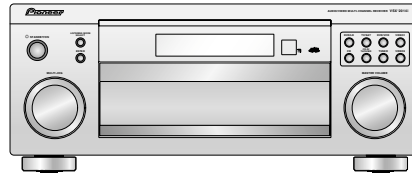


Service Manual



VSX-2014i-S

ORDER NO.
RRV3008

AUDIO/VIDEO MULTI-CHANNEL RECEIVER

VSX-2014i-S

VSX-1014-S

VSX-1014-K

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

Model	Type	Power Requirement	The voltage can be converted by the following method.
VSX-2014i-S	HYXJ	AC220-230V	AC240V, *
VSX-1014-S	HYXJ	AC220-230V	AC240V, *
VSX-1014-K	HYXJ	AC220-230V	AC240V, *

*:Alter the wiring of the power-supply block at the primary winding of Power transformer referring to the Line Voltage Selection described in Service Manual.



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.

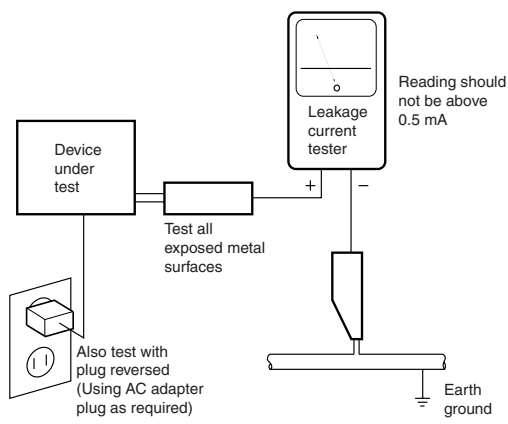
(FOR USA MODEL ONLY)

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.



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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Specifications

Amplifier section

Continuous Power Output (Stereo)

Front.....150 W + 150 W (DIN 1kHz, THD 1%,8Ω)
120 W + 120 W (DIN 1kHz, THD 1%,8Ω)

Continuous Power Output (Multichannel)

Front.....120 W + 120 W (DIN 1kHz, THD 1%,8Ω)
Center.....120 W (DIN 1kHz, THD 1%,8Ω)
Surround....120 W + 120 W (DIN 1kHz, THD 1%,8Ω)
Surround back120 W + 120 W (DIN 1kHz, THD 1%,8Ω)
Rated Power Output (Stereo).....140W+140W
(20Hz–20kHz, 0.09%, 6Ω)
Rated Power Output.....110W+110W
(20Hz–20kHz, 0.09%,8Ω)

- The above specifications are applicable when the power supply is 230V.

Audio Section

Input (Sensitivity/Impedance)

LINE.....335 mV/47kΩ

Frequency Response

LINE......5Hz to 100,000 Hz ± 0.5 dB

Output (Level/Impedance)

REC.....335 mV/2.2 kΩ

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

[DIN (continuous rated power output/50mW)]

LINE.....92/65 dB

Composite Video / S-Video Section

Input (Sensitivity/Impedance).....1 Vp-p/75Ω

Output (Level/Impedance).....1 Vp-p/75Ω

Signal-to-Noise Ratio.....65 dB

Frequency Response.....5 Hz to 10 MHz ± 0.5 dB

Component Video Section

Input (Sensitivity/Impedance).....1 Vp-p/75Ω

Output (Level/Impedance).....1 Vp-p/75Ω

Signal-to-Noise Ratio.....65 dB

Frequency Response.....5 Hz to 40 MHz ± 0.5 dB

FM Tuner Section

Frequency Range.....87.5 MHz to 108 MHz

Usable Sensitivity... Mono: 15.2 dBf, IHF (1.6 μV/75 Ω)

50 dB Quieting Sensitivity... Mono: 20.2 dBf
Stereo:41.2dBf

Sensitivity (DIN) . Mono: 1.1 μV (S/N 26dB)
Stereo: 50 μV (S/N 46dB)

Signal-to-Noise Ratio Mono: 76 dB (at 85 dBf)
Stereo: 72 dB (at 85 dBf)

Signal-to-Noise Ratio (DIN) Mono: 62 dB
Stereo: 58 dB

Distortion Stereo: 0.6% (1 kHz)

Alternate Channel Selectivity 70 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 531 kHz to 1,602 kHz (9 kHz step)

Sensitivity (IHF, Loop antenna) 350 μV/m

Selectivity 30 dB

Signal-to-Noise Ratio.....50 dB

Antenna Loop antenna

Miscellaneous

Power Requirements AC 220–230 V, 50/60 Hz

Power Consumption 430 W

In standby0.52 W

AC Outlet(switched) 100 W MAX.

Dimensions 420 (W) x 173 (H) x 465 (D) mm

Weight (without package)

VSX-2014i15.6 kg

VSX-1014.....15.4 kg

Furnished Parts

Microphone (for Auto MCACC setup).....1

Microphone stand.....1

AA/LR6 dry cell batteries.....2

Remote control1

AM loop antenna.....1

FM wire antenna.....1

Power cord (VSX-2014i only).....1

These operating instructions



Note

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

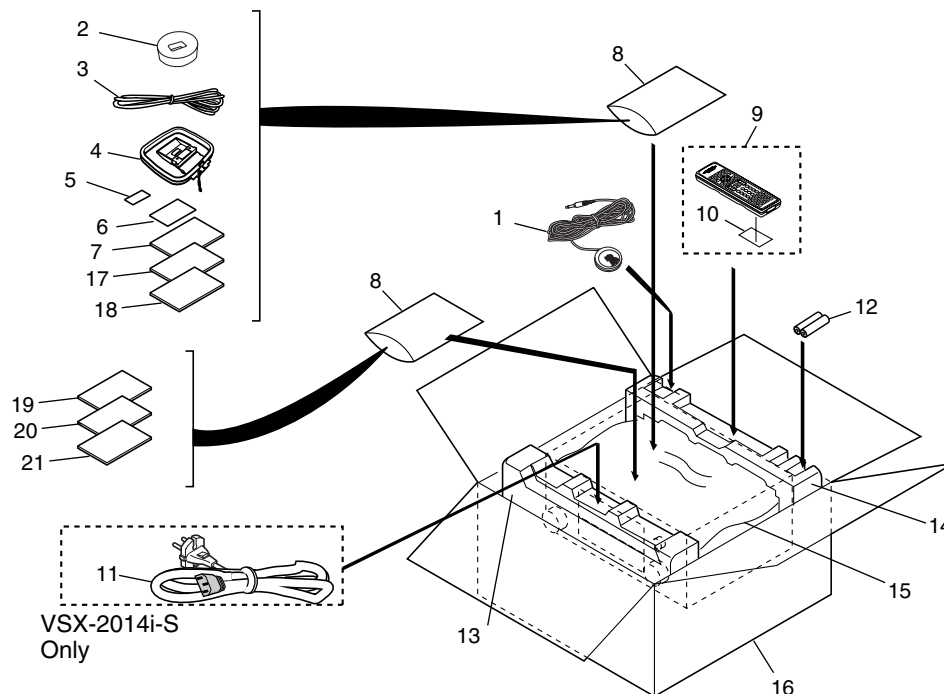
Cleaning the unit

- 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.

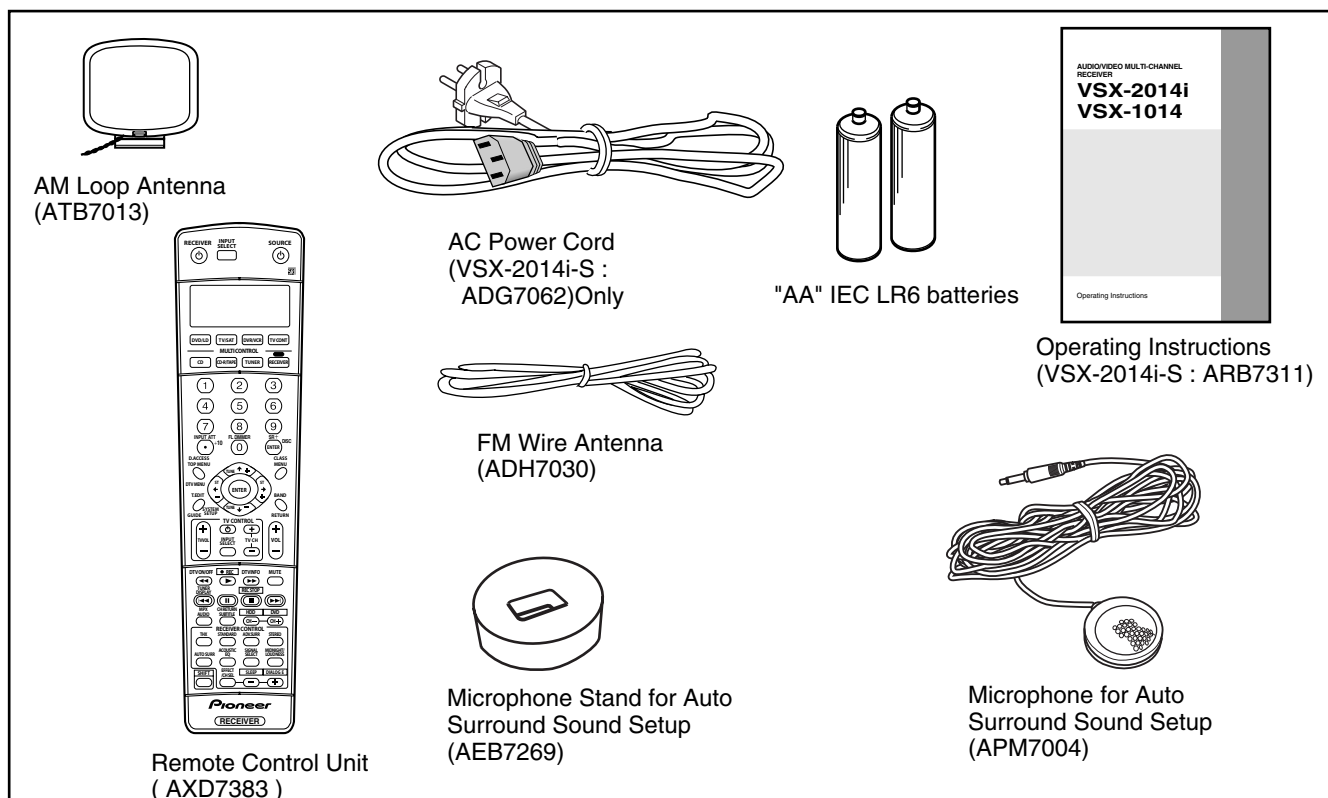
2. EXPLODED VIEWS AND PARTS LIST

- 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

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Microphone for Auto Surround Sound Setup	APM7004	⚠ 11	AC Power Cord	See Contrast table (2)
2	Microphone Stand for Auto Surround Sound Setup	AEB7269	NSP 12	"AA" IEC LR6 batteries	VEM1023
3	FM Wire Antenna	ADH7030	13	Front Pad V1	AHA7428
4	AM Loop Antenna	ATB7013	14	Rear Pad V1	AHA7429
5	Caution Sheet SP,E	ARM7083	15	Packing Sheet	RHC1023
NSP 6	Warranty Card	ARY7065	16	Packing Case	See Contrast table (2)
7	Operating Instructions (English)	ARB7311	17	Operating Instructions (Spanish)	ARC7536
NSP 8	Polyethylene Bag(230x340x0.03)	Z21-038	18	Operating Instructions (German)	ARC7537
9	Remote Control Unit	AXD7383	19	Operating Instructions (French)	ARC7547
10	Battery Cover	XZN3140	20	Operating Instructions (Dutch)	ARC7548
			21	Operating Instructions (Italian)	ARC7549

(2) CONTRAST TABLE

VSX-2014i-S/HYXJ, VSX-1014-K/HYXJ and VSX-1014-S/HYXJ are constructed the same except for the following:

Mark	No.	Symbol and Description	VSX-2014i-S /HYXJ	VSX-1014-K /HYXJ	VSX-1014-S /HYXJ
⚠	11	AC Power Cord	ADG7062	Not used	Not used
	16	Packing Case 2014i	AHD8257	Not used	Not used
	16	Packing Case 1014	Not used	AHD8259	AHD8258

1 2 3 4

2.2 EXTERIOR SECTION

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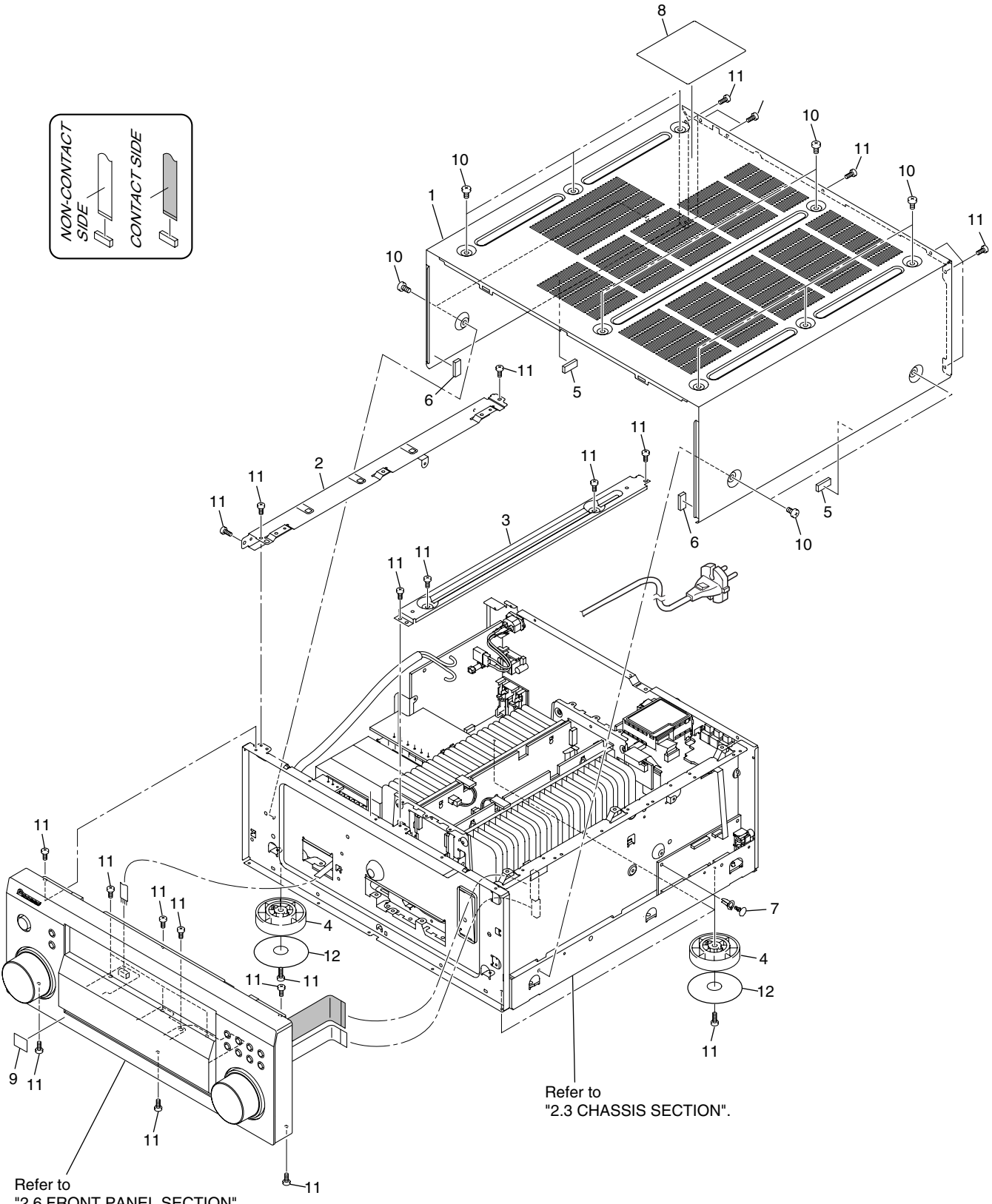
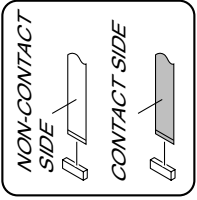
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(1) EXTERIOR SECTION parts List

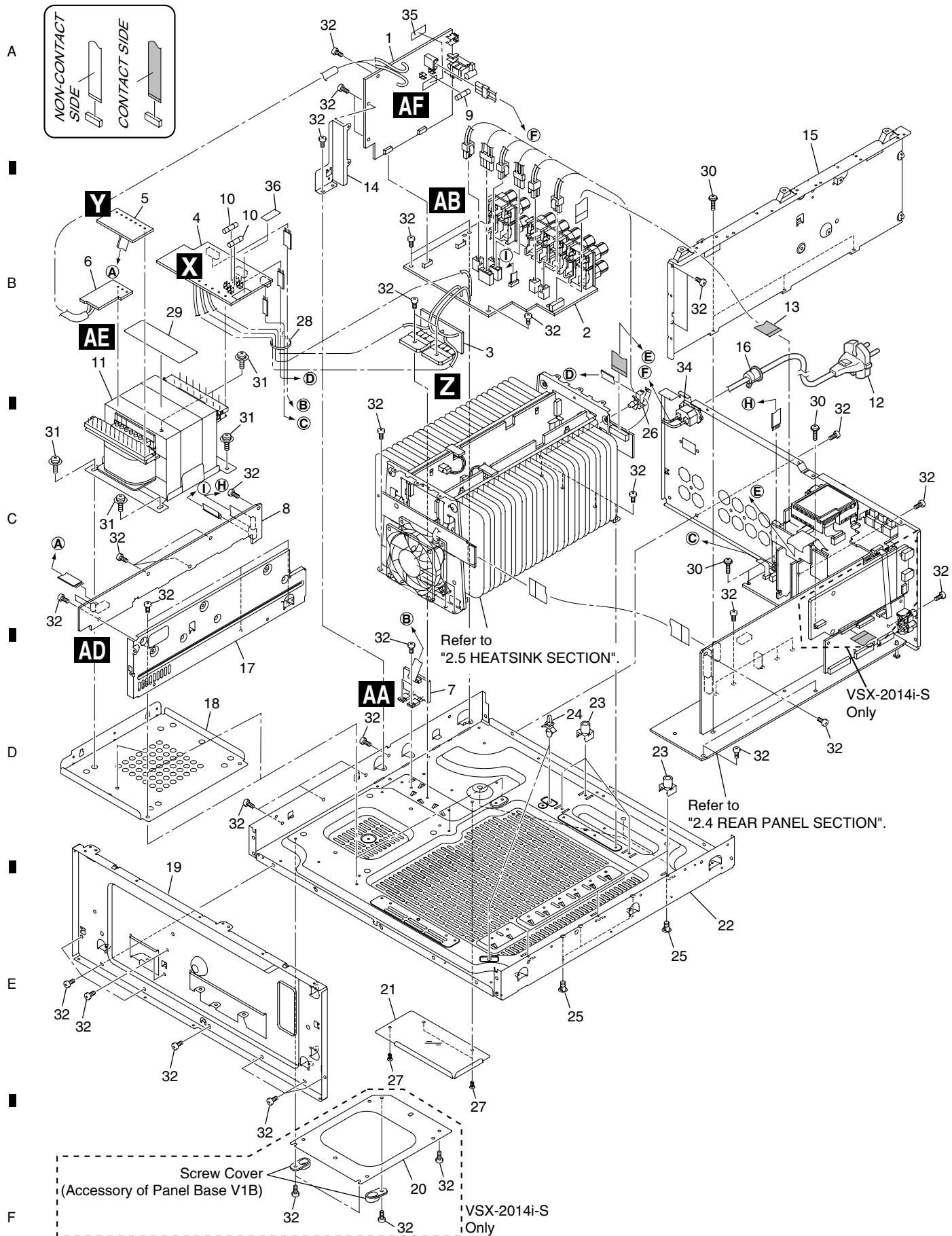
<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	Bonnet Case V1	See Contrast table (2)	7	Nyron Rivet	AEC7408
2	Left Beam	ANG7401	8	Label (DD/DTS/THX)	ARW7281
3	Center Beam	ANG7482	NSP 9	Getter	See Contrast table (2)
4	Insulator	PNW2766	10	Screw	See Contrast table (2)
5	Spacer (4.5 x 10 x 20)	AEB7355	11	Screw	BBZ30P080FCC
6	Spacer 45B (6 x 7 x 13)	AEB7264	12	Cushion 55	See Contrast table (2)

(2) CONTRAST TABLE

VSX-2014i-S/HYXJ, VSX-1014-K/HYXJ and VSX-1014-S/HYXJ are constructed the same except for the following:

Mark	No.	Symbol and Description	VSX-2014i-S /HYXJ	VSX-1014-K /HYXJ	VSX-1014-S /HYXJ
NSP	1	Bonnet Case V1	AZN7981	AZN7980	AZN7981
	9	Getter	AAX8028	AAX8029	AAX8029
	10	Screw	BBZ40P080FNI	BBZ40P080FZK	BBZ40P080FNI
	12	Cushion 55	PNM1339	Not used	Not used

2.3 CHASSIS SECTION



(1) CHASSIS SECTION parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	PRIMARY Assy	AWX8386	20	Stabilizer 45	See Contrast table (2)
2	SP/PS Assy	AWX8375	21	Screw Cover 45A	AEC7414
3	DIODE Assy	AWX8376	NSP 22	Under Base	See Contrast table (2)
4	TRANS 2-1 Assy	AWX8370	23	PCB Mold	AMR2534
5	TRANS 2-2 Assy	AWX8371	24	Locking Card Spacer	PNW2917
6	TRANS 1 Assy	AWX8383	25	Card Spacer	DNK2769
7	VH TR Assy	AWX8411	26	Wire Saddle 5S	AEC7500
8	TRANS SIDE Assy	AWX8417	27	Push Rivet	AEC7370
⚠ 9	Fuse (FU1 : T5.0A)	REK1029	NSP 28	Binder (BK-1)	ZCA-BK1
⚠ 10	Fuse (FU4, 5 : T2.0A)	REK1025	NSP 29	Trans. Label V1	AAX8052
⚠ 11	Power Transformer (T1501)	ATS7375	30	Screw	IBZ30P150FCC
⚠ 12	AC Power Cable	See Contrast table (2)	31	Screw (4x12)	ABA7109
13	Flexible Cable (12P)	ADD7477	32	Screw	BBZ30P080FCC
14	Primary Angle 56	ANG7526	33	• • • •	
15	DSP Shield A V1	ANG7479	⚠ 34	AC Inlet Assy	See Contrast table (2)
16	Cord Stopper	See Contrast table (2)	NSP 35	Fuse Card	AAX7098
17	Under Beam V1	AND7478	NSP 36	Fuse Card	AAX2357
18	Trans. Frame 45	ANG7399			
NSP 19	Panel Stay V1	AND7066			

(2) CONTRAST TABLE

VSX-2014i-S/HYXJ, VSX-1014-K/HYXJ and VSX-1014-S/HYXJ are constructed the same except for the following:

Mark	No.	Symbol and Description	VSX-2014i-S /HYXJ	VSX-1014-K /HYXJ	VSX-1014-S /HYXJ
⚠	12	AC Power Cable	Not used	VDG1080	VDG1080
	16	Cord Stopper	Not used	CM-22B	CM-22B
	20	Stabilizer 45	ANG7408	Not used	Not used
NSP	22	Under Base 52	ANA7166	Not used	Not used
NSP	22	Under Base 1014	Not used	ANA7161	ANA7161
⚠	34	AC Inlet Assy	ADX7411	Not used	Not used

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(1) REAR PANEL SECTION parts List

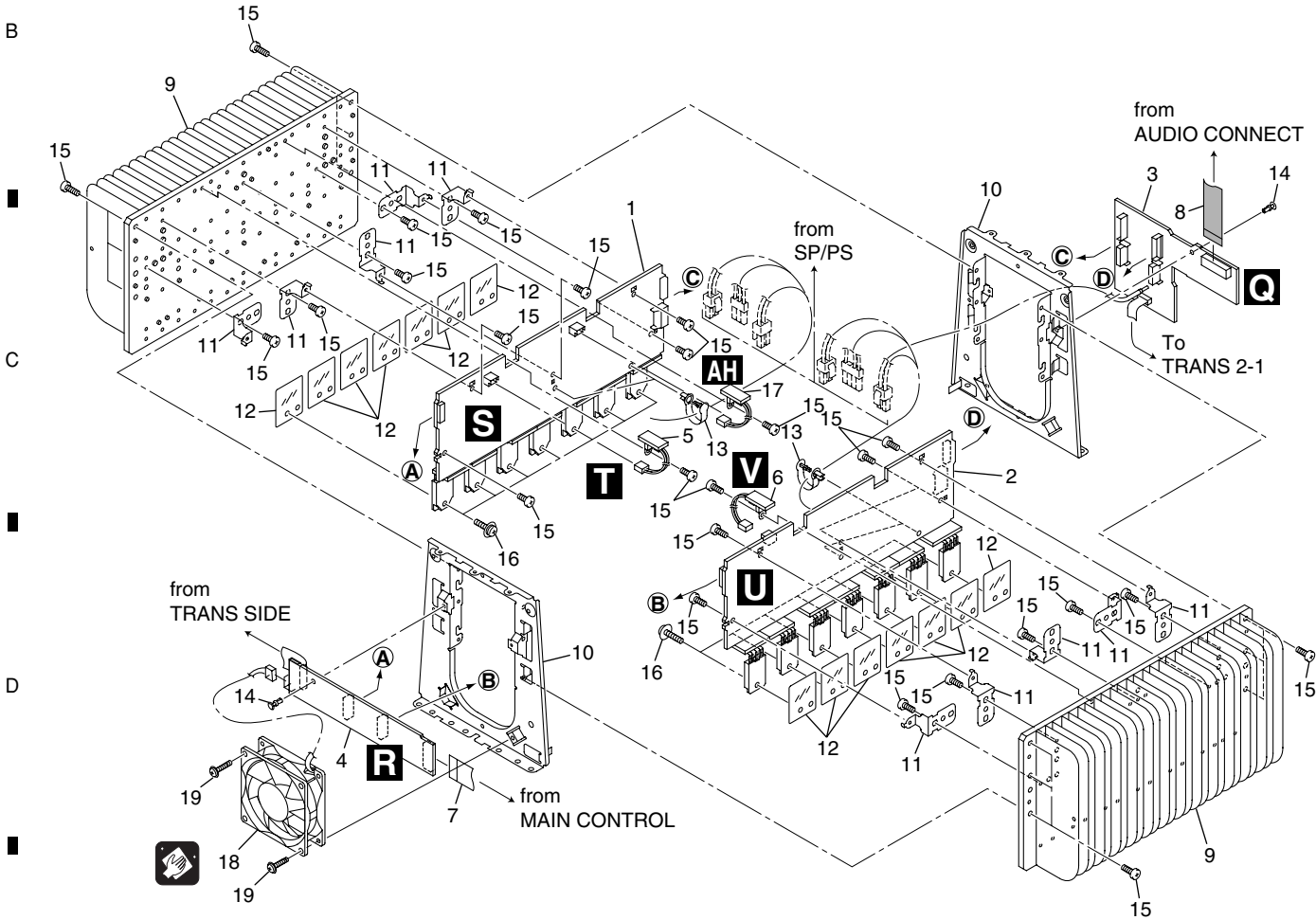
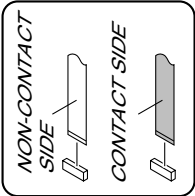
Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	12V TRIGGER Assy	See Contrast table (2)	16	Flexible Cable (11P)	ADD7476
2	COMPONENT Assy	See Contrast table (2)	17	Flexible Cable (17P)	ADD7478
3	S VIDEO Assy	See Contrast table (2)	18	Flexible Cable (10P)	ADD7472
4	COMPOSITE V Assy	See Contrast table (2)	19	Rear Panel	See Contrast table (2)
5	MULTI CH I/O Assy	See Contrast table (2)	20	Card Spacer	AEC7502
6	REAR TOP Assy	AWX8399	21	Speaker Sheet V1	AAK8176
7	OPTICAL-IN Assy	AWX8394	22	Hexagonal Screw	See Contrast table (2)
8	VIDEO SIDE Assy	AWX8366	23	Screw	BBZ30P080FCC
9	AUDIO CONNECT Assy	AWX8382	24	Screw	BBT30P100FCC
10	MAIN CONTROL Assy	See Contrast table (2)	25	Cushion Circle 14B	AED7081
11	REGULATOR Assy	See Contrast table (2)	26	1394 Assy	AWK7834
12	DSP Assy	AWX8414	27	Flexible Cable (22P)	ADD7471
13	FM/AM TUNER Unit	AXX7170	28	Fuse Card	AAX2348
⚠ 14	Fuse (FU2501, 2502 : T1.25A)	REK1023			
15	Connector Assy (8P)	See Contrast table (2)			

(2) CONTRAST TABLE

VSX-2014i-S/HYXJ, VSX-1014-K/HYXJ and VSX-1014-S/HYXJ are constructed the same except for the following:

Mark	No.	Symbol and Description	VSX-2014i-S /HYXJ	VSX-1014-K /HYXJ	VSX-1014-S /HYXJ
	1	12V TRIGGER Assy	AWX8395	Not used	Not used
	2	COMPONENT Assy	AWX8359	AWX8360	AWX8360
	3	S VIDEO Assy	AWX8356	AWX8357	AWX8357
	4	COMPOSITE V Assy	AWX8354	AWX8355	AWX8355
	5	MULTI CH I/O Assy	AWX8410	AWX8352	AWX8352
	10	MAIN CONTROL Assy	AWX8345	AWX8350	AWX8350
	11	REGULATOR Assy	AWX8365	AWX8369	AWX8369
	15	Connector Assy (8P)	ADE7085	Not used	Not used
	19	Rear Panel 2014SY	ANC8255	Not used	Not used
	19	Rear Panel 1014BY, SY	Not used	ANC8257	ANC8256
	22	Hexagonal Screw	ABA7078	Not used	Not used
	26	1394 Assy	AWK7834	Not used	Not used
	27	Flexible Cable (22P)	ADD7471	Not used	Not used

2.5 HEAT SINK SECTION

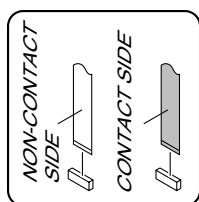


HEAT SINK SECTION parts List

Mark No.	Description	Part No.
1	POWER AMP-L Assy	AWX8403
2	POWER AMP-R Assy	AWX8404
3	POWER AMP IN Assy	AWX8405
4	POWER PROTECT Assy	AWX8407
5	POSI 1 L Assy	AWX8536
6	POSI 1 R Assy	AWX8539
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 (3x19)	ABA7085
17	POSI 2 L Assy	AWX8428
18	DC Fan Motor	AXM7029
19	Screw	BBZ30P300FTC

2.6 FRONT PANEL SECTION

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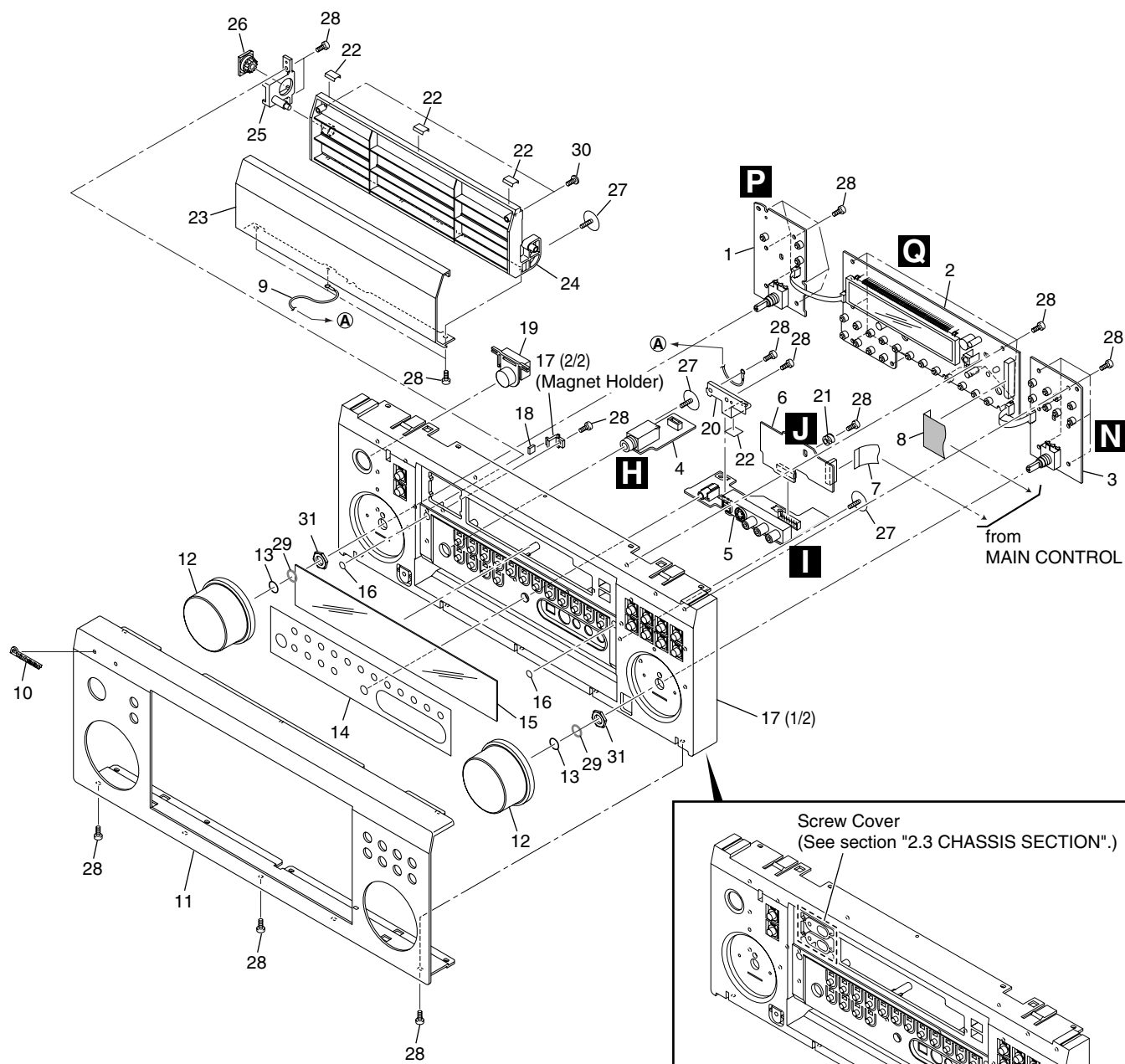
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(1) FRONT PANEL SECTION parts List

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 V1	See Contrast table (2)
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 V1	See Contrast table (2)
8	Flexible Cable (26P)	ADD7474	25	Door Shaft 35	AMR7295
NSP 9	Earth Lead Wire	ADH7022			
10	Pioneer Badge	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	See Contrast table (2)	29	Knob Spacer V1	AEC7519
13	Ring	ABH7213	30	• • • •	
14	D. Sheet	See Contrast table (2)			
15	Window	See Contrast table (2)	31	Nut	NK90FCC
16	Cushion Circle 6	See Contrast table (2)			
17	Panel Base V1	See Contrast table (2)			

(2) CONTRAST TABLE

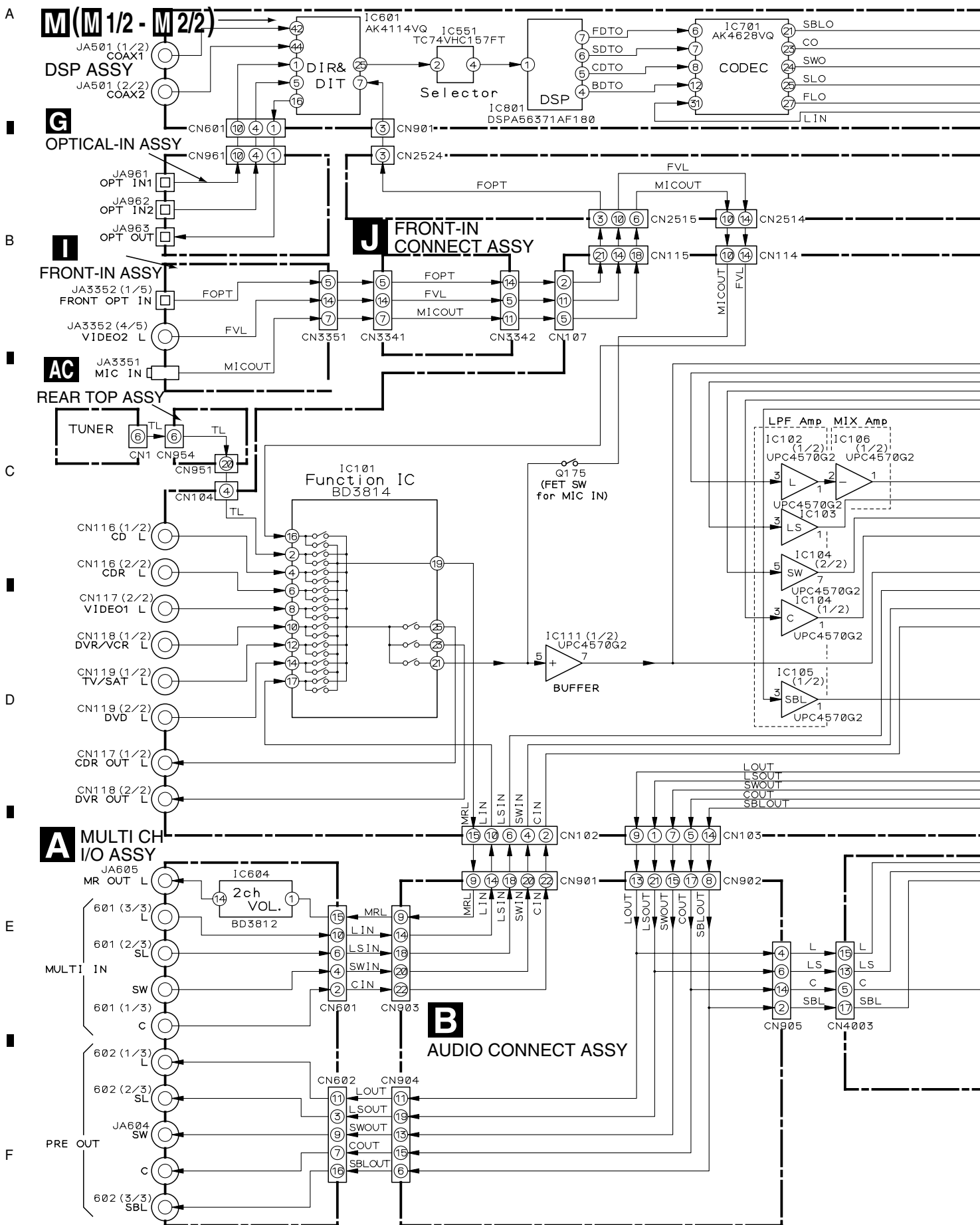
VSX-2014i-S/HYXJ, VSX-1014-K/HYXJ and VSX-1014-S/HYXJ are constructed the same except for the following:

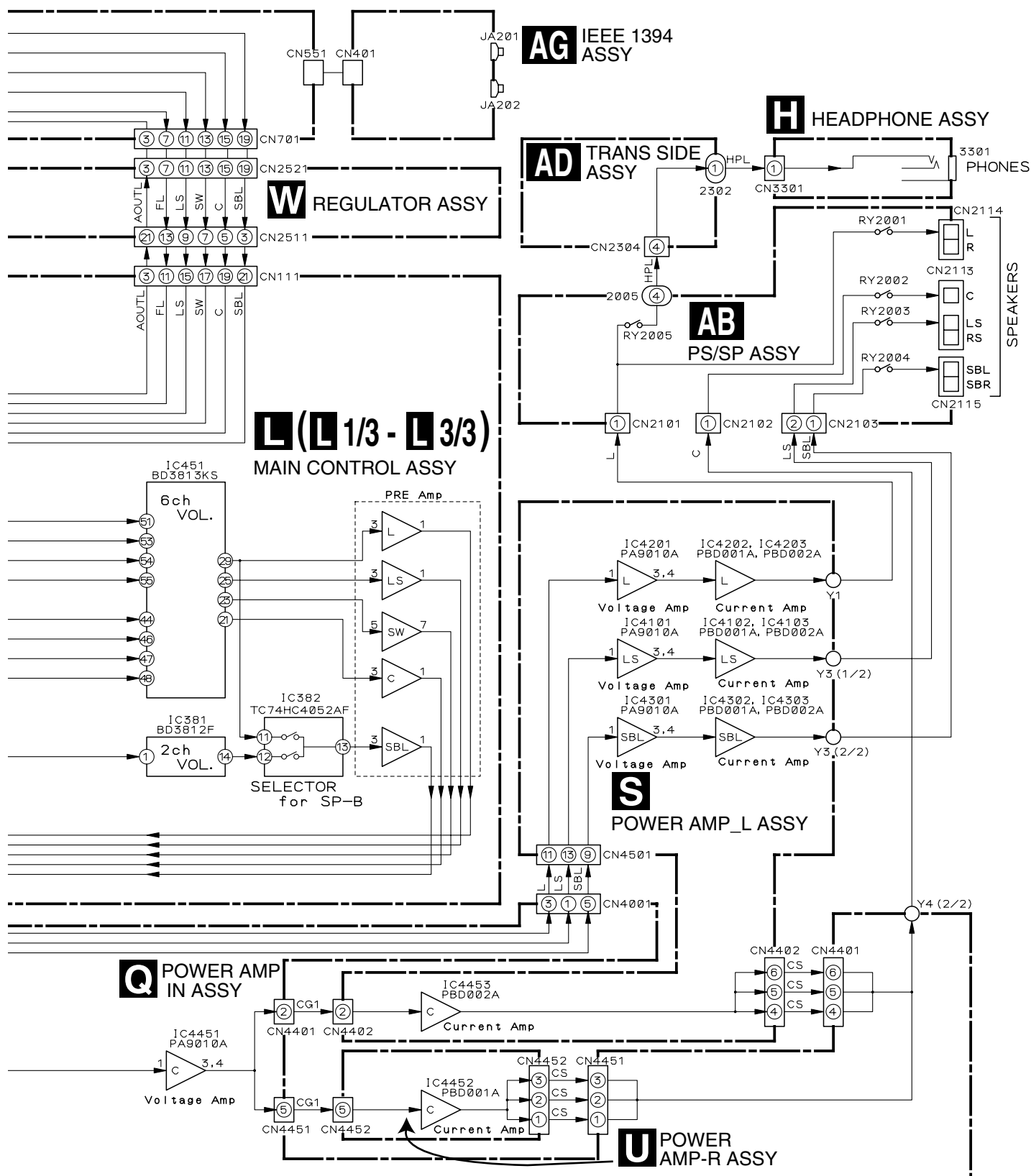
Mark	No.	Symbol and Description	VSX-2014i-S /HYXJ	VSX-1014-K /HYXJ	VSX-1014-S /HYXJ
	2	DISPLAY Assy	AWX8388	AWX8389	AWX8389
	10	Pioneer Badge	VAM1124	AAN7218	VAM1124
	11	F. Panel 2014SY	ANB7340	Not used	Not used
	11	F. Panel 1014BY, SY	Not used	ANB7342	ANB7341
	12	Rotary Knob	AAA7025	AAA7024	AAA7025
	14	D. Sheet 2014SY	AAK8181	Not used	Not used
	14	D. Sheet 1014BY, SY	Not used	AAK8183	AAK8182
	15	Window 2014	AAK8187	Not used	Not used
	15	Window 1014	Not used	AAK8186	AAK8186
	16	Cushion Circle 6	AED7080	AED7083	AED7080
	17	Panel Base V1	AMB7871	AMB7870	AMB7871
	19	Standby Button V1	XAD3191	XAD3173	XAD3191
	23	Door V1S	ANB7336	Not used	ANB7336
	23	Door V1B	Not used	ANB7335	Not used
	24	Door Base V1	AMR7478	AMR7477	AMR7478

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

3.1.1 AUDIO SECTION





3.1.2 VIDEO and DISPLAY SECTIONS

Video Block

A

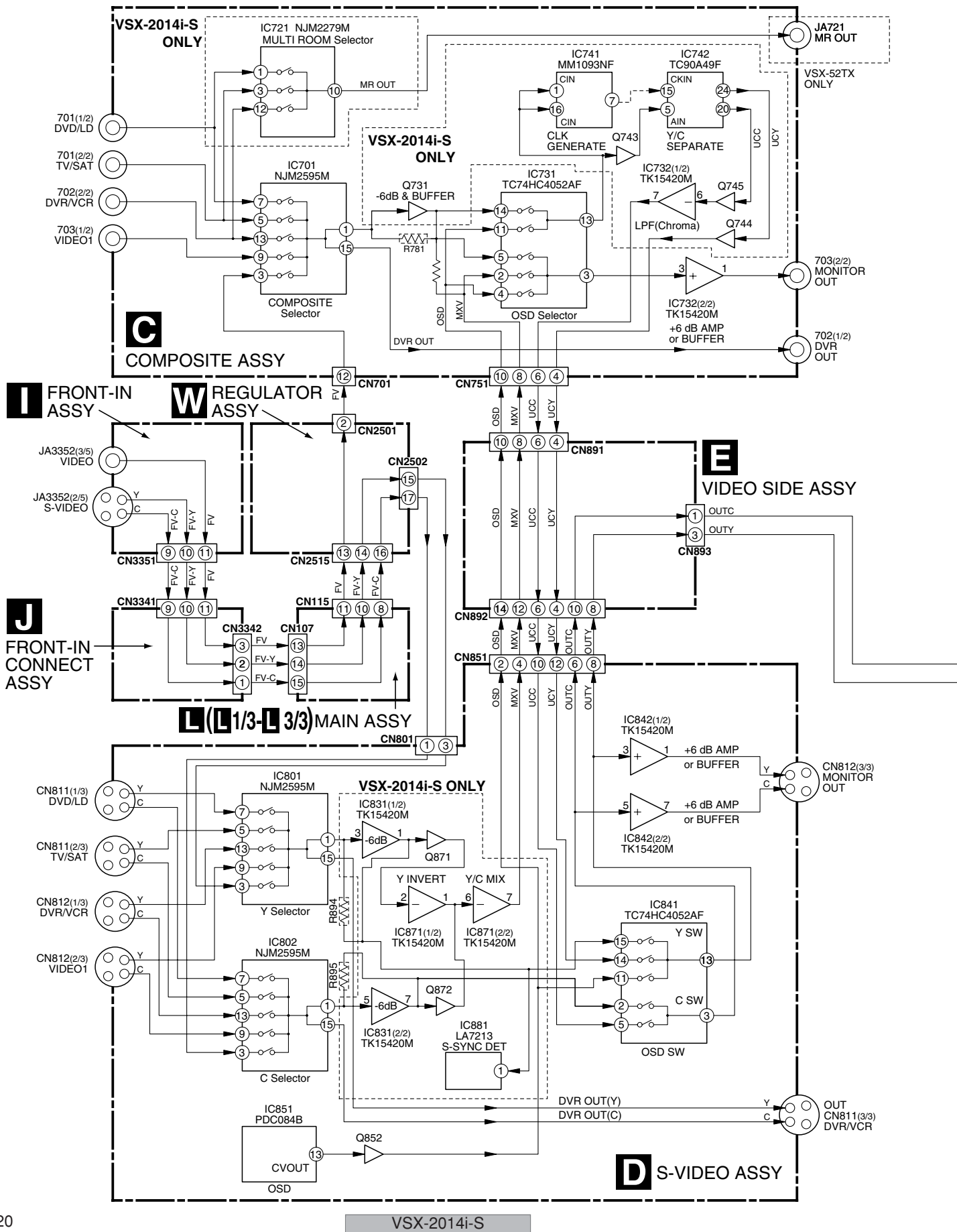
B

C

D

E

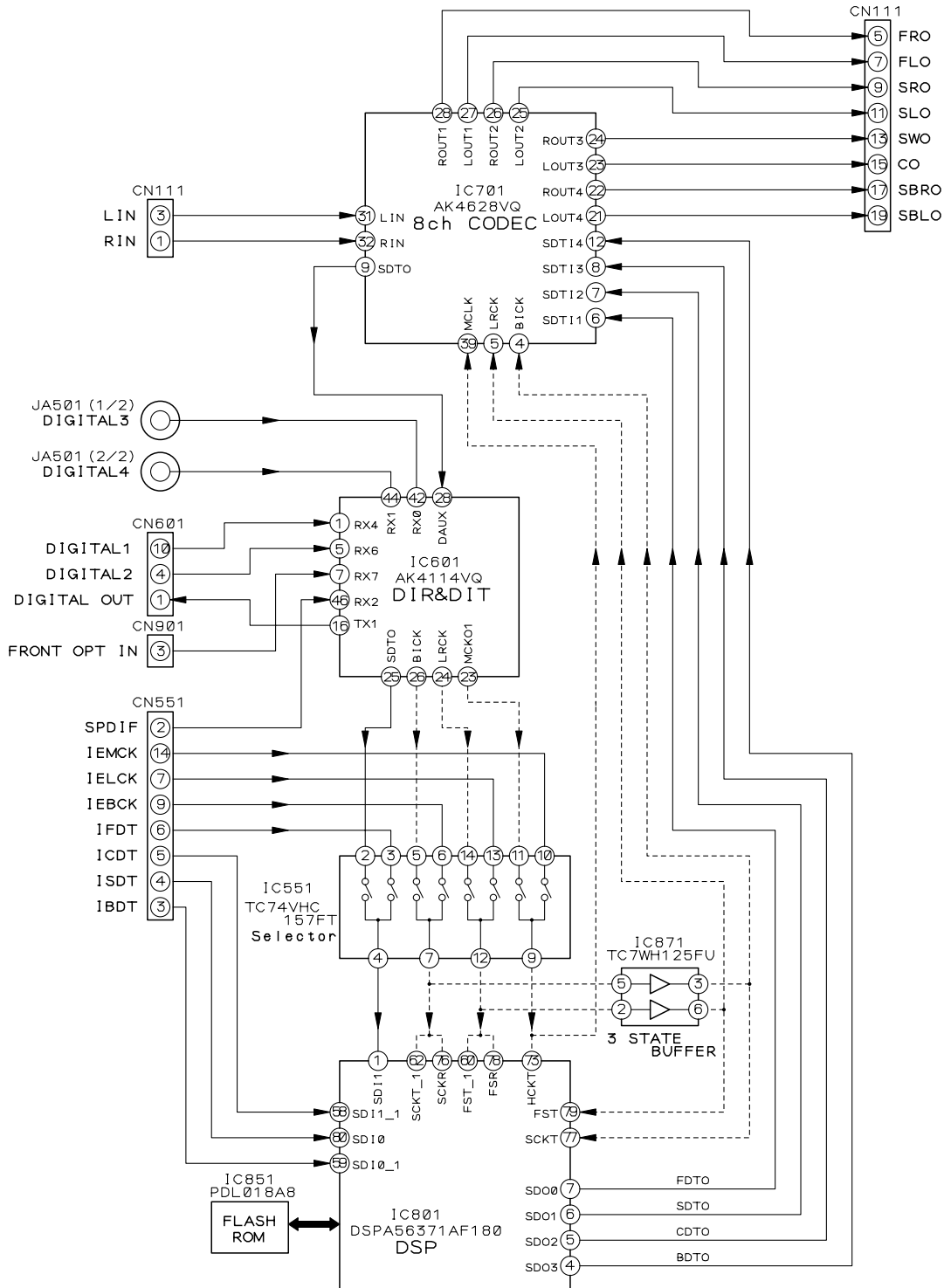
F



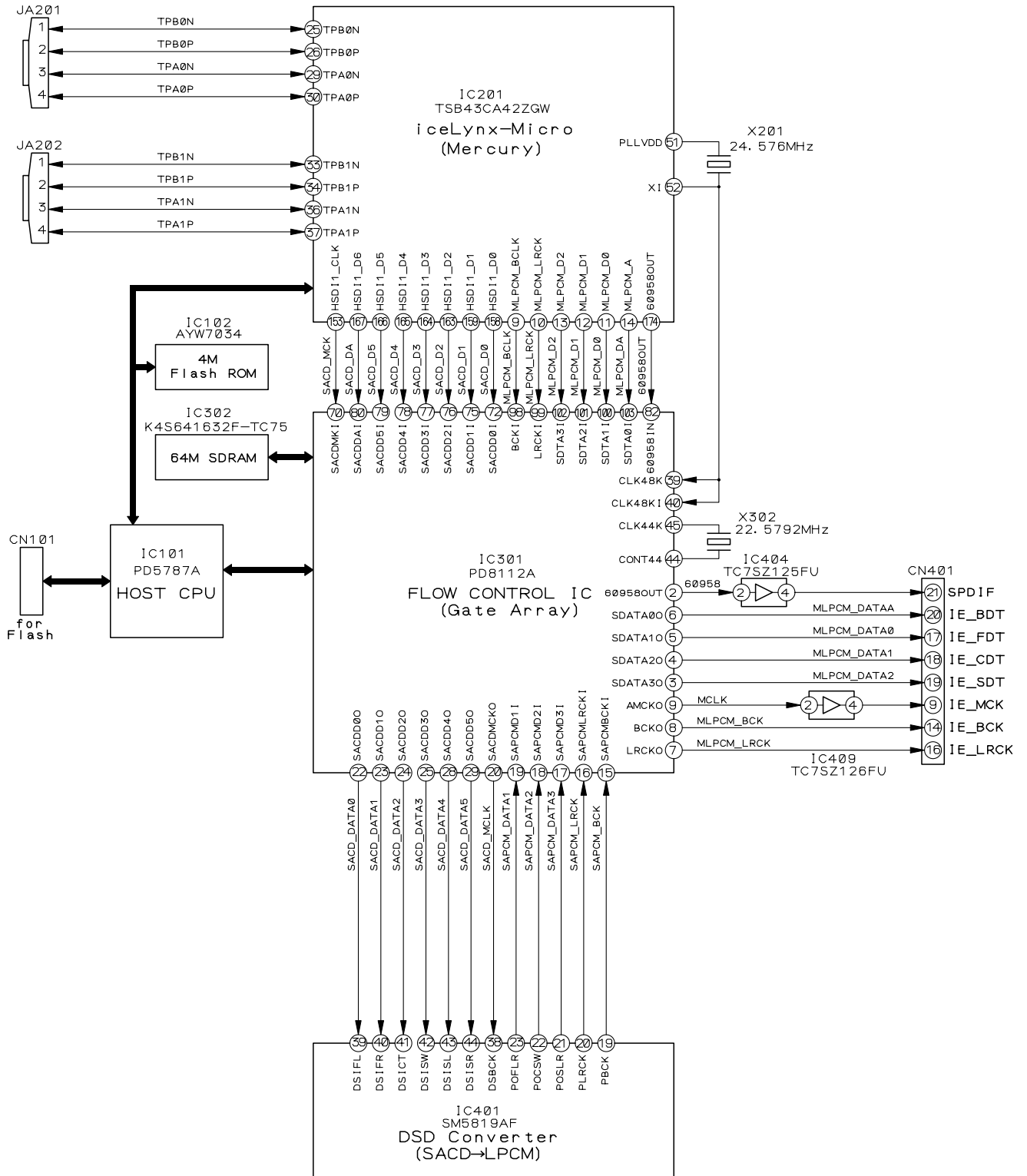
3.1.3 DSP and 1394 SECTIONS

DSP Block

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

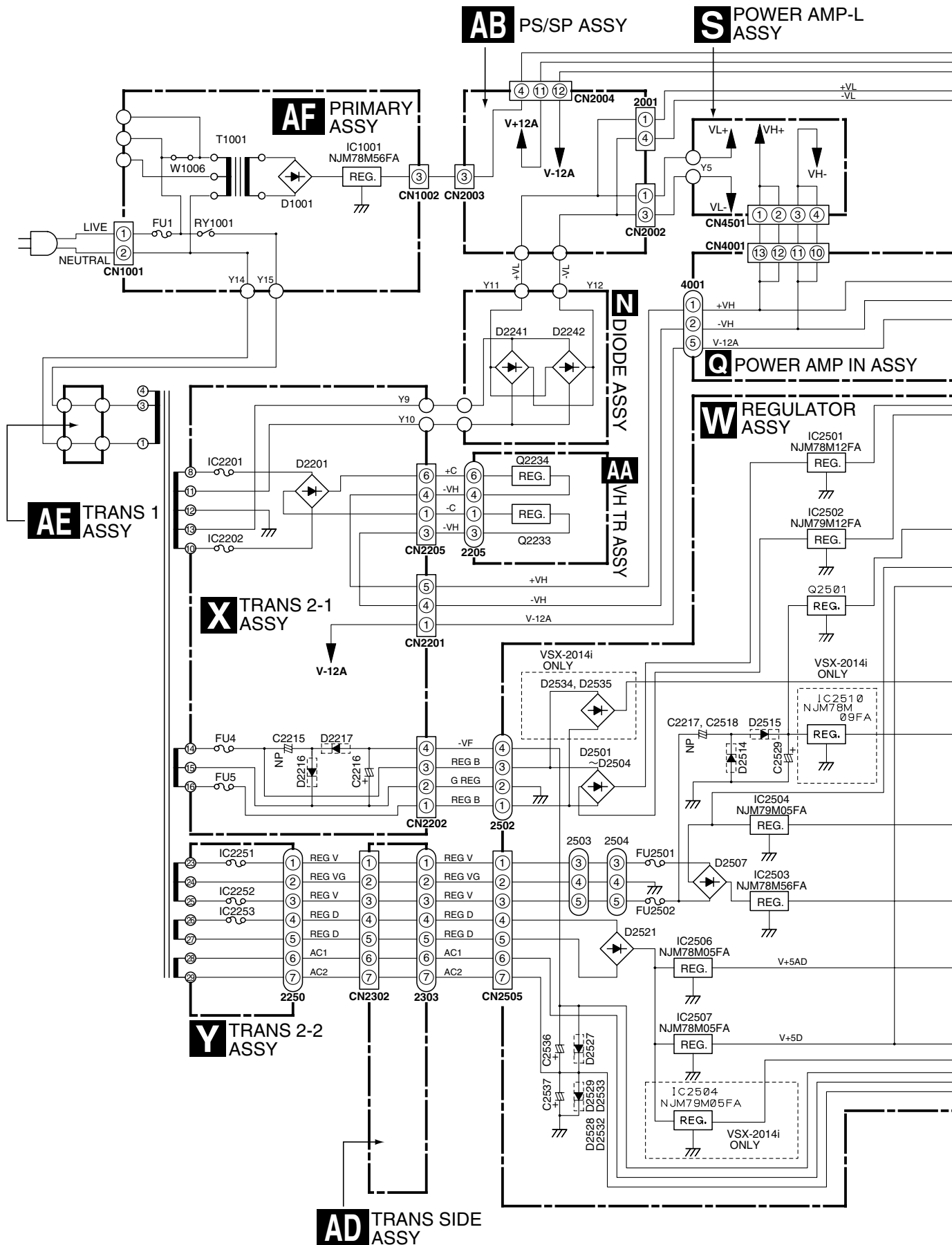


AG 1394 Block Diagram (VSX-2014i-S Only)



3.1.4 POWER SUPPLY SECTION

Power Supply Block

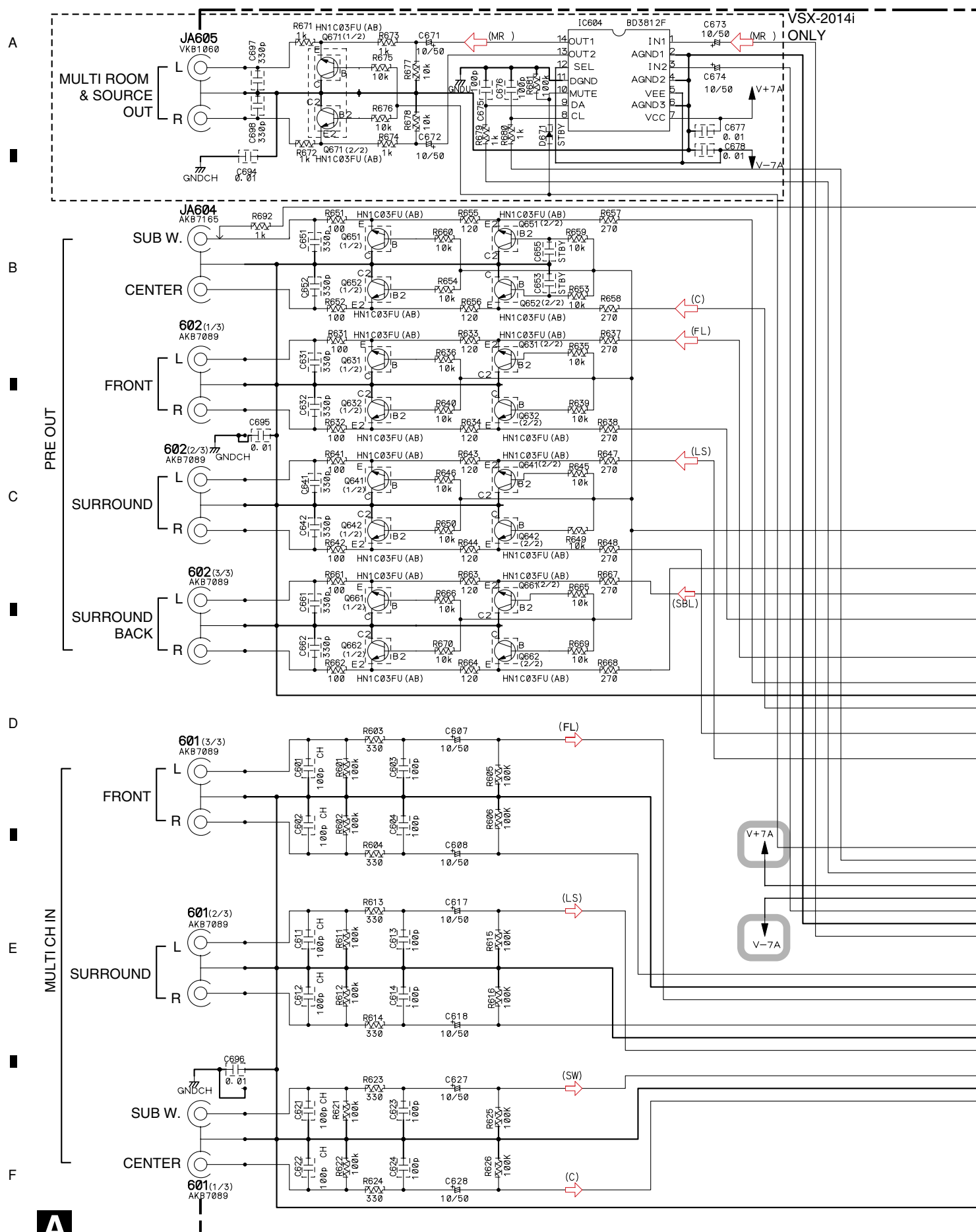




△

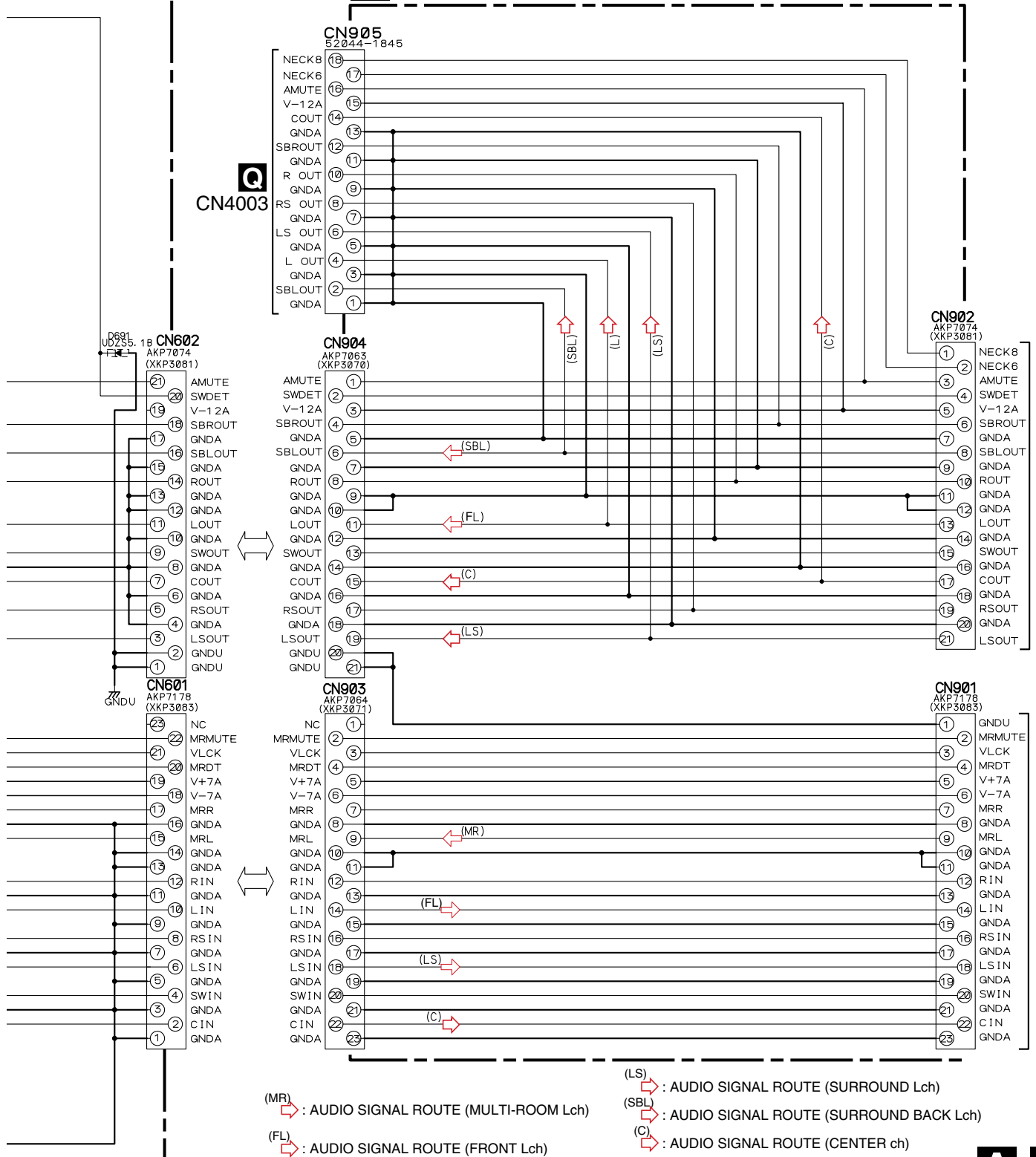


3.3 MULTI CH I/O and AUDIO CONNECT ASSYS



A MULTI CH I/O ASSY
(VSX-2014i : AWX8410)
(VSX-1014 : AWX8352)

B AUDIO CONNECT ASSY (AWX8382)



3.4 COMPOSITE V ASSY

A

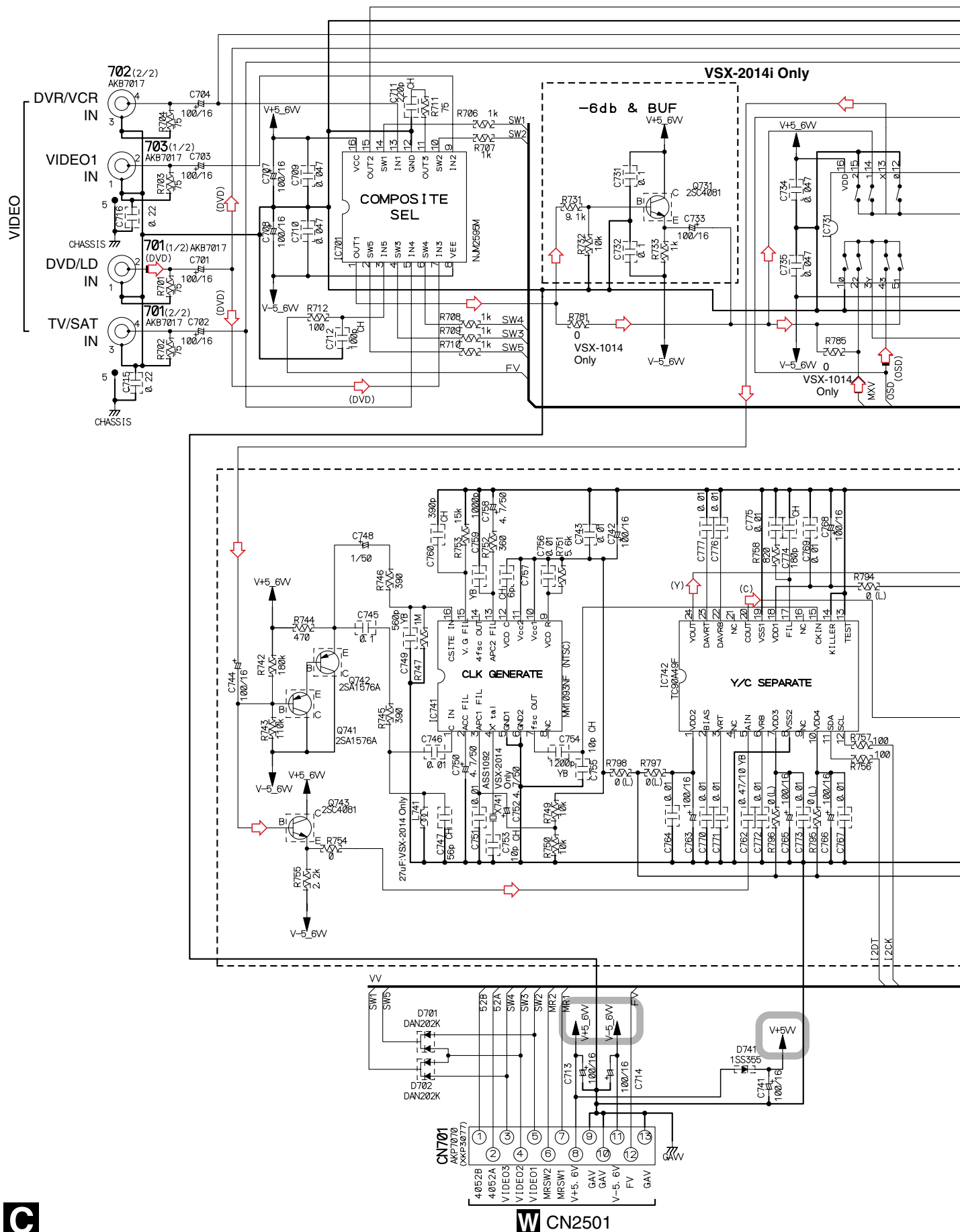
B

C

D

E

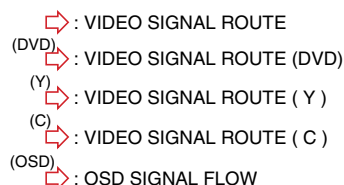
F



C

W CN2501

VSX-2014i-S



3.5 S VIDEO and VIDEO SIDE ASSYS

D S VIDEO ASSY (VSX-2014i : AWX8356), (VSX-1014 : AWX8357)

A

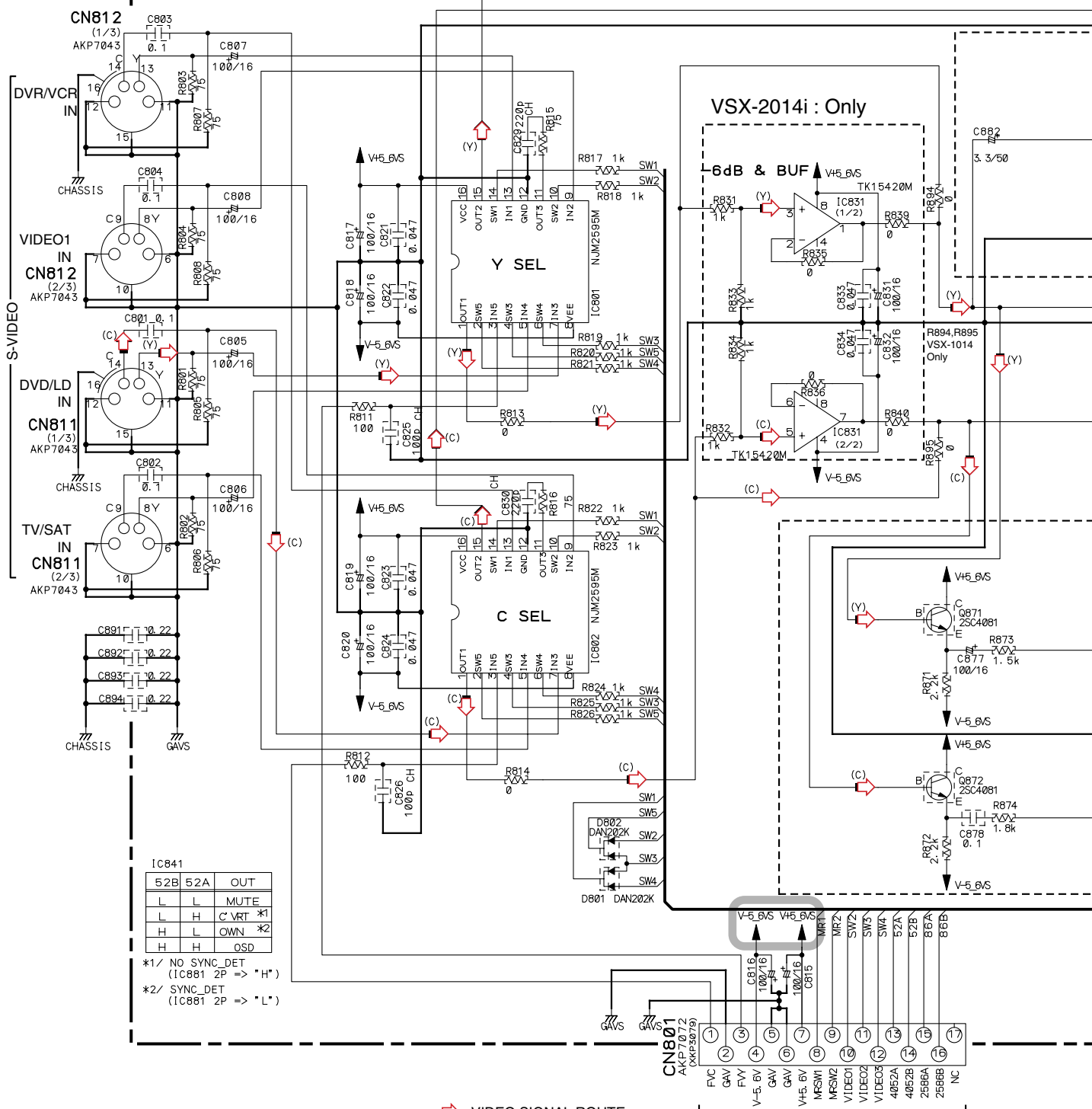
B

C

D

E

F



- ➡ : VIDEO SIGNAL ROUTE
- (Y) ➡ : VIDEO SIGNAL ROUTE (Y)
- (C) ➡ : VIDEO SIGNAL ROUTE (C)
- (OSD) ➡ : OSD SIGNAL FLOW

W CN2502



4



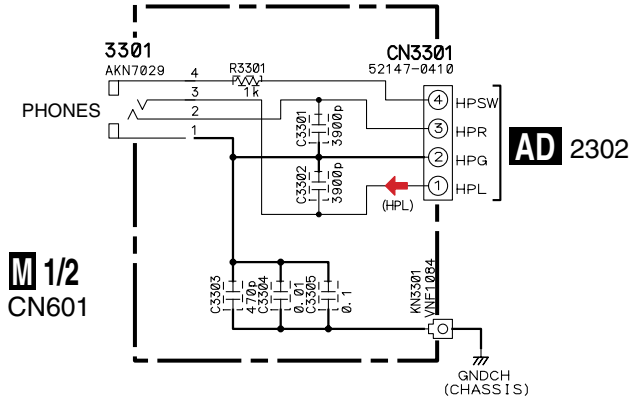
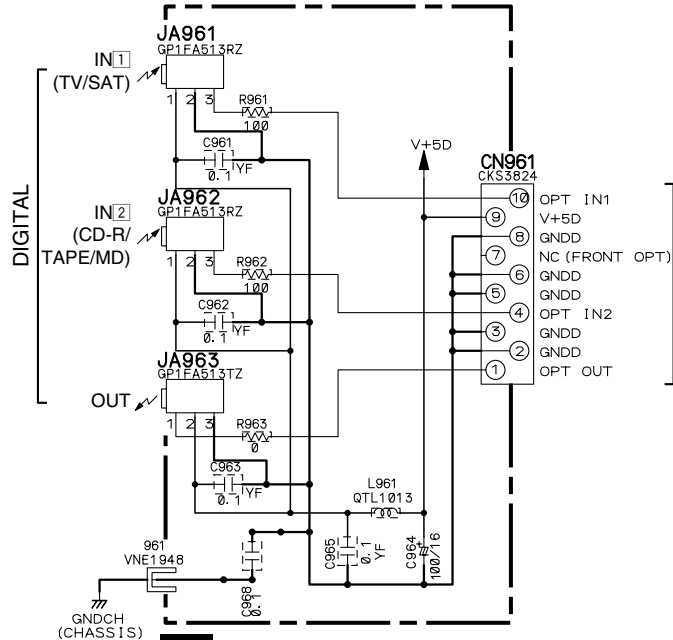


3.7 OPTICAL-IN,H,P,FRONT-IN,FRONT-IN CONNECT and 12VTRIG. ASSYS

G OPTICAL-IN ASSY (AWX8394)

H HEADPHONE ASSY (AWX8380)

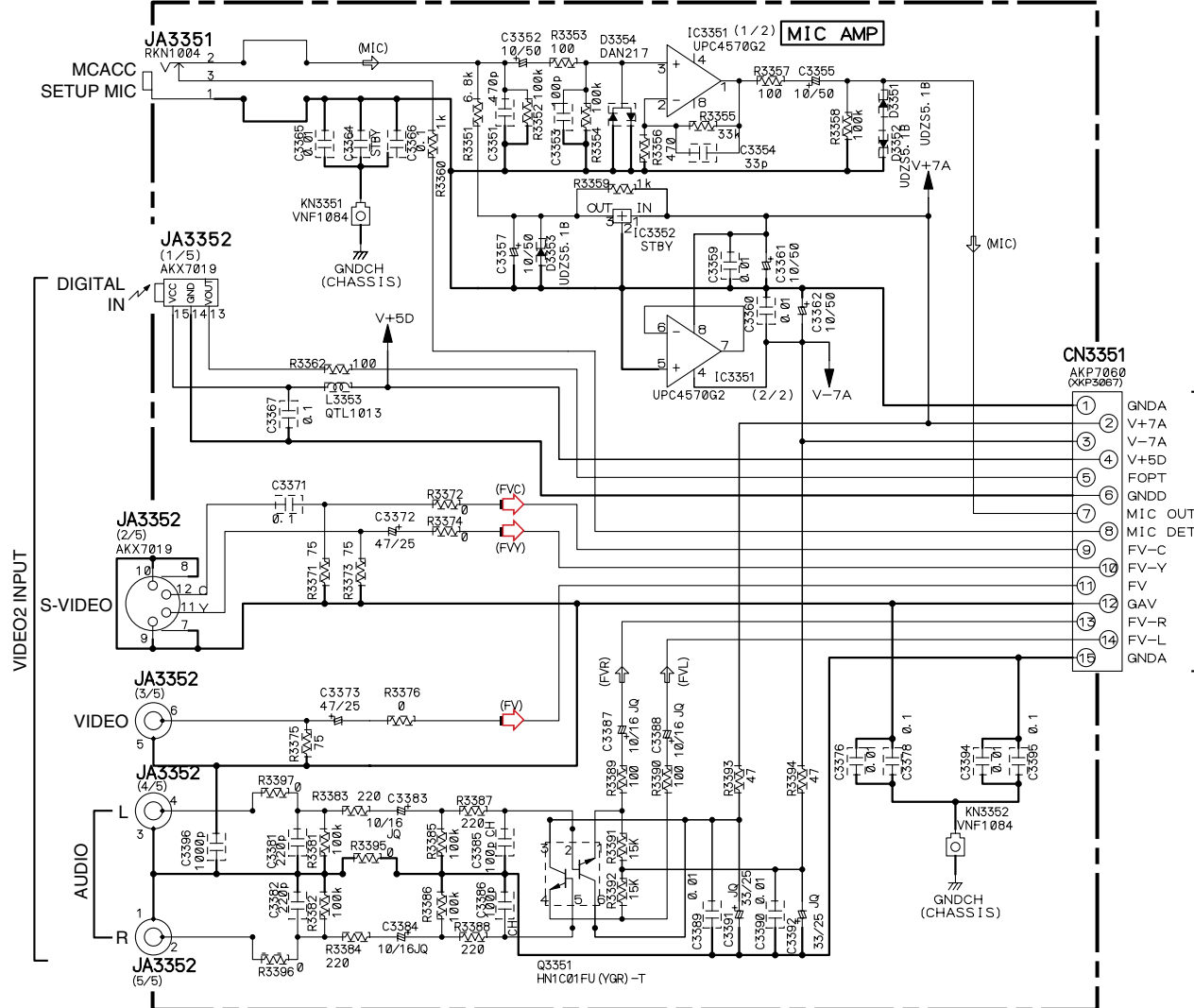
A



B

I FRONT-IN ASSY (AWX8381)

C

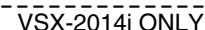


D

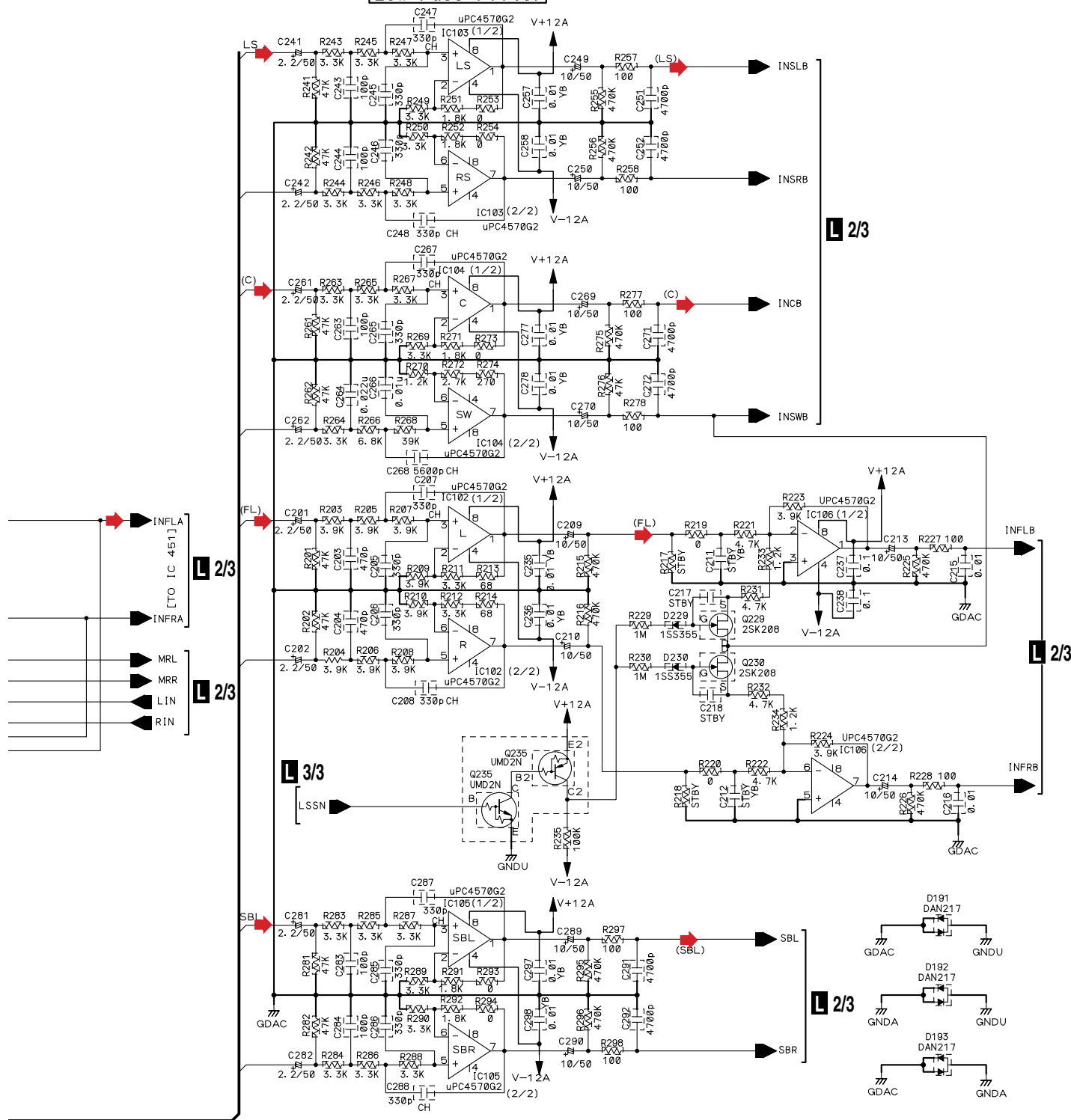
E

F

G H I



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)

3.9 MAIN CONTROL ASSY (2/3)

2/3

MAIN CONTROL ASSY
(VSX-2014i : AWX8345)
(VSX-1014 : AWX8350)

A

B

1/3

C

3/3

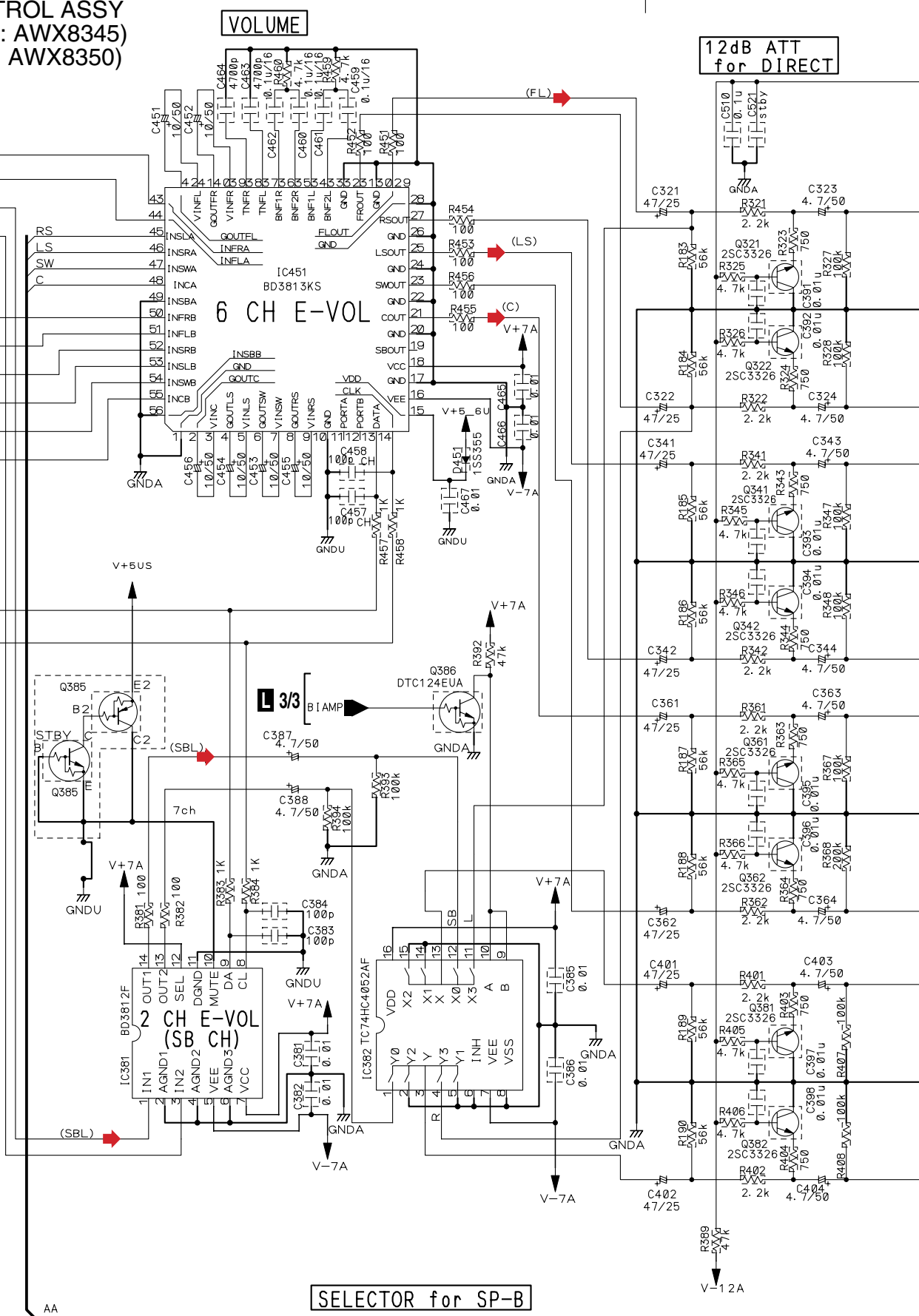
D

E

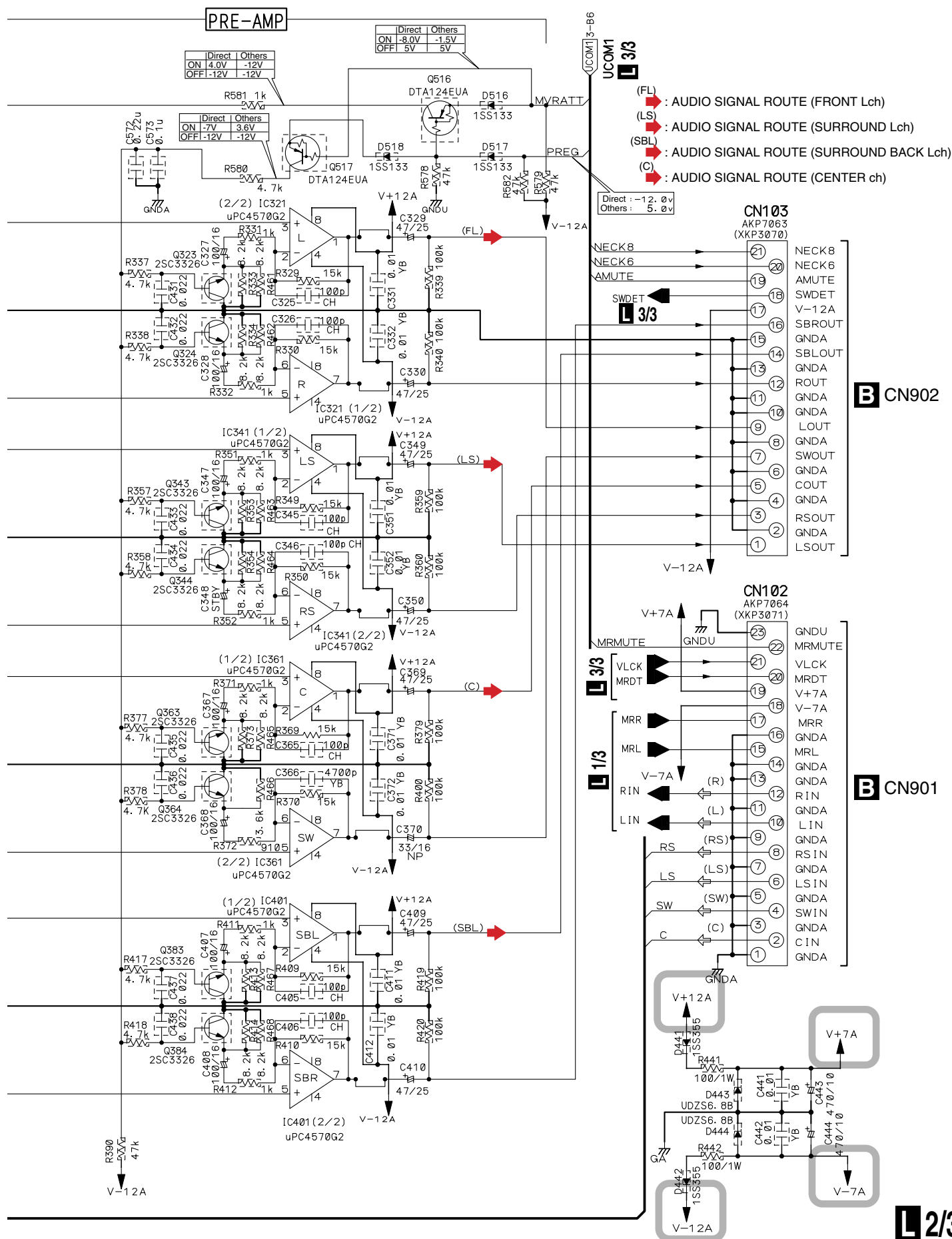
F

2/3

40



VSX-2014i-S



A

B

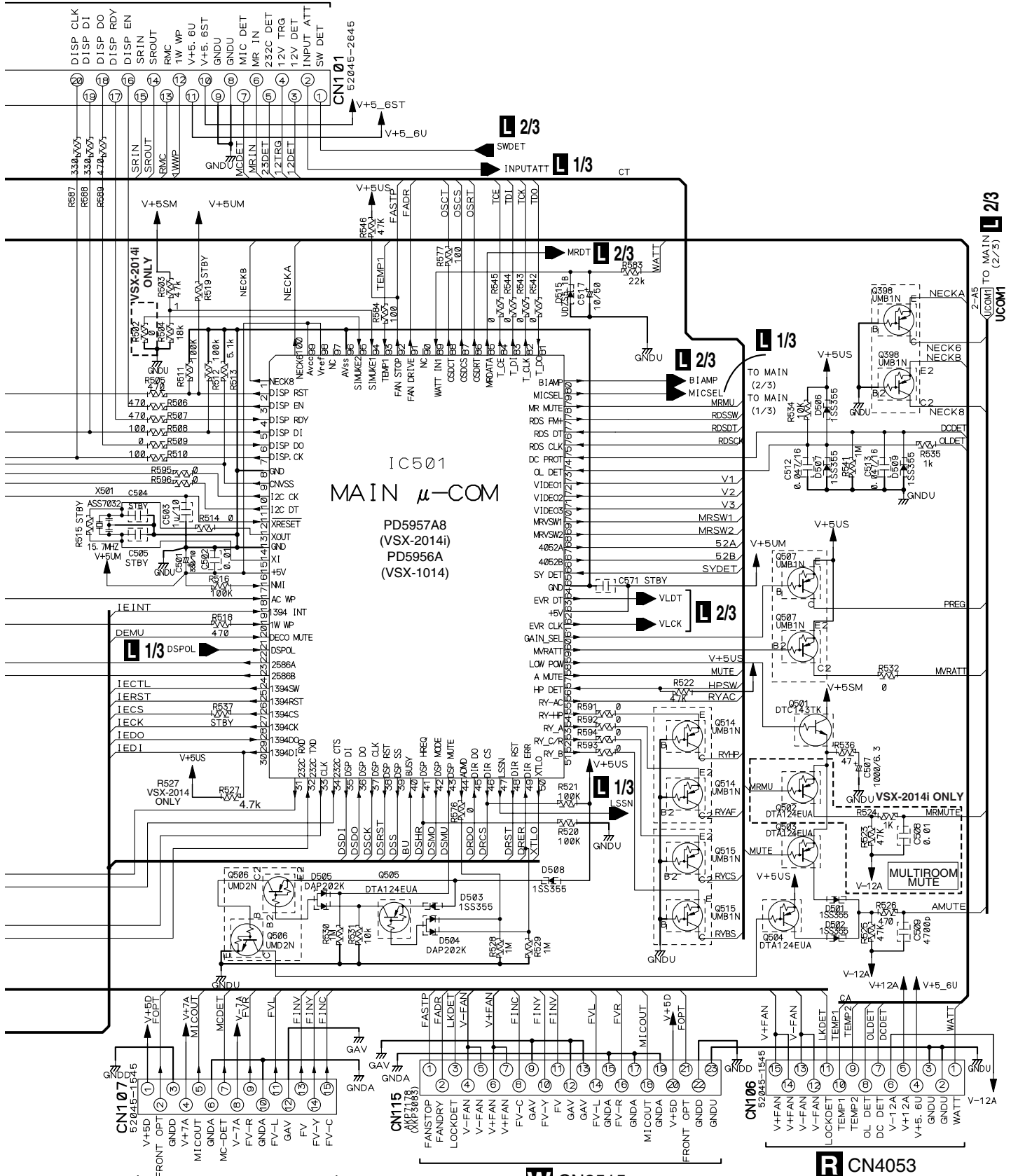
C

D

E

F

○ CN3001



J CN3322

W CN2515

R CN4053

L 3/3

VSX-2014i-S

3.11 DSP ASSY (1/2)

A

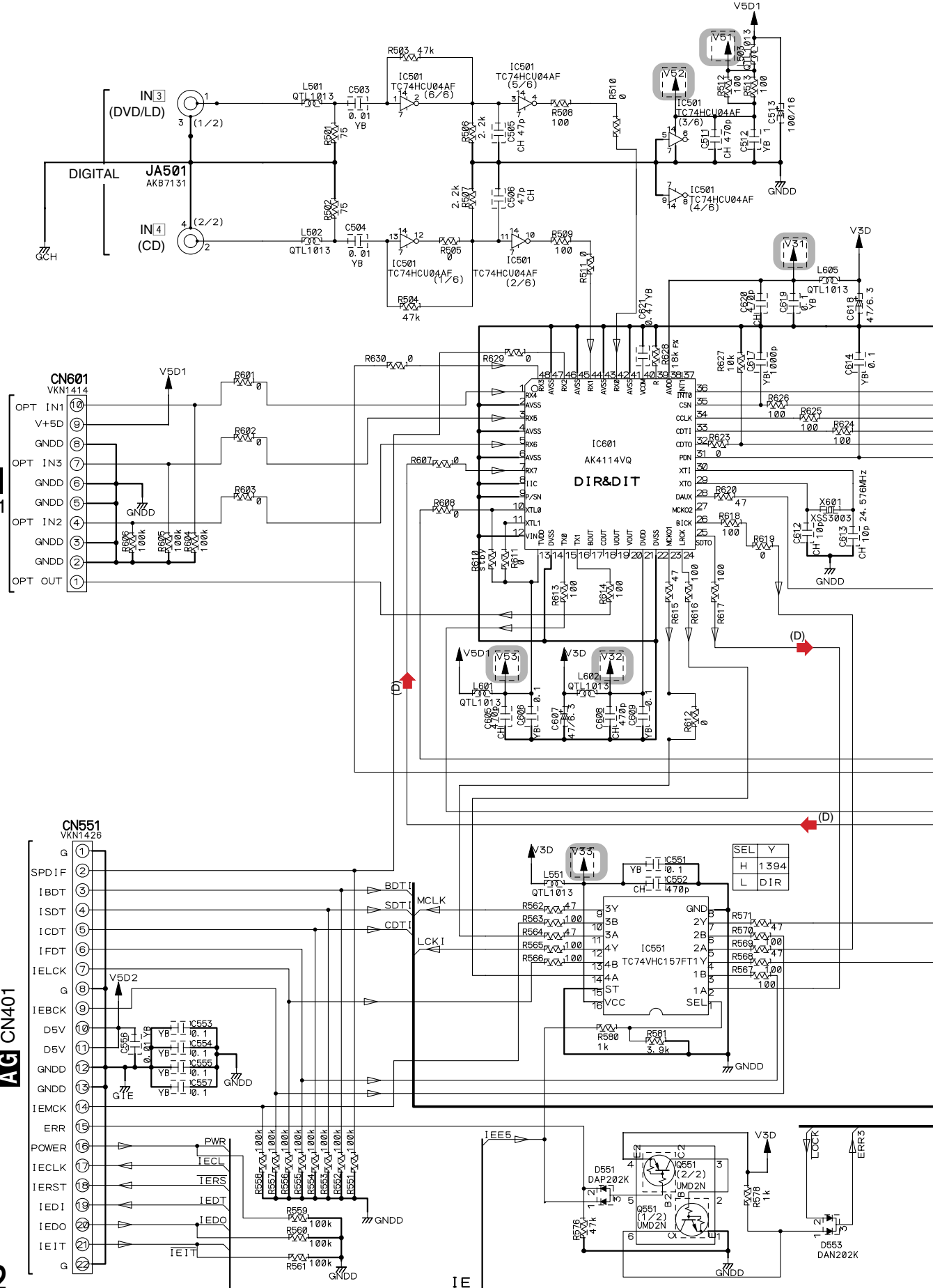
B

C

D

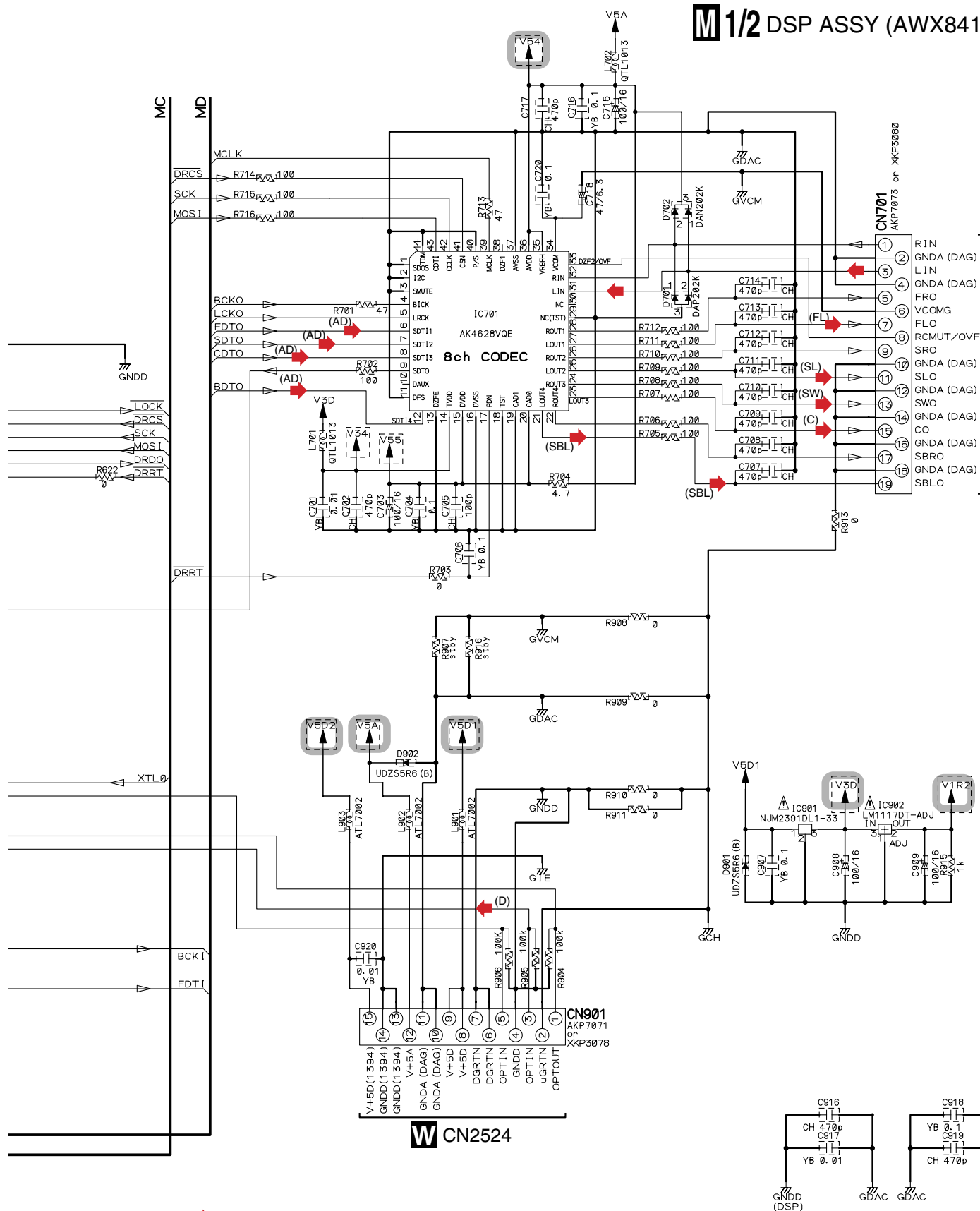
E

F



M 1/2

M 1/2 DSP ASSY (AWX8414)



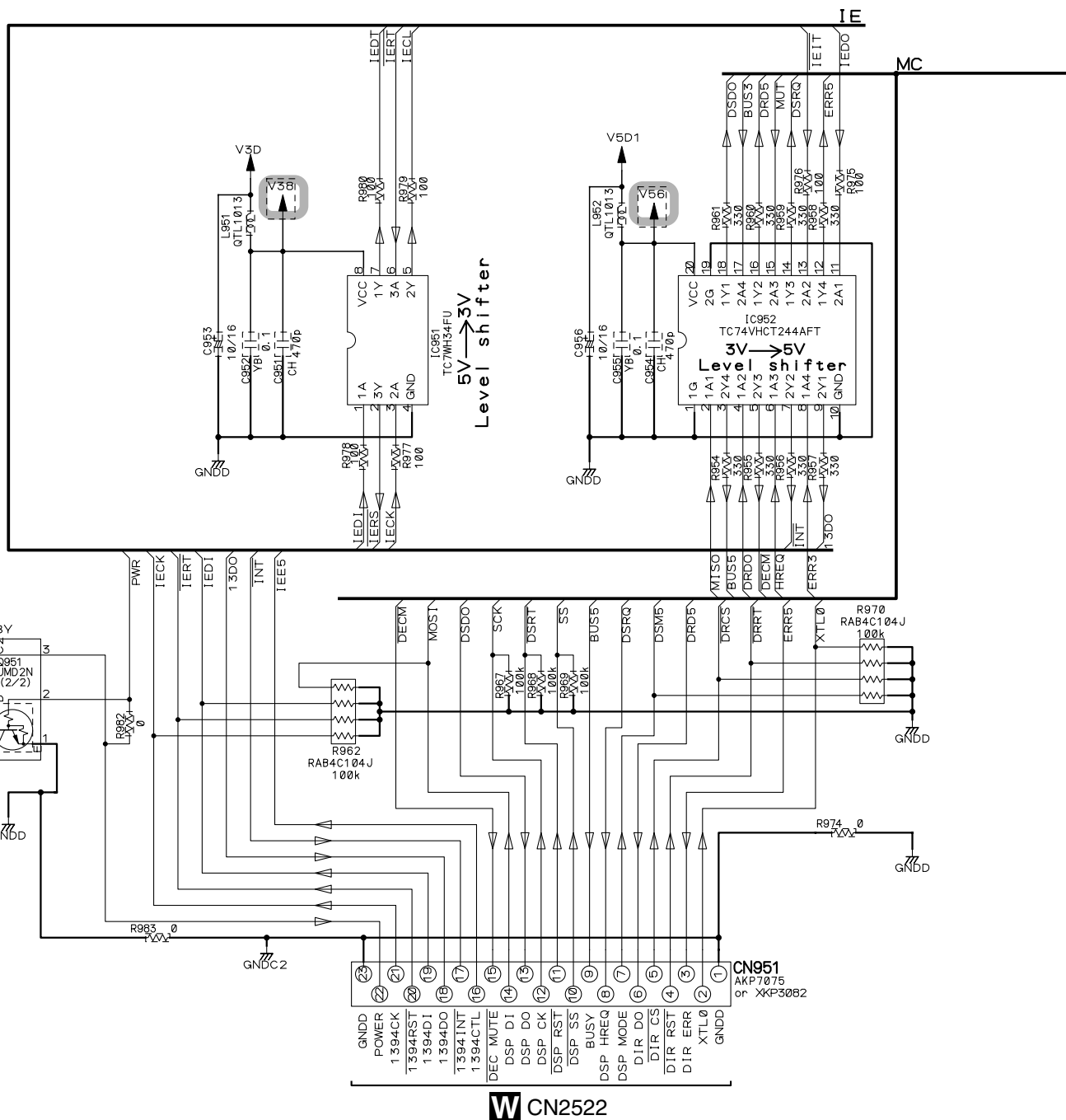
- ➡ : AUDIO SIGNAL ROUTE (Lch)
- (D) ➡ : AUDIO SIGNAL ROUTE (DIGITAL)
- (FL) ➡ : AUDIO SIGNAL ROUTE (FRONT Lch)
- (C) ➡ : AUDIO SIGNAL ROUTE (CENTER ch)

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

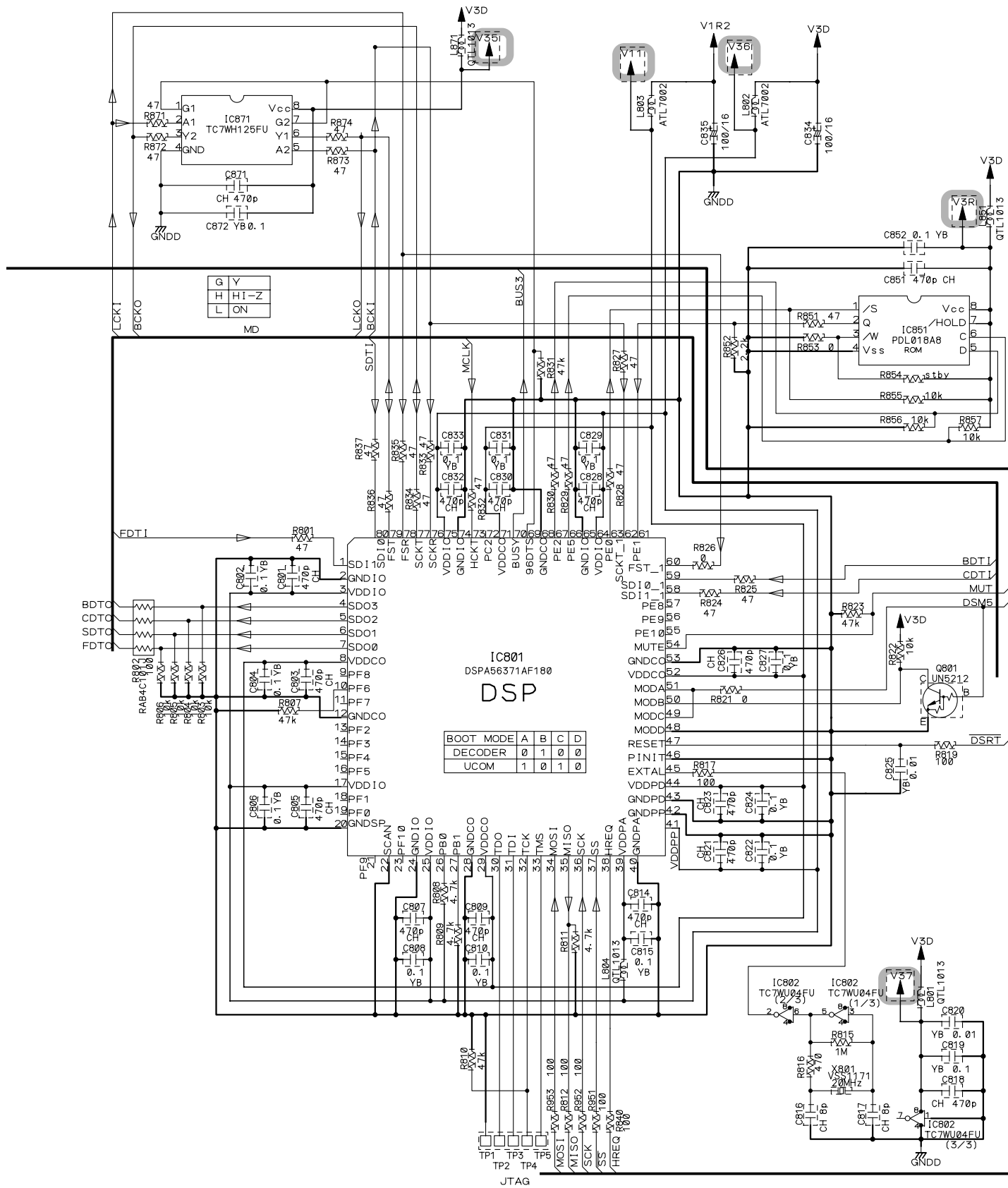
M 1/2

3.12 DSP ASSY (2/2)

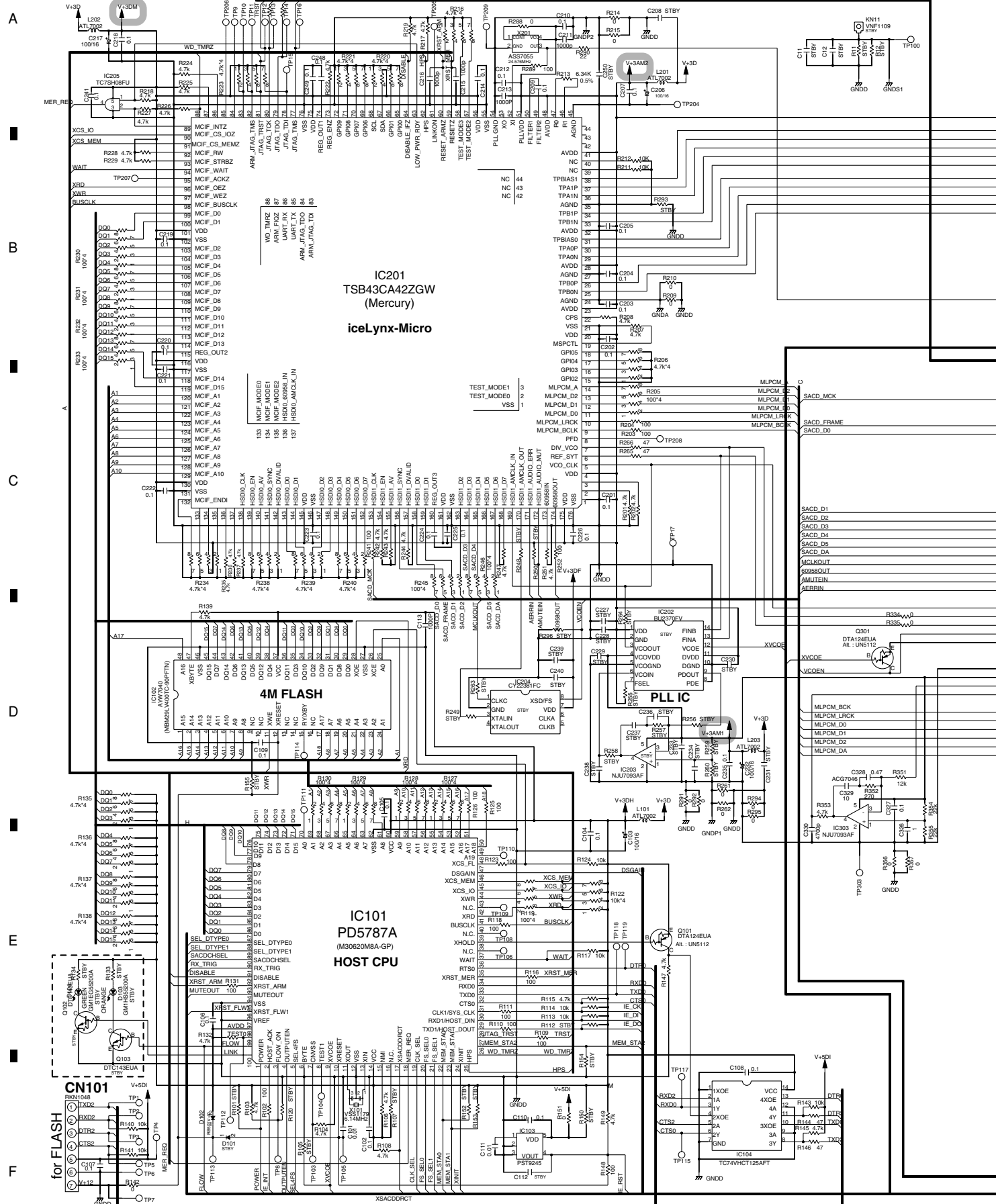
M 2/2 DSP ASSY (AWX8414)



M 2/2



3.13 1394 ASSY (1/2) (VSX-2014i ONLY)





C

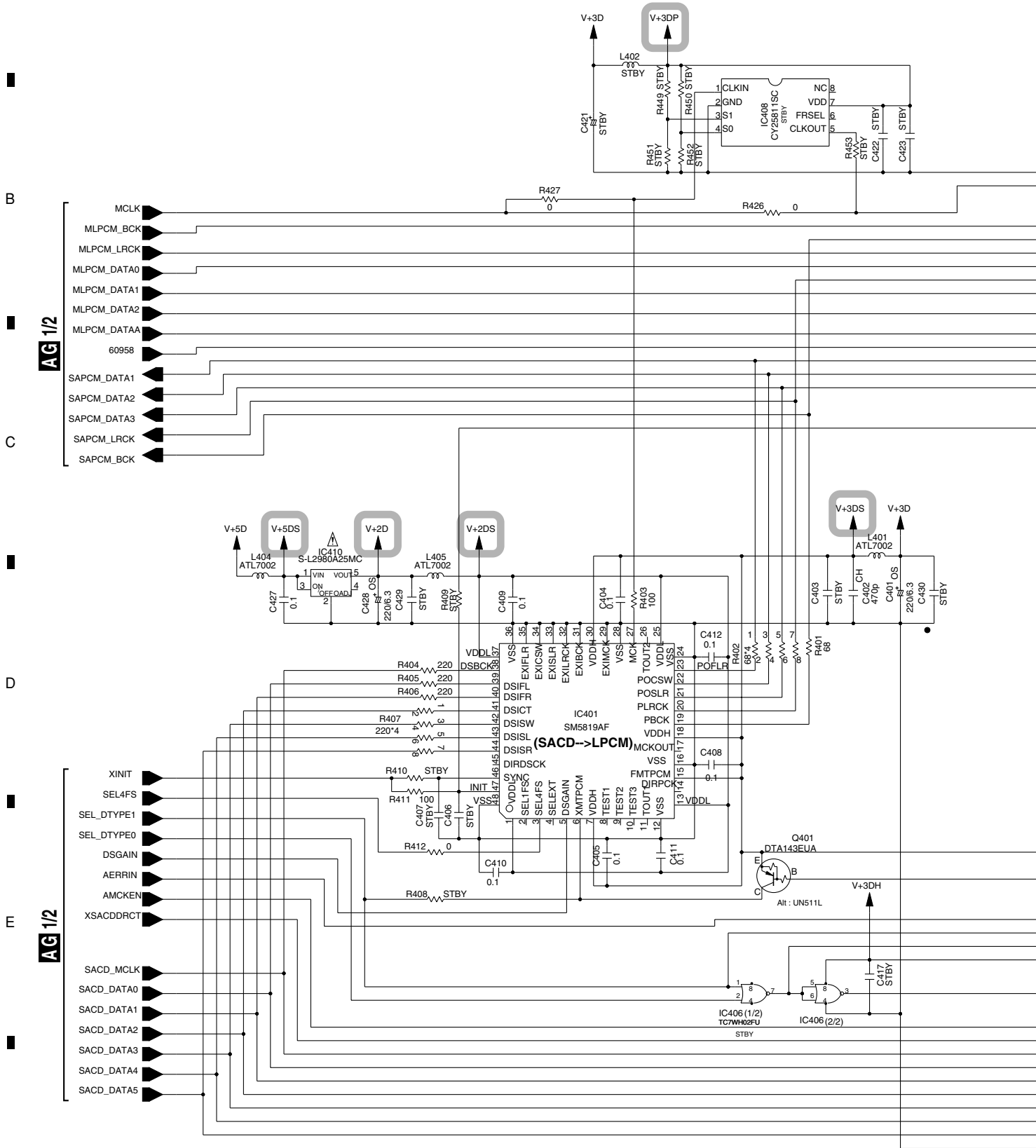
D

F

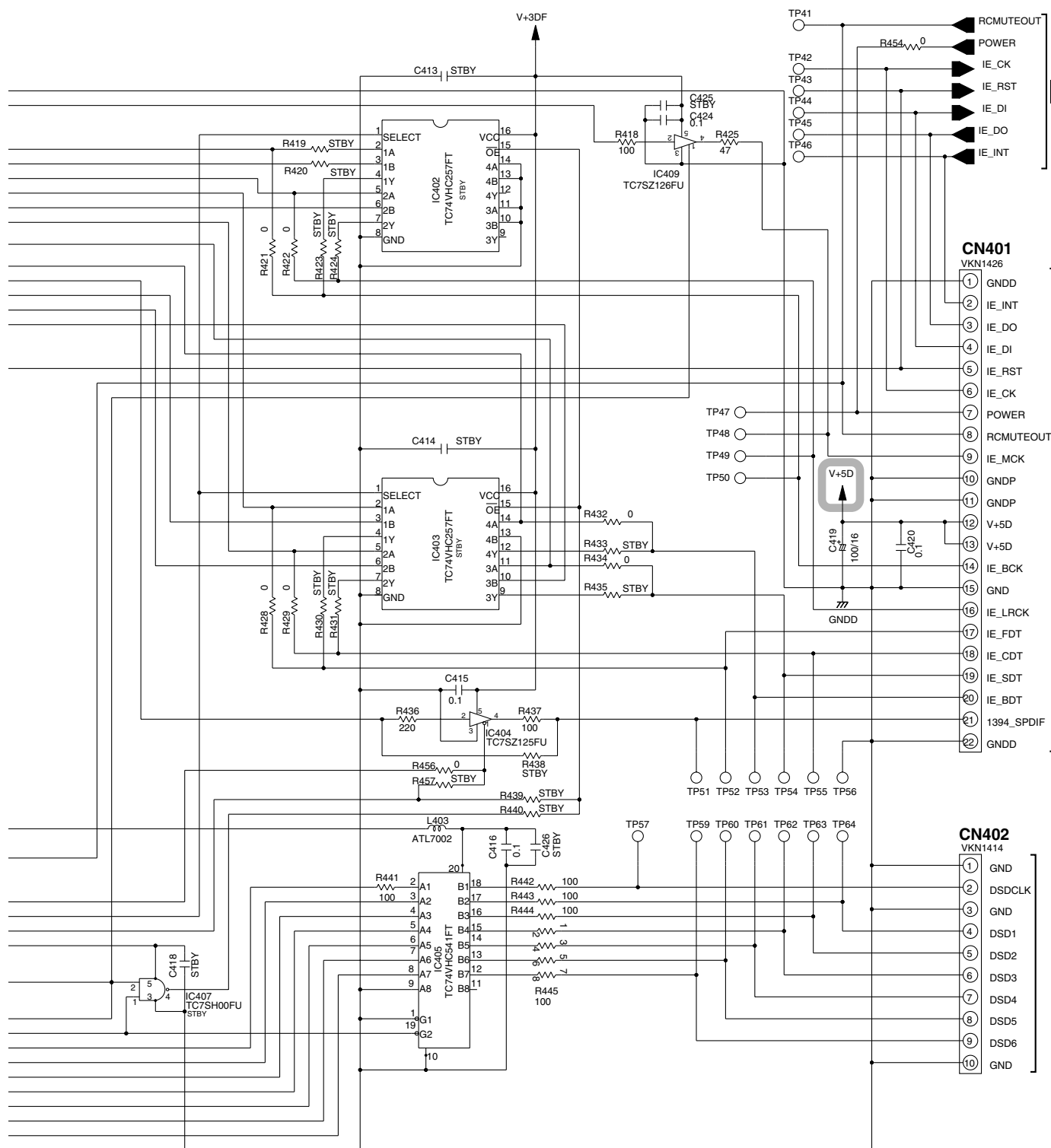
F

3.14 1394 ASSY (2/2) (VSX-2014i ONLY)

AG 2/2 1394 ASSY (AWK7834)



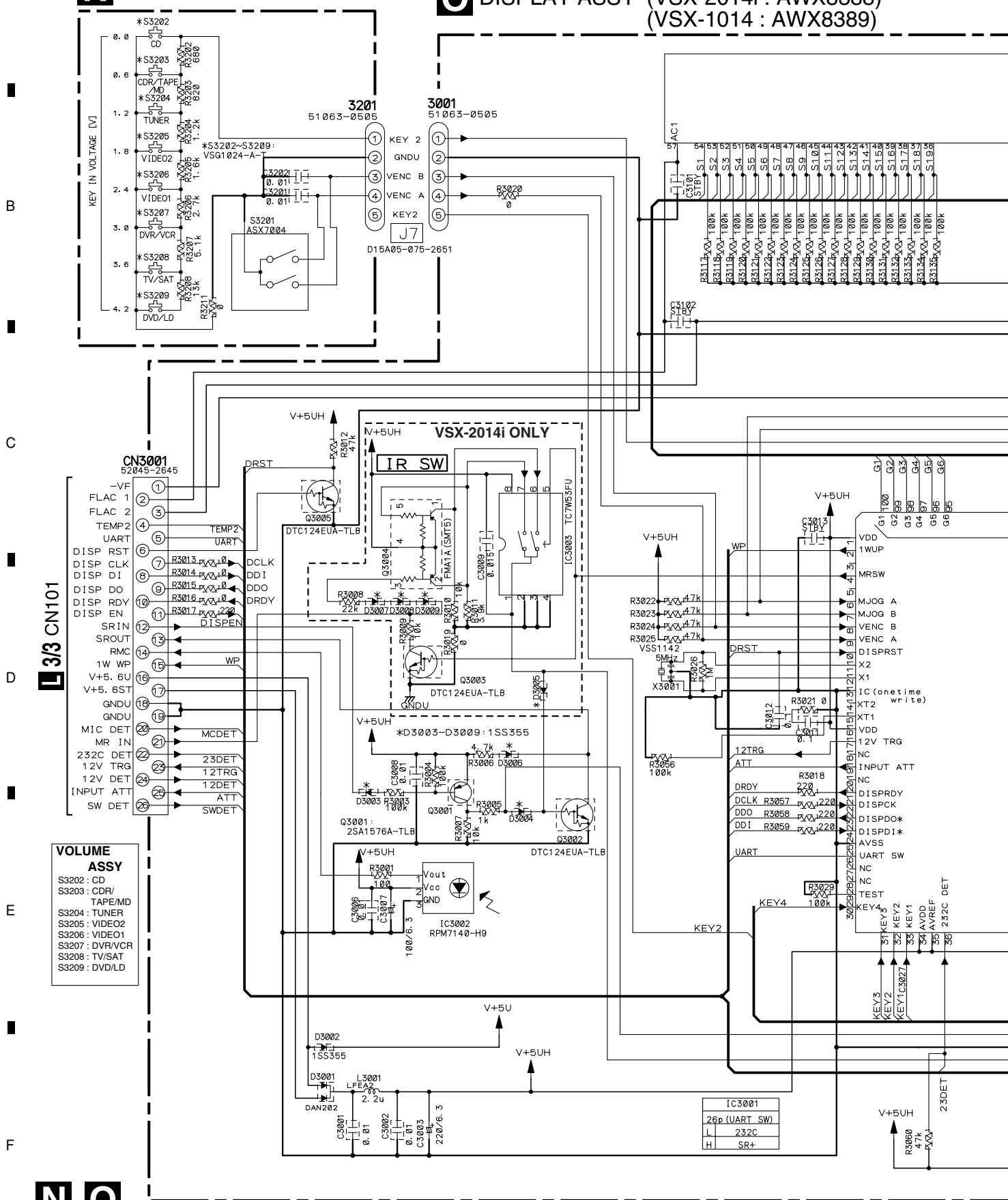
AG 2/2



3.15 VOLUME, DISPLAY and MULTI JOG ASSYS

N VOLUME ASSY (AWX8378)

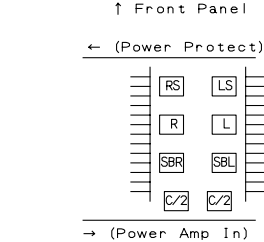
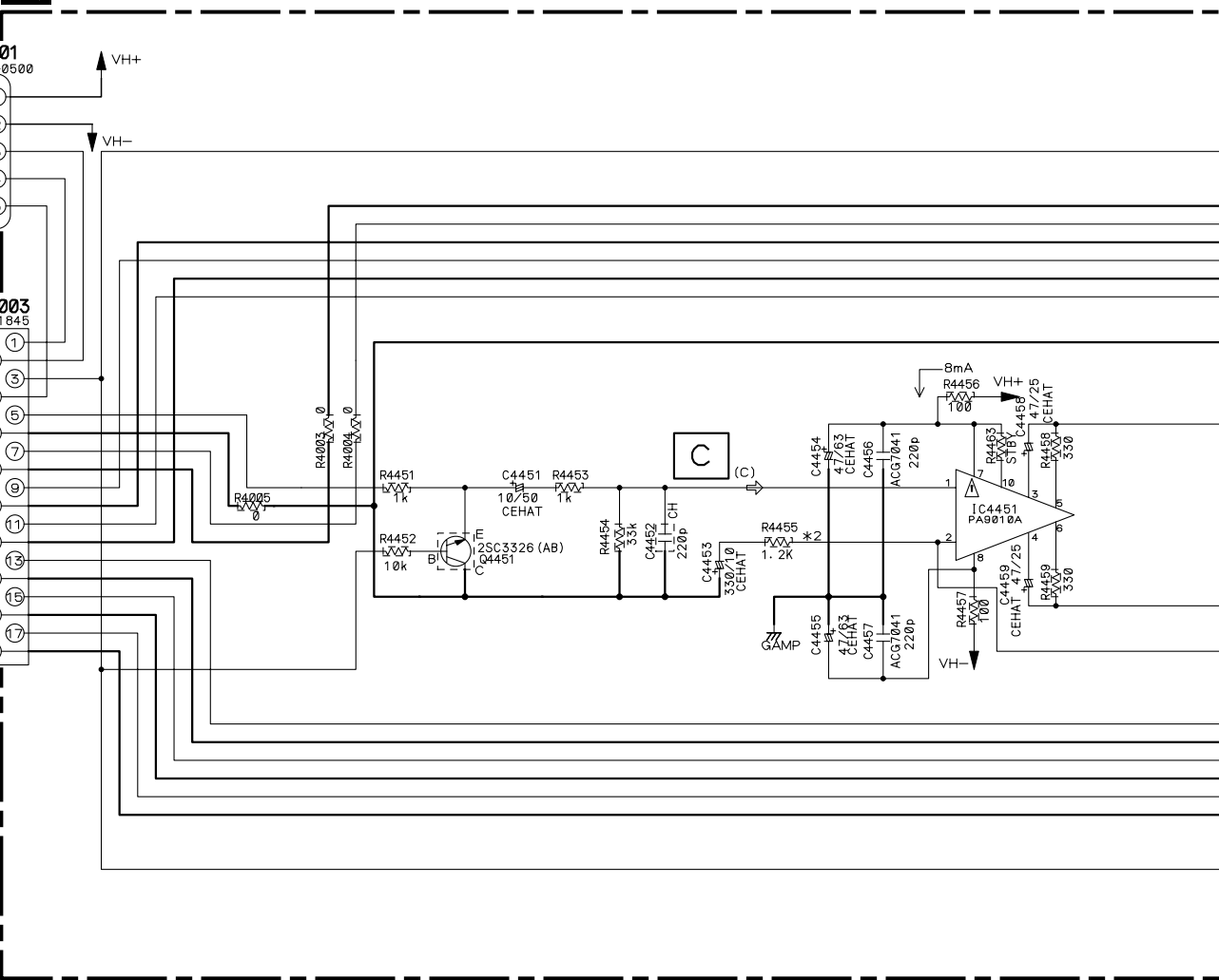
O DISPLAY ASSY (VSX-2014i : AWX8388)
(VSX-1014 : AWX8389)





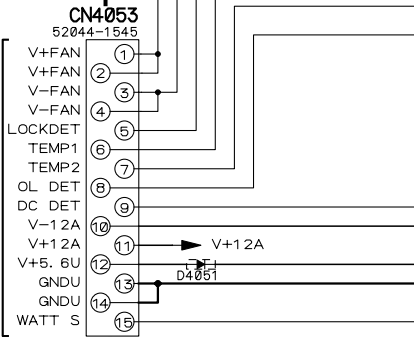
3.16 POWER AMP IN and POWER PROTECT ASSYS

Q POWER AMP IN ASSY (AWX8405)



LOCK DET	AT NORMAL	L	AT FAN LOCK	H
OL DET	AT NORMAL	H	AT OL DET	L
DC DET	AT NORMAL	H	AT DC DET	L

L 3/3
CN106



R POWER PROTECT ASSY (AWX8407)

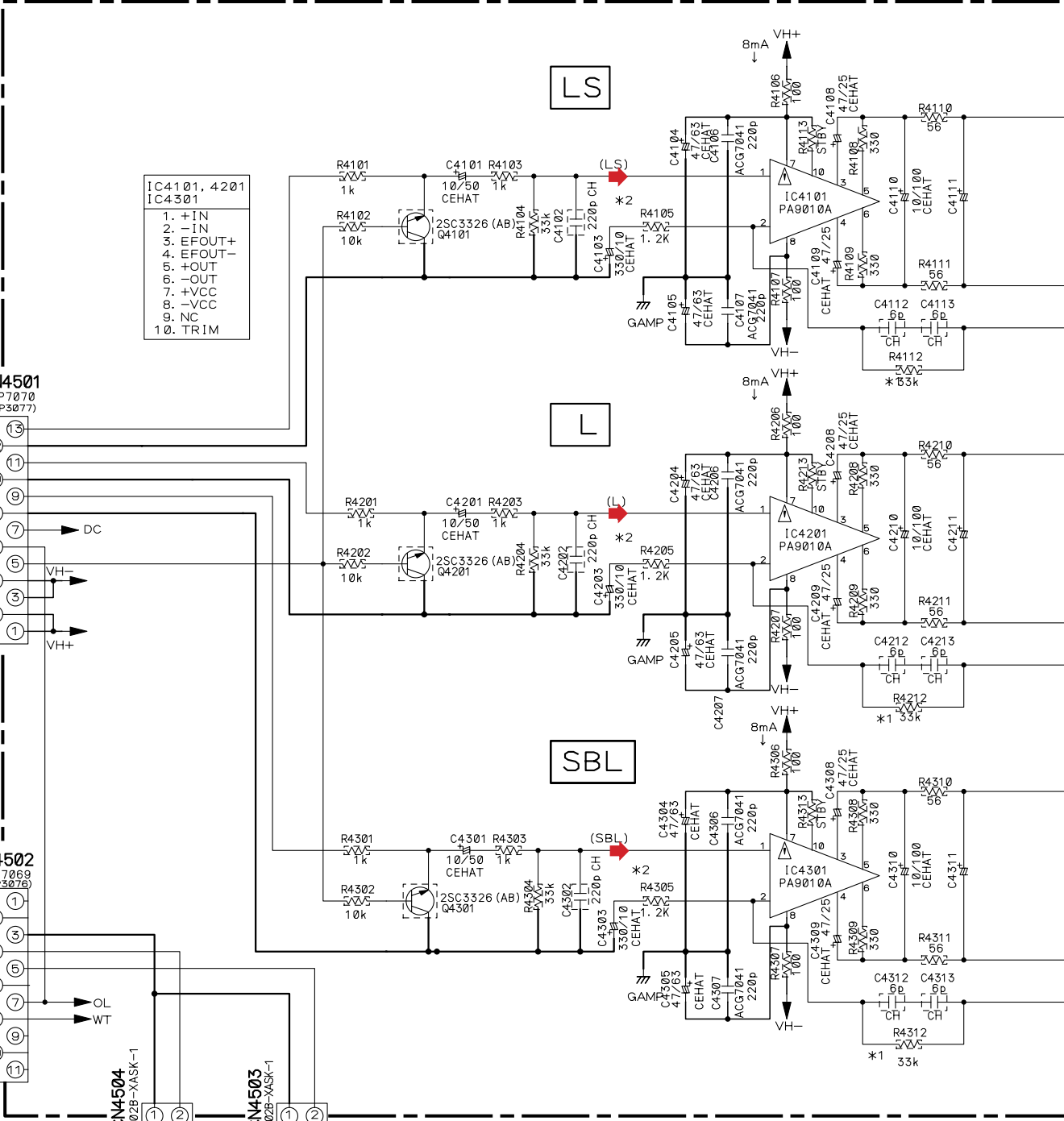
(C)



55

3.17 POWER AMP-L, POSI 1 L and POSI 2 L ASSYS

POWER AMP-L ASSY (AWX8403)



POSI 1_L ASSY (AWX8536)

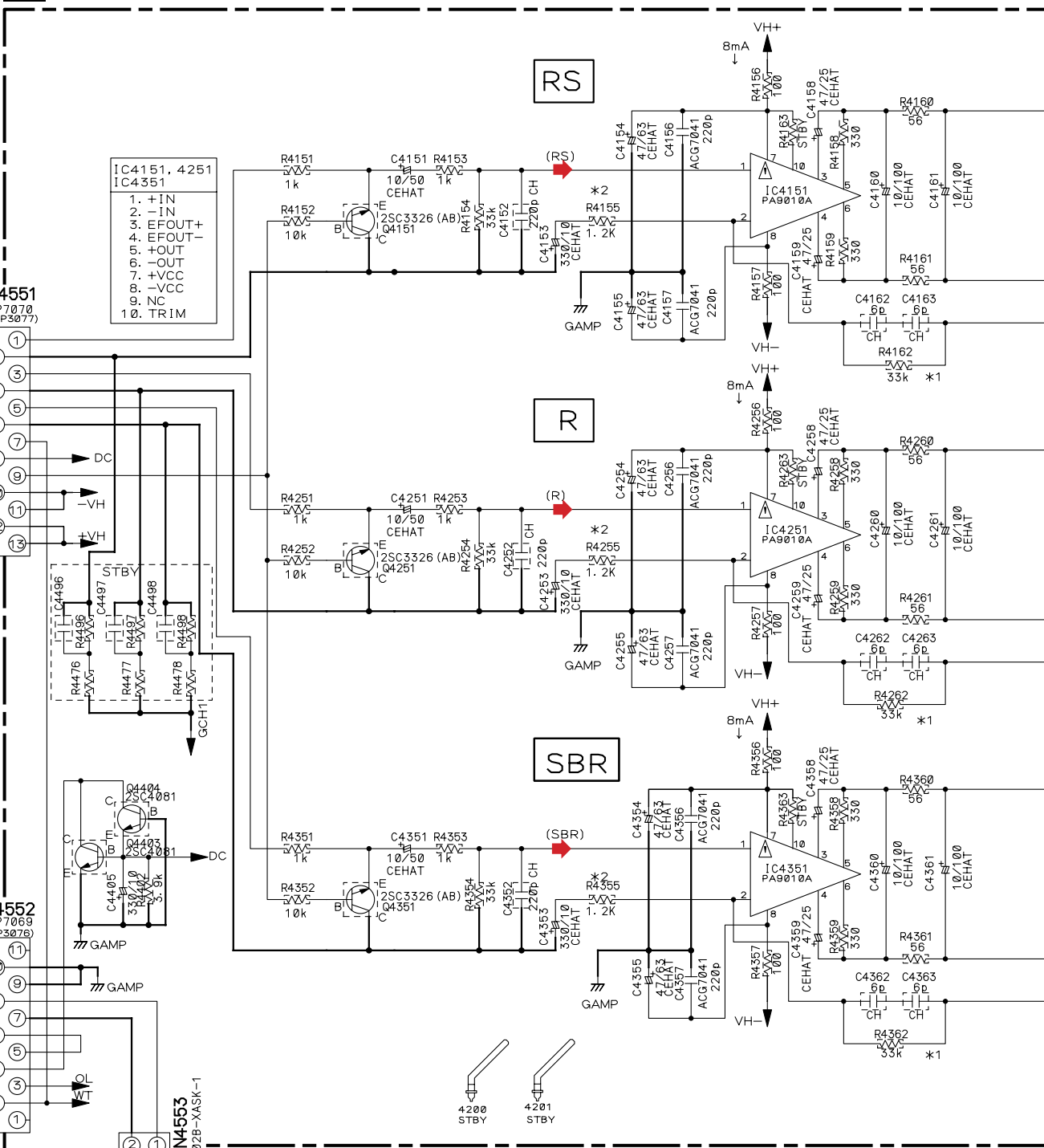
POSI 2_L ASSY (AWX8428)

POSI 1_L		POSI 2_L	
AWX	TH (4501)	AWX	TH (4502)
8536 PTFM04BH222Q2N34B0 (60°C)		8428 PTFM04BD222Q2N34B0 (100°C)	



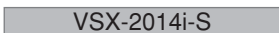
3.18 POWER AMP-R and POSI 1 R ASSYS

U POWER AMP-R ASSY (AWX8404)



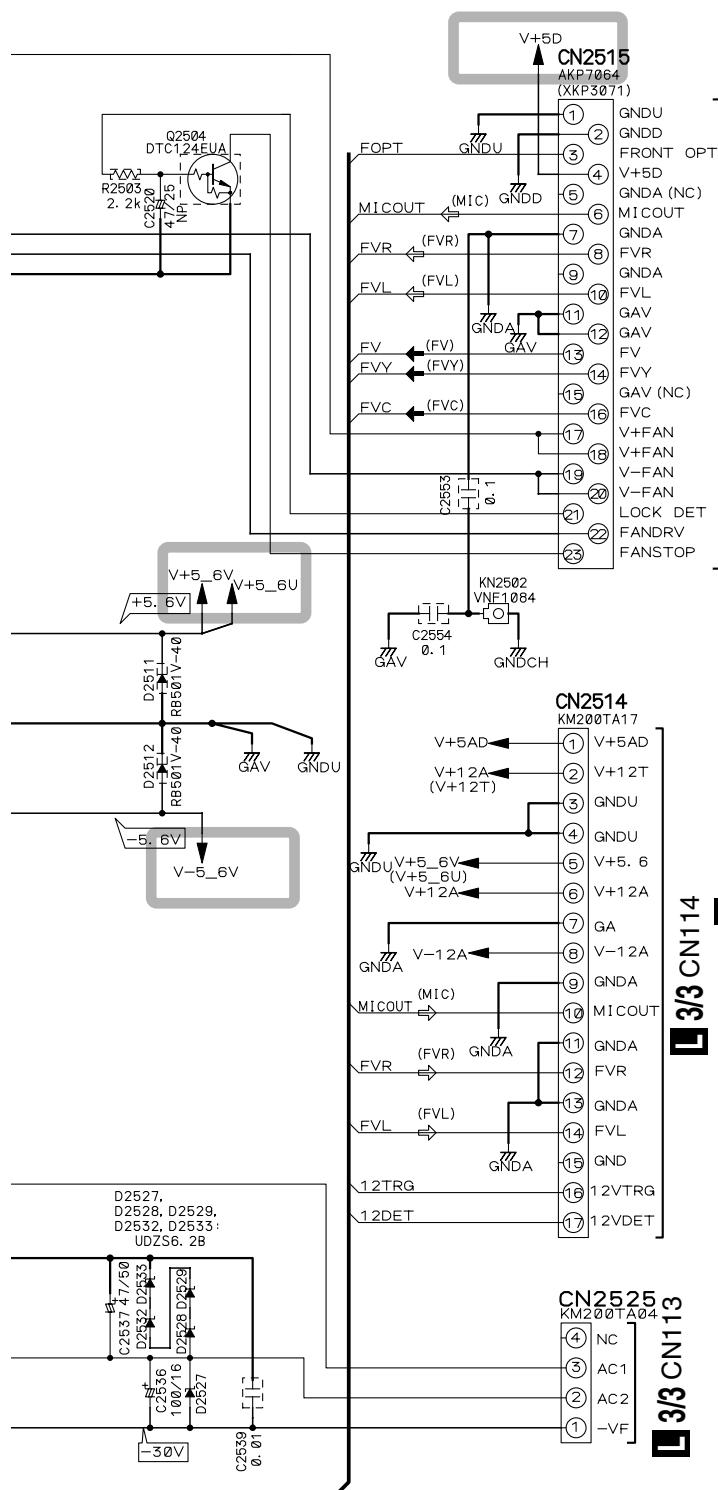
V POSI 1_R ASSY (AWX8539)





W REGULATOR ASSY
(VSX-2014i : AWX8365)
(VSX-1014 : AWX8369)





3/3 CN115

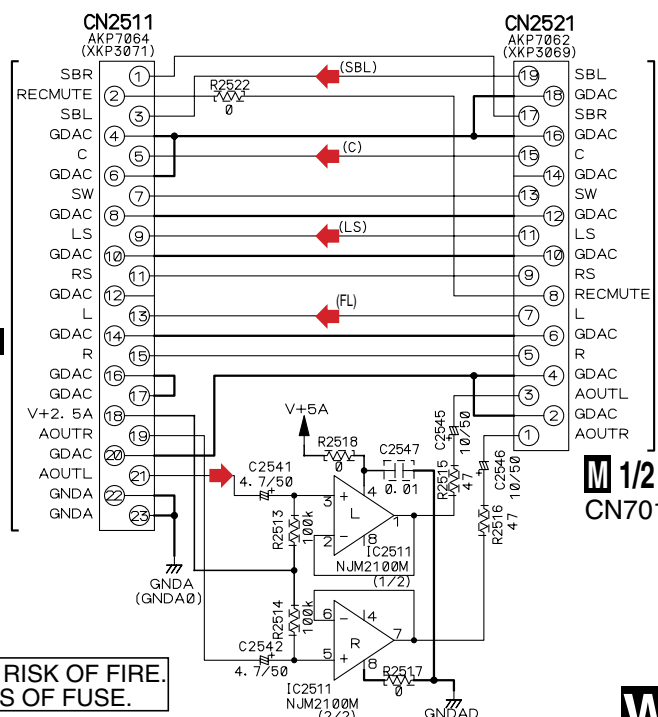
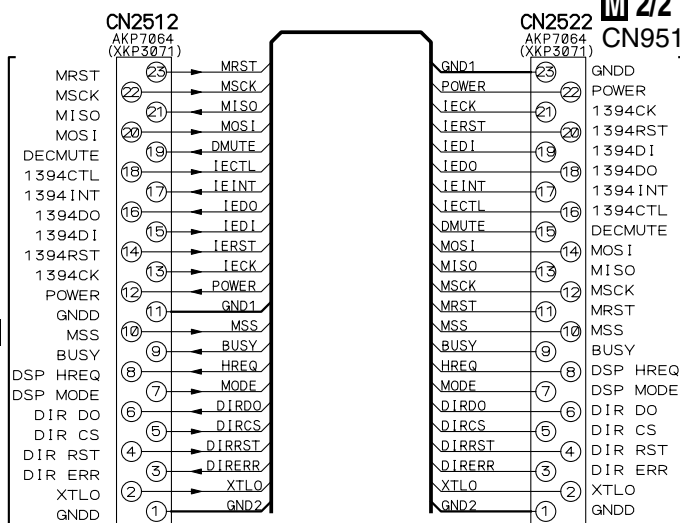
3/3 CN112

3/3 CN114

3/3 CN113

1/3 CN111

- ➔ : AUDIO SIGNAL ROUTE (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)



NOTE FOR FUSE REPLACEMENT

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

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

A

B

C

D

E

F

T1501

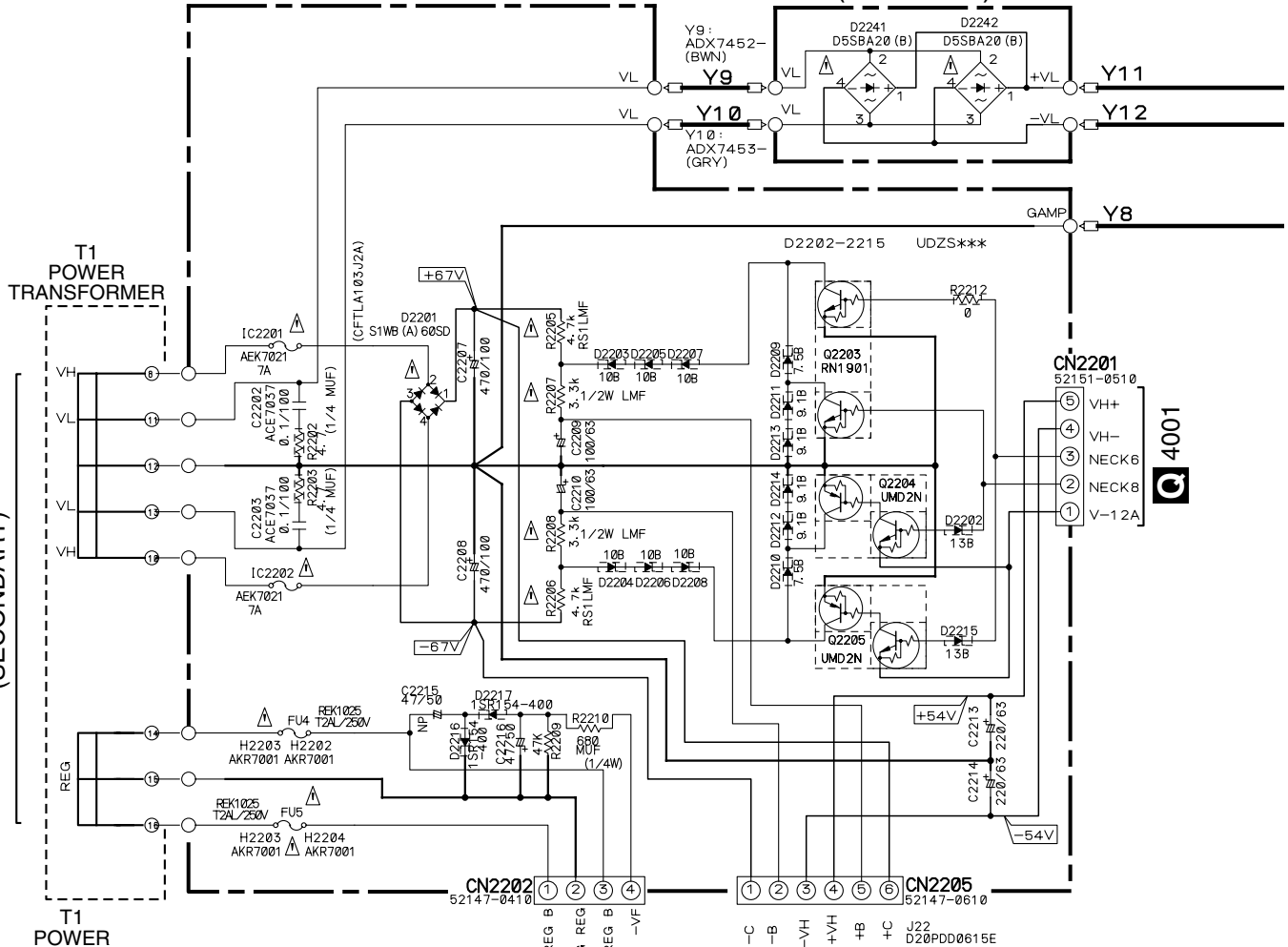
POWER TRANSFORMER
(SECONDARY)

T1501

POWER TRANSFORMER
(PRIMARY)

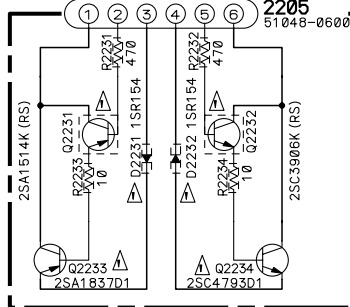
X TRANS 2-1 ASSY (AWX8370)

Z DIODE ASSY (AWX8376)



W 2502

AD CN2302



AA VH TR ASSY (AWX8411)

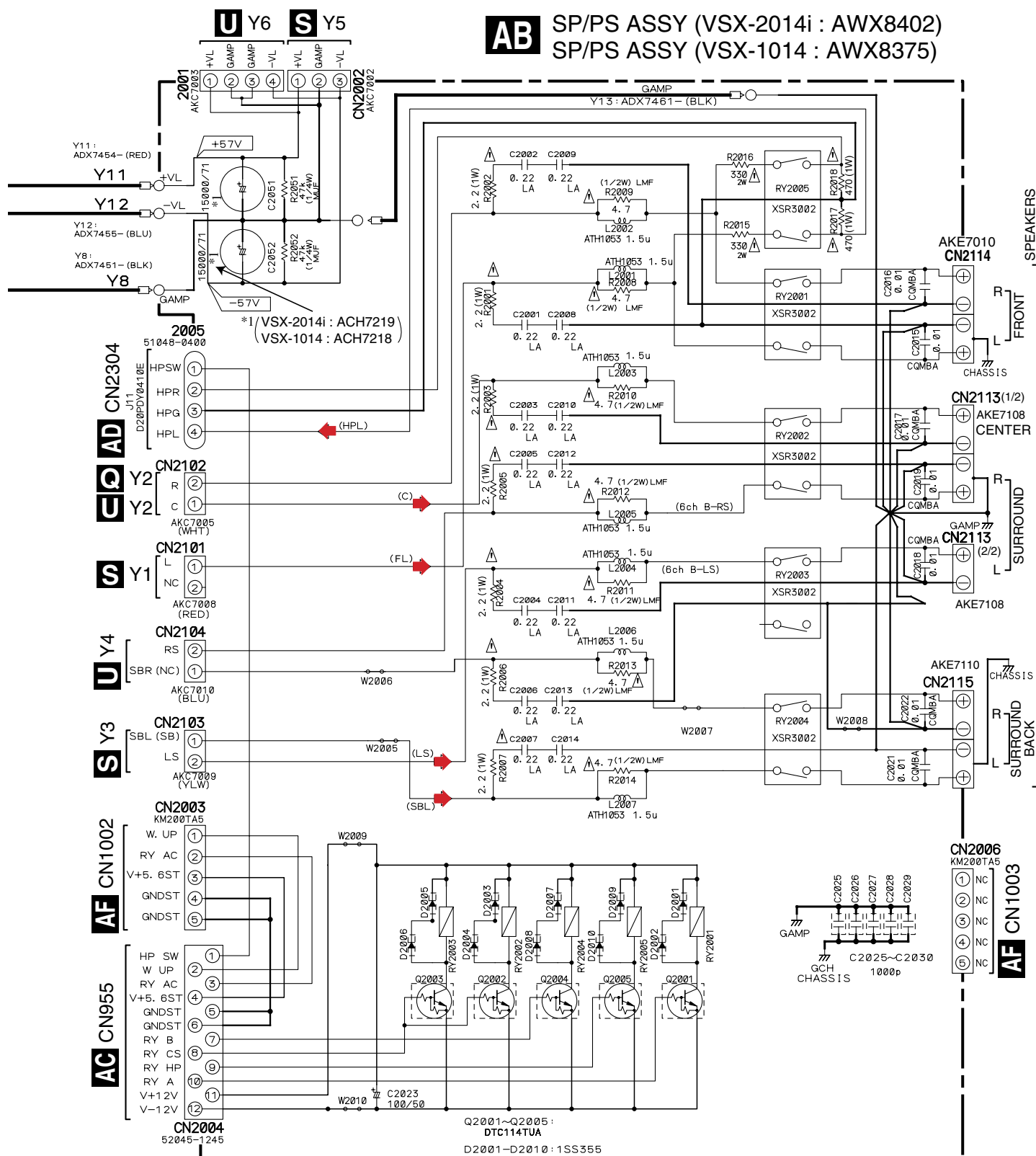
Y TRANS 2-2 ASSY (AWX8371)

• NOTE FOR FUSE REPLACEMENT

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

X Y Z AA

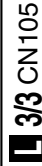
AB SP/PS ASSY (VSX-2014i : AWX8402)
SP/PS ASSY (VSX-1014 : AWX8375)



(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)
(HPL) : AUDIO SIGNAL ROUTE (PHONES Lch)

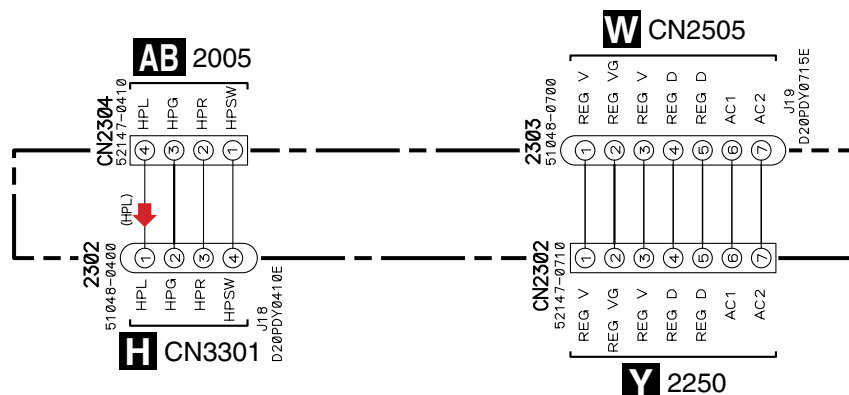
4

F



AD TRANS SIDE ASSY (AWX8417)

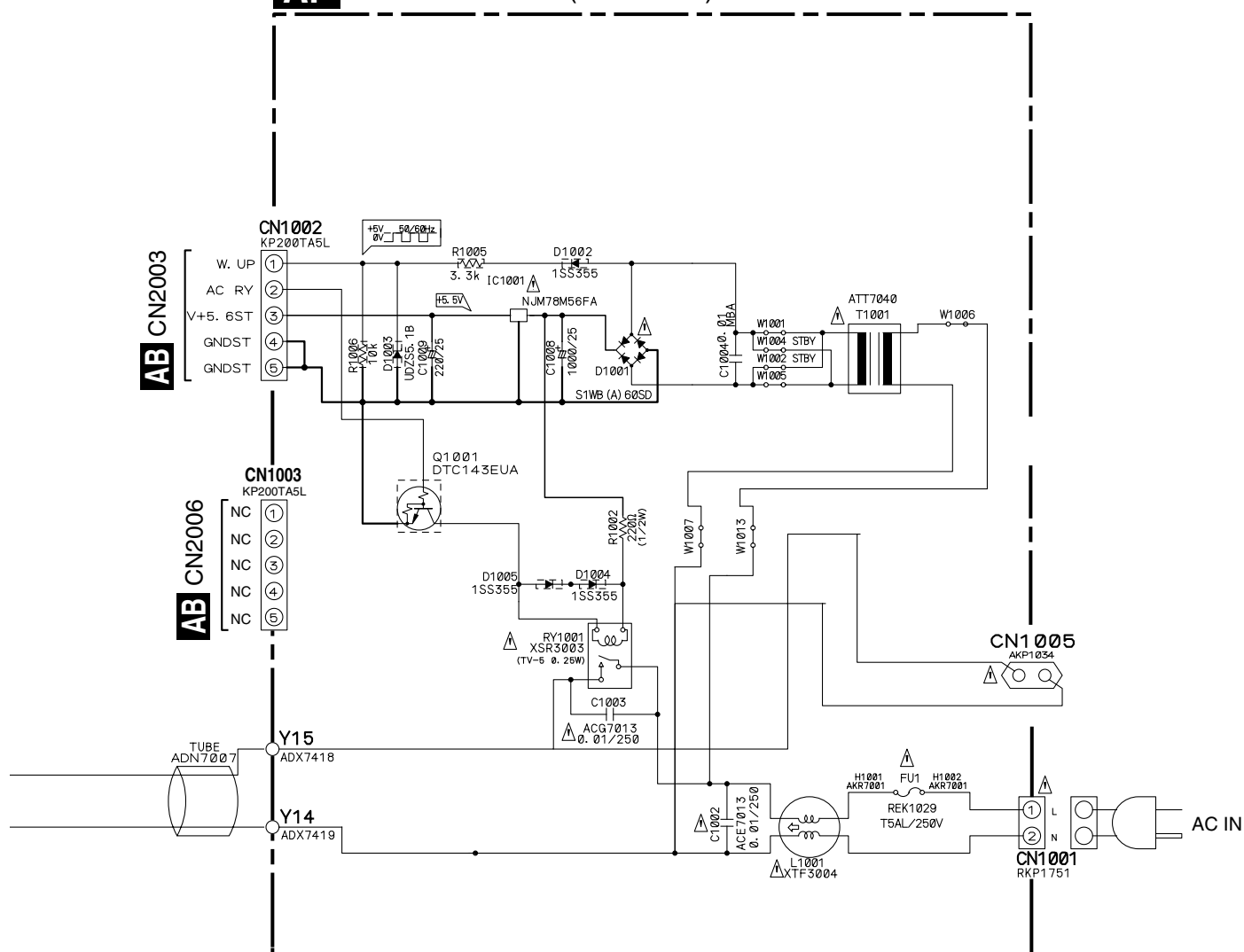
(HPL)
 : AUDIO SIGNAL ROUTE (PHONES Lch)



• NOTE FOR FUSE REPLACEMENT

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

AF PRIMARY ASSY (AWX8386)



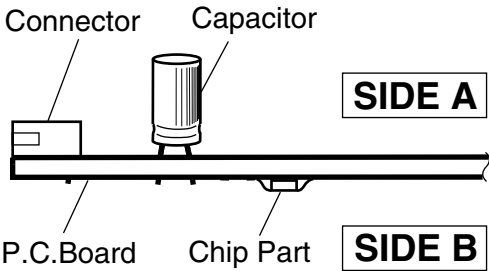
4. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

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

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
		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.

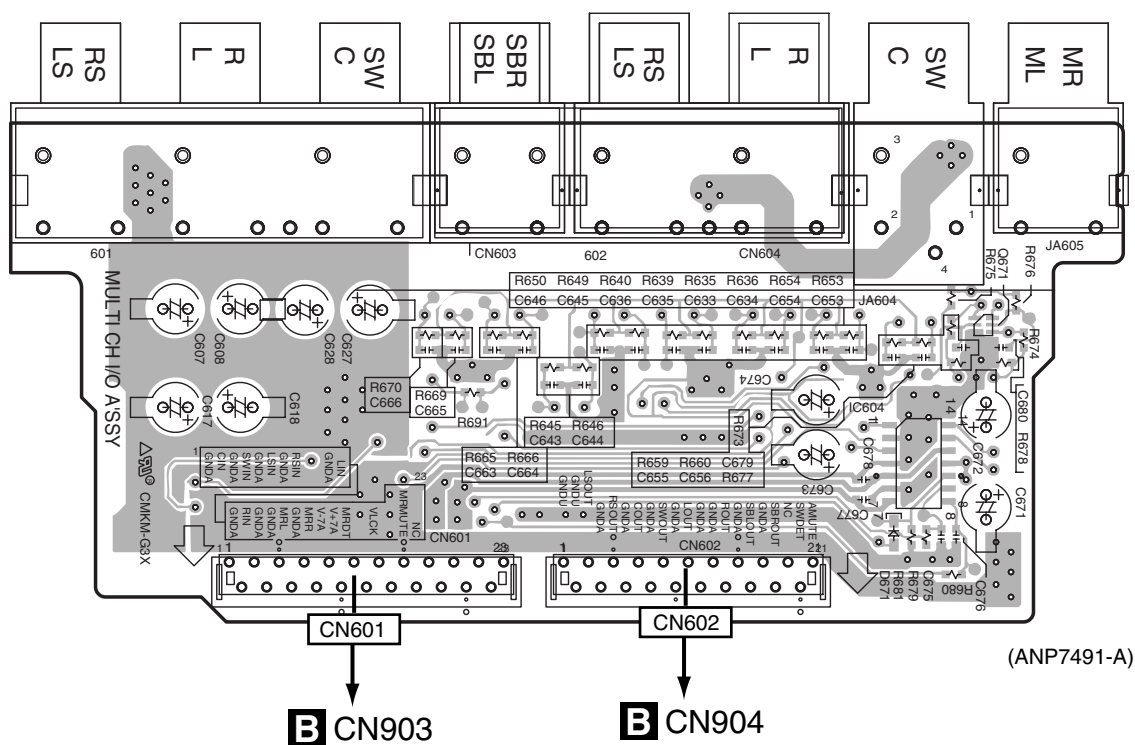


4.1 MULTI CH I/O ASSY

SIDE A

SIDE A

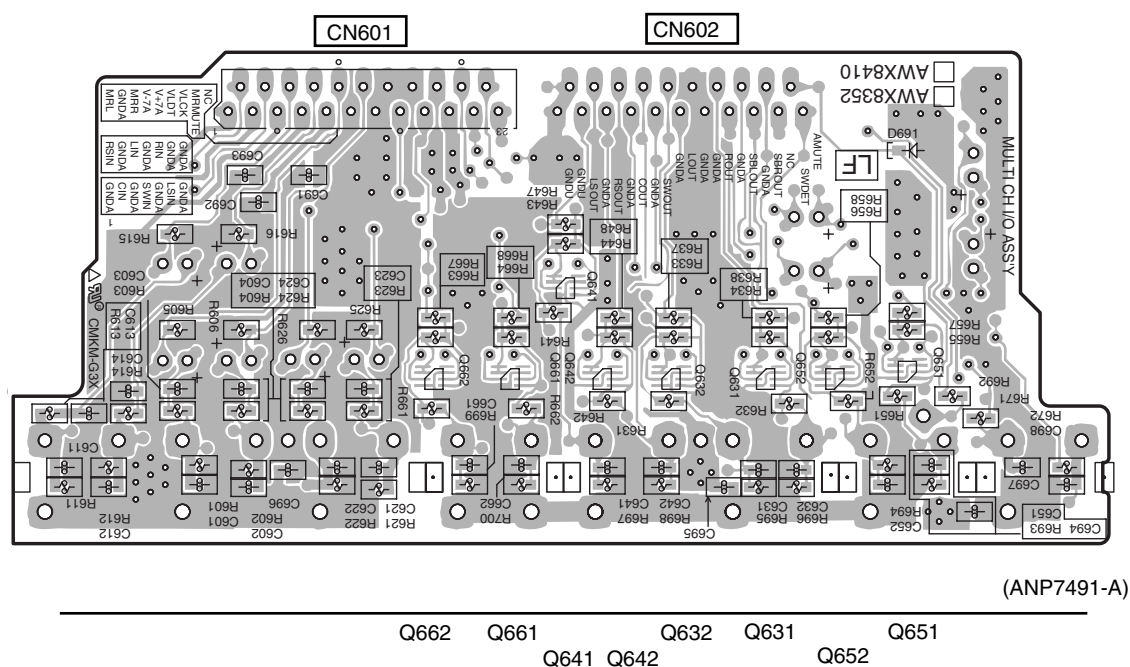
A MULTI CH I/O ASSY



SIDE B

SIDE B

A MULTI CH I/O ASSY



A

A

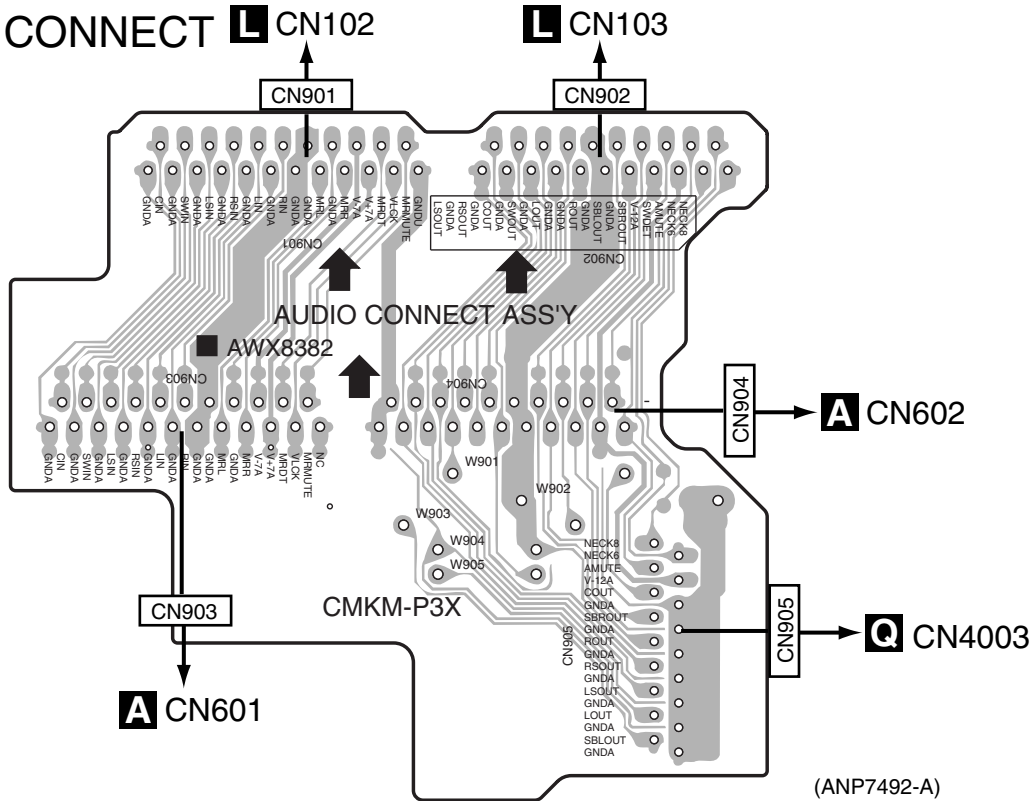
Q662 Q661 Q632 Q631 Q651
Q641 Q642 Q652

4.2 AUDIO CONNECT ASSY

SIDE A

SIDE A

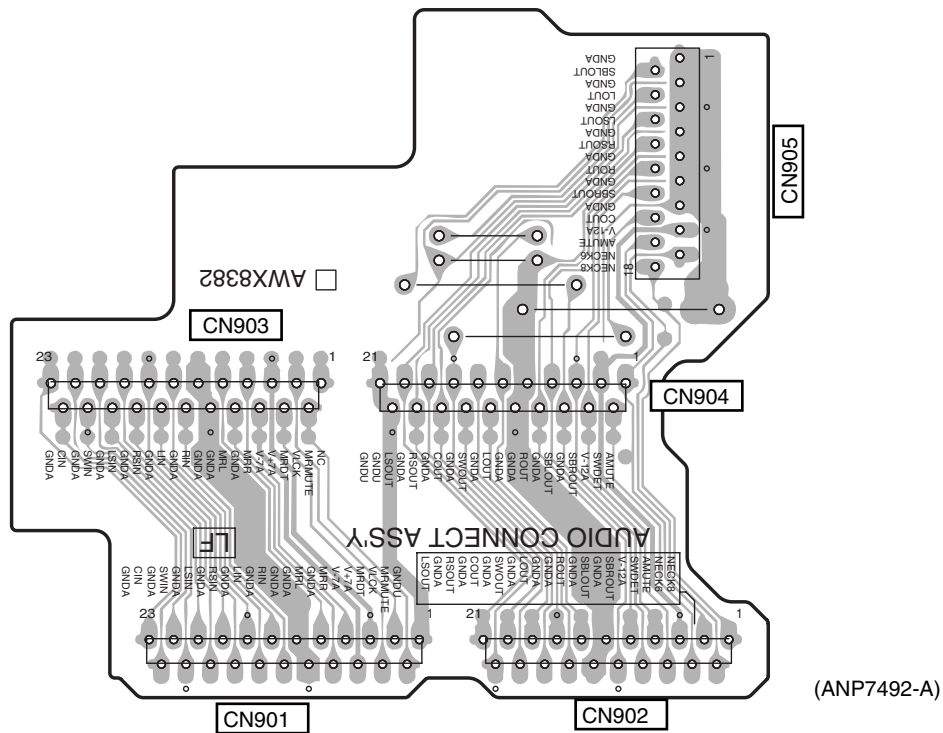
B AUDIO CONNECT ASSY



B AUDIO CONNECT ASSY

SIDE B

SIDE B



B

B

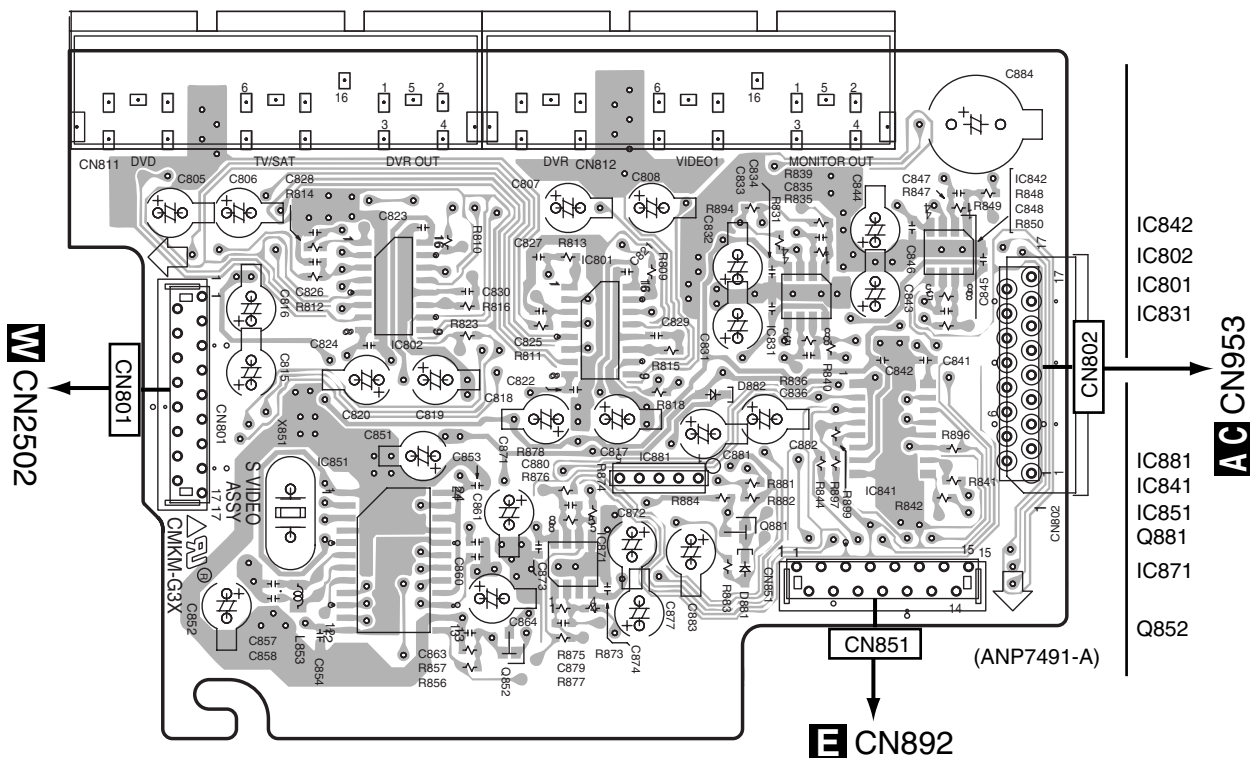
69

4.4 S VIDEO ASSY

SIDE A

SIDE A

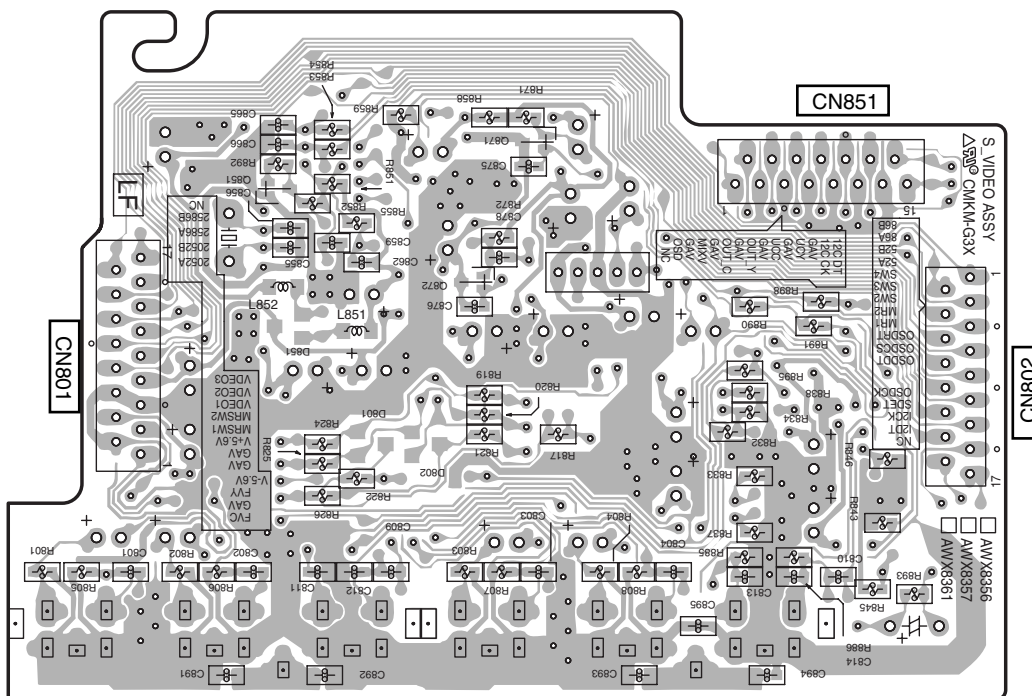
D S VIDEO ASSY



SIDE B

SIDE B

D S VIDEO ASSY



(ANP7491-A)

D

D

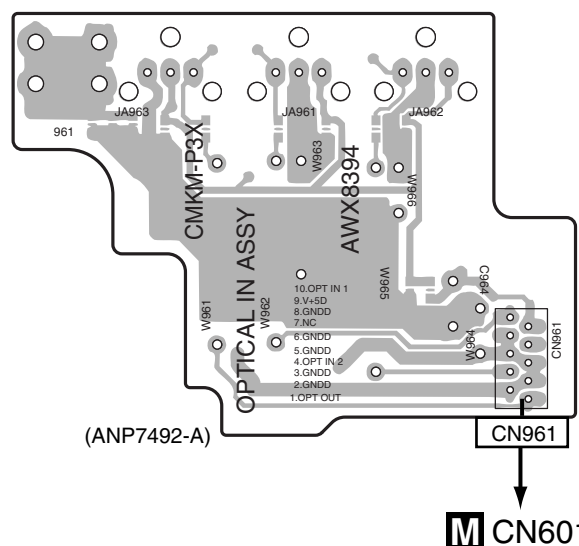
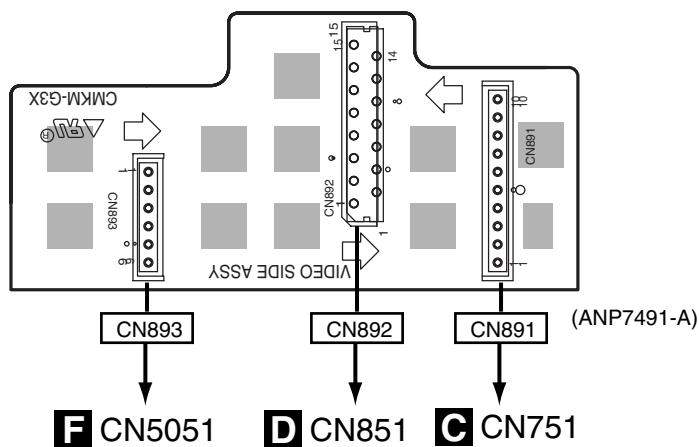
4.5 VIDEO SIDE and OPTICAL-IN ASSYS

SIDE A

SIDE A

E VIDEO SIDE ASSY

G OPTICAL-IN ASSY

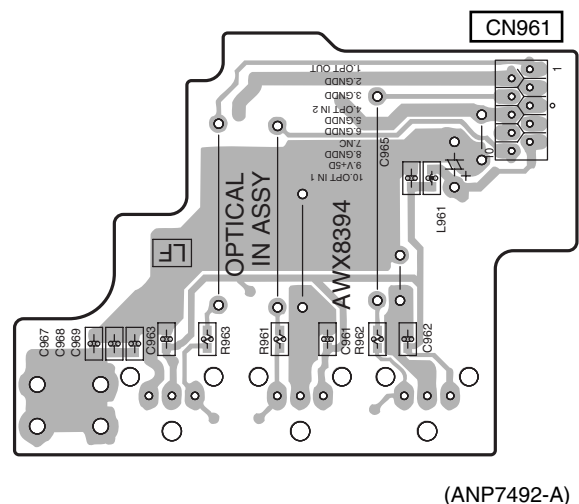
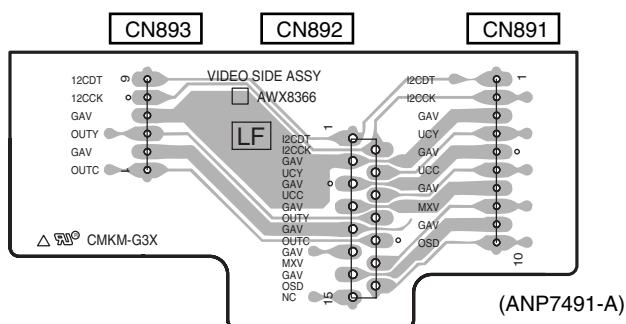


SIDE B

SIDE B

E VIDEO SIDE ASSY

G OPTICAL-IN ASSY



E G

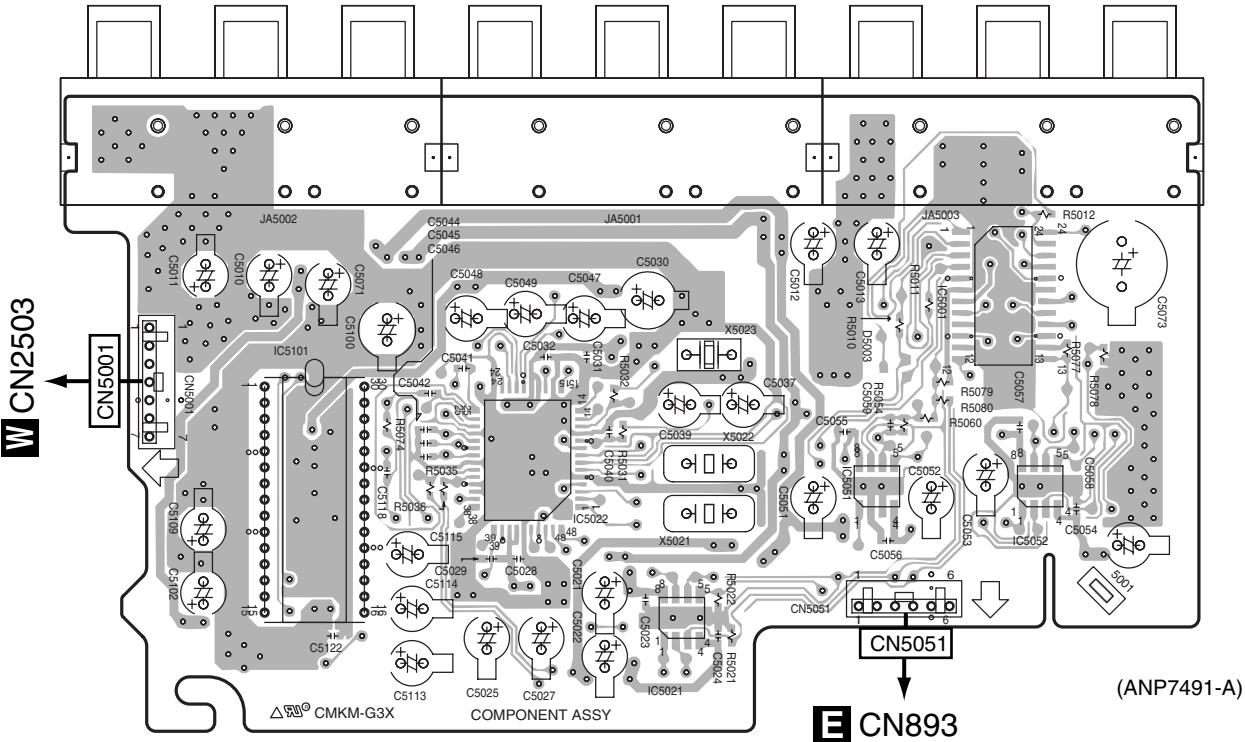
E G

4.6 COMPONENT ASSY

SIDE A

SIDE A

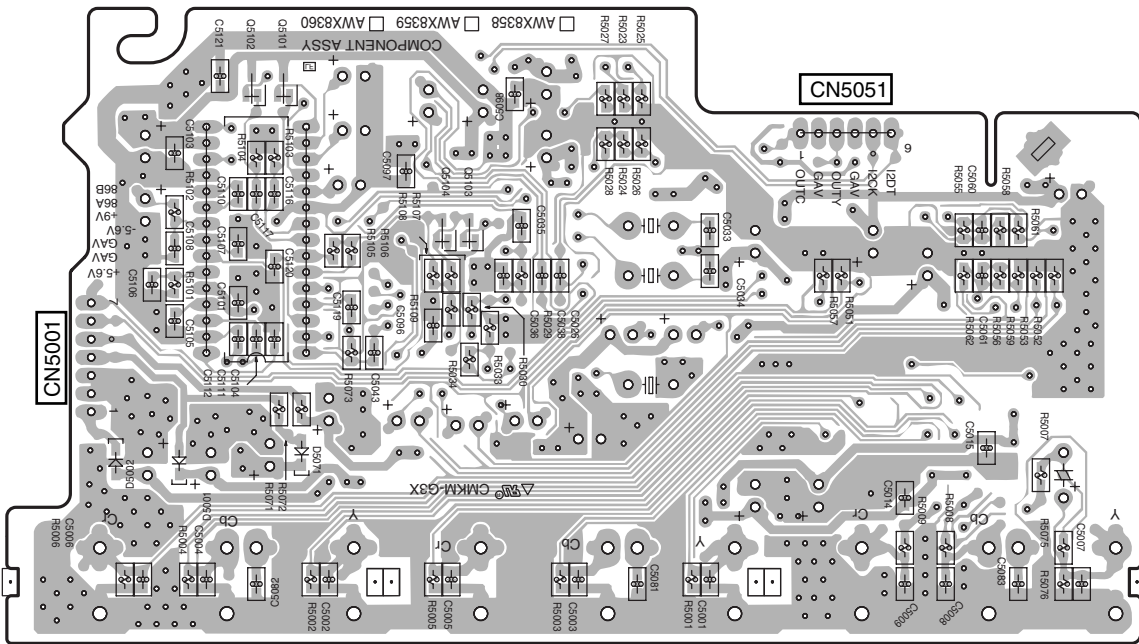
F COMPONENT ASSY



SIDE B

SIDE B

F COMPONENT ASSY



Q5102 Q5101 Q5104 Q5103

VSX-2014i-S

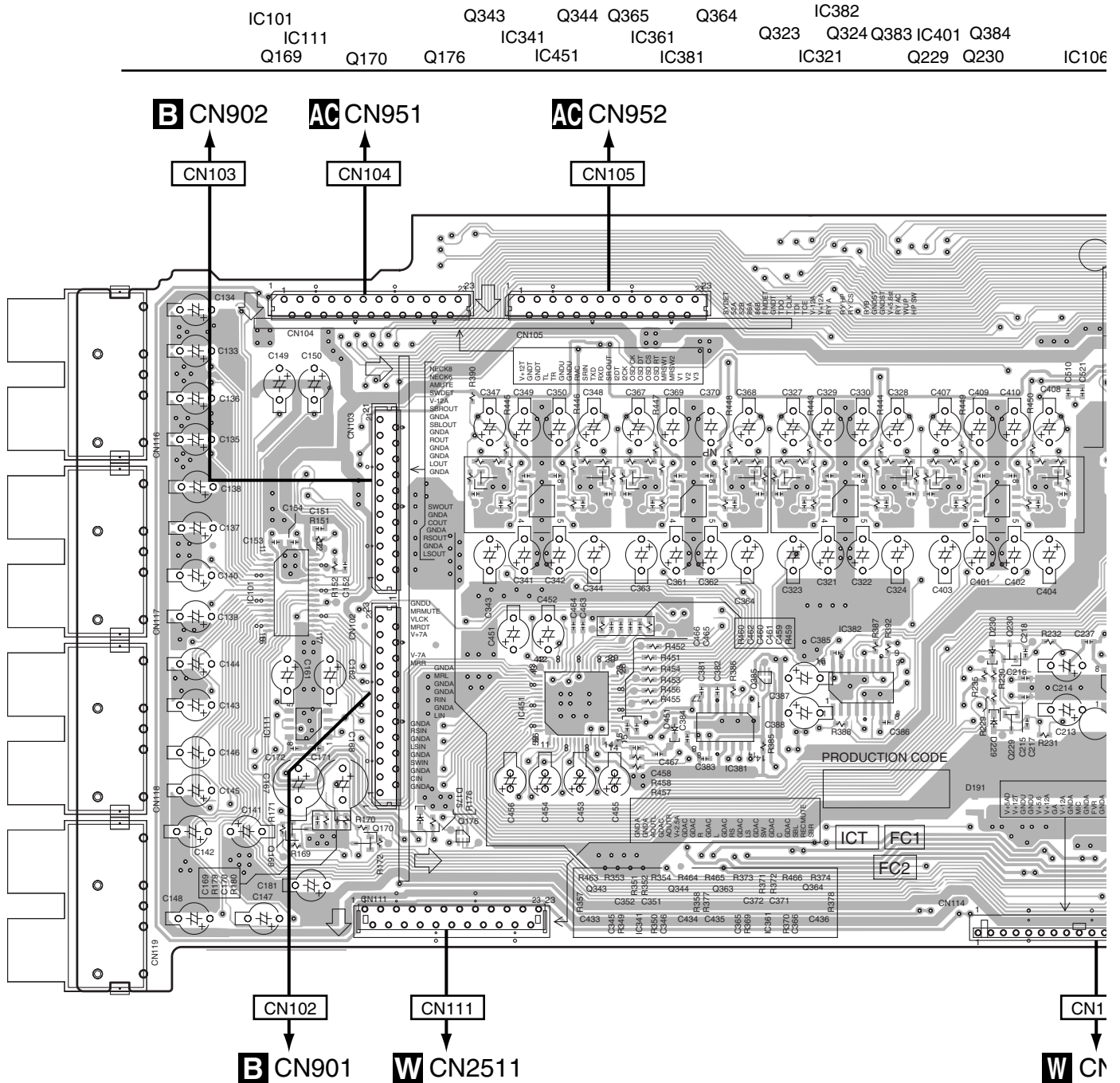
F

F

4.8 MAIN CONTROL ASSY

SIDE A

MAIN CONTROL ASSY



SIDE A

A

I384
230

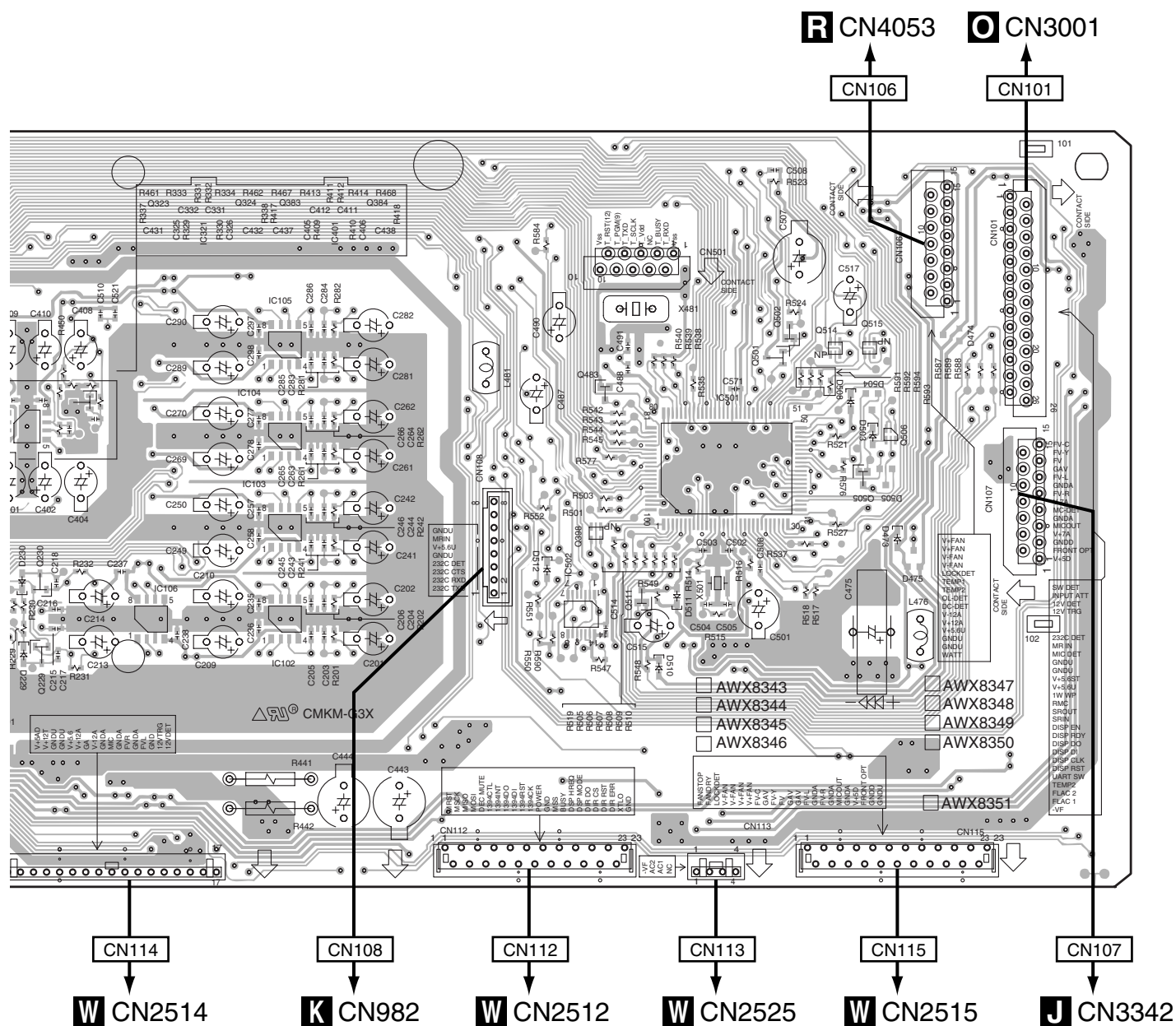
IC106

IC103
IC102IC105
IC104

IC502 Q399 Q483

IC501 Q501 Q502 Q505

Q514 Q515



(ANP7491-A)

F

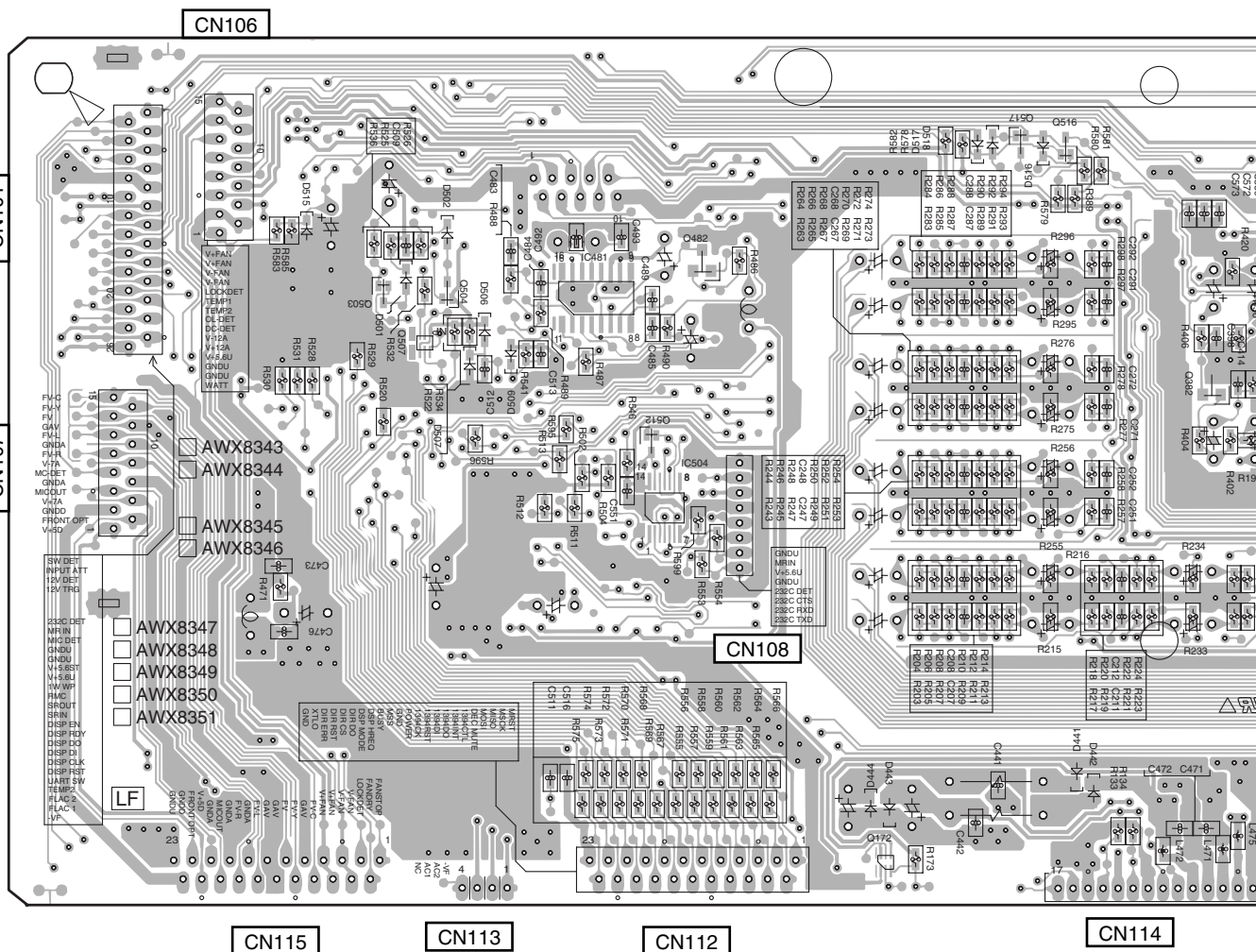
L

SIDE B

A

Q507 Q503 Q504 IC481 IC504 Q172 Q517 Q516 Q382

MAIN CONTROL ASSY

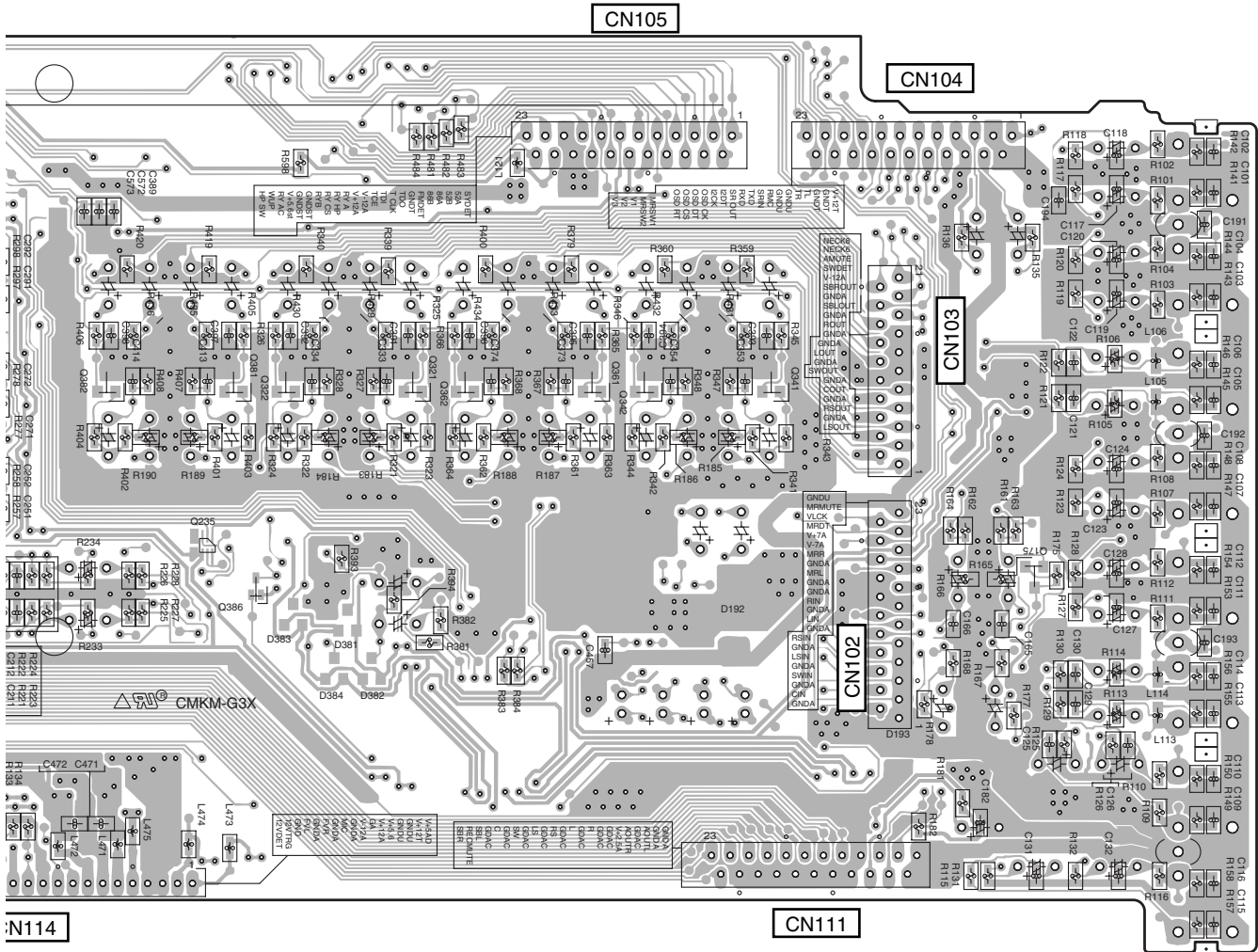


D

E

F

Q381 Q322
Q382 Q235 Q386 Q321 Q362 Q361 Q342 Q341 Q175



(ANP7491-A)

4

78

3002



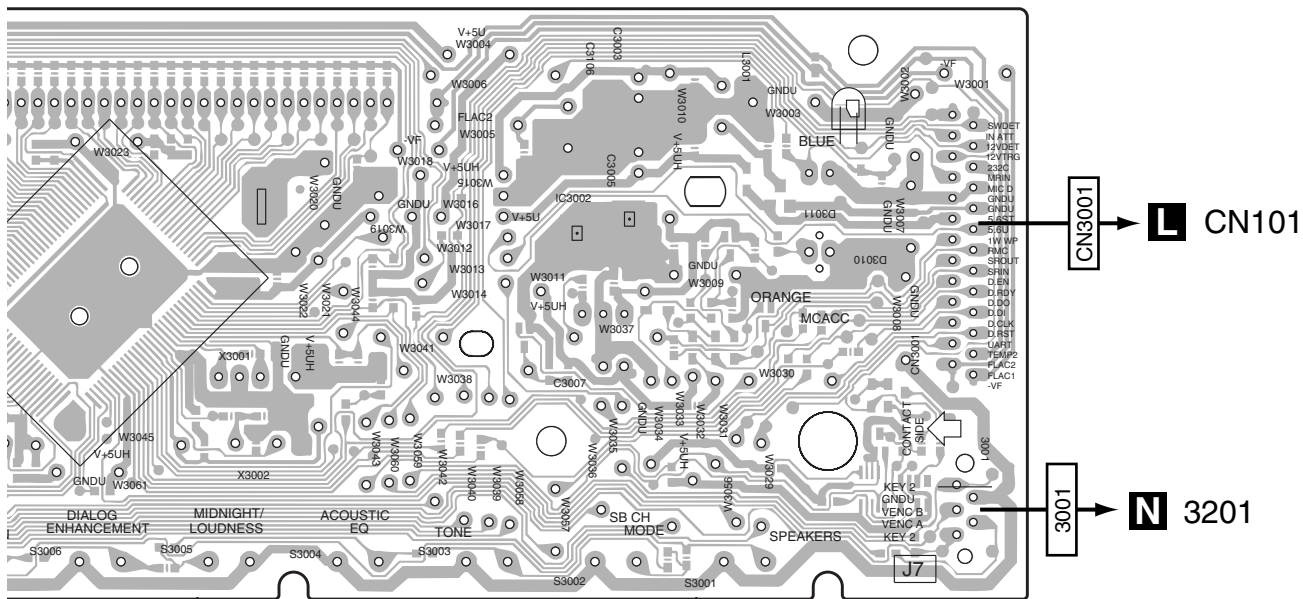
002



4

SIDE A

A



B

C

(ANP7492-A)

IC3002

IC3001

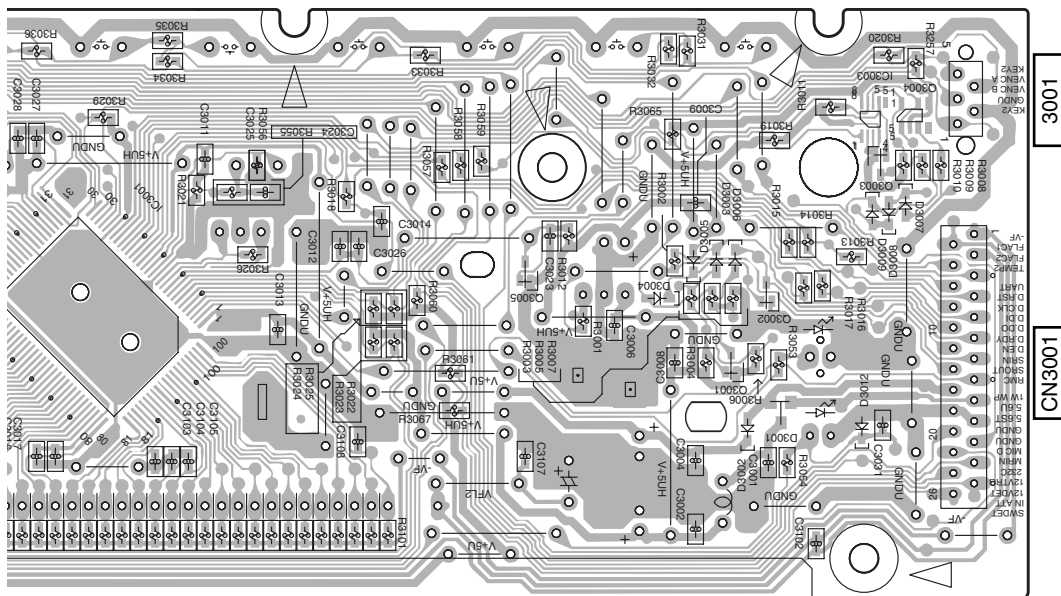
Q3005

Q3001 Q3002

IC3003
Q3003 Q3004

SIDE B

D



E

F

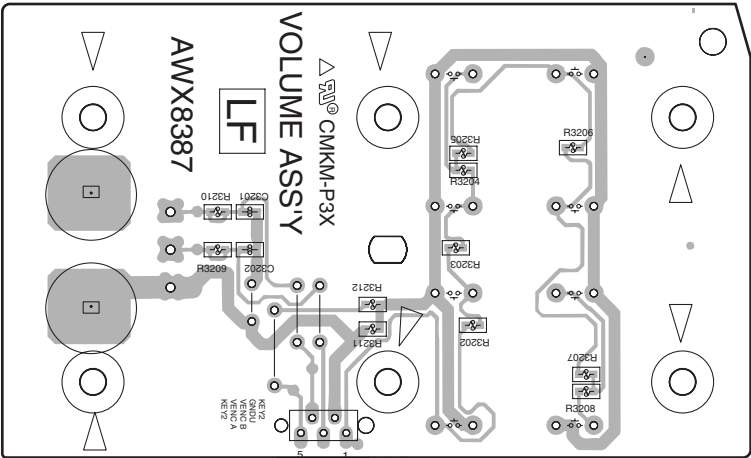
(ANP7492-A)

4

SIDE B

SIDE B

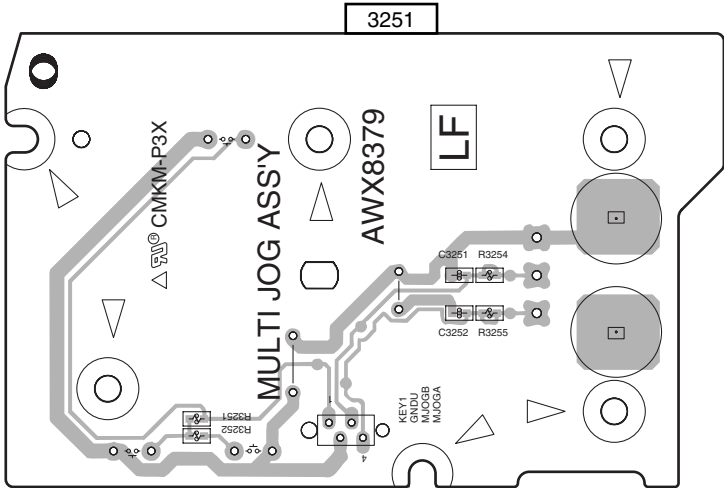
N VOLUME ASSY



3201

(ANP7492-A)

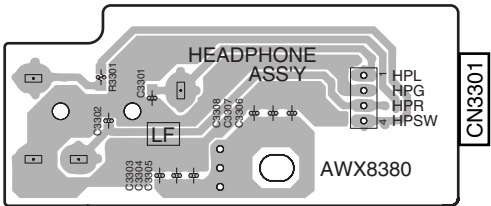
P MULTI JOG ASSY



3251

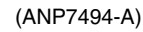
(ANP7492-A)

N HEADPHONE ASSY



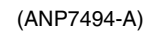
(ANP7492-A)

SIDE A

B CN905

SIDE B

Q POWER AMP IN ASSY



Q4451

Q

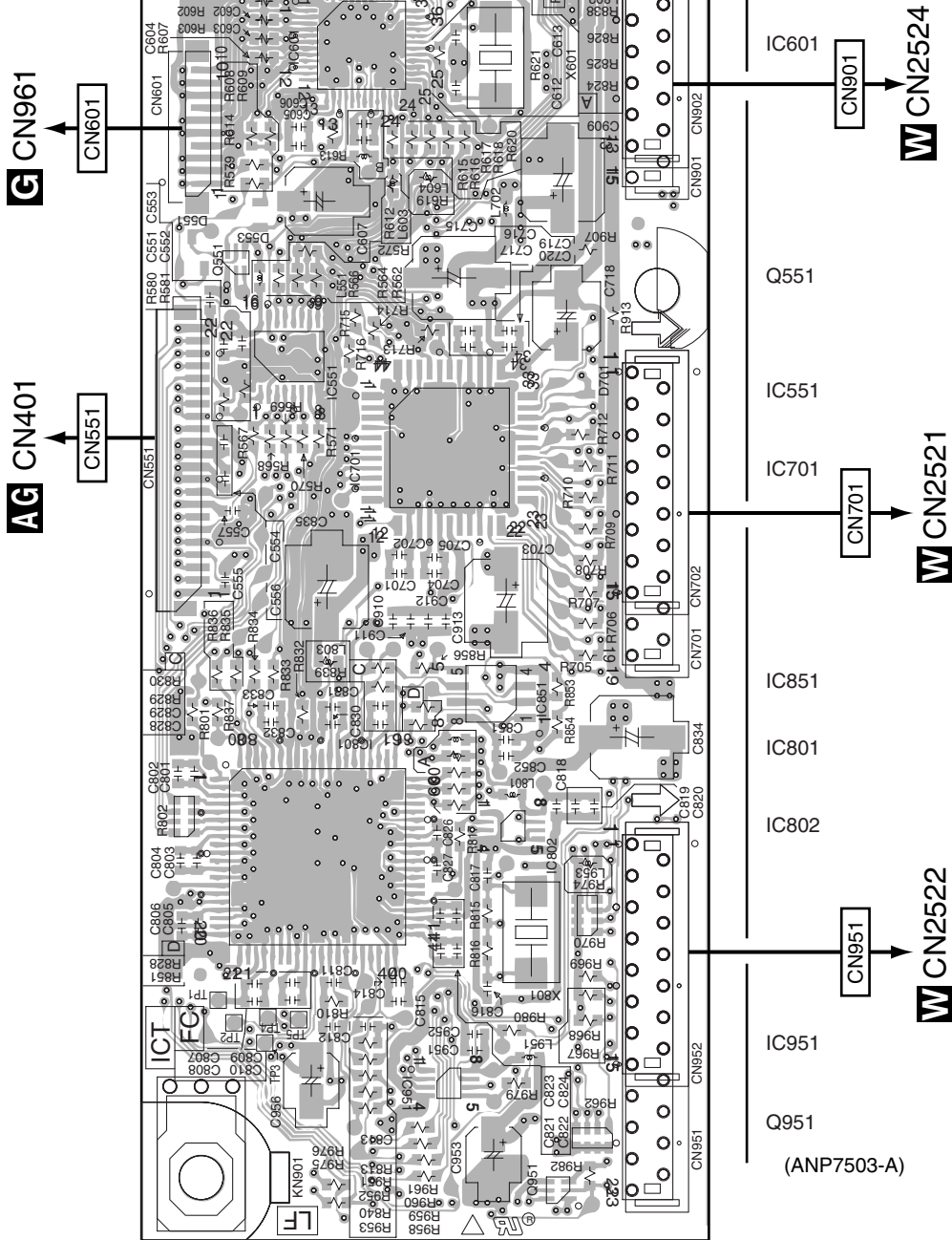
4.13 DSP ASSY

SIDE A

SIDE A

M DSP ASSY

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

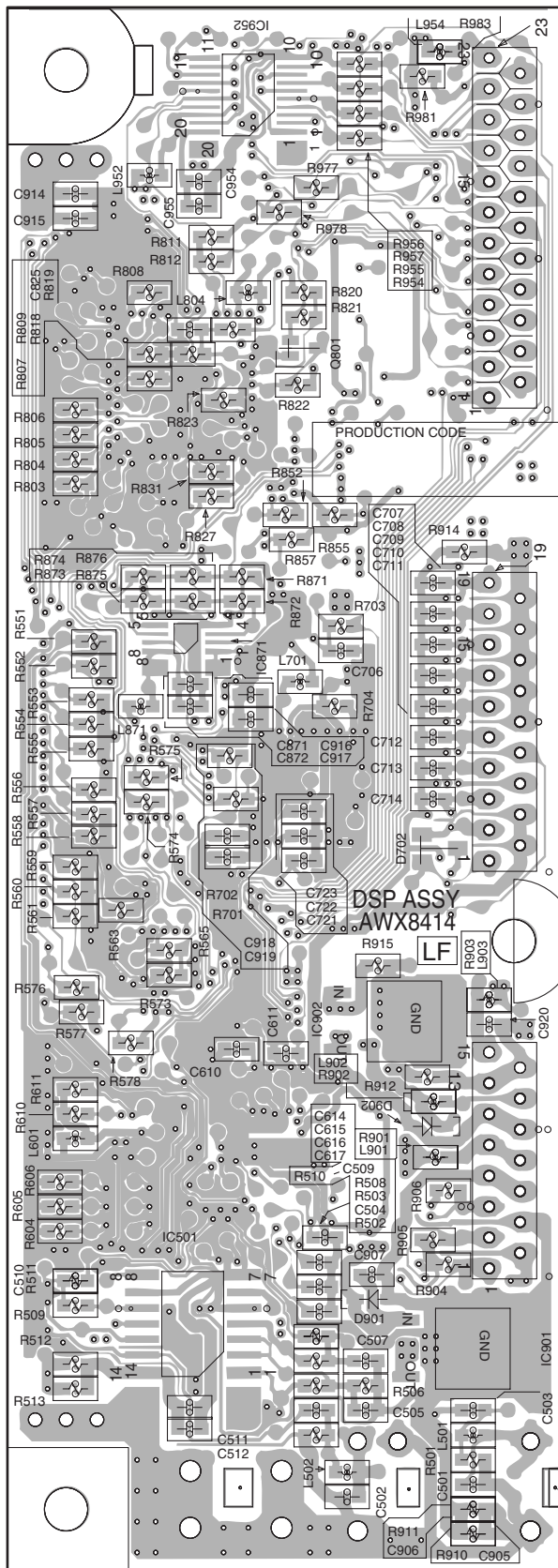


SIDE B

SIDE B

M DSP ASSY

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



IC952

Q801

IC871

IC902

IC501

IC901

(ANP7503-A)

CN951

CN701

CN901

△

A



A

B

C

D

F

F



A

(ANP7494-A)



E



4

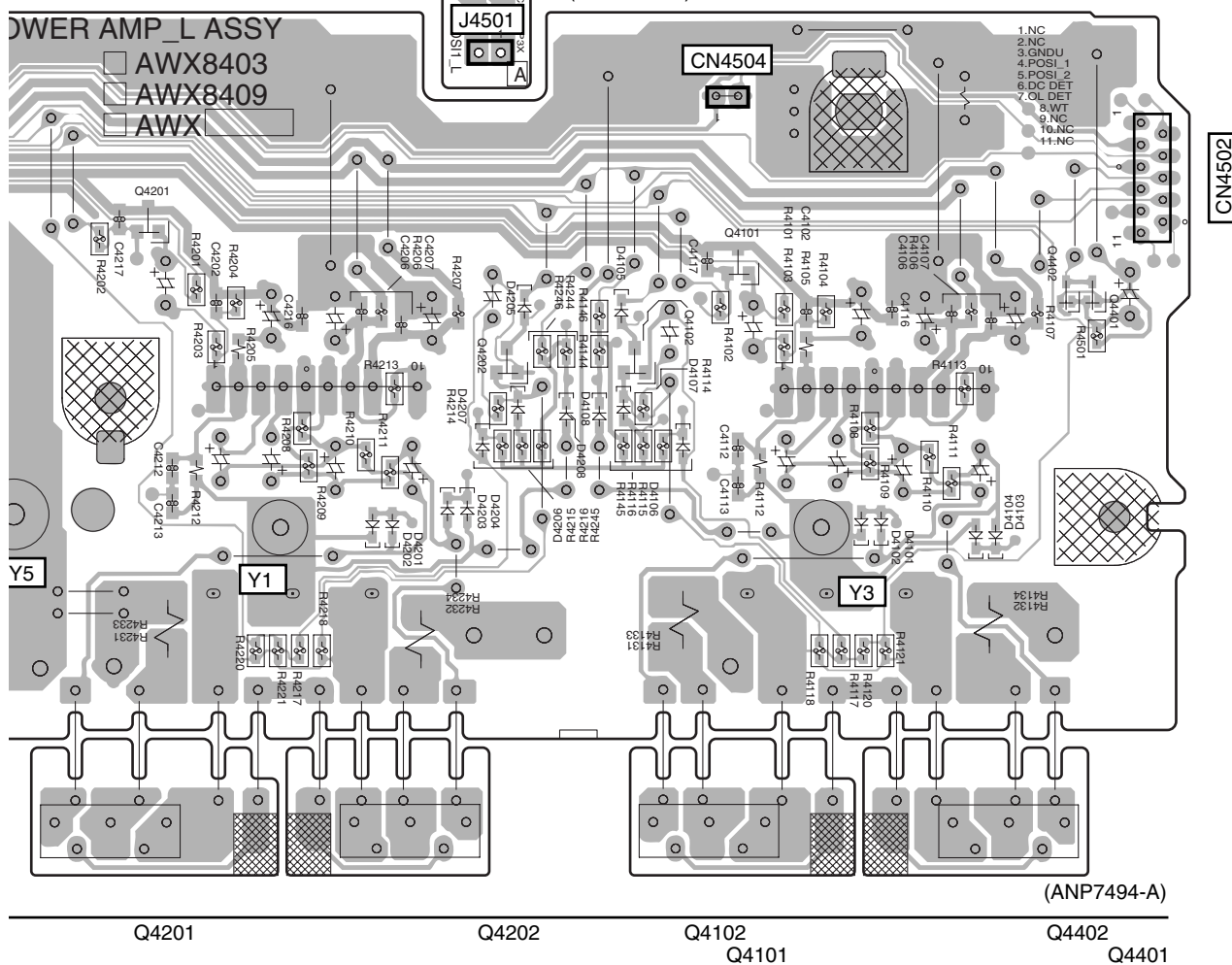
SIDE B

A

L

T POSI1-L ASSY

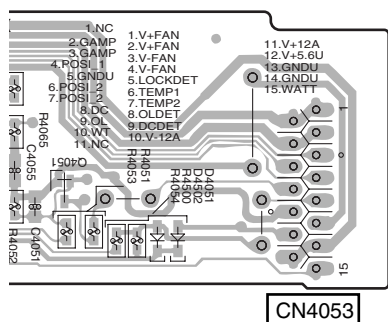
(ANP7494-A)



B

C

D



(ANP7494-A)

Q4051 Q4054
Q4053 Q4052
IC4051

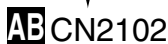
E

F

R S T

SIDE A

V F



AB 2001

A



C

□

F

1



A

B

C

D

E

F

U V R

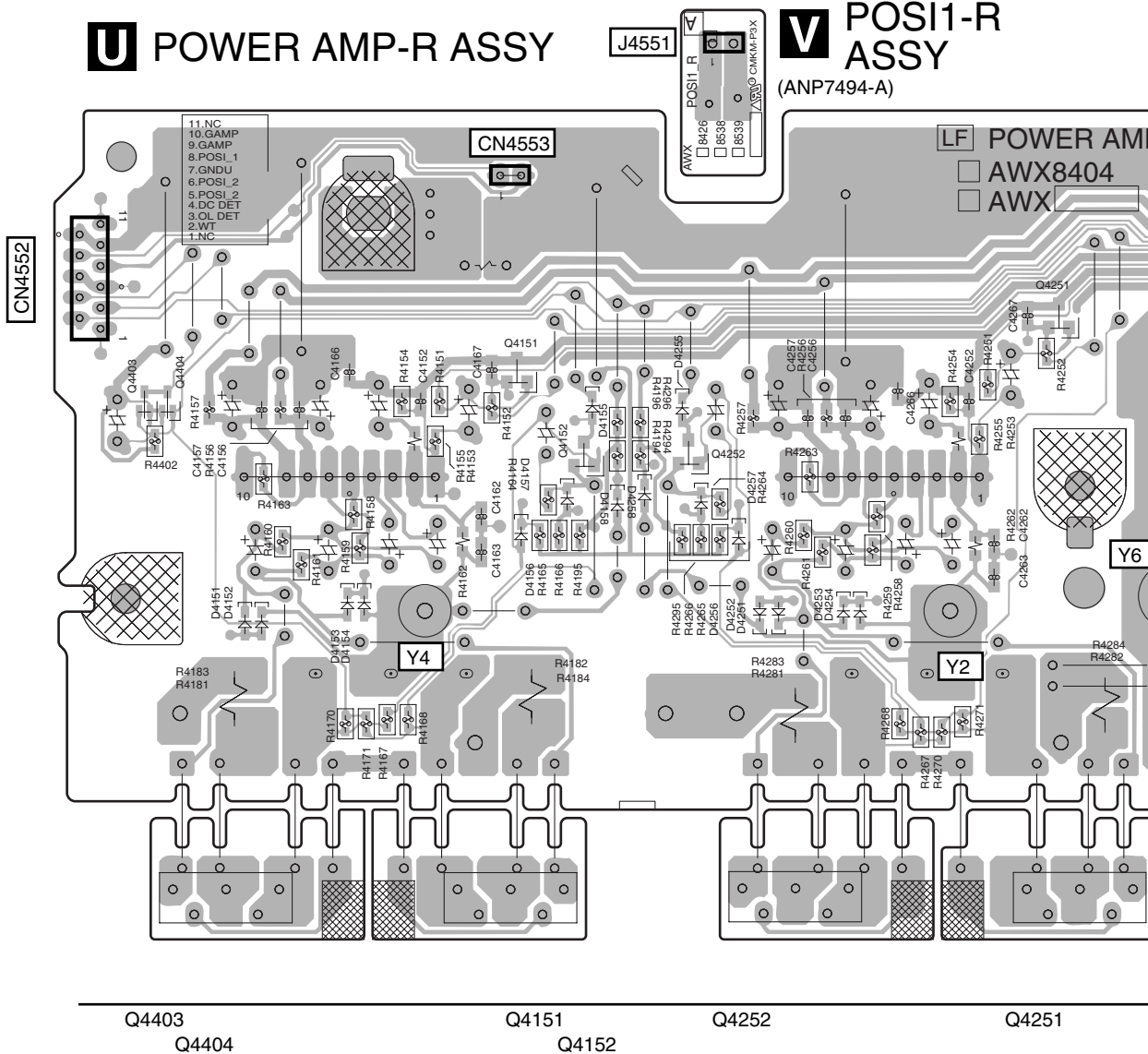
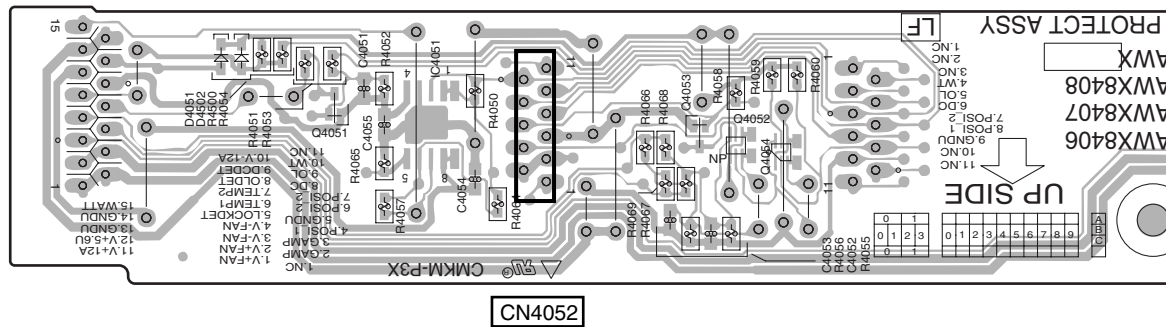
92

4

U POWER AMP-R ASSY

V POSI1-R
ASSY

(ANP7494-A)

**R** POWER PROTECT ASSY

VSX-2014i-S

SIDE B

A

B

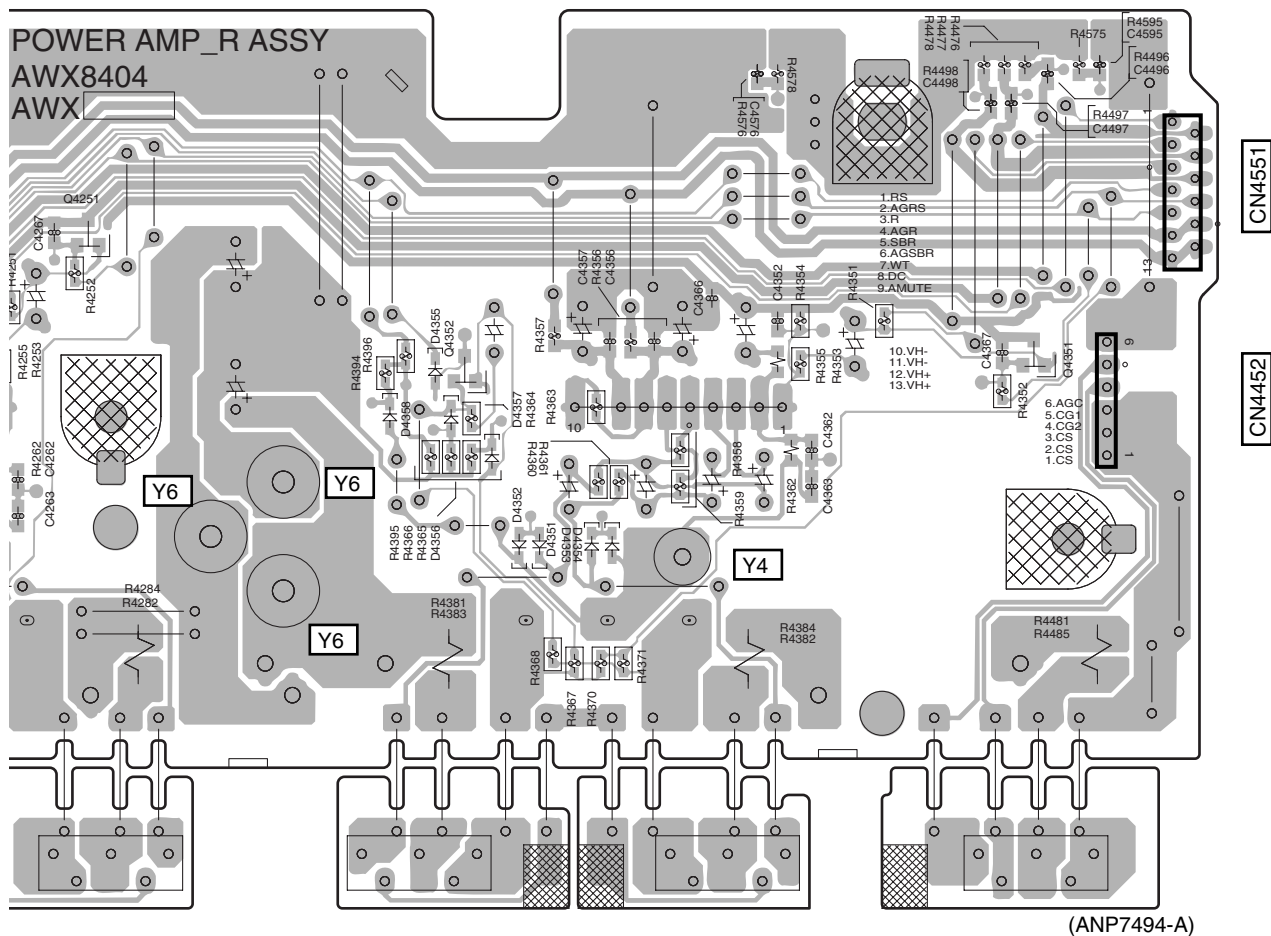
C

D

E

F

3

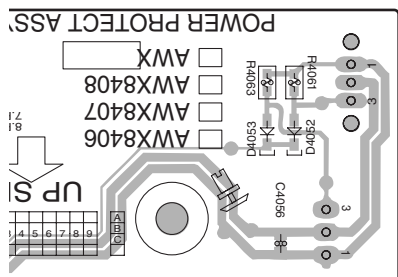


(ANP7494-A)

Q4251

Q4352

Q4351



(ANP7494-A)

IC4051
Q4053 Q4052
Q4051
Q4054

4

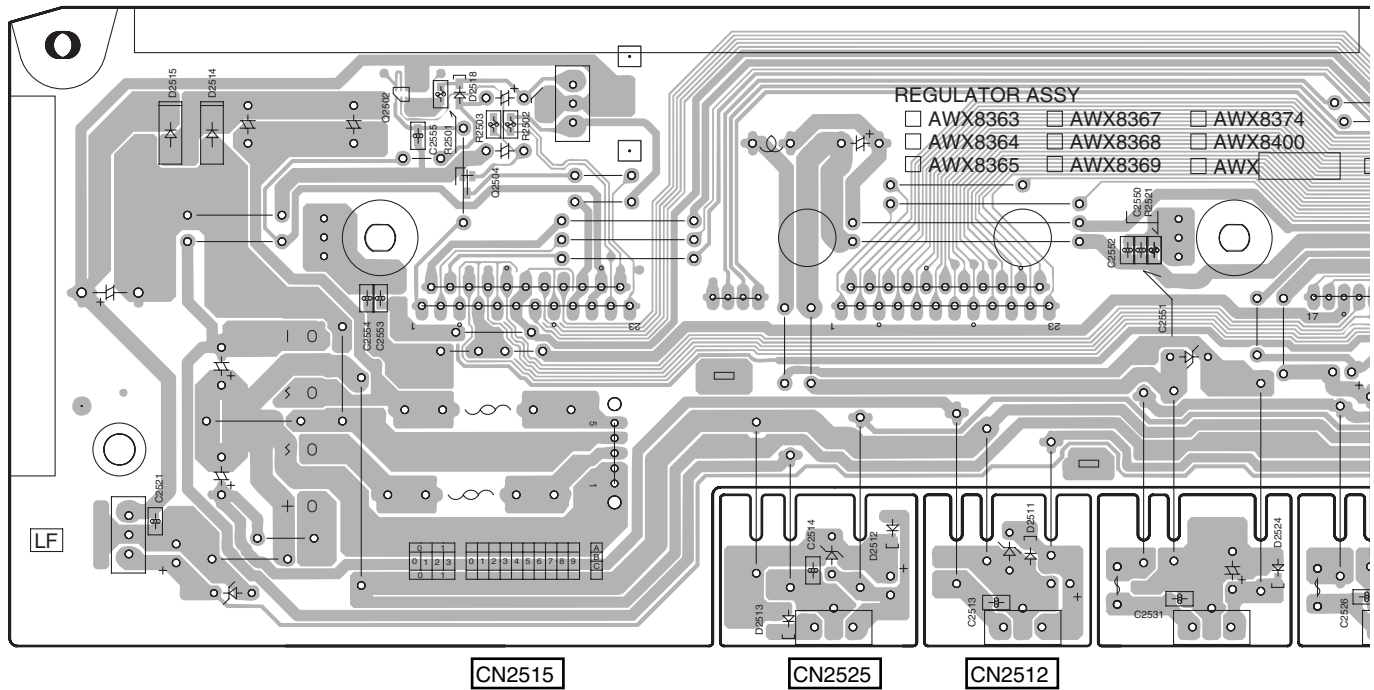
A



4

SIDE B

REGULATOR ASSY



(ANP7493-A)

SIDE B

A

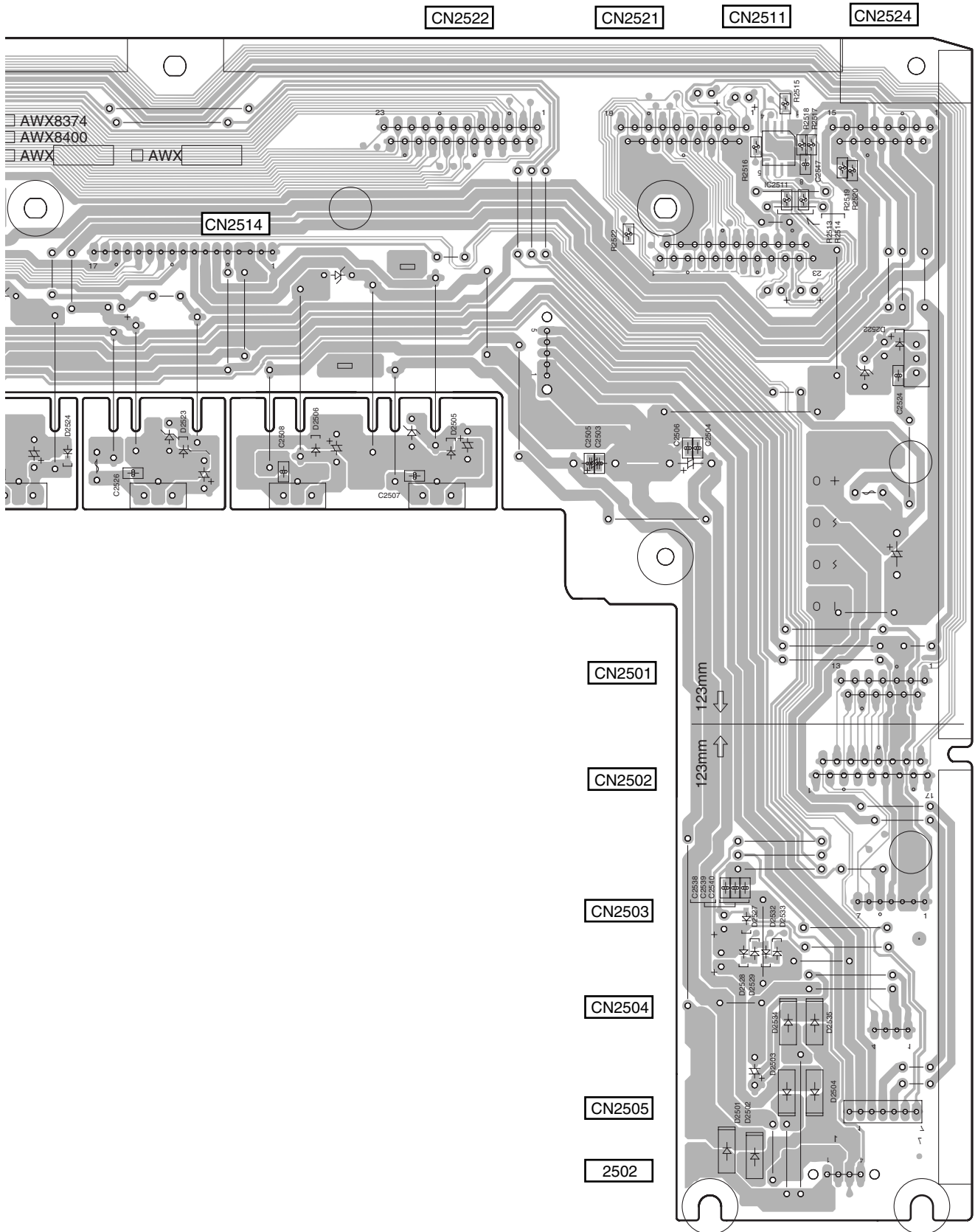
B

C

D

E

F



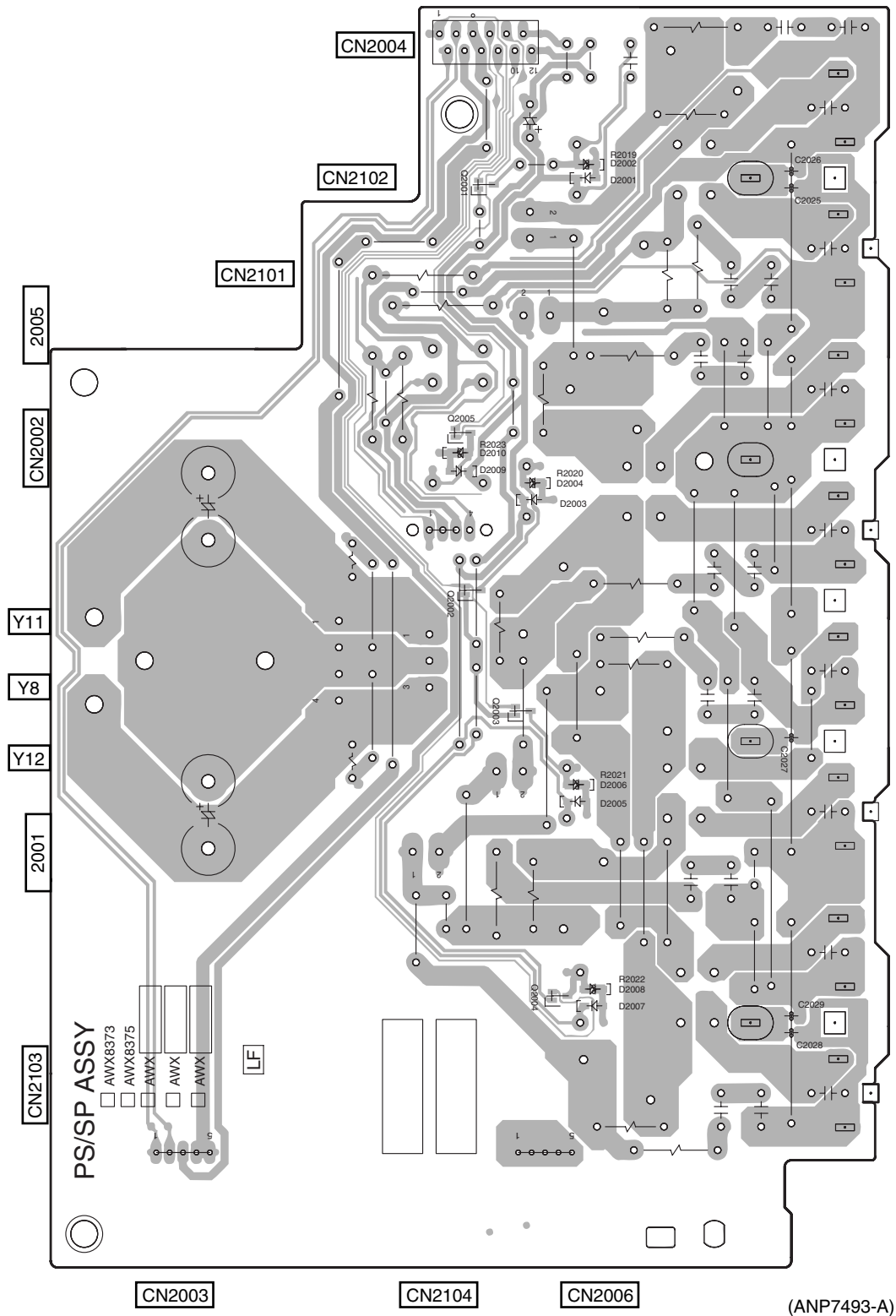
△

4

SIDE B

SIDE B

AB SP/PS ASSY



(ANP7493-A)

AB

AB

Q2006
Q2002
Q2004
Q2003

VSX-2014i-S

△

SIDE A

A



AB Y11

X Z AA

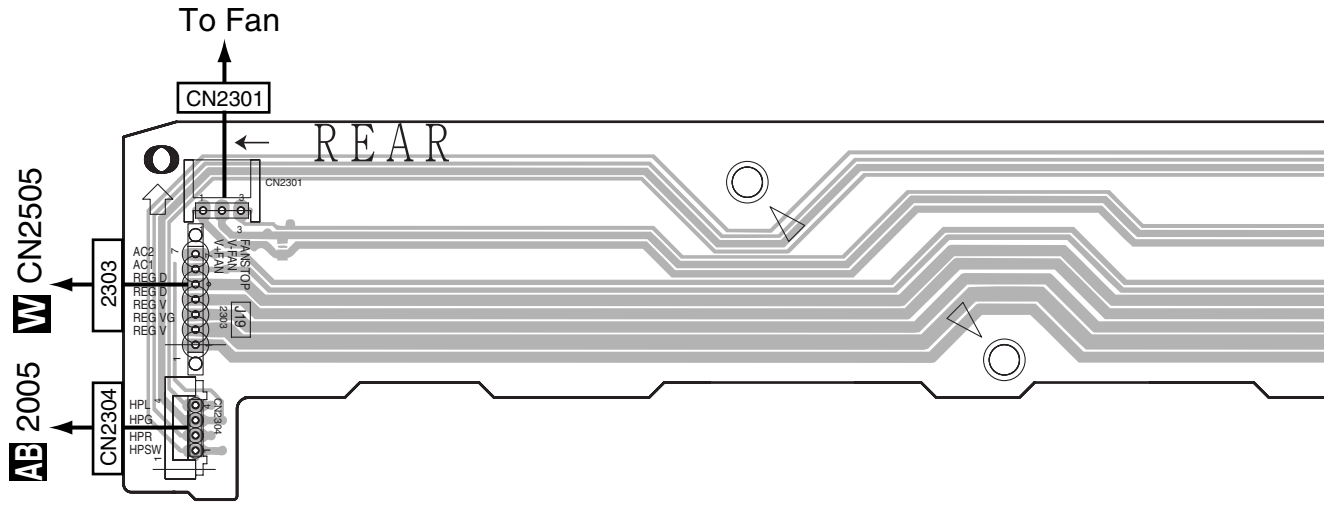
X Z AA

1 2 3 4

4.19 TRANS SIDE ASSY

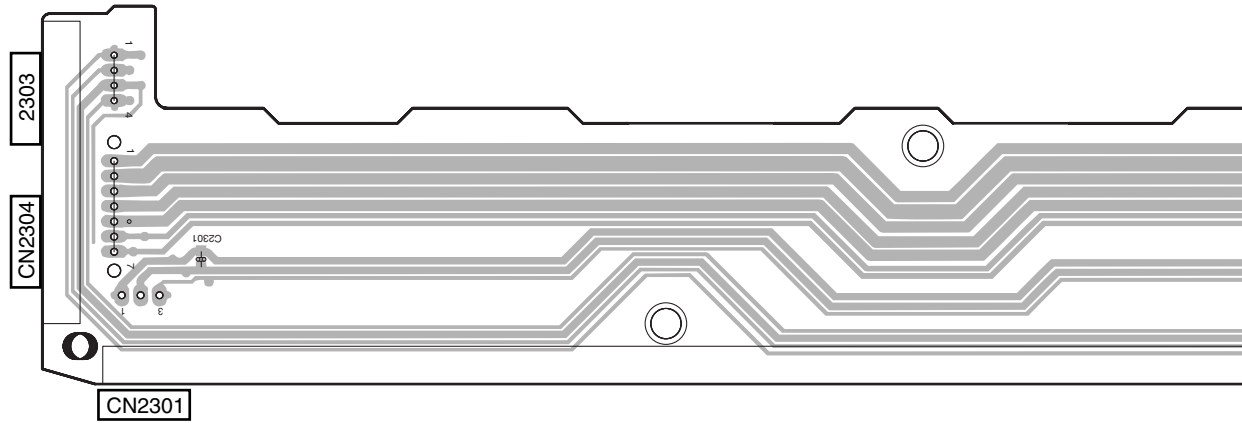
SIDE A

AD TRANS SIDE ASSY



SIDE B

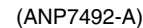
AD TRANS SIDE ASSY



AD

△

SIDE A



Y AE AF

SIDE B

SIDE B

● **Line Voltage Selection**

Line Voltage can be changed by the following modification:

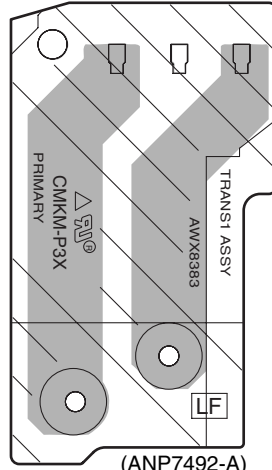
1. Disconnect the AC power cord.
2. Remove the cover.
3. Change the connection wire from TRANS 1 ASSY to PRIMARY ASSY (Terminal No. Y15) as follows.

Voltage	Terminal No.
220-230V	Y15 of TRANS 1 ASSY
240V	240V terminal of power transformer

4. Stick a line voltage label on the rear panel.

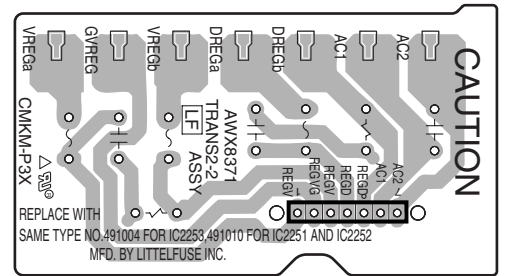
Description	Part No.
240V label	AAX-192

AE TRANS 1 ASSY



Y14 Y15

Y TRANS 2-2 ASSY

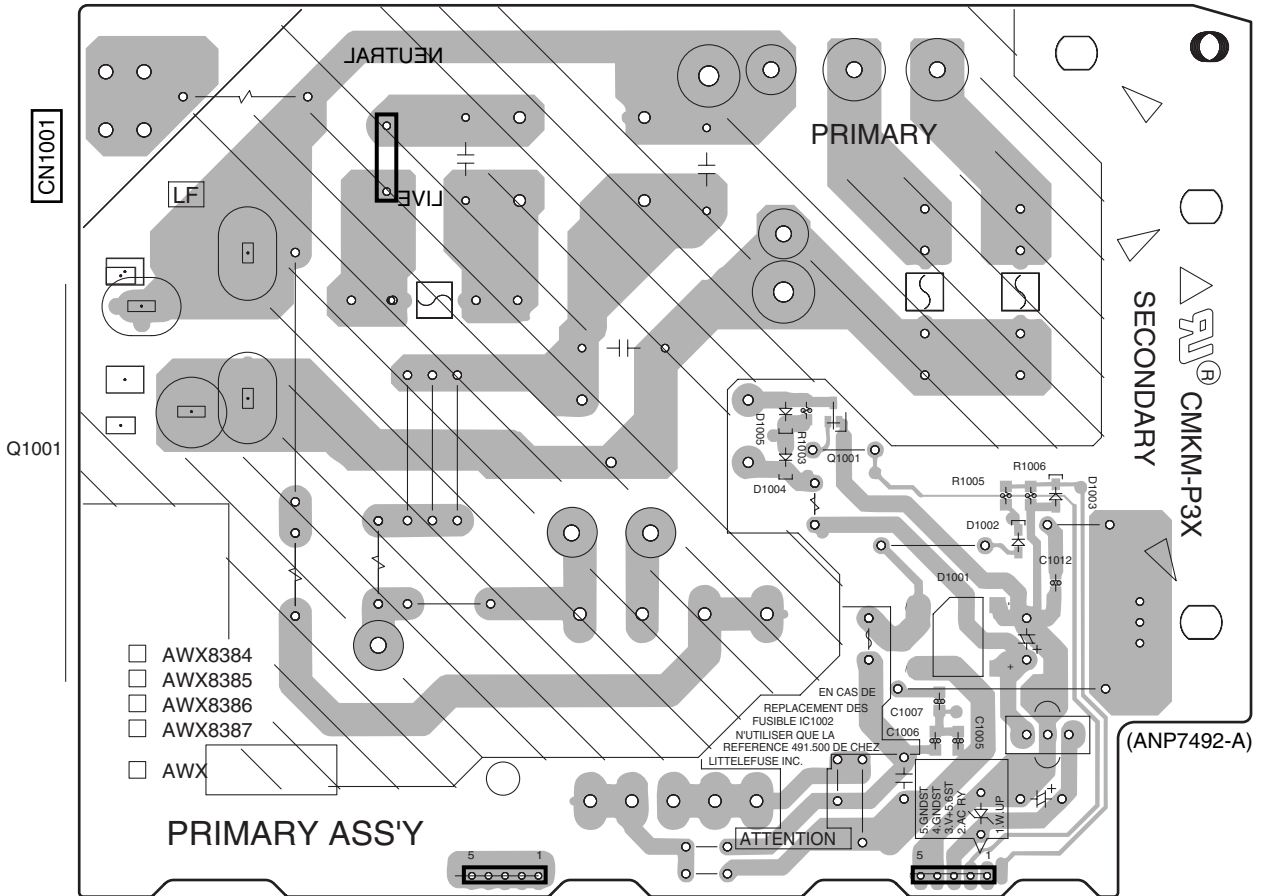


(ANP7494-A)

2250

AF PRIMARY ASSY

Y14 Y15



CN1003

CN1002

Y AE AF

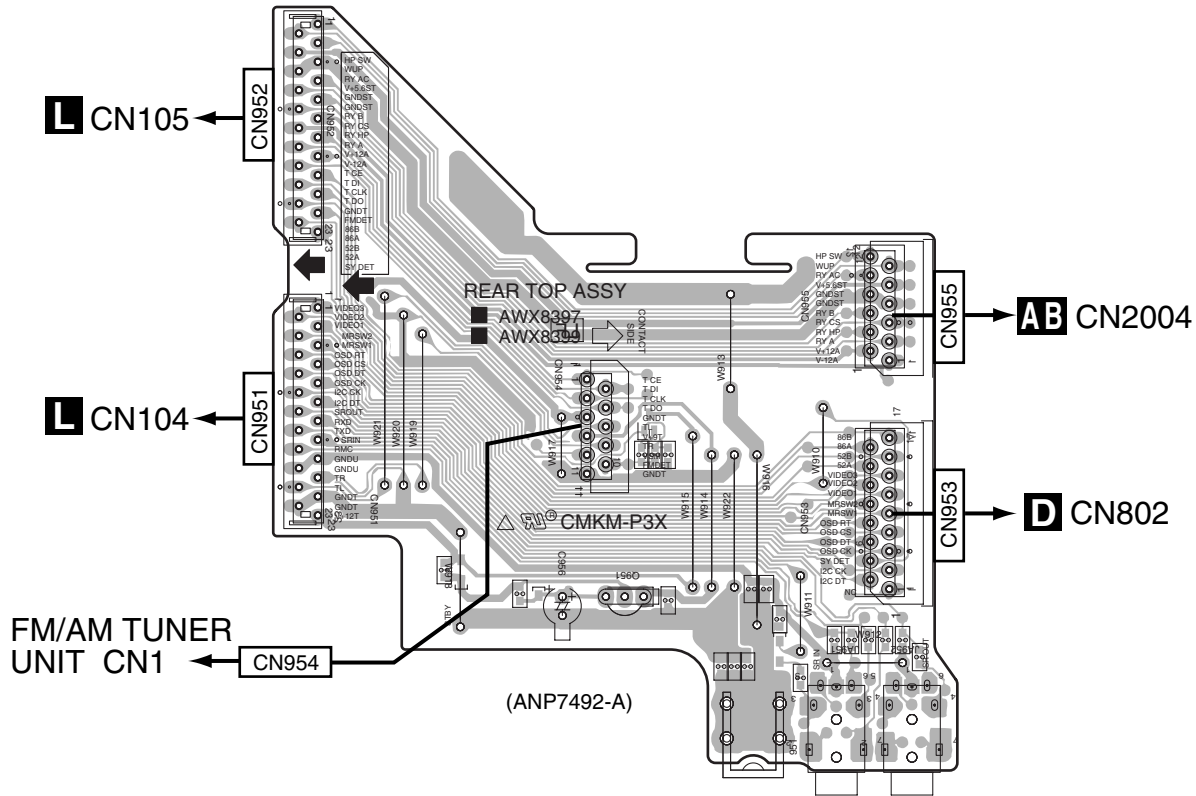
Y AE AF

4.21 REAR TOP ASSY

SIDE A

SIDE A

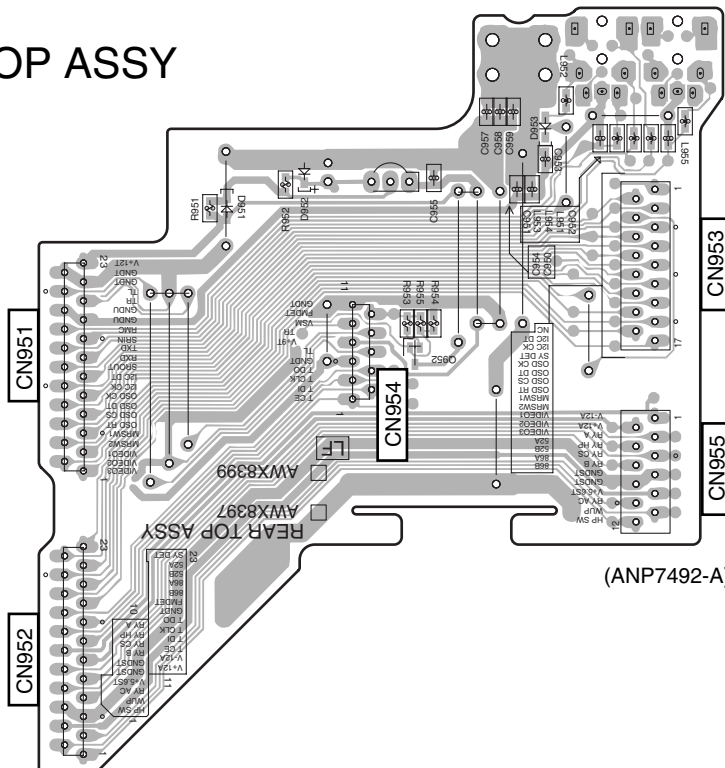
AC REAR TOP ASSY



SIDE B

SIDE B

AC REAR TOP ASSY



AC

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 $\times 10^1$ $\rightarrow$ 561 RD1/4PU $\overline{5}$ $\overline{6}$ $\overline{7}$ J

47k Ω $\rightarrow$ 47 $\times 10^3$ $\rightarrow$ 473 RD1/4PU $\overline{4}$ $\overline{7}$ $\overline{3}$ J

0.5 Ω $\rightarrow$ R50 RN2H $\overline{R}$ $\overline{5}$ $\overline{0}$ K

1 Ω $\rightarrow$ 1R0 RS1P $\overline{1}$ $\overline{R}$ $\overline{0}$ K

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

5.62k Ω $\rightarrow$ 562 $\times 10^1$ $\rightarrow$ 5621 RN1/4PC $\overline{5}$ $\overline{6}$ $\overline{2}$ $\overline{1}$ F

● LIST OF WHOLE PCB ASSEMBLIES

Mark	Symbol and Description	VSX-2014i /HYXJ	VSX-1014 /HYXJ
	1..FM/AM TUNER UNIT	AXX7170	AXX7170
NSP	1..SECONDARY ASSY	AWK7816	AWK7820
	2..REGULATOR ASSY	AWX8365	AWX8369
	2..TRANS 2-1 ASSY	AWX8370	AWX8370
	2..SP/PS ASSY	AWX8402	AWX8375
	2..DIODE ASSY	AWX8376	AWX8376
	2..TRANS SIDE ASSY	AWX8417	AWX8417
NSP	1..COMPLEX ASSY	AWK7808	AWK7812
	2..DISPLAY ASSY	AWX8388	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	AWX8386	AWX8386
	2..OPTICAL-IN ASSY	AWX8394	AWX8394
	2..REAR TOP ASSY	AWX8399	AWX8399
	2..FRONT-IN CONNECT ASSY	AWX8416	AWX8416
NSP	1..MAIN ASSY	AWK7800	AWK7804
	2..MAIN CONTROL ASSY	AWX8345	AWX8350
	2..COMPOSITE V ASSY	AWX8354	AWX8355
	2..COMPONENT ASSY	AWX8359	AWX8360
	2..S VIDEO ASSY	AWX8356	AWX8357
	2..VIDEO SIDE ASSY	AWX8366	AWX8366
	2..MULTI CH I/O ASSY	AWX8410	AWX8352
NSP	1..POWER AMP ASSY	AWK7824	AWK7828
	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	AWX8407	AWX8407
	2..POWER AMP-L ASSY	AWX8403	AWX8403
	2..VH TR ASSY	AWX8411	AWX8411
	2..POSI 1 R ASSY	AWX8539	AWX8539
	2..POSI 1 L ASSY	AWX8536	AWX8536
	2..POSI 2 L ASSY	AWX8428	AWX8428
	1..DSP ASSY	AWX8414	AWX8414
	1..1394 ASSY	AWK7834	Not used

• 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
	IC604	BD3812F	Not used
	Q671	HN1C03FU(AB)	Not used
	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

AWX8354 and AWX8355 are constructed the same except for the following :

Mark	Symbol and Description	AWX8354	AWX8355
	IC 721	NJM2279M	Not used
	IC 741	MM1093NF	Not used
	IC 742	TC90A49F	Not used
	Q731, Q743, Q744, Q745	2SC4081	Not used
	Q741, Q742	2SA1576A	Not used
	D721	DAN202K	Not used
	D741	1SS355	Not used
	C721	CCSRCH181J50	Not used
	C722, C723, C733, C741, C742, C744	CEAT101M16	Not used
	C724, C725, C726	CKSRYB473K25	Not used
	C727	CCSRCH220J50	Not used
	C728	CKSRYB224K16	Not used
	C731, C732, C745, C780	CKSRYB104K25	Not used
	C743, C746, C751, C756, C764, C767	CKSRYB103K50	Not used
	C769- C773, C775- C777	CKSRYB103K50	Not used
	C747	CCSRCH560J50	Not used
	C748	CEAT1R0M50	Not used
	C749	CKSRYB561K50	Not used
	C750, C752, C758	CEAT4R7M50	Not used
	C753, C755, C784	CCSRCH100D50	Not used
	C754	CKSRYB122K50	Not used
	C757	CCSRCH6R0D50	Not used
	C759	CKSRYB102K50	Not used
	C760	CCSRCH391J50	Not used
	C762	CKSRYB474K10	Not used
	C763, C765, C766, C768	CEAT101M16	Not used
	C774	CCSRCH181J50	Not used
	C781	CEAT470M16	Not used
	C782	CCSRCH101J50	Not used
	C783	CCSRCH390J50	Not used
	C785	CEAT102M10	Not used
	C796	CKSRYB105K6R3	Not used
	R721, R725, R765	RS1/16S750J	Not used
	R722- R724, R732, R733, R759, R760	RS1/16S102J	Not used
	R764, R784	RS1/16S102J	Not used
	R731	RS1/16S911J	Not used
	R738	RS1/16S202J	Not used
	R739	RS1/16S202J	RS1/16S0R0J

Mark	Symbol and Description	AWX8354	AWX8355
A	R741	RS1/16S473J	Not used
	R742	RS1/16S183J	Not used
	R743	RS1/16S113J	Not used
	R744, R763	RS1/16S471J	Not used
	R745, R746	RS1/16S391J	Not used
	R747	RS1/16S105J	Not used
	R749, R750	RS1/16S103J	Not used
	R751	RS1/16S562J	Not used
	R752	RS1/16S361J	Not used
	R753	RS1/16S153J	Not used
B	R754, R794- R798	RS1/16S0R0J	Not used
	R755	RS1/16S222J	Not used
	R756, R757, R761	RS1/16S101J	Not used
	R758, R762	RS1/16S821J	Not used
	R766, R781, R783, R785	Not used	RS1/16S0R0J
	L741 Coil	LCYA270J2520	Not used
	X741 Crystal Resonator	ASS1092	Not used
	JA721 1P PINJACK	VKB1063	Not used

L MAIN CONTROL ASSY

AWX8345 and AWX8350 are constructed the same except for the following :

Mark	Symbol and Description	AWX8345	AWX8350
C	IC501	PD5957A8	PD5956A
	Q502	DTA124EUA	Not used
	C508	CKSRYB103K50	Not used
	R502, R559, R560	RS1/16S0R0J	Not used
	R523	RS1/16S473J	Not used
	R501	Not used	RS1/16S0R0J
	R524	RS1/16S102J	Not used
	R527	RS1/16S472J	Not used
	R553, R554	RS1/16S101J	Not used
	CN108 KR CONNECTOR	B8B-PH-K-S	Not used

O DISPLAY ASSY

AWX8388 and AWX8389 are constructed the same except for the following :

Mark	Symbol and Description	AWX8388	AWX8389
E	IC3003	TC7W53FU	Not used
	Q3003	DTC124EUA	Not used
	Q3004	FMA1A	Not used
	D3005, D3007- D3009	1SS355	Not used
	C3009	CKSRYB153K50	Not used
	D3011 LED (BLUE)	SLR-343BBT	Not used
	R3008	RS1/16S223J	Not used
	R3009, R3010	RS1/16S103J	Not used
	R3011	RS1/16S392J	Not used
	R3019	RS1/16S0R0J	Not used
	R3054	RS1/16S101J	Not used
	R3065	Not used	RS1/16S473J

W REGULATOR ASSY

AWX8365 and AWX8369 are constructed the same except for the following :

Mark	Symbol and Description	AWX8365	AWX8369
F	IC2509	NJM78M05FA	Not used
	IC2510	NJM78M09FA	Not used
	D2534, D2535	1SR154-400	Not used
	C2521, C2531	CKSRYB103K50	Not used
	C2530	CEAT470M35	Not used

Mark	Symbol and Description	AWX8365	AWX8369
	C2532 C2533 C2549 C2550 R2519, R2520 R2521 L2504 Inductor (47uH) CN2504 4P PLUG 2506 PCB BINDER	CEAT101M16 CEAT102M10 CEAT102M25 CKSRYB104K16 RS1/16S0R0J Not used VTL1118 KM200TA4 VEF1040	Not used Not used Not used Not used Not used RS1/16S0R0J Not used Not used Not used

D S VIDEO ASSY

AWX8356 and AWX8357 are constructed the same except for the following :

Mark	Symbol and Description	AWX8356	AWX8357
	IC831, IC871 IC881 Q871, Q872 Q881 D881 C831, C832, C871, C872, C877, C881 C883 C833, C834, C873, C874 C878 C882 C884 R831- R834 R835, R836, R839, R840, R878, R891 R845, R846, R876, R877 R847, R848 R856 R871, R872 R873 R874 R875 R881 R882 R883 R885, R886 R890, R893- R895, R899	TK15420M LA7213 2SC4081 UN5212 1SS355 CEAT101M16 CEAT101M16 CKSRYB473K25 CKSRYB104K25 CEAT3R3M50 CEAT102M10 RS1/16S102J RS1/16S0R0 RS1/16S202J RS1/16S202J RS1/16S912J RS1/16S222J RS1/16S152J RS1/16S182J RS1/16S162J RS1/16S331J RS1/16S224J RS1/16S472J RS1/16S103J Not used	Not used Not used Not used Not used Not used Not used Not used Not used Not used Not used Not used Not used Not used Not used Not used Not used Not used Not used Not used Not used Not used Not used Not used Not used RS1/16S0R0J

F COMPONENT ASSY

AWX8359 and AWX8360 are constructed the same except for the following :

Mark	Symbol and Description	AWX8359	AWX8360
	IC5021, IC5051, IC5052 IC5022 IC5101 Q5101, Q5102 Q5103, Q5104 D5071 C5021, C5022, C5027, C5051- C5054 C5071, C5102 C5023, C5024, C5055- C5058 C5025, C5047- C5049 , C5109 C5026, C5103, C5104, C5120, C5101 C5028, C5029, C5031, C5032, C5038 C5041- C5046, C5105- C5108, C5110 C5116- C5119 C5030, C5100	TK15420M TA1270BF TA8772AN 2SC4081 UN5212 1SS355 CEAT101M16 CEAT101M16 CKSRYB473K25 CEAT100M50 CKSRYB103K50 CKSRYB104K25 CKSRYB104K25 CKSRYB104K25 CEAT101M35	Not used Not used Not used Not used Not used Not used Not used Not used Not used Not used Not used Not used Not used Not used Not used

Mark	Symbol and Description	AWX8359	AWX8360
A	C5033, C5034 C5035	CCSRCH120J50 CKSRYB222K50	Not used Not used
	C5036 C5037, C5039 C5040 C5073 C5111, C5112	CKSRYB224K10 CEAT2R2M50 CKSRYB223K25 CEAT102M10 CKSRYB474K10	Not used Not used Not used Not used Not used
	C5113- C5115 R5021, R5022, R5030, R5051, R5052 R5053, R5076, R5101 R5023, R5024, R5027, R5028, R5054 R5029	CEAT1R0RM50 RS1/16S103J RS1/16S103J RS1/16S0R0J RS1/16S303J	Not used Not used Not used Not used Not used
	R5031 R5032 R5033 R5034 R5035, R5036	RS1/16S302J RS1/16S361J RS1/16S682J RS1/16S332J RS1/16S101J	Not used Not used Not used Not used Not used
	R5055, R5056 R5058, R5059 R5060, R5061 R5062 R5071, R5072	RS1/16S202J RS1/16S153J RS1/16S750J RS1/16S221J RS1/16S0R0J	Not used Not used Not used Not used Not used
B	R5075, R5077, R5078 R5079, R5080 R5102- R5106 R5107, R5108 R5109	Not used Not used RS1/16S102J RS1/16S473J RS1/16S362J	RS1/16S0R0J RS1/16S472J Not used Not used Not used
	X5021 (4.43MHz) X5022 (3.56MHz) X5023 (503kHz)	ASS1092 ASS1091 ASS7036	Not used Not used Not used
C			

AB SP/PS ASSY

AWX8402 and AWX8375 are constructed the same except for the following :

Mark	Symbol and Description	AWX8402	AWX8375
	C2051, C2052 (15000uF/71V)	ACH7219	ACH7218

• PARTS LIST FOR VSX-2014i

Mark No.	Description	Part No.	Mark No.	Description	Part No.
COMPLEX ASSY			POWER AMP ASSY		
OTHERS			OTHERS		
E	Y15 BOARD IN JUMPER	ADX7418	Y5 BOARD IN JUMPER	ADX7404	
	Y14 BOARD IN JUMPER	ADX7419	Y6 BOARD IN JUMPER	ADX7456	
	J8 JUMPER WIRE	D15A04-100-2651	Y1 BOARD IN JUMPER	ADX7457	
	J7 JUMPER WIRE	D15A05-075-2651	Y3 BOARD IN JUMPER	ADX7458	
			Y2 BOARD IN JUMPER	ADX7459	
SECONDARY ASSY			Y4 BOARD IN JUMPER	ADX7460	
OTHERS			J13 JUMPER WIRE 5P	D20PDY0530E	
F	Y8 BOARD IN JUMPER	ADX7451	J22 JUMPER WIRE 6P	D20PDY0615E	
	Y9 BOARD IN JUMPER	ADX7452	J12 JUMPER WIRE 7P	D20PDY0710E	
	Y10 BOARD IN JUMPER	ADX7453			
	Y11 BOARD IN JUMPER	ADX7454			
	Y12 BOARD IN JUMPER	ADX7455			
F	Y13 BOARD IN JUMPER	ADX7461	A MULTI I/O ASSY SEMICONDUCTORS		
	J2501 JUMPER WIRE 5P	D20PDD0520E			
	J11, J18 JUMPER WIRE 4P	D20PDY0410E			
	J14 JUMPER WIRE 4P	D20PDY0425E			
	J19 JUMPER WIRE 7P	D20PDY0715E			
			IC604	BD3812F	
			Q631, Q632, Q641, Q642	HN1C03FU	
			Q651, Q652, Q661, Q662, Q671	HN1C03FU	
			D691	UDZS5R1(B)	

Mark No. DescriptionC853, C854, C860, C861
C873, C874**Part No.**CKSRYB473K25
CKSRYB473K25**A 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
IC5101	TA8772AN
Q5101, Q5102	2SC4081

Q5103, Q5104	UN5212
D5001, D5002, D5071	1SS355
D5003	DAN202K

CAPACITORS

C5033, C5034	CCSRCH120J50
C5025, C5047-C5049, C5109	CEAT100M50
C5010-C5013, C5021, C5022, C5027	CEAT101M16
C5051-C5054, C5071, C5102	CEAT101M16
C5030, C5100	CEAT101M35

C5073	CEAT102M10
C5037, C5039	CEAT2R2M50
C5026, C5101, C5103, C5104, C5120	CKSRYB103K50
C5028, C5029, C5031, C5032, C5038	CKSRYB104K25
C5041-C5046, C5105- C5108, C5110	CKSRYB104K25

C5116- C5119, C5121	CKSRYB104K25
C5035	CKSRYB222K50
C5040	CKSRYB223K25
C5036	CKSRYB224K10
C5081-C5083	CKSRYB224K16

C5014, C5015, C5023, C5024	CKSRYB473K25
C5055-C5058	CKSRYB473K25
C5111- C5112	CKSRYB474K10
C5113- C5115	CEAT1R0M50

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

Mark No. Description**Part No.****L MAIN CONTROL ASSY**
SEMICONDUCTORS

IC381	BD3812F
IC481	BU1924F
IC451	BD3813KS
IC101	BD3841FS
IC501	PD5957A8
IC382	TC74HC4052AF

IC502	TC74VHC08FT
IC504	TC74VHCT125AFT
IC102-IC106, IC111, IC321, IC341	UPC4570G2-A
IC361, IC401	UPC4570G2-A
Q169, Q170, Q321-Q324	2SC3326

Q341-Q344, Q361-Q364	2SC3326
Q381-Q384	2SC3326
Q175, Q229, Q230	2SK208
Q502-Q505, Q516, Q517	DTA124EUA
Q386	DTC124EUA

Q511, Q512, Q483	DTC143EUA
Q501	DTC143TK
Q398, Q507, Q514, Q515	UMB1N
Q172, Q176, Q235, Q506	UMD2N
Q482	2SA1036K

D175, D229, D230, D441, D442	1SS355
D451, D473, D501-D503	1SS355
D506-D512, D516-D519	1SS355
D474, D475	DAN202K
D191-D193	DAN217

D504, D505	DAP202K
D515	UDZS5R1(B)
D443, D444	UDZS6R8(B)

COILS AND FILTERS

X501 CERAMIC RESONATOR(15.7MHz)	ASS7032
X481 CERAMIC RESONATOR	ASS7004
L121, L475	ATL7002
L476, L481	LFEA2R2J
L471-L474	QTL1013

CAPACITORS

C101-C120, C123-C128	CCSRCH101J50
C131, C132, C151, C152	CCSRCH101J50
C169, C170, C243, C244, C263	CCSRCH101J50
C283, C284, C325, C326	CCSRCH101J50
C345, C346, C365, C383, C384	CCSRCH101J50

C405, C406, C457, C458	CCSRCH101J50
C121, C122, C129, C130	CCSRCH220J50
C205-C208, C245-C248, C265	CCSRCH331J50
C267, C285-C288	CCSRCH331J50
C203, C204	CCSRCH471J50

C370	CEANP330M16
C133-C150, C161, C162	CEAT100M50
C209, C210, C213, C214	CEAT100M50
C249, C250, C269, C270	CEAT100M50
C289, C290, C451-C456, C517	CEAT100M50

C327, C328, C347, C348	CEAT101M16
C367, C368, C407, C408	CEAT101M16
C507	CEAT102M6R3
C181	CEAT221M6R3
C201, C202, C241, C242, C487	CEAT2R2M50

5	6	7	8	
Mark No.	Description	Part No.	Mark No.	Description
C261, C262, C281, C282, C515 C501 C167, C168, C321, C322 C329, C330, C341, C342 C349, C350, C361, C362, C369	CEAT2R2M50 CEAT331M10 CEAT470M25 CEAT470M25 CEAT470M25		⚠ D2216, D2217 ⚠ D2201	1SR154-400 S1WB(A)60SD
C401, C402, C409, C410 C443, C444 C323, C324, C343, C344 C363, C364, C387, C388 C403, C404	CEAT470M25 CEAT471M10 CEAT4R7M50 CEAT4R7M50 CEAT4R7M50		D2203-D2206 D2207, D2208 D2202, D2215 D2209, D2210 D2211-D2214	UDZS10(B) UDZS10(B) UDZS13(B) UDZS7R5(B) UDZS9R1(B)
C506, C491 C153, C154, C171, C172 C191-C193, C215, C216 C235, C236, C257, C258, C266 C277, C278, C297, C298	CKSRYB102K50 CKSRYB103K50 CKSRYB103K50 CKSRYB103K50 CKSRYB103K50		CAPACITORS C2202, C2203 C2215 C2209, C2210 C2213, C2214 C2216	ACE7037 CEANP470M50 CEAT101M63 CEAT221M63 CEAT470M50
C331, C332, C351, C352 C371, C372, C381, C382 C385, C386, C391-C398 C411, C412, C441, C442 C465-C467, C471-C473, C476	CKSRYB103K50 CKSRYB103K50 CKSRYB103K50 CKSRYB103K50 CKSRYB103K50		C2207, C2208	CEAT471M2A
C502, C508, C514, C551 C182, C237, C238, C459-C462 C573 C510 C503	CKSRYB103K50 CKSRYB104K16 CKSRYB104K16 CKSRYB473K25 CKSRYB105K10		RESISTORS ⚠ R2207, R2208 ⚠ R2202, R2203 R2210 ⚠ R2205, R2206 Other Resistors	RD1/2LMF332J RD1/4MUF4R7J RD1/4MUF681J RS1LMF472J RS1/16S###J
C264 C431-C438 C572 C251, C252, C271, C272 C291, C292, C366, C463, C464	CKSRYB223K25 CKSRYB223K50 CKSRYB224K16 CKSRYB472K50 CKSRYB472K50		OTHERS CN2202 4P JUMPER CONNECTOR CN2202 5P JUMPER CONNECTOR CN2205 6P JUMPER CONNECTOR H2201-H2204 FUSE CLIP	52147-0410 52147-0510 52147-0610 AKR7001
C509, C485, C506 C512, C513 C268 C489 C475	CKSRYB472K50 CKSRYB473K16 CKSRYB562K50 CCSRCH561J50 PCH1132		W REGULATOR ASSY SEMICONDUCTORS IC2511 ⚠ IC2506, IC2507, IC2509 ⚠ IC2510 ⚠ IC2501 ⚠ IC2503	NJM2100M NJM78M05FA NJM78M09FA NJM78M12FA NJM78M56FA
C490 C492, R493	CEAT101M10 CCSRCH270J50		⚠ IC2504 ⚠ IC2502 ⚠ Q2502 ⚠ Q2501 Q2504	NJM79M05FA NJM79M12FA UMD2N 2SC4793D1 DTC124EUA
RESISTORS R441, R442 Other Resistors	RS1LMF101J RS1/16S###J		⚠ D2501-D2504, D2514, D2515 ⚠ D2534, D2535 D2513 ⚠ D2507, D2521 D2505, D2506, D2511, D2512	1SR154-400 1SR154-400 1SS355 D3SBA20(B) RB501V-40
OTHERS CN501 10P FFC CONNECTOR CN106, CN107 15P FFC CONNECTOR CN101 26P FFC CONNECTOR CN116-CN119 4P PIN JACK CN103 21P PLUG	52045-1045 52045-1545 52045-2645 AKB7015 AKP7063		D2518 D2527-D2529, D2532, D2533	UDZS27B UDZS6.2B
CN102, CN104, CN105 23P PLUG CN111, CN112, CN115 23P SOCKET CN108 KR CONNECTOR CN114 17P SOCKET CN113 4P SOCKET	AKP7064 AKP7178 B8B-PH-K KP200TA17L KP200TA4L		CAPACITORS C2517, C2518 C2545, C2546, C2519 C2515, C2516, C2527, C2536, C2532 C2549 C2533	CEANP102M16 CEAT100M50 CEAT101M16 CEAT102M25 CEAT102M10
101, 102 PCB BINDER	VEF1040		C2525 C2509, C2510 C2512 C2529 C2511	CEAT221M16 CEAT221M25 CEAT222M16 CEAT222M35 CEAT332M16
X TRANS 2-1 ASSY SEMICONDUCTORS IC2201, IC2202 Q2203 Q2204, Q2205	AEK7021 RN1901 UMD2N		C2501, C2502 C2520	CEAT332M25 CEANP470M25

Mark No. Description

C2530
C2537
C2523

C2541,C2542
C2507,C2508,C2513,C2514,C2521
C2524,C2526,C2539,C2547,C2555
C2531
C2553,C2554
C2550

Part No.

CEAT470M35
CEAT470M50
CEAT472M16

CEAT4R7M50
CKSRYB103K50
CKSRYB103K50
CKSRYB103K50
CKSRYB104K25
CKSRYB104K16

Mark No. Description

CN2003, CN2006 5P PLUG

CN2002 3P POST HEDDER
2001 4P POST HEDDER
CN2102 2P POST HEDDER
CN2101 2P POST HEDDER
CN2103 2P POST HEDDER

CN2104 2P POST HEDDER

Part No.

KM200TA5

AKC7002
AKC7003
AKC7005
AKC7008
AKC7009

AKC7010

COILS AND FILTERS

L2504 (47uH)

VTL1118

RESISTORS

All Resistors

RS1/16S###J

OTHERS

2502 4P CABLE HOLDER
2503,2504 5P CABLE HOLDER
CN2505 7P JUMPER CONNECTOR
CN2501 13P PLUG
CN2524 15P PLUG

51048-0400
51048-0500
52147-0710
AKP7059
AKP7060

CN2502 17P PLUG
CN2521 19P PLUG
CN2511,CN2512,CN2515,CN2522
23P PLUG

AKP7061
AKP7062
AKP7064

H2501-H2504 FUSE CLIP

AKR7001

CN2514 17P PLUG
CN2504,CN2525 4P PLUG
CN2503 7P PLUG
2506,2507 PCB BINDER
KN2501,KN2502

KM200TA17
KM200TA4
KM200TA7
VEF1040
VNF1084

WRAPPING TERMINAL

**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

ACH7219
CEAT101M50
CFTLA224J50
CKSRYB102K50
CQ MBA103J50

RESISTORS

R2017, R2018
R2051, R2052
⚠ R2008-R2014
⚠ R2001-R2007
⚠ R2015, R2016

RS1LMF471J
RD1/4MUF473J
RS1/2LMF4R7J
RS1LMF2R2J
RS2LMF331J

OTHERS

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

51048-0400
52045-1245
AKE7108
AKE7110

**Z DIODE ASSY
SEMICONDUCTORS**

⚠ D2241, D2242

D5SBA20(B)

**O DISPLAY ASSY
SEMICONDUCTORS**

IC3001
IC3002
IC3003
Q3001
Q3002, Q3003, Q3005

PE5403A
RPM7140-H9
TC7W53FU
2SA1576A
DTC124EUA

Q3004
D3002-D3009
D3001
D3010
D3011

FMA1A
1SS355
DAN202K
SLI-343DCW(STU)
SLR-343BBT(GHJ)

COILS AND FILTERS

L3001
X3001 CERAMIC RESONATOR(5MHz)

LFEA2R2J
VSS1142

SWITCHES AND RELAYS

S3001- S3016

VSG1024

CAPACITORS

C3103- C3105, C3107
C3007
C3003
C3018
C3019-C3022

CCSRCH471J50
CEAT101M6R3
CEAT221M6R3
CEAT470M50
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

5	6	7	8
Mark No. Description Part No.	Mark No. Description Part No.		
CAPACITORS C3201, C3202	CKSRYB103K50	C3366, C3367, C3371, C3378, C3395	CKSRYB104K25
RESISTORS All Resistors	RS1/16S###J	RESISTORS All Resistors	RS1/16S###J
OTHERS 3201 5P CABLE HOLDER	51063-0505	OTHERS CN3351 15P PLUG JA3352 FRONT AV INPUT JA3351 REMOTE CONTROL JACK KN3351, KN3352 WRAPPING TERMINAL	AKP7060 AKX7019 RKN1004 VNF1084
P MULTI JOG ASSY SWITCHES AND RELAYS S3251 S3252-S3254	ASX7031 VSG1024	AF PRIMARY ASSY SEMICONDUCTORS ⚠ IC1001 Q1001 D1002, D1004, D1005 ⚠ D1001 D1003	NJM78M56FA DTC143EUA 1SS355 S1WB(A)60SD UDZS5R1(B)
CAPACITORS C3251, C3252	CKSRYB103K50	COILS AND FILTERS ⚠ L1001 LINE FILTER	XTF3004
RESISTORS Other Resistors	RS1/16S###J	TRANSFORMERS ⚠ T1001	ATT7040
OTHERS 3251 4P CABLE HOLDER	51063-0405	SWITCHES AND RELAYS ⚠ RY1001	XSR3003
H HEADPHONE ASSY CAPACITORS C3303 C3304 C3305 C3301, C3302	CCSRCH471J50 CKSRYB103K50 CKSRYB104K25 CKSRYB392K50	CAPACITORS ⚠ C1002, C1003 (0.01 microF/275V) C1008 C1009 C1004	ACE7013 CEAT102M25 CEAT221M25 CQMBA103J50
RESISTORS All Resistors	RS1/16S###J	RESISTORS R1002 Other Resistors	RD1/2VM221J RS1/16S###J
OTHERS CN3301 4P JUMPER CONNECTOR 3301 PHONE JACK KN3301 WRAPPING TERMINAL	52147-0410 AKN7029 VNF1084	OTHERS ⚠ CN1005 1P AC OUTLET H1001, H1002 FUSE CLIP CN1002, CN1003 5P SOCKET ⚠ CN1001 AC CORD SOCKET KN1001 WRAPPING TERMINAL	AKP1034 AKR7001 KP200TA5L RKP1751 VNF1084
I FRONT-IN ASSY SEMICONDUCTORS IC3351 Q3351 D3354 D3351-D3353	UPC4570G2-A HN1C01FU DAN217 UDZS5R1(B)	G OPTICAL-IN ASSY COILS AND FILTERS L961	QTL1013
COILS AND FILTERS L3353	QTL1013	CAPACITORS C964 C968 C961-C963, C965	CEAT101M16 CKSRYB104K25 CKSRYF104Z25
CAPACITORS C3353, C3385, C3386 C3381, C3382 C3354 C3351 C3352, C3355, C3357, C3361, C3362 C3391, C3392 C3372, C3373 C3383, C3384, C3387, C3388 C3396 C3359, C3360, C3365, C3376 C3389, C3390, C3394	CCSRCH101J50 CCSRCH221J50 CCSRCH330J50 CCSRCH471J50 CEAT100M50 CEAT330M25 CEAT470M25 CEJQ100M16 CKSRYB102K50 CKSRYB103K50 CKSRYB103K50	RESISTORS Other Resistors	RS1/16S###J
	CKSRYB103K50	OTHERS CN961 CONNECTOR JA961, JA962 OPTICAL LINK IN JA963 OPTICAL LINK OUT 961 SCREW PLATE	CKS3824 GP1FA513RZ GP1FA513TZ VNE1948

Mark No. **Description**

Part No.

Mark No. **Description**

Part No.

AC REAR TOP ASSY

K 12V TRIGGER ASSY(VSX-2014i 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

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

SEMICONDUCTORS

Q951	2SD1858X
Q952	2SC4081
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
CN954	11P FFC CONNECTOR	52045-1145
CN951, CN952	23P SOCKET	AKP7075
951	SCREW PLATE	VNE1948

JA951, JA952	4P MINI JACK + SW	XKN3015
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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
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5	6	7	8	
Mark No.	Description	Part No.	Mark No.	Description
C4158, C4159, C4258, C4259 C4358, C4359 C4154, C4155, C4254, C4255	CEHAT470M25 CEHAT470M25 CEHAT470M63		D4051, D4053	1SS355
C4354, C4355	CEHAT470M63		CAPACITORS	
RESISTORS			C4054, C4055, C4056 C4052, C4053 C4051	CKSRYB103K50 CKSRYB104K25 CKSRYB223K50
⚠ R4169, R4269, R4369 ⚠ R4181, R4182, R4281, R4282 ⚠ R4381, R4382, R4481 R4574 R4155, R4255, R4355	ACN7121 ACN7132 ACN7132 RD1/2VM1R0J RN1/10SE1201D		RESISTORS	
R4162, R4262, R4362 Other Resistors	RN1/10SE3302D RS1/16S###J		All Resistors	RS1/16S###J
OTHERS			OTHERS	
CN4552 11P SOCKET CN4551 13P SOCKET CN4553 2P CONNECTOR CN4452 6P PLUG KN4403, KN4404 WRAPPING TERMINAL J4152- J4154 JUMPER WIRE 58 J4151, J4155 JUMPER WIRE 70	AKP7069 AKP7070 B02B-XASK-1 KM250NA6L VNF1084 ADB7021 ADB7022		CN4053 15P FFC CONNECTOR CN4051, CN4052 11P PLUG CN4054 3P PIN POST	52044-1545 AKP7058 S3B-EH
Q POWER AMP IN ASSY			S POWER AMP-L ASSY	
SEMICONDUCTORS			SEMICONDUCTORS	
IC4451 Q4452 Q4451 D4453-D4458 D4451, D4452	PA9010A 2SA1255 2SC3326 1SS355 UDZS10(B)		⚠ IC4101, IC4201, IC4301 ⚠ IC4102, IC4202, IC4302 ⚠ IC4103, IC4203, IC4303, IC4453 Q4102, Q4202, Q4302 Q4101, Q4201, Q4301	PA9010A PBD001A PBD002A 2SA1255 2SC3326
CAPACITORS			D4102, D4104-D4108, D4202 D4204-D4208, D4302, D4304-D4308 D4101, D4103, D4201, D4203, D4301 D4303	1SS355 1SS355 UDZS10(B) UDZS10(B)
C4456, C4457 C4452 C4462, C4463 C4464 C4460, C4461	ACG7041 CCSRCH221J50 CCSRCH6R0D50 CEANP2R2M50 CEHAT100M2A		CAPACITORS	
C4451 C4453 C4458, C4459 C4454, C4455	CEHAT100M50 CEHAT331M10 CEHAT470M25 CEHAT470M63		C4106, C4107, C4206, C4207 C4306, C4307 (220uF/100v) C4102, C4202, C4302 C4112, C4113, C4212, C4213 C4312, C4313 C4114, C4214, C4314	ACG7041 ACG7041 CCSRCH221J50 CCSRCH6R0D50 CCSRCH6R0D50 CEANP2R2M50
RESISTORS			C4401, C4402 C4110, C4111, C4210, C4211 C4310, C4311 C4101, C4201, C4301 C4103, C4203, C4303	CEAT331M2A CEHAT100M2A CEHAT100M2A CEHAT100M50 CEHAT331M10
R4469 (0.18 ohm/5W) R4455 R4462 Other Resistors	ACN7121 RN1/10SE1201D RN1/10SE3302D RS1/16S###J		C4108, C4109, C4208, C4209 C4308, C4309 C4104, C4105, C4204, C4205 C4304, C4305	CEHAT470M25 CEHAT470M25 CEHAT470M63 CEHAT470M63
OTHERS			RESISTORS	
4001 5P CABLE HOLDER CN4003 18P FFC CONNECTOR CN4001, CN4002 13P PLUG CN4401, CN4451 6P SOCKET	51048-0500 52044-1845 AKP7059 KP250NA6		⚠ R4119, R4219, R4319 (0.18 ohm/5W) ⚠ R4131, R4132, R4231, R4232 ⚠ R4331, R4332, R4482 (0.047 ohm) R4573 R4105, R4205, R4305	ACN7121 ACN7132 ACN7132 RD1/2VM1R0J RN1/10SE1201D
			R4112, R4212, R4312 Other Resistors	RN1/10SE3302D RS1/16S###J
R POWER PROTECT ASSY			OTHERS	
SEMICONDUCTORS			CN4502 11P SOCKET CN4501 13P SOCKET CN4503 2P CONNECTOR CN4504 2P CONNECTOR CN4402 6P PLUG	AKP7069 AKP7070 B02B-XASK-1 B02B-XASK-1 KM250NA6L
IC4051 Q4051 Q4052 Q4053 Q4054	NJM4558MD 2SC4081 UMB1N DTC124EUA UMH1N		KN4401, KN4402 WRAPPING TERMINAL J4101, J4104, J4105 JUMPER WIRE 58 J4102, J4103 JUMPER WIRE 70	VNF1084 ADB7021 ADB7022

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

A

**AA VH TR ASSY
SEMICONDUCTORS**

⚠ Q2231

⚠ Q2233

⚠ Q2232

⚠ Q2234

⚠ D2231, D2232

2SA1514K

2SA1837D1

2SC3906K

2SC4793D1

1SR154-400

RESISTORS

All Resistors

RS1/16S###J

OTHERS

2205 6P CABLE HOLDER

51048-0600

B

**M DSP ASSY
SEMICONDUCTORS**

IC601

IC701

IC801

⚠ IC902

⚠ IC901

AK4114VQ

AK4628VQE

DSPA56371AF180

LM1117DT-ADJ

NJM2391DL1-33

IC851

IC501

IC551

IC952

IC871

PDL018A8

TC74HCU04AF

TC74VHC157FT

TC74VHCT244AFT

TC7WH125FU

C

IC951

IC802

Q551

Q801

D553, D702

TC7WH34FU

TC7WU04FU

UMD2N

UN5212

DAN202K

D551, D701

D901, D902

DAP202K

UDZS5R6(B)

D

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

E

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

CEVW100M16

CEVW101M16

F

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

CN551 22P FFC CONNECTOR

VKN1426

**AG 1394 ASSY(VSX-2014i Only)
SEMICONDUCTORS**

IC302

⚠ IC1

IC303

IC101

IC301

K4S641632H-TC75

NJM2391DL1-33

NJU7093AF

PD5787A

PD8112A

IC103

⚠ IC410

IC401

IC405

IC104

PST9245

S-L2980A25MC-C6K

SM5819AF

TC74VHC541FT

TC74VHCT125AFT

IC205

IC404

IC409

IC201

Q101, Q301

TC7SH08FU

TC7SZ125FU

TC7SZ126FU

TSB43CA42ZGW

DTA124EUA

Q401

D102

DTA143EUA

RB501V-40

COILS AND FILTERS

⚠ L204-L207

L1, L101, L201-L203

L301, L302, L401, L403-L405

ATH7015

ATL7002

ATL7002

CAPACITORS

C329 (10u/6.3V)

C2, C401, C428 (220u/6.3V)

C242, C243

C402

C103, C206, C217, C232, C304

ACG7046

ACH7195

CCSRCH221J50

CCSRCH471J50

CEVW101M16

C321, C419

CEVW101M16

5	6
Mark No.	Description

C113, C211, C213, C215, C216
C310, C324
C101, C111
C1, C102, C104-C110

C201-C205, C207, C209, C210
C212, C214, C218-C226, C235
C241, C246-C249, C301-C303
C305, C309, C311, C315-C320
C322, C323, C325, C327, C333

C404, C405, C408-C412
C415, C416, C420, C424, C427
C244, C245, C326
C330
C328

RESISTORS

R119, R127-R130, R205
R230-R233, R245, R246, R445
R122
R407
R308, R339, R340, R343-R347

R350
R135-R138, R206, R216
R220, R221, R223, R234
R238-R240
R302, R402

R275, R276
R267-R274
R213
Other Resistors

OTHERS

X101 (6.14MHz)
X302 (22.5792MHz)
X201 (24.5760MHz)
CN101 7P CONNECTOR
CN402 10P CONNECTOR

CN401 22P CONNECTOR
JA201, JA202 1394 TERMINAL

V POSI 1 R ASSY OTHERS

J4551
⚠ TH4503

6
Part No.

CKSRYB102K50
CKSRYB102K50
CKSRYB103K50
CKSRYB104K16

CKSRYB104K16
CKSRYB104K16
CKSRYB104K16
CKSRYB104K16
CKSRYB104K16

CKSRYB104K16
CKSRYB104K16
CKSRYB105K6R3
CKSRYB472K50
CKSRYB474K10

RAB4C101J
RAB4C101J
RAB4C103J
RAB4C221J
RAB4C470J

RAB4C470J
RAB4C472J
RAB4C472J
RAB4C472J
RAB4C680J

RS1/16S5101F
RS1/16S56R0D
RS1/16S6341D
RS1/16S###J

VSS1179
ASS7054
ASS7055
RKN1048
VKN1414

VKN1426
VKN1800

T POSI 1 L ASSY OTHERS

J4501
⚠ TH4501

ADX7471
PTFM04BH222Q2N34B0

AH POSI 2 L ASSY OTHERS

J4502
⚠ TH4502

ADX7471
PTFM04BD222Q2N34B0

FM/AM TUNER UNIT
FM/AM TUNER UNIT has no service part.

7	8
Mark No.	Description
Part No.	

6. ADJUSTMENT

There is no information to be shown in this chapter.

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 ENTER key and VIDEO 2 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)

③ Fan stop detection

If the fan is forcibly stopped, the FAN_STOP port becomes "L"

Detecting "L" the microcomputer performs the following operations:

1. System muting on
2. Protection relays off

The warning indication "FAN STOP" appears (flashing) on the FL display.

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

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

FAN_STOP port performs the chattering check for 7 msec.

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

④ Diagnostic mode

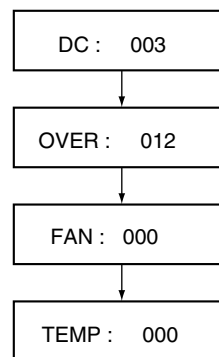
This mode is only for servicing and checking the circuit design, and not open to users.

When the VIDEO 1 key and ENTER key are both held pressed for 2 seconds in Standby mode, the power is turned on, and the number of times of each defect or Speaker relay off by abnormality detection is sequentially displayed on the FL display.

Displayed items:

- DC detection
- Overload detection
- Fan detection
- Temperature detection

Hold the VIDEO 1 key and ENTER key pressed for 2 seconds in Standby mode.



Display changes automatically every 3 seconds.

● Protection Process List

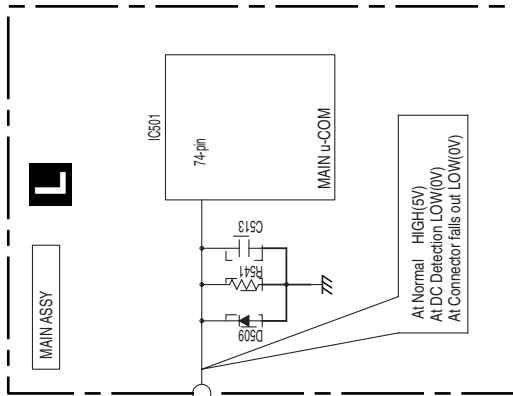
Item	Detection Method	Process	Warning Indication	Remarks
DC detection	Detects when the DC_PROT port becomes "L".	Turns muting on and speaker relay off, then turns off the power after 3 seconds.	Flashing "AMP ERR" for 3 seconds.	If the power is turned off, flashes the MCACC LED. Do not accept the POWER 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	
Fan stop	Detects when the FAN_STOP port becomes "L".	Turns muting on and speaker relay off, then turns off the power after 3 seconds.	Flashing "FAN STOP" for 3 seconds	If the FAN_DET port becomes "H" within 3 seconds, the unit resets automatically. After the power off, the key input is possible once again.
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 TRG ERR"	Only a fan that is assigned 12V TRIG is valid. Release the FL indication with the power on/off.

A

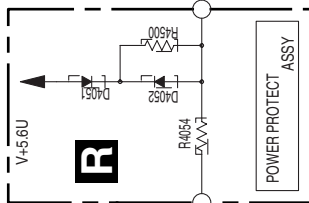
• Overload Detection circuit

• DC Detection circuit

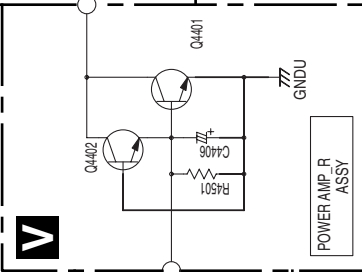
B



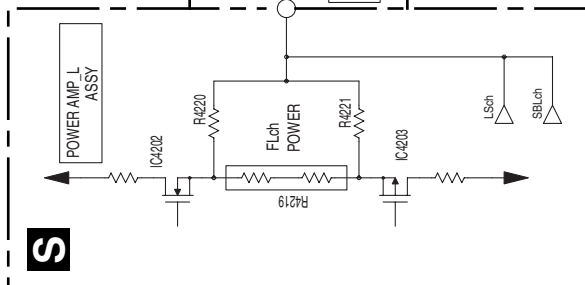
C



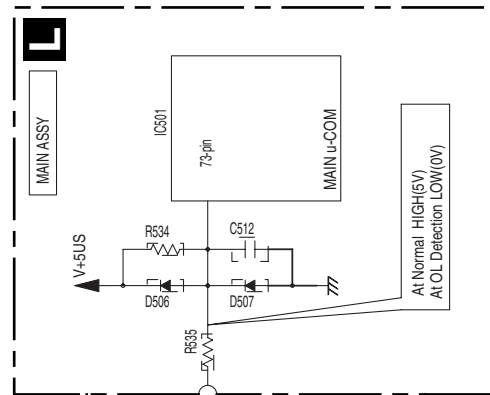
D



E



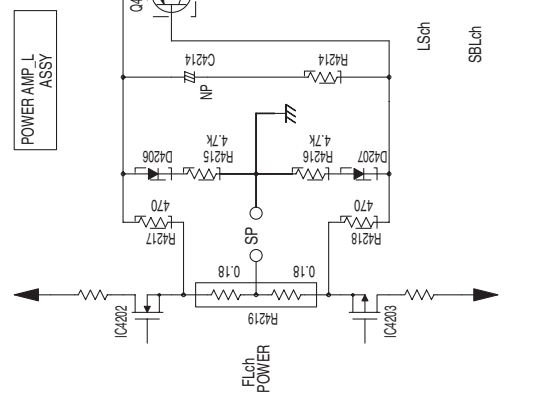
F



POWER AMP R ASSY

POWER AMP L ASSY

POWER AMP L ASSY



7.1.2 HOW TO DIAGNOSE THE AMPLIFIER SECTION

When DC detection worked (MCACC LED 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 (MCACC LED 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. R4231, R4232 (ACN7132: 0.047 Ω , 0.5W chip drain resistor)
IC 4202, IC4203 (PBD001A: Nch, PBD002A: Pch output
POWER MOS Tr.) /POWER AMP-L Assy
2. R4219 (ACN7121: 0.18 Ω .5W $\times 2$ cement source resistor)
R4217, R4218 (RS1/16S471J: 470 Ω chip resistor for
protection circuit)
D4201, D4203 (UDZS10B: 10V Zener diode for current
limiting)
D4202, D4204 (1SS355: Small signal diodes same as above)
R4210, R4211 (RS1/16S560J: 56 Ω chip gate resistor)
R4206, R4207 (RS1/16S101J: 100 Ω chip IC4201 power filter
resistor) /POWER AMP-L Assy
3. IC4201 (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

1 2 3 4

7.1.3 HOW TO DIAGNOSE THE UNIT WITH THE POWER AMPLIFIER SECTION REMOVED

A

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 MCACC 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)

C

Procedures:

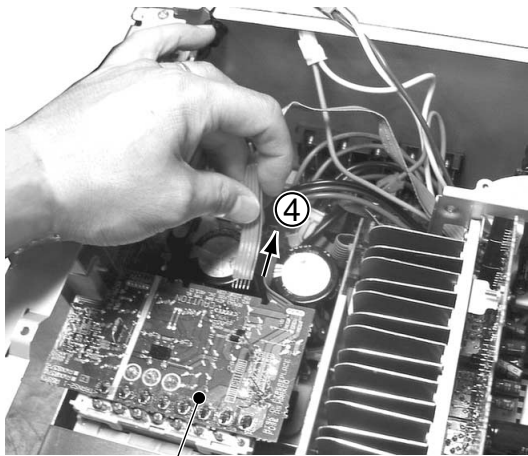
- ① Remove the bonnet and center beam.
- ② Remove all the wires from the wire saddle.
- ③ Disconnect all six connectors connected between the Amplifier Assy and the SP/PS Assy.

• Remove the wires.



- ④ 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.)
- ⑤ Remove the eight screws that secure the Amplifier section.

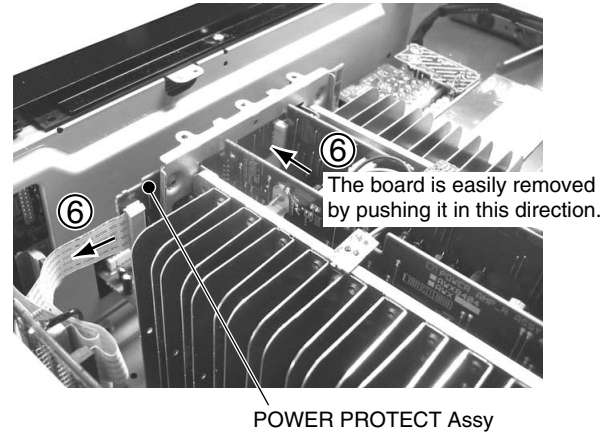
• Disconnect the parallel wires.



TRANS 2-1 Assy

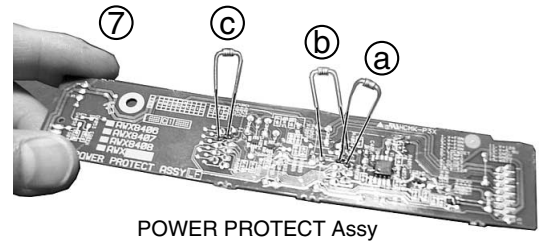
- ⑥ Remove the Power Amplifier, leaving the POWER PROTECT Assy intact.
- In this case, you can easily remove the Power Amplifier if the FFC cable connecting the POWER PROTECT Assy and the MAIN CONTROL Assy has been disconnected on either side.
 - When removing the POWER PROTECT Assy, pull out the Assy 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.



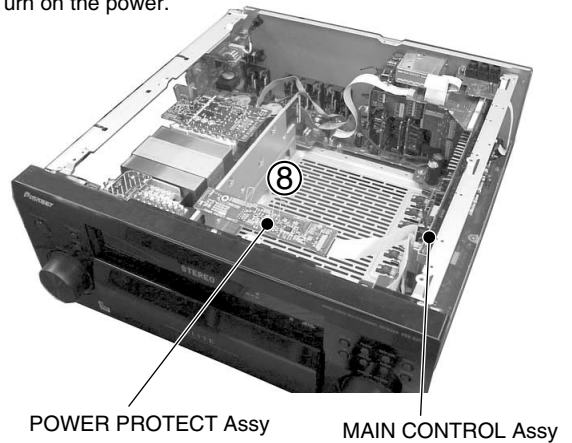
- ⑦ Jump with 100-ohm resistors in the following three places on the POWER PROTECT Assy:
- ① Between Pin 4 and Pin 5 of CN4052
 - ② Between Pin 5 and Pin 6 of CN4052
 - ③ Between Pin 8 and Pin 9 of CN4051

- 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)

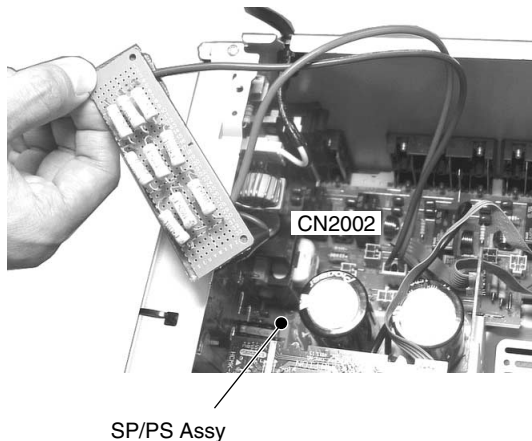
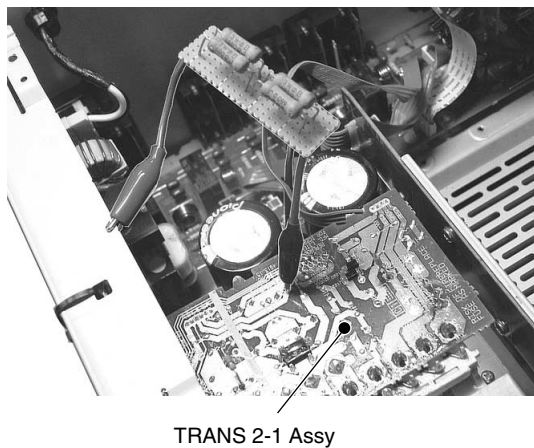


Photo 3: Discharging +VH (TRANS 2-1 Assy: C2213)



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.

● Discharging resistors

Modified ADX7404 wire with 3-pin connector

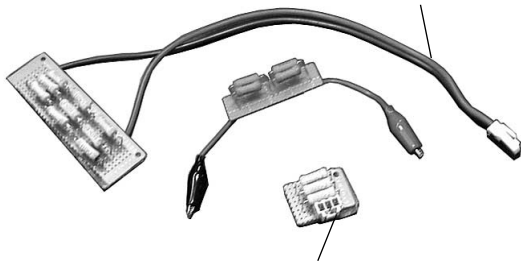


Photo 2: Discharging $\pm$ VL inside the POWER AMP-L and R Assys
Discharging of C4403 and C4404 of the POWER AMP-R Assy is also possible by reconnecting the connector to CN2001 of the POWER AMP-R Assy while keeping the discharging resistor connected to CN2002 of the SP/PS Assy connected.

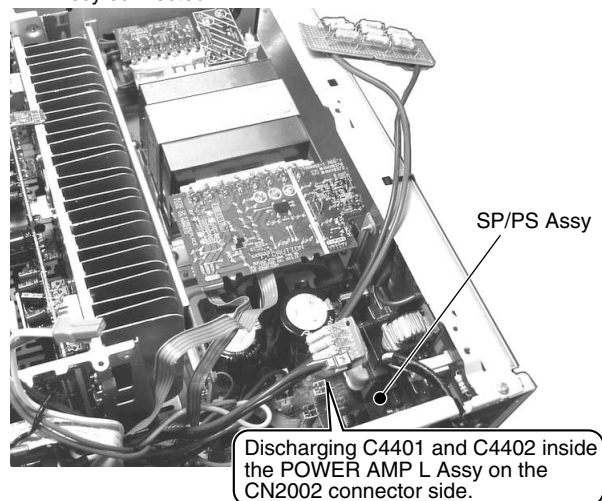
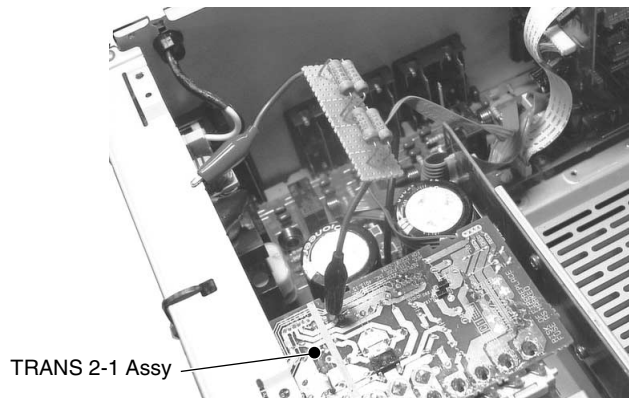
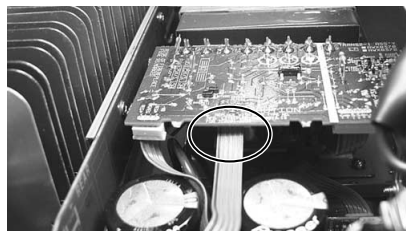


Photo 4: Discharging -VH (TRANS 2-1 Assy: C2214)



● Direction of wires

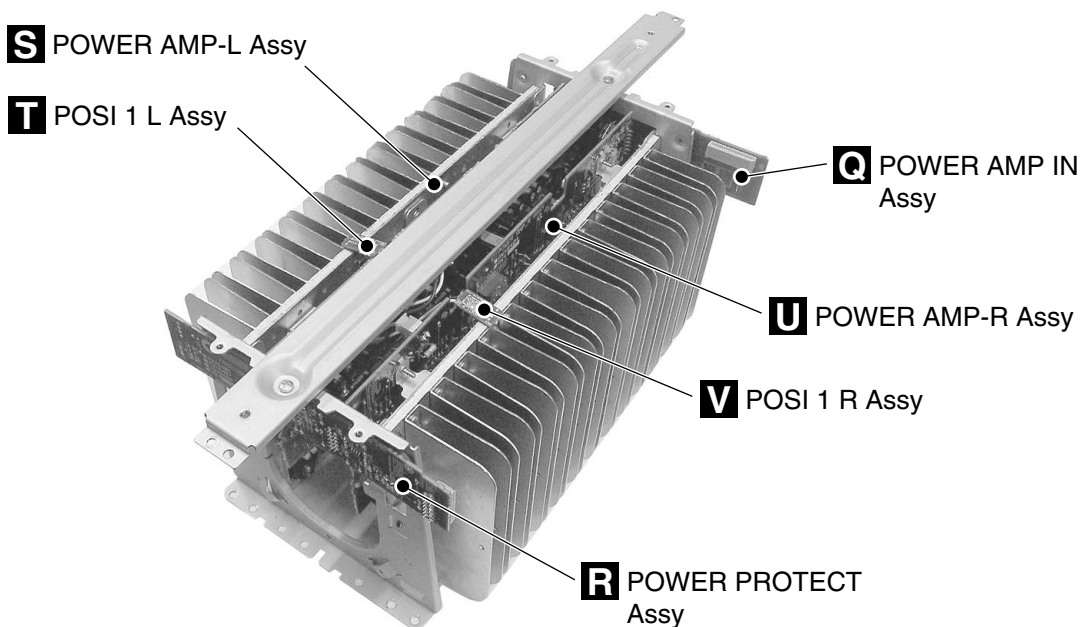
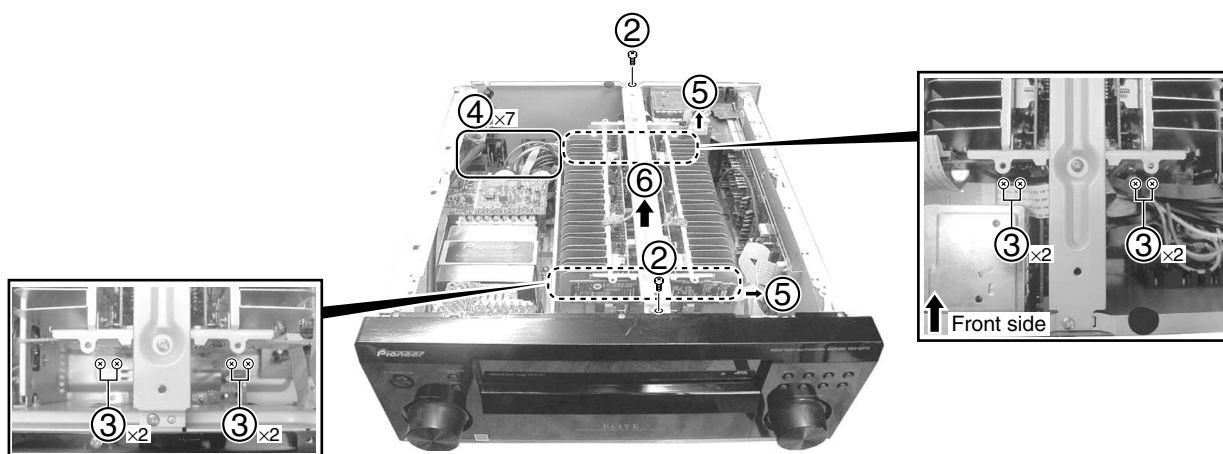


7.1.4 DISASSEMBLY

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

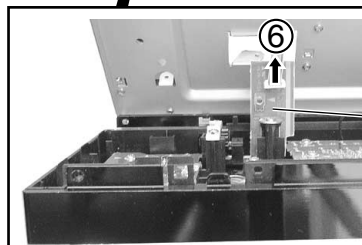
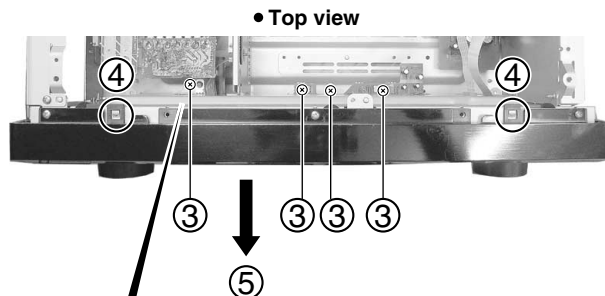
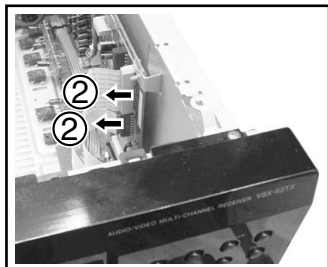
- ① Remove the bonnet case V1B by removing the twenty screws.
- ② Remove the two screws.
- ③ Remove the eight screws.
- ④ Disconnect the seven connectors.
- ⑤ Disconnect the two flexible cables.
- ⑥ Remove the heatsink section.



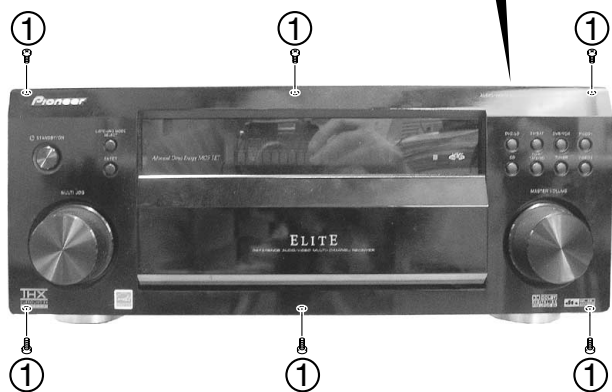
2 Front Panel Section

- 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.



HEADPHONE
Assy



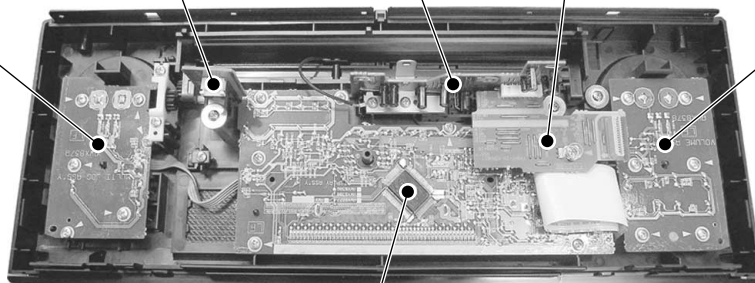
H HEADPHONE
Assy

I FRONT-IN
Assy

J FRONT-IN CONNECT
Assy

P MULTI JOG
Assy

N VOLUME
Assy



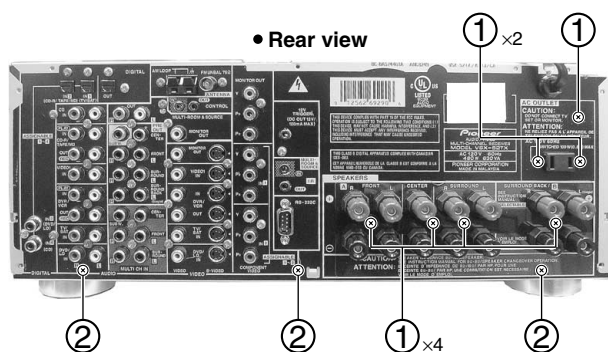
O DISPLAY Assy



3 Rear Panel and Main Sections

① Remove the seven screws.

② Remove the three screws.



③ Remove the one screw.

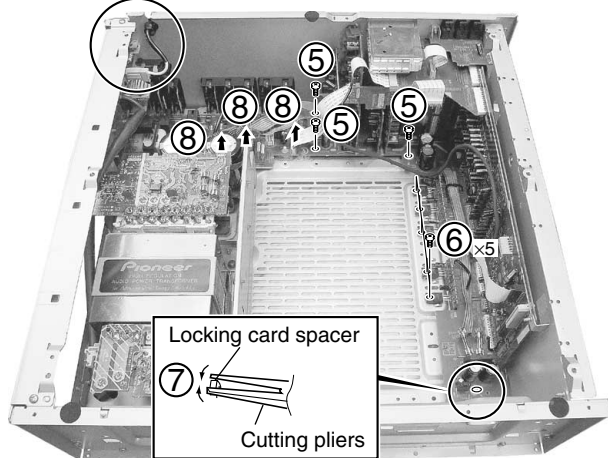
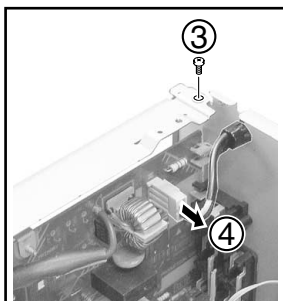
④ Disconnect the one connector.

⑤ Remove the three screws.

⑥ Remove the five screws.

⑦ Remove the locking card spacer.

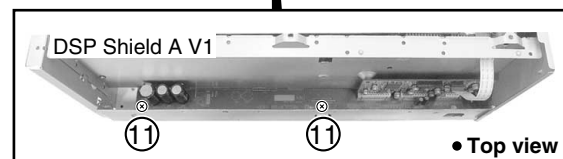
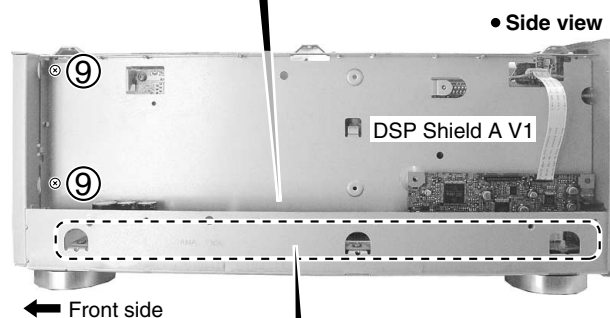
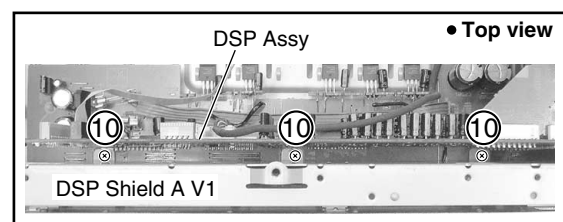
⑧ Disconnect the two connectors and the one flexible cable.



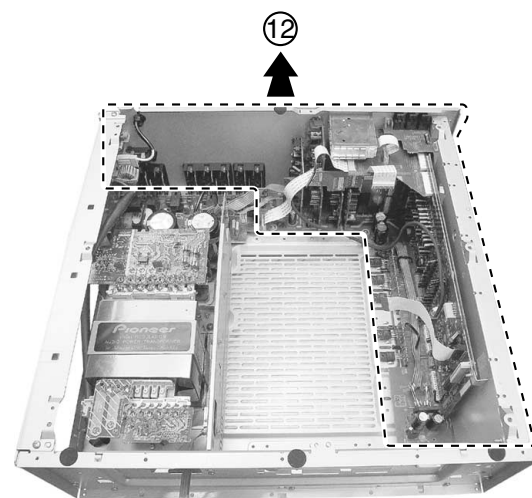
⑨ Remove the two screws.

⑩ Remove the three screws.

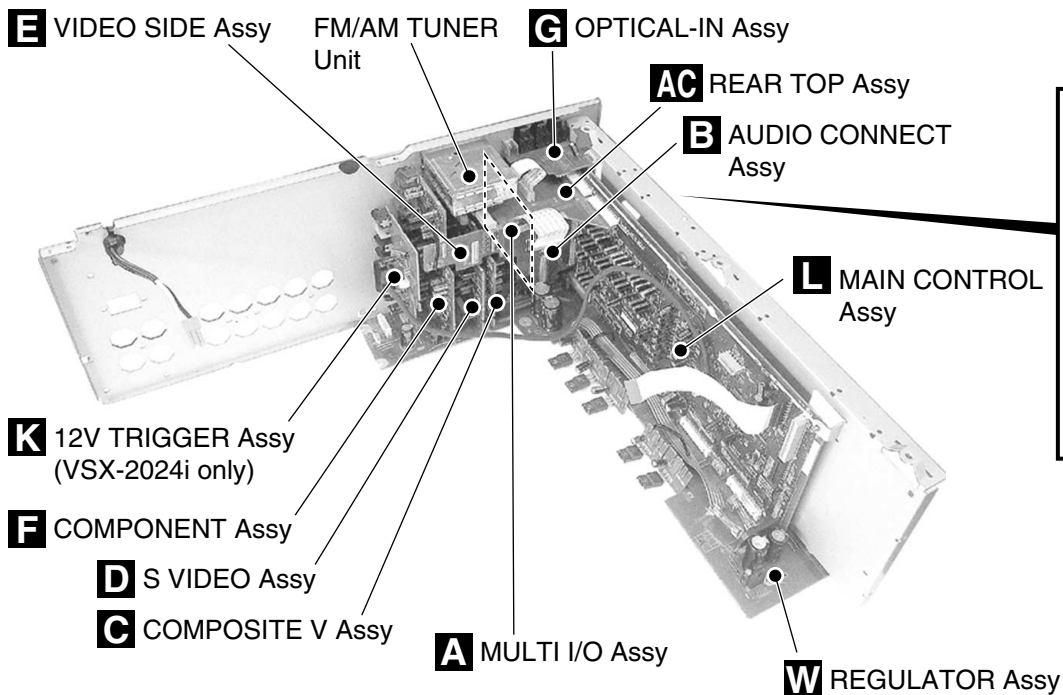
⑪ Remove the two screws.



⑫ Remove the rear panel section with the main section.



A



B

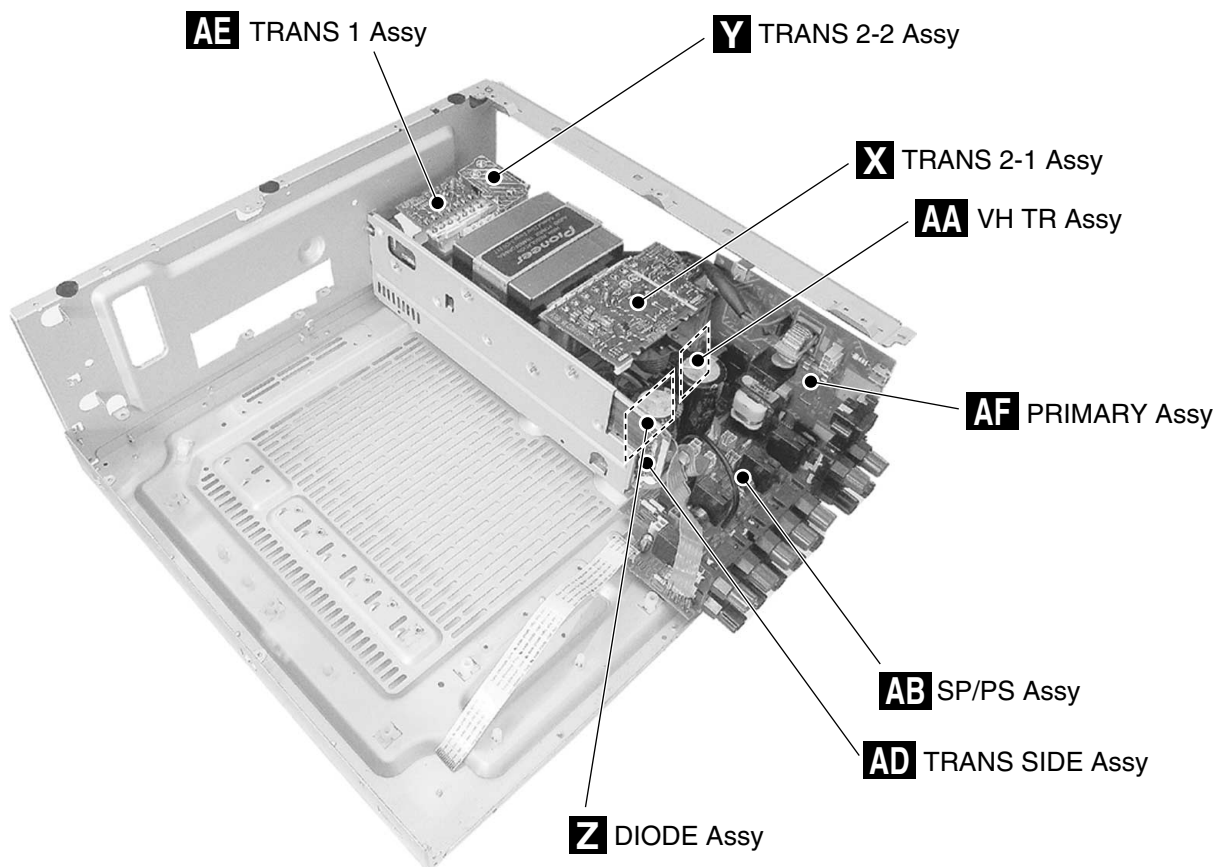
C

C

D

E

F



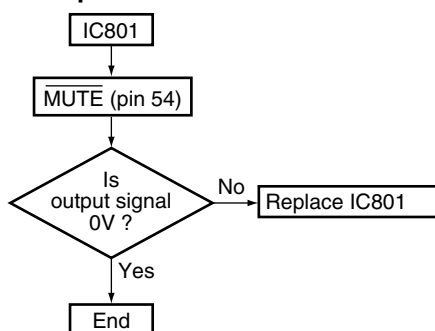
7.1.5 TROUBLE SHOOTING OF THE DSP ASSY

- 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.

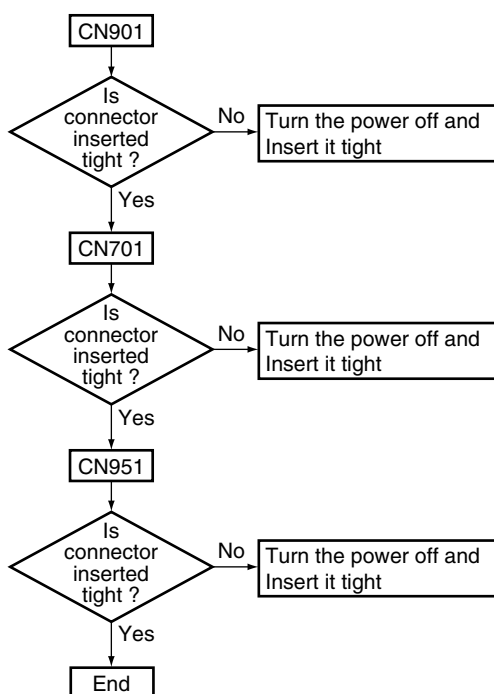
Step 0: Preliminary check

- 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.)

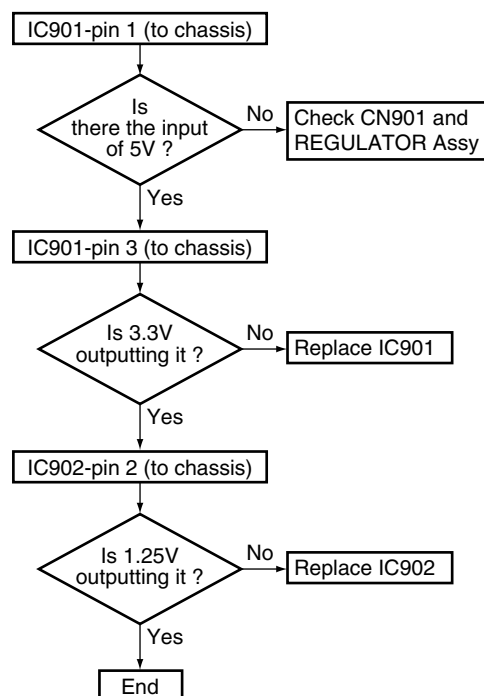
Step 1: Mute pin



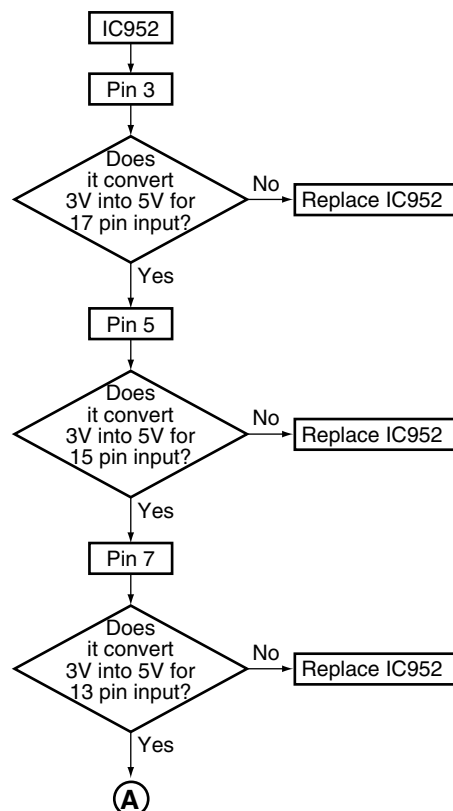
Step 2: B to B connector



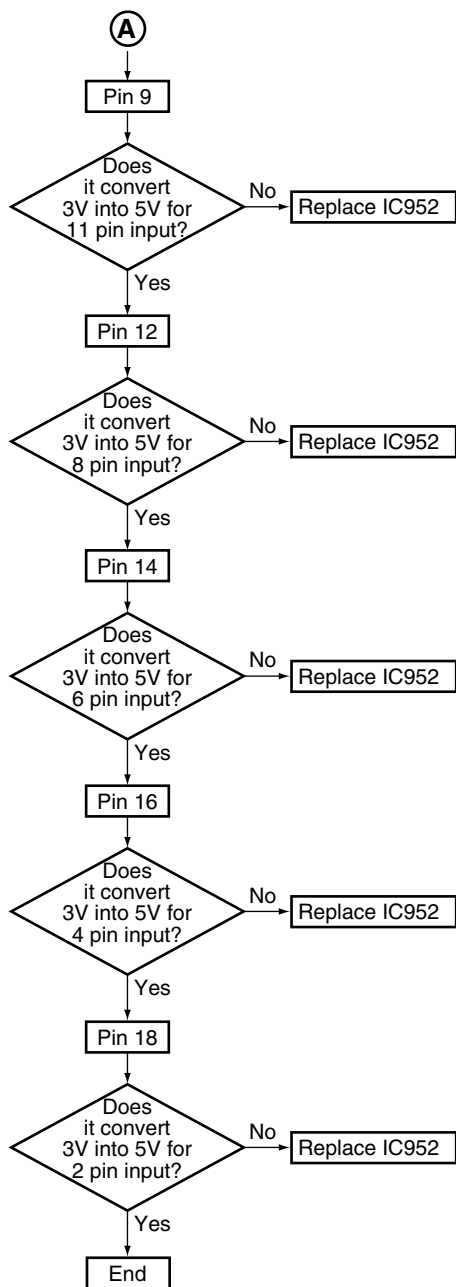
Step 3: Regulator IC



Step 4: 3 → 5V conversion



A



B

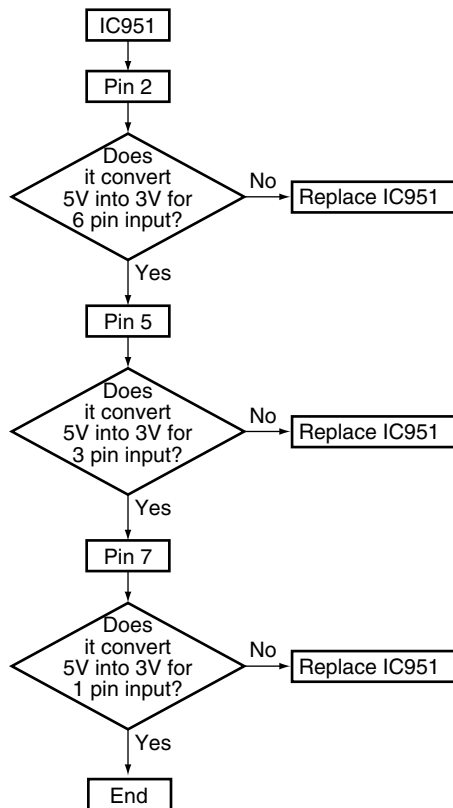
C

D

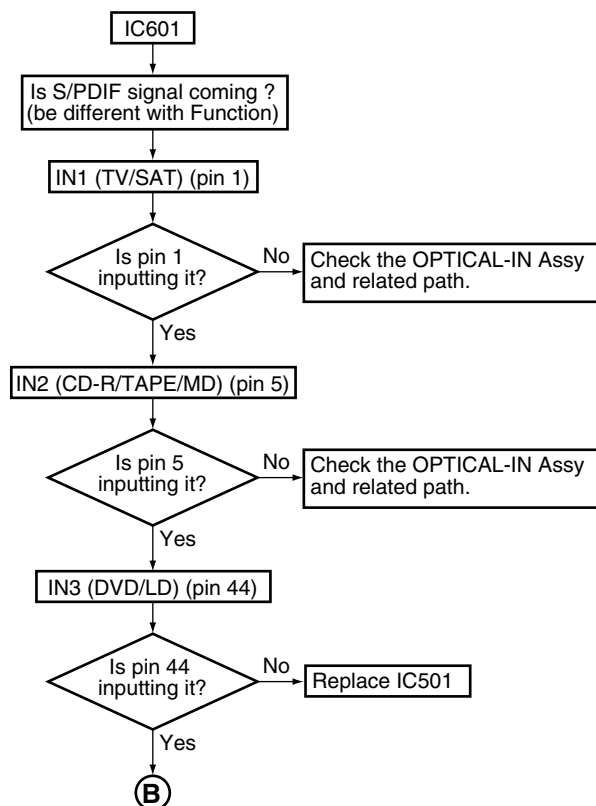
E

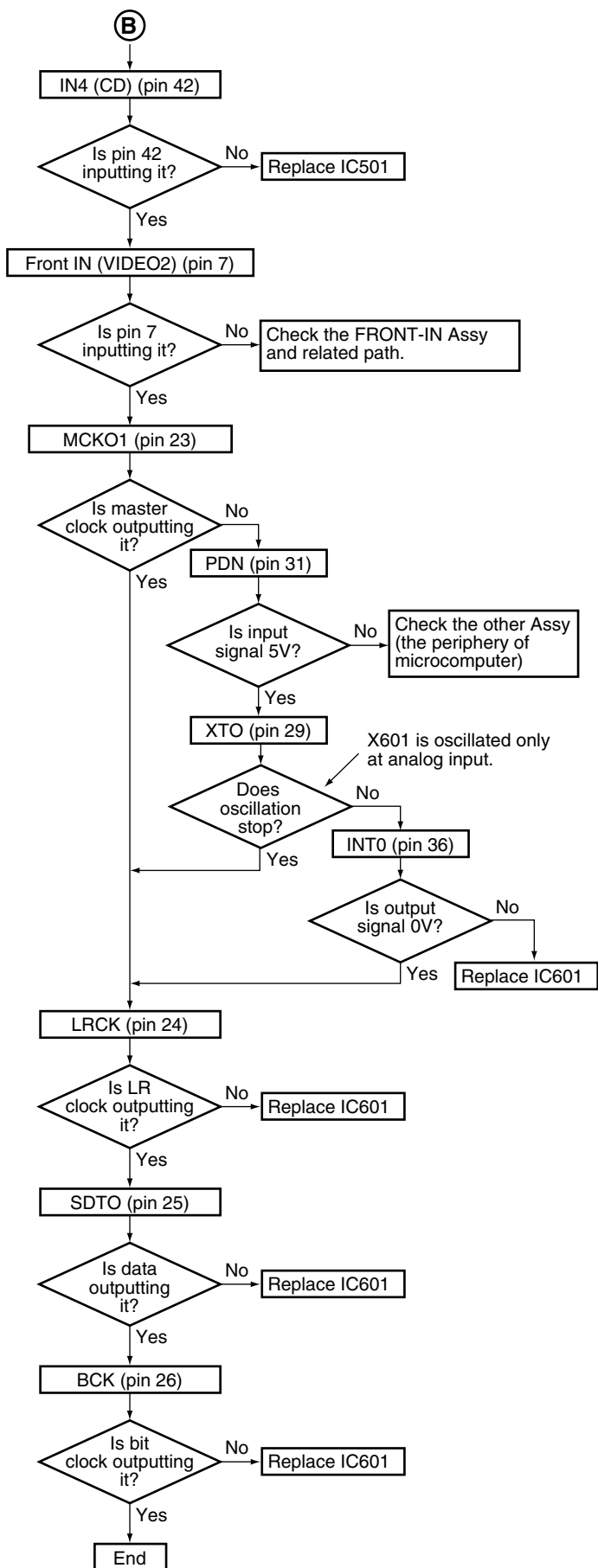
F

Step 5: 5 → 3V conversion

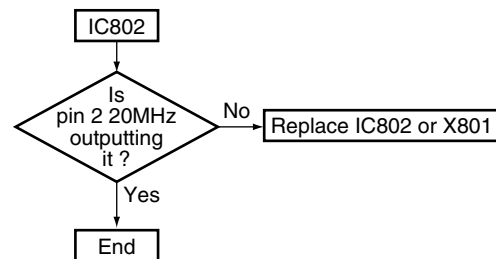


Step 6: DIR



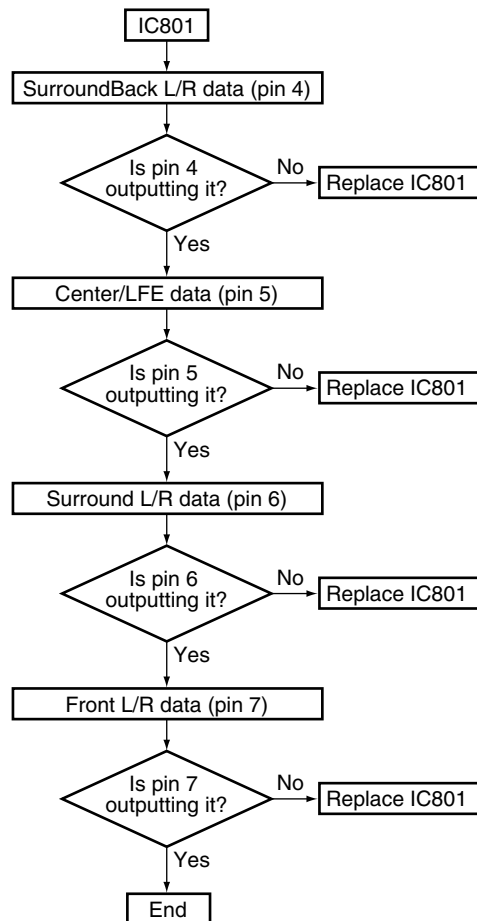


Step 7: X'tal

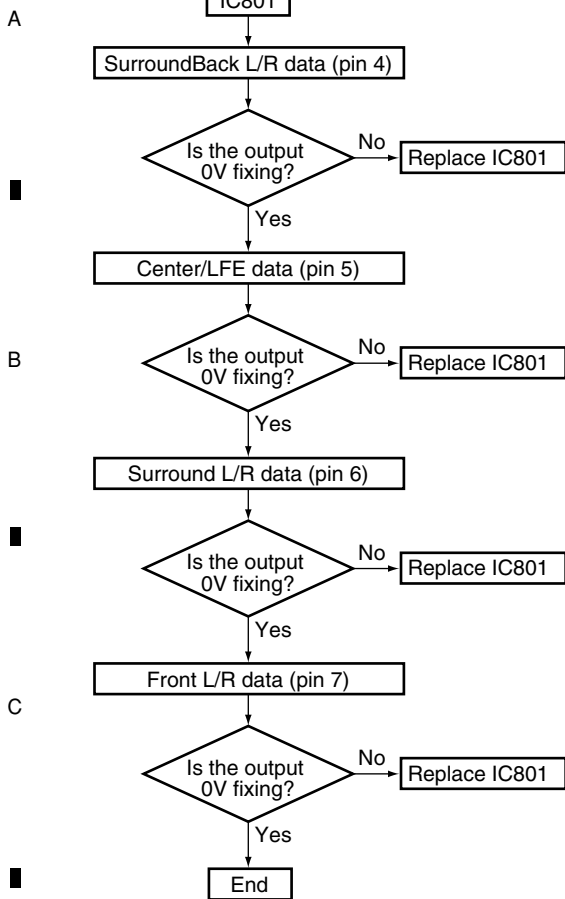


Step 8: DSP output (digital)

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

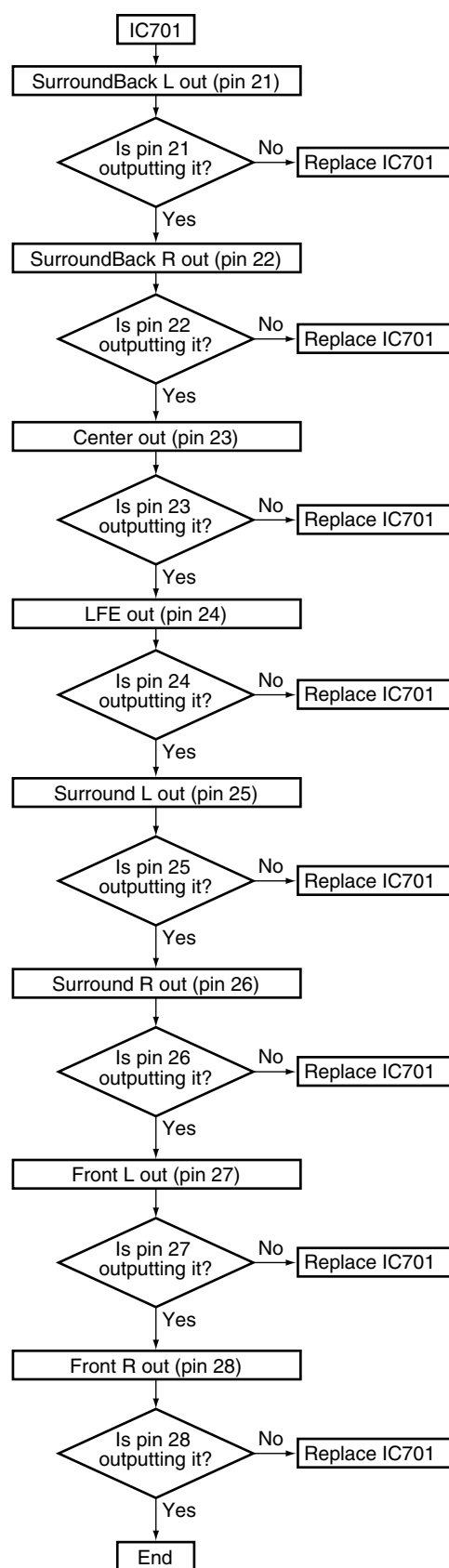


- Each channel output in the digital signal ($-\infty$ dB (there is no sound)) input.

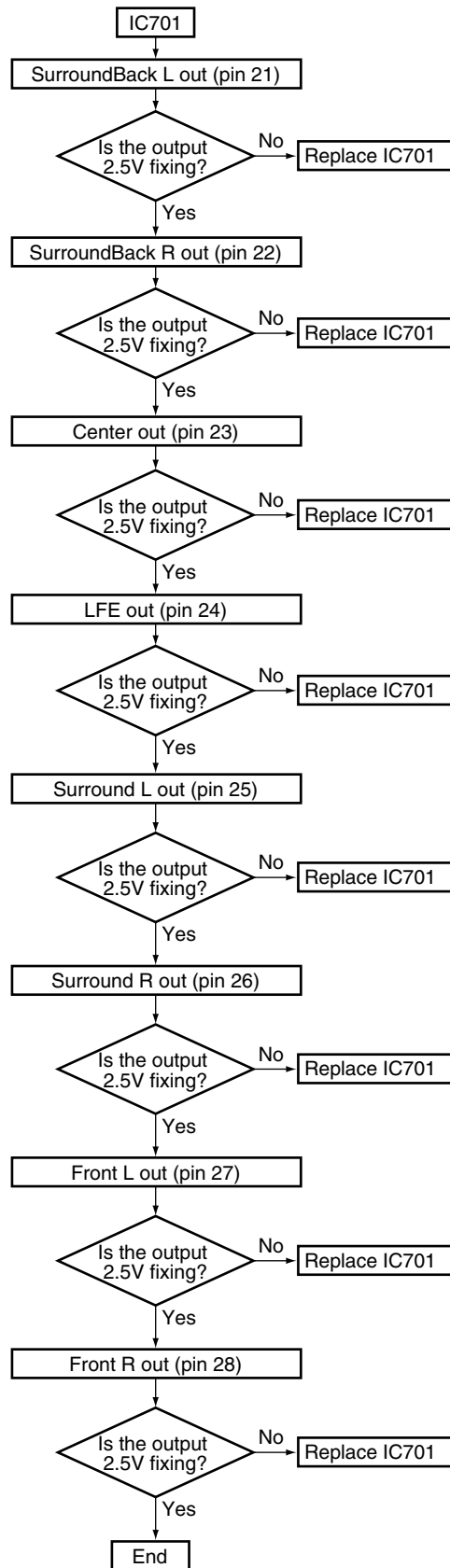


Step 9: Codec output (analog)

- 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 ON

(SurroundBack is not out with the setting.)

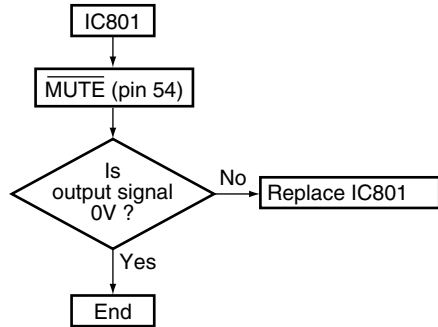
- Suppose CR to be poor contact and that is not damaged.
- This shows failure analysis of DSP Assy.

A

Step 0: Preliminary check

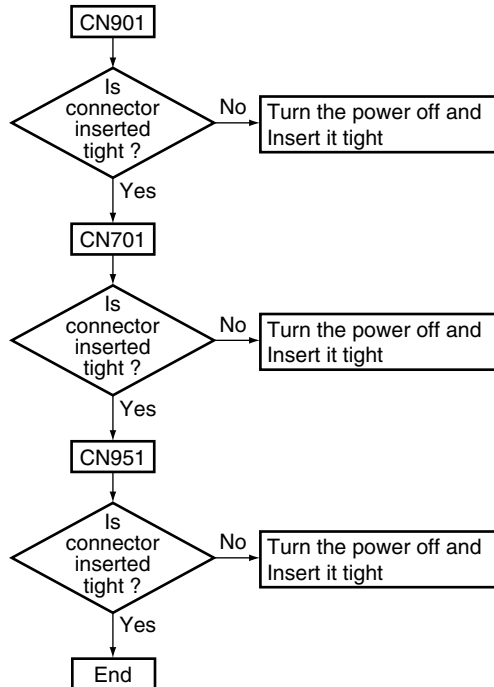
- Tighten the COAX Jack screws.
(GND of the DSP module floats from the chassis. And this unit may not work normally, because the electric potential becomes unstable.)

Step 1: Mute pin



B

Step 2: B to B connector

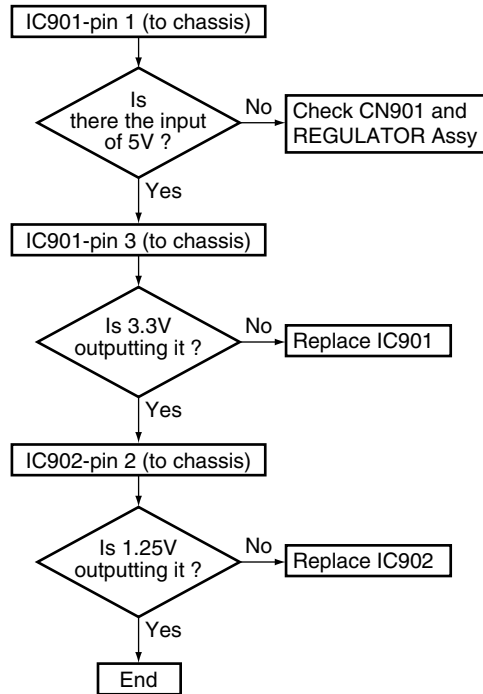


D

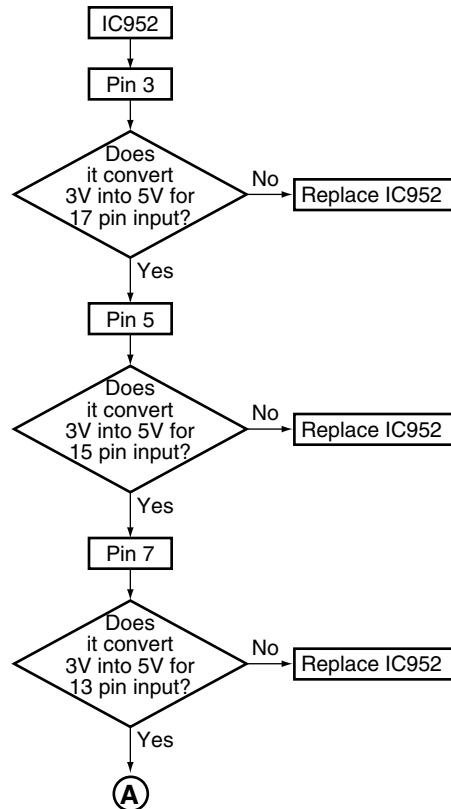
E

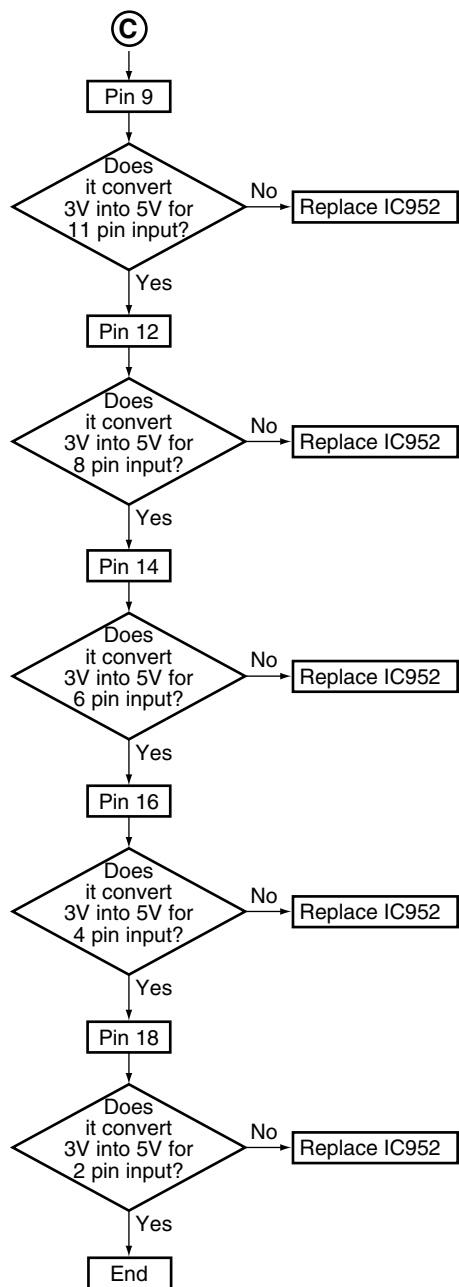
F

Step 3: Regulator IC

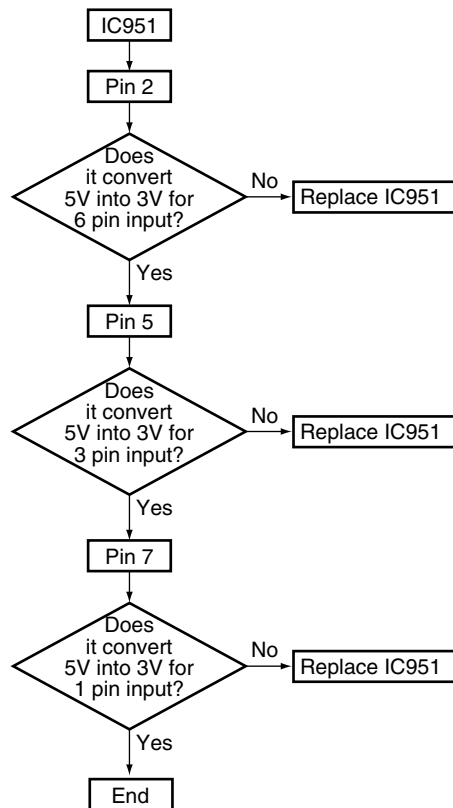


Step 4: 3 → 5V conversion

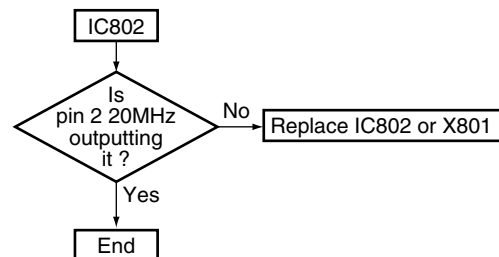




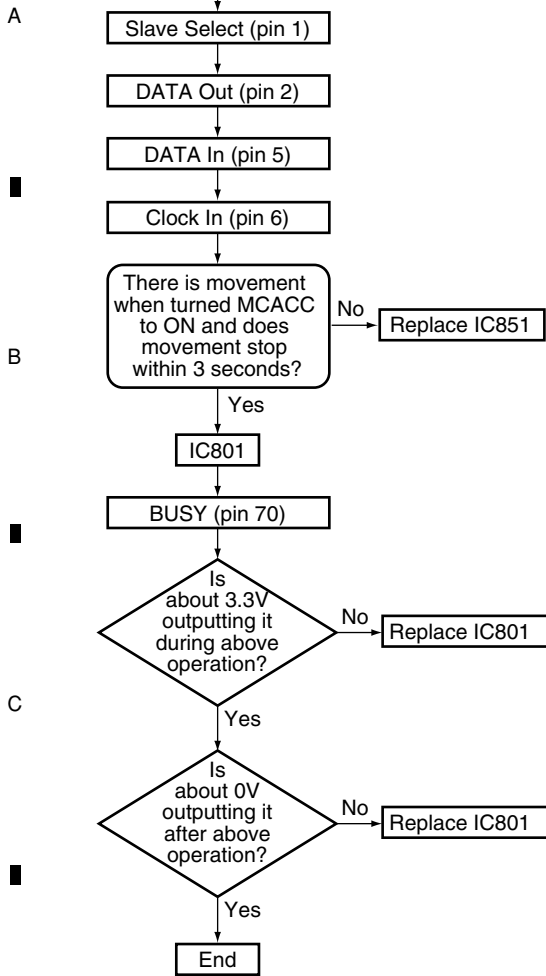
Step 5: 5 → 3V conversion



Step 6: X'tal

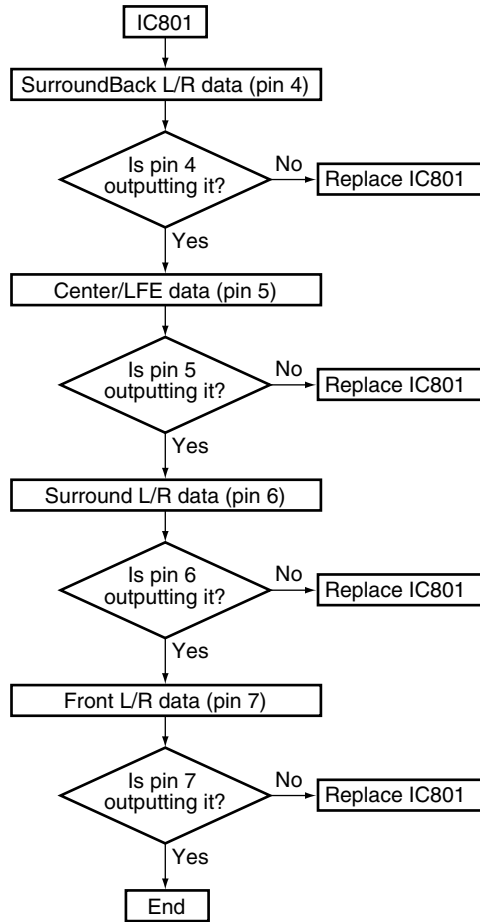


Step 7: ROM



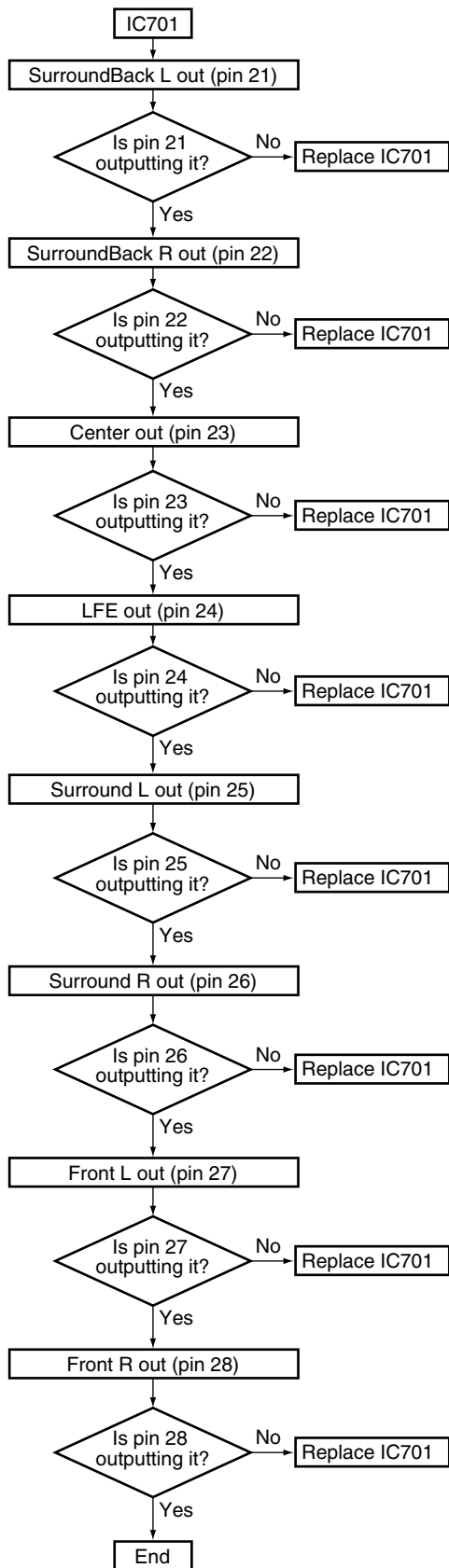
Step 8: DSP output (digital)

• Digital output when indicating each channel



Step 9: Codec output (analog)

• Analog output when indicating each channel



7.1.6 OUTLINE OF THE 1394 UNIT

●Operational Outline of the IEEE 1394 Unit

A This unit supports the A&M protocol (Audio and Music Data transmission Protocol), which, among the IEEE 1394 audio and video protocols, is employed for audio equipment and electronic musical instruments, etc. As the unit does not support the MPEG2-TS protocol (for BS digital tuners and D-VHS) or the DV protocol (for digital video cameras and Pioneer's DVR) among IEEE 1394 audio and video protocols, it does not support video data transmission.

The main commands supported by this unit are: For sending, the PLAY command to a player, and for receiving, the commands for switching functions, increasing/decreasing the volume, muting on/off, and stream information (for inquiring about the receiving capabilities of the receiver).

Audio data (media) that can be received by the unit are as follows:

- DVD-A (2 channels, multiple channels)
- SACD (2 channels, multiple channels)
- B • IEC 60958 (DVD-V, DVD-RW, CD, VCD, MP3, DTS-CD, etc.)

The received data are demodulated separately for the above three signal formats in the IEEE 1394 receiving IC, output to another IC for jitterless transmission, then output to a third IC for DIR or to the DSP of the main unit.

As to SACD data, DSD streams are converted to multibit data at the SACD/PCM converting IC, and this enables SACD data processing at the DSP of the main unit. But DSD streams are inputted directly into the DAC bypassing the DSP at SACD DIRECT mode.

In jitterless transmission, audio data with jitter generated during IEEE 1394 transmission (actually, jitter contained in sync signals that cannot be reduced by the PLL for audio receiving) are cached in the buffer RAM in the receiver up to a certain amount, and then read out by a highly accurate crystal-oscillation clock in the receiver, which enables reduction of jitter. The receiver controls the amount of cached data in the buffer RAM such that a certain amount of data is always cached. If the amount of cached data falls below the specified level, a request is sent to increase the playback speed (transmission volume per unit hour) (+1%). If the amount of cached data exceeds the specified level, a request is sent to decrease the playback speed (-1%). Thus, data transmitted in jitterless transmission are delayed by about 0.7 sec behind the time indicated on the FL of the transmitting device, compared with data transmitted in normal transmission. Moreover, as mentioned above, because the sending device switches the system clock according to the request of the receiving device, sync of the video signal may be unlocked, and the audio signal would be delayed behind a video signal because of its being cached. So many sending devices do not adopt jitterless transmission for content having both audio and video signals.

Both the sending and receiving devices must support jitterless transmission to enable this type of transmission. Start of jitterless transmission is requested by the receiving device; however, depending on the status of the sending device (type of media, etc.), jitterless transmission may not be possible. Media for which jitterless transmission is supported and those for which it is not (only normal transmission is supported) are shown below:

- Jitterless transmission : DVD-A, SACD, CD, DTS-CD
- D • Normal transmission only : DVD-V, DVD-RW, VCD, MP3

Depending on the specifications of the sending device, it may not support jitterless transmission, even for those media for which it can be supported.

As to copyright protection, IEEE 1394 employs the DTCP (Digital Transmission Content Protection) system, which consists of the following:

1. Copy-control information
2. Authentication and key exchange
3. Encryption
4. System renewability

The procedures for copy protection are basically as follows: After authentication and key exchange for encryption/decryption, the sending device will send the data encrypted using the keys. The receiving device in turn will decipher the data using the exchanged keys.

- Media whose data can be encrypted: DVD-V, DVD-A, SACD, DVD-RW
- E • Media whose data cannot be encrypted: CD, DTS-CD, VCD, MP3

No.	Message	Error Code	Cause and Actions to be taken	Remarks
1	WRITING CONFIG	E7	The Config ROM data are being written to flash memory. Do NOT turn off the power while this message is displayed. While this message is displayed, the Standby button on the main unit is disabled.	This message is displayed when a unit whose host board was replaced with a new one is turned on for the first time.
2	MODEL ID ERROR	CO	The MODEL ID stored in flash memory on the host board and that stored in the main unit do not match. Download the GUID again.	This error is generated when a host board for the wrong destination is mounted in the unit, and it will only be generated during servicing. The message will remain displayed until the error is corrected.
3	CONFIG ERROR	C1	The Config ROM data are erroneous. Download the GUID again.	This message is displayed when the power is turned off while the Config ROM data are being written. As this is generated while the unit is operated online, this error will only be generated during servicing. The message will remain displayed until the error is corrected.

Note: If downloading of the GUID cannot be performed for corrective measures for messages 1 and 2, replace the host board with a new one.

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, TSB43CA42ZGW, SM5819AF

■ 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	

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	SDI0_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: Exterenal serial ROM chip select	L
64	VDDIO	–	Interface power supply (3.3V)	
65	GNDIO	–	Interface GND	
66	PE5	O	General-purpose port: Exterenal serial ROM clock	
67	PE2	O	General-purpose port: Exterenal 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)	

AK4628VQE (DSP ASSY: IC701)

• 8 ch Codec

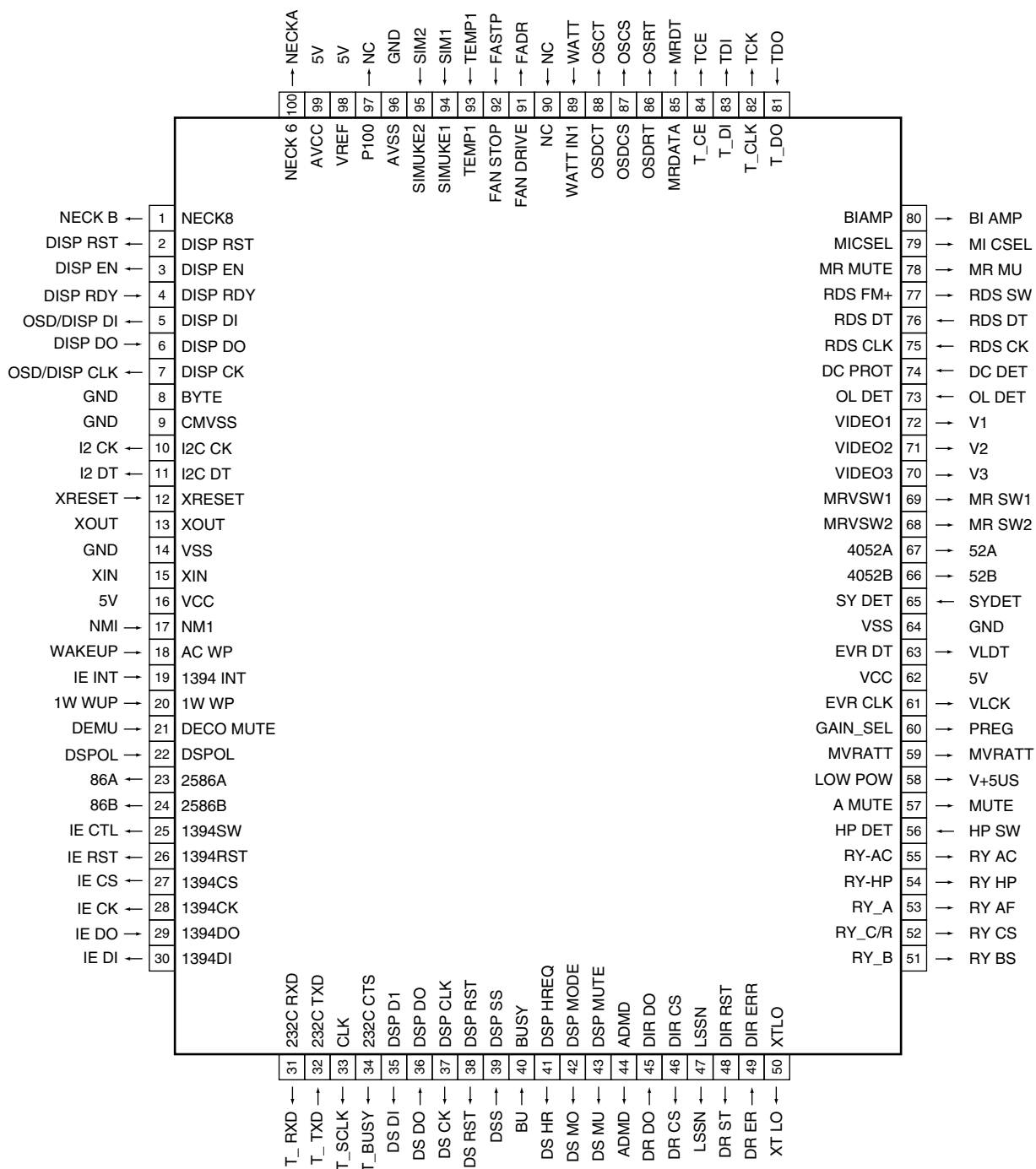
● Pin Function

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	

PD5957A (MAIN CONTROL ASSY: IC501) (For VSX-2014i)

Main Microcomputer

Pin Assignment (Top view)



● Pin Function

No.	Pin Name	I/O	Pin Function	Active
1	NECK-8	O	Limiter control	
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	L
22	DSP OL	O	Communication enabling signal to the display microcomputer	H
23	2586A	O	VIDEO Component SW Control	
24	2589B	O	VIDEO Component SW Control	H
25	1394 SW	O	1394 / DIR Control Signal H : 1393 L : DIR	
26	1394 RST	O	Reset for 1394 (Not used "L" fixed.)	
27	1394 CS	O	Standby for 1394 (Not used "L" fixed.)	H
28	1394 CK	O	CK for 1394	
29	1394 DO	I	DO for 1394	
30	1394 DI	O	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 DSP microcomputer	
36	DSP DO	I	Communication data in signal with the DSP 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	L
39	DSP SS	O	Slave select signal to DSP microcomputer	L
40	BUSY	I	MCACC used	H
41	DSP HREQ	O	Error detection signal of DSP microcomputer	H
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	O	DSP Analog / Digital select signal H : Digital, L : Analog	H
45	DIR DO	I	Communication data in signal with the DIR/DAC	
46	DIR CS	O	Communication chip select signal with the DIR/DAC	L
47	LSSN	O	DSP SP Config = LSSN Setting	H
48	DIR RST	O	DIR reset signal	L
49	DIR ERR	I	Lock/Unlock signal from DIR	H
50	XTLO	O	Selection X'tal to DIR	L

No.	Pin Name	I/O	Pin Function	Active
51	RY BS	O	Speaker relay B ON/OFF	H
52	RY C/R	O	Rear / Center relay ON / OFF	H
53	RY A	O	Speaker relay A ON/OFF	H
54	RY- HP	O	Headphone relay ON / OFF	H
55	RY- AC	O	AC relay ON / OFF	H
56	HP DET	I	Headphone detection L : detected.	L
57	A MUTE	O	System mute L: Mute ON	L
58	Low Consuh Ption	O	Power supply control for system mute	L
59	MVR ATT	O	Master volume att control	
60	GAIN SEL	O	Pregain select signal	
61	EVR CLK	O	Clock signal for eselectronic volume and function SW	
62	5V	–	5V power supply	
63	EVR DT	O	Data signal for eselectronic volume and function SW	
64	GND	–	Ground	
65	SY DET	O	Sync detection (S-VIDEO detection)	H
66	4052A	O	Output switching control signal of S-VIDEO and composite Video	
67	4052B	O	Output switching control signal of S-VIDEO and composite Video	
68	MRVSW2	O	Multi room function SW control	
69	MRVSW1	O	Multi room function SW control	
70	VIDEO3	O	Video input selector control	
71	VIDEO2	O	Video input selector control	
72	VIDEO1	O	Video input selector control	
73	OL DET	I	Amp. overload detection L: Detection	L
74	DC PROT	I	DC detection L: Detection	L
75	RDS CLK	I	Clock signal from RDS	
76	RDS DT	I	Data signal from RDS	
77	RDS FM+	O	Power supply control for RDS IC	H
78	MR MUTE	O	Multi room mute L: Mute ON	L
79	MICSEL	O	MIC select	H
80	BIAMP	O	Output switching control of surround back ch L : BiAMP, H : Normal	L
81	TUNED DO	I	Data input signal of tuner control	H
82	TUNER CLK	O	Clock signal of tuner control	H
83	TUNER DI	O	Data output signal of tuner control	L
84	TUNER CE	O	Chip select signal of tuner control	L
85	MRDATA	O	Data signal of : multi room Volume	
86	OSDRST	O	OSD-IC reset signal L: reset H: release reset	L
87	OSDCS	O	OSD-IC chip select signal	
88	OSDCT	O	OSD-IC data mute L : mute	
89	WATT IN1	I	Wattage detection Level detection with A/D	A/D
90	NC	I	Not used	
91	FAN DRIVE	O	FAN control H : drive	H
92	FAN STOP	I	Fan forced stop detection	L
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_6	O	ATT control of VH (power supply for Voltage Amplifier)	L

■ PE5403A (DISPLAY ASSY: IC3001)

• Display Microcomputer

A ● Pin Assignment (Top view)

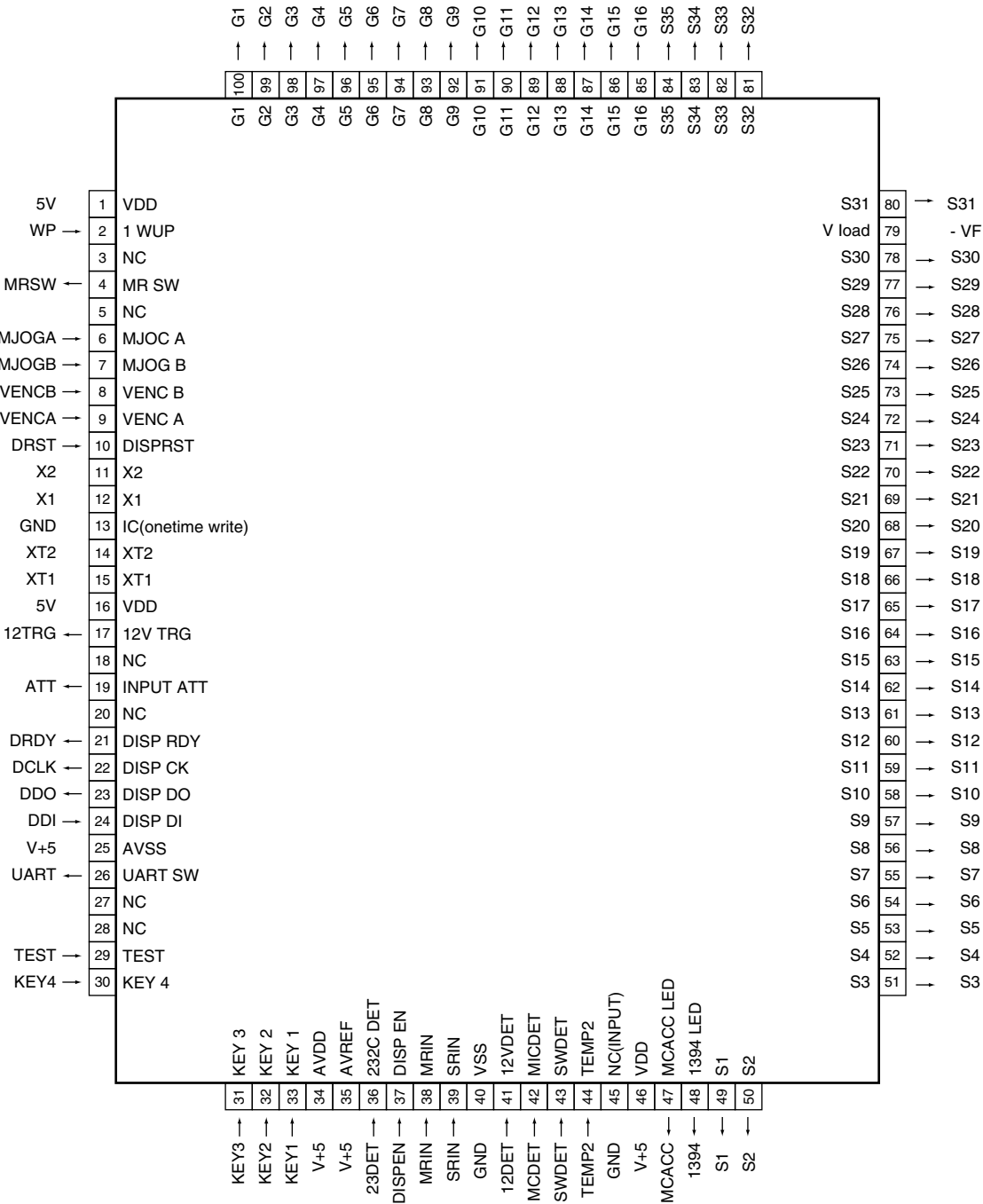
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● Pin Function

No.	Pin Name	I/O	Pin Function	Active
1	VDD	–	VDD(5V)power supply	
2	1WUP	I	Wakeup	H
3	NC	–	NC	
4	MR SW	O	Multi room input Pioneer / others L: Pioneer, H : Others	L
5	NC	–	NC	
6	MJOG A	I	MULTI JOG input A	
7	MJOG B	I	MULTI JOG input B	
8	VENCB	I	Volume – direction	
9	VENCA	I	Volume + direction	
10	DISPRST	I	Reset signal in put	
11	X2	–	Input clock 5MHz	
12	X1	–	Input clock 5MHz	
13	IC	–	GND	
14	XT2	–	NC	
15	XT1	–	NC	
16	VDD	–	5V power supply	
17	12V TRG	O	12V Trigger output control " H" at ON	
18	NC	–	NC	
19	INPUT ATT	O	INPUT Atteneuator H : ATT ON	
20	NC	–	NC	
21	DISP RDY	O	Communication enabling signal to the main microcomputer	
22	DISP CK	O	Communication clock signal with the main microcomputer	
23	DISP DO	O	Communication data in signal with the main microcomputer	
24	DISP DI	I	Communication data out signal with the main microcomputer	
25	AVSS	–	Ground	
26	UART SW	O	SR+ / 232C data selector control	
27	NC	–	NC	
28	NC	–	NC	
29	TEST	I	TEST Mode for checker (100kΩ pull down)	H
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 from the main microcomputer	
38	MRIN	I	Remote control input of sub room	
39	SRIN	I	Remote control input of main room	
40	VSS	–	Ground	
41	12VDET	I	12V TRIGGER Voltage 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	MCACCLED	O	MCACC LED	
48	1394LED	O	1394 LED	
49	S1	O	FL P_35s Drive	
50	S2	O	FL P_34s Drive	

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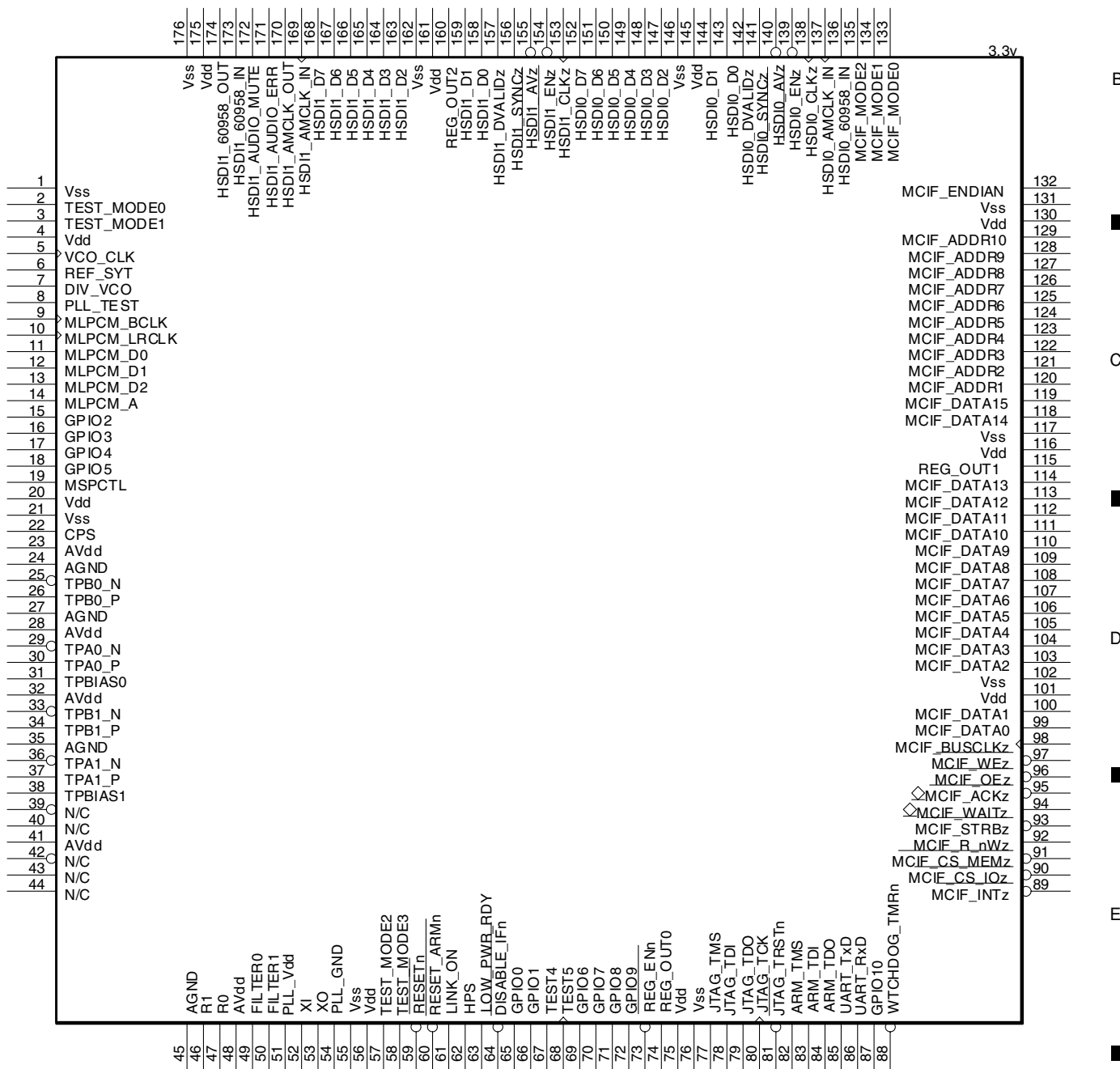
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No.	Pin Name	I/O	Pin Function	Active
51	S3	O	FL p_33s Drive	
52	S4	O	FL p_32s Drive	
53	S5	O	FL p_31s Drive	
54	S6	O	FL p_30s Drive	
55	S7	O	FL p_29s Drive	
56	S8	O	FL p_28s Drive	
57	S9	O	FL p_27s Drive	
58	S10	O	FL p_26s Drive	
59	S11	O	FL p_25s 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	-	-VF power supply	
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	

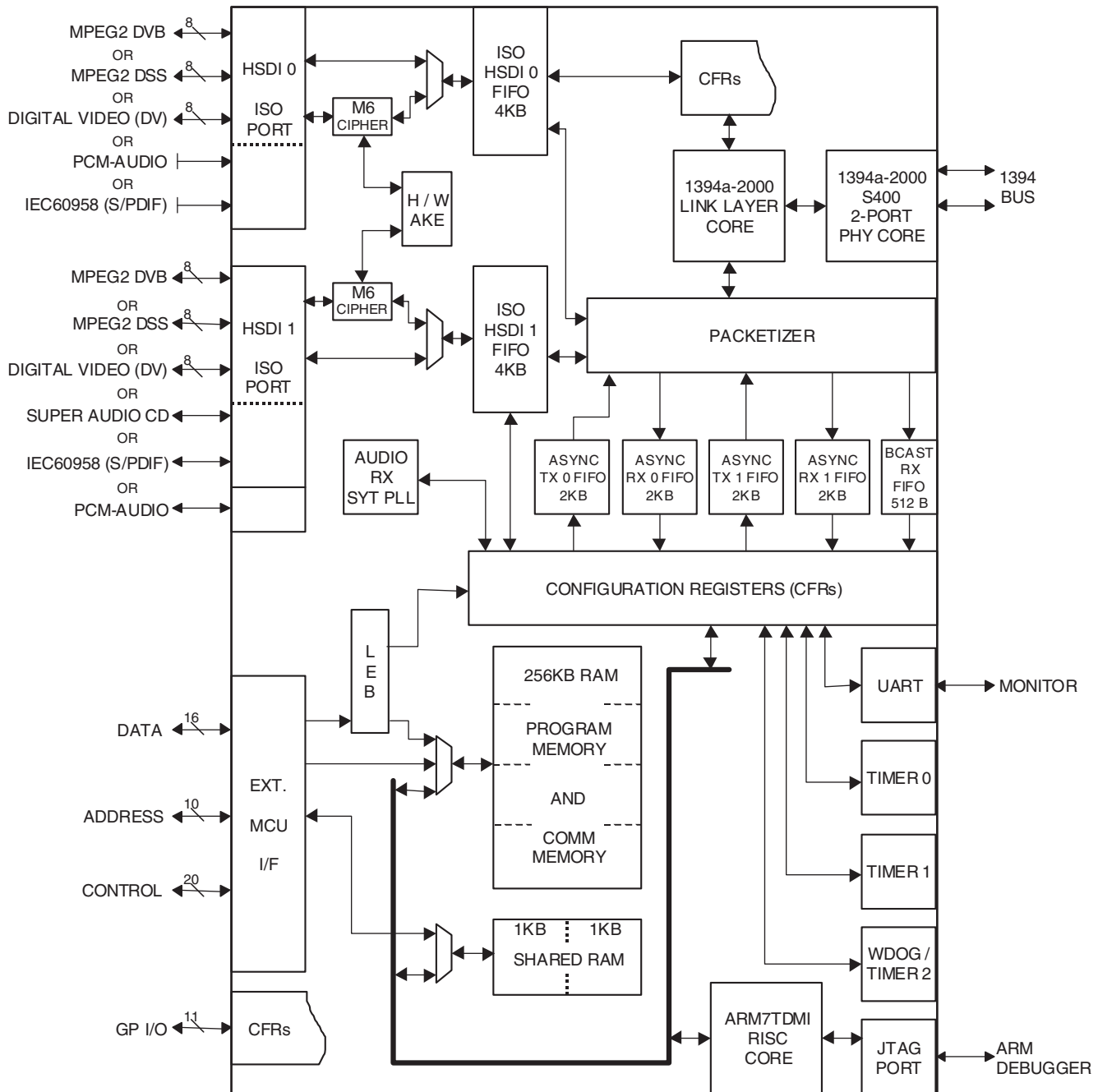
■ TSB43CA42ZGW (1394 ASSY : IC201)

• iceLynx-Micro

● Pin Arrangement (Top view)



● Block Diagram



● Pin Function

Miscellaneous Pins

No.	Pin Name	I/O	Pin Function
64	DISABLE_IFn	I	Interface disable. When asserted, the interfaces are put into a high-Z state. Interfaces include: ex-CPU, HSDI, GPIO, and WTCH_DG_TMRn.
62	HPS	I	Host power status. This indicates the power status of the external system to iceLynx-Micro. A rising edge indicates the system CPU has been turned ON. (The internal ARM must wake up.) A falling edge indicates the system CPU has been turned OFF. (The internal ARM decides if power down is necessary.)
63	LOW_PWR_RDY	O	Output to system to indicate iceLynx-Micro is ready to go into a low power state. The ARM and WTCH_DG_TMRn control this pin.
88	WTCH_DG_TMRn	O	Watch dog timer (for the ARM). iceLynx-Micro hardware asserts this pin whenever ARM software has not updated the Timer2 register within the allowed time period.
60	RESET_ARMn	I	ARM reset. This signal resets the internal ARM processor.
59	RESETn	I	Device reset. This signal resets all logic. This includes the PHY, link core, memory, the ARM, and random logic.

Power and Ground Pins

No.	Pin Name	I/O	Pin Function
1,21,55,76, 102,117,131, 146,162,176	VSS	–	Digital ground
24,27,35,45	AGND	–	Analog ground
54	PLL_GND	–	PLL ground
4,20,56,75, 101,116,130, 145,161,175	VDD	–	Digital power supply. Must be set to 3.3-V nominal.
23,28,32,41,48	AVDD	–	Analog power supply. Must be set to 3.3-V nominal.
51	PLL_VDD	–	PLL power supply. Must be set to 3.3-V nominal.

Regulator Pins

No.	Pin Name	I/O	Pin Function
73	REG_ENn	I	Internal regulator enable. The iceLynx-Micro core voltage is 1.8 V. Internal regulators are used to regulate the 3.3-V VDD inputs to 1.8 V. This pin enables the regulators.
74	REG_OUT0	O	1.8-V regulator output. This pin must be connected to ground using a 0.1-μF capacitor.
115	REG_OUT1	O	1.8-V regulator output. This pin must be connected to ground using a 0.1-μF capacitor.
160	REG_OUT2	O	1.8-V regulator output. This pin must be connected to ground using a 0.1-μF capacitor.

External CPU Interface Pins

No.	Pin Name	I/O	Pin Function
95	MCIF_ACKz	I/O	MCIF acknowledge pin. Default active low. iceLynx-Micro asserts this signal if it has completed the MCIF request. This signal is driven when chip select (CS) is asserted. This signal is used for the following modes: • 68000 + wait I/O access • I/O Type-3 MPC850
120	MCIF_ADDR1	I	MCIF address 1 pin. This data pin is the least significant bit of the MCIF address bus. MCIF_ADDR0 is internally grounded. Only 16-bit addressing is allowed. MCIF_ADDR1 must be connected to the Address1 signal of the system CPU.

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No.	Pin Name	I/O	Pin Function
121	MCIF_ADDR2	I	MCIF address 2 pin
122	MCIF_ADDR3	I	MCIF address 3 pin
123	MCIF_ADDR4	I	MCIF address 4 pin
124	MCIF_ADDR5	I	MCIF address 5 pin
125	MCIF_ADDR6	I	MCIF address 6 pin
126	MCIF_ADDR7	I	MCIF address 7 pin
127	MCIF_ADDR8	I	MCIF address 8 pin
128	MCIF_ADDR9	I	MCIF address 9 pin
129	MCIF_ADDR10	I	MCIF address 10 pin. This data pin is the most significant bit of the MCIF address bus.
98	MCIF_BUSCLKz	I	MCIF bus clock. This pin is only used for the MCIF synchronous mode. I/O Type-3 MPC850 and the memory access. This signal must be pulled high if not used.
90	MCIF_CS_IOz	I	MCIF chip select for all I/O MCIF modes.
91	MCIF_CS_MEMz	I	MCIF chip select for the memory MCIF mode.
99	MCIF_DATA0	I/O	MCIF data 0 pin. This data pin is the least significant bit of the MCIF data bus.
100	MCIF_DATA1	I/O	MCIF data 1 pin.
103	MCIF_DATA2	I/O	MCIF data 2 pin.
104	MCIF_DATA3	I/O	MCIF data 3 pin.
105	MCIF_DATA4	I/O	MCIF data 4 pin.
106	MCIF_DATA5	I/O	MCIF data 5 pin.
107	MCIF_DATA6	I/O	MCIF data 6 pin.
108	MCIF_DATA7	I/O	MCIF data 7 pin.
109	MCIF_DATA8	I/O	MCIF data 8 pin.
110	MCIF_DATA9	I/O	MCIF data 9 pin.
111	MCIF_DATA10	I/O	MCIF data 10 pin.
112	MCIF_DATA11	I/O	MCIF data 11 pin.
113	MCIF_DATA12	I/O	MCIF data 12 pin.
114	MCIF_DATA13	I/O	MCIF data 13 pin.
118	MCIF_DATA14	I/O	MCIF data 14 pin.
119	MCIF_DATA15	I/O	MCIF data 15 pin. This data pin is the most significant bit of the MCIF data bus.
132	MCIF_ENDIAN	I	MCIF endian pin. This sets the endianness for accesses between the external CPU and the internal iceLynx-Micro memory. This pin sets endianness for all MCIF modes. When set to 0, data is read/written to the ex-CPU exactly as it is stored in iceLynx-Micro memory. (Big endian) When set to 1, data is swapped on half-word and byte boundaries before it is read/written to the ex-CPU. (Little endian)
89	MCIF_INTz	O	MCIF Interrupt. This signal is push-pull (always asserted). It does not require a pull-up resistor.
133	MCIF_MODE0	I	MCIF mode 0. Used to select MCIF mode.
134	MCIF_MODE1	I	MCIF mode 1. Used to select MCIF mode.
135	MCIF_MODE2	I	MCIF mode 2. Used to select MCIF mode.
96	MCIF_OEz	I	MCIF output enable. Default active low. This input pin indicates if the system CPU wants to perform a MCIF read access. This signal is used for the following modes: • SH-3 I/O access • M16C/62 I/O access • Memory access This signal must be pulled high if not used.
92	MCIF_R_nWz	I	MCIF read/write pin. Default value for a read is 1. Default value for a write is 0.
93	MCIF_STRBz	I	MCIF strobe pin. Default active low. This pin is used (along with MCIF_CS_IOz) to validate the MCIF access. This signal is used for the following modes: • 68000 + wait I/O access • MPC850 I/O access When not used, this pin must be pulled high.
94	MCIF_WAITz	O	MCIF wait pin. Default active high. iceLynx-Micro asserts this signal if it is not ready to service an MCIF request. When not asserted, this signal is in a high-Z state. This signal is used for the following modes: • 68000 + wait I/O access • SH-3 I/O access • M16C/62 I/O access
97	MCIF_WEz	I	MCIF Write Enable. Default active low. This input pin indicates if the system CPU wants to perform a MCIF write access. This signal is used for the following modes: • SH-3 I/O access • M16C/62 I/O access • Memory access This signal must be pulled high if not used.

Universal Asynchronous Receiver Transmitter Pins

No.	Pin Name	I/O	Pin Function
86	UART_RxD	I	UART receive port. Data from the system is input to the UART buffer using this pin.
85	UART_TxD	O	UART transmit port. Data from the UART buffer is output to the system using this pin.

Joint Test Action Group (JTAG) and ARM Pins

No.	Pin Name	I/O	Pin Function
80	JTAG_TCK	I	JTAG clock pin. Both the boundary scan and ARM JTAG uses this input for the JTAG clock.
78	JTAG_TDI	I	JTAG test data input pin
79	JTAG_TDO	O	JTAG test data output pin
77	JTAG_TMS	I	JTAG test mode selector pin.
81	JTAG_TRSTn	I	JTAG reset pin. Both the boundary scan and ARM JTAG uses this input for the JTAG clock. Note 1: TSB43Cx43A/TSB43CA42 must have JTAG_TRSTn=0 for correct ARM interrupt operation. Note 2: JTAG_TRST must be asserted once after power-up for correct operation of the iceLynx-Micro.
83	ARM_TDI	I	ARM JTAG test data input pin
84	ARM_TDO	O	ARM JTAG test data output pin
82	ARM_TMS	I	ARM JTAG test mode selector pin

General-Purpose Input/Out Pins (GPIO)

No.	Pin Name	I/O	Pin Function
65	GPIO0	I/O	GPIO0. Can be programmed as general-purpose input, generalpurpose output, or specific function. Power-up default is input.
66	GPIO1	I/O	GPIO1. Can be programmed as general-purpose input, generalpurpose output, or specific function. Power-up default is input.
15	GPIO2	I/O	GPIO2. Can be programmed as general-purpose input, generalpurpose output, or specific function. Power-up default is input.
16	GPIO3	I/O	GPIO3. Can be programmed as general-purpose input, generalpurpose output, or specific function. Power-up default is input.
17	GPIO4	I/O	GPIO4. Can be programmed as general-purpose input, generalpurpose output, or specific function. Power-up default is input.
18	GPIO5	I/O	GPIO5. Can be programmed as general-purpose input, generalpurpose output, or specific function. Power-up default is input.
69	GPIO6	I/O	GPIO6. Can be programmed as general-purpose input, generalpurpose output, or specific function. Power-up default is input.
70	GPIO7	I/O	GPIO7. Can be programmed as general-purpose input, generalpurpose output, or specific function. Power-up default is input.
71	GPIO8	I/O	GPIO8. Can be programmed as general-purpose input, generalpurpose output, or specific function. Power-up default is input.
72	GPIO9	I/O	GPIO9. Can be programmed as general-purpose input, generalpurpose output, or specific function. Power-up default is input.
87	GPIO10	I/O	GPIO10. Can be programmed as general-purpose input, generalpurpose output, or specific function. Power-up default is input.

Physical Layer Pins

No.	Pin Name	I/O	Pin Function
29	TPA0_N	I/O	Twisted pair A differential signal terminals. For an unused port, TPAN and TPAP signals are left open (i.e., TSB43CA42 for Port 2).
36	TPA1_N	I/O	
42	TPA2_N	I/O	
30	TPA0_P	I/O	
37	TPA1_P	I/O	
43	TPA2_P	I/O	

No.	Pin Name	I/O	Pin Function
25	TPB0_N	I/O	Twisted pair B differential signal terminals. For an unused port, TPBN and TPBP signals are left open (i.e., TSB43CA42 for Port 2).
33	TPB1_N	I/O	
39	TPB2_N	I/O	
26	TPB0_P	I/O	
34	TPB1_P	I/O	
40	TPB2_P	I/O	
31	TPBIAS0	I/O	Twisted pair bias output. These signals provide the 1.86-V nominal bias voltage needed for proper operation of the twisted pair driver and receivers for signaling an active connection to a remote node. For an unused port, TPBIAS is left unconnected (i.e., TSB43CA42 for Port 2).
38	TPBIAS1	I/O	
44	TPBIAS2	I/O	
46	R1	–	Current setting resistors. These pins are connected to external resistors to set the internal operating currents and cable driver output currents.
47	R0	–	
49	FILTER0	I/O	PLL filter terminals. These terminals are connected to an external capacitor to form a lag-lead filter required for stable operation of the internal frequency-multiplier PLL, which is using the crystal oscillator.
50	FILTER1	I/O	
52	XI	–	Crystal oscillator inputs. These terminals connect to a 24.576-MHz parallel resonant fundamental mode crystal.
53	XO	–	
22	CPS	I	Cable power status. This input to iceLynx-Micro detects if cable power is present. This pin must be connected to the cable power through 390-k Ω resistor.
19	MSPCTL	I	Maximum speed of PHY. When this signal is high; S100 and S200 operation. When this signal is low; S100, S200, and S400 operation.
61	LINKON	O	Link-on output. This signal is asserted whenever LPS is low and a link-on packet is received from the 1394 bus.

High Speed Data Interface (HSDI) Port 0 Pins

No.	Pin Name	I/O	Pin Function
136	HSDI0_60958_IN	I	60958 data input
137	HSDI0_AMCLK_IN	I	Audio master clock input. This clock is used to decode the biphase encoding of 60958 data. This pin is also used to input the 1.5*BCLK for flow control mode.
140	HSDI0_AVz	O	HSDI port 0 available. Programmable. Default active low. For receive from 1394, this signal indicates if a 1394 packet is available in the receive buffer for reading. The HSDI_AV signal for MPEG2 data also depends on time stamp based release. For transmit to 1394, this signal indicates buffer level in HSDI TX modes 8 and 9 by programming a CFR. If the buffer level is above a programmed level, HSDI_AV will be asserted.
138	HSDI0_CLKz	I	HSDI port 0 clock. Programmable. Default rising edge sample. This clock is used to operate the HSDI port 0 logic. In parallel mode, the maximum clock is 27 MHz. In serial mode, the maximum clock is 70 MHz. This signal is output to HSDI1_CLKz in pass-through mode. This signal is used as HSDI0_MLPCM_BCLK for DVD-audio transmit.
143	HSDI0_D0	I/O	HSDI port 0 data 0 pin. Data 0 is the least significant bit on the HSDI data bus. In serial mode, only HSDI0_D0 is used. This signal is output to HSDI1_D0 in pass-through mode. This signal is used as HSDI0_MLPCM_D0 for DVD-audio transmit.
144	HSDI0_D1	I/O	HSDI port 0 Data 1 pin. This signal is output to HSDI1_D1 in pass-through mode. This signal is used as HSDI0_MLPCM_D1 for DVD-audio transmit.
147	HSDI0_D2	I/O	HSDI port 0 Data 2 pin. This signal is output to HSDI1_D2 in pass-through mode. This signal is used as HSDI0_MLPCM_D2 for DVD-audio transmit.
148	HSDI0_D3	I/O	HSDI port 0 Data 3 pin. This signal is output to HSDI1_D3 in pass-through mode. This signal is used as HSDI0_MLPCM_A for DVD-audio transmit.
149	HSDI0_D4	I/O	HSDI port 0 data 4 pin. This signal is output to HSDI1_D4 in pass-through mode
150	HSDI0_D5	I/O	HSDI port 0 data 5 pin. This signal is output to HSDI1_D5 in pass-through mode
151	HSDI0_D6	I/O	HSDI port 0 data 6 pin. This signal is output to HSDI1_D6 in pass-through mode
152	HSDI0_D7	I/O	HSDI port 0 data 7 pin. Data 0 is the most significant bit on the HSDI data bus. This signal is output to HSDI1_D7 in pass-through mode

No.	Pin Name	I/O	Pin Function
142	HSDI0_DVALIDz	I/O	HSDI port 0 data valid pin. Programmable. Default active high. This pin indicates if data on the HSDI data bus valid for reading or writing. For transmit to 1394, this signal is provided by the system with the data. For receive from 1394, iceLynx-Micro provides this signal with the data. For HSDI DV modes, this signal is used as HSDI0_FrameSync indicating DV frame boundary. This signal is output to HSDI1_DVALIDz in pass-through mode. If not used in transmit mode, this signal is pulled low.
139	HSDI0_ENz	I	HSDI port 0 enable. Programmable. Default active low. Input by the system to enable the HSDI for both transmit to and receive from 1394. If not used, this signal is pulled enabled (low or high depending on the polarity set). The application can use HSDI_DVALID or HSDI_SYNC to validate the HSDI data. This signal is used as HSDI0_MLPCM_LRCLK for DVD-audio transmit.
141	HSDI0_SYNCz	I/O	HSDI port 0 sync signal. Programmable. Default active high. This signal indicates the start of packet. For transmit to 1394, this signal is provided by the system with the data. For receive from 1394, iceLynx-Micro provides this signal with the data. This signal is output to HSDI1_SYNCz in pass-through mode. If not used in transmit mode, this signal is pulled low or high depending on the polarity.

High Speed Data Interface (HSDI) Port 1 Pins

No.	Pin Name	I/O	Pin Function
169	HSDI1_AMCLK_IN	I	Audio master clock input. This clock is used to decode the biphas encoding of 60958 data. This pin also inputs the 1.5*BCK for flow control mode. MLPCM interface, HSDI1 audio port, and HSDI1 video port share IsoPathBuffer 1. Only one interface can access the buffer at a time.
170	HSDI1_AMCLK_OUT	O	Audio master clock output. This clock is derived from the VCO_CLK input. 60958 data output from iceLynx-Micro is biphas encoded using this clock.
171	HSDI1_AUDIO_ERR	O	Audio error signal. iceLynx-Micro asserts this signal whenever an audio error condition occurs. (Receive from 1394 only.)
172	HSDI1_AUDIO_MUTE	O	Audio mute status. iceLynx-Micro asserts this signal whenever an audio mute condition has occurred, and hardware has muted the HSDI1 audio interface. (Receive from 1394 only.)
173	HSDI1_60958_IN	I	60958 data input
174	HSDI1_60958_OUT	O	60958 data output This signal is also used as FLWCTRL_DVALID in flow control data valid mode.
155	HSDI1_AVz	O	HSDI port 1 available. Programmable. Default active low. For receive from 1394, this signal indicates if a 1394 packet is available in the receive buffer for reading. The HSDI_AV signal for MPEG2 data also depends on time stamp based release. For transmit to 1394, this signal indicates the buffer level in HSDI TX modes 8 and 9 by programming a CFR. This pin indicates buffer level in transmit mode by programming a CFR. If the buffer level is above a programmed level, HSDI_AV is asserted.
153	HSDI1_CLKz	I/O	HSDI port 1 clock. Programmable. Default rising edge sample. This clock is used to operate the HSDI port 1 logic. In parallel mode, the maximum clock is 27 MHz. In serial mode, the maximum clock is 70 MHz. This signal is used as HSDI1_SACD_BCLK for SACD transmit and receive. MLPCM interface, HSDI1 audio port, and HSDI1 video port share IsoPathBuffer 1. Only one interface can access the buffer at a time.
158	HSDI1_D0	I/O	HSDI port 1 data 0 pin. Data 0 is the least significant bit on the HSDI data bus. In serial mode, only HSDI0_D0 is used. This signal is used as HSDI1_SACD_D0 for SACD transmit and receive.
159	HSDI1_D1	I/O	HSDI port 1 data 1 pin. This signal is used as HSDI1_SACD_D1 for SACD transmit and receive.
163	HSDI1_D2	I/O	HSDI port 1 data 2 pin. This signal is used as HSDI1_SACD_D2 for SACD transmit and receive.

No.	Pin Name	I/O	Pin Function
164	HSDI1_D3	I/O	HSDI port 1 data 3 pin. This signal is used as HSDI1_SACD_D3 for SACD transmit and receive.
165	HSDI1_D4	I/O	HSDI port 1 data 4 pin. This signal is used as HSDI1_SACD_D4 for SACD transmit and receive.
166	HSDI1_D5	I/O	HSDI port 1 data 5 pin. This signal is used as HSDI1_SACD_D5 for SACD transmit and receive.
167	HSDI1_D6	I/O	HSDI port 1 data 6 pin. This signal is used as HSDI1_SACD_D6 for SACD transmit and receive.
168	HSDI1_D7	I/O	HSDI port 1 data 7 pin. Data 0 is the most significant bit on the HSDI data bus.
157	HSDI1_DVALIDz	I/O	HSDI port 1 data valid pin. Programmable. Default active high. This pin indicates if data on the HSDI data bus valid for reading or writing. For transmit to 1394, this signal is provided by the system with the data. For receive from 1394, iceLynx-Micro provides this signal with the data. For HSDI DV modes, this signal is used as HSDI0_FrameSync indicating DV frame boundary. If not used in transmit mode, this signal is pulled low.
154	HSDI1_ENz	I	HSDI port 1 enable. Programmable. Default active low. Input by the system to enable the HSDI for both transmit to and receive from 1394. If not used, this signal is pulled enabled (low or high depending on the polarity set). The application can use HSDI_DVALID or HSDI_SYNC to validate the HSDI data.
156	HSDI1_SYNCz	I/O	HSDI port 1 sync signal. Programmable. Default active high. This signal indicates the start of a packet. For transmit to 1394, this signal is provided by the system with the data. For receive from 1394, iceLynx-Micro provides this signal with the data. If not used in transmit mode, this signal is pulled low or high depending on the polarity. This signal is used as HSDI1_SACD_FRAME for SACD transmit and receive.

DVD-Audio Interface Pins

No.	Pin Name	I/O	Pin Function
14	MLPCM_A	I/O	Audio MLPCM interface ancillary data. Ancillary data is input/output using this pin. For DVD-Audio, MLPCM_LRCLK determines if ancillary left or ancillary right data is present. This signal also functions as FLWCTL_A in flow control mode
9	MLPCM_BCLK	I/O	Audio MLPCM interface bit clock. Multiple functions: - DVD audio BCK (I) - DVD audio BCK (O) - Flow control BCK (I/O) MLPCM interface, HSDI1 audio port, and HSDI1 video port share IsoPathBuffer 1. Only one interface can access the buffer at a time.
11	MLPCM_D0	I/O	Audio MLPCM interface D0. Contains channel 1 and channel 2 information. MLPCM_LRCLK determines which channel is present. This signal also functions as FLWCTL_D0 in flow control mode.
12	MLPCM_D1	I/O	Audio MLPCM interface D1. Contains channel 3 and channel 4 information. MLPCM_LRCLK determines which channel is present. This signal also functions as FLWCTL_D0 in flow control mode
13	MLPCM_D2	I/O	Audio MLPCM interface D2. Contains channel 5 and channel 6 information. MLPCM_LRCLK determines which channel is present. This signal also functions as FLWCTL_D0 in flow control mode
10	MLPCM_LRCLK	I/O	Audio MLPCM interface left-right clock. Multiple functions: - DVD audio LRCLK (I) - DVD audio LRCLK (O) - Flow control LRCLK (I/O)

Audio Phase Lock Loops Pins

No.	Pin Name	I/O	Pin Function
7	DIV_VCO	O	Output for external phase detector. This signal is the divided VCO_CLK. It used by the external phase detector to compare with the REF_SYT signal. The divide ratios are setup in CFR.
8	PLL_TEST	O	PLL test. This signal is used for internal TI testing and must be unconnected for normal operation.
6	REF_SYT	O	Output for external phase detector. This signal represents the SYT match for received audio or DV packets. The phase detector uses it as input to detect differences between the SYT match and the VCO clock.
5	VCO_CLK	I	Input from VCO. This signal generates internal audio and DV clocks for receive clock recovery. Audio frequency: 33.868 MHz or 36.864 MHz. DV frequency: 30.72 MHz, 27 MHz

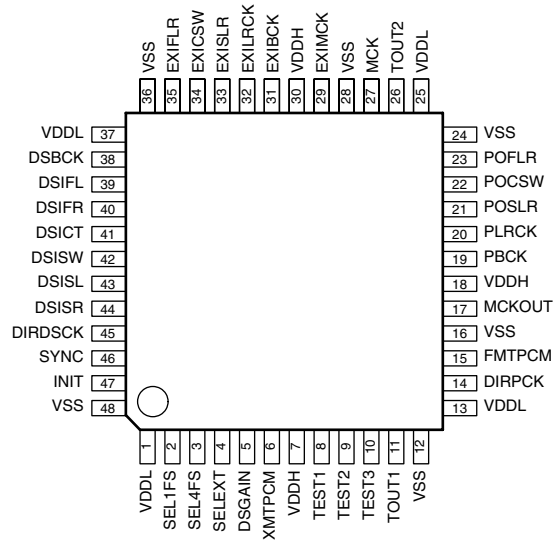
Test Mode Pins

No.	Pin Name	I/O	Pin Function
2	TEST_MODE0	I/O	Test mode. Used for internal TI testing. Must be pulled low for normal operation.
3	TEST_MODE1	I/O	
57	TEST_MODE2	I/O	
58	TEST_MODE3	I/O	
67	TEST4	I/O	Factory test pin.
68	TEST5	I/O	Must tie to low for normal operation. Recommend connection to ground through a 1 kΩ resistor.

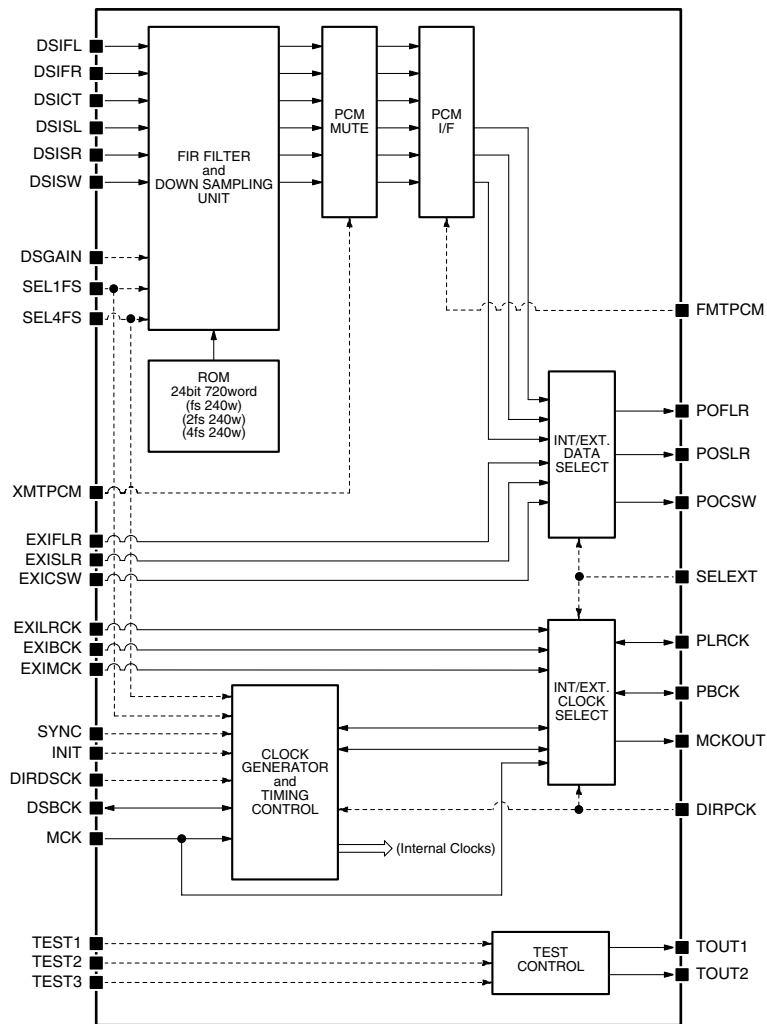
SM5819AF (1394 ASSY : IC401)

• 6-channel DS-PCM Converter

● Pin Arrangement (Top view)



● Block Diagram



● Pin Function

No.	Name	I/O	Function
1	VDDL	–	Core power supply
2	SEL1FS	I	PCM output rate select 1 L: 2fs/4fs, H: fs
3	SEL4FS	I	PCM output rate select 2 L: 2fs, H: 4fs
4	SELEXT	I	fs/2fs/4fs output and external data output select L: fs/2fs/4fs data, H: external data (EXI**)
5	DSGAIN	I	DSD signal gain setting L: 100% modulation = 0dB, H: 50% modulation = 0dB
6	XMTPCM	I	PCM output mute control input L: Mute ON, H: Mute OFF
7	VDDH	–	I/O power supply
8	TEST1	I	Test input 1 (must be open or tie LOW for normal operation)
9	TEST2	I	Test input 2 (must be open or tie LOW for normal operation)
10	TEST3	I	Test input 3 (must be open or tie LOW for normal operation)
11	TOUT1	O	Test output 1
12	VSS	–	Ground
13	VDDL	–	Core power supply
14	DIRPCK	I	PCM output PBCK/PLRCK I/O select L: Output (master mode), H: Input (slave mode)
15	FMTPCM	I	PCM output format select L: MSB-first left-justified 32-bit, H: IIS 32-bit
16	VSS	–	Ground
17	MCKOUT	O	System clock output (selected by SELEXT)
18	VDDH	–	I/O power supply
19	PBCK	I/O	PCM output BCK bit clock
20	PLRCK	I/O	PCM output LRCK word clock
21	POSLR	O	PCM data output: surround left/right-channel
22	POCSW	O	PCM data output: center/subwoofer channel
23	POFLR	O	PCM data output: front left/right-channel
24	VSS	–	Ground
25	VDDL	–	Core power supply
26	TOUT2	O	Test output 2
27	MCK	I	Master clock input: 512fs (22.5792MHz, fs = 44.1kHz)
28	VSS	–	Ground
29	EXIMCK	I	External system clock input
30	VDDH	–	I/O power supply
31	EXIBCK	I	External PCM data BCK bit clock input
32	EXILRCK	I	External PCM data LRCK word clock input
33	EXISLR	I	External PCM data input: surround left/right-channel
34	EXICSW	I	External PCM data input: center/subwoofer channel
35	EXIFLR	I	External PCM data input: front left/right-channel
36	VSS	–	Ground
37	VDDL	–	Core power supply
38	DSBCK	I/O	DSD data input bit clock. Controlled by DIRDSCK
39	DSIFL	I	DSD data input: front left-channel
40	DSIFR	I	DSD data input: front right-channel
41	DSICT	I	DSD data input: center channel
42	DSISW	I	DSD data input: subwoofer channel
43	DSISL	I	DSD data input: surround left-channel
44	DSISR	I	DSD data input: surround right-channel
45	DIRDSCK	I	DSBCK I/O select L: input (slave), H: output (master)
46	SYNC	I	Forced synchronization input (active-HIGH edge)
47	INIT	I	Initialization input: Active-LOW, Resync on L -> H
48	VSS	–	Ground

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

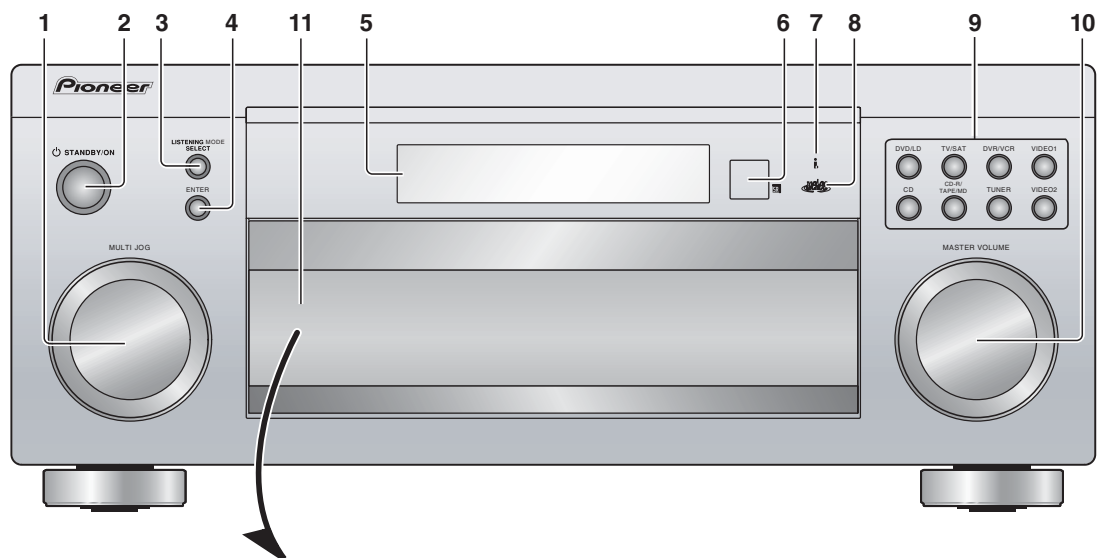
E

F

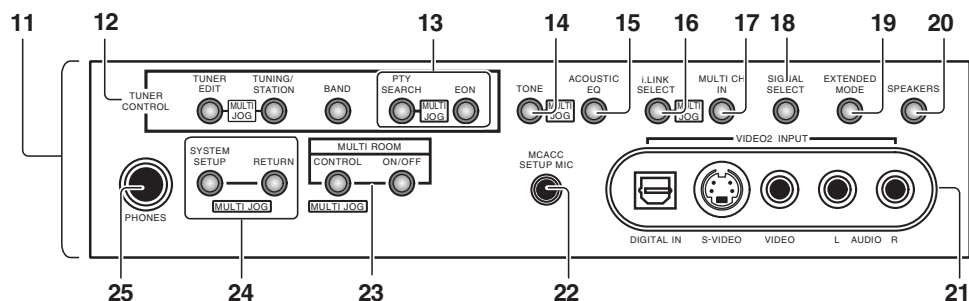
8. PANEL FACILITIES

8.1 FRONT PANEL

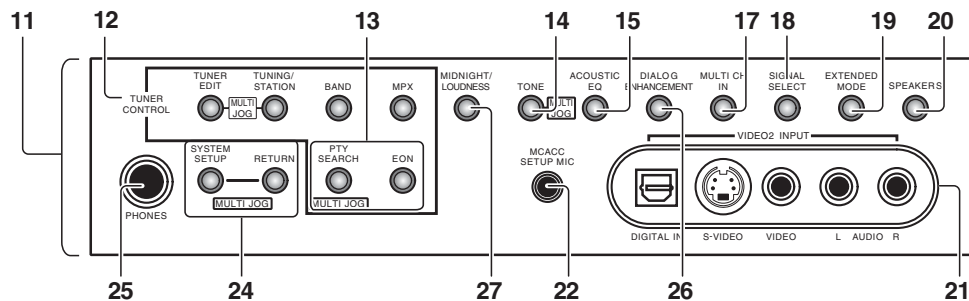
Front panel



VSX-2014i model



VSX-1014 model



A

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**

B

6 Remote sensor

Receives the signals from the remote control.

7 i.LINK indicator(VSX-2014i model only)

Lights when an i.LINK-equipped audio component is selected .

8 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).

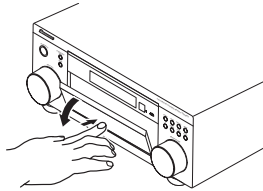
C

9 Input select buttons

Press to select an input source.

10 MASTER VOLUME dial**11 Front panel controls**

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



D

12 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.

E

MPX (VSX-1014 model only)

Press to receive a radio broadcast in mono.

13 PTY SEARCH

Use this button to search for RDS program types.

F

EON

Use to search for programs that are broadcasting traffic or news information .

14 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.

15 ACOUSTIC EQ

Press to select an Acoustic Calibration EQ setting.

16 i.LINK SELECT (VSX-2014i model only)

Use with the **MULTI JOG** dial to select unassigned i.LINK components.

17 MULTI CH IN

Press to select the component connected to the **MULTI CH IN** terminals (for example, a DVD-Audio player). See **Selecting the multichannel analog inputs** .

18 SIGNAL SELECT

Use to select an input signal.

19 EXTENDED MODE

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

20 SPEAKERS

Use to change the speaker system.

21 VIDEO2 INPUT

See **Connecting to the front panel video terminal**.

22 MCACC SETUP MIC jack

Use to connect the supplied microphone.

23 MULTI ROOM controls (VSX-2014i model only)

If you've made multi-room connections (see **Multi-room listening**) use these buttons to control the sub room from the main room (see **Using the sub room controls**).

24 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.

25 PHONES jack

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

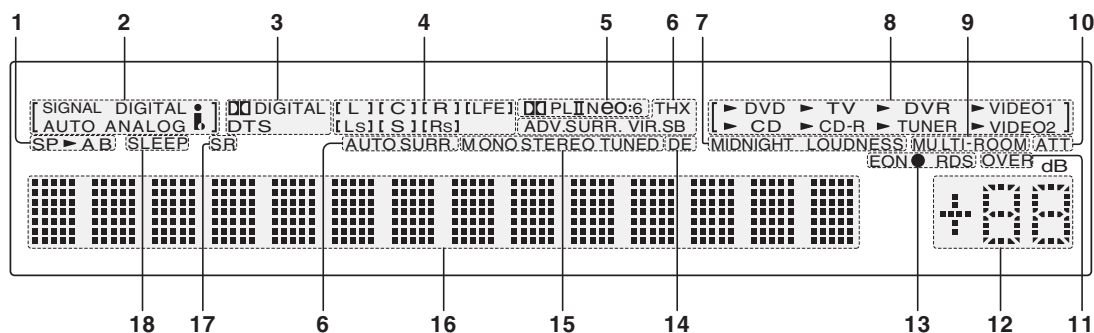
26 DIALOG ENHANCEMENT (VSX-1014 model only)

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

27 MIDNIGHT/LOUDNESS (VSX-1014 model only)

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

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.

i (VSX-2014i model only)

Lights when the currently selected input signal is input from the i.LINK connection.

3 Digital format indicators

DD 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

DD PLII

This lights to indicate Pro Logic II / Pro Logic IIx decoding (see **Listening in surround sound** for more on this).

Neo:6

When one of the Neo:6 modes of the receiver is on, this lights to indicate Neo:6 processing (see **Listening in surround sound** for more on this).

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 (see **Auto playback**).

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 (VSX-2014i model only)

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 EON / RDS indicators**EON ●**

EON lights when the EON mode is set, and flashes during reception of an EON broadcast. The ● indicator lights when the current station carries the EON service .

RDS

Lights when an RDS broadcast is received

14 DE

Lights when Dialog Enhancement (**DIALOGUE**) is switched on .

15 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.

16 Character display

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

17 SR

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

18 SLEEP

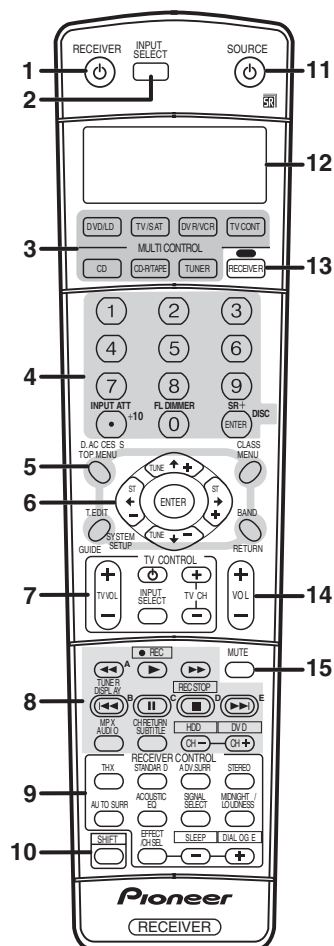
Lights when the receiver is in sleep mode.

D

E

F

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 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. Switching the dimmer to lowest setting will also switch off the MCACC and i.LINK indicators.

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.

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 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).

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 .

A

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**).

TUNER DISPLAY

Switches between named station presets, radio frequencies and RDS information.

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 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.

B

C

D

E

F

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

See Selecting preset codes directly.

LEARN

See Programming signals from other remote controls.

DIRECT

See Direct function.

ERASE

See Erasing one of the remote control button settings.

RESET

See Erasing all of the remote control presets.

READ ID

See Confirming preset codes.

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.

