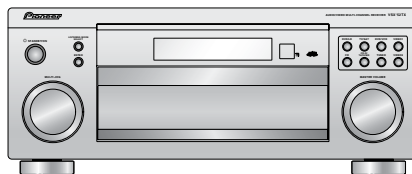


Service Manual



VSX-52TX

ORDER NO.
RRV2977

AUDIO/VIDEO MULTI-CHANNEL RECEIVER

VSX-52TX VSX-1014TX-K

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

Model	Type	Power Requirement	Remarks
VSX-52TX	KUXJ/CA	AC120V	
VSX-1014TX-K	KUXJC	AC120V	



For details, refer to "Important symbols for good services".

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.

B

WARNING

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

Health & Safety Code Section 25249.6 – Proposition 65

C

NOTICE

(FOR CANADIAN MODEL ONLY)

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

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

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

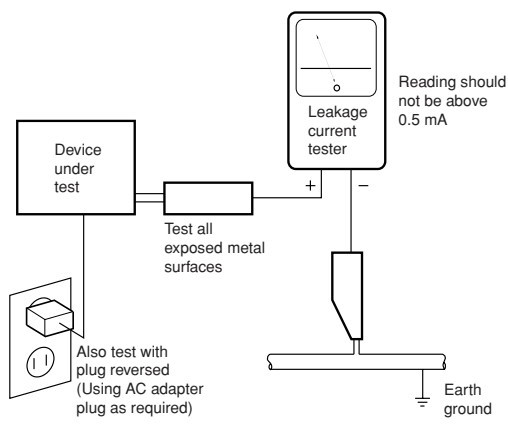
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

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

LEAKAGE CURRENT CHECK

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



The diagram illustrates the AC Leakage Test procedure. It shows a 'Device under test' connected to a 'Leakage current tester'. A note indicates to 'Test all exposed metal surfaces'. The tester is connected to an 'Earth ground'. A warning states 'Reading should not be above 0.5 mA'. An inset shows a plug being inserted into an outlet, with a note: 'Also test with plug reversed (Using AC adapter plug as required)'.

AC Leakage Test

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

2. PRODUCT SAFETY NOTICE

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

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

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

[Important symbols for good services]

In this manual, the symbols shown-below indicate that adjustments, settings or cleaning should be made securely. When you find the procedures bearing any of the symbols, be sure to fulfill them:

1. Product safety



You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.

2. Adjustments



To keep the original performances of the product, optimum adjustments or specification confirmation is indispensable. In accordance with the procedures or instructions described in this manual, adjustments should be performed.

3. Cleaning



For optical pickups, tape-deck heads, lenses and mirrors used in projection monitors, and other parts requiring cleaning, proper cleaning should be performed to restore their performances.

4. Shipping mode and shipping screws



To protect the product from damages or failures that may be caused during transit, the shipping mode should be set or the shipping screws should be installed before shipping out in accordance with this manual, if necessary.

5. Lubricants, glues, and replacement parts



Appropriately applying grease or glue can maintain the product performances. But improper lubrication or applying glue may lead to failures or troubles in the product. By following the instructions in this manual, be sure to apply the prescribed grease or glue to proper portions by the appropriate amount. For replacement parts or tools, the prescribed ones should be used.

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1. SPECIFICATIONS

Specifications

Amplifier section

Continuous average power output of 110 watts* per channel, min., at 8 ohms, from 20 Hz to 20,000 Hz with no more than 0.09% total harmonic distortion (front).**

Continuous Power Output

Front 110 W + 110 W (20 Hz-20 kHz, 0.09%)
Center 110 W (20 Hz-20 kHz, 0.09%)
Surround 110 W + 110 W (20 Hz-20 kHz, 0.09%)
Surround back 110 W + 110 W (20 Hz-20 kHz, 0.09%)

Audio Section

Input (Sensitivity/Impedance)
LINE 335 mV/47 k Ω
Frequency Response
LINE 5 Hz to 100,000 Hz ± 3 dB
Output (Level/Impedance)
REC 335 mV/2.2k Ω
Tone Control
BASS ± 6 dB (100 Hz)
TREBLE ± 6 dB (10 kHz)
LOUDNESS +4/+2 dB (100Hz/10 kHz)
(at volume position -40dB)
Signal-to-Noise Ratio (IHF, short circuited, A network)
LINE 103 dB
Signal-to-Noise Ratio [EIA, at 1W (1kHz)]
LINE 83 dB

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

** Measured by Audio Spectrum Analyzer

Composite Video / S-Video Section

Input (Sensitivity/Impedance) 1 Vp-p/75 Ω
Output (Level/Impedance) 1 Vp-p/75 Ω
Signal-to-Noise Ratio 65 dB
Frequency Response 5 Hz to 10 MHz ± 3 dB

Component Video Section

Input (Sensitivity/Impedance) 1 Vp-p/75 Ω
Output (Level/Impedance) 1 Vp-p/75 Ω
Signal-to-Noise Ratio 65 dB
Frequency Response 5 Hz to 40 MHz ± 3 dB

FM Tuner Section

Frequency Range 87.5 MHz to 108 MHz
Usable Sensitivity Mono: 13.2 dBf, IHF (1.3 μ V/75 Ω)
50 dB Quieting Sensitivity Mono: 20.2 dBf
Stereo: 38.6 dBf
Signal-to-Noise Ratio Mono: 73 dB (at 85 dBf)
Stereo: 70 dB (at 85 dBf)
Distortion Stereo: 0.5% (1 kHz)
Alternate Channel Selectivity 60 dB (400 kHz)
Stereo Separation 40 dB (1 kHz)
Frequency Response 30 Hz to 15 kHz ± 1 dB

Antenna Input 75 Ω unbalanced

AM Tuner Section

Frequency Range 530 kHz to 1,700 kHz
Sensitivity (IHF, Loop antenna) 350 μ V/m
Selectivity 25 dB
Signal-to-Noise Ratio 50 dB
Antenna Loop antenna

Miscellaneous

Power Requirements AC 120 V, 60 Hz
Power Consumption 480 W, 630 VA
In standby 0.43 W
AC Outlet (switched) 100 W MAX.
Dimensions 420 (W) x 173 (H) x 465 (D) mm
(16⁹/₁₆ (W) x 6¹³/₁₆ (H) x 18⁵/₁₆ (D) in.)
Weight (without package) 15.5 kg (34.2 lb)

Furnished Parts

Microphone (for Auto MCACC setup) 1
Microphone stand 1
AA/LR6 dry cell batteries 2
Remote control 1
AM loop antenna 1
FM wire antenna 1
Warranty card 1
These operating instructions 1



Note

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

Cleaning the unit

- Use a polishing cloth or dry cloth to wipe off dust and dirt.
- When the surface is dirty, wipe with a soft cloth dipped in some neutral cleanser diluted five or six times with water, and wrung out well, and then wipe again with a dry cloth. Do not use furniture wax or cleansers.
- Never use thinners, benzine, insecticide sprays or other chemicals on or near this unit, since these will corrode the surface.

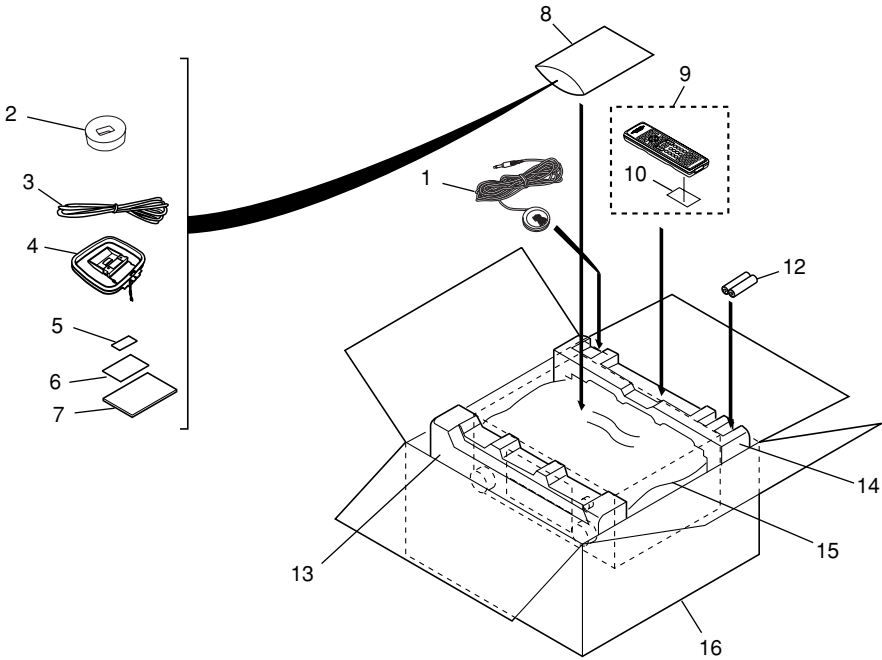
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2. EXPLODED VIEWS AND PARTS LIST

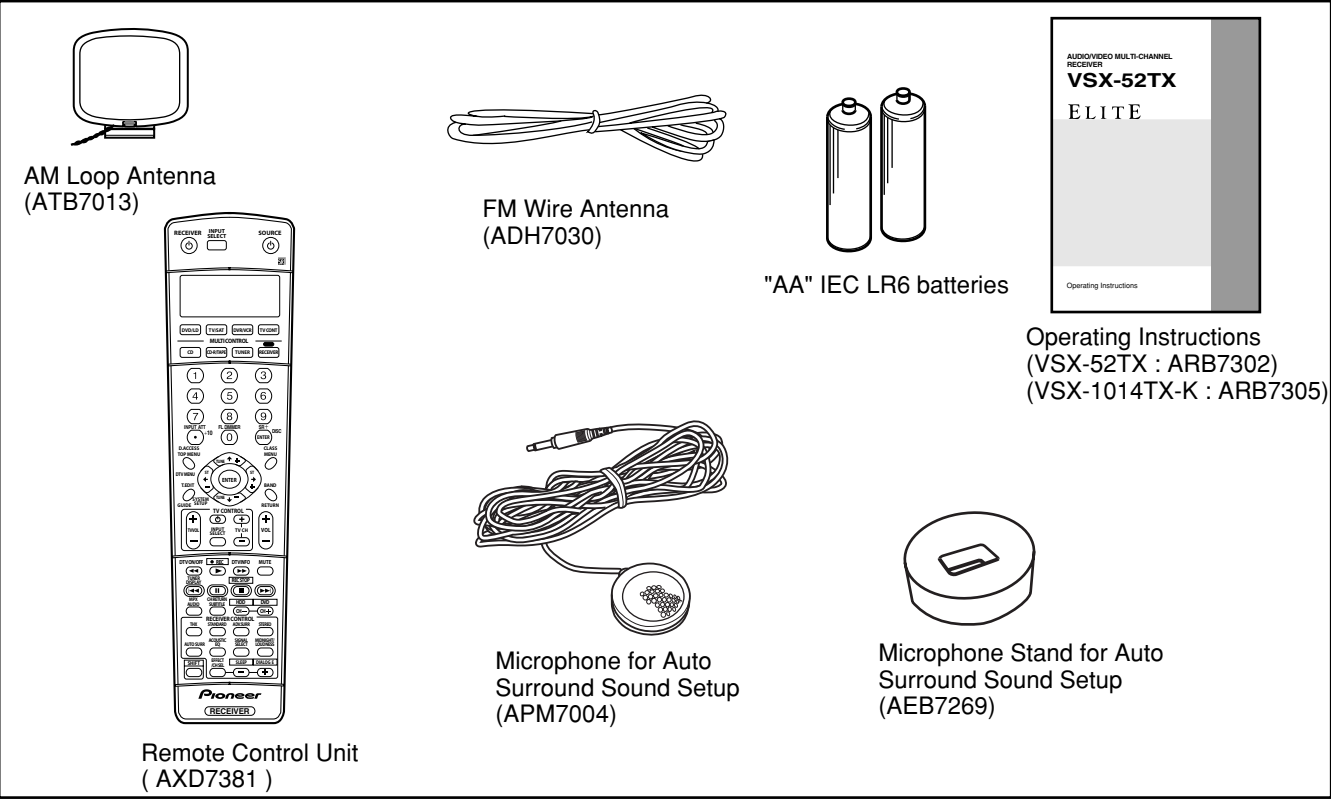
NOTES:

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

2.1 PACKING



● Accessories



(1) PACKING parts List

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	Microphone for Auto Surround Sound Setup	APM7004	9	Remote Control Unit	AXD7381
2	Microphone Stand for Auto Surround Sound Setup	AEB7269	10	Battery Cover	XZN3140
3	FM Wire Antenna	ADH7030	11		
4	AM Loop Antenna	ATB7013	NSP 12	"AA" IEC LR6 batteries	VEM1023
5	Caution Sheet SP,E	ARM7083	13	Front Pad V1	AHA7428
NSP 6	Warranty Card 106		14	Rear Pad V1	AHA7429
See Contrast table (2)			15	Packing Sheet	RHC1023
7	Operating Instructions (English)	See Contrast table (2)	16	Packing Case	See Contrast table (2)
NSP 8	Literature Bag	AHG1180			

(2) CONTRAST TABLE

VSX-52TX/KUXJ/CA and VSX-1014TX-K/KUXJC are constructed the same except for the following:

Mark	No.	Symbol and Description	VSX-52TX /KUXJ/CA	VSX-1014TX-K /KUXJC
NSP	6	Warranty Card	ARY7007	ARY7045
	7	Operating Instructions (English)	ARB7302	ARB7305
	16	Packing Case 52KU	AHD8255	Not used
	16	Packing Case 1014KU	Not used	AHD8256

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2.2 EXTERIOR SECTION

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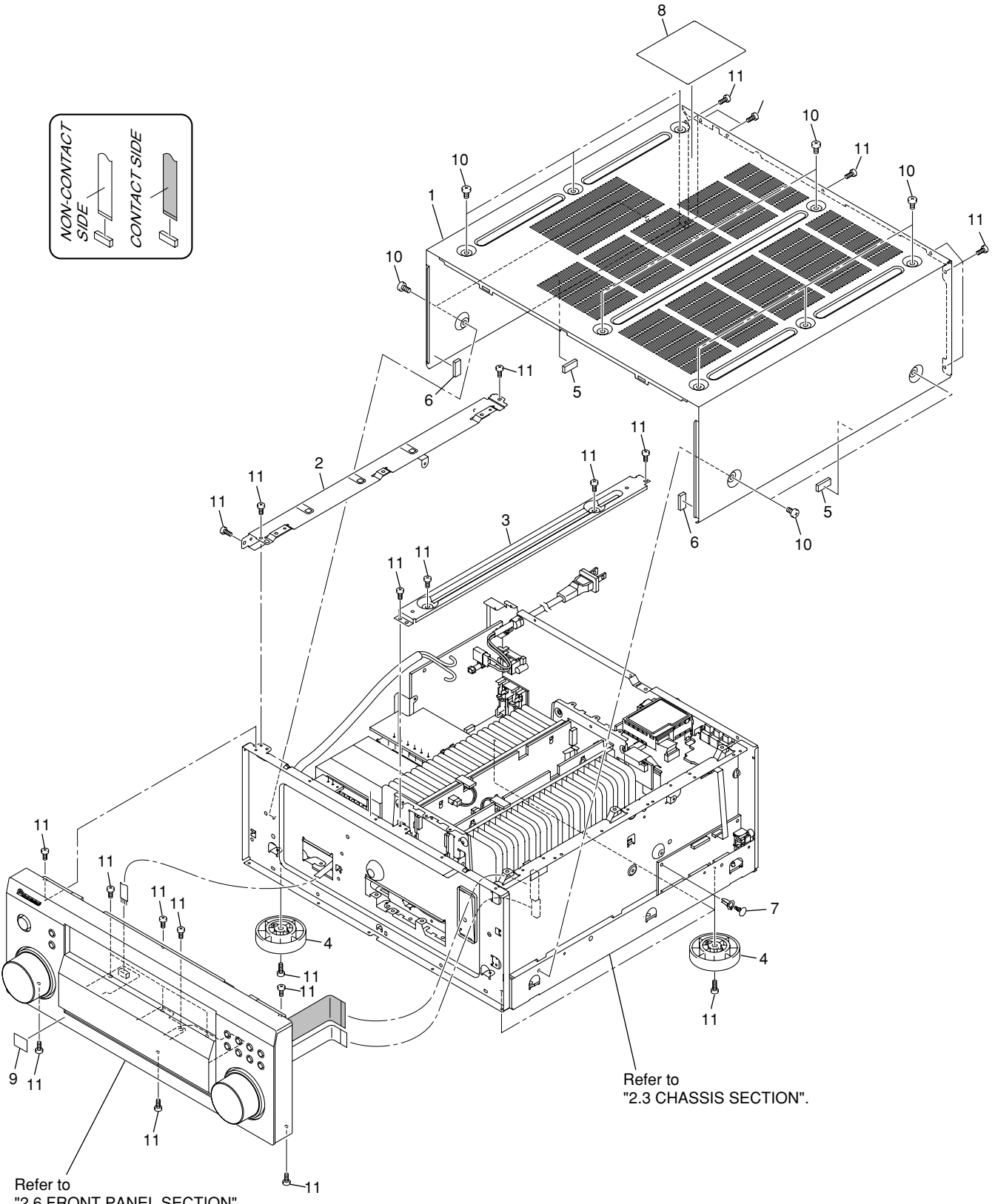
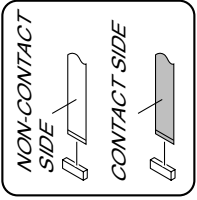
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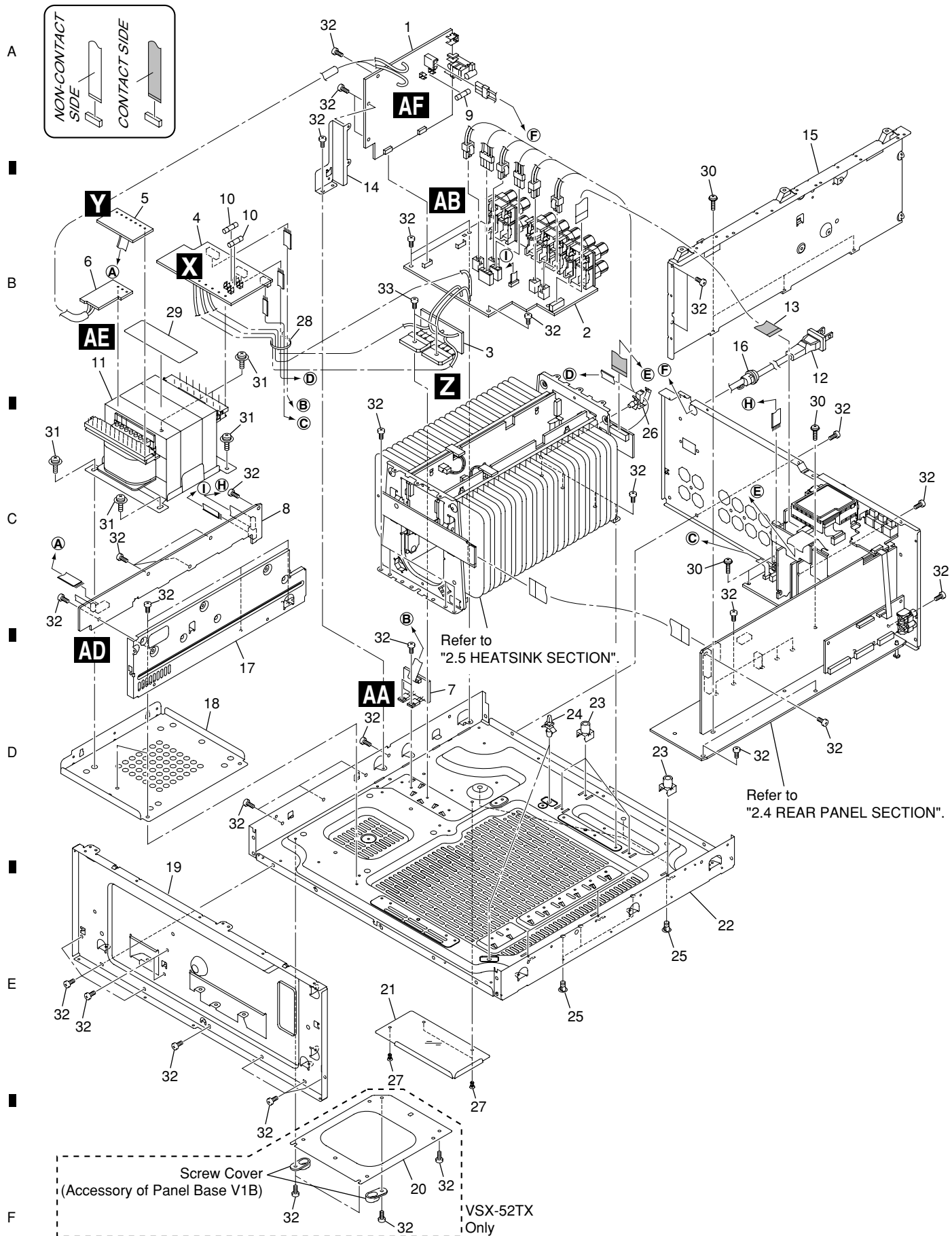
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(1) EXTERIOR SECTION parts List

Mark No.	Description	Part No.	
1	Bonnet Case V1B	AZN7980	
2	Left Beam	ANG7401	A
3	Center Beam	ANG7482	
4	Insulator	PNW2766	
5	Spacer (4.5 x 10 x 20)	AEB7355	
6	Spacer 45B (6 x 7 x 13)	AEB7264	
7	Nyron Rivet	AEC7408	
8	Label (DD/DTS/THX)	ARW7281	
NSP 9	Energy Star Label	AAX8022	
10	Screw	BBZ40P080FZK	
11	Screw	BBZ30P080FCC	B
12	• • • •		

2.3 CHASSIS SECTION



(1) CHASSIS SECTION parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.	
1	PRIMARY Assy	AWX8384	18	Trans. Frame 45	ANG7399	
2	SP/PS Assy	AWX8373	NSP 19	Panel Stay V1	AND7066	A
3	DIODE Assy	AWX8376	20	Stabilizer 45	See Contrast table (2)	
4	TRANS 2-1 Assy	AWX8372				
5	TRANS 2-2 Assy	AWX8371	21	Screw Cover 45A	AEC7414	
			NSP 22	Under Base	See Contrast table (2)	
6	TRANS 1 Assy	AWX8383	23	PCB Mold	AMR2534	
7	VH TR Assy	AWX8411	24	Locking Card Spacer	PNW2917	
8	TRANS SIDE Assy	AWX8417	25	Card Spacer	DNK2769	
⚠ 9	Fuse (FU1 : 10A)	VEK1029				
⚠ 10	Fuse (FU4, 5 : 2.5A)	REK1112	26	Wire Saddle 5S	AEC7500	
			27	Push Rivet	AEC7370	
⚠ 11	Power Transformer (T1501)	ATS7374	NSP 28	Binder (BK-1)	ZCA-BK1	B
⚠ 12	Power Cable	VDG1075	NSP 29	Trans. Label V1	AAX8052	
13	Flexible Cable (12P)	ADD7477	30	Screw	IBZ30P150FCC	
14	Primary Angle 56	ANG7526				
15	DSP Shield A V1	ANG7479	31	Screw	ABA7109	
			32	Screw	BBZ30P080FCC	
16	Cord Stopper	CM-22C	33	Deco Screw	ABA7060	
17	Under Beam V1	AND7478				

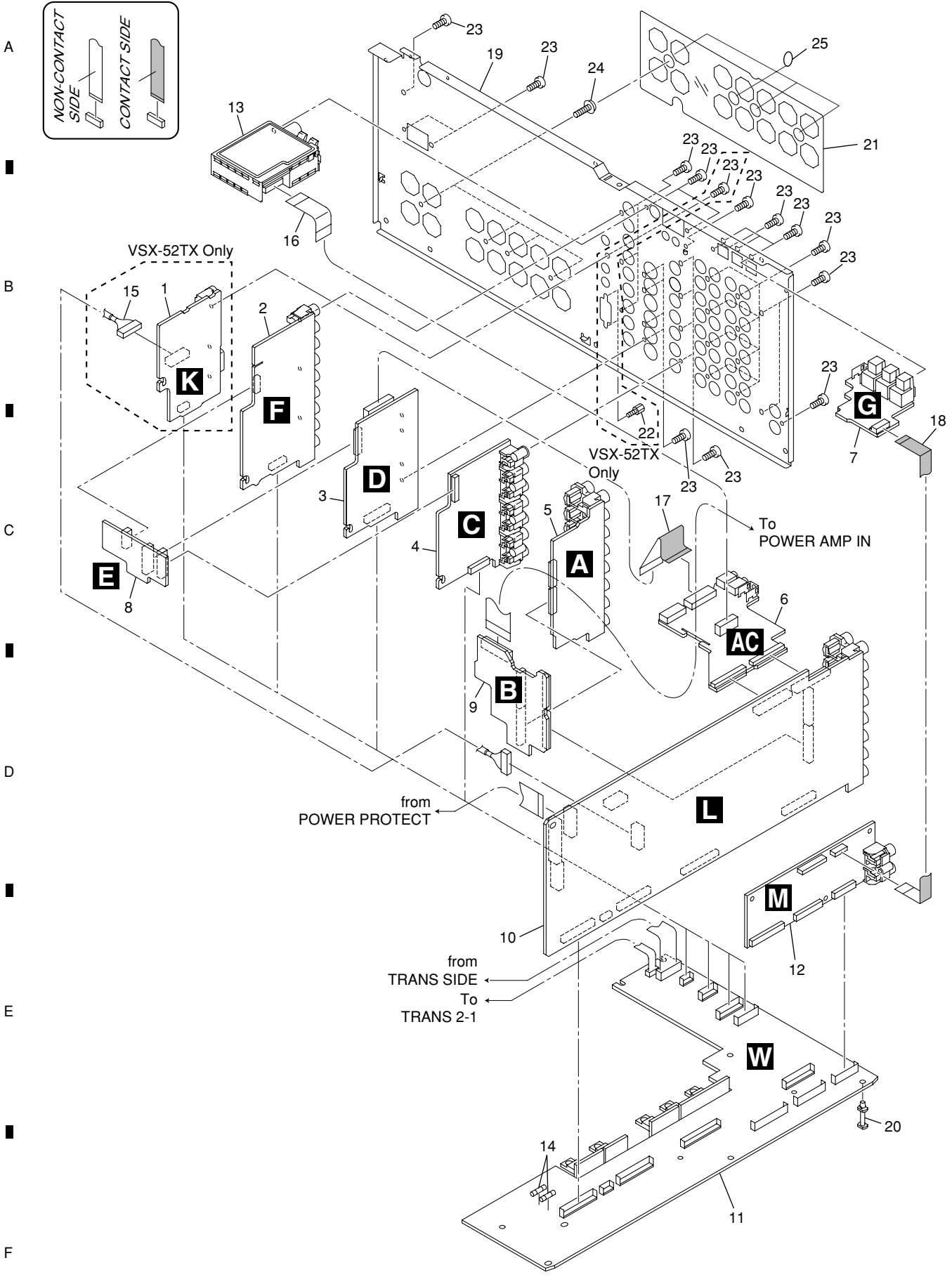
(2) CONTRAST TABLE

VSX-52TX/KUXJ/CA and VSX-1014TX-K/KUXJC are constructed the same except for the following:

Mark	No.	Symbol and Description	VSX-52TX /KUXJ/CA	VSX-1014TX-K /KUXJC
	20	Stabilizer 45	ANG7408	Not used
NSP	22	Under Base 52	ANA7166	Not used
NSP	22	Under Base 1014	Not used	ANA7161

1 2 3 4

2.4 REAR PANEL SECTION



(1) REAR PANEL SECTION parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	12V TRIGGER Assy	See Contrast table (2)	15	Connector Assy (8P)	See Contrast table (2)
2	COMPONENT Assy	AWX8358			
3	S VIDEO Assy	AWX8361	16	Flexible Cable (11P)	ADD7476
4	COMPOSITE V Assy	See Contrast table (2)	17	Flexible Cable (17P)	ADD7478
5	MULTI CH I/O Assy	See Contrast table (2)	18	Flexible Cable (10P)	ADD7472
			19	Rear Panel	See Contrast table (2)
6	REAR TOP Assy	AWX8397	20	Card Spacer	AEC7502
7	OPTICAL-IN Assy	AWX8394			
8	VIDEO SIDE Assy	AWX8366	21	Speaker Sheet V1	AAK8176
9	AUDIO CONNECT Assy	AWX8382	22	Hexagonal Screw	See Contrast table (2)
10	MAIN CONTROL Assy	See Contrast table (2)	23	Screw	BBZ30P080FCC
			24	Screw	BBT30P100FCC
11	REGULATOR Assy	See Contrast table (2)	25	Cushion Circle 14B	AED7081
12	DSP Assy	AWX8414			
13	FM/AM TUNER Unit	AXX7172			
⚠ 14	Fuse (FU2501, 2502 : 3.15A)	REK1114			

(2) CONTRAST TABLE

VSX-52TX/KUXJ/CA and VSX-1014TX-K/KUXJC are constructed the same except for the following:

Mark	No.	Symbol and Description	VSX-52TX /KUXJ/CA	VSX-1014TX-K /KUXJC
	1	12V TRIGGER Assy	AWX8395	Not used
	4	COMPOSITE V Assy	AWX8353	AWX8362
	5	MULTI CH I/O Assy	AWX8410	AWX8352
	10	MAIN CONTROL Assy	AWX8343	AWX8348
	11	REGULATOR Assy	AWX8364	AWX8367
	15	Connector Assy (8P)	ADE7085	Not used
	19	Rear Panel 52KU	ANC8249	Not used
	19	Rear Panel 1014KU	Not used	ANC8254
	22	Hexagonal Screw	ABA7078	Not used

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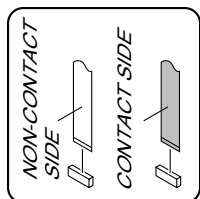


HEAT SINK SECTION parts List

Mark No.	Description	Part No.
1	POWER AMP-L Assy	AWX8409
2	POWER AMP-R Assy	AWX8404
3	POWER AMP IN Assy	AWX8405
4	POWER PROTECT Assy	AWX8406
5	POSI 1 L Assy	AWX8427
6	POSI 1 R Assy	AWX8426
7	Flexible Cable (15P)	ADD7473
8	Flexible Cable (18P)	ADD7479
NSP 9	Heat Sink 45	ANH7152
10	H.S Angle V1	ANG7481
11	PCB Angle 45	ANG7406
12	Mica Sheet 45	AEE7047
NSP 13	Speed Clamp	AEC7445
14	Nyron Rivet	AEC7408
15	Screw	BBZ30P100FCC
16	Screw	ABA7085
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2.6 FRONT PANEL SECTION

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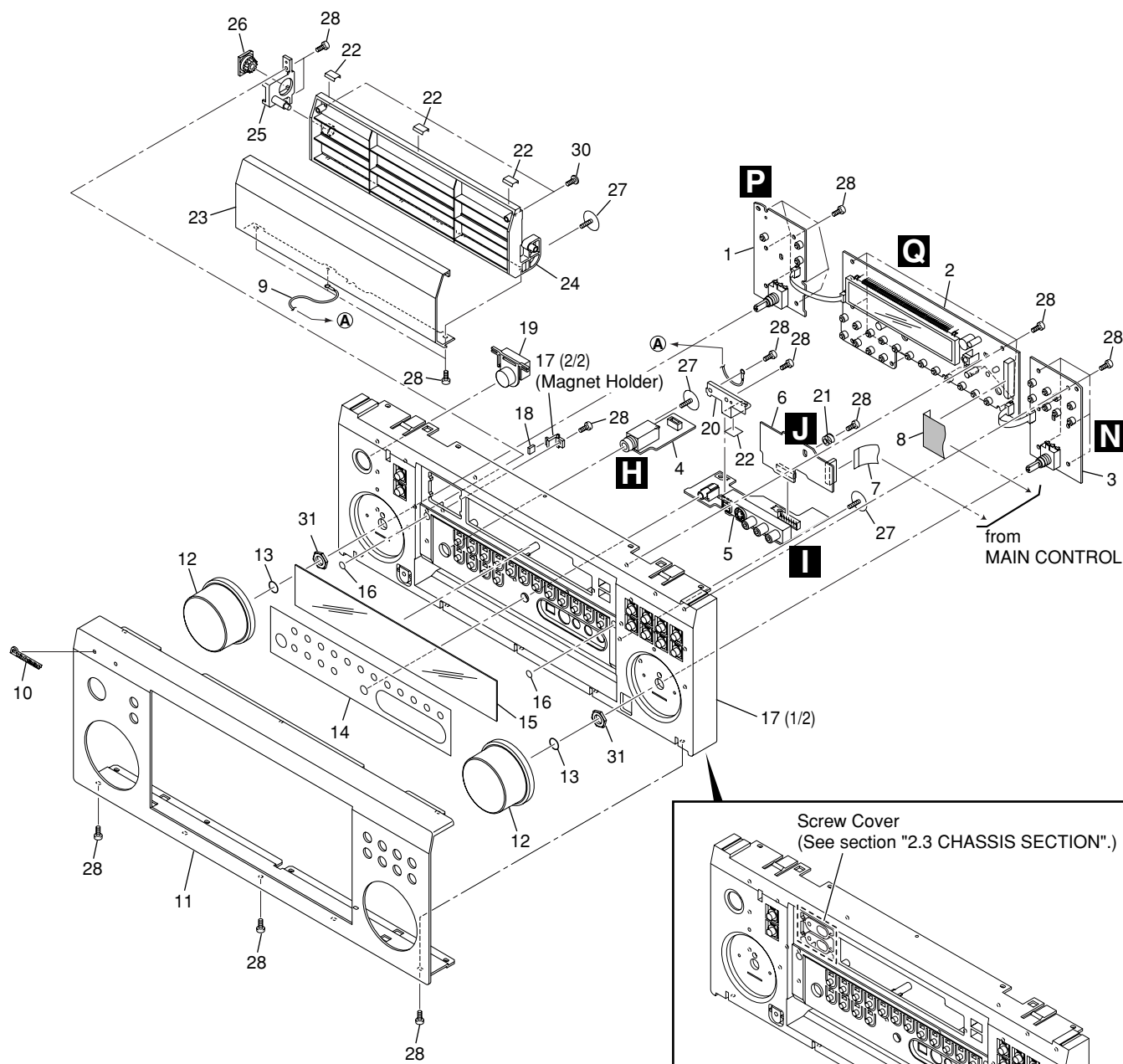
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(1) FRONT PANEL SECTION parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	MULTI JOG Assy	AWX8479	18	Magnet 35	AMF7007
2	DISPLAY Assy	See Contrast table (2)	19	Standby Button V1K	XAD3173
3	VOLUME Assy	AWX8378	20	Earth Plate A	ANG7484
4	HEADPHONE Assy	AWX8380			
5	FRONT-IN Assy	AWX8381	NSP 21	Earth Spring 35	ABH7193
			22	Cushion 11 x 11	AED7088
6	FRONT-IN CONNECT Assy	AWX8416	23	Door	See Contrast table (2)
7	Flexible Cable (15P)	ADD7473	24	Door Base V1B	AMR7477
8	Flexible Cable (26P)	ADD7474	25	Door Shaft 35	AMR7295
NSP 9	Earth Lead Wire	ADH7022			
10	Pioneer Badge B	See Contrast table (2)	26	Damper Assy (240)	AXA7136
			27	Screw	ABA7110
11	F. Panel	See Contrast table (2)	28	Screw	BPZ30P100FTC
12	Rotary Knob B	AAA7024	29	• • • •	
13	Ring	ABH7213	30	• • • •	
14	D. Sheet	See Contrast table (2)			
15	Window	See Contrast table (2)	31	Nut	NK90FCC
16	Cushion Circle 6B	AED7083			
17	Panel Base V1B	AMB7870			

(2) CONTRAST TABLE

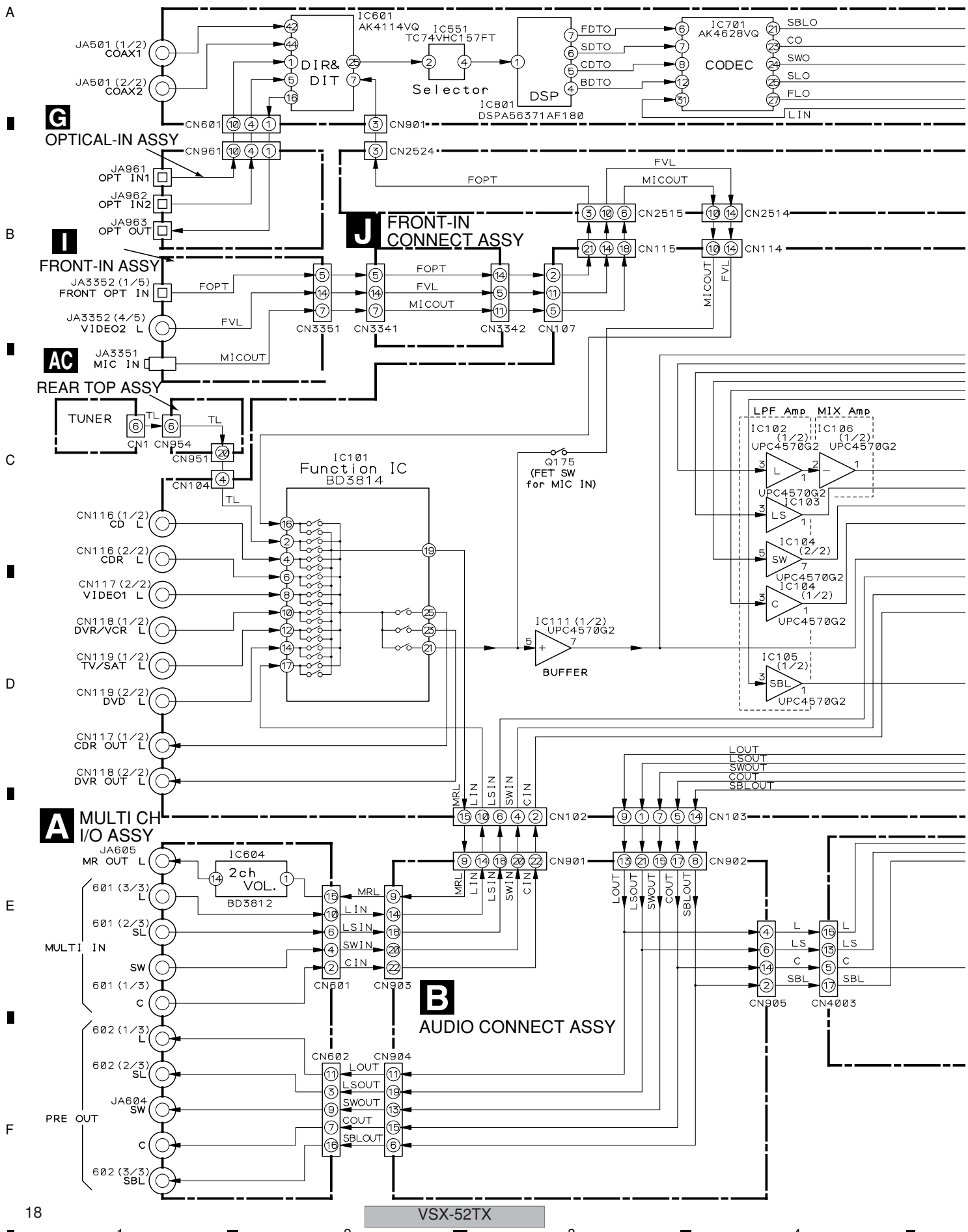
VSX-52TX/KUXJ/CA and VSX-1024TX-K/KUXJC are constructed the same except for the following:

Mark	No.	Symbol and Description	VSX-52TX /KUXJ/CA	VSX-1024TX-K /KUXJC
	2	DISPLAY Assy	AWX8377	AWX8389
	10	Pioneer Badge B	PAN1376	AAN7218
	11	F. Panel 52KU	ANB7338	Not used
	11	F. Panel 1014KU	Not used	ANB7339
	14	D. Sheet 52KU	AAK8179	Not used
	14	D. Sheet 1014KU	Not used	AAK8180
	15	Window 52	AAK8177	Not used
	15	Window 1014	Not used	AAK8186
	23	Door 52	ANB7334	Not used
	23	Door V1	Not used	ANB7335

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

3.1.1 AUDIO SECTION





3.1.2 VIDEO and DISPLAY SECTIONS

Video Block

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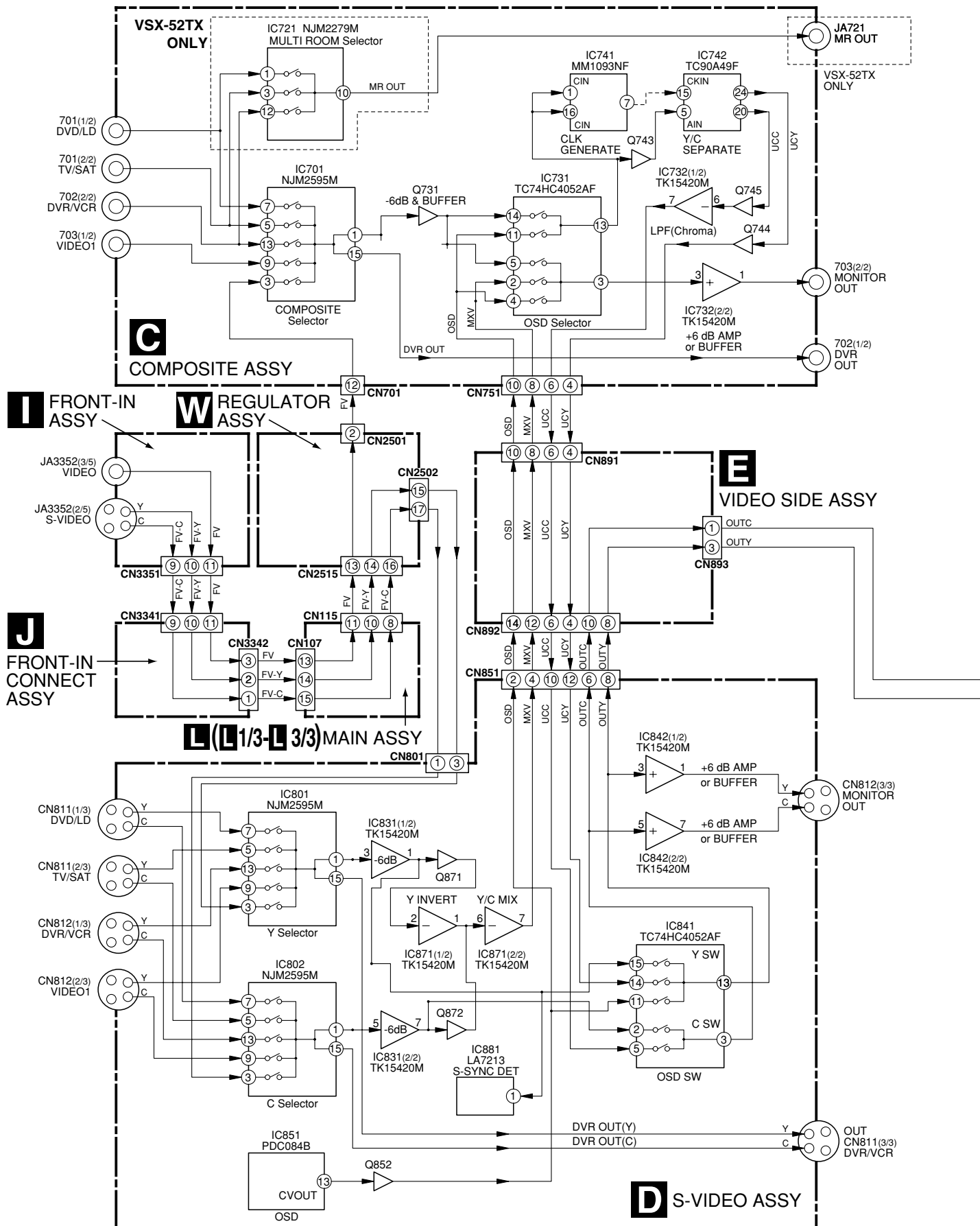
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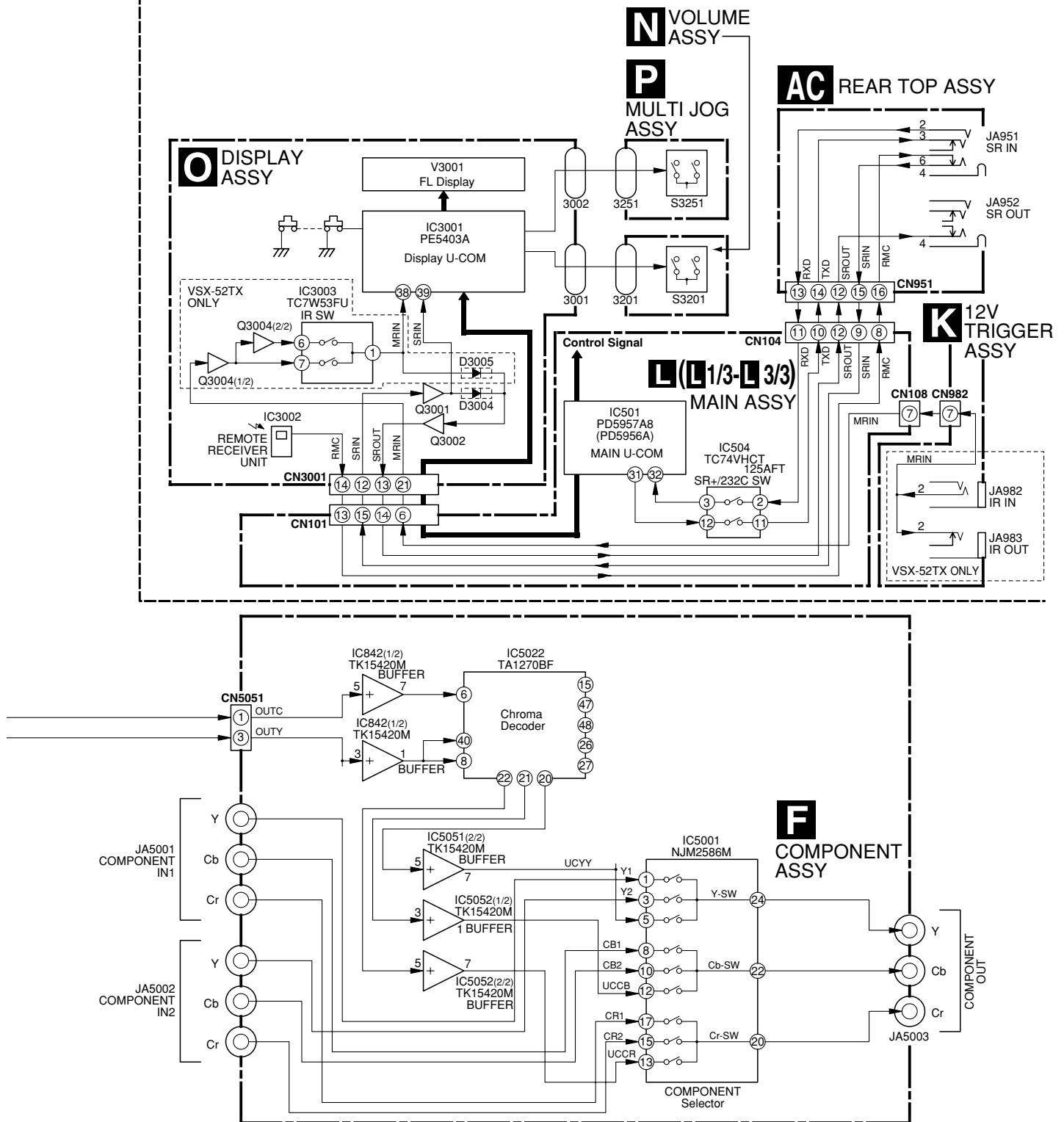
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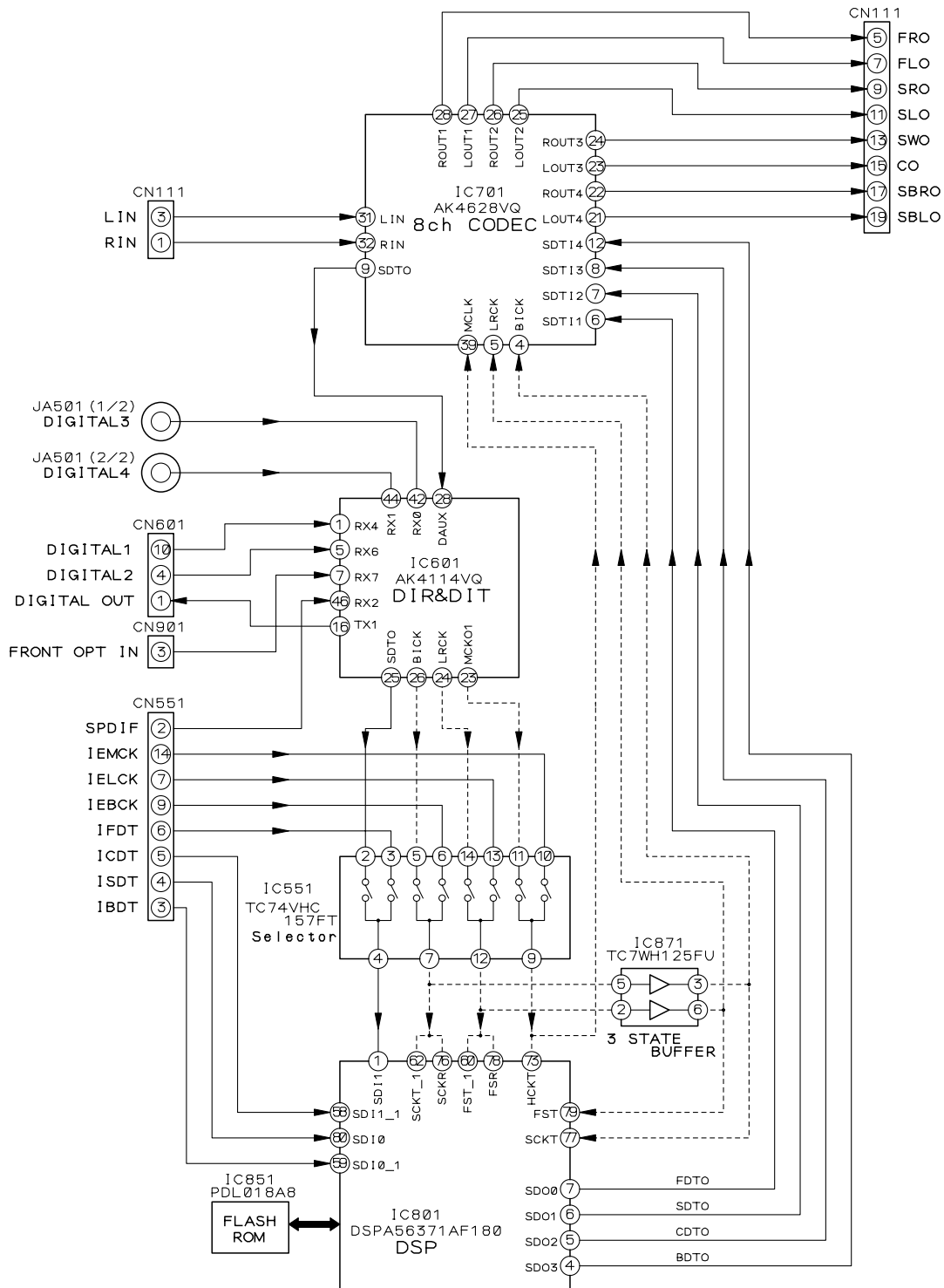
Display/SR Block



3.1.3 DSP SECTION

DSP Block

M(**M** 1/2 - **M** 2/2) DSP ASSY



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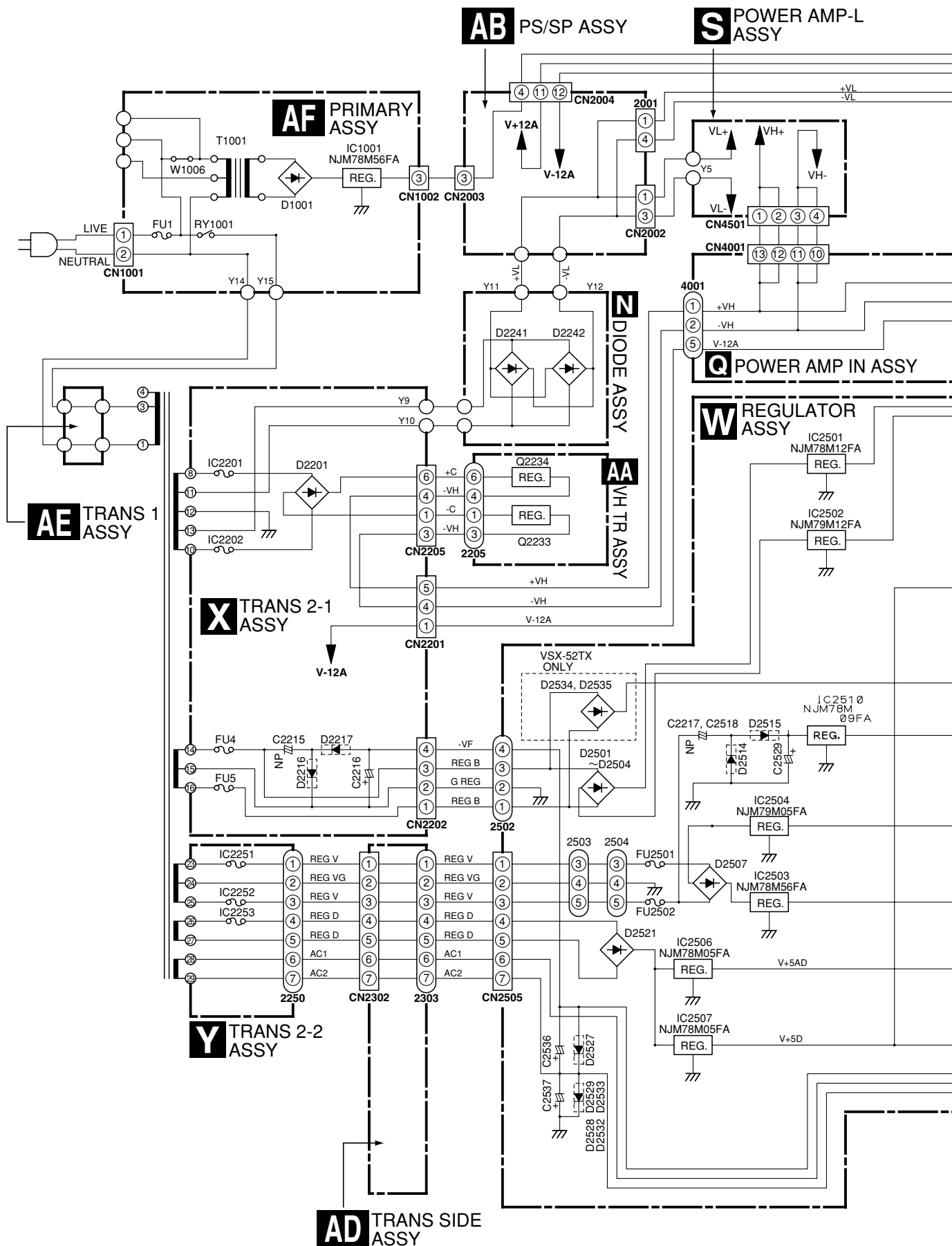
8

■

VSX-52TX

3.1.4 POWER SUPPLY SECTION

Power Supply Block

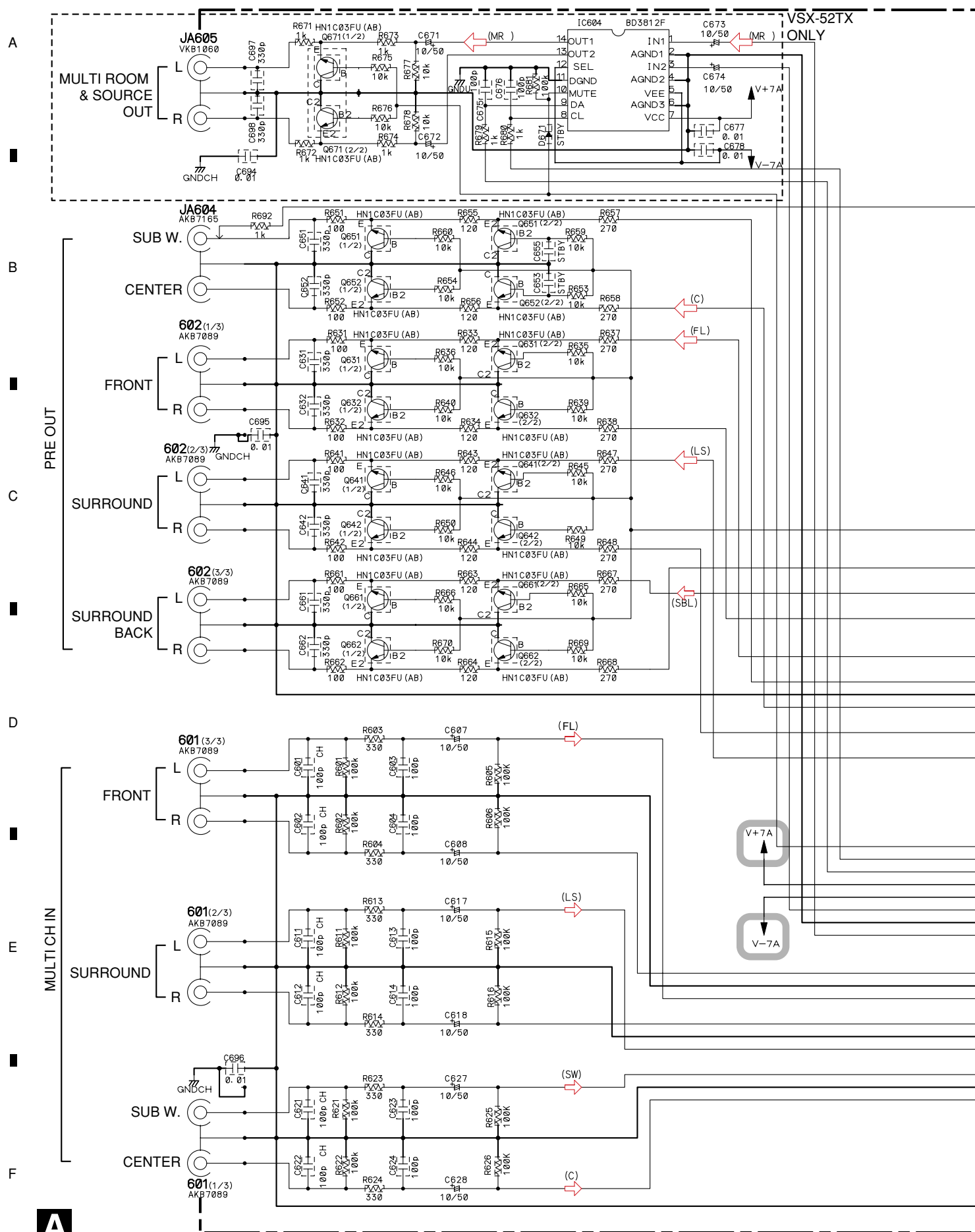




4

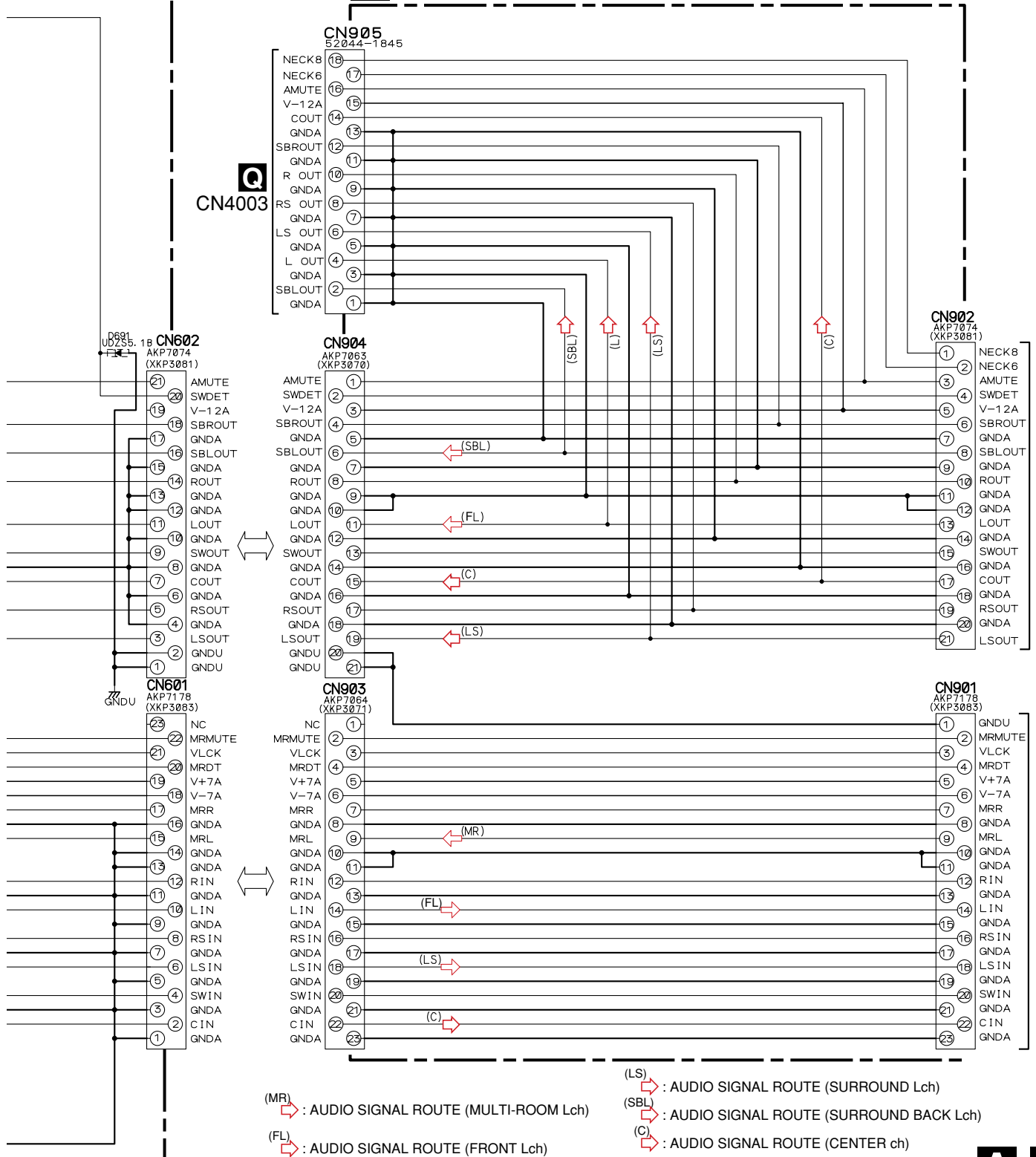


3.3 MULTI CH I/O and AUDIO CONNECT ASSYS

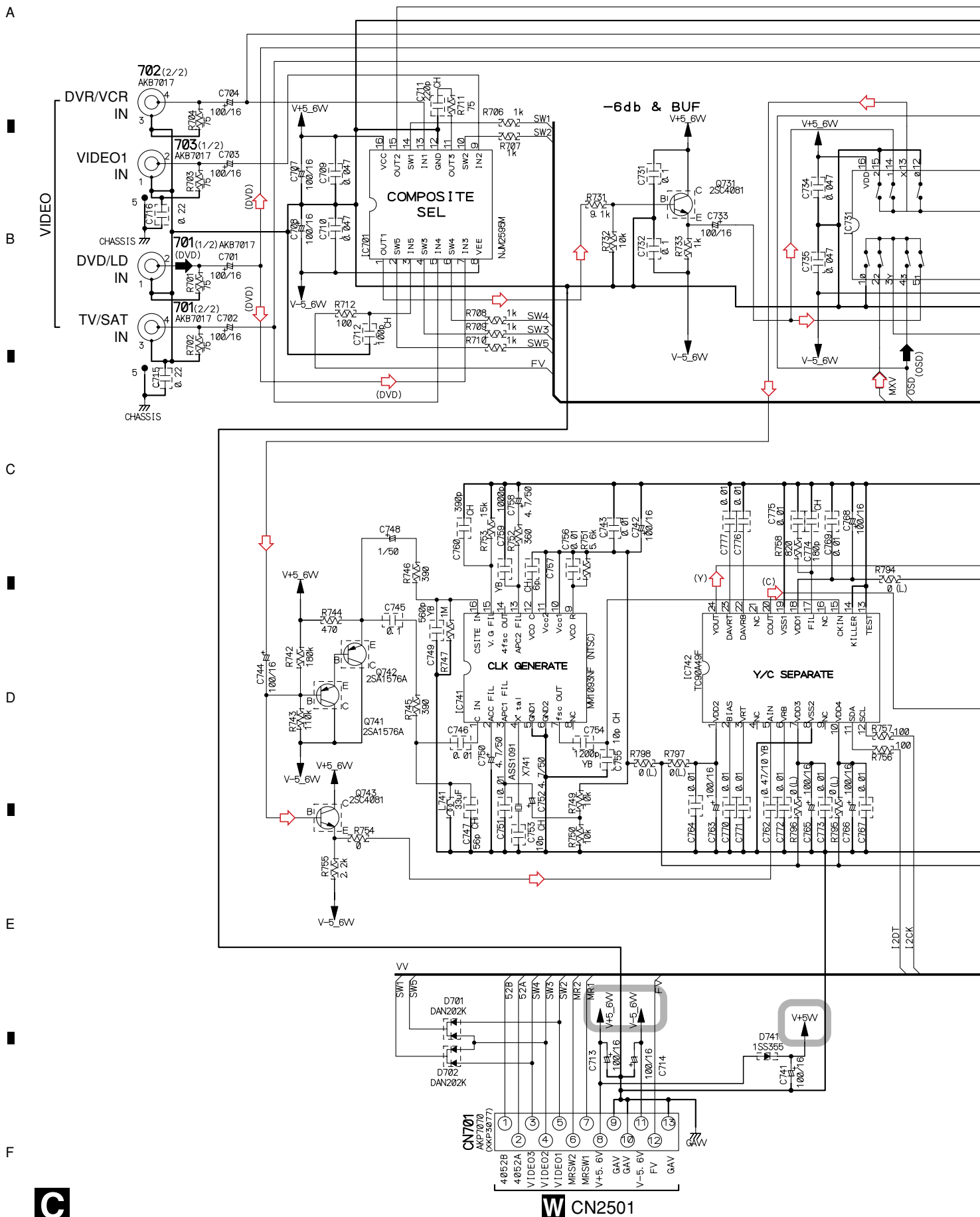


A MULTI CH I/O ASSY
(VSX-52TX : AWX8410)
(VSX-1014TX-K : AWX8352)

B AUDIO CONNECT ASSY (AWX8382)



3.4 COMPOSITE V ASSY



3.5 S VIDEO ASSY

D S VIDEO ASSY (AWX8361)

A

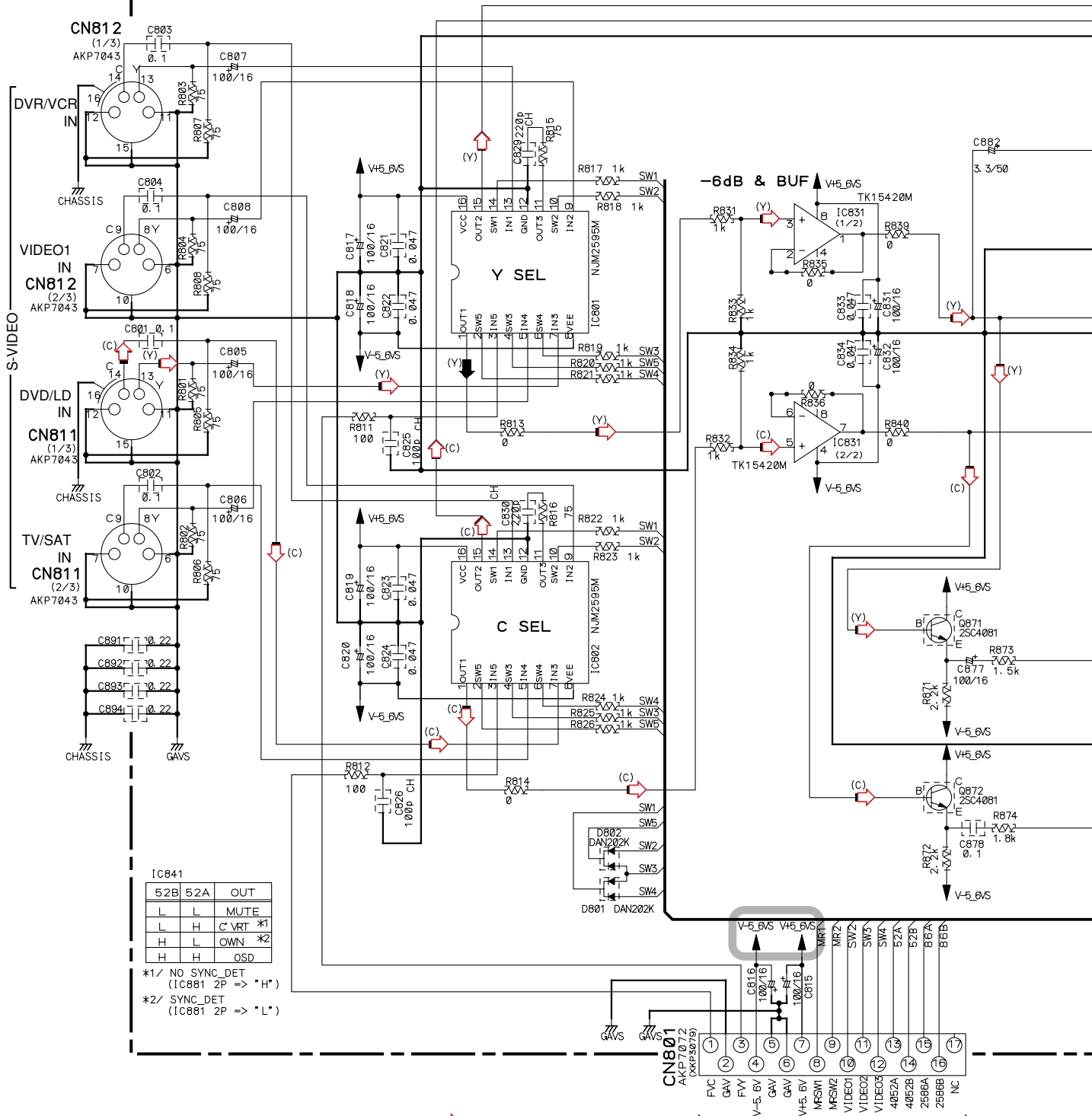
B

C

D

E

F



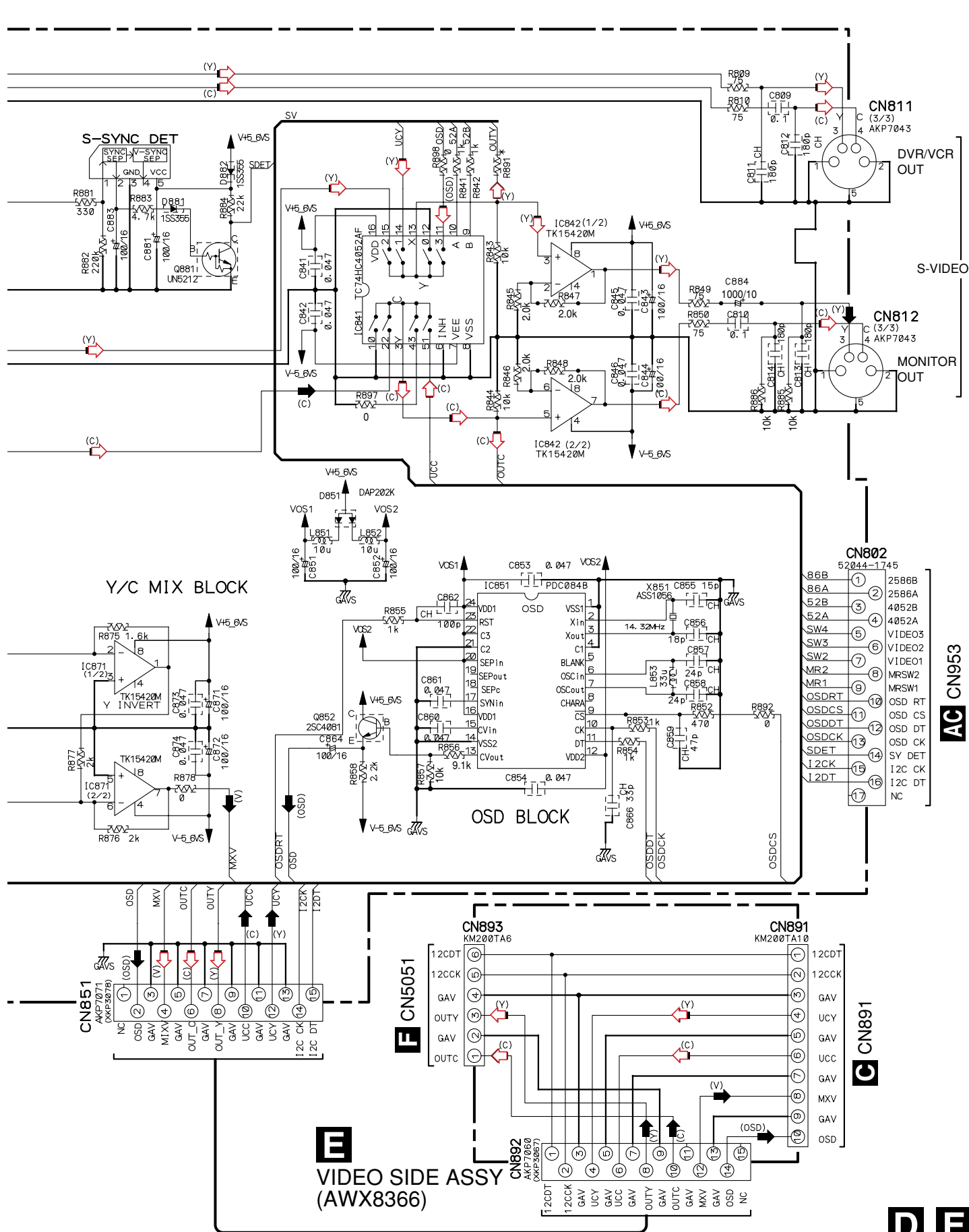
↗ : VIDEO SIGNAL ROUTE

(Y) ↗ : VIDEO SIGNAL ROUTE (Y)

(C) ↗ : VIDEO SIGNAL ROUTE (C)

W CN2502

D



A

B

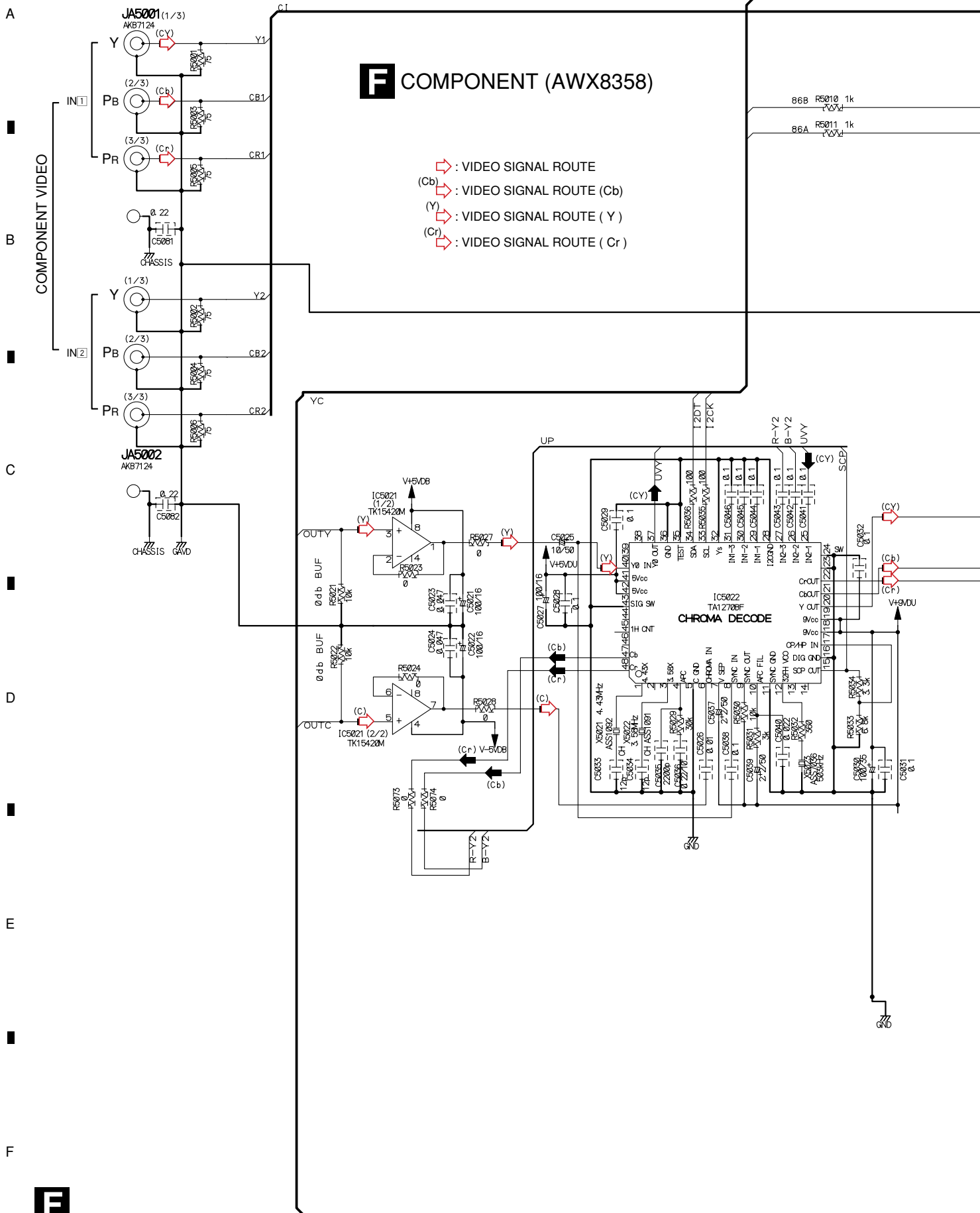
C

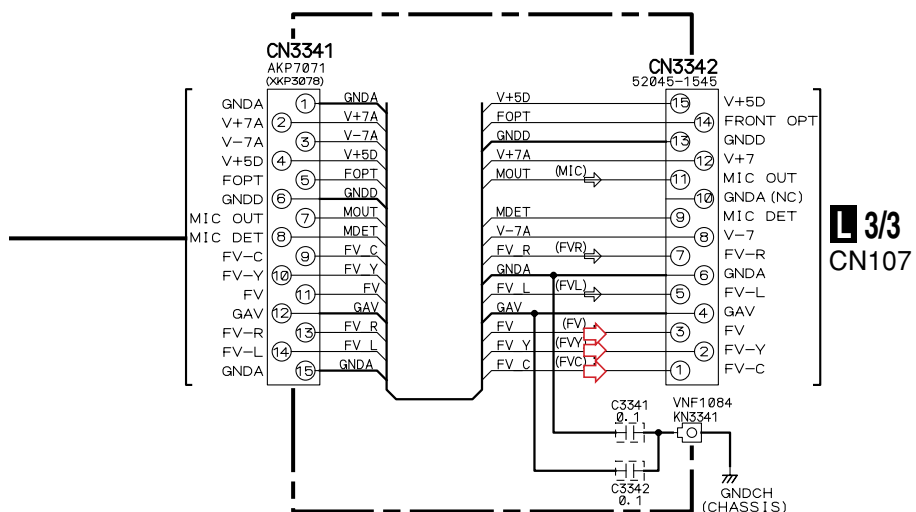
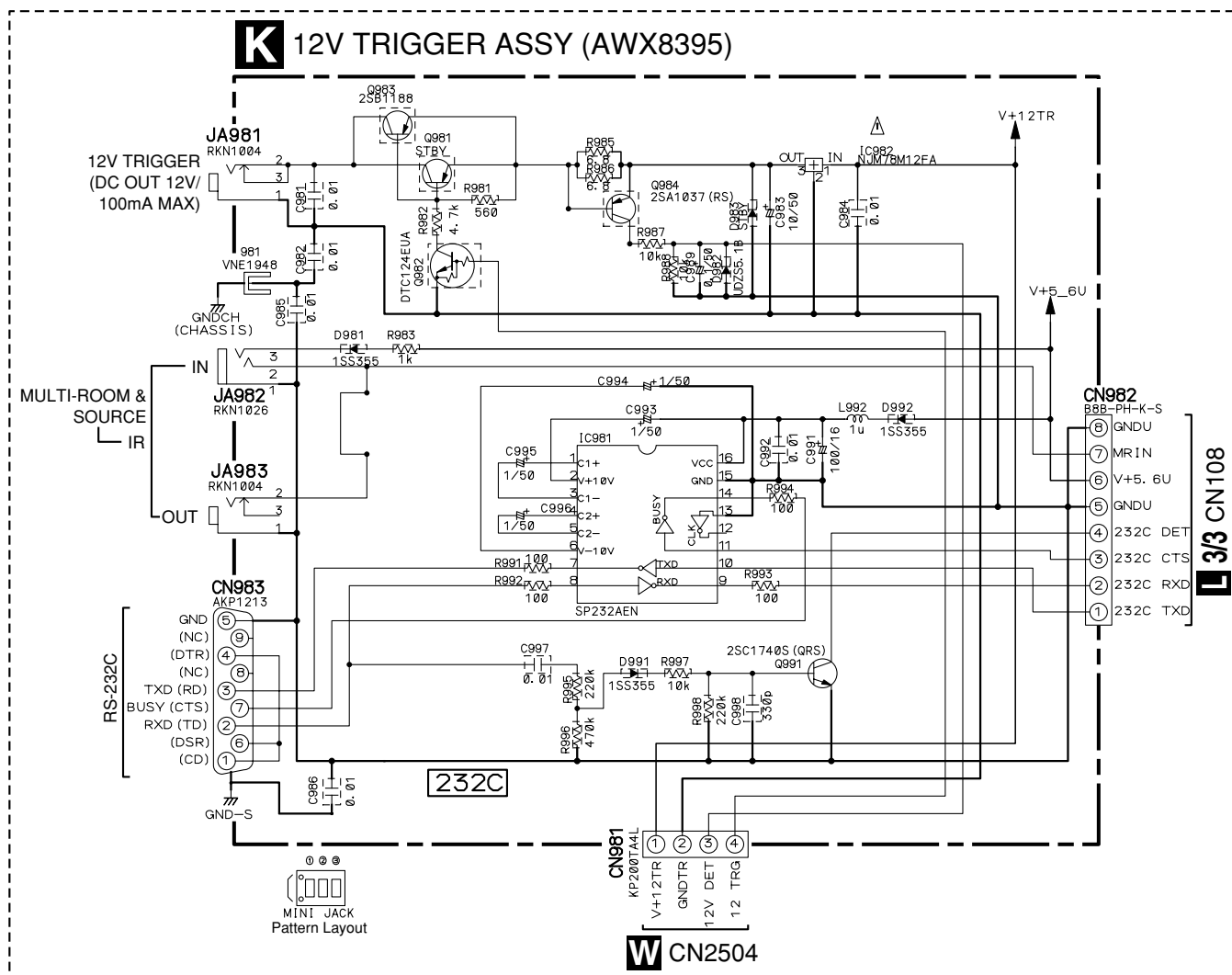
D

E

F

3.6 COMPONENT ASSY

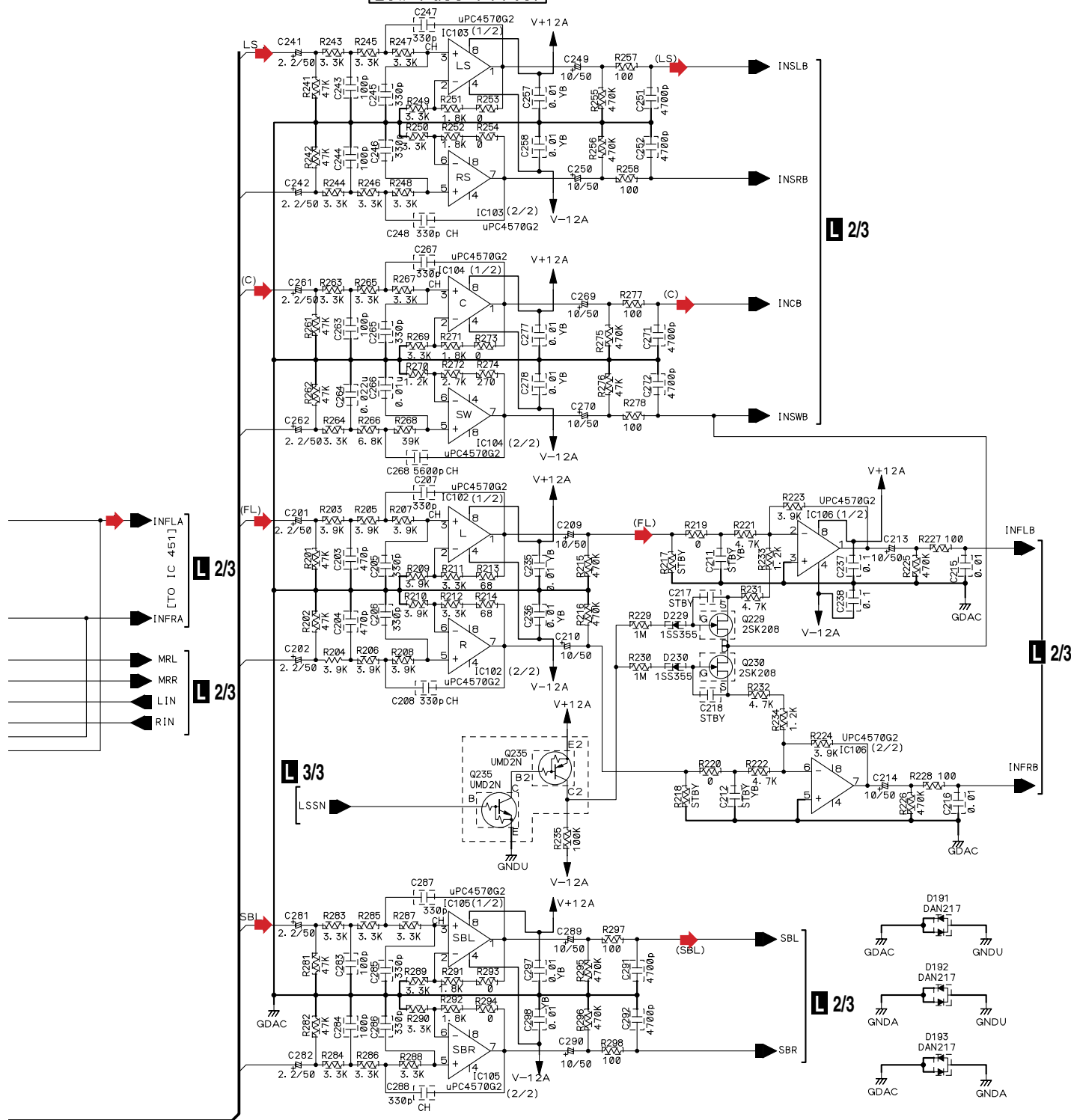




- ➡ : VIDEO SIGNAL ROUTE
- (V) ➡ : VIDEO SIGNAL ROUTE (V)
- (Y) ➡ : VIDEO SIGNAL ROUTE (Y)
- (C) ➡ : VIDEO SIGNAL ROUTE (C)

38

Low Pass Filter



- ➡ : AUDIO SIGNAL ROUTE (Lch)
- (CD-R) ➡ : AUDIO SIGNAL ROUTE (CD-R Lch)
- (TX) ➡ : AUDIO SIGNAL ROUTE (TUNER Lch)
- (MR) ➡ : AUDIO SIGNAL ROUTE (MULTI-ROOM Lch)
- (DVD) ➡ : AUDIO SIGNAL ROUTE (DVD Lch)

- (FL) ➡ : AUDIO SIGNAL ROUTE (FRONT Lch)
- (LS) ➡ : AUDIO SIGNAL ROUTE (SURROUND Lch)
- (SBL) ➡ : AUDIO SIGNAL ROUTE (SURROUND BACK Lch)
- (C) ➡ : AUDIO SIGNAL ROUTE (CENTER ch)

L 1/3

3.9 MAIN CONTROL ASSY (2/3)

2/3

MAIN CONTROL ASSY
(VSX-52TX : AWX8343)
(VSX-1014TX-K : AWX8348)

A

B

1/3

C

3/3

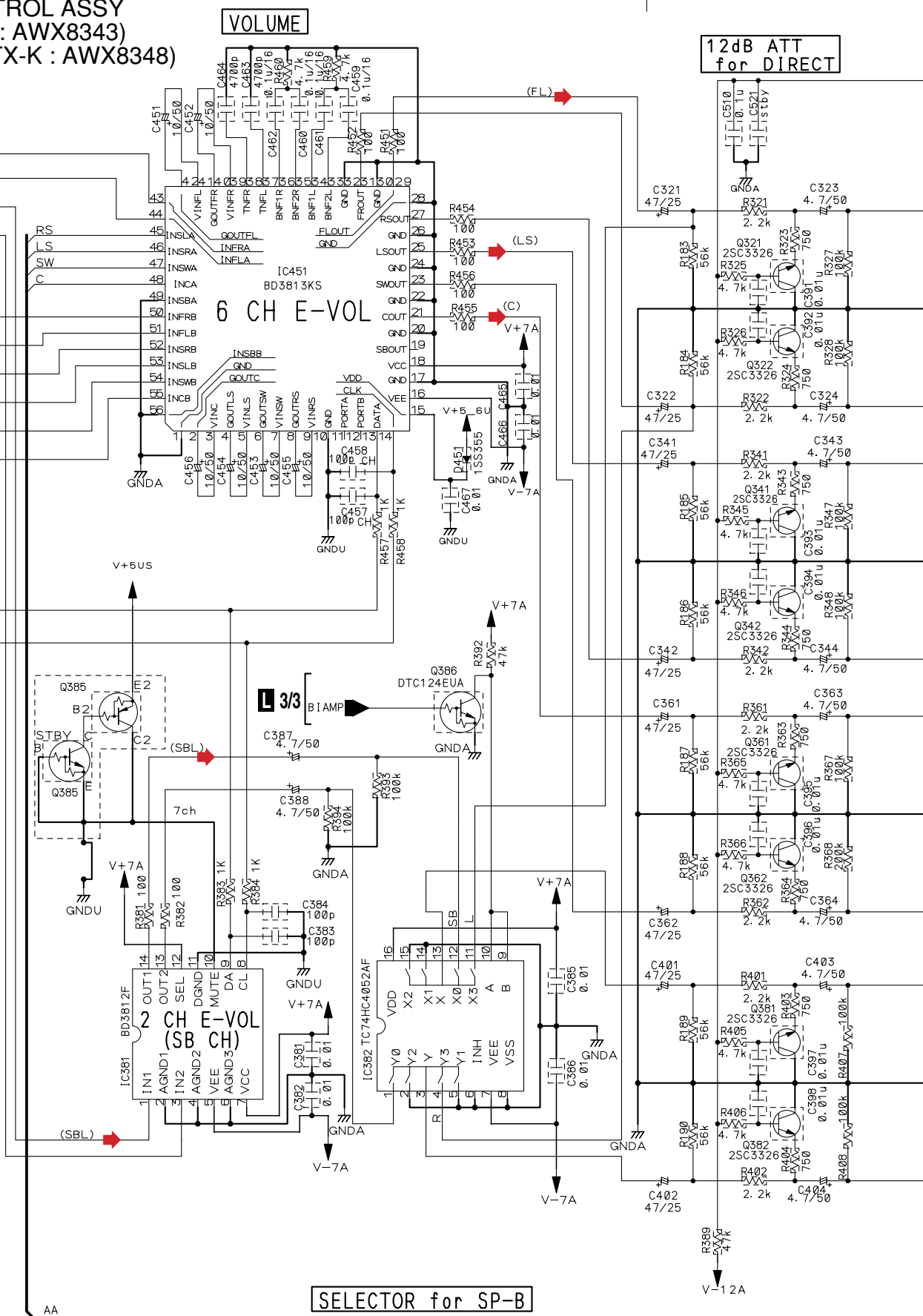
D

E

F

2/3

40



VSX-52TX

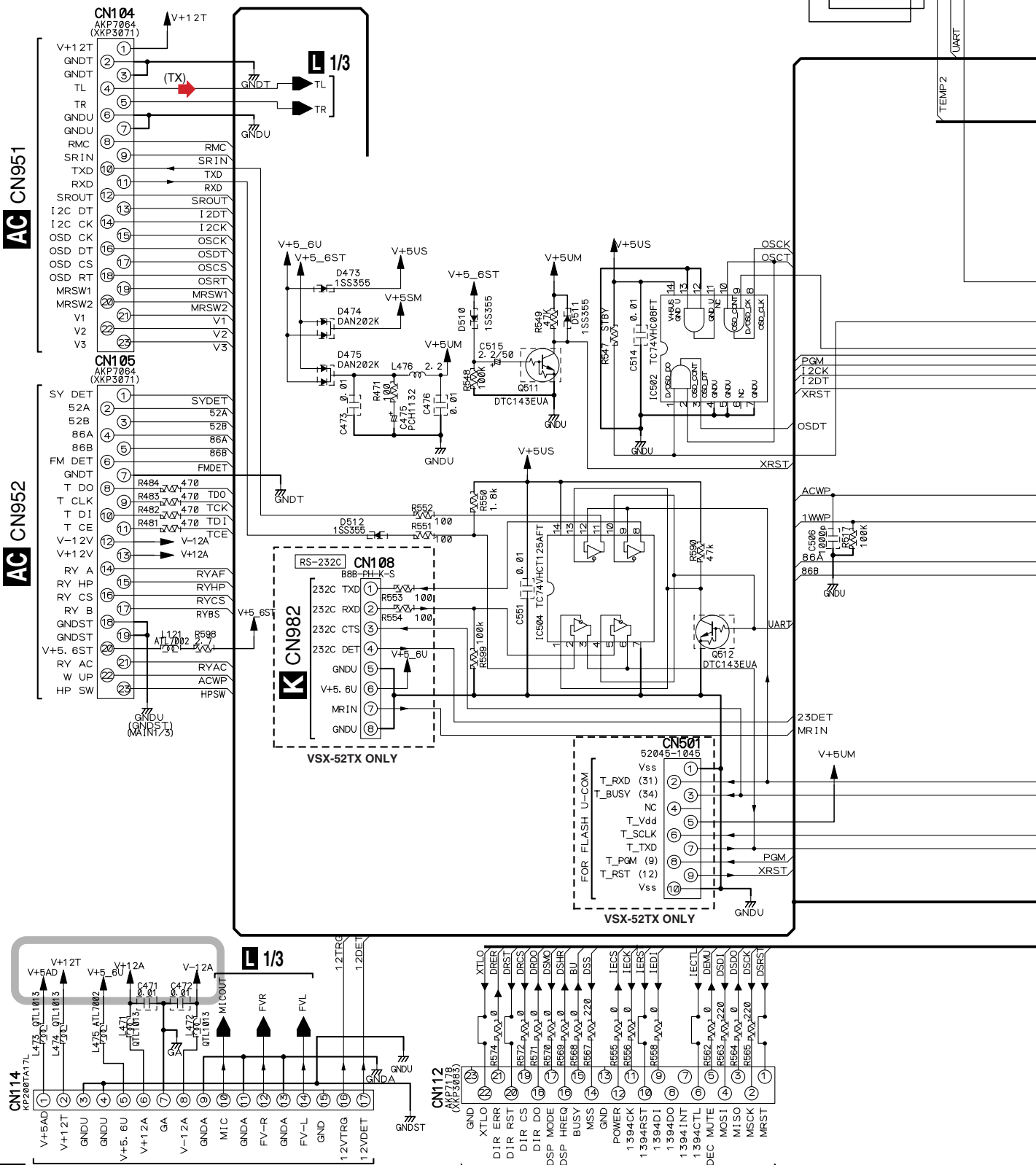


3.10 MAIN CONTROL ASSY (3/3)

3/3

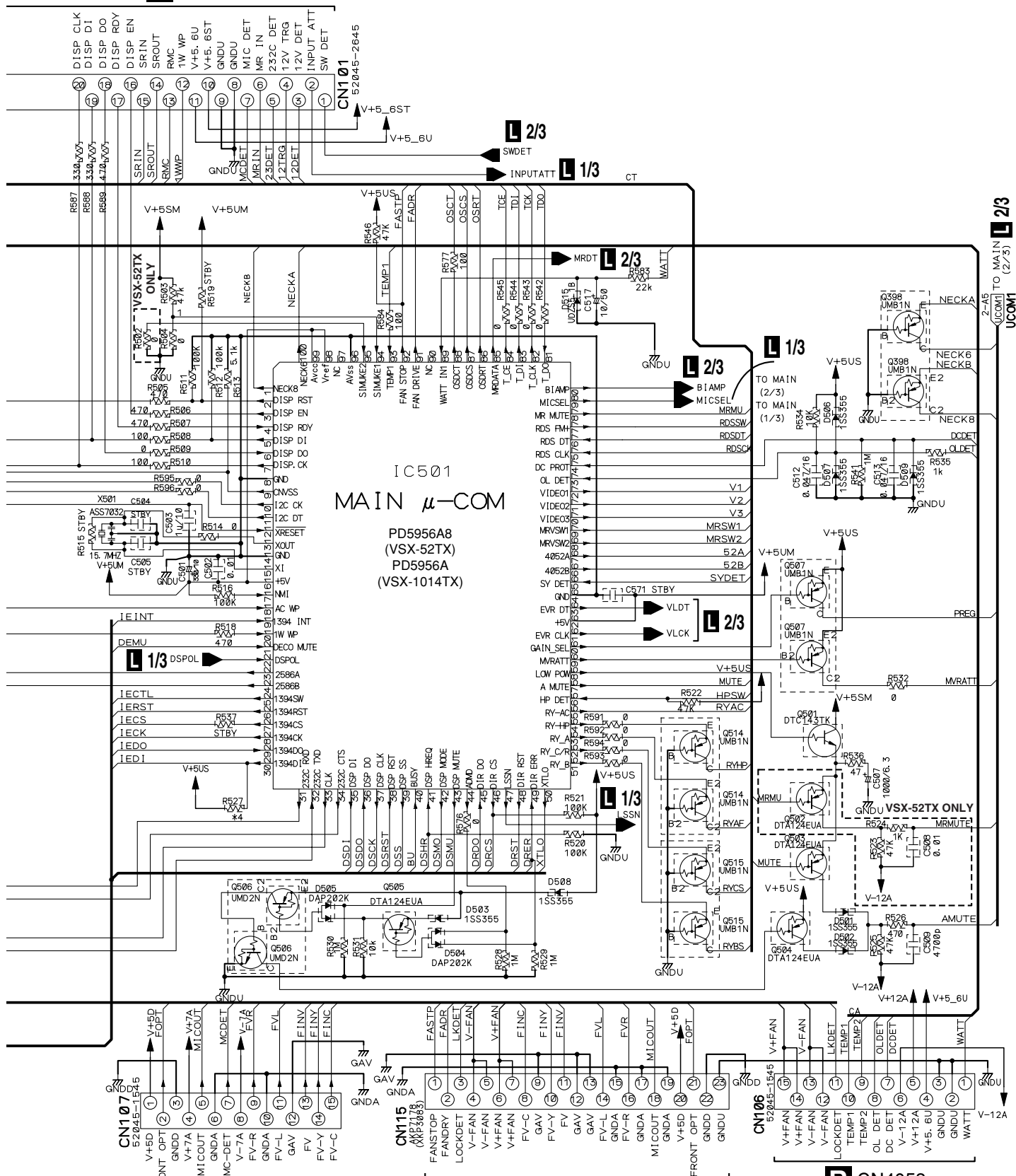
MAIN CONTROL ASSY
(VSX-52TX : AWX8343)
(VSX-1014TX-K : AWX8348)

(TX) : AUDIO SIGNAL ROUTE (TUNER Lch)



VSX-52TX

O CN3001



J CN3322

W CN2515

R CN4053

L 3/3

VSX-52TX

3.11 DSP ASSY (1/2)

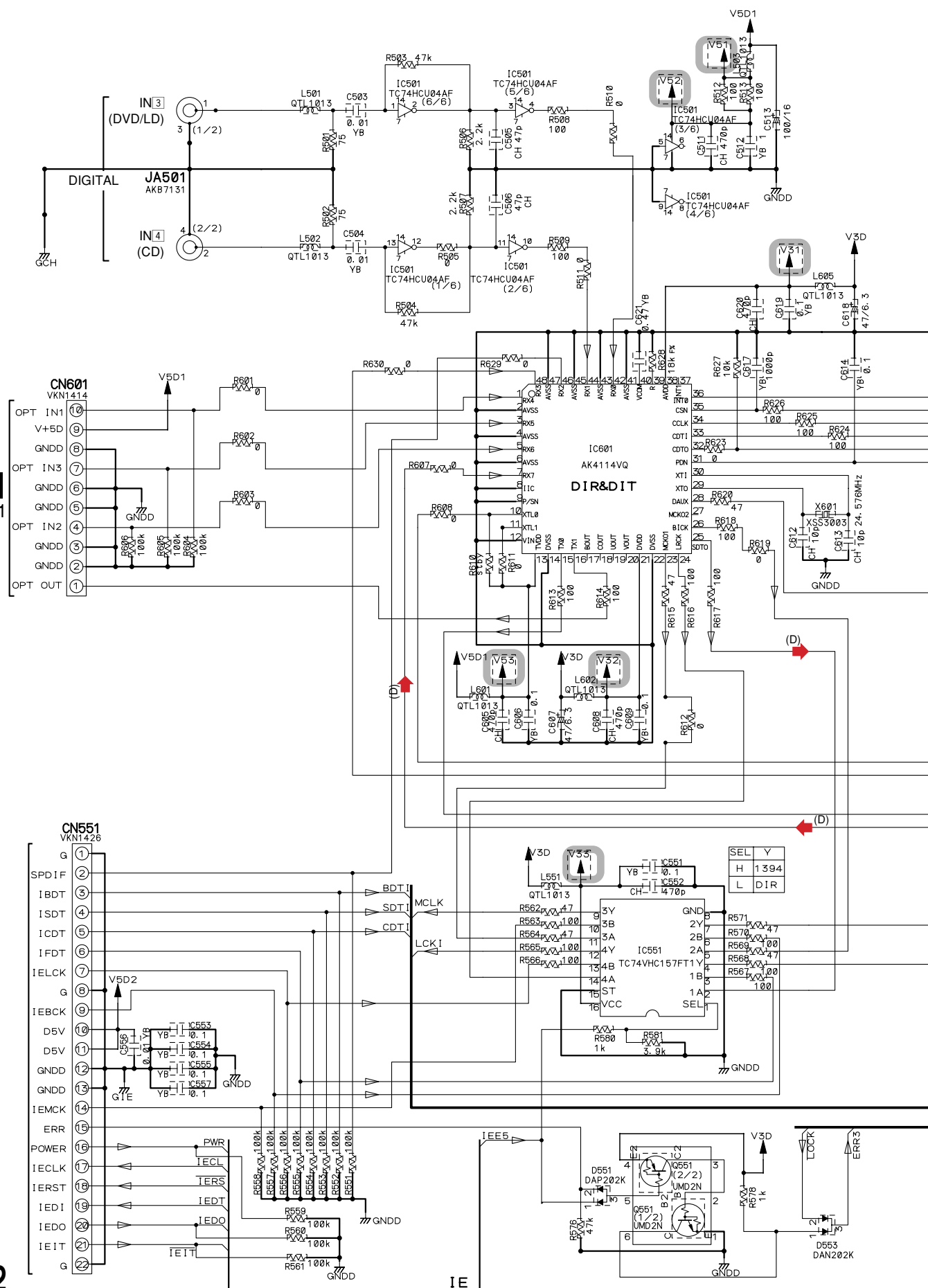
A

B

D

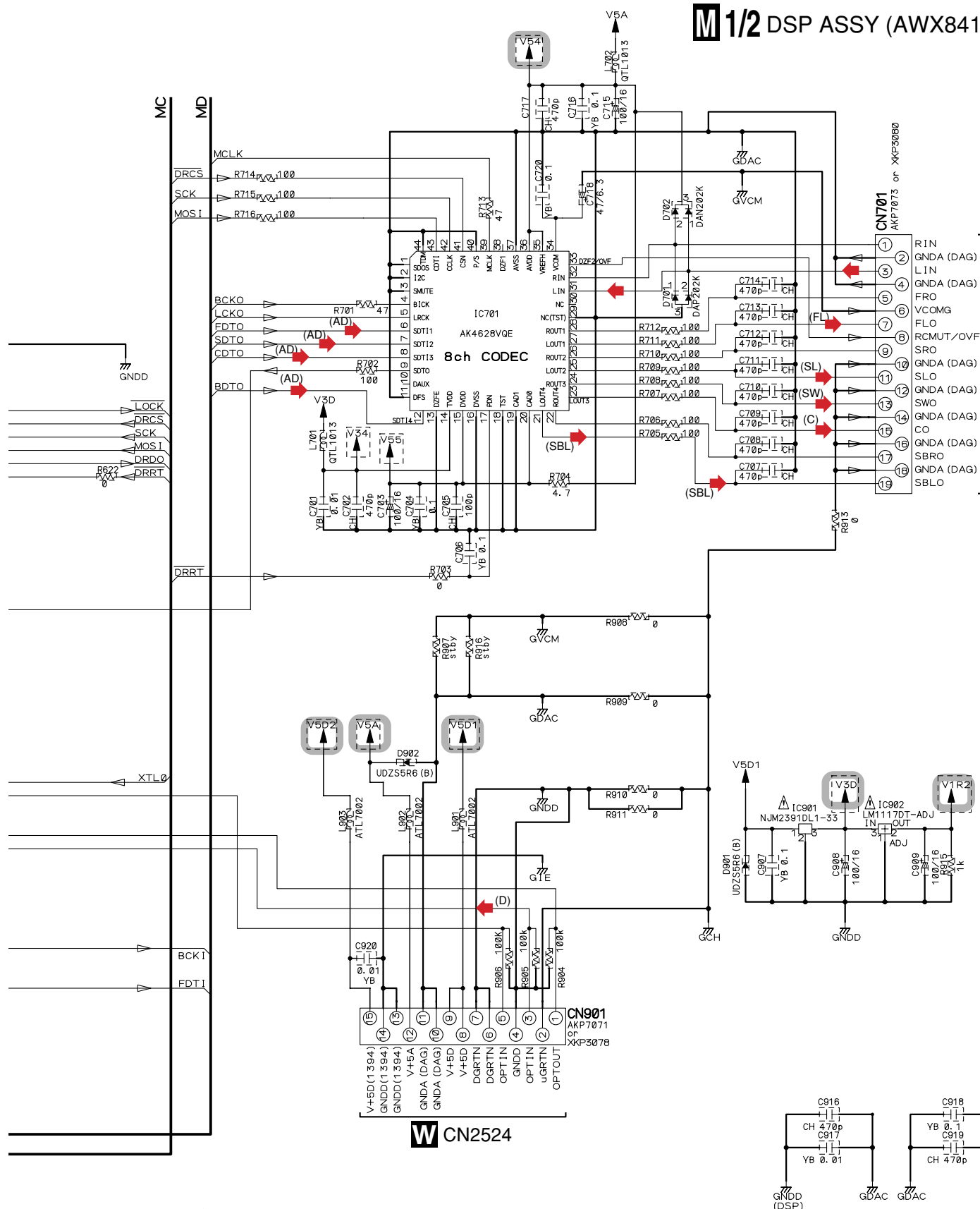
E

F



M 1/2

M 1/2 DSP ASSY (AWX8414)



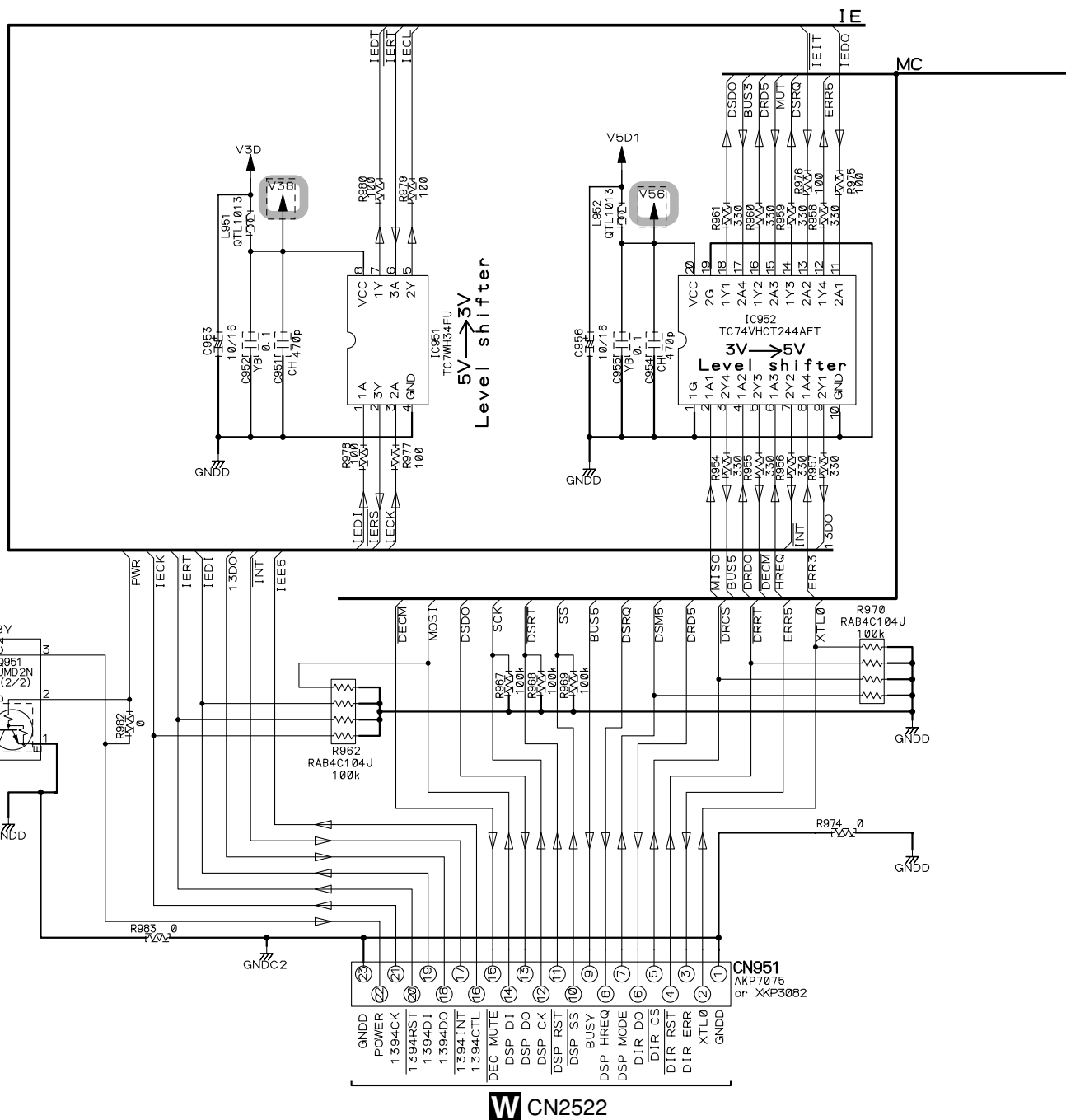
- ➡ : AUDIO SIGNAL ROUTE (Lch)
- (D) ➡ : AUDIO SIGNAL ROUTE (DIGITAL)
- (FL) ➡ : AUDIO SIGNAL ROUTE (FRONT Lch)
- (C) ➡ : AUDIO SIGNAL ROUTE (CENTER ch)

- (SL) ➡ : SURROUND SIGNAL ROUTE
- (SBL) ➡ : AUDIO SIGNAL ROUTE (SURROUND BACK Lch)
- (SW) ➡ : AUDIO SIGNAL ROUTE (SUB WOOFER ch)

M 1/2

3.12 DSP ASSY (2/2)

M 2/2 DSP ASSY (AWX8414)

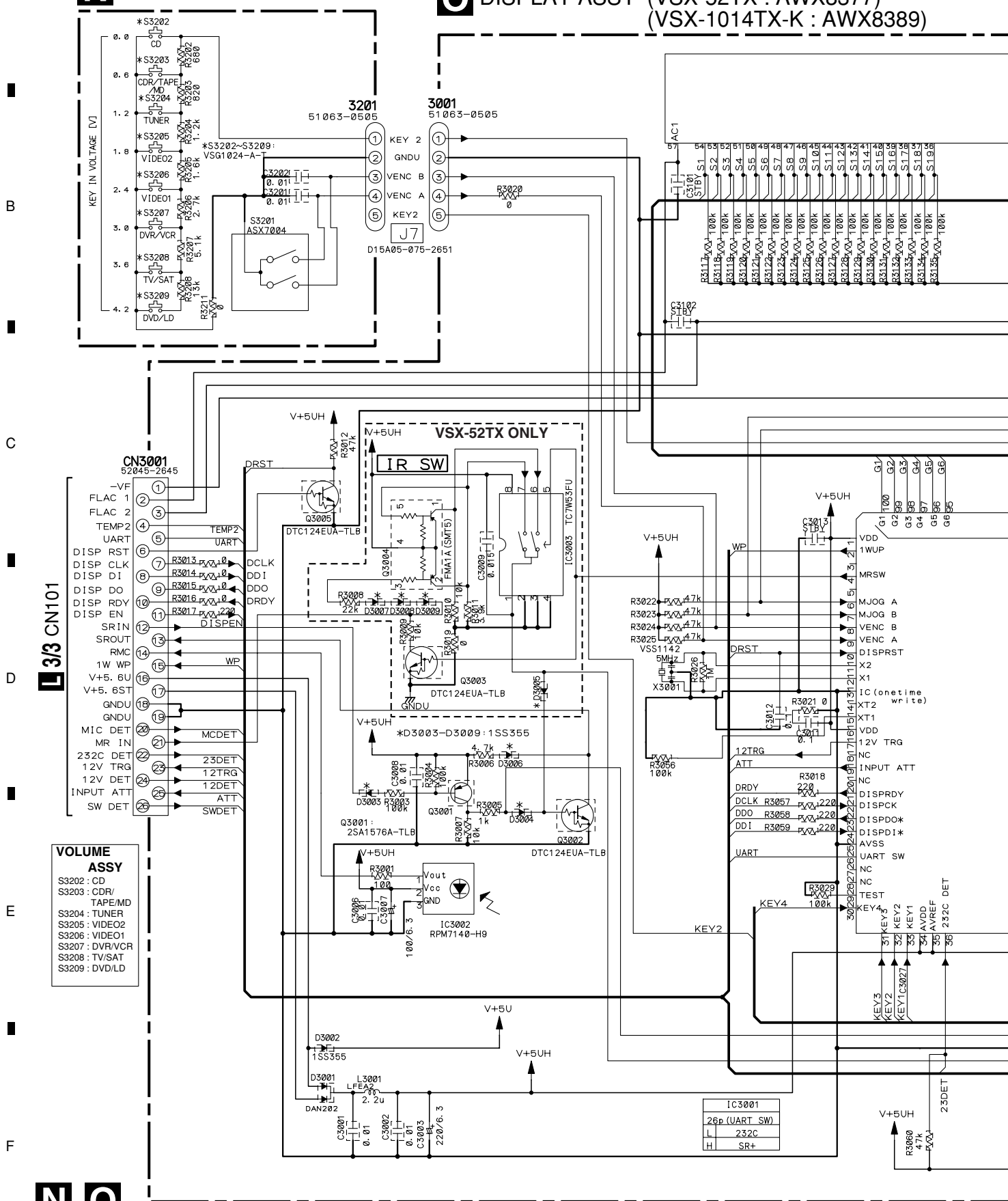


M 2/2

3.13 VOLUME, DISPLAY and MULTI JOG ASSYS

N VOLUME ASSY (AWX8378)

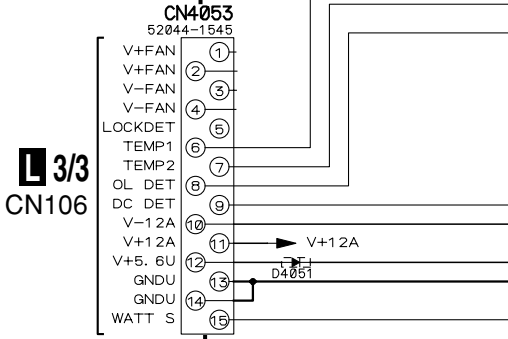
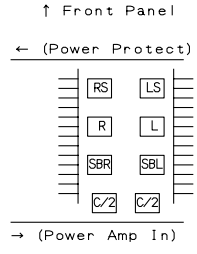
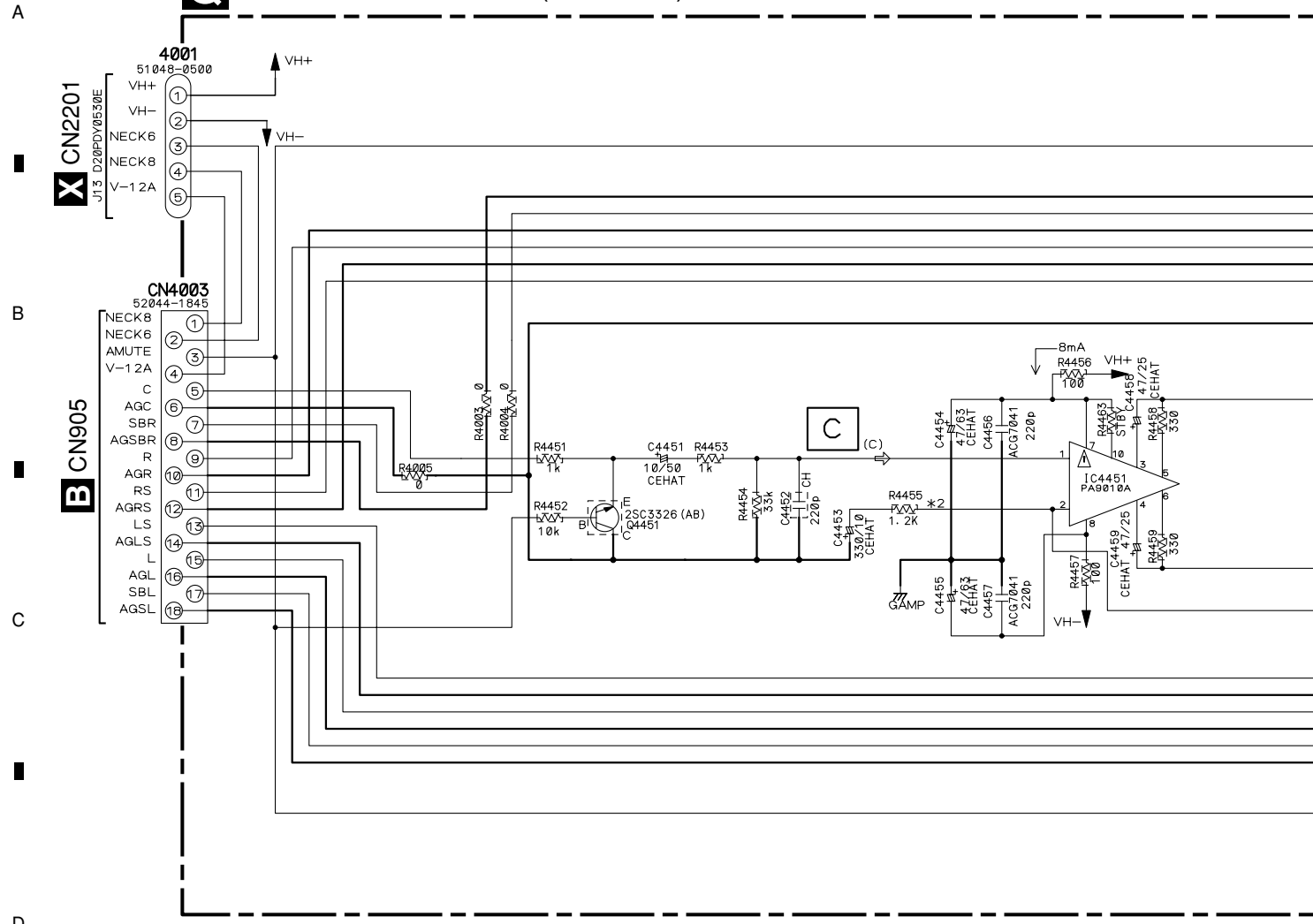
O DISPLAY ASSY (VSX-52TX : AWX8377)
(VSX-1014TX-K : AWX8389)





3.14 POWER AMP IN and POWER PROTECT ASSYS

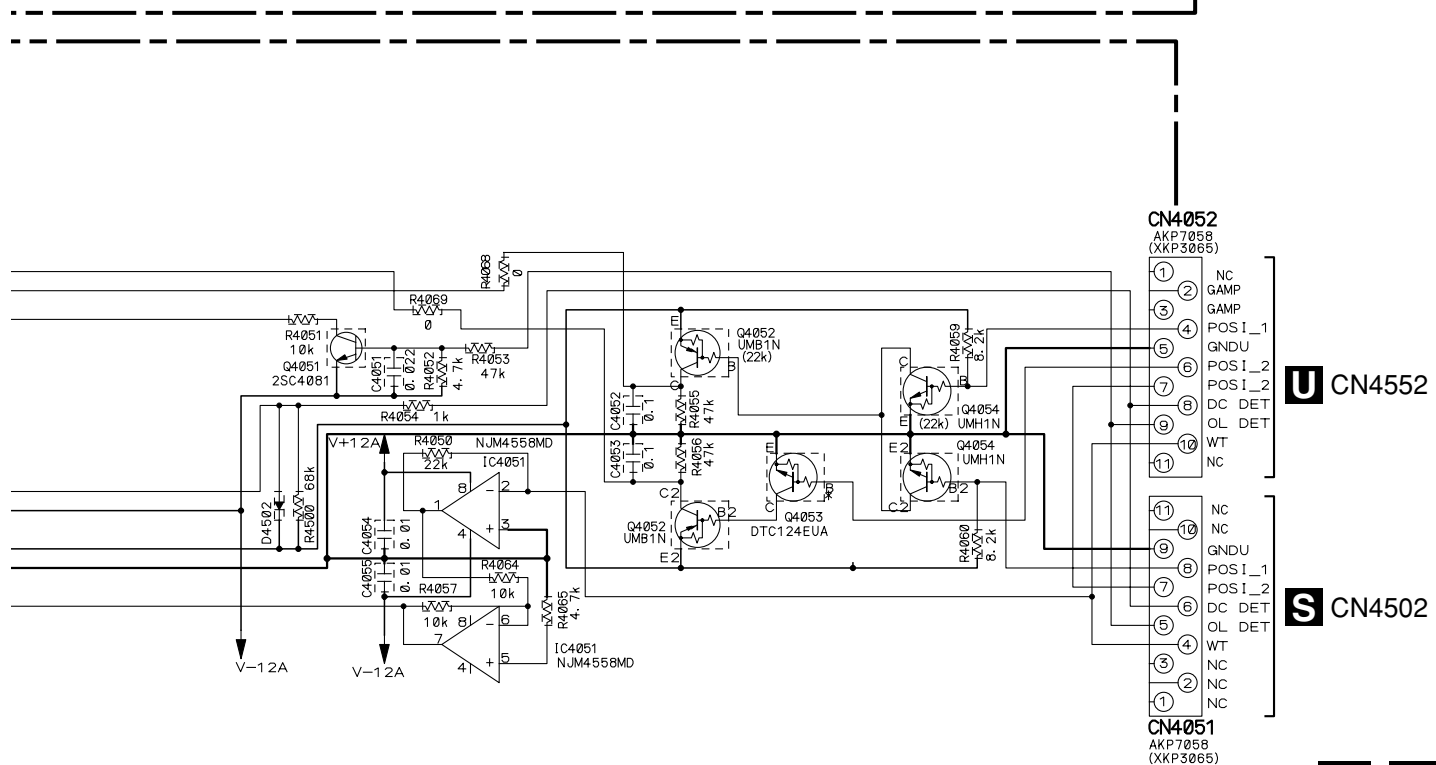
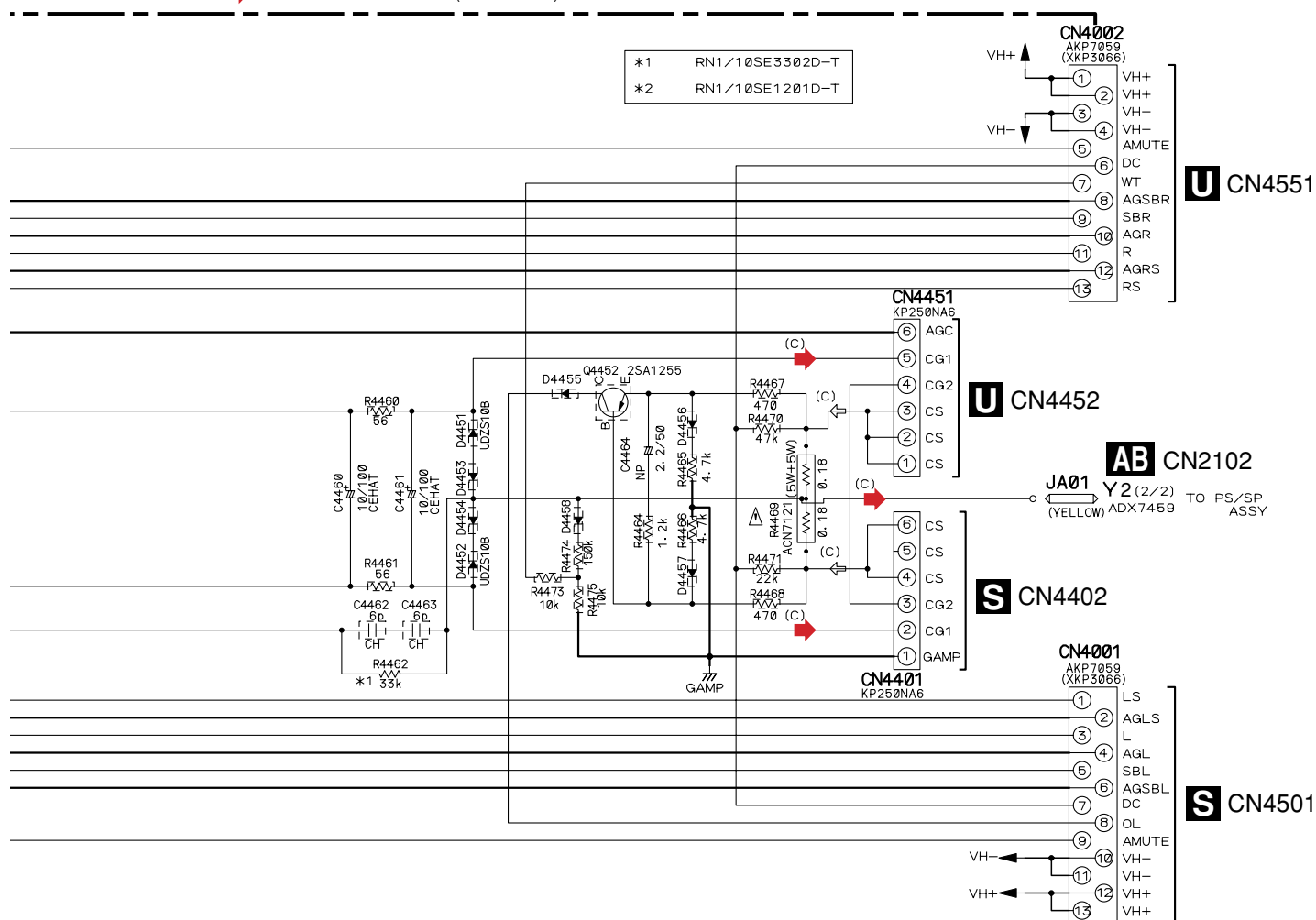
Q POWER AMP IN ASSY (AWX8405)



R POWER PROTECT ASSY (AWX8406)

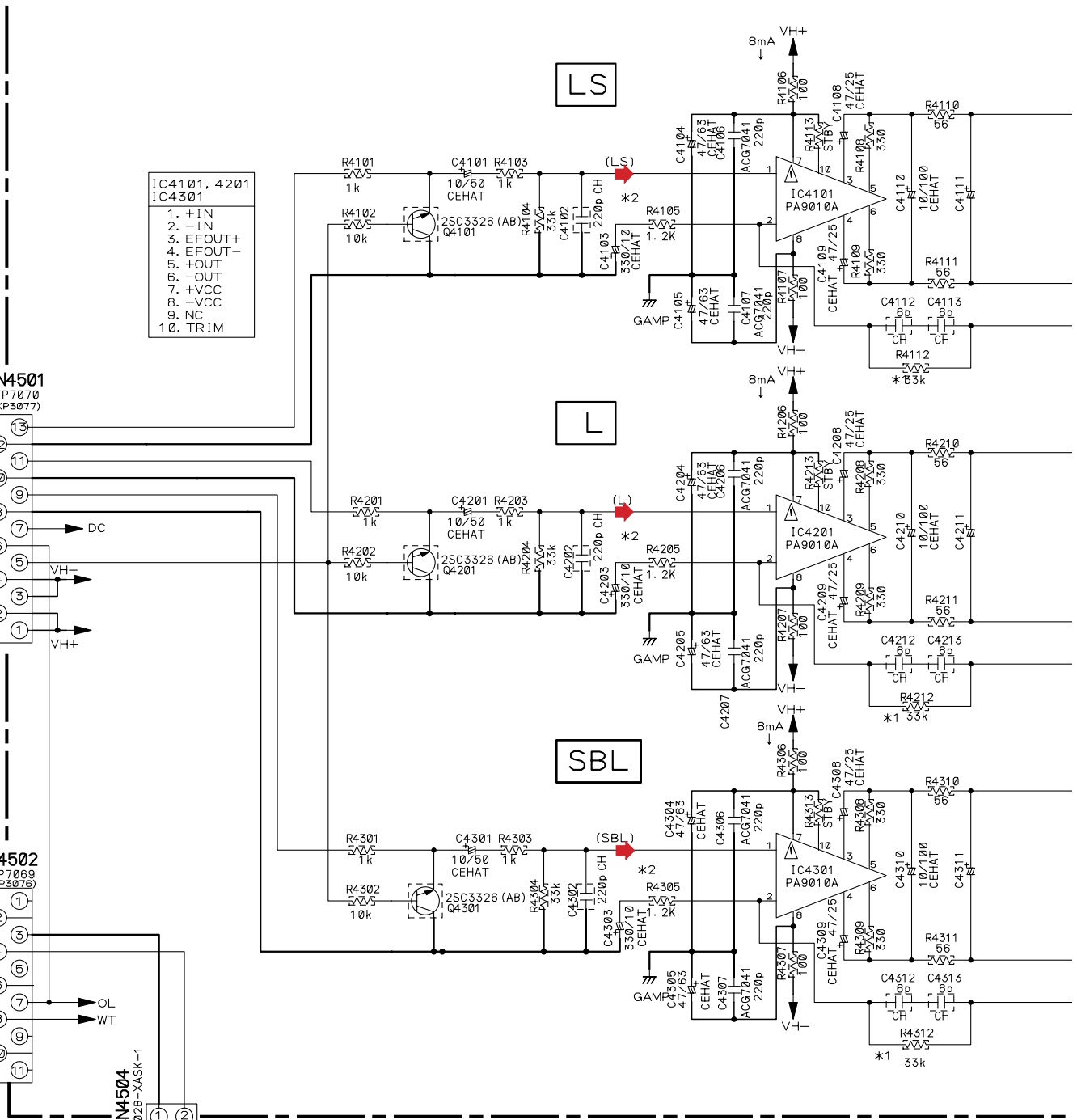
Q R

(C) : AUDIO SIGNAL ROUTE (CENTER ch)



3.15 POWER AMP-L and POSI 1 L ASSYS

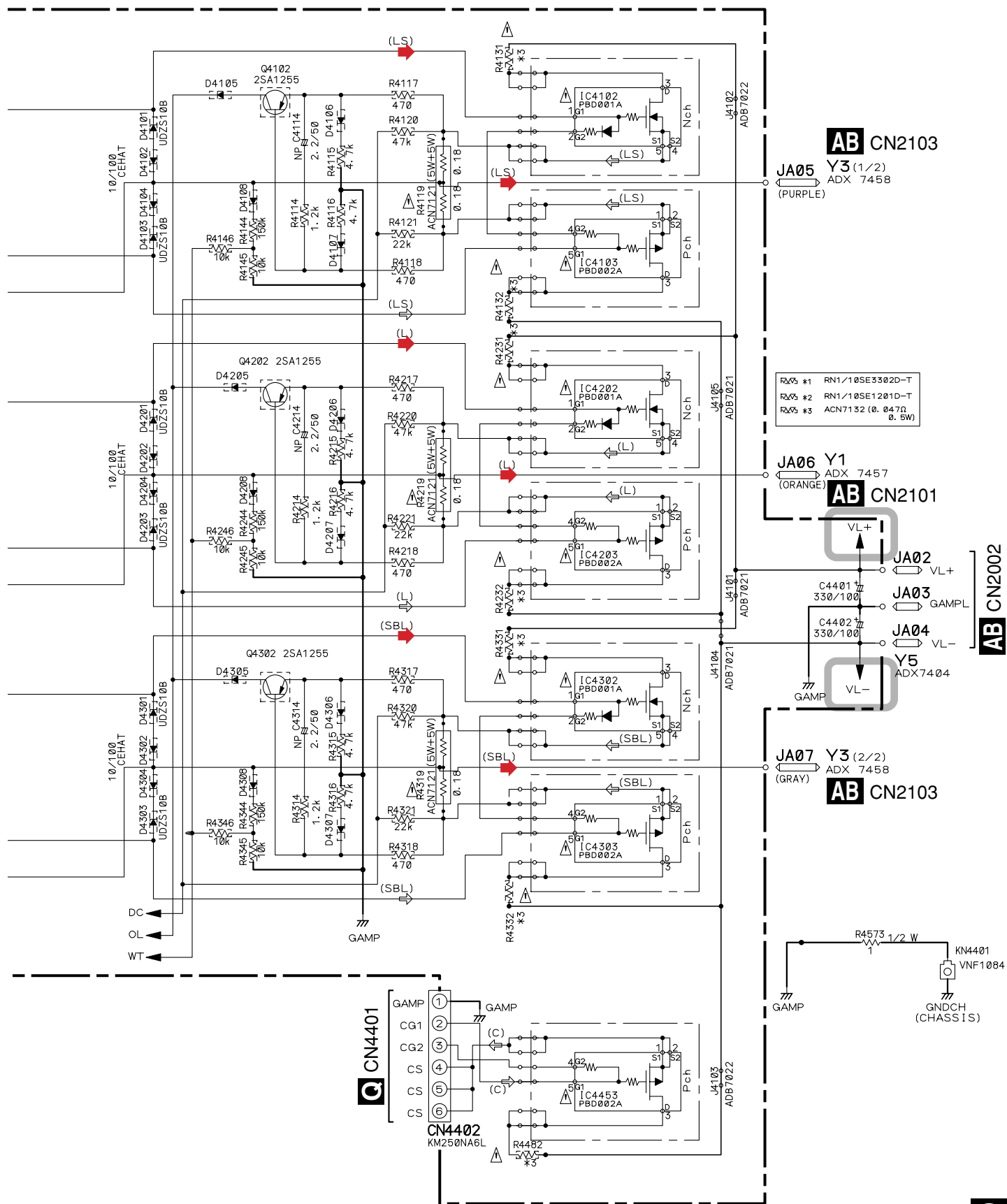
S POWER AMP-L ASSY (AWX8409)



(L) : AUDIO SIGNAL ROUTE (FRONT Lch)
(LS) : AUDIO SIGNAL ROUTE (SURROUND Lch)
(SBL) : AUDIO SIGNAL ROUTE (SURROUND BACK Lch)

T POSI 1 L ASSY (AWX8427)

S T



3.17 REGULATOR ASSY

W REGULATOR ASSY
(VSX-52TX : AWX8364)
(VSX-1014TX-K : AWX8367)

A

B

C

D

E

F

CN701

D CN801

W

X CN2202

AD 2303

C CN2501

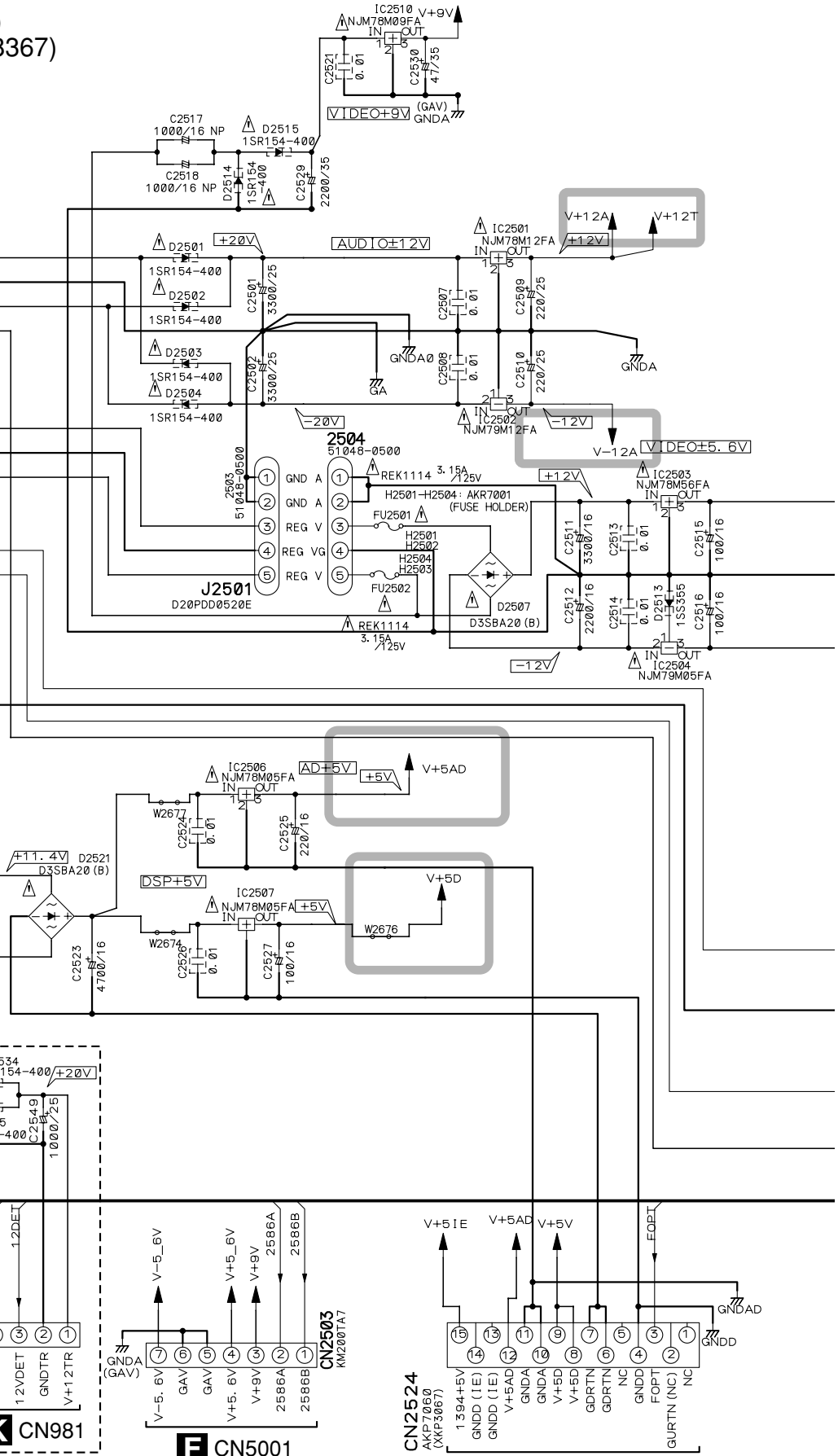
CN2502

VSX-52TX ONLY

K CN981

F CN5001

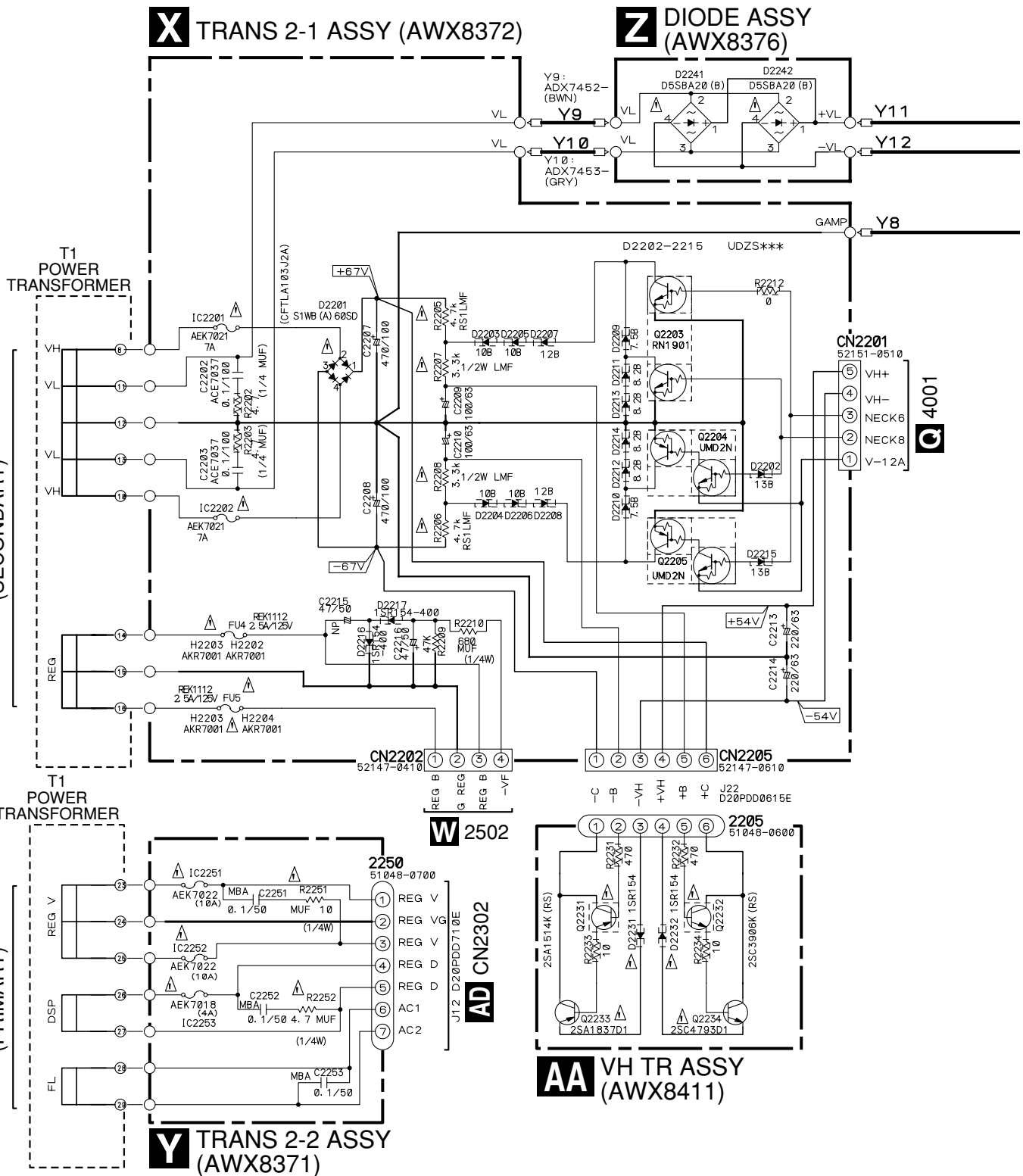
M 1/2 CN901





CAUTION -FOR CONTINUED PROTECTION AGAINST RISK OF FIRE.
REPLACE WITH SAME TYPE AND RATINGS OF FUSE.

3.18 TRANS 2-1, TRANS 2-2, DIODE, VH TR and SP/PS ASSYS

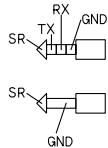


• NOTE FOR FUSE REPLACEMENT

CAUTION -FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE WITH SAME TYPE AND RATINGS OF FUSE.

3.19 REAR TOP, TRANS SIDE, TRANS 1 and PRIMARY ASSYS

A



AC REAR TOP ASSY
(AWX8397)

(TX) : AUDIO SIGNAL ROUTE (TUNER Lch)

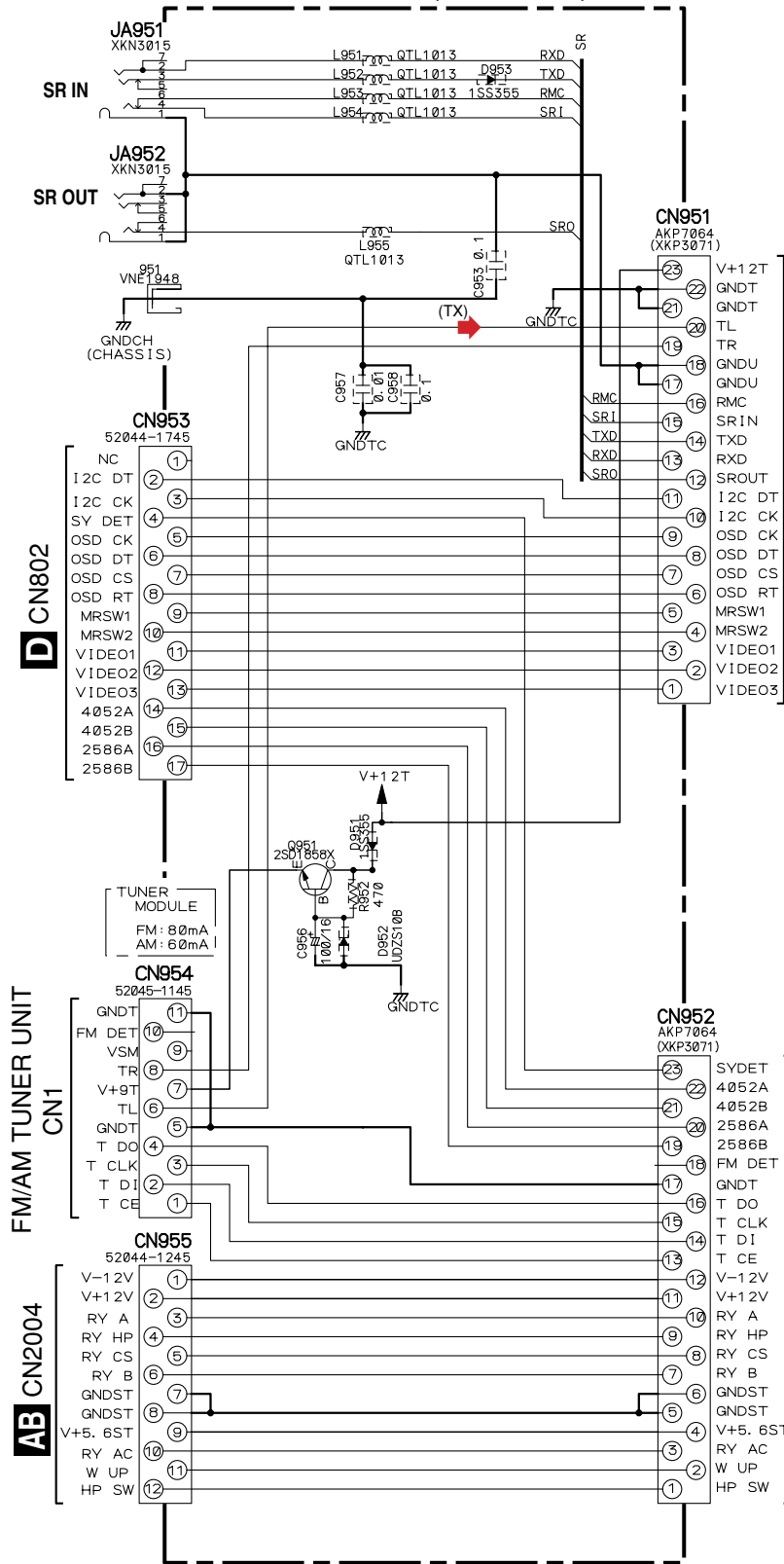
B

C

D

E

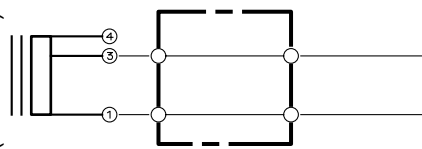
F



L 3/3 CN104

L 3/3 CN105

T1501
POWER
TRANSFORMER
(PRIMARY)



AE
TRANS 1 ASSY
(AWX8383)

AC **AE**

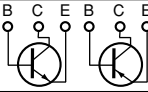
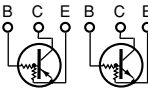
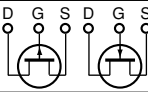
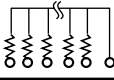
1 2 3 4

4. PCB CONNECTION DIAGRAM

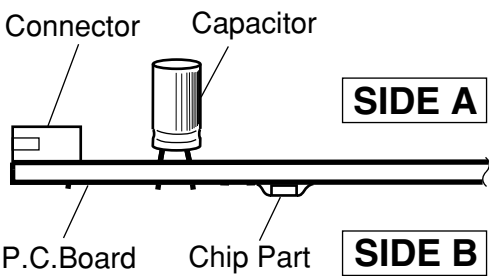
A

NOTE FOR PCB DIAGRAMS :

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

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator

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



△

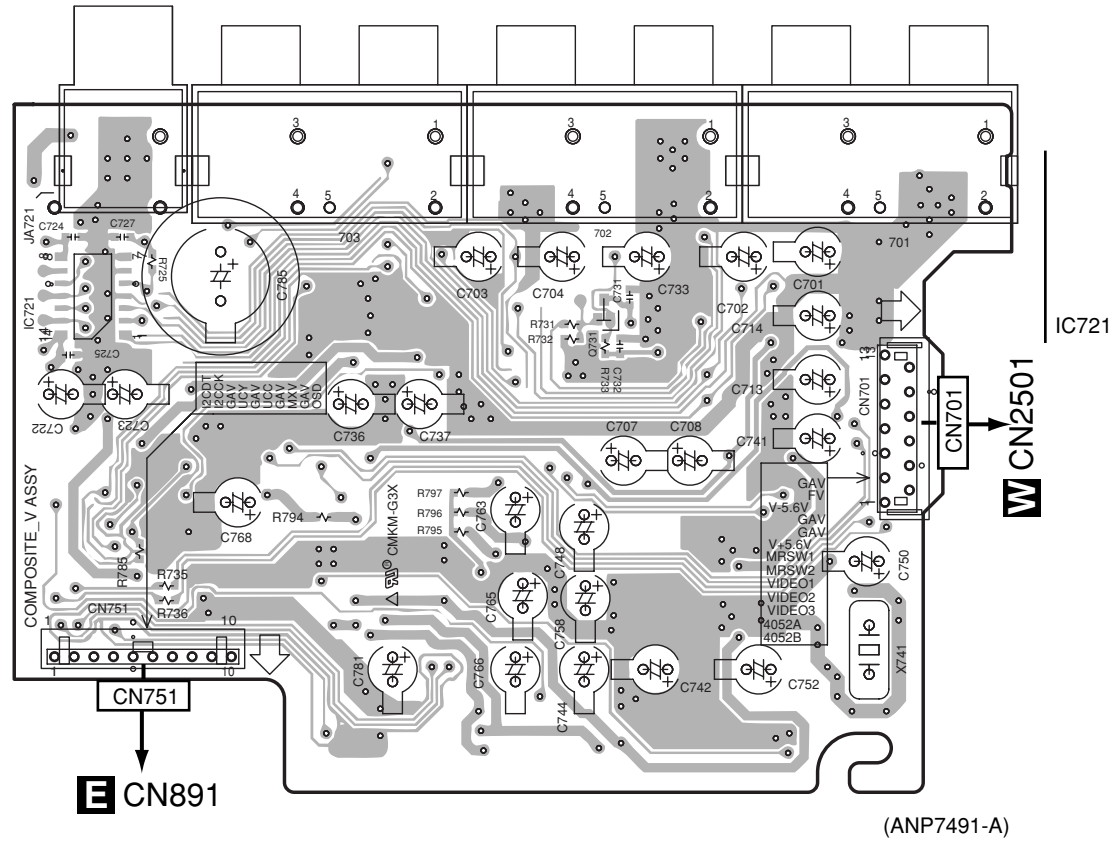
4

4.3 COMPOSITE V ASSY

SIDE A

C COMPOSITE V ASSY

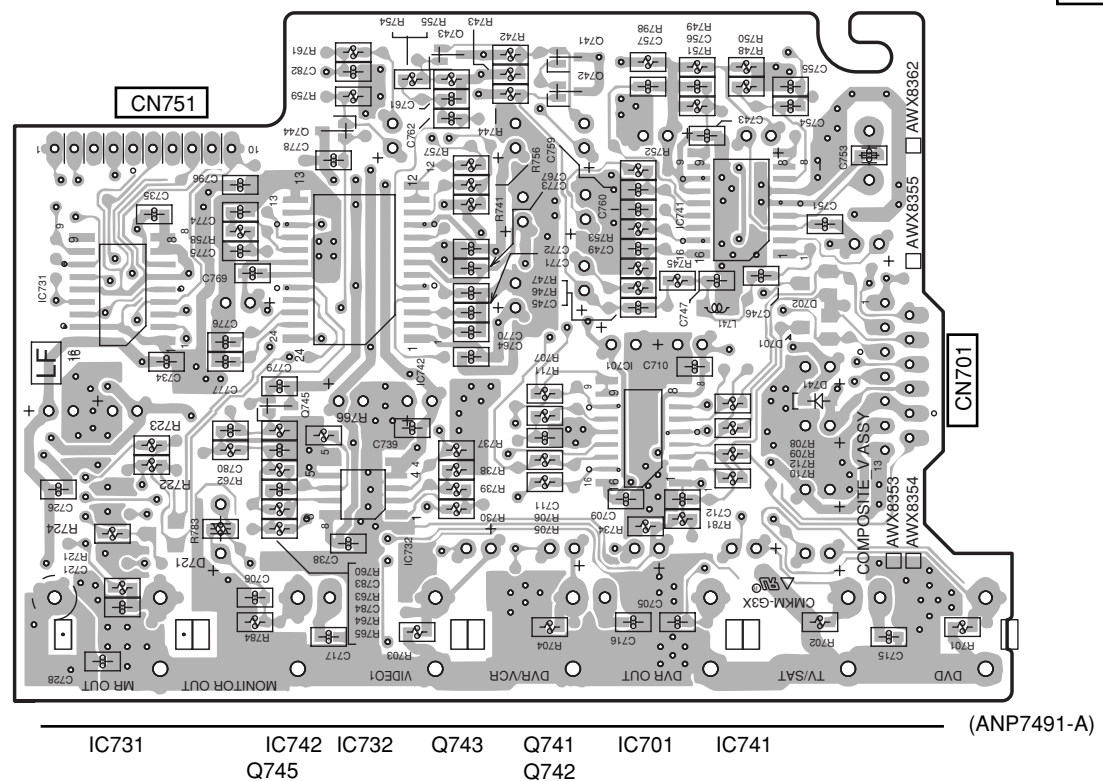
SIDE A



SIDE B

C COMPOSITE V ASSY

SIDE B



C

C

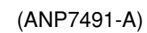
VSX-52TX

4

DS VIDEO ASSY



DS VIDEO ASSY



Q871

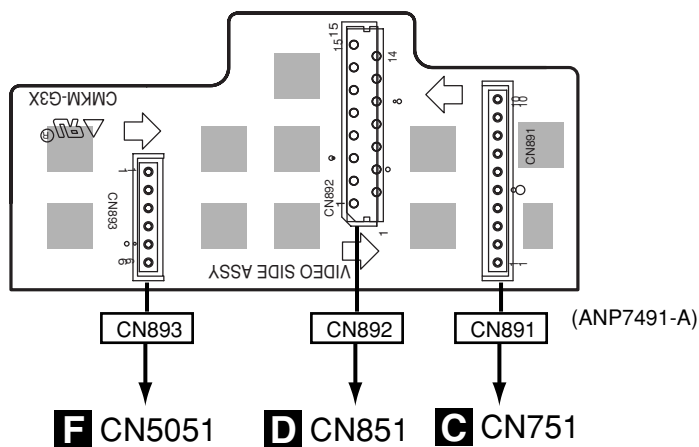
D

4.5 VIDEO SIDE and OPTICAL-IN ASSYS

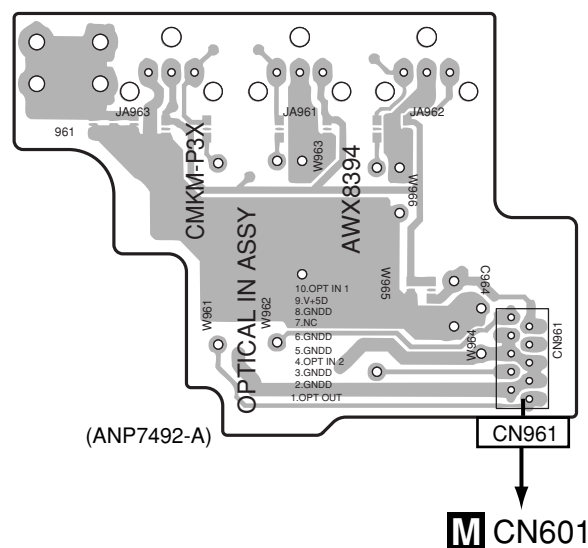
SIDE A

SIDE A

E VIDEO SIDE ASSY



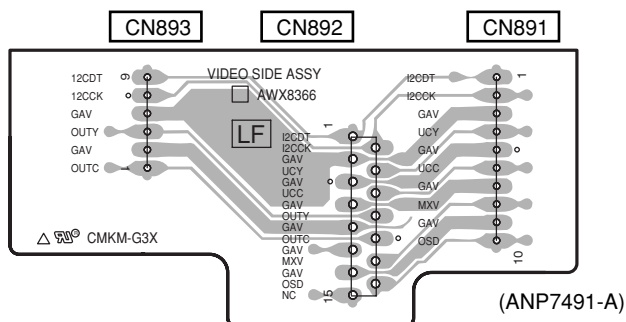
G OPTICAL-IN ASSY



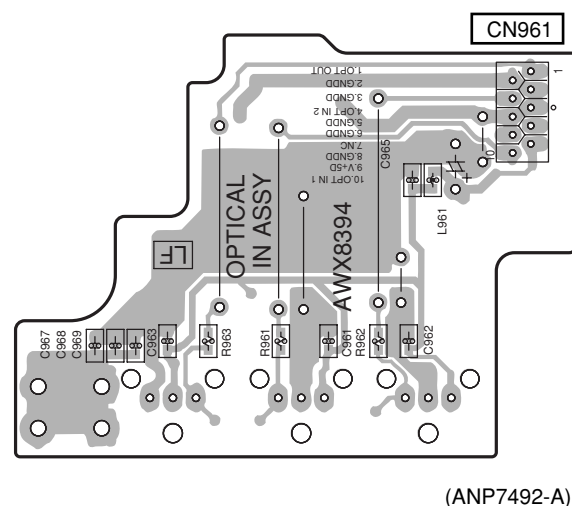
SIDE B

SIDE B

E VIDEO SIDE ASSY



G OPTICAL-IN ASSY



E G

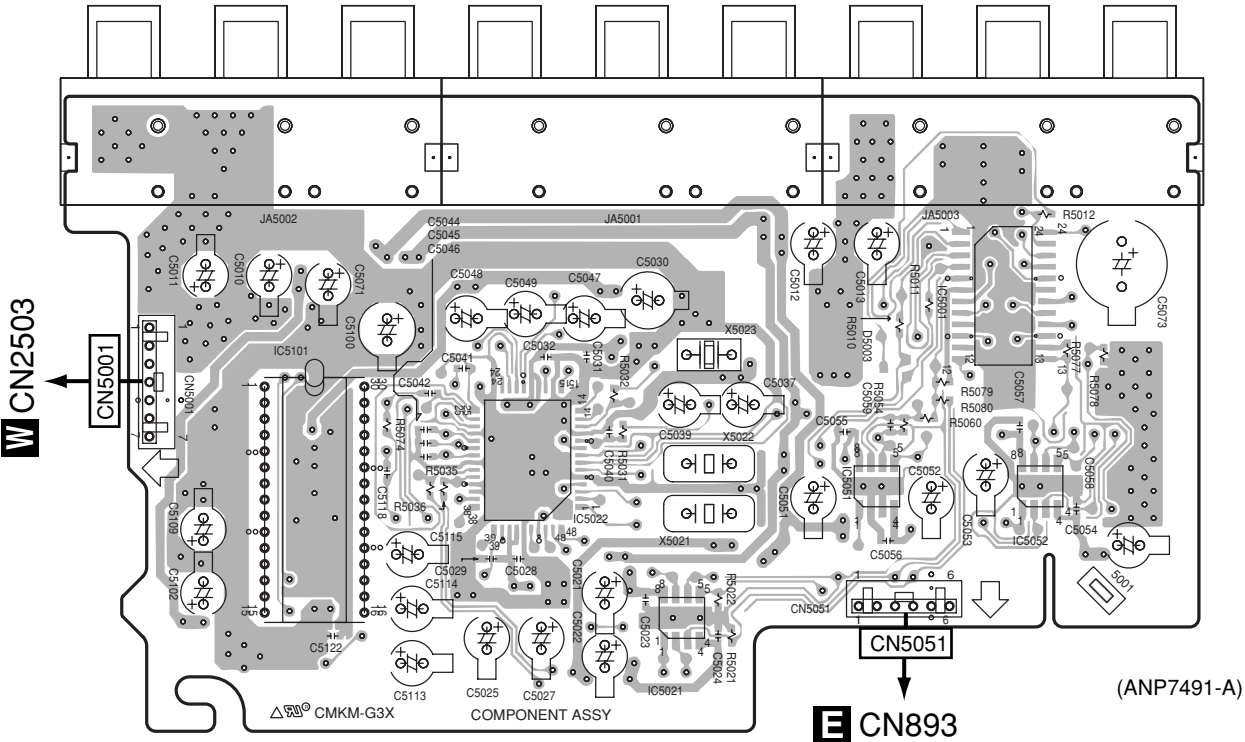
E G

4.6 COMPONENT ASSY

SIDE A

SIDE A

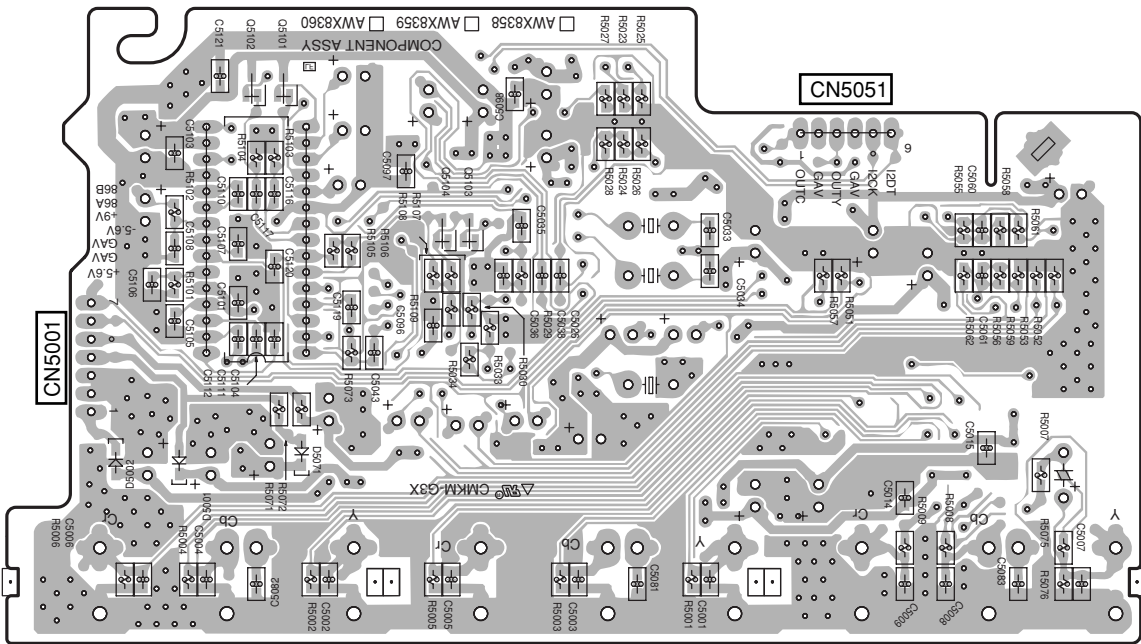
F COMPONENT ASSY



SIDE B

SIDE B

F COMPONENT ASSY



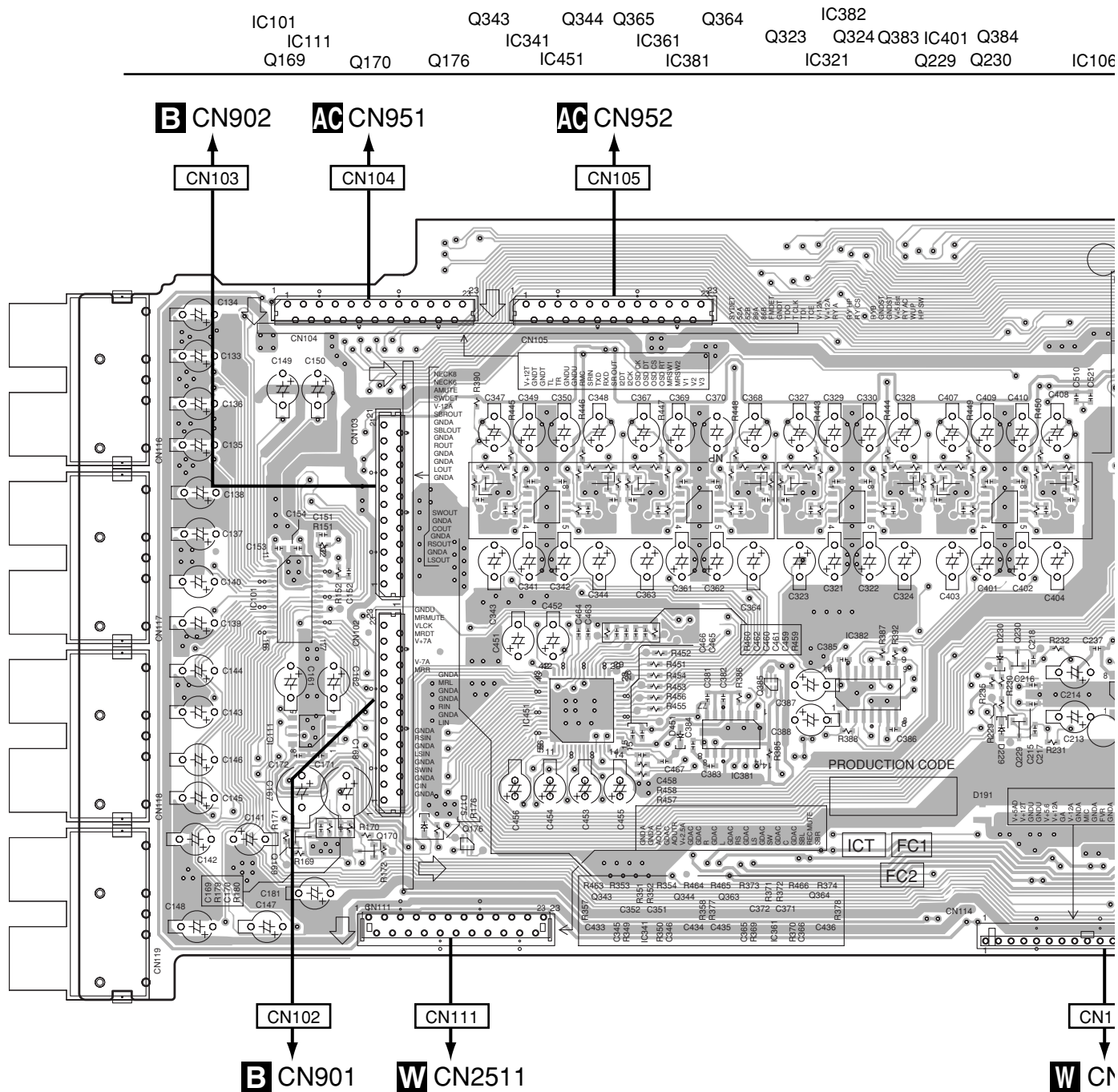
F

F

4.8 MAIN CONTROL ASSY

SIDE A

MAIN CONTROL ASSY



SIDE A

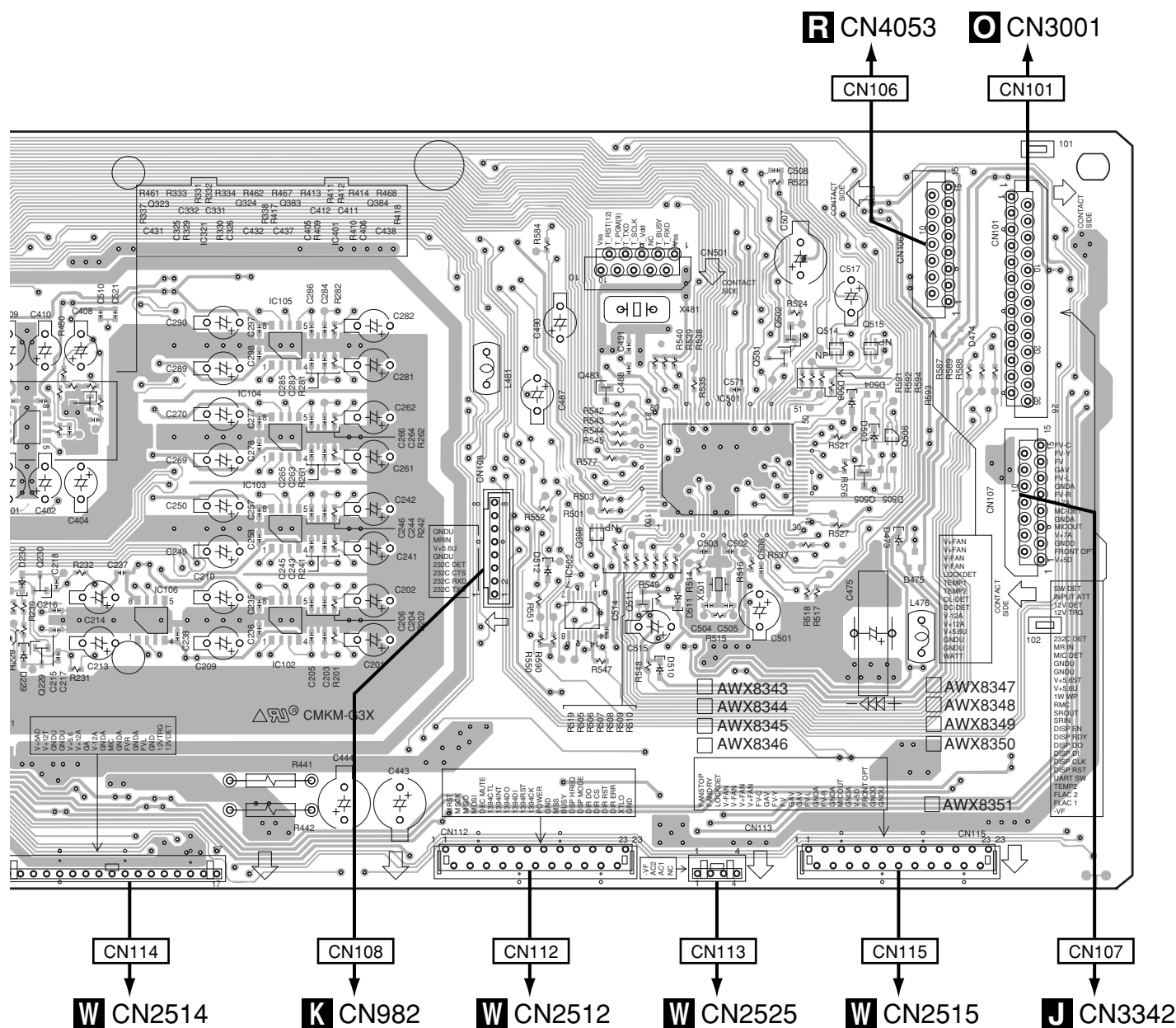
A

I384
230

IC106

IC103
IC102IC105
IC104

IC502 Q399 Q483

Q514 Q515
IC501 Q501 Q502 Q505

(ANP7491-A)

F

L

SIDE B

A

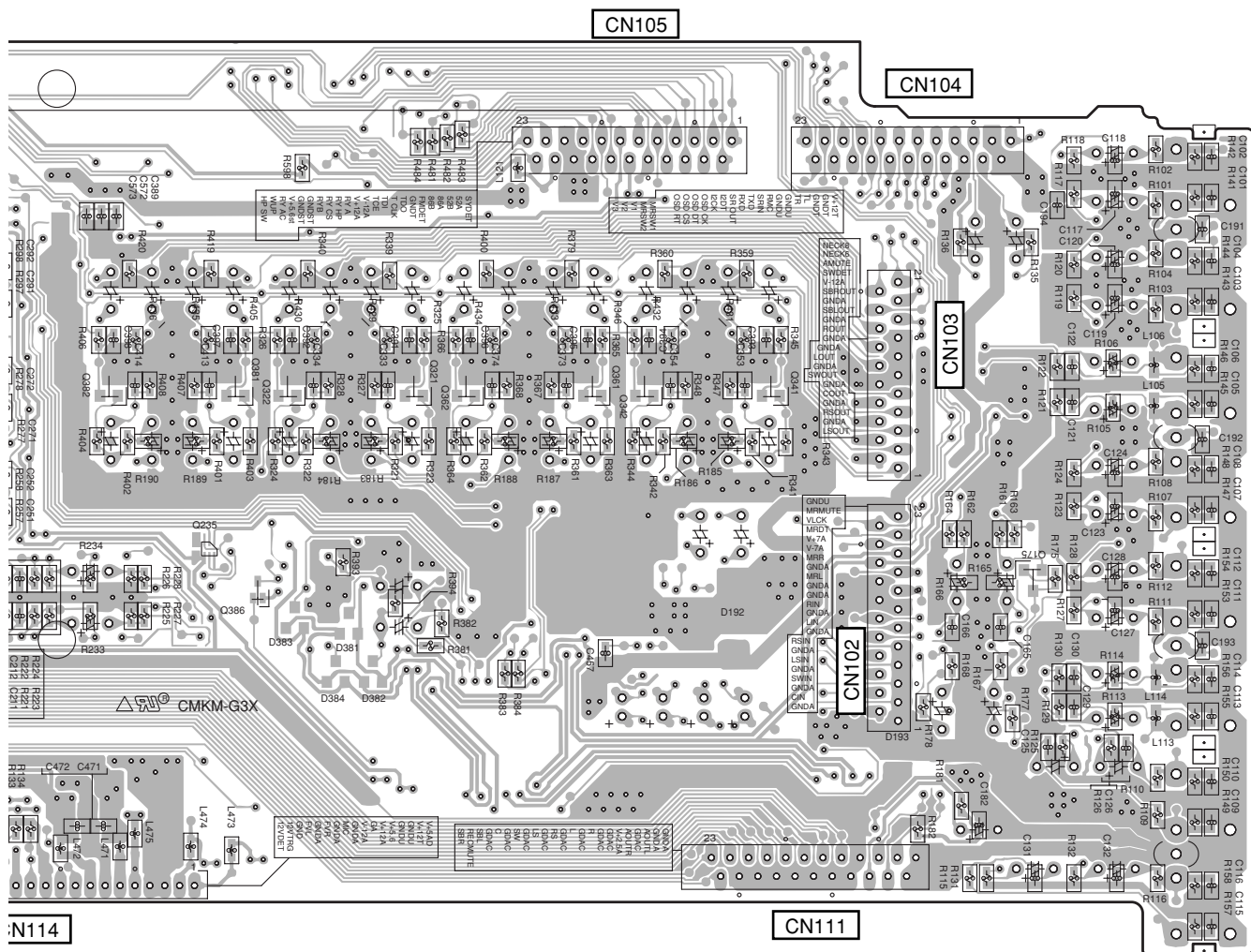
Q381 Q322
Q382 Q235 Q386

Q321 Q362

Q361 Q342

Q341

Q175



B

C

D

(ANP7491-A)

E

F



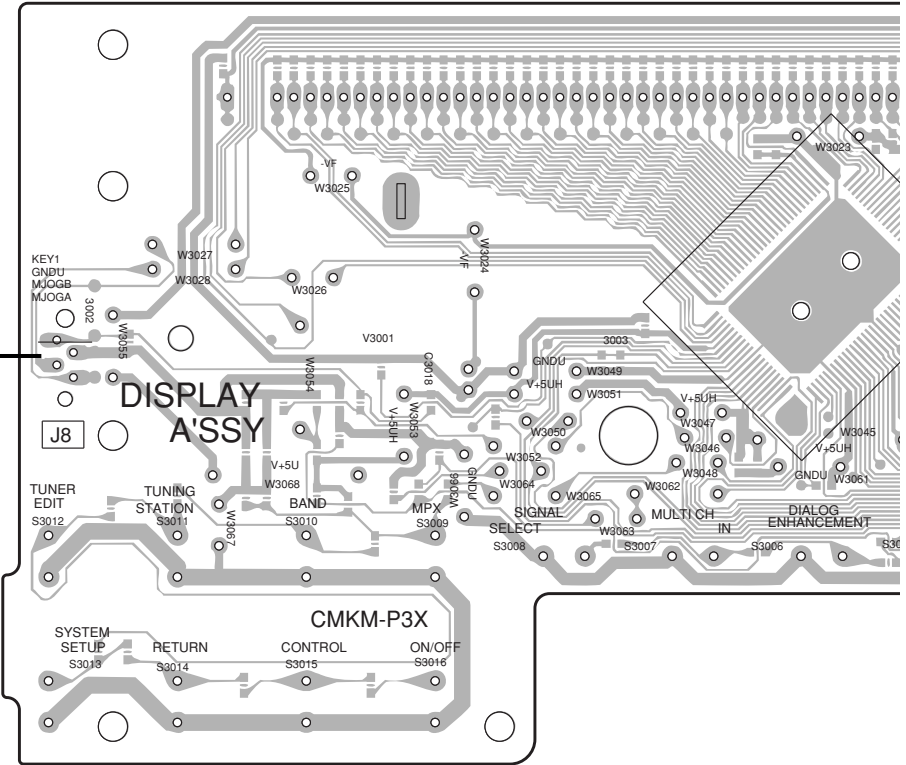
4.9 DISPLAY ASSY

SIDE A

○ DISPLAY ASSY

P 3251

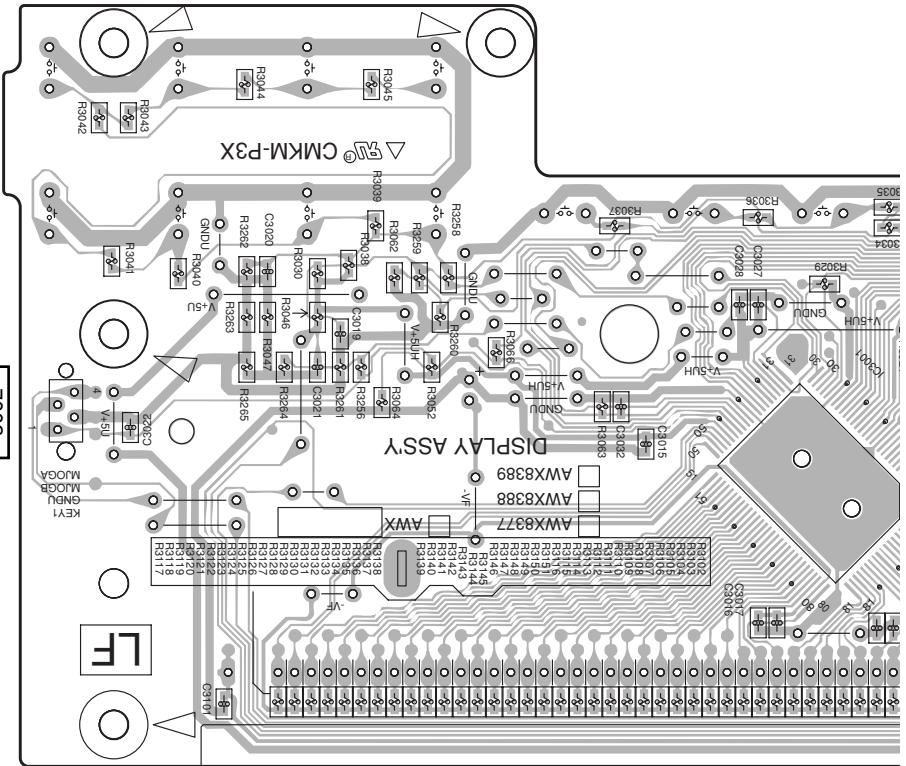
3002



SIDE B

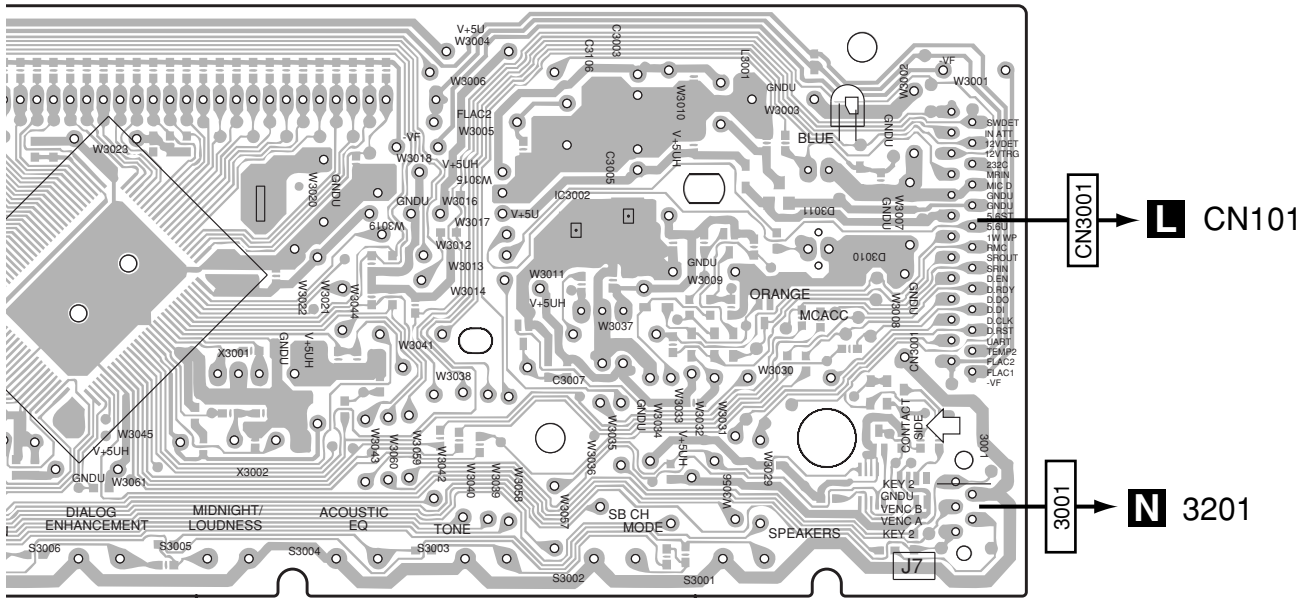
○ DISPLAY ASSY

3002



SIDE A

A



B

C

(ANP7492-A)

IC3002

IC3001

Q3005

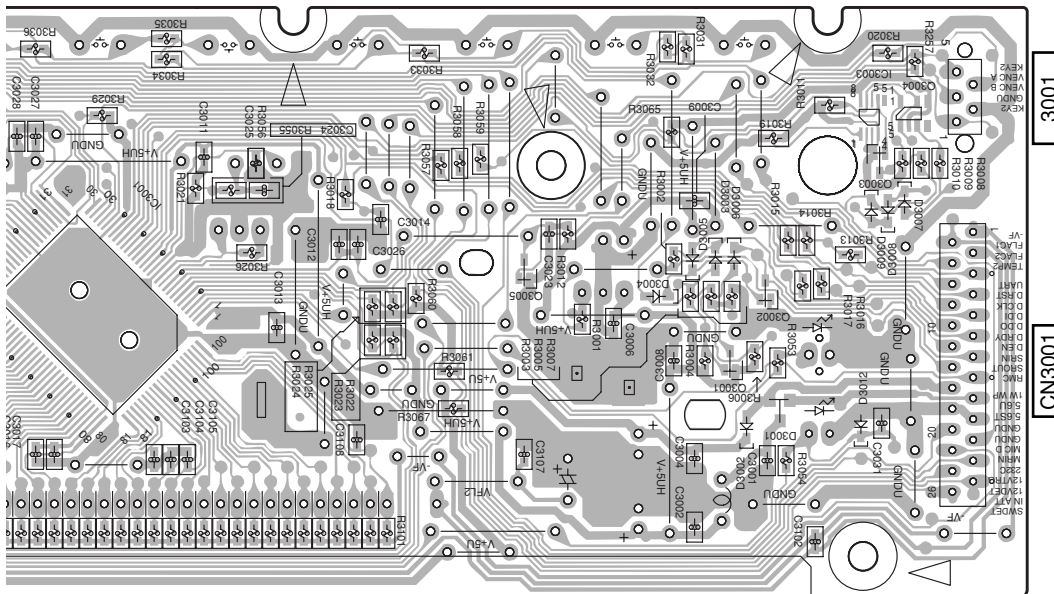
Q3001 Q3002

IC3003

Q3003 Q3004

SIDE B

D



E

F

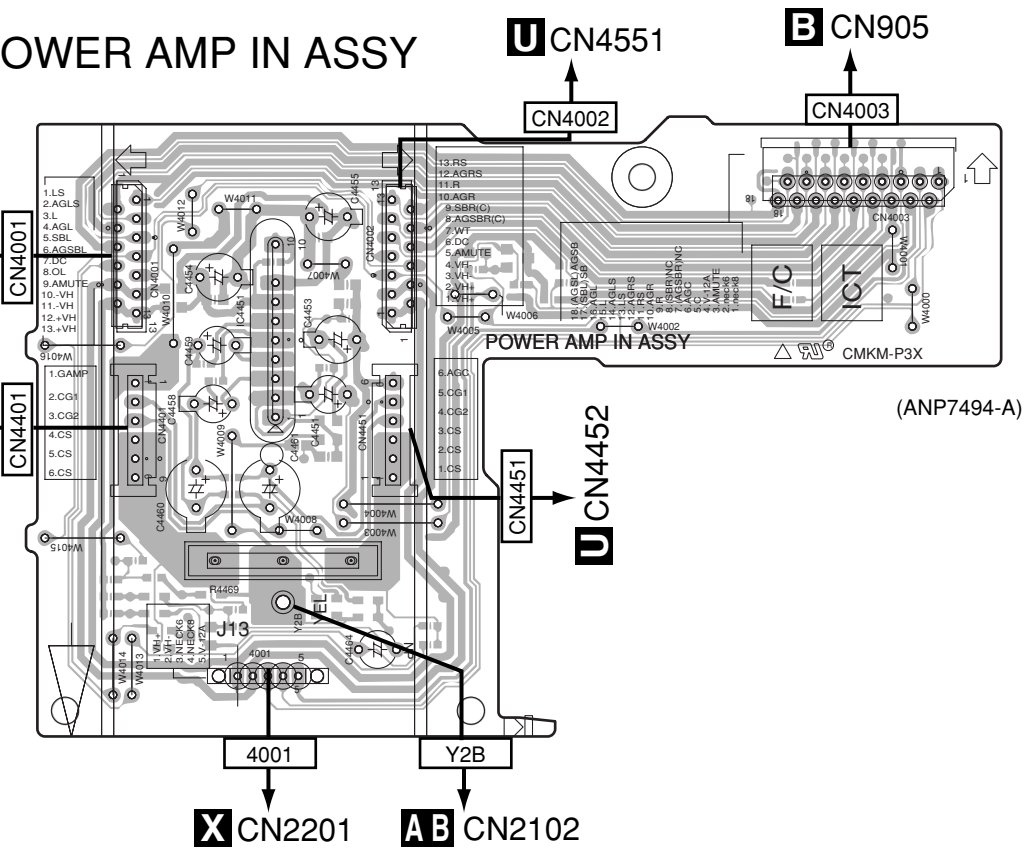
(ANP7492-A)

VSX-52TX

SIDE A

SIDE A

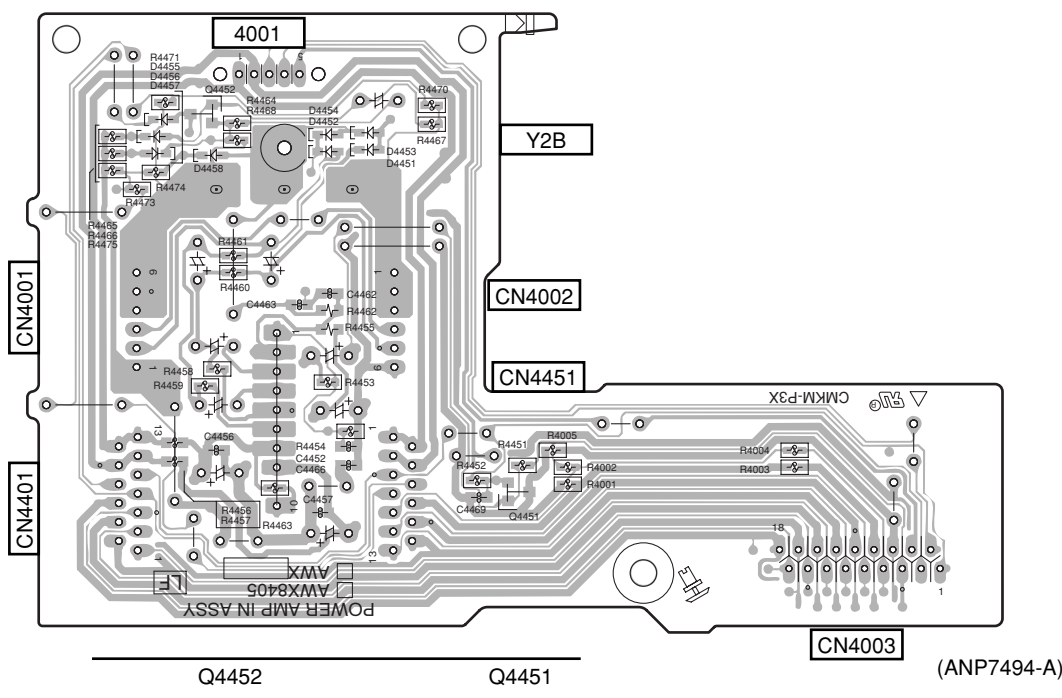
Q POWER AMP IN ASSY



SIDE B

SIDE B

Q POWER AMP IN ASSY



Q

Q

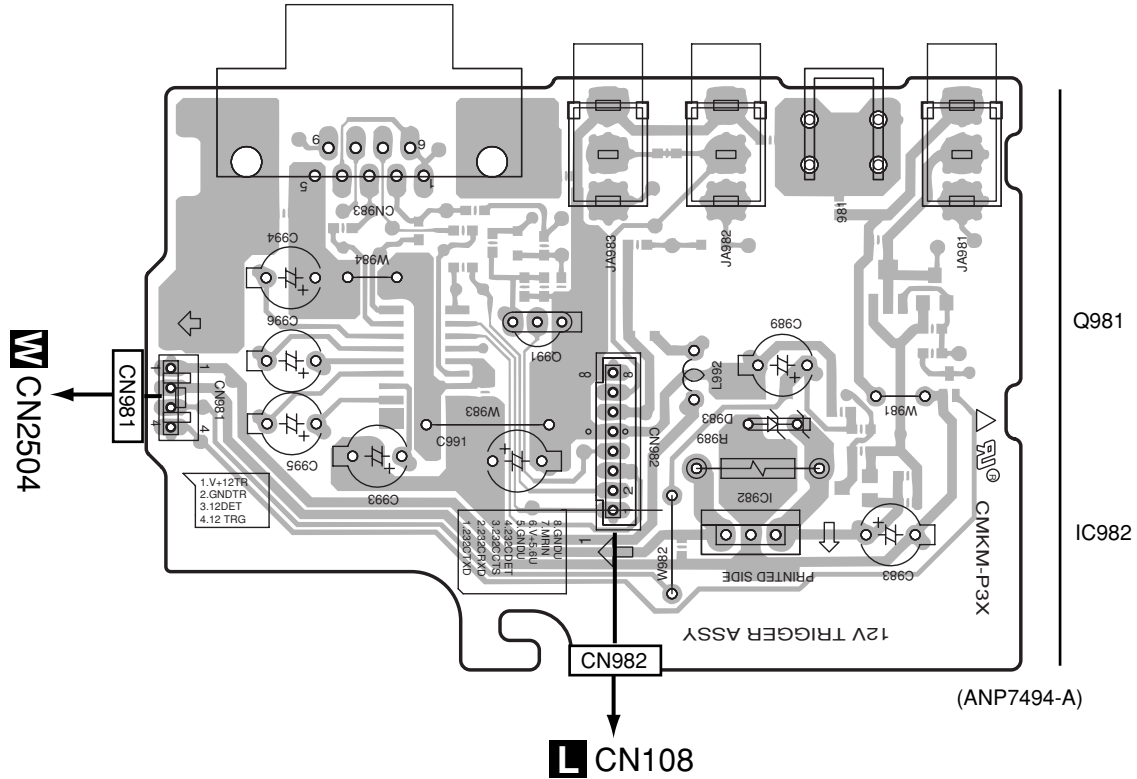
4.12 12V TRIGGER ASSY

SIDE A

• For VSX-52TX Only

SIDE A

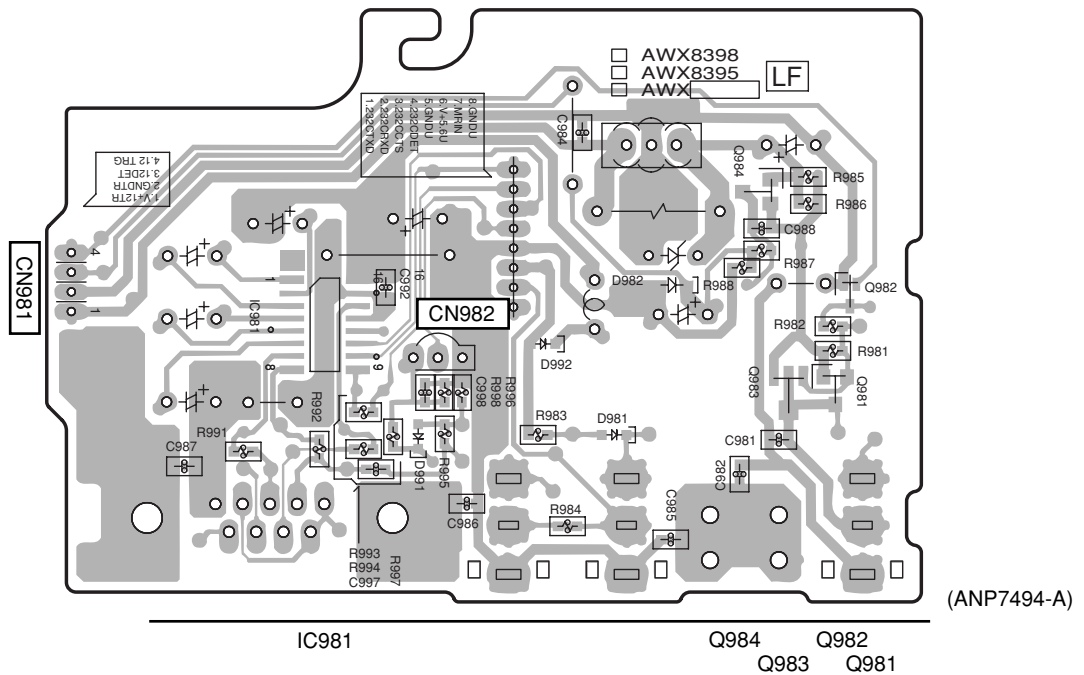
K 12V TRIGGER ASSY



SIDE B

K 12V TRIGGER ASSY

SIDE B



K

K

VSX-52TX

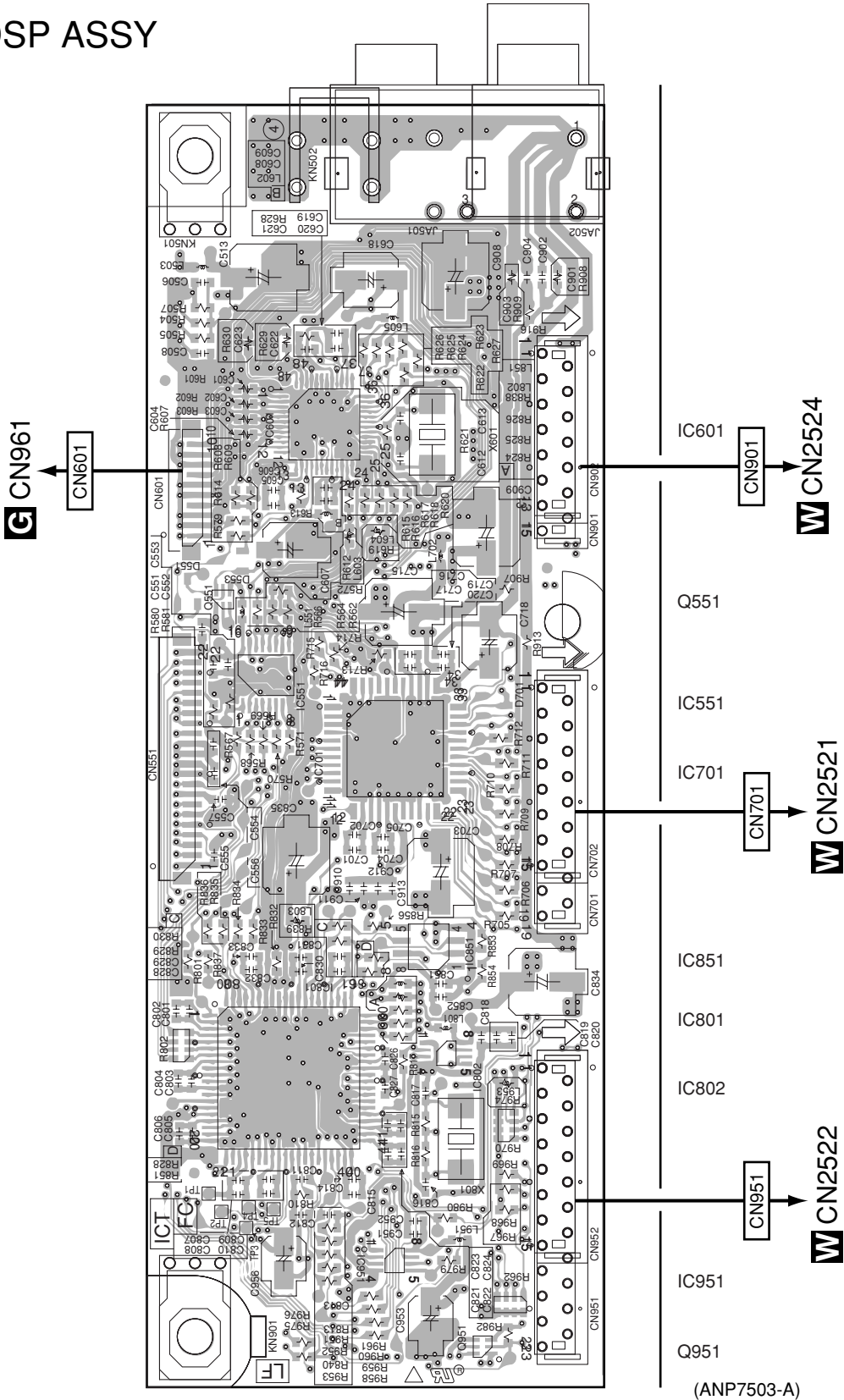
4.13 DSP ASSY

SIDE A

SIDE A

- This diagram has four layers.
In the two middle layers, mainy Vcc and GND are connected.

M DSP ASSY



(ANP7503-A)

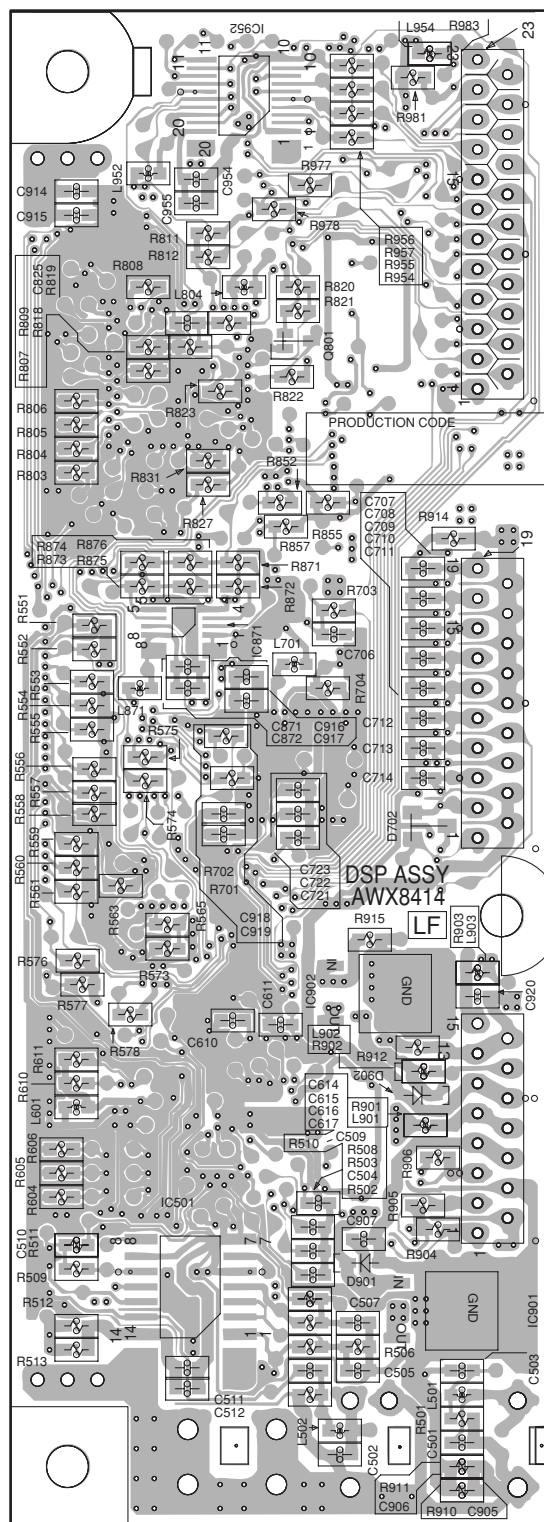
SIDE B

SIDE B

A

- This diagram has four layers.
In the two middle layers, mainy Vcc and GND are connected.

M DSP ASSY



CN951

CN701

CN901

IC952

Q801

IC871

IC902

IC501

IC901

(ANP7503-A)

B

C

D

E

F

M

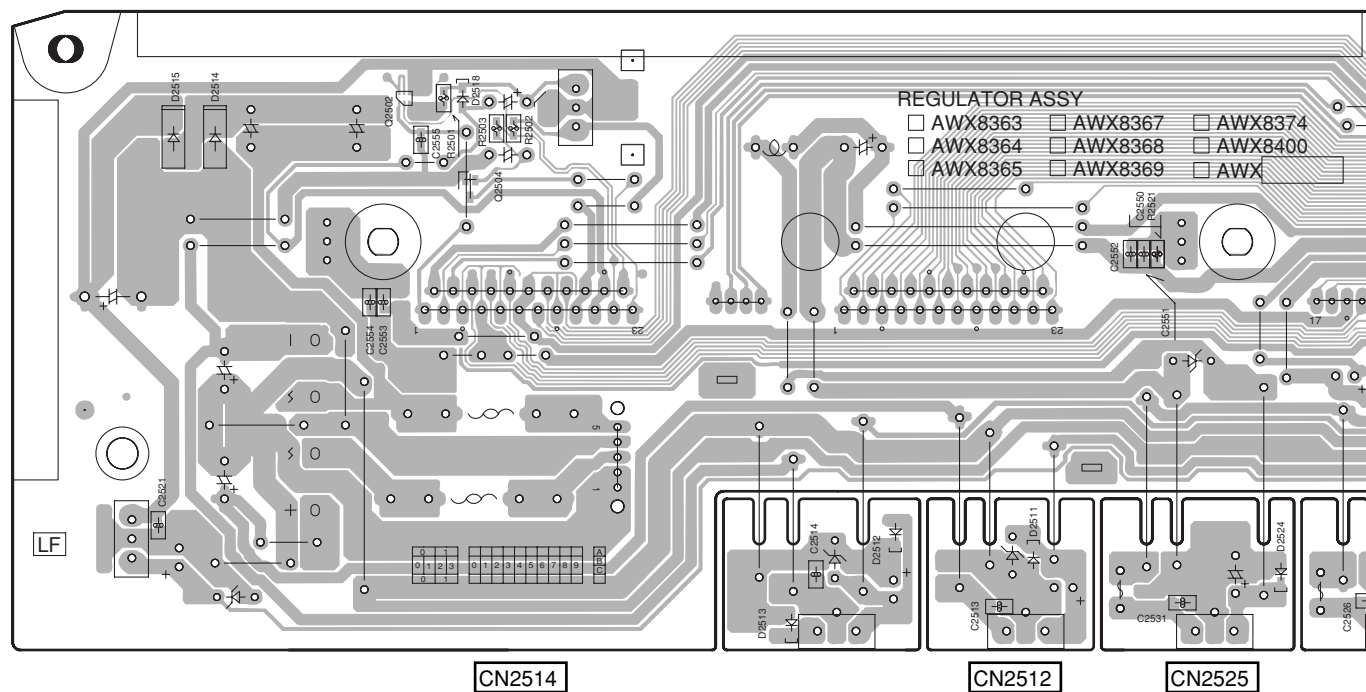
M

△

A

SIDE B

W REGULATOR ASSY



(ANP7493-A)

△

4

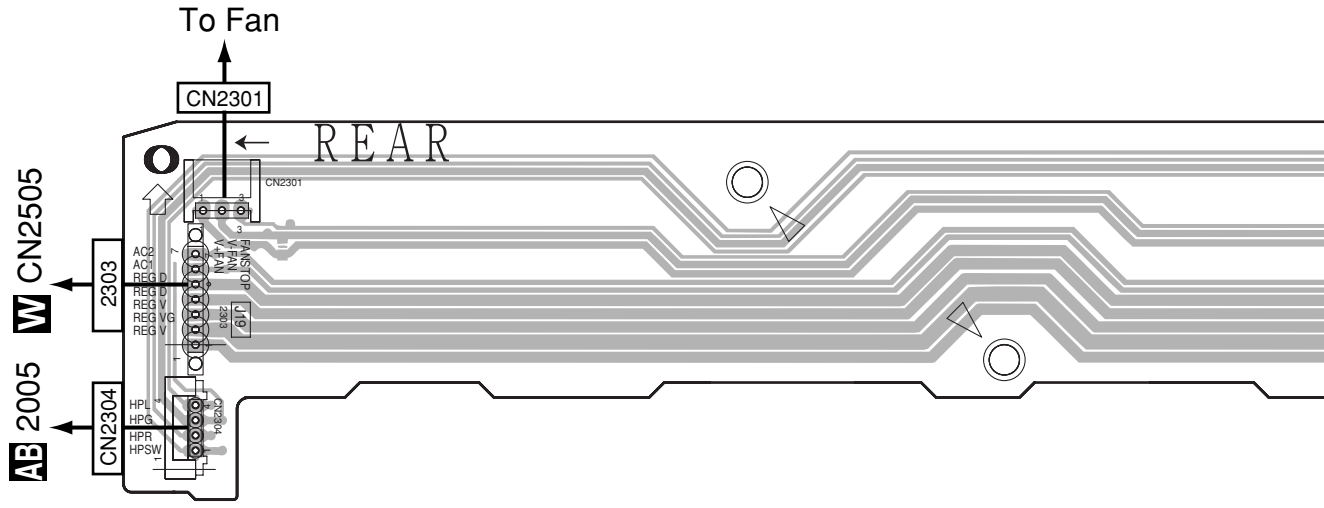


1 2 3 4

4.19 TRANS SIDE ASSY

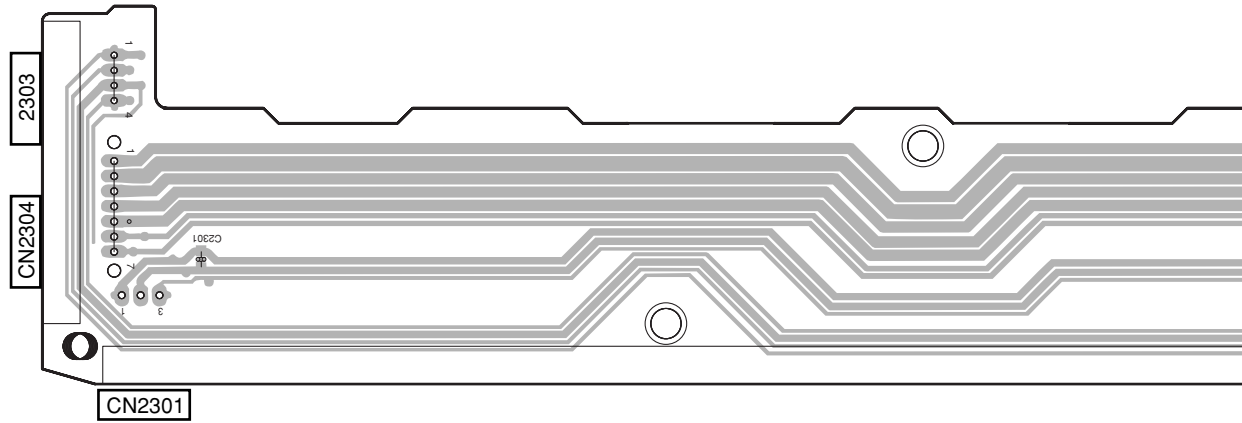
SIDE A

AD TRANS SIDE ASSY



SIDE B

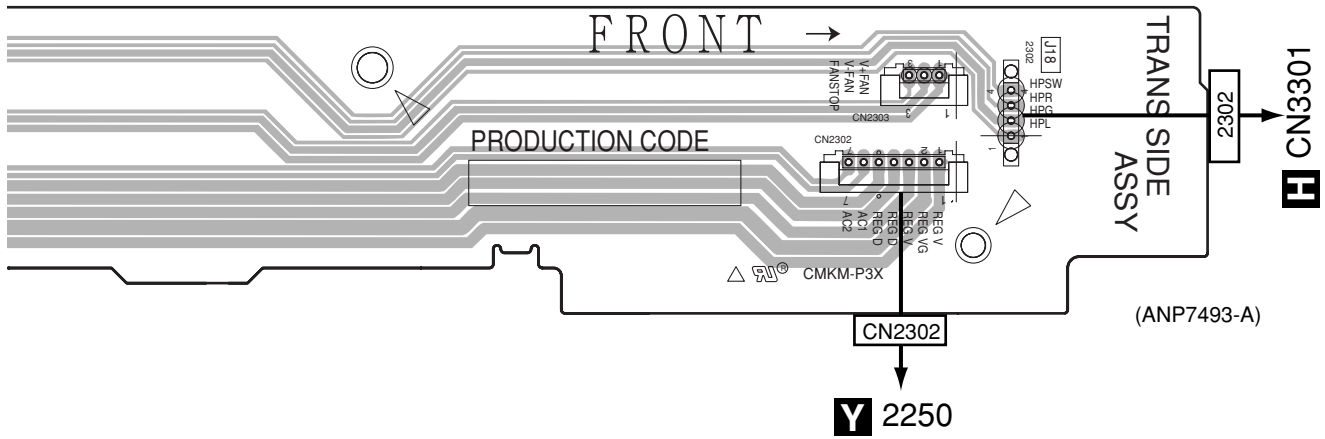
AD TRANS SIDE ASSY



AD

SIDE A

A

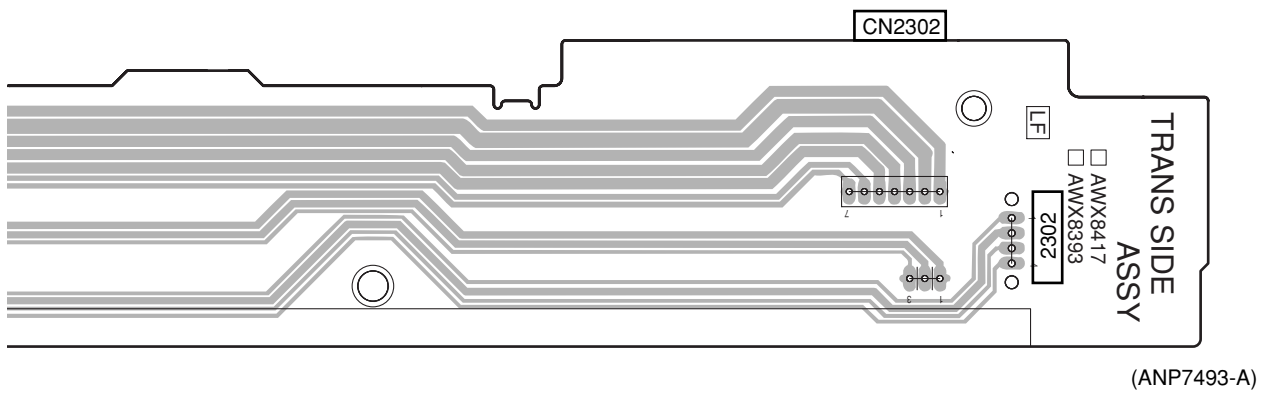


B

C

SIDE B

D



E

F

AD

4.20 TRANS 2-2, TRANS 1 and PRIMARY ASSYS

SIDE A

SIDE A

A

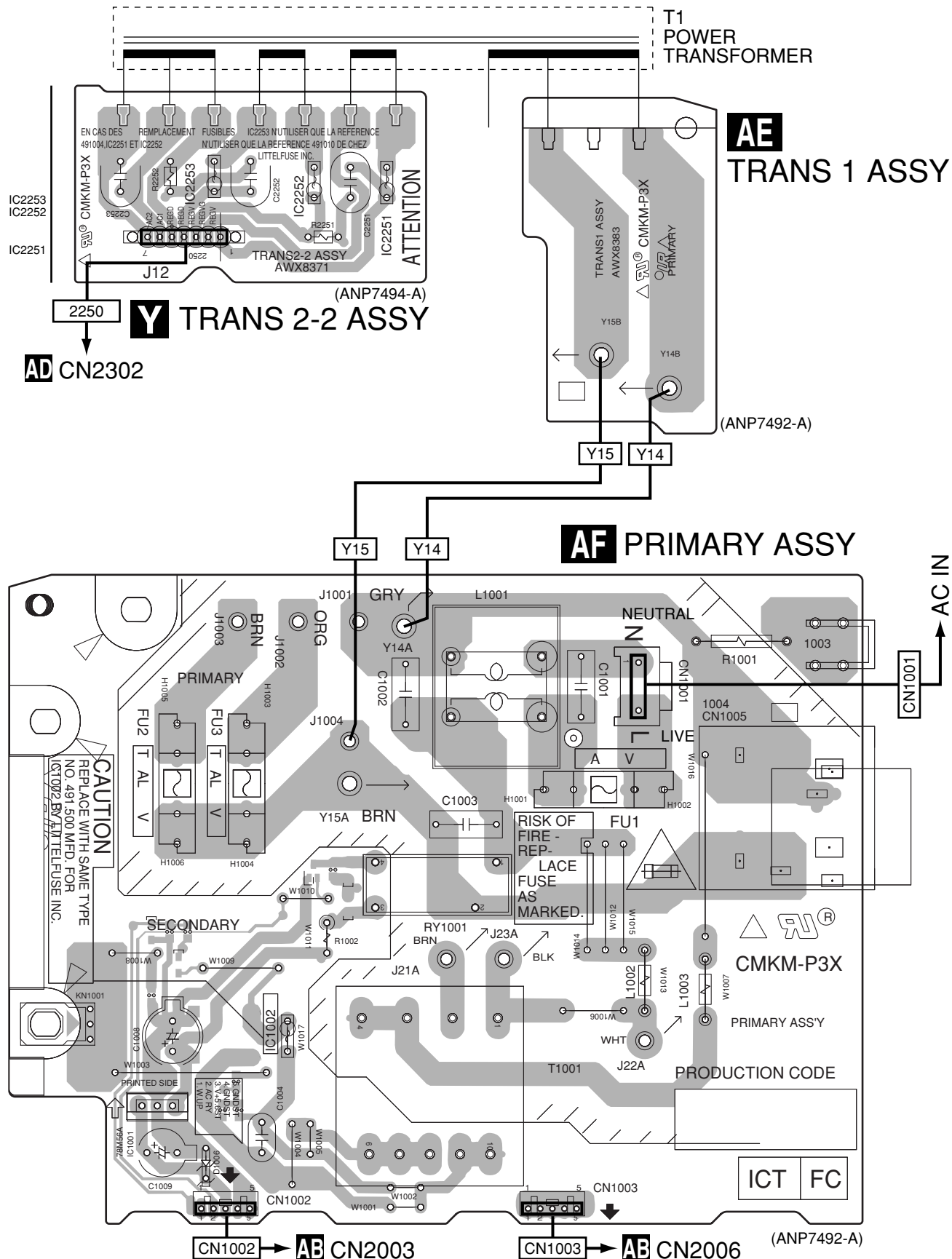
B

C

D

E

F



Y AE AF

Y AE AF

△

SIDE A

A



SIDE B

D



AC

5. PCB PARTS LIST

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

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

●When ordering resistors, first convert resistance values into code form as shown in the following examples.

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

560 Ω $\rightarrow$ 56×10^1 $\rightarrow$ 561 RD1/4PU $\overline{561}$ J

47k Ω $\rightarrow$ 47×10^3 $\rightarrow$ 473 RD1/4PU $\overline{473}$ J

0.5 Ω $\rightarrow$ R50 RN2H $\overline{R50}$ K

1 Ω $\rightarrow$ 1R0 RS1P $\overline{1R0}$ K

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

5.62k Ω $\rightarrow$ 562×10^1 $\rightarrow$ 5621 RN1/4PC $\overline{5621}$ F

• LIST OF WHOLE PCB ASSEMBLIES

Mark	Symbol and Description	VSX-52TX /KUXJ/CA	VSX-1014TX /KUXJC
	1..FM/AM TUNER UNIT	AXX7172	AXX7172
NSP	1..SECONDARY ASSY	AWK7814	AWK7818
	2..REGULATOR ASSY	AWX8364	AWX8367
	2..TRANS 2-1 ASSY	AWX8372	AWX8372
	2..SP/PS ASSY	AWX8373	AWX8373
	2..DIODE ASSY	AWX8376	AWX8376
	2..TRANS SIDE ASSY	AWX8417	AWX8417
NSP	1..COMPLEX ASSY	AWK7806	AWK7810
	2..DISPLAY ASSY	AWX8377	AWX8389
	2..VOLUME ASSY	AWX8378	AWX8378
	2..MULTI JOG ASSY	AWX8379	AWX8379
	2..HEADPHONE ASSY	AWX8380	AWX8380
	2..FRONT IN ASSY	AWX8381	AWX8381
	2..AUDIO CONNECT ASSY	AWX8382	AWX8382
	2..TRANS 1 ASSY	AWX8383	AWX8383
	2..PRIMARY ASSY	AWX8384	AWX8384
	2..OPTICAL-IN ASSY	AWX8394	AWX8394
	2..REAR TOP ASSY	AWX8397	AWX8397
	2..FRONT-IN CONNECT ASSY	AWX8416	AWX8416
NSP	1..MAIN ASSY	AWK7798	AWK7802
	2..MAIN CONTROL ASSY	AWX8343	AWX8348
	2..COMPOSITE V ASSY	AWX8353	AWX8362
	2..COMPONENT ASSY	AWX8358	AWX8358
	2..S VIDEO ASSY	AWX8361	AWX8361
	2..VIDEO SIDE ASSY	AWX8366	AWX8366
	2..MULTI CH I/O ASSY	AWX8410	AWX8352
NSP	1..POWER AMP ASSY	AWK7822	AWK7826
	2..TRANS 2-2 ASSY	AWX8371	AWX8371
	2..12V TRIGGER ASSY	AWX8395	Not used
	2..POWER AMP-R ASSY	AWX8404	AWX8404
	2..POWER AMP IN ASSY	AWX8405	AWX8405
	2..POWER PROTECT ASSY	AWX8406	AWX8406
	2..POWER AMP-L ASSY	AWX8409	AWX8409
	2..VH TR ASSY	AWX8411	AWX8411
	2..POS1 1 R ASSY	AWX8426	AWX8426
	2..POS1 1 L ASSY	AWX8427	AWX8427
	1..DSP ASSY	AWX8414	AWX8414

• CONTRAST OF PCB ASSEMBLIES

A MULTI CH I/O ASSY

AWX8410 and AWX8352 are constructed the same except for the following :

Mark	Symbol and Description	AWX8410	AWX8352
A	IC604	BD3812F	Not used
	Q671	HN1C03FU(AB)	Not used
B	C671- C674	CEAT100M50	Not used
	C675, C676	CCSRCH101J50	Not used
	C677, C678, C694	CKSRYB103K50	Not used
	C697, C698	CCSRCH331J50	Not used
	R671- R674	RS1/16S102J	Not used
	R675- R678	RS1/16S103J	Not used
	R679, R680	RS1/16S102J	Not used
	R681	RS1/16S104J	Not used
	JA605 2P PIN JACK	VKB1060	Not used

C COMPOSITE V ASSY

AWX8353 and AWX8362 are constructed the same except for the following :

Mark	Symbol and Description	AWX8353	AWX8362
C	IC 721	NJM2279M	Not used
	D721	DAN202K	Not used
	C721	CCSRCH181J50	Not used
	C722, C723	CEAT101M16	Not used
	C724, C725, C726	CKSRYB473K25	Not used
	C727	CCSRCH220J50	Not used
	C728	CKSRYB224K16	Not used
	R721, R725	RS1/16S750J	Not used
	R722- R724	RS1/16S102J	Not used
	JA721 1P PINJACK	VKB1063	Not used

L MAIN CONTROL ASSY

AWX8343 and AWX8348 are constructed the same except for the following :

Mark	Symbol and Description	AWX8343	AWX8348
D	IC501	PD5957A8	PD5956A
	Q502	DTA124EUA	Not used
	C508	CKSRYB103K50	Not used
	R502	RS1/16S0R0J	Not used
	R523	RS1/16S473J	Not used
	R501	Not used	RS1/16S0R0J
	R524	RS1/16S102J	Not used
	R553, R554	RS1/16S101J	Not used
	CN108 KR CONNECTOR	B8B-PH-K-S	Not used

O DISPLAY ASSY

AWX8377 and AWX8389 are constructed the same except for the following :

Mark	Symbol and Description	AWX8377	AWX8389
F	IC3003	TC7W53FU	Not used
	Q3003	DTA124EUA	Not used
	Q3004	FMA1A	Not used
	D3005, D3007- D3009	1SS355	Not used
	C3009	CKSRYB153K50	Not used
	R3008	RS1/16S223J	Not used
	R3009, R3010	RS1/16S103J	Not used
	R3011	RS1/16S392J	Not used
	R3019	RS1/16S0R0J	Not used
	R3065	Not used	RS1/16S473J

W REGULATOR ASSY

AWX8364 and AWX8367 are constructed the same except for the following :

Mark	Symbol and Description	AWX8364	AWX8367
	D2534, D2535	1SR154-400	Not used
	C2549	CEAT102M25	Not used
	CN2504 4P PLUG	KM200TA4	Not used
	2506 PCB BINDER	UEF1040	Not used

• PARTS LIST FOR VSX-52TX

Mark No.	Description	Part No.	Mark No.	Description	Part No.
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COMPLEX ASSY

OTHERS

Y15	BOARD IN JUMPER	ADX7418
Y14	BOARD IN JUMPER	ADX7419
J8	JUMPER WIRE	D15A04-100-2651
J7	JUMPER WIRE	D15A05-075-2651

SECONDARY ASSY

OTHERS

Y8	BOARD IN JUMPER	ADX7451
Y9	BOARD IN JUMPER	ADX7452
Y10	BOARD IN JUMPER	ADX7453
Y11	BOARD IN JUMPER	ADX7454
Y12	BOARD IN JUMPER	ADX7455

Y13	BOARD IN JUMPER	ADX7461
J2501	JUMPER WIRE 5P	D20PDD0520E
J11, J18	JUMPER WIRE 4P	D20PDY0410E
J14	JUMPER WIRE 4P	D20PDY0425E
J19	JUMPER WIRE 7P	D20PDY0715E

POWER AMP ASSY

OTHERS

Y5	BOARD IN JUMPER	ADX7404
Y6	BOARD IN JUMPER	ADX7456
Y1	BOARD IN JUMPER	ADX7457
Y3	BOARD IN JUMPER	ADX7458
Y2	BOARD IN JUMPER	ADX7459
Y4	BOARD IN JUMPER	ADX7460
J13	JUMPER WIRE 5P	D20PDY0530E
J22	JUMPER WIRE 6P	D20PDY0615E
J12	JUMPER WIRE 7P	D20PDY0710E

A MULTI I/O ASSY SEMICONDUCTORS

IC604
Q631, Q632, Q641, Q642
Q651, Q652, Q661, Q662, Q671
D691

BD3812F
HN1C03FU
HN1C03FU
UDZS5R1(B)

CAPACITORS

C601-C604, C611-C614
C621-C624, C675, C676
C631, C632, C641, C642
C651, C652, C661, C662
C697, C698

CCSRCH101J50
CCSRCH101J50
CCSRCH331J50
CCSRCH331J50
CCSRCH331J50

C607, C608, C617, C618
C627, C628, C671-C674
C677, C678, C694-C696

CEAT100M50
CEAT100M50
CKSRYB103K50

RESISTORS

All Resistors

RS1/16S###J

OTHERS

601, 602	6P PIN JACK	AKB7089
JA604	2P PIN JACK	AKB7165
CN602	21P SOCKET	AKP7074
CN601	23P SOCKET	AKP7178
JA605	2P PIN JACK	VKB1060

B AUDIO CONNECT ASSY

OTHERS

CN905	18P FFC CONNECTOR	52044-1845
CN904	21P PLUG	AKP7063
CN903	23P PLUG	AKP7064
CN902	21P SOCKET	AKP7074
CN901	23P SOCKET	AKP7178

C COMPOSITE V ASSY SEMICONDUCTORS

IC741	MM1093NF
IC721	NJM2279M
IC701	NJM2595M
IC731	TC74HC4052AF
IC742	TC90A49F

IC732	TK15420M
Q741, Q742	2SA1576A
Q731, Q743-Q745	2SC4081
D741	1SS355
D701, D702, D721	DAN202K

COILS AND FILTERS

X741	CRYSTAL RESONATOR	ASS1091
L741		LCYA330J2520

CAPACITORS

C753, C755, C784	CCSRCH100D50
C712, C782	CCSRCH101J50
C705, C706, C721, C774	CCSRCH181J50
C727	CCSRCH220J50
C711	CCSRCH221J50

C783	CCSRCH390J50
C760	CCSRCH391J50
C747	CCSRCH560J50
C757	CCSRCH6R0D50
C701-C704, C707, C708	CEAT101M16

C713, C714, C722, C723, C733	CEAT101M16
C736, C737, C741, C742, C744	CEAT101M16
C763, C765, C766, C768	CEAT101M16
C785	CEAT102M10
C748	CEAT1R0M50

C781	CEAT470M16
C750, C752, C758	CEAT4R7M50

Mark No. Description**Part No.**

C759
C715, C716, C743, C746, C751
C756, C764, C767, C769-C773

CKSRYB102K50
CKSRYB103K50
CKSRYB103K50

C775-C777
C731, C732, C745, C780
C796
C754
C717, C728

CKSRYB103K50
CKSRYB104K25
CKSRYB105K6R3
CKSRYB122K50
CKSRYB224K16

C709, C710, C724-C726
C734, C735, C738, C739
C762
C749

CKSRYB473K25
CKSRYB473K25
CKSRYB474K10
CKSRYB561K50

RESISTORS

All Resistors

RS1/16S###J

OTHERS

701-703 2P PIN JACK
CN701 13P SOCKET
CN751 10P SOCKET
JA721 1 PIN JACK

AKB7017
AKP7070
KP200TA10L
VKB1063

**D S VIDEO ASSY
SEMICONDUCTORS**

IC881
IC801, IC802
IC851
IC841
IC831, IC842, IC871

LA7213
NJM2595M
PDC084B
TC74HC4052AF
TK15420M

Q852, Q871, Q872
Q881
D881, D882
D801, D802
D851

2SC4081
UN5212
1SS355
DAN202K
DAP202K

COILS AND FILTERS

X851 CRYSTAL RESONATOR
(14.32MHz)
L851, L852
L853

ASS1056
LCYA100J2520
LCYA330J2520

CAPACITORS

C825, C826, C862
C855
C856
C811-C814
C857, C858

CCSRCH101J50
CCSRCH150J50
CCSRCH180J50
CCSRCH181J50
CCSRCH240J50

C866
C859
C805-C808, C815-C820
C831, C832, C843, C844
C851, C852, C864, C871, C872

CCSRCH330J50
CCSRCH470J50
CEAT101M16
CEAT101M16
CEAT101M16

C877, C881, C883
C884
C882
C891-C894
C801-C804, C809, C810, C878

CEAT101M16
CEAT102M10
CEAT3R3M50
CKSRYB103K50
CKSRYB104K25

C829, C830
C821-C824, C833, C834
C841, C842, C845, C846
C853, C854, C860, C861
C873, C874

CKSRYB221K50
CKSRYB473K25
CKSRYB473K25
CKSRYB473K25
CKSRYB473K25

Mark No. Description**Part No.****RESISTORS**

All Resistors

RS1/16S###J

OTHERS

CN802 17P FFC CONNECTOR 52044-1745
CN811, CN812 4P MINI DIN SOCKET AKP7043
CN851 15P SOCKET AKP7071
CN801 17P SOCKET AKP7072

**E VIDEO SIDE ASSY
OTHERS**

CN892 15P PLUG AKP7060
CN891 10P PLUG KM200TA10
CN893 6P PLUG KM200TA6

**F COMPONENT ASSY
SEMICONDUCTORS**

IC5001 NJM2586M
IC5022 TA1270BF
IC5021, IC5051, IC5052 TK15420M
D5001, D5002, D5071 1SS355
D5003 DAN202K

CAPACITORS

C5033, C5034 CCSRCH120J50
C5025, C5047-C5049 CEAT100M50
C5010-C5013, C5021, C5022, C5027 CEAT101M16
C5051-C5054, C5071 CEAT101M16
C5030 CEAT101M35

C5073 CEAT102M10
C5037, C5039 CEAT2R2M50
C5026 CKSRYB103K50
C5028, C5029, C5031, C5032, C5038 CKSRYB104K25
C5041-C5046 CKSRYB104K25

C5035 CKSRYB222K50
C5040 CKSRYB223K25
C5036 CKSRYB224K10
C5081-C5083 CKSRYB224K16
C5014, C5015, C5023, C5024 CKSRYB473K25

C5055-C5058

CKSRYB473K25

RESISTORS

All Resistors

RS1/16S###J

OTHERS

JA5001-JA5003 3P PIN JACK AKB7124
X5022 CRYSTAL RESONATOR ASS1091
X5021 CRYSTAL RESONATOR ASS1092
X5023 CERAMIC RESONATOR ASS7036
CN5051 6P SOCKET KP200TA6L

CN5001 7P SOCKET KP200TA7L
5001 PCB BINDER VEF1040

**L MAIN CONTROL ASSY
SEMICONDUCTORS**

IC381 BD3812F
IC451 BD3813KS
IC101 BD3841FS
IC501 PD5957A8
IC382 TC74HC4052AF

Mark No. Description

C2207, C2208

Part No.

CEAT471M2A

Mark No. Description

Q3002, Q3003, Q3005

Part No.

DTC124EUA

RESISTORS

⚠ R2207, R2208
 ⚠ R2202, R2203
 R2210
 ⚠ R2205, R2206
 Other Resistors

RD1/2LMF332J
 RD1/4MUF4R7J
 RD1/4MUF681J
 RS1LMF472J
 RS1/16S###J

Q3004
 D3002-D3009
 D3001
 D3010

FMA1A
 1SS355
 DAN202K
 SLI-343DCW(STU)

COILS AND FILTERS

L3001 LFEA2R2J
 X3001 CERAMIC RESONATOR(5MHz) VSS1142

SWITCHES AND RELAYS

S3001-S3016 VSG1024

CAPACITORS

C3103-C3105 CCSRCH471J50
 C3007 CEAT101M6R3
 C3003 CEAT221M6R3
 C3018 CEAT470M50
 C3019-C3022 CKSRYB102K50

C3001, C3002, C3006, C3008
 C3016, C3017, C3032
 C3011, C3012
 C3009
 C3106

CKSRYB103K50
 CKSRYB103K50
 CKSRYB104K25
 CKSRYB153K50
 XCH3011

RESISTORS

⚠ R3056
 Other Resistors

RS1/16S104J
 RS1/16S###J

OTHERS

3002 4P CABLE HOLDER
 3001 5P CABLE HOLDER
 CN3001 26P FFC CONNECTOR
 V3001 FL TUBE
 3003 FL HOLDER

51063-0405
 51063-0505
 52045-2645
 AAV7099
 VNF1096

**N VOLUME ASSY
SWITCHES AND RELAYS**

S3201
 S3202-S3209

ASX7004
 VSG1024

CAPACITORS

C3201, C3202

CKSRYB103K50

RESISTORS

All Resistors

RS1/16S###J

OTHERS

3201 5P CABLE HOLDER

51063-0505

**P MULTI JOG ASSY
SWITCHES AND RELAYS**

S3251
 S3252-S3254

ASX7031
 VSG1024

CAPACITORS

C3251, C3252

CKSRYB103K50

RESISTORS

Other Resistors

RS1/16S###J

OTHERS

3251 4P CABLE HOLDER

51063-0405

**AB SP/PS ASSY
SEMICONDUCTORS**

Q2001-Q2005
 D2001-D2010

DTC114TUA
 1SS355

COILS AND FILTERS

L2001-L2007

ATH1053

SWITCHES AND RELAYS

RY2001-RY2005

XSR3002

CAPACITORS

C2051, C2052
 C2023
 C2001-C2014
 C2025-C2029
 C2015-C2019, C2021, C2022

ACH7218
 CEAT101M50
 CFTLA224J50
 CKSRYB102K50
 CQMB103J50

RESISTORS

R2051, R2052
 ⚠ R2008-R2014
 ⚠ R2001-R2007
 ⚠ R2015, R2016

RD1/4MUF473J
 RS1/2LMF4R7J
 RS1LMF2R2J
 RS2LMF331J

OTHERS

2005 4P CABLE HOLDER
 CN2004 12P FFC CONNECTOR
 CN2113 6P SPEAKER TERMINAL
 CN2114, CN2115
 4P SPEAKER TERMINAL
 CN2003, CN2006 5P PLUG

51048-0400
 52045-1245
 AKE7107
 AKE7109

KM200TA5

CN2002 3P POST HEDDER
 CN2001 4P POST HEDDER
 CN2102 2P POST HEDDER
 CN2101 2P POST HEDDER
 CN2103 2P POST HEDDER
 CN2104 2P POST HEDDER

AKC7002
 AKC7003
 AKC7005
 AKC7008
 AKC7009
 AKC7010

**Z DIODE ASSY
SEMICONDUCTORS**

⚠ D2241, D2242

D5SBA20(B)

**O DISPLAY ASSY
SEMICONDUCTORS**

IC3001
 IC3002
 IC3003
 Q3001

PE5403A
 RPM7140-H9
 TC7W53FU
 2SA1576A

5

Mark No. Description

6

Part No.

H HEADPHONE ASSY

CAPACITORS

C3303	CCSRCH471J50
C3304	CKSRYB103K50
C3305	CKSRYB104K25
C3301, C3302	CKSRYB392K50

RESISTORS

All Resistors	RS1/16S###J
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OTHERS

CN3301 4P JUMPER CONNECTOR	52147-0410
3301 PHONE JACK	AKN7029
KN3301 WRAPPING TERMINAL	VNF1084

I FRONT-IN ASSY

SEMICONDUCTORS

IC3351	UPC4570G2-A
Q3351	HN1C01FU
D3354	DAN217
D3351-D3353	UDZS5R1(B)

COILS AND FILTERS

L3353	QTL1013
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CAPACITORS

C3353, C3385, C3386	CCSRCH101J50
C3381, C3382	CCSRCH221J50
C3354	CCSRCH330J50
C3351	CCSRCH471J50
C3352, C3355, C3357, C3361, C3362	CEAT100M50

C3391, C3392	CEAT330M25
C3372, C3373	CEAT470M25
C3383, C3384, C3387, C3388	CEJQ100M16
C3396	CKSRYB102K50
C3359, C3360, C3365, C3376	CKSRYB103K50

C3389, C3390, C3394	CKSRYB103K50
C3366, C3367, C3371, C3378, C3395	CKSRYB104K25

RESISTORS

All Resistors	RS1/16S###J
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OTHERS

CN3351 15P PLUG	AKP7060
JA3352 FRONT AV INPUT	AKX7019
JA3351 REMOTE CONTROL JACK	RKN1004
KN3351, KN3352	VNF1084
WRAPPING TERMINAL	

AF PRIMARY ASSY

SEMICONDUCTORS

△ IC1001	NJM78M56FA
Q1001	DTC143EUA
D1002, D1004, D1005	1SS355
△ D1001	S1WB(A)60SD
D1003	UDZS5R1(B)

COILS AND FILTERS

△ L1001 LINE FILTER	XTF3004
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7

Mark No. Description

8

Part No.

TRANSFORMERS

△ T1001	ATT7043
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SWITCHES AND RELAYS

△ RY1001	XSR3003
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CAPACITORS

△ C1002, C1003 (0.01 uF/275V)	ACE7013
C1008	CEAT102M25
C1009	CEAT221M25
C1004	CQ MBA103J50

RESISTORS

△ R1001 (2.2M ohm, 1/2W)	RCN1080
R1002	RD1/2VM221J
Other Resistors	RS1/16S###J

OTHERS

△ 1004 1P AC OUTLET	AKP1033
H1001, H1002 FUSE CLIP	AKR7001
CN1002, CN1003 5P SOCKET	KP200TA5L
△ CN1001 AC CORD SOCKET	RKP1751
1003 SCREW PLATE	VNE1948
KN1001 WRAPPING TERMINAL	VNF1084

G OPTICAL-IN ASSY

COILS AND FILTERS

L961	QTL1013
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CAPACITORS

C964	CEAT470M16
C968	CKSRYB104K25
C961-C963, C965	CKSRYF104Z25

RESISTORS

Other Resistors	RS1/16S###J
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OTHERS

CN961 CONNECTOR	CKS3824
JA961, JA962 OPTICAL LINK IN	GP1FA513RZ
JA963 OPTICAL LINK OUT	GP1FA513TZ
961 SCREW PLATE	VNE1948

AC REAR TOP ASSY

SEMICONDUCTORS

Q951	2SD1858X
D951, D953	1SS355
D952	UDZS10(B)

COILS AND FILTERS

L951-L955	QTL1013
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CAPACITORS

C956	CEAT101M16
C957	CKSRYB103K50
C953, C958	CKSRYB104K25

RESISTORS

Other Resistors	RS1/16S###J
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OTHERS

CN955 12P FFC CONNECTOR	52044-1245
CN953 17P FFC CONNECTOR	52044-1745

Mark No. Description Part No.

CN954	11P FFC CONNECTOR	52045-1145
CN951, CN952	23P SOCKET	AKP7075
951	SCREW PLATE	VNE1948
JA951, JA952	4P MINI JACK + SW	XKN3015

Mark No. Description Part No.

RESISTORS

Aii Resistors	RS1/16S###J
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OTHERS

CN983	9P D-SUB SOCKET	AKP1213
CN982	KR CONNECTOR	B8B-PH-K
CN981	4P SOCKET	KP200TA4L
JA981, JA983		RKN1004
	REMOTE CONTROL JACK	
JA982	REMOTE CONTROL JACK	RKN1026
981	SCREW PLATE	VNE1948

U POWER AMP-R ASSY

SEMICONDUCTORS

△ IC4151, IC4251, IC4351	PA9010A
△ IC4152, IC4252, IC4352, IC4452	PBD001A
△ IC4153, IC4253, IC4353	PBD002A
Q4152, Q4252, Q4352	2SA1255
Q4151, Q4251, Q4351	2SC3326
Q4403, Q4404	2SC4081
D4152, D4154-D4158, D4252	1SS355
D4254-D4258, D4352, D4354-D4358	1SS355
D4151, D4153, D4251, D4253, D4351	UDZS10(B)
D4353	UDZS10(B)

CAPACITORS

C4156, C4157, C4256, C4257	ACG7041
C4356, C4357	ACG7041
C4152, C4252, C4352	CCSRCH221J50
C4162, C4163, C4262, C4263	CCSRCH6R0D50
C4362, C4363	CCSRCH6R0D50
C4164, C4264, C4364	CEANP2R2M50
C4405	CEAT331M10
C4403, C4404	CEAT331M2A
C4160, C4161, C4260, C4261	CEHAT100M2A
C4360, C4361	CEHAT100M2A
C4151, C4251, C4351	CEHAT100M50
C4153, C4253, C4353	CEHAT331M10
C4158, C4159, C4258, C4259	CEHAT470M25
C4358, C4359	CEHAT470M25
C4154, C4155, C4254, C4255	CEHAT470M63
C4354, C4355	CEHAT470M63

RESISTORS

△ R4169, R4269, R4369	ACN7121
△ R4181, R4182, R4281, R4282	ACN7132
△ R4381, R4382, R4481	ACN7132
R4574	RD1/2VM1R0J
R4155, R4255, R4355	RN1/10SE1201D
R4162, R4262, R4362	RN1/10SE3302D
Other Resistors	RS1/16S###J

OTHERS

CN4552	11P SOCKET	AKP7069
CN4551	13P SOCKET	AKP7070
CN4553	2P CONNECTOR	B02B-XASK-1
CN4452	6P PLUG	KM250NA6L
KN4403, KN4404		VNF1084
	WRAPPING TERMINAL	
J4152- J4154	JUMPER WIRE 58	ADB7021
J4151, J4155	JUMPER WIRE 70	ADB7022

J FRONT-IN CONNECT ASSY

CAPACITORS

C3341, C3342	CKSRYB104K25
--------------	--------------

OTHERS

CN3342	15P FFC CONNECTOR	52045-1545
CN3341	15P SOCKET	AKP7071
KN3341	WRAPPING TERMINAL	VNF1084

AD TRANS SIDE ASSY

OTHERS

2302	4P CABLE HOLDER	51048-0400
2303	7P CABLE HOLDER	51048-0700
CN2304	4P JUMPER CONNECTOR	52147-0410
CN2302	7P JUMPER CONNECTOR	52147-0710

Y TRANS 2-2 ASSY

SEMICONDUCTORS

△ IC2253	AEK7018
△ IC2251, IC2252	AEK7022

CAPACITORS

C2251-C2253	CQMBA104J50
-------------	-------------

RESISTORS

△ R2251	RD1/4MUF100J
△ R2252	RD1/4MUF4R7J

OTHERS

2250	7P CABLE HOLDER	51048-0700
------	-----------------	------------

K 12V TRIGGER ASSY (52TX Only)

SEMICONDUCTORS

△ IC982	NJM78M12FA
IC981	SP232AEN
Q984	2SA1037K
Q983	2SB1188
Q991	2SC1740S
Q982	DTC124EUA
D981, D991, D992	1SS355
D982	UDZS5R1(B)

COILS AND FILTERS

L992	LAU1R0J
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CAPACITORS

C998	CCSRCH331J50
C983	CEAT100M50
C991	CEAT101M16
C993-C996	CEAT1R0M50
C989	CEATR10M50

C981, C982, C984-C986, C992	CKSRYB103K50
C997	CKSRYB103K50

5	6
Mark No.	Description
Part No.	

Q POWER AMP IN ASSY SEMICONDUCTORS

IC4451	PA9010A
Q4452	2SA1255
Q4451	2SC3326
D4453-D4458	1SS355
D4451, D4452	UDZS10(B)

CAPACITORS

C4456, C4457	ACG7041
C4452	CCSRCH221J50
C4462, C4463	CCSRCH6R0D50
C4464	CEANP2R2M50
C4460, C4461	CEHAT100M2A

C4451	CEHAT100M50
C4453	CEHAT331M10
C4458, C4459	CEHAT470M25
C4454, C4455	CEHAT470M63

RESISTORS

R4469 (0.18 ohm/5W)	ACN7121
R4455	RN1/10SE1201D
R4462	RN1/10SE3302D
Other Resistors	RS1/16S###J

OTHERS

4001 5P CABLE HOLDER	51048-0500
CN4003 18P FFC CONNECTOR	52044-1845
CN4001, CN4002 13P PLUG	AKP7059
CN4401, CN4451 6P SOCKET	KP250NA6

R POWER PROTECT ASSY SEMICONDUCTORS

IC4051	NJM4558MD
Q4051	2SC4081
Q4052	UMB1N
Q4054	UMH1N
D4051, D4502	1SS355

CAPACITORS

C4054, C4055	CKSRYB103K50
C4052, C4053	CKSRYB104K25
C4051	CKSRYB223K50

RESISTORS

All Resistors	RS1/16S###J
---------------	-------------

OTHERS

CN4053 15P FFC CONNECTOR	52044-1545
CN4051, CN4052 11P PLUG	AKP7058

S POWER AMP-L ASSY SEMICONDUCTORS

⚠ IC4101, IC4201, IC4301	PA9010A
⚠ IC4102, IC4202, IC4302	PBD001A
⚠ IC4103, IC4203, IC4303, IC4453	PBD002A
Q4102, Q4202, Q4302	2SA1255
Q4101, Q4201, Q4301	2SC3326

D4102, D4104-D4108, D4202	1SS355
D4204-D4208, D4302, D4304-D4308	1SS355
D4101, D4103, D4201, D4203, D4301	UDZS10(B)

7	8
Mark No.	Description
Part No.	

D4303

UDZS10(B)

CAPACITORS

C4106, C4107, C4206, C4207	ACG7041
C4306, C4307 (220uF/100v)	ACG7041
C4102, C4202, C4302	CCSRCH221J50
C4112, C4113, C4212, C4213	CCSRCH6R0D50
C4312, C4313	CCSRCH6R0D50
C4114, C4214, C4314	CEANP2R2M50

C4401, C4402	CEAT331M2A
C4110, C4111, C4210, C4211	CEHAT100M2A
C4310, C4311	CEHAT100M2A
C4101, C4201, C4301	CEHAT100M50
C4103, C4203, C4303	CEHAT331M10

C4108, C4109, C4208, C4209	CEHAT470M25
C4308, C4309	CEHAT470M25
C4104, C4105, C4204, C4205	CEHAT470M63
C4304, C4305	CEHAT470M63

RESISTORS

⚠ R4119, R4219, R4319 (0.18 ohm/5W)	ACN7121
⚠ R4131, R4132, R4231, R4232	ACN7132
⚠ R4331, R4332, R4482 (0.047 ohm)	ACN7132
R4573	RD1/2VM1R0J
R4105, R4205, R4305	RN1/10SE1201D

R4112, R4212, R4312	RN1/10SE3302D
Other Resistors	RS1/16S###J

OTHERS

CN4502 11P SOCKET	AKP7069
CN4501 13P SOCKET	AKP7070
CN4504 2P CONNECTOR	B02B-XASK-1
CN4402 6P PLUG	KM250NA6L
KN4401, KN4402	VNF1084
WRAPPING TERMINAL	
J4101, J4105 JUMPER WIRE 58	ADB7021
J4102- J4103 JUMPER WIRE 70	ADB7022

AA VH TR ASSY SEMICONDUCTORS

⚠ Q2231	2SA1514K
⚠ Q2233	2SA1837D1
⚠ Q2232	2SC3906K
⚠ Q2234	2SC4793D1
⚠ D2231, D2232	1SR154-400

RESISTORS

All Resistors	RS1/16S###J
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OTHERS

2205 6P CABLE HOLDER	51048-0600
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M DSP ASSY SEMICONDUCTORS

IC601	AK4114VQ
IC701	AK4628VQE
IC801	DSPA56371AF180
⚠ IC902	LM1117DT-ADJ
⚠ IC901	NJM2391DL1-33

IC851	PDL018A8
IC501	TC74HCU04AF
IC551	TC74VHC157FT

Mark No. Description

IC952
IC871

Part No.

TC74VHCT244AFT
TC7WH125FU

Mark No. Description

CN551 22P FFC CONNECTOR

Part No.

VKN1426

A

IC951
IC802
Q551
Q801
D553, D702

TC7WH34FU
TC7WU04FU
UMD2N
UN5212
DAN202K



POSI 1 R ASSY

OTHERS

J4551
⚠ TH4503

ADX7471
PTFM04BD222Q2N34B0

D551, D701
D901, D902

DAP202K
UDZS5R6(B)



POSI 1 L ASSY

OTHERS

J4501
⚠ TH4501

ADX7471
PTFM04BD222Q2N34B0

COILS AND FILTERS

L802, L803, L901-L903
CHIP FERRITE BEAD
L501-L503, L551, L601, L602
L605, L701, L702, L801, L804
CHIP SOLID INDUCTOR
L851, L871, L951, L952

ATL7002

QTL1013
QTL1013

QTL1013

X801 CRYSTAL RESONATOR
(20MHz)

VSS1171

X601 CRYSTAL RESONATOR
(24.576MHz)

XSS3003

CAPACITORS

C612, C613
C705
C505, C506
C511, C552, C605, C608, C620
C702, C707-C714, C717, C801

CCSRCH100D50
CCSRCH101J50
CCSRCH470J50
CCSRCH471J50
CCSRCH471J50

C803, C805, C807, C809, C814
C818, C821, C823, C826, C828
C830, C832, C851, C871, C916
C919, C951, C954
C816, C817

CCSRCH471J50
CCSRCH471J50
CCSRCH471J50
CCSRCH471J50
CCSRCH8R0D50

C953, C956
C513, C703, C715, C834, C835
C908, C909
C607, C618, C718
C617

CEVW100M16
CEVW101M16
CEVW101M16
CEVW470M6R3
CKSRYB102K50

C503, C504, C556, C701, C820
C825, C917, C920
C551, C553-C555, C557, C606
C609, C614, C619, C704, C706
C716, C720, C802, C804, C806

CKSRYB103K50
CKSRYB103K50
CKSRYB104K16
CKSRYB104K16
CKSRYB104K16

C808, C810, C815, C819, C822
C824, C827, C829, C831, C833
C852, C872, C907, C918, C952
C955
C512

CKSRYB104K16
CKSRYB104K16
CKSRYB104K16
CKSRYB104K16
CKSRYB105K6R3

C621

CKSRYB474K10

RESISTORS

R802
R962, R970
R628
Other Resistors

RAB4C101J
RAB4C104J
RS1/16S1802F
RS1/16S###J

OTHERS

JA501 2P PIN JACK
CN901 15P SOCKET
CN701 19P SOCKET
CN951 23P SOCKET
CN601 10P FFC CONNECTOR

AKB7131
AKP7071
AKP7073
AKP7075
VKN1414

F

6. ADJUSTMENT

There is no information to be shown in this chapter.

A

B

C

D

E

F

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 PROTECTION CIRCUIT CONTROL SPECIFICATION

Microcomputer-related ports

DC_PROT (pin 74 of IC501: MAIN CONTROL Assy)

Input port : For DC detection

OL_DET (pin 73 of IC501: MAIN CONTROL Assy)

Input port : To detect overloading at the amplifier
(Interrupt port)

FAN_STOP (pin 92 of IC501: MAIN CONTROL Assy)

Input port : To detect Fan forced stop

FAN_DRIVE (pin 91 of IC501: MAIN CONTROL Assy)

: For Fan on/off

TEMP2 (pin 44 of IC3001: DISPLAY Assy)

Input port : To detect temperature

12V_DET (pin 41 of IC3001: DISPLAY Assy)

Input port : To detect 12V trigger

The following control processes are activated immediately before the relay system is turned on upon power-on. The time is 4.8 seconds after power-on. (Control of the relay system is enabled 5.2 seconds after power-on.)

Only DC detection is enabled 2 seconds after power-on to activate it before other protection functions.

① DC detection (defect detection)

Only DC detection is enabled 2 seconds after power-on.

If there is a fault in the power amplifier or a high-level signal lower than 5 Hz is input, the DC_PROT port becomes "L". Detecting "L" the microcomputer performs the following operations:

1. System muting on
2. Speaker relay off (Control with the display microcomputer)

The warning indication "AMP ERR" appears on the FL display.

If this status continues for more than 3 seconds, the power is turned off (for Standby mode).

Do not accept the key input afterward.

(Flash it always till turns the primary side off.)

If the port becomes "H" within 3 seconds, the unit resets automatically.

DC_PROT port performs the chattering check for 1 msec.

In addition, there is the case that detection delays for maximum 20 msec because performs monitor of DC_PROT port with a main loop.

Even if turns the primary side off and turns on once again.

If detects DC once and turned the power off, do not accept the key input afterward.

However, power on is possible when the following key was pressed to be able to key input in the protection line and service.

1. Test mode (remote control code : A55F)
2. When the STEREO/DIRECT key and SIGNAL SELECT key are both held pressed for 2 seconds.
(Be effective when turned the power off by DC detection regarding 2.)

② Overload detection (abnormality detection)

If the speaker terminals are short-circuited or low-load driving is detected, the OL_DET port becomes "L"

Detecting "L" edge interrupt in an interrupt process, the microcomputer performs the following operations:

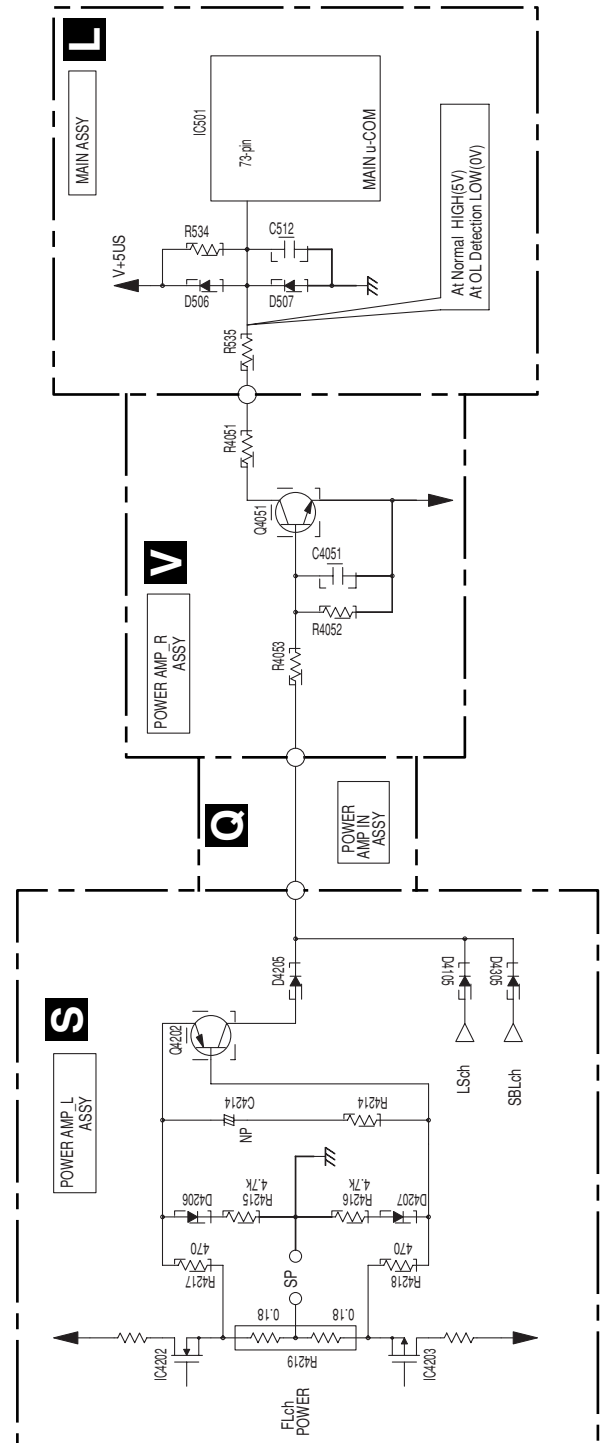
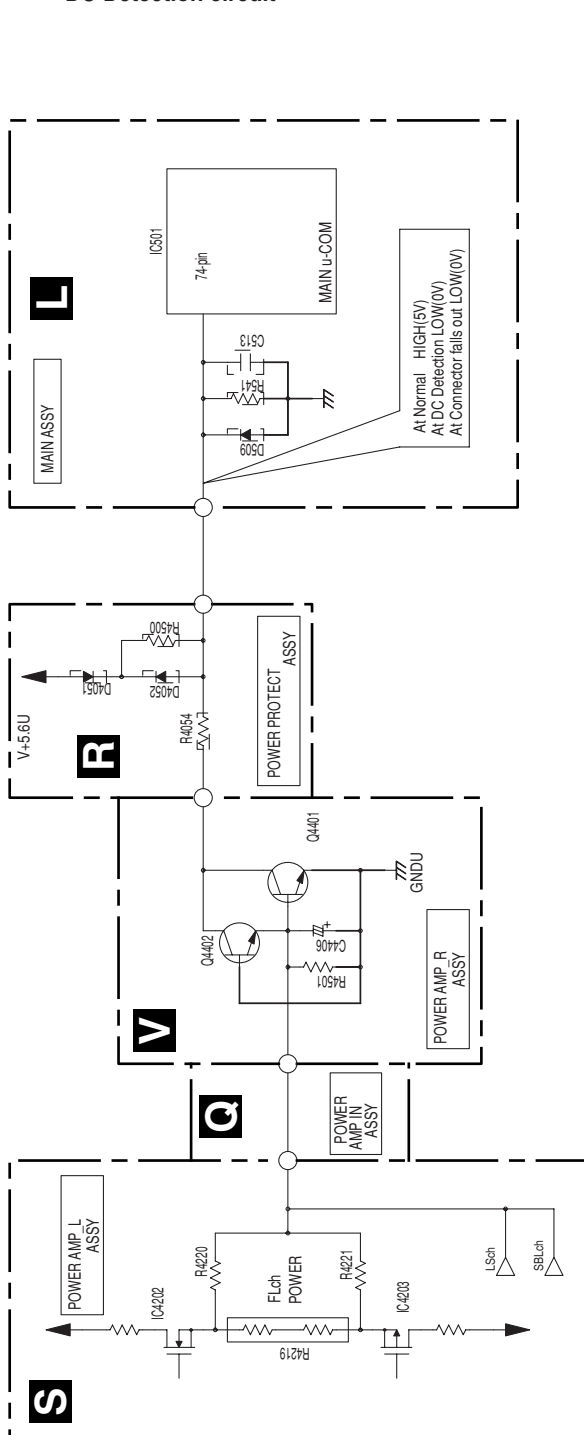
1. System muting on
2. Speaker relay off (Control with the display microcomputer)
3. Power off (Standby mode)

● Protection Process List

Item	Detection Method	Process	Warning Indication	Remarks
DC detection	Detects when the DC_PROT port becomes "L".	Turns muting on and speaker relay off, then turns off the power after 3 seconds.	Flashing "AMP ERR" for 3 seconds.	If the power is turned off, flashes the MCACC LED. Do not accept the POWER key. If the DC_DET port becomes "H" within 3 seconds, the unit resets automatically.
Overload detection	Detects when the OL_DET port becomes "L" (checks by interrupt).	Turns muting on and speaker relay off, and immediately turns off the power.	None	
Thermal shut down	Detects when the TEMP2 port becomes "H".	Turns muting on and speaker relay off, then turns off the power after 3 seconds.	Flashing "OVERHEAT" for 3 seconds	If the TEMP2 port becomes "L" within 3 seconds, the unit resets automatically. After the power off, the key input is possible once again.
12V trigger short detection	Detects when the 12V_DET port becomes "H".	Turns 12V_TRG port to "L", then turns off the 12V output.	Flashing "12V TRI ERR"	Only a fan that is assigned 12V TRIG is valid. Release the FL indication with the power on/off.

- **Overload Detection circuit**

- **DC Detection circuit**



7.1.2 HOW TO DIAGNOSE THE AMPLIFIER SECTION

When DC detection worked (STBY IND. flashes for a long time) in the protection circuit of foregoing section (or there is not the speaker output, probably only 1CH), failure (damage) of the power amplifier section is considered.

Because this receiver cannot diagnose the amplifier section by an electricity state by structure, please diagnose it in the following steps.

Caution:

When release the STBY (flashes) state before repair, Because there is the case that the damage progresses when turns the power on once again, please be careful.

- According to a symptom, perform the following confirmation beforehand.
 1. Are not Fuse and IC protector opening it?
 - 2-a. When can turn on electricity, confirm that supply voltage of the point that can measure is appropriate.
 - 2-b. Furthermore, confirm that voltage ((in a no signal) DC and the appropriate signal output) between GND and R2008-R2014 on the SP/PS Assy (Either of the amplifier side and the speaker terminal side is possible) (Or remove either of CN2101-2104) on the SP/PS Assy. And limit failure CH.

If was able to limit failure CH, diagnose the CH in the following steps.

- Use the tester basically and check that each part is not damaged (resistance value / open / short circuit).

About parts with damaged possibility, explain FL ch to an example in order.

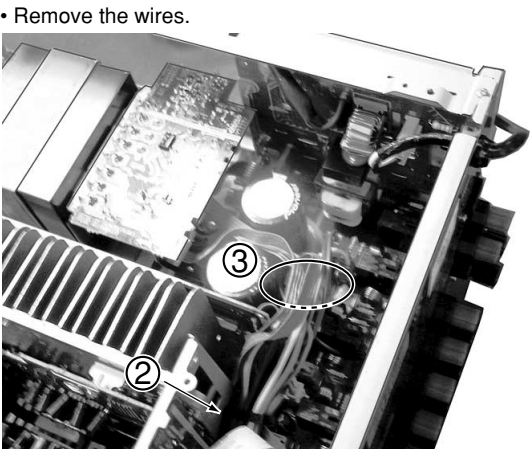
1. R4131, R4132 (ACN7132: 0.047 Ω , 0.5W chip drain resistor)
IC 4102, IC4103 (PBD001A: Nch, PBD002A: Pch output
POWER MOS Tr.) /POWER AMP-L Assy
2. R4119 (ACN7121: 0.18 Ω .5W $\times$ 2 cement source resistor)
R4117, R4118 (RS1/16S471J: 470 Ω chip resistor for
protection circuit)
D4101, D4103 (UDZS10B: 10V Zener diode for current
limiting)
D4102, D4104 (1SS355: Small signal diodes same as above)
R4110, R4111 (RS1/16S560J: 56 Ω chip gate resistor)
R4106, R4107 (RS1/16S101J: 100 Ω chip IC4101 power filter
resistor) /POWER AMP-L Assy
3. IC4101 (PA9010A: Power amplifier with output current bias
Voltage step HIC) /POWER AMP-L Assy
4. Q2231 (2SA1514K) /VH TR Assy
Q2232 (2SC3906K) /VH TR Assy
Q2233 (2SA1837D1) /VH TR Assy
Q2234 (2SC4793D1) /VH TR Assy

Purpose:
 When repairing this unit, the large Heat Sink Block obstructs access to some Assys.
 If the Heat Sink Block is removed, as the posistor mounted on it is also disconnected, the protection circuit is activated, which disables failure diagnosis of these Assys while the unit is powered. With the method explained here, the Assys that cannot be diagnosed while the unit is powered because of the Heat Sink Block can be diagnosed by creating an artificial status of the posistor's being connected (by connecting a 100-ohm resistor under normal temperature).

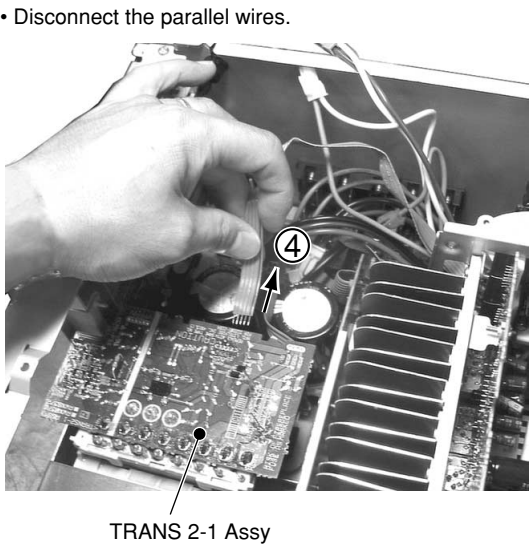
Note: Use this method for diagnosing a failure other than possible failures inside the Heat Sink Block, such as those shown in the table below:

Symptoms that are highly suspected to be failures inside the Heat Sink Block	Possible causes
① No power with the STBY LED flashing	DC detection has been activated to prevent further damage to the unit. Note: Refer to "7.1.2 How to diagnose the Amplifier Section" in the service manual.
② The unit turns itself off after "AMP ERR" was displayed on the FL display. Then it goes into state ① above.	
③ "OVERHEAT" is displayed on the FL display under normal temperature, then the unit turns itself off.	The peripheral circuits of the posistor inside the Power Amplifier Section are in failure. Note: A posistor is a kind of thermistor, and its resistance is approx. 100 ohms at normal room temperature.
④ The unit turns itself off without any indication on the FL	Overloaded amplifier, failure in the overload-detection circuit inside the Power Amplifier Section, etc.
⑤ "FAN STOP" is displayed on the FL display, then the unit turns itself off.	Disconnection of the Fan connector, failure in the fan. (Only for the models for Europe and those for other than North America and Japan)

- Procedures:**
- Remove the bonnet and center beam.
 - Remove all the wires from the wire saddle.
 - Disconnect all six connectors connected between the Amplifier Assy and the SP/PS Assy.

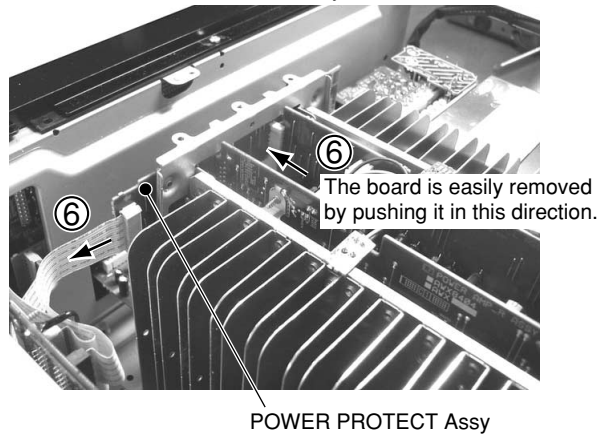


- Disconnect the parallel wires from the connector CN2201. (If the wires are not easily disconnected, disconnect them with the connector attached, using a vacuum desoldering tool.)
- Remove the eight screws that secure the Amplifier section.



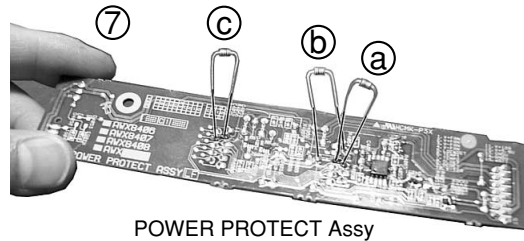
- ⑥ Remove the Power Amplifier, leaving the POWER PROTECT Assy intact.
- In this case, you can easily remove the Power Amplifier if the FFC cable connecting the POWER PROTECT Assy and the MAIN CONTROL Assy has been disconnected on either side.
 - When removing the POWER PROTECT Assy, pull out the Assy while pushing on the board at the center from the rear side, for easier removal with less stress on the connector.

- Remove the POWER PROTECT Assy.



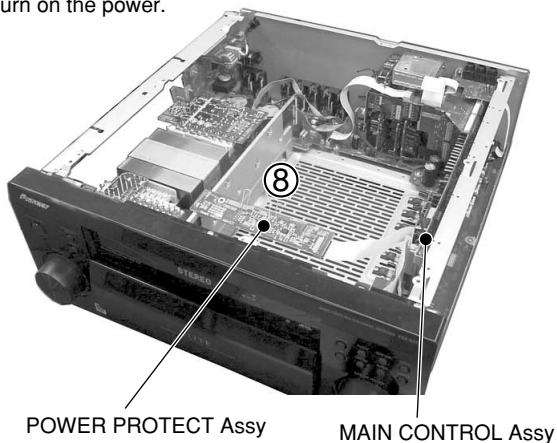
- ⑦ Jump with 100-ohm resistors in the following three places on the POWER PROTECT Assy:
- Ⓐ Between Pin 4 and Pin 5 of CN4052
 - Ⓑ Between Pin 5 and Pin 6 of CN4052
 - Ⓒ Between Pin 8 and Pin 9 of CN4051

- Jump with resistors.



- ⑧ Secure the POWER PROTECT Assy so that it will not come into contact with metallic parts of the unit, such as the chassis. Then connect the POWER PROTECT Assy with the MAIN CONTROL Assy using an FFC cable and turn on the power. The unit will be turned on without the protection circuit activated.

- Turn on the power.



- ⑨ After finishing diagnoses, remove the three resistors inserted in Step ⑦, and before returning the Power Amplifier to its original position, discharge the electrolytic capacitors in the places shown in the table below.

- If connection is made without discharging the electrolytic capacitors, the resistors may be damaged by a surge of current.
- Discharge the electrolytic capacitor using a resistor, not by short-circuiting it. Using a tester, etc., completely discharge it until there is no remaining voltage.

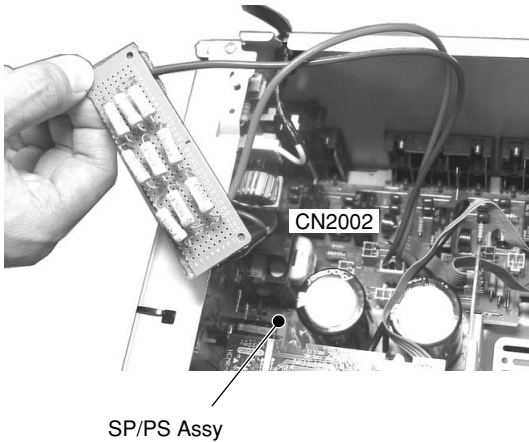
Places to be discharged	Discharging methods
SP/PS Assy: C2051, C2052	Jump with a discharging resistor in CN2002 of the SP/PS Assy. (Photo 1)
POWER AMP L Assy: C4401, C4402	Jump with a discharging resistor on the connector side of CN2002 of the POWER AMP-L Assy. (Photo 2)
POWER AMP R Assy: C4403, C4404	While you still have CN2002 of the SP/PS Assy jumped with a discharging resistor, reconnect the connector to CN2001 of the SP/PS Assy. (Photo 2)
TRANS 2-1 Assy: C2213, C2214	Jump between each capacitor and ground. (Photos 3 and 4)

● Discharging resistors

In a case when one resistor is used

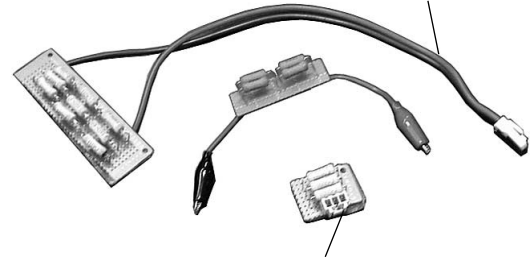
Wattage (W)	3	2	1
Recommended constant to be used (ohms)	3300	4700	10000
Miscellaneous			
Three-wire lead	ADX7404		
Three-core connector	RKP1751		

Photo 1: Discharging $\pm$ VL (SP/PS Assy: C2051, C2052)



• Discharging resistors

Modified ADX7404 wire with 3-pin connector



Modified RKP1751 3-pin connector

Photo 2: Discharging $\pm$ VL inside the POWER AMP-L and R Assys
Discharging of C4403 and C4404 of the POWER AMP-R Assy is also possible by reconnecting the connector to CN2001 of the POWER AMP-R Assy while keeping the discharging resistor connected to CN2002 of the SP/PS Assy connected.

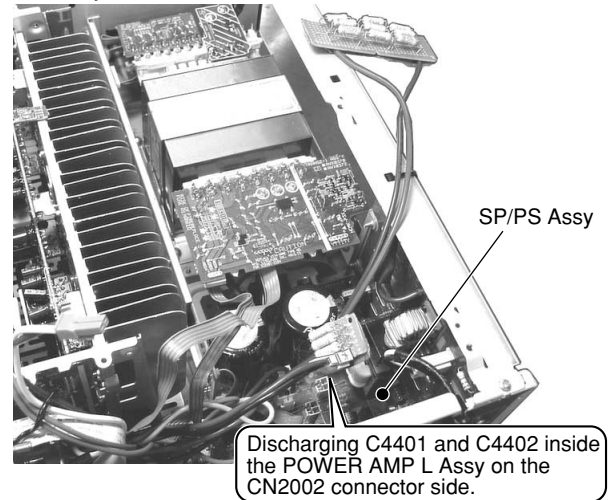
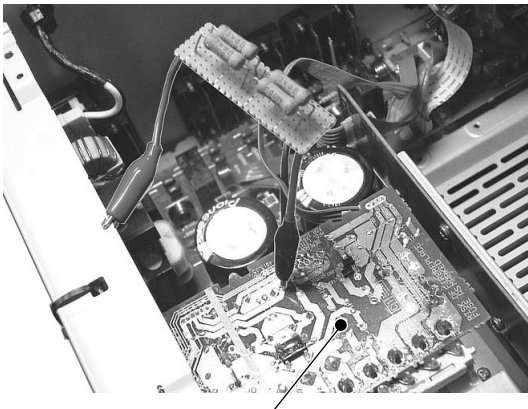
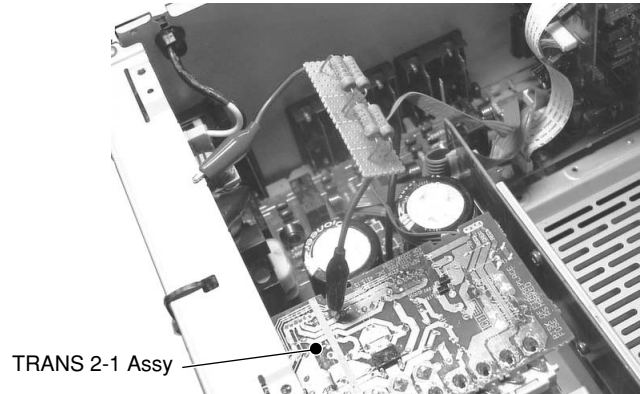


Photo 3: Discharging +VH (TRANS 2-1 Assy: C2213)



TRANS 2-1 Assy

Photo 4: Discharging -VH (TRANS 2-1 Assy: C2214)



TRANS 2-1 Assy

⑩ Reassemble the unit by following Steps ①-⑤ in reverse.

- When reconnecting the parallel wires to the connectors or reinserting the connectors, be careful of the direction. If a wire is connected to the wrong side of the connector, or if the five wires are not connected correctly, the resistors may be damaged.

• Direction of wires

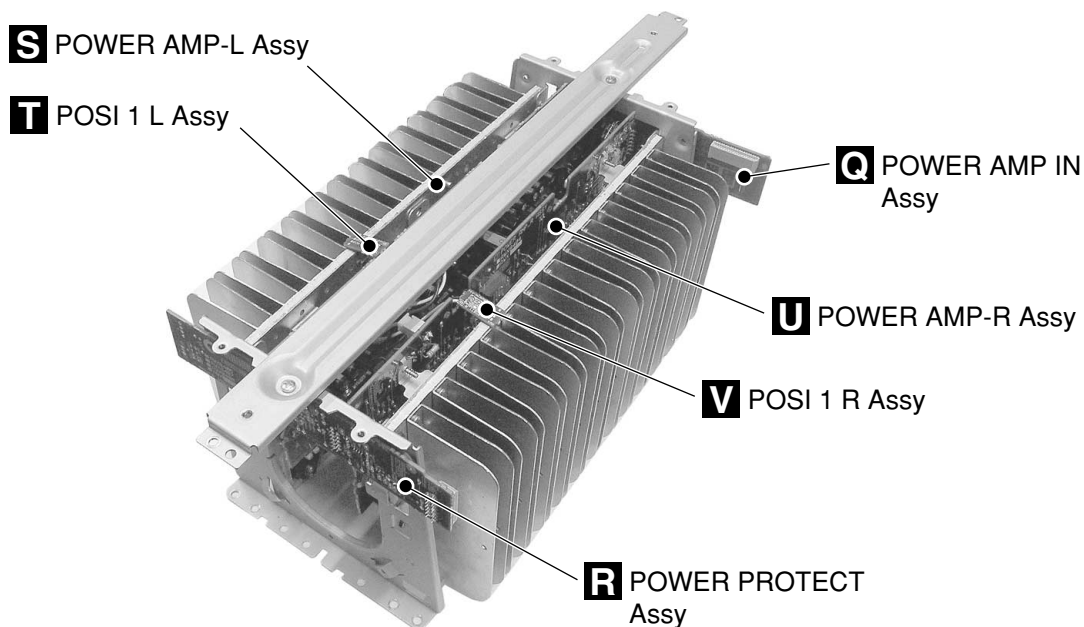
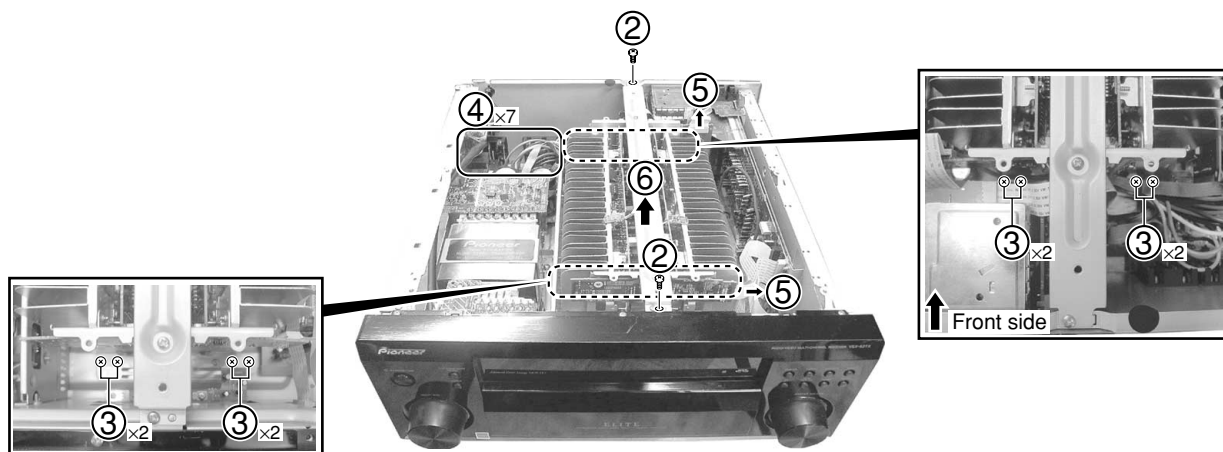


7.1.4 DISASSEMBLY

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

1 Bonnet Case V1B and Heatsink Section

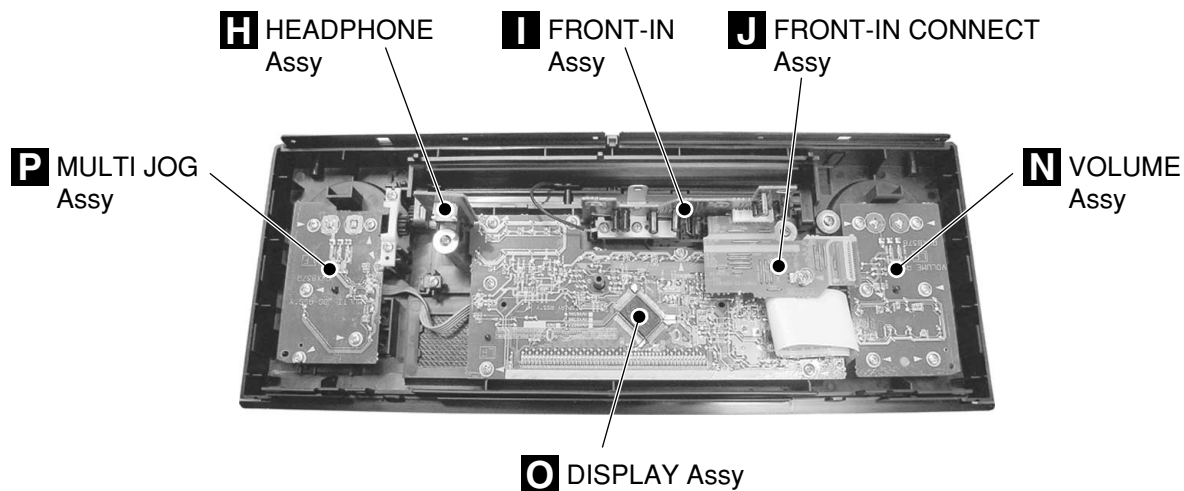
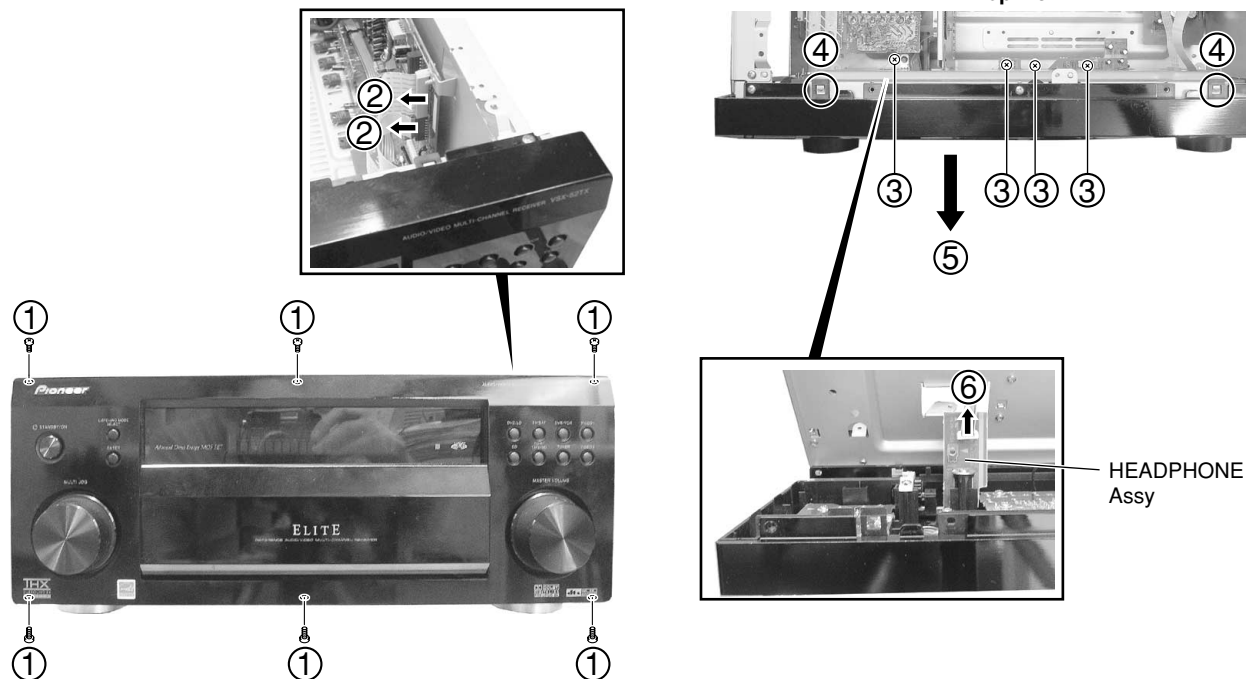
- ① Remove the bonnet case V1B by removing the twenty screws.
- ② Remove the two screws.
- ③ Remove the eight screws.
- ④ Disconnect the seven connectors.
- ⑤ Disconnect the two flexible cables.
- ⑥ Remove the heatsink section.



2 Front Panel Section

- ① Remove the six screws.
- ② Disconnect the two flexible cables.

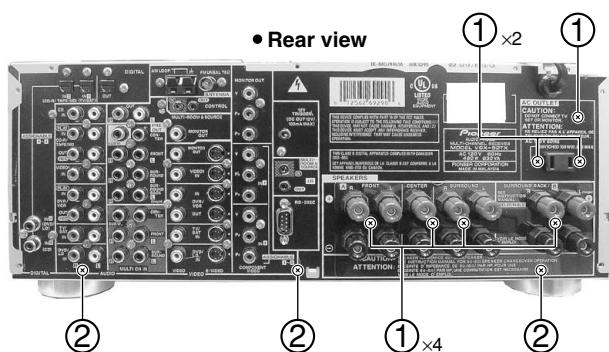
- ③ Remove the four screws.
- ④ Unhook the two hooks.
- ⑤ Remove the front panel section.
- ⑥ Disconnect the one connector.



3 Rear Panel and Main Sections

① Remove the seven screws.

② Remove the three screws.



③ Remove the one screw.

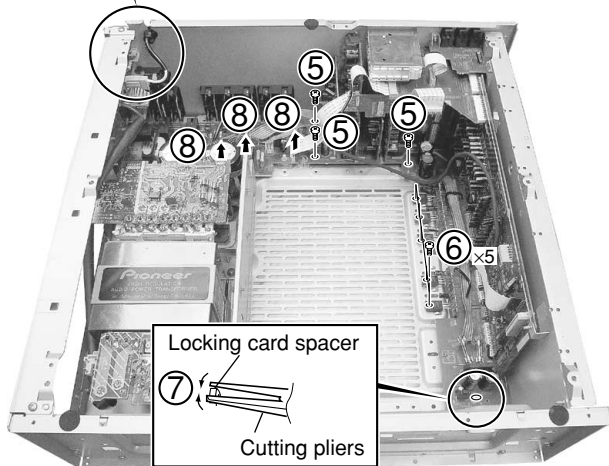
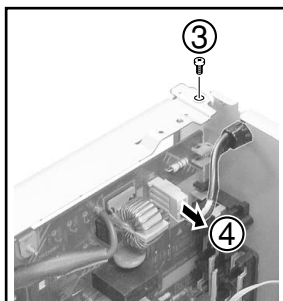
④ Disconnect the one connector.

⑤ Remove the three screws.

⑥ Remove the five screws.

⑦ Remove the locking card spacer.

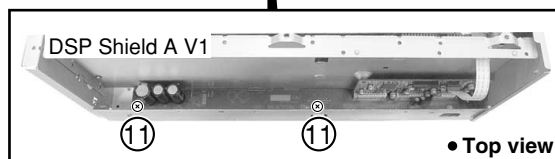
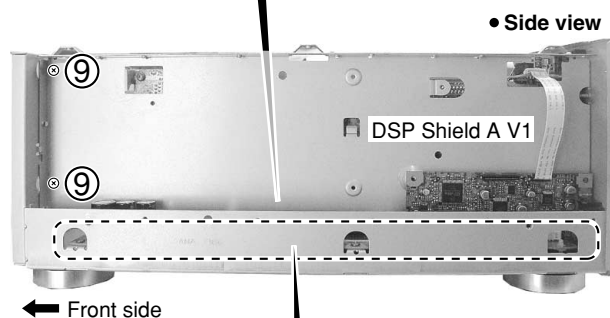
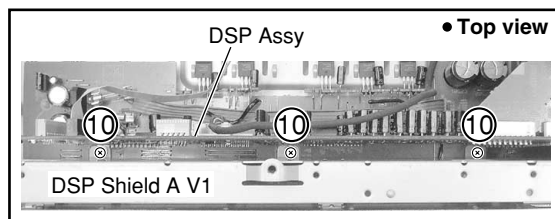
⑧ Disconnect the two connectors and the one flexible cable.



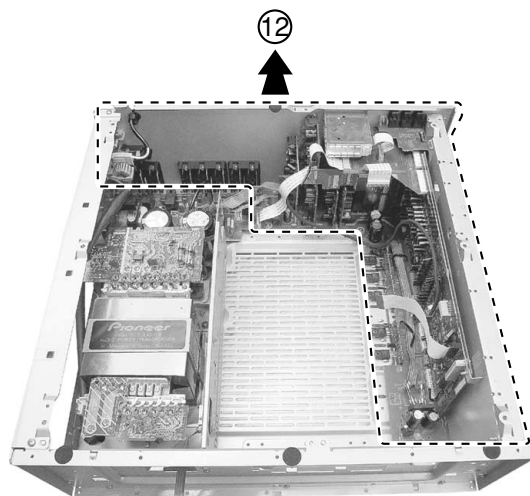
⑨ Remove the two screws.

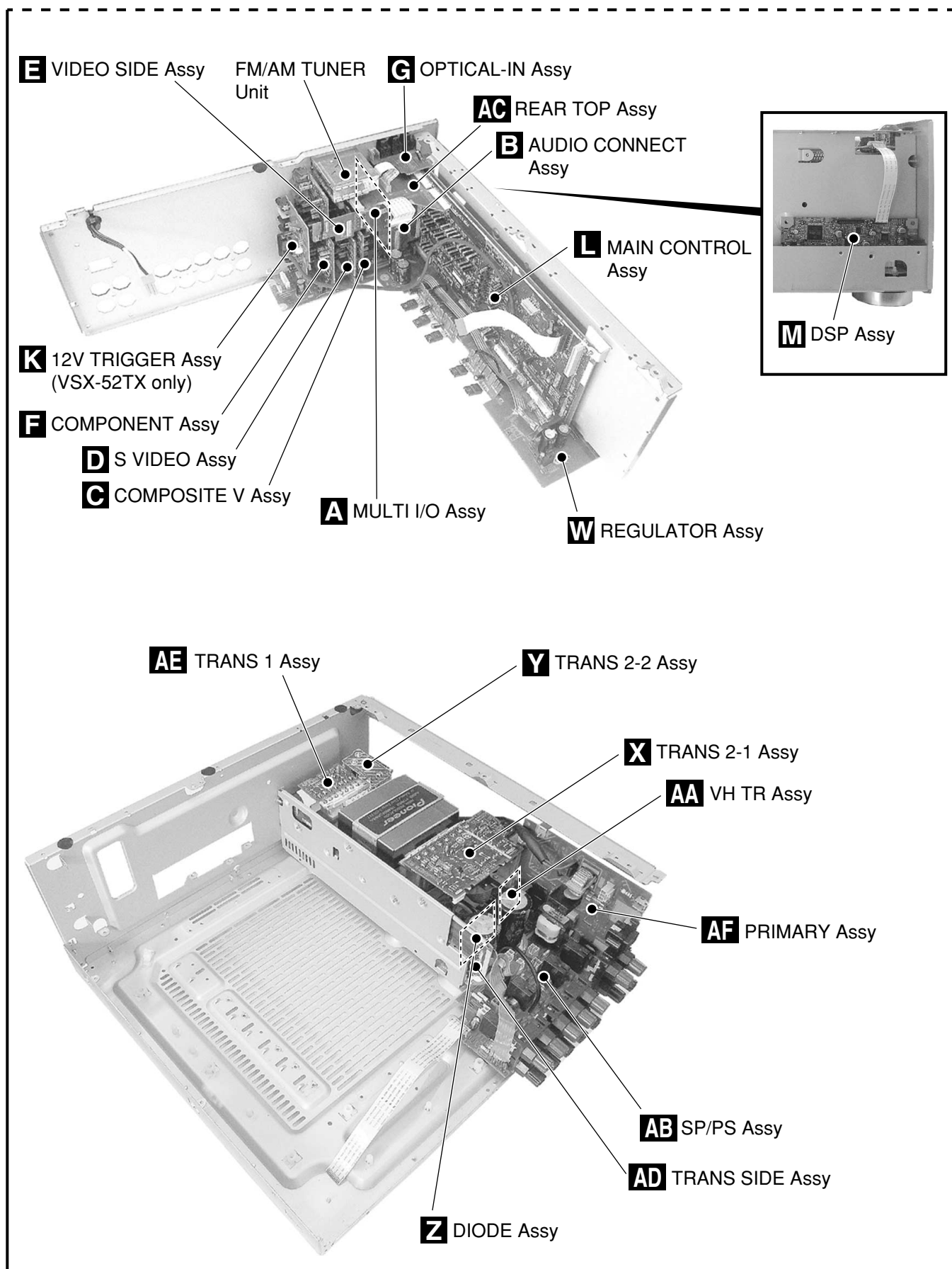
⑩ Remove the three screws.

⑪ Remove the two screws.



⑫ Remove the rear panel section with the main section.





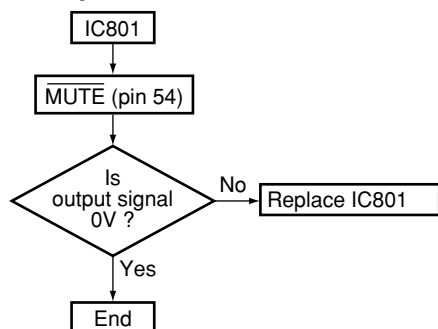
7.1.5 TROUBLE SHOOTING OF THE DSP ASSY

- When a sound is not out in the multi-channel signal playback or surround mode with the digital signal input.
(SurroundBack is not out with the setting.)
- Suppose CR to be poor contact and that is not damaged.
- This shows failure analysis of DSP Assy.

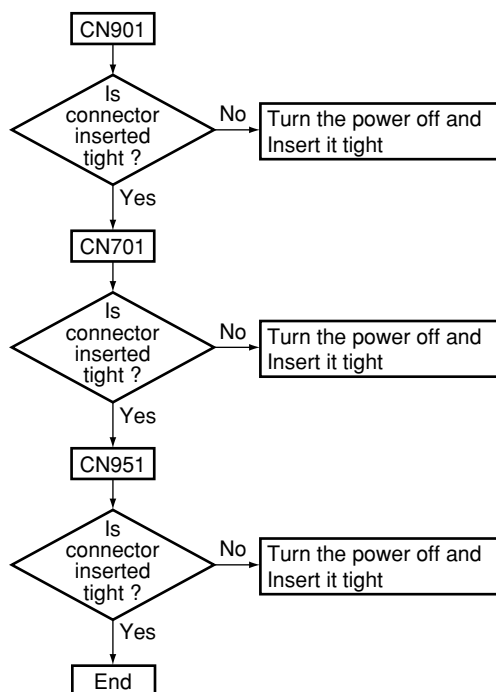
Step 0: Preliminary check

- Tighten the COAX Jack screws.
(GND of the DSP module floats from the chassis. And this unit may not work normally, because the electric potential becomes unstable.)

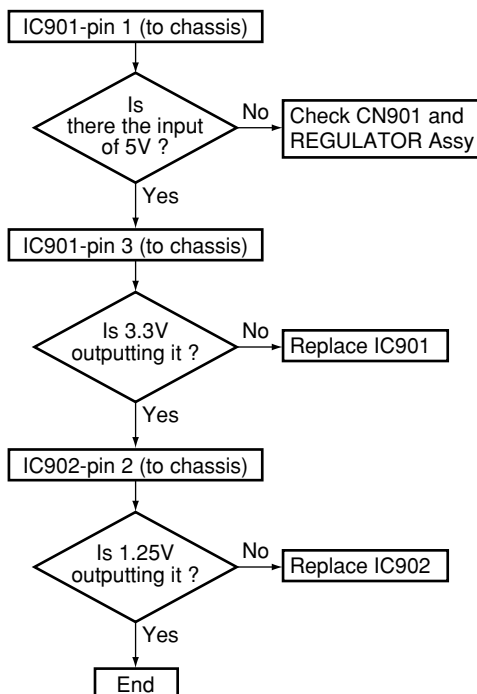
Step 1: Mute pin



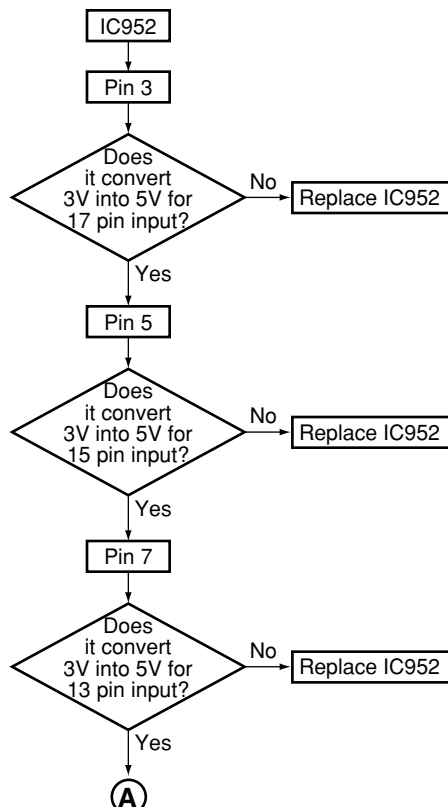
Step 2: B to B connector

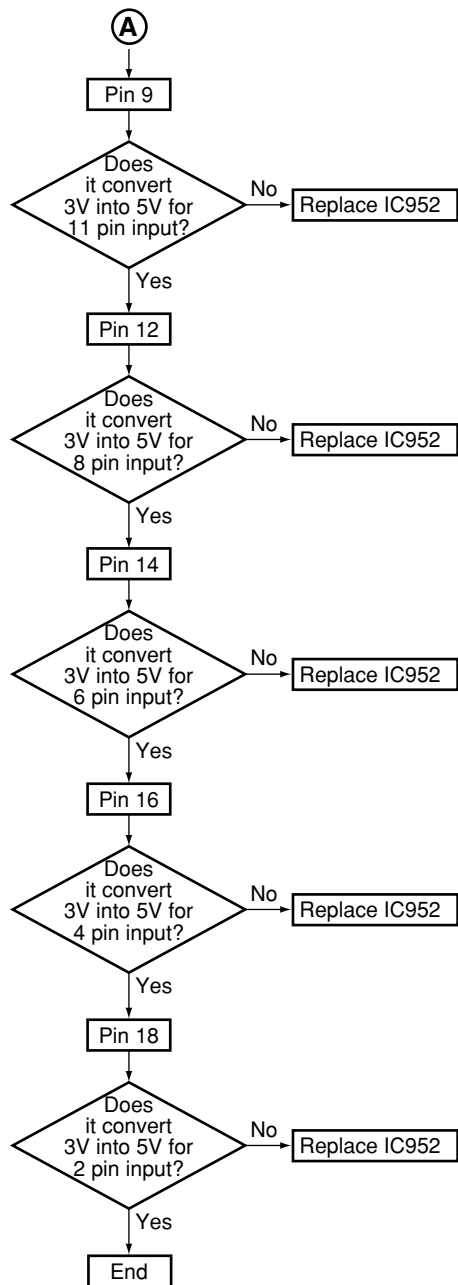


Step 3: Regulator IC

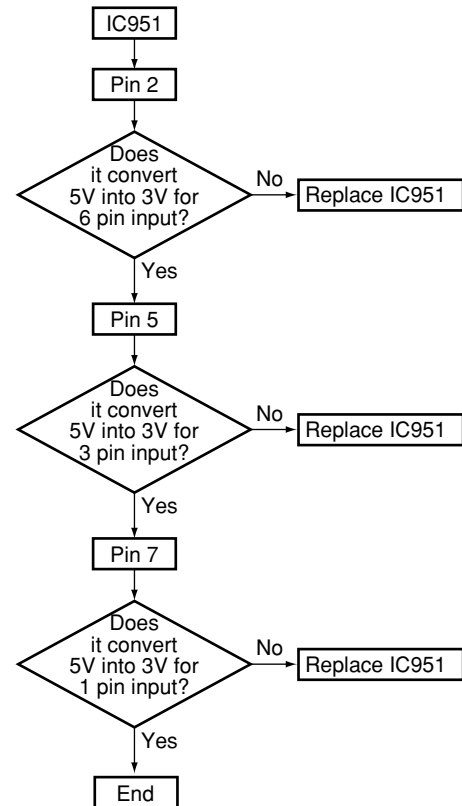


Step 4: 3 → 5V conversion

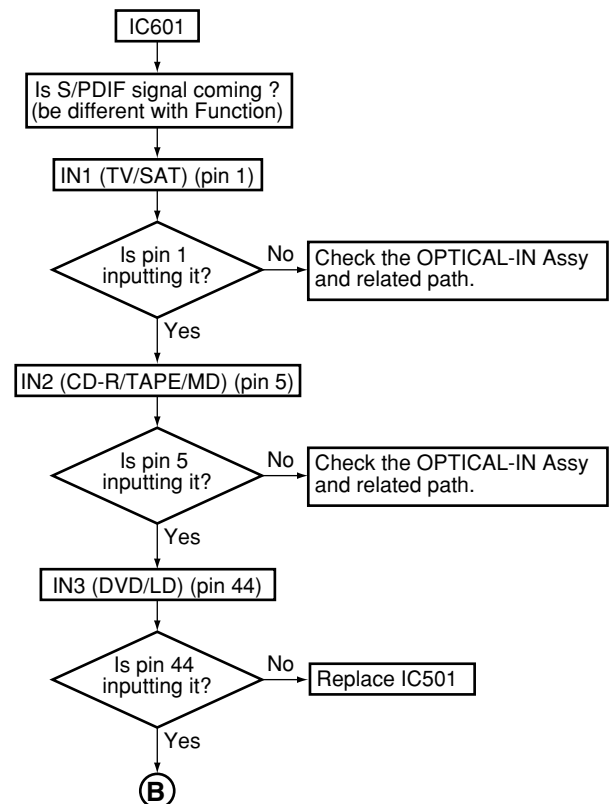




Step 5: 5 → 3V conversion

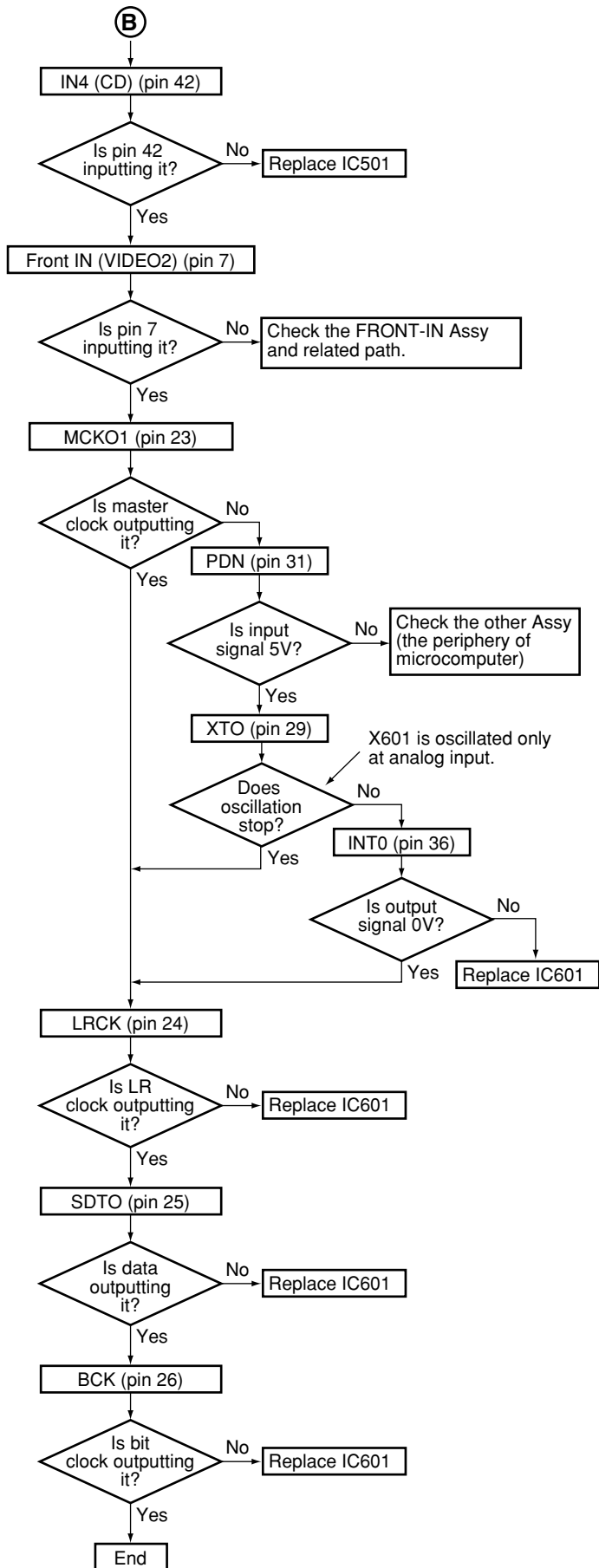


Step 6: DIR



(B)

A



B

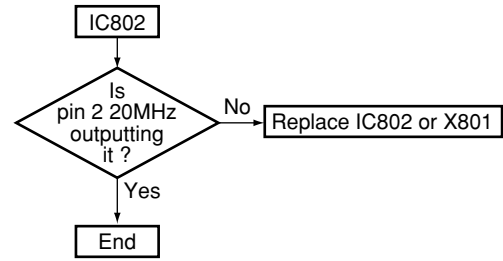
C

D

E

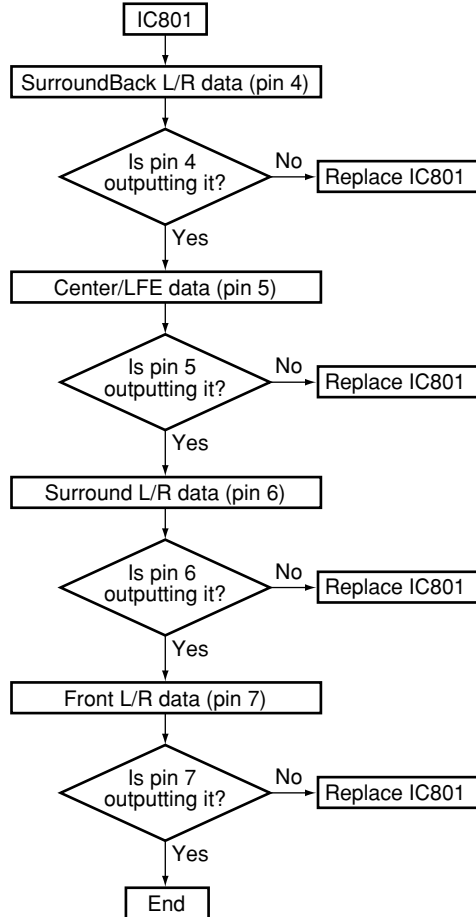
F

Step 7: X'tal

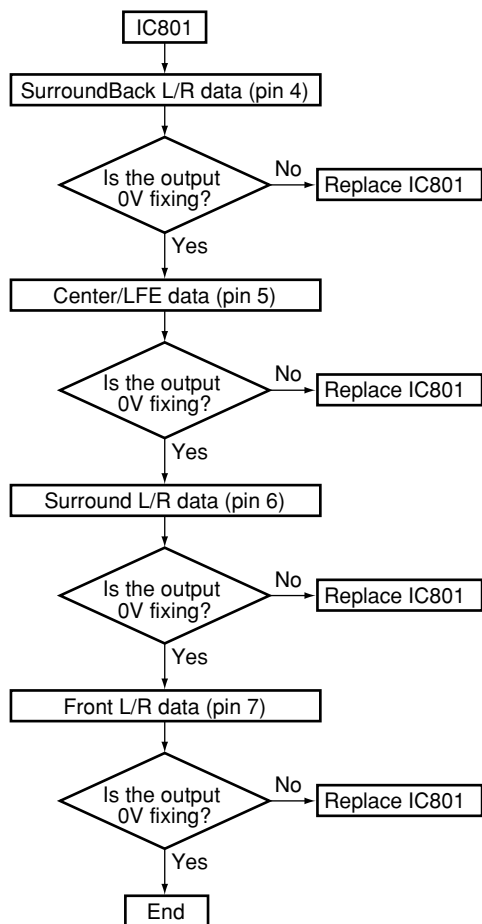


Step 8: DSP output (digital)

- Digital output of each channel in the digital signal (there is a sound) input.

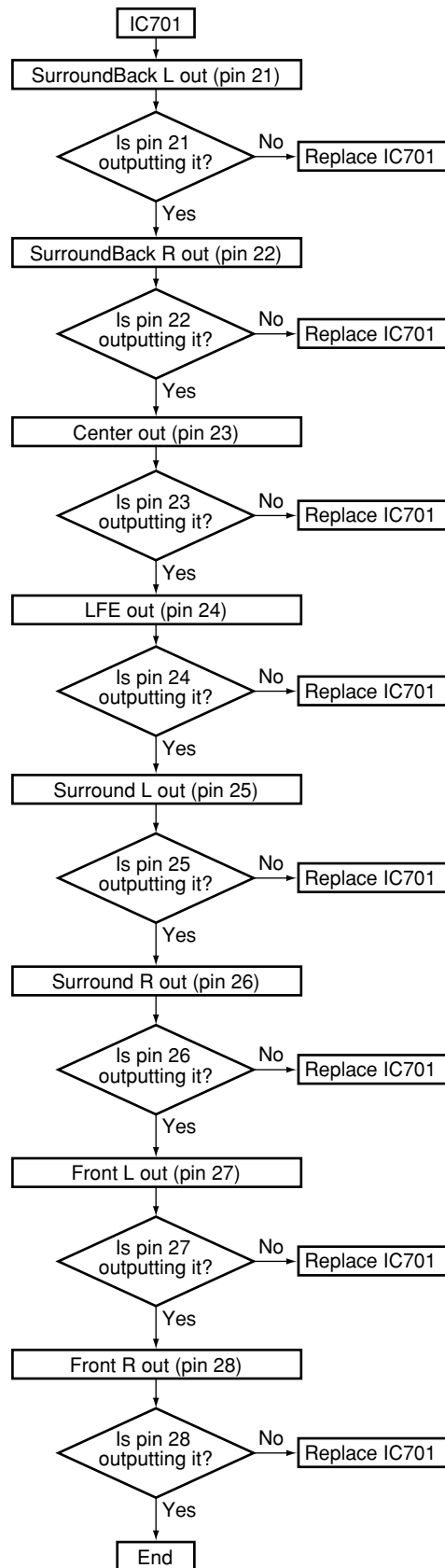


- Each channel output in the digital signal ($-\infty$ dB (there is no sound)) input.

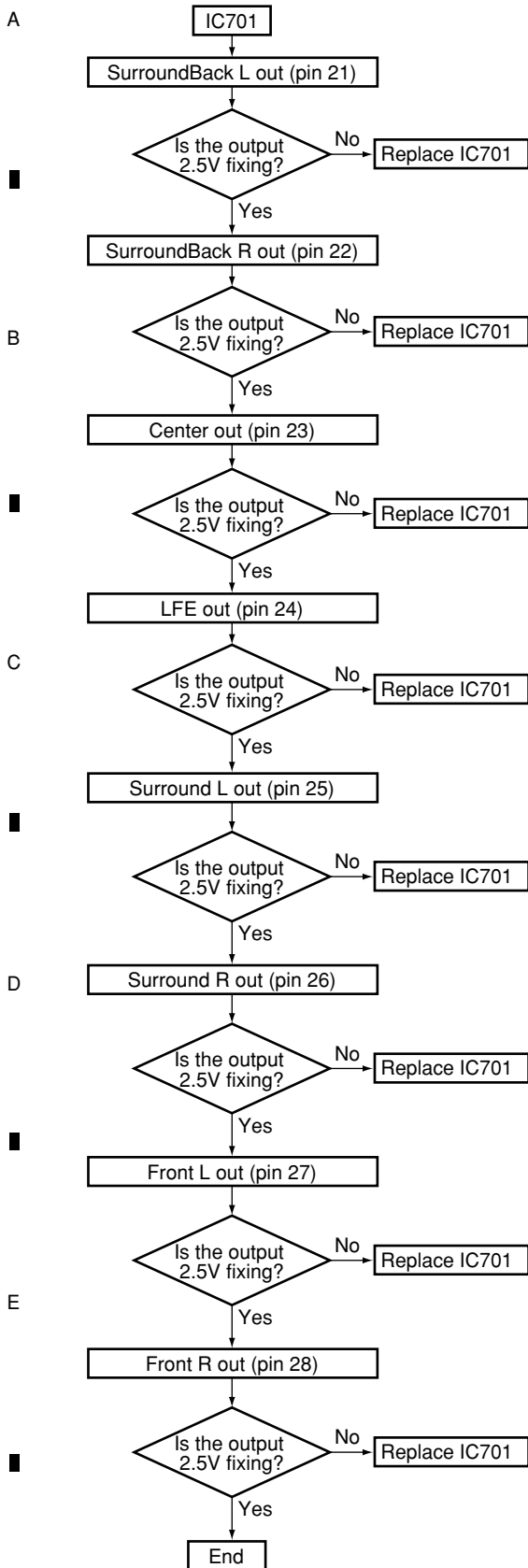


Step 9: Codec output (analog)

- Analog output of each channel in the digital signal (there is a sound) input.



- Each channel output in the digital signal ($-\infty$ dB (there is no sound)) input.

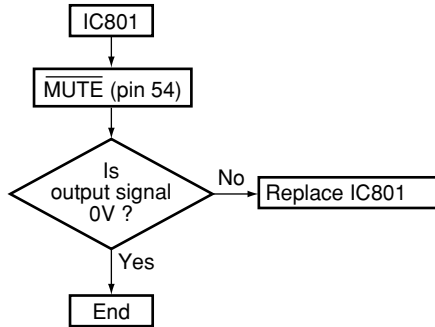


- **When MCACC is turned to ON**
(SurroundBack is not out with the setting.)
- Suppose CR to be poor contact and that is not damaged.
- This shows failure analysis of DSP Assy.

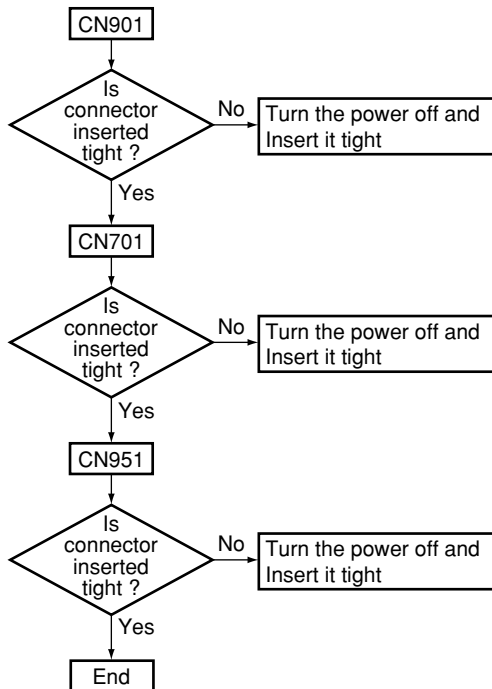
Step 0: Preliminary check

- Tighten the COAX Jack screws.
(GND of the DSP module floats from the chassis. And this unit may not work normally, because the electric potential becomes unstable.)

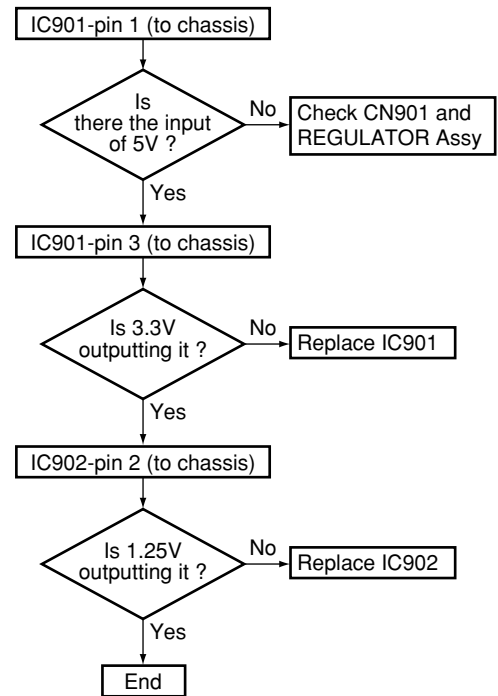
Step 1: Mute pin



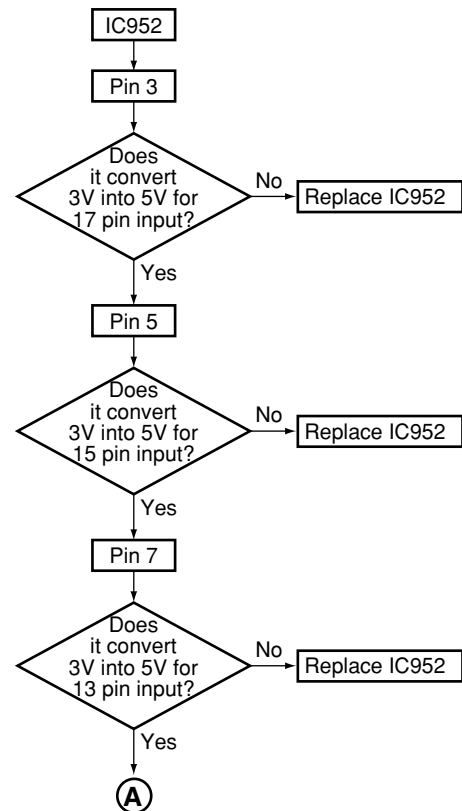
Step 2: B to B connector



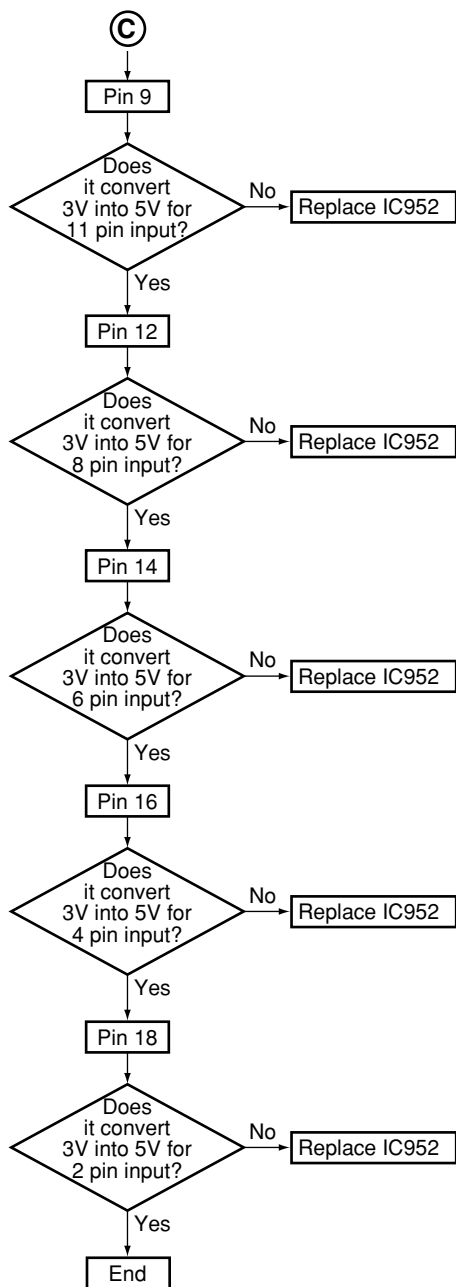
Step 3: Regulator IC



Step 4: 3 → 5V conversion



A



B

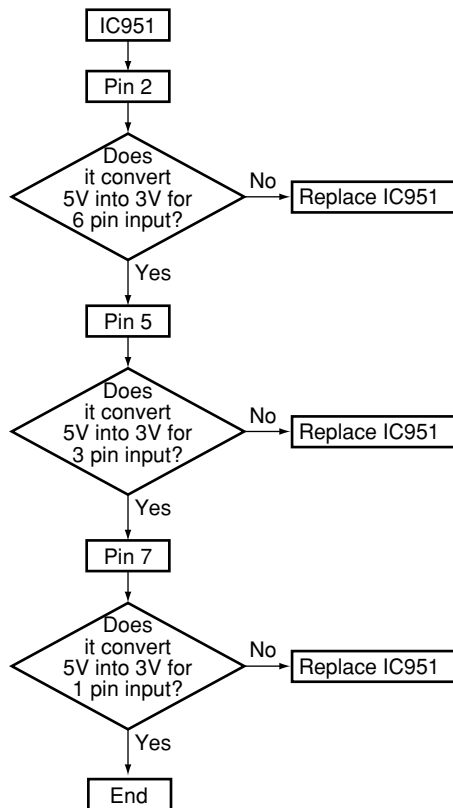
C

D

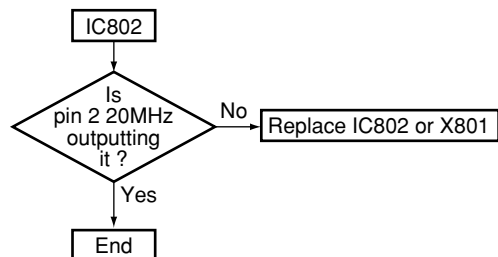
E

F

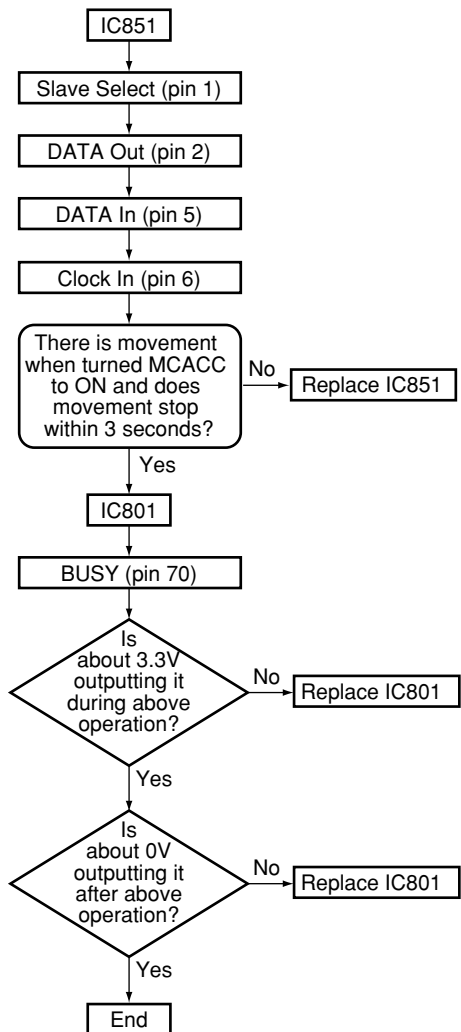
Step 5: 5 → 3V conversion



Step 6: X'tal

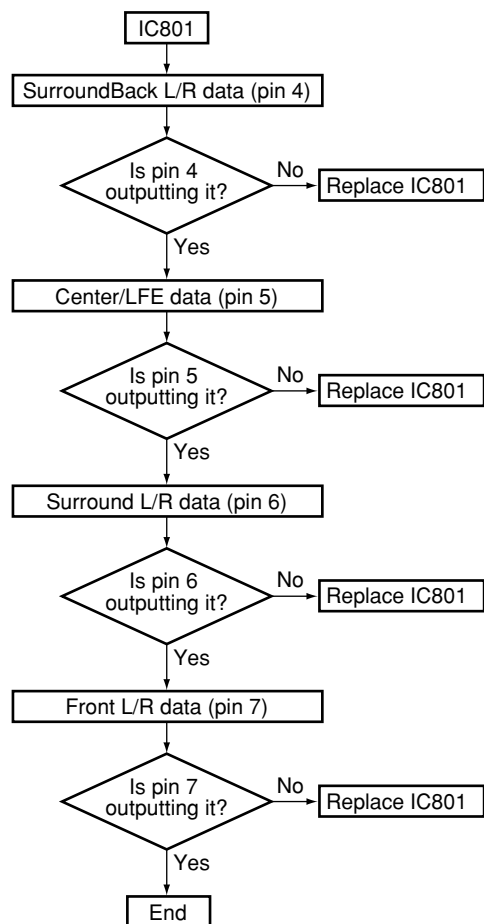


Step 7: ROM



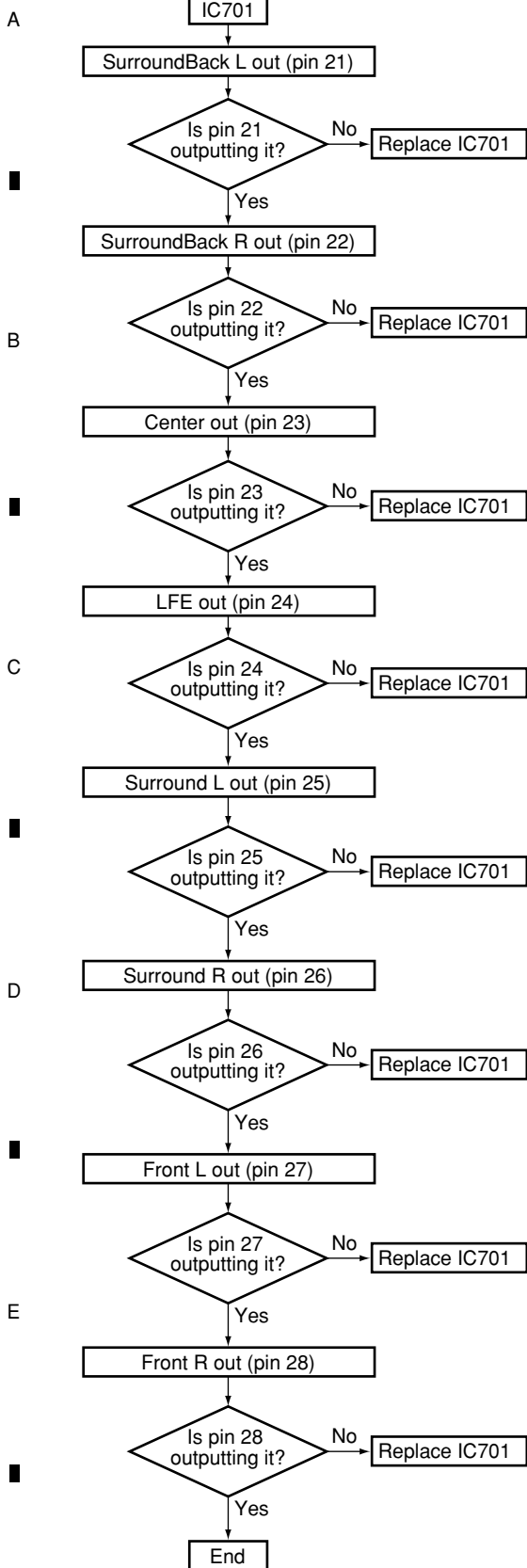
Step 8: DSP output (digital)

• Digital output when indicating each channel



Step 9: Codec output (analog)

• Analog output when indicating each channel



7.2 PARTS

7.2.1 IC

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

● List of IC

DSPA56371AF180, AK4628VQE, PD5957A, PE5403A

■ DSPA56371AF180 (DSP ASSY: IC801)

• DSP Microcomputer

● Pin Function

No.	Pin Name	I/O	Pin Function	Active
1	SDI1	I	Digital audio data (Front L/R)	
2	GNDIO	–	Interface GND	
3	VDDIO	–	Interface power supply (3.3V)	
4	SDO3	O	Digital audio data (Surround Back L/R)	
5	SDO2	O	Digital audio data (Center/Subwoofer)	
6	SDO1	O	Digital audio data (Surround L/R)	
7	SDO0	O	Digital audio data (Front L/R)	
8	VDDCO	–	Core power supply (1.25V)	
9	PF8	O	General-purpose port	
10	PF6	–	General-purpose port: LOCK	
11	PF7	O	General-purpose port	
12	GNDCO	–	Core GND	
13	PF2	O	General-purpose port	
14	PF3	O	General-purpose port	
15	PF4	O	General-purpose port	
16	PF5	O	General-purpose port	
17	VDDIO	–	Interface power supply (3.3V)	
18	PF1	O	General-purpose port	
19	PF0	O	General-purpose port	
20	GNDSP	–	GND for S/PDIF	
21	PF9	O	General-purpose port	
22	SCAN	I	Test pin	
23	PF10	O	General-purpose port	
24	GNDIO	–	Interface GND	
25	VDDIO	–	Interface power supply (3.3V)	
26	PB0	I	General-purpose port	H
27	PB1	I	General-purpose port	L
28	GNDCO	–	Core GND	
29	VDDCO	–	Core power supply (1.25V)	
30	TDO	O	JTAG data output	
31	TDI	I	JTAG data input	
32	TCK	I	JTAG test clock	
33	TMS	I	JTAG mode select	
34	MOSI	I	Communication data input with the microcomputer	
35	MISO	O	Communication data output with the microcomputer	
36	SCK	I	Communication clock with the microcomputer	
37	SS	I	Communication chip select with the microcomputer	L
38	HREQ	O	Communication request with the microcomputer	H
39	VDDPA	–	PLL power supply (3.3V)	
40	GNDPA	–	PLL GND	
41	VDDPP	–	PLL power supply (3.3V)	
42	GNDPP	–	PLL GND	
43	GNDPD	–	PLL GND	
44	VDDPD	–	PLL power supply (1.25V)	
45	EXTAL	I	External clock input	

A

No.	Pin Name	I/O	Pin Function	Active
46	PIINT	I	PLL initial pin	
47	RESET	I	Reset	L
48	MODO	I	Mode select D	
49	MODC	I	Mode select C	
50	MODB	I	Mode select B	
51	MODA	I	Mode select A	
52	VDDCO	–	Core power supply (1.25V)	
53	GNDCO	–	Core GND	
54	MUTE	O	DSP MUTE output	L
55	PE10	O	General-purpose port	
56	PE9	O	General-purpose port	
57	PE8	O	General-purpose port	
58	SDI1_1	I	Digital audio data (Center/Subwoofer)	
59	SDIO_1	I	Digital audio data (Ancillary data)	
60	FST_1	I	Digital audio LR clock	
61	PE1	I	General-purpose port: External serial ROM data input	
62	SCKT_1	I	Digital audio bit clock	
63	PE0	O	General-purpose port: External serial ROM chip select	L
64	VDDIO	–	Interface power supply (3.3V)	
65	GNDIO	–	Interface GND	
66	PE5	O	General-purpose port: External serial ROM clock	
67	PE2	O	General-purpose port: External serial ROM data output	
68	GNDCO	–	Core GND	
69	PD1	O	General-purpose port: DSP master/slave switch or 96DTS	H
70	PD0	O	General-purpose port: BUSY	H
71	VDDCO	–	Core power supply (1.25V)	
72	PC2	O	General-purpose port	
73	HCKT	I	Digital audio master clock	
74	GNDIO	–	Interface GND	
75	VDDIO	–	Interface power supply (3.3V)	
76	SCKR	I	Digital audio Bit clock	
77	SCKT	I/O	Digital audio Bit clock	
78	FSR	I	Digital audio Bit clock	
79	FST	I/O	Digital audio Bit clock	
80	SDIO	I	Digital audio data (Surround L/R)	

D

E

F

AK4628VQE (DSP ASSY: IC701)

• 8 ch Codec

Pin Function

No.	Pin Name	I/O	Pin Function	Active
1	SDOS	I	SDTO source selection	
2	I2C	I	Serial control mode selection	
3	SMUTE	I	Soft mute	
4	BICK	I	Audio serial data clock	
5	LRCK	I	Input channel clock	
6	SDTI1	I	DAC1 audio serial data input	
7	SDTI2	I	DAC2 audio serial data input	
8	SDTI3	I	DAC3 audio serial data input	
9	SDTO	O	Audio serial data output	
10	DAUX	I	Auxiliary audio serial data input	
11	DFSO	I	Double-speed sampling mode	
12	SDTI4	I	DAC4 audio serial data input	
13	DZFE	I	Zero-input detecting function validity pin	
14	TVDD	–	Power supply for output buffer	
15	DVDD	–	Digital power supply	
16	DVSS	–	Digital ground	
17	PDN	I	Power down and reset	L
18	TST1	I	Test pin	
19	CAD1	I	Chip address 1 pin	
20	CAD0	I	Chip address 0 pin	
21	LOUT4	O	Analog output of DAC 4 L channel	
22	ROUT4	O	Analog output of DAC 4 R channel	
23	LOUT3	O	Analog output of DAC 3 L channel	
24	ROUT3	O	Analog output of DAC 3 R channel	
25	LOUT2	O	Analog output of DAC 2 L channel	
26	ROUT2	O	Analog output of DAC 2 R channel	
27	LOUT1	O	Analog output of DAC 1 L channel	
28	ROUT1	O	Analog output of DAC 1 R channel	
29	TST2	–	No connect	
30	NC	–	No connect	
31	LIN	I	L channel analog input	
32	RIN	I	R channel analog input	
33	DZF2/OVF	O	Zero input detection 2 / Overflow detection of analog input	H
34	VCOM	O	Common voltage output	
35	VREFH	I	Reference voltage input	
36	AVDD	–	Analog power supply	
37	AVSS	–	Analog ground	
38	DZF1	O	Zero input detection 1	H
39	MCLK	I	Master clock input	
40	P/S	I	Parallel/serial input	
41	CSN	I	Chip select	L
42	CCLK	I	Control data clock	
43	CDTI	I	Control data input	
44	TDMO	I	TDM I/F format mode	

● Pin Function

No.	Pin Name	I/O	Pin Function	Active
1	12VTRIGGER	O	"H" at ON	
2	DISP RST	O	Display microcomputer reset signal L: reset, H: release reset (pulldown)	
3	DISP EN	O	Communication enabling signal to the display microcomputer	H
4	DISP RDY	I	Communication enabling signal from the display microcomputer	H
5	OSD/DISP DI	O	Communication data out signal with the OSD-IC/display microcomputer (N ch open drain: pullup)	
6	DISP DO	I	Communication data in signal with the display microcomputer (N ch open drain)	
7	OSD/DISP CLK	O	Communication clock signal with the OSD-IC/display microcomputer	
8	GND	–	Ground	
9	CNVSS	–	5.1kΩ pulldown	
10	–	O	L" fixed	
11	–	O	L" fixed	
12	XRESET	–	Reset	
13	XOUT	–	Oscillator	
14	GND	–	Ground	
15	XIN	–	Oscillator	
16	5V	–	5V power supply	
17	NMI	I	Cannot use it as usual input port (100kΩ pullup)	
18	WAKEUP	I	Wakeup	H
19	1394 INT	I	INT for 1394 (Not used) Standby with the circuit.	
20	1W WUP	I	Wakeup signal at standby (from the display microcomputer) (pulldown)	H
21	DECO MUTE	I	Boot success detecting port of 1st DSP	
22	DSP OL	O	Communication enabling signal to the display microcomputer	H
23	DC PROT	O	OSD-IC reset signal L: reset, H: release reset	
24	Boad DET	O	OSD-IC chip select signal	H
25	MIC DET	O	At data transfer to the OSD-IC: "H"	
26	1394 RST	O	Reset for 1394 "L" fixed.	
27	1394 CS	O	Standby for 1394 (Not used) "L" fixed.	H
28	1394 CK	O	CK for 1394	
29	1394 DO	O	DO for 1394	
30	1394 DI	I	DI for 1394	
31	232C RXD	O	For 232C rewriting (data output)	
32	232C TXD	I	For 232C rewriting (data input)	
33	CLK	-	Not used	
34	232C CTS	O	For 232C rewriting (communication permission)	
35	DSP DI	O	Communication data out signal with the DSP1 microcomputer	
36	DSP DO	I	Communication data in signal with the DSP2 microcomputer	
37	DSP CLK	O	Communication clock signal with the DSP microcomputer	
38	DSP RST	O	DSP microcomputer reset signal L: reset, H: release reset	
39	DSP SS	O	Slave select signal to DSP microcomputer	
40	BUSY	I	MCACC used	L
41	DSP HREQ	O	Error detection signal of DSP microcomputer	L
42	DSP MODE	O	Mode selection of DSP microcomputer (ROM/RAM) H: ROM mode, L: RAM (PPP) mode	H
43	DSP MUTE	O	DSP Assy mute	H
44	ADMD	-	NC	
45	DIR DO	I	Communication data in signal with the DIR/DAC	
46	DIR CS	O	Communication chip select signal with the DIR/DAC	
47	LSSN	-	NC	
48	DIR RST	O	DIR reset signal	
49	DIR ERR	I	Lock/Unlock signal from DIR	
50	XTLO	O	Selection X'tal to DIR	

A

B

C

D

E

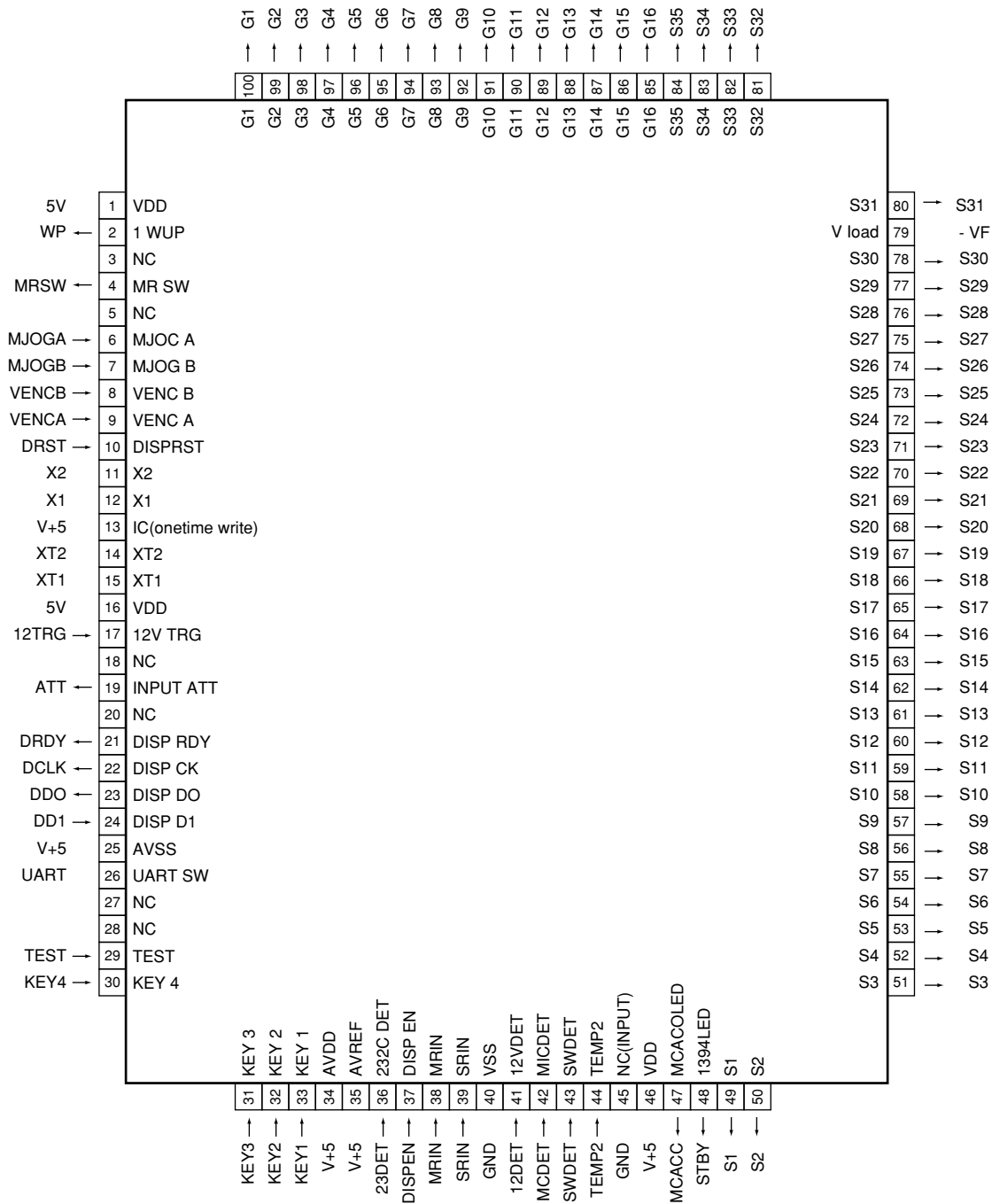
F

No.	Pin Name	I/O	Pin Function	Active
51	RY BS	O	Speaker relay B ON/OFF	
52	RY C/R	O	Rear / Center relay ON / OFF	H
53	RY A	O	Speaker relay A ON/OFF	
54	RY- HP	O	Headphone relay ON / OFF	
55	RY- AC	O	AC relay ON / OFF	
56	HP DET	O	Headphone detection H: detected.	
57	A MUTE	O	System mute L: Mute ON	
58	V+5V	–	5V power supply	
59	DSP HREQ2	I	Error detection signal of DSP2 microcomputer	
60	GND	–	Ground	
61	EVR CLK	O	Clock signal for electronic volume	
62	5V	–	5V power supply	
63	EVR DT	O	Data signal for electronic volume	L
64	GND	–	Ground	
65	SY DET	O	System detection	H
66	4052A	O	Output switching control signal 1 of surround back ch	
67	4052B	O	Output switching control signal 1 of surround back ch	
68	MRVSW2	O	Function SW control (Strobe)	
69	MRVSW1	O	Function SW control (Clock)	
70	VIDEO3	O	SWSP detect	
71	VIDEO2	O	SWSP detect	
72	VIDEO1	O	Control IC(NJM2296) : Video input select	
73	OL DET	I	Amp. overload detection L: Detection	L
74	DC PROT	I	DC detection L: Detection	
75	RDS CLK	O	"L" fixed	
76	RDS DT	O	"L" fixed	
77	RDS FM+	O	"L" fixed	
78	MR MUTE	O	Multi room mute L: Mute ON	
79	MICSEL	O	MIC select	H
80	BIAMP	I		L
81	TUNED DO	I	Data input signal of tuner control (pullup)	L
82	TUNER CLK	O	Clock signal of tuner control	
83	TUNER DI	O	Data output signal of tuner control	
84	TUNER CE	O	Chip select signal of tuner control	
85	MRDATA	O	Multi room data	
86	OSDRST	O	OSD-IC reset signal L: reset H: release reset	
87	OSDCS	O	OSD-IC chip select signal	
88	OSDCT	O	OSD-IC rewriting	
89	WATT IN1	I	Wattage detection Level detection with A/D	A/D
90	NC	I	Not used	
91	FAN DRIVE	O	"L" fixed	
92	FAN STOP	I	Fan forced stop detection	
93	TEMP1	I	Temperature detection Level detection with A/D	A/D
94	SIMUKE1	I	Destination read 1	
95	SIMUKE2	I	Destination read 2	H
96	AVSS	–	Connect to VSS	
97	–	O	NC	L
98	VREF	–	Connect to VCC	
99	AVCC	–	Connect to VCC	
100	NECK	O	Destination read 2	

PE5403A (DISPLAY ASSY: IC3001)

• Display Microcomputer

● Pin Assignment (Top view)



● Pin Function

No.	Pin Name	I/O	Pin Function	Active
1	VDD	–	VDD(5V)power supply	
2	1WUP	I	Wakeup	
3	NC	–	NC	
4	MR SW	O	Multi room input Pioneer / others L: Pioneer	
5	NC	–	NC	
6	MJOG A	I	MULTI JOG input A	
7	MJOG B	I	MULTI JOG input B	
8	VENCB	–	5V Volt(-)	
9	VENCA	–	5V Volt(+)	
10	DISPRST	I	Reset signal in put	
11	X2	–	Input clock 5MHz	
12	X1	–	Input clock 5MHz	
13	IC	–	Vss Power supply 5V	
14	XT2	–		
15	XT1	–		
16	VDD	–	5V power supply	
17	12V TRG	O	" H" at ON	
18	NC	–	NC	
19	INPUT ATT	I	INPUT Atteneuator	
20	NC	–	NC	
21	DISP RDY	O	Communication enabling signal to the display microcomputer	H
22	DISP CK	O	Communication clock signal with the OSD-IC/display microcomputer	
23	DISP DO	O	Communication data in signal with the display microcomputer (N ch open drain)	H
24	DISP DI	I	Communication data out signal with the OSD-IC/display microcomputer (N ch open drain: pullup)	H
25	AVSS	–	Ground	
26	UART SW	O		
27	NC	–	NC	
28	NC	–	NC	
29	TEST	I	TEST Mode	
30	KEY 4	I	KEY AD input	
31	KEY 3	I	KEY AD input	
32	KEY 2	I	KEY AD input	
33	KEY 1	I	KEY AD input	
34	AVDD	–	V+5	
35	AVREF	–	5V reference voltaage	
36	232C DET	I	For 232C signal input detection	
37	DISP EN	I	Communication enabling signal to the display microcomputer	
38	MRIN	I	Remote control input of sub room (active : H)	
39	SRIN	I	Remote control input of main room	
40	VSS	–	Ground	
41	12VDET	I	12V detection	
42	MICDET	I	MIC detection	
43	SWDET	I	SW detection	
44	TEMP2	I	Temperature detection Level 2	
45	NC	–	NC	
46	VDD	–	V+5	
47	MCACOLED	O	MCACC LED	
48	1394LED	O	1394 LED	
49	S1	O	FL p_35s Drive	
50	S2	O	FL p_34s Drive	

No.	Pin Name	I/O	Pin Function	Active
51	S3	O	FL p_33s Drive	
52	S4	O	FL p_32s Drive	
53	S5	O	FL p_31s Drive	
54	S6	O	FL p_30s Drive	
55	S7	O	FL p_29s Drive	
56	S8	O	FL p_28s Drive	
57	S9	O	FL p_27s Drive	
58	S10	O	FL p_26s Drive	
59	S11	O	FL p_25s Drive	
60	S12	O	FL p_24s Drive	
61	S13	O	FL p_23s Drive	
62	S14	O	FL p_22s Drive	
63	S15	O	FL p_21s Drive	
64	S16	O	FL p_20s Drive	
65	S17	O	FL p_19s Drive	
66	S18	O	FL p_18s Drive	
67	S19	O	FL p_17s Drive	
68	S20	O	FL p_16s Drive	
69	S21	O	FL p_15s Drive	
70	S22	O	FL p_14s Drive	
71	S23	O	FL p_13s Drive	
72	S24	O	FL p_12s Drive	
73	S25	O	FL p_11s Drive	
74	S26	O	FL p_10s Drive	
75	S27	O	FL p_9s Drive	
76	S28	O	FL p_8s Drive	
77	S29	O	FL p_7s Drive	
78	S30	O	FL p_6s Drive	
79	V Load	–	FIP controller/driver pull down resistor connecting	
80	S31	O	FL p_5s Drive	
81	S32	O	FL p_4s Drive	
82	S33	O	FL p_3s Drive	
83	S34	O	FL p_2s Drive	
84	S35	O	FL p_1s Drive	
85	G16	O	FL p_16g Drive	
86	G15	O	FL p_15g Drive	
87	G14	O	FL p_14g Drive	
88	G13	O	FL p_13g Drive	
89	G12	O	FL p_12g Drive	
90	G11	O	FL p_11g Drive	
91	G10	O	FL p_10g Drive	
92	G9	O	FL p_9g Drive	
93	G8	O	FL p_8g Drive	
94	G7	O	FL p_7g Drive	
95	G6	O	FL p_6g Drive	
96	G5	O	FL p_5g Drive	
97	G4	O	FL p_4g Drive	
98	G3	O	FL p_3g Drive	
99	G2	O	FL p_2g Drive	
100	G1	O	FL p_1g Drive	

1

2

3

4

7.3 CLEANING

A



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

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

B

C

D

E

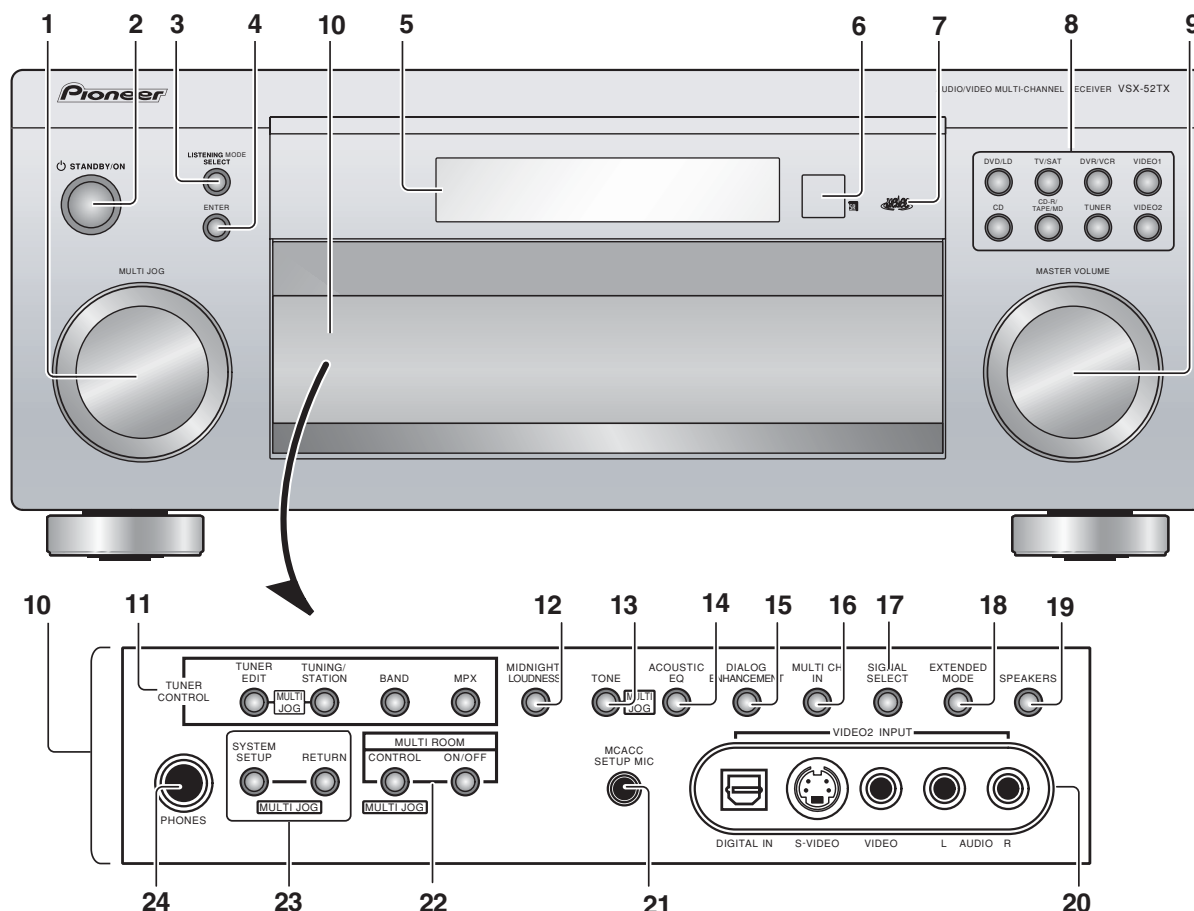
F

8. PANEL FACILITIES

8.1 FRONT PANEL

All the controls on the front panel are explained and/or referenced here. To open the front panel push gently on the lower third of the panel.

Front panel



1 MULTI JOG dial

Use the MULTI JOG dial to select various settings and menu options.

2 STANDBY/ON

Switches the receiver between on and standby.

3 LISTENING MODE SELECT

Use with the MULTI JOG dial to select the various listening modes.

4 ENTER

5 Character display

6 Remote sensor

Receives the signals from the remote control.

7 MCACC indicator

Lights when Acoustic Calibration EQ is on (Acoustic Calibration EQ is automatically set to ALL CH ADJUST after the Auto MCACC Setup or EQ Auto Setting is complete).

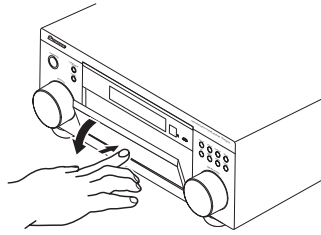
8 Input select buttons

Press to select an input source.

9 MASTER VOLUME dial

10 Front panel controls

To access the front panel controls, push gently on the lower third portion of the panel with your finger.



11 TUNER CONTROL

TUNER EDIT

Use with the MULTI JOG dial to memorize and name stations for recall.

TUNING/STATION

Use with the MULTI JOG dial to select station presets and radio frequencies.

BAND

Switches between AM and FM radio bands.

MPX

Press to receive a radio broadcast in mono.

12 MIDNIGHT/LOUDNESS

Use Midnight when listening to movie soundtracks at low volume. Use Loudness to boost the bass and treble at low volume.

13 TONE

When the STEREO mode is selected, press this button to access the bass and treble controls, which you can then adjust with the MULTI JOG dial.

14 ACOUSTIC EQ

Press to select an Acoustic Calibration EQ setting.

15 DIALOG ENHANCEMENT

Use to make dialog stand out when watching TV or a movie.

16 MULTI CH IN

Press to select the component connected to the MULTI CH IN terminals (for example, a DVD-Audio player).

17 SIGNAL SELECT

Use to select an input signal.

18 EXTENDED MODE

Selects the surround back channel mode or virtual surround back mode.

19 SPEAKERS

Use to change the speaker system.

20 VIDEO2 INPUT

21 MCACC SETUP MIC jack

Use to connect the supplied microphone.

22 MULTI ROOM controls

If you've made multi-room connections use these controls to control the sub room from the main room.

23 System Setup menu controls

SYSTEM SETUP

Use with the MULTI JOG dial to access the System Setup menu.

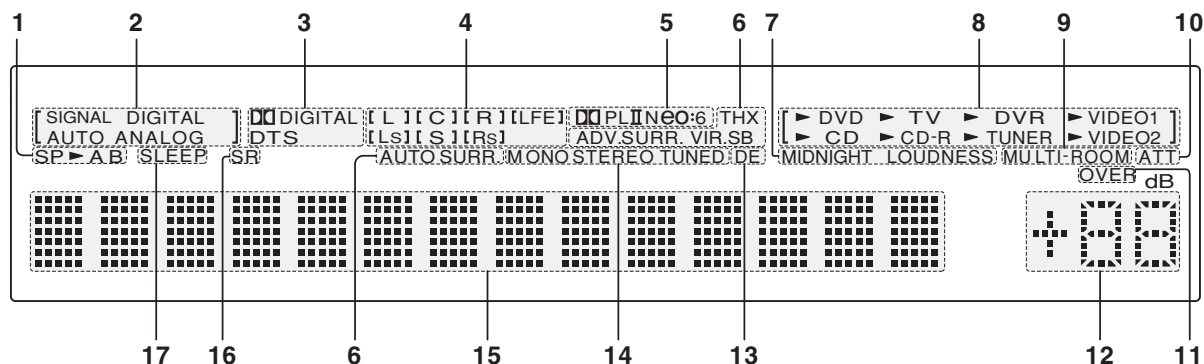
RETURN

Press to confirm and exit the current menu screen.

24 PHONES jack

Use to connect headphones. When the headphones are connected, there is no sound output from the speakers.

Display



1 Speaker indicators

Lights to indicate the current speaker system, A and/or B.

2 SIGNAL SELECT indicators

Lights to indicate the type of input signal assigned for the current component:

AUTO

Lights when AUTO signal select is on.

DIGITAL

Lights when a digital audio signal is detected.

ANALOG

Lights when an analog signal is detected.

3 Digital format indicators

2 DIGITAL

Lights when a Dolby Digital encoded signal is detected.

DTS

Lights when a DTS encoded signal is detected.

4 Program format indicators

These change according to which channels are active in Dolby, DTS, DVD-A and SACD sources.

LS, S and RS will light at the same time to indicate 6.1 channel sources.

- L – Left front channel
- C – Center channel
- R – Right front channel
- LS – Left surround channel
- S – Surround channel (mono) or surround back channel
- RS – Right surround channel
- LFE – Low frequency effects channel

5 Matrix decoding format indicators

2 PL II

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.

6 Listening mode indicators

THX

Lights when one of the Home THX modes is selected.

VIR.SB

Lights during Virtual surround back processing.

ADV.SURR.

Lights when one of the Advanced Surround modes has been selected.

AUTO SURR.

Lights when the Auto Surround feature is switched on.

7 MIDNIGHT / LOUDNESS

When Midnight or Loudness listening is switched on, the corresponding indicator shows in the display.

8 Input source indicators

Light to indicate the input source you have selected.

9 MULTI-ROOM

Lights when the multi-room feature is active.

10 ATT

Lights when INPUT ATT is used to attenuate (reduce) the level of the analog input signal.

11 OVER

Lights to indicate that the level of an analog source is too high. Use the attenuator (INPUT ATT) to reduce it.

A

12 Master volume level

Shows the overall volume level. –80dB indicates the minimum level, and +12dB indicates the maximum level.

13 DE

Lights when Dialog Enhancement (DIALOG E) is switched on.

14 TUNER indicators**STEREO**

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

MONO

Lights when the mono mode is set using the MPX button.

TUNED

Lights when a broadcast is being received.

15 Character display

Displays various system information (for example, the reason an operation is not possible may flash in the display).

C

16 SR

Lights when the SR+ control mode has been switched on (see Using the SR+ mode with a Pioneer plasma display).

17 SLEEP

Lights when the receiver is in sleep mode.

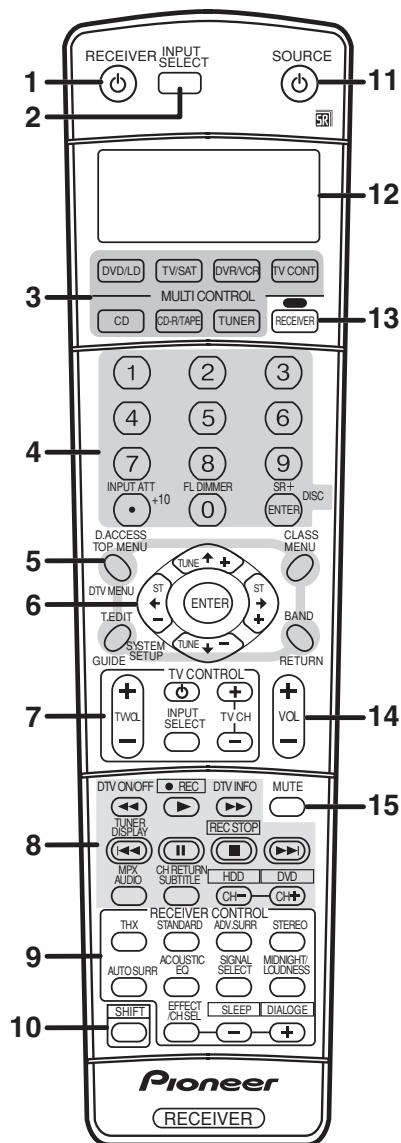
D

E

F

8.3 REMOTE CONTROL UNIT

Remote control



1 RECEIVER

This switches between standby and on for this receiver.

2 INPUT SELECT

Use to select the input source.

3 MULTI CONTROL buttons

Press to select control of other components.

4 Number buttons and other receiver/component controls

Use the number buttons to directly select a radio frequency or the tracks on a CD, DVD, etc.

DISC (ENTER) can be used to enter commands for TV or DTV, and can also be used to select a disc in a multi-CD player.

The following are accessed by pressing the RECEIVER button first:

INPUT ATT

Attenuates (lowers) the level of an analog input signal to prevent distortion.

FL DIMMER

Dims or brightens the display.

SR+

Switches the SR+ mode on/off.

5 Tuner/component control buttons/SYSTEM SETUP

The following button controls (except SYSTEM SETUP) can be accessed after you have selected the corresponding MULTI CONTROL button (TUNER, DVD/LD, TV/SAT, etc.)

D. ACCESS

After pressing, you can access a radio station directly using the number buttons.

TOP MENU

Displays the disc 'top' menu of a DVD.

DTV MENU

Displays menus on a digital TV.

T. EDIT

Press to memorize and name a station for recall.

GUIDE

Displays the guides on a digital TV.

SYSTEM SETUP

(Press RECEIVER first to access)

Use to access the System Setup menu.

CLASS

Switches between the three banks (classes) of radio station presets.

MENU

Displays the disc menu of DVD-Video discs. It also displays TV and DTV menus.

BAND

Switches between the tuner AM and FM bands.

RETURN

Press to confirm and exit the current menu screen (also use to return to the previous menu with DVDs or to select closed captioning with DTV).

6 (TUNE/ST +/-) /ENTER

Use the arrow buttons when setting up your surround sound system. Also used to control DVD menus/options and for deck 1 of a double cassette deck player. Use the TUNE +/- buttons to find radio frequencies and use ST +/- to find preset stations.

7 TV CONTROL buttons

These buttons are dedicated to control the TV assigned to the TV CONT button. Thus if you only have one TV to hook up to this system assign it to the TV CONT MULTI CONTROL button. If you have two TVs, assign the main TV to the TV CONT button.

TV

Use to turn on/off the power of the TV.

TV VOL +/-

Use to adjust the volume on your TV.

INPUT SELECT

Use to select the TV input signal.

TV CH +/-

Use to select channels.

8 Component control buttons

The main buttons (, , etc.) are used to control a component after you have selected it using the MULTI CONTROL buttons.

The controls above these buttons can be accessed after you have selected the corresponding MULTI CONTROL button (for example DVD/LD, DVR/VCR or TV/SAT (when connected to a DTV)).

DTV ON/OFF

Switches a digital TV on/off.

DTV INFO

Use to bring up information screens on a digital TV.

TUNER DISPLAY

Switches between named station presets and radio frequencies.

MPX

Switches between stereo and mono reception of FM broadcasts. If the signal is weak then switching to mono will improve the sound quality.

AUDIO

Changes the audio language or channel on DVD discs.

CH RETURN

Returns to the last channel selected with DTV, SAT and some TVs.

SUBTITLE

Displays/changes the subtitles included in multilingual DVD-Video discs.

CH +/-

Use to select channels when using a TV, VCR, DVR, etc.

The following DVR controls can be accessed by pressing SHIFT:

● REC

Starts recording.

REC STOP

Stops recording.

HDD/DVD

These buttons switch between the hard disk and DVD controls for DVD/HDD recorders.

9 RECEIVER CONTROL buttons

THX

Press to select a Home THX listening mode

STANDARD

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

ADV. SURR

Use to switch between the various surround modes

STEREO

Switches between direct and stereo playback. Direct playback bypasses the tone controls and any other signal processing for the most accurate reproduction of a source.

AUTO SURR

Press to have the receiver automatically detect what kind of source you're playing and select multichannel or stereo playback as necessary.

ACOUSTIC EQ

Press to select an Acoustic Calibration EQ setting

SIGNAL SELECT

Use to select an input signal.

MIDNIGHT/LOUDNESS

Use Midnight when listening to movie soundtracks at low volume. Use Loudness to boost the bass and treble at low volume.

EFFECT/CH SEL

Press repeatedly to select a channel, then use +/- to adjust the level. Also adjusts the level of the Advanced Surround effects as well as Dolby Pro Logic IIx Music and Neo:6 Music parameters. You can then use the + and - buttons to make these adjustments.

+/-

Use to adjust the effect and channel levels, as well as to change Dolby Pro Logic IIx and Neo:6 Music parameter settings.

SLEEP (SHIFT & -)

Use to put the receiver in sleep mode and select the amount of time before the receiver turns off

DIALOG E (SHIFT & +)

Use to make dialog stand out when watching TV or a movie.

10 SHIFT

Press to access the DVR controls (above the component control buttons) as well as some RECEIVER controls.

11 SOURCE

Press to turn on/off other components connected to the receiver.

12 Character display (LCD)

This display shows information when transmitting control signals.

The following commands are shown when you're setting the remote to control other components.

SETUP

Indicates the setup mode, from which you choose the options below.

PRESET

LEARN

DIRECT

ERASE

RESET

READ ID

13 RECEIVER

Switches the remote to control the receiver (used to select the green commands above the number buttons (INPUT ATT, etc). Also use this button to set up surround sound.

14 VOL +/-

Use to set the listening volume.

15 MUTE

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

Operating range of remote control unit

The remote control may not work properly if:

- There are obstacles between the remote control and the receiver's remote sensor.
- Direct sunlight or fluorescent light is shining onto the remote sensor.
- The receiver is located near a device that is emitting infrared rays.
- The receiver is operated simultaneously with another infrared remote control unit.

