DENON

Ver. 1

SERVICE MANUAL

MODEL	JP	E3	E2	EK	EA	E1C	E1K	CI
AVR-1513		✓	✓			✓		

AV SURROUND RECEIVER

• 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.

DENON

D&M Holdings Inc.

S0422-0V01DM/DG1202

CONTENTS

ABOUT THIS MANUAL

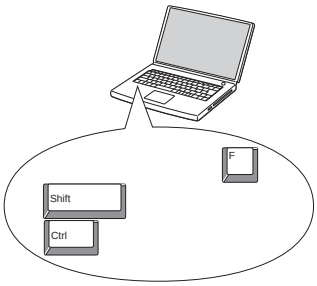
Read the following information before using the service manual.

What you can do with this manual

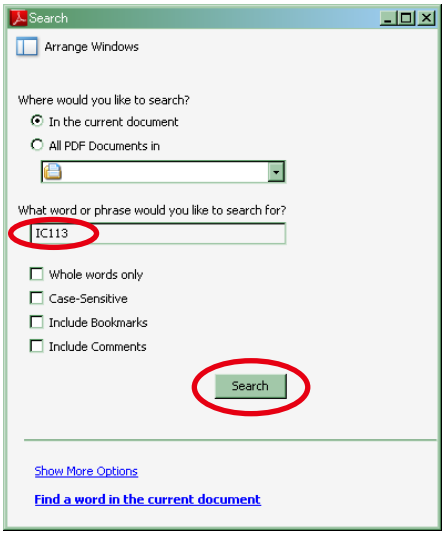
Search for a Ref. No. (phrase) (Ctrl+Shift+F)

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

1.Press **Ctrl**+**Shift**+**F** on the keyboard.
- The Search window appears.



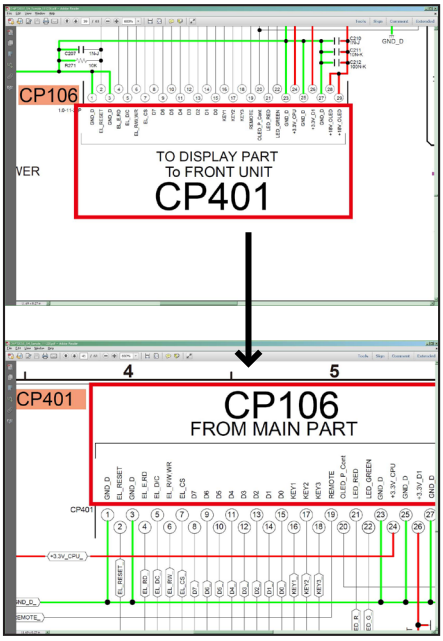
2.Enter the Ref. No. you want to search for in the Search window, and then click the **Search** button.
- A list of search results appears.



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.

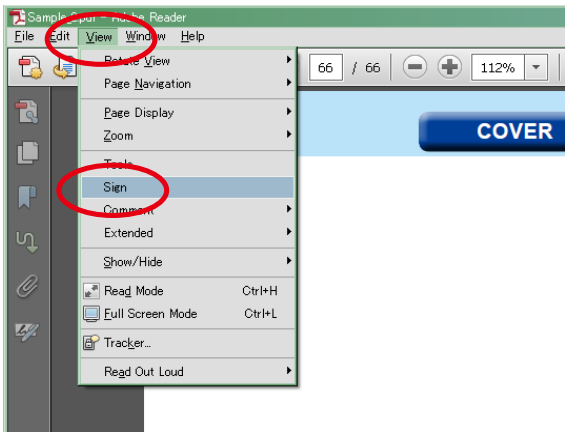
Using Adobe Reader (Windows version)

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.

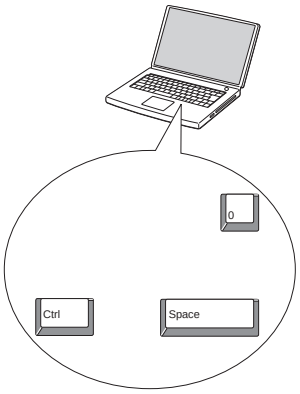


[Example using Adobe Reader 9]
On the "**Document**" menu, click "**Sign**".

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.

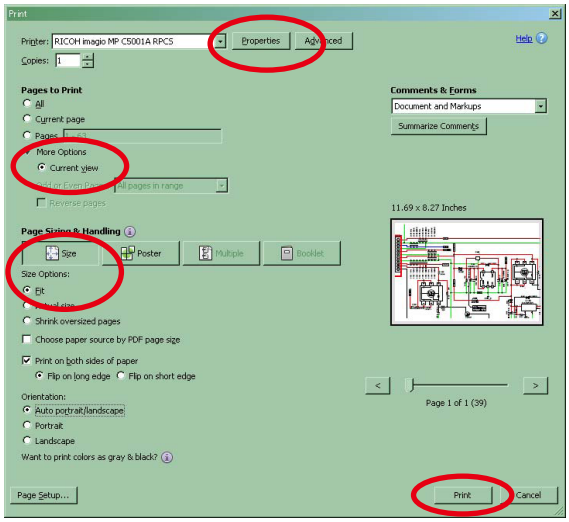


- When you want to move the area shown, hold down **Space** and drag the mouse.
- When you want to show a full page view, press **Ctrl**+**0** on the keyboard.

Print a magnified part of the manual

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

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



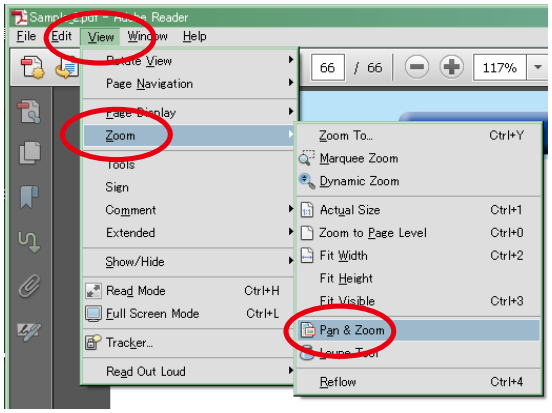
- **Properties**
  Click this button and check that the printer is set to a suitable paper size.
- **Page to print**
  Select the following checkbox.
  "**More Options**" : "**Current View**"
- **Page Sizing & Handling**
  Select the following checkbox.
  "**Size**" / "**Size Options**" : "**Fit**"

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

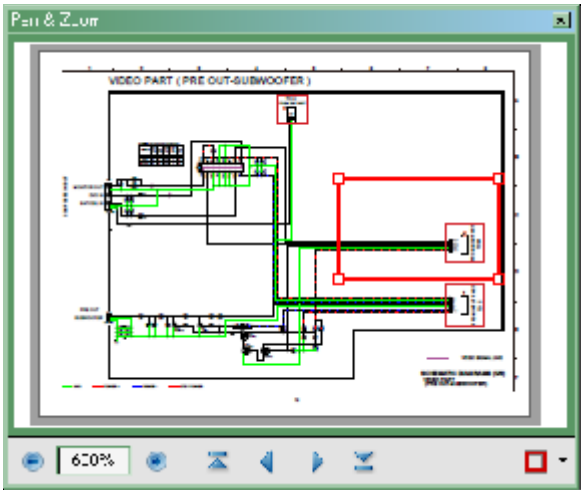
Magnify schematic / printed wiring board diagrams - 2
(Pan & Zoom function)

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.

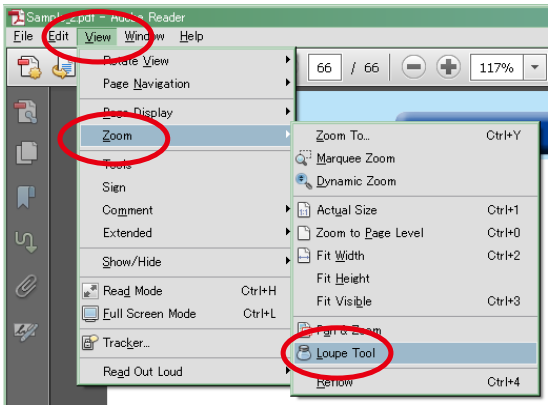


[Example using Adobe Reader 9]
On the "**Tools**" menu, point to "**Select & Zoom**", and then click "**Pan & Zoom Window**".

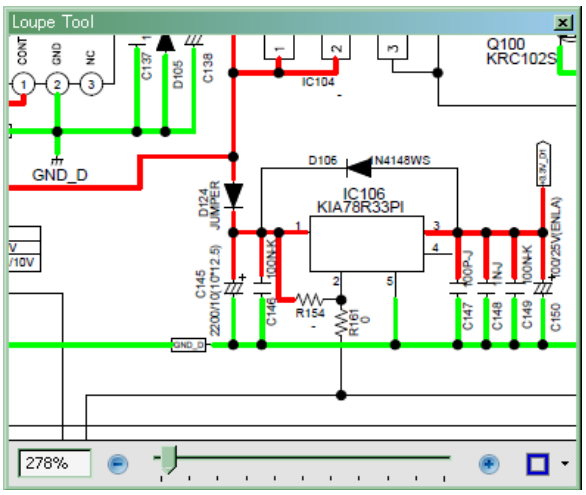
Magnify schematic / printed wiring board diagrams - 3
(Loupe Tool function)

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 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 1MΩ 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. 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.
5. General-purpose Carbon Film Resistor in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)
6. General-purpose Carbon Chip Resistors are not included are not included in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)

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

TECHNICAL SPECIFICATIONS

❑ Audio Section

- **Power amplifier**

  Rated output :

  Front :
  75 W + 75 W (8 Ω, 20 Hz – 20 kHz with 0.08 % T.H.D.)
  110 W + 110 W (6 Ω, 1 kHz with 0.7 % T.H.D.)
  130W+130W(6Ω, JEITA)

  Center :
  75 W (8 Ω, 20 Hz – 20 kHz with 0.08 % T.H.D.)
  110 W (6 Ω, 1 kHz with 0.7 % T.H.D.)
  130W(6Ω, JEITA)

  Surround :
  75 W + 75 W (8 Ω, 20 Hz – 20 kHz with 0.08 % T.H.D.)
  110 W + 110 W (6 Ω, 1 kHz with 0.7 % T.H.D.)
  130W+130W(6Ω, JEITA)

  Output connectors : 6 – 16 Ω

- **Analog**

  Input sensitivity/Input impedance : 200 mV/47 kΩ
  Frequency response: 10 Hz – 100 kHz — +1, –3 dB (DIRECT mode)
  S/N : 98 dB (IHF–A weighted, DIRECT mode)

❑ Video section

- **Standard video connectors**

  Input/output level and impedance : 1 Vp-p, 75 Ω
  Frequency response: 5 Hz – 10 MHz — 0, –3 dB

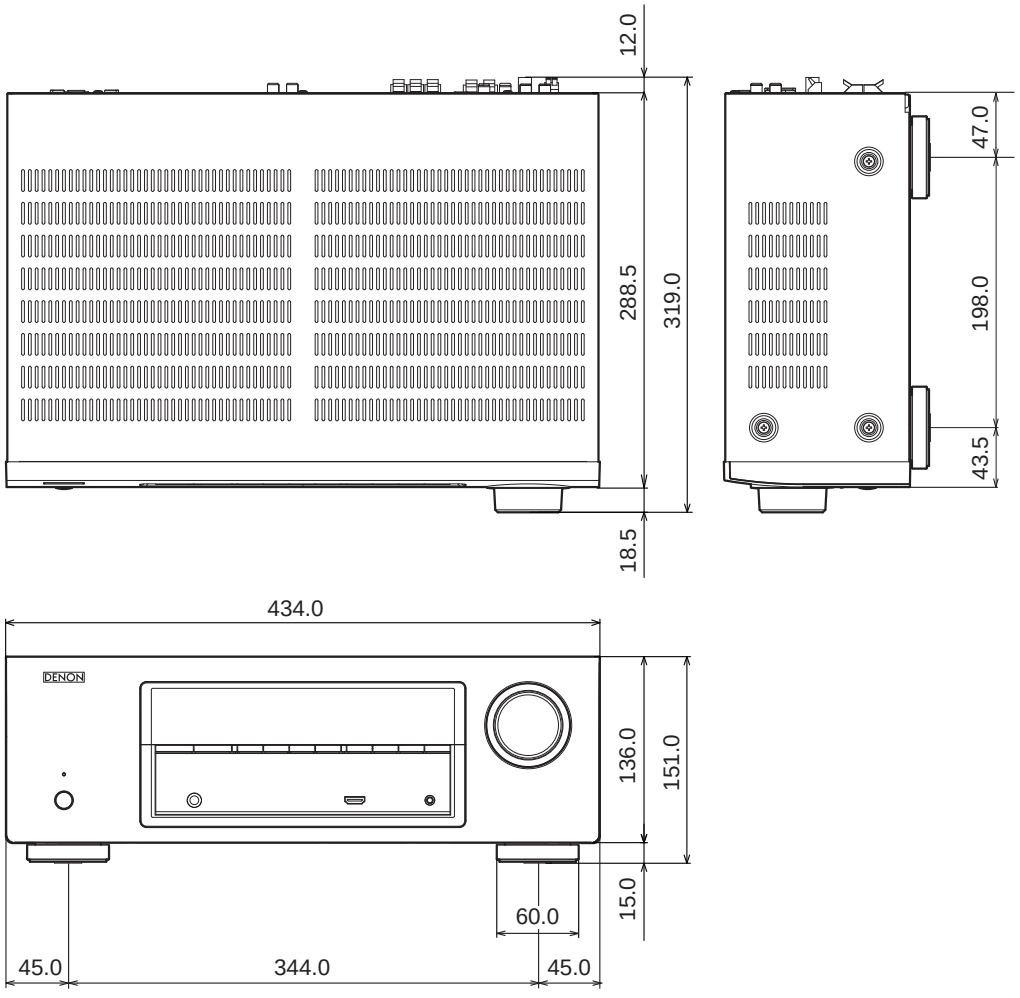
❑ Tuner section

[FM](Note: µV at 75 Ω, 0 dBf = 1 x 10^{-15} W)
Receiving Range (for E3) **:**
[FM] 87.5 MHz – 107.9 MHz **[AM]**520 kHz – 1710 kHz
Receiving Range (for E2, E1C) **:**
[FM] 87.5 MHz – 108.0 MHz **[AM]**522 kHz – 1611 kHz
Usable Sensitivity :
[FM]1.2 µV (12.8 dBf) **[AM]**18 µV
50 dB Quieting Sensitivity :
[FM]MONO 2.8 µV (20.2 dBf)
S/N (IHF-A) :
[FM]MONO 70 dB (IHF–A weighted, DIRECT mode)
STEREO 67 dB (IHF–A weighted, DIRECT mode)
Total harmonic Distortion (at 1 kHz) :
[FM]MONO 0.7 %
STEREO 1.0 %

❑ General

Power supply : (for E3) **:** AC 120 V, 60 Hz
(for E2) **:** AC 230 V, 50 Hz / 60Hz
(for E1C) **:** AC 220 V, 50 Hz
Power consumption : 330 W
0.5 W (Standby)

DIMENSION



Weight : 7.8kg

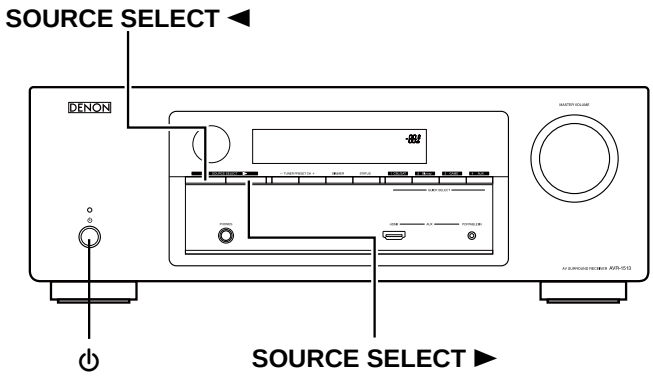
CAUTION IN SERVICING

Initializing AV SURROUND RECEIVER

AV SURROUND RECEIVER initialization should be performed when the µcom, peripheral parts of µcom, and Digital PCB were replaced.

1. Turn off the power pressing ⏻ button.
2. Press ⏻ button while simultaneously while pressing SOURCE SELECT ◄ and SOURCE SELECT ► buttons.
3. Check that the entire display is flashing at intervals of about 1 second, and then release the 2 buttons.
   The microprocessor will be initialized.

Note: • If step 3 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.



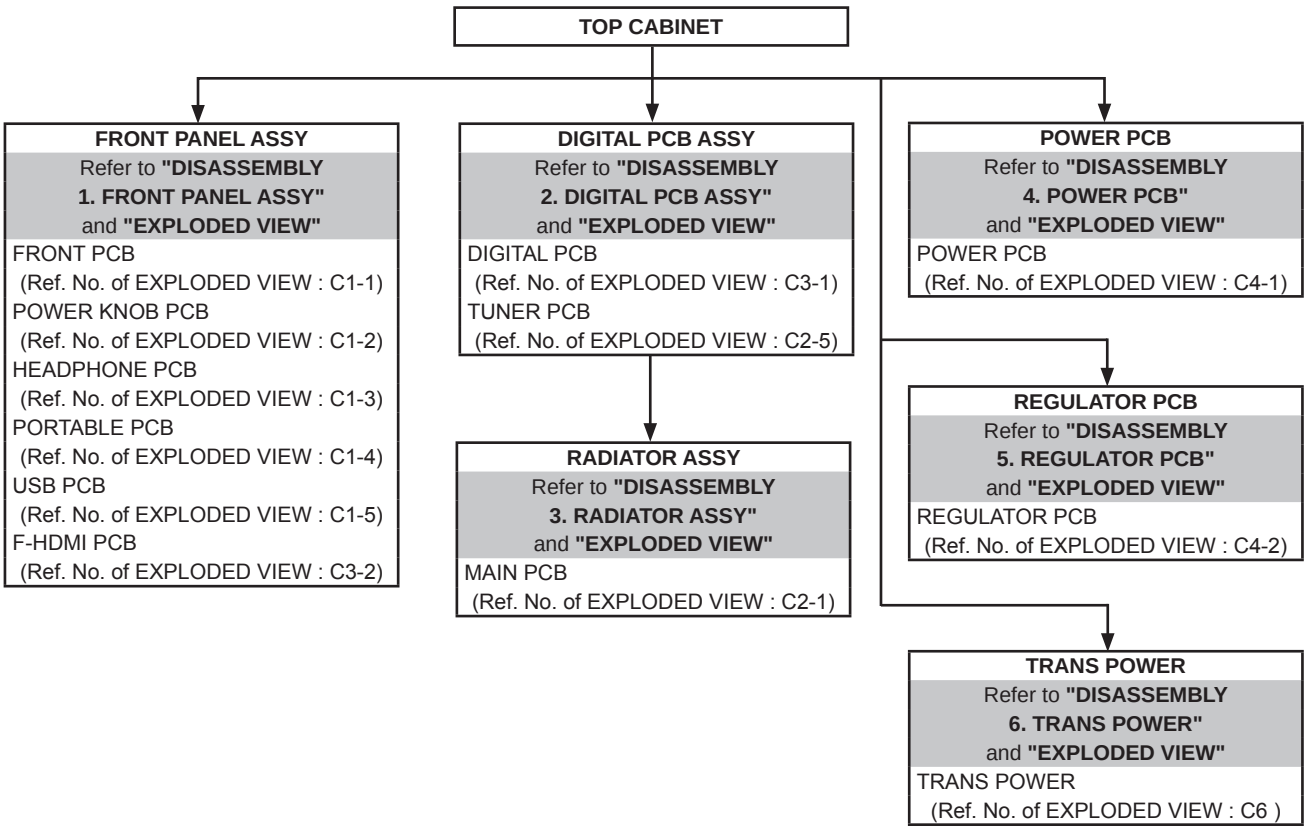
Service Jig

When you update the firmware, you can use the following
JIG (RS232C to internal connector conversion adapter).
Please order it from Denon Official Service Distributor in your region if necessary.

8U-210100S : WRITING KIT : 1 Set
606050028012P : 7P FFC(1.0) L-240 : 1 Set
(Refer to "PROCEDURE FOR UPGRADING THE VERSION OF THE FIRMWARE".)

DISASSEMBLY

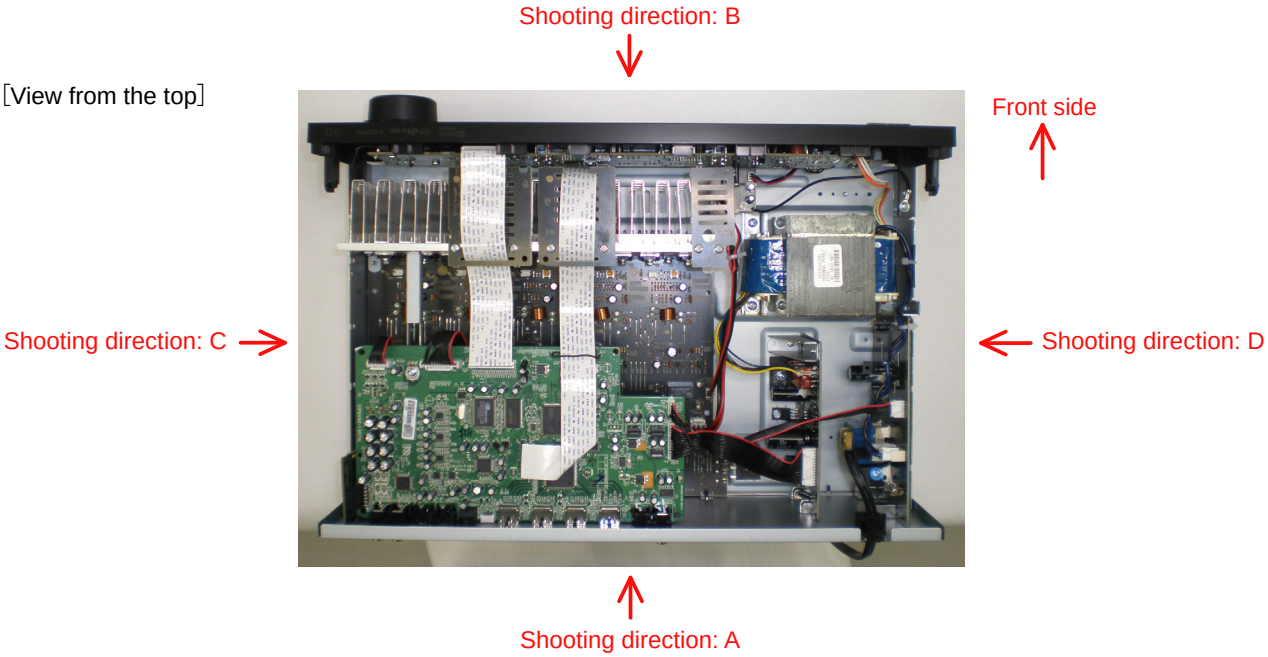
- Disassemble in order of the arrow in the following figure.
- In the case of the re-assembling, assemble it in order of the reverse of the following flow.
- In the case of the reassembling, observe "Caution concerning disassembly and assembly!".
- If wire bundles are untied or moved to perform adjustment or replace parts etc., be sure to rearrange them neatly as they were originally bundled or placed afterward.
  Otherwise, incorrect arrangement can be a cause of noise generation.



About the photos used for "descriptions of the DISASSEMBLY" section

- The shooting direction of each photograph used herein is indicated on the left side of the respective photograph as "Shooting direction: ***". (*** : A,B,C,D)
- Refer to the diagram below about the shooting direction of each photograph.
- Photographs with no shooting direction indicated were taken from the top of the set.

The viewpoint of each photograph (Shooting direction)



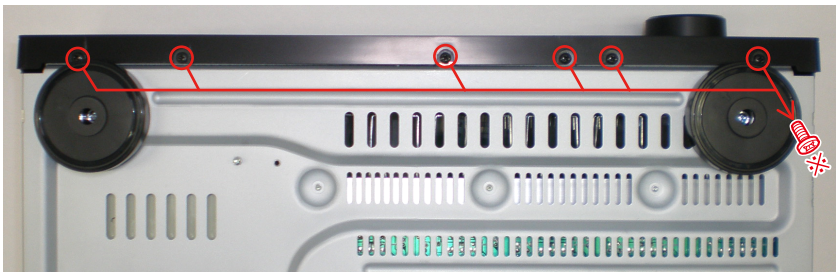
Note: • Before disassembling this unit, be sure to discharge the power line (the colored line in the schematic diagram).
• FFC cables with one end disconnected should be insulated by using tapes, etc.

1. FRONT PANEL ASSY

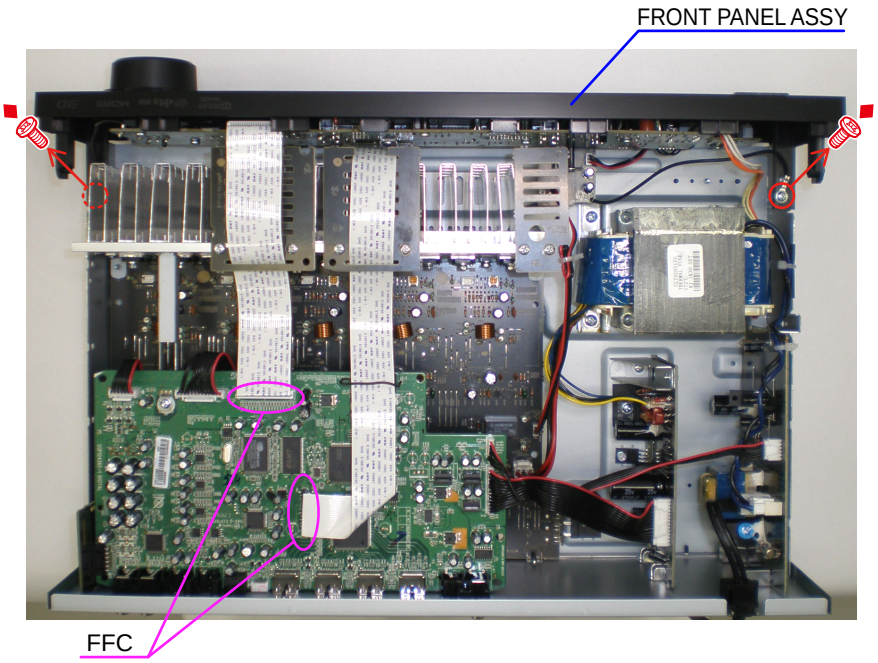
Proceeding : CABINET TOP → FRONT PANEL ASSY

(1) Remove the screws.

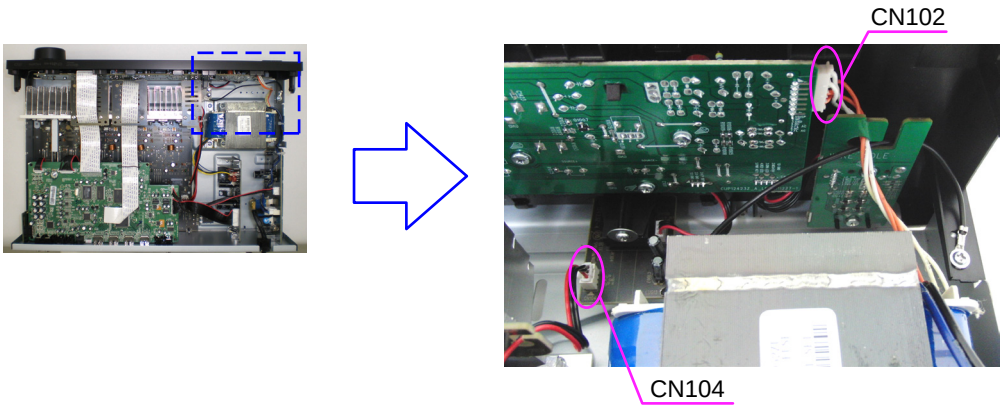
View from the bottom



(2) Remove the screws and disconnect the FFC.



(3) Disconnect the connector wires.



Please refer to "EXPLODED VIEW" for the disassembly method of each PCB included in FRONT PANEL ASSY.

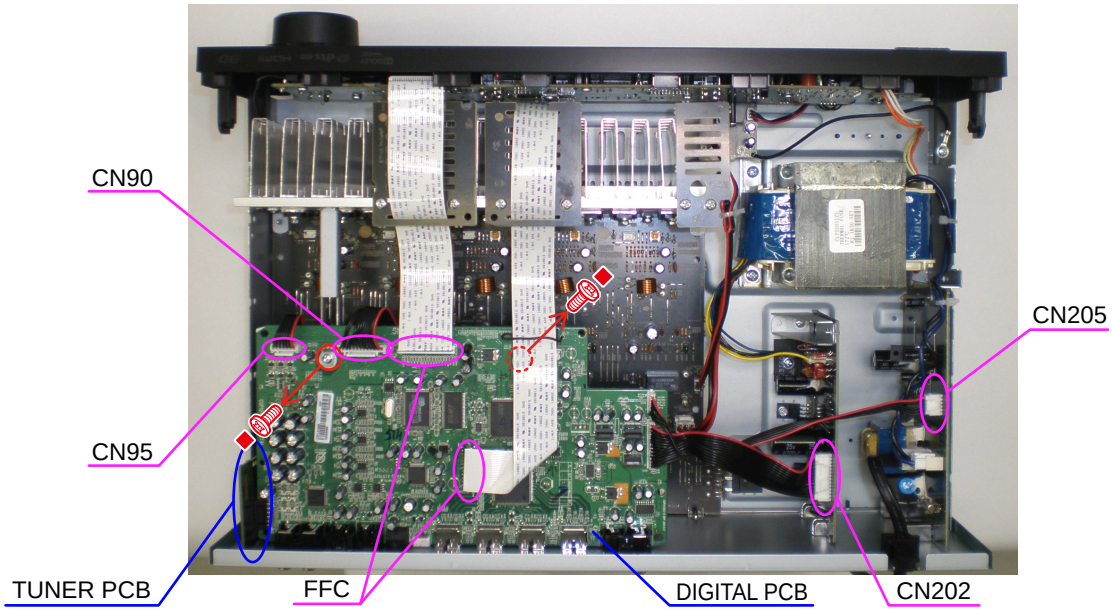
2. DIGITAL PCB ASSY

Proceeding : CABINET TOP → DIGITAL PCB ASSY

(1) Remove the screws.

Shooting direction: A

(2) Remove the screws.
Disconnect the connector wires and FFC then disconnect the TUNER PCB.

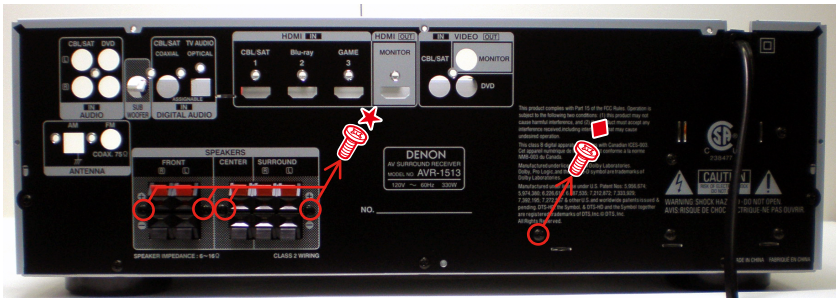


3. RADIATOR ASSY

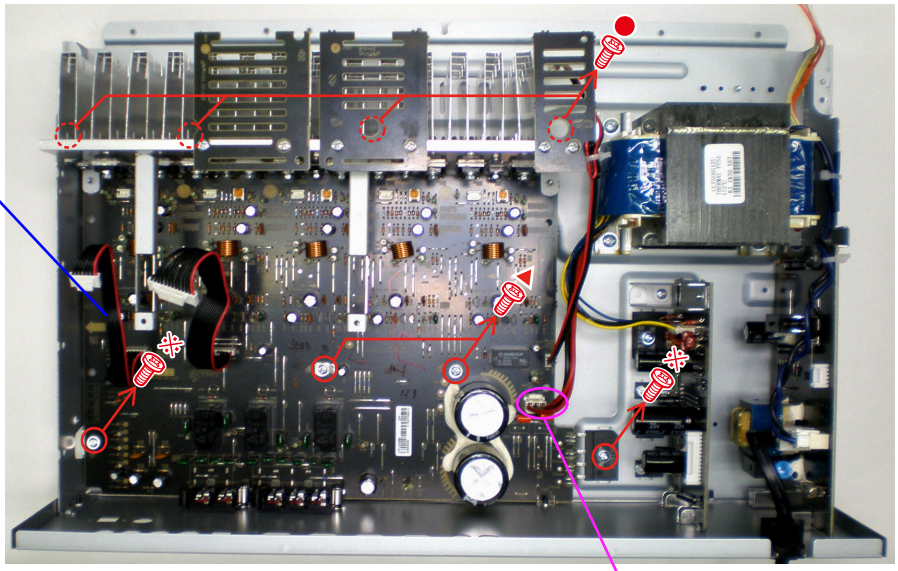
Proceeding : CABINET TOP → DIGITAL PCB ASSY → RADIATOR ASSY

(1) Remove the screws.

Shooting direction: A



(2) Remove the screws then disconnect the connector wire.
Remove the RADIATOR ASSY from the CHASSIS BOTTOM.



4. POWER PCB

Proceeding : CABINET TOP → POWER PCB

Please refer to "EXPLODED VIEW" for the disassembly method of POWER PCB.

5. REGULATOR PCB

Proceeding : CABINET TOP → REGULATOR PCB

Please refer to "EXPLODED VIEW" for the disassembly method of REGULATOR PCB.

6. TRANS POWER

Proceeding : CABINET TOP → TRANS POWER

Please refer to "EXPLODED VIEW" for the disassembly method of TRANS POWER.

SPECIAL MODE

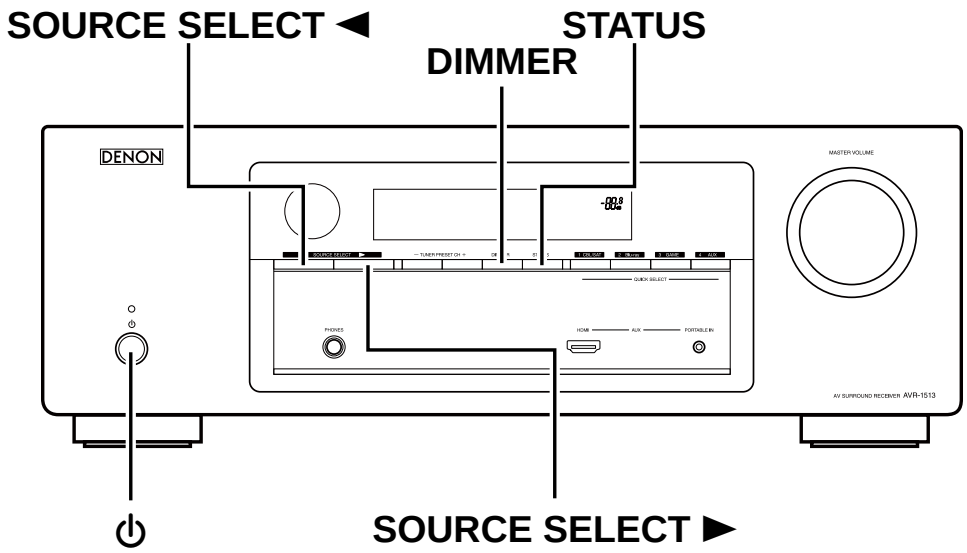
Special mode setting button

※ Press the ⏻ button to turn on the power while pressing both the button A and the button B at the same time.

Mode	Button A	Button B	Contents
µcom/DSP/OSD Version display mode	STATUS	DIMMER	Firmware versions such as Main, DSP or OSD are displayed in the FL display. Errors are displayed or when they occur. (Refer to 17 page.)
Initialization mode	SOURCE SELECT ◄	SOURCE SELECT ►	Backup data initialization is carried out. (Refer to 9 page.)
Mode for switching tuner frequency step	DIMMER	SOURCE SELECT ►	---E2 model only--- Change tuner frequency step to AM9k/FM50kHz STEP or AM:10k/FM:200kHz.

※ When power is turned on, pressing both buttons A and B at the same time for 3 seconds or more.

Mode	Button A	Button B	Contents
Select the video signal format	STATUS	SOURCE SELECT ◄	Select with the "SOURCE SELECT ◄", "SOURCE SELECT ►" and "STATUS" button change video format NTSC or PAL.
Mode for preventing remote control acceptance	STATUS	DIMMER	Operations using the remote control are rejected. "REMOTE LOCK:ON" is displayed in FL display. (Mode the cancellation: Execute the same button operations as when performing setup.)



1. µcom/DSP/OSD Version display mode

1.1. Operation specifications

µcom/DSP/OSD version display mode:
When the set is started up in this mode, the version information is displayed.

Starting up:

Press the ⏻ button to turn on the power while pressing the "DIMMER" and "STATUS" buttons.
Now, press the "STATUS" button to the display the 2nd item information on the FL Display.

1.2. Display Order

① Model destination information → ② Main-µcom version → ③ DSP version → ④ OSD version

Display	State
① Model destination information	
AVR-1513 E3 model	AVR1513 E3
AVR-1513 E2 model	AVR1513 E2
AVR-1513 E1C model	AVR1513 E1C
② Main-µcom version	Main :**.**
③ DSP version	DSP.*.*.*
④ OSD version	OSD :**.**

Cleared of mode:

Press the ⏻ button to turn the power off.

1.3. Error display

See the following table for each "Error information" display and its contents (status).

Condition	-	State
DSP NG	When DSP boot, executing DSP reset makes to becomes error.	DSP ERROR 01
DSP OK		(No error display, version display only)

WHEN THE MICROPROCESSOR IS REPLACED WITH A NEW ONE

When the U-PRO (Microprocessor) or the Flash ROM is replaced, confirm the following.

PWB Name	Ref. No.	Description	After replaced	Remark
DIGITAL	IC91	STM32F101ZE	**B**	SOFTWARE: Main
DIGITAL	IC82	MX25L8006EM2I-12G	**B**	SOFTWARE: DSP ROM
DIGITAL	IC14	MX25L8006EM2I-12G	**B**	SOFTWARE: OSD ROM

After replacing

A : Mask ROM (With software). No need for write-in of software to the microprocessor.

B : Flash ROM (With software). Usually, no need for write-in of software. But, when the software was updated, you should write the new software on the microprocessor or flash ROM. Please check the software version.

C : Empty Flash ROM (Without software). You should write the software on the microprocessor or flash ROM. Refer to "Update procedure" or "writing procedure", when you write the software.

PROCEDURE FOR UPGRADING THE VERSION OF THE FIRMWARE

1. Preparations

1.1. Before starting the operation

(1) Personal Computer

(2) RS-232 cable (9P (Male), Straight).

(3) 8U-210100S WRITING KIT.

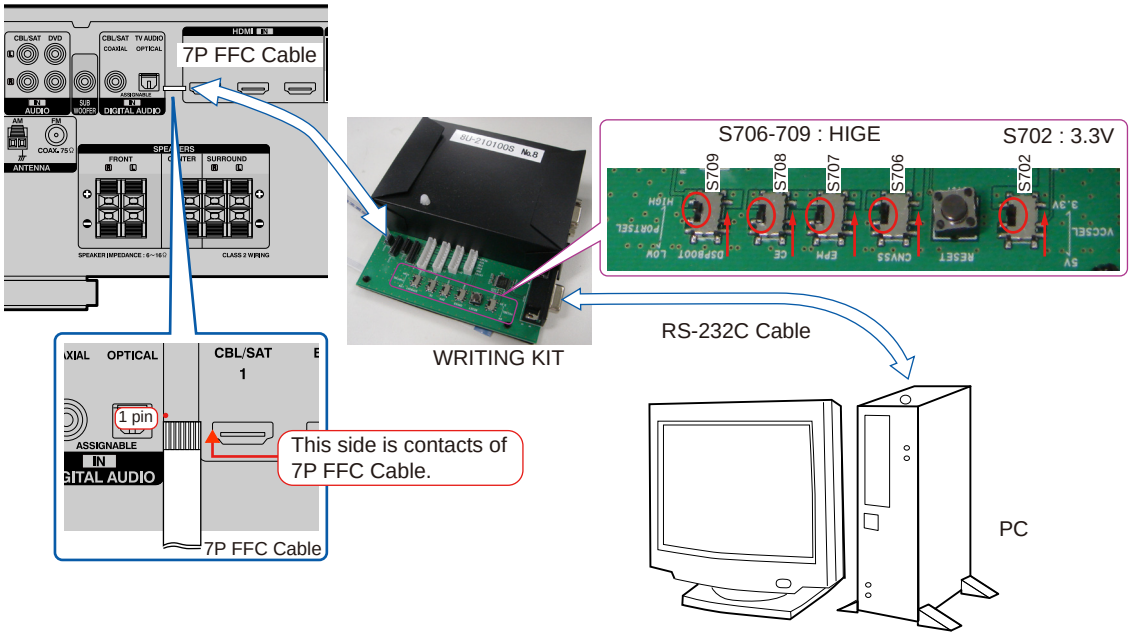
(4) 606050028012P / 7P FFC(1.0) L=240.

1.2. Connection of the AV receiver

(1) Confirm the power on/off switch of the AV receiver is turning off.

(2) Connect the update terminal of AV receiver with the "WRITING KIT". (Refer to figure below for the connection of the 7P FFC cable.)

(3) Connect the RS-232C cable from PC with the "WRITING KIT".



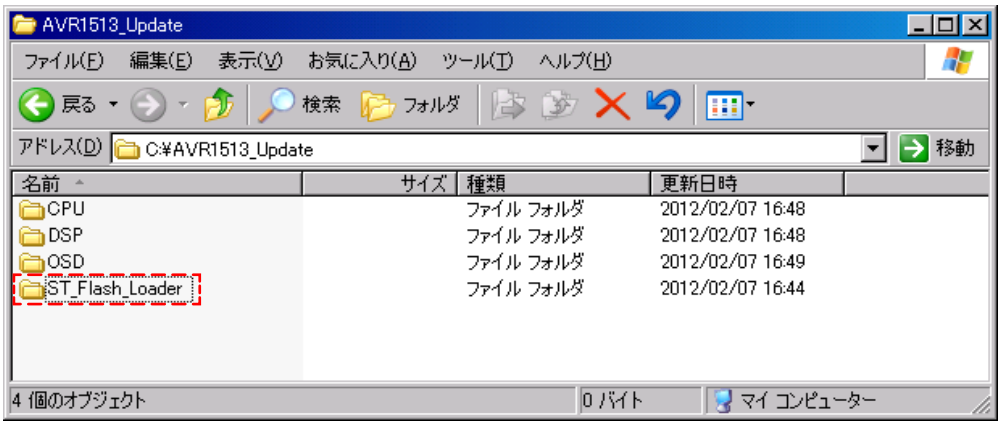
1.2. Connection of the AV receiver

(1) Confirm the power on/off switch of the AV receiver is turning off.

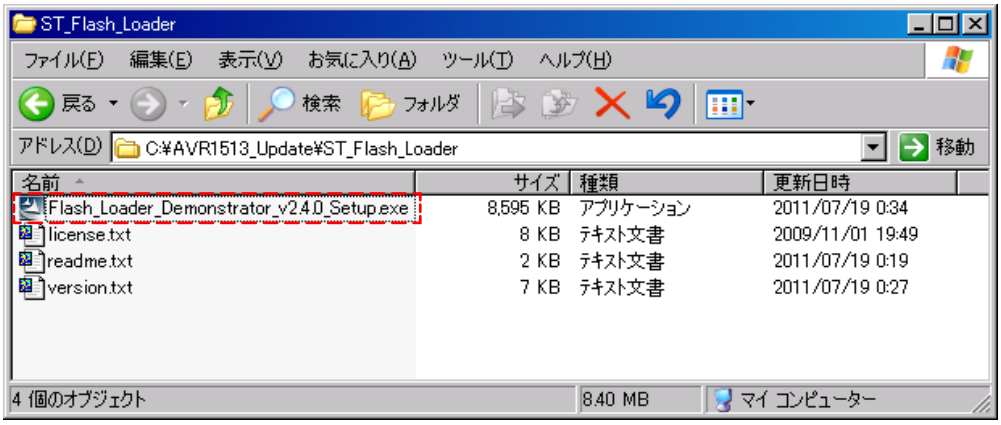
(2) Connect the update terminal of AV receiver with the "WRITING KIT". (Refer to figure below for the connection of the 7P FFC cable.)

1.3. INSTALL UPDATE TOOL

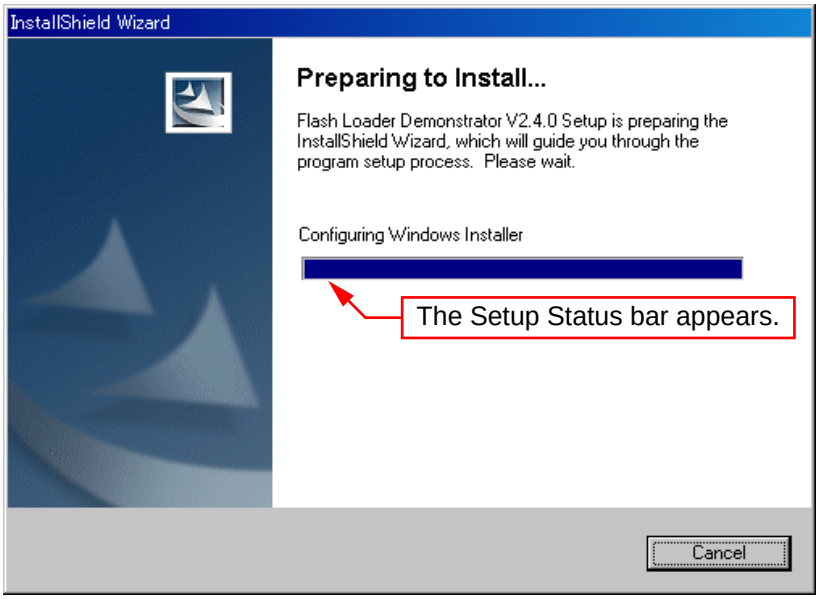
(1) Click the "ST_Flash_Loder" folder.



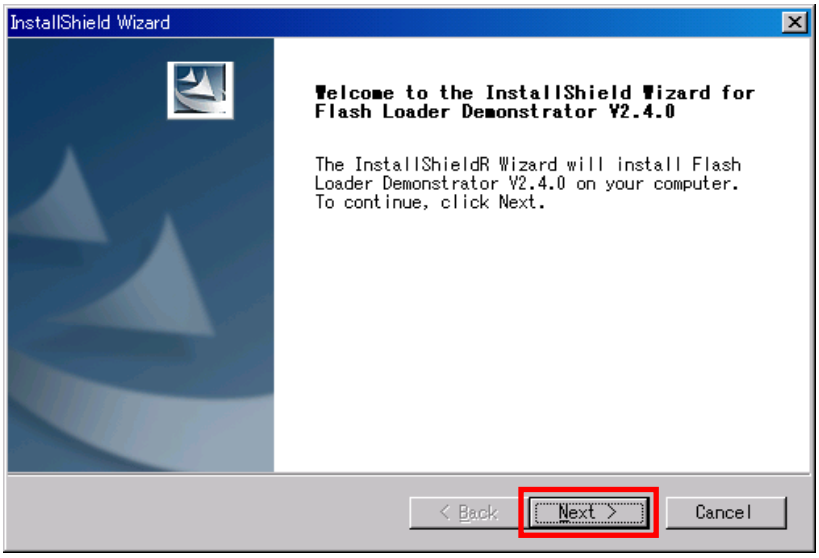
(2) Run the "Flash_Loader_Demonstrator_v2.4.0_Setup.exe" on program file.



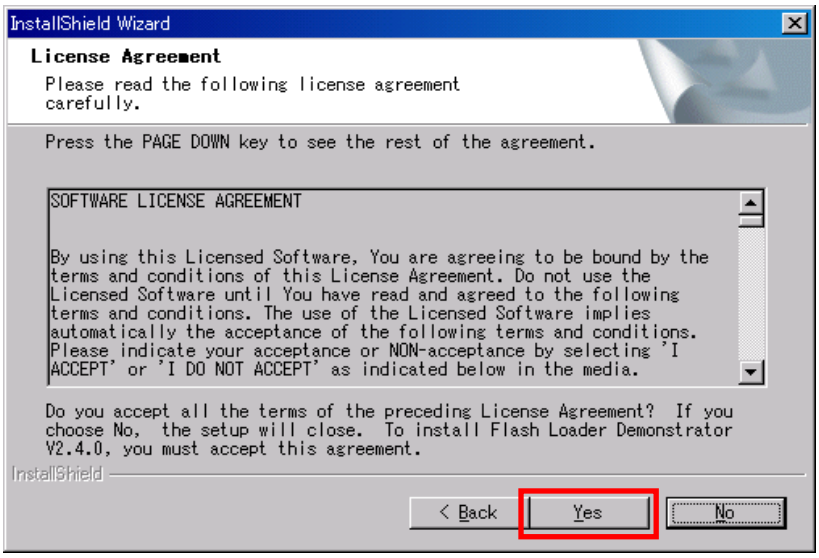
The following screen will be displayed.



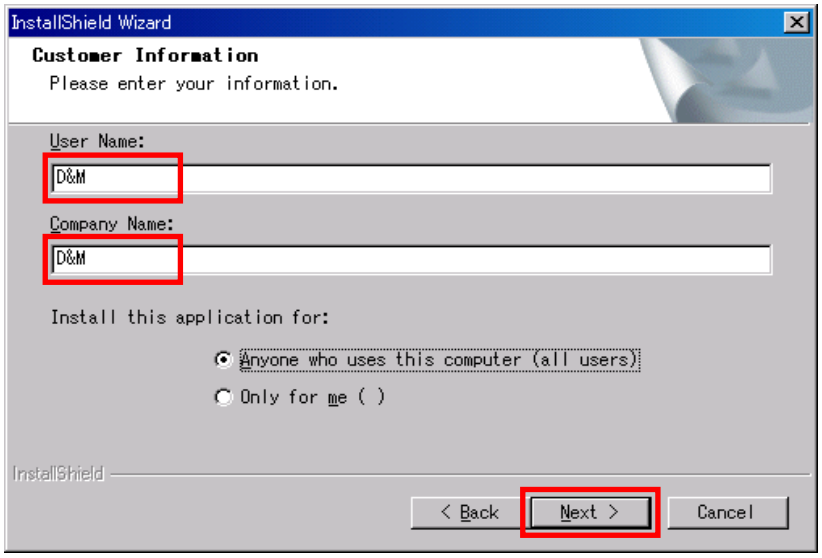
(3) Click the "Next" button.



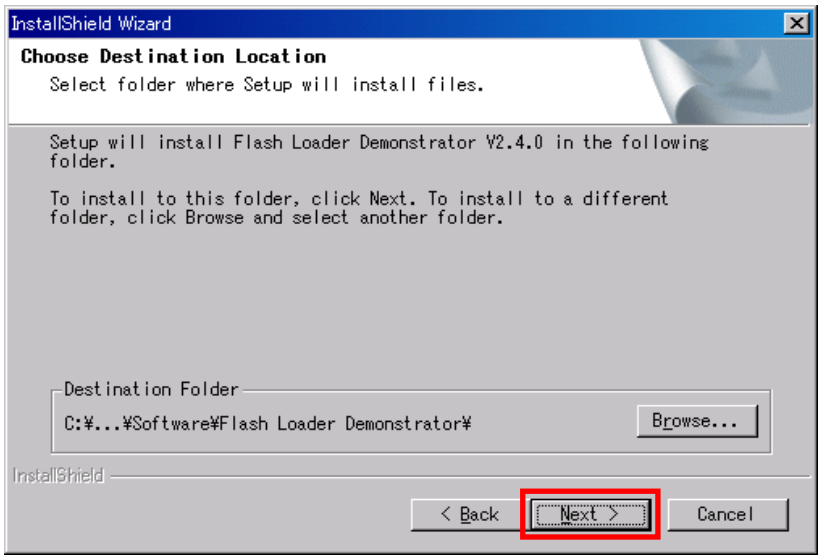
(4) Click the "Yes" button.



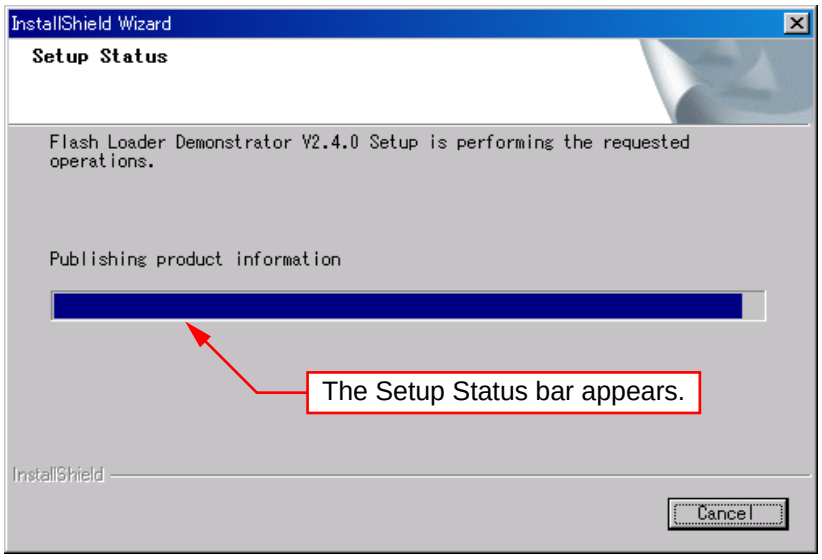
(5) Click the "Next" button after inputting "User Name" and "Company Name".



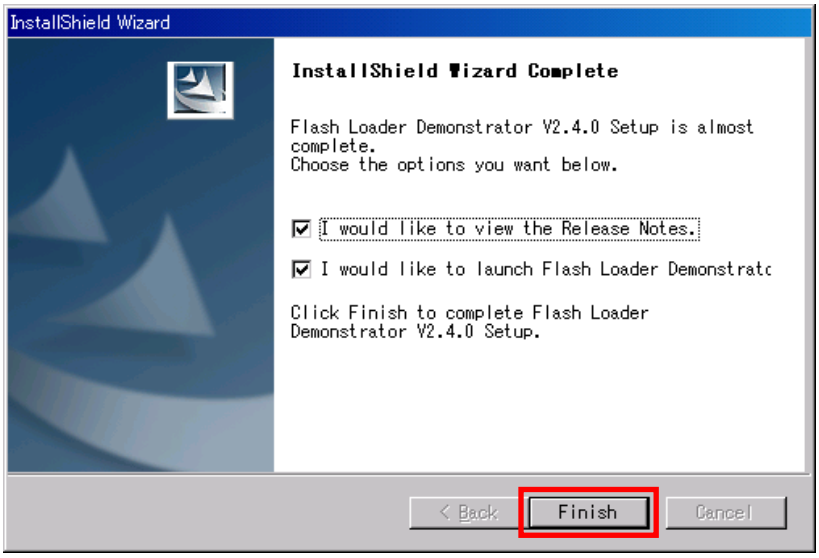
(6) Click the "Next" button.



The following screen will be displayed.



(7) Click the "Finish" button.



2. UPDATE FIRMWARE

(1) Connect the update terminal of AV receiver with the "WRITING KIT".

(2) Set the switch of "WRITING KIT". (Refer to the table below.)

DSPBOOT	CE	EPM	CNVSS
H	H	L	H

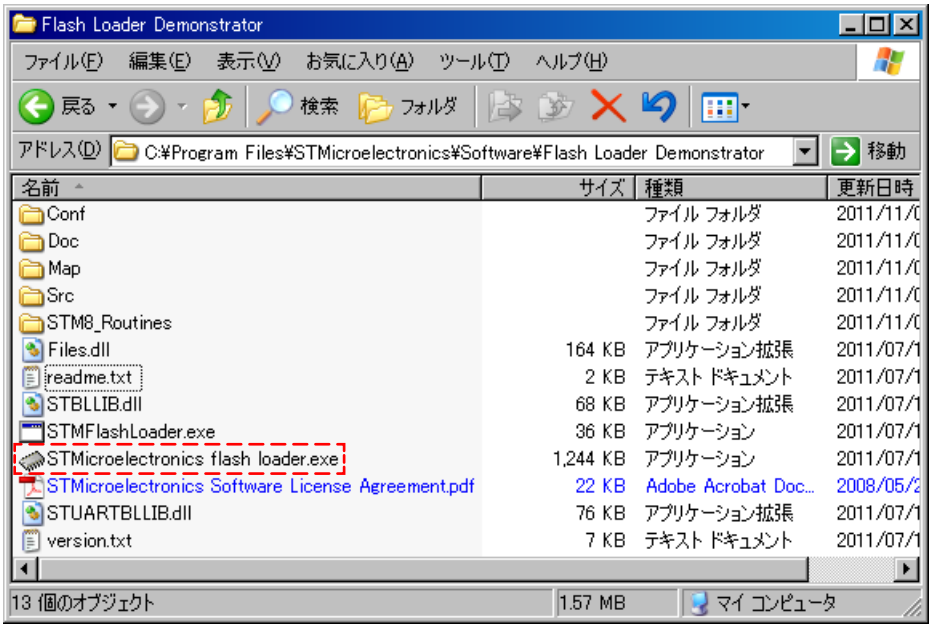
(3) Press the ⏻ button to turn the power on of AV receiver.

(4) Set the switch of "WRITING KIT". (Refer to the table below.)

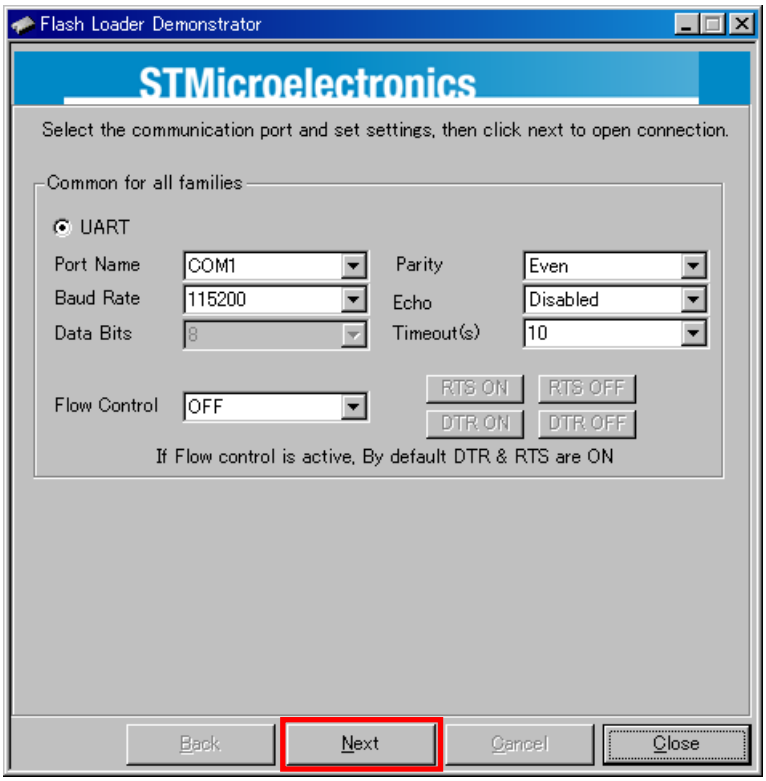
DSPBOOT	CE	EPM	CNVSS
H	H	H	H

(5) Press the "RESET" switch of "WRITING KIT".

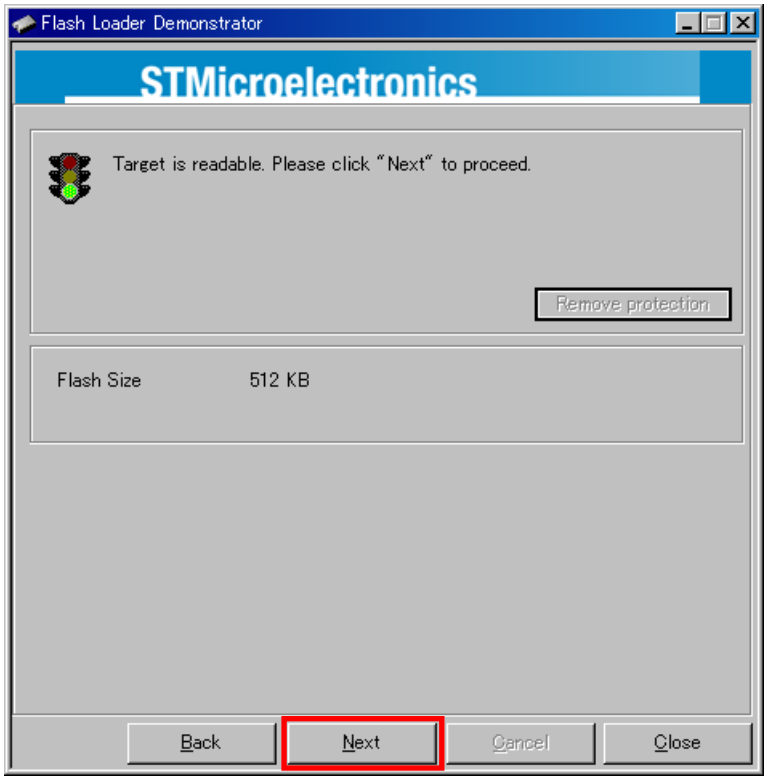
(6) Run the "STMicroelectronics flash loader.exe" on program file.



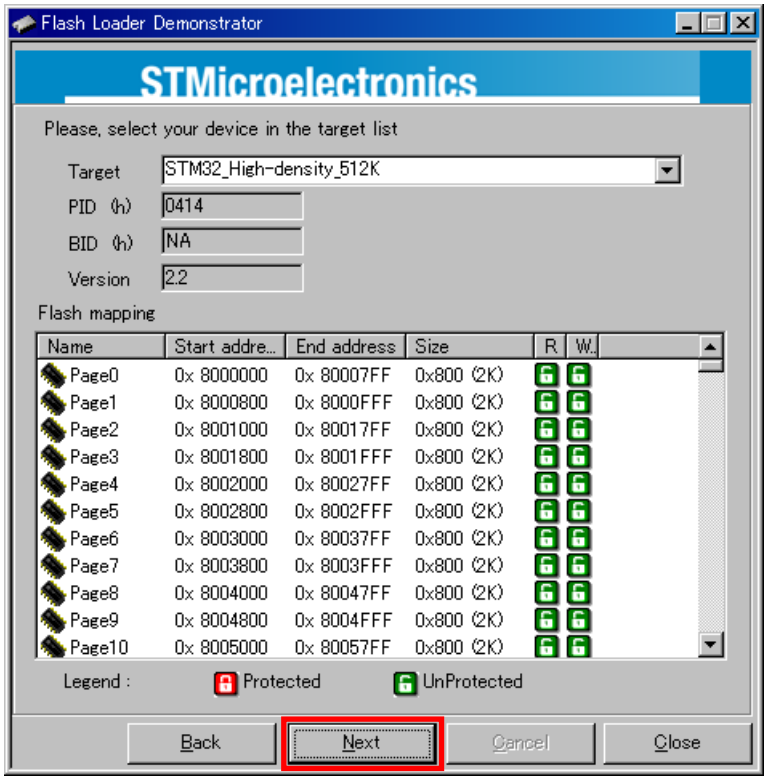
(7) Click the “Next” button 3 times.
Click the “Next” button for 1st time.



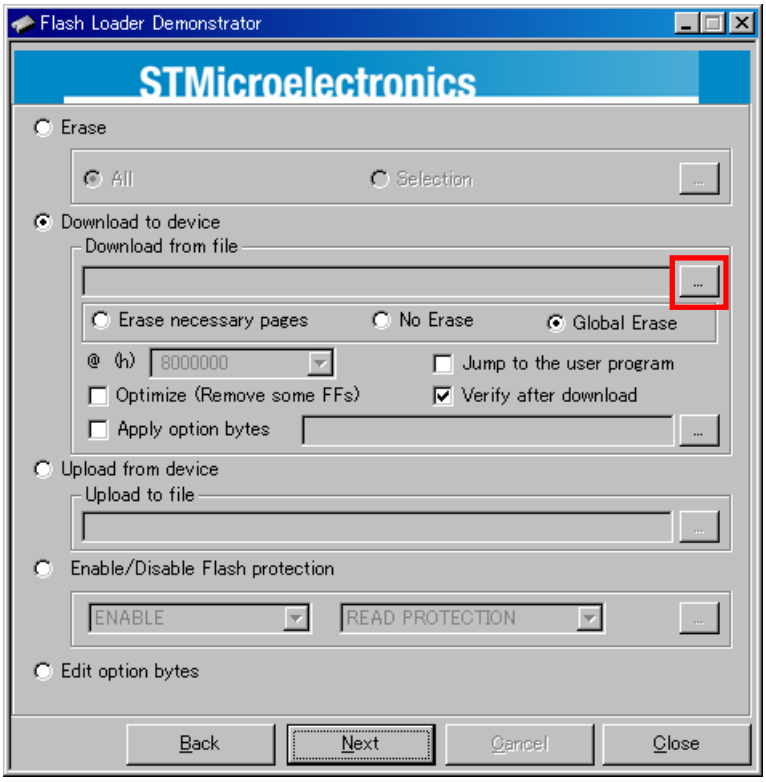
Click the “Next” button for 2nd time.



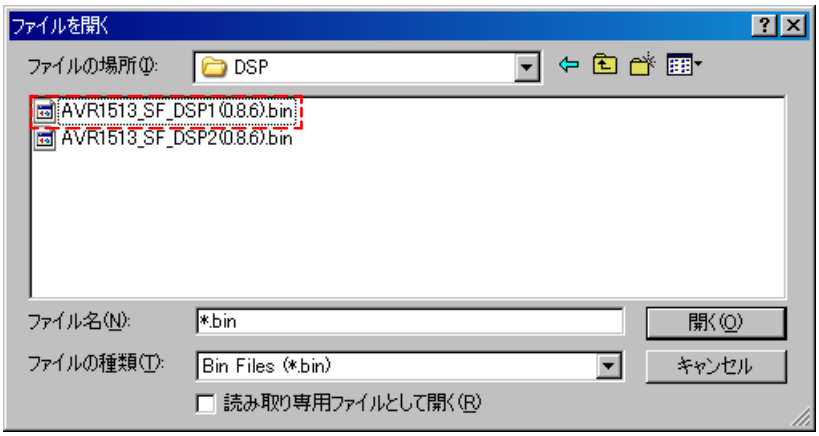
Click the “Next” button for 3rd time.



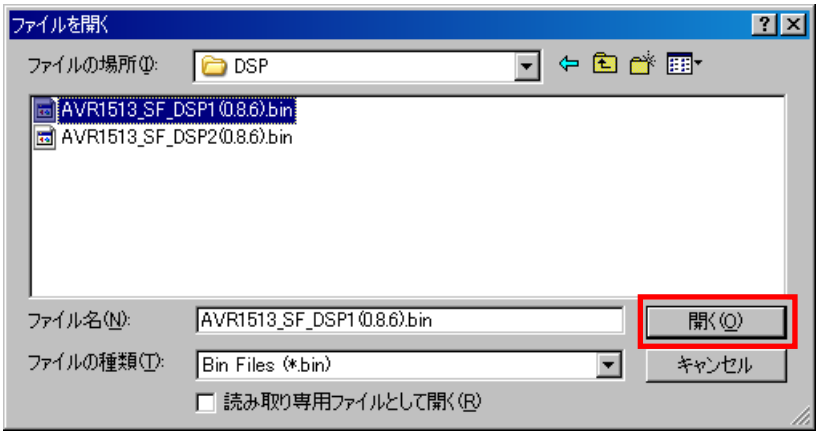
(8) Choose Flash File(DSP1).
Click the following button.



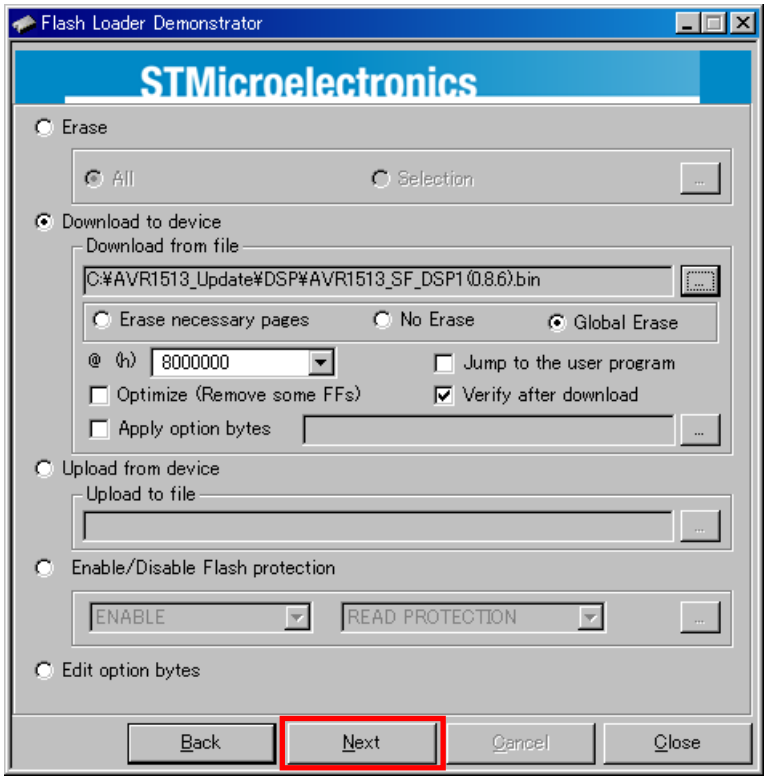
From the file browser windows select file of "AVR1513_SF_DSP1(x.x.x).bin".



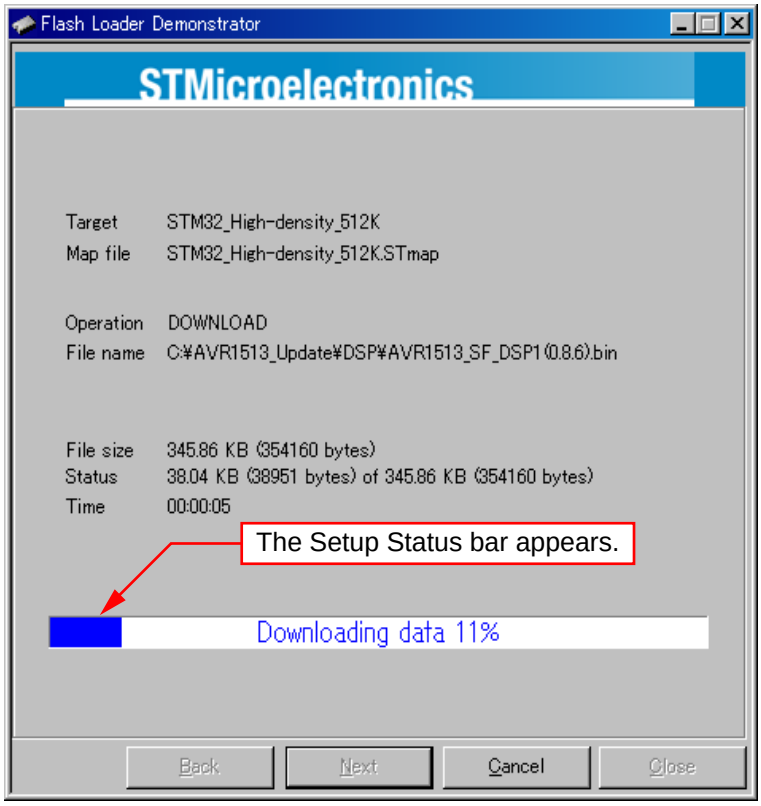
Click the "Open" button.



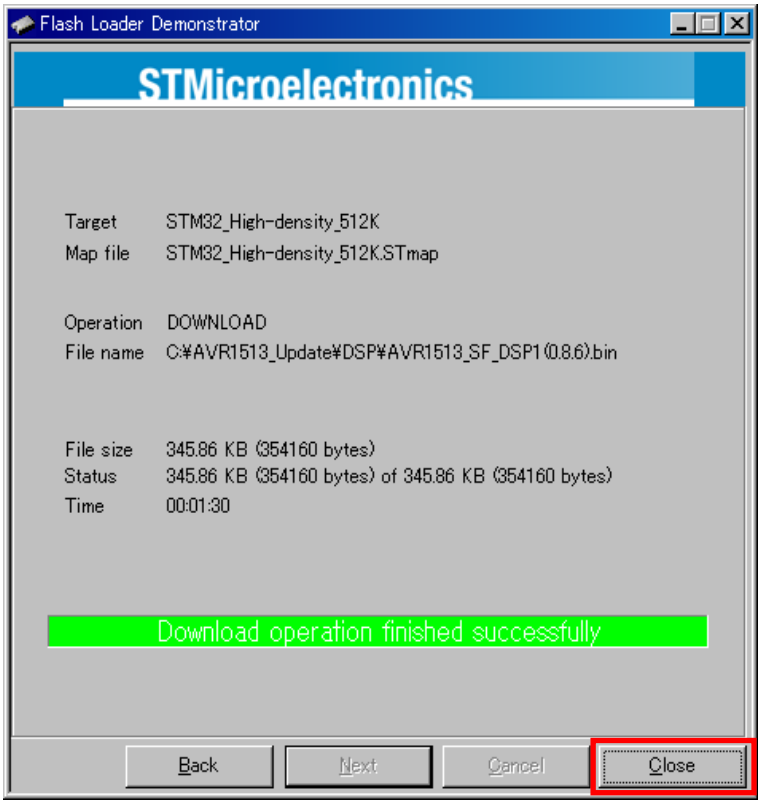
Click the “Next” button.



The following screen will be displayed.



The following screen will be displayed and click the "Close" button.



(9) Set the switch of "WRITING KIT". (Refer to the table below.)

DSPBOOT	CE	EPM	CNVSS
H	H	L	H

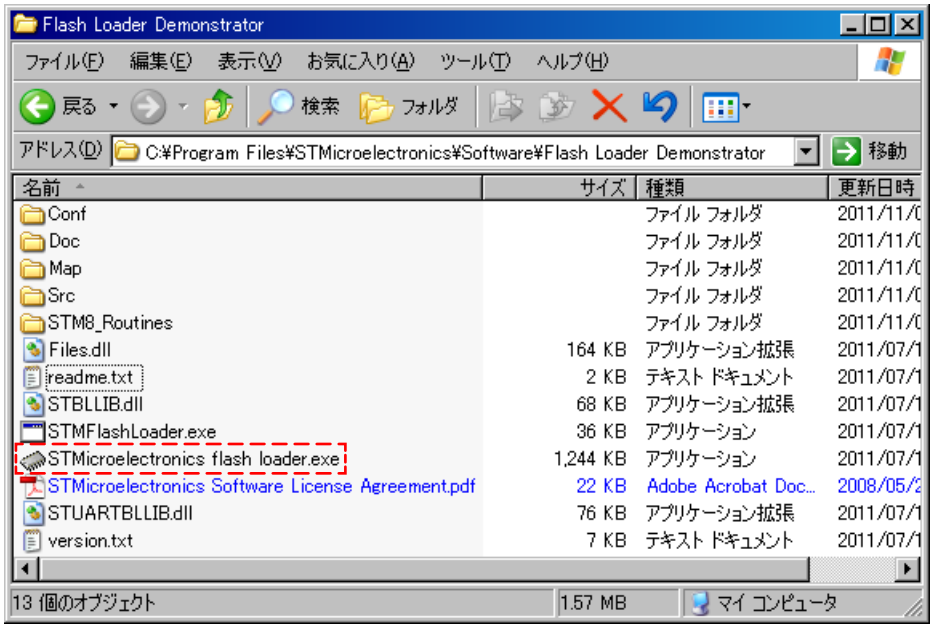
(10) Press the "RESET" switch of "WRITING KIT".
Wait for about 130 seconds until "Write Complete." is displayed on VFD.

(11) Set the switch of "WRITING KIT". (Refer to the table below.)

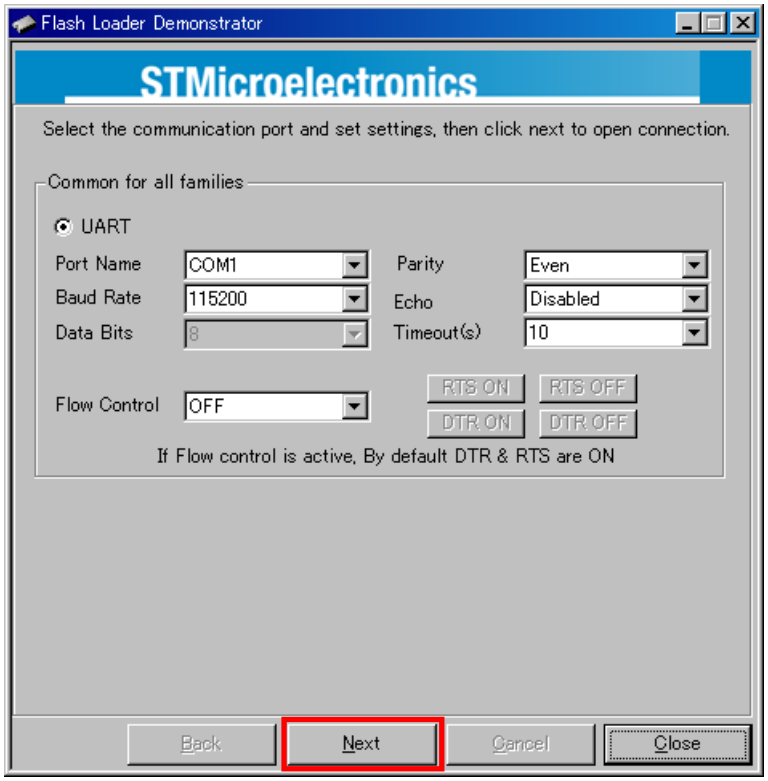
DSPBOOT	CE	EPM	CNVSS
H	H	H	H

(12) Press the "RESET" switch of "WRITING KIT".

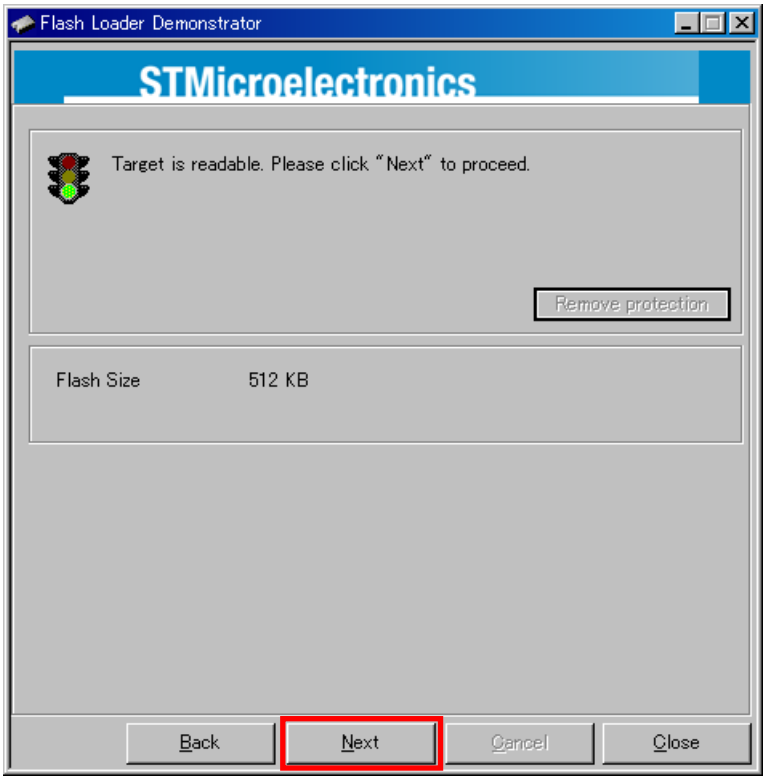
(13) Re-run the "STMicroelectronics flash loader.exe" on program file.



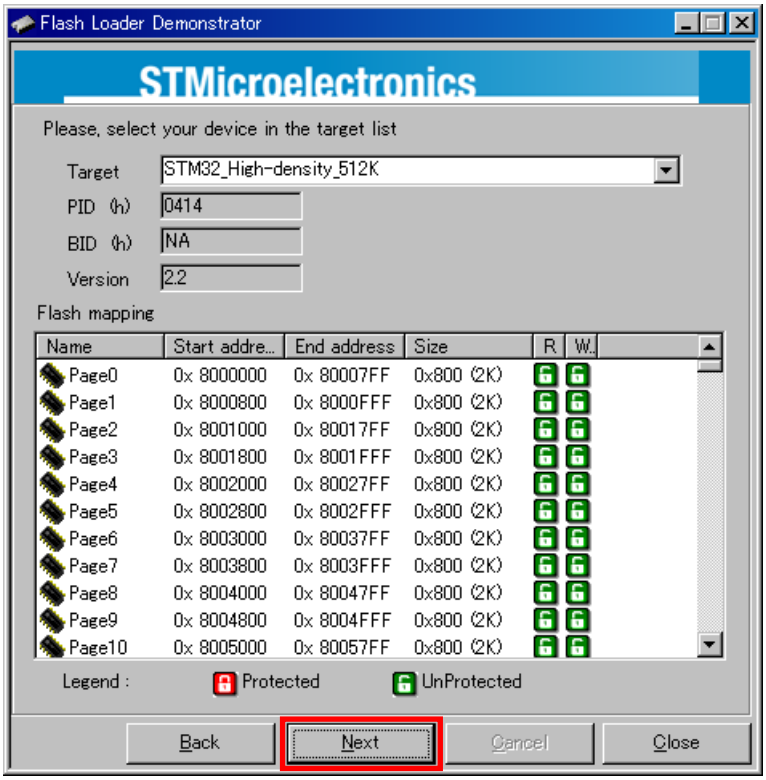
(14) Click the “Next” button 3 times.
Click the “Next” button for 1st time.



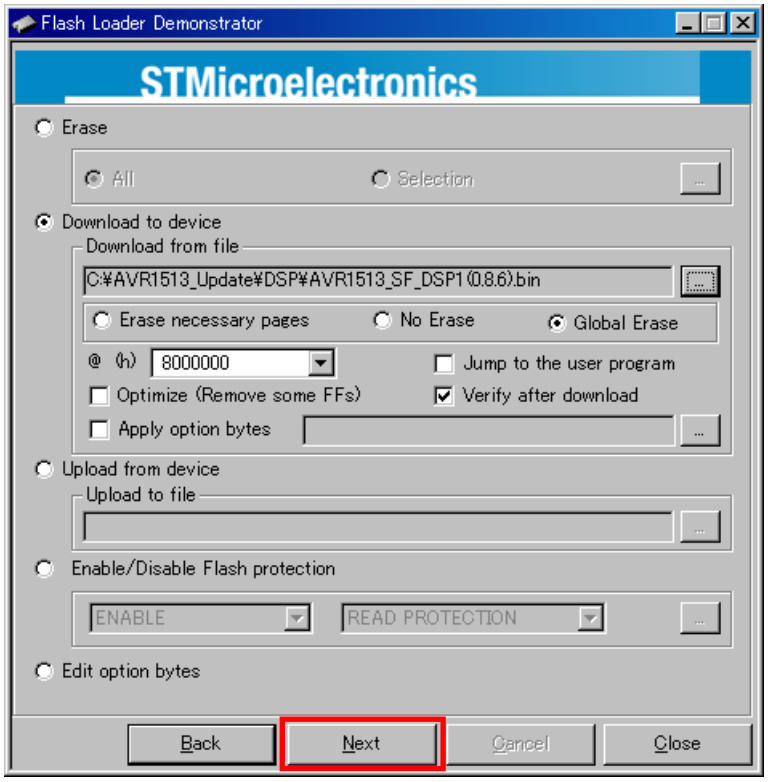
Click the “Next” button for 2nd time.



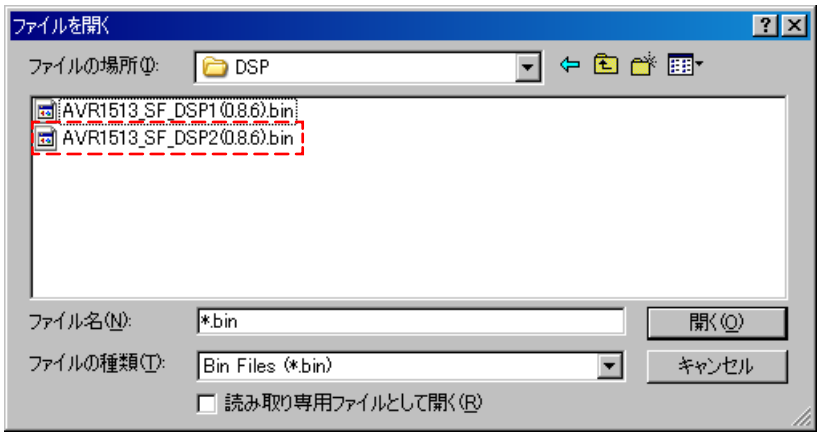
Click the “Next” button for 3rd time.



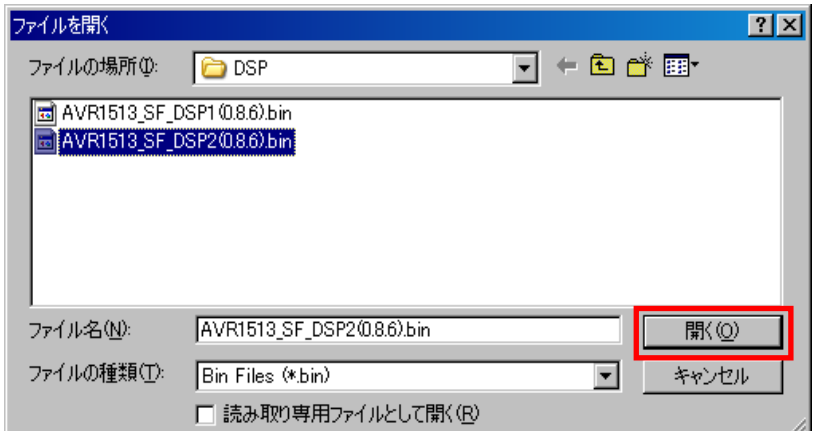
(15) Choose Flash File(DSP2).
Click the following button.



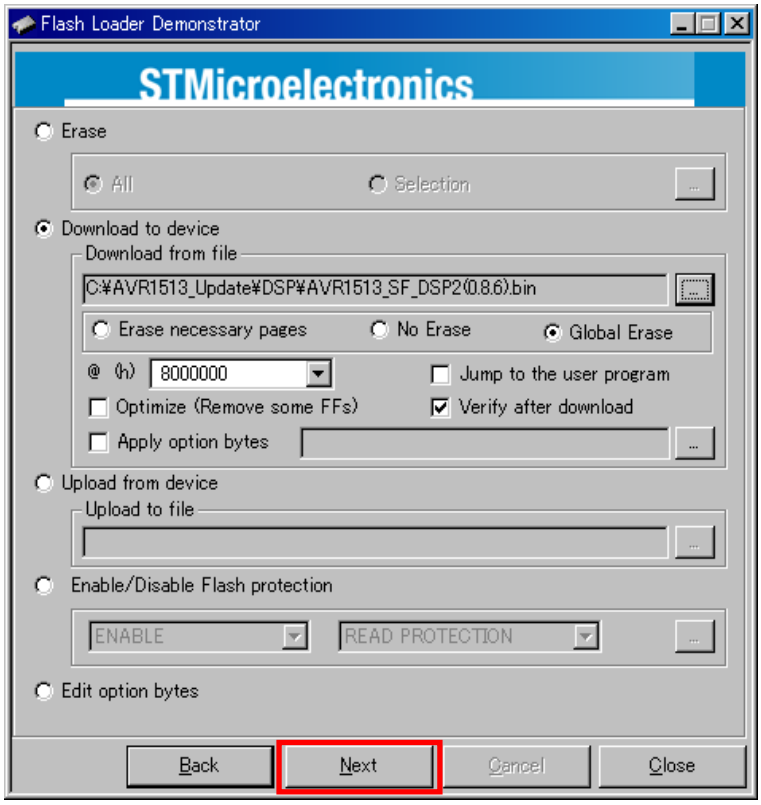
From the file browser windows select file of "AVR1513_SF_DSP2(x.x.x).bin".



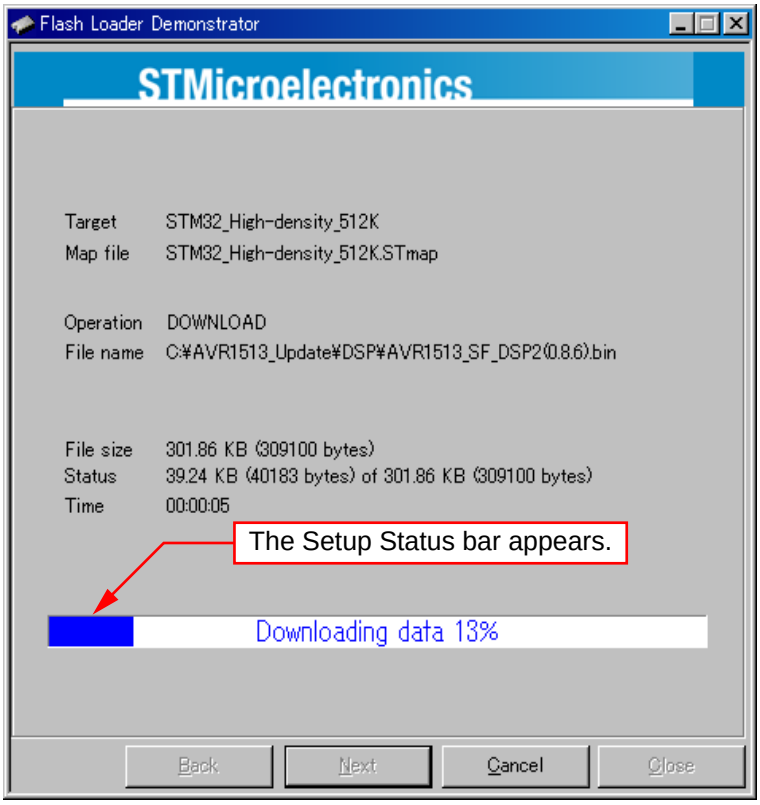
Click the "Open" button.



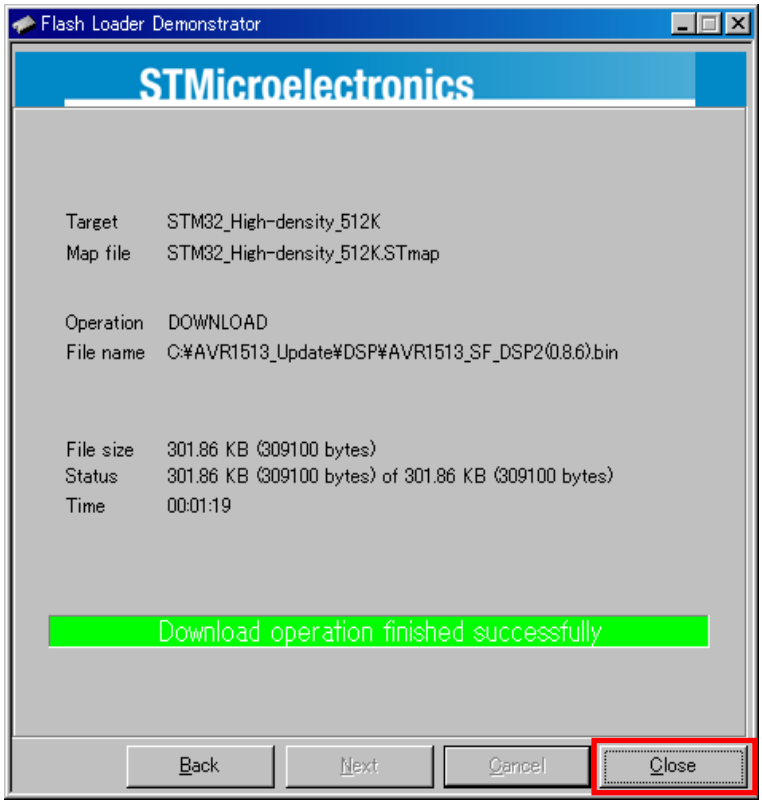
Click the “Next” button.



The following screen will be displayed.



The following screen will be displayed and click the "Close" button.



(16) Set the switch of "WRITING KIT". (Refer to the table below.)

DSPBOOT	CE	EPM	CNVSS
H	H	L	H

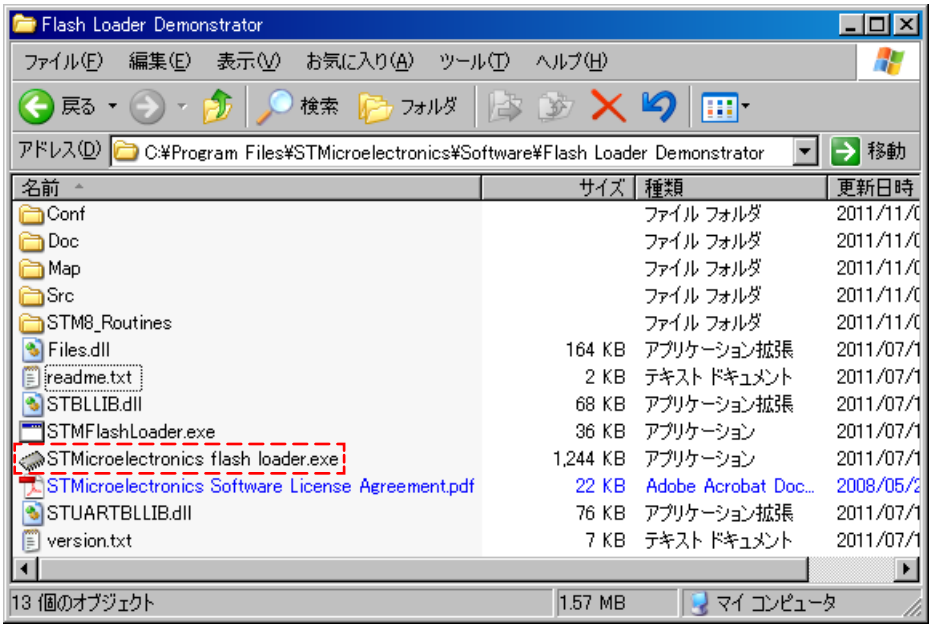
(17) Press the "RESET" switch of "WRITING KIT".
Wait for about 100 seconds until "Write Complete." is displayed on VFD.

(18) Set the switch of "WRITING KIT" (Refer to the table below).

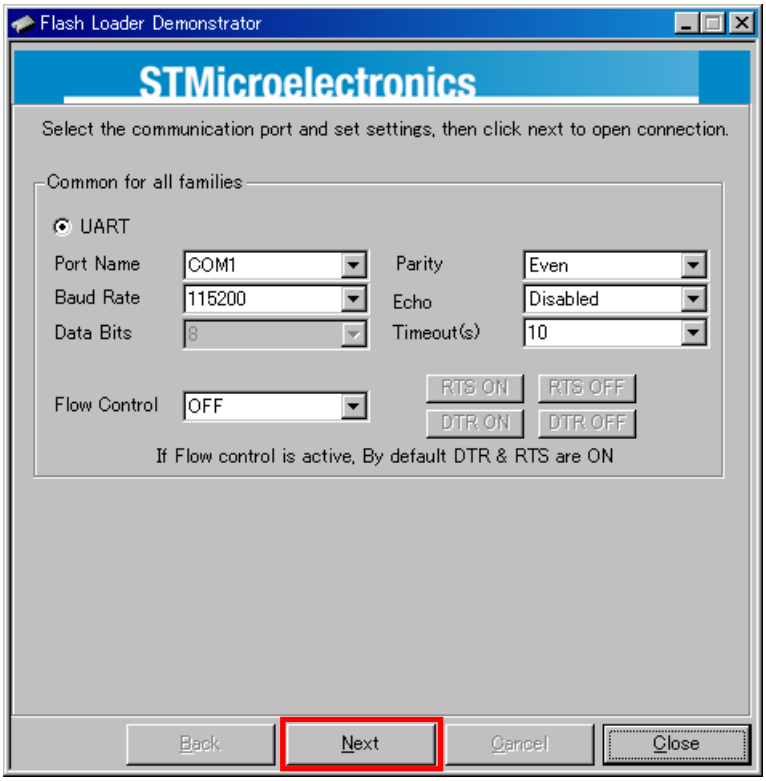
DSPBOOT	CE	EPM	CNVSS
H	H	H	H

(19) Press the "RESET" switch of "WRITING KIT".

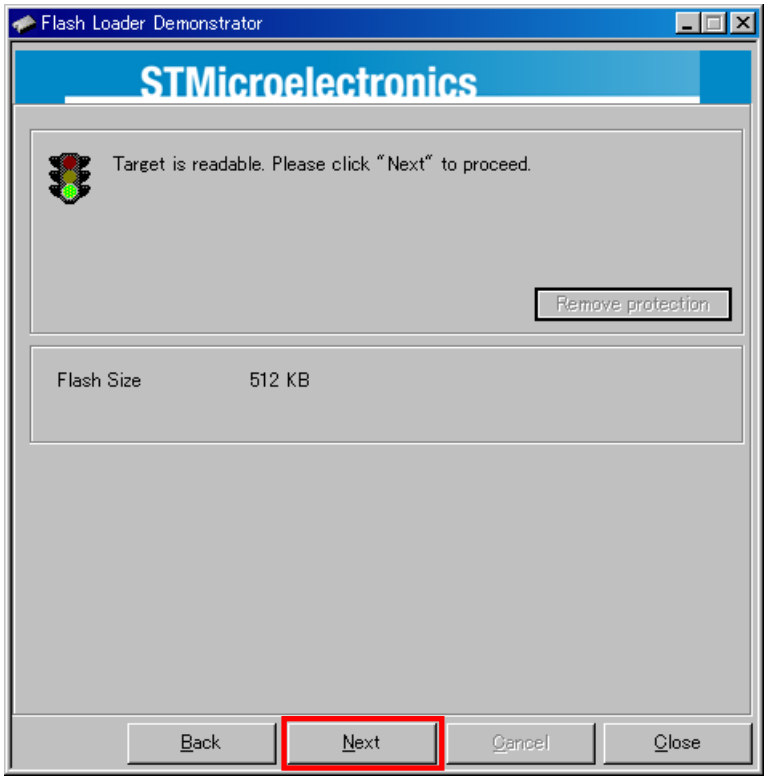
(20) Re-run the "STMicroelectronics flash loader.exe" on program file.



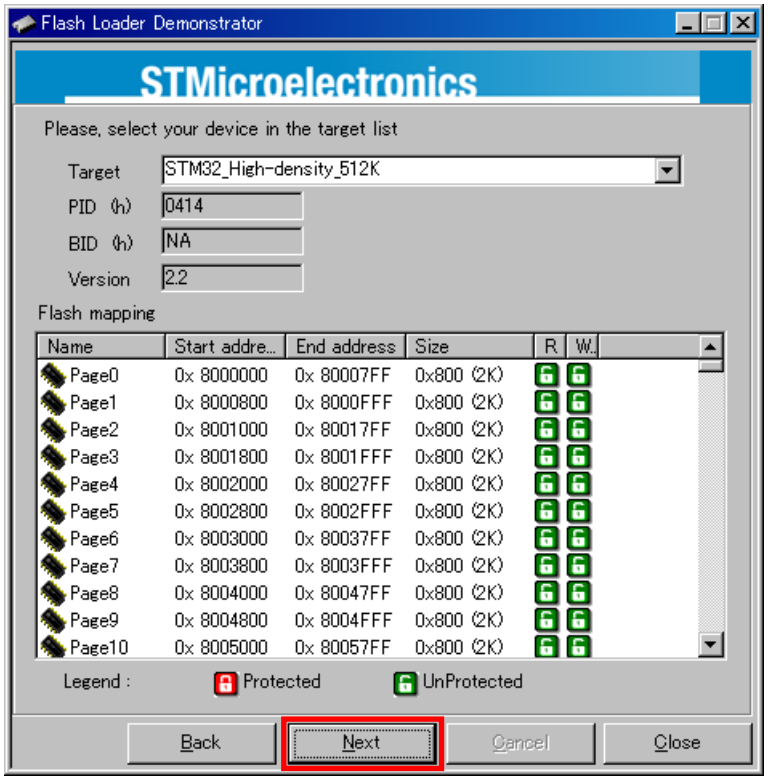
(21) Click the “Next” button 3 times.
Click the “Next” button for 1st time.



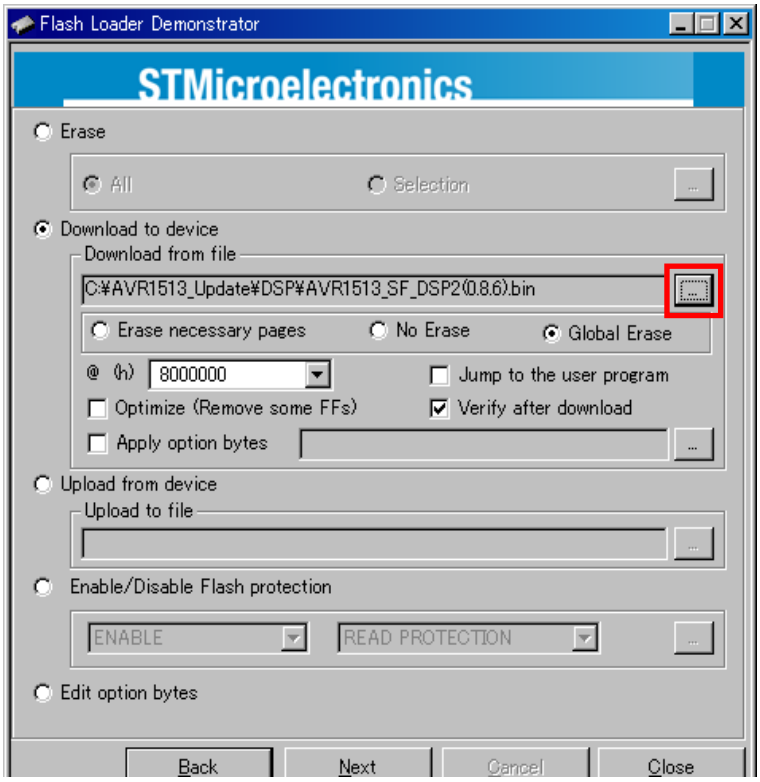
Click the “Next” button for 2nd time.



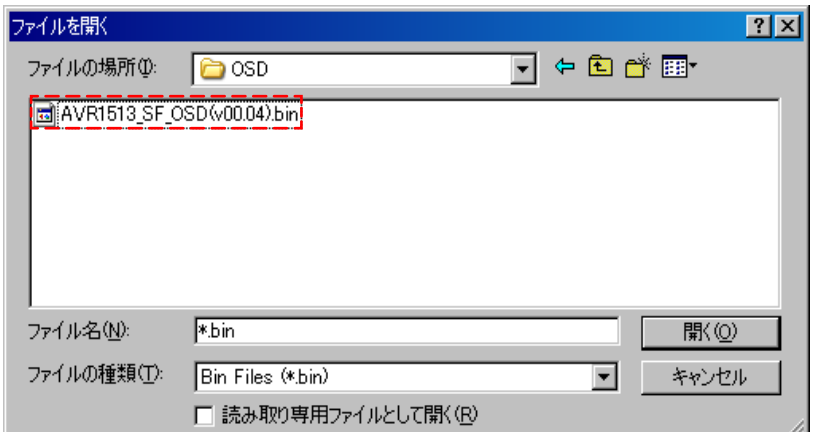
Click the “Next” at 3rd time.



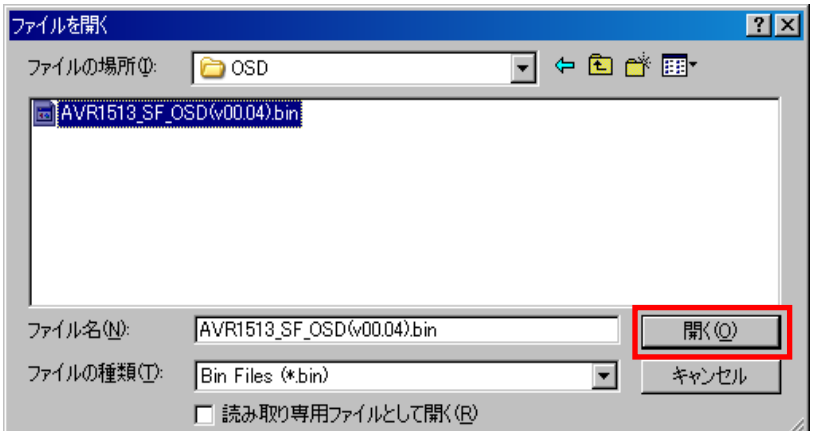
(22) Choose Flash File(OSD).
Click the following button.



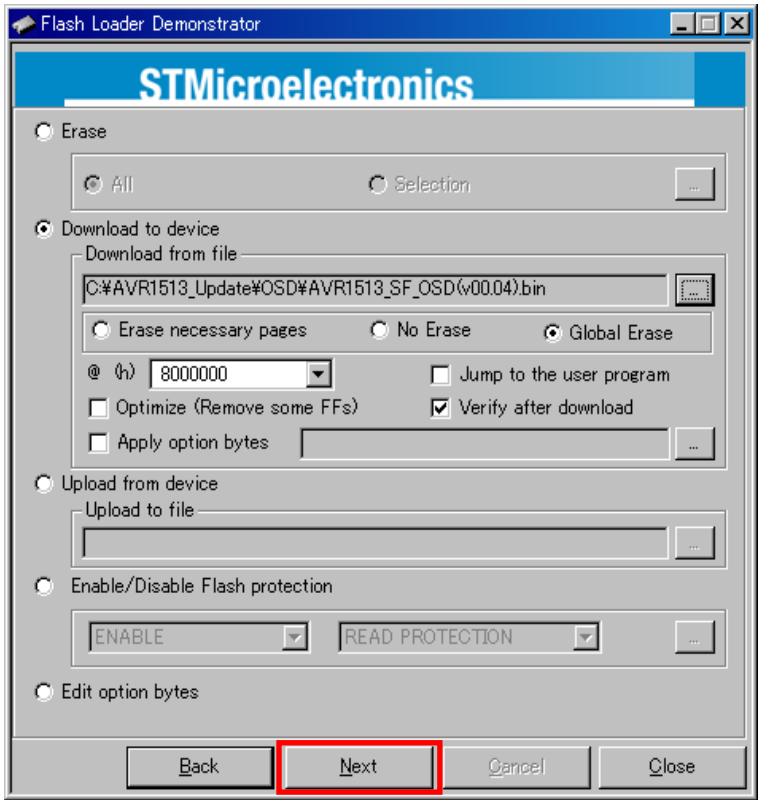
From the file browser windows select file of "AVR1513_SF_OSD(vxx.x.x).bin".



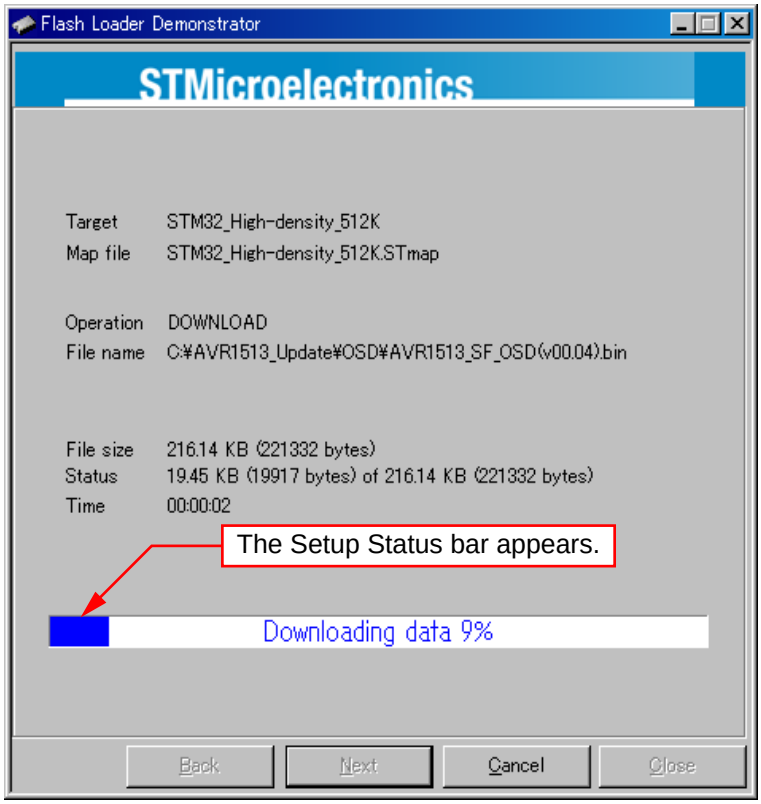
Click the "Open" button.



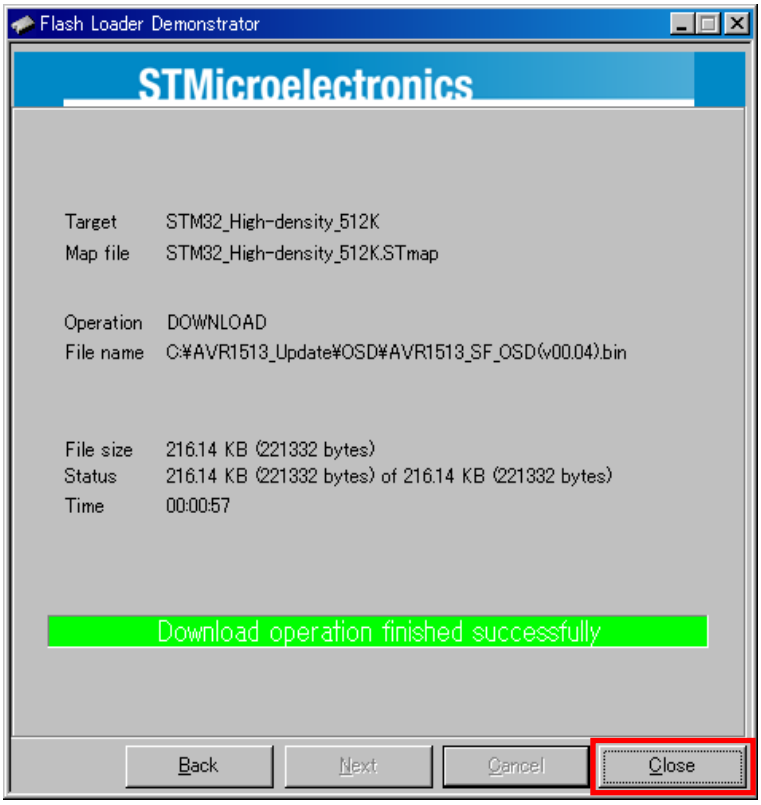
Click the “Next” button.



The following screen will be displayed.



The following screen will be displayed and click the "Close" button.



(23) Set the switch of "WRITING KIT". (Refer to the table below.)

DSPBOOT	CE	EPM	CNVSS
H	H	L	H

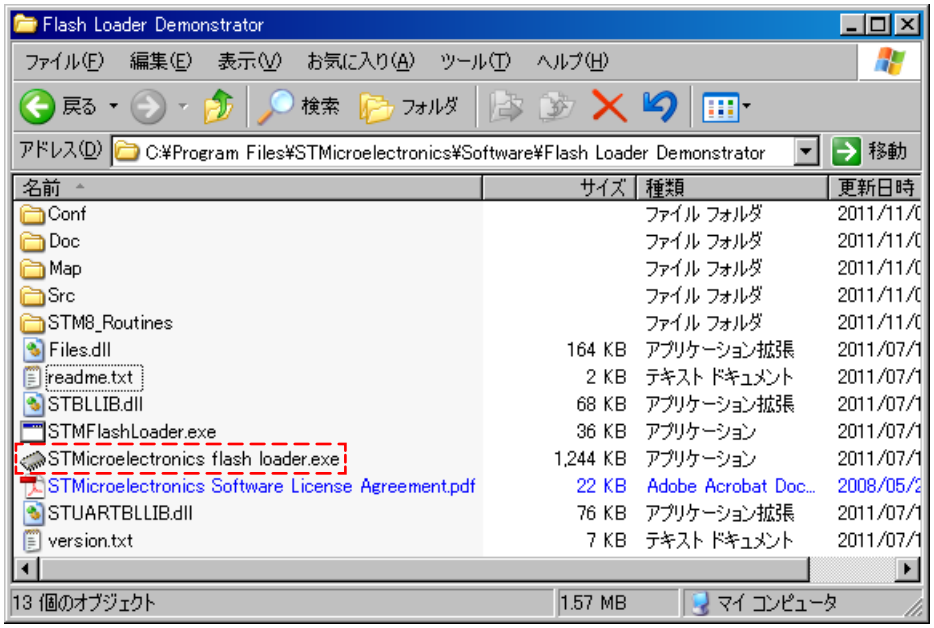
(24) Press the "RESET" switch of "WRITING KIT".
Wait for about 30 seconds until "Write Complete." is displayed on VFD.

(25) Set the switch of "WRITING KIT". (Refer to the table below.)

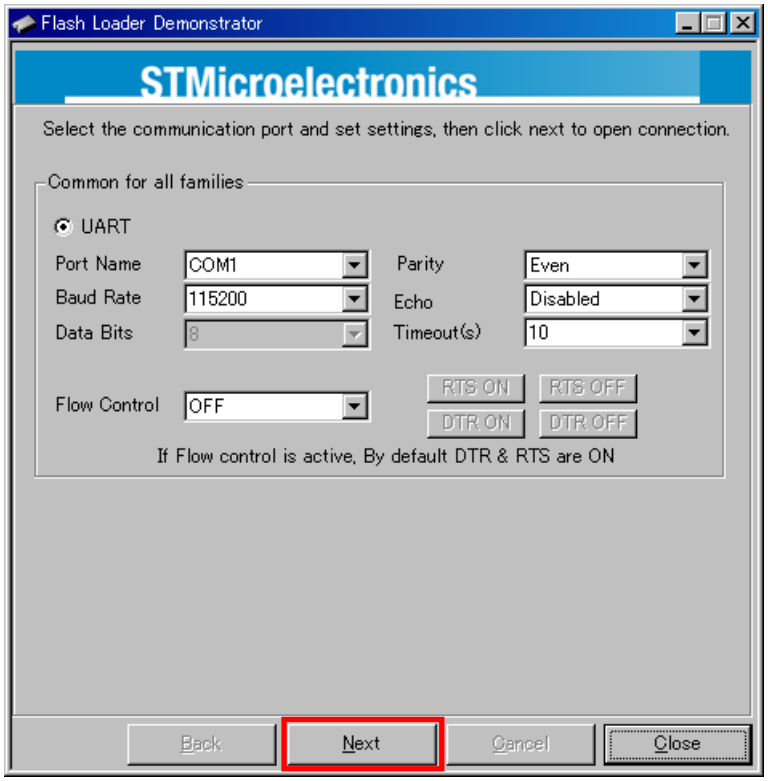
DSPBOOT	CE	EPM	CNVSS
H	H	H	H

(26) Press the "RESET" switch of "WRITING KIT".

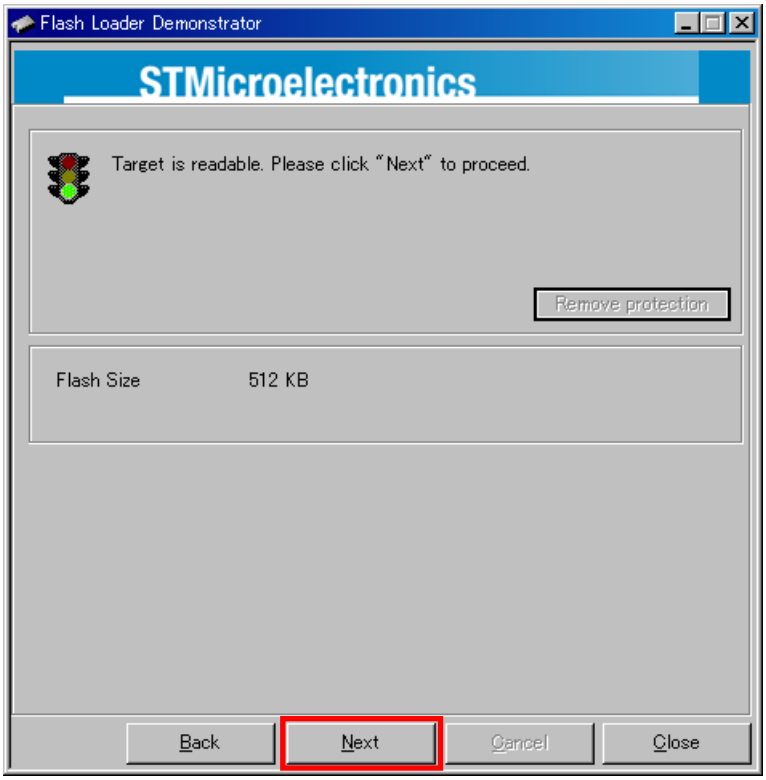
(27) Run the "STMicroelectronics flash loader.exe" on program file.



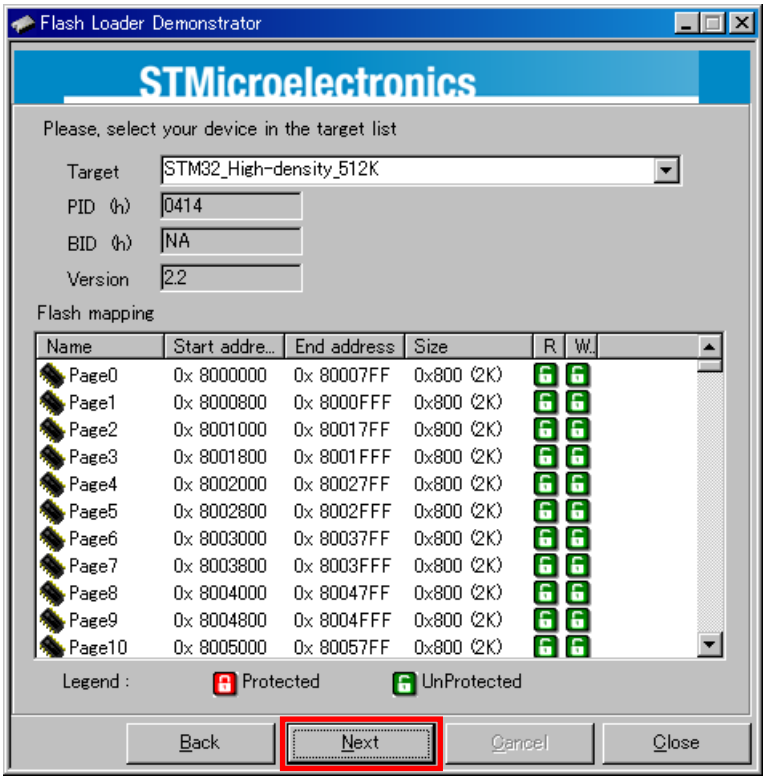
(28) Click the “Next” button 3 times.
Click the “Next” button for 1st time.



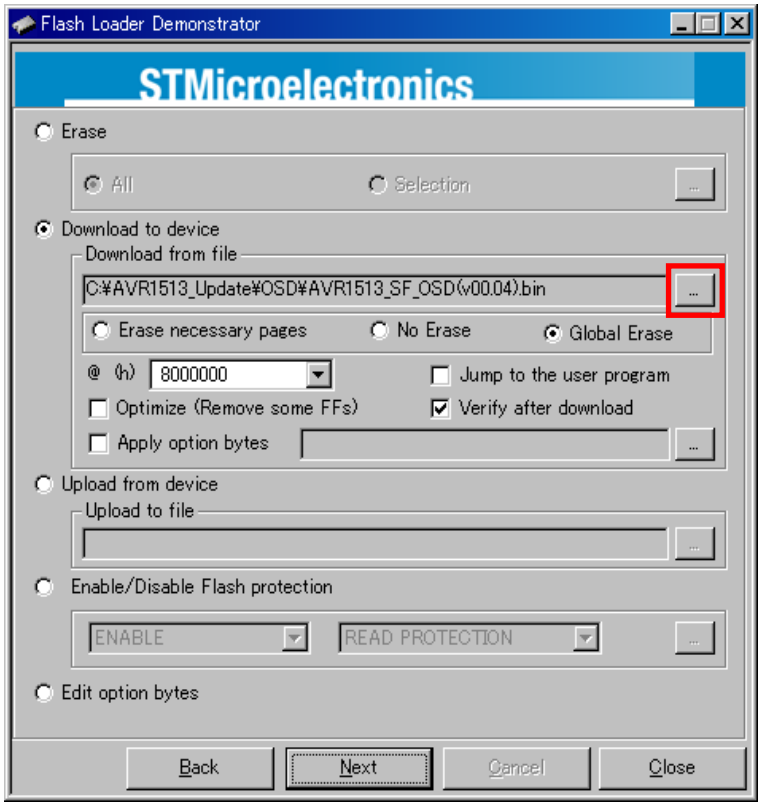
Click the “Next” button for 2nd time.



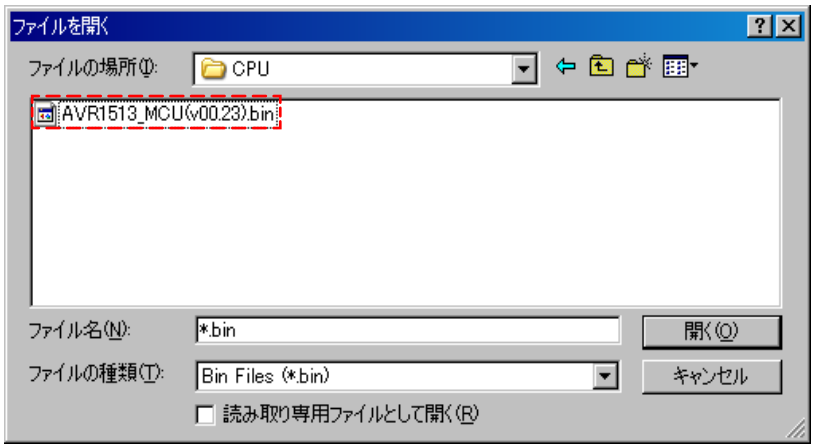
Click the “Next” button for 3rd time.



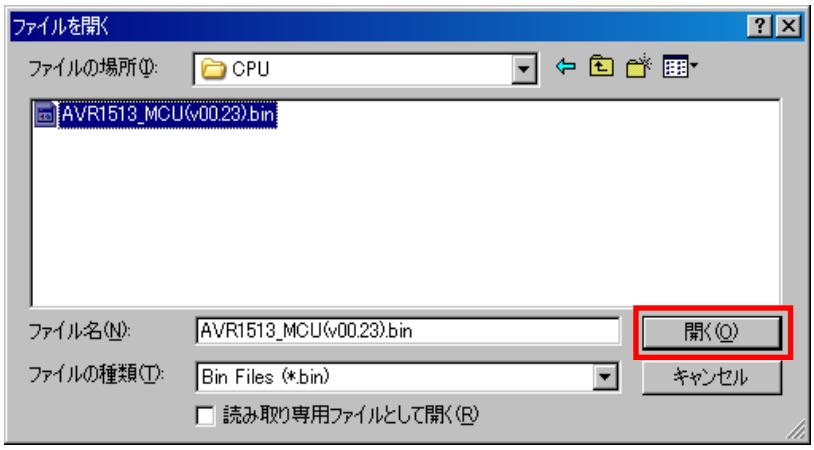
(29) Choose Flash File(MAIN).
Click the following button.



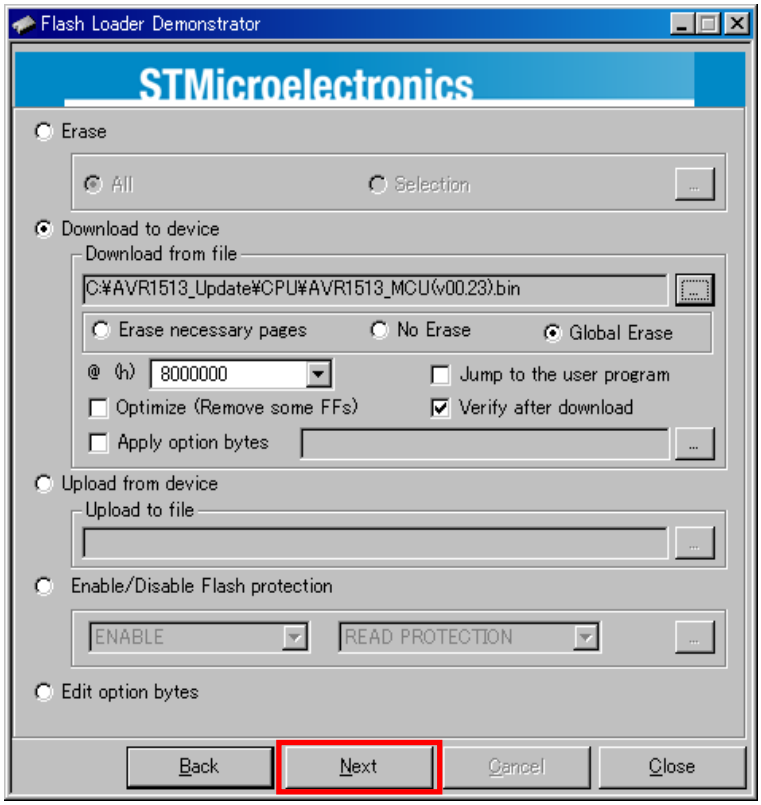
From the file browser windows select file of "AVR1513_MCU(vxx.x.x).bin".



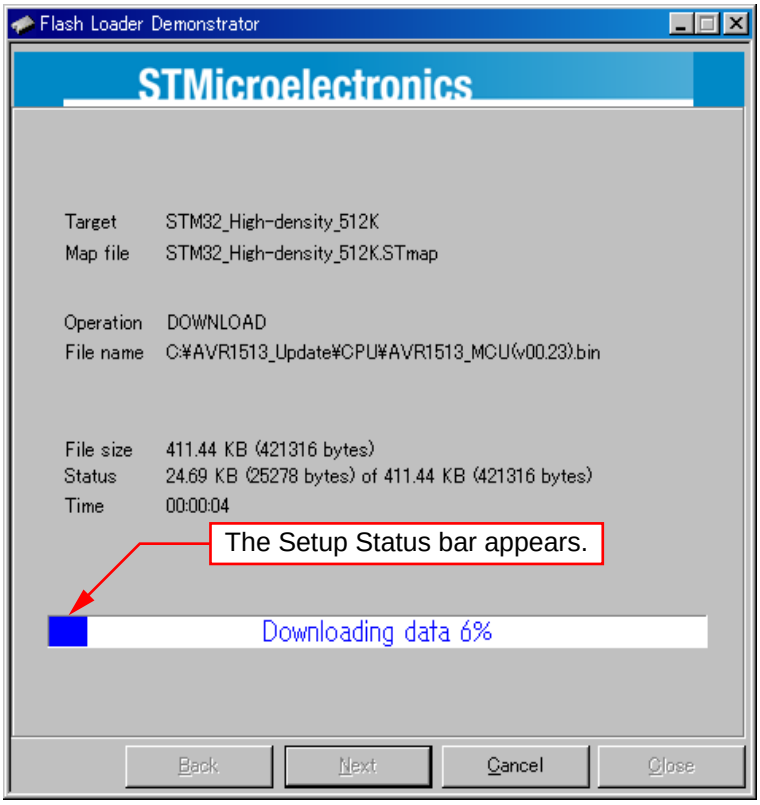
Click the "Open" button.



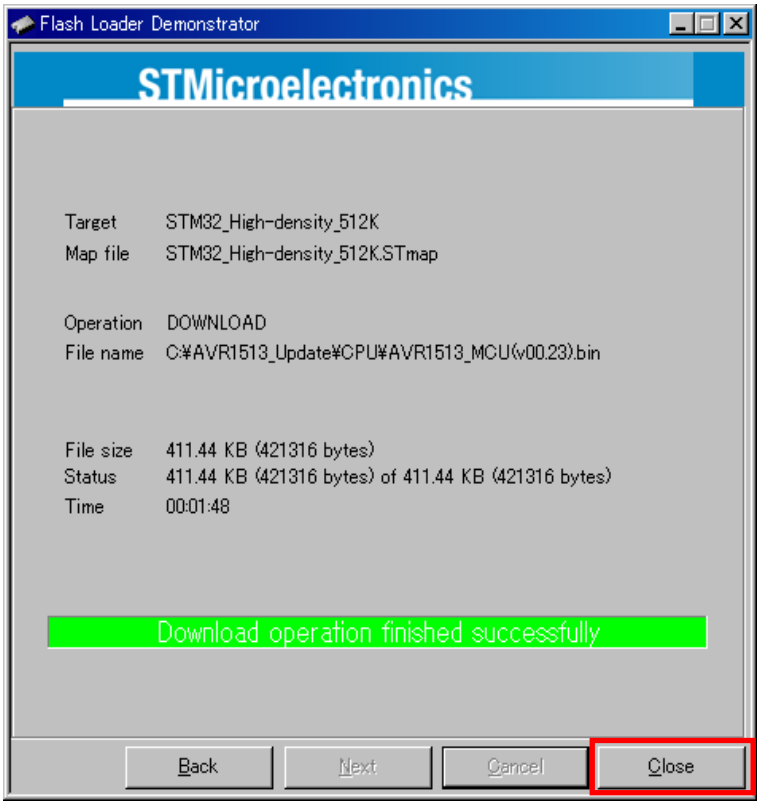
Click the “Next” button.



The following screen will be displayed.



The following screen will be displayed and click the "Close" button.



(30) Set the switch of “Writing Kit". (Refer to the table below.)

DSPBOOT	CE	EPM	CNVSS
H	H	L	H

(31) Press the "RESET" switch of “Writing Kit".

(32) Initializing.

1. Turn off the power using ⏻ button.
2. Press the ⏻ button while simultaneously pressing the SOURCE ◄ and SOURCE ► buttons.
3. Check that the entire display is flashing with an interval of about 1 second, and release your fingers from the 2 buttons and the microprocessor will be initialized.

Note: • If step 3 does not work, start over from step 1.
• All user settings will be lost and this factory setting will be recovered when this initialization mode. So make sure to memorize your setting for restoring after the initialization.

3. Notice:

Please keep the following notice for firmware update.

(a) Keep the PC environment

(b) Avoid the communication cable from the electrical noise source. (e.g. telephone cable, AC line, a fluorescent light)

(c) Don’t remove cable during update.

(d) Don’t turn off the power during update.

(e) Don’t run other PC application during update.

(f) Stop the resident program on PC (Virus checker and System check utility, etc)

(g) Stop the screen saver on PC.

(h) Stop the power save ability on PC.

(i) In case of laptop PC, Use the AC adaptor.

Confirming the firmware’s number after upgraded

After updating the firmware, check the version. Refer to "1. µcom/DSP Version display mode" (Refer to 17 page).

ADJUSTMENT

Audio Section

Adjusting Idling Current

Required measurement equipment: DC Voltmeter

1. Preparation

(1) Avoid direct blow from an air conditioner or an electric fan and humidity should be moderate, and place the set at normal usage environment.
Temperature should be at 15 °C ~ 30 °C (59 °F ~ 86 °F).

(2) Presetting

- POWER (Power source switch) OFF
- SPEAKER (Speaker terminal) No load

(Do not connect speaker, dummy resistor, etc.)

2. Adjustment

(1) Remove the top cover and set VR510(FL), VR550(FR), VR530(C), VR520(SL), VR540(SR), on MAIN PCB at fully counterclockwise (↺) position.

(2) Connect DC Voltmeter to test points (FRONT-Lch: CN510, FRONT-Rch: CN550, CENTER ch: CN530, SURROUND-Lch: CN520, SURROUND-Rch: CN540).

(3) Connect the power cord to AC Line, and set the power switch to "ON".

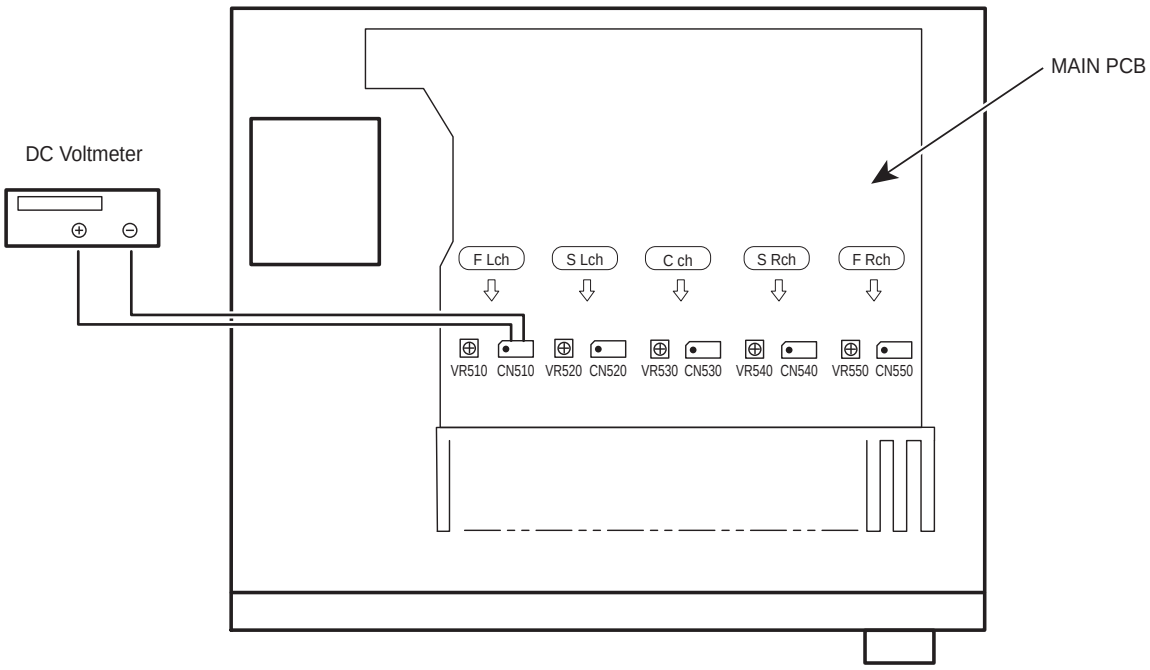
(4) Presetting.

MASTER VOLUME : ↺ minimum
SPEAKER (Speaker terminal) : No load
(Do not connect speaker, dummy resistor, etc.)
MODE : MCH STEREO
FUNCTION : CBL/SAT

(5) Within 2 minutes after the power on, turn VR510 clockwise (↻) to adjust the TEST POINT voltage at 1.5mV ± 0.5mV DC.

(6) After 10 minutes from the preset above, turn VR510 to set the voltage to 2.0mV ± 0.5mV DC.

(7) Adjust the Variable Resistors of each channel(VR520-VR550) in the same way.



This unit is equipped with a digital signal processing circuit that lets you play program sources in the surround mode to achieve the same sense of presence as in a movie theater.

Surround modes and surround parameters

This table shows the speakers that can be used in each surround mode and the surround parameters adjustable in each surround mode.

Symbols in the table

○ This indicates the audio output channels or surround parameters that can be set.
◎ This indicates the audio output channels. The output channels depend on the settings of "Speaker Config.".

Surround mode	Channel output				Audio Adjust			
	Front L/R	Center	Surround L/R	Subwoofer	Mode	LFE ∗4	D. Comp ∗2	DRC ∗3
DIRECT (2 channel)	○			◎∗1			○	○
DIRECT (Multi-channel)	○	◎	◎	◎		○	○	○
STEREO	○			◎		○	○	○
MULTI CH IN	○	◎	◎	◎		○		
DOLBY PRO LOGIC II	○	◎	◎	◎	○		○	○
DTS NEO:6	○	◎	◎	◎	○		○	○
DOLBY DIGITAL	○	◎	◎	◎		○	○	
DOLBY DIGITAL Plus	○	◎	◎	◎		○	○	
DOLBY TrueHD	○	◎	◎	◎		○		
DTS SURROUND	○	◎	◎	◎		○	○	
DTS 96/24	○	◎	◎	◎		○	○	
DTS-HD	○	◎	◎	◎		○	○	
DTS Express	○	◎	◎	◎		○	○	
MULTI CH STEREO	○	◎	◎	◎		○	○	
VIRTUAL	○			◎∗1		○	○	

∗1 Only when "SW Mode" is set to "LFE+Main", sound is output from the subwoofer.
∗2 This item can be selected when a Dolby Digital or DTS signal is played.
∗3 This item can be selected when a Dolby TrueHD signal is played.
∗4 This item can be selected when a Dolby Digital or DTS signal or DVD-Audio is played.

Surround mode	Audio Adjust					Tone	RESTORER ∗5
	Subwoofer	PRO LOGIC II Music mode only			NEO:6 Music mode only		
		Panorama	Dimension	Center Width	Center Image		
DIRECT (2 channel)	○∗1						
DIRECT (Multi-channel)							
STEREO						○	○
MULTI CH IN						○	
DOLBY PRO LOGIC II		○	○	○		○	○
DTS NEO:6					○	○	○
DOLBY DIGITAL						○	
DOLBY DIGITAL Plus						○	
DOLBY TrueHD							
DTS SURROUND						○	
DTS 96/24						○	
DTS-HD							
DTS Express						○	
MULTI CH STEREO						○	○
VIRTUAL						○	○

∗1 Only when "SW Mode" is set to "LFE+Main", sound is output from the subwoofer.
∗5 This item can be set when the input signal is analog, PCM 48 kHz or 44.1 kHz.

❑ Types of input signals, and corresponding surround modes

This table shows the input signal that can be played in each surround mode. Check the audio signal of the input source then select the surround mode.

Symbols in the table

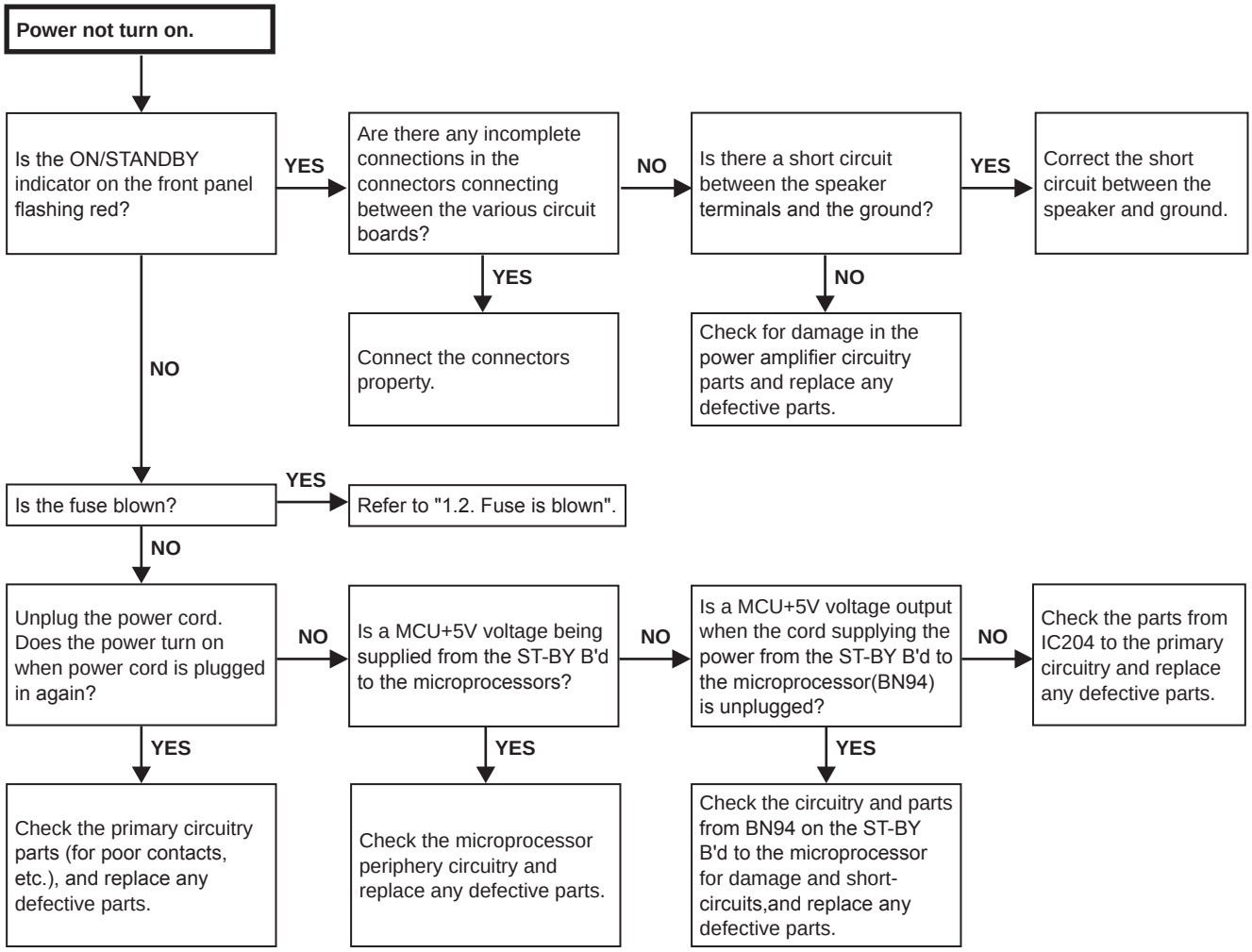
● This indicates the default surround mode.
○ This indicates the selectable surround mode.

Surround mode	NOTE	Input signal types and formats												
		ANALOG	PCM		DTS-HD		DTS			DOLBY		DOLBY DIGITAL		
			PCM (multi ch)	PCM (2ch)	DTS-HD Master Audio	DTS-HD High Resolution Audio	DTS EXPRESS	DTS (5.1ch)	DTS 96/24	DOLBY TrueHD	DOLBY DIGITAL Plus	DOLBY DIGITAL (5.1/5/4ch)	DOLBY DIGITAL (4/3ch)	DOLBY DIGITAL (2ch)
DTS SURROUND														
DTS-HD MSTR					●									
DTS-HD HI RES						●								
DTS SURROUND								●						
DTS 96/24									●					
DTS EXPRESS							●							
DTS NEO:6 CINEMA		○		○										○
DTS NEO:6 MUSIC		○		○										○
DOLBY SURROUND														
DOLBY TrueHD										●				
DOLBY DIGITAL+											●			
DOLBY DIGITAL												●	●	
DOLBY PRO LOGIC II CINEMA		○		○										○
DOLBY PRO LOGIC II MUSIC		○		○										○
DOLBY PRO LOGIC II GAME		○		○										○
DOLBY PRO LOGIC		○		○										○
MULTI CH IN														
MULTI CH IN			●											
DIRECT														
DIRECT		○	○	○	○	○	○	○	○	○	○	○	○	○
DSP SIMULATION														
MULTI CH STEREO		○	○	○				○	○			○	○	○
VIRTUAL		○	○	○				○	○			○	○	○
STEREO														
STEREO		●	○	●	○	○	○	○	○	○	○	○	○	○

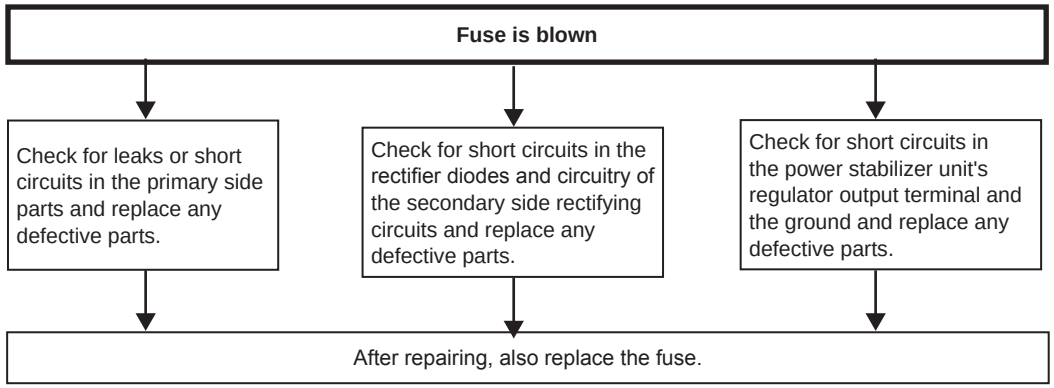
TROUBLE SHOOTING

1. POWER

1.1. Power not turn on



1.2. Fuse is blown



2. Analog video

MONITOR OUT(CVBS) Output NG

↓

Check ±5VV
+5VV : C755
-5VV : C754

NO → The power supply circuitry is defective.

YES ↓

Check output
Output V : IC71-1pin

NO → Check input
(When the SAT/CBL function)
Vin3 : IC71-7pin

NO → Check pattern from JK71 to IC71 and check cable between AMP and player or check player .

YES ↓

Check cable between AMP and monitor or Check monitor.

YES ↓

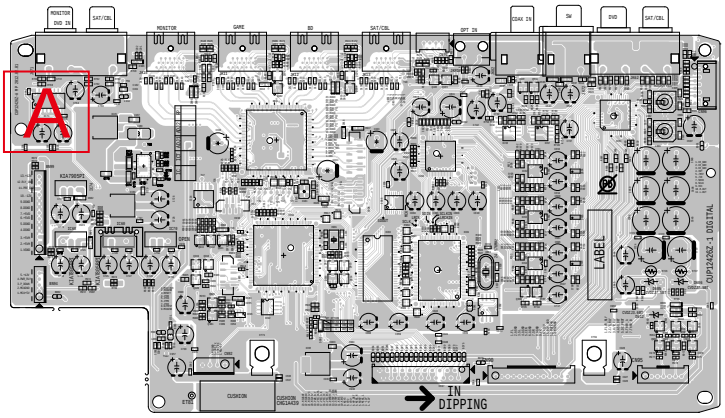
Check set value of IC.
SW2 : IC71-10pin : 3.3V : OK
SW5 : IC71-2pin : 3.3V : OK

NO → CPU(IC91) flaw.

YES ↓

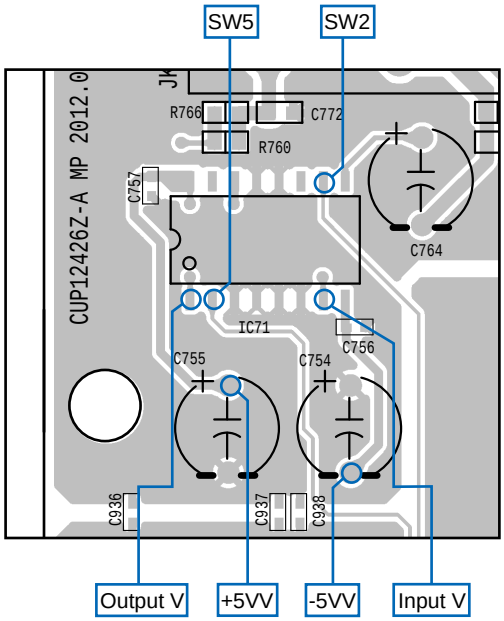
The IC71 and surrounding circuitry is defective.

VIDEO test point



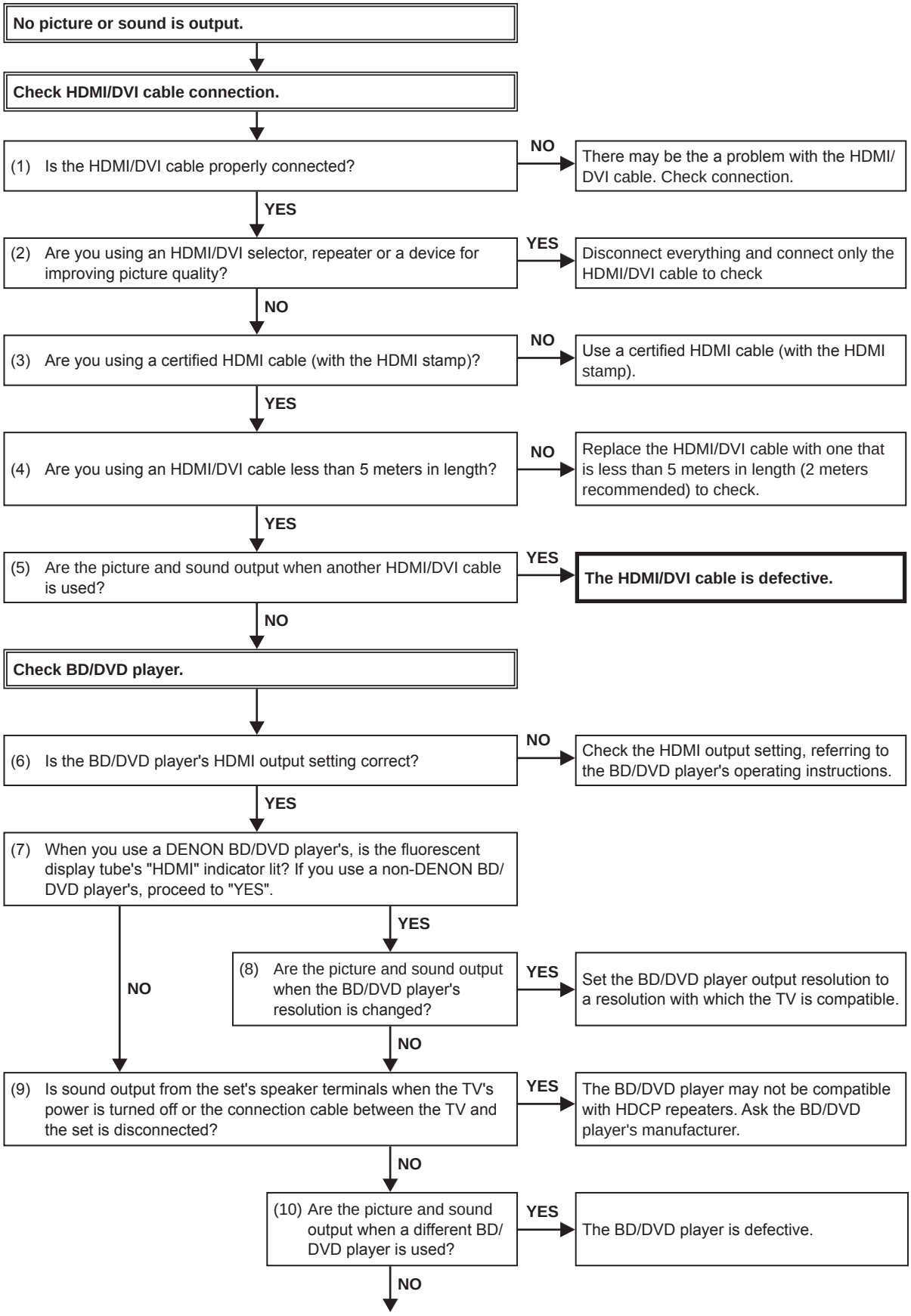
DIGITAL (COMPONENT SIDE)

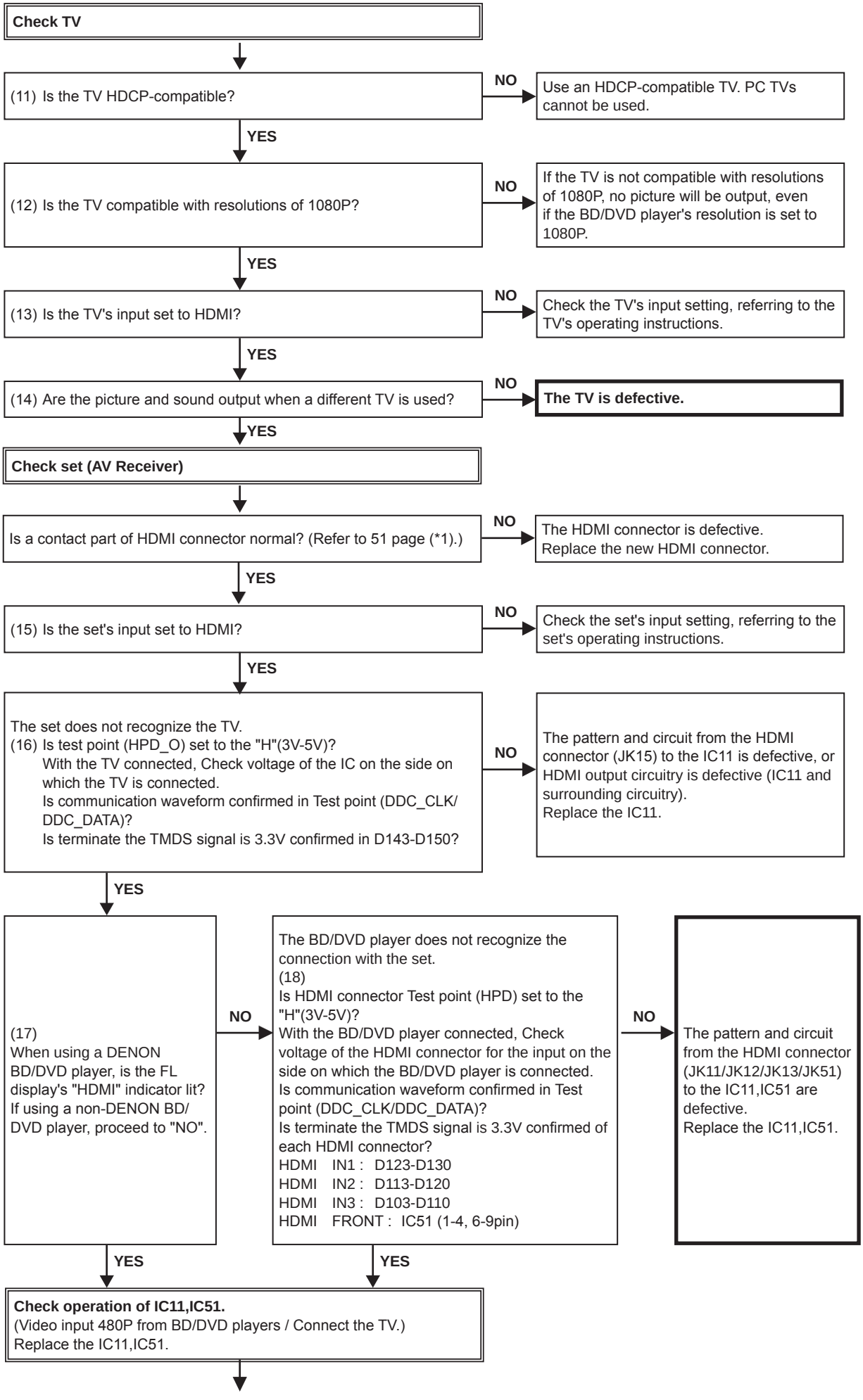
Detail A



3. HDMI/DVI

3.1. No picture or sound is output




Check TV
(11) Is the TV HDCP-compatible?
NO
Use an HDCP-compatible TV. PC TVs cannot be used.
YES
(12) Is the TV compatible with resolutions of 1080P?
NO
If the TV is not compatible with resolutions of 1080P, no picture will be output, even if the BD/DVD player's resolution is set to 1080P.
YES
(13) Is the TV's input set to HDMI?
NO
Check the TV's input setting, referring to the TV's operating instructions.
YES
(14) Are the picture and sound output when a different TV is used?
NO
The TV is defective.
YES
Check set (AV Receiver)
Is a contact part of HDMI connector normal? (Refer to 51 page (*1).)
NO
The HDMI connector is defective.
Replace the new HDMI connector.
YES
(15) Is the set's input set to HDMI?
NO
Check the set's input setting, referring to the set's operating instructions.
YES
The set does not recognize the TV.
(16) Is test point (HPD_O) set to the "H"(3V-5V)?
With the TV connected, Check voltage of the IC on the side on which the TV is connected.
Is communication waveform confirmed in Test point (DDC_CLK/DDC_DATA)?
Is terminate the TMDS signal is 3.3V confirmed in D143-D150?
NO
The pattern and circuit from the HDMI connector (JK15) to the IC11 is defective, or HDMI output circuitry is defective (IC11 and surrounding circuitry).
Replace the IC11.
YES
(17)
When using a DENON BD/DVD player, is the FL display's "HDMI" indicator lit?
If using a non-DENON BD/DVD player, proceed to "NO".
NO
The BD/DVD player does not recognize the connection with the set.
(18)
Is HDMI connector Test point (HPD) set to the "H"(3V-5V)?
With the BD/DVD player connected, Check voltage of the HDMI connector for the input on the side on which the BD/DVD player is connected.
Is communication waveform confirmed in Test point (DDC_CLK/DDC_DATA)?
Is terminate the TMDS signal is 3.3V confirmed of each HDMI connector?
HDMI IN1 : D123-D130
HDMI IN2 : D113-D120
HDMI IN3 : D103-D110
HDMI FRONT : IC51 (1-4, 6-9pin)
NO
The pattern and circuit from the HDMI connector (JK11/JK12/JK13/JK51) to the IC11,IC51 are defective.
Replace the IC11,IC51.
YES
YES
Check operation of IC11,IC51.
(Video input 480P from BD/DVD players / Connect the TV.)
Replace the IC11,IC51.

(19) Check power supply.
Are 1.8V or 3.3V supplied to IC11 (each power supply pin)?

NO → The power supply circuitry is defective.

YES

(20) Check xtal oscillator.
Is there 28.6363MHz oscillation of X101?

NO → The X101 or IC11 is defective.
Replace the new parts.

YES

(21) Check RESET.
Is RESET waveform confirmed at IC11 (97pin)? (If reference waveform, proceed to "YES".)

NO → The RESET pattern or IC11 is defective.
Replace the new parts.

YES

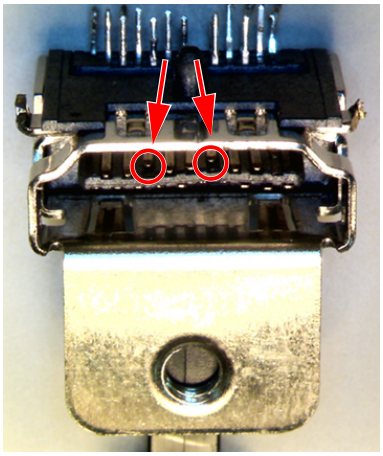
(22) Check control signal(I2C).
Is waveform confirmed at Test point (SDA/SCL). (If not continued to " L", proceed to "YES".)

NO → The SDATA/SCL line pattern is defective.

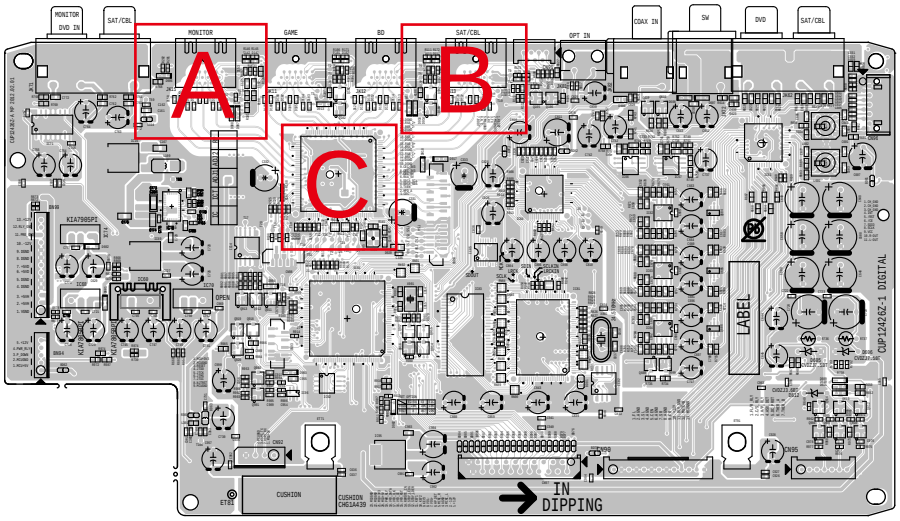
YES

HDMI output circuitry is defective (IC11 and surrounding circuitry).
Replace the IC11.

(*1) Abnormal sample of HDMI connector : The internal terminal has bent.

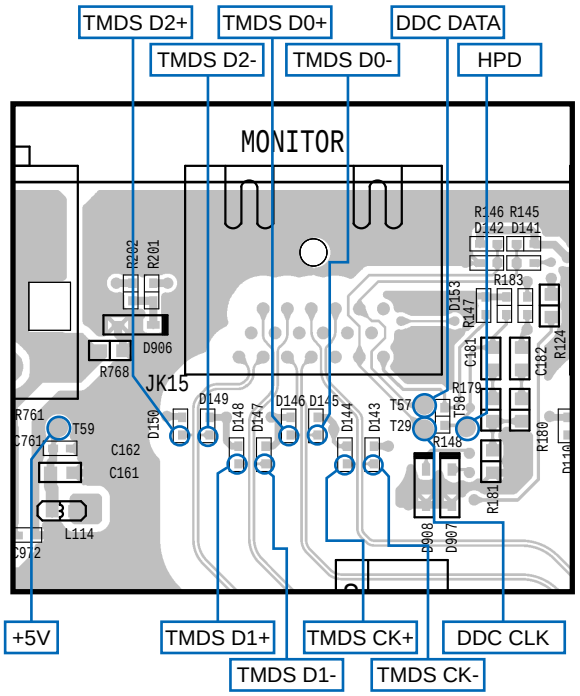


3.2. HDMI test point and waveforms

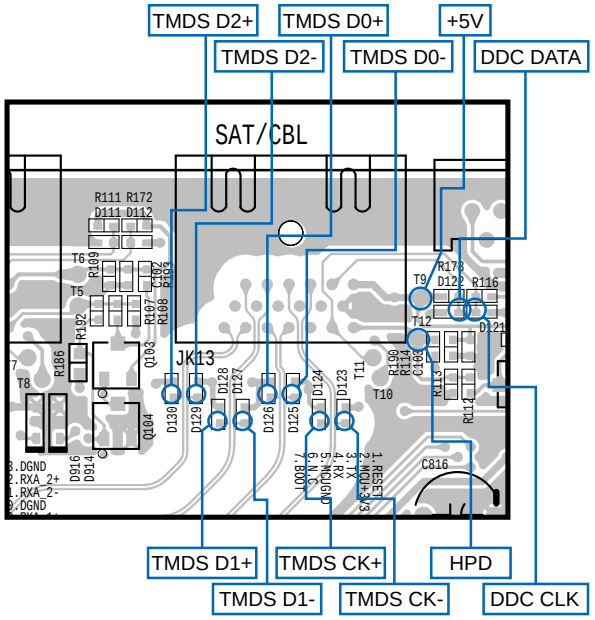


DIGITAL (COMPONENT SIDE)

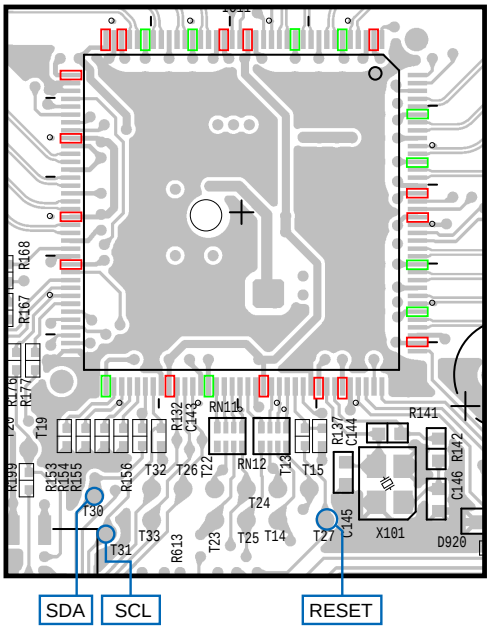
Detail A



Detail B



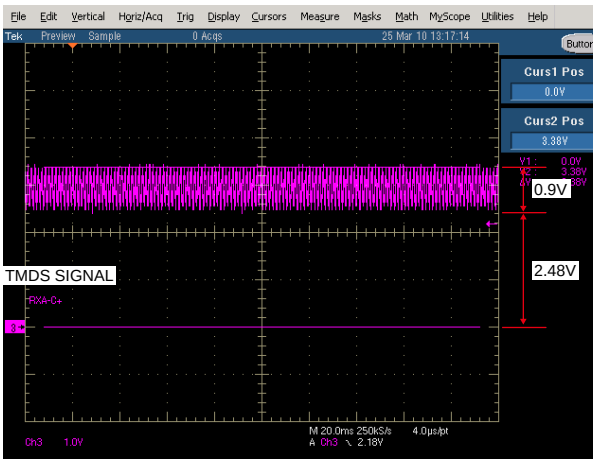
Detail C

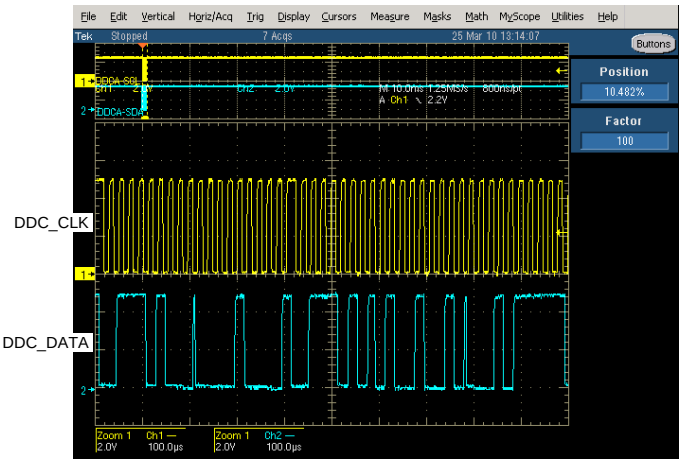


:B
:A

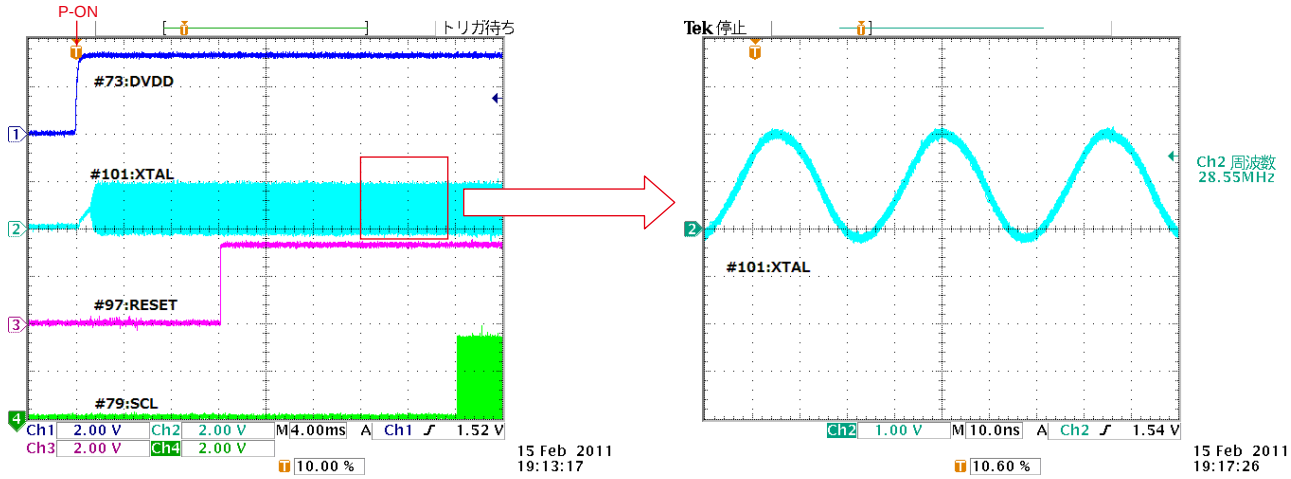
A: 1.8V	2,18,21,34,36,37,45,55,61,81,93,100,103,110,126,129 pin
B: 3.3V	6,12,25,31,73,86,114,120,133,139 pin

DDC_CLK/DDC_DATA/TMDS : Check items (16),(18)

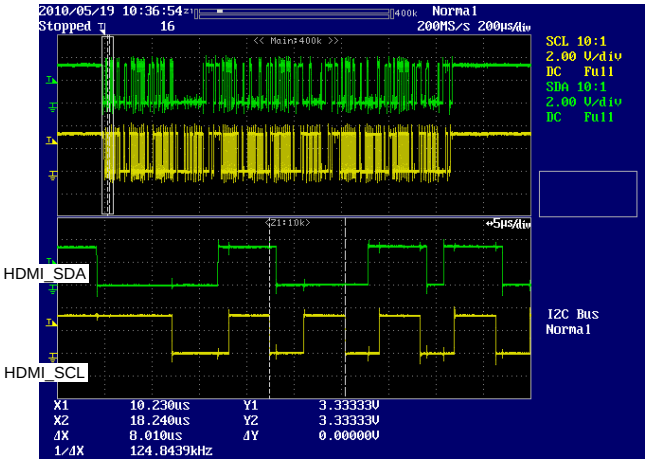




DVDD/XTAL/RESET/SCL : Check items (19),(20),(21)



HDMI_SDA/SCL(I2C) : Check item (22)



4. AUDIO

4.1. AUDIO CHECK

AUDIO OUTPUT : NG

CHECK1	INPUT	SURROND MODE	SOURCE	NG → Check ANALOG AUDIO BLOCK.
	ANALOG 2CH	DIRECT	ANALOG	

OK

CHECK2	INPUT	SURROND MODE	SOURCE	NG → Check Digital AUDIO BLOCK.
	COAX or OPT	---	Legacy(PCM or DolbyDigital or dts…)	

OK

CHECK3	INPUT	SURROND MODE	SOURCE	NG → Check via AD.
	ANALOG 2CH	MULTI CH STEREO	ANALOG	

OK

CHECK4	INPUT	SURROND MODE	SOURCE	NG → Check HDMI BLOCK.
	HDMI	---	Legacy(PCM2ch or DolbyDigital or dts…)	

OK

CHECK5	INPUT	SURROND MODE	SOURCE
	HDMI	---	HD AUDIO (PCM MULTI or DolbyTrueHD or dtsHD MA)

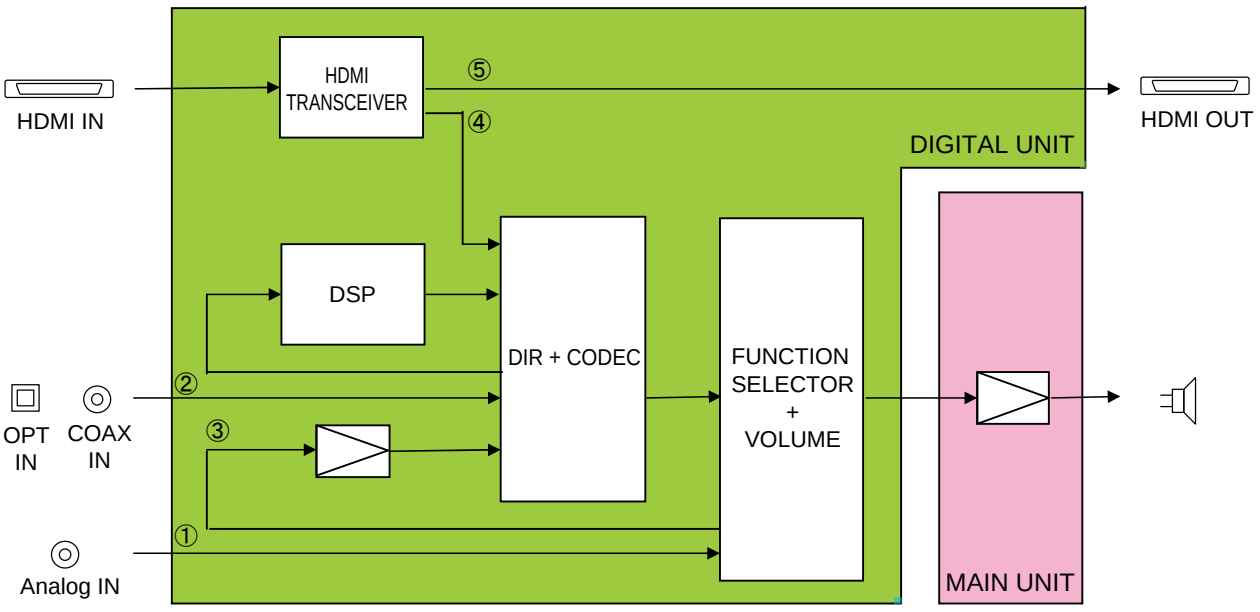
OK (Digital Audio BOLCK is OK) → Check other factors.

NG

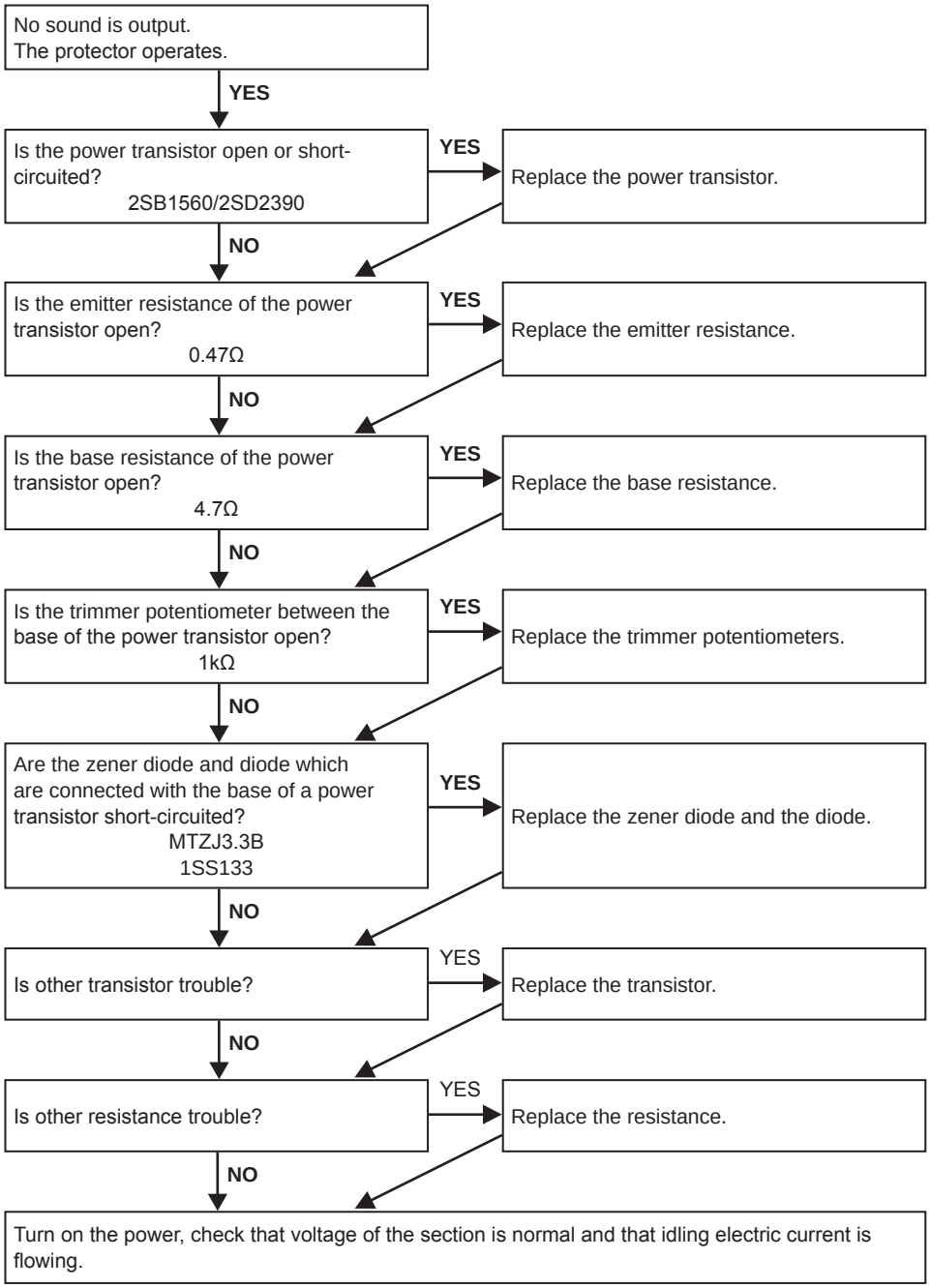
CHECK6	Connect	Setting	SOURCE
	HDMI OUT→other AVR HDMI IN	TV MODE	HD AUDIO (PCM MULTI or DolbyTrueHD or dtsHD MA)

OK → Check Digital AUDIO BLOCK.

NG → Check HDMI BLOCK.



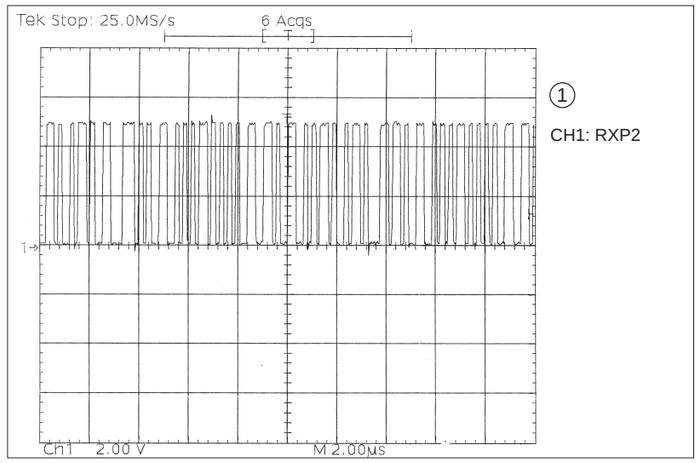
4.2. Power AMP (MAIN UNIT)



Personal notes:

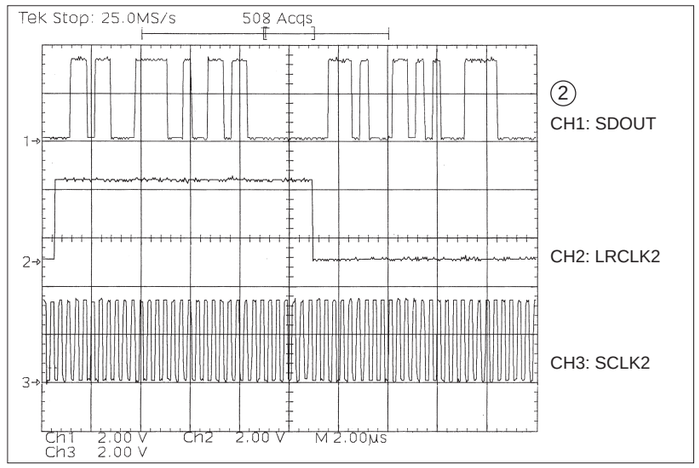
CLOCK FLOW & WAVE FORM IN DIGITAL BLOCK

Wave form



①

CH1: RXP2

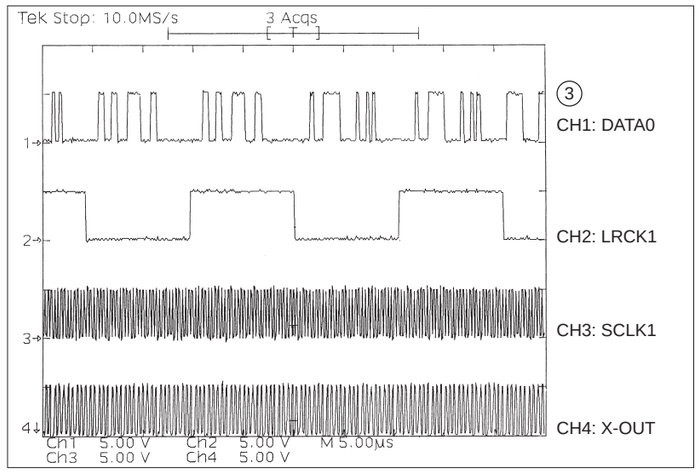


②

CH1: SDOUT

CH2: LRCLK2

CH3: SCLK2



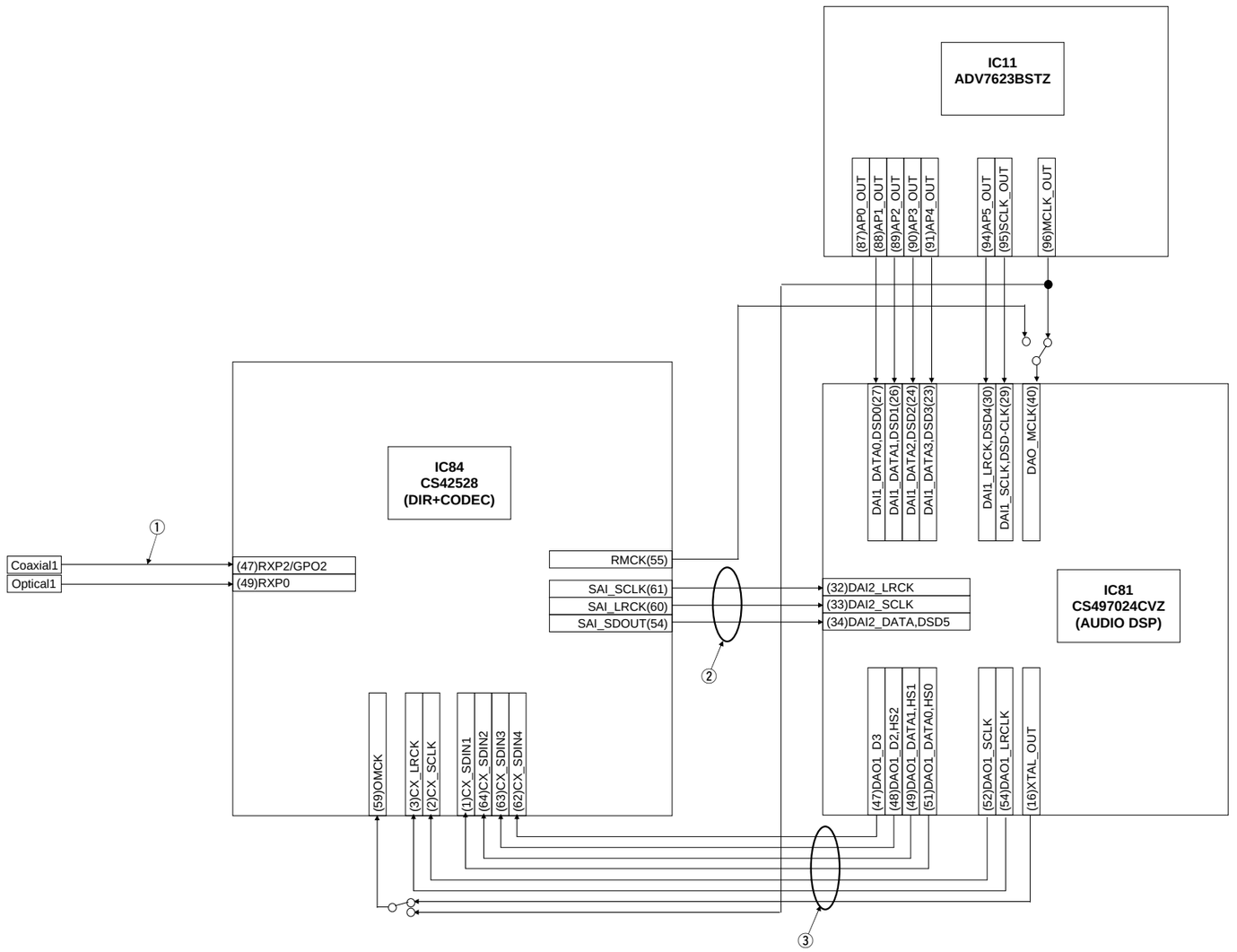
③

CH1: DATA0

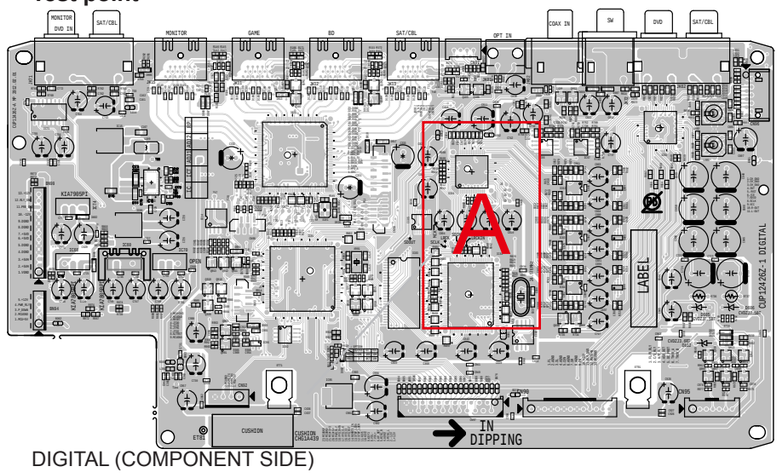
CH2: LRCK1

CH3: SCLK1

CH4: X-OUT

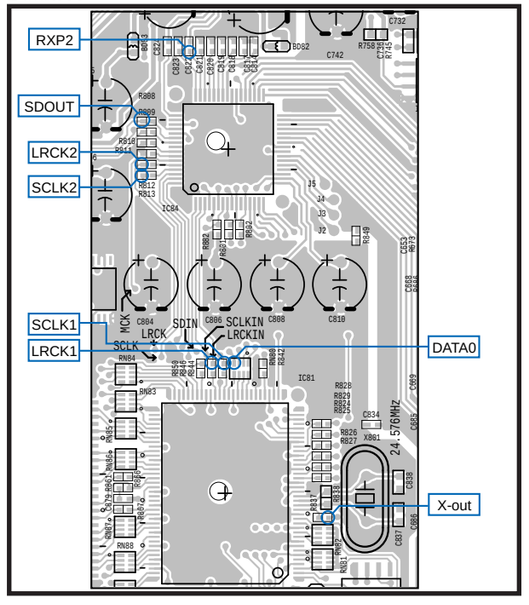


Test point

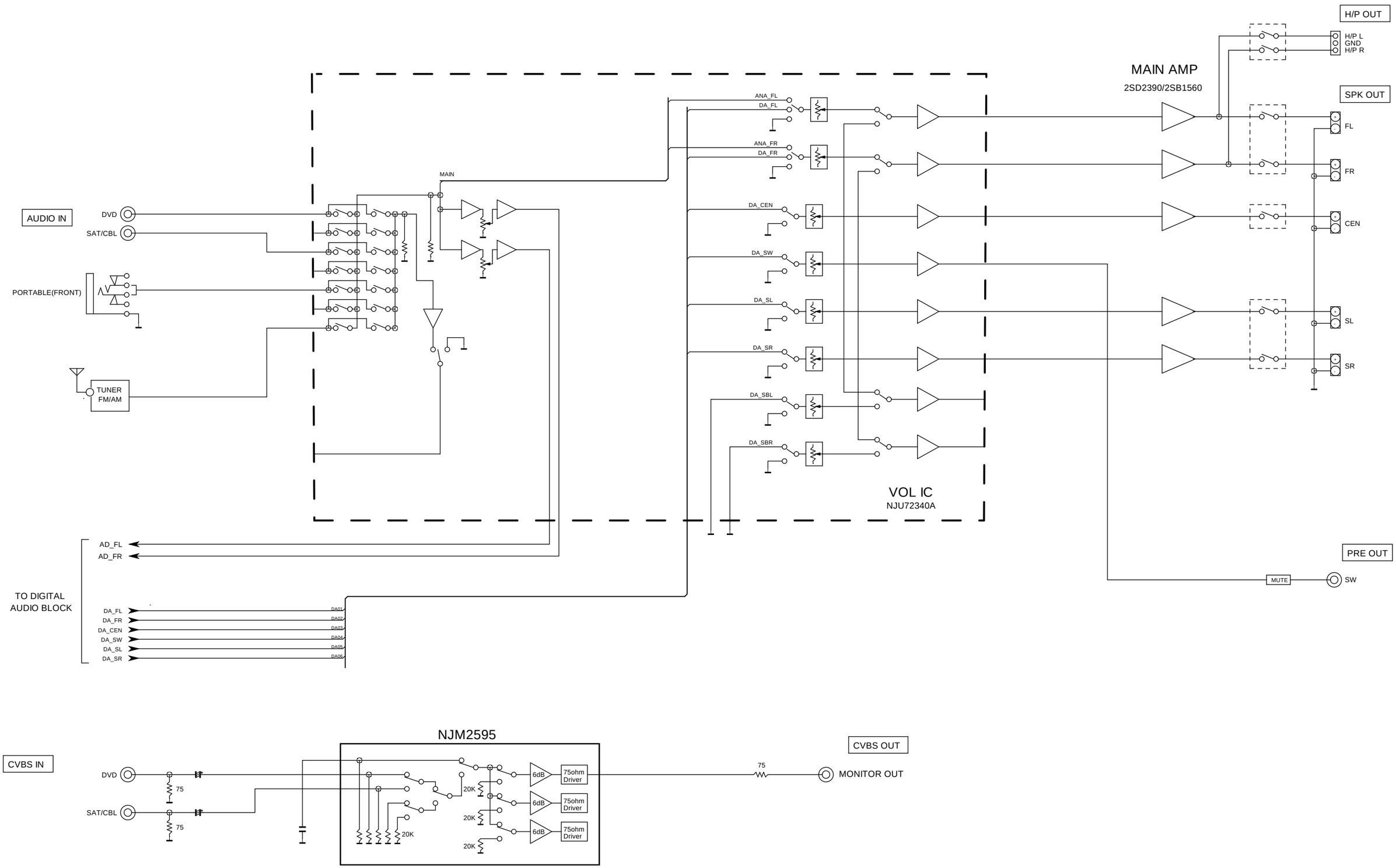


DIGITAL (COMPONENT SIDE)

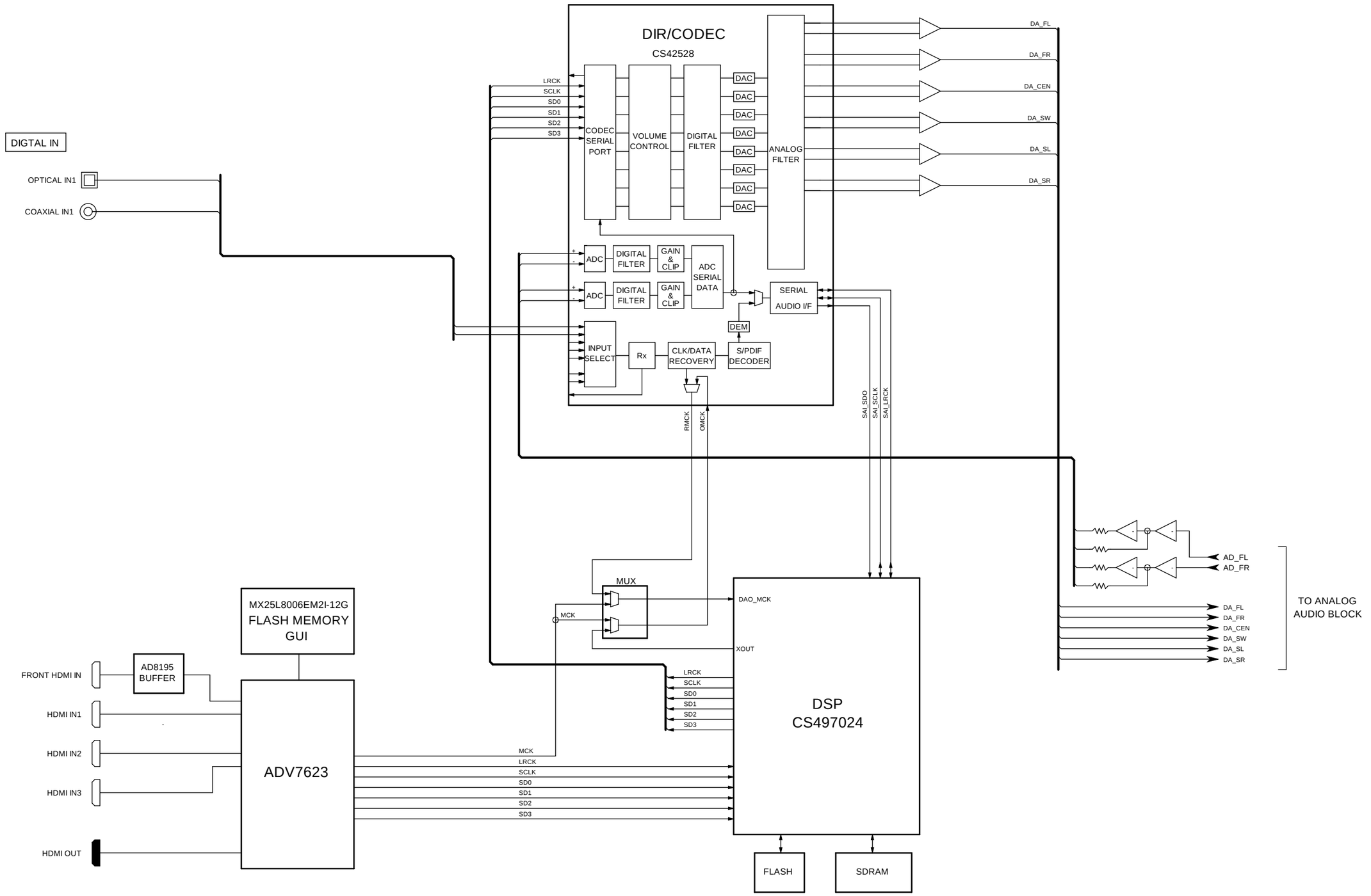
Detail A



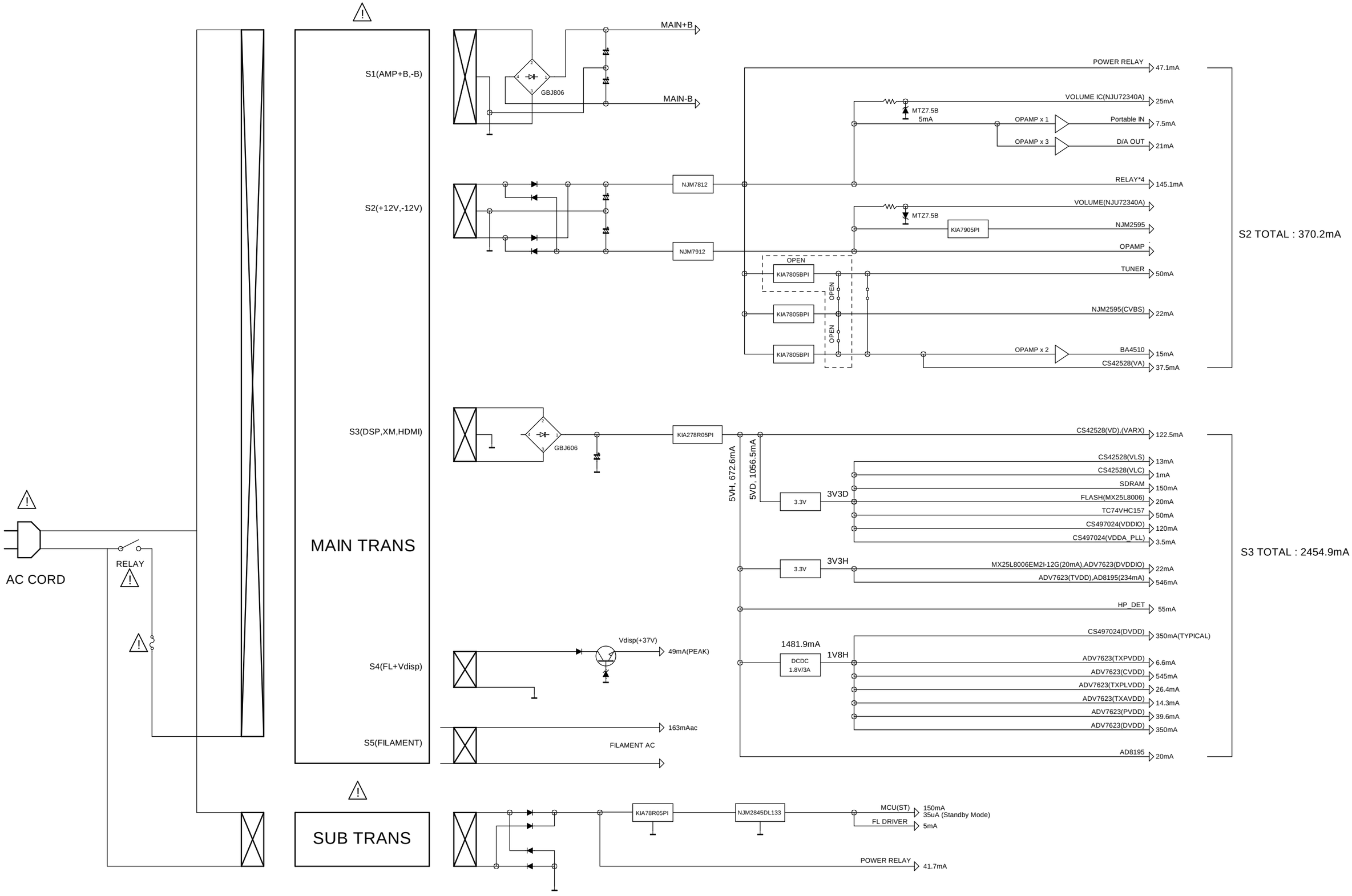
ANALOG AUDIO/VIDEO BLOCK DIAGRAM



DIGITAL AUDIO/HDMI BLOCK DIAGRAM

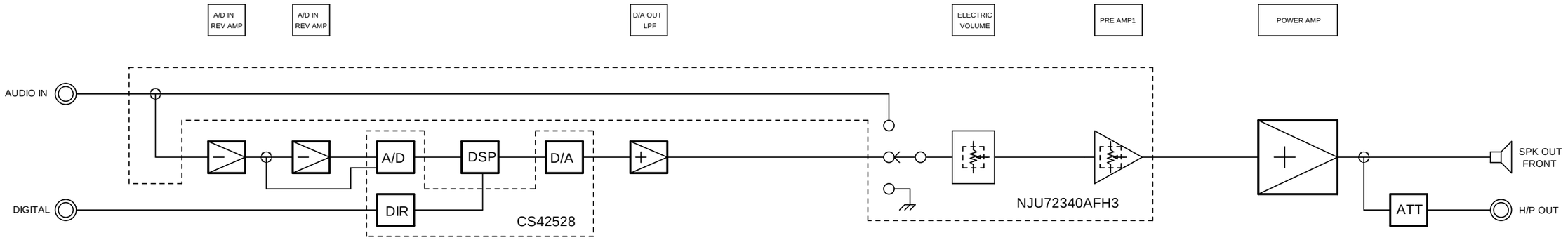


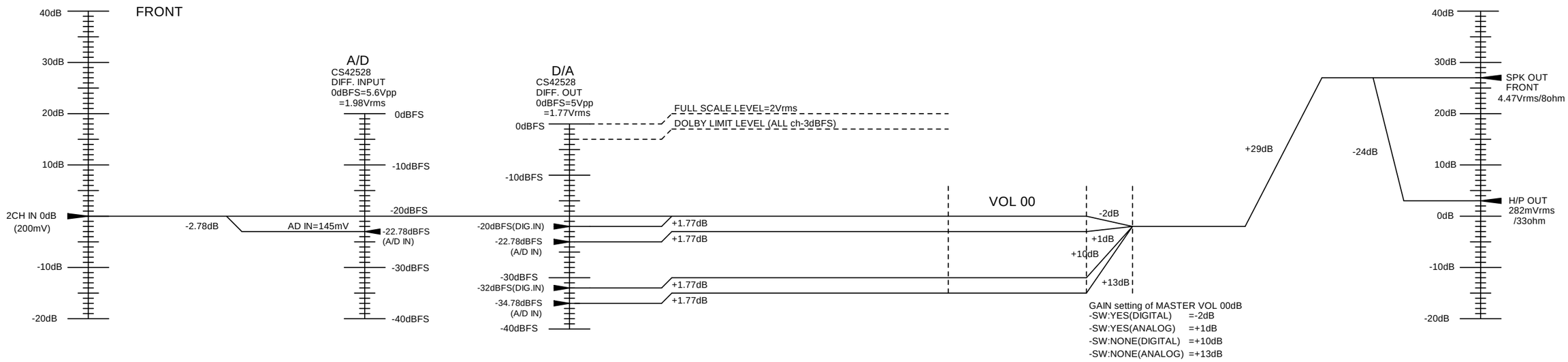
POWER BLOCK DIAGRAM



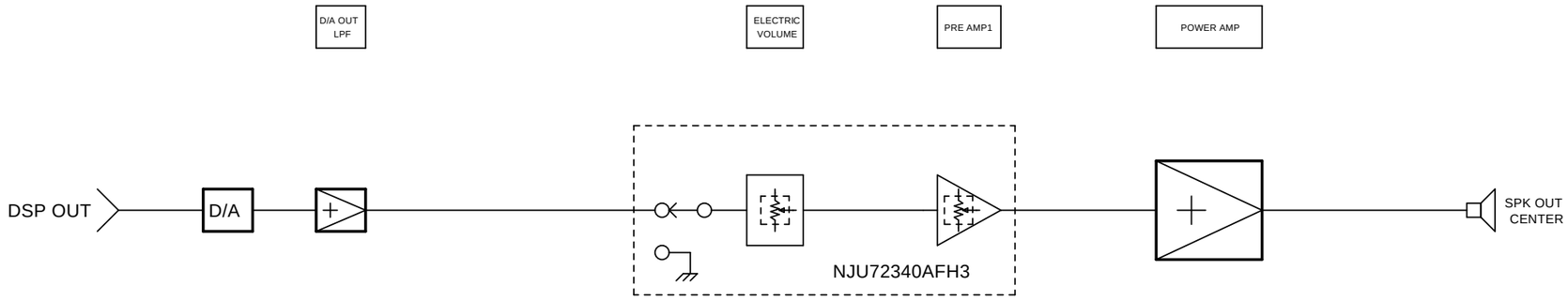
LEVEL DIAGRAM

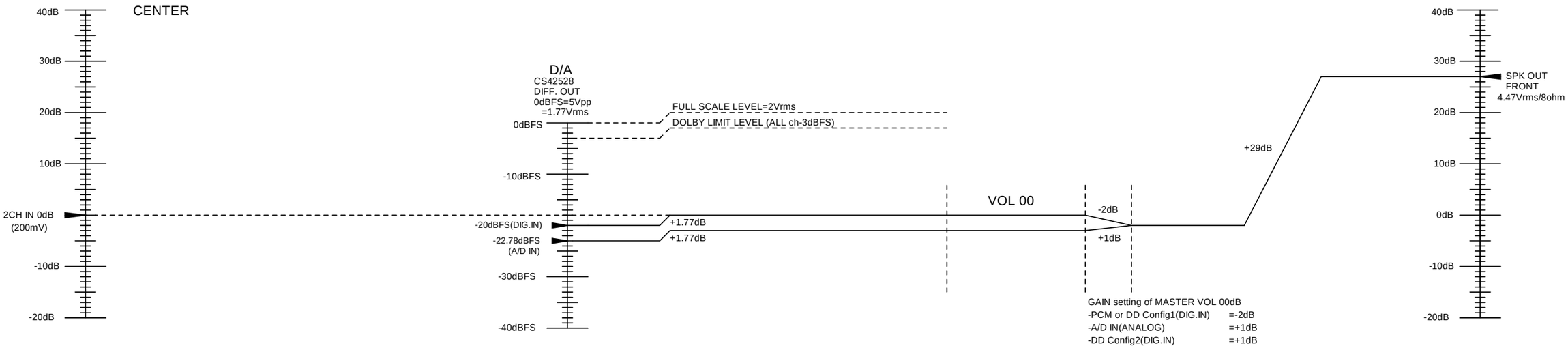
FRONT ch



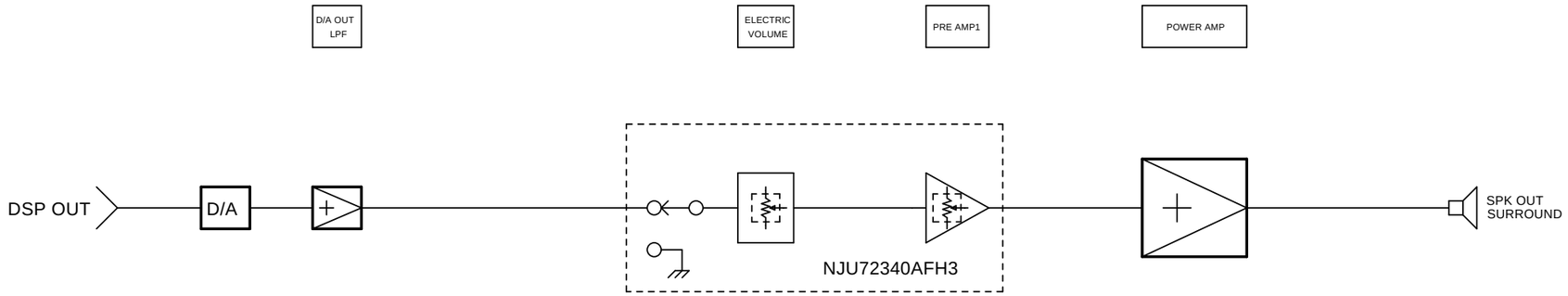


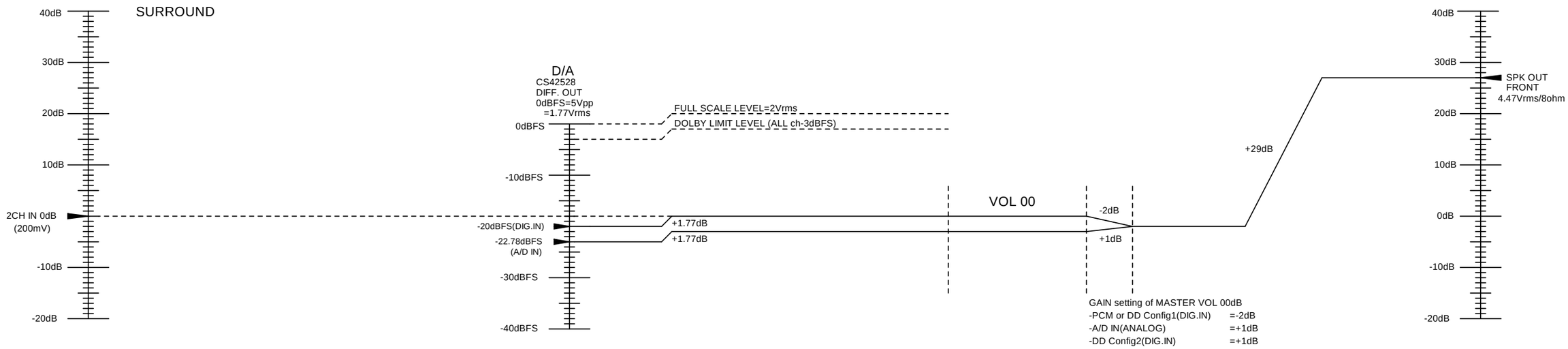
CENTER ch


D/A OUT
LPF
ELECTRIC
VOLUME
PRE AMP1
POWER AMP
DSP OUT
D/A
NJU72340AFH3
SPK OUT
CENTER

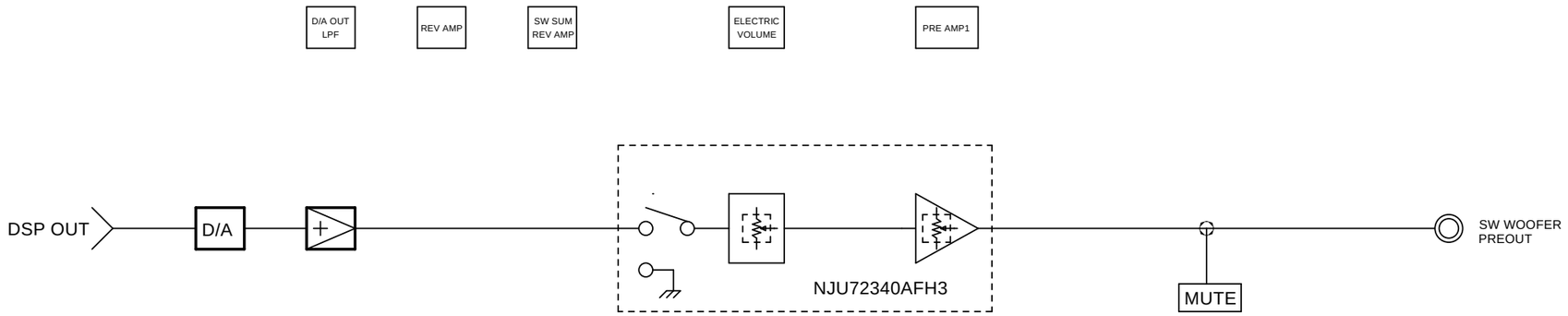

CENTER
40dB
30dB
20dB
10dB
2CH IN 0dB
(200mV)
-10dB
-20dB
D/A
CS42528
DIFF. OUT
0dBFS=5Vpp
=1.77Vrms
0dBFS
FULL SCALE LEVEL=2Vrms
DOLBY LIMIT LEVEL (ALL ch-3dBFS)
-10dBFS
-20dBFS(DIG.IN)
-22.78dBFS
(A/D IN)
-30dBFS
-40dBFS
+1.77dB
+1.77dB
VOL 00
-2dB
+1dB
+29dB
40dB
30dB
SPK OUT
FRONT
4.47Vrms/8ohm
20dB
10dB
0dB
-10dB
-20dB
GAIN setting of MASTER VOL 00dB
-PCM or DD Config1(DIG.IN) =-2dB
-A/D IN(ANALOG) =+1dB
-DD Config2(DIG.IN) =+1dB

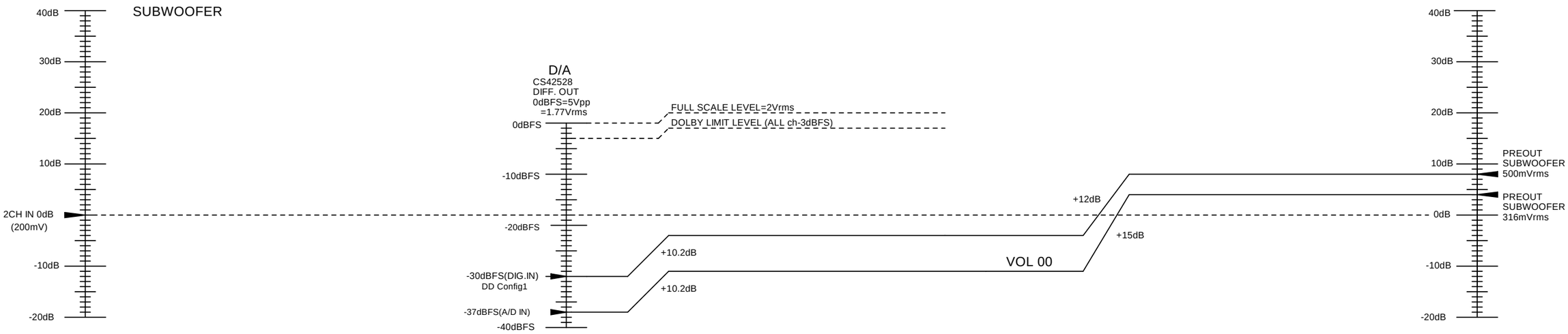
SURROUND ch


D/A OUT
LPF
ELECTRIC
VOLUME
PRE AMP1
POWER AMP
DSP OUT
D/A
NJU72340AFH3
SPK OUT
SURROUND

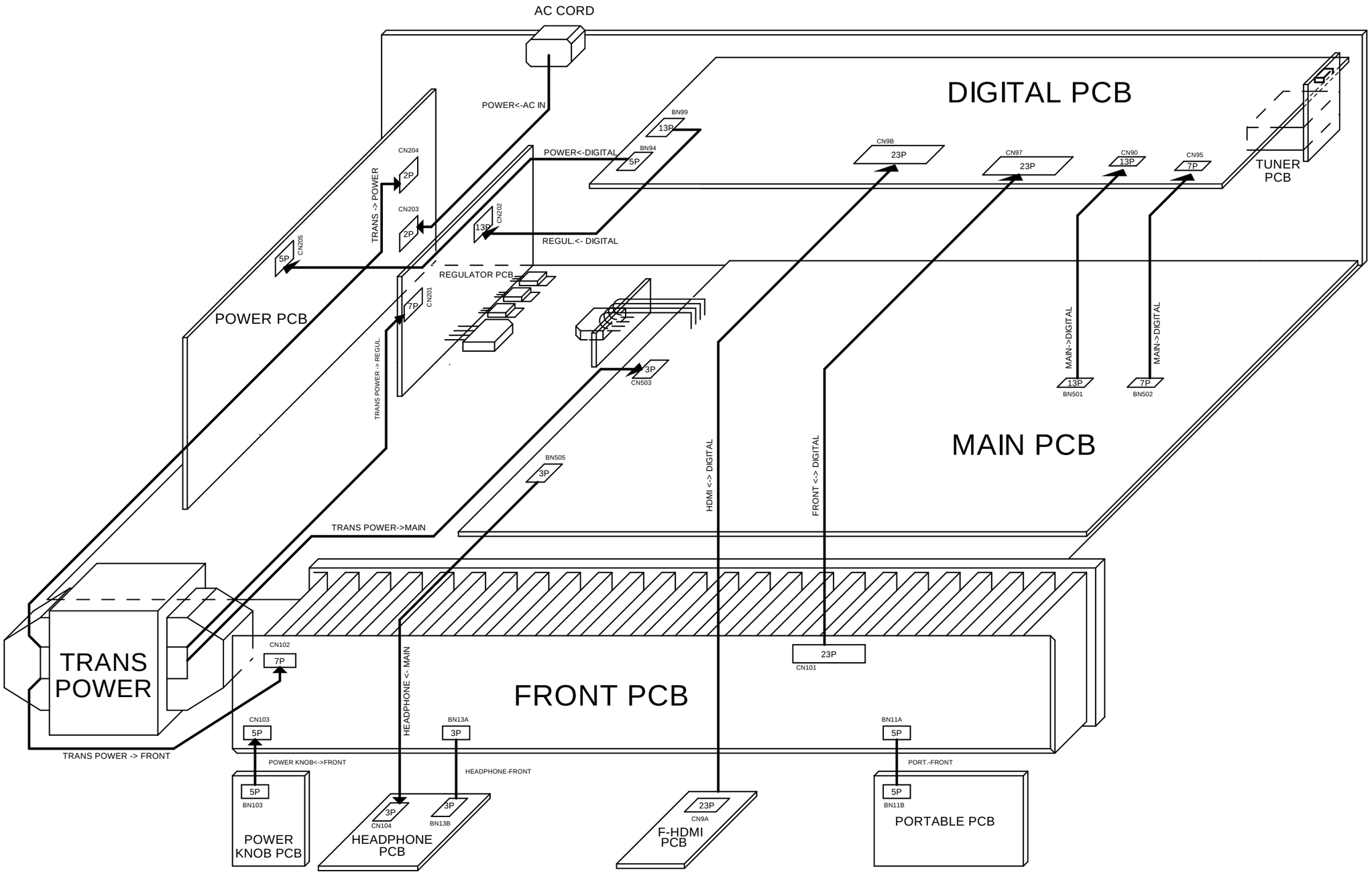

SURROUND
40dB
30dB
20dB
10dB
2CH IN 0dB
(200mV)
-10dB
-20dB
D/A
CS42528
DIFF. OUT
0dBFS=5Vpp
=1.77Vrms
0dBFS
-10dBFS
-20dBFS(DIG.IN)
-22.78dBFS
(A/D IN)
-30dBFS
-40dBFS
FULL SCALE LEVEL=2Vrms
DOLBY LIMIT LEVEL (ALL ch-3dBFS)
+1.77dB
+1.77dB
VOL 00
-2dB
+1dB
+29dB
GAIN setting of MASTER VOL 00dB
-PCM or DD Config1(DIG.IN) =-2dB
-A/D IN(ANALOG) =+1dB
-DD Config2(DIG.IN) =+1dB
40dB
30dB
20dB
10dB
0dB
-10dB
-20dB
SPK OUT
FRONT
4.47Vrms/8ohm

SUBWOOFER ch

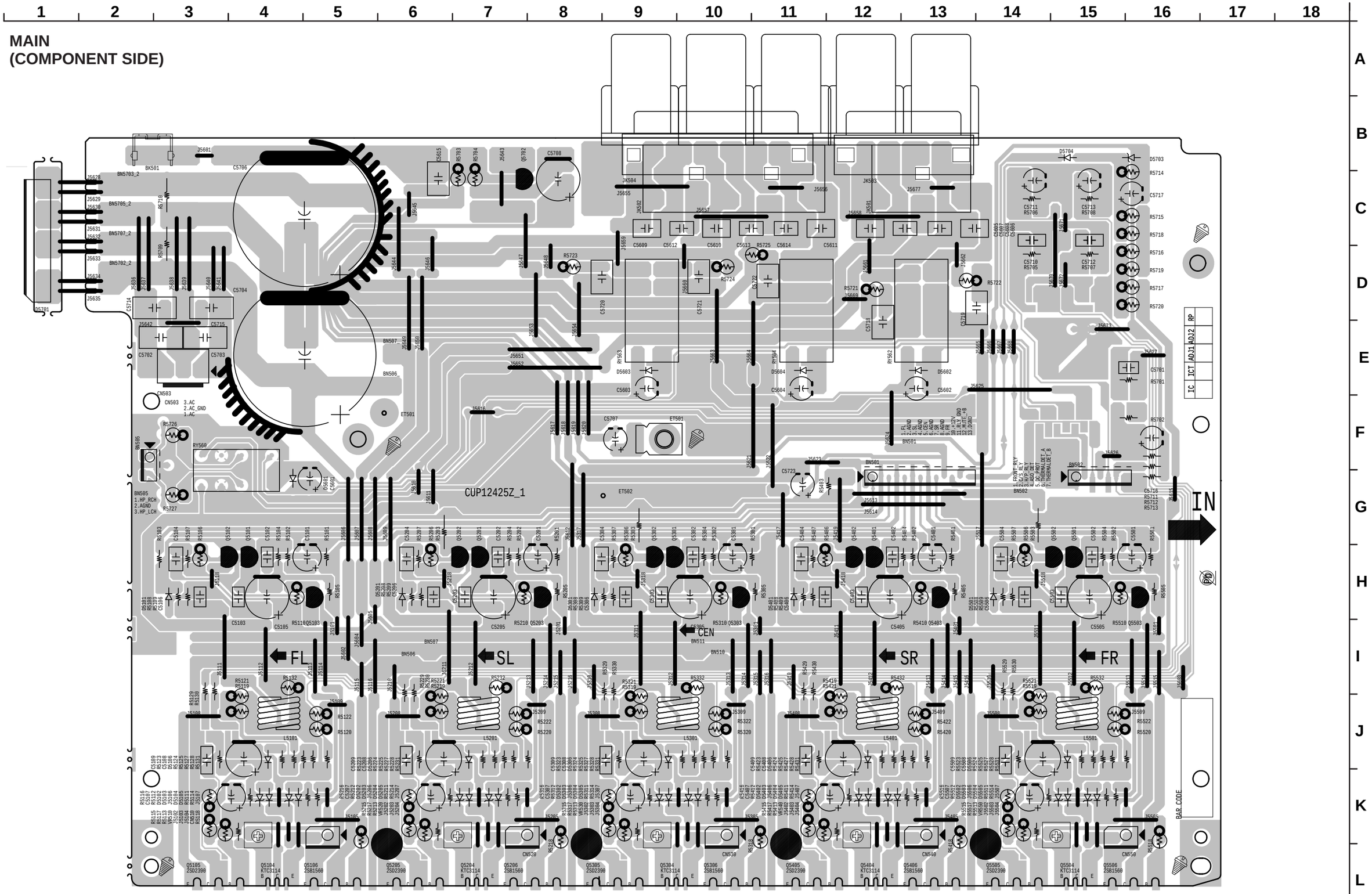




WIRING DIAGRAM



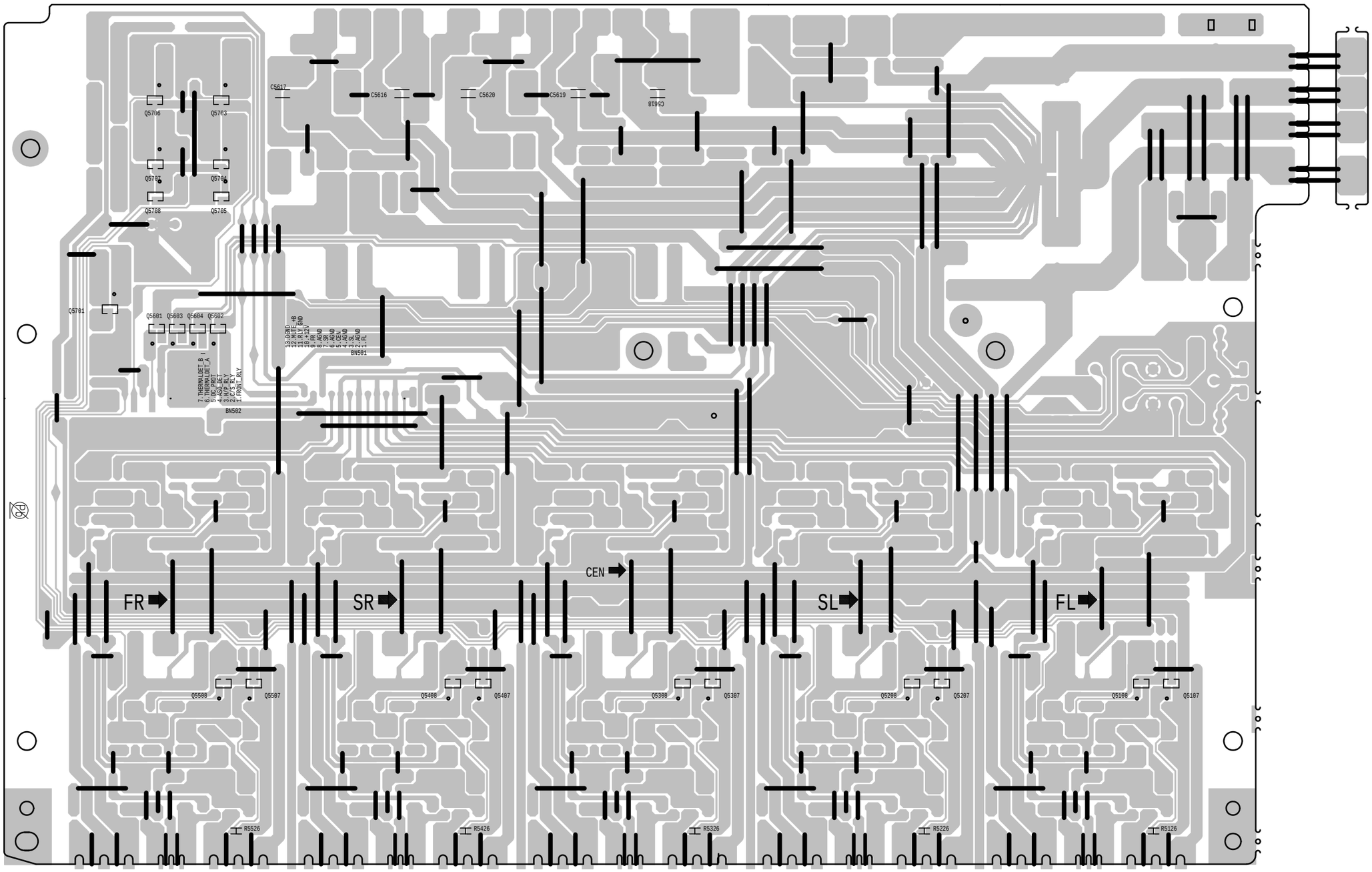
MAIN
(COMPONENT SIDE)



鉛フリー半田
半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

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

MAIN
(FOIL SIDE)



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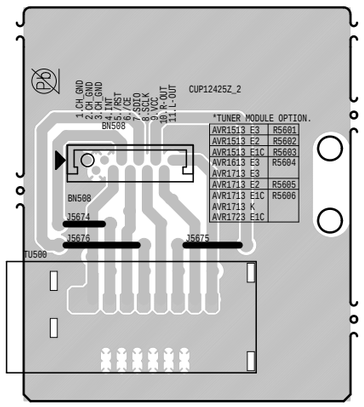
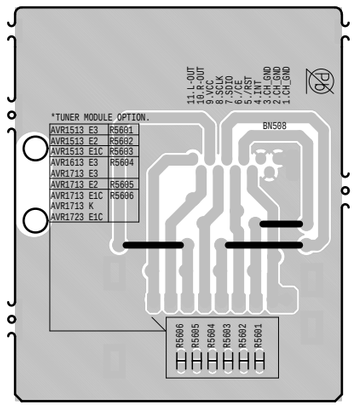
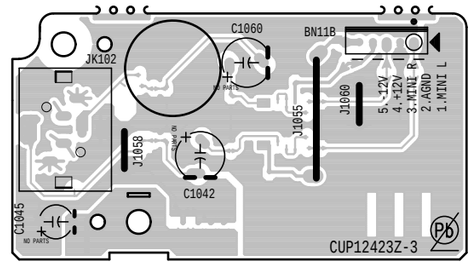
TUNER (COMPONENT SIDE)



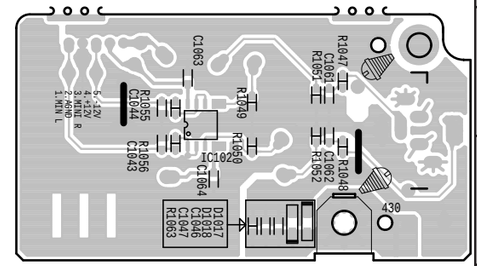
TUNER (FOIL SIDE)



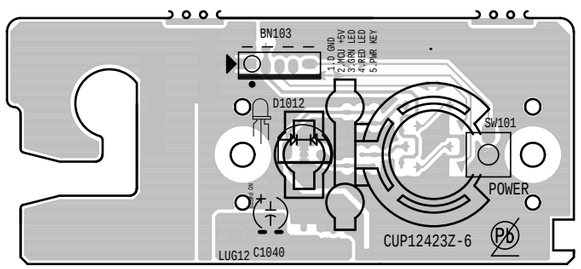
PORTABLE (COMPONENT SIDE)



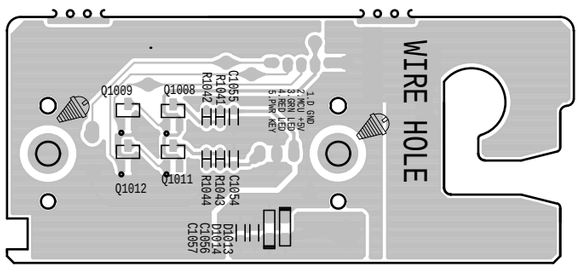
PORTABLE (FOIL SIDE)



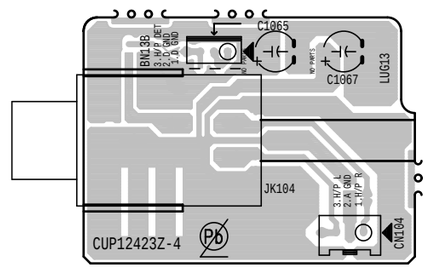
POWER KNOB (COMPONENT SIDE)A



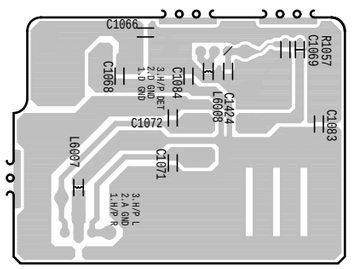
POWER KNOB (FOIL SIDE)



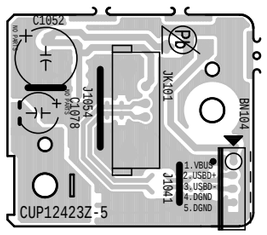
HEADPHONE (COMPONENT SIDE)



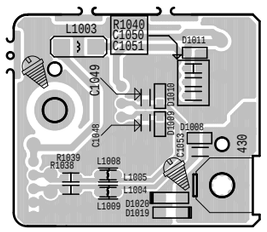
HEADPHONE (FOIL SIDE)



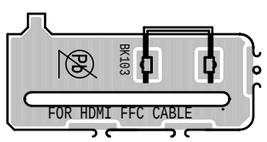
USB (COMPONENT SIDE)



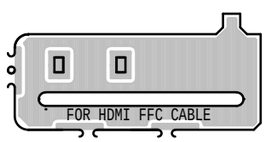
USB (FOIL SIDE)



FOR HDMI FFC CABLE (COMPONENT SIDE)



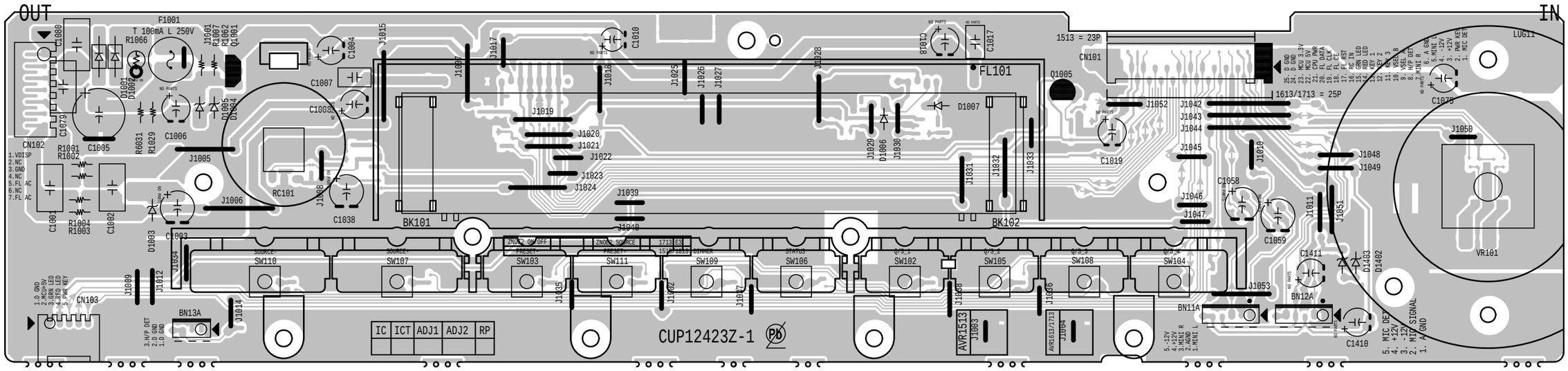
FOR HDMI FFC CABLE (FOIL SIDE)



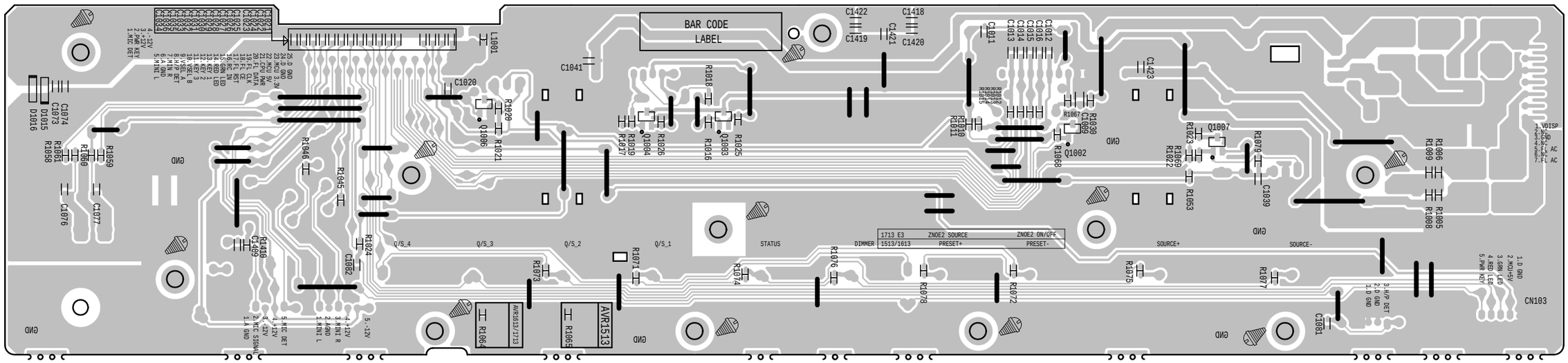
鉛フリー半田
半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

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

FRONT
(COMPONENT SIDE)



FRONT
(FOIL SIDE)



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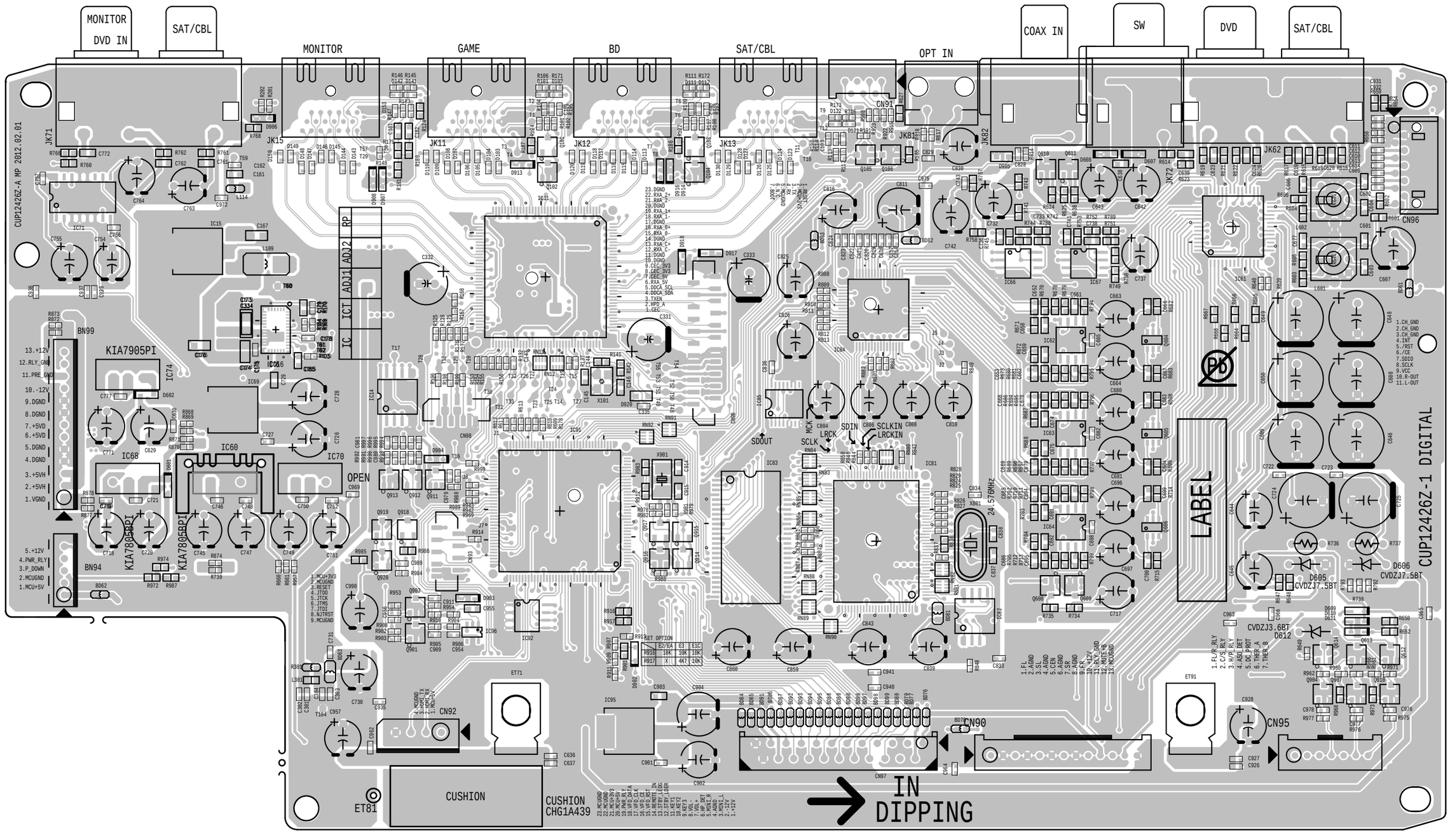
半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

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

DIGITAL
(COMPONENT SIDE)



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半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

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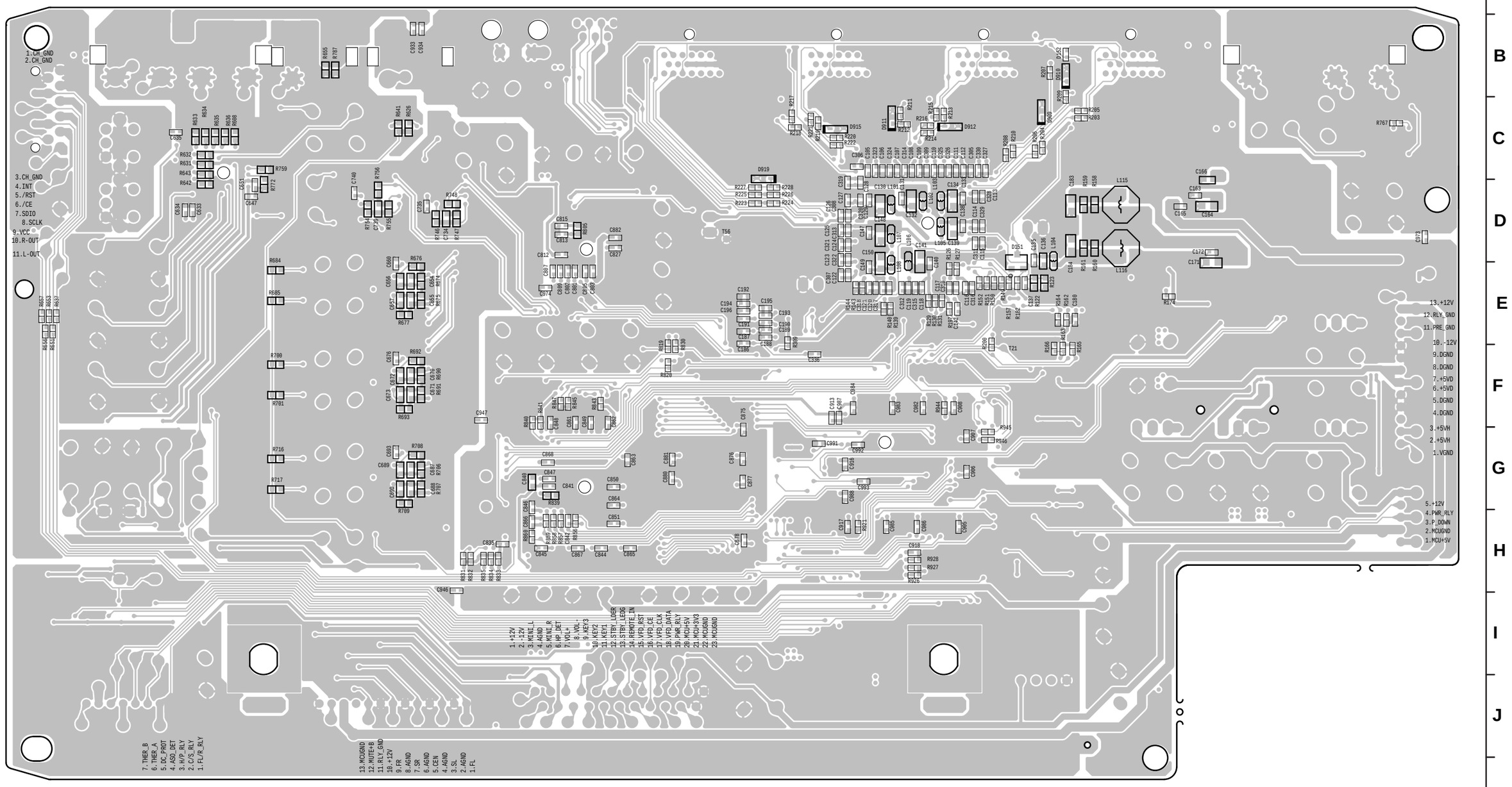
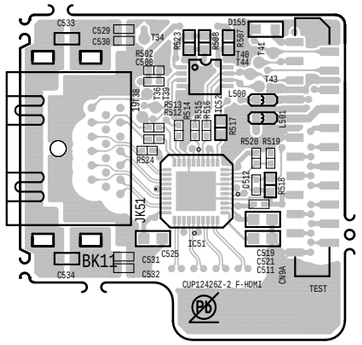
DIGITAL
(FOIL SIDE)



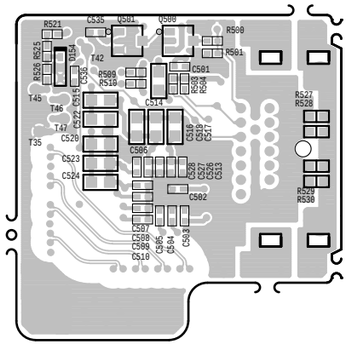
鉛フリー半田
半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

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

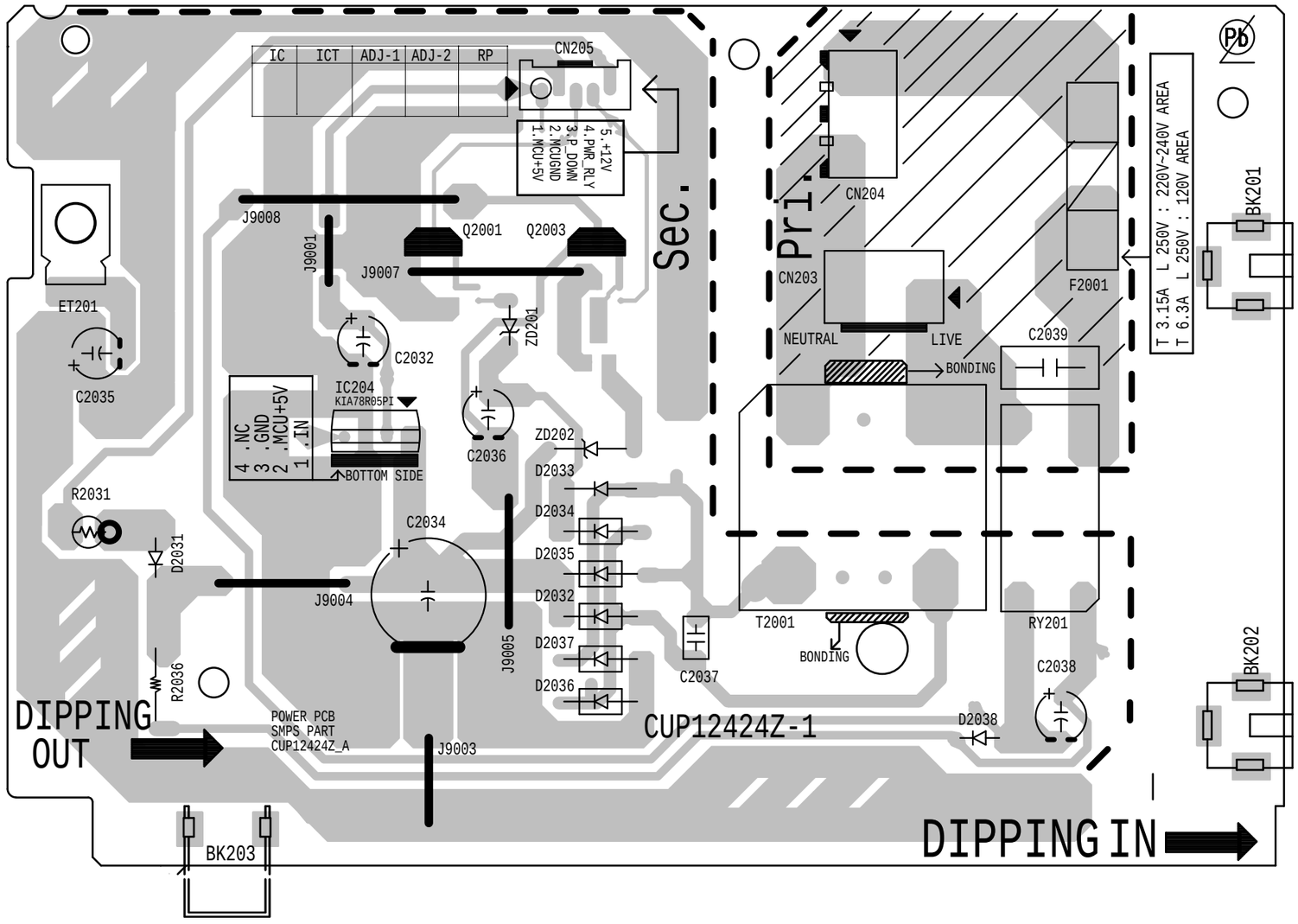
F-HDMI (COMPONENT SIDE)



F-HDMI (FOIL SIDE)



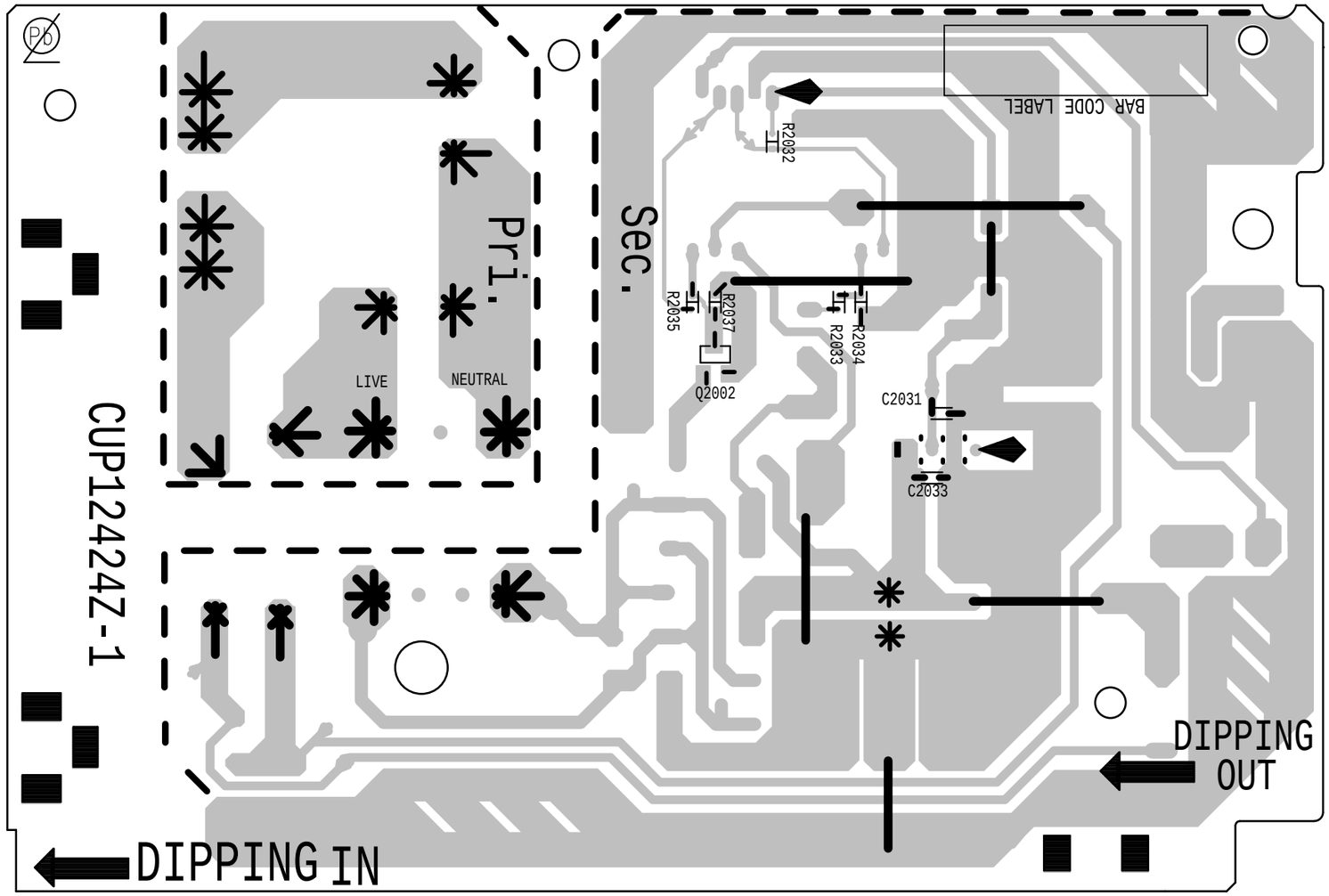
POWER (COMPONENT SIDE)



鉛フリー半田
半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

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

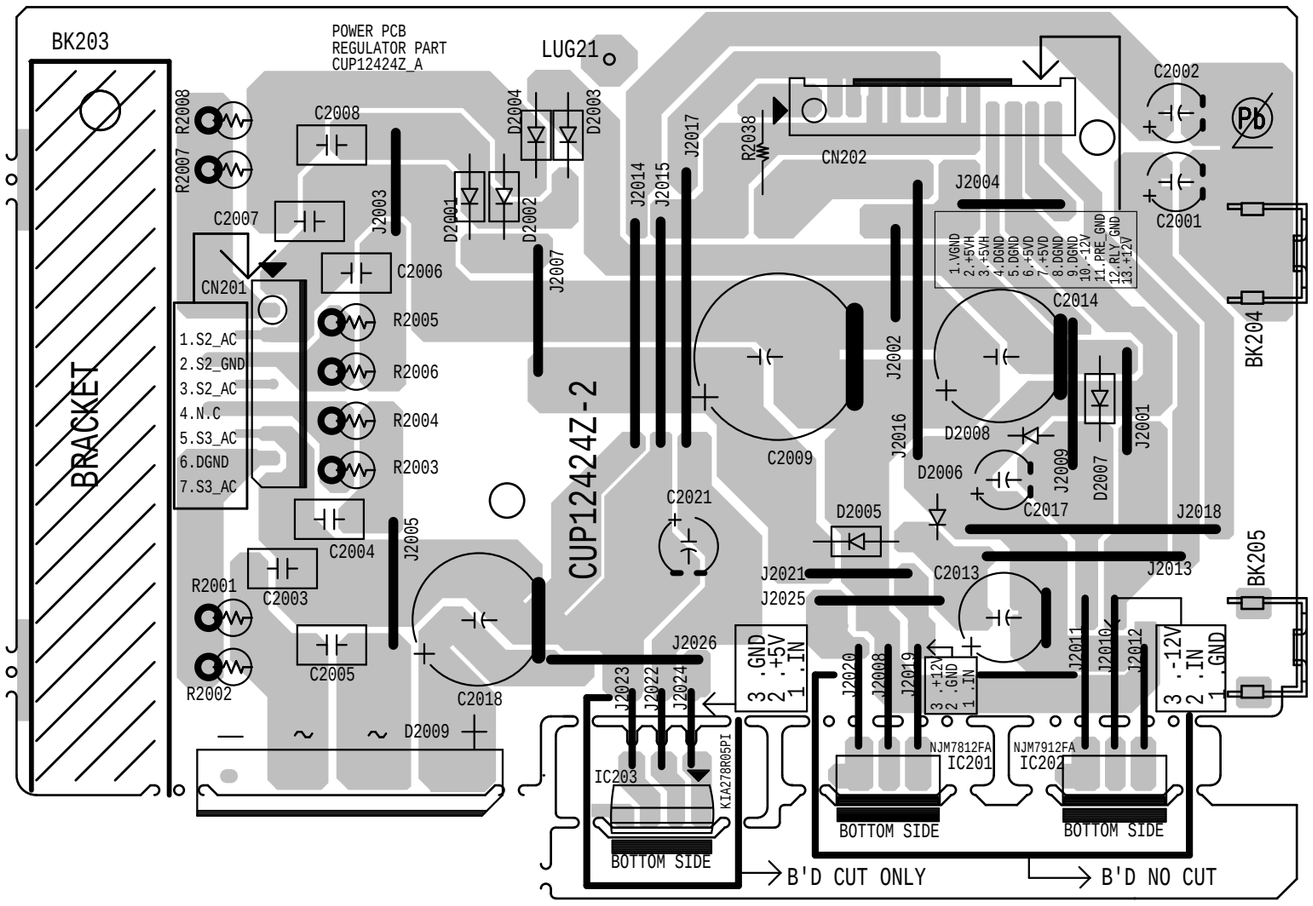
POWER
(FOIL SIDE)



鉛フリー半田
半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

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

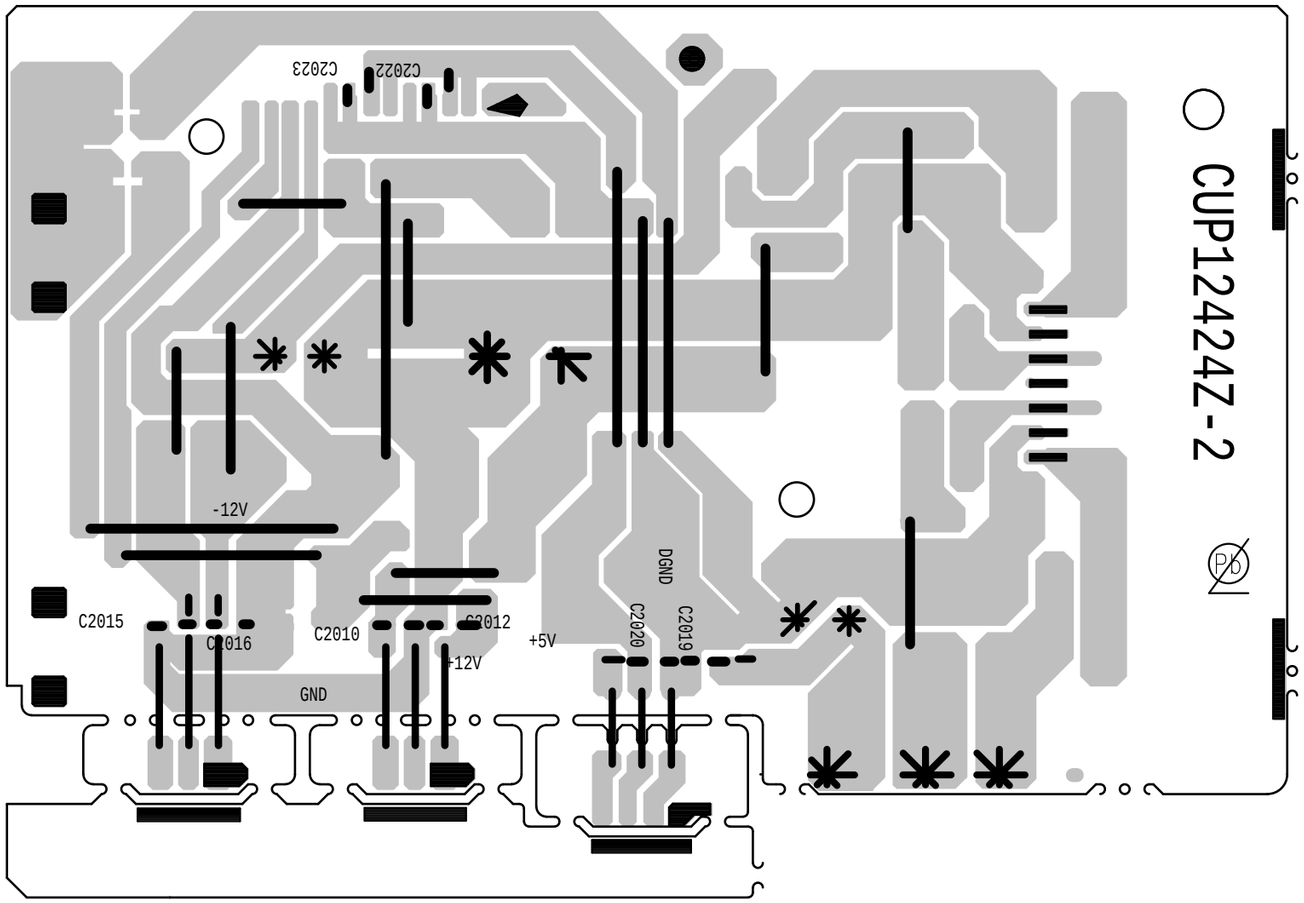
REGULATOR
(COMPONENT SIDE)



鉛フリー半田
半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

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

REGULATOR
(FOIL SIDE)



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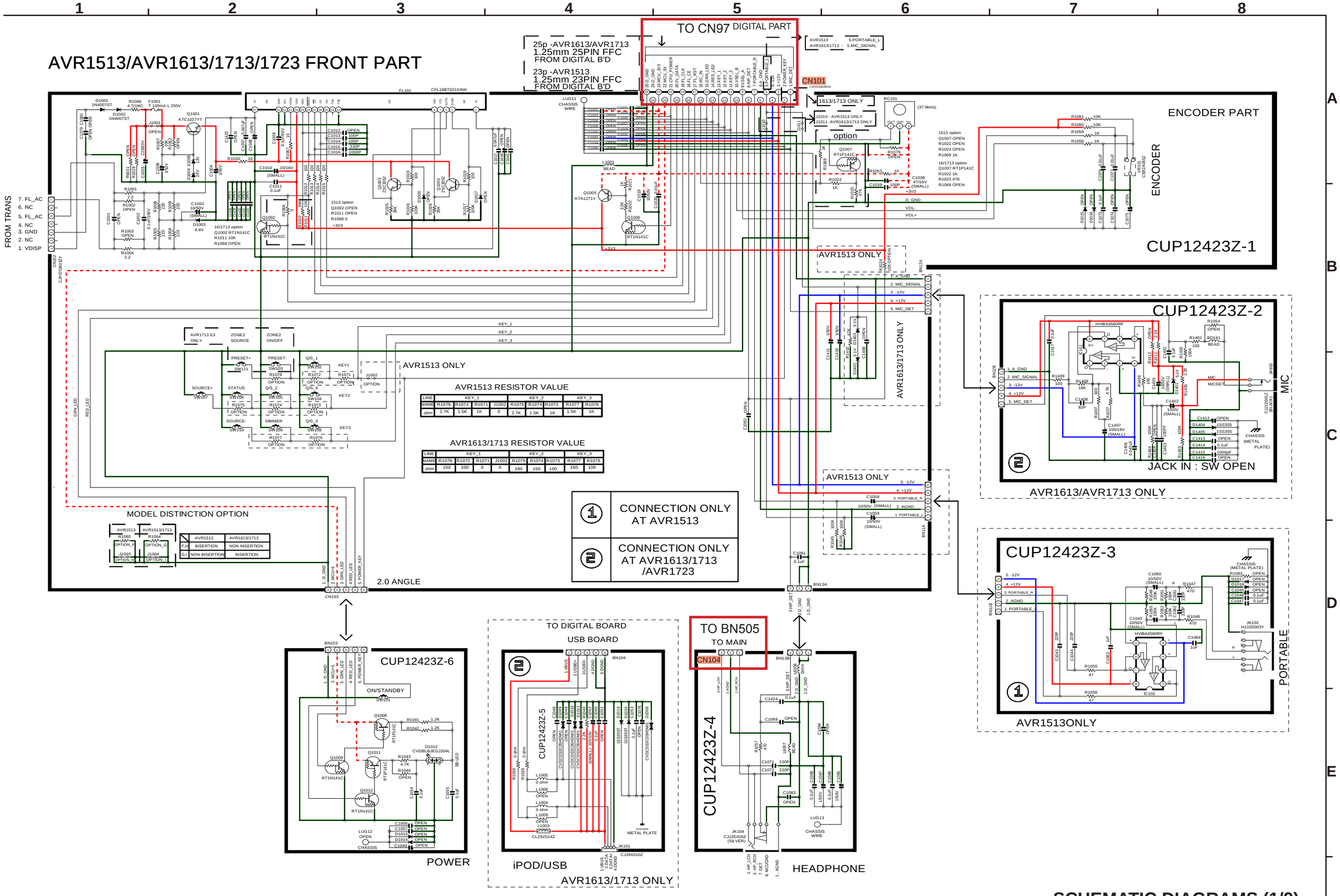
AVR1513/AVR1613/1713/1723 FRONT PART



LINE	KEY_1				KEY_2			KEY_3	
NAME	R1078	R1072	R1071	J1002	R1075	R1074	R1073	R1077	R1076
ohm	2.7K	1.5K	1K	0	2.7K	1.5K	1K	1.5K	1K

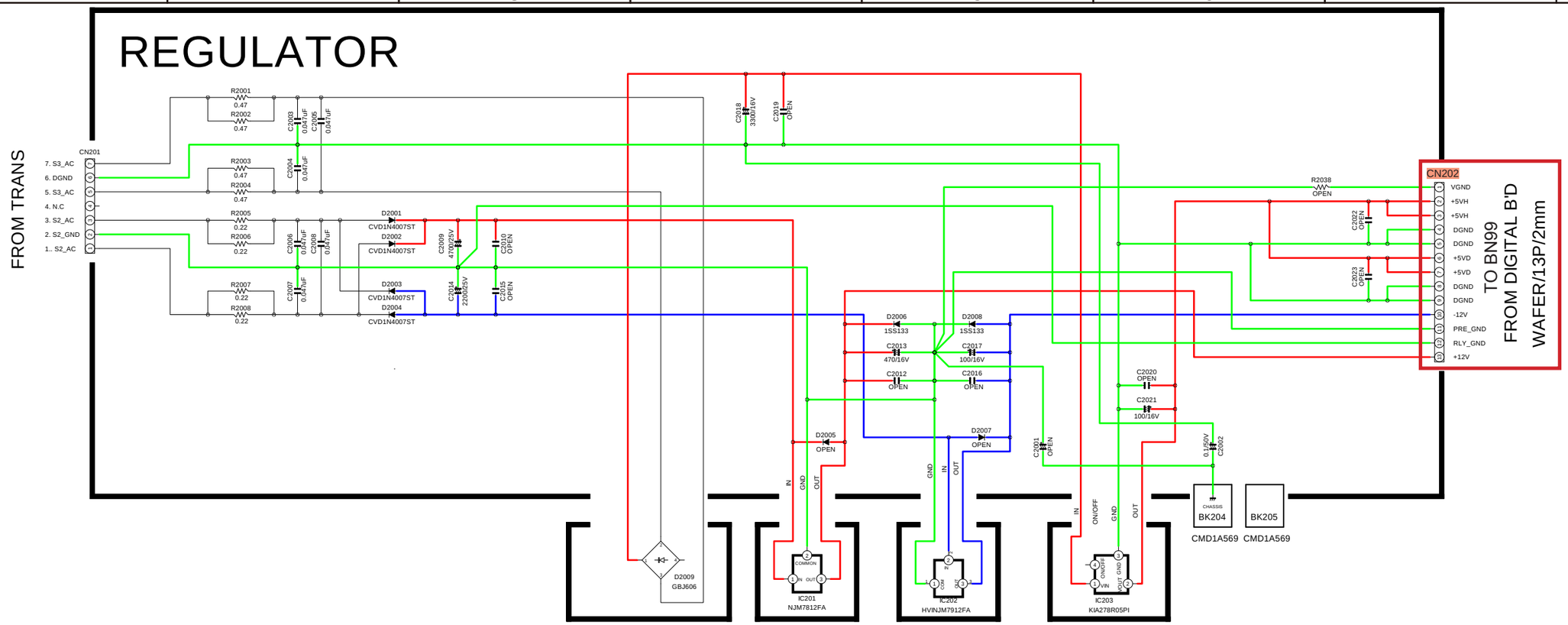
LINE	KEY_1				KEY_2			KEY_3	
NAME	R1078	R1072	R1071	J1002	R1075	R1074	R1073	R1077	R1076
ohm	150	100	0	X	180	150	100	150	100

AVR1513	AVR1613/1713
F-H INSERTION	NON INSERTION
G,I NON INSERTION	INSERTION

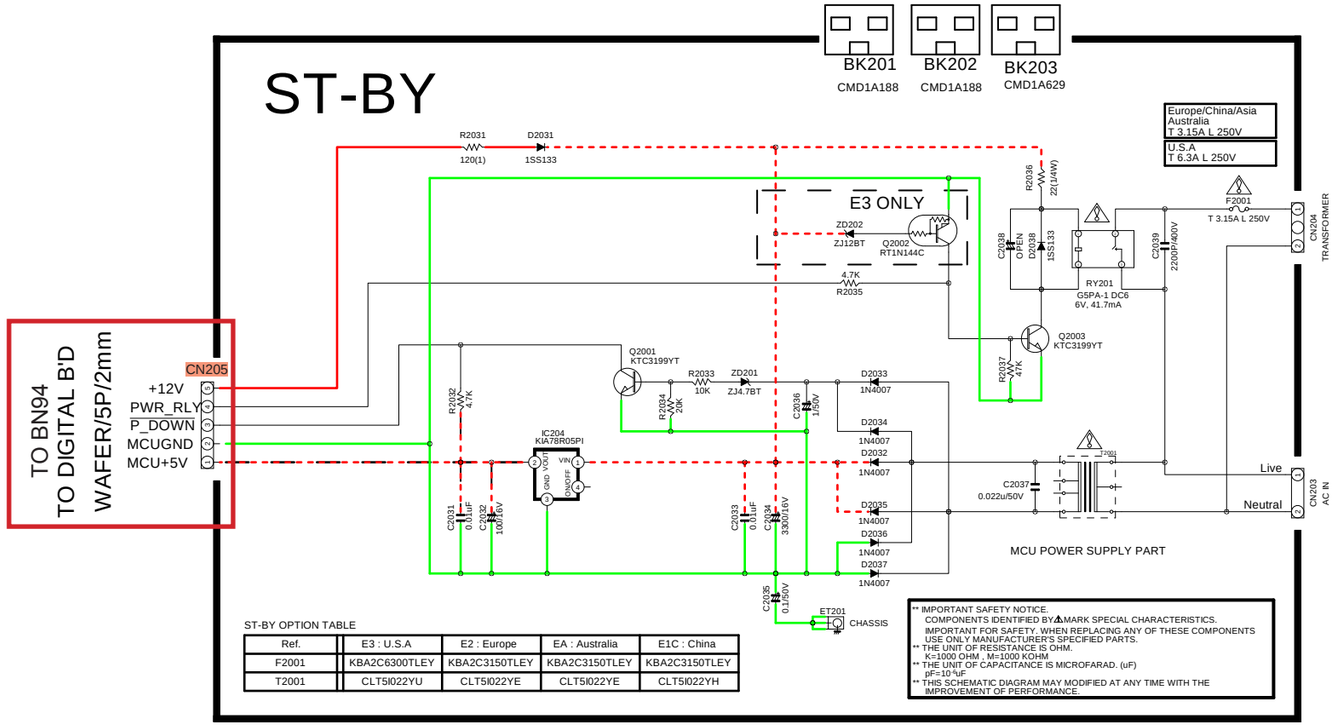
GND POWER + POWER - STBY POWER

SCHEMATIC DIAGRAMS (1/9)
FRONT PART

REGULATOR



ST-BY



ST-BY OPTION TABLE

Ref.	E3 : U.S.A	E2 : Europe	EA : Australia	E1C : China
F2001	KBA2C6300TLEY	KBA2C3150TLEY	KBA2C3150TLEY	KBA2C3150TLEY
T2001	CLT5I022YU	CLT5I022YE	CLT5I022YE	CLT5I022YH

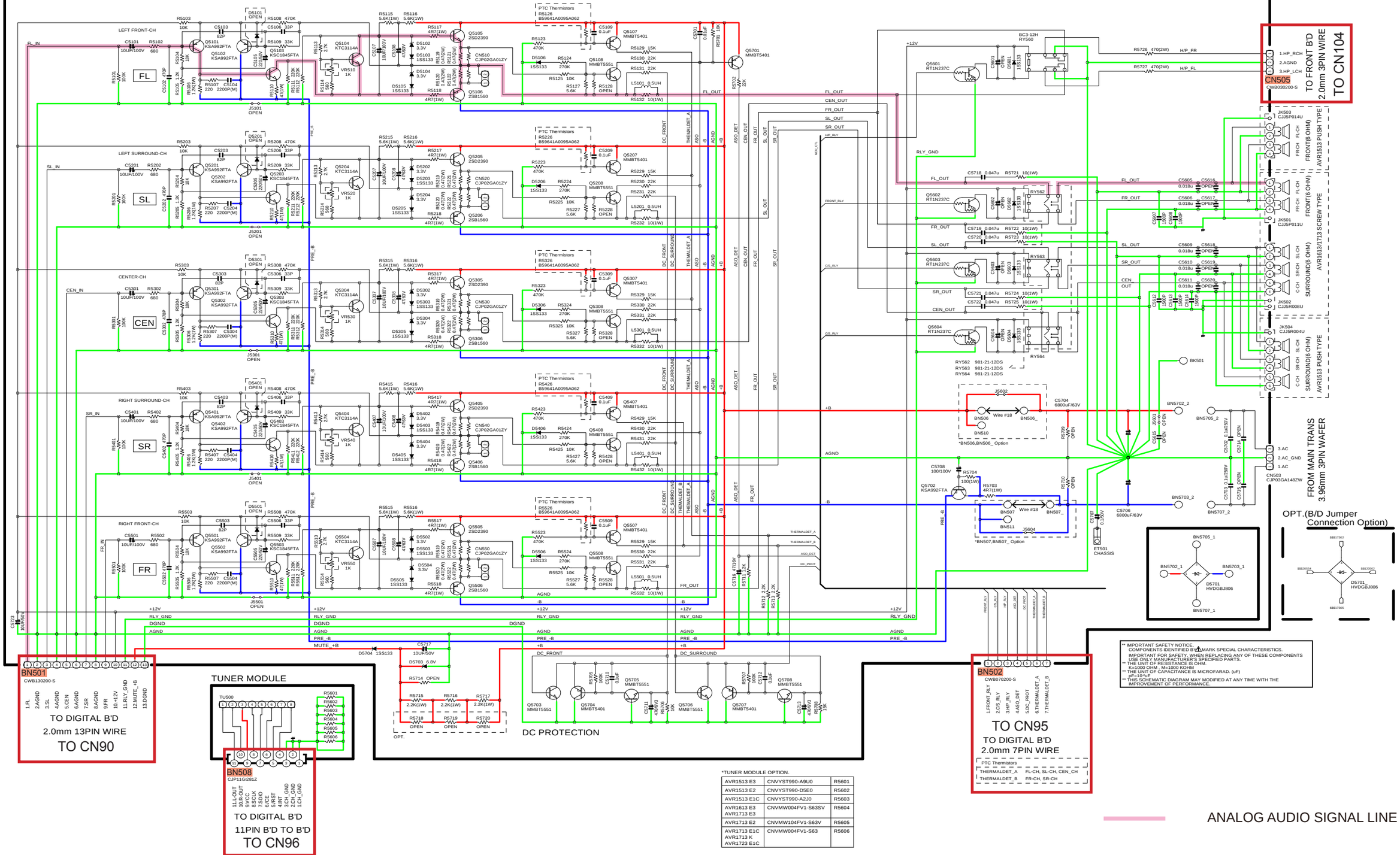
** IMPORTANT SAFETY NOTICE.
COMPONENTS IDENTIFIED BY ⚠ MARK SPECIAL CHARACTERISTICS.
IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY MANUFACTURER'S SPECIFIED PARTS.
** THE UNIT OF RESISTANCE IS OHM.
K=1000 OHM , M=1000 KOHM.
** THE UNIT OF CAPACITANCE IS MICROFARAD. (uF)
pF=10⁻⁶uF
** THIS SCHEMATIC DIAGRAM MAY MODIFIED AT ANY TIME WITH THE IMPROVEMENT OF PERFORMANCE.

GND POWER + POWER - STBY POWER

POWER PART

SCHEMATIC DIAGRAMS (2/9)
POWER PART

AVR1513/AVR1613/1713 MAIN PART



*TUNER MODULE OPTION.

AVR1513 E3	CNVYST990-A9U0	R5601
AVR1513 E2	CNVYST990-D5E0	R5602
AVR1513 E1C	CNVYST990-A2J0	R5603
AVR1613 E3 AVR1713 E3	CNVMW004FV1-S63SV	R5604
AVR1713 E2	CNVMW104FV1-S63V	R5605
AVR1713 E1C AVR1713 K AVR1723 E1C	CNVMW004FV1-S63	R5606

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pF=10^uF
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ANALOG AUDIO SIGNAL LINE

SCHEMATIC DIAGRAMS (3/9)
MAIN PART

GND — POWER + — POWER - — STBY POWER

INPUT & VOLUME PART

TO BN508
FROM TUNER MODULE

CN96
CH_GND
CH_GND
CH_GND
INT
/RST
/CE
SDIO
SCLK
VCC
R-OUT
L-OUT

SAT/ CBL IN
L CH
R CH
DVD IN
L CH
R CH

JK62
CJJ4P048U

IC61
NJU72340AFH2

IC66
BA4510F

IC67
BA4510F

IC62
IC63
IC64

IC70
OPEN

IC60
KIA78D05BPI

IC68
KIA7805BPI

IC74
KIA7905PI

IC69
NJM2845DL133

Q604
OPEN
Q605
OPEN
Q606
OPEN
Q608
OPEN
Q609
OPEN

FROM MCU PART
TO N

TO VIDEO PART
TO H

BN99
+12V
RLY_GND
PRE_GND
-12V
DGND
DGND
+5VD
+5VD
DGND
DGND
+5VH
+5VH
VGND

FROM REGULATOR B'D
WIRE/13P/2.0mm
TO CN202

TO HDMI PART(7/9)
TO Q

CN90
MCU_GND
MUTE_+B
RLY_GND
+12V
FR
AGND
SR
AGND
CEN
AGND
SL
AGND
FL

TO BN501
TO MAIN B'D
WAFER/13P/2.0mm

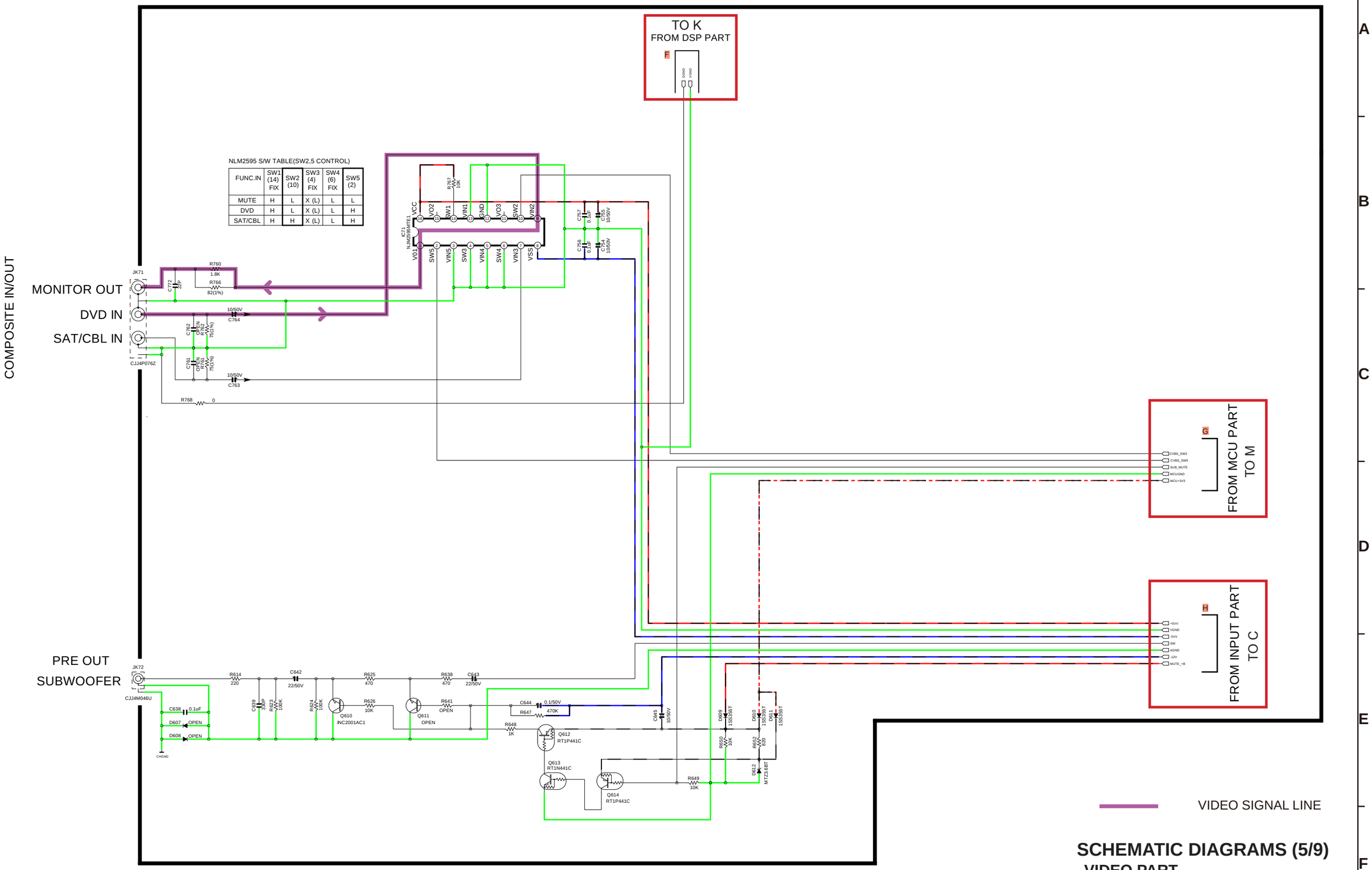
TO L
FROM DSP PART

ANALOG AUDIO SIGNAL LINE

GND
POWER +
POWER -
STBY POWER

SCHEMATIC DIAGRAMS (4/9)
INPUT & VOLUME PART

VIDEO PART (PRE OUT-SUBWOOFER)



SCHEMATIC DIAGRAMS (5/9)

VIDEO PART (PRE OUT-SUBWOOFER)

GND — POWER + — POWER - — STBY POWER

DSP PART

TO E
TO INPUT PART

TO F
TO VIDEO PART

FROM MCU PART
TO O

IC81
AUDIO DSP
CS497024CVZ

IC84
CS42528-CQ
DIR + CODEC

IC83
M12L16161A5TG2Q
512K * 16Bit * 2Banks

*HDMI SPDIF MODE : DIR MASTER
*HDMI I2S MODE : HDMI MASTER
*ADC MODE : DSP MASTER
*DIR MODE : DIR MASTER

STA/CBL
TV

L : A OUT(HDMI off)
H : B OUT(HDMI on)

TO MCU PART
TO A

TO HDMI PART(7/9)
TO P

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pF = 10⁻⁶ uF
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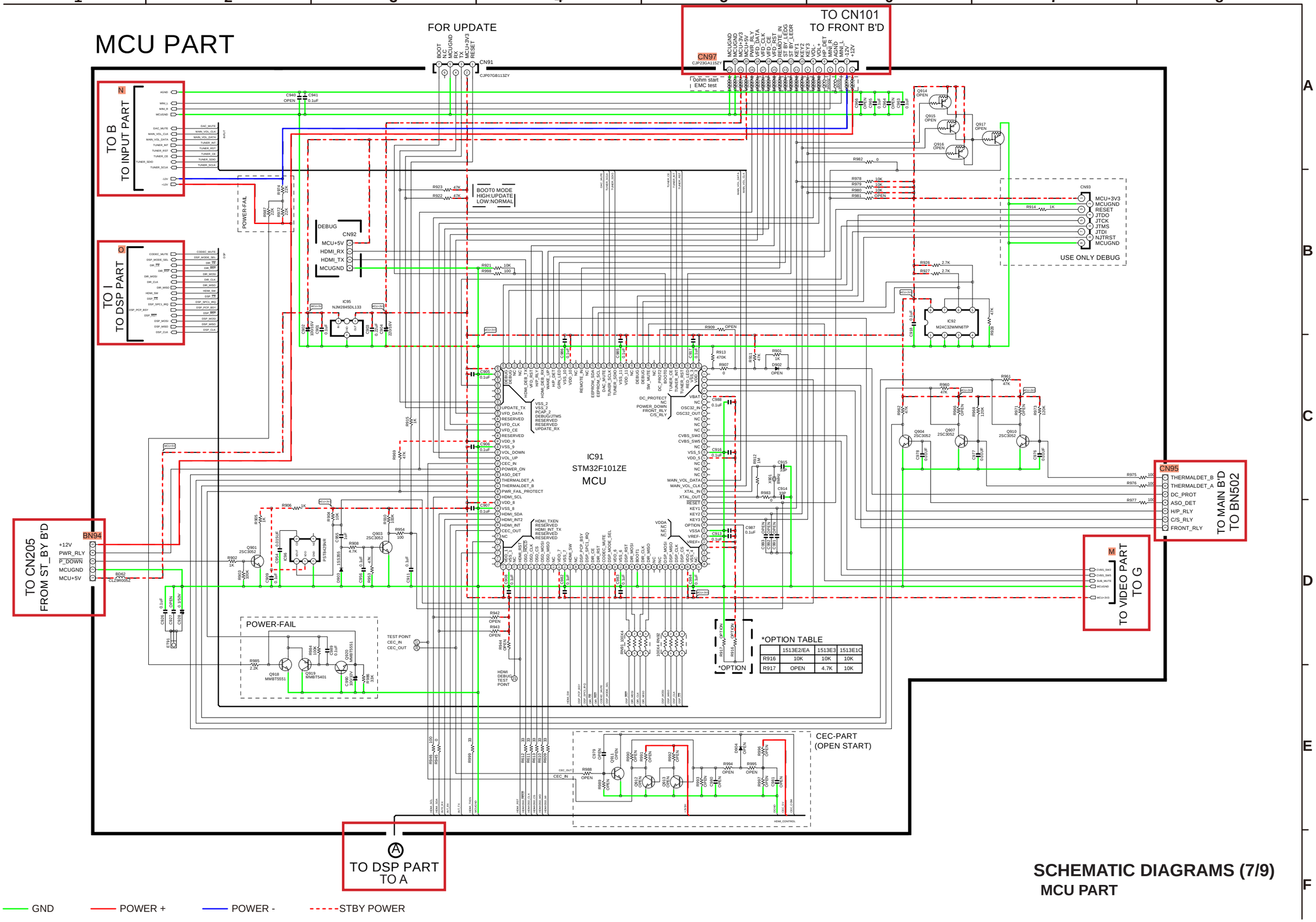
IMPOROVEMENT OF PERFORMANCE.

DIGITAL AUDIO SIGNAL LINE

GND
POWER +
POWER -
STBY POWER

SCHEMATIC DIAGRAMS (6/9)
DSP PART

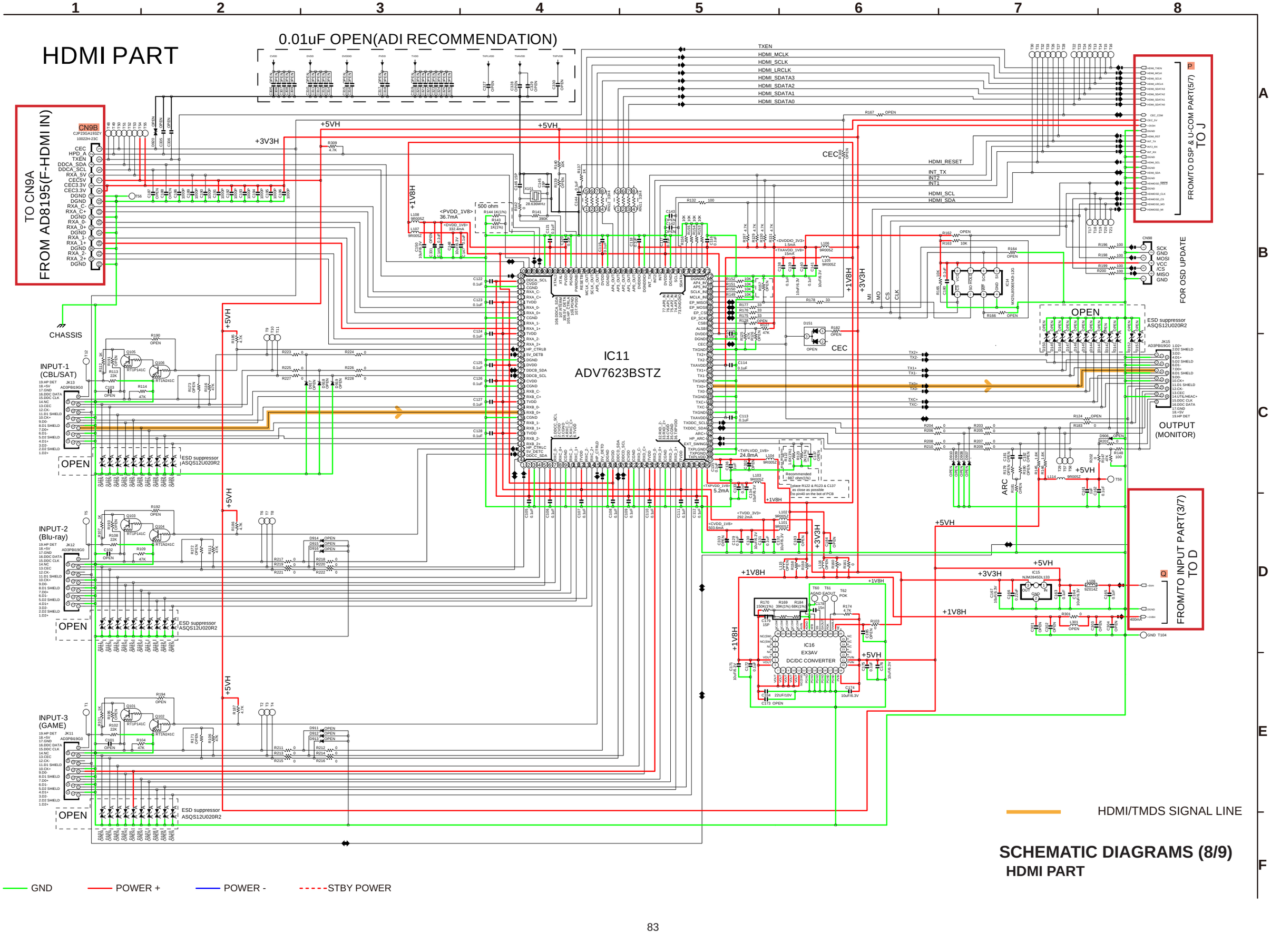
MCU PART



GND — POWER + — POWER - — STBY POWER

SCHEMATIC DIAGRAMS (7/9)
MCU PART

HDMI PART



SCHEMATIC DIAGRAMS (8/9)
HDMI PART

FRONT-HDMI IN PART

OPEN

INPUT-FRONT (AUX)

JK51
19.HP DET
18.+5V
17.GND
16.DDC DATA
15.DDC CLK
14.NC
13.CEC
12.CK-
11.D1 SHIELD
10.CK+
9.D0-
8.D1 SHIELD
7.D0+
6.D1-
5.D2 SHIELD
4.D1+
3.D2-
2.D2 SHIELD
1.D2+

IC52 OPEN
PCA9507DP
VCCA VCCB SCLA SCLB SDAA SDAB GND EN

IC51
AD8195ACPZ

CN9A
CJP23GA193ZY
10022H-23C
CEC
HPD_A
TXEN
DDCA_SDA
DDCA_SCL
RXA_5V
CEC5V
CEC3.3V
CEC3.3V
DGND
DGND
RXA_C-
RXA_C+
DGND
RXA_0-
RXA_0+
DGND
RXA_1-
RXA_1+
DGND
RXA_2-
RXA_2+
DGND

TO DIGITAL B'D
TO CN9B

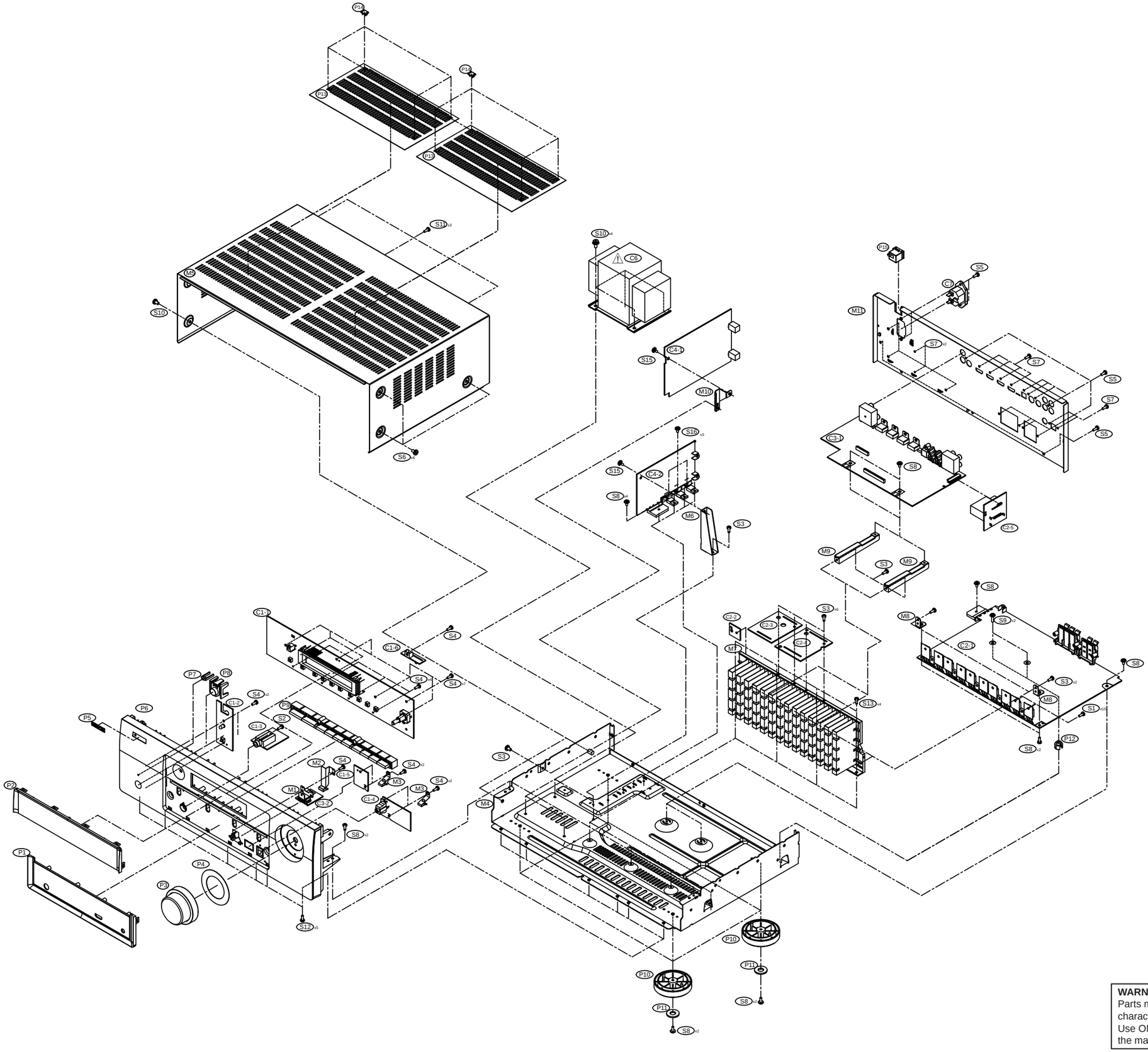
CEC5V
CEC3.3V
FRONT_TMDS

HDMI/TMDS SIGNAL LINE

GND
POWER +
POWER -
STBY POWER

SCHEMATIC DIAGRAMS (9/9)
FRONT-HDMI IN PART

EXPLODED VIEW



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

Personal notes:

Personal notes:

PARTS LIST OF EXPLODED VIEW

∗Parts indicated by "nsp" on this table cannot be supplied.
∗P.W.B. ASS'Y indicated by "nsp" on this table cannot be supplied. When repairing the P.W.B. ASS'Y, check the board parts list and order replacement parts.
∗Parts indicated by the " ★ " mark are not illustrated in the exploded view.
∗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.
E3 : U.S.A. & Canada model E2 : Europe model
E1C : China model
BK : Black model SP : Premium Silver model

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	C1	nsp	FRONT PCB UNIT ASS'Y	E3	COP12423B	1	*
	C1	nsp	FRONT PCB UNIT ASS'Y	E2	COP12423F	1	*
	C1	nsp	FRONT PCB UNIT ASS'Y	E1C	COP12423C	1	*
	C1-1	-	FRONT PCB				
	C1-2	-	POWER KNOB PCB				
	C1-3	-	HEADPHONE PCB				
	C1-4	-	PORTABLE PCB				
	C1-5	-	USB PCB				
	C1-6	-	FOR HDMI FFC CABLE PCB				
	C2	nsp	MAIN PCB UNIT ASS'Y	E3	COP12425B	1	*
	C2	nsp	MAIN PCB UNIT ASS'Y	E2	COP12425C	1	*
	C2	nsp	MAIN PCB UNIT ASS'Y	E1C	COP12425D	1	*
	C2-1	-	MAIN PCB				
	C2-2	-	CABLE PCB				
	C2-3	-	HDMI CABLE PCB				
	C2-4	-	CARD CABLE FIX PCB				
	C2-5	-	TUNER PCB				
	C3	943639100070D	DIGITAL PCB UNIT ASS'Y	E3	COP12426B	1	*
	C3-1	-	DIGITAL PCB UNIT ASS'Y				
	C3-2	-	F-HDMI PCB				
	C4	nsp	POWER PCB UNIT ASS'Y	E3	COP12424B	1	*
	C4	nsp	POWER PCB UNIT ASS'Y	E2	COP12424C	1	*
	C4	nsp	POWER PCB UNIT ASS'Y	E1C	COP12424D	1	*
	C4-1	-	POWER PCB				
	C4-2	-	REGULATOR PCB				
⚠	C6	943101101290D	TRANS,POWERAVR1513/E3,(85.8X63)	E3	CLT5U051ZU	1	*
⚠	C6	943101101300D	TRANS,POWERAVR1513/E2,(85.8X63)	E2	CLT5U051ZE	1	*
⚠	C6	943101101310D	TRANS,POWERAVR1513/E1C,(85.8X63)	E1C	CLT5U051ZH	1	*
	C7	nsp	2PWIREASS'Y(100MM)	E2	CWZPM5003TW91A	1	
	P1	943419100450D	PANEL,SUB		CGR1A533Z	1	*
	P2	943416100690D	WINDOW,FL		CGU1A462Z	1	*
	P3	943412100710D	KNOB,VOLUME	BK	CBN1A263	1	*

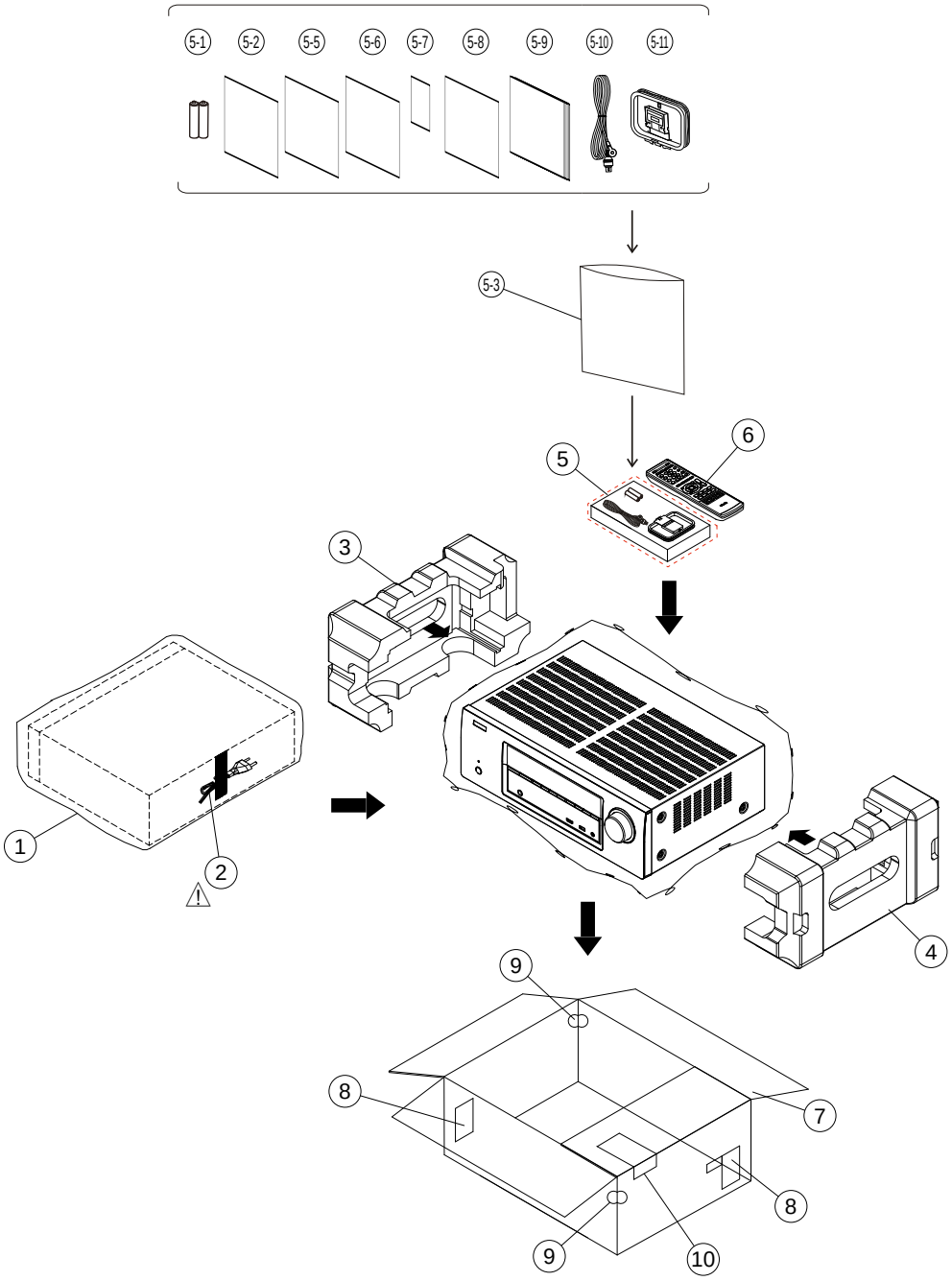
NOTE :
Please change the destination-resistors when changing 1513E3 (943639100070D) to other destination.
Please refer to destination-resistors. (82 page)
(SCHEMATIC DIAGRAMS : 7/9)

	R917
1513 E3	4.7K
1513 E2	OPEN
1513 E1C	10K

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	P3	943412100720D	KNOB,VOLUME	SP	CBN1A263C73	1	*
	P4	943446100590D	PLATE,VOLUMEKNOB		CGX1A469	1	*
	P5	42151002100AD	DENON BADGE	BK	CGB1A247H67	1	*
	P5	42151002101AD	DENON BADGE	SP	---	1	*
	P6	943402102050D	PANEL,FRONT	E3	CGW1A519RHZB63	1	*
	P6	943402102060D	PANEL,FRONT	E2	CGW1A519RHYB63	1	*
	P6	943402102070D	PANEL,FRONT	BKE1C	CGW1A519RHXB63	1	*
	P6	943402102080D	PANEL,FRONT	SPE1C	CGW1A519RGZG45	1	*
	P7	943423100310D	INDICATOR,POWER		CGL1A299	1	*
	P8	943411101750D	BUTTON,POWER	BK	CBT1A1167	1	*
	P8	943411101760D	BUTTON,POWER	SP	CBT1A1167C73	1	*
	P9	943411101770D	BUTTON,10KEY		CBT1A1164	1	*
	P10	943407100020D	FOOT		CKL1A190	4	
	P11	00D9430202902	CUSHION,FOOT		CHG2A289	4	
	P12	nsp	HOLDER,PCB		CHE170	2	
	P13	943419100250D	SHEET,TOP	BK	CGX1A492Z	2	
	P13	943419100260D	SHEET,TOP	SP	CGX1A492Y	2	
	P14	45451000500AM	STOPPER,SHEET	BK	CMH1A306Z	8	
	P14	45451000501AM	STOPPER,SHEET	SP	CMH1A306Y	8	
	P15	nsp	BUSHING,ACCORD	E3,E1C	CHR1A028	1	
	★ P16	nsp	CLAMPER		CHR301	5	
	★ P17	nsp	CUSHION		CHG1A439	1	
	★ P18	nsp	LABEL,HOT	E3	CQB1A906Z	1	
	★ P19	nsp	LABEL,POP	E3,E2	CQB1A1095Z	1	*
	★ P19	nsp	LABEL,POP	E1C	CQB1A1099Z	1	*
	★ P20	nsp	TAPE,HEMELON		CHS1A032	-	
	M1	nsp	EARTH,HDMI		CMC1A422	1	
	M2	nsp	EARTHPLATE,HDMI		CMC1A431	1	*
	M3	nsp	EARTHPLATE,USB		CMC1A430	2	*
	M4	nsp	CHASSIS,BOTTOM		CUA1A335	1	*
	M5	943403100570D	CABINET,TOP	BK	CKC1A215K117	1	*
	M5	943403100580D	CABINET,TOP	SP	CKC1A215D11	1	*
	M6	nsp	BRACKET,PCB		CMD1A398	1	
	M7	nsp	HEATSINK		CMY1A381	1	*
	M8	nsp	BRACKET,H/SPCB		CMD1A802	2	*
	M9	nsp	BRACKET,PCB		CMD1A774	2	
	M10	nsp	SMPS BRACKET		CMD1A790	1	
	M11	nsp	PANEL,REAR	E3	CKF1A454Z	1	*
	M11	nsp	PANEL,REAR	E2	CKF2A454Z	1	*
	M11	nsp	PANEL,REAR	E1C	CKF1A454Y	1	*
SCREWS							
	S1	nsp	SCREW,SPECIAL		CHD1A012ZR	15	
	S2	nsp	SCREW		CTWS3+10GR	1	
	S3	nsp	SCREW		CTB3+6JR	12	
	S4	nsp	SCREW		CTB3+10JR	19	
	S5	nsp	SCREW		CTBD3+8JFZR	14	
	S6	nsp	SCREW	BK	CTBD4+8JFZR	6	
	S6	nsp	SCREW	SP	CTBD4+8JFN	6	
	S7	nsp	SCREW		CTBD3+6FFZR	11	

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	S8	nsp	SCREW		CTW3+8JR	13	
	S9	nsp	SCREW		CTW3+12JR	2	
	S10	nsp	SCREW,TRANS		CHDR1A023R	4	
	S11	nsp	SCREW	BK	CTBD3+8JFZR	3	
	S11	nsp	SCREW	SP	CTBD3+8JFN	3	
	S12	nsp	SCREW	BK	CTB3+8JFZR	6	
	S12	nsp	SCREW	SP	CTB3+8JFN	6	
	S13	nsp	SCREW		CTB3+6FR	4	
	S15	nsp	SCREW		CTW3+6JR	2	
	S16	nsp	SCREW,SPECIAL		CHD4A012R	3	
WIRES							
	★ H1	943606501530S	CARD,CABLE	23P, L=180mm	CWC5C4A23B180B10	1	*
	★ H2	943606501540S	CARD,CABLE	23P, L=330mm	CWC5F4A23A330B08	1	*
	★ H3	nsp	WIRE ASS'Y	3T LUG WIRE	CWE8102050RR	1	

PACKING VIEW



PARTS LIST OF PACKING & ACCESSORIES

∗Parts indicated by "nsp" on this table cannot be supplied.
∗Parts indicated by the " ★ " mark are not illustrated in the exploded view.
∗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.
E3 : U.S.A. & Canada model E2 : Europe model
E1C : China model
BK : Black model SP : Premium Silver model

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	1	nsp	BAG,POLY		CPP1A081X	1	
⚠	2	90M-YC000780R	CORD,POWER(U/L)/KENIC	E3	CJA523FBYA	1	
⚠	2	90M-ZC000320R	CORD,POWER(DETACHABLE/EUR)	E2	CJA2B054Z	1	
⚠	2	90M-YC000850R	CORD,POWER	E1C	CJA2N047ZA	1	
	3	943533101120D	PAD,SNOW(L)		CPS1A916	1	*

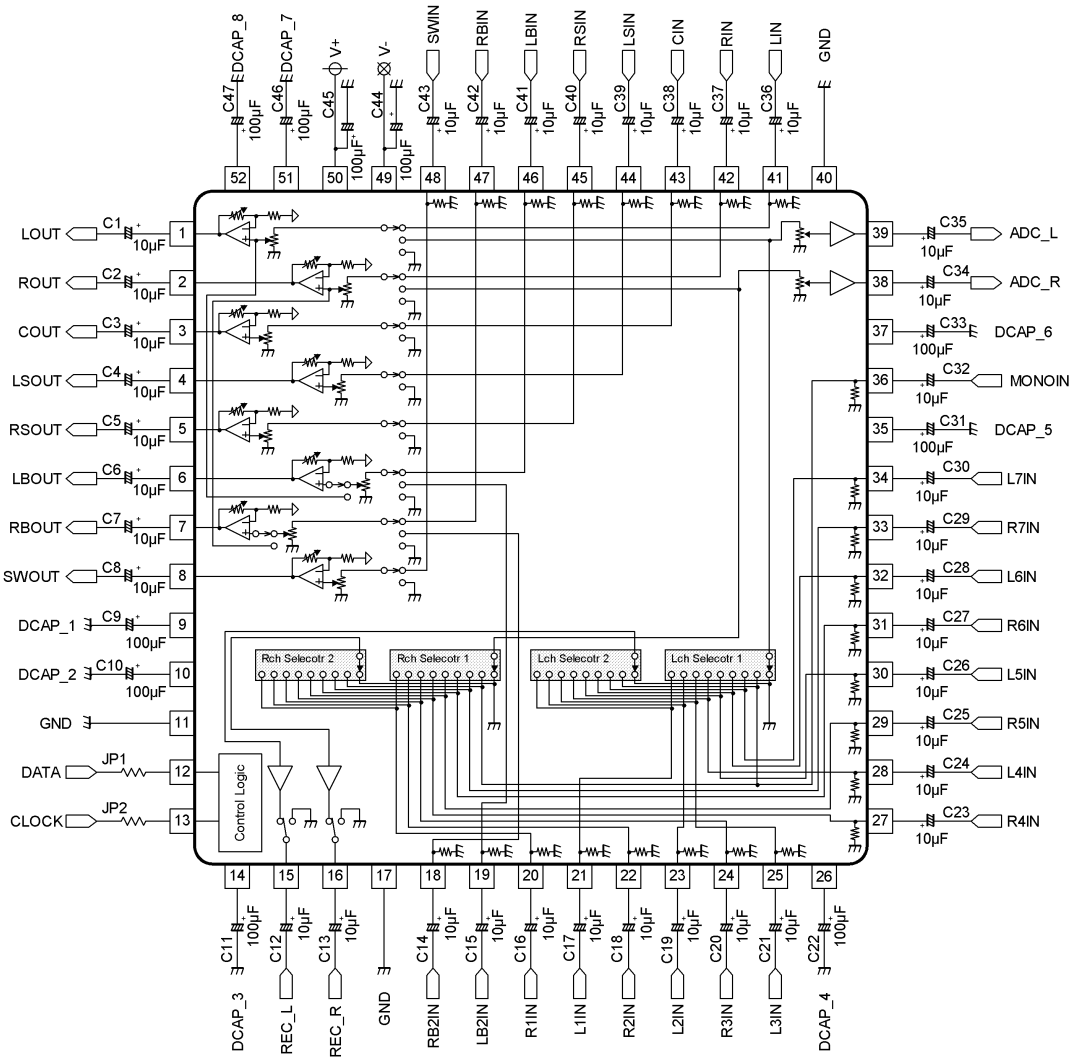
	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	4	943533101130D	PAD,SNOW(R)		CPS1A917	1	*
	5	-	INSTRUCTIONMANUALASS'Y		-	1	
	5-1	nsp	BATTERY,AAA2PCSINPACK		CABR03PPB	1	
	5-2	35201007100AD	CDMANUALASS'Y	E3	CFT1A049ZA	1	*
	5-2	35201007200AD	CDMANUALASS'Y	E2	CFT1A050ZA	1	*
	5-2	35201007300AD	CDMANUALASS'Y	E1C	CFT1A051ZA	1	*
	5-3	nsp	BAG,POLY(MANUAL)		CPB1A197Z	1	
	5-4	nsp	LABEL,BARCODE(MANUAL)		CQB1A971	1	
	5-5	nsp	LIST,S.S		CQE1A226P	1	
	5-6	nsp	CARD,WARRANTY	E3	CQE1A224Q	1	
	5-7	nsp	CARDFORCHINAINDENTIFICATION	E1C	CQE1A450Z	1	
	5-8	54111092800AD	SAFETY INSTRUCTIONS (E3)	E3	CQE1A547Z	1	*
	5-8	54111093000AD	SAFETY INSTRUCTIONS (E2)	E2	CQE1A549Z	1	*
	5-8	54111093100AD	SAFETY INSTRUCTIONS (E1C)	E1C	CQE1A550Z	1	*
	5-9	54111076500AD	MANUAL,GUIDE	E3	CQX1A1645Z	1	*
	5-9	54111076600AD	MANUAL,GUIDE	E2	CQX1A1646Z	1	*
	5-9	54111076700AD	MANUAL,GUIDE	E1C	CQX1A1647Z	1	*
	5-10	90M-ZA000230R	FM1POLEANT(UL)	E3,E1C	CSA1A019Z	1	
	5-10	00D9430113403	FM1POLEANT	E2	CSA1A018Z	1	
	5-11	963116100070S	ANT,AMLOOP(9.5uH/5T)		CSA1A039Z	1	
	6	30701010100AD	REMOCONASS'Y(RC-1170)		CARTAVR1513	1	*
	7	943531102240D	BOX,OUTCARTON	E3	CPG1A963Z	1	*
	7	943531102250D	BOX,OUTCARTON	E2	CPG1A962Y	1	*
	7	943531102260D	BOX,OUTCARTON	E1C	CPG1A962X	1	*
	8	nsp	CONTROL,LABEL		CQB1A993Z	1	
	9	nsp	LABEL,COLORLABEL(WHITE)	SP	CQB1A676	2	
	10	nsp	WARRANTYCARD,CHINA	E1C	CQE1A473Y	1	
	★ 11	nsp	LABEL,BARCODE(SET)		CQB1A978	1	

SEMICONDUCTORS

Only major semiconductors are shown. General semiconductors etc. are omitted from list.
The semiconductors which have a detailed drawing in a schematic diagram are omitted from list.

1. IC's

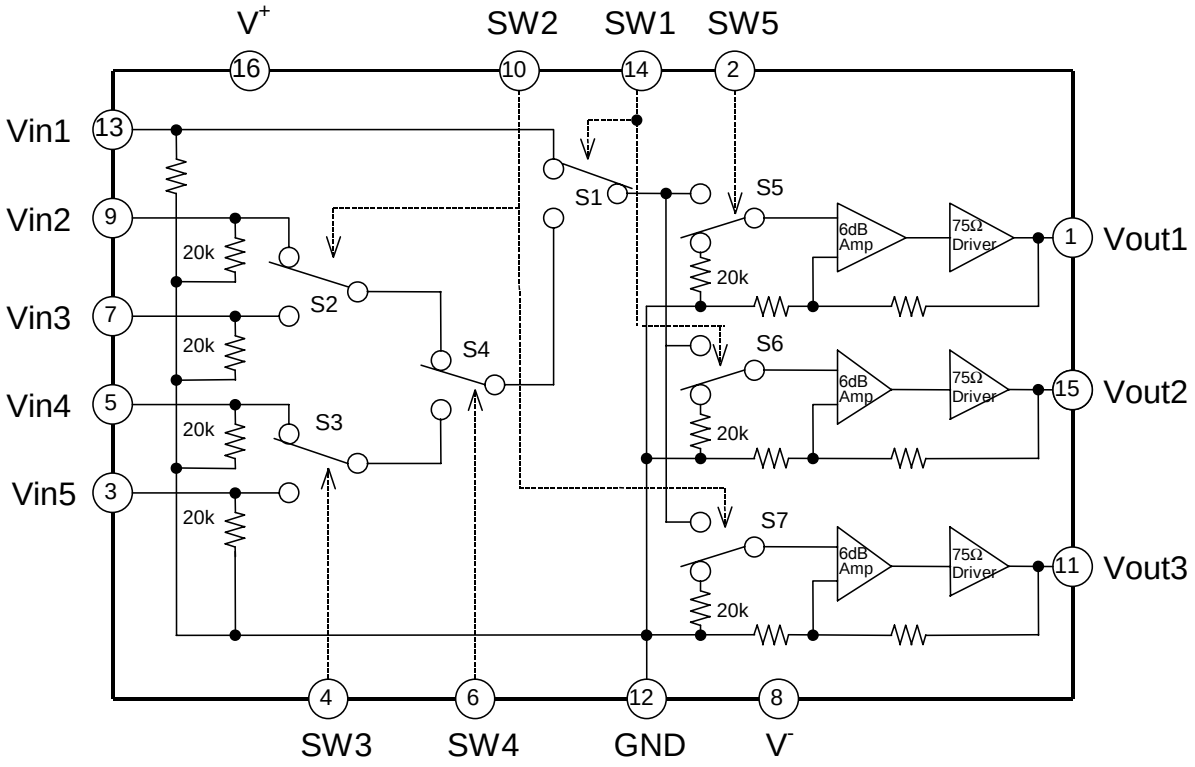
NJU72340A (DIGITAL :IC61)



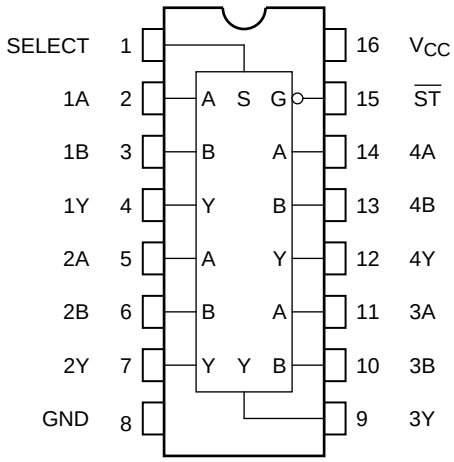
NJU72340A Terminal Functions

Pin No.	SYMBOL	Pin No.	SYMBOL	Pin No.	SYMBOL	Pin No.	SYMBOL
1	LOUT	14	DCAP_3	27	R4IN	40	GND
2	ROUT	15	REC_R	28	L4IN	41	LIN
3	COUT	16	REG_L	29	R5IN	42	RIN
4	LSOUT	17	GND	30	L5IN	43	CIN
5	RSOUT	18	RB2IN	31	R6IN	44	LSIN
6	LBOUT	19	LB2IN	32	L6IN	45	RSIN
7	RBOUT	20	R1IN	33	R7IN	46	LBIN
8	SWOUT	21	L1IN	34	L7IN	47	RBIN
9	DCAP_1	22	R2IN	35	DCAP_5	48	SWIN
10	DCAP_2	23	L2IN	36	MONOIN	49	V^-
11	GND	24	R3IN	37	DCAP_6	50	V^+
12	DATA	25	L3IN	38	ADC_R	51	DCAP_7
13	CLOCK	26	DCAP_4	39	ADC_L	52	DCAP_8

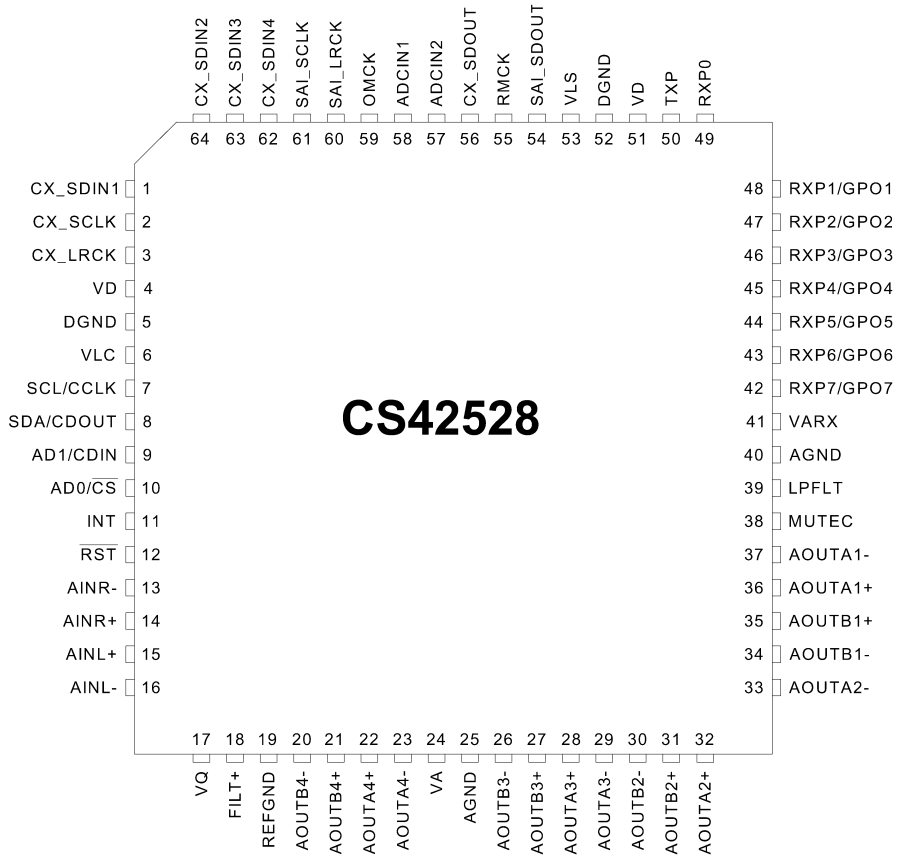
NJM2595M (DIGITAL : IC71)



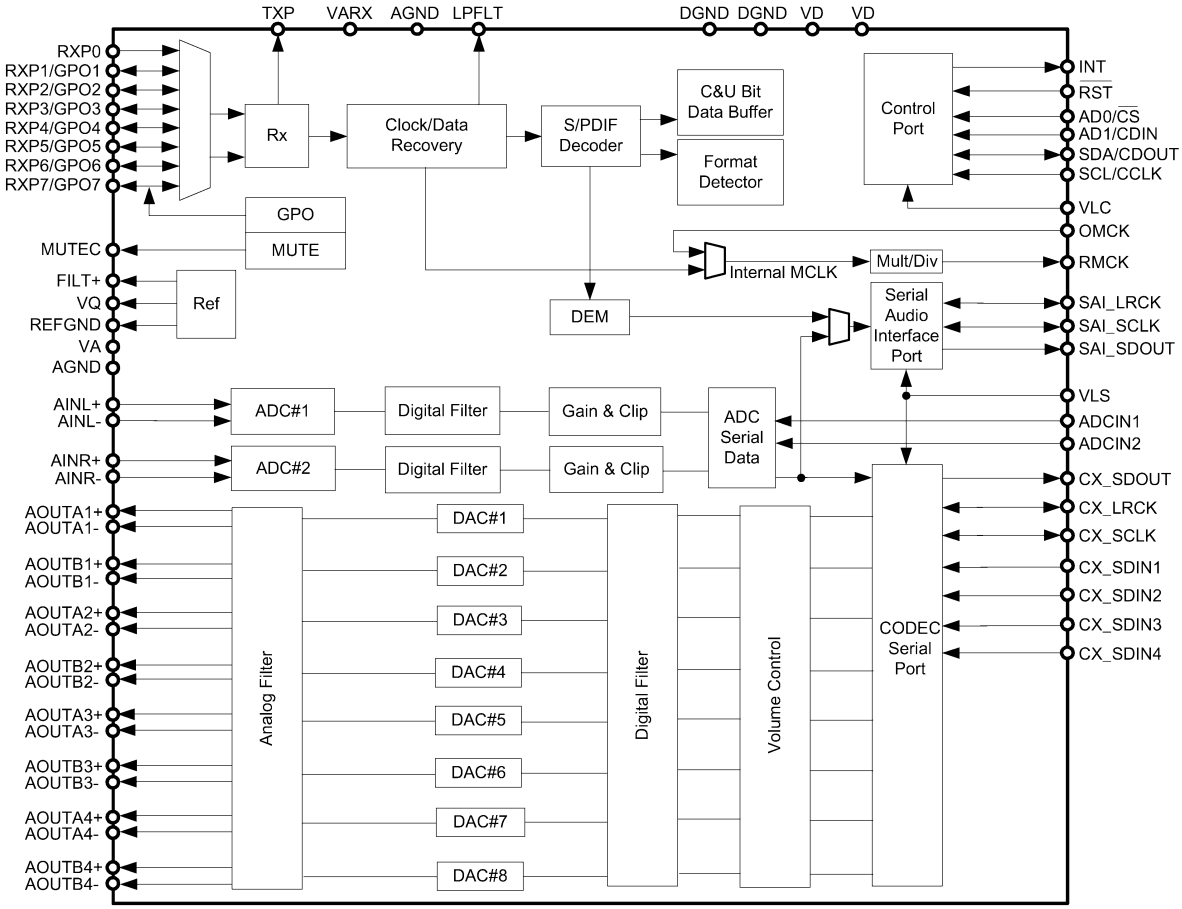
TC74VHC157FT (DIGITAL : IC85)



CS42528 (DIGITAL : IC84)



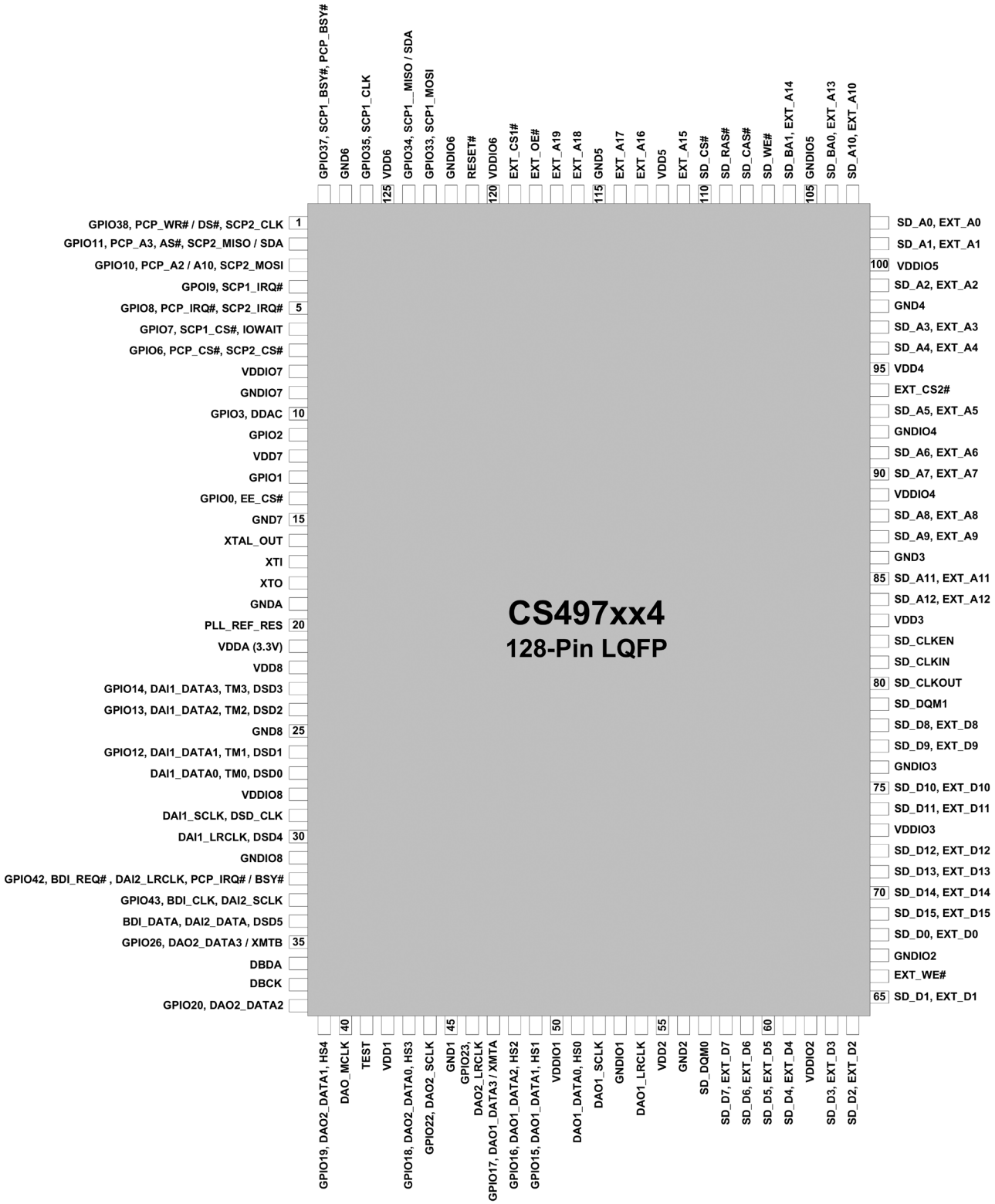
CS42528 Block diagram



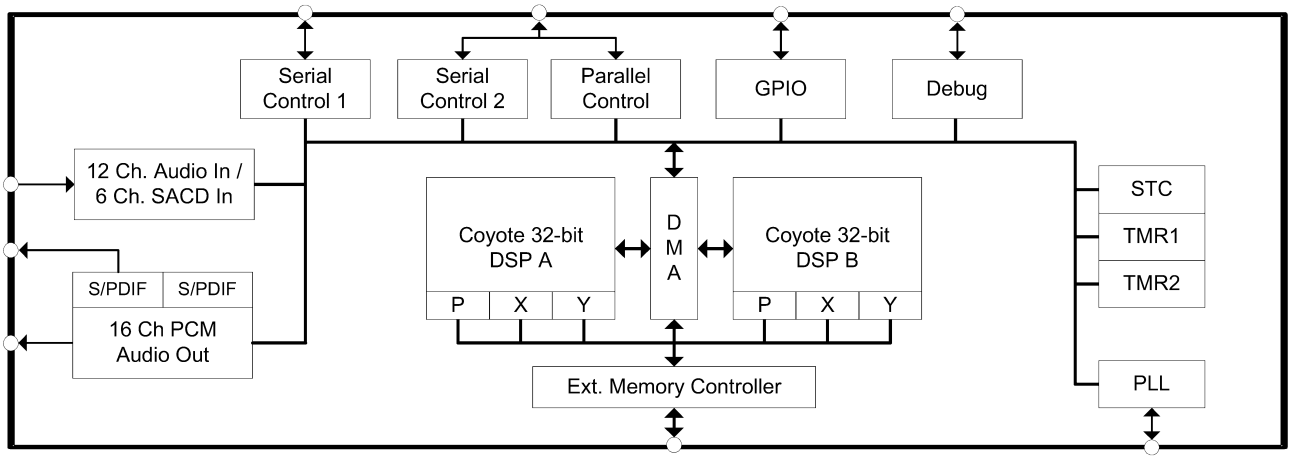
CS42528 Terminal Functions

INT	11	**Interrupt** *(Output)* - The CS42528 will generate an interrupt condition as per the Interrupt Mask register. See “Interrupts” on page 40 for more details.
$\overline{\text{RST}}$	12	**Reset** (*Input*) - The device enters a low power mode and all internal registers are reset to their default settings when low.
AINR- AINR+	13 14	**Differential Right Channel Analog Input** (*Input*) - Signals are presented differentially to the delta-sigma modulators via the AINR+/- pins.
AINL+ AINL-	15 16	**Differential Left Channel Analog Input** (*Input*) - Signals are presented differentially to the delta-sigma modulators via the AINL+/- pins.
VQ	17	**Quiescent Voltage** (*Output*) **-** Filter connection for internal quiescent reference voltage.
FILT+	18	**Positive Voltage Reference** (*Output*) - Positive reference voltage for the internal sampling circuits.
REFGND	19	**Reference Ground** (*Input*) - Ground reference for the internal sampling circuits.
AOUTA1 +,- AOUTB1 +,- AOUTA2 +,- AOUTB2 +,- AOUTA3 +,- AOUTB3 +,- AOUTA4 +,- AOUTB4 +,-	36,37 35,34 32,33 31,30 28,29 27,26 22,23 21,20	**Differential Analog Output** (*Output*) - The full-scale differential analog output level is specified in the Analog Characteristics specification table.
VA VARX	24 41	**Analog Power** (*Input*) - Positive power supply for the analog section.
AGND	25 40	**Analog Ground** (*Input*) - Ground reference. Should be connected to analog ground.
MUTEC	38	**Mute Control** (*Output*) - The Mute Control pin outputs high impedance following an initial power-on condition or whenever the PDN bit is set to a ‘1’, forcing the codec into power-down mode. The signal will remain in a high impedance state as long as the part is in power-down mode. The Mute Control pin goes to the selected “active” state during reset, muting, or if the master clock to left/right clock frequency ratio is incorrect. This pin is intended to be used as a control for external mute circuits to prevent the clicks and pops that can occur in any single supply system. The use of external mute circuits are not mandatory but may be desired for designs requiring the absolute minimum in extraneous clicks and pops.
LPFLT	39	**PLL Loop Filter** (*Output*) - An RC network should be connected between this pin and ground.
RXP7/GPO7 RXP6/GPO6 RXP5/GPO5 RXP4/GPO4 RXP3/GPO3 RXP2/GPO2 RXP1/GPO1	42 43 44 45 46 47 48	**S/PDIF Receiver Input/ General Purpose Output** (*Input*/*Output*) - Receiver inputs for S/PDIF encoded data. The CS42528 has an internal 8:2 multiplexer to select the active receiver port, according to the Receiver Mode Control 2 register. These pins can also be configured as general purpose output pins, ADC Overflow indicators or Mute Control outputs according to the RXP/General Purpose Pin Control registers.
RXP0	49	**S/PDIF Receiver Input** (*Input*) - Dedicated receiver input for S/PDIF encoded data.
TXP	50	**S/PDIF Transmitter Output** (*Output*) - S/PDIF encoded data output, mapped directly from one of the receiver inputs as indicated by the Receiver Mode Control 2 register.
VLS	53	**Serial Port Interface Power** (*Input*) - Determines the required signal level for the serial port interfaces.
SAI_SDOUT	54	**Serial Audio Interface Serial Data Output** (*Output*) - Output for two’s complement serial audio PCM data from the S/PDIF incoming stream. This pin can also be configured to transmit the output of the internal and external ADCs.
RMCK	55	**Recovered Master Clock** (*Output*) - Recovered master clock output from the External Clock Reference (OMCK, pin 59) or the PLL which is locked to the incoming S/PDIF stream or CX_LRCK.
CX_SDOUT	56	**CODEC Serial Data Output** (*Output*) - Output for two’s complement serial audio data from the internal and external ADCs.
ADCIN1 ADCIN2	58 57	**External ADC Serial Input** (*Input*) - The CS42528 provides for up to two external stereo analog to digital converter inputs to provide a maximum of six channels on one serial data output line when the CS42528 is placed in One-Line Mode.
OMCK	59	**External Reference Clock** (*Input*) - External clock reference that must be within the ranges specified in the register “OMCK Frequency (OMCK Freqx)” on page 53.
SAI_LRCK	60	**Serial Audio Interface Left/Right Clock** (*Input*/*Output*) - Determines which channel, Left or Right, is currently active on the serial audio data line.
SAI_SCLK	61	**Serial Audio Interface Serial Clock** *(Input*/*Output)* - Serial clock for the Serial Audio Interface.

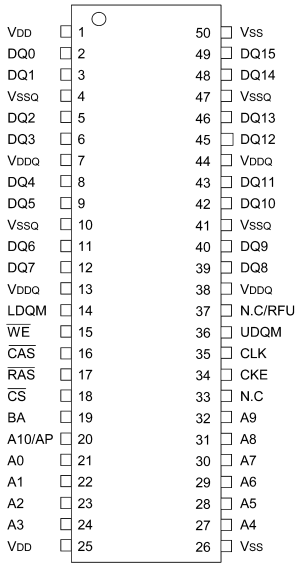
CS497024CVZ (DIGITAL : IC81)

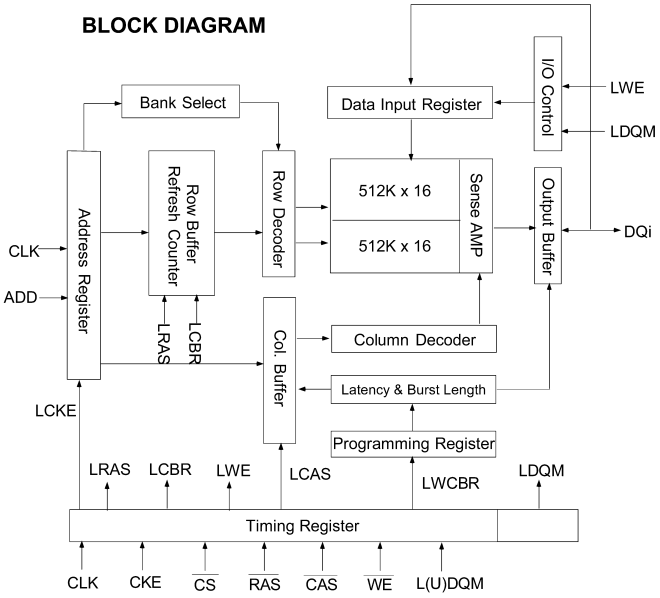


CS497024CVZ Block diagram



M12L16161A5TG (DIGITAL : IC83)

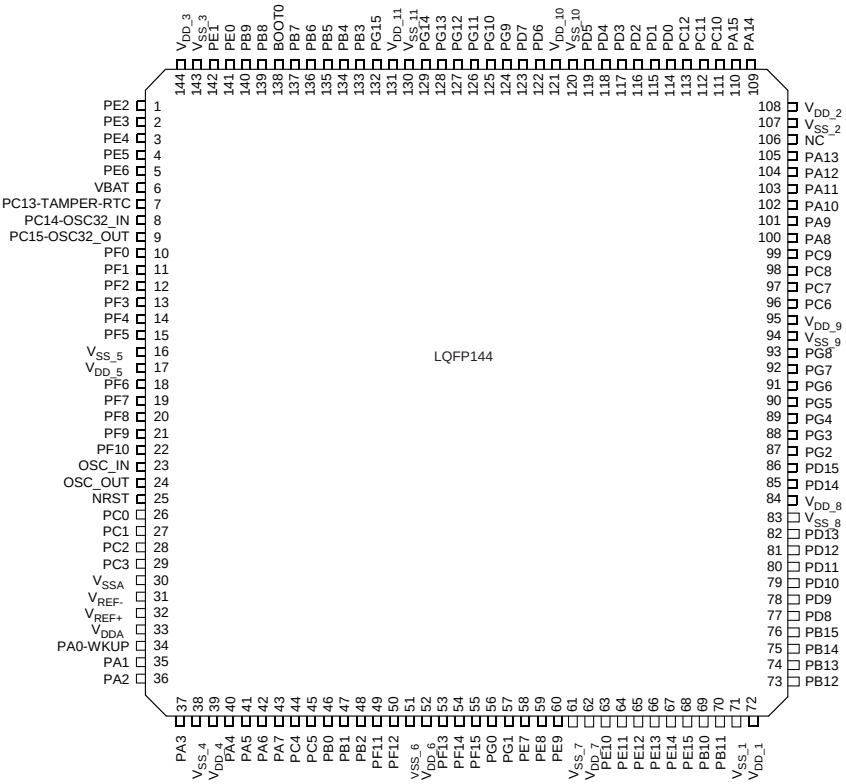




M12L16161A5TG Terminal Functions

Pin	Name	Input Function
CLK	System Clock	Active on the positive going edge to sample all inputs.
$\overline{CS}$	Chip Select	Disables or enables device operation by masking or enabling all inputs except CLK, CKE and L(U)DQM.
CKE	Clock Enable	Masks system clock to freeze operation from the next clock cycle. CKE should be enabled at least one cycle prior to new command. Disable input buffers for power down in standby.
A0 ~ A10/AP	Address	Row / column addresses are multiplexed on the same pins. Row address : RA0 ~ RA10, column address : CA0 ~ CA7
BA	Bank Select Address	Selects bank to be activated during row address latch time. Selects bank for read/write during column address latch time.
$\overline{RAS}$	Row Address Strobe	Latches row addresses on the positive going edge of the CLK with $\overline{RAS}$ low. Enables row access & precharge.
$\overline{CAS}$	Column Address Strobe	Latches column addresses on the positive going edge of the CLK with $\overline{CAS}$ low. Enables column access.
$\overline{WE}$	Write Enable	Enables write operation and row precharge. Latches data in starting from $\overline{CAS}$, $\overline{WE}$ active.
L(U)DQM	Data Input / Output Mask	Makes data output Hi-Z, t_{SHZ} after the clock and masks the output. Blocks data input when L(U)DQM active.
DQ0~15	Data Input / Output	Data inputs/outputs are multiplexed on the same pins.
VDD/VSS	Power Supply/Ground	Power and ground for the input buffers and the core logic.
VDDQ/VSSQ	Data Output Power/Ground	Isolated power supply and ground for the output buffers to provide improved noise immunity.
N.C/RFU	No Connection/ Reserved for Future Use	This pin is recommended to be left No Connection on the device.

STM32F101ZE (DIGITAL : IC91)



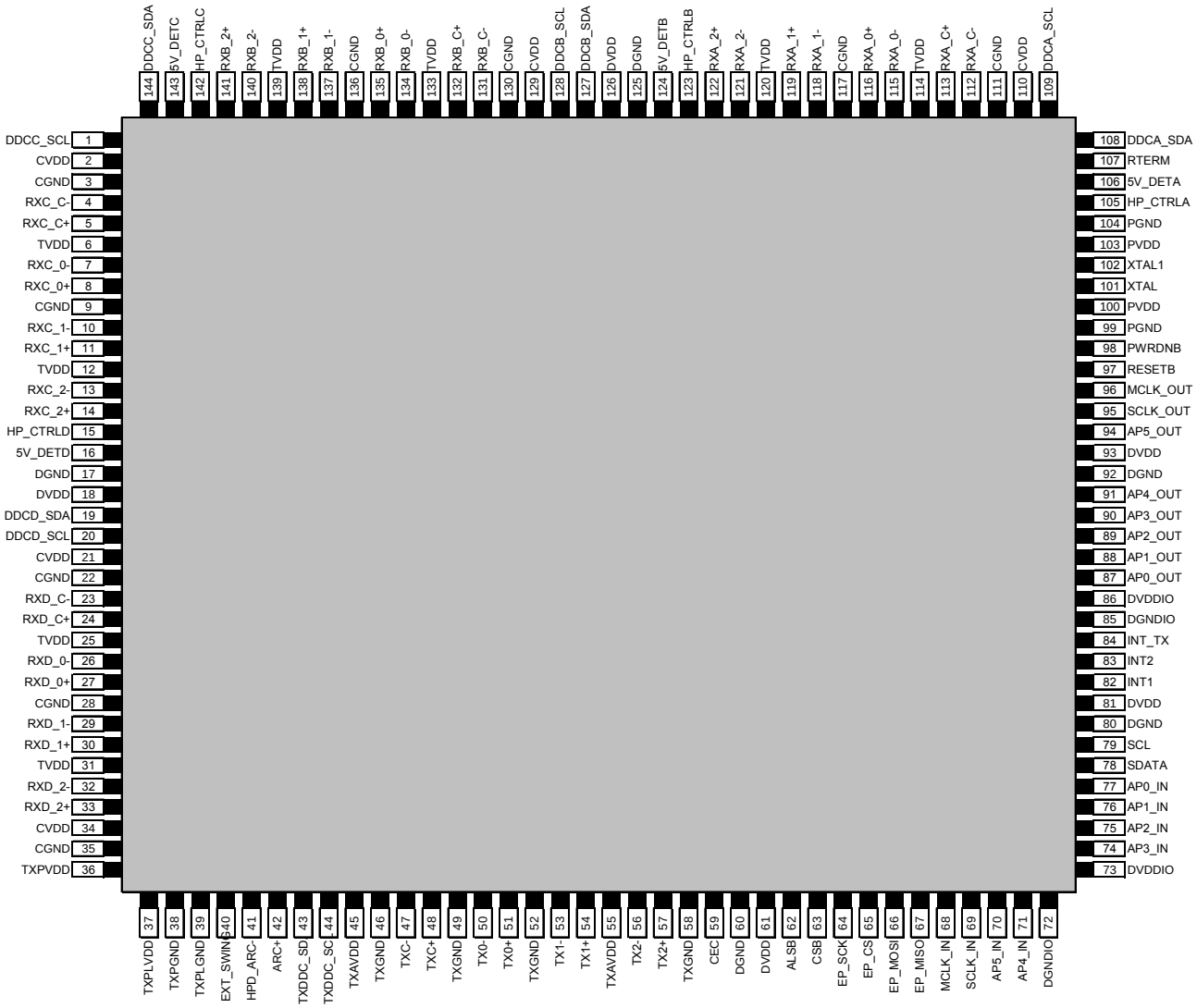
STM32F101ZE Terminal Functions

Pin	Pin Name	Symbol	I/O	Pullup	STBY	stop	Function
1	PE2	DC_PROTECT	I	M3VPu	I	I	DC Protection Detect
2	PE3	NC	O(L)	-	-	-	NC
3	PE4	POWER_DOWN	I	M3VPu	I	I	Power Down Detect
4	PE5	FRONT_RLY(SPK_RLY_ON)	O	-	O/L	O/L	Front SPK RLY Control
5	PE6	C/S_RLY	O	-	O/L	O/L	Center/Surround SPK RLY Control
6	VBAT	VBAT	-	-	-	-	3.3V
7	PC13	NC	O(L)	-	-	-	NC
8	PC14 / OSC32_IN	OSC32_IN	-	-	-	-	
9	PC15 / OSC32_OUT	OSC32_OUT	-	-	-	-	
10	PF0	NC	O(L)	-	-	-	NC
11	PF1	NC	O(L)	-	-	-	NC
12	PF2	NC	O(L)	-	-	-	NC
13	PF3	CVBS_SW2	O	-	O/L	O/L	CVBS(NJM2595)SW2 Control
14	PF4	CVBS_SW5	O	-	O/L	O/L	CVBS(NJM2595)SW5 Control
15	PF5	NC	O(L)	-	-	-	NC
16	VSS_5		-	-	-	-	GND
17	VDD_5		-	-	-	-	3.3V
18	PF6	NC	O(L)	-	-	-	NC
19	PF7	NC	O(L)	-	-	-	NC
20	PF8	NC	O(L)	-	-	-	NC
21	PF9	MAIN_VOL_DATA	O	-	O/L	O/L	Volume Data
22	PF10	MAIN_VOL_CLK	O	-	O/L	O/L	Volume CLK
23	PH0 / OSC_IN	XTAL_IN	I	-	-	-	8MHz Xtal
24	PH1 / OSD_OUT	XTAL_OUT	O	-	-	-	8MHz Xtal
25	NRST	RESET	I	-	-	-	RESET
26	PC0	KEY1	I	M3VPu	I	I	KEY1 input A/D port
27	PC1	KEY2	I	M3VPu	I	I	KEY2 input A/D port
28	PC2	KEY3	I	M3VPu	I	I	KEY3 input A/D port
29	PC3	OPTION	I	M3VPu	I	I	MODEL OPTION
30	VSSA		-	-	-	-	GND
31	VREF-		-	-	-	-	GND
32	VREF+		-	-	-	-	3.3V
33	VDDA		-	-	-	-	3.3V
34	PA0 / WKUP	NC	O(L)	-	-	-	NC
35	PA1	NC	O(L)	-	-	-	NC

Pin	Pin Name	Symbol	I/O	Pullup	STBY	stop	Function
36	PA2	NC	O(L)	-	-	-	NC
37	PA3	NC	O(L)	-	-	-	NC
38	VSS_4		-	-	-	-	GND
39	VDD_4		-	-	-	-	3.3V
40	PA4	DSP_CS	O	-	O/L	O/L	DSP Chip Select
41	PA5	DSP_CLK	O	D3VPu	O/L	O/L	DSP_CLK
42	PA6	DSP_MISO	I	D3VPu	O/L	O/L	DSP MISO
43	PA7	DSP_MOSI	O	-	O/L	O/L	DSP MOSI
44	PC4	NC	O(L)	-	-	-	NC
45	PC5	NC	O(L)	-	-	-	NC
46	PB0	DIR_MISO	I	-	O/L	O/L	DIR_MISO
47	PB1	DIR_CLK	O	D3VPu	O/L	O/L	DIR_CLK
48	PB2 / BOOT1	BOOT1	I	-	-	-	GND
49	PF11	DIR_MOSI	O	-	O/L	O/L	DIR MOSI
50	PF12	DSP_RST	O	-	O/L	O/L	DSP Reset
51	VSS_6		-	-	-	-	GND
52	VDD_6		-	-	-	-	3.3V
53	PF13	DSP_MODE_SEL	I/O	PullDown	O/L	O/L	DSP_MODE_SEL
54	PF14	CODEC_MUTE	I(FT)	-	O/L	O/L	CODEC Mute Detect (*FT = 5V tolerant)
55	PF15	DIR_RST	O	-	O/L	O/L	DIR Reset
56	PG0	DIR_CE	O	-	O/L	O/L	DIR Chip Select
57	PG1	DSP_SPC1_IRQ	I	D3VPu	O/L	O/L	DSP INTERRRUPTQ
58	PE7	DSP_PCP_BSY	I	D3VPu	O/L	O/L	DSP BSY
59	PE8	NC	O(L)	-	-	-	NC
60	PE9	HDMI_SW	O	-	O/L	O/L	HDMI Audio Data MCLK Select SW
61	VSS_7		-	-	-	-	GND
62	VDD_7		-	-	-	-	3.3V
63	PE10	NC	O(L)	-	-	-	NC
64	PE11	HDMI_SPI_MISO	I	-	I	O/L	HDMI OSD DATA input
65	PE12	HDMI_SPI_MOSI	O	-	O/L	O/L	HDMI OSD DATA output
66	PE13	HDMI_SPI_CS	O	+3VHPu	O/L	O/L	HDMI OSD Chip Select
67	PE14	HDMI_SPI_CLK	O	-	O/L	O/L	HDMI OSD Clock
68	PE15	HDMI_SPI_HOLD	O	-	O/L	O/L	HDMI OSD HOLD Control
69	PB10	HDMI_RST	O	-	O/L	O/L	HDMI Reset
70	PB11	NC	O(L)	-	-	-	NC
71	VSS_1		-	-	-	-	GND
72	VDD_1		-	-	-	-	3.3V
73	PB12	RESERVED	O(L)	-	-	-	RESERVED
74	PB13	RESERVED	O(L)	-	-	-	RESERVED
75	PB14	HDMI_INT_TX_7623	I	+3VHPu	I	O/L	HDMI INT TX interrupt
76	PB15	RESERVED	O(L)	-	-	-	RESERVED
77	PD8	HDMI_TXEN	O	-	O/L	O/L	FRONT HDMI BUFFER(AD8195) Output Enable
78	PD9	NC	O(L)	-	-	-	NC
79	PD10	NC	O	-	O/L	O/L	Option(STANDBY CEC MODE Control)
80	$\overline{\text{PD11}}$	HDMI_INT	I	+3VHPu	I	O/L	HDMI INT interrupt
81	PD12	HDMI_INT2	I	+3VHPu	I	O/L	HDMI INT2 intreeupt
82	$\overline{\text{PD13}}$	$\overline{\text{HDMI\_SDA}}$	I/O	+3VHPu	O/L	O/L	HDMI SDATA
83	VSS_8		-	-	-	-	GND
84	VDD_8		-	-	-	-	3.3V
85	PD14	HDMI_SCL	O	-	O/L	O/L	HDMI SCL
86	PD15	PWR_FAIL_PROTECT	I	M3VPu	O/L	O/L	+12V/-12V CHECK PROTECTION
87	PG2	THERMALDET_B	I	M3VPu	O/L	O/L	TEMPERATURE PROTECTION
88	PG3	THERMALDET_A	I	M3VPu	O/L	O/L	TEMPERATURE PROTECTION
89	PG4	ASO_DET	I	M3VPu	O/L	O/L	ASO_DETECT
90	PG5	POWER_ON	O	-	O/L	O/L	POWER RELAY Control
91	PG6	NC	I	-	I	O/L	Option(CEC MODE Interrupt)
92	PG7	VOL+	I	-	O/L	O/L	VOLUME UP
93	PG8	VOL-	I	-	O/L	O/L	VOLUME DOWN
94	VSS_9		-	-	-	-	GND
95	VDD_9		-	-	-	-	3.3V
96	PC6	RESERVED	O(L)	-	-	-	RESERVED
97	PC7	VFD_CE	O	-	O/L	O/L	VFD_CE
98	PC8	VFD_CLK	O	-	O/L	O/L	VFD_CLK
99	PC9	RESERVED	O(L)	-	-	-	RESERVED
100	PA8	VFD_DATA	O	-	O/L	O/L	VFD_DATA
101	PA9	UPDATE_TX	O	-	O/L	O/L	UPDATE TX

Pin	Pin Name	Symbol	I/O	Pullup	STBY	stop	Function
102	PA10	UPDATE_RX	I	-	I	O/L	UPDATE RX
103	PA11	RESERVED	O(L)	-	-	-	RESERVED
104	PA12	RESERVED	O(L)	-	-	-	RESERVED
105	PA13	DEBUG	I	-	-	-	JTMS / SWDIO
106	PCAP_2		-	-	-	-	Not Connected
107	VSS_2		-	-	-	-	GND
108	VDD_2		-	-	-	-	3.3V
109	PA14	DEBUG	I	-	-	-	JTCK / SWCLK
110	PA15	DEBUG	I	-	-	-	JTDI
111	PC10	NC	O(L)	-	-	-	NC
112	PC11	NC	O(L)	-	-	-	NC
113	PC12	HDMI_DEBUG_TX	O	-	O/L	O/L	HDMI DEBUG TX
114	PD0	VFD_RST	O	-	O/L	O/L	VFD_RESET(Low Active)
115	PD1	HP_RLY	O	-	O/L	O/L	H/P RLY Control
116	PD2	HDMI_DEBUG_RX	I	-	I	O/L	HDMI DEBUG RX
117	PD3	WAKE_UP	I	M3VPu	I	I	WAKE UP(Not use)
118	PD4	HP_DET	I	M3VPu	O/L	O/L	H/P DETECT
119	PD5	GRN_LED	O	-	O/L	O/L	2COLOR LED GREEN
120	VSS_10		-	-	-	-	GND
121	VDD_10		-	-	-	-	3.3V
122	PD6	NC	O(L)	-	-	-	NC
123	PD7	REMOTE_IN	I	-	I	O/L	REMOTE input
124	PG9	NC	O(L)	-	-	-	NC
125	PG10	EEPROM_SDA	I/O	M3VPu	I	O/L	EEPROM SDA
126	PG11	EEPROM_SCL	O	M3VPu	O/L	O/L	EEPROM SCL
127	PG12	DAC_MUTE	O	-	O/L	O/L	DAC Mute Control
128	PG13	TUNER_SCLK	O	-	O/L	O/L	TUNER SCLK
129	PG14	TUNER_SDIO	I/O	-	O/L	O/L	TUNER SDIO
130	VSS_11		-	-	-	-	GND
131	VDD_11		-	-	-	-	3.3V
132	PG15	NC	O(L)	-	-	-	NC
133	PB3	DEBUG	O	-	-	-	JTDO / TRACESWO
134	PB4	DEBUG	I	-	-	-	NJTRST
135	PB5	SUB MUTE	O	-	O/L	O/L	Sub Woofer MUTE Control
136	PB6	NC	O(L)	-	-	-	NC
137	PB7	NC	O(L)	-	-	-	NC
138	BOOT0	BOOT0	I	PullDown	I	I	UPDATE BOOT(HIGH:UPDATE / LOW:NORMAL MODE)
139	PB8	TUNER_CE	O	-	O/L	O/L	TUNER CE
140	PB9	TUNER_INT	I	-	I	O/L	TUNER INTERRUPT
141	PE0	TUNER_RST	O	-	O/L	O/L	TUNER Reset
142	PE1	RED_LED	O	-	O/L	O/L	2COLOR LED RED
143	VSS_3		-	-	-	-	GND
144	VDD_3		-	-	-	-	3.3V

ADV7623 (DIGITAL : IC11)



ADV7623 Terminal Functions

Location	Mnemonic	Type	Description
1	DDCC_SCL	Digital Input	HDCP slave serial clock port C. DDCC_SCL is a 3.3 V input that is 5 V tolerant.
2	CVDD	Power	Receiver comparator supply voltage (1.8V)
3	CGND	Ground	TVDD and CVDD Ground
4	RXC_C-	HDMI Input	Digital input clock Complement of port C in the HDMI interface.
5	RXC_C+	HDMI Input	Digital input clock True of port C in the HDMI interface.
6	TVDD	Power	Receiver terminator supply voltage (3.3 V)
7	RXC_0-	HDMI Input	Digital input channel 0 Complement of port C in the HDMI interface.
8	RXC_0+	HDMI Input	Digital input channel 0 True of port C in the HDMI interface.
9	CGND	Ground	TVDD and CVDD Ground
10	RXC_1-	HDMI Input	Digital input channel 1 Complement of port C in the HDMI interface.
11	RXC_1+	HDMI Input	Digital input channel 1 True of port C in the HDMI interface.
12	TVDD	Power	Receiver terminator supply voltage (3.3 V)
13	RXC_2-	HDMI Input	Digital input channel 2 Complement of port C in the HDMI interface.
14	RXC_2+	HDMI Input	Digital input channel 2 True of port C in the HDMI interface.
15	HP_CTRLD	Digital Output	Hot Plug Detect for Port D.
16	5V_DETD	Digital Input	5 V detect pin for port D in the HDMI interface.
17	DGND	Ground	Ground for DVDD
18	DVDD	Power	Digital supply voltage (1.8 V)
19	DDCD_SDA	Digital I/O	HDCP slave serial data ports D. DDCD_SDA is a 3.3 V input/output that is 5 V tolerant.
20	DDCD_SCL	Digital Input	HDCP slave serial clock port D. DDCD_SCL is a 3.3 V input that is 5 V tolerant.
21	CVDD	Power	Receiver comparator supply voltage (1.8V)
22	CGND	Ground	TVDD and CVDD Ground
23	RXD_C-	HDMI Input	Digital input clock Complement of port D in the HDMI interface.
24	RXD_C+	HDMI Input	Digital input clock True of port D in the HDMI interface.
25	TVDD	Power	Receiver terminator supply voltage (3.3 V)
26	RXD_0-	HDMI Input	Digital input channel 0 Complement of port

Location	Mnemonic	Type	Description
			D in the HDMI interface.
27	RXD_0+	HDMI Input	Digital input channel 0 True of port D in the HDMI interface.
28	CGND	Ground	TVDD and CVDD Ground
29	RXD_1-	HDMI Input	Digital input channel 1 complement of port D in the HDMI interface.
30	RXD_1+	HDMI Input	Digital input channel 1 true of port D in the HDMI interface.
31	TVDD	Power	Receiver terminator supply voltage (3.3 V)
32	RXD_2-	HDMI Input	Digital input channel 2 complement of port D in the HDMI interface.
33	RXD_2+	HDMI Input	Digital input channel 2 true of port D in the HDMI interface.
34	CVDD	Power	Receiver comparator supply voltage (1.8V)
35	CGND	Ground	TVDD and CVDD Ground
36	TXPVDD	Power	1.8 V Power Supply for Digital and I/O Power Supply. These pins supply power to the digital logic and I/Os. They should be filtered and as quiet as possible.
37	TXPLVDD	Power	1.8 V Power Supply.
38	TXGND	Ground	TXPVDD Ground
39	TXPGND	Ground	TXPLVDD Ground
40	EXT_SWING	Analog Input	Sets Internal Reference Currents. Place 887 Ω resistor (1% tolerance) between this pin and ground.
41	HPD_ARC-	Analog Input	Hot Plug Detect Signal. This indicates to the interface whether the receiver is connected. Supports 1.8 V to 5.0V CMOS logic levels.
42	ARC+	Analog Input	Audio return channel input
43	TXDDC_SDA	Digital I/O	Serial Port Data I/O to Receiver. This pin serves as the master to the DDC bus. Supports a 5 V CMOS logic level.
44	TXDDC_SCL	Digital Input	Serial Port Data Clock to Receiver. This pin serves as the master clock for the DDC bus. Supports a 5 V CMOS logic level.
45	TXAVDD	Power	1.8V power supply for TMDS outputs
46	TXGND	Ground	TXAVDD Ground
47	TXC-	HDMI Output	Differential Clock Output. Differential clock output at the TMDS clock rate; supports TMDS logic level.
48	TXC+	HDMI Output	Differential Clock Output. Differential clock output at the TMDS clock rate; supports TMDS logic level.

Location	Mnemonic	Type	Description
49	TXGND	Ground	TXAVDD Ground
50	TX0-	HDMI Output	Differential Output Channel 0 Complement. Differential output of the red data at 10× the pixel clock rate; supports TMDS logic level.
51	TX0+	HDMI Output	Differential Output Channel 0 True. Differential output of the red data at 10× the pixel clock rate; supports TMDS logic level.
52	TXGND	Ground	TXAVDD Ground
53	TX1-	HDMI Output	Differential Output Channel 1 Complement. Differential output of the red data at 10× the pixel clock rate; supports TMDS logic level.
54	TX1+	HDMI Output	Differential Output Channel 1 True. Differential output of the red data at 10× the pixel clock rate; supports TMDS logic level.
55	TXAVDD	Power	1.8V power supply for TMDS outputs
56	TX2-	HDMI Output	Differential Output Channel 2 Complement. Differential output of the red data at 10× the pixel clock rate; supports TMDS logic level.
57	TX2+	HDMI Output	Differential Output Channel 2 True. Differential output of the red data at 10× the pixel clock rate; supports TMDS logic level.
58	TXGND	Ground	TXAVDD Ground
59	CEC	Digital I/O	Consumer electronic control channel.
60	DGND	Ground	Ground for DVDD
61	DVDD	Power	Digital supply voltage (1.8 V)
62	ALSB	Digital Input	This pin is used to set I2C address of the Rx IO and the Tx Main Map.
63	CSB	Digital Input	Chip Select pin. This pin must be set low or left floating for the chip to process I2C messages that are destined to the ADV7623. The ADV7623 ignores I2C messages which he receives if this pin is high.
64	EP_SCK	Digital Output	SPI clock interface for the EDID/OSD
65	EP_CS	Digital Output	SPI chip selected interface for the EDID/OSD
66	EP_MOSI	Digital Output	SPI master out/slave in for the EDID/OSD
67	EP_MISO	Digital Input	SPI master in/slave out for the EDID/OSD

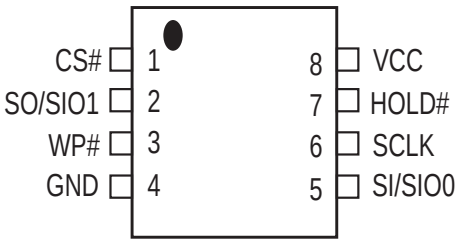
Location	Mnemonic	Type	Description
68	MCLK_IN	Digital Input	Audio Reference Clock. 128 × N × fs with N = 1, 2, 3, or 4. Set to 128 × sampling frequency (fs), 256 × fs, 384 × fs, or 512 × fs. Supports 1.8 V to 3.3 V CMOS logic levels.
69	SCLK_IN	Digital Input	I2S Audio Clock. Supports CMOS logic levels from 1.8 V to 3.3 V.
70	AP5_IN	Digital Input	Audio Input Port 5. CMOS logic levels from 1.8 V to 3.3 V.
71	AP4_IN	Digital Input	Audio Input Port 4. CMOS logic levels from 1.8 V to 3.3 V.
72	DGNDIO	Ground	Ground for DVDDIO
73	DVDDIO	Power	Digital I/O supply voltage (3.3 V)
74	AP3_IN	Digital Input	Audio Input Port 3. CMOS logic levels from 1.8 V to 3.3 V.
75	AP2_IN	Digital Input	Audio Input Port 2. CMOS logic levels from 1.8 V to 3.3 V.
76	AP1_IN	Digital Input	Audio Input Port 1. CMOS logic levels from 1.8 V to 3.3 V.
77	AP0_IN	Digital Input	Audio Input Port 0. CMOS logic levels from 1.8 V to 3.3 V.
78	SDATA	Digital I/O	I2C port serial data input/output pin. SDA is the data line for the control port.
79	SCL	Digital Input	I2C port serial clock input. SCL is the clock line for the control port.
80	DGND	Ground	Ground for DVDD
81	DVDD	Power	Digital supply voltage (1.8 V)
82	INT1 (AMUTE1)	Digital Output	Interrupt pin, can be active low or active high. When status bits change, this pin is triggered. The events that trigger an interrupt are under user control. This pin can also output an audio mute signal
83	INT2 (AMUTE2)	Digital Output	Interrupt pin, can be active low or active high. When status bits change, this pin is triggered. The events that trigger an interrupt are under user control. This pin can also output an audio mute signal. I2C LSB selection.
84	INT_TX	Digital Output	Interrupt. Open drain. A 2 kΩ pull-up resistor to the microcontroller I/O supply is recommended.
85	DGNDIO	Ground	Ground for DVDDIO
86	DVDDIO	Power	Digital I/O supply voltage (3.3 V)

Location	Mnemonic	Type	Description
87	AP0_OUT	Digital Output	Audio output port 0.
88	AP1_OUT	Digital Output	Audio output port 1.
89	AP2_OUT	Digital Output	Audio output port 2.
90	AP3_OUT	Digital Output	Audio output port 3.
91	AP4_OUT	Digital Output	Audio output port 4.
92	DGND	Ground	Ground for DVDD
93	DVDD	Power	Digital supply voltage (1.8 V)
94	AP5_OUT	Digital Output	Audio output port 5.
95	SCLK_OUT	Digital Output	Audio serial clock output.
96	MCLK_OUT	Digital Output	Audio master clock output.
97	RESETB	Digital Input	System reset input. Active low. A minimum low reset pulse width of 5 ms is required to reset the ADV7623 circuitry.
98	PWRDNB	Digital Input	Active low power-down pin. This pin should be used as a system power detect when the internal EDID is powered from the 5V signal from the HDMI port when connected to active equipment. Pin pulled down internally.
99	PGND	Ground	Ground for PVDD
100	PVDD	Power	PLL supply voltage
101	XTAL	Miscellaneous Analog	Input pin for 28.63636 MHz crystal or an external 1.8 V 28.63636 MHz clock oscillator source to clock the ADV7623. The following crystal frequencies are also supported: 24.576 MHz and 27 MHz.
102	XTAL1	Miscellaneous Analog	Crystal output pin. This pin should be left floating if a clock oscillator is used.
103	PVDD	Power	PLL supply voltage
104	PGND	Ground	PVDD Ground
105	HP_CTRLA	Digital Output	Hot Plug Detect for port A.
106	5V_DETA	Digital Input	5 V detect pin for port A in the HDMI interface.
107	RTERM	Miscellaneous Analog	Sets internal termination resistance. A 500 Ω resistor between this pin and GND should be used.
108	DDCA_SDA	Digital I/O	HDCP slave serial data port A. DDCD_SDA is a 3.3 V input/output that is 5 V tolerant.
109	DDCA_SCL	Digital Input	HDCP slave serial clock port A. DDCD_SCL is a 3.3 V input that is 5 V tolerant.
110	CVDD	Power	Receiver comparator supply voltage (1.8V)

Location	Mnemonic	Type	Description
111	CGND	Ground	TVDD and CVDD Ground
112	RXA_C-	HDMI Input	Digital input clock Complement of port A in the HDMI interface.
113	RXA_C+	HDMI Input	Digital input clock True of port A in the HDMI interface.
114	TVDD	Power	Receiver terminator supply voltage (3.3 V)
115	RXA_0-	HDMI Input	Digital input channel 0 complement of port A in the HDMI interface.
116	RXA_0+	HDMI Input	Digital input channel 0 true of port A in the HDMI interface.
117	CGND	Ground	TVDD and CVDD Ground
118	RXA_1-	HDMI Input	Digital input channel 1 complement of port A in the HDMI interface.
119	RXA_1+	HDMI Input	Digital input channel 1 true of port A in the HDMI interface.
120	TVDD	Power	Receiver terminator supply voltage (3.3 V)
121	RXA_2-	HDMI Input	Digital input channel 2 complement of port A in the HDMI interface.
122	RXA_2+	HDMI Input	Digital input channel 2 true of port A in the HDMI interface.
123	HP_CTRLB	Digital Output	Hot Plug Detect for port B.
124	5V_DETB	Digital Input	5 V detect pin for port B in the HDMI interface.
125	DGND	Ground	Ground for DVDD
126	DVDD	Power	Digital supply voltage (1.8 V)
127	DDCB_SDA	Digital I/O	HDCP slave serial data ports B. DDCB_SDA is a 3.3 V input/output that is 5 V tolerant.
128	DDCB_SCL	Digital Input	HDCP slave serial clock port B. DDCB_SCL is a 3.3 V input that is 5 V tolerant.
129	CVDD	Power	Receiver comparator supply voltage (1.8V)
130	CGND	Ground	TVDD and CVDD Ground
131	RXB_C-	HDMI Input	Digital input clock complement of port B in the HDMI interface.
132	RXB_C+	HDMI Input	Digital input clock true of port B in the HDMI interface.
133	TVDD	Power	Receiver terminator supply voltage (3.3 V)
134	RXB_0-	HDMI Input	Digital input channel 0 complement of port B in the HDMI interface.
135	RXB_0+	HDMI Input	Digital input channel 0 true of port B in the HDMI interface.
136	CGND	Ground	TVDD and CVDD Ground
137	RXB_1-	HDMI Input	Digital input channel 1 complement of port

Location	Mnemonic	Type	Description
			B in the HDMI interface.
138	RXB_1+	HDMI Input	Digital input channel 1 true of port B in the HDMI interface.
139	TVDD	Power	Receiver terminator supply voltage (3.3 V)
140	RXB_2-	HDMI Input	Digital input channel 2 complement of port B in the HDMI interface.
141	RXB_2+	HDMI Input	Digital input channel 2 true of port B in the HDMI interface.
142	HP_CTRLC	Digital Output	Hot Plug Detect for port C.
143	5V_DETC	Digital Input	5 V detect pin for port C in the HDMI interface.
144	DDCC_SDA	Digital I/O	HDCP slave serial clock port C. DDCC_SDA is a 3.3 V input/output that is 5 V tolerant.

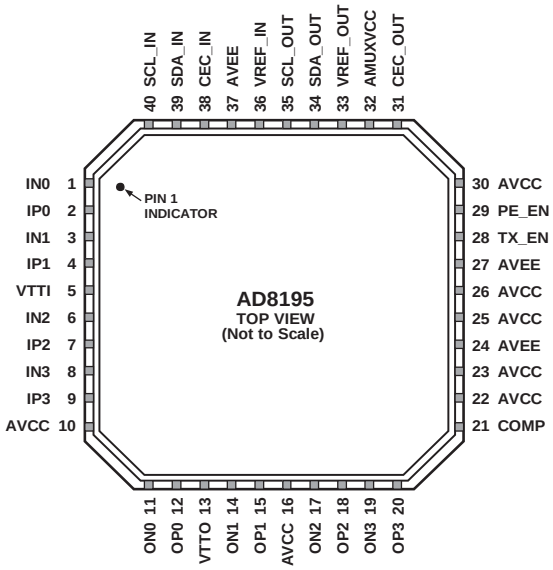
MX25L8006EM2I-12G (DIGITAL : IC14, IC82)



PIN DESCRIPTION

SYMBOL	DESCRIPTION
CS#	Chip Select
SI/SIO0	Serial Data Input (for 1 x I/O)/ Serial Data Input & Output (for Dual Output mode)
SO/SIO1	Serial Data Output (for 1 x I/O)/ Serial Data Output (for Dual Output mode)
SCLK	Clock Input
WP#	Write protection
HOLD#	Hold, to pause the device without deselecting the device
VCC	+ 3.3V Power Supply
GND	Ground

AD8195 (F-HDMI : IC51)



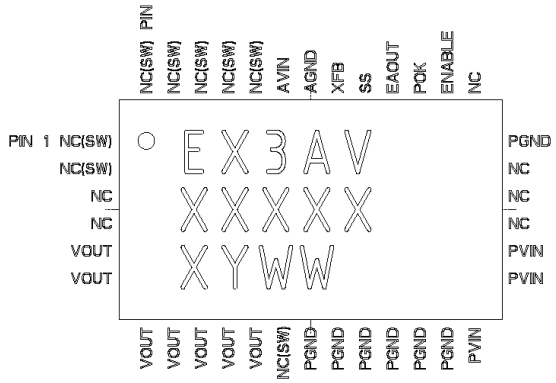
NOTES
1. THE AD8195 LFCSP HAS AN EXPOSED PAD ON THE UNDERSIDE OF THE PACKAGE THAT AIDS IN HEAT DISSIPATION. THE PAD MUST BE ELECTRICALLY CONNECTED TO THE AVEE SUPPLY PLANE IN ORDER TO MEET THERMAL SPECIFICATIONS.

AD8195 Terminal Functions

Pin No.	Mnemonic	Type[1]	Description
1	IN0	HS I	High Speed Input Complement.
2	IP0	HS I	High Speed Input.
3	IN1	HS I	High Speed Input Complement.
4	IP1	HS I	High Speed Input.
5	VTTI	Power	Input Termination Supply. Nominally connected to AVCC.
6	IN2	HS I	High Speed Input Complement.
7	IP2	HS I	High Speed Input.
8	IN3	HS I	High Speed Input Complement.
9	IP3	HS I	High Speed Input.
10, 16, 22, 23, 25, 26, 30	AVCC	Power	Positive Analog Supply. 3.3 V nominal.
11	ON0	HS O	High Speed Output Complement.
12	OP0	HS O	High Speed Output.
13	VTTO	Power	Output Termination Supply. Nominally connected to AVCC.
14	ON1	HS O	High Speed Output Complement.
15	OP1	HS O	High Speed Output.
17	ON2	HS O	High Speed Output Complement.
18	OP2	HS O	High Speed Output.
19	ON3	HS O	High Speed Output Complement.
20	OP3	HS O	High Speed Output.
21	COMP	Control	Power-On Compensation Pin. Bypass to ground through a 10 µF capacitor.
24, 27, 37, Exposed Pad	AVEE	Power	Negative Analog Supply. 0 V nominal.
28	TX_EN	Control	High Speed Output Enable Parallel Interface.
29	PE_EN	Control	High Speed Preemphasis Enable Parallel Interface.
31	CEC_OUT	LS I/O	CEC Output Side.
32	AMUXVCC	Power	Positive Auxiliary Buffer Supply. 5 V nominal.
33	VREF_OUT	Reference	DDC Output Side Pull-Up Reference Voltage.
34	SDA_OUT	LS I/O	DDC Output Side Data Line Input/Output.
35	SCL_OUT	LS I/O	DDC Output Side Clock Line Input/Output.
36	VREF_IN	Reference	DDC Input Side Pull-Up Reference Voltage.
38	CEC_IN	LS I/O	CEC Input Side.
39	SDA_IN	LS I/O	DDC Input Side Data Line.
40	SCL_IN	LS I/O	DDC Input Side Clock Line

[1] HS = high speed, LS = low speed, I = input, and O = output.

EX3AV (DIGITAL : IC16)

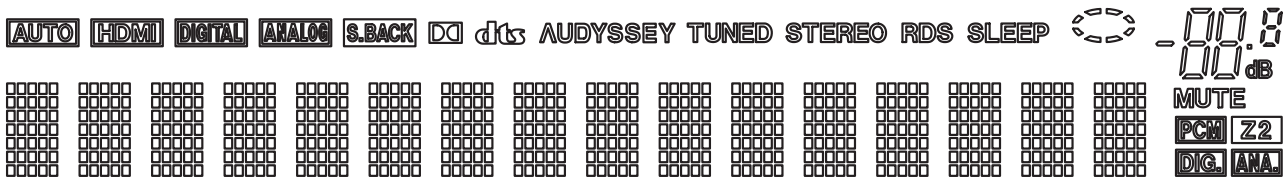


EX3AV Terminal Functions

PIN	NAME	FUNCTION
1-2, 12, 26, 34-38	NC(SW)	NO CONNECT – These pins are internally connected to the common switching node of the internal MOSFETs. They are not to be electrically connected to any external signal, ground, or voltage. Failure to follow this guideline may result in damage to the device.
3-4, 22-25	NC	NO CONNECT – These pins may be internally connected. Do not connect them to each other or to any other electrical signal. Failure to follow this guideline may result in device damage.
5-11	VOUT	Regulated converter output. Connect these pins to the load, and place output capacitor from these pins and PGND pins 13-15
13-18	PGND	Input/Output power ground. Connect these pins to the ground electrode of the Input and output filter capacitors. See VOUT and PVIN pin descriptions for more details.
19-21	PVIN	Input power supply. Connect to input power supply. Decouple with input capacitor to PGND pins 16-18.
27	ENABLE	Input Enable. Applying logic high enables the output and initiates a soft-start. Applying a logic low disables the output.
28	POK	Power OK is an open drain transistor for power system state indication. POK will be logic high when VOUT is with -10% to +20% of VOUT nominal.
29	EAOUT	Optional Error Amplifier output. Allows for customization of the control loop response.
30	SS	Soft-Start node. The soft-start capacitor is connected between this pin and AGND. The value of this capacitor determines the startup time.
31	XFB	External Feedback Input. The feedback loop is closed through this pin. A voltage divider at VOUT is used to set the output voltage. The mid point of the divider is connected to XFB. A phase lead capacitor from this pin to VOUT is also required to stabilize the loop.
32	AGND	Analog Ground. This is the Ground return for the controller. Needs to be connected to a quiet ground.
33	AVIN	Input power supply for the controller. Needs to be connected to input voltage at a quiet point.

2. FL DISPLAY

FLD (018BT021GINK) (FRONT : FL101)



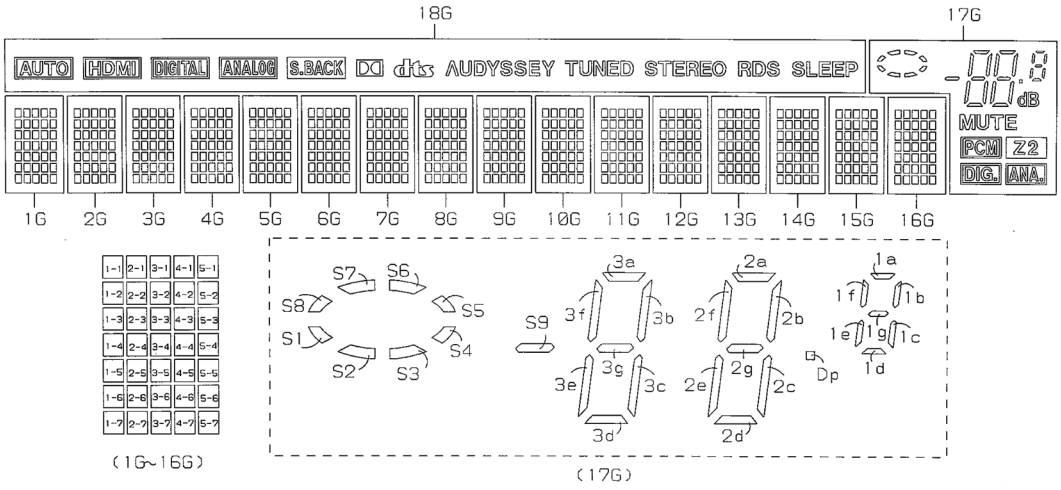
PIN CONNECTION

PIN NO.	57	56	55	54	53	52	51
CONNECTION	F2	NP	NP	NP	LGND	PGND	VH

PIN NO.	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	VDD	OSCT	IRESET	CS	DCP	DA	TSA	TSB	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	18G	17G	Q18G	Q17G	NP	NP	NP	F1

NOTE
1) F1,F2 --- Filament
2) NP ------ No pin
3) DL ------ Datum Line
4) NX ------ No extend pin
5) LGND -----Logic GND pin
6) PGND -----Power GND pin
7) VH ------ High Voltage Supply pin
8) VDD ----- Logic Voltage Supply pin
9) CP ------ Shift Register Clock
10) DA ------ Serial Data Input
11) TSA,B --- Test pin
12) CS ------ Chip Select Input pin
13) RESET --- Reset Input
14) OSC ----- Pin for self-oscillation
15) Solder composition is Sn-3Ag-0.5Cu.
16) 17G,18G ----- Grid
17) Q17G,Q18G ----- Driver Output Port.
18) Field of vision is a minimum of 21.8° from the lower side.

GRID ASSIGNMENT



ANODE CONNECTION

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G	13G	14G	15G	16G	17G (AD3)	18G (AD4)
D0	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	S9	-
D1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	3d	-
D2	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	2d	-
D3	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	3e	-
D4	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	2e	-
D5	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	3c	-
D6	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2c	-
D7	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3g	-
D8	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	2g	-
D9	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	3f	-
D10	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	2f	-
D11	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	3b	-
D12	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	2b	-
D13	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	3a	-
D14	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	2a	-
D15	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	Dp	-
D16	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	dB	-
D17	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	1d	-
D18	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	1e	-
D19	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	1c	-
D20	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1g	-
D21	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	1f	-
D22	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	1b	-
D23	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	1a	AUTO
D24	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	S1	HDMI
D25	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	S2	DGTAL
D26	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	S3	ANALOG
D27	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	S4	S.BACK
D28	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	S5	DC
D29	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	S6	dts
D30	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	S7	AUDYSSEY
D31	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	S8	TUNED
D32	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	MUTE	STEREO
D33	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	PCM	RDS
D34	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	Z2	SLEEP
AD1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DIG.	-
AD2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ANA.	-

PARTS LIST OF P.C.B. UNIT

∗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.
E3 : U.S.A. & Canada model E2 : Europe modelE1C : China model

FRONT PCB UNIT ASS'Y

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
SEMICONDUCTORS GROUP							
	IC102	943239005300M	OPAMPBA4560RF-E2		HVIBA4560RF		
	Q1001	943219006820S	TR KTC1027Y		CVTKTC1027YT		
	Q1003,1004	943214500020S	T.R,2SC3052		CVT2SC3052		
	Q1005	00MHT600141B1	TR KTA1271Y		HVTKTA1271YT		
	Q1006	943216500020S	T.R,RT1N141C(10K-10K)		CVTRT1N141C		
	Q1008	943215500020S	T.R,RT1P141C(10K-10K)		CVTRT1P141C		
	Q1009	943216500020S	T.R,RT1N141C(10K-10K)		CVTRT1N141C		
	Q1011	943215500020S	T.R,RT1P141C(10K-10K)		CVTRT1P141C		
	Q1012	943216500020S	T.R,RT1N141C(10K-10K)		CVTRT1N141C		
	D1001,1002	00D9630328409	DIODE,RECTIFIERS		CVD1N4007ST		
	D1003	90M-HD302360R	DIODE,ZENER,1/2W,6.8V		CVDZJ6.8BT		
	D1004	00D9430087209	DIODE,ZENER,1/2W,24V		CVDZJ24BT		
	D1005	90M-HD302450R	DIODE,ZENER,1/2W,13V		CVDZJ13BT		
	D1012	943176010090S	L.E.D,(GREEN/RED5PI)		CVDBLBJEGJ204L		
RESISTORS GROUP							
	R1001	nsp	RES,CARBON(1/5W,1.8ohm,J)		CRD20TJ1R8T		
	R1004	nsp	RES,CARBON(1/5W,1.8ohm,J)		CRD20TJ1R8T		
	R1005,1006	00MNN05221610	RES,CHIP(1608/5%/220ohm)		CRJ10DJ221T		
	R1007	00MGD05103160	RES,CARBON(1/5W,10Kohm,J)		CRD20TJ103T		
	R1008,1009	00MNN05221610	RES,CHIP(1608/5%/220ohm)		CRJ10DJ221T		
	R1010	00MNN05393610	RES,CHIP(1608/5%/39Kohm)		CRJ10DJ393T		
	R1012-1015	00MNN05101610	RES,CHIP(1608/5%/100ohm)		CRJ10DJ101T		
	R1016,1017	00MNN05104610	RES,CHIP(1608/5%/100Kohm)		CRJ10DJ104T		
	R1018,1019	00MNN05101610	RES,CHIP(1608/5%/100ohm)		CRJ10DJ101T		
	R1020	00MNN05332610	RES,CHIP(1608/5%/3.3Kohm)		CRJ10DJ332T		
	R1021	00MNN05102610	RES,CHIP(1608/5%/1Kohm)		CRJ10DJ102T		
	R1024	nsp	RES,CHIP(1608/5%/10Kohm)		CRJ10DJ103T		
	R1025,1026	00MNN05393610	RES,CHIP(1608/5%/39Kohm)		CRJ10DJ393T		
	R1030	00MNN05100610	RES,CHIP(1608/5%/10ohm)		CRJ10DJ100T		
	R1041,1042	00MNN05122610	RES,CHIP(1608/5%/1.2Kohm)		CRJ10DJ122T		
	R1043	nsp	RES,CHIP(1608/5%/4.7Kohm)		CRJ10DJ472T		
	R1045,1046	00MNN05104610	RES,CHIP(1608/5%/100Kohm)		CRJ10DJ104T		
	R1047,1048	00MNN05471610	RES,CHIP(1608/5%/470ohm)		CRJ10DJ471T		
	R1049-1052	00MNN05104610	RES,CHIP(1608/5%/100Kohm)		CRJ10DJ104T		
	R1053	00MNN05100610	RES,CHIP(1608/5%/10ohm)		CRJ10DJ100T		
	R1055,1056	00MNN05470610	RES,CHIP(1608/5%/47ohm)		CRJ10DJ470T		
	R1057	00MNN05471610	RES,CHIP(1608/5%/470ohm)		CRJ10DJ471T		
	R1058,1059	00MNN05102610	RES,CHIP(1608/5%/1Kohm)		CRJ10DJ102T		
	R1060,1061	nsp	RES,CHIP(1608/5%/10Kohm)		CRJ10DJ103T		
	R1065	nsp	RES,CHIP(1608/5%/0ohm)		CRJ10DJ0R0T		
	R1066	943124500040S	RES,M-OXIDEFILM(1W/4.7ohm)		CRG1SANJ4R7RT		
	R1067	00MNN05100610	RES,CHIP(1608/5%/10ohm)		CRJ10DJ100T		
	R1068	nsp	RES,CHIP(1608/5%/0ohm)		CRJ10DJ0R0T		
	R1069	00MNN05102610	RES,CHIP(1608/5%/1Kohm)		CRJ10DJ102T		
	R1071	00MNN05102610	RES,CHIP(1608/5%/1Kohm)		CRJ10DJ102T		
	R1072	00MNN05152610	RES,CHIP(1608/5%/1.5Kohm)		CRJ10DJ152T		
	R1073	00MNN05102610	RES,CHIP(1608/5%/1Kohm)		CRJ10DJ102T		
	R1074	00MNN05152610	RES,CHIP(1608/5%/1.5Kohm)		CRJ10DJ152T		
	R1075	00MNN05272610	RES,CHIP(1608/5%/2.7Kohm)		CRJ10DJ272T		
	R1076	00MNN05102610	RES,CHIP(1608/5%/1Kohm)		CRJ10DJ102T		
	R1077	00MNN05152610	RES,CHIP(1608/5%/1.5Kohm)		CRJ10DJ152T		
	R1078	00MNN05272610	RES,CHIP(1608/5%/2.7Kohm)		CRJ10DJ272T		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
CAPACITORS GROUP							
	C1002	nsp	CAP,MYLAR(100V/0.1uF/J)		HCQI1H104JZT		
	C1003	nsp	CAP,ELECT(50V/10uF)-S		CCEA1HKS100T		
	C1004	943134010530S	CAP,ELECT(50V/1uF)		CCEA1HH1R0T		
	C1005	00MOA22706320	CAP,ELECT(63V/220uF)		CCEA1JH221E		
	C1006	943134010530S	CAP,ELECT(50V/1uF)		CCEA1HH1R0T		
	C1007	nsp	CAP,METAL-FILM(100V/0.047uF)		CCME2A473JXT		
	C1009	nsp	CAP,CHIP(2012,50V/0.1uF)		CCUC1H104KC		
	C1010	00D9430175108	CAP,ELECT(50V/10uF)		CCEA1HH100T		
	C1011	nsp	CAP, CHIP(1608, 25V/1uF)		CCUS1E105ZF		
	C1013,1014	nsp	CAP,CHIP(1608,50V/100pF)		CCUS1H101JA		
	C1015	nsp	CAP,CHIP(1608,50V/330pF)		CCUS1H331JA		
	C1016	nsp	CAP,CHIP(1608,50V/1000pF)		CCUS1H102KC		
	C1017	nsp	CAP,METAL-FILM(100V/0.047uF)		CCME2A473JXT		
	C1019	00D9430175108	CAP,ELECT(50V/10uF)		CCEA1HH100T		
	C1020	nsp	CAP,CHIP(1608,50V/0.01uF)		CCUS1H103KC		
	C1038	943134010670S	CAP,ELECT(16V/47uF)-S		CCEA1CKS470T		
	C1039	nsp	CAP,CHIP(1608,50V/100pF)		CCUS1H101JA		
	C1042	nsp	CAP,ELECT(50V/10uF)-S		CCEA1HKS100T		
	C1043,1044	nsp	CAP,CHIP(1608,50V/220pF)		CCUS1H221JA		
	C1046,1047	nsp	CAP, CHIP(1608, 25V/1uF)		CCUS1E105ZF		
	C1054,1055	nsp	CAP, CHIP(1608, 25V/1uF)		CCUS1E105ZF		
	C1058-1060	nsp	CAP,ELECT(50V/10uF)-S		CCEA1HKS100T		
	C1061,1062	nsp	CAP,CHIP(1608,50V/330pF)		CCUS1H331JA		
	C1063,1064	nsp	CAP, CHIP(1608, 25V/1uF)		CCUS1E105ZF		
	C1065	943134010530S	CAP,ELECT(50V/1uF)		CCEA1HH1R0T		
	C1066	nsp	CAP, CHIP(1608, 25V/1uF)		CCUS1E105ZF		
	C1067	943134010530S	CAP,ELECT(50V/1uF)		CCEA1HH1R0T		
	C1068	nsp	CAP, CHIP(1608, 25V/1uF)		CCUS1E105ZF		
	C1071,1072	nsp	CAP,CHIP(1608,50V/220pF)		CCUS1H221JA		
	C1073	nsp	CAP, CHIP(1608, 25V/1uF)		CCUS1E105ZF		
	C1076,1077	nsp	CAP,CHIP(1608,50V/0.01uF)		CCUS1H103KC		
	C1081	nsp	CAP, CHIP(1608, 25V/1uF)		CCUS1E105ZF		
	C1410,1411	943134010530S	CAP,ELECT(50V/1uF)		CCEA1HH1R0T		
	C1424	nsp	CAP, CHIP(1608, 25V/1uF)		CCUS1E105ZF		
OTHERS PARTS GROUP							
	BK101,102	nsp	BRACKET,FIP		CMD1A572		
	BK103	nsp	PCB BRACKET		CMD1A629		
	BN103	nsp	WIRE ASS'Y		CWB1B005050HC		*
	BN11A	nsp	WIRE ASS'Y		CWB1B005080CC		*
	BN13A	nsp	WIRE ASS'Y		CWB1B003080CC		
	CN101	nsp	WAFER,FPC1.25mm,angle		CJP23GB286ZN		
	CN102	nsp	WAFER , 2.5MM ANGLE		CJP07GB03ZY		
	CN103	nsp	LOCK-WAFER/ANGLE/2MMPITCH/5PIN		CJP05GJ288ZY		
	CN104	nsp	LOCK-WAFER/STRAIGHT/2MMPITCH/3PIN		CJP03GI288ZY		*
⚠	F1001	943652000620S	FUSE(372Series/100mA/TR5)		CBA2D0100A3EYT		
	FL101	943172100150S	V.F.D(FUTABA,18-BT-02GINK)		CFL18BT021GINK		*
	JK102	00D9430105204	JACK,HEADPHONE(SILVER)		HJJ2D003Y		
	JK104	90M-YT004500R	JACK,PHONES(6.35mm,SILVER)		CJJ2E026Z		
	L1001	nsp	FERRITE , CHIP BEAD(60ohm, 1608)		CLZ9R005Z		
	L6007	nsp	FERRITE , CHIP BEAD(60ohm, 1608)		CLZ9R005Z		
	L6008	nsp	RES,CHIP(1608/5%/0ohm)		CRJ10DJ0R0T		
	LUG11	nsp	WIRE ASS'Y		CWE8102100RV		
	LUG13	nsp	WIRE ASS'Y		CWE8102180RV		
	RC101	943262100140S	SENSOR,REMOCON(37.9KHz)		CRVHM238RT12		*

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	SW101-111	90M-SP001400R	SW,TACT		CST1A023ZT		
	VR101	943671010330S	ENCODER(16MM,24PULSES),W/CLICK		CSR2A055Z		

POWER PCB UNIT ASS'Y

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
SEMICONDUCTORS GROUP							
	IC201	00D2630801004	I.C,REGULATOR		HVINJM7812FA		
	IC202	00D2630641002	I.C,REGULATOR		HVINJM7912FA		
	IC203	231010031706S	REGULATOR (5V OUTPUT LOW DROP)		HVIKIA278R05PI		
	IC204	00D2631162014	REGULATOR (5V OUTPUT LOW DROP)		HVIKIA78R05PI		
	Q2001	00MHT30001000	TR KTC3199Y		HVTKTC3199YT		
	Q2002	963216500060S	T.R,RT1N144C(10K-47K)	E3	CVTRT1N144C		
	Q2003	00MHT30001000	TR KTC3199Y		HVTKTC3199YT		
	D2001-2004	00D9630328409	DIODE,RECTIFIERS		CVD1N4007ST		
	D2006	00D9430182609	DIODE,SWITCHING		CVD1SS133MT		
	D2008	00D9430182609	DIODE,SWITCHING		CVD1SS133MT		
	D2009	943203003170S	DIODE,BRIDGE		HVDGBJ606		
	D2031	00D9430182609	DIODE,SWITCHING		CVD1SS133MT		
	D2032-2037	00D9630328409	DIODE,RECTIFIERS		CVD1N4007ST		
	D2038	00D9430182609	DIODE,SWITCHING		CVD1SS133MT		
RESISTORS GROUP							
⚠	R2001-2004	943125500050S	RES,METALFILM1W5%(SMALL,PILKOR)		CRG1SANJR47RTP		*
⚠	R2005-2008	943125500020S	RES,METALFILM1W5%		CRG1SANJR22RTP		
	R2031	nsp	RES,M-OXIDEFILM(1W/120ohm)		CRG1SANJ121RT		
	R2032	nsp	RES,CHIP(1608/5%/4.7Kohm)		CRJ10DJ472T		
	R2033	nsp	RES,CHIP(1608/5%/10Kohm)		CRJ10DJ103T		
	R2034	00MNN05203610	RES,CHIP(1608/5%/20Kohm)		CRJ10DJ203T		
	R2035	nsp	RES,CHIP(1608/5%/4.7Kohm)		CRJ10DJ472T		
	R2036	nsp	RES,CARBON(1/4W,22ohm,J)		CRD25TJ220T		
	R2037	00MNN05473610	RES,CHIP(1608/5%/47Kohm)		CRJ10DJ473T		
CAPACITORS GROUP							
	C2002	943134010470S	CAP,ELECT(50V/0.1uF)		CCEA1HH0R1T		
	C2003-2008	nsp	CAP,METAL-FILM(100V/0.047uF)		CCME2A473JXT		
	C2009	943134010620S	CAP,ELECT(25V/4700uF)		CCEA1EH472E		
	C2013	00D9430103905	CAP,ELECT(16V/470uF)		CCEA1CH471T		
	C2014	943134001290S	CAP,ELECT(25V/2200uF)		CCEA1EH222E		
	C2017	00D9430062101	CAP,ELECT(16V/100uF)		CCEA1CH101T		
	C2018	943134010600S	CAP,ELECT(16V/3300uF)		CCEA1CH332E		
	C2021	00D9430062101	CAP,ELECT(16V/100uF)		CCEA1CH101T		
	C2031	nsp	CAP,CHIP(1608,50V/0.01uF)		CCUS1H103KC		
	C2032	00D9430062101	CAP,ELECT(16V/100uF)		CCEA1CH101T		
	C2033	nsp	CAP,CHIP(1608,50V/0.01uF)		CCUS1H103KC		
	C2034	943134010600S	CAP,ELECT(16V/3300uF)		CCEA1CH332E		
	C2035	943134010470S	CAP,ELECT(50V/0.1uF)		CCEA1HH0R1T		
	C2036	943134010530S	CAP,ELECT(50V/1uF)		CCEA1HH1R0T		
	C2037	nsp	CERAMIC CAP 0.022uF 50V ZF		CCFT1H223ZF		
⚠	C2039	943132500020S	CAP,CERAMIC(400VY-CAP)		CCKDHS222ME		
OTHERS PARTS GROUP							
	BK201,202	nsp	BRACKET,PCB(A)		CMD2A188		
	BK204,205	nsp	BRACKET,PCB		CMD1A569		
	CN201	nsp	WAFER/STRAIGHT/2.5mm/7P		CJP07GA01ZY		
	CN202	nsp	LOCK-WAFER/STRAIGHT/2MMPITCH/13PIN		CJP13GI288ZY		
	CN203	nsp	WAFER,2P,3.96mm		CJP02KA060ZY		
	CN204	nsp	WAFER,2P,7.92mm		CJP02GA89ZY		
	CN205	nsp	LOCK-WAFER/STRAIGHT/2MMPITCH/5PIN		CJP05GI288ZY		*
	ET201	nsp	PALTE,EARTH		HJT1A025		
⚠	F2001	90M-FS001430R	FUSE(218Series,250V/6.3A)		KBA2C6300TLEY		
⚠	RY201	943682004660S	RELAY,G5PA-1,DC6V,1C1P		CSL1E002ZE		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
⚠	T2001	943101101210S	TRANS,SUB(6.9V,65mA)	E3	CLT5I022YU		
⚠	T2001	943101101220S	TRANS,SUB(6.9V,65mA)	E2	CLT5I022YE		
⚠	T2001	943101101200S	TRANS,SUB(6.9V,65mA)	E1C	CLT5I022YH		
	ZD201	90M-HD302440R	DIODE,ZENER,1/2W,4.7V		CVDZJ4.7BT		
	ZD202	943202008160S	DIODE,ZENER,1/2W,12V	E3	CVDZJ12BT		

MAIN PCB UNIT ASS'Y

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
SEMICONDUCTORS GROUP							
	Q5101,5102	943211500150S	PNP,TO-92,LOWNOISE,HFE:300-600,FAILCHILD		CVTKSA992FTA		*
	Q5103	943213500150S	NPN,TO-92,LOWNOISE,HFE:300-600,FAILCHILD		CVTKSC1845FTA		*
	Q5104	90M-HT800120R	TR KTC3114A		HVTKTC3114A		
	Q5105	90M-HT400490R	T.R,POWER		HVT2SD2390		
	Q5106	90M-HT200440R	T.R,POWER		HVT2SB1560		
	Q5107	943212500020S	HighVoltagePNPTransistors(SOT-23)		CVTMMBT5401		
	Q5108	943214500040S	HighVoltageNPNTransistors(SOT-23)		CVTMMBT5551		
	Q5201,5202	943211500150S	PNP,TO-92,LOWNOISE,HFE:300-600,FAILCHILD		CVTKSA992FTA		*
	Q5203	943213500150S	NPN,TO-92,LOWNOISE,HFE:300-600,FAILCHILD		CVTKSC1845FTA		*
	Q5204	90M-HT800120R	TR KTC3114A		HVTKTC3114A		
	Q5205	90M-HT400490R	T.R,POWER		HVT2SD2390		
	Q5206	90M-HT200440R	T.R,POWER		HVT2SB1560		
	Q5207	943212500020S	HighVoltagePNPTransistors(SOT-23)		CVTMMBT5401		
	Q5208	943214500040S	HighVoltageNPNTransistors(SOT-23)		CVTMMBT5551		
	Q5301,5302	943211500150S	PNP,TO-92,LOWNOISE,HFE:300-600,FAILCHILD		CVTKSA992FTA		*
	Q5303	943213500150S	NPN,TO-92,LOWNOISE,HFE:300-600,FAILCHILD		CVTKSC1845FTA		*
	Q5304	90M-HT800120R	TR KTC3114A		HVTKTC3114A		
	Q5305	90M-HT400490R	T.R,POWER		HVT2SD2390		
	Q5306	90M-HT200440R	T.R,POWER		HVT2SB1560		
	Q5307	943212500020S	HighVoltagePNPTransistors(SOT-23)		CVTMMBT5401		
	Q5308	943214500040S	HighVoltageNPNTransistors(SOT-23)		CVTMMBT5551		
	Q5401,5402	943211500150S	PNP,TO-92,LOWNOISE,HFE:300-600,FAILCHILD		CVTKSA992FTA		*
	Q5403	943213500150S	NPN,TO-92,LOWNOISE,HFE:300-600,FAILCHILD		CVTKSC1845FTA		*
	Q5404	90M-HT800120R	TR KTC3114A		HVTKTC3114A		
	Q5405	90M-HT400490R	T.R,POWER		HVT2SD2390		
	Q5406	90M-HT200440R	T.R,POWER		HVT2SB1560		
	Q5407	943212500020S	HighVoltagePNPTransistors(SOT-23)		CVTMMBT5401		
	Q5408	943214500040S	HighVoltageNPNTransistors(SOT-23)		CVTMMBT5551		
	Q5501,5502	943211500150S	PNP,TO-92,LOWNOISE,HFE:300-600,FAILCHILD		CVTKSA992FTA		*
	Q5503	943213500150S	NPN,TO-92,LOWNOISE,HFE:300-600,FAILCHILD		CVTKSC1845FTA		*
	Q5504	90M-HT800120R	TR KTC3114A		HVTKTC3114A		
	Q5505	90M-HT400490R	T.R,POWER		HVT2SD2390		
	Q5506	90M-HT200440R	T.R,POWER		HVT2SB1560		
	Q5507	943212500020S	HighVoltagePNPTransistors(SOT-23)		CVTMMBT5401		
	Q5508	943214500040S	HighVoltageNPNTransistors(SOT-23)		CVTMMBT5551		
	Q5601-5604	943213500160S	T.R,RT1N237C(2.2K-47K)		CVTRT1N237C		*
	Q5701	943212500020S	HighVoltagePNPTransistors(SOT-23)		CVTMMBT5401		
	Q5702	943211500150S	PNP,TO-92,LOWNOISE,HFE:300-600,FAILCHILD		CVTKSA992FTA		*
	Q5703	943214500040S	HighVoltageNPNTransistors(SOT-23)		CVTMMBT5551		
	Q5704	943212500020S	HighVoltagePNPTransistors(SOT-23)		CVTMMBT5401		
	Q5705,5706	943214500040S	HighVoltageNPNTransistors(SOT-23)		CVTMMBT5551		
	Q5707	943212500020S	HighVoltagePNPTransistors(SOT-23)		CVTMMBT5401		
	Q5708	943214500040S	HighVoltageNPNTransistors(SOT-23)		CVTMMBT5551		
	D5102	90M-HD302390R	DIODE,ZENER,1/2W,3.3V		CVDZJ3.3BT		
	D5103	00D9430182609	DIODE,SWITCHING		CVD1SS133MT		
	D5104	90M-HD302390R	DIODE,ZENER,1/2W,3.3V		CVDZJ3.3BT		
	D5105,5106	00D9430182609	DIODE,SWITCHING		CVD1SS133MT		
	D5202	90M-HD302390R	DIODE,ZENER,1/2W,3.3V		CVDZJ3.3BT		
	D5203	00D9430182609	DIODE,SWITCHING		CVD1SS133MT		
	D5204	90M-HD302390R	DIODE,ZENER,1/2W,3.3V		CVDZJ3.3BT		
	D5205,5206	00D9430182609	DIODE,SWITCHING		CVD1SS133MT		
	D5302	90M-HD302390R	DIODE,ZENER,1/2W,3.3V		CVDZJ3.3BT		
	D5303	00D9430182609	DIODE,SWITCHING		CVD1SS133MT		
	D5304	90M-HD302390R	DIODE,ZENER,1/2W,3.3V		CVDZJ3.3BT		
	D5305,5306	00D9430182609	DIODE,SWITCHING		CVD1SS133MT		
	D5402	90M-HD302390R	DIODE,ZENER,1/2W,3.3V		CVDZJ3.3BT		
	D5403	00D9430182609	DIODE,SWITCHING		CVD1SS133MT		
	D5404	90M-HD302390R	DIODE,ZENER,1/2W,3.3V		CVDZJ3.3BT		
	D5405,5406	00D9430182609	DIODE,SWITCHING		CVD1SS133MT		
	D5502	90M-HD302390R	DIODE,ZENER,1/2W,3.3V		CVDZJ3.3BT		
	D5503	00D9430182609	DIODE,SWITCHING		CVD1SS133MT		
	D5504	90M-HD302390R	DIODE,ZENER,1/2W,3.3V		CVDZJ3.3BT		
	D5505,5506	00D9430182609	DIODE,SWITCHING		CVD1SS133MT		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	D5601-5604	00D9430182609	DIODE,SWITCHING		CVD1SS133MT		
	D5701	943203002640S	DIODE,BRIDGE		HVDGBJ806		
	D5703	90M-HD302360R	DIODE,ZENER,1/2W,6.8V		CVDZJ6.8BT		
	D5704	00D9430182609	DIODE,SWITCHING		CVD1SS133MT		
RESISTORS GROUP							
	R5101	00MGD05104160	RES,CARBON(1/5W,100Kohm,J)		CRD20TJ104T		
	R5102	00MGD05681160	RES,CARBON(1/5W,680ohm,J)		CRD20TJ681T		
	R5103	00MGD05103160	RES,CARBON(1/5W,10Kohm,J)		CRD20TJ103T		
	R5104	00MGD05183160	RES,CARBON(1/5W,18Kohm,J)		CRD20TJ183T		
	R5105	00MGD05122160	RES,CARBON(1/5W,1.2Kohm,J)		CRD20TJ122T		
	R5106	nsp	RES,M-OXIDEFILM(1W/1.2Kohm)		CRG1SANJ122RT		
	R5107	00MGD05221160	RES,CARBON(1/5W,220ohm,J)		CRD20TJ221T		
	R5108	00MGD05474160	RES,CARBON(1/5W,470Kohm,J)		CRD20TJ474T		
	R5109	00MGD05333160	RES,CARBON(1/5W,33Kohm,J)		CRD20TJ333T		
	R5110	nsp	RES,M-OXIDEFILM(1W/47ohm)		CRG1SANJ470RT		
	R5111,5112	00MGD05224160	RES,CARBON(1/5W,220Kohm,J)		CRD20TJ224T		
	R5113	00MGD05272160	RES,CARBON(1/5W,2.7Kohm,J)		CRD20TJ272T		
	R5114	00MGD05561160	RES,CARBON(1/5W,560ohm,J)		CRD20TJ561T		
	R5115,5116	nsp	RES,M-OXIDEFILM(1W/5.6Kohm)		CRG1SANJ562RT		
	R5117,5118	943124500040S	RES,M-OXIDEFILM(1W/4.7ohm)		CRG1SANJ4R7RT		
	R5119-5122	943124500050S	RES,M-OXIDEFILM(2W/0.47ohm)		CRG2SANJR47RT		
	R5123	00MGD05474160	RES,CARBON(1/5W,470Kohm,J)		CRD20TJ474T		
	R5124	00MGD05274160	RES,CARBON(1/5W,270Kohm,J)		CRD20TJ274T		
	R5125	00MGD05103160	RES,CARBON(1/5W,10Kohm,J)		CRD20TJ103T		
⚠	R5126	943252100130S	PTCTHEMISTORS,CHIP(95C)		CRTB59641A0095		*
	R5127	00MGD05562160	RES,CARBON(1/5W,5.6Kohm,J)		CRD20TJ562T		
	R5129	00MGD05153160	RES,CARBON(1/5W,15Kohm,J)		CRD20TJ153T		
	R5130,5131	00MGD05223160	RES,CARBON(1/5W,22Kohm,J)		CRD20TJ223T		
	R5132	nsp	RES,M-OXIDEFILM(1W/10ohm)		CRG1SANJ100RT		
	R5201	00MGD05104160	RES,CARBON(1/5W,100Kohm,J)		CRD20TJ104T		
	R5202	00MGD05681160	RES,CARBON(1/5W,680ohm,J)		CRD20TJ681T		
	R5203	00MGD05103160	RES,CARBON(1/5W,10Kohm,J)		CRD20TJ103T		
	R5204	00MGD05183160	RES,CARBON(1/5W,18Kohm,J)		CRD20TJ183T		
	R5205	00MGD05122160	RES,CARBON(1/5W,1.2Kohm,J)		CRD20TJ122T		
	R5206	nsp	RES,M-OXIDEFILM(1W/1.2Kohm)		CRG1SANJ122RT		
	R5207	00MGD05221160	RES,CARBON(1/5W,220ohm,J)		CRD20TJ221T		
	R5208	00MGD05474160	RES,CARBON(1/5W,470Kohm,J)		CRD20TJ474T		
	R5209	00MGD05333160	RES,CARBON(1/5W,33Kohm,J)		CRD20TJ333T		
	R5210	nsp	RES,M-OXIDEFILM(1W/47ohm)		CRG1SANJ470RT		
	R5211,5212	00MGD05224160	RES,CARBON(1/5W,220Kohm,J)		CRD20TJ224T		
	R5213	00MGD05272160	RES,CARBON(1/5W,2.7Kohm,J)		CRD20TJ272T		
	R5214	00MGD05561160	RES,CARBON(1/5W,560ohm,J)		CRD20TJ561T		
	R5215,5216	nsp	RES,M-OXIDEFILM(1W/5.6Kohm)		CRG1SANJ562RT		
	R5217,5218	943124500040S	RES,M-OXIDEFILM(1W/4.7ohm)		CRG1SANJ4R7RT		
	R5219-5222	943124500050S	RES,M-OXIDEFILM(2W/0.47ohm)		CRG2SANJR47RT		
	R5223	00MGD05474160	RES,CARBON(1/5W,470Kohm,J)		CRD20TJ474T		
	R5224	00MGD05274160	RES,CARBON(1/5W,270Kohm,J)		CRD20TJ274T		
	R5225	00MGD05103160	RES,CARBON(1/5W,10Kohm,J)		CRD20TJ103T		
⚠	R5226	943252100130S	PTCTHEMISTORS,CHIP(95C)		CRTB59641A0095		*
	R5227	00MGD05562160	RES,CARBON(1/5W,5.6Kohm,J)		CRD20TJ562T		
	R5229	00MGD05153160	RES,CARBON(1/5W,15Kohm,J)		CRD20TJ153T		
	R5230,5231	00MGD05223160	RES,CARBON(1/5W,22Kohm,J)		CRD20TJ223T		
	R5232	nsp	RES,M-OXIDEFILM(1W/10ohm)		CRG1SANJ100RT		
	R5301	00MGD05104160	RES,CARBON(1/5W,100Kohm,J)		CRD20TJ104T		
	R5302	00MGD05681160	RES,CARBON(1/5W,680ohm,J)		CRD20TJ681T		
	R5303	00MGD05103160	RES,CARBON(1/5W,10Kohm,J)		CRD20TJ103T		
	R5304	00MGD05183160	RES,CARBON(1/5W,18Kohm,J)		CRD20TJ183T		
	R5305	00MGD05122160	RES,CARBON(1/5W,1.2Kohm,J)		CRD20TJ122T		
	R5306	nsp	RES,M-OXIDEFILM(1W/1.2Kohm)		CRG1SANJ122RT		
	R5307	00MGD05221160	RES,CARBON(1/5W,220ohm,J)		CRD20TJ221T		
	R5308	00MGD05474160	RES,CARBON(1/5W,470Kohm,J)		CRD20TJ474T		
	R5309	00MGD05333160	RES,CARBON(1/5W,33Kohm,J)		CRD20TJ333T		
	R5310	nsp	RES,M-OXIDEFILM(1W/47ohm)		CRG1SANJ470RT		
	R5311,5312	00MGD05224160	RES,CARBON(1/5W,220Kohm,J)		CRD20TJ224T		
	R5313	00MGD05272160	RES,CARBON(1/5W,2.7Kohm,J)		CRD20TJ272T		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	R5314	00MGD05561160	RES,CARBON(1/5W,560ohm,J)		CRD20TJ561T		
	R5315,5316	nsp	RES,M-OXIDEFILM(1W/5.6Kohm)		CRG1SANJ562RT		
	R5317,5318	943124500040S	RES,M-OXIDEFILM(1W/4.7ohm)		CRG1SANJ4R7RT		
	R5319-5322	943124500050S	RES,M-OXIDEFILM(2W/0.47ohm)		CRG2SANJR47RT		
	R5323	00MGD05474160	RES,CARBON(1/5W,470Kohm,J)		CRD20TJ474T		
	R5324	00MGD05274160	RES,CARBON(1/5W,270Kohm,J)		CRD20TJ274T		
	R5325	00MGD05103160	RES,CARBON(1/5W,10Kohm,J)		CRD20TJ103T		
⚠	R5326	943252100130S	PTCTHEMISTORS,CHIP(95C)		CRTB59641A0095		*
	R5327	00MGD05562160	RES,CARBON(1/5W,5.6Kohm,J)		CRD20TJ562T		
	R5329	00MGD05153160	RES,CARBON(1/5W,15Kohm,J)		CRD20TJ153T		
	R5330,5331	00MGD05223160	RES,CARBON(1/5W,22Kohm,J)		CRD20TJ223T		
	R5332	nsp	RES,M-OXIDEFILM(1W/10ohm)		CRG1SANJ100RT		
	R5401	00MGD05104160	RES,CARBON(1/5W,100Kohm,J)		CRD20TJ104T		
	R5402	00MGD05681160	RES,CARBON(1/5W,680ohm,J)		CRD20TJ681T		
	R5403	00MGD05103160	RES,CARBON(1/5W,10Kohm,J)		CRD20TJ103T		
	R5404	00MGD05183160	RES,CARBON(1/5W,18Kohm,J)		CRD20TJ183T		
	R5405	00MGD05122160	RES,CARBON(1/5W,1.2Kohm,J)		CRD20TJ122T		
	R5406	nsp	RES,M-OXIDEFILM(1W/1.2Kohm)		CRG1SANJ122RT		
	R5407	00MGD05221160	RES,CARBON(1/5W,220ohm,J)		CRD20TJ221T		
	R5408	00MGD05474160	RES,CARBON(1/5W,470Kohm,J)		CRD20TJ474T		
	R5409	00MGD05333160	RES,CARBON(1/5W,33Kohm,J)		CRD20TJ333T		
	R5410	nsp	RES,M-OXIDEFILM(1W/47ohm)		CRG1SANJ470RT		
	R5411,5412	00MGD05224160	RES,CARBON(1/5W,220Kohm,J)		CRD20TJ224T		
	R5413	00MGD05272160	RES,CARBON(1/5W,2.7Kohm,J)		CRD20TJ272T		
	R5414	00MGD05561160	RES,CARBON(1/5W,560ohm,J)		CRD20TJ561T		
	R5415,5416	nsp	RES,M-OXIDEFILM(1W/5.6Kohm)		CRG1SANJ562RT		
	R5417,5418	943124500040S	RES,M-OXIDEFILM(1W/4.7ohm)		CRG1SANJ4R7RT		
	R5419-5422	943124500050S	RES,M-OXIDEFILM(2W/0.47ohm)		CRG2SANJR47RT		
	R5423	00MGD05474160	RES,CARBON(1/5W,470Kohm,J)		CRD20TJ474T		
	R5424	00MGD05274160	RES,CARBON(1/5W,270Kohm,J)		CRD20TJ274T		
	R5425	00MGD05103160	RES,CARBON(1/5W,10Kohm,J)		CRD20TJ103T		
⚠	R5426	943252100130S	PTCTHEMISTORS,CHIP(95C)		CRTB59641A0095		*
	R5427	00MGD05562160	RES,CARBON(1/5W,5.6Kohm,J)		CRD20TJ562T		
	R5429	00MGD05153160	RES,CARBON(1/5W,15Kohm,J)		CRD20TJ153T		
	R5430,5431	00MGD05223160	RES,CARBON(1/5W,22Kohm,J)		CRD20TJ223T		
	R5432	nsp	RES,M-OXIDEFILM(1W/10ohm)		CRG1SANJ100RT		
	R5501	00MGD05104160	RES,CARBON(1/5W,100Kohm,J)		CRD20TJ104T		
	R5502	00MGD05681160	RES,CARBON(1/5W,680ohm,J)		CRD20TJ681T		
	R5503	00MGD05103160	RES,CARBON(1/5W,10Kohm,J)		CRD20TJ103T		
	R5504	00MGD05183160	RES,CARBON(1/5W,18Kohm,J)		CRD20TJ183T		
	R5505	00MGD05122160	RES,CARBON(1/5W,1.2Kohm,J)		CRD20TJ122T		
	R5506	nsp	RES,M-OXIDEFILM(1W/1.2Kohm)		CRG1SANJ122RT		
	R5507	00MGD05221160	RES,CARBON(1/5W,220ohm,J)		CRD20TJ221T		
	R5508	00MGD05474160	RES,CARBON(1/5W,470Kohm,J)		CRD20TJ474T		
	R5509	00MGD05333160	RES,CARBON(1/5W,33Kohm,J)		CRD20TJ333T		
	R5510	nsp	RES,M-OXIDEFILM(1W/47ohm)		CRG1SANJ470RT		
	R5511,5512	00MGD05224160	RES,CARBON(1/5W,220Kohm,J)		CRD20TJ224T		
	R5513	00MGD05272160	RES,CARBON(1/5W,2.7Kohm,J)		CRD20TJ272T		
	R5514	00MGD05561160	RES,CARBON(1/5W,560ohm,J)		CRD20TJ561T		
	R5515,5516	nsp	RES,M-OXIDEFILM(1W/5.6Kohm)		CRG1SANJ562RT		
	R5517,5518	943124500040S	RES,M-OXIDEFILM(1W/4.7ohm)		CRG1SANJ4R7RT		
	R5519-5522	943124500050S	RES,M-OXIDEFILM(2W/0.47ohm)		CRG2SANJR47RT		
	R5523	00MGD05474160	RES,CARBON(1/5W,470Kohm,J)		CRD20TJ474T		
	R5524	00MGD05274160	RES,CARBON(1/5W,270Kohm,J)		CRD20TJ274T		
	R5525	00MGD05103160	RES,CARBON(1/5W,10Kohm,J)		CRD20TJ103T		
⚠	R5526	943252100130S	PTCTHEMISTORS,CHIP(95C)		CRTB59641A0095		*
	R5527	00MGD05562160	RES,CARBON(1/5W,5.6Kohm,J)		CRD20TJ562T		
	R5529	00MGD05153160	RES,CARBON(1/5W,15Kohm,J)		CRD20TJ153T		
	R5530,5531	00MGD05223160	RES,CARBON(1/5W,22Kohm,J)		CRD20TJ223T		
	R5532	nsp	RES,M-OXIDEFILM(1W/10ohm)		CRG1SANJ100RT		
	R5701	00MGD05103160	RES,CARBON(1/5W,10Kohm,J)		CRD20TJ103T		
	R5702	00MGD05223160	RES,CARBON(1/5W,22Kohm,J)		CRD20TJ223T		
	R5703	943124500040S	RES,M-OXIDEFILM(1W/4.7ohm)		CRG1SANJ4R7RT		
	R5704	nsp	RES,M-OXIDEFILM(1W/100ohm)		CRG1SANJ101RT		
	R5705	00MGD05104160	RES,CARBON(1/5W,100Kohm,J)		CRD20TJ104T		
	R5706	00MGD05103160	RES,CARBON(1/5W,10Kohm,J)		CRD20TJ103T		
	R5707	00MGD05104160	RES,CARBON(1/5W,100Kohm,J)		CRD20TJ104T		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	R5708	00MGD05153160	RES,CARBON(1/5W,15Kohm,J)		CRD20TJ153T		
	R5711	00MGD05122160	RES,CARBON(1/5W,1.2Kohm,J)		CRD20TJ122T		
	R5712,5713	00MGD05222160	RES,CARBON(1/5W,2.2Kohm,J)		CRD20TJ222T		
	R5715-5717	nsp	RES,M-OXIDEFILM(1W/2.2Kohm)		CRG1SANJ222RT		
	R5721-5725	nsp	RES,M-OXIDEFILM(1W/10ohm)		CRG1SANJ100RT		
	R5726,5727	nsp	RES,M-OXIDEFILM(2W/470ohm)		CRG2SANJ471RT		
	VR510	963161012400S	RES,SEMIFIXED(1K,BCURVE)		CVN1RA102B03T		
	VR520	963161012400S	RES,SEMIFIXED(1K,BCURVE)		CVN1RA102B03T		
	VR530	963161012400S	RES,SEMIFIXED(1K,BCURVE)		CVN1RA102B03T		
	VR540	963161012400S	RES,SEMIFIXED(1K,BCURVE)		CVN1RA102B03T		
	VR550	963161012400S	RES,SEMIFIXED(1K,BCURVE)		CVN1RA102B03T		
CAPACITORS GROUP							
	C5101	943134500070S	CAP,ELECT(100V/10uF)		CCEA2AH100T		
	C5102	nsp	CAP,CERAMIC(50V/470pF/K)		CCKT1H471KB		
	C5103	nsp	CAP,CERAMIC(50V/82pF/J)		CCCT1H820JC		
	C5104	nsp	CAP,MYLAR(50V/2200pF/J)		HCQI1H222JZT		
	C5105	943134501770S	CAP,ELECT(50V/220uF)		CCEA1HH221T		*
	C5106	nsp	CAP,CERAMIC(50V/33pF/J)		CCCT1H330JC		
	C5107	943134500070S	CAP,ELECT(100V/10uF)		CCEA2AH100T		
	C5108	943134501780S	CAP,ELECT(KR1,47uF/63V,8X11.5)		CCEA1JKR1470T		*
	C5109	nsp	SEMICONDUCTOR CAP 0.1uF 50V ZF		CCFT1H104ZF		
	C5201	943134500070S	CAP,ELECT(100V/10uF)		CCEA2AH100T		
	C5202	nsp	CAP,CERAMIC(50V/470pF/K)		CCKT1H471KB		
	C5203	nsp	CAP,CERAMIC(50V/82pF/J)		CCCT1H820JC		
	C5204	nsp	CAP,MYLAR(50V/2200pF/J)		HCQI1H222JZT		
	C5205	943134501770S	CAP,ELECT(50V/220uF)		CCEA1HH221T		*
	C5206	nsp	CAP,CERAMIC(50V/33pF/J)		CCCT1H330JC		
	C5207	943134500070S	CAP,ELECT(100V/10uF)		CCEA2AH100T		
	C5208	943134501780S	CAP,ELECT(KR1,47uF/63V,8X11.5)		CCEA1JKR1470T		*
	C5209	nsp	SEMICONDUCTOR CAP 0.1uF 50V ZF		CCFT1H104ZF		
	C5301	943134500070S	CAP,ELECT(100V/10uF)		CCEA2AH100T		
	C5302	nsp	CAP,CERAMIC(50V/470pF/K)		CCKT1H471KB		
	C5303	nsp	CAP,CERAMIC(50V/82pF/J)		CCCT1H820JC		
	C5304	nsp	CAP,MYLAR(50V/2200pF/J)		HCQI1H222JZT		
	C5305	943134501770S	CAP,ELECT(50V/220uF)		CCEA1HH221T		*
	C5306	nsp	CAP,CERAMIC(50V/33pF/J)		CCCT1H330JC		
	C5307	943134500070S	CAP,ELECT(100V/10uF)		CCEA2AH100T		
	C5308	943134501780S	CAP,ELECT(KR1,47uF/63V,8X11.5)		CCEA1JKR1470T		*
	C5309	nsp	SEMICONDUCTOR CAP 0.1uF 50V ZF		CCFT1H104ZF		
	C5401	943134500070S	CAP,ELECT(100V/10uF)		CCEA2AH100T		
	C5402	nsp	CAP,CERAMIC(50V/470pF/K)		CCKT1H471KB		
	C5403	nsp	CAP,CERAMIC(50V/82pF/J)		CCCT1H820JC		
	C5404	nsp	CAP,MYLAR(50V/2200pF/J)		HCQI1H222JZT		
	C5405	943134501770S	CAP,ELECT(50V/220uF)		CCEA1HH221T		*
	C5406	nsp	CAP,CERAMIC(50V/33pF/J)		CCCT1H330JC		
	C5407	943134500070S	CAP,ELECT(100V/10uF)		CCEA2AH100T		
	C5408	943134501780S	CAP,ELECT(KR1,47uF/63V,8X11.5)		CCEA1JKR1470T		*
	C5409	nsp	SEMICONDUCTOR CAP 0.1uF 50V ZF		CCFT1H104ZF		
	C5501	943134500070S	CAP,ELECT(100V/10uF)		CCEA2AH100T		
	C5502	nsp	CAP,CERAMIC(50V/470pF/K)		CCKT1H471KB		
	C5503	nsp	CAP,CERAMIC(50V/82pF/J)		CCCT1H820JC		
	C5504	nsp	CAP,MYLAR(50V/2200pF/J)		HCQI1H222JZT		
	C5505	943134501770S	CAP,ELECT(50V/220uF)		CCEA1HH221T		*
	C5506	nsp	CAP,CERAMIC(50V/33pF/J)		CCCT1H330JC		
	C5507	943134500070S	CAP,ELECT(100V/10uF)		CCEA2AH100T		
	C5508	943134501780S	CAP,ELECT(KR1,47uF/63V,8X11.5)		CCEA1JKR1470T		*
	C5509	nsp	SEMICONDUCTOR CAP 0.1uF 50V ZF		CCFT1H104ZF		
	C5605,5606	nsp	CAP,MYLAR(50V/0.018pF/J)		HCQI1H183JZT		
	C5607,5608	nsp	CAP,MYLAR(50V/1500pF/J)		HCQI1H152JZT		
	C5609-5611	nsp	CAP,MYLAR(50V/0.018pF/J)		HCQI1H183JZT		
	C5612-5614	nsp	CAP,MYLAR(50V/1500pF/J)		HCQI1H152JZT		
	C5701	nsp	CERAMIC CAP 0.01uF 50V ZF		CCFT1H103ZF		
	C5702,5703	nsp	CAP,METALPEFILM(250V/0.1uF)		KCME2E104JP04T		
	C5704	943134010460S	CAP,ELECT(30X35)WITHOUTPLATEONTHETOP		CCET63VKL5682NKZ		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	C5706	943134010460S	CAP,ELECT(30X35)WITHOUTPLATEONTHETOP		CCET63VKL5682NKZ		
	C5707	943134010470S	CAP,ELECT(50V/0.1uF)		CCEA1HH0R1T		
	C5708	943134010480S	CAP,ELECT(100V/100uF)		CCEA2AH101E		
	C5710	nsp	SEMICONDUCTOR CAP 0.1uF 50V ZF		CCFT1H104ZF		
	C5711	943134010660S	CAP,ELECT(6.3V/470uF)		CCEA0JH471T		
	C5712	nsp	SEMICONDUCTOR CAP 0.1uF 50V ZF		CCFT1H104ZF		
	C5713	943134010660S	CAP,ELECT(6.3V/470uF)		CCEA0JH471T		
	C5716	963134010980S	CAP,ELECT(16V/47uF)		CCEA1CH470T		
	C5717	00D9430175108	CAP,ELECT(50V/10uF)		CCEA1HH100T		
	C5718-5722	nsp	CAP,MYLAR(50V/0.047uF/J)		HCQI1H473JZT		
	C5723	00D9430175108	CAP,ELECT(50V/10uF)		CCEA1HH100T		
OTHERS PARTS GROUP							
	BK501	nsp	BRACKET,PCB		CMD1A569		
	BN501	nsp	WIRE ASS'Y		CWB1B013150HC		*
	BN502	nsp	WIRE ASS'Y		CWB1B007150HC		*
	BN505	nsp	WIRE ASS'Y		CWB4B003250HC		*
	BN508	nsp	PINHEADER(11P,1.25mm,STRAIGHT,B-TO-B)		CJP11GI281Z		
	CN503	nsp	WAFER(3.96MM)		CJP03GA148ZW		
	CN510	nsp	WAFER/STRAIGHT/2.5mm/2P		CJP02GA01ZY		
	CN520	nsp	WAFER/STRAIGHT/2.5mm/2P		CJP02GA01ZY		
	CN530	nsp	WAFER/STRAIGHT/2.5mm/2P		CJP02GA01ZY		
	CN540	nsp	WAFER/STRAIGHT/2.5mm/2P		CJP02GA01ZY		
	CN550	nsp	WAFER/STRAIGHT/2.5mm/2P		CJP02GA01ZY		
	ET501	nsp	EARTH PALTE		HJT1A025		
	JK503	943643101580S	JACK,NOSPCC4PRR/BB(PUSH,94V-0)		CJJ5P014U		*
	JK504	943646010230S	JACK,NOSPCC6PRRR/BBB(PUSH,94V-0)		CJJ5R004U		
	L5101	943115100310S	COIL,SPEAKER(0.5UH)		CLEY0R5KAD		*
	L5201	943115100310S	COIL,SPEAKER(0.5UH)		CLEY0R5KAD		*
	L5301	943115100310S	COIL,SPEAKER(0.5UH)		CLEY0R5KAD		*
	L5401	943115100310S	COIL,SPEAKER(0.5UH)		CLEY0R5KAD		*
	L5501	943115100310S	COIL,SPEAKER(0.5UH)		CLEY0R5KAD		*
	RY560	943682000810S	RELAY,BC3-12H,DC12V,2C2P		CSL4A016ZU		
	RY562-564	943682100270S	RELAY,981-2A-12DS,DC12V,2C1P		CSL3A022ZU		*
	TU500	943183100230S	TUNER,FM(SCREW:FTYPE),AM,SI4730-D60	E3	CNVYST990-A9U0		*
	TU500	943183100240S	TUNER,RDS,FM(PALTYPE),AM,SI4731-D60	E2	CNVYST990-D5E0		*
	TU500	943183100250S	TUNER,NORDS,FM(PALTYPE),AM,SI4730-D60	E1C	CNVYST990-A2J0		*

DIGITAL PCB UNIT ASS'Y

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
SEMICONDUCTORS GROUP							
	IC11	943236012460S	I.C,HDMITransceiver(LQFP-144P)		CVIADV7623BSTZ		
	IC14	943248101030S	I.C, OSD Serial Flash(AVR1513)		CVIANAM1661AV		*
	IC15	943239010400S	I.C,REGULATOR(3.3V/TO-252)		CVINJM2845DL133		
	IC16	nsp	I.C,DC-DCCONVERTER(3A,QFNT&R-38P)		CVIEX3AV		
	IC51	nsp	I.C,HDMIBUFFER		CVIAD8195ACPZ		
	IC60	943231010390S	I.C,REGULATOR(+5V,T0220IS)		CVIKIA7805BPI		
	IC61	943235100520S	I.C,INPUTWITH8CHVOLUME(52PLQFP)		CVINJU72340AFH3		*
	IC62-64	00D2631289900	EOLitemI.C,OPAMP(DUAL/LOWNOISE)		CVIAZ4580MTR-E1		
	IC66,67	00D2630934900	ICBA4510F		HVIBA4510F		
	IC68	943231010390S	I.C,REGULATOR(+5V,T0220IS)		CVIKIA7805BPI		
	IC69	943239010400S	I.C,REGULATOR(3.3V/TO-252)		CVINJM2845DL133		
	IC71	90M-HC109700R	I.C,VIDEOS/W(JRC)		CVINJM2595MTE1		
	IC74	00D2631099006	I.C,REGULATOR(-5V,T0220IS)		CVIKIA7905PI		
	IC81	943245010410S	I.C,DSP(CIRRUSLOGIC)		CVICS497024CVZ		
	IC82	943248101040S	I.C, DSP Serial Flash(AVR1513)		CVIANAM1660AV		*
	IC83	943236101210S	I.C,16MBSDRAM(TSOP-50P)		CVIM12L16161A5TG2Q		*
	IC84	90M-HC110090R	I.C,CODEC+DIR(CIRRUSLOGIC)		HVICS42528-CQ		
	IC85	00D2623198902	I.C,QUAD2-CHANNELMUX(TSSOP-16)		HVITC74VHC157FT		
	IC91	943243100850S	I.C , MAIN MCU(AVR1513)		CVIANAM1659AV		*
	IC92	943246010440S	I.C,EEPROM(32Kbit)ST		CVIM24C32WMN6TP		
	IC95	943239010400S	I.C,REGULATOR(3.3V/TO-252)		CVINJM2845DL133		
	IC96	943182100150S	I.C,SYSTEMRESET(2.5V,SOT-25A)		CVIPST8425NR		*
	Q101	943215500020S	T.R,RT1P141C(10K-10K)		CVTRT1P141C		
	Q102	943216500040S	T.R,RT1N241C(22K-22K)		CVTRT1N241C		
	Q103	943215500020S	T.R,RT1P141C(10K-10K)		CVTRT1P141C		
	Q104	943216500040S	T.R,RT1N241C(22K-22K)		CVTRT1N241C		
	Q105	943215500020S	T.R,RT1P141C(10K-10K)		CVTRT1P141C		
	Q106	943216500040S	T.R,RT1N241C(22K-22K)		CVTRT1N241C		
	Q500	943215500020S	T.R,RT1P141C(10K-10K)		CVTRT1P141C		
	Q501	943216500040S	T.R,RT1N241C(22K-22K)		CVTRT1N241C		
	Q610	943214500030S	T.R,MUTE		CVTINC2001AC1		
	Q612	943215500030S	T.R,RT1P441C(47K-47K)		CVTRT1P441C		
	Q613	943216500050S	T.R,RT1N441C(47K-47K)		CVTRT1N441C		
	Q614	943215500030S	T.R,RT1P441C(47K-47K)		CVTRT1P441C		
	Q901	943214500020S	T.R,2SC3052		CVT2SC3052		
	Q903,904	943214500020S	T.R,2SC3052		CVT2SC3052		
	Q907	943214500020S	T.R,2SC3052		CVT2SC3052		
	Q910	943214500020S	T.R,2SC3052		CVT2SC3052		
	Q918	943214500040S	HighVoltageNPNTransistors(SOT-23)		CVTMMBT5551		
	Q919	943212500020S	HighVoltagePNPTransistors(SOT-23)		CVTMMBT5401		
	Q920	943214500040S	HighVoltageNPNTransistors(SOT-23)		CVTMMBT5551		
	D155	963209003510S	DIODE,RELIABLEESDPROTECTION		CVDCDS3C05HDMI1		
	D601,602	943209001080S	DIODE,CHIP,SWITCHING		CVD1SS355T		
	D605,606	00D9430196306	DIODE,ZENER,1/2W,7.5V		CVDZJ7.5BT		
	D609-611	943209001080S	DIODE,CHIP,SWITCHING		CVD1SS355T		
	D612	90M-HD302380R	DIODE,ZENER,1/2W,3.6V		CVDZJ3.6BT		
	D903	943209001080S	DIODE,CHIP,SWITCHING		CVD1SS355T		
RESISTORS GROUP							
	R101	nsp	RES,CHIP(1005/5%/1Kohm)		CRJ06IJ102T		
	R102	nsp	RES,CHIP(1005/5%/22Kohm)		CRJ06IJ223T		
	R103	nsp	RES,CHIP(1005/5%/0ohm)		CRJ06IJ0R0T		
	R104	nsp	RES,CHIP(1005/5%/47Kohm)		CRJ06IJ473T		
	R106	nsp	RES,CHIP(1005/5%/47Kohm)		CRJ06IJ473T		
	R107	nsp	RES,CHIP(1005/5%/1Kohm)		CRJ06IJ102T		
	R108	nsp	RES,CHIP(1005/5%/22Kohm)		CRJ06IJ223T		
	R109	nsp	RES,CHIP(1005/5%/47Kohm)		CRJ06IJ473T		
	R111	nsp	RES,CHIP(1005/5%/47Kohm)		CRJ06IJ473T		
	R112	nsp	RES,CHIP(1005/5%/1Kohm)		CRJ06IJ102T		
	R113	nsp	RES,CHIP(1005/5%/22Kohm)		CRJ06IJ223T		
	R114	nsp	RES,CHIP(1005/5%/47Kohm)		CRJ06IJ473T		

NOTE :
When update Firmware, please confirm a last version in SDI. Use the service board after updating it.

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	R116	nsp	RES,CHIP(1005/5%/47Kohm)		CRJ06IJ473T		
	R122	nsp	RES,CHIP(1608/1%/1.6Kohm)		CRJ10DF1601T		
	R123	nsp	RES,CHIP(1608/1%/2Kohm)		CRJ10DF2001T		
	R125	nsp	RES,CHIP(1005/5%/47Kohm)		CRJ06IJ473T		
	R127	nsp	RES,CHIP(1005/5%/47Kohm)		CRJ06IJ473T		
	R129-131	nsp	RES,CHIP(1005/5%/4.7Kohm)		CRJ06IJ472T		
	R132	nsp	RES,CHIP(1005/5%/100ohm)		CRJ06IJ101T		
	R137	nsp	RES,CHIP(1005/5%/1Kohm)		CRJ06IJ102T		
	R140	nsp	RES,CHIP(1005/5%/10Kohm)		CRJ06IJ103T		
	R141	nsp	RES,CHIP(1608/5%/390Kohm)		CRJ10DJ394T		
	R142	nsp	RES,CHIP(1608/5%/0ohm)		CRJ10DJ0R0T		
	R143,144	nsp	RES,CHIP(1005/1%/1Kohm)		CRJ06IF1001T		
	R145,146	nsp	RES,CHIP(1005/5%/1.8Kohm)		CRJ06IJ182T		
	R147	nsp	RES,CHIP(1005/5%/47Kohm)		CRJ06IJ473T		
	R148	nsp	RES,CHIP(1005/5%/100ohm)		CRJ06IJ101T		
	R149-156	nsp	RES,CHIP(1005/5%/10Kohm)		CRJ06IJ103T		
	R158-161	nsp	RES,CHIP(1608/5%/0ohm)		CRJ10DJ0R0T		
	R163	nsp	RES,CHIP(1005/5%/10Kohm)		CRJ06IJ103T		
	R165	nsp	RES,CHIP(1005/5%/10Kohm)		CRJ06IJ103T		
	R169	nsp	RES,CHIP(1005/1%/39Kohm)		CRJ06IF3902T		
	R170	nsp	RES,CHIP(1005/1%/150Kohm)		CRJ06IF1503T		
	R174	nsp	RES,CHIP(1005/5%/4.7Kohm)		CRJ06IJ472T		
	R175-178	nsp	RES,CHIP(1005/5%/33ohm)		CRJ06IJ330T		
	R183	nsp	RES,CHIP(1005/5%/0ohm)		CRJ06IJ0R0T		
	R184	nsp	RES,CHIP(1005/1%/68Kohm)		CRJ06IF6802T		
	R185-187	nsp	RES,CHIP(1608/5%/4.7Kohm)		CRJ10DJ472T		
	R196	nsp	RES,CHIP(1005/5%/100ohm)		CRJ06IJ101T		
	R197	nsp	RES,CHIP(1005/5%/4.7Kohm)		CRJ06IJ472T		
	R198-200	nsp	RES,CHIP(1005/5%/100ohm)		CRJ06IJ101T		
	R201-228	nsp	RES,CHIP(1005/5%/0ohm)		CRJ06IJ0R0T		
	R301	nsp	RES,CHIP(1608/5%/0ohm)		CRJ10DJ0R0T		
	R309	nsp	RES,CHIP(1005/5%/4.7Kohm)		CRJ06IJ472T		
	R500	nsp	RES,CHIP(1005/5%/1Kohm)		CRJ06IJ102T		
	R501	nsp	RES,CHIP(1005/5%/22Kohm)		CRJ06IJ223T		
	R502	nsp	RES,CHIP(1005/5%/47Kohm)		CRJ06IJ473T		
	R504	nsp	RES,CHIP(1005/5%/47Kohm)		CRJ06IJ473T		
	R509,510	nsp	RES,CHIP(1005/5%/2Kohm)		CRJ06IJ202T		
	R512,513	nsp	RES,CHIP(1005/5%/0ohm)		CRJ06IJ0R0T		
	R515,516	nsp	RES,CHIP(1005/5%/0ohm)		CRJ06IJ0R0T		
	R519	nsp	RES,CHIP(1005/5%/4.7Kohm)		CRJ06IJ472T		
	R521	nsp	RES,CHIP(1005/5%/0ohm)		CRJ06IJ0R0T		
	R523	nsp	RES,CHIP(1608/5%/0ohm)		CRJ10DJ0R0T		
	R524	nsp	RES,CHIP(1005/5%/2Kohm)		CRJ06IJ202T		
	R525,526	nsp	RES,CHIP(1005/5%/0ohm)		CRJ06IJ0R0T		
	R601,602	00MNN05271610	RES,CHIP(1608/5%/270ohm)		CRJ10DJ271T		
	R603,604	00MNN05273610	RES,CHIP(1608/5%/27Kohm)		CRJ10DJ273T		
	R605,606	00MNN05561610	RES,CHIP(1608/5%/560ohm)		CRJ10DJ561T		
	R609-613	nsp	RES,CHIP(1005/5%/33ohm)		CRJ06IJ330T		
	R614	00MNN05221610	RES,CHIP(1608/5%/220ohm)		CRJ10DJ221T		
	R615,616	00MNN05101610	RES,CHIP(1608/5%/100ohm)		CRJ10DJ101T		
	R617,618	00MNN05105610	RES,CHIP(1608/5%/1Mohm)		CRJ10DJ105T		
	R619,620	00MNN05101610	RES,CHIP(1608/5%/100ohm)		CRJ10DJ101T		
	R621,622	00MNN05105610	RES,CHIP(1608/5%/1Mohm)		CRJ10DJ105T		
	R623,624	00MNN05104610	RES,CHIP(1608/5%/100Kohm)		CRJ10DJ104T		
	R625	00MNN05471610	RES,CHIP(1608/5%/470ohm)		CRJ10DJ471T		
	R626	nsp	RES,CHIP(1608/5%/10Kohm)		CRJ10DJ103T		
	R627	nsp	RES,CHIP(1608/5%/0ohm)		CRJ10DJ0R0T		
	R637	nsp	RES,CHIP(1005/5%/100ohm)		CRJ06IJ101T		
	R638	00MNN05471610	RES,CHIP(1608/5%/470ohm)		CRJ10DJ471T		
	R639,640	nsp	RES,CHIP(1005/5%/100ohm)		CRJ06IJ101T		
	R645,646	nsp	RES,CHIP(1608/5%/0ohm)		CRJ10DJ0R0T		
	R647	00MNN05474610	RES,CHIP(1608/5%/470Kohm)		CRJ10DJ474T		
	R648	00MNN05102610	RES,CHIP(1608/5%/1Kohm)		CRJ10DJ102T		
	R649	nsp	RES,CHIP(1005/5%/10Kohm)		CRJ06IJ103T		
	R650	nsp	RES,CHIP(1608/5%/10Kohm)		CRJ10DJ103T		
	R651	nsp	RES,CHIP(1005/5%/100ohm)		CRJ06IJ101T		
	R652	00MNN05821610	RES,CHIP(1608/5%/820ohm)		CRJ10DJ821T		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	R653	nsp	RES,CHIP(1005/5%/100ohm)		CRJ06IJ101T		
	R654,655	nsp	RES,CHIP(1608/5%/0ohm)		CRJ10DJ0R0T		
	R656,657	nsp	RES,CHIP(1005/5%/100ohm)		CRJ06IJ101T		
	R660,661	nsp	RES,CHIP(1005/5%/0ohm)		CRJ06IJ0R0T		
	R664-668	00MNN05471610	RES,CHIP(1608/5%/470ohm)		CRJ10DJ471T		
	R670-673	00MNN05242610	RES,CHIP(1608/5%/2.4Kohm)		CRJ10DJ242T		
	R674,675	nsp	RES,CHIP(1608/5%/3Kohm)		CRJ10DJ302T		
	R676,677	nsp	RES,CHIP(1608/5%/2Kohm)		CRJ10DJ202T		
	R678	nsp	RES,CHIP(1608/5%/3Kohm)		CRJ10DJ302T		
	R679	nsp	RES,CHIP(1608/5%/2Kohm)		CRJ10DJ202T		
	R680	nsp	RES,CHIP(1608/5%/3Kohm)		CRJ10DJ302T		
	R681	nsp	RES,CHIP(1608/5%/2Kohm)		CRJ10DJ202T		
	R682,683	00MNN05104610	RES,CHIP(1608/5%/100Kohm)		CRJ10DJ104T		
	R686-689	00MNN05242610	RES,CHIP(1608/5%/2.4Kohm)		CRJ10DJ242T		
	R690	nsp	RES,CHIP(1608/5%/3Kohm)		CRJ10DJ302T		
	R691	00MNN05822610	RES,CHIP(1608/5%/8.2Kohm)		CRJ10DJ822T		
	R692,693	nsp	RES,CHIP(1608/5%/2Kohm)		CRJ10DJ202T		
	R694	nsp	RES,CHIP(1608/5%/3Kohm)		CRJ10DJ302T		
	R695	nsp	RES,CHIP(1608/5%/2Kohm)		CRJ10DJ202T		
	R696	00MNN05822610	RES,CHIP(1608/5%/8.2Kohm)		CRJ10DJ822T		
	R697	nsp	RES,CHIP(1608/5%/2Kohm)		CRJ10DJ202T		
	R698,699	00MNN05104610	RES,CHIP(1608/5%/100Kohm)		CRJ10DJ104T		
	R702-705	00MNN05242610	RES,CHIP(1608/5%/2.4Kohm)		CRJ10DJ242T		
	R706,707	nsp	RES,CHIP(1608/5%/3Kohm)		CRJ10DJ302T		
	R708,709	nsp	RES,CHIP(1608/5%/2Kohm)		CRJ10DJ202T		
	R710	nsp	RES,CHIP(1608/5%/3Kohm)		CRJ10DJ302T		
	R711	nsp	RES,CHIP(1608/5%/2Kohm)		CRJ10DJ202T		
	R712	nsp	RES,CHIP(1608/5%/3Kohm)		CRJ10DJ302T		
	R713	nsp	RES,CHIP(1608/5%/2Kohm)		CRJ10DJ202T		
	R714,715	00MNN05104610	RES,CHIP(1608/5%/100Kohm)		CRJ10DJ104T		
	R736,737	943125500060S	RES,M-OXIDEFILM(1W/150ohm)		CRG1SANJ151RT		*
	R738	nsp	RES,CHIP(1005/5%/0ohm)		CRJ06IJ0R0T		
	R741	nsp	RES,CHIP(1608/5%/0ohm)		CRJ10DJ0R0T		
	R742	00MNN05153610	RES,CHIP(1608/5%/15Kohm)		CRJ10DJ153T		
	R744	nsp	RES,CHIP(1608/5%/4.7Kohm)		CRJ10DJ472T		
	R745	00MNN05101610	RES,CHIP(1608/5%/100ohm)		CRJ10DJ101T		
	R746,747	nsp	RES,CHIP(1608/5%/4.7Kohm)		CRJ10DJ472T		
	R748	00MNN05101610	RES,CHIP(1608/5%/100ohm)		CRJ10DJ101T		
	R749	nsp	RES,CHIP(1608/5%/0ohm)		CRJ10DJ0R0T		
	R751	00MNN05153610	RES,CHIP(1608/5%/15Kohm)		CRJ10DJ153T		
	R752	nsp	RES,CHIP(1608/5%/4.7Kohm)		CRJ10DJ472T		
	R753	00MNN05101610	RES,CHIP(1608/5%/100ohm)		CRJ10DJ101T		
	R754,755	nsp	RES,CHIP(1608/5%/4.7Kohm)		CRJ10DJ472T		
	R756	00MNN05101610	RES,CHIP(1608/5%/100ohm)		CRJ10DJ101T		
	R757	00MNN05123610	RES,CHIP(1608/5%/12Kohm)		CRJ10DJ123T		
	R758	nsp	RES,CHIP(1608/5%/10Kohm)		CRJ10DJ103T		
	R760	00MNN05182610	RES,CHIP(1608/5%/1.8Kohm)		CRJ10DJ182T		
	R761,762	nsp	RES,CHIP(1608/1%/75ohm)		CRJ10DF75R0T		
	R766	nsp	RES,CHIP(1608/1%/82ohm)		CRJ10DF82R0T		
	R767	nsp	RES,CHIP(1005/5%/10Kohm)		CRJ06IJ103T		
	R768	nsp	RES,CHIP(1608/5%/0ohm)		CRJ10DJ0R0T		
	R786,787	nsp	RES,CHIP(1608/5%/0ohm)		CRJ10DJ0R0T		
	R788,789	00MNN05154610	RES,CHIP(1608/5%/150Kohm)		CRJ10DJ154T		
	R792,793	nsp	RES,CHIP(1005/5%/0ohm)		CRJ06IJ0R0T		
	R794-799	00MNN05101610	RES,CHIP(1608/5%/100ohm)		CRJ10DJ101T		
	R801,802	nsp	RES,CHIP(1005/5%/100ohm)		CRJ06IJ101T		
	R805	nsp	RES,CHIP(1608/1%/1.37Kohm)		CRJ10DF1371T		
	R808	nsp	RES,CHIP(1005/5%/33ohm)		CRJ06IJ330T		
	R809	nsp	RES,CHIP(1005/5%/220ohm)		CRJ06IJ221T		
	R810,811	nsp	RES,CHIP(1005/5%/1Kohm)		CRJ06IJ102T		
	R812	nsp	RES,CHIP(1005/5%/33ohm)		CRJ06IJ330T		
	R813	nsp	RES,CHIP(1005/5%/100ohm)		CRJ06IJ101T		
	R814	nsp	RES,CHIP(1005/5%/75ohm)		CRJ06IJ750T		
	R819,820	nsp	RES,CHIP(1005/5%/100ohm)		CRJ06IJ101T		
	R824-830	nsp	RES,CHIP(1005/5%/68ohm)		CRJ06IJ680T		
	R831	nsp	RES,CHIP(1005/5%/3.3Kohm)		CRJ06IJ332T		
	R832,833	nsp	RES,CHIP(1005/5%/10Kohm)		CRJ06IJ103T		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	R834	nsp	RES,CHIP(1005/5%/3.3Kohm)		CRJ06IJ332T		
	R835	nsp	RES,CHIP(1005/5%/10Kohm)		CRJ06IJ103T		
	R837	nsp	RES,CHIP(1005/5%/330ohm)		CRJ06IJ331T		
	R838	00MNN05105610	RES,CHIP(1608/5%/1Mohm)		CRJ10DJ105T		
	R839	nsp	RES,CHIP(1608/1%/5.1Kohm)		CRJ10DF5101T		
	R840,841	nsp	RES,CHIP(1005/5%/3.3Kohm)		CRJ06IJ332T		
	R842,843	nsp	RES,CHIP(1005/5%/10Kohm)		CRJ06IJ103T		
	R844	nsp	RES,CHIP(1005/5%/100ohm)		CRJ06IJ101T		
	R845	nsp	RES,CHIP(1005/5%/10Kohm)		CRJ06IJ103T		
	R846	nsp	RES,CHIP(1005/5%/33ohm)		CRJ06IJ330T		
	R847	nsp	RES,CHIP(1005/5%/10Kohm)		CRJ06IJ103T		
	R850	nsp	RES,CHIP(1005/5%/33ohm)		CRJ06IJ330T		
	R856	nsp	RES,CHIP(1005/5%/100ohm)		CRJ06IJ101T		
	R857,858	nsp	RES,CHIP(1005/5%/3.3Kohm)		CRJ06IJ332T		
	R859,860	nsp	RES,CHIP(1005/5%/10Kohm)		CRJ06IJ103T		
	R861	nsp	RES,CHIP(1005/5%/75ohm)		CRJ06IJ750T		
	R866,867	nsp	RES,CHIP(1005/5%/33ohm)		CRJ06IJ330T		
	R872,873	nsp	RES,CHIP(1005/5%/0ohm)		CRJ06IJ0R0T		
	R877,878	nsp	RES,CHIP(1005/5%/0ohm)		CRJ06IJ0R0T		
	R901	00MNN05102610	RES,CHIP(1608/5%/1Kohm)		CRJ10DJ102T		
	R902	nsp	RES,CHIP(1005/5%/1Kohm)		CRJ06IJ102T		
	R903	nsp	RES,CHIP(1005/5%/100Kohm)		CRJ06IJ104T		
	R904	nsp	RES,CHIP(1005/5%/10Kohm)		CRJ06IJ103T		
	R905,906	nsp	RES,CHIP(1005/5%/1Kohm)		CRJ06IJ102T		
	R907	nsp	RES,CHIP(1005/5%/0ohm)		CRJ06IJ0R0T		
	R908	nsp	RES,CHIP(1005/5%/4.7Kohm)		CRJ06IJ472T		
	R910	nsp	RES,CHIP(1005/5%/100Kohm)		CRJ06IJ104T		
	R911	nsp	RES,CHIP(1005/5%/47Kohm)		CRJ06IJ473T		
	R912	00MNN05105610	RES,CHIP(1608/5%/1Mohm)		CRJ10DJ105T		
	R913	nsp	RES,CHIP(1005/5%/470Kohm)		CRJ06IJ474T		
	R914,915	nsp	RES,CHIP(1005/5%/1Kohm)		CRJ06IJ102T		
	R916	nsp	RES,CHIP(1608/5%/10Kohm)		CRJ10DJ103T		
	R917	nsp	RES,CHIP(1608/5%/4.7Kohm)		CRJ10DJ472T		
	R921	nsp	RES,CHIP(1005/5%/10Kohm)		CRJ06IJ103T		
	R922,923	nsp	RES,CHIP(1005/5%/47Kohm)		CRJ06IJ473T		
	R926,927	nsp	RES,CHIP(1005/5%/2.7Kohm)		CRJ06IJ272T		
	R928	nsp	RES,CHIP(1005/5%/47Kohm)		CRJ06IJ473T		
	R945	nsp	RES,CHIP(1005/5%/0ohm)		CRJ06IJ0R0T		
	R946	nsp	RES,CHIP(1005/5%/100ohm)		CRJ06IJ101T		
	R953	nsp	RES,CHIP(1005/5%/47Kohm)		CRJ06IJ473T		
	R954	nsp	RES,CHIP(1005/5%/100ohm)		CRJ06IJ101T		
	R960-962	nsp	RES,CHIP(1005/5%/47Kohm)		CRJ06IJ473T		
	R966	nsp	RES,CHIP(1005/5%/22Kohm)		CRJ06IJ223T		
	R968	00MNN05124610	RES,CHIP(1608/5%/120Kohm)		CRJ10DJ124T		
	R969	nsp	RES,CHIP(1005/5%/47Kohm)		CRJ06IJ473T		
	R971	nsp	RES,CHIP(1005/5%/22Kohm)		CRJ06IJ223T		
	R972	00MNN05223610	RES,CHIP(1608/5%/22Kohm)		CRJ10DJ223T		
	R973	00MNN05124610	RES,CHIP(1608/5%/120Kohm)		CRJ10DJ124T		
	R974	00MNN05223610	RES,CHIP(1608/5%/22Kohm)		CRJ10DJ223T		
	R975-977	nsp	RES,CHIP(1005/5%/100ohm)		CRJ06IJ101T		
	R978-980	nsp	RES,CHIP(1005/5%/10Kohm)		CRJ06IJ103T		
	R982	nsp	RES,CHIP(1005/5%/0ohm)		CRJ06IJ0R0T		
	R983	nsp	RES,CHIP(1608/5%/0ohm)		CRJ10DJ0R0T		
	R984	nsp	RES,CHIP(1005/5%/100Kohm)		CRJ06IJ104T		
	R985	00MNN05222610	RES,CHIP(1608/5%/2.2Kohm)		CRJ10DJ222T		
	R986	00MNN05333610	RES,CHIP(1608/5%/33Kohm)		CRJ10DJ333T		
	R987	00MNN05223610	RES,CHIP(1608/5%/22Kohm)		CRJ10DJ223T		
	R998	nsp	RES,CHIP(1005/5%/100ohm)		CRJ06IJ101T		
	R999	nsp	RES,CHIP(1005/5%/33ohm)		CRJ06IJ330T		
	RN11,12	nsp	RES,CHIP(1005/5%/33ohm*4)		CRJ064IJ330T		
	RN80	nsp	RES,CHIP(1005/5%/33ohm*4)		CRJ064IJ330T		
	RN81,82	nsp	RES,CHIP(1005/5%/10Kohm*4)		CRJ064IJ103T		
	RN83-90	nsp	RES,CHIP(1005/5%/33ohm*4)		CRJ064IJ330T		
	RN91,92	nsp	RES,CHIP(1005/5%/100ohm*4)		CRJ064IJ101T		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
CAPACITORS GROUP							
	C105-129	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C130	nsp	CAP,CHIP(2012,6.3V/10uF,X5R)		CCUC0J106KC		
	C131	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C132	nsp	CAP,CHIP(2012,6.3V/10uF,X5R)		CCUC0J106KC		
	C133	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C134	nsp	CAP,CHIP(2012,6.3V/10uF,X5R)		CCUC0J106KC		
	C135	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C136	nsp	CAP,CHIP(1608,10V/1uF)		CCUS1A105KC		
	C138	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C139	nsp	CAP,CHIP(2012,6.3V/10uF,X5R)		CCUC0J106KC		
	C140	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C141	nsp	CAP,CHIP(2012,6.3V/10uF,X5R)		CCUC0J106KC		
	C144	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C145,146	nsp	CAP,CHIP(1608,50V/15pF)		CCUS1H150JA		
	C147	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C148	nsp	CAP,CHIP(2012,6.3V/10uF,X5R)		CCUC0J106KC		
	C149	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C150	nsp	CAP,CHIP(2012,6.3V/10uF,X5R)		CCUC0J106KC		
	C161	nsp	CAP,CHIP(1608,10V/1uF)		CCUS1A105KC		
	C162,163	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C164	nsp	CAP,CHIP(2012,6.3V/10uF,X5R)		CCUC0J106KC		
	C165	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C166	nsp	CAP,CHIP(1608,16V/0.22uF)		CCUS1C224KC		
	C167	nsp	CAP,CHIP(2012,6.3V/10uF,X5R)		CCUC0J106KC		
	C171	nsp	CAP,CHIP(2012,6.3V/10uF,X5R)		CCUC0J106KC		
	C172	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C174	nsp	CAP,CHIP(2012,6.3V/10uF,X5R)		CCUC0J106KC		
	C175	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C176	nsp	CAP,CHIP(2012,6.3V/10uF,X5R)		CCUC0J106KC		
	C178	nsp	CAP,CHIP(1005,25V/0.015uF)		CCUI1E153KC		
	C179	nsp	CAP,CHIP(1608,50V/15pF)		CCUS1H150JA		
	C180	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C186	nsp	CAP,CHIP(1005,50V/1000pF)		CCUI1H102KC		
	C189-196	nsp	CAP,CHIP(1005,50V/1000pF)		CCUI1H102KC		
	C334	nsp	CAP,CHIP(2012,10V/22uF)		CCUC1A226KC		
	C502-510	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C511	nsp	CAP,CHIP(2012,6.3V/10uF,X5R)		CCUC0J106KC		
	C512	nsp	CAP,CHIP(1005,25V/0.01uF)		CCUI1E103KC		
	C513	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C514,515	nsp	CAP,CHIP(2012,6.3V/10uF,X5R)		CCUC0J106KC		
	C519	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C520,521	nsp	CAP,CHIP(2012,6.3V/10uF,X5R)		CCUC0J106KC		
	C526-528	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C530,531	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C535,536	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C605	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C607	00D9430103808	CAP,ELECT(10V/470uF)		CCEA1AH471T		
	C608,609	00MOA10705020	CAP,ELECT(50V/100uF)		CCEA1HH101T		
	C610,611	nsp	CAP,CHIP(1005,50V/100pF)		CCUI1H101JA		
	C612	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C613,614	nsp	CAP,CHIP(1005,50V/100pF)		CCUI1H101JA		
	C619,620	nsp	CAP,CHIP(1608,50V/220pF)		CCUS1H221JA		
	C623,624	nsp	CAP,CHIP(1608,50V/220pF)		CCUS1H221JA		
	C629	00D9430062101	CAP,ELECT(16V/100uF)		CCEA1CH101T		
	C635,636	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C638	nsp	CAP, CHIP(1608, 25V/1uF)		CCUS1E105ZF		
	C639	nsp	CAP,CHIP(1608,50V/330pF)		CCUS1H331JA		
	C642,643	943134010590S	CAP,ELECT(50V/22uF)		CCEA1HH220T		
	C644	943134010470S	CAP,ELECT(50V/0.1uF)		CCEA1HH0R1T		
	C645	00D9430175108	CAP,ELECT(50V/10uF)		CCEA1HH100T		
	C646	00MOA10705020	CAP,ELECT(50V/100uF)		CCEA1HH101T		
	C647	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C648-650	00MOA10705020	CAP,ELECT(50V/100uF)		CCEA1HH101T		
	C651	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C652-655	nsp	CAP,CHIP(1608,50V/1500pF)		CCUS1H152KC		
	C656,657	nsp	CAP,CHIP(1608,50V/330pF)		CCUS1H331JA		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	C658,659	nsp	CAP,CHIP(1608,50V/1500pF)		CCUS1H152KC		
	C660	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C661,662	nsp	CAP,CHIP(1608,50V/330pF)		CCUS1H331JA		
	C663,664	943134501760S	CAP,ELECT(KR3,4.7uF/100V,5X11)		CCEA2AH4R7T		*
	C665	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C668-670	nsp	CAP,CHIP(1608,50V/1500pF)		CCUS1H152KC		
	C671	nsp	CAP,CHIP(1608,50V/4700pF)		CCUS1H472KC		
	C672	nsp	CAP,CHIP(1608,50V/330pF)		CCUS1H331JA		
	C673	nsp	CAP,CHIP(1608,50V/1000pF)		CCUS1H102KC		
	C674	nsp	CAP,CHIP(1608,50V/1500pF)		CCUS1H152KC		
	C675	nsp	CAP,CHIP(1608,50V/4700pF)		CCUS1H472KC		
	C676	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C678	nsp	CAP,CHIP(1608,50V/330pF)		CCUS1H331JA		
	C679	nsp	CAP,CHIP(1608,50V/1000pF)		CCUS1H102KC		
	C680,681	943134501760S	CAP,ELECT(KR3,4.7uF/100V,5X11)		CCEA2AH4R7T		*
	C682	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C685-688	nsp	CAP,CHIP(1608,50V/1500pF)		CCUS1H152KC		
	C689,690	nsp	CAP,CHIP(1608,50V/330pF)		CCUS1H331JA		
	C691,692	nsp	CAP,CHIP(1608,50V/1500pF)		CCUS1H152KC		
	C693	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C694,695	nsp	CAP,CHIP(1608,50V/330pF)		CCUS1H331JA		
	C696,697	943134501760S	CAP,ELECT(KR3,4.7uF/100V,5X11)		CCEA2AH4R7T		*
	C698	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C718	00D9430062101	CAP,ELECT(16V/100uF)		CCEA1CH101T		
	C720	00D9430062101	CAP,ELECT(16V/100uF)		CCEA1CH101T		
	C724,725	00MOA10705020	CAP,ELECT(50V/100uF)		CCEA1HH101T		
	C726	00D9430062101	CAP,ELECT(16V/100uF)		CCEA1CH101T		
	C727	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C728	00D9430062101	CAP,ELECT(16V/100uF)		CCEA1CH101T		
	C729	nsp	CAP,CHIP(1608,16V/0.22uF)		CCUS1C224KC		
	C730	00D9430062101	CAP,ELECT(16V/100uF)		CCEA1CH101T		
	C731	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C732	943134010590S	CAP,ELECT(50V/22uF)		CCEA1HH220T		
	C733	nsp	CAP,CHIP(1608,50V/220pF)		CCUS1H221JA		
	C735	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C736	nsp	CAP,CHIP(1608,50V/2700pF)		CCUS1H272KC		
	C737	943134010590S	CAP,ELECT(50V/22uF)		CCEA1HH220T		
	C738	nsp	CAP,CHIP(1608,50V/220pF)		CCUS1H221JA		
	C740	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C741	nsp	CAP,CHIP(1608,50V/2700pF)		CCUS1H272KC		
	C742	00D9430062101	CAP,ELECT(16V/100uF)		CCEA1CH101T		
	C743	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C745	00D9430062101	CAP,ELECT(16V/100uF)		CCEA1CH101T		
	C747	00D9430062101	CAP,ELECT(16V/100uF)		CCEA1CH101T		
	C752	nsp	RES,CHIP(1005/5%/0ohm)		CRJ06IJ0R0T		
	C754,755	00D9430175108	CAP,ELECT(50V/10uF)		CCEA1HH100T		
	C756,757	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C763,764	00D9430175108	CAP,ELECT(50V/10uF)		CCEA1HH100T		
	C771	00D9430062101	CAP,ELECT(16V/100uF)		CCEA1CH101T		
	C772	nsp	CAP,CHIP(1608,50V/22pF)		CCUS1H220JA		
	C801	nsp	CAP,CHIP(1005,50V/100pF)		CCUI1H101JA		
	C802,803	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C804	943134010490S	CAP,ELECT(10V/100uF)		CCEA1AH101T		
	C805	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C806	943134010490S	CAP,ELECT(10V/100uF)		CCEA1AH101T		
	C807	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C808	943134010610S	CAP,ELECT(50V/4.7uF)		CCEA1HH4R7T		
	C809	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C810	943134010490S	CAP,ELECT(10V/100uF)		CCEA1AH101T		
	C811	00D9430103808	CAP,ELECT(10V/470uF)		CCEA1AH471T		
	C812	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C813	nsp	CAP,CHIP(1005,50V/1000pF)		CCUI1H102KC		
	C814	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C815	nsp	CAP,CHIP(1005,25V/0.022uF)		CCUI1E223KC		
	C816	943134010490S	CAP,ELECT(10V/100uF)		CCEA1AH101T		
	C817	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C818	nsp	CAP,CHIP(1005,25V/0.01uF)		CCUI1E103KC		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	C819-821	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C822-824	nsp	CAP,CHIP(1005,25V/0.01uF)		CCUI1E103KC		
	C825,826	943134010490S	CAP,ELECT(10V/100uF)		CCEA1AH101T		
	C827	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C828	nsp	CAP,CHIP(1005,50V/100pF)		CCUI1H101JA		
	C829	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C830	nsp	CAP,ELECT(10V/47uF)		CCEA1AH470T		
	C833	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C835,836	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C837,838	nsp	CAP,CHIP(1608,50V/15pF)		CCUS1H150JA		
	C839	00D9430173003	CAP,ELECT(10V/220uF)		CCEA1AH221T		
	C840	nsp	CAP,CHIP(1608,10V/1uF)		CCUS1A105KC		
	C841	nsp	CAP,CHIP(1005,25V/0.01uF)		CCUI1E103KC		
	C842	nsp	CAP,CHIP(1005,50V/100pF)		CCUI1H101JA		
	C843	943134010490S	CAP,ELECT(10V/100uF)		CCEA1AH101T		
	C844-851	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C859,860	943134010490S	CAP,ELECT(10V/100uF)		CCEA1AH101T		
	C861-868	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C875-878	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C879	nsp	CAP,CHIP(1005,50V/15pF)		CCUI1H150JA		
	C880-882	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C901	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C902	00D9430062101	CAP,ELECT(16V/100uF)		CCEA1CH101T		
	C903	nsp	CAP,CHIP(1608,16V/0.22uF)		CCUS1C224KC		
	C904	943134010570S	CAP,ELECT(16V/220uF)		CCEA1CH221T		
	C905-909	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C911	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C913	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C914,915	00MDD95330300	CAP,CHIP(1608,50V/33pF)		CCUS1H330JA		
	C916-918	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C926	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C928	943134010470S	CAP,ELECT(50V/0.1uF)		CCEA1HH0R1T		
	C935,936	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C941	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C946,947	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C954	nsp	CAP,CHIP(1005,25V/0.015uF)		CCUI1E153KC		
	C955	nsp	CAP,CHIP(1608,10V/1uF)		CCUS1A105KC		
	C956	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C963	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C965	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C969	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C974	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C976-978	nsp	CAP,CHIP(1005,25V/0.01uF)		CCUI1E103KC		
	C982-989	nsp	CAP,CHIP(1005,16V/0.1uF)		CCUI1C104KC		
	C990	943134010490S	CAP,ELECT(10V/100uF)		CCEA1AH101T		
OTHERS PARTS GROUP							
	BD61,62	nsp	FERRITECHIPBEAD(1608/60R)		CLZ9R005Z		
	BD63	nsp	FERRITE,CHIPBEAD(60ohm,2012)		CLZ9R001Z		
	BD78,79	nsp	FERRITECHIPBEAD(1608/60R)		CLZ9R005Z		
	BD81	nsp	FERRITE,CHIPBEAD(60ohm,2012)		CLZ9R001Z		
	BD83	nsp	CHIPBEAD(600R,1808,0.5A)		HLZ9Z008Z		
	BK11	nsp	EARTH,HDMI		CMC1A422		
	BN94	nsp	WIRE ASS'Y		CWB1B005180HC		*
	BN99	nsp	WIRE ASS'Y		CWB1C013120HC		*
	CN9A	nsp	WAFER,FFC,SMD(23P-1mm,STRAIGHT)		CJP23GA193ZY		*
	CN9B	nsp	WAFER,FFC,SMD(23P-1mm,STRAIGHT)		CJP23GA193ZY		*
	CN90	nsp	LOCK-WAFER/STRAIGHT/2MMPITCH/13PIN		CJP13GI288ZY		*
	CN91	nsp	WAFER,FFC(5P-1mm,ANGLE)		CJP07GB113ZY		
	CN92	nsp	WAFER/STRAIGHT/2.5mm/4P		CJP04GA01ZY		
	CN93	nsp	WAFER,FFC,SMD(09-1mm,STRAIGHT)		CJP09GA193ZY		
	CN95	nsp	LOCK-WAFER/STRAIGHT/2MMPITCH/7PIN		CJP07GI288ZY		*
	CN96	nsp	PINSOCKET(11P,1.25mm,ANGLE,B-TO-B)		CJP11HJ282Z		*

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	CN97	nsp	WAFER,FFC(23P-1.25mm,STRAIGHT)		CJP23GA115ZY		*
	CN98	nsp	WAFER,FFC,SMD(07P-1mm,STRAIGHT)		CJP07GA193ZY		
	ET71	nsp	PALTE,EARTH		HJT1A025		
	ET81	nsp	WIRE ASS'Y		CWE5202080A		
	ET91	nsp	PALTE,EARTH		HJT1A025		
	JK11-13	943643100040S	JACK,HDMI(KSI-TWI,W/FLANGE)		CJJ9H014Z		
	JK15	943643100040S	JACK,HDMI(KSI-TWI,W/FLANGE)		CJJ9H014Z		
	JK51	943643100040S	JACK,HDMI(KSI-TWI,W/FLANGE)		CJJ9H014Z		
	JK62	943643101570S	JACK,4P(W/R,W/R),SEPA-GND		CJJ4P048U		*
	JK71	943643101130S	JACK,3P(YL),SILVER		CJJ4P076Z		
	JK72	943643010160S	JACK,1P(BK),SEPA-GND,SILVER		CJJ4M046U		
	JK81	943262100150S	MODULE,OPTICAL(RX16MHz)		CJSJSR1124		*
	JK82	943643100170S	JACK,1P(ORG),SILVER		CJJ4M043Y		
	L101-108	nsp	FERRITECHIPBEAD(1608/60R)		CLZ9R005Z		
	L109	nsp	FERRITE,CHIPBEAD(4516/60R)		CLZ9Z014Z		
	L114	nsp	FERRITECHIPBEAD(1608/60R)		CLZ9R005Z		
	L500,501	nsp	RES,CHIP(1608/5%/0ohm)		CRJ10DJ0R0T		
	X101	943141100600S	X-TAL,SMD3.2X2.5,28.636MHz,12PF		COX28636I120ST		*
	X801	943141010360S	X-TAL,24.576MHz,HC-49/S,15pF,30PPM		HOX24576E150TF		
	X901	943141100590S	X-TAL,SMD3.2X2.5,8.000MHz,20PF		COX08000I200ST		*