DENON

Ver. 6

Please refer to the MODIFICATION NOTICE.

SERVICE MANUAL

MODEL	JP	E3	E2	EK	EA	E1	E1K	E1C
AVR-1912		✓	✓ △2		✓ △2			✓ △2
AVR-2112CI △2		✓						

INTEGRATED NETWORK AV RECEIVER

• For purposes of improvement, specifications and design are subject to change without notice.

• Please use this service manual with referring to the operating instructions without fail.

• Some illustrations using in this service manual are slightly different from the actual set.

DENON

D&M Holdings Inc.

S0436-0V06DM/DG1202

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WARNING: Violators will be prosecuted to the maximum extent possible.

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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 ⚠2

❑ Audio Section

- **Power amplifier**

Rated output :

Front :
90 W + 90 W (8 Ω, 20 Hz – 20 kHz with 0.08 % T.H.D.)
125 W + 125 W (6 Ω, 1 kHz with 0.7 % T.H.D.)

Center :
90 W (8 Ω, 20 Hz – 20 kHz with 0.08 % T.H.D.)
125 W (6 Ω, 1 kHz with 0.7 % T.H.D.)

Surround :
90 W + 90 W (8 Ω, 20 Hz – 20 kHz with 0.08 % T.H.D.)
125 W + 125 W (6 Ω, 1 kHz with 0.7 % T.H.D.)

Surround back:
90 W + 90 W (8 Ω, 20 Hz – 20 kHz with 0.08 % T.H.D.)
125 W + 125 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 — +1, –3 dB (DIRECT mode)
S/N : 100 dB (IHF–A weighted, DIRECT mode)

❑ Video section

- **Standard video connectors**

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

❑ Tuner section

[FM](Note: µV at 75 Ω, 0 dBf = 1 x 10^{-15} W)
Receiving Range (for E3 model) **:**
[FM] 87.5 MHz – 107.9 MHz **[AM]**520 kHz – 1710 kHz
Receiving Range (for E2, EA, E1C model) **:**
[FM] 87.5 MHz – 108.0 MHz **[AM]**522 kHz – 1611 kHz
Usable Sensitivity :
[FM]1.2 µV (12.8 dBf) **[AM]**18 µV
50 dB Quieting Sensitivity (for E3 model) **:**
[FM]MONO 2.8 µV (20.2 dBf)
50 dB Quieting Sensitivity (for E2, EA, E1C model) **:**
[FM]MONO 2.0 µV (17.3 dBf)
STEREO 34.5µV(42dBf) ⚠4
S/N (IHF-A) (for E3 model) **:**
[FM]MONO 70 dB
STEREO 67 dB
S/N (IHF-A) (for E2, EA, E1C model) **:**
[FM]MONO 72 dB (DIRECT mode)
STEREO 67 dB (DIRECT mode)
Total harmonic Distortion (at 1 kHz) (for E3 model) **:**
[FM]MONO 0.7 %
STEREO 1.0 %
Total harmonic Distortion (at 1 kHz) (for E2, EA, E1C model) **:**
[FM]MONO 0.3 %
STEREO 0.7 %

❑ General

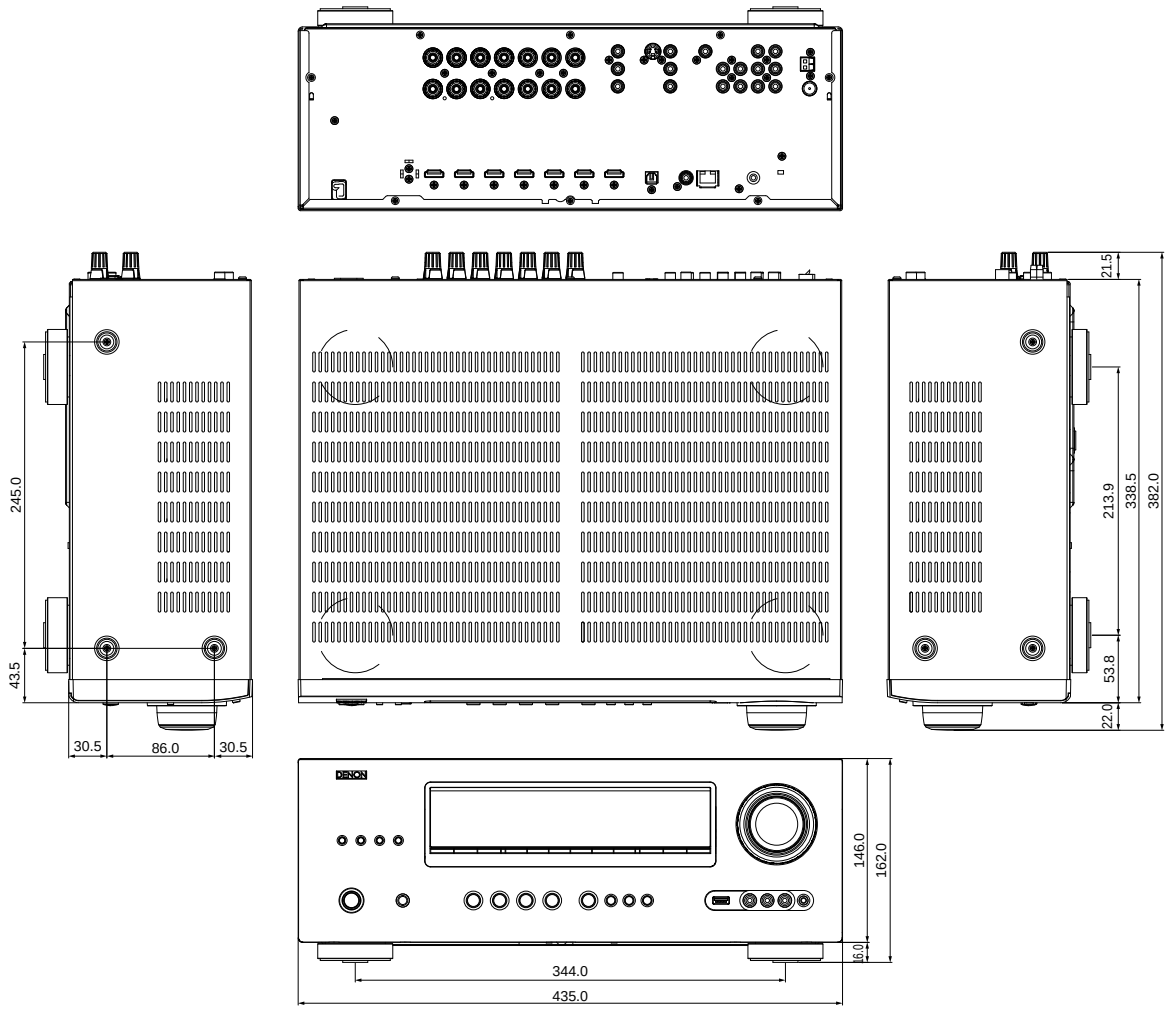
Power supply (for E3 model) **:** AC 120 V, 60 Hz
Power supply (for E2, EA model) **:** AC 230 V, 50/60 Hz
Power supply (for E1C model) **:** AC 220 V, 50 Hz
Power consumption :
460 W
0.1 W (Standby)
3 W (CEC standby)
Maximum external dimensions (for 1912E3 model) **:**
435 (W) x 162 (H) x 382 (D) mm
Weight : 10.2 kg
Maximum external dimensions
(for 1912E2,EA,E1C,2112CIE3 model) **:**
435 (W) x 167 (H) x 382 (D) mm
Weight : 10.3 kg

❑ Remote Control Unit (RC-1156)

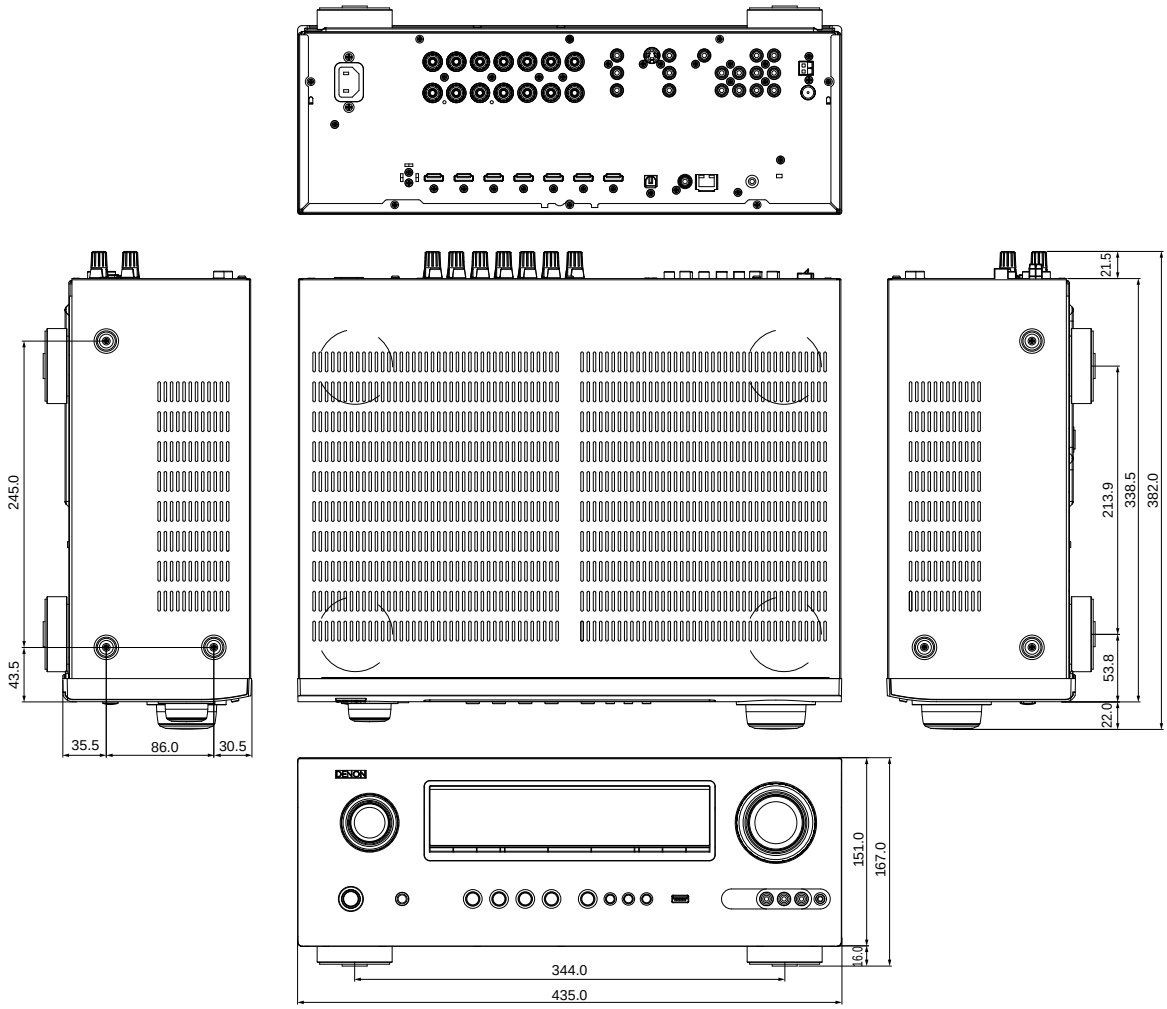
Batteries : R6/AA Type (two batteries)
Maximum external dimensions : 53 (W) x 224 (H) x 28 (D) mm
Weight : 160 g (including batteries)

DIMENSION

[AVR-1912E3 model]



[AVR-1912E2/EA/E1C,2112CIE3 model] ⚠2



CAUTIONS IN SERVICING

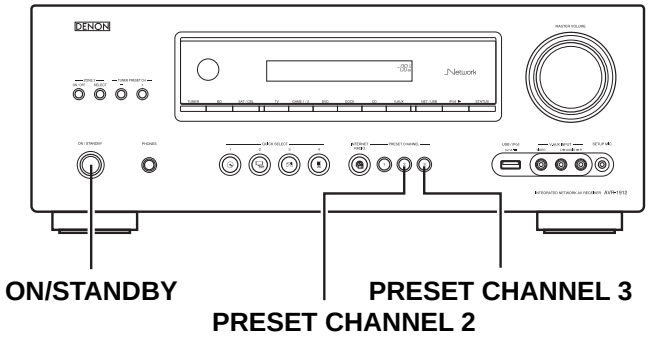
Initializing INTEGRATED NETWORK AV RECEIVER

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

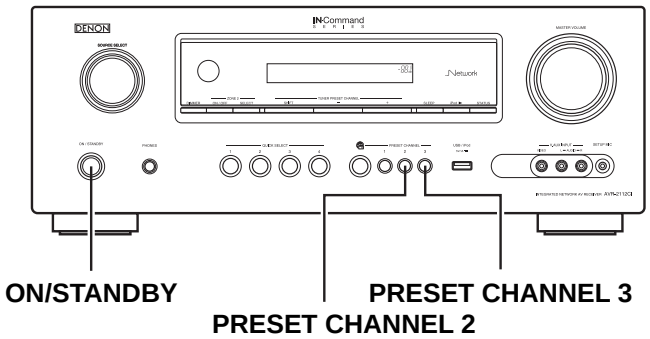
1. Turn off the power pressing ON/STANDBY button.
2. Press ON/STANDBY button while simultaneously while pressing PRESET CHANNEL 2 and PRESET CHANNEL 3 buttons.
3. Check that the entire display is flashing at intervals of about 1 second, and then release the 2 buttons.
   The microprocessor will be initialized.

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.

[AVR-1912E3 model]



[AVR-1912E2/EA/E1C,2112CIE3 model] ⚠2



Service Jig

When you repair the printing board, you can use the following JIG (Extension cable kit).
Please order it from Denon Official Service Distributor in your region if necessary.

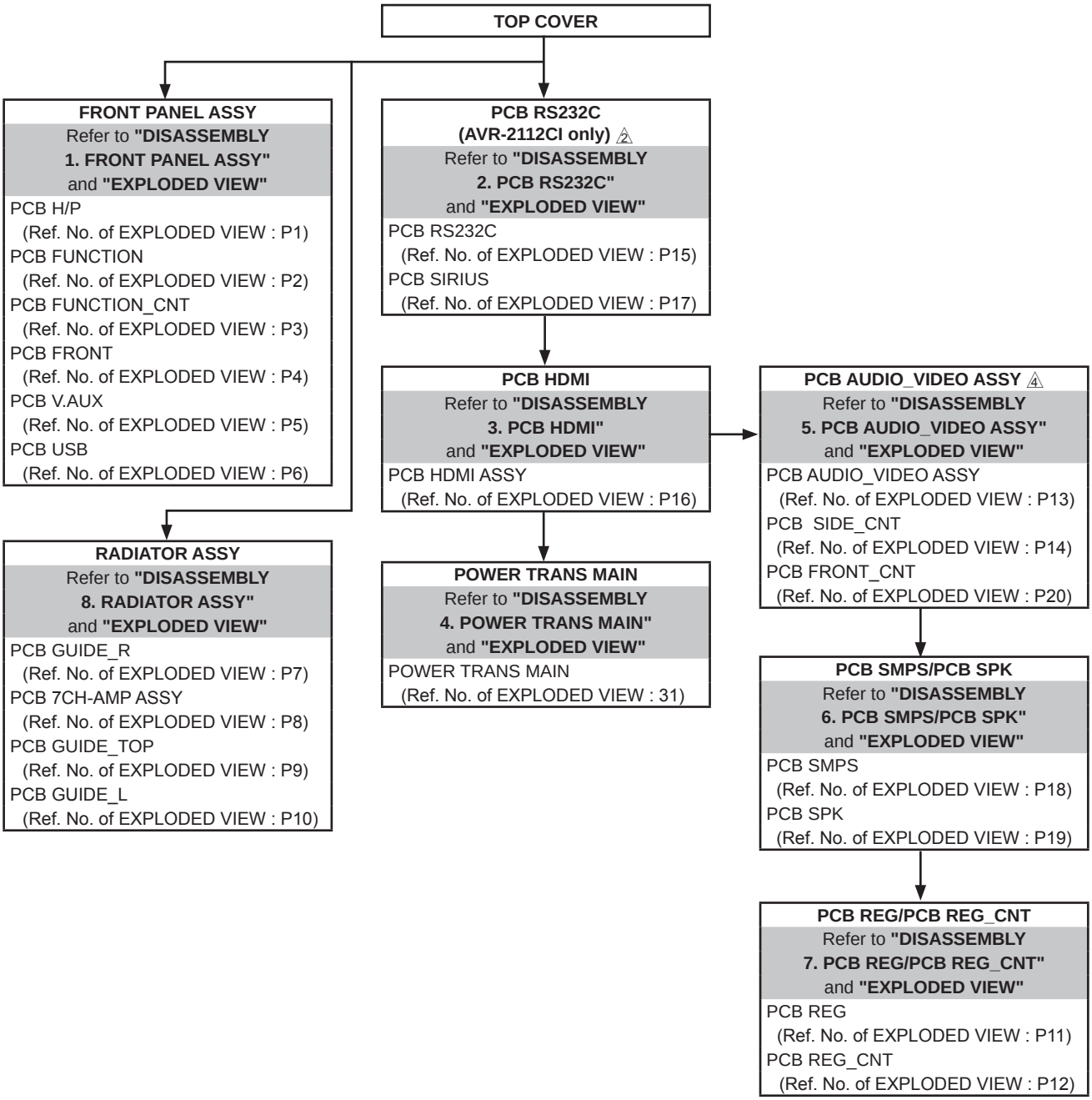
8U-110084S : EXTENSION UNIT KIT : 1 Set
(Refer to 43 page.)

When you update the firmware by DFW, you can use the following JIG (RS232C to internal connector conversion adapter with 4P FFC cable kit).
Please order it from Denon Official Service Distributor in your region if necessary.

8U-210100S : WRITING KIT : 1 Set
(Refer to 45 page.)

DISASSEMBLY ⚠2

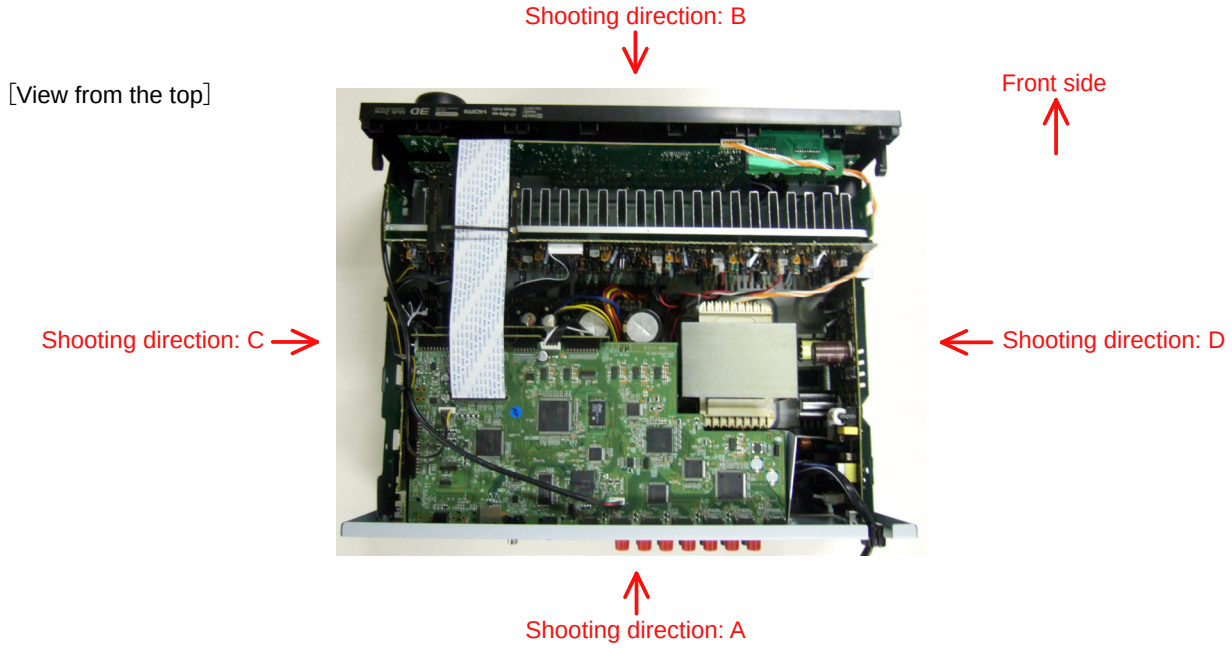
- Disassemble in order of the arrow in the following figure.
- In the case of the re-assembling, assemble it in order of the reverse of the following flow.
- In the case of the re-assembling, observe "attention of assembling".
- If wire bundles are untied or moved to perform adjustment or replace parts 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 photograph is AVR-1912 E3 model.

The viewpoint of each photograph (Shooting direction)

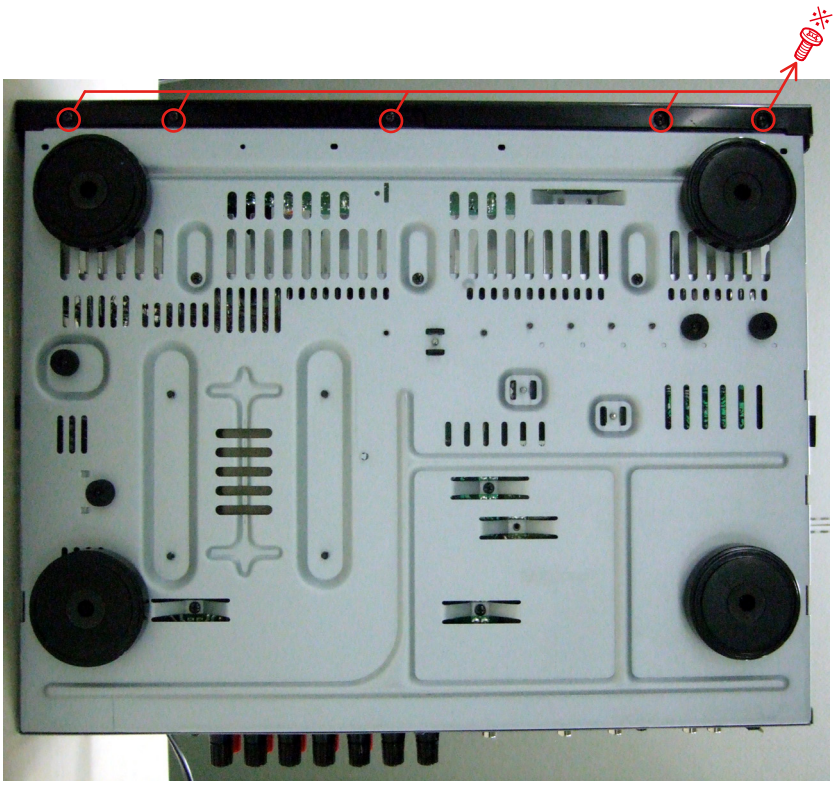


1. FRONT PANEL ASSY

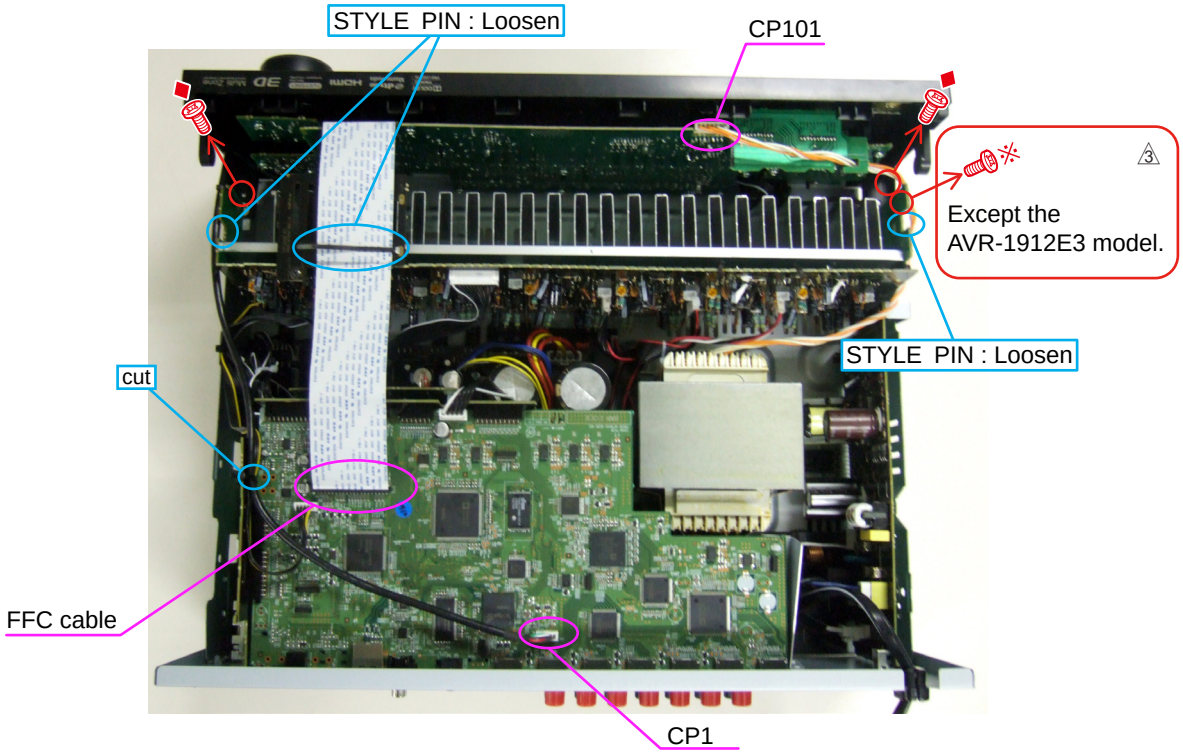
Proceeding : TOP COVER → FRONT PANEL ASSY

(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.



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

2. PCB RS232C (AVR-2112CI only) ⚠2

Proceeding : TOP COVER → PCB RS232C (AVR-2112CI only)

(1) Remove the screws.

Shooting of photograph: A

Please refer to "EXPLODED VIEW" for the disassembly method of PCB RS232C.

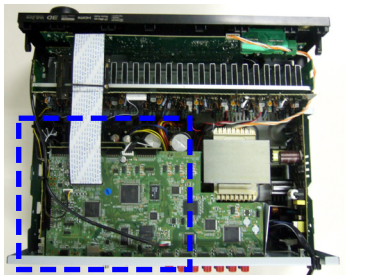
3. PCB HDMI

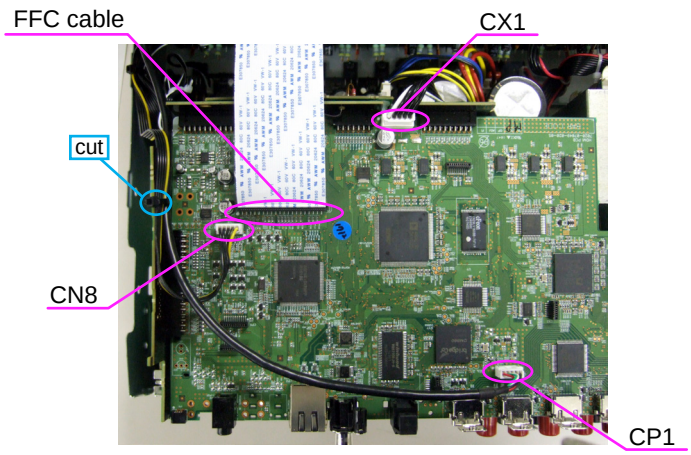
Proceeding : TOP COVER → PCB RS232C (AVR-2112CI only) → PCB HDMI

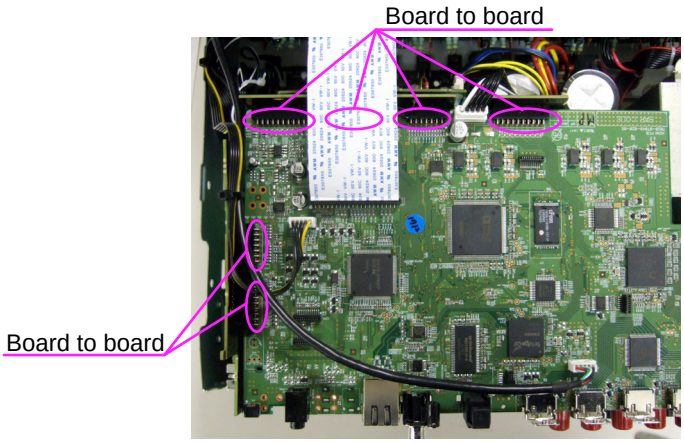
(1) Remove the screws.

Shooting of photograph: A

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



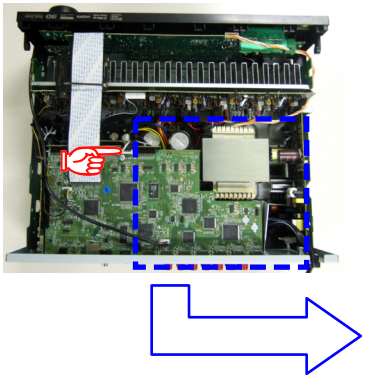


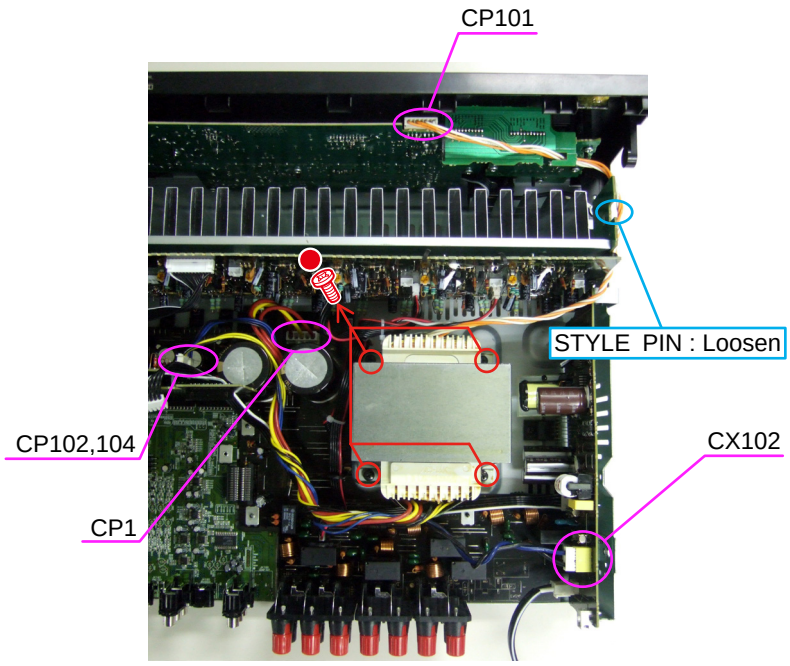


4. POWER TRANS MAIN

Proceeding : TOP COVER → PCB RS232C (AVR-2112CI only) → PCB HDMI → POWER TRANS MAIN

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

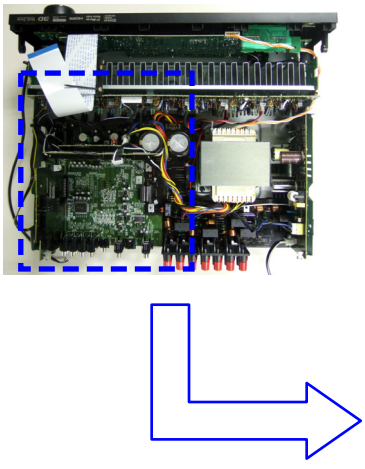


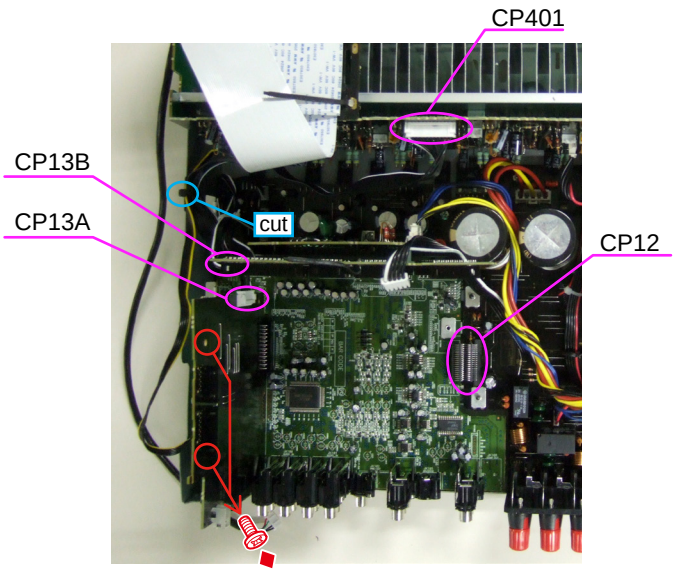


5. PCB AUDIO_VIDEO ASSY ⚠4

Proceeding : TOP COVER → PCB RS232C (AVR-2112CI only) → PCB HDMI → PCB AUDIO_VIDEO ASSY

(1) Cut the wire clamp band, then disconnect the connector wires. Remove the screws.





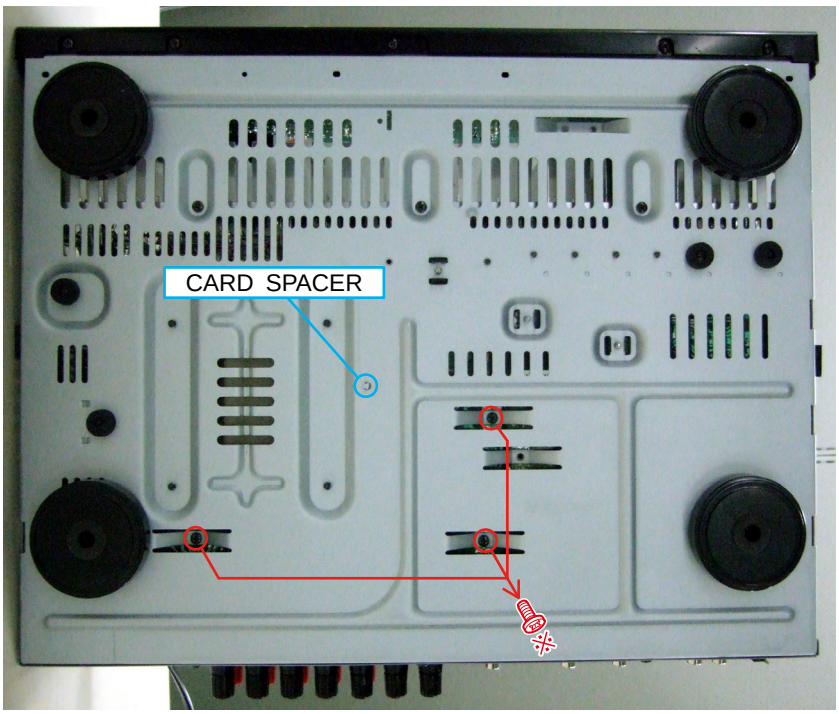
Please refer to "EXPLODED VIEW" for the disassembly method of each P.W.B.

6. PCB SMPS/PCB SPK

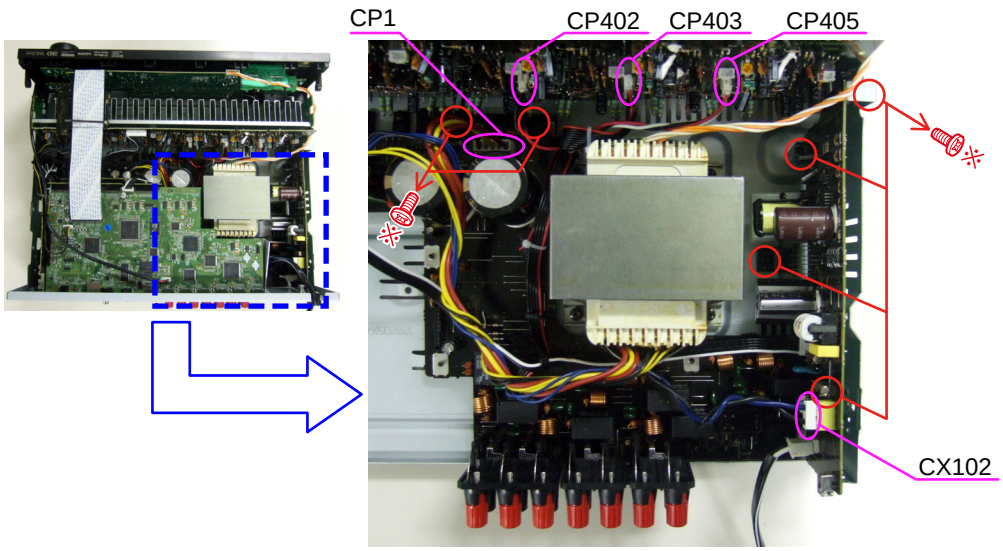
Proceeding : TOP COVER → PCB RS232C (AVR-2112CI only) → PCB HDMI → PCB AUDIO_VIDEO ASSY → PCB SMPS/PCB SPK

(1) Remove the screws and CARD SPACER.

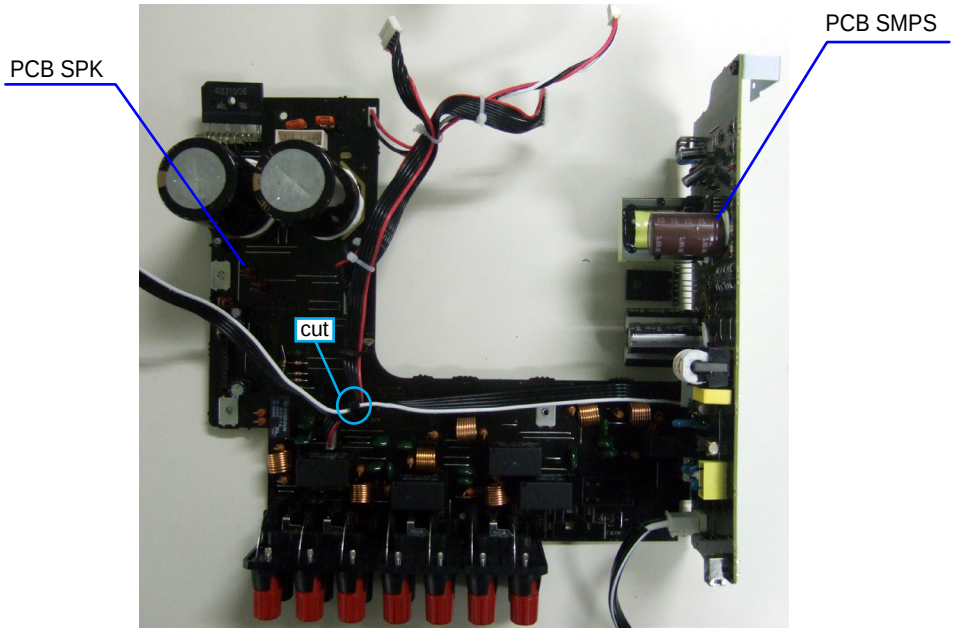
View from the bottom



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



(3) Remove the PCB SMPS/PCB SPK from the CHASSIS, then cut the wire clamp band.

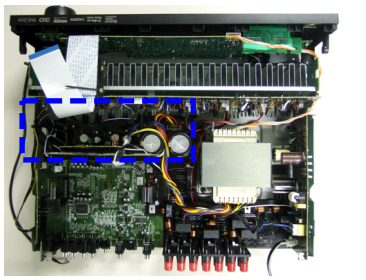


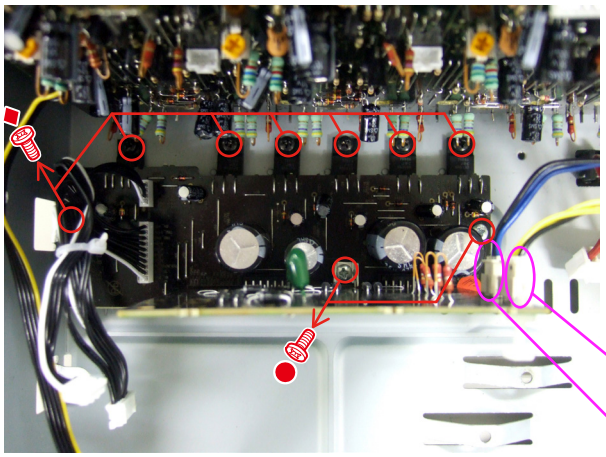
Please refer to "EXPLODED VIEW" for the disassembly method of each P.W.B.

7. PCB REG/PCB REG_CNT

Proceeding : TOP COVER → PCB RS232C (AVR-2112CI only) → PCB HDMI → PCB AUDIO_VIDEO ASSY → PCB SMPS/PCB SPK → PCB REG/PCB REG_CNT

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





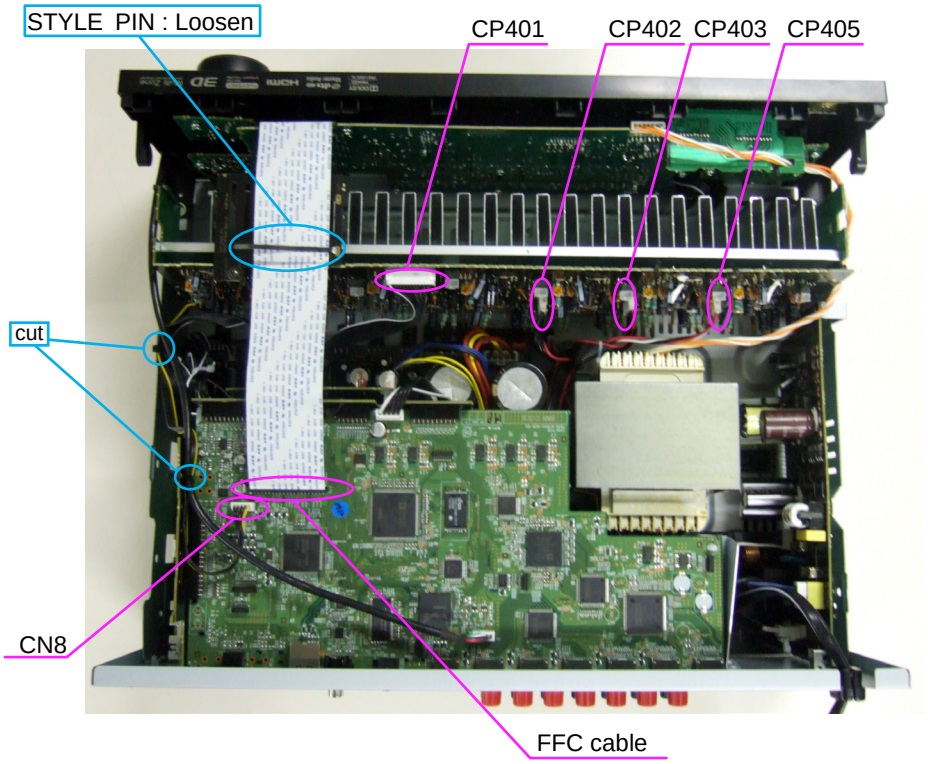
8. RADIATOR ASSY

Proceeding : TOP COVER → RADIATOR ASSY

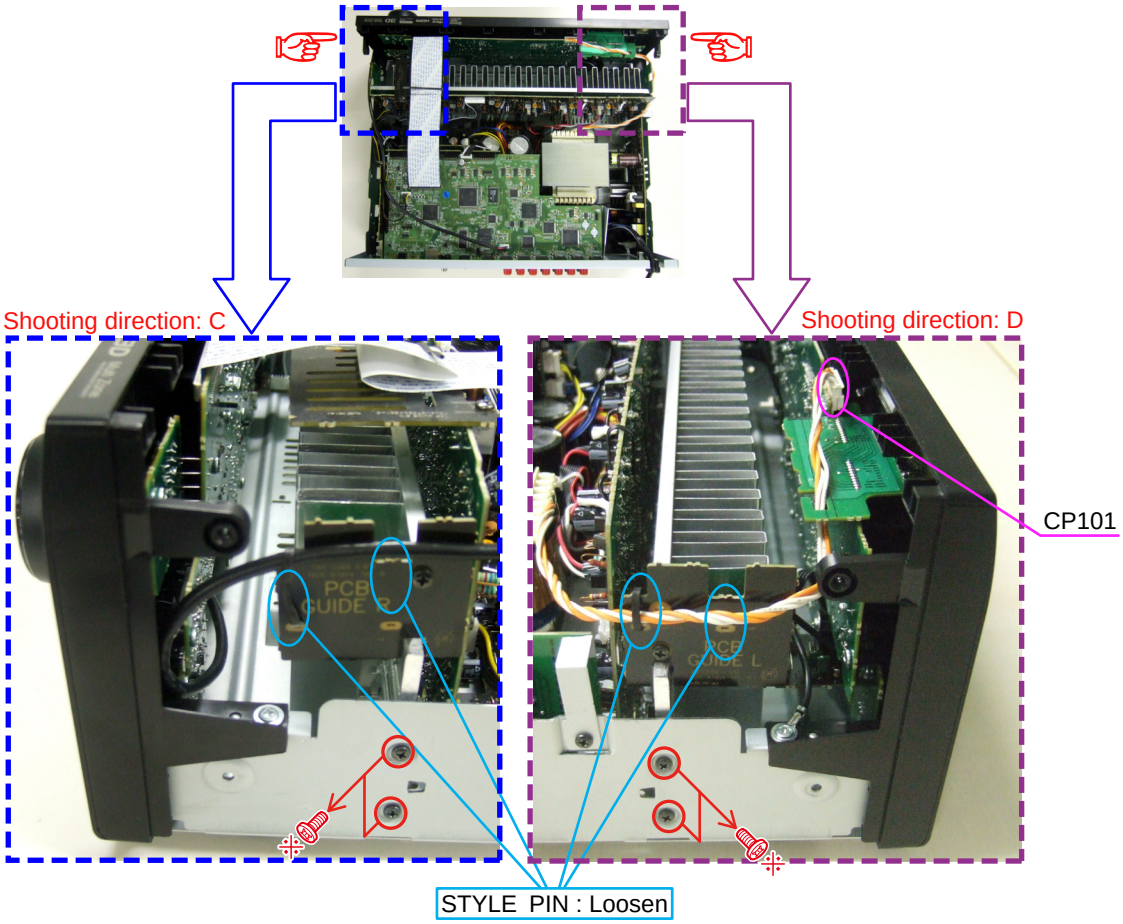
(1) Remove the screws.

View from the bottom

(2) Disconnect the connector wires and FFC cable.



(3) Remove the screws.



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

SPECIAL MODE

Special mode setting button (for 1912E3 model)

※ No.1 - 10 : Press the ON/STANDBY button to turn on the power while pressing both the button A and the button B at the same time.

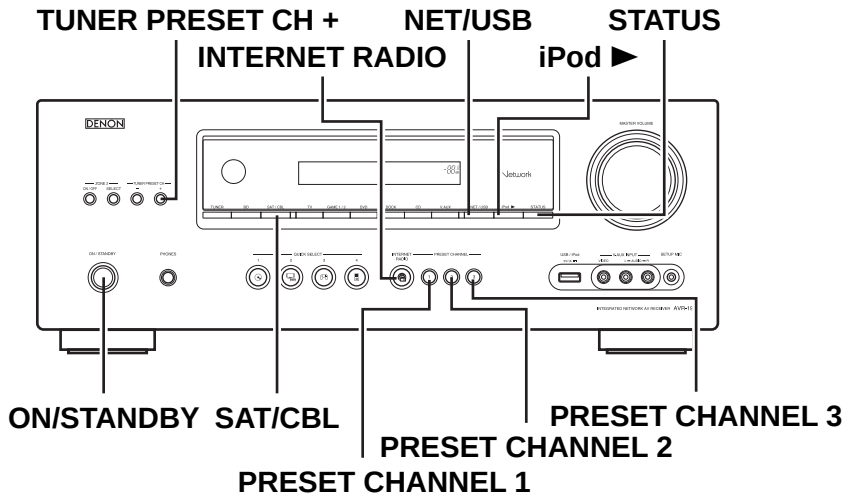
※ No.11 : Turn on the power, then press and hold down the A and B buttons for over 3 seconds.

No.	Mode	Button A	Button B	Contents
1	Version display (µcom/DSP Error Display)	STATUS	iPod ►	Firmware versions such as Main or DSP are displayed in the FL Display. Errors are displayed when they occur. (Refer to 20 page)
2	Displaying the protection history mode	STATUS	NET/USB	The protection history is displayed. (Refer to 23 page)
3	User Initialization mode (Installer Setup settings are not initialized.)	PRESET CHANNEL 2	PRESET CHANNEL 3	Backup data initialization is carried out. (Installer Setup settings are not initialized.)
4	Factory Initialization mode (Installer Setup settings are also initialized.)	PRESET CHANNEL 1	PRESET CHANNEL 2	Backup data initialization is carried out. (Installer Setup settings are also initialized.)
5	Mode for switching tuner frequency step (E2 model Only)	-	-	Change tuner frequency step to FM:200kHz/AM:10kHzSTEP
6	Mode for preventing remote control acceptance	PRESET CHANNEL 1	INTERNET RADIO	Operations using the remote control are rejected. (Mode cancellation: Turn off the power and execute the same button operations as when performing setup.)
7	Panel lock mode	PRESET CHANNEL 2	TUNER PRESET CH +	Operations using the main unit panel buttons or the master volume knob are rejected.
8	Panel lock mode (Master volume is not locked.)	PRESET CHANNEL 2	NET/USB	Operations using the main unit panel buttons are rejected.
9	Cancellation of panel lock mode	PRESET CHANNEL 2	SAT/CBL	Panel lock mode is cancelled.
10	Diagnostic mode	PRESET CHANNEL 1	STATUS	This mode is used for confirming the Video and Audio (signal) paths. (Troubleshooting) The signal paths of the set can be easily confirmed after repair.
11	Remote ID Setup mode	PRESET CHANNEL 1	STATUS	When using multiple DENON AV receivers in the same room, make this setting so that only the desired AV receiver operates.(Refer to 25 page)

NOTE:

If " REC " is displayed on the fluorescent display, the set is in the special developer's mode and the RS-232C communications are not possible.

Turn on the power, then press and hold down the "PRESET CHANNEL 2" and " STATUS " buttons for over 3 seconds to turn off "REC" on the display. RS-232C communications are now enabled.



Special mode setting button (for AVR-1912E2/EA/E1C,2112CIE3 model) △2

※ No.1 - 10, 12 : Press the ON/STANDBY button to turn on the power while pressing both the button A and the button B at the same time.

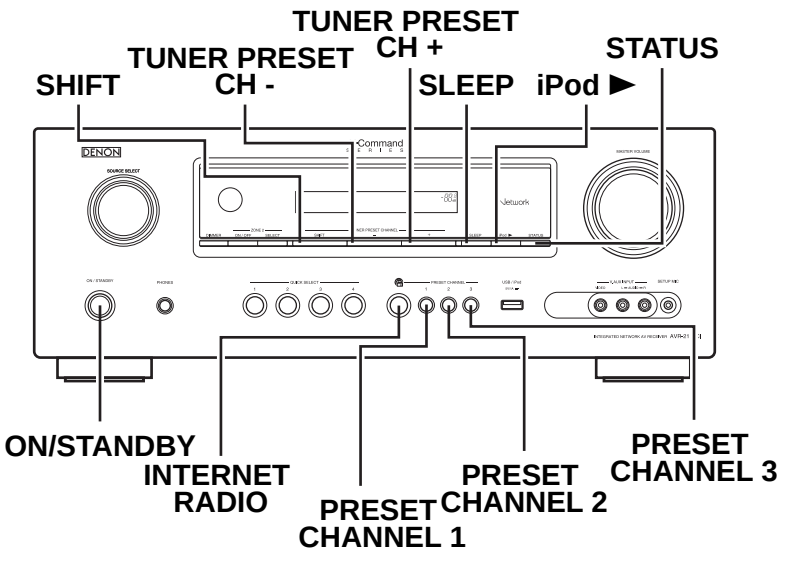
※ No.11 : Turn on the power, then press and hold down the A and B buttons for over 3 seconds.

No.	Mode	Button A	Button B	Contents
1	Version display (µcom/DSP Error Display)	STATUS	iPod ►	Firmware versions such as Main or DSP are displayed in the FL Display. Errors are displayed when they occur. (Refer to 20 page)
2	Displaying the protection history mode	STATUS	SLEEP	The protection history is displayed. (Refer to 23 page)
3	User Initialization mode (Installer Setup settings are not initialized.)	PRESET CHANNEL 2	PRESET CHANNEL 3	Backup data initialization is carried out. (Installer Setup settings are not initialized.)
4	Factory Initialization mode (Installer Setup settings are also initialized.)	PRESET CHANNEL 1	PRESET CHANNEL 2	Backup data initialization is carried out. (Installer Setup settings are also initialized.)
5	Mode for switching tuner frequency step (E2 model Only)	TUNER PRESET CH +	TUNER PRESET CH -	Change tuner frequency step to FM:200kHz/AM:10kHzSTEP
6	Mode for preventing remote control acceptance	PRESET CHANNEL 1	INTERNET RADIO	Operations using the remote control are rejected. (Mode cancellation: Turn off the power and execute the same button operations as when performing setup.)
7	Panel lock mode	PRESET CHANNEL 2	TUNER PRESET CH +	Operations using the main unit panel buttons or the master volume knob are rejected.
8	Panel lock mode (Master volume is not locked.)	PRESET CHANNEL 2	SLEEP	Operations using the main unit panel buttons are rejected.
9	Cancellation of panel lock mode	PRESET CHANNEL 2	STATUS	Panel lock mode is cancelled.
10	Diagnostic mode	PRESET CHANNEL 1	STATUS	This mode is used for confirming the Video and Audio (signal) paths. (Troubleshooting) The signal paths of the set can be easily confirmed after repair.
11	Remote ID Setup mode	PRESET CHANNEL 1	STATUS	When using multiple DENON AV receivers in the same room, make this setting so that only the desired AV receiver operates.(Refer to 25 page)
12	Installer Setup mode (AVR-2112CI model only)	SHIFT	STATUS	Access the Remote Maintenance mode via the internet.Installer Setup is displayed on GUI/Option Menu. ※ Refer to AVR_RemoteMaintenance_.pdf of SDI.

NOTE:

If " REC " is displayed on the fluorescent display, the set is in the special developer's mode and the RS-232C communications are not possible.

Turn on the power, then press and hold down the "PRESET CHANNEL 2" and " STATUS " buttons for over 3 seconds to turn off "REC" on the display. RS-232C communications are now enabled.



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 "STATUS" and "iPod ►" buttons.
Now, press the "STATUS" button to the display the 2nd item information on the FL Display.
※ When the version is displayed on the FL Display, the version list is also displayed on the OSD.

1.2. Display Order

Error information(Refer to **1.3. Error display**) → ① Model destination information → ② Firmware Package Version → ③ Main µ-com → ④ Main 1st Boot Loader → ⑤ DSP ROM → ⑥ Audio PLD → ⑦ OSD SFLASH → *⑧ Ethernet(DM860) 1st Boot Loader, Hardware ID → *⑨ Ethernet(DM860) 2nd Boot Loader, Rhapsody Flag → *⑩ Ethernet(DM860) IMAGE → *⑪ Ethernet(DM860)MAC ADDRESS information → ⑫ iPod Version

① Model destination information :

Model	FLD
AVR-1912 E3 model	AVR1912 E3 :****
AVR-1912 E2/EA model	AVR1912 E2/EA
AVR-1912 E1C model	AVR1912 E1C
AVR-2112CI E3 model	AVR2112 E3

△2

② Firmware Package Version :

FLD	Firm ver. :****

△3

③ Main µ-com :

FLD	Main :****

④ Main 1st Boot Loader :

FLD	Main FBL :**.**

⑤ DSP ROM :

FLD	DSP :**.**

⑥ Audio PLD :

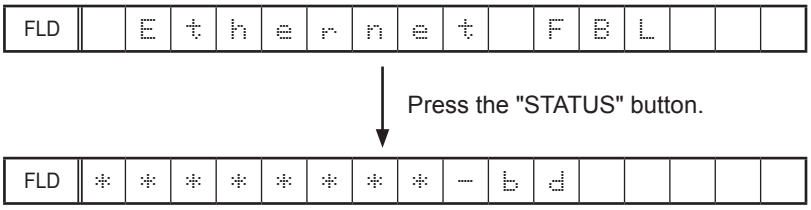
FLD	Audio PLD :**.**

⑦ OSD SFLASH :

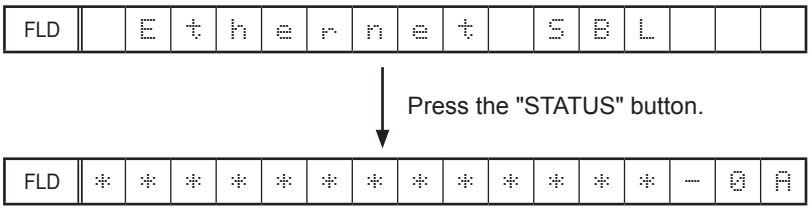
Model	FLD
AVR-1912 E3 model	OSD :4918****
AVR-1912 E2/EA model	OSD :4912****
AVR-1912 E1C model	OSD :4915****
AVR-2112CI E3 model	OSD :4911****

△2

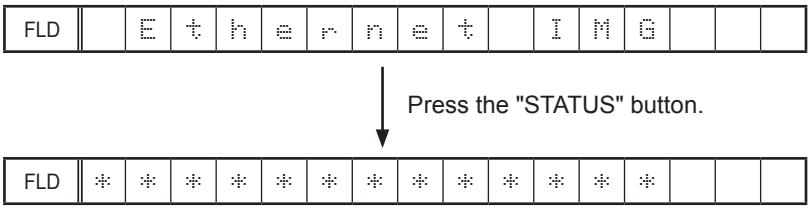
⑧ Ethernet(DM860) 1st Boot Loader, Hardware ID :



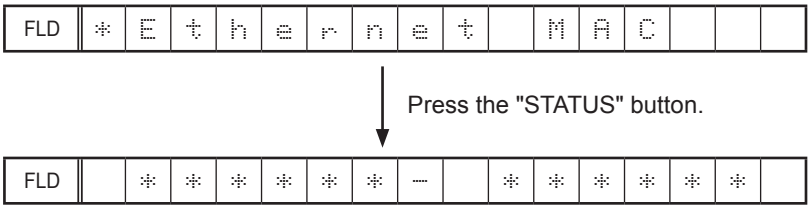
⑨ Ethernet(DM860) 2nd Boot Loader, Rhapsody Flag :



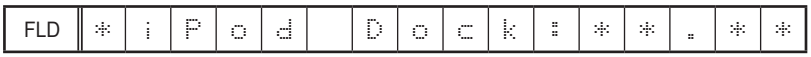
⑩ Ethernet(DM860) IMAGE :



⑪ Ethernet(DM860)MAC ADDRESS information :



⑫ iPod Version :



1.3. Error display

See the following table for each "Error information" display and its explanation (status).
Display order is ①,②,③,④,⑤.

Condition	Status	FL Display	Trouble shooting
① Firm Check NG	Compared with the destination setting on the board. This is displayed when the model name or destination information written into the firmware does not match. (※)	FIRM ERROR	• Please check the destination-resistors (R773/R776, HDMI B'D). • Please write the firmware of correct destination.
② DIR NG	No response from DIR.	DIR ERROR 01	• Please check DIR (IC21, HDMI B'D) and around circuits.
③ DSP NG	When DSP code boot is performed, the DSP FLAG0 port does not change to "H" even if DSP reset is executed.	DSP ERROR 01	• Please check DSP (U8, HDMI B'D) and around circuits.
	Before DSP command is issued, the DSP BUSY port does not change to "L". ⚠3	DSP ERROR 02	
	When DSP data read is performed, executing WRITE="L" does not result in ACK="H".	DSP ERROR 03	
	When DSP data read is performed, executing REQ="L" does not result in ACK="L".	DSP ERROR 04	
	When DSP data writing is performed, executing WRITE="H" does not result in ACK="H".	DSP ERROR 05	
	When DSP data writing is performed, executing REQ="L" does not result in ACK="L".	DSP ERROR 06	
④ EEPROM NG	Error occurs in EEPROM checksum.(*** is a block address number.)	E2PROM ERR***	
⑤ Both DSP / EEPROM OK		(No error display, version display only)	

Status	FL Display
※ The written Firmware and product settings (model name, brand name, destination) are compared. If Firmware that is not designed for this product is written, ▲ is displayed in the first column, as shown on the right. ⚠3	▲Main :********
	▲DSP :**.**
	▲Audio PLD:**.**
	▲OSD :********

2. Errors checking mode (Displaying the protection history)

2.1. Operation specifications

Error mode (Displaying the protection history):

When the set is started up in this mode, the error information is displayed.

Starting up:
[AVR-1912E3 model]
Press the "ON/STANDBY" button to turn on the power while pressing the "STATUS" and "NET/USB" buttons. The error (protection history display) mode is set.
Now, press the "STATUS" button to turn on the FL display.

[AVR-1912E2/EA/E1C,2112CIE3 model] ⚠2
Press the "ON/STANDBY" button to turn on the power while pressing the "STATUS" and "SLEEP" buttons. The error (protection history display) mode is set.
Now, press the "STATUS" button to turn on the FL display.

2.2. About the display on the FL display

When the "STATUS" button is pressed after the error (protection history display) mode is set, a history like the one shown below is displayed, depending on the conditions.

(1) Normal (when there has been no protection incident)

FLD	NO		PROTECT											

(2) For ASO (when the last protection incident was ASO protection)

FLD	PRT:ASO													

Cause: The line between speaker terminals is shorted, or speakers with impedance of less than the rated value.
Supplementary information: As the excess current is detected after operation of the speaker relay, a short on the speaker terminal and the connected speaker can be identified.

If the power is turned on without correcting the abnormality, the protection function will work about 5 seconds later and the power supply will be shut off.

(3) For DC (when the last protection incident was DC protection)

FLD	PRT:DC													

Cause: DC output of the power amplifier is abnormal.

If the power is turned on without correcting the abnormality, the protection function will work about 5 seconds later and the power supply will be shut off.

(4) For THERMAL (when the last protection incident was THERMAL(A) or THERMAL(B) protection)

FLD	PRT:THERMAL		A											

FLD	PRT:THERMAL		B											

Cause: The temperature of the heat sink is excessive.

If the power is turned on without correcting the abnormality, the protection function will work about 5 seconds later and the power supply will be shut off.

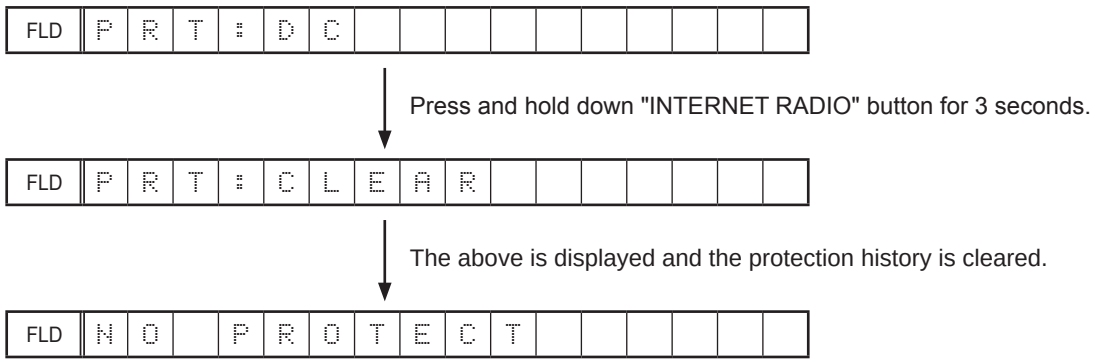
※ Additional causes of protection can be due to loose connections, associated components, Microprocessor, etc.

When the "STATUS" button is pressed again after the protection history as shown above is displayed, the normal display reappears.

2.3. Clearing the protection history

There are two ways to clear the protection history, as described below.

(1) Start up the set in error (protection display) mode and display the error, then press and hold down the "INTERNET RADIO" button for 3 seconds.



(2) Initialize. (Refer to "Initializing INTEGRATED NETWORK AV RECEIVER" 7 page.)

※ If you want to save a backup, perform the method in 2.3.(1).

Warning indication by the POWER LED

If the power is turned off when a protection incident has been detected, the POWER LED (red) flashes as a warning according to the conditions in which the protection incident occurred.

(1) ASO/DC PROTECTION : Flashes at intervals of 0.5 seconds (0.25 seconds lit, 0.25 seconds off)
(2) THERMAL (A/B) PROTECTION : Flashes at intervals of 2 seconds (1 second lit, 1 second off)

3. Remote ID Setup mode

3.1. Specifications

When using multiple DENON AV receivers in the same room, make this setting so that only the desired AV receiver operates.
When you change the remote ID, make sure that the remote control unit and the remote ID of the main unit are exactly the same.

3.2. Setting the AV receivers

Starting up:
Turn on the power, then press and hold down the "STATUS" and " PRESET CHANNEL 1 " buttons for over 3 seconds.

(1) When Remote ID Setup mode is started, the following is displayed.

(2) Press the "QUICK SELECT 1 - 4" button that corresponds to the number you want to set.

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

(3) Turn off the power using "ON/STANDBY" button.
(4) Turn on the power using "ON/STANDBY" button.

※ When Remote ID Setup mode is running, operations other than the "QUICK SELECT 1 - 4" buttons or "ON/STANDBY" buttons on the main unit are not received.

3.3. Setting the Remote control unit

(1) Press and hold both "ZONE/DEVICE (1)" button for over 3 seconds.
The zone mode indicator flashes twice.
(2) Press the "AMP" button.
The zone mode indicator flashes twice.
(3) Press the "1, 2, 3 or 4" button. △2
The zone mode indicator flashes twice.

NOTE:
If the IDs do not match, "AVAMP∗" (∗ is the main unit's remote control ID) appears on the display when the remote control unit is operated.

Personal notes:

4. DIAGNOSTIC MODE (Video/Audio (signal) path confirmation mode)

This mode is used for confirming the Video and Audio (signal) paths. (Troubleshooting)
Confirming the operation of unit can be easily done after repair.
Backup data will not be lost.

4.1. Starting diagnostic mode

Press the ON/STANDBY button to turn on the power while pressing both the "PRESET CHANNEL1" button and the "STATUS" button at the same time. ⚠3
Q1, Q2 and Q3 are lit in FL display.

4.2. Canceling diagnostic mode

Turn off the power by pressing the ON/Standby button.

4.3. Operation

When you perform remote operation in accordance with the instructions in "Details of how to operate remote controller" *a) in the table below using the remote control unit (RC-1156).
You will find using another remote control unit with the macro functions very useful. To use the macro functions, program a macro function to output a remote control code in accordance with the steps in *b) in the table below.

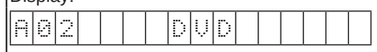
3.4. Video system confirmation items

fig.XX : Refer to the block diagram of the fig.XXth.

	Confirmation item	Setting and display	Details of how to operate remote controller *a)	Output sequence of remote control codes ※ It is useful to form a macro program. *b)	Contents of confirmation	Remarks
1	Analog Video (signal) Path **fig.1**	All ZONE : ON Display: V01 DVD	1.Press [AMP] 2.Press [ZONE SELECT] , Select "ZONE2" 3.Press [ZONE OFF]	①ZONE2 POWER OFF	·Input : CVBS / Output : CVBS ·Input : S / Output : CVBS	
			4.Press [ZONE SELECT], Select "MAIN" 5.Press [1/./]	②KEY 1/CODE1 (Main Zone) Initialization		
			6.Press [ZONE SELECT], Select "ZONE2" 7.Press [ZONE ON]	③ZONE2 POWER ON		
			8.Press [ZONE SELECT], Select "MAIN" 9.Press [DVD]	④DVD (Main Zone)		
2	Analog or HDMI to HDMI (signal) Path **fig.2**	Display: V02 DVD	1.Press [AMP] 2.Press [ZONE SELECT] , Select "ZONE2" 3.Press [ZONE OFF]	①ZONE2 POWER OFF	·Input CVBS / Output : HDMI ·Input S-VIDEO / Output : HDMI ·Input Component / Output : HDMI ·Input HDMI / Output : HDMI (※ As the input source, you can switch from DVD to other ones.)	Confirm the input pass one by one. Because it becomes only the input of the highest input becomes Convert/ (signal) Path if it inputs it at the same time. (HDMI input > Component input > S-VIDEO input > CVBS input)
			4.Press [ZONE SELECT], Select "MAIN" 5.Press [2/ABC]	②KEY 2/ABC (Main Zone) Initialization		
			6.Press [DVD]	③DVD (Main Zone)		
3	OSD FUNCTION **fig.3**	Menu : ON All ZONE :ON Display: V02 DVD	1.Press [AMP] 2.Press [ZONE SELECT] , Select "ZONE2" 3.Press [ZONE OFF]	①ZONE2 POWER OFF	·OSD Display / Output : HDMI (※ As the input source, you can switch from DVD to other ones.)	
			4.Press [ZONE SELECT], Select "MAIN" 5.Press [2/ABC]	②KEY 2/ABC (Main Zone) Initialization		
			6.Press [ZONE SELECT], Select "ZONE2" 7.Press [ZONE ON]	③ZONE2 POWER ON		
			8.Press [ZONE SELECT], Select "MAIN" 9.Press [DVD]	④DVD (Main Zone)		
			10.Press [AMP] 11.Press [MENU]	⑤GUI MENU (Main Zone)		
4	CEC FUNCTION (Control Monitor : HDMI Monitor) **fig.4**	HDMI Control : ON Display: V03 DVD	1.Press [AMP] 2.Press [ZONE SELECT] , Select "ZONE2" 3.Press [ZONE OFF]	①ZONE2 POWER OFF	·When the power supply of a TV is put in the standby mode, make sure that the power supply of this unit is also put in the standby mode. (※ As the input source, you can switch from DVD to other ones.)	
			4.Press [ZONE SELECT], Select "MAIN" 5.Press [3/DEF]	②KEY 3/DEF (Main Zone) Initialization & CEC Control ON		
			6.Press [DVD]	③DVD (Main Zone)		
5	HDMI Audio (signal) Path (Audio : AMP) **fig.5**	Audio : AMP(When checking the audio output from AMP) Display: V05 DVD	1.Press [AMP] 2.Press [ZONE SELECT] , Select "ZONE2" 3.Press [ZONE OFF]	①ZONE2 POWER OFF	·Input : HDMI (Signal of PCM, DolbyDigital or DTS) / Output : Speakers ·Input : HDMI (Signal of HD Audio) / Output : Speakers (※ As the input source, you can switch from DVD to other ones.)	
			4.Press [ZONE SELECT], Select "MAIN" 5.Press [5/JKL]	②KEY 5/JKL (Main Zone) Initialization & Select Audio AMP		
			6.Press [DVD]	③DVD (Main Zone)		
6	HDMI Audio (signal) Path (Audio : TV) **fig.6**	Audio : TV(When checking the audio output from TV) Display: V06 DVD	1.Press [AMP] 2.Press [ZONE SELECT] , Select "ZONE2" 3.Press [ZONE OFF]	①ZONE2 POWER OFF	·Input : HDMI (Signal of PCM or DolbyDigital or DTS) / Output : HDMI (Audio output from connected TV) (※ As the input source, you can switch from DVD to other ones.)	
			4.Press [ZONE SELECT], Select "MAIN" 5.Press [6/MNO]	②KEY 6/MNO (Main Zone) Initialization & Audio Select TV		
			6.Press [DVD]	③DVD (Main Zone)		

4.5. Audio system confirmation items

fig.XX : Refer to the block diagram of the fig.XXth.

	Confirmation item	Setting and display	Details of how to operate remote controller	Output sequence of remote control codes ※ It is useful to form a macro program.	Contents of confirmation	Remarks
1	Analog (signal) Path **fig.7**	Input Mode : Fixed ANALOG SURROUND mode : DIRECT Amp assign : NORMAL Display: 	1.Press [AMP] 2.Press [ZONE SELECT] , Select "ZONE2" 3.Press [ZONE OFF]	①ZONE2 POWER OFF	·Input : Analog / Output : Speakers (Front L/R) (※ As the input source, you can switch from DVD to other ones.)	
			4.Press [ZONE SELECT], Select "MAIN" 5.Press [7/PQRS]	②KEY 7/PQRS (Main Zone) Initialization & Amp assign NORMAL& Input Mode Fixed ANALOG & SURROUND mode DIRECT		
			8.Press [DVD]	④DVD (Main Zone)		
2	DIGITAL (signal) Path (MAIN) **fig.8**	Input Mode : Fixed DIGITAL Amp assign : NORMAL Display: 	1.Press [AMP] 2.Press [ZONE SELECT] , Select "ZONE2" 3.Press [ZONE OFF]	①ZONE2 POWER OFF	·Input : Digital / Output : Speakers (Front L/R) (※ As the input source, you can switch from DVD to other ones.)	
			4.Press [ZONE SELECT], Select "MAIN" 5.Press [8/TUV]	②KEY 8/TUV (Main Zone) Initialization & Amp assign NORMAL& Input Mode Fixed DIGITAL		
			6.Press [DVD]	③DVD (Main Zone)		
3	DIGITAL (signal) Path (ZONE2 : NET / USB) **fig.9**	Input Mode : Fixed DIGITAL Amp assign : ZONE2 ZONE2 Function : Source Display: 	1.Press [AMP] 2.Press [ZONE SELECT] , Select "ZONE2" 3.Press [ZONE OFF]	①ZONE2 POWER OFF	·Input : Digital / Output : Speakers (SURR BACK L/R) ·Input : Digital / Output : LINE OUT(ZONE2 L/R) AVR-2112 model only (※ As the input source, you must select NET/USB.)	Except the AVR-1712 model.
			4.Press [ZONE SELECT], Select "MAIN" 5.Press [9/WXYZ]	②KEY9/WXYZ (Main Zone) Initialization & Amp assign ZONE2 & Input Mode Fixed DIGITAL		
			6.Press [ZONE SELECT], Select "ZONE2" 7.Press [ZONE ON]	③ZONE2 POWER ON		
			8.Press [ZONE SELECT], Select "MAIN" 9.Press [NET/USB]	④NET/USB (Main Zone)		
4	HDMI (signal) Path **fig.10**	Input Mode : Fixed HDMI Amp assign : NORMAL Display: 	1.Press [AMP] 2.Press [ZONE SELECT] , Select "ZONE2" 3.Press [ZONE OFF]	①ZONE2 POWER OFF	·Input : HDMI / Output : Speakers (Front L/R) (※ As the input source, you can switch from DVD to other ones.)	
			4.Press [ZONE SELECT], Select "MAIN" 5.Press [MOVIE]	②MOVIE Select Initialization &Amp assign NORMAL & Input Mode Fixed HDMI		
			6.Press [DVD]	③DVD (Main Zone)		
5	A/D (signal) Path (Main Zone) **fig.11**	Amp assign : NORMAL SURROUND mode : Multi ch STEREO Vol -20dB Speaker Config : SSSSY (Front/Center/Surround/SourroundBack : Small, SW : Yes) Display: 	1.Press [AMP] 2.Press [ZONE SELECT] , Select "ZONE2" 3.Press [ZONE OFF]	①ZONE2 POWER OFF	·Input : Analog / Output : Speakers (Front L/R) ·Input : Analog / Output : SW(20Hz) (※ As the input source, you can switch from DVD to other ones.)	
			4.Press [ZONE SELECT], Select "MAIN" 5.Press [MUSIC]	②MUSIC Initialization &Amp assign NORMAL & SURROUND mode : Multi ch STEREO & Volume -20dB		
			6.Press [DVD]	④DVD (Main Zone)		
6	Amp Assign (signal) Path (Amp Assign : ZONE2) **fig.12**	Amp assign : ZONE2 ZONE2 Function : Source Zone2 Vol -20dB Display: 	1.Press [AMP] 2.Press [ZONE SELECT] , Select "ZONE2" 3.Press [ZONE OFF]	①ZONE2 POWER OFF	·Input : Analog / Output : Speakers (SURR BACK L/R) ·Input : Analog / Output : LINE OUT(ZONE2 L/R) AVR-2112 model only (※ As the input source, you can switch from DVD to other ones.)	
			4.Press [ZONE SELECT], Select "MAIN" 5.Press [GAME]	②GAME Initialization & Amp assign ZONE2 & SURROUND mode : Multi ch STEREO & ZONE2 Volume -20dB		
			6.Press [ZONE SELECT], Select "ZONE2" 7.Press [ZONE ON]	③ZONE2 POWER ON		
			8.Press [ZONE SELECT], Select "MAIN" 9.Press [DVD]	④DVD (Main Zone)		
7	Amp Assign (signal) Path (Amp Assign : BiAMP) **fig.13**	Amp assign : BiAMP SURROUND mode : Multi ch STEREO Vol -20dB Display: 	1.Press [AMP] 2.Press [ZONE SELECT] , Select "ZONE2" 3.Press [ZONE OFF]	①ZONE2 POWER OFF	·Input : Analog / Output : Speakers (SURR BACK L/R) (※ As the input source, you can switch from DVD to other ones.)	
			4.Press [ZONE SELECT], Select "MAIN" 5.Press [I◀◀]	②I◀◀ Initialization & Amp assign BiAMP & SURROUND mode : Multi ch STEREO & Volume -20dB		
			6.Press [DVD]	③DVD (Main Zone)		

BLOCK DIAGRAM

fig.1

VIDEO BLOCK DIAGRAM

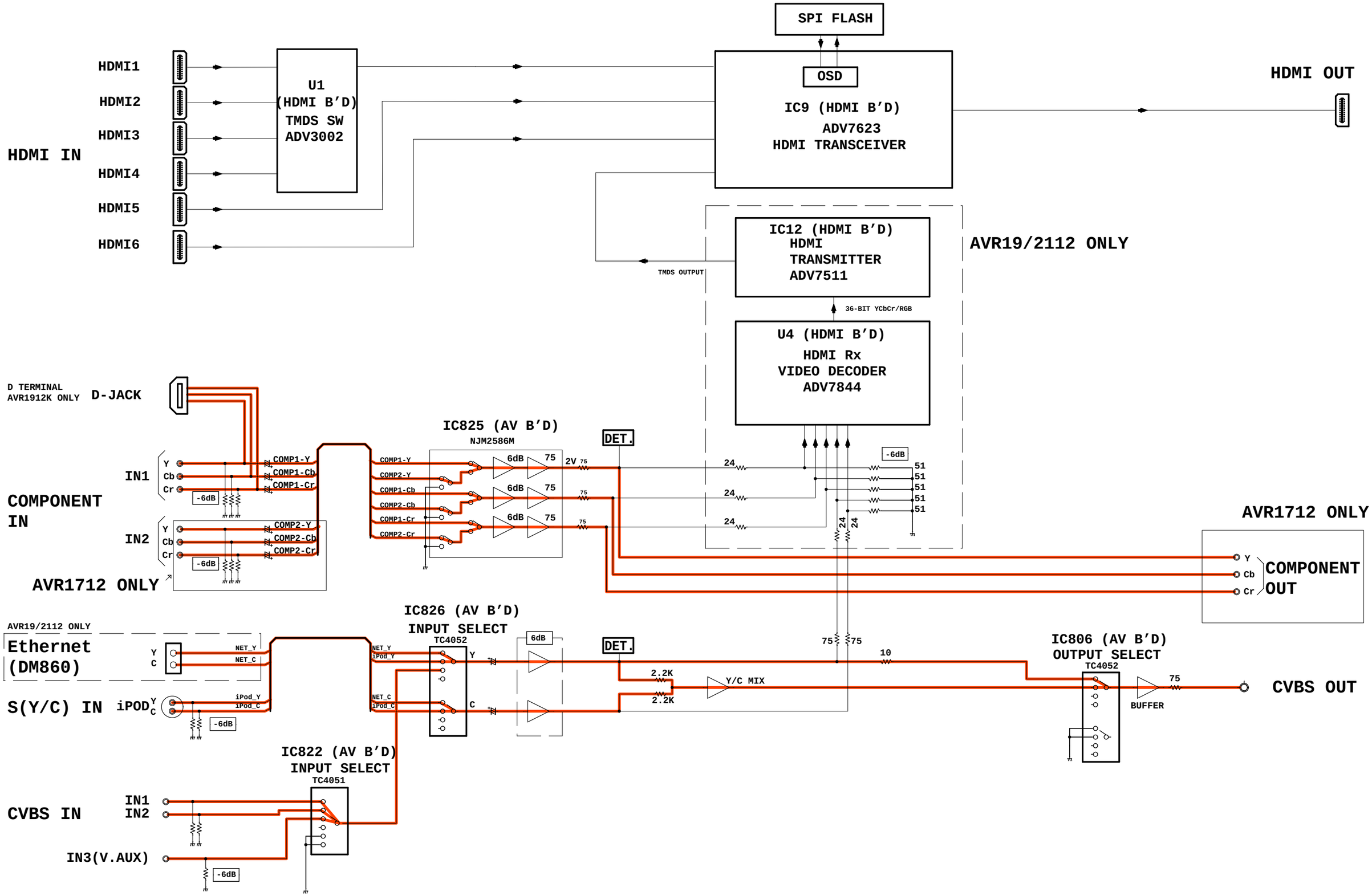


fig.2

VIDEO BLOCK DIAGRAM

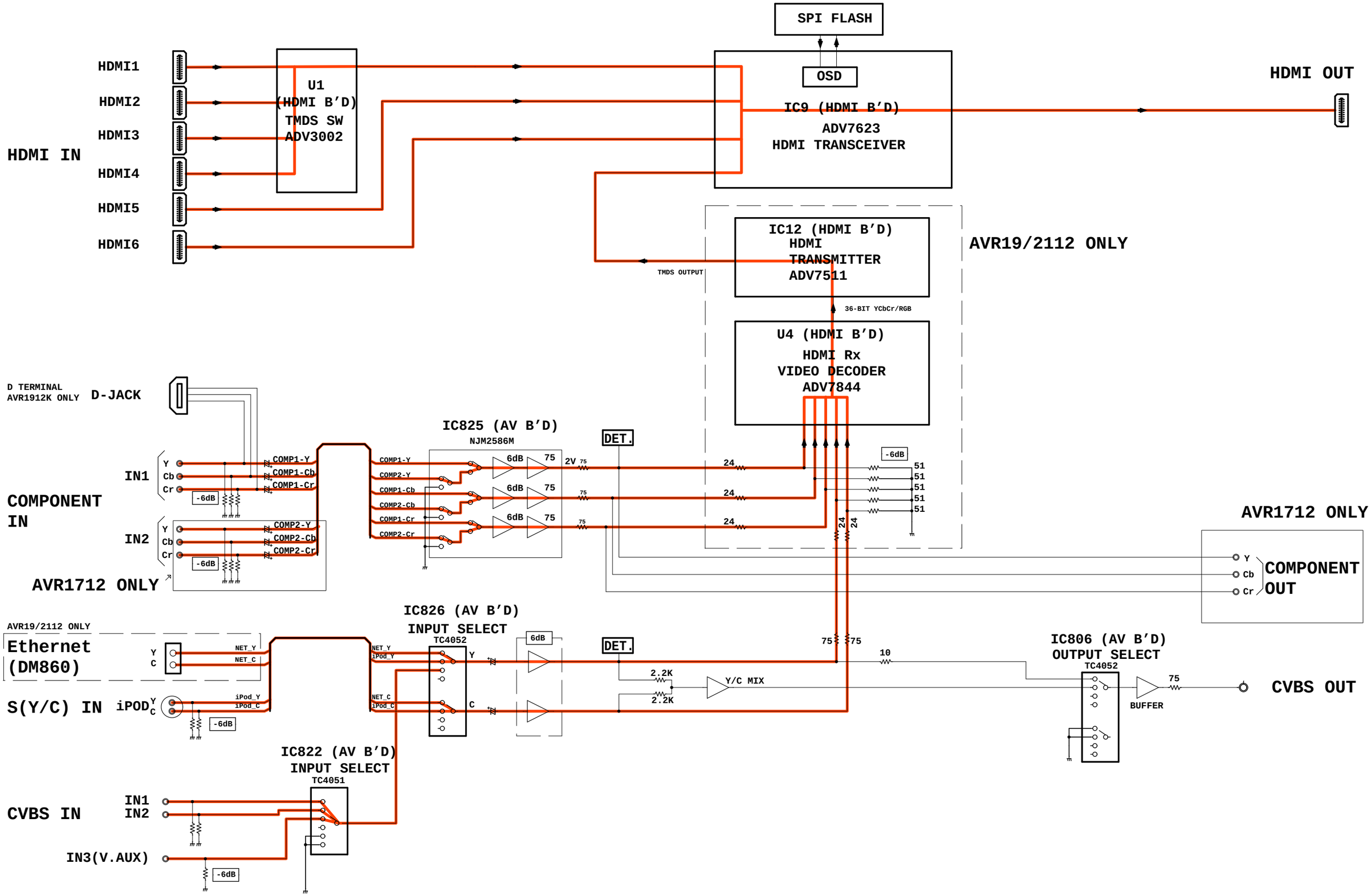


fig.3

VIDEO BLOCK DIAGRAM

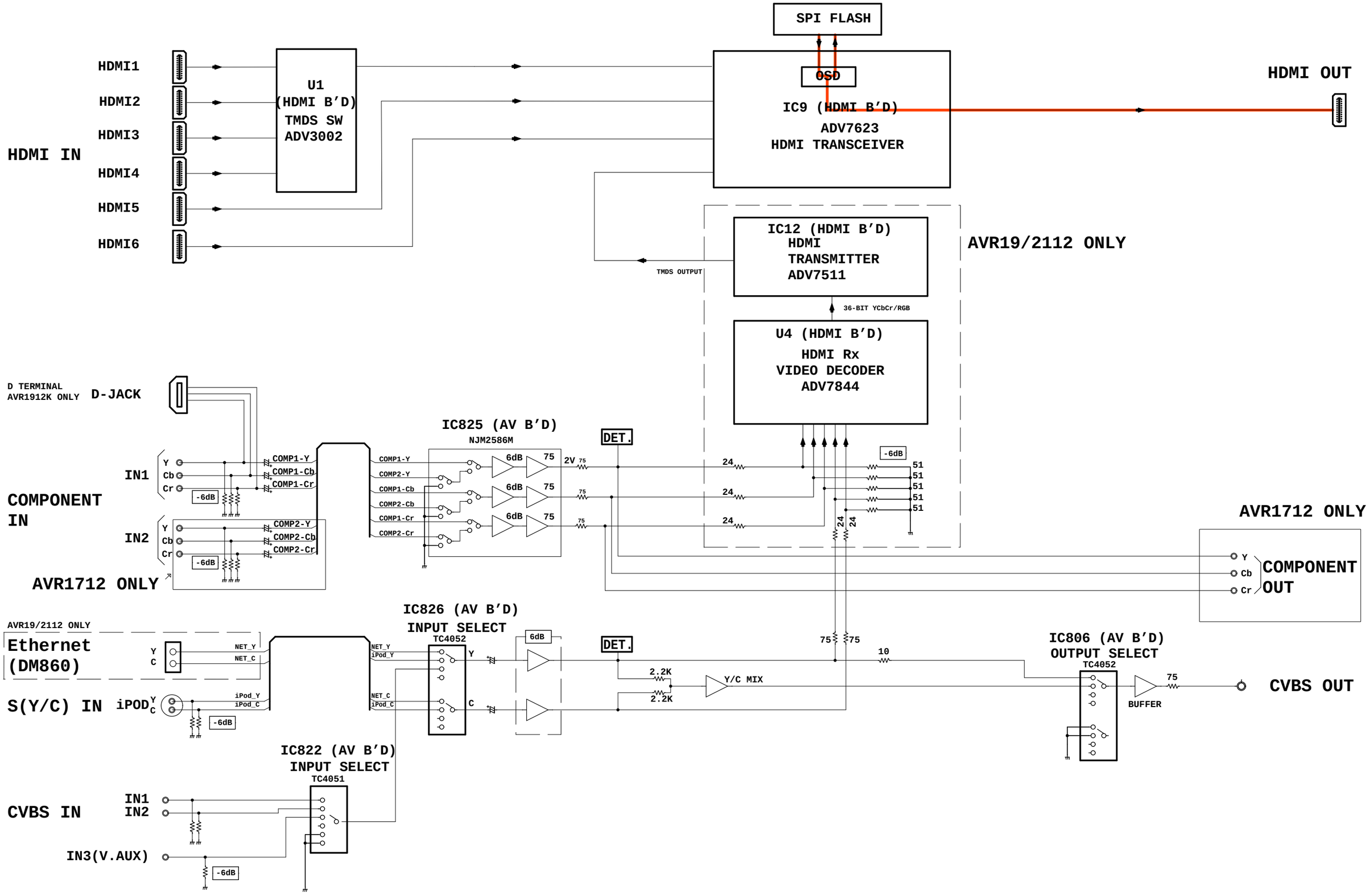


fig.4

VIDEO BLOCK DIAGRAM

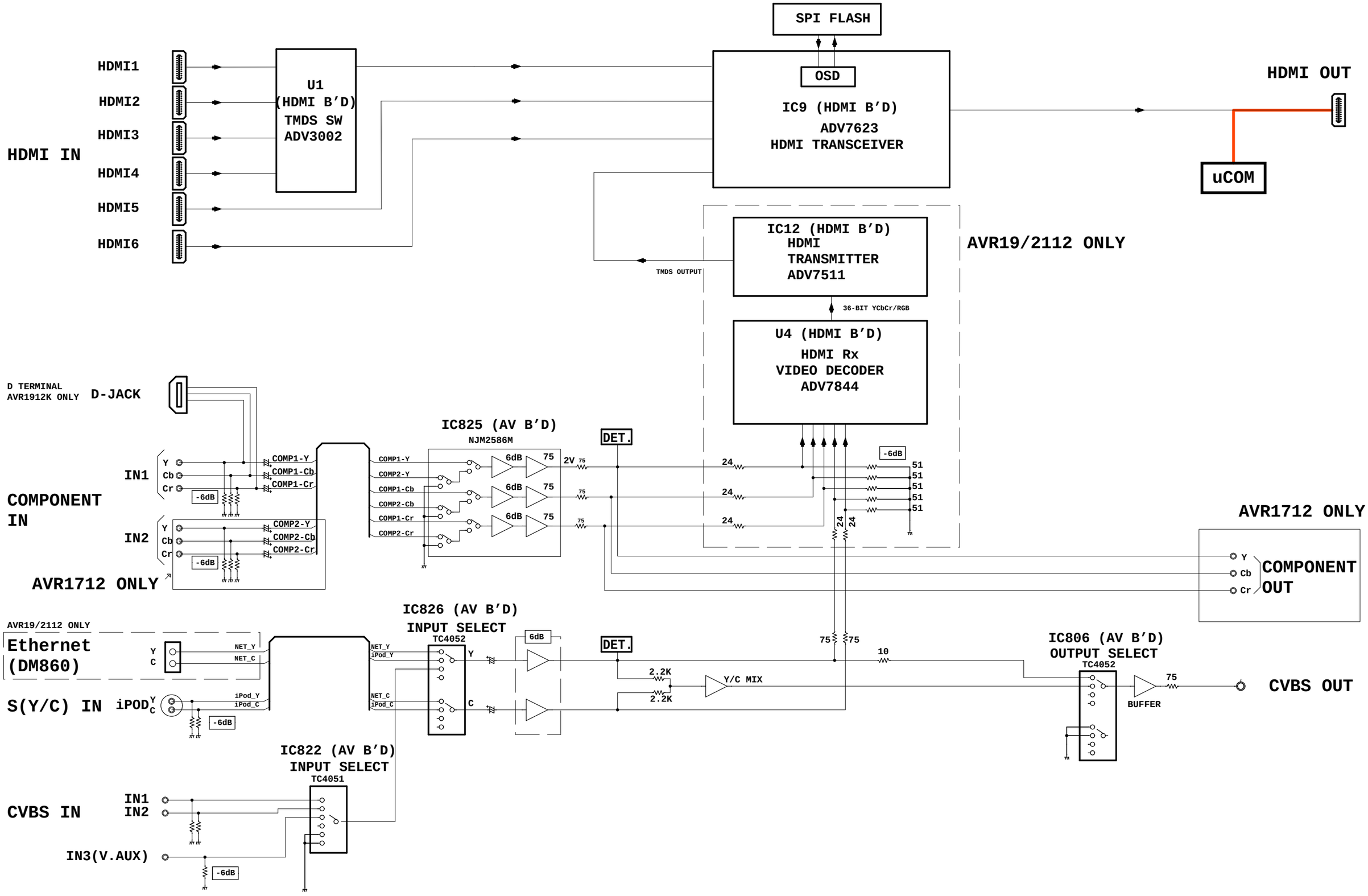


fig.5

AUDIO BLOCK DIAGRAM

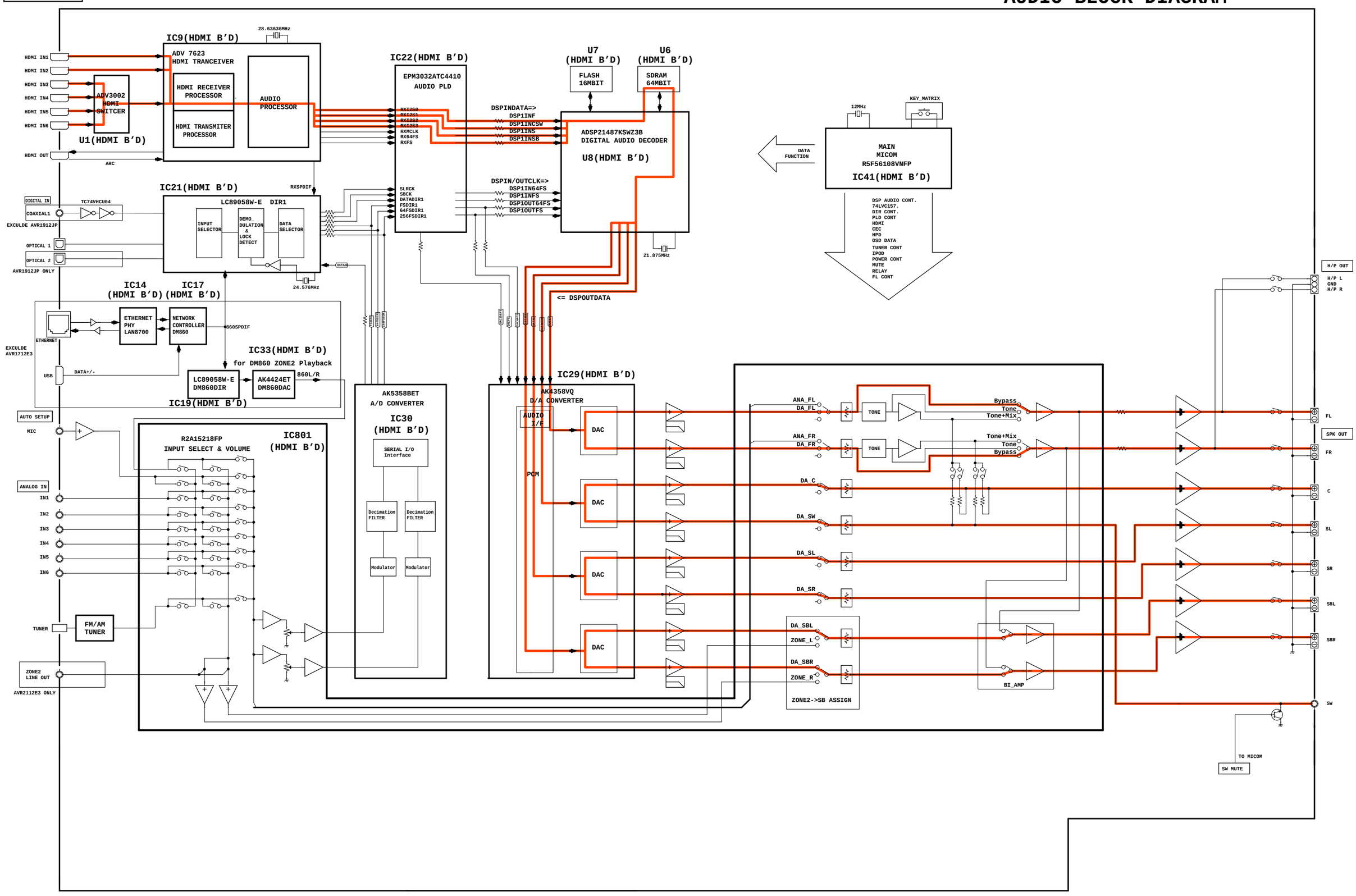


fig.6

AUDIO BLOCK DIAGRAM

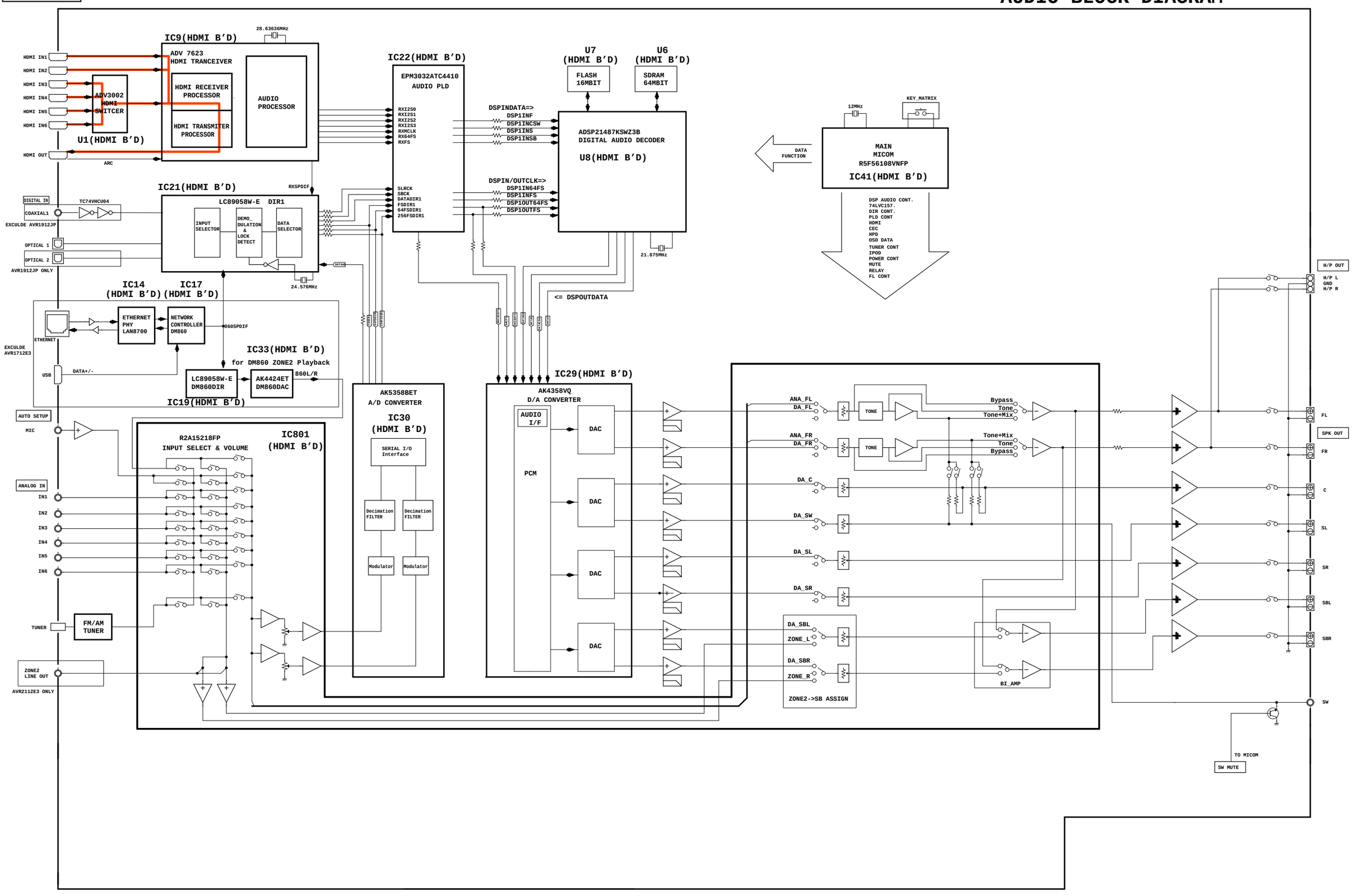


fig.7

AUDIO BLOCK DIAGRAM

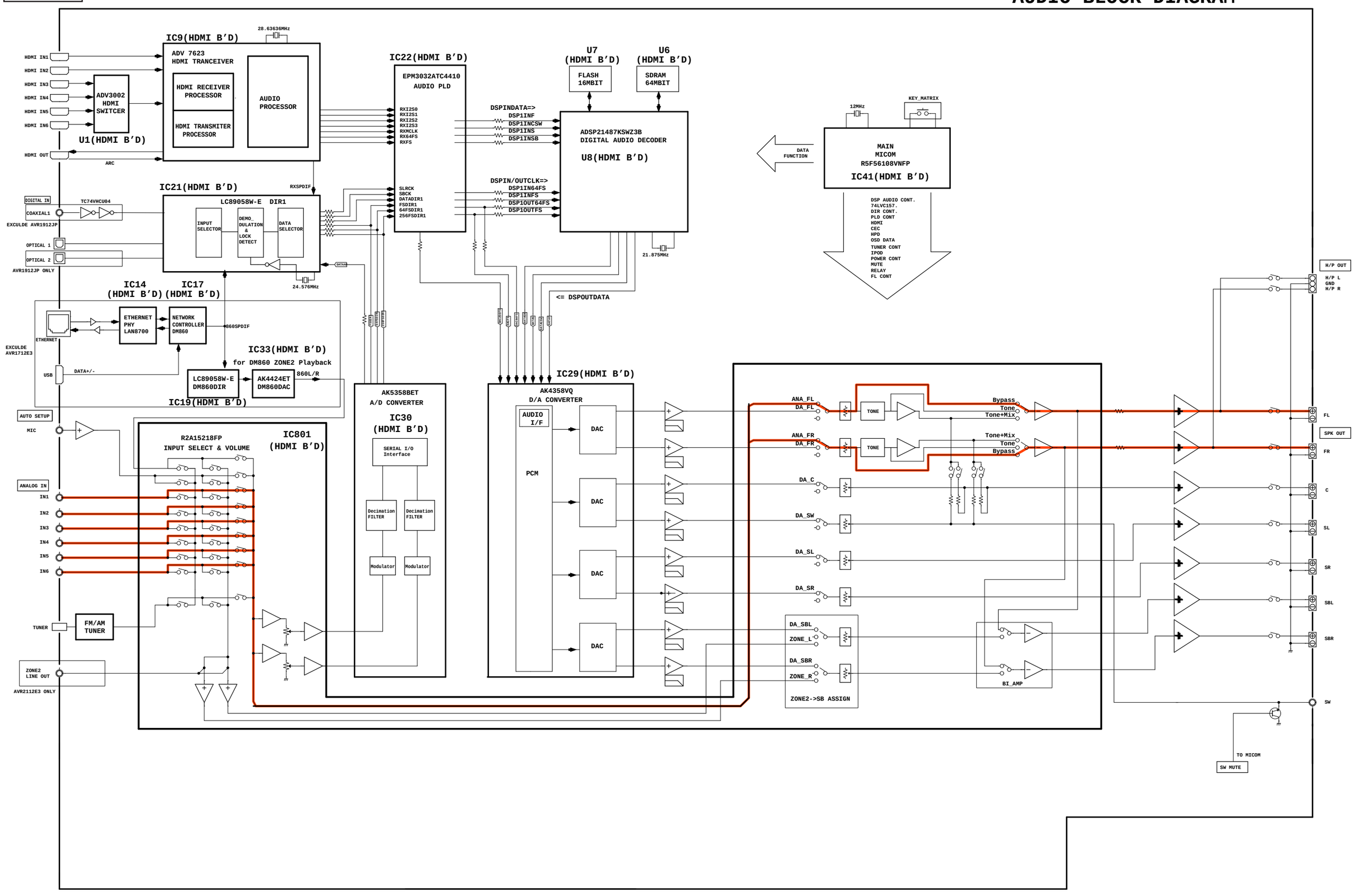


fig.8

AUDIO BLOCK DIAGRAM

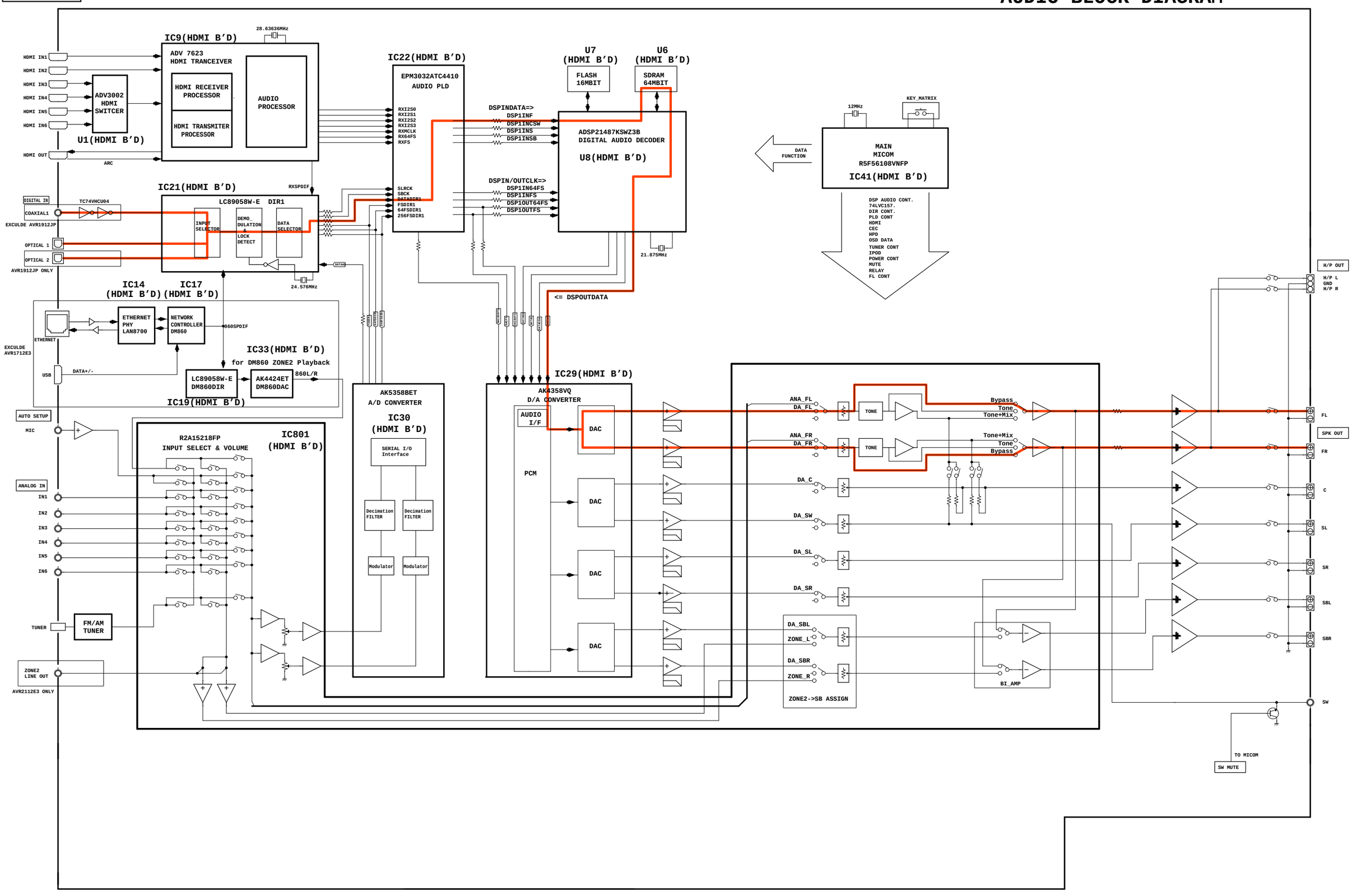


fig.9

AUDIO BLOCK DIAGRAM

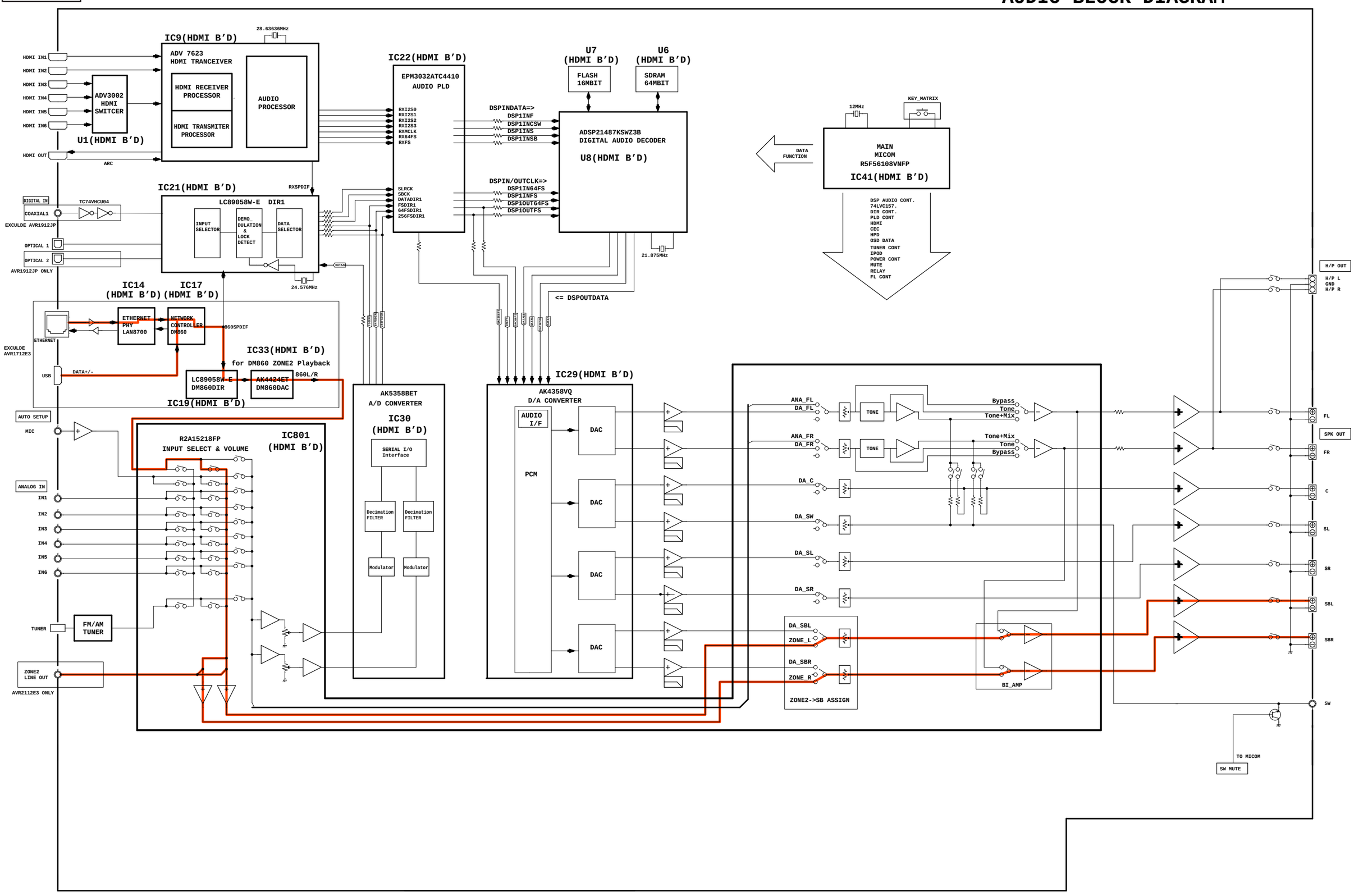


fig.10

AUDIO BLOCK DIAGRAM

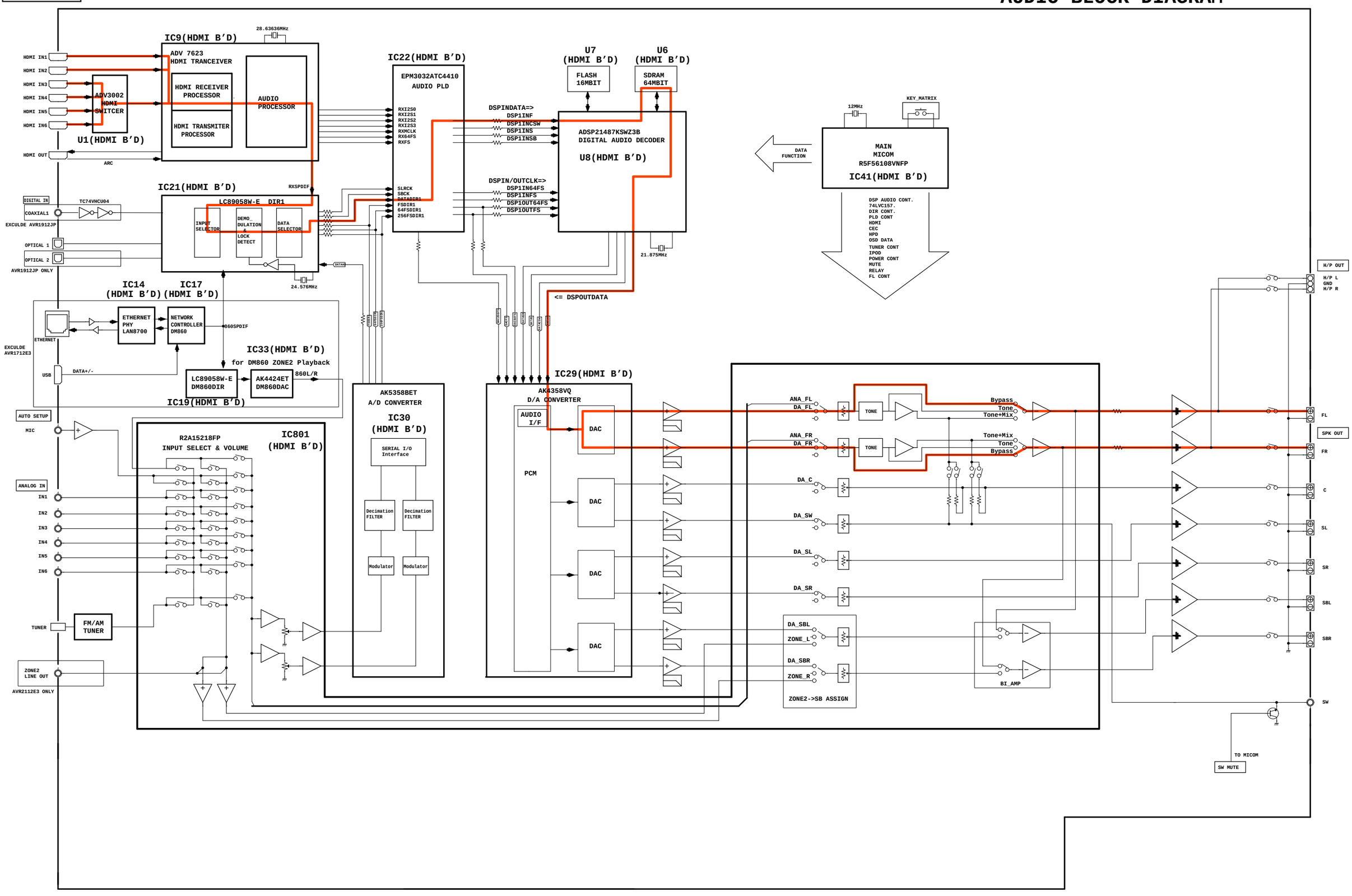


fig.11

AUDIO BLOCK DIAGRAM

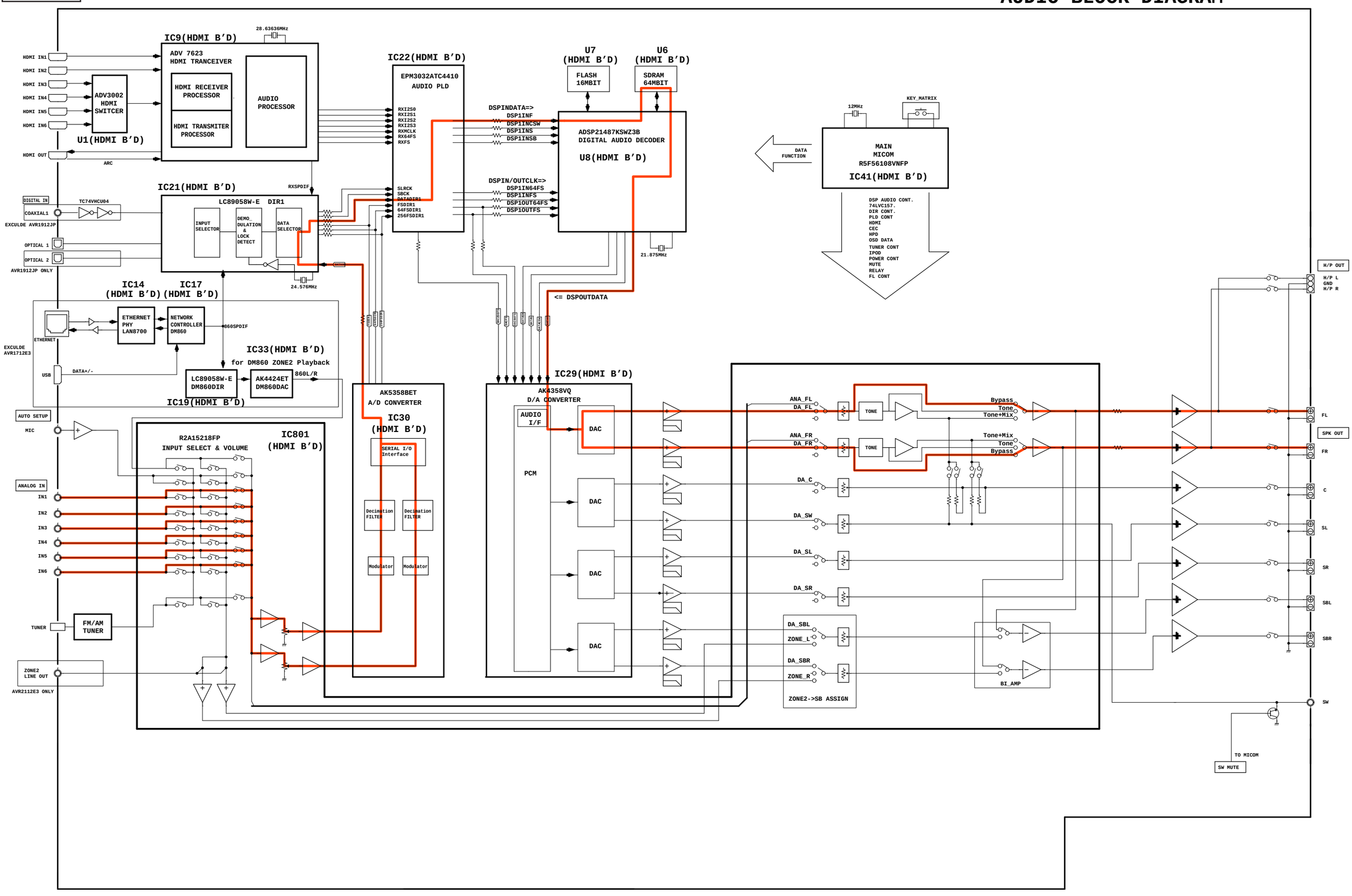


fig.12

AUDIO BLOCK DIAGRAM

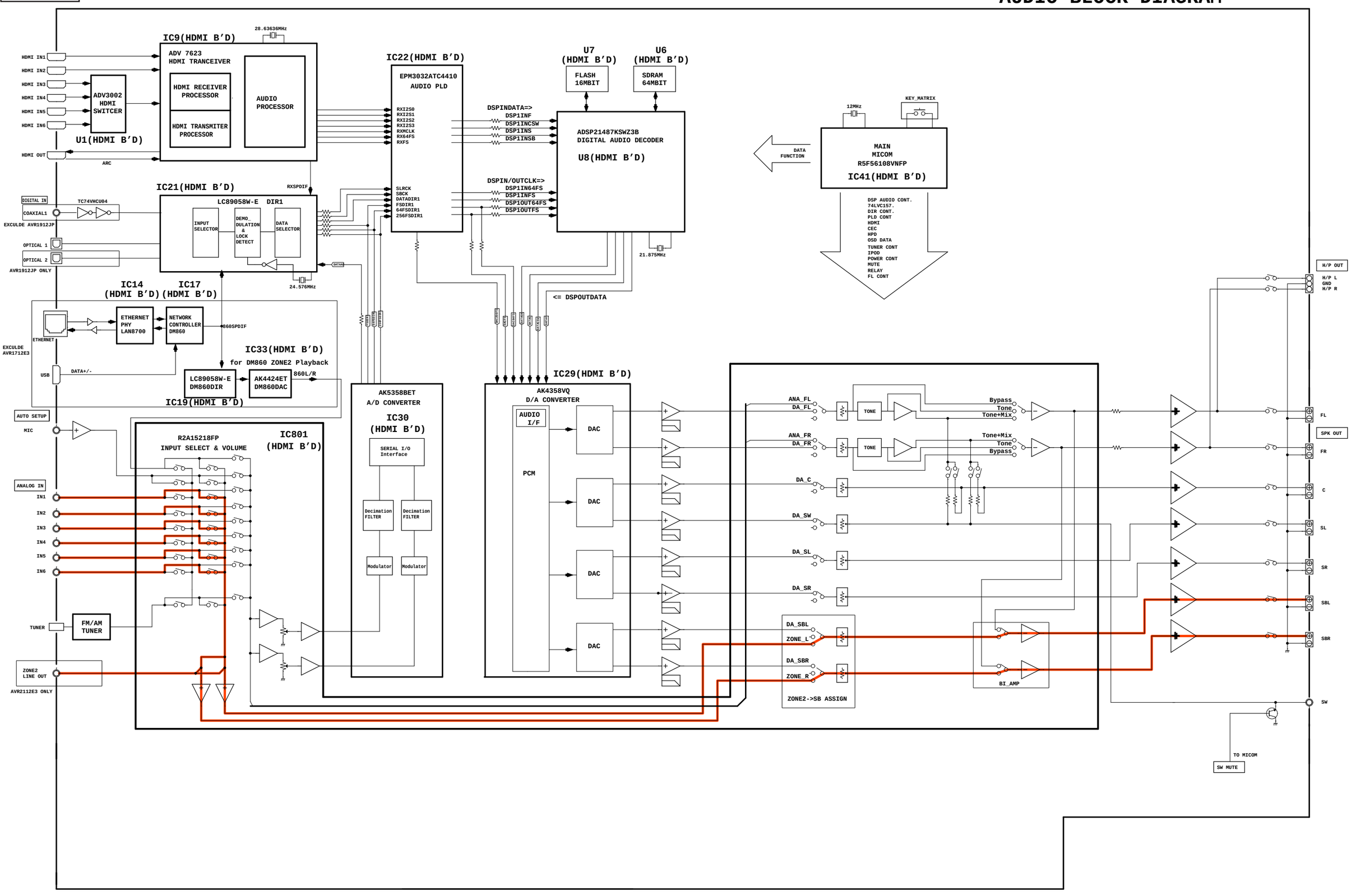
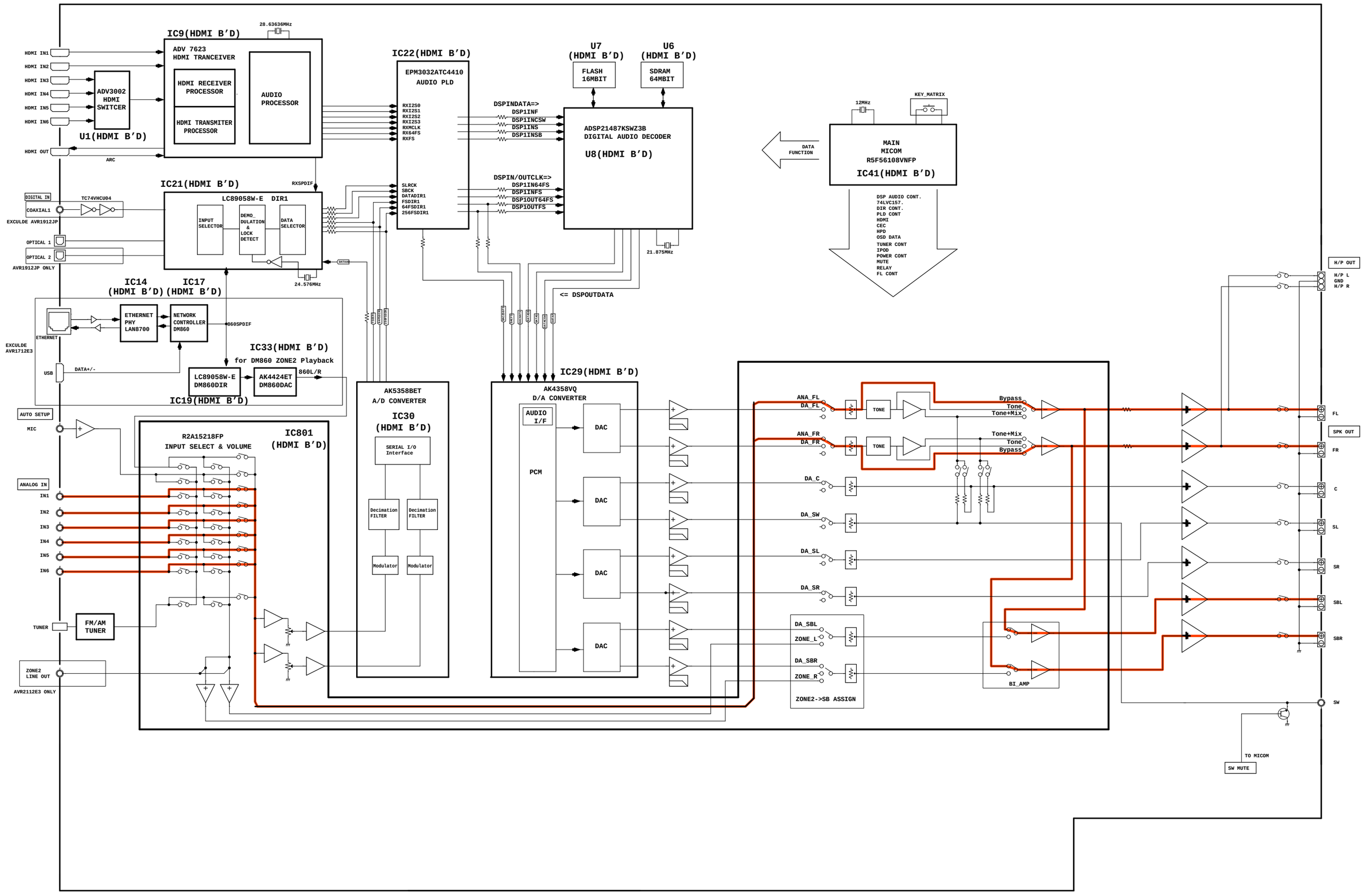
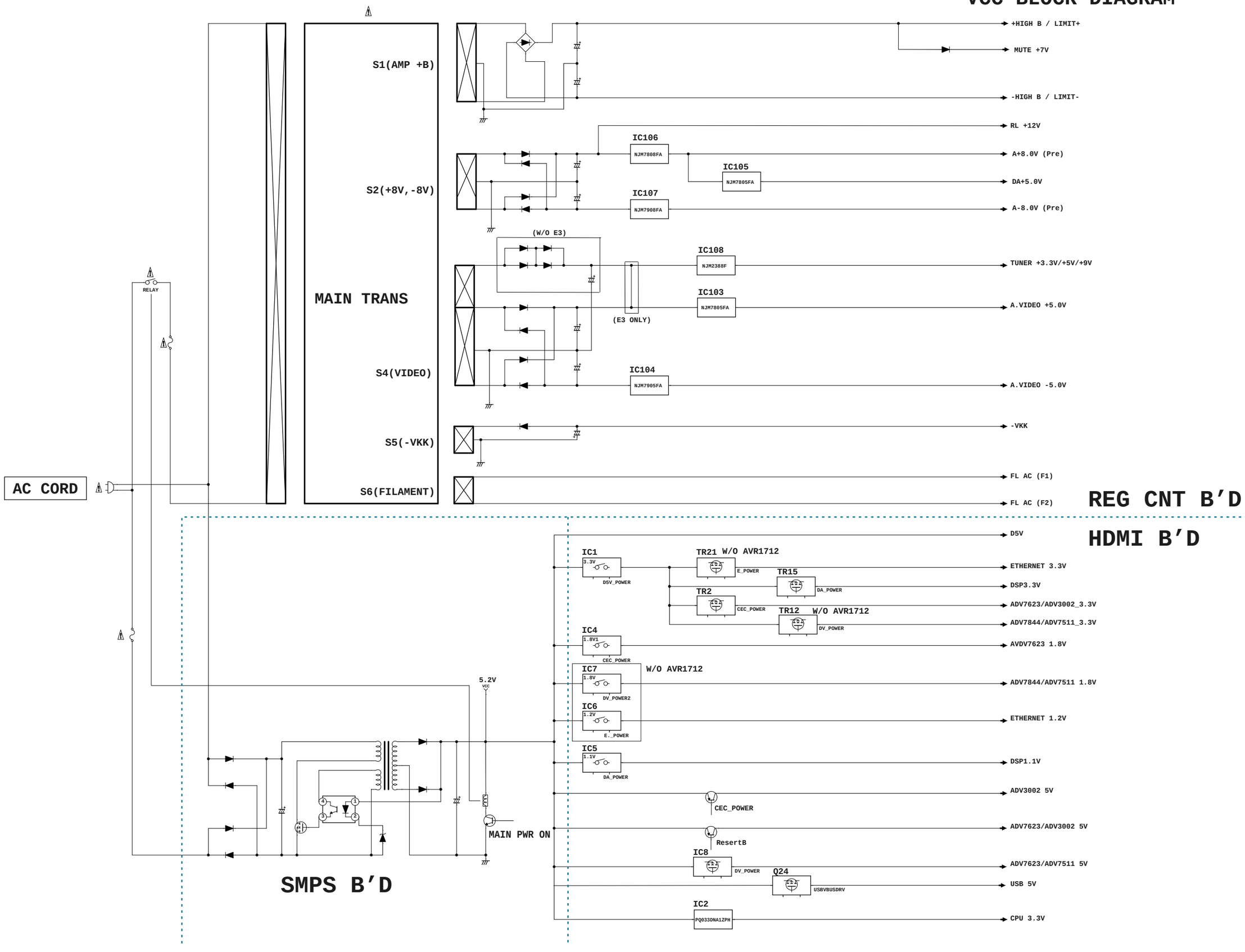


fig.13

AUDIO BLOCK DIAGRAM



VCC BLOCK DIAGRAM



JIG FOR SERVICING

When you repair the printing board, you can use the following JIG (Extension cable kit).
Please order it from DENON Official Service. Distributor in your region if necessary.

NOTE: The incorrect connection with in the JIG (EXTENSION UNIT KIT) may cause damage.

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

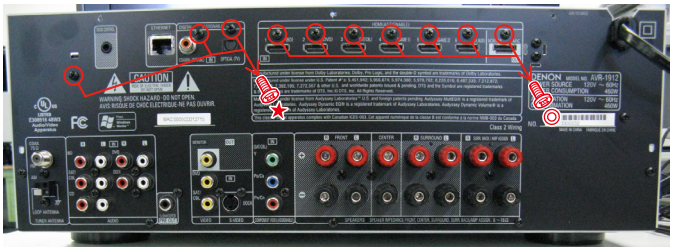
• Connection of PCB HDMI JIG

-Preparation-

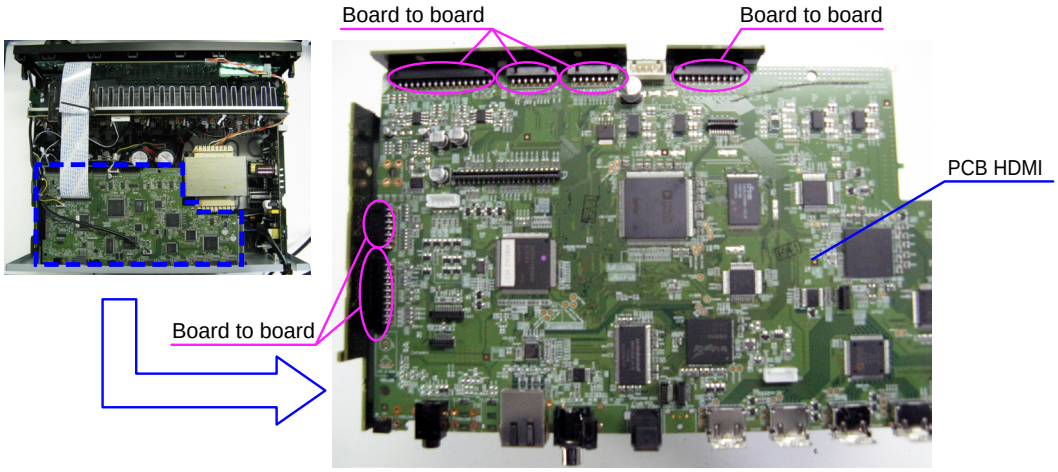
8U-110084S : EXTENSION UNIT KIT : 1 Set
Insulation sheet (Do not supply it) : 1 sheet
Ground lead (Do not supply it) : 1 pc

-Procedures-

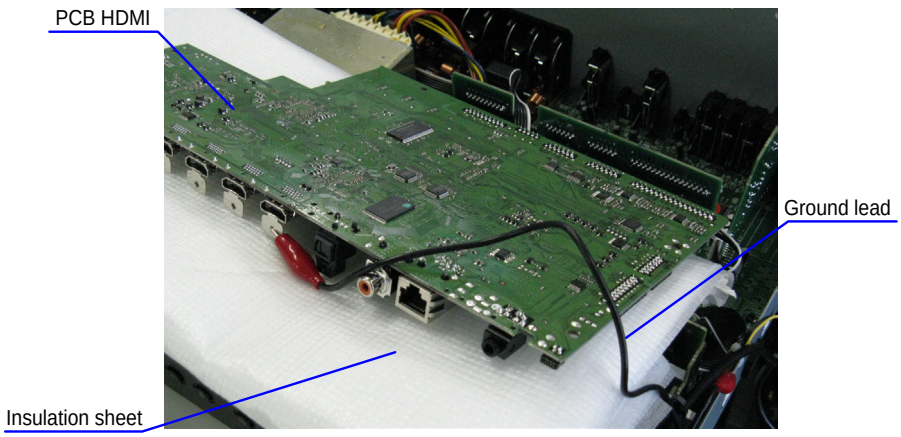
(1) Remove the screws.



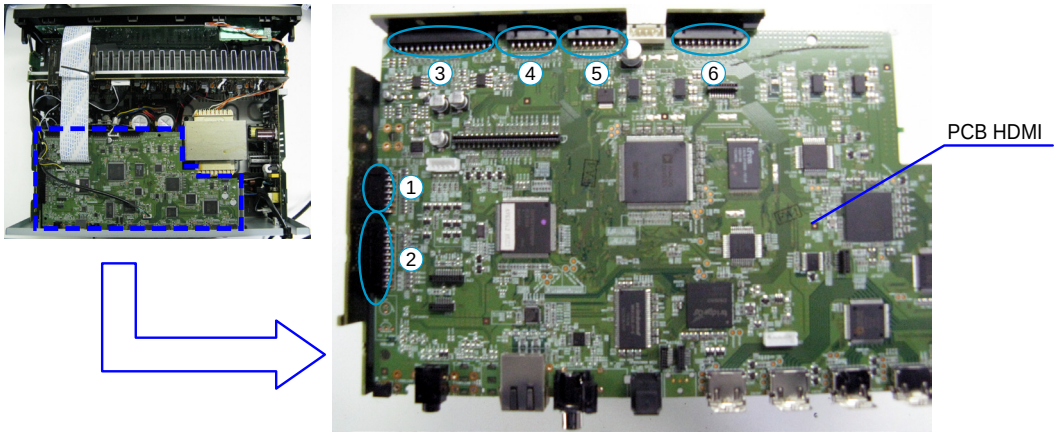
(2) Disconnect the connector board.



(3) Detach PCB HDMI from the chassis, and turn it over.
Please put an insulation sheet that is larger than PCB HDMI under PCB.
※ Connect the ground point of PCB to the chassis with a ground lead or the like.



(4) Connect the six extension jig cables.



Connection table of Board to Board

No.	Pin	Ref. No.	PCB		Ref. No.	PCB
①	13 pin	CP3	SIDE CNT	⟷	CN3	HDMI
②	19 pin	CP5	SIDE CNT	⟷	CN5	HDMI
③	33 pin	CP11	FRONT CNT	⟷	CN2	HDMI
④	13 pin	CP10	FRONT CNT	⟷	CN6	HDMI
⑤	13 pin	CP9	FRONT CNT	⟷	CN7	HDMI
⑥	19 pin	CP8	FRONT CNT	⟷	CN4	HDMI

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	
HDMI	IC41	R5F56108VNFP	**B**	SOFTWARE: Main	
HDMI	U7	EN29LV160BB-70TIP	**B**	SOFTWARE: DSP ROM	
HDMI	IC22	EPM3032A-TC44	**B**	SOFTWARE: AUDIO PLD	
HDMI	IC11	MX25L3206EM2I-12G	**B**	SOFTWARE: OSD ROM (E3 model)	△2
HDMI	IC11	MX25L6406EM2I-12G	**B**	SOFTWARE: OSD ROM (E2,EA,E1C model)	△2
HDMI	IC18	H27U1G8F2BTR	**B**	SOFTWARE: DM860 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

NOTE: When the following are replaced, always rewrite with updated firmware using DFW. (Refer to parts list of "PCB HDMI ASS'Y" (188 page) △2

- PCB HDMI ASSY
- IC11 (MX25L3206EM2I-12G/MX25L6406EM2I-12G)
- IC18 (H27U1G8F2BTR)
- IC22 (EPM3032A-TC44) △3
- IC41 (R5F64169DFDFP)
- U7 (EN29LV160BB-70TIP) △3

1. How to update by DFW

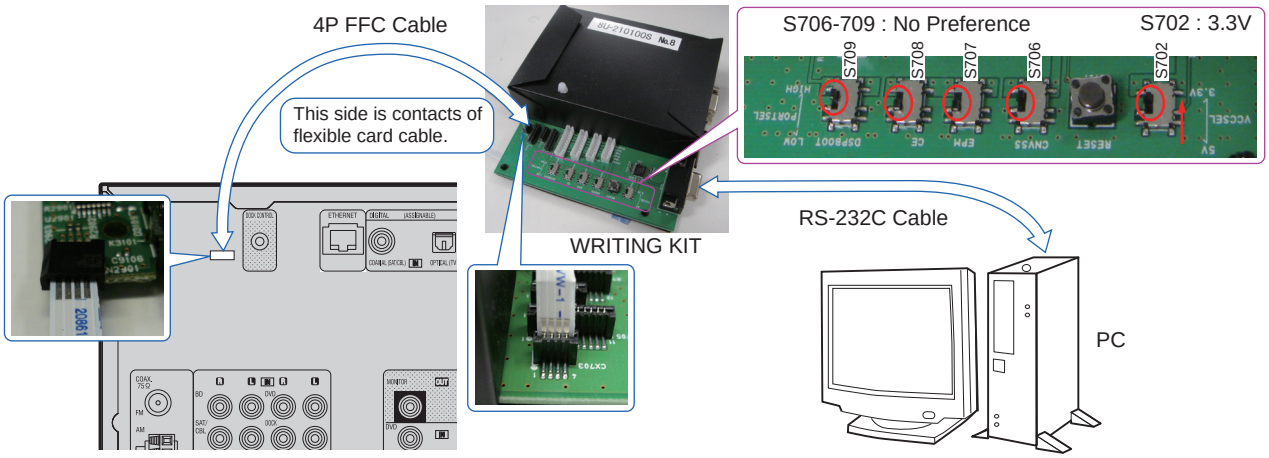
[AVR-1912 model]

1.1. Preparations before starting the operation

(1) Personal Computer (Installed "DFW_0049_AVR1912_2112_(Rev.X.X.X).exe".
(2) RS-232 cable (9P (Male), Straight).
(3) 8U-210100S WRITING KIT. △4
Replacement:606050103005S (FFC 4P 300mm 1mm) △6

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



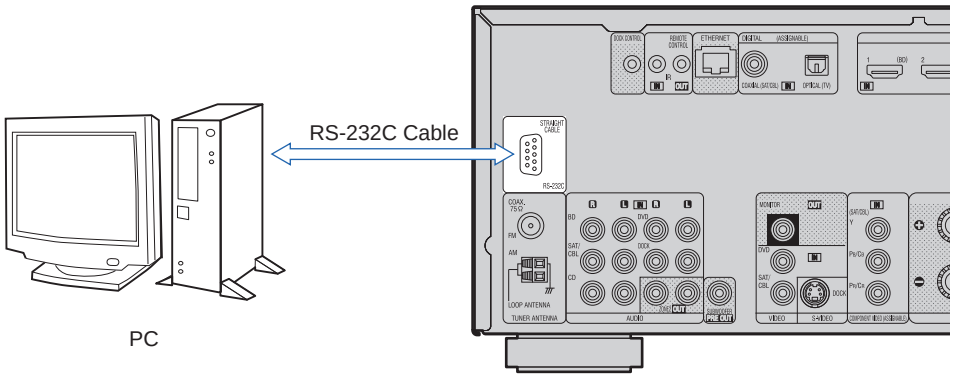
[AVR-2112CI model] ⚠2

1.1. Preparations before starting the operation

(1) Personal Computer (Installed "DFW_0049_AVR1912_2112_(Rev.X.X.X).exe".
(2) RS-232 cable (9P (Male), Straight).

1.2. Connection of AV receiver

(1) Confirm the power on/off switch of the AV receiver is turning off.
(2) Connect the RS-232C cable from PC with the "RS232C Terminal of AV receiver".



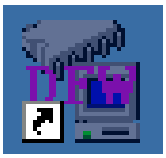
[All model commonness]

1.3. Turn on the AV receiver

Operate the following. Turn on the AV receiver.
(1) Connect the power cable to the AC outlet while simultaneously pushing the "NET/USB (AVR1912E3) or SLEEP (except AVR1912E3)" button and the "INTERNET RADIO" button of the front panel. ⚠3
(2) Confirm the power indicator is green and "WRITTING" is displayed in the front panel.

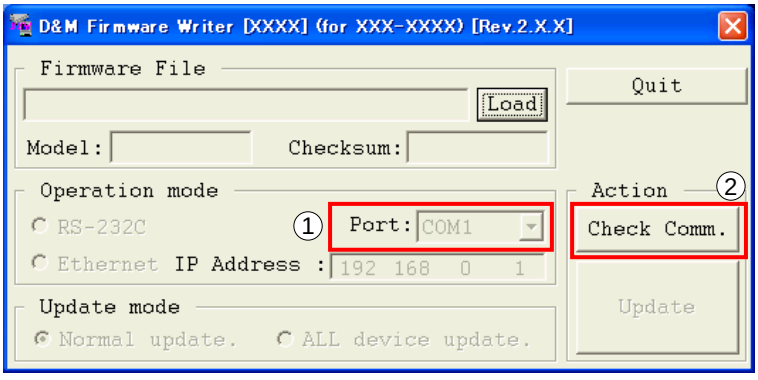
1.4. Run the DFW

Run the "DFW_0049_AVR1912_2112_(Rev.X.X.X).exe" on desktop of PC.



1.5. Communication check

(1) Select the serial port number of RS-232C in PC.
(2) Click the "Check Comm." button.



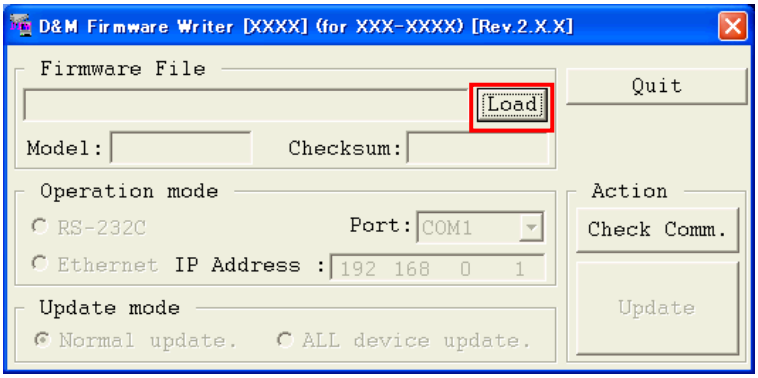
(3) When connection is good, then you can see the "Communication check OK." message.

(4) If connection is not good, then you can see the "Communication check NG" message.

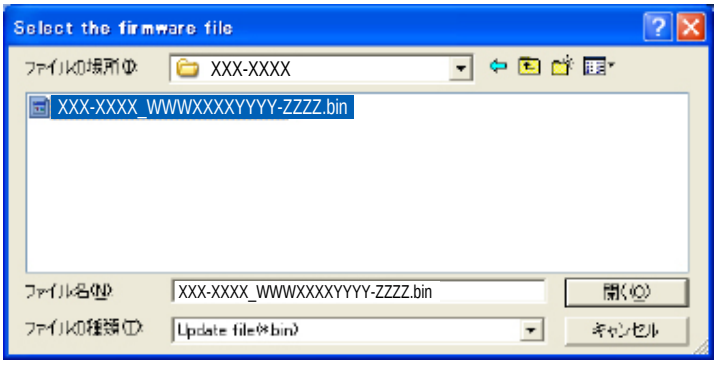
Please confirm the following
(a) Check the connection of the AV receiver and PC. (refer to "**1.2. Connection of the AV receiver**")
(b) Check the operation mode of the AV receiver. (refer to "**1.3.Turn on the AV receiver**")
(c) Check the selection of the RS-232C port number of PC.

1.6. Download the firmware

(1) Click the "Load" button.

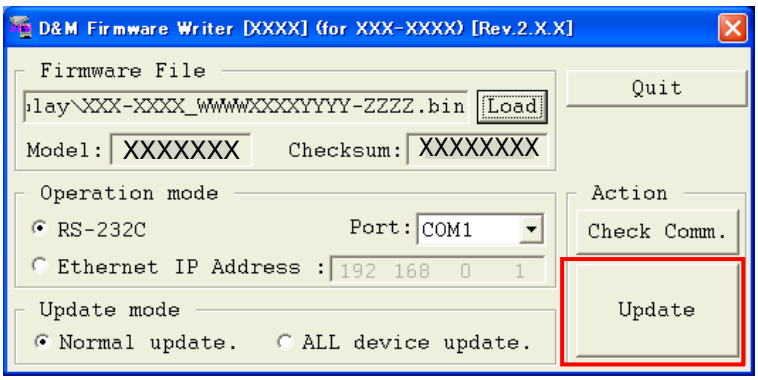


(2) Download the firmware from the specified download source to PC.

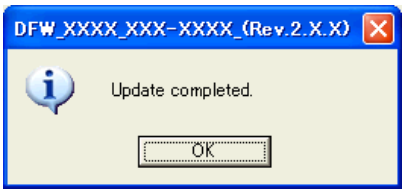


1.7. Complete the firmware updating

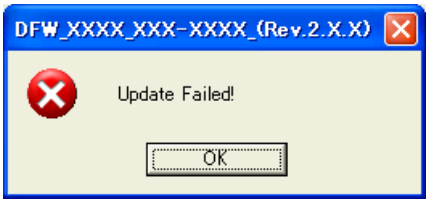
(1) Click the "Update" button.



(2) When writing of the firmware is completed, the power of AV receiver turns on automatically and you can see the "Update completed" message.



(3) If you can't complete the firmware update, please retry the firmware update from "1.3. Turn on the AV receiver".



1.8. Notice:

Please keep the following notice for firmware update.

(a) Keep the PC environment
(b) Avoid the communication cable from the electrical noise source.
(e.g. telephone cable, AC line, a fluorescent light)
(c) Don't remove cable during update.
(d) Don't turn off the power during update.
(e) Don't run other PC application during update.
(f) Stop the resident program on PC (Virus checker and System check utility, etc)
(g) Stop the screen saver on PC.
(h) Stop the power save ability on PC.
(i) In case of laptop PC, Use the AC adaptor.

Confirming the firmware's number after upgraded

After updating the firmware, check the version. Refer to "**1. µcom/DSP Version display mode**" (20 page).

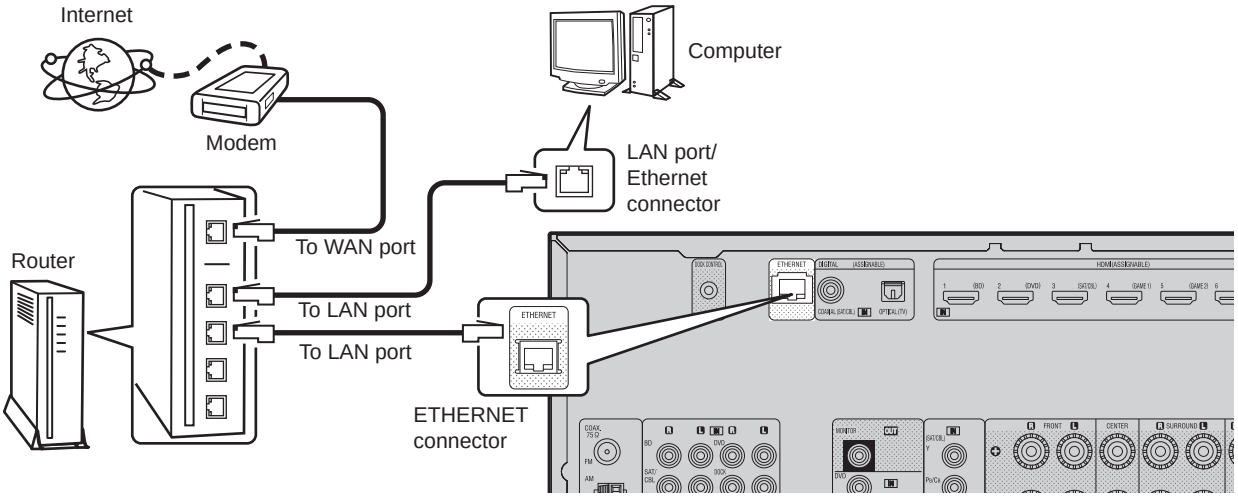
2. How to update by DPMS

You can update the firmware by downloading the latest version from the Internet.

2.1. Connecting to the Network

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

(2) Setting



2.2. Checking and updating the firmware

Check if the latest firmware exists. You can also check approximately time required to complete an update.

(1) Press the MENU button on the remote control to display the GUI menu.
(2) Use the cursor buttons to select "System Setup" → "Option Setup" → "Firmware Update" → "Check For Update". △3
(3) Press the ENTER button.
- The latest version of the firmware on the website is displayed.
- If the firmware on the website is latest, proceed to (4).
- If the latest firmware has been already installed, press the MENU button to close the menu.

(4) Use the cursor buttons to select "Update", then press the ENTER button.
- During update, the power indicator lights in red and the GUI screen disappears. And an approximately remaining time is indicated on the display.
- When updating is complete the power indicator lights in green and normal status is resumed.

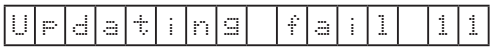
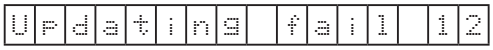
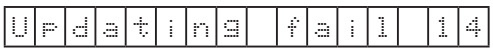
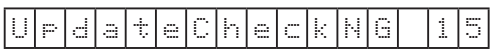
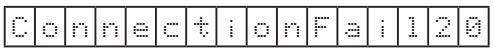
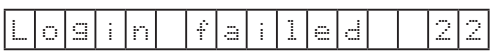
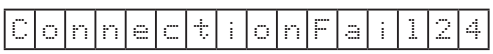
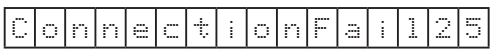
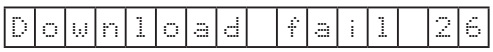
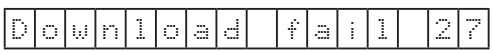
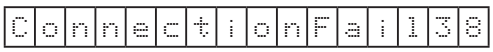
--- Cautions on Firmware Update ---

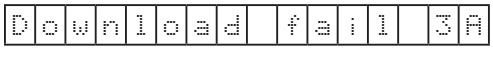
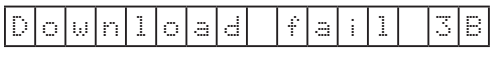
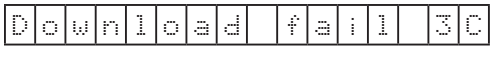
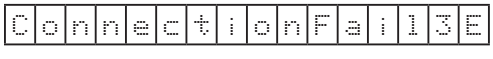
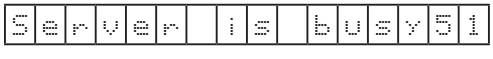
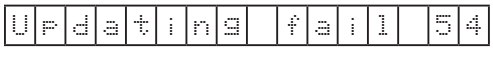
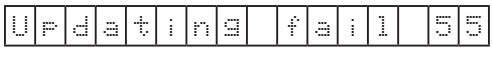
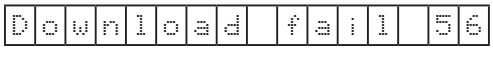
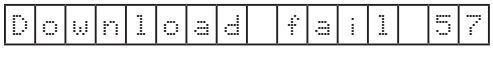
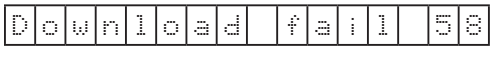
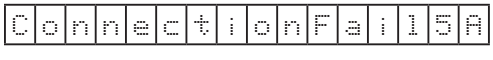
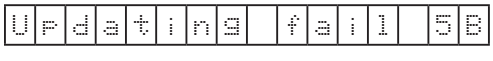
- In order to update the firmware, you must have the correct system requirements and settings for a broadband Internet connection.
- Do not turn off the power until updating is completed.
  Even with a broadband connection to the Internet, approximately 1 hour is required for the updating procedure to be completed.
  Once updating starts, normal operations on the AVR-1912/2112CI cannot be performed until updating is completed.
  Also, setting items of the GUI menu of AVR-1912/2112CI or setting items of the image adjustment may be initialized.
  Note down the settings before updating, and set them again after updating.

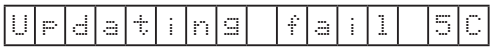
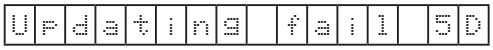
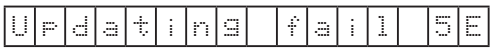
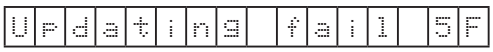
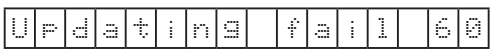
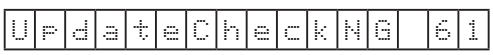
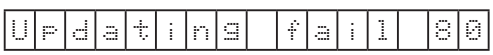
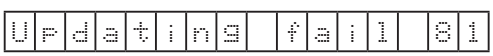
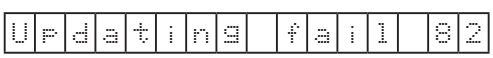
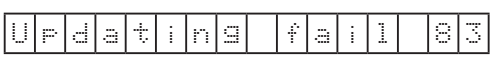
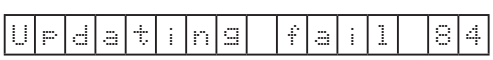
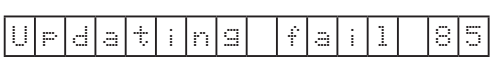
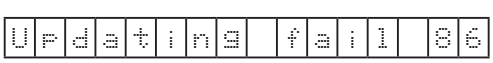
2.3. About the error code ⚠3

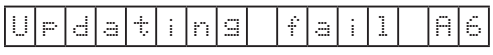
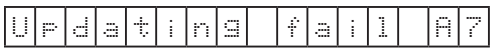
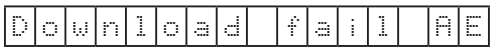
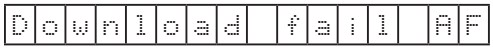
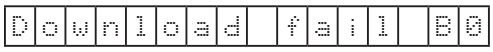
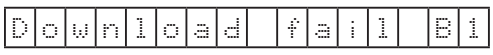
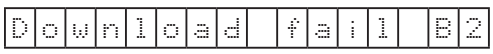
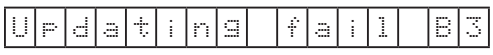
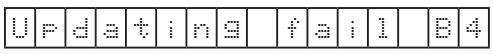
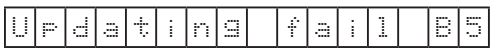
See the table below for error codes, details of faults, and coping strategies when the firmware is updated through DPMS (Denon Product Management Server).

Error Code	Details of Error code	Display	Coping strategies
01	Log-in to DPMS failed.	Login failed 01	Reset and update again. Carry out the update in an environment that has little network load.
02	Line, etc., is busy when logging into DPMS.	Server is busy 02	Carry out the update in an environment that has little network load.
03	Connection to DPMS failed.	ConnectionFai103	Check the network connection. Carry out the update in an environment that has little network load.
04	Firmware file data was requested but error message was received.	ConnectionFai104	Check the network connection. Carry out the update in an environment that has little network load.
05	Firmware file data was requested but it timed out.	ConnectionFai105	Check the network connection. Carry out the update in an environment that has little network load.
06	Firmware file data was requested but error message was received.	ConnectionFai106	Check the network connection. Carry out the update in an environment that has little network load.
07	All firmware file data was requested but it timed out.	ConnectionFai107	Check the network connection. Carry out the update in an environment that has little network load.
08	Firmware file data of Main CPU was requested but error message was received.	ConnectionFai108	Check the network connection. Carry out the update in an environment that has little network load.
09	Firmware file data of Main CPU was requested but it timed out.	ConnectionFai109	Check the network connection. Carry out the update in an environment that has little network load.
0A	Error (NG) message was received when firmware of Main CPU was downloaded.	Download fail 0A	Check the network connection. Carry out the update in an environment that has little network load.
0B	Error (line congestion) message was received when firmware of Main CPU was downloaded.	Download fail 0B	Check the network connection. Carry out the update in an environment that has little network load.
0C	Error (connection failure) message was received when firmware of Main CPU was downloaded.	Download fail 0C	Check the network connection. Carry out the update in an environment that has little network load.
0D	Received Package Version is wrong.	Download fail 0D	Check the network connection. Carry out the update in an environment that has little network load.
0E	Connection to DPMS failed. (can not get NTP)	ConnectionFai10E	Check the network connection. Carry out the update in an environment that has little network load.
10	Main CPU failed to receive firmware for rewriting sent from DM860 (when timed out).	Updating fail 10	Turn off and on the power. Updating starts automatically.

Error Code	Details of Error code	Display	Coping strategies
11	Main CPU failed to receive firmware for rewriting sent from DM860 (when an error occurred).		Turn off and on the power. Updating starts automatically.
12	There was invalid data in the firmware for rewriting sent from DM860 to Main CPU (when a Check Sum error occurred).		Turn off and on the power. Updating starts automatically.
13	The deletion of block data failed before Main CPU was rewritten.		Turn off and on the power. Updating starts automatically.
14	The rewriting of block data failed when Main CPU was rewritten.		Turn off and on the power. Updating starts automatically.
15	The data verification was invalid after Main CPU was rewritten.		Turn off and on the power. Updating starts automatically.
20	Failure to acquire (Boot Loader Mode) IP address before rewriting DM860 (AutoIP).		Check the network connection. Carry out the update in an environment that has little network load.
21	Failure to acquire (Boot Loader Mode) IP address before rewriting DM860 (when timed out).		Check the network connection. Carry out the update in an environment that has little network load.
22	Log-in to DPMS failed.		Reset and update again. Carry out the update in an environment that has little network load.
23	Line, etc., is busy when logging into DPMS.		Carry out the update in an environment that has little network load.
24	Connection to DPMS failed.		Check the network connection. Carry out the update in an environment that has little network load.
25	Mode change failure of DM860.		Reset and update again.
26	Data acquisition failed (timed out) when firmware of Main CPU was downloaded. Received Package Version is wrong.		Check the network connection. Carry out the update in an environment that has little network load.
27	Mode change failure of DM860.		Reset and update again.
36	Log-in to DPMS failed when Main CPU was rewritten.		Carry out the update in an environment that has little network load.
37	Line, etc., is busy when logging into DPMS when Main CPU was rewritten.		Carry out the update in an environment that has little network load.
38	Connection to DPMS failed when Main CPU was rewritten.		Check the network connection. Carry out the update in an environment that has little network load.

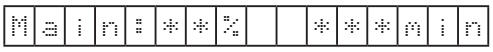
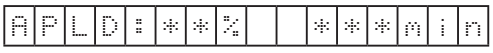
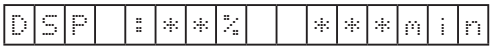
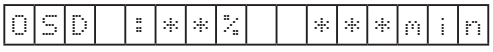
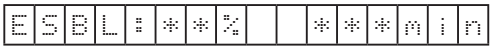
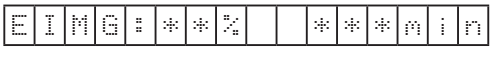
Error Code	Details of Error code	Display	Coping strategies
39	Connection to DPMS timed out when Main CPU was rewritten.		Check the network connection. Carry out the update in an environment that has little network load.
3A	Error (NG) message was received when firmware was downloaded or Main CPU was rewritten.		Turn off and on the power. Updating starts automatically. Carry out the update in an environment that has little network load.
3B	Error (line congestion) message received when downloading firmware when Main CPU was rewritten.		Turn off and on the power. Updating starts automatically. Carry out the update in an environment that has little network load.
3C	Error (connection failure) message received when downloading firmware when Main CPU was rewritten.		Turn off and on the power. Updating starts automatically. Carry out the update in an environment that has little network load.
3D	Failure to acquire (Boot Loader Mode) IP address before rewriting DM860 (AutoIP).		Check the network connection. Carry out the update in an environment that has little network load.
3E	Failure to acquire (Boot Loader Mode) IP address before rewriting DM860 (when timed out).		Check the network connection. Carry out the update in an environment that has little network load.
50	Log-in to DPMS failed when firmware such as DSP and PLD was rewritten.		Carry out the update in an environment that has little network load.
51	Line, etc., is busy when the log-in to DPMS when firmware such as DSP and PLD was rewritten.		Carry out the update in an environment that has little network load.
52	Connection to DPMS failed when firmware such as DSP and PLD was rewritten.		Check the network connection. Carry out the update in an environment that has little network load.
54	Error message received regarding firmware data after the log-in to DPMS when firmware such as DSP and PLD was rewritten.		Turn off and on the power. Updating starts automatically. Carry out the update in an environment that has little network load.
55	When firmware such as DSP and PLD was rewritten, request was made for firmware data after the log-in to DPMS, but it timed out.		Turn off and on the power. Updating starts automatically. Carry out the update in an environment that has little network load.
56	Downloading firmware failed after the log-in to DPMS when firmware such as DSP and PLD was rewritten.		Turn off and on the power. Updating starts automatically. Carry out the update in an environment that has little network load.
57	Firmware download error received (line congestion) after the log-in to DPMS when firmware such as DSP and PLD was rewritten.		Turn off and on the power. Updating starts automatically. Carry out the update in an environment that has little network load.
58	Firmware download error received (connection failure) after the log-in to DPMS when firmware such as DSP and PLD was rewritten.		Turn off and on the power. Updating starts automatically. Carry out the update in an environment that has little network load.
5A	NACK was received when "C" command sent to DSP, PLD etc.		Turn off and on the power. Updating starts automatically.
5B	NACK was received when "L" command sent to DSP, PLD etc.		Turn off and on the power. Updating starts automatically.

Error Code	Details of Error code	Display	Coping strategies
5C	DSP, PLD etc. failed to receive firmware for rewriting sent from DM860 (when timed out).		Turn off and on the power. Updating starts automatically.
5D	DSP, PLD etc. failed to receive firmware for rewriting sent from DM860 (when an error occurred).		Turn off and on the power. Updating starts automatically.
5E	Data in firmware such as DSP and PLD for rewriting sent from DM860 was invalid (when a Check Sum error occurred).		Turn off and on the power. Updating starts automatically.
5F	Invalid data in firmware such as DSP and PLD for rewriting sent from DM860 was invalid (invalid data was received).		Turn off and on the power. Updating starts automatically.
60	NACK was received when "P" command sent to DSP, PLD etc.		Turn off and on the power. Updating starts automatically.
61	NACK was received when "I" command sent to DSP, PLD etc.		Turn off and on the power. Updating starts automatically.
80	Acquisition of serial flash data failed before serial flash was deleted.		Turn off and on the power. Updating starts automatically.
81	Deleting data failed before serial flash was rewritten.		Turn off and on the power. Updating starts automatically.
82	Receiving firmware for rewriting serial flash sent by DM860 failed (when timed out).		Turn off and on the power. Updating starts automatically.
83	Receiving firmware for rewriting serial flash sent by DM860 failed (when an error).		Turn off and on the power. Updating starts automatically.
84	Receiving firmware for rewriting serial flash sent by DM860 failed (when a Check Sum error).		Turn off and on the power. Updating starts automatically.
85	Receiving firmware for rewriting serial flash sent by DM860 failed (when invalid data was received).		Turn off and on the power. Updating starts automatically.
86	The data verification was invalid after serial flash was rewritten.		Turn off and on the power. Updating starts automatically.
A0	Acquisition of (Application Mode) IP address failed before DM860 was rewritten (AutoIP).		Check the network connection. Carry out the update in an environment that has little network load.
A1	Acquisition of (Application Mode) IP address failed before DM860 was rewritten (when timed out).		Check the network connection. Carry out the update in an environment that has little network load.
A2	Invalid login via DPMS access was notified when DM860 related firmware was rewritten (Application Mode).		Check the network connection. Carry out the update in an environment that has little network load.

Error Code	Details of Error code	Display	Coping strategies
A3	Line congestion via DPMS access was notified when DM860 related firmware was rewritten (Application Mode).		Check the network connection. Carry out the update in an environment that has little network load.
A4	Connection failure via DPMS access was notified when DM860 related firmware was rewritten (Application Mode).		Check the network connection. Carry out the update in an environment that has little network load.
A6	Firmware data error message was received after DPMS login when DM860 related firmware was rewritten (Application Mode).		Turn off and on the power. Updating starts automatically. Carry out the update in an environment that has little network load.
A7	When DM860 related firmware was rewritten (Application Mode), request was made for firmware data after DPMS login but it timed out.		Turn off and on the power. Updating starts automatically. Carry out the update in an environment that has little network load.
AE	Firmware download error message received (when download fails) when DM860 related firmware was rewritten (Boot Loader Mode).		Turn off and on the power. Updating starts automatically. Carry out the update in an environment that has little network load.
AF	Firmware download error message received (line congestion) when DM860 related firmware was rewritten (Boot Loader Mode).		Turn off and on the power. Updating starts automatically. Carry out the update in an environment that has little network load.
B0	Firmware download error message received (connection failure) when DM860 related firmware was rewritten (Boot Loader Mode).		Turn off and on the power. Updating starts automatically. Carry out the update in an environment that has little network load.
B1	Firmware download error message. (Timeout failure)		Turn off and on the power. Updating starts automatically. Carry out the update in an environment that has little network load.
B2	Error message received when DM860 related firmware was rewritten.		Turn off and on the power. Updating starts automatically. Carry out the update in an environment that has little network load.
B3	Firmware writing error message. (Timeout failure)		Turn off and on the power. Updating starts automatically. Carry out the update in an environment that has little network load.
B4	Mode change failure of DM860. (Boot Loader Mode)		Reset and update again.
B5	Mode change failure of DM860. (Application Mode)		Reset and update again.

Device display during firmware update ⚠3

Display of target device during firmware update.

Target device	Display	Error code when an error occurs
Main		08 - 0C 10 - 15 22 - 24 36 - 3E
Audio PLD		50 - 52 54 - 58 5A - 61
DSP		50 - 52 54 - 58 5A - 61
OSD Serial Flash		50 - 52 54 - 58 5A - 61 80 - 86
DM860 Boot Loader		A0 - A4 A6 - A7 AE - B5
DM860 Image		A0 - A4 A6 - A7 AE - B5

Confirming the firmware's number after upgraded

After updating the firmware, check the version. Refer to "**1. µcom/DSP Version display mode**" (20 page).

ADJUSTMENT

Audio Section

Adjusting Idling Current

Required measurement equipment: DC Voltmeter

1. Preparation

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

(2) Presetting

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

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

2. Adjustment

(1) Remove the top cover and set VR401, VR402, VR403, VR404, VR405, VR406, VR407 on at fully 7CH AMP UNIT at fully counterclockwise (↺) position.

(2) Connect DC Voltmeter to test points (FRONT-Lch: TP401, FRONT-Rch: TP402, CENTER ch: TP403, SURROUND-Lch: TP404, SURROUND-Rch: TP405, SURROUND-BACK Lch: TP406, SURROUND-BACK Rch: TP407.

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

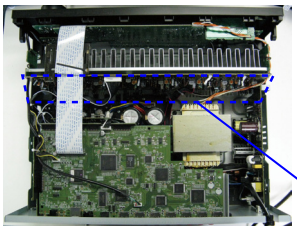
(4) Presetting.

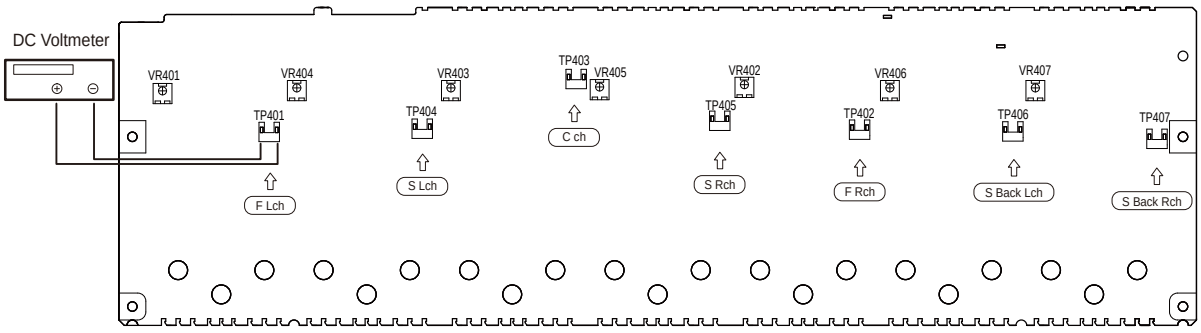
MASTER VOLUME : "---" counterclockwise (↺ min.)
SPEAKER (Speaker terminal) : No load
(Do not connect speaker, dummy resistor, etc.)
MODE : MCH STEREO
FUNCTION : DVD

(5) Within 2 minutes after the power on, turn VR401 clockwise (↻) to adjust the TEST POINT voltage to 2.0mV ± 0.5mV DC.

(6) After 10 minutes from the preset above, turn VR401 to set the voltage to 3.0mV ± 0.5mV DC.

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





Surround modes and surround parameters

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

Symbols in the table

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

Surround mode	Channel output						Surr.Parameter							
	Front L/R	Center	Surround L/R	Surround Back L/R	Front Height L/R	Subwoofer	Mode	Cinema EQ.	DRC *9	D. Comp *10	LFE *11	Delay Time	Effect Level	Room Size
DIRECT/PURE DIRECT (2channel)*1	○					◎*4			○	○				
DIRECT/PURE DIRECT (Multi-channel)*1	○	◎	◎	◎*2	◎*2	◎			○	○	○			
STEREO	○					◎			○	○	○			
MULTI CH IN	○	◎	◎	◎	◎*3	◎		○*6			○			
DOLBY PRO LOGIC IIz	○	◎	◎		◎	◎	○*5	○	○	○				
DOLBY PRO LOGIC IIx	○	◎	◎	◎		◎	○	○*8	○	○				
DOLBY PRO LOGIC II	○	◎	◎			◎	○	○*7	○	○				
DTS NEO:6	○	◎	◎	◎		◎	○	○*8	○	○				
DOLBY DIGITAL	○	◎	◎	◎	◎*3	◎		○*6		○	○			
DOLBY DIGITAL Plus	○	◎	◎	◎	◎*3	◎		○*6		○	○			
DOLBY TrueHD	○	◎	◎	◎	◎*3	◎		○*6	○		○			
DTS SURROUND	○	◎	◎	◎	◎*3	◎		○*6			○			
DTS 96/24	○	◎	◎	◎	◎*3	◎		○*6			○			
DTS-HD	○	◎	◎	◎	◎*3	◎		○*6			○			
DTS Express	○	◎	◎	◎	◎*3	◎		○*6			○			
MULTI CH STEREO	○	◎	◎	◎	◎	◎			○	○	○			
ROCK ARENA	○	◎	◎	◎	◎	◎			○	○	○		○	○
JAZZ CLUB	○	◎	◎	◎	◎	◎			○	○	○		○	○
MONO MOVIE	○	◎	◎	◎	◎	◎			○	○	○		○	○
VIDEO GAME	○	◎	◎	◎	◎	◎			○	○	○		○	○
MATRIX	○	◎	◎	◎	◎	◎			○	○	○	○		
VIRTUAL	○					◎			○	○	○			

*1 During playback in PURE DIRECT mode, the surround parameters are the same as in DIRECT mode.
*2 A signal for each channel contained in an input signal is output as audio.
*3 If "Surr.Parameter" – "PLIIz Height" is set to "ON", sound is output from the front height speakers.
*4 Only when "Subwoofer Mode" is set to "LFE+Main", sound is output from the subwoofer.
*5 If this surround mode is selected, only the "Height" mode setting is available for "Surr.Parameter" – "Mode".
*6 This item cannot be set when "Surr.Parameter" – "S.Back" is set to "PLIIx Music".
*7 This item can be selected when "Surr.Parameter" – "Mode" is set to "Cinema" or "Pro Logic".
*8 This item can be selected when "Surr.Parameter" – "Mode" is set to "Cinema".
*9 This item can be selected when a Dolby TrueHD signal is played.
*10 This item can be selected when a Dolby Digital or DTS signal is played.
*11 This item can be selected when a Dolby Digital or DTS signal or DVD-Audio is played.

Surround mode	Surr.Parameter									Tone *15	Audyssey Settings*17			RESTORER *20
	Height Gain	PLIIz Height *13	AFDM *14	S.Back	Subwoofer	PRO LOGIC II/IIx Music mode only			NEO:6 Music mode only		MultEQ® XT	Dynamic EQ® *18	Dynamic Volume® *19	
						Panorama	Dimension	C.Width	C.Image					
DIRECT/PURE DIRECT (2channel)*1					○*4									
DIRECT/PURE DIRECT (Multi-channel)*1														
STEREO										○	○	○	○	○
MULTI CH IN	○*12	○								○	○	○	○	
DOLBY PRO LOGIC IIz	○	○								○	○	○	○	○
DOLBY PRO LOGIC IIx				○		○	○	○		○	○	○	○	○
DOLBY PRO LOGIC II				○		○	○	○		○	○	○	○	○
DTS NEO:6				○					○	○	○	○	○	○
DOLBY DIGITAL	○*12	○	○	○						○	○	○	○	
DOLBY DIGITAL Plus	○*12	○	○	○						○	○	○	○	
DOLBY TrueHD	○*12	○	○	○						○	○	○	○	
DTS SURROUND	○*12	○	○	○						○	○	○	○	
DTS 96/24	○*12	○	○	○						○	○	○	○	
DTS-HD	○*12	○	○	○						○	○	○	○	
DTS Express	○*12	○		○						○	○	○	○	
MULTI CH STEREO										○	○	○	○	○
ROCK ARENA										○*16	○	○	○	○
JAZZ CLUB										○	○	○	○	○
MONO MOVIE										○	○	○	○	○
VIDEO GAME										○	○	○	○	○
MATRIX										○	○	○	○	○
VIRTUAL										○	○	○	○	○

*1 During playback in PURE DIRECT mode, the surround parameters are the same as in DIRECT mode.
*4 Only when "Subwoofer Mode" is set to "LFE+Main", sound is output from the subwoofer.
*12 This item can be selected when "Surr.Parameter" – "PLIIz Height" is set to "ON".
*13 If "Speaker Config." – "F.Height" is set to "None", this item cannot be selected.
*14 This item can be selected when a Dolby Digital or DTS signal is played.
*15 This item cannot be set when "Dynamic EQ®" is set to "ON".
*16 In this surround mode, bass is +6 dB, and treble is +4 dB. (Default)
*17 For HD Audio whose sampling frequency of an input signal is more than 96 kHz, this sound parameter cannot be set.
*18 This item cannot be set when "MultEQ® XT" is set to "OFF" or "Manual".
*19 This item cannot be set when "Dynamic EQ®" is set to "OFF".
*20 This item can be set when the input signal is analog, PCM 48 kHz or 44.1 kHz.

❑ Types of input signals, and corresponding surround modes

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

Symbols in the table

● This indicates the default surround mode.
◎ This indicates the 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			
			PCM (multi ch)	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/3ch)	DOLBY DIGITAL (2ch)
DTS SURROUND																	
DTS-HD MSTR					●												
DTS-HD HI RES						●											
DTS ES DSCRT6.1	*1*3							●									
DTS ES MTRX6.1	*1*3								●◎								
DTS SURROUND								○	○	●							
DTS 96/24											●						
DTS (–HD) + PLIIx CINEMA	*2*3				○	○	○		○	○	○						
DTS (–HD) + PLIIx MUSIC	*1*3				○	○	○		○	○	○						
DTS (–HD) + PLIIz	*4				○	○	○	○	○	○	○						
DTS EXPRESS							●										
DTS (–HD) + NEO:6	*1*3				○	○	○		○	○	○						
DTS NEO:6 CINEMA		○		○													○
DTS NEO:6 MUSIC		○		○													○
DOLBY SURROUND																	
DOLBY TrueHD												●					
DOLBY DIGITAL+													●				
DOLBY DIGITAL EX	*1*3													○	○	○	
DOLBY (D+) (HD) +EX	*1*3											○	○				
DOLBY DIGITAL														○	●	●	
DOLBY (D) (D+) (HD) +PLIIx CINEMA	*2*3											○	○	●◎	○	○	
DOLBY (D) (D+) (HD) +PLIIx MUSIC	*1*3											○	○	○	○	○	
DOLBY (D) (D+) (HD) +PLIIz	*4											○	○	○	○	○	
DOLBY PRO LOGIC IIx CINEMA	*1*3	○		○													○
DOLBY PRO LOGIC IIx MUSIC	*1*3	○		○													○
DOLBY PRO LOGIC IIx GAME	*1*3	○		○													○
DOLBY PRO LOGIC IIz	*4	○		○													○
DOLBY PRO LOGIC II CINEMA		○		○													○
DOLBY PRO LOGIC II MUSIC		○		○													○
DOLBY PRO LOGIC II GAME		○		○													○
DOLBY PRO LOGIC		○		○													○

*1 If "Speaker Config." – "S.Back" is set to "None", this surround mode cannot be selected.
*2 If "Speaker Config." – "S.Back" is set to "1spkr" or "None", this surround mode cannot be selected.
*3 This surround mode can be selected when "Amp Assign" is set to "NORMAL".
*4 If "Speaker Config." – "F.Height" is set to "None", this surround mode cannot be selected.

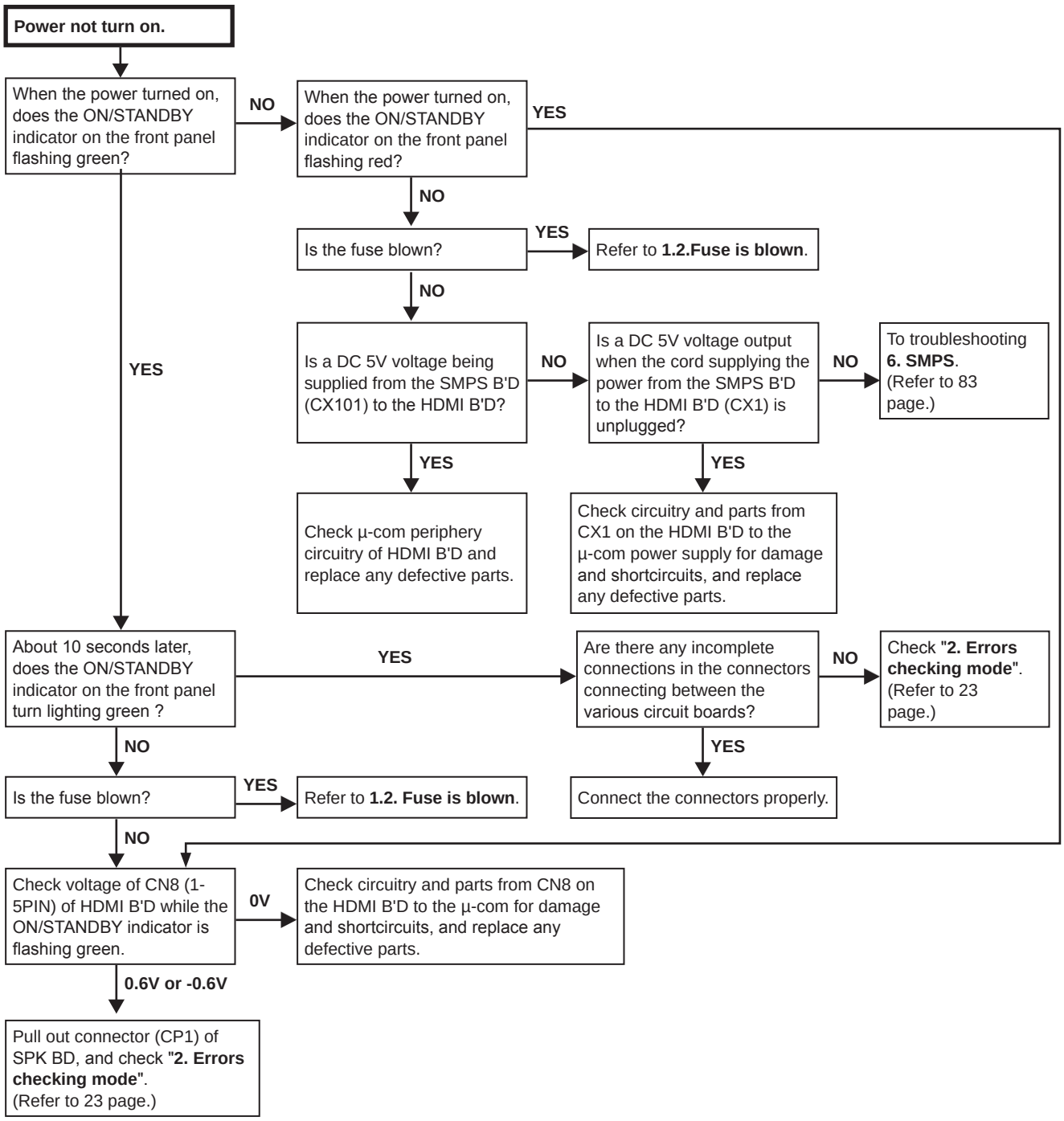
Surround mode	NOTE	Input signal types and formats																
		ANALOG	PCM		DTS-HD		DTS					DOLBY		DOLBY DIGITAL				
			PCM (multi ch)	PCM (2ch)	DTS-HD Master Audio	DTS-HD High Resolution Audio	DTS EXPRESS	DTS ES DSCRT (With Flag)	DTS ES MTRX (With Flag)	DTS (5.1ch)	DTS 96/24	DOLBY TrueHD	DOLBY DIGITAL Plus	DOLBY DIGITAL EX (With Flag)	DOLBY DIGITAL EX (With no Flag)	DOLBY DIGITAL (5.1/5/4ch/3ch)	DOLBY DIGITAL (2ch)
MULTI CH IN																		
MULTI CH IN			●															
MULTI CH IN + PLIIx CINEMA	∗2∗3		○															
MULTI CH IN + PLIIx MUSIC	∗1∗3		○															
MULTI CH IN + PLIIz	∗4		○															
MULTI CH IN + Dolby EX	∗1∗3		○															
MULTI CH IN 7.1	∗3		●◎ (7.1)															
DIRECT																		
DIRECT		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
PURE DIRECT																		
PURE DIRECT		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
DSP SIMULATION																		
MULTI CH STEREO		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
ROCK ARENA		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
JAZZ CLUB		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
MONO MOVIE		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
VIDEO GAME		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
MATRIX		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
VIRTUAL		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
STEREO																		
STEREO		●	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	

∗1 If “Speaker Config.” – “S.Back” is set to “None”, this surround mode cannot be selected.
∗2 If “Speaker Config.” – “S.Back” is set to “1spkr” or “None”, this surround mode cannot be selected.
∗3 This surround mode can be selected when “Amp Assign” is set to “NORMAL”.
∗4 If “Speaker Config.” – “F.Height” is set to “None”, this surround mode cannot be selected.

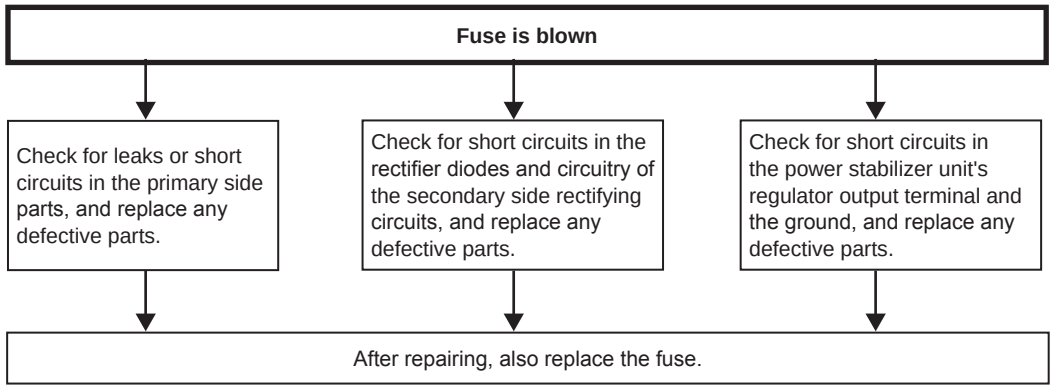
TROUBLE SHOOTING

1. POWER

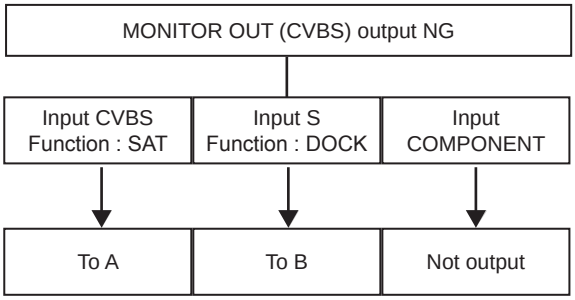
1.1. Power not turn on

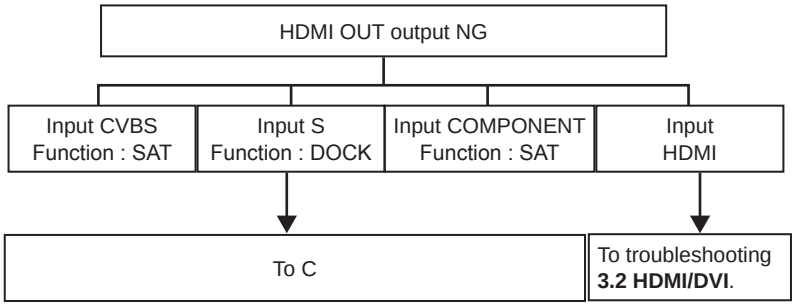


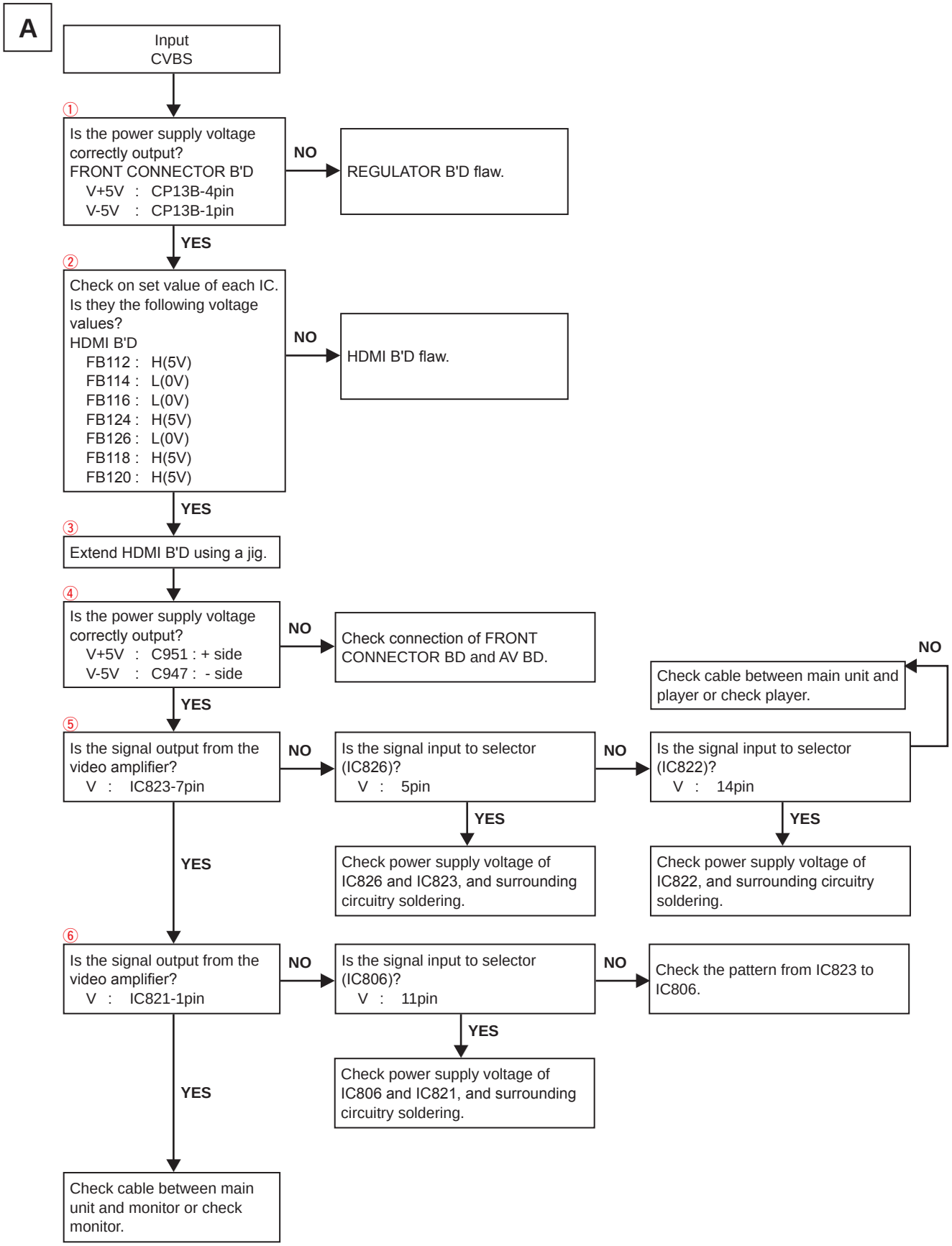
1.2. Fuse is blown



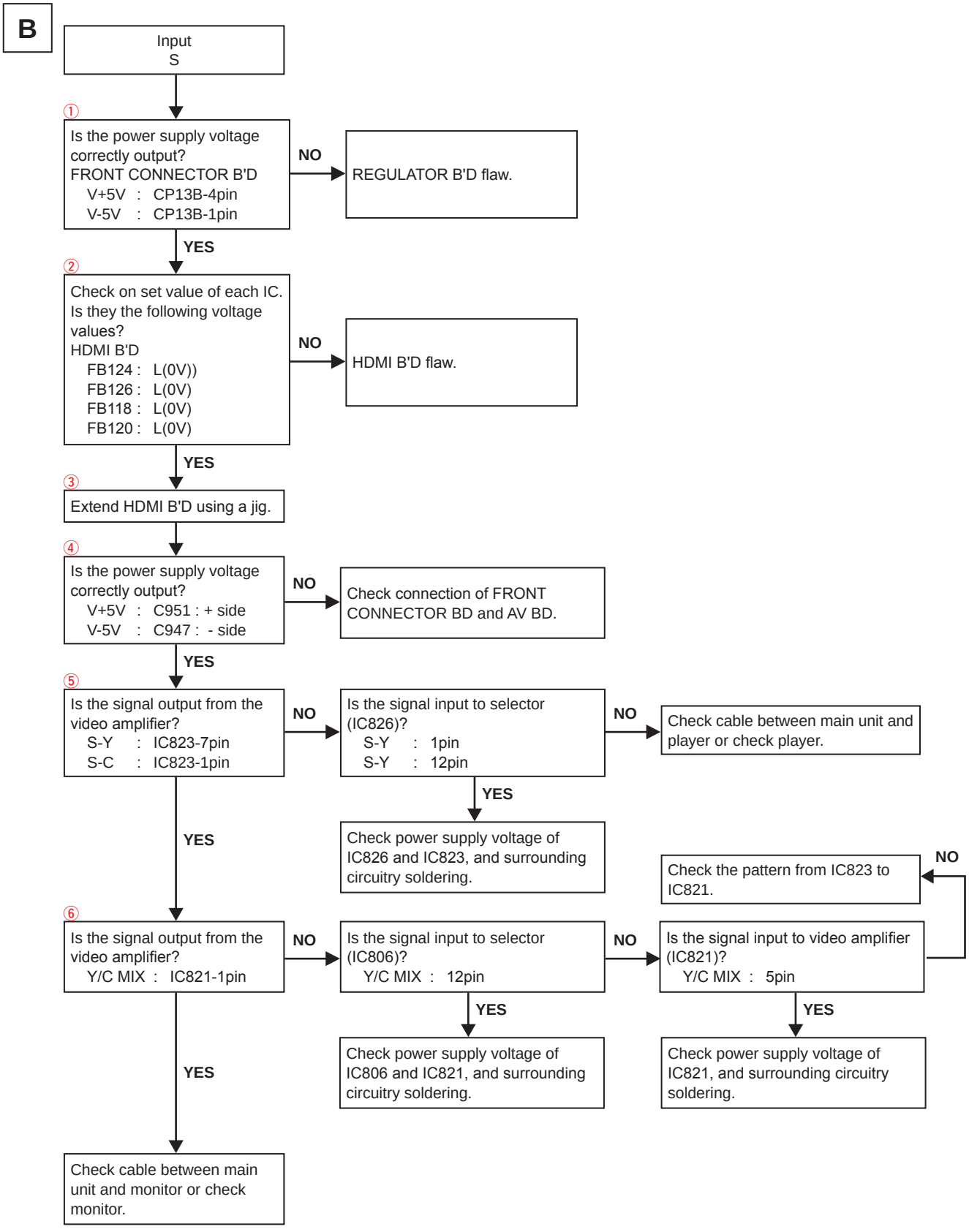
2. Analog video



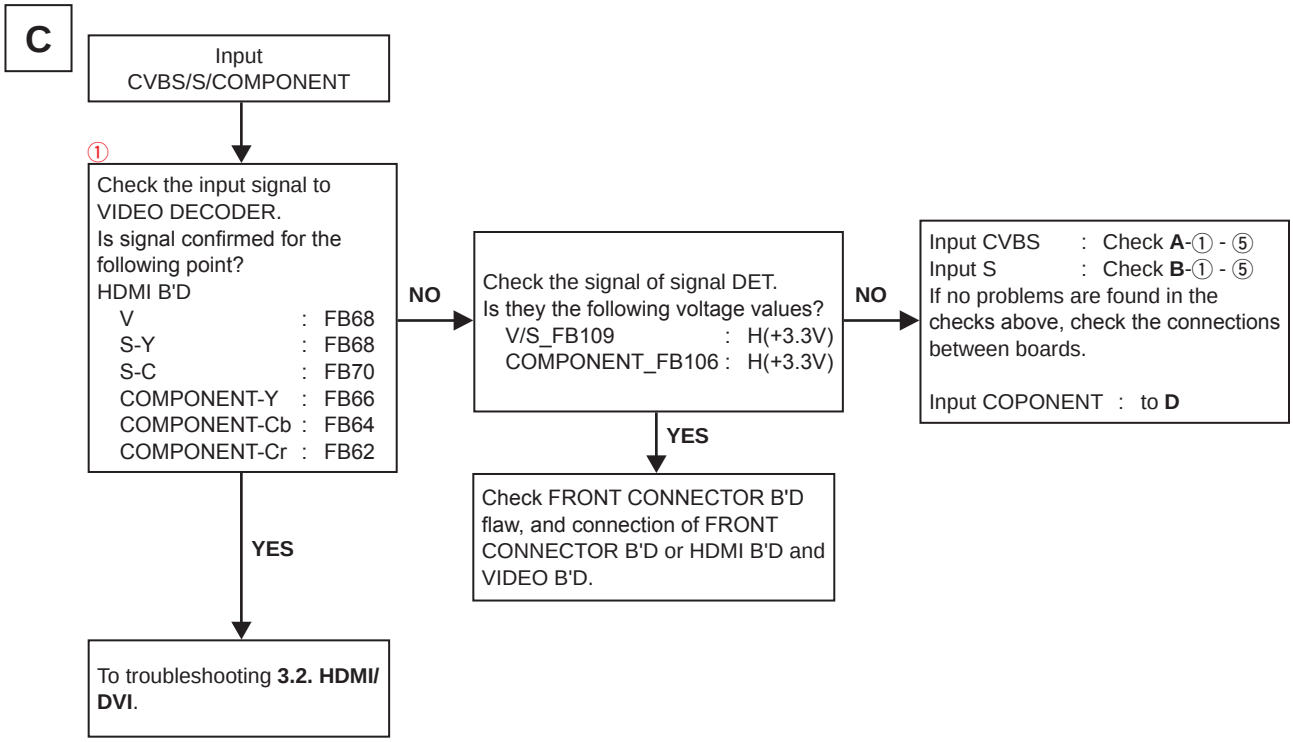




※ Unless specified, AV B'D part.



※ Unless specified, AV B'D part.


C
Input
CVBS/S/COMPONENT
①
Check the input signal to
VIDEO DECODER.
Is signal confirmed for the
following point?
HDMI B'D
V : FB68
S-Y : FB68
S-C : FB70
COMPONENT-Y : FB66
COMPONENT-Cb : FB64
COMPONENT-Cr : FB62
NO
Check the signal of signal DET.
Is they the following voltage values?
V/S_FB109 : H(+3.3V)
COMPONENT_FB106 : H(+3.3V)
NO
Input CVBS : Check A-① - ⑤
Input S : Check B-① - ⑤
If no problems are found in the
checks above, check the connections
between boards.
Input COPONENT : to D
YES
Check FRONT CONNECTOR B'D
flaw, and connection of FRONT
CONNECTOR B'D or HDMI B'D and
VIDEO B'D.
YES
To troubleshooting 3.2. HDMI/
DVI.

D

Input
COMPONENT

①
Is the power supply voltage correctly output?
FRONT CONNECTOR B'D
V+5V : CP13B-4pin
V-5V : CP13B-1pin

NO → REGULATOR B'D flaw.

YES

②
Check on set value of each IC. Is they the following voltage values?
HDMI B'D
FB100 : H(5V)
FB103 : H(5V)
FB122 : H(5V)

NO → HDMI B'D flaw.

YES

③
Extend HDMI B'D using a jig.

④
Is the power supply voltage correctly output?
V+5V : C951 : + side
V-5V : C947 : - side

NO → Check connection of FRONT CONNECTOR BD and AV BD.

YES

⑤
Is the signal output from the video amplifier?
COMP-Y : IC825-24pin
COMP-CB : IC825-22pin
COMP-CR : IC825-20pin

NO → Is the signal input to video amplifier?
COMP-Y : IC825-5pin
COMP-CB : IC825-12pin
COMP-CR : IC825-13pin

NO → Check cable between main unit and player or check player.

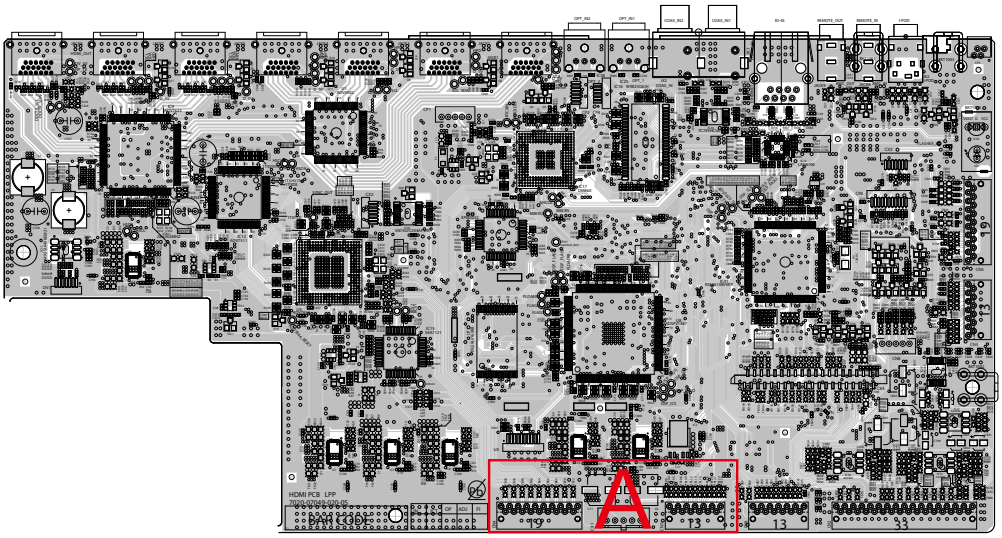
YES → Check power supply voltage of IC825, and surrounding circuitry soldering.

YES

Check FRONT CONNECTOR B'D flaw, and connection of FRONT CONNECTOR B'D or HDMI B'D and VIDEO B'D.

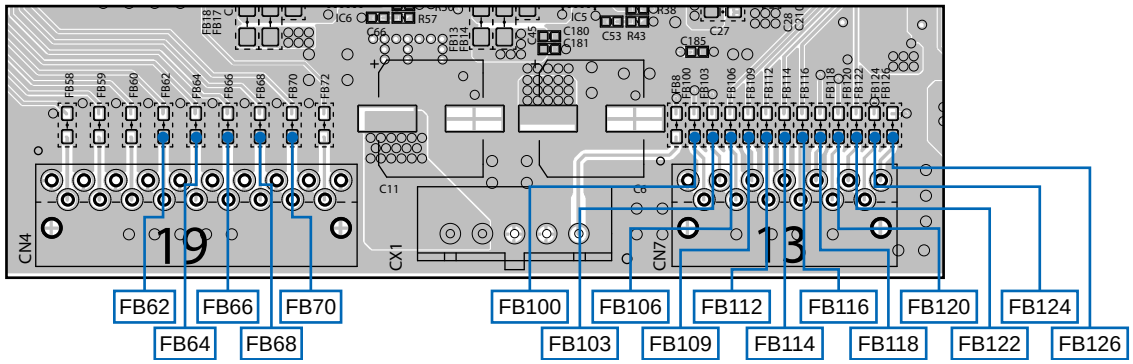
※ Unless specified, AV B'D part.

HDMI test point

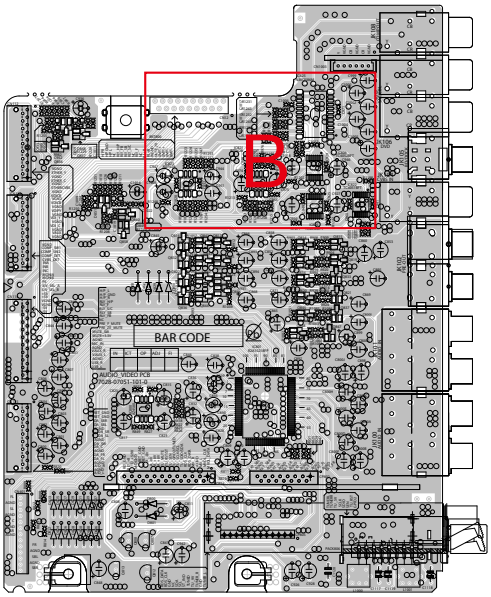


(COMPONENT SIDE)

Detail A

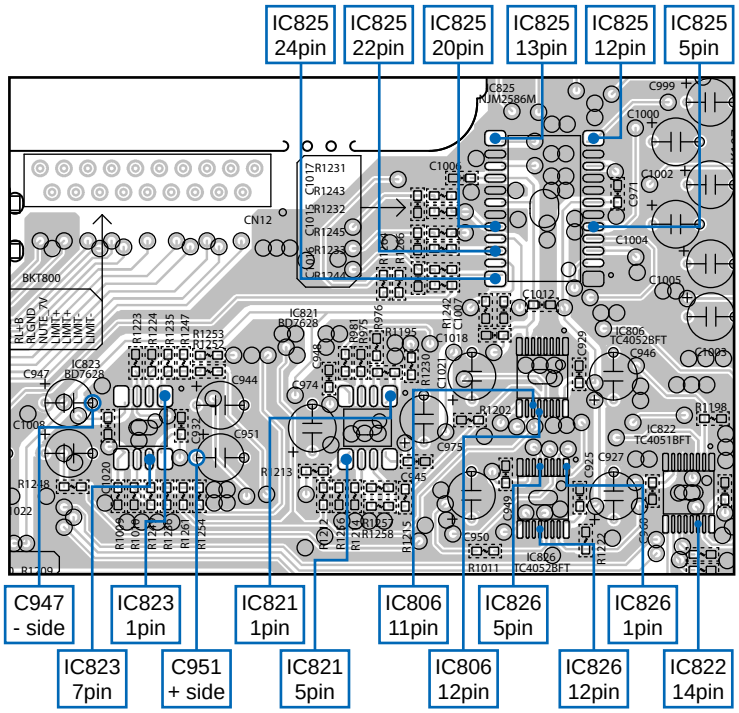


VIDEO test point



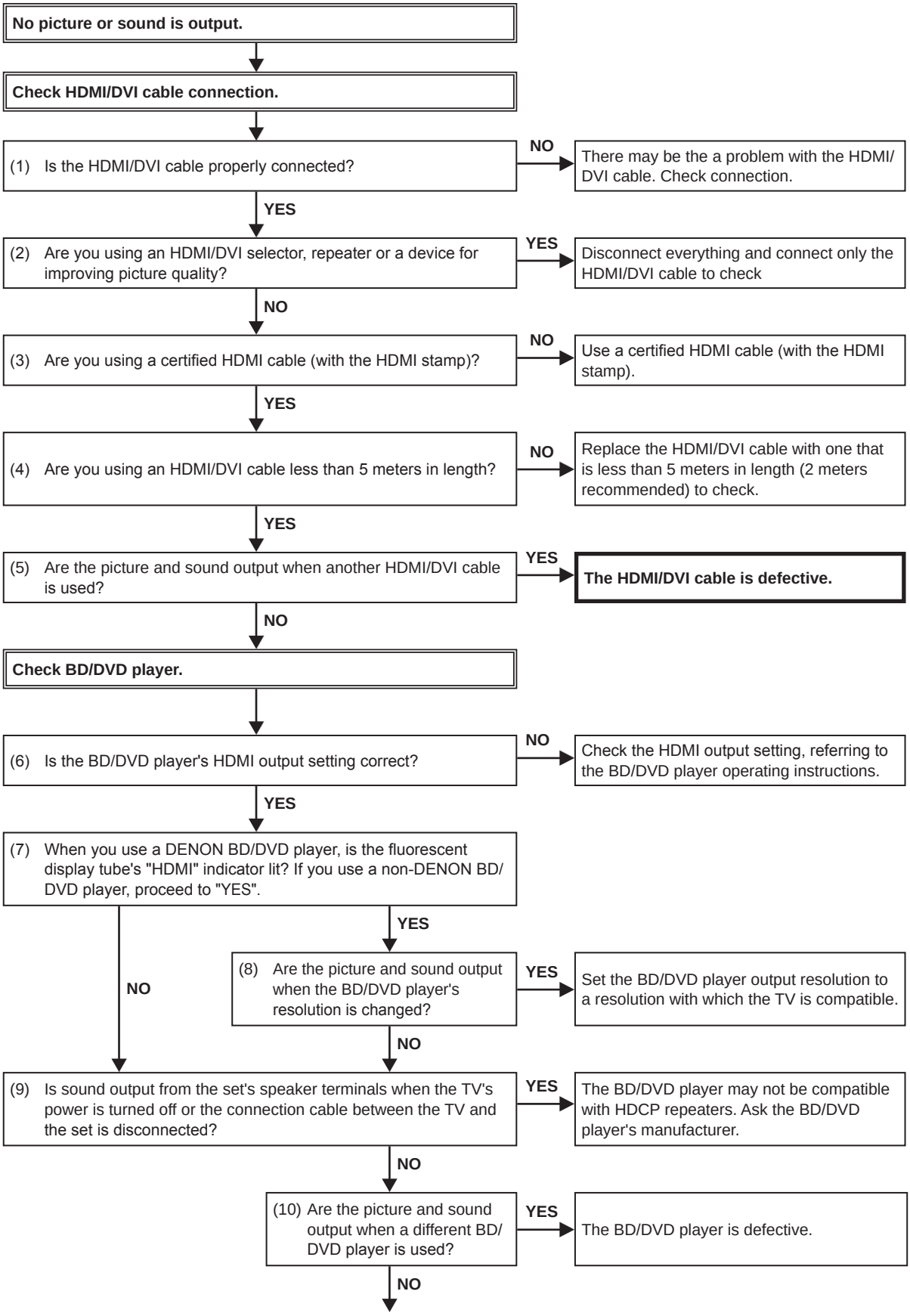
(COMPONENT SIDE)

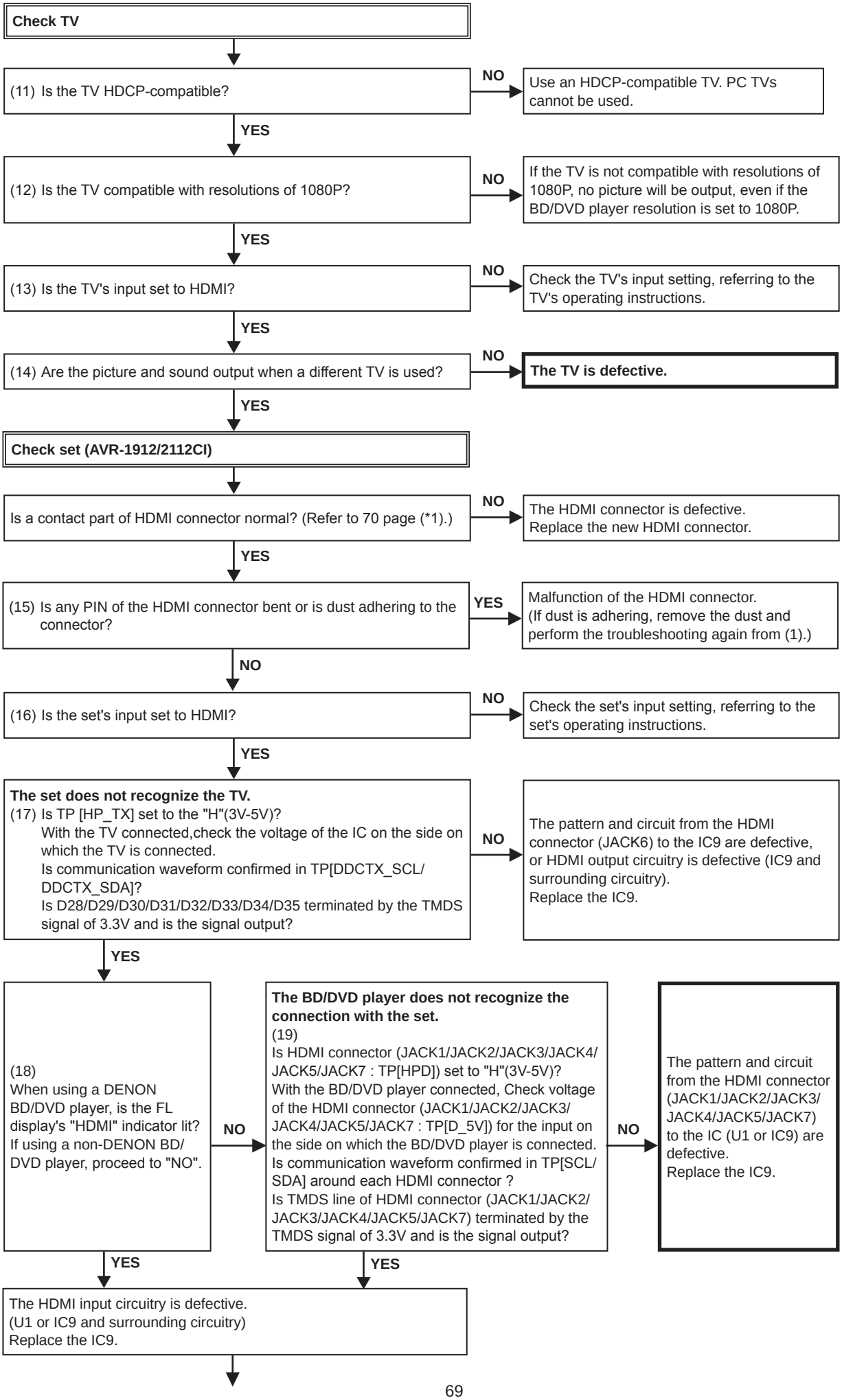
Detail B



3. HDMI/DVI

3.1. No picture or sound is output (HDMI to HDMI) ⚠3 ⚠5




Check TV
(11) Is the TV HDCP-compatible?
NO
Use an HDCP-compatible TV. PC TVs cannot be used.
YES
(12) Is the TV compatible with resolutions of 1080P?
NO
If the TV is not compatible with resolutions of 1080P, no picture will be output, even if the BD/DVD player resolution is set to 1080P.
YES
(13) Is the TV's input set to HDMI?
NO
Check the TV's input setting, referring to the TV's operating instructions.
YES
(14) Are the picture and sound output when a different TV is used?
NO
The TV is defective.
YES
Check set (AVR-1912/2112CI)
Is a contact part of HDMI connector normal? (Refer to 70 page (*1).)
NO
The HDMI connector is defective. Replace the new HDMI connector.
YES
(15) Is any PIN of the HDMI connector bent or is dust adhering to the connector?
YES
Malfunction of the HDMI connector. (If dust is adhering, remove the dust and perform the troubleshooting again from (1).)
NO
(16) 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.
(17) Is TP [HP_TX] set to the "H"(3V-5V)?
With the TV connected,check the voltage of the IC on the side on which the TV is connected.
Is communication waveform confirmed in TP[DDCTX_SCL/DDCTX_SDA]?
Is D28/D29/D30/D31/D32/D33/D34/D35 terminated by the TMDS signal of 3.3V and is the signal output?
NO
The pattern and circuit from the HDMI connector (JACK6) to the IC9 are defective, or HDMI output circuitry is defective (IC9 and surrounding circuitry).
Replace the IC9.
YES
(18)
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.
(19)
Is HDMI connector (JACK1/JACK2/JACK3/JACK4/JACK5/JACK7 : TP[HPD]) set to "H"(3V-5V)?
With the BD/DVD player connected, Check voltage of the HDMI connector (JACK1/JACK2/JACK3/JACK4/JACK5/JACK7 : TP[D_5V]) for the input on the side on which the BD/DVD player is connected.
Is communication waveform confirmed in TP[SCL/SDA] around each HDMI connector ?
Is TMDS line of HDMI connector (JACK1/JACK2/JACK3/JACK4/JACK5/JACK7) terminated by the TMDS signal of 3.3V and is the signal output?
NO
The pattern and circuit from the HDMI connector (JACK1/JACK2/JACK3/JACK4/JACK5/JACK7) to the IC (U1 or IC9) are defective.
Replace the IC9.
YES
YES
The HDMI input circuitry is defective.
(U1 or IC9 and surrounding circuitry)
Replace the IC9.

Check operation of each device.
(AMP source : BD / Video input of player : 480P / Connect the TV.)

↓

Check operation of U1(ADV3002).

↓

(20) Check power supply.
Are 5V or 3.3V supplied to U1 (each power supply pin)?
Refer to [Detail C] of the substrate for test point.

NO → The power supply circuitry is defective.

YES ↓

(21) Check RESET.
Is RESET waveform confirmed in U1 (36pin), when the power is turned on?(If the waveform is not the reference waveform, proceed to NO.)

NO → The RESET circuitry (Q7 and surrounding circuitry) or U1 is defective.

YES ↓

(22) Check Control signal (I2C).
Is waveform confirmed in TP[HSCL/HSDA], when the power is turned on? (If the waveform is not the reference waveform, proceed to NO.)

NO → The pattern is defective of the HSCL/HSDA line.

YES ↓

(23) Check output signal.
Is TMDS waveform confirmed in 25pin/26pin/28pin/29pin/31pin/32pin/34pin/35pin.
Is communication waveform of DDC_SCL/DDC_SDA confirmed in 67pin/68pin? (If the waveform is not the reference waveform, proceed to NO.)

NO → The U1 is defective.

YES ↓

Check operation of IC9(ADV7623)

↓

(24) Check power supply.
Are 1.8V or 3.3V supplied to IC9(each power supply pin)?
Refer to [Detail D] of the substrate for test point.

NO → The power supply circuitry is defective.

YES ↓

(25) Check xtal oscillator.
Is oscillation of XTAL1(28.6363MHz) transmitted?

NO → The XTAL1 or IC9 is defective.
Replace the new parts.

YES ↓

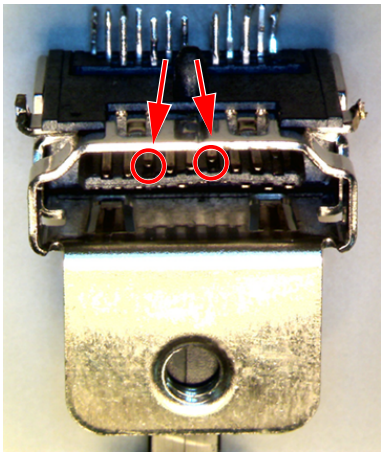
(26) Check RESET.
Is RESET waveform confirmed in IC9 (97pin), when the power is turned on? (If not reference waveform, proceed to "NO".)

NO → The RESET circuitry (Q18 and surrounding circuitry) or IC9 is defective.
Replace the new parts.

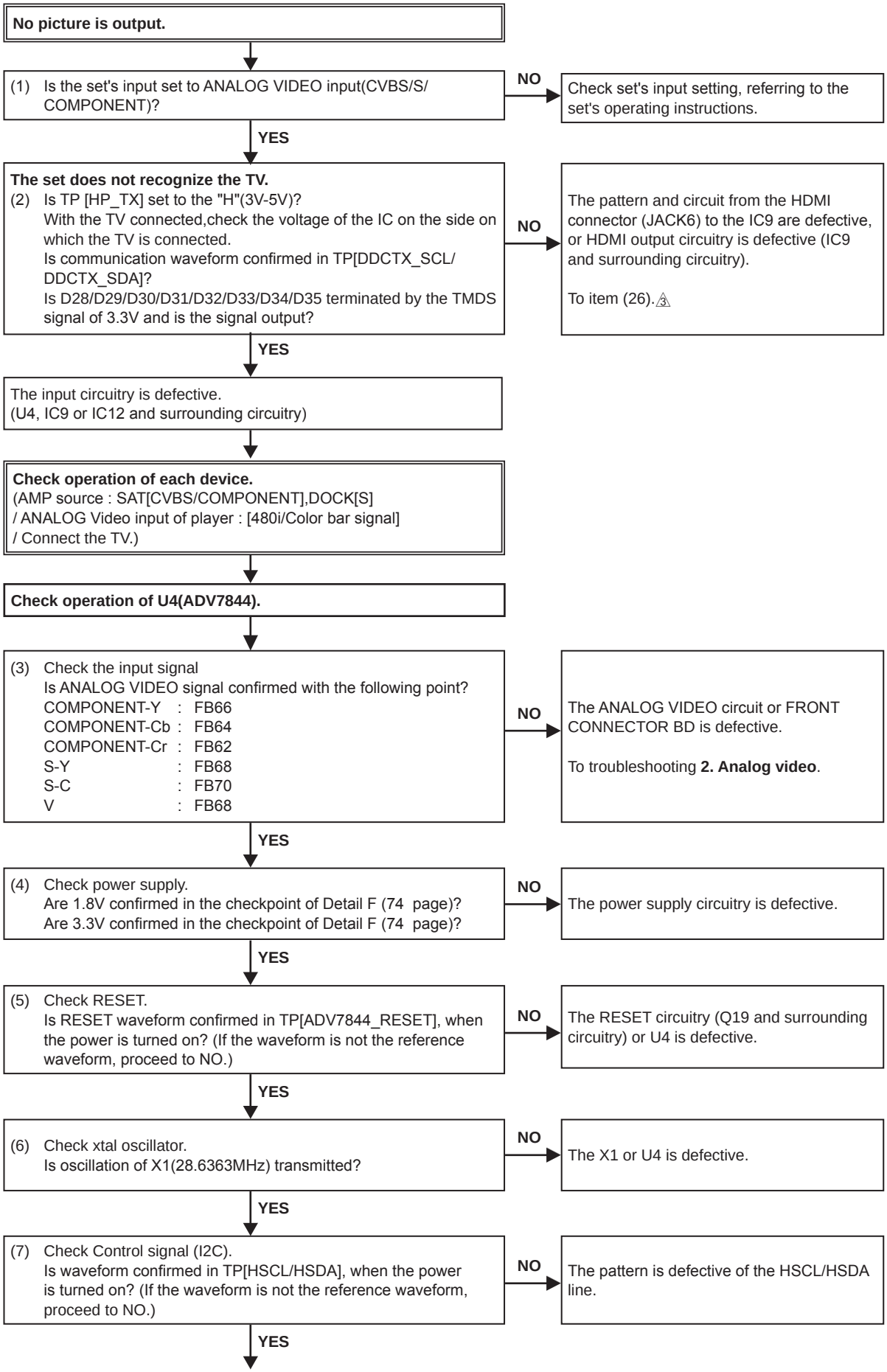
YES ↓

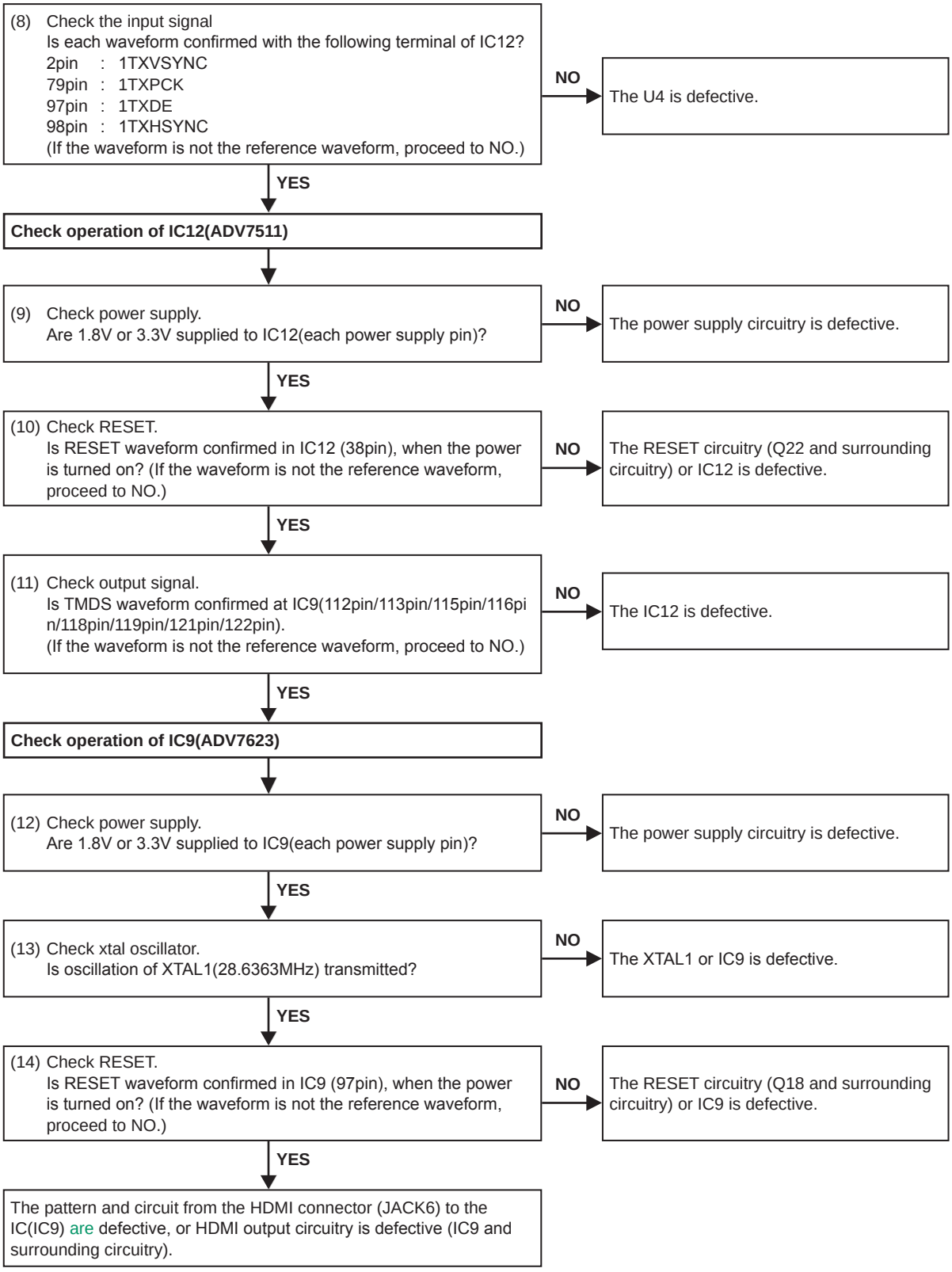
The pattern and circuit from the HDMI connector (JACK6) to the IC(IC9) is defective, or HDMI output circuitry is defective (IC9 and surrounding circuitry).
Replace the IC9.

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

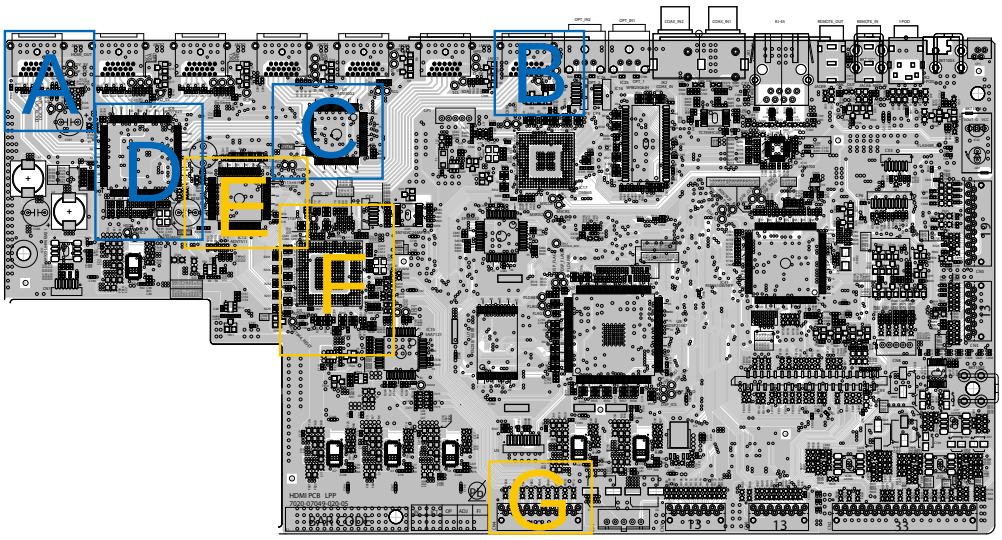


3.2. No picture is output (Analog to HDMI)



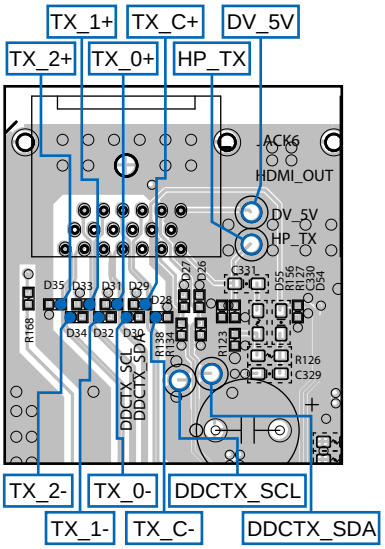

(8) Check the input signal
Is each waveform confirmed with the following terminal of IC12?
2pin : 1TXVSYNC
79pin : 1TXPCK
97pin : 1TXDE
98pin : 1TXHSYNC
(If the waveform is not the reference waveform, proceed to NO.)
NO
The U4 is defective.
YES
Check operation of IC12(ADV7511)
(9) Check power supply.
Are 1.8V or 3.3V supplied to IC12(each power supply pin)?
NO
The power supply circuitry is defective.
YES
(10) Check RESET.
Is RESET waveform confirmed in IC12 (38pin), when the power is turned on? (If the waveform is not the reference waveform, proceed to NO.)
NO
The RESET circuitry (Q22 and surrounding circuitry) or IC12 is defective.
YES
(11) Check output signal.
Is TMDS waveform confirmed at IC9(112pin/113pin/115pin/116pin/118pin/119pin/121pin/122pin).
(If the waveform is not the reference waveform, proceed to NO.)
NO
The IC12 is defective.
YES
Check operation of IC9(ADV7623)
(12) Check power supply.
Are 1.8V or 3.3V supplied to IC9(each power supply pin)?
NO
The power supply circuitry is defective.
YES
(13) Check xtal oscillator.
Is oscillation of XTAL1(28.6363MHz) transmitted?
NO
The XTAL1 or IC9 is defective.
YES
(14) Check RESET.
Is RESET waveform confirmed in IC9 (97pin), when the power is turned on? (If the waveform is not the reference waveform, proceed to NO.)
NO
The RESET circuitry (Q18 and surrounding circuitry) or IC9 is defective.
YES
The pattern and circuit from the HDMI connector (JACK6) to the IC(IC9) are defective, or HDMI output circuitry is defective (IC9 and surrounding circuitry).

3.2. HDMI test point and waveforms

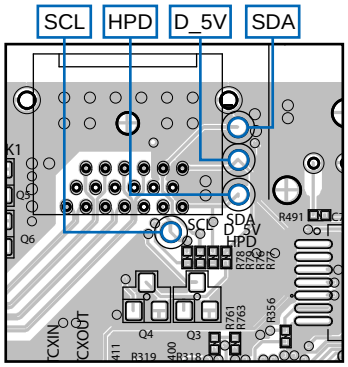


(COMPONENT SIDE)

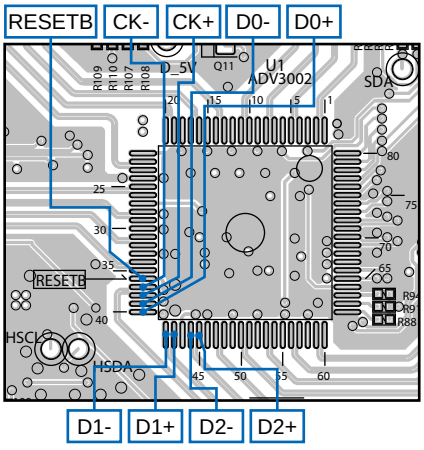
Detail A



Detail B

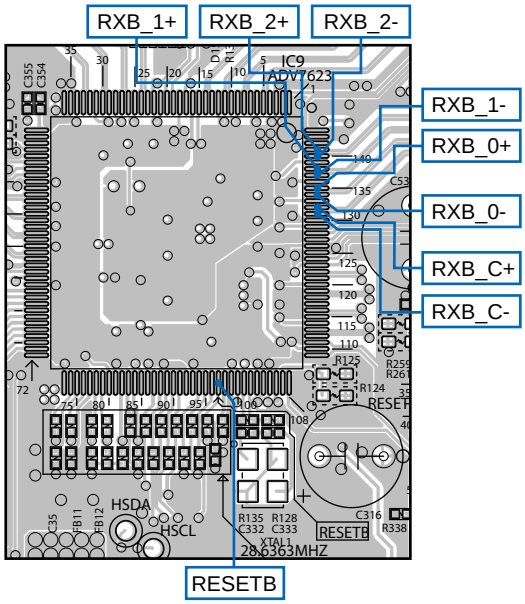


Detail C



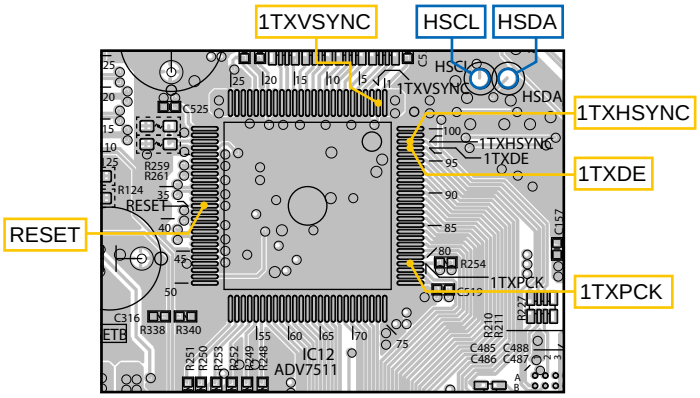
U1 [ADV3002] Power pin
5V : 64pin
3.3V : 9pin / 18pin / 33pin / 43pin /52pin

Detail D



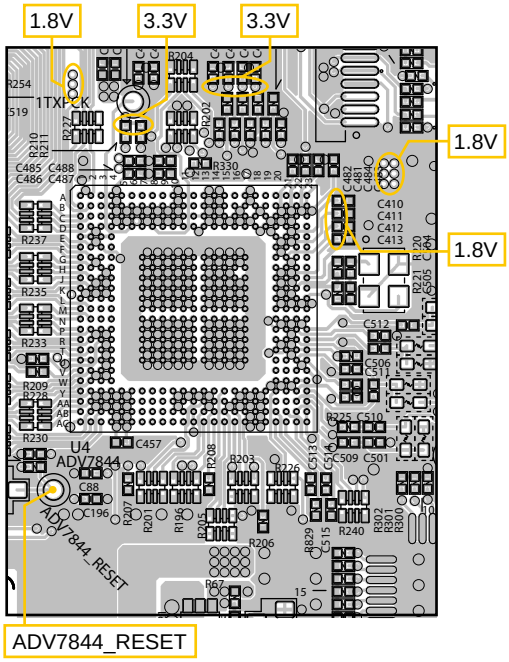
IC9 [ADV7623] Power pin
3.3V : 6pin / 12pin / 25pin / 31pin / 73pin / 86pin / 114pin / 120pin / 133pin / 139pin
1.8V : 2pin / 18pin / 21pin / 34pin / 36pin / 37pin / 45pin / 55pin / 61pin / 81pin / 93pin / 100pin / 103pin / 110pin / 126pin / 129pin

Detail E

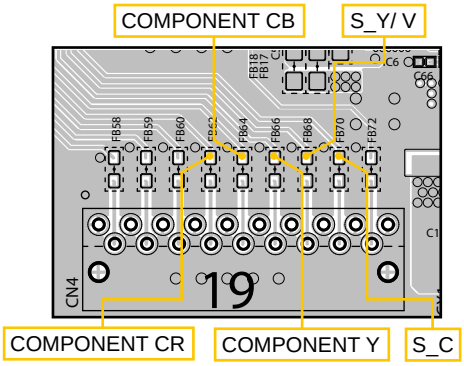


IC12 [ADV7511]Power pin
3.3V : 47pin
1.8V : 1pin / 19pin / 21pin / 24pin / 25pin / 26pin / 29pin / 34pin / 41pin / 49pin / 76pin / 77pin

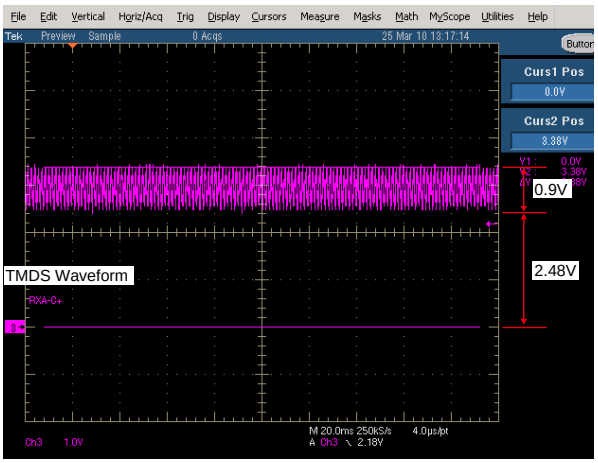
Detail F

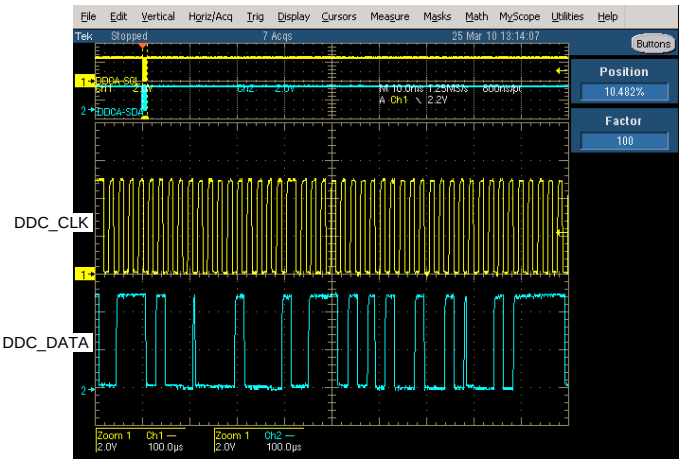


Detail G



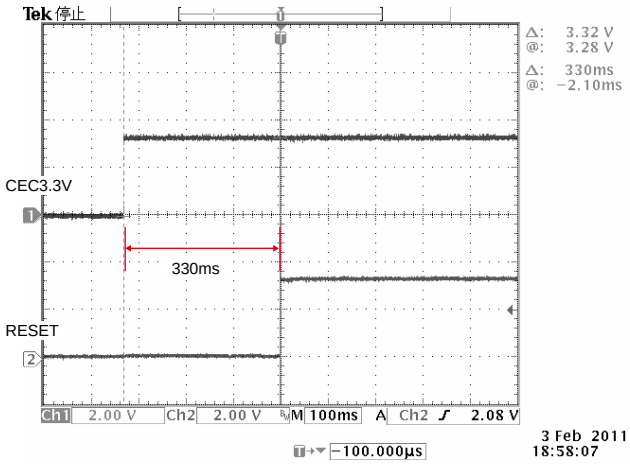
DDC_CLK/DDC_DATA/TMDS : Check items HDMI to HDMI (17)/(19)/(23), Check items Analog to HDMI (2)/(11)



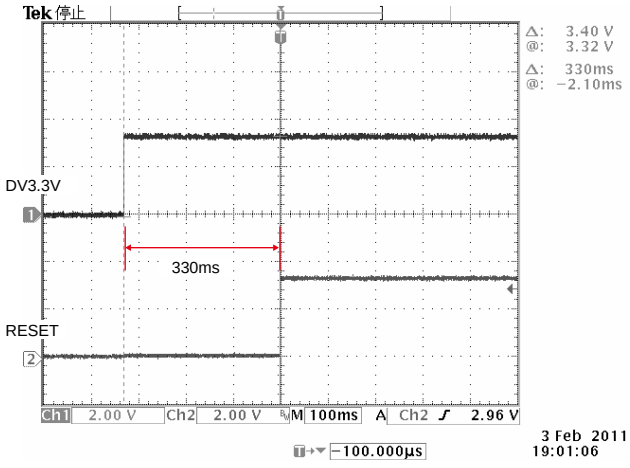


Timing waveform illustration from the start of CEC3.3V to when reset is released :

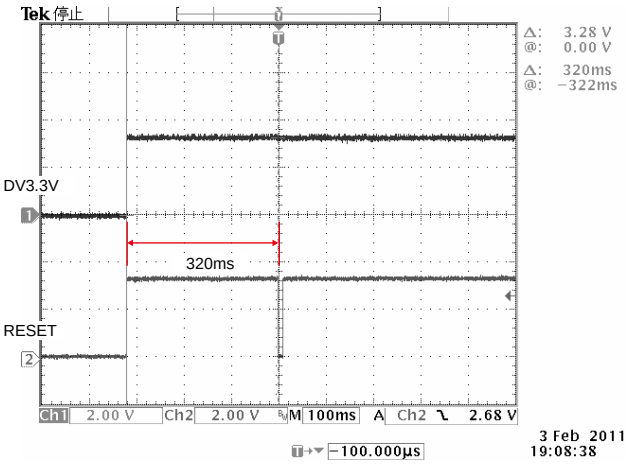
Check items HDMI to HDMI (21)/(26),
Check item Analog to HDMI (14)



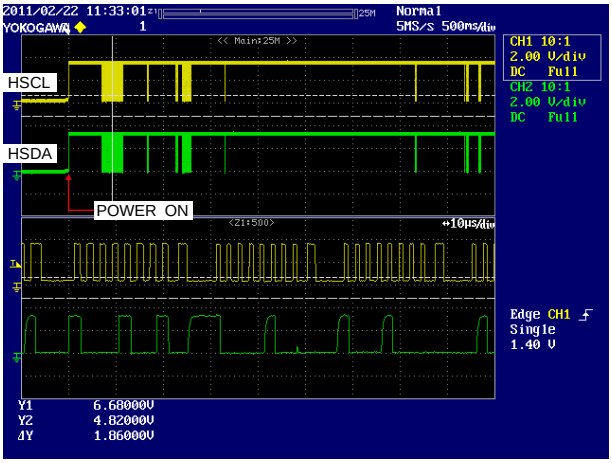
Check item Analog to HDMI (5)



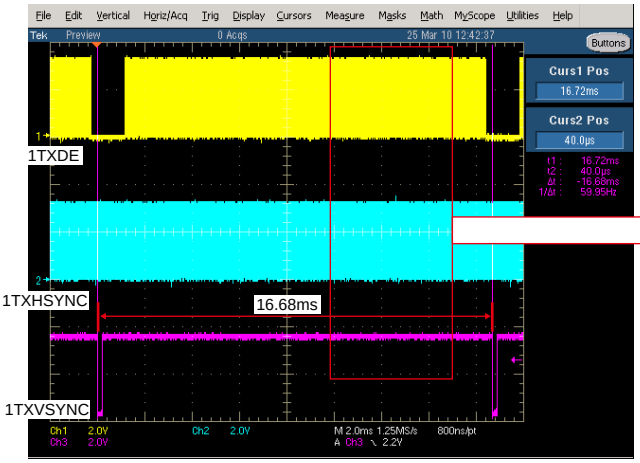
Check item Analog to HDMI (10)

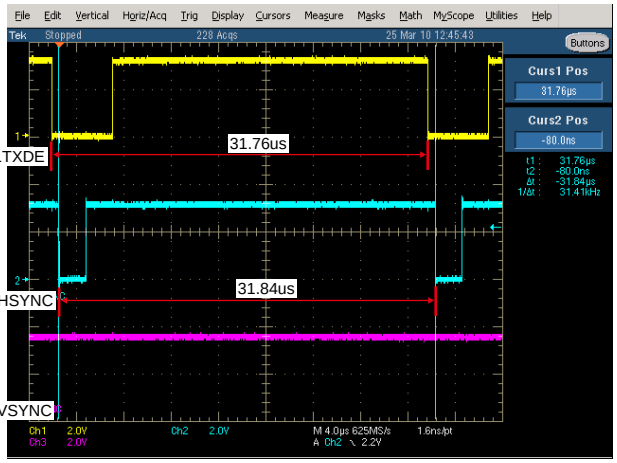


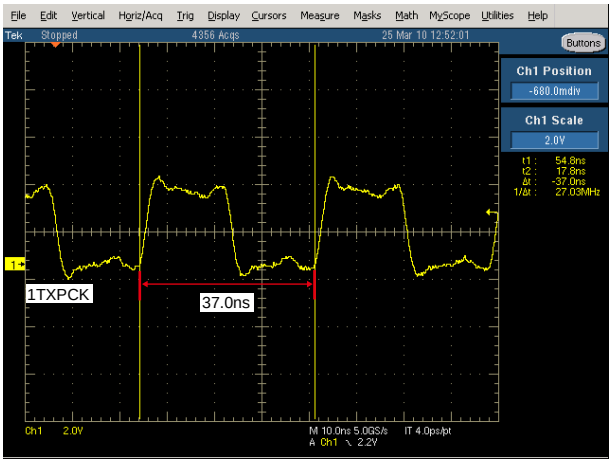
Controlled waveform(I2C), when power is turned on : Check item HDMI to HDMI (22), Check item Analog to HDMI (7)



1TXDE/1TXVSYNC/1TXHSYNC/1TXPCK : Check item Analog to HDMI (8)







4. AUDIO

4.1. AUDIO CHECK

Audio output NG. Refer to "**Audio Check PATH**" (85 page).

CHECK1	INPUT	SURROND MODE	SOURCE
Audio output OK?	ANALOG 2CH	DIRECT	ANALOG

NO → Check ANALOG audio BLOCK.

YES

CHECK2	INPUT	SURROND MODE	SOURCE
Audio output OK?	COAX or OPT	Don't care	Legacy (PCM or DolbyDigital or dts…)

NO → Check Digital audio BLOCK.

YES

CHECK3	INPUT	SURROND MODE	SOURCE
Audio output OK?	ANALOG 2CH	MULTICH STEREO	ANALOG

NO → Check ADC BLOCK

YES

CHECK4	INPUT	SURROND MODE	SOURCE
Audio output OK?	HDMI	Don't care	Legacy (PCM2ch or DolbyDigital or dts…)

NO → Check HDMI BLOCK.

YES

CHECK5	INPUT	SURROND MODE	SOURCE
Audio output OK?	HDMI	Don't care	HBR audio (DolbyTrueHD or dtsHD MA)

YES (Digital audio Block is OK) → Check other factors.

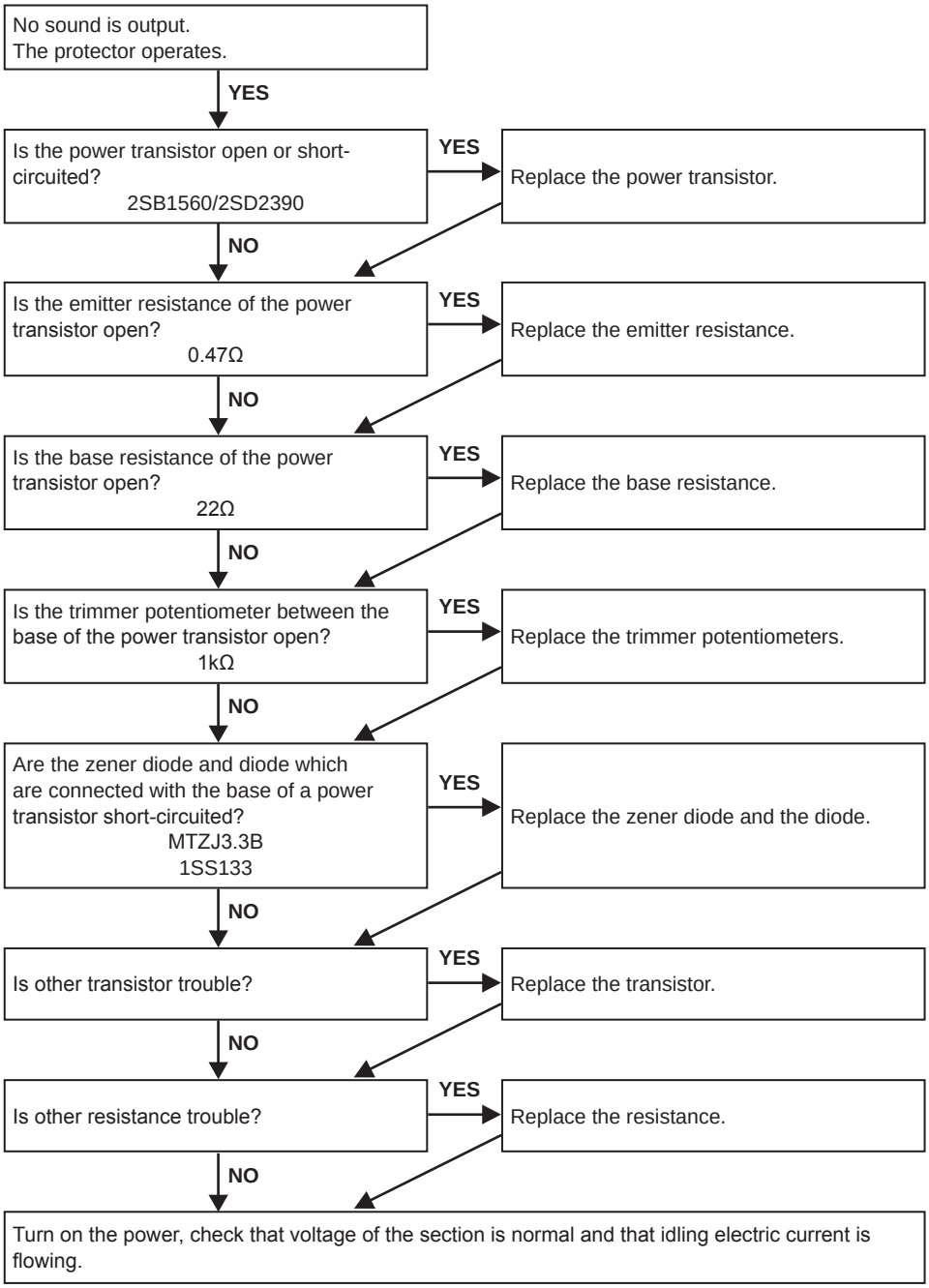
NO

CHECK6	INPUT	Connect	
AVR's (connected in HDMI) audio output OK?	HDMI	This unit's HDMI OUT → Other AVR's HDMI IN	
	Setting	SURROND MODE	SOURCE
	CEC STANDBY	Don't care	HBR audio(DolbyTrueHD or dtsHD MA)

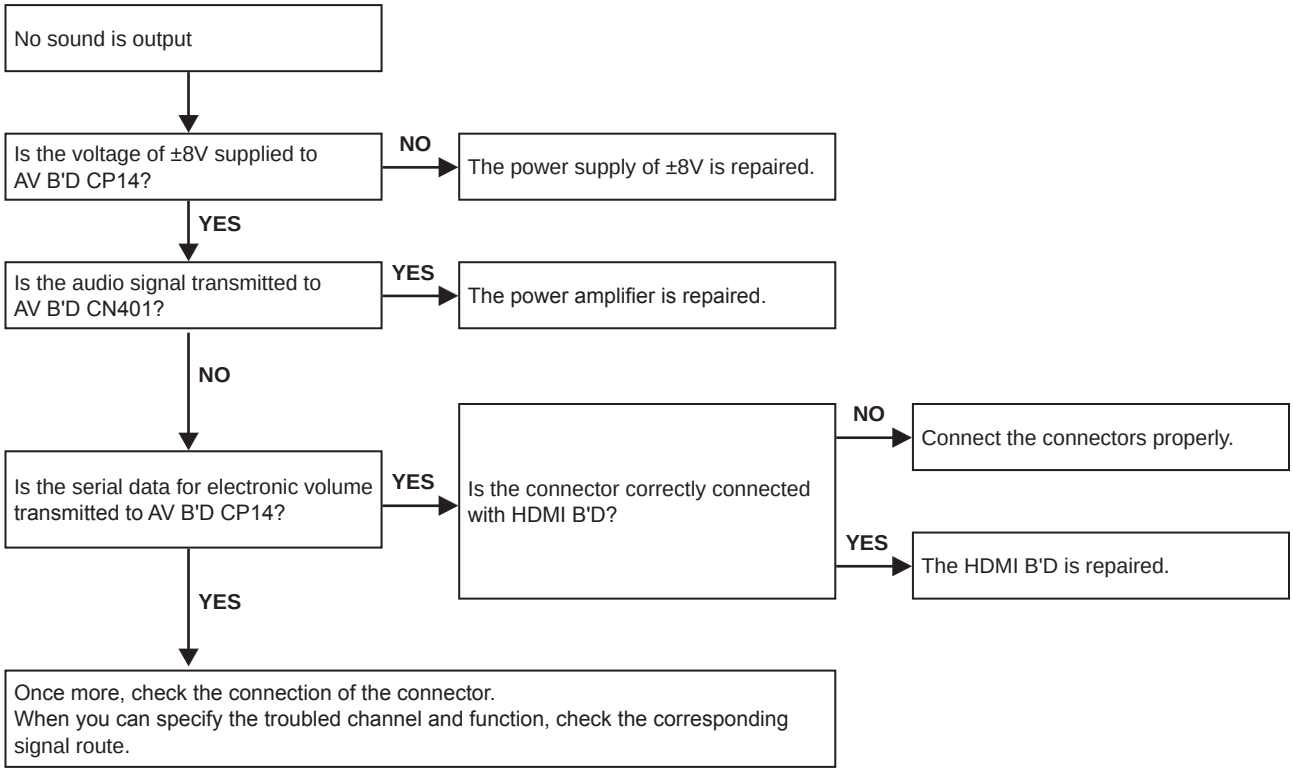
YES → Check Digital audio BLOCK

NO → Check HDMI BLOCK.

4.2. Power AMP (MAIN UNIT)

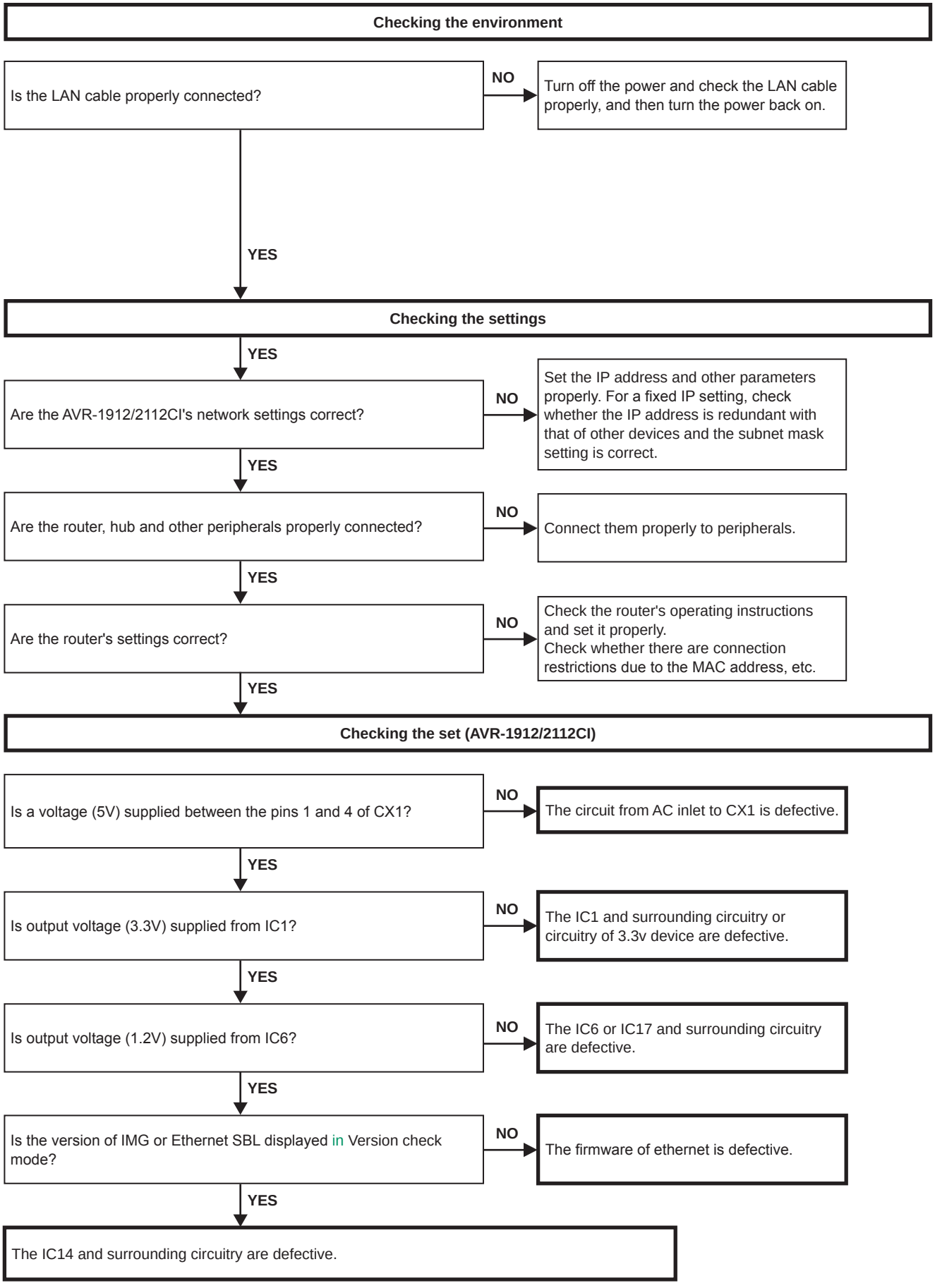


4.3. Analog audio

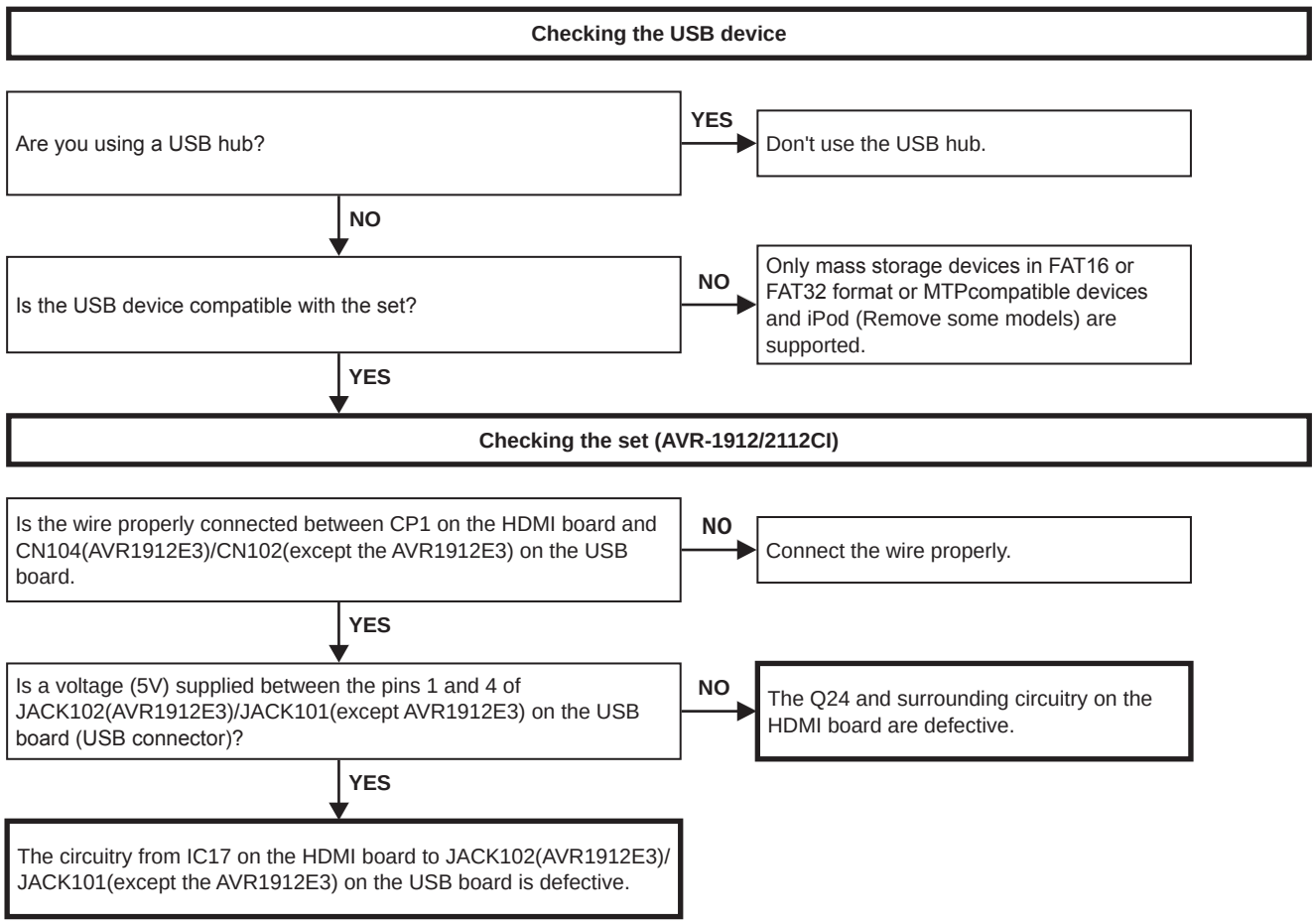


5. Network/USB

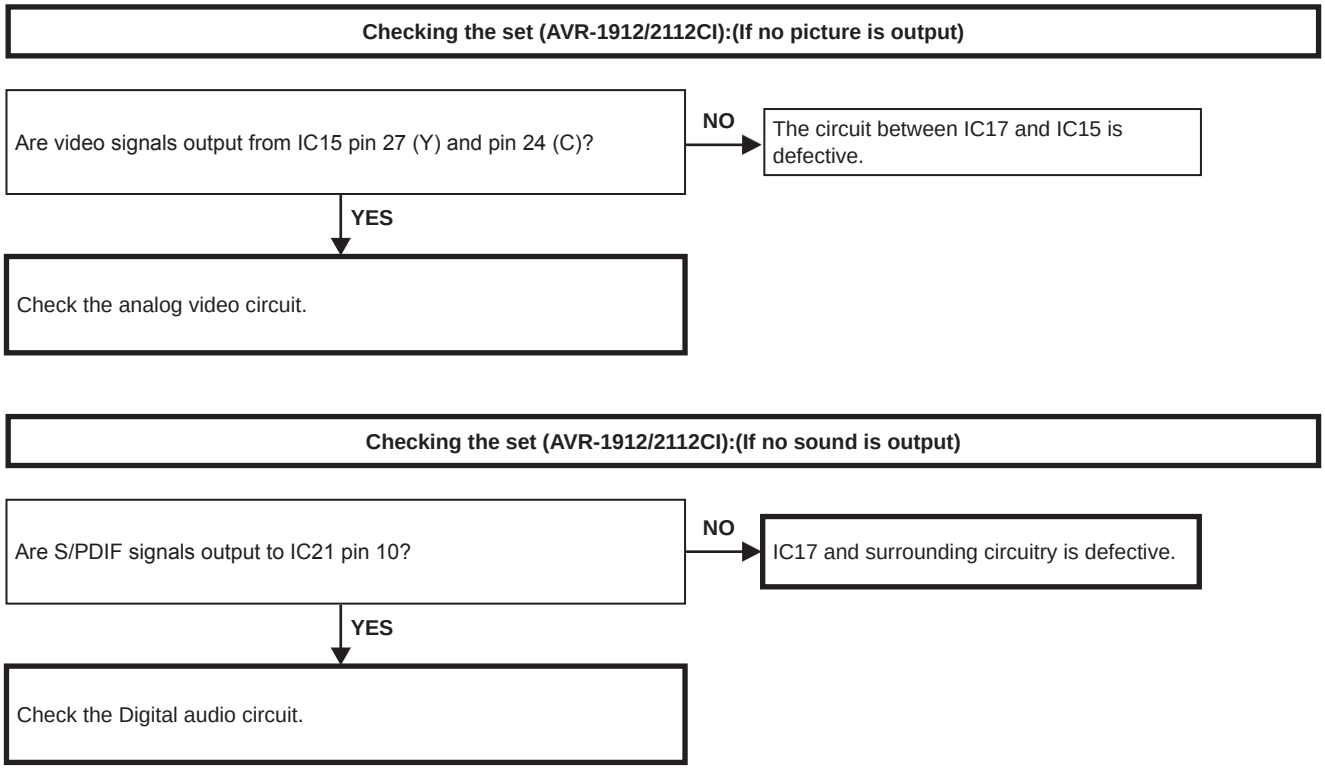
5.1. Cannot connect to network



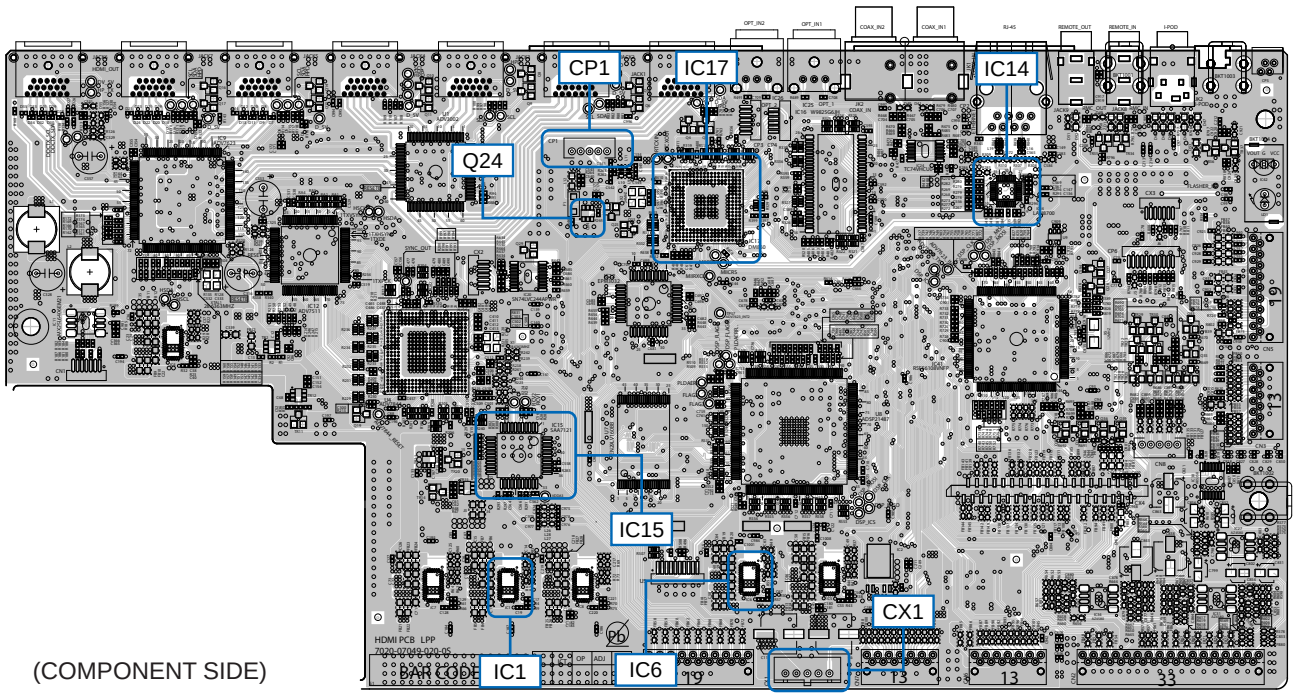
5.2. USB device is not recognized



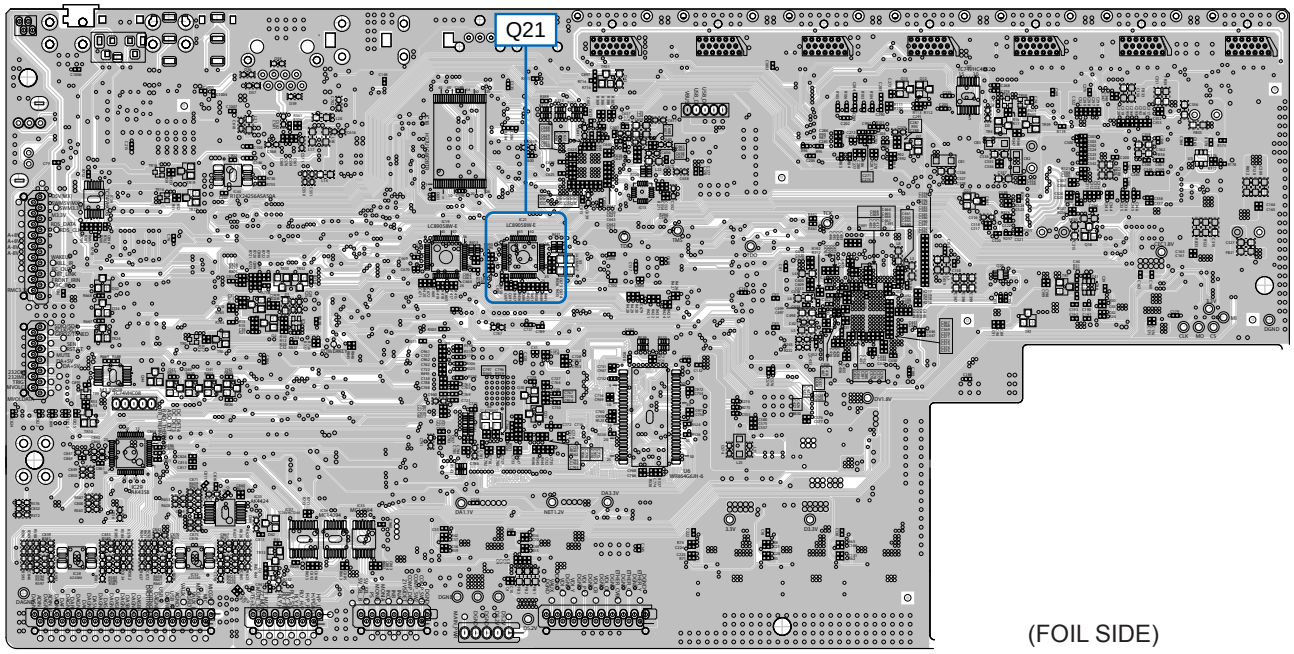
5.3. No picture or no sound is output



HDMI test point

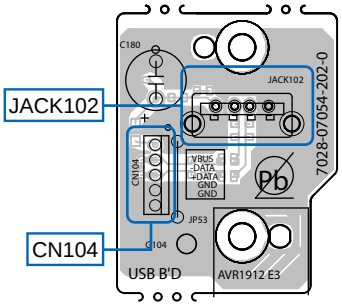


(COMPONENT SIDE)



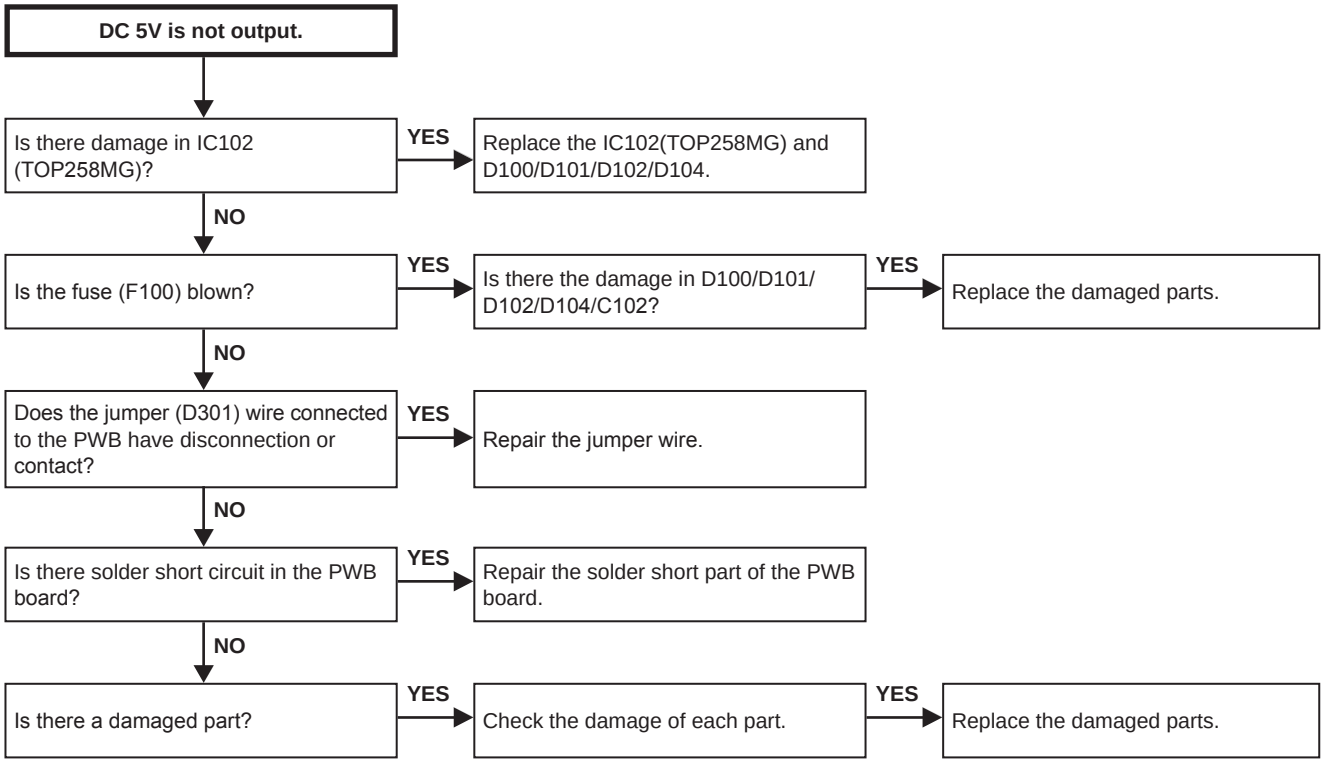
(FOIL SIDE)

USB test point

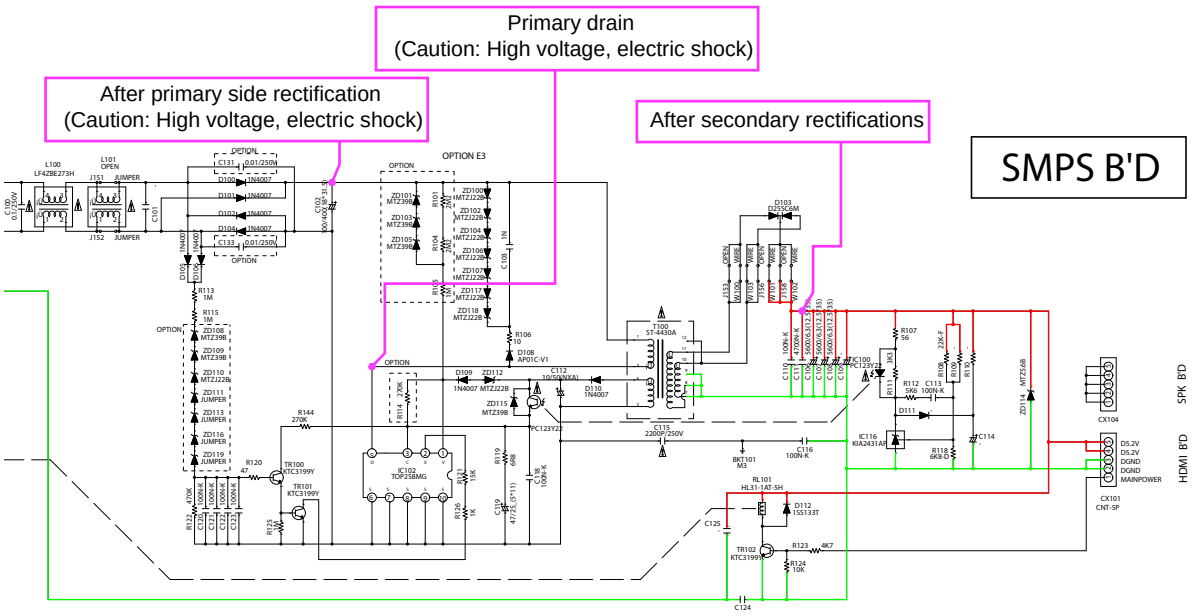


(COMPONENT SIDE)

6. SMPS

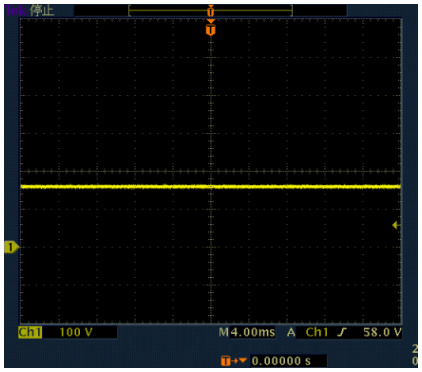

DC 5V is not output.
Is there damage in IC102 (TOP258MG)?
YES
Replace the IC102(TOP258MG) and D100/D101/D102/D104.
NO
Is the fuse (F100) blown?
YES
Is there the damage in D100/D101/ D102/D104/C102?
YES
Replace the damaged parts.
NO
Does the jumper (D301) wire connected to the PWB have disconnection or contact?
YES
Repair the jumper wire.
NO
Is there solder short circuit in the PWB board?
YES
Repair the solder short part of the PWB board.
NO
Is there a damaged part?
YES
Check the damage of each part.
YES
Replace the damaged parts.

Operation waveform for each part

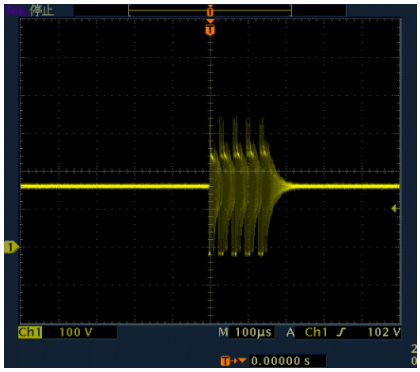


SMPS unit
(Unloaded)

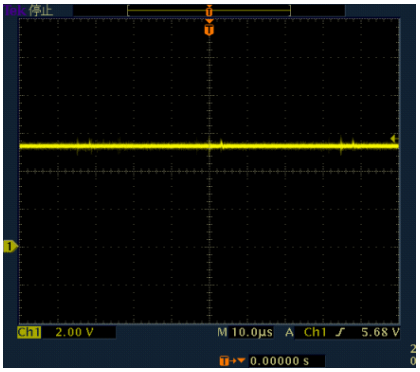
A



B

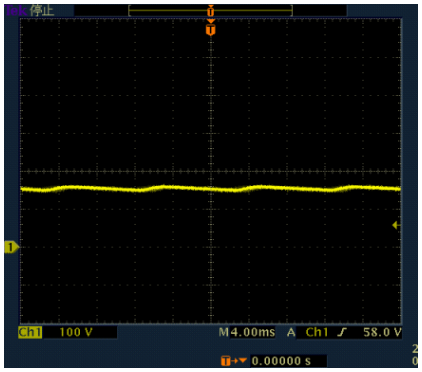


C

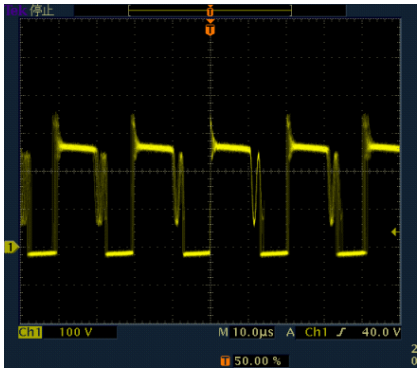


Set

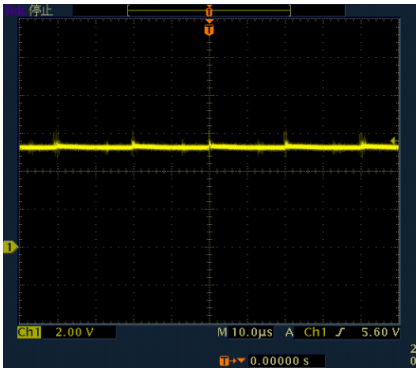
A



B

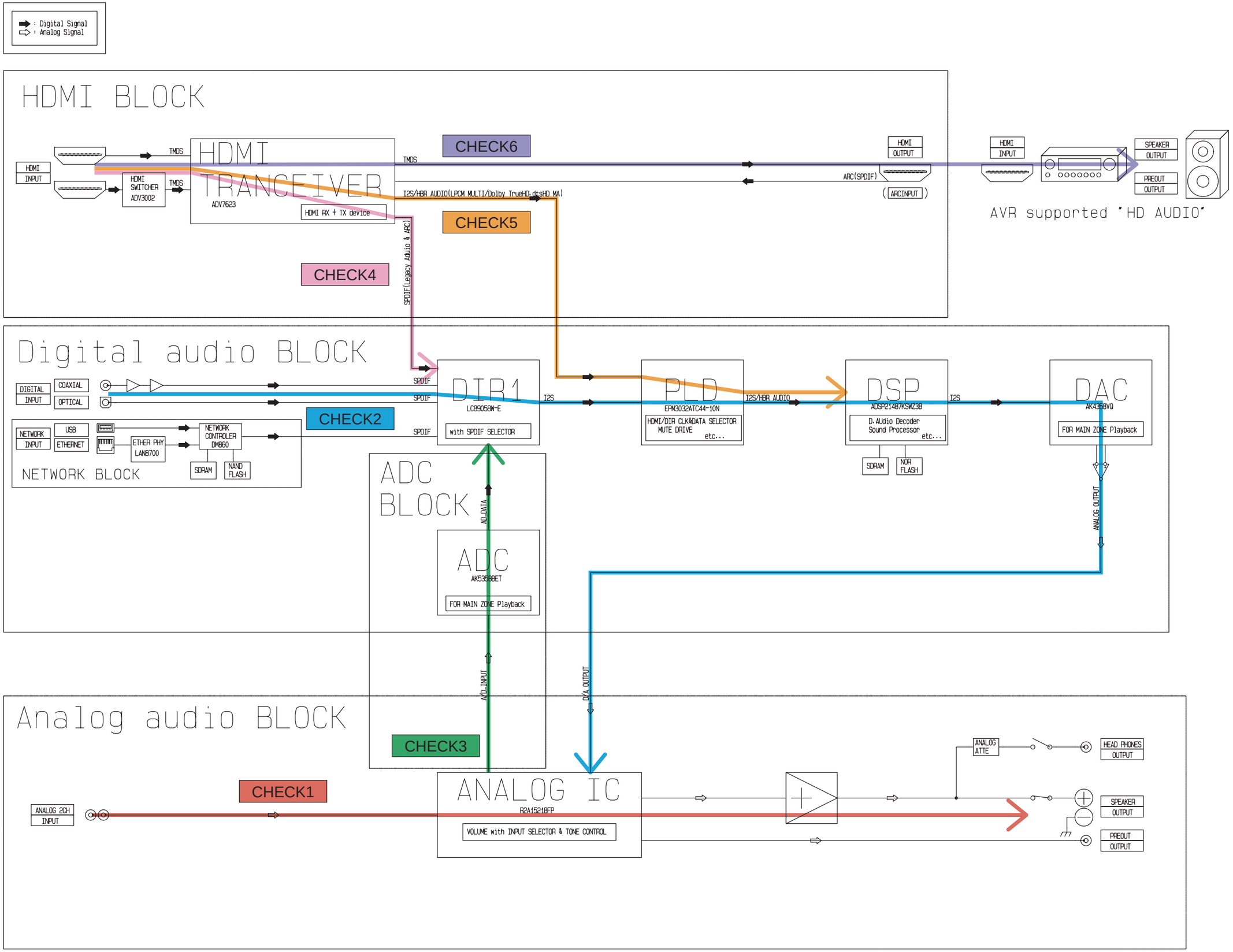


C



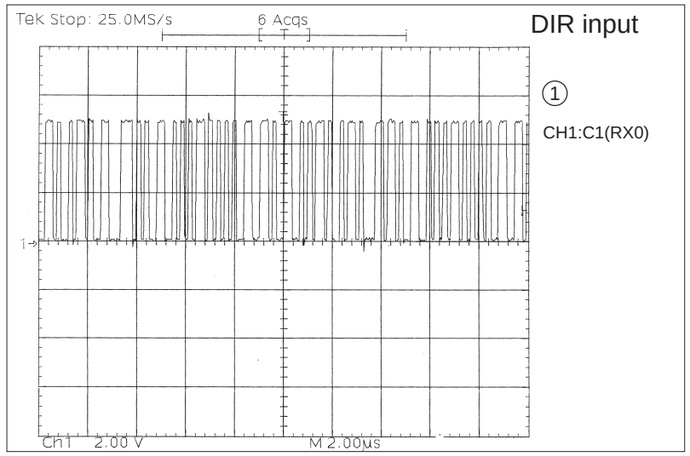
Audio Check PATH

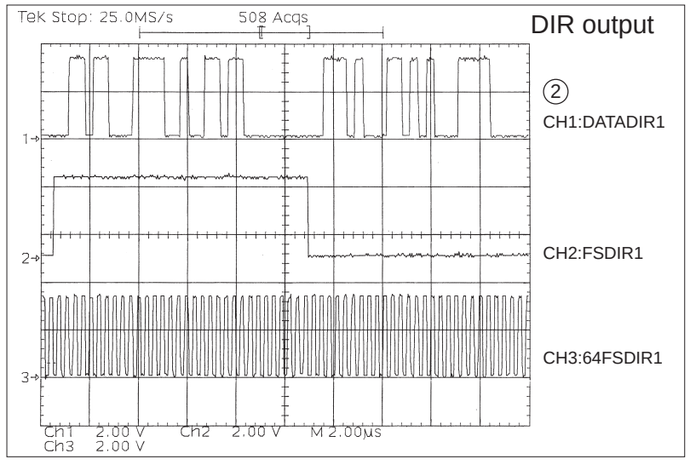
Refer to troubleshooting "**4.1. AUDIO CHECK**"(77 page).

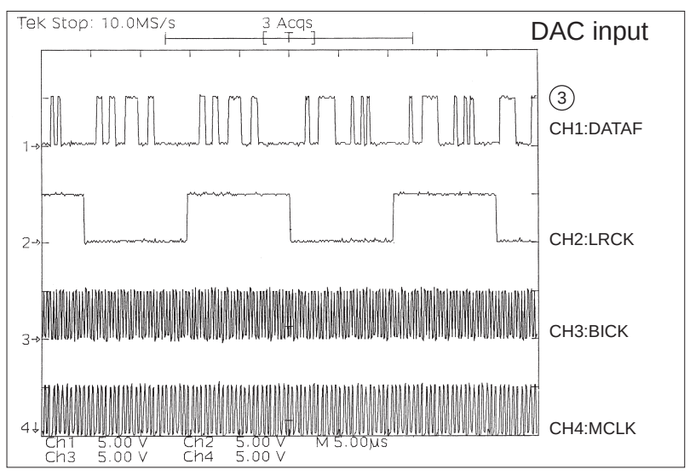


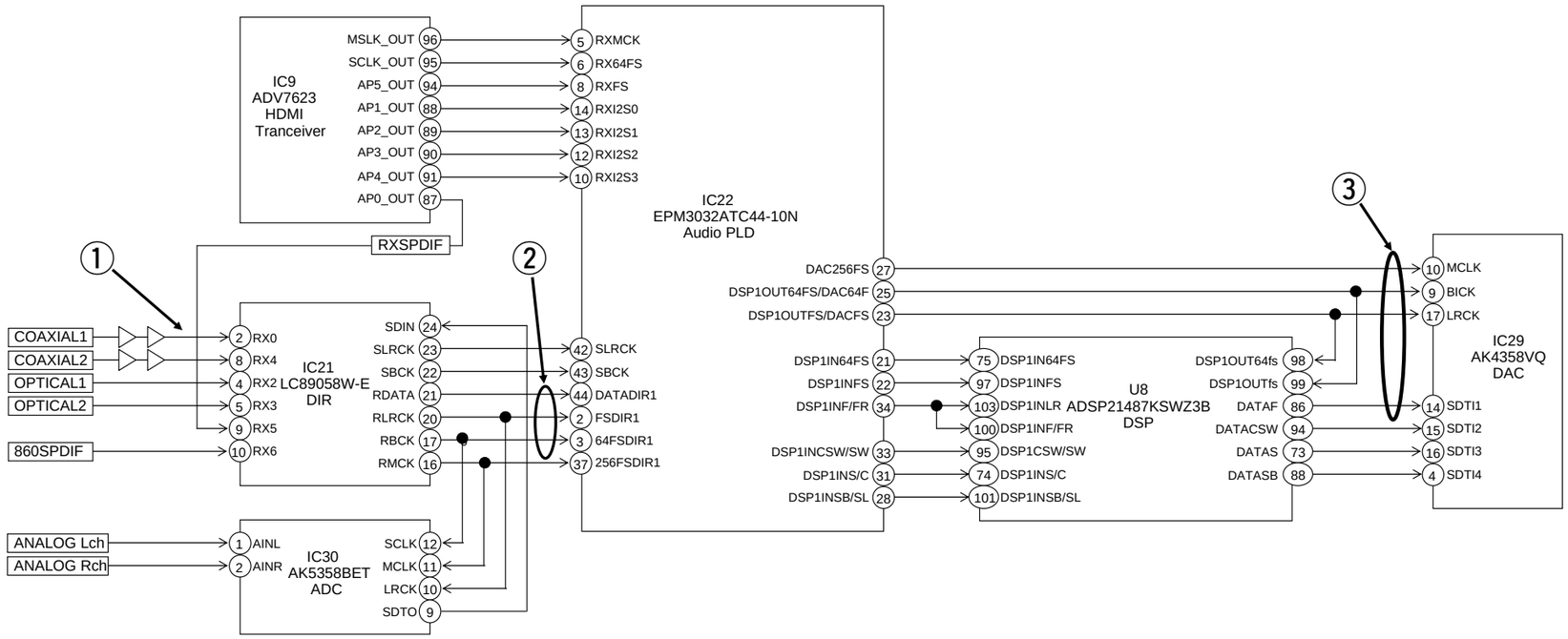
CLOCK FLOW & WAVE FORM IN DIGITAL BLOCK

WAVE FORM

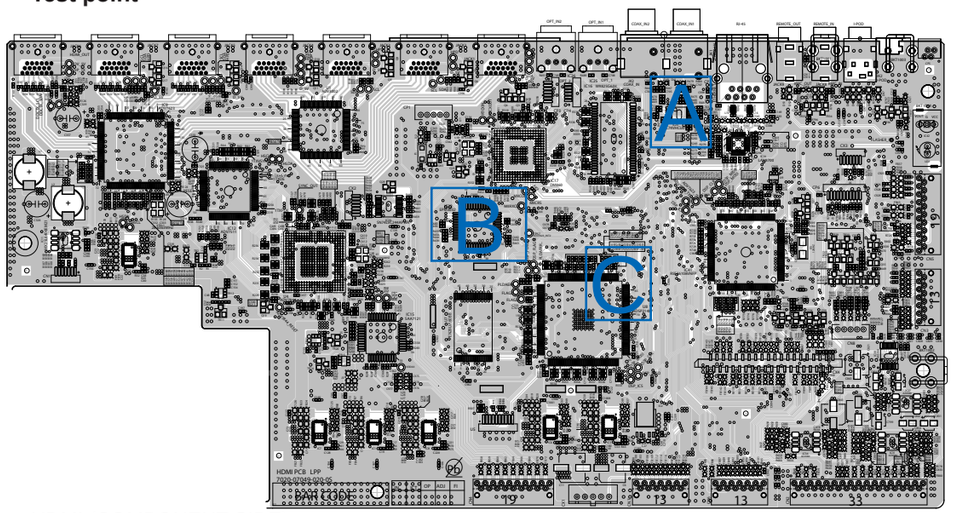






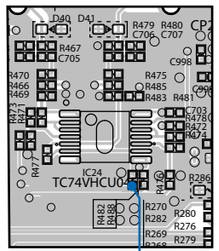


Test point

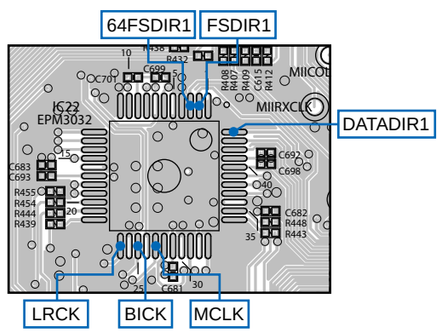


HDMI (COMPONENT SIDE)

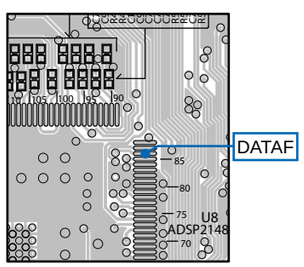
Detail A



Detail B

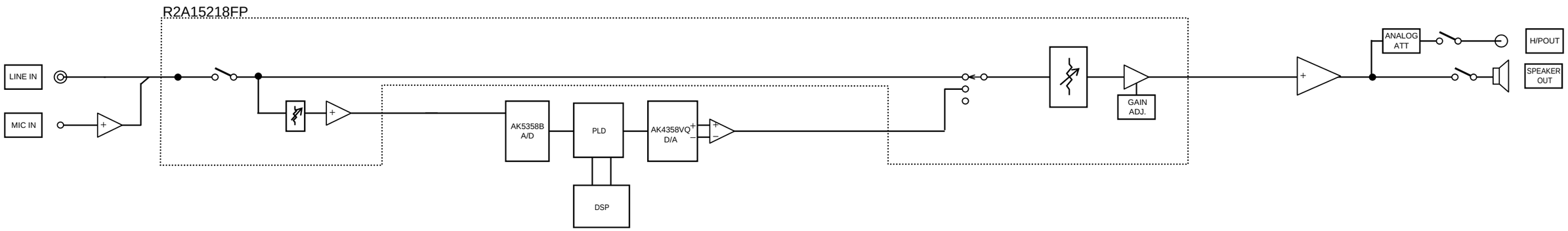


Detail C

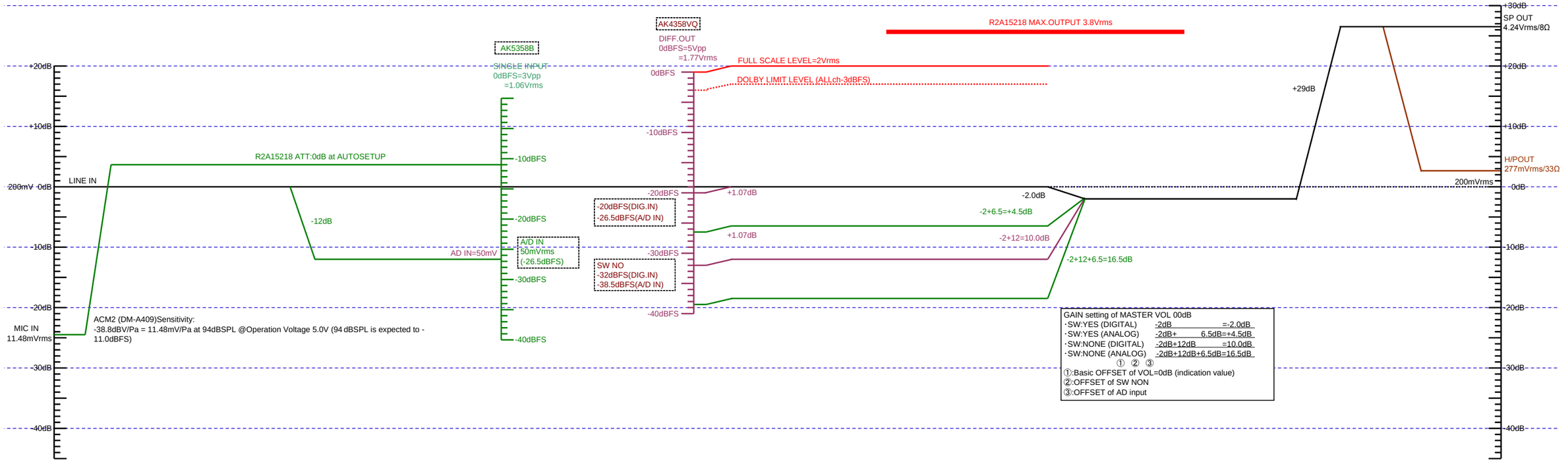


LEVEL DIAGRAM

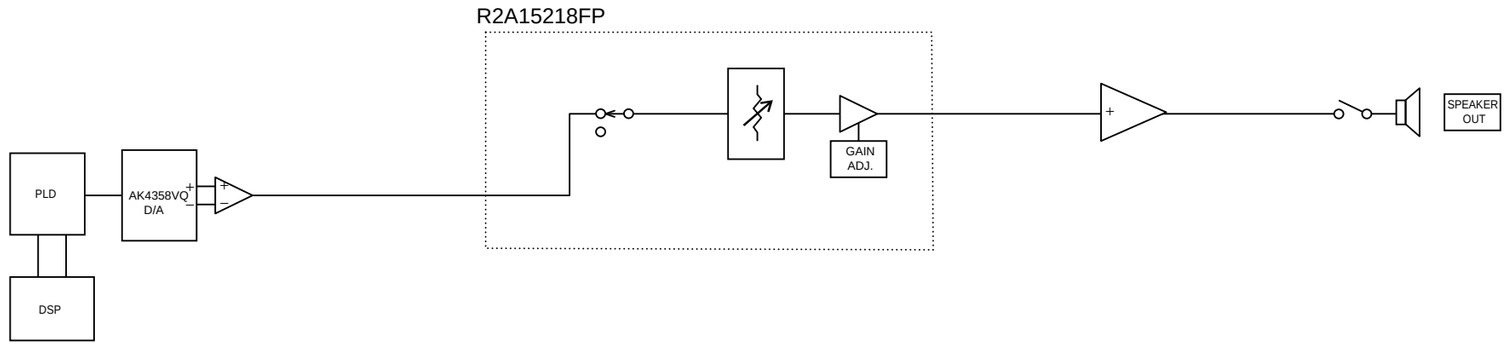
LEVEL DIAGRAM
FRONT ch

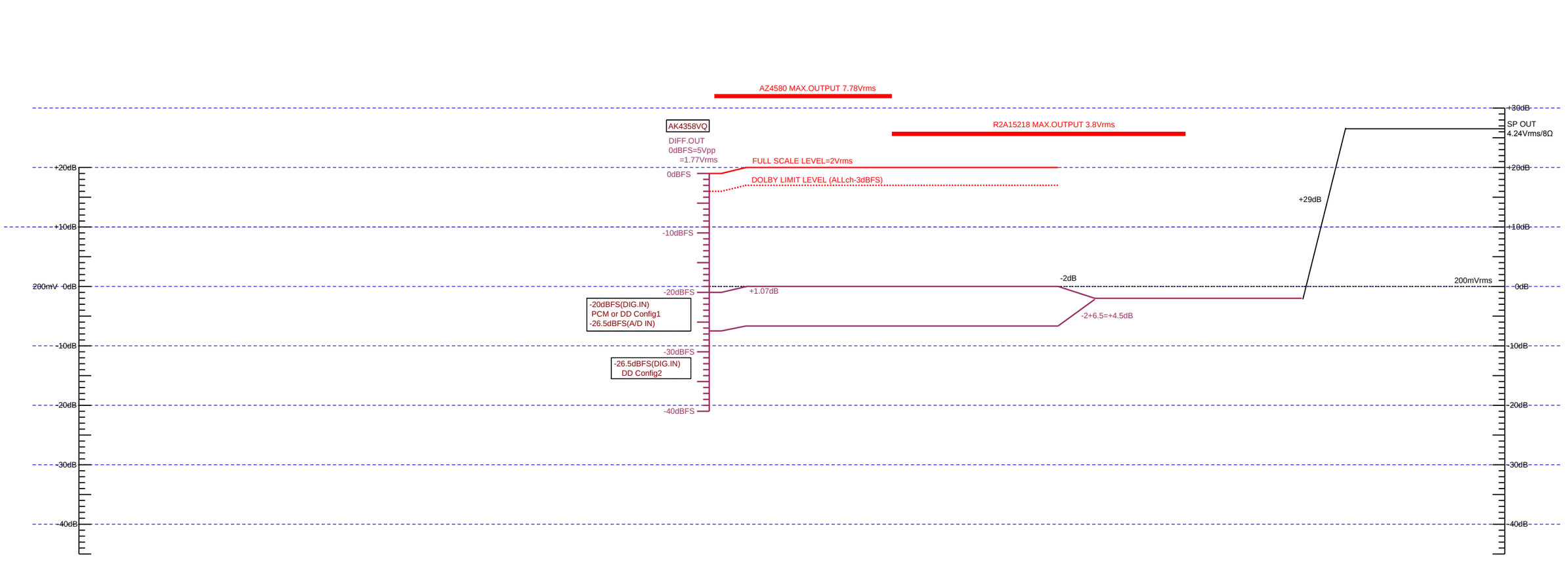


AZ4580 MAX.OUTPUT 7.78Vrms

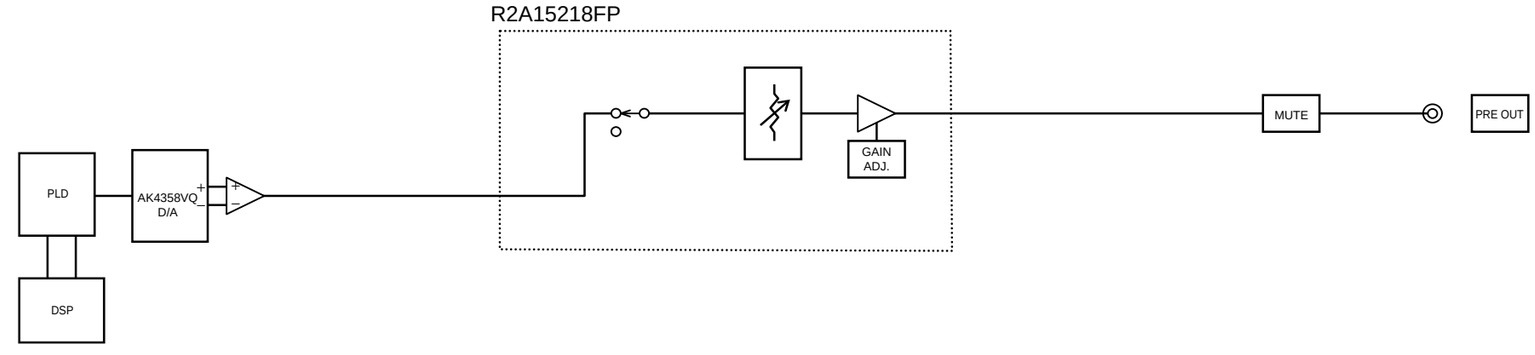


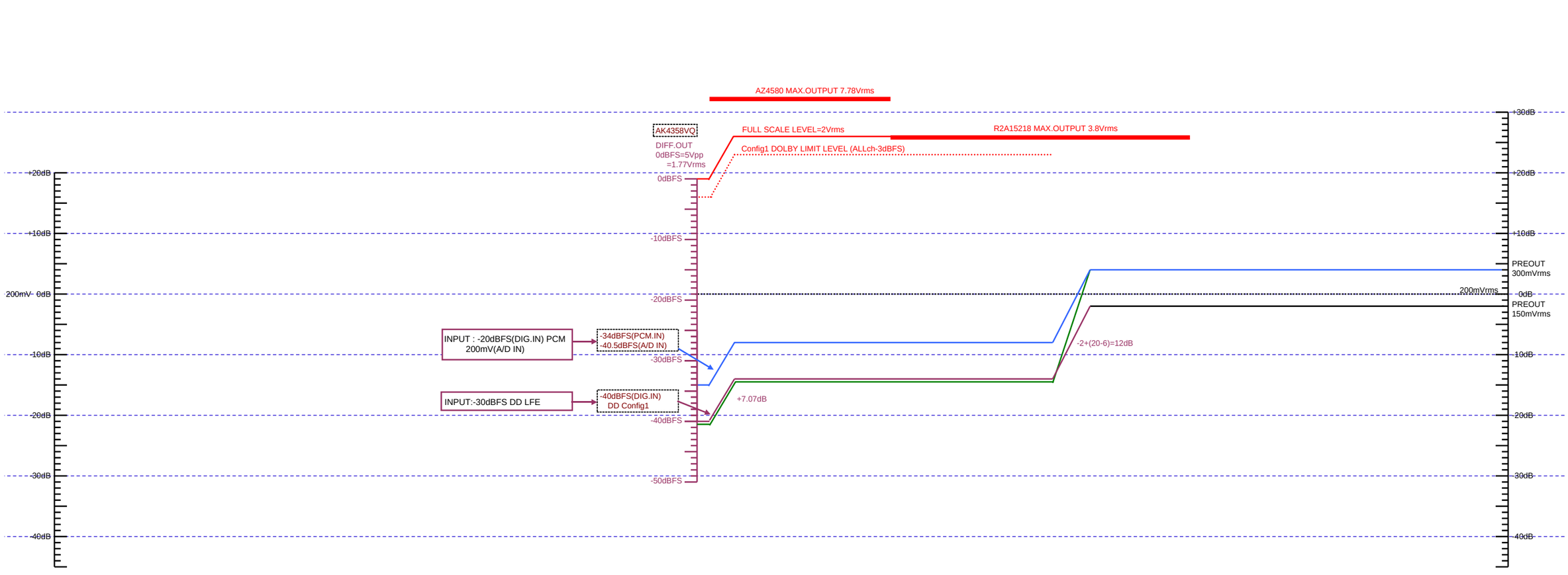
LEVEL DIAGRAM
CENTER ch



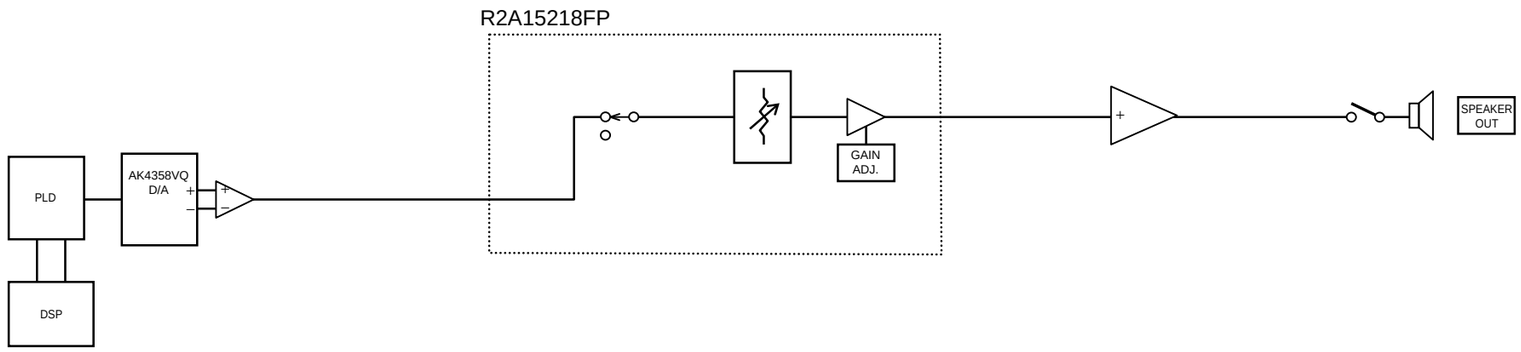


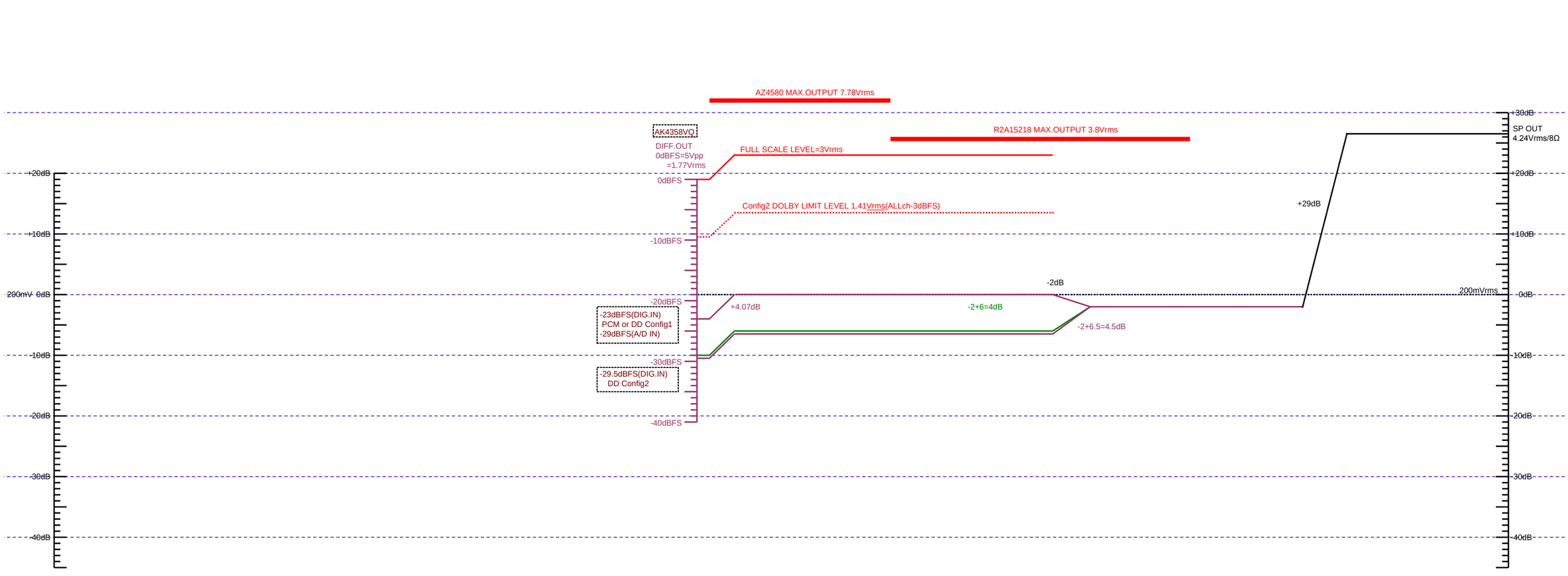
LEVEL DIAGRAM
SUBWOOFER ch



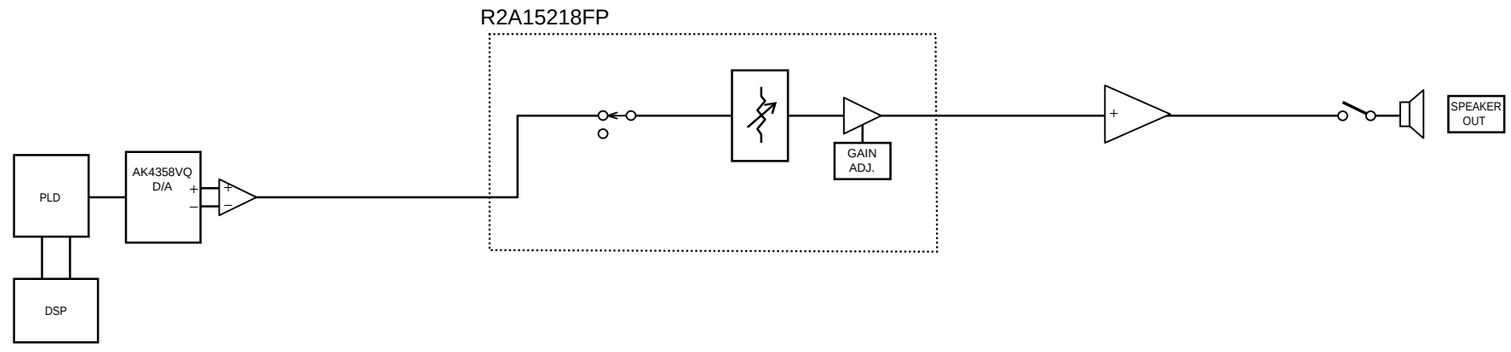


LEVEL DIAGRAM
SURROUND ch

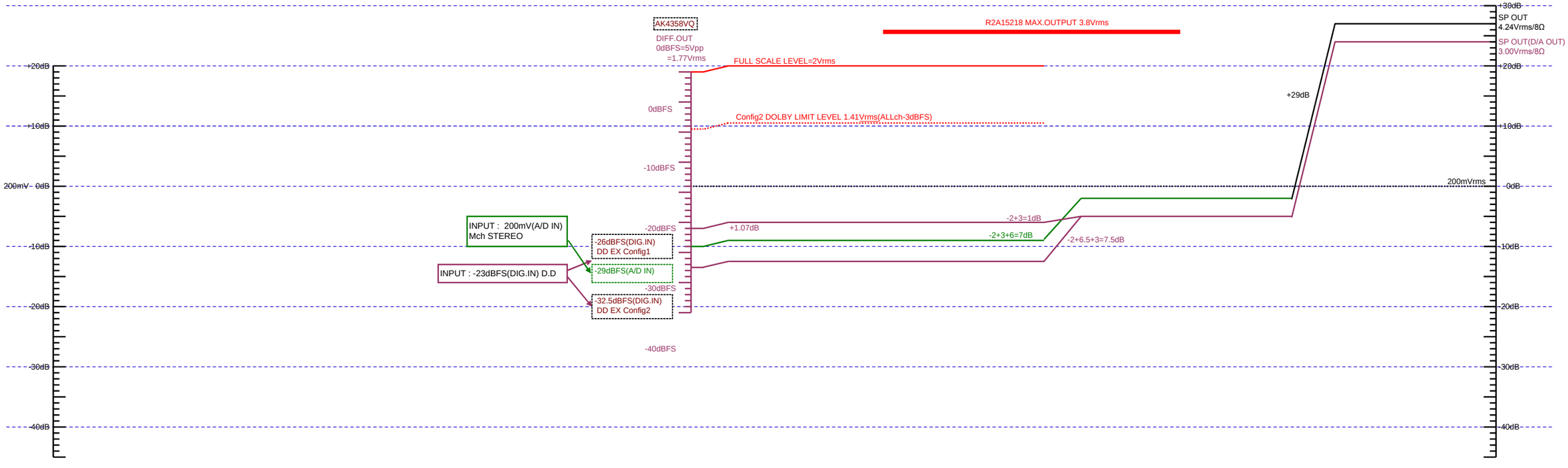




LEVEL DIAGRAM
SURR.BACK ch

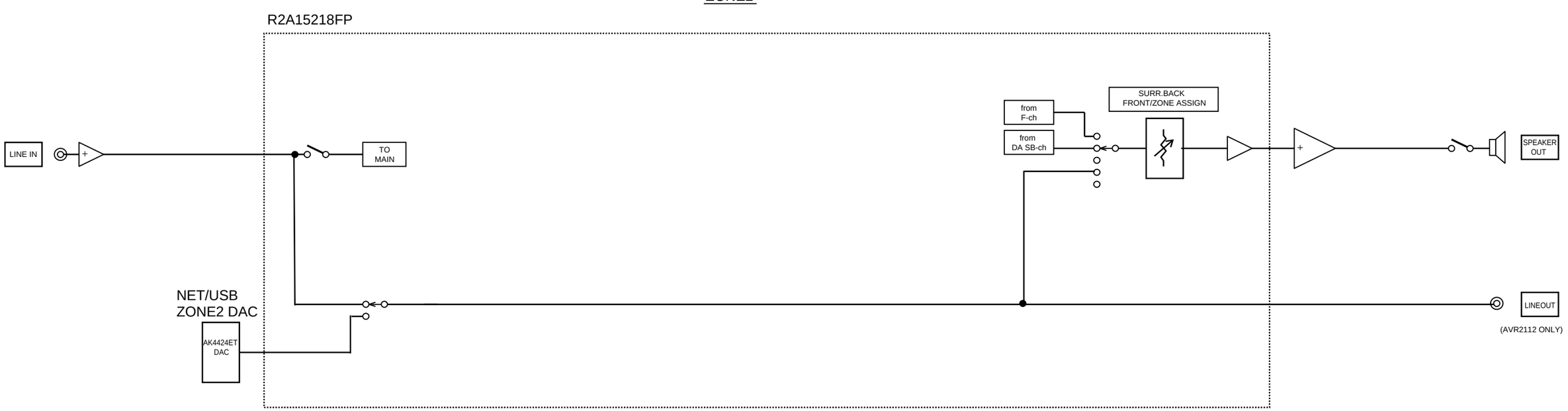


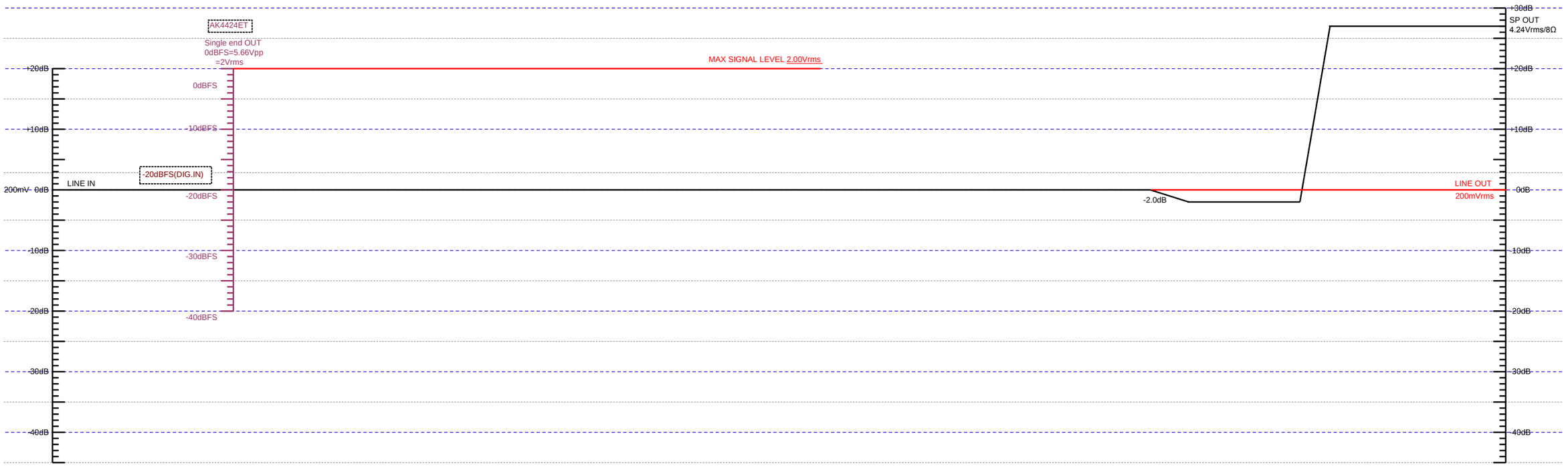
AZ4580 MAX.OUTPUT 7.78Vrms



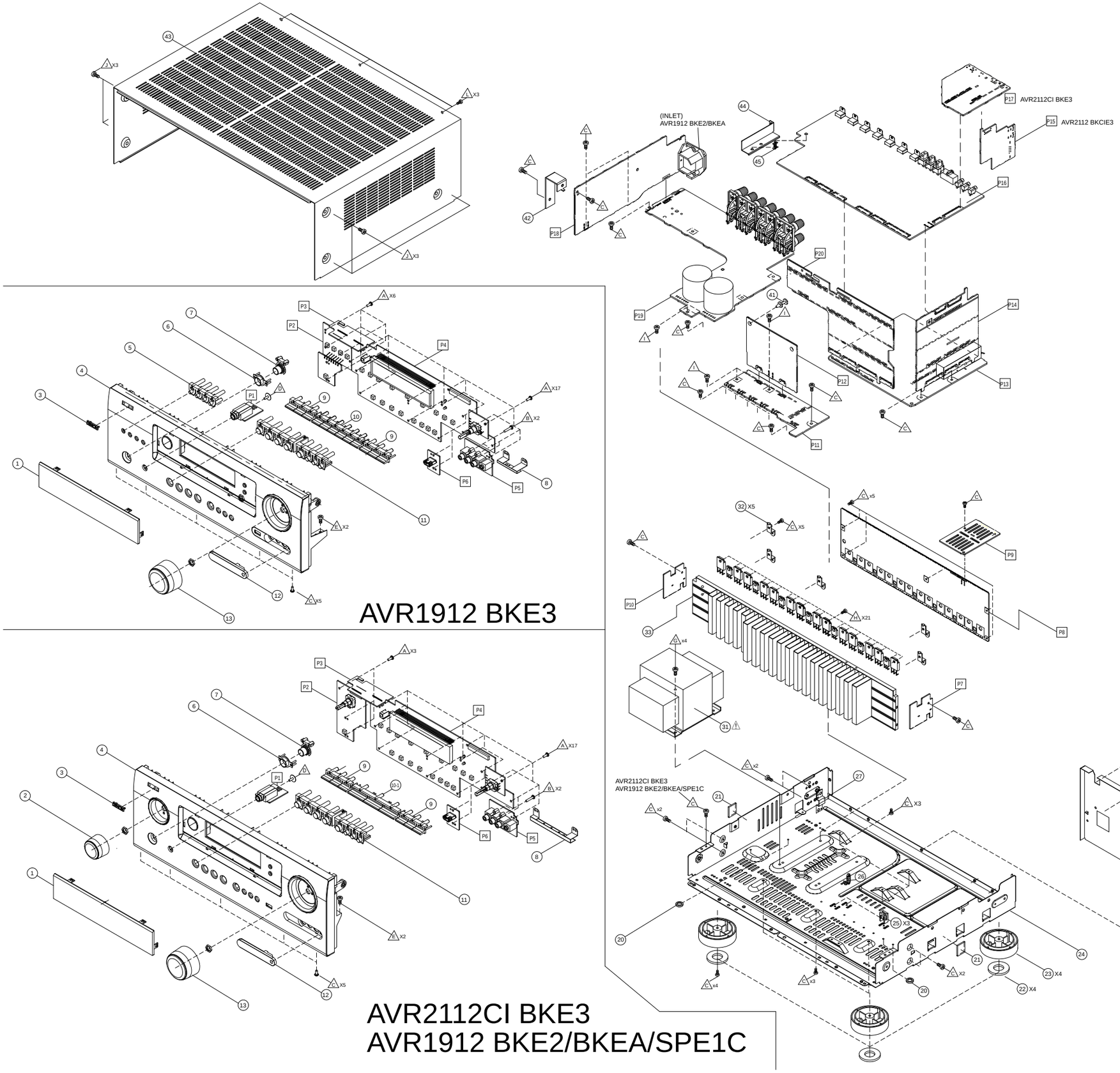
LEVEL DIAGRAM
ZONE2

R2A15218FP





EXPLODED VIEW ⚠2 ⚠3



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

Personal notes:

Personal notes:

PARTS LIST OF EXPLODED VIEW ⚠3

∗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.
1912E3 : U.S.A. & Canada model 1912E2 : Europe model 1912EA : Australia model
1912E1C : China model 2311CIE3 : U.S.A. & Canada model
BK : Black model SP : Premium Silver model

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New	
	P4A	nsp	PCB FRONT ASSY	1912BKE3	7025HK1015063	1	*	
	P4A	nsp	PCB FRONT ASSY	2112CIBKE3	7025HK1015013	1	*	
	P4A	nsp	PCB FRONT ASSY	1912BKE2,1912BKEA	7025HK1015053	1	*	
	P4A	nsp	PCB FRONT ASSY	1912SPE1C	7025HK1015023	1	*	
	P1	-	PCB H/P		-			
	P2	-	PCB FUNCTION		-			
	P3	-	PCB FUNCTION CNT		-			
	P4	-	PCB FRONT		-			
	P5	-	PCB V.AUX		-			
	P6	-	PCB USB		-			
	P7	-	PCB GUIDE R		-			
	P9	-	PCB GUIDE TOP		-			
	P10	-	PCB GUIDE L		-			
	P8	nsp	PCB 7CH_AMP ASSY	1912BKE3	7025HK1015060	1		
	P8	nsp	PCB 7CH_AMP ASSY	2112CIBKE3	7025HK1015010	1		
	P8	nsp	PCB 7CH_AMP ASSY	1912BKE2,1912BKEA	7025HK1015050	1		
	P8	nsp	PCB 7CH_AMP ASSY	1912SPE1C	7025HK1015020	1		
	P19A	nsp	PCB SPK ASSY	1912BKE3	7025HK1015061	1	*	
	P19A	nsp	PCB SPK ASSY	2112CIBKE3	7025HK1015011	1	*	
	P19A	nsp	PCB SPK ASSY	1912BKE2,1912BKEA	7025HK1015051	1	*	
	P19A	nsp	PCB SPK ASSY	1912SPE1C	7025HK1015021	1	*	
	P19	-	PCB SPK		-			
	P18	-	PCB SMPS		-			
	P12A	nsp	PCB REG_CNT ASSY	1912BKE3	7025HK1015062	1	*	
	P12A	nsp	PCB REG_CNT ASSY	2112CIBKE3	7025HK1015012	1	*	
	P12A	nsp	PCB REG_CNT ASSY	1912BKE2,1912BKEA	7025HK1015052	1	*	
	P12A	nsp	PCB REG_CNT ASSY	1912SPE1C	7025HK1015022	1	*	
	P11	-	PCB REG		-			
	P12	-	PCB REG_CNT		-			
	P14	-	PCB SIDE_CNT		-			
	P15	-	PCB RS232C ASSY	2112CIBKE3	-		*	
	P17	-	PCB SIRIUS ASSY	2112CIBKE3	-		*	
	P20	-	PCB FRONT_CNT		-			
	P13	nsp	PCB AUDIO_VIDEO ASSY	1912BKE3	7025HK1015064	1	*	⚠4
	P13	nsp	PCB AUDIO_VIDEO ASSY	2112CIBKE3	7025HK1015014	1	*	⚠4
	P13	nsp	PCB AUDIO_VIDEO ASSY	1912BKE2,1912BKEA	7025HK1015054	1	*	⚠4
	P13	nsp	PCB AUDIO_VIDEO ASSY	1912SPE1C	7025HK1015024	1	*	⚠4
	P16	8U6331008300D	PCB HDMI ASSY	AVR1912BKE3	7025HK1015065	1	*	
	P16	8U6331008400D	PCB HDMI ASSY	AVR2112CIBKE3	7025HK1015015	1	*	

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	P16	8U6331008500D	PCB HDMI ASSY	1912BKE2,1912BKEA	7025HK1015055	1	*
	P16	nsp	PCB HDMI ASSY	1912SPE1C	7025HK1015025	1	*

NOTE :
When replacing the 1912SPE1C PCB HDMI ASSY, use the 1912BKE2/1912BKEA PCB HDMI ASSY (8U6331008500D).
Please change the parts when changing 1912BKE2/1912BKEA PCB HDMI ASSY to 1912SPE1C. (Refer to the table below)
Please refer to parts 127 , 128 page. (SCHEMATIC DIAGRAMS : 22/26, 23/26)

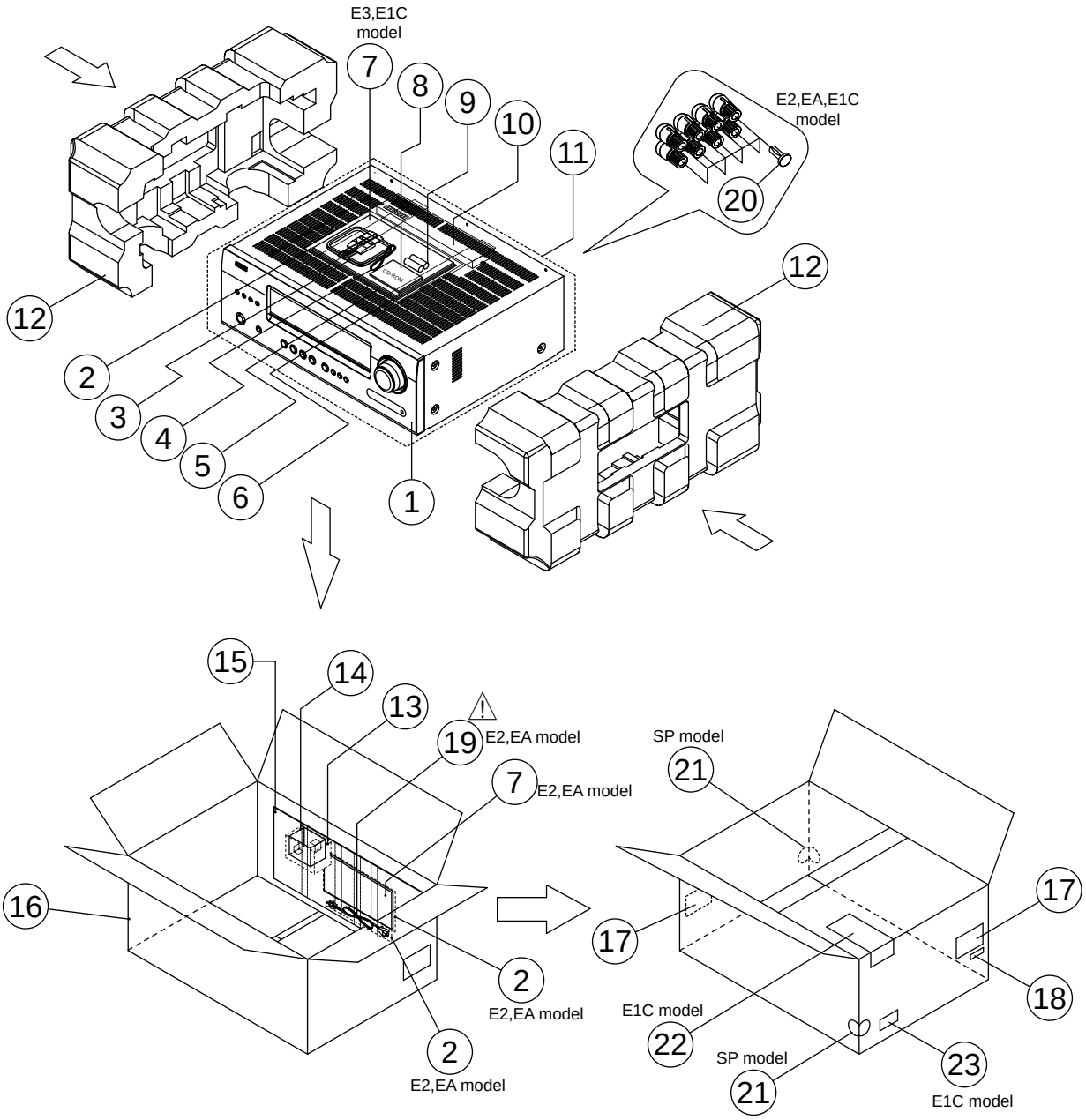
	R701(22/26)	R702(22/26)	R709(22/26)	R710(22/26)	R773(23/26)	R776(23/26)
1912BKE2/1912BKEA	OPEN	OPEN	OPEN	OPEN	OPEN	0
1912SPE1C	470k	470k	470k	470k	10k	10K

After replacing the PCB HDMI ASSY in 1912SPE1C, overwrite the firmware with the newest E1C version firmware.
(Refer to "PROCEDURE FOR UPGRADING THE VERSION OF THE FIRMWARE" (45 page).)
[IC11] [IC18] [IC22] [IC41] [U7] (Refer to parts list of "PCB HDMI ASS'Y" (188 page).)

	1	963416013480D	WINDOW DISPLAY	1912BKE3	5077213153020S	1	*
	1	963416013460D	WINDOW DISPLAY	2112CIBKE3,1912BKE2, 1912BKEA,1912SPE1C	5077213153000S	1	*
	2	963412000570D	KNOB FUNCTION(KD)	BK	5080211761000SZ	1	
	2	943412100640D	KNOB FUNCTION	SP	CBN1A254C73	1	*
	3	00D9630362109	BADGE DENON	BK	5630210028300S	1	
	3	00D9630362202	BADGE DENON	SP	5630210028400S	1	
	4	963402013360D	PANEL FRONT	1912BKE3	3067215191000S	1	*
	4	963402013350D	PANEL FRONT	2112CIBKE3	3067215201000S	1	*
	4	963402013380D	PANEL FRONT	1912BKE2,1912BKEA	3067215201110S	1	*
	4	963402013390D	PANEL FRONT	1912SPE1C	3067215201200S	1	*
	5	963411002810S	BUTTON 4KEY	1912BKE3	5097213731000S	1	
	6	00D9630137807	LENS STANDBY		3710210503000S	1	
	7	963411002820S	BUTTON-ASSY STANDBY(KD)	BK	5098212361000SZ	1	
	7	00D9630221904	BUTTON-ASSY STANDBY	SP	5097212368030SZ	1	
	8	nsp	PLATE EARTH USB	1912BKE3	4470212106000S	1	*
	8	nsp	PLATE EARTH USB	2112CIBKE3,1912BKE2, 1912BKEA,1912SPE1C	4470212116000S	1	*
	9	00D9630365002	BUTTON WIN 3KEY	BK	5097213371000S	2	
	9	00D9630365301	BUTTON WIN 3KEY	SP	5097213371110S	2	
	10	00D9630365404	BUTTON WIN 6KEY	1912BKE3	5097213361000S	1	
	10-1	963411003400D	BUTTON WIN 3KEY C	2112CIBKE3,1912BKE2, 1912BKEA	5097213831000S	1	
	10-1	963411003690D	BUTTON WIN 3KEY C	1912SPE1C	5097213831100S	1	
	11	963411013450D	BUTTON 8KEY	1912BKE3	5097214661000S	1	*
	11	963411013430D	BUTTON 8KEY	2112CIBKE3,1912BKE2, 1912BKEA	5090214671000S	1	*
	11	963411013440D	BUTTON 8KEY	1912SPE1C	5090214671100S	1	*
	12	963419100040D	COVER RCA	1912BKE3	4317215141010S	1	*
	12	963419013410D	COVER RCA	2112CIBKE3,1912BKE2, 1912BKEA	4317215361000S	1	*
	12	963419013420D	COVER RCA	1912SPE1C	4317215361100S	1	*
	13	963412000560D	KNOB VOLUME(KD)	BK	5080211751000SZ	1	
	13	943412009850D	KNOB VOLUME	SP	CBN1A249C73	1	*
	20	nsp	CUSHION SCREW		4050213025000S	4	
	21	nsp	CUSHION SIDE		4050213095000S	2	
	22	00D9630214607	CUSHION FOOT		4050211295000S	4	
	23	963407100030D	FOOT	1912BKE3	4000210641000S	4	*
	23	963407100200D	FOOT	2112CIBKE3,1912BKE2, 1912BKEA,1912SPE1C	4000210261000S	4	*
	24	nsp	CHASSIS MAIN	1912BKE3	3200213506400S	1	
	24	nsp	CHASSIS MAIN	2112CIBKE3,1912BKE2, 1912BKEA,1912SPE1C	3200213506500S	1	*
	25	nsp	SUPPORTER PCB		4070001601010S	3	
	26	nsp	SUPPORTER P.C.		4070210192000S	1	

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	27	nsp	BRACKET SIDE		4010210686000S	1	
	28	nsp	CHASSIS BACK	1912BKE3	3207213806100S	1	*
	28	nsp	CHASSIS BACK	2112CIBKE3	3207213806000S	1	*
	28	nsp	CHASSIS BACK	1912BKE2,1912BKEA	3207213806200S	1	*
	28	nsp	CHASSIS BACK	1912SPE1C	3207213806300S	1	*
	29	nsp	STOPPER CORD AC	E3,E1C	4380210002000S	1	
⚠	30	00D9630292205	CORD ASSY	E3	L068125100020S	1	
⚠	30	963611500410S	CORD ASSY	E1C	L068250060011S	1	*
⚠	31	963101100020S	POWER TRANS MAIN	E3	8200960611030S	1	*
⚠	31	963101101010S	POWER TRANS MAIN	E2,EA	8200960610770S	1	*
⚠	31	963101101020S	POWER TRANS MAIN	E1C	8200960610780S	1	*
	32	nsp	BRACKET H SINK		4010056906010S	5	
	33	nsp	HEAT SINK MAIN		2120211988000S	1	
	★ 34	00D9960018706	TR 2SB1560-Y	Q410,Q422,Q434,Q446, Q458,Q470,Q482	J5011560Y0000S	7	
	★ 35	00D9960018706	TR 2SD2390-Y	Q404,Q416,Q428,Q440, Q452,Q464,Q476	J5032390Y0000S	7	
	★ 36	00D9630280107	TR 2SC3964	Q409,Q421,Q433,Q445, Q457,Q469,Q481	J502396400000S	7	
	41	nsp	SPACER CARD		4300210062000S	1	
	42	nsp	BRACKET SMPS		4010214886000S	1	
	43	963403100020S	CABINET TOP	BK	3007211916000S	1	*
	43	963403100480S	CABINET TOP	SP	3007211916010S	1	*
	44	nsp	BRACKET HDMI		4010215226000S	1	*
	45	nsp	SUPPORTER PCB		4070211653000S	1	
	★ 50	9636060104905	CABLE,FLAT CARD 1.0MM		N711402912480S	1	
	★ 51	nsp	CLAMP CABLE		4330040343010S	8	
	★ 52	nsp	CLAMP WIRE(MTG)		4330000310000S	1	
SCREWS							
	A	nsp	SCREW +2S 3X8 B-TYPE(DA CHENG) ZNW/BH	1912BKE3	B020030081B10D	23	
	A	nsp	SCREW +2S 3X8 B-TYPE(DA CHENG) ZNW/BH	2112CIBKE3,1912BKE2, 1912BKEA,1912SPE1C	B020030081B10D	20	
	B	nsp	SCREW +2S 3X15 B-TYPE ZNW/BH		B020030151B10S	2	
	C	nsp	SCREW +2S 3X8(ROUND)(DA CHENG) BK/BH	1912BKE3	B020230083B10D	49	
	C	nsp	SCREW +2S 3X8(ROUND)(DA CHENG) BK/BH	2112CIBKE3,1912BKE2, 1912BKEA,1912SPE1C	B020230083B10D	50	
	D	nsp	SCREW +2S 3X8 ZnY WASHER PI12		1500001456010S	1	
	E	nsp	SCREW +2S 3X8 PI9.5 B-TYPE ZNW		1500001206010S	2	
	G	nsp	SCREW +3S 4X10 P+S-WASHER(ROUND)BK/BH		B028940101B11S	4	
	H	nsp	SCREW +2S 3X14 P(Φ6)+S-WASHER ZNY/HH		B018230141H11S	21	
	I	nsp	SCREW +2S 3X17 B-TYPE(DA CHENG) BK/BH		B020030171B10D	3	
	J	nsp	SCREW +2S 4X8 B-TYPE(DOT)(DACHENG) BK/BH	2112CIBKE3,1912BKE3	1500040083B10D	6	
	J	nsp	SCREW +2S 4X8 B-TYPE(DOT)(DACHENG) BK/BH	1912BKE2,1912BKEA	1500040083B10D	8	
	J	nsp	SCREW +2S 4X8 B-TYPE(DOT)(DACHENG) NI/BH	1912SPE1C	1500040084B10S	6	
	K	nsp	SCREW +2S 3X10 B-TYPE(DOT)(DA CHENG) BK/BH		B020030103B11D	25	
	L	nsp	SCREW +3S 3X6(DOT)CBTS(S)-B		B020930063B10S	10	

PACKING VIEW ⚠2⚠3



PARTS LIST OF PACKING & ACCESSORIES ⚠2⚠3

∗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.
1912E3 : U.S.A. & Canada model 1912E2 : Europe model 1912EA : Australia model
1912E1C : China model 2311CIE3 : U.S.A. & Canada model
BK : Black model SP : Premium Silver model

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	1	-	set		-		
	2	nsp	POLY BAG	1912BKE3,1912SPE1C, 2112CIE3	6330000240000S	1	
	2	nsp	POLY BAG	1912BKE2,1912BKEA	6330000240000S	3	
	3	90M-ZA000260R	ANTENNA LOOP WIRE 9.5UH		E601016000010S	1	
	3	963116100070S	or ANTENNA LOOP WIRE 9.5UH		E601019000010S	1	*

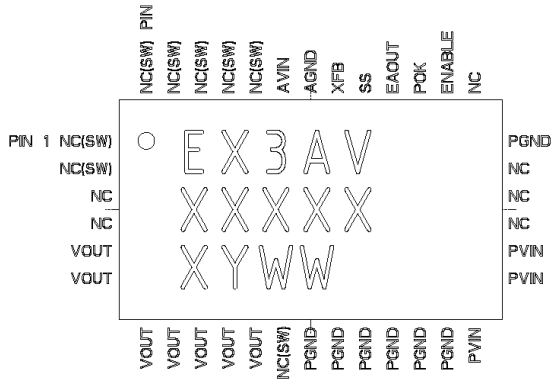
	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New	
	4	00D9600187308	ANTENNA WIRE (FM)		E6050100700 01S	1		
	4	963116100080S	or ANTENNA WIRE (FM)		E6050101400 10S	1	*	
	5	nsp	CARD S.S LIST		577700162001GS	1		
	6	nsp	WARRANTY CARD	1912BKE3	5727000003010S	1		
	6	nsp	WARRANTY CARD	2112CIBKE3	54311000300AD	1	*	
	7	542110056008D	GETTING STARTED	1912BKE3	5707000005260S	1	*	
	7	542110055005D	GETTING STARTED	2112CIBKE3	5707000005270S	1	*	
	7	54211005710AD	GETTING STARTED	1912BKE2,1912BKEA	5707000005281S	1	*	4
	7	541110696007D	GETTING STARTED	1912SPE1C	5707000005370S	1	*	
	8	352010020009D	CD-ROM (OWNER'S MANUAL)	1912BKE3	6517000000000S	1	*	
	8	352010019009D	CD-ROM (OWNER'S MANUAL)	2112CIBKE3	6517000000010S	1	*	
	8	35201002110AD	CD-ROM (OWNER'S MANUAL)	1912BKE2,1912BKEA	6517000000022S	1	*	4
	8	352010025004D	CD-ROM (OWNER'S MANUAL)	1912SPE1C	6517000000090S	1	*	
	9	nsp	BATTERY DRY (AA)		G670001R50230S	2		4
	10	307010087002D	REMOTE CONTROL(RC-1156)		8300115600010S	1	*	
	11	nsp	PE SHEET		6327040059000S	1		
	12	963533013490D	CUSHION SNOW L/R		6230212954000S	1	*	
	13	nsp	POLY BAG ACCESSORY		6330210222000S	1		
	14	324010001003D	MIC CONDENSER		M040000310040S	1		
	15	963537100020D	PAD BOX BACK		6240210730000S	1		
	16	963531013510D	BOX GIFT	1912BKE3	6007211860000S	1	*	
	16	963531013500D	BOX GIFT	2112CIBKE3	6007211860010S	1	*	
	16	963531013530D	BOX GIFT	1912BKE2,1912BKEA	6007211860040S	1	*	
	16	963531013540D	BOX GIFT	1912SPE1C	6007211860020S	1	*	
	17	nsp	LABEL DENON CONTROL		5507000007000S	1		
	18	nsp	LABEL MAC ADDRESS		5507000002920S	1		
⚠	19	90M-ZC000600R	AC CORD	E2	L068250160020S	1		
⚠	19	963611001490S	AC CORD	EA	L068250100070S	1		
	20	nsp	BUSHING	E2,EA,E1C	2410040353010S	14		
	21	nsp	COLOR LABEL	E1C	5507020170680S	2		
	22	nsp	WARRANTY CARD	E1C	5727000000400S	1	*	
	23	nsp	LABEL PRODUCTION-BOX	E1C	5507100500970S	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

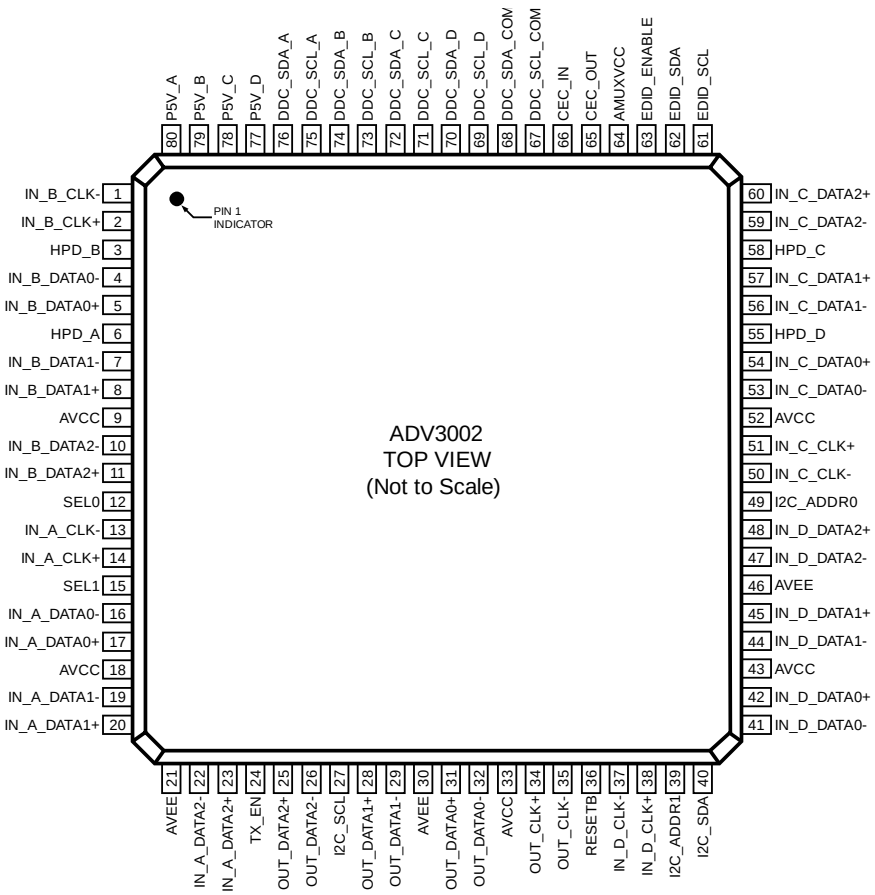
EX3AV (HDMI : IC1,4,5,6,7,8)



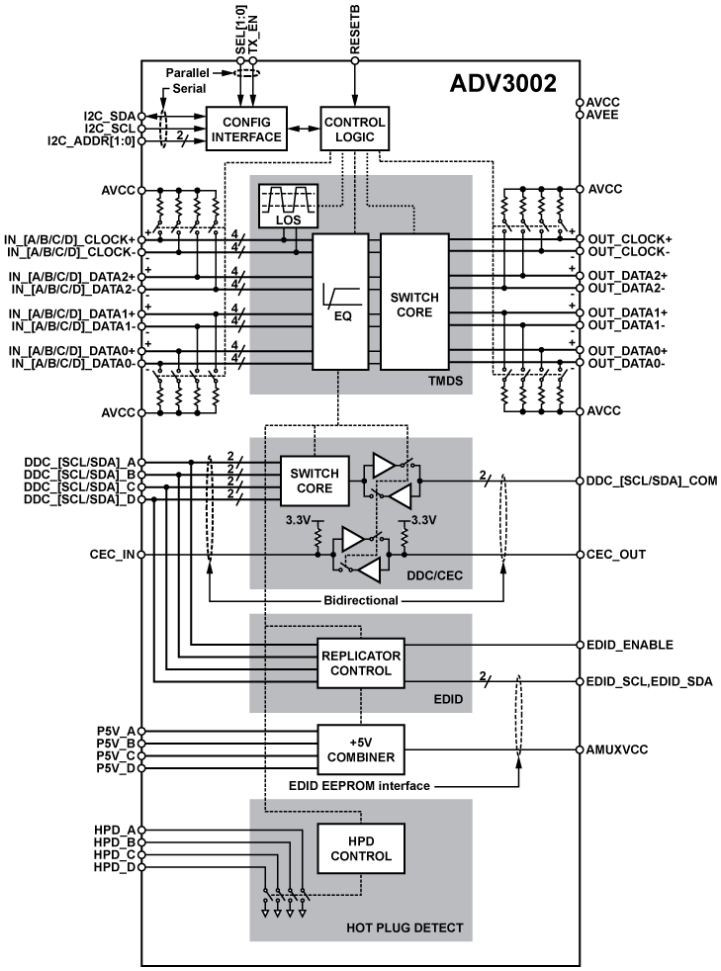
EX3AV Terminal Functions

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.

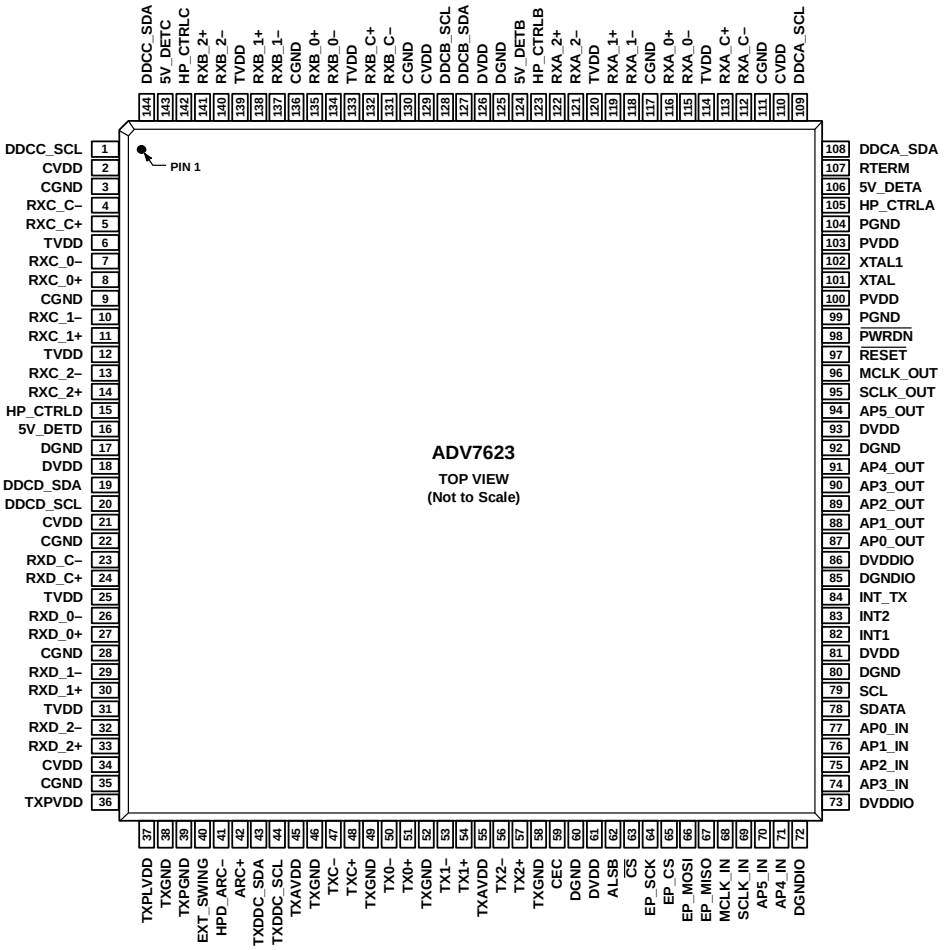
ADV3002BSTZ (HDMI : U1)



ADV3002BSTZ Block diagram



ADV7623 (HDMI : IC9)



Pin Function Descriptions

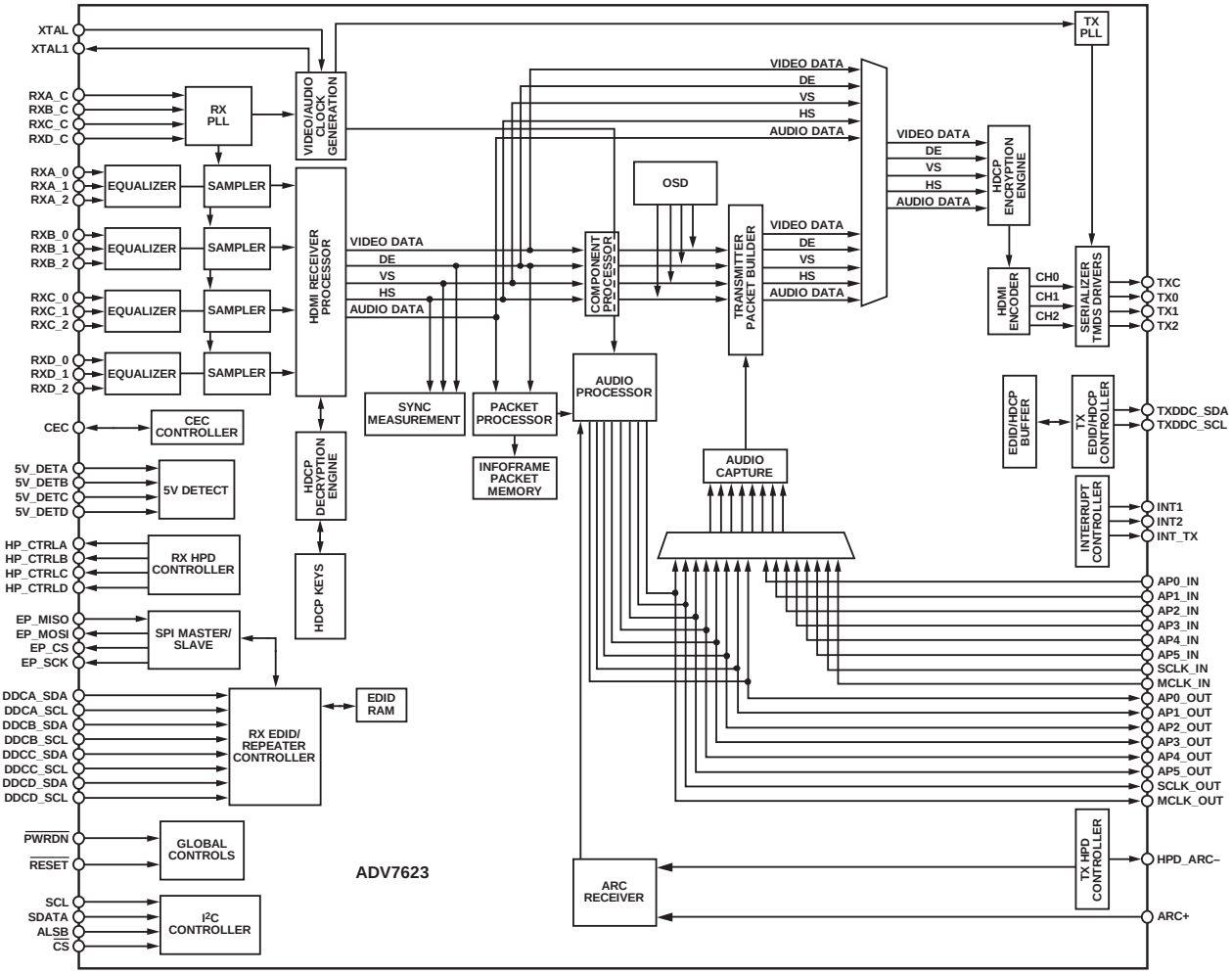
Pin No.	Mnemonic	Type	Description
1	DDCC_SCL	Digital input	HDCP Slave Serial Clock Port C. DDCC_SCL is a 3.3 V input that is 5 V tolerant.
2	CVDD	Power	Receiver Comparator Supply Voltage (1.8 V).
3	CGND	Ground	TVDD and CVDD Ground.
4	RXC_C–	HDMI input	Digital Input Clock Complement of Port C in the HDMI 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).

Pin No.	Mnemonic	Type	Description
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	DVDD Ground.
18	DVDD	Power	Digital Supply Voltage (1.8 V).
19	DDCD_SDA	Digital I/O	HDCP Slave Serial Data Port 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 (1.8 V).
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 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 (1.8 V).
35	CGND	Ground	TVDD and CVDD Ground.
36	TXPVDD	Power	1.8 V Power Supply for Digital and I/O Power Supply. This pin supplies power to the digital logic and I/Os. It 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	This pin sets the internal reference currents. Place an 887 Ω resistor (1% tolerance) between this pin and ground.
41	HPD_ARC−	Analog input	Hot Plug Detect Signal. This pin indicates to the interface whether the receiver is connected. It supports 1.8 V to 5 V CMOS logic levels.
42	ARC+	Analog input	Audio Return Channel Input (5 V Tolerant).
43	TXDDC_SDA	Digital I/O	Serial Port Data I/O to Receiver. This pin serves as the master to the DDC bus. It supports a 5 V CMOS logic level.
44	TXDDC_SCL	Digital output	Serial Port Data Clock to Receiver. This pin serves as the master clock for the DDC bus. It supports a 5 V CMOS logic level.
45	TXAVDD	Power	1.8 V 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.
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	1.8 V Power Supply for TMDS Outputs.

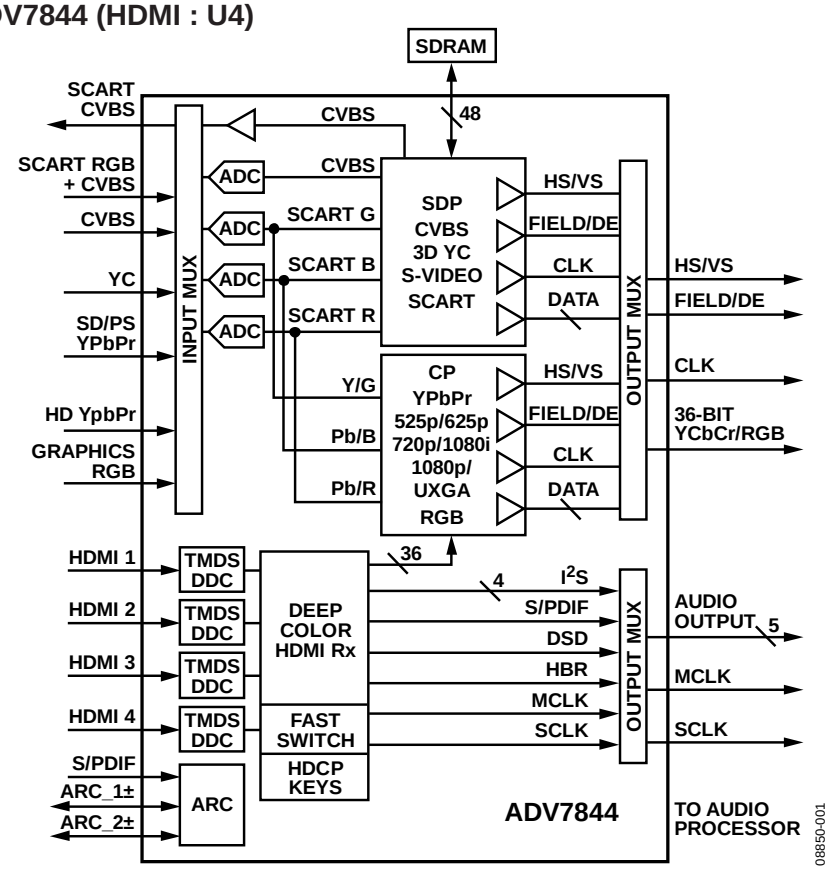
Pin No.	Mnemonic	Type	Description
13	RXC_2–	HDMI input	Digital Input Channel 2 Complement of Port C in the HDMI Interface.
14	RXC_2+	HDMI input	Digital Input Channel 2 True of Port C in the HDMI Interface.
15	HP_CTRLD	Digital output	Hot Plug Detect for Port D.
16	5V_DETD	Digital input	5 V Detect Pin for Port D in the HDMI Interface.
17	DGND	Ground	DVDD Ground.
18	DVDD	Power	Digital Supply Voltage (1.8 V).
19	DDCD_SDA	Digital I/O	HDCP Slave Serial Data Port 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 (1.8 V).
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 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 (1.8 V).
35	CGND	Ground	TVDD and CVDD Ground.
36	TXPVDD	Power	1.8 V Power Supply for Digital and I/O Power Supply. This pin supplies power to the digital logic and I/Os. It 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	This pin sets the internal reference currents. Place an 887 Ω resistor (1% tolerance) between this pin and ground.
41	HPD_ARC–	Analog input	Hot Plug Detect Signal. This pin indicates to the interface whether the receiver is connected. It supports 1.8 V to 5 V CMOS logic levels.
42	ARC+	Analog input	Audio Return Channel Input (5 V Tolerant).
43	TXDDC_SDA	Digital I/O	Serial Port Data I/O to Receiver. This pin serves as the master to the DDC bus. It supports a 5 V CMOS logic level.
44	TXDDC_SCL	Digital output	Serial Port Data Clock to Receiver. This pin serves as the master clock for the DDC bus. It supports a 5 V CMOS logic level.
45	TXAVDD	Power	1.8 V 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.
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	1.8 V Power Supply for TMDS Outputs.

Pin No.	Mnemonic	Type	Description
99	PGND	Ground	PVDD Ground.
100	PVDD	Power	PLL Supply Voltage (1.8 V).
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.
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 (1.8 V).
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	This pin sets the internal termination resistance. A 500 Ω resistor between this pin and ground should be used.
108	DDCA_SDA	Digital I/O	HDCP Slave Serial Data Port A. DDCA_SDA is a 3.3 V input/output that is 5 V tolerant.
109	DDCA_SCL	Digital input	HDCP Slave Serial Clock Port A. DDCA_SCL is a 3.3 V input that is 5 V tolerant.
110	CVDD	Power	Receiver Comparator Supply Voltage (1.8 V).
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	DVDD Ground.
126	DVDD	Power	Digital Supply Voltage (1.8 V).
127	DDCB_SDA	Digital I/O	HDCP Slave Serial Data Port 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 (1.8 V).
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 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 Data Port C. DDCC_SDA is a 3.3 V input/output that is 5 V tolerant.

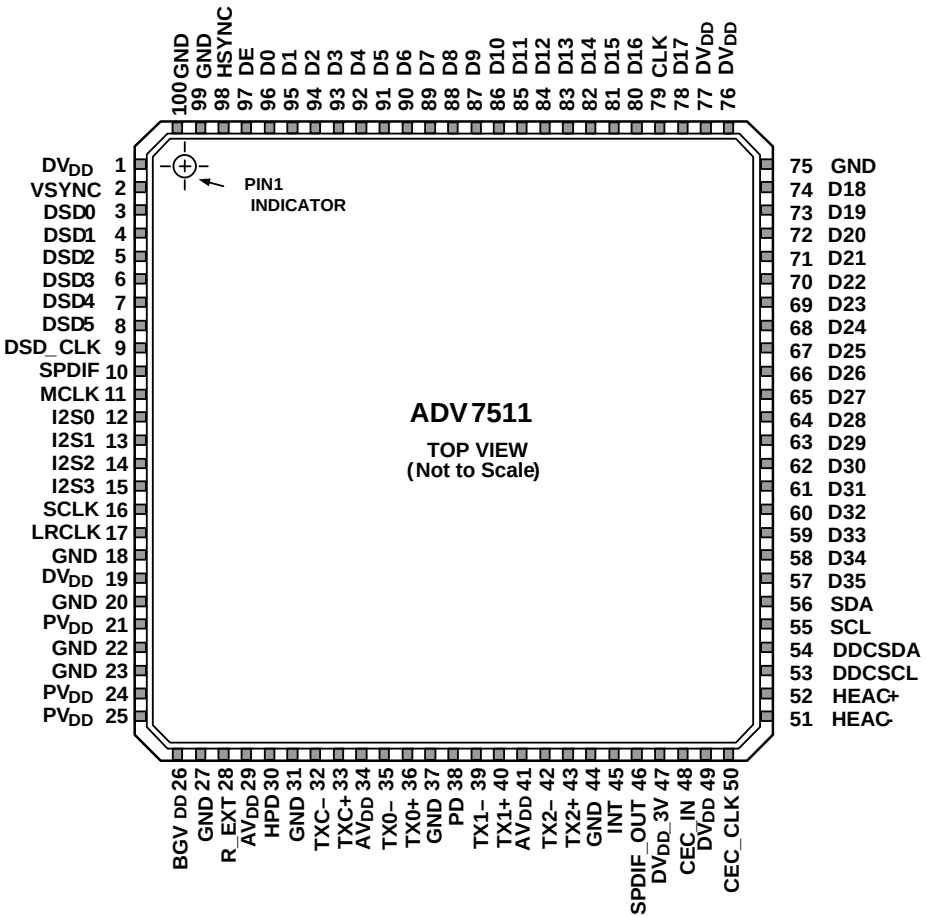
ADV7623 Block diagram



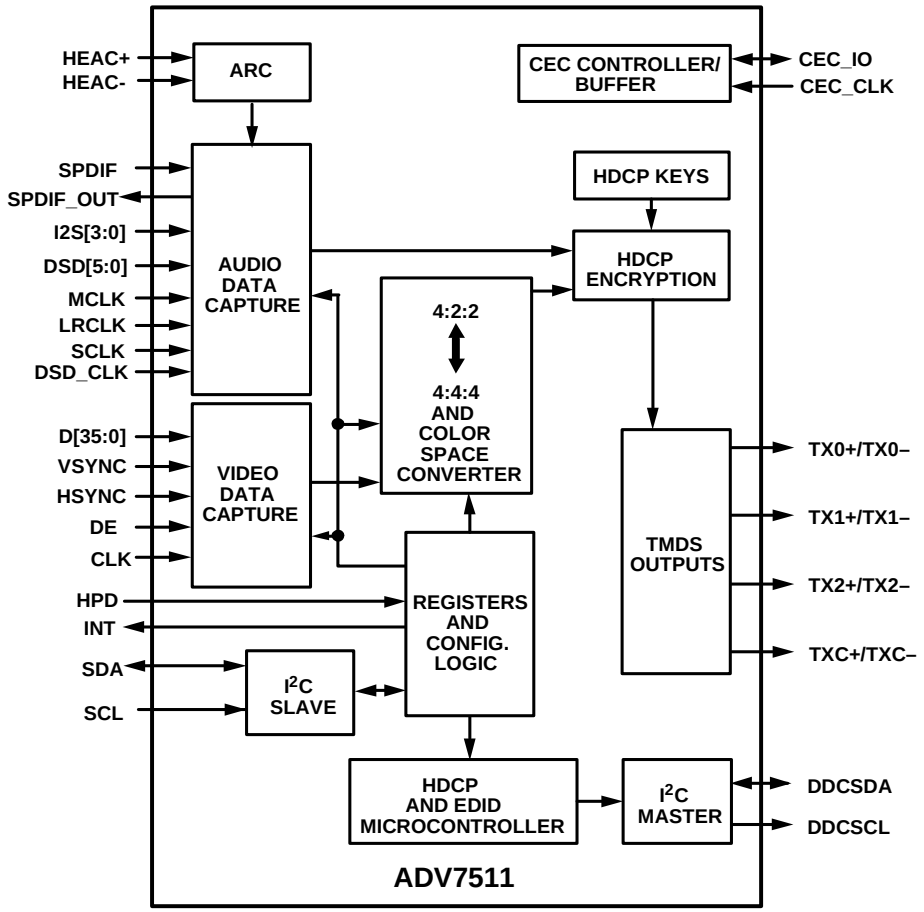
ADV7844 (HDMI : U4)



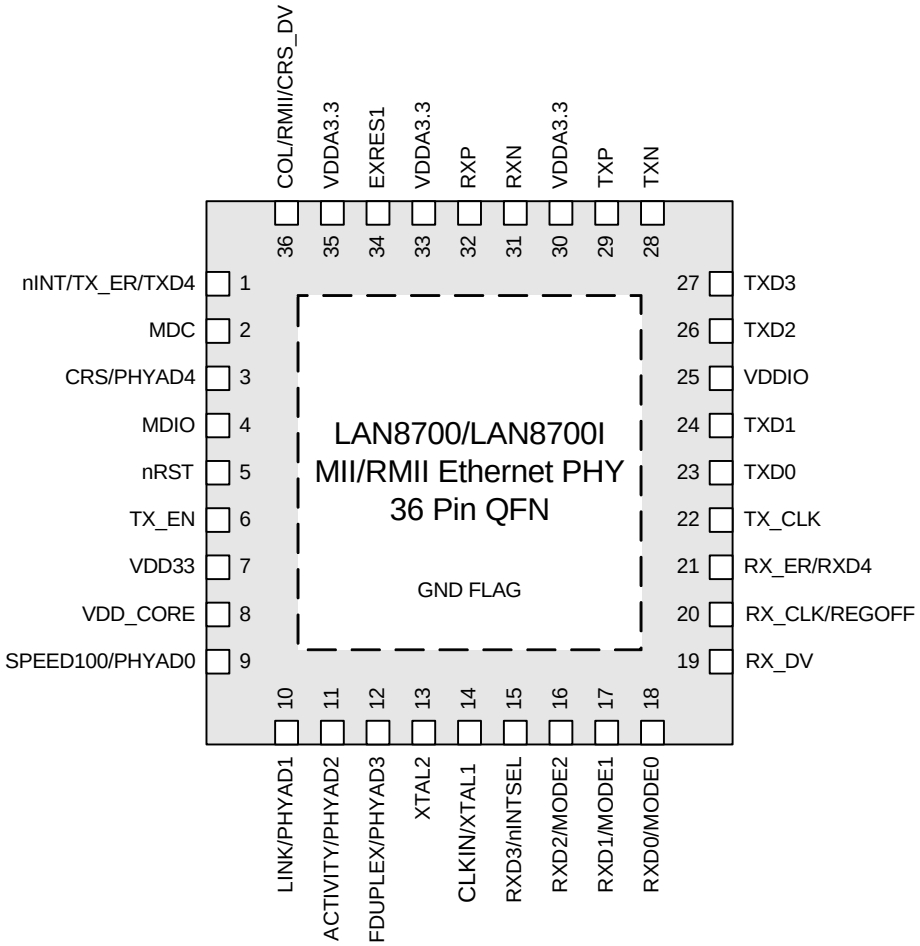
ADV7511BSTZ (HDMI : IC12)



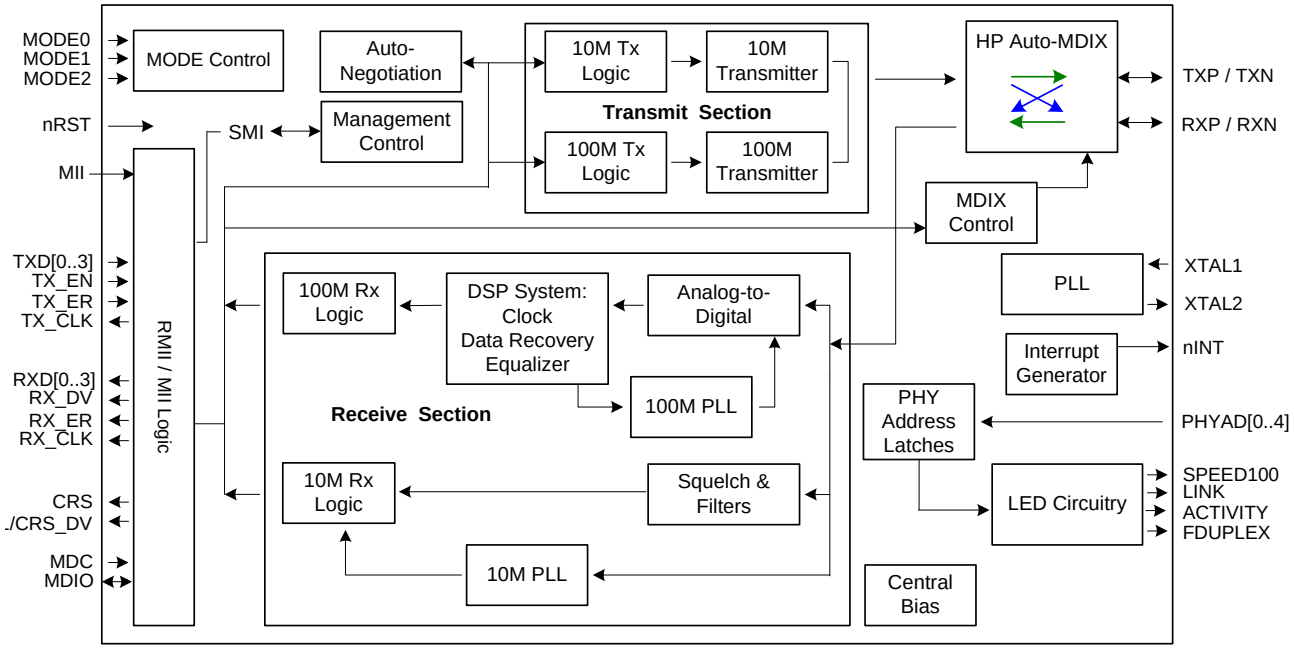
ADV7511BSTZ Block diagram



LAN8700-AEZG-TR (HDMI : IC14)



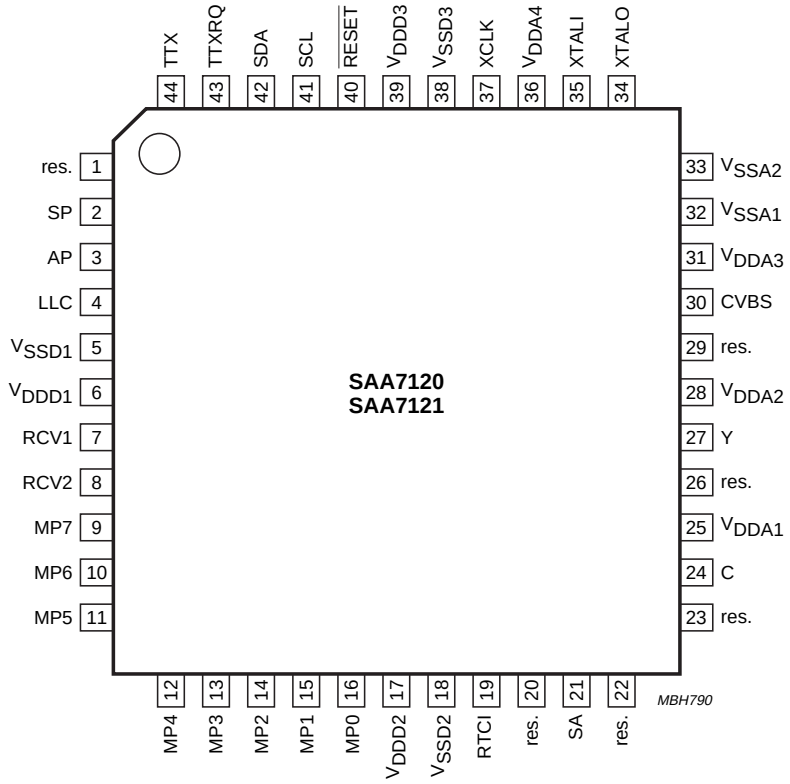
LAN8700-AEZG-TR Block Diagram



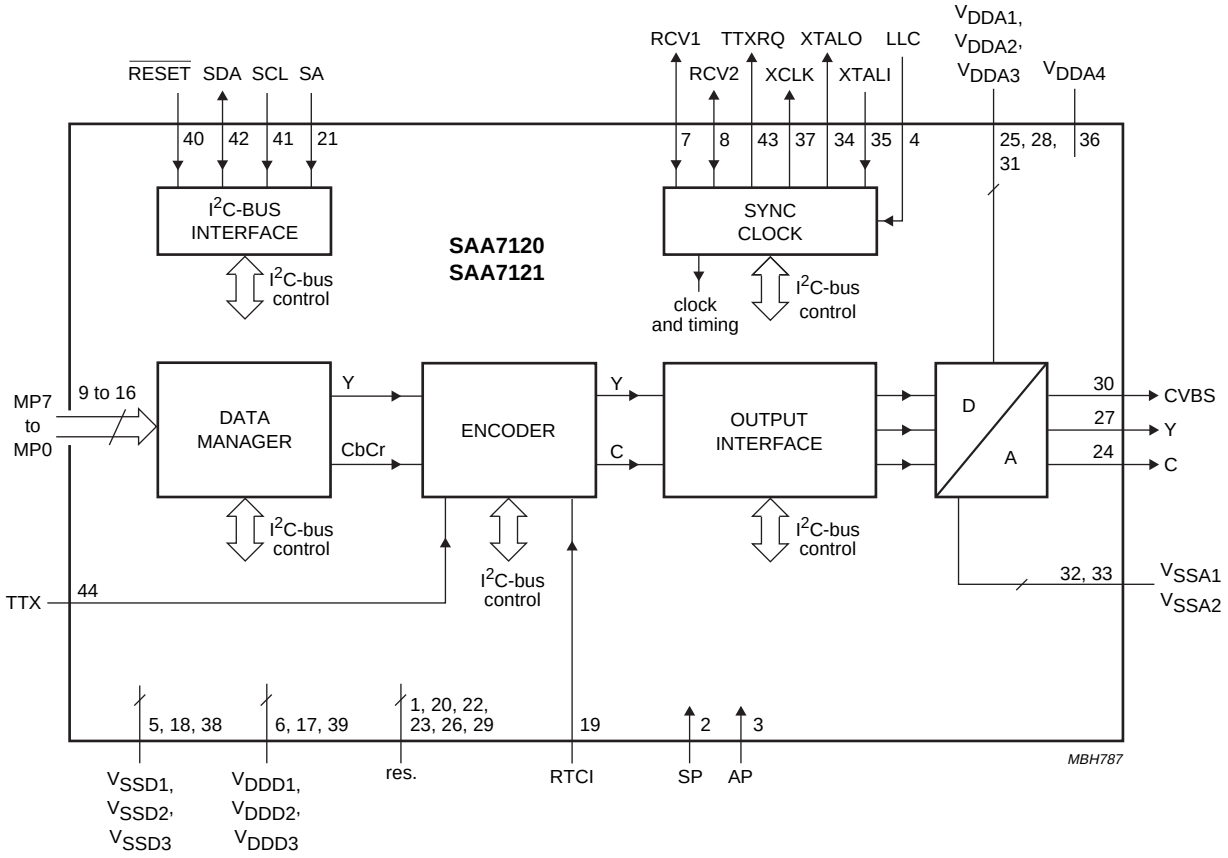
LAN8700-AEZG-TR Pin Description

PIN NO.	PIN NAME	PIN NO.	PIN NAME
1	nINT/TX_ER/TXD4	19	RX_DV
2	MDC	20	RX_CLK/REGOFF
3	CRS/PHYAD4	21	RX_ER/RXD4
4	MDIO	22	TXCLK
5	nRST	23	TXD0
6	TX_EN	24	TXD1
7	VDD33	25	VDDIO
8	VDD_CORE	26	TXD2
9	SPEED100/PHYAD0	27	TXD3
10	LINK/PHYAD1	28	TXN
11	ACTIVITY/PHYAD2	29	TXP
12	FDUPLEX/PHYAD3	30	VDDA3.3
13	XTAL2	31	RXN
14	CLKIN/XTAL1	32	RXP
15	RXD3/nINTSEL	33	VDDA3.3
16	RXD2/MODE2	34	EXRES1
17	RXD1/MODE1	35	VDDA3.3
18	RXD0/MODE0	36	COL/RMII/CRS_DV

SAA7121H (HDMI : IC15)



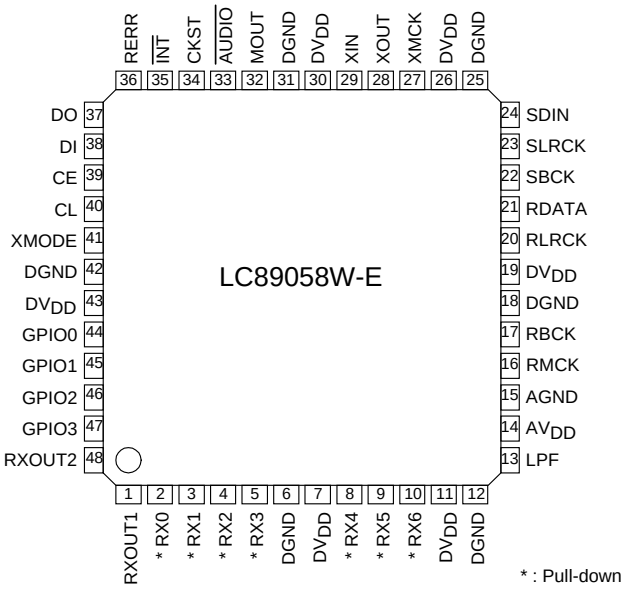
SAA7121H Block Diagram



SAA7121H Pin Description

SYMBOL	PIN	I/O	DESCRIPTION
res.	1	–	reserved
SP	2	I	test pin; connected to digital ground for normal operation
AP	3	I	test pin; connected to digital ground for normal operation
LLC	4	I	line-locked clock; this is the 27 MHz master clock for the encoder
V_{SSD1}	5	I	digital ground 1
V_{DDD1}	6	I	digital supply voltage 1
RCV1	7	I/O	raster control 1 for video port; this pin receives/provides a VS/FS/FSEQ signal
RCV2	8	I/O	raster control 2 for video port; this pin provides an HS pulse of programmable length or receives an HS pulse
MP7	9	I	MPEG port; it is an input for *"CCIR 656"* style multiplexed Cb Y, Cr data
MP6	10	I	
MP5	11	I	
MP4	12	I	
MP3	13	I	
MP2	14	I	
MP1	15	I	
MP0	16	I	
V_{DDD2}	17	I	digital supply voltage 2
V_{SSD2}	18	I	digital ground 2
RTCI	19	I	Real Time Control input; if the LLC clock is provided by an SAA7111 or SAA7151B, RTCI should be connected to pin RTCO of the decoder to improve the signal quality
res.	20	–	reserved
SA	21	I	the I^2C-bus slave address select input pin; LOW: slave address = 88H, HIGH = 8CH
res.	22	–	reserved
res.	23	–	reserved
C	24	O	analog output of the chrominance signal
V_{DDA1}	25	I	analog supply voltage 1 for the C DAC
res.	26	–	reserved
Y	27	O	analog output of VBS signal
V_{DDA2}	28	I	analog supply voltage 2 for the Y DAC
res.	29	–	reserved
CVBS	30	O	analog output of the CVBS signal
V_{DDA3}	31	I	analog supply voltage 3 for the CVBS DAC
V_{SSA1}	32	I	analog ground 1 for the DACs
V_{SSA2}	33	I	analog ground 2 for the oscillator and reference voltage
XTALO	34	O	crystal oscillator output (to crystal)
XTALI	35	I	crystal oscillator input (from crystal); if the oscillator is not used, this pin should be connected to ground
V_{DDA4}	36	I	analog supply voltage 4 for the oscillator and reference voltage
XCLK	37	O	clock output of the crystal oscillator

LC89058W-E (HDMI : IC19,21)



* : Pull-down resistor internal at no selection

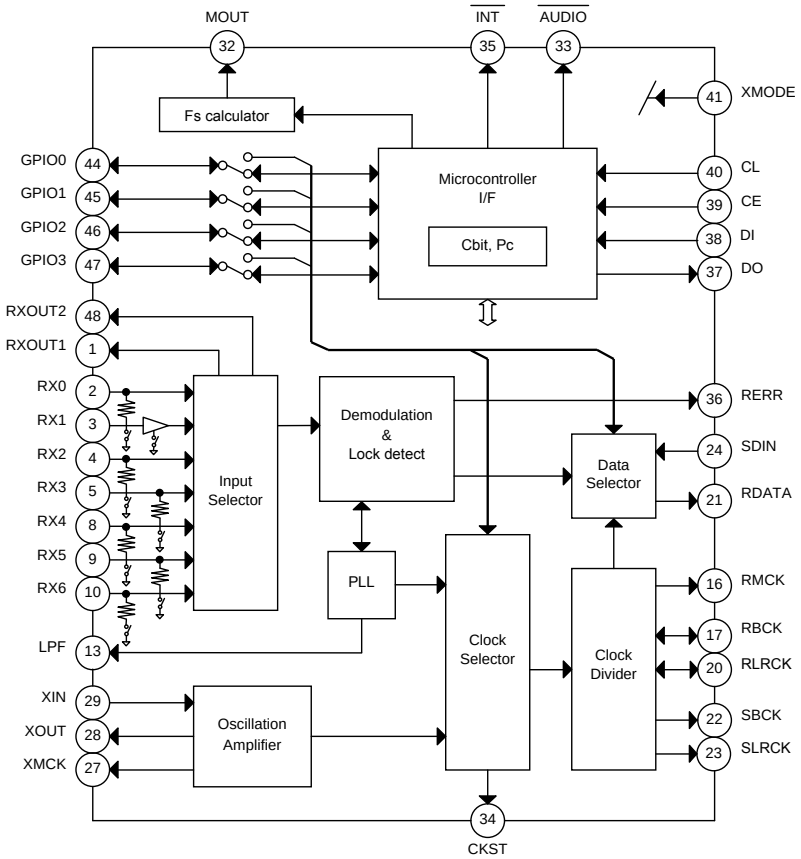
Pin Functions

Pin No.	Name	I/O	Function
1	RXOUT1	O	RX0-6 input S/PDIF through output pin 1
2	RX0	I_5(pd)	5V withstand voltage TTL input level compatible S/PDIF input pin (connected to GND when RX1 is set)
3	RX1	I(pd)	Co-axial compatible S/PDIF input pin (supported demodulation sampling frequency of up to 96kHz)
4	RX2	I_5(pd)	5V withstand voltage TTL input level compatible S/PDIF input pin (connected to GND when RX1 is set)
5	RX3	I_5(pd)	5V withstand voltage TTL input level compatible S/PDIF input pin
6	DGND		Digital GND
7	DV_{DD}		Digital power supply (3.3V)
8	RX4	I_5(pd)	5V tolerable TTL input level compatible S/PDIF input pin
9	RX5	I_5(pd)	5V tolerable TTL input level compatible S/PDIF input pin
10	RX6	I_5(pd)	5V tolerable TTL input level compatible S/PDIF input pin
11	DV_{DD}		Digital power supply (3.3V)
12	DGND		Digital GND
13	LPF	O	PLL loop filter connection pin
14	AV_{DD}		Analog power supply (3.3V)
15	AGND		Analog GND
16	RMCK	O	R system clock output pin (VCO, 512fs, XIN)
17	RBCK	O/I	R system bit clock I/O pin (64fs)
18	DGND		Digital GND
19	DV_{DD}		Digital power supply (3.3V)
20	RLRCK	O/I	R system LR clock I/O pin (fs)
21	RDATA	O	Serial audio data output pin
22	SBCK	O	S system bit clock output pin (16fs, 32fs, 64fs, 128fs)
23	SLRCK	O	S system LR clock output pin (fs/4, fs/2, fs, 2fs)
24	SDIN	I_5	External serial audio data input pin

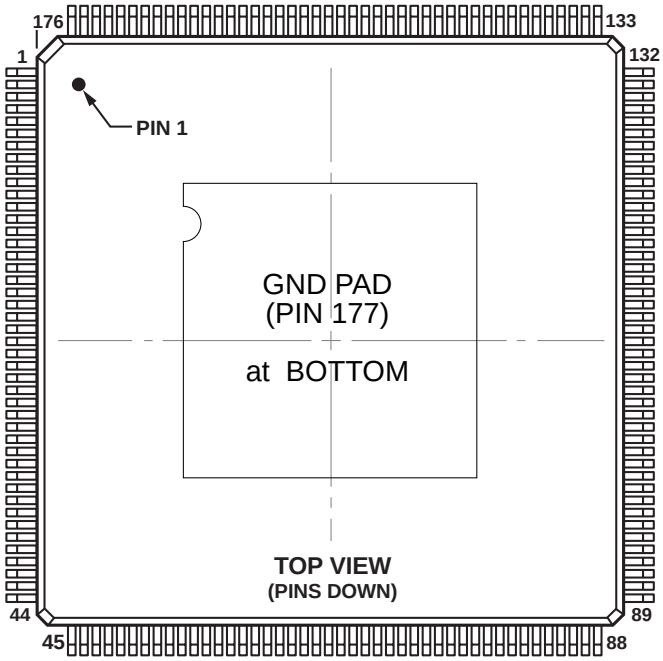
Pin No.	Name	I/O	Function
25	DGND		Digital GND
26	DV_{DD}		Digital power supply (3.3V)
27	XMCK	O	Oscillation amplifier clock output pin
28	XOUT	O	Output pin connected to the resonator
29	XIN	I	External clock input pin, connected to the resonator (12.288MHz/24.576MHz)
30	DV_{DD}		Digital power supply
31	DGND		Digital GND
32	MOUT	I/O	Emphasis information || Input fs monitor output || Chip address setting input pin
33	$\overline{AUDIO}$	I/O	Channel status bit 1 output || Chip address setting input pin
34	CKST	I/O	Clock switching transition period signal output || Master/slave setting input pin
35	$\overline{INT}$	I/O	Microcontroller interrupt signal output || Pins44-48 I/O setting input pin
36	RERR	O	PLL lock error, data error flag output pin
37	DO	O	CCB microcontroller I/F, read data output pin (3-state)
38	DI	I_5	CCB microcontroller I/F, write data input pin
39	CE	I_5	CCB microcontroller I/F, chip enable input pin
40	CL	I_5	CCB microcontroller I/F, clock input pin
41	XMODE	I_5	System reset input pin
42	DGND		Digital GND
43	DV_{DD}		Digital power supply (3.3V)
44	GPIO0	O/I	General-purpose I/O pin || Selector input pin (output referred to RDATA pin)
45	GPIO1	O/I	General-purpose I/O pin || Selector input pin (output referred to RLRCK pin)
46	GPIO2	O/I	General-purpose I/O pin || Selector input pin (output referred to RBCK pin)
47	GPIO3	O/I	General-purpose I/O pin || Selector input pin (output referred to RMCK pin)
48	RXOUT2	O	RX0-6 input S/PDIF through output pin 2

* Input voltage: I= -0.3 to 3.6V, I_5 = -0.3 to 5.5V
* Output voltage: O= -0.3 to 3.6V
* Pins 2, 4, 5, 8, 9, 10, 24, 38, 39, 40, and 41 have an internal pull-down resistor (pd).
  Their level is fixed when they are unselected.
* Pins 32 and 33 are input pins for chip address setting when pin 41 is held at the low level.
* Pin 34 serves as the input pin for designating as the master or slave when pin 41 is held at the low level.
* Pin 35 serves as the input pin for configuring the I/O of pins 44 to 47 when pin 41 is held at the low level.
* The DV_{DD} and AV_{DD} pins must be held at the same level and turned on and off at the same timing to preclude Latch-up conditions.

LC89058W-E Block diagram



ADSP21487KSWZ3B (HDMI : U8)

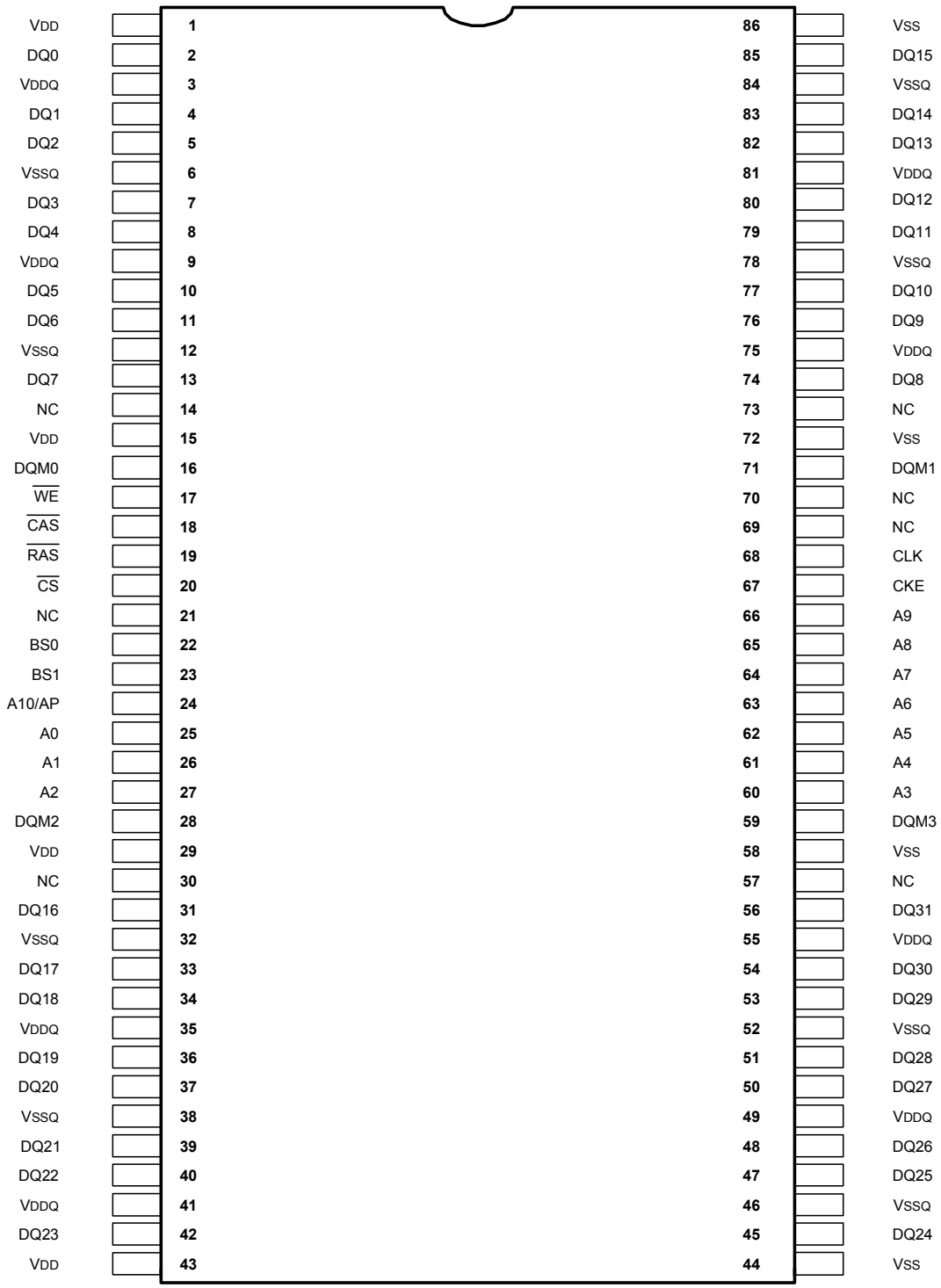


ADSP21487KSWZ3B Terminal Function

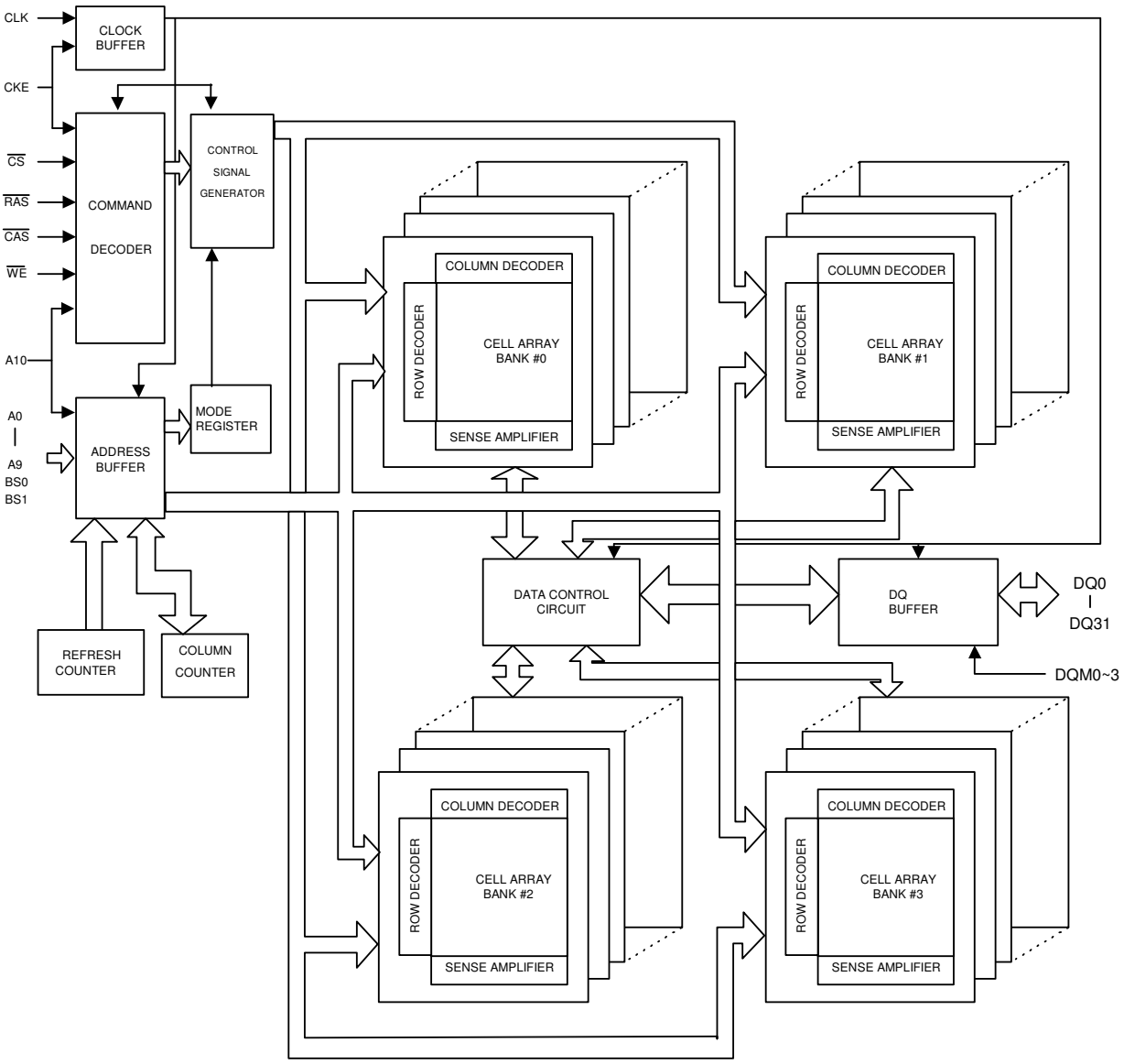
Pin Name	Pin No.	Pin Name	Pin No.	Pin Name	Pin No.	Pin Name	Pin No.
SDDQM	1	V_{DD_EXT}	45	DAI_P10	89	V_{DD_INT}	133
$\overline{MS0}$	2	DPI_P08	46	V_{DD_INT}	90	FLAG0	134
SDCKE	3	DPI_P07	47	V_{DD_EXT}	91	FLAG1	135
V_{DD_INT}	4	V_{DD_INT}	48	DAI_P20	92	FLAG2	136
CLK_CFG1	5	DPI_P09	49	V_{DD_INT}	93	NC	137
ADDR0	6	DPI_P10	50	DAI_P08	94	FLAG3	138
BOOT_CFG0	7	DPI_P11	51	DAI_P14	95	NC	139
V_{DD_EXT}	8	DPI_P12	52	DAI_P04	96	NC	140
ADDR1	9	DPI_P13	53	DAI_P18	97	V_{DD_EXT}	141
ADDR2	10	DPI_P14	54	DAI_P17	98	NC	142
ADDR3	11	DAI_P03	55	DAI_P16	99	V_{DD_INT}	143
ADDR4	12	NC	56	DAI_P12	100	$\overline{TRST}$	144
ADDR5	13	V_{DD_EXT}	57	DAI_P15	101	NC	145
BOOT_CFG1	14	NC	58	V_{DD_INT}	102	$\overline{EMU}$	146
GND	15	NC	59	DAI_P11	103	DATA0	147
ADDR6	16	NC	60	V_{DD_EXT}	104	DATA1	148
ADDR7	17	NC	61	V_{DD_INT}	105	DATA2	149
NC	18	V_{DD_INT}	62	BOOT_CFG2	106	DATA3	150
NC	19	NC	63	V_{DD_INT}	107	TDO	151
ADDR8	20	NC	64	AMI_ACK	108	DATA4	152
ADDR9	21	V_{DD_INT}	65	GND	109	V_{DD_EXT}	153
CLK_CFG0	22	NC	66	THD_M	110	DATA5	154
V_{DD_INT}	23	NC	67	THD_P	111	DATA6	155
CLKIN	24	V_{DD_INT}	68	V_{DD_THD}	112	V_{DD_INT}	156
XTAL	25	NC	69	V_{DD_INT}	113	DATA7	157
ADDR10	26	$\overline{WDTRSTO}$	70	V_{DD_INT}	114	TDI	158
SDA10	27	NC	71	$\overline{MS1}$	115	SDCLK	159
V_{DD_EXT}	28	V_{DD_EXT}	72	V_{DD_INT}	116	V_{DD_EXT}	160
V_{DD_INT}	29	DAI_P07	73	WDT_CLKO	117	DATA8	161
ADDR11	30	DAI_P13	74	WDT_CLKIN	118	DATA9	162
ADDR12	31	DAI_P19	75	V_{DD_EXT}	119	DATA10	163
ADDR17	32	DAI_P01	76	ADDR23	120	TCK	164
ADDR13	33	DAI_P02	77	ADDR22	121	DATA11	165
V_{DD_INT}	34	V_{DD_INT}	78	ADDR21	122	DATA12	166
ADDR18	35	NC	79	V_{DD_INT}	123	DATA14	167
$\overline{RESETOUT}/\overline{RUNRSTIN}$	36	NC	80	ADDR20	124	DATA13	168
V_{DD_INT}	37	NC	81	ADDR19	125	V_{DD_INT}	169
DPI_P01	38	NC	82	V_{DD_EXT}	126	DATA15	170
DPI_P02	39	NC	83	ADDR16	127	$\overline{SDWE}$	171
DPI_P03	40	V_{DD_EXT}	84	ADDR15	128	$\overline{SDRAS}$	172
V_{DD_INT}	41	V_{DD_INT}	85	V_{DD_INT}	129	$\overline{RESET}$	173
DPI_P05	42	DAI_P06	86	ADDR14	130	TMS	174
DPI_P04	43	DAI_P05	87	$\overline{AMI_WR}$	131	$\overline{SDCAS}$	175
DPI_P06	44	DAI_P09	88	$\overline{AMI_RD}$	132	V_{DD_INT}	176
						GND	177*

* at BOTTOM

W9864G6JH-6 (HDMI : U6)



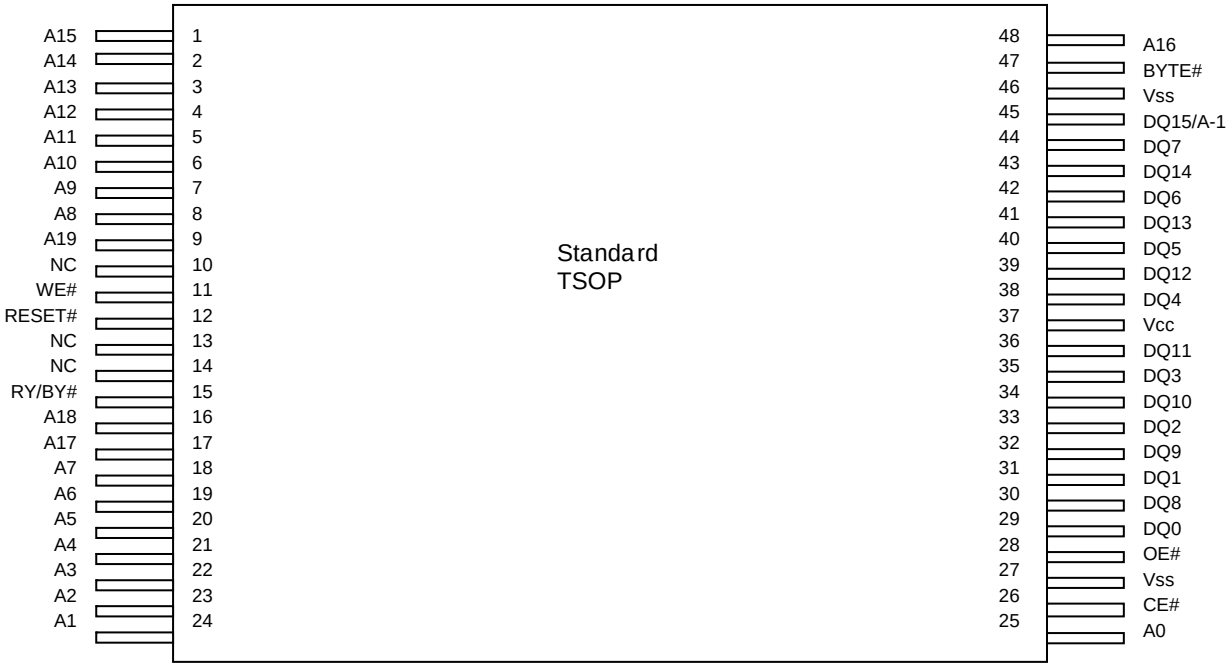
W9864G6JH-6 Block diagram



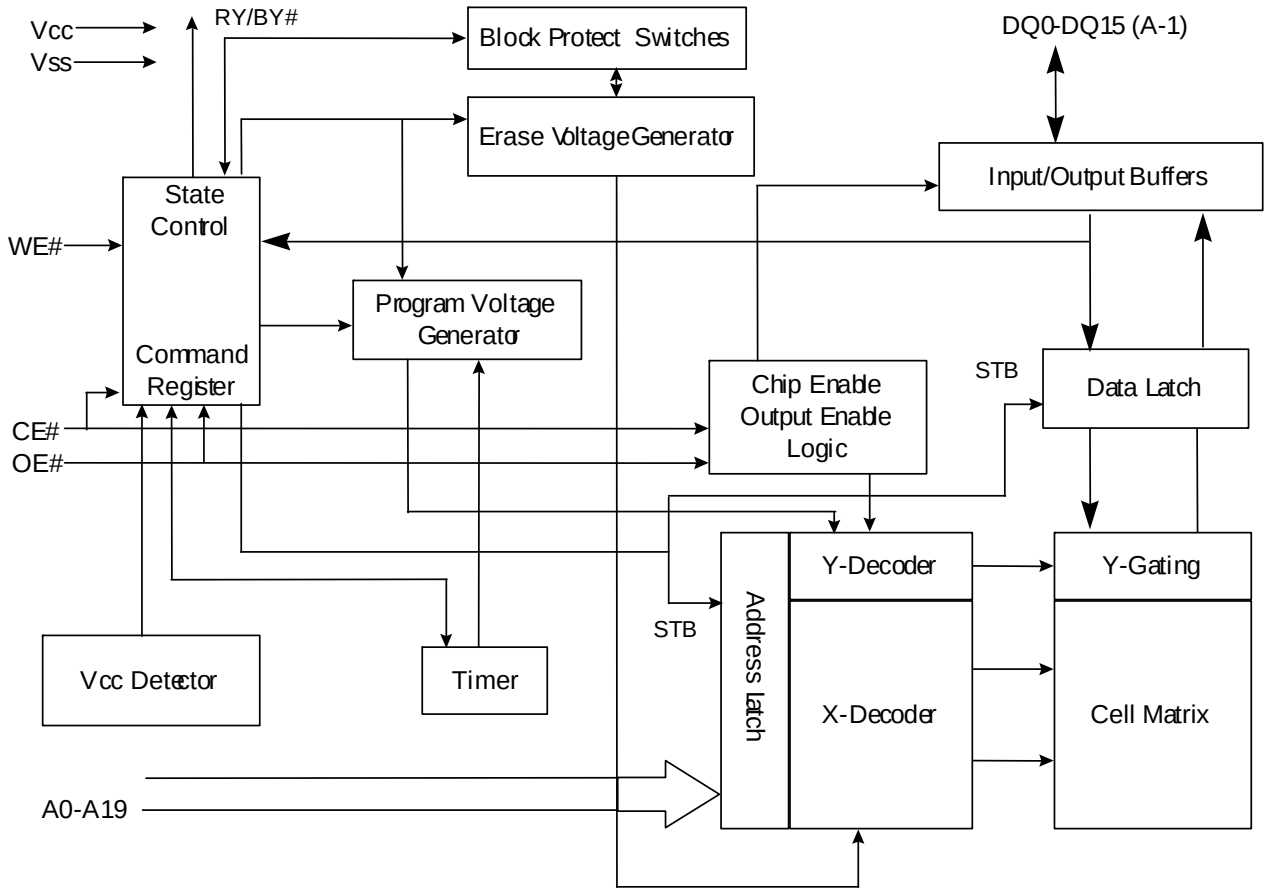
W9864G6JH-6 Pin description

PIN NUMBER	PIN NAME	FUNCTION	DESCRIPTION
24, 25, 26, 27, 60, 61, 62, 63, 64, 65, 66	A0−A10	Address	Multiplexed pins for row and column address. Row address: A0−A10. Column address: A0−A7. A10 is sampled during a precharge command to determine if all banks are to be precharged or bank selected by BS0, BS1.
22, 23	BS0, BS1	Bank Select	Select bank to activate during row address latch time, or bank to read/write during address latch time.
2, 4, 5, 7, 8, 10, 11, 13, 31, 33, 34, 36, 37, 39, 40, 42, 45, 47, 48, 50, 51, 53, 54, 56, 74, 76, 77, 79, 80, 82, 83, 85	DQ0−DQ31	Data Input/ Output	Multiplexed pins for data output and input.
20	$\overline{CS}$	Chip Select	Disable or enable the command decoder. When command decoder is disabled, new command is ignored and previous operation continues.
19	$\overline{RAS}$	Row Address Strobe	Command input. When sampled at the rising edge of the clock $\overline{RAS}$, $\overline{CAS}$ and $\overline{WE}$ define the operation to be executed.
18	$\overline{CAS}$	Column Address Strobe	Referred to $\overline{RAS}$
17	$\overline{WE}$	Write Enable	Referred to $\overline{RAS}$
16, 28, 59, 71	DQM0−DQM3	Input/Output Mask	The output buffer is placed at Hi-Z (with latency of 2) when DQM is sampled high in read cycle. In write cycle, sampling DQM high will block the write operation with zero latency.
68	CLK	Clock Inputs	System clock used to sample inputs on the rising edge of clock.
67	CKE	Clock Enable	CKE controls the clock activation and deactivation. When CKE is low, Power Down mode, Suspend mode, or Self Refresh mode is entered.
1, 15, 29, 43	V_{DD}	Power	Power for input buffers and logic circuit inside DRAM.
44, 58, 72, 86	V_{SS}	Ground	Ground for input buffers and logic circuit inside DRAM.
3, 9, 35, 41, 49, 55, 75, 81	V_{DDQ}	Power for I/O Buffer	Separated power from VDD, to improve DQ noise immunity.
6, 12, 32, 38, 46, 52, 78, 84	V_{SSQ}	Ground for I/O Buffer	Separated ground from VSS, to improve DQ noise immunity.
14, 21, 30, 57, 69, 70, 73	NC	No Connection	No connection.

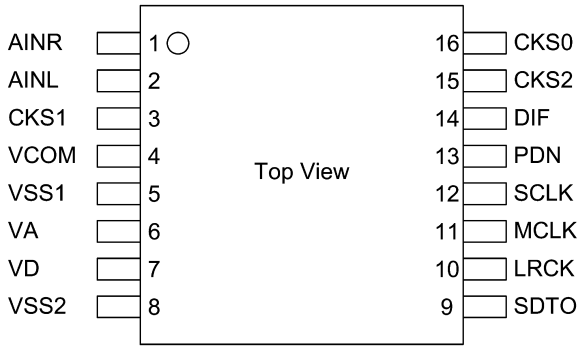
EN29LV160BB-70TIP (HDMI : U7)



EN29LV160BB-70TIP Block Diagram



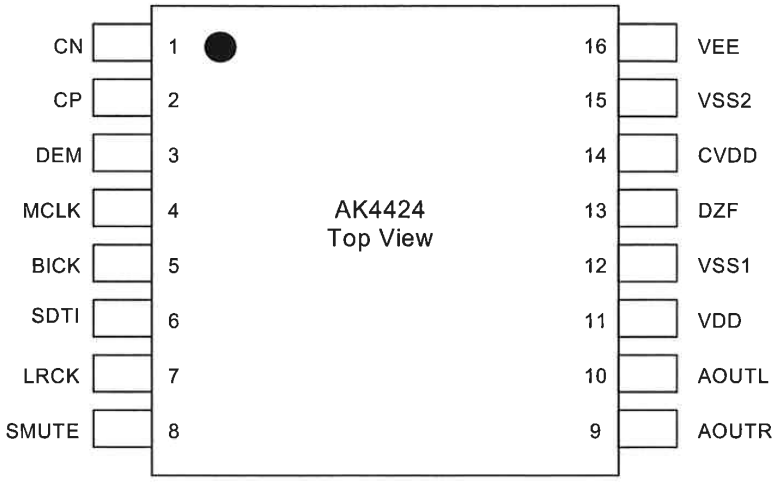
AK5358BET (HDMI : IC30)



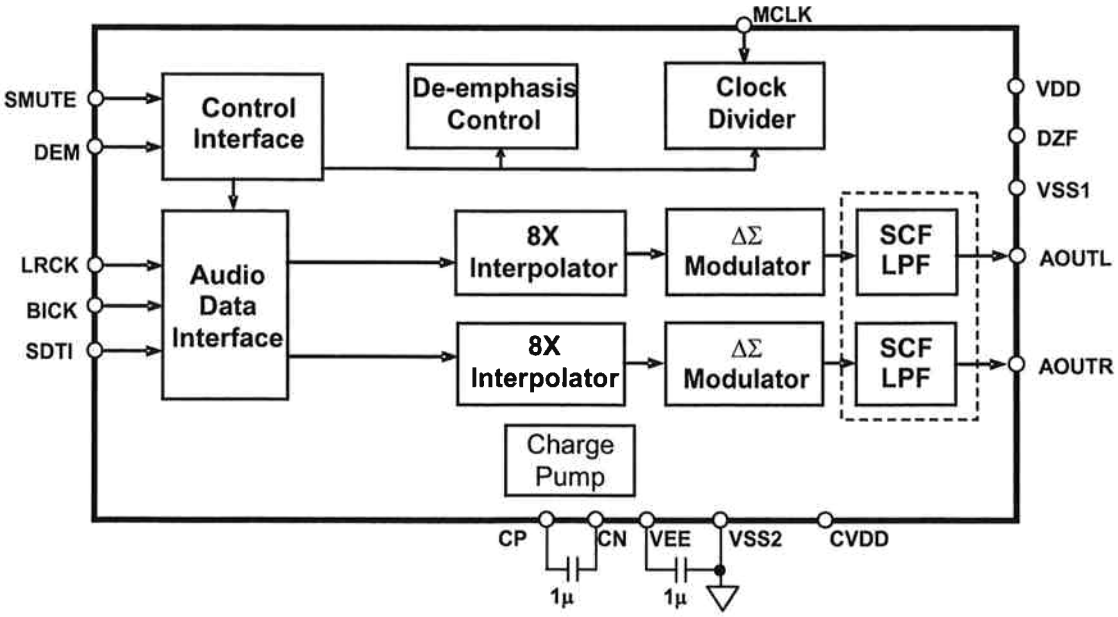
AK5358BET Pin Function

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

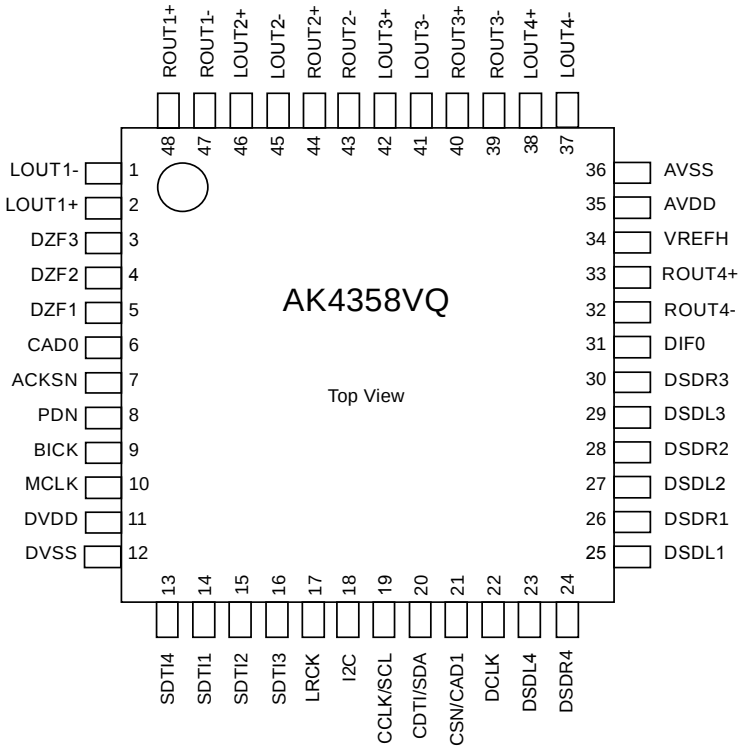
AK4424ET (HDMI : IC33)



AK4424ET Block Diagram



AK4358VQ (HDMI : IC29)



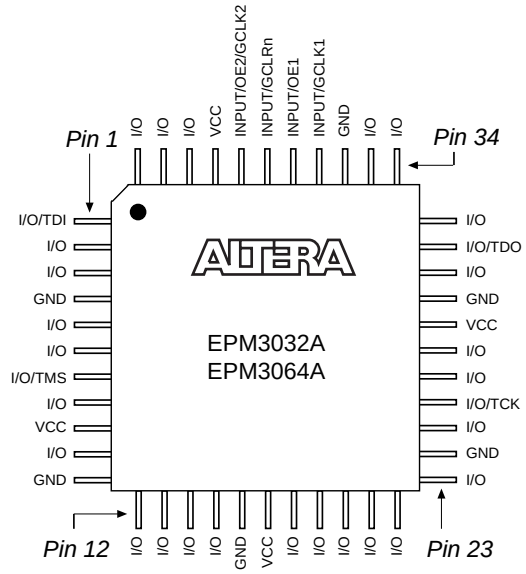
AK4358VQ Pin Function

No.	Pin Name	I/O	Function
1	LOUT1-	O	DAC1 Lch Negative Analog Output Pin
2	LOUT1+	O	DAC1 Lch Positive Analog Output Pin
3	DZF3	O	Zero Input Detect 3 Pin
4	DZF2	O	Zero Input Detect 2 Pin
5	DZF1	O	Zero Input Detect 1 Pin
6	CAD0	I	Chip Address 0 Pin
7	ACKSN	I	Auto Setting Mode Disable Pin (Pull-down Pin) "L": Auto Setting Mode, "H": Manual Setting Mode
8	PDN	I	Power-Down Mode Pin When at "L", the AK4358 is in the power-down mode and is held in reset. The AK4358 should always be reset upon power-up.
9	BICK	I	Audio Serial Data Clock Pin
10	MCLK	I	Master Clock Input Pin An external TTL clock should be input on this pin.
11	DVDD	-	Digital Power Supply Pin, +4.75~+5.25V
12	DVSS	-	Digital Ground Pin
13	SDTI4	I	DAC4 Audio Serial Data Input Pin
14	SDTI1	I	DAC1 Audio Serial Data Input Pin
15	SDTI2	I	DAC2 Audio Serial Data Input Pin
16	SDTI3	I	DAC3 Audio Serial Data Input Pin
17	LRCK	I	L/R Clock Pin
18	I2C	I	Control Mode Select Pin "L": 3-wire Serial, "H": I^2C Bus
19	CCLK/SCL	I	Control Data Clock Pin I2C = "L": CCLK (3-wire Serial), I2C = "H": SCL (I^2C Bus)
20	CDTI/SDA	I/O	Control Data Input Pin I2C = "L": CDTI (3-wire Serial), I2C = "H": SDA (I^2C Bus)
21	CSN/CAD1	I	Chip Select Pin I2C = "L": CSN (3-wire Serial), I2C = "H": CAD1 (I^2C Bus)
22	DCLK	I	DSD Clock Pin
23	DSDL4	I	DAC4 DSD Lch Data Input Pin
24	DSDR4	I	DAC4 DSD Rch Data Input Pin
25	DSDL1	I	DAC1 DSD Lch Data Input Pin
26	DSDR1	I	DAC1 DSD Rch Data Input Pin
27	DSDL2	I	DAC2DSD Lch Data Input Pin
28	DSDR2	I	DAC2 DSD Rch Data Input Pin

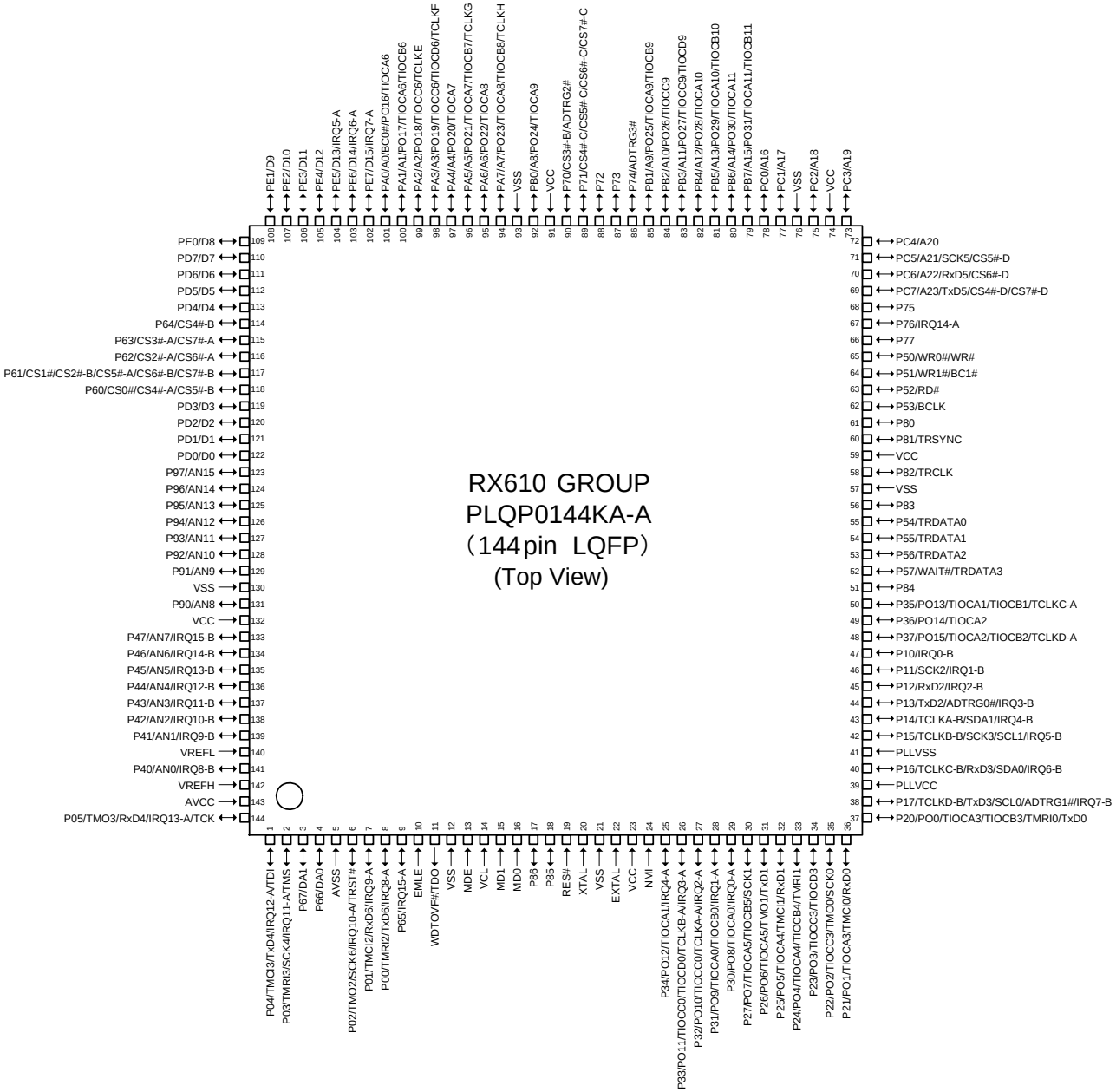
29	DSDL3	I	DAC3 DSD Lch Data Input Pin
30	DSDR3	I	DAC3 DSD Rch Data Input Pin
31	DIF0	I	Audio Data Interface Format 0 Pin
32	ROUT4-	O	DAC4 Rch Negative Analog Output Pin
33	ROUT4+	O	DAC4 Rch Positive Analog Output Pin
34	VREFH	I	Positive Voltage Reference Input Pin
35	AVDD	-	Analog Power Supply Pin, +4.75~+5.25V
36	AVSS	-	Analog Ground Pin
37	LOUT4-	O	DAC4 Lch Negative Analog Output Pin
38	LOUT4+	O	DAC4 Lch Positive Analog Output Pin
39	ROUT3-	O	DAC3 Rch Negative Analog Output Pin
40	ROUT3+	O	DAC3 Rch Positive Analog Output Pin
41	LOUT3-	O	DAC3 Lch Negative Analog Output Pin
42	LOUT3+	O	DAC3 Lch Positive Analog Output Pin
43	ROUT2-	O	DAC2 Rch Negative Analog Output Pin
44	ROUT2+	O	DAC2 Rch Positive Analog Output Pin
45	LOUT2-	O	DAC2 Lch Negative Analog Output Pin
46	LOUT2+	O	DAC2 Lch Positive Analog Output Pin
47	ROUT1-	O	DAC1 Rch Negative Analog Output Pin
48	ROUT1+	O	DAC1 Rch Positive Analog Output Pin

Note: All input pins except pull-down pin should not be left floating.

EPM3032A (HDMI : IC 22)



R5F56108VNFP (HDMI : IC41)



R5F56108VNFP Terminal Functions △2

Pin	Pin Name	Symbol	I/O	Pull up/ down	LvCnv	STBY	CEC STBY	Function
1	P04/IRQ12-A/TMCI3/ TxD4/TDI	NC	I	M3VPu	-	I	I	NC
2	P03/IRQ11-A/TMRI3/ SCK4/TMS	NC	I	M3VPu	-	I	I	NC
3	P67/DA1	HIN SELA	O	-	-	L	L	For HDMI 4/5/6/F selection(TC4052)
4	P66/DA0	HIN SELB	O	-	-	L	L	For HDMI 4/5/6/F selection(TC4052)
5	AVSS	AVSS	-	-	-	-	-	GND
6	P02/IRQ10-A/TMO2/ SCK6/TRST#	NC	I	Pd	-	I	I	NC
7	P01/IRQ9-A/TMCI2/RxD6	RXD MI232O	I	M3VPu	-	I	I	Data received from the external pin(AMX)/MITSUBISHI writer rewrite
8	P00/IRQ8-A/TMRI2/TxD6	TXD MO232I	O	-	-	L	L	Data transfer to external pin(AMX)/MITSUBISHI writer rewrite
9	P65/IRQ15-A	POWER KEY	I	M3VPu	-	I	I	POWER KEY (WAIT MODE cancel, interrupt port)
10	EMLE	EMLE	I	Pd	-	-	-	Emulator communication pin
11	WDTOVF#/TDO	TDO/WDTOVF#	O/O	-	-	-	-	Emulator communication pin
12	VSS	VSS	I	-	-	-	-	GND
13	MDE	MDE	I	Pd	-	-	-	NC

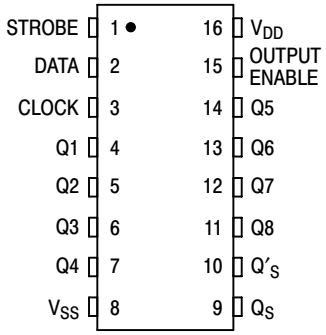
Pin	Pin Name	Symbol	I/O	Pull up/ down	LvCnv	STBY	CEC STBY	Function
14	VCL	VCL	I	-	-	-	-	Smoothing capacitor connection pin
15	MD1	MD1	I	M3VPu	-	-	-	NC
16	MD0	MD0	I	M3VPu	-	-	-	NC
17	P86	(MUTE POWER)	O	-	-	L	L	Reserve (PRE MUTE control)
18	P85	REMOTE POWER(232C)	O	-	-	L	L	232C POWER control pin(ON: H)
19	RES#	RESET	I	-	-	-	-	Reset input pin (reset: L)
20	XTAL	XTAL	I	-	-	-	-	Clock input
21	VSS	VSS	-	-	-	-	-	GND
22	EXTAL	EXTAL	-	-	-	-	-	Clock output
23	VCC	VCC	-	-	-	-	-	+3.3V
24	NMI	NMI	I	M3VPu	-	-	-	NC
25	P34/IRQ4-A/PO12/ TIOCA1	BDOWN	I	-	-	I	I	Power failure detection pin(Power failure:L)
26	P33/IRQ3-A/PO11/ TIOCC0/TIOCD0/ TCLKB-A	PLDAERR	I	-	-	L	L	PLD ERROR detection pin
27	P32/IRQ2-A/PO10/ TIOCC0/TCLKA-A	NC	O	-	-	L	L	NC
28	P31/IRQ1-A/PO9/TIOCA0/ TIOCB0	ADV7623 INT1	I	-	-	I	I	HDMI transmitter /receiver / OSD (ADV7623) INT1 output pin
29	P30/IRQ0-A/PO8/TIOCA0	RC IN	I	-	-	I	I	Remote control signal input pin
30	P27/PO7/TIOCA5/ TIOCB5/SCK1	ADV7511 RST	0	SW3VPu	-	L	H	HDMI transmitter RESET control pin (ADV7511)
31	P26/PO6/TIOCA5/TMO1/ TxD1	iPod TXD	O	-	3->5	L	L	IPOD communication control pin
32	P25/PO5/TIOCA4/TMCI1/ RxD1	iPod RXD	I	-	5->3	L	L	IPOD communication control pin
33	P24/PO4/TIOCA4/ TIOCB4/TMRI1	TU RST/(TU STEREO)	O/I	SW3VPu	-	L/L	L/L	TUNER RESET pin (E3 model) /TUNER ST control pin (E2,EA,E1C,JP models)
34	P23/PO3/TIOCC3/TIOCD3	E RESET	0	-	-	L	L	ETHERNET RESET control pin (DM860)
35	P22/PO2/TIOCC3/TMO0/ SCK0	E POWER	0	-	-	L	L	ETHERNET POWER control pin (DM860)
36	P21/PO1/TIOCA3/TMCI0/ RxD0	E_RXDMIEO	0	-	-	L	L	ETHERNET communication control pin (DM860)
37	P20/PO0/TIOCA3/ TIOCB3/TMRI0/TxD0	E_TXDMOEI	0	-	-	L	L	ETHERNET communication control pin (DM860)
38	P17/IRQ7-B/TCLKD-B/ TxD3/SCL0/ADTRG1#	TU SCLK/TU SCL	O/O	SW3VPu	-	L/L	L/L	TUNER control pin
39	PLLVCC	PLLVCC	-	-	-	-	-	+3.3V
40	P16/IRQ6-B/TCLKC-B/ RxD3/SDA0	TU SDIO/TU SDA	O/I_O	SW3VPu	-	L/L	L/L	TUNER control pin
41	PLLVSS	PLLVSS	-	-	-	-	-	GND
42	P15/IRQ5-B/TCLKB-B/ SCK3/SCL1	HSCL (400k)	O	CEC3VPu	-	L	L	VIDEO I2C- HDMI TX,RX,OSD(ADV7623)/ HDMI_TX(ADV7511)/HDMI SW(ADV3002)/A to H decoder(ADV7844)
43	P14/IRQ4-B/TCLKA-B/ SDA1	HSDA (400k)	I_O	CEC3VPu	-	L	L	VIDEO I2C- HDMI TX,RX,OSD(ADV7623)/ HDMI_TX(ADV7511)/HDMI SW(ADV3002)/A to H decoder(ADV7844)
44	P13/IRQ3-B/TxD2/ ADTRG0#	ADV7623 SPI MO	O	-	-	L	L	OSD control pin (ADV7623)
45	P12/IRQ2-B/RxD2	ADV7623 SPI MI	I	-	-	L	L	OSD control pin (ADV7623)
46	P11/IRQ1-B/SCK2	ADV7623 SPI CLK	O	-	-	L	L	OSD control pin (ADV7623)
47	P10/IRQ0-B	ADV7623 SPI CS	O	-	-	L	L	OSD control pin (ADV7623)
48	P37/PO15/TIOCA2/ TIOCB2/TCLKD-A	EEPROM SDA	I_O	M3VPu	-	I	I	EEPROM control pin
49	P36/PO14/TIOCA2	EEPROM SCL	O	M3VPu	-	I	I	EEPROM control pin
50	P35/PO13/TIOCA1/ TIOCB1/TCLKC-A	ADV7844 RST	0	SW3VPu	-	L	H	HDMI decoder RESET control pin (ADV7844)
51	P84	CEC_OUT	O	-	-	L	-	CEC-D signal input pin
52	P57/WAIT#/TRDATA3	ADV3002 RST	O	SW3VPu	-	L	L	HDMI switcher RESET control pin (ADV3002)
53	P56/TRDATA2	E SPI MOEI	0	N3VPu	-	L	L	ETHERNET communication control pin (DM860)
54	P55/TRDATA1	ADV7623 RST	O	SW3VPu	-	L	L	HDMI Tx/Rx/OSD RESET control pin (ADV7623)
55	P54/TRDATA0	E SPI MIEO	I	N3VPu	-	L	L	ETHERNET communication control pin (DM860)
56	P83	E SPI CLK	0	N3VPu	-	L	L	ETHERNET communication control pin (DM860)
57	VSS	VSS	-	-	-	-	-	GND
58	P82/TRCLK	FL CE	O	-	-	L	L	FL control order pin
59	VCC	VCC	-	-	-	-	-	+3.3V

Pin	Pin Name	Symbol	I/O	Pull up/ down	LvCnv	STBY	CEC STBY	Function
60	P81/TRSYNC	FL RST	O	-	-	L	L	FL control order pin
61	P80	S VSEL B	O	-	-	L	L	S VIDEO switcher control pin (TC4052)
62	BCLK/P53	iPod DET	I	SW3VPu	-	L	L	MINI JACK connection detection pin for DOCK connection(Connection:H)
63	P52/RD#	COMPS DET	I	SW3VPu	-	L	L	COMPONENT IN signal presence detection pin
64	P51/WR1#/BC1#	Z1 VSIG.DET	I	SW3VPu	-	L	L	VIDEO IN signal presence detection pin (input:H)
65	P50/WR0#/WR#	NC	O	-	-	L	L	NC
66	P77	S VSEL A	O	-	-	L	L	S VIDEO switcher control pin (TC4052)
67	P76/IRQ14-A	TU GPO2_INT/(TUNED)	I	SW3VPu	-	L/L	L/L	TUNER GPIO2 input pin (E3 model) /TUNER TUNED input pin (E2,EA,E1C,JP models)
68	P75	DSP ROMRST	O	-	-	L	L	Memory reset for DSP (Reset : L)
69	PC7/A23/CS4#-D/CS7#-D/ TxD5	DSP MOSI	O	DA3VPu	-	L	L	DSP control pin (ADSP21487KSWZ-3B)
70	PC6/A22/CS6#-D/RxD5	DSP MISO	I	DA3VPu	-	L	L	DSP control pin (ADSP21487KSWZ-3B)
71	PC5/A21/CS5#-D/SCK5	DSPI CLK	O	DA3VPu	-	L	L	DSP control pin (ADSP21487KSWZ-3B)
72	PC4/A20	DSP RST	O	-	-	L	L	DSP(ADSP21487KSWZ-3B) reset output pin (Reset : L)
73	PC3/A19	DSP FLAG0	I	Pd	-	L	L	DSP control pin (ADSP21487KSWZ-3B)
74	VCC	VCC	-	-	-	-	-	+3.3V
75	PC2/A18	DSP ICS	O	DA3VPu	-	L	L	DSP control pin (ADSP21487KSWZ-3B)
76	VSS	VSS	-	-	-	-	-	GND
77	PC1/A17	GRN LED	O	-	-	L	L	POWER LED control pin(ON:H)
78	PC0/A16	RED LED	O	-	-	L	L	POWER/STANDBY LED control pin (ON:H)
79	PB7/A15/PO31/TIOCA11/ TIOCB11	H/P RL	O	-	-	L	L	HEADPHONE RLY control pin
80	PB6/A14/PO30/TIOCA11	FRONT RL	O	-	-	L	L	LRELAY control pin
81	PB5/A13/PO29/TIOCA10/ TIOCB10	T.MUTE	O	-	-	L	L	TUNER MUTE control pin(MUTE:L)
82	PB4/A12/PO28/TIOCA10	TU_SEN (E3 Model)/ NC(E2,EA,E1C,JP Model)	O/O	-	-	L/L	L/L	TUNER control pin (E3 Model) / NC(E2,EA,E1C,JP Model)
83	PB3/A11/PO27/TIOCC9/ TIOCD9	C/S RL	O	-	-	L	L	LRELAY control pin
84	PB2/A10/PO26/TIOCC9	SB RL	O	-	-	L	L	LRELAY control pin
85	PB1/A9/PO25/TIOCA9/ TIOCB9	D5V POWER	O	-	-	L	H	Digital 5V power supply control pin
86	P74/ADTRG3#	DIR CE	O	-	-	L	L	DIR control pin (LC89058W-E)
87	P73	DIR DIN	O	-	-	L	L	DIR control pin (LC89058W-E)
88	P72	DIR DOUT	I	DA3VPu	-	I	I	DIR control pin (LC89058W-E)
89	P71/CS4#-C/CS5#-C/ CS6#-C/CS7#-C	DIR CLK	O	-	-	L	L	DIR control pin (LC89058W-E)
90	P70/CS3#-B/ADTRG2#	DIR RST1	O	-	-	L	L	DIR control pin (LC89058W-E)
91	VCC	VCC	-	-	-	-	-	+3.3V
92	PB0/A8/PO24/TIOCA9	7623 ROM HOLD	O	-	-	L	L	SPI FLASH ROM HOLD control pin (ADV7623)
93	VSS	VSS	-	-	-	-	-	GND
94	PA7/A7/PO23/TIOCA8/ TIOCB8/TCLKH	DIR(ETHER) RST	0	-	-	L	L	DIR (ETHER) RESET control pin (LC89058W)
95	PA6/A6/PO22/TIOCA8	VSEL A	I	-	-	I	I	Master Volume rotation detection pin(Rotary encoder)
96	PA5/A5/PO21/TIOCA7/ TIOCB7/TCLKG	VSEL B	I	-	-	I	I	Master Volume rotation detection pin(Rotary encoder)
97	PA4/A4/PO20/TIOCA7	DIR(ETHER) CE	0	-	-	L	L	DIR (ETHER) CE control pin (LC89058W)
98	PA3/A3/PO19/TIOCC6/ TIOCD6/TCLKF	DAC(ETHER) MUTE	0	-	-	L	L	DAC (ETHER) MUTE control pin (AK4424ET)
99	PA2/A2/PO18/TIOCC6/ TCLKE	PRE Z2 MUTE	O	-	-	L	L	PRE OUT MUTE control pin
100	PA1/A1/PO17/TIOCA6/ TIOCB6	NC	O	-	-	L	L	NC
101	PA0/A0/BC0#/PO16/ TIOCA6	PRE SW MUTE	O	-	-	L	L	PRE OUT MUTE control pin / NC (AVR1712)
102	PE7/IRQ7-A/D15	ADV7623 INT2	I	-	-	I	I	HDMI RECEIVER INT2 output pin (ADV7623)
103	PE6/IRQ6-A/D14	ADV7623 Tx INT	I	-	-	I	I	HDMI signal detection pin (ADV7623)
104	PE5/IRQ5-A/D13	ADV7511 Tx INT	0	-	-	L	L	HDMI signal detection pin (ADV7511)
105	PE4/D12	ISEL A(AVR1912E2,AVR2112)/ NC(AVR1912E3)	I/0	SW3Pu/-	-	L/L	L/L	Input Selector rotation detection pin(Rotary encoder) / NC (AVR1912E3)
106	PE3/D11	ISEL A(AVR1912E2,AVR2112)/ NC(AVR1912E3)	I/0	SW3Pu/-	-	L/L	L/L	Input Selector rotation detection pin(Rotary encoder) / NC (AVR1912E3)
107	PE2/D10	VOL CLK	O	-	-	L	L	FUNCTION/VOLUME control pin(R2A15218)
108	PE1/D9	VOL DATA	O	-	-	L	L	FUNCTION/VOLUME control pin(R2A15218)
109	PE0/D8	PLD WRITE	O	-	-	L	L	A.PLD /JTAG switching control pin

Pin	Pin Name	Symbol	I/O	Pull up/ down	LvCnv	STBY	CEC STBY	Function
110	PD7/D7	JTAG TDO	I	-	-	L	L	A.PLD rewriting control pin(JTAG)
111	PD6/D6	JTAG TMS/APLD CS	O	-	-	L	L	A.PLD rewriting & control pin
112	PD5/D5	JTAG TDI/APLD DATA/DAC DATA	O	-	-	L	L	A.PLD rewriting & control /DAC control pin
113	PD4/D4	JTAG TCK/APLD CLK/DAC CLK	O	-	-	L	L	A.PLD rewriting & control /DAC control pin
114	P64/CS4#-B	ADC RST	O	-	-	L	L	A/D converter control pin(AK5358B)
115	P63/CS3#-A/CS7#-A	E SPI REQ	I	Pd	-	L	L	ETHERNET communication control pin(DM860)
116	P62/CS2#-A/CS6#-A	E SPI CS	0	N3VPu	-	L	L	ETHERNET communication control pin(DM860)
117	P61/CS1#/CS2#-B/ CS5#-A/CS6#-B/CS7#-B	DAC MS	O	-	-	L	L	A/D converter control pin(AK4358VQ)
118	P60/CS0#/CS4#-A/ CS5#-B	DAC RST	O	-	-	L	L	A/D converter control pin(AK4358VQ)
119	PD3/D3	VEXP STB	O	-	3->5	L	L	VIDEO expander control pin(MC14094BD)
120	PD2/D2	VEXP OE	O	Pd	3->5	L	L	VIDEO expander control pin(MC14094BD)
121	PD1/D1	VEXP CLK/FL CLK	O	-	3->5/-	L	L	VIDEO expander control (MC14094BD) & FL control pin
122	PD0/D0	VEXP DIN/FL DATA	O	-	3->5/-	L	L	VIDEO expander control (MC14094BD) & FL control pin
123	P97/AN15	DA POWER	O	-	-	L	L	Digital power supply (DA3.3V & DA1.2V) control pin (ON:H)
124	P96/AN14	CEC POWER	O	-	-	L	H	CEC power supply (CEC5V & CEC3.3V & CEC1.8V) control pin for CEC STANDBY.
125	P95/AN13	DV POWER	O	-	-	L	※	Digital (VIDEO) power supply (DV5V & DV3.3V) control pin. *CEC STANDBY:MODE1=H, MODE2=L
126	P94/AN12	DV POWER2	0	-	-	L	※	Digital (VIDEO) power supply (DV1.8V) control pin. *CEC STANDBY:MODE1=H, MODE2=L
127	P93/AN11	MAIN POWER	O	-	-	L	L	MAIN POWER control pin
128	P92/AN10	CPU POWER	O	-	-	L	L	MAIN CPU POWER pin (POWER ON: H CEC ON = STANDBY: H)
129	P91/AN9	MODEL	I	-	-	I	I	MODEL switch input pin (No assign)
130	VSS	VSS	-	-	-	-	-	GND
131	P90/AN8	MODE	I	-	-	I	I	Destination detection pin
132	VCC	VCC	-	-	-	-	-	+3.3V
133	P47/IRQ15-B/AN7	THERMAL B/DC DET/ASO	I	-	-	I	I	ASO PROTECT / DC PROTECT / HEAT PROTECT-B detection pin
134	P46/IRQ14-B/AN6	H/P DET / MIC DET/THERMAL A	I	-	-	I	I	MIC detectionion / Headphone detectionion / HEAT PROTECT-A detection pin
135	P45/IRQ13-B/AN5	KEY3	I	SW3VPu	-	I	I	Button input 3
136	P44/IRQ12-B/AN4	KEY2	I	SW3VPu	-	I	I	Button input 2
137	P43/IRQ11-B/AN3	KEY1	I	SW3VPu	-	I	I	Button input 1
138	P42/IRQ10-B/AN2	RDS DATA(EU)/NC(KST-MW MODEL)	I/I	-	5->3	I/I	I/I	NC / RDS control (E2 Model)
139	P41/IRQ9-B/AN1	RDS CLK(EU)/NC(KST-MW MODEL)	I/I	-	5->3	I/I	I/I	NC / RDS control (E2 Model)
140	AVSS	AVSS	-	-	-	-	-	GND
141	P40/IRQ8-B/AN0	CEC_IN	I	SW3VPu	-	I	I	CEC-D signal input pin
142	VREF	VREF	-	-	-	-	-	Reference voltage (+3.3V) input pin for A/D port
143	AVCC	AVCC	-	-	-	-	-	+3.3V
144	P05/IRQ13-A/TMO3/ RxD4/TCK	NC	I	M3VPu	-	I	I	NC

MC14094BDTR2G (HDMI : IC35)

PIN ASSIGNMENT



TRUTH TABLE

Clock	Output Enable	Strobe	Data	Parallel Outputs		Serial Outputs	
				Q1	Q_N	Q_S*	Q'_S
⎍	0	X	X	Z	Z	Q7	No Chg.
⎎	0	X	X	Z	Z	No Chg.	Q7
⎍	1	0	X	No Chg.	No Chg.	Q7	No Chg.
⎍	1	1	0	0	Q_N−1	Q7	No Chg.
⎍	1	1	1	1	Q_N−1	Q7	No Chg.
⎎	1	1	1	No Chg.	No Chg.	No Chg.	Q7

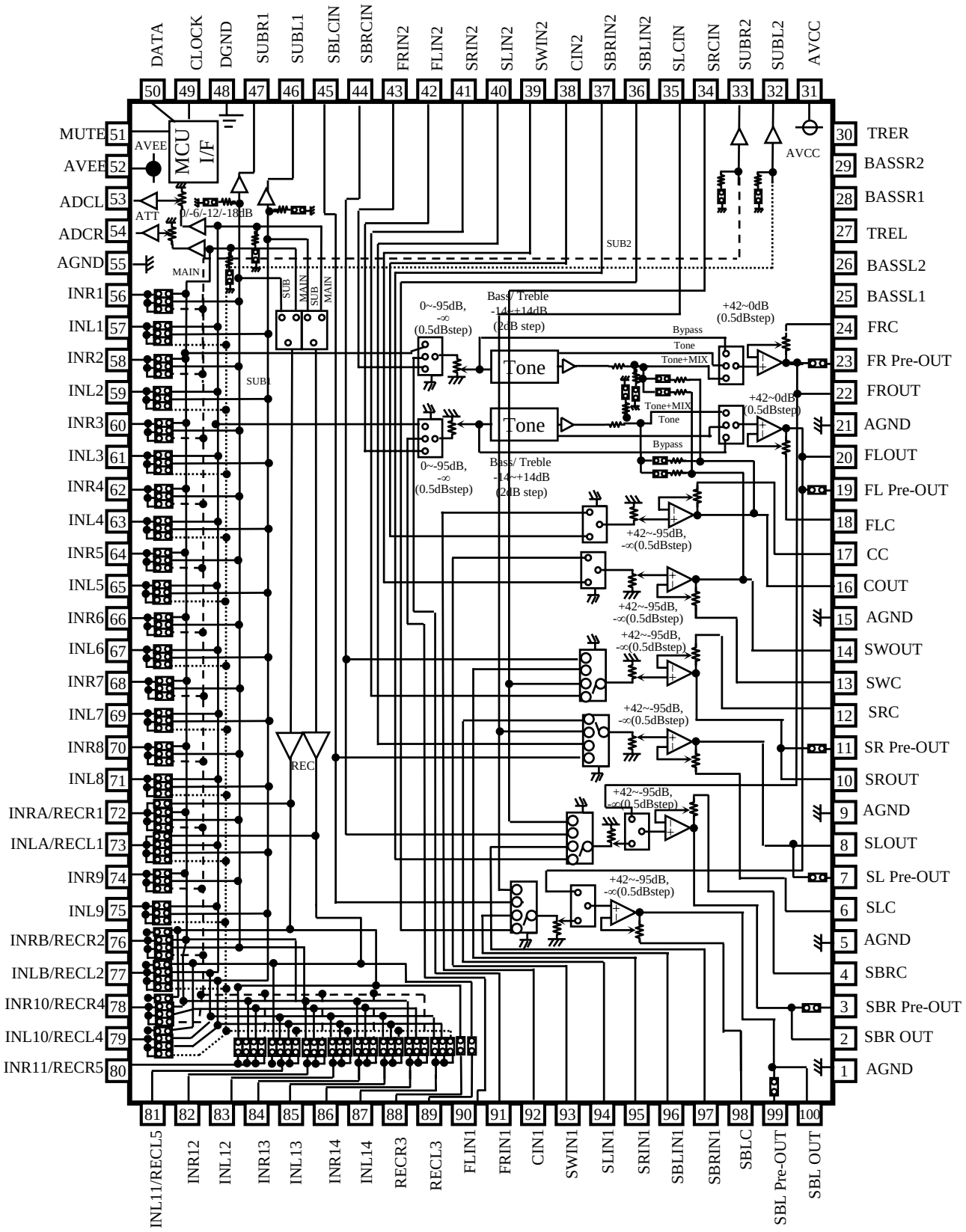
Z = High Impedance X = Don't Care

* At the positive clock edge, information in the 7th shift register stage is transferred to Q8 and Q_S.

MC14094BDTR2G Terminal Function

Device	Pin	Pin Name	Symbol	I/O	Function
HDMI:IC35	4	EXP1 (Q1)	VINA	O	CVBS input select control pin (TC4051)
	5	EXP2 (Q2)	VINB	O	CVBS input select control pin (TC4051)
	6	EXP3 (Q3)	VINC	O	CVBS input select control pin (TC4051)
	7	EXP4 (Q4)	P.SAVE	O	COMPONENT output MUTE control pin (NJM2586)
	11	EXP5 (Q8)	COMP SW2	O	VIDEO SELECT IC(NJW2586)
	12	EXP6 (Q7)	COMP SW1	O	VIDEO SELECT IC(NJW2586)
	13	EXP7 (Q6)	MONIB	O	CVBS monitor output signal control pin(TC4052)
	14	EXP8 (Q5)	MONIA	O	CVBS monitor output signal control pin(TC4052)

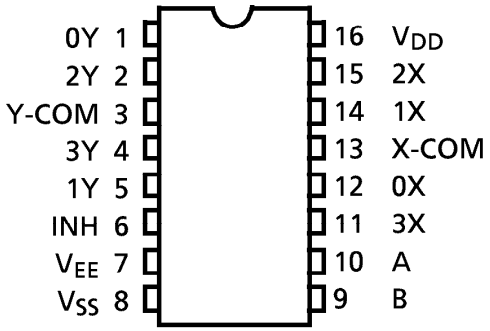
R2A15218FP (AV : IC801)



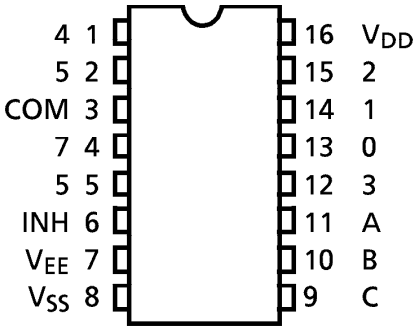
R2A15218FP Pin Function

PIN No.	Name	Function
22,20, 16,14, 10, 8, 2, 100	FROUT,FLOUT, COUT,SWOUT, SROUT, SLOUT, SBROUT,SBLOUT	Output pin of FL/FR/C/SW/SL/SR/SBL/SBR channel
23,19, 11, 7, 3, 99	FR Pre-out,FL Pre-out, SR Pre-out, SL Pre-out, SBR Pre-out,SBL Pre-out	Pre-output pin of FL/FR/SL/SR/SBL/SBR channel
24,18, 17,13, 12, 6, 4, 98	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
1,5,9,15, 21,55,98	AGND	Analog ground of internal circuit
27,30	TREL, TRER	Frequency characteristic setting pin of L/R channel tone control (Treble)
25,26, 28,29	BASSL1,BASSL2 BASSR1,BASSR2	Frequency characteristic setting pin of L/R channel tone control (Bass)
31	AVCC	Positive power supply to internal circuit
43,42, 41,40, 39,38, 37,36	FRIN2, FLIN2, SRN2,SLIN2, SWIN2,CIN2, SBRIN2,SBLIN2	Multi Input pin of L/R/C/SW/SL/SR/SBL/SBR channel (Multi IN 1/2)
90,91, 92,93, 94,95, 96,97	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
57,59,61,63, 65,67,69,71, 75,83,85,87	INL1,INL2, INL3,INL4, INL5,INL6,INL7,INL8, INL9,INL12,INL13,INL14	Input pin of L/R channel (Input Selector)
56,58,60,62, 64,6668,70, 74,82,84,86	INR1,INR2, INR3,INR4, INR5,INR6,INR7,INR8, INR9,INR12,INR13,INR14	
51	MUTE	Outside Mute Control PIN
44,45 34,35	SBRCIN,SBLCIN SRCIN,SLCIN	3rd Multi Input pin for SBL/SBR/SL/SR channel Volume that is able to swap SBR/SBL with SR/SL
46,47 33,32	SUBL1,SUBR1 SUBL2,SUBR2	Output pin for L/R channel SUB1/SUB2 Output
53,54	ADCL, ADCR	Output pin for L/R channel ADC
88,89	RECR3,RECL3	Output pin for L/R channel REC Output
72,73, 76,77, 78,79 80,81	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

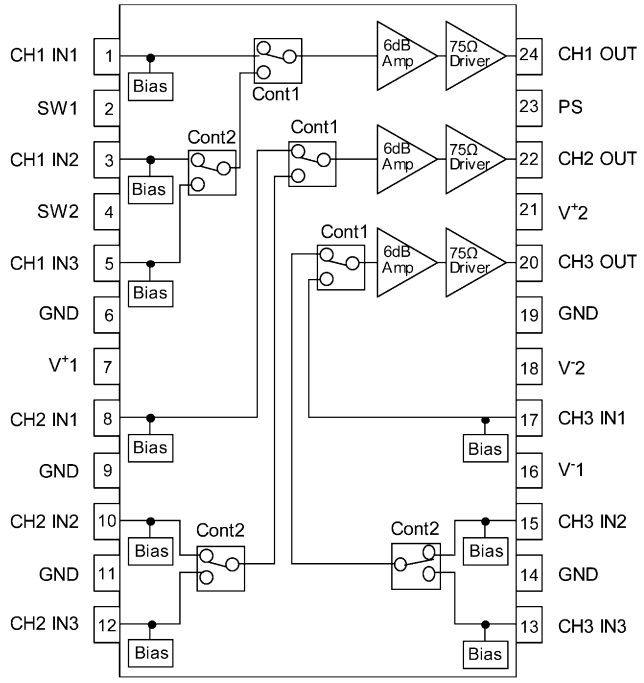
TC4052BFT (AV : IC806,826)



TC4051BFT (AV : IC822)

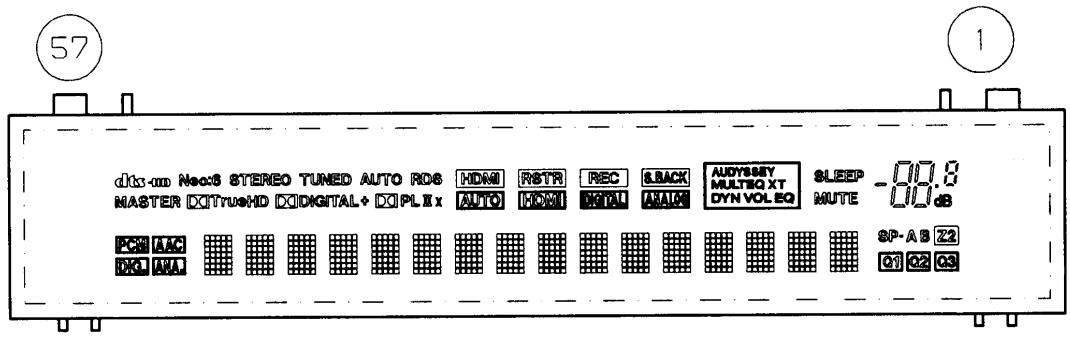


NJM2586AM (AV : IC825)



2. FL DISPLAY

FLD (18-ST-13GINK) (FRONT : U100)



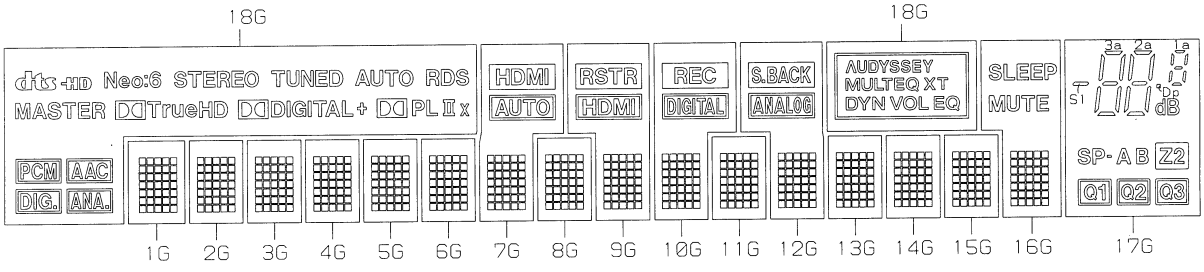
PIN CONNECTION

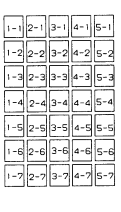
PIN NO.	57	56	55	54	53	52	51
CONNECTION	F2	NX	NP	NP	GND	VFL	VDDH

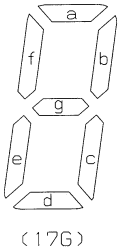
PIN NO.	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	VDDC	VOSET	-RESET	-CS	CP	DA	TSA	TSB	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	18G	17G	Q17G	Q18G	NP	NP	NX	F1

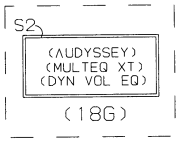
NOTE
1) F1,F2 --- Filament
2) NP ------ No pin
3) DL ------ Datum Line
4) NX ------ No extend pin
5) GND ----- GND pin
6) VFL ----- VFD Driving Voltage sink pin
7) VDD ----- Logic Voltage Supply pin
8) VDDH ------ VFD Driving Voltage Source pin
9) CP ------ Shift Register Clock
10) DA ------ Serial Data Input
11) TSA,B --- Test pin
12) $\overline{CS}$ ------ Chip Select Input pin
13) $\overline{RESET}$ --- 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) NC ------ No connection
(NC pin should be electrically open on the PC board.)
19) 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	18G
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	DD (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	–	DDDIGITAL
AD2	–	–	–	–	–	–	HDMI	–	RSTR	REC	–	S.BACK	–	–	–	SLEEP	–	DDTrueHD

PARTS LIST OF P.C.B. UNIT ⚠2

∗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.
1912E3 : U.S.A. & Canada model 1912E2 : Europe model 1912EA : Australia model
1912E1C : China model 2311CIE3 : U.S.A. & Canada model
BK : Black model SP : Premium Silver model

PCB 7CH_AMP ASS'Y

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
SEMICONDUCTORS GROUP							
	Q401	00D2710314903	TR 2SA KTA1024Y		J5001024Y0050S		
	Q403	00D2710318909	TR 2SA 2N5401S		J520254010010S		
	Q405	00D2710318909	TR 2SA 2N5401S		J520254010010S		
	Q406	00D2730479909	TR 2SC 2N5551S		J522255510010S		
	Q407,408	00D9600196205	TR 2SA KSA992F		J5000992F0050S		
	Q412	00D2730471907	TR 2SC KTC3206Y		J5023206Y0050S		
	Q413	00D2710314903	TR 2SA KTA1024Y		J5001024Y0050S		
	Q415	00D2710318909	TR 2SA 2N5401S		J520254010010S		
	Q417	00D9600196205	TR 2SA KSA992F		J5000992F0050S		
	Q418	00D2730479909	TR 2SC 2N5551S		J522255510010S		
	Q419,420	00D9600196205	TR 2SA KSA992F		J5000992F0050S		
	Q424	00D2730471907	TR 2SC KTC3206Y		J5023206Y0050S		
	Q425	00D2710314903	TR 2SA KTA1024Y		J5001024Y0050S		
	Q427	00D2710318909	TR 2SA 2N5401S		J520254010010S		
	Q430	00D2730479909	TR 2SC 2N5551S		J522255510010S		
	Q431,432	00D9600196205	TR 2SA KSA992F		J5000992F0050S		
	Q436	00D2730471907	TR 2SC KTC3206Y		J5023206Y0050S		
	Q437	00D2710314903	TR 2SA KTA1024Y		J5001024Y0050S		
	Q439	00D2710318909	TR 2SA 2N5401S		J520254010010S		
	Q442	00D2730479909	TR 2SC 2N5551S		J522255510010S		
	Q443,444	00D9600196205	TR 2SA KSA992F		J5000992F0050S		
	Q448	00D2730471907	TR 2SC KTC3206Y		J5023206Y0050S		
	Q449	00D2710314903	TR 2SA KTA1024Y		J5001024Y0050S		
	Q451	00D2710318909	TR 2SA 2N5401S		J520254010010S		
	Q454	00D2730479909	TR 2SC 2N5551S		J522255510010S		
	Q455,456	00D9600196205	TR 2SA KSA992F		J5000992F0050S		
	Q460	00D2730471907	TR 2SC KTC3206Y		J5023206Y0050S		
	Q461	00D2710314903	TR 2SA KTA1024Y		J5001024Y0050S		
	Q463	00D2710318909	TR 2SA 2N5401S		J520254010010S		
	Q466	00D2730479909	TR 2SC 2N5551S		J522255510010S		
	Q467,468	00D9600196205	TR 2SA KSA992F		J5000992F0050S		
	Q472	00D2730471907	TR 2SC KTC3206Y		J5023206Y0050S		
	Q473	00D2710314903	TR 2SA KTA1024Y		J5001024Y0050S		
	Q475	00D2710318909	TR 2SA 2N5401S		J520254010010S		
	Q478	00D2730479909	TR 2SC 2N5551S		J522255510010S		
	Q479,480	00D9600196205	TR 2SA KSA992F		J5000992F0050S		
	Q484	00D2730471907	TR 2SC KTC3206Y		J5023206Y0050S		
	D402-404	00D2760401905	D,SWITCHING 1SS133T		K000013300520S		
	D408-410	00D2760401905	D,SWITCHING 1SS133T		K000013300520S		
	D414-416	00D2760401905	D,SWITCHING 1SS133T		K000013300520S		
	D420-422	00D2760401905	D,SWITCHING 1SS133T		K000013300520S		
	D426-428	00D2760401905	D,SWITCHING 1SS133T		K000013300520S		
	D432-434	00D2760401905	D,SWITCHING 1SS133T		K000013300520S		
	D438-440	00D2760401905	D,SWITCHING 1SS133T		K000013300520S		
	ZD401	00D2760643983	D,ZENER MTZJ5.1A		K06005R134520S		
	ZD402,403	00D9630047502	D,ZENER MTZJ3.3B		K06003R344520S		
	ZD404	00D2760643983	D,ZENER MTZJ5.1A		K06005R134520S		
	ZD405,406	00D9630047502	D,ZENER MTZJ3.3B		K06003R344520S		
	ZD407	00D2760643983	D,ZENER MTZJ5.1A		K06005R134520S		
	ZD408,409	00D9630047502	D,ZENER MTZJ3.3B		K06003R344520S		
	ZD410	00D2760643983	D,ZENER MTZJ5.1A		K06005R134520S		
	ZD411,412	00D9630047502	D,ZENER MTZJ3.3B		K06003R344520S		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	ZD413	00D2760643983	D,ZENER MTZJ5.1A		K06005R134520S		
	ZD414,415	00D9630047502	D,ZENER MTZJ3.3B		K06003R344520S		
	ZD416	00D2760643983	D,ZENER MTZJ5.1A		K06005R134520S		
	ZD417,418	00D9630047502	D,ZENER MTZJ3.3B		K06003R344520S		
	ZD419	00D2760643983	D,ZENER MTZJ5.1A		K06005R134520S		
	ZD420,421	00D9630047502	D,ZENER MTZJ3.3B		K06003R344520S		
RESISTORS GROUP							
	R404	nsp	R,FIXED 1WJ-5.6K		N113135656220S		
	R406	963252004160S	POSISTOR 18BC471QB5RB		F320184710050S		
	R408	nsp	R,FIXED 1WJ-5.6K		N113135656220S		
	R415	963125012630S	R,METAL FILM 22-J,1W	FLAME RETARDANT	C060022065050S		
	R424,425	00D9630345903	R,FIXED 2WJ-0.47	FLAME RETARDANT	N113136647820S		
	R430,431	00D9630345903	R,FIXED 2WJ-0.47	FLAME RETARDANT	N113136647820S		
	R434	nsp	R,METAL FILM 3.3K-J,1W		C060033265050S		
	R439	963125012630S	R,METAL FILM 22-J,1W	FLAME RETARDANT	C060022065050S		
	R441	nsp	R,METAL FILM 1.2K-J,1W		C060012265050S		
	R443	nsp	R,METAL FILM 47-J,1W		C060047065060S		
	R445	nsp	R,FIXED 1WJ-5.6K		N113135656220S		
	R450	963252004160S	POSISTOR 18BC471QB5RB		F320184710050S		
	R451	nsp	R,FIXED 1WJ-5.6K		N113135656220S		
	R458	963125012630S	R,METAL FILM 22-J,1W	FLAME RETARDANT	C060022065050S		
	R467,468	00D9630345903	R,FIXED 2WJ-0.47	FLAME RETARDANT	N113136647820S		
	R474,475	00D9630345903	R,FIXED 2WJ-0.47	FLAME RETARDANT	N113136647820S		
	R478	nsp	R,METAL FILM 3.3K-J,1W		C060033265050S		
	R483	963125012630S	R,METAL FILM 22-J,1W	FLAME RETARDANT	C060022065050S		
	R485	nsp	R,METAL FILM 1.2K-J,1W		C060012265050S		
	R487	nsp	R,METAL FILM 47-J,1W		C060047065060S		
	R489	nsp	R,FIXED 1WJ-5.6K		N113135656220S		
	R493	00D9630337908	R,METAL 33-J,1W	FLAME RETARDANT	C060033065050S		
	R494	963252004160S	POSISTOR 18BC471QB5RB		F320184710050S		
	R495	nsp	R,FIXED 1WJ-5.6K		N113135656220S		
	R502	963125012630S	R,METAL FILM 22-J,1W	FLAME RETARDANT	C060022065050S		
	R511,512	00D9630345903	R,FIXED 2WJ-0.47	FLAME RETARDANT	N113136647820S		
	R517,518	00D9630345903	R,FIXED 2WJ-0.47	FLAME RETARDANT	N113136647820S		
	R521	nsp	R,METAL FILM 3.3K-J,1W		C060033265050S		
	R526	963125012630S	R,METAL FILM 22-J,1W	FLAME RETARDANT	C060022065050S		
	R528	nsp	R,METAL FILM 1.2K-J,1W		C060012265050S		
	R530	nsp	R,METAL FILM 47-J,1W		C060047065060S		
	R534	nsp	R,FIXED 1WJ-5.6K		N113135656220S		
	R537	963252004160S	POSISTOR 18BC471QB5RB		F320184710050S		
	R538	nsp	R,FIXED 1WJ-5.6K		N113135656220S		
	R545	963125012630S	R,METAL FILM 22-J,1W	FLAME RETARDANT	C060022065050S		
	R551	00D9639005639	R,METAL FILM 100-J,1W	FLAME RETARDANT	C060010165060S		
	R554,555	00D9630345903	R,FIXED 2WJ-0.47	FLAME RETARDANT	N113136647820S		
	R561,562	00D9630345903	R,FIXED 2WJ-0.47	FLAME RETARDANT	N113136647820S		
	R564	nsp	R,METAL FILM 3.3K-J,1W		C060033265050S		
	R569	963125012630S	R,METAL FILM 22-J,1W	FLAME RETARDANT	C060022065050S		
	R571	nsp	R,METAL FILM 1.2K-J,1W		C060012265050S		
	R573	nsp	R,METAL FILM 47-J,1W		C060047065060S		
	R577	nsp	R,FIXED 1WJ-5.6K		N113135656220S		
	R580	963252004160S	POSISTOR 18BC471QB5RB		F320184710050S		
	R581	nsp	R,FIXED 1WJ-5.6K		N113135656220S		
	R588	963125012630S	R,METAL FILM 22-J,1W	FLAME RETARDANT	C060022065050S		
	R597,598	00D9630345903	R,FIXED 2WJ-0.47	FLAME RETARDANT	N113136647820S		
	R603,604	00D9630345903	R,FIXED 2WJ-0.47	FLAME RETARDANT	N113136647820S		
	R607	nsp	R,METAL FILM 3.3K-J,1W		C060033265050S		
	R612	963125012630S	R,METAL FILM 22-J,1W	FLAME RETARDANT	C060022065050S		
	R614	nsp	R,METAL FILM 1.2K-J,1W		C060012265050S		
	R616	nsp	R,METAL FILM 47-J,1W		C060047065060S		
	R620	nsp	R,FIXED 1WJ-5.6K		N113135656220S		
	R623	963252004160S	POSISTOR 18BC471QB5RB		F320184710050S		
	R624	nsp	R,FIXED 1WJ-5.6K		N113135656220S		
	R631	963125012630S	R,METAL FILM 22-J,1W	FLAME RETARDANT	C060022065050S		
	R640,641	00D9630345903	R,FIXED 2WJ-0.47	FLAME RETARDANT	N113136647820S		
	R646,647	00D9630345903	R,FIXED 2WJ-0.47	FLAME RETARDANT	N113136647820S		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	R650	nsp	R,METAL FILM 3.3K-J,1W		C060033265050S		
	R655	963125012630S	R,METAL FILM 22-J,1W	FLAME RETARDANT	C060022065050S		
	R657	nsp	R,METAL FILM 1.2K-J,1W		C060012265050S		
	R659	nsp	R,METAL FILM 47-J,1W		C060047065060S		
	R663	nsp	R,FIXED 1WJ-5.6K		N113135656220S		
	R666	963252004160S	POSISTOR 18BC471QB5RB		F320184710050S		
	R667	nsp	R,FIXED 1WJ-5.6K		N113135656220S		
	R674	963125012630S	R,METAL FILM 22-J,1W	FLAME RETARDANT	C060022065050S		
	R683,684	00D9630345903	R,FIXED 2WJ-0.47	FLAME RETARDANT	N113136647820S		
	R689,690	00D9630345903	R,FIXED 2WJ-0.47	FLAME RETARDANT	N113136647820S		
	R694	nsp	R,METAL FILM 3.3K-J,1W		C060033265050S		
	R698	963125012630S	R,METAL FILM 22-J,1W	FLAME RETARDANT	C060022065050S		
	R700	nsp	R,METAL FILM 1.2K-J,1W		C060012265050S		
	R702	nsp	R,METAL FILM 47-J,1W		C060047065060S		
	VR401-407	963161012400S	VR,SEMI CARBON EVN-DCAA03B 1KB		C541102315000S		
CAPACITORS GROUP							
	C401	nsp	C,CERAMIC 0.1UF-K/50V		D011104577160S		
	C403	nsp	C,CERAMIC 0.01UF-K/50V		D010103777160S		
	C404	00D9630234506	C,ELECT 47UF-M/50V (Pb Free)		D040470087070S		
	C405	nsp	C,CERAMIC 100PF-J/50V		D010101167160S		
	C406	nsp	C,CERAMIC SL220PF-J/500V		D00022106D051S		
	C407	00D9630234506	C,ELECT 47UF-M/50V (Pb Free)	1912E3,1912E1C, 2112CIE3	D040470087070S		
	C407	00D2544574919	C,ELECT 47UF-M/50V RA3	1912E2,1912EA	D040470087330S		
	C408	00D9630224503	C,ELECT 22UF-M/50V		D040220087060S		
	C410	00D9609009937	C,ELECT 100UF-M/50V		D040101087060S		
	C412	nsp	C,CERAMIC 470PF-K/500V		D00447127D050S		
	C413	nsp	C,CERAMIC X7R2200PF-K/50V		D011222777200S		
	C415,416	00D9630234302	C,ELECT 10UF-M/100V		D04010008C050S		
	C418	nsp	C,CERAMIC 0.1UF-K/50V		D011104577160S		
	C419	00D9630324005	C,ELECT 100UF-M/100V		D04010108C240S		
	C420	00D9630234506	C,ELECT 47UF-M/50V (Pb Free)		D040470087070S		
	C421	nsp	C,CERAMIC 100PF-J/50V		D010101167160S		
	C422	nsp	C,CERAMIC SL220PF-J/500V		D00022106D051S		
	C423	00D9630234506	C,ELECT 47UF-M/50V (Pb Free)	1912E3,1912E1C, 2112CIE3	D040470087070S		
	C423	00D2544574919	C,ELECT 47UF-M/50V RA3	1912E2,1912EA	D040470087330S		
	C424	00D9630224503	C,ELECT 22UF-M/50V		D040220087060S		
	C426	00D9609009937	C,ELECT 100UF-M/50V		D040101087060S		
	C428	nsp	C,CERAMIC 470PF-K/500V		D00447127D050S		
	C429	nsp	C,CERAMIC X7R2200PF-K/50V		D011222777200S		
	C434	nsp	C,CERAMIC 0.1UF-K/50V		D011104577160S		
	C436	00D9630234506	C,ELECT 47UF-M/50V (Pb Free)		D040470087070S		
	C437	nsp	C,CERAMIC 100PF-J/50V		D010101167160S		
	C438	nsp	C,CERAMIC SL220PF-J/500V		D00022106D051S		
	C439	00D9630234506	C,ELECT 47UF-M/50V (Pb Free)		D040470087070S		
	C440	00D9630224503	C,ELECT 22UF-M/50V		D040220087060S		
	C442	00D9609009937	C,ELECT 100UF-M/50V		D040101087060S		
	C444	nsp	C,CERAMIC 470PF-K/500V		D00447127D050S		
	C445	nsp	C,CERAMIC X7R2200PF-K/50V		D011222777200S		
	C450	nsp	C,CERAMIC 0.1UF-K/50V		D011104577160S		
	C452	00D9630234506	C,ELECT 47UF-M/50V (Pb Free)		D040470087070S		
	C453	nsp	C,CERAMIC 100PF-J/50V		D010101167160S		
	C454	nsp	C,CERAMIC SL220PF-J/500V		D00022106D051S		
	C455	00D9630234506	C,ELECT 47UF-M/50V (Pb Free)		D040470087070S		
	C456	00D9630224503	C,ELECT 22UF-M/50V		D040220087060S		
	C458	00D9609009937	C,ELECT 100UF-M/50V		D040101087060S		
	C460	nsp	C,CERAMIC 470PF-K/500V		D00447127D050S		
	C461	nsp	C,CERAMIC X7R2200PF-K/50V		D011222777200S		
	C466	nsp	C,CERAMIC 0.1UF-K/50V		D011104577160S		
	C468	00D9630234506	C,ELECT 47UF-M/50V (Pb Free)		D040470087070S		
	C469	nsp	C,CERAMIC 100PF-J/50V		D010101167160S		
	C470	nsp	C,CERAMIC SL220PF-J/500V		D00022106D051S		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	C471	00D9630234506	C,ELECT 47UF-M/50V (Pb Free)		D040470087070S		
	C472	00D9630224503	C,ELECT 22UF-M/50V		D040220087060S		
	C474	00D9609009937	C,ELECT 100UF-M/50V		D040101087060S		
	C476	nsp	C,CERAMIC 470PF-K/500V		D00447127D050S		
	C477	nsp	C,CERAMIC X7R2200PF-K/50V		D011222777200S		
	C479,480	00D9630234302	C,ELECT 10UF-M/100V		D04010008C050S		
	C482	nsp	C,CERAMIC 0.1UF-K/50V		D011104577160S		
	C484	00D9630234506	C,ELECT 47UF-M/50V (Pb Free)		D040470087070S		
	C485	nsp	C,CERAMIC 100PF-J/50V		D010101167160S		
	C486	nsp	C,CERAMIC SL220PF-J/500V		D00022106D051S		
	C487	00D9630234506	C,ELECT 47UF-M/50V (Pb Free)		D040470087070S		
	C488	00D9630224503	C,ELECT 22UF-M/50V		D040220087060S		
	C490	00D9609009937	C,ELECT 100UF-M/50V		D040101087060S		
	C492	nsp	C,CERAMIC 470PF-K/500V		D00447127D050S		
	C493	nsp	C,CERAMIC X7R2200PF-K/50V		D011222777200S		
	C498	nsp	C,CERAMIC 0.1UF-K/50V		D011104577160S		
	C500	00D9630234506	C,ELECT 47UF-M/50V (Pb Free)		D040470087070S		
	C501	nsp	C,CERAMIC 100PF-J/50V		D010101167160S		
	C502	nsp	C,CERAMIC SL220PF-J/500V		D00022106D051S		
	C503	00D9630234506	C,ELECT 47UF-M/50V (Pb Free)		D040470087070S		
	C504	00D9630224503	C,ELECT 22UF-M/50V		D040220087060S		
	C506	00D9609009937	C,ELECT 100UF-M/50V		D040101087060S		
	C508	nsp	C,CERAMIC 470PF-K/500V		D00447127D050S		
	C509	nsp	C,CERAMIC X7R2200PF-K/50V		D011222777200S		
	C511,512	00D9630234302	C,ELECT 10UF-M/100V		D04010008C050S		
	C513,514	00D9630338402	C,ELECT 330UF-M/6.3V		D040331081050S		
	C515	00D9630324607	C,ELECT 47UF-M/10V (Pb Free)		D040470082060S		
OTHERS PARTS GROUP							
	BKT400	nsp	BRACKET 0.8t/SCREW		4010210196100S		
	CN404	nsp	CN.WIRE 240MM/5P		L025241052620S		
	CP401	nsp	CN.WAFER 13P STRAIGHT		L101200101310S		
	CP402	nsp	CN.WAFER 5P 5267-05A		L102526700500S		
	CP403	nsp	CN.WAFER 10P STRAIGHT		L101200101010S		
	CP405	nsp	CN.WAFER 3P 5267-03A		L102526700300S		
	G400	nsp	CN.WIRE 60MM/1P		L025600012040S		
	G402	nsp	CN.WIRE 60MM/1P		L025600012040S		
	J538	nsp	CN.WIRE 1P		L045061000050S		
	TP401-407	nsp	CN.WAFER 3P		L101200100320S		

PCB SPK ASS'Y

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
SEMICONDUCTORS GROUP							
⚠	IC100	9632390104805	IC PC123X2YFZ (DIP4P SHARP)		K6141230000105		
⚠	IC102	2310100917085	IC TOP258MG		G2002580000105		
	IC116	2120500105085	IC KIA2431AP		J1262431180105		
	Q1-5	9432155000205	TR 2SA RT1P141C		CVTRT1P141C		
	Q8-12	9432165000205	TR 2SC RT1N141C		CVTRT1N141C		
	TR100-102	00D9630255802	TR 2SC KTC3199Y		J5023199Y0010S		
	D1-5	00D9630355401	D,SWITCHING KDS4148U		K0050414800305		
	D8	00D2760401905	D,SWITCHING 1SS133T		K0000133005205		
	D12	00D9600262304	D,RECTIFIER BRIDGE		K0471006000105		
	D100-102	00D9630328409	D,SWITCHING 1N4007		K0004007000105		
	D103	2030500187065	D,SCHOTTKY D25SC6M 60V 25A		K1202560000105		
	D104-106	00D9630328409	D,SWITCHING 1N4007		K0004007000105		
	D108	9632090104305	D,FAST RECOVERY AP01C-V1 52RE-AX		K0500000150005		
	D109,110	00D9630328409	D,SWITCHING 1N4007		K0004007000105		
	D112	00D2760401905	D,SWITCHING 1SS133T		K0000133005205		
	ZD100	9632020104405	D,ZENER MTZJ22B		K0602R0445205		
	ZD101	00D2760762958	D,ZENER MTZJ39B	2112CIE3,1912E3	K0603R0445205		
	ZD102	9632020104405	D,ZENER MTZJ22B		K0602R0445205		
	ZD103	00D2760762958	D,ZENER MTZJ39B	2112CIE3,1912E3	K0603R0445205		
	ZD104	9632020104405	D,ZENER MTZJ22B		K0602R0445205		
	ZD105	00D2760762958	D,ZENER MTZJ39B	2112CIE3,1912E3	K0603R0445205		
	ZD106,107	9632020104405	D,ZENER MTZJ22B		K0602R0445205		
	ZD108,109	00D2760762958	D,ZENER MTZJ39B	2112CIE3,1912E3	K0603R0445205		
	ZD108,109	nsp	R,CARBON FILM 1M-J,1/5W	1912E2,1912EA, 1912E1C	C0000105P5205		
	ZD110	9632020104405	D,ZENER MTZJ22B	2112CIE3,1912E3	K0602R0445205		
	ZD110	00D2760762958	D,ZENER MTZJ39B	1912E2,1912EA, 1912E1C	K0603R0445205		
	ZD111	00D2760762958	D,ZENER MTZJ39B	1912E2,1912EA, 1912E1C	K0603R0445205		
	ZD112	9632020104405	D,ZENER MTZJ22B		K0602R0445205		
	ZD113	00D2760762958	D,ZENER MTZJ39B	1912E2,1912EA, 1912E1C	K0603R0445205		
	ZD114	00D9600095607	D,ZENER MTZJ5.6B		K0600R5644205		
	ZD115	00D2760762958	D,ZENER MTZJ39B		K0603R0445205		
	ZD116	00D2760762958	D,ZENER MTZJ39B	1912E2,1912EA, 1912E1C	K0603R0445205		
	ZD117,118	9632020104405	D,ZENER MTZJ22B		K0602R0445205		
	ZD119	00D2760762958	D,ZENER MTZJ39B	1912E2,1912EA, 1912E1C	K0603R0445205		
	DZ1	00D9600095801	D,ZENER MTZJ6.8B		K0600R8445205		
RESISTORS GROUP							
	R5-18	9631250101005	R,METAL FILM 10-J 2W		C0600100665005		
	R28-33	00D9630310404	R,METAL FILM 2.2K-J,1W		C0600222650505		
	R34	nsp	R,METAL FILM 10K-J,1/4W		C0601030635005		
	R35,36	nsp	R,METAL FILM 47K-J,1/4W	2112E3,1912E3, 1912E1C	C0600473630505		⚠4
	R37,38	9631250101105	R,METAL FILM 470-J,2W		C0600471666005		
CAPACITORS GROUP							
	C1	nsp	C,FILM MI-0.047UF-J/50V		D0204731670505		
	C2	nsp	C,CERAMIC 2200PF-K/50V		D0112227771605		
	C4	nsp	C,FILM MI-0.047UF-J/50V		D0204731670505		
	C5	nsp	C,CERAMIC 2200PF-K/50V		D0112227771605		
	C7	nsp	C,CERAMIC 2200PF-K/50V		D0112227771605		
	C9	nsp	C,FILM MI-0.047UF-J/50V		D0204731670505		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	C10	nsp	C,CERAMIC 2200PF-K/50V		D011222777160S		
	C12	nsp	C,FILM MI-0.047UF-J/50V		D020473167050S		
	C13	nsp	C,CERAMIC 2200PF-K/50V		D011222777160S		
	C15	nsp	C,CERAMIC 2200PF-K/50V		D011222777160S		
	C17	nsp	C,FILM MI-0.047UF-J/50V		D020473167050S		
	C18	nsp	C,CERAMIC 2200PF-K/50V		D011222777160S		
	C22	nsp	C,FILM MI-0.047UF-J/50V		D020473167050S		
	C25	nsp	C,FILM MI-0.047UF-J/50V		D020473167050S		
	C27	nsp	C,CERAMIC 1000PF-K/50V		D011102777160S		
	C30	nsp	C,CERAMIC 1000PF-K/50V		D011102777160S		
	C33	nsp	C,CERAMIC 1000PF-K/50V		D011102777160S		
	C36	nsp	C,CERAMIC 1000PF-K/50V		D011102777160S		
	C39	nsp	C,CERAMIC 1000PF-K/50V		D011102777160S		
	C42	nsp	C,CERAMIC 1000PF-K/50V		D011102777160S		
	C45	nsp	C,CERAMIC 1000PF-K/50V		D011102777160S		
	C53	00D9609009937	C,ELECT 100UF-M/50V		D040101087060S		
	C54	nsp	C,FILM MI-0.047UF-J/50V		D020473167050S		
	C55	963134010180S	C,ELECT 12000UF-M/71V		D040123089550S		
	C56	nsp	C,FILM MI-0.047UF-J/50V		D020473167050S		
	C57	00D9630234205	C,ELECT 10UF-M/50V		D040100087070S		
	C58	963134010180S	C,ELECT 12000UF-M/71V		D040123089550S		
	C59	nsp	C,FILM MI-0.047UF-J/50V		D020473167050S		
	C60	00D9630244606	C,ELECT 0.1UF-M/50V (Pb Free)		D040R10087080S		
	C61	nsp	C,FILM MI-0.047UF-J/50V		D020473167050S		
	C63	nsp	C,CERAMIC 1000PF-K/50V		D011102777160S		
	C64	nsp	C,FILM MI-0.047UF-J/50V		D020473167050S		
	C65,66	nsp	C,FILM 0.1UF-K/250V		D02010407H080S		
	C67,68	nsp	C,FILM MI-0.047UF-J/50V		D020473167050S		
	C100	nsp	C,FILM 0.1UF-K/275V		D02110407H010S		
	C102	963134010200S	C,ELECT 100UF-M/400V		D04110108K000S		
	C103	963132010120S	C,CERAMIC DEHR33A102KB2B		D00810207Q010S		
⚠	C104,105	963134011730S	C,CERAMIC DE1B3KX471KB4BL01 AC250V		D00847127H010S		
	C106-108	963134010220S	C,ELECT5600UF-M/6.3V		D041562081001S		
	C110	nsp	C,CERAMIC 0.1UF-K/25V		D011104774161S		
	C111	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C112	963134010190S	C,ELECT 10UF-M/50V		D041100087050S		
	C113	nsp	C,CERAMIC 0.1UF-K/25V		D011104774161S		
⚠	C115	963132011930S	C,CERAMIC DE1E3KX222MB4BL01 AC250V		D00822248H010S		
	C116	nsp	C,CERAMIC 0.1UF-K/25V		D011104774161S		
⚠	C117	963132011940S	C,CERAMIC DE2F3KY103MB3BM02 AC250V		D0081035890010S		
	C118	nsp	C,CERAMIC 0.1UF-K/25V		D011104774161S		
	C119	963134010210S	C,ELECT 47UF-M/25V		D041470084050S		
	C120-123	nsp	C,CERAMIC 0.1UF-K/25V		D011104774161S		
	C131	963132011940S	C,CERAMIC DE2F3KY103MB3BM02 AC250V	1912E2,1912EA, 1912E1C	D0081035890010S		
	C133	963132011940S	C,CERAMIC DE2F3KY103MB3BM02 AC250V	1912E2,1912EA, 1912E1C	D0081035890010S		
OTHERS PARTS GROUP							
	BKT1-3	nsp	BRACKET t1.0+Sn plating /PCB MTG		4010214876000S		
	BKT100	nsp	BRACKET 0.8t/SCREW		4010210196100S		
	BKT101	nsp	BRACKET SCREW		4010210196000S		
	CLAMP3	nsp	CLAMP WIRE(SOLDER)		4330000120000S		
	CN1	nsp	CN.WIRE 230MM/5P		L025231052650S		
	CN2	nsp	CN.WIRE 160MM/3P		L025161032050S		
	CN3	nsp	CN.WIRE 170MM/10P		L025171102620S		
	CP1	nsp	CN.WAFER 7.92MM 35328-0360		L108353280360S		
	CP12	nsp	CN.FPC 1.25MM 19P 127301119K2		L131019100010S		
	CP22	nsp	CN.WAFER 5P TUC-P05P		L101100040510S		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
⚠	F100	963652010510S	FUSE T2A/250V	2112CIE3,1912E3	N751502001160S		
⚠	F100	963652010500S	FUSE T1.6A/250V	1912E2,1912EA, 1912E1C	N751501601160S		
⚠	F101	963652010520S	FUSE T6.3A/250V	2112CIE3,1912E3	N751506301160S		
⚠	F101	963652010910S	FUSE T3.15A/250V	1912E2,1912EA, 1912E1C	N751503151160S		
	JACK1	963643010360S	TER, BOARD 6P JB-602A-02		G613602A0200YS		
	JACK2	963646001690S	TER, BOARD 8P MST-108V1		G614108V1010MS		
	JK100	963641011240S	SOCKET,POWER AC	1912E2,1912EA	G4300152P0001S		
	L1-7	nsp	COIL INDUCTOR 0.5UH		D330R50000000S		
⚠	L100	963111010230S	COIL LINE FILTER LF-4ZB-E273H 27mH		D320402730020S		
⚠	RL101	963682010370S	RELAY HL31-1AT-5H 5V 1A		G680050102020S		
	RLY1	00D9630218409	RELAY BC3-12 24V 2A		G680240202030S		
	NOTE : Two kinds of relays can be used. Please choose suitable resistors to each kind of relay.						⚠4
	① .RELAY_A						⚠4
	RLY2-5	963682003410S	RELAY HL3-2A-12S 12V 5A		G680120503020S		
	R20-23	nsp	R,CARBON FILM//22-J,1/5W-52RE-AX		C00002206P520S		
	② .RELAY_B						⚠4
	RLY2-5	963682002440S	RELAY G5PA-28MC 12V		G680120502050S		
	R20-23	nsp	R,CARBON FILM//20-J,1/5W-52RE-AX		C00002006P520S		
	CX100	nsp	CN.WAFER 7.92MM	2112CIE3,1912E3, 1912E1C	L108202000220S		
	CX101	nsp	CN.WIRE 370MM/5P		L025371052050S		
	CX102	nsp	CN.WAFER 7.92MM 35328-0263	2112CIE3,1912E3, 1912E1C	L108353280290S		
	CX102	nsp	CN.WAFER 7.92MM LWBP1143-02P	1912E2,1912EA	L108011430210S		
	CX104	nsp	CN.WAFER 5P TUC-P05X		L101100030510S		
⚠	T100	963102100020S	TRANS,SWITCHING EER2834		E060283405520S		*
	W100-103	nsp	CN.WIRE 40MM/1P		L025400012440S		
		nsp	HOLDER,FUSE CLIP	F100_1	G645000050010S		
		nsp	HOLDER,FUSE CLIP	F100_2	G645000050010S		
		nsp	HOLDER,FUSE CLIP	F101_1	G645000050010S		
		nsp	HOLDER,FUSE CLIP	F101_2	G645000050010S		
		nsp	FUSE LABEL T1.6AL/250V	1912E2,1912EA, 1912E1C	5507000006790S		
		nsp	FUSE LABEL T3.15AL/250V	1912E2,1912EA, 1912E1C	5507000006800S		

PCB REG_CNT ASS'Y

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New	
SEMICONDUCTORS GROUP								
	IC103	00D2630553006	IC NJM7805FA		J126780500130S			
	IC104	00D2630554005	IC NJM7905FA		J126790500020S			
	IC105	00D2630553006	IC NJM7805FA		J126780500130S			
	IC106	00D2630810008	IC NJM7808FA		J126780800030S			
	IC107	00D2630503001	IC NJM7908FA		J126790800020S			
	IC108	963239003420S	IC NJM2388F05	2112CIE3,1912E3	J126238800050S			
	IC108	963239010770S	IC NJM2388F09	1912E2,1912EA, 1912E1C	J126238800090S			
	IC404	236810090504S	IC ILX3232D	2112CIE3	J046323200020S			
	D114	00D9630236504	D,SCHOTTKY RB721Q-40		K120072140010S			
	D115,116	00D2760401905	D,SWITCHING 1SS133T		K000013300520S			
	D117,118	00D9630236504	D,SCHOTTKY RB721Q-40		K120072140010S			
	D119-121	00D2760401905	D,SWITCHING 1SS133T		K000013300520S			
	D122	00D9630236504	D,SCHOTTKY RB721Q-40		K120072140010S			
	D123	00D2760401905	D,SWITCHING 1SS133T		K000013300520S			
	D124-126	00D9630328409	D,SWITCHING 1N4007	1912E2,1912EA, 1912E1C	K000400700010S			
	D127-134	00D9630328409	D,SWITCHING 1N4007		K000400700010S			
	D137-144	00D9630328409	D,SWITCHING 1N4007		K000400700010S			
	D145	00D9630328409	D,SWITCHING 1N4007	1912E2,1912EA, 1912E1C	K000400700010S			
	ZD117,118	00D9600096004	D,ZENER MTZJ33B		K06033R044520S			
RESISTORS GROUP								
	R123,124	nsp	R,METAL 0.22-J,1W-R		C060R22065050S			
CAPACITORS GROUP								
	C126	963134011290S	C,ELECT 4700UF-M/16V	2112CIE3,1912E3	D040472083020S			
	C126	00D9630217002	C,ELECT 3300UF-M/16V	1912E2,1912EA, 1912E1C	D040332083010S			
	C127,128	00D9630234205	C,ELECT 10UF-M/50V		D040100087070S			
	C129	00D9630217002	C,ELECT 3300UF-M/16V		D040332083010S			
	C130	00D9630333203	C,ELECT 100UF-M/16V	2112E3,1912E3, 1912E1C	D040101083090S			⚠4
	C130	00D2544577945	C,ELECT 100UF-M/16V RA3	1912E2,1912EA	D040101083220S			⚠4
	C131	00D9630234205	C,ELECT 10UF-M/50V		D040100087070S			
	C132	00D9630333203	C,ELECT 100UF-M/16V	2112E3,1912E3, 1912E1C	D040101083090S			⚠4
	C132	00D2544577945	C,ELECT 100UF-M/16V RA3	1912E2,1912EA	D040101083220S			⚠4
	C133	90M-OA000500R	C,ELECT 4700UF-M/25V(MHA)		D040472084240S			
	C134	00D9630333203	C,ELECT 100UF-M/16V	2112E3,1912E3, 1912E1C	D040101083090S			⚠4
	C134	00D2544577945	C,ELECT 100UF-M/16V RA3	1912E2,1912EA	D040101083220S			⚠4
	C135	90M-OA000500R	C,ELECT 4700UF-M/25V(MHA)		D040472084240S			
	C136	00D9630333203	C,ELECT 100UF-M/16V		D040101083090S			
	C137	00D9630234205	C,ELECT 10UF-M/50V		D040100087070S			
	C139,140	963134011280S	C,ELECT 470UF-M/25V	1912E2,1912EA, 1912E1C	D040471084060S			
	C143	nsp	C,FILM 0.1UF-J/50V		D020104167050S			
	C147	nsp	C,FILM 0.1UF-J/50V		D020104167050S			
	C448-451	nsp	C,CERAMIC 0.1UF-K/50V	2112CIE3	D011104577160S			
	C452	00D9630234205	C,ELECT 10UF-M/50V	2112CIE3	D040100087070S			
	C453	nsp	C,CERAMIC 0.1UF-K/50V	2112CIE3	D011104577160S			
	C456	nsp	C,CERAMIC 33PF-J/50V	2112CIE3	D010330167160S			
	C459	nsp	C,CERAMIC 33PF-J/50V	2112CIE3	D010330167160S			
	C467	nsp	C,CERAMIC 0.1UF-K/50V	2112CIE3	D011104577160S			
OTHERS PARTS GROUP								
	BKT100	nsp	BRACKET SCREW		4010210196000S			

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	BKT401	nsp	BRACKET 0.8t/SCREW	2112CIE3	4010210196100S		
	BKT402	nsp	BRACKET 0.8t/SCREW	1912E3,1912E2, 1912EA,1912E1C	4010210196100S		
	CN13A	nsp	CN.WIRE 120MM/10P		L025121102620S		
	CN13B	nsp	CN.WIRE 120MM/4P.		L025121042620S		
	CN14	nsp	CN.WAFER 23P C125Z2-23		L109012522310S		
	CN100	nsp	CN,WAFER 13P C125Z2-13		L109012521310S		
	CN101	nsp	CN,WAFER 9P C125Z2-09		L109012520910S		
	CN401	nsp	CN,WAFER 9P	2112CIE3	L109012520910S		
	CN402	nsp	CN,WAFER 11P	2112CIE3	L109012521110S		
	CP3	nsp	CN,WAFER 13P C125Z1-13		L109012511310S		
	CP5	nsp	CN,WAFER 19P C125Z1-19		L109012511910S		
	CP8	nsp	CN,WAFER 19P C125Z1-19		L109012511910S		
	CP9,10	nsp	CN,WAFER 13P C125Z1-13		L109012511310S		
	CP11	nsp	CN.WAFER 33P C125Z1-33		L109012513310S		
	CP13A	nsp	CN.WAFER 10P 20010WR-10A00		L101200101020S		
	CP13B	nsp	CN.WAFER 4P 20010WR-04		L101200100420S		
	CP100	nsp	CN.WAFER 13P C125Z1-13		L109012511310S		
	CP101	nsp	CN.WAFER 9P C125Z1-09		L109012510910S		
	CP102	nsp	CN.WAFER 4P 5267-04A		L102526700400S		
	CP104	nsp	CN.WAFER 3P 5267-03A		L102526700300S		
	CP112,113	nsp	CN,WAFER 19P C125Z1-19		L109012511910S		
	CP114	nsp	CN,WAFER 21P C125Z1-21		L109012512110S		
	CP115	nsp	CN,WAFER 17P C125Z1-17		L109012511710S		
	CP401	nsp	CN,WAFER 9P	2112CIE3	L109012510910S		
	CP402	nsp	CN,WAFER 11P	2112CIE3	L109012511110S		
⚠	F104	963652500120S	FUSE T1.25A/250V	1912E2,1912EA, 1912E1C	N751501251160S		*
⚠	F105	963652010500S	FUSE T1.6A/250V		N751501601160S		
⚠	F106	963652010500S	FUSE T1.6A/250V		N751501601160S		
	F104A,104B	nsp	HOLDER,FUSE CLIP	1912E2,1912EA, 1912E1C	G645000050010S		
	F105A,105B	nsp	HOLDER,FUSE CLIP		G645000050010S		
	F106A,106B	nsp	HOLDER,FUSE CLIP		G645000050010S		
	JACK404	00D2051305008	CN.WAFER 9P	2112CIE3	L103090090030S		

PCB FRONT ASS'Y

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
SEMICONDUCTORS GROUP							
	IC100	00D2631289900	IC AZ4580M		J121458000020S		
	IC102	00D2631289900	IC AZ4580M		J121458000020S		
	Q100,101	943214500020S	TR 2SC 2SC3052		CVT2SC3052		
	Q102	00D9600133103	TR 2SA KSA916Y		J5000916Y0050S		
	Q106	943216500050S	TR 2SC RT1N441C		CVTRT1N441C		
	Q107,108	963212500030S	TR 2SA ISA1530AC1		J5200153012105		*
	Q109	943215500030S	TR 2SA RT1P441C		CVTRT1P441C		
	Q111,112	943216500020S	TR 2SC RT1N141C		CVTRT1N141C		
	D100,101	00D9630328409	D,SWITCHING 1N4007		K000400700010S		
	D102,103	00D9630355401	D,SWITCHING KDS4148U		K005041480030S		
	D111-114	00D9630355401	D,SWITCHING KDS4148U		K005041480030S		
	D115,116	963209003510S	D,ESD CDS3C05HDMI1	2112CIE3,1912E2, 1912EA,1912E1C	K067030500010S		
	D117	963209500020S	D,ESD CDS3C15GTA	2112CIE3,1912E2, 1912EA,1912E1C	K067031500010S		*
	D118,119	00D9630355401	D,SWITCHING KDS4148U		K005041480030S		
	D123,124	963209003510S	D,ESD CDS3C05HDMI1	1912E3	K067030500010S		
	D125	963209500020S	D,ESD CDS3C15GTA	1912E3	K067031500010S		*
	ZD100	00D9600095500	D,ZENER MTZJ5.1B		K06005R144520S		
	ZD101	00D9600095801	D,ZENER MTZJ6.8B		K06006R844520S		
	ZD102	00D9630046202	D,ZENER MTZJ18B		K06018R044520S		
	ZD103	00D2760665903	D,ZENER MTZJ16B		K06016R044520S		
	ZD104,105	00D9600095500	D,ZENER MTZJ5.1B		K06005R144520S		
	LED101	963262010460S	LED SIR-341ST3F 3PI	2112CIE3	K505341300010S		
	LED103	00D9630366108	LED BL-BEG204-L 5PI	2112CIE3,1912E2, 1912EA,1912E1C	K500052004010S		
	LED104	00D9630366108	LED BL-BEG204-L 5PI	1912E3	K500052004010S		
RESISTORS GROUP							
	R127	00D9639006272	R,FIXED RSD-R1-1WJ-4.7		N1131356479205		
CAPACITORS GROUP							
	C100	00D9630234205	C,ELECT 10UF-M/50V		D040100087070S		
	C101	nsp	C,FILM 0.1UF-J/100V		D02010406C060S		
	C103	00D9630293602	C,ELECT 1UF-M/50V (Pb Free)		D040010087150S		
	C104	nsp	C,CERAMIC 0.047UF-Z/50V		D011473597160S		
	C105	nsp	C,CERAMIC 0.1UF-K/50V		D011104577160S		
	C106	nsp	C,CERAMIC 100PF-J/50V		D010101167160S		
	C107	nsp	C,CERAMIC COG82PF-J/50V		D010820167160S		
	C108	nsp	C,FILM 0.047UF-J/100V		D02047306C060S		
	C109	nsp	C,FILM 0.1UF-J/100V		D02010406C060S		
	C110	nsp	C,CERAMIC 0.047UF-Z/50V		D011473597160S		
	C111	nsp	C,CERAMIC 1UF-Z/50V		D011105597160S		
	C112	00D9630234205	C,ELECT 10UF-M/50V		D040100087070S		
	C113	nsp	C,FILM 0.1UF-K/250V		D02010407H080S		
	C114	nsp	C,CERAMIC 330PF-J/50V		D010331167160S		
	C115	nsp	C,CERAMIC0.047UF-K/25V		D011473774161S		
	C116	00D9630293602	C,ELECT 1UF-M/50V (Pb Free)		D040010087150S		
	C117	nsp	C,ELECT 470UF-M/63V		D040471088010S		
	C118	00D9630293602	C,ELECT 1UF-M/50V (Pb Free)		D040010087150S		
	C119	nsp	C,FILM 0.1UF-K/250V		D02010407H080S		
	C120	nsp	C,CERAMIC 330PF-J/50V		D010331167160S		
	C121	nsp	C,CERAMIC 0.1UF-K/50V		D011104577160S		
	C122	00D9630234205	C,ELECT 10UF-M/50V		D040100087070S		
	C123	00D9630293602	C,ELECT 1UF-M/50V (Pb Free)		D040010087150S		
	C124-126	nsp	C,CERAMIC 100PF-J/50V		D010101167160S		
	C127	nsp	C,CERAMIC0.047UF-K/25V		D011473774161S		
	C129	00D9630293602	C,ELECT 1UF-M/50V (Pb Free)		D040010087150S		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	C130	00D9630234205	C,ELECT 10UF-M/50V		D040100087070S		
	C131	nsp	C,CERAMIC 0.1UF-K/50V		D011104577160S		
	C132	00D9630293602	C,ELECT 1UF-M/50V (Pb Free)		D040010087150S		
	C133	nsp	C,CERAMIC 0.047UF-Z/50V		D011473597160S		
	C134	00D9630293602	C,ELECT 1UF-M/50V (Pb Free)		D040010087150S		
	C137	nsp	C,CERAMIC 0.047UF-Z/50V		D011473597160S		
	C139	nsp	C,CERAMIC0.01UF-K/50V		D011103777160S		
	C142	nsp	C,FILM 0.047UF-J/100V		D02047306C060S		
	C145	nsp	C,FILM 0.047UF-J/100V		D02047306C060S		
	C146	nsp	C,CERAMIC 0.1UF-K/50V		D011104577160S		
	C147	00D9630234205	C,ELECT 10UF-M/50V		D040100087070S		
	C148,149	nsp	C,CERAMIC0.01UF-K/50V		D011103777160S		
	C150	nsp	C,CERAMIC 0.047UF-Z/50V		D011473597160S		
	C151	nsp	C,ELECT 47UF-M/16V		D040470083080S		
	C152	nsp	C,CERAMIC 0.047UF-Z/50V		D011473597160S		
	C153	nsp	C,FILM ST-0.01UF-J/100V		D02010306C060S		
	C154	nsp	C,CERAMIC 0.1UF-K/50V		D011104577160S		
	C155	nsp	C,FILM ST-0.01UF-J/100V		D02010306C060S		
	C156,157	nsp	C,CERAMIC 1000PF-K/50V		D011102777160S		
	C158	nsp	C,CERAMIC 0.01UF-K/50V	2112CIE3,1912E2, 1912EA,1912E1C	D011103777160S		
	C159	nsp	C,CERAMIC 0.047UF-Z/50V	2112CIE3,1912E2, 1912EA,1912E1C	D011473597160S		
	C160	nsp	C,CERAMIC 0.01UF-K/50V	2112CIE3,1912E2, 1912EA,1912E1C	D011103777160S		
	C161	nsp	C,CERAMIC 0.047UF-Z/50V	2112CIE3,1912E2, 1912EA,1912E1C	D011473597160S		
	C163	nsp	C,CERAMIC 0.1UF-K/50V	2112CIE3,1912E2, 1912EA,1912E1C	D011104577160S		
	C164	nsp	C,ELECT 220UF-M/6.3V	2112CIE3,1912E2, 1912EA,1912E1C	D040221081070S		
	C165	nsp	C,CERAMIC0.01UF-K/50V		D011103777160S		
	C166	00D9630293709	C,ELECT 100UF-M/10V		D040101082070S		
	C167	nsp	C,CERAMIC 0.1UF-K/50V	1912E3	D011104577160S		
	C172	nsp	C,CERAMIC 0.001UF-J/50V	2112CIE3,1912E2, 1912EA,1912E1C	D010102167160S		
	C180	nsp	C,ELECT 220UF-M/6.3V	1912E3	D040221081070S		
	C183	nsp	C,CERAMIC 0.001UF-J/50V	1912E3	D010102167160S		
OTHERS PARTS GROUP							
	BD100-104	nsp	R,CHIP 0-J, 1/16W		C20000006M160S		
	BD105	nsp	COIL,BEAD CBW160808U121T		D340160811210S		
	BD107-109	nsp	R,CHIP 0-J, 1/16W		C20000006M160S		
	BD110	nsp	COIL,BEAD BLM21PG221SN1	2112CIE3,1912E2, 1912EA,1912E1C	D340201212210S		
	BD111,112	nsp	R,CHIP 0-J, 1/16W	2112CIE3,1912E2, 1912EA,1912E1C	C20000006M160S		
	BD113	nsp	COIL,BEAD BLM21PG221SN1	1912E3	D340201212210S		
	BD114,115	nsp	R,CHIP 0-J, 1/16W	1912E3	C20000006M160S		
	CB100,101	nsp	R,CHIP 0-J, 1/16W		C20000006M160S		
	CLAMP111	nsp	CLAMP WIRE(SOLDER)		4330000120000S		
	CLAMP113-116	nsp	CLAMP WIRE(SOLDER)		4330000120000S		
	CN100	nsp	CN.WIRE 80MM/5P		L025800052620S		
	CN102	nsp	CN.WIRE 570MM/5P	2112CIE3,1912E2, 1912EA,1912E1C	L025571052820S		
	CN103	nsp	CN.WIRE 40MM/10P		L025400102620S		
	CN104	nsp	CN.WIRE 570MM/5P	1912E3	L025571052820S		
	CN104_1	nsp	CN.WAFER 11P	1912E2,1912EA, 1912E1C,212CIE3	L101100031110S		
	CN104_2	nsp	CN.WAFER 11P	1912E3	L101100031110S		
	CN104_22	nsp	CN.WAFER 11P	1912E2,1912EA, 1912E1C,212CIE3	L101100031110S		
	CP100	nsp	CN.WAFER 5P 20010-05		L101200100510S		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	CP101	nsp	CN.WAFER 5268-07A 7P		L102526800700S		
	CP104_1	nsp	CN.WAFER 11P	1912E3	L101100041110S		
	CP104_2	nsp	CN.WAFER 11P	1912E3	L101100041110S		
	CP104_11	nsp	CN.WAFER 11P	1912E2,1912EA, 1912E1C,2112CIE3	L101100041110S		
	CP104_22	nsp	CN.WAFER 11P	1912E2,1912EA, 1912E1C,2112CIE3	L101100041110S		
⚠	F102	963652500020S	FUSE 6125FF500-R 500mA		G657612505030S		*
	G101	nsp	CN.WIRE 100MM/1P		8410101012240S		
	JACK100	00D9630367802	JACK,D3.5 EARPHONE		G401PJ354H40YS		
	JACK101	963643100110S	CN.PLUG USB A TYPE DIP4P	2112CIE3,1912E2, 1912EA,1912E1C	G480040040060S		*
	JACK102	963643100110S	CN.PLUG USB A TYPE DIP4P	1912E3	G480040040060S		*
	JACK103	00D9630146403	TER,RCA 3PIN		G606308HG110YS		
	JACK104	963643013700S	JACK,D6.5 PHONE		G402PJ612AG1YS		
	L100	nsp	COIL INDUCTOR 100UH		D330101001020S		
	RMC100	963262010290S	MODULE,REMOCON R34FS9A		E940349003810S		
	SW100-103	00D9630095305	SW,TACT SKHV10910D01		G180040500010S		
	SW104,105	00D9630095305	SW,TACT SKHV10910D01	1912E3	G180040500010S		
	SW106	00D9630095305	SW,TACT SKHV10910D01	2112CIE3,1912E2, 1912EA,1912E1C	G180040500010S		
	SW107-111	00D9630095305	SW,TACT SKHV10910D01		G180040500010S		
	SW112,113	00D9630095305	SW,TACT SKHV10910D01	1912E3	G180040500010S		
	SW114-116	00D9630095305	SW,TACT SKHV10910D01		G180040500010S		
	SW117	00D9630095305	SW,TACT SKHV10910D01	2112CIE3,1912E2, 1912EA,1912E1C	G180040500010S		
	SW118-122	00D9630095305	SW,TACT SKHV10910D01	1912E3	G180040500010S		
	SW123	00D9630095305	SW,TACT SKHV10910D01	2112CIE3,1912E2, 1912EA,1912E1C	G180040500010S		
	SW124,125	00D9630095305	SW,TACT SKHV10910D01		G180040500010S		
	SW126,127	00D9630095305	SW,TACT SKHV10910D01	1912E3	G180040500010S		
	SW128	00D9630095305	SW,TACT SKHV10910D01	2112CIE3,1912E2, 1912EA,1912E1C	G180040500010S		
	VEC100	00D9630387408	SW,ENCODER EC16B24SO		G121162400070S		
	VEC101	00D9630387408	SW,ENCODER EC16B24SO	2112CIE3,1912E2, 1912EA,1912E1C	G121162400070S		
	U1	nsp	CN.FPC 1.0MM 1.0-11S-40PW 40P		L130100114050S		
	U100	963172010470S	DISPLAY,FLT 18-ST-13GINK		K530180130010S		
	JP210	nsp	R,CHIP 0-J,1/8W		C200000061300S		
	JP212	nsp	R,CHIP 0-J,1/8W		C200000061300S		
		nsp	HOLDER FLT		4320200026000S		

PCB AUDIO_VIDEO ASS'Y

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
SEMICONDUCTORS GROUP							
	IC801	963239000650S	IC R2A15218FP		J084152180010S		
	IC806	963233100020S	IC TC4052BFT		J040405205510S		*
	IC821	232810005504S	IC BD7628F-E2		J127762800010S		
	IC822	00D2623445901	IC TC4051BFT		J040405105510S		
	IC823	232810005504S	IC BD7628F-E2		J127762800010S		
	IC825	963239003470S	IC NJM2586AM		J171258600010S		
	IC826	963233100020S	IC TC4052BFT		J040405205510S		*
	Q821	943214500030S	TR 2SC INC2001AC1		CVTINC2001AC1		
	Q822,823	943215500020S	TR 2SA RT1P141C		CVTRT1P141C		
	Q836	943215500020S	TR 2SA RT1P141C	2112CIE3	CVTRT1P141C		
	Q837	943214500030S	TR 2SC INC2001AC1	2112CIE3	CVTINC2001AC1		
	Q842	943216500020S	TR 2SC RT1N141C		CVTRT1N141C		
	Q844	943216500020S	TR 2SC RT1N141C	2112CIE3	CVTRT1N141C		
	Q846	943215500020S	TR 2SA RT1P141C	2112CIE3	CVTRT1P141C		
	Q847	943214500030S	TR 2SC INC2001AC1	2112CIE3	CVTINC2001AC1		
	Q855	963212500030S	TR 2SA ISA1530AC1		J520015301210S		*
	Q856-858	943216500020S	TR 2SC RT1N141C		CVTRT1N141C		
	Q859	963212500030S	TR 2SA ISA1530AC1		J520015301210S		*
	Q860	963216500060S	TR 2SC RT1N144C		J522101441210S		
	D800,801	00D9630328409	D,SWITCHING 1N4007		K000400700010S		
	D828,829	00D9630328409	D,SWITCHING 1N4007		K000400700010S		
	D841	00D9630328409	D,SWITCHING 1N4007		K000400700010S		
	D848-851	00D9630355401	D,SWITCHING KDS4148U		K005041480030S		
	ZD800	00D2760760905	D,ZENER MTZJ3.6B-0.5W/5MA		K06003R644520S		
CAPACITORS GROUP							
	C800,801	00D9630234205	C,ELECT 10UF-M/50V	1912E3,1912E1C, 2112CIE3	D040100087070S		
	C800,801	963134501230S	C,ELECT 10UF-M/50V RA3	1912E2,1912EA	D040100087380S		*
	C802-807	00D9630234205	C,ELECT 10UF-M/50V		D040100087070S		
	C808	00D9630333203	C,ELECT 100UF-M/16V		D040101083090S		
	C809,810	00D9630234205	C,ELECT 10UF-M/50V		D040100087070S		
	C811	00D9630333203	C,ELECT 100UF-M/16V		D040101083090S		
	C812,813	nsp	C,CERAMIC 330PF-J/50V		D010331167160S		
	C823	00D2544583942	C,ELECT 10/50(ROB)	1912E2,1912EA	D040100087140S		
	C825	00D2544583942	C,ELECT 10/50(ROB)	1912E2,1912EA	D040100087140S		
	C826	nsp	C,CERAMIC 330PF-J/50V		D010331167160S		
	C828	nsp	C,ELECT 47UF-M/16V	2112E3,19112E3, 1912E1C	D040470083080S		
	C828	00D2544577932	C,ELECT 47/16(RA3)	1912E2,1912EA	D040470084330S		
	C829	nsp	C,CERAMIC 330PF-J/50V		D010331167160S		
	C830	nsp	C,ELECT 47UF-M/16V		D040470083080S		
	C832	nsp	C,ELECT 47UF-M/16V	2112E3,19112E3, 1912E1C	D040470083080S		
	C832	00D2544577932	C,ELECT 47/16(RA3)	1912E2,1912EA	D040470084330S		
	C834	nsp	C,CERAMIC 330PF-J/50V		D010331167160S		
	C835,836	nsp	C,ELECT 47UF-M/16V		D040470083080S		
	C837	nsp	C,CERAMIC 330PF-J/50V		D010331167160S		
	C838,839	nsp	C,ELECT 47UF-M/16V		D040470083080S		
	C840	00D9630234205	C,ELECT 10UF-M/50V		D040100087070S		
	C842	nsp	C,CERAMIC 330PF-J/50V		D010331167160S		
	C844,845	00D9630234205	C,ELECT 10UF-M/50V		D040100087070S		
	C846	nsp	C,ELECT 47UF-M/16V		D040470083080S		
	C847	nsp	C,CERAMIC 330PF-J/50V		D010331167160S		
	C850,851	00D9630234205	C,ELECT 10UF-M/50V		D040100087070S		
	C854	nsp	C,CERAMIC 330PF-J/50V		D010331167160S		
	C856	nsp	C,CERAMIC 330PF-J/50V		D010331167160S		
	C861	nsp	C,CERAMIC 330PF-J/50V	2112CIE3	D010331167160S		
	C862-864	nsp	C,CERAMIC 0.01UF-K/50V		D010103777160S		
	C865	00D9630224503	C,ELECT 22UF-M/50V	2112CIE3	D040220087060S		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	C866	00D9630244606	C,ELECT 0.1UF-M/50V (Pb Free)	2112CIE3	D040R10087080S		
	C867	nsp	C,CERAMIC 0.01UF-K/50V		D010103777160S		
	C868,869	00D9630224503	C,ELECT 22UF-M/50V		D040220087060S		
	C870	nsp	C,CERAMIC 100PF-J/50V		D010101167160S		
	C871	00D9630244606	C,ELECT 0.1UF-M/50V (Pb Free)		D040R10087080S		
	C896	nsp	C,CERAMIC 330PF-J/50V	2112CIE3	D010331167160S		
	C897-899	00D9630224503	C,ELECT 22UF-M/50V	2112CIE3	D040220087060S		
	C918	nsp	C,CERAMIC 100PF-J/50V	2112CIE3,1912E3	D010101167160S		
	C919	nsp	C,CERAMIC 33PF-J/50V	1912E2,1912EA, 1912E1C	D010330167160S		
	C921	nsp	C,CERAMIC 100PF-J/50V	1912E2,1912EA	D010101167160S		
	C925	nsp	C,CERAMIC 0.01UF-K/50V		D010103777160S		
	C926	00D9630234205	C,ELECT 10UF-M/50V		D040100087070S		
	C927	nsp	C,ELECT 47UF-M/16V		D040470083080S		
	C928	00D9630234205	C,ELECT 10UF-M/50V		D040100087070S		
	C929	nsp	C,CERAMIC 0.01UF-K/50V		D010103777160S		
	C930,931	nsp	C,CERAMIC 100PF-J/50V	2311E3,1912E3	D010101167160S		
	C932	nsp	C,CERAMIC 0.01UF-K/50V		D010103777160S		
	C933	nsp	C,CERAMIC 0.047UF-Z/50V		D011473597160S		
	C935	nsp	C,CERAMIC 100PF-J/50V	1912E2,1912EA, 1912E1C	D010101167160S		
	C936	00D9630293602	C,ELECT 1UF-M/50V (Pb Free)		D040010087150S		
	C937	nsp	C,CERAMIC 100PF-J/50V	1912E2,1912EA	D010101167160S		
	C938	nsp	C,CERAMIC 0.1UF-K/50V	2112CIE3,1912E3	D011104577160S		
	C939,940	nsp	C,CERAMIC 100PF-J/50V	2112CIE3,1912E3	D010101167160S		
	C941	nsp	C,CERAMIC 0.01UF-K/50V		D010103777160S		
	C943	nsp	C,CERAMIC 100PF-J/50V	1912E2,1912EA, 1912E1C	D010101167160S		
	C944	00D9630293709	C,ELECT 100UF-M/10V		D040101082070S		
	C945	nsp	C,CERAMIC 0.01UF-K/50V		D010103777160S		
	C946	nsp	C,ELECT 47UF-M/16V		D040470083080S		
	C947	00D9630224503	C,ELECT 22UF-M/50V		D040220087060S		
	C948,949	nsp	C,CERAMIC 0.01UF-K/50V		D010103777160S		
	C950	nsp	C,ELECT 47UF-M/16V		D040470083080S		
	C951	00D9630224503	C,ELECT 22UF-M/50V		D040220087060S		
	C952	nsp	C,CERAMIC 0.1UF-K/50V		D011104577160S		
	C953	nsp	C,CERAMIC 100PF-J/50V	1912E2,1912EA, 1912E1C	D010101167160S		
	C959	nsp	C,CERAMIC 0.047UF-Z/50V		D011473597160S		
	C960	nsp	C,CERAMIC 0.01UF-K/50V		D010103777160S		
	C971	nsp	C,CERAMIC 0.1UF-K/50V		D011104577160S		
	C974,975	00D9630293709	C,ELECT 100UF-M/10V		D040101082070S		
	C999,1000	00D9630293602	C,ELECT 1UF-M/50V (Pb Free)		D040010087150S		
	C1002	00D9630293602	C,ELECT 1UF-M/50V (Pb Free)		D040010087150S		
	C1006,1007	nsp	C,CERAMIC 0.1UF-K/50V		D011104577160S		
	C1008	00D9630293709	C,ELECT 100UF-M/10V		D040101082070S		
	C1009-1011	nsp	C,CERAMIC 0.047UF-Z/50V		D011473597160S		
	C1012	nsp	C,CERAMIC 0.1UF-K/50V		D011104577160S		
	C1013	nsp	C,CERAMIC 0.01UF-K/50V		D010103777160S		
	C1014	00D9630293602	C,ELECT 1UF-M/50V (Pb Free)		D040010087150S		
	C1015-1017	nsp	C,CERAMIC 68PF-J/50V		D010680167160S		
	C1018	nsp	C,CERAMIC 0.01UF-K/50V		D010103777160S		
	C1019	nsp	C,CERAMIC 220PF-J/50V		D010221167160S		
	C1020	nsp	C,CERAMIC 0.01UF-K/50V		D010103777160S		
	C1021	nsp	C,ELECT 47UF-M/16V		D040470083080S		
	C1022	nsp	C,CERAMIC 0.047UF-Z/50V		D011473597160S		
	C1117,1118	nsp	C,FILM 0.0047UF	1912E2,1912EA	D02047206C060S		
	C1119,1120	nsp	C,FILM 0.0082UF	1912E2,1912EA	D02082206C060S		
OTHERS PARTS GROUP							
	BD803	nsp	COIL,BEAD CBW160808U121T		D340160811210S		
	CN12	nsp	CN.FPC 19P TWG-P19P-A1		L131019000010S		
	CN112,113	nsp	CN.WAFER 19P C125Z2-19		L109012521910S		
	CN114	nsp	CN.WAFER 21P C125Z2-21		L109012522110S		
	CN115	nsp	CN.WAFER 17P C125Z2-17		L109012521710S		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	CN401	nsp	CN.WIRE 290MM/13P		L025291132620S		
	CP14	nsp	CN.WAFER 23P C125Z1-23		L1090125123105		
	CP805	963183011320S	TUNER,FM/AM KST-MT104MV1-2	1912E2,1912EA, 1912E1C	E903104100110S		
	JK100	963643010330S	TER,RCA 6PIN		G603615A0700YS		
	JK101	963643010320S	TER,RCA 4PIN	1912E3,1912E2, 1912EA,1912E1C	G603615A0207YS		
	JK101	963643010330S	TER,RCA 6PIN	2112CIE3	G603615A0700YS		
	JK102	00D9630146005	TER,RCA 1PIN		G600107A0000YS		
	JK104	963643010350S	TER,RCA 3PIN		G606305B1400YS		
	JK105	963643010310S	TER,RCA 1PIN		G600000020020S		
	JK107	963643010340S	TER,RCA 3PIN		G606305B0200YS		
	L1000,1001	nsp	FILTER,LC MPX	1912E2,1912EA	E401010020020S		
	PACK806	963183012380S	TUNER,FM/AM KST-MW004MV1-S63SV	2112CIE3,1912E3	E903004100031S		

PCB HDMI ASS'Y

NOTE: When replacing the AVR1912E2, EA, E1C IC18 or IC41, use the AVR2112CIE3, AVR1912E3 IC18(963248100110S) or IC41(963243100070S). ⚠3
When replacing the AVR1912E1C IC11, use the AVR1912E2 (EA) IC11(963248100710S).
When the following are replaced, always rewrite with updated firmware using DFW.
(Refer to "PROCEDURE FOR UPGRADING THE VERSION OF THE FIRMWARE" (45 page).)

- PCB HDMI ASSY
- IC11 (MX25L3206EM2I-12G/MX25L6406EM2I-12G)
- IC18 (H27U1G8F2BTR)
- IC22 (EPM3032A-TC44)
- IC41 (R5F64169DFDFP)
- U7 (EN29LV160BB-70TIP)

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
SEMICONDUCTORS GROUP							
	IC1	nsp	IC EX3AV		J048030030010S		
	IC2	231310009508S	IC PQ033DNA1ZPH		J126033010010S		
	IC3	234810015507S	IC BU4248F		J126424800010S		
	IC4-7	nsp	IC EX3AV		J048030030010S		
	IC9	943236012460S	IC ADV7623		CVIADV7623BSTZ		
	IC11	963248100120S	IC MEMORY FLASH (MX25L3206EM2I-12G)	2112CIE3,1912E3	8952191200040		*
	IC11	963248100710S	IC MEMORY FLASH (MX25L6406EM2I-12G)	1912E2,1912EA	8952191200060		*
	IC11	nsp	IC MEMORY FLASH (MX25L6406EM2I-12G)	1912E1C	-		
	IC12	963239010410S	IC ADV7511BSTZ-225		J040751100010S		
	IC13	nsp	IC MFI341S2164		J044341216410S		
	IC14	nsp	IC LAN8700-AEZG-TR		J127870010010S		
	IC15	00D2623711004	IC LOGIC SAA7121H		J045712100010S		
	IC16	246810063608S	IC MEMORY-RAM (W9825G6JH-6)		J001982566010S		
	IC17	nsp	IC,ANALOG DM860		J080860005510S		
	IC18	963248100110S	IC MEMORY FLASH (H27U1G8F2BTR)	2112CIE3,1912E3	8952191200030		*
	IC18	nsp	IC MEMORY FLASH (H27U1G8F2BTR)	1912E2,1912EA, 1912E1C	-		
	IC19	236810062608S	IC LC89058W-E		J046890580020S		
	IC20	963239002150S	IC SN74LVC244APWR		J040742440230S		
	IC21	236810062608S	IC LC89058W-E		J046890580020S		
	IC22	943236100020S	IC EPM3032A-TC44		CVIANAM1570AV		
	IC24	00D2623077900	IC TC74VHCU04FT		J040740405580S		
	IC25	00D9630237503	MODULE JSR1165-C		E100116500040S		
	IC28	00D2631289900	IC AZ4580M	2112E3,1912E3, 1912E1C	J121458000020S		⚠4
	IC28	00D2623555901	IC SA5532ADR	1912E2,1912EA	J121553200050S		⚠4
	IC29	236810073509S	IC AK4358VQ-L		J042435800010S		
	IC30	236810086505S	IC AK5358BET-E2		J043535805520S		
	IC31,32	00D2631289900	IC AZ4580M		J121458000020S		
	IC33	236810070500S	IC AK4424ET-E2 TSSOP16		J042442405520S		
	IC34	00D2631289900	IC AZ4580M		J121458000020S		
	IC35	234810014504S	IC MC14094BDTR2G		J040140940020S		
	IC37	00D2623437906	IC TC74VHCT244AFT		J040742445540S		
	IC38	00D2623444902	IC TC74VHC08FT	1912E3,1912E2, 1912EA,1912E1C	J040740800280S		
	IC39	00D2623444902	IC TC74VHC08FT		J040740800280S		
	IC40	246810026500S	IC R1EX24256ASAS0A		J000242565550S		

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

NOTE : When replacing the 1912E1C parts, use the 1912E2(EA) parts.
After replacing the parts, overwrite the firmware with the newest 1912E1C version firmware.

NOTE : When replacing the 1912E2(EA) or E1C parts, use the 1912E3/2112CIE3 parts.
After replacing the parts, overwrite the firmware with the newest 1912E2(EA) or E1C version firmware.

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	IC41	963243100070S	IC CPU MICRO PROCESS (R5F56108VNFP)	2112CIE3,1912E3	8952191200010		*
	IC41	nsp	IC CPU MICRO PROCESS (R5F56108VNFP)	1912E2,1912EA, 1912E1C	-		
	U1	236810057606S	IC LOGIC ADV3002BSTZ		J040300205510S		
	U2	234810018506S	IC LOGIC TC74VHC4052AFT		J040744052080S		
	U4	nsp	IC LOGIC ADV7844 HDMI		J040784405510S		
	U6	943246012690S	IC MEMORY-RAM (W9864G6JH-6)		CVIW9864G6JH-6		
	U7	963248100100S	IC EN29LV160BB-70TIP		8952191200020		*
	U8	nsp	IC ANALOG ADSP21487KSWZ-3B3018	1912E3,1912E2, 1912EA,1912E1C	J080214875510S		
	U8	nsp	IC,ANALOG ADSP21487KSWZ-3B3017	2112CIE3	J080214875520S		
	Q1	943214500020S	TR 2SC 2SC3052		CVT2SC3052		
	Q3	943216500020S	TR 2SC RT1N141C		CVTRT1N141C		
	Q4	943216500050S	TR 2SC RT1N441C		CVTRT1N441C		
	Q5	943216500020S	TR 2SC RT1N141C		CVTRT1N141C		
	Q6,7	943216500050S	TR 2SC RT1N441C		CVTRT1N441C		
	Q8	943216500020S	TR 2SC RT1N141C		CVTRT1N141C		
	Q9	943216500050S	TR 2SC RT1N441C		CVTRT1N441C		
	Q10	943216500020S	TR 2SC RT1N141C		CVTRT1N141C		
	Q11-13	943216500050S	TR 2SC RT1N441C		CVTRT1N441C		
	Q14	943216500020S	TR 2SC RT1N141C		CVTRT1N141C		
	Q15	943216500050S	TR 2SC RT1N441C		CVTRT1N441C		
	Q16	943216500020S	TR 2SC RT1N141C		CVTRT1N141C		
	Q17-19	943216500050S	TR 2SC RT1N441C		CVTRT1N441C		
	Q20	00D2750110905	SEMI HN1K02FU		J543102000020S		
	Q22	943216500020S	TR 2SC RT1N141C		CVTRT1N141C		
	Q24	963219004200S	CHIP FDC608PZ P-CH		J543608000010S		
	Q25	943216500020S	TR 2SC RT1N141C		CVTRT1N141C		
	Q26	943215500020S	TR 2SA RT1P141C		CVTRT1P141C		
	Q27	943216500020S	TR 2SC RT1N141C		CVTRT1N141C		
	Q29	943216500020S	TR 2SC RT1N141C		CVTRT1N141C		
	Q30	943215500020S	TR 2SA RT1P141C		CVTRT1P141C		
	Q31-39	943216500020S	TR 2SC RT1N141C		CVTRT1N141C		
	Q40-43	943215500030S	TR 2SA RT1P441C		CVTRT1P441C		
	Q44	943216500020S	TR 2SC RT1N141C		CVTRT1N141C		
	TR1	943216500050S	TR 2SC RT1N441C		CVTRT1N441C		
	TR2	963219004200S	CHIP FDC608PZ P-CH		J543608000010S		
	TR3	00D2710326904	TR 2SA 2SA1954		J520195405510S		
	TR4	943216500020S	TR 2SC RT1N141C		CVTRT1N141C		
	TR5	00D2710326904	TR 2SA 2SA1954		J520195405510S		
	TR6	943216500020S	TR 2SC RT1N141C		CVTRT1N141C		
	TR7	943216500050S	TR 2SC RT1N441C		CVTRT1N441C		
	TR8	963219004200S	CHIP FDC608PZ P-CH		J543608000010S		
	TR9	00D2710326904	TR 2SA 2SA1954		J520195405510S		
	TR10	943216500020S	TR 2SC RT1N141C		CVTRT1N141C		
	TR11	943216500050S	TR 2SC RT1N441C		CVTRT1N441C		
	TR12	963219004200S	CHIP FDC608PZ P-CH		J543608000010S		
	TR14	943216500050S	TR 2SC RT1N441C		CVTRT1N441C		
	TR15	963219004200S	CHIP FDC608PZ P-CH		J543608000010S		
	TR16	00D2710326904	TR 2SA 2SA1954		J520195405510S		
	TR17	943216500020S	TR 2SC RT1N141C		CVTRT1N141C		
	TR20	943216500050S	TR 2SC RT1N441C		CVTRT1N441C		
	TR21	963219004200S	CHIP FDC608PZ P-CH		J543608000010S		
	TR22-28	943214500020S	TR 2SC 2SC3052		CVT2SC3052		
	TR29,30	963212500030S	TR 2SA ISA1530AC1		J520015301210S		*
	TR31	963219002180S	TR 2SD2114KT146W		J5232114K0010S		
	TR32,33	943214500020S	TR 2SC 2SC3052		CVT2SC3052		
	TR34	943214500020S	TR 2SC 2SC3052	2112CIE3	CVT2SC3052		
	TR35	943215500030S	TR 2SA RT1P441C	2112CIE3	CVTRT1P441C		

NOTE : When replacing the 1912E2(EA) or E1C parts, use the 1912E3/2112CIE3 parts.
After replacing the parts, overwrite the firmware with the newest 1912E2(EA) or E1C version firmware.

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
	TR38	00D2710326904	TR 2SA 2SA1954		J520195405510S		
	TR39	943216500020S	TR 2SC RT1N141C		CVTRT1N141C		
	D1	00D9630355401	D,SWITCHING KDS4148U		K005041480030S		
	D3	00D9630328603	D,SCHOTTKY RB521S-30		K125521300010S		
	D42	00D2760740909	D CHIP KDS184S(B3)		K005018400020S		
	D43-45	00D9630355401	D,SWITCHING KDS4148U		K005041480030S		
	D49	00D9630328603	D,SCHOTTKY RB521S-30	2112CIE3	K125521300010S		
	D50	00D9630355401	D,SWITCHING KDS4148U	2112CIE3	K005041480030S		
	D51	00D9630328603	D,SCHOTTKY RB521S-30	2112CIE3	K125521300010S		
	D901	00D9630328603	D,SCHOTTKY RB521S-30		K125521300010S		
RESISTORS GROUP							
	RA1-4	nsp	R,NETWORK WA04		C180103042100S		
CAPACITORS GROUP							
	C1-3	nsp	C,CERAMIC 10UF-K/16V		D011106573200S		
	C6	00D9630325402	C,ELECT 470UF-MVG/6.3V	1912E3,1912E1C, 2112CIE3	D050471081200S		
	C6	963134501220S	C,ELECT 470UF-MVG/6.3V (RV0)	1912E2,1912EA	D050471081330S		*
	C8,9	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C12,13	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C14	nsp	C,CERAMIC 10PF-J/50V		D010100167161S		
	C17	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C18,19	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C22-24	nsp	C,CERAMIC 10UF-K/16V		D011106573200S		
	C25	nsp	C,CERAMIC 1UF-K/10V		D011105772161S		
	C26	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C27,28	nsp	C,CERAMIC 1UF-K/10V		D011105772161S		
	C29	nsp	C,CERAMIC X7R0.015UF-K/50V		D011153777160S		
	C30,31	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C34	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C37	nsp	C,CERAMIC 15PF-J/50V		D010150167160S		
	C38	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C39-41	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C44	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C45-47	nsp	C,CERAMIC 10UF-K/16V		D011106573200S		
	C48	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C49	nsp	C,CERAMIC 15PF-J/50V		D010150167160S		
	C52,53	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C54	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C55	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C58-60	nsp	C,CERAMIC 10UF-K/16V		D011106573200S		
	C61,62	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C63	nsp	C,CERAMIC 15PF-J/50V		D010150167160S		
	C66	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C67	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C68	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C71-73	nsp	C,CERAMIC 10UF-K/16V		D011106573200S		
	C74	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C125	nsp	C,CERAMIC 15PF-J/50V		D010150167160S		
	C128	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C129	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C130	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C167	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C216	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C225	nsp	C,CERAMIC 1000PF-K/50V		D011102177101S		
	C277,278	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C279	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C287	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C288	nsp	C,CERAMIC 1000PF-K/50V		D011102177101S		
	C289-292	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C293	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C294	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C295	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	C296	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C297	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C298	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C299	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C300	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C301	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C302	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C303	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C304	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C305	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C306	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C307	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C308-310	nsp	C,CERAMIC 10UF-K/16V		D011106573200S		
	C311	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C312	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C313	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C314	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C315	nsp	C,CERAMIC 10UF-K/16V		D011106573200S		
	C317	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C318	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C319	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C320	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C321	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C322	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C323	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C324	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C325	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C326	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C327	nsp	C,CERAMIC 10UF-K/16V		D011106573200S		
	C328	00D2544554984	C,ELECT 10UF-M/50V RA3	1912E2,1912EA	D040100087380S		
	C330,331	nsp	C,CERAMIC 1UF-K/10V		D011105772161S		
	C332,333	nsp	C,CERAMIC 15PF-J/50V		D011150167101S		
	C334	nsp	C,CERAMIC 1000PF-K/50V		D011102177101S		
	C335	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C336	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C337	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C338	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C339	nsp	C,CERAMIC 10UF-K/16V		D011106573200S		
	C340	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C341	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C342	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C343	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C344	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C345	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C346	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C347	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C348	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C349	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C350,351	nsp	C,CERAMIC 10UF-K/16V		D011106573200S		
	C352	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C353,354	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C355	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C356	nsp	C,CERAMIC 10UF-K/16V		D011106573200S		
	C358	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C359	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C360	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C361	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C362	nsp	C,CERAMIC 10UF-K/16V		D011106573200S		
	C365	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C366,367	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C368	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C369	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C370	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C371	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C372	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C373	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C374	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	C375	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C376	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C377	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C378	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C379	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C380	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C381	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C382	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C383	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C384	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C385	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C386	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C387	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C388	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C389	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C390	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C391	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C392	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C393	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C394	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C395	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C396	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C397-399	nsp	C,CERAMIC 10UF-K/16V		D011106573200S		
	C400	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C401	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C402	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C403	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C404	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C405	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C406	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C407	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C408	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C409	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C410	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C411	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C412	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C413	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C414	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C415	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C416	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C417	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C418	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C419	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C420	nsp	C,CERAMIC 1UF-K/10V		D011105772101S		
	C421	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C422-426	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C427	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C428-430	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C431	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C434	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C435	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C436	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C437	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C438	nsp	C,CERAMIC 1UF-K/10V		D011105772101S		
	C439	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C440	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C441	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C442	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C443	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C444	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C445	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C446	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C447	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C448	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C449	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C450	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C451	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	C452	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C453	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C454	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C455	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C456	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C457	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C458	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C459	nsp	C,CERAMIC 10UF-K/16V		D011106573200S		
	C460	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C461	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C462	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C463	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C464	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C465	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C466	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C467	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C468	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C469	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C470	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C471	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C472	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C473	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C474	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C475	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C476	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C477	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C478	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C479	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C480	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C481	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C482	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C483	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C484	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C485	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C486	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C487	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C488	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C489	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C490	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C491	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C492	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C493	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C494	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C495	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C496	nsp	C,CERAMIC 1UF-K/10V		D011105772101S		
	C497	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C498	nsp	C,CERAMIC 10UF-K/16V		D011106573200S		
	C499	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C500	nsp	C,CERAMIC 1000PF-K/50V		D011102177101S		
	C501-503	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C504,505	nsp	C,CERAMIC 15PF-J/50V		D011150167101S		
	C506-509	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C510	nsp	C,CERAMIC 1000PF-K/50V		D011102177101S		
	C511,512	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C513-515	nsp	R,CHIP 0-J,1/16W		C20000006M101S		
	C516	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C519-525	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C526	nsp	C,CERAMIC 10UF-K/16V		D011106573200S		
	C529-532	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C533	00D2544554984	C,ELECT 10UF-M/50V RA3	1912E2,1912EA	D040100087380S		
	C534	nsp	C,CERAMIC 10UF-K/16V		D011106573200S		
	C537	nsp	C,CERAMIC 10UF-K/16V		D011106573200S		
	C539,540	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C541,542	nsp	C,CERAMIC 1PF-C/50V		D011010107100S		
	C543	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C546	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C548,549	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	C550-552	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C554	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C555,556	nsp	C,CERAMIC 1000PF-K/50V		D011102177101S		
	C557-564	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C565	nsp	C,CERAMIC10PF-J/50V		D011100167101S		
	C566,567	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C568	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C571	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C572	nsp	C,CERAMIC10PF-J/50V		D011100167101S		
	C573	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C574	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C581	nsp	C,CERAMIC 0.022UF-K/25V		D011223777160S		
	C583	nsp	C,CERAMIC 1000PF-K/50V		D011102177101S		
	C584	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C585	nsp	C,CERAMIC 1000PF-K/50V		D011102177101S		
	C586	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C587-593	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C594	nsp	C,CERAMIC 1000PF-K/50V		D011102177101S		
	C595	nsp	C,CERAMIC 12PF-J/50V		D011120167101S		
	C597	nsp	C,CERAMIC 12PF-J/50V		D011120167101S		
	C598,599	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C605	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C616-619	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C620-633	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C635	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C638-641	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C642-654	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C656	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C659	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C662,663	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C664	nsp	C,CERAMIC 1000PF-K/50V		D011102177101S		
	C665-671	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C672	nsp	C,CERAMIC 0.022UF-K/25V		D011223174101S		
	C673,674	nsp	C,CERAMIC 10PF-D/50V		D011100117101S		
	C675	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C676	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C678	nsp	C,CERAMIC 1000PF-K/50V		D011102177101S		
	C679-683	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C684	nsp	C,CERAMIC 1000PF-K/50V		D011102177101S		
	C685-696	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C697	nsp	C,CERAMIC 0.022UF-K/25V		D011223174101S		
	C698-701	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C702	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C703	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C706	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C708	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C710-735	nsp	C,CERAMIC 1000PF-K/50V		D011102177101S		
	C736-785	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C786,787	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C790,791	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C792	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C796,797	nsp	C,CERAMIC 9PF-D/50V		D011090117101S		
	C799	00D9630338606	C,ELECT 10UF-MVG/16V		D050100083470S		
	C801	nsp	C,CERAMIC0.01UF-K/50V		D011103777160S		
	C804,805	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C806-830	nsp	C,CERAMIC 1000PF-K/50V		D011102177101S		
	C831	00D9630338606	C,ELECT 10UF-MVG/16V		D050100083470S		
	C833	nsp	C,CERAMIC0.01UF-K/50V		D011103777160S		
	C834	nsp	C,CERAMIC X7R3900PF-K/50V		D011392777160S		
	C835	nsp	C,CERAMIC 680PF-J/50V		D010681167163S		
	C837	nsp	C,CERAMIC 680PF-J/50V		D010681167163S		
	C838	963134000450S	C,ELECT 100UF-MVG/16V		D050101083660S		
	C839	nsp	C,CERAMIC 680PF-J/50V		D010681167163S		
	C840	nsp	CHIP RES. 1KJ 1/16W1005REEL		C20001026M101S		
	C841	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C843	963134000450S	C,ELECT 100UF-MVG/16V		D050101083660S		
	C845	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	C846	nsp	C,CERAMIC X7R3900PF-K/50V		D011392777160S		
	C847	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C849,850	nsp	C,CERAMIC 1UF-K/10V		D011105772161S		
	C851	nsp	C,CERAMIC 680PF-J/50V		D010681167163S		
	C853	nsp	C,CERAMIC X7R3900PF-K/50V		D011392777160S		
	C854,855	nsp	C,CERAMIC 680PF-J/50V		D010681167163S		
	C857	nsp	C,CERAMIC 680PF-J/50V		D010681167163S		
	C858	nsp	C,CERAMIC 1000PF-K/50V		D011102177101S		
	C859	nsp	C,CERAMIC X7R3900PF-K/50V		D011392777160S		
	C862	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C863	963134000450S	C,ELECT 100UF-MVG/16V		D050101083660S		
	C864	nsp	C,CERAMIC 680PF-J/50V		D010681167163S		
	C865	nsp	C,CERAMIC X7R3900PF-K/50V		D011392777160S		
	C866	nsp	C,CERAMIC 1UF-K/10V		D011105772161S		
	C867,868	nsp	C,CERAMIC 470PF-J/50V		D010471167163S		
	C869	nsp	C,CERAMIC 2200PF-K/50V		D011222777160S		
	C870	nsp	C,CERAMIC 470PF-J/50V		D010471167163S		
	C871	nsp	C,CERAMIC 2200PF-K/50V		D011222777160S		
	C872	nsp	C,CERAMIC X7R3900PF-K/50V		D011392777160S		
	C873	nsp	C,CERAMIC 470PF-J/50V		D010471167163S		
	C874,875	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C876	nsp	C,CERAMIC 1UF-K/10V		D011105772161S		
	C877	nsp	C,CERAMIC X7R3900PF-K/50V		D011392777160S		
	C878-880	nsp	C,CERAMIC 680PF-J/50V		D010681167163S		
	C881	nsp	C,CERAMIC X7R3900PF-K/50V		D011392777160S		
	C882	nsp	C,CERAMIC 680PF-J/50V		D010681167163S		
	C883	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C885-887	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C888-892	nsp	C,CERAMIC 0.01UF-K/50V		D011103177101S		
	C893	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C895	nsp	C,CERAMIC 0.1UF-K/50V	1912E3,1912E2, 1912EA,1912E1C	D011104177101S		
	C896	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C898	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C899	nsp	C,CERAMIC 220PF-K/50V		D011221177101S		
	C900-908	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C910,911	nsp	C,CERAMIC 0.1UF-K/50V		D011104177101S		
	C912	nsp	C,CERAMIC 1000PF-K/50V	2112CIE3	D011102177101S		
	C915,916	nsp	C,CERAMIC 12PF-J/50V		D011120167101S		
	C917	nsp	C,CERAMIC 1000PF-K/50V	2112CIE3	D011102177101S		
	C918	nsp	C,CERAMIC 4.7UF-K/6.3V		D011475571160S		
	C919	nsp	C,CERAMIC 0.1UF-K/50V	2112CIE3	D011104177101S		
	C933-940	nsp	C,CERAMIC 100PF-J/50V		D011101167101S		
	C947-973	nsp	C,CERAMIC 1000PF-K/50V		D011102177101S		
	C976	nsp	C,CERAMIC 560PF-K/50V		D011561177101S		
	C977	nsp	C,CERAMIC 390PF-K/50V		D011391177101S		
	C978	nsp	C,CERAMIC 560PF-K/50V		D011561177101S		
	C979	nsp	C,CERAMIC 390PF-K/50V		D011391177101S		
	C982-987	nsp	C,CERAMIC 1000PF-K/50V		D011102177101S		
	C994-1001	nsp	C,CERAMIC 1000PF-K/50V		D011102177101S		
	C1003-1008	nsp	C,CERAMIC 1000PF-K/50V		D011102177101S		
OTHERS PARTS GROUP							
	CB1-3	nsp	COIL,CHIP FLC32C220K		D307322205520S		
	CN2	nsp	CN.WAFER 33P C125Z2		L109012523310S		
	CN3	nsp	CN.WAFER 13P C125Z2-13		L109012521310S		
	CN4,5	nsp	CN.WAFER 19P C125Z2-19		L109012521910S		
	CN6,7	nsp	CN.WAFER 13P C125Z2-13		L109012521310S		
	CN8	nsp	CN.WAFER 5P 20010-05		L101200100510S		
	CP1	nsp	CN.WAFER 5P 20010-05		L101200100510S		
	CP2	963643100130S	JACK,MODULAR RJ45		G4060RJ450120S		*
	CP5	nsp	CN.FPC 4P 1.0-9-4PW	1912E3,1912E2, 1912EA,1912E1C	L130100090450S		

	Ref. No.	Part No.	Part Name	Remarks		Q'ty	New
	F1	00D2790055907	SW,POLY MICROSMD175F		G300017500010S		
	JACK1-7	963643100120S	HDMI CONNECTOR 19P		L109100190160S		*
	JACK8,9	00D9630244703	JACK,D3.5 EARPHONE	2112CIE3	G40130802000YS		
	JK1	963643003580S	TER,RCA 1PIN		G600107C0020YS		
	JK2	00D9630294601	JACK,D3.5 EARPHONE		G40100350000YS		
	L3-8	nsp	COIL,BEAD BLM21PG221SN1		D340201212210S		
	L10	nsp	COIL,CHIP DLW21SN181SQ2L		D311201211810S		
	L12	nsp	R,CHIP THICK 0-J,1/10W		C200000060200S		
	L14	nsp	COIL,BEAD BLM21PG221SN1		D340201212210S		
	L15	nsp	COIL,BEAD CBW160808U121T		D340160811210S		
	L16	nsp	COIL,CHIP DLW21SN900HQ2L		D311201219000S		
	L17,18	nsp	COIL,BEAD BLM21PG221SN1		D340201212210S		
	L19	nsp	COIL,CHIP DLW21SN900HQ2L		D311201219000S		
	L20-24	nsp	COIL,BEAD BLM21PG221SN1		D340201212210S		
	L27,28	nsp	R,CHIP 0-J, 1/16W		C20000006M160S		
	X1	141810044504S	CRYSTAL CHIP FCX-04(28.63636MHz)		E80528R636380S		
	X2	963141010990S	CRYSTAL CHIP FCX-04(24MHz)		E80524R000080S		
	X3	141810046500S	CRYSTAL CHIP FCX-04(24.576MHz)		E80524R576080S		
	X4	943141100020S	CRYSTAL CHIP FCX-04(21.875MHz)		COX21875I070SR		
	X5	00D3991038900	CRYSTAL CHIP FCX-03(12MHz)		E805120000020S		
	XTAL1	141810044504S	CRYSTAL CHIP FCX-04(28.63636MHz)		E80528R636380S		
	CX1	nsp	CN.WAFER 5P SMW250-5P		L102050010040S		
	CX4	nsp	CN.FPC 40P 10022HS-40C		L130100220400S		
	FB1-5	nsp	COIL,BEAD BLM21PG221SN1		D340201212210S		
	FB6,7	nsp	R,CHIP THICK 0-J,1/10W		C200000060200S		
	FB8	nsp	COIL,BEAD CBW160808U121T		D340160811210S		
	FB9,10	nsp	COIL,BEAD BLM21PG221SN1		D340201212210S		
	FB11,12	nsp	R,CHIP THICK 0-J,1/10W		C200000060200S		
	FB13,14	nsp	COIL,BEAD BLM21PG221SN1		D340201212210S		
	FB15,16	nsp	R,CHIP THICK 0-J,1/10W		C200000060200S		
	FB17,18	nsp	COIL,BEAD BLM21PG221SN1		D340201212210S		
	FB19,20	nsp	R,CHIP THICK 0-J,1/10W		C200000060200S		
	FB21,22	nsp	COIL,BEAD BLM21PG221SN1		D340201212210S		
	FB23,24	nsp	R,CHIP THICK 0-J,1/10W		C200000060200S		
	FB29-36	nsp	COIL,BEAD BLM21PG221SN1		D340201212210S		
	FB37-44	nsp	R,CHIP THICK 0-J,1/10W		C200000060200S		
	FB45-80	nsp	R,CHIP 0-J, 1/16W		C20000006M160S		
	FB81-84	nsp	R,CHIP THICK 0-J,1/10W		C200000060200S		
	FB85-103	nsp	R,CHIP 0-J, 1/16W		C20000006M160S		
	FB105-145	nsp	R,CHIP 0-J, 1/16W		C20000006M160S		