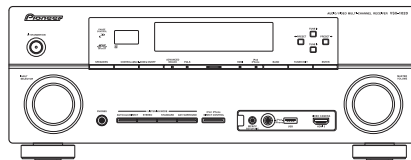


# Pioneer

## Service Manual



VSX-1020-K

ORDER NO.  
**RRV4045**

**AUDIO/VIDEO MULTI-CHANNEL RECEIVER**

# VSX-1020-K

# VSX-1025-K

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

Model	Type	Power Requirement	Remarks
VSX-1020-K	UXCNCB	AC 120 V	
VSX-1025-K	CUXCN	AC 120 V	



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

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# SAFETY INFORMATION

A

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

B

This product may contain a chemical known to the State of California to cause cancer, or birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 - Proposition 65

(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.

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VSX-1020-K

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## [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.

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# 1. SERVICE PRECAUTIONS

## 1.1 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.

## 1.2 NOTES ON REPLACING PARTS

The part listed below is difficult to replace as a discrete component part.  
When the part listed in the table is defective, replace whole Assy.

Assy Name	PCB Assy Part No.	Parts that is Difficult to Replace			
		Ref No.	Function	Part No.	Remarks
D-MAIN Assy	7028069261010-IL	IC800	EMMA2RL2	UPD61283F1-407LU2A	BGA
		IC1501	HDMI Receiver	SII9233ACTU	IC with heat-pad

## 1.3 CAUTION

- **Discharging**

For more detail, please refer to "7. DISASSEMBLY - 1. Discharging".

- **Notes on Ground Points Connection**

For more detail, please refer to "7. DISASSEMBLY - 2. Notes on Ground Points Connection".

# 2. SPECIFICATIONS

## 2.1 SPECIFICATIONS

### A Amplifier section

**Continuous average power output of 80 watts\* per channel, min., at 8 ohms, from 20 Hz to 20 000 Hz with no more than 0.08 %\*\* total harmonic distortion.**

Front (stereo) . . . . . 80 W + 80 W  
Power output (1 kHz, 8 Ω, 0.05 %, 1 ch driven)  
. . . . . 110 W per channel  
Guaranteed speaker impedance

B . . . . . 16 Ω to 8 Ω,  
less than 8 Ω to 6 Ω (setting required)

\* Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifiers

\*\* Measured by Audio Spectrum Analyzer

### C Audio Section

Input (Sensitivity/Impedance)

LINE . . . . . 300 mV/47 kΩ

Output (Level/Impedance)

REC . . . . . 300 mV/2.2 kΩ

Signal-to-Noise Ratio

(IHF, short circuited, A network)

LINE . . . . . 100 dB

Signal-to-Noise Ratio [EIA, at 1 W (1 kHz)]

LINE . . . . . 81 dB

### D Tuner Section

Frequency Range (FM) . . . 87.5 MHz to 108 MHz

Antenna Input (FM) . . . . . 75 Ω unbalanced

Frequency Range (AM) . . . . 530 kHz to 1700 kHz

Antenna (AM) . . . . . Loop antenna (balanced)

### E Video Section

Signal level

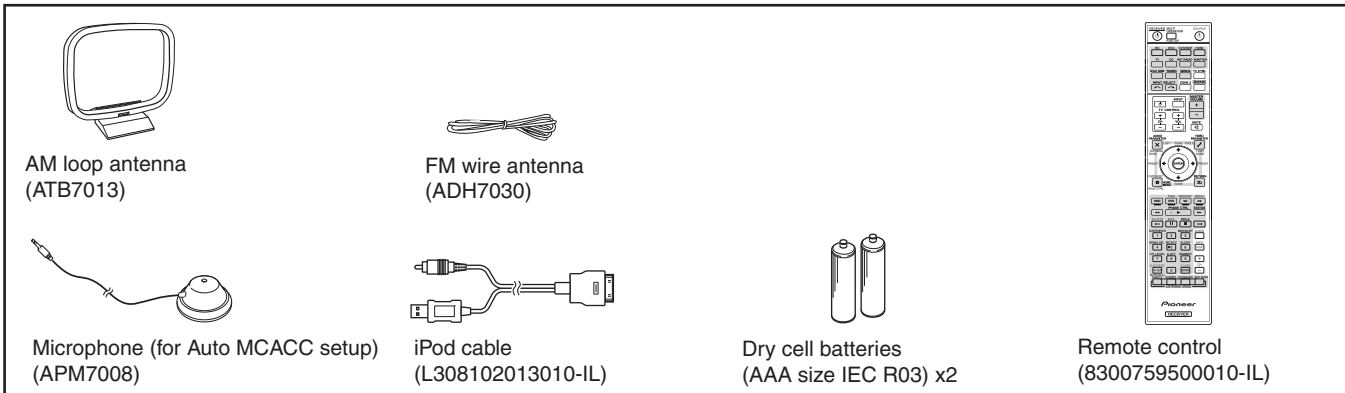
Composite . . . . . 1 Vp-p (75 Ω)

Component Video . . . . . Y: 1.0 Vp-p (75 Ω),  
PB, PR: 0.7 Vp-p (75 Ω)

Corresponding maximum resolution

Component Video . . . . . 1080p (1125p)  
(Video convert off)

### F Accessories



### Digital In/Out Section

HDMI terminal . . . . . 19-pin (Not DVI)

HDMI output type . . . . . 5 V, 100 mA

USB terminal . . . . . USB2.0 Full Speed (Type A)

iPod terminal . . . . . USB, and Video (Composite)

SIRIUS antenna cable . . . . 8-pin mini DIN cable

ADAPTER PORT terminal . . . . . 5 V, 100 mA

### Integrated control section

Control (SR) terminal . . . Ø 3.5 Mini-jack (MONO)

Control (IR) terminal . . . Ø 3.5 Mini-jack (MONO)

IR signal . . . . . High Active (High Level: 2.0 V)

### Miscellaneous

Power requirements . . . . . AC 120 V, 60 Hz

Power consumption . . . . . 245 W

In standby . . . . . 0.5 W (Control OFF)

0.8 W (Control ON)

Dimensions (VSX-1020-K)

. . . . . 420 mm (W) x 158 mm (H) x 348.6 mm (D)

(16 9/16 in. (W) x 6 1/4 in. (H) x 13 3/4 in. (D))

Weight (without package) . . . . 8.7 kg (19 lb 3 oz)

Dimensions (VSX-1025-K)

. . . . . 420 mm (W) x 158 mm (H) x 379 mm (D)

(16 9/16 in. (W) x 6 1/4 in. (H) x 14 15/16 in. (D))

Weight (without package) . . . . 10.2 kg (22 lb 8 oz)

### Furnished Parts Number

MCACC Setup microphone . . . . . 1

Remote control unit . . . . . 1

AAA/IEC R03 dry cell batteries . . . . . 2

iPod cable . . . . . 1

AM loop antenna . . . . . 1

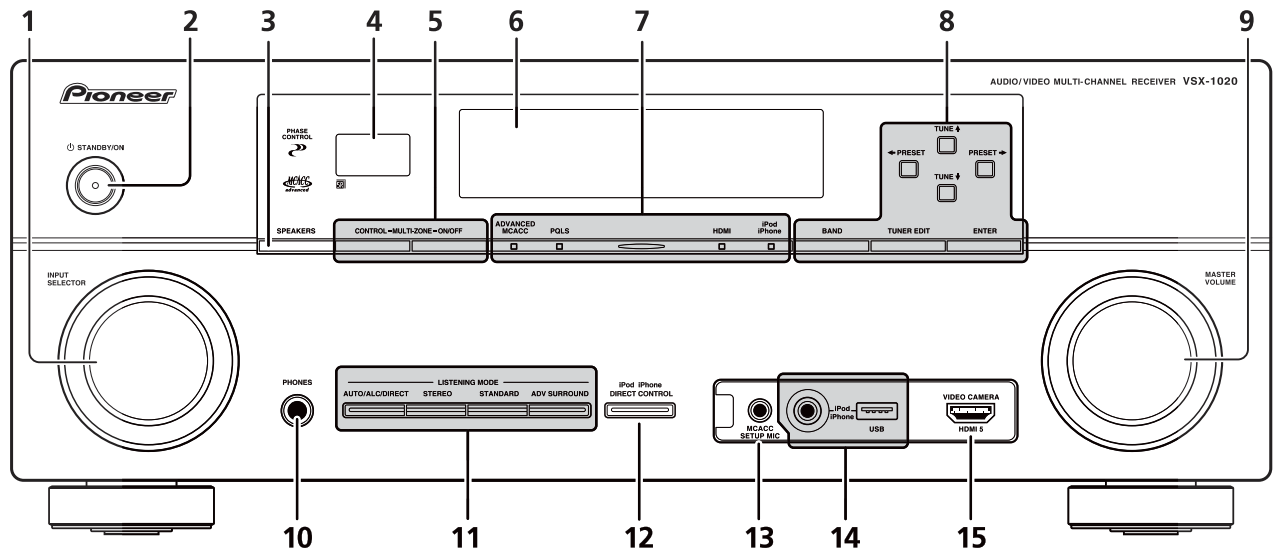
FM wire antenna . . . . . 1

Operating instructions . . . . . 1

### Note

- Specifications and the design are subject to possible modifications without notice, due to improvements.

Front panel



**1 INPUT SELECTOR dial**

Select an input function.

**2  $\odot$  STANDBY/ON**

Switches the receiver between on and standby.

**3 SPEAKERS**

See *Switching the speaker terminal*.

**4 Remote sensor**

Receives the signals from the remote control.

**5 MULTI-ZONE controls**

If you've made MULTI-ZONE connections use these controls to control the sub zone from the main zone.

**6 Character display**

See *Display*.

**7 Indicators**

**ADVANCED MCACC** – Lights when EQ is set to **ON** in the **AUDIO PARAMETER** menu.

**PQLS** – Lights when the PQLS feature is active.

**HDMI** – Blinks when connecting an HDMI-equipped component; lights when the component is connected.

**iPod/iPhone** – Lights to indicate iPod/iPhone is connected.

**8 Tuner controls**

**BAND** – Switches between AM and FM radio bands.

**TUNER EDIT** – Use with **TUNE  $\uparrow/\downarrow$** , **PRESET  $\leftarrow/\rightarrow$**  and **ENTER** to memorize and name stations for recall.

**TUNE  $\uparrow/\downarrow$**  – Find radio frequencies.

**PRESET  $\leftarrow/\rightarrow$**  – Find preset stations.

**9 MASTER VOLUME dial**

**10 PHONES jack**

Connect the headphones. When the headphones are connected, there is no sound output from the speakers.

**11 Listening mode buttons**

**AUTO/ALC/DIRECT** – Switches between Auto Surround, Auto Level Control mode and Stream Direct mode.

**STEREO** – Switches between stereo playback and Front Stage Surround Advance modes.

**STANDARD** – Press for Standard decoding and to switch between the various  $\square$  Pro Logic IIx and Neo:6 options.

**ADV SURROUND** – Switch between the various surround modes.

**12 iPod iPhone DIRECT CONTROL**

Change the receiver's input to the **iPod** and enable iPod operations on the iPod.

**13 MCACC SETUP MIC jack**

Connect the supplied microphone.

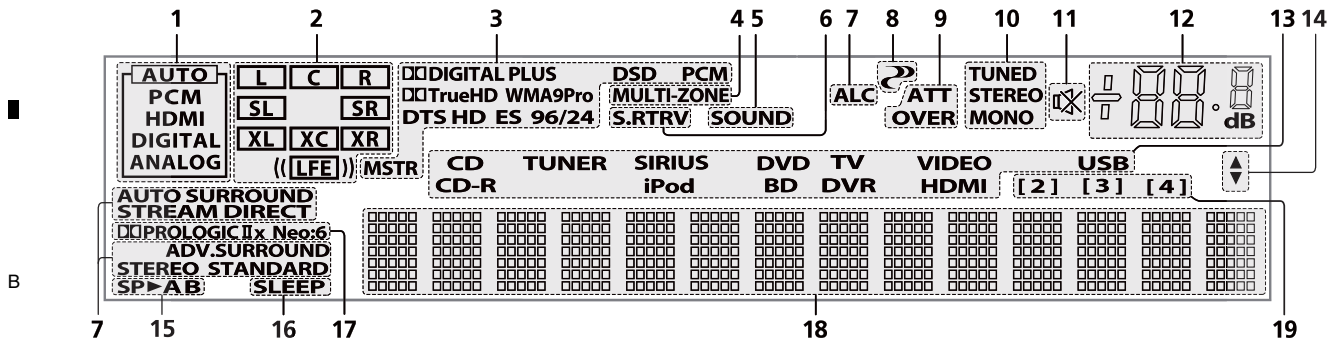
**14 iPod/iPhone/USB terminals**

Connect your Apple iPod as an audio and video source, or connect a USB device for audio and photo playback.

**15 HDMI input connector**

Use for connection to compatible HDMI device (Video camera, etc.).

## A Display



### 1 SIGNAL indicators

Light to indicate the currently selected input signal. **AUTO** lights when the receiver is set to select the input signal automatically.

### 2 Program format indicators

Light to indicate the channels being digital input.

**L/R** – Left front/Right front channel

**C** – Center channel

**SL/SR** – Left surround/Right surround channel

**LFE** – Low frequency effects channel (the (( )) indicators light when an LFE signal is being input)

**XL/XR** – Two channels other than the ones above

**XC** – Either one channel other than the ones above, the mono surround channel or matrix encode flag

### 3 Digital format indicators

Light when a signal encoded in the corresponding format is detected.

**DIGITAL** – Lights with Dolby Digital decoding.

**DIGITAL PLUS** – Lights with Dolby Digital Plus decoding.

**TrueHD** – Lights with Dolby TrueHD decoding.

**DTS** – Lights with DTS decoding.

**DTS HD** – Lights with DTS-HD decoding.

**96/24** – Lights with DTS 96/24 decoding.

**WMA9 Pro** – Lights to indicate that a WMA9 Pro signal is being decoded.

**DSD PCM** – Light during DSD (Direct Stream Digital) to PCM conversion with SACDs.

**PCM** – Lights during playback of PCM signals.

**MSTR** – Lights during playback of DTS-HD Master Audio signal.

### 4 MULTI-ZONE

Lights when the MULTI-ZONE feature is active.

### 5 SOUND

Lights when any of the Midnight, Loudness or tone controls feature is selected.

Lights when Dialog Enhancement is switched on.

### 6 S.RTRV

Lights when the Sound Retriever function is active.

### 7 Listening mode indicators

**AUTO SURROUND** – Lights when the Auto Surround feature is switched on.

**ALC** – Lights when the ALC (Auto level control) mode is selected.

**STREAM DIRECT** – Lights when Direct/Pure Direct is selected.

**ADV.SURROUND** – Lights when one of the Advanced Surround modes has been selected.

**STEREO** – Lights when stereo listening is switched on.

**STANDARD** – Lights when one of the Standard Surround modes is switched on.

### 8 (PHASE CONTROL)

Lights when the Phase Control is switched on.

### 9 Analog signal indicators

Light to indicate reducing the level of an analog signal.

### 10 Tuner indicators

**TUNED** – Lights when a broadcast is being received.

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

**MONO** – Lights when the mono mode is set using **MPX**.

### 11

Lights when the sound is muted.

### 12 Master volume level

Shows the overall volume level.

“---” indicates the minimum level, and “+12dB” indicates the maximum level.

### 13 Input function indicators

Light to indicate the input function you have selected.

### 14 Scroll indicators

Light when there are more selectable items when making the various settings.

### 15 Speaker indicators

Indicates the speaker terminal, **A** and/or **B**, to which audio signal output is currently set.

### 16 SLEEP

Lights when the receiver is in sleep mode.

### 17 Matrix decoding format indicators

**PRO LOGIC IIx** – This lights to indicate Pro Logic II / Pro Logic IIx decoding.

**Neo:6** – When one of the Neo:6 modes of the receiver is on, this lights to indicate Neo:6 processing.

### 18 Character display

Displays various system information.

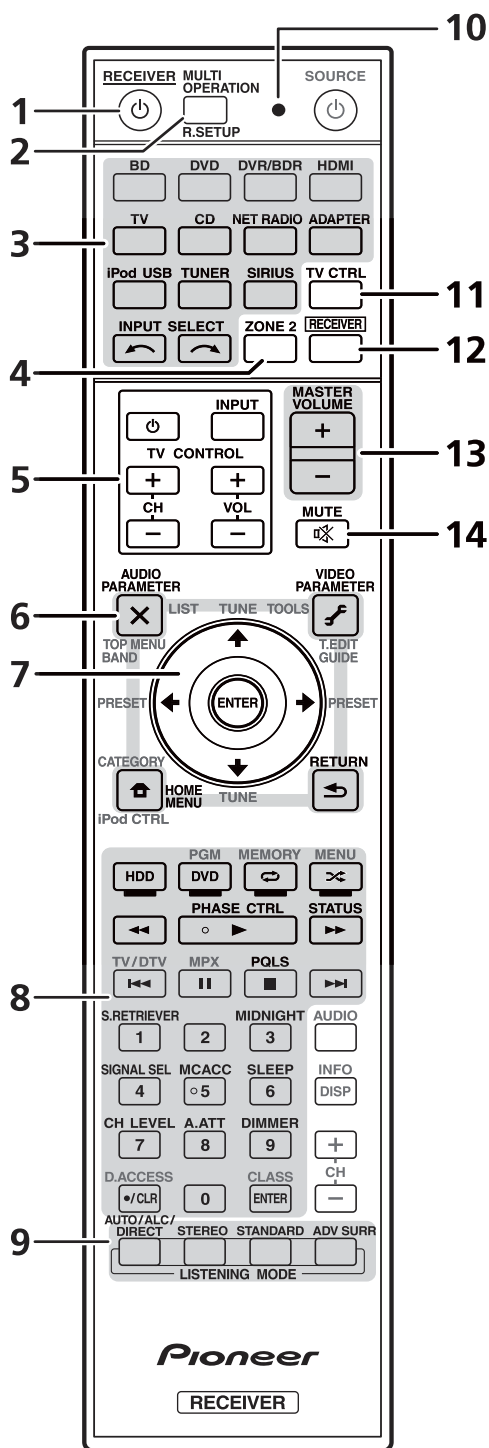
### 19 Remote control mode indicator

Lights to indicate the receiver's remote control mode setting. (Not displayed when set to **1**.)



## Remote control

This section explains how to operate the remote control for the receiver.



The remote has been conveniently color-coded according to component control using the following system:

- **White** – Receiver control, TV Control
- **Blue** – Other controls

### 1 RECEIVER

This switches between standby and on for this receiver.

**2 MULTI OPERATION** – Use to perform multi operations.

**R.SETUP** – Use to input the preset code when making remote control settings and to set the remote control mode.

### 3 Input function buttons

Press to select control of other components.

### 4 ZONE 2

Switch to perform operations in the sub zone.

### 5 TV CONTROL buttons

These buttons are dedicated to control the TV assigned to **TV CTRL** button.

– Turn on/off the power of the TV.

**INPUT** – Select the TV input signal.

**CH +/-** – Select channels.

**VOL +/-** – Adjust the volume on your TV.

### 6 Receiver controls

Press **RECEIVER** first to access:

**AUDIO PARAMETER** – Use to access the Audio options.

**VIDEO PARAMETER** – Use to access the Video options.

**HOME MENU** – Use to access the Home Menu.

**RETURN** – Press to confirm and exit the current menu screen.

A

**7** ↑/↓/←/→, ENTER

Use the arrow buttons when setting up your surround sound system and the Audio or Video options.

**8 Receiver controls**

Press **RECEIVER** first to access:

**PHASE CTRL** – Switch on/off Phase Control.

**STATUS** – Check selected receiver settings.

**PQLS** – Select PQLS setting.

**S.RETRIEVER** – Press to restore CD quality sound to compressed audio sources.

**MIDNIGHT** – Switches to Midnight or Loudness listening.

**SIGNAL SEL** – Select an input signal.

**MCACC** – Switch between MCACC presets.

**SLEEP** – Use to put the receiver in sleep mode and select the amount of time before sleep.

**CH LEVEL** – Press repeatedly to select a channel, then use ←/→ to adjust the level.

**A.ATT** – Attenuates (lowers) the level of an analog input signal to prevent distortion.

**DIMMER** – Dims or brightens the display.

**9 LISTENING MODE controls**

**AUTO/ALC/DIRECT** – Switches between Auto Surround, Auto Level Control mode and Stream Direct mode.

**STEREO** – Switches between stereo playback and Front Stage Surround Advance modes.

**STANDARD** – Press for Standard decoding and to switch between the various **PRO** Pro Logic IIx and Neo:6 options.

**ADV SURR** – Switch between the various surround modes.

**10 Remote control LED**

Lights when a command is sent from the remote control.

**11 TV CTRL**

Set preset code of your TV's manufacturer when controlling TV.

**12 RECEIVER**

Switches the remote to control the receiver (used to select the white commands above the number buttons (**SIGNAL SEL**, etc.)).

Switch to perform operations in the main zone. Also use to set up surround sound.

**13 MASTER VOLUME +/-**

Set the listening volume.

**14 MUTE**

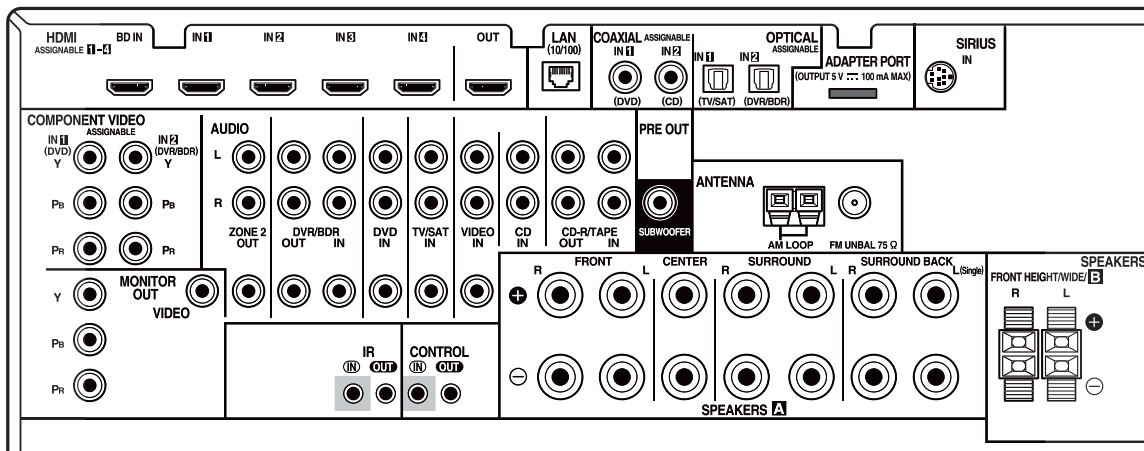
Mutes the sound or restores the sound if it has been muted (adjusting the volume also restores the sound).

B

C

D

**Rear panel**



F

### 3. BASIC ITEMS FOR SERVICE

#### 3.1 CHECK POINTS AFTER SERVICING

#### Items to be checked after servicing / VSX, SC

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

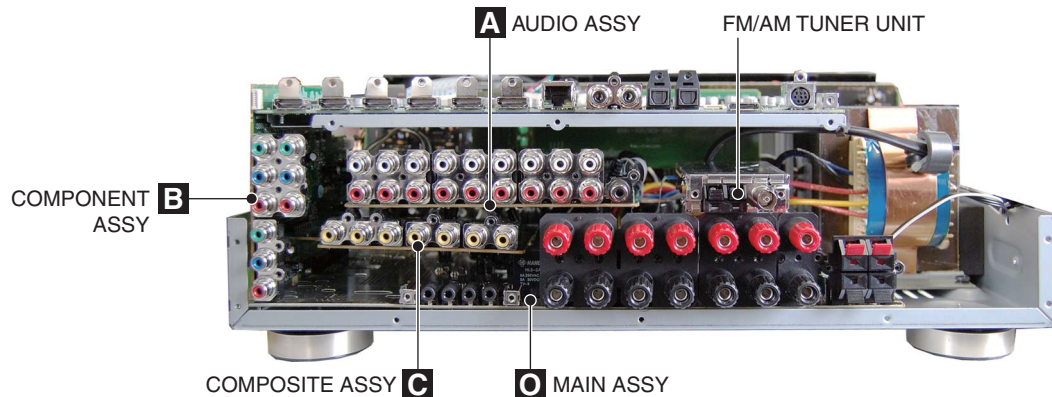
No.	Procedures	Check points
1	Confirm whether the customer complain has been solved. If the customer complain occurs with the particular source, such as Dolby Digital, DTS, AAC, DVD-A and HDMI, input it for the operation check.	The customer complain must not be reappeared. Video, Audio and operations 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 video outputs. (Connect with a DVD player.)	Video and operations must be normal.
6	Check the tuner (AM and FM) operations.	Audio and operations must be normal.
7	Check the sound from headphone output.	Sound must be normal, without noise.
8	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 video and audio.

Item to be checked regarding video	Item to be checked regarding audio
Block noise	Distortion
Horizontal noise	Noise
Flicker	Volume too low
Disturbed image (video jumpiness)	Volume too high
Too dark	Volume fluctuating
Too bright	Sound interrupted
Mottled color	

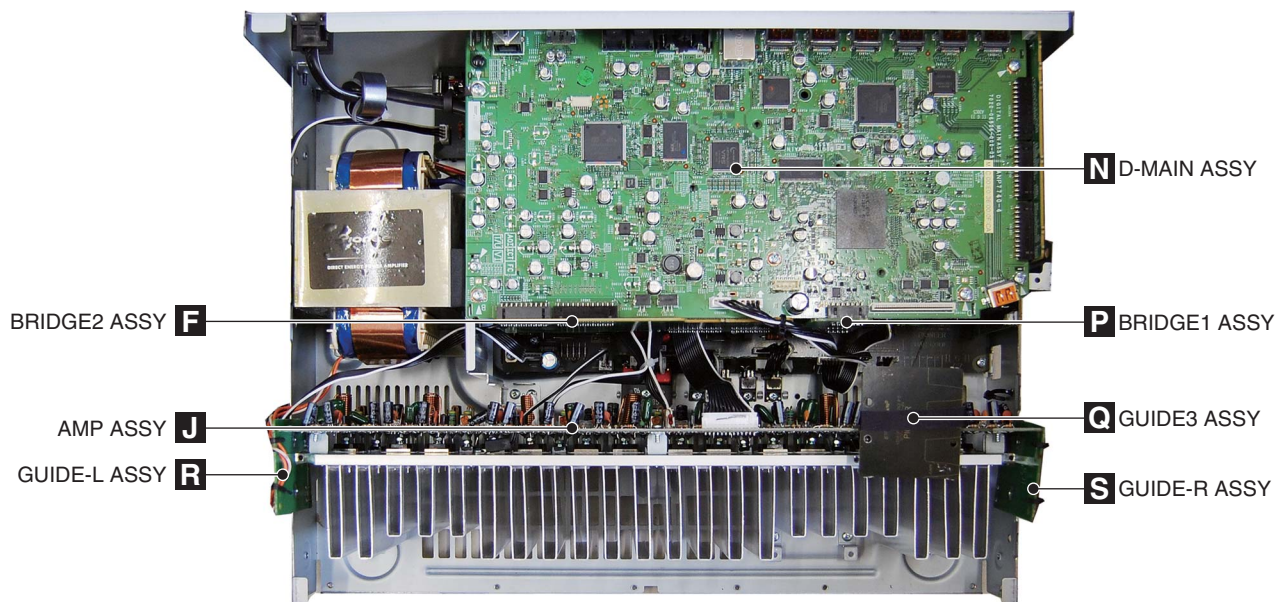
## 3.2 PCB LOCATIONS

A



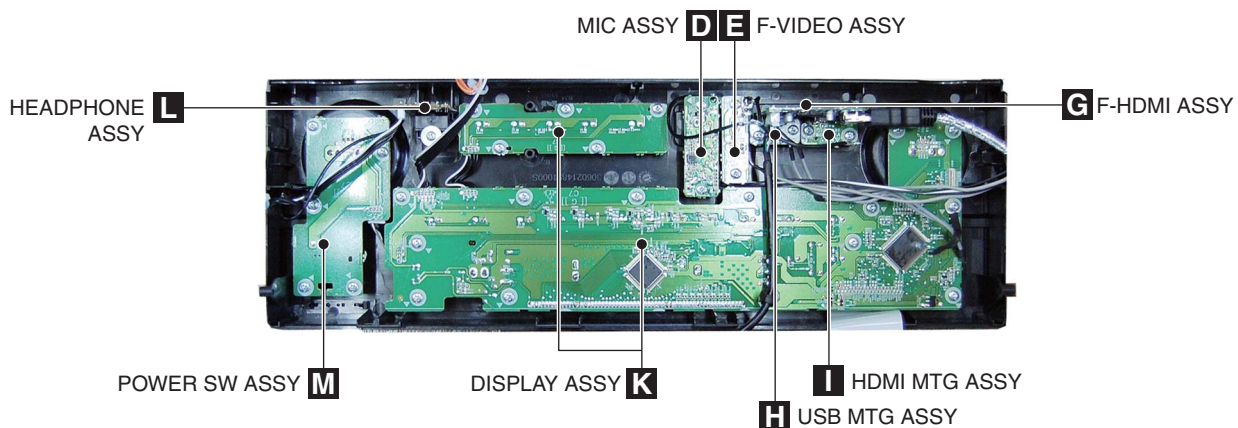
B

C



D

E



E

F

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.

Mark No.	Description	Part No.	Mark No.	Description	Part No.
<b>LIST OF ASSEMBLIES</b>					
NSP	1..MAIN ASSY	7025HK0918010-IL	NSP	1..AMP ASSY	7025HK0918012-IL
	2..MAIN ASSY	7028069211010-IL		2..AMP ASSY	7028069531010-IL
	2..BRIDGE1 ASSY	7028069213010-IL			
	2..GUIDE-L ASSY	7028069214010-IL	NSP	1..INPUT ASSY	7025HK0918013-IL
	2..GUIDE-R ASSY	7028069215010-IL		2..AUDIO ASSY	7028069241010-IL
				2..COMPONENT ASSY	7028069242010-IL
	2..GUIDE3 ASSY	7028069218010-IL		2..COMPOSITE ASSY	7028069243010-IL
				2..BRIDGE2 ASSY	7028069244010-IL
NSP	1..FRONT ASSY (VSX-1020-K)	7025HK0918011-IL		2..F-VIDEO ASSY	7028069245010-IL
NSP	1..FRONT ASSY (VSX-1025-K)	7025HK0918051-IL		2..MIC ASSY	7028069246010-IL
	2..DISPLAY ASSY (VSX-1020-K)	7028069221010-IL			
	2..DISPLAY ASSY (VSX-1025-K)	70280692210C0-IL	NSP	1..F-HDMI ASSY	7025HK0918014-IL
	2..POWER SW ASSY	7028069222010-IL		2..F-HDMI ASSY	7028069251010-IL
			NSP	1..D-MAIN ASSY	7025HK0918015-IL
	2..USB MTG ASSY	7028069223010-IL		2..D-MAIN ASSY	7028069261010-IL
	2..HDMI MTG ASSY	7028069224010-IL			
	2..HEADPHONE ASSY	7028069225010-IL			

### 3.3 JIGS LIST

#### Jigs List

Jig Name	Part No.	Remarks
13P extension jig cable	GGD1669	Diagnosis (AMP Assy ↔ AUDIO Assy)
8P extension jig cable	GGD1670	Diagnosis (AMP Assy ↔ MAIN Assy)
7P extension jig cable	GGD1671	Diagnosis (AMP Assy ↔ MAIN Assy)
2P short connector jig	GGD1672	Diagnosis (Posistor ↔ MAIN Assy)
Board to board extension jig cable	GGD1675	Diagnosis (COMPONENT Assy ↔ MAIN Assy)


#### Lubricants and Glues List

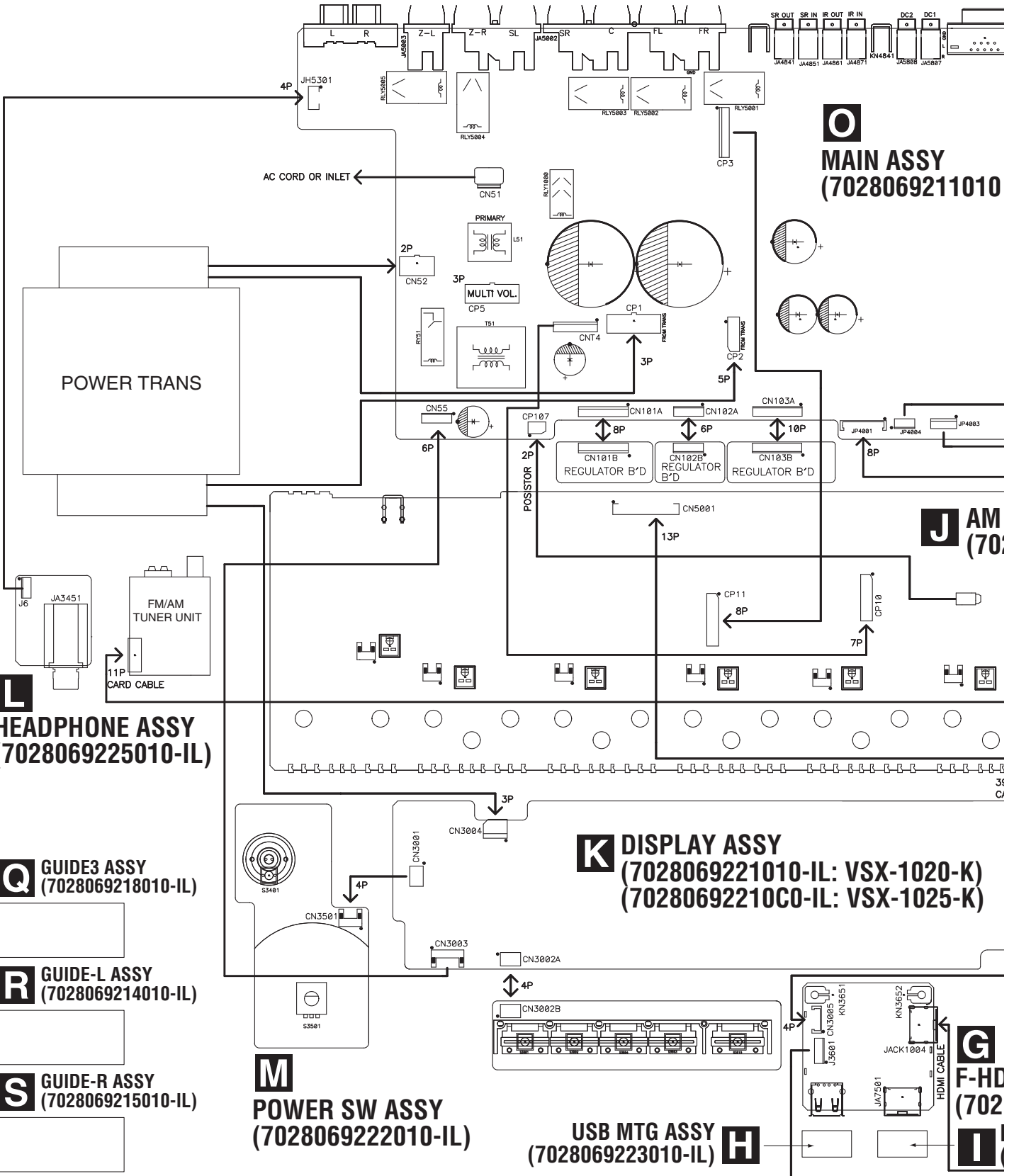


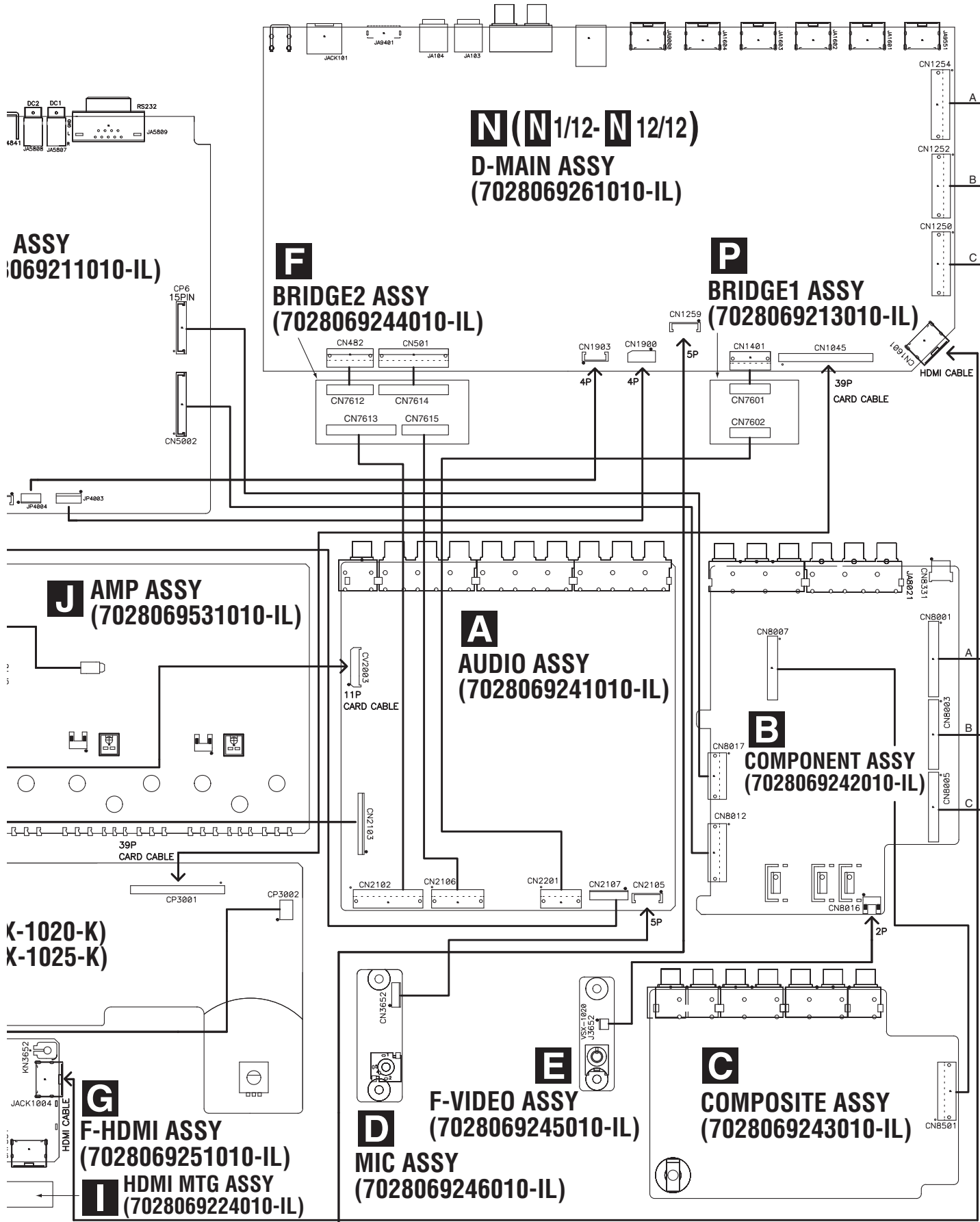
Name	Part No.	Remarks
Silicon grease	GEM1057	Refer to “9.2 EXTERIOR SECTION”.
Silicon adhesive	GYA1011 (KE40RTV-W)	Refer to “9.2 EXTERIOR SECTION”.

# 4. BLOCK DIAGRAM

## 4.1 OVERALL WIRING DIAGRAM

- 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.





**N (N1/12- N 12/12)**  
**D-MAIN ASSY**  
 (7028069261010-IL)

**ASSY**  
 (7069211010-IL)

**F**  
**BRIDGE2 ASSY**  
 (7028069244010-IL)

**P**  
**BRIDGE1 ASSY**  
 (7028069213010-IL)

**J**  
**AMP ASSY**  
 (7028069531010-IL)

**A**  
**AUDIO ASSY**  
 (7028069241010-IL)

**B**  
**COMPONENT ASSY**  
 (7028069242010-IL)

**K-1020-K)**  
**K-1025-K)**

**E**  
**F-VIDEO ASSY**  
 (7028069245010-IL)

**C**  
**COMPOSITE ASSY**  
 (7028069243010-IL)

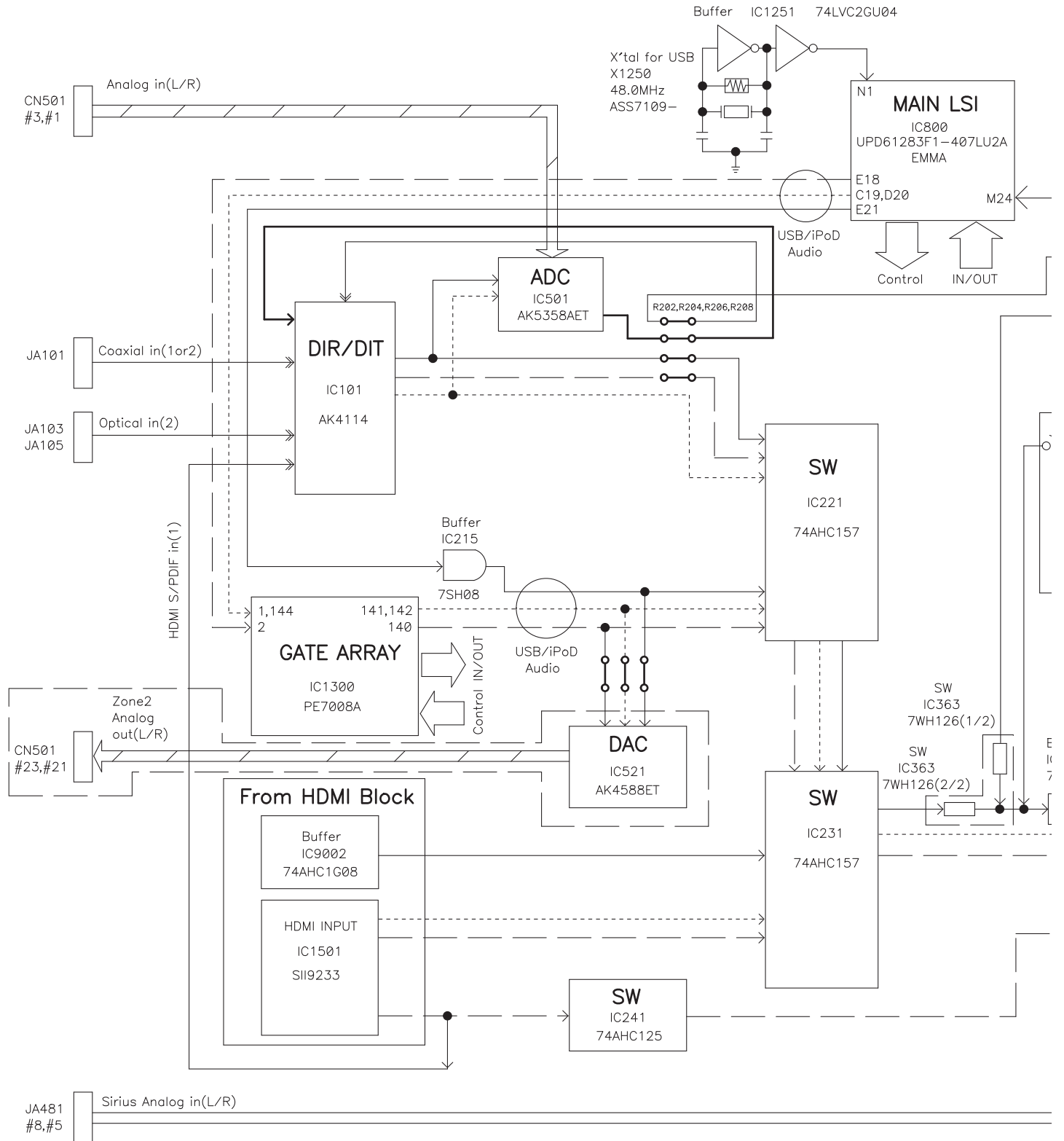
**G**  
**F-HDMI ASSY**  
 (7028069251010-IL)

**D**  
**MIC ASSY**  
 (7028069246010-IL)

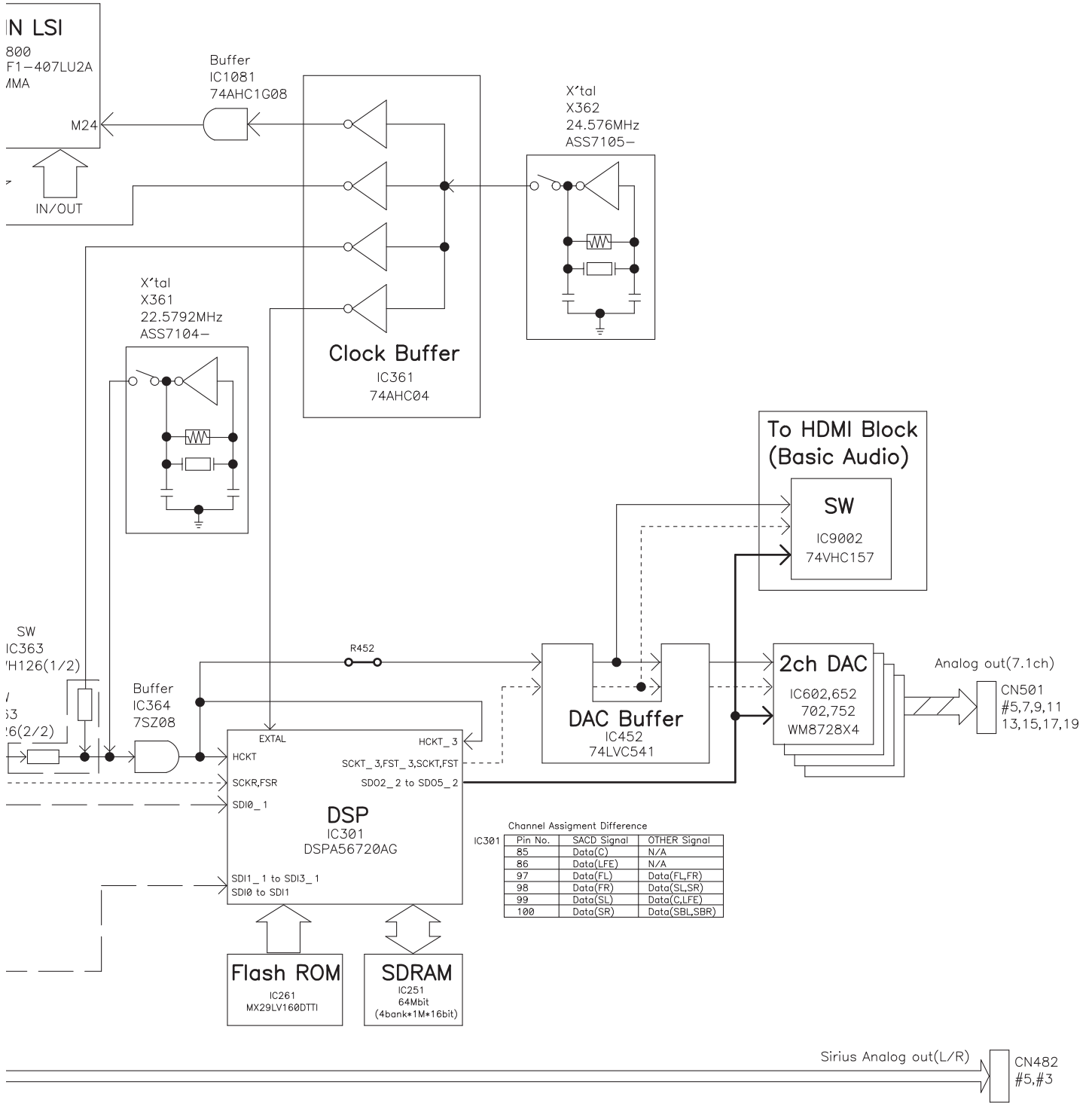
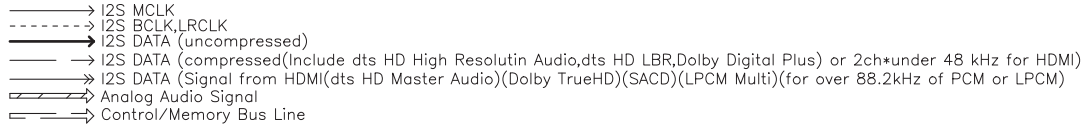
**I**  
**HDMI MTG ASSY**  
 (7028069224010-IL)

# 4.2 DIGITAL AUDIO BLOCK DIAGRAM

## N D-MAIN ASSY

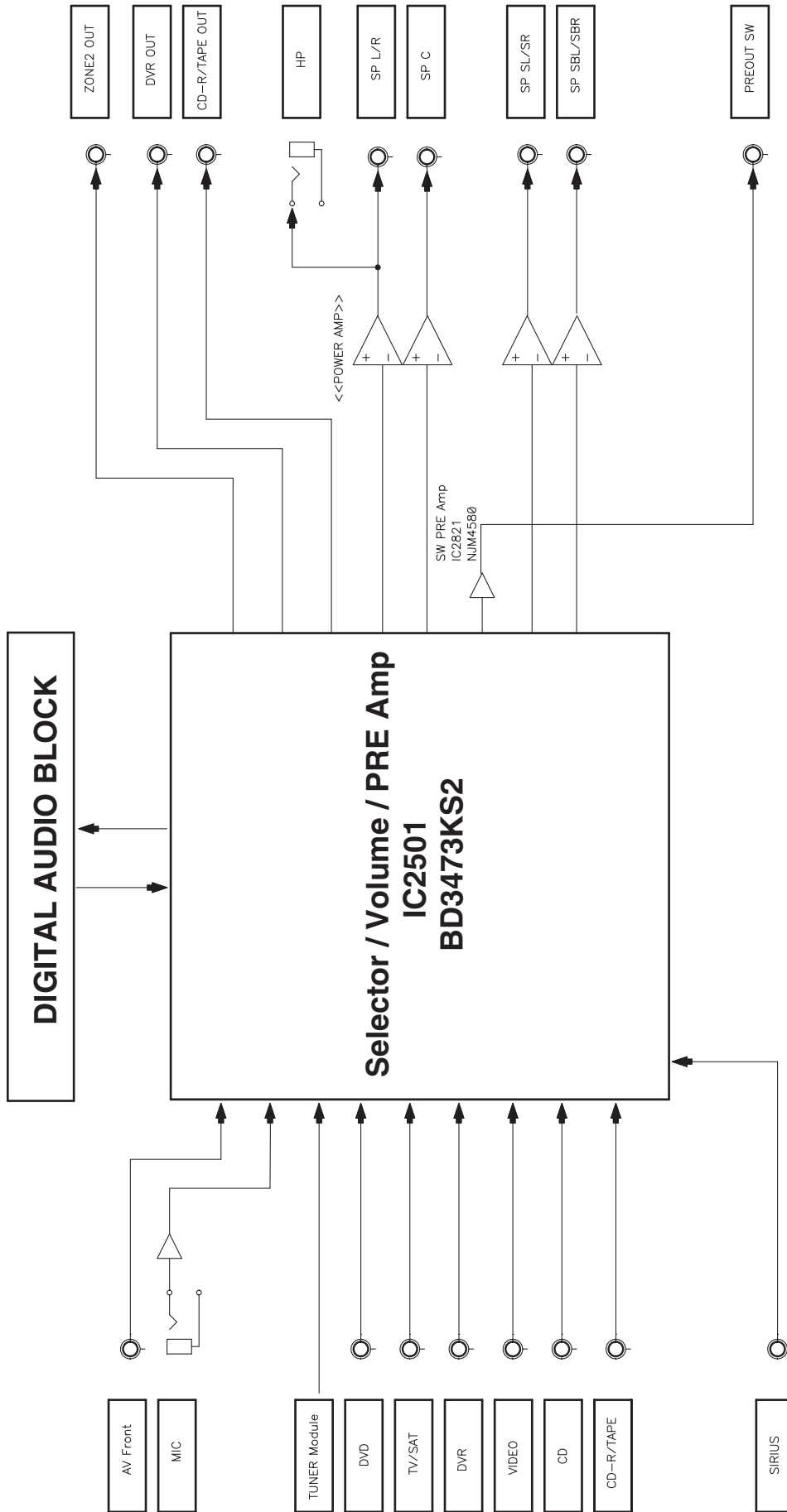






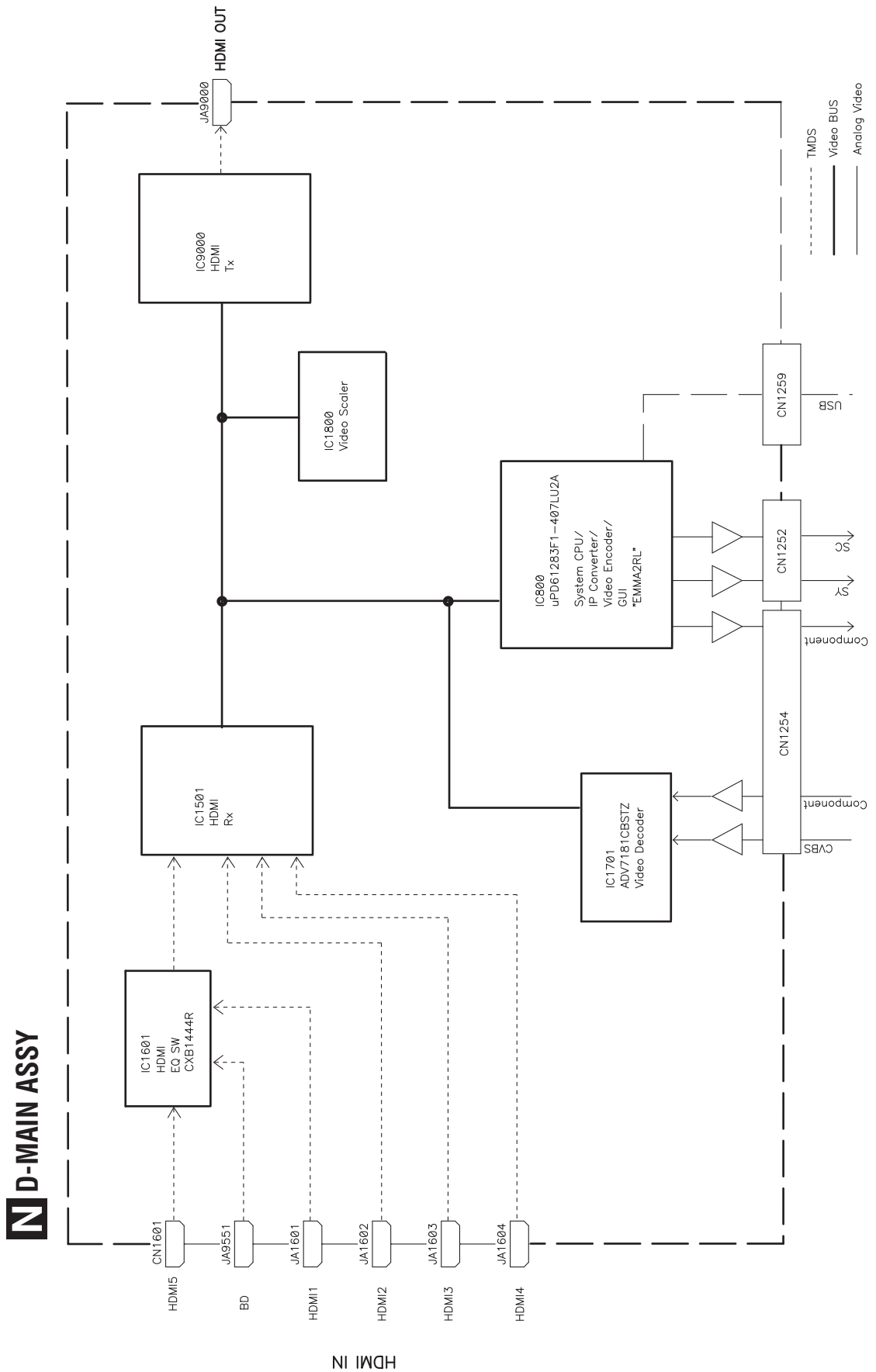
# 4.3 ANALOG AUDIO BLOCK DIAGRAM

**A** AUDIO ASSY



VSX-1020-K

# 4.4 DIGITAL VIDEO BLOCK DIAGRAM



5

6

7

8

A  
B  
C  
D  
E  
F

5

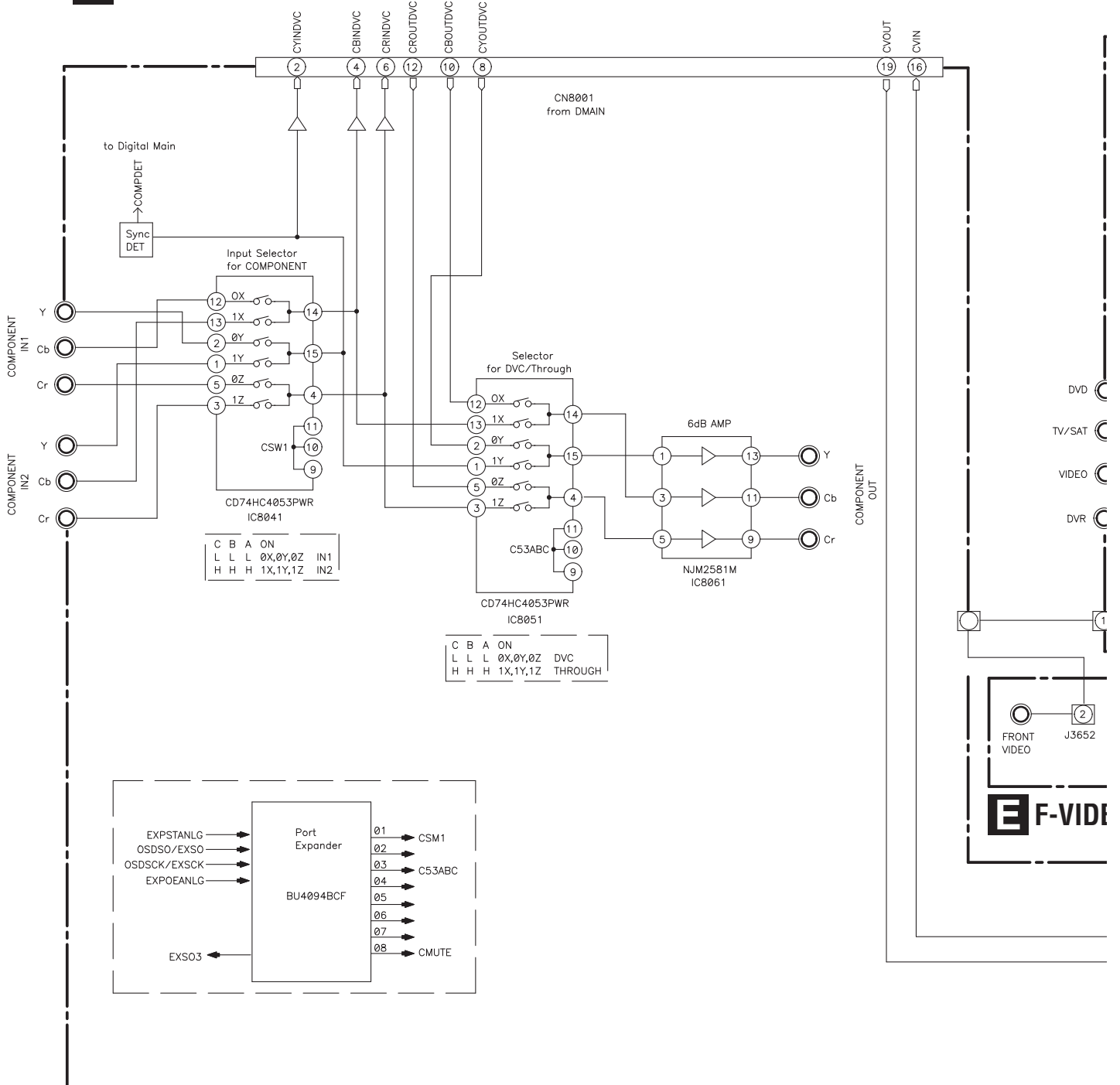
6

7

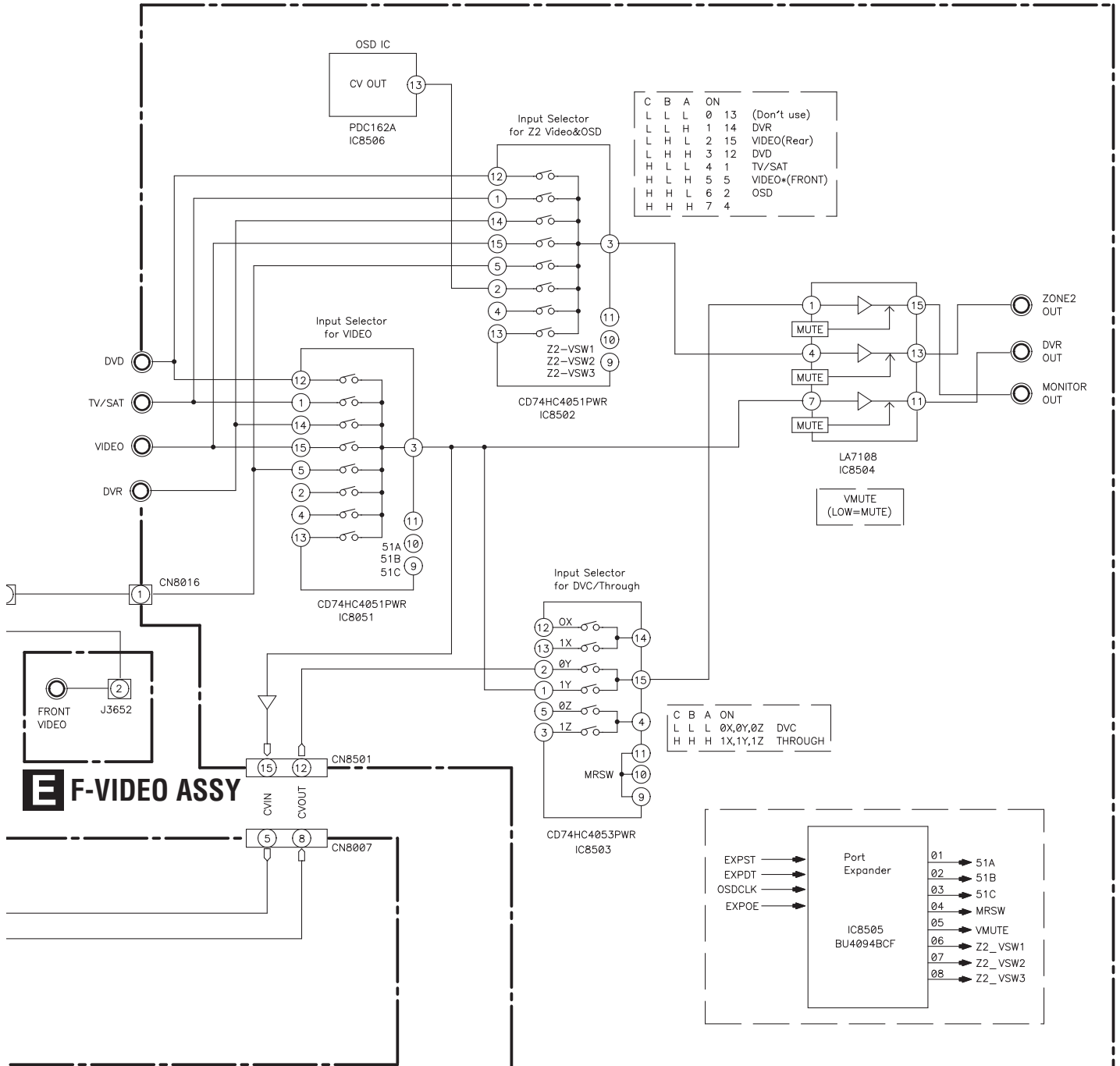
8

# 4.5 ANALOG VIDEO BLOCK DIAGRAM

## B COMPONENT ASSY



# C COMPOSITE ASSY



# E F-VIDEO ASSY

# 4.6 GND BLOCK DIAGRAM

A

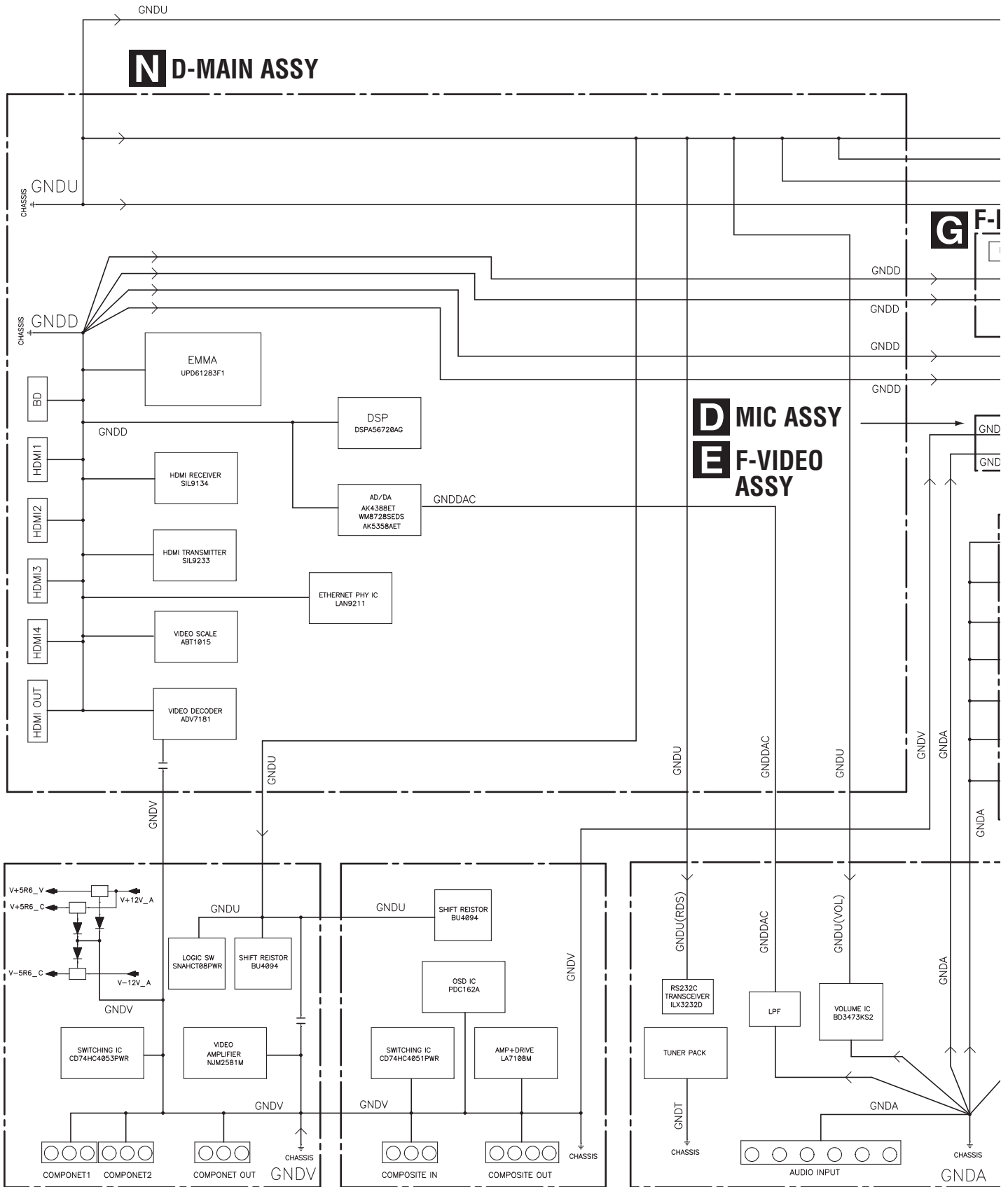
B

C

D

E

F



**B COMPONENT ASSY**

**C COMPOSITE ASSY**

**A AUDIO ASSY**



1

2

3

4

A

B

C

D

E

F

1

2

3

4



# 5. DIAGNOSIS

## 5.1 DIAGNOSIS FLOWCHART

### ■ Simplified diagnosis

Errors in the Audio Part of the D-MAIN Assy (those simply and roughly predictable by machine operation only)

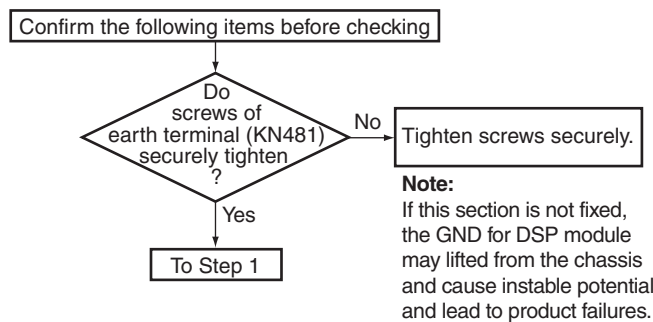
- Sound abnormality in Delay
  - If sound abnormality does not occur in the Delay OFF state but occurs in the Delay ON state, it is most likely that a failure has occurred in SDRAM (IC251) or LATCH (IC281, IC291) in the DSP Part.
- No sound at analog signal input
  - If sound abnormality does not occur with digital signal input (COAX, OPT, etc.) but occurs only with analog signal input, it is most likely that a failure has occurred in the AD converter (IC501).
- No sound with the PQLS ON (normal sound with the PQLS OFF)
  - If no sound is output during CD playback with the PQLS ON, it is most likely that a failure has occurred in the crystal oscillator (X361). (Diagnosis point A)

### ■ DSP Troubleshooting

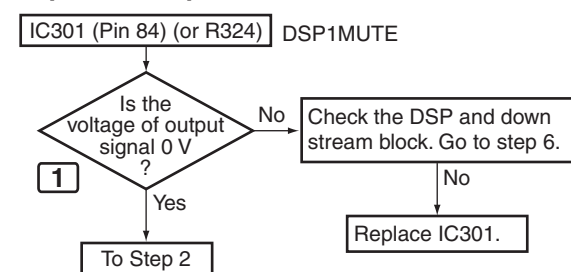
<If no sound is output in Multi-Channel-Signal Playback or Surround mode with the COAX, OPT, USB, and HDMI inputs>

- Assume that the LCRs are neither in poor connection nor damaged.
- Assume that diagnosis is performed from Side A.
- This shows failure analysis for the DSP Part of the D-MAIN Assy.
- The parts marked like **1** in the following chart are located in "Check Points of the D-MAIN Assy."

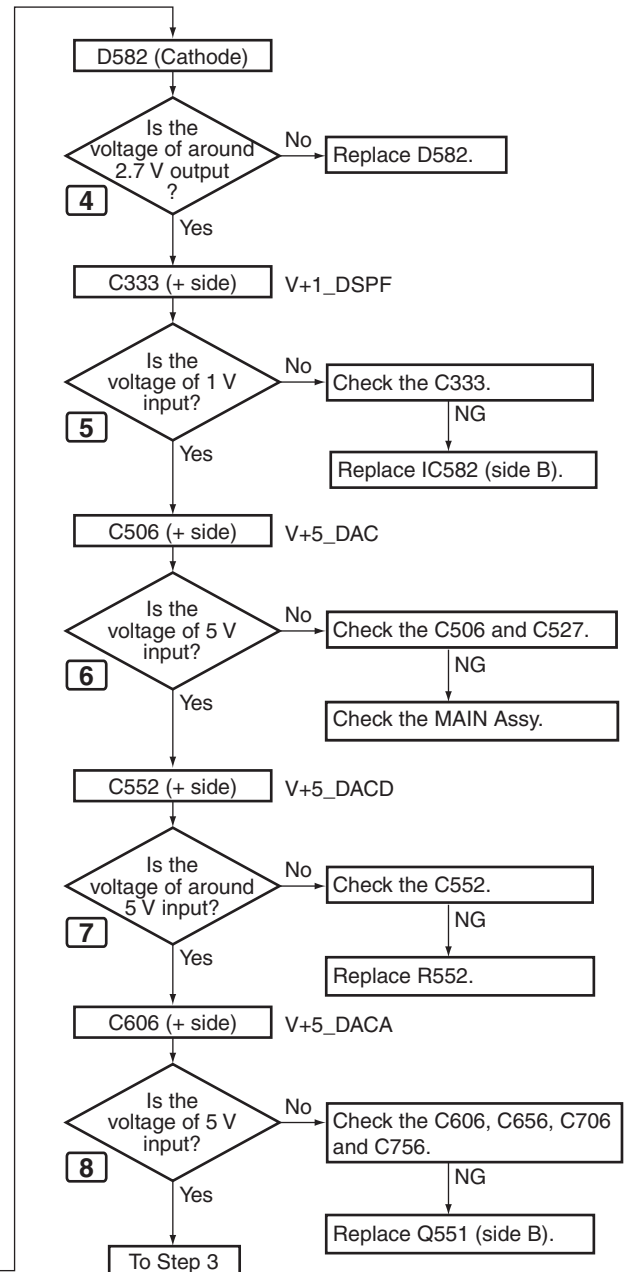
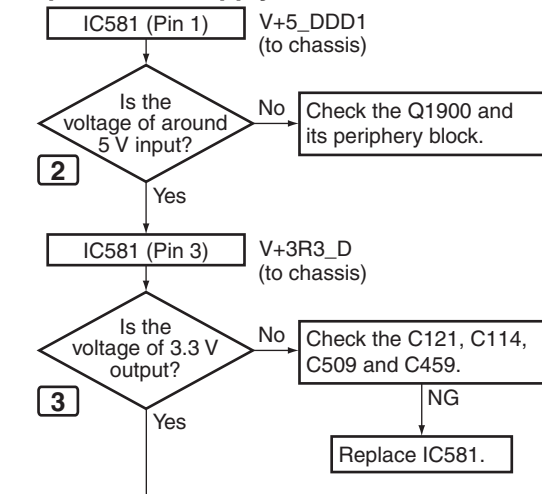
#### Step 0: Preliminary confirmation



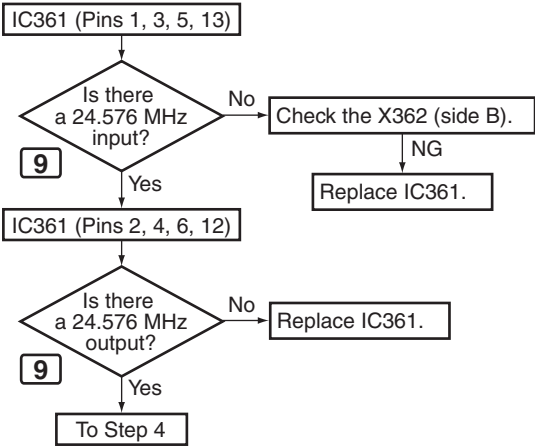
#### Step 1: MUTE pin



#### Step 2: Power supply



### A Step 3: X'tal



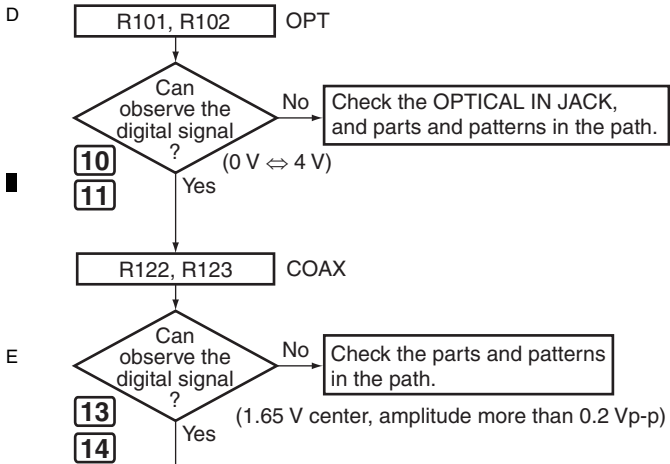
B

- When the COAX or OPT is input, go to Step 4.
- When the HDMI (SPDIF path) is input, go to Step 4-1.  
Used Source: [dts HD High Resolution Audio], [dts HD LBR], [Dolby Digital Plus], [2ch of 48kHz sampling rate or less], [Other compression stream]
- When the HDMI (SACD) is input, go to Step 5-1.  
Used Source: [SACD]
- When the HDMI (I2S path) is input, go to Step 5-2.  
Used Source: [dts HD Master Audio], [Dolby True HD], [PCM or LPCM of 88.2kHz sampling rate or more], [LPCM Multi ch]
- When the USB is input, go to Step 5-3.

C

### Step 4: DIR

Check that the S/PDIF signal is output.  
Check that changes by pulling out and inserting the digital input lines.

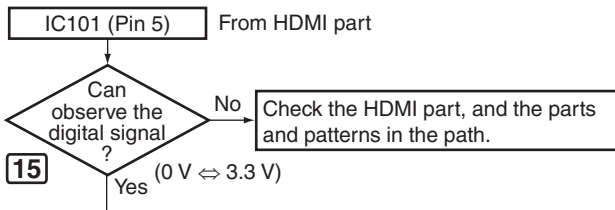


D

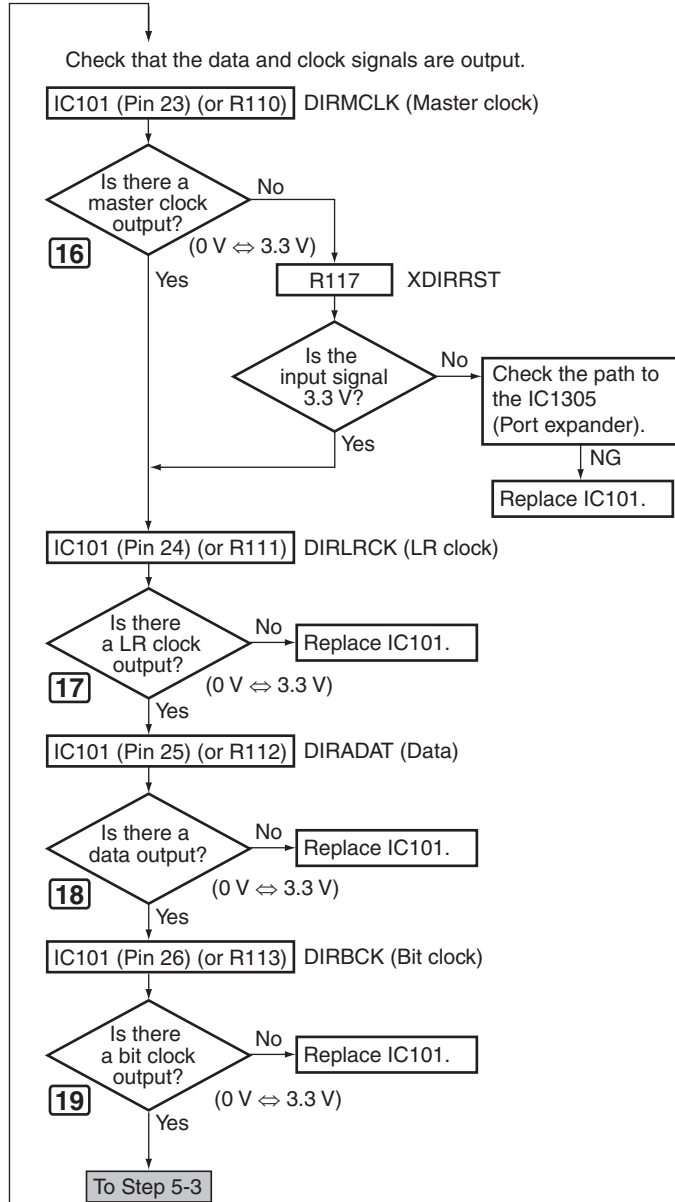
E

#### Step 4-1

Check that it changes in the Playback and Pause modes of the HDMI.



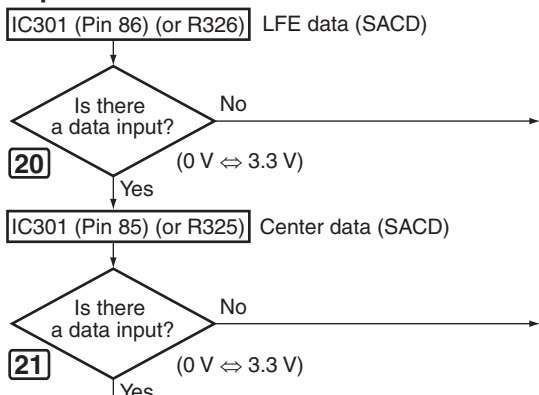
F



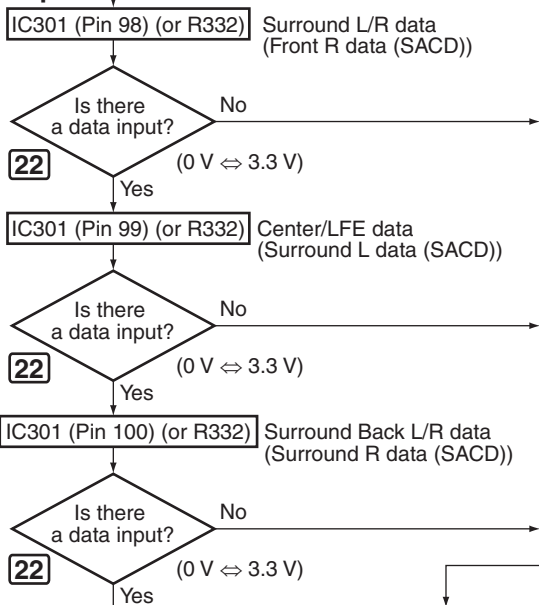
### Step 5: DSP input (digital)

Digital input of each CH when inputting the digital signal with audio.

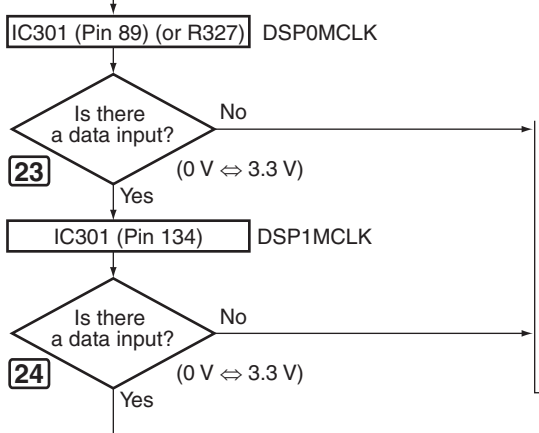
#### Step 5-1



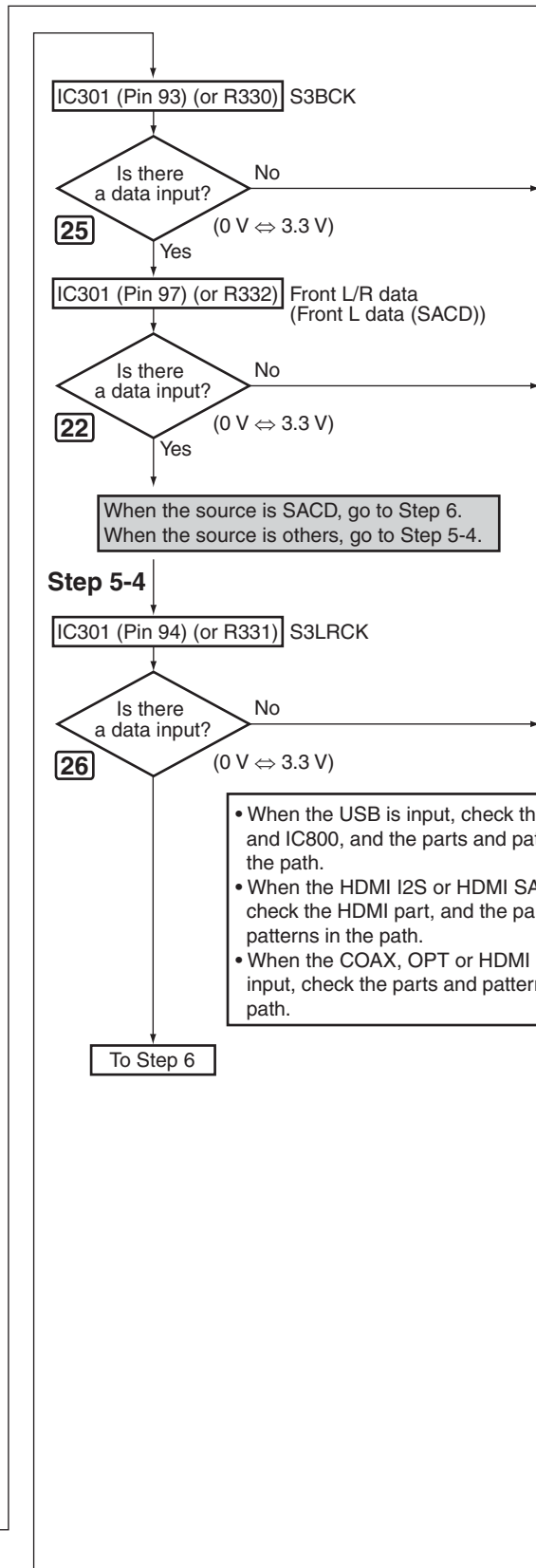
#### Step 5-2



#### Step 5-3



Check the HDMI part, and the parts and patterns in the path.

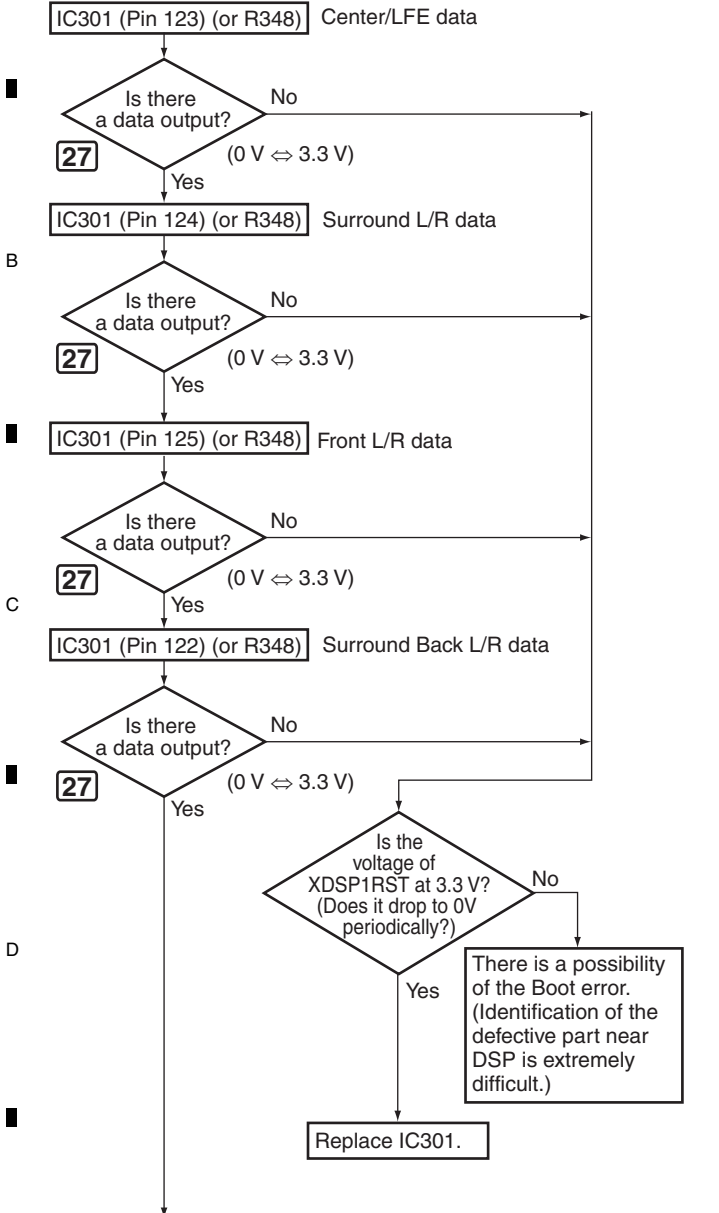


- When the USB is input, check the IC1300 and IC800, and the parts and patterns in the path.
- When the HDMI I2S or HDMI SACD is input, check the HDMI part, and the parts and patterns in the path.
- When the COAX, OPT or HDMI SPDIF is input, check the parts and patterns in the path.

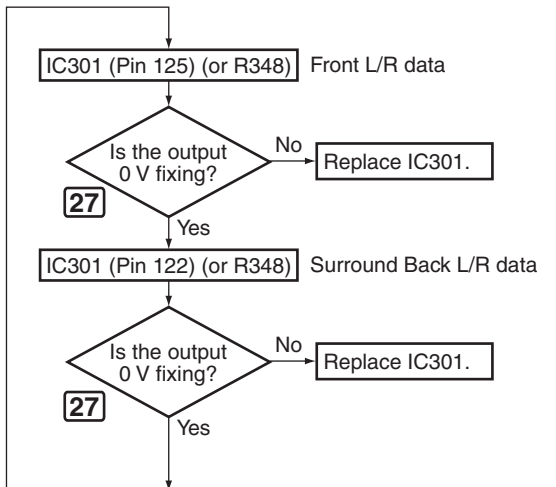
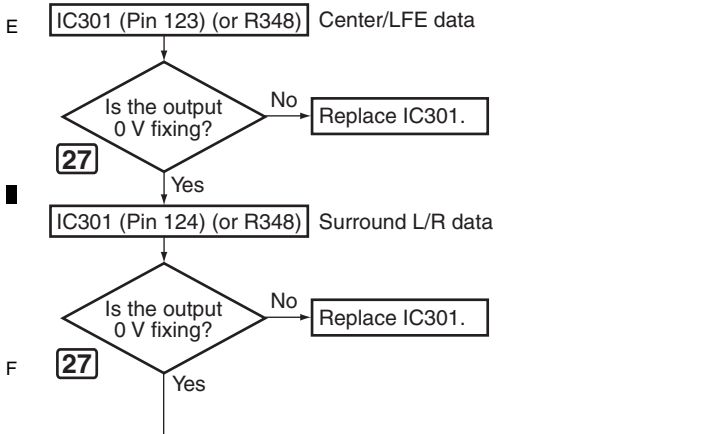
A  
B  
C  
D  
E  
F

### A Step 6: DSP output (digital)

Digital output of each CH when inputting the digital signal with audio.

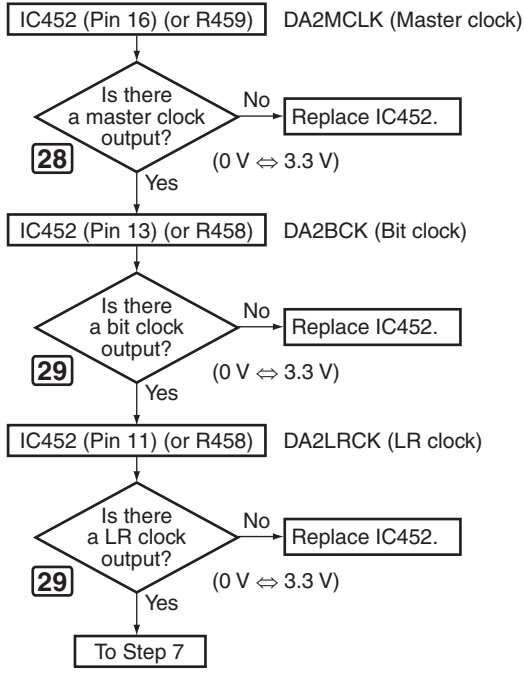


Digital output of each CH when inputting the digital signal (-∞ dB (no audio)).



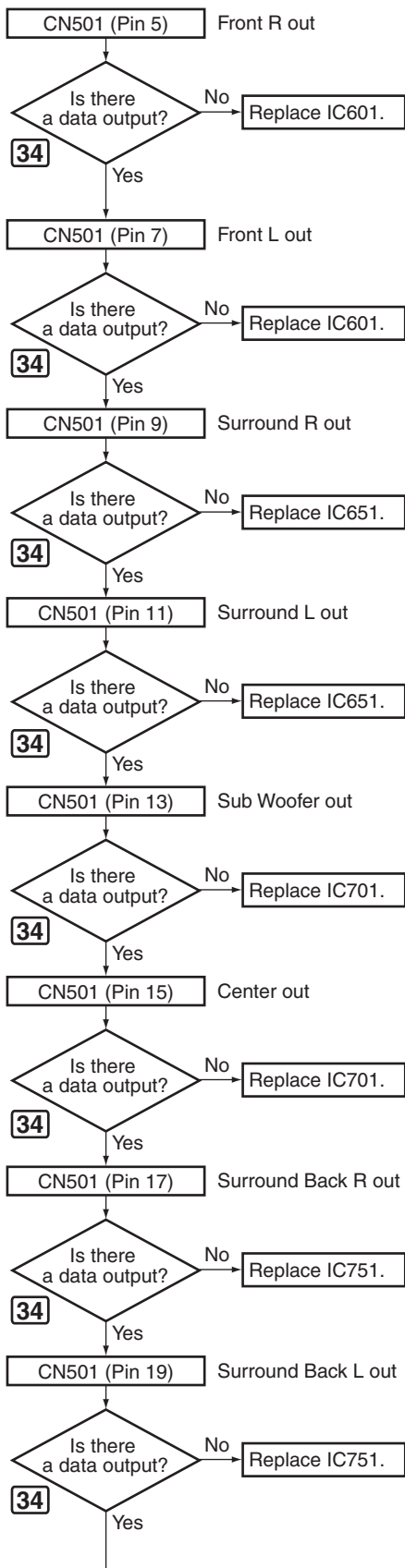
### DAC Buffer

Check that the clock signal is output.

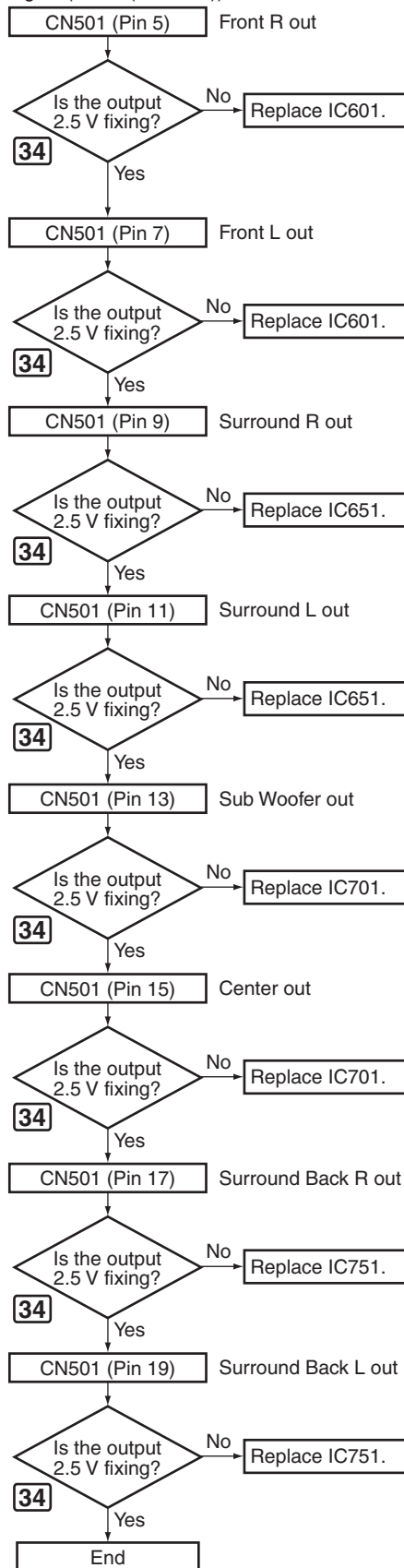


### Step 7: DAC output (analog)

Analog output of each CH when inputting the digital signal with audio.



Analog output of each CH when inputting the digital signal (-∞ dB (no audio)).



### ■ Conditions for selecting SPDIF or I2S output (HDMI transmission)

	pcm	fs (kHz)	Layout	SPDIF	I2S (3 lines)	
Indistinguishable	Compression DVD-V	48	2ch	Yes	No	
	Compression *.WAV	44	2ch	Yes	No	
		48	2ch	Yes	No	
	dts-CD	44	2ch	Yes	No	
	PCM	44	2ch	Yes	No	
		48	2ch	Yes	No	
	DVD-V	96	2ch	No	Yes	
	DVD-A	LPCM	44	2ch	Yes	Yes
			Multi	No	Yes	
		48	2ch	Yes	Yes	
			Multi	No	Yes	
		88	2ch	No	Yes	
			Multi	No	Yes	
		96	2ch	No	Yes	
Multi			No	Yes		
176	2ch	No	Yes			
	Multi	NA	NA			
192	2ch	No	Yes			
	Multi	NA	NA			

SACD	2ch	No	Yes	(DSD)
	Multi	No	Yes	(DSD)

dts HD Master Audio	No	Yes
dts HD High Resolution Audio	Yes	No
dts HD LBR	Yes	No
Dolby TrueHD	No	Yes
Dolby Digital Plus	Yes	No

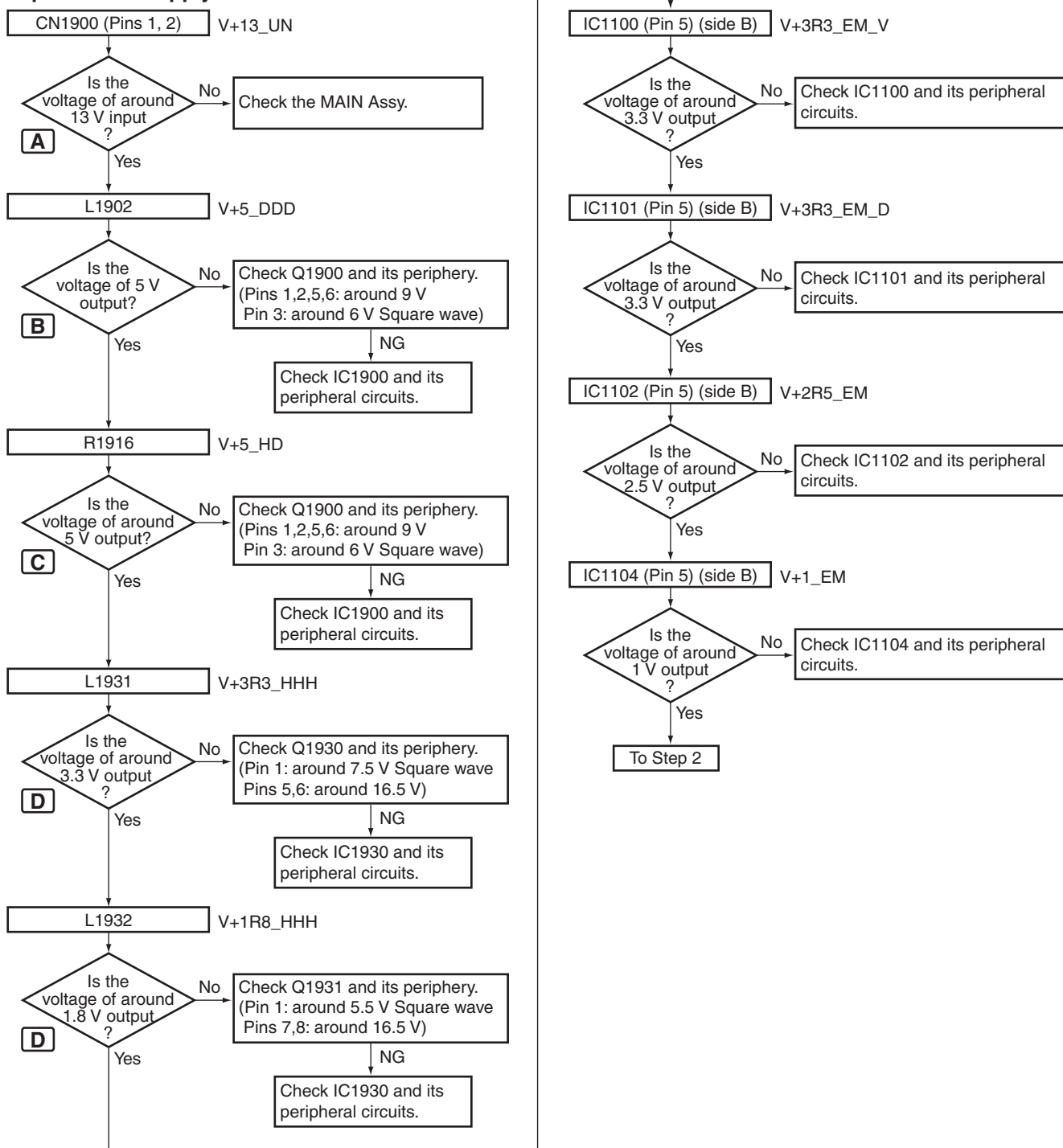
## ■ HDMI & DVC Block Troubleshooting

<When no image is displayed after the unit is turned on, the HDMI LED on the front panel lights, and the HDMI or analog signal is input.>

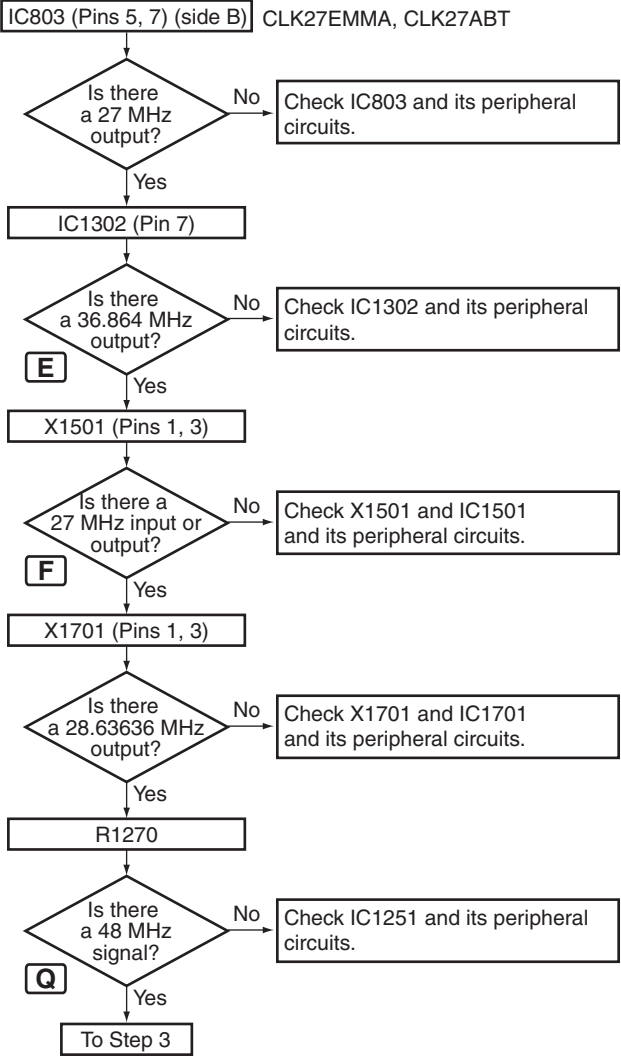
- If conversion between 480i and 480p is not possible, it is most likely that IC800 is in failure. Check its peripheral circuits.
- Assume that the LCRs are neither in poor connection nor damaged.
- Analog video Convert (Ex.: S → COMPONENT) is satisfied by diagnosing the input and output.
- Although diagnosis is assumed to be performed from Side A, the wiring numbers on Side B are also described in the flowchart.
- This shows failure analysis for the HDMI & DVC Part of the D-MAIN Assy.
- The confirmation of peripheral circuits means mainly a power supply of IC, a sync signal, a existence of the input/output signal, a conduction check and the appearance check of the bridges.

- The parts marked like **A** in the following chart are located in "Check Points of the D-MAIN Assy."

### Step 1: Power supply



**A Step 2: X'tal**

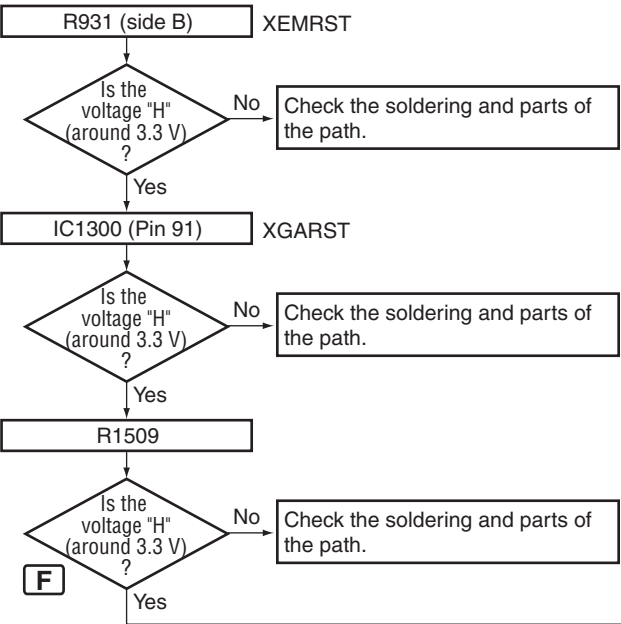


B

C

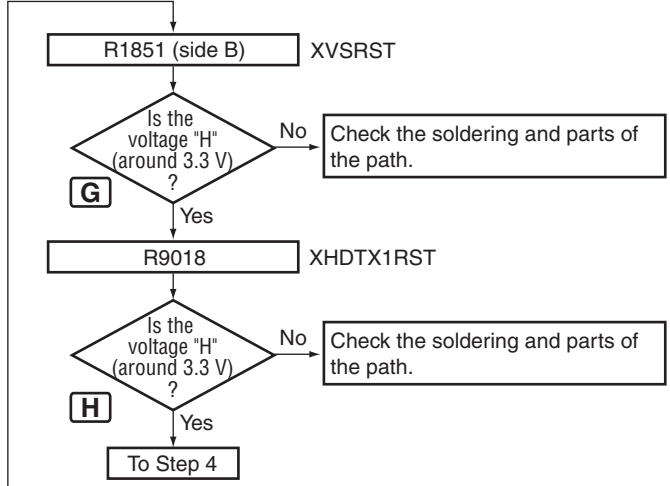
D

**Step 3: RESET**



E

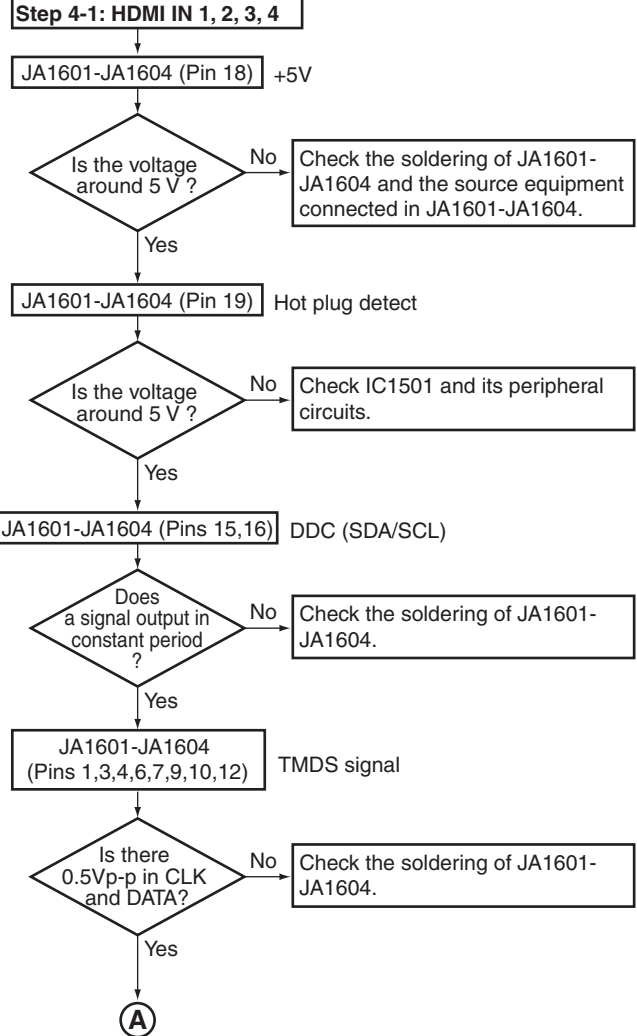
F



G

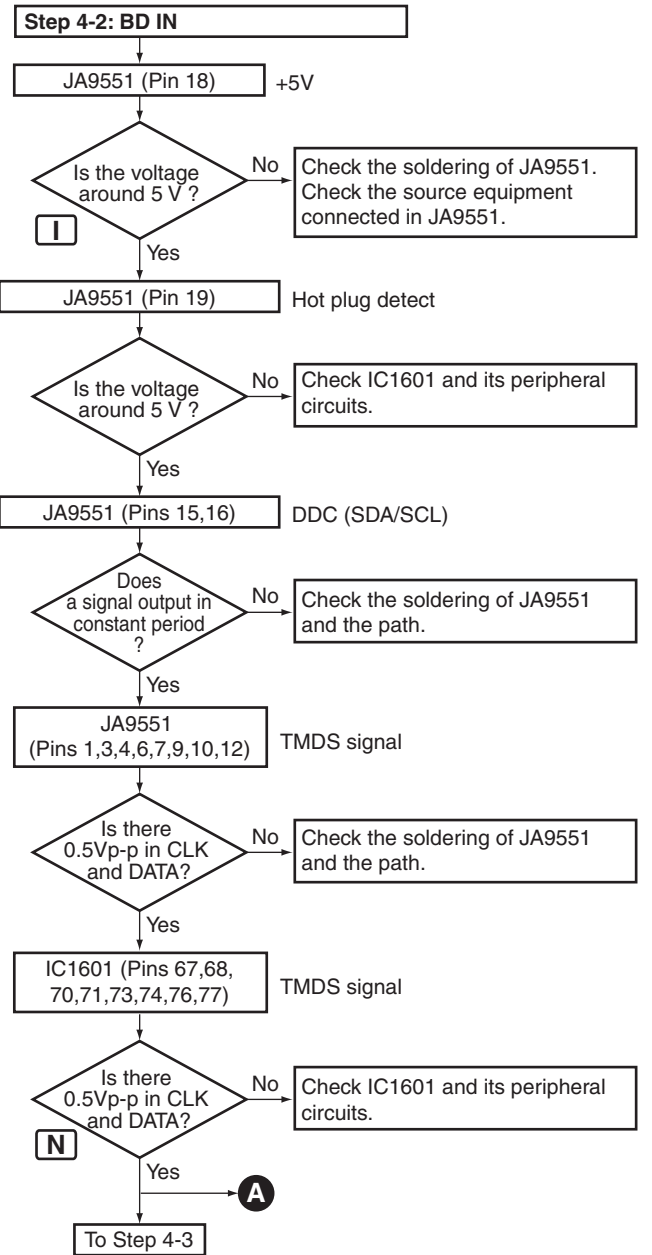
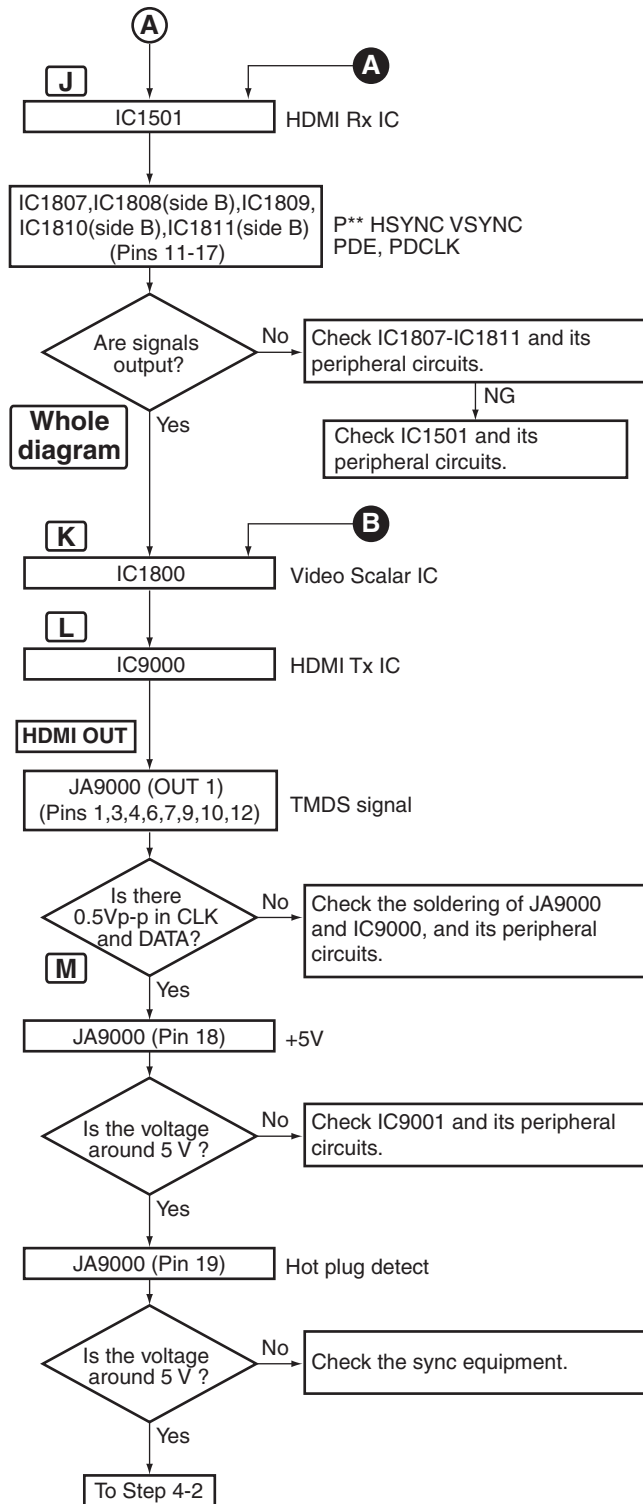
H

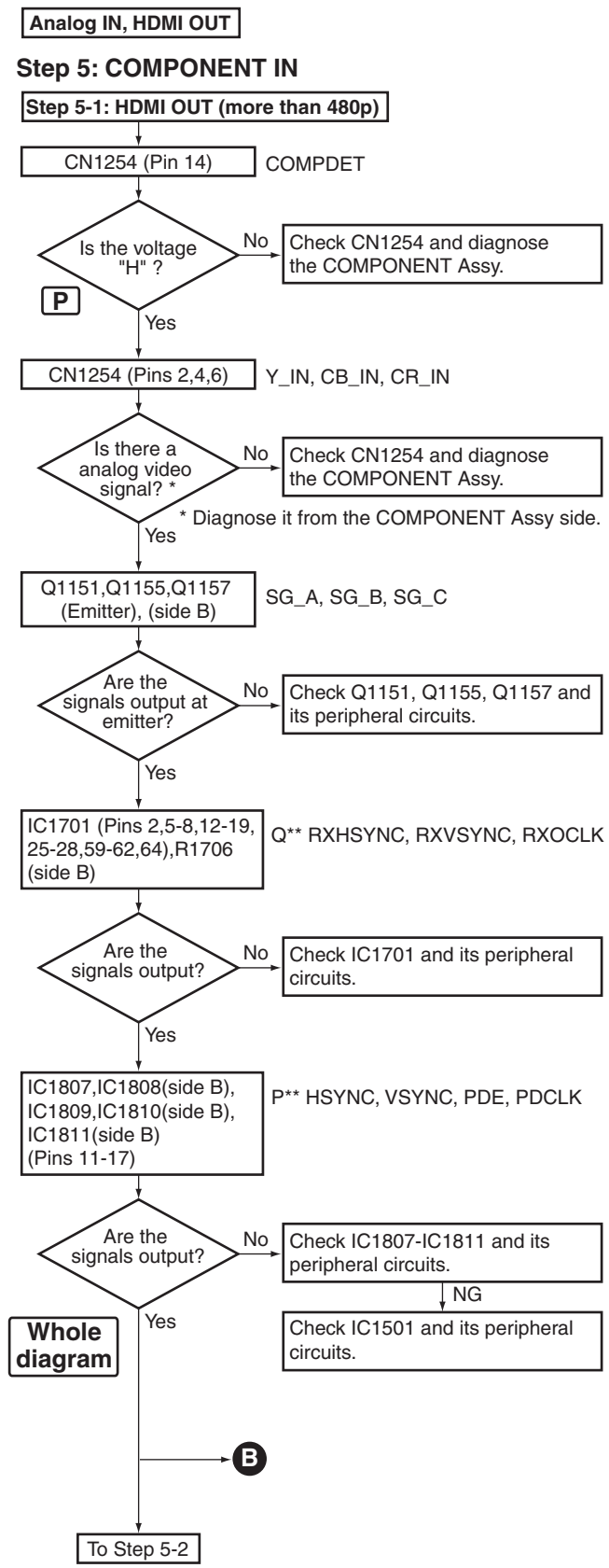
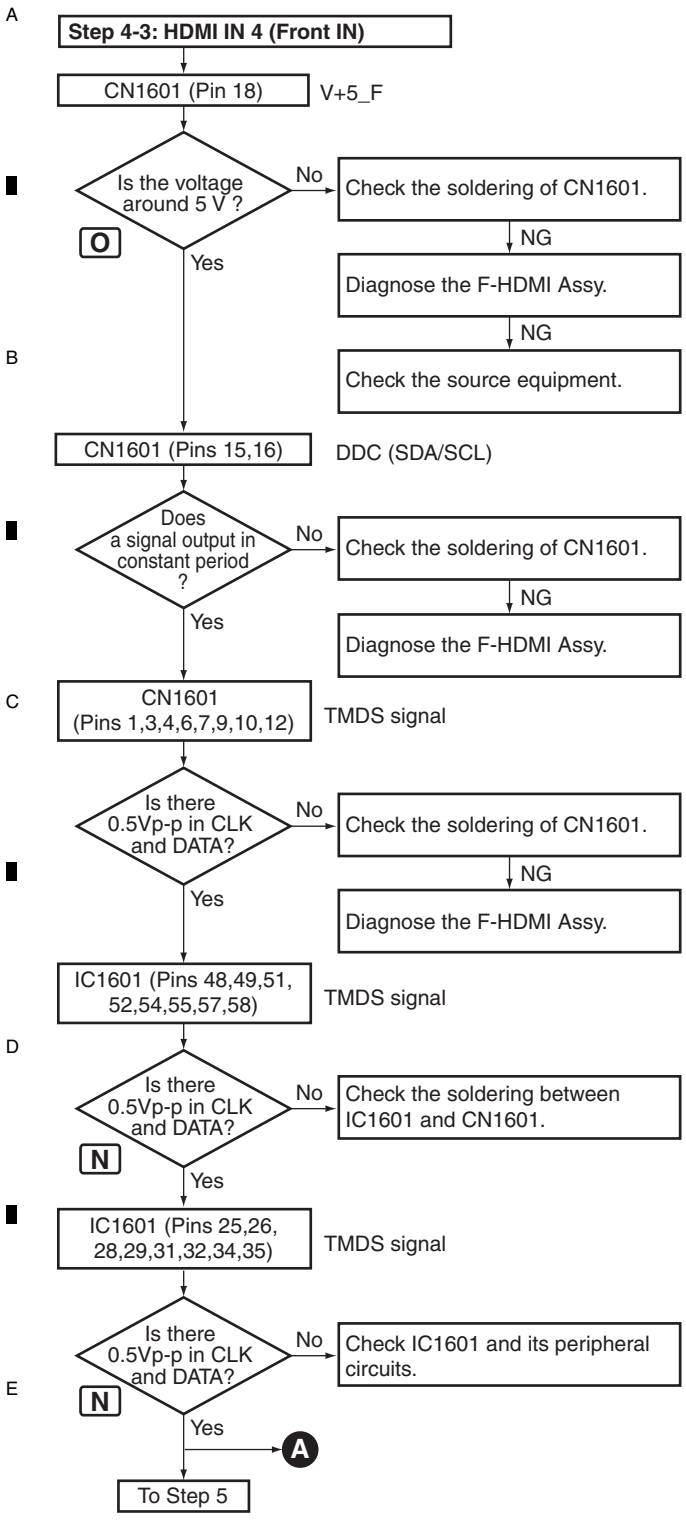
**Step 4: HDMI IN, HDMI OUT**



A







**Step 5-2: Component IN, HDMI OUT (at 480i)**

Perform the same check items up to those for IC1805 and IC1806 of Step 7.

IC800 (through hole)  
(Pins E13,D13,E12,D12,E11,  
D11,E10,D10,D15) (side B)

VID0-7, VICLK

Are there signals?

No  
Check IC1805 and IC1806 and its peripheral circuits.  
Check the soldering.

Yes

R872-R875,R878,R879,  
R884-R887

VOD,VOCLK

Is there a signal?

No  
Check IC800 and its peripheral circuits. Check the soldering.

Yes

IC1801 (Pins 11-13),  
IC1802, IC1803 (Pins 11-18),  
IC1804 (Pin 4) (side B)

PHSYNC, PVSYN, PDE  
P\*\*  
PCLK

Are the signals output?

No  
Check IC1801 to IC1804 and its peripheral circuits.

Yes

To Step 6

**Step 6: HDMI OUT**

CN1254 (Pin 16) A\_VVYIN

Is there a luminance signal?

No  
Check CN1254 and diagnose the COMPONENT Assy.

Yes

IC1701 (Pin 36) (side B) A\_VVYIN

Are there color and luminance signals?

No  
Check the soldering between IC1701 and CN1254 and its peripheral circuits.

Yes

IC1701 (Pins 2,5-8,59-62,  
64),R1706 (side B)

Q\*\* RXHSYN, RXVSYN,  
RXOCLK

Are the signals output?

No  
Check IC1701 and its peripheral circuits.

Yes

IC1805 (Pins 3-9),  
IC1806 (Pin 4) (side B)

Q16-23  
VICLK

Are the signals output?

No  
Check IC1805, IC1806 and its peripheral circuits.

Yes

To Step 7

**C**

**Q**

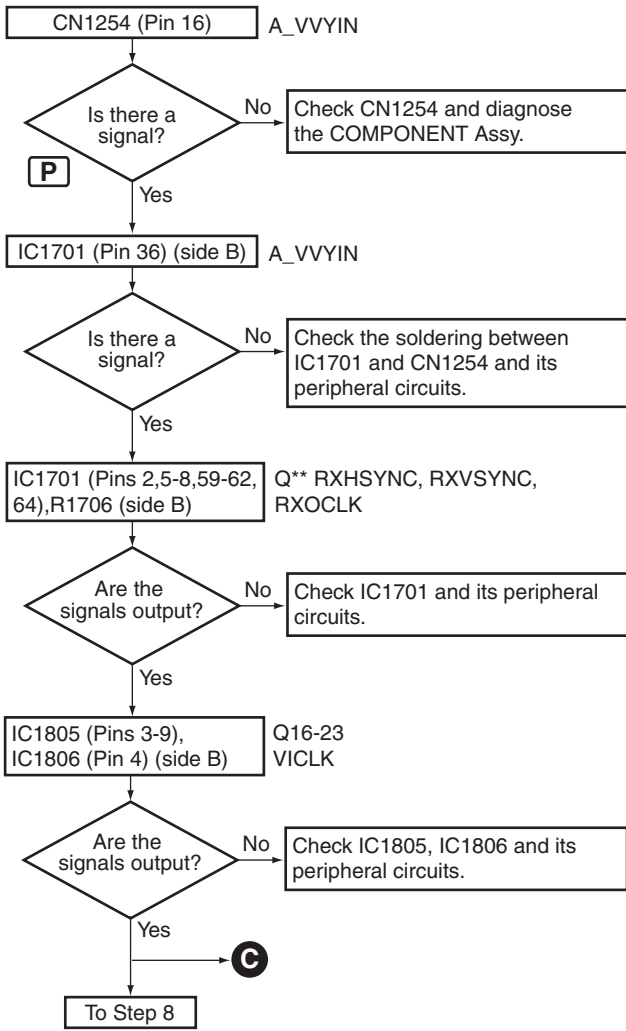
**B**

**P**

**C**

A  
B  
C  
D  
E  
F

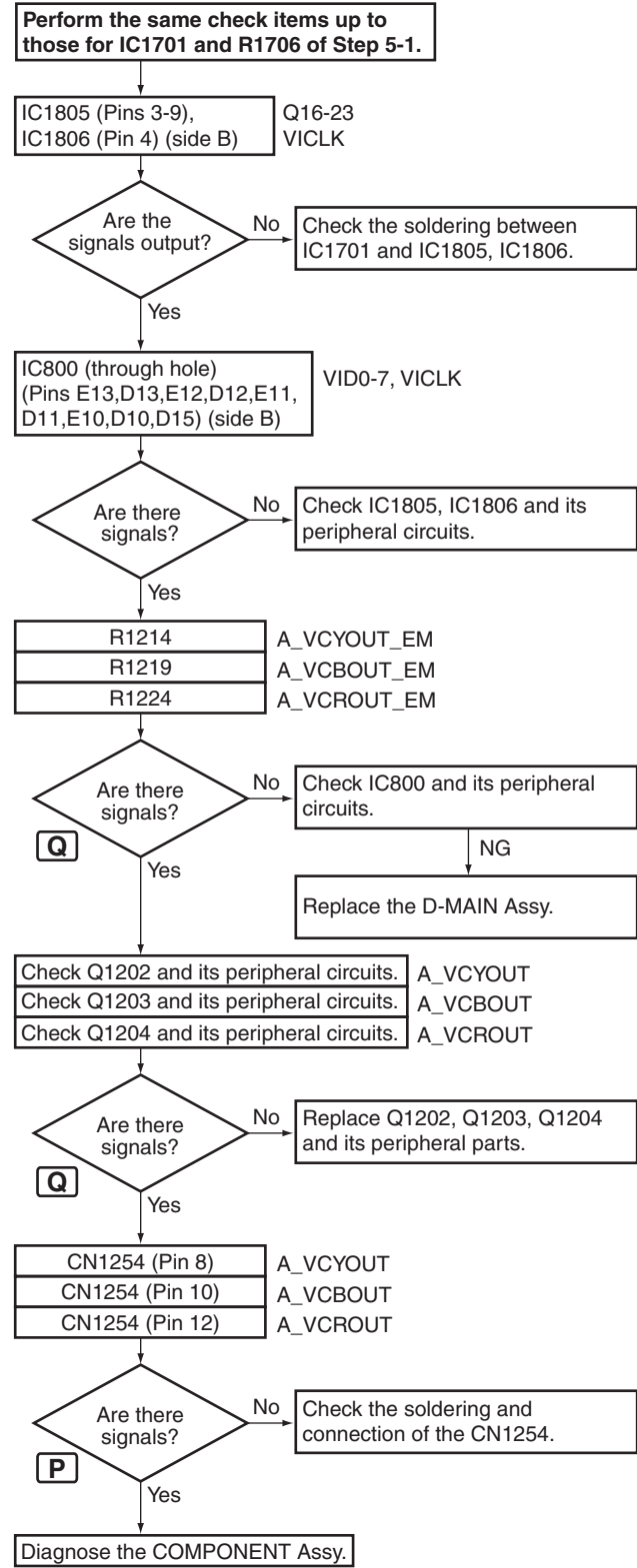
### Step 7: COMPOSITE IN, HDMI OUT



### DVC ON, Analog IN, OUT

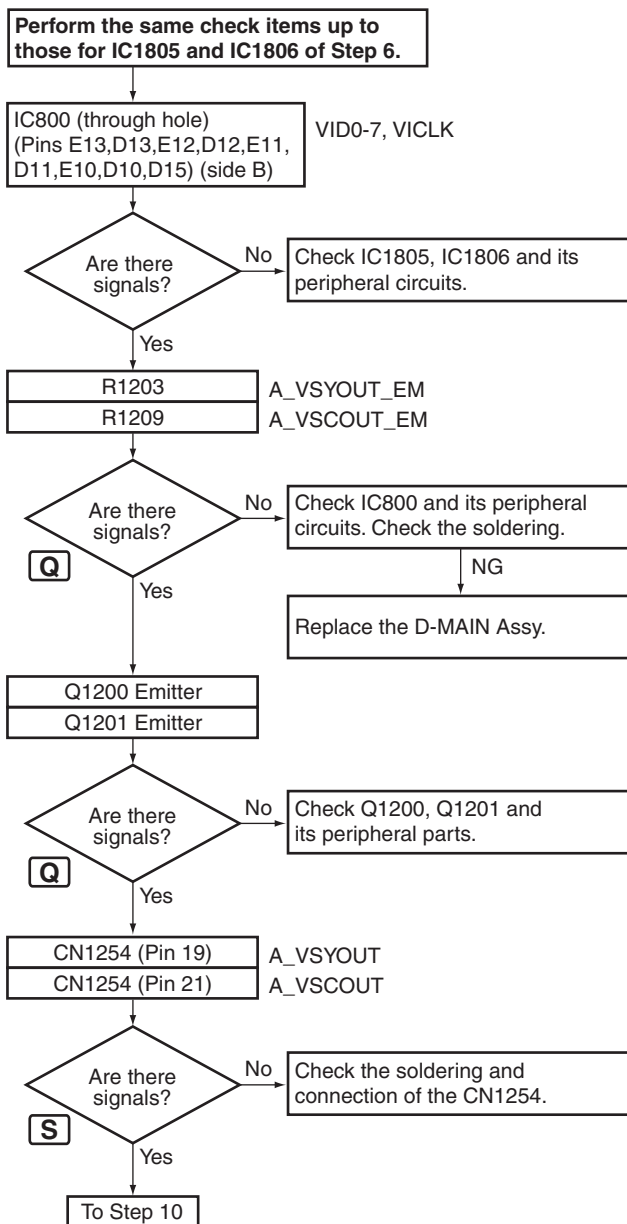
### Step 8: COMPONENT IN COMPONENT OUT

Note: When the connection is Composite S OUT, refer to the diagnose of IC800 and later in steps 9 and 10.



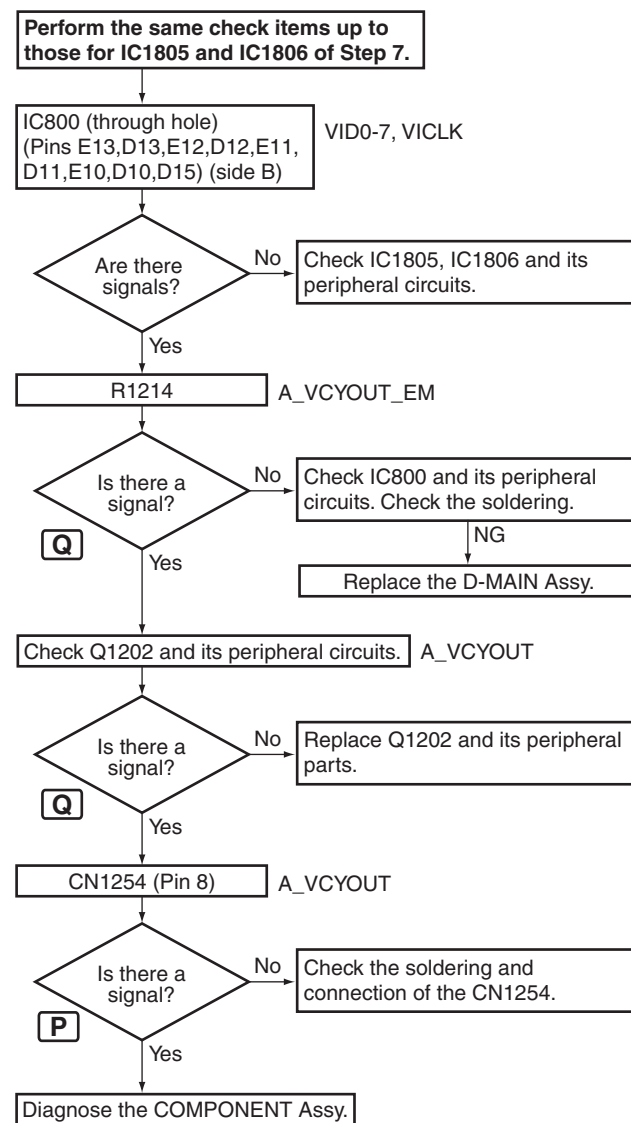
### Step 9: S IN, S OUT

Note: When the connection is Composite OUT and Component OUT, refer to the diagnose of IC800 and later in steps 8 and 10.



### Step 10: COMPOSITE IN, COMPOSITE OUT (at DVC ON)

Note: When the connection is S Component OUT, refer to the diagnose of IC800 and later in steps 8 and 9.



### Step 11: GUI/JPEG (USB) Composite/S/Component OUT

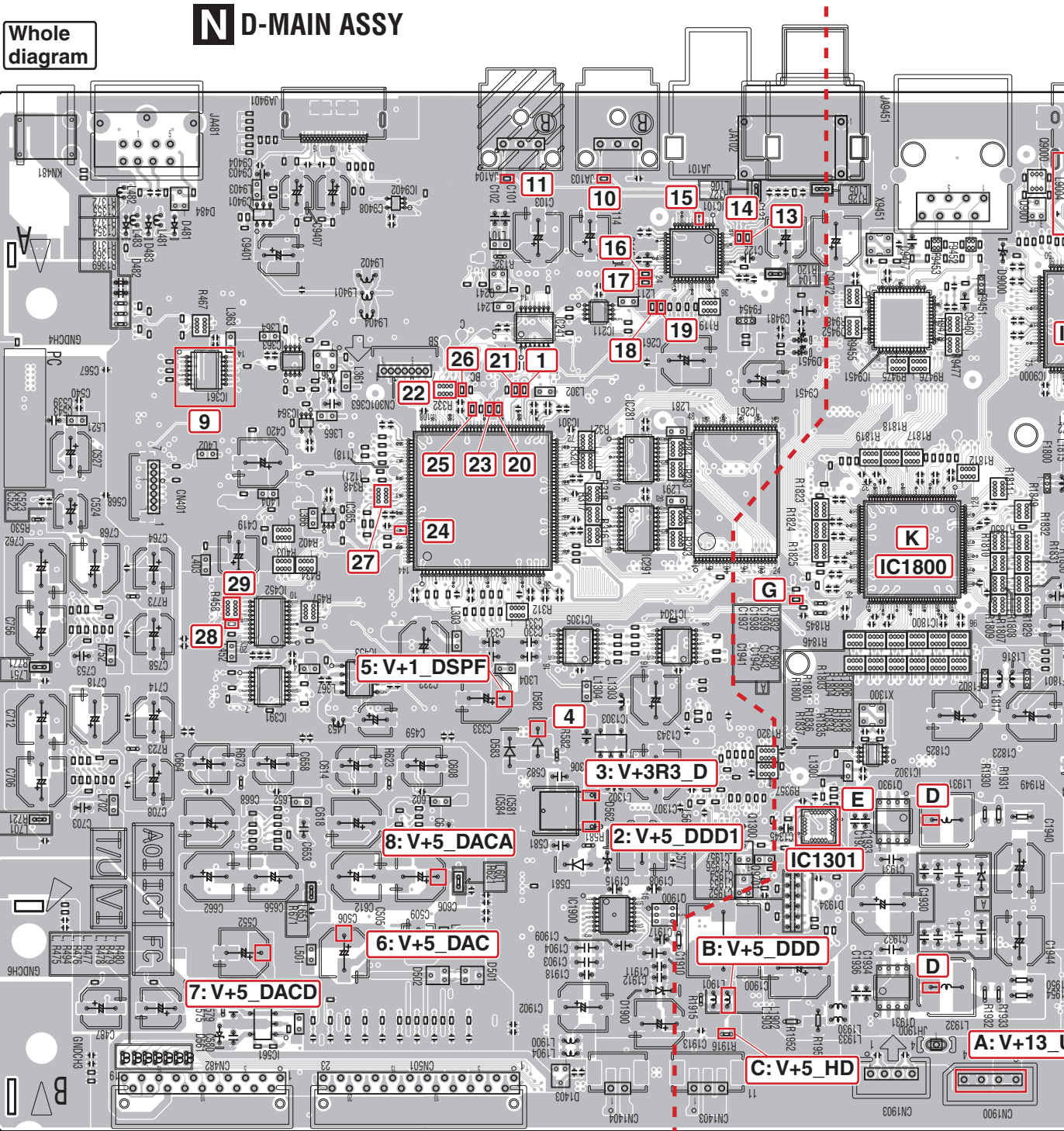
Diagnose the IC800 (through hole) of Composite/S/Component OUT and later.

### Step 12: GUI/JPEG (USB) HDMI OUT

Go to **C**.

# Check Points of the D-MAIN Assy

DSP Part ← → HDMI Part



B

C

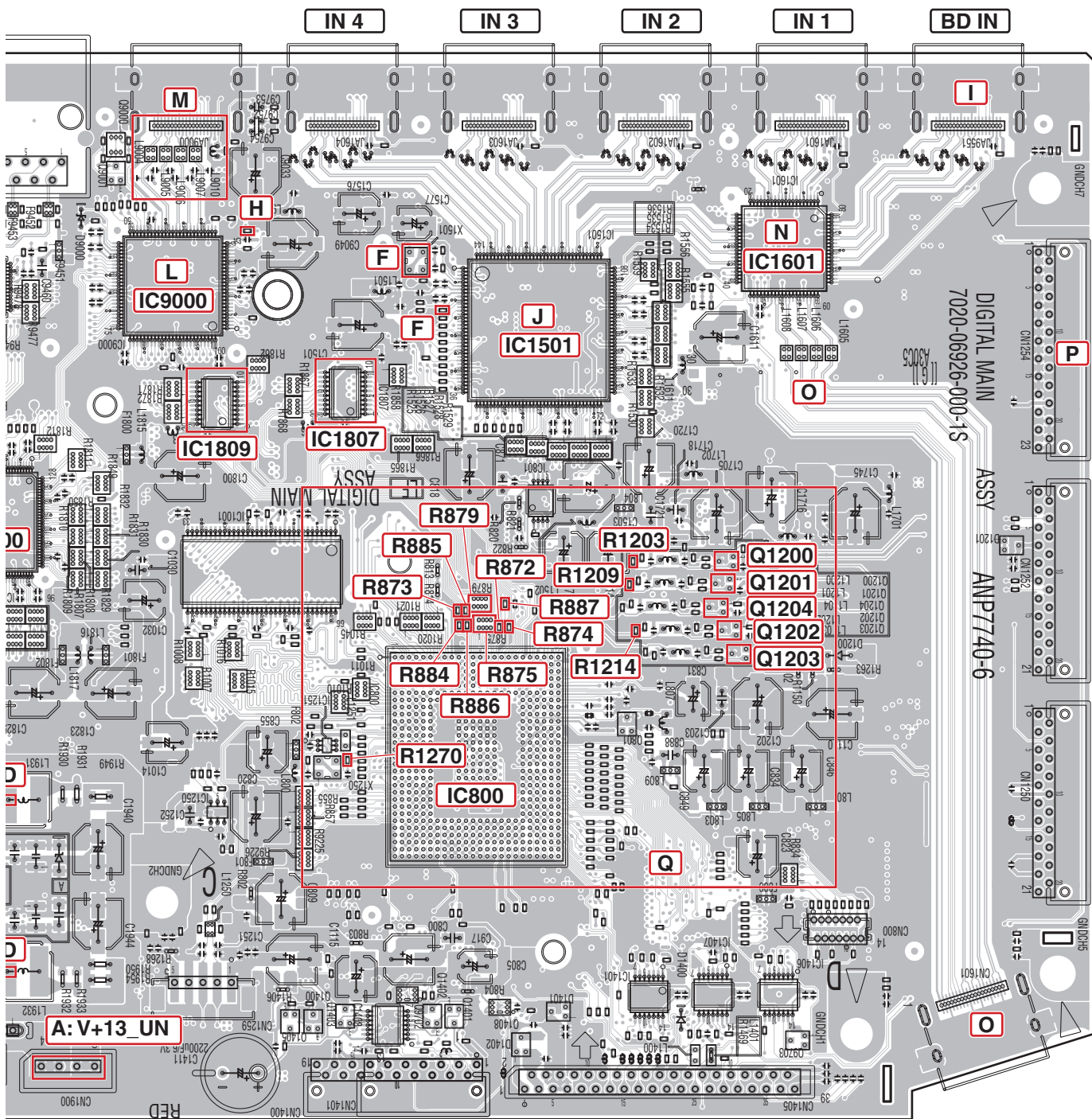
D

E

F

MI Part

SIDE A



VSX-1020-K

## 5.2 ERROR INDICATIONS

### ■ Error Indications When an Abnormality in The Amplifier System is Detected

#### [Purpose]

Errors upon detection of abnormalities in the amp system are indicated.

#### [Error Indications]

Item	FL Display	LED Flashes	NG Count.	Detection Method	Process After Detection	Description / Remarks
"AMP DC" ("DC output from SP term") detection	Flashing "AMP ERR" for 3 seconds	MCACC LED	DC	XDCERR (Pin 80 of IC3004) Detect "L"	1) Muting on, speaker relay off. 2) "AMP ERR" flashing 3) Shutdown after 3 seconds. 4) "MCACC" LED flashing 5) Power on is not acceptable.	To detect high DC output from amplifier damage (defect status). A process to protect speakers (for protection of connected external devices). For checking, refer to "How to enter release mode" below. If the DC detection port become "H" for 3 seconds, the unit will returns to normal condition automatically.
"AMP overload" detection.	N/A	iPod LED	OL	XOLERR (Pin 71 of IC3004) Detect "L"	1) Muting on, speaker relay off. 2) Shutdown immediately. 3) "iPod" LED flashing 4) Power on is acceptable.	To detect overloading (abnormal status) with low-load driving or a short circuit of the speaker terminals (for protection of the amplifier).
"Over Heat" detection.	Flashing "AMP OVERHEAT" for 3 seconds	Center Blue LED	STMP	TEMPERR5 (Pin 72 of IC3004) Detect "H"	1) Muting on, speaker relay off, 2) "OVERHEAT" flashing 3) Shutdown after 3 seconds. 4) "Center Blue" LED flashing 5) Power on is acceptable after 1 minute.	To detect overheat of inner temperature.
"Abnormality DC voltage of the Digital power supply" detection	N/A	PQLS	DERR	XVDDERR (Pin 70 of IC3004) Detect "L"	1) Muting on, speaker relay off. 2) Shutdown immediately. 3) "PQLS" LED flashing 4) Power on is acceptable.	To detect the abnormality voltage of Digital power supply circuit for the D-MAIN Assy.
"USB Overload" detection	"Over Current" No Flashing	N/A	N/A	USB ERR (Pin M3 of IC800) Detect "H"	1) Bass Power off 2) Display "Over Current" 3) Power on is acceptable	To detect the connected USB device is overload. (over 500 mA)
"BT Adapter overload" detection.	"ADP OVERLOAD" No Flashing	N/A	N/A	BTOL (Pin N3 of IC800) Detect "H"	1) Adapter port power off 2) Display "ADP OVERLOAD"	To detect the connected Blue Tooth Adapter device is overload. (over 100 mA)
"HDCP of HDMI Error" detection	Flashes "HDCP ERROR" for 5 seconds	N/A	N/A	Read Register value	1) Display "HDCP ERROR"	The monitor does not support HDCP type or is in standby mode. (Warning indication for HDMI Simplay)
"Analog Input Over" detection	"OVER" Icon lights 1 second	N/A	N/A	DSP firmware Detect	While the Icon lights 1 second, when there is no ANALOG INPUT OVER detection, the Icon stops lighting and returns to normal display.	To detect the over-input of the analog audio to the A/D converter. When the Icon lights frequently, output level of the source equipment is high and a sound is distorted. Turn on the Analog Att switch.

#### [How to Enter Release Mode]

During Standby mode, simultaneously press and hold the "TUNE ↓" and "MULTI-ZONE ON/OFF" keys for 5 seconds.



# 6. SERVICE MODE

## 6.1 TEST MODE

### [1] Detected protection history

#### [Purpose]















The numbers of detections for various protection processes are displayed.

#### [How to enter/exit]

Turn off the power to this unit by setting the main volume level to “---dB” and Multi-zone to “OFF”.

During Standby mode, simultaneously press and hold “MULTI-ZONE ON/OFF” and “ENTER” keys for 5 seconds to enter this mode.

#### [Basic operations]

Key operation	FL display
Display number of times DC is detected.  	DC : ***
Display number of times OVERLOAD is detected.  	OL : ***
Display number of times COMBINATION is detected. (Detects DC and OVERLOAD simultaneously)  	COM : ***
Display number of times Power abnormality is detected.  	XPRT : ***
Display number of times AMP overheat is detected.  	STMP : ***
Display number of times Digital Power abnormality is detected.  	DERR : ***
Resetting the number of times error is detected.  	RESET ◀HOLD▶

#### Front Panel Key



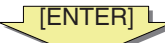
[↓] : TUNE key

[↑] : TUNE key

[←] : PRESET key

[→] : PRESET key

Resetting the number of times error is detected

Key operation	FL display
 	RESET ◀CLEAR?▶
	RESET ◀RESET▶

Continued

A

Key operation	FL display
Display accumulated time & RESET.	1 2 3 4 5 h 2 0 m ◀ HLD ▶
[↓] [↑]	
Display CEC(TEST) state.	CEC ◀ OFF ▶
[↓] [↑]	
Display FAN(TEST) state. This function does not work on this model.	FAN ◀ OFF ▶
[↓] [↑]	
USB Backup state	USB BAK ◀ HOLD ▶
[↓] [↑]	
Change cyclically	

Resetting the accumulated time

Key operation	FL display
[←][→]	1 2 3 4 5 h 2 0 m ◀ CL? ▶
[ENTER]	0 h 0 m ◀ RST ▶
Continued	

Display CEC(TEST) state.

Key operation	FL display
[←][→]	CEC ◀ ON ▶
Change cyclically	

C

Display USB backup state.

Key operation	FL display
[←][→]	(A/V Receiver → USB) USB BAK ◀ SAVE? ▶
[←][→]	(USB → A/V Receiver) USB BAK ◀ LOAD? ▶
Change cyclically	

E

**[Description]**

CEC TEST : The function for making the HDMI output terminal to output 1 kHz square wave. If the square wave is output, the CEC line is considered to be normal.

Key operation	FL display
[ENTER]	PLEASE WAIT
SAVE or LOAD is completed.	COMPLETE
↓ 5 sec Power OFF (All zone OFF)	

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# 7. DISASSEMBLY

**Note:**

- (1) Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.
- (2) For performing the diagnosis shown below, the following jigs for service is required:
  - 13P extension jig cable (GGD1669)
  - 8P extension jig cable (GGD1670)
  - 7P extension jig cable (GGD1671)
  - 2P short connector jig (GGD1672)
  - Board to board extension jig cable (GGD1675)

## 1. Discharging

### [1] MAIN Assy Capacitor (C5301, C5302)

**[Procedures]**

- (1) Unplug the power cord.
- (2) Connect D5301 B+ and B- terminals, using resistor leads with 47 - 100 ohms (2 W or higher), for discharging.
  - \* Discharging time: 30 - 60 seconds, depending on the level of resistance.
- (3) Check that the voltage between the B+ and GND terminals, as well as that between the B- and GND terminals, is less than 1 V, using a tester.
  - \* Be sure to connect the GND terminal of the tester to the chassis.
  - \* If the voltage is still 1 V or higher, repeat Step (2).

The diagram illustrates the discharging procedure for the MAIN Assy capacitor. On the left, a photograph of the MAIN Assy board shows two large electrolytic capacitors, C5301 and C5302, and a callout box for component D5301. On the right, a close-up of the D5301 component shows two terminals labeled B+ and B-. A resistor is connected between these two terminals. The resistor is labeled "47 - 100 ohms (2 W or higher)".

VSX-1020-K

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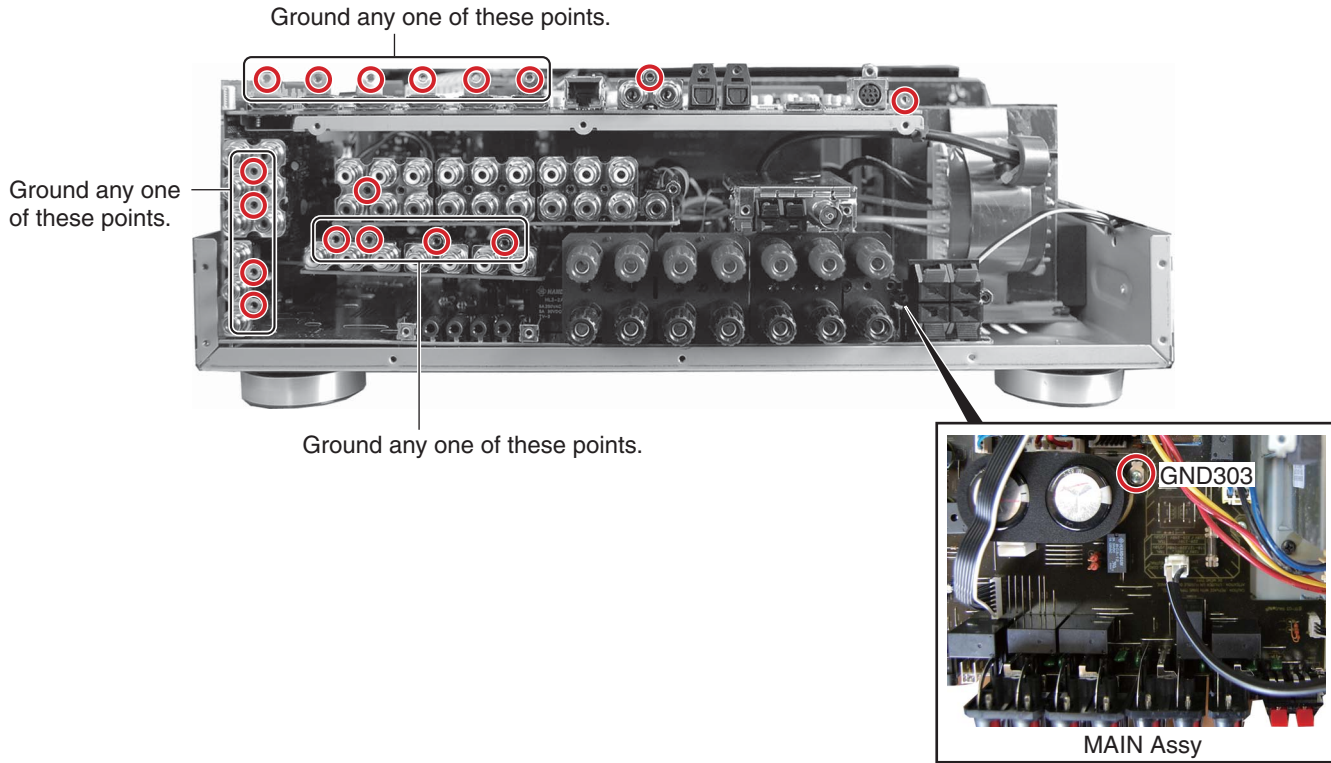
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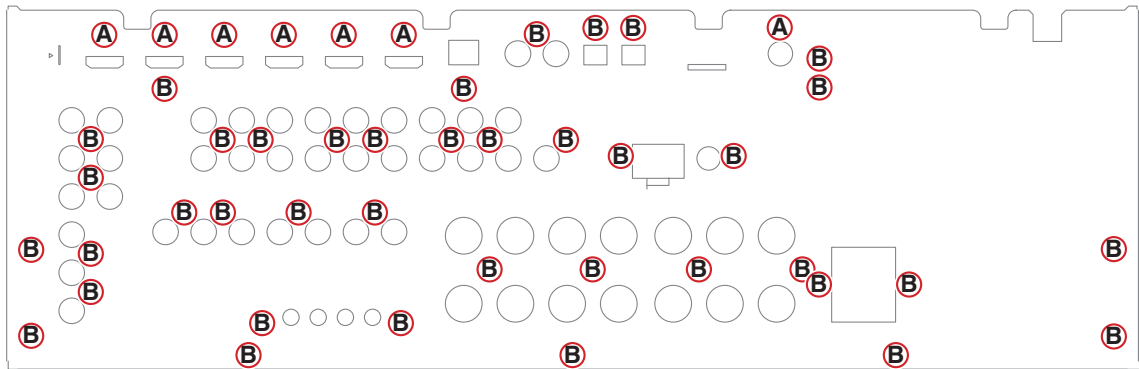
43

## 2. Notes on Ground Points Connection

**Note:**  
 The points marked below must be grounded when the rear panel is removed.  
 Before turning the unit ON, be sure to ground the marked points with the chassis. Or, you may short-circuit the ground points on the solder surface, using pieces of wire.



## 3. Screws for Chassis Back

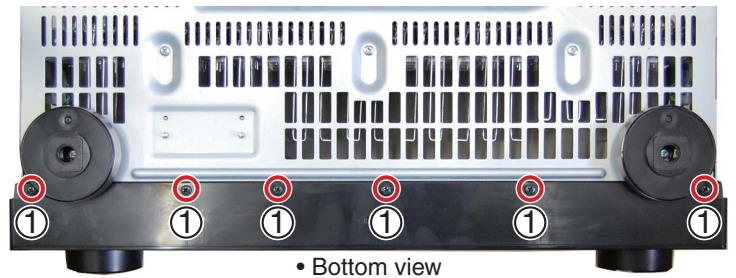


### 4. Disassembly

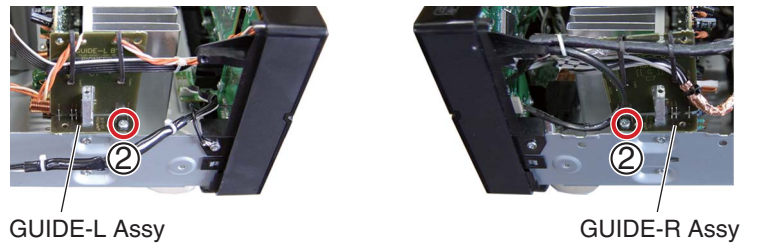
#### [1] Front Panel Section and D-MAIN Assy

Remove the cabinet by removing the 10 screws.

(1) Remove the six screws. (BBZ30P080FTB)



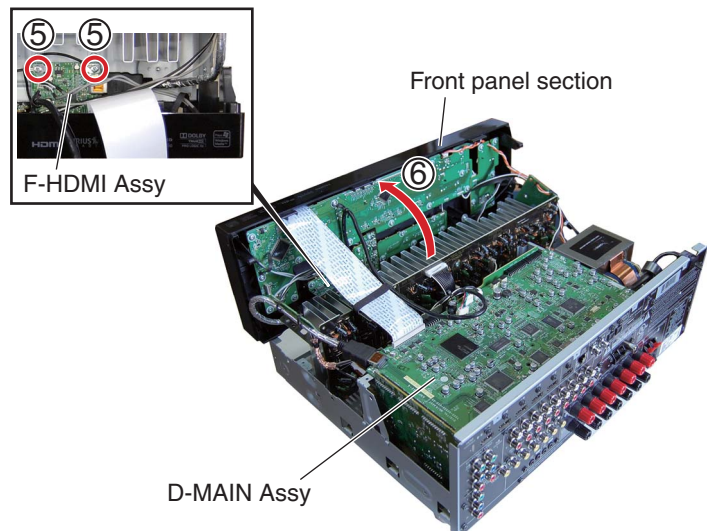
(2) Remove the two screws. (BBZ30P080FTC)



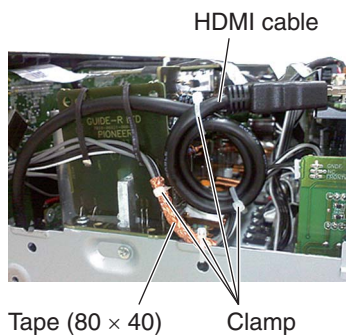
(3) Remove the two screws. (BBZ30P080FTC)  
(4) Unhook the two hooks.



(5) Remove the two screws. (BBZ30P080FTC)  
(6) Arrange the front panel section as shown in the photo below.



#### • Cable styling

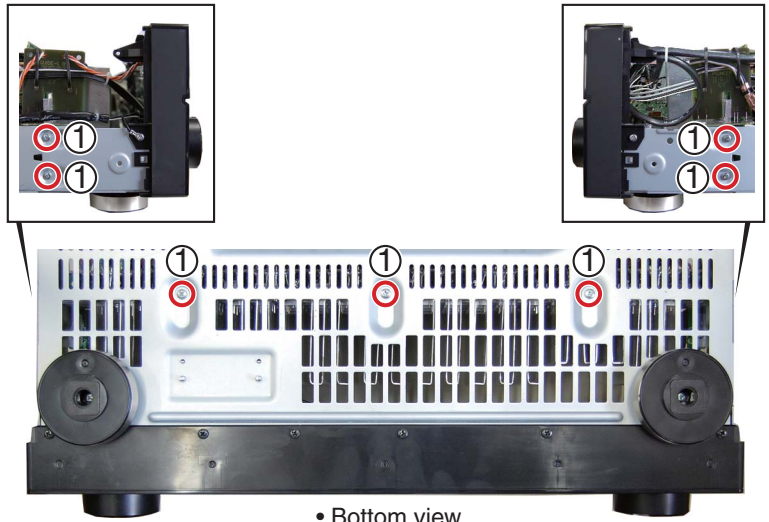


## A [2] Heatsink Section

**Caution:** Heatsink section in work becomes hot, and be careful with it.

Remove the cabinet by removing the 10 screws.

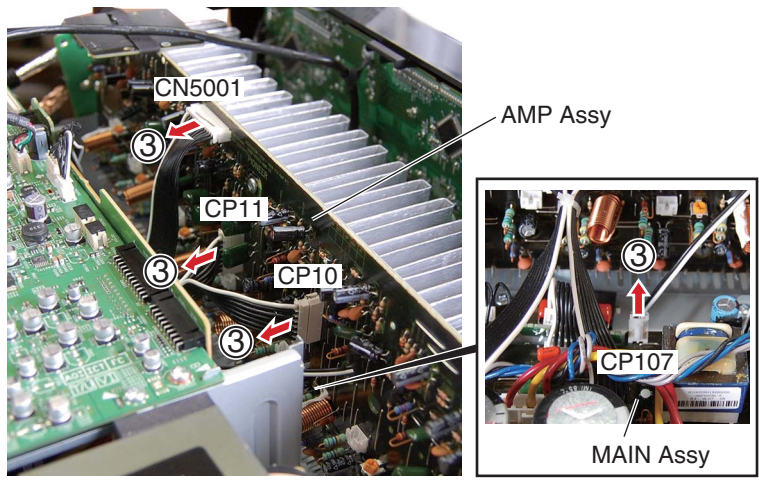
(1) Remove the seven screws. (BBZ30P080FTC)



(2) Remove the two screws. (BBZ30P080FTC)



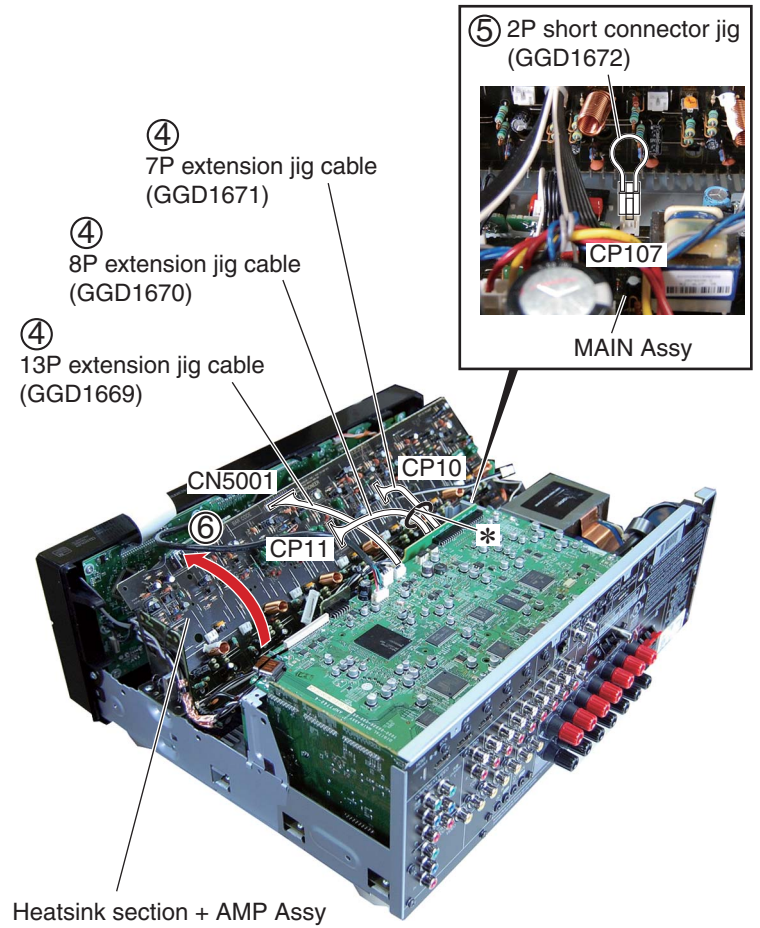
(3) Disconnect the four connectors.



- (4) Connect the three extension jig cables.
- (5) Connect the 2P short connector jig.
- (6) Rotate the heatsink section in the direction of the arrow.

**Note \*:**

Please bind the jig cables (GGD1670 and GGD1671) with tape to prevent an oscillation.

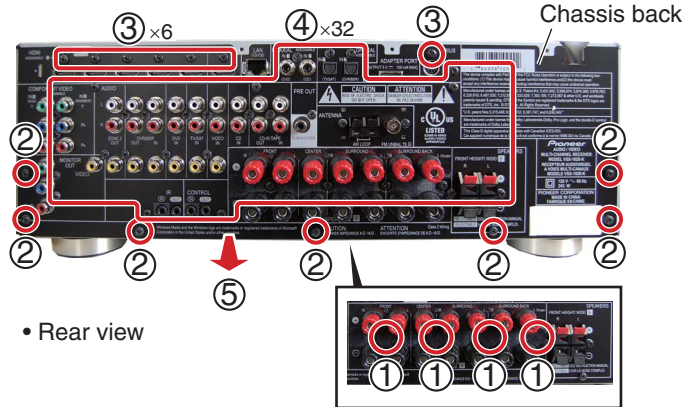


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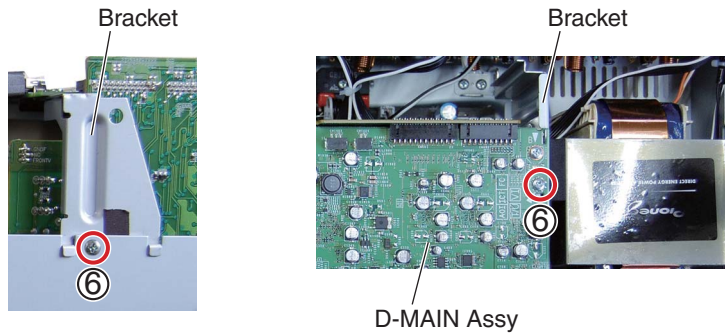
### A [3] AUDIO and COMPOSITE Assys

Remove the cabinet by removing the 10 screws.

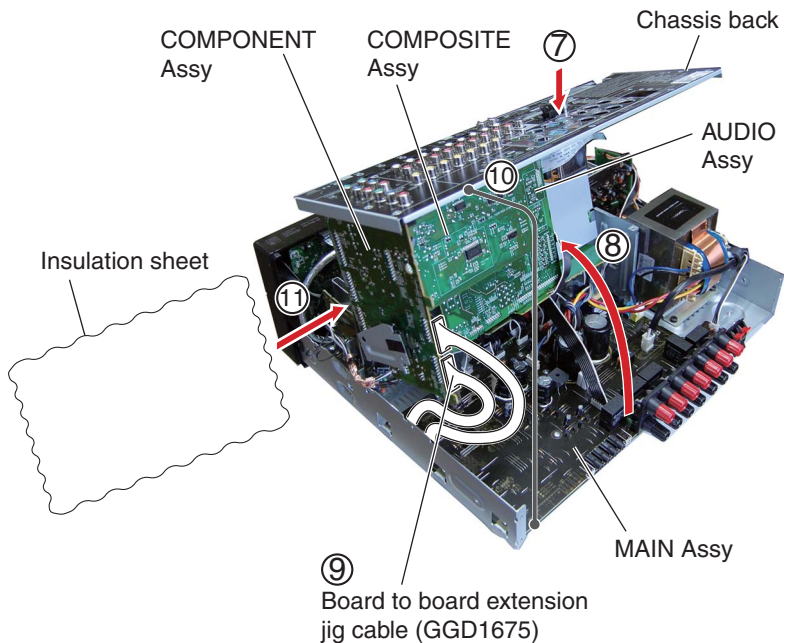
- (1) Remove the four felts.
- (2) Remove the seven screws. (BBT30P100FTB)
- (3) Remove the seven screws. (B020930083B10-IL)
- (4) Remove the 32 screws. (BBT30P100FTB)
- (5) Remove the chassis back.



- (6) Remove the two screws. (BBZ30P080FTC)



- (7) Reassembling the chassis back.  
See "2. Notes on Ground Points Connection".
- (8) Arrange the unit as shown in the photo below.
- (9) Connect the board to board extension jig cable.
- (10) Connect the chassis back to the chassis ground.
- (11) Insert any insulation sheet between top of heatsink and D-MAIN Assy.

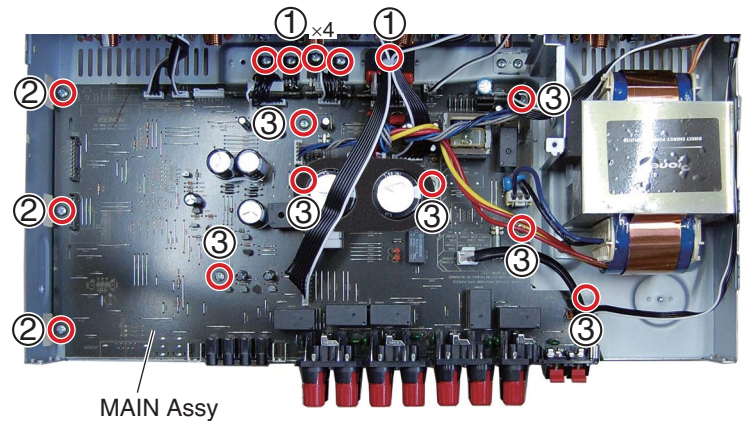




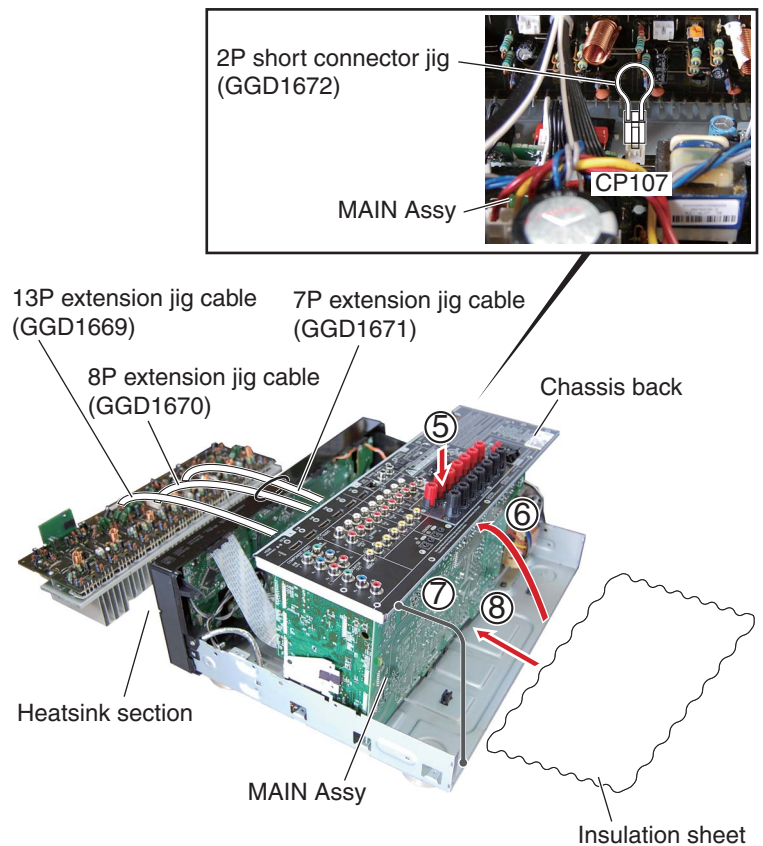
## [4] MAIN Assy

- (1) Remove the cabinet by removing the 10 screws.
- (2) Remove the heatsink section.  
(See steps [2] (1) to (5).)
- (3) Remove the chassis back and D-MAIN Assy etc. block. (See steps [3] (1) to (8).)

- 
- (1) Remove the five screws. (BBZ30P080FTC)
  - (2) Remove the three screws. (BBZ30P080FTC)
  - (3) Remove the seven screws. (B020030171B10-IL)
  - (4) Reassembling the D-MAIN Assy etc. block.



- (5) Reassembling the chassis back.  
Tighten back five screws (BBZ30P080FTC) that were removed by the above step (1).  
(It is necessary to fit these ICs to base chassis in order to reduce heating of them even though testing the following style.)  
See "2. Notes on Ground Points Connection".
- (6) Arrange the unit as shown in the photo below.
- (7) Connect the chassis back to the chassis ground.
- (8) Insert any insulation sheet between base chassis and MAIN Assy.



# 8. EACH SETTING AND ADJUSTMENT

## 8.1 HOW TO UPDATE FIRMWARE

### A ■ Workflow

Enter the UPDATE PANEL mode.



Check a current version.



Update it.



Update completed.  
(Turn the power OFF automatically.)



Enter the UPDATE PANEL mode again.



Check an updated version.



Turn the power off.  
(Release the UPDATE PANEL mode.)

Updating process

Checking process

### ■ MAIN com (EMMA), SUB com (EVENT) and DSP Flash ROM Update by USB Memory and the Confirmation of the Version




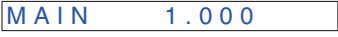

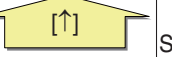







#### ● UPDATE PANEL Mode (Version update)

##### [Preparations]

1. Copy the UPDATE FILE to the root directory of the USB Memory.  
**Note:** NEVER copy several UPDATE FILES to the root directory of the USB Memory.  
Copy only the corresponding UPDATE FILE.
2. Turn off the power to this unit by setting Multi-Zone to "OFF".
3. Connect the USB Memory to the USB terminal (A type) of the front panel.

##### [Procedure]




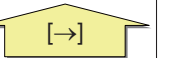
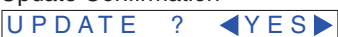


1. While holding down "TUNE↑" key on the front panel, press "STANDBY ON/OFF" key and moves to the **UPDATE PANEL mode**.
2. The updating process is as follows.

Key operation	FL display
[TUNE↑] + [STANDBY ON/OFF] 	
Booting is completed 	MAIN com (EMMA) version is displayed. 
[TUNE↓] or [TUNE↑]  	SUB com (EVENT) version is displayed. 
[TUNE↓] or [TUNE↑]  	DSP version is displayed. 
[TUNE↓] or [TUNE↑]  	Update Menu 

### Front Panel Key

[↓] : TUNE key  
 [↑] : TUNE key  
 [←] : PRESET key  
 [→] : PRESET key

If no key is pressed within 10 seconds while booting UPDATE PANEL, the UPDATE PANEL is finished and returns to the normal display. But the process does not become timeout and continues while "FILE searching" or "Updating process".

Key operation	FL display
	Update Menu 
[PRESET→] or [PRESET←]	Update Confirmation 
[←]  [→]	Update Confirmation 
	File searching 
UPDATE FILE searching completed	

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A

Key operation	FL display
UPDATE FILE searching completed	
	Updating process UPDATE █
DSP UPDATE completed	
	Updating process UPDATE █ █
MAIN com (EMMA) UPDATE completed	
	Updating process UPDATE █ █ █ █
SUB com (EVENT) UPDATE completed	
	Update completion display COMPLETE █ █ █ █ █ █ █ █
5 Second	
	
Power turns off automatically. (All ZONE OFF) Disconnect the USB MEMORY.	

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Update time is fluctuated by contents of the update. It will take about 15 minutes at the maximum.  
(Actual time is from 2 minutes to 12 minutes.)  
Time required for updating varies, because only the programs that require updating will be updated.

**[Confirmation]**

Enter UPDATE PANEL mode and check that the programs have been updated.

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VSX-1020-K

# 8.2 IDLE CURRENT ADJUSTMENT



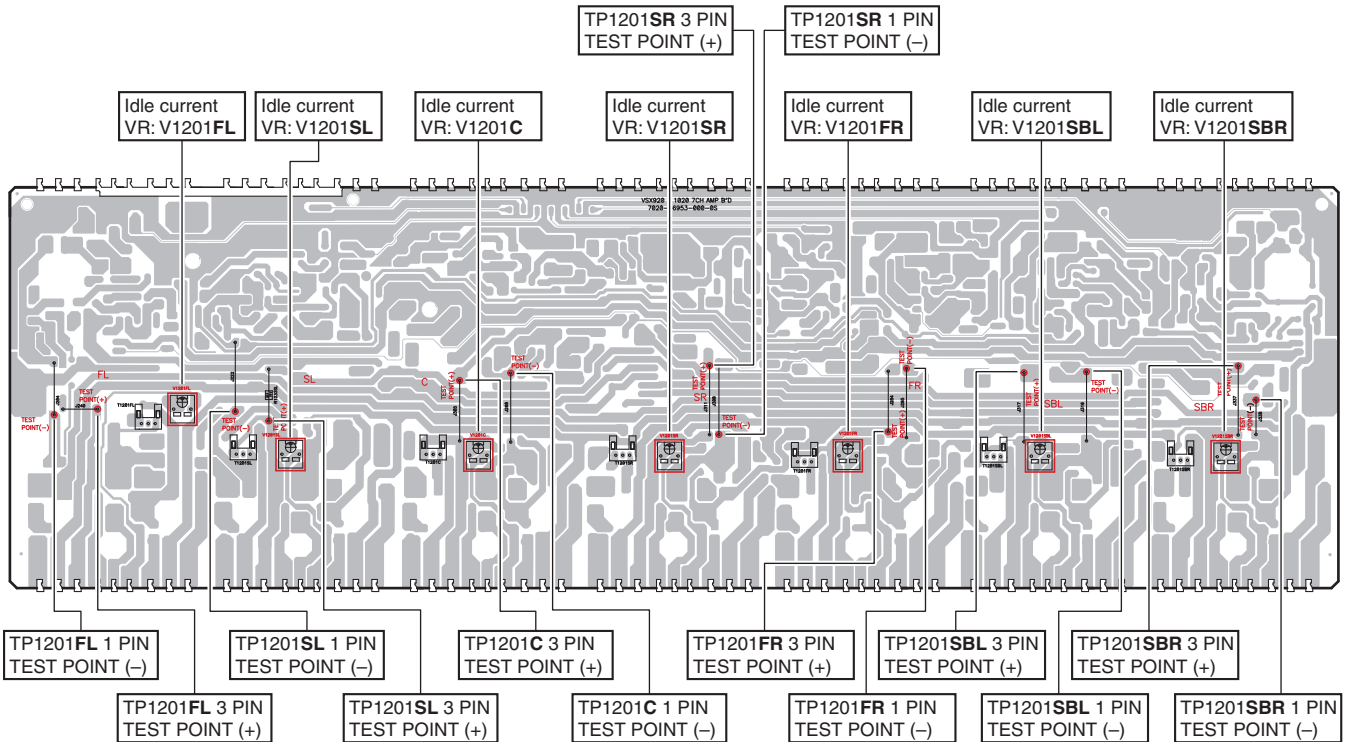
## 1. Idle Current Adjustment

Measurement Points	Adjustment Points	Procedure
TP1201FL 3PIN : TEST POINT(+) TP1201FL 1PIN : TEST POINT(-)	V1201FL	① Turn on the power. ② Perform aging for one minute. ③ Connect a digital voltmeter to the measurement point. ④ Turn the adjustment VR so that the voltage becomes in 2.0 mV ± 0.2 mV.  (Condition : No signal and no load)
TP1201FR 3PIN : TEST POINT(+) TP1201FR 1PIN : TEST POINT(-)	V1201FR	
TP1201C 3PIN : TEST POINT(+) TP1201C 1PIN : TEST POINT(-)	V1201C	
TP1201SL 3PIN : TEST POINT(+) TP1201SL 1PIN : TEST POINT(-)	V1201SL	
TP1201SR 3PIN : TEST POINT(+) TP1201SR 1PIN : TEST POINT(-)	V1201SR	
TP1201SBL 3PIN : TEST POINT(+) TP1201SBL 1PIN : TEST POINT(-)	V1201SBL	
TP1201SBR 3PIN : TEST POINT(+) TP1201SBR 1PIN : TEST POINT(-)	V1201SBR	

• Adjustment Point and Measurement Points.... see fig1.

### B AMP ASSY

### SIDE A

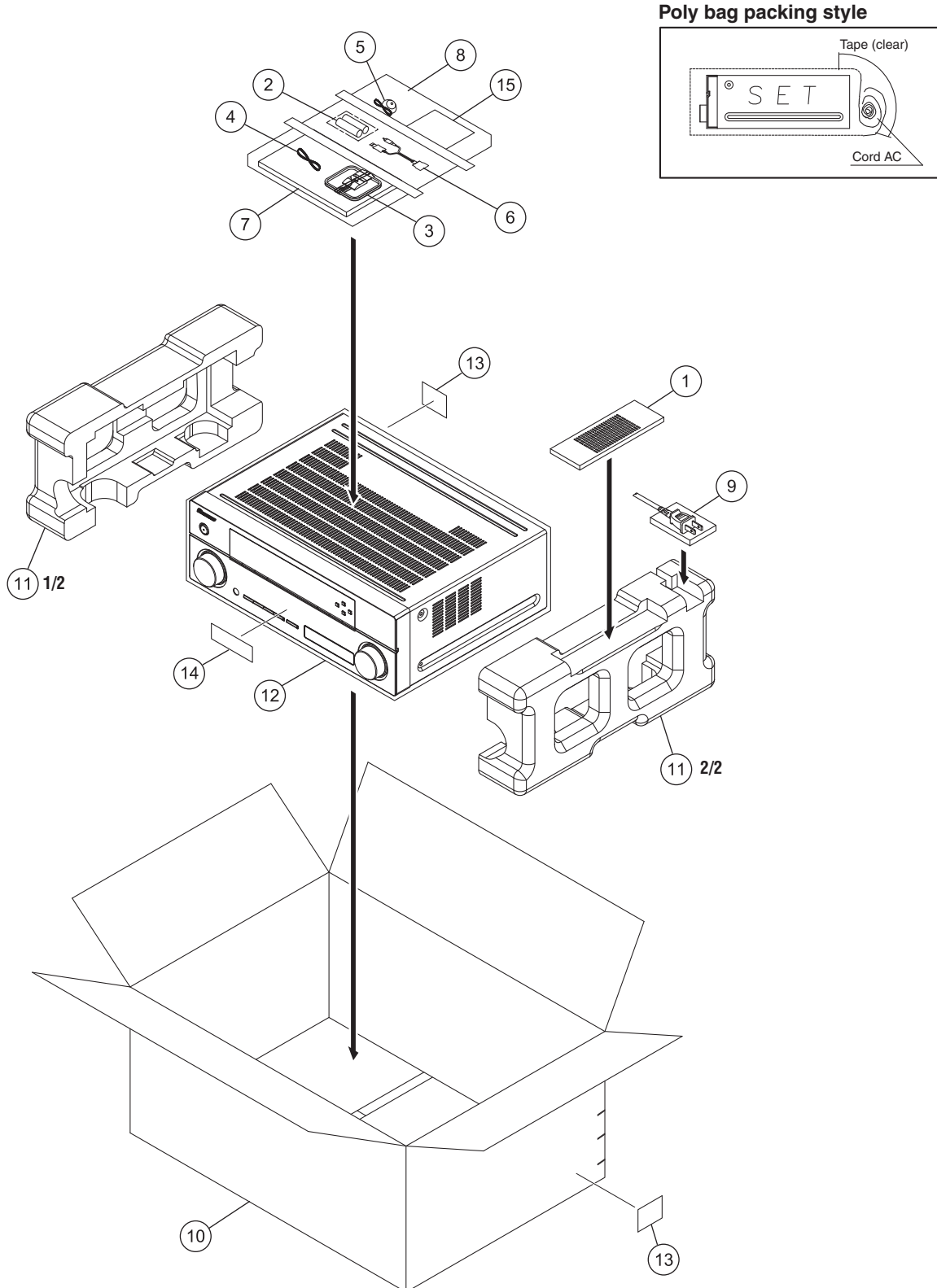


[Fig. 1]

# 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  $\triangle$  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  $\nabla$  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 SECTION



**(1) PACKING SECTION PARTS LIST**

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
	1 Remote Control Unit	8300759500010-IL
NSP	2 Dry Cell Batteries (AAA size IEC R03)	G670001R50210-IL
	3 AM Loop Antenna	ATB7013
	4 FM Wire Antenna	ADH7030
	5 Setup Microphone (for Auto MCACC setup)(5 m)	APM7008
	6 iPod Cable	L308102013010-IL
	7 Operating Instructions	See Contrast table (2)
	8 Poly Bag	6330210059000-IL
NSP	9 Poly Bag	6337040062010-IL
	10 Box, Gift	See Contrast table (2)
	11 Cushion, Snow	6230212784000-IL
	12 Pe, Sheet	6327040059000-IL
NSP	13 Label	VRW1629
NSP	14 Label Getter 1020U	5507000004560-IL
	15 Sheet	5227000001050-IL

**(2) CONTRAST TABLE**

VSX-1020-K/UXCNCB and VSX-1025-K/CUXCN are constructed the same except for the following:

Mark	No.	Symbol and Description	VSX-1020-K /UXCNB	VSX-1025-K /CUXCN
	7	Operating Instructions (En, Es)	5707000003280-IL	Not used
	7	Operating Instructions (En, Frca)	Not used	5707000003320-IL
	10	Box, Gift	6007211670010-IL	6007211670050-IL

# 9.2 EXTERIOR SECTION

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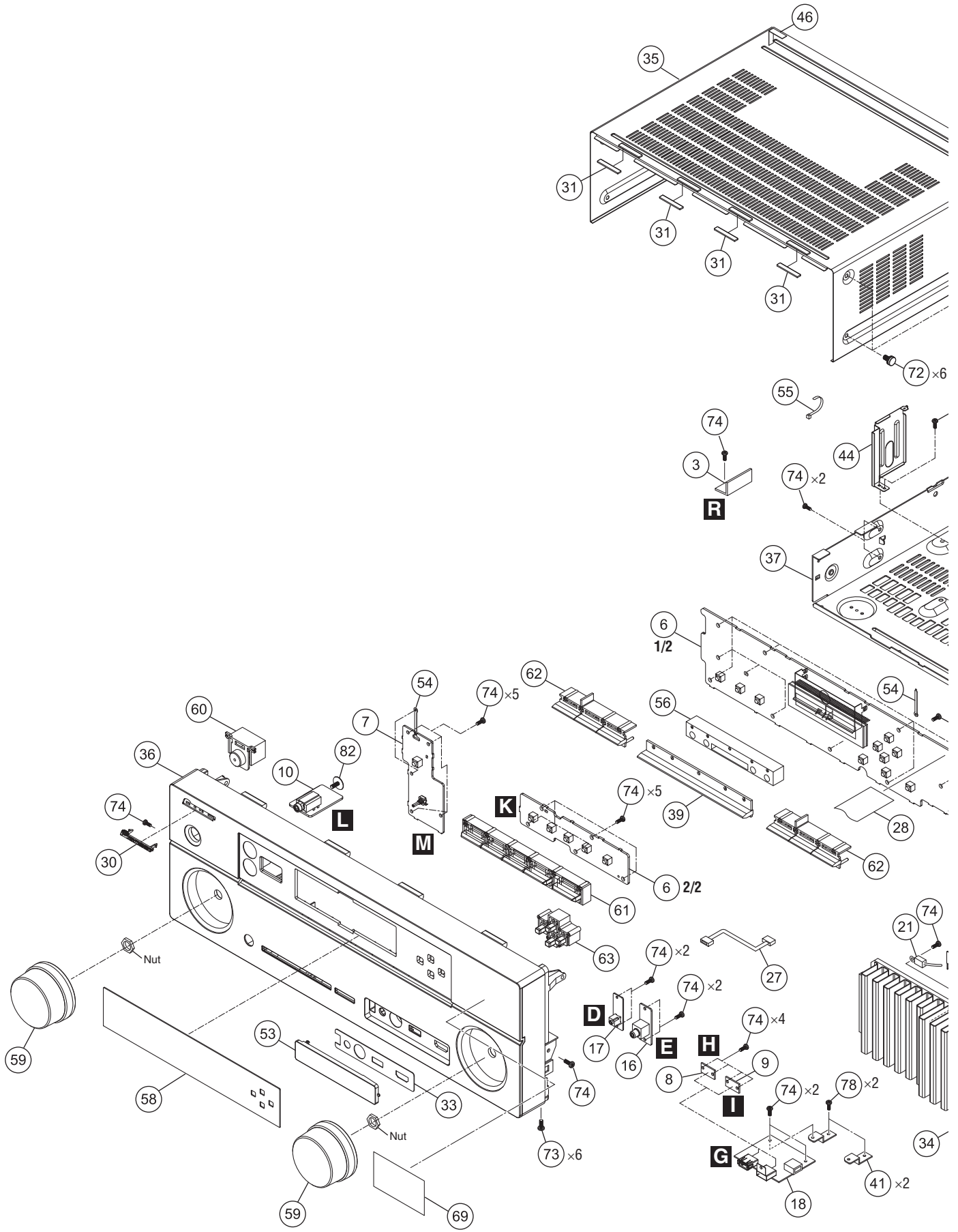
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**(1) EXTERIOR SECTION PARTS LIST**

<u>Mark No</u>	<u>Description</u>	<u>Part No</u>	<u>Mark No</u>	<u>Description</u>	<u>Part No</u>
A	1 MAIN Assy	7028069211010-IL	46	Cushion	4050211385000-IL
	2 BRIDGE1 Assy	7028069213010-IL	47	Cushion	4050211605000-IL
	3 GUIDE-L Assy	7028069214010-IL	48	•••••	
	4 GUIDE-R Assy	7028069215010-IL	49	Cushion	4050211745000-IL
	5 GUIDE3 Assy	7028069218010-IL	50	Cushion	4050212685000-IL
	6 DISPLAY Assy	See Contrast table (2)	51	Cushion 1020	4050213045000-IL
	7 POWER SW Assy	7028069222010-IL	52	Supporter	4070001601010-IL
	8 USB MTG Assy	7028069223010-IL	53	Cover	See Contrast table (2)
	9 HDMI MTG Assy	7028069224010-IL	54	Clamp MTG	4330000310000-IL
	10 HEADPHONE Assy	7028069225010-IL	55	Clamp	4330040343010-IL
B	11 AMP Assy	7028069531010-IL	56	Guide	4350210451000-IL
	12 AUDIO Assy	7028069241010-IL	57	Stopper	4380040162010-IL
	13 COMPONENT Assy	7028069242010-IL	58	Window Display	5077212953100-IL
	14 COMPOSITE Assy	7028069243010-IL	59	Knob	5080212361000-IL
	15 BRIDGE2 Assy	7028069244010-IL	60	Button	5090213741100-IL
	16 F-VIDEO Assy	7028069245010-IL	61	Button 5Key	5090214311000-IL
	17 MIC Assy	7028069246010-IL	62	Button 3Key	5090214331000-IL
	18 F-HDMI Assy	7028069251010-IL	63	Button 4Key	5090214351000-IL
	19 D-MAIN Assy	7028069261010-IL	64	•••••	
C	20 FM/AM TUNER Unit	AXX7267	NSP 65	Tape	1220210129300-IL
	21 Posistor	F320121021240-IL	NSP 66	Tape	1220210879000-IL
⚠	22 Transistor (Q1202)	J5011560Y0000-IL	67	Label Trans	5507000003270-IL
⚠	23 Semi, TR/GE NPN 2SC (Q1203)	J502396400010-IL	NSP 68	Label MAC Address	5507000004960-IL
⚠	24 Transistor (Q1201)	J5032390Y0000-IL	69	Label Getter 1020U	5507000004560-IL
⚠	25 Power Trans.	8200960610650-IL	70	•••••	
⚠	26 Cord Assy	L068125101710-IL	71	Screw	BBT30P100FTB
	27 Cable, HDMI	L304201190020-IL	72	Screw	BBT40P080FTB
	28 Cable, Flat Card 1.0M	N711392313880-IL	73	Screw	BBZ30P080FTB
D	29 Cable, Flat Card 1.25	N712111013880-IL	74	Screw	BBZ30P080FTC
	30 Pioneer Badge B	XAM3006	75	•••••	
	31 Sheet	1210210235000-IL	76	Screw Tapping Assy	B018230141H11-IL
	32 Sheet	1210211242000-IL	77	Screw	B020030171B10-IL
	33 Sheet	1217211162000-IL	78	Screw, Tap Tite	B020230063B10-IL
NSP	34 Heatsink Main	2120211718100-IL	79	Screw, Tap Tite	B020930083B10-IL
	35 Cabinet	3007211686000-IL	80	Screw, Tap Tite	B028130086B10-IL
	36 Panel Front	See Contrast table (2)	81	Screw	B028940101B11-IL
NSP	37 Chassis Main	3200213436000-IL	82	Screw	1500001456010-IL
E	38 Chassis Back	See Contrast table (2)			
	39 Lens	3717211041000-IL			
	40 Foot	See Contrast table (2)			
	41 Bracket	4010056906010-IL			
	42 Bracket	4010214716000-IL			
	43 Bracket	4010214726000-IL			
	44 Bracket	4010214736000-IL			
	45 Cushion	4050211365000-IL			

**(2) CONTRAST TABLE**

VSX-1020-K/UXCNCB and VSX-1025-K/CUXCN are constructed the same except for the following:

Mark	No.	Symbol and Description	VSX-1020-K /UXCNCB	VSX-1025-K /CUXCN
	6	DISPLAY Assy	7028069221010-IL	70280692210C0-IL
	36	Panel Front	3067214871000-IL	3067214871010-IL
	38	Chassis Back	3207213476000-IL	3207213476010-IL
	40	Foot	4007210391000-IL	4000210391000-IL
	53	Cover	4317215111000-IL	4317215111020-IL

A

B

C

D

E

F

# 10. SCHEMATIC DIAGRAM

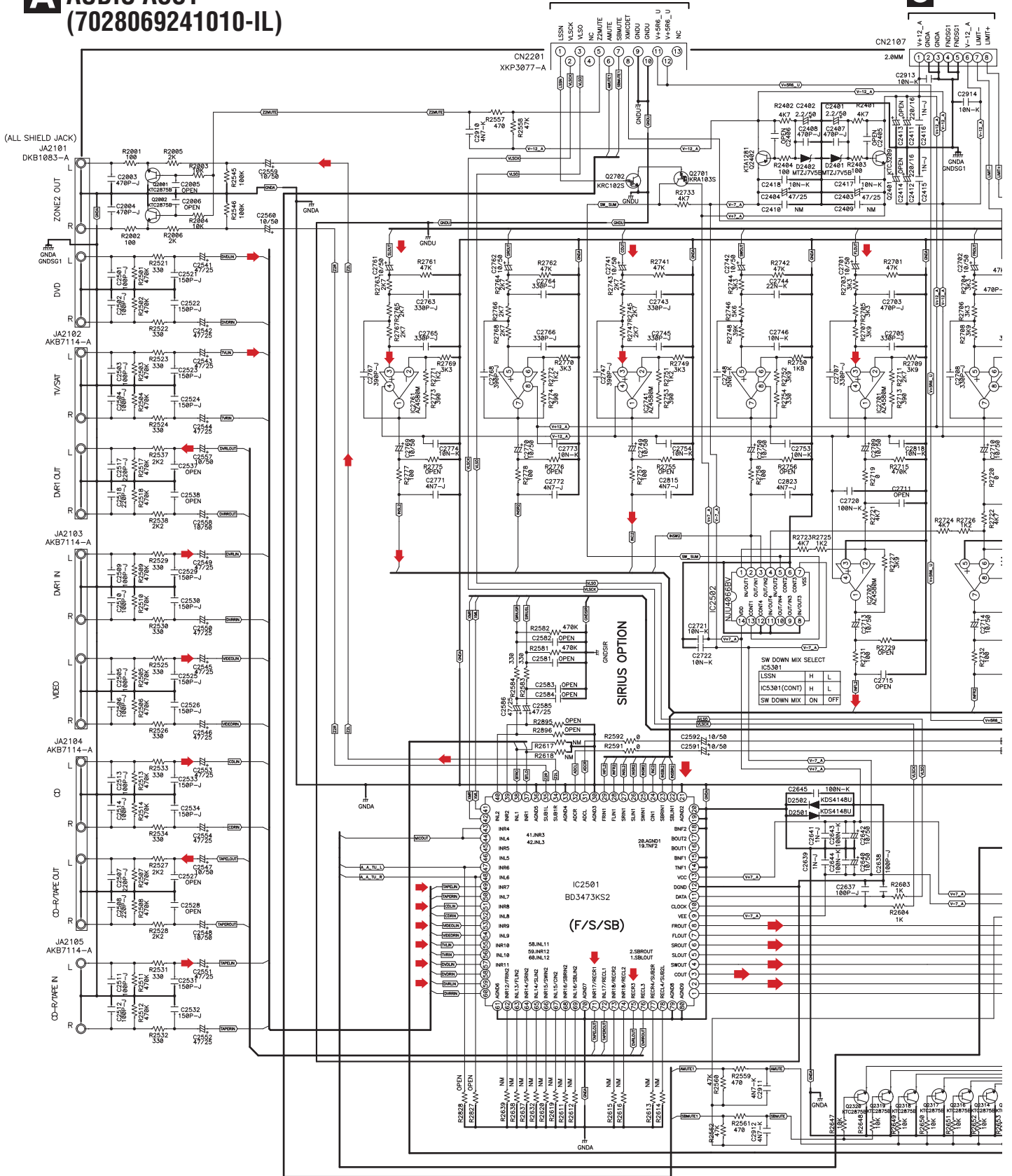
## 10.1 AUDIO ASSY

**A** AUDIO ASSY  
(7028069241010-IL)

**P** CN7602

**O** JP4001

A  
B  
C  
D  
E  
F



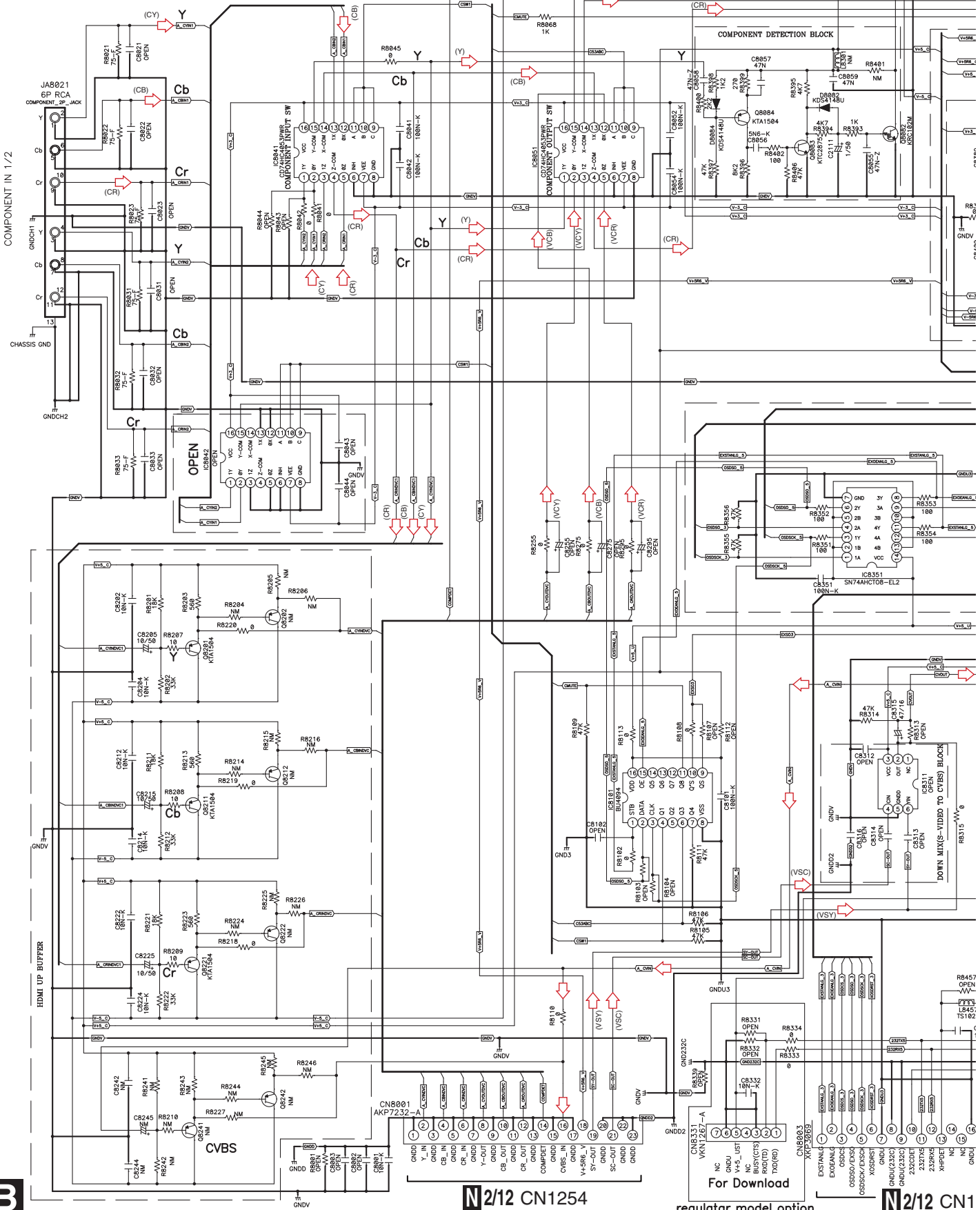
**A**



# 10.2 COMPONENT ASSY

## B COMPONENT ASSY (7028069242010-IL)

A  
B  
C  
D  
E  
F

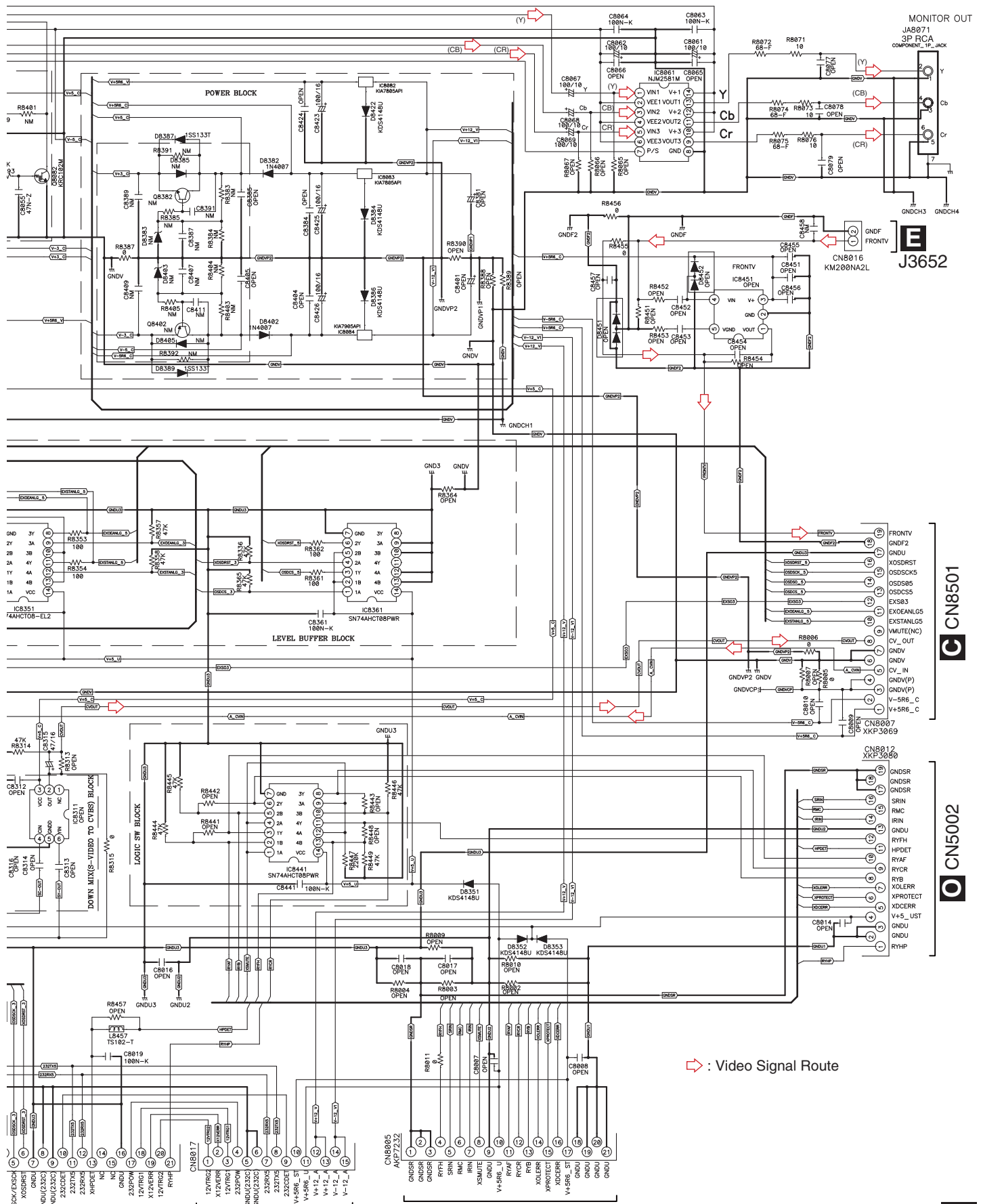


N/12 CN1254

For Download regulator model option

N/12 CN1

VSX-1020-K



A  
B  
C  
D  
E  
F

C CN8501

O CN5002

N2/12 CN1252

O CP6

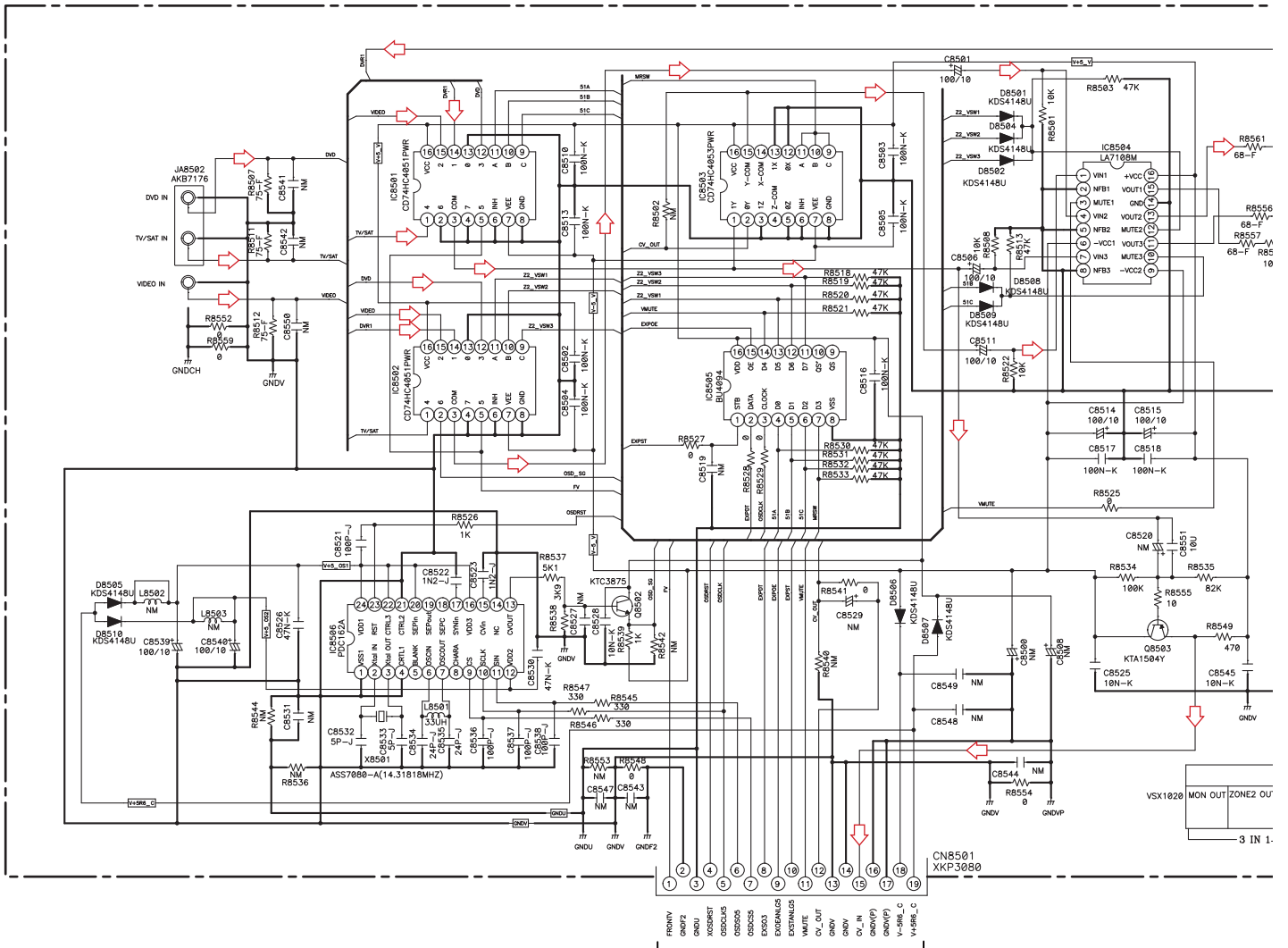
N2/12 CN1250

VSX-1020-K

B

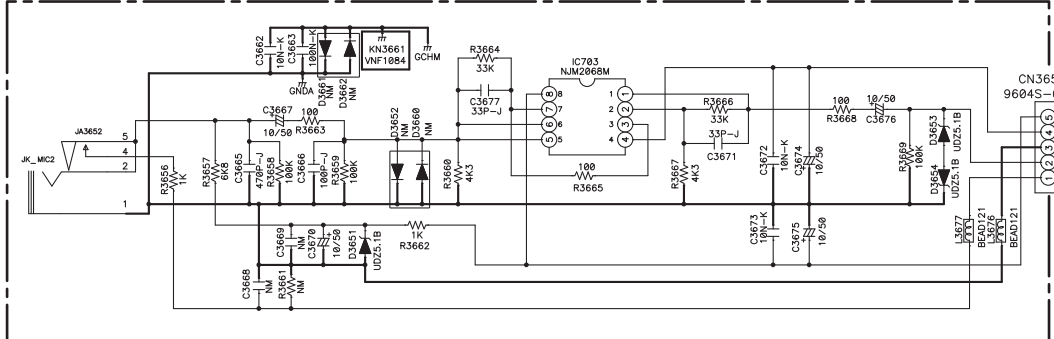
# 10.3 COMPOSITE, MIC, F-VIDEO and BRIDGE2 ASSYS

## C COMPOSITE ASSY (7028069243010-IL)



B CN8007

## D MIC ASSY (7028069246010-IL)

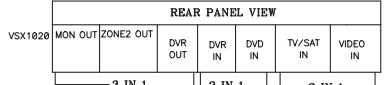
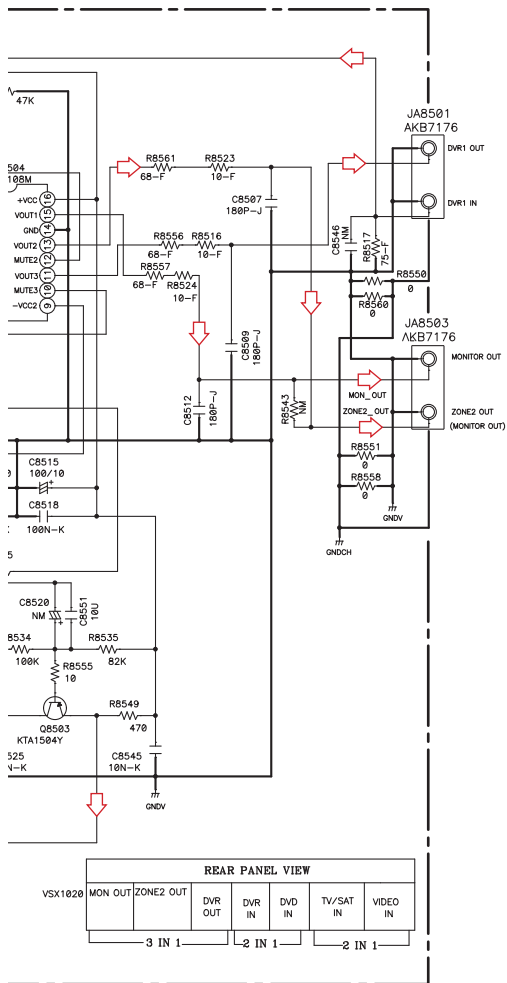
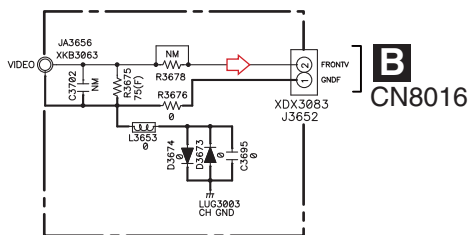


A CN2105

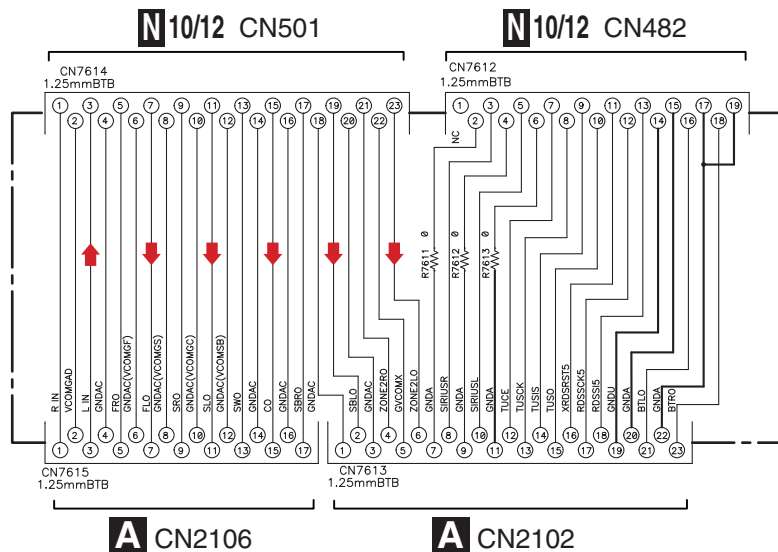
C D



### E F-VIDEO ASSY (7028069245010-IL)



### F BRIDGE2 ASSY (7028069244010-IL)



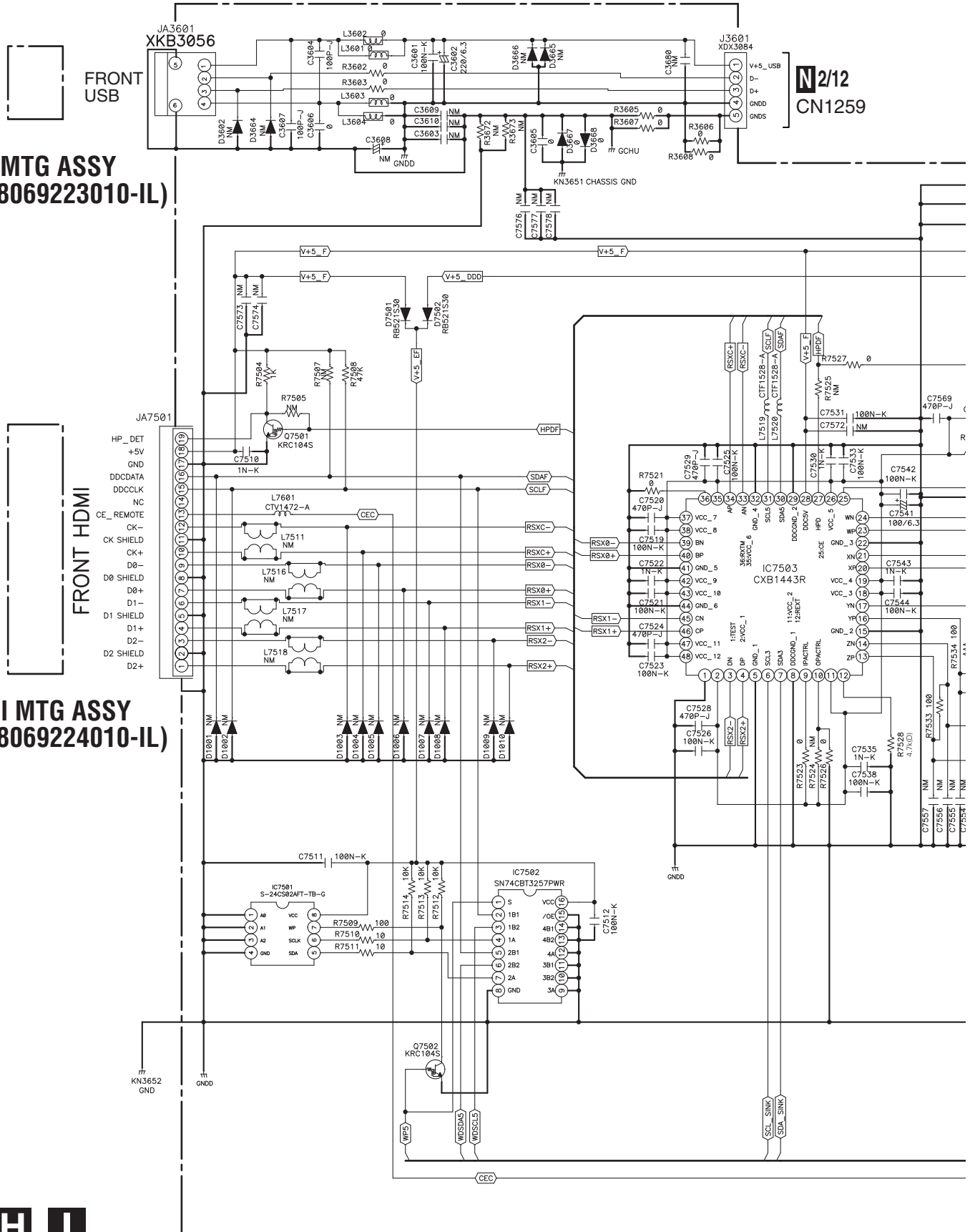
↗ : Video Signal Route  
 ↘ : Audio Signal Route

# 10.4 F-HDMI, USB MTG and HDMI MTG ASSYS

## F-HDMI ASSY (7028069251010-IL)

## USB MTG ASSY (7028069223010-IL)

## HDMI MTG ASSY (7028069224010-IL)



N2/12  
CN1259

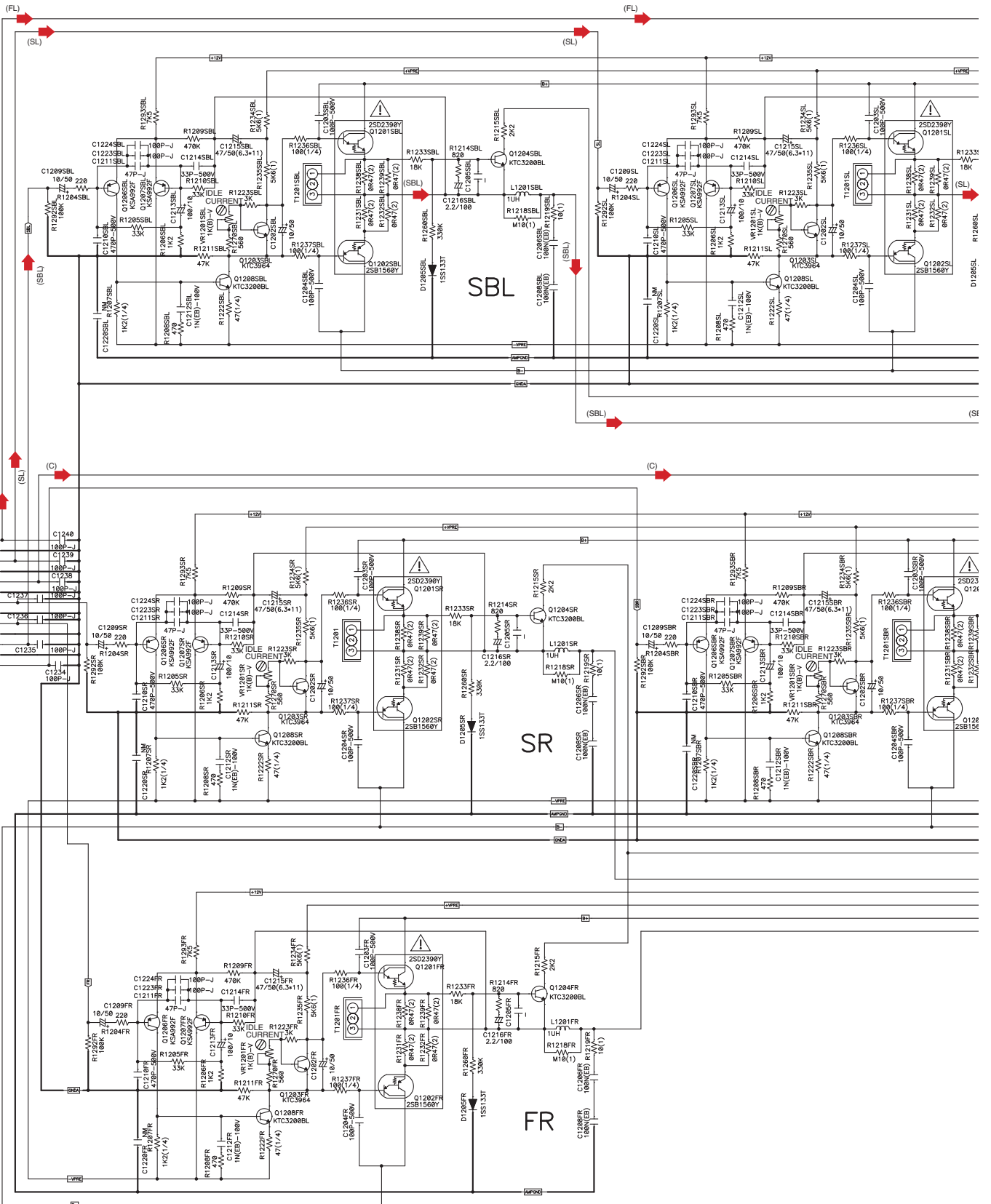
FRONT HDMI


FRONT USB

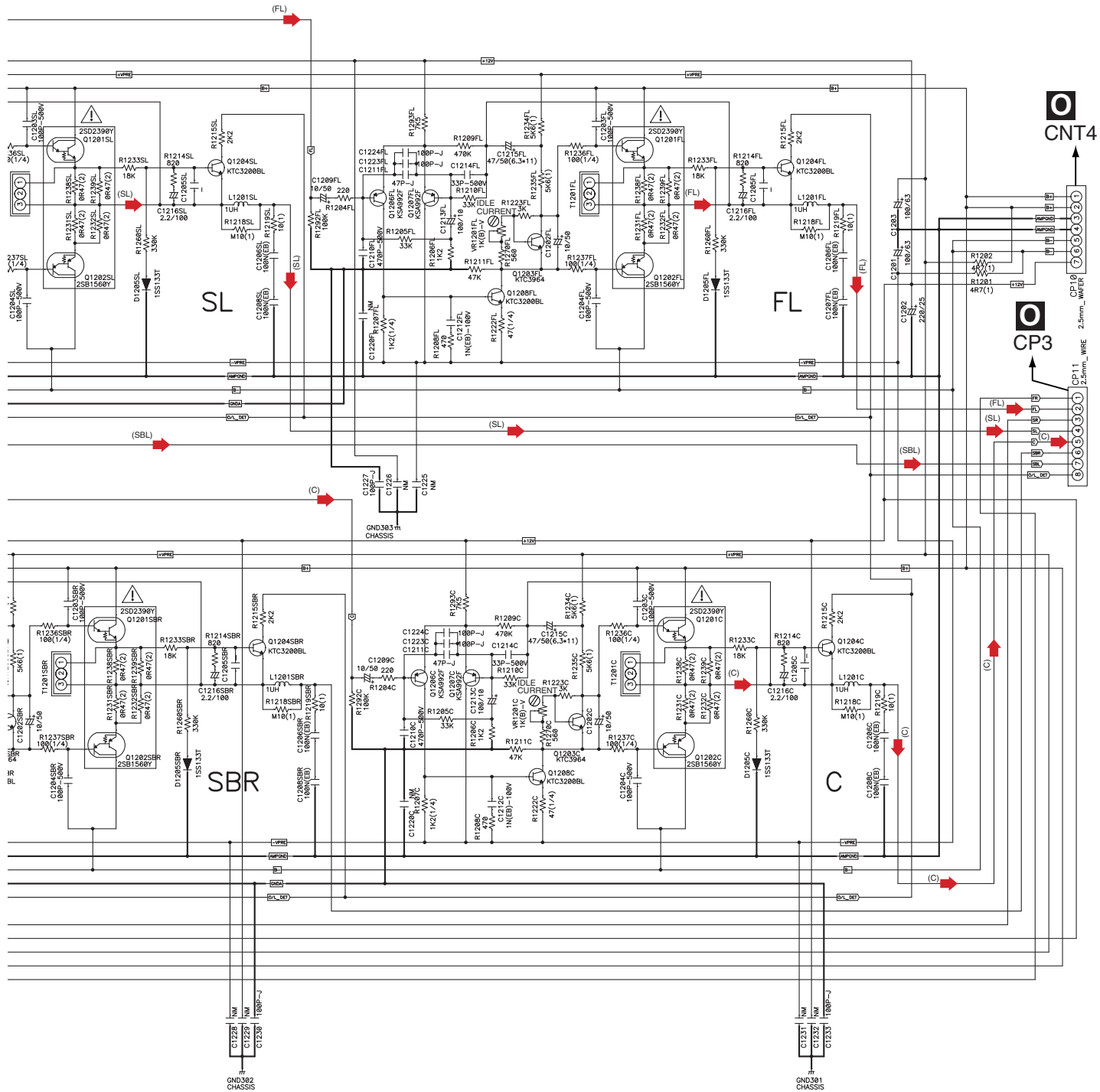


# 10.5 AMP ASSY

## J AMP ASSY (7028069531010-IL)



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.



 : Audio Signal Route

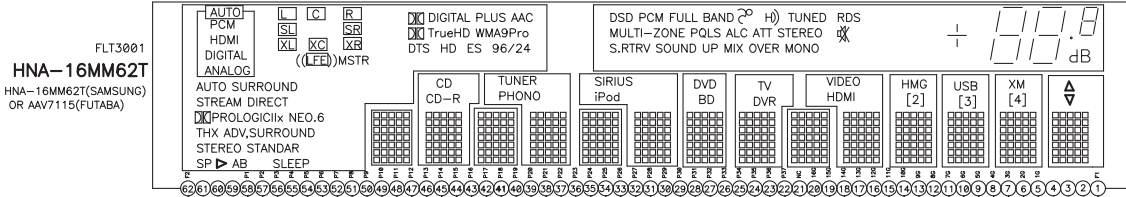
\*AMP PCB BLOCK (TOP VIEW)

FL	SL	C	SR	FR	SBL	SBR
----	----	---	----	----	-----	-----

VSX-1020-K

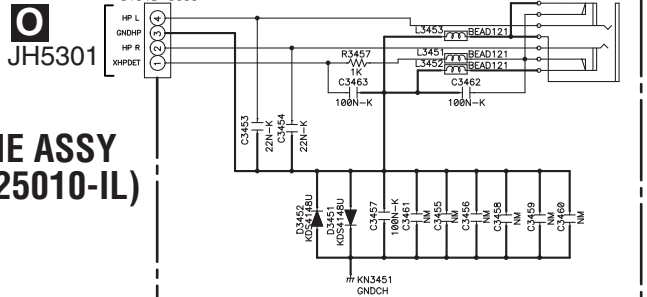
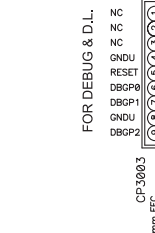
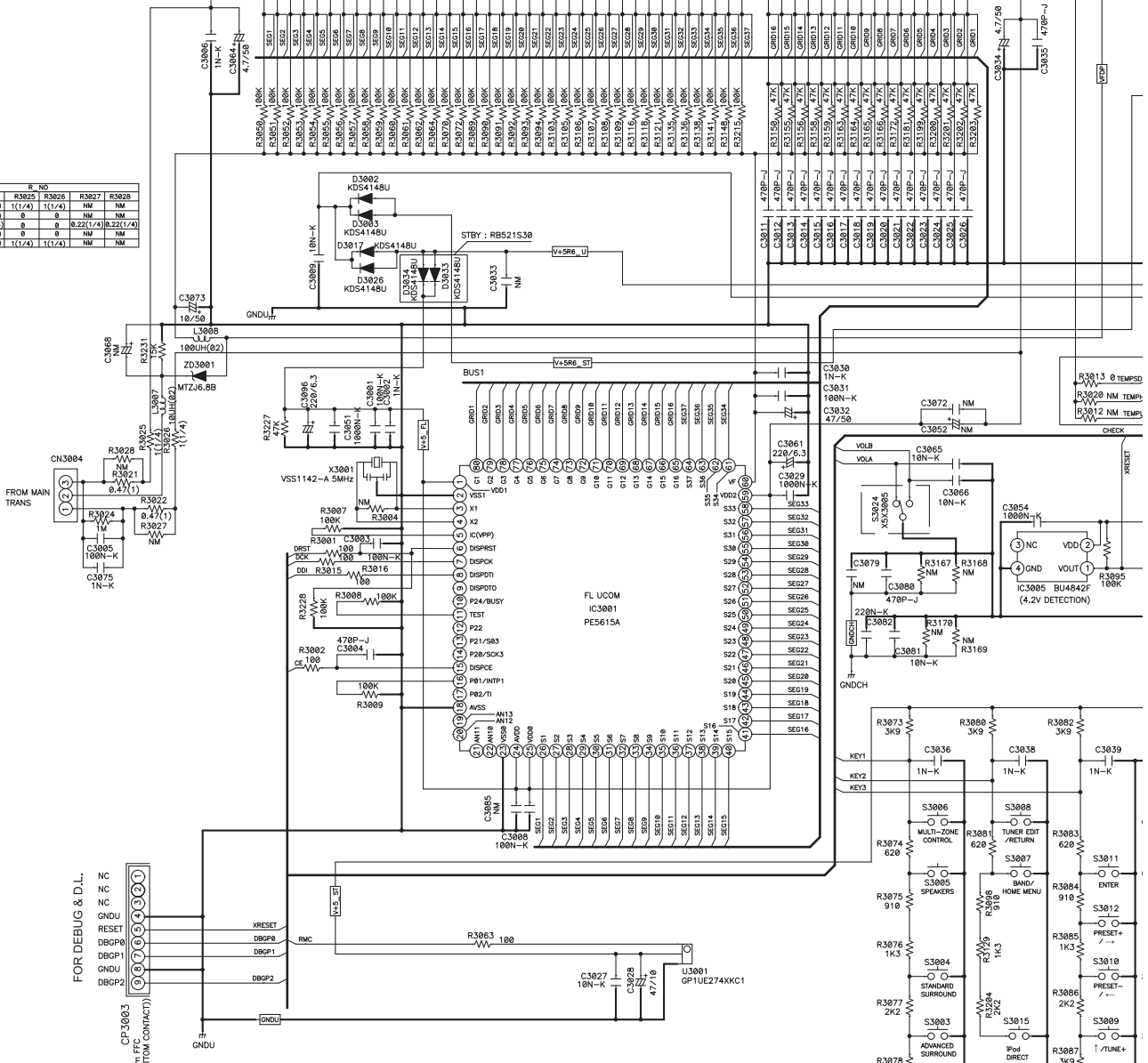
# 10.6 DISPLAY, HEADPHONE and POWER SW ASSYS

## K DISPLAY ASSY (7028069221010-IL: VSX-1020-K) (70280692210C0-IL: VSX-1025-K)



MODEL DISCRIMINATION

MODEL	AREA	R3921	R3922	R3925	R3926	R3927	R3928
1020AH	NA	8.47(1)	8.47(1)	1(1/4)	1(1/4)	NM	NM
1020AH	JPN	8.47(1)	8.47(1)	8	8	NM	NM
1020AH	GEN	8.22(1/4)	8.22(1/4)	8	8	8.22(1/4)	8.22(1/4)
1020AH	EU	8.47(1)	8.47(1)	8	8	NM	NM
1020AH	NAD0	8.47(1)	8.47(1)	1(1/4)	1(1/4)	NM	NM



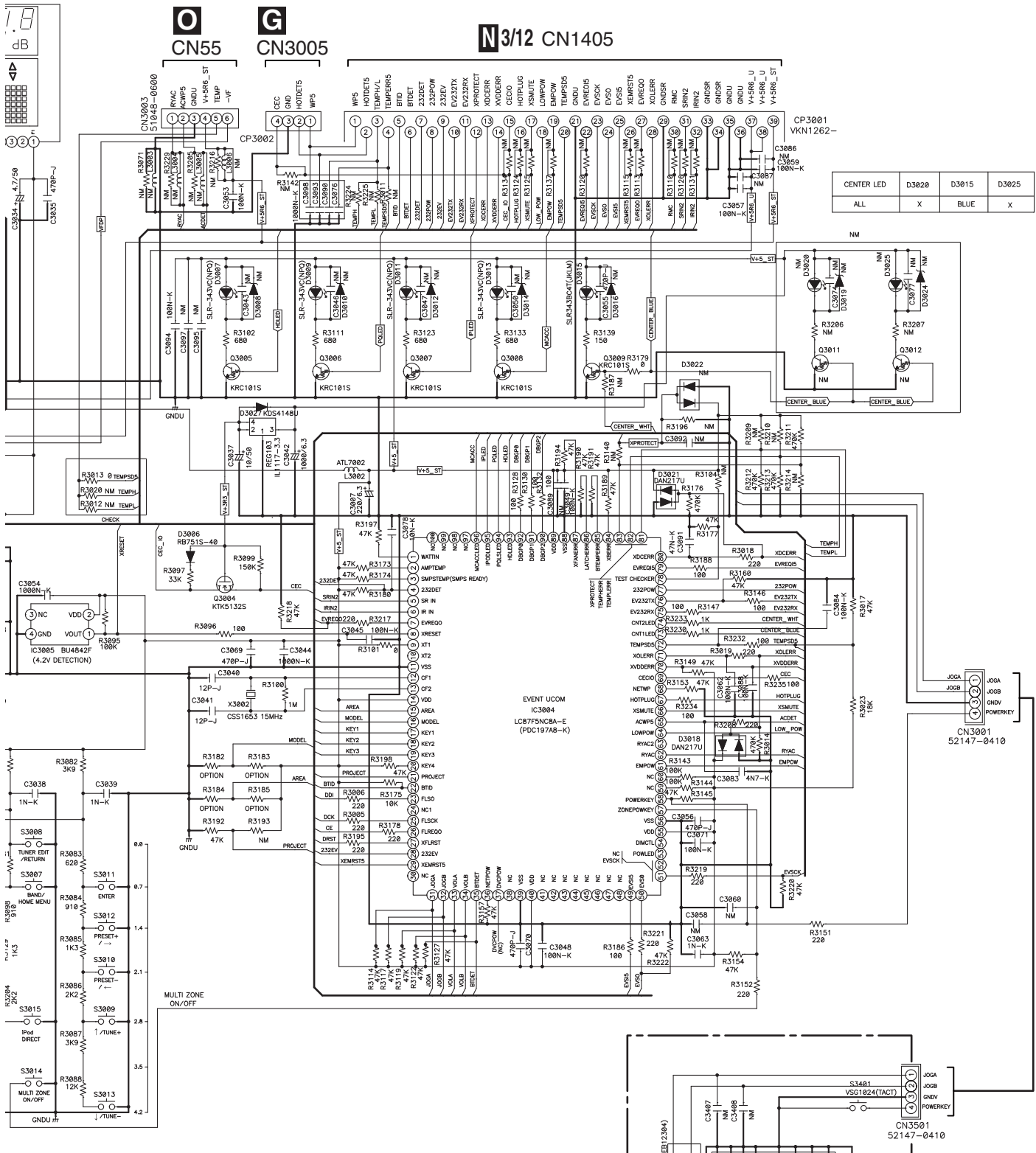
MODEL DISCRIMINATION

MODEL	AREA	R3192	R3193	R3182	R3183	R3184	R3185
1020AH	USA	47K	NM	NM	47K	47K	NM
1020AH	JPN	47K	NM	NM	47K	18K	33K
1020AH	CH	47K	NM	NM	47K	22K	33K
1020AH	GEN	47K	NM	NM	47K	33K	22K
1020AH	HIGH	47K	NM	NM	47K	47K	33K
1020AH	EU	47K	NM	NM	47K	47K	18K
1020AH	NAD0	47K	NM	33K	22K	47K	NM



## L HEADPHONE ASSY (7028069225010-IL)

VSX-1020-K



MODEL	R3182	R3183	R3184	R3185
1193	NM	47K	47K	NM
1194	NM	47K	18K	33K
1195	NM	47K	22K	33K
1196	NM	47K	33K	22K
1197	NM	47K	33K	18K
1198	NM	47K	NM	47K
1199	33K	22K	47K	NM

CENTER LED	D3020	D3015	D3025
ALL	X	BLUE	X

**M POWER SW ASSY**  
(702806922010-IL)



VSX-1020-K

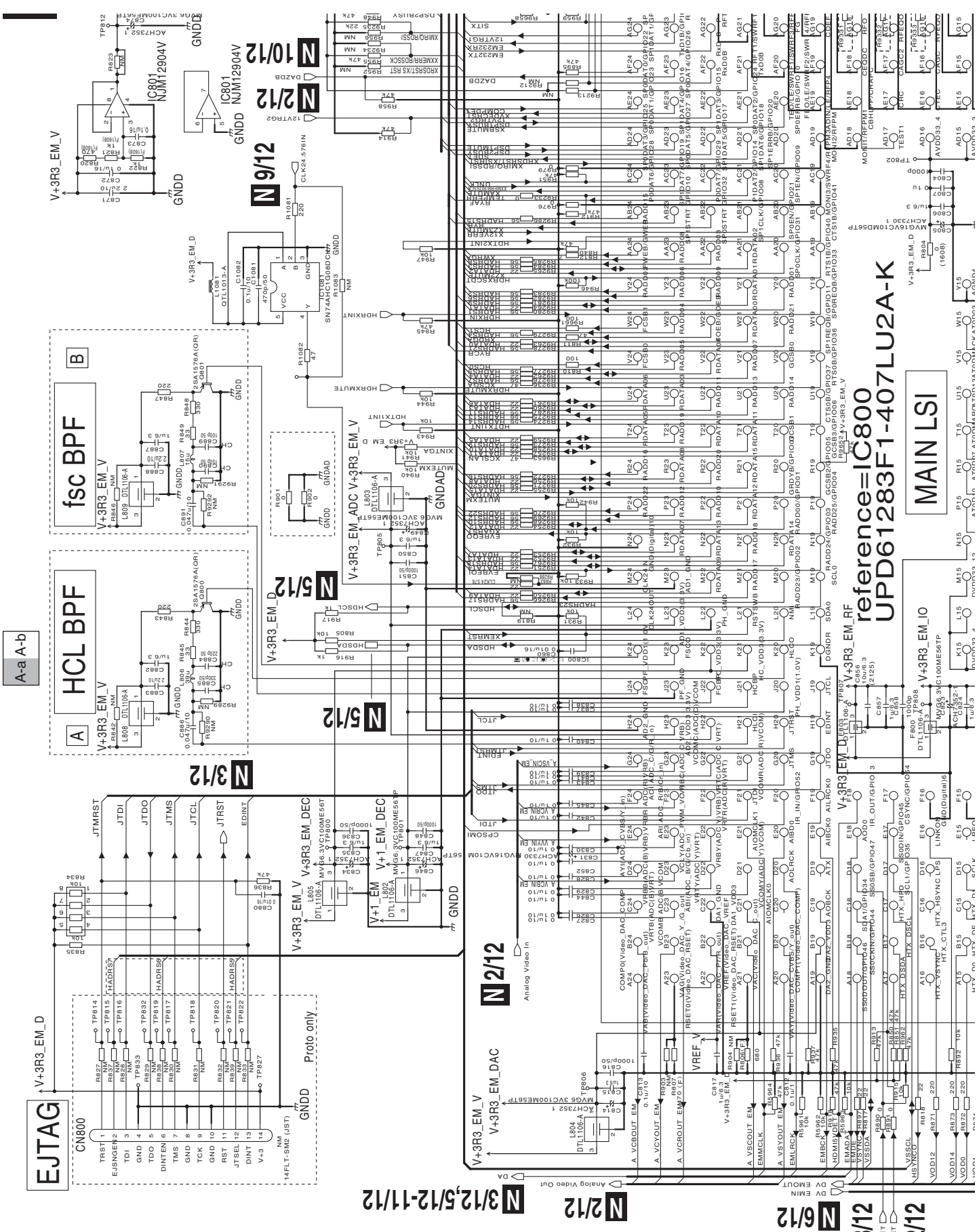










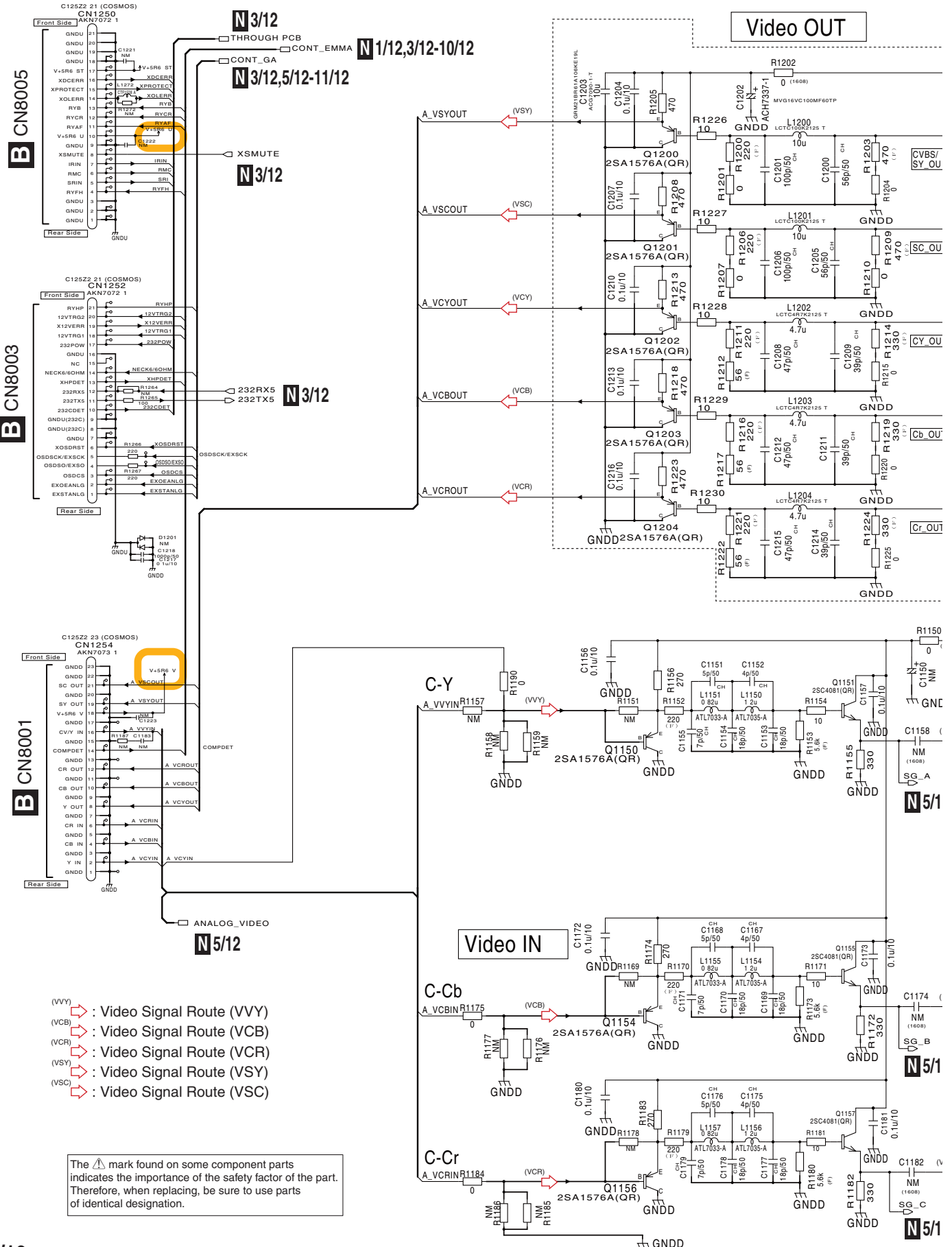


reference=IC800  
 UPD61283F1-407LU2A-K  
 MAIN LSI



# 10.8 D-MAIN ASSY (2/12)

A  
B  
C  
D  
E  
F



- (VVY) : Video Signal Route (VVY)
- (VCB) : Video Signal Route (VCB)
- (VCR) : Video Signal Route (VCR)
- (VSY) : Video Signal Route (VSY)
- (VSC) : Video Signal Route (VSC)

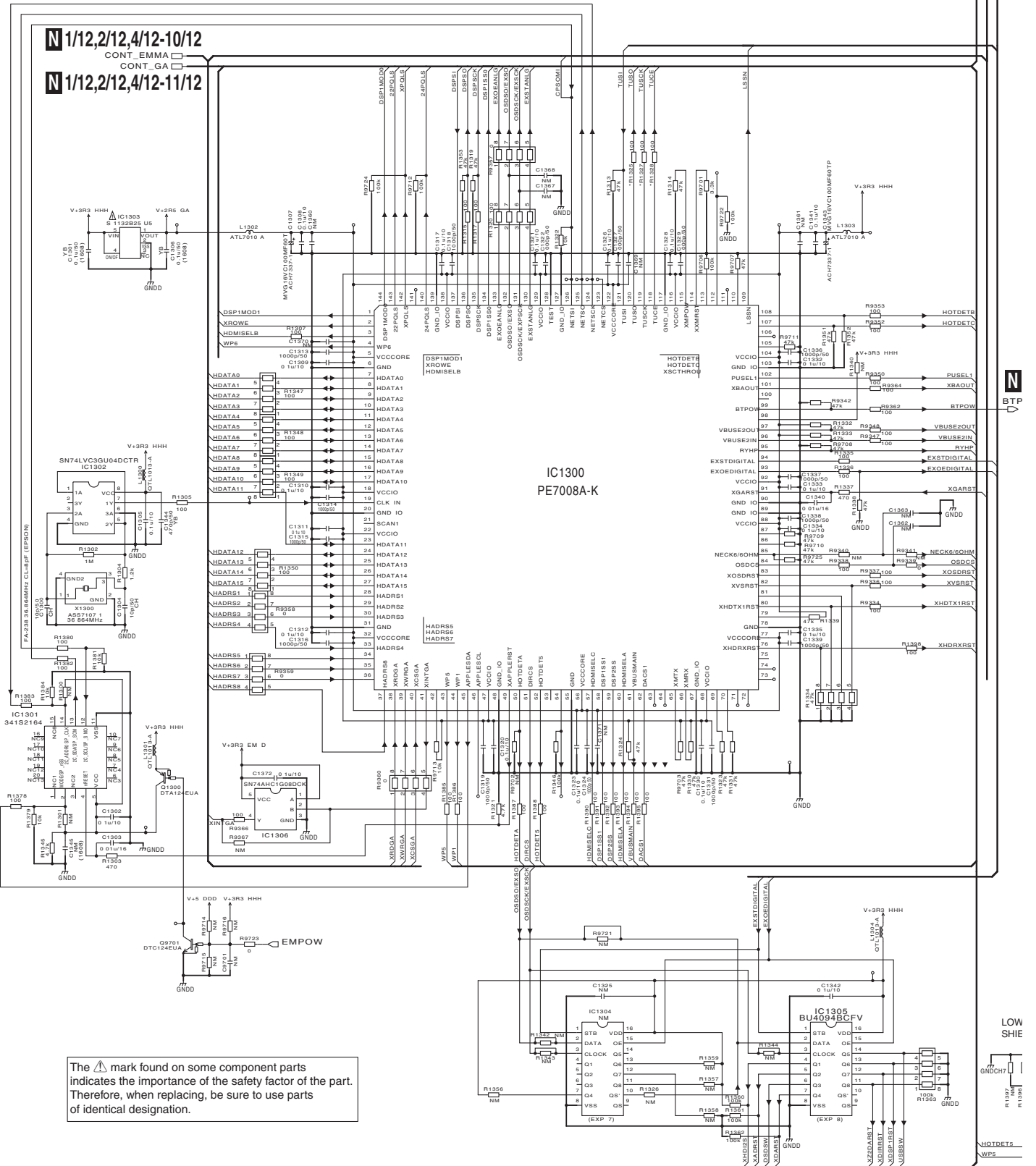
The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

**N2/12**



# 10.9 D-MAIN ASSY (3/12)

## N 3/12 D-MAIN ASSY (7028069261010-IL) • GATE ARRAY PART







# 10.10 D-MAIN ASSY (4/12)

1

2

3

4

A

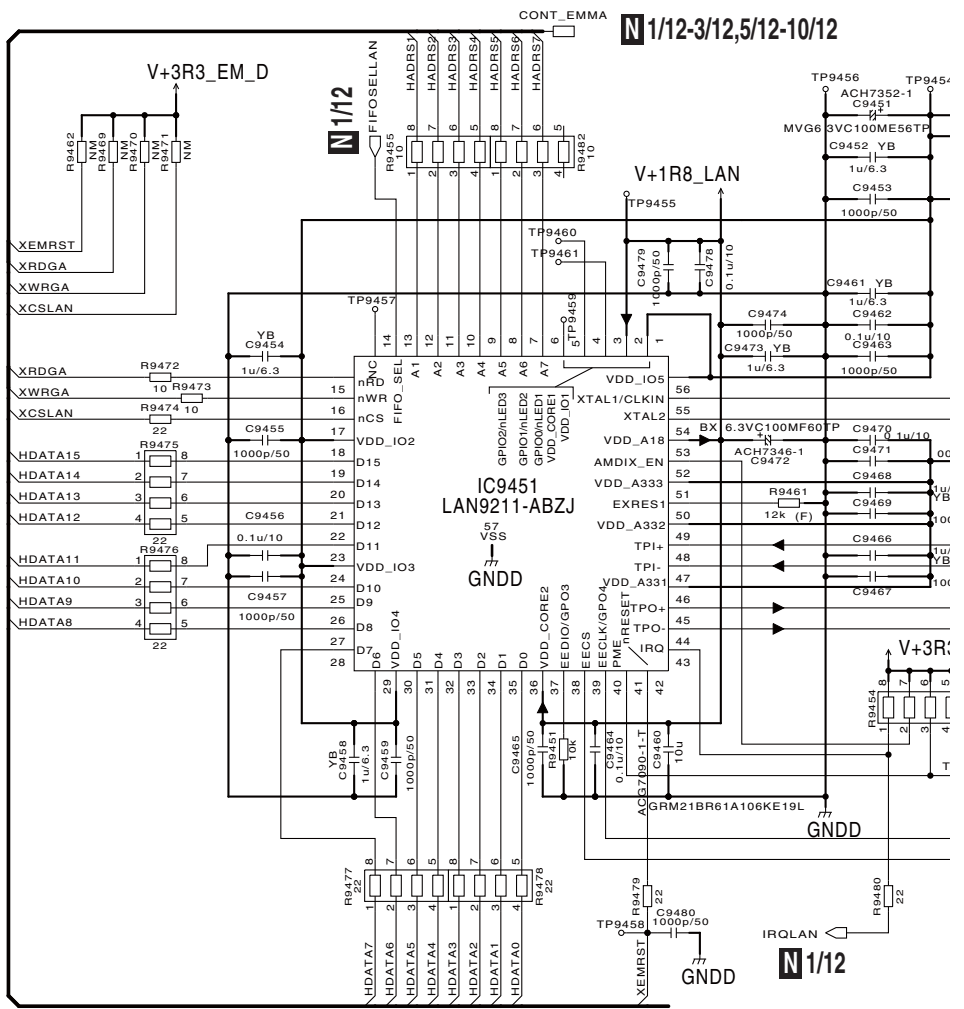
B

C

D

E

F

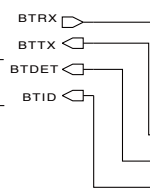


N 1/12-3/12,5/12-10/12

N 1/12

BTPO  
N 3/

N 3/12



N 4/12

1

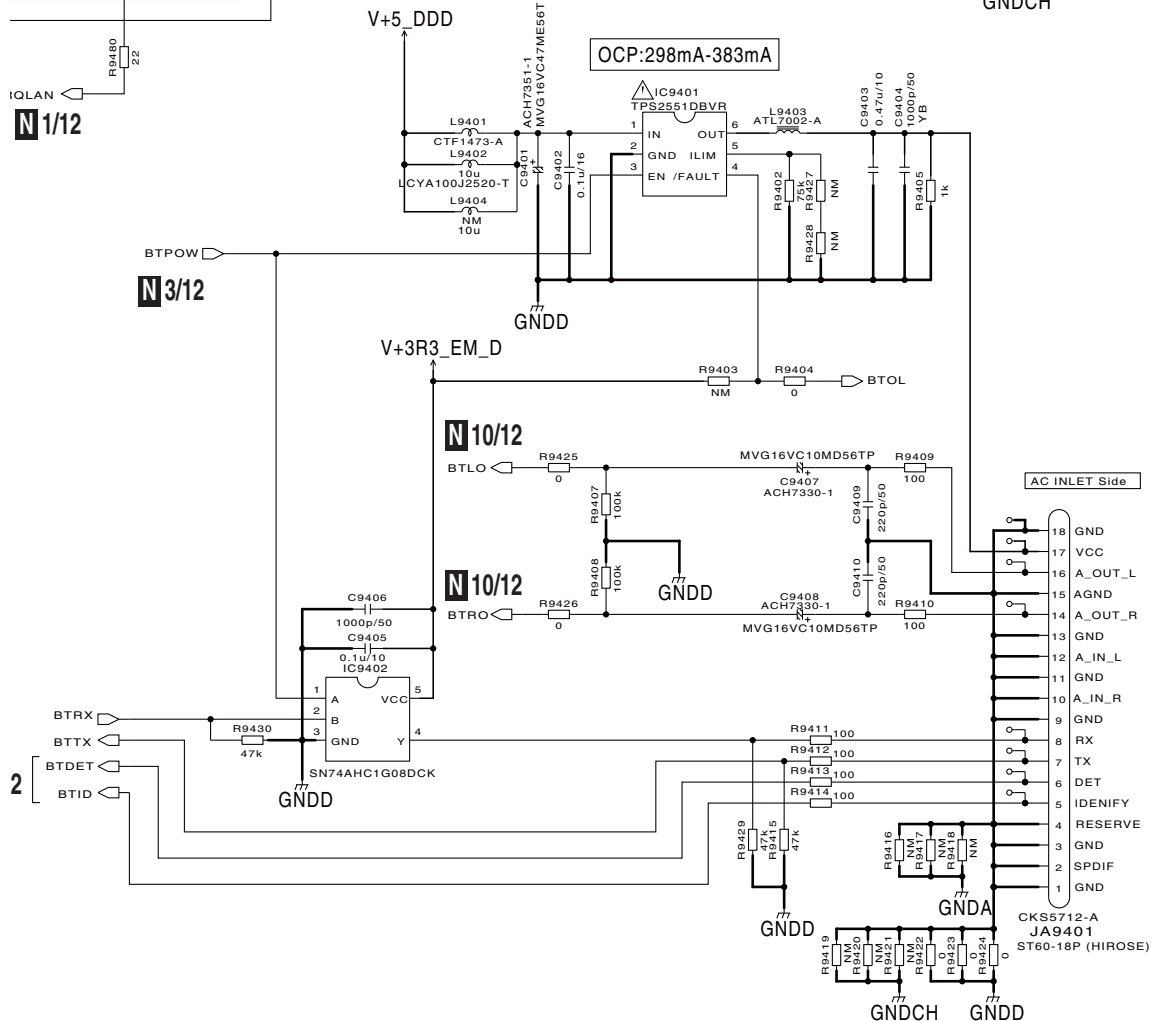
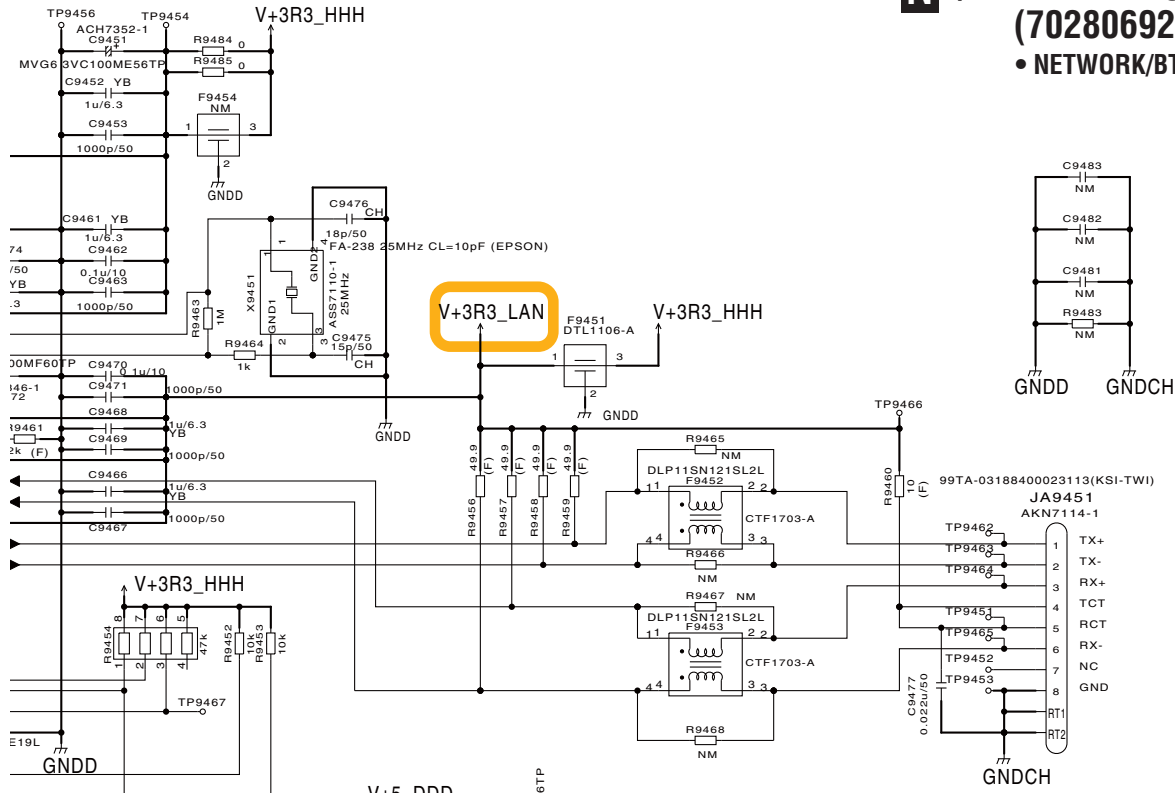
2

3

4

2-10/12

**N 4/12 D-MAIN ASSY**  
**(7028069261010-IL)**  
 • NETWORK/BT PART



VSX-1020-K

**N 4/12**

# 10.11 D-MAIN ASSY (5/12)

1

2

3

4

A

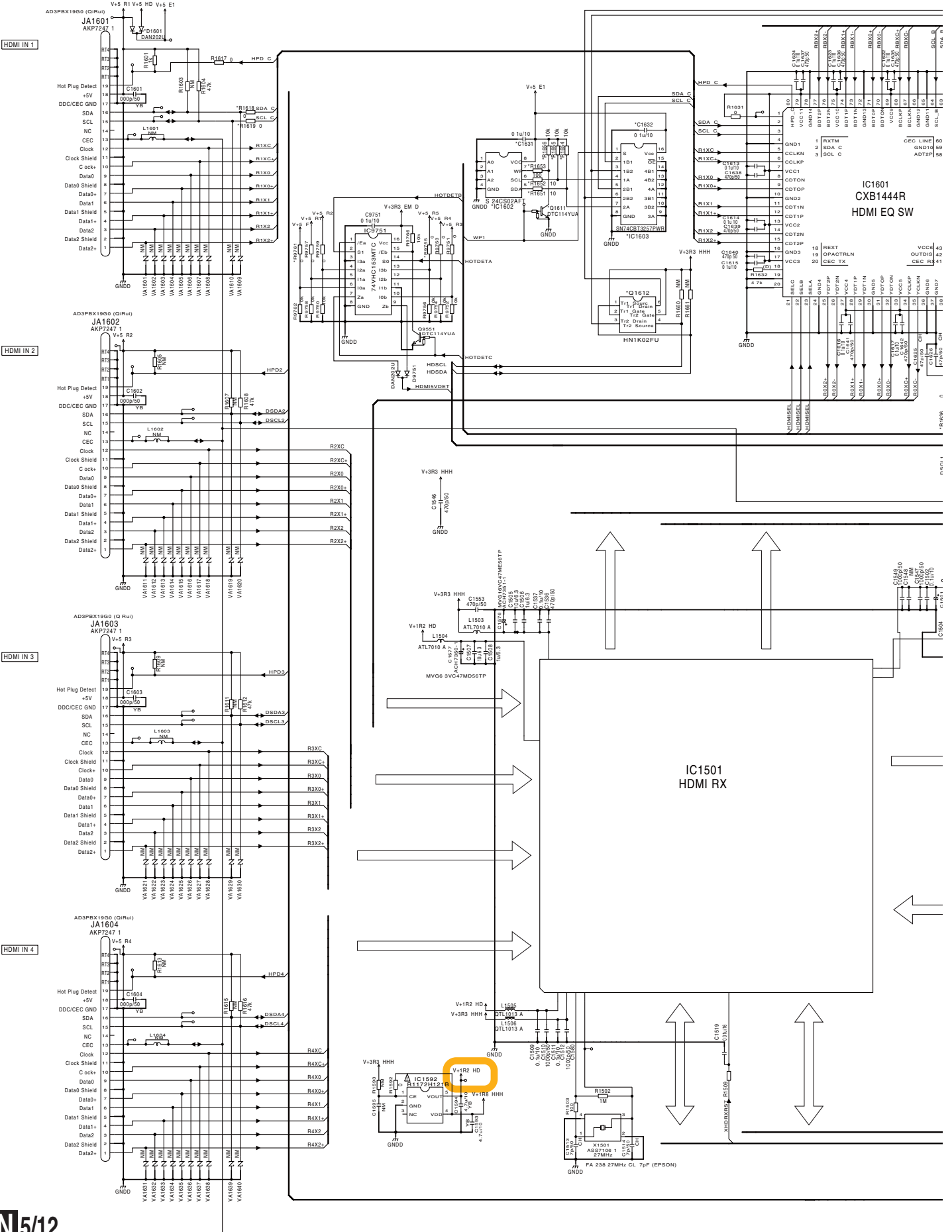
B

C

D

E

F



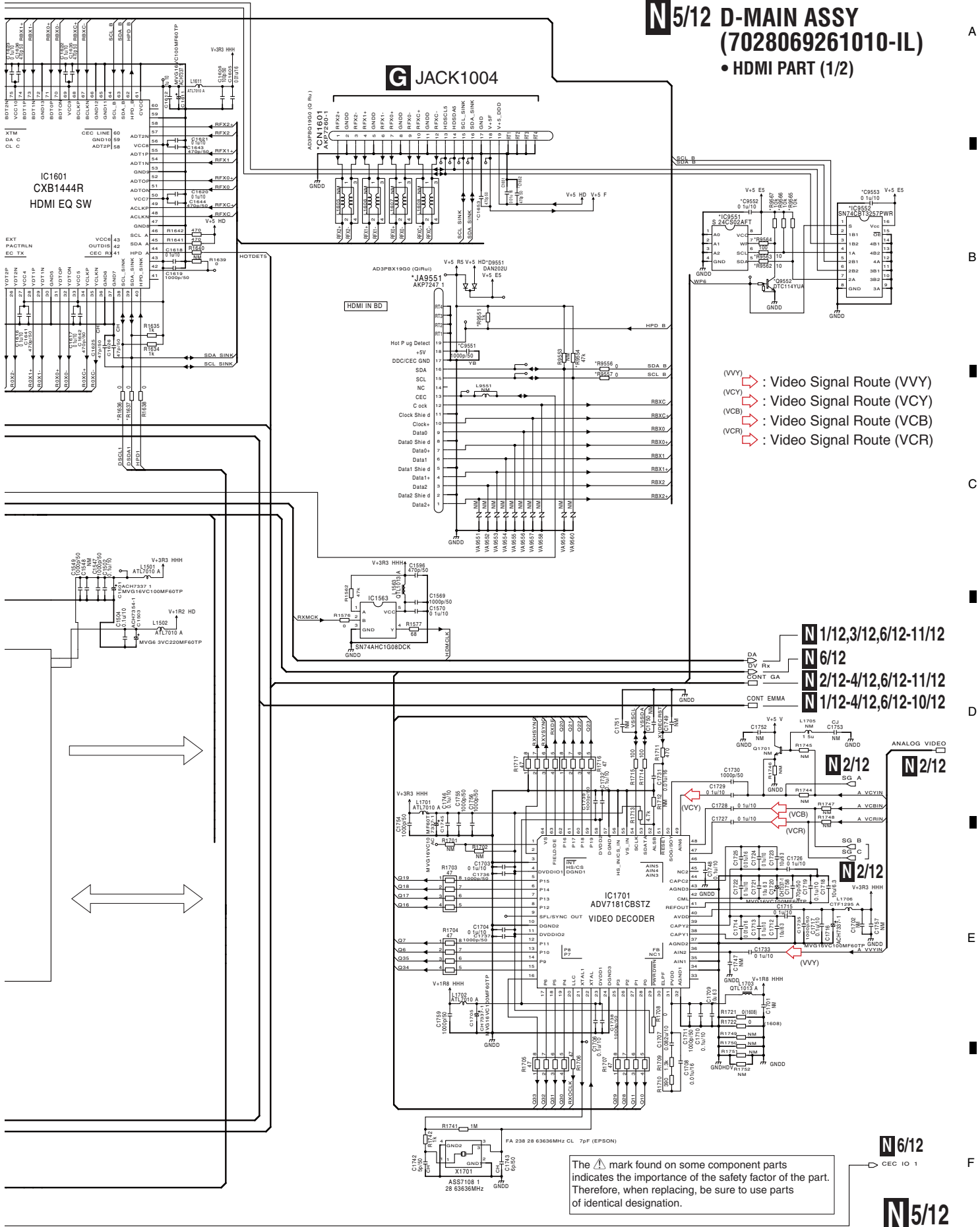
1

2

3

4

**N5/12 D-MAIN ASSY (7028069261010-IL)**  
**• HDMI PART (1/2)**



- (VVY) Video Signal Route (VVY)
- (VCY) Video Signal Route (VCY)
- (VCB) Video Signal Route (VCB)
- (VCR) Video Signal Route (VCR)

- N 1/12,3/12,6/12-11/12
- N 6/12
- N 2/12-4/12,6/12-11/12
- N 1/12-4/12,6/12-10/12

N 2/12

N 2/12

N 2/12

N 6/12

N 5/12

The  $\Delta$  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.

# 10.12 D-MAIN ASSY (6/12)

1

2

3

4

A

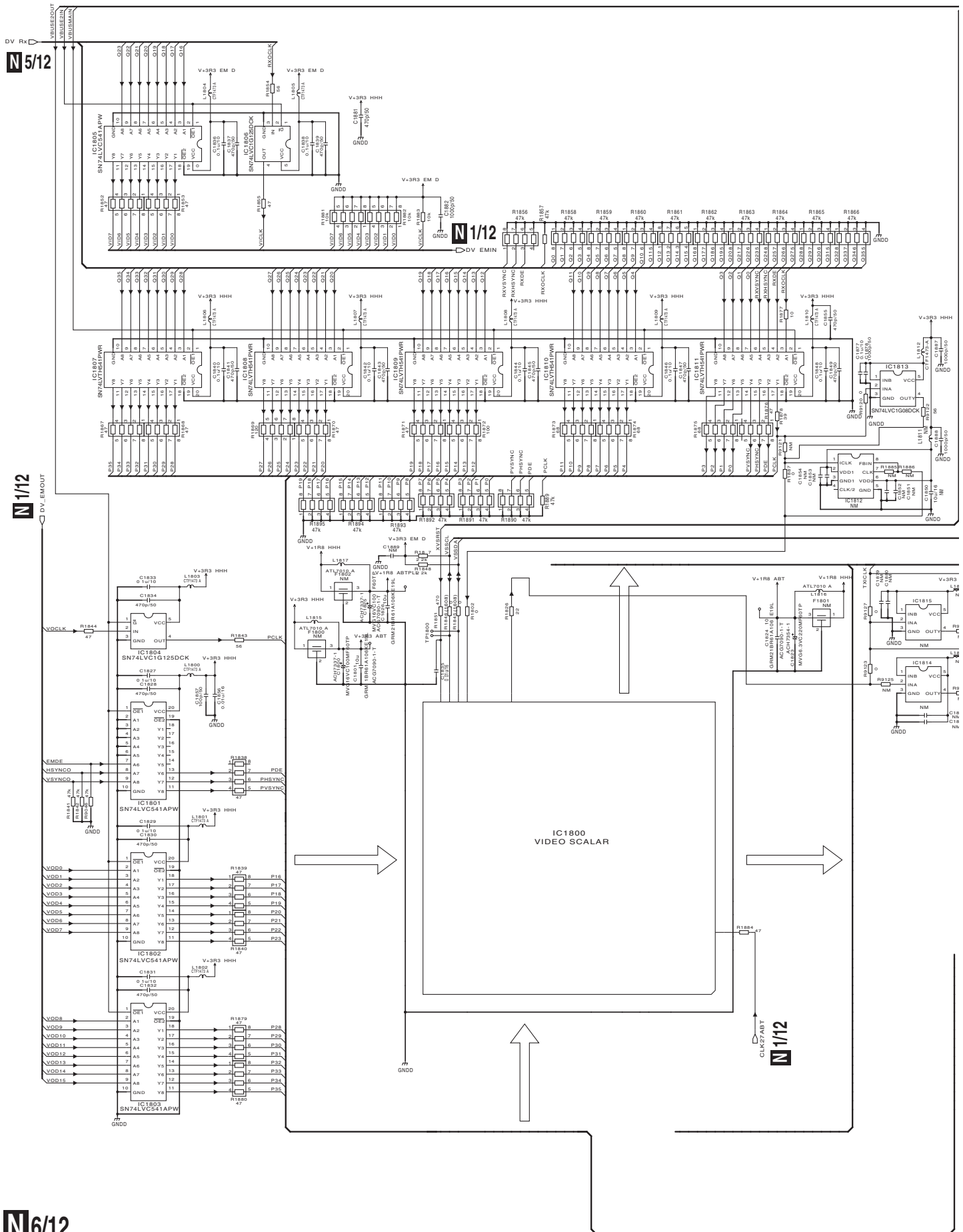
B

C

D

E

F



N 6/12

1

2

3

4

# N6/12 D-MAIN ASSY (7028069261010-IL)

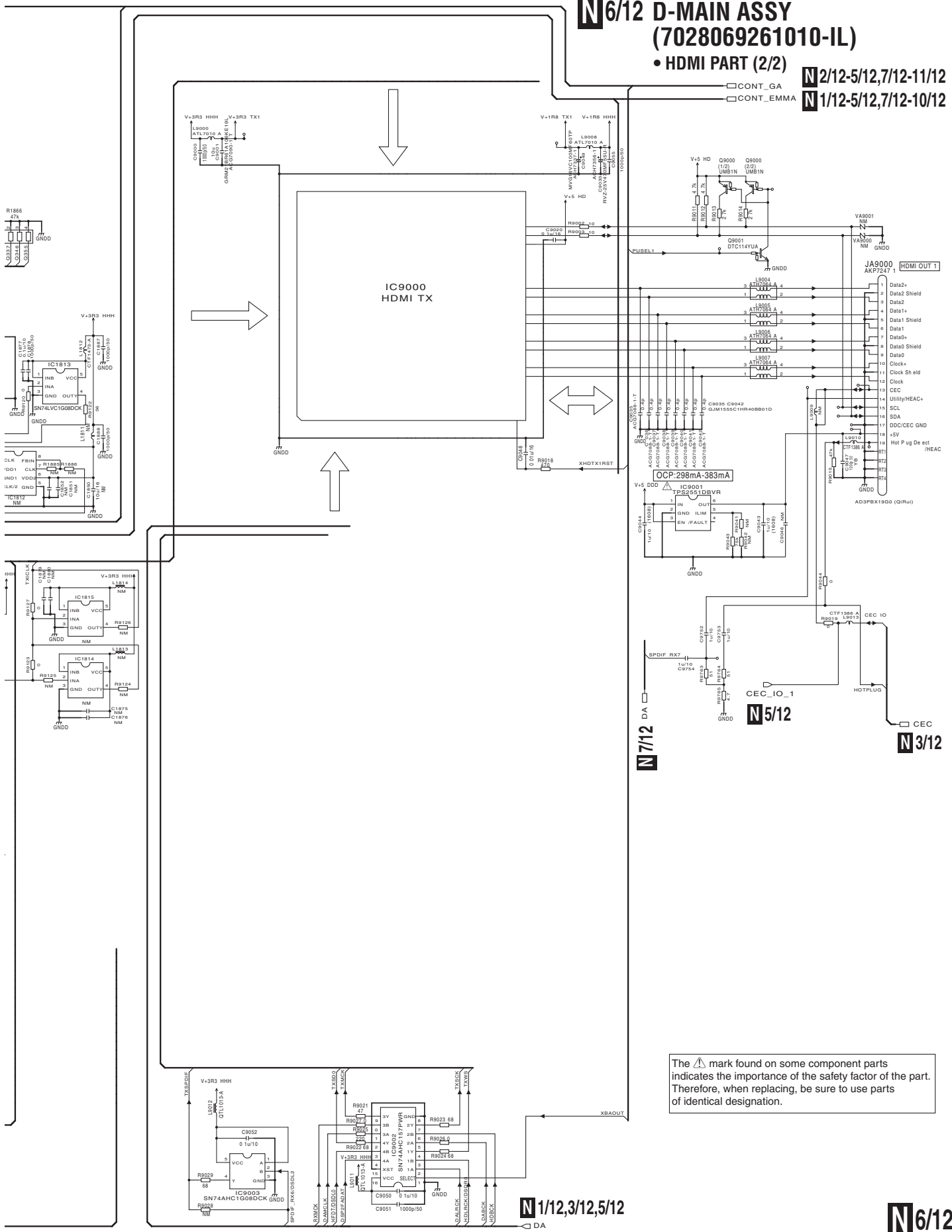
## • HDMI PART (2/2)

N2/12-5/12,7/12-11/12

N1/12-5/12,7/12-10/12

CONT\_GA

CONT\_EMMA



A  
B  
C  
D  
E  
F

N1/12,3/12,5/12

VSX-1020-K

N6/12

# 10.13 D-MAIN ASSY (7/12)

1 2 3 4

A

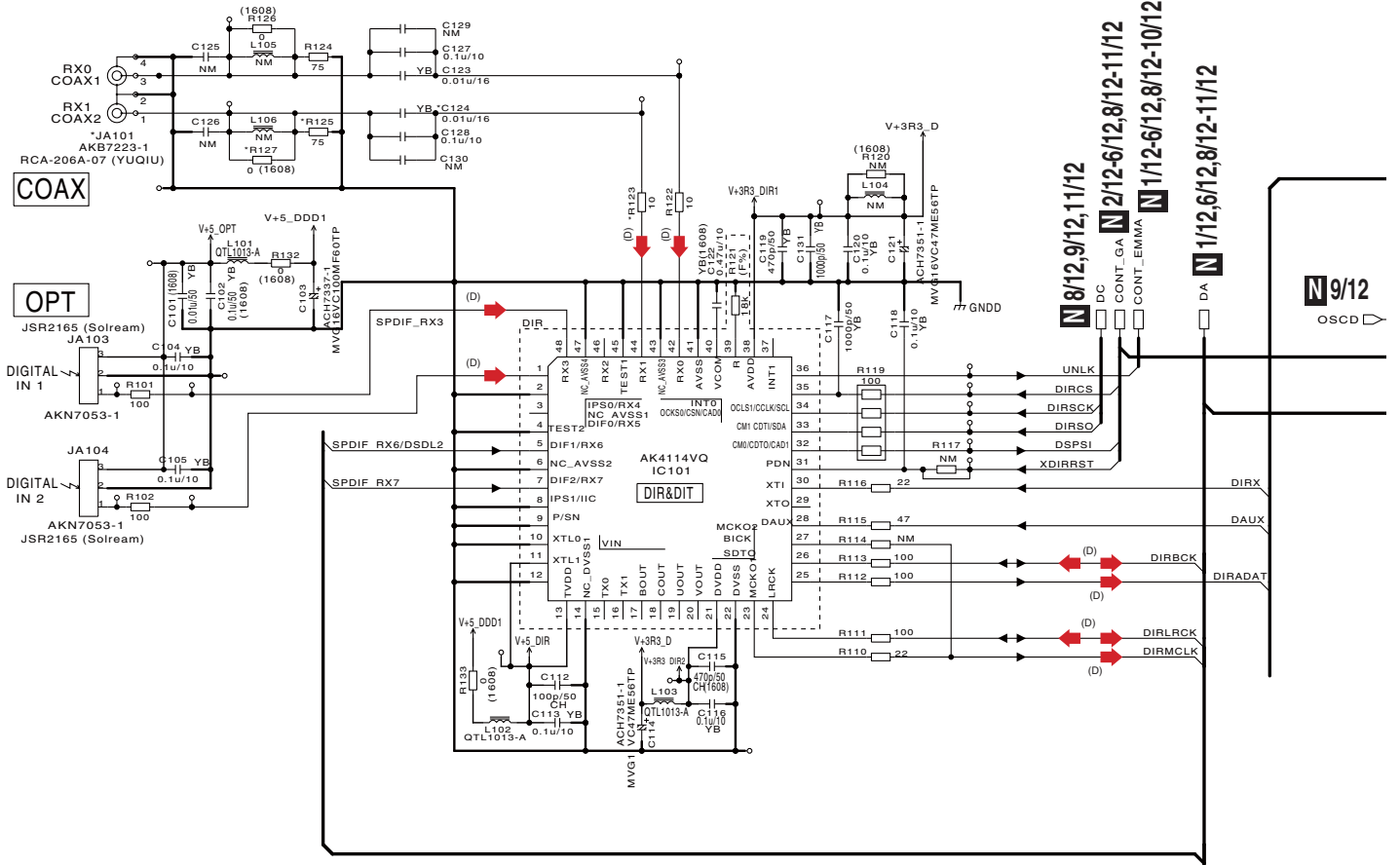
B

C

D

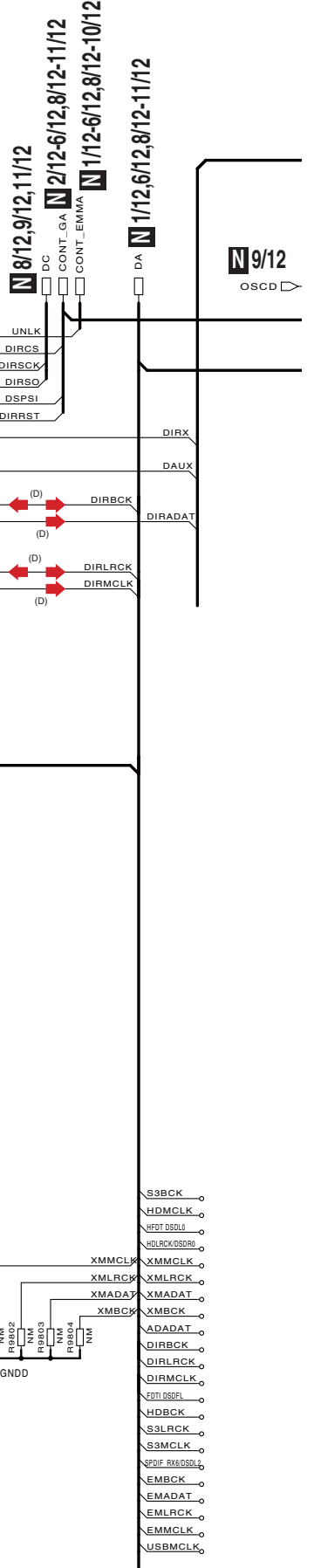
E

F



The  $\Delta$  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.

(D)  $\rightarrow$  : Digital Audio Signal Route



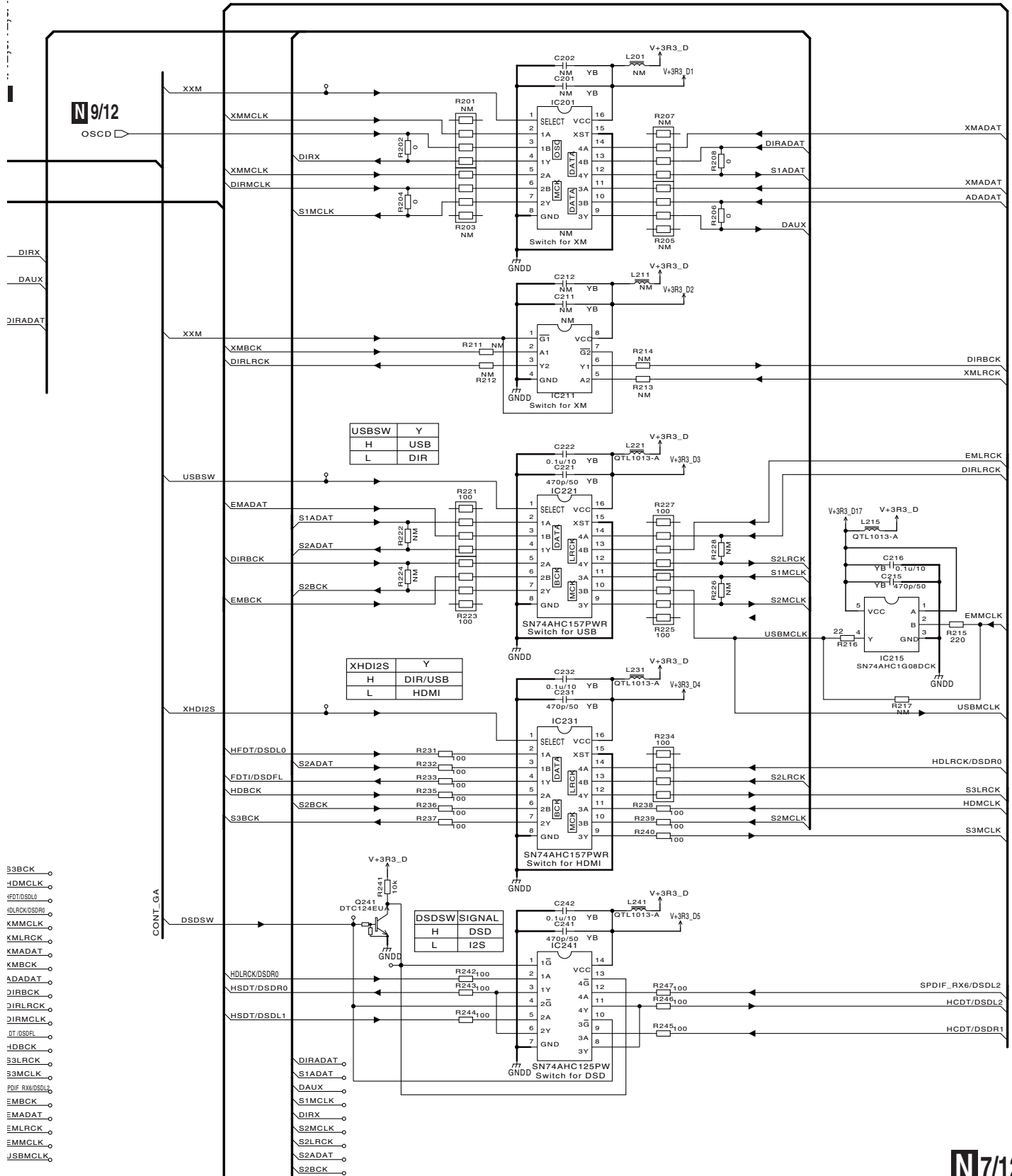
N7/12

1 2 3 4



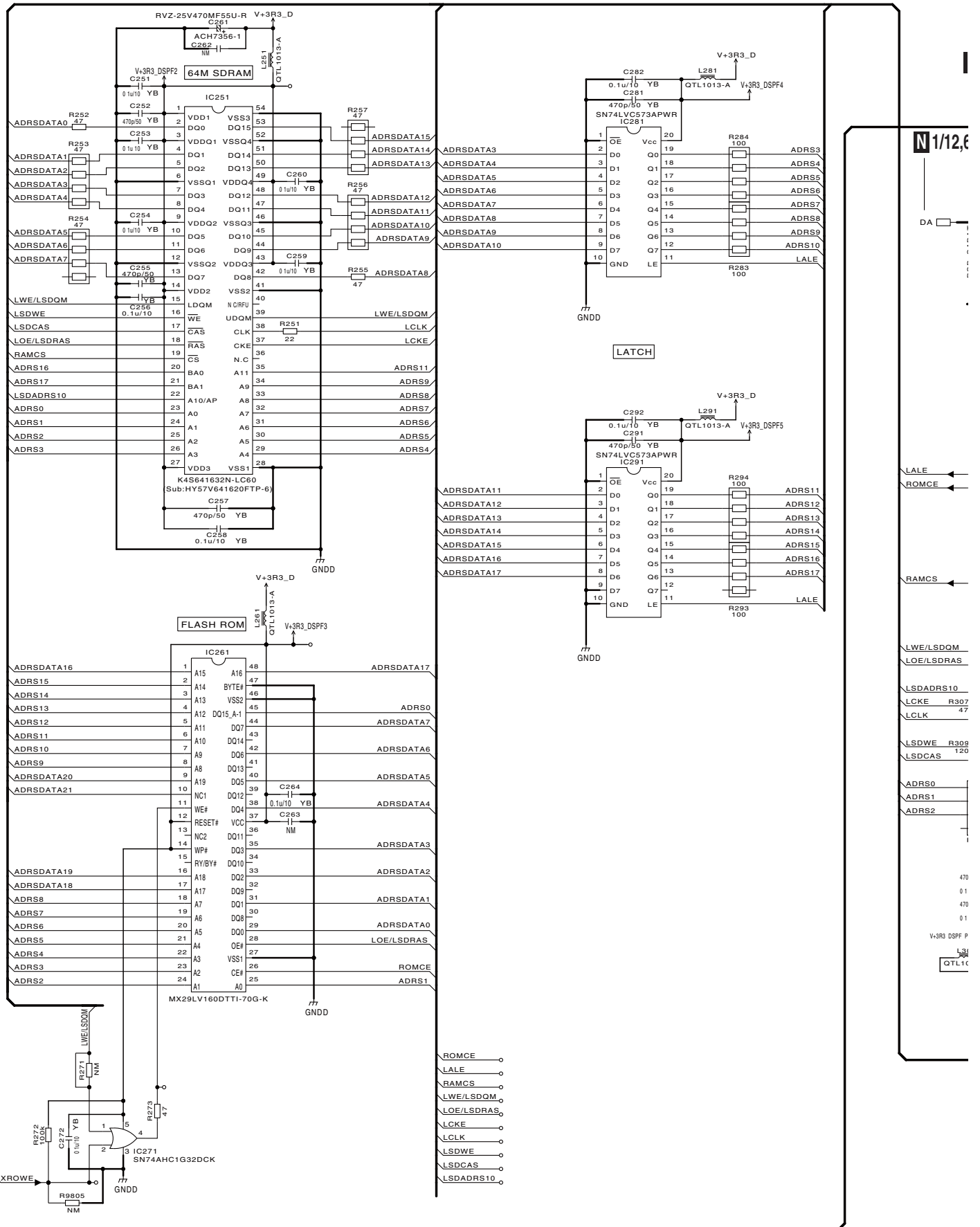
# N7/12 D-MAIN ASSY (7028069261010-IL)

• DSP PART (1/5)



# 10.14 D-MAIN ASSY (8/12)

A  
B  
C  
D  
E  
F



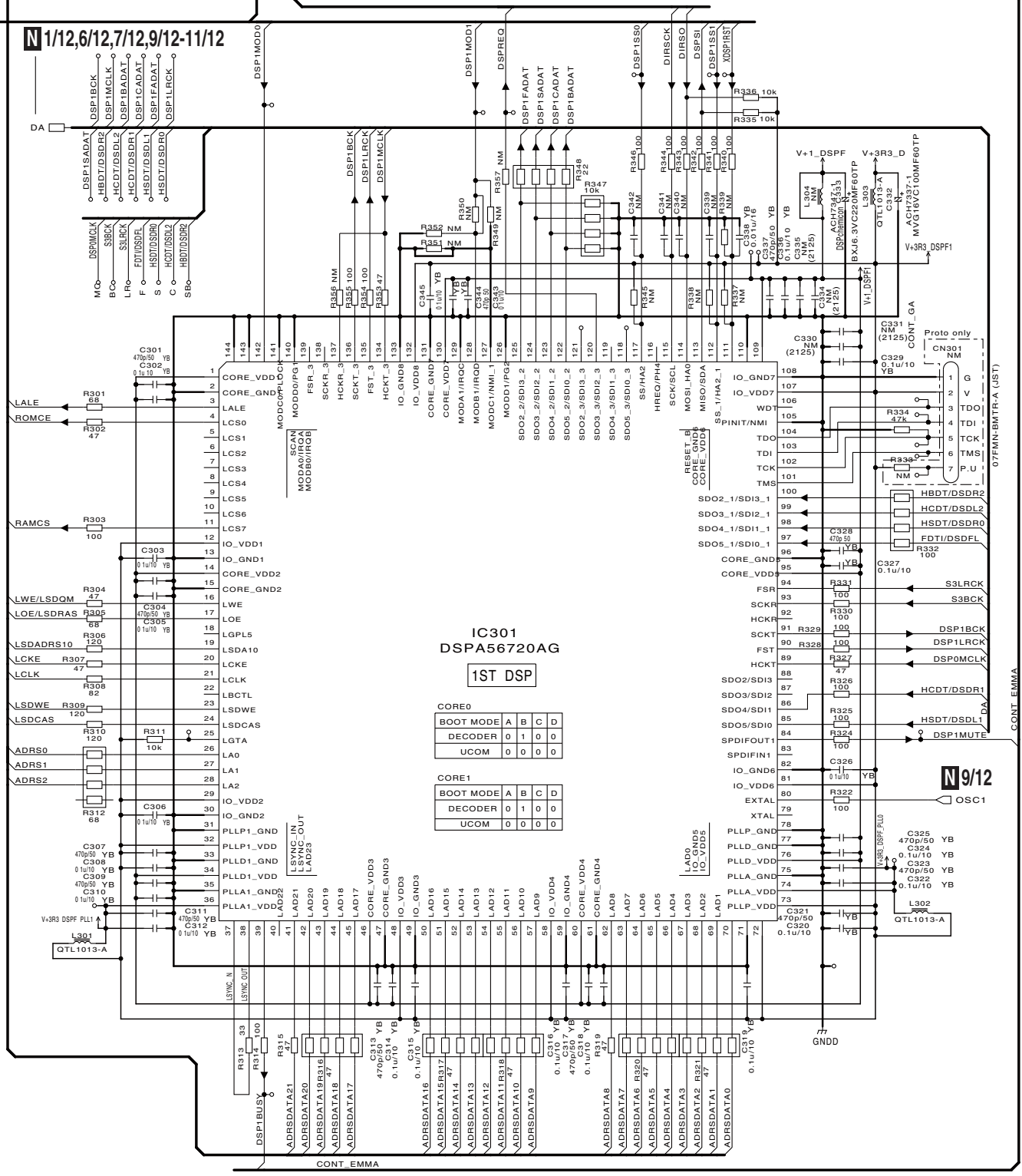
**8/12 D-MAIN ASSY**  
**(7028069261010-IL)**  
 • DSP PART (2/5)

**2/12-7/12,9/12-11/12**

**7/12,9/12,11/12**

**1/12-7/12,9/12-10/12**

**1/12,6/12,7/12,9/12-11/12**



07FMN-BMTR-A (UST)

CONT\_EMMMA

CONT\_EMMMA

CONT\_EMMMA

CONT\_EMMMA

CONT\_EMMMA

CONT\_EMMMA

CONT\_EMMMA

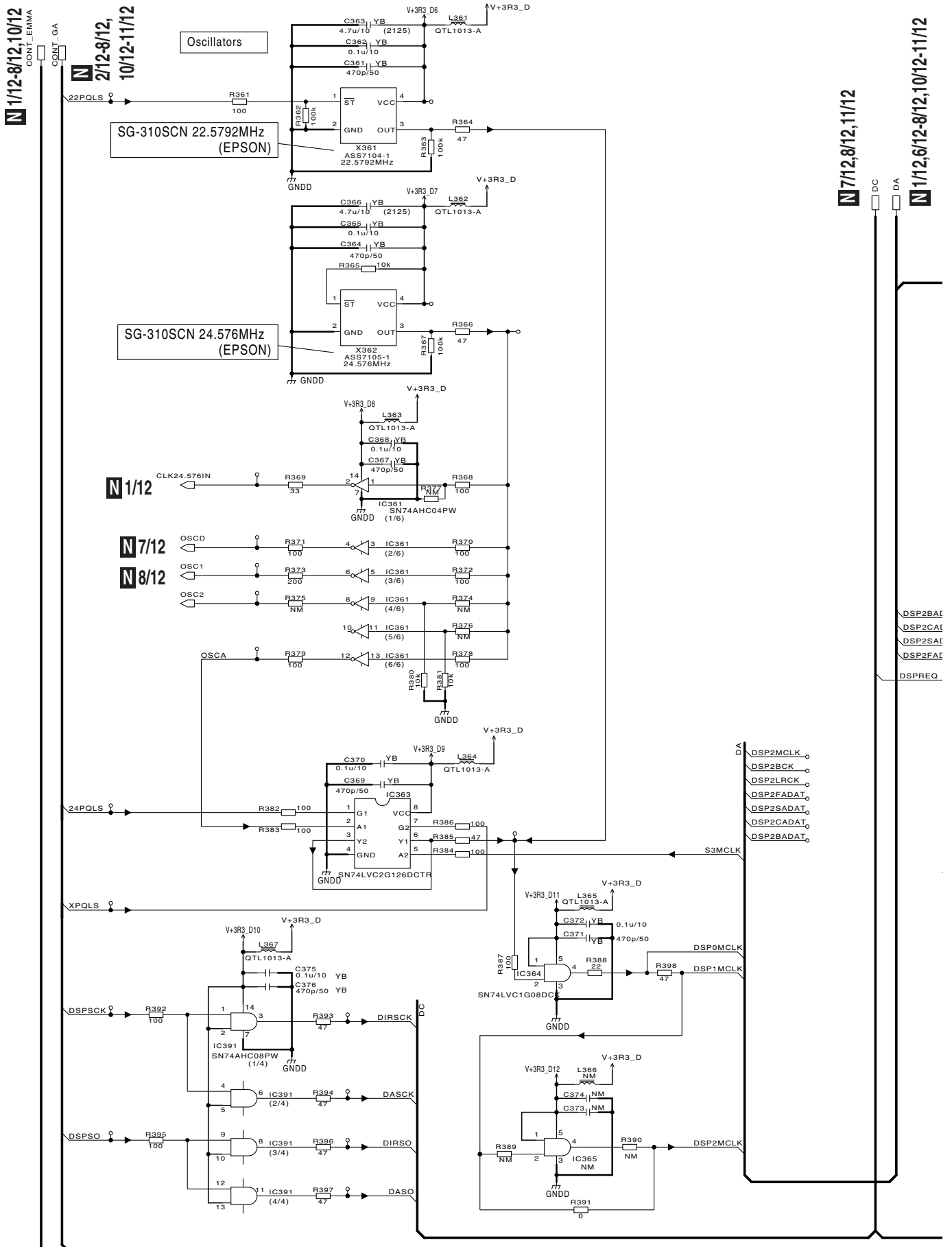
CONT\_EMMMA

CONT\_EMMMA

# 10.15 D-MAIN ASSY (9/12)

1 2 3 4

A  
B  
C  
D  
E  
F



N 1/12-8/12,10/12  
 CONT\_EMMMA  
 CONT\_GA  
 N 2/12-8/12, 10/12-11/12  
 N 7/12,8/12,11/12  
 DC  
 DA  
 N 1/12,6/12-8/12,10/12-11/12

DSP2BAI  
 DSP2CAI  
 DSP2SAI  
 DSP2FAI  
 DSPREQ

DSP2MCLK  
 DSP2BCK  
 DSP2LRCK  
 DSP2FADAT  
 DSP2SADAT  
 DSP2CADAT  
 DSP2BADAT

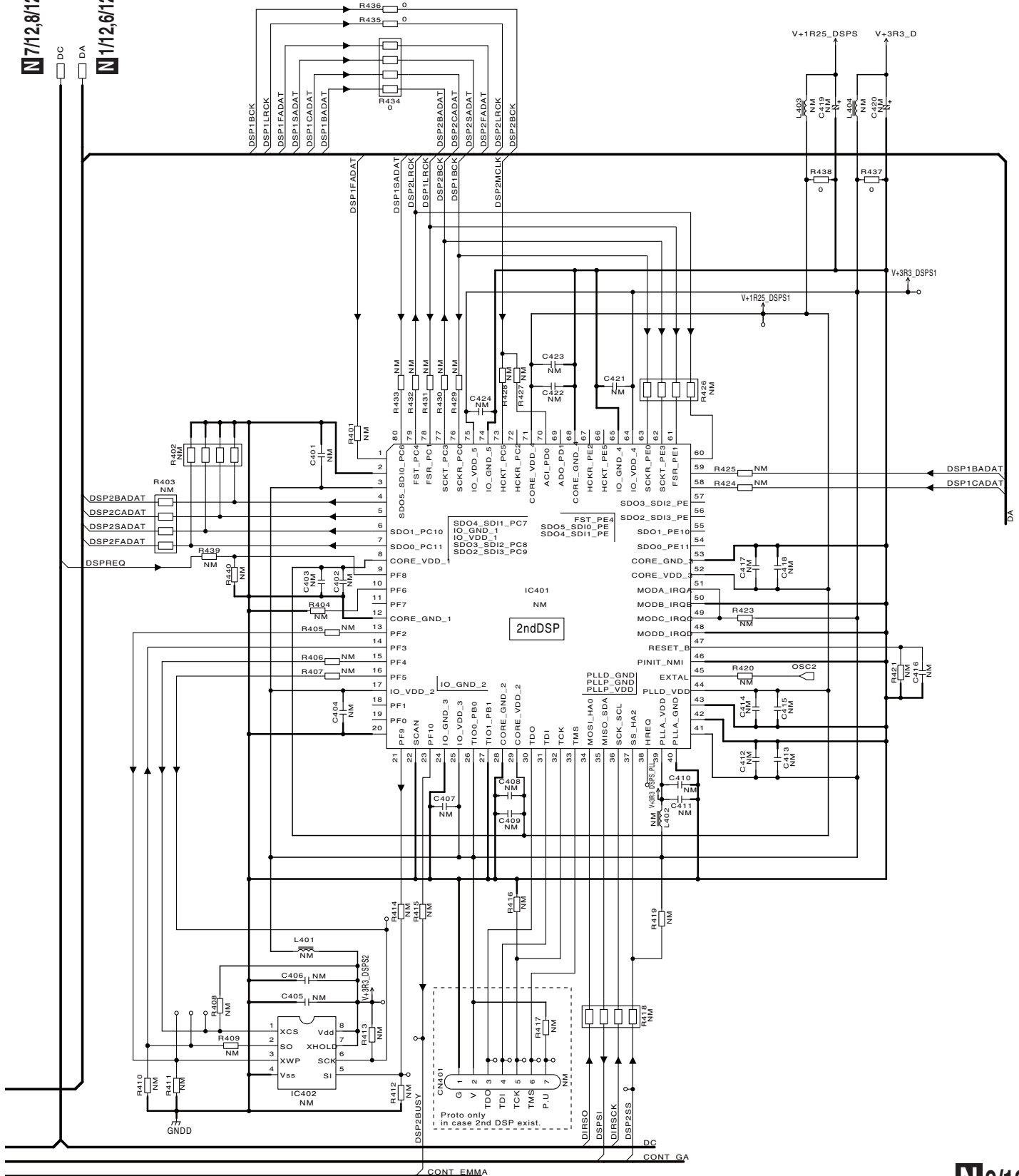
N 9/12

1 2 3 4

# N9/12 D-MAIN ASSY (7028069261010-IL) • DSP PART (3/5)

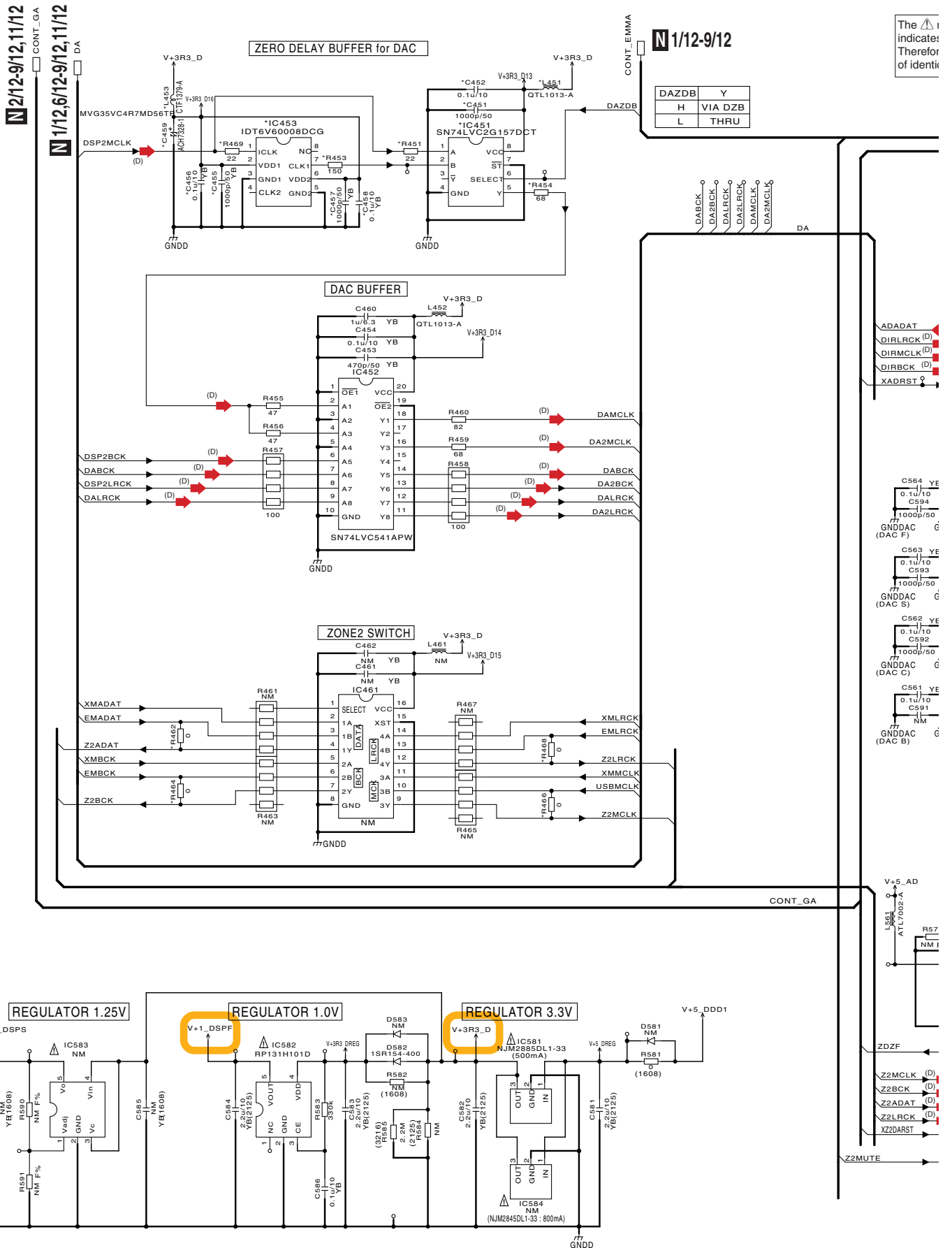
N7/12,8/12,11/12

N11/12,6/12-8/12,10/12-11/12



A  
B  
C  
D  
E  
F

# 10.16 D-MAIN ASSY (10/12)

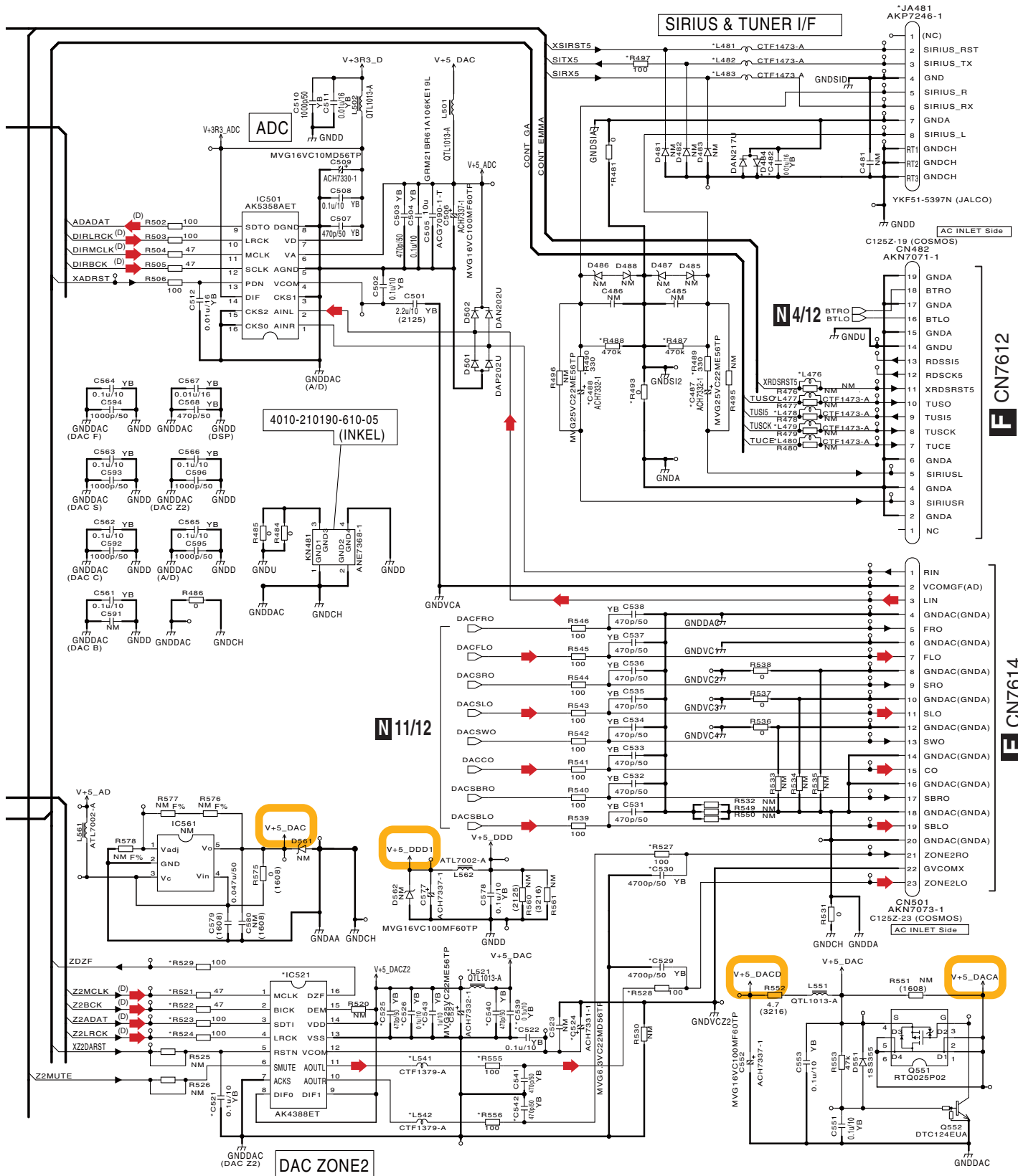


The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

- ▶ : Audio Signal Route
- ▶ (D) : Digital Audio Signal Route

# N10/12 D-MAIN ASSY (7028069261010-IL)

• DSP PART (4/5)

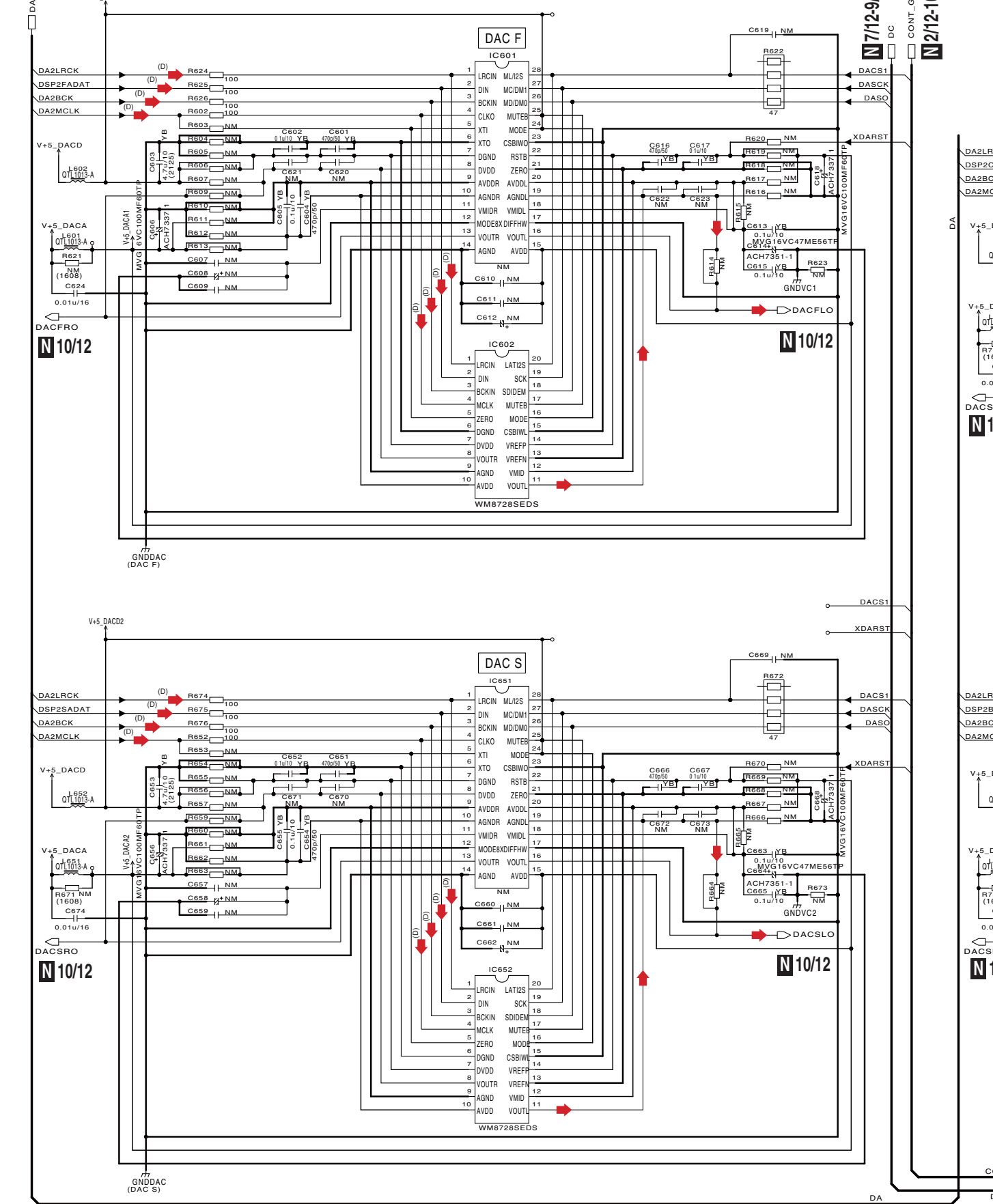


VSX-1020-K

# 10.17 D-MAIN ASSY (11/12)

1/12,6/12-10/12

A  
B  
C  
D  
E  
F

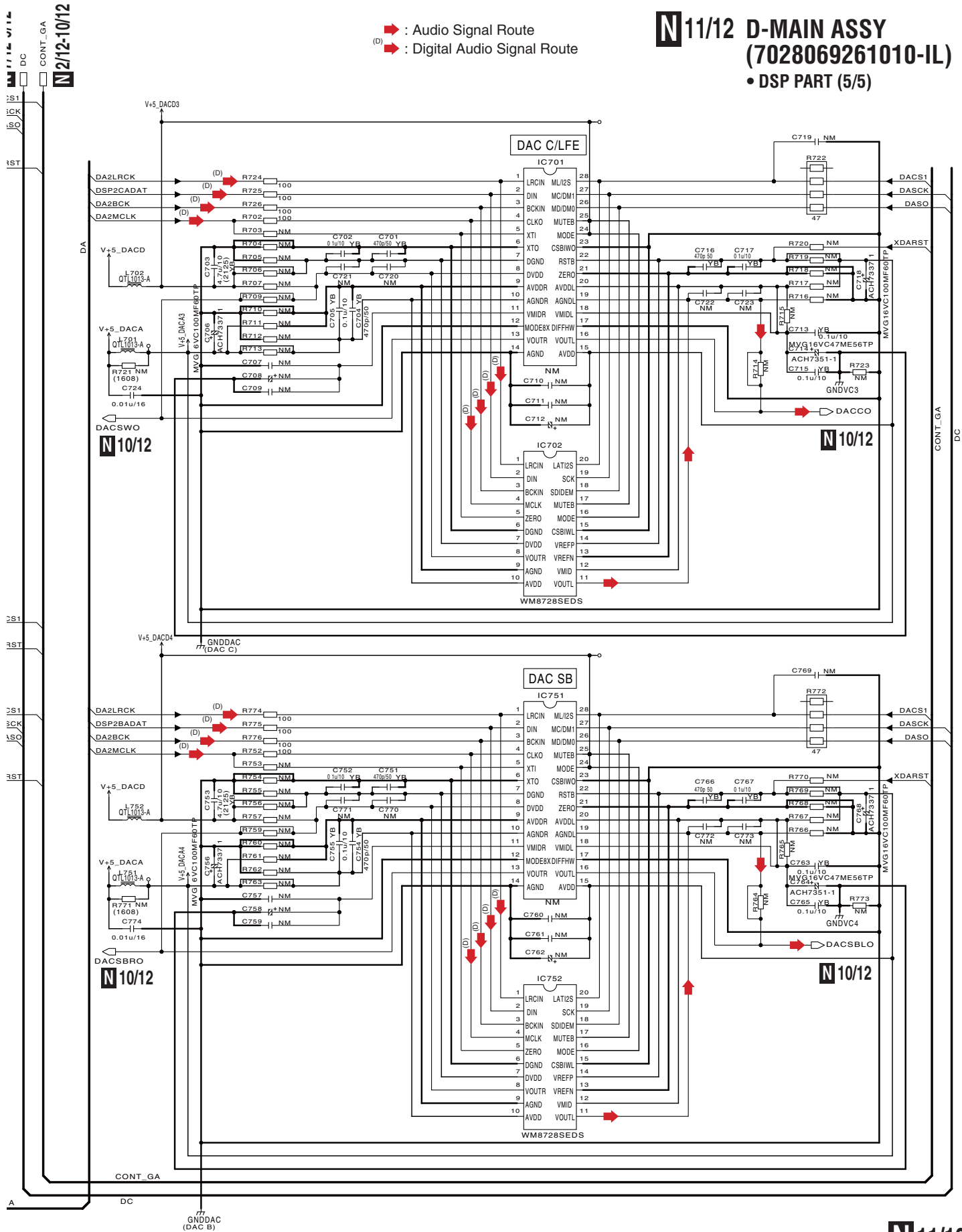


11/12



# N11/12 D-MAIN ASSY (7028069261010-IL) • DSP PART (5/5)

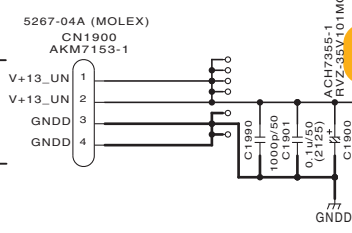
➔ : Audio Signal Route  
➔(D) : Digital Audio Signal Route



# 10.18 D-MAIN ASSY (12/12)

1 2 3 4

A



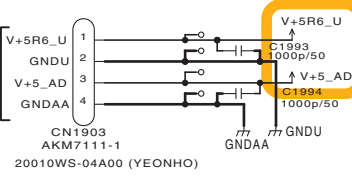
B



C

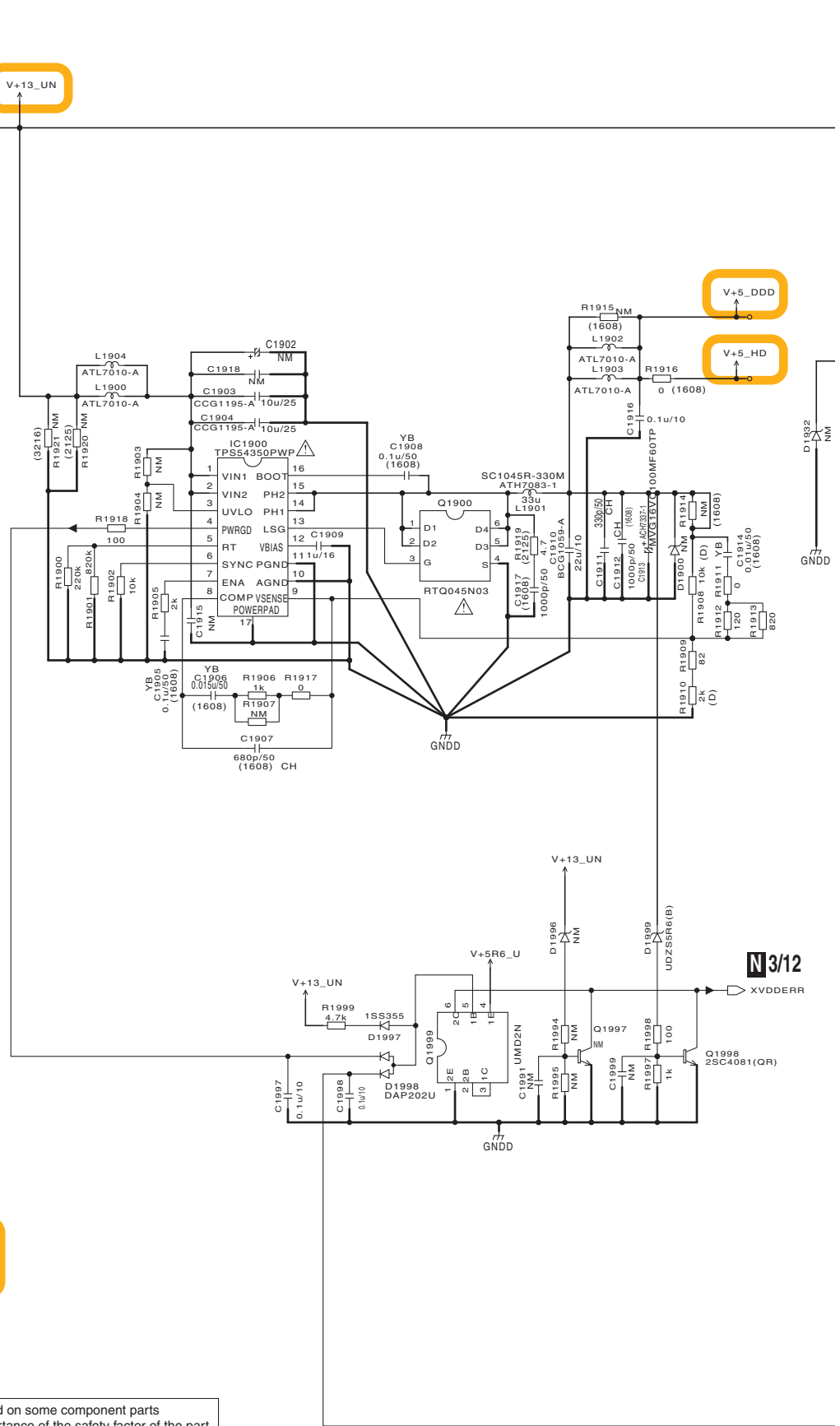
D

E



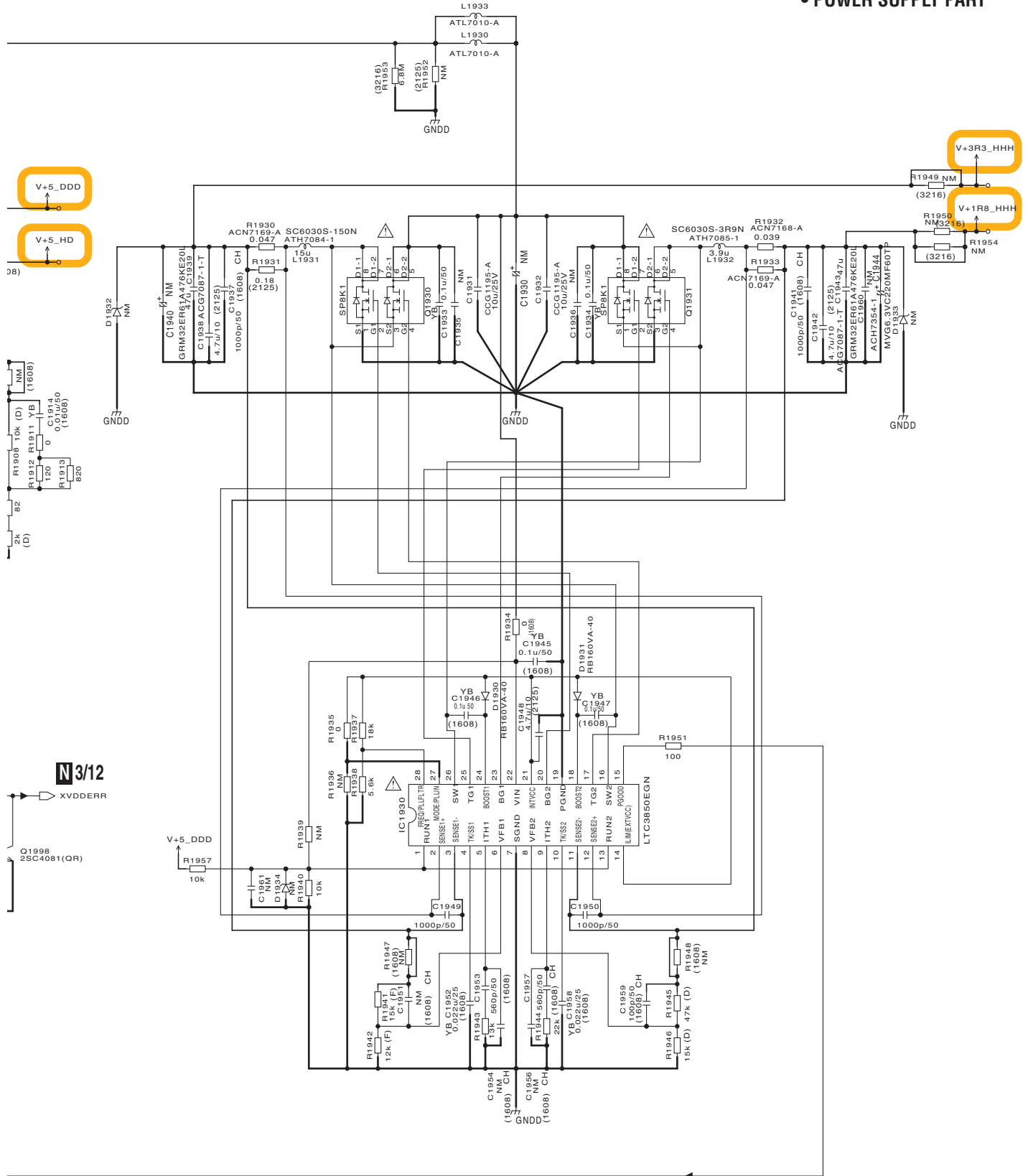
F

The  $\triangle$  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.



1 2 3 4

**N12/12 D-MAIN ASSY  
(7028069261010-IL)**  
• POWER SUPPLY PART



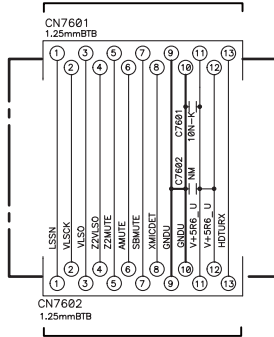
**N3/12**  
XVDDERR

VSX-1020-K

# 10.19 MAIN and BRIDGE1 ASSYS

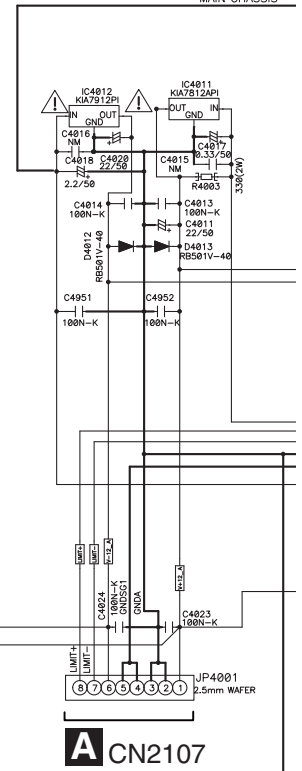
## **P** BRIDGE1 ASSY (7028069213010-IL)

**N** 3/12 CN1401

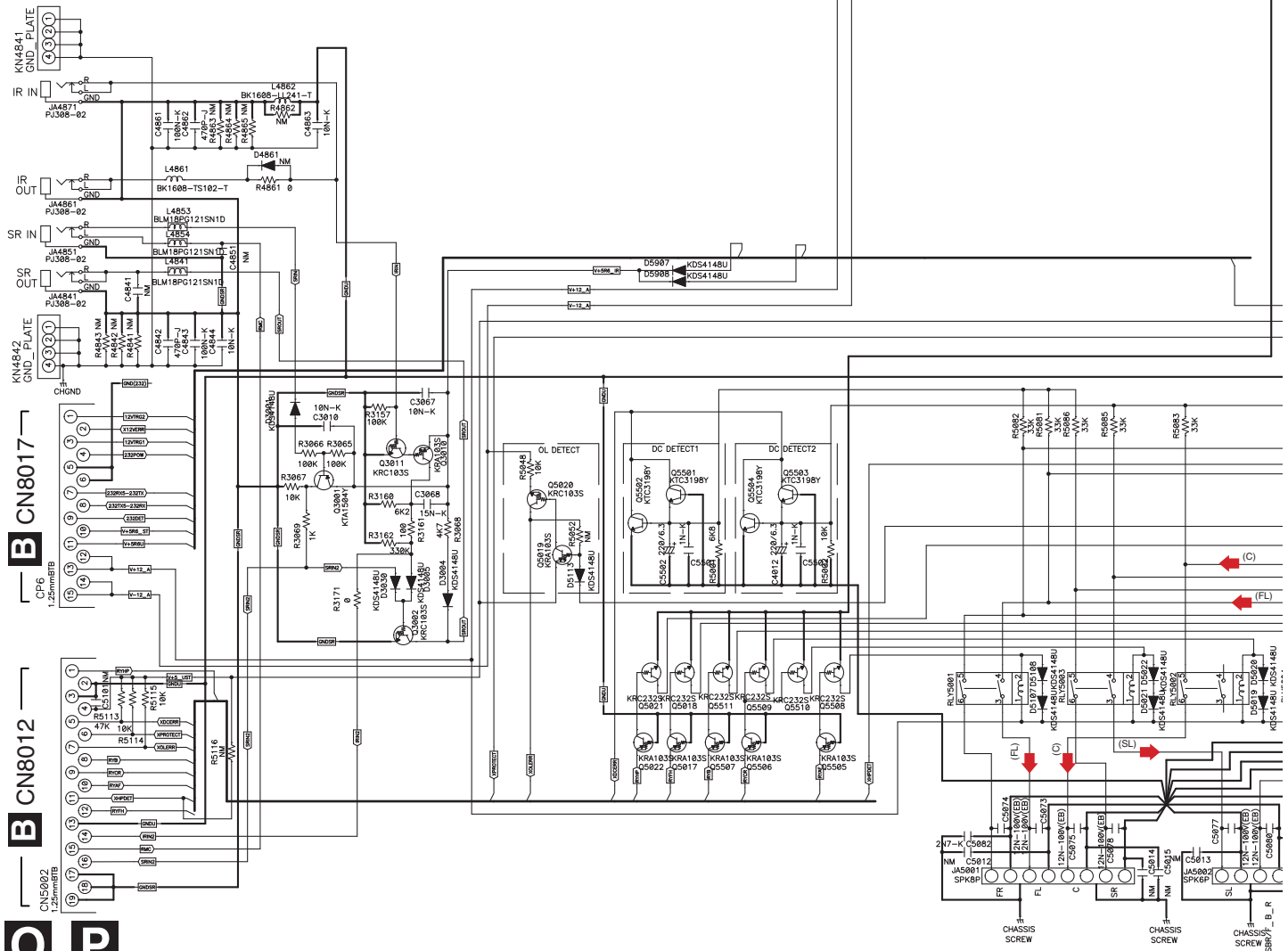


**A** CN2201

MAIN CHASSIS



## **O** MAIN ASSY (7028069211010-IL)



VSX-1020-K



# 11. PCB CONNECTION DIAGRAM

## 11.1 AUDIO ASSY

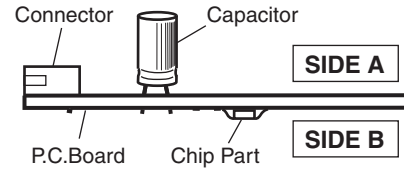
**SIDE A**

**SIDE A**

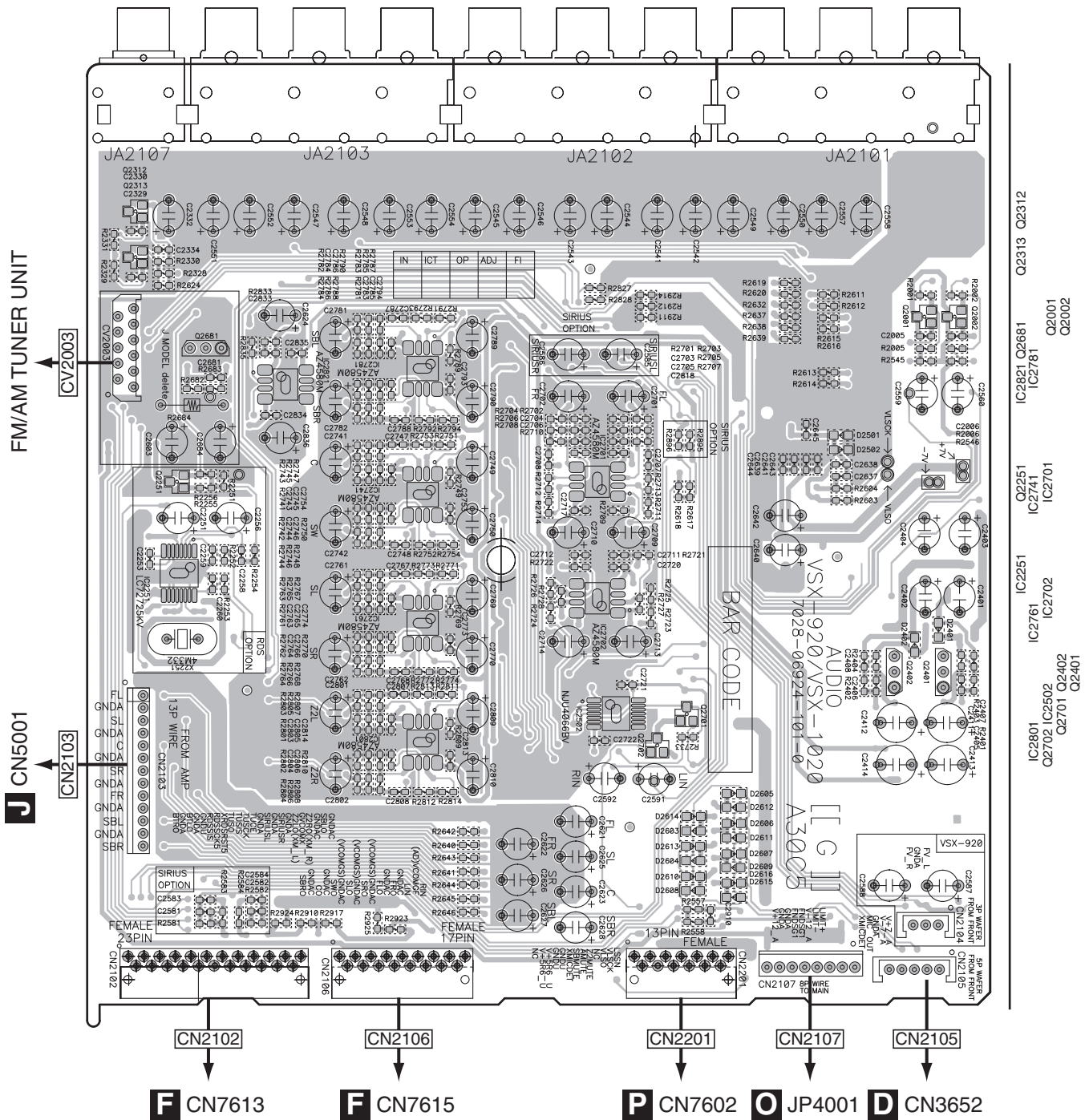
### NOTE FOR PCB DIAGRAMS :

1. 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.

2. View point of PCB diagrams.



## **A** AUDIO ASSY



FM/AM TUNER UNIT

J CN5001

**F** CN7613

**F** CN7615

**P** CN7602

**O** JP4001

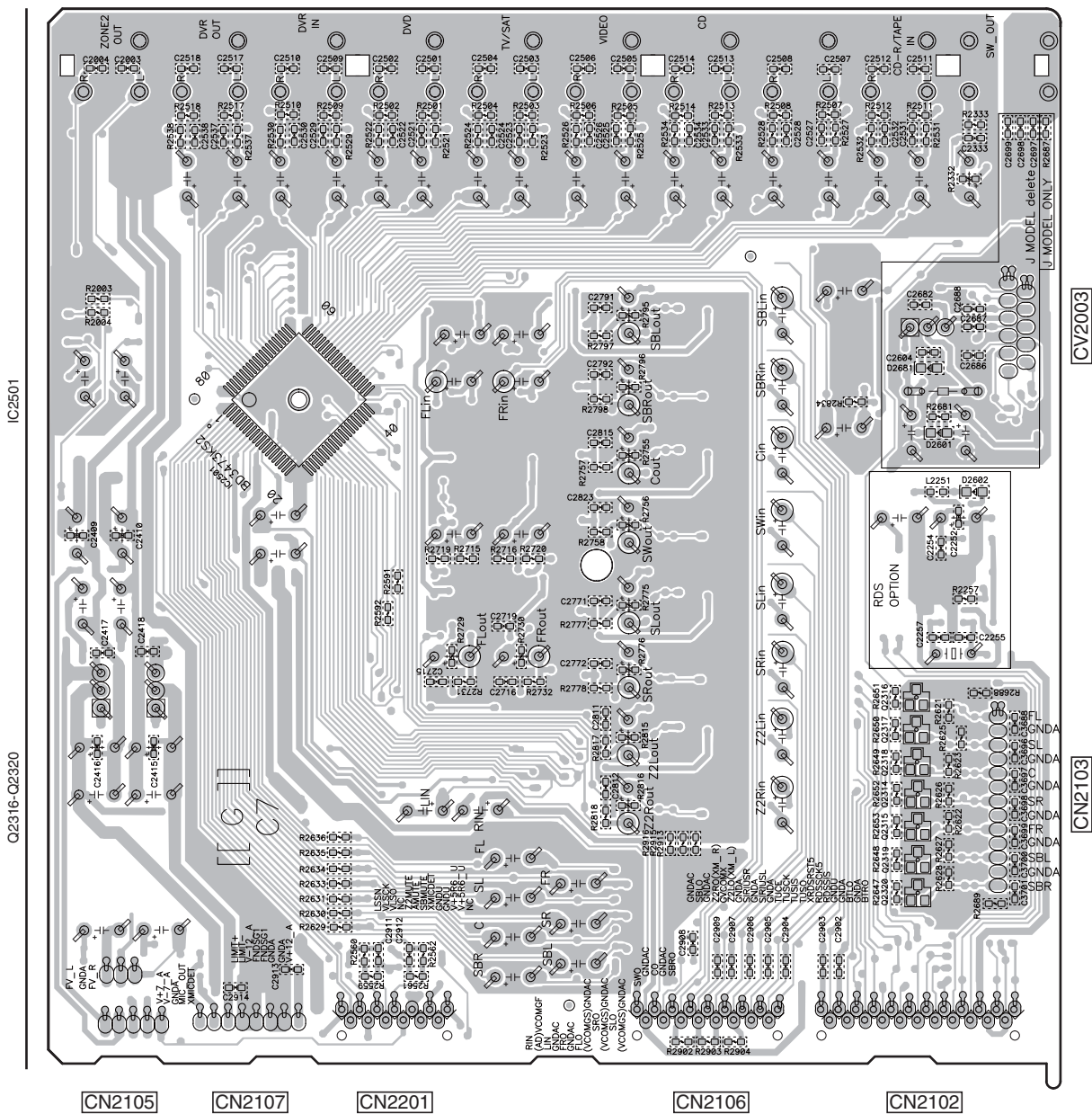
**D** CN3652

**A**

SIDE B

SIDE B

# A AUDIO ASSY



VSX-1020-K

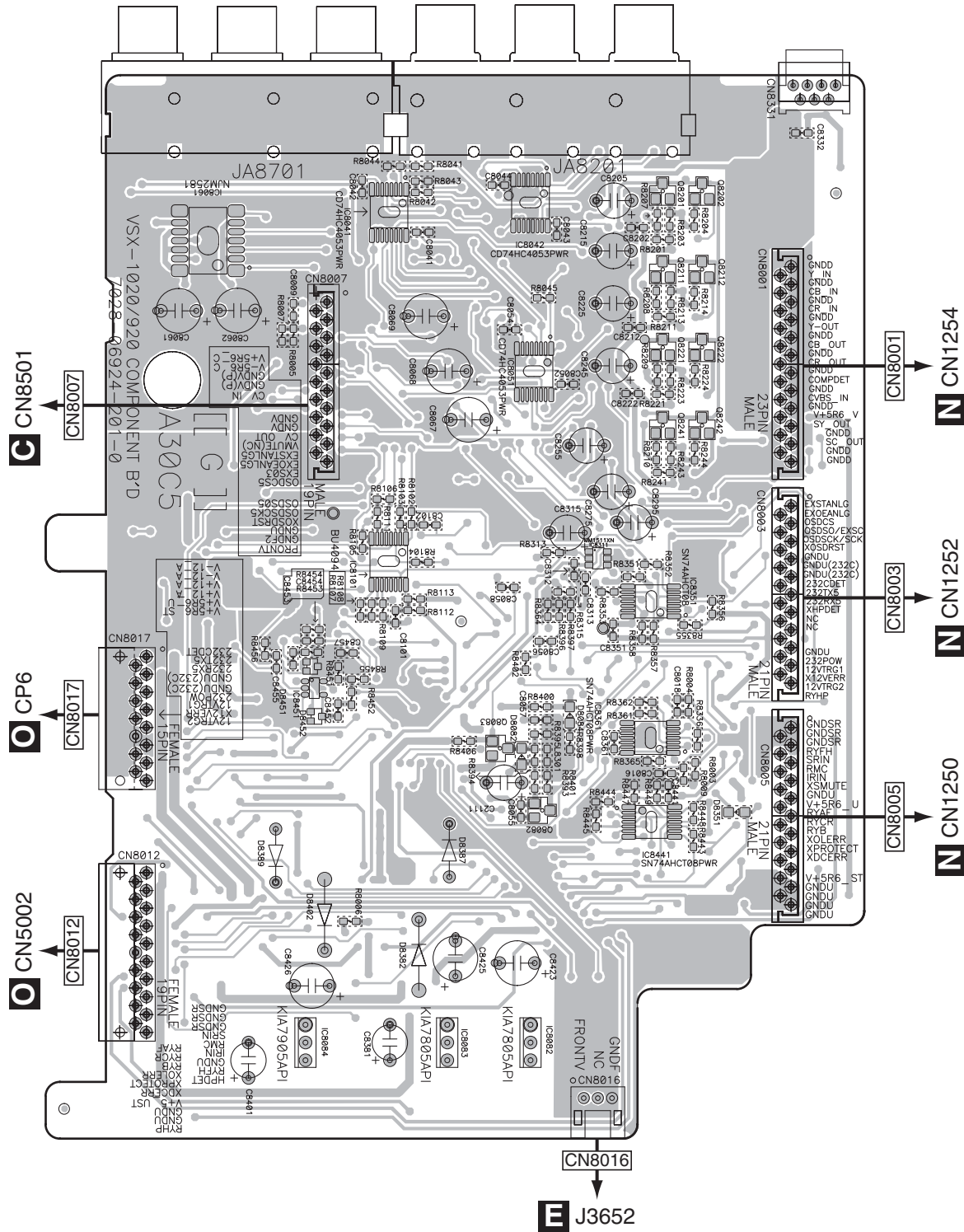
A

# 11.2 COMPONENT ASSY

**SIDE A**

**SIDE A**

## **B** COMPONENT ASSY



IC8061	IC8041	IC8042	Q8201	Q8201
			Q8211	Q8212
		IC8051	Q8221	Q8222
			Q8241	Q8242
IC8451	IC8101		IC8311	IC8351
		Q8303		IC8361
		Q8082		IC8441
IC8084	IC8083	IC8082		

**VSX-1020-K**

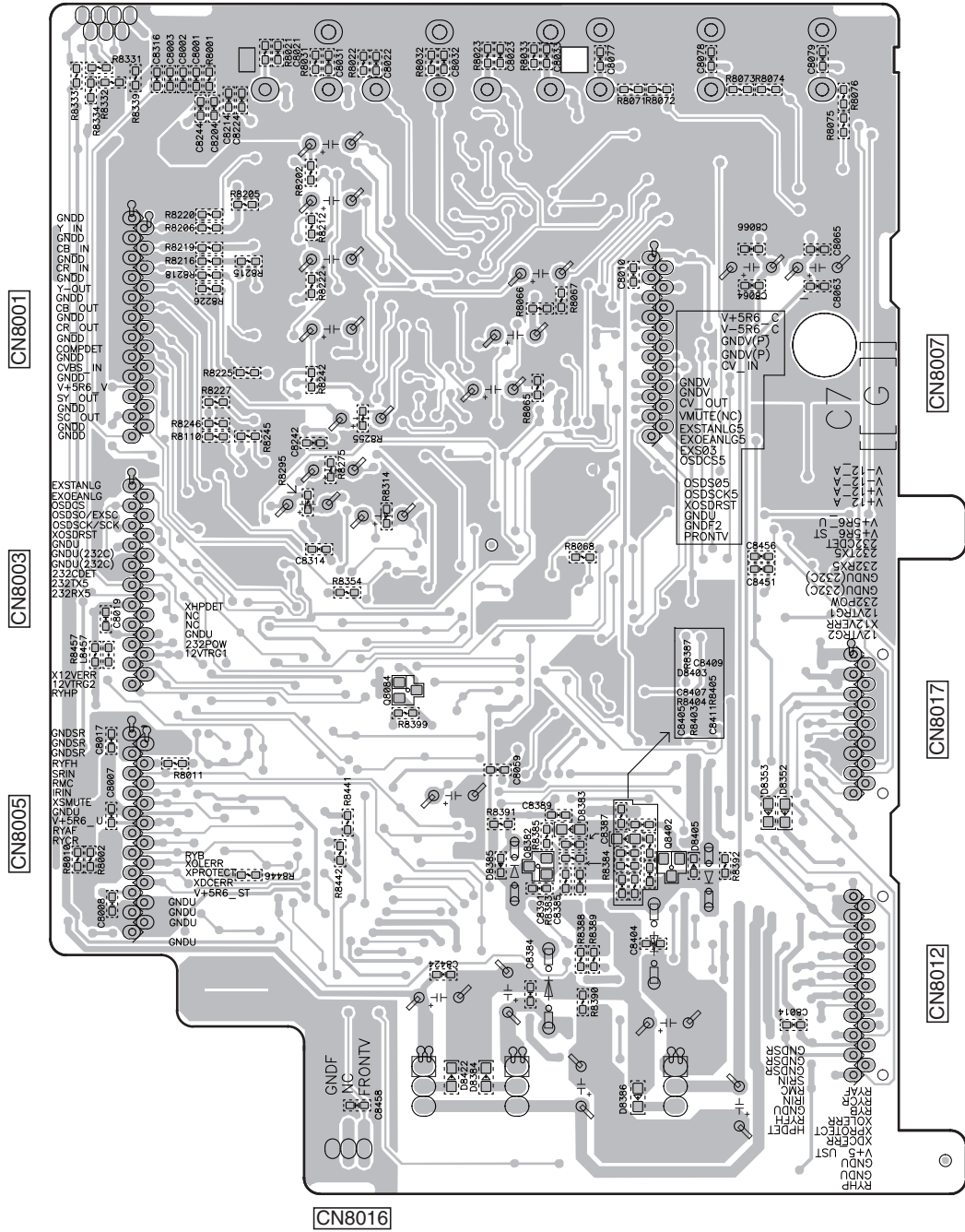
**B**



SIDE B

SIDE B

# B COMPONENT ASSY



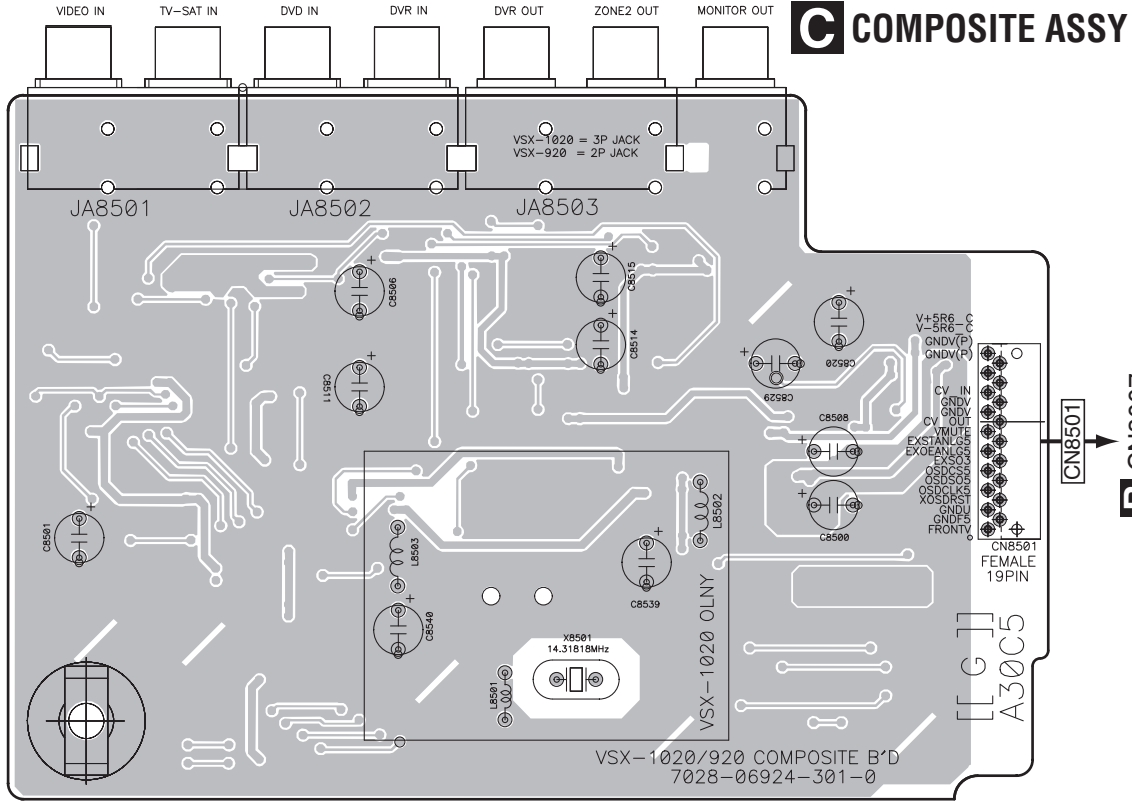
Q8084      Q8382      Q8402

A  
B  
C  
D  
E  
F

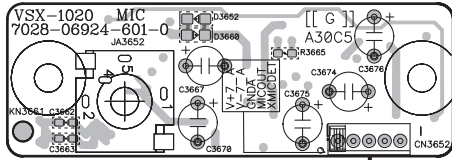
# 11.3 COMPOSITE, MIC, F-VIDEO and BRIDGE2 ASSYS

**SIDE A**

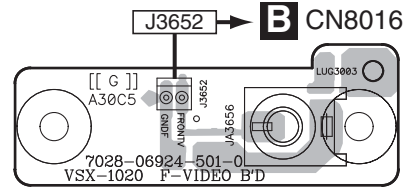
**SIDE A**



**D MIC ASSY**

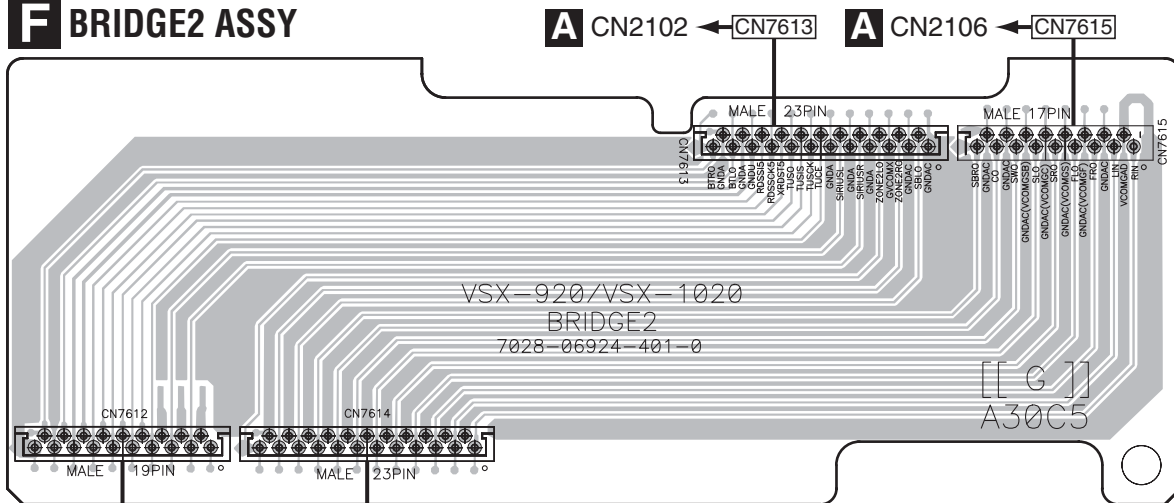


**A** CN2105



**E F-VIDEO ASSY**

**F BRIDGE2 ASSY**



**A** CN2102 ← CN7613

**A** CN2106 ← CN7615

**N** CN482 ← CN7612

CN7614 → **N** CN501

**C D E F**

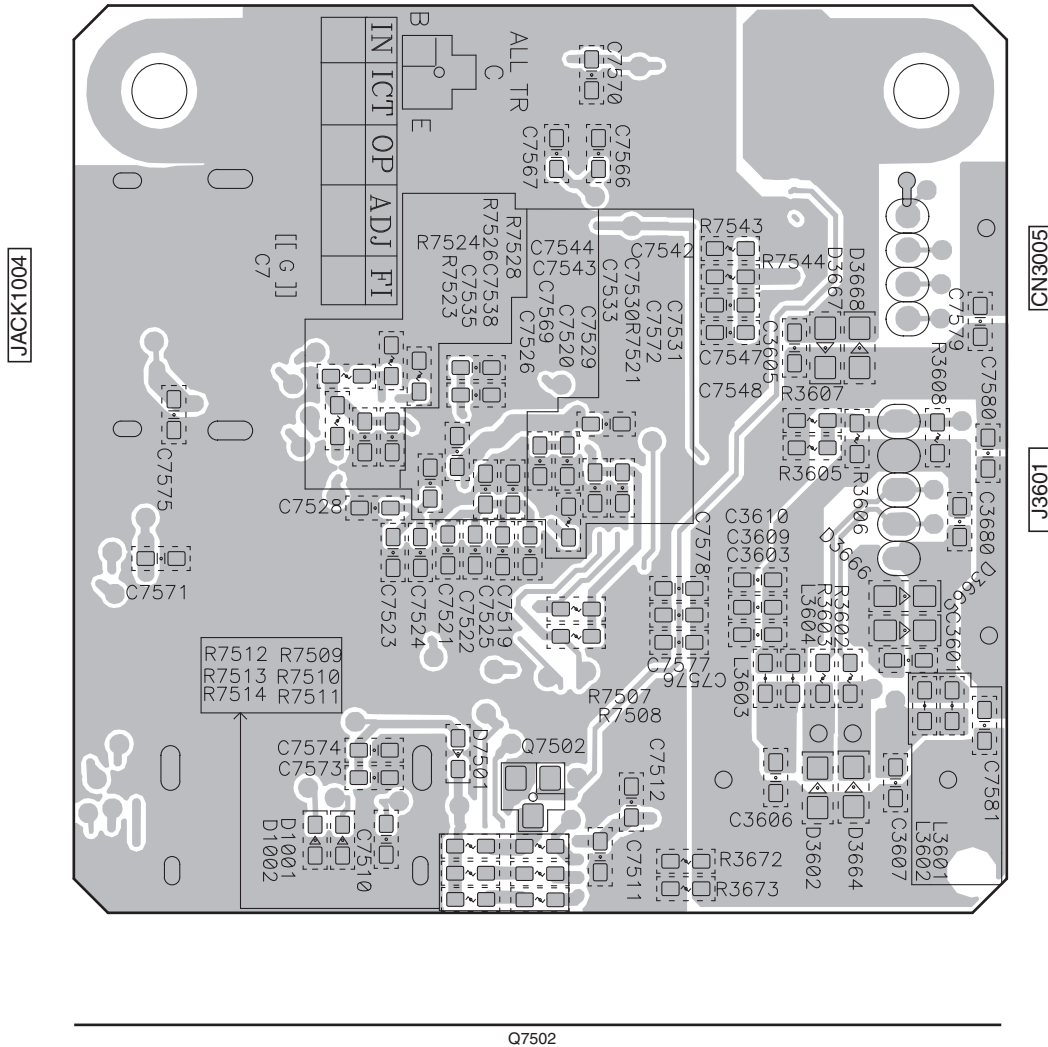




SIDE B

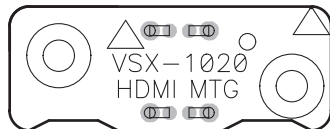
SIDE B

### G F-HDMI ASSY

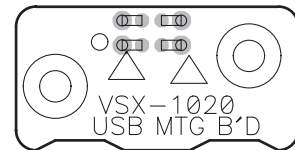


Q7502

### I HDMI MTG ASSY



### H USB MTG ASSY

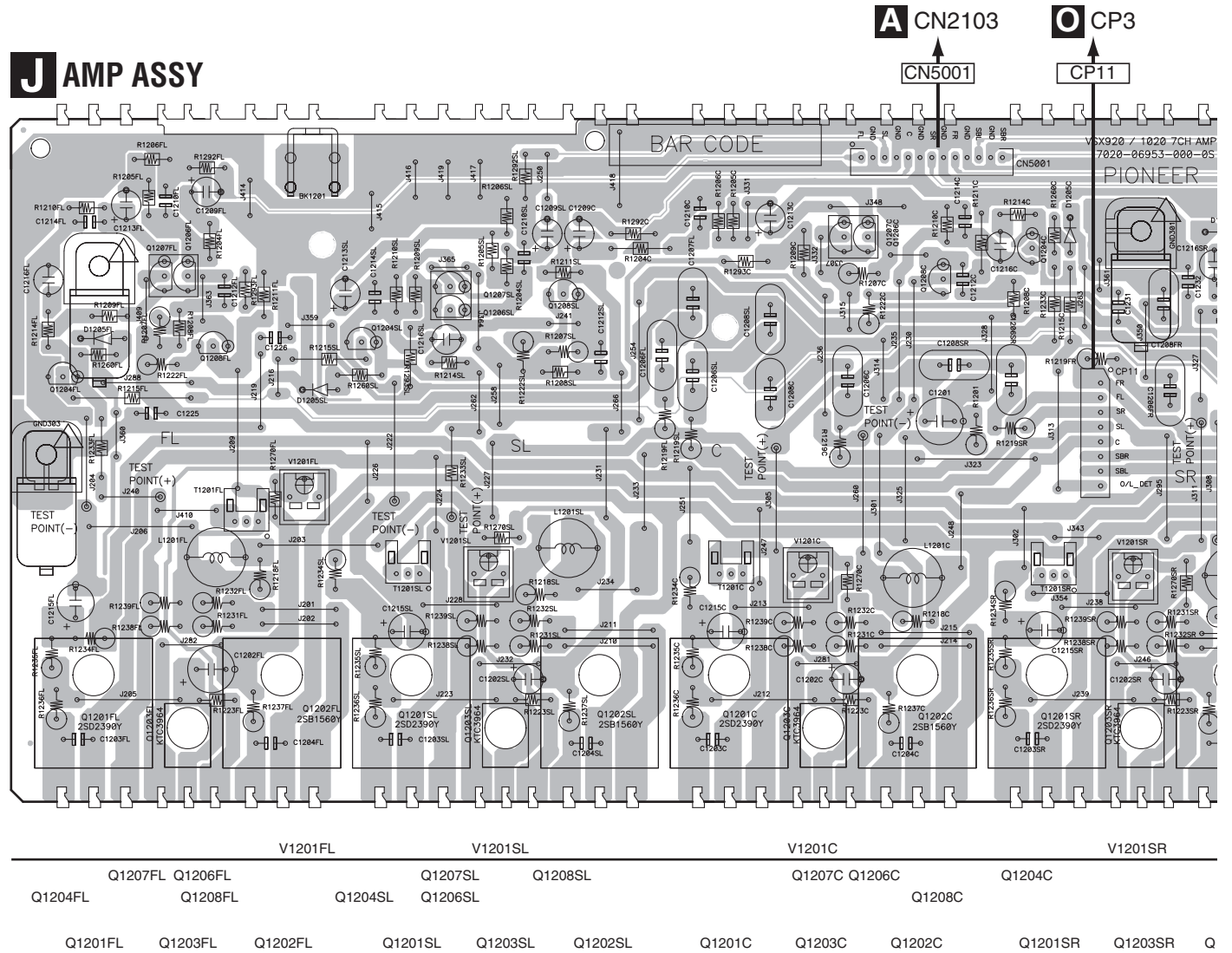


G H I

# 11.5 AMP ASSY

**SIDE A**

## J AMP ASSY



SIDE A

A

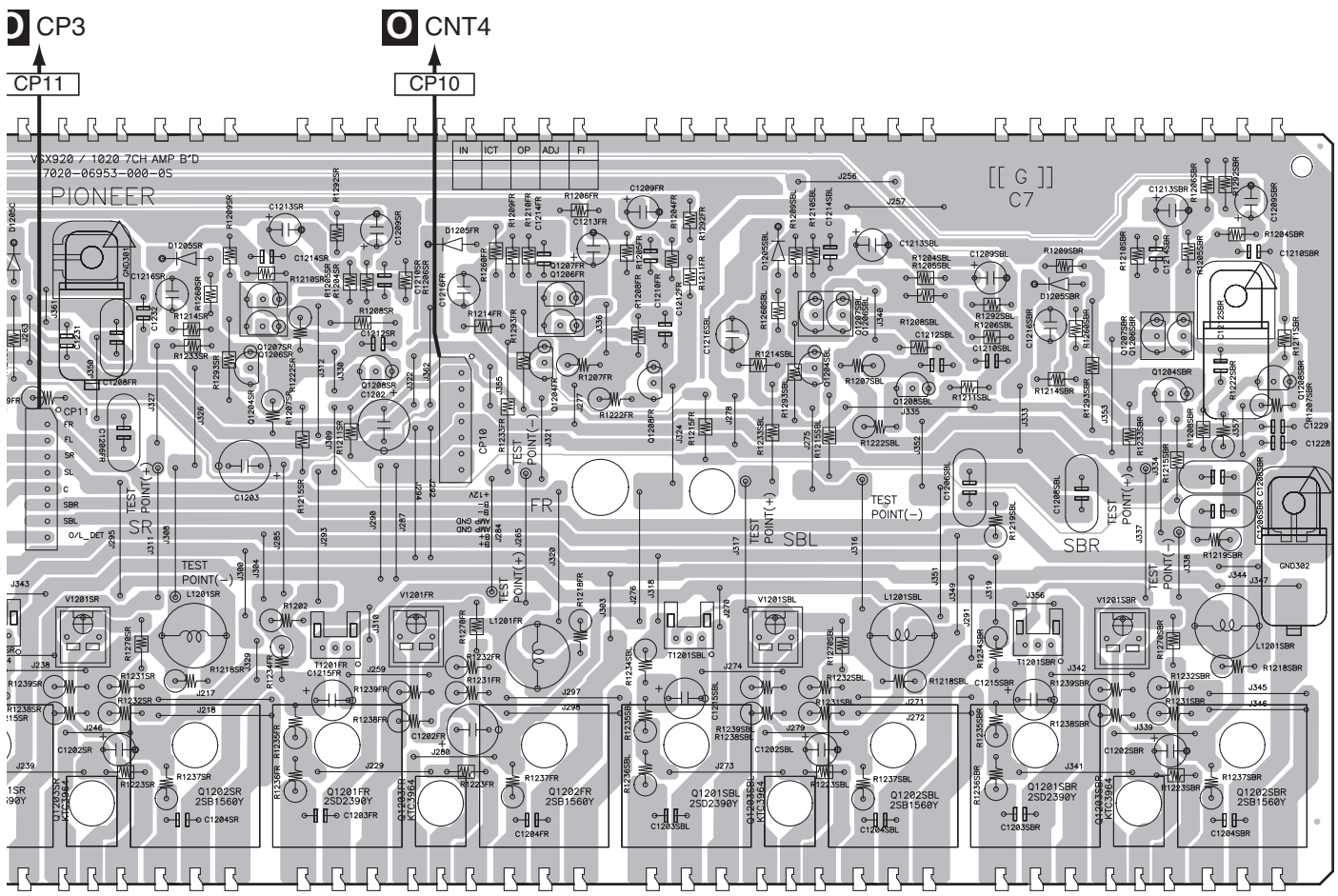
B

C

D

E

F



V1201SR	V1201FR	V1201SBL	V1201SBR
Q1207SR	Q1207FR	Q1207SBL	Q1207SBR
Q1206SR	Q1206FR	Q1206SBL	Q1206SBR
Q1204SR	Q1204FR	Q1204SBL	Q1204SBR
Q1208SR	Q1208FR	Q1208SBL	Q1208SBR
Q1203SR	Q1203FR	Q1203SBL	Q1203SBR
Q1202SR	Q1202FR	Q1202SBL	Q1202SBR
Q1201FR	Q1201SBL	Q1201SBR	
Q1203FR	Q1202SBL	Q1203SBR	Q1202SBR

VSX-1020-K

J





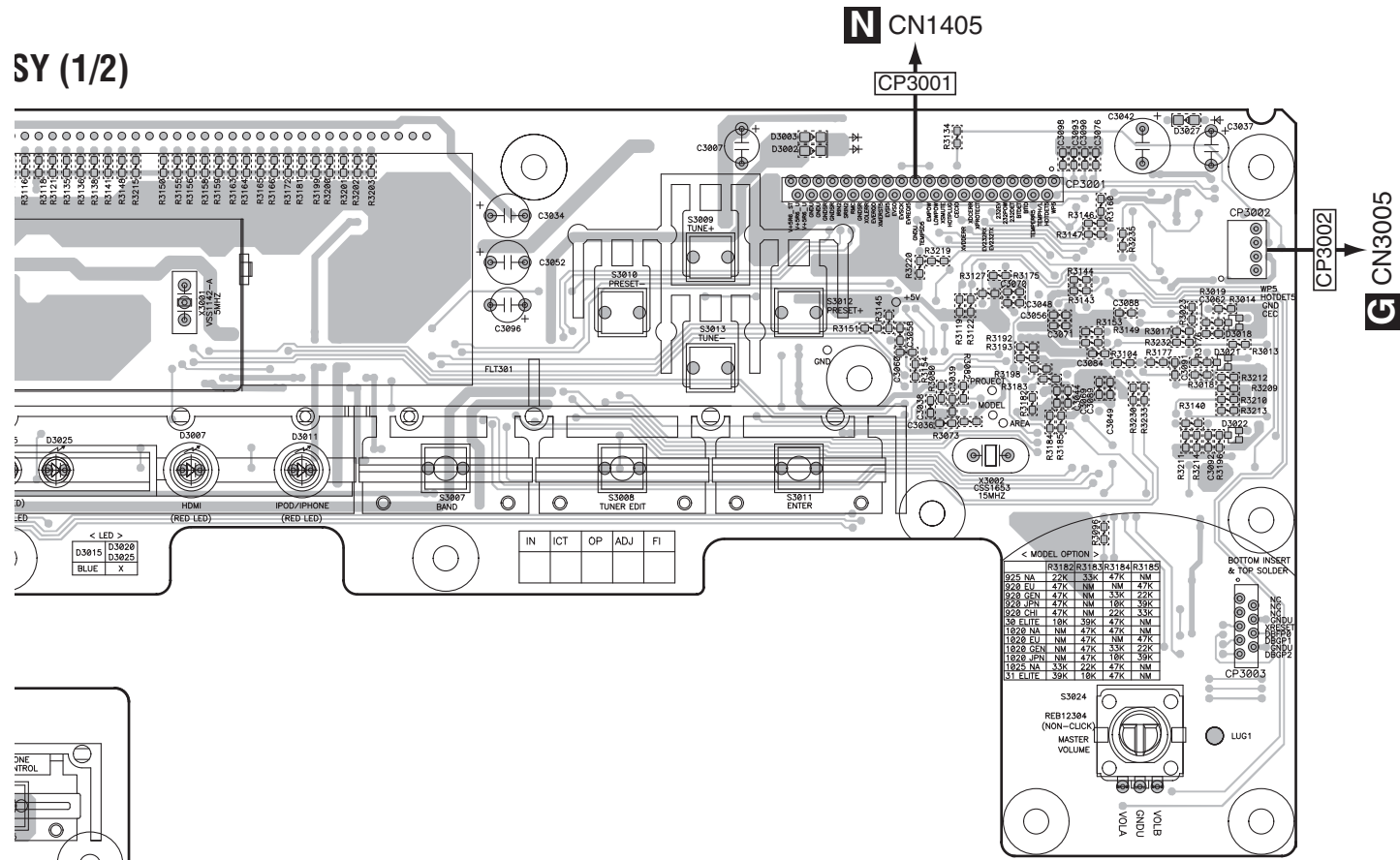




**SIDE A**

A

**SY (1/2)**



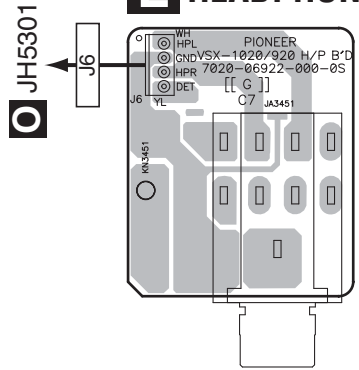
B

C

D

**SY (2/2)**

**HEADPHONE ASSY**



E

F

**VSX-1020-K**

**K L**





# 11.7 D-MAIN ASSY

**SIDE A**

A

IC9401 IC363 IC9402 Q241 IC211 IC281 IC101 IC9451 Q9000  
 IC361 IC452 IC365 IC241 IC1305 IC291 IC1304 IC261 IC1800 Q9001 IC900  
 IC451 IC391 IC453 IC301 IC584 IC581 IC1303 IC1300 Q1300 IC1301 Q1930  
 IC561 IC9407 IC9408 IC9409 IC9410 IC9411 IC9412 IC9413 IC9414 IC9415 IC9416 IC9417 IC9418 IC9419 IC9420 IC9421 IC9422 IC9423 IC9424 IC9425 IC9426 IC9427 IC9428 IC9429 IC9430 IC9431 IC9432 IC9433 IC9434 IC9435 IC9436 IC9437 IC9438 IC9439 IC9440 IC9441 IC9442 IC9443 IC9444 IC9445 IC9446 IC9447 IC9448 IC9449 IC9450 IC9451 IC9452 IC9453 IC9454 IC9455 IC9456 IC9457 IC9458 IC9459 IC9460 IC9461 IC9462 IC9463 IC9464 IC9465 IC9466 IC9467 IC9468 IC9469 IC9470 IC9471 IC9472 IC9473 IC9474 IC9475 IC9476 IC9477 IC9478 IC9479 IC9480 IC9481 IC9482 IC9483 IC9484 IC9485 IC9486 IC9487 IC9488 IC9489 IC9490 IC9491 IC9492 IC9493 IC9494 IC9495 IC9496 IC9497 IC9498 IC9499 IC9500

## D-MAIN ASSY

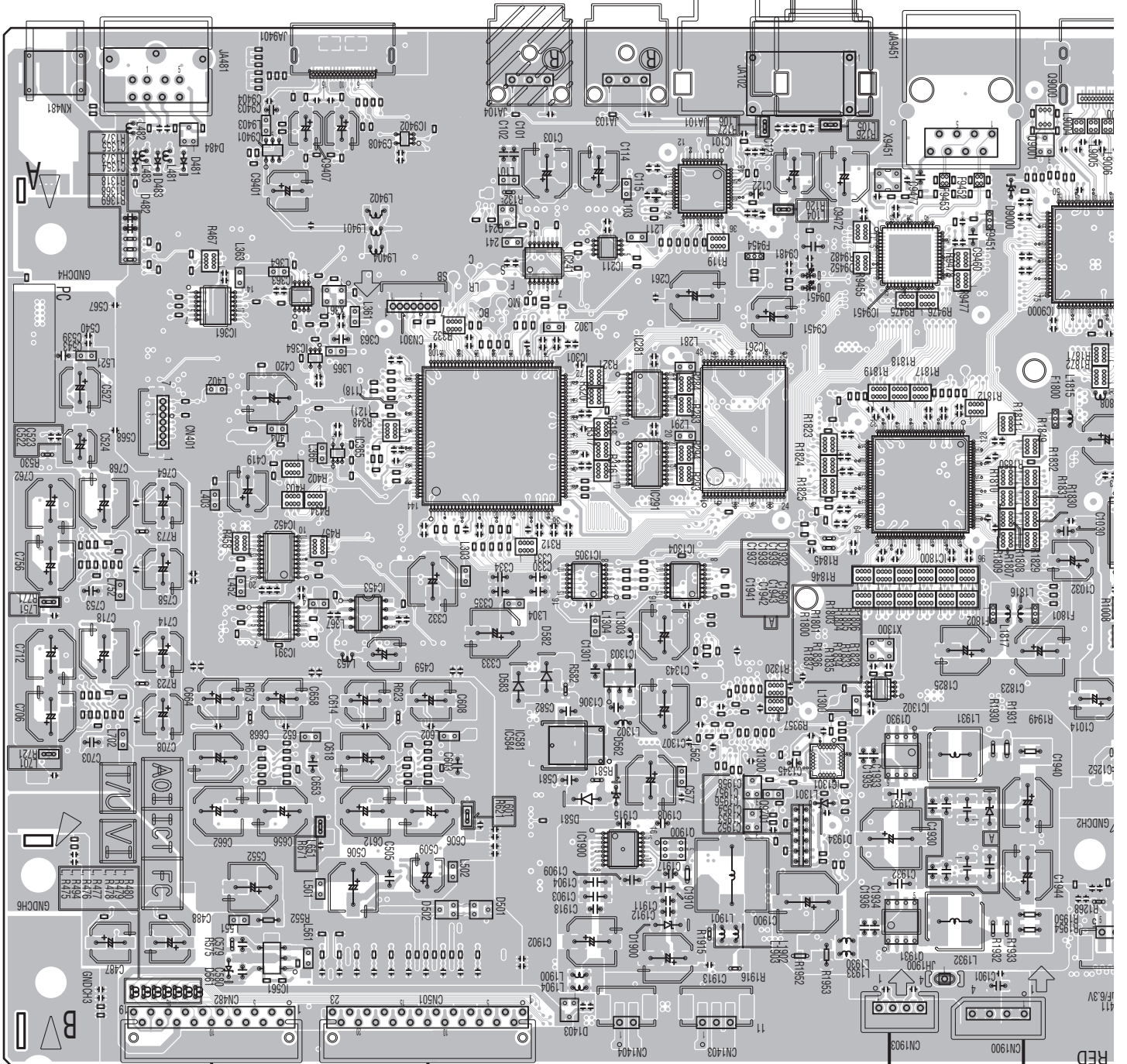
B

C

D

E

F



CN482

CN501

CN1903

CN1900

**F** CN7612

**F** CN7614

**O** JP4004

**O** JP4003

**N**

1

2

3

4



**SIDE B**

A

Q9552 IC9552 IC9551	Q1611 IC1603 IC1602	Q9551 IC9751 Q1701 IC1592	IC1081 IC1806	IC1811 IC802	IC1563 IC1810 IC1804	IC9001 IC1802 IC1000	IC1801
IC9651	Q1150 Q1154-Q1157 IC1050 Q1151	Q800	IC1403 IC1402	IC1404 IC1405	IC1103 IC1101	IC1104 IC1100	IC1

**N D-MAIN ASSY**

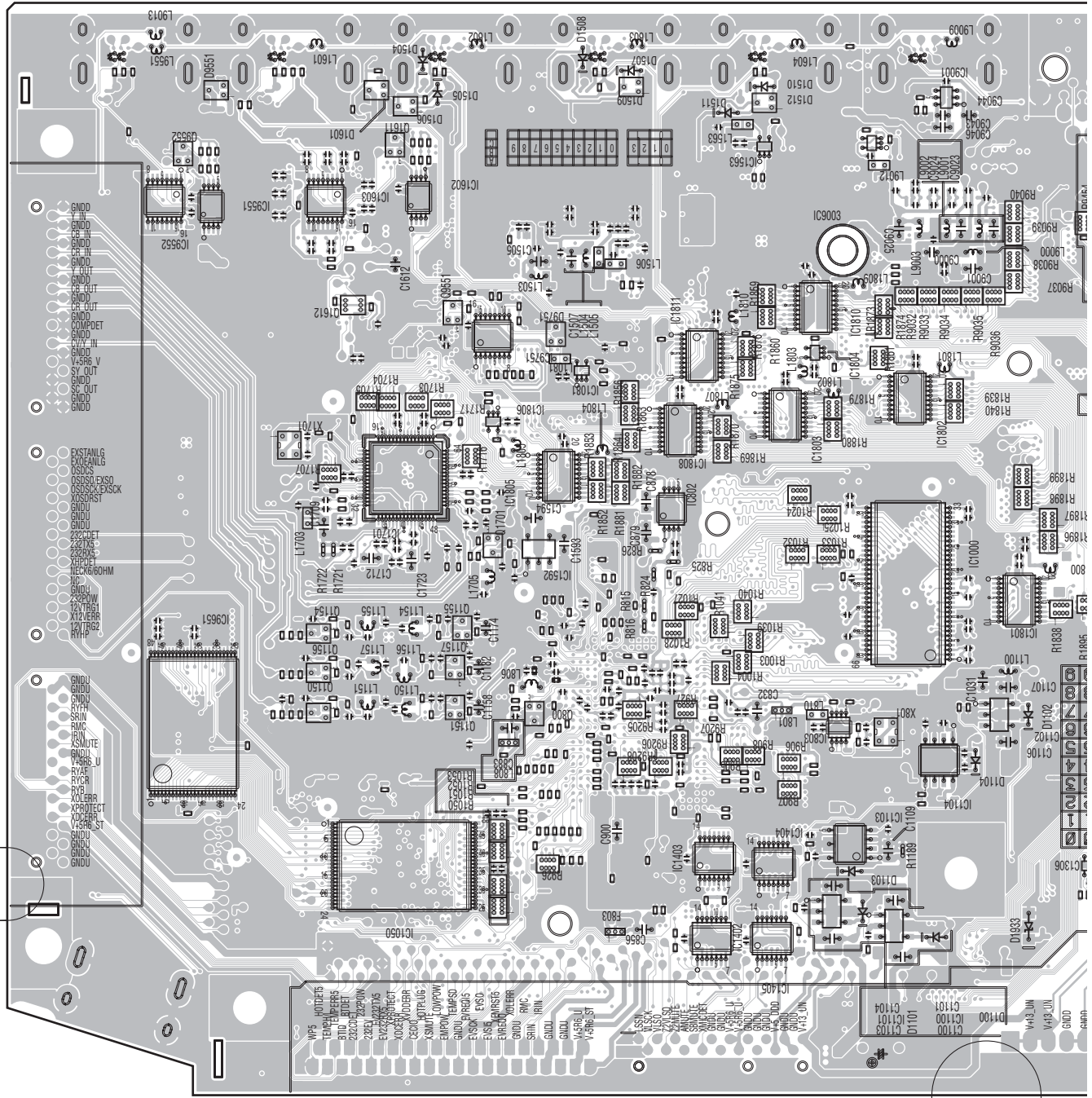
B

C

D

E

F



**N**









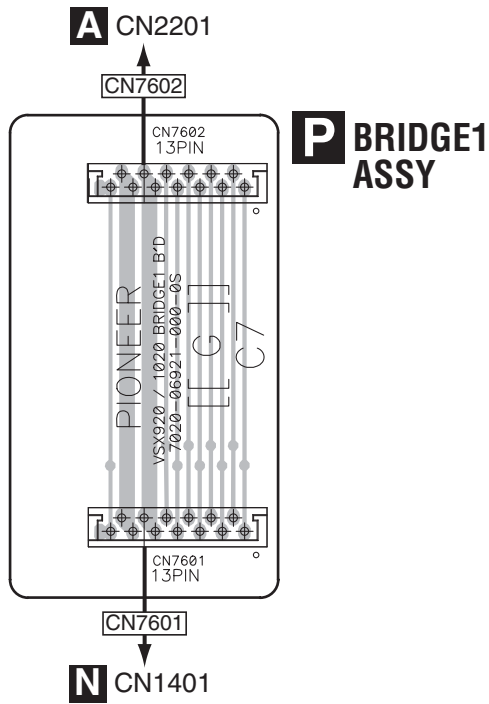




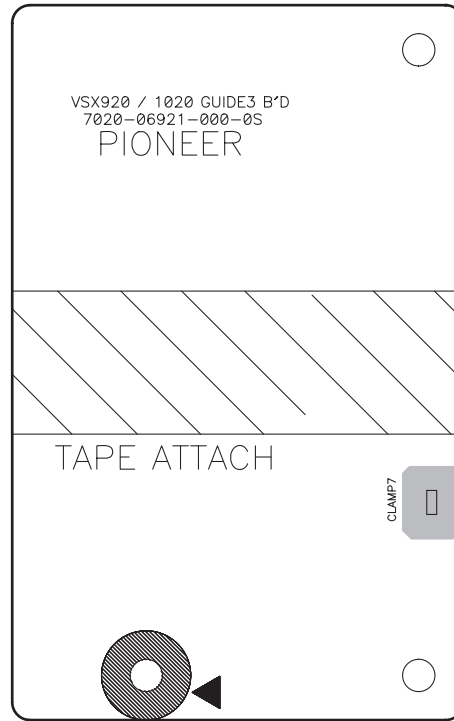
# 11.9 BRIDGE1, GUIDE3 GIUIDE-L and GUIDE-R ASSYS

**SIDE A**

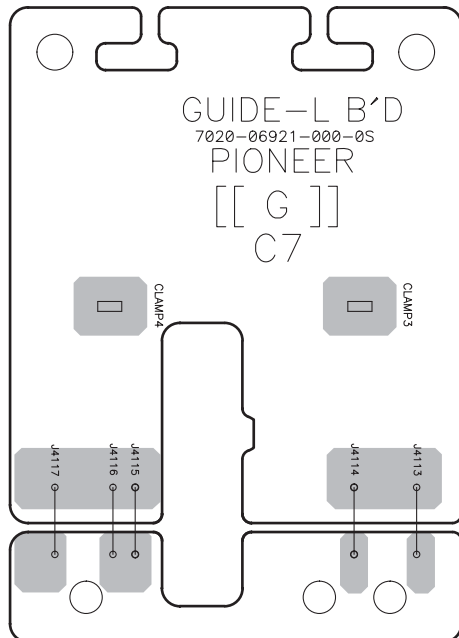
**SIDE A**



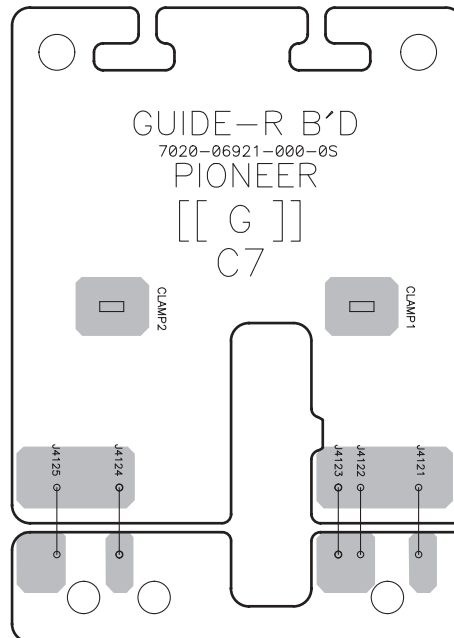
**Q GUIDE3 ASSY**



**R GUIDE-L ASSY**



**S GUIDE-R ASSY**



**P Q R S**



# 12. PCB PARTS LIST

NOTES: ● Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.

● The  $\Delta$  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 47 k ohm (tolerance is shown by J = 5%, and K = 10%).

560  $\Omega$   $\rightarrow$  56  $\times 10^1$   $\rightarrow$  561 ..... RD1/APU  $\boxed{5}$   $\boxed{6}$   $\boxed{7}$  J  
 47 k $\Omega$   $\rightarrow$  47  $\times 10^3$   $\rightarrow$  473 ..... RD1/APU  $\boxed{4}$   $\boxed{7}$   $\boxed{3}$  J  
 0.5  $\Omega$   $\rightarrow$  R50 ..... RN2H  $\boxed{R}$   $\boxed{5}$   $\boxed{0}$  K  
 1  $\Omega$   $\rightarrow$  1R0 ..... RSIP  $\boxed{7}$   $\boxed{R}$   $\boxed{0}$  K

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

5.62 k $\Omega$   $\rightarrow$  562  $\times 10^1$   $\rightarrow$  5621 ..... RN1/4PC  $\boxed{5}$   $\boxed{6}$   $\boxed{2}$   $\boxed{7}$  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

● PCB PARTS LIST

JA\*\*\*  
 RY\*\*\*  
 T\*\*\*  
 X\*\*\*  
 FU\*\*\*  
 V\*\*\*  
 S\*\*\*  
 L\*\*\*  
 CN\*\*\*  
 Q\*\*\*  
 D\*\*\*

● SCHEMATIC DIAGRAM and PCB CONNECTION DIAGRAM

JACK\*\*\*, JK\*\*\*  
 RLY\*\*\*  
 PT\*\*\*  
 XTAL\*\*\*, RES\*\*\* (CERAMIC)  
 F\*\*\*  
 FLT\*\*\*  
 SW\*\*\*, VEC\*\*\* (ENCODER)  
 FB\*\*\*  
 CP\*\*\*, PN\*\*\*  
 Q\*\*\*FL, Q\*\*\*FR, Q\*\*\*C, Q\*\*\*SL, Q\*\*\*SR  
 ZD\*\*\*

**Mark No. Description**  
**LIST OF ASSEMBLIES**

Mark No.	Description	Part No.
NSP	1..MAIN ASSY	7025HK0918010-IL
	2..MAIN ASSY	7028069211010-IL
	2..BRIDGE1 ASSY	7028069213010-IL
	2..GUIDE-L ASSY	7028069214010-IL
	2..GUIDE-R ASSY	7028069215010-IL
	2..GUIDE3 ASSY	7028069218010-IL
NSP	1..FRONT ASSY (VSX-1020-K)	7025HK0918011-IL
NSP	1..FRONT ASSY (VSX-1025-K)	7025HK0918051-IL
	2..DISPLAY ASSY (VSX-1020-K)	7028069221010-IL
	2..DISPLAY ASSY (VSX-1025-K)	70280692210C0-IL
	2..DISPLAY ASSY	7028069221010-IL
	2..POWER SW ASSY	7028069222010-IL
	2..USB MTG ASSY	7028069223010-IL
	2..HDMI MTG ASSY	7028069224010-IL
	2..HEADPHONE ASSY	7028069225010-IL
NSP	1..AMP ASSY	7025HK0918012-IL
NSP	2..AMP ASSY	7028069531010-IL
NSP	1..INPUT ASSY	7025HK0918013-IL
	2..AUDIO ASSY	7028069241010-IL
	2..COMPONENT ASSY	7028069242010-IL
	2..COMPOSITE ASSY	7028069243010-IL
	2..BRIDGE2 ASSY	7028069244010-IL
	2..F-VIDEO ASSY	7028069245010-IL
	2..MIC ASSY	7028069246010-IL
NSP	1..F-HDMI ASSY	7025HK0918014-IL
	2..F-HDMI ASSY	7028069251010-IL
NSP	1..D-MAIN ASSY	7025HK0918015-IL
	2..D-MAIN ASSY	7028069261010-IL

**Mark No. Description**  
**A AUDIO ASSY**  
**SEMICONDUCTORS**  
**Part No.**

IC 2501	BD3473KS2
IC 2502	J040406600010-IL
IC 2701,2702,2741,2761	J121458000020-IL
IC 2781,2801,2821	J121458000020-IL
Q 2001,2002,2312-2320	INC2001AC1
Q 2401,2681	J5023209Y0010-IL
Q 2402	J5001281Y0010-IL
Q 2701	J520103S00210-IL
Q 2702	J522101411210-IL
D 2401,2402	UDZS7R5(B)
D 2501,2502,2603-2616	K005041480030-IL
D 2681	UDZS10(B)
<b>MISCELLANEOUS</b>	
JA 2101-2103 TER,RCA 6PIN	G603603A0500Y-IL
JA 2107 TER,RCA 1PIN	G600107A0000Y-IL
CN 2102 CN,WAFER	L109012522310-IL
CN 2106 CN,WAFER	L109012521710-IL
CN 2201 CN,WAFER	L109012521310-IL

**B COMPONENT ASSY**  
**SEMICONDUCTORS**

IC 8041,8051	CD74HC4053PW
IC 8061	NJM2581M
IC 8082,8083	KIA7805API
IC 8084	J126790500070-IL
IC 8101	BU4094BCFV
IC 8351,8361,8441	SN74AHCT08PW
Q 8082	J522101411210-IL



Mark	No.	Description	Part No.
	Q	8083	INC2001AC1
	Q	8084,8201,8211,8221	J520015301210-IL
	D	8082,8084,8351-8354	K005041480030-IL
	D	8382,8402	K000400700010-IL
	D	8386,8422	K005041480030-IL
	D	8387,8389	1SS133

**MISCELLANEOUS**

JA 8021	TER,RCA 6PIN	G603603A0260Y-IL
JA 8071	TER,RCA 3PIN	G606303A0800Y-IL
CN 8001	CN,WAFER	L109012512310-IL
CN 8003,8005	CN,WAFER	L109012512110-IL
CN 8007	CN,WAFER	L109012511910-IL
CN 8012	CN,WAFER	L109012521910-IL
CN 8017	CN,WAFER	L109012521510-IL
CN 8331	CN.FPC 1.0MM	L130100150750-IL

**C COMPOSITE ASSY**  
**SEMICONDUCTORS**

IC 8501,8502	CD74HC4051PW
IC 8503	CD74HC4053PW
IC 8504	J171710800010-IL
IC 8505	BU4094BCF
IC 8506	PDC162A
Q 8502	J522038750210-IL
Q 8503	J520015301210-IL
D 8501,8502,8504-8510	K005041480030-IL

**MISCELLANEOUS**

JA 8501,8502	TER,RCA 2PIN	G601206A0100Y-IL
JA 8503	TER,RCA 3PIN	G606303A0100Y-IL
X 8501	CRYSTAL (14.31818 MHz)	E80014R318180-IL
CN 8501	CN,WAFER	L109012521910-IL

**D MIC ASSY**  
**SEMICONDUCTORS**

IC 703	NJM2068M
D 3651,3653,3654	UDZS5R1(B)

**MISCELLANEOUS**

JA 3652	JACK,D3.5	G401PJ354H40Y-IL
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**E F-VIDEO ASSY**  
**SEMICONDUCTORS**

D 3673,3674	RS1/8SQ0R0J
-------------	-------------

**MISCELLANEOUS**

L 3653	RESISTOR	RS1/10SR0R0J
JA 3656	TER,RCA 1PIN	G600101HG000Y-IL

**CAPACITORS**

C 3695	RS1/10SR0R0J
--------	--------------

Mark	No.	Description	Part No.
<b>F</b>		<b>BRIDGE2 ASSY</b>	
		<b>MISCELLANEOUS</b>	

CN 7612	CN,WAFER	L109012511910-IL
CN 7613,7614	CN,WAFER	L109012512310-IL
CN 7615	CN,WAFER	L109012511710-IL

**G F-HDMI ASSY**  
**SEMICONDUCTORS**

IC 7501	S-24CS02AFT
IC 7502	J040743257030-IL
IC 7503	CXB1443R
IC 7504	J126111700041-IL
Q 7501-7503	J522104411210-IL
D 3667,3668	RS1/8SQ0R0J
D 7501,7502	RB521S-30G
D 7551	K005041480030-IL

**MISCELLANEOUS**

L 3601-3604	RESISTOR	RS1/10SR0R0J
JA 1004	(JACK1004) CN,WAFER	L109100190140-IL
JA 3601	CN,PLUG CONTACT	G480040400030-IL
JA 7501	CN,WAFER	L109100190050-IL

**CAPACITORS**

C 3605,3606	RS1/10SR0R0J
-------------	--------------

**H USB MTG ASSY**

There is no service parts.

**I HDMI MTG ASSY**

There is no service parts.

**J AMP ASSY**  
**SEMICONDUCTORS**

Q 1204,1208	J5023200B0050-IL
Q 1206,1207	J5000992F0050-IL
D 1205	1SS133

**MISCELLANEOUS**

L 1201	COIL,FILTER-INDUCTOR	D330256800010-IL
VR 1201	VR,SEMI CARBON MOLD	C541102315000-IL

**RESISTORS**

R 1201,1202	C0604R7065050-IL
R 1207	C060012263050-IL
R 1218,1219	C060010065050-IL
R 1222	C060047065060-IL
R 1231,1232,1238,1239	N113136647820-IL

**RESISTORS**

R 1234,1235	N113135656220-IL
R 1236,1237	C060010163050-IL
Other Resistors	RD1/4PU###J

**CAPACITORS**

C 1203,1204	D00410107D051-IL
C 1206,1207	D02010406C060-IL



Mark	No.	Description	Part No.
△	Q	1900	RTQ045N03
△	Q	1930,1931	SP8K1
	Q	9000	UMB1N
	D	484	DAN217U
	D	501,1998	DAP202U
	D	502,1402,1601,9551	DAN202U
	D	551,1997	1SS355
	D	582	1SR154-400
	D	1200	RR264M-400
	D	1400	RB501V-40
	D	1930,1931	RB160VA-40
	D	1999	UDZS5R6(B)
	D	9000	UDZS5R1(B)
	D	9751	DAN202U

### MISCELLANEOUS

L	1901	COIL,INDUCTOR	D310104503300-IL
L	1931	COIL,INDUCTOR	D310603001500-IL
L	1932	COIL,INDUCTOR	D310603003900-IL
JA	101	PIN JACK (2P)	G601206A0700Y-IL
JA	103,104	MODULE	E100216500010-IL
JA	481	JACK,DIN	G403515397000-IL
JA	1601-1604,9000,9551	CN.WAFER	L109100190050-IL
JA	9401	CONNECTOR	CKS5712
JA	9451	JACK,MODULAR	G4060RJ450120-IL
KN	481	BRACKET	4010210196100-IL
X	361	OSCILATOR,CERA CHIP (22.5792 MHz)	E85522R579210-IL
X	362	OSCILATOR,CERA CHIP (24.576 MHz)	E85524R576050-IL
X	801,1501	CRYSTAL CHIP (27 MHz)	E80527R000050-IL
X	1250	CRYSTAL CHIP (48 MHz)	E80548R000060-IL
X	1300	CRYSTAL CHIP (36.864 MHz)	E80536R864060-IL
X	1701	CRYSTAL CHIP (28.63636 MHz)	E80528R636360-IL
X	9451	CRYSTAL CHIP (25 MHz)	E80525R000050-IL
CN	482	CN,WAFER	L109012521910-IL
CN	501,1254	CN,WAFER	L109012522310-IL
CN	1250,1252	CN,WAFER	L109012522110-IL
CN	1401	CN,WAFER	L109012521310-IL
CN	1601	CN,WAFER	L109100190140-IL

### CAPACITORS

C	333		D050221081250-IL
C	505,1203,1801,1824		D011106572200-IL
C	1411		D040222082020-IL
C	1826,9001,9406		D011106572200-IL
C	1900		D050101085210-IL
C	1903,1904,1931,1932		D011106574300-IL
C	1939,1943		D011476572310-IL
C	9035-9042		D010R40137100-IL
C	9472		D050101083200-IL



## MAIN ASSY

### SEMICONDUCTORS

△	IC	51,4001	NJM78M56FA
△	IC	4011	KIA7812API
△	IC	4012	KIA7912PI
△	IC	4911	KIA7805API
	Q	51	J522104311210-IL
	Q	52	J522038750210-IL
	Q	121,123,126	J5001268B0050-IL

Mark	No.	Description	Part No.
	Q	122,5501-5504	J5023198Y0000-IL
	Q	125	J5000916Y0050-IL
	Q	3001	J520015301210-IL
	Q	3002,3011,5020	J522102411210-IL
	Q	3010,5017,5019,5022	J520103S00210-IL
	Q	4941,4942	J6010103M0010-IL
	Q	4943,4944	J6030103M0010-IL
	Q	5018,5021,5508-5511	J5220232S0010-IL
	Q	5505-5507	J520103S00210-IL
	D	52,9103 (ZD103),9104 (ZD104)	MTZJ15(B)
	D	55,111,307	K000400700010-IL
	D	56,57,3001,3004	K005041480030-IL
	D	58	UDZS5R1(B)
	D	125	1SS133
	D	310-312,4923-4926	K000400700010-IL
	D	3005,3030,4941	K005041480030-IL
	D	4012,4013	RB501V-40
	D	4911	K047604000020-IL
	D	4912,4942	MTZJ6R2(B)
	D	5019-5024,5107-5113	K005041480030-IL
	D	5301	K047100600010-IL
	D	5907,5908	K005041480030-IL

### MISCELLANEOUS

L	4841,4853,4854	FERRITE BEAD	D340160831210-IL
L	4861	FERRITE BEAD	D340160861020-IL
L	4862	FERRITE BEAD	D340160862410-IL
JA	4841,4851,4861,4871	JACK,D3.5	G401PJ3080100-IL
JA	5001	TER,BOARD SCREW 8P	G614108V1010M-IL
JA	5002	TER,BOARD SCREW 4P	G612405E0200Y-IL
JA	5003	TER,BOARD SCREW 2P	G611201A0200Y-IL
JA	5004	TER,BOARD PUSH 4P	G594408SA030Y-IL
RY	501	RELAY	G680060102020-IL
RY	1000	RELAY	G680240202030-IL
RY	5001-5005	RELAY	G680120503020-IL
T	51	POWER TRANS	8200280150620-IL
CN	5002	CN,WAFER	L109012511910-IL
CN	9006 (CP6)	CN,WAFER	L109012511510-IL
FU	1 (F1)	FUSE GLASS TUBE 20MM	N751508001160-IL
FU	4094 (P4094)	FUSE GLASS TUBE 20MM	N751503151160-IL

### RESISTORS

R	52		C060027065050-IL
R	116,117		C060015165050-IL
R	178,179		C141R10069010-IL
R	184		C0604R7065050-IL
R	186		C060022063050-IL
R	4003		C060033166520-IL
R	5301		C060010065050-IL
R	5305,5306		C060033166050-IL
R	9005		RS1/4SAORJ
		Other Resistors	RD1/4PU###J

### CAPACITORS

△	C	51,52	D00847208H010-IL
	C	53	D040332083010-IL
	C	189	D040331088230-IL
	C	4901,4902	D040472084020-IL
	C	4916	D040682083240-IL
	C	4953	D005104597531-IL
	C	5073-5075,5077-5080	D02012306C060-IL
	C	5083,5084	D02012306C060-IL

Mark	No.	Description	Part No.
	C	5301,5302	D040682088010-IL
	C	5303,5309	D02010406C060-IL
A	C	5304-5307	D02010407H080-IL

**P BRIDGE1 ASSY**

There is no service parts.

**Q GUIDE3 ASSY**

There is no service parts.

**R GUIDE-L ASSY**

There is no service parts.

**S GUIDE-R ASSY**

There is no service parts.