DENON

Ver. 4

Please refer to the MODIFICATION NOTICE.

SERVICE MANUAL

MODEL	JP	E3	E2	EK	EA	E1	E1K	E1C
AVR-1312		✓	✓		✓			✓

AV SURROUND RECEIVER

MODEL	JP	E3	E2	EK	EA	E1	E1K	E1C
DHT-1312XP ⚠2		✓	✓					

5.1CH HOME THEATER SYSTEM

• 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.

CONTENTS

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.)

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.)

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.)

Output connectors : 6 – 16 Ω

• **Analog**

Input sensitivity/Input impedance : 200 mV/47 kΩ
Frequency response: 10 Hz – 100 kHz — 0, –3 dB (DIRECT mode)
S/N : 98 dB (IHF–A weighted, DIRECT mode)

❑ 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, EA, E1C) **:**
[FM] 57.5 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
STEREO 67 dB
Total harmonic Distortion (at 1 kHz) :
[FM]MONO 0.7 %
STEREO 1.0 %

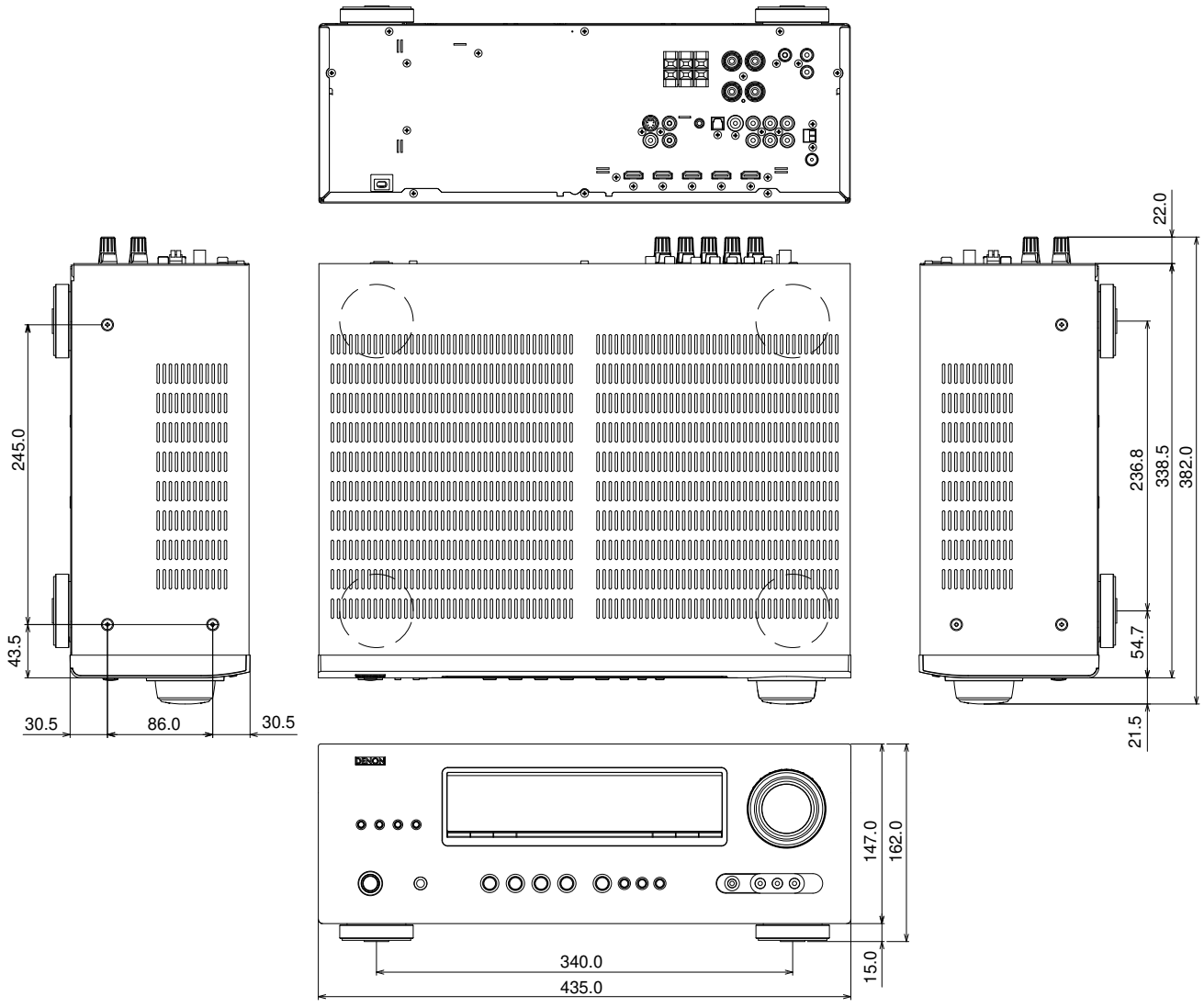
❑ General

Power supply (for E3) **:** AC 120 V, 60 Hz
(for E2, EA) **:** AC 230 V, 50 Hz / 60Hz
(for E1C) **:** AC 220 V, 50 Hz
Power consumption :
330 W
0.5 W (Standby)
Maximum external dimensions :
435 (W) x 162 (H) x 382 (D) mm
Weight : 9.2 kg

❑ Remote Control Unit (RC-1158)

Batteries : R03/AAA Type (two batteries)
Maximum external dimensions : 50 (W) x 211 (H) x 22 (D) mm
Weight : 110 g (including batteries)

DIMENSION



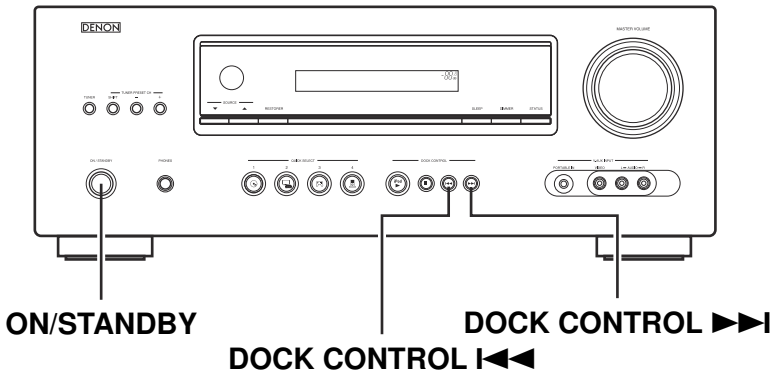
CAUTIONS IN SERVICING

Initializing AV SURROUND RECEIVER

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

1. Turn off the power pressing ON/STANDBY button.
2. Press ON/STANDBY button while simultaneously while pressing DOCK CONTROL I◄◄ and DOCK CONTROL ►►I 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.



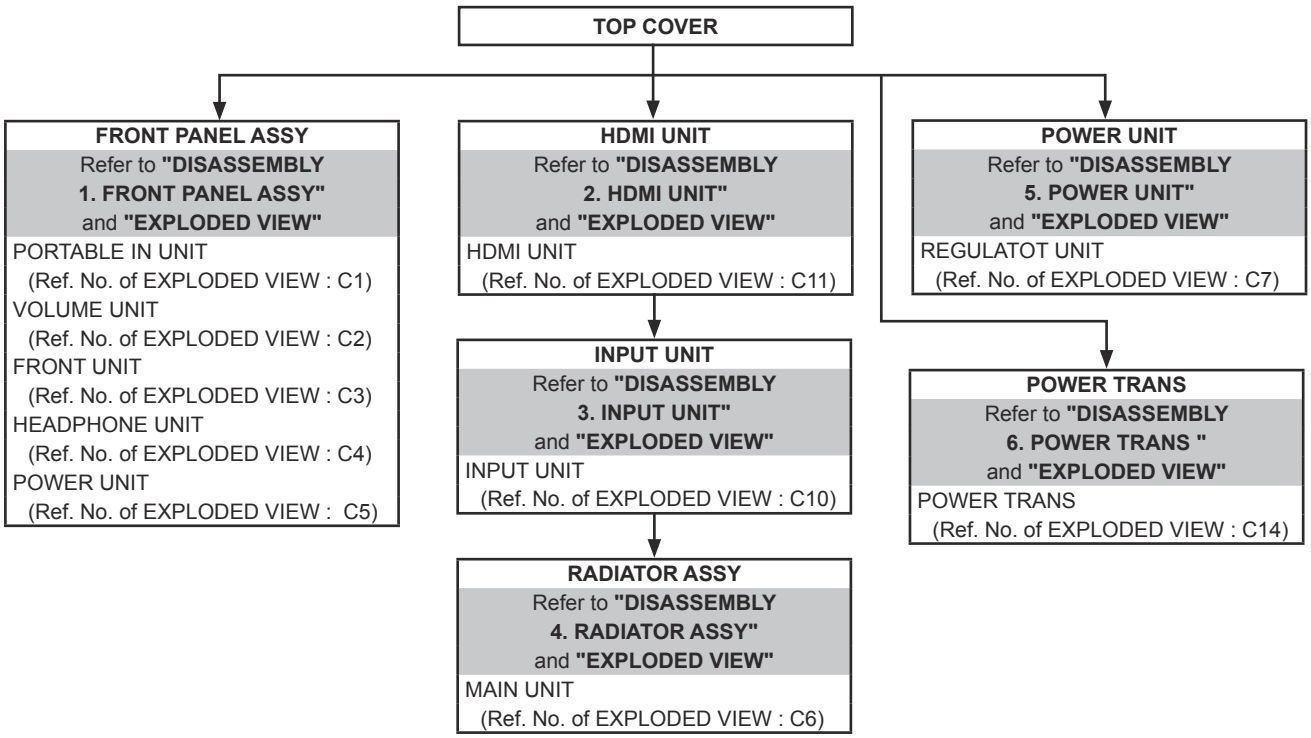
Service Jig

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

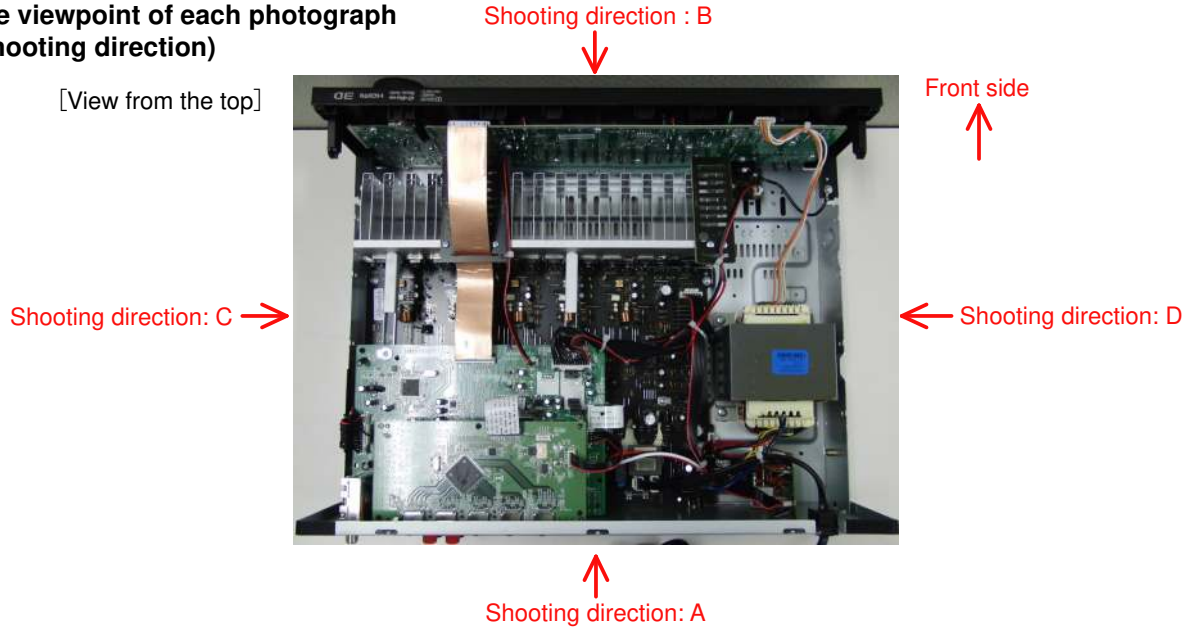
- Disassemble in order of the arrow in the following figure.
- In the case of the re-assembling, assemble it in order of the reverse of the following flow.
- In the case of the re-assembling, observe "attention of assembling".
- If wire bundles are untied or moved to perform adjustment or replace parts 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: ***".
- 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)

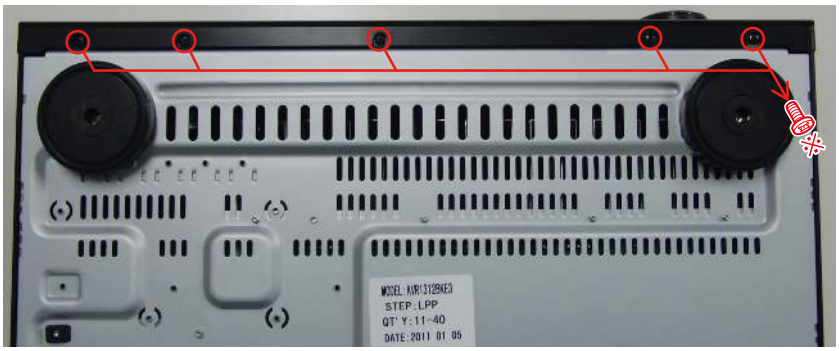


1. FRONT PANEL ASSY

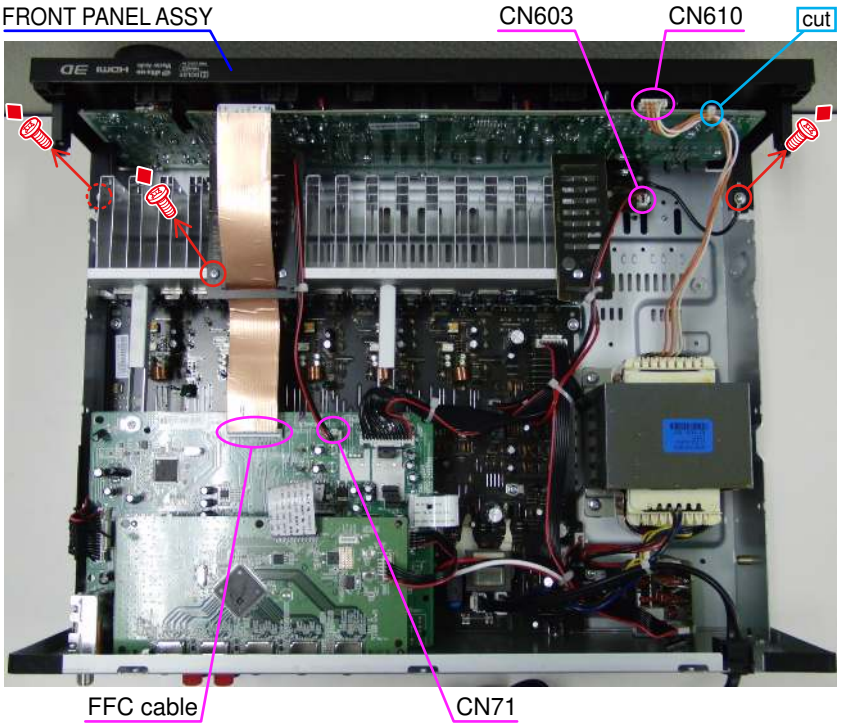
Proceeding : TOP COVER → FRONT PANEL ASSY

(1) Remove the screws.

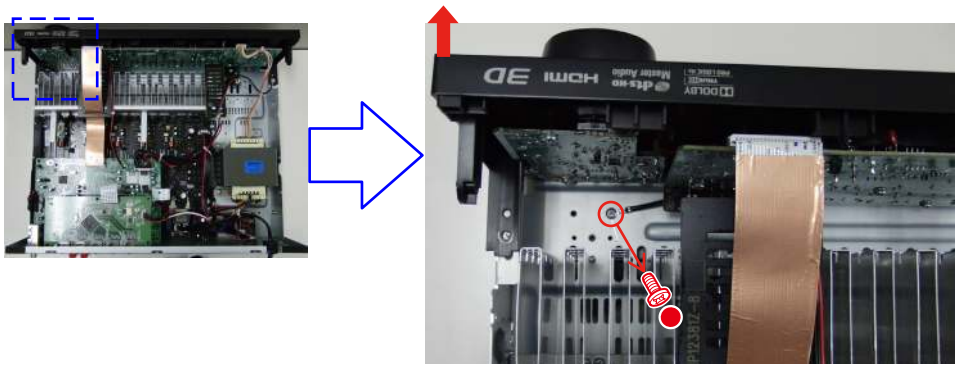
View from the bottom



(2) Cut the wire clamp band, then disconnect the connector wires and FFC cable. Remove the screws.



(3) Remove the screws.



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

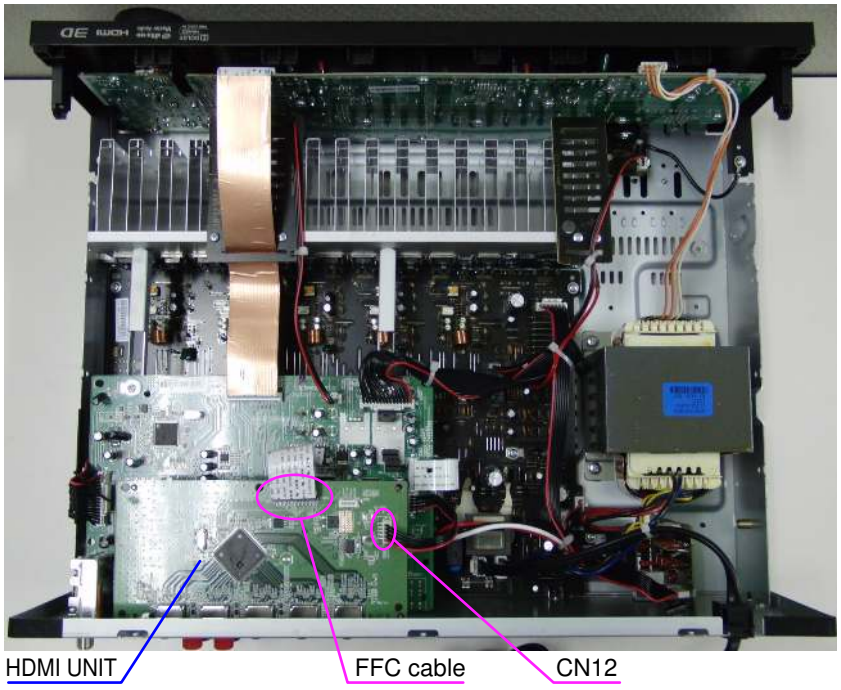
2. HDMI UNIT

Proceeding : TOP COVER → HDMI UNIT

(1) Remove the screws.

Shooting direction: A

(2) Disconnect the connector wire and FFC cable.



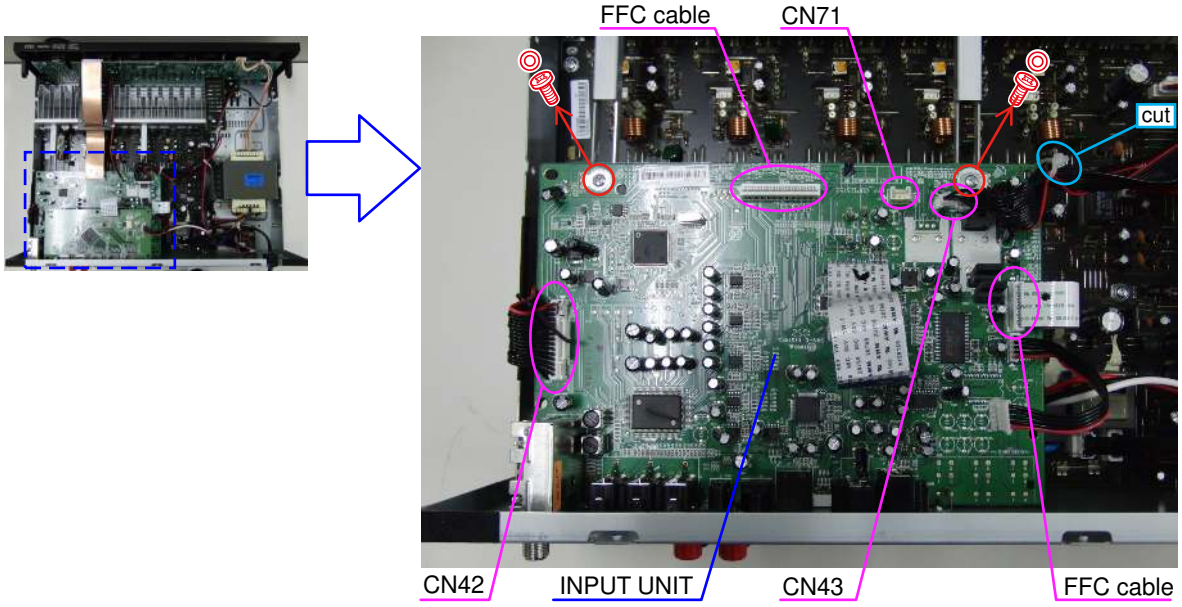
3. INPUT UNIT

Proceeding : TOP COVER → HDMI UNIT → INPUT UNIT

(1) Remove the screws.

Shooting direction: A

(2) Disconnect the connector wires and FFC cables, then remove the screws.



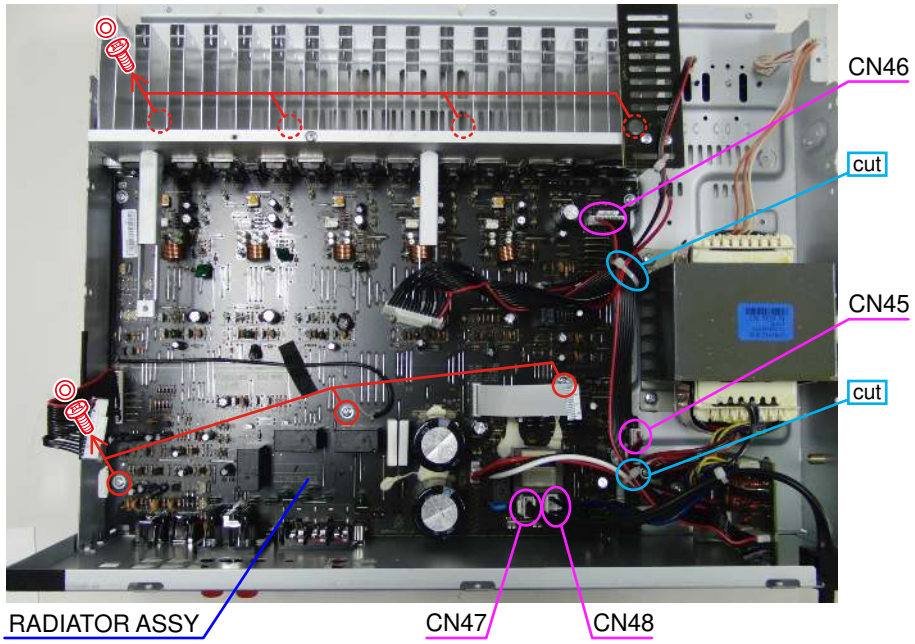
4. RADIATOR ASSY

Proceeding : TOP COVER → HDMI UNIT → INPUT UNIT → RADIATOR ASSY

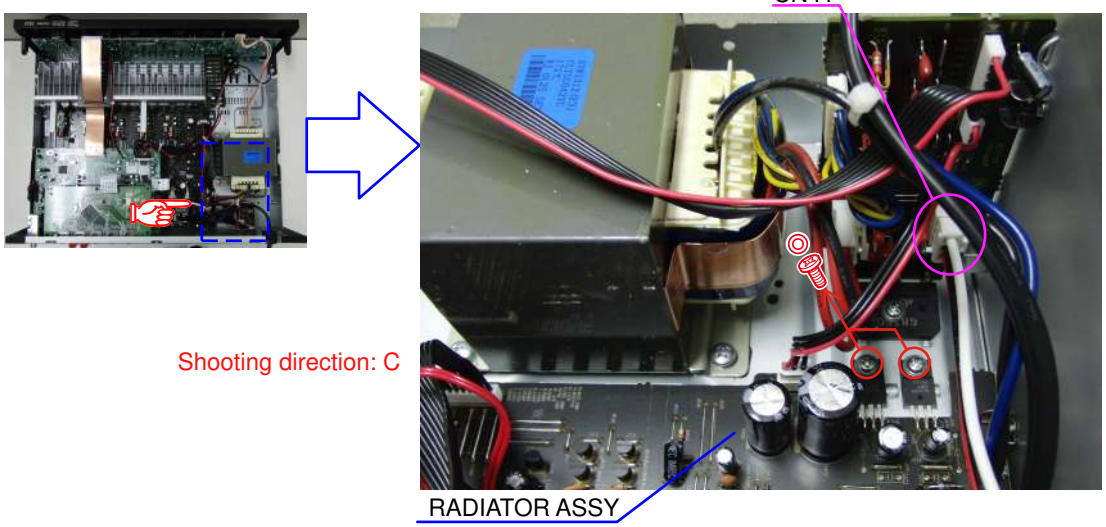
(1) Remove the screws.

Shooting direction: A

(2) Disconnect the connector wires, then remove the screws.



(3) Disconnect the connector wire, then remove the screws. Remove the RADIATOR ASSY from the main unit.



Please refer to "EXPLODED VIEW" for the disassembly method of each P.W.B included in RADIATOR ASSY.

5. POWER UNIT

Proceeding : TOP COVER → POWER UNIT

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

6. POWER TRANS

Proceeding : CABINET TOP → TRANS MAIN

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

SPECIAL MODE

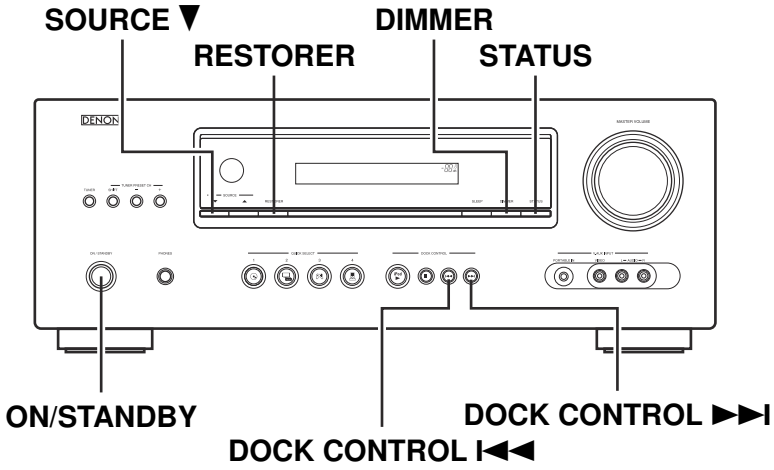
Special mode setting button

※ Press the ON/STANDBY 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 Version display mode	STATUS	DIMMER	Firmware versions such as Main or DSP are displayed in the FL display. Errors are displayed or when they occur. (Refer to page 14 .)
Initialization mode	DOCK CONTROL I◄◄	DOCK CONTROL ►►I	Backup data initialization is carried out. (Refer to page 6 .)
Mode for switching tuner frequency step	DIMMER	PRESET CH +	---E2 model only--- Change tuner frequency step to AM9k/FM50kHz STEP or AM:10k/FM:200kHz.
Mode for preventing remote control acceptance	RESTORER	SOURCE ▼	Operations using the remote control are rejected. "REMOTE LOCK:ON" is displayed in FL display. (Mode the cancellation: Turn off the power and execute the same button operations as when performing setup.)

※ 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	DIMMER	Select with the "+", "-" and iPod play button change video format NTSC or PAL



1. µcom/DSP Version display mode

1.1. Operation specifications

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

Starting up:

Press the "ON/STANDBY" button to turn on the power while pressing the "RETURN" 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
→ ⑤ iPod Dock version (Connecting iPod Dock)

Display		State
① Model destination information		
	AVR-1312 E3 model	AVR1312 E3
	AVR-1312 E2 model	AVR1312 E2
	AVR-1312 E1C model	AVR1312 E1C
② Main-µcom version		Main :**.**
③ DSP version		DSP.*.*.*
④ OSD version		OSD :**.**
⑤ iPod Dock version (Connecting iPod Dock)		
	(ASD-1R/11R)	Dock Ver :**.**
	(ASD-3/51)	Dock :I********

Cleared of mode:

Press the "ON/STANDBY" 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
INPUT	IC91	T5CN5	**B**	SOFTWARE: Main
INPUT	IC82	ST25VF080B-50-4C-S2AF	**B**	SOFTWARE: DSP 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 (Installed “BootTool_M330(Writing program).exe”).

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

(3) 8U-210100S Writing Kit.

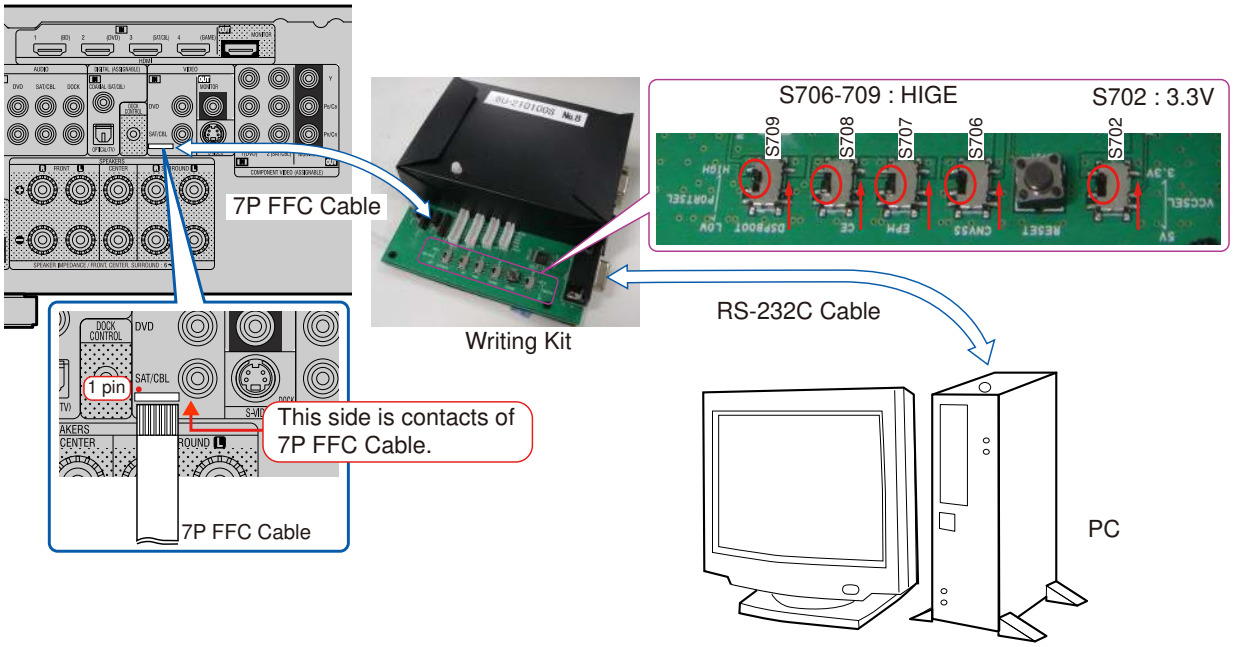
(4) 606050028012P / 7P FFC(1.0) L=240.

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”.



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	H	H

(3) Press the "ON/STANDBY" button to turn the power on of AV receiver.

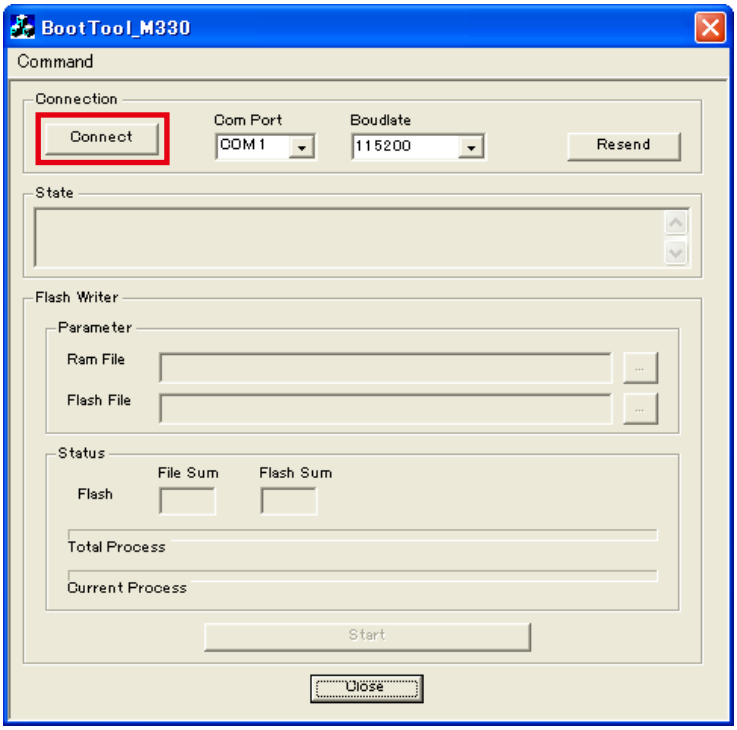
(4) Set the switch of “Writing Kit" (Refer to the table below).

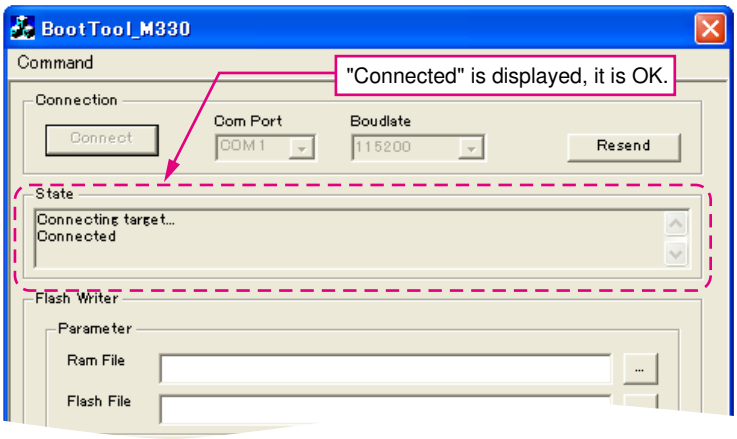
DSPBOOT	CE	EPM	CNVSS
H	H	L	H

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

(6) Run the “BootTool_M330(Writing program).exe” on desktop of PC.

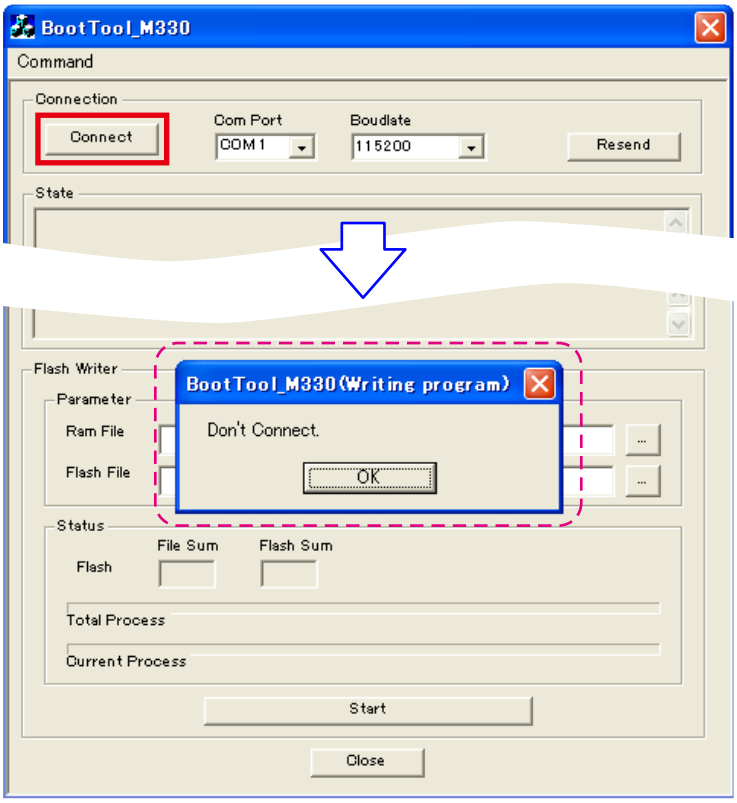
(7)-1 Click the “Connect” button.





[If you can't get a "Connected" message.]

(7-a) Click the “Connect” button. If connection is not good, then you can see the “Don't Connect” message.



Please confirm the following

(i) Check the connection of the AV receiver and PC. (Refer to "1.2. Connection of the AV receiver")

(ii) Check the selection of the RS-232C port number of PC.

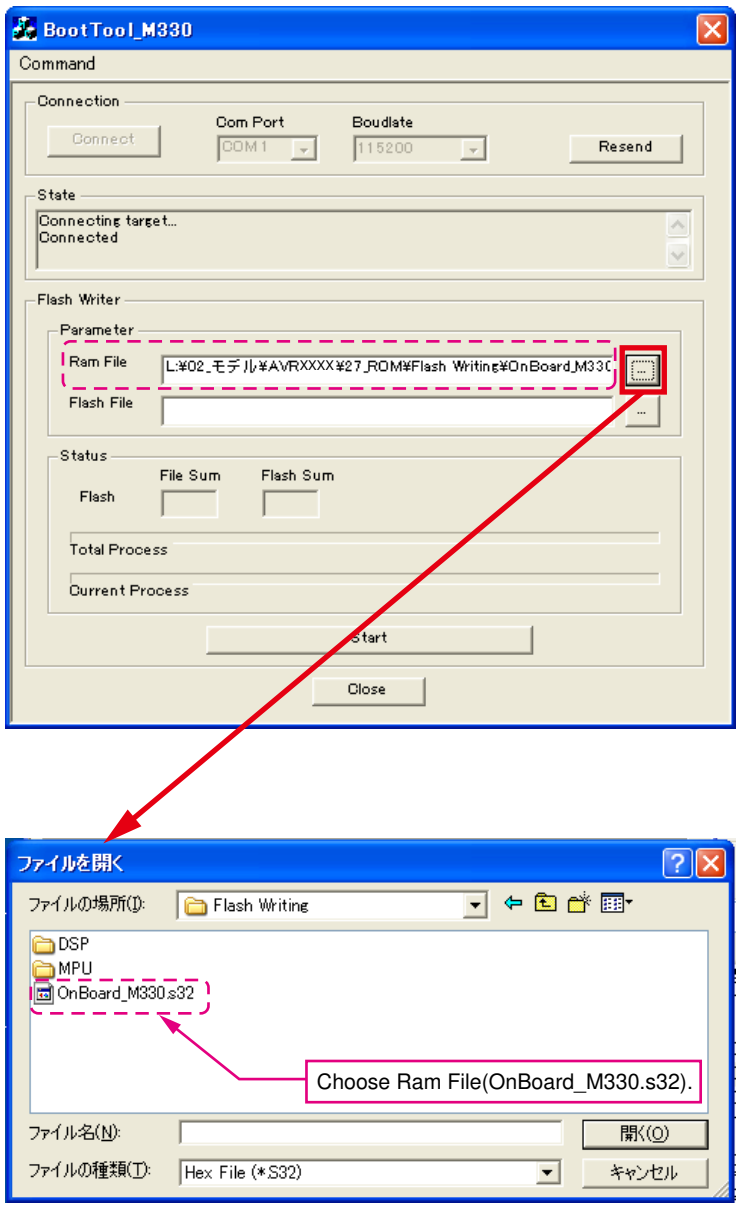
(ii) Refer to "3. Notice: ". (page 27)

(7-b) If Ram/Flash file selection screen is active, after you Click "Resend" button.

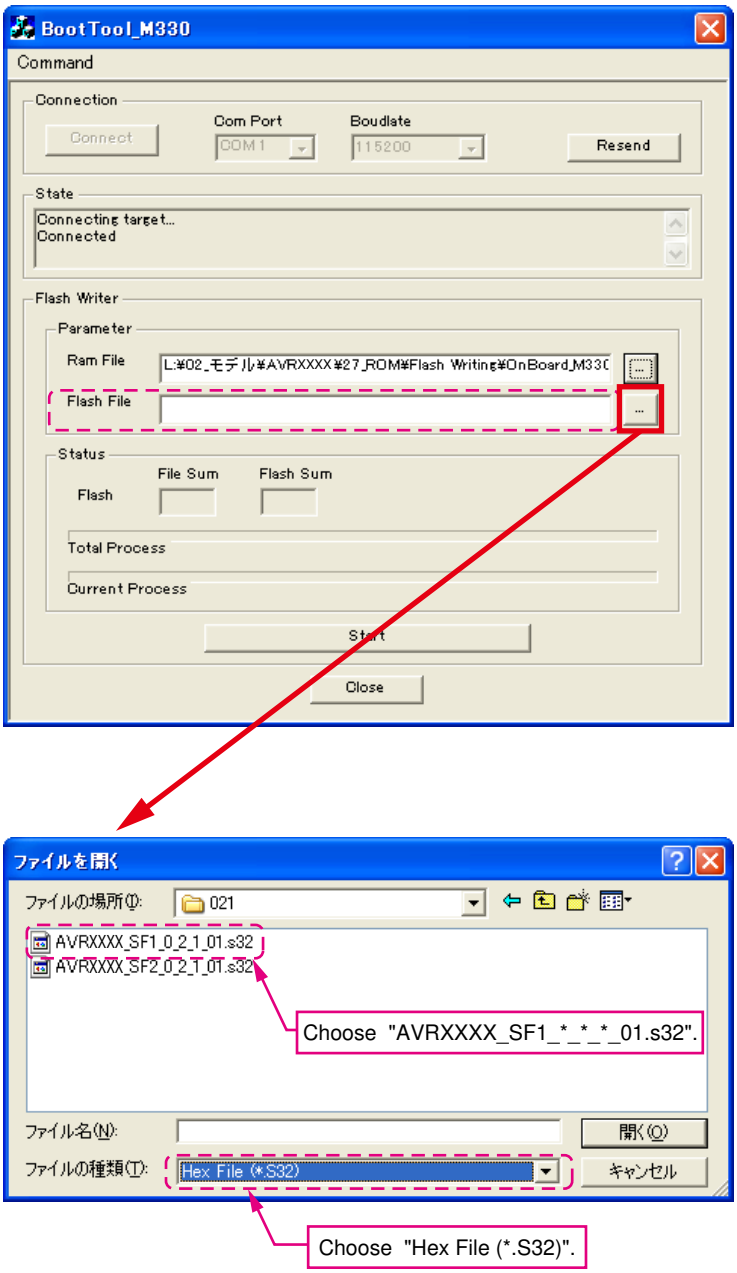
Connection is good, go to next step.

SP SF1

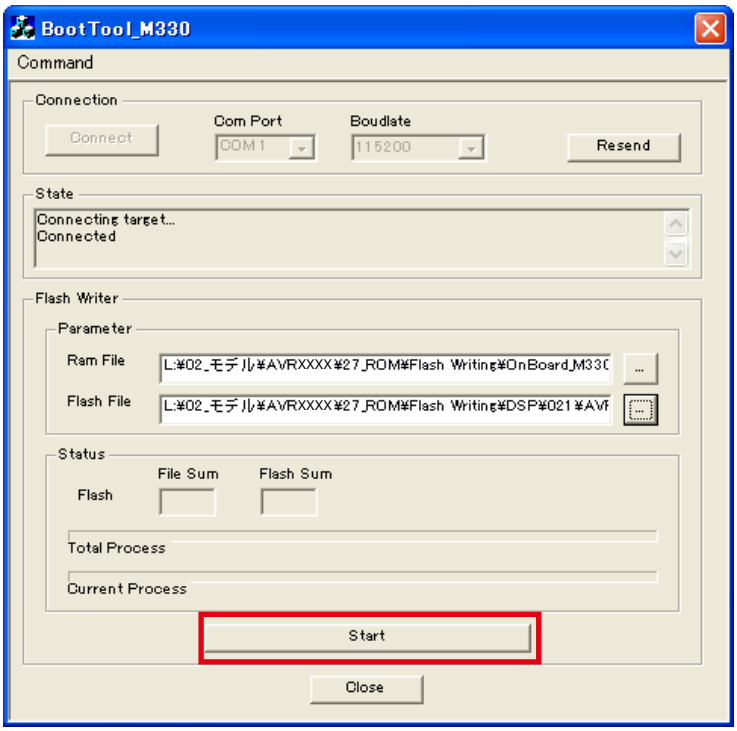
(8) Choose Ram File(OnBoard_M330.s32).

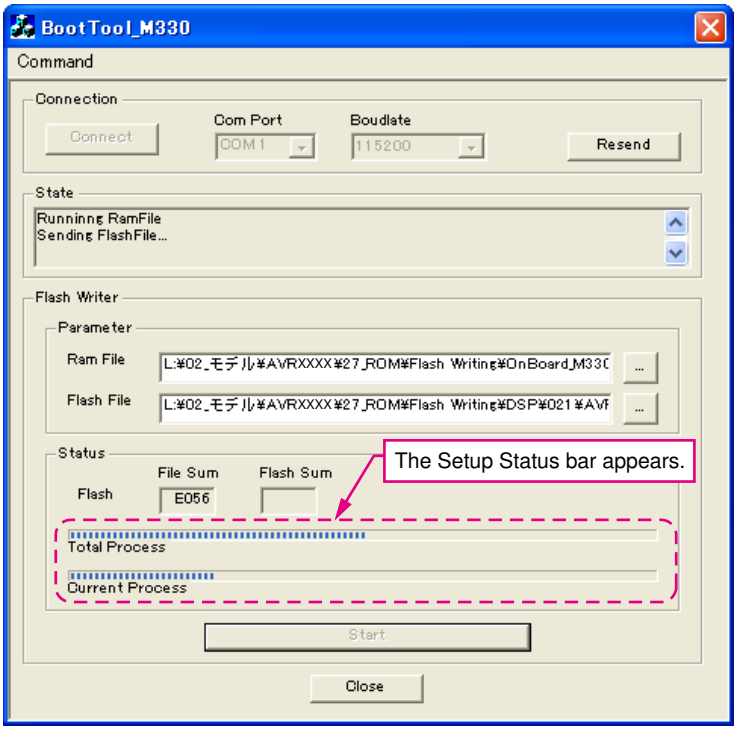


(9) Choose Flash File(DSP : SF1).

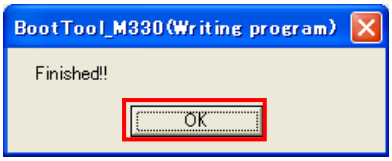


(10) Click the “Start” button.





(11) "Finished!!" is displayed. Click the "OK"" button.



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

DSPBOOT	CE	EPM	CNVSS
H	H	H	H

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

(14) AV receiver is power on and starts update of DSP1.

(15) "Write Comleted" is displayed in the FL tube.

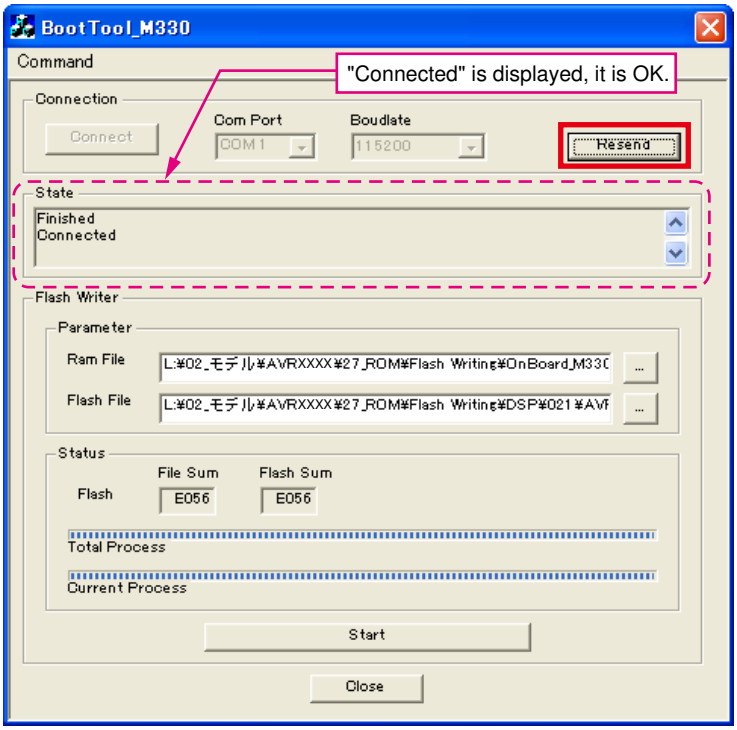
(16) Set the switch of “Writing Kit" (Refer to the table below).

DSPBOOT	CE	EPM	CNVSS
H	H	L	H

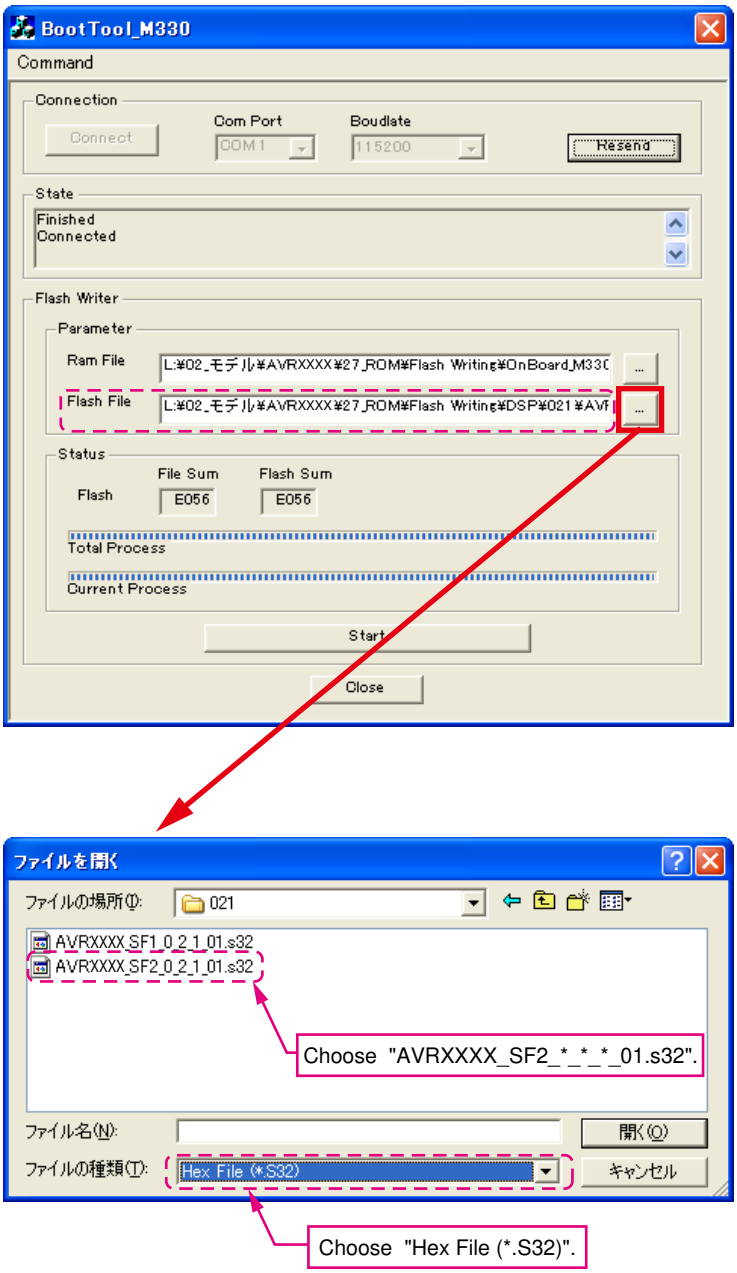
(17) Press the "RESET" switch of “Writing Kit".

DSP SF2

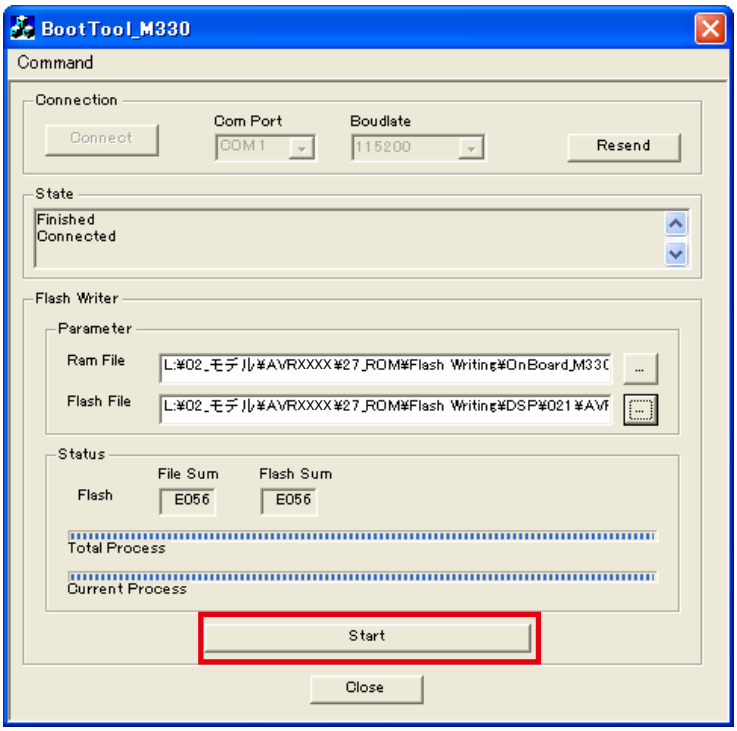
(18) Click the “Resend” button.



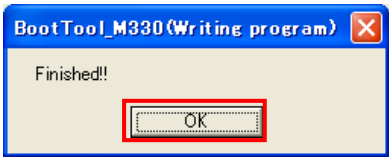
(19) Choose Flash File(DSP : SF2).



(20) Click the “Start” button.



(21) "Finished!!" is displayed. Click the "OK" button.



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

DSPBOOT	CE	EPM	CNVSS
H	H	H	H

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

(24) AV receiver is power on and starts update of DSP2.

(25) "Write Comleted" is displayed in the FL tube.

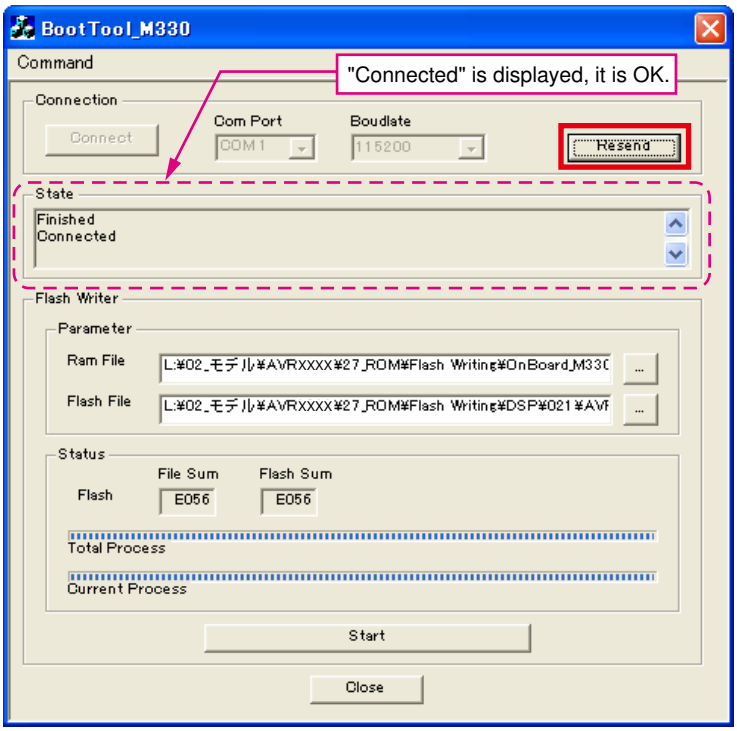
(26) Set the switch of “Writing Kit" (Refer to the table below).

DSPBOOT	CE	EPM	CNVSS
H	H	L	H

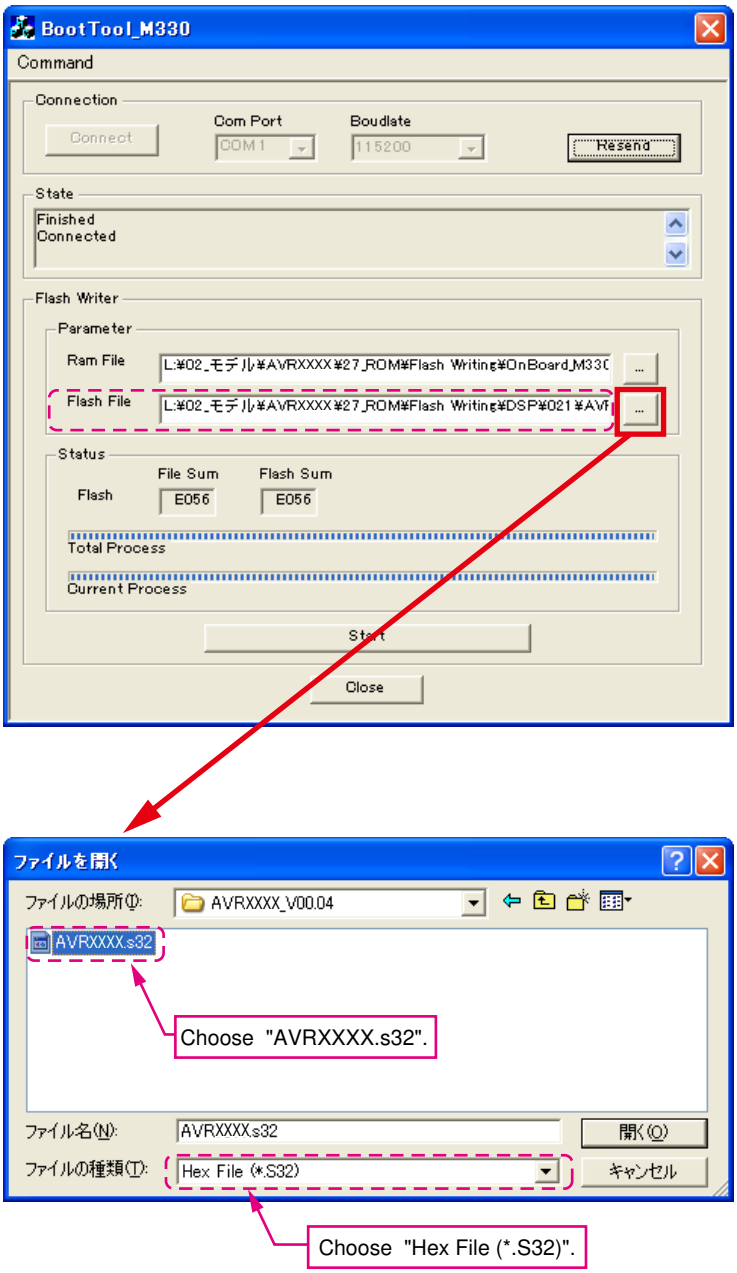
(27) Press the "RESET" switch of “Writing Kit".

MAIN

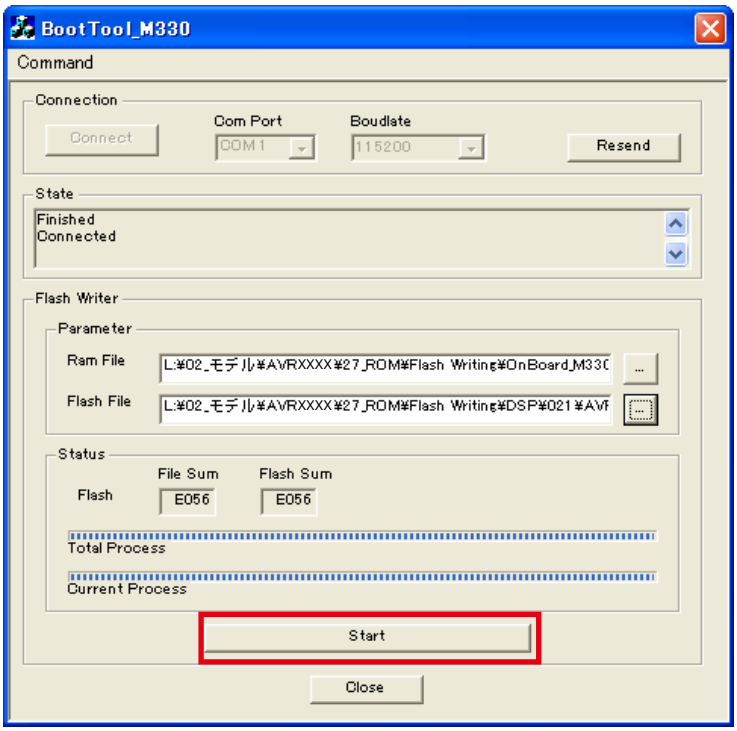
(28) Click the “Resend” button.

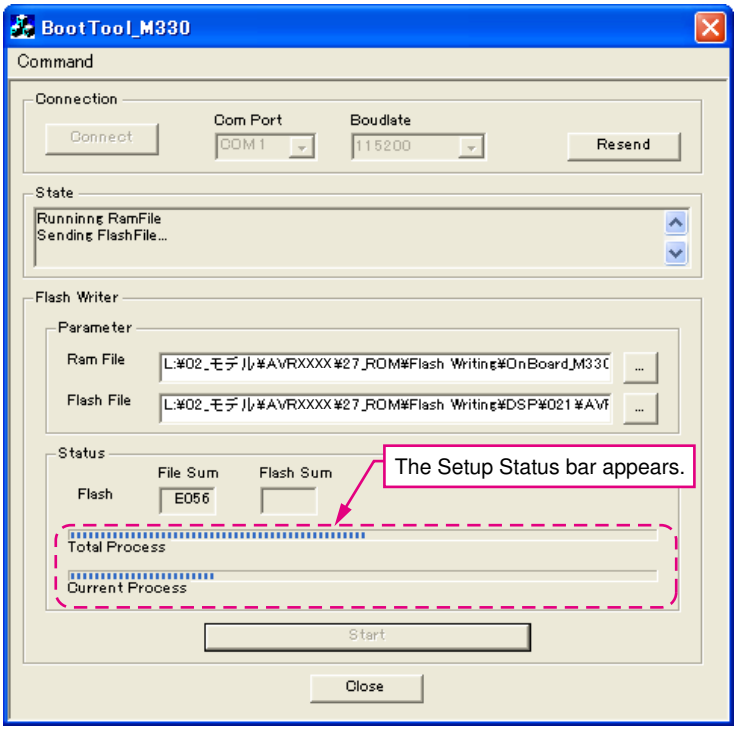


(29) Choose Flash File(MAIN).

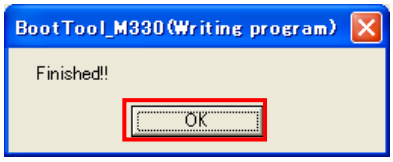


(30) Click the “Start” button.





(31) "Finished!!" is displayed. Click the "OK" button.



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

DSPBOOT	CE	EPM	CNVSS
H	H	H	H

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

(34) Initializing.

1. Turn off the power using ON/STANDBY button.
2. Press ON/STANDBY button while simultaneously pressing DOCK CONTROL ⏮ and DOCK CONTROL ⏭ 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 utilitu, 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 completion of the updating operation, the new version number can confirmed by starting up the AVR-1312 according to the following procedure.

With the following operation, the AVR-1312 can be set to the Flash ROM Version-Number Confirmation mode.

Turn on power switch while simultaneously pressing "DIMMER" and "STATUS" buttons on the front panel. Every time the "STATUS" button is pressed, version number of the Model, Main, DSP, … are indicated on the front panel section. (Refer to "1.2. Display other" (page 14))

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.

(2) Presetting

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

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

2. Adjustment

(1) Removed the top cover and set VR41(FL),VR45(FR),VR42(C),VR44(SL),VR43(SR), on Main Amp. Unit at fully counterclockwise position.

(2) Connect DC Voltmeter to test points (Front-Lch:CN51,Front-Rch:CN55,CENTERch:CN53, Surround-Lch:CN52,Surround-Rch:CN54).

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

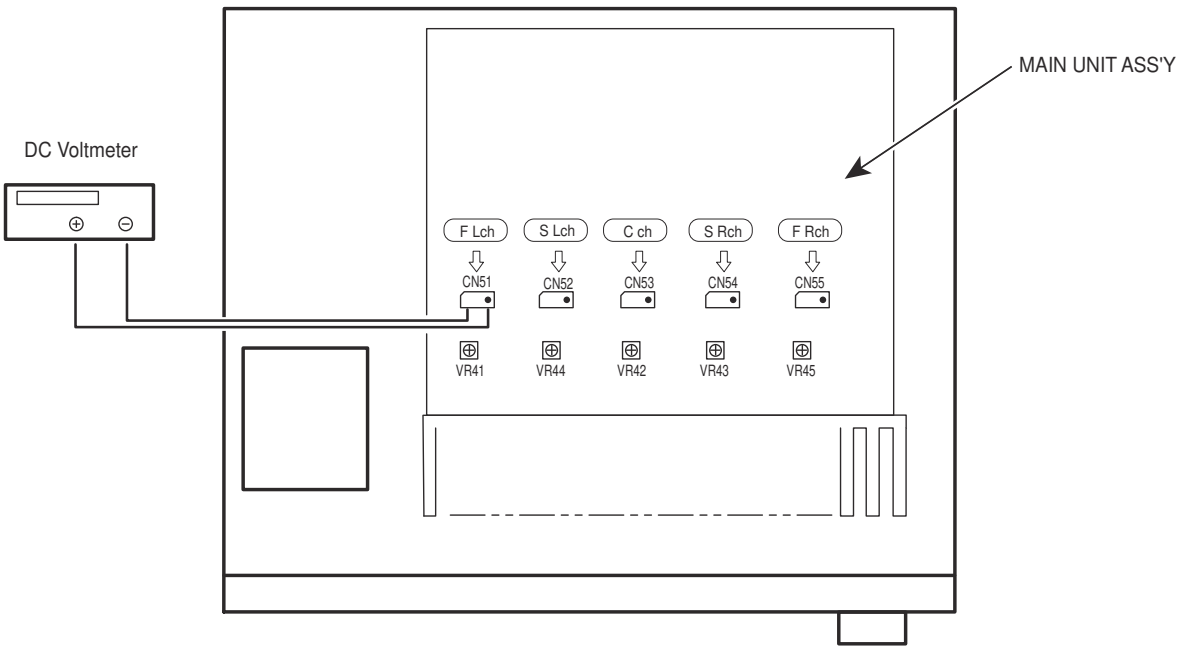
(4) Presetting.

MASTER VOLUME : "---" counterclockwise (↺ min.)
SPEAKER (Speaker terminal) : No load
(Do not connect speaker, dummy resistor, etc.)
FUNCTION : DVD

(5) Within 2 minutes after the power on, turn VR41 clockwise (↻) to adjust the TEST POINT voltage at 1.5 mV ± 0.5 mV DC.

(6) After 10 minutes from the preset above, turn VR41 to set the voltage to 2.0 mV ± 0.5 mV DC.

(7) Adjust the Variable Resisters of each channel (VR42-VR45) in the same way.



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	Surround Back L/R	Subwoofer	Mode	D. Comp ✻3	DRC ✻4	LFE ✻5
DIRECT (2channel)	○				◎✻2		○	○	
DIRECT (Multi-channel)	○	◎	◎	◎✻1	◎		○	○	○
STEREO	○				◎		○	○	○
MULTI CH IN	○	◎	◎	◎	◎				○
DOLBY PRO LOGIC IIx	○	◎	◎	◎	◎	○	○	○	
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	○				◎✻2		○		○

✻1 A signal for each channel contained in an input signal is output as audio.
✻2 Only when "SW Mode" is set to "LFE+Main" ("Bass Setting"), sound is output from the subwoofer.
✻3 This item can be selected when a Dolby Digital or DTS signal is played.
✻4 This item can be selected when a Dolby TrueHD signal is played.
✻5 This item can be selected when a Dolby Digital or DTS signal or DVD-Audio is played.

Surround mode	Audio Adjust							Tone	RESTORER ✻7
	AFDM ✻6	SB CH OUT	Subwoofer	PRO LOGIC II/IIx Music mode only			NEO:6 Music mode only		
				Panorama	Dimension	Center Width	Center Image		
DIRECT (2 channel)			○✻2						
DIRECT (Multi-channel)									
STEREO								○	○
MULTI CH IN	○	○						○	
DOLBY PRO LOGIC IIx		○		○	○	○		○	○
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								○	○

✻2 Only when "SW Mode" is set to "LFE+Main" ("Bass Setting"), sound is output from the subwoofer.
✻6 This item can be selected when a Dolby Digital or DTS or DVD-Audio signal is played.
✻7 This item can be set when the input signal is analog, PCM 48 kHz or 44.1 kHz.

Symbols in the table

● This indicates the default surround mode.
◎ This indicates the surround mode that is fixed when "AFDM" is set to "ON".
○ This indicates the selectable surround mode.

Surround mode	NOTE	Input signal types and formats																
		ANALOG	PCM		DTS-HD		DTS					DOLBY		DOLBY DIGITAL				
			LINEAR PCM (multi ch)	LINEAR PCM (2ch)	DTS-HD Master Audio	DTS-HD High Resolution Audio	DTS EXPRESS	DTS ES DSCRT (With Flag)	DTS ES MTRX (With Flag)	DTS (5.1ch)	DTS 96/24	DOLBY TrueHD	DOLBY DIGITAL Plus	DOLBY DIGITAL EX (With Flag)	DOLBY DIGITAL EX (With no Flag)	DOLBY DIGITAL (5.1/5/4ch)	DOLBY DIGITAL (4/3ch)	DOLBY DIGITAL (2ch)
DTS SURROUND																		
DTS-HD MSTR					●													
DTS-HD HI RES						●												
DTS ES DSCRT6.1	*							●◎										
DTS ES MTRX6.1	*								●◎									
DTS SURROUND								○	○	●								
DTS 96/24											●							
DTS + PLIIx CINEMA	*							○	○	○	○							
DTS + PLIIx MUSIC	*							○	○	○	○							
DTS EXPRESS							●											
DTS + NEO:6	*								○	○	○							
DTS NEO:6 CINEMA		○		○														○
DTS NEO:6 MUSIC		○		○														○
DOLBY SURROUND																		
DOLBY TrueHD												●						
DOLBY DIGITAL+													●					
DOLBY DIGITAL EX	*													○	○	○	○	
DOLBY DIGITAL														○	●	●	●	
DOLBY (D) +PLIIx CINEMA	*													●◎	○	○	○	
DOLBY (D) +PLIIx MUSIC	*													○	○	○	○	
DOLBY PRO LOGIC IIx CINEMA	*	○		○														○
DOLBY PRO LOGIC IIx MUSIC	*	○		○														○
DOLBY PRO LOGIC IIx GAME	*	○		○														○
DOLBY PRO LOGIC II CINEMA		○		○														○
DOLBY PRO LOGIC II MUSIC		○		○														○
DOLBY PRO LOGIC II GAME		○		○														○
DOLBY PRO LOGIC		○		○														○

* If "Speaker Config." – "Surround Back" ("Speaker Config.") is set to "None", this surround mode cannot be selected.

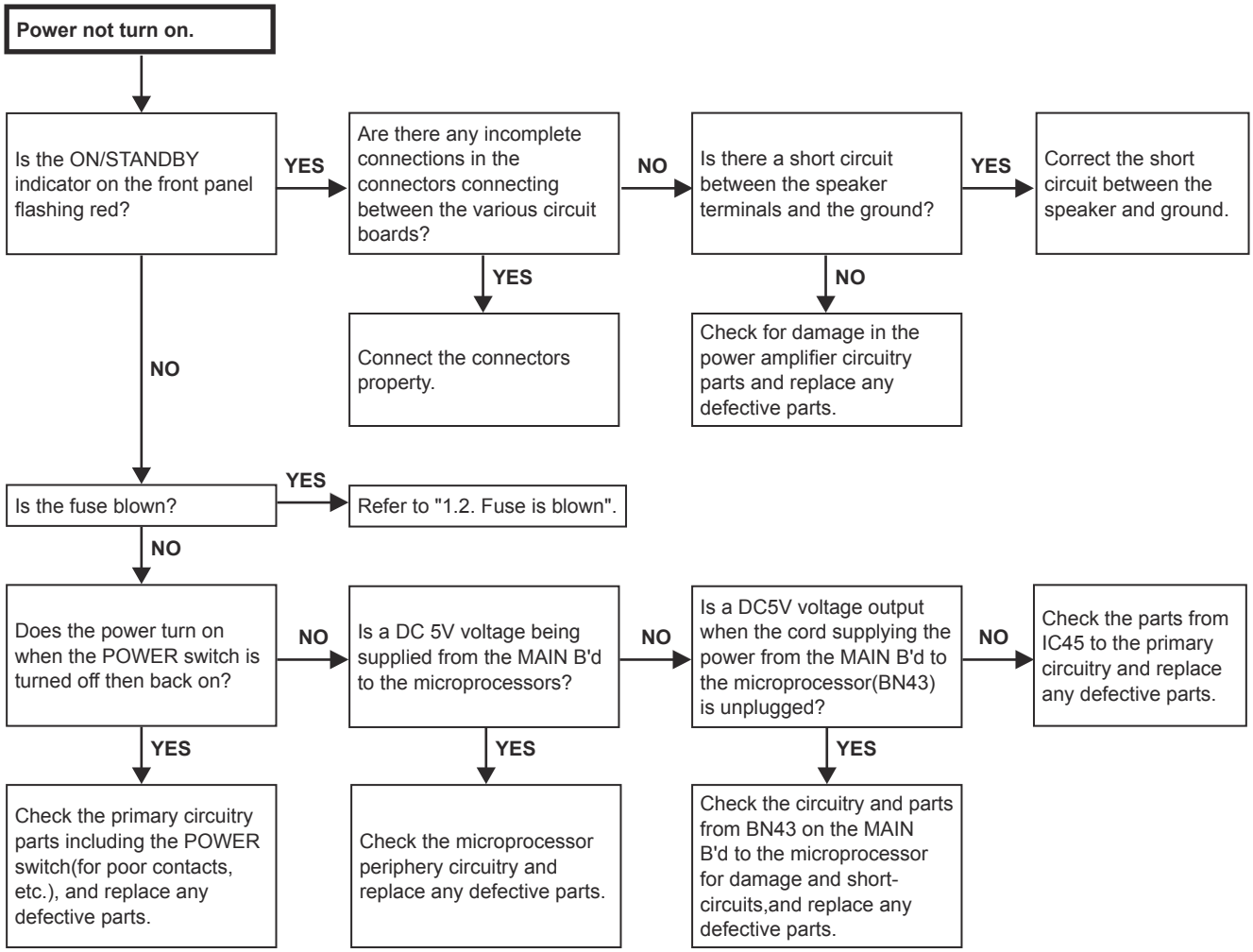
Surround mode	NOTE	Input signal types and formats																	
		ANALOG	PCM		DTS-HD		DTS					DOLBY		DOLBY DIGITAL					
			LINEAR PCM (multi ch)	LINEAR PCM (2ch)	DTS-HD Master Audio	DTS-HD High Resolution Audio	DTS EXPRESS	DTS ES DSCRT (With Flag)	DTS ES MTRX (With Flag)	DTS (5.1ch)	DTS 96/24	DOLBY TrueHD	DOLBY DIGITAL Plus	DOLBY DIGITAL EX (With Flag)	DOLBY DIGITAL EX (With no Flag)	DOLBY DIGITAL (5.1/5/4ch)	DOLBY DIGITAL (4/3ch)	DOLBY DIGITAL (2ch)
MULTI CH IN																			
MULTI CH IN			●																
MULTI CH IN + PLⅡx CINEMA	*		○																
MULTI CH IN + PLⅡx MUSIC	*		○																
MULTI CH IN 7.1			●◎ (7.1)																
DIRECT																			
DIRECT		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
DSP SIMULATION																			
MULTI CH STEREO		○	○	○				○	○	○	○			○	○	○	○	○	
VIRTUAL		○	○	○				○	○	○	○			○	○	○	○	○	
STEREO																			
STEREO		●	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	

* If "Speaker Config." – "Surround Back" ("Speaker Config.") is set to "None", this surround mode cannot be selected.

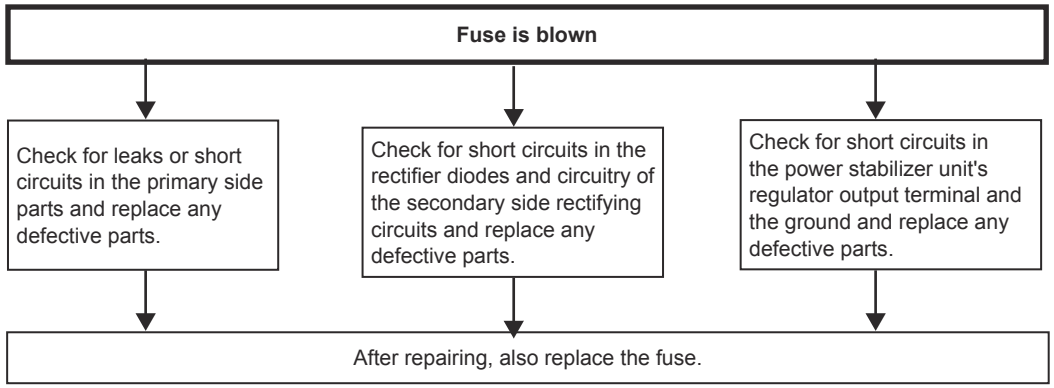
TROUBLE SHOOTING

1. POWER

1.1. Power not turn on



1.2. Fuse is blown



2. Analog video

MONITOR OUT(CVBS) Output NG

↓

Check ±5V
+5V : C755
-5V : C754

NO → The power supply circuitry is defective.

YES ↓

Check output
Output V : IC71-1pin

NO → Check input
(When the DVD function)
Vin5 : IC71-3pin

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

YES ↓

Check cable between main unit and monitor or Check monitor.

YES ↓

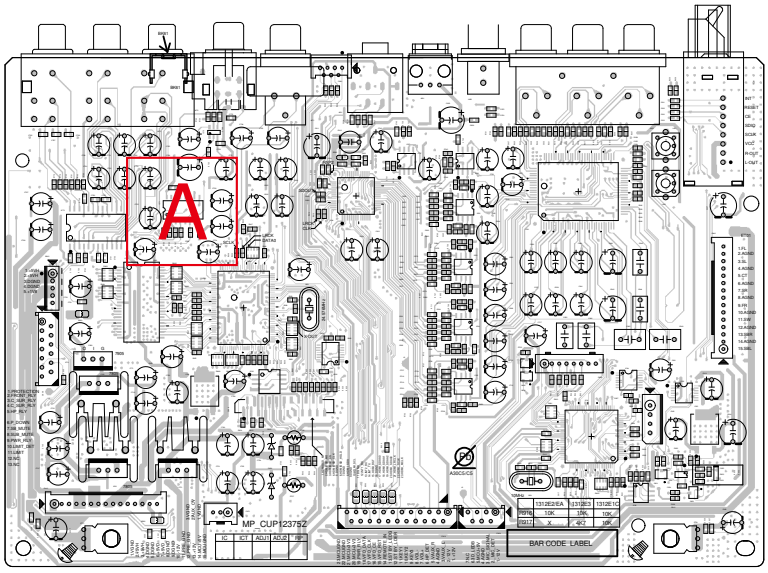
Check set value of IC.
SW1 : IC71-14pin : 3.3V : OK
SW2 : IC71-10pin : 3.3V : OK
SW3 : IC71-4pin : 3.3V : OK
SW4 : IC71-6pin : 3.3V : OK

NO → CPU(IC91) flaw.

YES ↓

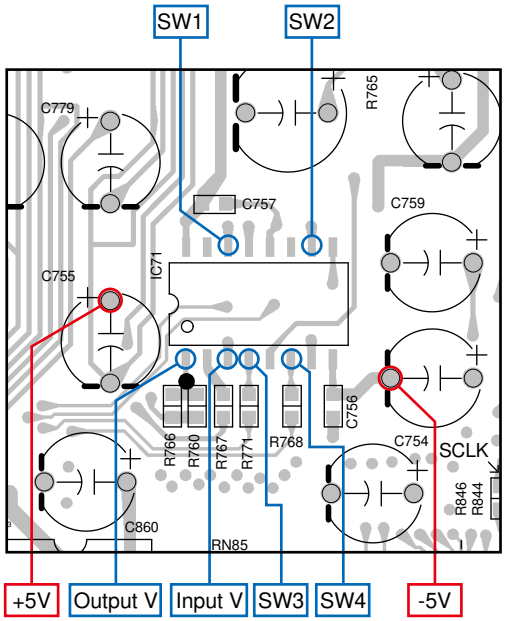
The IC71 and surrounding circuitry is defective.

VIDEO test point



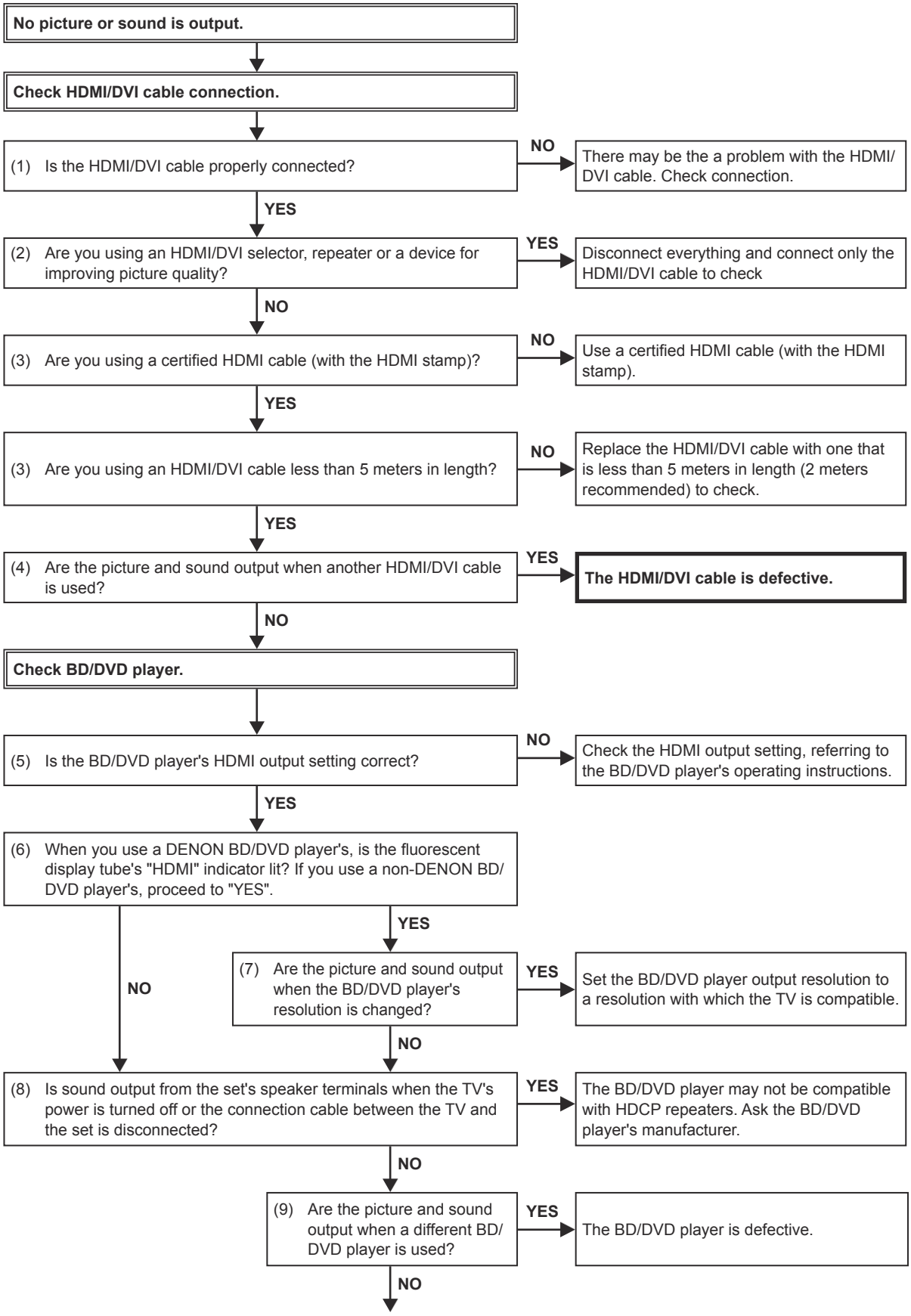
INPUT (COMPONENT SIDE)

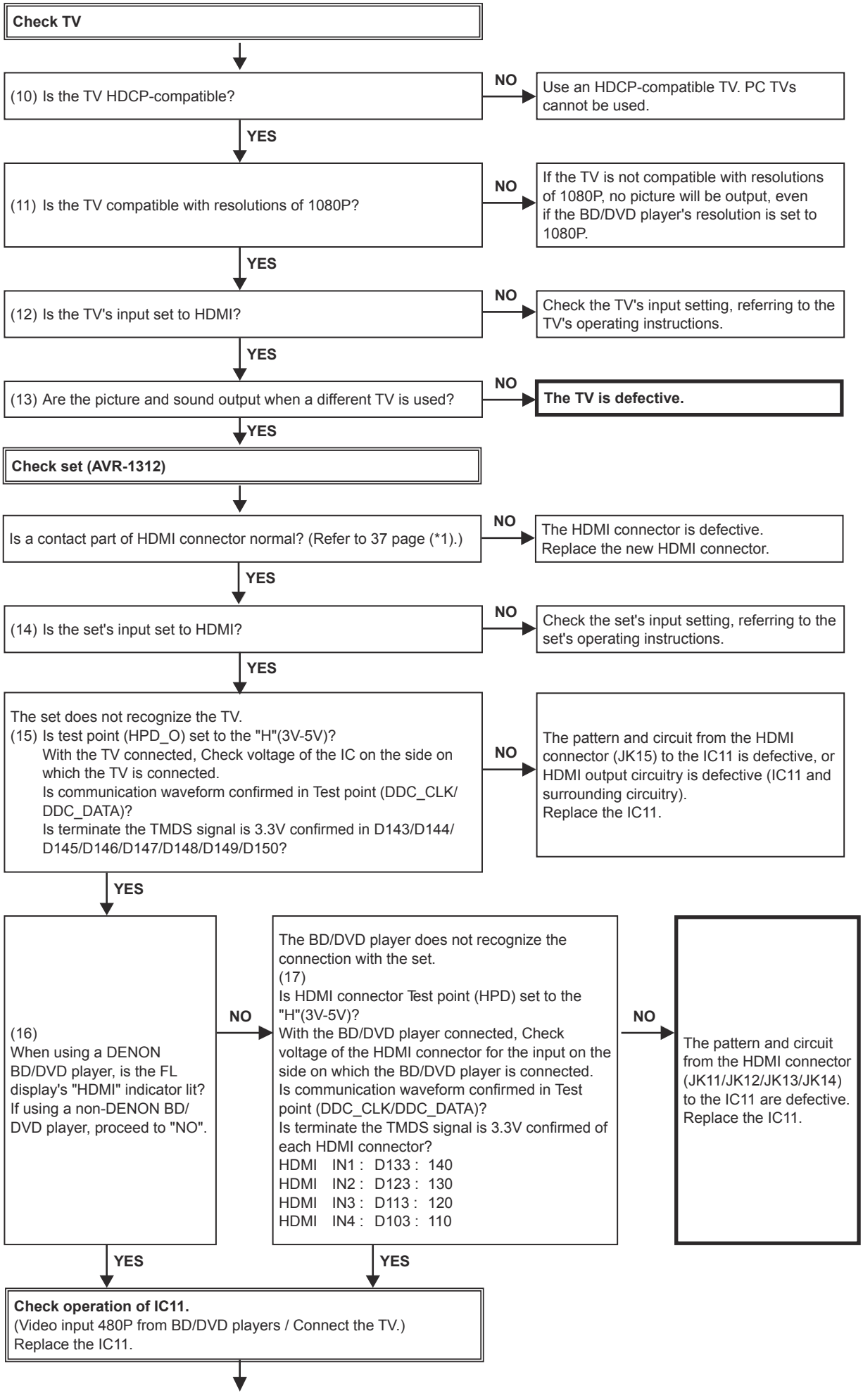
Detail A



3. HDMI/DVI

3.1. No picture or sound is output △3




Check TV
(10) Is the TV HDCP-compatible?
NO
Use an HDCP-compatible TV. PC TVs cannot be used.
YES
(11) 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
(12) Is the TV's input set to HDMI?
NO
Check the TV's input setting, referring to the TV's operating instructions.
YES
(13) Are the picture and sound output when a different TV is used?
NO
The TV is defective.
YES
Check set (AVR-1312)
Is a contact part of HDMI connector normal? (Refer to 37 page (*1).)
NO
The HDMI connector is defective. Replace the new HDMI connector.
YES
(14) 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.
(15) 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/D144/D145/D146/D147/D148/D149/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
(16)
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.
(17)
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 : D133 : 140
HDMI IN2 : D123 : 130
HDMI IN3 : D113 : 120
HDMI IN4 : D103 : 110
NO
The pattern and circuit from the HDMI connector (JK11/JK12/JK13/JK14) to the IC11 are defective.
Replace the IC11.
YES
YES
Check operation of IC11.
(Video input 480P from BD/DVD players / Connect the TV.)
Replace the IC11.

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

NO → The power supply circuitry is defective.

YES

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

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

YES

(20) 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

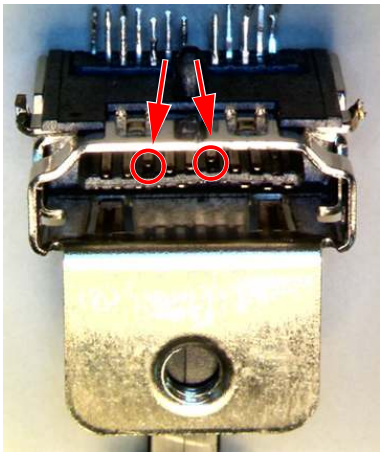
(21) Check control signal(I2C).
Is waveform confirmed at Test point (SDA/SCL). (If not continued to " L", proceed to "YES".)

NO → The SDATA/SCL line pattern is defective.

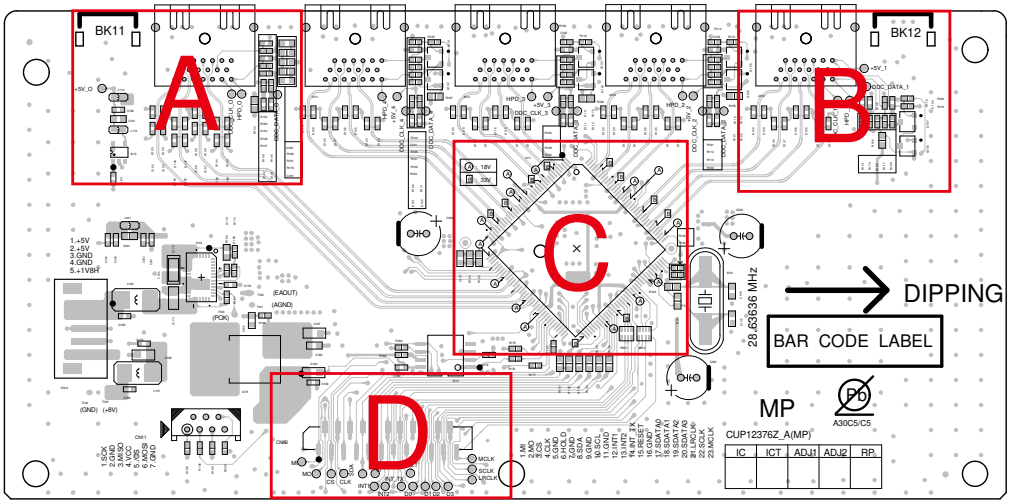
YES

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

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

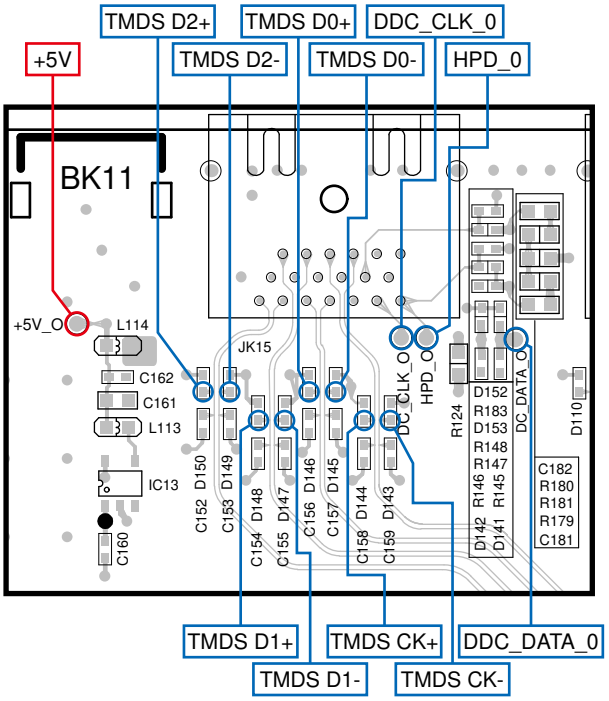


3.2. HDMI test point and waveforms

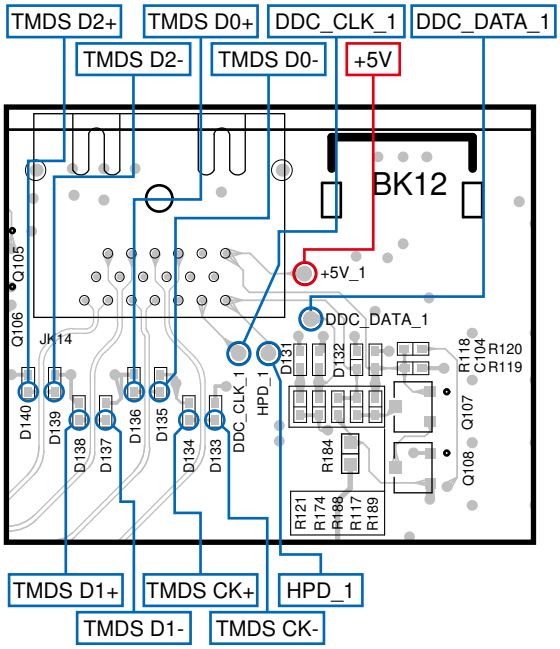


HDMI (COMPONENT SIDE)

Detail A

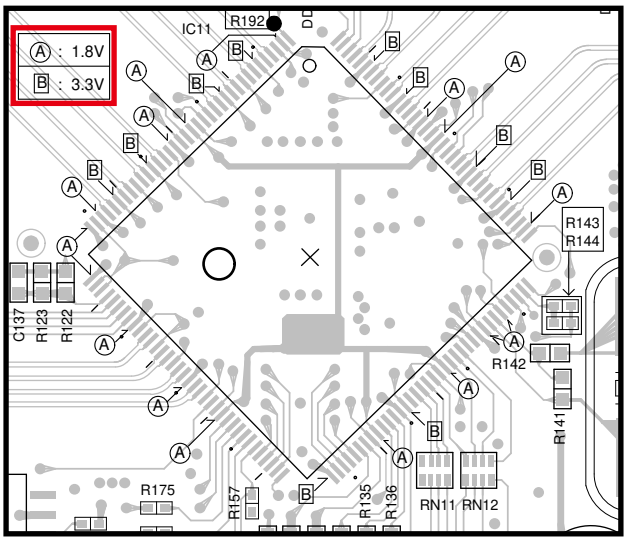


Detail B

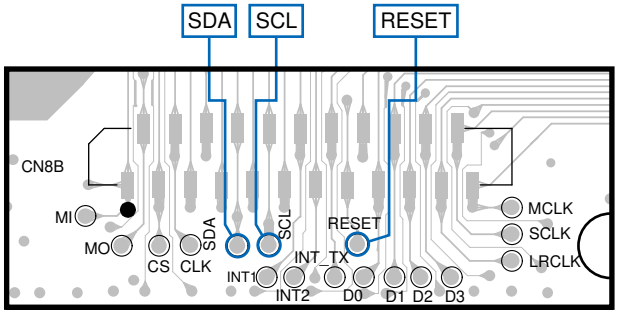


Detail C

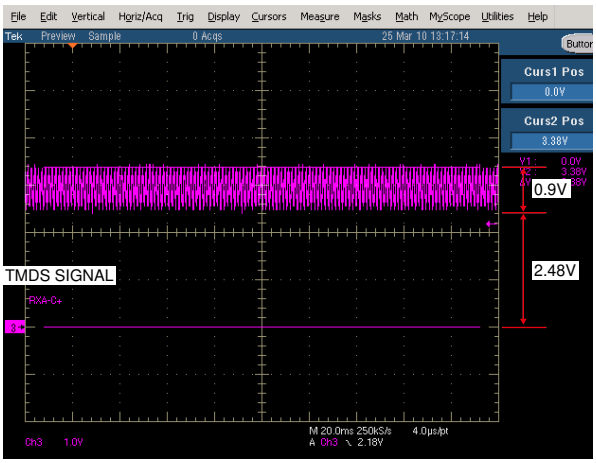
Check that silk A/B described in the terminal is numerical value of a red frame.

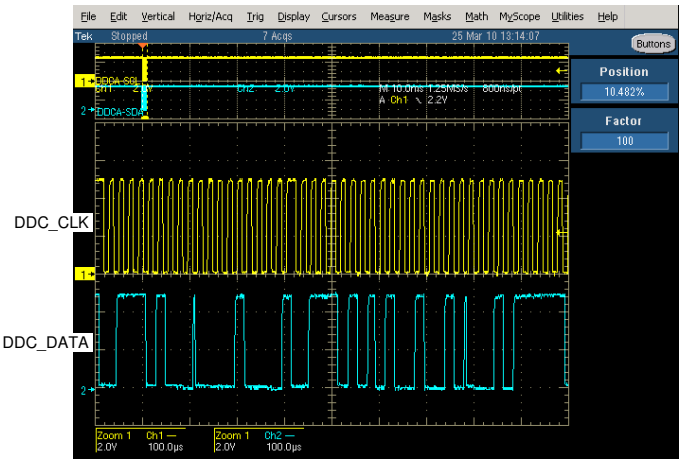


Detail D

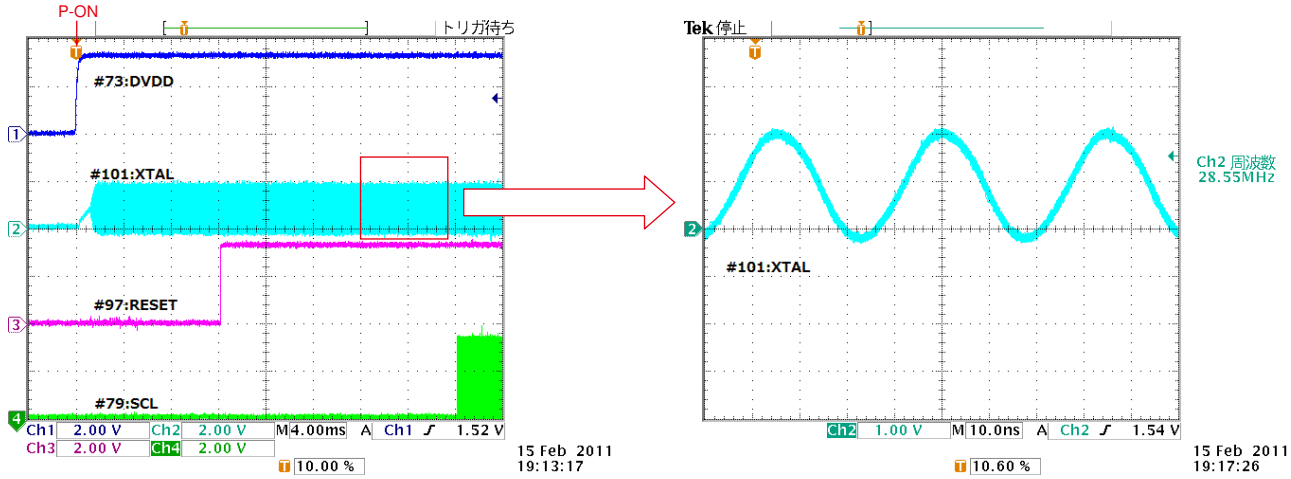


DDC_CLK/DDC_DATA/TMDS : Check items (15),(17)

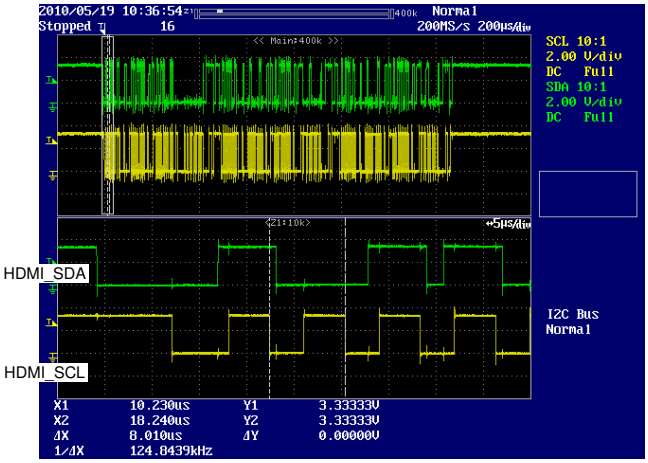




DVDD/XTAL/RESET/SCL : Check items (18),(19),(20)



HDMI_SDA/SCL(I2C) : Check item (21)



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	7ch 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)

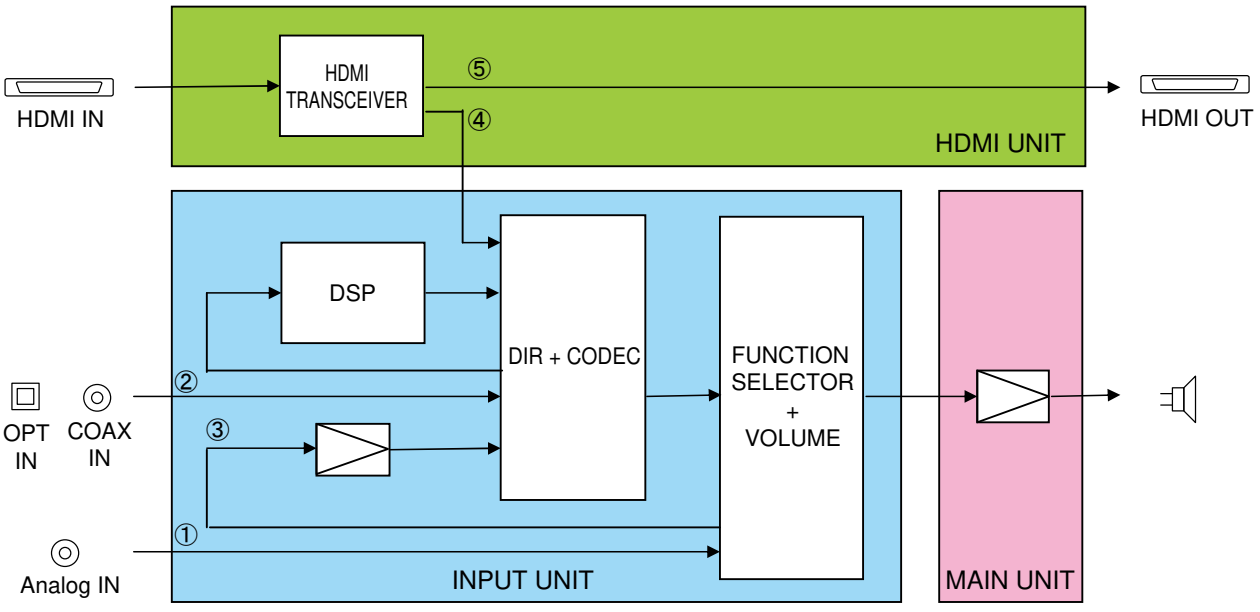
OK (Digital Audio BOLCK is OK) → Check other factors.

NG

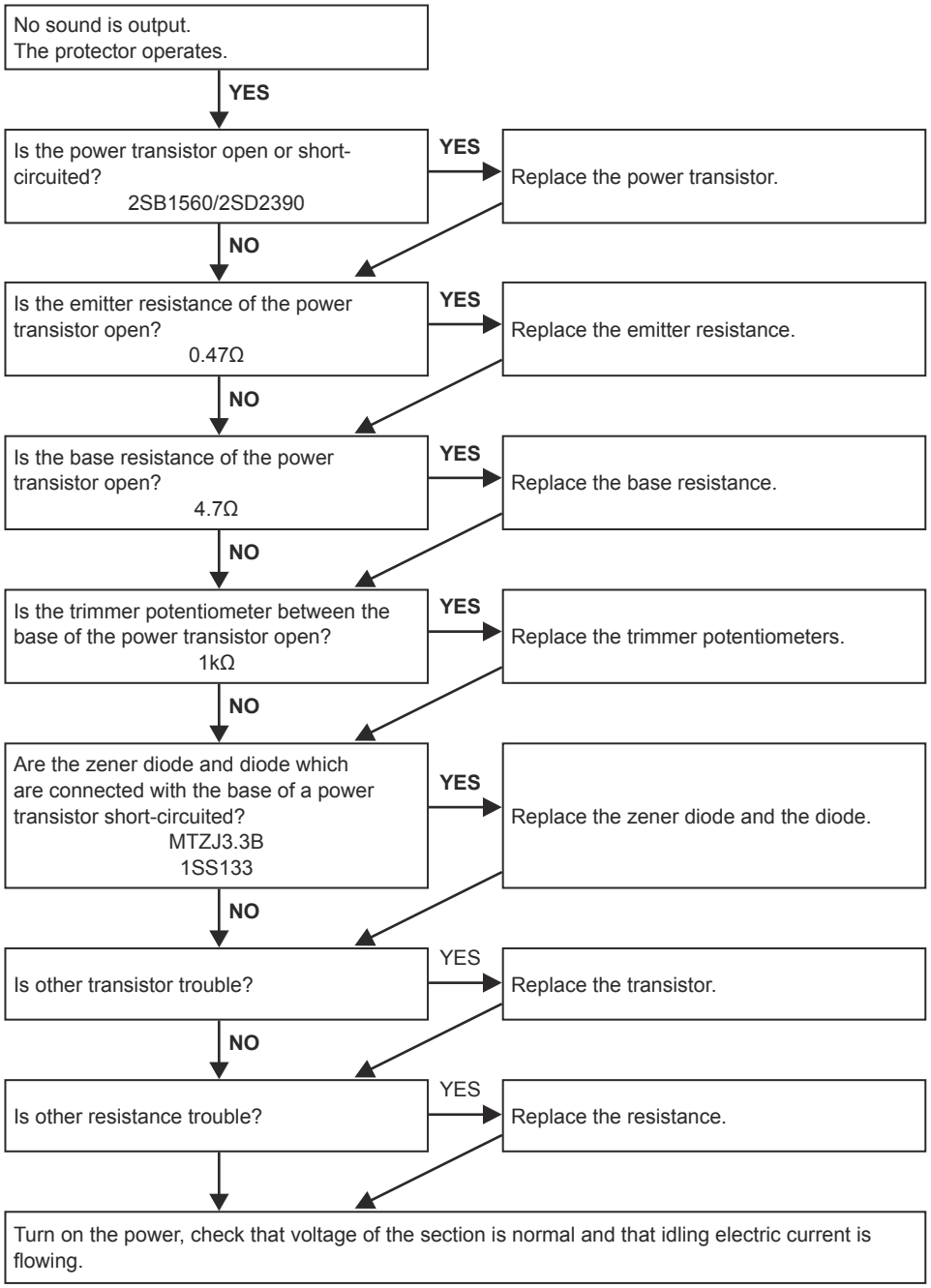
CHECK6	Connect	Setting	SOURCE
	HDMI OUT→other AVR HDMI IN	TV MODE	HD AUDIO (PCM MULTI or DolbyTrueHD or dtsHD MA)

OK → Check Digital AUDIO BLOCK.

NG → Check HDMI BLOCK.

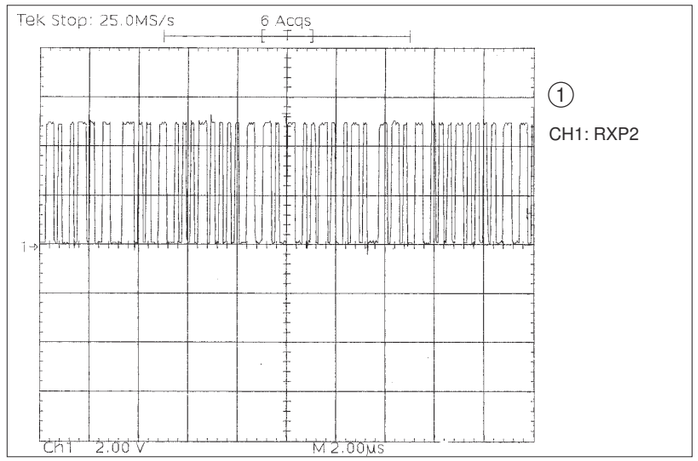


4.2. Power AMP (MAIN UNIT)



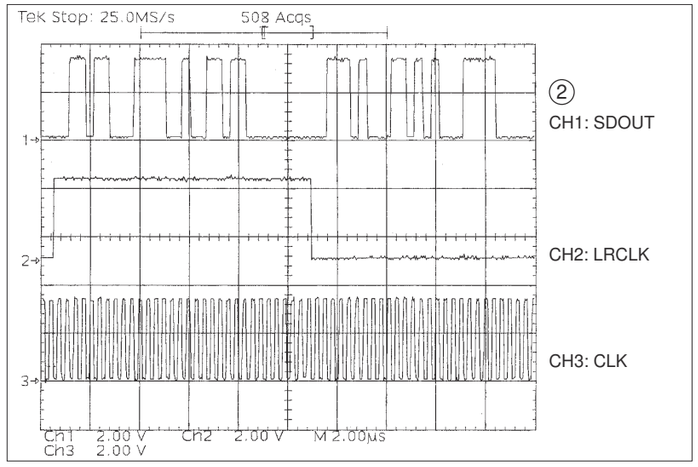
CLOCK FLOW & WAVE FORM IN DIGITAL BLOCK

Wave form



①

CH1: RXP2

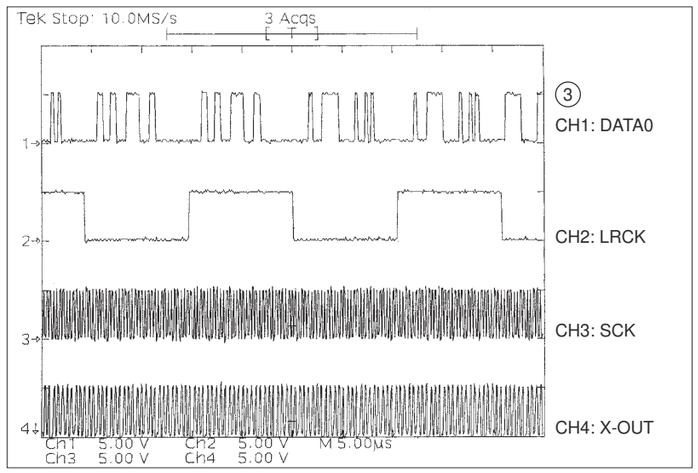


②

CH1: SDOUT

CH2: LRCLK

CH3: CLK



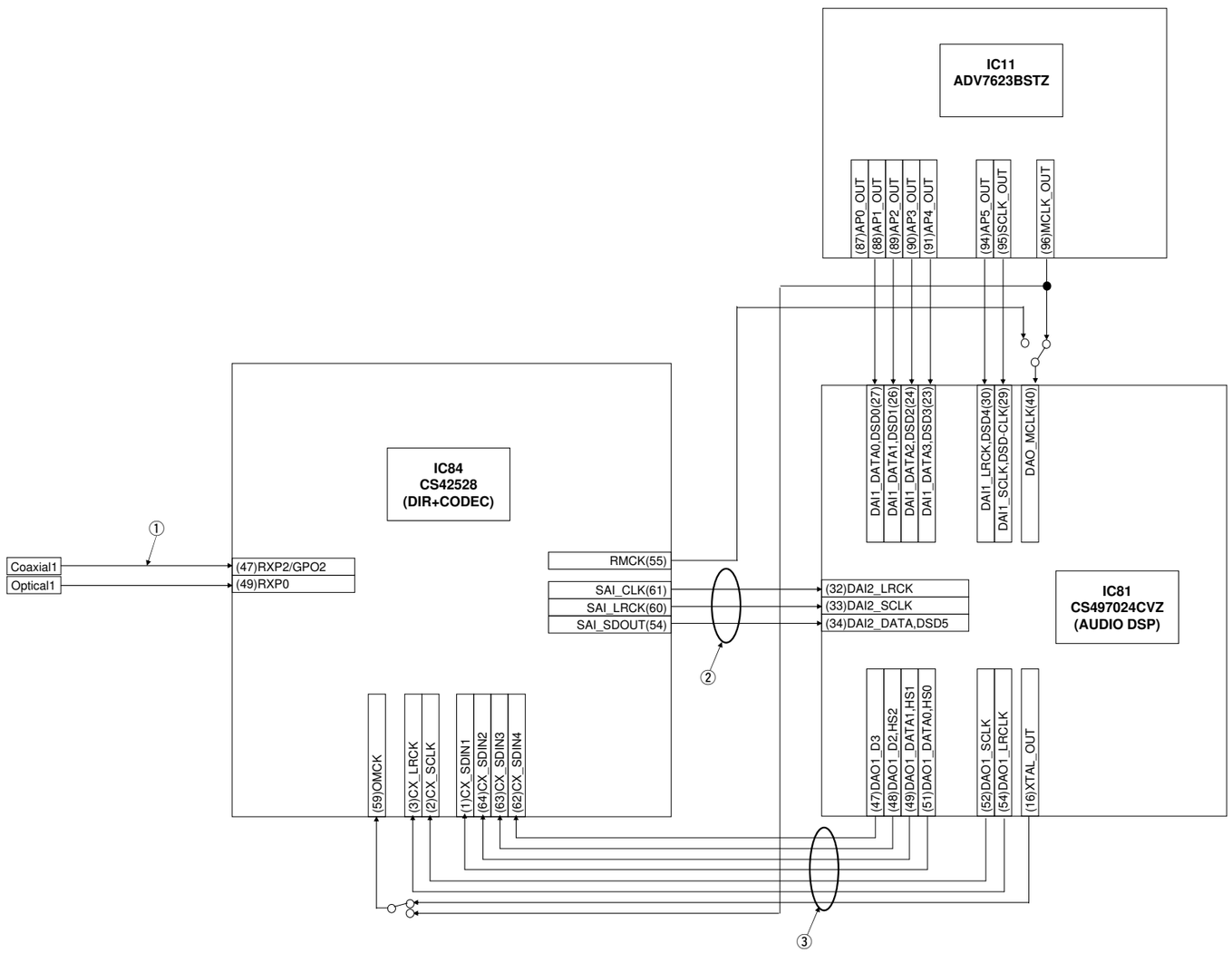
③

CH1: DATA0

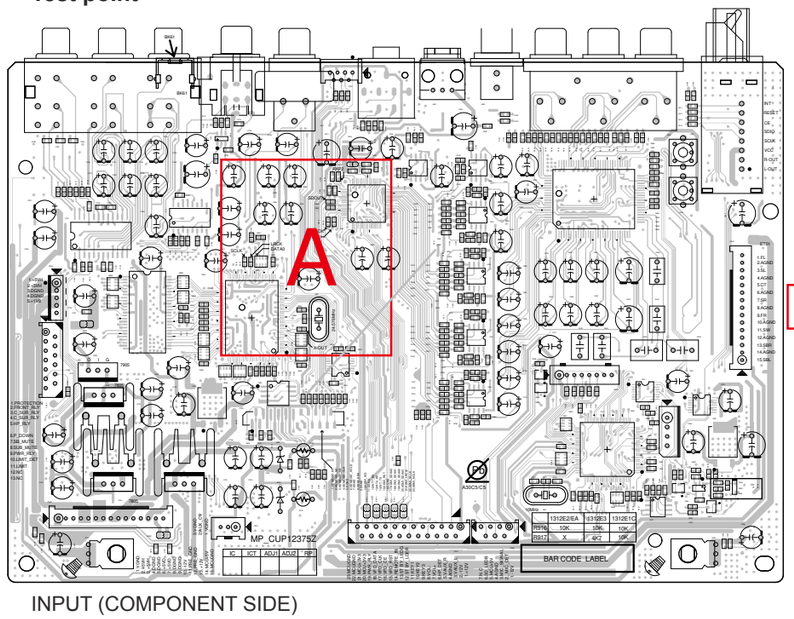
CH2: LRCK

CH3: SCK

CH4: X-OUT

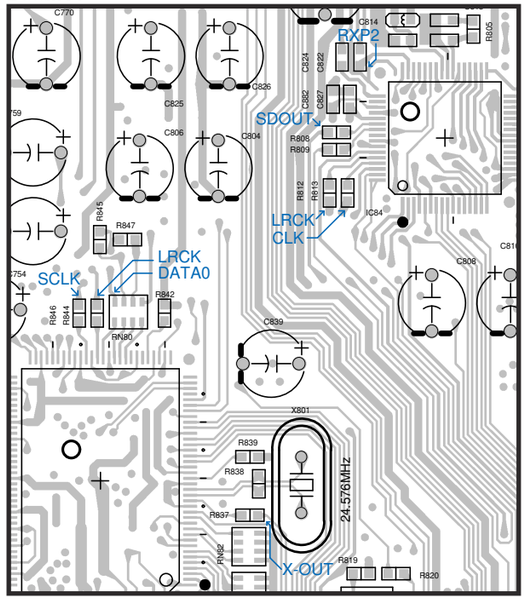


Test point

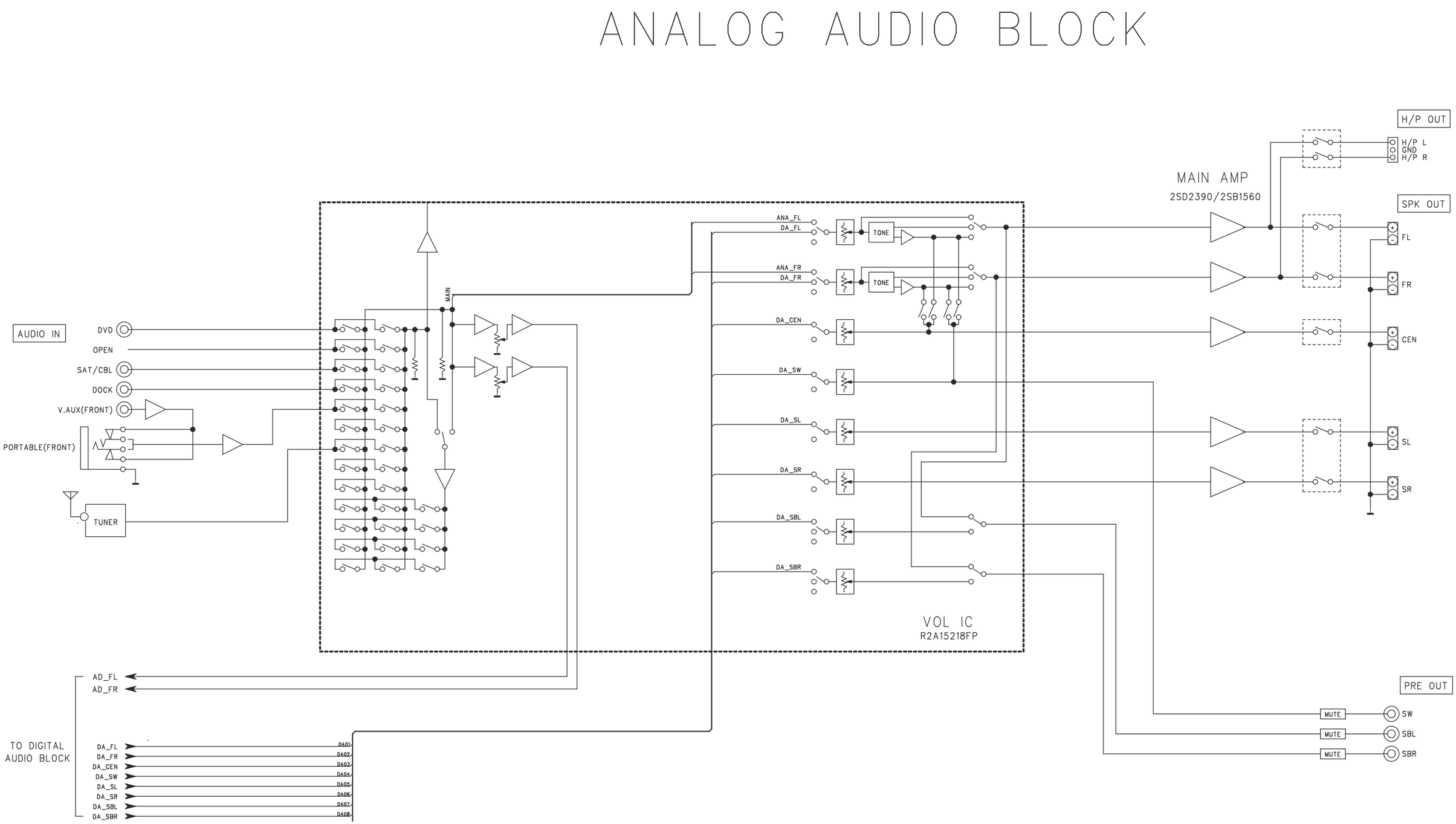


INPUT (COMPONENT SIDE)

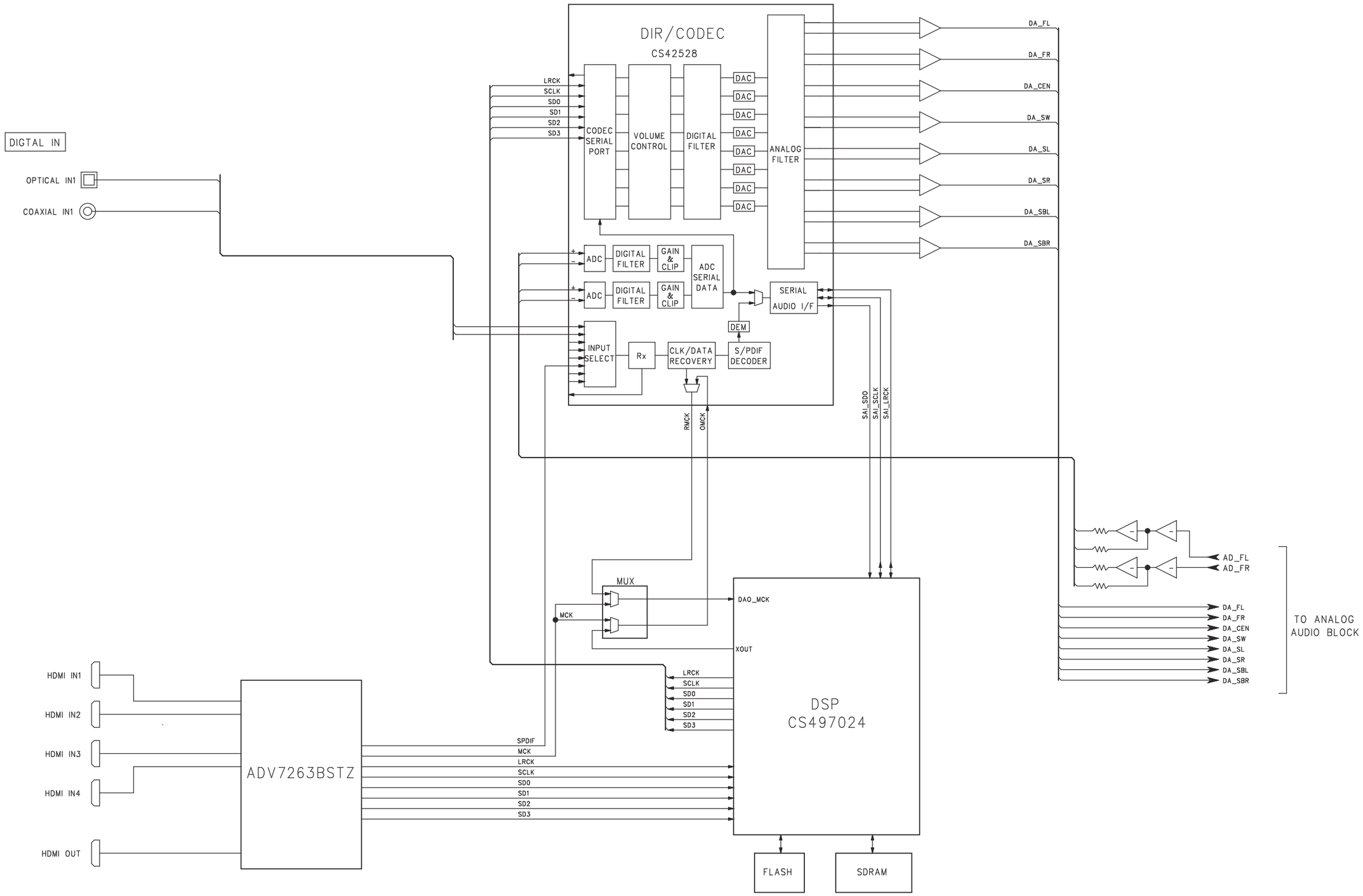
Detail A



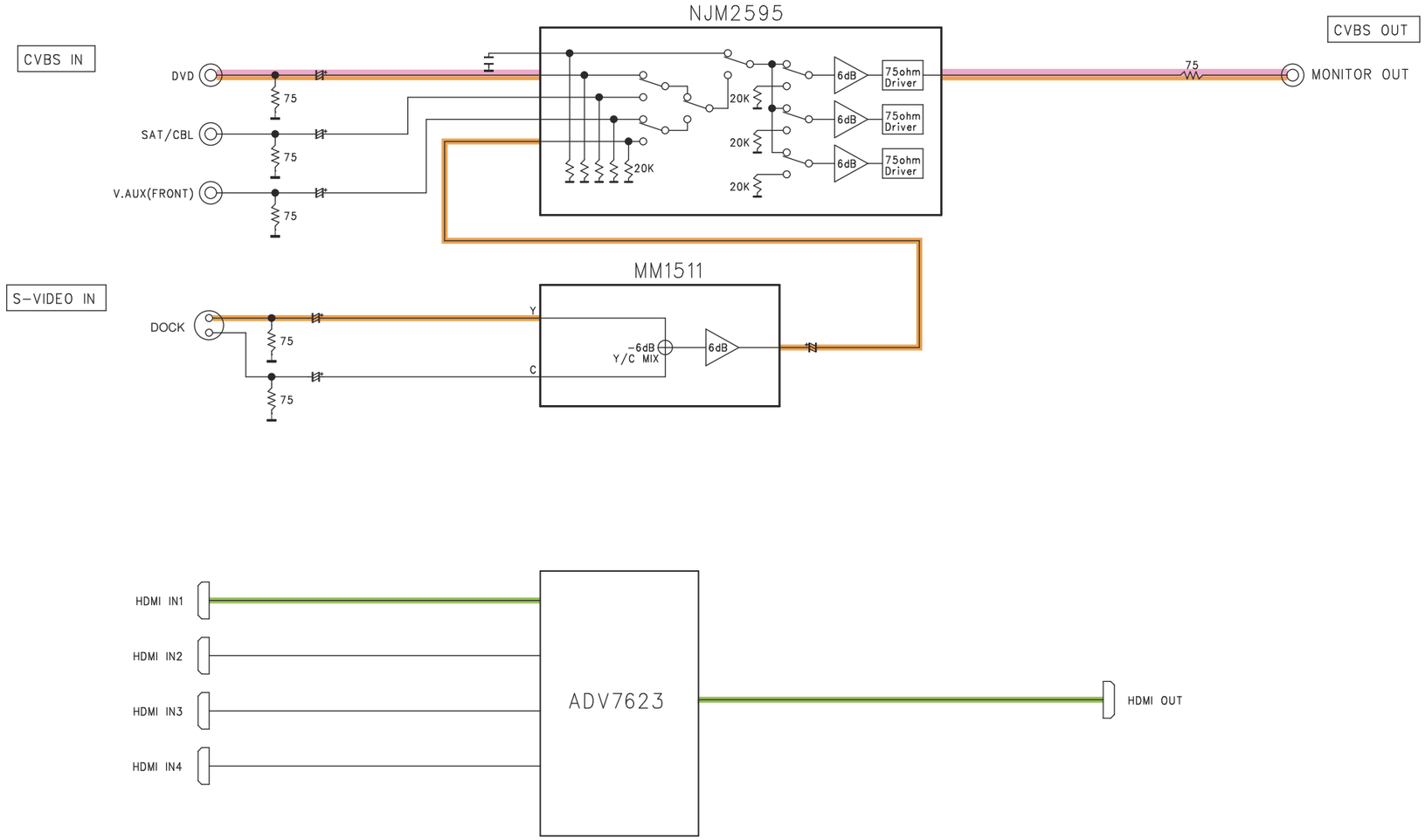
BLOCK DIAGRAM



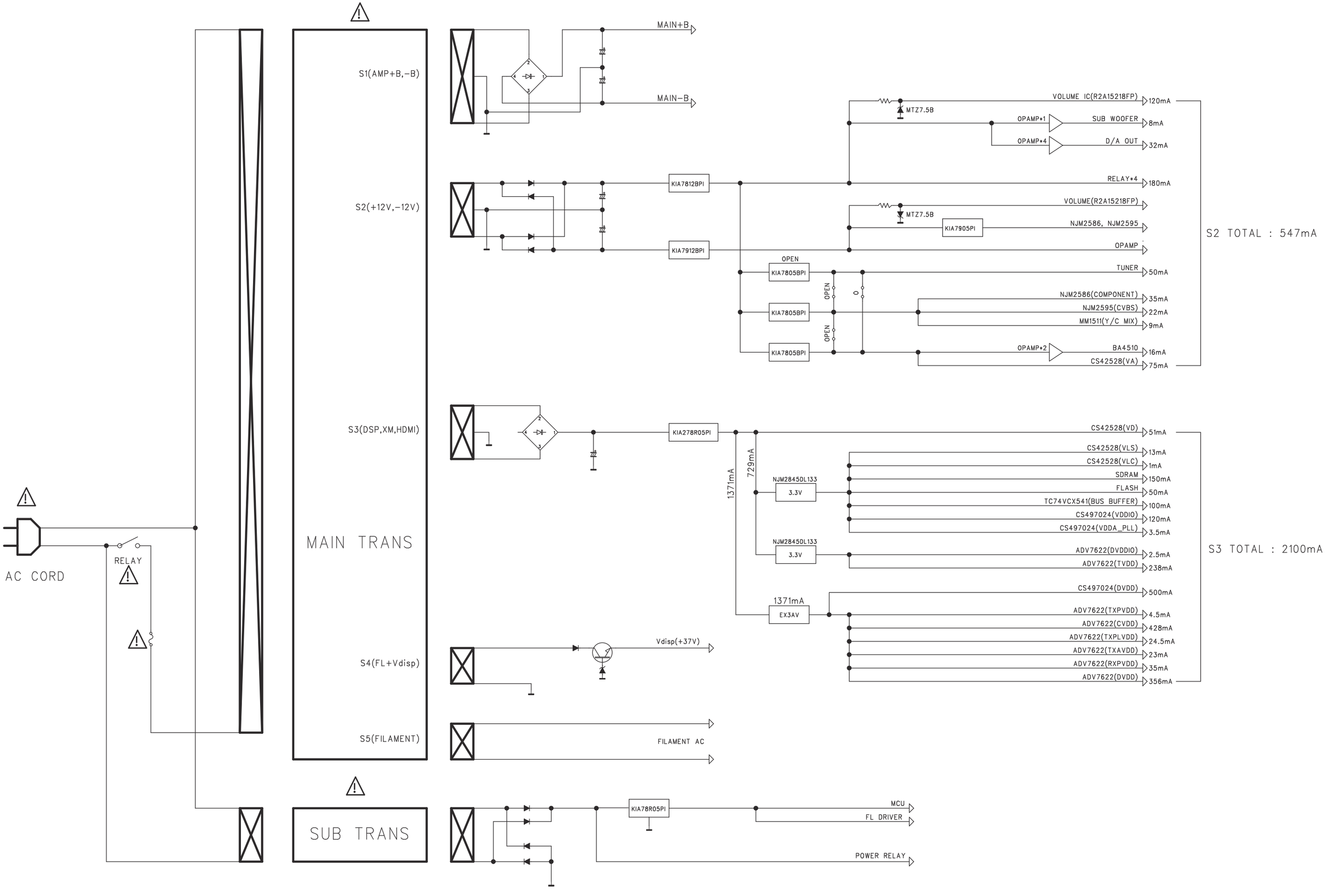
DIGITAL AUDIO BLOCK



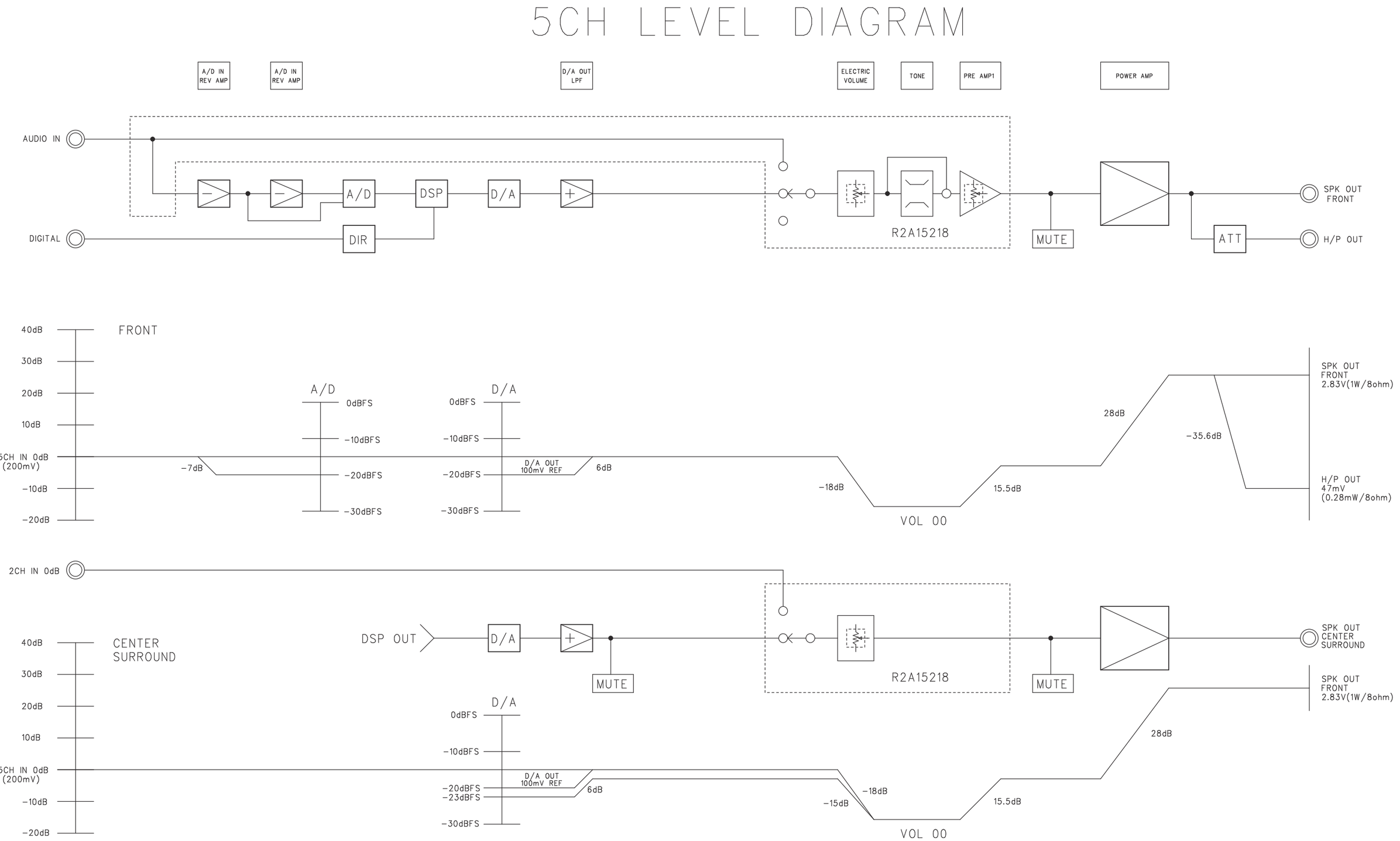
VIDEO BLOCK


NJM2595
CVBS IN
DVD
SAT/CBL
V.AUX(FRONT)
75
75
75
20K
20K
20K
6dB
6dB
6dB
75ohm Driver
75ohm Driver
75ohm Driver
75
CVBS OUT
MONITOR OUT
MM1511
S-VIDEO IN
DOCK
75
75
Y
C
-6dB Y/C MIX
6dB
HDMI IN1
HDMI IN2
HDMI IN3
HDMI IN4
ADV7623
HDMI OUT

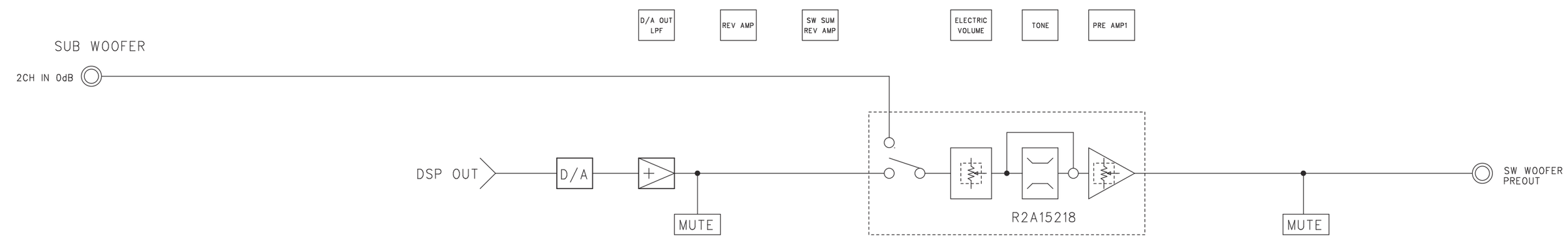
POWER BLOCK DIAGRAM

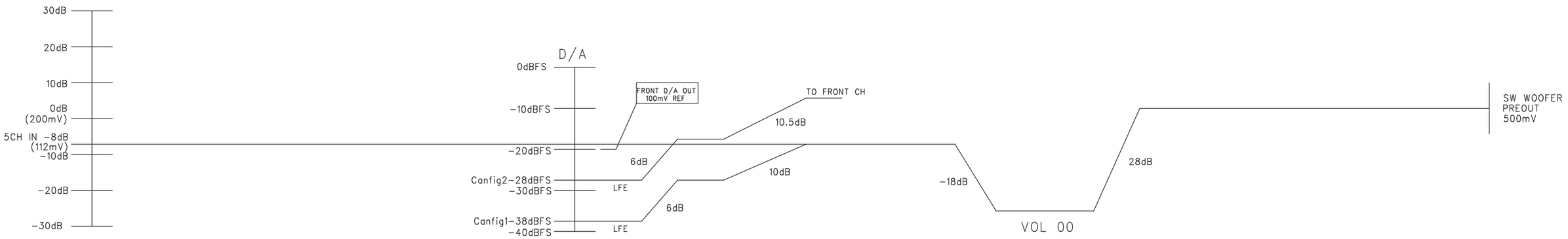


LAEVEL DIAGRAM



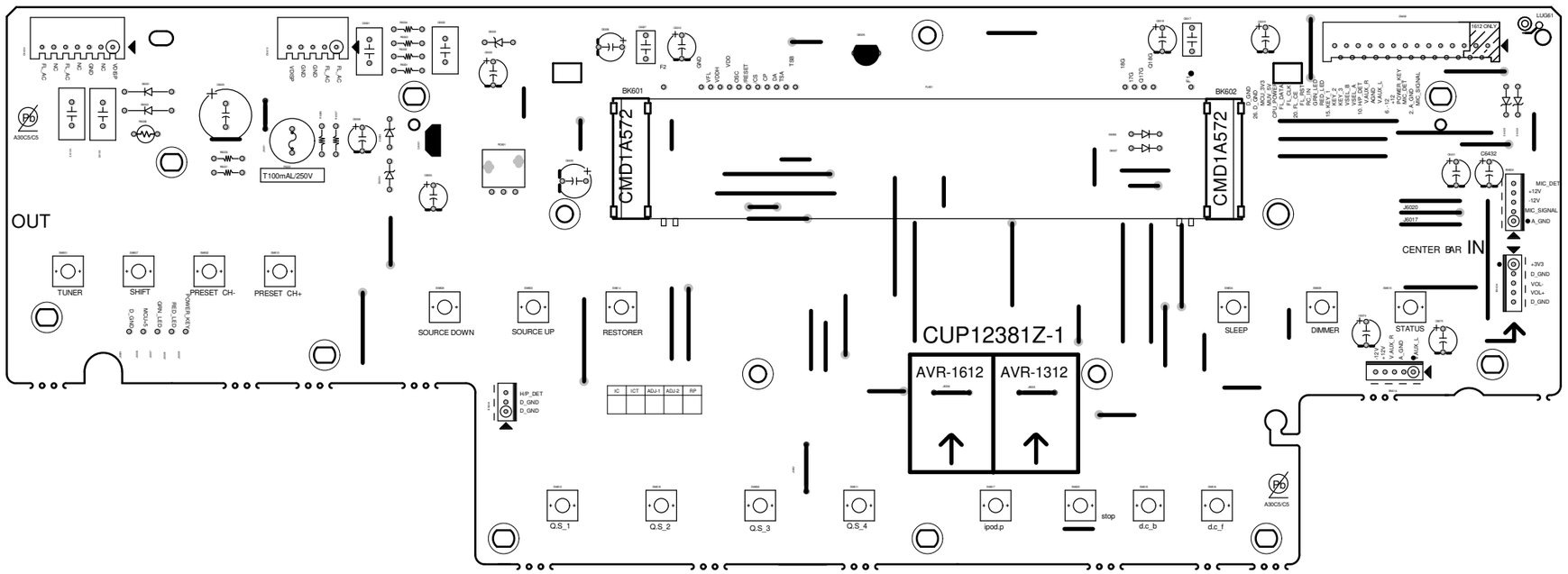
SUB WOOFER LEVEL DIAGRAM



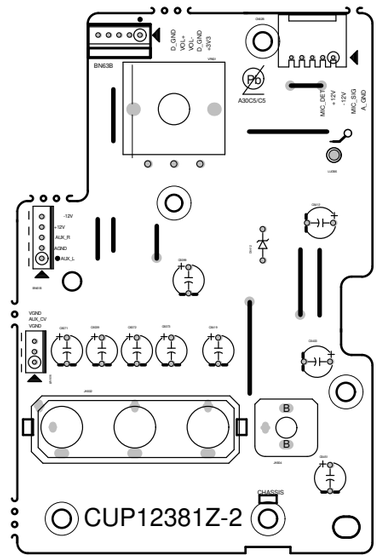


PRINTED WIRING BOARDS

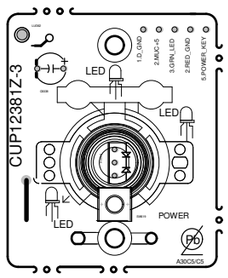
FRONT (COMPONENT SIDE)



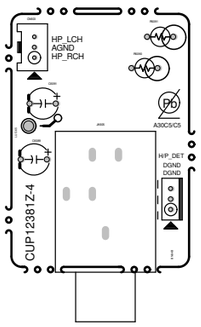
VOLUME (COMPONENT SIDE)



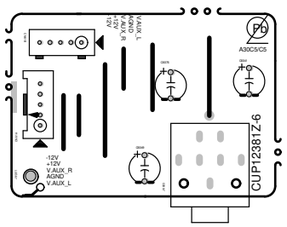
POWER (COMPONENT SIDE)



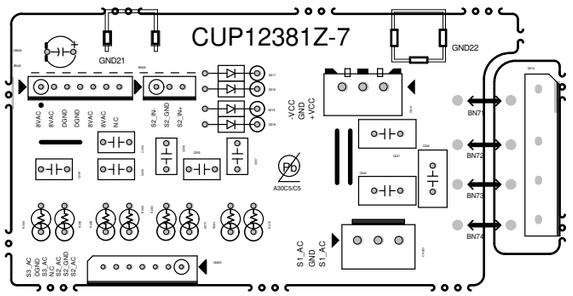
HEADPHONE (COMPONENT SIDE)



PORTABLE IN (COMPONENT SIDE)



REGULATOR (COMPONENT SIDE)



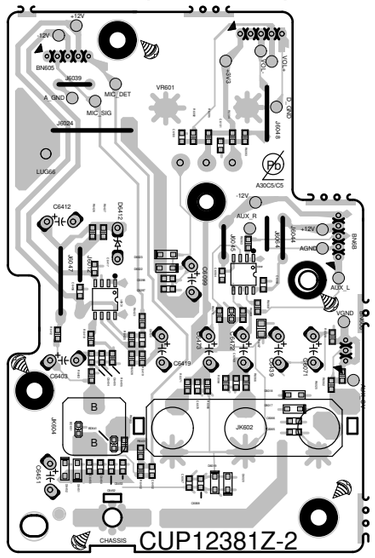
鉛フリー半田
半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

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

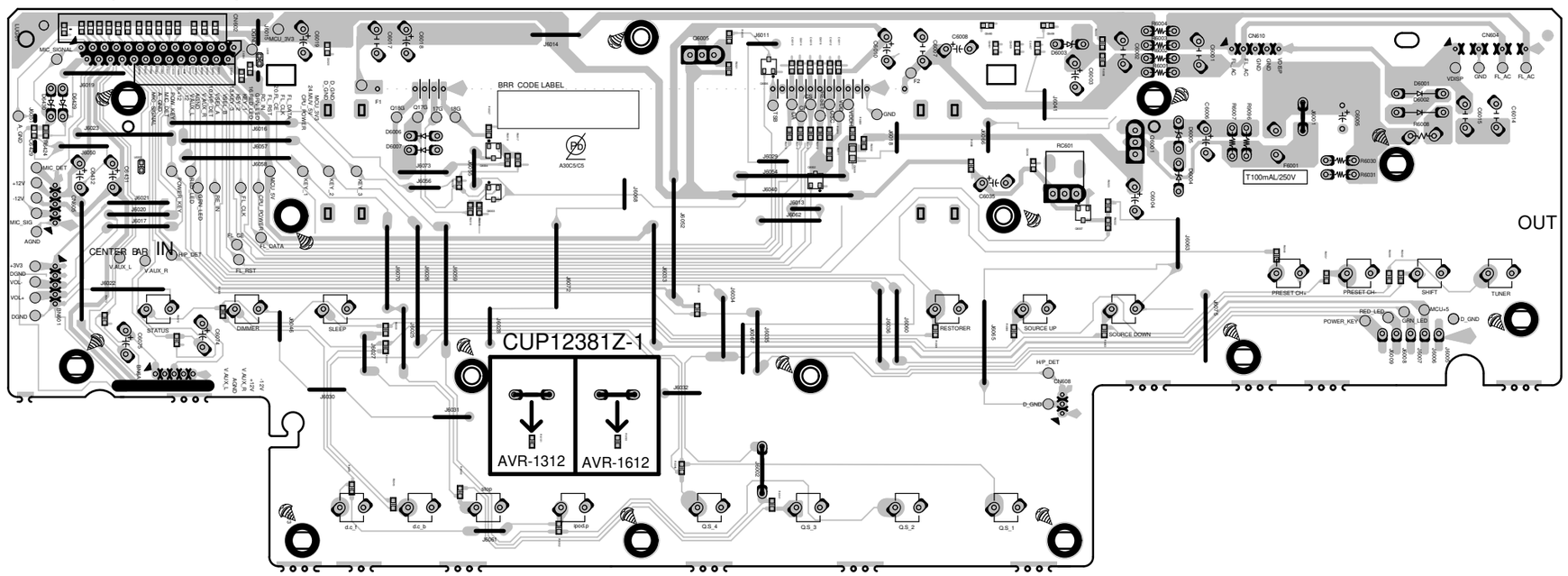
18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

A B C D E F G H I J K L M

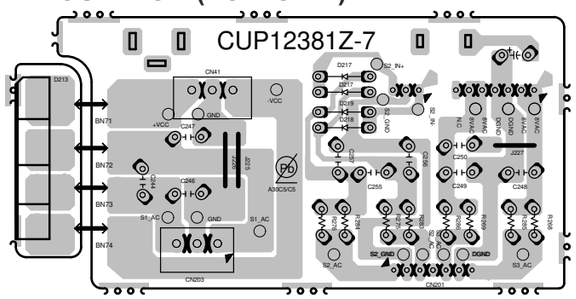
VOLUME (FOIL SIDE)



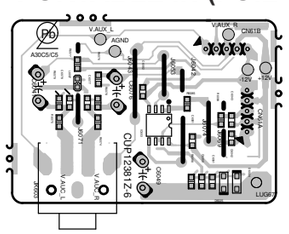
FRONT (FOIL SIDE)



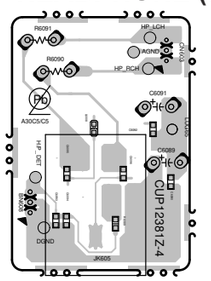
REGULATOR (FOIL SIDE)



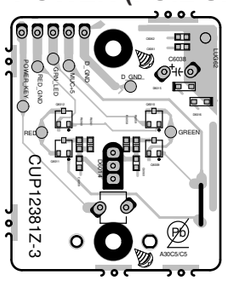
PORTABLE IN (FOIL SIDE)



HEADPHONE (FOIL SIDE)



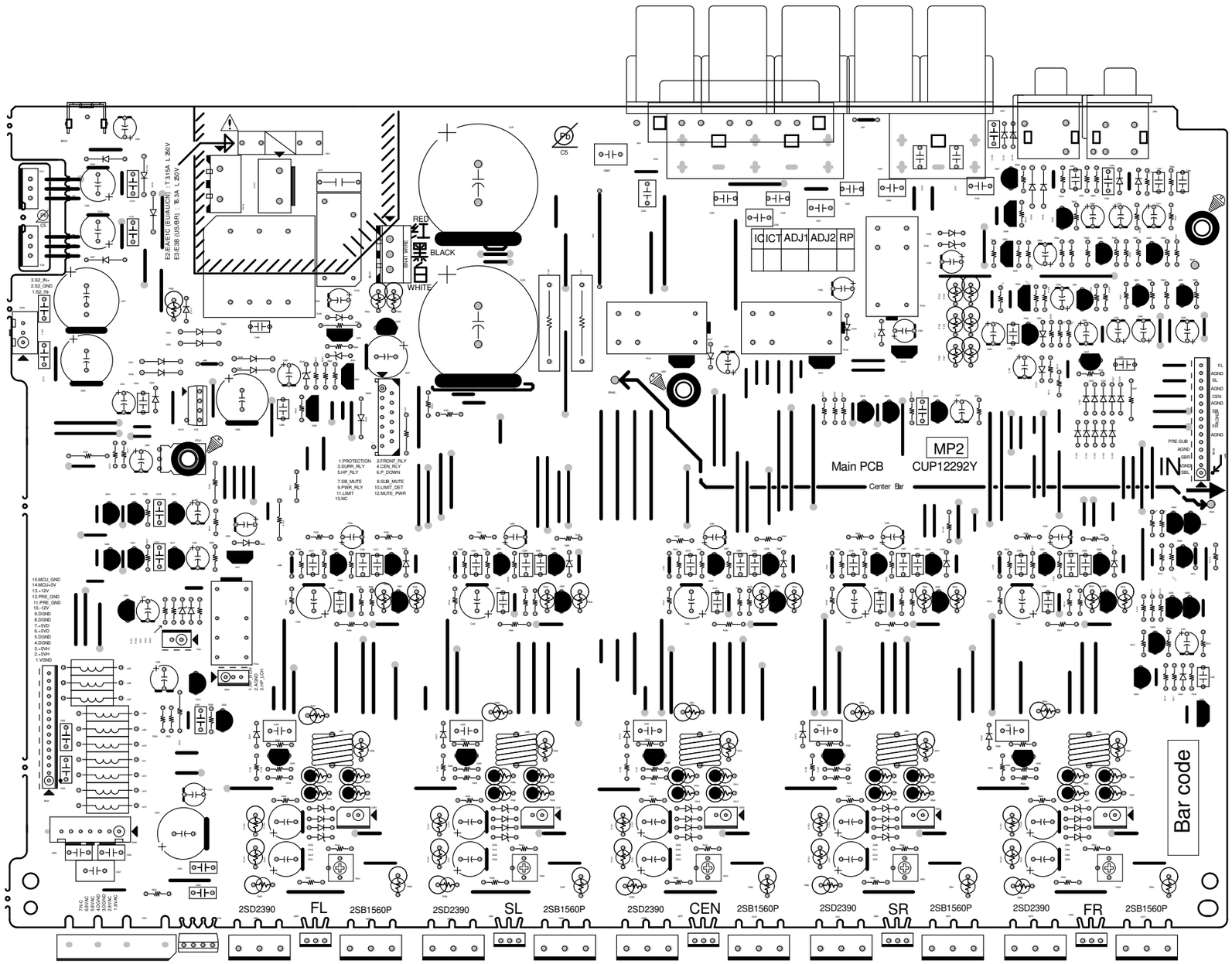
POWER (FOIL SIDE)



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).

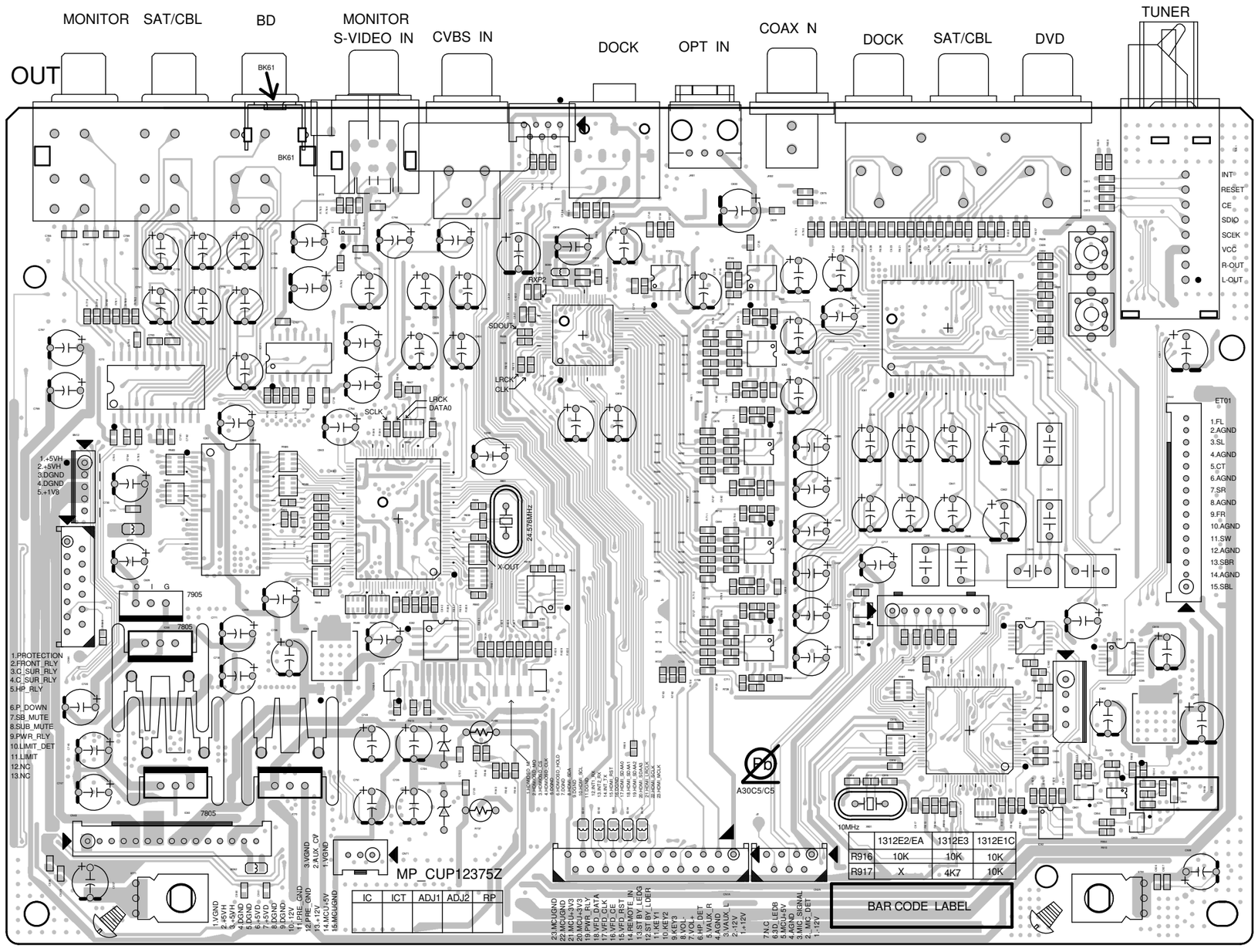
MAIN (COMPONENT SIDE)



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).

INPUT (COMPONENT SIDE)



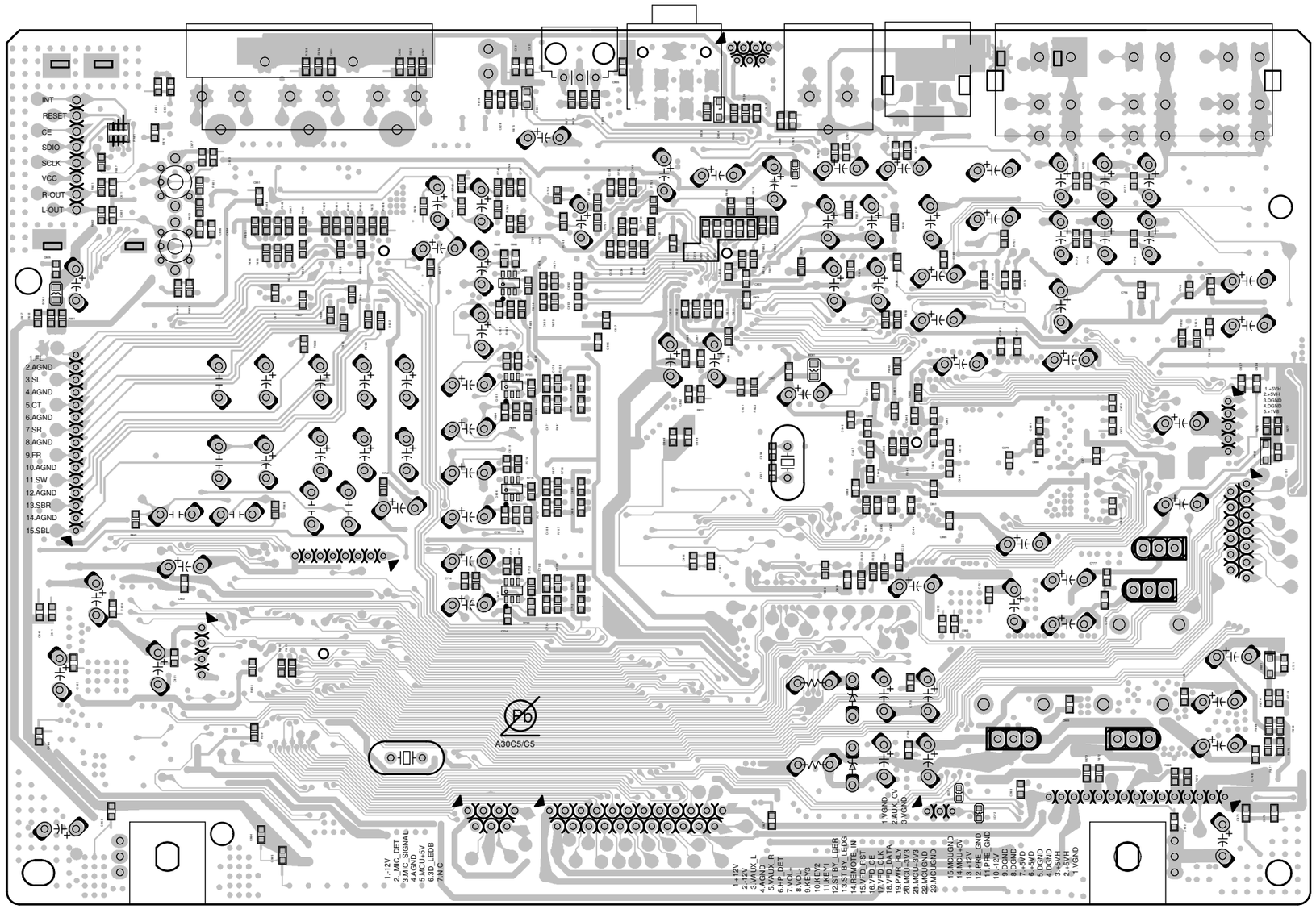
	1312E2/EA	1312E3	1312E1C
R916	10K	10K	10K
R917	X	4K7	10K

IC	ICT	ADJ1	ADJ2	RP

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).

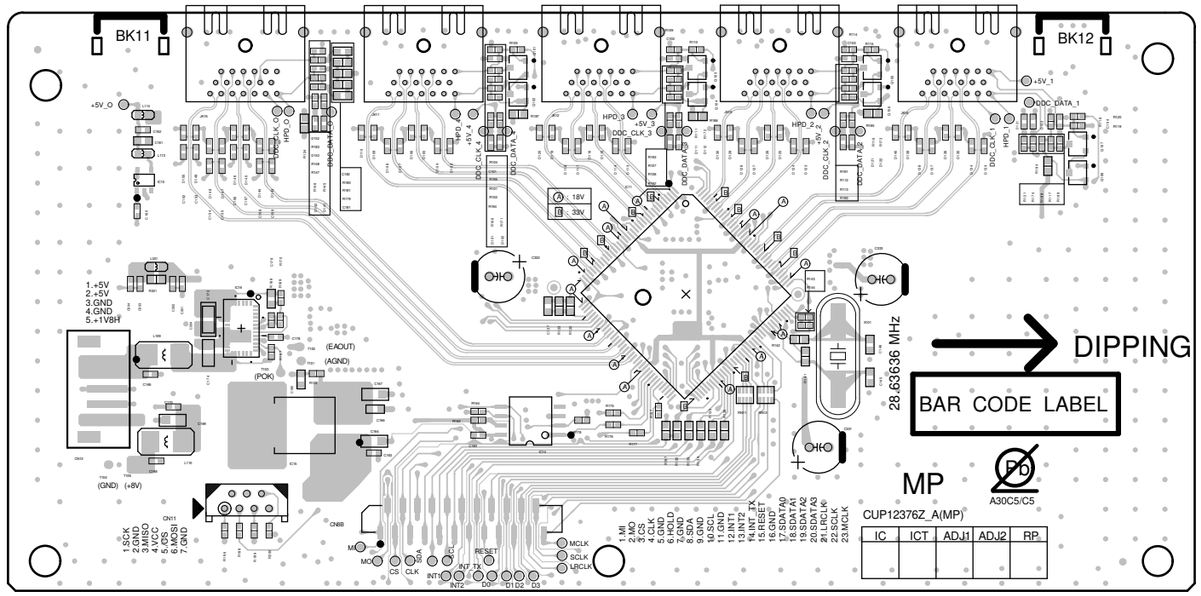
INPUT (FOIL SIDE)



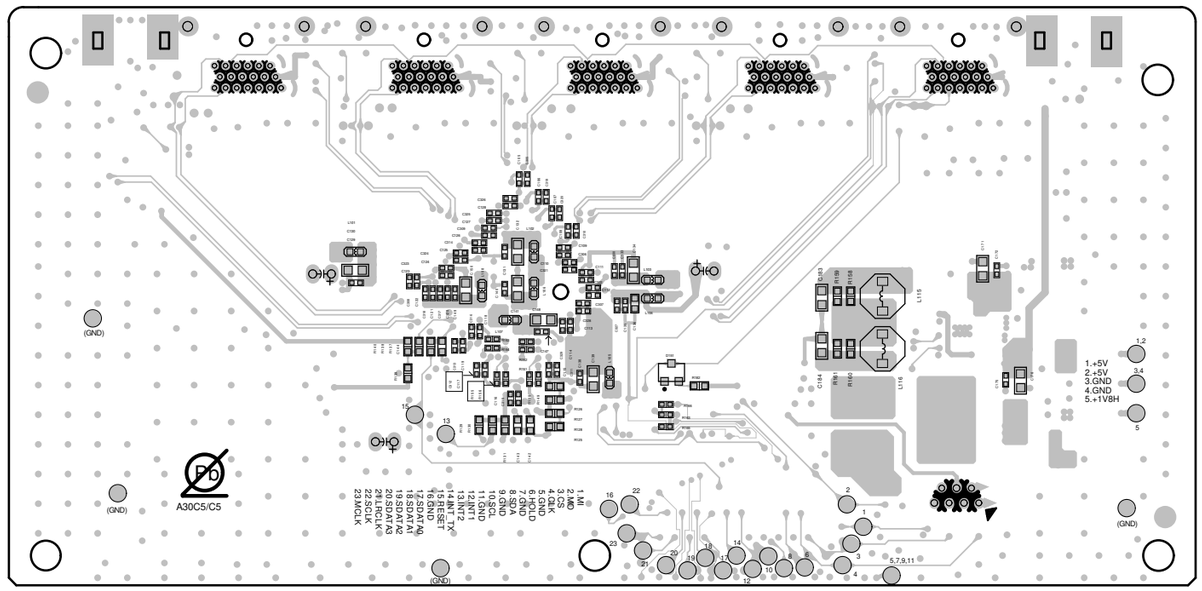
鉛フリー半田
半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

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

HDMI (COMPONENT SIDE)

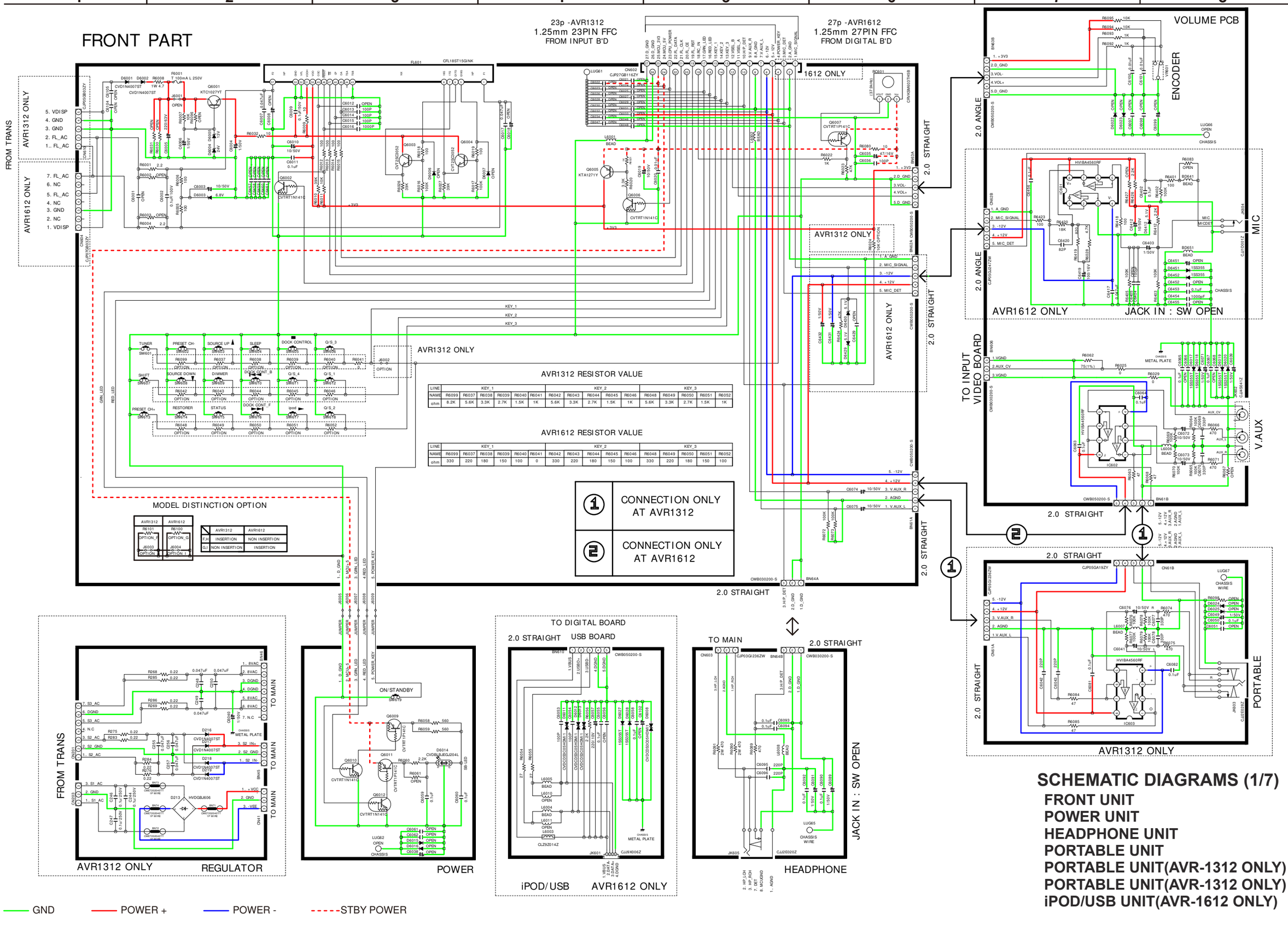


HDMI (FOIL SIDE)



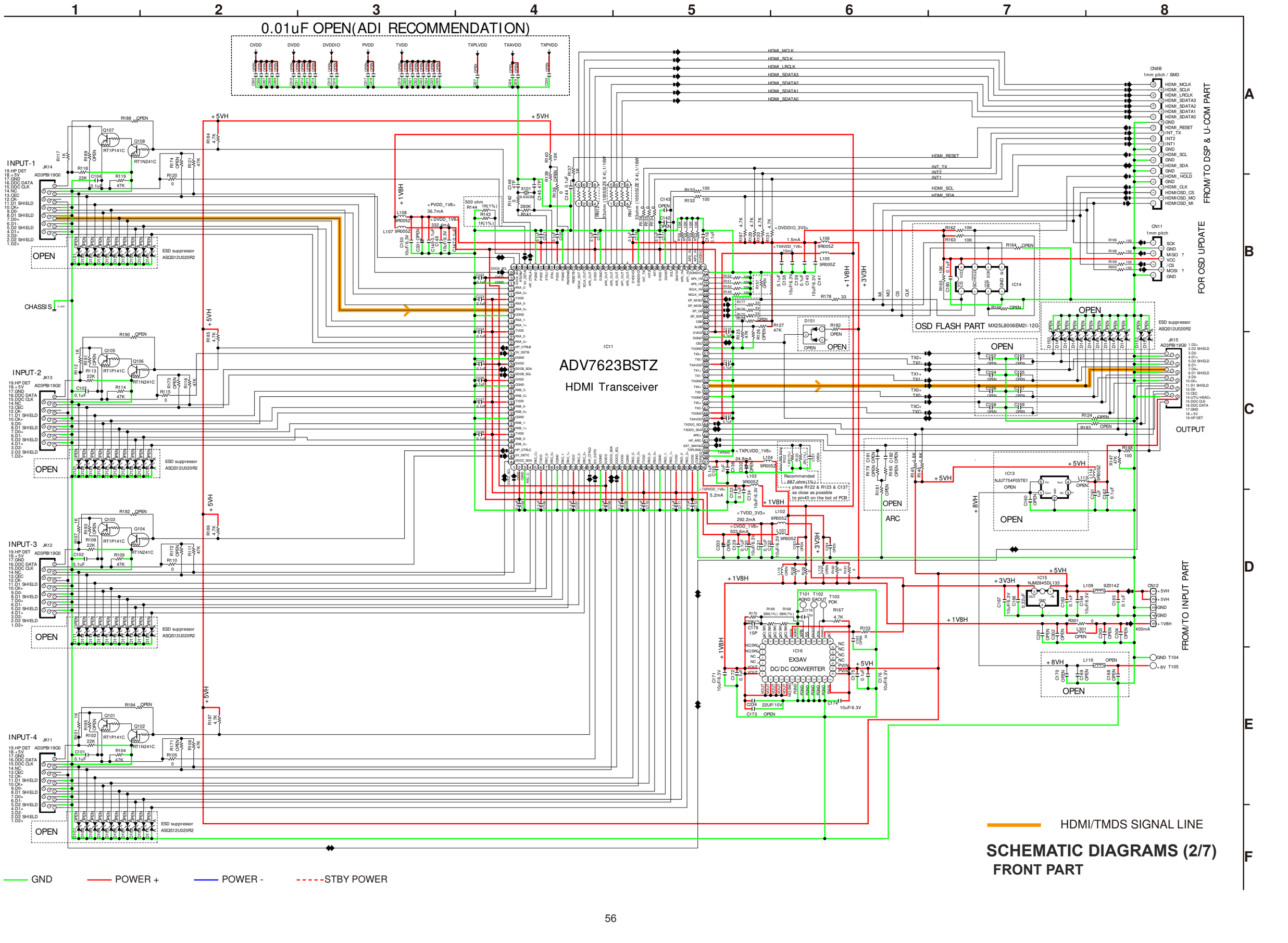
鉛フリー半田
半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

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



SCHEMATIC DIAGRAMS (1/7)

- FRONT UNIT
- POWER UNIT
- HEADPHONE UNIT
- PORTABLE UNIT
- PORTABLE UNIT(AVR-1312 ONLY)
- PORTABLE UNIT(AVR-1312 ONLY)
- iPOD/USB UNIT(AVR-1612 ONLY)


0.01uF OPEN(ADI RECOMMENDATION)
ADV7623BSTZ
HDMI Transceiver
IC11
INPUT-1
INPUT-2
INPUT-3
INPUT-4
JK14
JK13
JK12
JK11
AD3PBI19G0
OPEN
ESD suppressor
ASQS12U020R2
CHASSIS
+5VH
+1V8H
+3V3H
+8VH
OSD FLASH PART MX25L8006EM2I-12G
IC14
CN8B
1mm pitch / SMD
FROM/TO DSP & U-COM PART
CN11
1mm pitch
FOR OSD UPDATE
OUTPUT
ARC
IC13
NJU7754F05TE1
IC15
NJM2845DL133
IC16
EX3AV
DC/DC CONVERTER
FROM/TO INPUT PART
HDMI_MCLK
HDMI_SCLK
HDMI_LRCLK
HDMI_SDATA3
HDMI_SDATA2
HDMI_SDATA1
HDMI_SDATA0
HDMI_RESET
INT_TX
INT2
INT1
HDMI_SCL
HDMI_SDA
HDMI/TMDS SIGNAL LINE
SCHEMATIC DIAGRAMS (2/7)
FRONT PART
GND
POWER +
POWER -
STBY POWER

INPUT & VOLUME PART

* TUNER MODULE OPTION TABLE

	BKE3	BKE2	E2(AP)	BKEA	SPE1C
CNVMW004MV1S63SN	O	—	—	—	—
CNVMW104MV1S63N	—	O	O	O	O

TUNER MODULE

FROM MCU PART

TO VIDEO PART

INPUT B'D < --> AMP B'D

INPUT B'D<--> HDMI B'D
WIRE/05P/2mm

INPUT B'D < --> AMP B'D
WAFER/15P/2mm

FROM DSP PART

AUDIO SIGNAL LINE

SCHEMATIC DIAGRAMS (3/7)
INPUT & VOLUME UNIT

GND POWER + POWER - STBY POWER

VIDEO PART

WAFER/03P/2mm
TO FRONT B'D

CN71 VGND AUX-CV VGND CJP03GI236ZW

FROM DSP PART

DVD IN
SAT/CBL IN
DOCK IN
MONITOR OUT

NLM2595 S/W TABLE

FUNC.IN	SW1 (14)	SW2 (10)	SW3 (4)	SW4 (6)
MUTE	L	X	X	X
SAT/CBL	H	L	X	L
AUX_CV	H	H	X	L
DOCK	H	X	L	H
DVD	H	X	H	H

VIDEO SW

IC72 HVIMM1511XNRE

FROM MCU PART

FROM INPUT PART

COMPONENT VIDEO

BD IN
SAT/CBL IN
MONITOR OUT

NLM2586 S/W TABLE

FUNC. IN	SW1 (2)	SW2 (4)
BD	H	H
SAT/CBL	H	L
MUTE	L	L

COMPONENT VIDEO PART

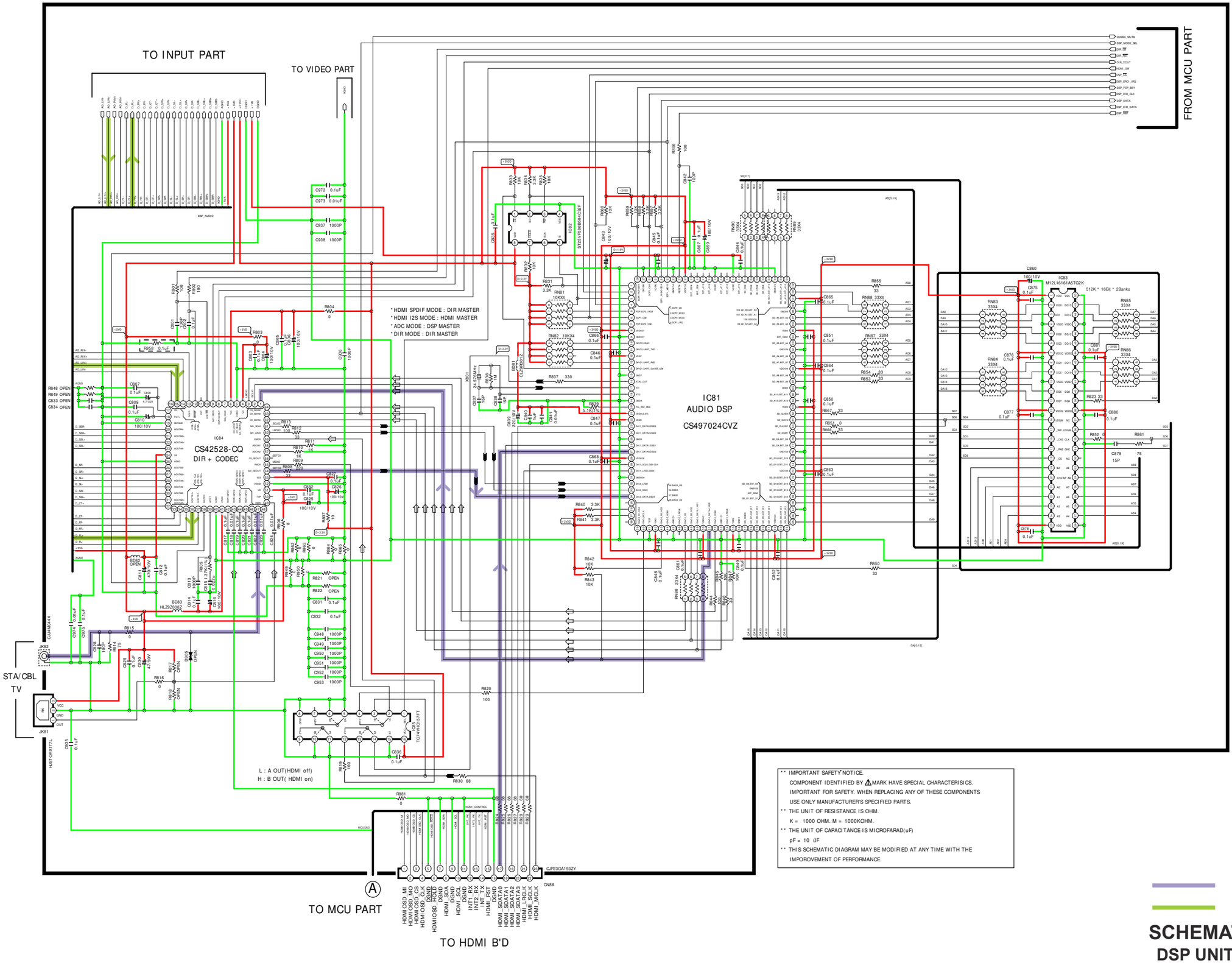
ALL OPEN

VIDEO SIGNAL LINE

GND POWER + POWER - STBY POWER

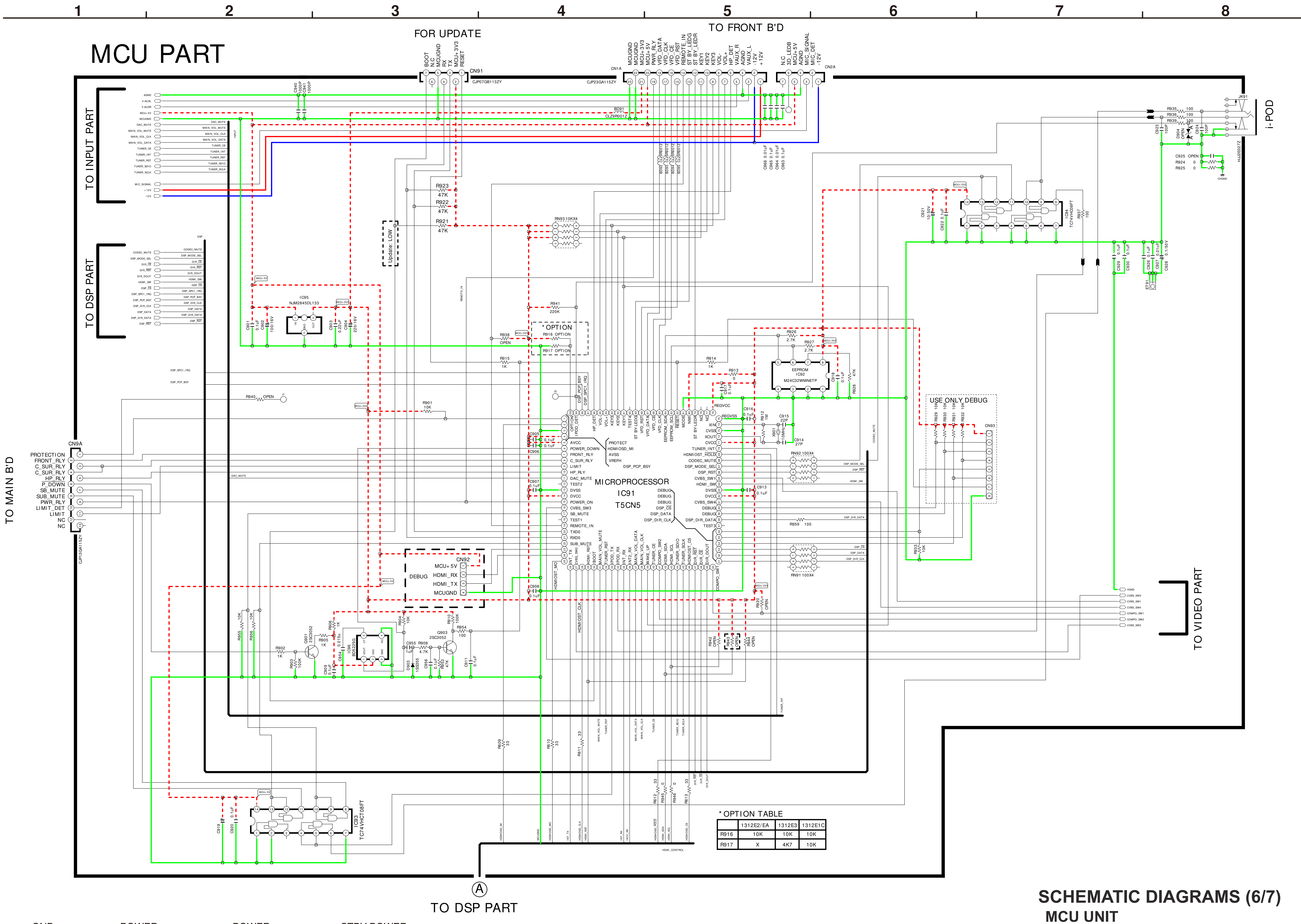
SCHEMATIC DIAGRAMS (4/7)
VIDEO UNIT

DSP PART



SCHEMATIC DIAGRAMS (5/7)
DSP UNIT

MCU PART



1
2
3
4
5
6
7
8
A
B
C
D
E
F
FOR UPDATE
TO FRONT B'D
TO INPUT PART
TO DSP PART
TO MAIN B'D
TO VIDEO PART
i-POD
PROTECTION
FRONT_RLY
C_SUR_RLY
C_SUR_RLY
HP_RLY
P_DOWN
SB_MUTE
SUB_MUTE
PWR_RLY
LIMIT_DET
LIMIT
NC
NC
Update: LOW
*OPTION
USE ONLY DEBUG
MICROPROCESSOR
IC91
T5CN5
DEBUG
MCU+5V
HDMI_RX
HDMI_TX
MCUGND
CN92
EEPROM
IC92
M24C32WMN6TP
IC95
NJM2845DL133
IC93
TC74VHCT08FT
IC94
TC74VHC08FT
Ⓐ
TO DSP PART

*OPTION TABLE

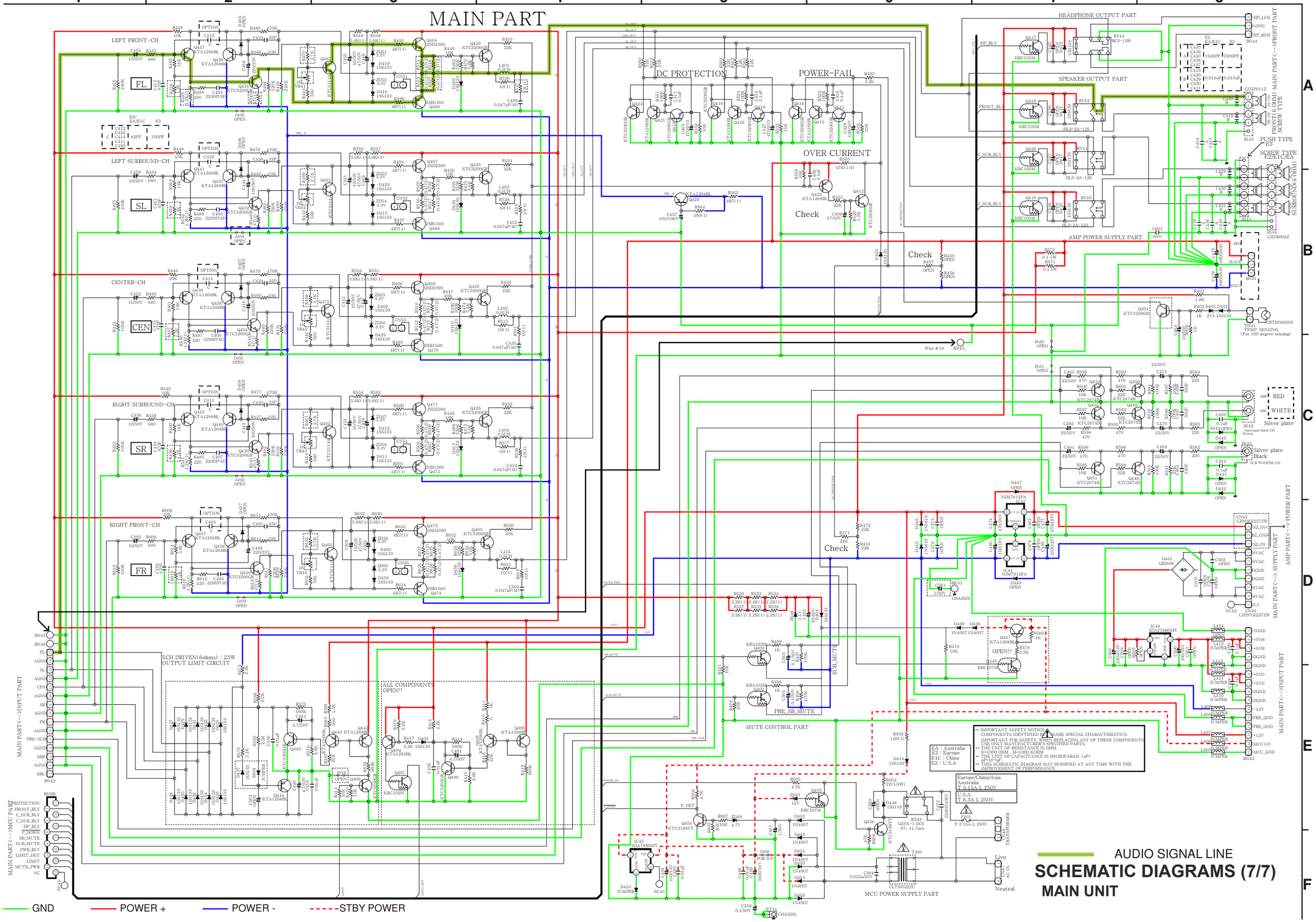
	1312E2/EA	1312E3	1312E1C
R916	10K	10K	10K
R917	X	4K7	10K

GND   POWER +   POWER -   STBY POWER

SCHEMATIC DIAGRAMS (6/7)

MCU UNIT

MAIN PART

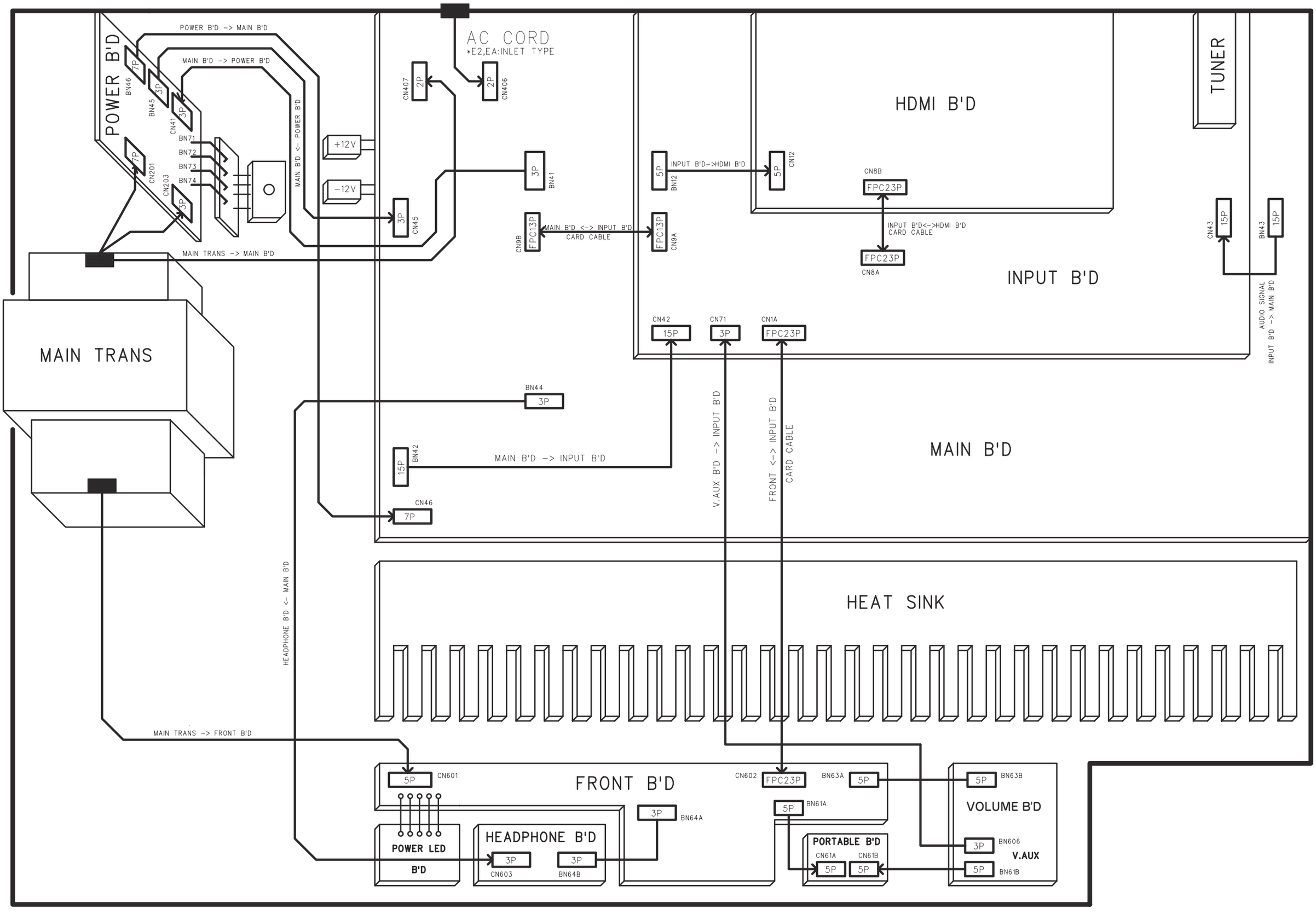


AUDIO SIGNAL LINE

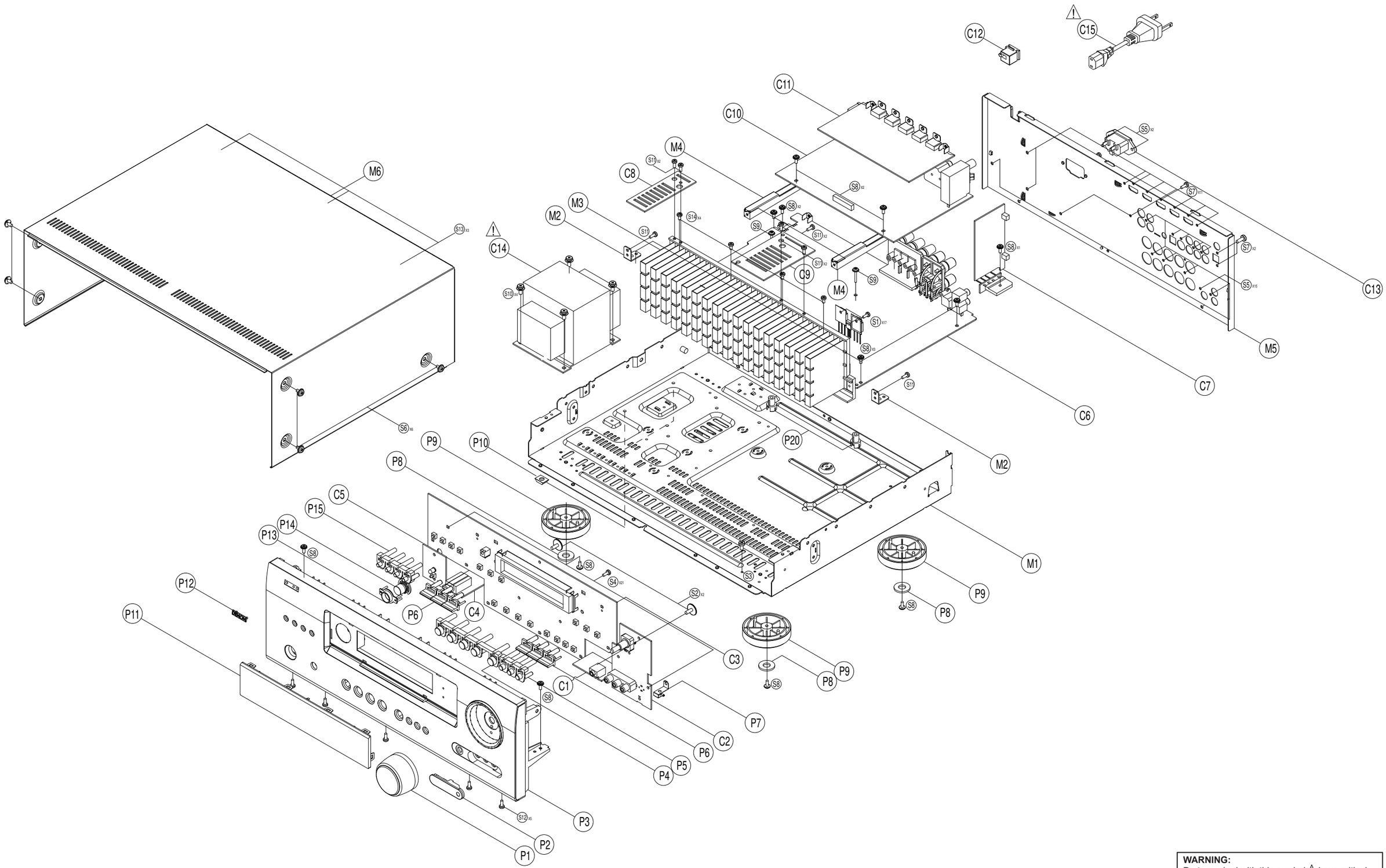
SCHEMATIC DIAGRAMS (7/7)

MAIN UNIT

WIRING DIAGRAM



EXPLODED VIEW



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

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	EA : Australia model
BK : Black model	SP : Premium Silver model

	Ref.No.	Part No.	Part Name	Remarks		Q'ty	New
	C3'	nsp	FRONT PCB ASS'Y	E3	COP12381G	1	*
	C3'	nsp	FRONT PCB ASS'Y	E2,EA,E1C	COP12381H	1	*
	C1	-	PORTABLE IN PCB				
	C2	-	VOLUME PCB				
	C3	-	FRONT PCB				
	C4	-	HEADPHONE PCB				
	C5	-	POWER PCB				
	C7	-	REGULATOR PCB				
	C9	-	WIRE SUPPORT				
	C6'	nsp	MAIN PCB ASS'Y	E3	COP12396B	1	*
	C6'	nsp	MAIN PCB ASS'Y	E2,EA	COP12396C	1	*
	C6'	nsp	MAIN PCB ASS'Y	E1C	COP12396D	1	*
	C6	-	MAIN PCB				
	C8	-	WIRE SUPPORT PCB				
	C10	nsp	INPUT PCB ASS'Y	E3	COP12375B	1	*
	C10	nsp	INPUT PCB ASS'Y	E2,EA	COP12375C	1	*
	C10	nsp	INPUT PCB ASS'Y	E1C	COP12375D	1	*
	C11	943633012250D	HDMI PCB ASS'Y	E3	COP12376B	1	*
	C12	nsp	AC CORD BUSHING	E3,E1C	CHR1A028	1	
	C13	00MYJ04002640	AC RECEPTACLE (15A/250V,R-301,B21)	E2,EA	CJJ8A006ZW	1	
⚠	C14	943101009640D	TRANS POWER	E3	CLT5U042YU	1	
⚠	C14	943101009650D	TRANS POWER	E2,EA	CLT5U042YE	1	
⚠	C14	943101009660D	TRANS POWER	E1C	CLT5U042YH	1	
⚠	C15	90M-YC000780R	POWER CORD	E3	CJA523FBYA	1	
⚠	C15	90M-ZC000320R	POWER CORD	E2	CJA2B054Z	1	
⚠	C15	90M-ZC000430R	POWER CORD	EA	HJA2S084Z	1	
⚠	C15	90M-YC000850R	POWER CORD	E1C	CJA2N047ZA	1	
	P1	943412009840D	VOLUME KNOB	BK	CBN1A249	1	
	P1	943412009850D	VOLUME KNOB	SP	CBN1A249C73	1	
	P2	943419100020D	RCA COVER	BK	CGR1A510B28	1	*

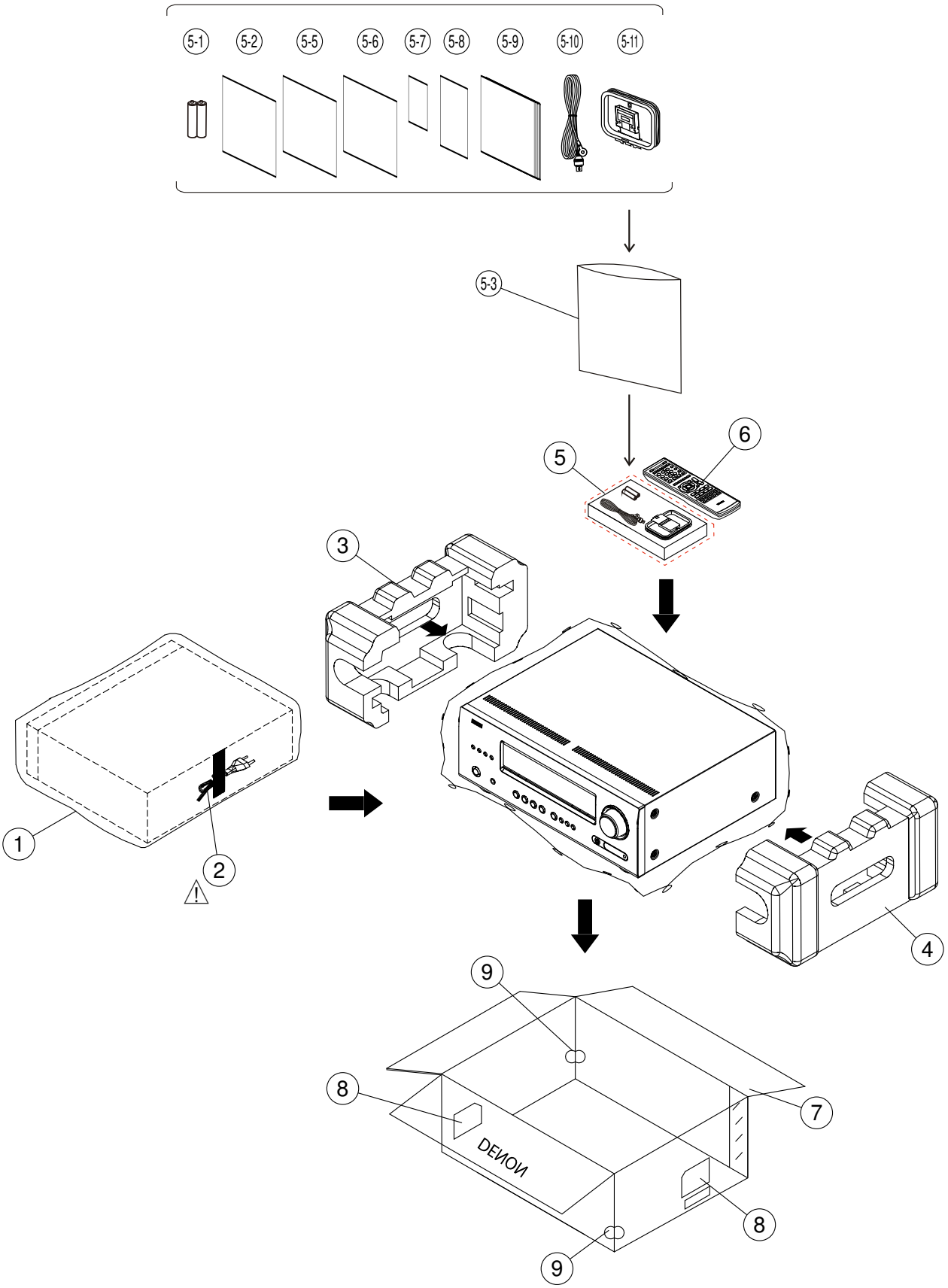
NOTE :
Please change the destination-resistors when changing 1312E3 (943633012250D) to other destination.
Please refer to destination-resistors page 60 .
(SCHEMATIC DIAGRAMS : 6/7)

	R916	R917
1312 E3	10K	4.7K
1312 E2/EA	10K	OPEN
1312 E1C	10K	10K

	Ref.No.	Part No.	Part Name	Remarks		Q'ty	New
	P2	943419100030D	RCA COVER	SP	CGR1A510G45	1	*
	P3	943402012270D	FRONT PANEL	BKE2,BKEA	CGW1A510B28Y	1	*
	P3	943402012260D	FRONT PANEL	BKE3	CGW1A510B28Z	1	*
	P3	943402100040D	FRONT PANEL	BKE1C	CGW1A510B28W	1	*
	P3	943402012280D	FRONT PANEL	SPE1C	CGW1A510RGG45X	1	*
	P4	943411012470D	5KEY BUTTON	BK	CBT1A1153B28Z	1	*
	P4	943411012480D	5KEY BUTTON	SP	CBT1A1153G45Z	1	*
	P5	943411012510D	3KEY B BUTTON	BK	CBT1A1155B28Z	1	*
	P5	943411012520D	3KEY B BUTTON	SP	CBT1A1155G45Z	1	*
	P6	00D9630365002	WINE 3KEY BUTTON	BK	CBT1A1140B28	2	
	P6	00D9630365301	WINE 3KEY BUTTON	SP	CBT1A1140G45	2	
	P7	nsp	EARTH AUX		CMC1A421	1	*
	P8	00D9430202902	FOOT CUSHION		CHG2A289	4	
	P9	943407100020D	FOOT		CKL1A190	4	*
	P10	nsp	RUBBER		CHG1A113	2	
	P11	943416012530D	WINDOW FL		CGU1A459Z	1	*
	P12	00D9630362109	DENON BADGE(BLACK049)	BK	CGB1A140U	1	
	P12	00D9630362202	DENON BADGE(SILVER052)	SP	CGB1A140T	1	
	P13	00D9630137807	STANDBY LENS		CGL1A289	1	
	P14	943411009860D	BUTTON STANDBY ASS'Y	BK	CBT1A1141ZA	1	
	P14	943411009870D	BUTTON STANDBY ASS'Y	SP	CBT1A1141YA	1	
	P15	943411012490D	4KEY BUTTON	BK	CBT1A1154B28	1	*
	P15	943411012500D	4KEY BUTTON	SP	CBT1A1154G45	1	*
	P20	nsp	HOLDER,PCB		CHE2A030	2	
	M1	nsp	BOTTOM CHASSIS		CUA1A328	1	*
	M2	nsp	PCB BRACKET		CMD1A417	2	
	M3	nsp	HEAT SINK		CMY1A370	1	*
	M4	nsp	PCB BRACKET		CMD1A774	2	
	M5	nsp	REAR PANEL	E3	CKF1A446Z	1	*
	M5	nsp	REAR PANEL	E1C	CKF2A446Z	1	*
	M5	nsp	REAR PANEL	E2,EA	CKF3A446Z	1	*
	M6	00M07BW257010	TOP CABINET	BK	CKC2A155K117	1	
	M6	943403002040M	TOP CABINET	SP	CKC2A155D11	1	
	★ H1	943606500030S	CARD CABLE (13P 1.25mm 100mm rev.)		CWC4C4A13B100B	1	*
	★ H2	943606500040S	CARD CABLE (23P 1.25mm 220mm rev.)		CWC4C4A23B220B10S	1	*
	★ H3	943606500050S	CABLE,CARD (23P 1.0mm 80mm rev.)		CWC4F4A23A080B08	1	*
SCREWS							
	S1	nsp	SCREW,SPECIAL		CHD1A012R	17	
	S2	nsp	SCREW		CTWS3+10GR	2	
	S3	nsp	SCREW		CTB3+6JR	1	
	S4	nsp	SCREW		CTB3+10JR	21	
	S5	nsp	SCREW		CTBD3+8JFZR	18	
	S6	nsp	SCREW	BK	CTBD4+8JFZR	6	
	S6	nsp	SCREW	SP	CTBD4+8JFN	6	
	S7	nsp	SCREW		CTBD3+6FFZR	12	
	S8	nsp	SCREW		CTW3+8JR	14	

	Ref.No.	Part No.	Part Name	Remarks		Q'ty	New
	S9	nsp	SCREW		CTW3+18JR	2	
	S10	nsp	SCREW,TRANS		CHD2A023R	4	
	S11	nsp	SCREW		CTB3+8JR	8	
	S12	nsp	SCREW	BK	CTB3+8JFZR	5	
	S12	nsp	SCREW	SP	CTB3+8JFN	5	
	S13	nsp	SCREW	BK	CTBD3+8JFZR	3	
	S13	nsp	SCREW	SP	CTBD3+8JFN	3	
	S14	nsp	SCREW		CTB3+6FR	4	

PACKING VIEW (for AVR-1312)



PARTS LIST OF PACKING & ACCESSORIES (for AVR-1312)

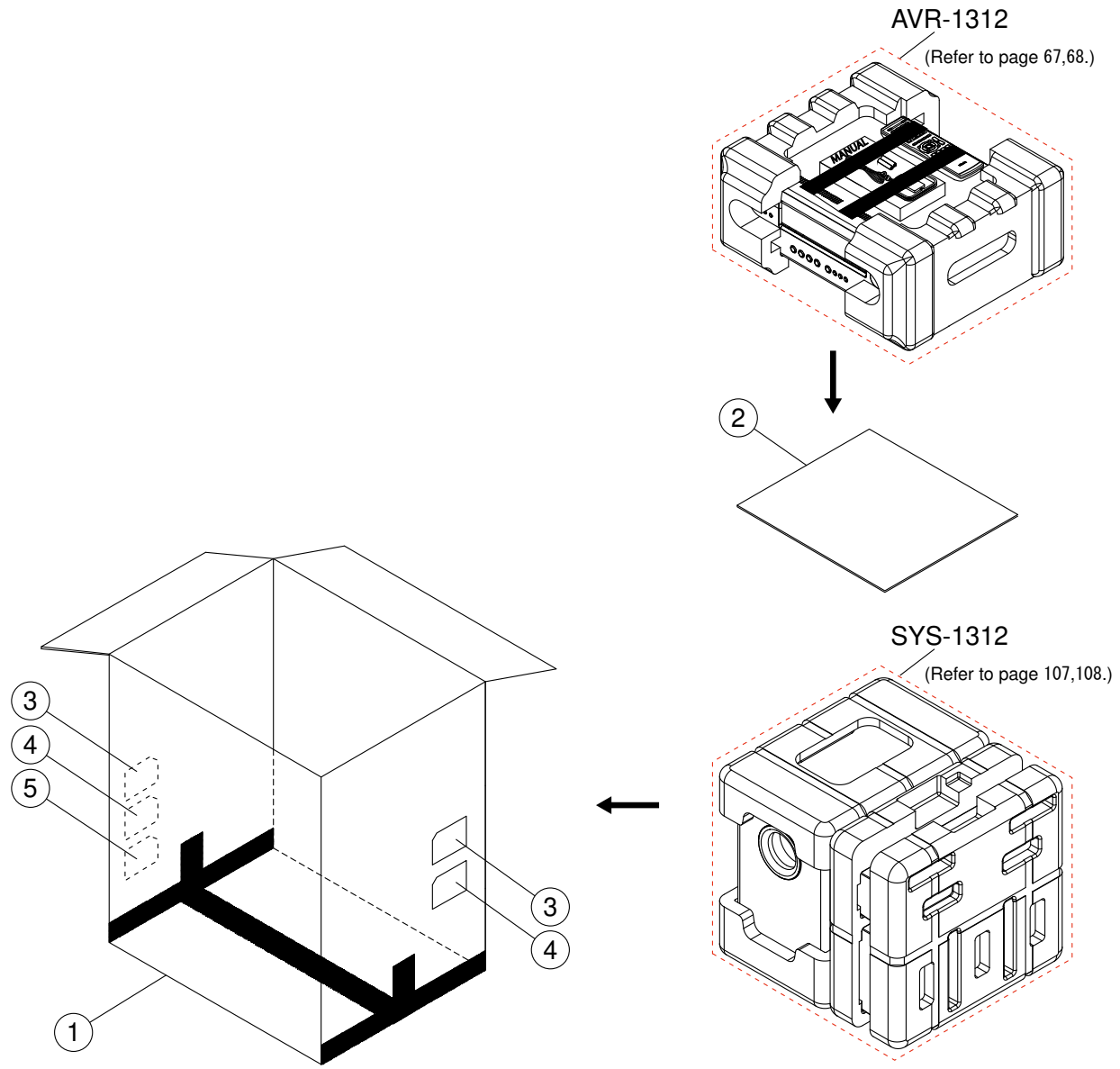
∗Parts indicated by "nsp" on this table cannot be supplied.
∗Parts indicated by the " ★ " mark are not illustrated in the exploded view.
∗The parts listed below are only for maintenance. Therefore they might differ from the parts used in the unit in appearances or dimensions.

Note: The symbols in the column "Remarks" indicate the following destinations.

E3 : U.S.A. & Canada model
E2 : Europe model
E1C : China model
EA : Australia model
BK : Black model
SP : Premium Silver model

	Ref.No.	Part No.	Part Name	Remarks		Q'ty	New
	1	nsp	POLY BAG		CPP1A081X	1	
⚠	2	90M-YC000780R	POWER CORD	E3	CJA523FBYA	1	
⚠	2	90M-ZC000320R	POWER CORD	E2	CJA2B054Z	1	
⚠	2	90M-ZC000430R	POWER CORD	EA	HJA2S084Z	1	*
⚠	2	90M-YC000850R	POWER CORD	E1C	CJA2N047ZA	1	
	3	943533012540D	SNOW PAD(L)		CPS1A909	1	*
	4	943533100040D	SNOW PAD(R)		CPS1A910	1	*
	5	-	INSTRUCTION MANUAL ASS'Y				
	5-1	nsp	BATTERY(AAA)		CABR03PPB	2	
	5-2	352010015007D	INST. MANUAL(E3 CD-ROM)	E3	CFTAVR1312ZA	1	*
	5-2	352010016000D	INST. MANUAL(E2 CD-ROM)	E2,EA	CFTAVR1312YA	1	*
	5-2	352010035001D	INST. MANUAL(E1C CD-ROM)	E1C	CFTAVR1312XA	1	*
	5-3	nsp	POLY BAG(MANUAL)		CPB1A197Z	1	
	★ 5-4	nsp	BARCODE LABEL(MANUAL)		CQB1A971	1	
	5-5	nsp	S.S LIST		CQE1A226P	1	
	5-6	nsp	WARRANTY CARD	E3	CQE1A224R	1	
	5-7	nsp	CARD FOR CHINA INDENTIFICATION	E1C	CQE1A450Z	1	
	5-8	nsp	WARRANTYCARD CHINA	E1C	CQE1A473Z	1	
	5-9	542110051003D	QUICK MANUAL(E3)	E3	CQX1A1612Z	1	*
	5-9	542110052006D	QUICK MANUAL(E2)	E2,EA	CQX1A1612Y	1	*
	5-9	542110061000D	QUICK MANUAL(E1C)	E1C	CQX1A1612X	1	*
	5-10	90M-ZA000230R	FM 1 POLANT(UL)	E3	CSA1A019Z	1	
	5-10	00D9430113403	FM 1 POLE ANT.	BKE2,EA,E1C	CSA1A018Z	1	
	5-11	943116009500S	AM LOOP ANT		CSA1A032Z	1	
	6	307010089008D	REMOCONASS'Y(RC-1158)		CARTAVR1312	1	*
	7	943531012550D	OUTCARTON BOX	E3,BKE1C	CPG1A942Z	1	*
	7	943531012560D	OUTCARTON BOX	E2,EA	CPG1A942Y	1	*
	7	943531100020D	OUTCARTON BOX	SPE1C	CPG1A942X	1	*
	8	nsp	CONTROL LABEL		CQB1A993Z	1	
	9	nsp	COLOR LABEL	SPE1C	CQB1A676	2	
	★ 10	nsp	ANGLE SIDEBAR		CPW1A011	1	
	★ 11	nsp	CLAMPER ARM		CHE154	1	
	★ 12	nsp	LABEL BARCODE(SET)		CQB1A978	1	
	★ 13	nsp	PALLET		CPW1A043	1	
	★ 14	nsp	PESHEET		CPE1D001	1	
	★ 15	nsp	RIBON BARCODE		CQS1A001	1	

PACKING VIEW (for DHT-1312XP) ⚠2



PARTS LIST OF PACKING & ACCESSORIES (for DHT-1312XP) ⚠2

∗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

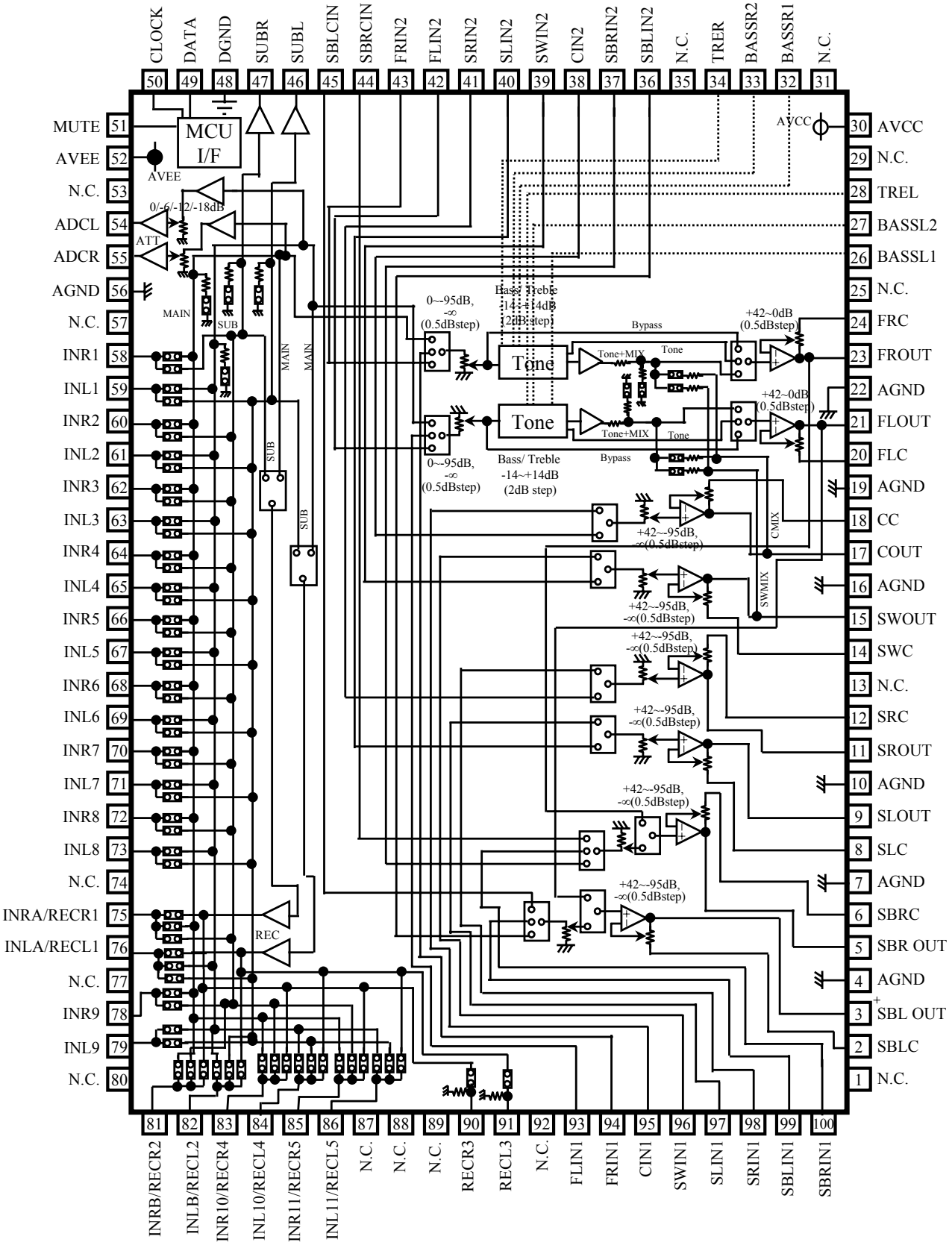
	Ref.No.	Part No.	Part Name	Remarks		Q'ty	New
	1	943531101920D	OUTCARTON BOX		CPG1A957	1	*
	2	943537100190D	PAD BOX		CPG1A958	1	*
	3	nsp	CONTROL LABEL	DHT1312XPE3,E2	CQB1A993Z	1	
	4	nsp	CONTROL LABEL	SYS1312	CQB1A1076Z	1	
	5	nsp	ATCM LABEL	DHT1312XPE3	CQB1A1077Z	1	
	★ 6	54111074000AD	INST.MANUAL SYS1312	SYS1312	CQX1A1628Z	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

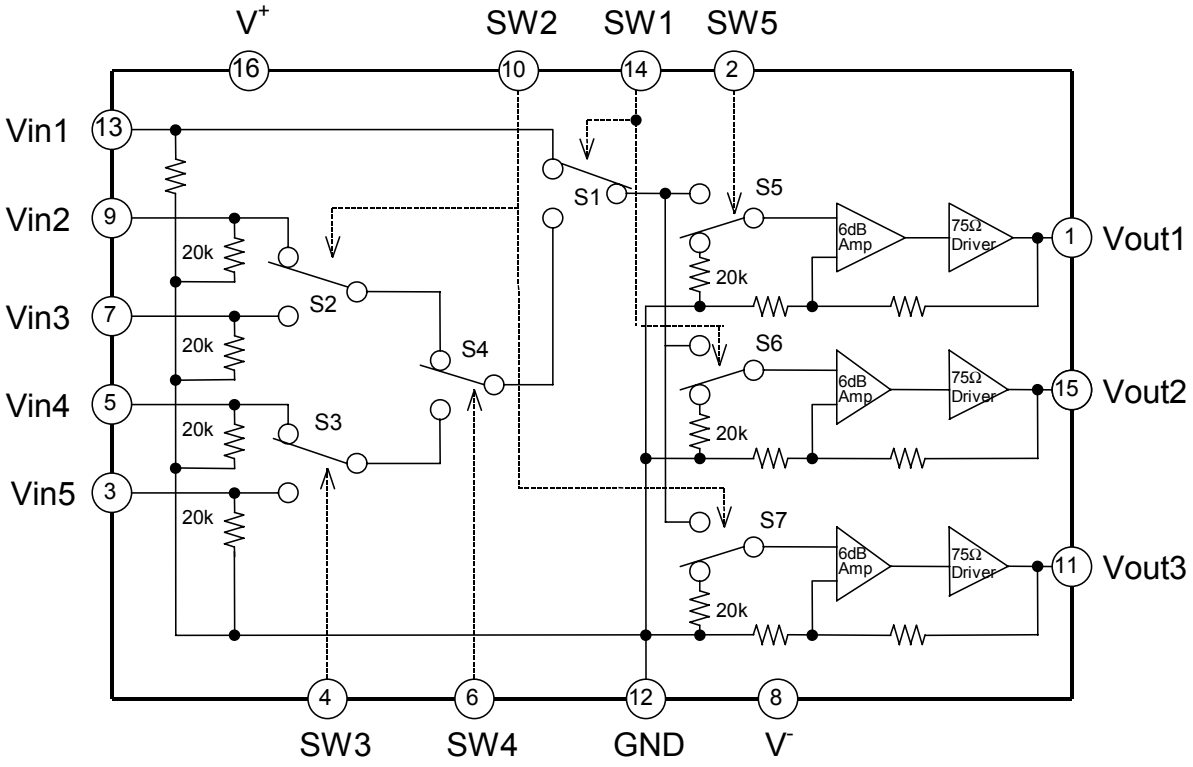
R2A15218FP (INPUT :IC61)



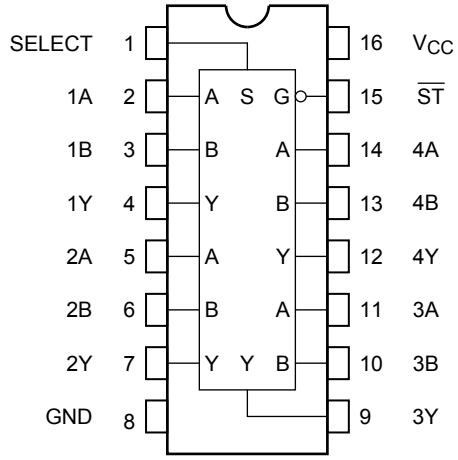
R2A15218FP Terminal Functions

PIN No.	Name	Function
23,21, 17,15, 11,9, 5,3	FROUT,FLOUT, COUT,SWOUT, SROUT, SLOUT, SBROUT,SBLOUT	Output pin of FL/FR/C/SW/SL/SR/SBL/SBR channel
24,20, 18,14, 12,8, 6,2	FRC,FLC, CC,SWC, SRC,SLC, SBRC,SBLC	Connects capacitor for reducing click noise of L/R/C/SW/SL/SR/SBL/SBR channel volume
4,7,10,16, 19,22,56	AGND	Analog ground of internal circuit
28,34	TREL, TRER	Frequency characteristic setting pin of L/R channel tone control (Treble)
26,27, 32,33	BASSL1,BASSL2 BASSR1,BASSR2	Frequency characteristic setting pin of L/R channel tone control (Bass)
30	AVCC	Positive power supply to internal circuit
43,42, 41,40, 39,38, 37,36	FRIN2, FLIN2, SRN2,SLIN2, SWIN2,CIN2, SBRIN2,SBLIN2	Input pin of L/R/C/SW/SL/SR/SBL/SBR channel (Multi IN 1/2)
93,94, 95,96, 97,98, 99,100	FLIN1, FRIN1, CIN1,SWIN1, SLIN1,SRIN1, SBLIN1,SBRIN1	
48	DGND	Digital ground of internal circuit
49	DATA	Input pin of control data
50	CLOCK	Input pin of control clock
52	AVEE	Negative power supply to internal circuit
59,61,63, 65,67,69, 71,73,79	INL1,INL2, INL3, INL4,INL5,INL6, INL7,INL8,INL9	Input pin of L/R channel (Input Selector)
58,60,62, 64,66,68, 70,72,78	INR1,INR2, INR3, INR4,INR5,INR6, INR7,INR8,INR9	
51	MUTE	Outside Mute Control PIN
44,45	SBRCIN,SBLCIN	Input pin for SBL/SBR channel Volume
46,47	SUBL,SUBR	Output pin for L/R channel SUB Output
54,55	ADCL, ADCR	Output pin for L/R channel ADC
90,91	RECR3,RECL3	Output pin for L/R channel REC Output
75,76, 81,82, 83,84, 85,86	INRA/RECR1,INLA/RECL1, INRB/RECR2,INLB/RECL2, INR10/RECR4,INL10/RECL4, INR11/RECR5,INL11/RECL5	Input pin of L/R channel (Input Selector)/ Output pin for L/R channel REC Output
1,13,25,29,31, 35,53, 57,74,77,80, 87,88,89,92	N.C.	No Connected PIN

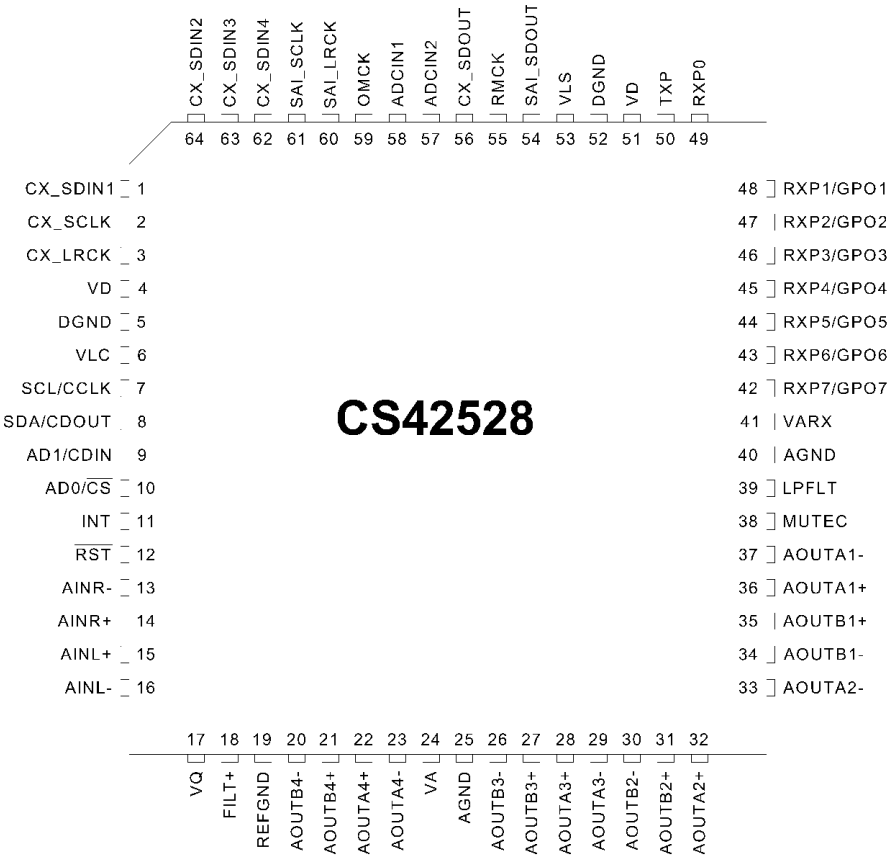
NJM2595M (INPUT : IC71)



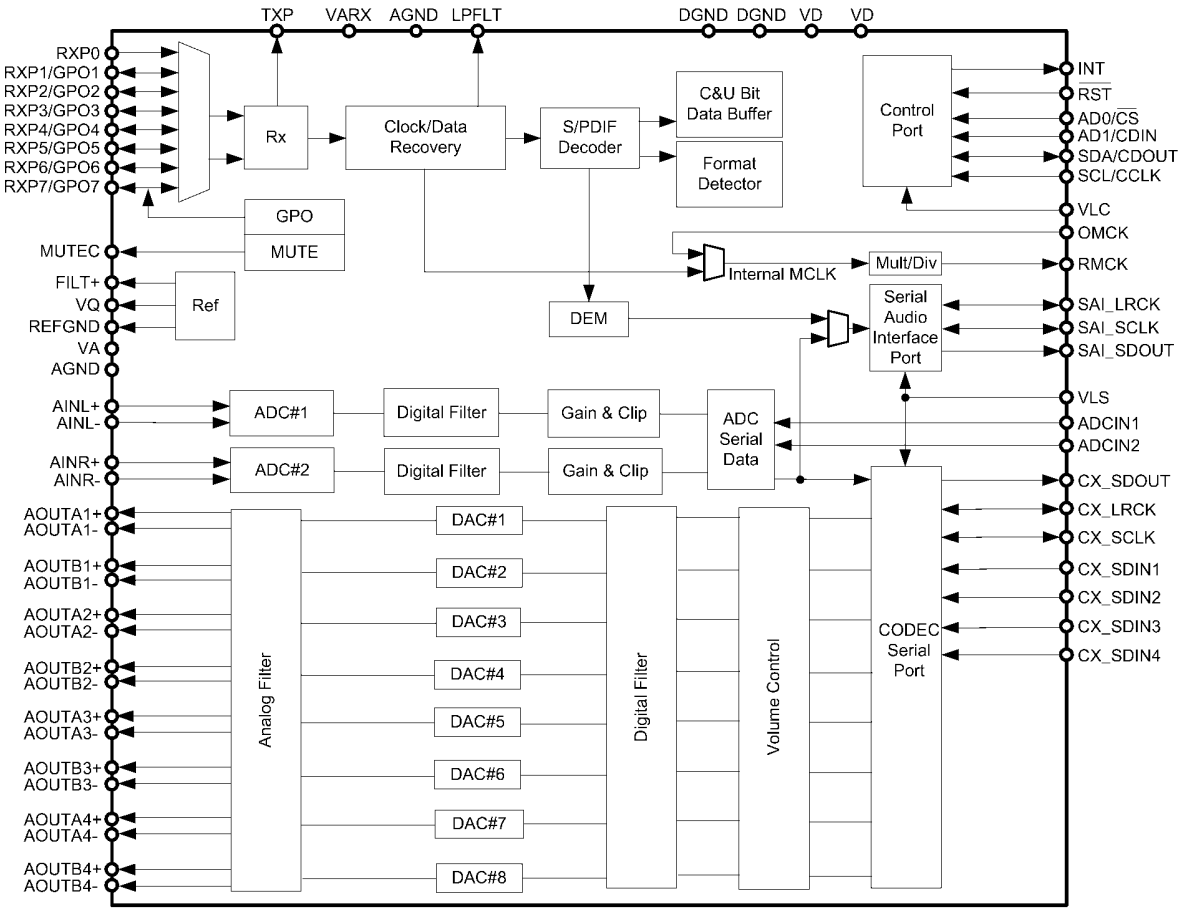
TC74VHC157FT (INPUT : IC85)



CS42528 (INPUT : IC84)



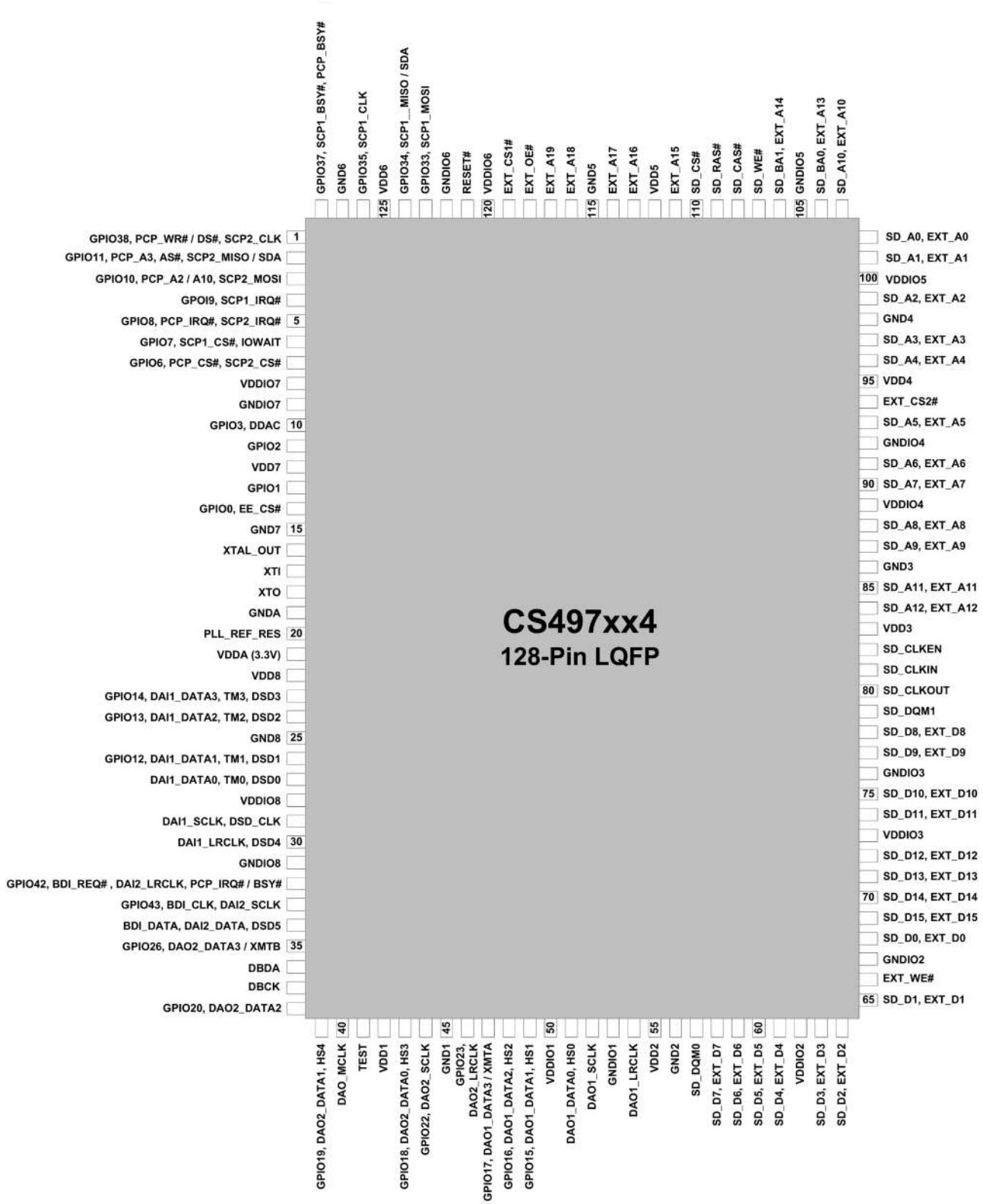
CS42528 Block diagram



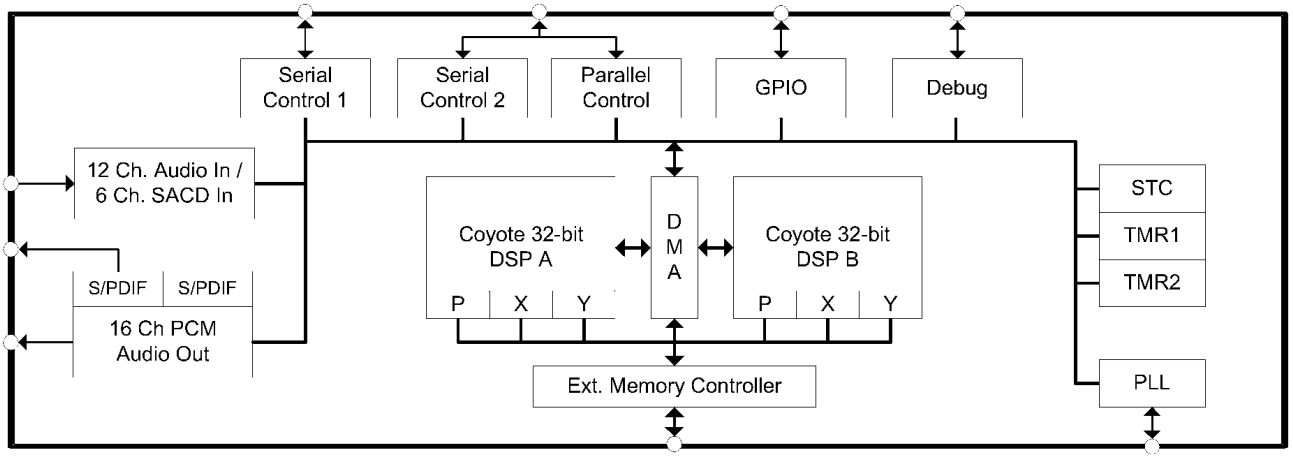
CS42528 Terminal Functions

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.

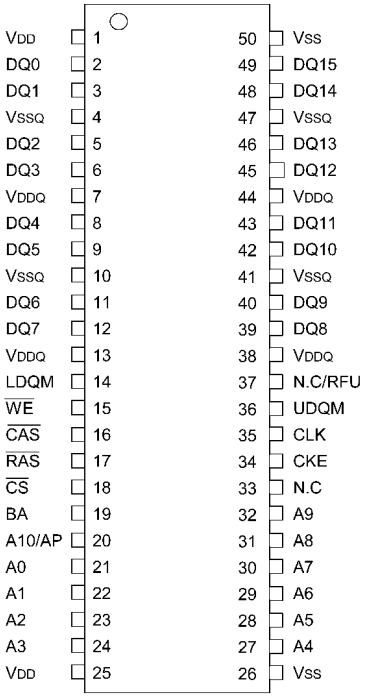
CS497024CVZ (INPUT : IC81)

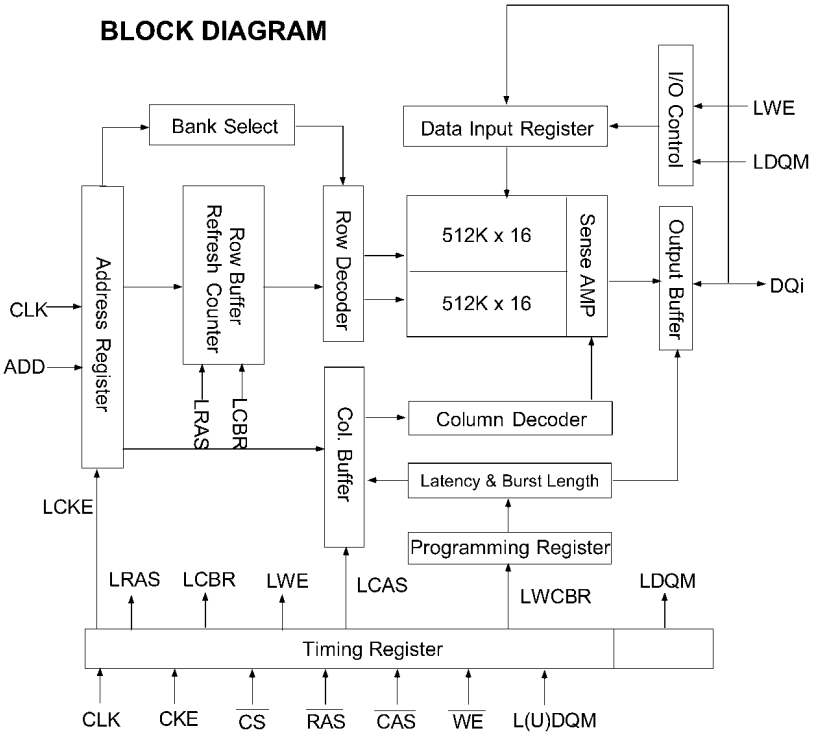


CS497024CVZ Block diagram



M12L16161A5TG (INPUT : IC83)

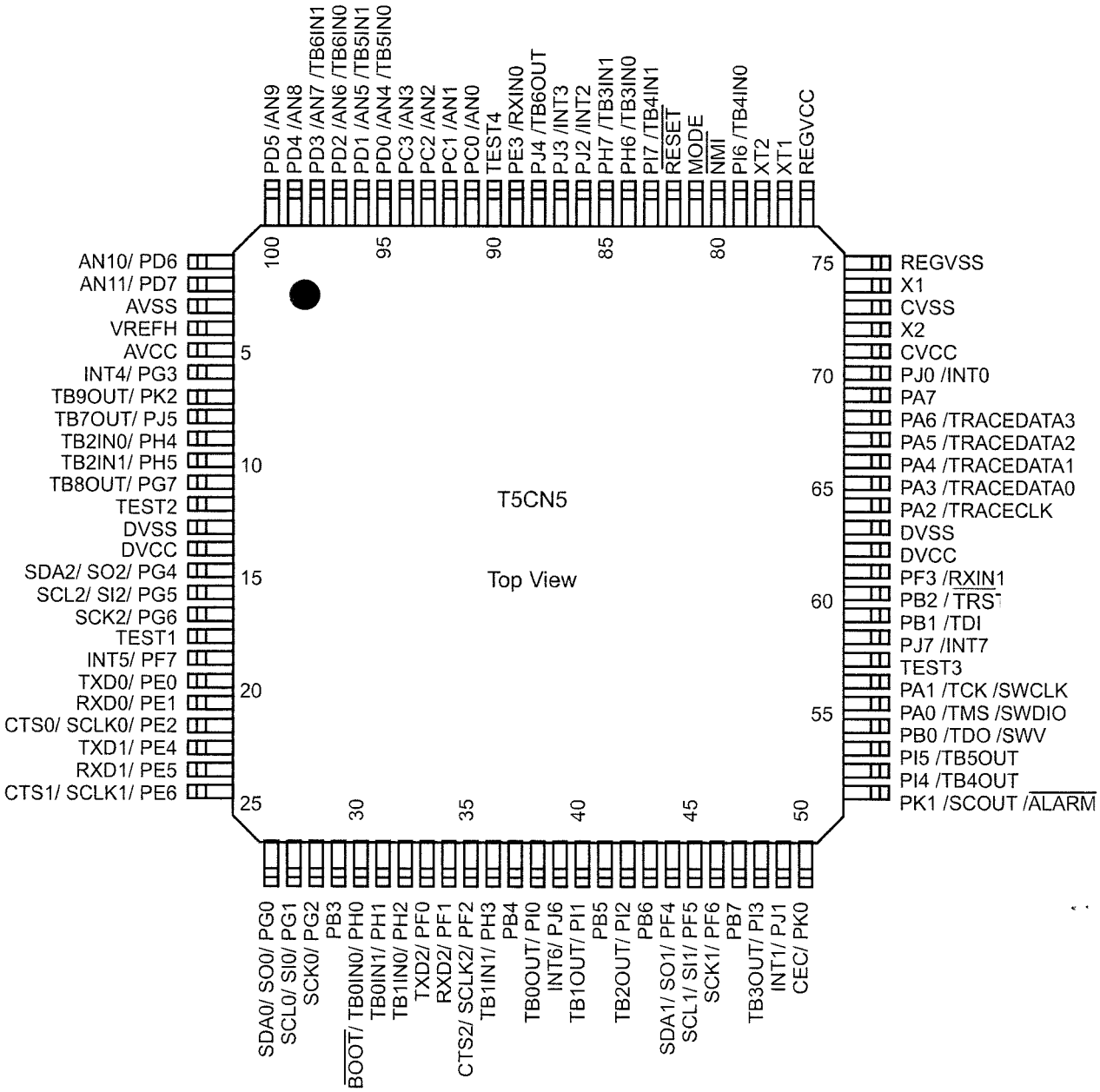




PIN FUNCTION DESCRIPTION

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, tSHZ after the clock and masks the output. Blocks data input when L(U)DQM active.

T5CN5 (INPUT : IC91)



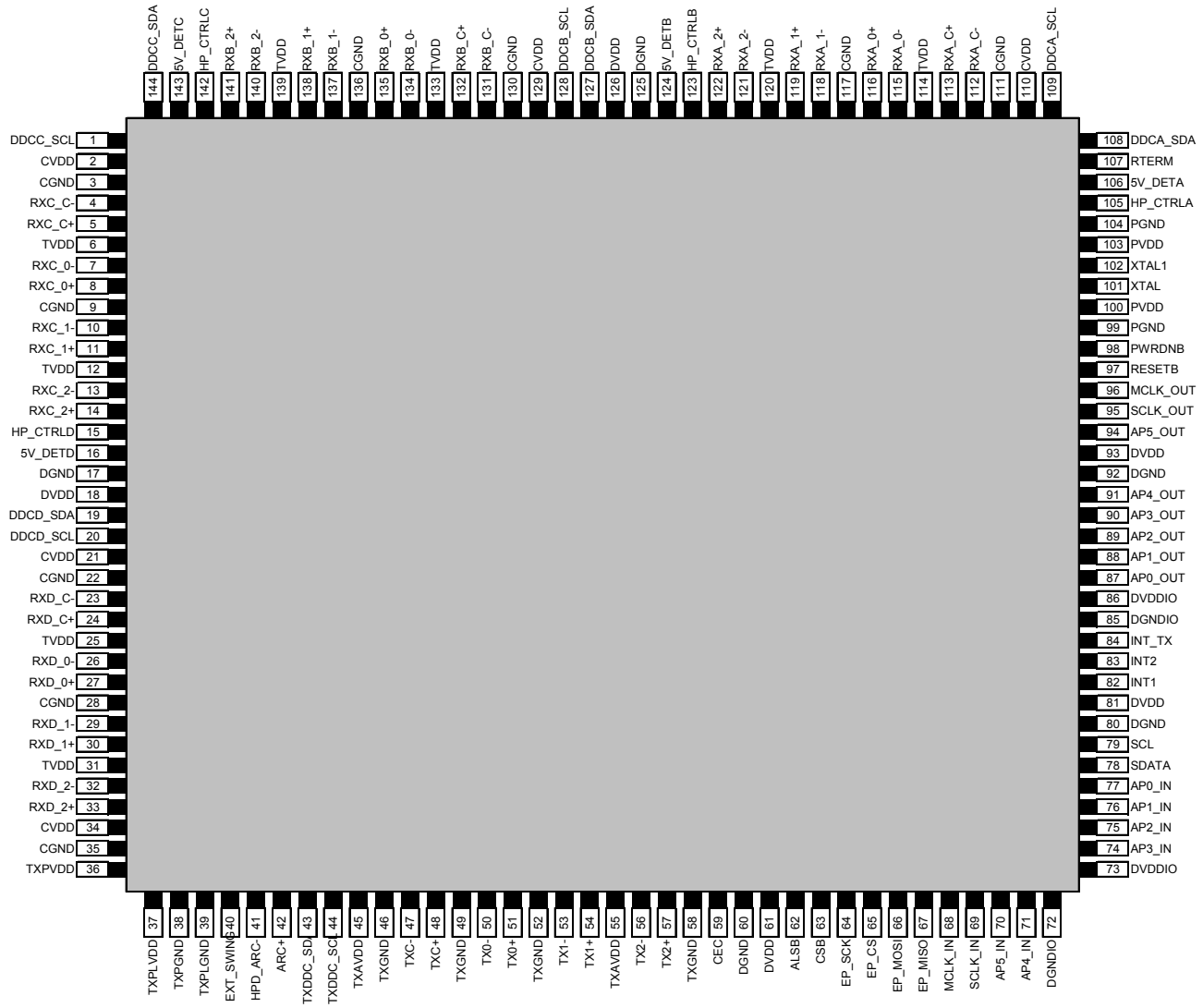
T5CN5 Terminal Functions

Pin	Pin Name	Symbol	TOLERANT	Nch	I/O	Type	Pullup	LvCnv	STBY	stop	Function
1	AN10/PD6	PROTECT	-	-	I	-	M3VPu	-	I	I	Protection detection pin
2	AN11/PD7	HDMIOST_MISI	-	-	I	-	-	-	I	O/L	DATA input pin for HDMI OST
3	AVSS	AVSS	-	-	-	-	-	-	-	-	Fixed GND
4	VREFH	VREFH	-	-	-	-	-	-	-	-	3.3V
5	AVCC	AVCC	-	-	-	-	-	-	-	-	3.3V
6	INT4/PG3	POWER_DOWN	-	-	I	-	M3VPu	-	I	I	Power Down detection pin
7	TB9OUT/PK2	FRONT_RLY	-	-	O	-	-	-	O/L	O/L	Front SP RLY control pin
8	TC7OUT/PJ5	SURR_RLY	-	-	O	-	-	-	O/L	O/L	Surround SP RLY control pin/Center SP RLY control pin
9	TB2IN0/PH4	LIMIT	-	-	O	-	-	-	O/L	O/L	Current LIMIT
10	TB2IN1/PH5	HP_RLY	-	-	O	-	-	-	O/L	O/L	H/P RLY control pin
11	TB8OUT/PG7	DAC_MUTE	-	-	O	-	-	-	O/L	O/L	DAC Mute control pin
12	TEST2	TEST2	-	-	-	-	-	-	-	-	OPEN
13	DVSS	DVSS	-	-	-	-	-	-	-	-	Fixed GND
14	DVCC	DVCC	-	-	-	-	-	-	-	-	3.3V
15	SDA2/SO2/PG4	POWER_ON	-	-	O	-	-	-	O/L	O/L	Power RELAY control pin
16	SCL2/SI2/PG5	CVBS_SW3	-	-	O	-	-	-	O/L	O/L	CVBS(Video) SW3 control pin

Pin	Pin Name	Symbol	TOLERANT	Nch	I/O	Type	Pullup	LvCnv	STBY	stop	Function
17	SCK2/PG6	SB_MUTE	-	-	O	-	-	-	O/L	O/L	Surround Back Mute control pin
18	TEST1	TEST1	-	-	-	-	-	-	-	-	OPEN
19	INT5/PF7	REMOTE_IN	-	-	I	-	-	-	I	O/L	REMOTE input pin
20	TXD0/PE0	TXD0	-	-	O	-	M3VPu	-	O/L	O/L	UPDATE TX pin
21	RXD0/PE1	RXD0	-	-	I	-	M3VPu	-	I	O/L	UPDATE RX pin
22	CTS0/SCLK0/PE2	SUB MUTE	-	-	O	-	-	-	O/L	O/L	Sub Woofer MUTE pin
23	TXD1/PE4	HDMI_TX	-	-	O	-	-	-	O/L	O/L	HDMI DEBUG TX pin
24	RXD1/PE5	HDMI_RX	-	-	I	-	-	-	I	O/L	HDMI DEBUG RX pin
25	CST1/SCLK1/PE6	HDMIOST_MISO	-	-	O	-	-	-	O/L	O/L	DATA output pin for HDMI OST
26	SDA0/SO0/PG0	INT_TX	-	-	I	-	+3VHPu	-	I	O/L	HDMI INT TX interrupt
27	SCL0/SI0/PG1	CVBS_SW2	-	-	O	-	-	-	O/L	O/L	CVBS(Video) SW2 control pin
28	SCK0/PG2	HDMIOST_CLK	-	-	O	-	-	-	O/L	O/L	Clock pin for HDMI OST
29	PB3	HDMI_RST	-	-	O	-	-	-	O/L	O/L	HDMI Reset control pin
30	BOOT/TB0IN0/PH0	/BOOT	-	-	I	-	M3VPu	-	I	O/L	Update Boot (At Update: Low)
31	TB0IN1/PH1	MAIN_VOL_MUTE	-	-	O	-	-	-	O/L	O/L	Volume Mute control pin
32	TB1IN0/PH2	TUNER_RST	-	-	O	-	-	-	O/L	O/L	TUNER Reset control pin
33	TXD2/PF0	IPOD_TX	-	-	O	-	-	-	O/L	O/L	IPod DOCK TX communication line
34	RXD2/PF1	IPOD_RX	-	-	I	-	-	-	I	O/L	IPod DOCK RX communication line
35	CTS2/SCLK2/PF2	INT_RX	-	-	I	-	+3VHPu	-	I	O/L	HDMI INT interrupt
36	TB1IN1/PH3	INT2_RX	-	-	I	-	+3VHPu	-	I	O/L	HDMI INT2 intreeupt
37	PB4	MAIN_VOL_DATA	-	-	O	-	-	-	O/L	O/L	Volume Data line
38	TB0OUT/PI0	MAIN_VOL_CLK	-	-	O	-	-	-	O/L	O/L	Volume CLK line
39	INT6/PJ6	WAKE_UP	-	-	I	-	M3VPu	-	I	I	WAKE UP pin
40	TB1OUT/PI1	TUNER_CE	-	-	O	-	-	-	O/L	O/L	TUNER CE pin
41	PB5	COMPO_SW2	-	-	O	-	-	-	O/L	O/L	COMPO_(Video) SW2 control pin
42	TB2OUT/PI2	HDMI_SDA	-	-	I/O	-	-	-	O/L	O/L	HDMI SDATA
43	PB6	HDMI_SCL	-	-	O	-	-	-	O/L	O/L	HDMI SCL
44	SDA1/SO1/PF4	TUNER_SDIO	-	-	I/O	-	-	-	O/L	O/L	TUNER SDIO
45	SCL1/SI1/PF5	TUNER_SCLK	-	-	O	-	-	-	O/L	O/L	TUNER SCLK
46	SCK1/PF6	HDMIOST_CS	-	-	O	-	+3VHPu	-	O/L	O/L	Chip Select pin for HDMI OST
47	PB7	DIR_RST	-	-	O	-	-	-	O/L	O/L	DIR Reset
48	TB3OUT/PI3	DIR_CE	-	-	O	-	-	-	O/L	O/L	DIR Chip Select
49	INT1/PJ1	DIR_DOUT	-	-	I	-	-	-	O/L	O/L	DIR Output Data
50	CEC/PK0	COMPO_SW1	-	-	O	-	M3VPu	-	O/L	O/L	COMPO_(Video) SW1 control pin
51	PK1/SCOUT/ALARM	DSP_DIR_CLK	-	-	O	-	-	-	O/L	O/L	DSP_DIR_CLK
52	PI4/TB4OUT	DSP_DATA	-	-	I/O	-	-	-	O/L	O/L	DSP DATA
53	PI5/TB5OUT	DSP_CS	-	-	O	-	D3VPu	-	O/L	O/L	DSP Chip Select
54	PB0/TDO/SWV	DEBUG	-	-	O	-	M3VPu	-	O/L	O/L	MICOM DEBUG
55	PA0/TMS/SWDIO	DEBUG	-	-	O	-	M3VPu	-	O/L	O/L	MICOM DEBUG
56	PA1/TCK/SWCLK	DEBUG	-	-	I	-	-	-	O/L	O/L	MICOM DEBUG
57	TEST3	TEST3	-	-	-	-	-	-	-	-	OPEN
58	PJ7/INT7	DSP_DIR_DATA	-	-	O	-	-	-	O/L	O/L	DSP_DIR_DATA
59	PB1/TDI	DEBUG	-	-	O	-	M3VPu	-	-	-	MICOM DEBUG
60	PB2/TRS-	DEBUG	-	-	O	-	M3VPu	-	-	-	MICOM DEBUG
61	PF3/RXIN1	CVBS_SW4	-	-	O	-	-	-	O/L	O/L	CVBS(Video) SW4 control pin
62	DVCC	DVCC	-	-	-	-	-	-	-	-	3.3V
63	DVSS	DVSS	-	-	-	-	-	-	-	-	Fixed GND
64	PA2/TRACECLK	HDMI_SW	-	-	O	-	-	-	O/L	O/L	HDMI Audio Data MCLK Select SW
65	PA3/TRACEDATA0	CVBS_SW1	-	-	O	-	-	-	O/L	O/L	CVBS(Video) SW1 control pin
66	PA4/TRACEDATA1	DSP_RST	-	-	O	-	-	-	O/L	O/L	DSP Reset control pin
67	PA5/TRACEDATA2	DSP_MODE_SEL	-	-	I	-	-	-	O/L	O/L	DSP_MODE_SEL
68	PA6/TRACEDATA3	CODEC_MUTE	-	-	I/O	-	-	-	O/L	O/L	CODEC Mute Control control pin
69	PA7	HDMIOST_HOLD	-	-	O	-	+3VHPu	-	O/L	O/L	HOLD pin for HDMI OST
70	PJ0/INT0	TUNER_INT	-	-	I	-	-	-	I	O/L	TUNER INTERRUPT
71	CVCC	CVCC	-	-	-	-	-	-	-	-	3.3V
72	X2	XOUT	-	-	-	-	-	-	-	-	XOUT
73	CVSS	CVSS	-	-	-	-	-	-	-	-	Fixed GND
74	X1	XIN	-	-	-	-	-	-	-	-	XIN
75	REGVSS	REGVSS	-	-	-	-	-	-	-	-	Fixed GND
76	REGVCC	REGVCC	-	-	-	-	-	-	-	-	3.3V
77	XT1	NC	-	-	-	-	-	-	-	-	OPEN
78	XT2	NC	-	-	-	-	-	-	-	-	OPEN
79	PI6/TB4IN0	STANDBY_LEDR	-	-	O	-	-	-	O/L	O/L	2COLOR LED RED
80	$\overline{\text{NMI}}$	NMI	-	-	-	-	M3VPu	-	-	-	
81	MODE	MODE	-	-	-	-	-	-	-	-	Fixed GND
82	$\overline{\text{RESET}}$	$\overline{\text{RESET}}$	-	-	I	-	-	-	-	-	RESET

Pin	Pin Name	Symbol	TOLERANT	Nch	I/O	Type	Pullup	LvCnv	STBY	stop	Function
83	PI7/TB4IN1	EEPROM_SCL	-	-	O	-	M3VPu	-	O/L	O/L	EEPROM SCL
84	PH6/TB3IN0	EEPROM_SDA	-	-	I/O	-	M3VPu	-	I	O/L	EEPROM SDA
85	PH7/TB3IN3	VFD_CLK	-	-	O	-	-	-	O/L	O/L	VFD_CLK
86	PJ2/INT2	VFD_CE	-	-	O	-	-	-	O/L	O/L	VFD_CE
87	PJ3/INT3	VFD_DATA	-	-	O	-	-	-	O/L	O/L	VFD_DATA
88	PJ4/TB6OUT	VFD_RST	-	-	O	-	-	-	O/L	O/L	VFE_RESET
89	PE3/RXIN0	STANDBY_LEDG	-	-	O	-	-	-	O/L	O/L	2COLOR LED GREEN
90	TEST4	TEST4	-	-	-	-	-	-	-	-	OPEN
91	PC0/AN0	KEY1	-	-	I	-	M3VPu	-	I	I	KEY1 input pin
92	PC1/AN1	KEY2	-	-	I	-	M3VPu	-	I	O/L	KEY2 input pin
93	PC2/AN2	KEY3	-	-	I	-	M3VPu	-	I	O/L	KEY3 input pin
94	PC3/AN3	VOL+	-	-	I	-	-	-	O/L	O/L	VOLUME UP
95	PD0/AN4/TB5IN0	VOL-	-	-	I	-	-	-	O/L	O/L	VOLUME DOWN
96	PD1/AN5/TB5IN1	HP_DET	-	-	I	-	M3VPu	-	O/L	O/L	H/P DETECT
97	PD2/AN6/TB6IN0	DSP_SPC1_IRQ	-	-	I	-	-	-	O/L	O/L	DSP INTERRRUPTQ
98	PD3/AN7/TB6IN1	DSP_PCP_BSY	-	-	I	-	-	-	O/L	O/L	DSP BSY
99	PD4/AN8	iPod_DET	-	-	I	-	-	-	O/L	O/L	iPod_DETECT
100	PD5/AN9	OPTION	-	-	I	-	M3VPu	-	-	-	MODEL OPTION

ADV7623 (HDMI : 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

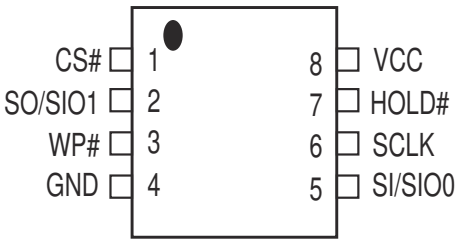
Location	Mnemonic	Type	Description
68	MCLK_IN	Digital Input	Audio Reference Clock. 128 × N × fs with N = 1, 2, 3, or 4. Set to 128 × sampling frequency (fs), 256 × fs, 384 × fs, or 512 × fs. Supports 1.8 V to 3.3 V CMOS logic levels.
69	SCLK_IN	Digital Input	I2S Audio Clock. Supports CMOS logic levels 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.

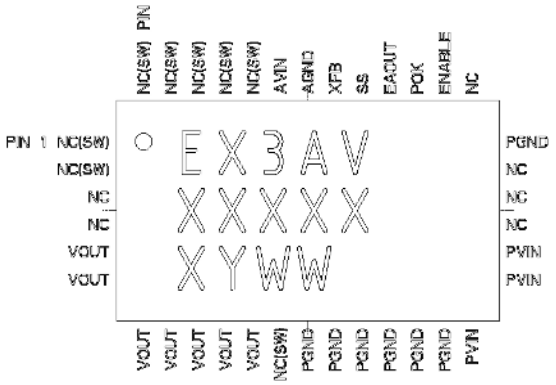
MX25L8006EM2I-12G (HDMI : IC14)



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

EX3AV (HDMI : IC16)

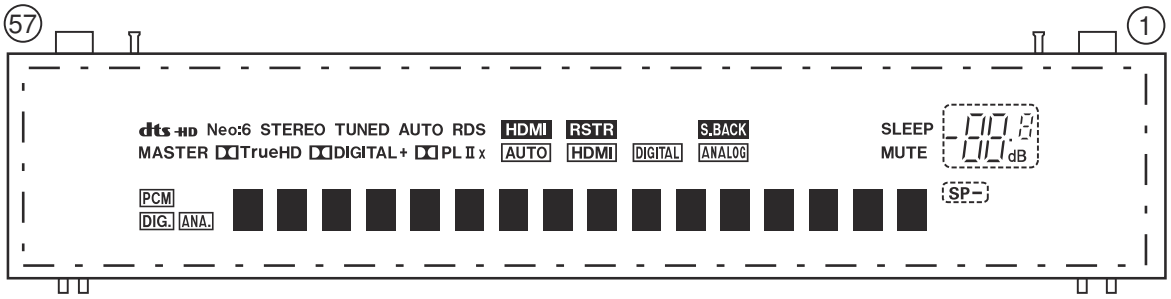


EX3AV Terminal Functions

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 (18-ST-15GINK) (FRONT : FL601)



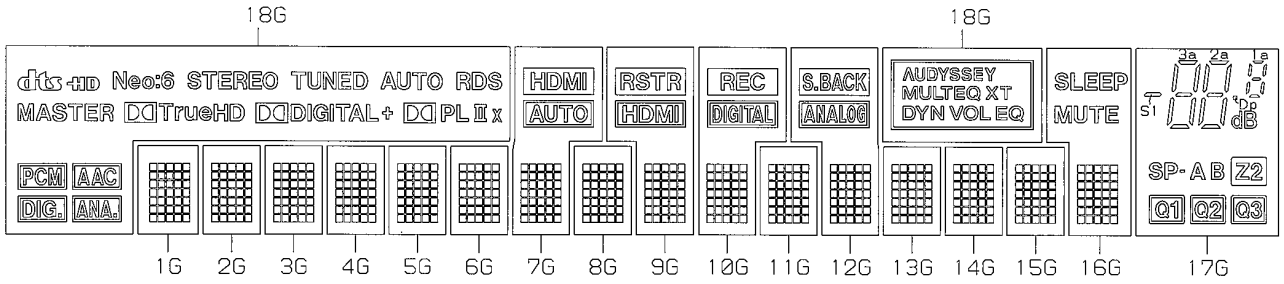
PIN CONNECTION

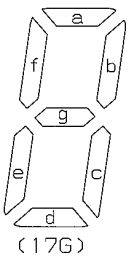
PIN NO.	57	56	55	54	53	52	51
CONNECTION	F2	NP	NP	NP	LGND	PGND	VH

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	OSC	RESET	CS	CP	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	NX	17G	16G	Q17G	Q18G	NP	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	S1	PCM
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	AAC
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	S2
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	EQ
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	VOL
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	DYN
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	XT
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	MULTEQ
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	AUDYSSEY
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	X
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	II
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	PL
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	DC (PL)
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	MASTER
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	RDS
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	AUTO
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	TUNED
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	STEREO
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	Neo:6
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	HD
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	dts
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	–
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	SP-	–
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	A	–
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	B	–
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	Z2	–
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	Q1	–
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	Q2	–
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	Q3	–
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	–	–
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	–	–
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	–	DIG.
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	–	ANA.
AD1	–	–	–	–	–	–	AUTO	–	HDMI	DIGITAL	–	ANALOG	–	–	–	MUTE	–	DD DIGITAL
AD2	–	–	–	–	–	–	HDMI	–	RSTR	REC	–	S.BACK	–	–	–	SLEEP	–	DD TrueHD

PARTS LIST OF P.W.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 model
E1C : China model
EA : Australia model
BK : Black model
SP : Premium Silver model

FRONT P.W.B. UNIT ASS'Y

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
SEMICONDUCTORS GROUP							
	IC602,603	943239005300M	IC BA4560RF		HVIBA4560RF		
	Q6001	943219006820S	TR KTC1027Y		CVTKTC1027YT		
	Q6002	943216500020S	TR RT1N141C		CVTRT1N141C		*
	Q6003,6004	943214500020S	TR 2SC3052		CVT2SC3052		*
	Q6005	00MHT600141B1	TR KTA1271Y		HVTKTA1271YT		
	Q6006	943216500020S	TR RT1N141C		CVTRT1N141C		*
	Q6007	943215500020S	TR RT1P141C		CVTRT1P141C		*
	Q6009	943215500020S	TR RT1P141C		CVTRT1P141C		*
	Q6010	943216500020S	TR RT1N141C		CVTRT1N141C		*
	Q6011	943215500020S	TR RT1P141C		CVTRT1P141C		*
	Q6012	943216500020S	TR RT1N141C		CVTRT1N141C		*
	D213	943203003170S	DIODE GBJ606		HVDGBJ606		
	D216-219	943203003150S	DIODE 1N4007T		HVD1N4007T		
	D6001,6002	943203003150S	DIODE 1N4007T		HVD1N4007T		
	D6003	90M-HD302360R	DIODE ZJ6.8BT		CVDZJ6.8BT		
	D6004	00D9430087209	ZENER DIODE ZJ24B 1/2W		CVDZJ24BT		
	D6005	90M-HD302450R	ZENER DIODE ZJ13B 1/2W		CVDZJ13BT		
	D6014	943176010090S	LED BLBJEGJ204L		CVDBLBJEGJ204L		
	D6015,6016	943209001080S	DIODE 1SS355T	E1C	CVD1SS355T		
	D6017-6020	943209001080S	DIODE 1SS355T		CVD1SS355T		
RESISTORS GROUP							
⚠	R268,269	943125500020S	METAL RES FILM, 0.22ohm 1W 5%		CRG1SANJR22RTP		*
⚠	R275,276	943125500020S	METAL RES FILM, 0.22ohm 1W 5%		CRG1SANJR22RTP		*
⚠	R283,284	943125500020S	METAL RES FILM, 0.22ohm 1W 5%		CRG1SANJR22RTP		*
⚠	R285,286	943125500020S	METAL RES FILM, 0.22ohm 1W 5%		CRG1SANJR22RTP		*
	R6008	nsp	RES,M-OXIDEFILM(1W/4.7ohm)		CRG1SANJ4R7RT		
	R6062	nsp	CHIP RES1%75OHM		CRJ10DF75R0T		
	R6090,6091	nsp	RES,M-OXIDEFILM(2W/470ohm)		CRG2SANJ471RT		
	VR601	943671010330S	ENCODER VR		CSR2A055Z		
CAPACITORS GROUP							
	C244	nsp	METALLIZED CAP 0.1UF 250V J		KCME2E104JP04T		
	C246,247	nsp	METALLIZED CAP 0.1UF 250V J		KCME2E104JP04T		
	C248-250	nsp	METALLIZEDFILM CAP 0.047UF 100V		CCME2A473JXT		
	C255-257	nsp	METALLIZEDFILM CAP 0.047UF 100V		CCME2A473JXT		
	C6002	nsp	MYLAR CAP 0.1UF 50V J		HCQI1H104JZT		
	C6003	00D9430175108	ELECT CAP 10UF 50V		CCEA1HH100T		
	C6004	943134010530S	ELECT CAP 1UF 50V C		CCEA1HH1R0T		
	C6005	00MOA22706320	ELECT CAP 220UF 63V		CCEA1JH221E		
	C6006	943134010530S	ELECT CAP 1UF 50V C		CCEA1HH1R0T		
	C6007	nsp	METALLIZEDFILM CAP 0.047UF 100V		CCME2A473JXT		
	C6009	nsp	CHIP CAP 0.1UF/50V/2012		CCUC1H104KC		
	C6010	00D9430175108	ELECT CAP 10UF 50V		CCEA1HH100T		
	C6011	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C6013-6015	nsp	CHIP CAP 100PF 50V J		CCUS1H101JA		
	C6016	nsp	CHIP CAP 1000PF 50VK		CCUS1H102KC		
	C6017	nsp	METALLIZEDFILM CAP 0.047UF 100V		CCME2A473JXT		
	C6019	00D9430175108	ELECT CAP 10UF 50V		CCEA1HH100T		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	C6020	nsp	CHIP CAP 0.01UF 50V K		CCUS1H103KC		
	C6035	943134010670S	ELECT CAP 47UF 16V		CCEA1CKS470T		
	C6036	nsp	CHIP CAP 100PF 50V J		CCUS1H101JA		
	C6038	943134010530S	ELECT CAP 1UF 50V C	E1C	CCEA1HH1R0T		
	C6039,6040	943134010530S	ELECT CAP 1UF 50V C		CCEA1HH1R0T		
	C6041	00D9430175108	ELECT CAP 10UF 50V		CCEA1HH100T		
	C6042,6043	nsp	CHIP CAP 220PF 50V		CCUS1H221JA		
	C6049	943134010530S	ELECT CAP 1UF 50V C		CCEA1HH1R0T		
	C6050	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C6059,6060	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C6062	nsp	CHIP CAP 0.1UF 50V K	E1C	CCUS1H104KC		
	C6063-6065	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C6067	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C6069,6070	nsp	CHIP CAP 330PF 50V J		CCUS1H331JA		
	C6071	943134010530S	ELECT CAP 1UF 50V C		CCEA1HH1R0T		
	C6072-6076	00D9430175108	ELECT CAP 10UF 50V		CCEA1HH100T		
	C6077,6078	nsp	CHIP CAP 330PF 50V J		CCUS1H331JA		
	C6081,6082	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C6089	943134010530S	ELECT CAP 1UF 50V C		CCEA1HH1R0T		
	C6090	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C6091	943134010530S	ELECT CAP 1UF 50V C		CCEA1HH1R0T		
	C6092-6094	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C6095	nsp	CHIP CAP 220PF 50V	E3,E2,EA	CCUS1H221JA		
	C6095	nsp	CHIP CAP 100PF 50V J	E1C	CCUS1H101JA		
	C6096	nsp	CHIP CAP 220PF 50V	E3,E2,EA	CCUS1H221JA		
	C6096	nsp	CHIP CAP 100PF 50V J	E1C	CCUS1H101JA		
	C6100,6101	nsp	CHIP CAP 0.01UF 50V K		CCUS1H103KC		
OTHERS PARTS GROUP							
	BK601,602	nsp	FIP BRACKET		CMD1A572		
	BN45	nsp	WIRE ASSY(LOCK 3P 120MM 2.5MM)		CWB1D00312058		
	BN46	nsp	WIRE ASS'Y (7P, 250MM)		CWB4D00725058		
	BN606	nsp	WIRE ASS'Y (3P, 300MM)		CWB4B00330047		
	BN61A	nsp	WIREASS'Y (5P, 50MM)		CWB1B00505047		
	BN61B	nsp	WIREASS'Y (5P, 80MM)		CWB1B005080E7		
	BN63A	nsp	WIREASS'Y (5P, 100MM)		CWB1B00510067		
	BN64A	nsp	WIREASS'Y (3P, 80MM)		CWB1B00308077		
	BN71-74	nsp	WIREASS'Y (1P, 40MM)		CWE7202040TT		
	CN201	nsp	WAFER STRAIGHT(7PIN 2.5MM)		CJP07GA01ZY		
	CN203	nsp	WAFER(3PIN 3.96MM)		CJP03GA148ZW		
	CN41	nsp	WAFER STRAIGHT(3PIN 3.96MM)		CJP03GA90ZY		
	CN602	nsp	WAFER,FPC 23P 1.25mm angle		CJP23GB286ZN		
	CN603	nsp	LOCKINGTYPE STRAIGHTWAFER 2MM		CJP03GI236ZW		
	CN610	nsp	WAFER ANGLE(2.5mm)		CJP05GB03ZY		
	CN61A	nsp	LOCKINGTYPE STRAIGHTWAFER 2mm		CJP05GI236ZW		
	CN61B	nsp	WAFER STRAIGHT		CJP05GA19ZY		
⚠	F6001	943652000620S	FUSE(0.1A 372SERIES/TR5)		CBA2D0100A3EYT		
	FL601	943172012630S	V.F.D 18-ST-15GINK		CFL18ST15GINK		*
	GND21	nsp	PCB BRACKET		CMD1A569		
	GND22	nsp	PCB BRACKET		CMD1A188		
	JK602	90M-YT004310R	JACK BOARD(3P)		CJJ4S041Z		
	JK603	943643010140S	JACK HEADPHONE(3.5mm GOLD)		CJJ2E028Z		
	JK605	943643010130S	JACK PHONES(6.35mm)		CJJ2E020Z		
	L6001,6002	nsp	CHIP FERRITE BEAD(60ohm 1608)		CLZ9R005Z		
	L6006-6008	nsp	CHIP FERRITE BEAD(60ohm 1608)		CLZ9R005Z		
	LUG65,67	nsp	WIRE ASS'Y 1P, 100MM		CWE8102100RV		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	RC601	943262010290S	REMOCON SENSOR		CRVKSM603TH5B		
	SW601-619	90M-SP001400R	TACT SW EVQ22505R		CST1A023ZT		

MAIN P.W.B. UNIT ASS'Y

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
SEMICONDUCTORS GROUP							
	IC41	00D2630641002	REGULATOR IC NJM7912FA		HVINJM7912FA		
	IC42	00D2630801004	REGULATOR IC NJM7812FA		HVINJM7812FA		
	IC45	00D2631162014	REGULATOR IC KIA78R05PI		HVIKIA78R05PI		
	IC46	231010031706S	REGULATOR IC KIA278R05PI		HVIKIA278R05PI		
	Q401	00MHT800931A0	TR KTC3200GR		HVTKTC3200GRT		
	Q402,403	00D9430154200	TR KRA102M		HVTKRA102MT		
	Q408	00MHT800931A0	TR KTC3200GR		HVTKTC3200GRT		
	Q410-414	00MHT800931A0	TR KTC3200GR		HVTKTC3200GRT		
	Q415	00D2710301903	TR KTA1268BLATP		CVTKTA1268BLATPA		
	Q416	00MHT800931A0	TR KTC3200GR		HVTKTC3200GRT		
	Q417-420	943216500030S	TR KRC105M		CVTKRC105MT		*
	Q421-423	00D2710301903	TR KTA1268BLATP		CVTKTA1268BLATPA		
	Q424	00MHT800931A0	TR KTC3200GR		HVTKTC3200GRT		
	Q425-428	00D2710301903	TR KTA1268BLATP		CVTKTA1268BLATPA		
	Q429-436	00MHT800931A0	TR KTC3200GR		HVTKTC3200GRT		
	Q437-444	00D2710301903	TR KTA1268BLATP		CVTKTA1268BLATPA		
	Q445	00MHT800931A0	TR KTC3200GR		HVTKTC3200GRT		
	Q448-453	00D9430108104	TR KTC2874B		HVTKTC2874BT		
	Q454	00MHT30001000	TR KTC3199Y		HVTKTC3199YT		
	Q455	00D9430004305	TR KRC107M		HVTKRC107MT		
	Q456	00MHT30001000	TR KTC3199Y		HVTKTC3199YT		
	Q457,458	00D2710301903	TR KTA1268BLATP		CVTKTA1268BLATPA		
	Q459,460	00MHT800931A0	TR KTC3200GR		HVTKTC3200GRT		
	Q461-463	90M-HT800120R	TR KTC3114A		HVTKTC3114A		
	Q464	90M-HT400490R	POWER TR 2SD2390		HVT2SD2390		
	Q465	90M-HT800120R	TR KTC3114A		HVTKTC3114A		
	Q466	90M-HT200440R	POWER TR HVT2SB1560		HVT2SB1560		
	Q467	90M-HT400490R	POWER TR 2SD2390		HVT2SD2390		
	Q468	90M-HT200440R	POWER TR HVT2SB1560		HVT2SB1560		
	Q469	90M-HT400490R	POWER TR 2SD2390		HVT2SD2390		
	Q470	90M-HT200440R	POWER TR HVT2SB1560		HVT2SB1560		
	Q471	90M-HT400490R	POWER TR 2SD2390		HVT2SD2390		
	Q472	90M-HT200440R	POWER TR HVT2SB1560		HVT2SB1560		
	Q473	90M-HT400490R	POWER TR 2SD2390		HVT2SD2390		
	Q474	90M-HT200440R	POWER TR HVT2SB1560		HVT2SB1560		
	Q475	90M-HT800120R	TR KTC3114A		HVTKTC3114A		
	D401	943202010050S	DIODE ZJ2.4B		CVDZJ2.4BT		
	D402	00D9430182609	DIODE 1SS133MT		CVD1SS133MT		
	D404	00D9430182609	DIODE 1SS133MT		CVD1SS133MT		
	D409-437	00D9430182609	DIODE 1SS133MT		CVD1SS133MT		
	D438,439	943203003150S	DIODE 1N4007T		HVD1N4007T		
	D445,446	90M-HD201850R	SCHOTTKY DIODE 1N5819		HVD1N5819T		
	D448	00D9430182609	DIODE 1SS133MT		CVD1SS133MT		
	D449-454	943203003150S	DIODE 1N4007T		HVD1N4007T		
	D455	nsp	COPPER WIRE		C3A206		
	D458-460	00D9430182609	DIODE 1SS133MT		CVD1SS133MT		
	D461	943203003170S	DIODE GBJ606		HVDGBJ606		
	D501	nsp	COPPER WIRE		C3A206		
	ZD41	943202008160S	DIODE ZJ12B		CVDZJ12BT		
	ZD48	943202010080S	DIODE ZJ5.1B		CVDZJ5.1BT		
	ZD49	90M-HD302440R	DIODE ZJ4.7B		CVDZJ4.7BT		
	ZD51-60	90M-HD302390R	DIODE ZJ3.3B		CVDZJ3.3BT		
RESISTORS GROUP							
	R494-501	943124500040S	RES,M-OXIDEFILM(1W/4.7ohm)	FLAMERETARDANT	CRG1SANJ4R7RT	*	
	R502	nsp	RES,M-OXIDEFILM(1W/120ohm)		CRG1SANJ121RT		
	R505-514	943124500050S	RES,M-OXIDEFILM(2W/0.47ohm)	FLAMERETARDANT	CRG2SANJR47RT	*	
	R515	nsp	RES,M-OXIDEFILM(1W/10ohm)		CRG1SANJ100RT		
	R516-520	943124500050S	RES,M-OXIDEFILM(2W/0.47ohm)	FLAMERETARDANT	CRG2SANJR47RT	*	
	R527-531	nsp	RES,M-OXIDEFILM(1W/10ohm)		CRG1SANJ100RT		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	R532	943124500050S	RES,M-OXIDEFILM(2W/0.47ohm)	FLAMERETARDANT	CRG2SANJR47RT	*	
	R533-537	nsp	RES,M-OXIDEFILM(1W/2.2Kohm)		CRG1SANJ222RT		
	R538	nsp	RES,M-OXIDEFILM(1W/10ohm)		CRG1SANJ100RT		
	R539-542	nsp	METAL OXID EFILM RES(1.2KOHM 1W)		CRG1SANJ122RT		
	R543-546	nsp	RES,M-OXIDEFILM(1W/47ohm)		CRG1SANJ470RT		
	R547-554	nsp	METAL OXID EFILM RES(1W/5.6Kohm)		CRG1SANJ562RT		
	R559	nsp	RES,M-OXIDEFILM(1W/2.2Kohm)		CRG1SANJ222RT		
	R563	nsp	RES,M-OXIDEFILM(1W/4.7ohm)		CRG1SANJ4R7RT		
	R564	nsp	RES,M-OXIDEFILM(1W/100ohm)		CRG1SANJ101RT		
	R577	nsp	RES,M-OXIDEFILM(1W/10ohm)		CRG1SANJ100RT		
	R616	nsp	METAL OXID EFILM RES(1.2KOHM 1W)		CRG1SANJ122RT		
	R618	nsp	RES,M-OXIDEFILM(1W/47ohm)		CRG1SANJ470RT		
	R619	nsp	RES,M-OXIDEFILM(1W/10ohm)		CRG1SANJ100RT		
	R621	nsp	RES,M-OXIDEFILM(1W/10ohm)		CRG1SANJ100RT		
	R625-628	943124500050S	RES,M-OXIDEFILM(2W/0.47ohm)	FLAMERETARDANT	CRG2SANJR47RT	*	
	R630	nsp	METAL OXID EFILM RES(1W/5.6Kohm)		CRG1SANJ562RT		
	R632	nsp	METAL OXID EFILM RES(1W/5.6Kohm)		CRG1SANJ562RT		
	R634,635	943124500040S	RES,M-OXIDEFILM(1W/4.7ohm)	FLAMERETARDANT	CRG1SANJ4R7RT	*	
	VR41-45	nsp	RES,SEMIFIXED(1K,BCURVE)		CVN1RA102B03T		
CAPACITORS GROUP							
	C403	943134010660S	ELECT CAP 470UF 6.3V		CCEA0JH471T		
	C404-407	nsp	MYLAR CAP 2200PF 100V J		HCQI1H222JZT		
	C408	00D9430148708	ELECT CAP 47UF 50V		CCEA1HH470T		
	C409	nsp	SEMICONDUCTOR CAP 0.1UF 50V ZF		CCFT1H104ZF		
	C410	nsp	CERAMIC CAP 470PF 50V KB		CCKT1H471KB		
	C411	nsp	CERAMIC CAP 100PF 50V KB	E3	CCKT1H101KB		
	C411	nsp	CERAMIC CAP 82PF 50V J	E2,E1C,EA	CCCT1H820JC		
	C412	nsp	CERAMIC CAP 100PF 50V KB	E3	CCKT1H101KB		
	C412	nsp	CERAMIC CAP 82PF 50V J	E2,E1C,EA	CCCT1H820JC		
	C413	nsp	CERAMIC CAP 470PF 50V KB		CCKT1H471KB		
	C414	nsp	CERAMIC CAP 100PF 50V KB	E3	CCKT1H101KB		
	C414	nsp	CERAMIC CAP 82PF 50V J	E2,E1C,EA	CCCT1H820JC		
	C415	nsp	CERAMIC CAP 470PF 50V KB		CCKT1H471KB		
	C416-418	nsp	SEMICONDUCTOR CAP 0.1UF 50V ZF		CCFT1H104ZF		
	C419	nsp	FILM CAP 0.015UF 100V J MYLAR	E3	HCQI1H153JZT		
	C419	nsp	MYLAR CAP 0.018UF 100V J MYLAR	E2,E1C,EA	HCQI1H183JZT		
	C420	nsp	FILM CAP 0.015UF 100V J MYLAR	E3	HCQI1H153JZT		
	C420	nsp	MYLAR CAP 0.018UF 100V J MYLAR	E2,E1C,EA	HCQI1H183JZT		
	C421	nsp	CERAMIC CAP 470PF 50V KB		CCKT1H471KB		
	C422	nsp	CERAMIC CAP 100PF 50V KB	E3	CCKT1H101KB		
	C422	nsp	CERAMIC CAP 82PF 50V J	E2,E1C,EA	CCCT1H820JC		
	C423-426	nsp	CERAMIC CAP 33PF 50V J		CCCT1H330JC		
	C427	943134010660S	ELECT CAP 470UF 6.3V		CCEA0JH471T		
	C428	943134010490S	ELECT CAP 100UF 10V		CCEA1AH101T		
	C429	nsp	FILM CAP 0.015UF 100V J MYLAR	E3	HCQI1H153JZT		
	C429	nsp	MYLAR CAP 0.018UF 100V J MYLAR	E2,E1C,EA	HCQI1H183JZT		
	C430	nsp	FILM CAP 0.015UF 100V J MYLAR	E3	HCQI1H153JZT		
	C430	nsp	MYLAR CAP 0.018UF 100V J MYLAR	E2,E1C,EA	HCQI1H183JZT		
	C431	nsp	FILM CAP 0.015UF 100V J MYLAR	E3	HCQI1H153JZT		
	C431	nsp	MYLAR CAP 0.018UF 100V J MYLAR	E2,E1C,EA	HCQI1H183JZT		
	C432	nsp	MYLAR CAP 0.047UF 50V		HCQI1H473JZT		
	C433	nsp	MYLAR CAP 2200PF 100V J	E3	HCQI1H222JZT		
	C433	nsp	MYLAR CAP 1000PF 100V J MYLAR	E2,E1C,EA	HCQI1H102JZT		
	C434	nsp	MYLAR CAP 0.047UF 50V		HCQI1H473JZT		
	C435	nsp	MYLAR CAP 0.047UF 50V		HCQI1H473JZT		
	C436	nsp	MYLAR CAP 2200PF 100V J	E3	HCQI1H222JZT		
	C436	nsp	MYLAR CAP 1000PF 100V J MYLAR	E2,E1C,EA	HCQI1H102JZT		
	C437	nsp	MYLAR CAP 2200PF 100V J	E3	HCQI1H222JZT		
	C437	nsp	MYLAR CAP 1000PF 100V J MYLAR	E2,E1C,EA	HCQI1H102JZT		
	C438	nsp	MYLAR CAP 2200PF 100V J	E3	HCQI1H222JZT		
	C438	nsp	MYLAR CAP 1000PF 100V J MYLAR	E2,E1C,EA	HCQI1H102JZT		
	C439	nsp	MYLAR CAP 0.047UF 50V		HCQI1H473JZT		
	C440	nsp	MYLAR CAP 2200PF 100V J	E3	HCQI1H222JZT		
	C440	nsp	MYLAR CAP 1000PF 100V J MYLAR	E2,E1C,EA	HCQI1H102JZT		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	C441,442	00D9430175108	ELECT CAP 10UF 50V		CCEA1HH100T		
	C443-445	00MOA10705020	ELECT CAP 100UF 50V		CCEA1HH101T		
	C446-449	00D9430148708	ELECT CAP 47UF 50V		CCEA1HH470T		
	C450-456	00D9430175108	ELECT CAP 10UF 50V		CCEA1HH100T		
	C457	943134010480S	ELECT CAP 100UF 100V		CCEA2AH101E		
	C458,459	nsp	CERAMIC CAP 0.01UF 50V ZF		CCFT1H103ZF		
	C460	943134010610S	ELECT CAP 4.7UF 50V		CCEA1HH4R7T		
	C461	943134010610S	ELECT CAP 4.7UF 50V		CCEA1HH4R7T		
	C462	943134010580S	ELECT CAP 220UF 35V		CCEA1VH221T		
	C463	00D9430175108	ELECT CAP 10UF 50V		CCEA1HH100T		
	C464	nsp	SEMICONDUCTOR CAP 0.1UF 50V ZF		CCFT1H104ZF		
	C465	nsp	CERAMIC CAP 330PF 50V KB		CCKT1H331KB		
	C466	nsp	SEMICONDUCTOR CAP 0.1UF 50V ZF		CCFT1H104ZF		
	C467,468	nsp	CERAMIC CAP 330PF 50V KB		CCKT1H331KB		
	C469-471	943134010590S	ELECT CAP 22UF 50V		CCEA1HH220T		
⚠	C472	943132500020S	CERAMIC CAP (400V Y-CAP)		CCKDHS222ME	*	
	C474	00D9430103905	ELECT CAP470UF 16V		CCEA1CH471T		
	C475,476	943134010460S	ELECT CAP 6800UF 63V (30X35)		CCET63VKL5682NKZ		
	C477	943134010620S	ELECT CAP 4700UF 25V		CCEA1EH472E		
	C480	00D9430062101	ELECT CAP 100UF 16V		CCEA1CH101T		
	C481-483	943134010590S	ELECT CAP 22UF 50V		CCEA1HH220T		
	C484	nsp	CERAMIC CAP 0.022UF 50V ZF		CCFT1H223ZF		
	C486	943134001290S	ELECT CAP 2200UF 25V		CCEA1EH222E		
	C487	943134010530S	ELECT CAP 1UF 50V C		CCEA1HH1R0T		
	C488	nsp	CERAMIC CAP 0.01UF 50V ZF		CCFT1H103ZF		
	C489	943134010600S	ELECT CAP 3300UF 16V		CCEA1CH332E		
	C490	nsp	CERAMIC CAP 0.01UF 50V ZF		CCFT1H103ZF		
	C491	00D9430062101	ELECT CAP 100UF 16V		CCEA1CH101T		
	C492	00D9430175108	ELECT CAP 10UF 50V		CCEA1HH100T		
	C493	nsp	CERAMIC CAP 470PF 50V KB		CCKT1H471KB		
	C494	nsp	MYLAR CAP 2200PF 100V J		HCQI1H222JZT		
	C495	nsp	CERAMIC CAP 100PF 50V KB		CCKT1H101KB		
	C495	nsp	CERAMIC CAP 82PF 50V J	E2,E1C,EA	CCCT1H820JC		
	C496	943134010580S	ELECT CAP 220UF 35V		CCEA1VH221T		
	C497	nsp	CERAMIC CAP 33PF 50V J		CCCT1H330JC		
	C498,499	nsp	SEMICONDUCTOR CAP 0.1UF 50V ZF		CCFT1H104ZF		
	C500	00D9430062101	ELECT CAP 100UF 16V		CCEA1CH101T		
	C502	nsp	MYLAR CAP 0.047UF 50V		HCQI1H473JZT		
	C504	943134010600S	ELECT CAP 3300UF 16V		CCEA1CH332E		
	C505	00D9430148708	ELECT CAP 47UF 50V		CCEA1HH470T		
	C508	00D9430175108	ELECT CAP 10UF 50V		CCEA1HH100T		
	C559	943134010470S	ELECT CAP 0.1UF 50V		CCEA1HH0R1T		
	C561	943134010530S	ELECT CAP 1UF 50V C		CCEA1HH1R0T		
	C563,564	943134010470S	ELECT CAP 0.1UF 50V		CCEA1HH0R1T		
OTHERS PARTS GROUP							
	BK41	nsp	PCB BRACKET		CMD1A569		
	BN41	nsp	WIRE ASS'Y (3P, 200MM)		CWB3FE03200UZ		
	BN42	nsp	WIREASS'Y (15P, 100MM)		CWB1B01510047		
	BN43	nsp	WIRE ASS'Y (15P, 200MM)		CWB4C01520047		
	BN44	nsp	WIREASS'Y (3P, 250MM)		CWB4B00325047		
	BN45	nsp	WIRE ASS'Y (1P, 200MM)		CWE8202200VV		
	BN9B	nsp	WAFER CARD CABLE, 13PIN 1.25MM		CJP13GA115ZY		
	CN45	nsp	STRAIGHT WAFER 3PIN 2.5MM		CJP03GI237ZW		
	CN46	nsp	STRAIGHT WAFER 7PIN 2.5MM		CJP07GI237ZW		
	CN47	nsp	WAFER 2PIN 2MM		CJP02KA060ZY		
	CN48	nsp	WAFER 2PIN		CJP02GA89ZY		
	CN51-55	nsp	WAFER STRAIGHT 2PIN		CJP02GA01ZY		
	ET41	nsp	EARTH PALTE		HJT1A025		
⚠	F401	90M-FS001420R	FUSE(218Series 250V 3.15A)	E2,EA,E1C	KBA2C3150TLEY		
⚠	F401	90M-FS001430R	FUSE(218Series 250V 6.3A)	E3	KBA2C6300TLEY		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New	
	JK41	943646010230S	JACK NOSPCC6PRRR/BBB	E3	CJJ5R004U			
	JK42	943643010150S	JACK NOSPCC2PW/R		CJJ4N034U			
	JK43	943643010160S	JACK NOSPCC1PBLACK		CJJ4M046U			
	JK44	943646010240S	JACK NOSPCC6PRRR/BBB	E2,E1C,EA	CJJ5R008U			
	JK45	943646010250S	JACK NOSPCC4PRR/BB		CJJ5P011U			
	L401-404	943115010260S	SPEAKER COIL (0.5UH)		CLEY0R5KAK			
	L405-L413	nsp	COPPER WIRE		C3A206			
	L415	943115010260S	SPEAKER COIL (0.5UH)		CLEY0R5KAK			
	RY41,42	682010023006S	RELAY 12V 2C1P		CSL3A021ZU			
⚠	RY43	943682004660S	POWER RERAY G5PA-1		CSL1E002ZE			
	RY44	943682000810S	RELAY 12V 2C2P		CSL4A016ZU			
	RY45	682010023006S	RELAY 12V 2C1P		CSL3A021ZU			
⚠	T401	943101012290D	SUB TRANS(6.9V,65mA)	E3	CLT5I022ZU			
⚠	T401	943101012300D	SUB TRANS(6.9V,65mA)	E2,EA	CLT5I022ZE			⚠2
⚠	T401	943101012310D	SUB TRANS(6.9V,65mA)	E1C	CLT5I022ZH			⚠2
⚠	TH41	943252010310S	POSISTOR ASS'Y(100)		CRTDHTS100180W			
		nsp	FUSE HOLDER	F401	KJCFC5S			

INPUT P.W.B. UNIT ASS'Y

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
SEMICONDUCTORS GROUP							
	IC60	943231010390S	REGULATOR IC KIA7805BPI		CVIKIA7805BPI		
	IC61	943235003810S	IC R2A15218FP		CVIR2A15218FP		
	IC62-65	00D2631289900	IC AZ4580MTR-E1		CVIAZ4580MTR-E1		
	IC66,67	00D2630934900	IC BA4510F		HVIBA4510F		
	IC68	943231010390S	REGULATOR IC KIA7805BPI		CVIKIA7805BPI		
	IC69	943239010400S	REGULATOR IC NJM2845DL133		CVINJM2845DL133		
	IC71	90M-HC109700R	IC NJM2595MTE1		CVINJM2595MTE1		
	IC72	00MHC1010455Y	IC MM1511XNRE		HVIMM1511XNRE		
	IC74	00D2631099006	REGULATOR IC KIA7905PI		CVIKIA7905PI		
	IC81	943245010410S	IC CS497024CVZ		CVICS497024CVZ		
	IC82	943246010420S	IC, SST25VF080B-50-4C-S2AF		CVIANAM1530AV		
	IC83	943246012710S	IC, M12L16161A-5TG		CVIM12L16161A5TG2K		*
	IC84	90M-HC110090R	IC CS42528-CQ		HVICS42528-CQ		
	IC85	00D2623198902	IC C74VHC157FT		HVITC74VHC157FT		
	IC91	943243100020S	IC IT5CN5(512KB/32KB,LQFP100P)		CVIANAM1558AV		*
	IC92	943246010440S	IC M24C32WMN6TP		CVIM24C32WMN6TP		
	IC93	00D2623410907	IC TC74VHCT08AFT		HVITC74VHCT08FT		
	IC94	00D2623444902	IC TC74VHC08FT		CVITC74VHC08FT		
	IC95	943239010400S	REGULATOR IC NJM2845DL133		CVINJM2845DL133		
	IC96	943234010450S	IC BD5225G		CVIBD5225G		
	Q901	943214500020S	TR 2SC3052		CVT2SC3052		*
	Q903	943214500020S	TR 2SC3052		CVT2SC3052		*
	D601,602	9432090010805	DIODE 1SS355T		CVD1SS355T		
	D605,606	00D9430196306	DIODE ZJ7.5B		CVDZJ7.5BT		
	D903	9432090010805	DIODE 1SS355T		CVD1SS355T		
RESISTORS GROUP							
	R736,737	nsp	METAL OXID EFILM RES(68OHM 1W)		CRG1SANJ680RT		
	R761-764	nsp	CHIP RES1%75OHM		CRJ10DF75R0T		
	R766	nsp	CHIP RES(82OHM 1%)		CRJ10DF82R0T		
	R805	nsp	CHIP RES(1.37KOHM 1/16W 1% 1608)		CRJ10DF1371T		
	R839	nsp	CHIP RES(5.1K 1%)		CRJ10DF5101T		
	R916	nsp	CHIP RES,10K OHM 1/10W J		CRJ10DJ103T		
	R917	nsp	CHIP RES,4.7K OHM 1/10W J	E3	CRJ10DJ472T		
	R917	nsp	CHIP RES,10K OHM 1/10W J	E1C	CRJ10DJ103T		
	R958	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	RN61	nsp	CHIP RES(100OHM 5% 1608X4)		CRJ104DJ101T		
	RN80	nsp	CHIP RES(10KOHM 5% 1608X4)		CRJ104DJ330T		
	RN81,82	nsp	CHIP RES(10KOHM 5% 1608X4)		CRJ104DJ103T		
	RN83-90	nsp	CHIP RES(10KOHM 5% 1608X4)		CRJ104DJ330T		
	RN91,92	nsp	CHIP RES(100OHM 5% 1608X4)		CRJ104DJ101T		
	RN93	nsp	CHIP RES(10KOHM 5% 1608X4)		CRJ104DJ103T		
CAPACITORS GROUP							
	C603	nsp	CHIP CAP 8200UF 50V		CCUS1H822KC		
	C604	nsp	CHIP CAP 8200UF 50V		CCUS1H822KC		
	C605	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C606	nsp	CHIP CAP 3900PF 50V K		CCUS1H392KC		
	C607	00D9430103808	ELECT CAP 470UF 10V		CCEA1AH471T		
	C610,611	nsp	CHIP CAP 100PF 50V J		CCUS1H101JA		
	C612	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C613,614	nsp	CHIP CAP 100PF 50V J		CCUS1H101JA		
	C619,620	nsp	CHIP CAP 220PF 50V		CCUS1H221JA		
	C623,624	nsp	CHIP CAP 220PF 50V		CCUS1H221JA		
	C627,628	nsp	CHIP CAP 220PF 50V		CCUS1H221JA		
	C629	00D9430062101	ELECT CAP 100UF 16V		CCEA1CH101T		
	C636-639	nsp	ELECT CAP 47UF 16V		CCEA1CH470T		
	C640	9431340105905	ELECT CAP 22UF 50V		CCEA1HH220T		
	C641	nsp	ELECT CAP 47UF 16V		CCEA1CH470T		

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
	C642,643	00D9430148708	ELECT CAP 47UF 50V		CCEA1HH470T		
	C647	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C651	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C652-655	nsp	CHIP CAP 1500PF 50VK		CCUS1H152KC		
	C656,657	nsp	CHIP CAP 330PF 50V J		CCUS1H331JA		
	C658,659	nsp	CHIP CAP 1500PF 50VK		CCUS1H152KC		
	C660	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C661,662	nsp	CHIP CAP 330PF 50V J		CCUS1H331JA		
	C663,664	943134010610S	ELECT CAP 4.7UF 50V		CCEA1HH4R7T		
	C665	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C668-670	nsp	CHIP CAP 1500PF 50VK		CCUS1H152KC		
	C671	nsp	CHIP CAP 4700PF 50V		CCUS1H472KC		
	C672	nsp	CHIP CAP 330PF 50V J		CCUS1H331JA		
	C673	nsp	CHIP CAP 1000PF 50VK		CCUS1H102KC		
	C674	nsp	CHIP CAP 1500PF 50VK		CCUS1H152KC		
	C675	nsp	CHIP CAP 4700PF 50V		CCUS1H472KC		
	C676	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C677	nsp	CHIP CAP 3900PF 50V K		CCUS1H392KC		
	C678	nsp	CHIP CAP 330PF 50V J		CCUS1H331JA		
	C679	nsp	CHIP CAP 1000PF 50VK		CCUS1H102KC		
	C680,681	943134010610S	ELECT CAP 4.7UF 50V		CCEA1HH4R7T		
	C682	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C685-688	nsp	CHIP CAP 1500PF 50VK		CCUS1H152KC		
	C689,690	nsp	CHIP CAP 330PF 50V J		CCUS1H331JA		
	C691,692	nsp	CHIP CAP 1500PF 50VK		CCUS1H152KC		
	C693	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C694,695	nsp	CHIP CAP 330PF 50V J		CCUS1H331JA		
	C696,697	943134010610S	ELECT CAP 4.7UF 50V		CCEA1HH4R7T		
	C698	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C701-704	nsp	CHIP CAP 1500PF 50VK		CCUS1H152KC		
	C705,706	nsp	CHIP CAP 330PF 50V J		CCUS1H331JA		
	C707,708	nsp	CHIP CAP 1500PF 50VK		CCUS1H152KC		
	C709	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C710,711	nsp	CHIP CAP 330PF 50V J		CCUS1H331JA		
	C712,713	943134010610S	ELECT CAP 4.7UF 50V		CCEA1HH4R7T		
	C714	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C718	00D9430062101	ELECT CAP 100UF 16V		CCEA1CH101T		
	C720	00D9430062101	ELECT CAP 100UF 16V		CCEA1CH101T		
	C724-726	00D9430062101	ELECT CAP 100UF 16V		CCEA1CH101T		
	C727	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C728	00D9430062101	ELECT CAP 100UF 16V		CCEA1CH101T		
	C729	nsp	CHIP CAP 0.22UF 16VK		CCUS1C224KC		
	C730	00D9430062101	ELECT CAP 100UF 16V		CCEA1CH101T		
	C731	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C732	943134010590S	ELECT CAP 22UF 50V		CCEA1HH220T		
	C733	nsp	CHIP CAP 220PF 50V		CCUS1H221JA		
	C735	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C736	nsp	CHIP CAP 2700PF 50V K		CCUS1H272KC		
	C737	943134010590S	ELECT CAP 22UF 50V		CCEA1HH220T		
	C738	nsp	CHIP CAP 220PF 50V		CCUS1H221JA		
	C740	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C741	nsp	CHIP CAP 2700PF 50V K		CCUS1H272KC		
	C742	00D9430062101	ELECT CAP 100UF 16V		CCEA1CH101T		
	C743	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C745	00D9430062101	ELECT CAP 100UF 16V		CCEA1CH101T		
	C747	00D9430062101	ELECT CAP 100UF 16V		CCEA1CH101T		
	C752	nsp	RES,CHIP(0OHM,5%,1608)		CRJ10DJ0R0T		
	C754,755	00D9430175108	ELECT CAP 10UF 50V		CCEA1HH100T		
	C756-C758	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C759	00D9430175108	ELECT CAP 10UF 50V		CCEA1HH100T		
	C763-765	00D9430175108	ELECT CAP 10UF 50V		CCEA1HH100T		
	C766	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C768	00D9430148708	ELECT CAP 47UF 50V		CCEA1HH470T		
	C769	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C770	00D9430175108	ELECT CAP 10UF 50V		CCEA1HH100T		
	C771	00D9430062101	ELECT CAP 100UF 16V		CCEA1CH101T		
	C772	nsp	CHIP CAP 22PF 50V		CCUS1H220JA		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	C801	nsp	CHIP CAP 100PF 50V J		CCUS1H101JA		
	C802,803	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C804	943134010490S	ELECT CAP 100UF 10V		CCEA1AH101T		
	C805	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C806	943134010490S	ELECT CAP 100UF 10V		CCEA1AH101T		
	C807	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C808	943134010610S	ELECT CAP 4.7UF 50V		CCEA1HH4R7T		
	C809	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C810	943134010490S	ELECT CAP 100UF 10V		CCEA1AH101T		
	C811	00D9430103808	ELECT CAP 470UF 10V		CCEA1AH471T		
	C812	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C813	nsp	CHIP CAP 1000PF 50VK		CCUS1H102KC		
	C814	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C815	nsp	CHIP CAP 0.022UF 50VK		CCUS1H223KC		
	C816	943134010490S	ELECT CAP 100UF 10V		CCEA1AH101T		
	C817	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C818	nsp	CHIP CAP 0.01UF 50V K		CCUS1H103KC		
	C821-819	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C822-824	nsp	CHIP CAP 0.01UF 50V K		CCUS1H103KC		
	C825	943134010490S	ELECT CAP 100UF 10V		CCEA1AH101T		
	C826	943134010490S	ELECT CAP 100UF 10V		CCEA1AH101T		
	C827	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C828	nsp	CHIP CAP 100PF 50V J		CCUS1H101JA		
	C829	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C830	00D9430148708	ELECT CAP 47UF 50V		CCEA1HH470T		
	C831,832	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C835,836	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C837,838	nsp	CHIP CAP 15PF 50V		CCUS1H150JA		
	C839	00D9430173003	ELECT CAP 220UF10V		CCEA1AH221T		
	C840	nsp	CHIP CAP 1UF 10V		CCUS1A105KC		
	C841	nsp	CHIP CAP 0.01UF 50V K		CCUS1H103KC		
	C842	nsp	CHIP CAP 100PF 50V J		CCUS1H101JA		
	C843	943134010490S	ELECT CAP 100UF 10V		CCEA1AH101T		
	C844-851	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C859	943134010490S	ELECT CAP 100UF 10V		CCEA1AH101T		
	C860	943134010490S	ELECT CAP 100UF 10V		CCEA1AH101T		
	C861-868	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C875-878	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C879	nsp	CHIP CAP 15PF 50V		CCUS1H150JA		
	C880-882	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C901	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C902	00D9430062101	ELECT CAP 100UF 16V		CCEA1CH101T		
	C903	nsp	CHIP CAP 0.22UF 16VK		CCUS1C224KC		
	C904	943134010570S	ELECT CAP 220UF 16V		CCEA1CH221T		
	C905-909	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C911	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C913	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C914	nsp	CHIP CAP 27PF 50V J		CCUS1H270JA		
	C915	nsp	CHIP CAP 22PF 50V		CCUS1H220JA		
	C916-918	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C919	00D9430175108	ELECT CAP 10UF 50V		CCEA1HH100T		
	C920	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C921	00D9430175108	ELECT CAP 10UF 50V		CCEA1HH100T		
	C922	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C923,924	nsp	CHIP CAP 100PF 50V J		CCUS1H101JA		
	C926	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C927	nsp	CHIP CAP 0.01UF 50V K		CCUS1H103KC		
	C928	943134010470S	ELECT CAP 0.1UF 50V		CCEA1HH0R1T		
	C929,930	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C933-935	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C936-938	nsp	CHIP CAP 1000PF 50VK		CCUS1H102KC		
	C940,941	nsp	CHIP CAP 1000PF 50VK		CCUS1H102KC		
	C946-953	nsp	CHIP CAP 1000PF 50VK		CCUS1H102KC		
	C954	nsp	CHIP CAP 0.015UF 50V		CCUS1H153KC		
	C955	nsp	CHIP CAP 1UF 10V		CCUS1A105KC		
	C956	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C957	943134010530S	ELECT CAP 1UF 50V C		CCEA1HH1R0T		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	C958-963	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C964	nsp	CHIP CAP 0.01UF 50V K		CCUS1H103KC		
	C965	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C966	nsp	CHIP CAP 0.01UF 50V K		CCUS1H103KC		
	C967-969	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C970	nsp	CHIP CAP 0.01UF 50V K		CCUS1H103KC		
	C971,972	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C973,974	nsp	CHIP CAP 0.01UF 50V K		CCUS1H103KC		
	C975	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
OTHERS PARTS GROUP							
	BD61-63	nsp	CHIP FERRITE BEAD(60ohm 2012)		CLZ9R001Z		
	BD71,72	nsp	CHIP FERRITE BEAD(60ohm 1608)		CLZ9R005Z		
	BD81	nsp	CHIP FERRITE BEAD(60ohm 2012)		CLZ9R001Z		
	BD83	nsp	CHIP,BEAD		HLZ9Z008Z		
	BD91-95	nsp	CHIP FERRITE BEAD(60ohm 2012)		CLZ9R001Z		
	BK61	nsp	PCB BRACKET		CMD1A569		
	BN12	nsp	WIRE ASS'Y (5P, 100MM)		CWB1C005100G7		
	CN1A	nsp	WAFER FPC 23P 1.25mm		CJP23GA285ZN		
	CN42,43	nsp	LOCKING TYPE, STRAIGHT WAFER 2MM		CJP15GI236ZW		
	CN71	nsp	LOCKINGTYPE STRAIGHTWAFER 2MM		CJP03GI236ZW		
	CN8A	nsp	WAFER CARD CABLE 23P, 1.0MM		CJP23GA193ZY		
	CN91	nsp	WAFER CARD CABLE 7P 1.25MM		CJP07GB113ZY		
	CN9A	nsp	WAFER CARD CABLE 13P 1.25MM		CJP13GA115ZY		
	ET71	nsp	EARTH PALTE		HJT1A025		
	ET91	nsp	EARTH PALTE		HJT1A025		
	JK62	943643010170S	JACK NOSPCC6PWWW/RRR		CJJ4R019T		
	JK71	943643010180S	JACK NOSPCC2PY/Y		CJJ4N092U		
	JK72	943643010190S	JACK NOSPCCRCA/SVIDEO		CJJ9N004U		
	JK81	943643010210S	JACK ASS'Y CJS9U017Z+HJSTORX177L		HJSTORX177L		
	JK82	943643100030S	JACK RCA		CJJ4M044X		*
	JK91	943643010220S	JACK 3.5PIHORIZONTALWITHOUTRING		CJJ2E033Z		
	L601,602	943115010270S	MPX COIL(FM19KHzFILTER)		CLM4B001Z		
	TU61	943183010320S	TUNER(USA)FM(SCREW:FTYPE) ,AM(S/LAB)	E3	CNVMW004MV1S63SN		
	TU61	943183010310S	TUNER(EUR)FM,AM,RDS(S/LAB)	E2,E1C,EA	CNVMW104MV1S63N		
	X801	943141010360S	CRYSTAL 24.576MHz 15PF 30PPM		HOX24576E150TF		
	X901	943141010370S	CRYSTAL 10.000MHz 22PF 30PPM		HOX10000E220TF		

HDMI P.W.B. UNIT ASS'Y

	Ref. No.	Part No.	Part Name		Remarks	Q'ty	New
SEMICONDUCTORS GROUP							
	IC11	943236012460S	IC HDMITransceiver(LQFP-144P)		CVIADV7623BSTZ		*
	IC14	943248100030S	I.C, MX25L8006EM2I		CVIANAM1571AV		*
	IC15	943239010400S	REGULATOR IC NJM2845DL133		CVINJM2845DL133		
	IC16	nsp	IC EX3AV		CVIEX3AV		
	Q101	943215500020S	TR RT1P141C		CVTRT1P141C		*
	Q102	943216500040S	TR RT1N241C		CVTRT1N241C		*
	Q103	943215500020S	TR RT1P141C		CVTRT1P141C		*
	Q104	943216500040S	TR RT1N241C		CVTRT1N241C		*
	Q105	943215500020S	TR RT1P141C		CVTRT1P141C		*
	Q106	943216500040S	TR RT1N241C		CVTRT1N241C		*
	Q107	943215500020S	TR RT1P141C		CVTRT1P141C		*
	Q108	943216500040S	TR RT1N241C		CVTRT1N241C		*
RESISTORS GROUP							
	R122	nsp	RES,CHIP(1608/1%/1.6Kohm)		CRJ10DF1601T		
	R123	nsp	RES,CHIP(1608/1%/2Kohm)		CRJ10DF2001T		
	R143,144	nsp	RES,CHIP1005,1K0,1/16W,1%		CRJ06IF1001T		
	R168	nsp	RES,CHIP(68K / 1% / 1005 size)		CRJ06IF6802T		
	R169	nsp	RES,CHIP(39K / 1% / 1005 size)		CRJ06IF3902T		
	R170	nsp	RES,CHIP(150K / 1% / 1005 size)		CRJ06IF1503T		
	RN11,13	nsp	RESNETWORK CHIP (33ohm 1/16W)		CRJ064IJ330T		
CAPACITORS GROUP							
	C101-129	nsp	CHIP CAP 0.1UF 16V		CCUI1C104KC		
	C130	nsp	CHIP CAP 10UF 6.3V		CCUC0J106KC		
	C131	nsp	CHIP CAP 0.1UF 16V		CCUI1C104KC		
	C132	nsp	CHIP CAP 10UF 6.3V		CCUC0J106KC		
	C133	nsp	CHIP CAP 0.1UF 16V		CCUI1C104KC		
	C134	nsp	CHIP CAP 10UF 6.3V		CCUC0J106KC		
	C135	nsp	CHIP CAP 0.1UF 16V		CCUI1C104KC		
	C136	nsp	CHIP CAP 1UF 10V		CCUS1A105KC		
	C138	nsp	CHIP CAP 0.1UF 16V		CCUI1C104KC		
	C139	nsp	CHIP CAP 10UF 6.3V		CCUC0J106KC		
	C140	nsp	CHIP CAP 0.1UF 16V		CCUI1C104KC		
	C141	nsp	CHIP CAP 10UF 6.3V		CCUC0J106KC		
	C144	nsp	CHIP CAP 0.1UF 50V K		CCUS1H104KC		
	C145	nsp	CHIP CAP 47PF 50V		CCUS1H470JA		
	C146	nsp	CHIP CAP 47PF 50V		CCUS1H470JA		
	C147	nsp	CHIP CAP 0.1UF 16V		CCUI1C104KC		
	C148	nsp	CHIP CAP 10UF 6.3V		CCUC0J106KC		
	C149	nsp	CHIP CAP 0.1UF 16V		CCUI1C104KC		
	C150	nsp	CHIP CAP 10UF 6.3V		CCUC0J106KC		
	C161	nsp	CHIP CAP 1UF 10V		CCUS1A105KC		
	C162,163	nsp	CHIP CAP 0.1UF 16V		CCUI1C104KC		
	C164	nsp	CHIP CAP 10UF 6.3V		CCUC0J106KC		
	C165	nsp	CHIP CAP 0.1UF 16V		CCUI1C104KC		
	C166	nsp	CHIP CAP 0.22UF 16VK		CCUS1C224KC		
	C167	nsp	CHIP CAP 10UF 6.3V		CCUC0J106KC		
	C171	nsp	CHIP CAP 10UF 6.3V		CCUC0J106KC		
	C172	nsp	CHIP CAP 0.1UF 16V		CCUI1C104KC		
	C174	nsp	CHIP CAP 10UF 6.3V		CCUC0J106KC		
	C175	nsp	CHIP CAP 0.1UF 16V		CCUI1C104KC		
	C176	nsp	CHIP CAP 10UF 6.3V		CCUC0J106KC		
	C178	nsp	CHIP CAP 0.015UF 25V		CCUI1E153KC		
	C179	nsp	CHIP CAP 15PF 50V		CCUS1H150JA		
	C180	nsp	CHIP CAP 0.1UF 16V		CCUI1C104KC		
	C334	nsp	CAP,CHIP(2012,10V/22uF)		CCUC1A226KC		

	Ref. No.	Part No.	Part Name		Remarks	Q'ty	New
OTHERS PARTS GROUP							
	BK11,12	nsp	PCB BRACKET		CMD1A569		
	CN11	nsp	WAFER 7P 1.25MM		CJP07GA117ZY		
	CN12	nsp	WAFER SMD(2MMPITCH)		CJP05GA208ZY		
	CN8B	nsp	WAFER CARDCABLE(23P, 1MM)		CJP23GA193ZY		
	JK11-15	943643100040S	JACK,HDMI(KSI-TWI,W/FLANGE)		CJJ9H014Z		*
	L101-108	nsp	CHIP FERRITE BEAD(60ohm 1608)		CLZ9R005Z		
	L109	nsp	CHIP FERRITE BEAD(60ohm 4516)		CLZ9Z014Z		
	L114	nsp	CHIP FERRITE BEAD(60ohm 1608)		CLZ9R005Z		
	X101	943141010350S	CRYSTAL 28.636MHz 33PF 30PPM		COX28636E330S		

SYS-1312 section ⚠2

SPEAKER SYSTEM PACK

TECHNICAL SPECIFICATIONS

❑ **Center speaker [SC-C1312]**

Type:	Full-range, 1-speaker Closed box
Drive units:	8 cm cone full range x 1
Input impedance:	6 Ω
Max. input:	60 W (IEC) 120 W (PEAK)
Frequency range:	150 Hz – 20 kHz
Dimensions:	200 (W) x 105 (H) x 150 (D) mm (7-7/8" x 4-9/64" x 5-29/32")
Weight:	0.8 kg (1 lbs 12 oz)

❑ **Front and Surround speaker [SC-F1312(F) (SC-F1312(R))]**

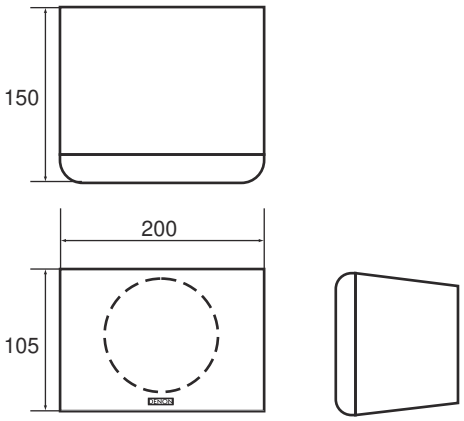
Type:	Full-range, 1-speaker Closed box
Drive units:	8 cm cone full range x 1
Input impedance:	6 Ω
Max. input:	60 W (IEC) 120 W (PEAK)
Frequency range:	150 Hz – 20 kHz
Dimensions:	105 (W) x 200 (H) x 150 (D) mm (4-9/64" x 7-7/8" x 5-29/32")
Weight:	0.8 kg (1 lbs 12 oz)

❑ **Subwoofer [DSW-1312]**

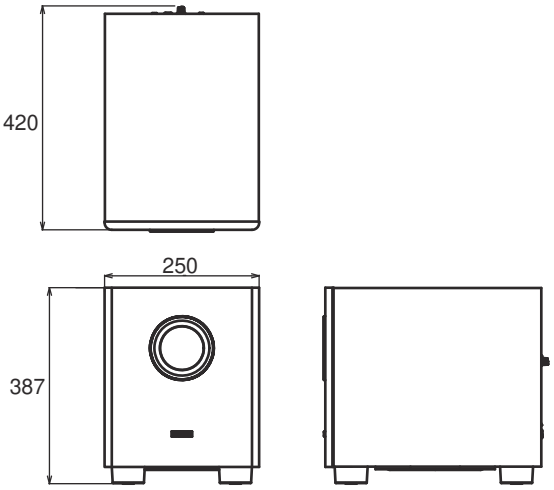
Type:	Reflex box Built-in amplifier
Drive unit:	20 cm cone woofer x 1
Frequency range:	35 Hz – 150 Hz
Dynamic power:	100 W
Input impedance:	22 kΩ
Power supply:	120 V / 60 Hz (North American) 230 V / 50 Hz (European model)
Power consumption:	65 W MAX. 0.5 W (Standby)
Dimensions:	250 (W) x 387 (H) x 420 (D) mm (9-27/32" x 15-15/64" x 16-17/32")
Weight:	11 kg (24 lbs 4 oz)

DIMENSION

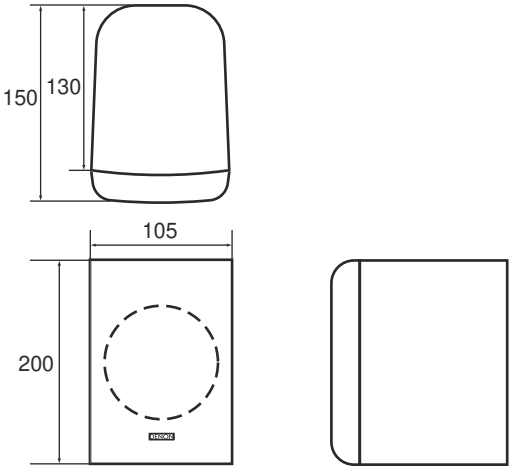
[SC-C1312]



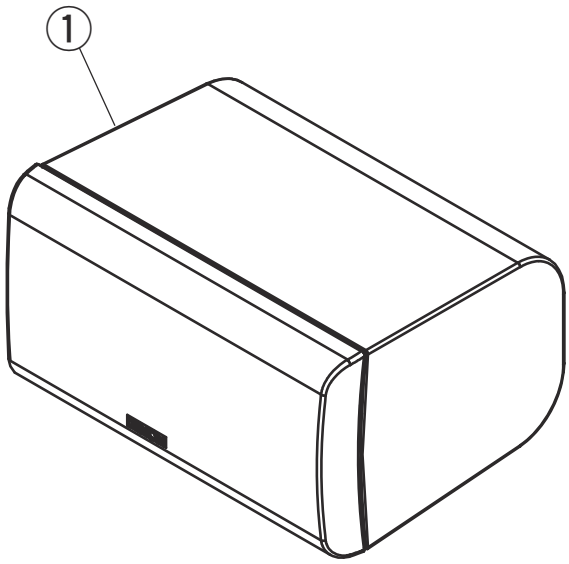
[DSW-1312]



[SC-F1312(F) (SC-F1312(R))]



SC-C1312 EXPLODED VIEW

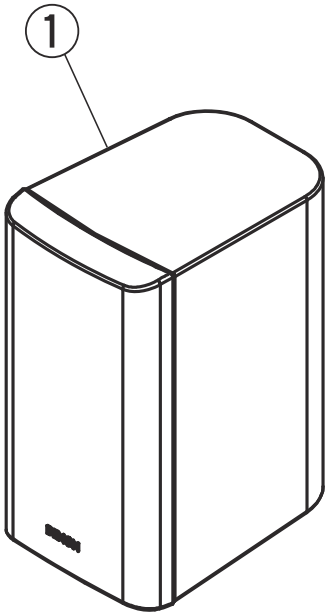


SC-C1312 PARTS LIST OF EXPLODED VIEW

* Parts for which "nsp" is indicated on this table cannot be supplied.
* The parts listed below are for maintenance only, might differ from the parts used in the unit in appearances or dimensions.

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	1	984189100150D	SPEAKER ASSY C1312		00N-SCC1312	1	*

SC-F1312 EXPLODED VIEW



SC-F1312(F) PARTS LIST OF EXPLODED VIEW

* Parts for which "nsp" is indicated on this table cannot be supplied.
* The parts listed below are for maintenance only, might differ from the parts used in the unit in appearances or dimensions.
* This speaker can be ordered from one.⚠4

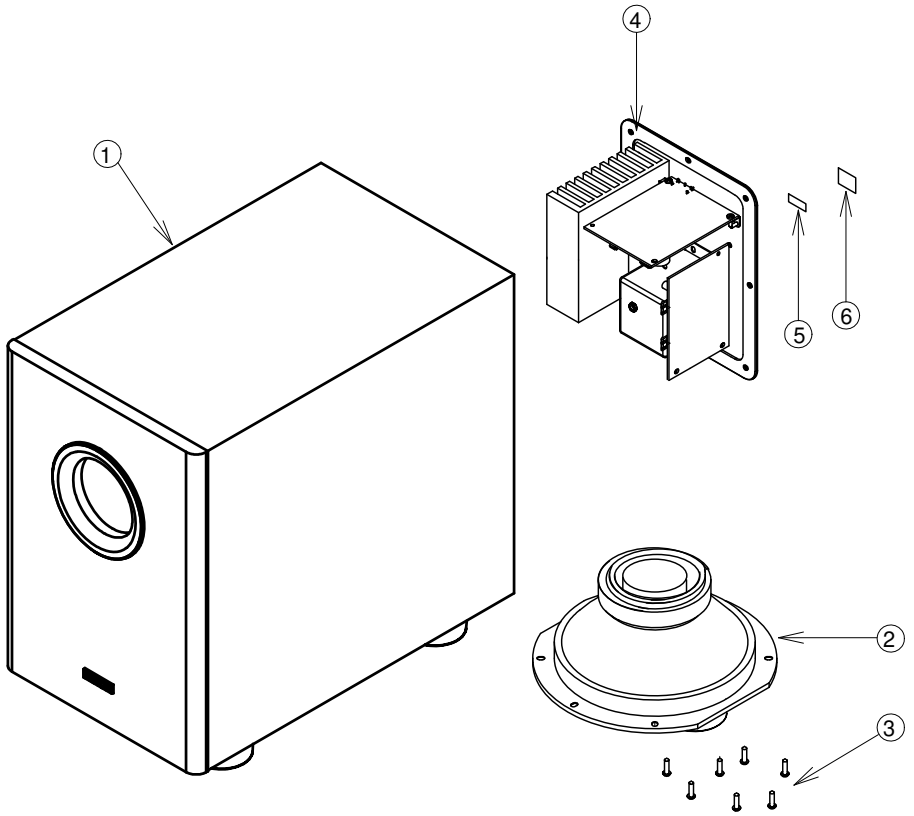
	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New	
	1	984189100160D	SPEAKER ASSY F1312(F)		00N-SCF1312	2	*	⚠4

SC-F1312(R) PARTS LIST OF EXPLODED VIEW

* Parts for which "nsp" is indicated on this table cannot be supplied.
* The parts listed below are for maintenance only, might differ from the parts used in the unit in appearances or dimensions.
* This speaker can be ordered from one.⚠4

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New	
	1	984189100170D	SPEAKER ASSY F1312(R)		00N-SCR1312	2	*	⚠4

DSW-1312 EXPLODED VIEW



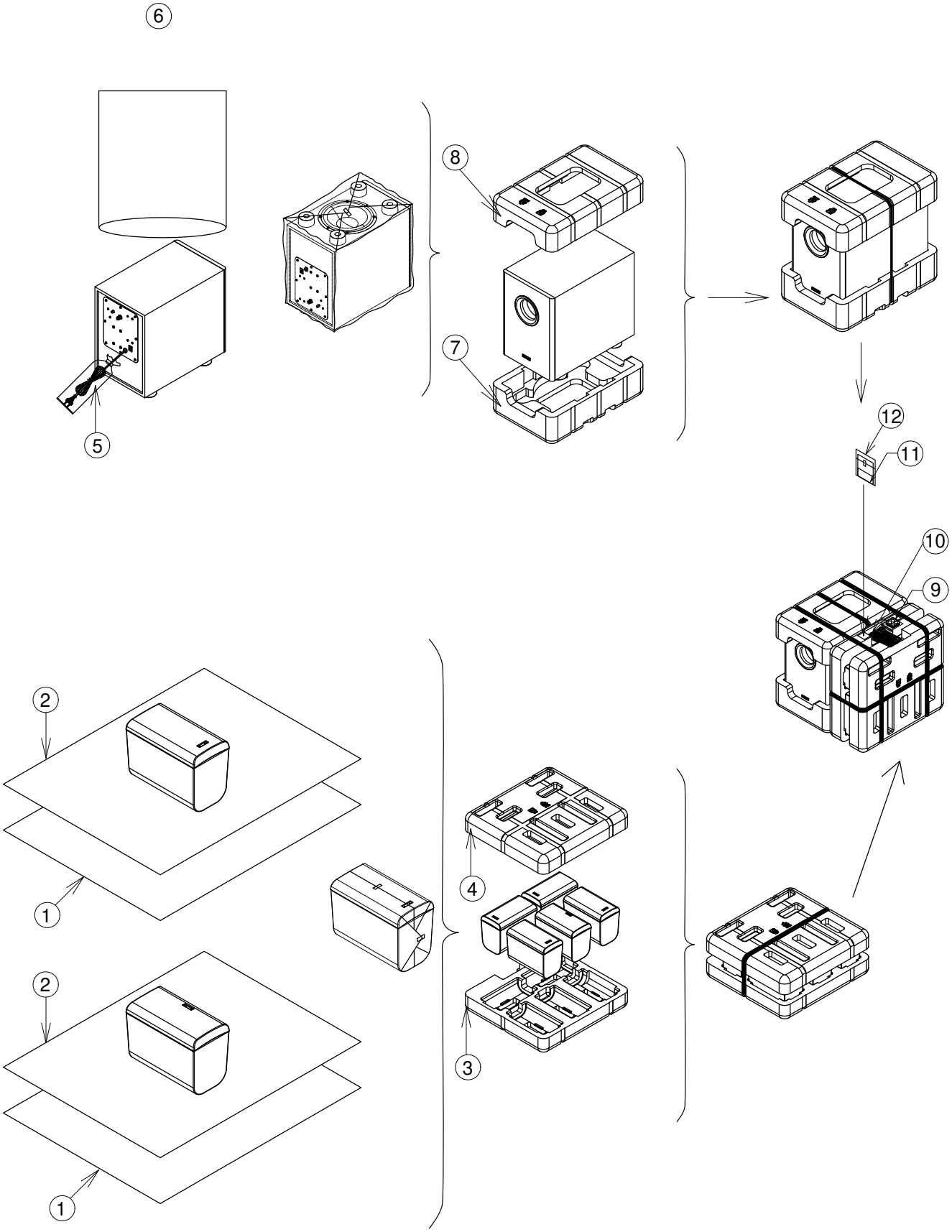
DSW-1312 PARTS LIST OF EXPLODED VIEW

* Parts for which "nsp" is indicated on this table cannot be supplied.
* The parts listed below are for maintenance only, 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. and Canada model E2 : Europe model

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	1	nsp	CABINET ASSY		-	1	*
	2	984323100060D	DRIVER		304-00050-00	1	*
	3	nsp	SCREW		S411-A4020E1J	16	*
	4	984189000150D	AMPLIFIER	E2	326-W391CE-K0	1	*
	4	984189000160D	AMPLIFIER	E3	326-W391UL-K0	1	*
	5	nsp	SAFETY LABEL	E2	660-0W1312-00	1	*
	5	nsp	SAFETY LABEL	E3	660-00W391-00	1	*
	6	nsp	SPEC LABEL	E2	600-0W1312-00	1	*
	6	nsp	SPEC LABEL	E3	600-1W1312-00	1	*

SYS-1312 PACKING VIEW



SYS-1312 PARTS LIST OF PACKING VIEW

* Parts for which "nsp" is indicated on this table cannot be supplied.
* The parts listed below are for maintenance only, 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. and Canada model E2 : Europe model

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	1	nsp	MIRROR MAT		715-140031-00	5	*
	2	nsp	UNWOVEN CLOTH		442-9A3W04-00	5	*
	3	nsp	POLYFORM		720-S1312B-00	1	*
	4	nsp	POLYFORM		720-S1312T-00	1	*
	5	nsp	PE BAG		700-220001-00	1	*
	6	nsp	EPE BAG		710-140037-00	1	*
	7	nsp	POLYFORM		720-W1312B-00	1	*
	8	nsp	POLYFORM		720-W1312T-00	1	*
	9	nsp	CORK		441-902N01-00	1	*
	10	nsp	CORD		319-131201-10	1	*
	11	nsp	CONTROL LABEL		605-W13120-00	1	*
	12	nsp	PE BAG		700-120006-00	1	*

Personal notes:

Type	F1	J1	J2	Rated Input
US	2A 250V	Yes	No	AC120V 60Hz
EC/AU	T1.25AL250V	No	Yes	AC230V 50Hz

SCHEMATIC DIAGRAMS (1/1)