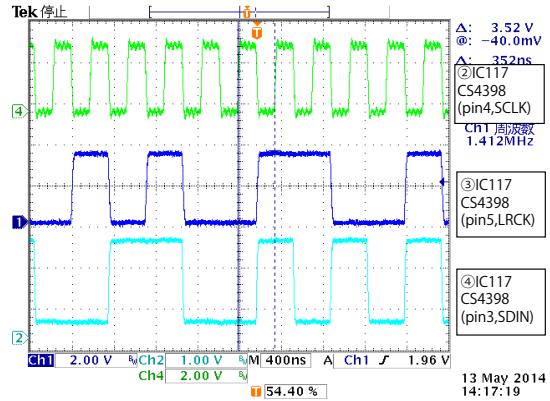
2. MASTER CLOCK (ex. DSD64 Playback from USBB)



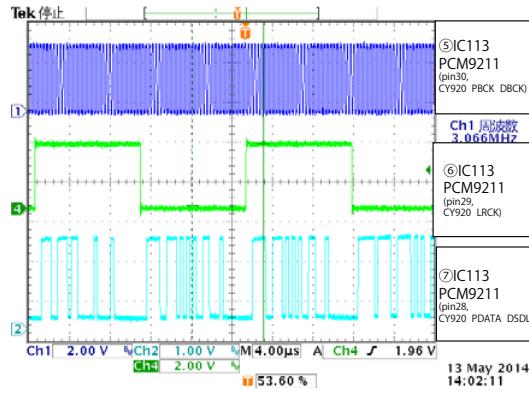
3. I₂I Input to DAC, CS4398 (ex. PCM Playback from COAX IN, FS=48K)



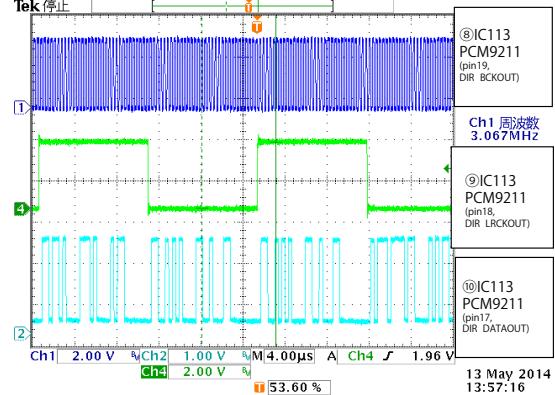
4. DSD64 Input to DAC, CS4398 (ex. DSD64 Playback from USBB)



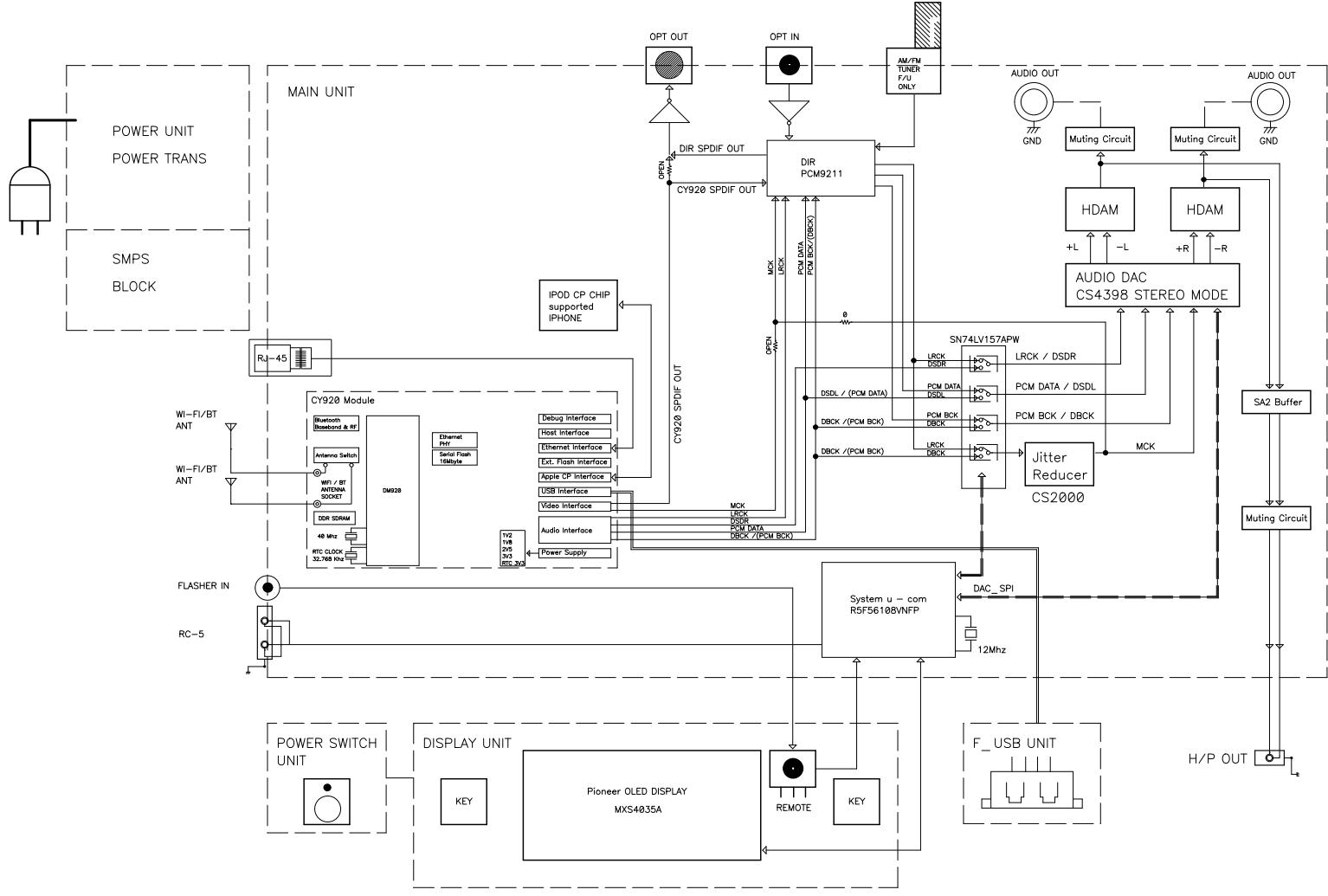
5. PLD INPUT I₂I (ex. PCM from COAX IN, FS=48K)



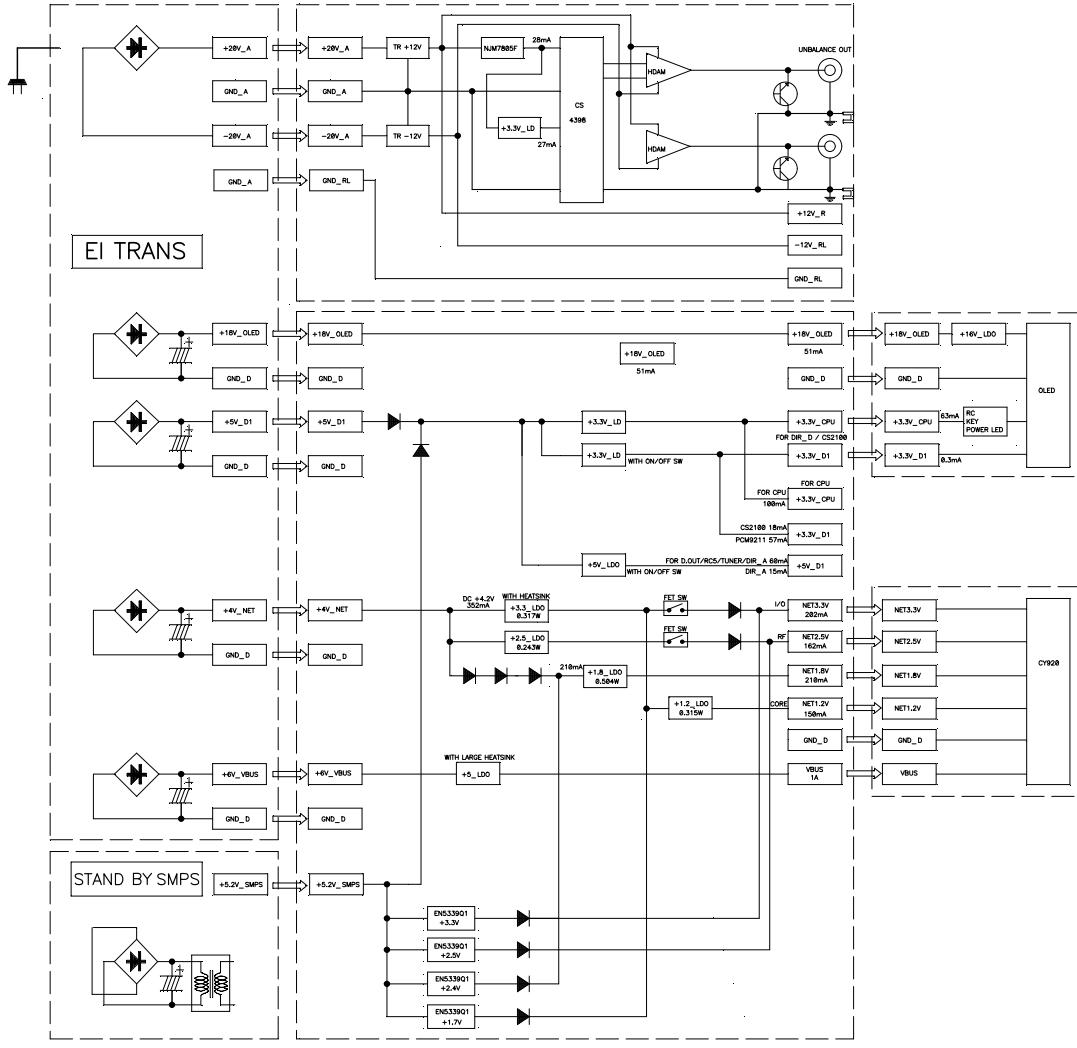
6. PLD OUTPUT I₂I (ex. PCM from COAX IN, FS=48K)



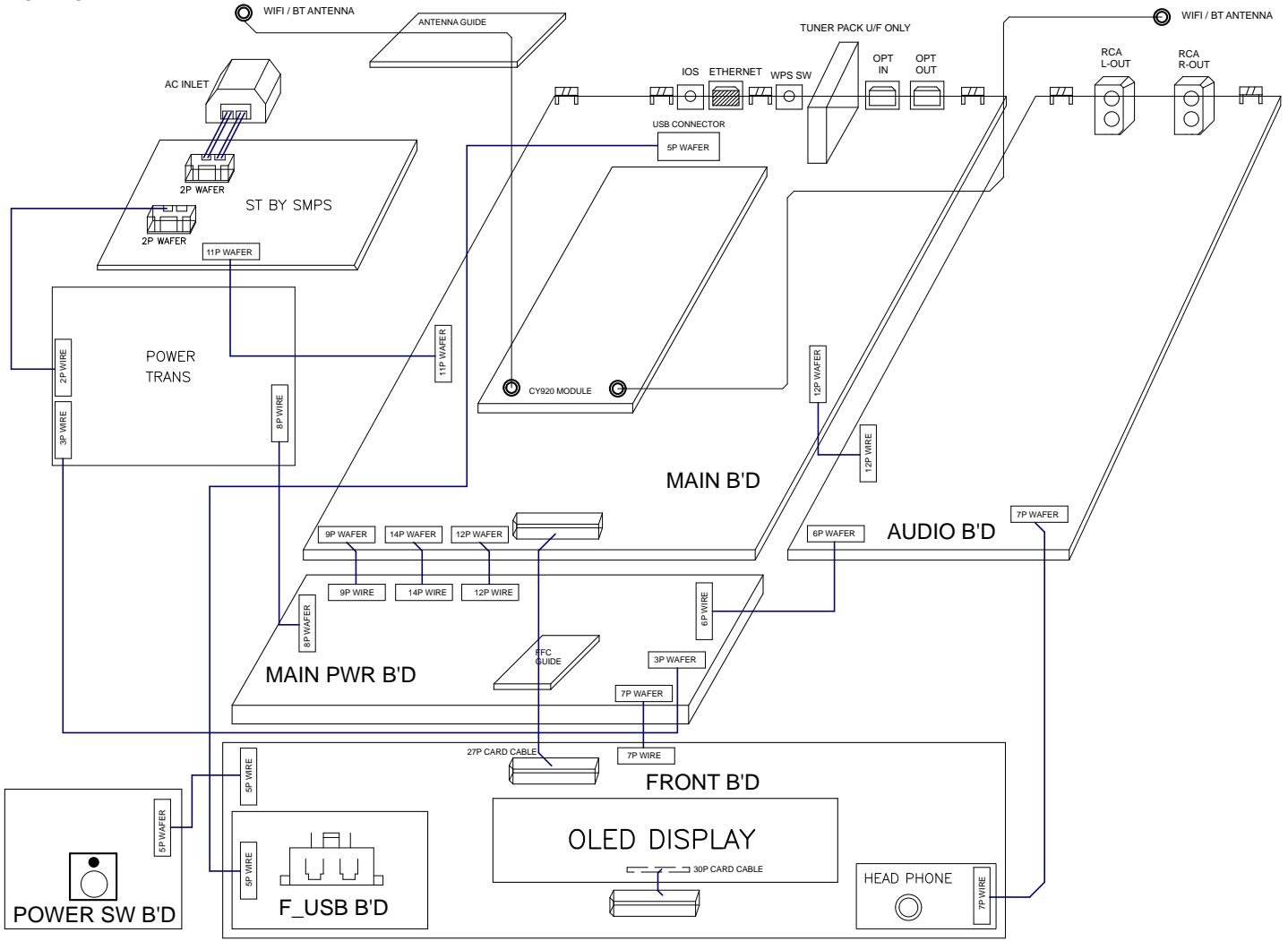
BLOCK DIAGRAM

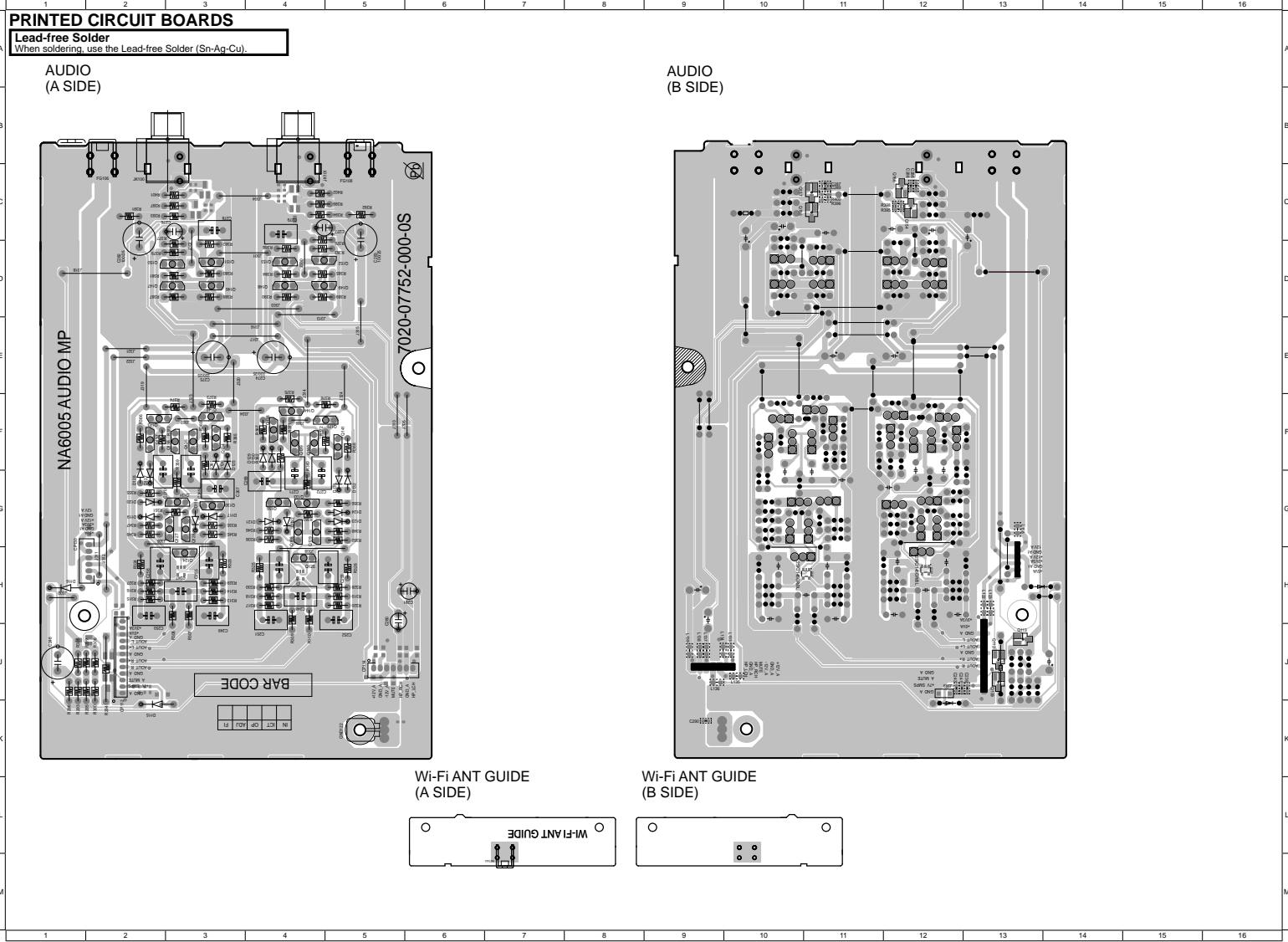


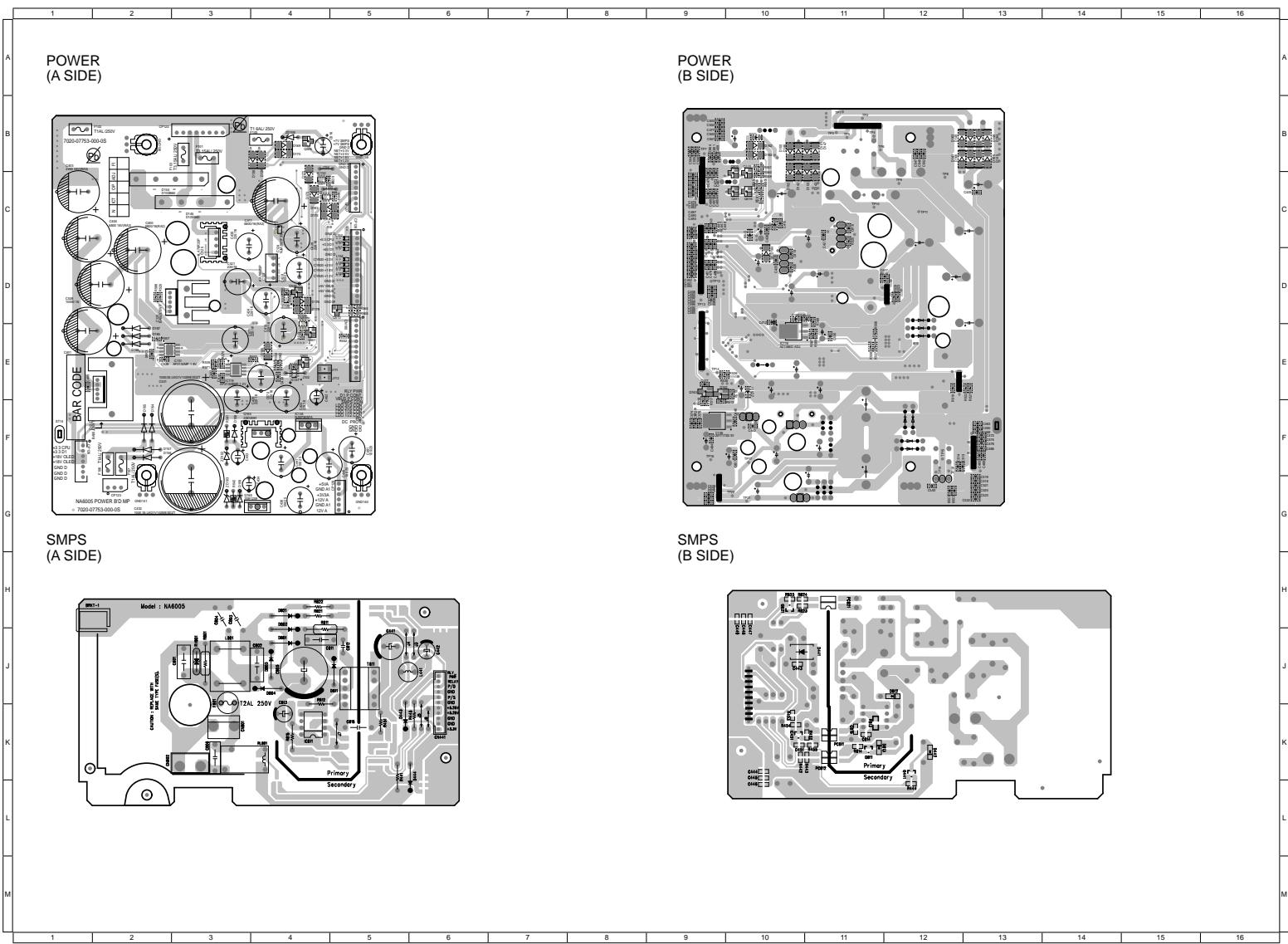
POWER DIAGRAM

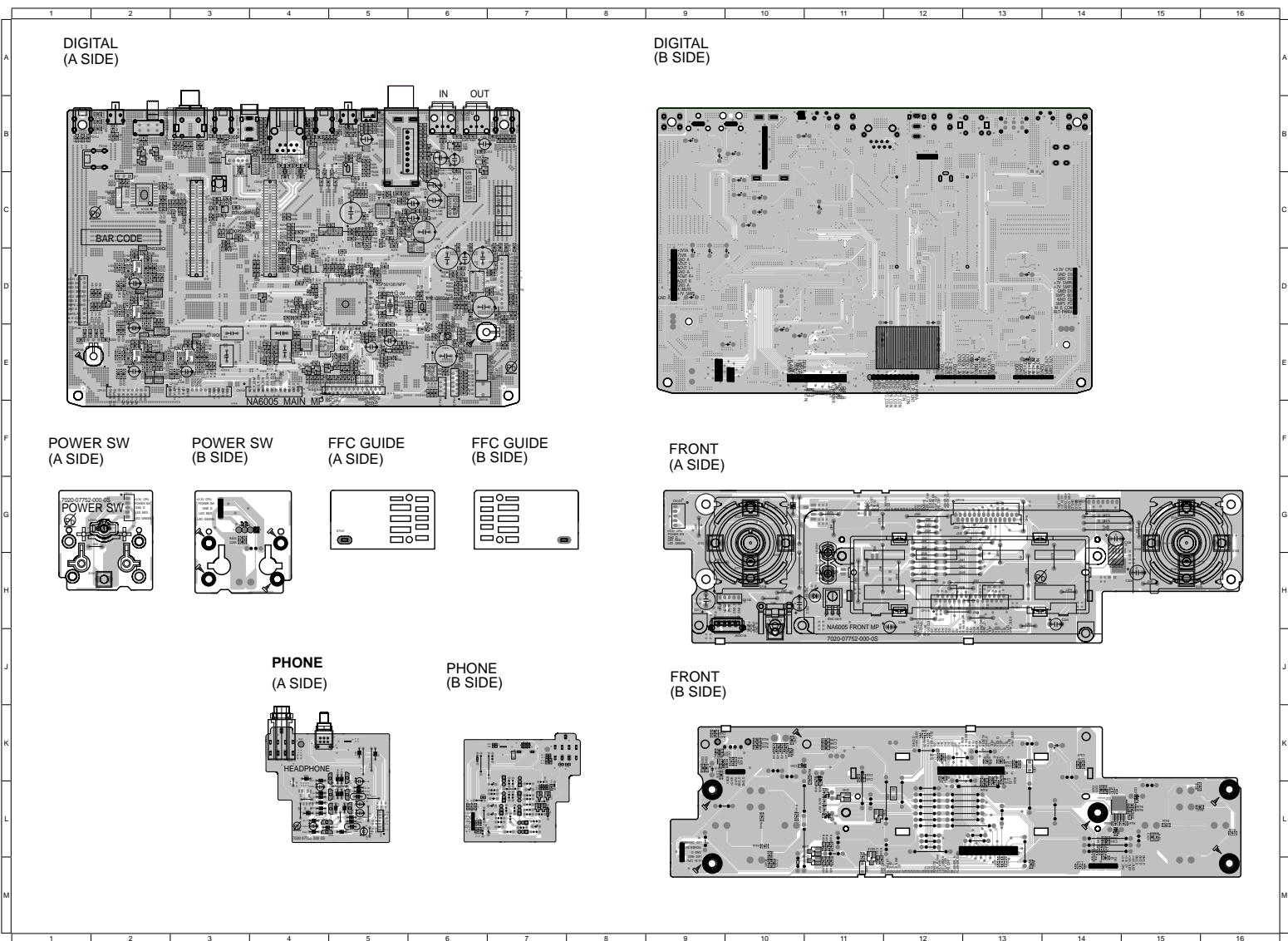


WIRING DIAGRAM

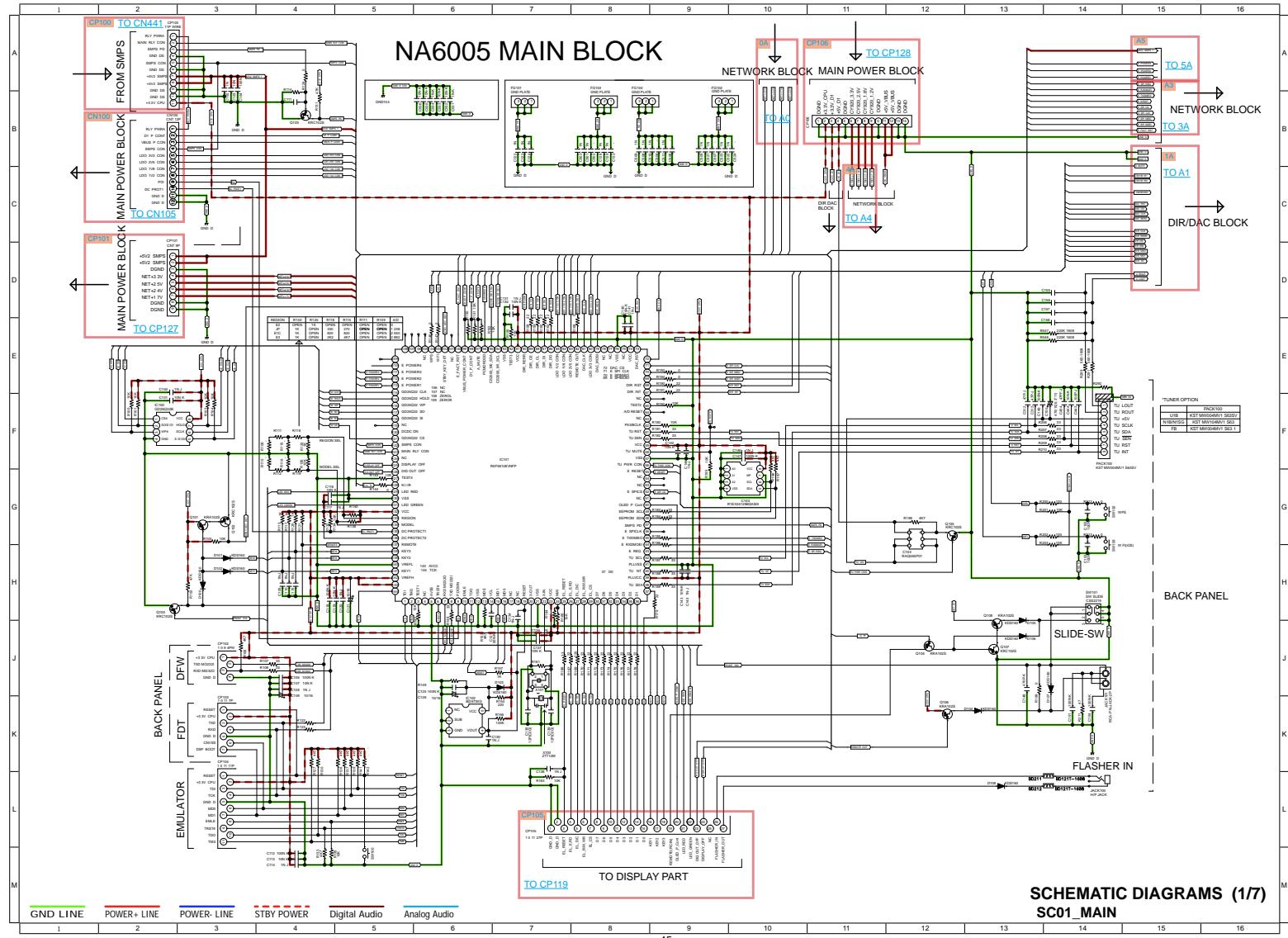


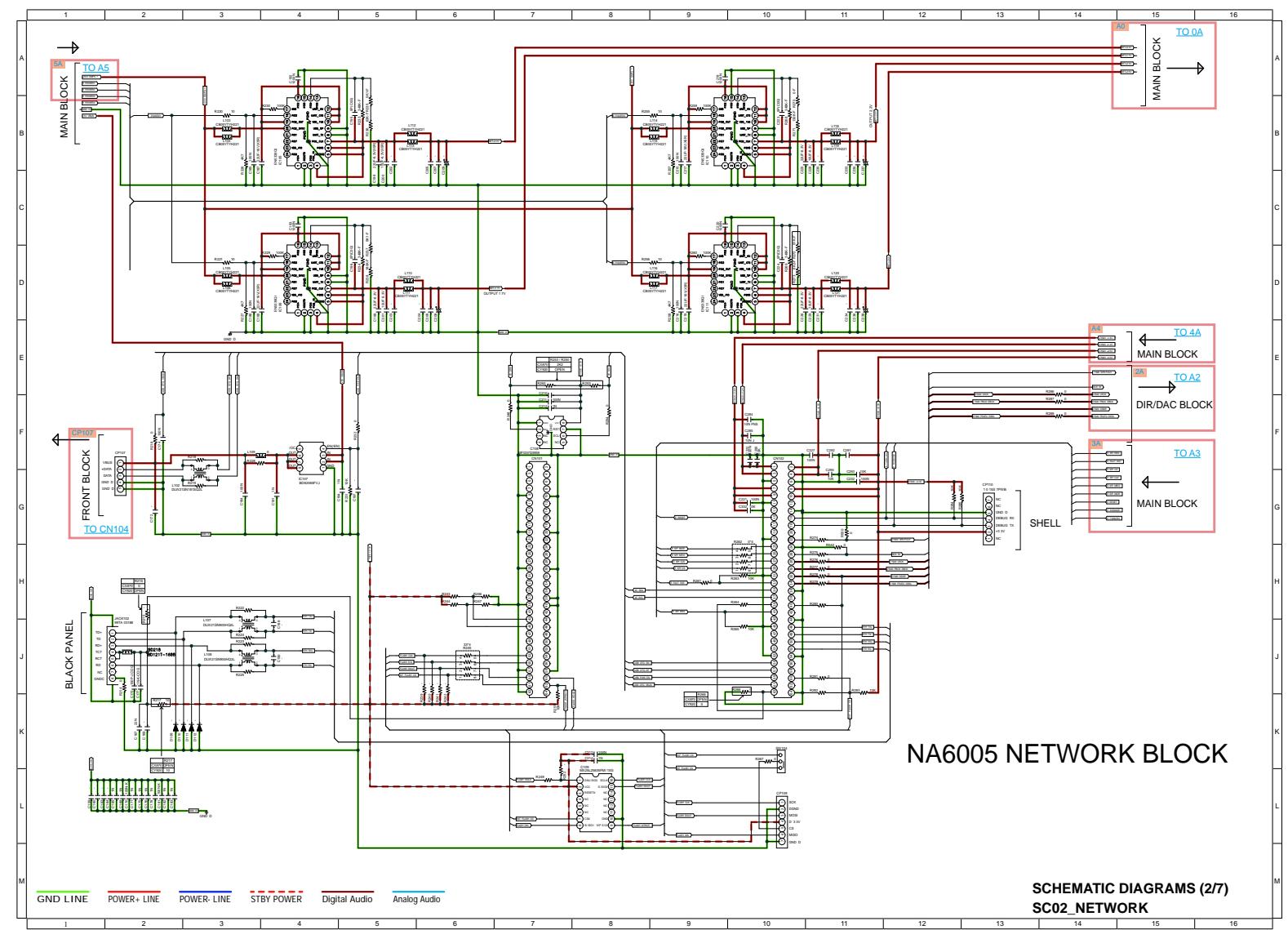




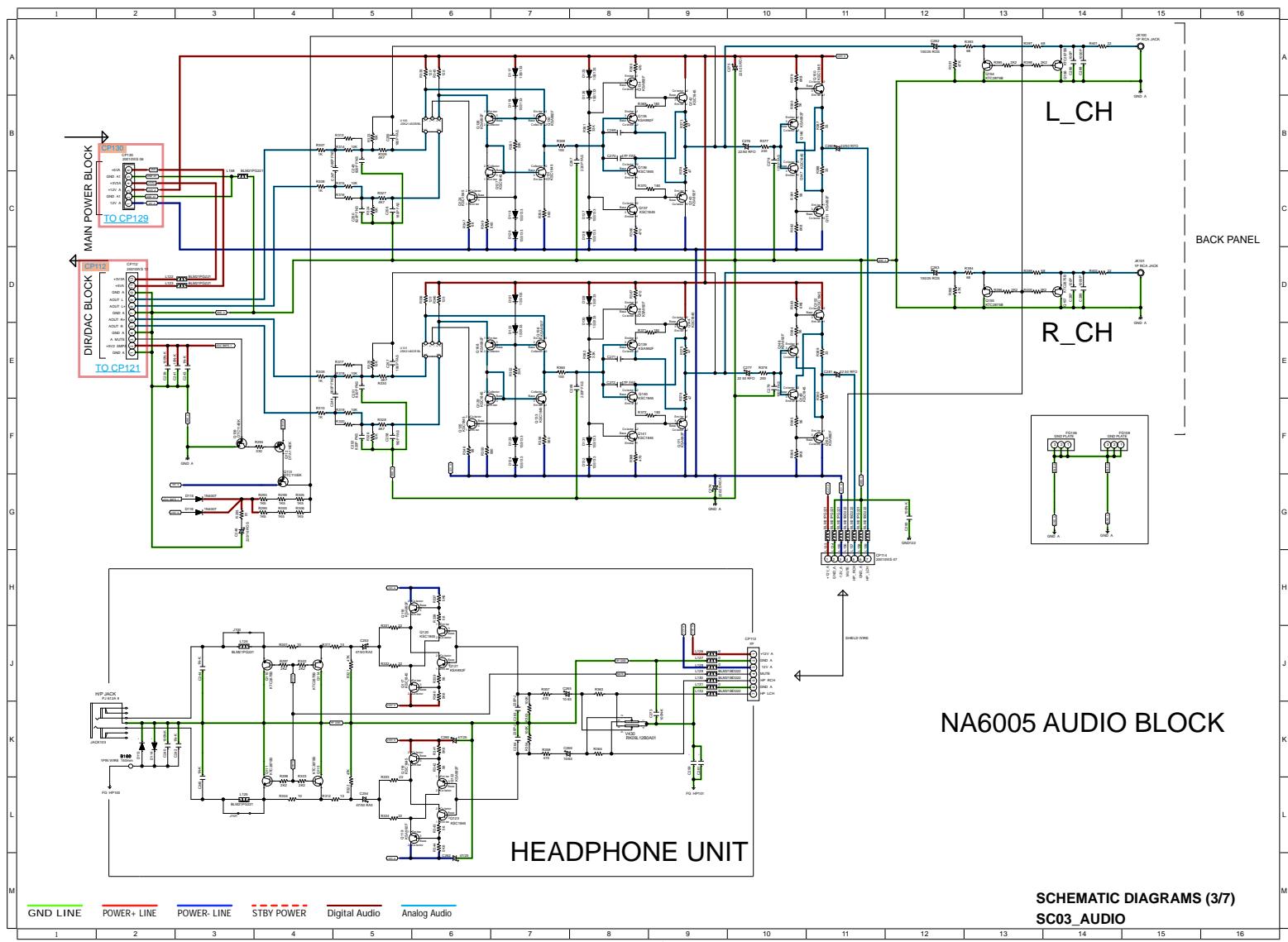


NA6005 MAIN BLOCK

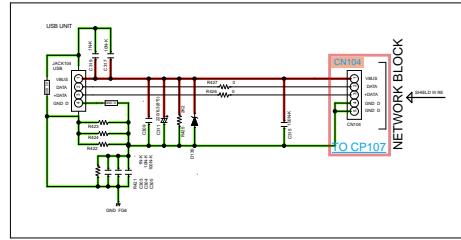
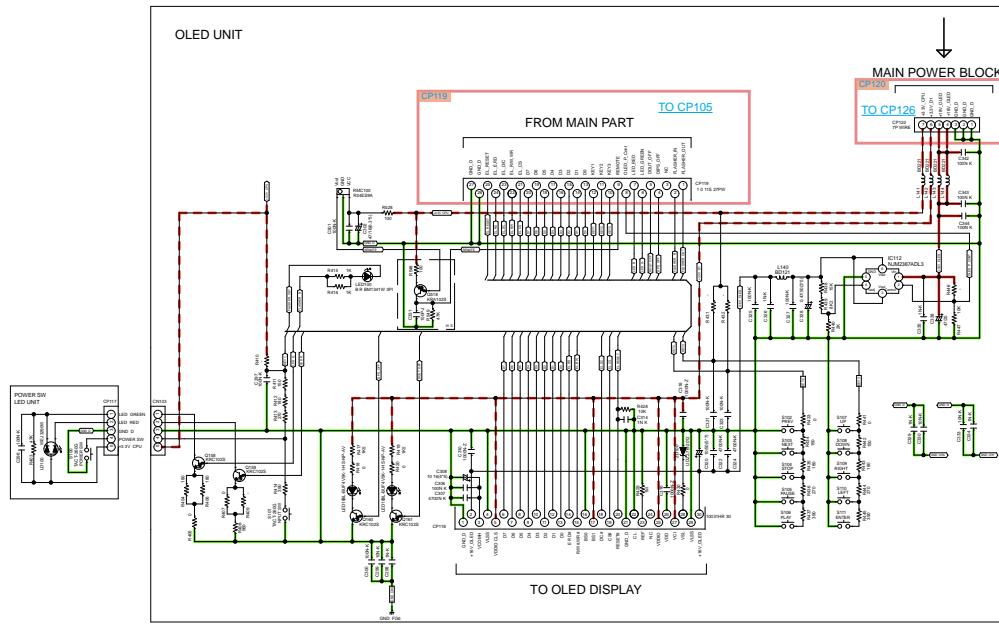




SCHEMATIC DIAGRAMS (2/7)
SC02_NETWORK



NA6005 FRONT BLOCK

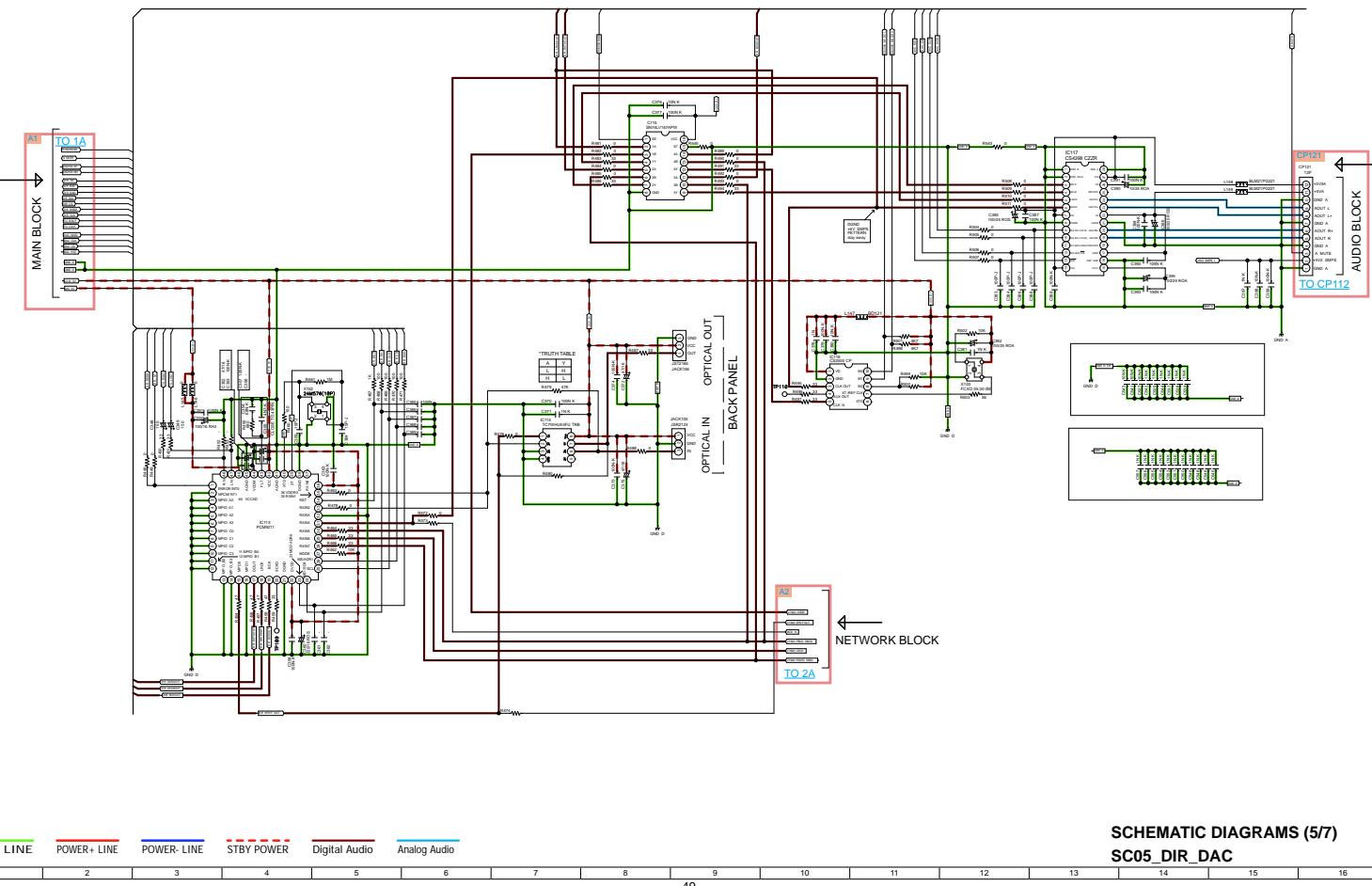


**SCHEMATIC DIAGRAMS (4/7)
SC04_FRONT**

GND LINE POWER+ LINE POWER- LINE STBY POWER Digital Audio Analog Audio

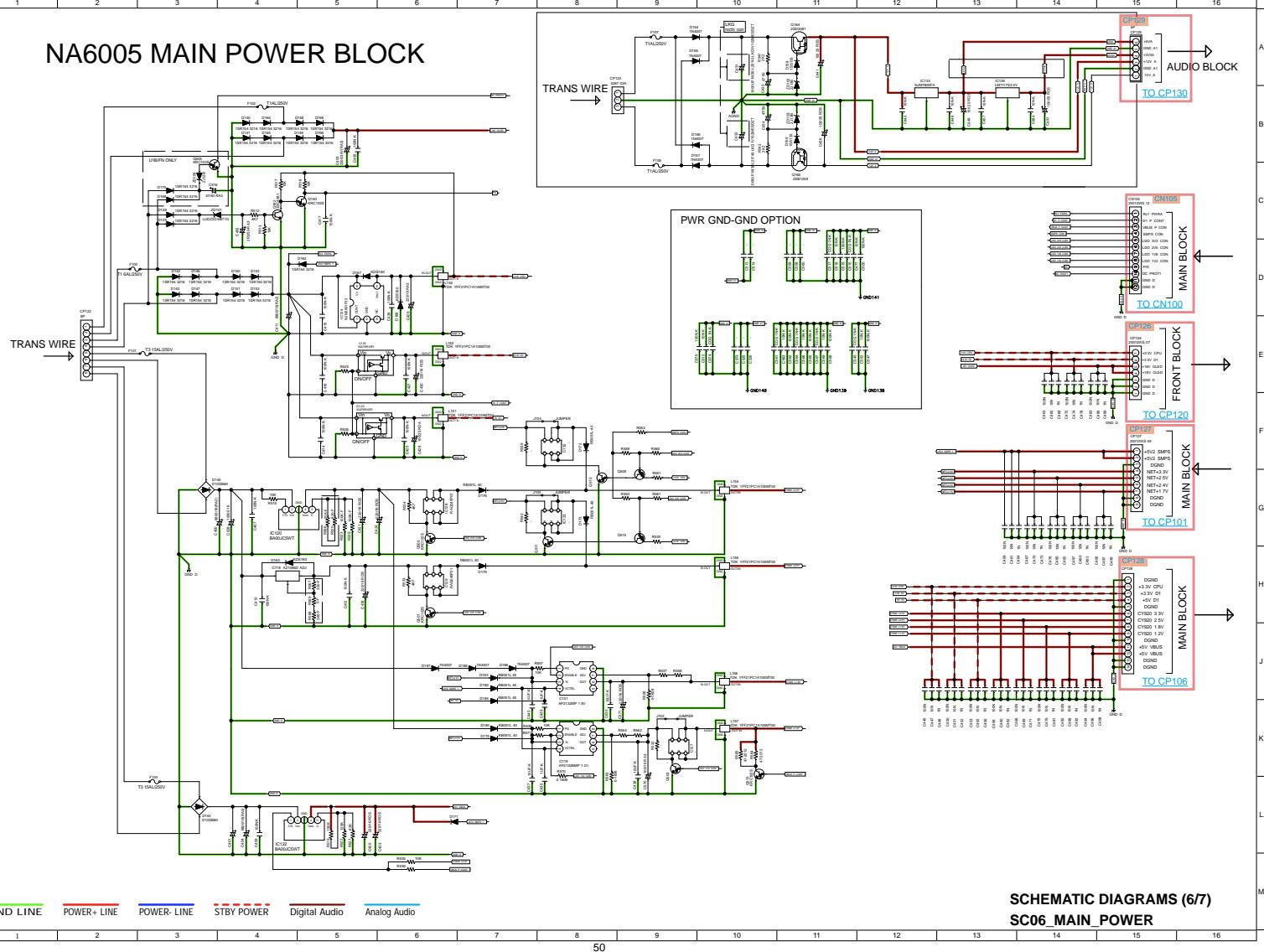
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----

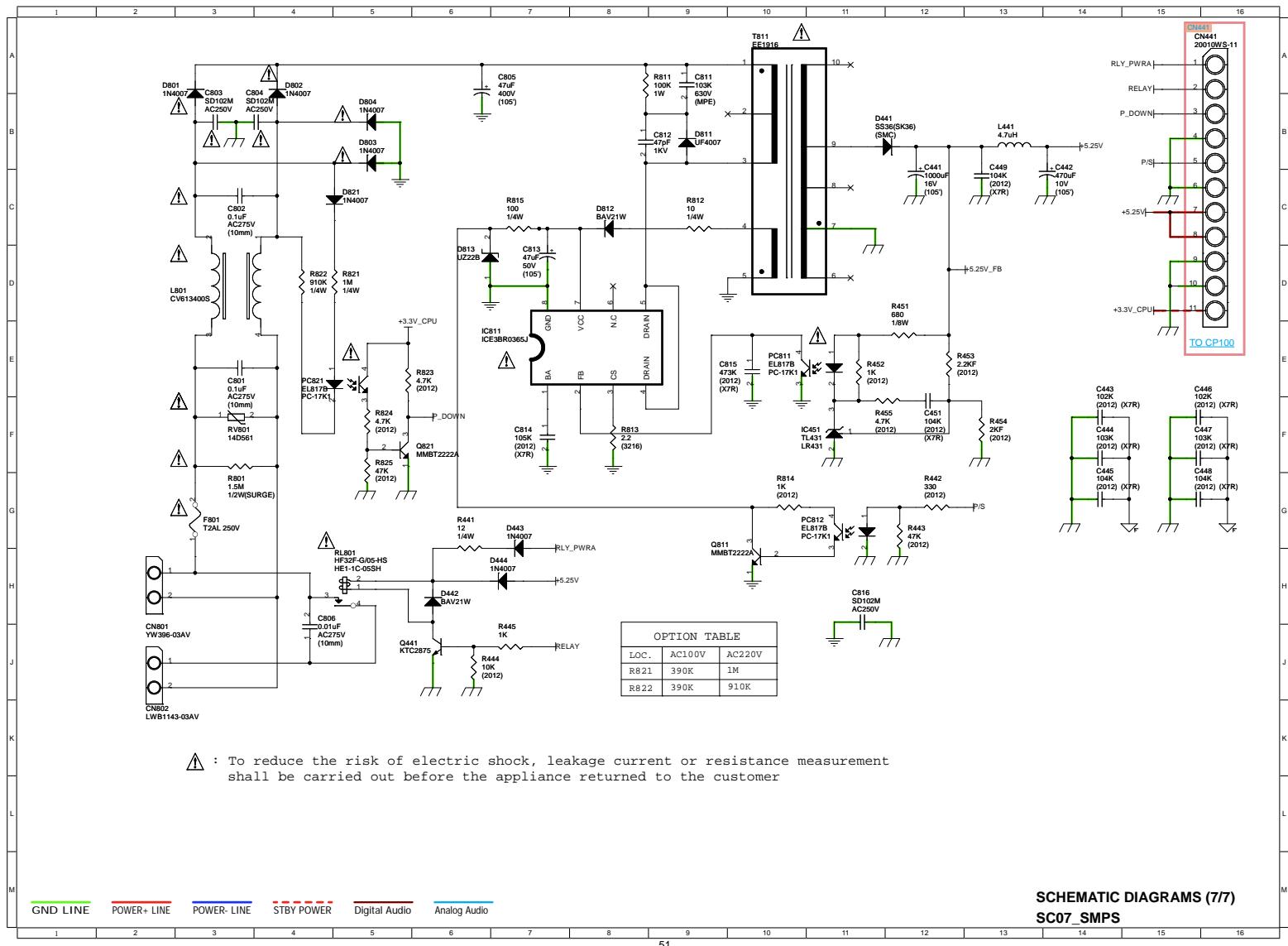
NA6005 DIR/DAC BLOCK



SCHEMATIC DIAGRAMS (5/7)
SC05_DIR_DAC

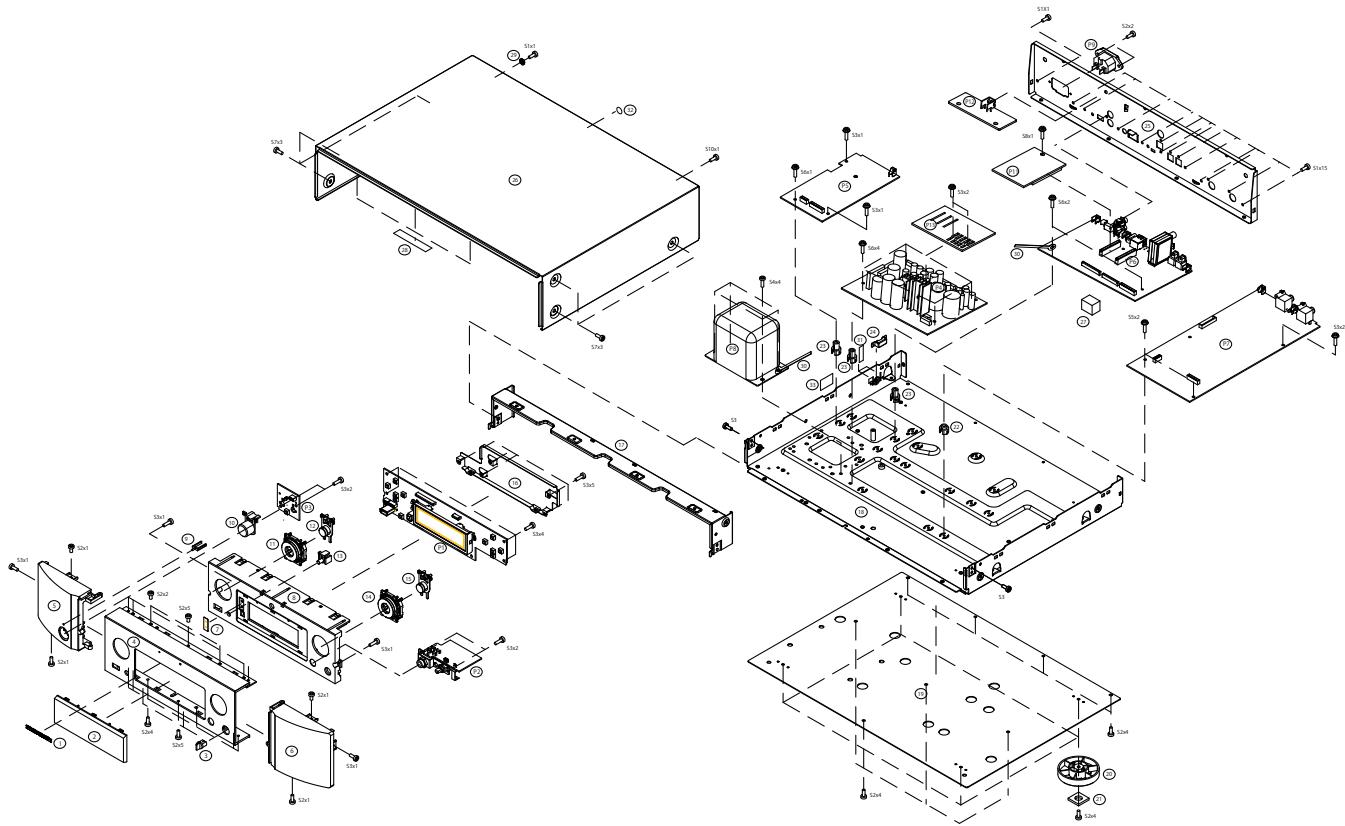
NA6005 MAIN POWER BLOCK





EXPLODED VIEW

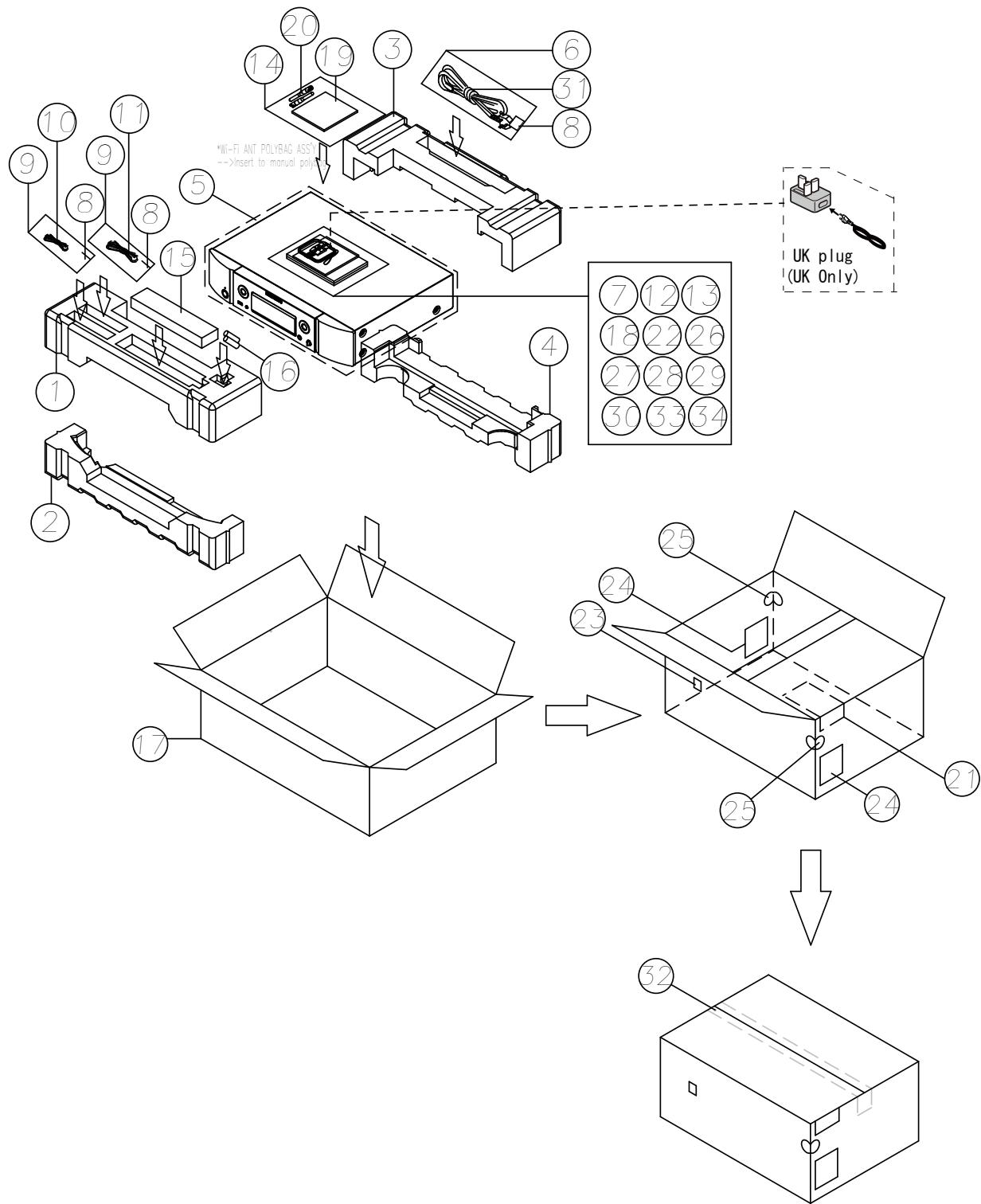
Please refer to the last chapter for the part list.



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

PACKING VIEW

Please see the last chapter for the part list.



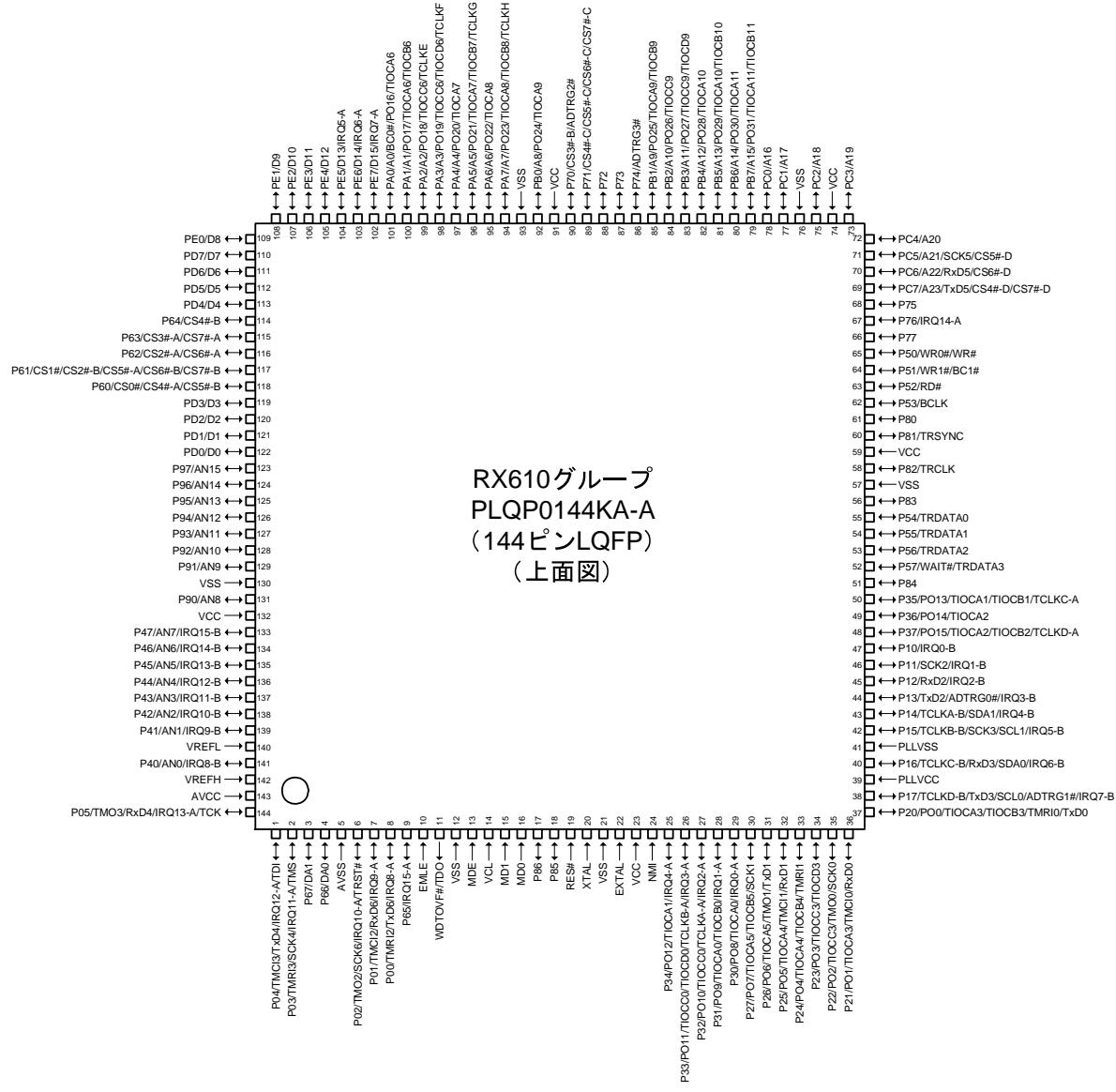
SEMICONDUCTORS

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

R5F56108VNFP (MAINI : IC101)



R5F56108VNFP Terminal Functions

Pin	Port Name	PD/ PU	I/ O	STANDBY MODE			NOTE
				STBY	Network STBY	Eco STBY	
1	TDI	PU	I	I	I	I	EMULATOR CONNECTION TERMINAL
2	TMS	PU	I	I	I	I	EMULATOR CONNECTION TERMINAL
3	TEST1	PD	I	I	I	I	BOARD CHECK MODE INPUT PORT
4	OPEN		O	O/L	O/L	O/L	OPEN
5	AVSS	-	-	-	-	-	GND
6	TRST#	PD	I	I	I	I	EMULATOR CONNECTION TERMINAL
7	RXD MI232O	PU	I	I	I	I	232C REWRITE TERMINAL DFW
8	TXD MO232I	-	O/L	O/L	O/L	O/L	232C REWRITE TERMINAL DFW
9	P.Down	-	I	I	I	I	P.Down DETECTION (INT)
10	EMLE	PD	I	I	I	I	EMULATOR CONNECTION TERMINAL
11	TDO	-	O	O/L	O/L	O/L	EMULATOR CONNECTION TERMINAL
12	VSS	-	-	-	-	-	GND
13	MDE	PD	I	I	I	I	SETTING OPERATION MODE
14	VCL	-	I	I	I	I	0.1 μ F Capacitor CONNECTION TERMINAL
15	MD1	PU	I	I	I	I	EMULATOR CONNECTION TERMINAL
16	MD0	PU	I	I	I	I	EMULATOR CONNECTION TERMINAL
17	OPEN		O	O/L	O/L	O/L	OPEN
18	OPEN		O	O/L	O/L	O/L	OPEN
19	RESET	-	I	I	I	I	RESET TERMINAL
20	X-OUT	-	-	-	-	-	CERALOCK12MHz OUTPUT
21	VSS	-	-	-	-	-	GND
22	X-IN	-	-	-	-	-	CERALOCK12MHz ININPUT
23	VCC	-	-	-	-	-	+3.3V_CPU
24	NMI	PU	I	I	I	I	NMI
25	EL RESET	PD	O	O/L	O/L	O/L	OLED RESET RESET in "L".
26	EL E,RD	-	O	O/L	O/L	O/L	EL READ
27	EL D/C	-	O	O/L	O/L	O/L	Data/Commando SWITCHING "H":DATA, "L":COMMAND
28	EL R/W,WR	-	O	O/L	O/L	O/L	EL WRITE
29	EL CS	-	O	O/L	O/L	O/L	EL CS "L" in THE I / F COMMUNICATE FOR OLED
30	D7	-	O	O/L	O/L	O/L	Data Bus FOR OLED
31	D6	-	O	O/L	O/L	O/L	Data Bus FOR OLED
32	D5	-	O	O/L	O/L	O/L	Data Bus FOR OLED
33	D4	-	O	O/L	O/L	O/L	Data Bus FOR OLED
34	D3	-	O	O/L	O/L	O/L	Data Bus FOR OLED
35	D2	-	O	O/L	O/L	O/L	Data Bus FOR OLED
36	D1	-	O	O/L	O/L	O/L	Data Bus FOR OLED
37	D0	-	O	O/L	O/L	O/L	Data Bus FOR OLED
38	OPEN	PU	O	O/L	O/L	O/L	I2C DATA TUNER
39	PLLVCC	-	-	-	-	-	+3.3V_CPU
40	OPEN	PD	I	I	I	I	INT. FROM TUNER
41	PLLVSS	-	-	-	-	-	GND
42	OPEN	PU	O	O/L	O/L	O/L	I2C CLOCK TUNER
43	E_REQ	PD	I	I	I	I	DM870/860 INT. COMMUNICATION REQUEST
44	OPEN		O	O/L	O/L	O/L	OPEN
45	OPEN		O	O/L	O/L	O/L	OPEN
46	OPEN		O	O/L	O/L	O/L	OPEN
47	OPEN		I	I	I	I	SMPS P_Down DETECTION (INT.)
48	EEPROM SDA	PU	I/O	I	I	I	EEPROM R1EX24256A CONTROL TERMINAL
49	EEPROM SCL	PU	O	I	I	I	EEPROM R1EX24256A CONTROL TERMINAL
50	OLED_Power_Cont	PD	O	O/L	O/L	O/L	OLED +18V Power-supply control
51	OPEN		O	O/L	O/L	O/L	OPEN
52	/E_SPICS	PU	O	O/L	O/L	O/L	DM870/860 SCI CS
53	OPEN		O	O/L	O/L	O/L	OPEN
54	OPEN		O	O/L	O/L	O/L	OPEN
55	E_RESET	PU	O	O/L	O/L	O/L	DM870/860 RESET (PU DM870/860 SIDE)
56	OPEN	PD	O	O/L	O/L	O/L	TUNER POWER CONTROL : Not used: L fixed

Pin	Port Name	PD/ PU	I/ O	STANDBY MODE			NOTE
				STBY	Network STBY	Eco STBY	
57	VSS	-	-	-	-	-	GND
58	OPEN		O	O/L	O/L	O/L	OPEN
59	VCC	-	-	-	-	-	+3.3V_CPU
60	OPEN	-	O	O/L	O/L	O/L	TUNER COMMUNICATION LINE CE
61	OPEN	PU	O	O/L	O/L	O/L	RESET FOR TUNER
62	OPEN	PD	I	I	I	I	INPUT ONLY
63	OPEN	PD	O	O/L	O/L	O/L	Ether UNITPower control (not used, reserved)
64	OPEN	-	O	O/L	O/L	O/L	OPEN
65	TEST2	PD	I	I	I	I	BOARD CHECK MODE INPUT PORT
66	OPEN		O	O/L	O/L	O/L	OPEN
67	DIR_INT	PU	I	I	I	I	DIR CONTROL
68	DIR_RST	-	O	O/L	O/L	O/L	DIR RESET
69	E_SPIMOEI	PU	O	O/L	O/L	O/L	CY920 SPI COMMUNICATION
70	E_SPIMIEO	PU	I	I	I	I	CY920 SPI COMMUNICATION
71	E_SPICLK	PU	O	O/L	O/L	O/L	CY920 SPI COMMUNICATION
72	DAC_CS		O	O/L	O/L	O/L	PCM1795 CONTROL
73	DAC_RST		O	O/L	O/L	O/L	PCM1795 CONTROL
74	VCC	-	-	-	-	-	+3.3V_CPU
75	OPEN		O	O/L	O/L	O/L	OPEN
76	VSS	-	-	-	-	-	GND
77	OPEN		O	O/L	O/L	O/L	OPEN
78	OPEN		O	O/L	O/L	O/L	OPEN
79	DAC_MOSI		O	O/L	O/L	O/L	PCM1795 CONTROL
80	OPEN		O	O/L	O/L	O/L	THE POWER STATUS ON, FOR CY920 +3.3VPOWER-SUPPLY CONTROL (exclusive work with E_POWER1)
81	DAC_CLK		O	O/L	O/L	O/L	PCM1795 CONTROL
82	REMOTE OUT		O	O/L	O/L	O/L	There remote control output carrier (DNP-730AE ONLY)
83	OPEN		O	O/L	O/L	O/L	THE POWER STATUS ON, +2.5VPOWER-SUPPLY CONTROL (exclusive work with E_POWER2)
84	OPEN		O	O/L	O/L	O/L	THE POWER STATUS ON, +1.8VPOWER-SUPPLY CONTROL (exclusive work with E_POWER3)
85	OPEN		O	O/L	O/L	O/L	THE POWER STATUS ON, +1.2VPOWER-SUPPLY CONTROL (exclusive work with E_POWER4)
86	DIR_DO	-	I	I	I	I	DIR CONTROL
87	DIR_DI	-	O	O/L	O/L	O/L	DIR CONTROL
88	DIR_CL	-	O	O/L	O/L	O/L	DIR CONTROL
89	DIR_CE	-	O	O/L	O/L	O/L	DIR CONTROL
90	DIR_RERR	PD	I	I	I	I	DIR CONTROL
91	VCC	-	-	-	-	-	+3.3V_CPU
92	TEST3	PD	I	I	I	I	BOARD CHECK MODE INPUT PORT
93	VSS	-	-	-	-	-	GND
94	CS2100 M0		O	O/L	O/L	O/L	CS2100 CONTROL
95	CS2100 M1		O	O/L	O/L	O/L	CS2100 CONTROL
96	PCM or DSD		O	O/L	O/L	O/L	PCM/DSD switching for path (output)
97	A_MUTE	PD	O	O/L	O/L	O/L	Audio MUTE OUTPUT
98	D1_Power_Cont	-	O	O/L	O/L	O/L	+3.3V_D1 / +12V_A POWER-SUPPLY CONTROL
99	VBUS_Power_Cont	PD	O	O/L	O/L	O/L	USB_VBUS POWER-SUPPLY CONTROL
100	E_FACT_RST		O	O/L	O/L	O/L	CY920 CONTROL
101	OPEN		O	O/L	O/L	O/L	OPEN
102	OPEN	PU	I	I	I	I	POWER ON key DETECTION
103	WiFi		I	I	I	I	
104	WPS		I	I	I	I	
105	OPEN		O	O/L	O/L	O/L	OPEN
106	OPEN		O	O/L	O/L	O/L	OPEN
107	OPEN		O	O/L	O/L	O/L	OPEN
108	ZEROL		O	O/L	O/L	O/L	PCM1795 ZERO FLAG

Pin	Port Name	PD/ PU	I/ O	STANDBY MODE			NOTE
				STBY	Network STBY	Eco STBY	
109	ZEROR		O	O/L	O/L	O/L	PCM1795 ZERO FLAG
110	E_POWER4		O	O/L	O/L	O/L	CY920 POWER-SUPPLY CONTROL
111	E_POWER3		O	O/L	O/L	O/L	CY921 POWER-SUPPLY CONTROL
112	E_POWER2		O	O/L	O/L	O/L	CY922 POWER-SUPPLY CONTROL
113	E_POWER1		O	O/L	O/L	O/L	CY923 POWER-SUPPLY CONTROL
114	GD25Q32_CLK	-	O	O/L	O/L	O/L	GD25Q32-6P, CLK
115	GD25Q32_HOLD	PU	I/O	I	I	I	GD25Q32-7P,HOLD# (IO3)
116	GD25Q32_WP	PU	I/O	I	I	I	GD25Q32-3P,WP# (IO2)
117	GD25Q32_SO	PU	I/O	I	I	I	GD25Q32-2P,SO (IO1)
118	GD25Q32_SI	PU	I/O	I	I	I	GD25Q32-5P,SI (IO0)
119	D3.3POWER		O	O/L	O/L	O/L	CY920 POWER-SUPPLY CONTROL Not used (RESERVED)
120	OPEN		O	O/L	O/L	O/L	STANDBY用 DC-DC Con OUTPUT CONTROL (Substitute in SMPS_CONT、 Reserved)
121	GD25Q32_CS		O	O/L	O/L	O/L	GD25Q32-1P, CS
122	OPEN		O	O/L	O/L	O/L	For the standby boot for SMPS
123	OPEN		O	O/L	O/L	O/L	Main Relay ON/OFF CONTROL
124	OPEN		O	O/L	O/L	O/L	OPEN
125	OPEN		O	O/L	O/L	O/L	DISPLAY OFF : RED LED Indicator (same as NA8005)
126	OPEN		O	O/L	O/L	O/L	Digital OUT OFF: RED LED Indicator (same as NA8005)
127	TEST4	PD	I	I	I	I	BOARD CHECK MODE INPUT PORT
128	OPEN	-	O	O/L	O/L	O/L	IR Sensor input invalid output
129	LED_RED	PD	O	O/L	O/H	O/L	RED LED Eco-STBY : Low OUTPUT
130	VSS	-	-	-	-	-	GND
131	LED_GREEN	PD	O	O/L	O/L	O/L	GREEN LED Eco-STBY : Low OUTPUT
132	VCC	-	-	-	-	-	+3.3V_CPU
133	REGION	AD	I	I	I	I	Destination discrimination
134	MODEL	AD	I	I	I	I	MODEL FLAG (FOR Mz RESEVED) DNP720AE Low
135	DC Protect 1	PU	O	O/L	O/L	O/L	DC PROTECTION DETECT 1
136	DC Protect 2	PU	O	O/L	O/L	O/L	DC PROTECTION DETECT 2
137	REMOTE	-	I	I	I	I	REMOTE IN
138	KEY3	PU	I	I	I	I	OPERATION BUTTON INPUT 3(A/D port)
139	KEY2	PU	I	I	I	I	OPERATION BUTTON INPUT 2(A/D port)
140	VREFL	-	-	-	-	-	GND
141	KEY1	PU	I	I	I	I	OPERATION BUTTON INPUT 1(A/D port)
142	VREFH	-	-	-	-	-	+3.3V_CPU
143	AVCC	-	-	-	-	-	+3.3V_CPU
144	TCK	PU	I	I	I	I	EMULATOR CONNECTION TERMINAL

CS4398 (AUDIO : IC117)

DSD_B	1		28	DSD_A
DSD_SCLK	2		27	VLS
SDIN	3		26	VQ
SCLK	4		25	AMUTEC
LRCK	5		24	AOUTA-
MCLK	6		23	AOUTA+
VD	7		22	VA
DGND	8		21	AGND
M3 (AD1/CDIN)	9		20	AOUTB+
M2 (SCL/CCLK)	10		19	AOUTB-
M1 (SDA/CDOUT)	11		18	BMUTEC
M0 (AD0/CS)	12		17	VREF
RST	13		16	REF_GND
VLC	14		15	FILT+

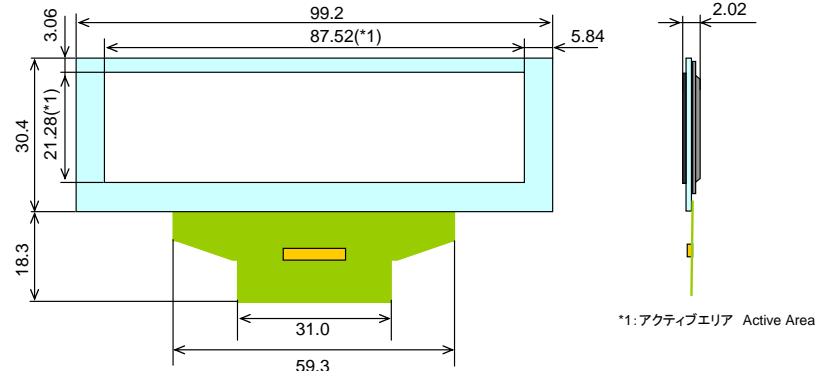
CS4398 Terminal Functions

Pin Name	Pin #	Pin Description
DSD_A	28	Direct Stream Digital Input (<i>Input</i>) - Input for Direct Stream Digital serial audio data.
DSD_B	1	
DSD_SCLK	2	DSD Serial Clock (<i>Input</i>) - Serial clock for the Direct Stream Digital audio interface.
SDIN	3	Serial Audio Data Input (<i>Input</i>) - Input for two's complement serial audio data.
SCLK	4	Serial Clock (<i>Input</i>) - Serial clock for the serial audio interface.
LRCK	5	Left Right Clock (<i>Input</i>) - Determines which channel, Left or Right, is currently active on the serial audio data line.
MCLK	6	Master Clock (<i>Input</i>) - Clock source for the delta-sigma modulator and digital filters.
VD	7	Digital Power (<i>Input</i>) - Positive power for the digital section.
DGND	8	Digital Ground (<i>Input</i>) - Ground reference for the digital section.
RST	13	Reset (<i>Input</i>) - The device enters system reset when enabled.
VLC	14	Control Port Power (<i>Input</i>) - Positive power for Control Port I/O.
FILT+	15	Positive Voltage Reference (<i>Output</i>) - Positive reference voltage for the internal sampling circuits.
REF_GND	16	Reference Ground (<i>Input</i>) - Ground reference for the internal sampling circuits.
VREF	17	Voltage Reference (<i>Input</i>) - Positive voltage reference for the internal sampling circuits.
BMUTEC	18	Mute Control (<i>Output</i>) - The Mute Control pin is active during power-up initialization, muting, power-down or if the master clock to left/right clock frequency ratio is incorrect. During reset, these outputs are set to a high impedance.
AMUTEC	25	
AOUTB+	20	Differential Right Channel Analog Output (<i>Output</i>) - The full-scale differential analog output level is specified in the Analog Characteristics specification table.
AOUTB-	19	
AGND	21	Analog Ground (<i>Input</i>) - Ground reference for the analog section.
VA	22	Analog Power (<i>Input</i>) - Positive power for the analog section.
AOUTA+	23	Differential Left Channel Analog Output (<i>Output</i>) - The full-scale differential analog output level is specified in the Analog Characteristics specification table.
AOUTA-	24	
VQ	26	Quiescent Voltage (<i>Output</i>) - Filter connection for internal quiescent voltage.
VLS	27	Serial Audio Interface Power (<i>Input</i>) - Positive power for serial audio interface I/O.
Stand-Alone Mode Definitions		
M3	9	
M2	10	
M1	11	Mode Selection (<i>Input</i>) - Determines the operational mode of the device.
M0	12	
Control Port Mode Definitions		
AD1/CDIN	9	Address Bit 1 (I ² C) / Control Data Input (SPI) (<i>Input</i>) - AD1 is a chip address pin in I ² C mode; CDIN is the input data line for the Control Port interface in SPI mode.
SCL/CCLK	10	Serial Control Port Clock (<i>Input</i>) - Serial clock for the serial Control Port.
SDA/CDOUT	11	Serial Control Data (I ² C) / Control Data Output (SPI) (<i>Input/Output</i>) - SDA is a data I/O line in I ² C mode. CDOUT is the output data line for the Control Port interface in SPI mode.
AD0/CS	12	Address Bit 0 (I ² C) / Control Port Chip Select (SPI) (<i>Input</i>) - AD0 is a chip address pin in I ² C mode; CS is the chip select signal for SPI format.

2. DISPLAY

OLED (Ref.No.15)
S020-MXS4035A-3

端子番号 Pin No.	端子名 Pin Name	入出力 /O	機能 Function
1	VSS	P	グランド GND
2	VCC	P	ドライブ系電源電圧 Drive System Power Voltage
3	VCOMH	P	陰極電源 Power Supply for Cathode Driver
4	VLSS	P	アナロググランド Analog System Ground
5	CLS	I	VDDIO接続 Connect to VDDIO
6	D7	I	データバス Data Bus
7	D6	I	データバス Data Bus
8	D5	I	データバス Data Bus
9	D4	I	データバス Data Bus
10	D3	I	データバス Data Bus
11	D2	I	データバス Data Bus
12	D1(SD N)	I	データバス(シリアルデータ) Data Bus(Serial Data)
13	D0(SCLK)	I	データバス(シリアルクロック) Data Bus(Serial Clock)
14	RD#	I	読み出し Read
15	WR#	I	書き込み Write
16	BS0	I	インターフェース選択端子
17	BS1	I	Select MCU Bus Interface Setting
18	D/C#	I	データ/コマンド選択 Select Data/Command
19	CS#	I	チップセレクト Chip Select
20	RES#	I	リセット Reset
21	VSS	P	グランド GND
22	CL	I	VSS接続 Connect to VSS
23	IREF	O	基準電流 Reference Current Setting
24	NC	-	
25	VDDIO	P	インターフェイス系電源電圧 Interface System Power Voltage
26	VDD	O	内部ロジック電源 Internal Logic Power
27	VCI	P	ロジック系電源 Logic System Power Voltage
28	VSL	P	陽極基準電位 Anode Reference Voltage
29	VLSS	P	アナロググランド Analog System Ground
30	VCC	P	ドライブ系電源電圧 Drive System Power Voltage



REF No.	Part No.	Part Name	Remarks	Q'ty	New	Ver
JACK106	96362200010D	MODULE JST2165 192K 25MBPS OPTICAL TRANSMITTER INTERFACE	E100216500020S	1		
L102	nsp	COIL,CHIP DLW21SN181SQ2L COMMON MODE CHOKE COILS SMD2012	D311201211810S	1		
L103,106	nsp	COIL,BEAD CB05YTYH221-2012REEL	D340201292210S	4		
L107,108	nsp	COIL,CHIP DLW21SN900HQ2L COMMON MODE CHOKE COILS SMD2012	D311201219000S	2		
L109	nsp	R,CHIP THICK -0.3,1/10W-2012REEL	C20000006020US	1		
L110-121	nsp	COIL,BEAD CB05YTYH221-2012REEL	D340201292210S	12		
L145,146	nsp	R,CHIP THICK 0.3,1/16V-1608REEL	C20000006M160S	2		
L147	nsp	COIL,BEAD CBW160808U121T 120ohm SMD1608 TYPE	D340160811210S	1		
L148,149	nsp	COIL,BEAD HB-1M1608-221JT CIM10J221NC 220 OHM	D340116082210S	2		
PACK100	963189100860D	TUNER,FM/AM KST-MW004MV1-S63SV-1 4GANG+MW+50US NA	U	E903004103630S	1	
PACK100	963189100850D	TUNER,FM/AM KST-MW004MV1-S63-1 FM/AM NA	F	E903004101630S	1	
SW100	00D9630045708	SW,TACT SKHV10920A,5MM/260G-REEL	G180000270010S	1		
SW101	963674100130S	SW,SLIDE CSS-2219(9mm) SLIDE SWITCH	G060221900020S	1	*	
SW102,103	963662100130S	SW,TACT THHH583RAA VERTICAL TACT SWITCH 260G	G180583000010S	2		
X100	00D9630217701	RESONATOR,CERAMIC ZTT12.00MT-TF C1,C2=22PF 3PIN 2.5-REEL	E830120000060S	1		
X102	963141100940S	CRYSTAL CHIP 24.576MHZ CL=10PF XS-3225 SMD3225 ECEC	E80524R576190S	1		
X103	963142111000D	OSCILATOR,CERAMIC CHIP OS-3225 30.0000MHZ 3.3V SMD3225 ECEC	E85530R000090S	1		
★	nsp	BRACKET AVR2100BKE3 SPCC 10.5 Sn-Plating A4/SCREW L10	4010216016000S	1		
★	nsp	SCREW,TAP TITE +3S 3°8 BK/BH	B020930083B10S	1		

REF No.	Part No.	Part Name	Remarks	Q'ty	New	Ver
CP130	nsp	CN.WAFER 2.0MM 20010WS-06A00 DIP6P STRAIGHT	L101200100610S	1		
B100	nsp	RING.TER WIRE 150MM/1P 602-B5(3.2).B1011TOP-2(1.0) BK1007#24	8410151010120S	1	*	
BKT403	nsp	BRACKET AVR133(HARMAN) BURRING HOLE SPTE 0.8/SCREW	4010210196100S	1		
FG106	nsp	BRACKET AVR133(HARMAN) BURRING HOLE SPTE 0.8/SCREW	4010210196100S	1		
FG108	nsp	BRACKET AVR133(HARMAN) BURRING HOLE SPTE 0.8/SCREW	4010210196100S	1		
GND122	nsp	TERMINAL MET37-0002/TAPIG EARTH FITTING	3790040886000S	1		
J201_202	nsp	R.CHIP THICK 0-J_1/10W-2012REEL	C200000060200S	2		
J300-352	nsp	CN.WIRE 1P JUMPER (0.6/52MM)	L045084006040S	53		
J353	nsp	R.CHIP THICK 0-J_1/8W-3216REEL	C200000061300S	1		
J354	nsp	CN.WIRE 1P JUMPER (0.6/52MM)	L045084006040S	1		
J355	nsp	R.CHIP THICK 0-J_1/10W-2012REEL	C200000060200S	1		
J356-374	nsp	CN.WIRE 1P JUMPER (0.6/52MM)	L045084006040S	19		
J375	nsp	R.CHIP THICK 0-J_1/8W-3216REEL	C200000061300S	1		
J376-382	nsp	CN.WIRE 1P JUMPER (0.6/52MM)	L045084006040S	7		
J383	nsp	R.CHIP THICK 0-J_1/8W-3216REEL	C200000061300S	1		
J384-387	nsp	CN.WIRE 1P JUMPER (0.6/52MM)	L045084006040S	4		
J388_389	nsp	R.CHIP THICK 0-J_1/8W-3216REEL	C200000061300S	2		
JACK103	963643101120S	JACK,D6.5 PHONE (YUQIU) D6.5 9P SILVER PJ-612A-9	G402PJ612A09YS	1		
JACK104	963643101610D	CN.PLUG CONTACT USB A F 180 DIP L=15.0	G480040000180S	1		
JK100	963643103130S	TER.RCA 1PIN Jack RCA-117G-06(WH)	G600117G06000S	1	*	
JK101	963643103140S	TER.RCA 1PIN Jack RCA-117G-05(RD)	G600117G05000S	1	*	
L122-125	nsp	COIL,BEAD BLM21PG221SN1 220ohm 2A SMD2012 TYPE	D340201212210S	4		
L126-128	nsp	R.CHIP THICK 0-J_1/10W-2012REEL	C200000060201S	3		
L129_130	nsp	COIL,BEAD BLM21PG221SN1 220ohm 2A SMD2012 TYPE	D340201212210S	2		
L131	nsp	R.CHIP THICK 0-J_1/10W-2012REEL	C200000060201S	1		
L132-139	nsp	COIL,BEAD BLM21PG221SN1 220ohm 2A SMD2012 TYPE	D340201212210S	8		
L140-144	963115100320S	COIL,BEAD CBW201209U221T 220ohm SMD2012 TYPE	D340201202210S	5		
L158	nsp	COIL,BEAD BLM21PG221SN1 220ohm 2A SMD2012 TYPE	D340201212210S	1		
RMC100	963262100320S	MODULE,REMOCON R94FH1A 38KHZ LEAD BENDING TYPE	E940941003810S	1	*	
S100-111	00D9630045708	SW.TACT SKHV10920A.5MM/260G-REEL	G180000270010S	12		
ST101,102	nsp	CLAMP HMX9800(ON)(HAITAI) (W=2.6,L=50)/WIRE(SOLDER)	I430000120000S	2		

PACKING

※Parts indicated by "nsp" on this table cannot be supplied.

※The parts listed below are only for maintenance. Therefore they might differ from the parts used in the unit in appearances or dimensions.

NOTE:The symbols in the column Remarks indicate the following destinations.

U : North America model N : Europe model K : China model F : Japan model

B : Black model SG : Silver Gold model

REF No.	Part No.	Part Name	Remarks	Q'ty	New	Ver
1	963533102890M	CUSHION SNOW FRONT TOP	6230213884000S	1	*	
2	963533102910M	CUSHION SNOW FRONT BOTTOM	6230213894000S	1	*	
3	963533102900M	CUSHION SNOW REAR TOP	6230213904000S	1	*	
4	963533102920M	CUSHION SNOW REAR BOTTOM	6230213914000S	1	*	
5	nsp	SET PE SHEET	6327040059000S	1		
6	nsp	POLYBAG	6330210812000S	1		
7	nsp	POLYBAG	6337040062010S	1		
8	nsp	YELLOW TAPE	1220211609000S	1		
9	nsp	POLYBAG	6330210789000S	1		
10	nsp	CORD RCA CABLE_500MM/1P RCA	L0635010102020S	1		
11	nsp	CORD RCA CABLE_1200MM/2P RCA	L063122020020S	1	*	
12	54111125202AM	INSTRUCTION MANUAL	K	5707000009830S	1	*
12	54111125203AM	INSTRUCTION MANUAL	F	5707000009840S	1	*
12	54111125200AM	INSTRUCTION MANUAL	U	5707000009810S	1	*
12	54111125201AM	INSTRUCTION MANUAL	N	5707000009820S	1	*
13	54111125100AM	DISC CD	K	6517000002100S	1	*
13	35201037200AM	DISC CD	U	6517000002080S	1	*
13	35201037201AM	DISC CD	N	6517000002090S	1	*
14	nsp	POLY BAG	6330210719000S	1	2	
15	30701020400AM	REMOCON	8300004000010S	1	*	2
16	nsp	BATTERY,DRY	G670001R50242S	1		
17	963531104740M	BOX GIFT	6007212910000S	1	*	
18	nsp	SHHET SAFTEY	K	5227000003460S	1	*
18	nsp	SHHET SAFTEY	F	5227000003470S	1	*
18	nsp	SHHET SAFTEY	U	5227000003440S	1	*
18	nsp	SHHET SAFTEY	N	5227000003450S	1	*
19	nsp	SHEET FLY(FOR ANTENNA)		5227000003480S	1	*
20	11601005400AS	ANTENNA, ROD		E600000020010S	2	*
21	nsp	WARRANTY CARD	K	522700000302S	1	*
21	nsp	WARRANTY CARD	F	5777200120043S	1	
22	nsp	CARD PASS	K	577700000020S	1	
23	nsp	LABEL Q PLAY	K	5507000017910S	1	*
23	nsp	LABEL Q PLAY	N	5507000017900S	1	*
24	nsp	LABEL CONTROL		-	1	
25	nsp	LABEL COLOR	SG	5507000004600S	1	
26	35201037202AM	INSTRUCTION MANUAL	F	5707000009850S	1	*
27	nsp	SHEET ADDRESS	F	522700000067S	1	*
28	nsp	SHEET NOTE ON RADIO		5227000003490S	1	*
29	nsp	WARRANTY CARD	U	522700000112S	1	
30	nsp	WARRANTY CARD	U	527041650142S	1	
! 31	90M-ZC000330R	AC CORD ASSY (K)	K	L068250100150S	1	
! 31	943611011630S	AC CORD ASSY (F)	F	L068125120190S	1	
! 31	90M-ZC000310R	AC CORD ASSY (U)	U	L068125130020S	1	
! 31	90M-ZC000320R	AC CORD ASSY (N)	N	L068250160120S	1	
32	nsp	PACKING TAPE		1220210772000S	1	
33	963116100560S	AM ANTTENA	U, F	E601019000050S	1	
34	963116100550S	FM ANTTENA	U, F	E605010140050S	1	