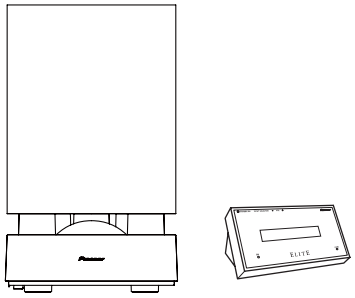
Pioneer sound.vision.soul

Service Manual



SX-LX70SW

ORDER NO.
RRV3674

AUDIO MULTI-CHANNEL RECEIVER SUBWOOFER

SX-LX70SW

ACCESSORY BOX

AS-LX70

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
SX-LX70SW	KUCXTW	AC 120 V	
AS-LX70	XJ/UC	---	

This product is component of system.

Component	System	Service Manual	Remarks
H5.1CH SURROUND SYSTEM	HTS-LX70	---------	
AUDIO MULTI-CHANNEL RECEIVER SUBWOOFER	SX-LX70SW/KUCXTW	RRV3674	This manual
ACCESSORY BOX	AS-LX70/XJ/UC	RRV3674	This manual
SATELLITE SPEAKER	SSP-LX70ST/XTW/WL5	RRV3658	

For details, refer to "Important Check Points for good servicing".

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PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936

T-ZZV SEPT. 2007 printed in Japan

SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 - Proposition 65

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

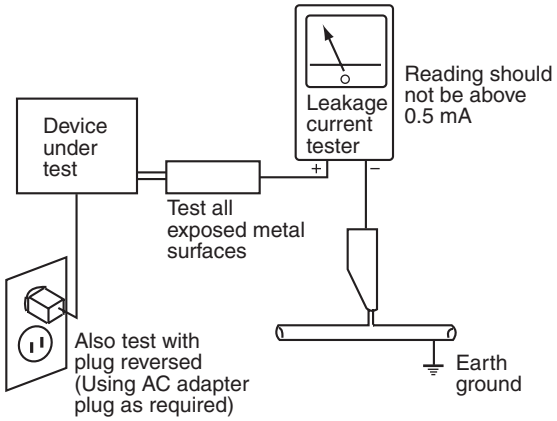
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

CONTENTS

1. SERVICE PRECAUTIONS

CAUTION

Ask users to bring both subwoofer receiver and the display unit together when servicing.

NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit.
  Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.

- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40 °C.
  Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 °C in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

Do NOT use a soldering iron whose tip temperature cannot be controlled.

Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

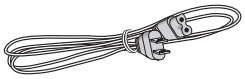
The following lead-free solders are available as service parts:

- Parts numbers of lead-free solder:
  GYP1006 1.0 in dia.
  GYP1007 0.6 in dia.
  GYP1008 0.3 in dia.

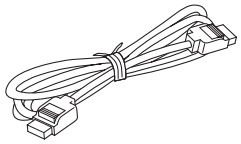
2. SPECIFICATIONS

2.1 ACCESSORIES

● Accessories

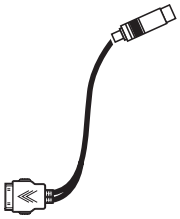


Power Cord
(ADG7022)



Display Cable
(ADE7124)

Optical Digital Cable
(ADE7116)



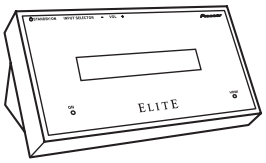
iPod Cable
(ADE7119)

Control Cable
(XDE3071)

Microphone
(APM7006)

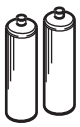
AM Loop Antenna
(ATB7013)

FM Wire Antenna
(ADH7030)



Display Unit
(AXX7258)

Remote Control
(AXD7512)



(x2)

AA/LR6 Alkaline Batteries

2.2 SPECIFICATIONS

Specifications

SX-LX70SW Audio Multi-channel Receiver Subwoofer

- **Amplifier section**

RMS Power Output (8 channel output):
- Front (L/R) . . . . . 100 W (50 W + 50 W) (1 kHz, 10 % T.H.D., 8 Ω)
- Dual Center (CL/CR) . . . . . 100 W (50 W + 50 W) (1 kHz, 10 % T.H.D., 8 Ω)
- Surround (L/R) . . . . . 100 W (50 W + 50 W) (1 kHz, 10 % T.H.D., 8 Ω)
- Double Subwoofer (2 channel) . . . . . 100 W (50 W + 50 W) (100 Hz, 10 % T.H.D., 8 Ω)

FTC Power Output (8 channel output):
- Front, Dual Center, Surround (6 channel) . . . . . .45 W per channel (200 Hz to 20 kHz, 1 % T.H.D., 8 Ω)
- Double Subwoofer (2 channel) . . . . . 90 W (45 W + 45 W) (20 Hz to 200 Hz, 1 % T.H.D., 8 Ω)

- **FM tuner section**

Frequency range . . . . . 87.5 MHz to 108 MHz
Antenna . . . . . 75 Ω, unbalanced

- **AM tuner section**

Frequency range
With 9 kHz step . . . . . 531 kHz to 1602 kHz
With 10 kHz step . . . . . 530 kHz to 1700 kHz
Antenna . . . . . .Loop antenna

- **Subwoofer section**

Enclosure . . . . . Bass-reflex floor type (magnetically shielded)
System . . . . . 18 cm 1-way system
Speaker . . . . . .18 cm cone type x2
Nominal impedance . . . . . 8 Ω
Frequency range . . . . . .30 Hz to 500 Hz
Maximum Input Power . . . . . .50 W x2

- **Input/Output section**

HDMI terminal
- input . . . . . 19 pin x3
- output . . . . . .19 pin (5 V, 100 mA)

Other connector
- System connector . . . . . .26 pin
- Audio input . . . . . .Optical x2 (Digital) RCA (2 pin) (Analog)
- XM connector . . . . . .4 pin (5 V, 370 mA)
- SIRIUS connector . . . . . 8 pin
- Control output . . . . . .Mini jack x2

Display unit
- System connector . . . . . .26 pin
- Front Audio input . . . . . Mini jack
- MCACC input . . . . . Mini jack
- iPod input . . . . . .20 pin (12 V, 420 mA)

- **Miscellaneous**

Power requirements . . . . . AC 120 V, 60 Hz
Power consumption . . . . . .74 W/143 VA
Power consumption in standby . . . . . 0.27 W (HDMI Control ON) 0.16 W (HDMI Control OFF)
Dimensions . . . . . 9-11/16 in. (W) x 16-1/8 in. (H) x 23-5/8 in. (D) 245 mm (W) x 409 mm (H) x 600 mm (D)
Weight . . . . . 39 lb 4 oz/17.8 kg

SSP-LX70ST Satellite Speaker

(Front/center speakers x2, Surround speakers x2)

- **Front/center speakers**

Enclosure . . . . . Closed-box bookshelf type (magnetically shielded)
System . . . . . 5.2 cm 1-way system
Speakers . . . . . 5.2 cm cone type x3
Nominal impedance
- Front channel . . . . . 8 Ω
- Center channel . . . . . .8 Ω

Frequency range . . . . . .200 Hz to 20 kHz
Maximum input power
- Front channel . . . . . .50 W
- Center channel . . . . . .50 W

Dimensions . . . . . 4-7/8 in. (W) x 3-9/16 in. (H) x 4-1/8 in. (D) 122.5 mm (W) x 89.5 mm (H) x 104 mm (D)
Weight . . . . . 1 lb 2 oz/0.5 kg

- **Surround speakers**

Enclosure . . . . . Closed-box bookshelf type (magnetically shielded)
System . . . . . 5.2 cm 1-way system
Speakers . . . . . 5.2 cm cone type x2
Nominal impedance . . . . . 8 Ω
Frequency range . . . . . .200 Hz to 20 kHz
Maximum input power . . . . . 50 W
Dimensions . . . . . 4-7/8 in. (W) x 3-9/16 in. (H) x 4-1/8 in. (D) 122.5 mm (W) x 89.5 mm (H) x 104 mm (D)
Weight . . . . . 1 lb/0.44 kg

Accessories

- **Accessory box (AS-LX70):**

Remote control 1
AA/LR6 alkaline batteries 4
Power cord 1
Display unit 1
AM loop antenna 1
FM wire antenna 1
Control cable 1
Microphone (for Auto MCACC setup) 1
Display cable 1
Optical digital cable 1
iPod cable 1
Warranty card 1
These operating instructions

- **Receiver subwoofer (SX-LX70SW) box:**

Cleaning cloth 1

- **Satellite Speakers (SSP-LX70ST) box:**

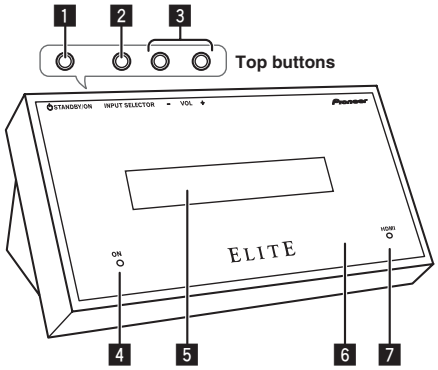
Speaker cables 6
Speaker bases 4
Non-skid pads 16
Screws 4

Note

- Specifications and design subject to possible modification without notice, due to improvements.

2.3 PANEL FACILITIES

Display unit



1 ⏻ **STANDBY/ON**
Press to switch the receiver subwoofer on/into standby.

2 **INPUT SELECTOR**
Press repeatedly to select one of the external audio inputs (**HDMI 1** to **HDMI 3**, **Digital 1**, **Digital 2**, **Analog**, **iPod** or **Front Audio In**).

3 **VOL +/– buttons**
Use to adjust the volume.

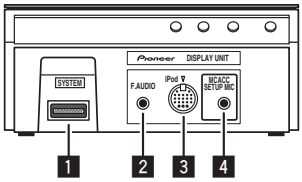
4 **POWER ON indicator (Blue)**

5 **Front panel display**
See below for details.

6 **IR remote sensor**

7 **HDMI indicator (Red)**
Lights when this receiver subwoofer is connected to HDMI (HDCP) compatible component.
Also lights during initialization, after you plug this unit into an AC outlet.

Back of display unit



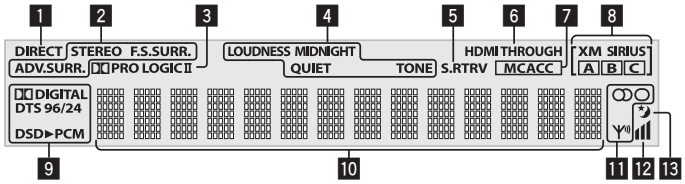
1 **SYSTEM connector**
Connect to the receiver subwoofer.

2 **F.AUDIO input**
To listen to audio from an external component, connect with a stereo mini-plug cable. Once connected, the input automatically changes to **Front Audio In**.

3 **iPod input terminal**
Use to connect your Apple iPod as an audio source. When you connect an iPod, the input automatically changes to **iPod**.

4 **MCACC SETUP MIC jack**
Use to connect the supplied microphone for the Auto MCACC setup.

Display



1 DIRECT
Lights when Direct Sound is selected (i.e. Effective Sound is off).

2 Listening mode indicators

STEREO
Lights when the Stereo mode is selected or when a stereo source is being played back in the Auto listening mode.

F.S.SURR.
Lights when one of the Front Stage Surround Advance listening modes is selected.

ADV.SURR.
Lights when one of the Advanced Surround listening modes is selected.

3 PRO LOGIC II
Lights during Dolby Pro Logic II decoding.

4 Sound processing indicators
Lights when any of the Loudness, Midnight, Quiet or tone controls feature is selected.

5 S.RTRV
Lights when Sound Retriever is active.

6 HDMI THROUGH
Lights when **HDMI Mode** is set to **Through Mode**.

7 MCACC
Lights when MCACC Effect is switched on.
Blinks during Auto MCACC Setup.

8 XM/SIRIUS radio indicators

XM
Lights during XM reception mode.

SIRIUS
Lights during SIRIUS reception mode.

A, B, C
Indicate the class of XM or SIRIUS Radio.

9 Digital format indicators

DIGITAL
Lights during playback of a Dolby Digital source.

DTS
Lights during playback of a DTS source.

DTS 96/24
Lights during playback of a DTS 96/24 decoding.

DSD►PCM
Lights during DSD (Direct Stream Digital) to PCM conversion with SACDs.

PCM
Lights during playback of PCM signals.

10 Character display

11 Tuner indicators

Lights when a broadcast is being received.

Lights when a stereo FM broadcast is being received in auto stereo mode.

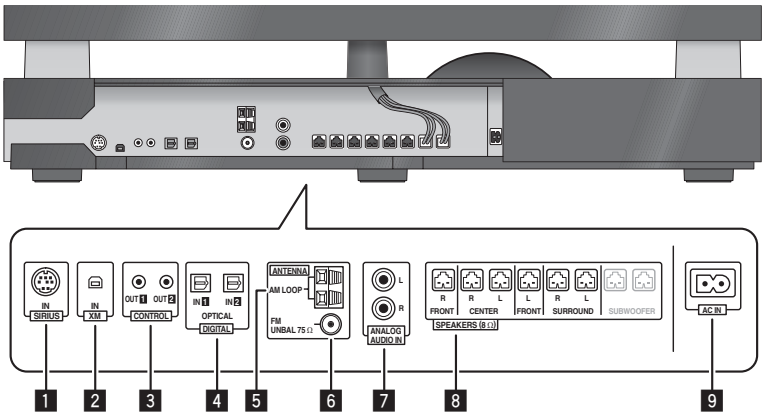
Lights when FM mono reception is selected.

12
Indicates the antenna status of XM Radio or SIRIUS Radio.

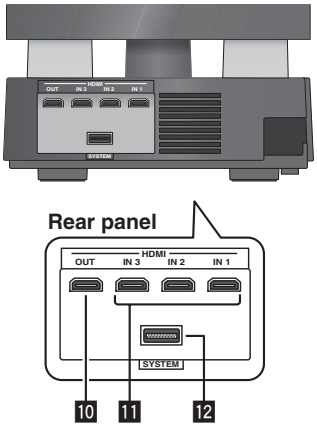
13
Lights when sleep timer is active.

Receiver subwoofer

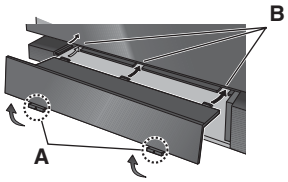
Side panel



Rear panel



- There is a cover over the connectors on the side panel.
  A. When making connections, lift the two hooks and remove the cover.
  B. Once connections are finished, line up the three positions and place the cover back in its original position.



1 SIRIUS IN terminal

2 XM IN terminal

3 CONTROL OUT jacks (x2)
Connect other Pioneer components with the supplied control cable.

4 DIGITAL OPTICAL IN jacks (x2)
To listen to optical digital audio, change the input to **Digital 1** or **Digital 2**.
When the digital output jacks of your TV are connected to these jacks, set '**TV Input**'.

5 AM LOOP antenna terminal

6 FM antenna socket

7 ANALOG AUDIO IN jacks
Handle sound from an external component by using stereo audio code. To listen to analog audio, change the input to **Analog**.
When the analog output jacks of your TV are connected to these jacks, set '**TV Input**'.

8 SPEAKERS terminals
Match the colors of the speaker cords to their respective connectors.

9 AC IN – Power inlet

10 HDMI OUT connector
Connect to a television that has an HDMI terminal.

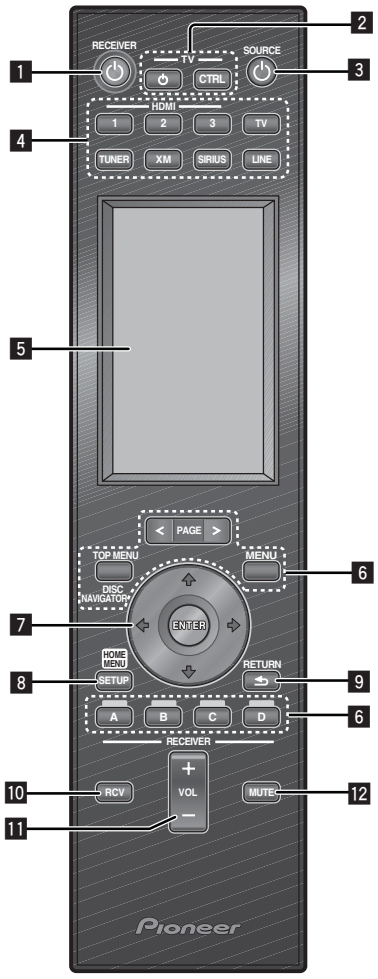
11 HDMI IN connectors (x3)
Use high-quality audio/video connection with compatible HDMI devices.
To select this input, choose **HDMI 1** to **HDMI 3**.

12 SYSTEM connector
Connect to the display unit.

Remote control

Operating the receiver

This section explains how to operate the remote control for the receiver subwoofer. Note that the controls change when you have chosen the input function for separate connected devices.



1 ⏻ **RECEIVER**
Switches the receiver subwoofer to On/Standby.

2 ⏻ **TV**
Switches the TV to On/Standby.

TV CTRL
Switches the remote control to the TV operating mode (no effect on the current input source of this unit).

3 ⏻ **SOURCE**
Switches the power for the selected component to On/Standby.

4 **Input select buttons**
Change the input for this unit. You will also need to press one of these buttons when operating another connected component via this remote control.

HDMI 1 to HDMI 3
Switch input from **HDMI 1** to **HDMI 3**.

TV
Switches to the input selected at TV Input setup.

TUNER
Switches between FM and AM bands.

XM
Switches to XM Radio.

SIRIUS
Switches to SIRIUS Radio.

LINE
Press repeatedly to select one of the receiver subwoofer's audio inputs (**Digital 1**, **Digital 2**, **Analog**, **iPod** or **Front Audio In**).

5 **LCD touch screen**
Displays the buttons used to control external components such as a receiver subwoofer, plasma display, DVD player, Blu-ray disc player, and HDD/DVD recorder. The current operating mode is displayed at the top of the remote control's screen.
Although the LCD touch screen disappears if you do not perform any operations for a while, it appears when the screen is touched or a button on the remote control is pressed.

6 **Other component button**
Use to operate an HDD/DVD recorder or other connected component.

7 **↑/↓/←/→ (cursor buttons) and ENTER**
Use to control receiver functions.

8 **SETUP**
Use to access the menu system for surround sound setup, tuner settings and so on.

9 **RETURN**
Use to cancel settings.

10 **RCV**
Use to switch to the receiver subwoofer operating mode when this unit is in the other operating modes. Press again to return to the previous operating mode.

11 **VOL +/–**
Use to adjust the volume of the receiver subwoofer.

12 **MUTE**
Mutes the sound or restores the sound if it has been muted (adjusting the volume also restores the sound).

3. BASIC ITEMS FOR SERVICE
3.1 CHECK POINTS AFTER SERVICING

Check points after servicing (Subwoofer receiver)

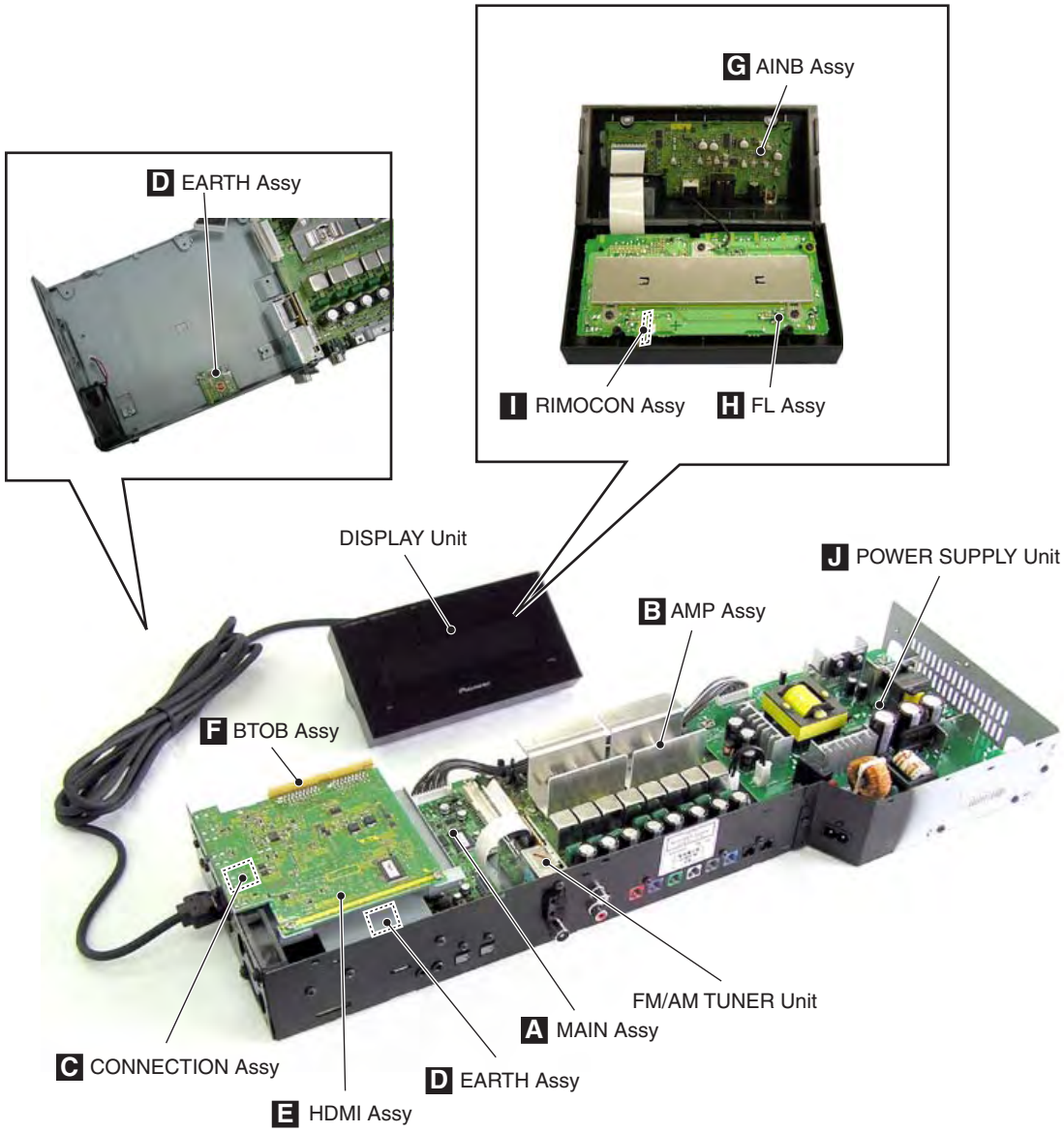
To keep the product quality after servicing, confirm recommended check points shown below.

No.	Procedure	Check points
1	Confirm whether the customer complain has been solved. If the customer complain occurs with the particular source, such as Dolby Digital, DTS and AAC, input it for the operation check.	The customer complain must not be reappeared. Audio and operations must be normal.
2	Check the analog audio playback. (Make the analog connections with a DVD player.)	Each channel audio and operations must be normal.
3	Check the digital audio playback. (Make the digital connections with a DVD player.)	Each channel audio and operations must be normal.
4	Check surround playback. (Select Surround mode and check the multichannel operations via the DSP circuit.)	Each channel audio and operations must be normal.
5	Check the appearance of the product.	No scratches or dirt on its appearance after receiving it for service.

See the table below for the items to be checked regarding audio:

Item to be checked regarding audio
Distortion
Noise
Volume too low
Volume too high
Volume fluctuating
Sound interrupted

3.2 PCB LOCATIONS



LIST OF ASSEMBLIES

Mark	No.	Description	Part No.
	1	..MAIN ASSY	AWK8028
	1	..DAMP ASSY	AWM8093
	2	..AMP ASSY	AWU8298
	2	..CONNECTION ASSY	AWU8299
	2	..EARTH ASSY	AWU8318
	1	..HDMI ASSY	AWX8872
	1	..BTOB ASSY	AWX8951
	1	..AINB ASSY	AWK8032
	1	..DISPLAY ASSY	AWM8089
	2	..FL ASSY	AWU8301
	2	..REMOCON ASSY	AWU8302

Mark	No.	Description	Part No.
⚠	1	..POWER SUPPLY UNIT	AWR7051
	1	..FM/AM TUNER UNIT	AXX7250

3.3 JIGS LIST

■ Jigs list

Name	Jig No.	Remarks
Speaker Cable with terminal	SDS1197 (FL/WHITE), SDS1198(FR/RED) SDS1200 (SL/BLUE), SDS1201 (SR/GRAY), SDS1199 (CL/GREEN), SDS1203 (CR/PURPLE)	For checking audio at the SP terminal
Extension Cable	GGD1437	For Diagnosis of the MAIN Assy
Extension Board	GGF1533	For Diagnosis of the MAIN Assy

■ Lubricants and Glues list

Name	Lubricants and Glues No.	Remarks
Grease	GEM1057	refer to "9.4 RECEIVER UNIT"
Silicone Adhesive	GYA1011	refer to "9.4 RECEIVER UNIT"

3.4 CLEANING

■ CLEANING

Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools:

Position to be cleaned	Cleaning tools
Fans	Cleaning paper : GED-008

A

B

C

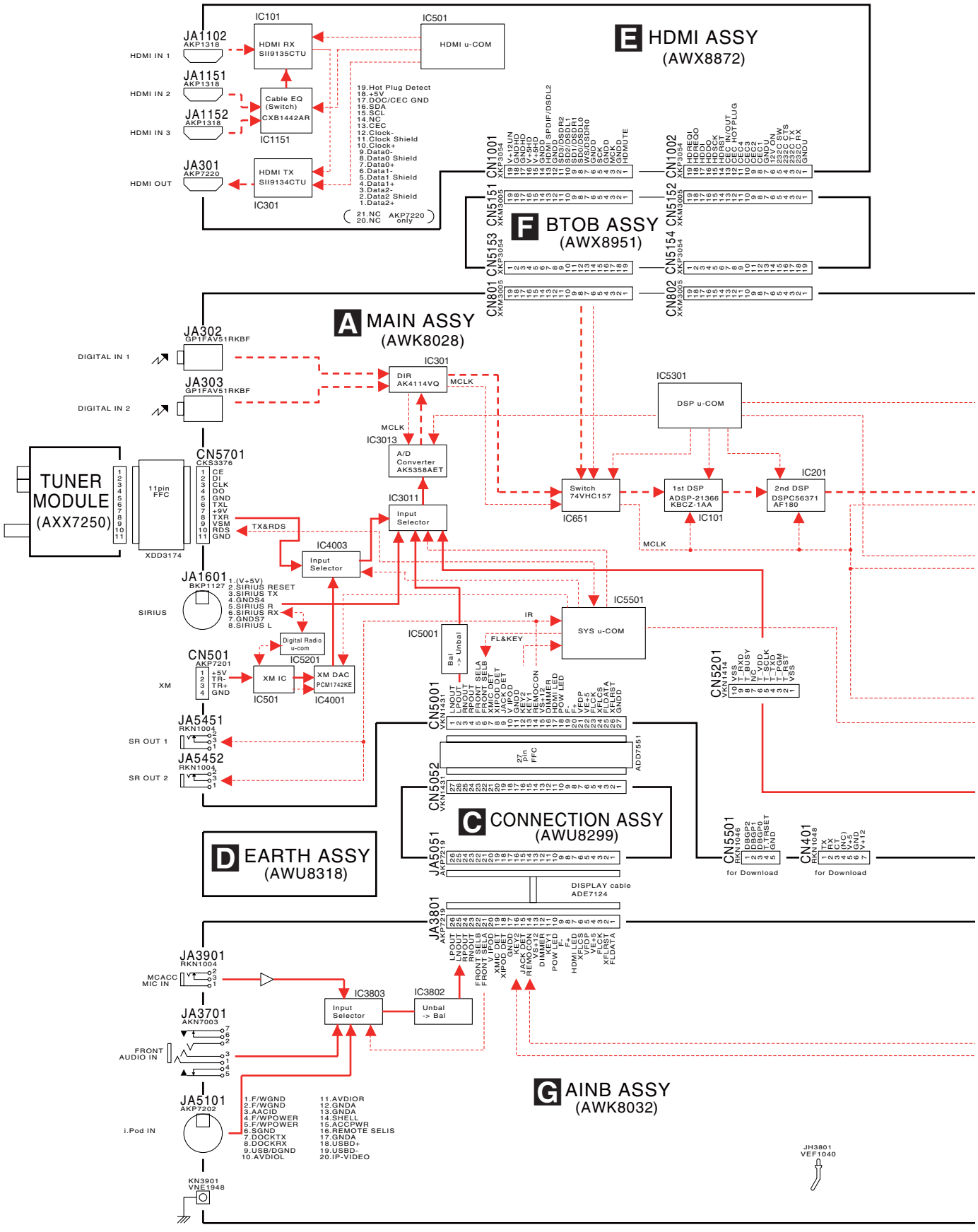
D

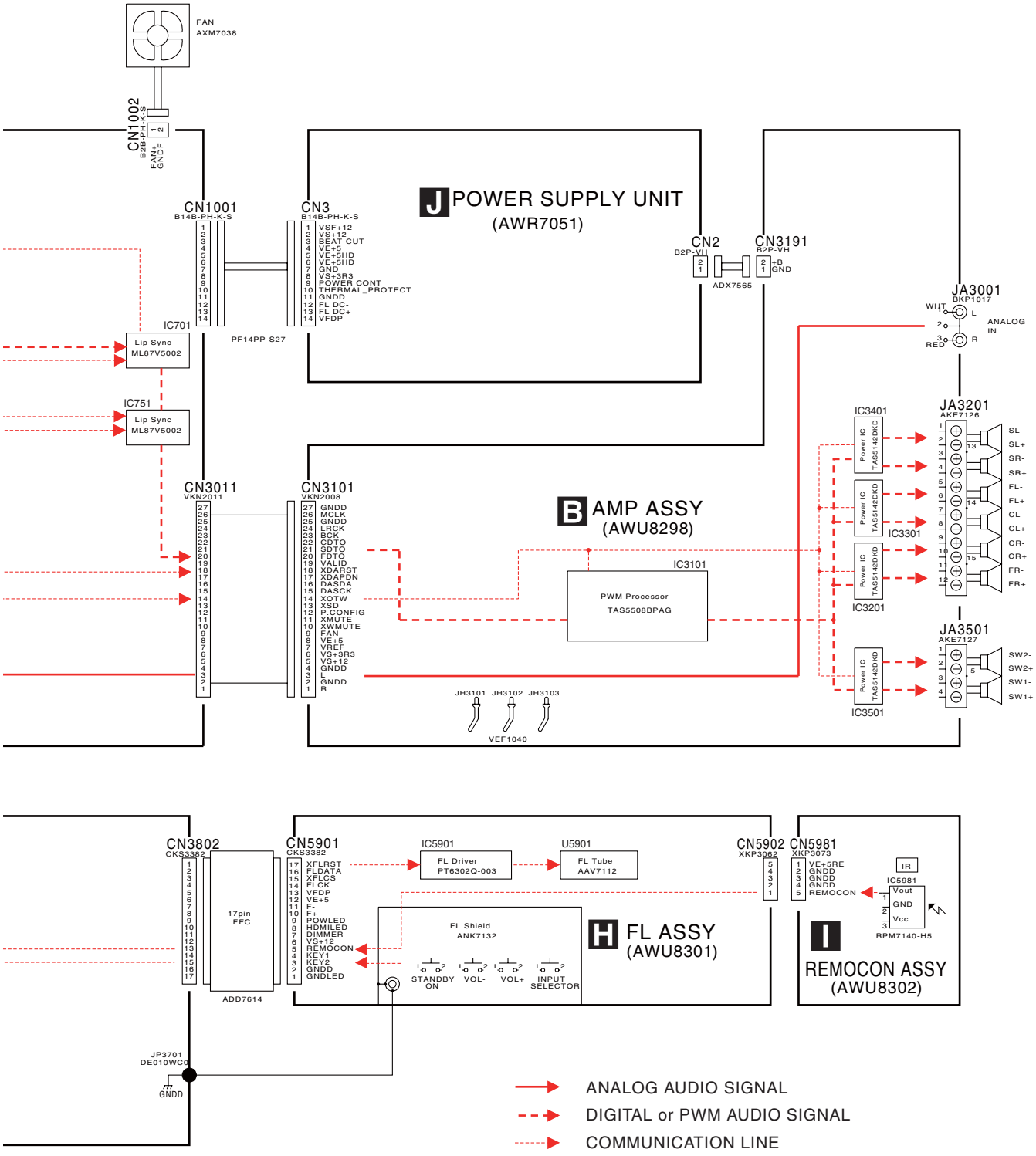
E

F

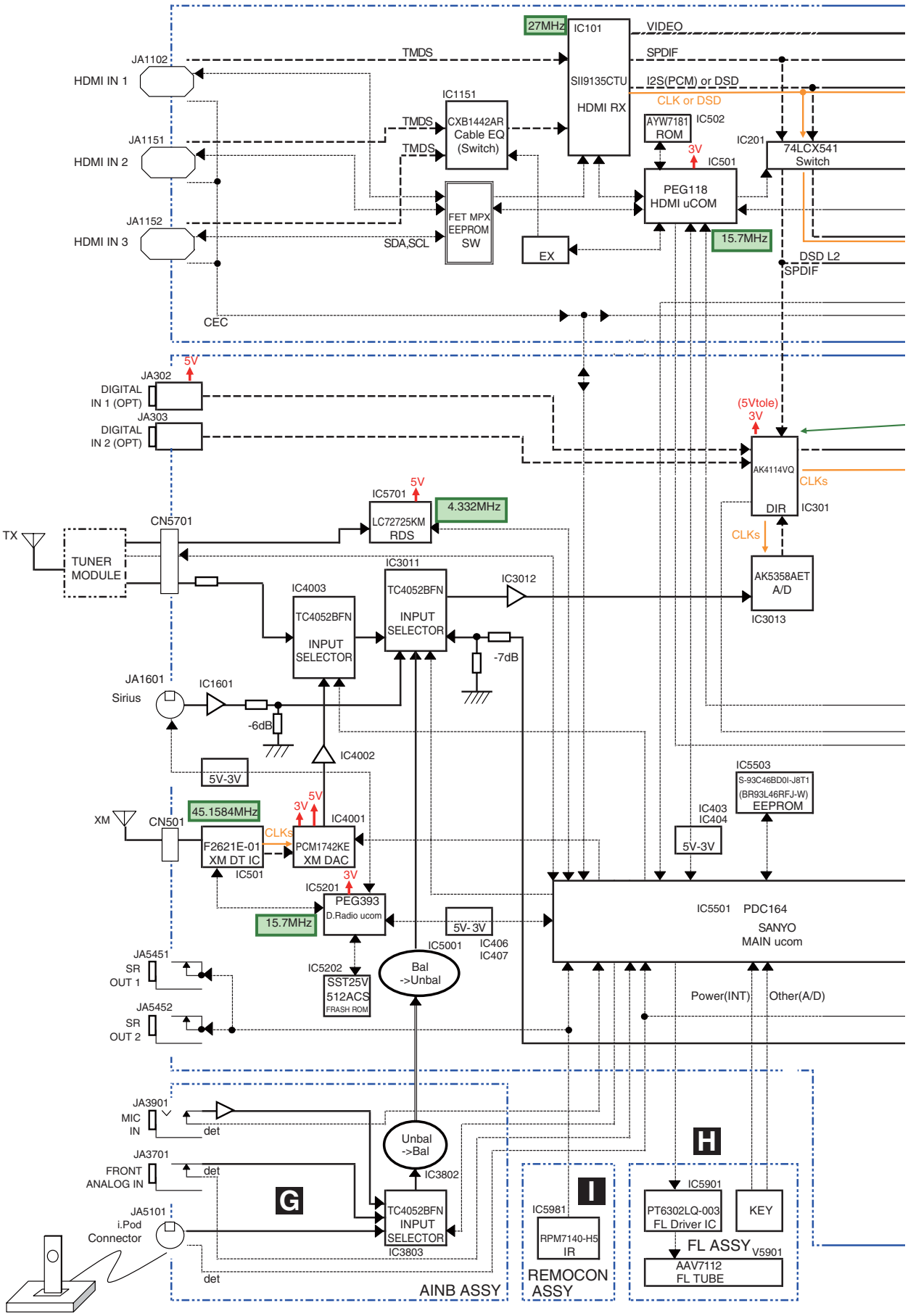
4. BLOCK DIAGRAM

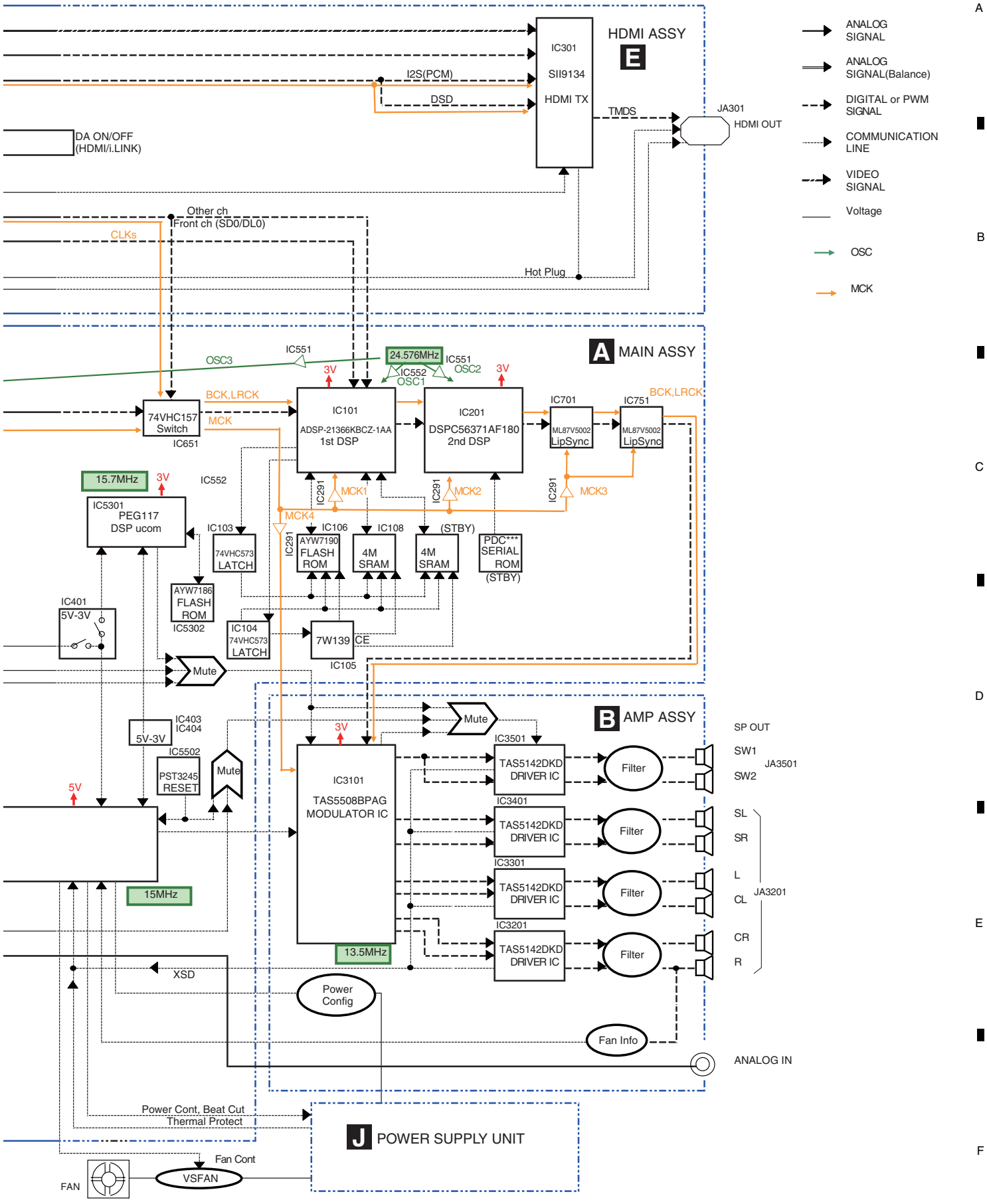
4.1 OVERALL WIRING CONNECTION DIAGRAM




FAN
AXM7038
CN1002
B2B-PH-K-S
FAN
GNDF
J POWER SUPPLY UNIT
(AWR7051)
CN1001
B14B-PH-K-S
CN3
B14B-PH-K-S
VSF+12
VS+12
BEAT CUT
VE+5
VE+5HD
VE+5HD
GND
VS+3R3
POWER CONT
THERMAL_PROTECT
GNDD
FL DC-
FL DC+
VFDP
PF14PP-S27
CN2
B2P-VH
CN3191
B2P-VH
+B
GND
ADX7565
JA3001
BKP1017
WHT
RED
L
R
ANALOG
IN
IC701
Lip Sync
ML87V5002
IC751
Lip Sync
ML87V5002
CN3011
VKN2011
CN3101
VKN2008
GNDD
MCLK
GNDD
LRCK
BCK
CDTO
SDTO
FDTO
VALID
XDARST
XDAPDN
DASDA
DASCK
XOTW
XSD
P.CONFIG
XMUTE
XWMUTE
FAN
VE+5
VREF
VS+3R3
VS+12
GNDD
L
GNDD
R
B AMP ASSY
(AWU8298)
IC3101
PWM Processor
TAS5508BPAG
IC3401
Power IC
TAS5142DKD
IC3301
IC3201
IC3501
JA3201
AKE7126
JA3501
AKE7127
SL-
SL+
SR-
SR+
FL-
FL+
CL-
CL+
CR-
CR+
FR-
FR+
SW2-
SW2+
SW1-
SW1+
JH3101
JH3102
JH3103
VEF1040
CN3802
CKS3382
17pin
FFC
ADD7614
CN5901
CKS3382
XFLRST
FLDATA
XFLCS
FLCK
VFDP
VE+5
F-
F+
POWLED
HDMILED
DIMMER
VS+12
REMOCON
KEY1
KEY2
GNDD
GNDLED
IC5901
FL Driver
PT6302Q-003
U5901
FL Tube
AAV7112
FL Shield
ANK7132
STANDBY
ON
VOL-
VOL+
INPUT
SELECTOR
H FL ASSY
(AWU8301)
CN5902
XKP3062
CN5981
XKP3073
VE+5RE
GNDD
GNDD
GNDD
REMOCON
IR
IC5981
Vout
GND
Vcc
RPM7140-H5
I
REMOCON ASSY
(AWU8302)
JP3701
DE010WC0
GNDD
ANALOG AUDIO SIGNAL
DIGITAL or PWM AUDIO SIGNAL
COMMUNICATION LINE

4.2 OVERALL BLOCK DIAGRAM



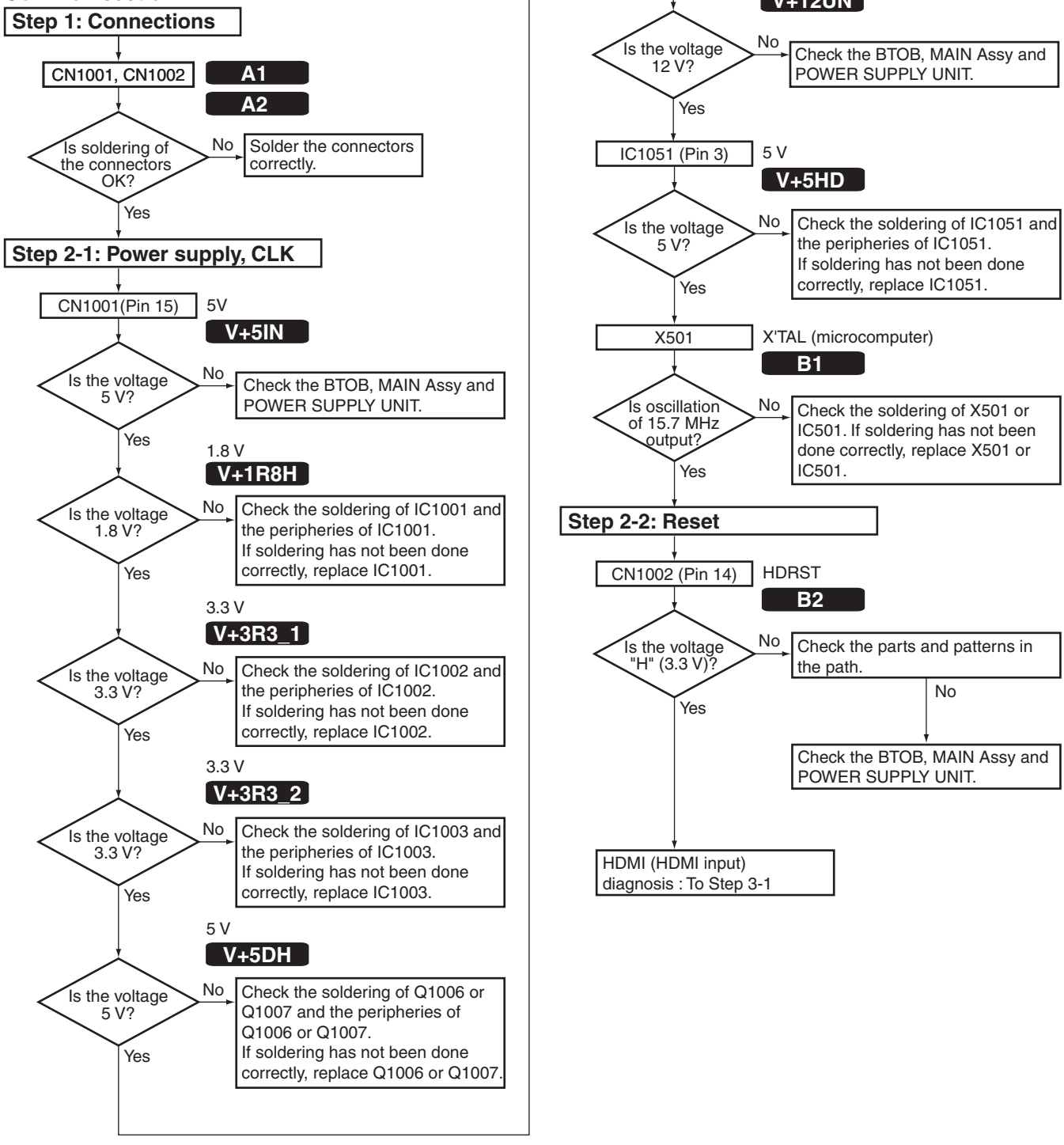

HDMI ASSY
E
IC301
SII9134
HDMI TX
I2S(PCM)
DSD
TMDS
JA301
HDMI OUT
DA ON/OFF
(HDMI/i.LINK)
Other ch
Front ch (SD0/DL0)
CLKs
Hot Plug
ANALOG SIGNAL
ANALOG SIGNAL(Balance)
DIGITAL or PWM SIGNAL
COMMUNICATION LINE
VIDEO SIGNAL
Voltage
OSC
MCK
A MAIN ASSY
OSC3
IC551
24.576MHz
IC552
OSC1
OSC2
3V
BCK,LRCK
MCK
74VHC157
Switch
IC651
IC101
ADSP-21366KBCZ-1AA
1st DSP
IC201
DSPC56371AF180
2nd DSP
IC701
IC751
ML87V5002
LipSync
15.7MHz
IC5301
PEG117
DSP ucom
IC291
MCK1
MCK2
MCK3
MCK4
IC103
74VHC573
LATCH
IC106
AYW7190
FLASH
ROM
IC108
4M
SRAM
(STBY)
PDC***
SERIAL
ROM
(STBY)
AYW7186
FLASH
ROM
IC5302
IC401
5V-3V
IC104
74VHC573
LATCH
7W139
CE
IC105
Mute
B AMP ASSY
IC403
IC404
5V-3V
IC5502
PST3245
RESET
5V
15MHz
IC3101
TAS5508BPAG
MODULATOR IC
13.5MHz
XSD
IC3501
IC3401
IC3301
IC3201
TAS5142DKD
DRIVER IC
Filter
SP OUT
SW1
SW2
JA3501
SL
SR
L
CL
CR
R
JA3201
Power
Config
Fan Info
ANALOG IN
Power Cont, Beat Cut
Thermal Protect
J POWER SUPPLY UNIT
Fan Cont
FAN
VSFAN

5. DIAGNOSIS
5.1 HDMI TROUBLESHOOTING

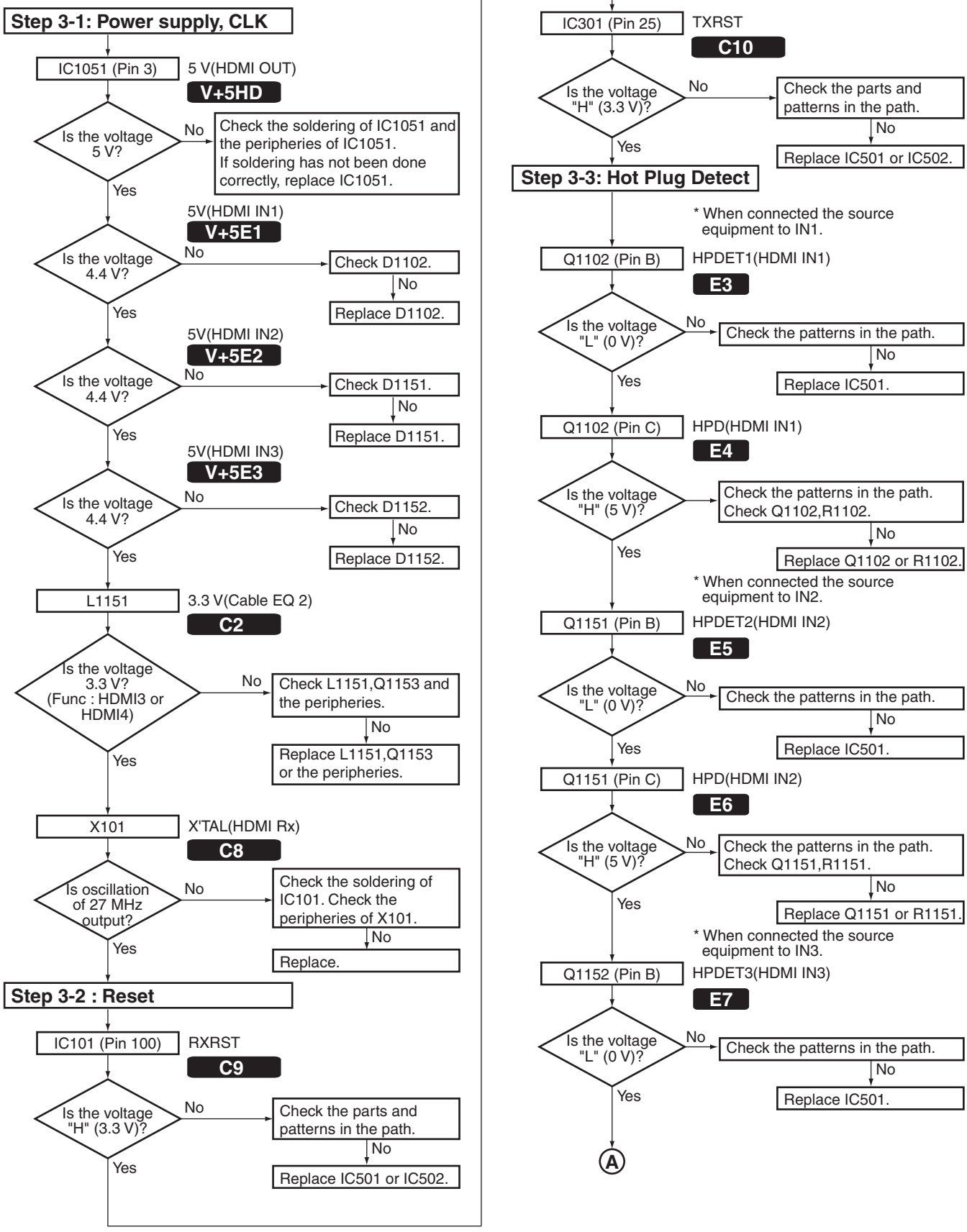
■ HDMI Troubleshooting

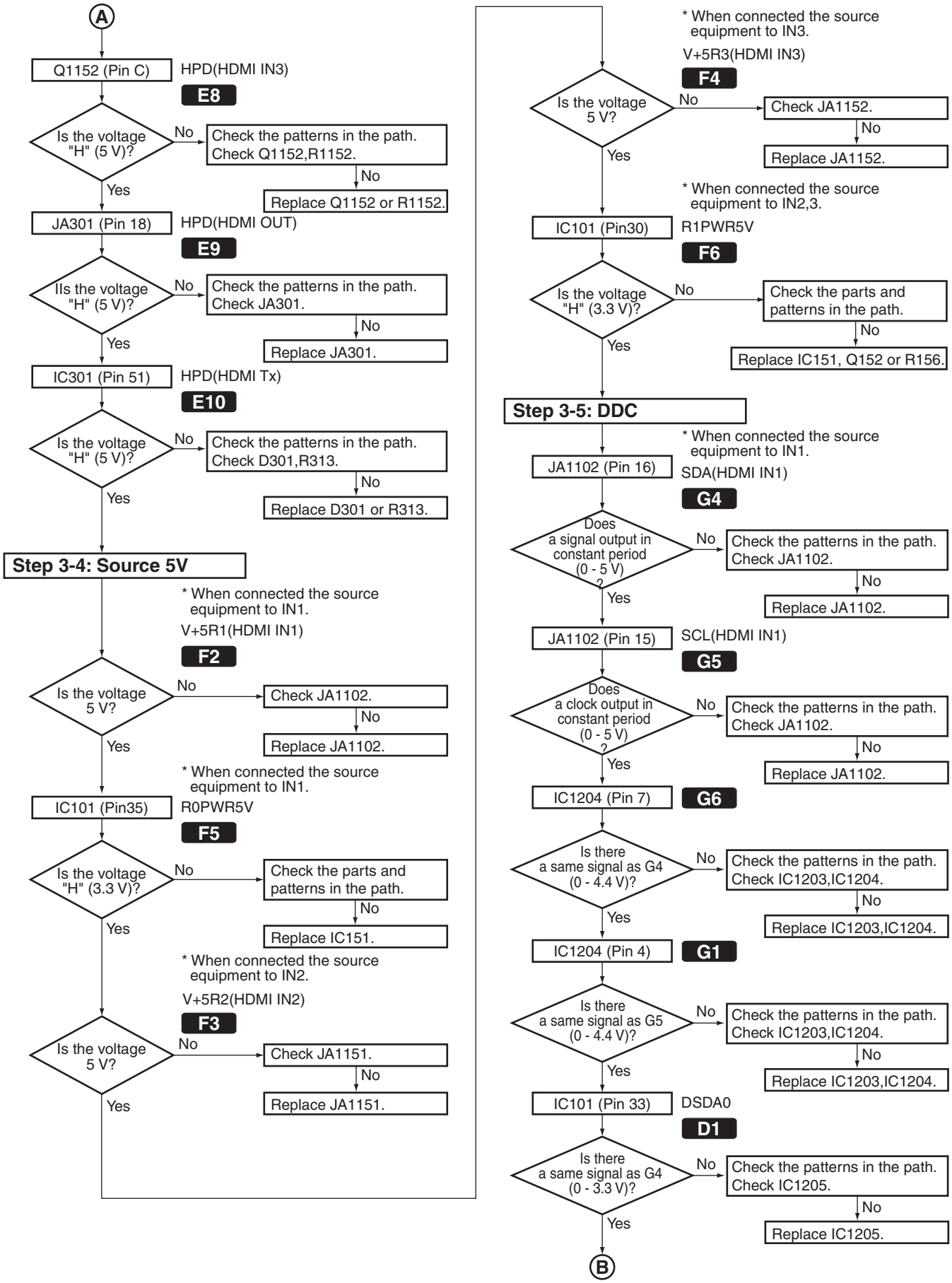
• The parts marked like **V+5** in the following chart are located in "HDMI Assy Check Points".

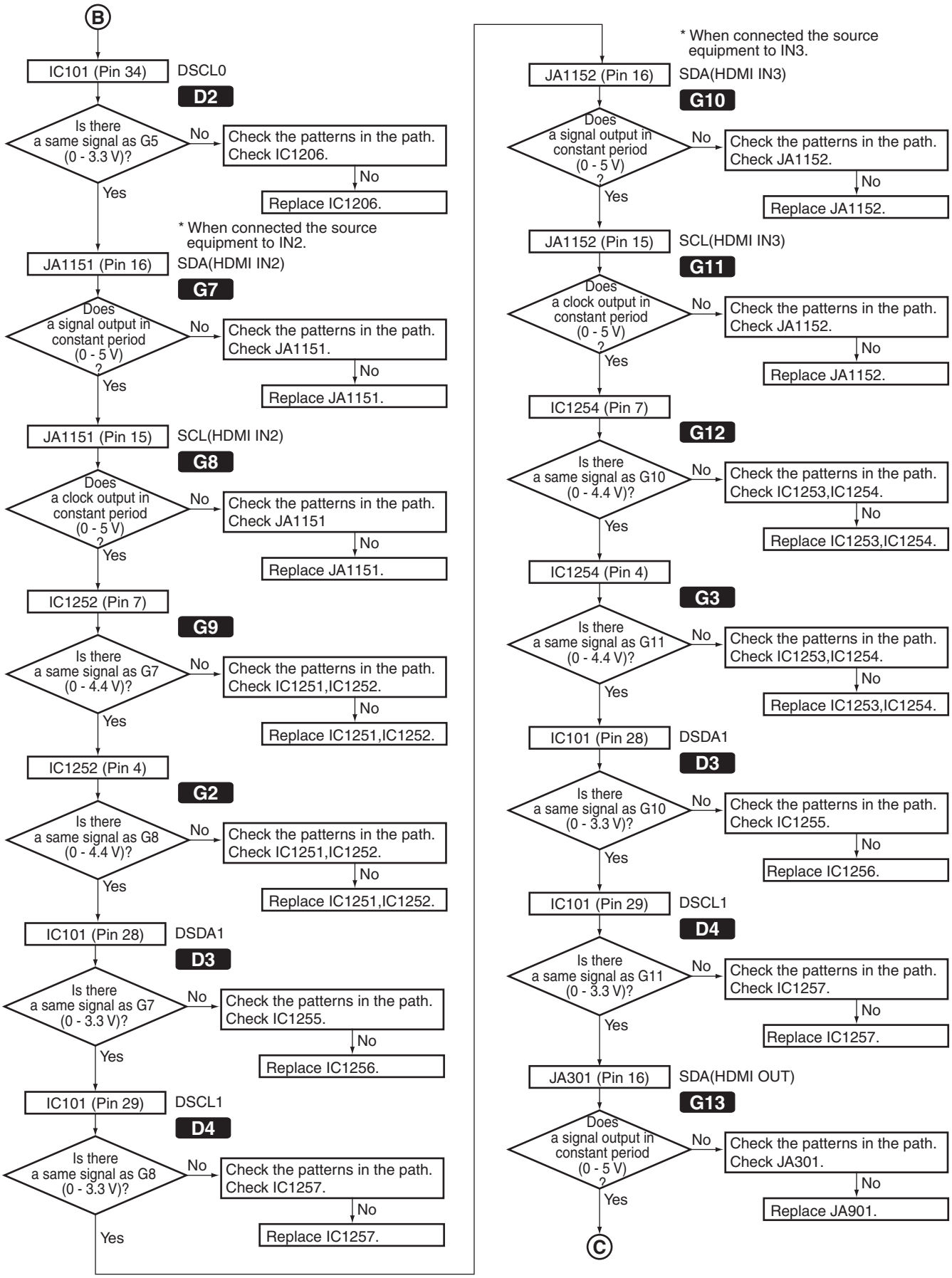
Common section

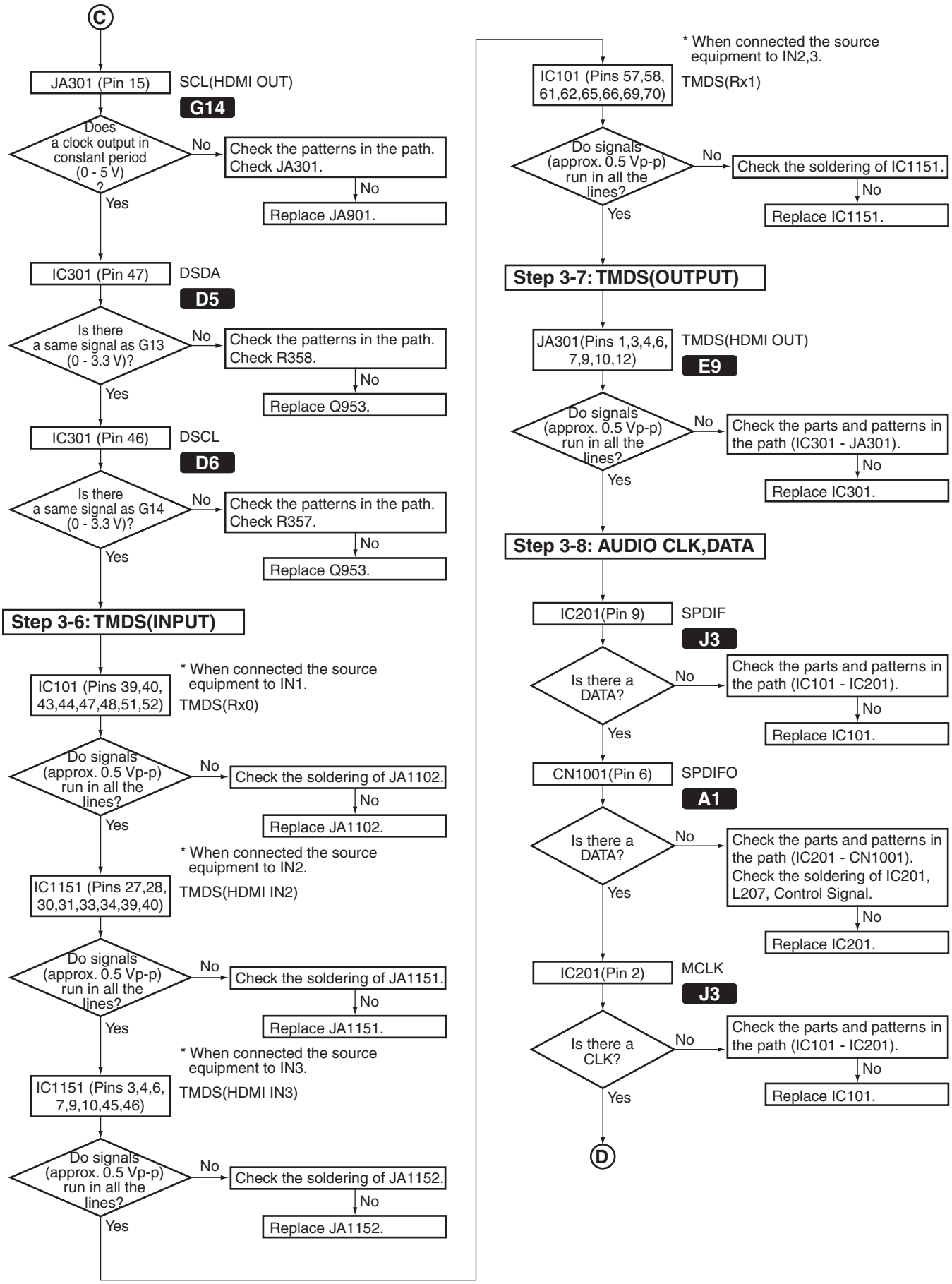


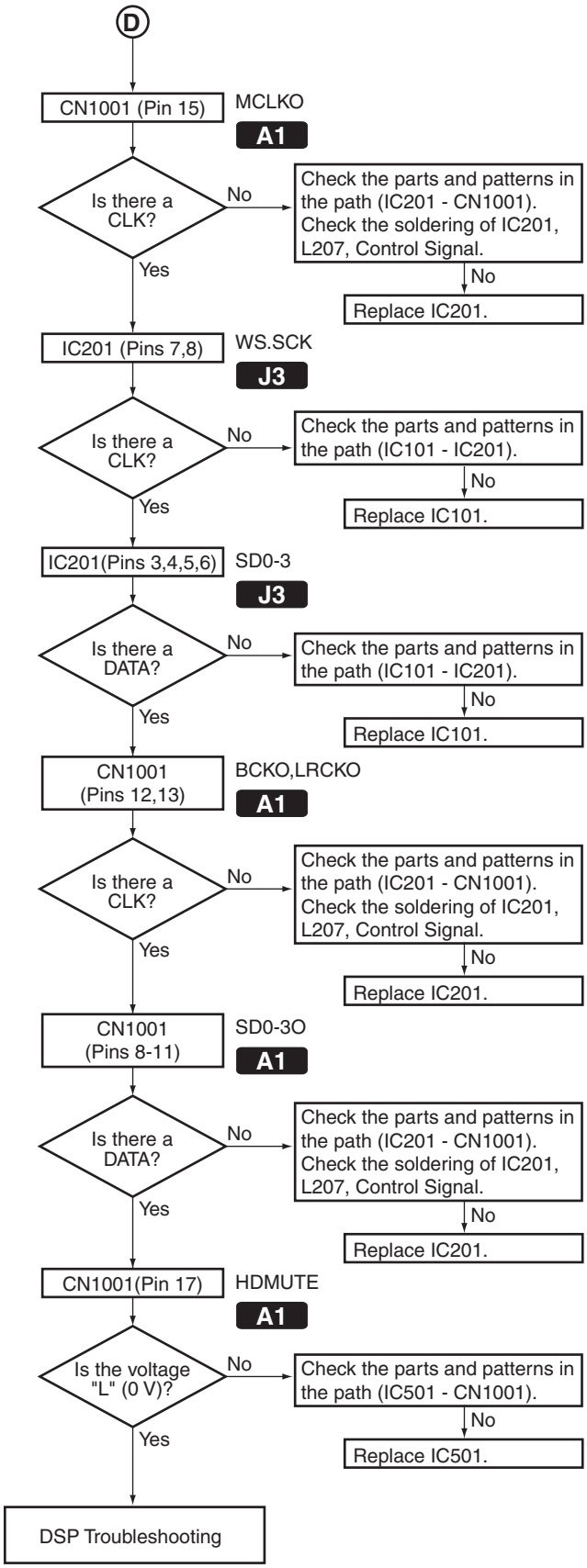
HDMI section




A
Q1152 (Pin C)
HPD(HDMI IN3)
E8
Is the voltage "H" (5 V)?
No
Check the patterns in the path. Check Q1152,R1152.
No
Replace Q1152 or R1152.
Yes
JA301 (Pin 18)
HPD(HDMI OUT)
E9
IIs the voltage "H" (5 V)?
No
Check the patterns in the path. Check JA301.
No
Replace JA301.
Yes
IC301 (Pin 51)
HPD(HDMI Tx)
E10
Is the voltage "H" (5 V)?
No
Check the patterns in the path. Check D301,R313.
No
Replace D301 or R313.
Yes
Step 3-4: Source 5V
* When connected the source equipment to IN1.
V+5R1(HDMI IN1)
F2
Is the voltage 5 V?
No
Check JA1102.
No
Replace JA1102.
Yes
* When connected the source equipment to IN1.
IC101 (Pin35)
R0PWR5V
F5
Is the voltage "H" (3.3 V)?
No
Check the parts and patterns in the path.
No
Replace IC151.
Yes
* When connected the source equipment to IN2.
V+5R2(HDMI IN2)
F3
Is the voltage 5 V?
No
Check JA1151.
No
Replace JA1151.
Yes
* When connected the source equipment to IN3.
V+5R3(HDMI IN3)
F4
Is the voltage 5 V?
No
Check JA1152.
No
Replace JA1152.
Yes
* When connected the source equipment to IN2,3.
IC101 (Pin30)
R1PWR5V
F6
Is the voltage "H" (3.3 V)?
No
Check the parts and patterns in the path.
No
Replace IC151, Q152 or R156.
Yes
Step 3-5: DDC
* When connected the source equipment to IN1.
JA1102 (Pin 16)
SDA(HDMI IN1)
G4
Does a signal output in constant period (0 - 5 V) ?
No
Check the patterns in the path. Check JA1102.
No
Replace JA1102.
Yes
JA1102 (Pin 15)
SCL(HDMI IN1)
G5
Does a clock output in constant period (0 - 5 V) ?
No
Check the patterns in the path. Check JA1102.
No
Replace JA1102.
Yes
IC1204 (Pin 7)
G6
Is there a same signal as G4 (0 - 4.4 V)?
No
Check the patterns in the path. Check IC1203,IC1204.
No
Replace IC1203,IC1204.
Yes
IC1204 (Pin 4)
G1
Is there a same signal as G5 (0 - 4.4 V)?
No
Check the patterns in the path. Check IC1203,IC1204.
No
Replace IC1203,IC1204.
Yes
IC101 (Pin 33)
DSDA0
D1
Is there a same signal as G4 (0 - 3.3 V)?
No
Check the patterns in the path. Check IC1205.
No
Replace IC1205.
Yes
B


B
IC101 (Pin 34)
DSCL0
D2
Is there a same signal as G5 (0 - 3.3 V)?
No
Check the patterns in the path. Check IC1206.
No
Replace IC1206.
Yes
* When connected the source equipment to IN2.
JA1151 (Pin 16)
SDA(HDMI IN2)
G7
Does a signal output in constant period (0 - 5 V) ?
No
Check the patterns in the path. Check JA1151.
No
Replace JA1151.
Yes
JA1151 (Pin 15)
SCL(HDMI IN2)
G8
Does a clock output in constant period (0 - 5 V) ?
No
Check the patterns in the path. Check JA1151
No
Replace JA1151.
Yes
IC1252 (Pin 7)
G9
Is there a same signal as G7 (0 - 4.4 V)?
No
Check the patterns in the path. Check IC1251,IC1252.
No
Replace IC1251,IC1252.
Yes
IC1252 (Pin 4)
G2
Is there a same signal as G8 (0 - 4.4 V)?
No
Check the patterns in the path. Check IC1251,IC1252.
No
Replace IC1251,IC1252.
Yes
IC101 (Pin 28)
DSDA1
D3
Is there a same signal as G7 (0 - 3.3 V)?
No
Check the patterns in the path. Check IC1255.
No
Replace IC1256.
Yes
IC101 (Pin 29)
DSCL1
D4
Is there a same signal as G8 (0 - 3.3 V)?
No
Check the patterns in the path. Check IC1257.
No
Replace IC1257.
Yes
* When connected the source equipment to IN3.
JA1152 (Pin 16)
SDA(HDMI IN3)
G10
Does a signal output in constant period (0 - 5 V) ?
No
Check the patterns in the path. Check JA1152.
No
Replace JA1152.
Yes
JA1152 (Pin 15)
SCL(HDMI IN3)
G11
Does a clock output in constant period (0 - 5 V) ?
No
Check the patterns in the path. Check JA1152.
No
Replace JA1152.
Yes
IC1254 (Pin 7)
G12
Is there a same signal as G10 (0 - 4.4 V)?
No
Check the patterns in the path. Check IC1253,IC1254.
No
Replace IC1253,IC1254.
Yes
IC1254 (Pin 4)
G3
Is there a same signal as G11 (0 - 4.4 V)?
No
Check the patterns in the path. Check IC1253,IC1254.
No
Replace IC1253,IC1254.
Yes
IC101 (Pin 28)
DSDA1
D3
Is there a same signal as G10 (0 - 3.3 V)?
No
Check the patterns in the path. Check IC1255.
No
Replace IC1256.
Yes
IC101 (Pin 29)
DSCL1
D4
Is there a same signal as G11 (0 - 3.3 V)?
No
Check the patterns in the path. Check IC1257.
No
Replace IC1257.
Yes
JA301 (Pin 16)
SDA(HDMI OUT)
G13
Does a signal output in constant period (0 - 5 V) ?
No
Check the patterns in the path. Check JA301.
No
Replace JA901.
Yes
C


C
JA301 (Pin 15)
SCL(HDMI OUT)
G14
Does a clock output in constant period (0 - 5 V) ?
No
Check the patterns in the path. Check JA301.
No
Replace JA901.
Yes
IC301 (Pin 47)
DSDA
D5
Is there a same signal as G13 (0 - 3.3 V)?
No
Check the patterns in the path. Check R358.
No
Replace Q953.
Yes
IC301 (Pin 46)
DSCL
D6
Is there a same signal as G14 (0 - 3.3 V)?
No
Check the patterns in the path. Check R357.
No
Replace Q953.
Yes
Step 3-6: TMDS(INPUT)
* When connected the source equipment to IN1.
IC101 (Pins 39,40, 43,44,47,48,51,52)
TMDS(Rx0)
Do signals (approx. 0.5 Vp-p) run in all the lines?
No
Check the soldering of JA1102.
No
Replace JA1102.
Yes
* When connected the source equipment to IN2.
IC1151 (Pins 27,28, 30,31,33,34,39,40)
TMDS(HDMI IN2)
Do signals (approx. 0.5 Vp-p) run in all the lines?
No
Check the soldering of JA1151.
No
Replace JA1151.
Yes
* When connected the source equipment to IN3.
IC1151 (Pins 3,4,6, 7,9,10,45,46)
TMDS(HDMI IN3)
Do signals (approx. 0.5 Vp-p) run in all the lines?
No
Check the soldering of JA1152.
No
Replace JA1152.
Yes
* When connected the source equipment to IN2,3.
IC101 (Pins 57,58, 61,62,65,66,69,70)
TMDS(Rx1)
Do signals (approx. 0.5 Vp-p) run in all the lines?
No
Check the soldering of IC1151.
No
Replace IC1151.
Yes
Step 3-7: TMDS(OUTPUT)
JA301(Pins 1,3,4,6, 7,9,10,12)
TMDS(HDMI OUT)
E9
Do signals (approx. 0.5 Vp-p) run in all the lines?
No
Check the parts and patterns in the path (IC301 - JA301).
No
Replace IC301.
Yes
Step 3-8: AUDIO CLK,DATA
IC201(Pin 9)
SPDIF
J3
Is there a DATA?
No
Check the parts and patterns in the path (IC101 - IC201).
No
Replace IC101.
Yes
CN1001(Pin 6)
SPDIFO
A1
Is there a DATA?
No
Check the parts and patterns in the path (IC201 - CN1001). Check the soldering of IC201, L207, Control Signal.
No
Replace IC201.
Yes
IC201(Pin 2)
MCLK
J3
Is there a CLK?
No
Check the parts and patterns in the path (IC101 - IC201).
No
Replace IC101.
Yes
D

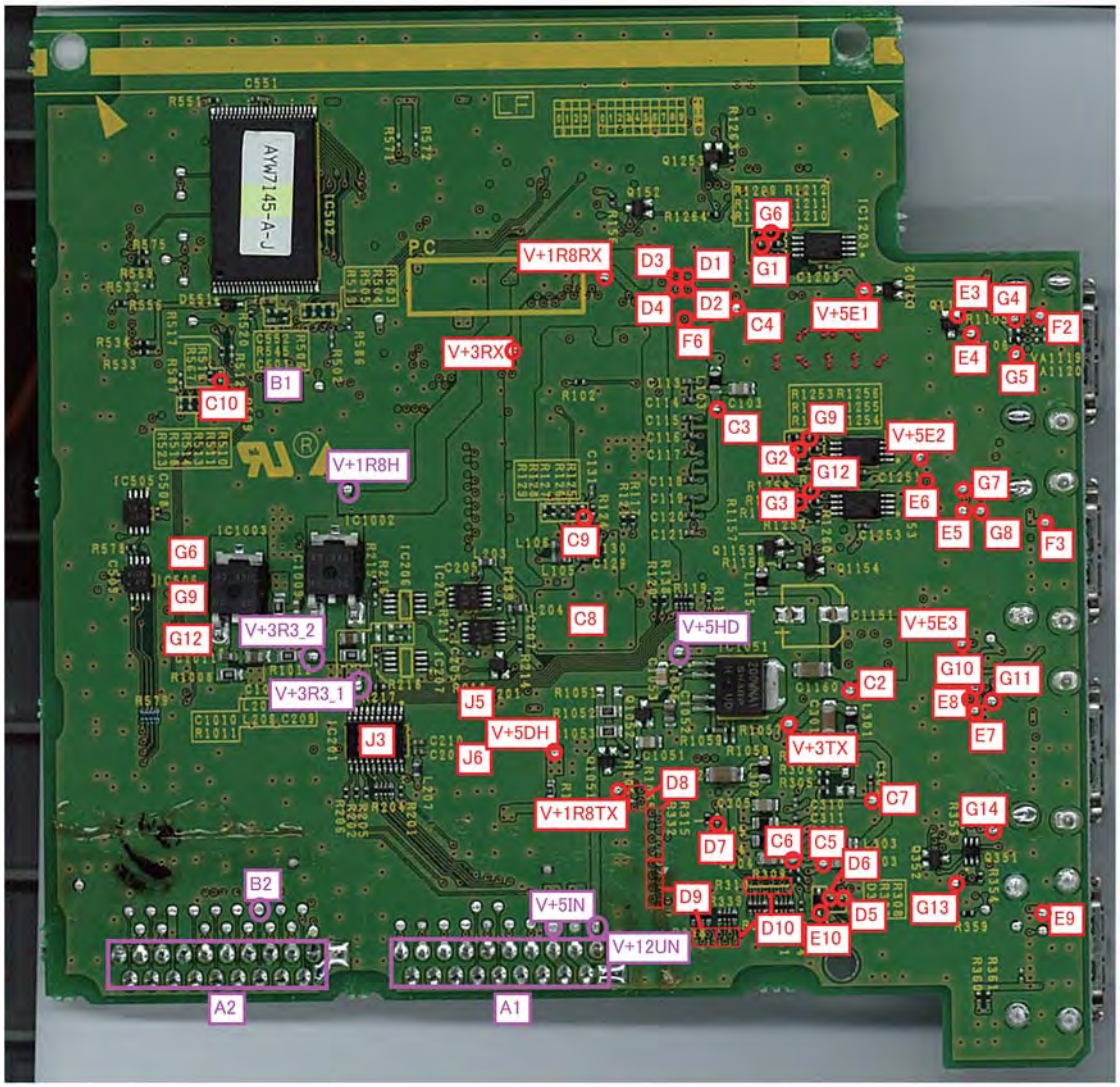

D
CN1001 (Pin 15)
MCLKO
A1
Is there a CLK?
No
Check the parts and patterns in the path (IC201 - CN1001). Check the soldering of IC201, L207, Control Signal.
No
Replace IC201.
Yes
IC201 (Pins 7,8)
WS.SCK
J3
Is there a CLK?
No
Check the parts and patterns in the path (IC101 - IC201).
No
Replace IC101.
Yes
IC201(Pins 3,4,5,6)
SD0-3
J3
Is there a DATA?
No
Check the parts and patterns in the path (IC101 - IC201).
No
Replace IC101.
Yes
CN1001 (Pins 12,13)
BCKO,LRCKO
A1
Is there a CLK?
No
Check the parts and patterns in the path (IC201 - CN1001). Check the soldering of IC201, L207, Control Signal.
No
Replace IC201.
Yes
CN1001 (Pins 8-11)
SD0-3O
A1
Is there a DATA?
No
Check the parts and patterns in the path (IC201 - CN1001). Check the soldering of IC201, L207, Control Signal.
No
Replace IC201.
Yes
CN1001(Pin 17)
HDMUTE
A1
Is the voltage "L" (0 V)?
No
Check the parts and patterns in the path (IC501 - CN1001).
No
Replace IC501.
Yes
DSP Troubleshooting

■ HDMI Assy Check Points

E HDMI ASSY

Commonness HDMI

SIDE B

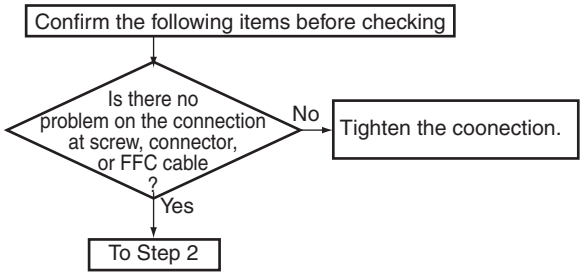


5.2 DSP TROUBLESHOOTING

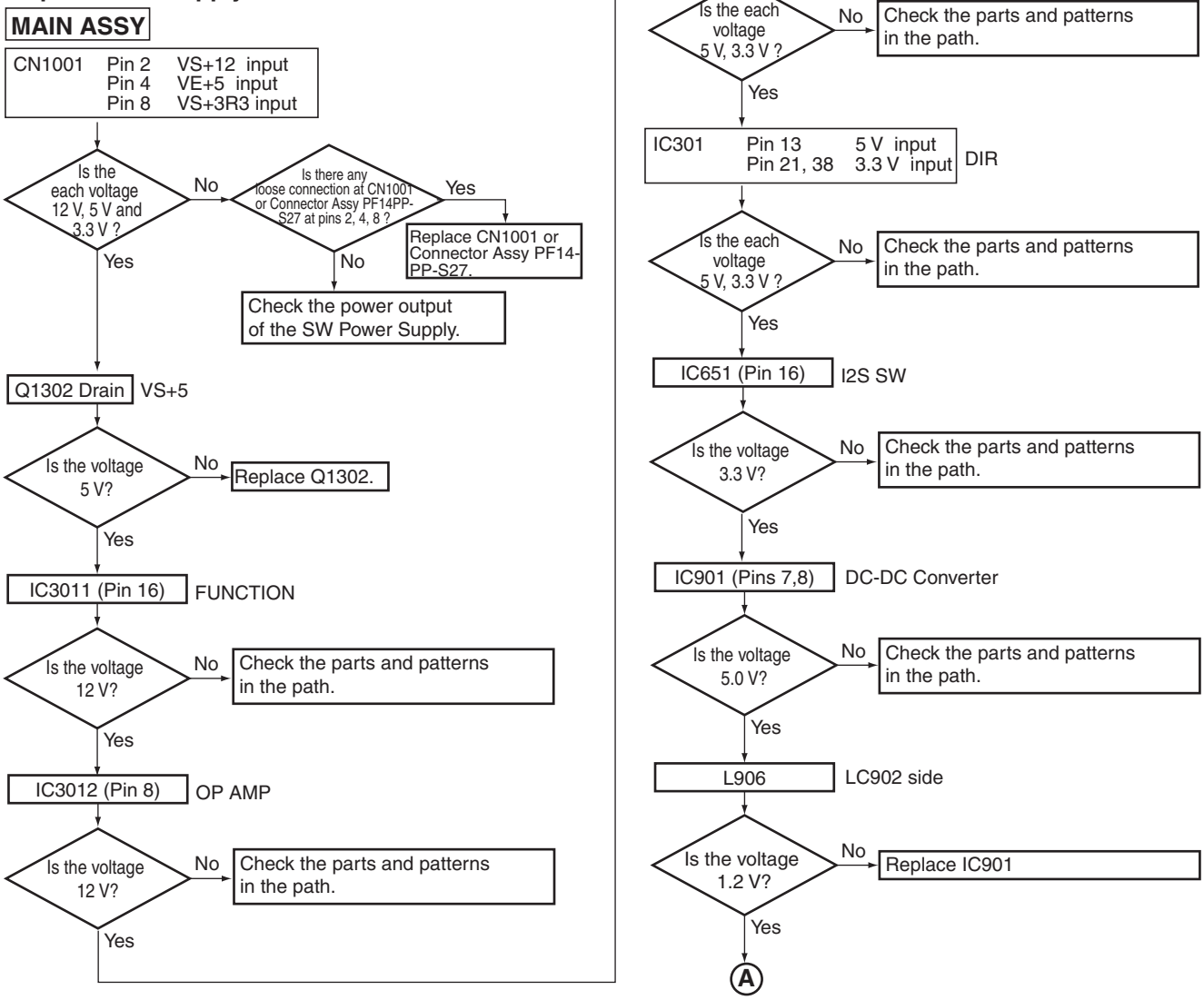
■ Troubleshooting

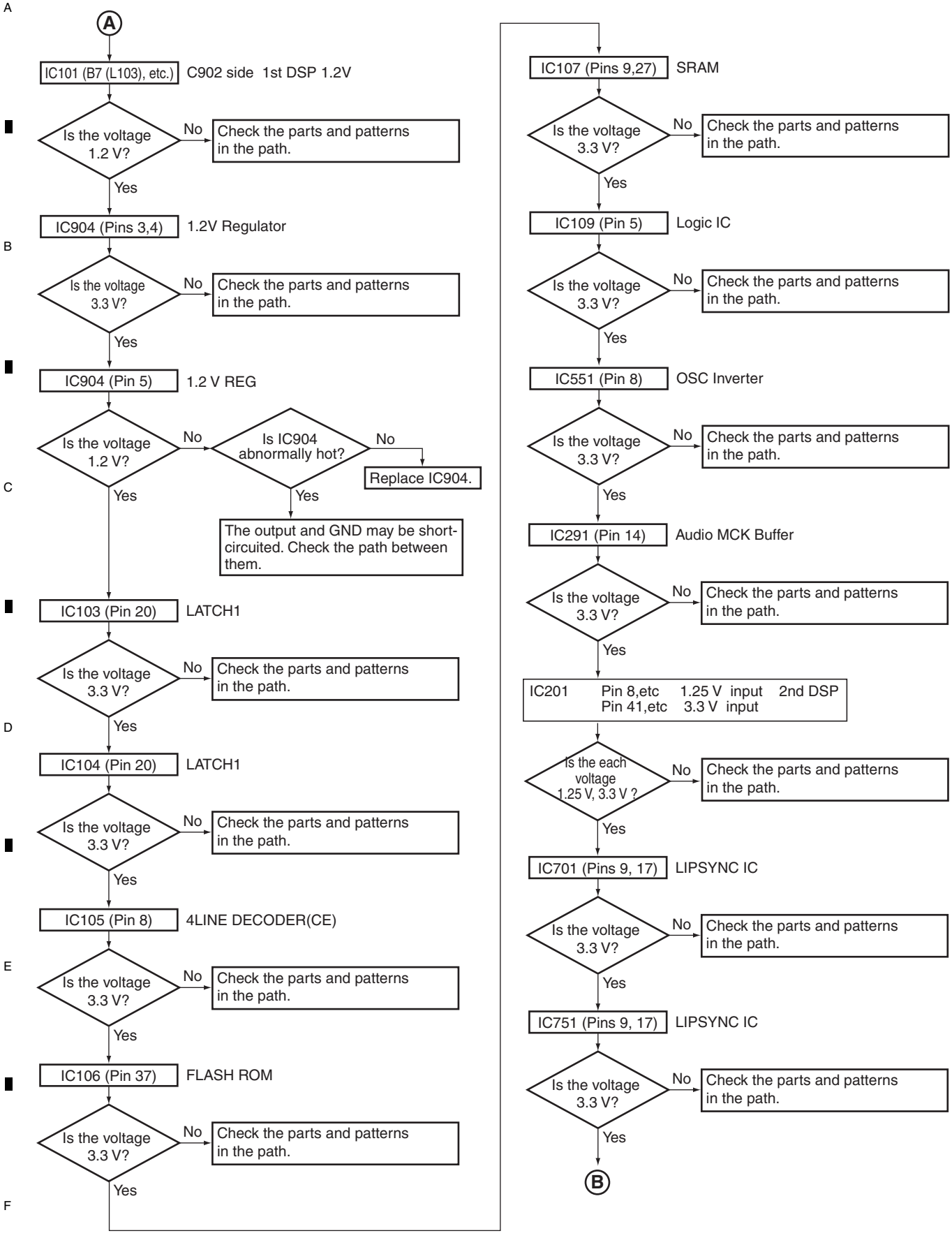
- The following flow is the diagnosis method when the sound is not out from the SP output.
- It is assumed that there is no loose connection or damage in the LCRs.
- Refer to the Block Diagram as well as the Schematic Diagram about the signal flow.

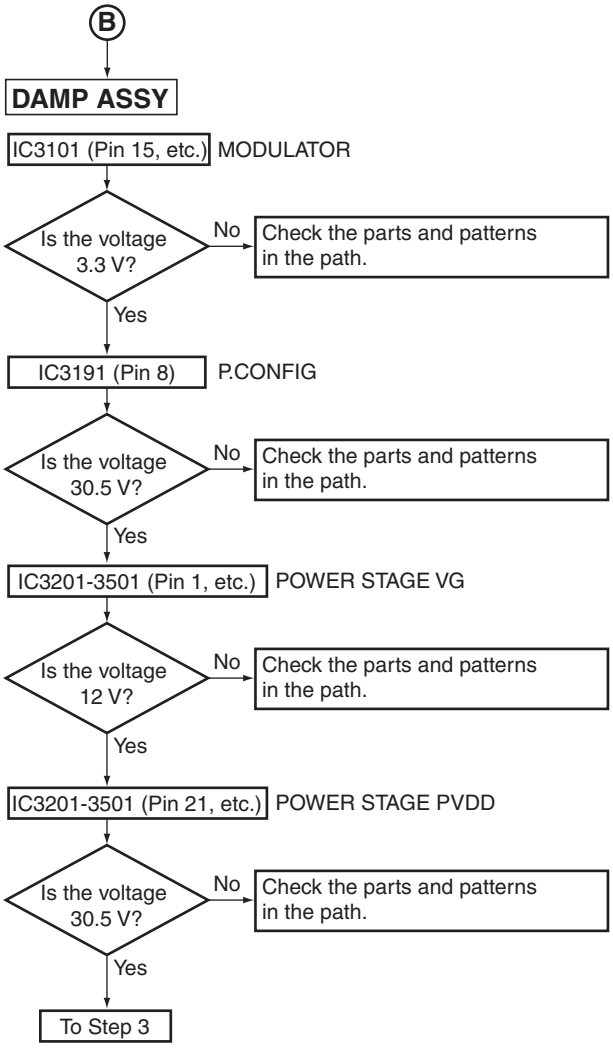
Step 1: Preliminary connecting confirmation



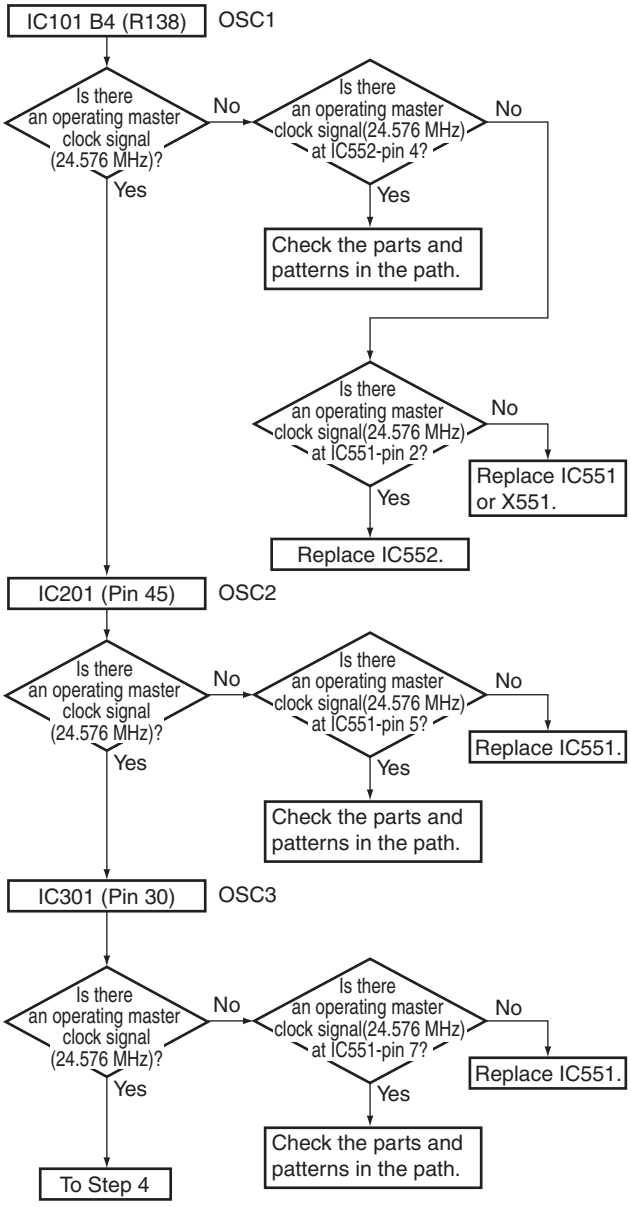
Step 2: Power supply




A
IC101 (B7 (L103), etc.)
C902 side 1st DSP 1.2V
Is the voltage 1.2 V?
No
Check the parts and patterns in the path.
Yes
IC904 (Pins 3,4)
1.2V Regulator
Is the voltage 3.3 V?
No
Check the parts and patterns in the path.
Yes
IC904 (Pin 5)
1.2 V REG
Is the voltage 1.2 V?
No
Is IC904 abnormally hot?
No
Replace IC904.
Yes
The output and GND may be short-circuited. Check the path between them.
IC103 (Pin 20)
LATCH1
Is the voltage 3.3 V?
No
Check the parts and patterns in the path.
Yes
IC104 (Pin 20)
LATCH1
Is the voltage 3.3 V?
No
Check the parts and patterns in the path.
Yes
IC105 (Pin 8)
4LINE DECODER(CE)
Is the voltage 3.3 V?
No
Check the parts and patterns in the path.
Yes
IC106 (Pin 37)
FLASH ROM
Is the voltage 3.3 V?
No
Check the parts and patterns in the path.
Yes
IC107 (Pins 9,27)
SRAM
Is the voltage 3.3 V?
No
Check the parts and patterns in the path.
Yes
IC109 (Pin 5)
Logic IC
Is the voltage 3.3 V?
No
Check the parts and patterns in the path.
Yes
IC551 (Pin 8)
OSC Inverter
Is the voltage 3.3 V?
No
Check the parts and patterns in the path.
Yes
IC291 (Pin 14)
Audio MCK Buffer
Is the voltage 3.3 V?
No
Check the parts and patterns in the path.
Yes
IC201 Pin 8,etc 1.25 V input 2nd DSP
Pin 41,etc 3.3 V input
Is the each voltage 1.25 V, 3.3 V ?
No
Check the parts and patterns in the path.
Yes
IC701 (Pins 9, 17)
LIPSYNC IC
Is the voltage 3.3 V?
No
Check the parts and patterns in the path.
Yes
IC751 (Pins 9, 17)
LIPSYNC IC
Is the voltage 3.3 V?
No
Check the parts and patterns in the path.
Yes
B



Step 3: Operating Master Clock



Step 4: Audio Clock (Until Switch)

- When a sound is not out with the digital (OPT IN) signal input. → Go to Step 4-1
- When a sound is not out with the analog signal input. → Go to Step 4-2
- When a sound is not out with the HDMI. (It is assumed that failure diagnosis of HDMI Assy has been completed.)

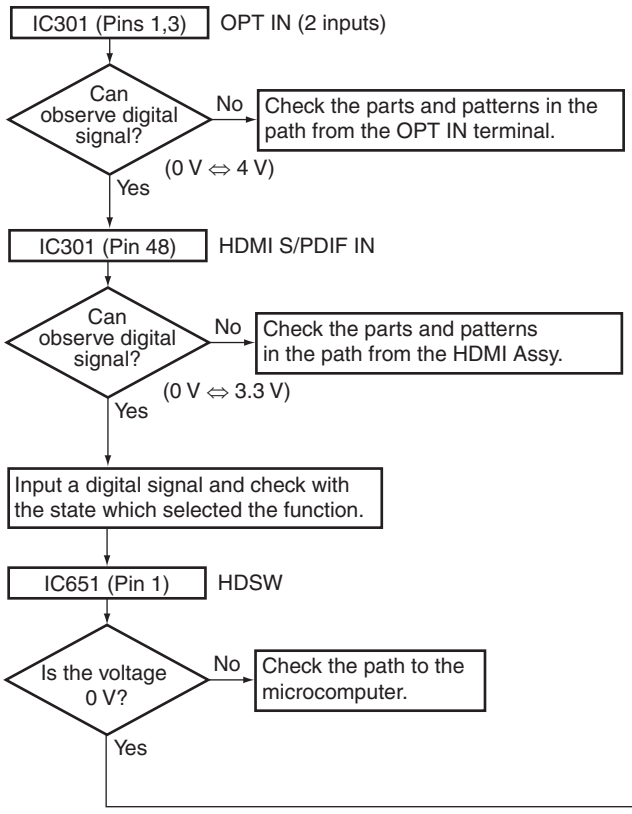
(I2S path)
When the source is “dts HD Master Audio”, “Dolby True HD”, “PCM or LPCM at or above the sampling rate of 88.2kHz” or “LPCM Multi ch”. → Go to Step 4-3-1

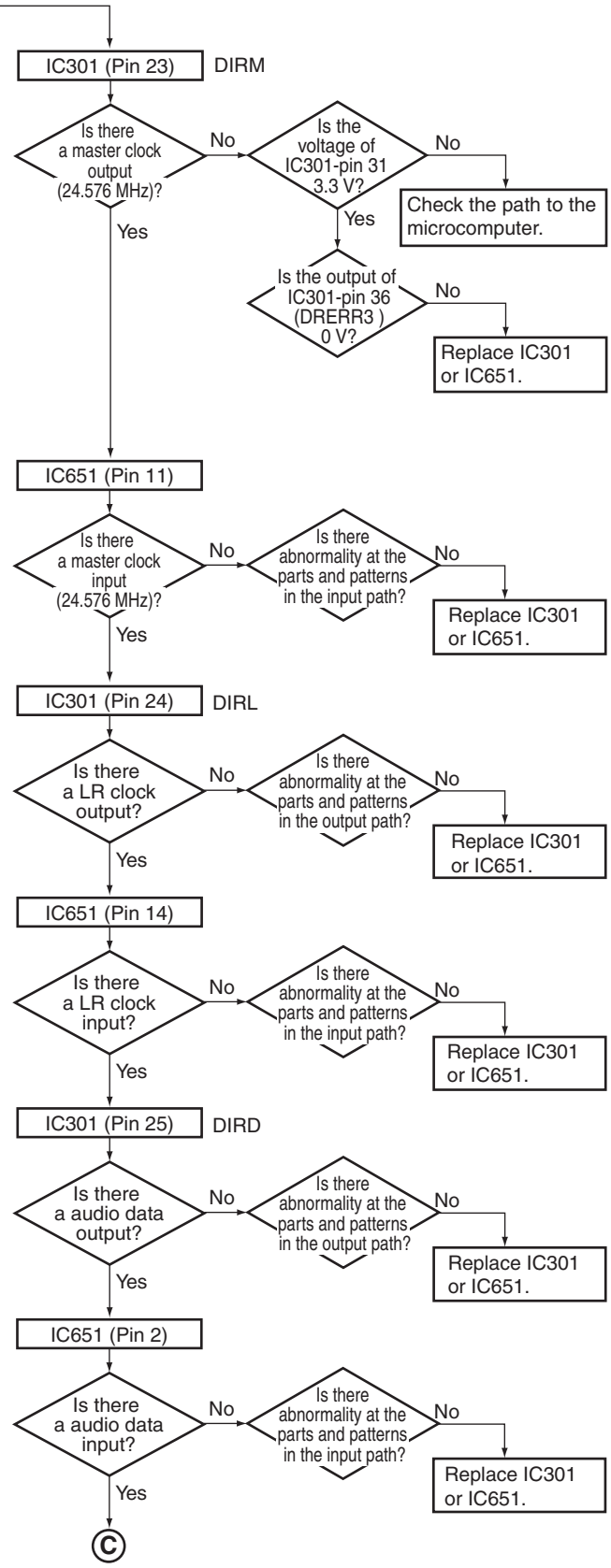
(S/PDIF path)
When the source is “dts HD High Resolution Audio”, “dts HD LBR”, “Dolby Digital Plus”, “2ch at or below the sampling rate of 48kHz), or “other compression streams”. → Go to Step 4-1

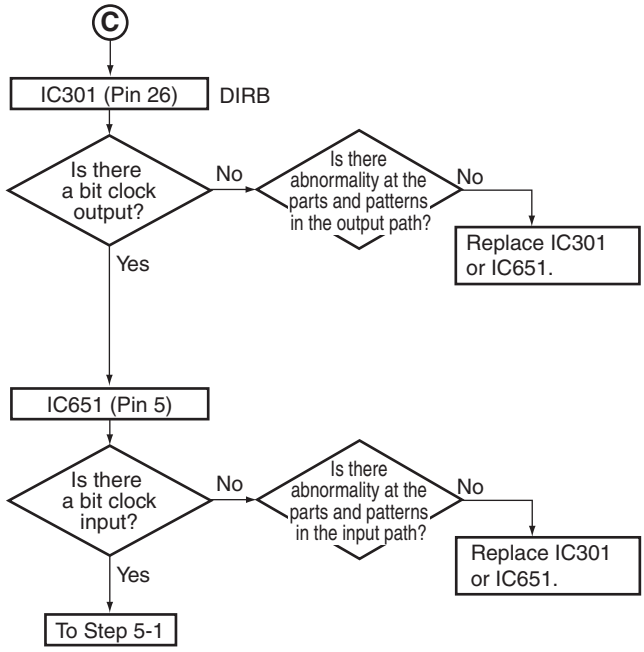
(DSD)
When the source is SACD. → Go to Step 4-3-2

Step 4-1: When a sound is not out with the digital (OPT IN) signal input

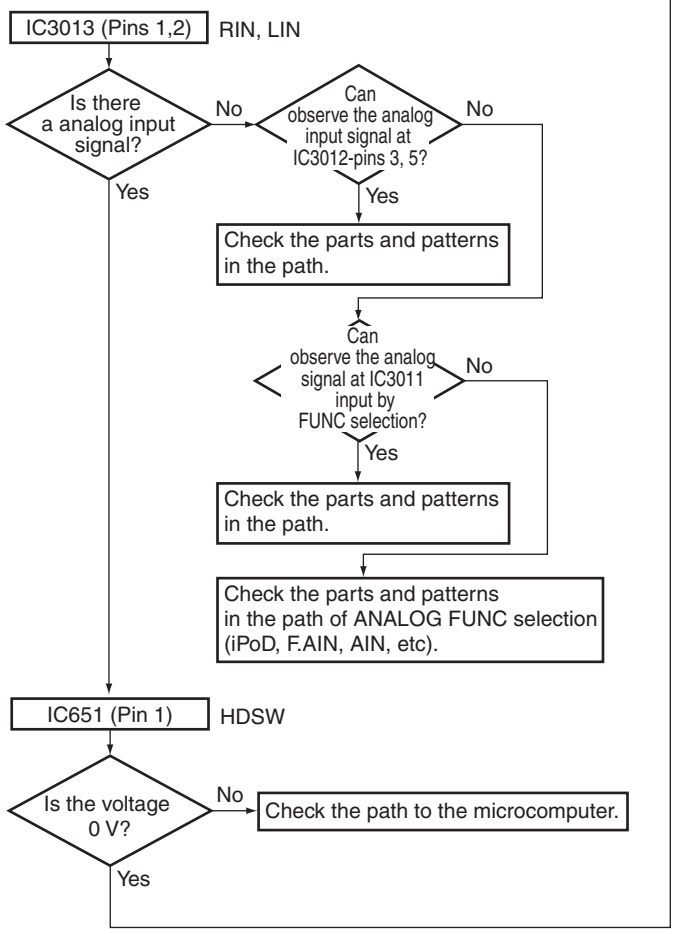
When the source in the digital (OPT IN) or the HDMI path is “dts HD High Resolution Audio”, “dts HD LBR”, “Dolby Digital Plus”, “2ch at or below the sampling rate of 48kHz” or “other compression streams”. Check that changes by pulling out and inserting the digital input lines.

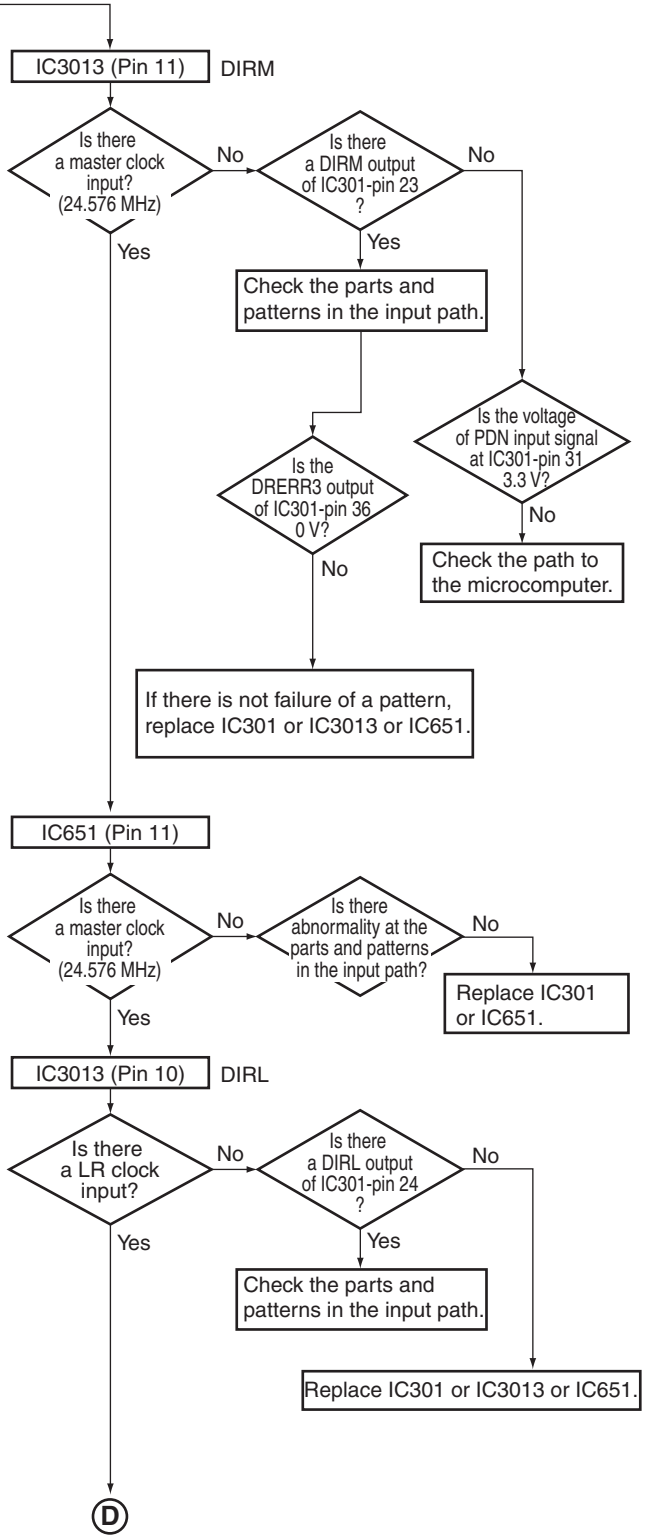


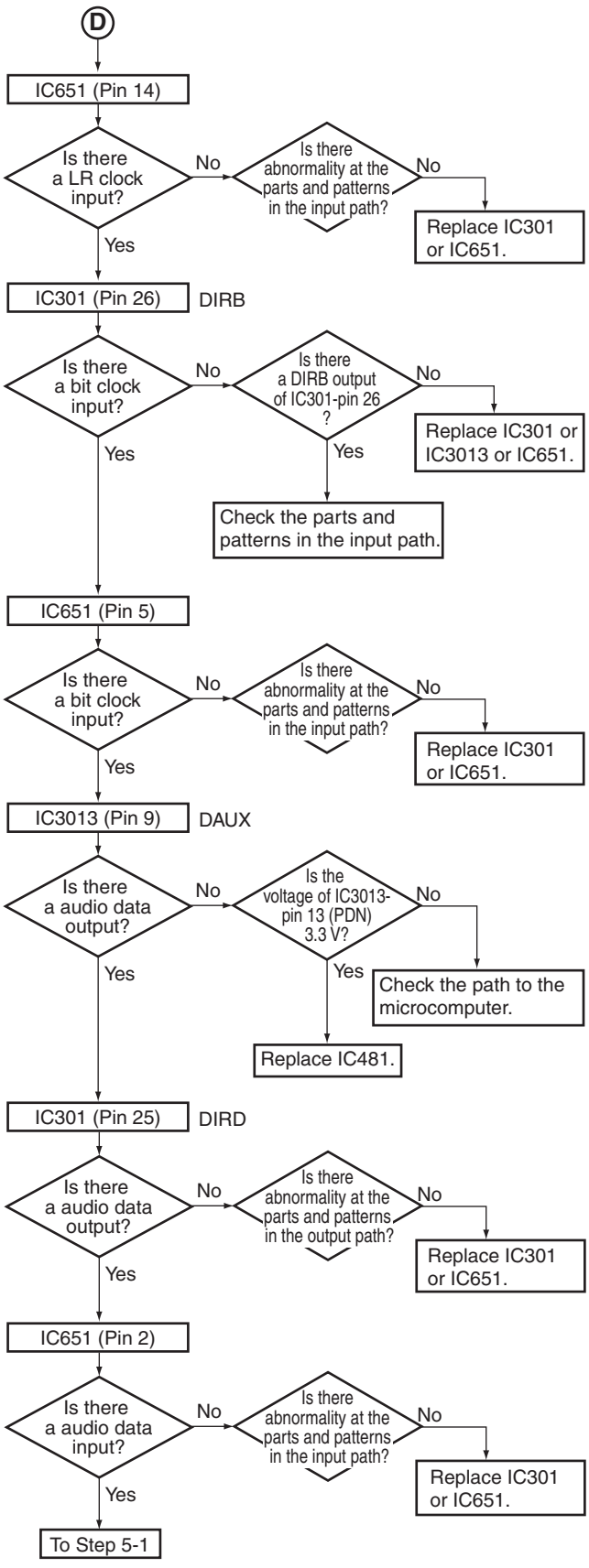




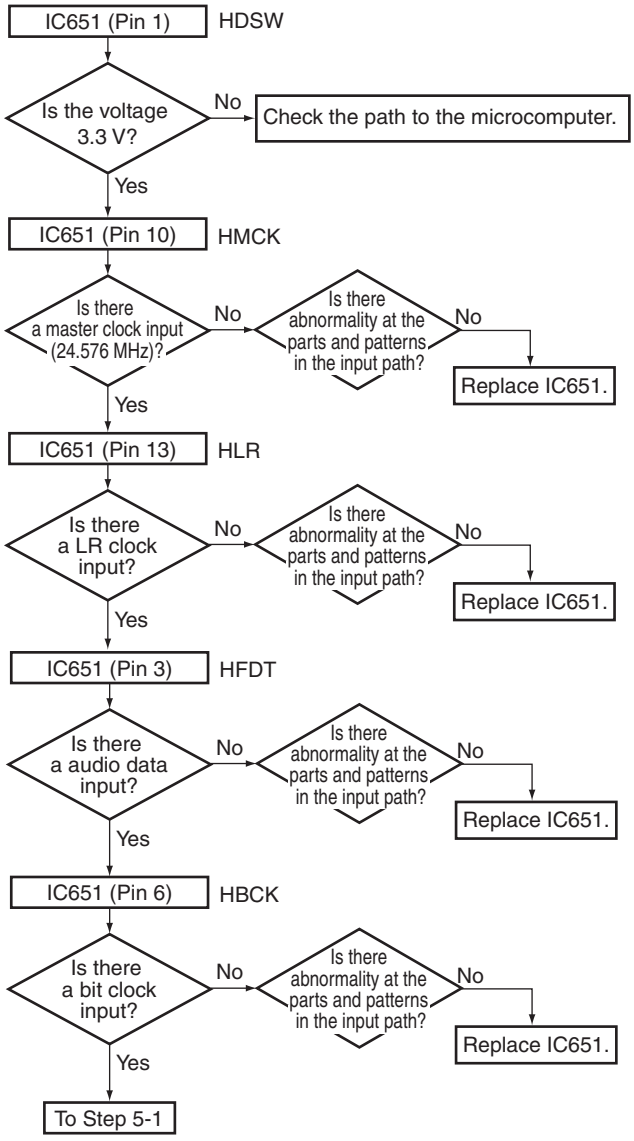
Step 4-2: When a sound is not out with the analog signal input



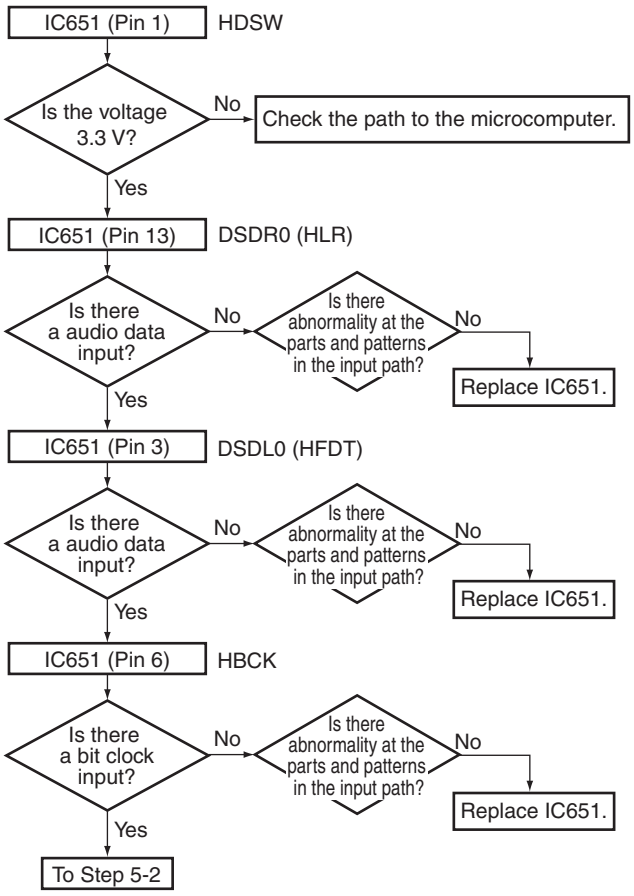




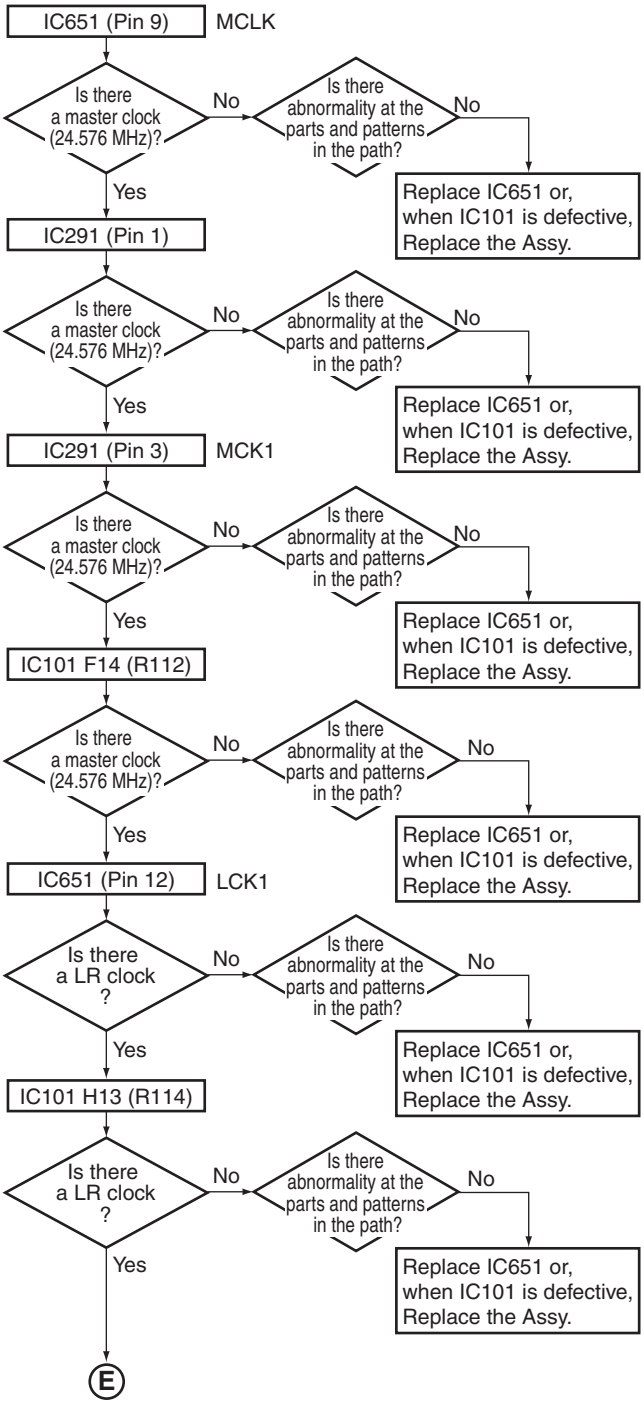
Step 4-3-1: When a sound is not out with the HDMI (When the source is “dts HD Master Audio”, “Dolby True HD”, “PCM or LPCM at or above the sampling rate of 88.2kHz” or “LPCM Multi ch”)

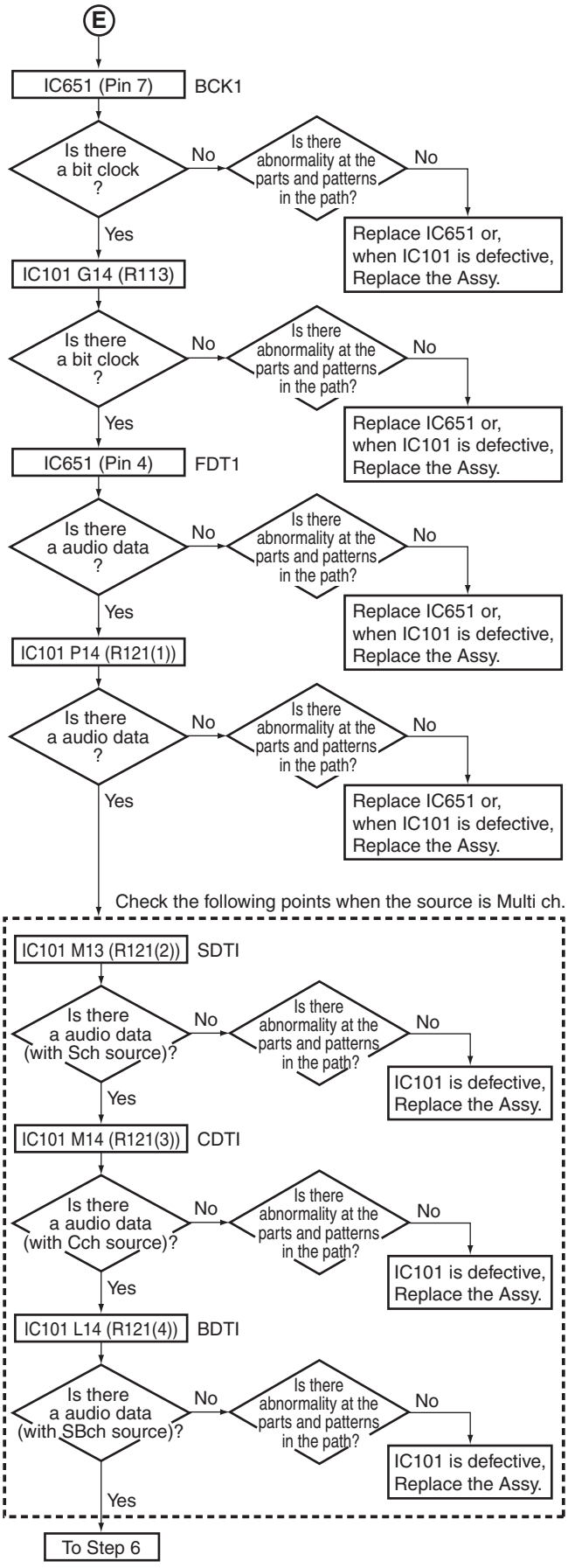


Step 4-3-2: When a sound is not out with the HDMI (When the source is SACD)

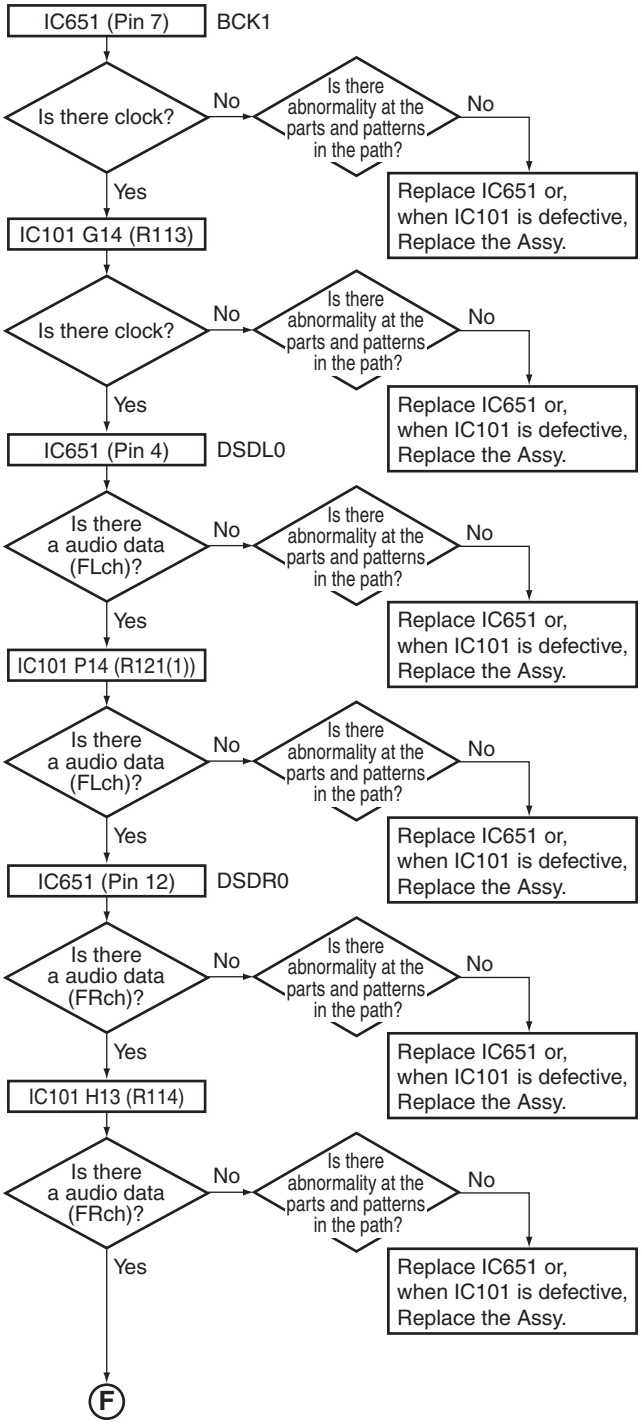


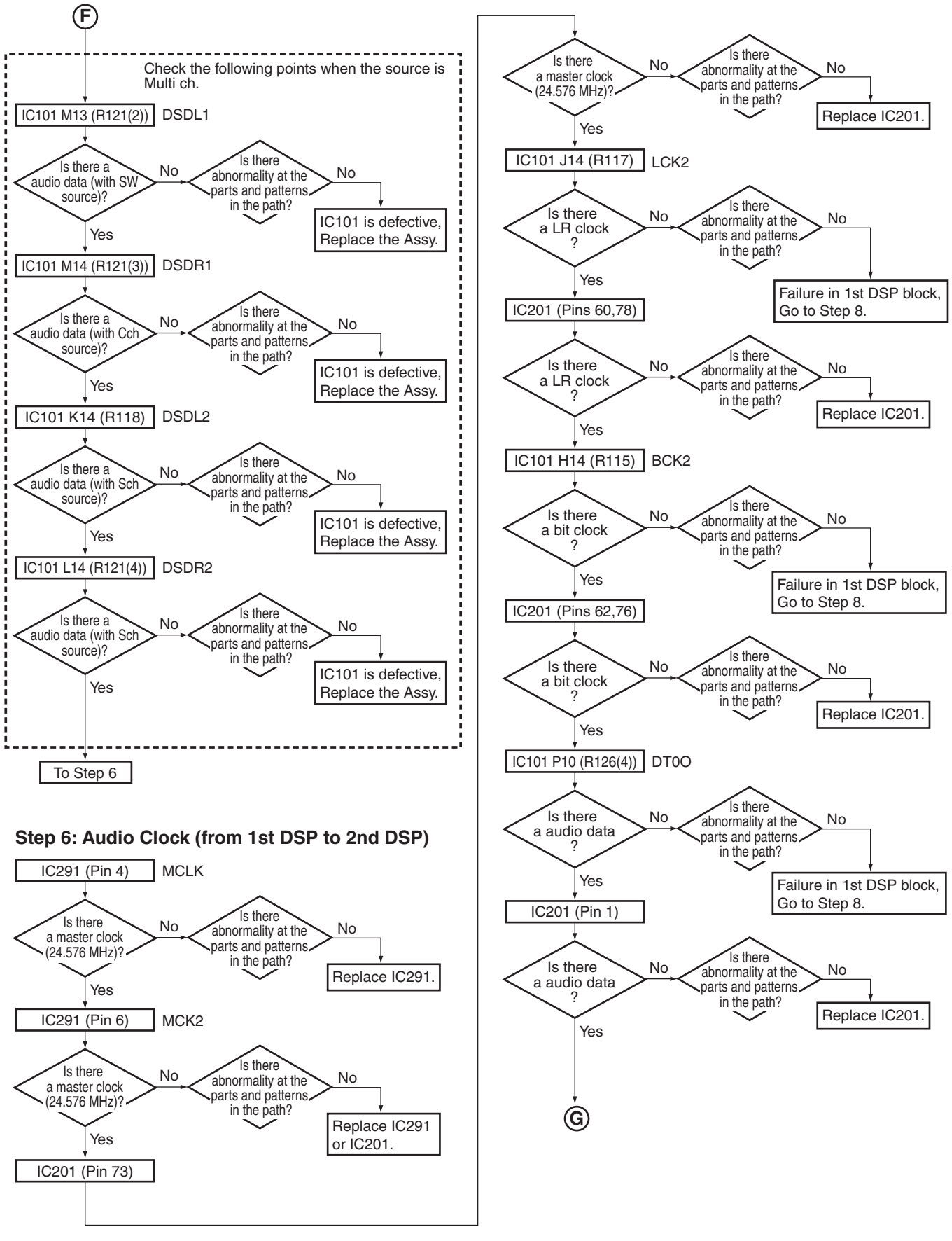
Step 5-1: Audio Clock (from Switch to 1st DSP)

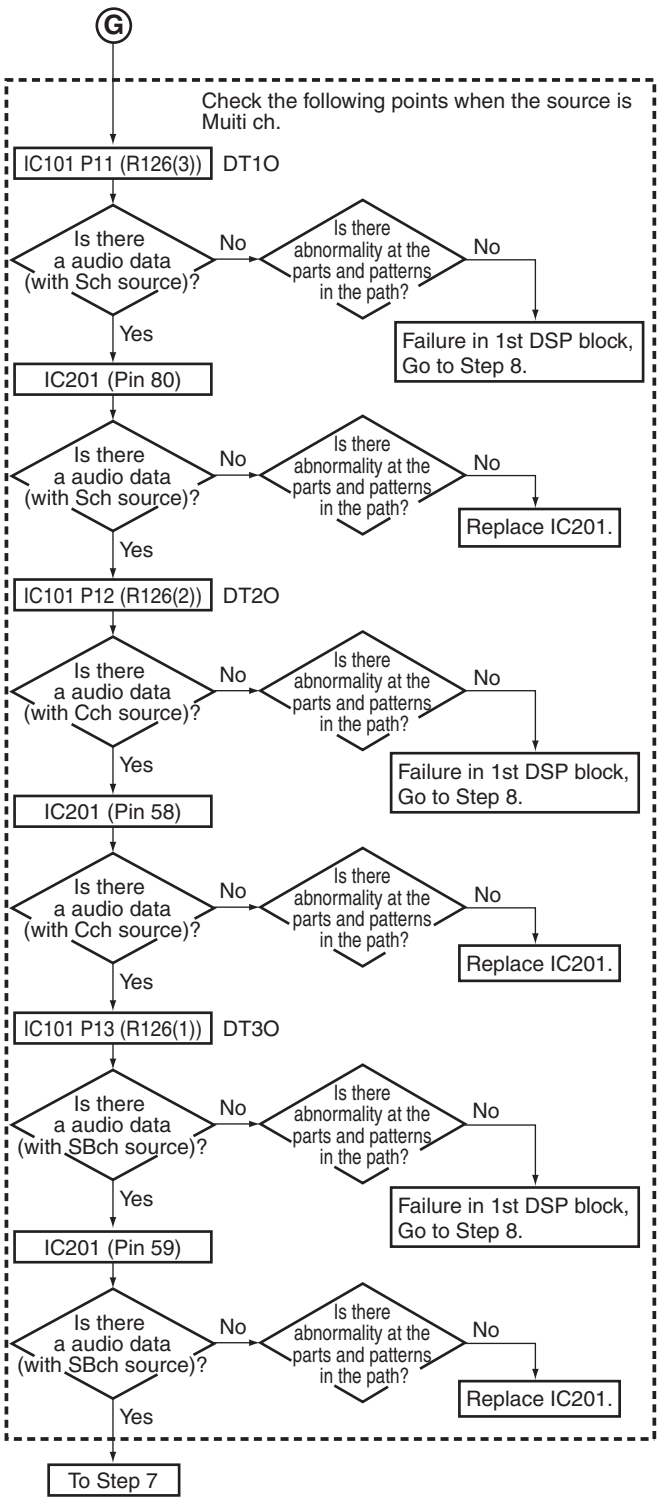




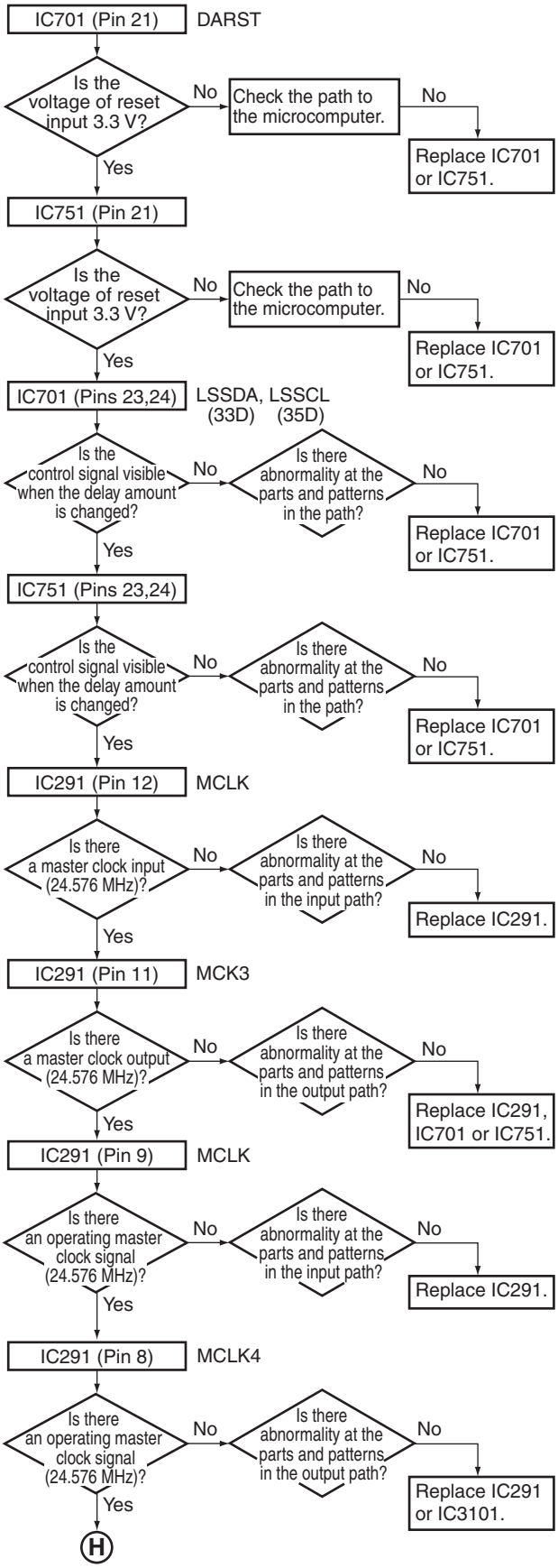
Step 5-2: Audio Clock & Data (in the case of SACD to 1st DSP)

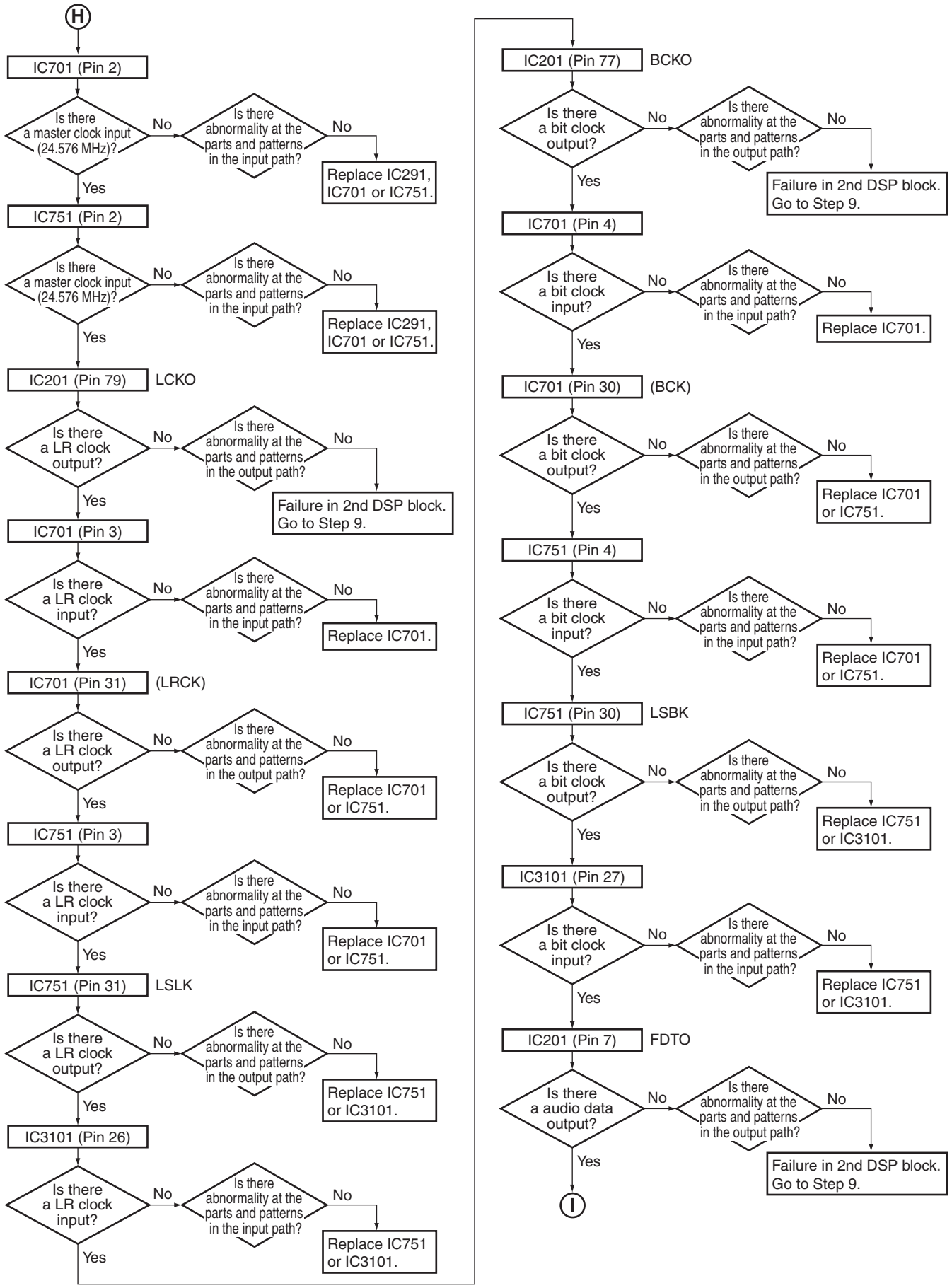


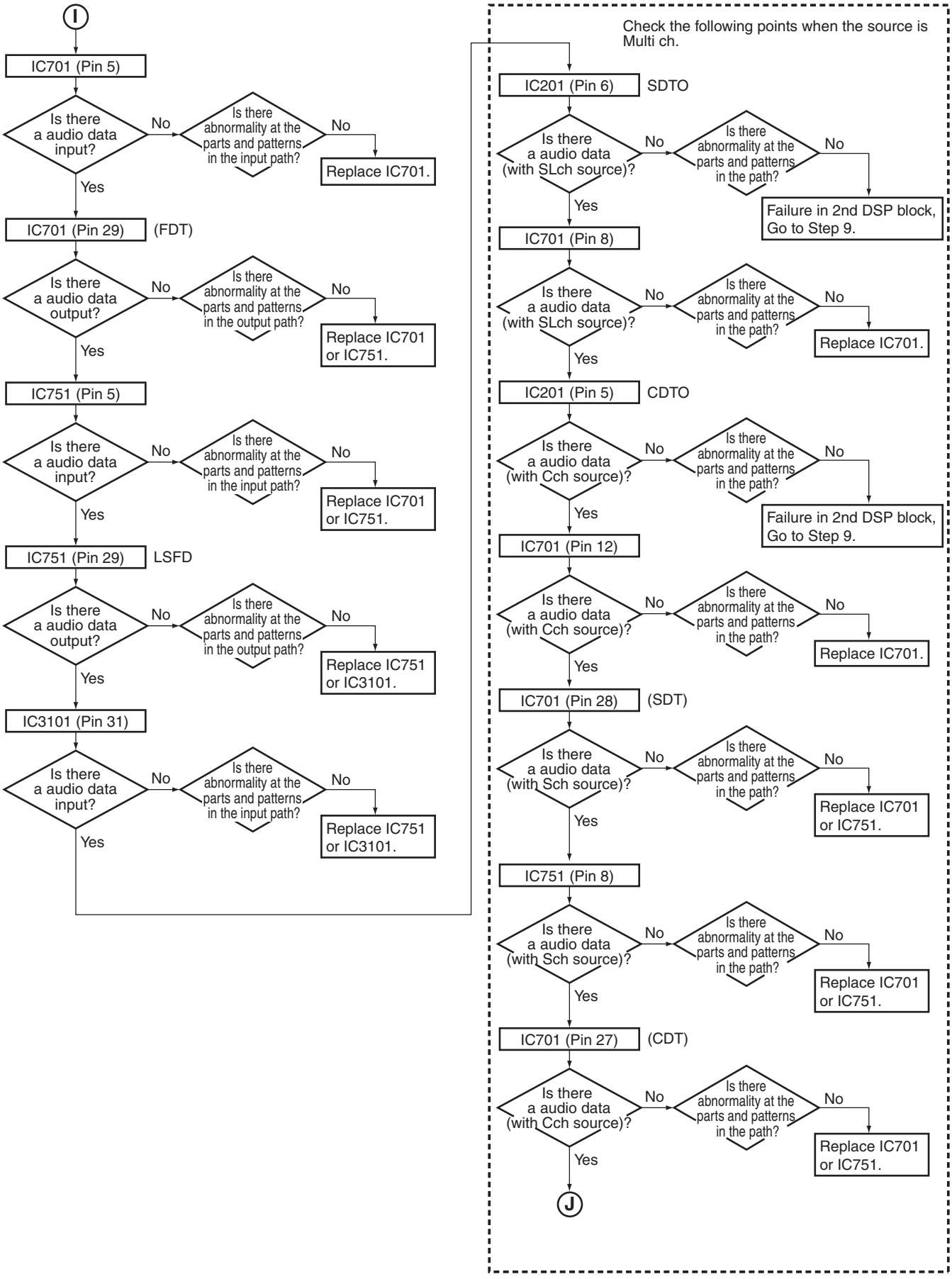

F
Check the following points when the source is Multi ch.
IC101 M13 (R121(2)) DSDL1
Is there a audio data (with SW source)?
No
Is there abnormality at the parts and patterns in the path?
No
IC101 is defective, Replace the Assy.
Yes
IC101 M14 (R121(3)) DSDR1
Is there a audio data (with Cch source)?
No
Is there abnormality at the parts and patterns in the path?
No
IC101 is defective, Replace the Assy.
Yes
IC101 K14 (R118) DSDL2
Is there a audio data (with Sch source)?
No
Is there abnormality at the parts and patterns in the path?
No
IC101 is defective, Replace the Assy.
Yes
IC101 L14 (R121(4)) DSDR2
Is there a audio data (with Sch source)?
No
Is there abnormality at the parts and patterns in the path?
No
IC101 is defective, Replace the Assy.
Yes
To Step 6
Step 6: Audio Clock (from 1st DSP to 2nd DSP)
IC291 (Pin 4) MCLK
Is there a master clock (24.576 MHz)?
No
Is there abnormality at the parts and patterns in the path?
No
Replace IC291.
Yes
IC291 (Pin 6) MCK2
Is there a master clock (24.576 MHz)?
No
Is there abnormality at the parts and patterns in the path?
No
Replace IC291 or IC201.
Yes
IC201 (Pin 73)
Is there a master clock (24.576 MHz)?
No
Is there abnormality at the parts and patterns in the path?
No
Replace IC201.
Yes
IC101 J14 (R117) LCK2
Is there a LR clock ?
No
Is there abnormality at the parts and patterns in the path?
No
Failure in 1st DSP block, Go to Step 8.
Yes
IC201 (Pins 60,78)
Is there a LR clock ?
No
Is there abnormality at the parts and patterns in the path?
No
Replace IC201.
Yes
IC101 H14 (R115) BCK2
Is there a bit clock ?
No
Is there abnormality at the parts and patterns in the path?
No
Failure in 1st DSP block, Go to Step 8.
Yes
IC201 (Pins 62,76)
Is there a bit clock ?
No
Is there abnormality at the parts and patterns in the path?
No
Replace IC201.
Yes
IC101 P10 (R126(4)) DT0O
Is there a audio data ?
No
Is there abnormality at the parts and patterns in the path?
No
Failure in 1st DSP block, Go to Step 8.
Yes
IC201 (Pin 1)
Is there a audio data ?
No
Is there abnormality at the parts and patterns in the path?
No
Replace IC201.
Yes
G

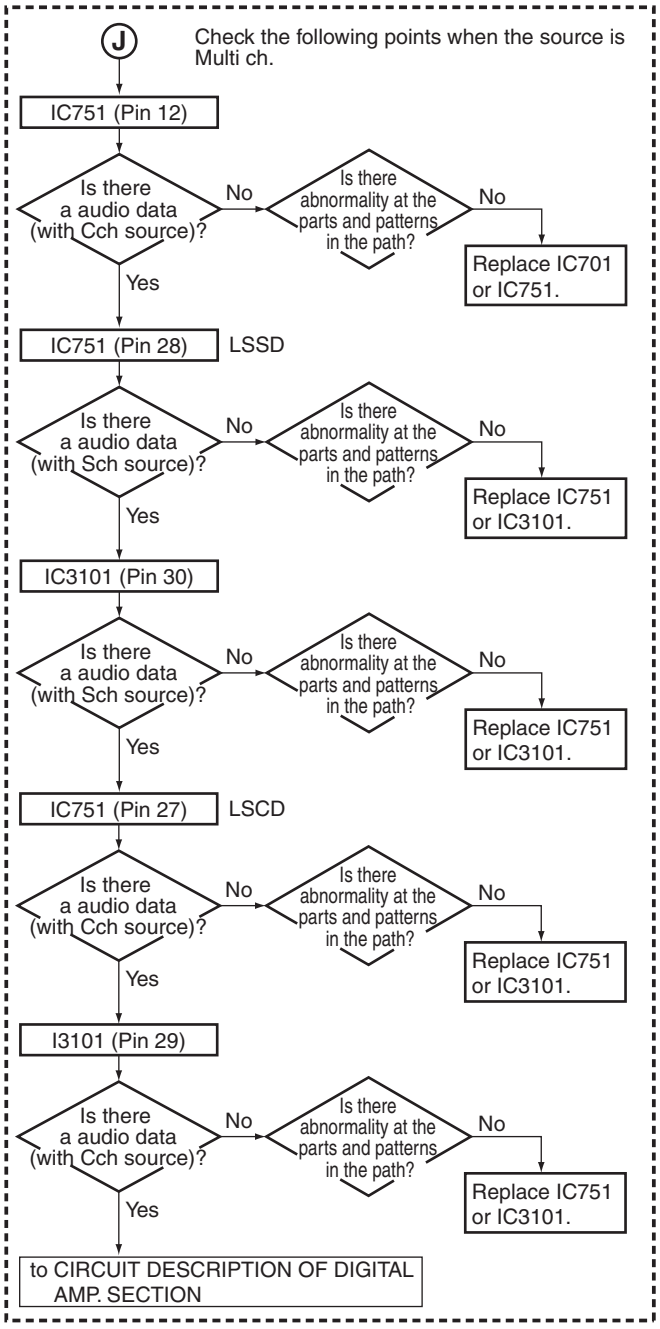


Step 7: Audio Clock (from 2nd DSP to the MODULATOR input)

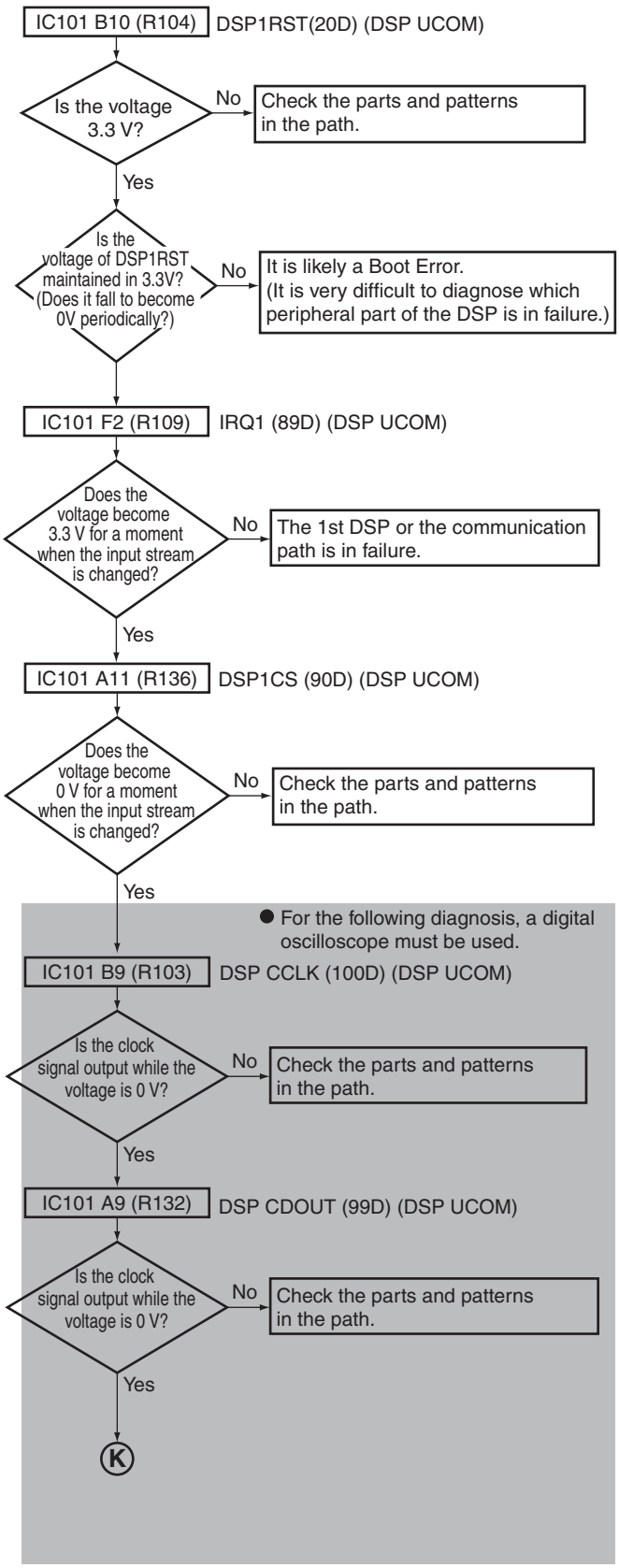


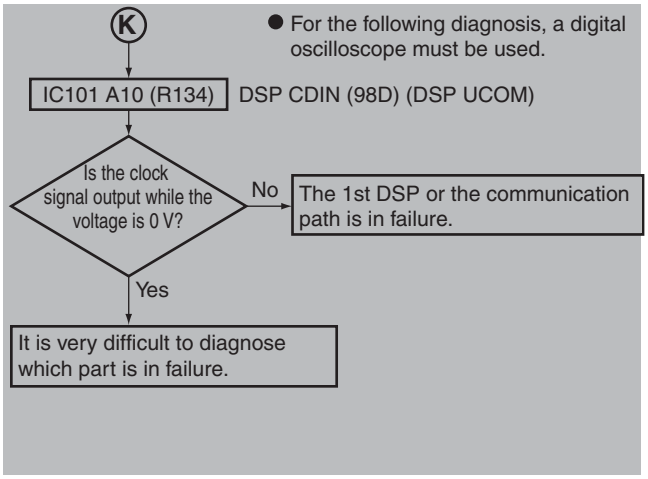

H
IC701 (Pin 2)
Is there a master clock input (24.576 MHz)?
No
Is there abnormality at the parts and patterns in the input path?
No
Replace IC291, IC701 or IC751.
Yes
IC751 (Pin 2)
Is there a master clock input (24.576 MHz)?
No
Is there abnormality at the parts and patterns in the input path?
No
Replace IC291, IC701 or IC751.
Yes
IC201 (Pin 79) LCKO
Is there a LR clock output?
No
Is there abnormality at the parts and patterns in the output path?
No
Failure in 2nd DSP block. Go to Step 9.
Yes
IC701 (Pin 3)
Is there a LR clock input?
No
Is there abnormality at the parts and patterns in the input path?
No
Replace IC701.
Yes
IC701 (Pin 31) (LRCK)
Is there a LR clock output?
No
Is there abnormality at the parts and patterns in the output path?
No
Replace IC701 or IC751.
Yes
IC751 (Pin 3)
Is there a LR clock input?
No
Is there abnormality at the parts and patterns in the input path?
No
Replace IC701 or IC751.
Yes
IC751 (Pin 31) LSLK
Is there a LR clock output?
No
Is there abnormality at the parts and patterns in the output path?
No
Replace IC751 or IC3101.
Yes
IC3101 (Pin 26)
Is there a LR clock input?
No
Is there abnormality at the parts and patterns in the input path?
No
Replace IC751 or IC3101.
Yes
IC201 (Pin 77) BCKO
Is there a bit clock output?
No
Is there abnormality at the parts and patterns in the output path?
No
Failure in 2nd DSP block. Go to Step 9.
Yes
IC701 (Pin 4)
Is there a bit clock input?
No
Is there abnormality at the parts and patterns in the input path?
No
Replace IC701.
Yes
IC701 (Pin 30) (BCK)
Is there a bit clock output?
No
Is there abnormality at the parts and patterns in the output path?
No
Replace IC701 or IC751.
Yes
IC751 (Pin 4)
Is there a bit clock input?
No
Is there abnormality at the parts and patterns in the input path?
No
Replace IC701 or IC751.
Yes
IC751 (Pin 30) LSBK
Is there a bit clock output?
No
Is there abnormality at the parts and patterns in the output path?
No
Replace IC751 or IC3101.
Yes
IC3101 (Pin 27)
Is there a bit clock input?
No
Is there abnormality at the parts and patterns in the input path?
No
Replace IC751 or IC3101.
Yes
IC201 (Pin 7) FDTO
Is there a audio data output?
No
Is there abnormality at the parts and patterns in the output path?
No
Failure in 2nd DSP block. Go to Step 9.
Yes
I


I
IC701 (Pin 5)
Is there a audio data input?
No
Is there abnormality at the parts and patterns in the input path?
No
Replace IC701.
Yes
IC701 (Pin 29) (FDT)
Is there a audio data output?
No
Is there abnormality at the parts and patterns in the output path?
No
Replace IC701 or IC751.
Yes
IC751 (Pin 5)
Is there a audio data input?
No
Is there abnormality at the parts and patterns in the input path?
No
Replace IC701 or IC751.
Yes
IC751 (Pin 29) LSFD
Is there a audio data output?
No
Is there abnormality at the parts and patterns in the output path?
No
Replace IC751 or IC3101.
Yes
IC3101 (Pin 31)
Is there a audio data input?
No
Is there abnormality at the parts and patterns in the input path?
No
Replace IC751 or IC3101.
Yes
Check the following points when the source is Multi ch.
IC201 (Pin 6) SDTO
Is there a audio data (with SLch source)?
No
Is there abnormality at the parts and patterns in the path?
No
Failure in 2nd DSP block, Go to Step 9.
Yes
IC701 (Pin 8)
Is there a audio data (with SLch source)?
No
Is there abnormality at the parts and patterns in the path?
No
Replace IC701.
Yes
IC201 (Pin 5) CDTO
Is there a audio data (with Cch source)?
No
Is there abnormality at the parts and patterns in the path?
No
Failure in 2nd DSP block, Go to Step 9.
Yes
IC701 (Pin 12)
Is there a audio data (with Cch source)?
No
Is there abnormality at the parts and patterns in the path?
No
Replace IC701.
Yes
IC701 (Pin 28) (SDT)
Is there a audio data (with Sch source)?
No
Is there abnormality at the parts and patterns in the path?
No
Replace IC701 or IC751.
Yes
IC751 (Pin 8)
Is there a audio data (with Sch source)?
No
Is there abnormality at the parts and patterns in the path?
No
Replace IC701 or IC751.
Yes
IC701 (Pin 27) (CDT)
Is there a audio data (with Cch source)?
No
Is there abnormality at the parts and patterns in the path?
No
Replace IC701 or IC751.
Yes
J

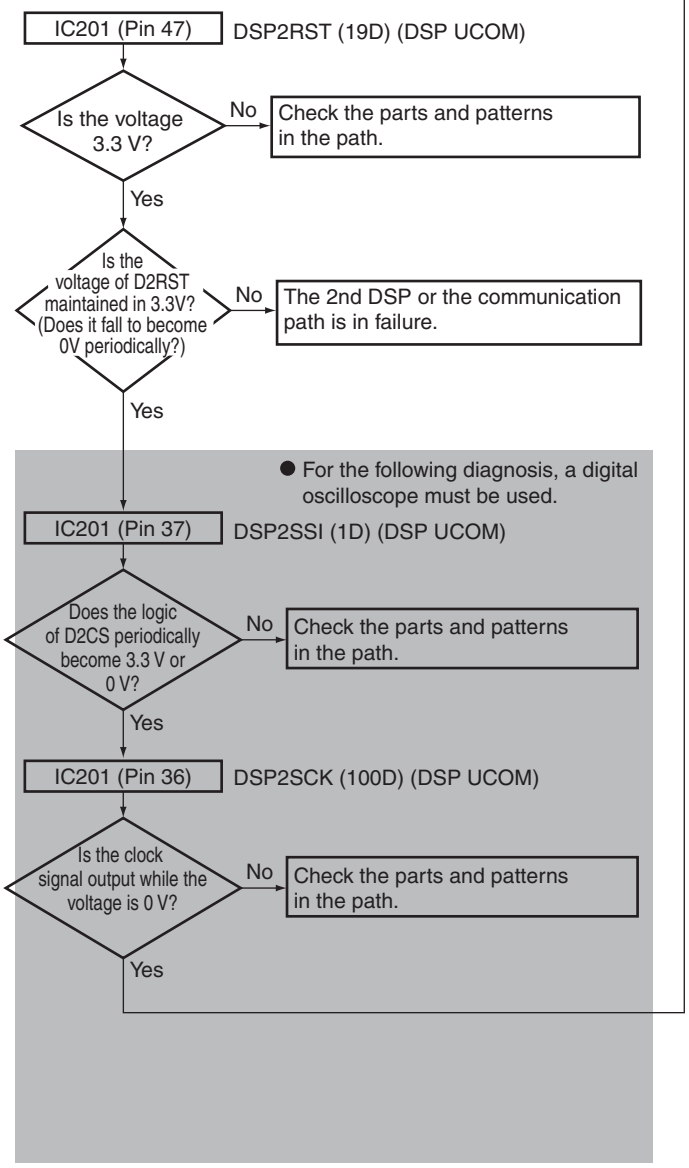


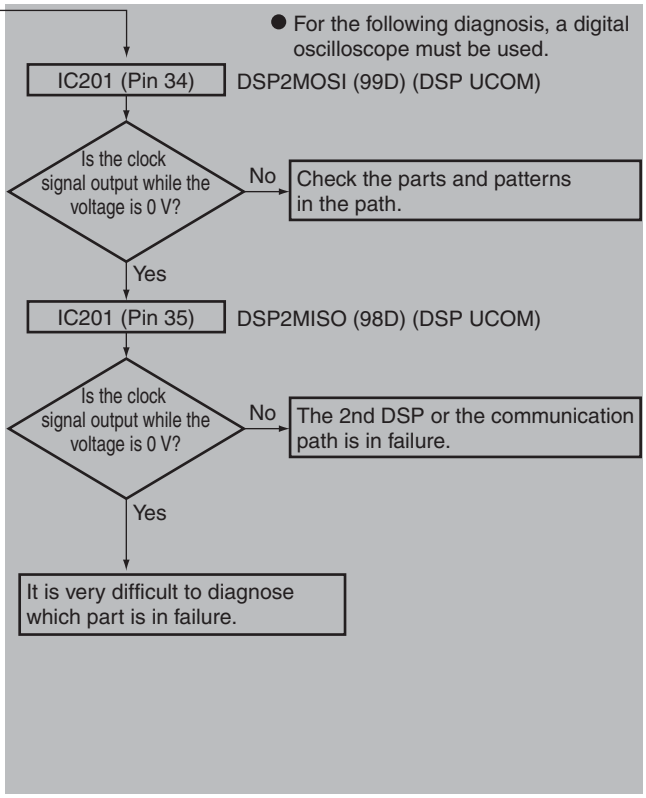
Step 8: 1st DSP





Step 9: 2nd DSP





• Conditions for selecting SPDIF or I2S output from HDMI Assy.

	pcm	fs(kHz)	Layout	SPDIF	I2S(3 lines)
Indistinguishable → DVD-V	Compression DVD-V	48	2ch	◎	×
	Compression *.WAV	44	2ch	○	×
		48	2ch	○	×
	dts-CD	44	2ch	○	×
	PCM	44	2ch	○	×
		48	2ch	○	×
		96	2ch		○
Indistinguishable → DVD-A	LPCM	44	2ch	○	
			Multi	×	○
		48	2ch	○	
			Multi	×	○
		88	2ch		○
			Multi	×	○
		96	2ch		○
			Multi	×	○
		176	2ch	×	○
			Multi	-	-
		192	2ch	×	○
			Multi	-	-

SACD	2ch	×	○	(DSD)
	Multi	×	○	(DSD)

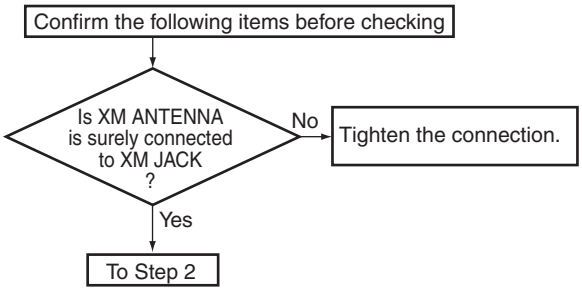
dts HD Master Audio	×	○
dts HD High Resolution Audio	○	×
dts HD LBR	○	×
Dolby TrueHD	×	○
Dolby Digital Plus	○	×

5.3 XM TROUBLESHOOTING

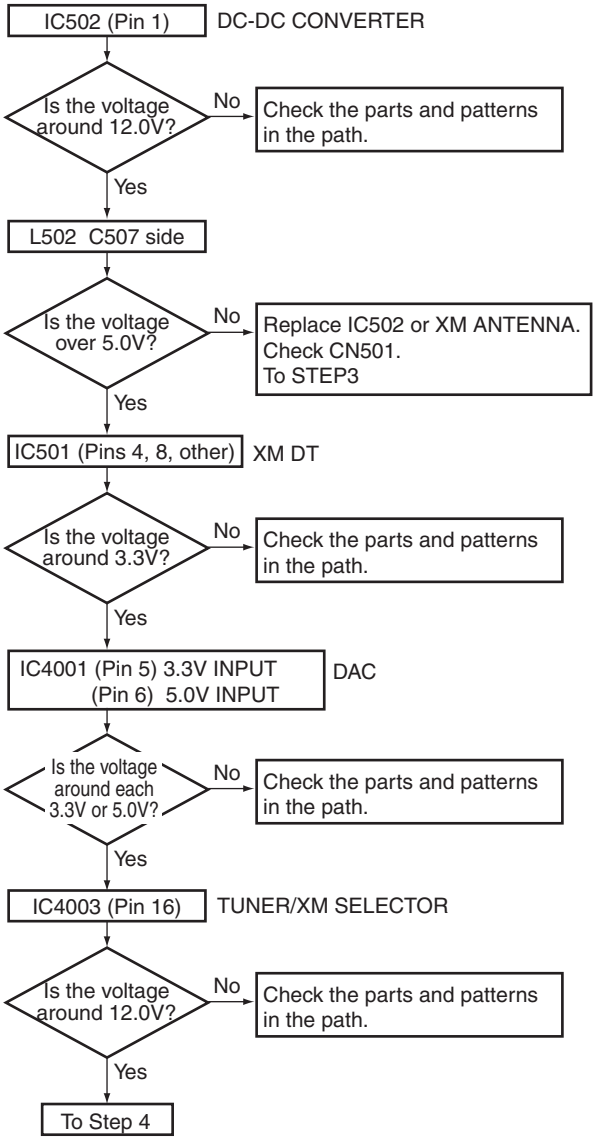
■ Troubleshooting

- This flow is the diagnosis method when there is no reception or no sound output.
- It is assumed that there is no loose connection or damage in the LCRs.
- Refer to Block Diagram beside the Schematic Diagram about the signal flow.

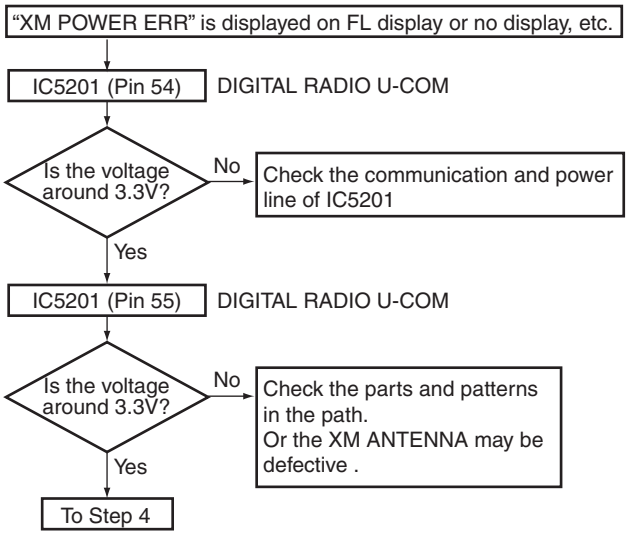
Step 1: Preliminary connecting confirmation



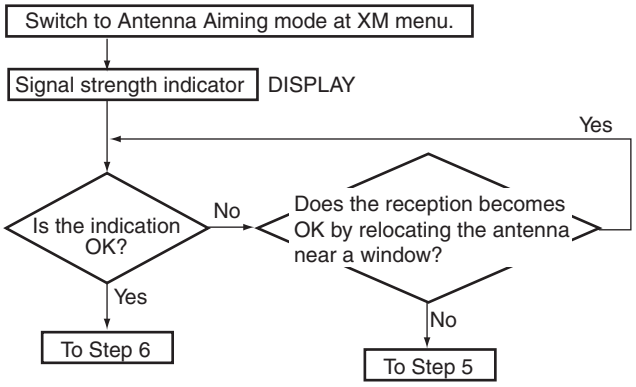
Step 2: Power



Step 3: Abnormal in external Power Supply

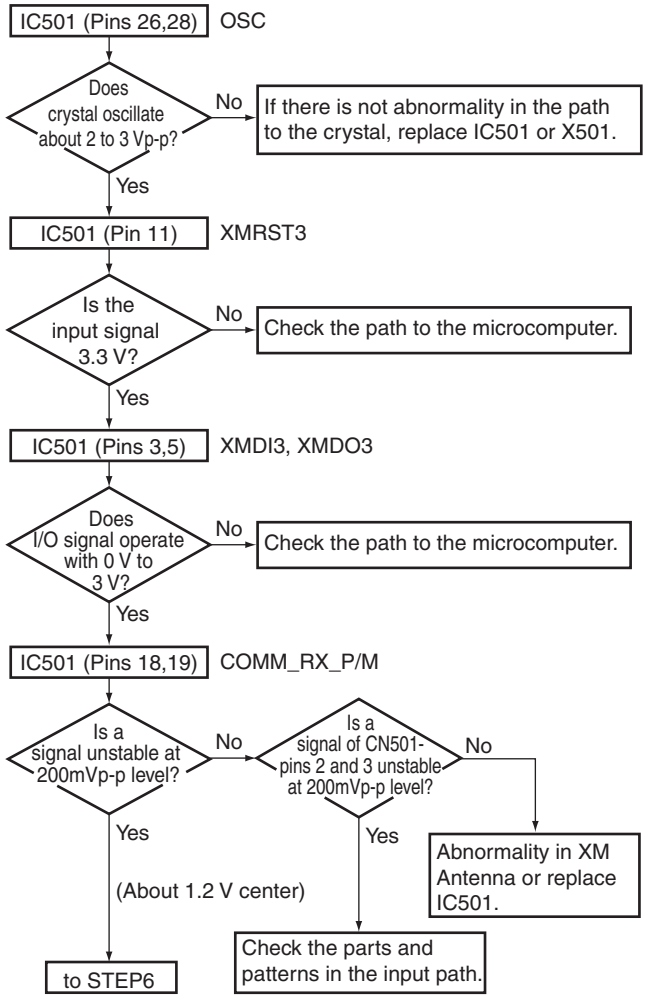


Step 4: Reception Confirmation

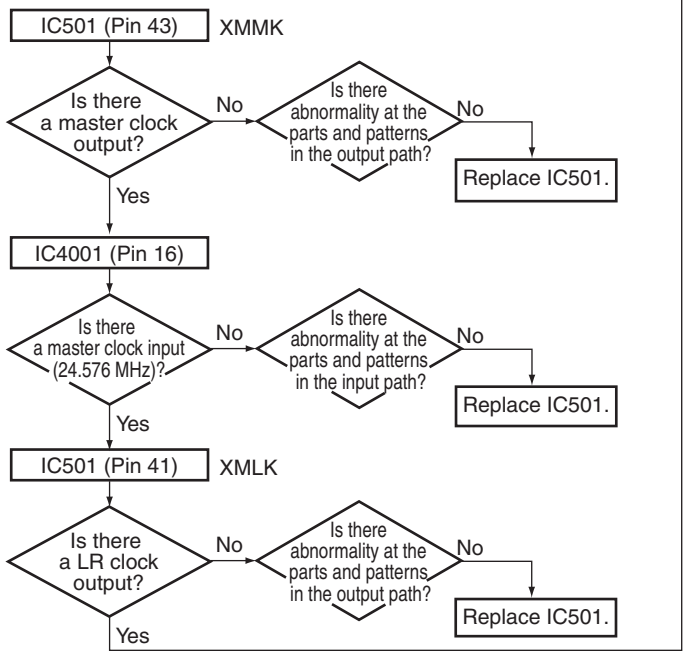


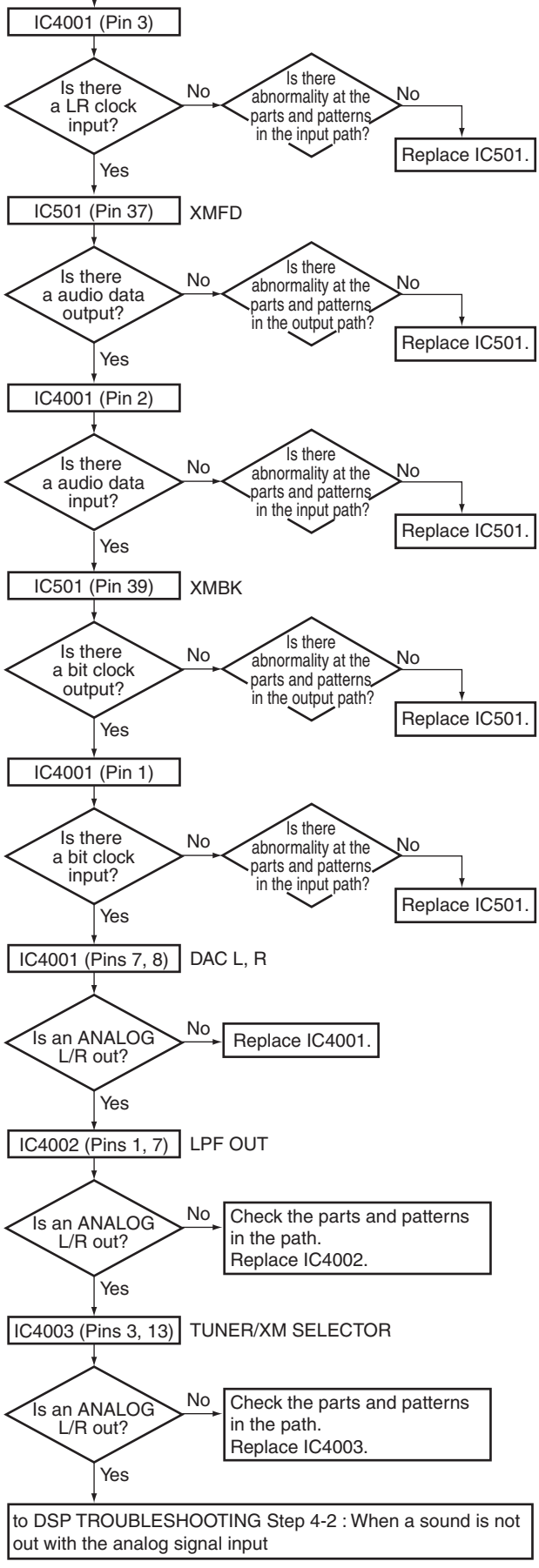
Step 5: Communication Confirmation

Insert the XM Antenna and check it.



Step 6: Sound Confirmation



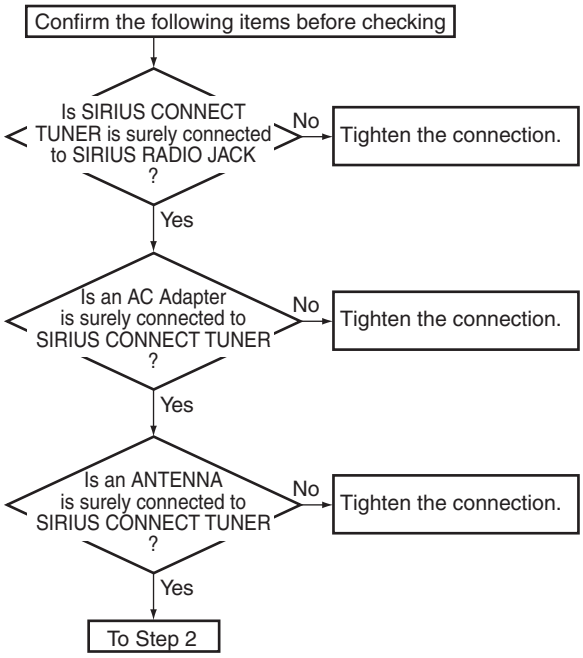


5.4 SIRIUS TROUBLESHOOTING

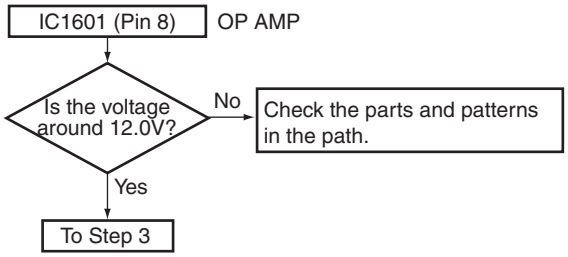
■ Troubleshooting

- This flow is the diagnosis method when there is no reception or no sound output.
- It is assumed that there is no loose connection or damage in the LCRs.
- Refer to Block Diagram beside the Schematic Diagram about the signal flow.

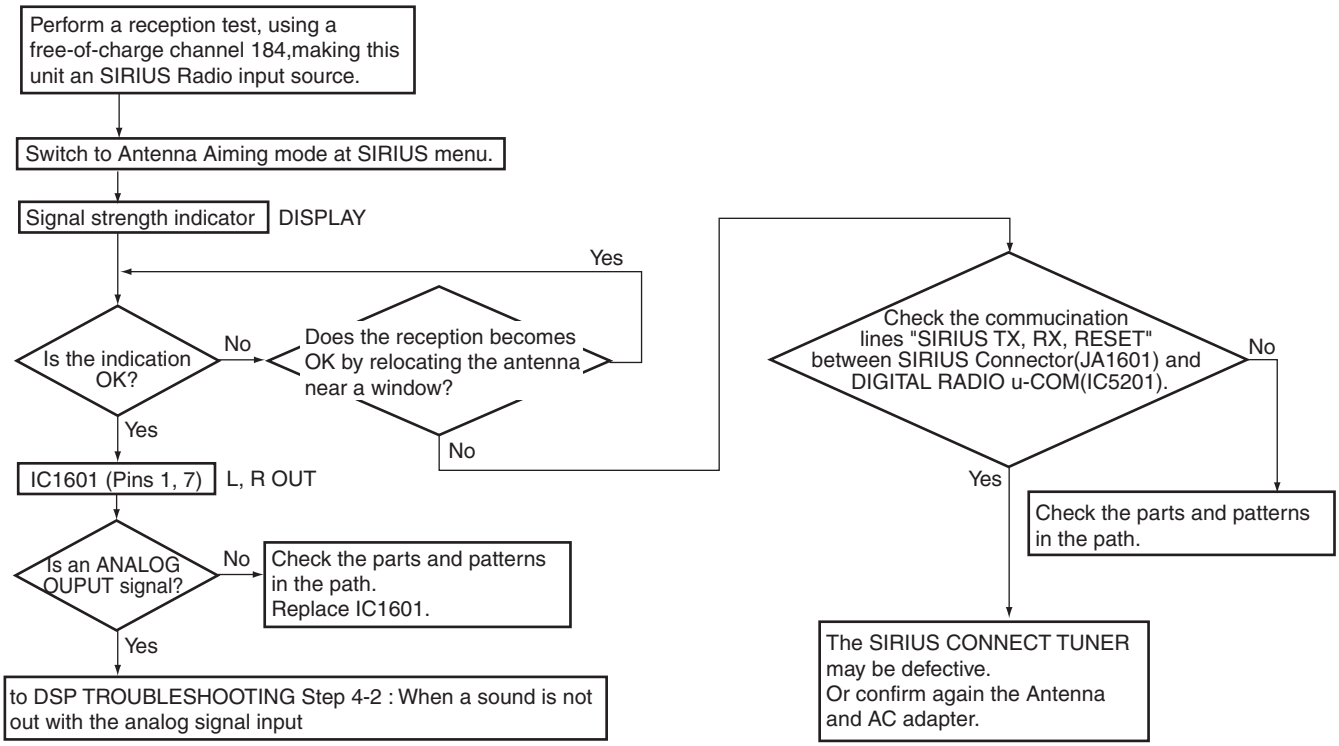
Step 1: Preliminary connecting confirmation



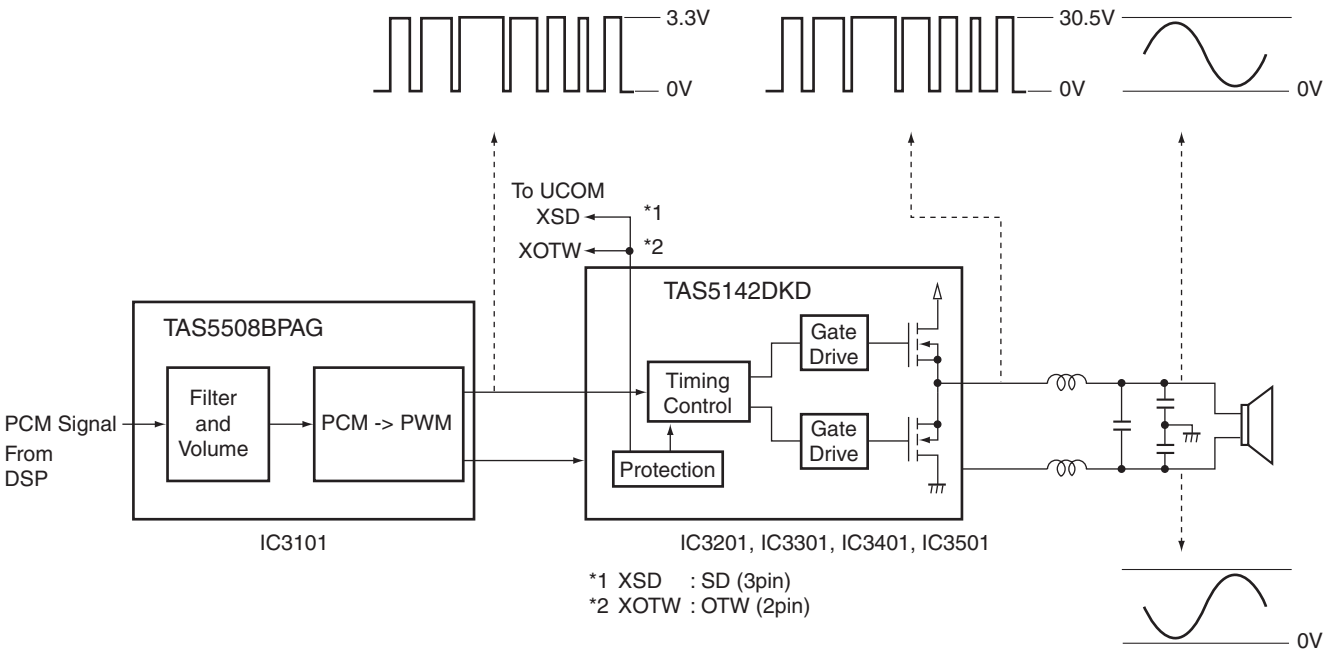
Step 2: Power



Step 3: Reception/Sound Confirmation



5.5 CIRCUIT DESCRIPTION OF DIGITAL AMP. SECTION



PWM Processor section

The PCM signals output from the DSP are input to this section, and their volume and sound quality are digitally adjusted. At the output stage, after conversion from PCM to PWM, the signals are output to the Power stage.

Power Stage section

In this section, timing is controlled so that the MOSFETs on the high and low sides will not be turned on simultaneously. The voltage of the PWM signals are raised to drive the gates of the MOSFET, and the PWM signals to drive the speakers are output from the MOSFET at the output stage. Detection and protection functions against short-circuiting of the output signals and temperature exceeding the standard value are also provided.

If the detection and protection work, the ports of the power stage ICs become the following state.

Power Stage ICs No.	Protection Enable State
IC3201 IC3301	SD (3pin) => L
IC3401 IC3501	OTW (2pin) => L

Output LPF section

The carrier elements, high-frequency signals that are unnecessary for these speakers, are eliminated. The signals passed through the LPF will become sine-wave signals, as shown in the figure above.

5.6 SPECIFICATIONS FOR THE PROTECTION CIRCUITS FOR THE DIGITAL AMPLIFIER

The protection circuits for the Digital Amplifier are activated, following the specifications shown below. The error indication on the FL display shows the reason a protection circuit was activated.
Upon diagnosis of the Digital Amplifier, refer to the specifications for the protection circuits here and the overview of the Digital Amplifier circuitry.

1. Overview

The system microcomputer monitors the ports for shutdown requests (Pin 3: /SD) and the ports for abnormal-temperature detection (Pin 2 : /OTW) of the Power Stage ICs (IC3201, IC3301, IC3401 and IC3501). As soon as any abnormality is detected, it shuts the unit down.
To notify the user of the possibility of a too high a volume, when the unit is turned on the next time, the volume level will be set to 0, and an error message will be displayed on the FL display.

2. Ports on the system microcomputer to be used for detection

Pin 77: SHUTDOWN
Low voltage at this pin means overcurrent at the Power Stage ICs or that the power supply voltage for the gate drive for the Power Stage ICs (= GVDD, Pins 1, 18, 19 and 36), i.e., VG+12 is less than 10V.

Pin 79: XOTW
Low voltage at this pin means the temperature at the Power Stage ICs exceeded 125°C.

Note: As one Power Stage IC is provided with two channels, four Power Stage ICs (in total 8 channels) are mounted in this unit. For abnormality detection, the unit implements a logical OR operation regarding these three ICs. Therefore, which IC is abnormal cannot be known directly. To find which IC is abnormal, it is required to check whether abnormally detection is activated or not with the abnormality detection port of each IC open (by temporarily removing a series resistor (IC3201: R3201, R3202, IC3301: R3301, R3302, IC3401: R3401, R3402, IC3501: R3501, R3502)).

3. Detection timing

Start : Detection starts 500 ms after the PWRCONT port (Pin 78) of the system microcomputer becomes active by your pressing the STANDBY/ON key.

Finish : When the STANDBY/ON key is pressed again (when the power-off process starts).

4. Operation of the protection circuits

The following three protection circuits are activated when the conditions shown below are met:

Overcurrent detection 1: Indication on the FL display: OC ERROR1
Conditions: If the SHUTDOWN ports, which are monitored every 10 ms, become low 7 times in succession.

Overcurrent detection 2: Indication on the FL display: OC ERROR2
Conditions: At the P.CONFIG port (Pin21), which are monitored every 30 ms, 5.2A (ucom threshold 153) is fixed at 3000/6000 (MIN 180 sec/ MAX 270 sec).

Abnormal temperature detection 1: Indication on the FL display: OVERTEMP
Conditions: If the XOTW ports, which are monitored every 10 ms, become low in succession for one minute.

Abnormal temperature detection 2: Indication on the FL display: OVERTEMP
(Prerequisite: The XOTW ports, which are monitored every 10 ms, become low three times in succession.)
Conditions: The above prerequisite is upheld, and the conditions for an overcurrent detection are met.

5. Process when the protection circuits are activated

The unit is shut down within 30 ms after abnormality detection then the volume level is set to 0. The unit can be turned on immediately after the shutdown.

5.7 CONDITIONS FOR SWITCHING THE ROTAIONS SPEED OF THE FAN

A fan is provided with this unit. Its rotation speed can be switched between Low and High by taking the feedback voltage (0 V to 5 V) from DAMP output as FANINFO described below.

1. Conditions for switching the rotation speed from High ⇔ Low

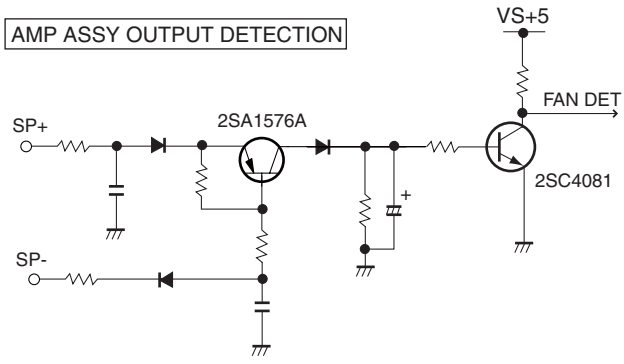
In a case either DAMP output is over 0.125 W (1.0 V) /8Ω, or all output is under the value

- If the FAN INFO port, which are monitored every 30 ms, matches 100 times, the rotation speed is determined as below.
  FAN INFO port (37Pin) = " H " and FAN CONT (81M) = " H " ⇒ Low speed
  FAN INFO port (37Pin) = " L " and FAN CONT (81M) = " L " ⇒ High speed

- When the state is other than POWER ON, the roation speed is fixed to Low.

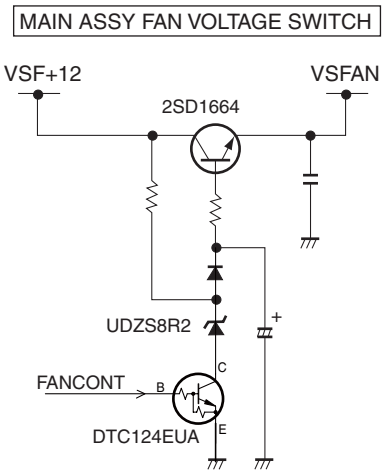
2. Fan drive circuit and drive voltage

The fan drive circuit and the drive voltages at low/high rotation speed are shown below:



FAN DET
H : Low speed
L : High speed

OUTPUT SELECT SETTING
HIGH ⇔ LOW
0.125 W (1.0 V) / 8 Ω



FANCONT
H : Low speed
L : High speed

	Power	Voltage (V)
Low speed	VSF+12	12.0
	VSFAN	7.3
High speed	VSF+12	12.0
	VSFAN	10.7

Note: The above voltage values are references.
They differ from product to product.

5.8 ERROR LIST

■ Error displays

SYS BackUpERR	**System u-com Backup data error (EEPROM)**
DSP BackUpERR	**DSP u-com Backup data error** Suspected causes 1. The communications line to EEPROM/FlashROM is broken or short-circuited. 2. Failure in IC of EEPROM/FlashROM itself.
SAT BackUpERR	**Digital radio u-com Backup data error**
OC Error	**Error due to detection of overcurrent** Refer to P52 " Error due to detection of overcurrent " description.
Over Temp	**Over temperature error** Refer to P52 " Over temperatute error " description.
XM ANT ERR SIRIUS ANT ERR	**(XM/SIRIUS) Antenna Error** "Antenna is not connected."

■ DSP system warning display

192kHz PCM	**Displays when the following function is operated during 192kHz PCM decoding.** • SOUND RETRIEVER
SACD	**It is displayed when the following operation is conducted during DSD of SACD decoding.** • SOUND RETRIEVER
DTS-HD	**It is displayed when the following operation is conducted during DTS-HD decoding.** The warning display varies depending on whether or not it is Master Audio (Lossless). • ADVANCED • F.S.SURR • SOUND RETRIEVER

DTS Express	**It is displayed when the following operation is conducted during DTS Express decoding.** • SOUND RETRIEVER
Dolby TrueHD	**It is displayed when the following operation is conducted during Dolby TrueHD decoding.** • ADVANCED • F.S.SURR • SOUND RETRIEVER
Dolby D+	**It is displayed when the following operation is conducted during Dolby Digital + decoding.** • SOUND RETRIEVER
No MIC	**It is displayed when the following operation is conducted while MIC is not connected.** • MCACC SETUP
Muting	**It is displayed when the following operation is conducted during MUTING.** • TEST TONE • MCACC SETUP
2ch Only	**It is displayed when the following operation is conducted in Multi-ch source (2/0, except LtRt) playing.** • SOUND RETRIEVER
Exit	**When a stream that is prohibited from display (or selection) enters while a menu is displayed, the menu is forced to be exited.** Ex.) • The case where Multi-ch source is input while the panorama menu is displayed.

■ **HDMI warning**

HDMI Through	**When any operation relating to the listening mode is conducted in the HDMI Through mode (for 2 seconds)**
HDCP Error	**HDCP error (authentication error)** **HDMI-LED flashes (when authentication is in process. & authentication error occurs)** * HDMI-LED turns on. (Authentication is completed.)
Not Support	**HDCP error (authentication error)** 1) The source equipment outputs deep color though the HDMI monitor doesn't support deep color "NOT SUPPORT" is displayed, and signals that are set down to 8 bits are output. 2) The source equipment outputs 1080p though the HDMI monitor doesn't support 1080p. "NOT SUPPORT" is not displayed, and no signal is output.

■ **Digital radio warning**

AcquiringSignal	**(XM/SIRIUS) Acquiring Signal** "Non-signal"
SubscriptionUpdating Scroll	**(XM/SIRIUS) Subscription Updating** "Subscription data is updating"
UpdatingChannels Scroll	**(XM/SIRIUS) Updating Channels** "Channel data is updating"
InvalidChannels Scroll	**(XM/SIRIUS) Invalid Channel** "Invalid channel is selected"
Call 885-539-SIRIUS Scroll	**(XM/SIRIUS) Ex.) Call 885-539-SIRIUS** to Subscribe "Unsubscribed channel"

■ HDMI-CEC warning

Unknown
5-second one-shot

Unknown genre
The genre information "Unknown" is sent from DVR.
It is supposed that the [Genre] button is pressed with No Disc, during loading of disc, etc.

No Genre
5-second one-shot

No Genre
The genre information "Undefined or others" is sent from DVR.
DVR cannot judge the genre appropriately. There is no genre.

Can't Use
5-second one-shot

Can't Use
The genre interlocking operation was conducted to the source equipment having no genre interlocking function.
The source equipment cannot execute a genre interlocking (for example, when the tray is open.)
Genre interlocking was executed while the function of the main unit was not HDMI. (Only with the HDMI function, genre interlocking is enabled.)

HDMI C.ERR *
5-second one-shot

CEC command error display (HDMI CONTROL ERR)
The last 3-digit numbers *** indicates the cause of error. (below chart)
The relationship between an error number and an error content are as follows:

● **Error number list**

110	Automatic logic address	Command error	Check the connection of HDMI cable. The cable may be broken. (The main unit or the connected device may be broken.)
120	GibePhysicalAddress	Command error	
130	Get CEC Version undecided	Command error	
140	Give Device Vendor ID undecided	Command error	
150	VCID Give Command Level undecided	Command error	
160	Give Device Power Status undecided	Command error	
170	Set System Audio Mode undecided	Command error	
180	Request Active Source undecided	Command error	
190	VCID TV switch request undecided	Command error	
1A0	VCID lip-sync request undecided	Command error	
1B0	VCID volume display undecided	Command error	
1C0	VCID genre request undecided	Command error	
2C0	VCID genre request undecided	Time-out error	The unit may be connected with the device that doesn't support a genre interlocking function. The connected device may be in the state that doesn't enable a genre interlocking function (While the power is OFF, etc.)

Initial setting values

* Clear = Return to the initial setting value.

	Setting name		Initial value	Setting range	Step	Standby	AC OFF	Memory clear
SYSTEM	FUNCTION		HDMI1	All functions	-	Memory	Memory	clear
	MASTER VOLUME		0	0 - 59, MAX	1	Memory	clear	clear
	MUTE		OFF	OFF / ON	-	clear	clear	clear
	PROTECT		-	-	-	Memory	Memory	Memory
SOUND SETUP	DISTANCE	L	(Except the North America) 3.0m (Only the North America) 10.0ft	(Except the North America) 0.1m - 9.0m (Only the North America) 0.5ft - 45.0ft	(Except the North America) 0.1m (Only the North America) 0.5ft	Memory	Memory*2	clear
		C	(Except the North America) 3.0m (Only the North America) 10.0ft	(Except the North America) 0.1m - 9.0m (Only the North America) 0.5ft - 45.0ft	(Except the North America) 0.1m (Only the North America) 0.5ft			
		R	(Except the North America) 3.0m (Only the North America) 10.0ft	(Except the North America) 0.1m - 9.0m (Only the North America) 0.5ft - 45.0ft	(Except the North America) 0.1m (Only the North America) 0.5ft			
		SR	(Except the North America) 3.0m (Only the North America) 10.0ft	(Except the North America) 0.1m - 9.0m (Only the North America) 0.5ft - 45.0ft	(Except the North America) 0.1m (Only the North America) 0.5ft			
		SL	(Except the North America) 3.0m (Only the North America) 10.0ft	(Except the North America) 0.1m - 9.0m (Only the North America) 0.5ft - 45.0ft	(Except the North America) 0.1m (Only the North America) 0.5ft			
		SW	(Except the North America) 3.0m (Only the North America) 10.0ft	(Except the North America) 0.1m - 9.0m (Only the North America) 0.5ft - 45.0ft	(Except the North America) 0.1m (Only the North America) 0.5ft			
	CH LEVEL	L	0	-10.0dB - +10.0dB	0.5dB	Memory	Memory*2	clear
		C	0	-10.0dB - +10.0dB	0.5dB			
		R	0	-10.0dB - +10.0dB	0.5dB			
		SR	0	-10.0dB - +10.0dB	0.5dB			
		SL	0	-10.0dB - +10.0dB	0.5dB			
		SW	0	-10.0dB - +10.0dB	0.5dB			
	D.R.C.		OFF	OFF / MID / HIGH / AUTO	-	Memory	Memory*2	clear
	DUALMONO		CH1 MONO	CH1 MONO/CH2 MONO/CH1/CH2	-	Memory	Memory*2	clear
	VIRTUAL SURROUND BACK		AUTO	ON/OFF/AUTO	-	Memory	Memory*2	clear
	LFE ATT		0dB	0dB/-5dB/-10dB/-15dB/-20dB/OFF	-	Memory	Memory*2	clear
TUNER SETUP	ST.Memory		-	-	-	Memory	Memory	clear
	FM MODE		AUTO	AUTO / MONO	-	Memory	clear*1	clear
	NOISE CUT		MODE1	MODE1 / MODE2 / MODE3	-	Memory	clear*1	clear
	TUNER F.STEP (Generally, only in the North America)		(Generally) 9k, (North America) 10K	9k 50k / 10k 100k	-	Memory	clear	clear
SYSTEM SETUP	DIMMER		OFF	OFF / ON	-	Memory	clear	clear
	TV input setting		OPT1	OPT1/OPT2/ANALOG	-	Memory	Memory	clear
HDMI SETUP	HDMI AMP/THROUGH		AMP	AMP/THROUGH	-	Memory	Memory	clear
	Auto Delay		OFF	OFF / ON	-	Memory	Memory	clear
	HDMI_CONTROL		ON	OFF / ON	-	Memory	Memory	clear
SOUND	TONE		BASS/TREBLE	BASS/TREBLE / MIDNIGHT / LOUDNESS / QUIET (MANNER)	-	Memory	Memory*2	clear
	BASS/TREBLE	BASS	0	-6 - +6	1	Memory	Memory*2	clear
		TREBLE	0	-6 - +6	1			
	SOUND DELAY		0	0-60 (0.0frame-6.0frame@NTSC)	1	Memory	Memory*2	clear
	MCACC EFFECT		ALL ON	ALL ON /ALL OFF	-	Memory	Memory	clear
	CENTER WIDTH		3	0 - 7	1	Memory	Memory*2	clear
	DIMENSION		0	-3 - +3	1	Memory	Memory*2	clear
	PANORAMA		OFF	OFF / ON	-	Memory	Memory*2	clear
	CENTER IMAGE		3	0 - 10	1	Memory	Memory*2	clear
LISTENING MODE	LISTENING MODE		SURROUND	SURROUND / ADVANCED / F.S.SURR / DIRECT	-	Memory	Memory*2	clear
	SURROUND		AUTO	(2ch) AUTO / MOVIE / MUSIC / GAME / PRO LOGIC / STEREO (Multi ch) AUTO / STANDARD /	-	Memory	Memory*2	clear
	ADVANCED		ACTION	ACTION / DRAMA / SCI-FI / MONO FILM / ENT.SHOW / EXPANDED / TV.SURROUND / ADV.GAME / CLASSICAL / ROCK/POP / UNPLUGGED/EXT.STEREO	-	Memory	Memory*2	clear
	FRONT STAGE SURROUND		FOCUS	FOCUS / WIDE / EXTRA POWER		Memory	Memory*2	clear
	DIRECT		DIRECT	-	-	Memory	Memory*2	clear
	SOUND RETRIEVER		OFF	OFF / ON	-	Memory	Memory*2	clear
	EffectiveSound		EffectiveSound	EffectiveSound / DirectSound	-	Memory	clear	clear
TESTMODE (Reference)	Power-ON time					Memory	Memory	Memory
	Receiving prohibition time of CEC command "Set Stream Path"		11	0-27	1	Memory	Memory	Memory

* It is cleared when the service mode is exited.

*1 With Station Memory, the settings are stored in the station memory. Without Station Memory, the settings are cleared.

*2 When the AC is turned off while the power is ON, the backup funciton of DSP and XM•SIRIUS is disabled. (When the AC is turned off while the power is OFF, the backup function is enabled.)

The Memory system at the AC OFF is set as EEP ROM, and the capacity is limited. (128 bytes)

: Memory backed up by DSP u-com
: Memory backed up by the digital radio u-com
: Memory backed up by the system u-com

6. SERVICE MODE
6.1 TEST MODE

■ Indication of version

[Purpose]

The version and destination information of software for each microcomputer is indicated.

[How to enter/exit]

Keep pressing the INPUT SELECT on the Display unit for 8 seconds while the power is turned ON.

[Basic operations]

FL Display	Duration (sec.)	Devices that can be considered generally normal, with the corresponding indications
KU SYS **** ↓ DSP **** ↓ DSP1 **** ↓ DSP2 **** ↓ HDMI **** ↓ SAT **** ↓ Normal display	3 3 3 3 3 3	System microcomputer DSP microcomputer 1st DSP 2nd DSP HDMI microcomputer Digital Radio microcomputer

[Note]

The destination information is indicated at the same time when the System u-com version is indicated.
North America: KU (Europe: WY, General: DD, Japan: J)

■ Memory clear

[Purpose]

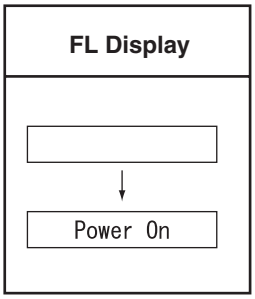
It can clear the settings related to the system to initialize them.

[How to enter/exit]

Step (1):
INPUTSELECT+POWER (Press together) (on the Display unit only)
Step (2):
POWER (on the Display unit only)

[Basic operations]

Conduct the operation while the power is turned ON.



Press the "POWER" and "INPUT SELECT" buttons together on the Display unit while the power is ON, and the power is turned OFF.
Then, press the "POWER" key to turn the power ON, and Memory Clear is completed.

6.2 SERVICE TEST MODE

1. Configuration and conditions at check

- During the service test mode, an emergency shutdown operation is not executed even if any of the errors described below in "5. Contents of failures" occurs. (Errors are neglected.)
- In the normal mode, even if an emergency shutdown due to detection of any failure described below occurs, POWER ON is enabled within one minute.

2. How to enter the service test mode

Immediately after the power is turned off (within 5 seconds after the "-OFF-"display goes out), keep pressing the INPUT SELECT and POWER buttons on the Display unit for 5 seconds.

[When it is unable to enter the service mode by the way above] (When HDMI control is Control Off.)

Once unplug the power cord. While keeping pressing the INPUT SELECT and POWER buttons on the Display unit, plug in the power cord again, then hold keeping pressing both buttons for 5 seconds.

3. Operation at the time of getting in the service test mode

The function is set to HDMI1 and the power is automatically turned on.

- Depending on the operation before entry, whether the power is normally turned off or an emergency shutdown due to detection of a failure was executed, the FL display shows differently as follows:
- To obtain the output for Multi-CH, set the listening mode to the Ext.Stereo (5chStereo) mode.

[FL Display]

FL display `Power On` * Power on display
⇩
FL display `Volume 20` * Last volume
⇩
FL display `HDMI 1SERV` * HDMI1 function

[After shutdown due to detection of overcurrent]

FL display `OC Error`
⇩
FL display `Volume 20`
⇩
FL display `HDMI 1SERV`

[After shutdown due to EEPROM failure]

FL display `SYS BackUpERR`
⇩
FL display `Volume 20`
⇩
FL display `HDMI 1SERV`

FL display `SAT BackUpERR`
⇩
FL display `Volume 20`
⇩
FL display `HDMI 1SERV`

[After shutdown due to detection of abnormal temperature]

FL display `Over Temp`
⇩
FL display `Volume 20`
⇩
FL display `HDMI 1SERV`

* To exit the service mode, turn the POWER OFF.
* When the service test mode is exited, only the above failure-related RAM is initialized. (User settable RAM is not initialized.)

- When an EEPROM failure of DSP occurs, "DSP BackUpERR" is displayed in 15 seconds after the power is turned on.

[In the case of EEPROM failure of DSP]

FL display `Power On`
⇩
FL display `Volume 20`
⇩
FL display `DSP BackUpERR`

4. Contents of operation

• Basically, the operation of the service test mode is the same as that of the normal mode. In order to indicate that the operation is in the test mode, the displays by function are as shown below.

[Functions]	[FL display]
HDMI1	HDMI 1SERV
HDMI2	HDMI 2SERV
HDMI3	HDMI 3SERV
Digital1	Digital 1SERV
Digital2	Digital 2SERV
Analog (RCA)	Analog SERV
ipod	ipod SERV
F.AudioIn	F.Audio ISERV
FM/AM	Tuner SERV
XM	XM RadiSERV
SIRIUS	SIRIUSSERV

5. Contents of failures

• The contents of failures are classified depending on the error displayed at POWER ON as follows:

Error due to backup failure

SYS BackUpERR	Backup error for PDC157A8,164A8(system u-com) control
SAT BackUpERR	Backup error for PEG393(digital radio u-com) control

When an EEPROM failure of DSP occurs, "DSP BackUpERR" is displayed in 15 seconds after the power is turned on.

DSP BackUpERR	Backup error of PEG117 (DSP u-com) control

In any case, the following causes are suspected:

1. The communication line to EEPROM (or Flash ROM) is broken or short-circuited.
2. The IC of EEPROM (or Flash ROM) itself has a defect.

Error due to detection of overcurrent

OC Error1

OC Error2

- If "OC ERROR" doesn't occurs in the next operation when the power is turned on in the normal mode, it is suspected that the speaker terminal may be short-circuited.
  1. When the customer set up, the volume was increased with the both poles of SP cable being short-circuited.
  2. When the customer set up, the conductor of SP cable was in contact with the chassis of main unit.
- If "OC ERROR" occurs again, the following causes may be suspected:
  1. Any (or some) of the four digital amplifier ICs (TAS5142DKD) in the AMP ASSY may be broken.
  2. Any portion between the above digital amplifier ICs and the speaker terminal may be short-circuited.
  3. At any portion between the above digital amplifier ICs and the system component (PDC157A8), the line for SHUTDOWN may be short-circuited to the ground or broken.
  4. The voltage of VG+12 is low (less than 10V).

Over temperature error

Over Temp

- If "OVERTEMP" doesn't occur in the next operation when the power is turned on in the normal mode, there is no abnormality. (It may be a temporary over temperature. Lower the volume.)
- If "OVERTEMP" occurs again, the following causes may be suspected:
  1. Any (or some) of the four digital amplifier ICs (TAS5142DKD) in the AMP ASSY may be broken.
  2. At any portion between the above digital amplifier ICs and the system component (PDC157A8), the line for XOTW may be short-circuited to the ground or broken.
  3. The heat sink is not installed properly. (Screws are loosened, silicone grease is not applied, etc.)

6. Power-ON time display

• Keep pressing the INPUT SELECT key on the main unit while the power is ON.

Power-ON time 10H50M

- The Power-ON time is counted as long as the power it ON irrespective of function and operation. (It is not counted during standby.)
- The maximum counting time is 255H59M. (If the Power-ON time exceeds 255H59, the display doesn't change.)
- Basically, the time cannot be cleared.

7. Setting of the time length of reception prohibition of the CEC command "Set Stream Path"

• Enter the setup menu by the SYSTEM SET UP key during POWER ON and select HDMI Setup.

← HDMI Setup →

• The menu "EX.SSP" appears only in the service mode. Select it.

← HDMI Mode →
⇕
← Auto Delay →
⇕
← HDMI Ctrl →
⇕
← EX.SSP →

• Using the ↑↓ keys, change the numeric value (0 to 27: Default 11) and confirm it by the ENTER key.

EX.SSP 11

* The menu "EX.SSP" is not used when servicing.

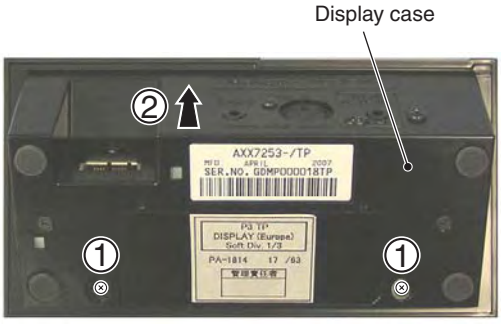
7. DISASSEMBLY

Note : Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

1 DISPLAY Unit

① Remove the two screws.

② Open the display case.



● Bottom view

③ Remove the four screws.

④ Remove the shield plate.

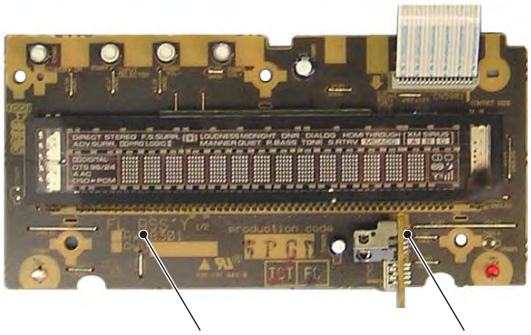
⑤ Disconnect the flexible cable.

⑥ Remove the FL Assy.

Shield plate

H FL Assy

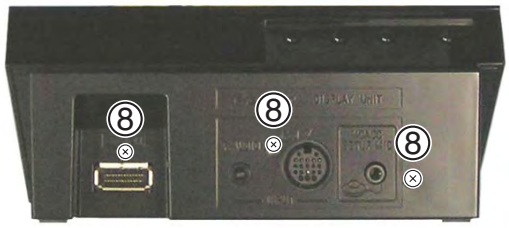
⑦ Remove the REMOCON Assy.



H FL Assy

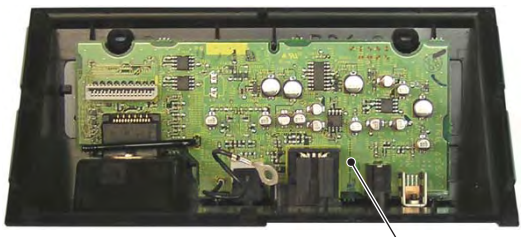
I REMOCON Assy

⑧ Remove the three screws.



● **Rear view**

⑨ Remove the AINB Assy.

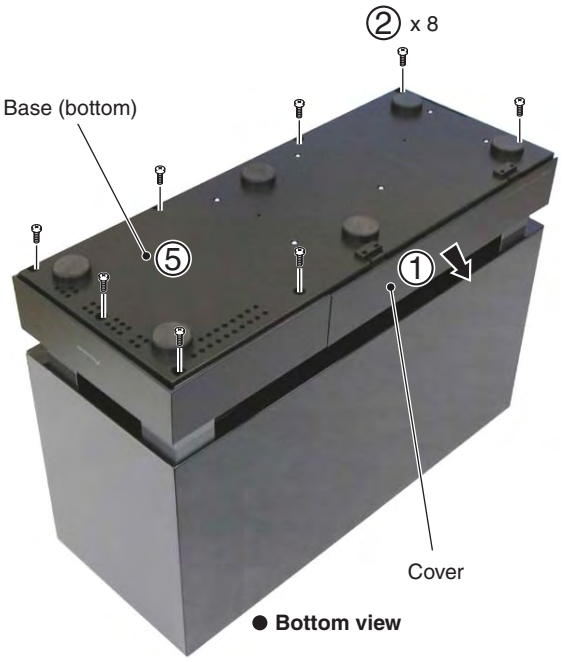


G AINB Assy

2 Speaker

① Remove the cover.

② Remove the eight screws.



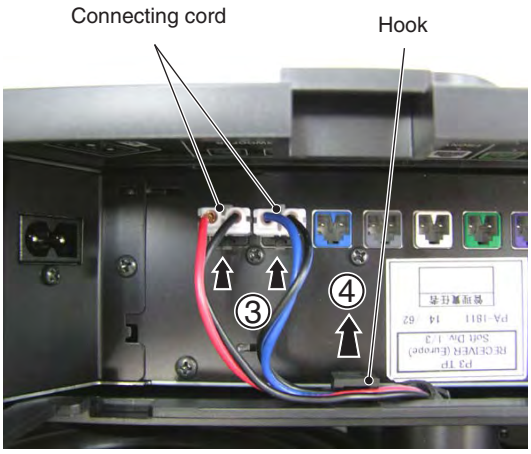
● **Bottom view**

③ Disconnect the connecting cord.

④ Remove the connecting code from the hook.

NOTE: Do not damage the connecting cord.

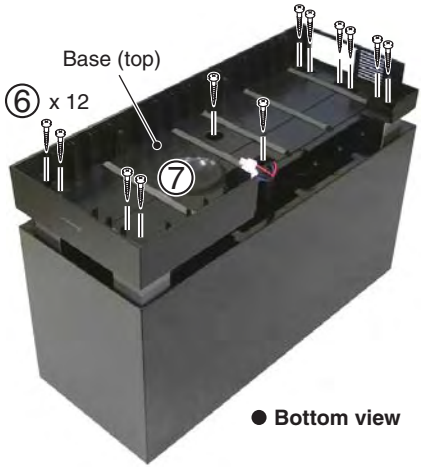
⑤ Remove the Base (bottom).



● **Side view**

⑥ Remove the twelve screws.

⑦ Remove the base (top).

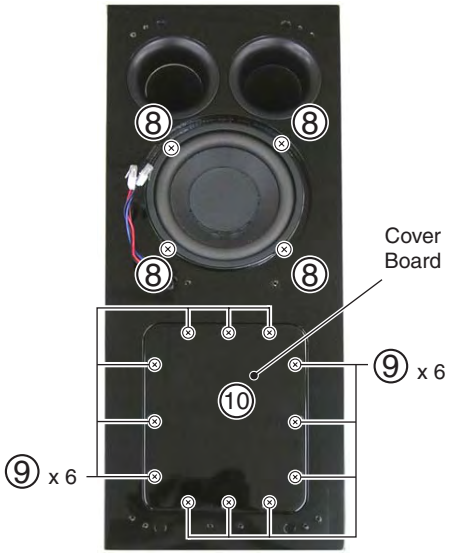


● **Bottom view**

⑧ Remove the four screws.

⑨ Remove the twelve screws.

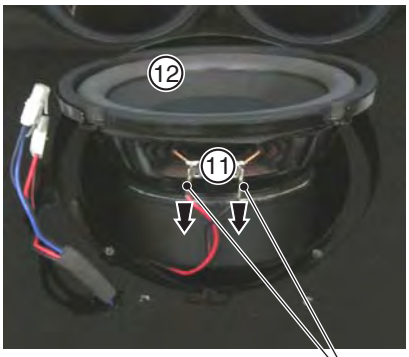
⑩ Pull up the cover board.



● **Bottom view**

⑪ Remove the connecting cord.

⑫ Remove the speaker.



● **Bottom view**

Connecting cord

⑬ Remove the four screws.

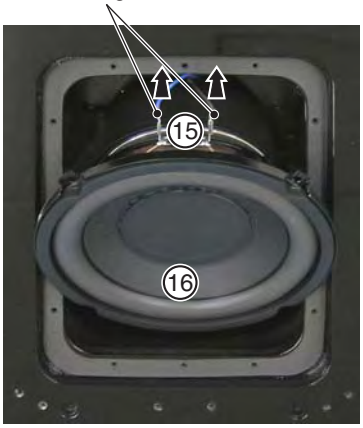
⑭ Pull out the speaker.

● **Bottom view**

⑮ Remove the connecting cord.

⑯ Remove the speaker.

Connecting cord

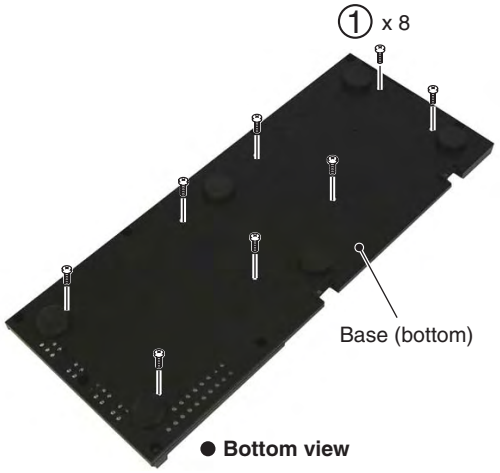


● **Bottom view**

3 RECEVER Unit

① Remove the eight screws.

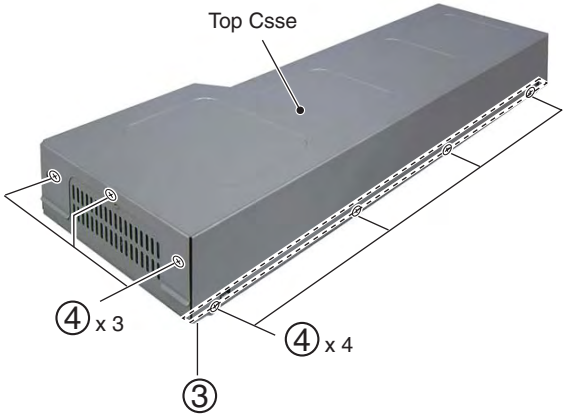
② Remove the base (bottom).

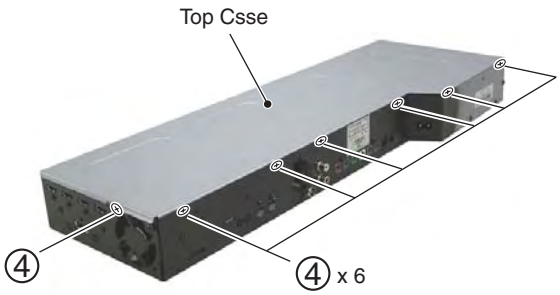


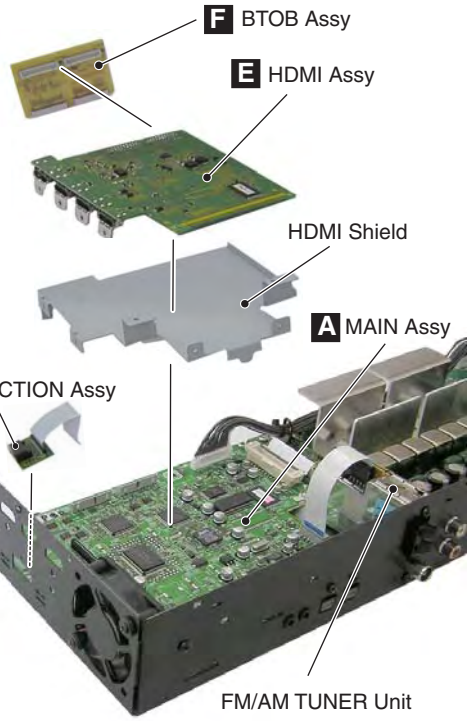
③ Remove the packing.

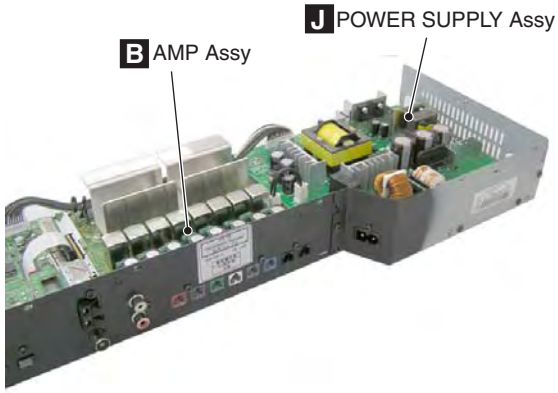
④ Remove the fourteen screws.

⑤ Remove the top case.



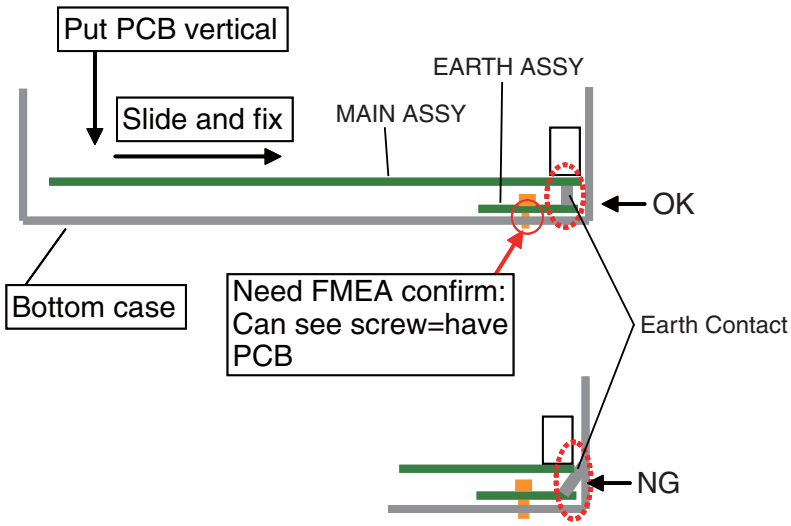






4 CAUTION ON EARTH ASSY

Be catefull during fix PCB to base chassis
by ensure earth contact not bend.
Please refer step below.



8. EACH SETTING AND ADJUSTMENT

8.1 ADJUSTMENT

There is no information to be shown in this chapter.

8.2 HOW TO UPDATE THE FLASH ROMS FOR VARIOUS MICROCOMPUTERS

■ System, HDMI and DSP microcomputer

[Purpose]

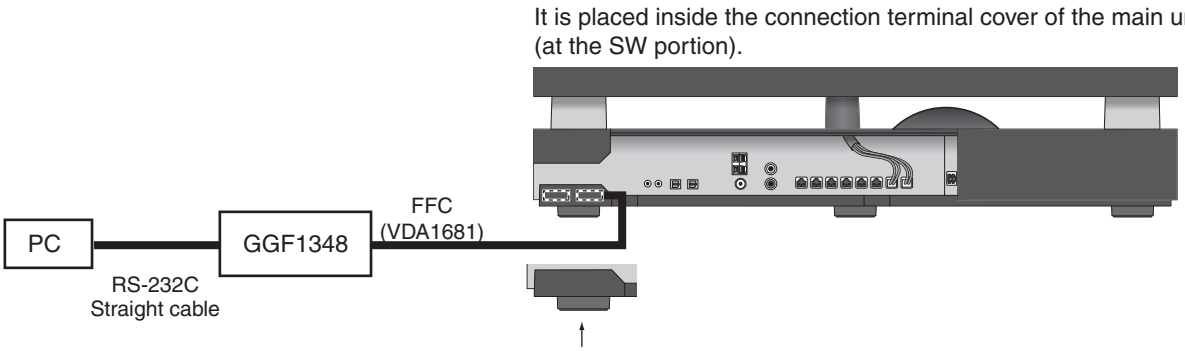
Refer to this section when updating the firmware of each microcomputer is required by the service information, etc.

[Necessary Tools]

- PC with RS232C port
- RS-232C straight cable (9pin female ↔ 25pin male)
- RS-232C Interface jig : GGF1348
- 7 pin FFC : VDA1681
- Updating program : UFU.exe
- Firmware file : ".mot" file

[Connections]

Connect as shown in the figure below.

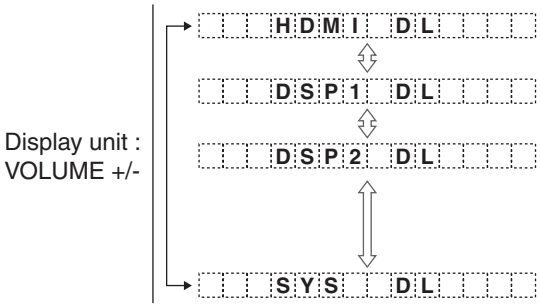


[Note]

Do NOT disconnect the AC power cords of this unit and the PC during a downloading.

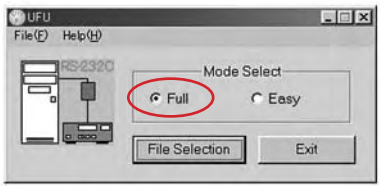
[Procedures]

1. Set the main volume level to "0" then turn off the unit (Standby mode).
2. Connect the PC and the unit as shown in "Connections".
3. Keep pressing the "VOL +" and "POWER" keys on the display (for 2 seconds) till the AC power is turned on.
   When the power is turned on, the download menu appears.
   Using the VOL+/- on the display unit, select the microcomputer to be downloaded, and press the INPUT SELECT button on the display unit.
   → "DownLoading" is displayed and the POWER LED (blue) flashes.

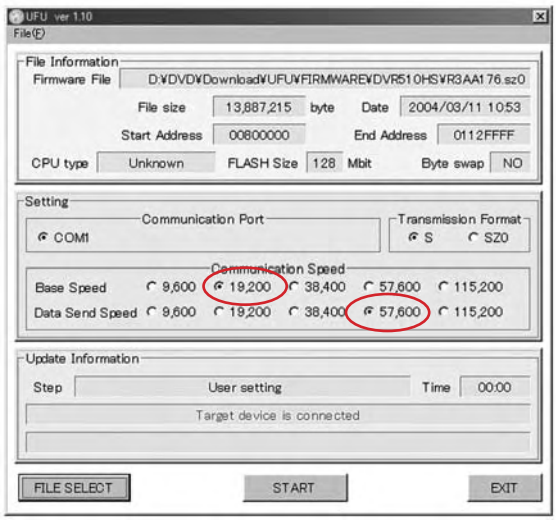


   * DSP1 cannot be updated by the above procedure (RS232C). Do not select it.

4. Double-click the "UFU.exe".
5. Check that "Full" is selected in Mode Select.



6. Select the firmware file (.mot file) for updating each ucom.
   Note: Do NOT download the firmware file for other ucom.
7. Select the communication speed.
   • Basic speed: 19200
   • Data transfer speed: 57600



8. Click the "START" button.
9. "Completed" is displayed on the "UFU.exe" window about 5 minute later.
10. Disconnect the AC power cord of the unit.
    After downloading is completed on UFU, disconnect the AC plug. (Wait for several seconds after the AC plug is disconnected.)
    When a plurality of microcomputers need to be burned, repeat the above steps (1) to (7).
11. After updating of all microcomputers is completed, execute Memory Clear.
    Turn on the main unit. Then, press the POWER button while pressing the INPUT SELECT to set the unit in the standby state.
12. Check the version.
    Please refer to "Indication of version" (P49) and check that the version has been changed to a new one.

8.3 HOW TO UPDATE THE DSP FLASH ROM BY PLAYING BACK A CD

■ DSP FLASH ROM

[Purpose]

Refer to this section when updating the DSP flash ROM firmware is required by the service information, etc.
It is able to update the DSP flash ROM firmware by playing back a CD-R which is recorded a DSP firmware (.wav file) via digital connection.

[Necessary Tools]

- DVD player
- Optical cable
- Update disc (CD-R disc)

Note:
Please use DVD player based on MTK system (DV-270, 370, 373, 575K, 280, 380, 383, etc.),Mitsubishi system (DV-59AVi, 868AVi, S969AVi, 668AVi, etc.) and Fujitsu system (DV-343, 444, 545, etc.).
DO NOT use DVD player based on ST system (DV-353, 454, 250, 400, 555K, 260, 363, 464, 466, 563, etc.).
The factory confirmed that DVD players based on ST system cannot send the correct data to the receiver.
You can check the base system of our DVD players on the firmware version list at PSN web (Niis).

[Connections]

Connect as shown in the figure below.

[Preparations]

Burn the DSP flash ROM firmware (.wav file) to a CD-R disc using commercially available burning software.
It is necessary to select the writing format to "For music player", not "For PC data".

Note:
Depending on a burning software, data on a CD-R may not be worked for updating the DSP flash ROM.
If the "□□ PRO LOGIC II segment" does not flash when playing back a update disc, the disc is not able to use for updating.
Burn the DSP flash ROM firmware to a CD-R disc, using other burning software.

[Note]

- Do NOT disconnect the AC power cords of this unit and the CD/DVD player during a updating.
- When updating is completed, the flashing FL display gets to stay illuminated.
  If the flashing FL display doesn't get to stay illuminated, updating has not been completed correctly. Be sure to perform the updating procedures again.

[Procedures]

1. Check the version of the DSP flash ROM (1st DSP).
   Please refer to "Indication of version" (P49).

2. Connect a DVD player
   Connect the DVD player for updating to DIGITAL1 input jack of this unit.

3. To get in the downloading mode
   Turn on the AC Power of the main unit and set it in the standby state.
   Keep pressing both the VOL+ and POWER buttons on the Display unit for 2 seconds or more. Then, the power is turned on and the download menu appears.
   Press the VOL+/- button on the Display unit to select "DSP1 DL". Then, press the INPUT SELECT button on the Display unit.
   * The download menu appears only when VOL 0 is set.

   ⇒ "DownLoading" is displayed on the FL, and the POWER LED (blue) flashes.

[Procedures]

4. To start downloading
   Place the upgrade CD-R on the tray of the DVD player and press the PLAY button.
   Download time is about 2 and a half minutes.
   * Do Not to turn off the power or stop CD playback during download.

   ⇒ In several seconds after playback of Trk.1 starts, "□□PRO LOGIC II" segment of FL will start flashing.

5. To end downloading
   When downloading is completed (when some of Trk2 is played back after the playback of Trk1 ends), the "□□PRO LOGIC II" segment gets to stay illuminated. Turn off the power of P3 and stop the replay of CD-ROM. Now, the upgrade of 1st DSP is completed.

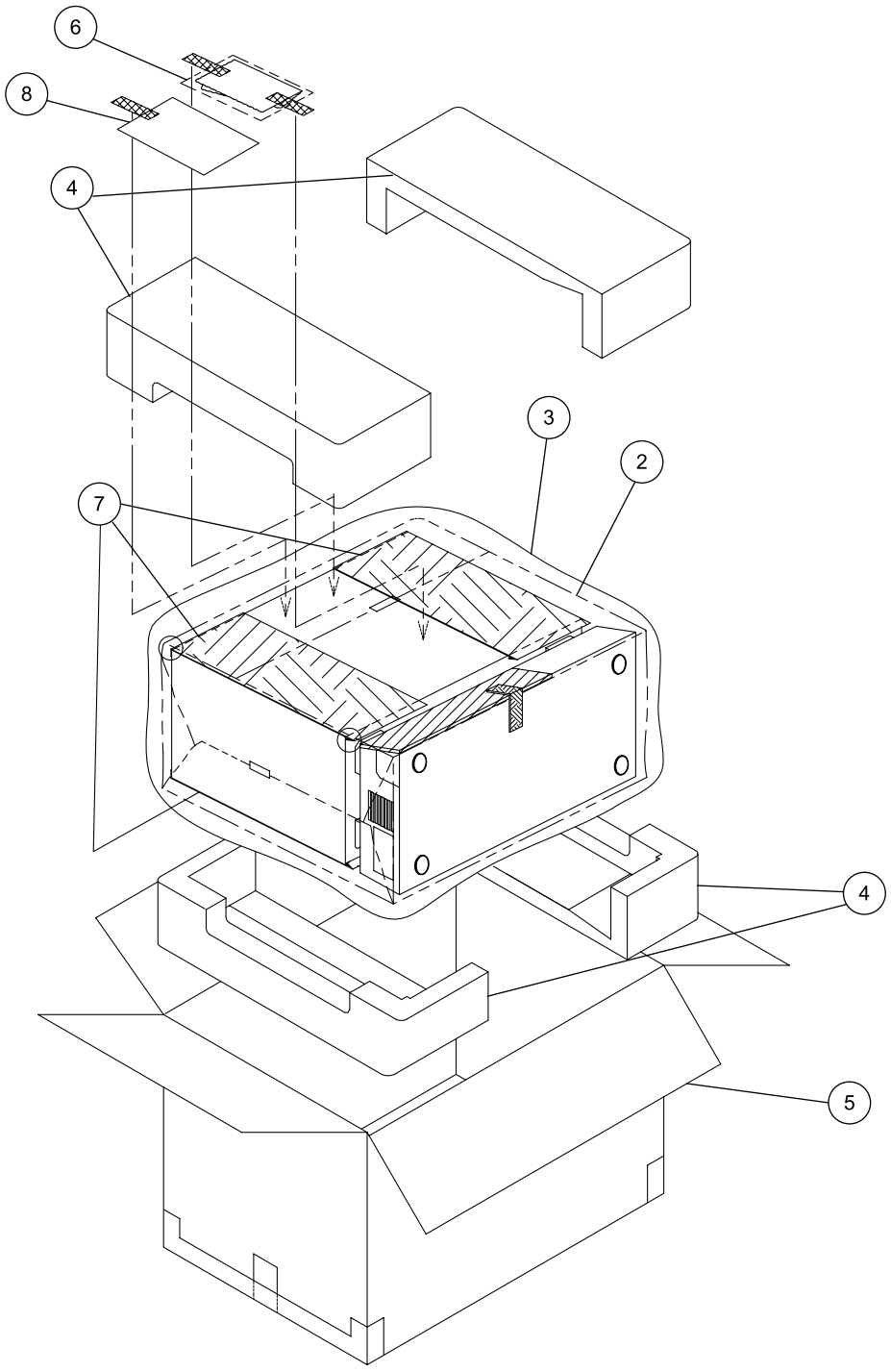
6. Execute Memory Clear
   Turn on the power of main unit, and press the POWER button while pressing the INPUT SELECT to set it in the standby state.

7. Check the version of the DSP flash ROM (1st DSP).
   Please refer to "Indication of version" (P49) and check that the version has been changed to a new one.

9. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

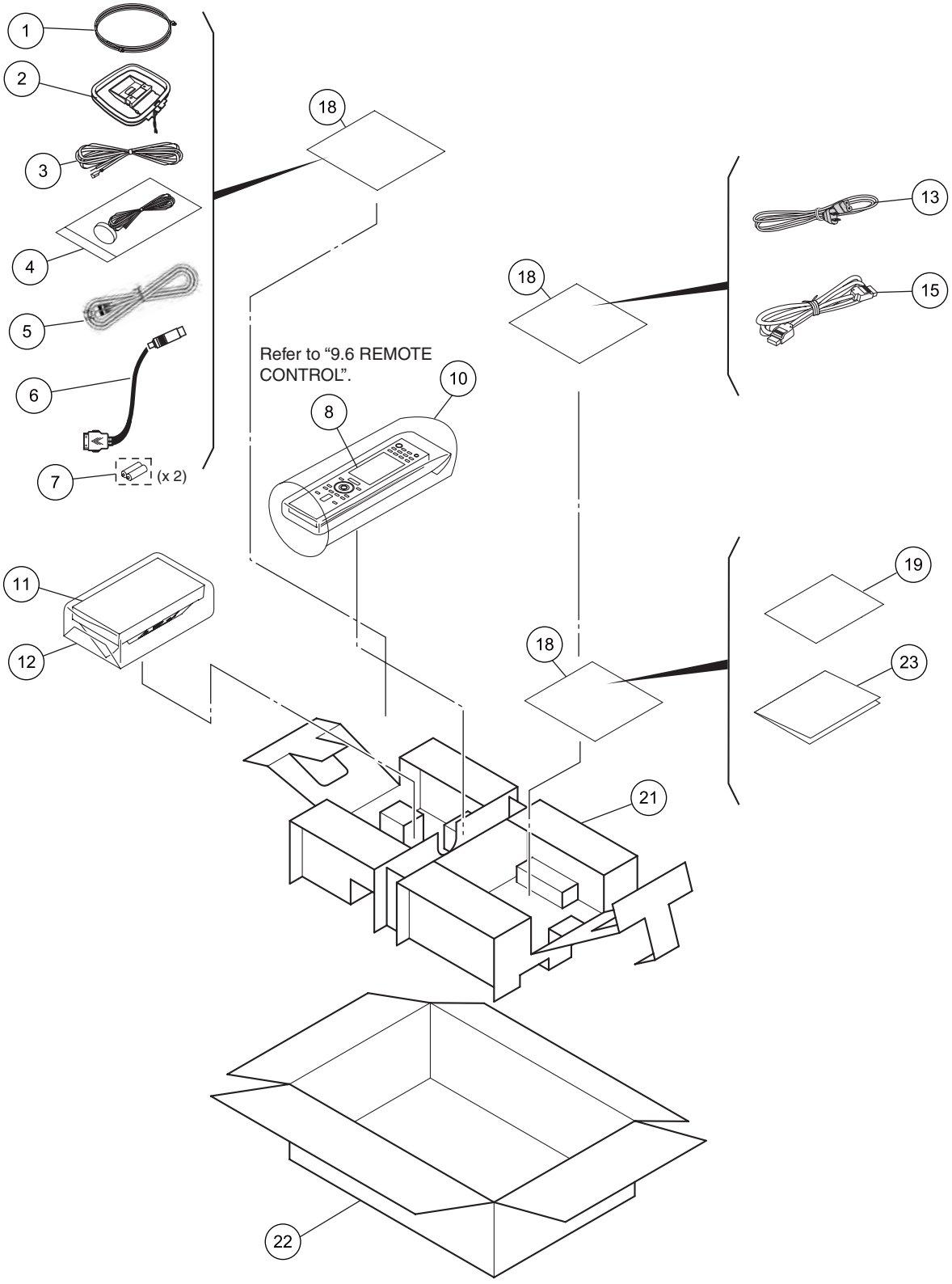
9.1 PACKING (SX-LX70SW)



PACKING (SX-LX70SW) PARTS LIST

Mark	No.	Description	Part No.
	1	•••••	
	2	Protection Sheet	SHC1864
	3	Polyethylene Bag	SHL1463
	4	Protector	SHA2595
	5	Packing Case	SHG2795
	6	Cleaning Cloth	SER1358
NSP	7	Protection Film	SEH1130
	8	Caution Card	SRR1029

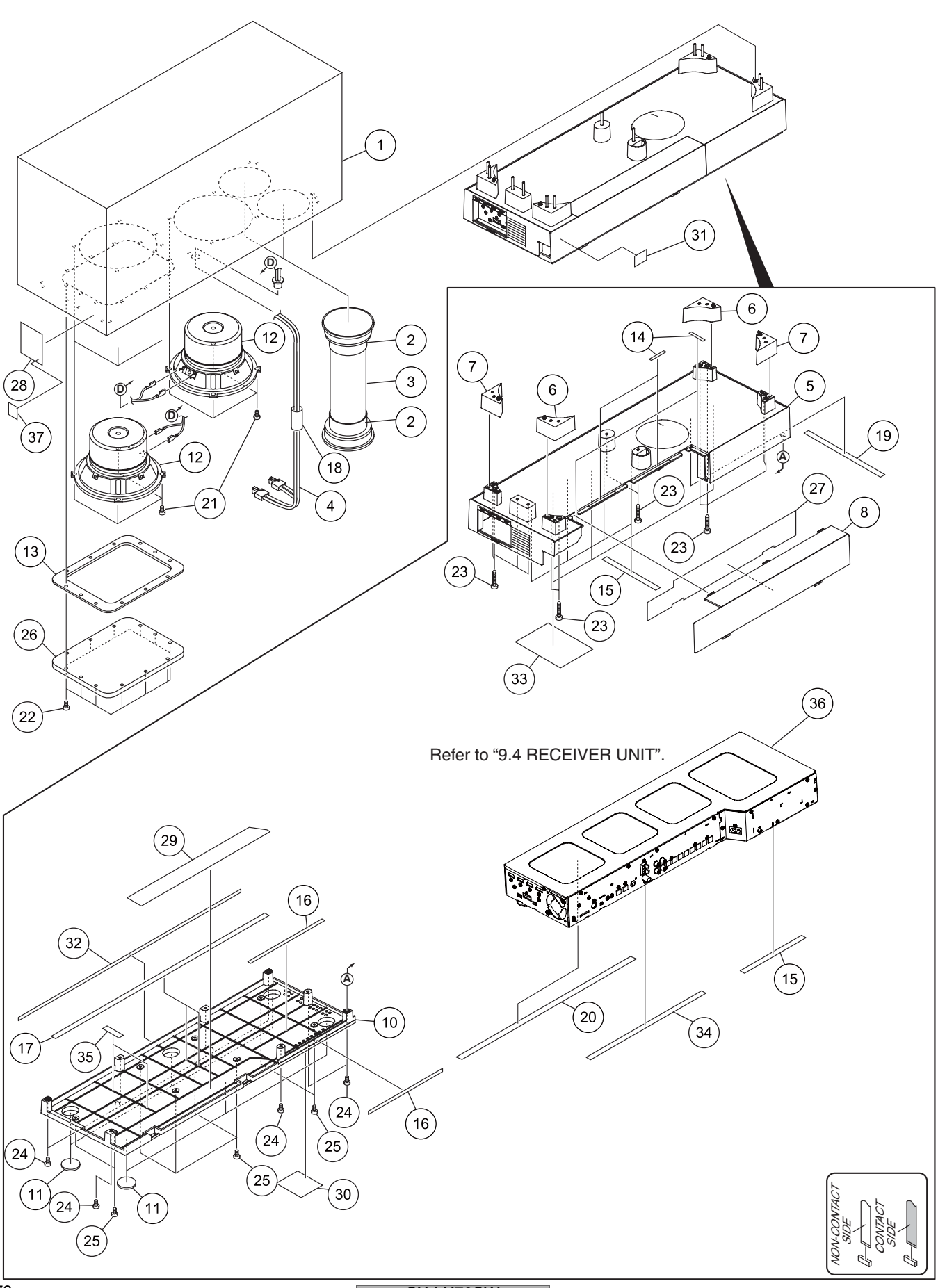
9.2 PACKING (AS-LX70)



(1) PACKING (AS-LX70) PARTS LIST

Mark	No.	Description	Part No.
	1	Optical Digital Cable	ADE7116
	2	AM Loop Antenna	ATB7013
	3	FM Wire Antenna	ADH7030
	4	Microphone	APM7006
	5	Control Cable	XDE3071
	6	iPod Cable	ADE7119
NSP	7	AA/LR6 Alkaline Batteries	VEM1021
	8	Remote Control	AXD7512
	9	•••••	
	10	Packing Sheet	AHG7108
	11	Display Unit	AXX7258
	12	Packing Sheet	AHG7135
⚠	13	Power Cord	ADG7022
	14	•••••	
	15	Display Cable	ADE7124
	16	•••••	
	17	•••••	
NSP	18	Polyethylen Bag	AHG7117
NSP	19	Warranty Card	ARY7007
	20	•••••	
	21	Accesssory Pad	AHB7147
	22	Packing Case P3	AHD8563
	23	Operating Instructions (English/French)	ARE7639

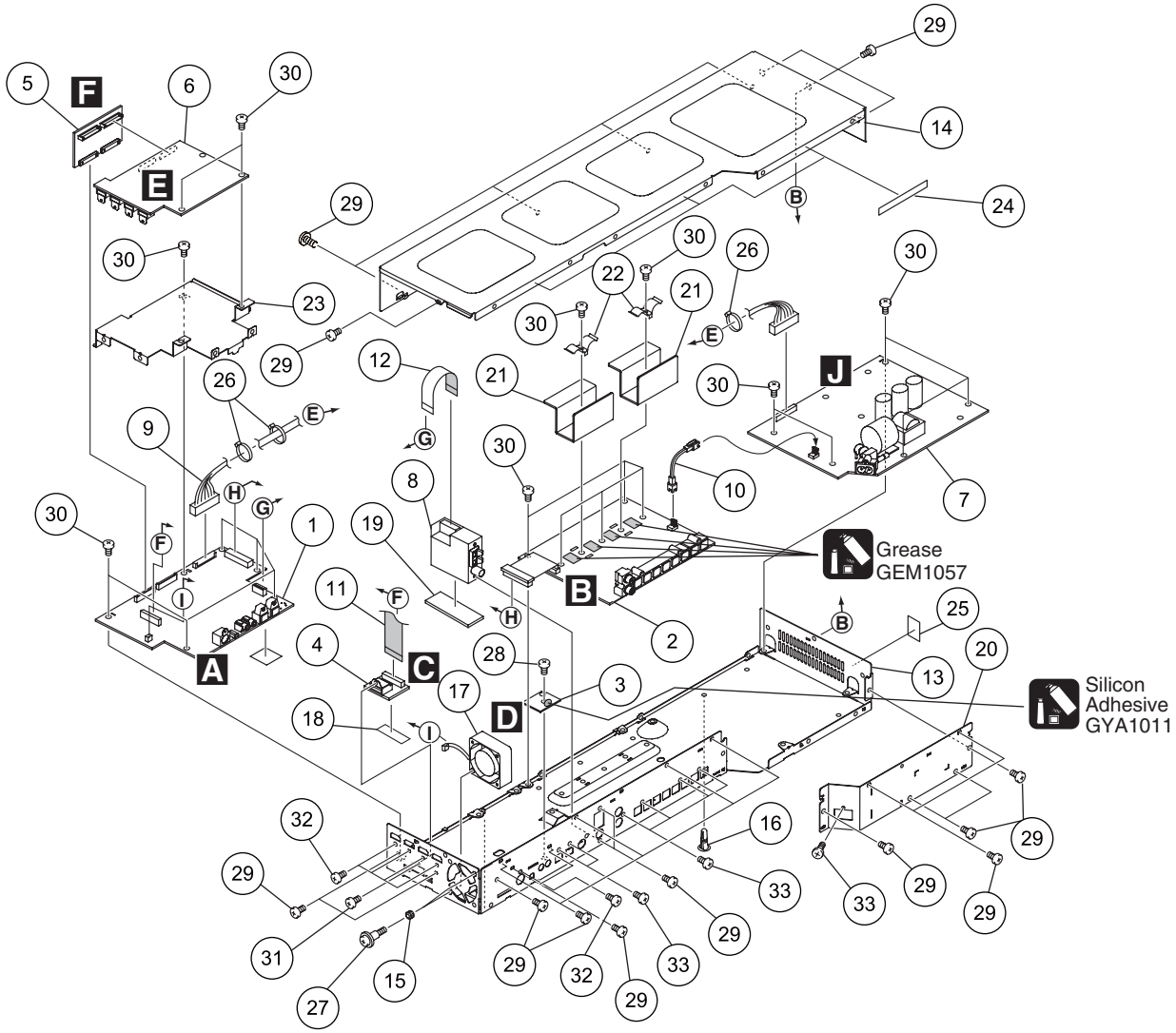
9.3 EXTERIOR SECTION

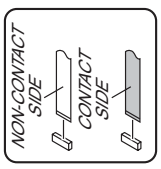


EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
NSP	1	Cabinet	SMM2045
NSP	2	Port Tube Ring 60	SNK6110
NSP	3	Paper Tube 60	SMR1405
	4	Connectingt Cord	SDD1355
	5	Base (Top)	SNK2946
	6	Cosmetic Pillar	SNK2949
	7	Cosmetic Pillar	SNK2950
	8	Cover	SNK3001
	9	•••••	
	10	Base (Bottom)	SNK2947
	11	Non Skid Pad	SEB6004
	12	Speaker	T16EU90-51F
	13	Packing	SEC2110
	14	Packing A	SEC2111
	15	Packing B	SEC2139
	16	Packing C	SEC2140
	17	Packing D	SEC2141
	18	Packing	SEC2149
	19	Packing E	SEC2147
	20	Packing	SEC2170
	21	Screw	BYC40P160FTB
	22	Screw	BYC40P250FTB
	23	Screw	BYC40P300FTB
	24	Screw	BPZ40P100FTC
	25	Screw	BBZ30P080FTC
NSP	26	Cover Board	SMS1484
	27	Cushion	SEP1376
NSP	28	Model Label	SAN3976
NSP	29	Label	SAK1036
NSP	30	License Label	SAK1037
NSP	31	Energy Star Label	AAX8022
	32	Packing F	SEC2153
	33	Gasket	SEC2159
	34	Gasket	SEC2160
	35	Gasket	SEC2161
NSP	36	Receiver Unit	AXX7254
NSP	37	UL Listed Label	SAX1434

9.4 RECEIVER UNIT

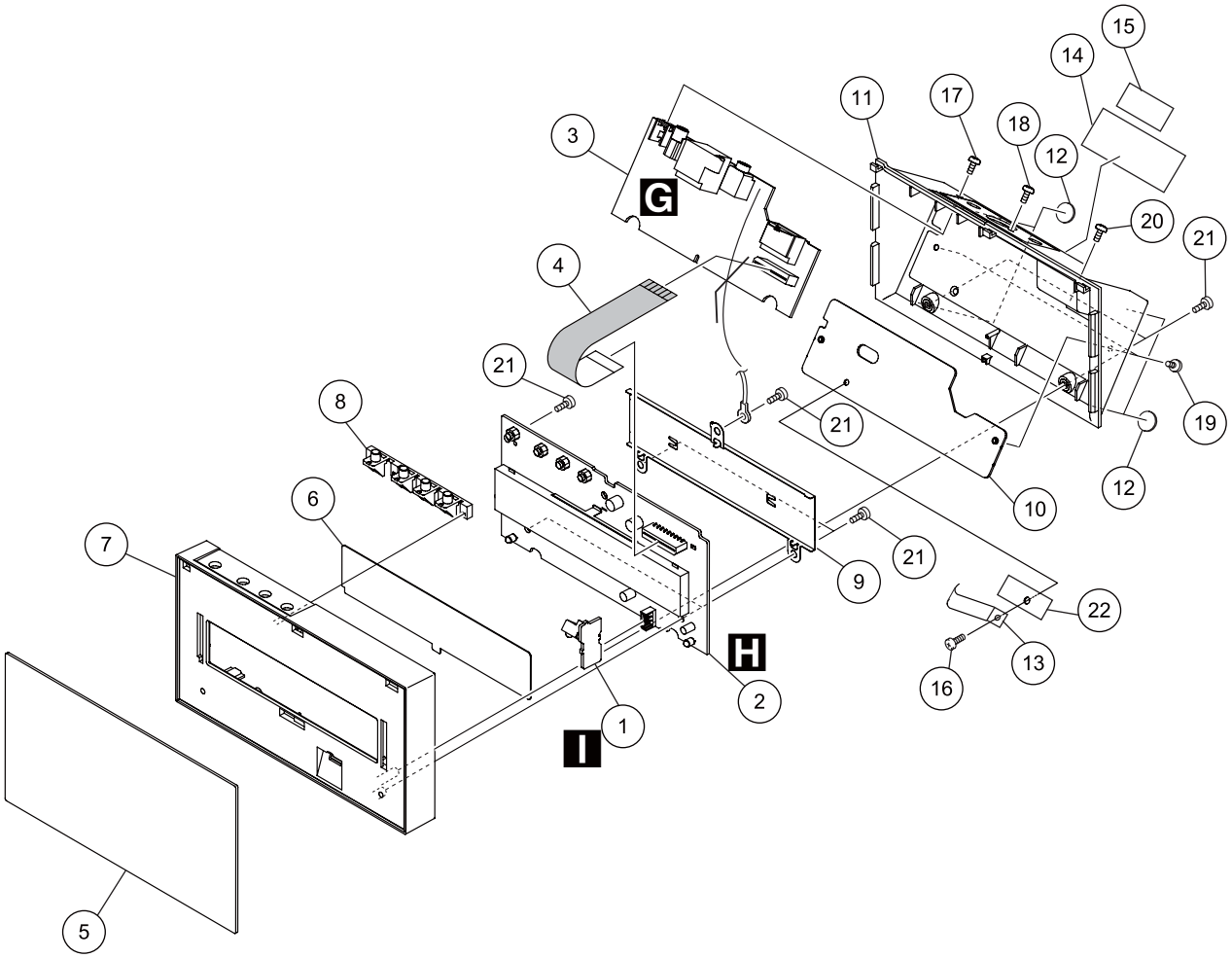


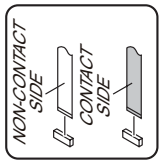


RECEIVER UNIT PARTS LIST

Mark	No.	Description	Part No.
	1	Main ASSY	AWK8028
	2	AMP ASSY	AWU8298
	3	Earth ASSY	AWU8318
	4	Connection ASSY	AWU8299
	5	BTOB ASSY	AWX8951
	6	HDMI ASSY	AWX8872
⚠	7	POWER SUPPLY UNIT	AWR7051
	8	FM/AM TUNER UNIT	AXX7250
	9	Connecter Assy	PF14PP-S27
	10	2P Lead with Housing	ADX7565
	11	27P FFC/60V	ADD7551
	12	11P FFC/30V	XDD3174
NSP	13	Bottom Case P3	ANF7044
NSP	14	Top Case	ANF7042
	15	Rubber Bushing	AEB7291
	16	Locking Card Spacer	AEC7372
	17	DC Fan Motor	AXM7038
	18	FFC Spacer	PEB1310
	19	Tuner Cushion	AEB7390
	20	AC Inlet Plate	ANG7595
	21	Heat Sink	ANH7195
	22	Spring Plate	ABK7065
	23	HDMI Shield P3	ANG7594
	24	Rubber Packing	AEB7392
	25	Side Packing	AEB7393
NSP	26	Binder (BK-1)	ZCA-BK1
	27	Screw	ABA7139
	28	Screw	BBZ30P040FCC
	29	Screw	BBZ30P060FTB
	30	Screw	BBZ30P080FNI
	31	Screw	PMZ26P060FTB
	32	Screw	PMZ30P060FTB
	33	Screw	PPZ30P080FTB

9.5 DISPLAY UNIT

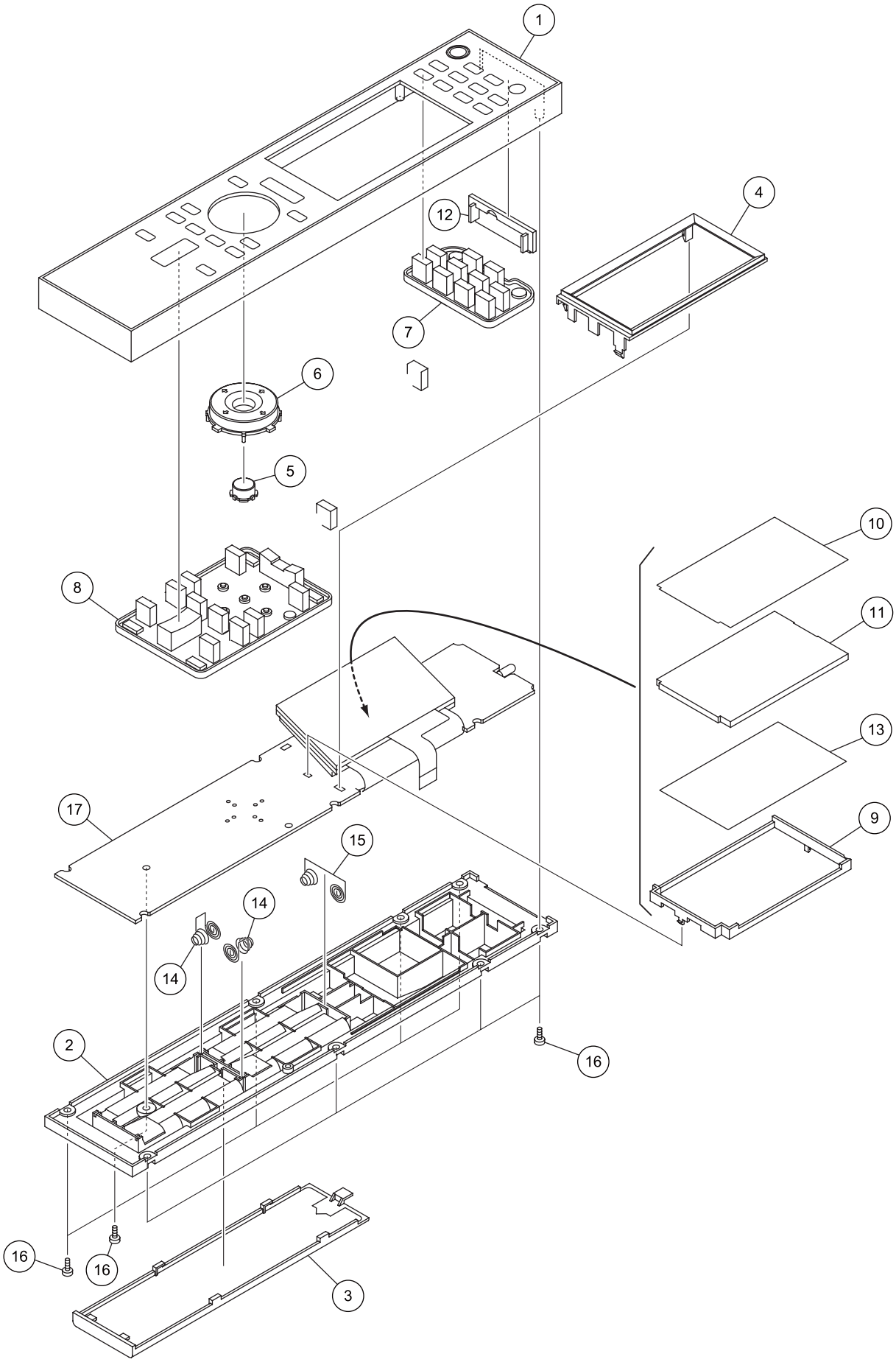




DISPLAY UNIT PARTS LIST

Mark	No.	Description	Part No.
	1	Remocon Assy	AWU8302
	2	FL Assy	AWU8301
	3	AINB Assy	AWK8032
	4	17P FFC/ 60V	ADD7614
	5	Display Window	AAK8423
	6	FL Filter	AEC7574
	7	Display Panel	AMB7972
	8	Button P3	AAD7782
	9	Shield Plate	ANK7132
	10	Inner Plate	ANG7592
	11	Display Case	AMF7011
	12	Leg	AEB7090
	13	Earth Spring W5.1	ABH7240
NSP	14	Name Label	AAL7435
NSP	15	Serial Label	DRW2311
	16	Screw	BBZ30P040FCC
	17	Screw	BBZ30P060FTB
	18	Screw	BPZ26P080FTB
	19	Screw	CBZ26P050FTB
	20	Screw	PMZ26P060FTB
	21	Screw	PPZ30P080FTB
NSP	22	PCB Spacer	•••••

9.6 REMOTE CONTROL

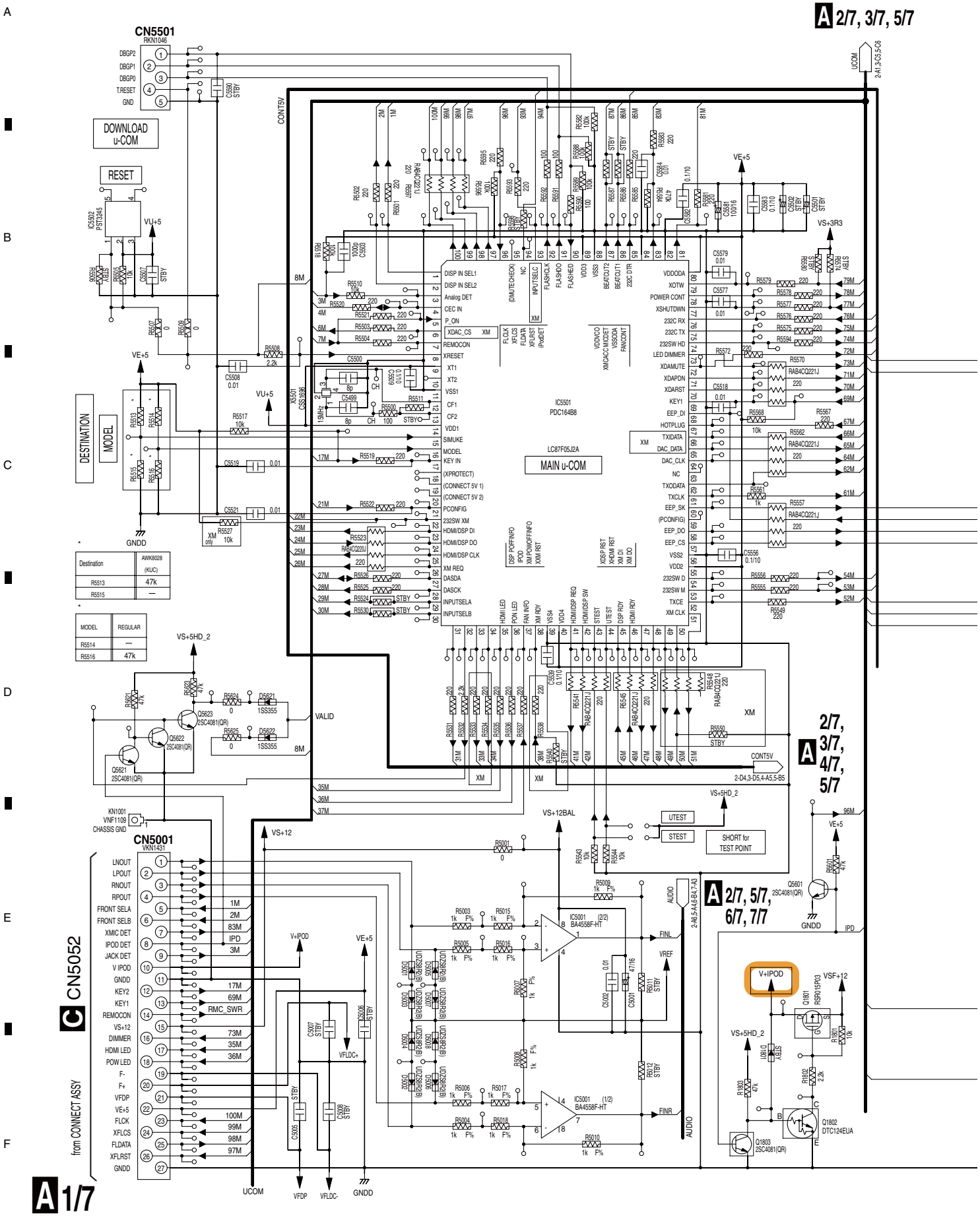


REMOTE CONTROL PARTS LIST

Mark	No.	Description	Part No.
	1	Case(A) Assy	AZA7440
	2	Case(B)	AZA7443
	3	Battery Cover	AZA7444
	4	LCD Cover	AZA7445
	5	Keytop-A	AZA7446
	6	Keytop-B	AZA7447
	7	Rubber Sheet-A	AZA7449
	8	Rubber Sheet-B	AZA7451
	9	LCD Holder	AZA7452
	10	Diffusion Sheet	AZA7453
	11	L.G.P	AZA7454
	12	Filter	AZA7455
	13	Diffusion Sheet	AZA7456
	14	Batt.Term-C	AZN8032
	15	Batt.Term-D	AZN8033
	16	Screw	AZB7161
	17	P.W.B. Assy	AZW7309

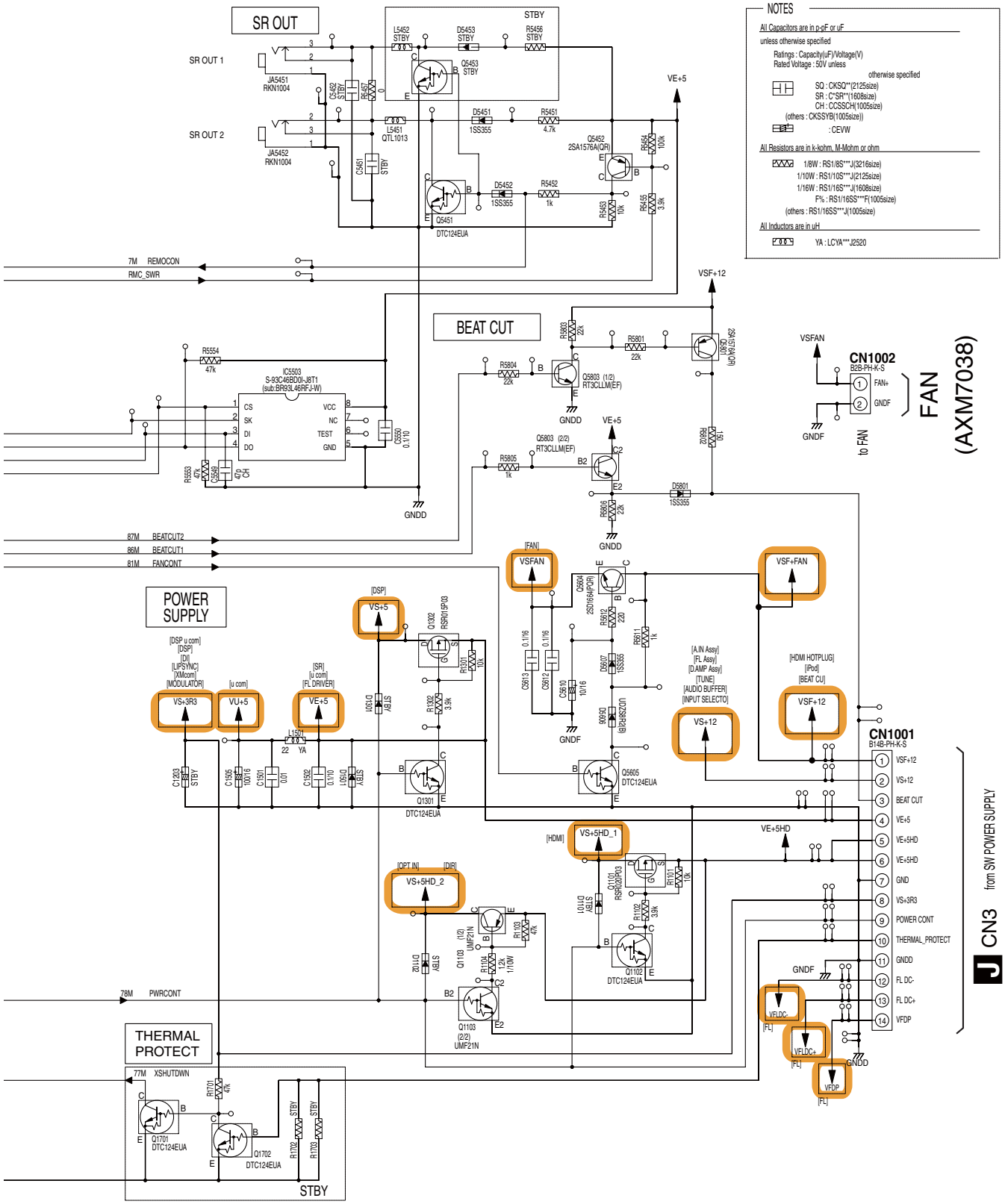
10. SCHEMATIC DIAGRAM

10.1 MAIN ASSY (1/7)

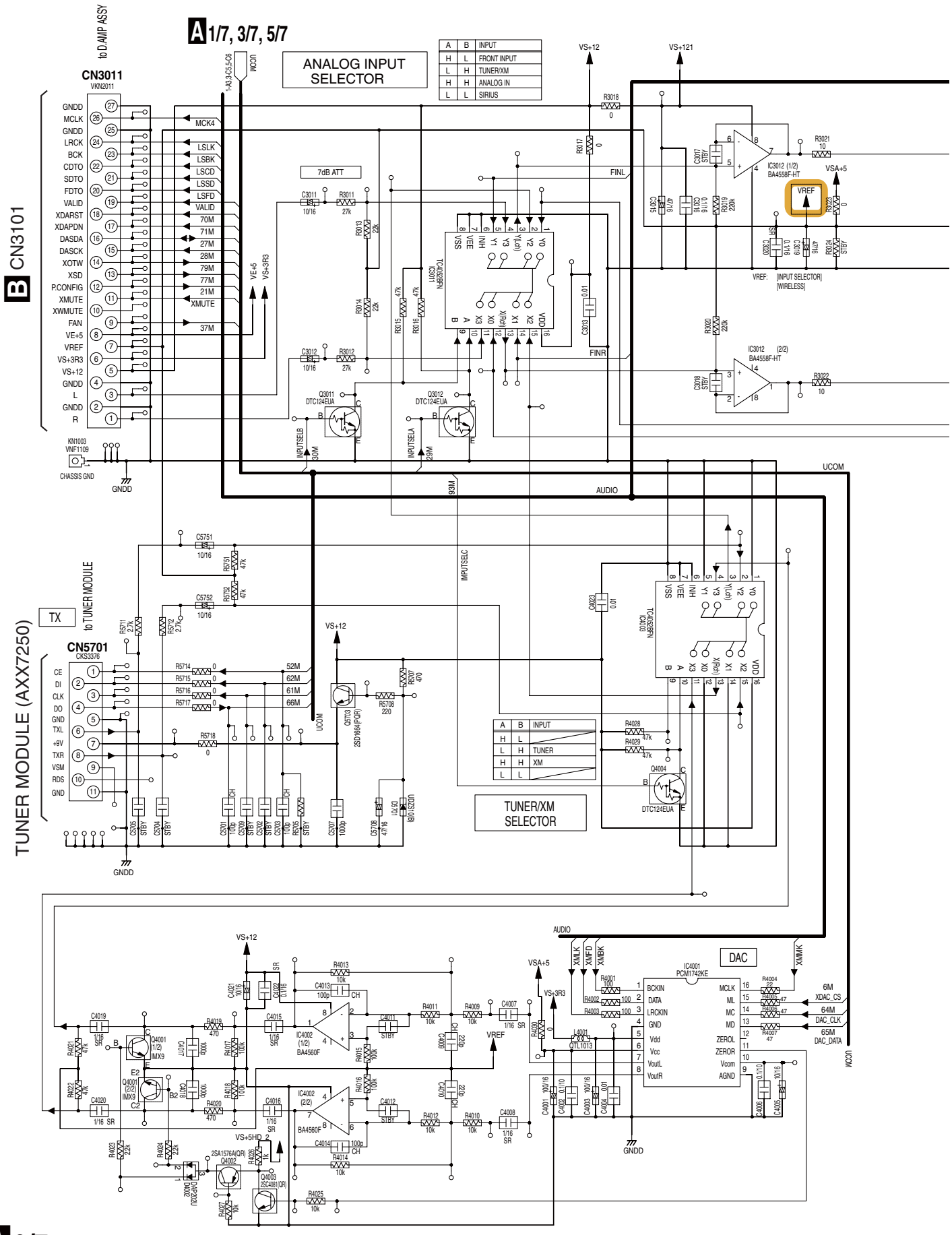


- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- : The power supply is shown with the marked box.

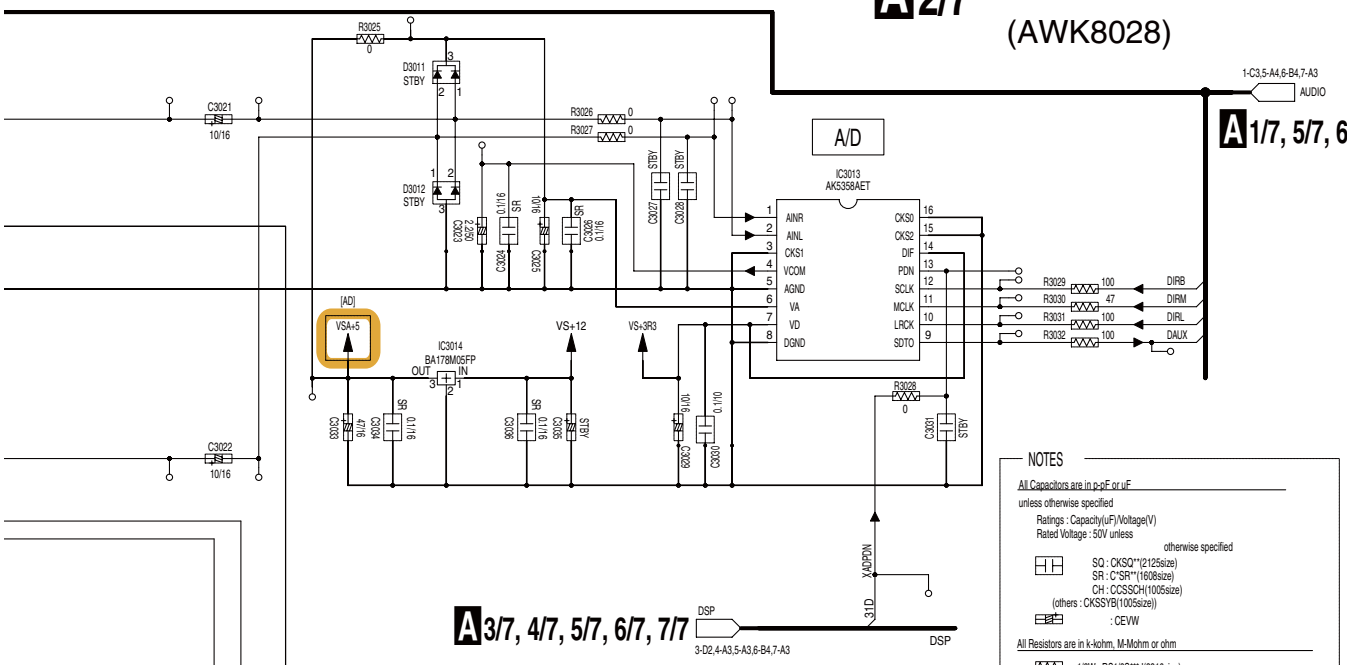
A1/7 MAIN ASSY (AWK8028)

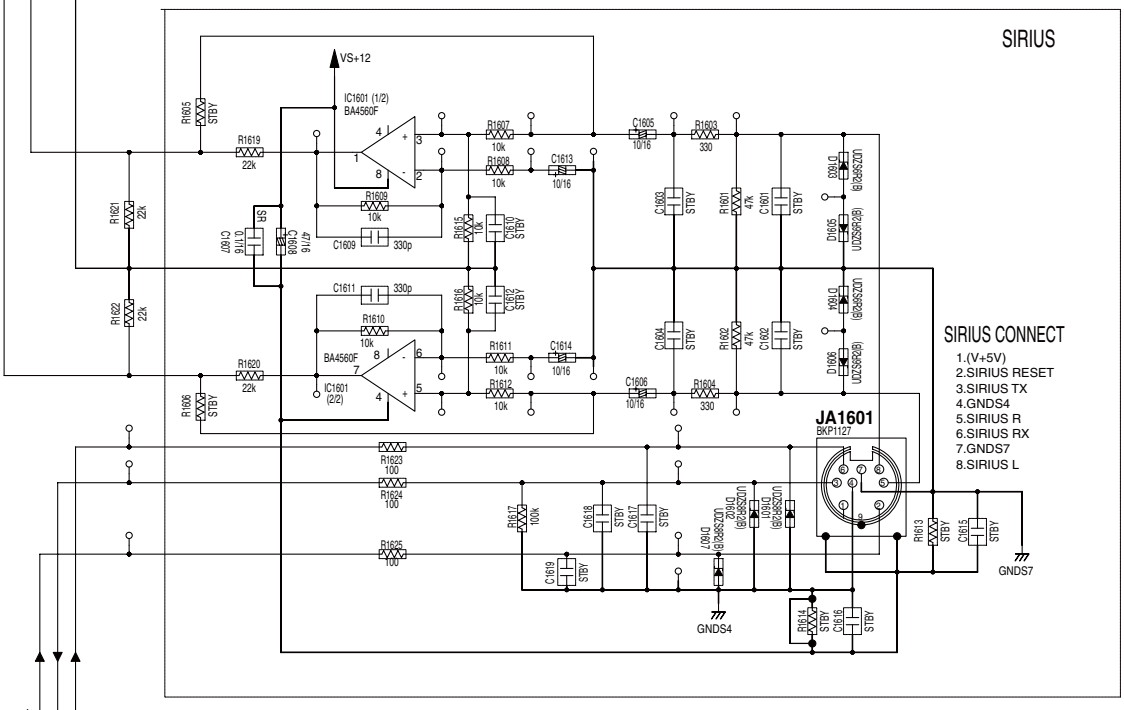


10.2 MAIN ASSY (2/7)

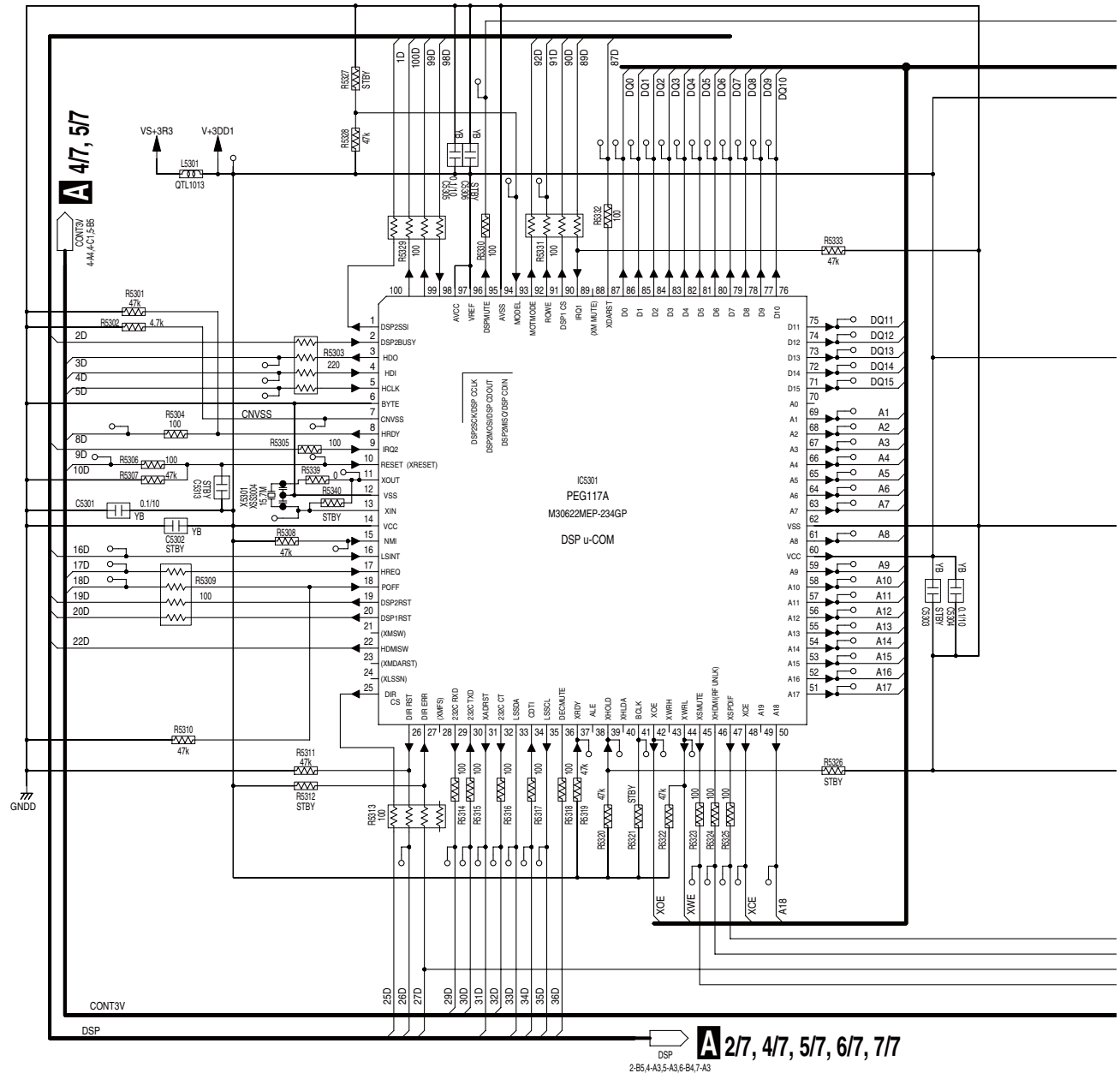


A 2/7 MAIN ASSY (AWK8028)





10.3 MAIN ASSY (3/7)

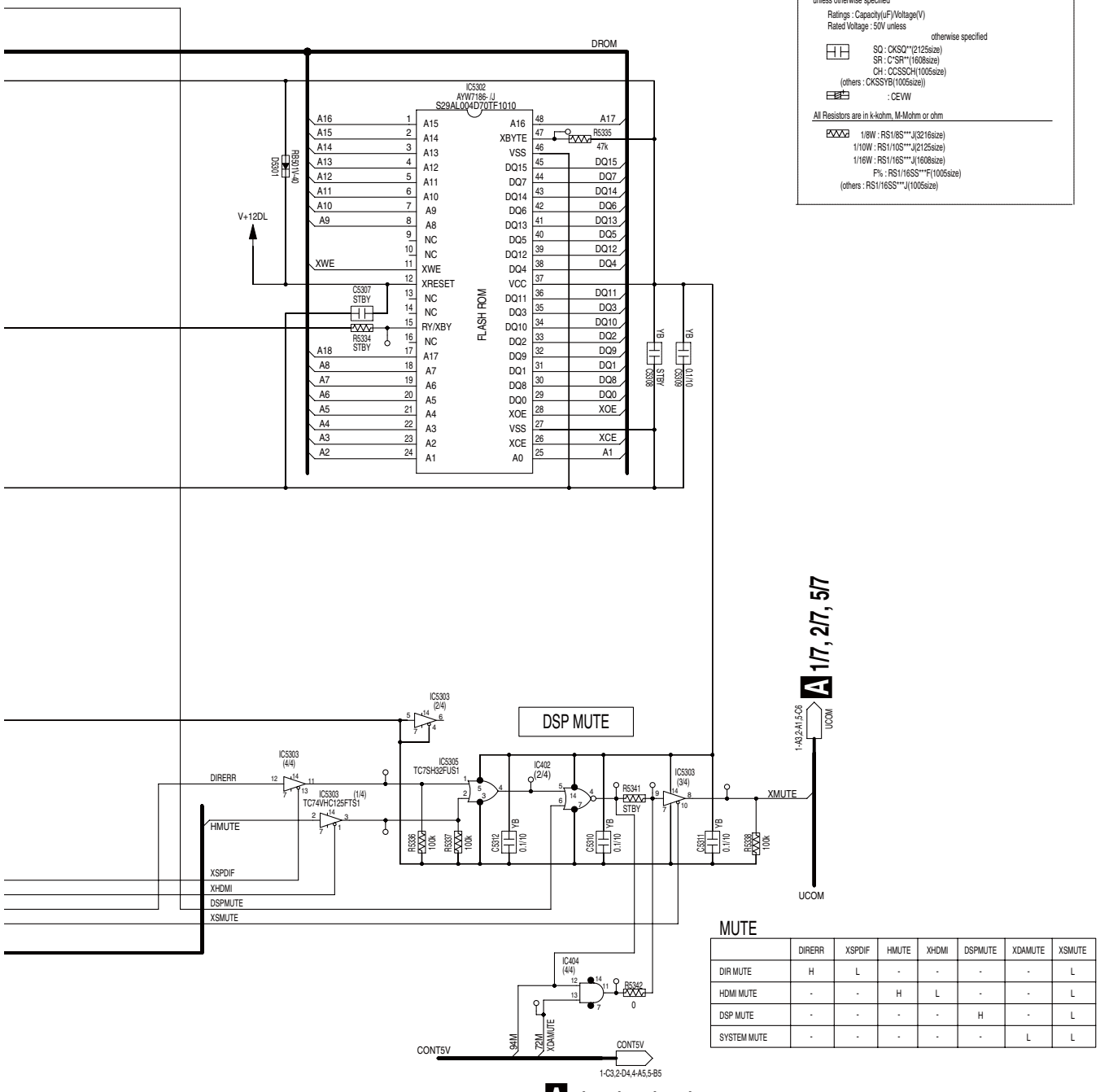


A3/7 MAIN ASSY (AWK8028)

NOTES

All Capacitors are in p-pF or uF
unless otherwise specified
Ratings : Capacity(uF)/Voltage(V)
Rated Voltage : 50V unless otherwise specified
SQ : CKSQ**(2125size)
SR : C*SR**(1608size)
CH : CCSSCH(1005size)
(others : CKSSYB(1005size))
: CEVW

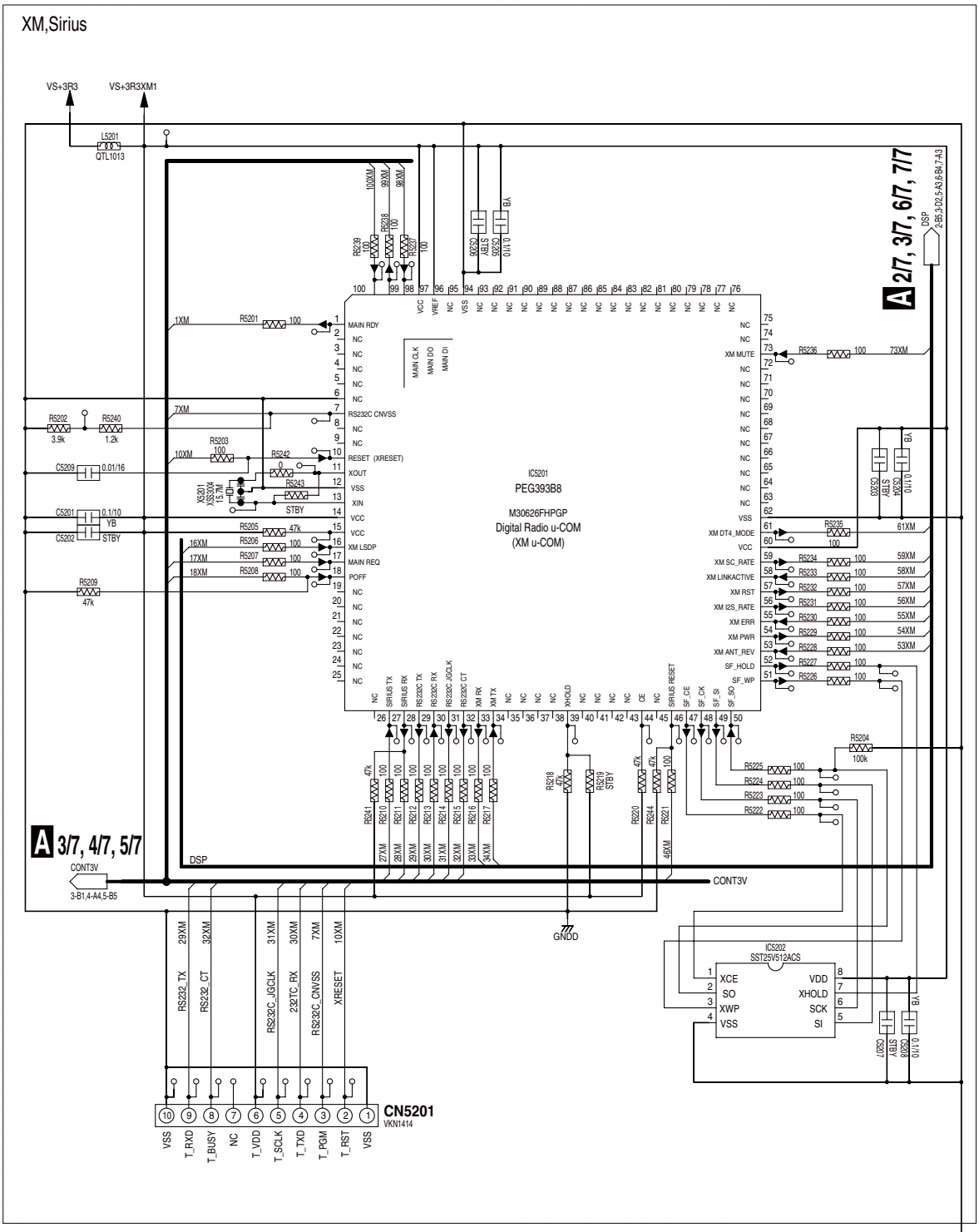
All Resistors are in k-kohm, M-Mohm or ohm
1/8W : RS1/8S***J(3216size)
1/10W : RS1/10S***J(2125size)
1/16W : RS1/16S***J(1608size)
F% : RS1/16SS***F(1005size)
(others : RS1/16SS***J(1005size)



MUTE

	DIRERR	XSPDIF	HMUTE	XHDMI	DSPMUTE	XDAMUTE	XSMUTE
DIR MUTE	H	L	-	-	-	-	L
HDMI MUTE	-	-	H	L	-	-	L
DSP MUTE	-	-	-	-	H	-	L
SYSTEM MUTE	-	-	-	-	-	L	L

10.4 MAIN ASSY (4/7)



NOTES

All Capacitors are in p-pF or uF unless otherwise specified

Ratings : Capacity(uF)Voltage(V)
Rated Voltage : 50V unless otherwise specified

SQ : CKSQ**(2125size)
SR : C*SR**(1608size)
CH : CCSSCH(1005size)
(others : CKSSYB(1005size))

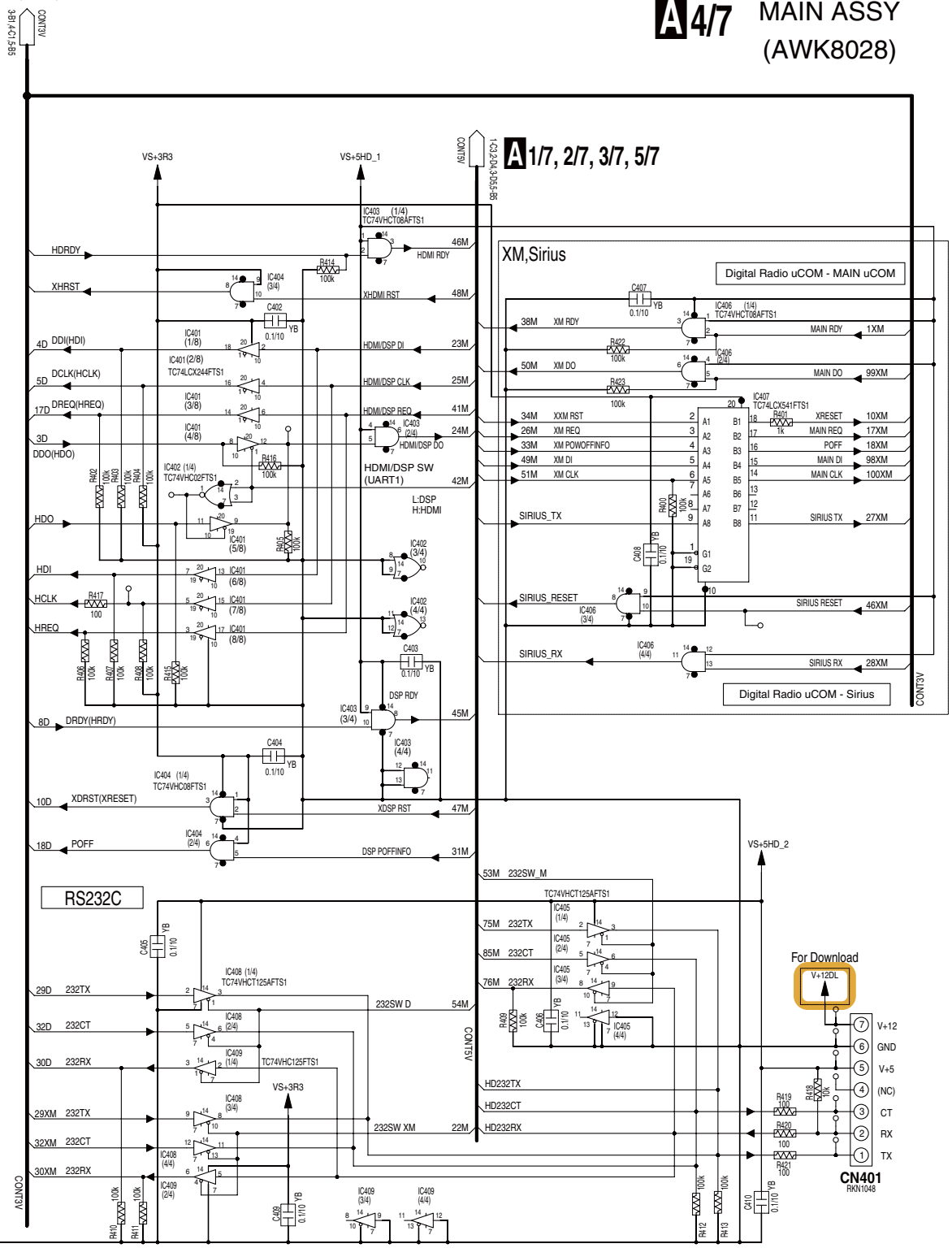
: CEVW

All Resistors are in k-kohm, M-Mohm or ohm

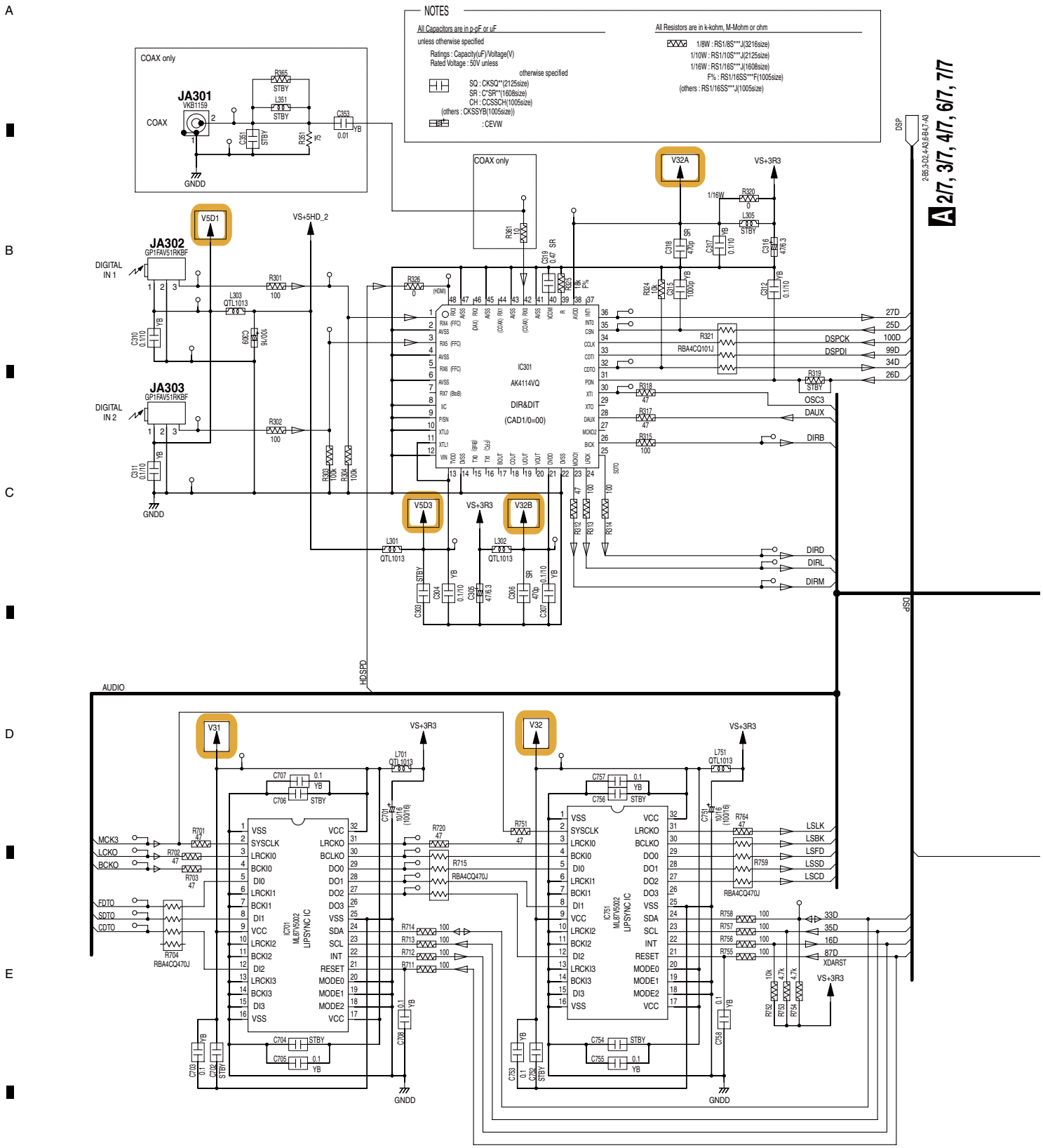
1/8W : RS1/8S***J(3216size)
1/10W : RS1/10S***J(2125size)
1/16W : RS1/16S***J(1608size)
F% : RS1/16SS***F(1005size)
(others : RS1/16SS***J(1005size)

A 4/7

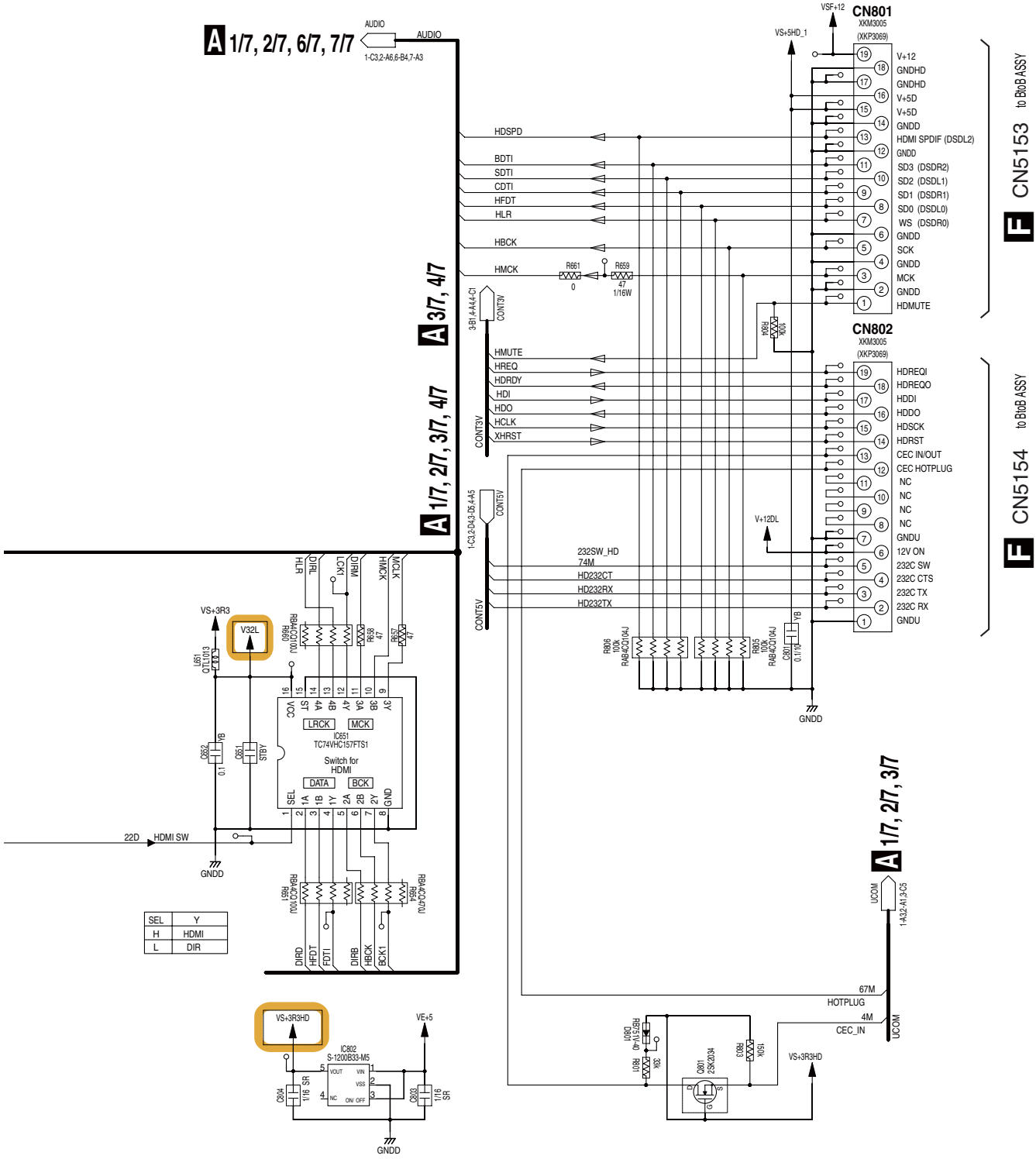
A 4/7 MAIN ASSY (AWK8028)



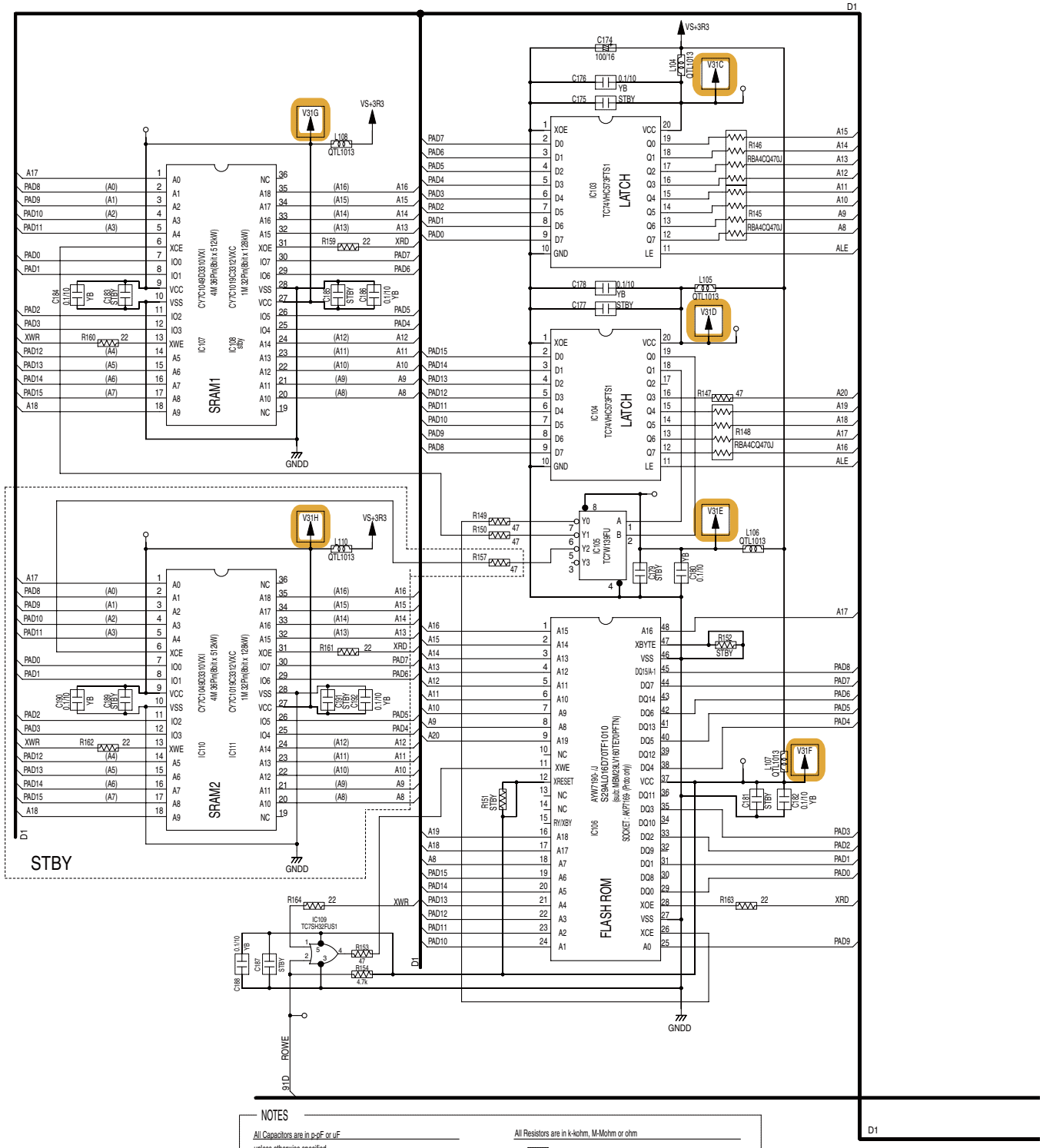
10.5 MAIN ASSY (5/7)

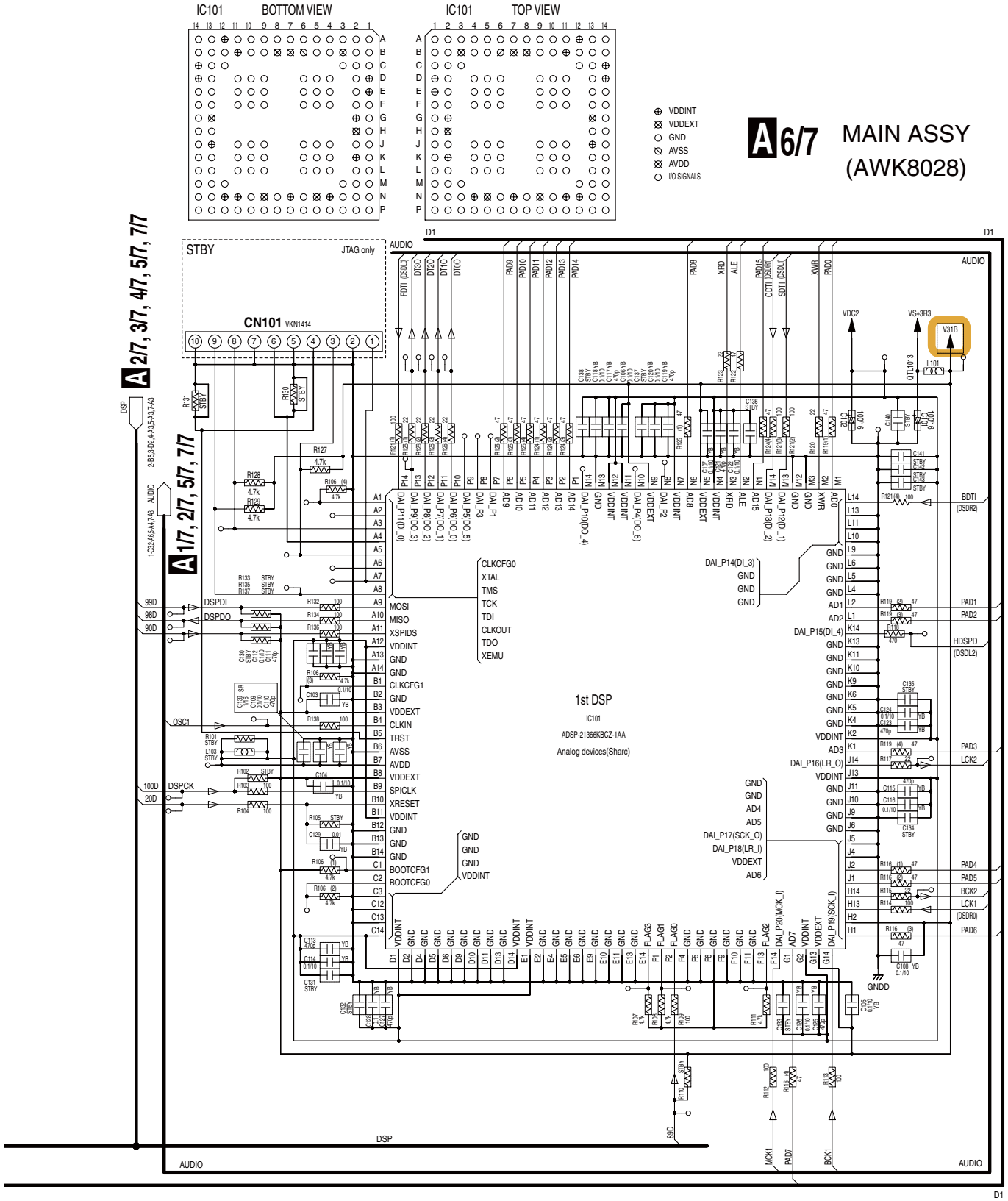


A5/7

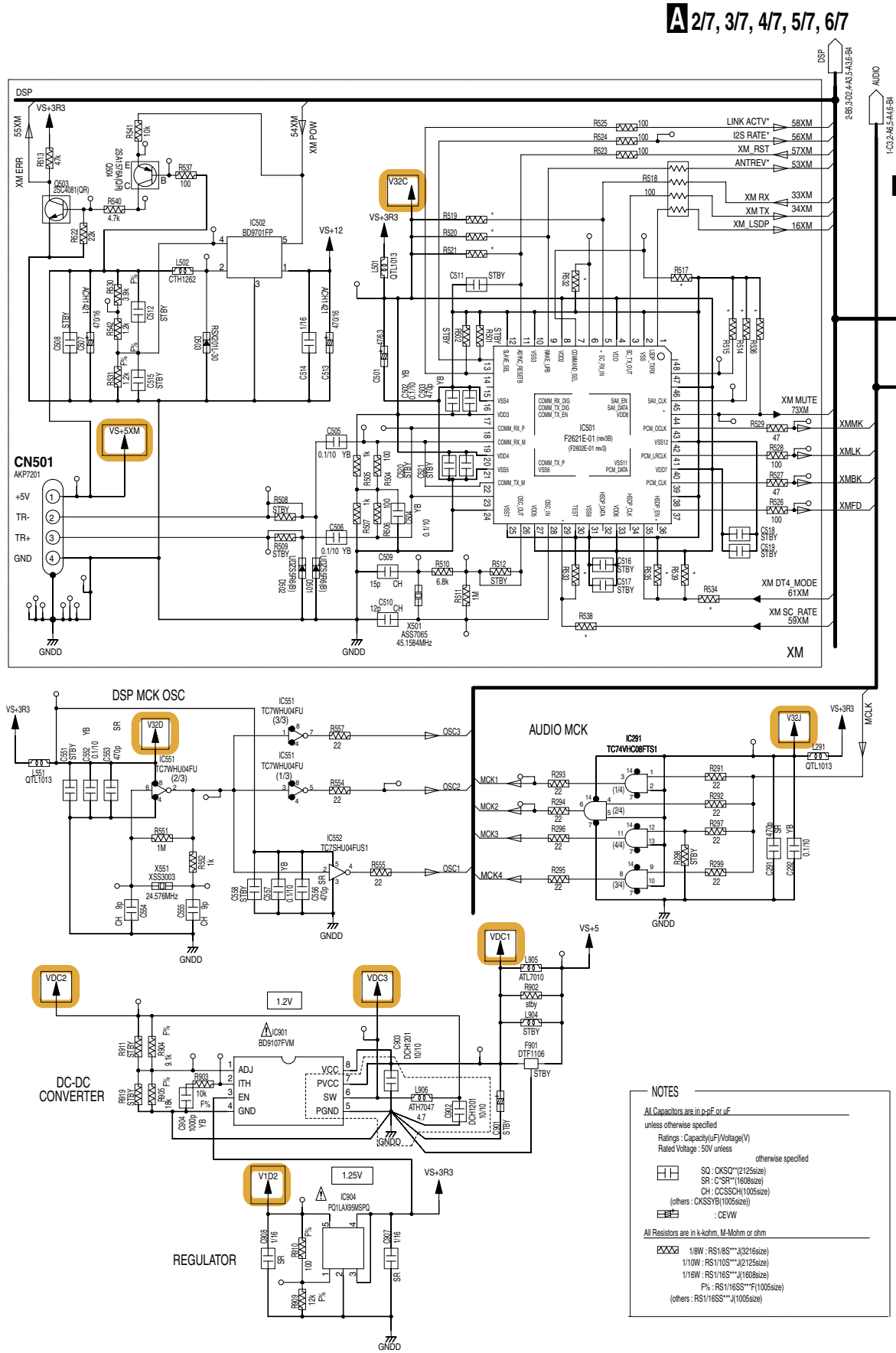

A 1/7, 2/7, 6/7, 7/7
AUDIO
1-C3,2-A6,6-B4,7-A3
A 3/7, 4/7
A 1/7, 2/7, 3/7, 4/7
CN801
XKM3005
(XKP3069)
V+12
GNDHD
GNDHD
V+5D
V+5D
GNDD
HDMI SPDIF (DSDL2)
GNDD
SD3 (DSDR2)
SD2 (DSDL1)
SD1 (DSDR1)
SD0 (DSDL0)
WS (DSDR0)
GNDD
SCK
GNDD
MCK
GNDD
HDMUTE
F CN5153 to BtoB ASSY
CN802
XKM3005
(XKP3069)
HDREQI
HDREQO
HDDI
HDDO
HDSCK
HDRST
CEC IN/OUT
CEC HOTPLUG
NC
NC
NC
NC
GNDU
12V ON
232C SW
232C CTS
232C TX
232C RX
GNDU
F CN5154 to BtoB ASSY
HDSPD
BDTI
SDTI
CDTI
HFDT
HLR
HBCK
HMCK
HMUTE
HREQ
HRDY
HDI
HDO
HCLK
XHRST
232SW_HD
74M
HD232CT
HD232RX
HD232TX
CONT3V
CONT5V
V+12DL
GNDD
VS+3R3
V32L
IC651
TC74VHC157FTS1
Switch for
HDMI
LRCK
MCK
DATA
BCK
SEL
22D
HDMI SW
SEL | Y
H | HDMI
L | DIR
DIRD
HFDT
FDTI
DIRB
HBCK
BCK1
A 1/7, 2/7, 3/7
UCOM
67M
HOTPLUG
4M
CEC_IN
VS+3R3HD
IC802
S-1200B33-M5
VE+5
GNDD

10.6 MAIN ASSY (6/7)




IC101 BOTTOM VIEW
IC101 TOP VIEW
VDDINT
VDDEXT
GND
AVSS
AVDD
I/O SIGNALS
A2/7, 3/7, 4/7, 5/7, 7/7
A1/7, 2/7, 5/7, 7/7
STBY
JTAG only
CN101 VKN1414
AUDIO
DSP
1st DSP
IC101
ADSP-21366KBCZ-1AA
Analog devices(Sharc)
CLKCFG0
XTAL
TMS
TCK
TDI
CLKOUT
TDO
XEMU
MOSI
MISO
XSPIDS
VDDINT
GND
CLKCFG1
VDDEXT
CLKIN
TRST
AVSS
AVDD
SPICLK
XRESET
BOOTCFG1
BOOTCFG0
DSPDI
DSPDO
DSPCK
OSC1
VDC2
VS+3R3
V31B
BDTI (DSDR2)
HDSPD (DSDL2)
PAD1
PAD2
PAD3
LCK2
PAD4
PAD5
BCK2
LCK1 (DSDR0)
PAD6
GNDD
MCK1
PAD7
BCK1

10.7 MAIN ASSY (7/7)



* IC501 Pin Function

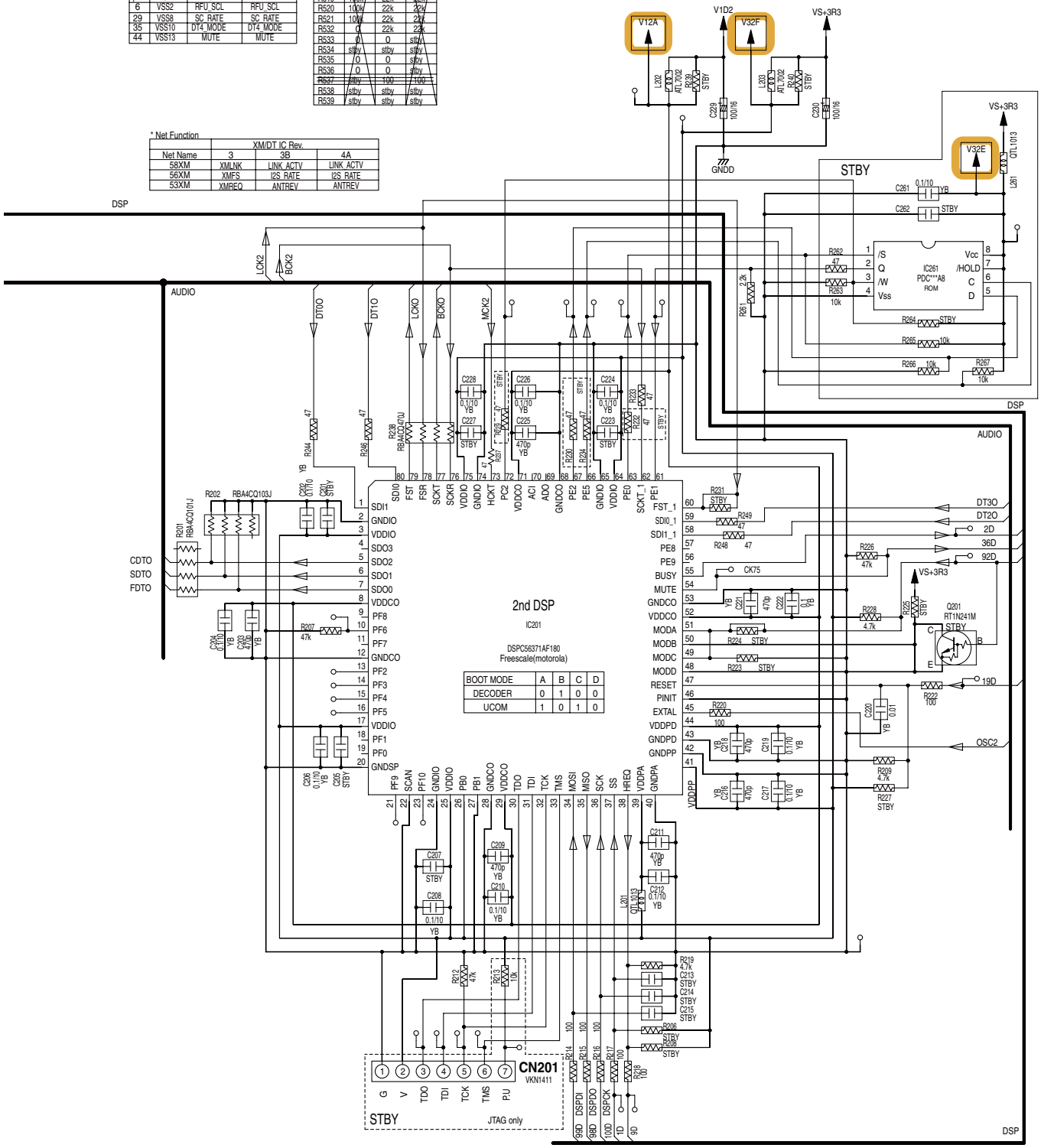
pin	XM/DT IC Rev. 3	3B	4A
6	VSS2	RFU_SCL	RFU_SCL
29	VSS8	SC_RATE	SC_RATE
35	VSS10	DT4_MODE	DT4_MODE
44	VSS13	MUTE	MUTE

* Parts Table

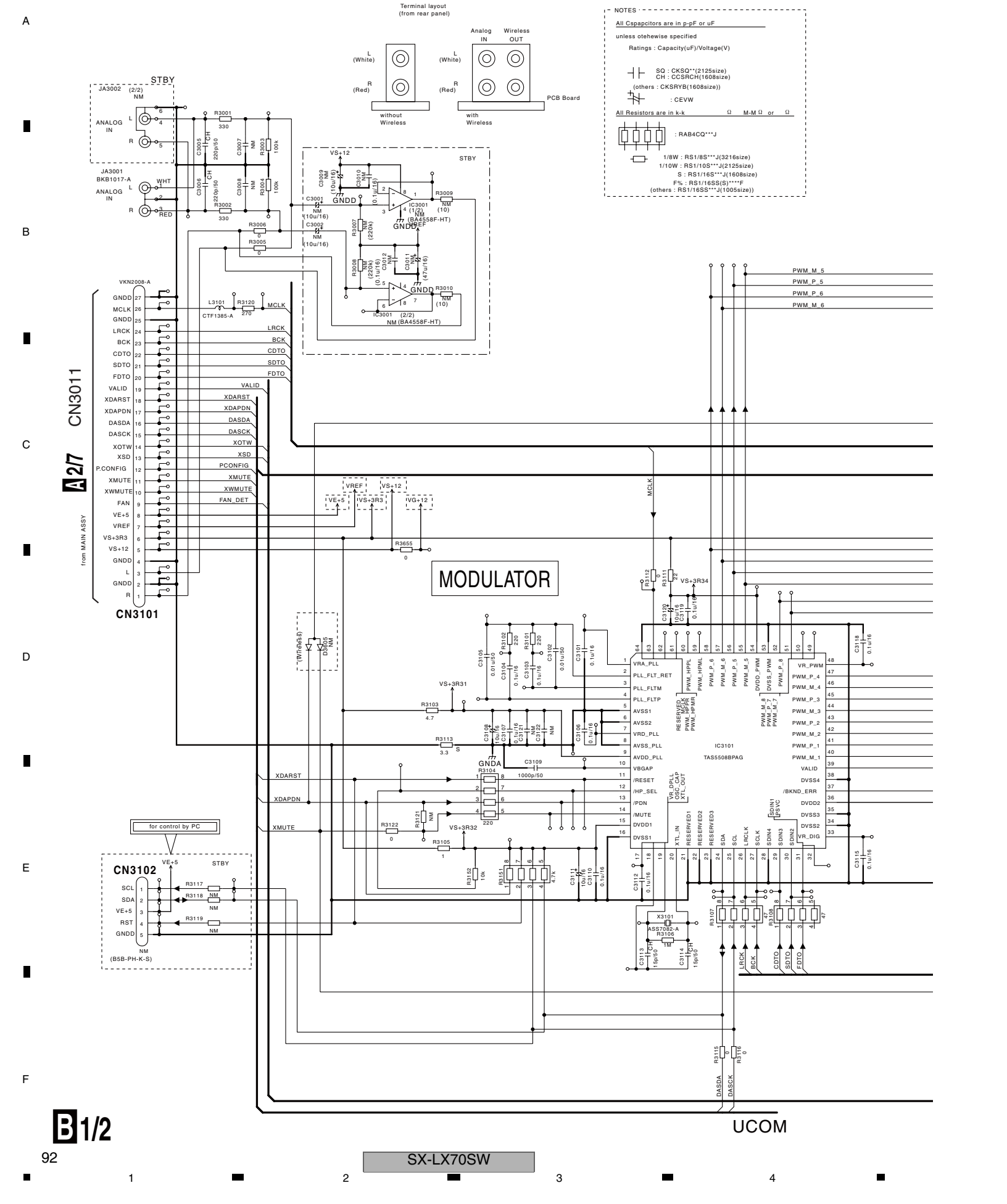
No.	XM/DT IC Rev. 3	3B	4A
R514	100k	22k	22k
R515	100k	22k	22k
R517	100k	22k	22k
R519	100k	22k	22k
R520	100k	22k	22k
R521	100k	22k	22k
R532	0	22k	22k
R533	0	0	stby
R534	stby	stby	stby
R535	0	0	stby
R536	0	0	stby
R537	stby	100	100
R538	stby	stby	stby
R539	stby	stby	stby

* Net Function

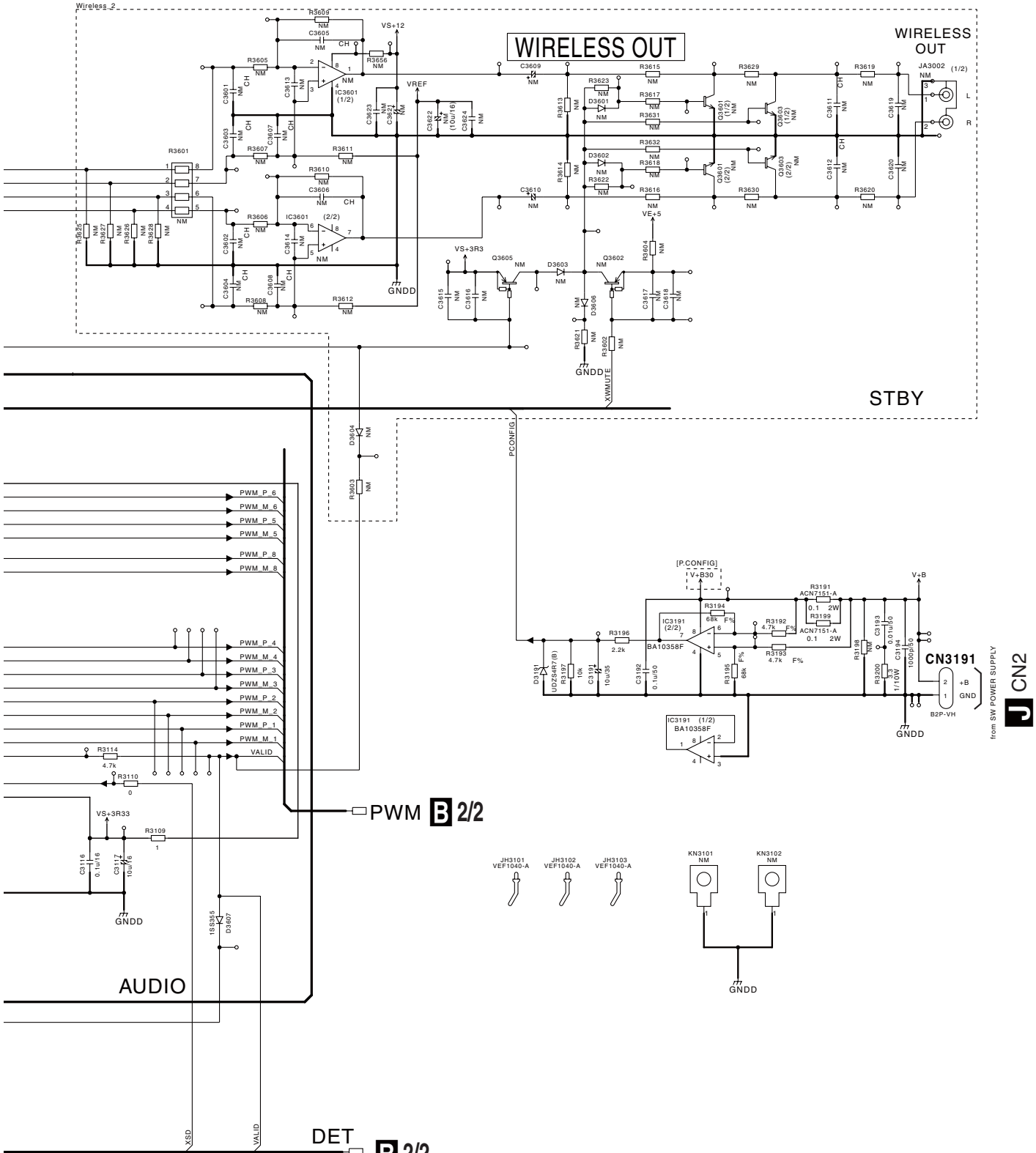
Net Name	XM/DT IC Rev. 3	3B	4A
58XM	XMLNK	LINK_ACTV	LINK_ACTV
56XM	XMFS	I2S_RATE	I2S_RATE
53XM	XMREQ	ANTREV	ANTREV



10.8 AMP ASSY (1/2)

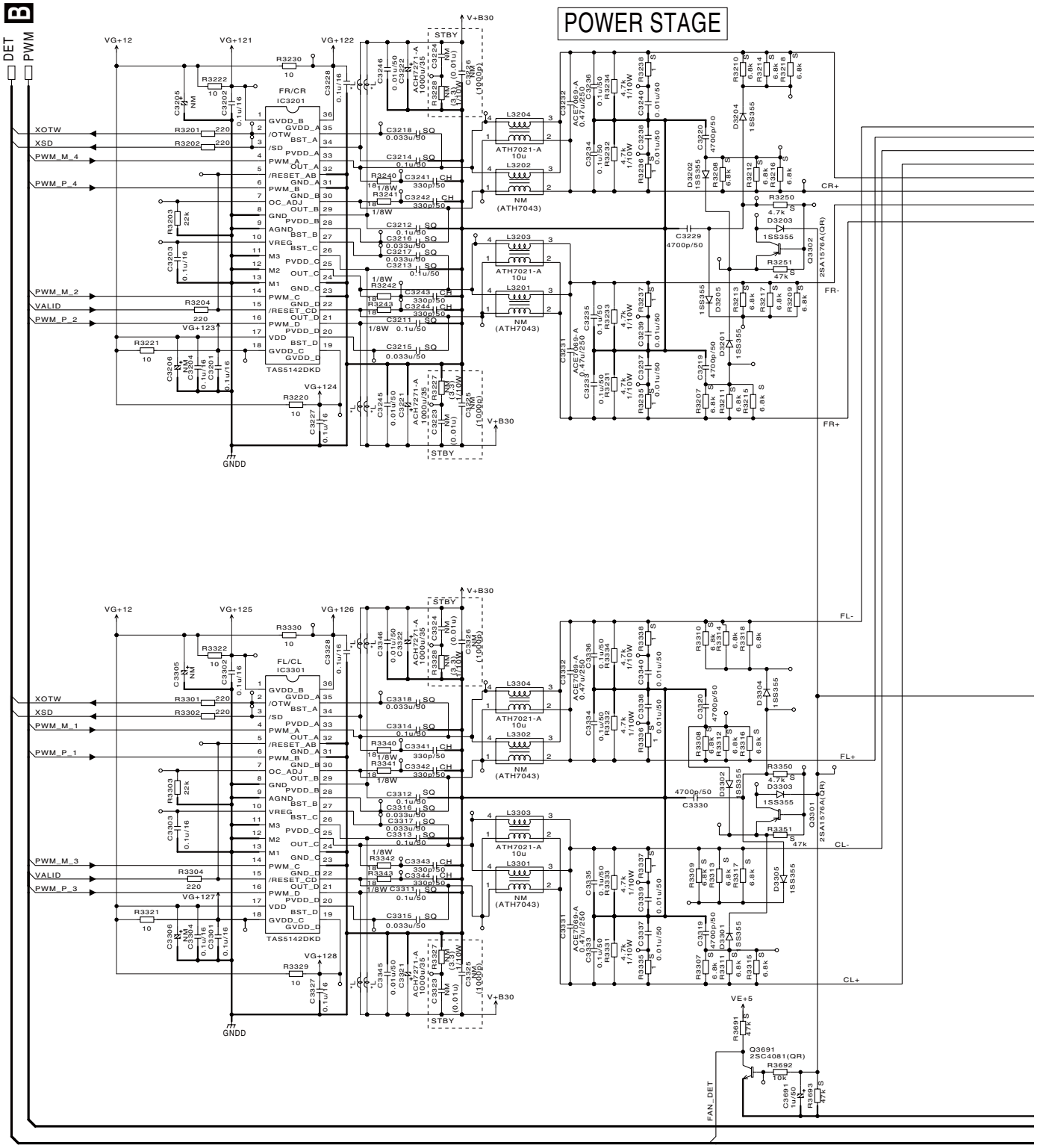


B 1/2 AMP ASSY (AWU8298)



B 1/2

10.9 AMP ASSY (2/2)



LAYOUT NOTE :
*L are PCB track inductors
approx 50mm long and 1mm wide

NOTES
All Cspapcitors are in p-pF or uF
unless otehewise specified
Ratings : Capacity(uF)/Voltage(V)
SQ : CKSQ**(2125size)
CH : CCSRCH(1608size)
(others : CKSRYB(1608size))
: CEVW
All Inductors are in uH

All Resistors are in k-k Ω M-MΩ or Ω
: RAB4CQ***J
1/8W : RS1/8S***J(3216size)
1/10W : RS1/10S***J(2125size)
S : RS1/16S***J(1608size)
F% : RS1/16SS(S)****F
(others : RS1/16SS***J(1005size))

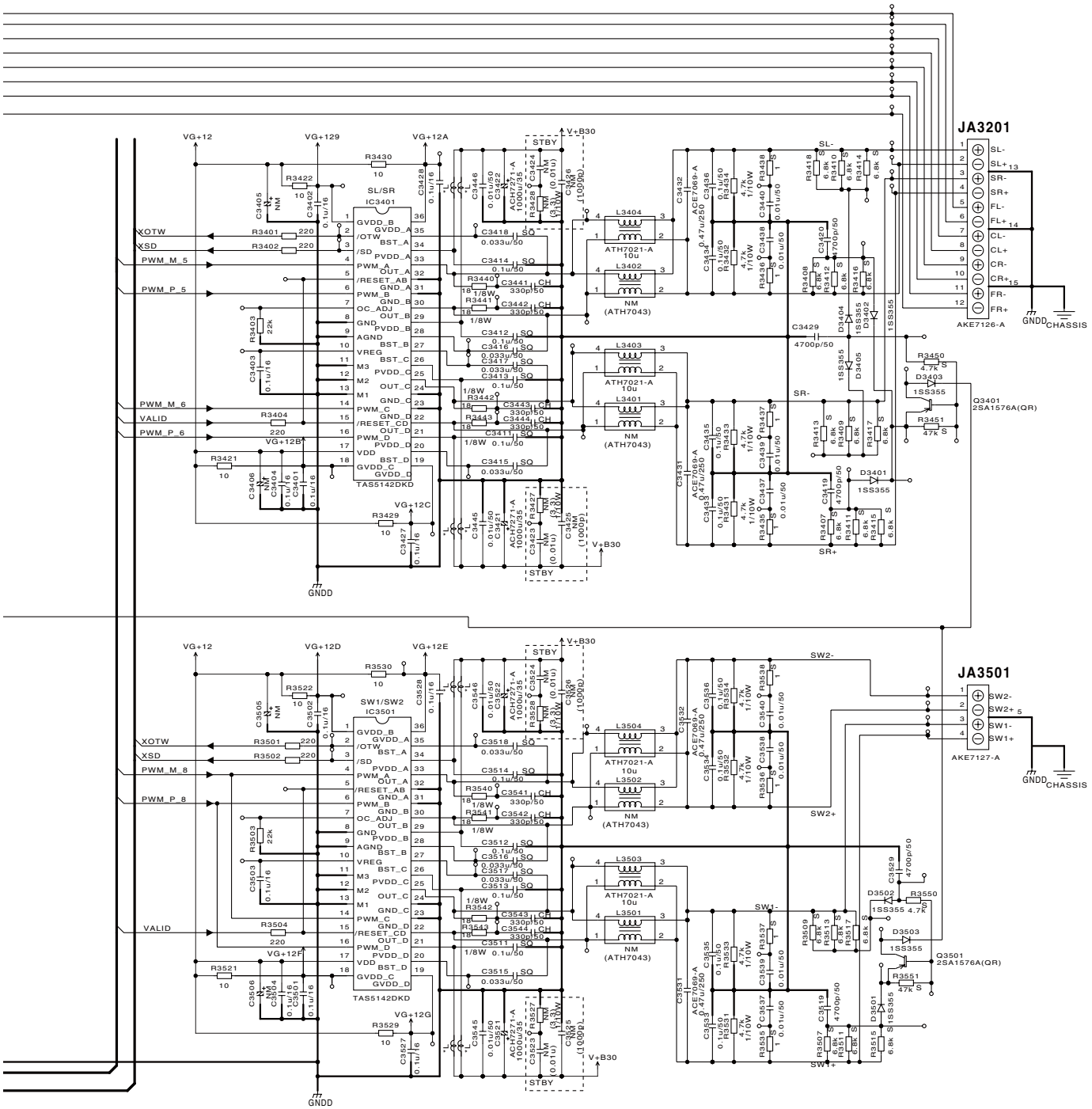
B 2/2 AMP ASSY (AWU8298)

Terminal Layout
(from rear panel)

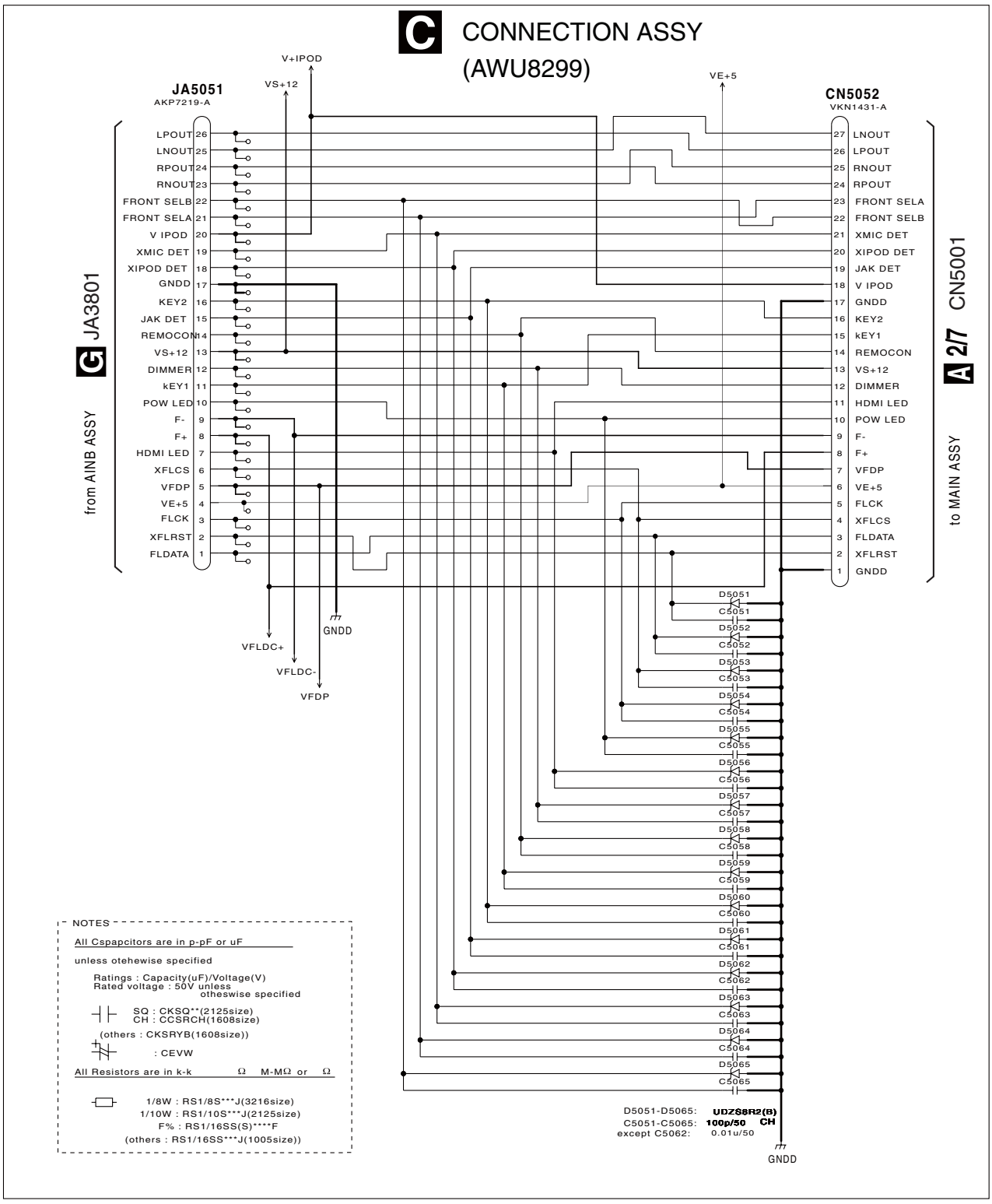
FR	CR	CL	FL	SR	SL
(RED)	(PUR)	(GRN)	(WHI)	(GRY)	(BLU)

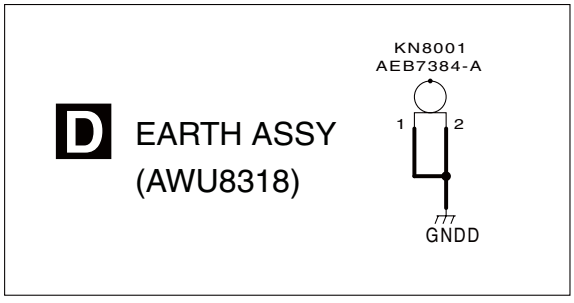
PCB board

SW1	SW2
(BLK)	(BLK)



10.10 CONNECTION and EARTH ASSYS





C D

C D

A

B

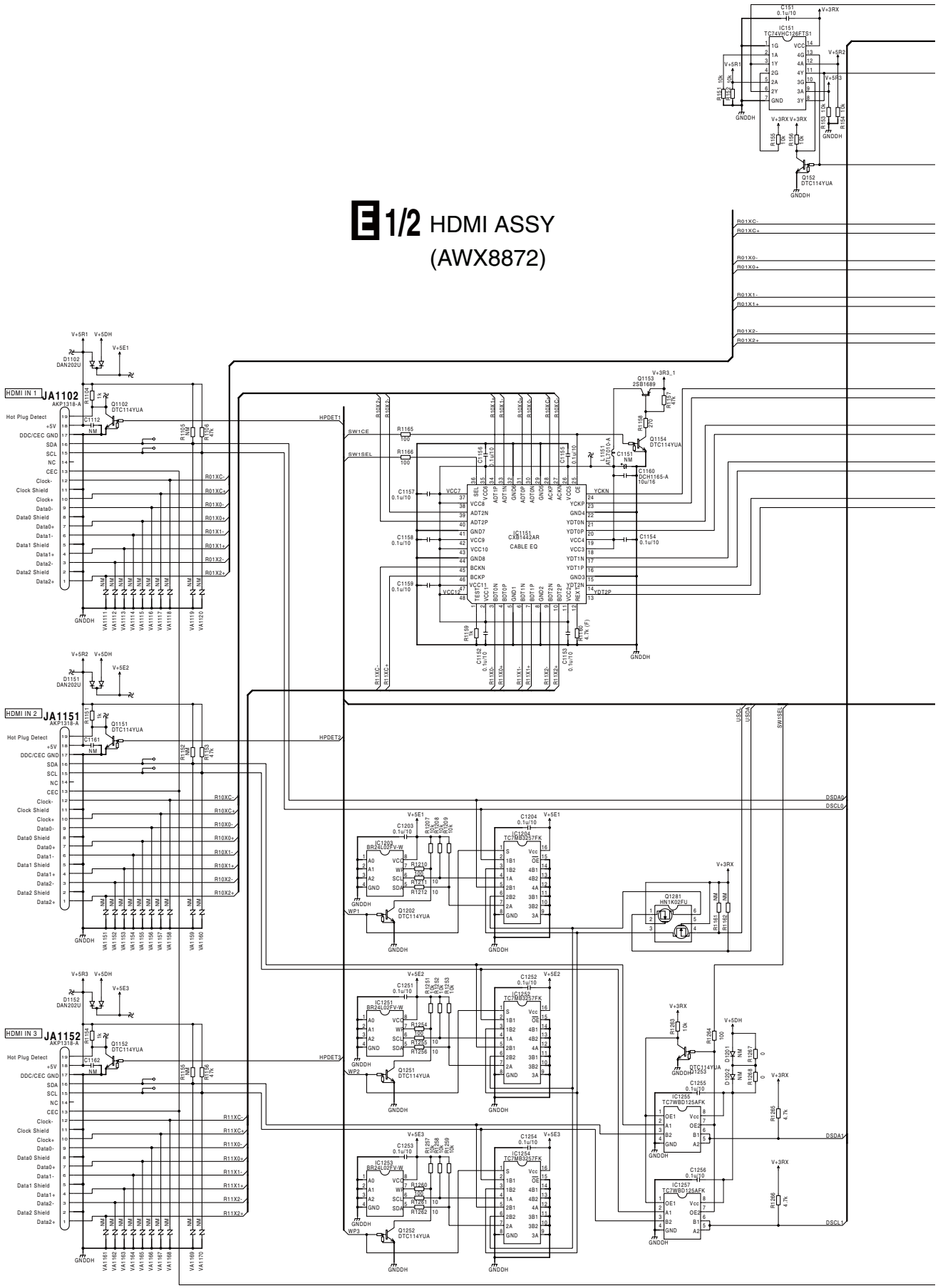
C

D

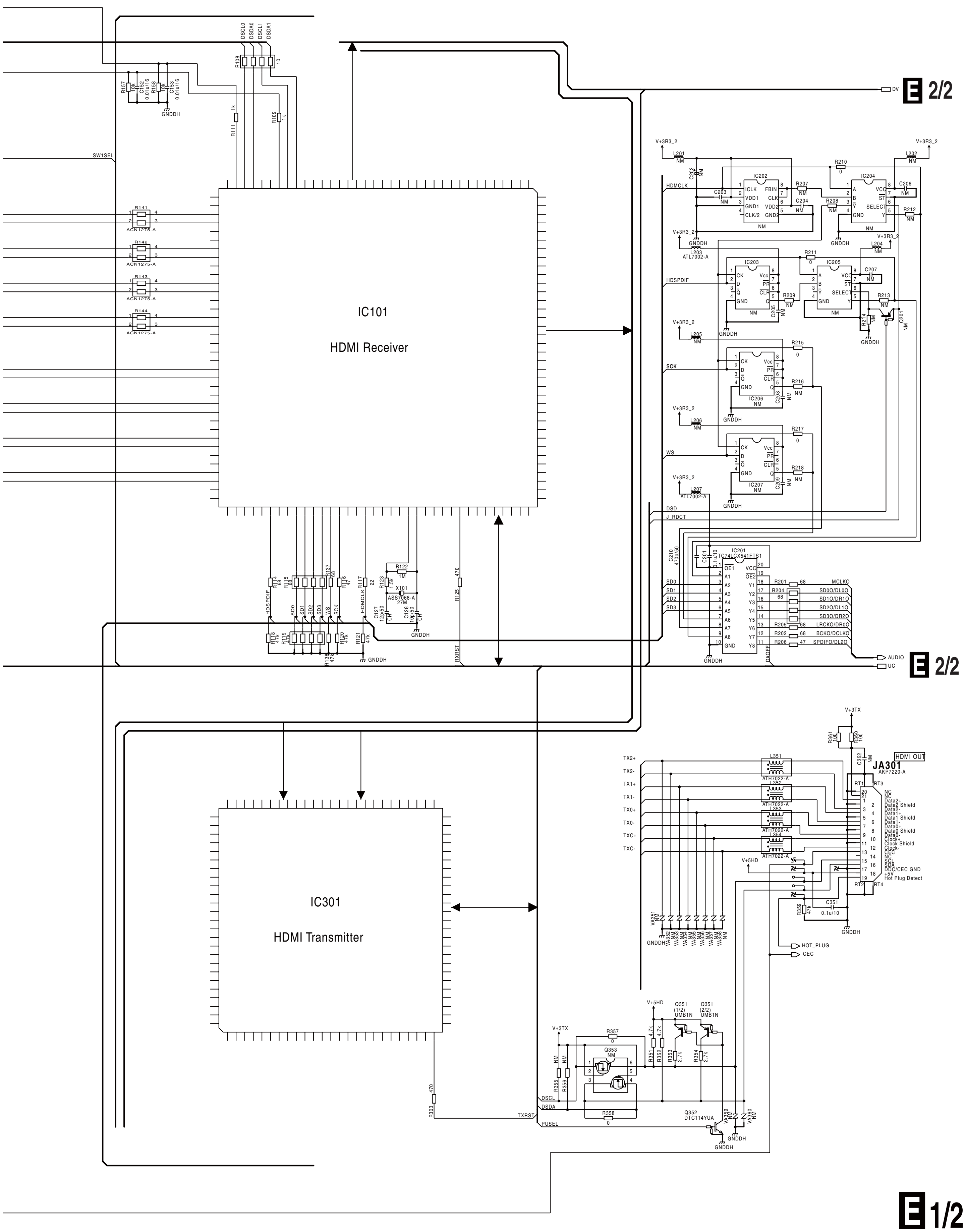
E

F

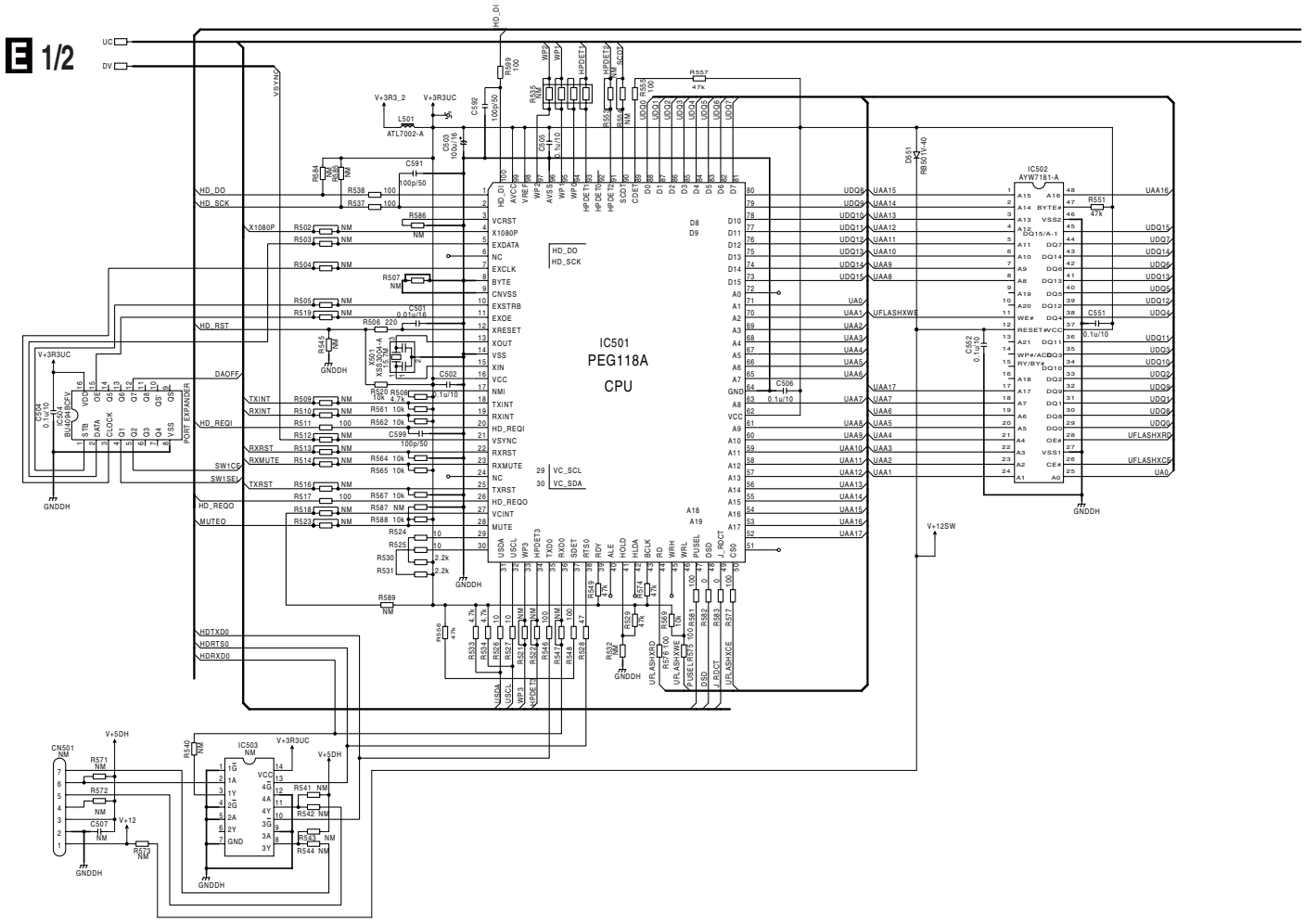
10.11 HDMI ASSY (1/2)



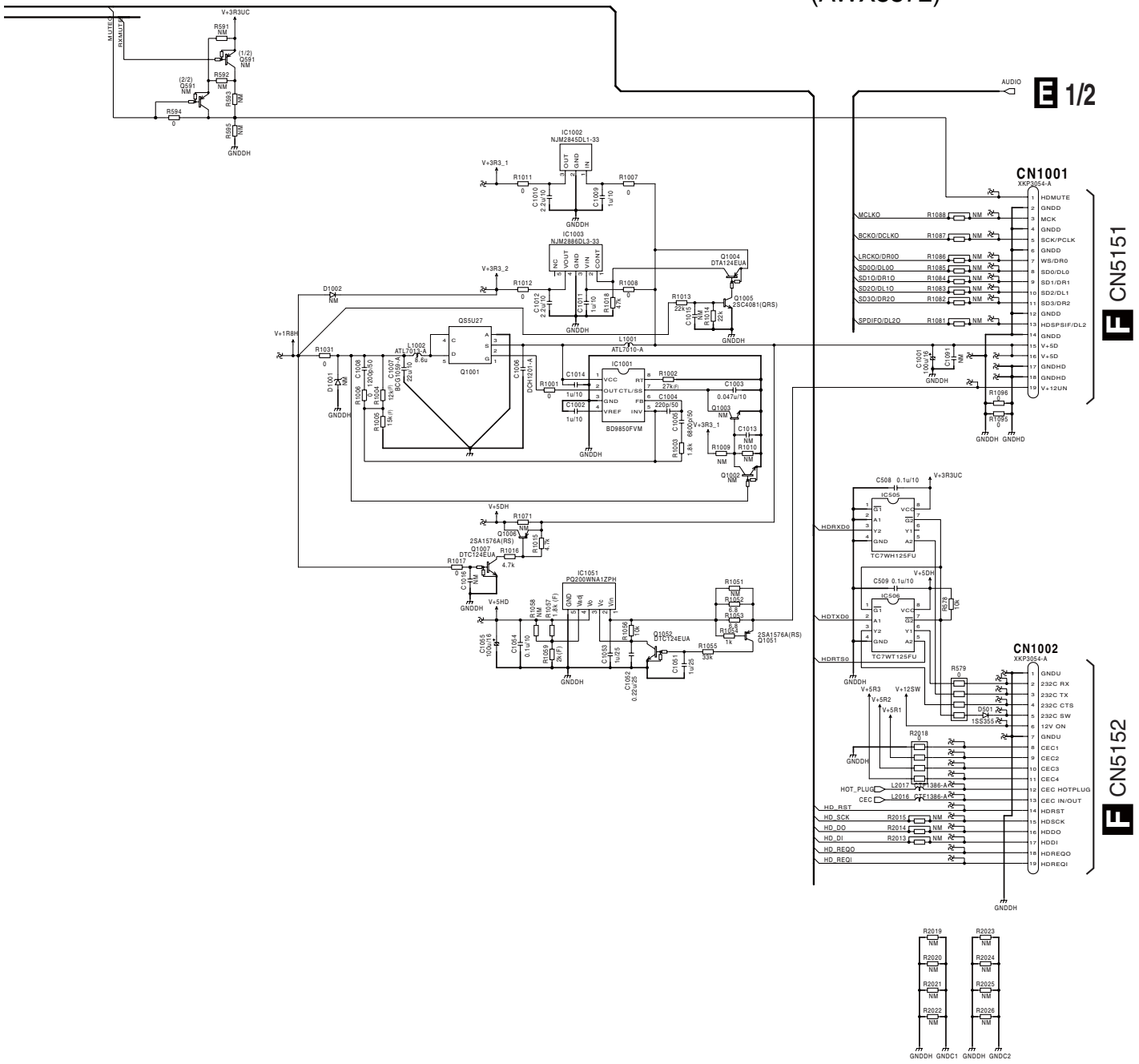
E 1/2


IC101
HDMI Receiver
IC301
HDMI Transmitter
IC201
TC74LCX541FTS1
IC202
IC203
IC204
IC205
IC206
IC207
JA301
AKP7220-A
HDMI OUT
Q351
UMB1N
Q352
DTC114YUA
Q353
DV
E 2/2
AUDIO
UC
E 2/2
HOT_PLUG
CEC
SW1SEL
HDSPDIF
HDMCLK
SCK
WS
DSD
J_RDCT
SD0
SD1
SD2
SD3
MCLKO
SD0O/DL0O
SD1O/DR1O
SD2O/DL1O
SD3O/DR2O
LRCKO/DR0O
BCKO/DCLKO
SPDIFO/DL2O
RXRST
TXRST
DSCL
DSDA
PUSEL
TX2+
TX2-
TX1+
TX1-
TX0+
TX0-
TXC+
TXC-
ATH7022-A
ATL7002-A
ACN1275-A
ASS7068-A
27M
GNDDH
V+3R3_2
V+3TX
V+5HD
NC
Data2+
Data2 Shield
Data2-
Data1+
Data1 Shield
Data1-
Data0+
Data0 Shield
Data0-
Clock+
Clock Shield
Clock-
CEC
NC
SCL
SDA
DDC/CEC GND
+5V
Hot Plug Detect
E 1/2

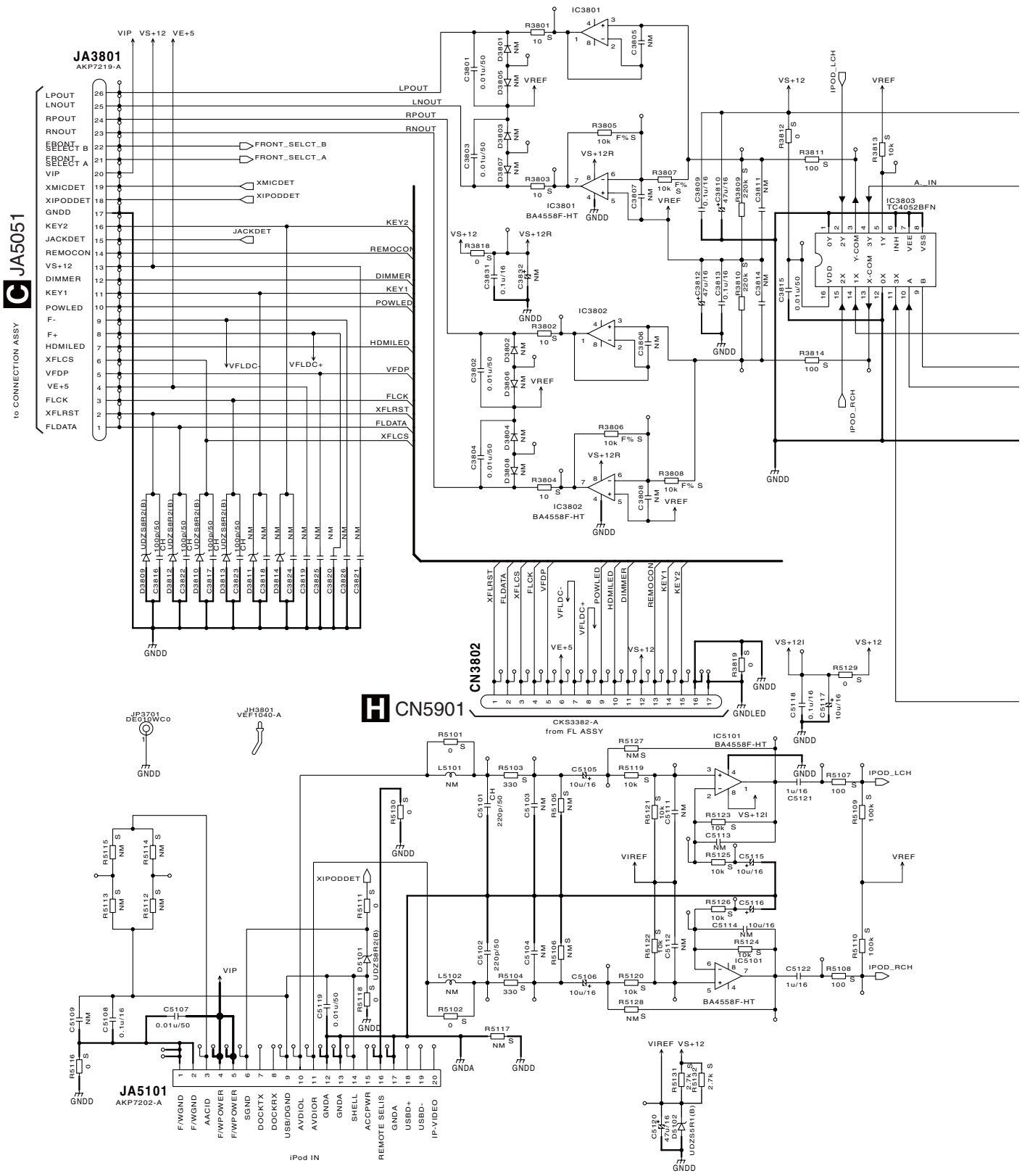
10.12 HDMI ASSY (2/2)



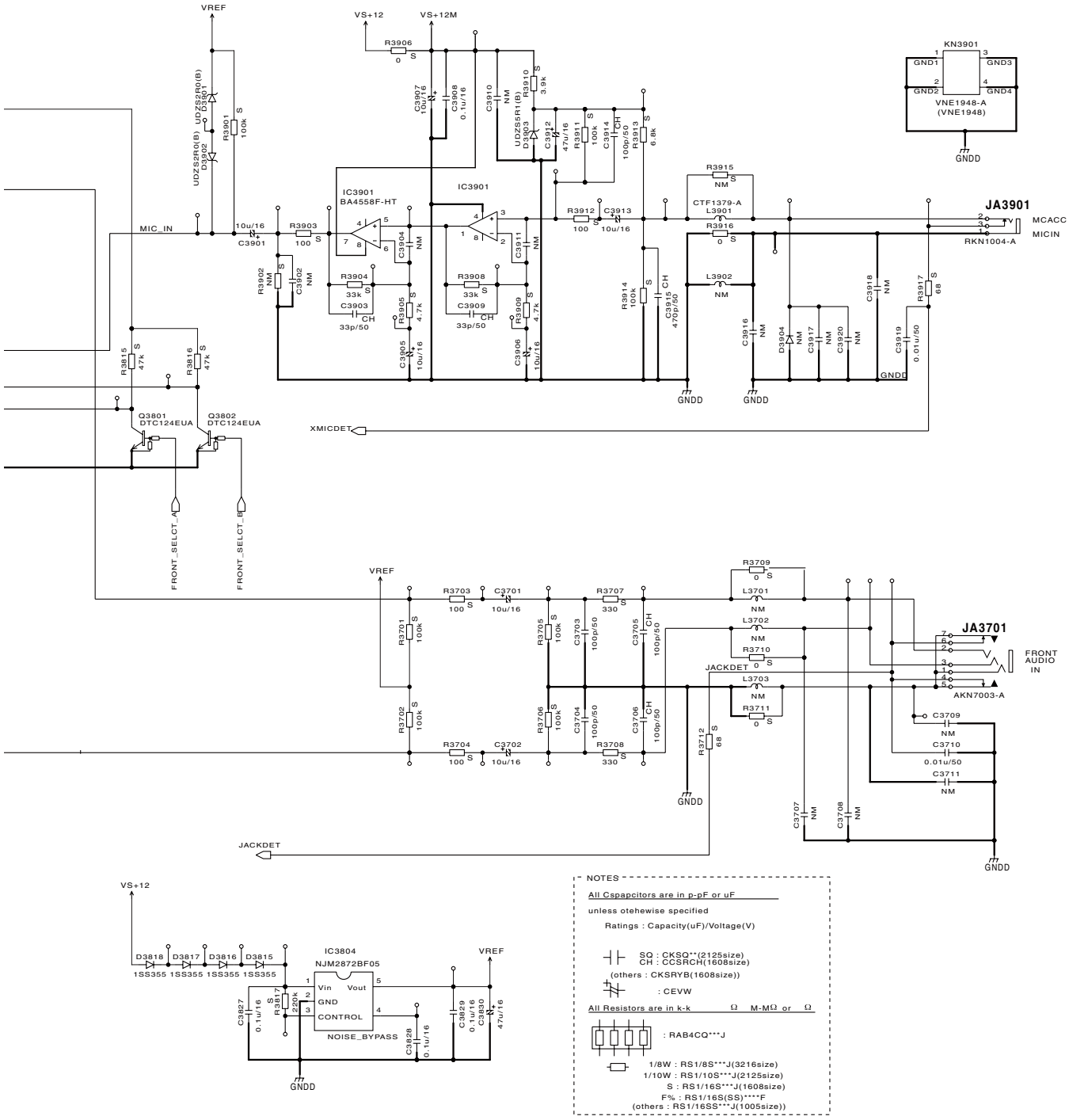
E 2/2 HDMI ASSY (AWX8872)



10.13 AINB ASSY



G AINB ASSY (AWK8032)



NOTES

All Cspapcitors are in p-pF or uF
unless otehewise specified
Ratings : Capacity(uF)/Voltage(V)

SQ : CKSQ**(2125size)
CH : CCSRCH(1608size)
(others : CKSRYB(1608size))

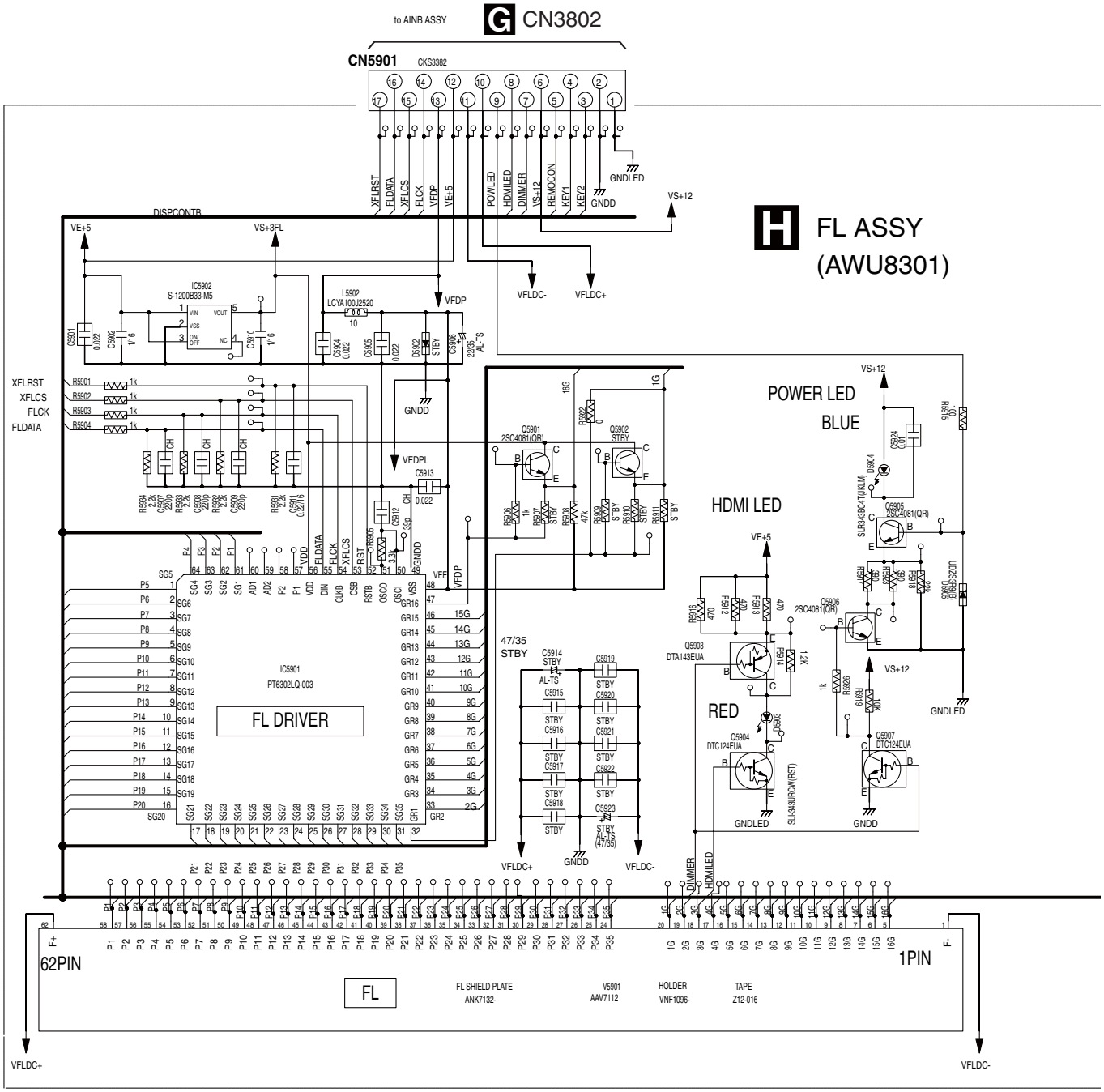
: CEVW

All Resistors are in k-k Ω M-MΩ or Ω

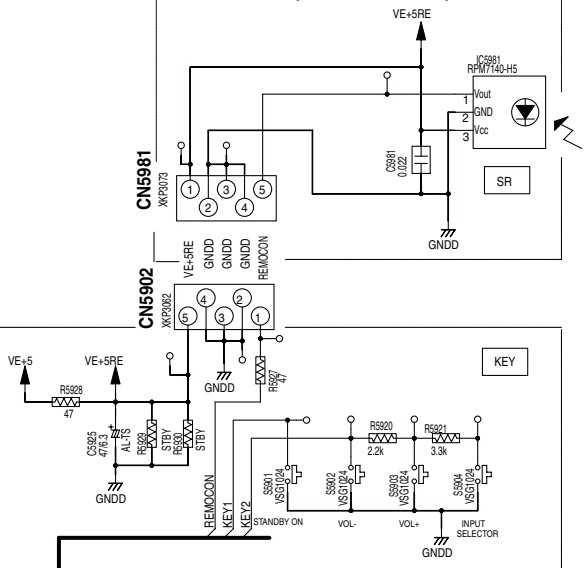
: RAB4CQ***J

1/8W : RS1/8S***J(3216size)
1/10W : RS1/10S***J(2125size)
S : RS1/16S***J(1608size)
F% : RS1/16S(SS)****F
(others : RS1/16SS***J(1005size))

10.14 FL, REMOCON and BTOB ASSYS



I REMOCON ASSY (AWU8302)



NOTES

All Capacitors are in p-pF or uF
unless otherwise specified
Ratings : Capacity(uF)/Voltage(V)
Rated Voltage : 50V unless otherwise specified

CH : CCSRCH(1608size)
(others : CKSRYB(1608size))

AL : CEAL

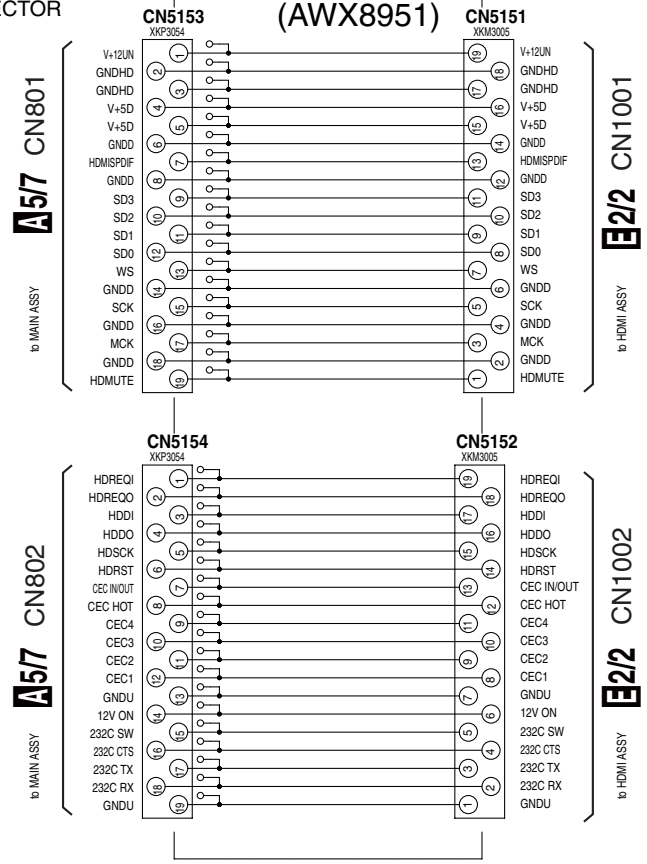
All Resistors are in k-kohm, M-Mohm or ohm

RS1/16S***J(1608size)
RS1/16S***F(1608size)

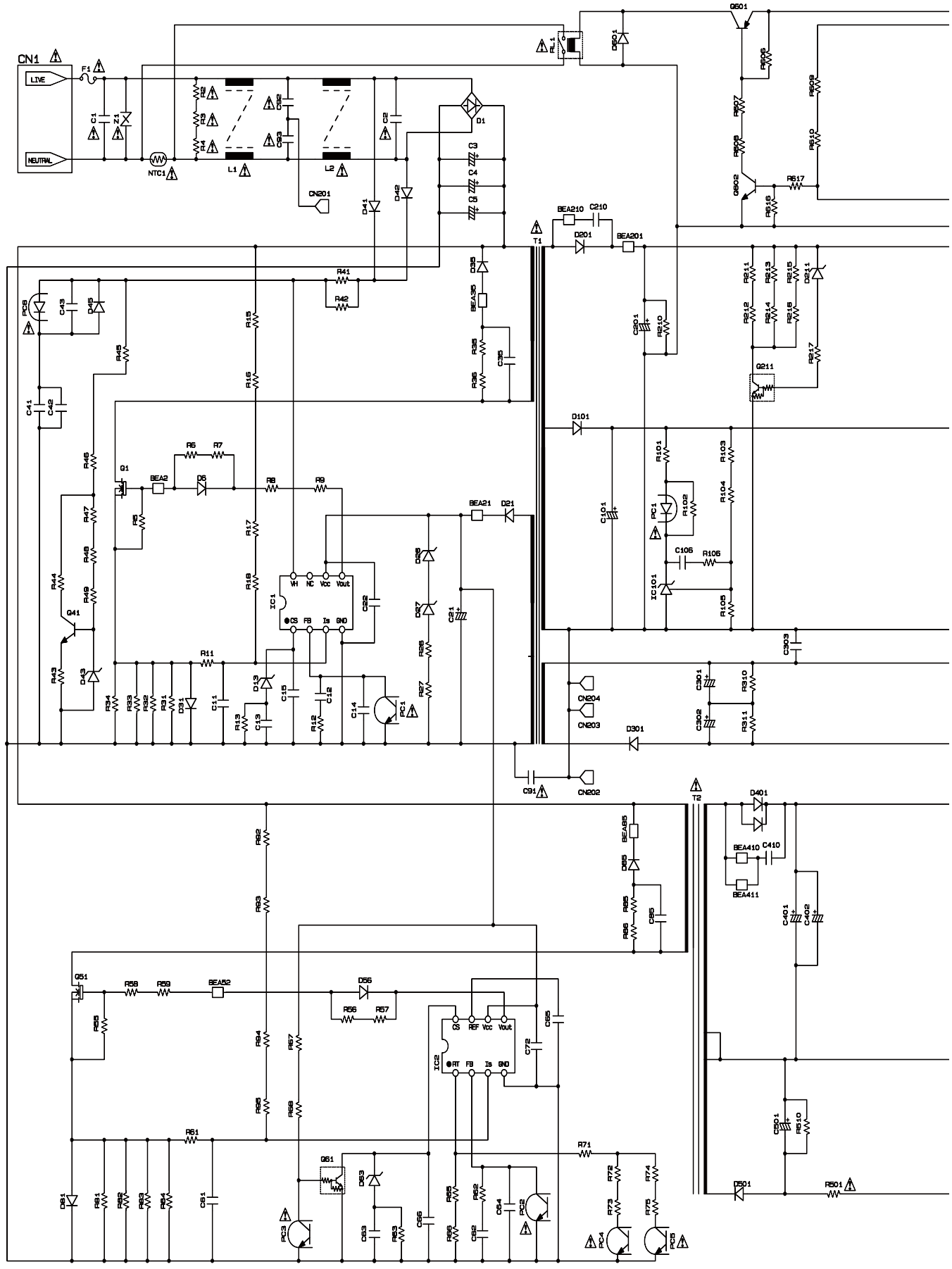
All Inductors are in uH

SWITCHES
S5901 : STANDBY ON
S5902 : VOL-
S5903 : VOL+
S5904 : INPUT SELECTOR

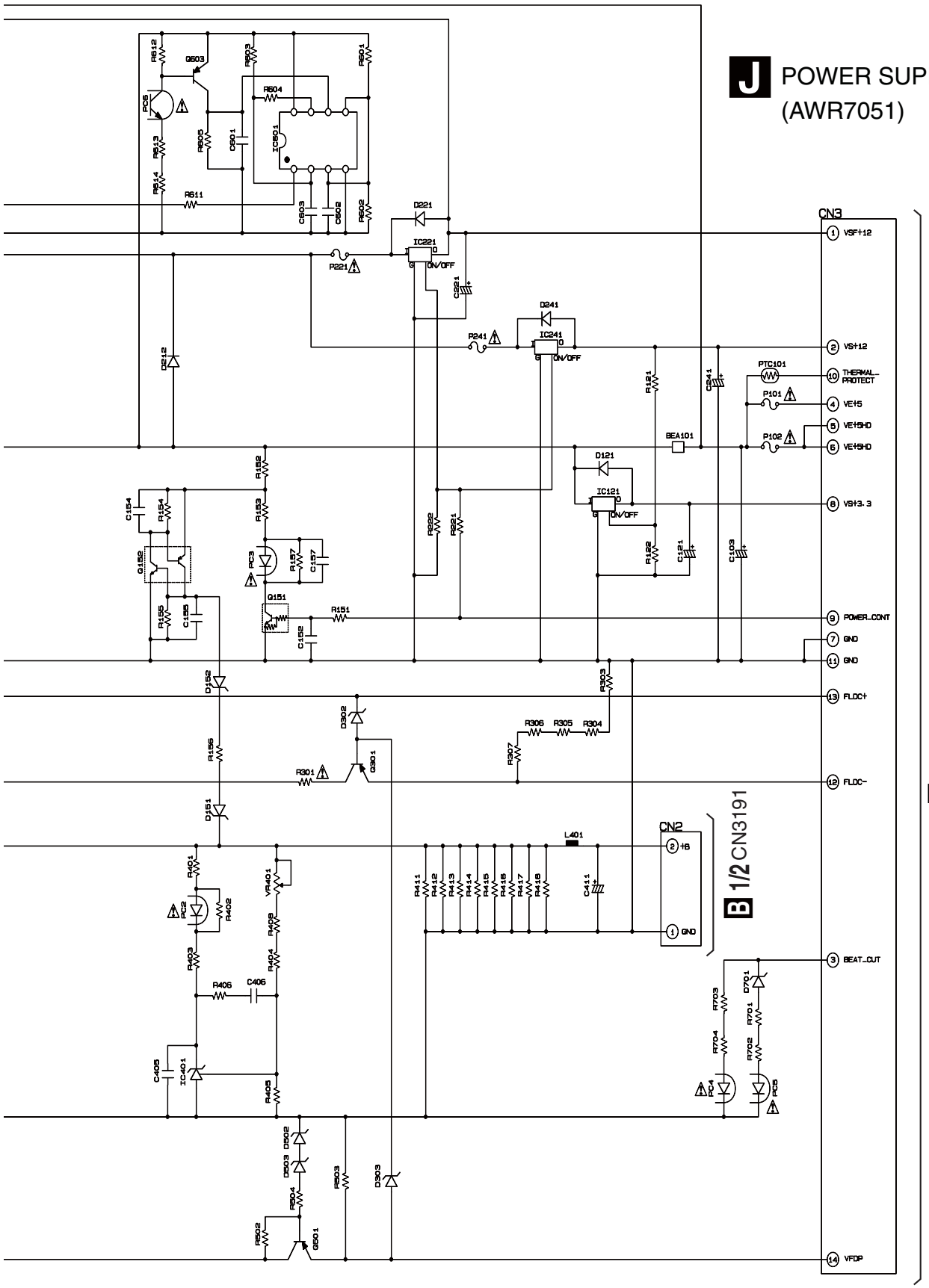
F BTOB ASSY (AWX8951)



10.15 POWER SUPPLY UNIT



J POWER SUPPLY UNIT (AWR7051)



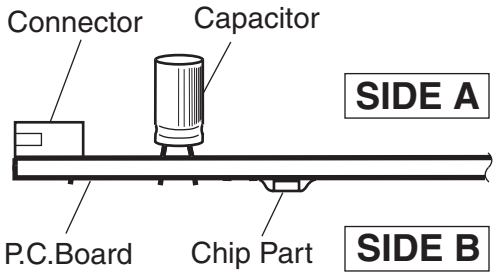
11. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

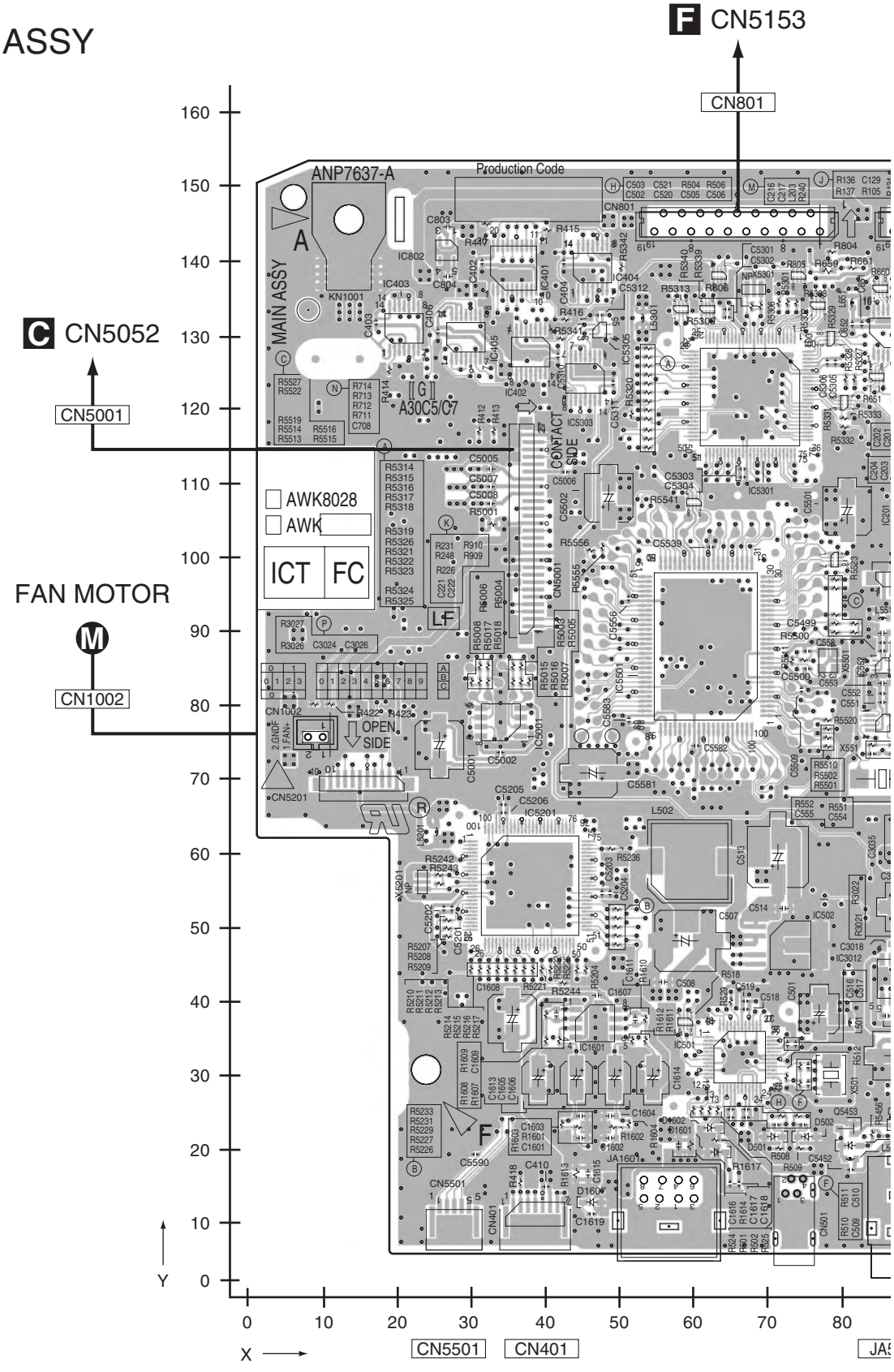
Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.

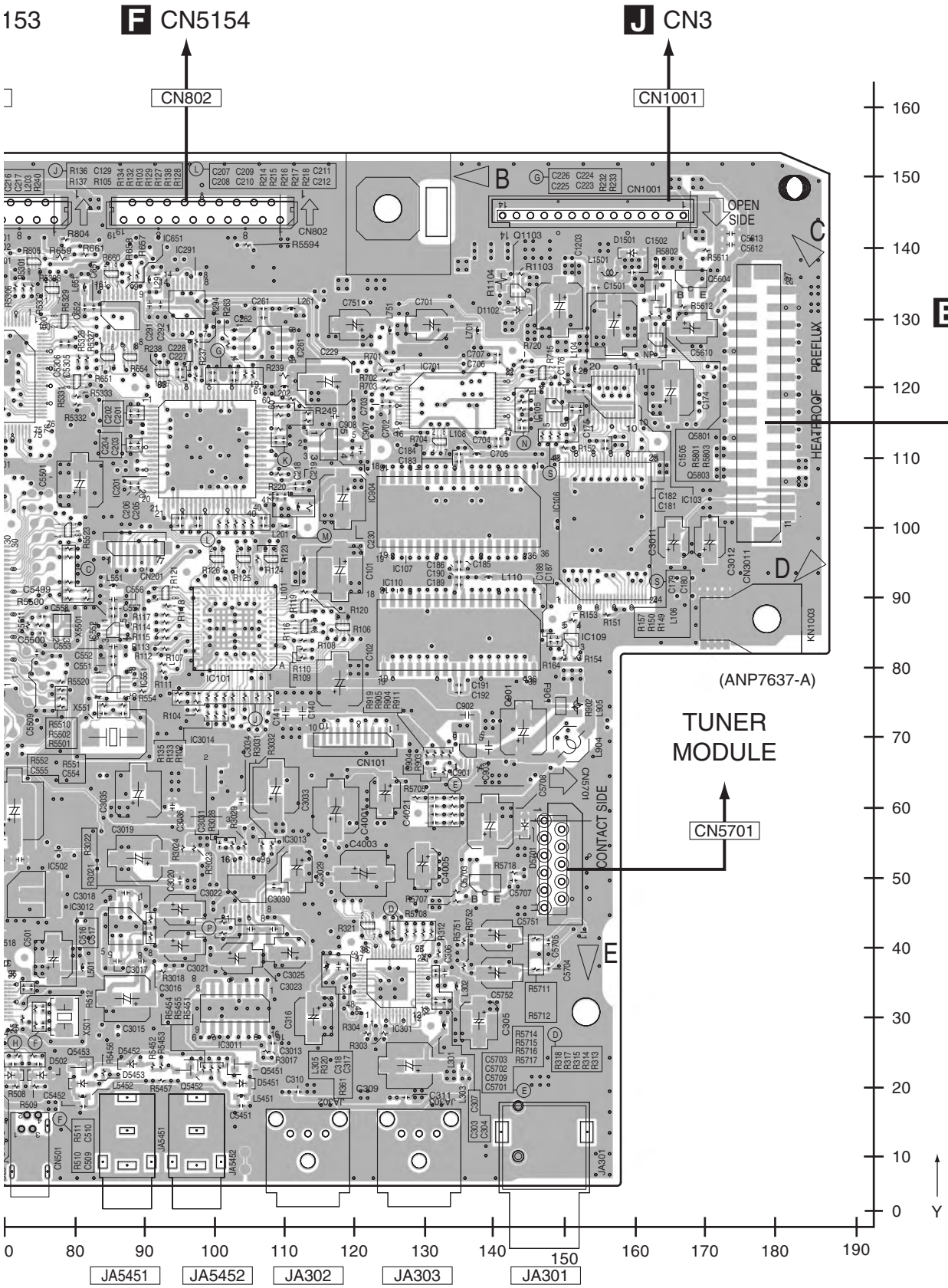


11.1 MAIN ASSY

SIDE A

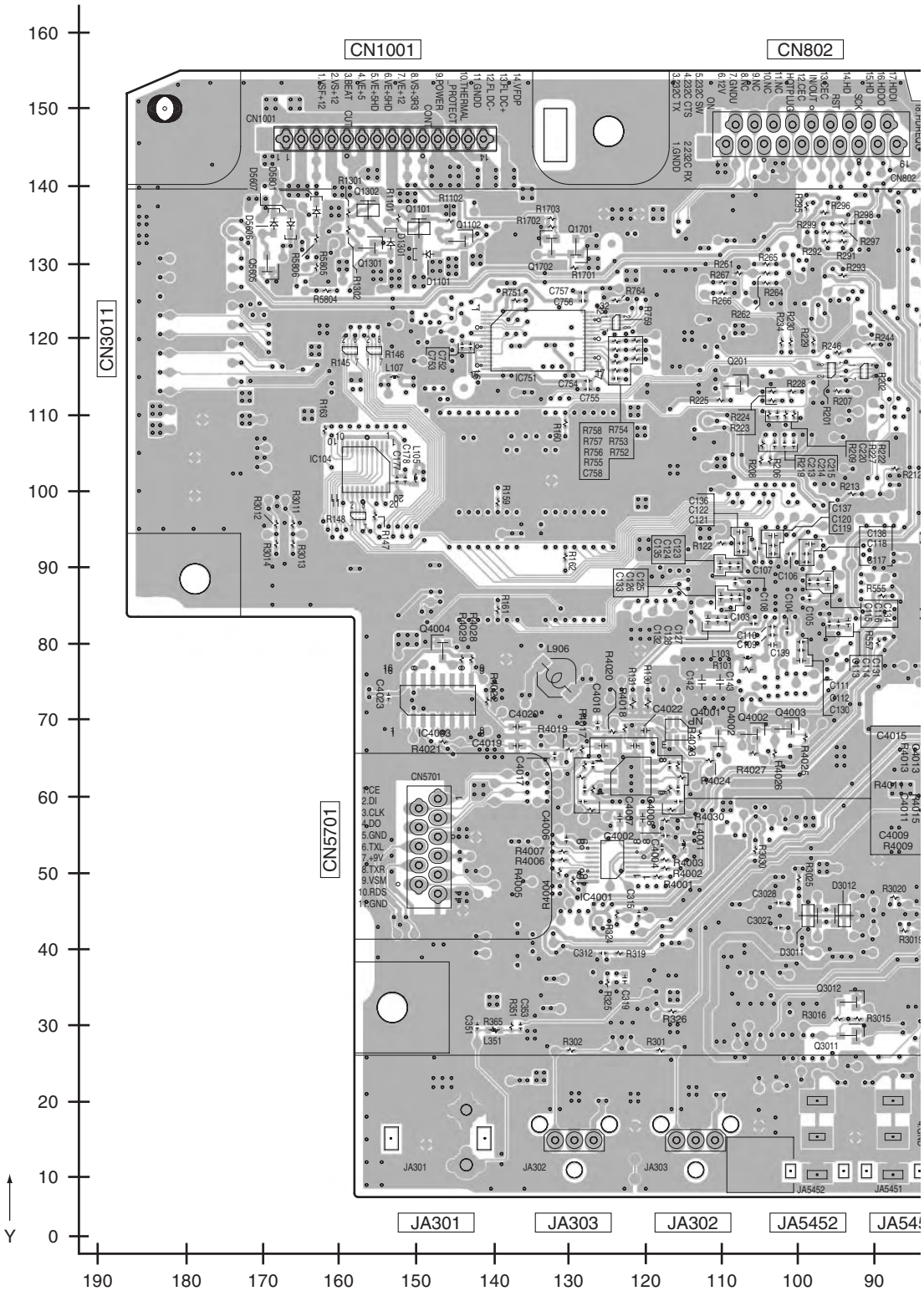


SIDE A

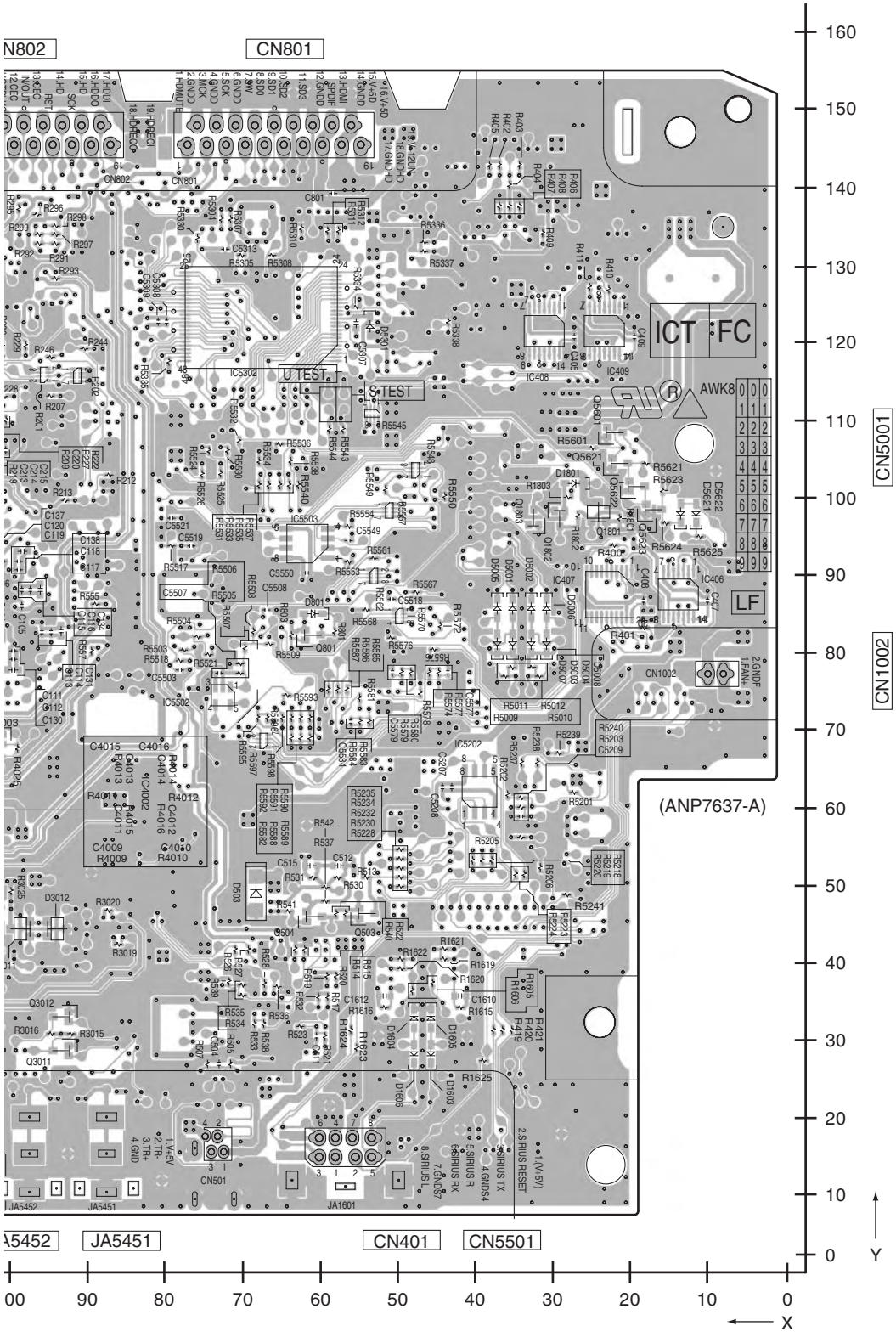

153
F CN5154
J CN3
CN802
CN1001
B CN3101
CN3011
CN5701
TUNER MODULE
(ANP7637-A)
OPEN SIDE
CONTACT SIDE
PREFLUX
HEAT PROOF
JA5451
JA5452
JA302
JA303
JA301
Y

SIDE B

A MAIN ASSY



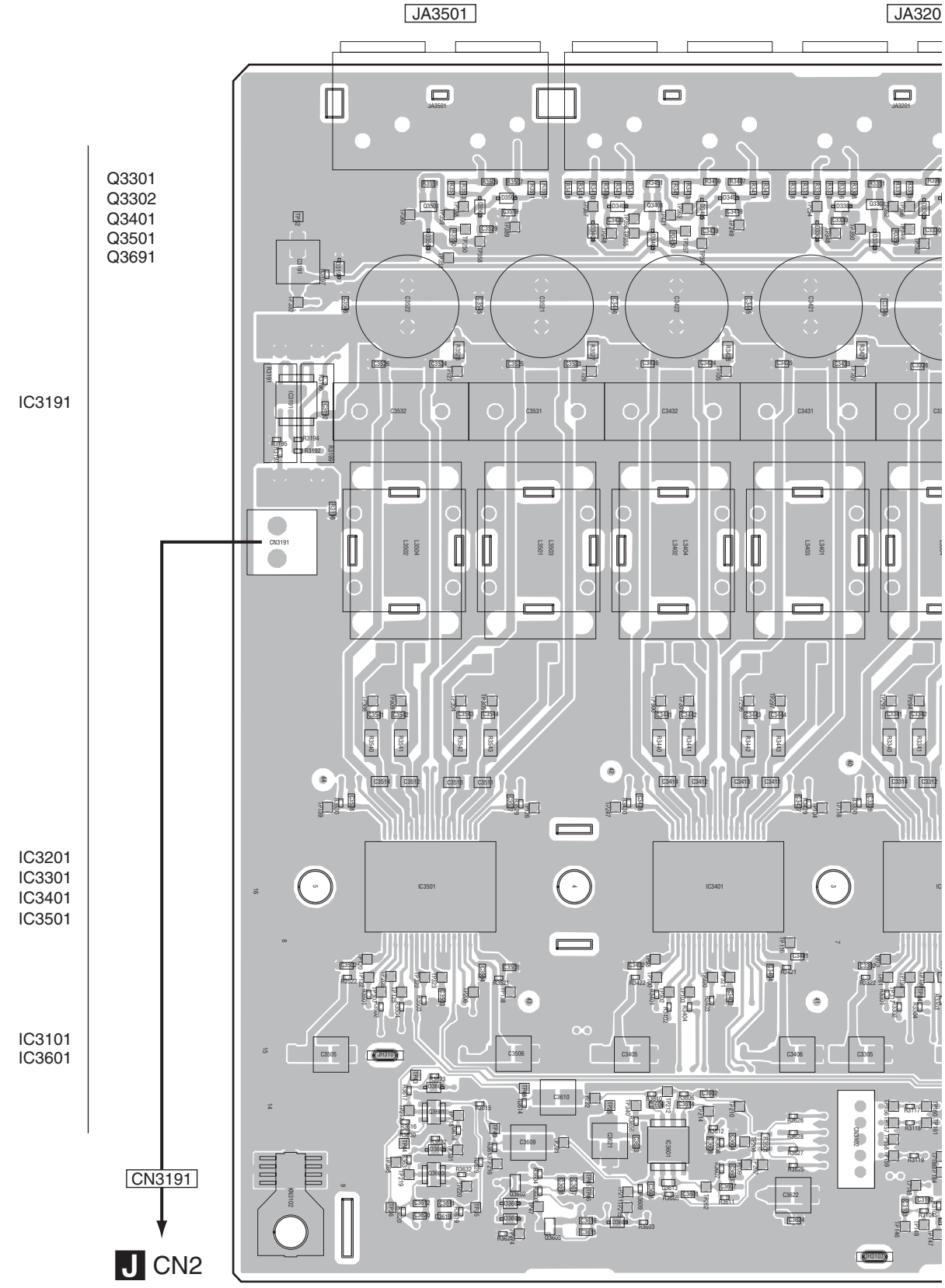
SIDE B


CN802
CN801
ICT
FC
LF
U.TEST
S.TEST
AWK8
(ANP7637-A)
CN5001
CN1002
CN401
CN5501
JA5452
JA5451
JA1601
CN501
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
Y
X

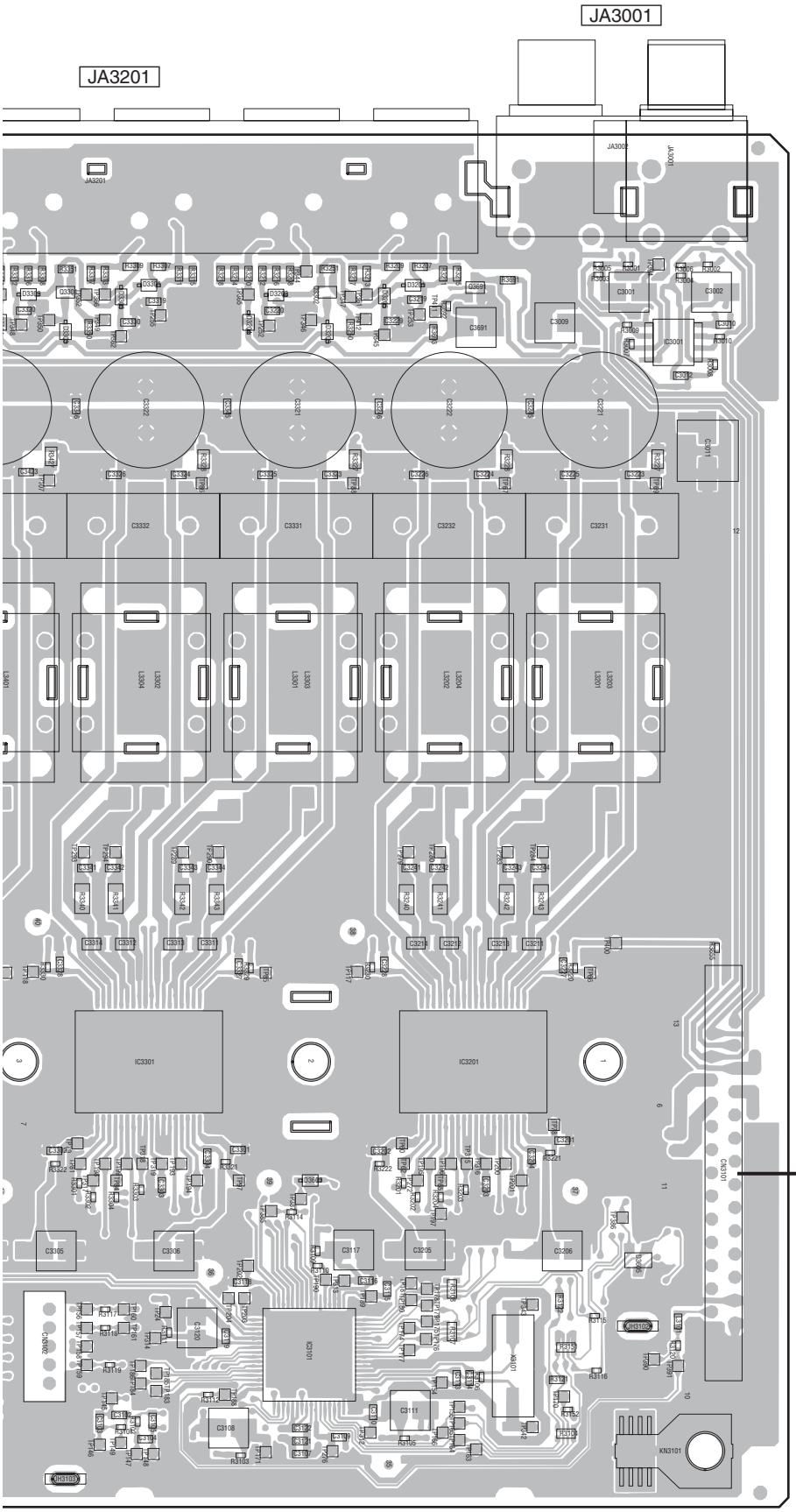
11.2 AMP ASSY

SIDE A

B AMP ASSY



SIDE A



CN3101

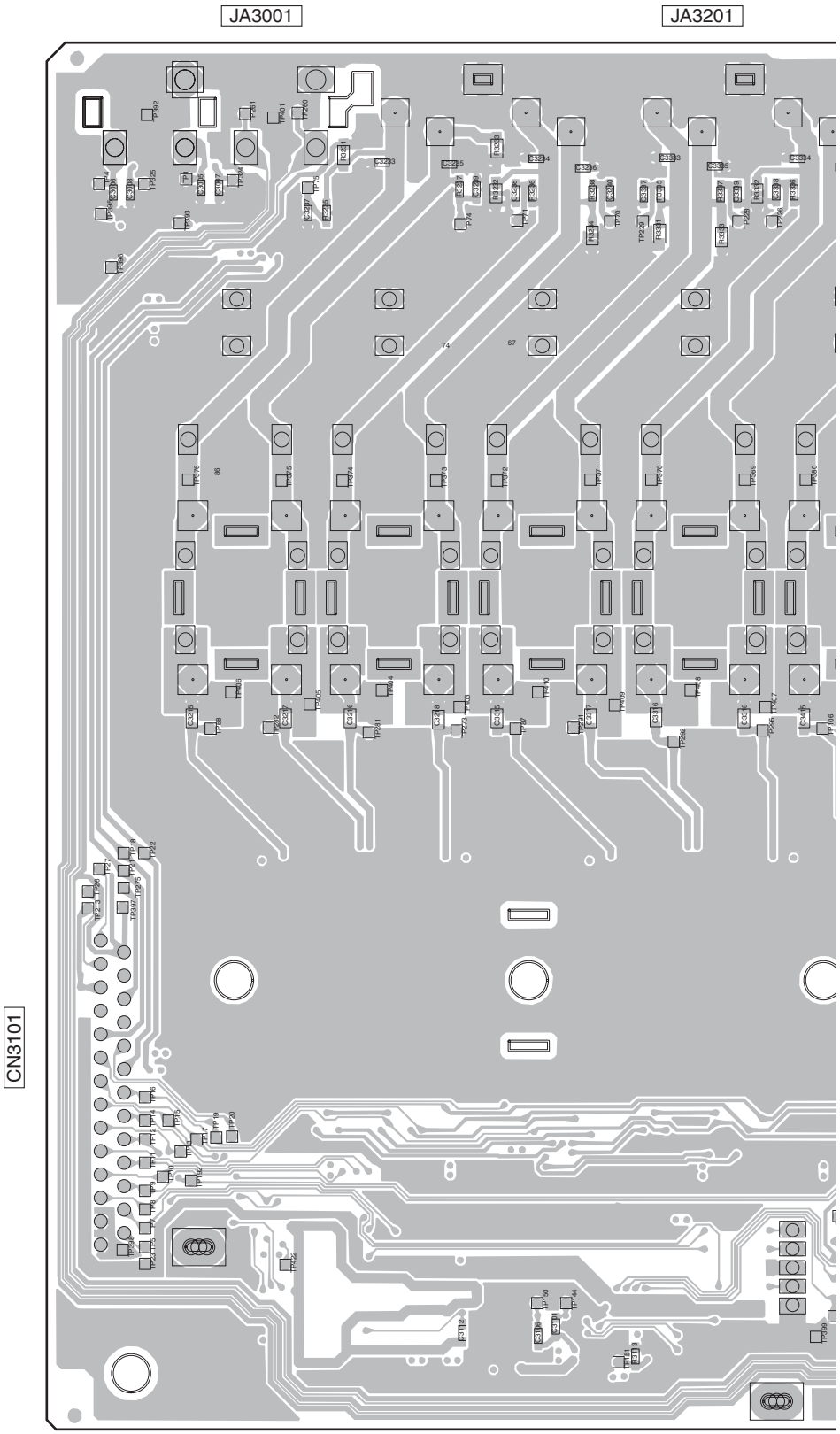
A CN3011

(ANP7618-B)

B

SIDE B

B AMP ASSY



SIDE B

A

B

C

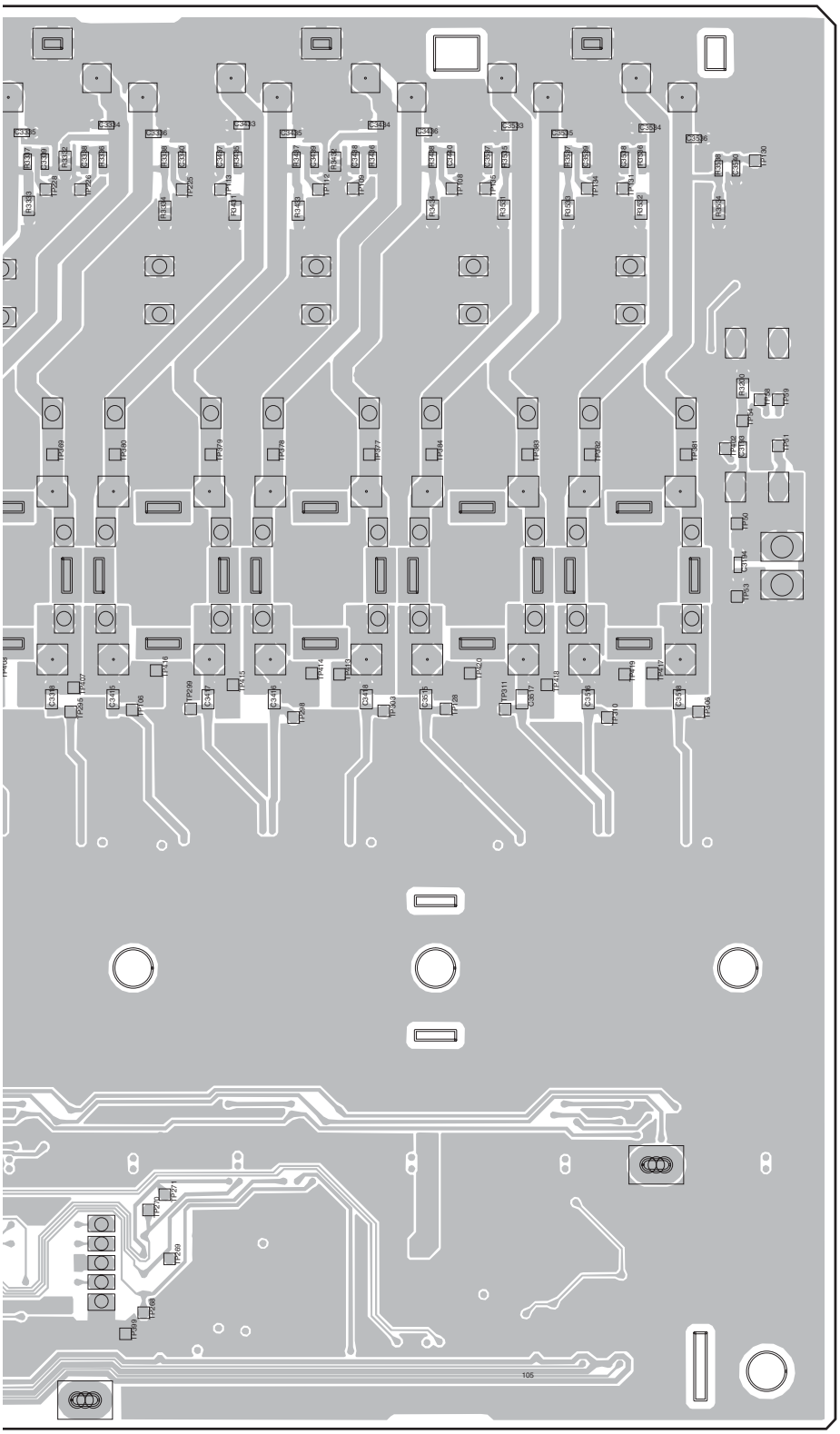
D

E

F

3201

JA3501



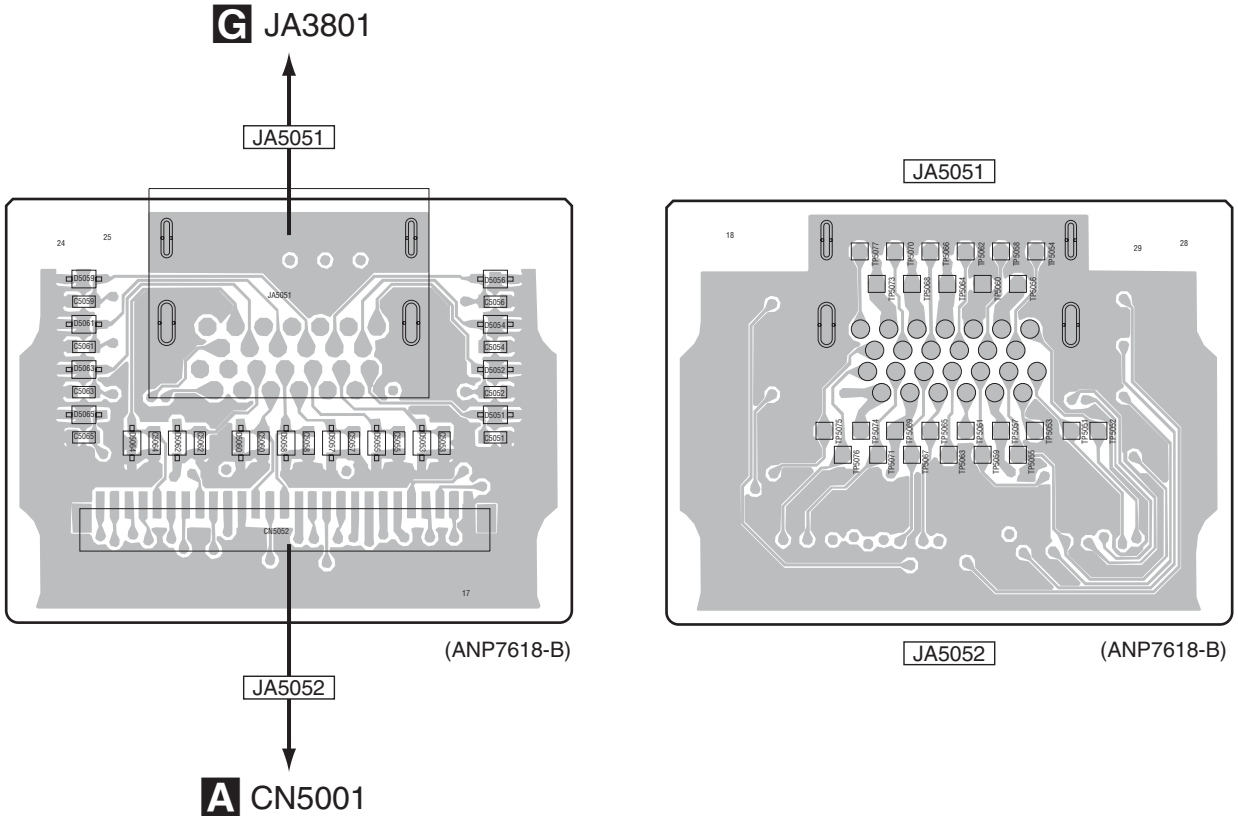
CN3191

(ANP7618-B)

11.3 CONNECTION ASSY

SIDE A **SIDE B**

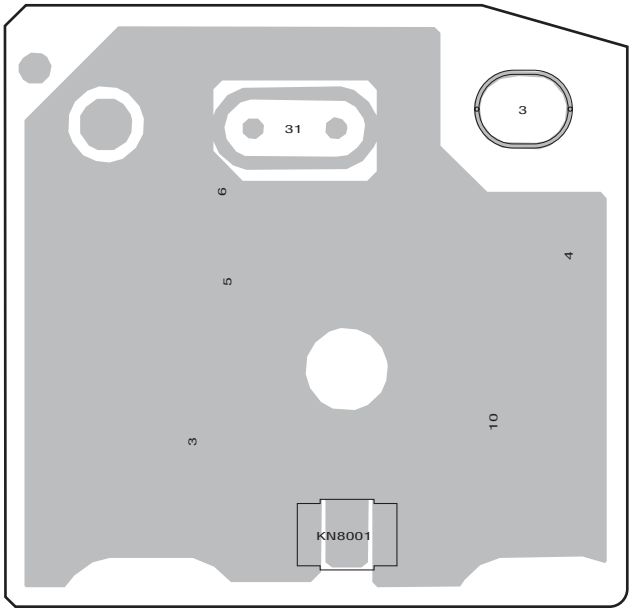
C CONNECTION ASSY



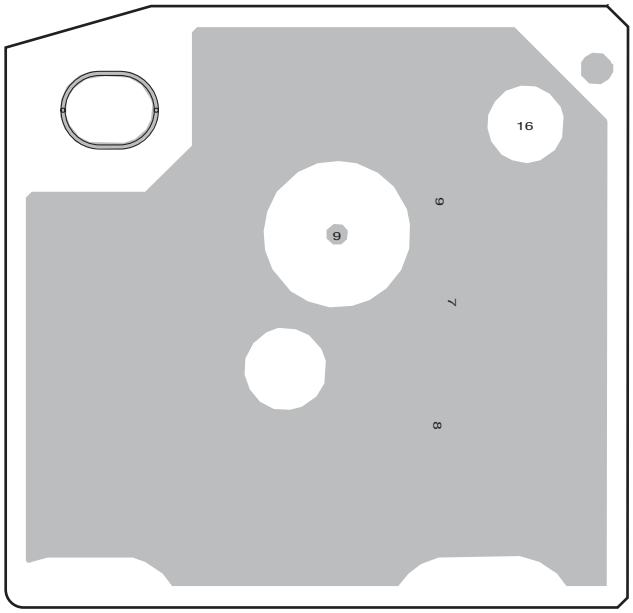
11.4 EARTH ASSYS

SIDE A **SIDE B**

D EARTH ASSY



(ANP7618-B)

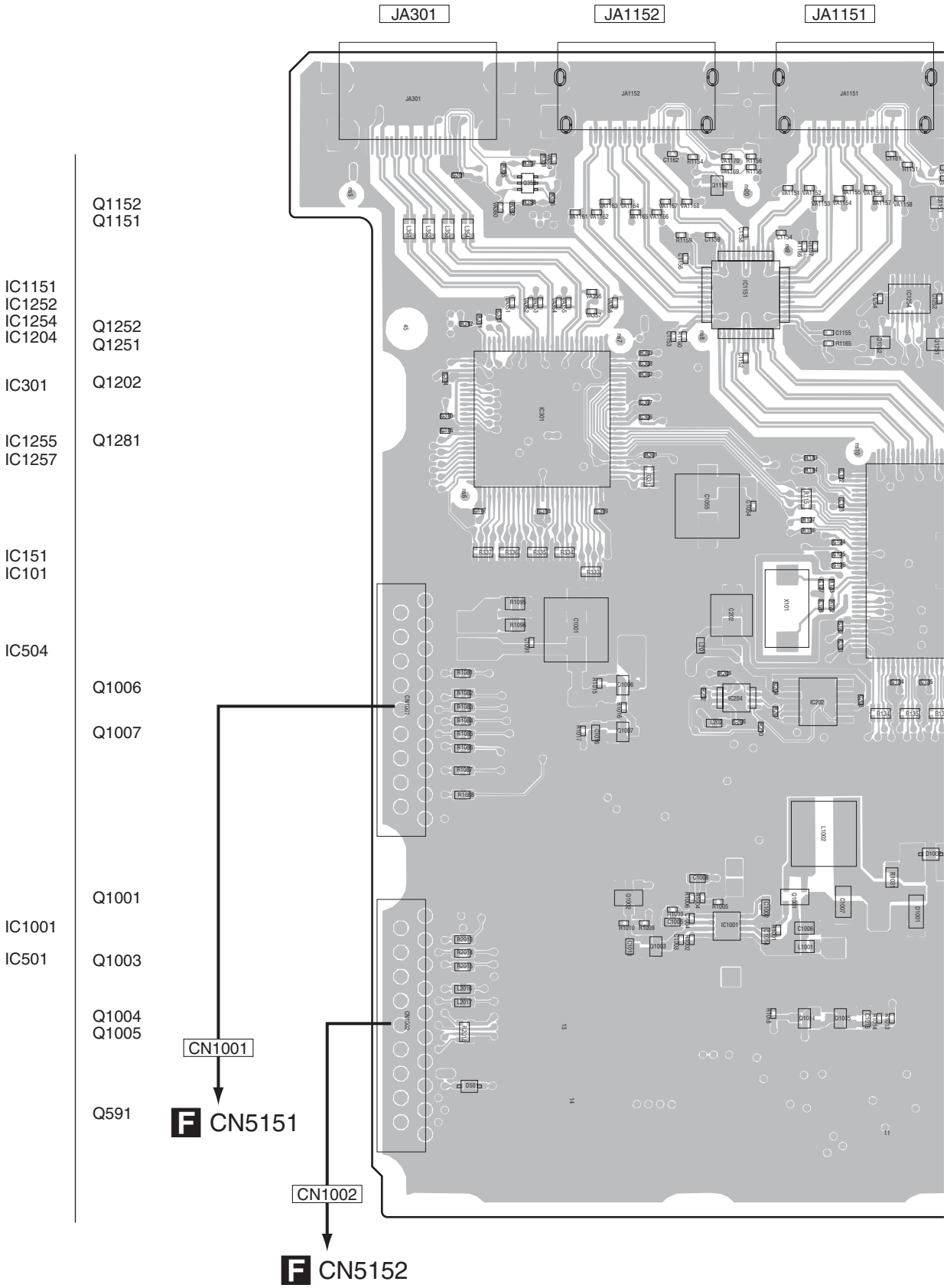


(ANP7618-B)

11.5 HDMI ASSY

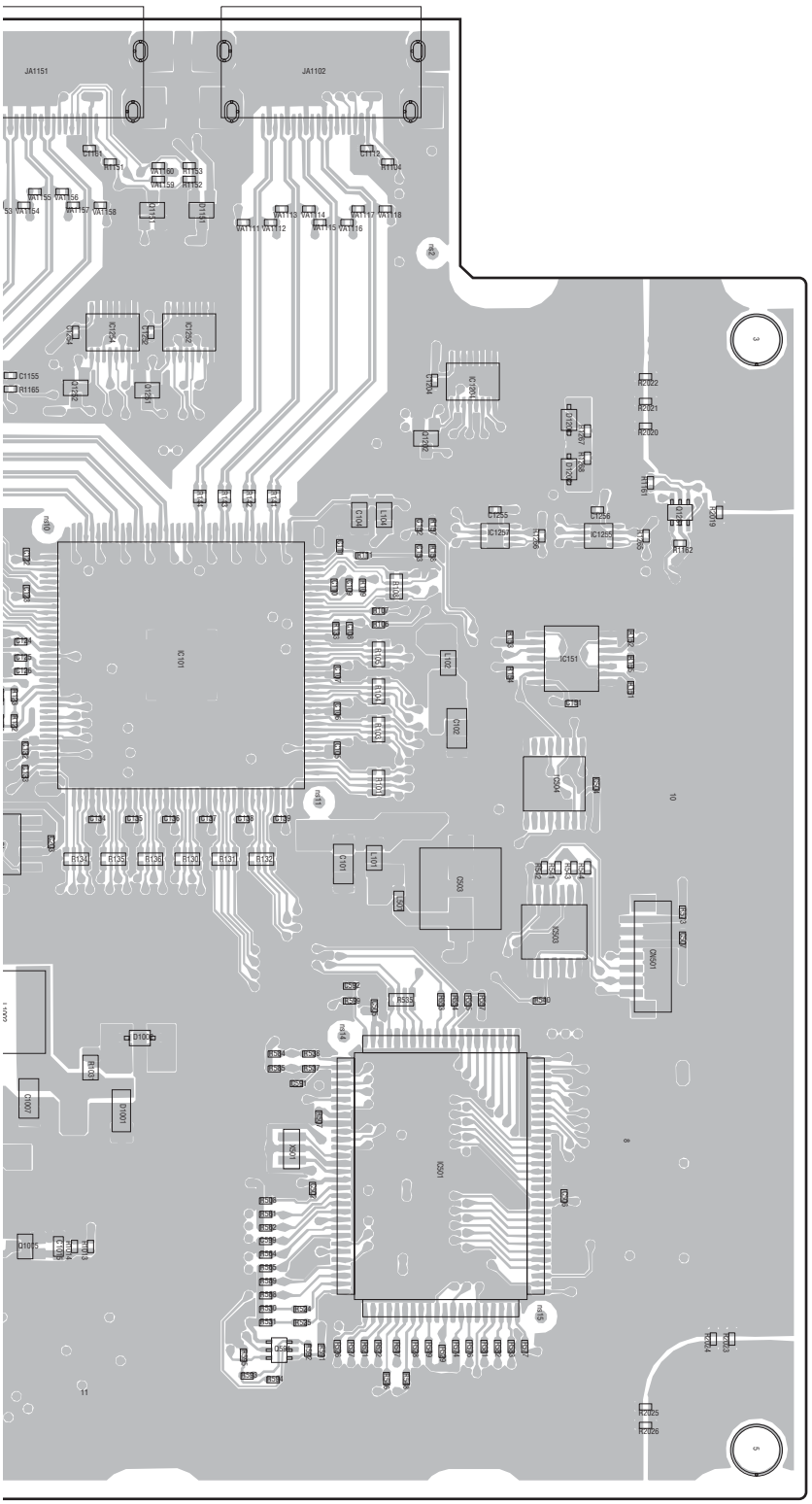
SIDE A

E HDMI ASSY



SIDE A

A1151 JA1102



(ANP7622-A)

SIDE B

E HDMI ASSY

JA1102 JA1

Q351
Q1102
Q352

IC1251
IC1253
IC1203 Q1154
Q1153

IC1051 Q1253

Q152
Q1052
Q1051

IC205
IC203

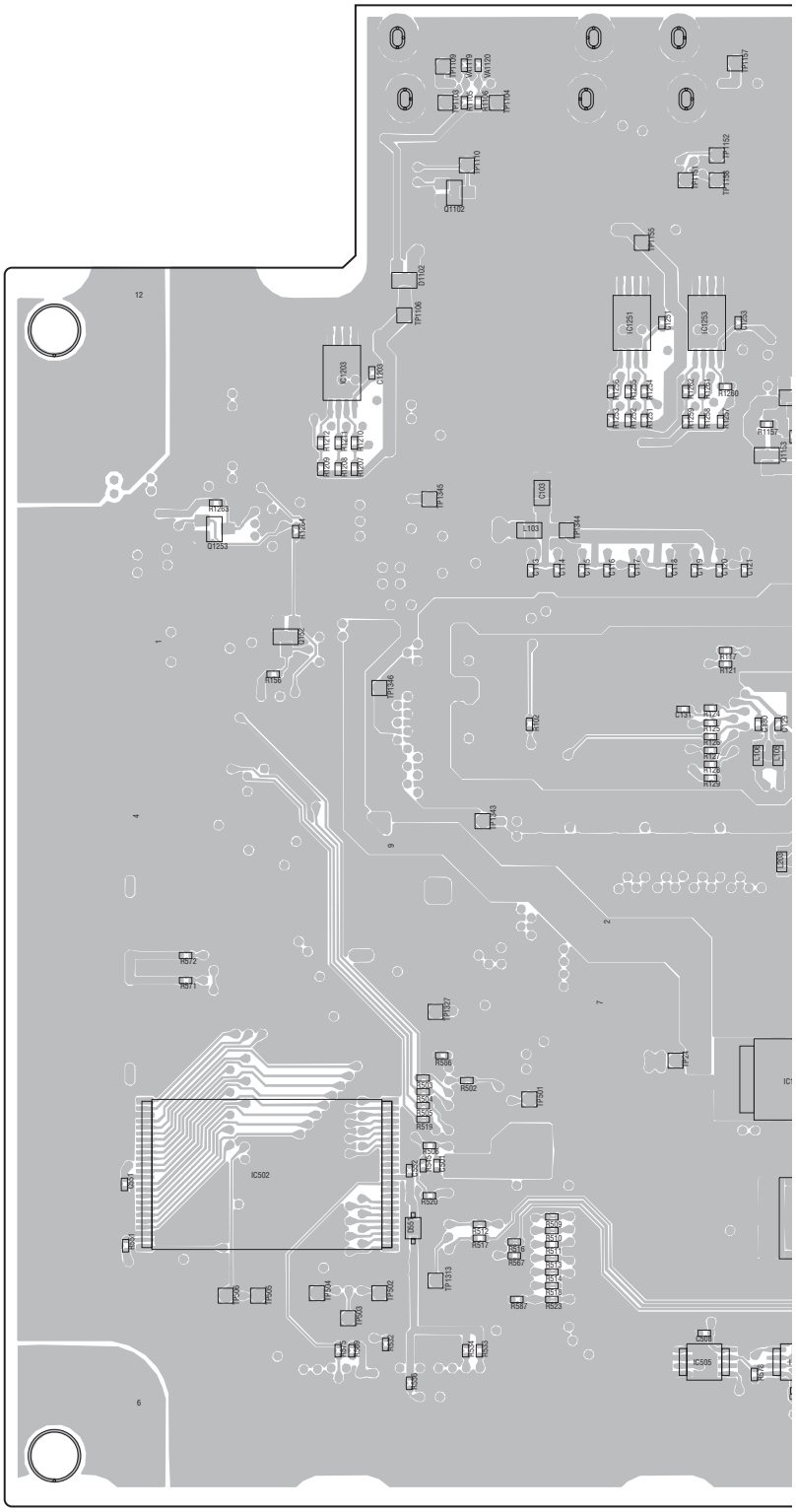
IC201

IC1002

IC502

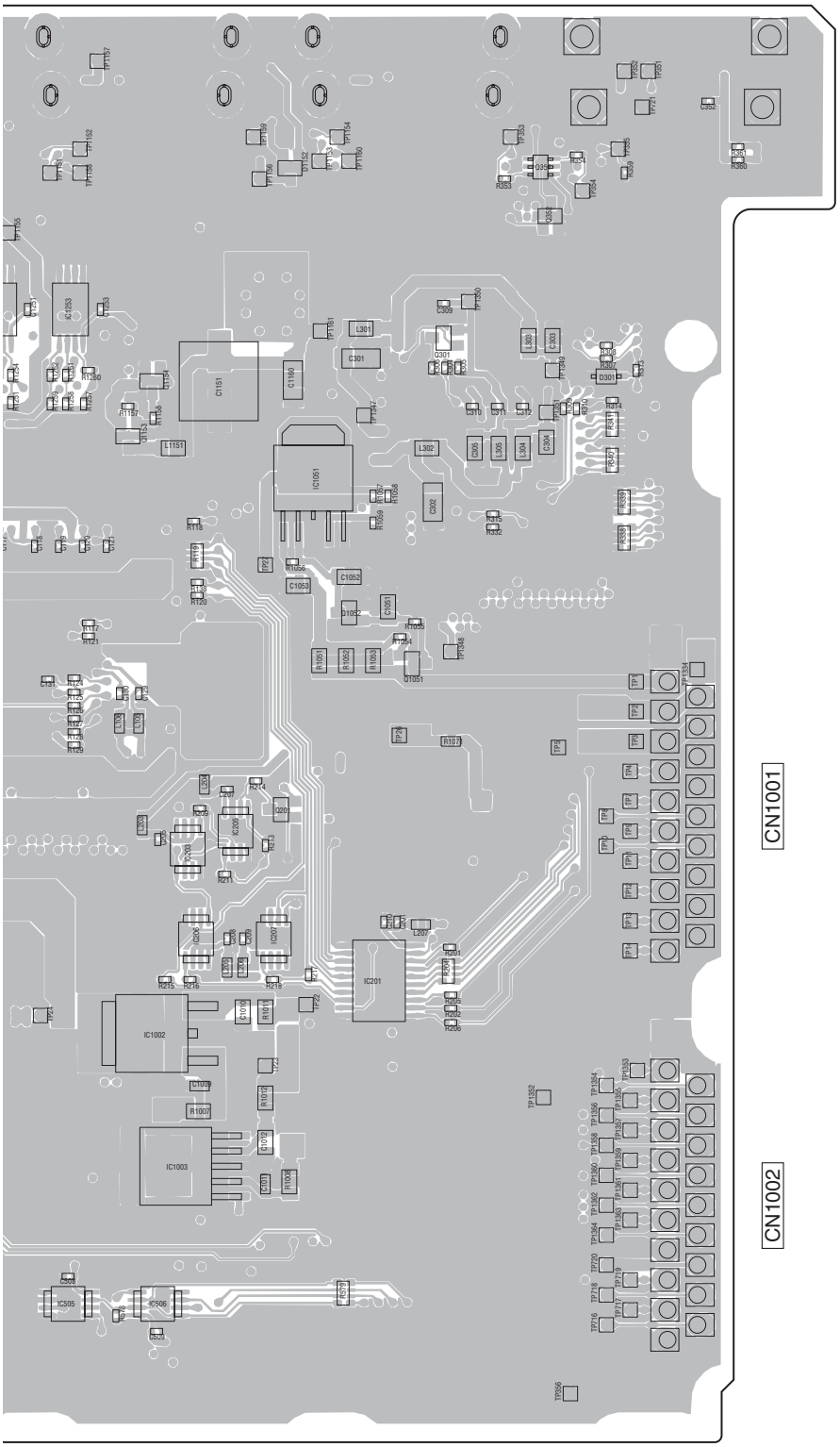
IC1003

IC505
IC506



SIDE B

JA1151 JA1152 JA301

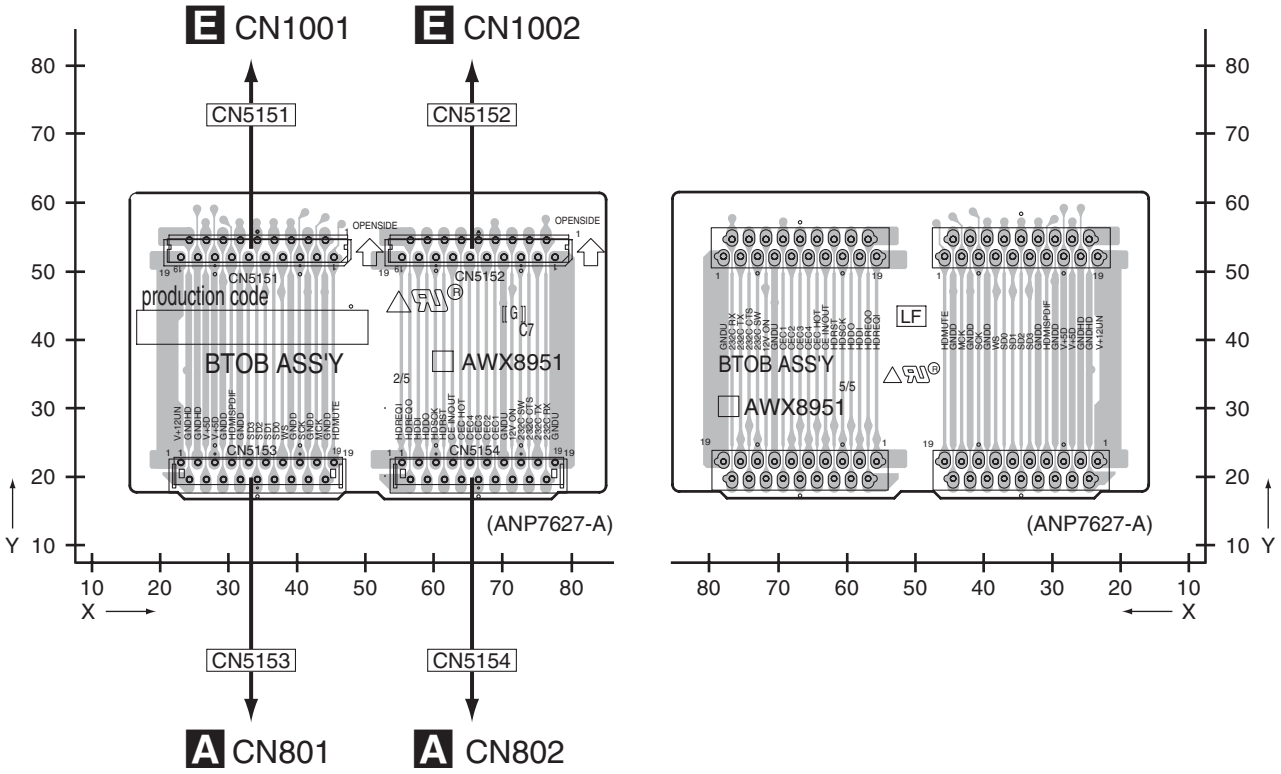


(ANP7622-A)

11.6 BTOB ASSY

SIDE A **SIDE B**

F BTOB ASSY

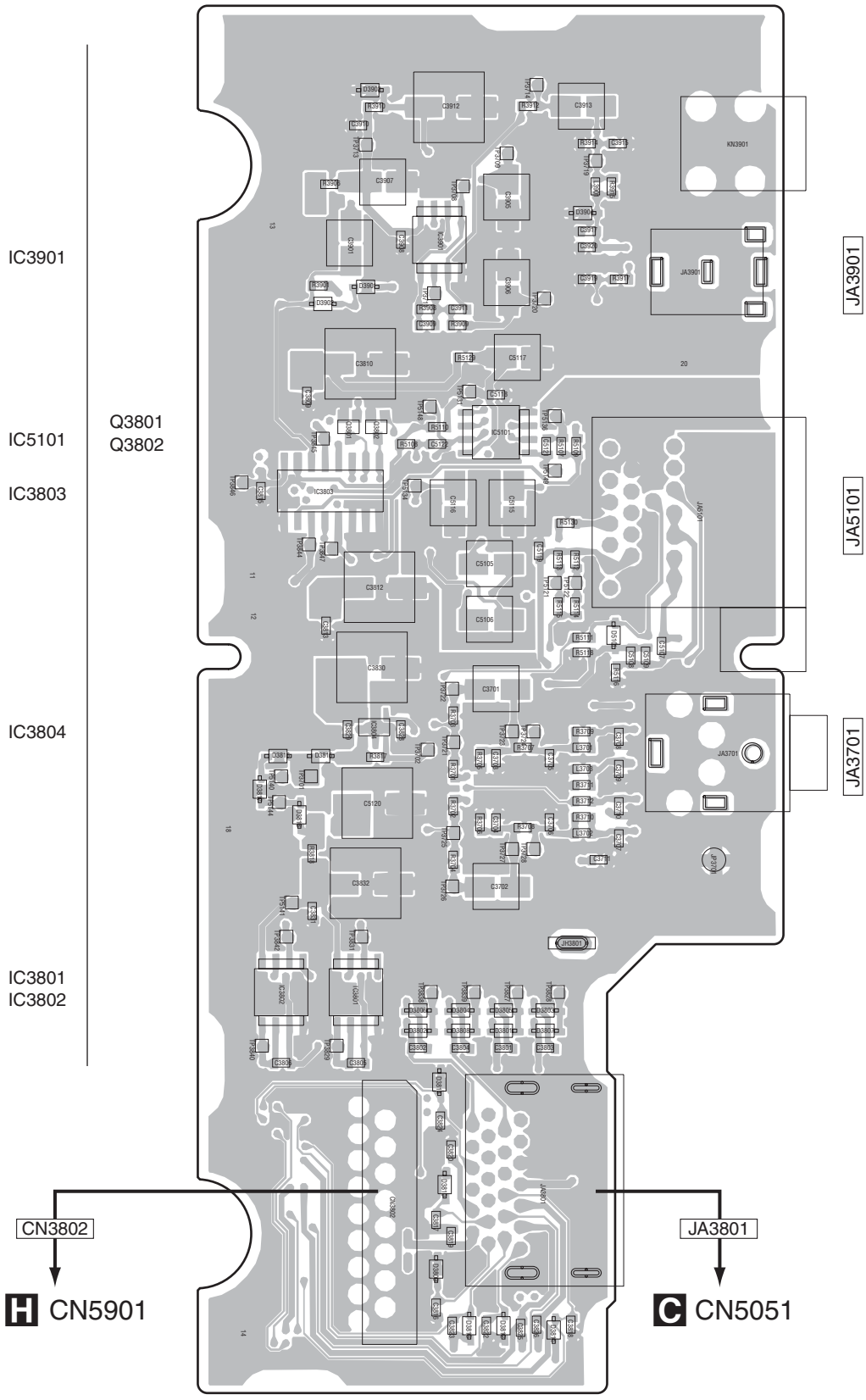


11.7 AINB ASSY

SIDE A

SIDE A

G AINB ASSY

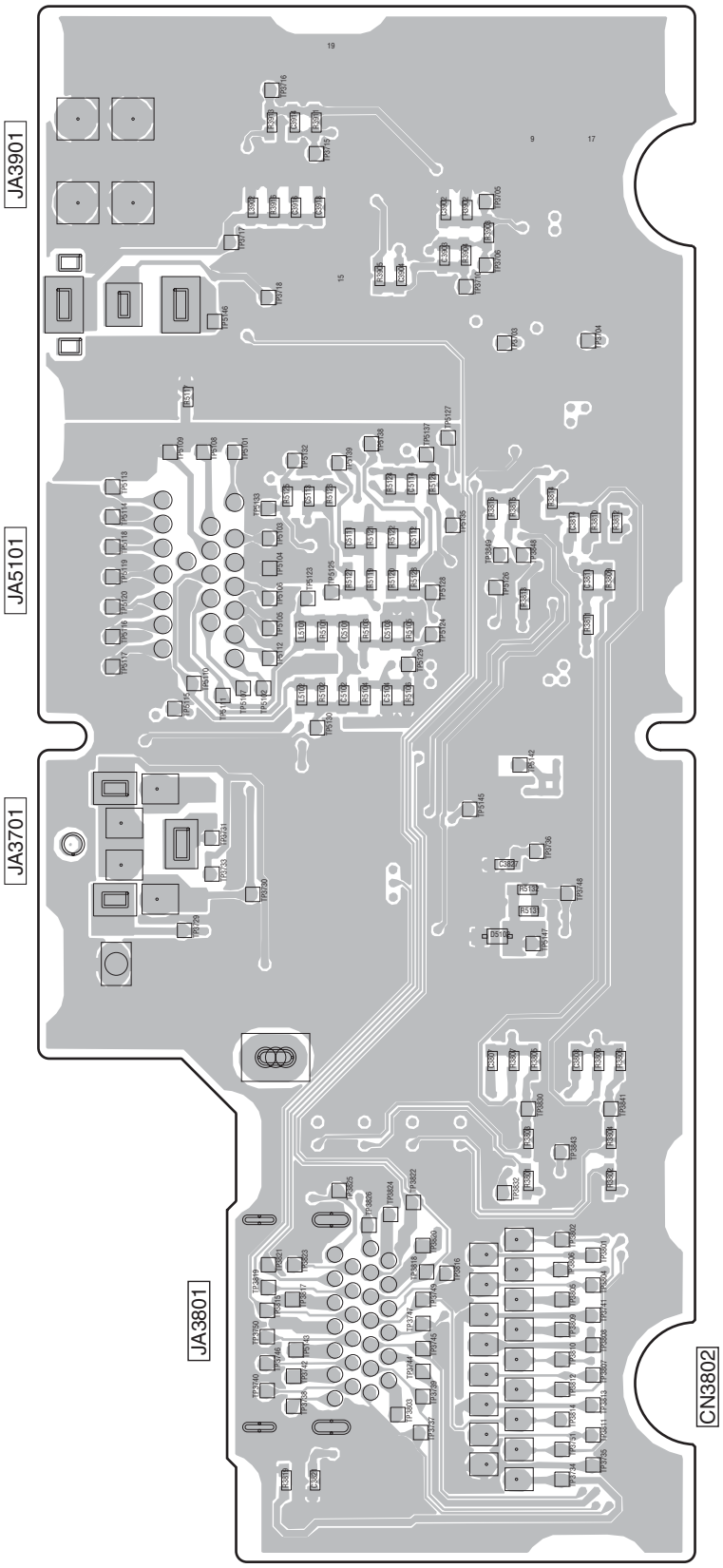


(ANP7628-B)

SIDE B

SIDE B

G AINB ASSY

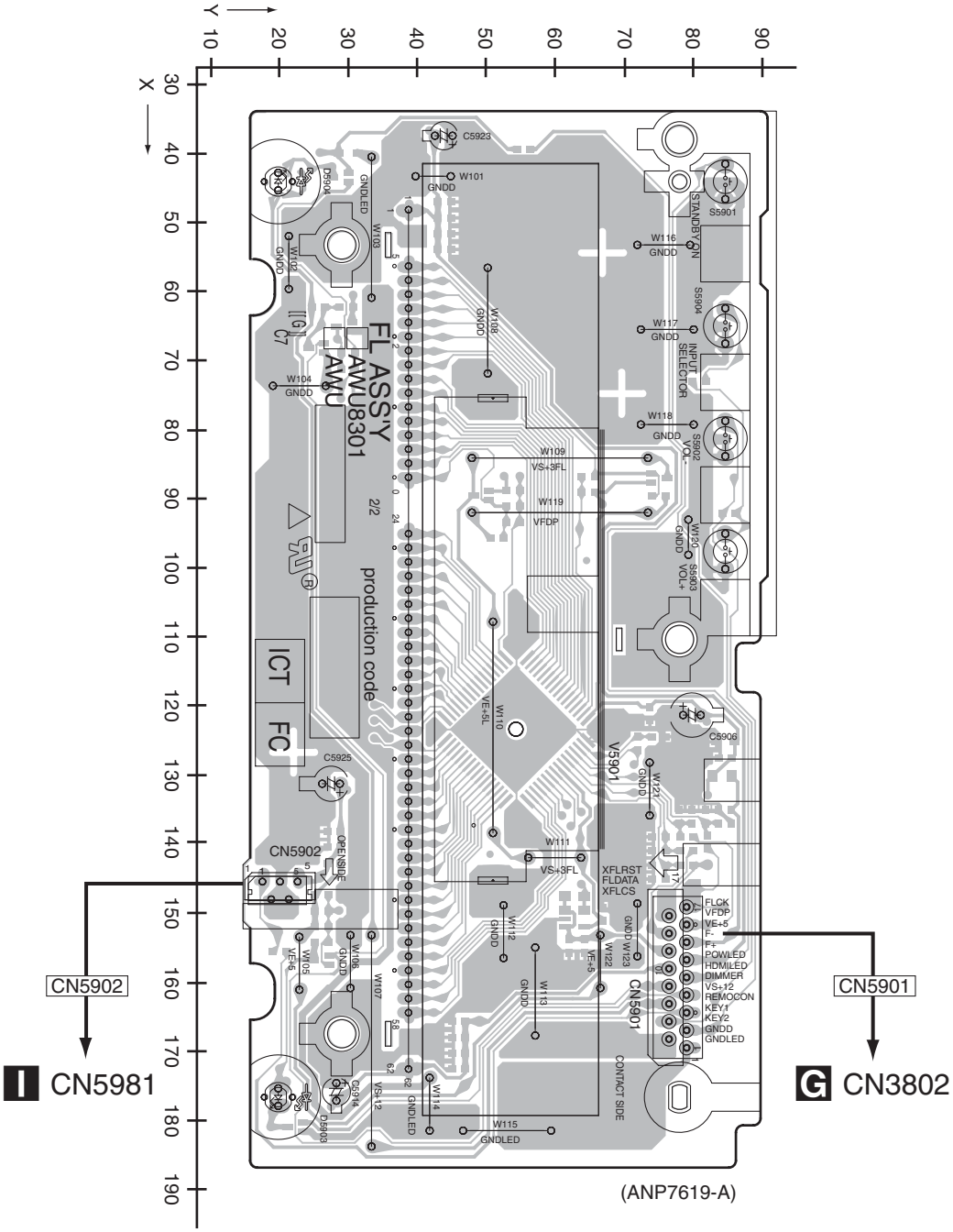


11.8 FL ASSY

SIDE A

SIDE A

H FL ASSY

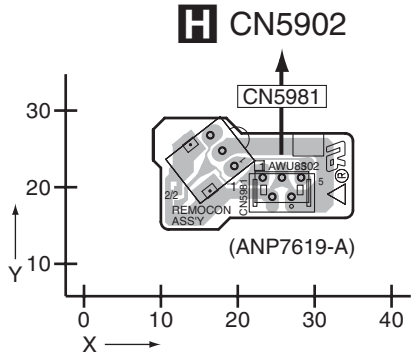


(ANP7619-A)

CN5902 → I CN5981

CN5901 → G CN3802

I REMOCON ASSY



(ANP7619-A)

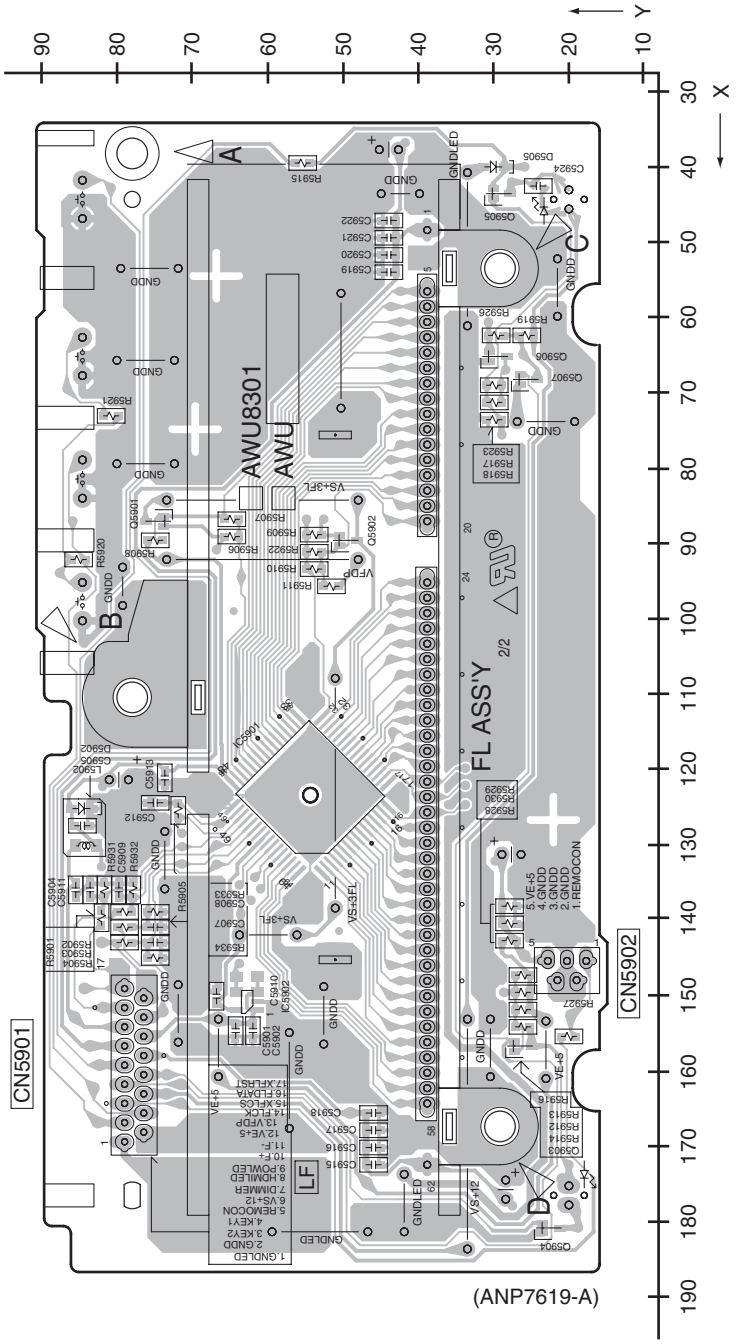
H I

H I

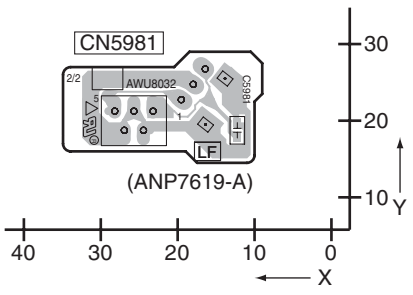
SIDE B

SIDE B

H FL ASSY



I REMOCON ASSY

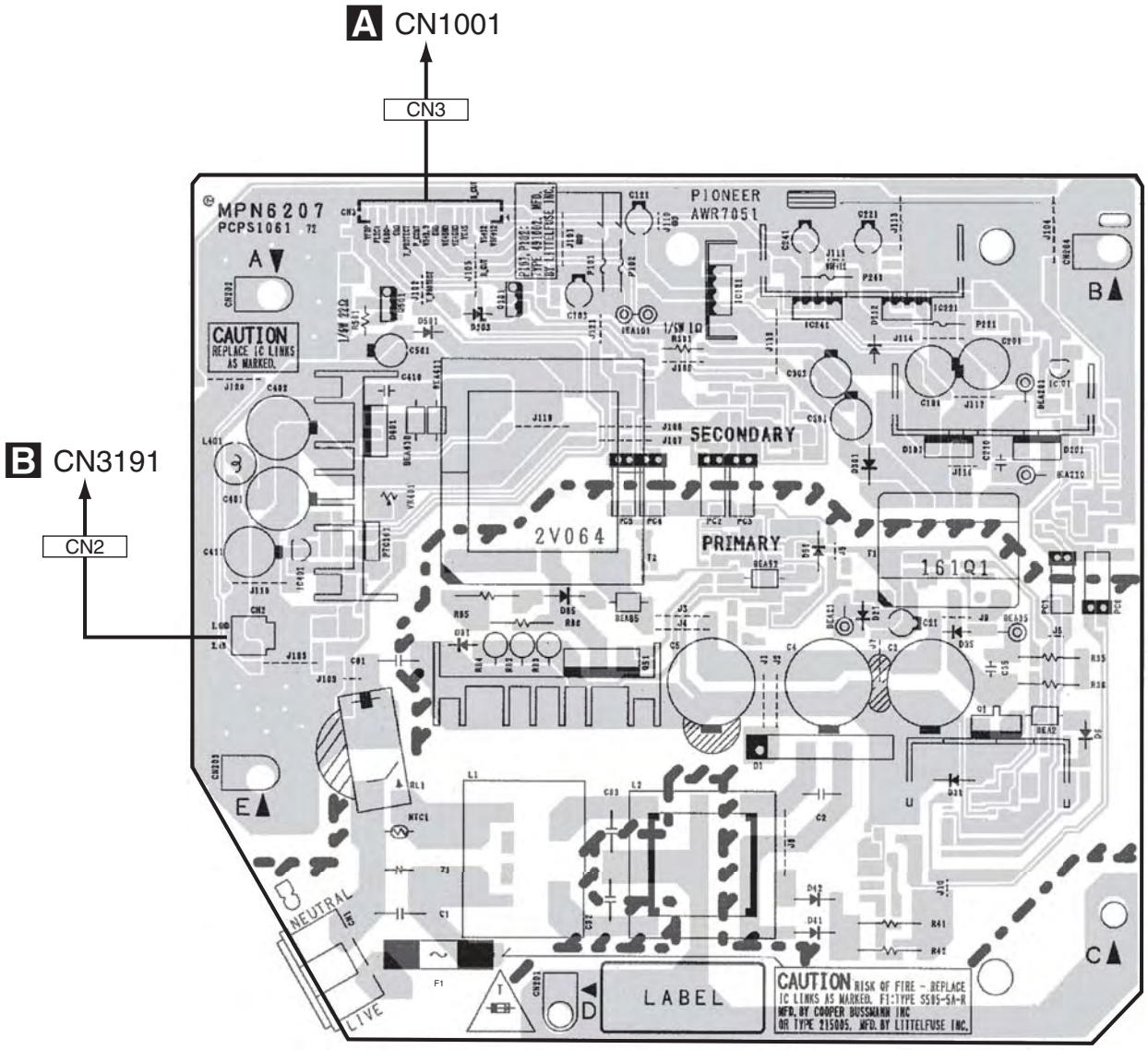


11.9 POWER SUPPLY UNIT

SIDE A

SIDE A

J POWER SUPPLY ASSY



SIDE B

SIDE B

J POWER SUPPLY ASSY

12. PCB PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω	→ *56 x 10^1* →	*561*	*RD1/4PU 5 6 1 J*
47k Ω	→ *47 x 10^3* →	*473*	*RD1/4PU 4 7 3 J*
0.5 Ω	→ *R50*		*RN2H R 5 0 K*
1 Ω	→ *1R0*		*RS1P 1 R 0 K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω	→ *562 x 10^1* →	*5621*	*RN1/4PC 5 6 2 1 F*

- *Meaning of the figures and others in the parentheses in the parts list.*

Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.

IC 301 (A, 91, 111) IC NJM2068V

LIST OF ASSEMBLIES

Mark	No.	Description	Part No.
	1	MAIN ASSY	AWK8028
	1	DAMP ASSY	AWM8093
	2	AMP ASSY	AWU8298
	2	CONNECTION ASSY	AWU8299
	2	EARTH ASSY	AWU8318
	1	HDMI ASSY	AWX8872
	1	BTOB ASSY	AWX8951
	1	AINB ASSY	AWK8032
	1	DISPLAY ASSY	AWM8089
	2	FL ASSY	AWU8301
	2	REMOCON ASSY	AWU8302
⚠	1	POWER SUPPLY UNIT	AWR7051
	1	FM/AM TUNER UNIT	AXX7250

A MAIN ASSY

MISCELLANEOUS

Mark	No.	Description	Part No.
	IC 101	(A,103,88) DSP IC	ADSP-21366KBCZ-1AA
	IC 103	(A,157,121) LOGIC IC (LATCHES)	TC74VHC573FTS1
	IC 104	(B,157,103) LOGIC IC (LATCHES)	TC74VHC573FTS1
	IC 105	(A,148,120) 2 TO 4 LINE DECODER	TC7W139FU
	IC 106	(A,156,102) FLASH ROM	AYW7190
	IC 107	(A,135,104) SRAM(4M)	CY7C1049D3310VXI
	IC 109	(A,151,86) 1 CHIP OR GATE	TC7SH32FUS1
	IC 201	(A,99,113) DSP IC	DSPC56371AF180
	IC 291	(A,96,134) IC	TC74VHC08FTS1
	IC 301	(A,125,37) DA I/F TRANSCEIVER	AK4114VQ
	IC 401	(A,35,141) IC	TC74LCX244FTS1
	IC 402	(A,37,130) IC	TC74VHC02FTS1
	IC 403	(A,20,133) IC	TC74VHCT08AFTS1
	IC 404	(A,46,141) IC	TC74VHC08FTS1
	IC 405	(A,28,132) IC	TC74VHCT125AFTS1
	IC 406	(B,13,88) IC	TC74VHCT08AFTS1
	IC 407	(B,22,88) IC	TC74LCX541FTS1
	IC 408	(B,30,122) IC	TC74VHCT125AFTS1
	IC 409	(B,22,122) IC	TC74VHC125FTS1
	IC 501	(A,66,34) XM/DT IC	F2621E-01
	IC 502	(A,72,49) DC/DC CONVERTER IC	BD9701FP
	IC 551	(A,85,80) LOGIC IC	TC7WHU04FU
	IC 552	(A,85,87) LOGIC IC	TC7SHU04FUS1
	IC 651	(A,86,133) IC	TC74VHC157FTS1
	IC 701	(A,134,120) LIPSYNC IC	ML87V5002
	IC 751	(B,134,120) LIPSYNC IC	ML87V5002
	IC 802	(A,26,144) IC	S-1200B33-M5
⚠	IC 901	(A,136,70) DC/DC CONVERTER	BD9107FVM
⚠	IC 904	(A,116,114) REGURATOR	PQ1LAX95MSPQ
	IC 1601	(A,46,39) IC	BA4560F
	IC 3011	(A,103,33) IC	TC4052BFN
	IC 3012	(A,87,45) OP-AMP IC	BA4558F-HT
	IC 3013	(A,104,50) AD CONVERTER IC	AK5358AET
	IC 3014	(A,98,65) IC	BA178M05FP
	IC 4001	(B,124,52) IC	PCM1742KE
	IC 4002	(B,122,63) IC	BA4560F
	IC 4003	(B,147,73) IC	TC4052BFN
	IC 5001	(A,33,80) OP-AMP IC	BA4558F-HT
	IC 5201	(A,37,58) XM/SIRIUS MICON	PEG393B8
	IC 5202	(B,39,62) FLASH ROM IC	SST25V512ACS
	IC 5301	(A,67,124) CPU	PEG117A
	IC 5302	(B,67,124) FLASH ROM	AYW7186
	IC 5303	(A,45,126) IC	TC74VHC125FTS1
	IC 5305	(A,47,133) 1 CHIP OR GATE	TC7SH32FUS1
	IC 5501	(A,61,90) SYSTEM CONTROL MICON	PDC164B8
	IC 5502	(B,72,75) RESET IC	PST3245
	IC 5503	(B,61,95) EEPROM	S-93C46BD0I-J8T1
	Q 503	(B,53,47) TRANSISTOR	2SC4081
	Q 504	(B,60,46) TRANSISTOR	2SA1576A
	Q 801	(B,60,83) MOS FET	2SK2034
	Q 1101	(B,150,135) CHIP TRANSISTOR	RSR020P03
	Q 1102	(B,145,134) DIGITAL TRANSISTOR	DTC124EUA
	Q 1103	(A,143,136) CHIP TRANSISTOR	UMF21N
	Q 1301	(B,156,133) DIGITAL TRANSISTOR	DTC124EUA
	Q 1302	(B,156,138) CHIP TRANSISTOR	RSR015P03
	Q 1801	(B,23,99) CHIP TRANSISTOR	RSR015P03
	Q 1802	(B,28,98) DIGITAL TRANSISTOR	DTC124EUA
	Q 1803	(B,32,98) TRANSISTOR	2SC4081
	Q 3011	(B,93,29) DIGITAL TRANSISTOR	DTC124EUA
	Q 3012	(B,93,33) DIGITAL TRANSISTOR	DTC124EUA
	Q 4001	(B,116,69) TRANSISTOR	IMX9
	Q 4002	(B,106,69) TRANSISTOR	2SA1576A

Mark	No.	Description	Part No.
Q	4003	(B,102,69) TRANSISTOR	2SC4081
Q	4004	(B,146,80) DIGITAL TRANSISTOR	DTC124EUA
Q	5451	(A,104,25) DIGITAL TRANSISTOR	DTC124EUA
Q	5452	(A,95,24) TRANSISTOR	2SA1576A
Q	5601	(B,21,109) TRANSISTOR	2SC4081
Q	5604	(A,168,138) TRANSISTOR	2SD1664
Q	5605	(B,170,131) DIGITAL TRANSISTOR	DTC124EUA
Q	5621	(B,20,105) TRANSISTOR	2SC4081
Q	5622	(B,18,102) TRANSISTOR	2SC4081
Q	5623	(B,16,99) TRANSISTOR	2SC4081
Q	5703	(A,139,51) TRANSISTOR	2SD1664
Q	5801	(A,163,136) TRANSISTOR	2SA1576A
Q	5803	(A,163,129) TRANSISTOR	RT3CLLM
D	501	(A,70,23) DIODE	UDZS5R6(B)
D	502	(A,75,23) DIODE	UDZS5R6(B)
D	503	(B,68,49) DIODE	RSX201L-30
D	801	(B,60,86) DIODE	RB751V-40
D	1601	(A,62,21) DIODE	UDZS8R2(B)
D	1602	(A,62,25) DIODE	UDZS8R2(B)
D	1603	(B,45,28) DIODE	UDZS6R2(B)
D	1604	(B,47,33) DIODE	UDZS6R2(B)
D	1605	(B,45,33) DIODE	UDZS6R2(B)
D	1606	(B,47,28) DIODE	UDZS6R2(B)
D	1607	(A,46,15) DIODE	UDZS8R2(B)
D	4002	(B,110,68) DIODE	DAP202U
D	5001	(B,34,86) DIODE	UDZS8R2(B)
D	5002	(B,32,86) DIODE	UDZS8R2(B)
D	5003	(B,34,82) DIODE	UDZS8R2(B)
D	5004	(B,32,82) DIODE	UDZS8R2(B)
D	5005	(B,36,86) DIODE	UDZS8R2(B)
D	5006	(B,30,86) DIODE	UDZS8R2(B)
D	5007	(B,36,82) DIODE	UDZS8R2(B)
D	5008	(B,30,82) DIODE	UDZS8R2(B)
D	5301	(B,53,123) CHIP DIODE	RB501V-40
D	5451	(A,103,22) DIODE	1SS355
D	5452	(A,88,25) DIODE	1SS355
D	5606	(B,169,136) DIODE	UDZS8R2(B)
D	5607	(B,166,136) DIODE	1SS355
D	5621	(B,13,99) DIODE	1SS355
D	5622	(B,11,99) DIODE	1SS355
D	5701	(A,144,59) DIODE	UDZS10(B)
D	5801	(B,163,137) DIODE	1SS355
L	101	(A,112,98) CHIP SOLID INDUCTOR	QTL1013
L	104	(A,151,125) CHIP SOLID INDUCTOR	QTL1013
L	105	(B,150,102) CHIP SOLID INDUCTOR	QTL1013
L	106	(A,151,116) CHIP SOLID INDUCTOR	QTL1013
L	107	(B,153,116) CHIP SOLID INDUCTOR	QTL1013
L	108	(A,137,113) CHIP SOLID INDUCTOR	QTL1013
L	201	(A,110,102) CHIP SOLID INDUCTOR	QTL1013
L	202	(A,110,122) CHIP SOLID INDUCTOR	ATL7002
L	203	(A,112,105) CHIP SOLID INDUCTOR	ATL7002
L	291	(A,90,138) CHIP SOLID INDUCTOR	QTL1013
L	301	(A,133,31) CHIP SOLID INDUCTOR	QTL1013
L	302	(A,134,36) CHIP SOLID INDUCTOR	QTL1013
L	303	(A,135,25) CHIP SOLID INDUCTOR	QTL1013
L	501	(A,81,39) CHIP SOLID INDUCTOR	QTL1013
L	502	(A,59,61) INDUCTOR	CTH1262
L	551	(A,85,94) CHIP SOLID INDUCTOR	QTL1013
L	651	(A,81,137) CHIP SOLID INDUCTOR	QTL1013
L	701	(A,137,131) CHIP SOLID INDUCTOR	QTL1013
L	751	(A,125,131) CHIP SOLID INDUCTOR	QTL1013
L	905	(A,152,77) CHIP BEADS	ATL7010
L	906	(B,131,76) POWER INDUCTOR	ATH7047
L	1501	(A,156,139) INDUCTOR	LCYA220J2520
L	4001	(B,115,54) CHIP SOLID INDUCTOR	QTL1013
L	5201	(A,24,65) CHIP SOLID INDUCTOR	QTL1013
L	5301	(A,52,135) CHIP SOLID INDUCTOR	QTL1013
L	5451	(A,103,20) CHIP SOLID INDUCTOR	QTL1013
JA	302	(A,113,7) OPT. LINK IN	GP1FAV51RKBF
JA	303	(A,129,7) OPT. LINK IN	GP1FAV51RKBF
JA	1601	(A,56,7) SOCKET	BKP1127
JA	5451	(A,87,9) JACK	RKN1004
JA	5452	(A,97,9) JACK	RKN1004
KN	1001	(A,13,144) EARTH METAL FITTING	VNF1109
KN	1003	(A,175,89) EARTH METAL FITTING	VNF1109
X	501	(A,78,32) CRYSTAL (45.1584MHz)	ASS7065
X	551	(A,85,72) CRYSTAL (24.576MHz)	XSS3003
X	5201	(A,23,58) CERAMIC (15.7MHz)	XSS3004
X	5301	(A,68,139) CERAMIC (15.7MHz)	XSS3004
X	5501	(A,78,88) RESONATOR (15MHz)	CSS1696
CN	401	(A,38,11) 07P CONNECTOR	RKN1048
CN	501	(A,73,6) 4P SOCKET	AKP7201
CN	801	(A,77,146) 19P PLUG	XKM3005
CN	802	(A,109,146) 19P PLUG	XKM3005
CN	1001	(A,167,147) CONNECTOR(KR)	B14B-PH
CN	1002	(A,9,78) CONNECTOR POST	B2B-PH
CN	3011	(A,178,120) CONNECTOR	VKN2011
CN	5001	(A,36,106) 27P CONNECTOR	VKN1431
CN	5201	(A,15,71) 10P CONNECTOR	VKN1414
CN	5501	(A,27,12) 05P CONNECTOR	RKN1046
CN	5701	(A,147,60) CONNECTOR	CKS3376

RESISTORS

R	103	(A,101,78)	RS1/16SS101J
R	104	(A,97,76)	RS1/16SS101J
R	106	(A,118,88) RESISTOR ARRAY	RAB4CQ472J
R	107	(A,92,83)	RS1/16SS472J
R	108	(A,112,86)	RS1/16SS472J
R	109	(A,112,83)	RS1/16SS101J
R	111	(A,92,81)	RS1/16SS472J
R	112	(A,93,85)	RS1/16SS101J
R	113	(A,93,86)	RS1/16SS101J
R	114	(A,93,89)	RS1/16SS101J
R	115	(A,93,87)	RS1/16SS220J
R	116	(A,113,88) RESISTOR ARRAY	RAB4CQ470J
R	117	(A,93,90)	RS1/16SS220J
R	118	(A,93,91)	RS1/16SS471J
R	119	(A,113,91) RESISTOR ARRAY	RAB4CQ470J
R	120	(A,113,93)	RS1/16SS220J
R	121	(A,93,93) RESISTOR ARRAY	RAB4CQ101J
R	122	(B,110,94)	RS1/16SS470J
R	123	(A,106,98)	RS1/16SS220J
R	124	(A,108,98) RESISTOR ARRAY	RAB4CQ470J
R	125	(A,104,98) RESISTOR ARRAY	RAB4CQ470J
R	126	(A,100,98) RESISTOR ARRAY	RAB4CQ220J
R	127	(A,104,78)	RS1/16SS472J
R	128	(A,108,78)	RS1/16SS472J
R	129	(A,102,78)	RS1/16SS472J
R	132	(A,100,78)	RS1/16SS101J
R	134	(A,99,78)	RS1/16SS101J

Mark	No.	Description	Part No.
R	136	(A,94,78)	RS1/16SS101J
R	138	(A,106,78)	RS1/16SS101J
R	145	(B,159,119) RESISTOR ARRAY	RAB4CQ470J
R	146	(B,155,119) RESISTOR ARRAY	RAB4CQ470J
R	147	(B,155,97)	RS1/16SS470J
R	148	(B,158,97) RESISTOR ARRAY	RAB4CQ470J
R	149	(A,149,115)	RS1/16SS470J
R	150	(A,148,115)	RS1/16SS470J
R	153	(A,151,89)	RS1/16SS470J
R	154	(A,152,83)	RS1/16SS472J
R	157	(A,147,115)	RS1/16SS470J
R	159	(B,139,99)	RS1/16SS220J
R	160	(B,130,110)	RS1/16SS220J
R	163	(B,162,109)	RS1/16SS220J
R	164	(A,150,83)	RS1/16SS220J
R	201	(B,95,117) RESISTOR ARRAY	RAB4CQ101J
R	202	(B,91,116) RESISTOR ARRAY	RAB4CQ103J
R	207	(B,94,114)	RS1/16SS473J
R	209	(B,103,111)	RS1/16SS472J
R	212	(B,87,104)	RS1/16SS473J
R	214	(A,100,103)	RS1/16SS101J
R	215	(A,101,103)	RS1/16SS101J
R	216	(A,103,103)	RS1/16SS101J
R	217	(A,104,103)	RS1/16SS101J
R	218	(A,105,103)	RS1/16SS101J
R	219	(B,104,107)	RS1/16SS472J
R	220	(A,109,110)	RS1/16SS101J
R	222	(B,100,111)	RS1/16SS101J
R	226	(A,109,116)	RS1/16SS473J
R	228	(B,100,114)	RS1/16SS472J
R	233	(A,105,124)	RS1/16SS470J
R	237	(A,97,124)	RS1/16SS470J
R	238	(A,92,124) RESISTOR ARRAY	RAB4CQ470J
R	244	(B,90,120)	RS1/16SS470J
R	246	(B,94,119)	RS1/16SS470J
R	248	(A,109,118)	RS1/16SS470J
R	249	(A,111,121)	RS1/16SS470J
R	261	(B,107,129)	RS1/16SS222J
R	291	(B,94,134)	RS1/16SS220J
R	292	(B,96,134)	RS1/16SS220J
R	293	(B,94,129)	RS1/16SS220J
R	294	(A,97,129)	RS1/16SS220J
R	295	(B,98,138)	RS1/16SS220J
R	296	(B,96,137)	RS1/16SS220J
R	297	(B,94,135)	RS1/16SS220J
R	299	(B,96,135)	RS1/16SS220J
R	301	(B,118,27)	RS1/16SS101J
R	302	(B,129,27)	RS1/16SS101J
R	303	(A,124,29)	RS1/16SS104J
R	304	(A,122,29)	RS1/16SS104J
R	312	(A,132,41)	RS1/16SS470J
R	313	(A,131,44)	RS1/16SS101J
R	314	(A,130,44)	RS1/16SS101J
R	315	(A,128,44)	RS1/16SS101J
R	317	(A,127,44)	RS1/16SS470J
R	318	(A,125,44)	RS1/16SS470J
R	320	(A,116,39)	RS1/16S0R0J
R	321	(A,122,45) RESISTOR ARRAY	RAB4CQ101J
R	324	(B,123,45)	RS1/16SS103J
R	325	(B,125,36) CHIP RESISTOR	RS1/16SS1802F
R	326	(B,116,32)	RS1/16SS0R0J
R	400	(B,21,94)	RS1/16SS104J
R	401	(B,17,84)	RS1/16SS102J
R	402	(B,36,144)	RS1/16SS104J
R	403	(B,33,144)	RS1/16SS104J
R	404	(B,35,141)	RS1/16SS104J
R	405	(B,37,144)	RS1/16SS104J
R	406	(B,33,138)	RS1/16SS104J
R	407	(B,36,138)	RS1/16SS104J
R	408	(B,35,138)	RS1/16SS104J
R	409	(B,30,135)	RS1/16SS104J
R	410	(B,22,128)	RS1/16SS104J
R	411	(B,24,128)	RS1/16SS104J
R	412	(A,30,119)	RS1/16SS104J
R	413	(A,32,119)	RS1/16SS104J
R	414	(A,18,128)	RS1/16SS104J
R	415	(A,40,147)	RS1/16SS104J
R	416	(A,42,134)	RS1/16SS104J
R	417	(A,31,147)	RS1/16SS101J
R	418	(A,36,17)	RS1/16SS103J
R	419	(B,37,32)	RS1/16SS101J
R	420	(B,36,32)	RS1/16SS101J
R	421	(B,34,32)	RS1/16SS101J
R	422	(A,8,82)	RS1/16SS104J
R	423	(A,10,82)	RS1/16SS104J
R	504	(A,71,26)	RS1/16SS101J
R	505	(B,71,27)	RS1/16SS102J
R	506	(A,74,26)	RS1/16SS101J
R	507	(B,74,27)	RS1/16SS102J
R	510	(A,74,31)	RS1/16SS682J
R	511	(A,74,33)	RS1/16SS105J
R	513	(B,53,51)	RS1/16SS473J
R	514	(B,63,42)	RS1/16SS223J
R	515	(B,61,42)	RS1/16SS223J
R	517	(B,58,36)	RS1/16SS223J
R	518	(A,58,39) RESISTOR ARRAY	RAB4CQ101J
R	519	(B,58,39)	RS1/16SS223J
R	520	(B,57,39)	RS1/16SS223J
R	521	(B,59,31)	RS1/16SS223J
R	522	(B,56,47)	RS1/16SS223J
R	523	(B,62,32)	RS1/16SS101J
R	524	(A,59,27)	RS1/16SS101J
R	525	(A,63,27)	RS1/16SS101J
R	526	(B,70,42)	RS1/16SS101J
R	527	(B,69,42)	RS1/16SS470J
R	528	(B,67,38)	RS1/16SS101J
R	529	(A,64,42)	RS1/16SS470J
R	530	(B,57,51)	RS1/16SS3901F
R	531	(B,60,51) CHIP RESISTOR	RS1/16SS1201F
R	532	(B,60,36)	RS1/16SS223J
R	533	(B,68,32)	RS1/16SS0R0J
R	535	(B,69,37)	RS1/16SS0R0J
R	536	(B,65,37)	RS1/16SS0R0J
R	537	(B,59,48)	RS1/16SS101J
R	540	(B,57,47)	RS1/16SS472J
R	541	(B,63,47)	RS1/16SS103J
R	542	(B,59,50) CHIP RESISTOR	RS1/16SS1201F
R	551	(A,86,77)	RS1/16SS105J
R	552	(A,84,77)	RS1/16SS102J
R	554	(A,89,79)	RS1/16SS220J

Mark	No.		Description	Part No.
R	555	(B,88,87)		RS1/16SS220J
R	557	(B,89,81)		RS1/16SS220J
R	651	(A,84,127)	RESISTOR ARRAY	RAB4CQ101J
R	654	(A,87,127)	RESISTOR ARRAY	RAB4CQ470J
R	657	(A,89,139)		RS1/16SS470J
R	658	(A,87,138)		RS1/16SS470J
R	659	(A,78,141)		RS1/16S470J
R	660	(A,85,139)	RESISTOR ARRAY	RAB4CQ101J
R	661	(A,81,141)		RS1/16SS0R0J
R	701	(A,124,125)		RS1/16SS470J
R	702	(A,124,123)		RS1/16SS470J
R	703	(A,124,122)		RS1/16SS470J
R	704	(A,132,115)	RESISTOR ARRAY	RAB4CQ470J
R	711	(A,144,118)		RS1/16SS101J
R	712	(A,144,119)		RS1/16SS101J
R	713	(A,144,120)		RS1/16SS101J
R	714	(A,145,122)		RS1/16SS101J
R	715	(A,147,124)	RESISTOR ARRAY	RAB4CQ470J
R	720	(A,144,126)		RS1/16SS470J
R	751	(B,137,126)		RS1/16SS470J
R	752	(B,121,118)		RS1/16SS103J
R	753	(B,121,119)		RS1/16SS472J
R	754	(B,121,120)		RS1/16SS472J
R	755	(B,124,117)		RS1/16SS101J
R	756	(B,124,118)		RS1/16SS101J
R	757	(B,124,119)		RS1/16SS101J
R	758	(B,124,120)		RS1/16SS101J
R	759	(B,124,123)	RESISTOR ARRAY	RAB4CQ470J
R	764	(B,124,126)		RS1/16SS470J
R	801	(B,57,83)		RS1/16SS333J
R	803	(B,63,83)		RS1/16SS154J
R	804	(A,78,144)		RS1/16SS104J
R	805	(A,74,140)	RESISTOR ARRAY	RAB4CQ104J
R	806	(A,63,140)	RESISTOR ARRAY	RAB4CQ104J
R	903	(A,133,67)	CHIP RESISTOR	RS1/16SS1002F
R	904	(A,132,70)		RS1/16SS9101F
R	905	(A,131,70)	CHIP RESISTOR	RS1/16SS1802F
R	909	(A,113,118)	CHIP RESISTOR	RS1/16SS1202F
R	910	(A,113,119)	CHIP RESISTOR	RS1/16SS1000F
R	1101	(B,152,137)		RS1/16SS103J
R	1102	(B,145,136)		RS1/16SS392J
R	1103	(A,144,139)		RS1/16SS473J
R	1104	(A,141,138)		RS1/10S122J
R	1301	(B,159,137)		RS1/16SS103J
R	1302	(B,159,135)		RS1/16SS392J
R	1601	(A,44,25)		RS1/16SS473J
R	1602	(A,48,25)		RS1/16SS473J
R	1603	(A,41,25)		RS1/16SS331J
R	1604	(A,51,25)		RS1/16SS331J
R	1607	(A,41,37)		RS1/16SS103J
R	1608	(A,39,37)		RS1/16SS103J
R	1609	(A,39,40)		RS1/16SS103J
R	1610	(A,53,39)		RS1/16SS103J
R	1611	(A,53,37)		RS1/16SS103J
R	1612	(A,51,37)		RS1/16SS103J
R	1615	(B,41,34)		RS1/16SS103J
R	1616	(B,51,34)		RS1/16SS103J
R	1617	(A,62,23)		RS1/16SS104J
R	1619	(B,43,41)		RS1/16SS223J
R	1620	(B,49,39)		RS1/16SS223J
R	1621	(B,43,42)		RS1/16SS223J
R	1622	(B,49,41)		RS1/16SS223J
R	1623	(B,55,29)		RS1/16SS101J
R	1624	(B,55,32)		RS1/16SS101J
R	1625	(B,38,28)		RS1/16SS101J
R	1801	(B,20,98)		RS1/16SS103J
R	1802	(B,26,98)		RS1/16SS222J
R	1803	(B,27,101)		RS1/16SS473J
R	3011	(B,166,96)		RS1/16SS273J
R	3012	(B,168,96)		RS1/16SS273J
R	3013	(B,166,94)		RS1/16SS223J
R	3014	(B,168,94)		RS1/16SS223J
R	3015	(B,92,31)		RS1/16SS473J
R	3016	(B,94,31)		RS1/16SS473J
R	3017	(A,107,27)		RS1/16SS0R0J
R	3018	(A,92,38)		RS1/16SS0R0J
R	3019	(B,86,43)		RS1/16SS224J
R	3020	(B,87,47)		RS1/16SS224J
R	3021	(A,90,43)		RS1/16SS100J
R	3022	(A,90,46)		RS1/16SS100J
R	3023	(A,97,56)		RS1/16SS0R0J
R	3025	(B,99,50)		RS1/16SS0R0J
R	3026	(A,101,44)		RS1/16SS0R0J
R	3027	(A,101,45)		RS1/16SS0R0J
R	3028	(A,102,57)		RS1/16SS0R0J
R	3029	(A,104,57)		RS1/16SS101J
R	3030	(B,105,53)		RS1/16SS470J
R	3031	(A,106,57)		RS1/16SS101J
R	3032	(A,108,57)		RS1/16SS101J
R	4001	(B,118,50)		RS1/16SS101J
R	4002	(B,117,51)		RS1/16SS101J
R	4003	(B,117,52)		RS1/16SS101J
R	4004	(B,129,49)		RS1/16SS220J
R	4005	(B,131,50)		RS1/16SS470J
R	4006	(B,131,52)		RS1/16SS470J
R	4007	(B,131,53)		RS1/16SS470J
R	4009	(B,127,59)		RS1/16SS103J
R	4010	(B,116,59)		RS1/16SS103J
R	4011	(B,128,63)		RS1/16SS103J
R	4012	(B,115,63)		RS1/16SS103J
R	4013	(B,128,64)		RS1/16SS103J
R	4014	(B,115,64)		RS1/16SS103J
R	4015	(B,127,61)		RS1/16SS104J
R	4016	(B,116,61)		RS1/16SS104J
R	4017	(B,128,67)		RS1/16SS104J
R	4018	(B,122,69)		RS1/16SS104J
R	4019	(B,130,66)		RS1/16SS471J
R	4020	(B,124,69)		RS1/16SS471J
R	4021	(B,146,68)		RS1/16SS473J
R	4022	(B,141,73)		RS1/16SS473J
R	4023	(B,113,69)		RS1/16SS222J
R	4024	(B,111,65)		RS1/16SS222J
R	4025	(B,99,68)		RS1/16SS103J
R	4026	(B,103,66)		RS1/16SS102J
R	4027	(B,105,66)		RS1/16SS103J
R	4028	(B,143,78)		RS1/16SS473J
R	4029	(B,144,78)		RS1/16SS473J
R	4030	(B,117,57)		RS1/16SS0R0J
R	5001	(A,32,107)		RS1/16SS0R0J
R	5003	(A,35,87)	CHIP RESISTOR	RS1/16SS1001F

Mark	No.	Description	Part No.
R	5004 (A,31,87)	CHIP RESISTOR	RS1/16SS1001F
R	5005 (A,36,87)	CHIP RESISTOR	RS1/16SS1001F
R	5006 (A,30,87)	CHIP RESISTOR	RS1/16SS1001F
R	5007 (A,37,85)	CHIP RESISTOR	RS1/16SS1001F
R	5008 (A,29,85)	CHIP RESISTOR	RS1/16SS1001F
R	5009 (B,35,77)	CHIP RESISTOR	RS1/16SS1001F
R	5010 (B,31,77)	CHIP RESISTOR	RS1/16SS1001F
R	5015 (A,35,85)	CHIP RESISTOR	RS1/16SS1001F
R	5016 (A,36,85)	CHIP RESISTOR	RS1/16SS1001F
R	5017 (A,30,85)	CHIP RESISTOR	RS1/16SS1001F
R	5018 (A,31,85)	CHIP RESISTOR	RS1/16SS1001F
R	5201 (B,26,62)		RS1/16SS101J
R	5202 (B,35,62)		RS1/16SS392J
R	5203 (B,33,60)		RS1/16SS101J
R	5204 (A,45,46)		RS1/16SS104J
R	5205 (B,33,57)		RS1/16SS473J
R	5206 (B,31,53)		RS1/16SS101J
R	5207 (A,26,53)		RS1/16SS101J
R	5208 (A,26,52)		RS1/16SS101J
R	5209 (A,26,51)		RS1/16SS473J
R	5210 (A,29,46)		RS1/16SS101J
R	5211 (A,30,46)		RS1/16SS101J
R	5212 (A,32,46)		RS1/16SS101J
R	5213 (A,33,46)		RS1/16SS101J
R	5214 (A,34,46)		RS1/16SS101J
R	5215 (A,35,46)		RS1/16SS101J
R	5216 (A,36,46)		RS1/16SS101J
R	5217 (A,38,46)		RS1/16SS101J
R	5218 (B,37,54)		RS1/16SS473J
R	5220 (B,40,54)		RS1/16SS473J
R	5221 (A,39,46)		RS1/16SS101J
R	5222 (A,40,46)		RS1/16SS101J
R	5223 (B,33,52)		RS1/16SS101J
R	5224 (B,34,52)		RS1/16SS101J
R	5225 (A,44,46)		RS1/16SS101J
R	5226 (A,49,50)		RS1/16SS101J
R	5227 (A,49,51)		RS1/16SS101J
R	5228 (B,49,50)		RS1/16SS101J
R	5229 (A,49,52)		RS1/16SS101J
R	5230 (B,49,51)		RS1/16SS101J
R	5231 (A,49,53)		RS1/16SS101J
R	5232 (B,49,53)		RS1/16SS101J
R	5233 (A,49,54)		RS1/16SS101J
R	5234 (B,49,54)		RS1/16SS101J
R	5235 (B,49,55)		RS1/16SS101J
R	5236 (A,48,63)		RS1/16SS101J
R	5237 (B,33,66)		RS1/16SS101J
R	5238 (B,31,66)		RS1/16SS101J
R	5239 (B,28,67)		RS1/16SS101J
R	5240 (B,33,62)		RS1/16SS122J
R	5241 (B,27,49)		RS1/16SS473J
R	5242 (A,25,59)		RS1/16SS0R0J
R	5244 (A,42,44)		RS1/16SS473J
R	5301 (A,72,137)		RS1/16SS473J
R	5302 (A,73,137)		RS1/16SS472J
R	5303 (A,76,136)	RESISTOR ARRAY	RAB4CQ221J
R	5304 (B,72,137)		RS1/16SS101J
R	5305 (B,70,132)		RS1/16SS101J
R	5306 (A,71,137)		RS1/16SS101J
R	5307 (B,71,137)		RS1/16SS473J
R	5308 (B,66,132)		RS1/16SS473J
R	5309 (A,61,136)	RESISTOR ARRAY	RAB4CQ101J
R	5310 (B,62,136)		RS1/16SS473J
R	5311 (B,58,135)		RS1/16SS473J
R	5313 (A,58,136)	RESISTOR ARRAY	RAB4CQ101J
R	5314 (A,53,131)		RS1/16SS101J
R	5315 (A,53,129)		RS1/16SS101J
R	5316 (A,53,128)		RS1/16SS101J
R	5317 (A,53,127)		RS1/16SS101J
R	5318 (A,53,126)		RS1/16SS101J
R	5319 (A,53,125)		RS1/16SS473J
R	5320 (A,51,122)		RS1/16SS473J
R	5322 (A,53,121)		RS1/16SS473J
R	5323 (A,53,119)		RS1/16SS101J
R	5324 (A,53,118)		RS1/16SS101J
R	5325 (A,53,117)		RS1/16SS101J
R	5328 (A,80,126)		RS1/16SS473J
R	5329 (A,78,132)	RESISTOR ARRAY	RAB4CQ101J
R	5330 (B,75,134)		RS1/16SS101J
R	5331 (A,80,123)	RESISTOR ARRAY	RAB4CQ101J
R	5332 (A,80,120)		RS1/16SS101J
R	5333 (A,80,121)		RS1/16SS473J
R	5335 (B,79,118)		RS1/16SS473J
R	5336 (B,46,134)		RS1/16SS104J
R	5337 (B,46,133)		RS1/16SS104J
R	5338 (B,43,123)		RS1/16SS104J
R	5339 (A,68,136)		RS1/16SS0R0J
R	5342 (A,50,142)		RS1/16SS0R0J
R	5451 (A,100,24)		RS1/16SS472J
R	5452 (A,91,25)		RS1/16SS102J
R	5453 (A,92,25)		RS1/16SS103J
R	5454 (A,98,24)		RS1/16SS104J
R	5455 (A,99,24)		RS1/16SS392J
R	5457 (A,92,23)		RS1/16SS0R0J
R	5500 (A,74,88)		RS1/16SS101J
R	5501 (A,78,76)		RS1/16SS221J
R	5502 (A,78,78)		RS1/16SS221J
R	5503 (B,77,81)		RS1/16SS221J
R	5504 (B,75,83)		RS1/16SS221J
R	5505 (B,70,78)		RS1/16SS103J
R	5507 (B,69,81)		RS1/16SS0R0J
R	5508 (B,68,83)		RS1/16SS222J
R	5509 (B,66,82)		RS1/16SS0R0J
R	5510 (A,78,79)		RS1/16SS103J
R	5513 (A,79,92)		RS1/16SS473J
R	5516 (A,81,93)		RS1/16SS473J
R	5517 (B,79,94)		RS1/16SS103J
R	5518 (B,78,79)		RS1/16SS104J
R	5519 (A,79,94)		RS1/16SS221J
R	5520 (A,78,80)		RS1/16SS221J
R	5521 (B,74,80)		RS1/16SS221J
R	5522 (A,79,98)		RS1/16SS221J
R	5523 (A,79,102)	RESISTOR ARRAY	RAB4CQ221J
R	5525 (B,72,104)		RS1/16SS221J
R	5526 (B,75,104)		RS1/16SS221J
R	5527 (A,79,99)		RS1/16SS103J
R	5531 (B,67,102)		RS1/16SS221J
R	5532 (B,70,108)		RS1/16SS472J
R	5533 (B,66,102)		RS1/16SS221J
R	5534 (B,67,105)		RS1/16SS221J

Mark	No.	Description	Part No.
R	5535	(B,65,102)	RS1/16SS221J
R	5536	(B,65,108)	RS1/16SS221J
R	5537	(B,63,102)	RS1/16SS221J
R	5538	(B,63,105)	RS1/16SS221J
R	5541	(A,59,110) RESISTOR ARRAY	RAB4CQ221J
R	5543	(B,56,109)	RS1/16SS103J
R	5544	(B,58,109)	RS1/16SS103J
R	5545	(B,53,112) RESISTOR ARRAY	RAB4CQ221J
R	5548	(B,47,104) RESISTOR ARRAY	RAB4CQ221J
R	5549	(B,51,102)	RS1/16SS221J
R	5553	(B,56,92)	RS1/16SS473J
R	5554	(B,56,97)	RS1/16SS473J
R	5555	(A,47,104)	RS1/16SS221J
R	5556	(A,45,103)	RS1/16SS221J
R	5557	(B,50,99) RESISTOR ARRAY	RAB4CQ221J
R	5561	(B,52,93)	RS1/16SS102J
R	5562	(B,52,90) RESISTOR ARRAY	RAB4CQ221J
R	5567	(B,47,88)	RS1/16SS221J
R	5568	(B,53,86)	RS1/16SS103J
R	5570	(B,49,85) RESISTOR ARRAY	RAB4CQ221J
R	5572	(B,44,84)	RS1/16SS221J
R	5575	(B,45,81)	RS1/16SS221J
R	5576	(B,50,82)	RS1/16SS221J
R	5577	(B,44,78)	RS1/16SS221J
R	5578	(B,46,75)	RS1/16SS221J
R	5579	(B,49,78)	RS1/16SS221J
R	5581	(B,54,75)	RS1/16SS221J
R	5582	(B,63,69)	RS1/16SS104J
R	5583	(B,53,72)	RS1/16SS221J
R	5584	(B,54,72)	RS1/16SS474J
R	5585	(B,56,76)	RS1/16SS221J
R	5588	(B,62,69)	RS1/16SS104J
R	5589	(B,61,69)	RS1/16SS104J
R	5590	(B,61,72)	RS1/16SS101J
R	5591	(B,62,72)	RS1/16SS101J
R	5592	(B,63,72)	RS1/16SS101J
R	5593	(B,64,75)	RS1/16SS221J
R	5594	(A,104,143)	RS1/16SS221J
R	5595	(B,67,72)	RS1/16SS221J
R	5596	(B,66,72)	RS1/16SS104J
R	5597	(B,67,69) RESISTOR ARRAY	RAB4CQ221J
R	5601	(B,24,107)	RS1/16SS473J
R	5611	(A,170,142)	RS1/16SS102J
R	5612	(A,167,134)	RS1/16SS221J
R	5621	(B,17,105)	RS1/16SS473J
R	5623	(B,15,102)	RS1/16SS473J
R	5624	(B,14,97)	RS1/16SS0R0J
R	5625	(B,10,96)	RS1/16SS0R0J
R	5707	(A,134,50)	RS1/16SS471J
R	5708	(A,134,48)	RS1/16SS221J
R	5711	(A,146,43)	RS1/16SS272J
R	5712	(A,146,39)	RS1/16SS272J
R	5714	(A,134,63)	RS1/16SS0R0J
R	5715	(A,134,62)	RS1/16SS0R0J
R	5716	(A,134,61)	RS1/16SS0R0J
R	5717	(A,134,60)	RS1/16SS0R0J
R	5718	(A,143,53)	RS1/16SS0R0J
R	5751	(A,135,43)	RS1/16SS473J
R	5752	(A,135,39)	RS1/16SS473J
R	5801	(A,162,133)	RS1/16SS223J
R	5802	(A,163,139)	RS1/16SS151J
R	5803	(A,164,133)	RS1/16SS223J
R	5804	(B,162,127)	RS1/16SS223J
R	5805	(B,163,130)	RS1/16SS102J
R	5806	(B,163,134)	RS1/16SS223J

CAPACITORS

Mark	No.	Description	Part No.
C	101	(A,118,96)	CEVW101M16
C	102	(A,118,80)	CEVW101M16
C	103	(B,105,83)	CKSSYB104K10
C	104	(B,101,82)	CKSSYB104K10
C	105	(B,98,87)	CKSSYB104K10
C	106	(B,101,92)	CKSSYB104K10
C	107	(B,105,93)	CKSSYB104K10
C	108	(B,108,89)	CKSSYB104K10
C	109	(B,103,82)	CKSSYB104K10
C	110	(B,103,83)	CKSSYB471K50
C	111	(B,99,81)	CKSSYB471K50
C	112	(B,99,80)	CKSSYB104K10
C	113	(B,95,83)	CKSSYB471K50
C	114	(B,94,83)	CKSSYB104K10
C	115	(B,98,89)	CKSSYB471K50
C	116	(B,97,89)	CKSSYB104K10
C	117	(B,98,91)	CKSSYB471K50
C	118	(B,98,92)	CKSSYB104K10
C	119	(B,103,92)	CKSSYB471K50
C	120	(B,103,93)	CKSSYB104K10
C	121	(B,107,93)	CKSSYB471K50
C	122	(B,107,94)	CKSSYB104K10
C	123	(B,107,91)	CKSSYB471K50
C	124	(B,109,91)	CKSSYB104K10
C	125	(B,107,87)	CKSSYB471K50
C	126	(B,108,87)	CKSSYB104K10
C	127	(B,109,84)	CKSSYB471K50
C	128	(B,110,84)	CKSSYB104K10
C	129	(A,97,78)	CKSSYB103K16
C	139	(B,103,80)	CKSRYB105K16
C	174	(A,165,122)	CEVW101M16
C	176	(A,151,122)	CKSSYB104K10
C	178	(B,151,102)	CKSSYB104K10
C	180	(A,152,119)	CKSSYB104K10
C	182	(A,156,115)	CKSSYB104K10
C	184	(A,135,113)	CKSSYB104K10
C	186	(A,135,96)	CKSSYB104K10
C	188	(A,148,86)	CKSSYB104K10
C	202	(A,88,119)	CKSSYB104K10
C	203	(A,89,114)	CKSSYB471K50
C	204	(A,88,114)	CKSSYB104K10
C	206	(A,88,108)	CKSSYB104K10
C	208	(A,95,102)	CKSSYB104K10
C	209	(A,97,104)	CKSSYB471K50
C	210	(A,97,102)	CKSSYB104K10
C	211	(A,107,104)	CKSSYB471K50
C	212	(A,107,102)	CKSSYB104K10
C	216	(A,109,107)	CKSSYB471K50
C	217	(A,110,107)	CKSSYB104K10
C	218	(A,111,108)	CKSSYB471K50
C	219	(A,112,108)	CKSSYB104K10
C	220	(B,102,111)	CKSSYB103K16
C	221	(A,108,115)	CKSSYB471K50

Mark	No.	Description	Part No.
C	222	(A,110,115)	CKSSYB104K10
C	224	(A,102,124)	CKSSYB104K10
C	225	(A,99,123)	CKSSYB471K50
C	226	(A,99,124)	CKSSYB104K10
C	228	(A,95,125)	CKSSYB104K10
C	229	(A,116,123)	CEVW101M16
C	230	(A,118,106)	CEVW101M16
C	291	(A,90,134)	CCSRCH471J50
C	292	(A,92,134)	CKSSYB104K10
C	304	(A,133,34)	CKSSYB104K10
C	305	(A,138,31)	CEVW470M6R3
C	306	(A,133,38)	CCSRCH471J50
C	307	(A,131,38)	CKSSYB104K10
C	309	(A,128,25)	CEVW101M16
C	310	(A,112,21)	CKSSYB104K10
C	311	(A,127,20)	CKSSYB104K10
C	312	(B,125,40)	CKSSYB104K10
C	315	(B,121,45)	CKSSYB102K50
C	316	(A,114,32)	CEVW470M6R3
C	317	(A,119,39)	CKSSYB104K10
C	318	(A,117,39)	CCSRCH471J50
C	319	(B,122,36)	CKSRYB474K10
C	402	(A,31,142)	CKSSYB104K10
C	403	(A,16,134)	CKSSYB104K10
C	404	(A,42,142)	CKSSYB104K10
C	405	(B,26,121)	CKSSYB104K10
C	406	(A,25,133)	CKSSYB104K10
C	407	(B,9,87)	CKSSYB104K10
C	408	(B,17,87)	CKSSYB104K10
C	409	(B,19,121)	CKSSYB104K10
C	410	(A,39,17)	CKSSYB104K10
C	501	(A,76,40)	CEVW470M6R3
C	502	(A,64,26)	CKSSYB104K10
C	503	(A,64,27)	CKSSYB471K50
C	504	(B,72,27)	CKSSYB104K10
C	505	(A,71,25)	CKSSYB104K10
C	506	(A,74,25)	CKSSYB104K10
C	507	(A,58,50)	ACH1421
C	509	(A,75,31)	CCSSCH150J50
C	510	(A,75,33)	CCSSCH120J50
C	513	(A,71,61)	ACH1421
C	514	(A,72,54)	CKSRYB105K16
C	552	(A,85,84)	CKSSYB104K10
C	553	(A,85,85)	CCSRCH471J50
C	554	(A,86,75)	CCSSCH9R0D50
C	555	(A,84,75)	CCSSCH9R0D50
C	556	(A,85,92)	CCSRCH471J50
C	557	(A,85,91)	CKSSYB104K10
C	652	(A,81,134)	CKSSYB104K10
C	701	(A,131,131)	CEVW100M16
C	703	(A,124,120)	CKSSYB104K10
C	705	(A,140,114)	CKSSYB104K10
C	707	(A,140,127)	CKSSYB104K10
C	708	(A,144,116)	CKSSYB104K10
C	751	(A,120,131)	CEVW100M16
C	753	(B,144,120)	CKSSYB104K10
C	755	(B,127,114)	CKSSYB104K10
C	757	(B,128,127)	CKSSYB104K10
C	758	(B,124,115)	CKSSYB104K10
C	801	(B,58,140)	CKSSYB104K10

Mark	No.	Description	Part No.
C	803	(A,26,147)	CKSRYB105K16
C	804	(A,26,140)	CKSRYB105K16
C	902	(A,136,75)	DCH1201
C	903	(A,139,71)	DCH1201
C	904	(A,131,67)	CKSSYB102K50
C	907	(A,121,113)	CKSRYB105K16
C	908	(A,117,118)	CKSRYB105K16
C	1501	(A,155,137)	CKSSYB103K16
C	1502	(A,160,139)	CKSSYB104K10
C	1505	(A,157,131)	CEVW101M16
C	1605	(A,43,31)	CEVW100M16
C	1606	(A,49,31)	CEVW100M16
C	1607	(A,46,43)	CKSRYB104K16
C	1608	(A,35,39) CHIP ELECT.CAPACITOR	CEVW470M16
C	1609	(A,41,40)	CCSRCH331J50
C	1611	(A,51,39)	CCSRCH331J50
C	1613	(A,38,31)	CEVW100M16
C	1614	(A,54,31)	CEVW100M16
C	3011	(A,166,100)	CEVW100M16
C	3012	(A,171,100)	CEVW100M16
C	3013	(A,108,28)	CKSSYB103K16
C	3015	(A,87,34) CHIP ELECT.CAPACITOR	CEVW470M16
C	3016	(A,89,40)	CKSRYB104K16
C	3019	(A,89,55) CHIP ELECT.CAPACITOR	CEVW470M16
C	3020	(A,95,51)	CKSRYB104K16
C	3021	(A,95,42)	CEVW100M16
C	3022	(A,95,47)	CEVW100M16
C	3023	(A,103,40)	CEVW2R2M50
C	3024	(A,105,44)	CKSRYB104K16
C	3025	(A,110,41)	CEVW100M16
C	3026	(A,108,44)	CKSRYB104K16
C	3029	(A,111,53)	CEVW100M16
C	3030	(A,108,51)	CKSSYB104K10
C	3033	(A,108,64) CHIP ELECT.CAPACITOR	CEVW470M16
C	3034	(A,103,63)	CKSRYB104K16
C	3036	(A,94,62)	CKSRYB104K16
C	4001	(A,117,62)	CEVW101M16
C	4002	(B,117,55)	CKSSYB104K10
C	4003	(A,121,52)	CEVW101M16
C	4004	(B,117,54)	CKSSYB103K16
C	4005	(A,130,54)	CEVW100M16
C	4006	(B,130,55)	CKSSYB104K10
C	4007	(B,123,58)	CKSRYB105K16
C	4008	(B,120,58)	CKSRYB105K16
C	4009	(B,128,60)	CCSSCH221J50
C	4010	(B,115,60)	CCSSCH221J50
C	4013	(B,127,64)	CCSSCH101J50
C	4014	(B,116,64)	CCSSCH101J50
C	4015	(B,125,67)	CKSRYB105K16
C	4016	(B,121,67)	CKSRYB105K16
C	4017	(B,132,66)	CKSSYB102K50
C	4018	(B,126,70)	CKSSYB102K50
C	4019	(B,137,67)	CKSRYB105K16
C	4020	(B,137,70)	CKSRYB105K16
C	4021	(A,124,64)	CEVW100M16
C	4022	(B,120,69)	CKSRYB104K16
C	4023	(B,154,73)	CKSSYB103K16
C	5001	(A,25,77) CHIP ELECT.CAPACITOR	CEVW470M16
C	5002	(A,33,76)	CKSSYB103K16
C	5201	(A,27,54)	CKSSYB104K10

Mark	No.	Description	Part No.
C	5204 (A,48,57)		CKSSYB104K10
C	5205 (A,34,69)		CKSSYB104K10
C	5208 (B,43,63)		CKSSYB104K10
C	5209 (B,33,59)		CKSSYB103K16
C	5301 (A,64,136)		CKSSYB104K10
C	5304 (A,66,113)		CKSSYB104K10
C	5305 (A,79,129)		CKSSYB104K10
C	5309 (B,80,123)		CKSSYB104K10
C	5310 (A,41,130)		CKSSYB104K10
C	5311 (A,48,126)		CKSSYB104K10
C	5312 (A,47,135)		CKSSYB104K10
C	5499 (A,75,89)		CCSSCH8R0D50
C	5500 (A,75,87)		CCSSCH8R0D50
C	5503 (B,78,78)		CKSSYB102K50
C	5508 (B,66,86)		CKSSYB103K16
C	5509 (A,74,84)		CKSSYB104K10
C	5518 (B,50,87)		CKSSYB103K16
C	5519 (B,76,94)		CKSSYB103K16
C	5521 (B,79,98)		CKSSYB103K16
C	5539 (A,62,104)		CKSSYB104K10
C	5549 (B,56,95)		CCSSCH470J50
C	5550 (B,61,91)		CKSSYB104K10
C	5556 (A,51,97)		CKSSYB104K10
C	5577 (B,43,78)		CKSSYB103K16
C	5579 (B,50,78)		CKSSYB103K16
C	5581 (A,46,73)		CEVW101M16
C	5582 (A,60,77)		CKSSYB104K10
C	5583 (A,51,80)		CKSSYB104K10
C	5584 (B,55,72)		CKSSYB103K16
C	5610 (A,168,131)		CEVW100M16
C	5612 (A,174,143)		CKSRYB104K16
C	5613 (A,174,144)		CKSRYB104K16
C	5701 (A,131,60)		CCSSCH101J50
C	5703 (A,131,63)		CCSSCH101J50
C	5707 (A,143,51)		CKSSYB102K50
C	5708 (A,139,59)	CHIP ELECT.CAPACITOR	CEVW470M16
C	5751 (A,140,44)		CEVW100M16
C	5752 (A,140,38)		CEVW100M16

B AMP ASSY

SEMICONDUCTORS

IC	3101		TAS5508BPAG
IC	3191		BA10358F
IC	3201,3301,3401,3501		TAS5142DKD
Q	3301,3302,3401,3501		2SA1576A
Q	3691		2SC4081
D	3191		UDZS4R7(B)
D	3201-3205,3301-3305		1SS355
D	3401-3405,3501-3503		1SS355
D	3607		1SS355

MISCELLANEOUS

L	3101	INDUCTOR	CTF1385
L	3203,3204,3303,3304	INDUCTOR	ATH7021
L	3403,3404,3503,3504	INDUCTOR	ATH7021
JA	3001	2P PIN JACK	BKB1017
JA	3201	SPEAKER TERMINAL 6-P	AKE7126
JA	3501	SPEAKER TERMINAL 2-P	AKE7127
X	3101	CRYSTAL RESONATOR (13.5MHz)	ASS7082
CN	3101	CONNECTOR	VKN2008
CN	3191	2P CONNECTOR	B2P-VH
JH	3101-3103PCB	BINDER	VEF1040

RESISTORS

R	3104		RAB4CQ221J
R	3107,3108		RAB4CQ470J
R	3113		RS1/16S3R3J
R	3122		RS1/16S0R0J
R	3151		RAB4CQ472J
R	3191,3199		2W)
R	3192,3193		RS1/16SS4701F
R	3194,3195		RS1/16SS6802F
R	3200		RS1/10S3R3J
R	3207-3218,3307-3318		RS1/16S682J
R	3231-3234,3331-3334		RS1/10S472J
R	3235-3238,3335-3338		RS1/16S1R0J
R	3240-3243,3340-3343		RS1/8S180J
R	3250,3350,3450,3550		RS1/16S472J
R	3251,3351,3451,3551		RS1/16S473J
R	3407-3418,3507,3509		RS1/16S682J
R	3431-3434,3531-3534		RS1/10S472J
R	3435-3438,3535-3538		RS1/16S1R0J
R	3440-3443,3540-3543		RS1/8S180J
R	3511,3513,3515,3517		RS1/16S682J
R	3691,3693		RS1/16S473J
Other Resistors			RS1/16SS###J

CAPACITORS

C	3005,3006		CCSRCH221J50
C	3101,3103,3104,3106		CKSRYB104K16
C	3102,3105,3193		CKSRYB103K50
C	3107,3110,3112,3115		CKSRYB104K16
C	3108,3111,3117,3120		CEVW100M16
C	3109,3194		CKSRYB102K50
C	3113,3114		CCSRCH150J50
C	3116,3118,3119		CKSRYB104K16
C	3191		CEVW100M35
C	3192,3233-3236		CKSRYB104K50
C	3201-3204,3227,3228		CKSRYB104K16
C	3211-3214,3311-3314		CKSQYB104K50
C	3215-3218,3315-3318		CKSQYB333K50
C	3219,3220,3229,3319		CKSRYB472K50
C	3221,3222,3321,3322		ACH7271
C	3231,3232,3331,3332		ACE7069
C	3237-3240,3245,3246		CKSRYB103K50
C	3241-3244,3341-3344		CCSRCH331J50
C	3301-3304,3327,3328		CKSRYB104K16
C	3320,3330,3419,3420		CKSRYB472K50
C	3333-3336,3433-3436		CKSRYB104K50
C	3337-3340,3345,3346		CKSRYB103K50
C	3401-3404,3427,3428		CKSRYB104K16
C	3411-3414,3511-3514		CKSQYB104K50
C	3415-3418,3515-3518		CKSQYB333K50
C	3421,3422,3521,3522		ACH7271
C	3429,3519,3529		CKSRYB472K50
C	3431,3432,3531,3532		ACE7069
C	3437-3440,3445,3446		CKSRYB103K50
C	3441-3444,3541-3544		CCSRCH331J50
C	3501-3504,3527,3528		CKSRYB104K16

Mark	No.	Description	Part No.
	C 3533-3536		CKSRYB104K50
	C 3537-3540,3545,3546		CKSRYB103K50
	C 3691		CEVW1R0M50

C CONNECTION ASSY

SEMICONDUCTORS

	D 5051-5065		UDZS8R2(B)

MISCELLANEOUS

	JA 5051 26P CONNECTOR		AKP7219
	CN 5052 27P CONNECTOR		VKN1431

CAPACITORS

	C 5051-5061,5063-5065		CCSRCH101J50
	C 5062		CKSRYB103K50

D EARTH ASSY

MISCELLANEOUS

	KN 8001 EARTH CONTACT		AEB7384

E HDMI ASSY

SEMICONDUCTORS

	IC 101		SII9135CTU
	IC 151		TC74VHC126FTS1
	IC 201		TC74LCX541FTS1
	IC 301		SII9134CTU
	IC 501		PEG118A
	IC 502		AYW7181
	IC 504		BU4094BCFV
	IC 505		TC7WH125FU
	IC 506		TC7WT125FU
⚠	IC 1001		BD9850FVM
⚠	IC 1002		NJM2845DL1-33
⚠	IC 1003		NJM2886DL3-33
⚠	IC 1051		PQ200WNA1ZPH
	IC 1151		CXB1442AR
	IC 1203,1251,1253		BR24L02FV-W
	IC 1204,1252,1254		TC7MB3257FK
	IC 1255,1257		TC7WBD125AFK
	Q 152,352,1102,1151		DTC114YUA
	Q 351		UMB1N
⚠	Q 1001		QS5U27
	Q 1004		DTA124EUA
	Q 1005		2SC4081
	Q 1006,1051		2SA1576A
	Q 1007,1052		DTC124EUA
	Q 1152,1154,1202		DTC114YUA
	Q 1153		2SB1689
	Q 1251-1253		DTC114YUA
	Q 1281		HN1K02FU
	D 301		UDZS5R1(B)
	D 501		1SS355
	D 551		RB501V-40
	D 1102,1151,1152		DAN202U

MISCELLANEOUS

	L 101-104,301-305CHIP BEADS		ATL7010
	L 105,106CHIP SOLID INDUCTOR		QTL1013
	L 207,501CHIP SOLID INDUCTOR		ATL7002
	L 351-354COIL		ATH7022
	L 1001,1151CHIP BEADS		ATL7010
	L 1002 INDUCTOR		ATL7013
	L 2016,2017INDUCTOR		CTF1386
	JA 301 HDMI CONNECTOR		AKP7220
	JA 1102,1151,1152HDMI CONNECTOR		AKP1318
	X 101 CRYSTAL RESONATOR (27.000MHz)		ASS7068
	X 501 CERAMIC RESONATOR (15.7MHz)		XSS3004
	CN 1001,100219P SOCKET		XKP3054

RESISTORS

	R 101,103-105		RAB4CQ220J
	R 108		RAB4CQ100J
	R 115,204		RAB4CQ680J
	R 119,331,333-341		RAB4CQ473J
	R 130-132,134-136		RAB4CQ220J
	R 141-144		ACN1275
	R 304		RS1/16SS6800F
	R 579,2018		RAB4CQ0R0J
	R 1002		RS1/16SS2702F
	R 1004		RS1/16SS1202F
	R 1005		RS1/16SS1502F
	R 1007,1008,1011,1012		RS1/10S0R0J
	R 1031,1095,1096		RS1/10S0R0J
	R 1052,1053		RS1/10S6R8J
	R 1057		RS1/16SS1801F
	R 1059		RS1/16SS2001F
	R 1160		RS1/16SS4701F
	Other Resistors		RS1/16SS###J

CAPACITORS

	C 101,102,301,302		DCH1165
	C 103,104,303-305		CKSQYB106K6R3
	C 105,113,121,122		CKSSYB105K6R3
	C 106-108,110		CKSSYB104K10
	C 109,111,131,152		CKSSYB103K16
	C 114-120,123-126		CKSSYB104K10
	C 127		CCSSCH120J50
	C 128		CCSSCH100D50
	C 129,130,133,307		CKSSYB105K6R3
	C 132,134-139,151		CKSSYB104K10
	C 153,308,501		CKSSYB103K16
	C 201,306,309,311		CKSSYB104K10
	C 210		CKSSYB471K50
	C 310,312,314		CKSSYB105K6R3
	C 313,315,316,351		CKSSYB104K10
	C 317-319		CKSSYB105K6R3
	C 502,504-506,508		CKSSYB104K10
	C 503,1001,1055		CEVW101M16
	C 509,551,552,1054		CKSSYB104K10
	C 591,592,599		CCSSCH101J50
	C 1002,1009,1011,1014		CKSRYB105K10
	C 1003		CKSSYB473K10
	C 1004		CCSSCH221J50
	C 1005		CKSRYB682K50
	C 1006		DCH1201
	C 1007		BCG1059
	C 1008		CKSRYB122K50
	C 1010,1012		CKSQYB225K10
	C 1051,1053		CKSQYB105K25

Mark	No.	Description	Part No.
C	1052		CKSQYB224K25
C	1152-1159,1203,1204		CKSSYB104K10
C	1160		DCH1165
C	1251-1256		CKSSYB104K10

F BTOB ASSY

MISCELLANEOUS

CN	5151 (A,56,53)	19P PLUG	XKM3005
CN	5152 (A,89,53)	19P PLUG	XKM3005
CN	5153 (A,34,22)	19P SOCKET	XKP3054
CN	5154 (A,66,22)	19P SOCKET	XKP3054

G AINB ASSY

SEMICONDUCTORS

IC	3801,3802,3901,5101		BA4558F-HT
IC	3803		TC4052BFN
IC	3804		NJM2872BF05
Q	3801,3802		DTC124EUA
D	3809,3810,3812,3813		UDZS8R2(B)
D	3815-3818		1SS355
D	3901,3902		UDZS2R0(B)
D	3903,5102		UDZS5R1(B)
D	5101		UDZS8R2(B)

MISCELLANEOUS

L	3901	INDUCTOR	CTF1379
JA	3701	JACK	AKN7003
JA	3801	26P CONNECTOR	AKP7219
JA	3901	JACK	RKN1004
JA	5101	20P SOCKET	AKP7202
KN	3901	SCREW PLATE	VNE1948
CN	3802	CONNECTOR	CKS3382
JH	3801	PCB BINDER	VEF1040

RESISTORS

R	3805-3808		RS1/16S1002F
	Other Resistors		RS1/16S###J

CAPACITORS

C	3701,3702,3901		CEVW100M16
C	3703-3706,3816,3817		CCSRCH101J50
C	3710,3801-3804,3815		CKSRYB103K50
C	3809,3813,3827-3829		CKSRYB104K16
C	3810,3812,3830,3912		CEVW470M16
C	3822,3823,3914		CCSRCH101J50
C	3831,3908,5108,5118		CKSRYB104K16
C	3903,3909,3910		CCSRCH330J50
C	3905-3907,3913,5105		CEVW100M16
C	3915		CCSRCH471J50
C	3919,5107,5119		CKSRYB103K50
C	5101,5102		CCSRCH221J50
C	5106,5115-5117		CEVW100M16
C	5120		CEVW470M16
C	5121,5122		CKSRYB105K16

H FL ASSY

MISCELLANEOUS

IC	5901 (B,124,54)	FL DRIVER IC	PT6302LQ-003
IC	5902 (B,151,62)	IC	S-1200B33-M5
Q	5901 (B,88,74)	TRANSISTOR	2SC4081
Q	5903 (B,157,26)	DIGITAL TRANSISTOR	DTA143EUA
Q	5904 (B,180,22)	DIGITAL TRANSISTOR	DTC124EUA
Q	5905 (B,45,29)	TRANSISTOR	2SC4081
Q	5906 (B,67,29)	TRANSISTOR	2SC4081
Q	5907 (B,70,25)	DIGITAL TRANSISTOR	DTC124EUA
D	5903 (A,177,20)	LED(RED)	SLI-343URCW(RST)
D	5904 (A,45,20)	LED(BLUE)	SLR343BC4T(JKLM)
D	5905 (B,42,30)	DIODE	UDZS3R9(B)
L	5902 (B,130,83)	INDUCTOR	LCYA100J2520
V	5901 (A,50,39)	FL TUBE	AAV7112
S	5901 (A,44,84)	SWITCH	VSG1024
S	5902 (A,80,84)	SWITCH	VSG1024
S	5903 (A,96,84)	SWITCH	VSG1024
S	5904 (A,64,84)	SWITCH	VSG1024
CN	5901 (A,169,78)	CONNECTOR	CKS3382
CN	5902 (A,145,18)	5P PLUG	XKP3062
1		FL HOLDER(FE)	VNF1096

RESISTORS

R	5901 (B,140,81)		RS1/16S102J
R	5902 (B,139,78)		RS1/16S102J
R	5903 (B,141,78)		RS1/16S102J
R	5904 (B,143,78)		RS1/16S102J
R	5905 (B,126,71)		RS1/16S332J
R	5906 (B,90,64)		RS1/16S102J
R	5908 (B,91,74)		RS1/16S473J
R	5912 (B,152,26)		RS1/16S471J
R	5913 (B,150,26)		RS1/16S471J
R	5914 (B,154,26)		RS1/16S122J
R	5915 (B,41,55)		RS1/16S100J
R	5916 (B,147,26)		RS1/16S471J
R	5917 (B,73,30)		RS1/16S221J
R	5918 (B,75,30)		RS1/16S102J
R	5919 (B,64,26)		RS1/16S103J
R	5920 (B,93,84)		RS1/16S222J
R	5921 (B,74,80)		RS1/16S332J
R	5922 (B,92,53)		RS1/16S0R0J
R	5926 (B,64,30)		RS1/16S102J
R	5927 (B,155,20)		RS1/16S470J
R	5928 (B,143,28)		RS1/16S470J
R	5931 (B,136,81)		RS1/16S222J
R	5932 (B,136,77)		RS1/16S222J
R	5933 (B,139,74)		RS1/16S222J
R	5934 (B,145,74)		RS1/16S222J

CAPACITORS

C	5901 (B,155,64)		CKSRYB223K50
C	5902 (B,155,61)		CKSRYB105K16
C	5904 (B,136,84)		CKSRYB223K50
C	5905 (B,128,84)		CKSRYB223K50
C	5906 (A,122,78)		CEAL220M35
C	5907 (B,143,74)		CCSRCH221J50
C	5908 (B,141,74)		CCSRCH221J50
C	5909 (B,136,79)		CCSRCH221J50
C	5910 (B,150,66)		CKSRYB105K16
C	5911 (B,136,83)		CKSRYB224K16
C	5912 (B,125,74)		CCSRCH390J50
C	5913 (B,122,73)		CKSRYB223K50

Mark	No.	Description	Part No.
C	5924 (B,44,24)		CKSRYB103K50
C	5925 (A,132,29)		CEAL470M6R3

I REMOCON ASSY

MISCELLANEOUS

IC	5981 (A,18,25)	REMOTE RECEIVER UNIT	RPM7140-H5
CN	5981 (A,23,21)	5P SOCKET	XKP3073

CAPACITORS

C	5981 (B,12,19)		CKSRYB223K50

J POWER SUPPLY UNIT

POWER SUPPLY UNIT has no service part.

FM/AM TUNER UNIT

FM/AM TUNER UNIT has no service part.