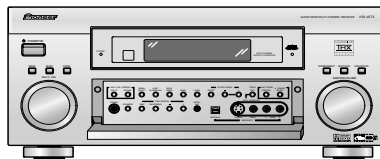


# Service Manual



VSX-45TX

ORDER NO.  
**RRV2635**

**AUDIO/VIDEO MULTI-CHANNEL RECEIVER**

# VSX-45TX

## VSX-43TX

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

Model	Type	Power Requirement	Remarks
VSX-45TX	KUXJI/CA	AC120V	
VSX-43TX	KUXJI/CA	AC120V	



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

# SAFTY INFORMATION



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

## WARNING

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

Health & Safety Code Section 25249.6 – Proposition 65

## NOTICE

(FOR CANADIAN MODEL ONLY)

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

## REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

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

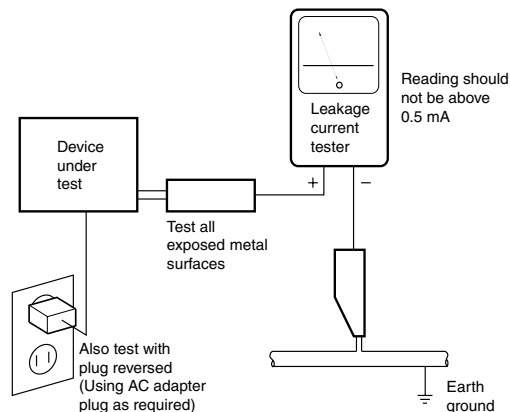
## (FOR USA MODEL ONLY)

### 1. SAFETY PRECAUTIONS

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

#### LEAKAGE CURRENT CHECK

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



AC Leakage Test

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

### 2. PRODUCT SAFETY NOTICE

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

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

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

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

**[ Important symbols for good services ]**

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

**1. Product safety**

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

**2. Adjustments**

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

**3. Cleaning**

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

**4. Shipping mode and shipping screws**

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

**5. Lubricants, glues, and replacement parts**

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

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# 1. SPECIFICATIONS

## Amplifier Section

Continuous average power output of 100 watts\* per channel, min., at 8 ohms, from 20 Hz to 20,000 Hz with no more than 0.09 %\*\* total harmonic distortion (front).

### Continuous Power Output

Front.....100 W +100 W (20 Hz – 20 kHz, 0.09 %, 8 Ω)  
Center.....100 W +100 W (20 Hz – 20 kHz, 0.09 %, 8 Ω)  
Surround.....100 W +100 W (20 Hz – 20 kHz, 0.09 %, 8 Ω)  
Surround Back  
.....100 W +100 W (20 Hz – 20 kHz, 0.09 %, 8 Ω)

### Input (Sensitivity/Impedance)

PHONO MM (VSX-45TX).....4.7 mV/47 kΩ  
VCR 1/DVR, VCR 2, DVD/LD, TV/SAT, VIDEO, CD,  
CD-R/TAPE 1, MD/TAPE 2.....335 mV/47 kΩ

### Frequency Response

PHONO MM (VSX-45TX).....20 Hz to 20,000 Hz ± 0.3 dB  
VCR 1/DVR, VCR 2, DVD/LD, TV/SAT, VIDEO, CD,  
CD-R/TAPE 1, MD/TAPE 2.....5 Hz to 100,000 Hz <sup>+0</sup><sub>-3</sub> dB

### Output (Level/Impedance)

VCR 1/DVR REC, VCR 2 REC, CD-R/TAPE 1,  
MD/TAPE 2 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)

VCR 1/DVR, VCR 2, DVD/LD, TV/SAT, VIDEO, CD,  
CD-R/TAPE 1, MD/TAPE 2, MULTI CH IN.....101 dB

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

VCR 1/DVR, VCR 2, DVD/LD, TV/SAT, VIDEO, CD,  
CD-R/TAPE 1, MD/TAPE 2.....83 dB

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

\*\* Measured by Audio Spectrum Analyzer.

## VIDEO Section (S jack)

### Input (Sensitivity/Impedance)

VCR 1/DVR, VCR 2, VIDEO, DVD/LD, TV/SAT  
Luminance signal (Y).....1 Vp-p/75 Ω  
Chrominance signal (C).....0.286 Vp-p/75 Ω

### Output (Level/Impedance)

VCR 1/DVR, VCR 2, MONITOR OUT  
Luminance signal (Y).....1 Vp-p/75 Ω  
Chrominance signal (C).....0.286 Vp-p/75 Ω

### Frequency Response

VCR 1/DVR, VCR 2, VIDEO, DVD/LD, TV/SAT  
Luminance signal (Y).....5 Hz to 10 MHz <sup>+0</sup><sub>-3</sub> dB

### Signal-to-Noise Ratio

Luminance signal (Y).....65 dB

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## Component Video Section

### Input (Sensitivity)

Y.....1 Vp-p/75 Ω  
PB/PR.....0.7 V/75 Ω

### Output (Level/Impedance)

Y.....1 Vp-p/75 Ω  
PB/PR.....0.7 V/75 Ω

### Frequency Response

Y.....5 Hz to 40 MHz <sup>+0</sup><sub>-3</sub> dB  
PB/PR.....5 Hz to 40 MHz <sup>+0</sup><sub>-3</sub> dB

## VIDEO Section (Composite)

### Input (Sensitivity/Impedance)

VCR 1/DVR, VCR 2, VIDEO, DVD/LD,  
TV/SAT.....1 Vp-p/75 Ω

### Output (Level/Impedance)

VCR 1/DVR, VCR 2, MONITOR OUT,  
MONITOR OUT2.....1 Vp-p/75 Ω

### Frequency Response

VCR 1/DVR, VCR 2, TV/SAT, DVD/LD  
VIDEO→MONITOR OUT.....5 Hz to 10 MHz <sup>+0</sup><sub>-3</sub> dB

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

## FM Tuner Section

Frequency Range.....87.5 MHz to 108 MHz  
Usable Sensitivity.....Mono: 13.2 dBf, IHF (1.3 μV/75 Ω)  
50 dB Quieting Sensitivity.....Mono: 20.2 dBf  
Stereo: 38.6 dBf

Signal-to-Noise Ratio.....Mono: 73 dB (at 85 dBf)  
Stereo: 70 dB (at 85 dBf)

Distortion.....Stereo: 0.5 % (1 kHz)  
Alternate Channel Selectivity.....60 dB (400 kHz)  
Stereo Separation.....40 dB (1 kHz)  
Frequency Response.....30 Hz to 15 kHz (± 1) dB  
Antenna Input.....75 Ω unbalanced

## AM Tuner Section

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



## Miscellaneous

Power Requirements.....AC 120 V, 60 Hz  
Power Consumption.....600 W  
Power Consumption in Standby mode (VSX-45TX).....0.8 W  
Power Consumption in Standby mode (VSX-43TX).....0.6 W  
AC Outlet SWITCHED.....100 W (0.8 A) MAX  
Dimensions.....420 (W) × 188 (H) × 464 (D) mm  
(16-9/16 (W) × 7-7/16 (H) × 18-5/16 (D) in.)  
Weight (without package) (VSX-45TX)...18.8 kg (41 lb 8 oz)  
Weight (without package) (VSX-43TX)...17.3 kg (38 lb 3 oz)

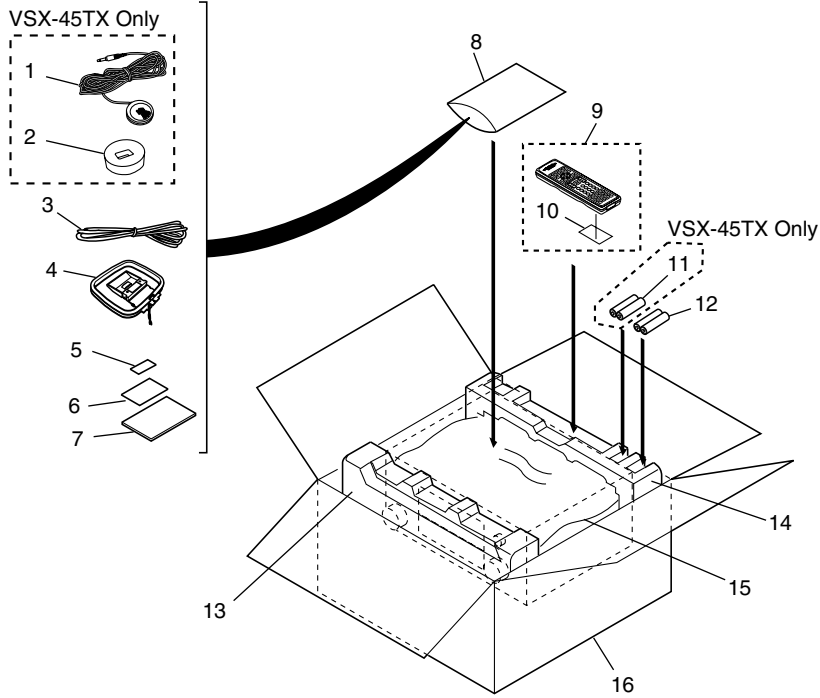
## Furnished Parts

FM wire Antenna.....1  
AM loop Antenna.....1  
"AA" IEC LR6 batteries.....4  
Remote Control Unit .....1  
Microphone for Auto Surround Sound Setup.....1  
Microphone Stand for Auto Surround Sound Setup.....1  
Operating Instructions.....1

# 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

AM Loop Antenna (ATB7009)	FM Wire Antenna (ADH7004)	Dry Cell Battery (LR6, AA)	Operating Instructions (VSX-45TX : ARB7257) (VSX-43TX : ARB7261)
Remote Control Unit (VSX-45TX : AXD7325)	Remote Control Unit (VSX-43TX : AXD7328)		

**PACKING parts List**

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	MIC Assy	See Contrast table (2)	10	Battery Cover	See Contrast table (2)
2	MIC Stand 45	See Contrast table (2)	NSP 11	Alkaline Dry Cell Battery (LR6, AA)	See Contrast table (2)
3	FM Wire Antenna	ADH7004	NSP 12	Alkaline Dry Cell Battery (LR6, AA)	VEM1021
4	AM Loop Antenna	ATB7009			
5	Caution Sheet SP,E	ARM7056			
NSP 6	Warranty Card EL	ARY7007	13	Front Pad 45	AHA7374
7	Operating Instructions (English)	See Contrast table (2)	14	Rear Pad 45	AHA7375
NSP 8	Polyethylene Bag (0.03*230*340)	Z21-038	15	Packing Sheet	RHC1023
9	Remote Control Unit	See Contrast table (2)	16	Packing Case	See Contrast table (2)

**(2) CONTRAST TABLE**

VSX-45TX/KUXJI/CA and VSX-43TX/KUXJI/CA are constructed the same except for the following:

Mark	NO	Symbol and Description	VSX-45TX/KUXJI/CA	VSX-43TX/KUXJI/CA
	1	MIC Assy	APM7004	Not used
	2	MIC Stand 45	AEB7269	Not used
	7	Operating Instructions (English)	ARB7257	ARB7261
	9	Remote Control Unit 45/KU	AXD7325	Not used
	9	Remote Control Unit 43/KU	Not used	AXD7328
	10	Battery Cover	AZN7896	AZN7424
NSP	11	Alkaline Dry Cell Battery (LR6, AA)	VEM1021	Not used
	16	Packing Case 45KU	AHD8060	Not used
	16	Packing Case 43KU	Not used	AHD8061

# 2.2 EXTERIOR SECTION

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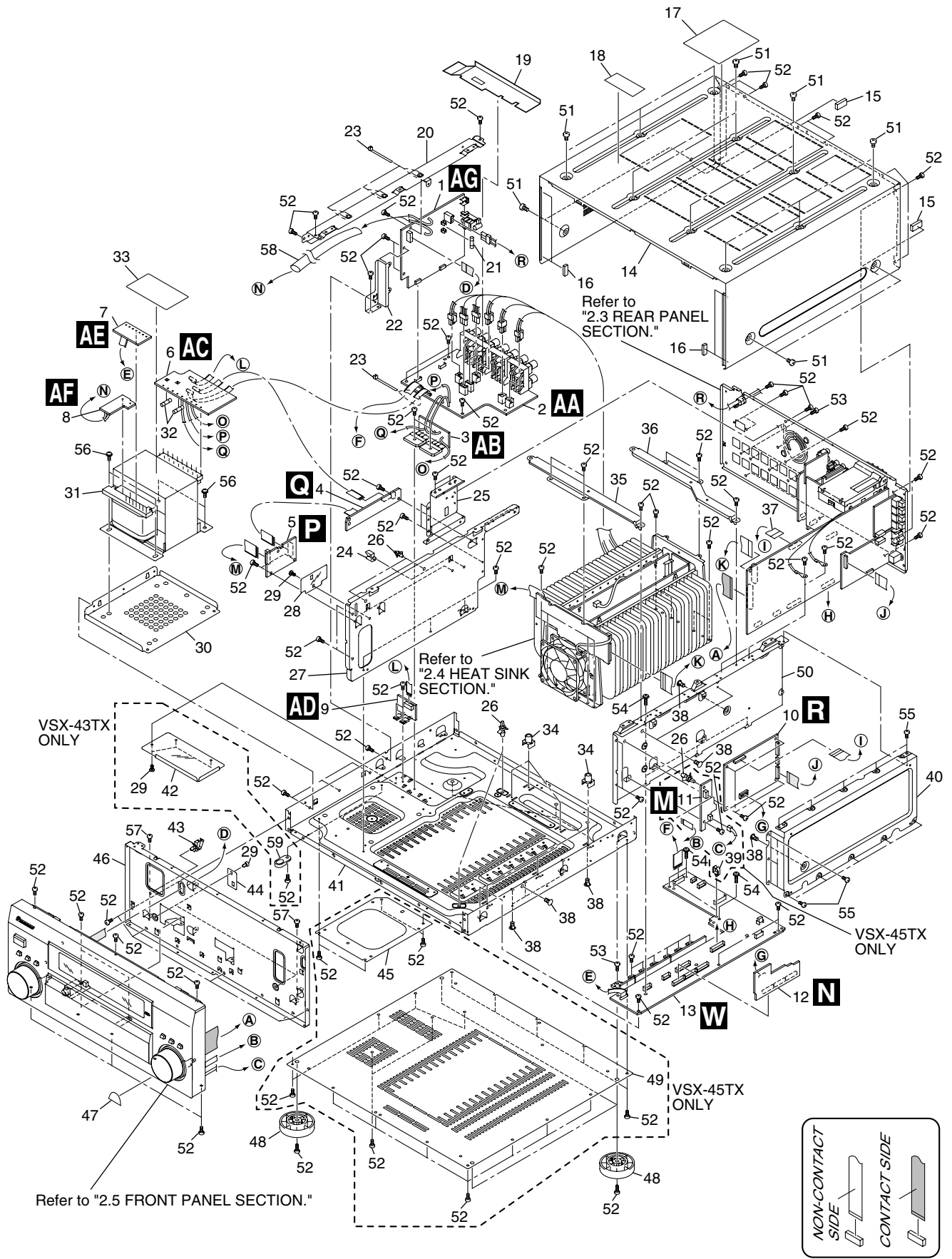
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## EXTERIOR SECTION parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	PRIMARY Assy	AWX7968	⚠ 31	T1 Power Transformer	ATS7328
2	SP/PS Assy	See Contrast table (2)	⚠ 32	FU4,FU5 Fuse (3A)	REK1113
3	DIODE Assy	See Contrast table (2)	NSP 33	Trans Label 45	AAX7957
4	FAN CONNECTION Assy	AWX8005	34	PCB Mold	AMR2534
5	FAN DRIVE Assy	AWX7976	35	Bridge Frame 45F	ANG7409
6	TRANS 2-1 Assy	AWX7979	36	Bridge Frame 45R	ANG7410
7	TRANS 2-2 Assy	AWX7970	37	J7 21P FFC/60V	ADD7355
8	TRANS 1 Assy	AWX7969	38	Card Spacer	DNK2769
9	VH TR Assy	AWX8018	NSP 39	Wire Clip (A)	See Contrast table (2)
10	DSP ASSY	AWX8016	40	DSP Shield 45B	ANG7403
11	MIC AMP Assy	See Contrast table (2)	NSP 41	Under Base	See Contrast table (2)
12	DSP CONNECTION Assy	AWX8024	42	Screw Cover 45A	See Contrast table (2)
13	REGULATOR Assy	AWX7967	NSP 43	Wire Saddle	DEC1450
14	Bonnet Case 45B	AZN7897	44	Styling Sheet	AEC7413
15	Spacer 45A	AEB7263	45	Stabilizer 45	See Contrast table (2)
16	Spacer 45B	AEB7264	NSP 46	Panel Stay 45	AND7047
17	Label (DD/DTS/THX)	ARW7177	NSP 47	Energy Star Label	AAX7876
18	Label (FCC/DOC)	ARW7191	48	Insulator	PNW2766
19	Barrier 45	AEC7444	49	Bottom Plate 45	See Contrast table (2)
20	Left Beam 45	ANG7401	50	DSP Shield 45A	ANG7402
⚠ 21	FU1 Fuse (10A)	VEK1029	51	Screw	BBZ40P080FZK
22	Primary Angle 35	ANG7301	52	Screw	BBZ30P080FZK
NSP 23	Binder	ZCA-BK1	53	Screw	BBZ30P100FCC
NSP 24	Mini Clamp	VEC1597	54	Screw	IBZ30P150FCC
25	Fan Box 45	ANG7413	55	Screw	BBT30P080FCC
26	Locking Card Spacer	PNW2917	56	Screw	ABA7066
27	Trans Shield 45	ANG7400	57	Screw	ABA7009
28	Styling Sheet B	AEC7437	58	UL Tube	ADN7007
29	Push Rivet	AEC7370	59	Screw Cover	
30	Trans Frame 45	ANG7399		See "2.5 FRONT PANEL SECTION" No. 19-3	

## (2) CONTRAST TABLE

VSX-45TX/KUXJI/CA and VSX-43TX/KUXJI/CA are constructed the same except for the following:

Mark	NO	Symbol and Description	VSX-45TX/KUXJI/ CA	VSX-43TX/KUXJI/ CA
NSP	2	SP/PS Assy	AWX7975	AWX8037
	3	DIODE Assy	AWX8017	AWX8038
NSP	11	MIC AMP Assy	AWX8004	Not used
	39	Wire Clip (A)	VEC1355	Not used
NSP	41	Under Base 45	ANA7138	Not used
NSP	41	Under Base 43	Not used	ANA7144
	42	Screw Cover 45A	Not used	AEC7414
	45	Stabilizer 45	ANG7408	Not used
	49	Bottom Plate 45	ANF7031	Not used

# 2.3 REAR PANEL SECTION

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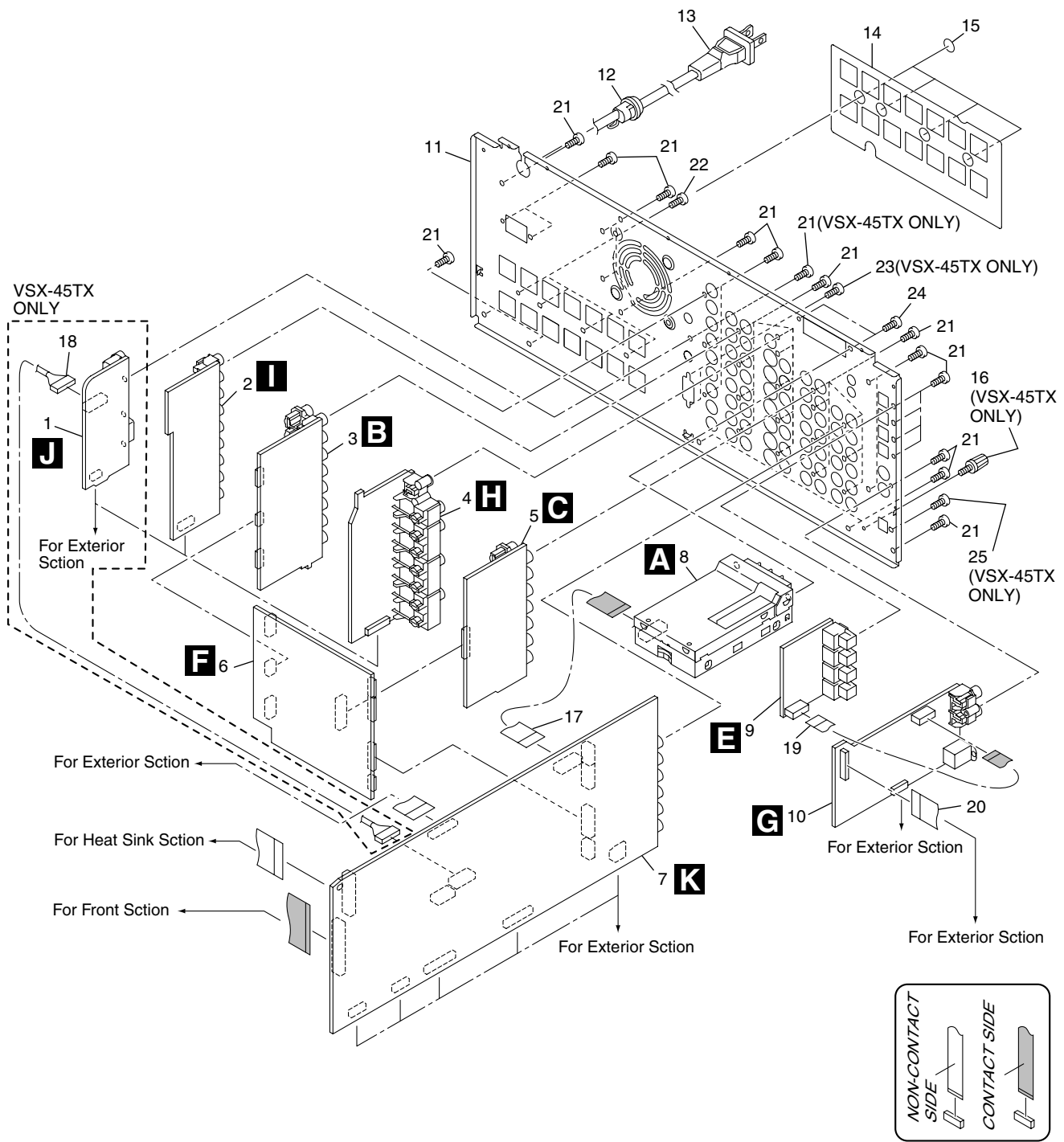
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## REAR PANEL SECTION parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	RS232C Assy	See Contrast table (2)	14	Speaker Sheet	AAK8016
2	COMPONENT Assy	See Contrast table (2)	15	Cushion Circle 16B	AED7052
3	7.1CH I/O Assy	AWX7973			
4	VIDEO Assy	See Contrast table (2)	16	Screw with Terminal	See Contrast table (2)
5	V-AUDIO IN Assy	See Contrast table (2)	17	J8 13P FFC/60V	ADD7356
			18	J1902 Connector Assy (8P)	See Contrast table (2)
6	INPUT CONNECT Assy	See Contrast table (2)	19	J5 9P FFC/60V	ADD7353
7	MAIN CONTROL Assy	See Contrast table (2)	20	J6 20P FFC/60V	ADD7354
8	FM/AM TUNER Module	AXQ7231			
9	OPTICAL IN Assy	AWX7978	21	Screw	BBZ30P080FZK
10	COAXIAL IN Assy	See Contrast table (2)	22	Screw	BBZ30P100FCC
			23	Screw	See Contrast table (2)
11	Rear Panel	See Contrast table (2)	24	Screw	VPZ30P080FZK
12	Cord Stopper	CM-22C	25	Screw	See Contrast table (2)
 13	AC Power Cord	VDG1075			

## (2) CONTRAST TABLE

VSX-45TX/KUXJI/CA and VSX-43TX/KUXJI/CA are constructed the same except for the following:

Mark	NO	Symbol and Description	VSX-45TX/KUXJI/ CA	VSX-43TX/KUXJI/ CA
	1	RS232C Assy	AWX7966	Not used
	2	COMPONENT Assy	AWX7963	AWX8021
	4	VIDEO Assy	AWX7962	AWX8002
	5	V-AUDIO IN Assy	AWX7964	AWX7991
	6	INPUT CONNECT Assy	AWX7974	AWX8041
	7	MAIN CONTROL Assy	AWX7961	AWX8000
	10	COAXIAL IN Assy	AWX7965	AWX8013
	11	Rear Panel 45KU	ANC8063	Not used
	11	Rear Panel 43KU	Not used	ANC8086
	16	Screw with Terminal	AKE-031	Not used
	18	J1902 Connector Assy (8P)	ADE7085	Not used
	23	Screw	ABA7078	Not used
	25	Screw	PMZ30P060FCC	Not used

# 2.4 HEAT SINK SECTION

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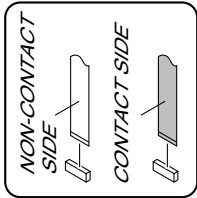
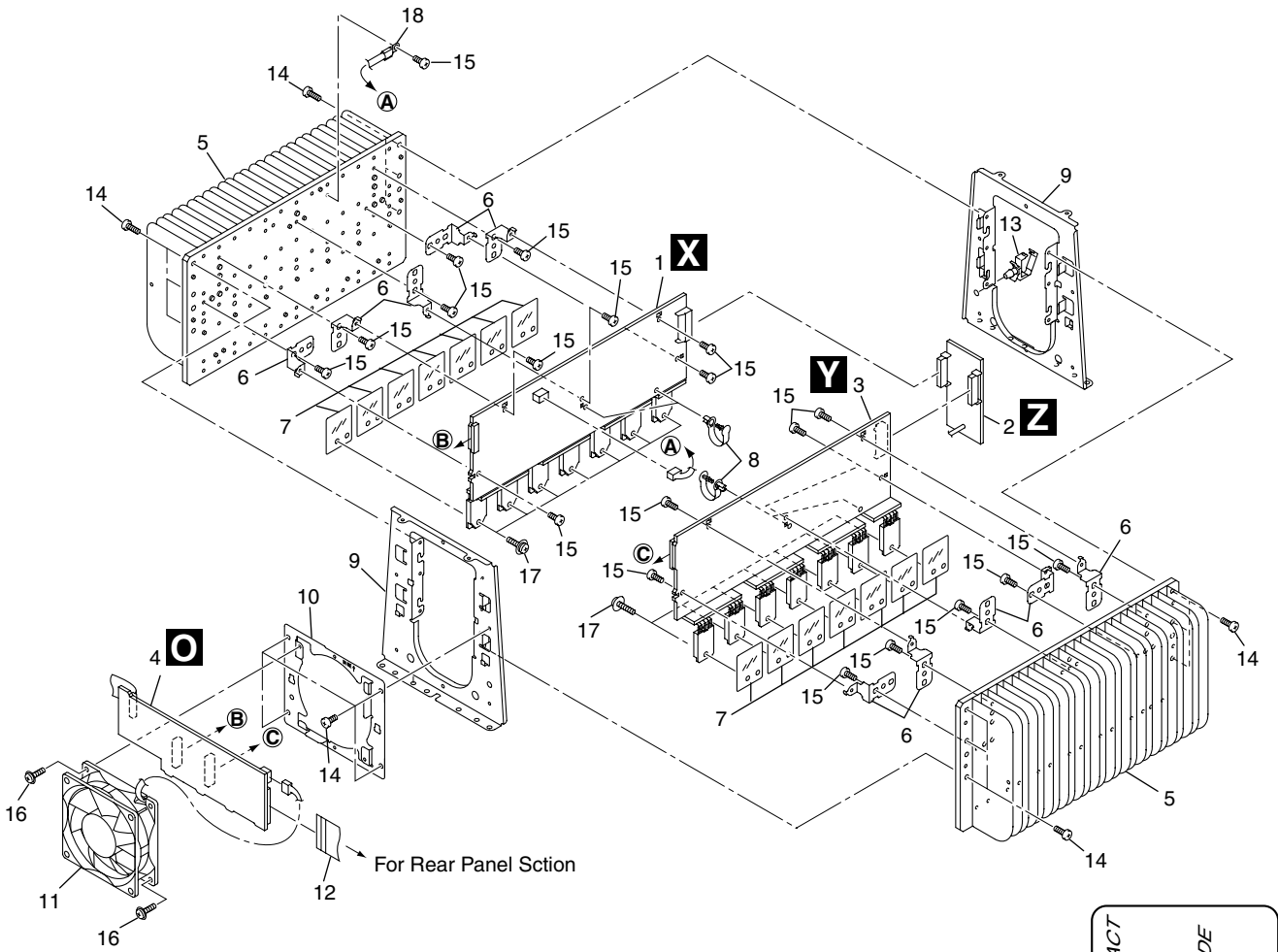
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**HEAT SINK SECTION parts List**

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	POWER AMP-L Assy	AWX7984
2	POWER AMP-C Assy	AWX7986
3	POWER AMP-R Assy	AWX7985
4	POWER AMP IN Assy	AWX7982
NSP 5	Heat Sink 45	ANH7152
6	PCB Angle 45	ANG7406
7	Mica Sheet 45	AEE7047
NSP 8	Speed Clamp	AEC7445
9	H.S Angle 45	ANG7404
10	Fan Holder 80	ANG7407
⚠ 11	Fan Motor	AXM7023
12	J14 24P FFC/60V	ADD7357
NSP 13	Wire Saddle	DEC1450
14	Screw	BBZ30P100FCC
15	Screw	BBZ30P080FZK
16	Screw	BBZ30P300FMC
17	Screw	ABA7085
⚠ 18	TH1 Thermistor	AEX7004

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# 2.5 FRONT PANEL SECTION

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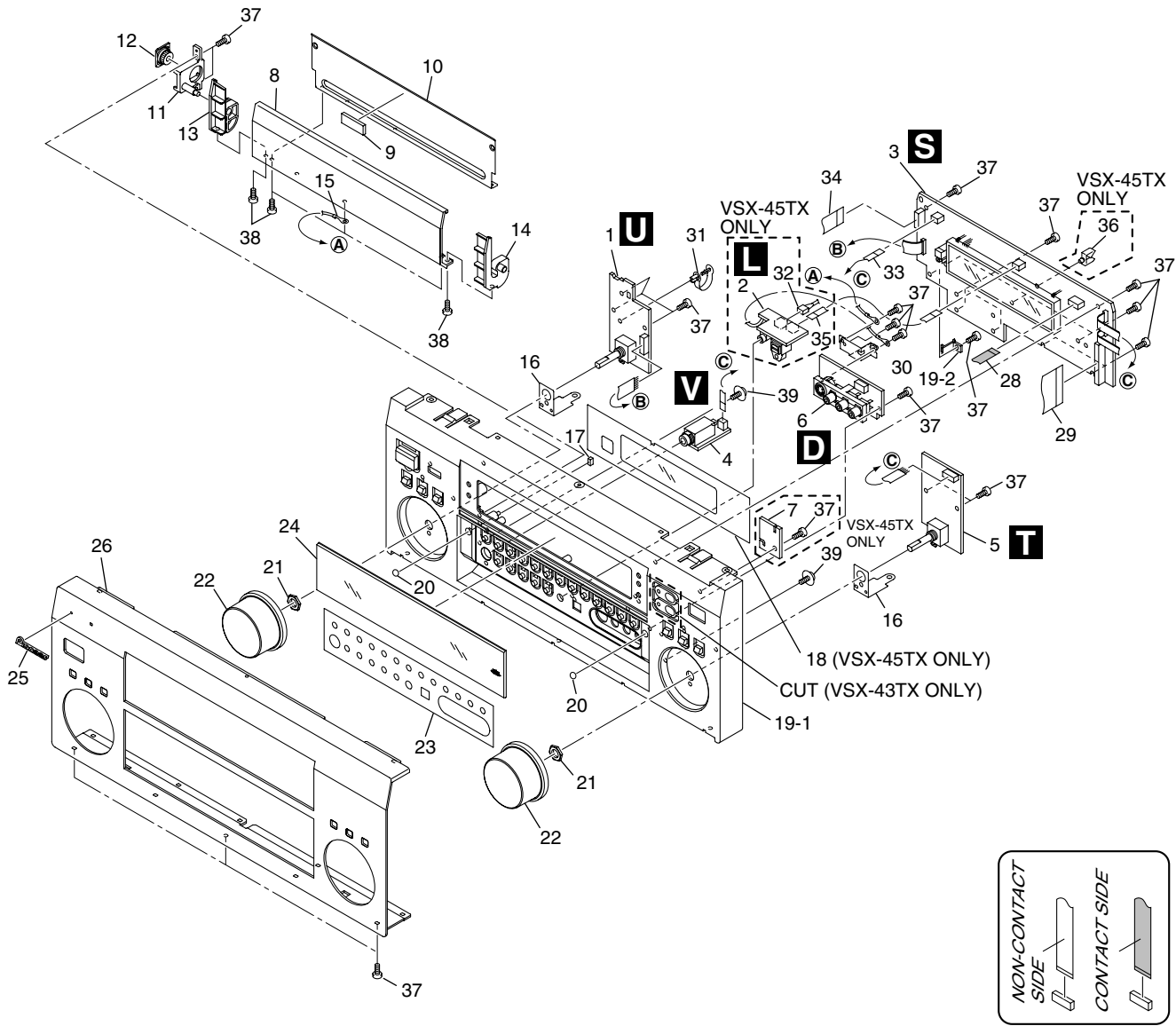
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## FRONT PANEL SECTION parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	MULTI JOG Assy	AWX7972	21	Nut	NK90FUC
2	MIC & F.OPT IN Assy	See Contrast table (2)	22	Rotary Knob L BK	AAA7018
3	DISPLAY Assy	See Contrast table (2)	23	D.Sheet	See Contrast table (2)
4	HEADPHONE Assy	AWX7980	24	Window	See Contrast table (2)
5	VOLUME Assy	AWX7971	25	Pionner Badge B	PAN1376
6	FRONT IN Assy	AWX7977	26	F.Panel	See Contrast table (2)
7	STYLING Assy	•••••	27	•••••	
8	Door 45	ANB7277	28	J4 7P FFC/60V	ADD7352
9	Spacer 45A	AEB7263	29	J1 32P FFC/60V	ADD7349
10	Door Stay 45B	AAH7089	30	Earth Plate A	ANG7411
11	Door Shaft 35	AMR7295	NSP 31	Speed Clamp	AEC7445
12	Damper Assy (200)	AXA7088	32	J1901 Connector Assy (3P)	See Contrast table (2)
13	Door Hinge L 45B	AMR7386	33	J15 3P FFC/60V	ADD7371
14	Door Hinge R 45B	AMR7387	34	J2 11P FFC/60V	ADD7350
NSP 15	Earth Lead Wire	ADH7022	35	J3 4P FFC/60V	See Contrast table (2)
16	Earth Plate B	ANG7412	NSP 36	Wire Clip (A)	See Contrast table (2)
17	Magnet 35	AMF7007	37	Screw	BPZ30P100FMC
18	FL Sheet 45R	See Contrast table (2)	38	Screw	BBZ30P080FZK
19-1	Panel Base 45B	AMB7803	39	Screw	ABA7009
19-2	Magnet Holder				
19-3	Screw Cover				
20	Cushion Circle 6B	AED7044			

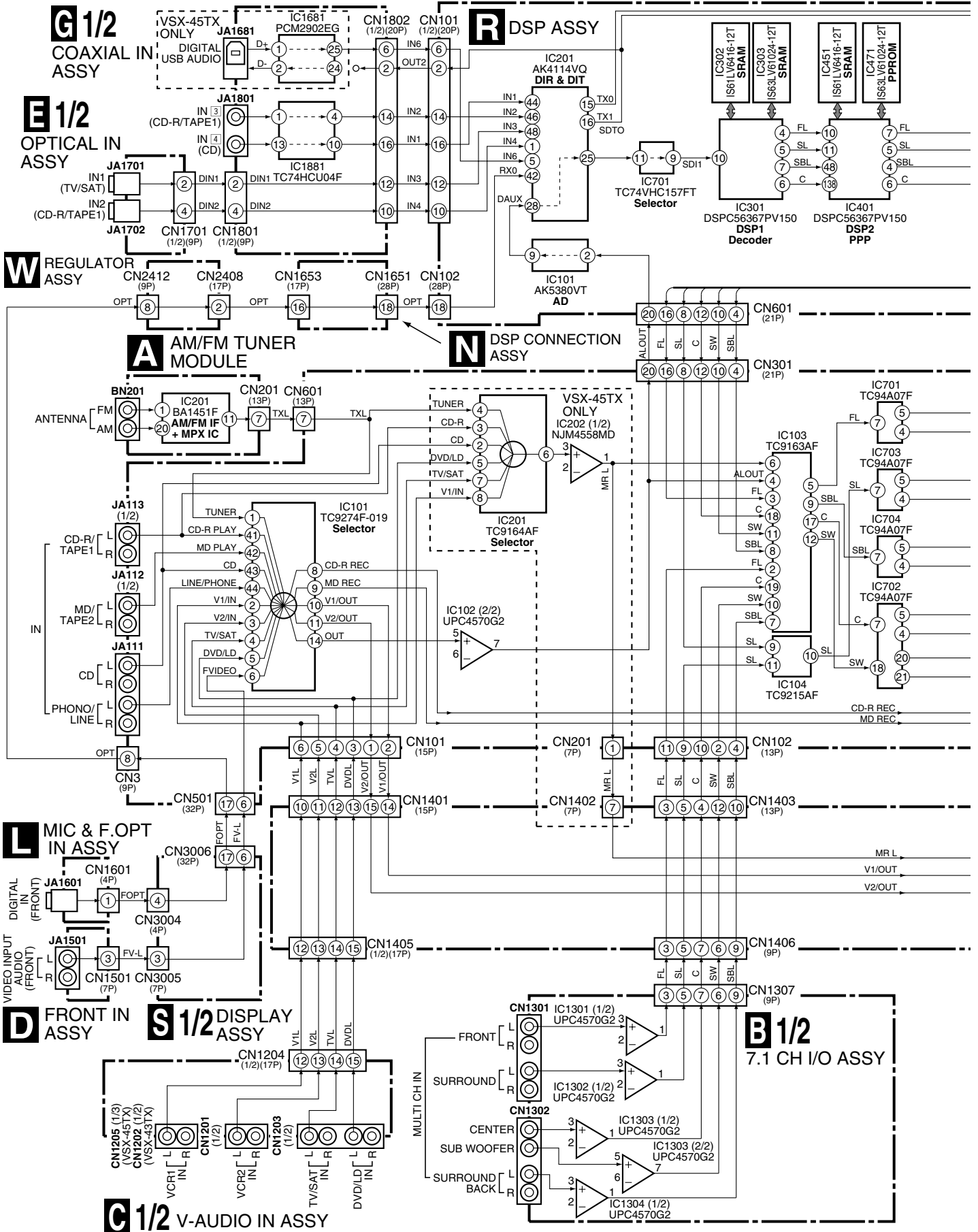
## (2) CONTRAST TABLE

VSX-45TX/KUXJI/CA and VSX-43TX/KUXJI/CA are constructed the same except for the following:

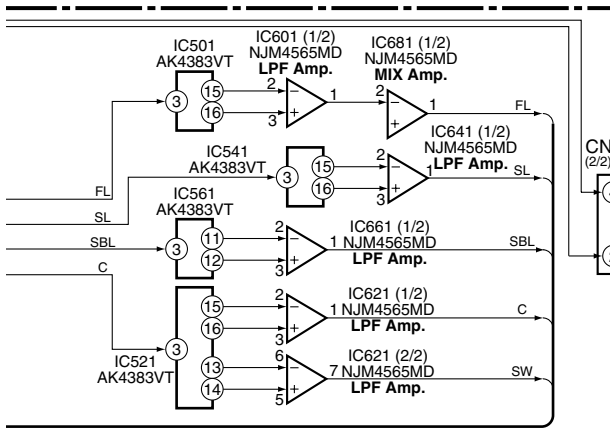
Mark	NO	Symbol and Description	VSX-45TX/KUXJI/ CA	VSX-43TX/KUXJI/ CA
	2	MIC & F.OPT IN Assy	AWX7981	Not used
	3	DISPLAY Assy	AWX7983	AWX8011
	18	FL Sheet 45R	AAK7957	Not used
	23	D.Sheet 45B	AAK7955	Not used
	23	D.Sheet 43B	Not used	AAK8019
	24	Window 45	AAK7954	Not used
	24	Window 43R	Not used	AAK8072
	26	F.Panel 45BKU	ANB7276	Not used
	26	F.Panel 43BKU	Not used	ANB7278
	32	J1901 Connector Assy (3P)	ADE7084	Not used
	35	J3 4P FFC/60V	ADD7351	Not used
NSP	36	Wire Clip (A)	VEC1355	Not used

# 3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

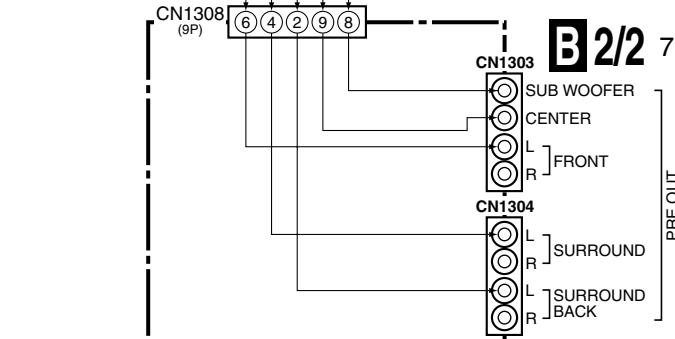
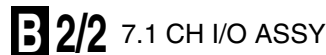
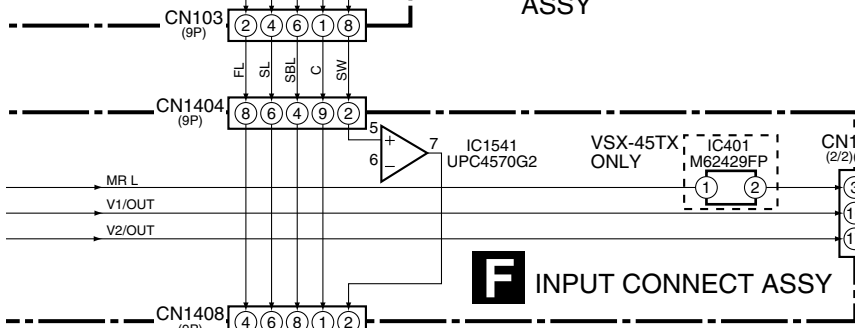
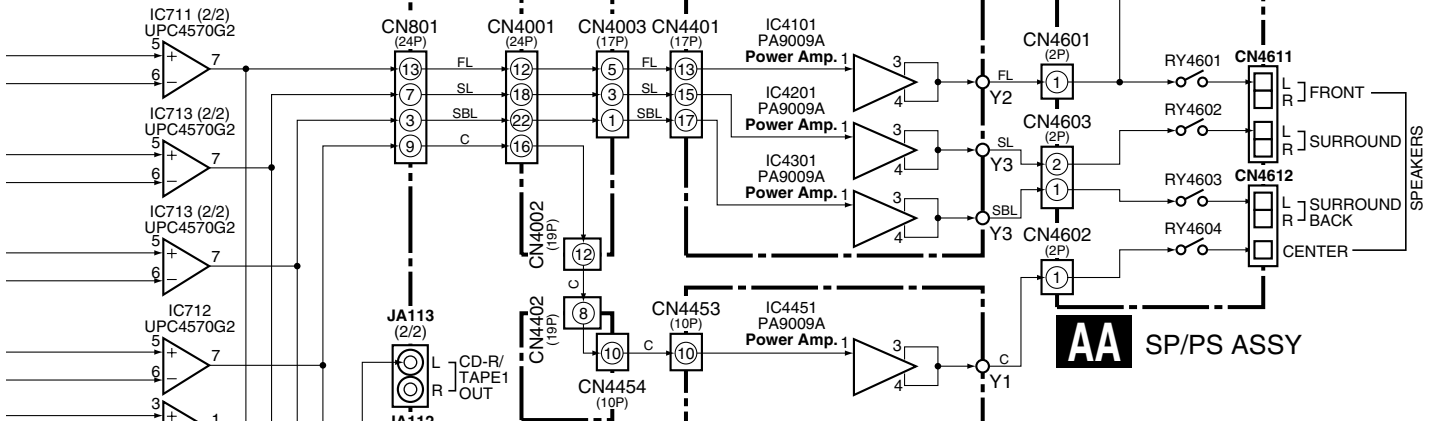
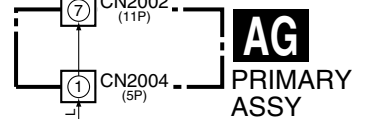
## 3.1 AUDIO BLOCK DIAGRAM







The details please refer to next page.



# 3.2 DSP BLOCK DIAGRAM

A

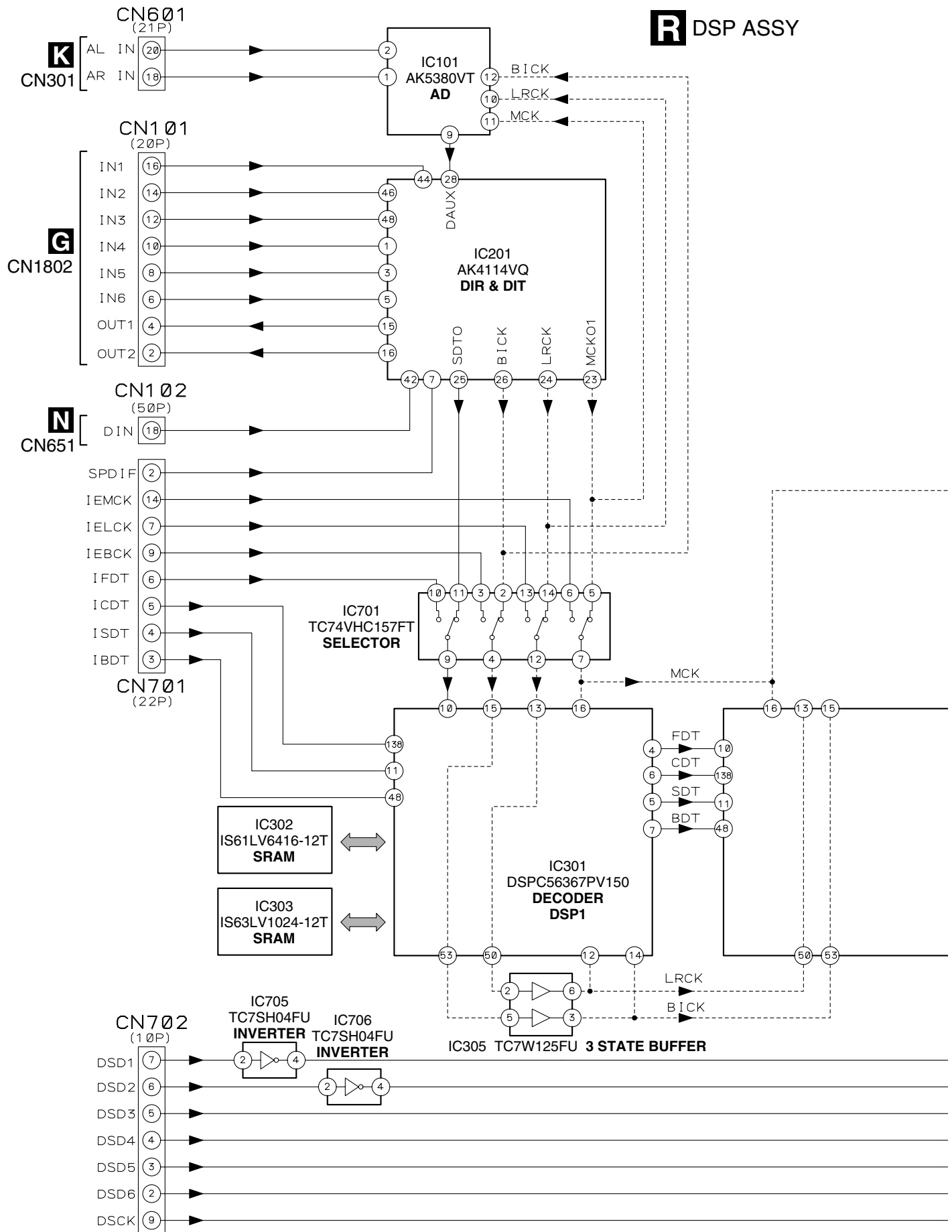
B

C

D

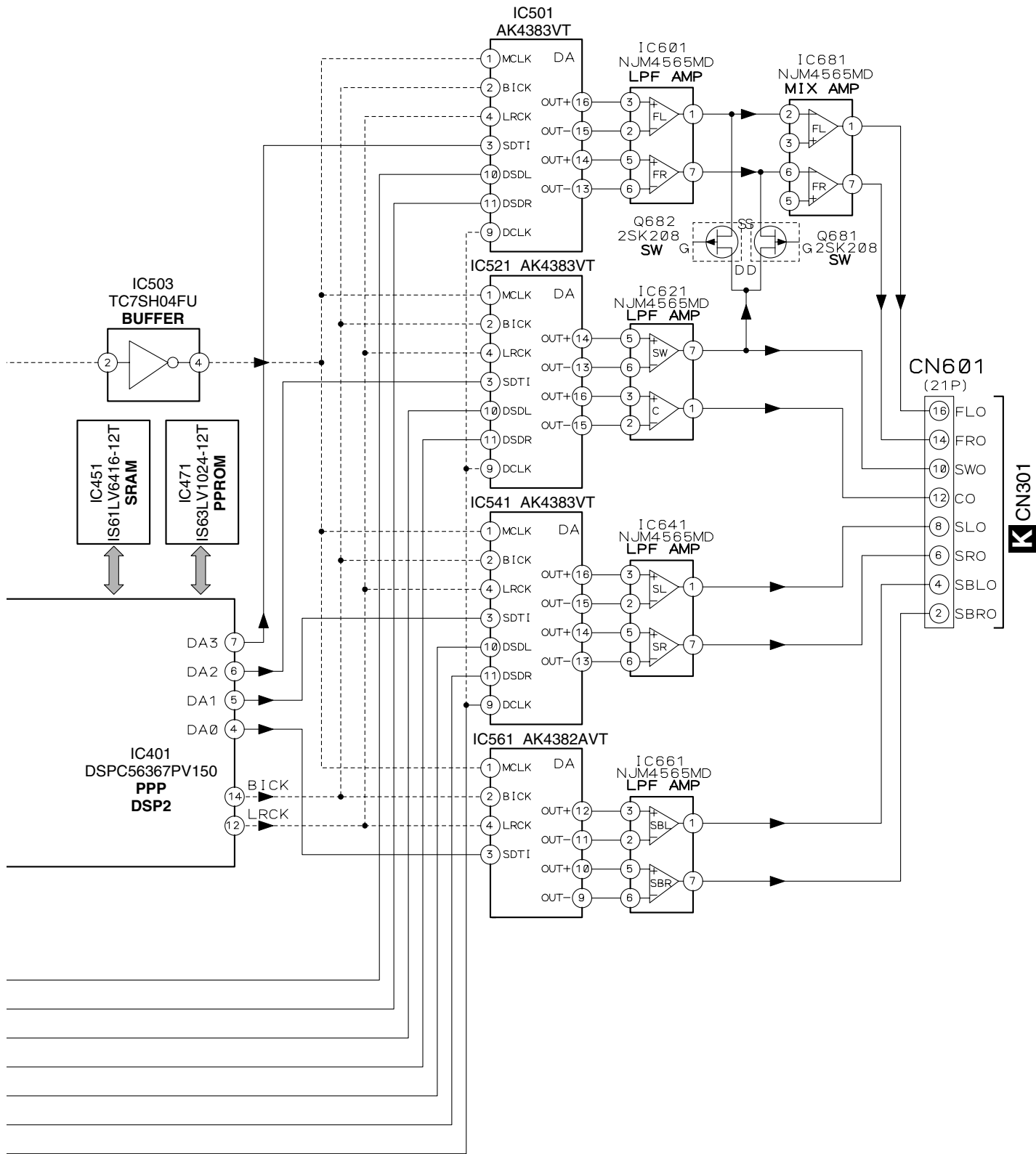
E

F

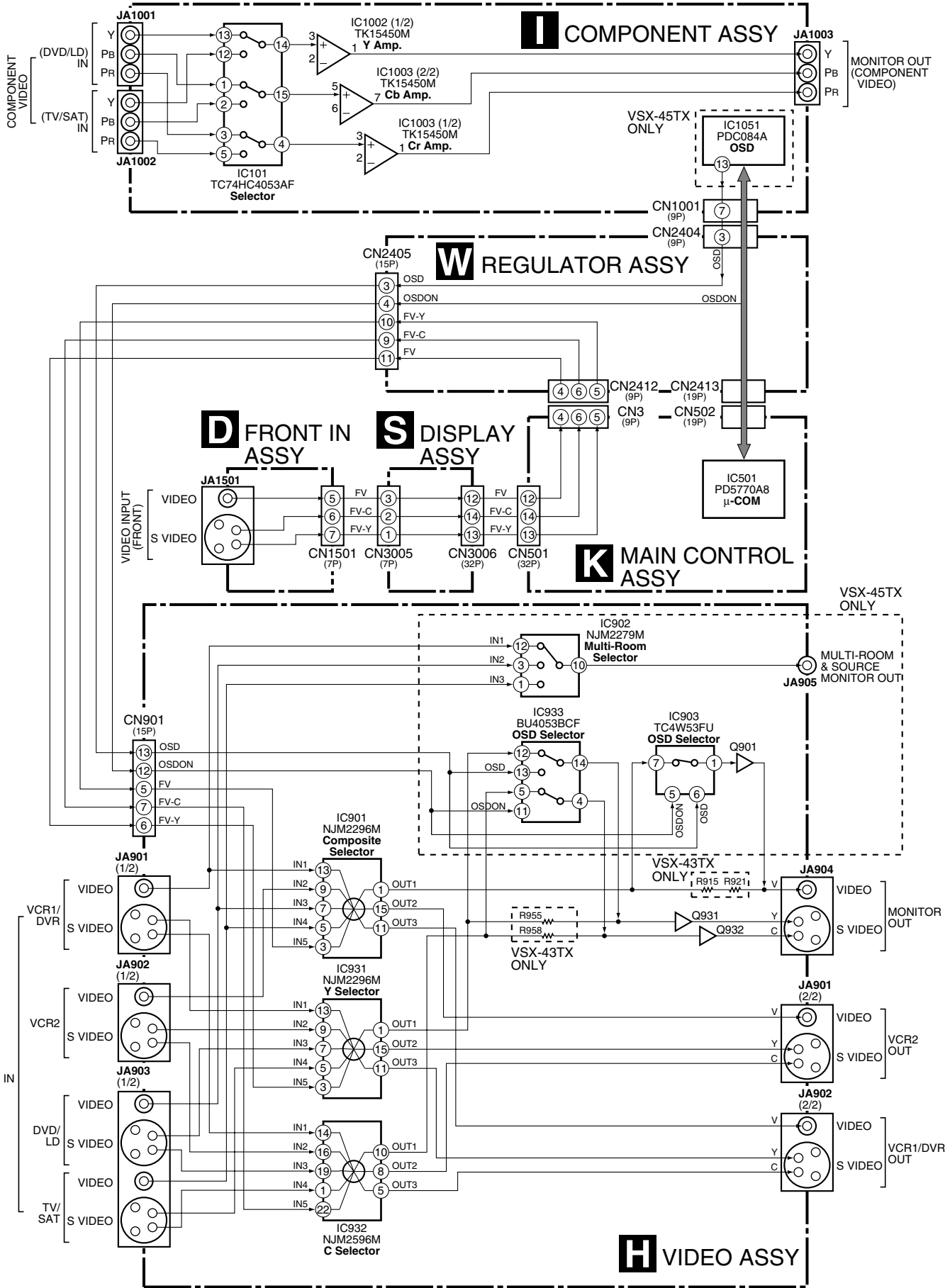


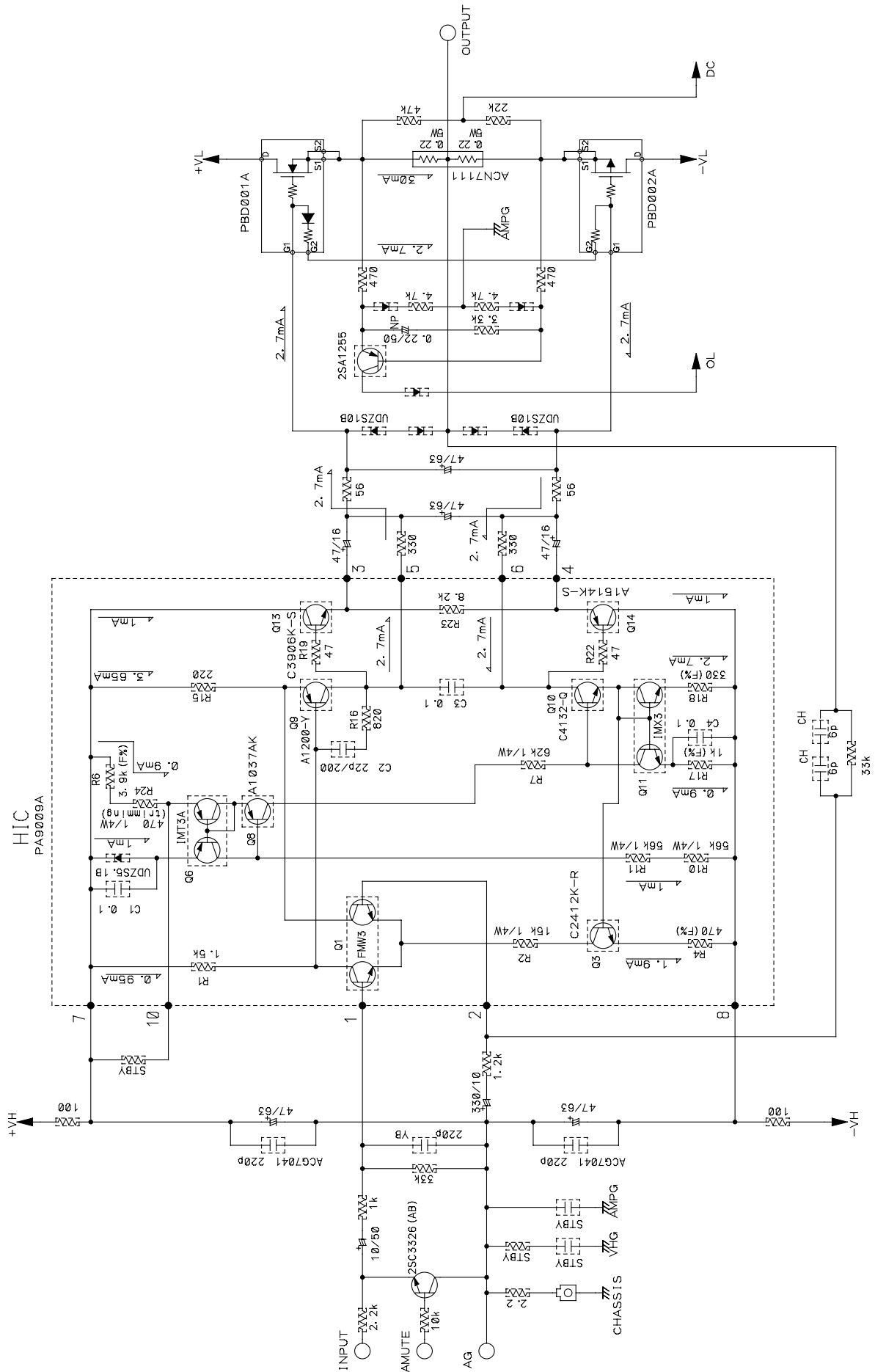
**R DSP ASSY**

----- CLOCK LINE  
 \_\_\_\_\_ DATA LINE



### 3.3 VIDEO AND POWER AMP BLOCK DIAGRAM





VSX-45TX

### 3.4 OVERALL WIRING DIAGRAM

A

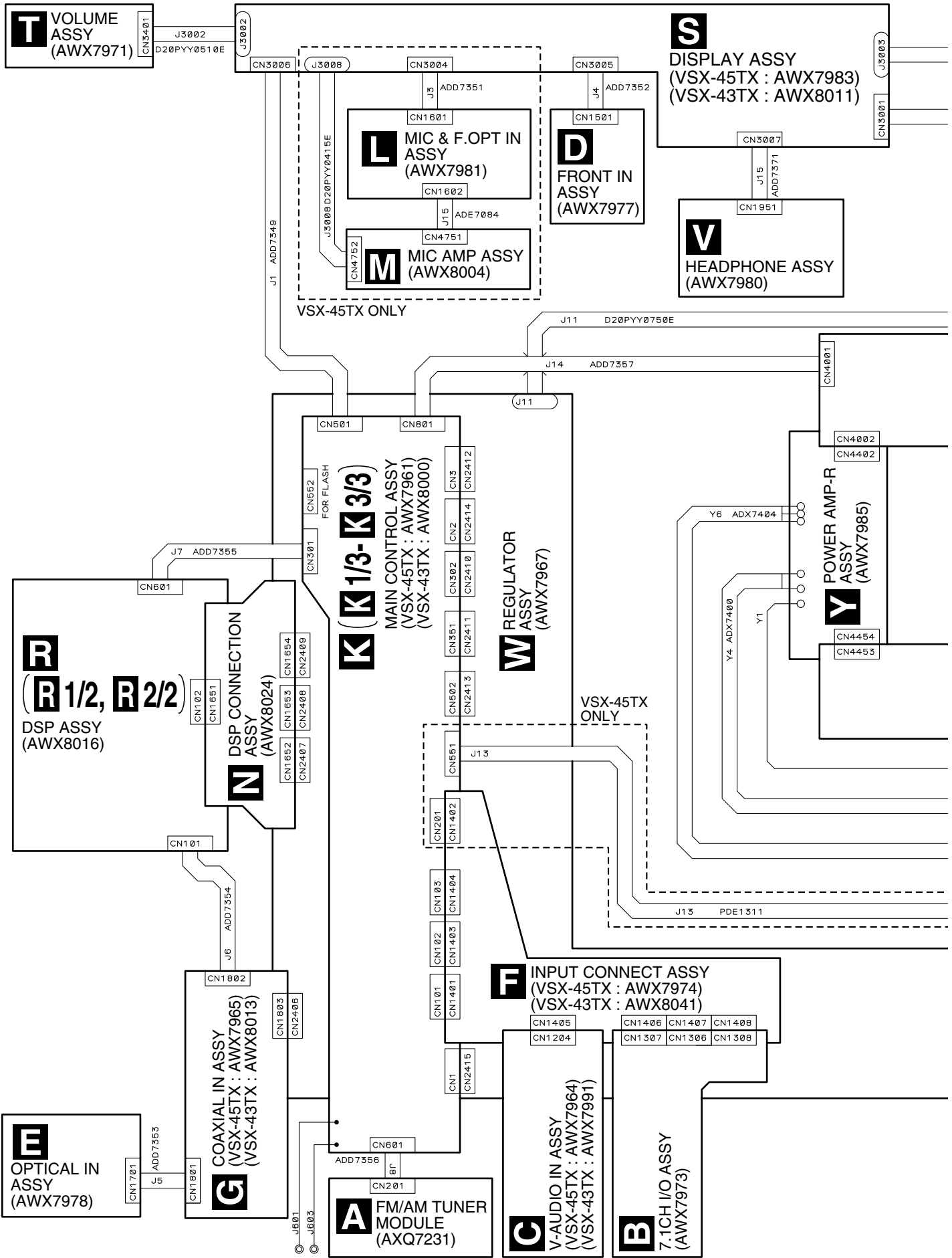
B

C

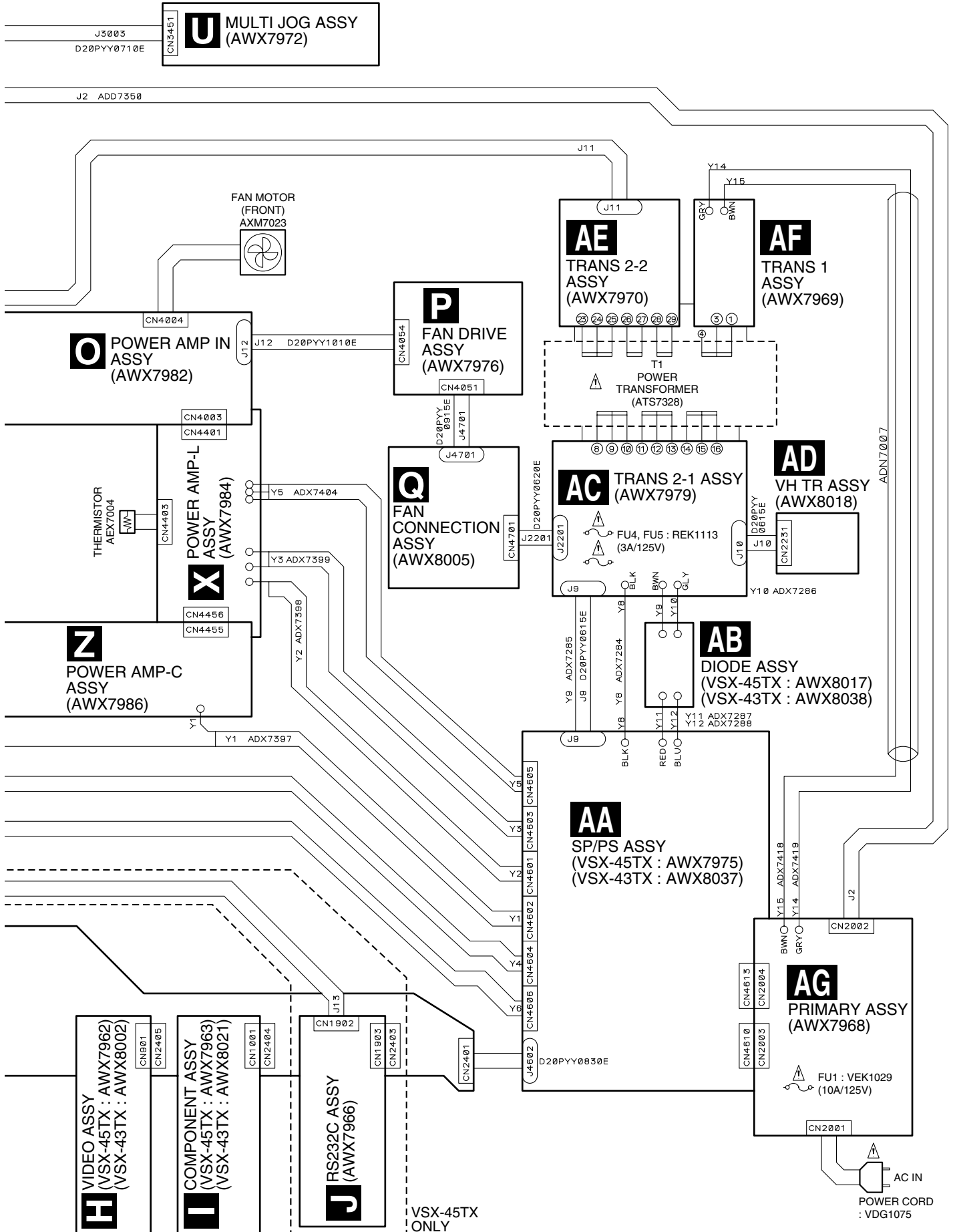
D

E

F

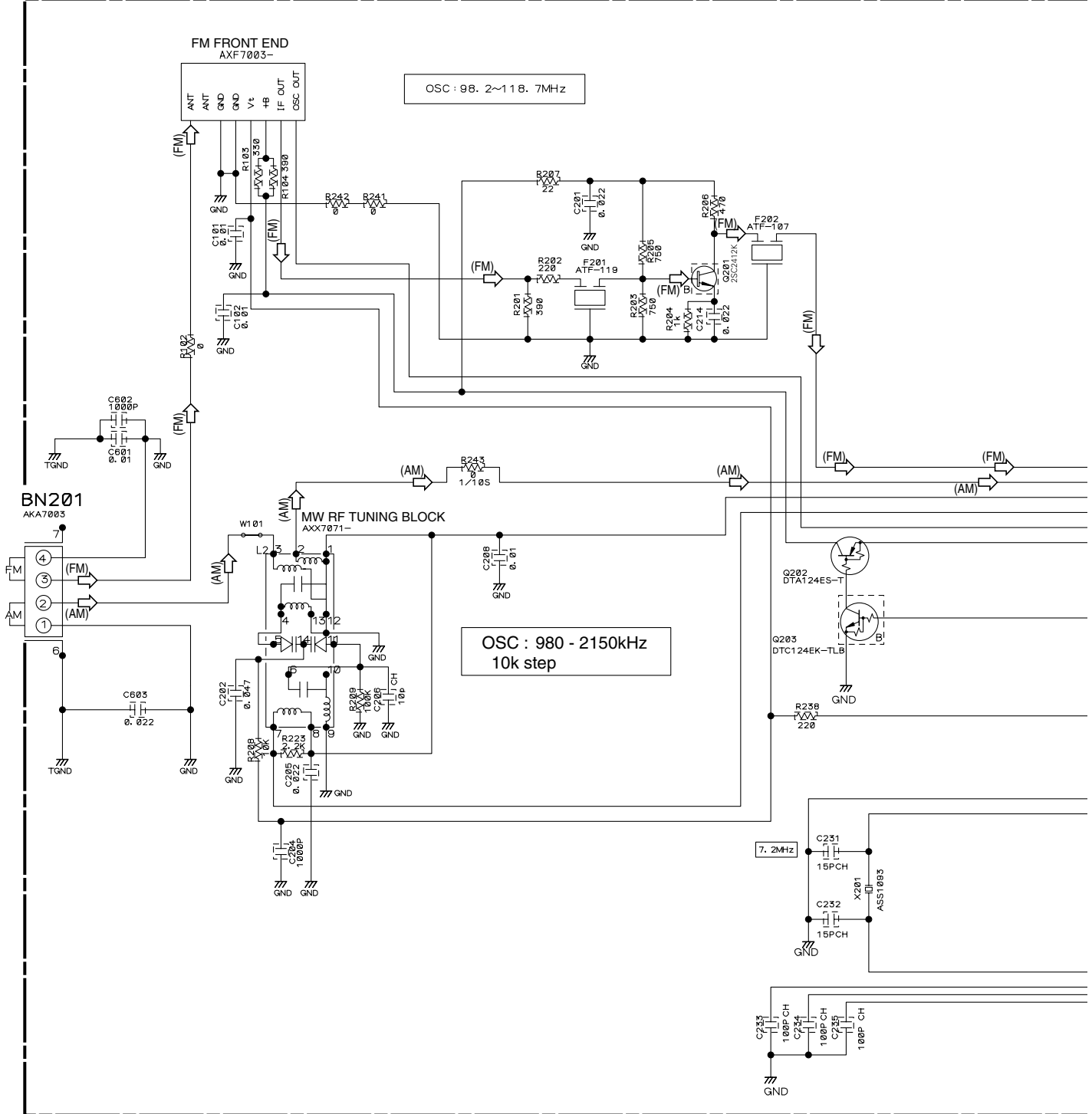


Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".



# 3.5 FM/AM TUNER MODULE

## A FM/AM TUNER MODULE (AXQ7231)





Notes

1. RESISTORS

Indicated in Ω, 1/16W±5% Tolerance unless otherwise noted K:KΩ, M:MΩ.

2. CAPACITORS

Indicated in Capacity (μF)/VOLTAGE (V) unless otherwise noted P:PF.


3. DIODES

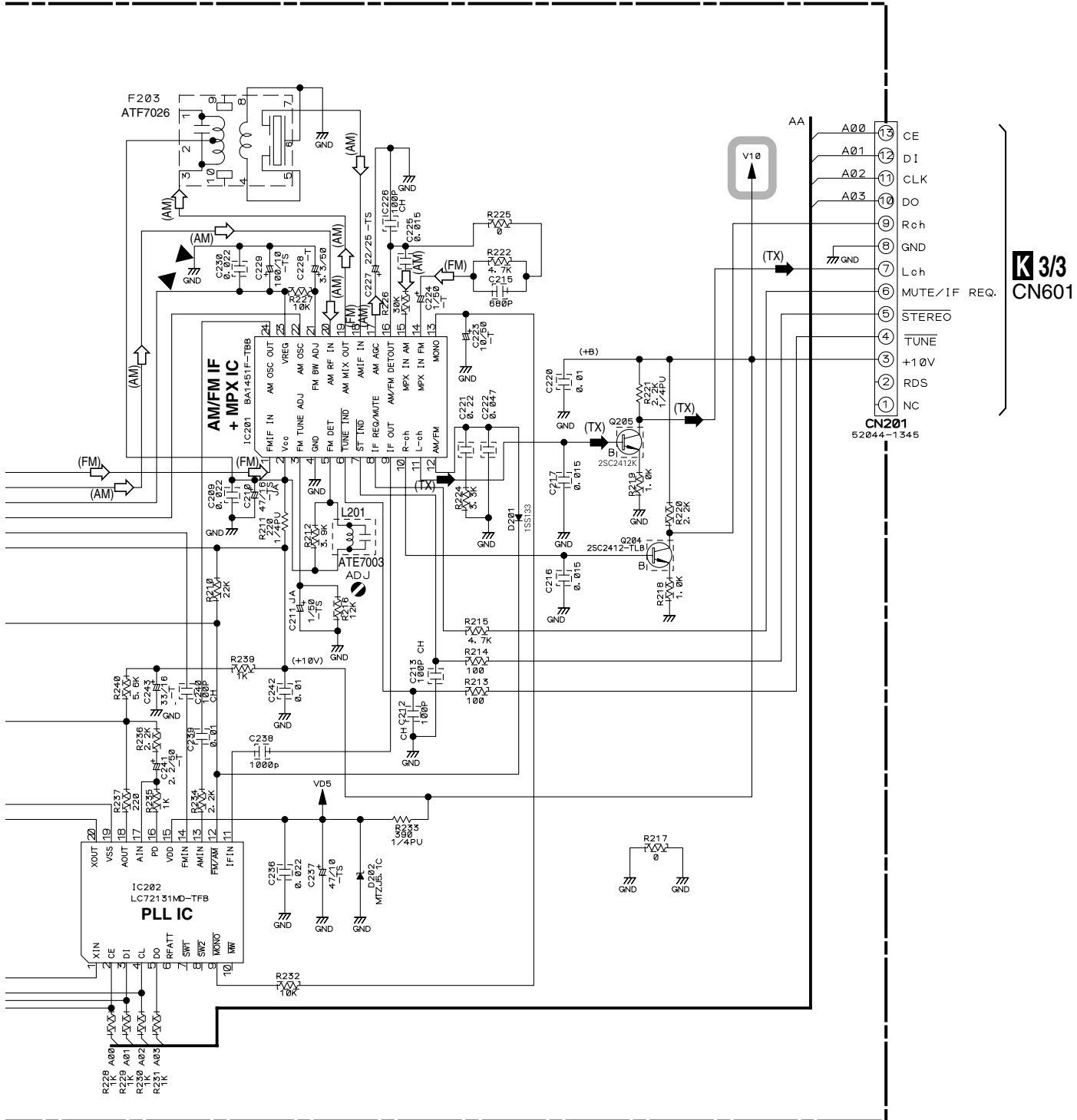
No mark diode is 1SS133.

(TX) : AUDIO SIGNAL ROUTE (TUNER Lch)

(AM) : AM SIGNAL ROUTE

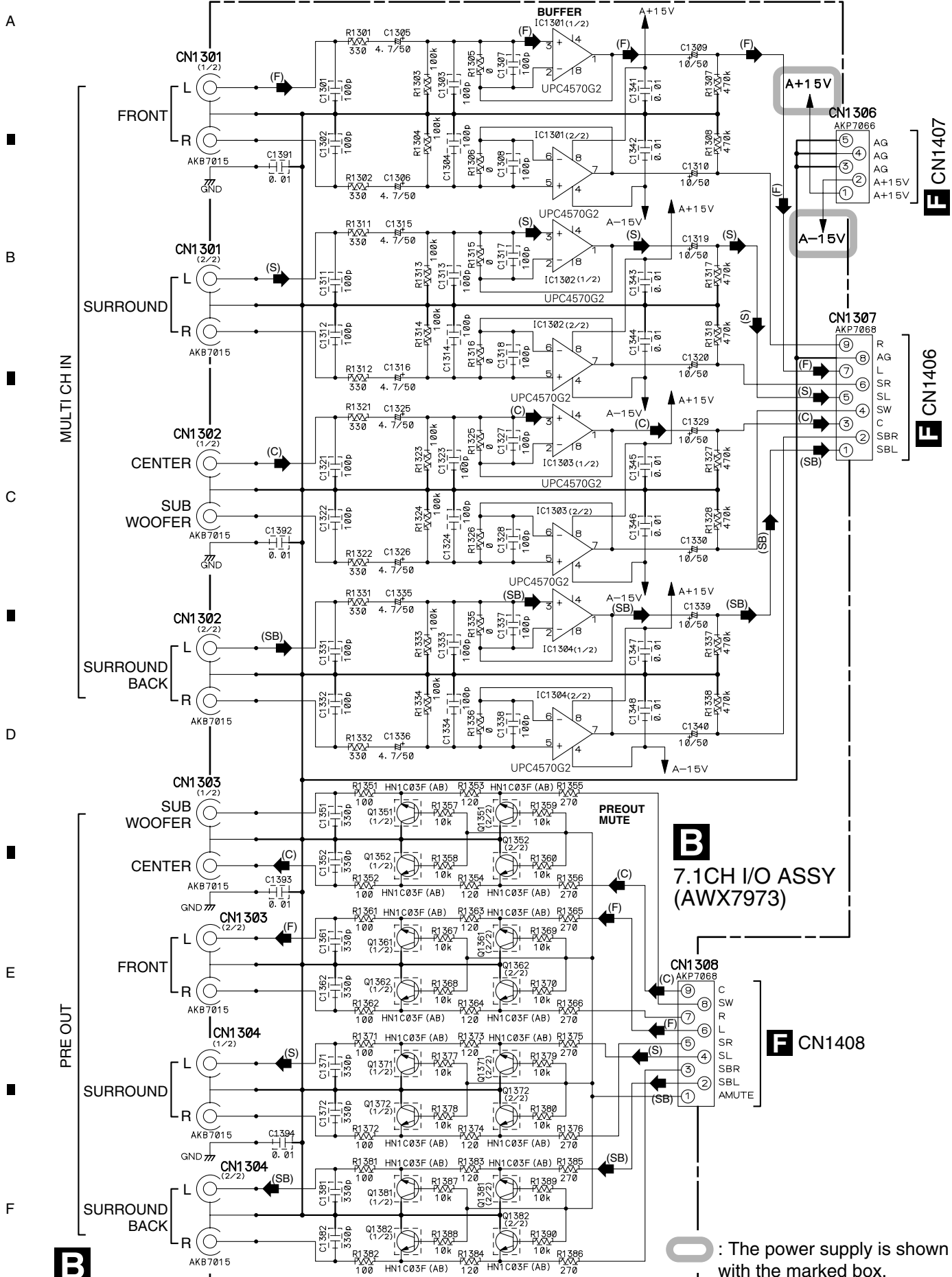
(FM) : FM SIGNAL ROUTE

 : The power supply is shown with the marked box.



**K 3/3**  
CN601

### 3.6 7.1CH I/O, V-AUDIO IN, FRONT IN and OPTICAL IN ASSYS

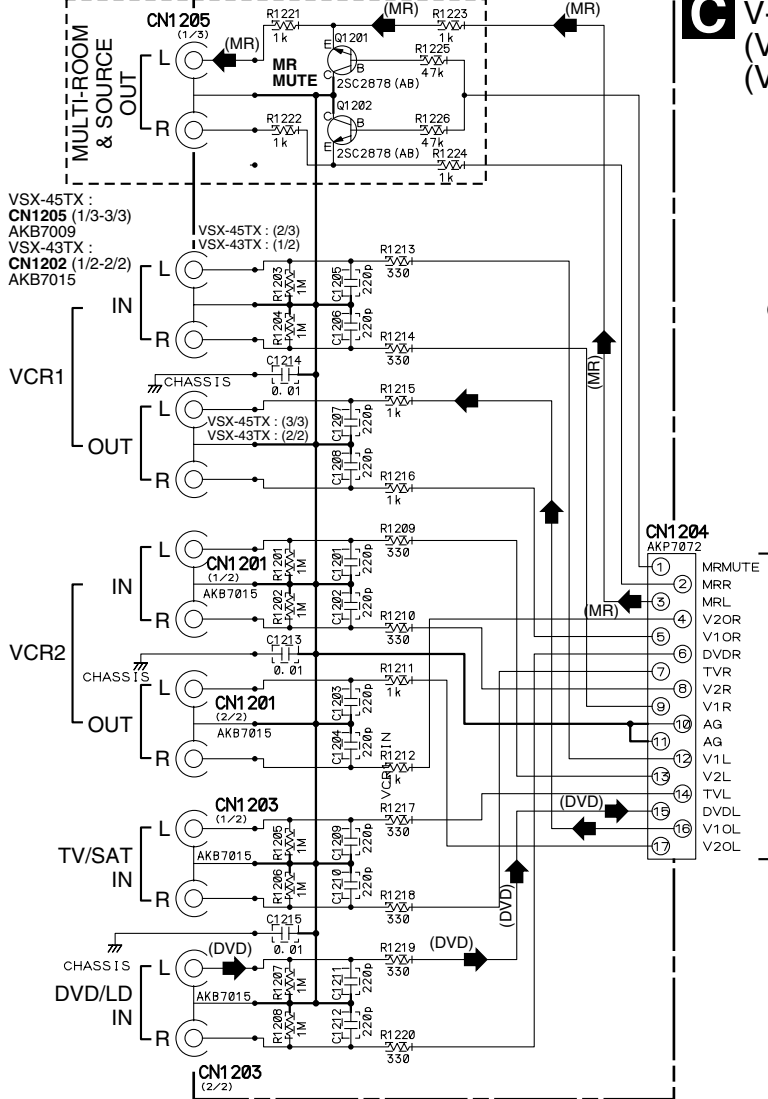


**B** 7.1CH I/O ASSY (AWX7973)

**F** CN1408

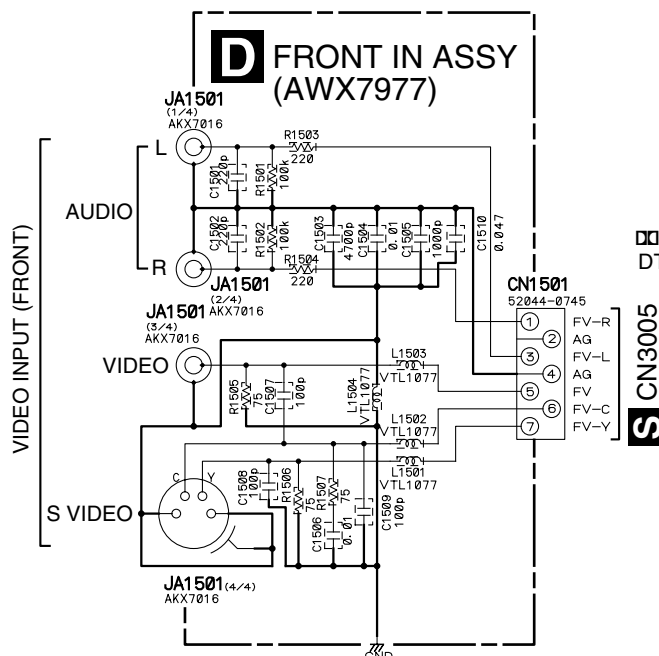
**O** : The power supply is shown with the marked box.

VSX-45TX ONLY



**C** V-AUDIO IN ASSY  
 (VSX-45TX : AWX7964)  
 (VSX-43TX : AWX7991)

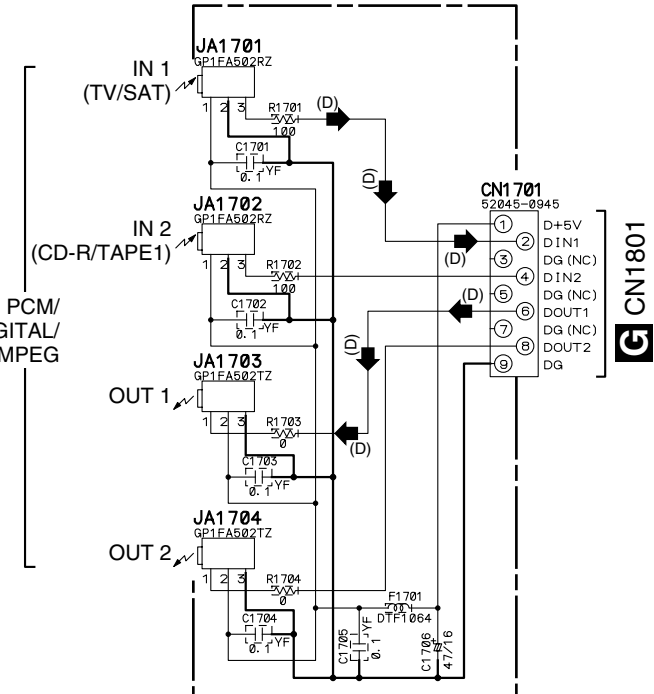
- : AUDIO SIGNAL ROUTE (Lch)
- : AUDIO SIGNAL ROUTE (MULTI-ROOM Lch)
- : AUDIO SIGNAL ROUTE (DVD Lch)
- : AUDIO SIGNAL ROUTE (FRONT Lch)
- : AUDIO SIGNAL ROUTE (SURROUND Lch)
- : AUDIO SIGNAL ROUTE (SURROUND BACK Lch)
- : AUDIO SIGNAL ROUTE (CENTER ch)
- : AUDIO SIGNAL ROUTE (DIGITAL)



**D** FRONT IN ASSY  
 (AWX7977)

**S** CN3005

**E** OPTICAL IN ASSY  
 (AWX7978)



**G** CN1801

**C D E**

### 3.7 INPUT CONNECT and COAXIAL IN ASSYS

A

B

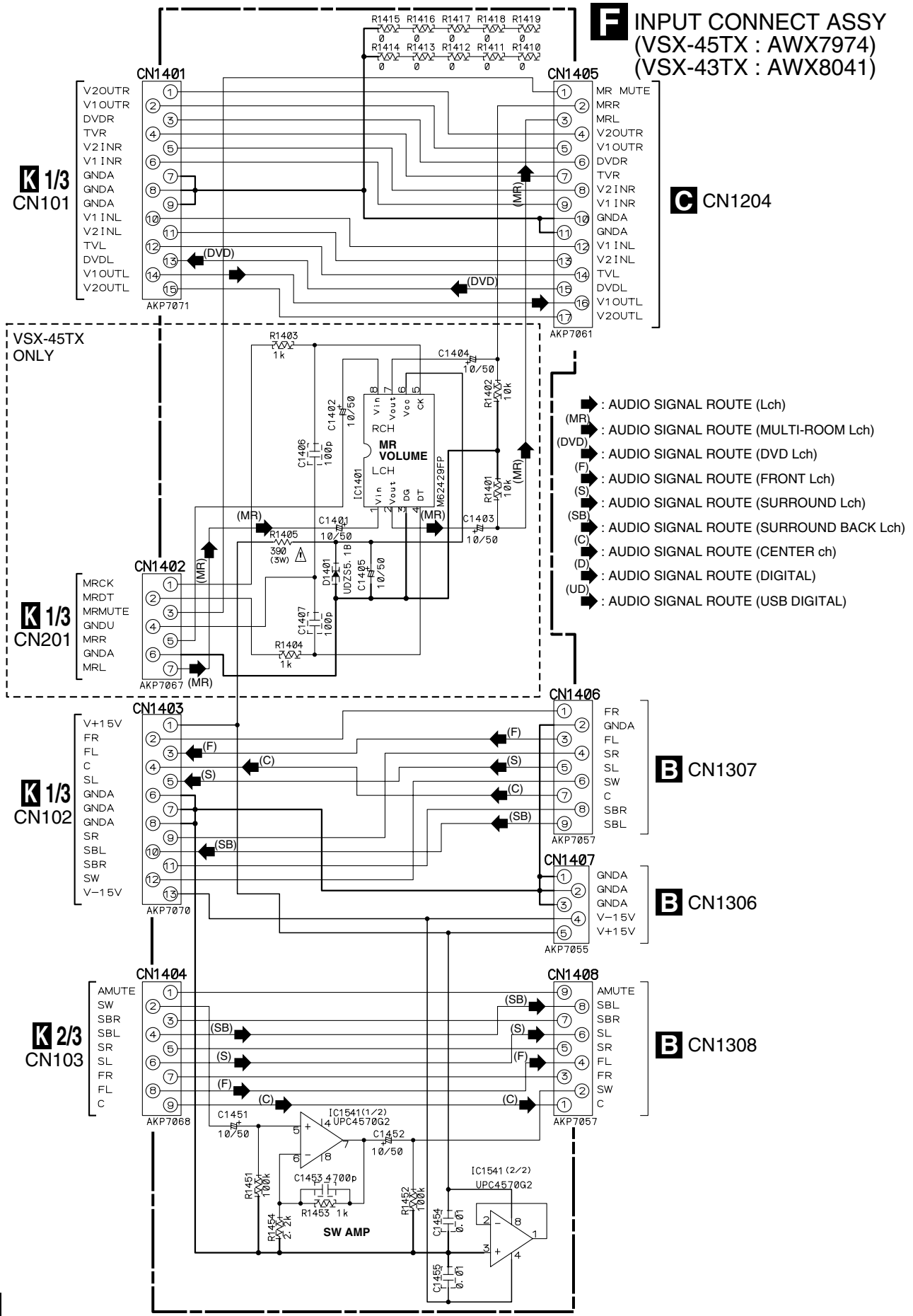
C

D

E

F

**F** INPUT CONNECT ASSY  
 (VSX-45TX : AWX7974)  
 (VSX-43TX : AWX8041)



**K 1/3**  
**CN101**

**K 1/3**  
**CN201**

**K 1/3**  
**CN102**

**K 2/3**  
**CN103**

**C** CN1204

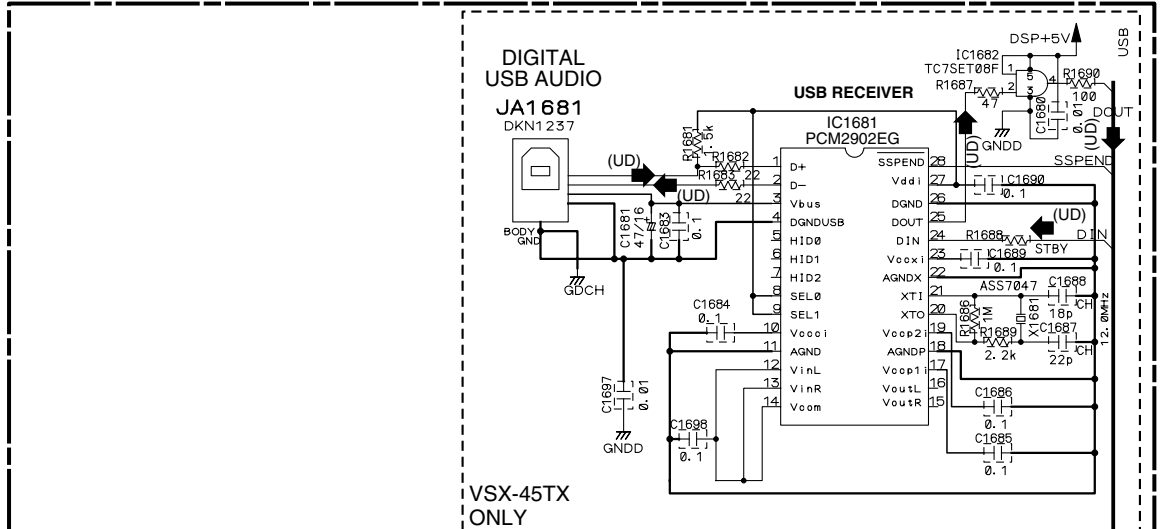
**B** CN1307

**B** CN1306

**B** CN1308

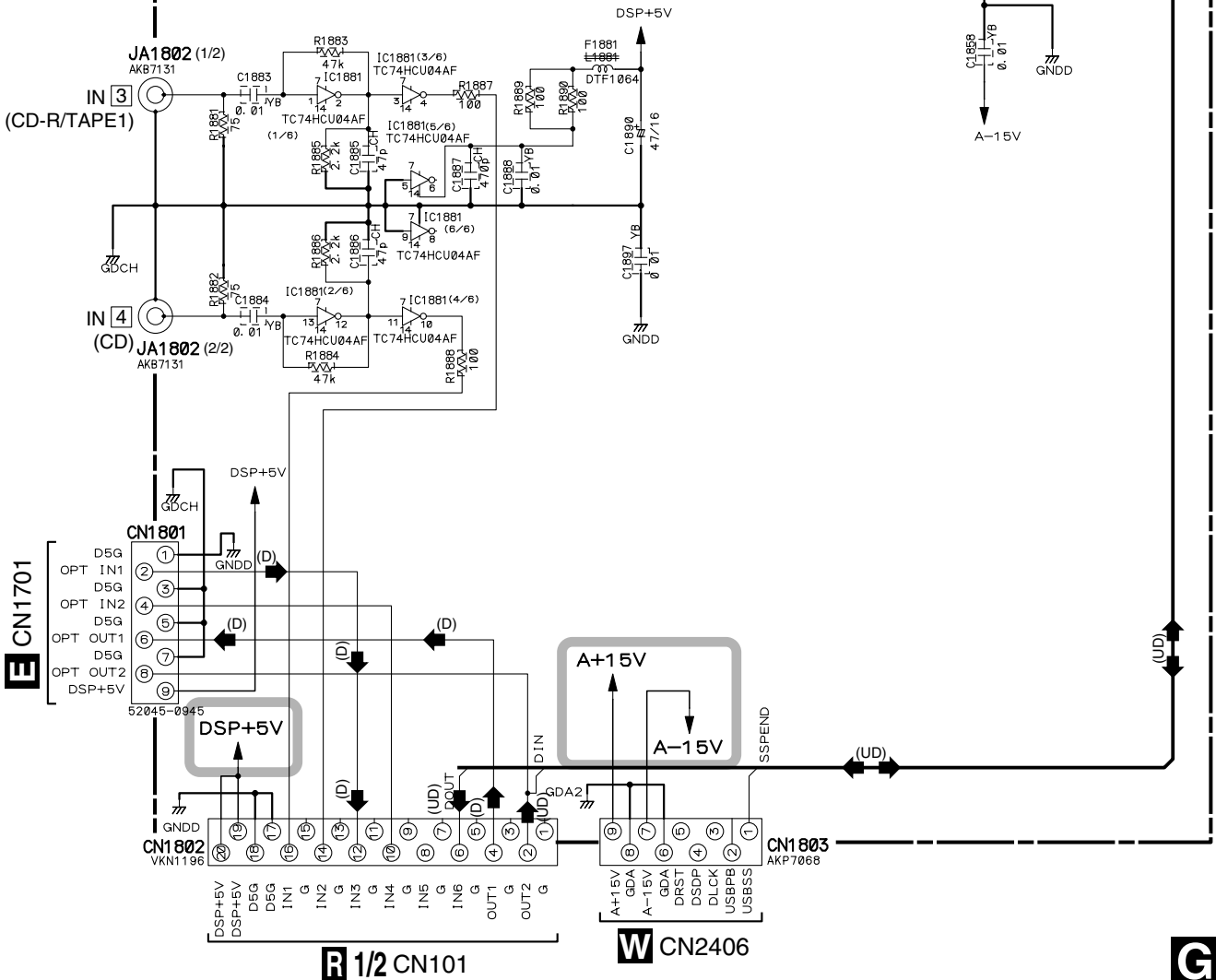
- ➔ : AUDIO SIGNAL ROUTE (Lch)
- (MR) ➔ : AUDIO SIGNAL ROUTE (MULTI-ROOM Lch)
- (DVD) ➔ : AUDIO SIGNAL ROUTE (DVD Lch)
- (F) ➔ : AUDIO SIGNAL ROUTE (FRONT Lch)
- (S) ➔ : AUDIO SIGNAL ROUTE (SURROUND Lch)
- (SB) ➔ : AUDIO SIGNAL ROUTE (SURROUND BACK Lch)
- (C) ➔ : AUDIO SIGNAL ROUTE (CENTER ch)
- (D) ➔ : AUDIO SIGNAL ROUTE (DIGITAL)
- (UD) ➔ : AUDIO SIGNAL ROUTE (USB DIGITAL)

**F**



**G** COAXIAL IN ASSY (VSX-45TX : AWX7965)  
(VSX-43TX : AWX8013)

**O** : The power supply is shown with the marked box.



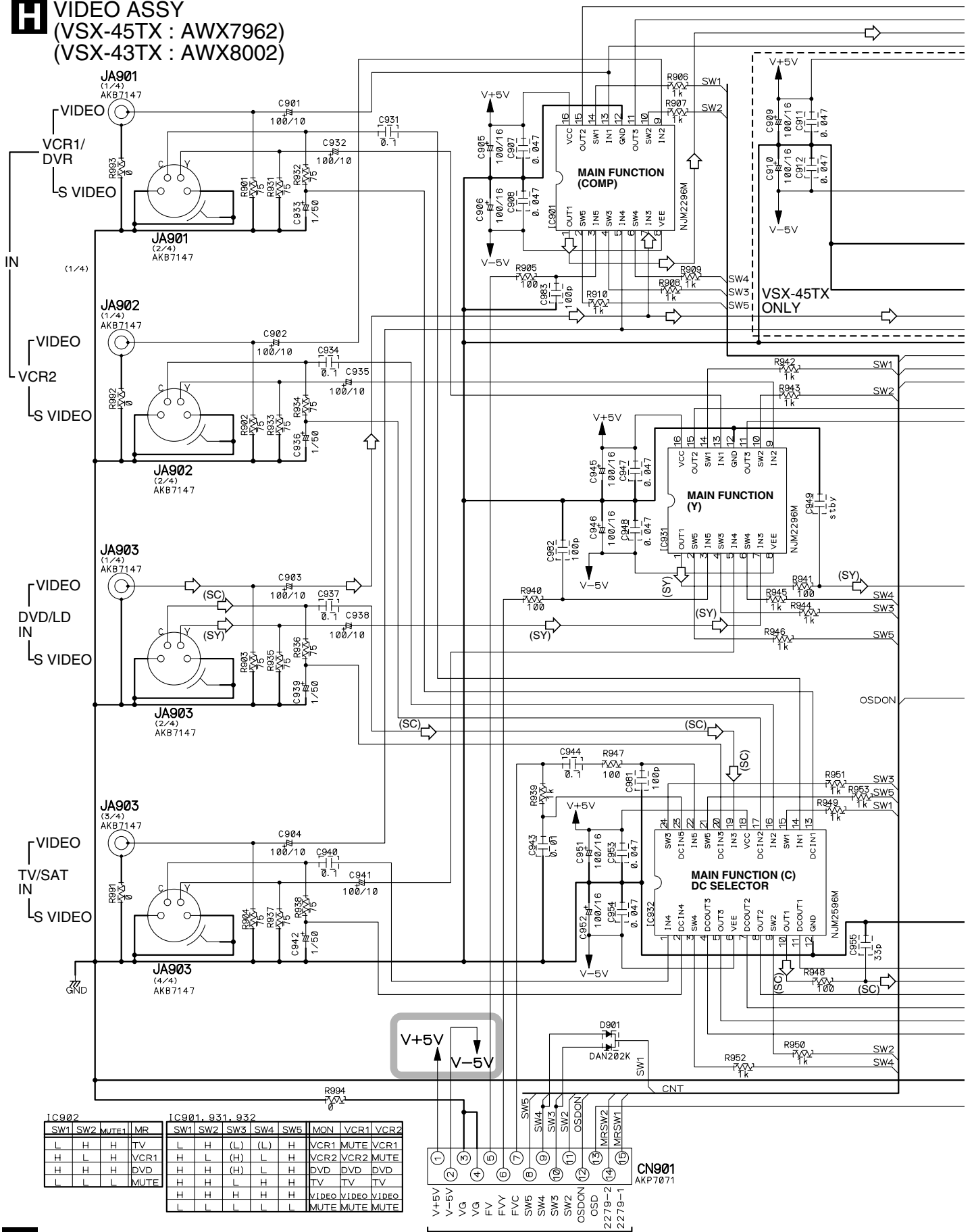
**R** 1/2 CN101

**W** CN2406

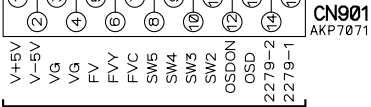
**G**

# 3.8 VIDEO ASSY

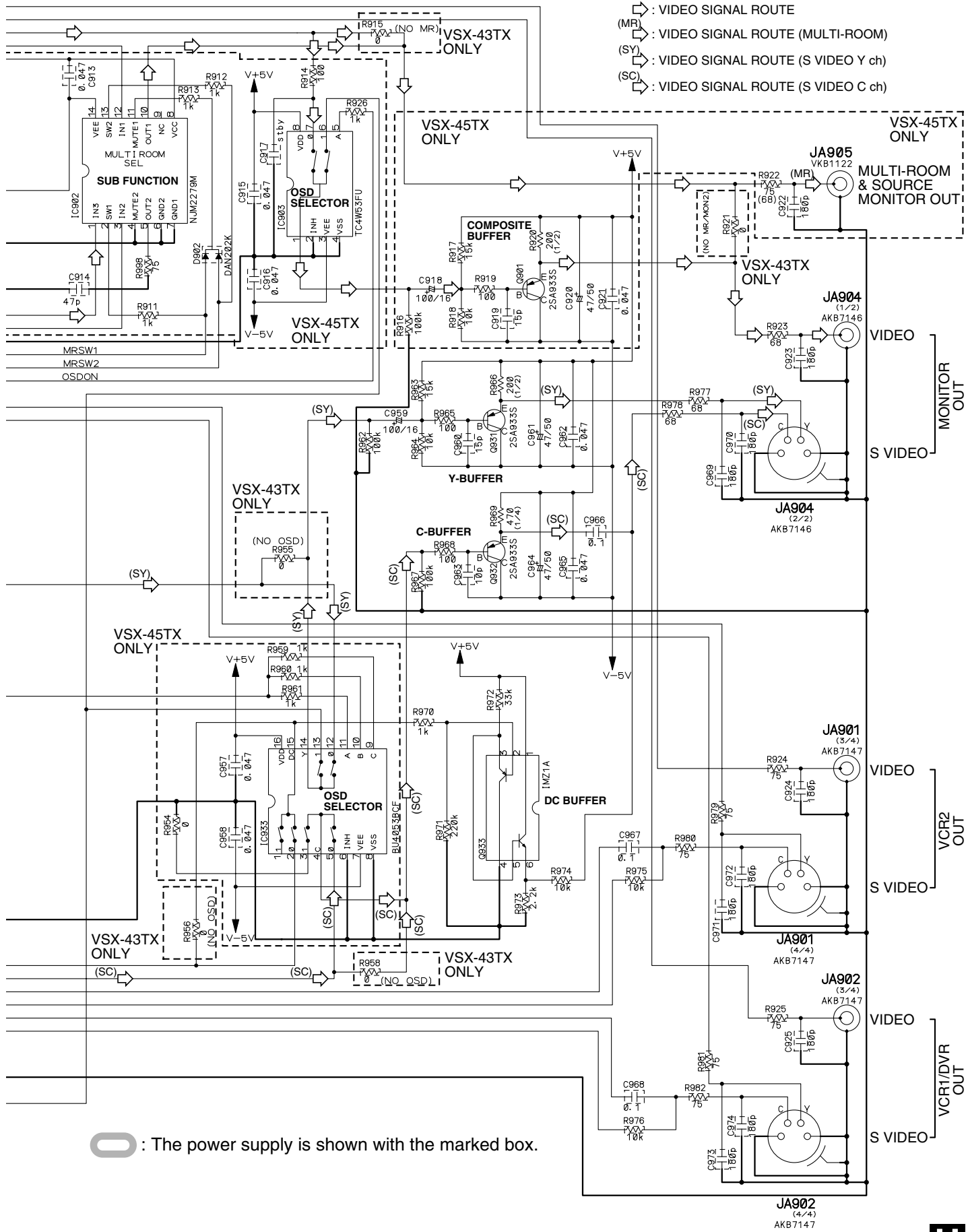
## VIDEO ASSY (VSX-45TX : AWX7962) (VSX-43TX : AWX8002)








IC902				IC901, 931, 932								
SW1	SW2	MUTE1	MR	SW1	SW2	SW3	SW4	SW5	MON	VCR1	VCR2	
L	H	H	TV	L	H	(L)	(L)	L	H	VCR1	MUTE	VCR1
H	L	H	VCR1	L	L	(H)	L	H	H	VCR2	VCR2	MUTE
H	H	H	DVD	H	H	(H)	L	H	DVD	DVD	DVD	
L	L	L	MUTE	H	H	L	H	H	TV	TV	TV	
H	H	L		L	H	L	H	H	VIDEO	VIDEO	VIDEO	
L	L	L		L	L	L	H	H	MUTE	MUTE	MUTE	



W CN2405



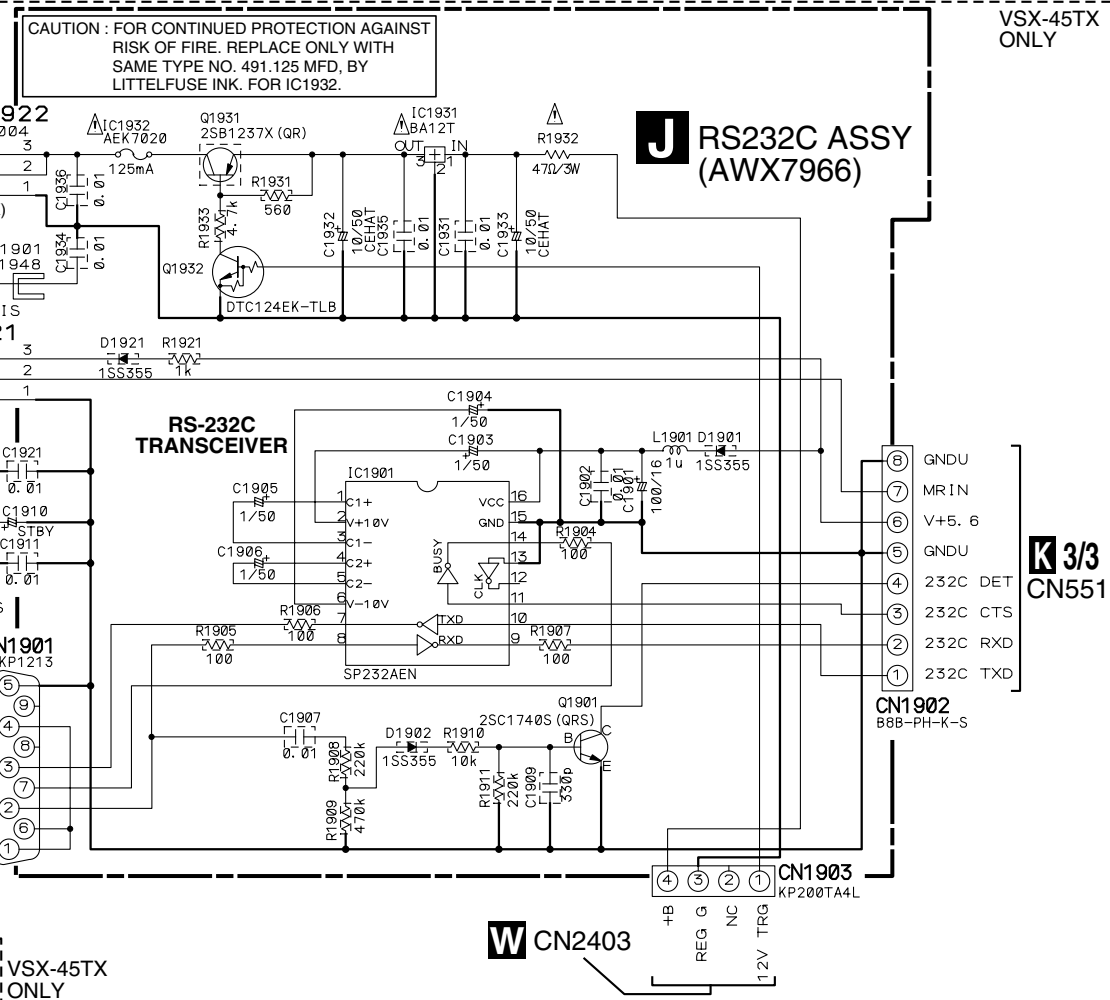
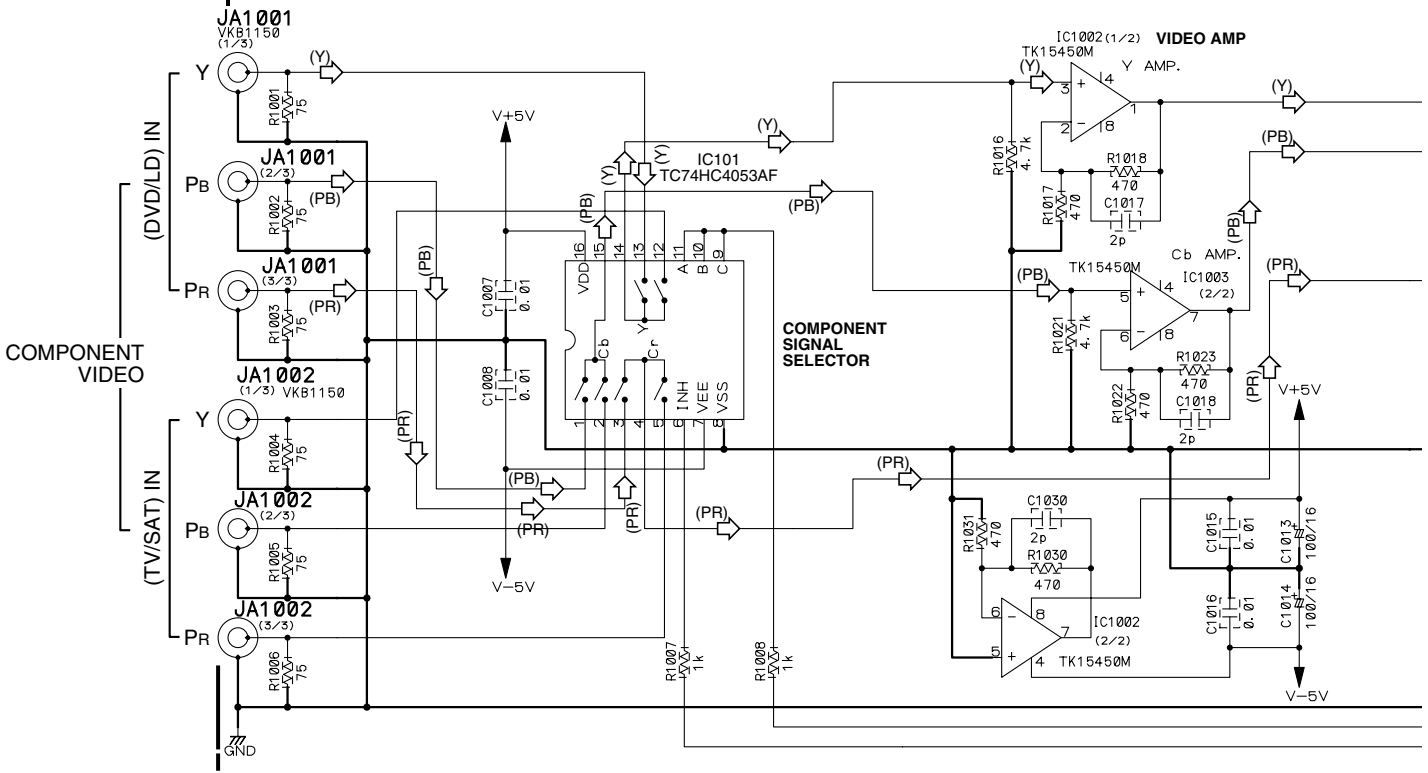
 : The power supply is shown with the marked box.

-  : VIDEO SIGNAL ROUTE
-  : VIDEO SIGNAL ROUTE (MULTI-ROOM)
-  : VIDEO SIGNAL ROUTE (S VIDEO Y ch)
-  : VIDEO SIGNAL ROUTE (S VIDEO C ch)




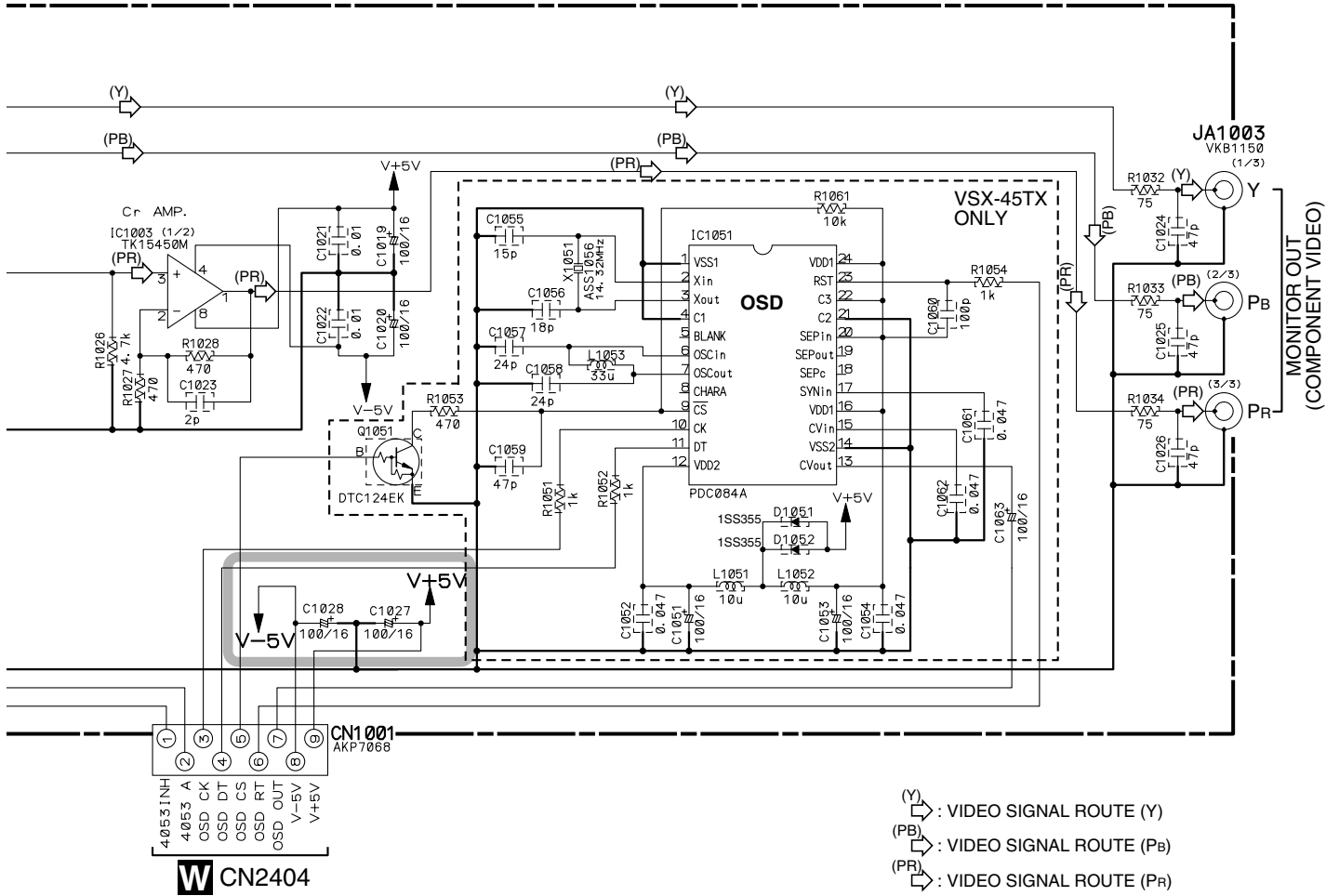
### 3.9 COMPONENT and RS232C ASSYS

#### I COMPONENT ASSY (VSX-45TX : AWX7963) (VSX-43TX : AWX8021)



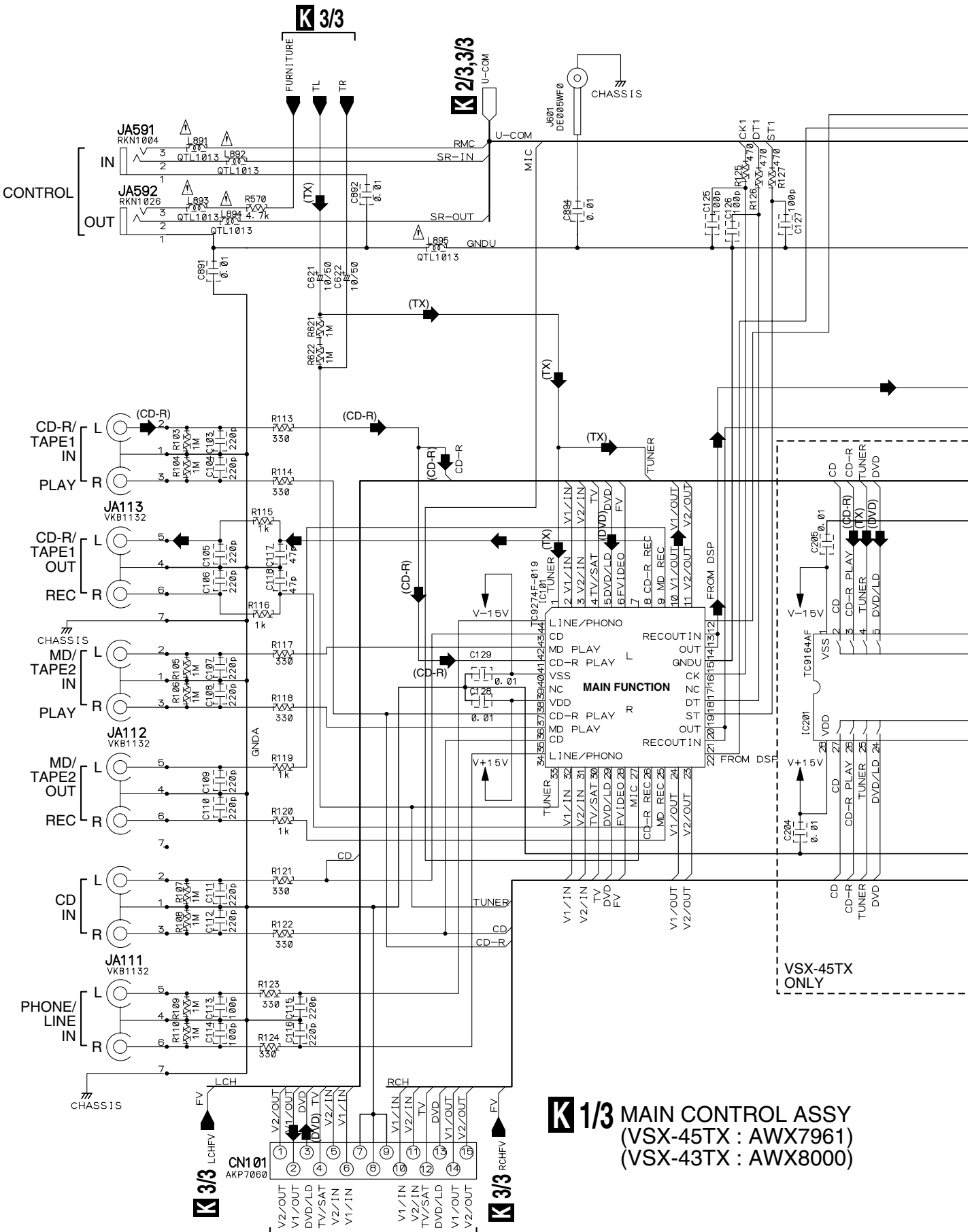


 : The power supply is shown with the marked box.



A  
B  
C  
D  
E  
F

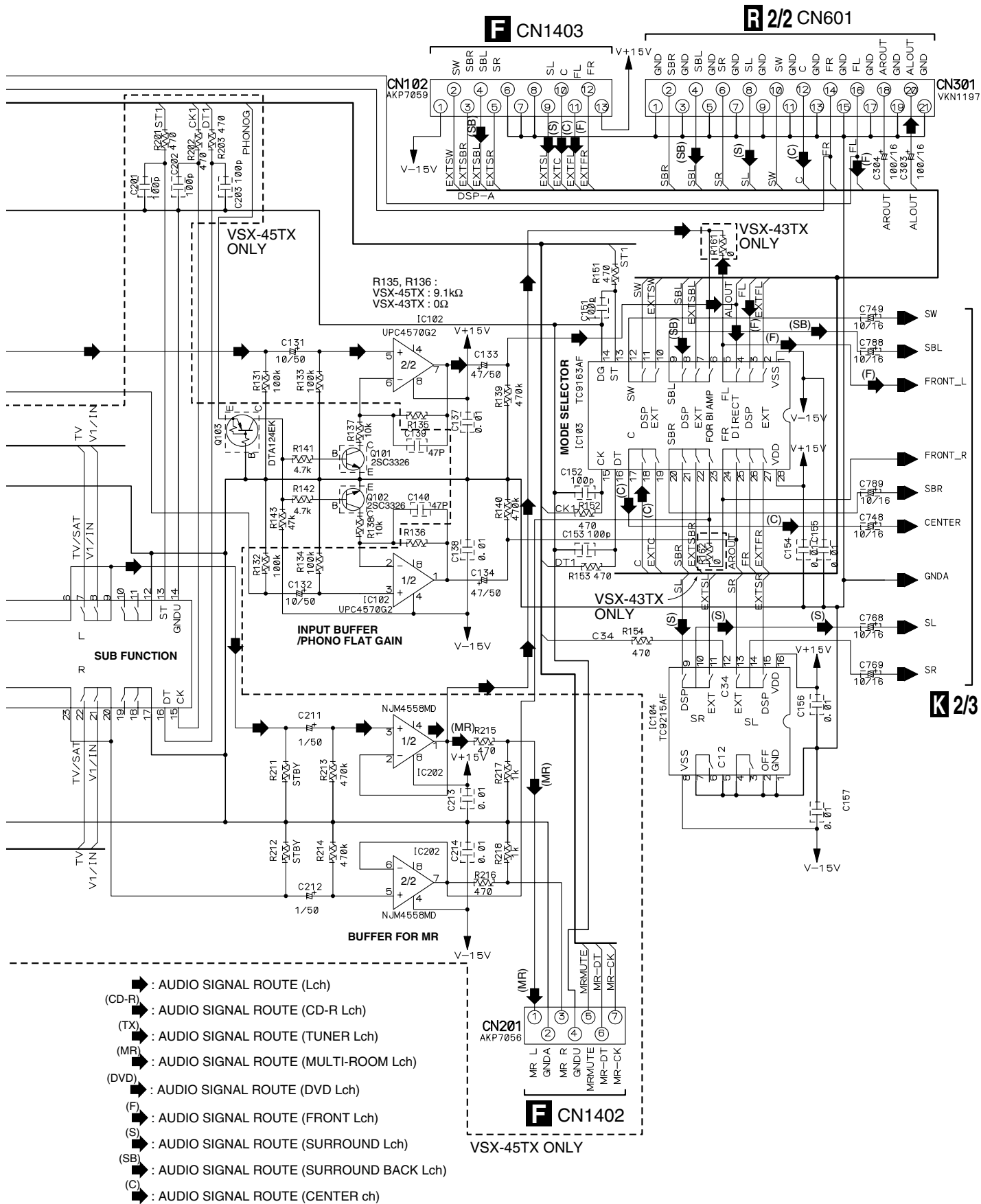
# 3.10 MAIN CONTROL ASSY (1/3)



**K 1/3** MAIN CONTROL ASSY  
 (VSX-45TX : AWX7961)  
 (VSX-43TX : AWX8000)

**K 1/3**

**F** CN1401



F CN1403

R 2/2 CN601

CN102  
AKP7059

CN301  
VKN1197

VSX-45TX ONLY

VSX-43TX ONLY

R135, R136 :  
VSX-45TX : 9.1kΩ  
VSX-43TX : 0Ω

IC102  
UPC4570G2

MODE SELECTOR  
IC103 TC9163AF

VSX-43TX ONLY

INPUT BUFFER  
/PHONO FLAT GAIN

IC202  
NJM4558MD

IC104  
TC9215AF

VSX-45TX ONLY

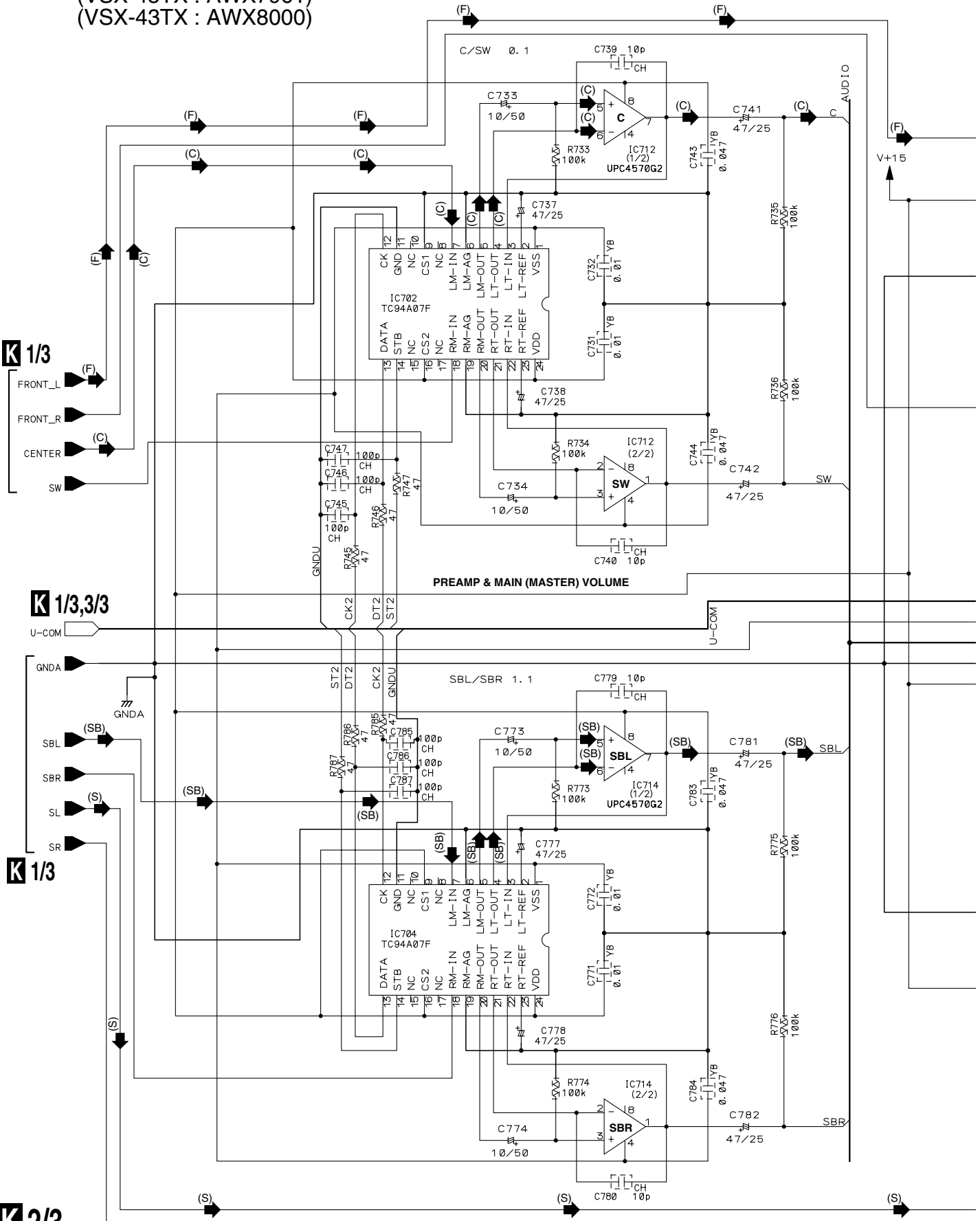
F CN1402

K 2/3

- ➔ : 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)
- (F) ➔ : AUDIO SIGNAL ROUTE (FRONT Lch)
- (S) ➔ : AUDIO SIGNAL ROUTE (SURROUND Lch)
- (SB) ➔ : AUDIO SIGNAL ROUTE (SURROUND BACK Lch)
- (C) ➔ : AUDIO SIGNAL ROUTE (CENTER ch)

### 3.11 MAIN CONTROL ASSY (2/3)

**K 2/3** MAIN CONTROL ASSY  
 (VSX-45TX : AWX7961)  
 (VSX-43TX : AWX8000)



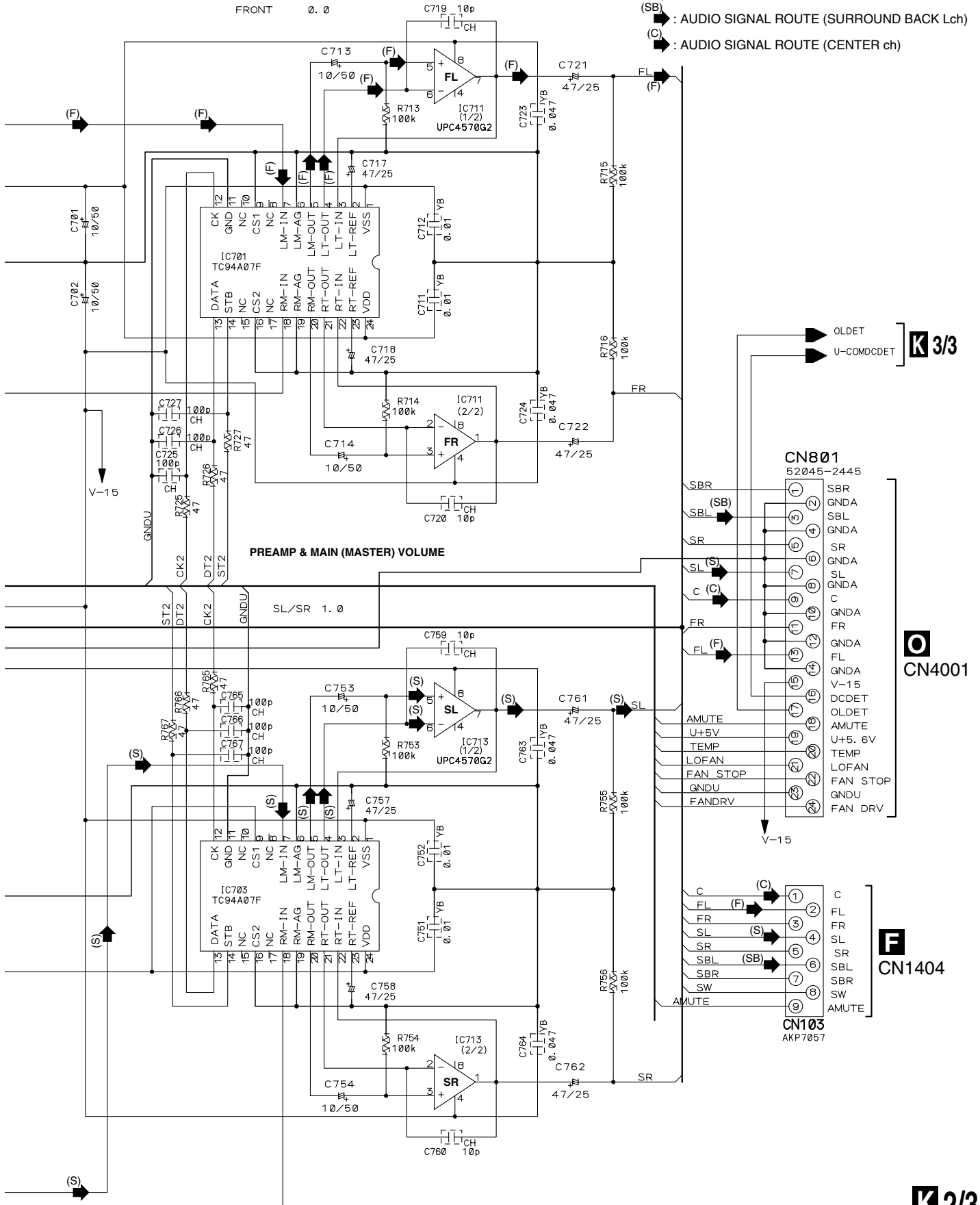
**K 1/3**

**K 1/3,3/3**

**K 1/3**

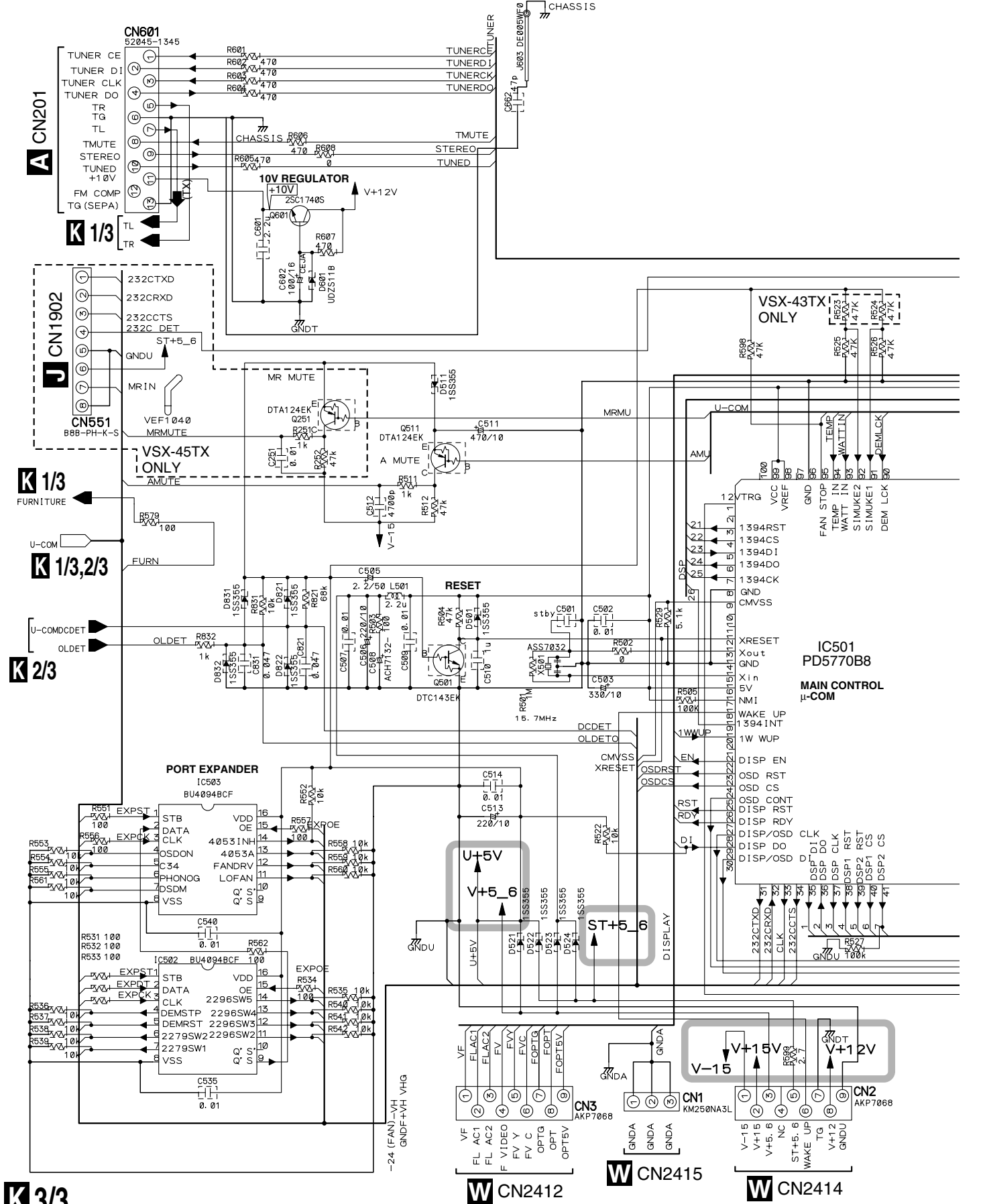
**K 2/3**

- (F) : AUDIO SIGNAL ROUTE (FRONT Lch)
- (S) : AUDIO SIGNAL ROUTE (SURROUND Lch)
- (SB) : AUDIO SIGNAL ROUTE (SURROUND BACK Lch)
- (C) : AUDIO SIGNAL ROUTE (CENTER ch)



# 3.12 MAIN CONTROL ASSY (3/3)

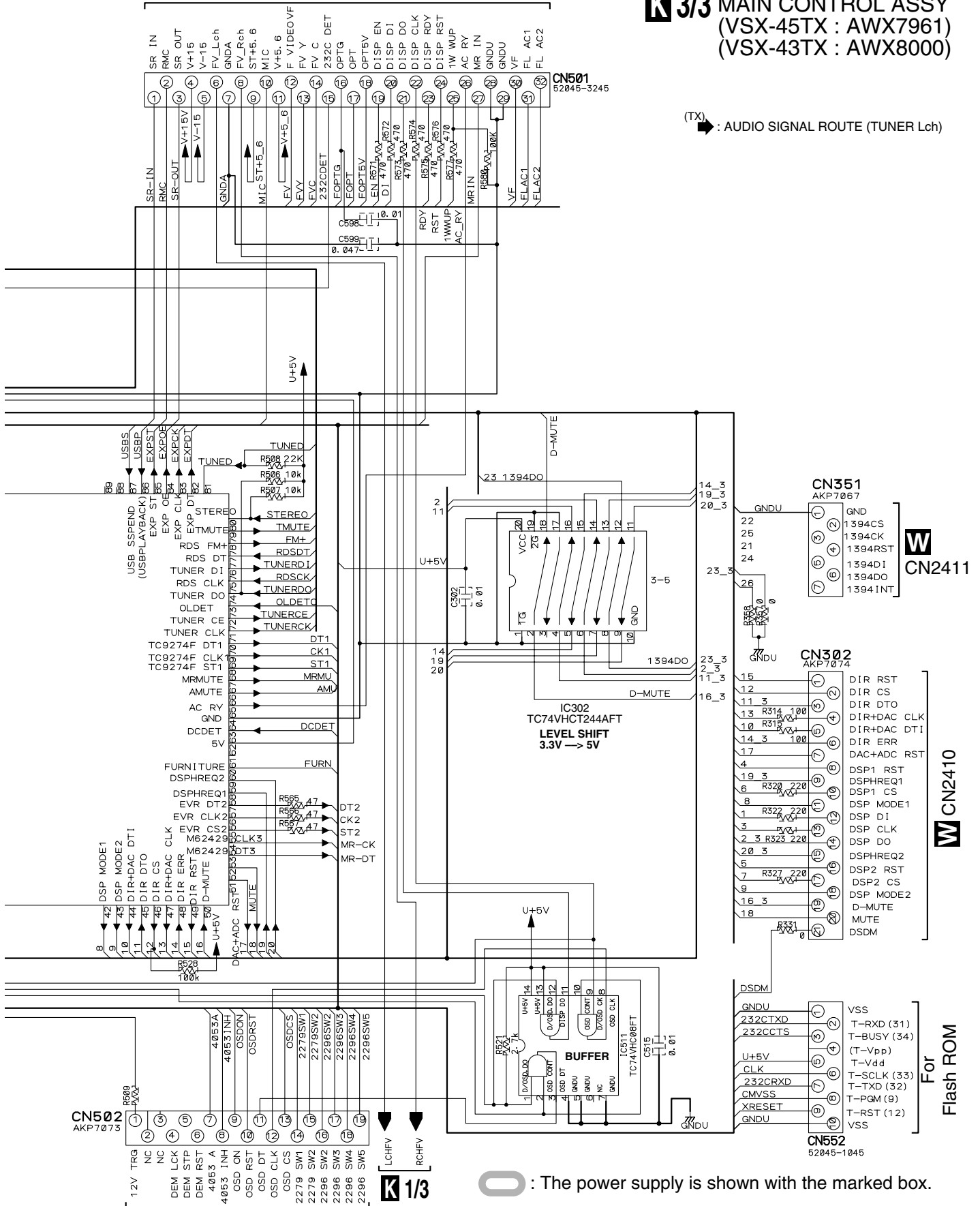
A  
B  
C  
D  
E  
F



### S CN3006

### K 3/3 MAIN CONTROL ASSY (VSX-45TX : AWX7961) (VSX-43TX : AWX8000)

(TX) : AUDIO SIGNAL ROUTE (TUNER Lch)



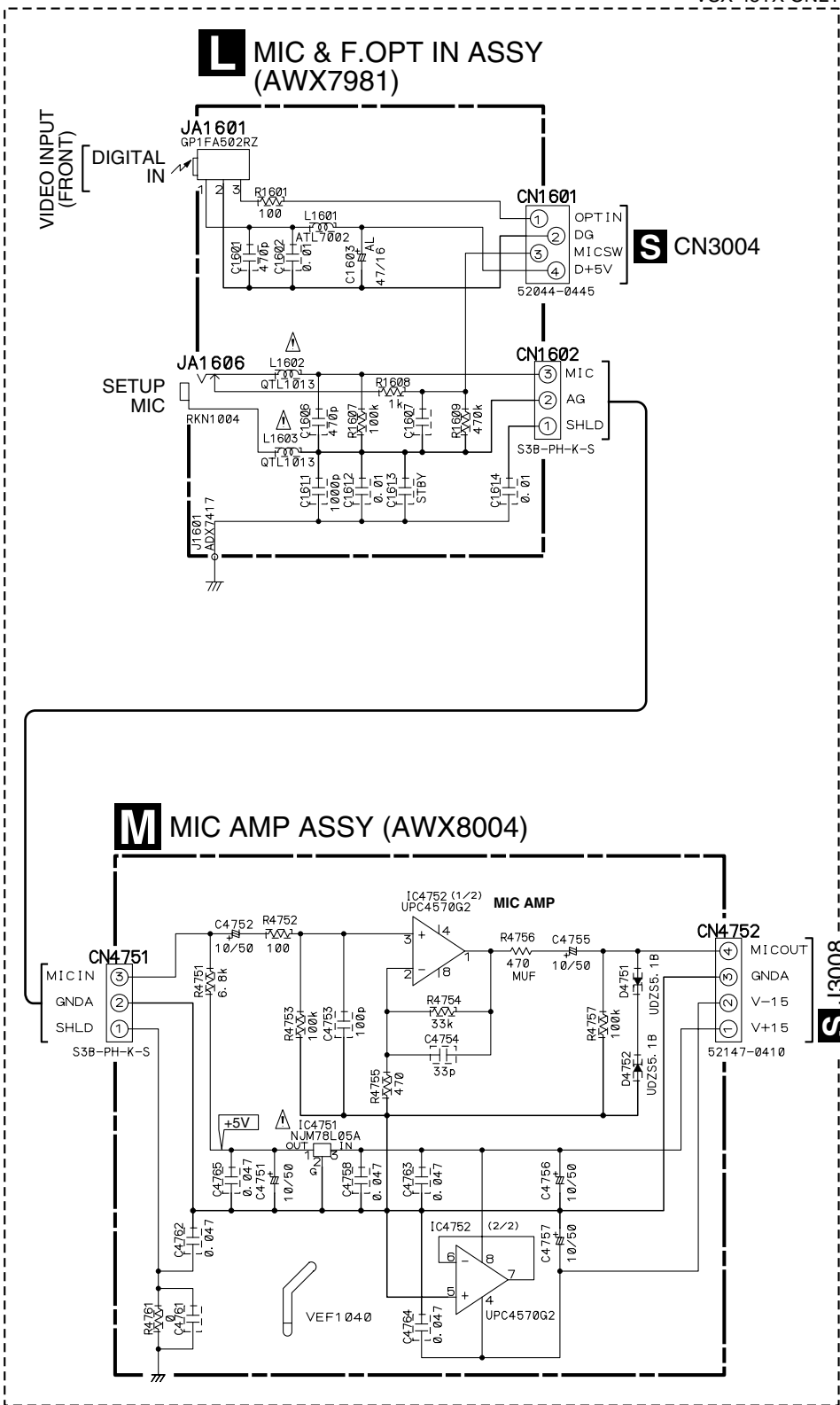
O : The power supply is shown with the marked box.

### W CN2413

### K 3/3

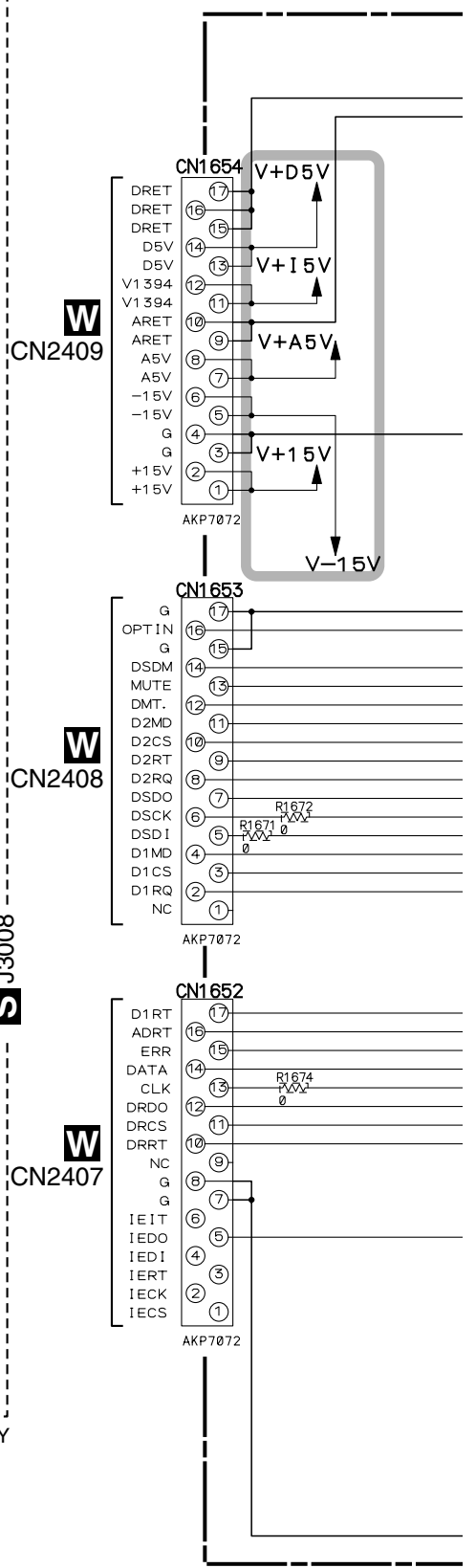
### 3.13 MIC & F.OPT IN, MIC AMP and DSP CONNECTION ASSYS

VSX-45TX ONLY



VSX-45TX ONLY

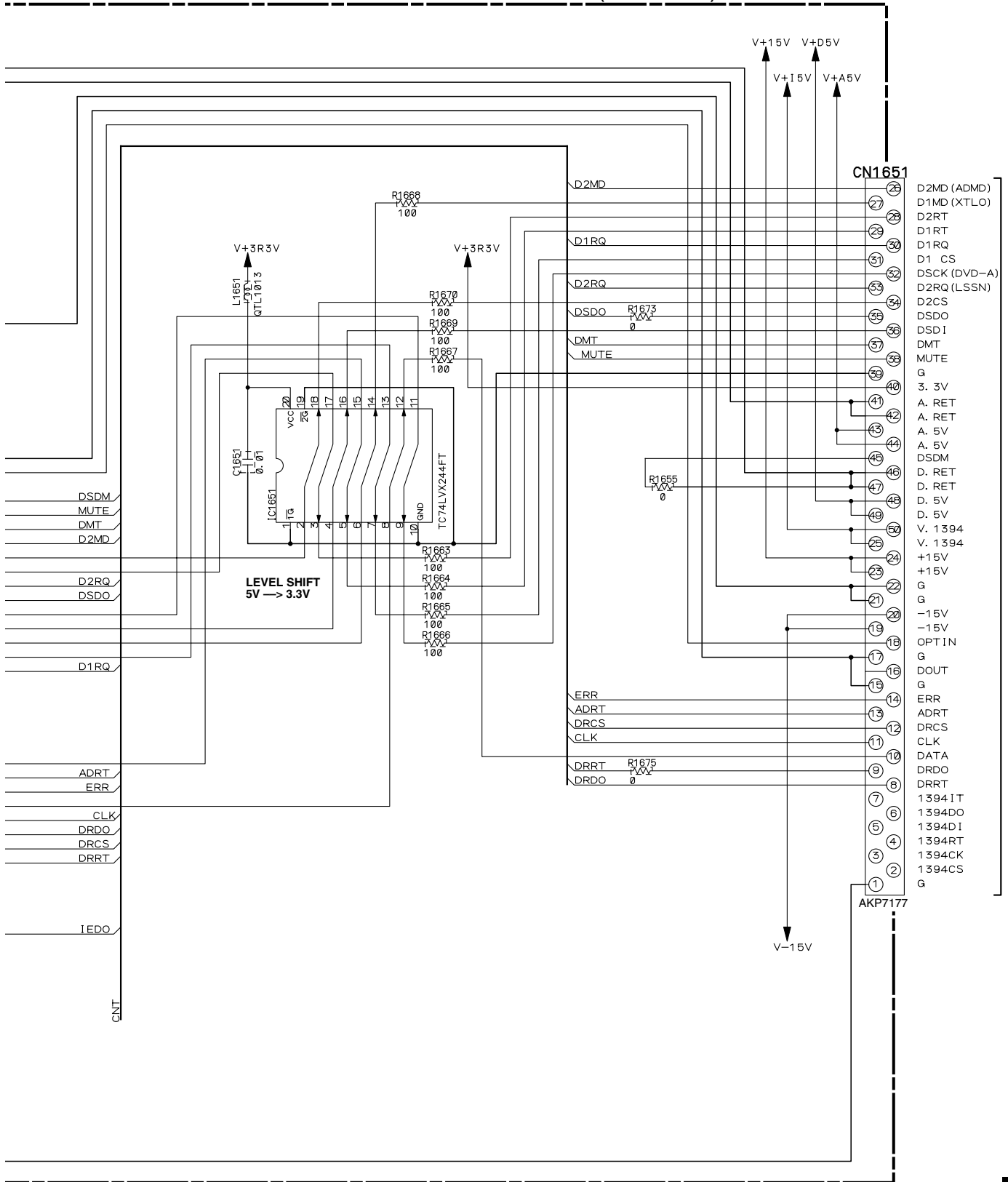
: The power supply is shown with the marked box.



**L M N**



# N DSP CONNECTION ASSY (AWX8024)

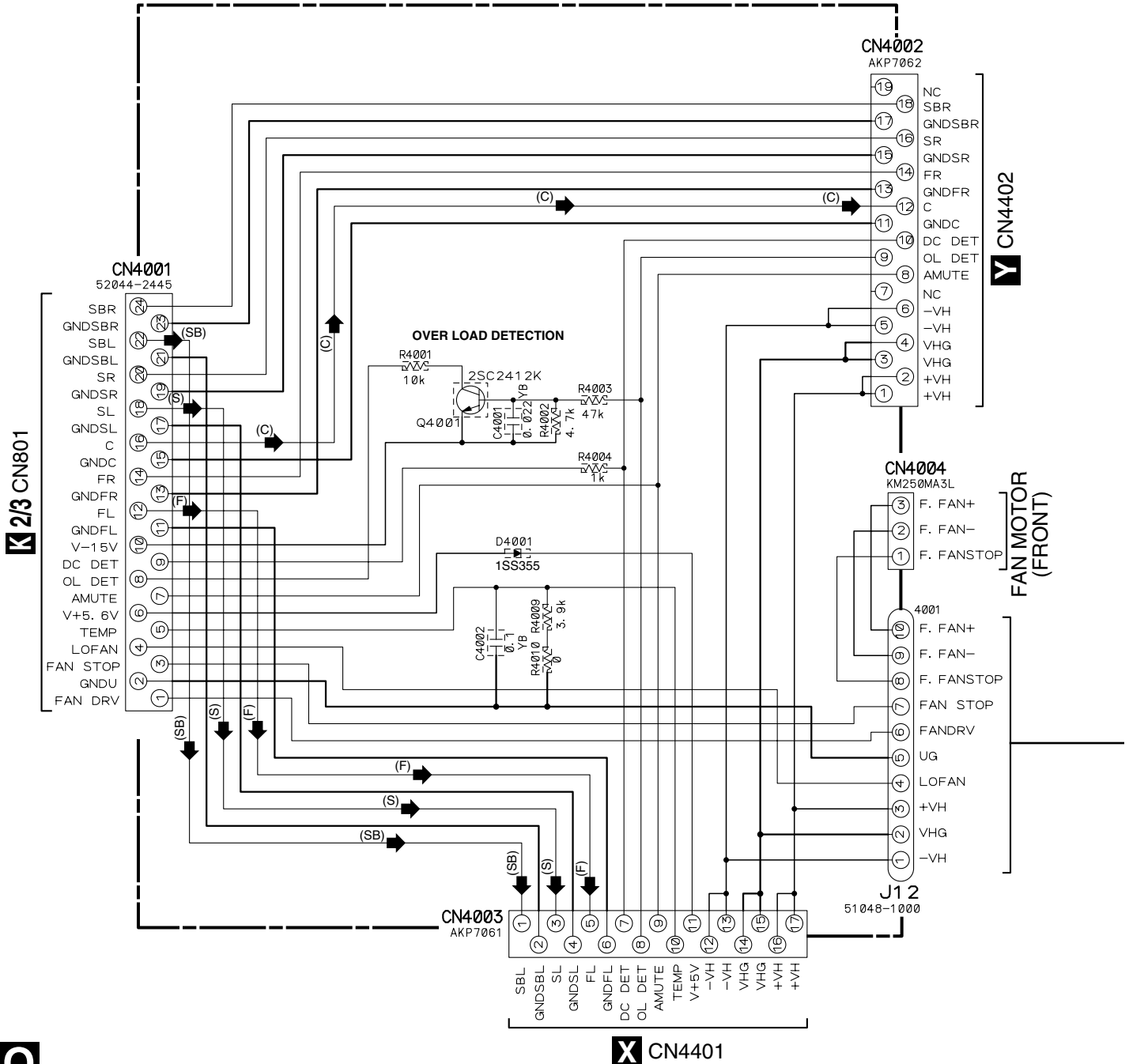


**R 1/2 CN102**

### 3.14 POWER AMP IN, FAN DRIVE and FAN CONNECTION ASSYS

- (F) : AUDIO SIGNAL ROUTE (FRONT Lch)
- (S) : AUDIO SIGNAL ROUTE (SURROUND Lch)
- (SB) : AUDIO SIGNAL ROUTE (SURROUND BACK Lch)
- (C) : AUDIO SIGNAL ROUTE (CENTER ch)

#### POWER AMP IN ASSY (AWX7982)



K 2/3 CN801

Y CN4402

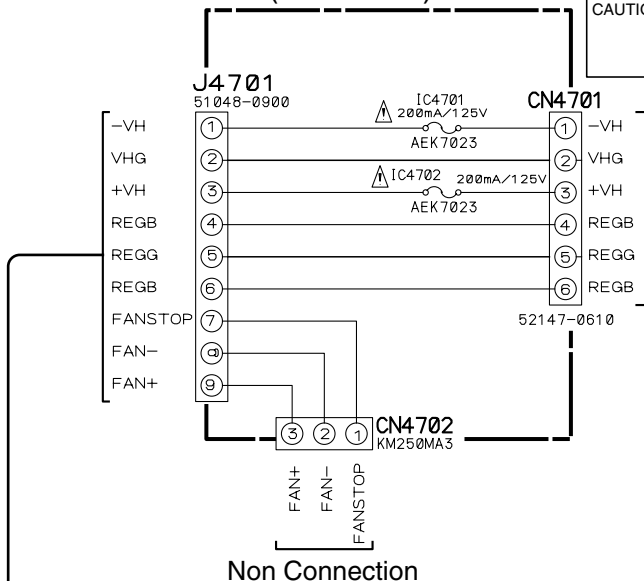
FAN MOTOR (FRONT)

X CN4401



### Q FAN CONNECTION ASSY (AWX8005)

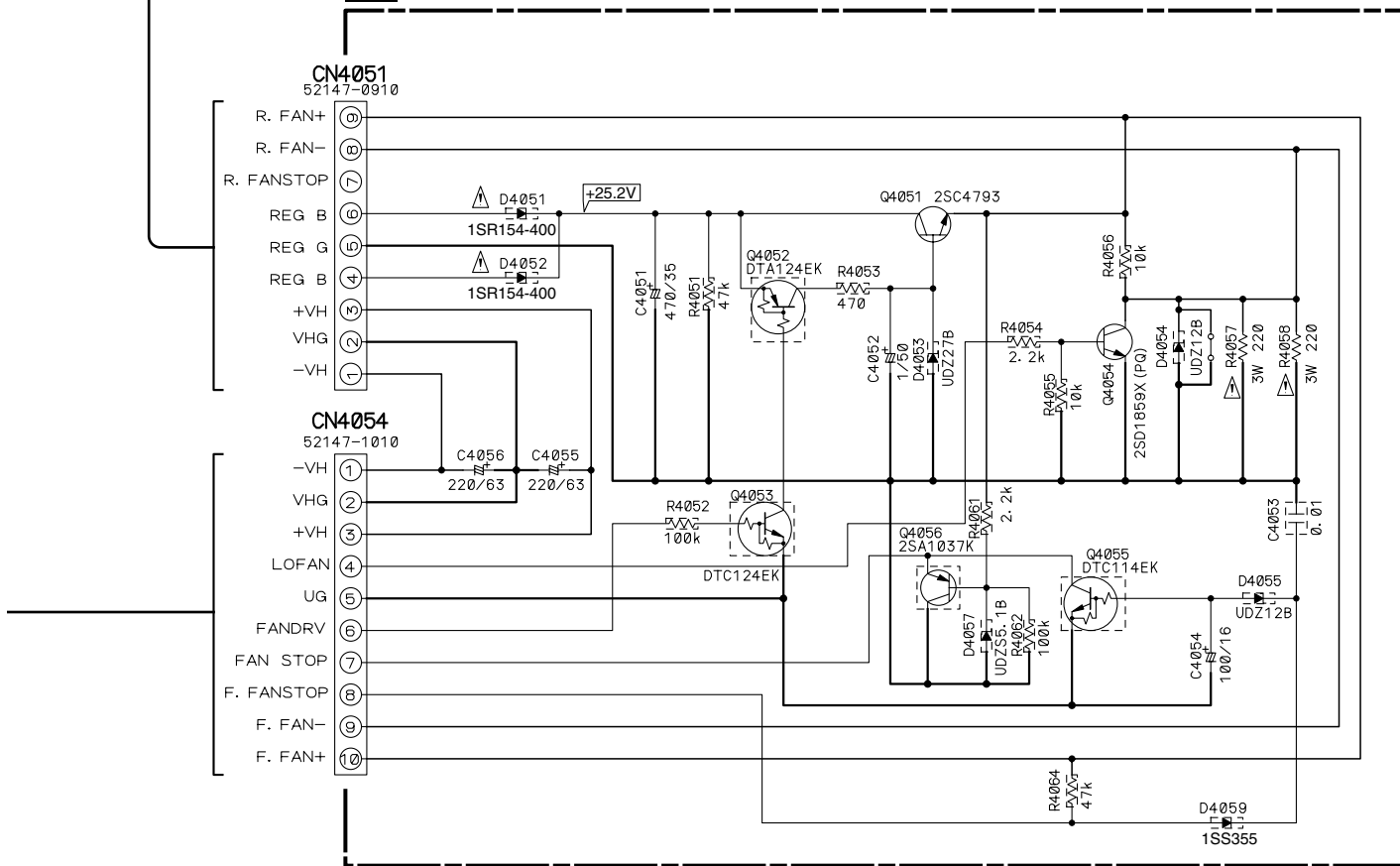
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE NO. 491.200 MFD, BY LITTELFUSE INK. FOR IC4701 AND IC4702.



AC J2201

- VA CFTYA J50-T
- LA CFTLA J2A-T
- CH CCSRCH J50-T
- YB CKSRYB K50-T
- YF CKSRYF J25-T
- 1SS355-TRB
- RS1/16S J-T
- RDR RDR1/4V J-T
- (MUF) RD1/4MUF J-T
- RS3LM J
- 3W
- NON-FRAMBLE

### P FAN DRIVE ASSY (AWX7976)



P Q

# 3.15 DSP ASSY (1/2)

A

G CN1802

**R** 1/2 DSP ASSY (AWX8016)

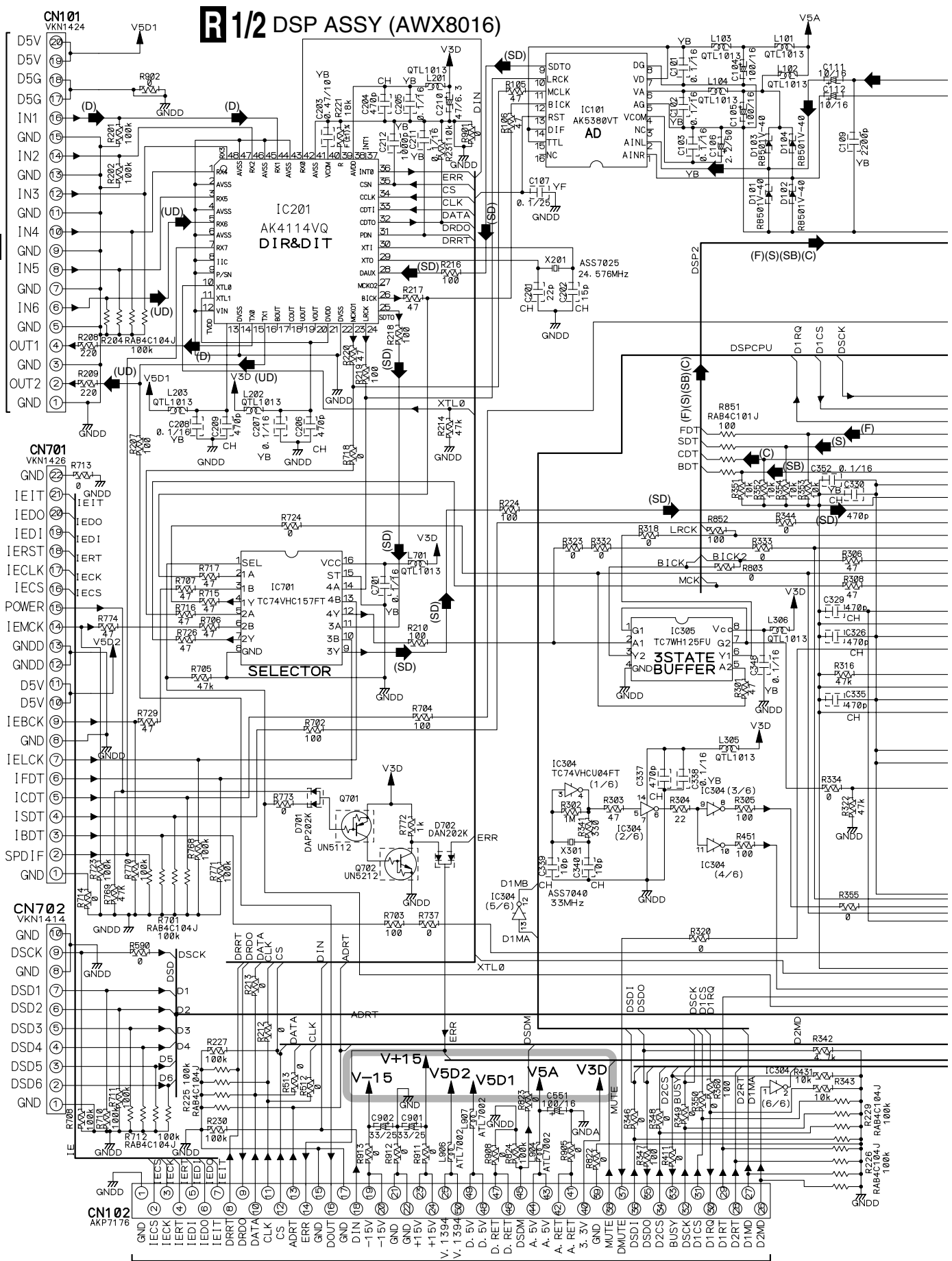
B

C

D

E

F

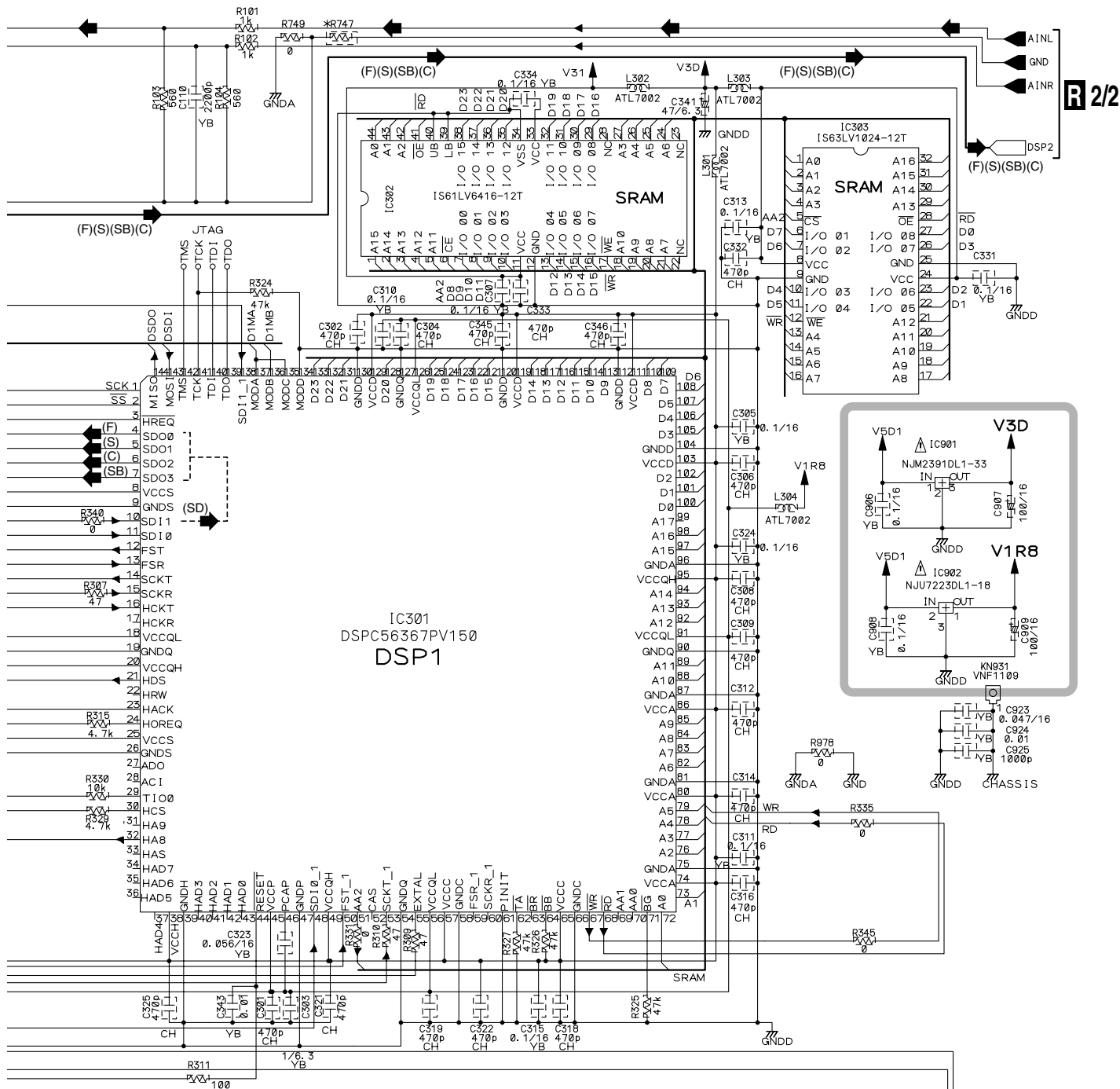


**R** 1/2

**N** CN1651

VSX-45TX

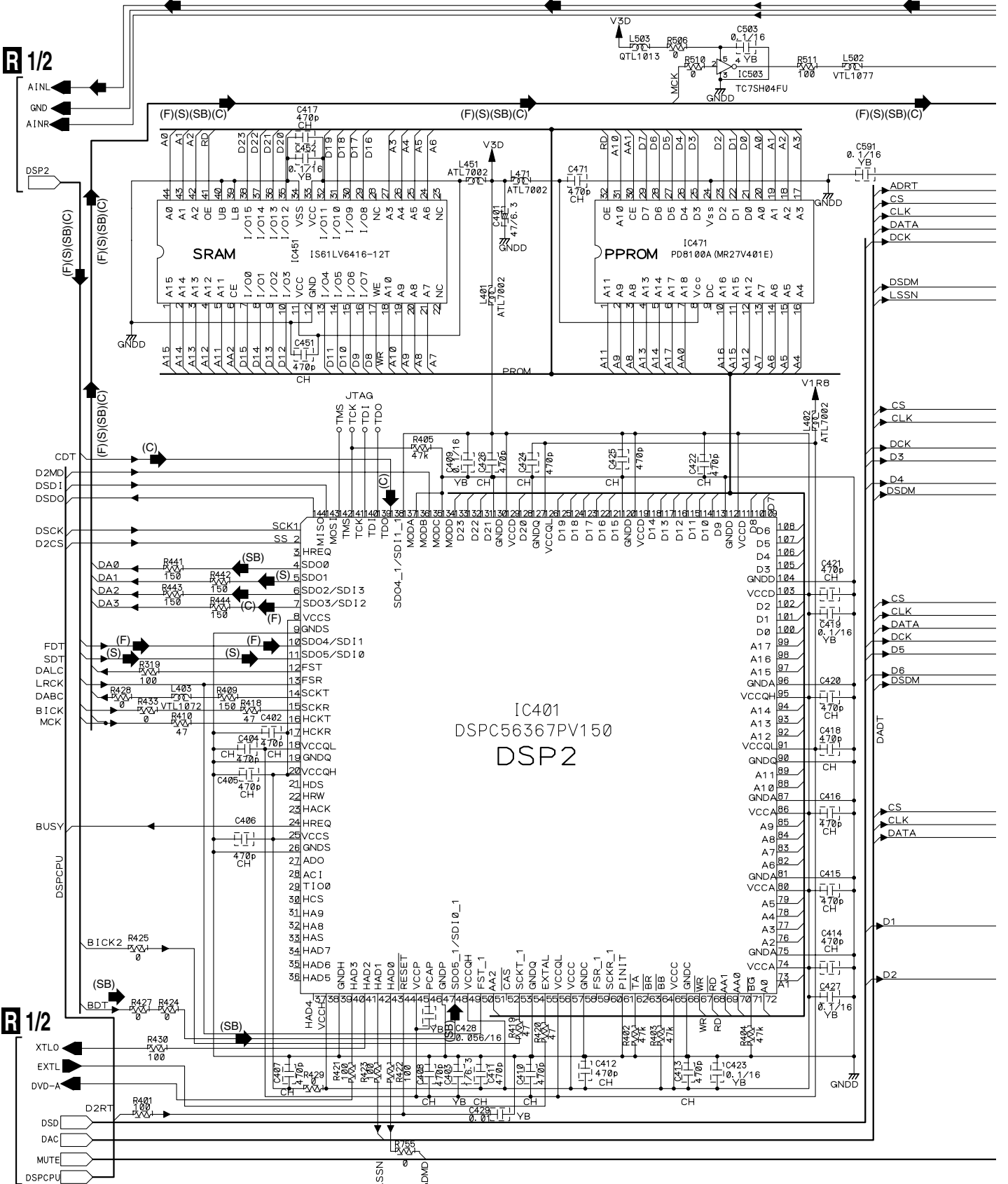
○ : The power supply is shown with the marked box.



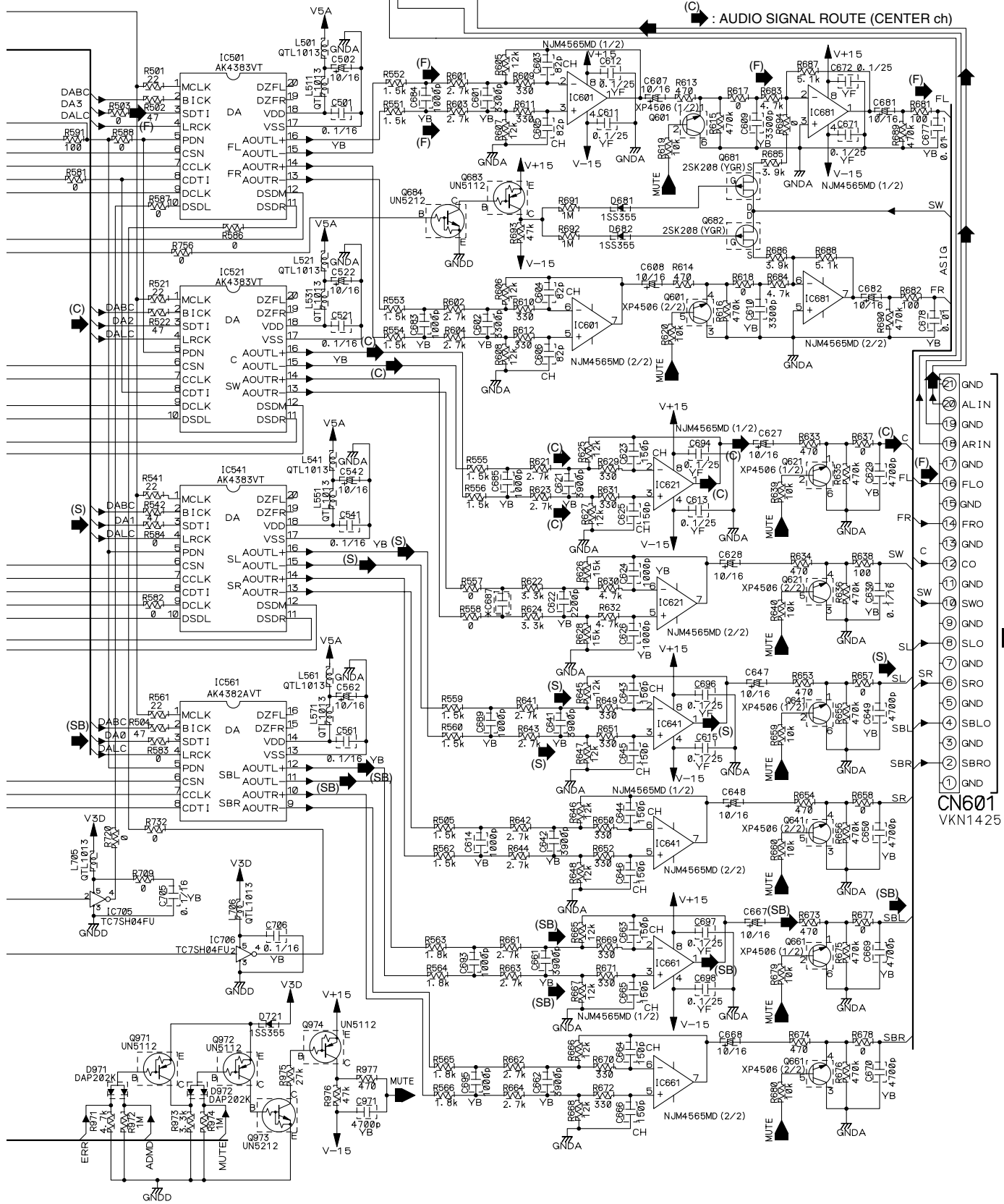
- : AUDIO SIGNAL ROUTE (Lch)
- (F) : AUDIO SIGNAL ROUTE (FRONT Lch)
- (S) : AUDIO SIGNAL ROUTE (SURROUND Lch)
- (SB) : AUDIO SIGNAL ROUTE (SURROUND BACK Lch)
- (C) : AUDIO SIGNAL ROUTE (CENTER ch)
- (SD) : SURROUND DATA SIGNAL ROUTE
- (D) : AUDIO SIGNAL ROUTE (DIGITAL)
- (UD) : AUDIO SIGNAL ROUTE (USB DIGITAL)

# 3.16 DSP ASSY (2/2)

## R 2/2 DSP ASSY (AWX8016)



- ◆ : AUDIO SIGNAL ROUTE (Lch)
- (F) : AUDIO SIGNAL ROUTE (FRONT Lch)
- (S) : AUDIO SIGNAL ROUTE (SURROUND Lch)
- (SB) : AUDIO SIGNAL ROUTE (SURROUND BACK Lch)
- (C) : AUDIO SIGNAL ROUTE (CENTER ch)



K 1/3 CN301

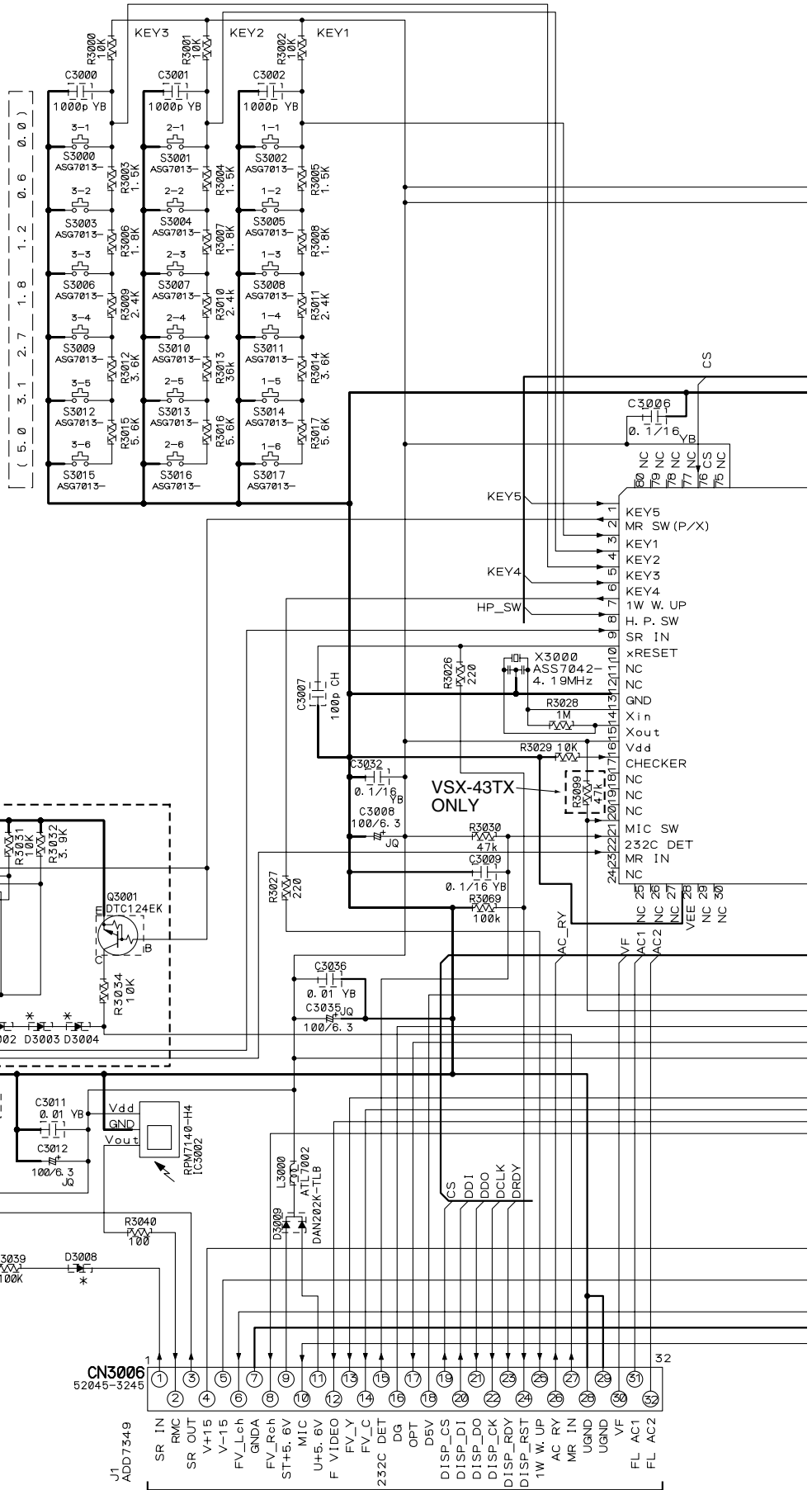
CN601 VKN1425

# 3.17 DISPLAY ASSY

## DISPLAY ASSY (VSX-45TX : AWX7983) (VSX-43TX : AWX8011)

- 45TX**
- 1-1 SB CH MODE
  - 1-2 HI-BITV HI-SAMPLING
  - 1-3 SIGNAL SELECT
  - 1-4 MULTI JOG CONT. RETURN
  - 1-5 MULTI JOG CONT. SETUP
  - 1-6 SPEAKER
- 2-1 CLASS**
- 2-2 BAND
  - 2-3 TONE +
  - 2-4 TONE -
  - 2-5 BASS/TREBLE
  - 2-6 TONE ON/OFF
- 3-1 TUNING SELECT**
- 3-2 (ST. FREQ) -
  - 3-3 (ST. FREQ) +
  - 3-4 TUNER EDIT
  - 3-5 MR&S CONTROL
  - 3-6 MR&S ON/OFF

- 43TX, /F, /NK**
- 2-1 LOUDNESS
  - 2-2 MIDNIGHT
  - 3-1 BAND
  - 3-2 CLASS
  - 3-3 TUNING SELECT
  - 3-4 (ST. FREQ) -
  - 3-5 (ST. FREQ) +
  - 3-6 TUNER EDIT



VSX-45TX ONLY

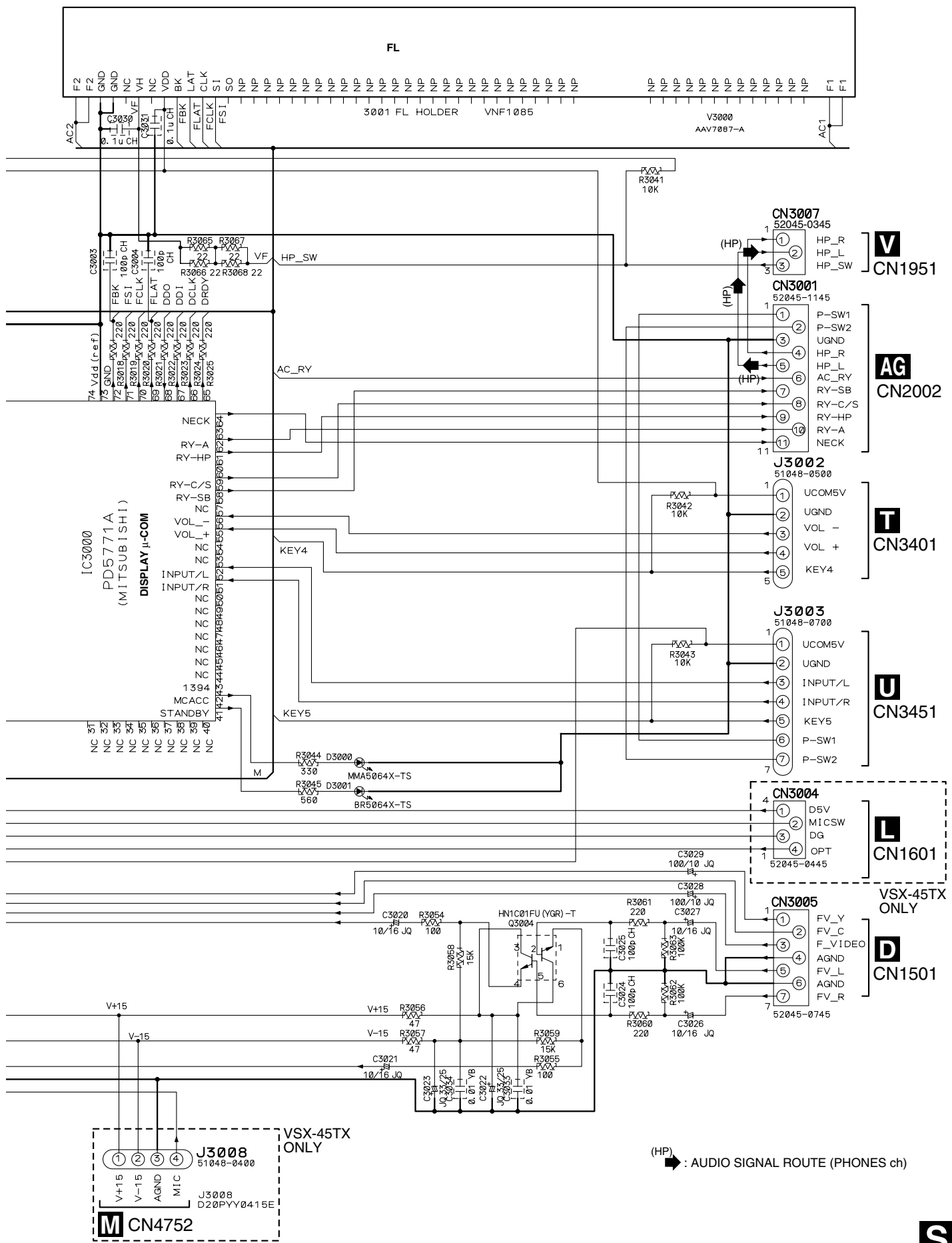
VSX-43TX ONLY

REMOTE SIGNAL CONTROL

\* D3002~D3008 : 1SS355

**K 3/3 CN501**





A

B

C

D

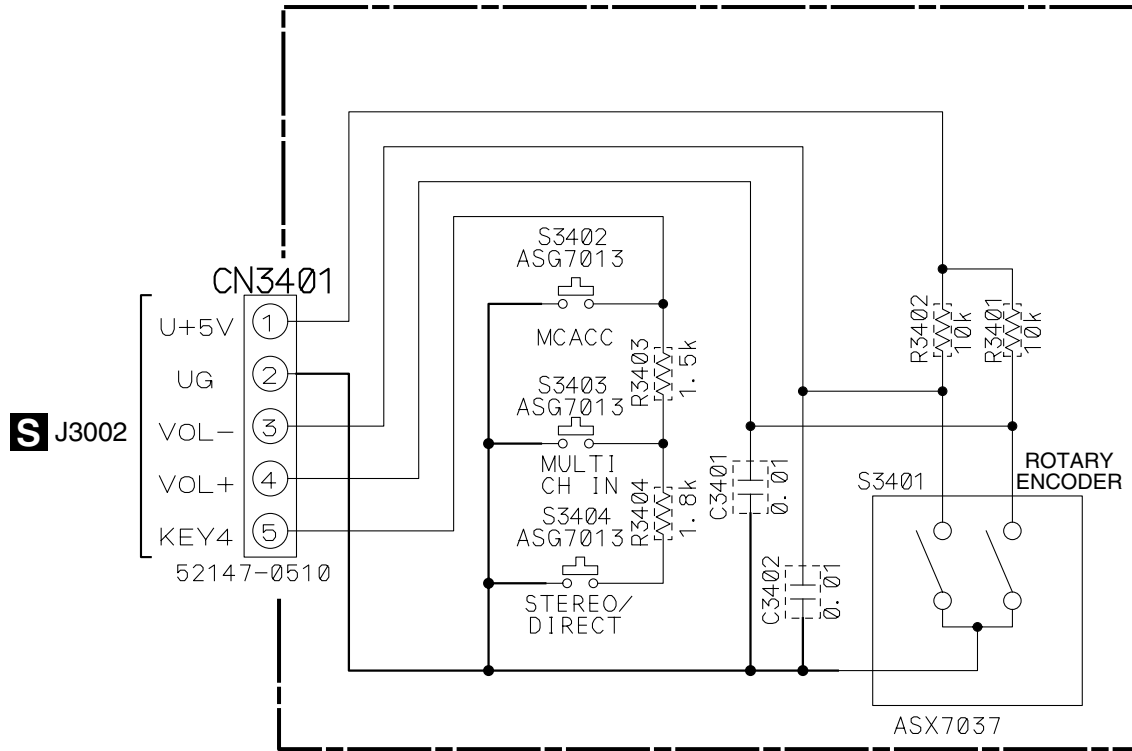
E

F

**S**

### 3.18 VOLUME, MULTI JOG and HEADPHONE ASSYS

#### T VOLUME ASSY (AWX7971)

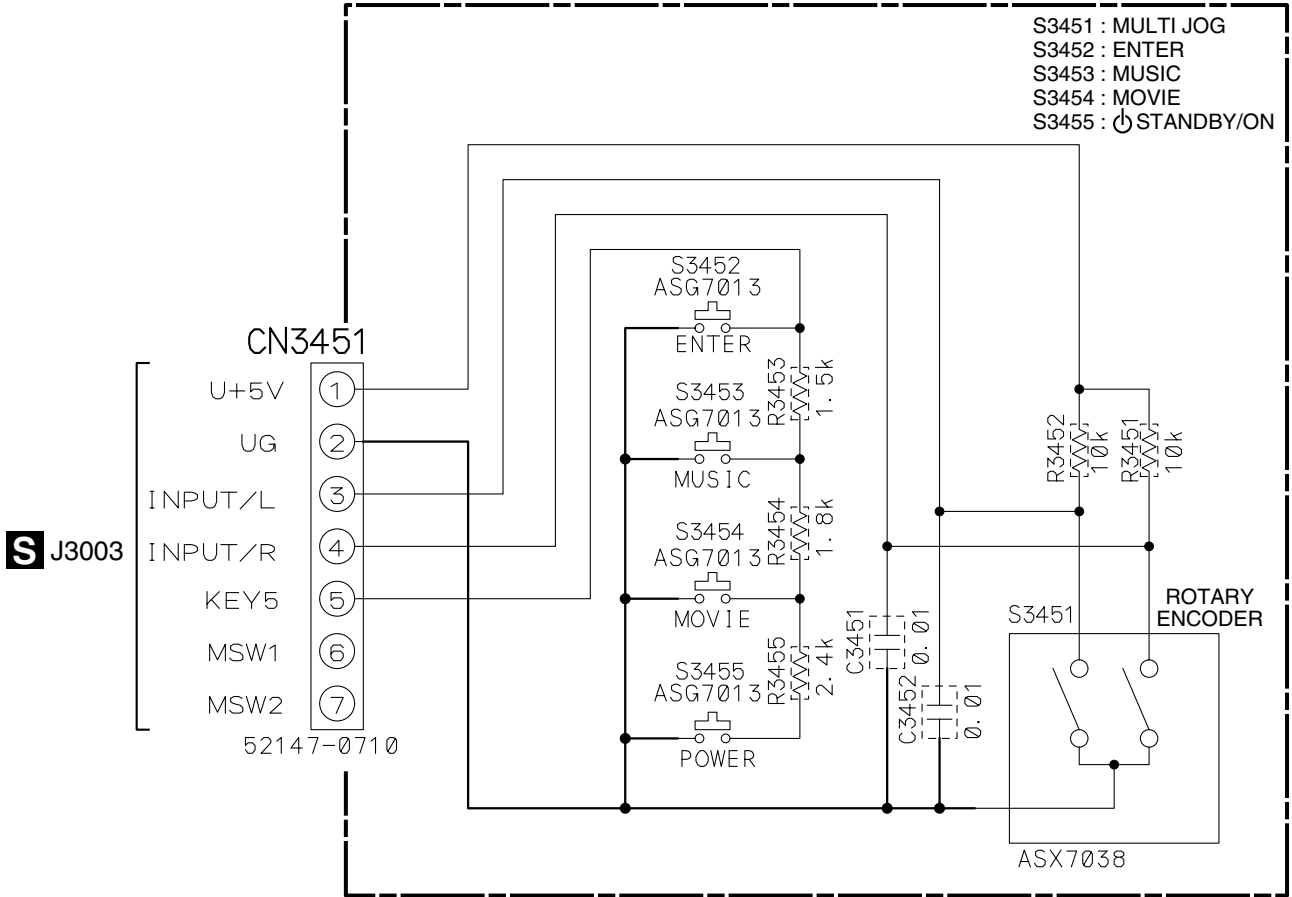


S J3002

- S3401 : MASTER VOLUME
- S3402 : ACOUSTIC EQ
- S3403 : MULTI CH IN
- S3404 : STEREO/DIRECT

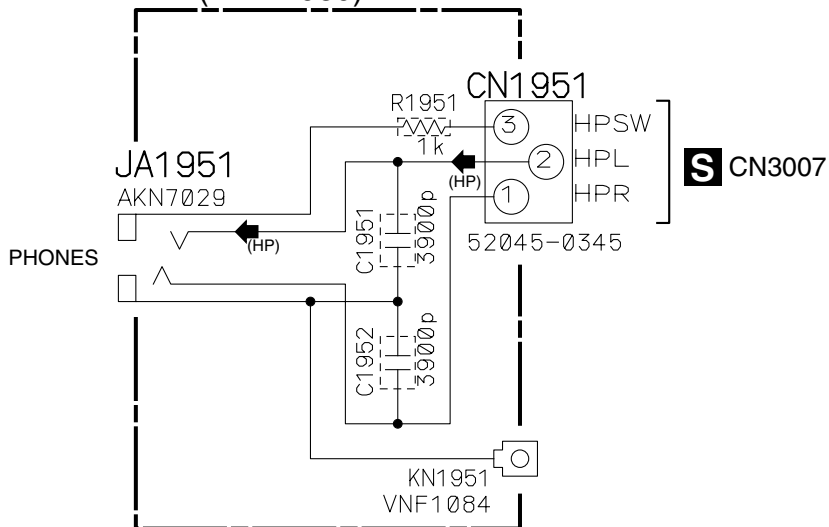
T

### U MULTI JOG ASSY (AWX7972)



(HP)  $\blacktriangleright$  : AUDIO SIGNAL ROUTE (PHONES ch)

### V HEADPHONE ASSY (AWX7980)



# 3.19 REGULATOR ASSY

## W REGULATOR ASSY (AWX7967)

A

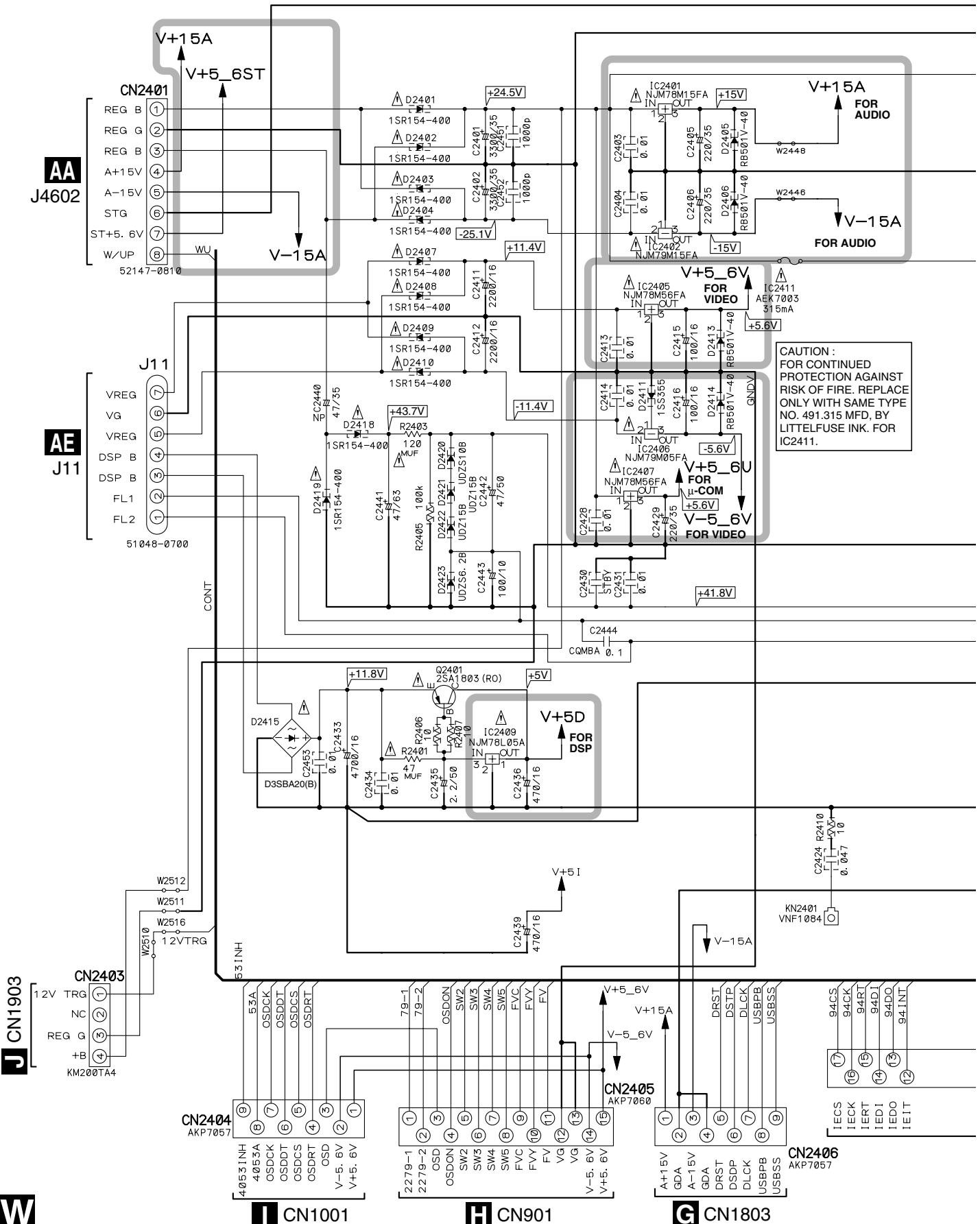
B

C

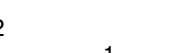
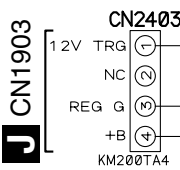
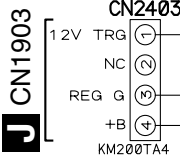
D

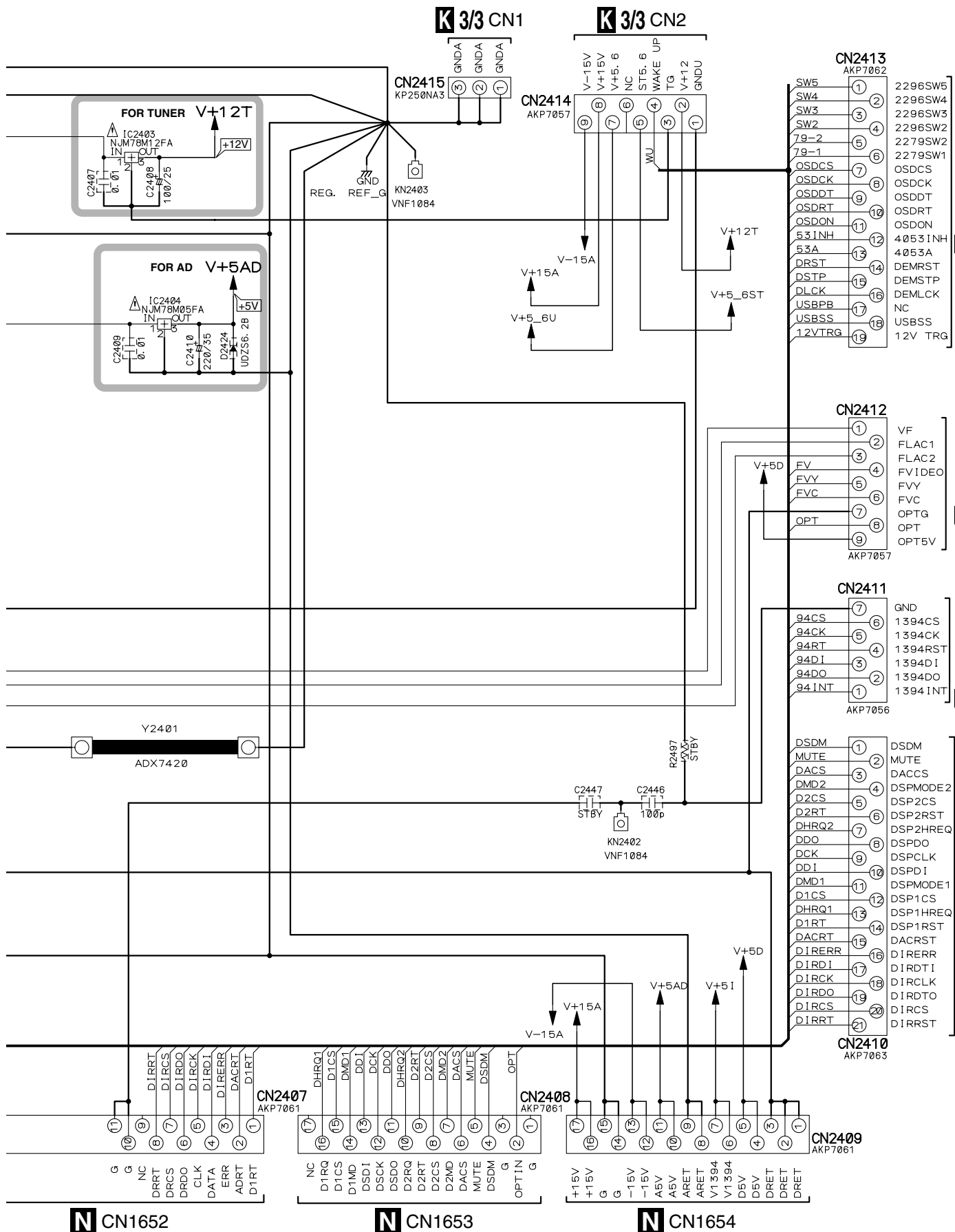
E


F



**CAUTION :**  
 FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE NO. 491.315 MFD, BY LITTELFUSE INK. FOR IC2411.



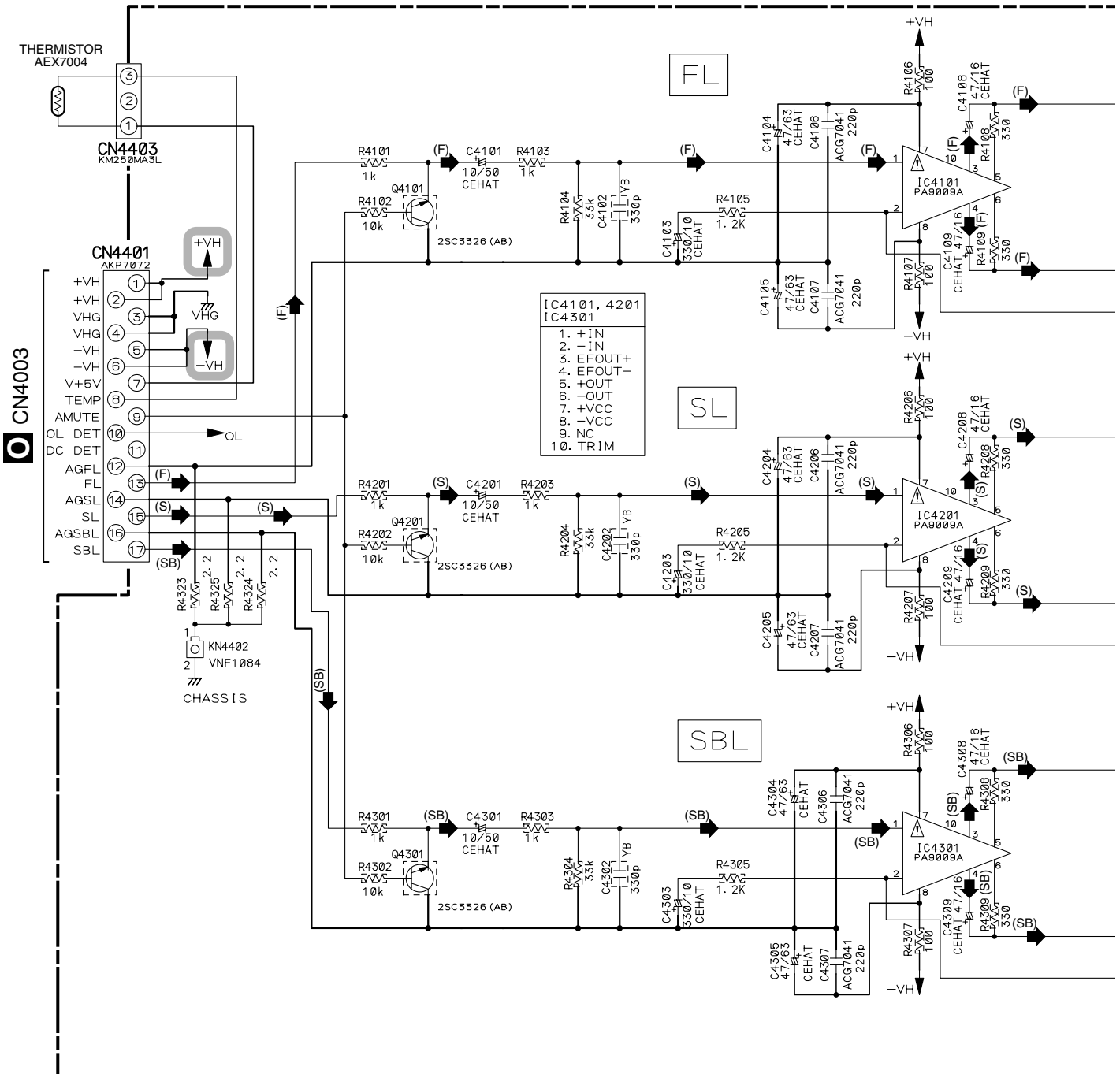


 : The power supply is shown with the marked box.



# 3.20 POWER AMP-L ASSY


## POWER AMP-L ASSY (AWX7984)

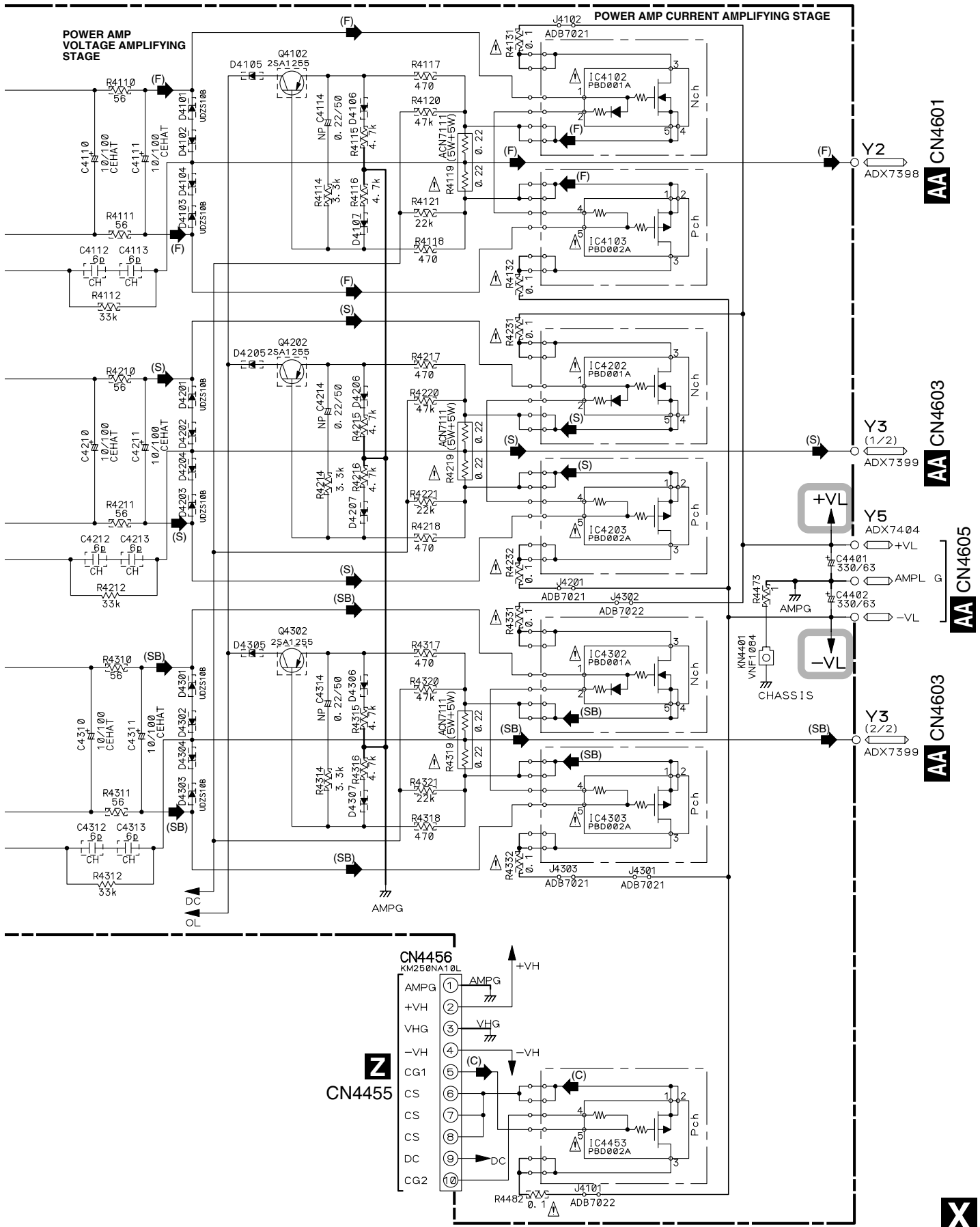


	CFTYA□□□J50-T		RS1/16S□□□J-T
	CFTLA□□□J2A-T		RDR1/4VM□□□J-T
	CCSRCH□□□J50-T		RD1/4MUF□□□J-T
	CKSRYB□□□K50-T		RS1LMF□□□J
	CKSRYF□□□Z25-T		ACN7107 (0.1Ω 1W)
	1SS355-TRB		NON-FRAMABLE

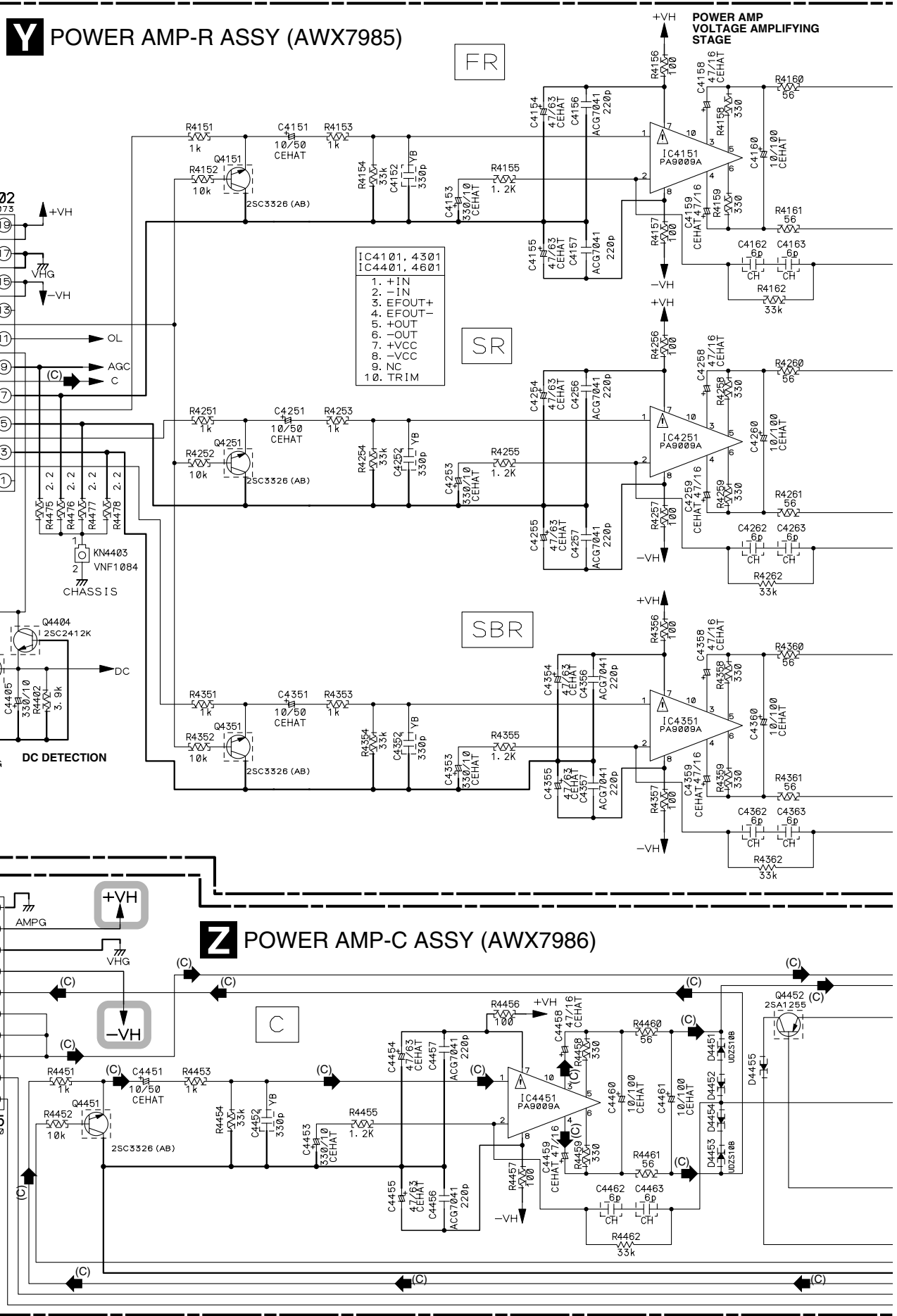
- (F) : AUDIO SIGNAL ROUTE (FRONT Lch)
- (S) : AUDIO SIGNAL ROUTE (SURROUND Lch)
- (SB) : AUDIO SIGNAL ROUTE (SURROUND BACK Lch)
- (C) : AUDIO SIGNAL ROUTE (CENTER ch)



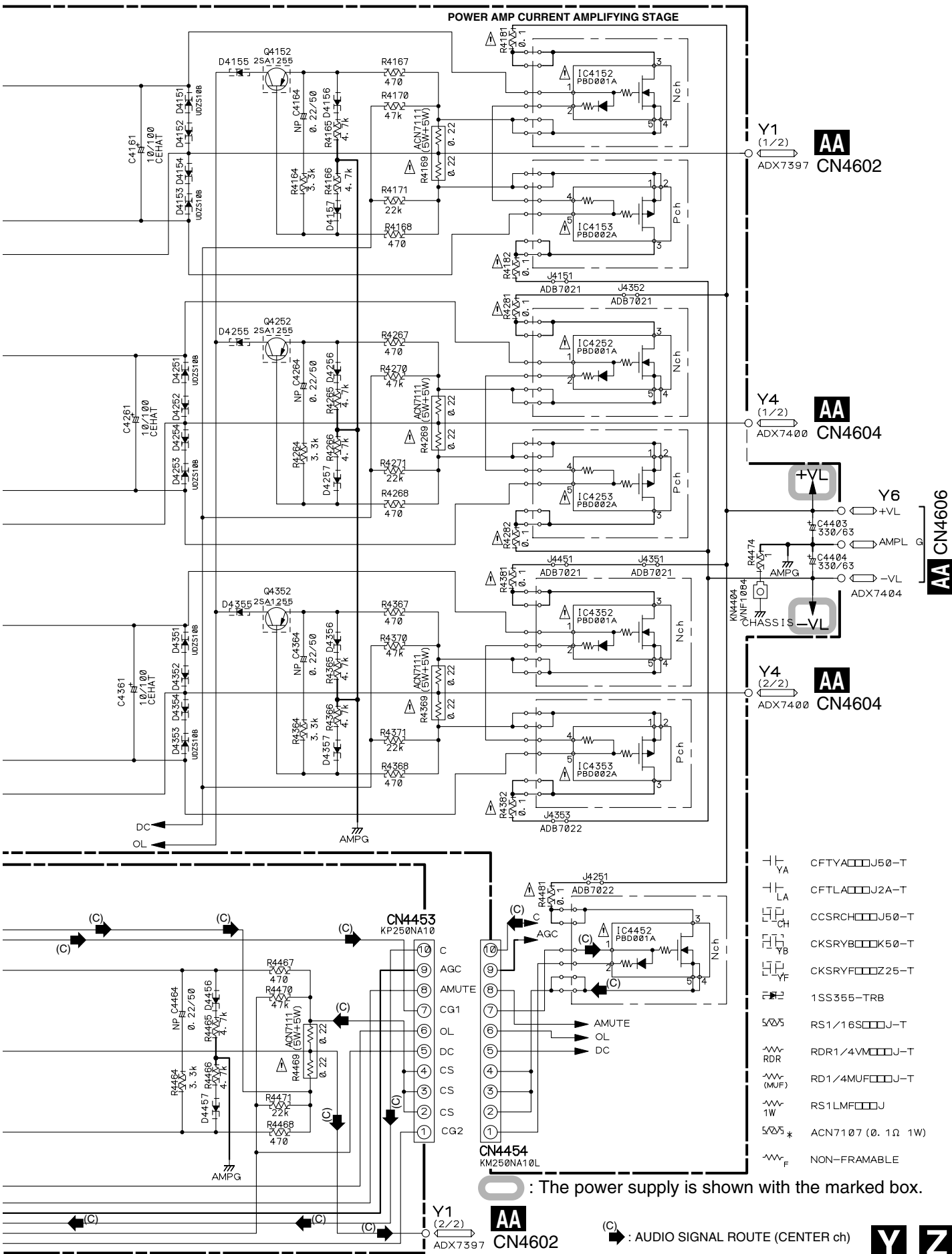
 : The power supply is shown with the marked box.



### 3.21 POWER AMP-R and POWER AMP-C ASSYS







A

B

C

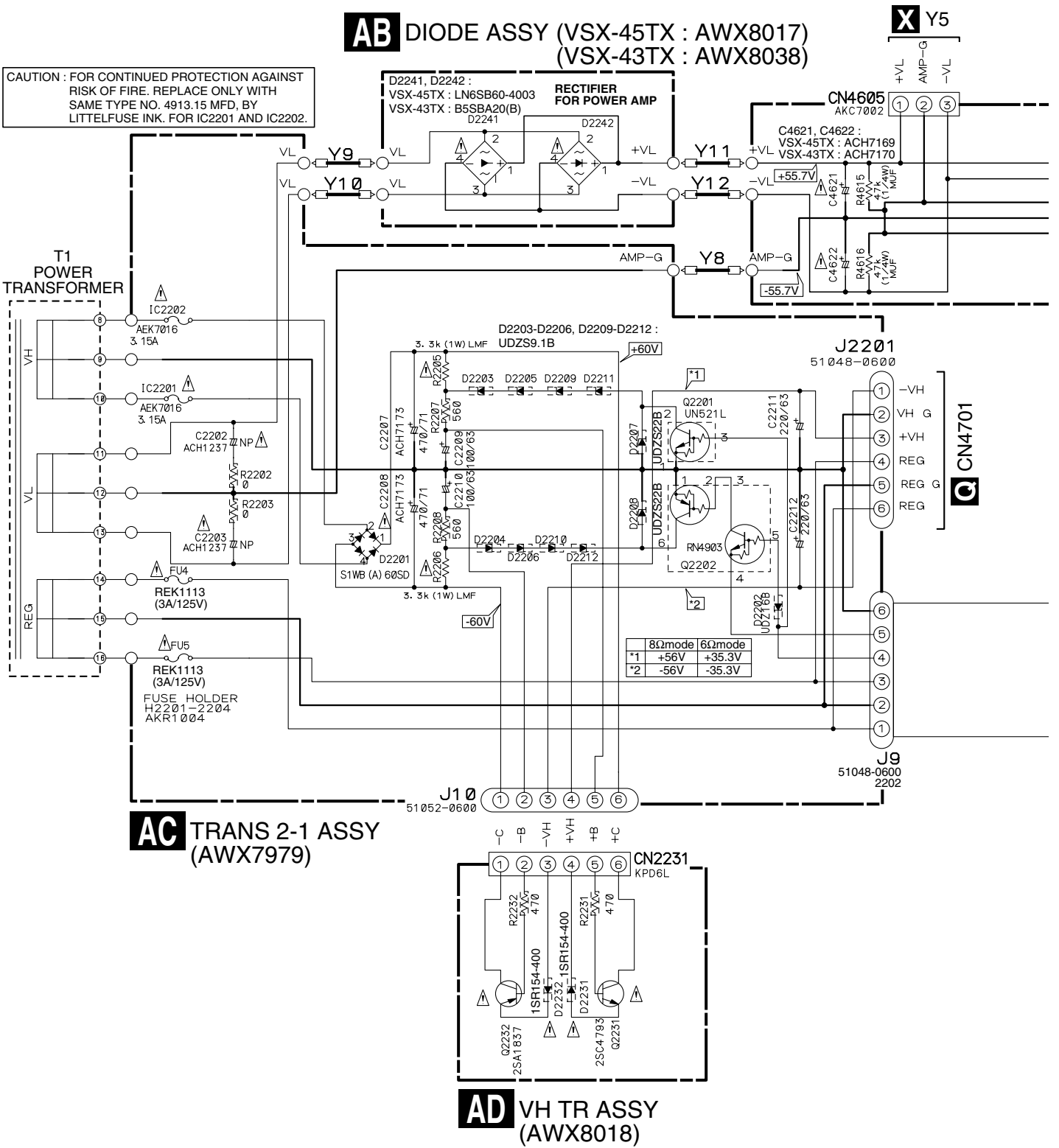
D

E

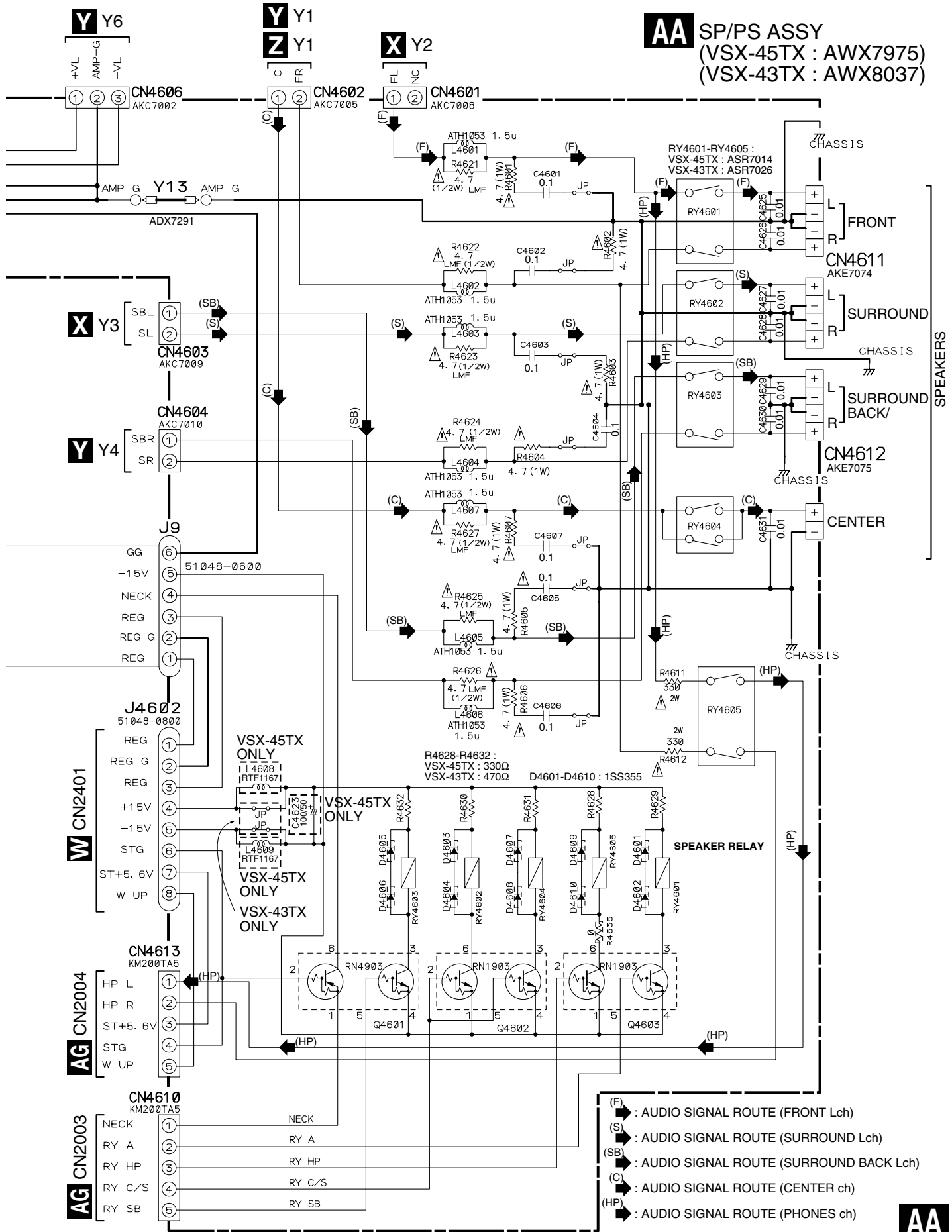
F

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

A  
B  
C  
D  
E  
F



**AA AB AC AD**



A  
B  
C  
D  
E  
F



### 3.23 TRANS 2-2, TRANS 1 and PRIMARY ASSYS

• NOTE FOR FUSE REPLACEMENT

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

A

B

C

D

E

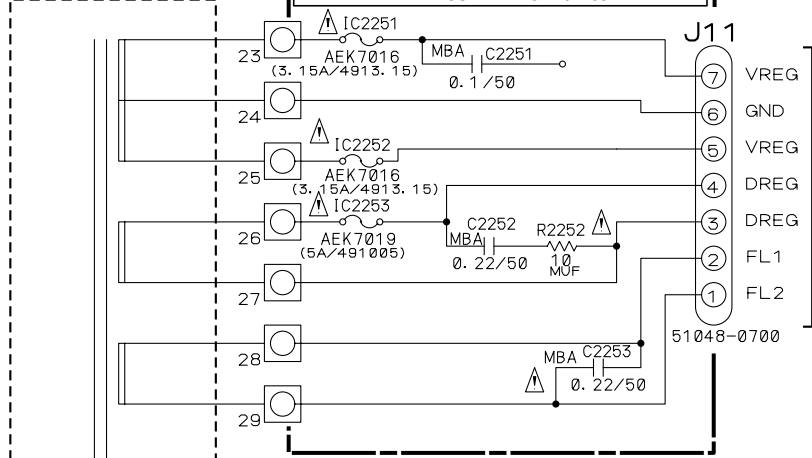
F

#### **AE** TRANS 2-2 ASSY (AWX7970)

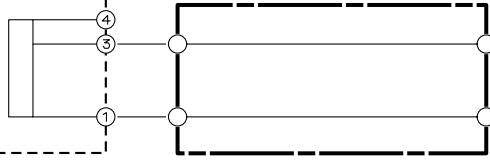
**CAUTION** : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 4913.15 MFD, BY LITTELFUSE INK. FOR IC2251 AND IC2252.

**CAUTION** : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 491005 MFD, BY LITTELFUSE INK. FOR IC2253.

T1 POWER TRANSFORMER



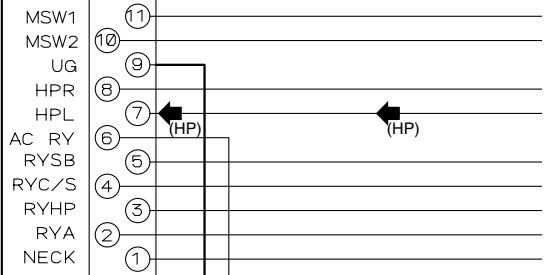
#### **AF** TRANS 1 ASSY (AWX7969)



**S** CN3001

**W** J11

CN2002



52045-1145

ADN7007

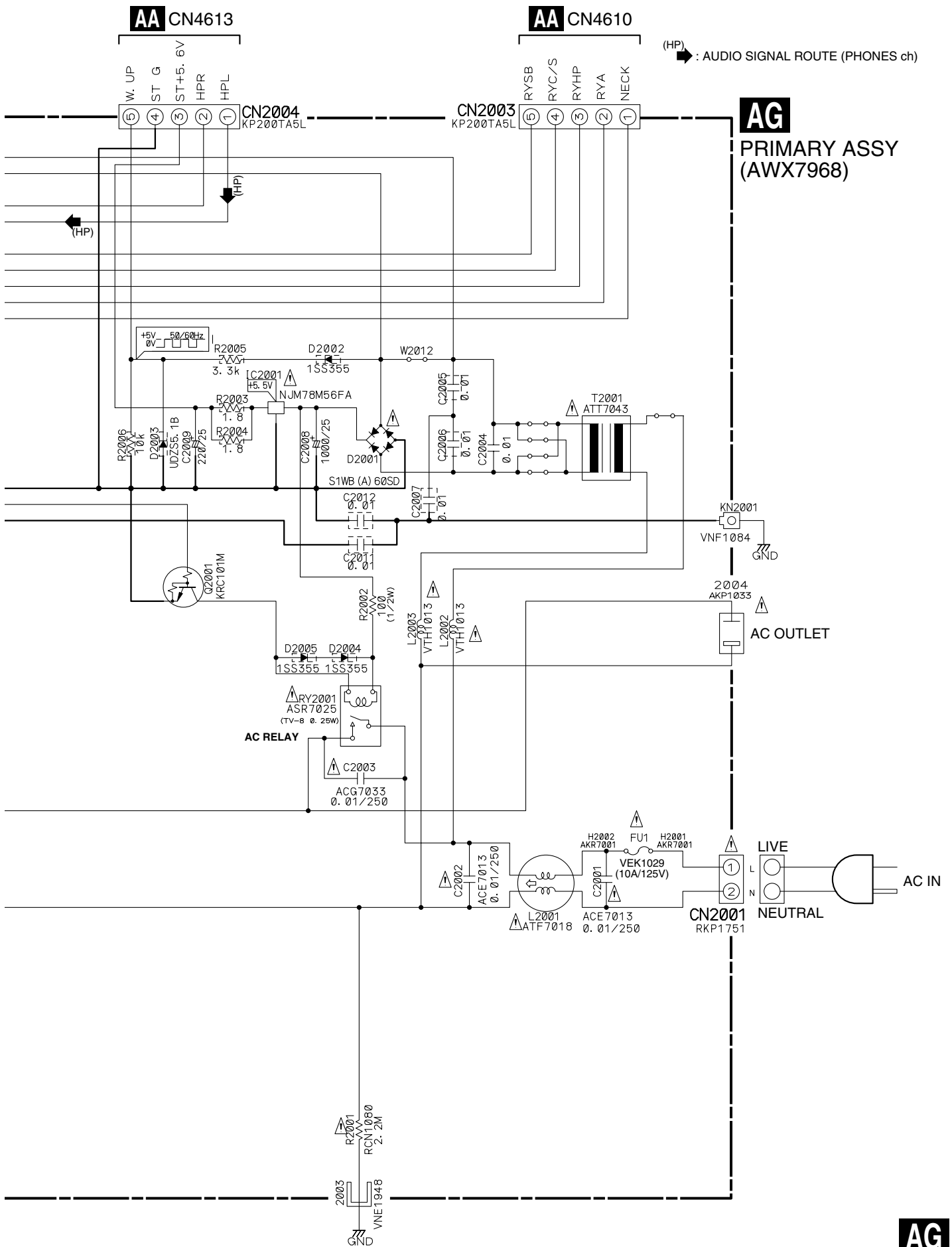
Y15

ADX7418

Y14

ADX7419

**AE AF AG**




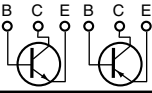

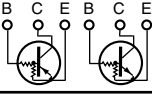

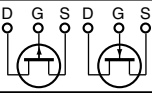

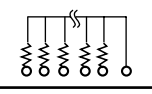


A  
B  
C  
D  
E  
F



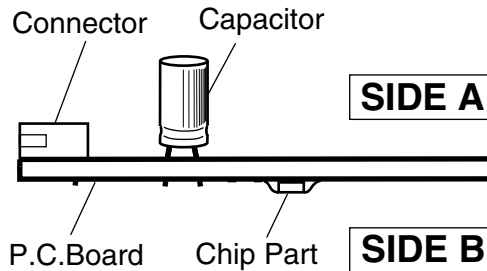
# 4. PCB CONNECTION DIAGRAM

## 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.

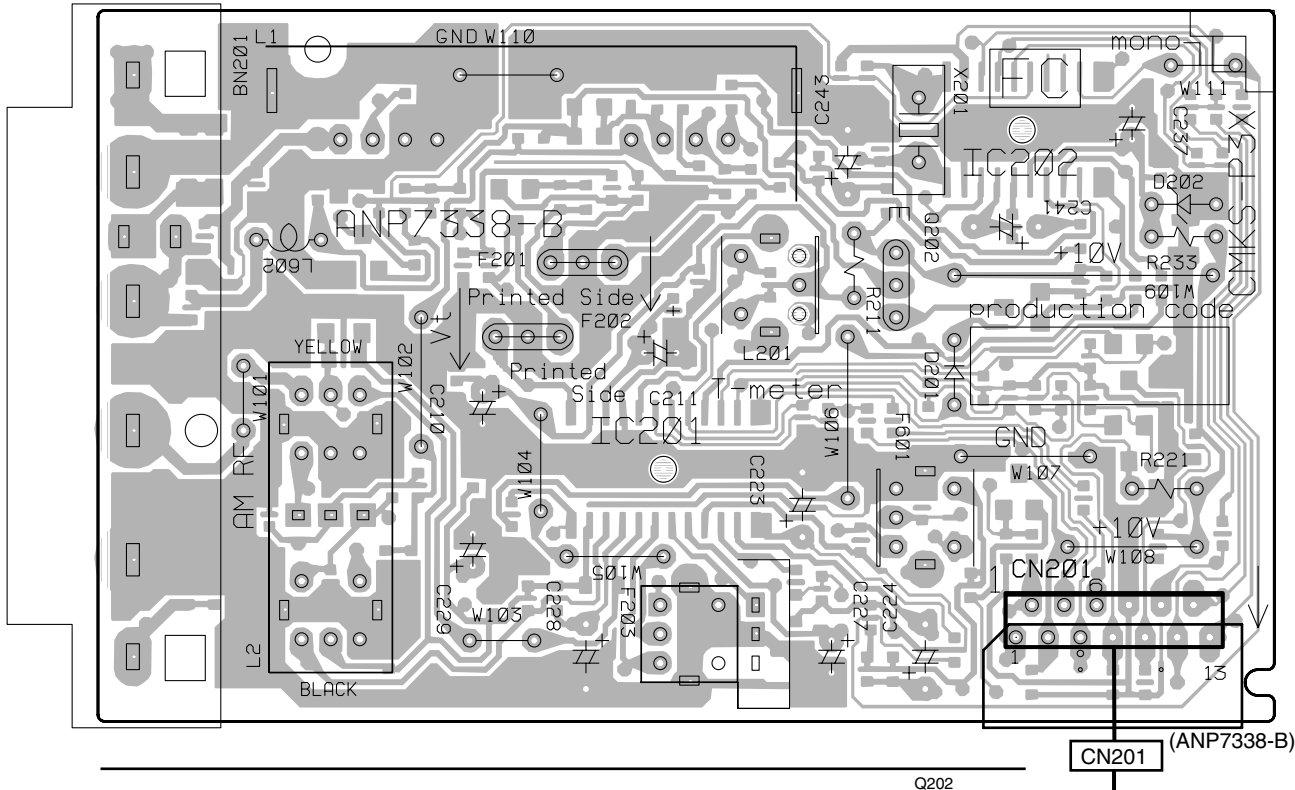


# 4.1 FM/AM TUNER MODULE

**SIDE A**

## **A** FM/AM TUNER MODULE

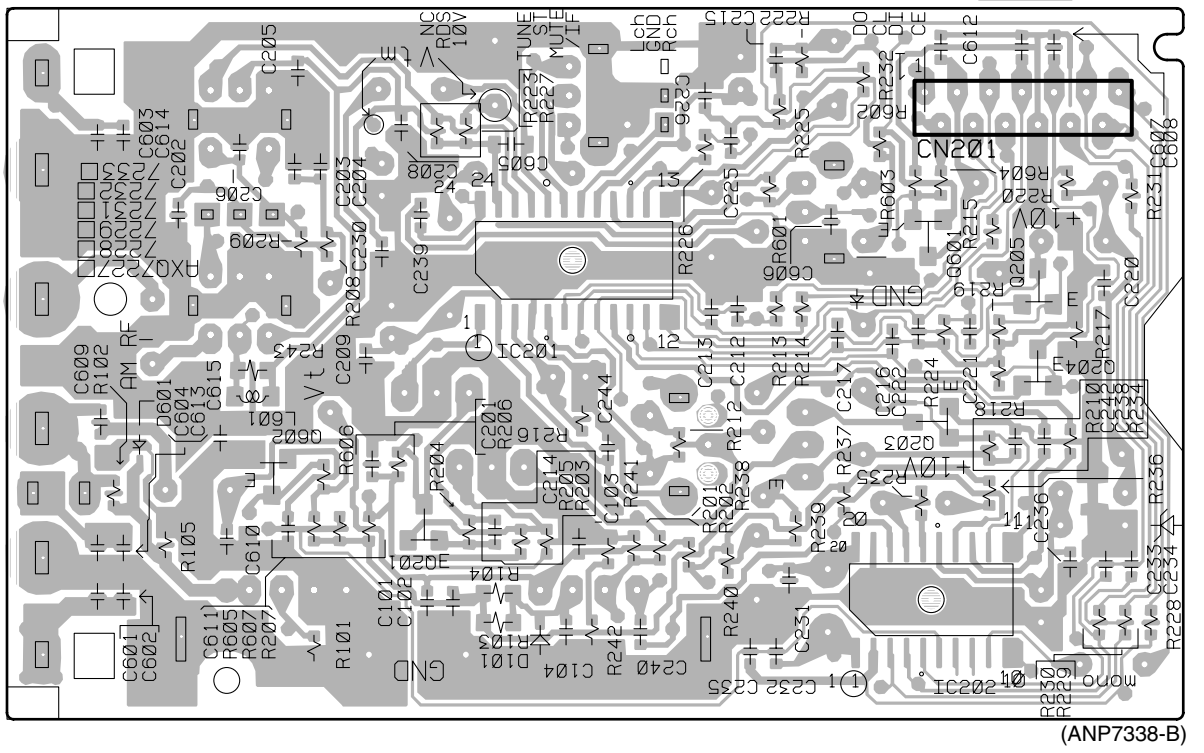
**SIDE A**



**SIDE B**

## **A** FM/AM TUNER MODULE

**SIDE B**



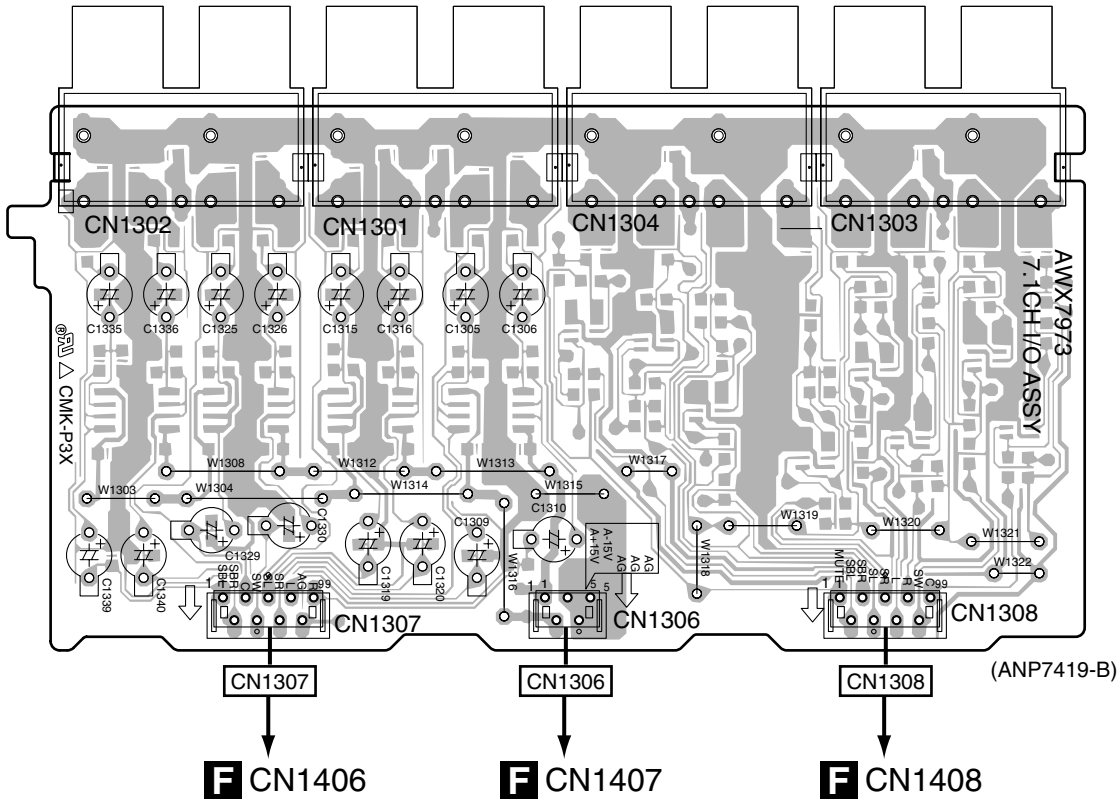
Q602 IC201 Q203 Q601 Q204  
IC202 Q205

# 4.2 7.1CH I/O ASSY

**SIDE A**

**SIDE A**

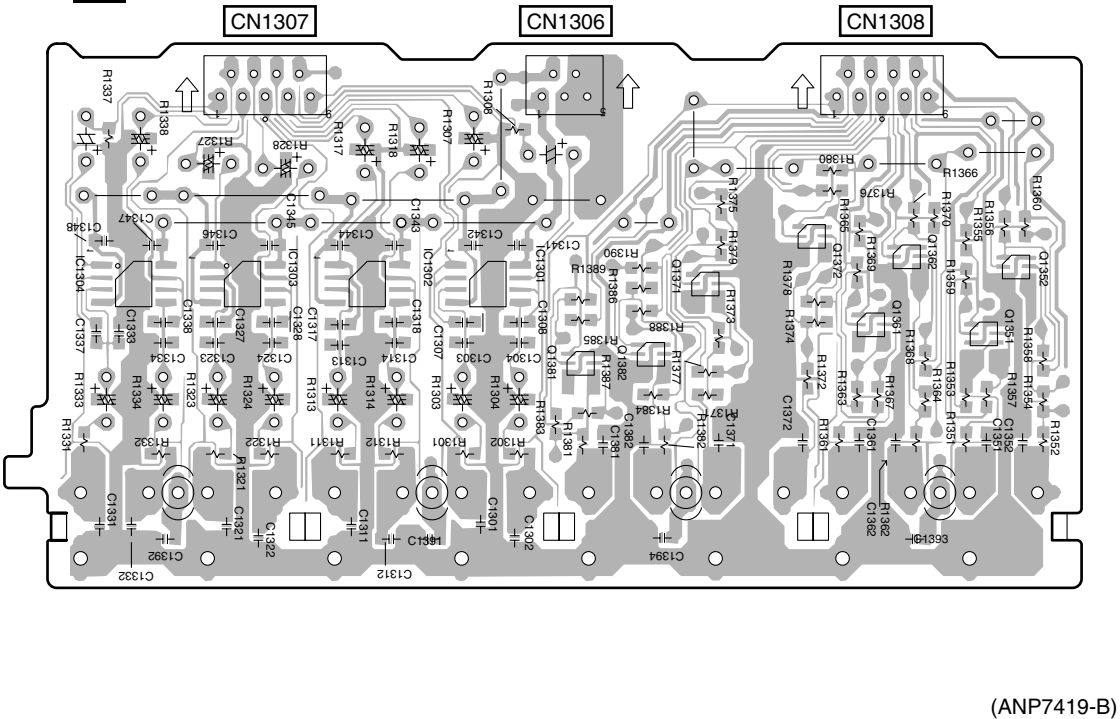
## **B** 7.1CH I/O ASSY



**SIDE B**

**SIDE B**

## **B** 7.1CH I/O ASSY



(ANP7419-B)

IC1304 IC1303 IC1302 IC1301 Q1371 Q1372 Q1362 Q1352  
 Q1381 Q1382 Q1361 Q1351

**B**

VSX-45TX

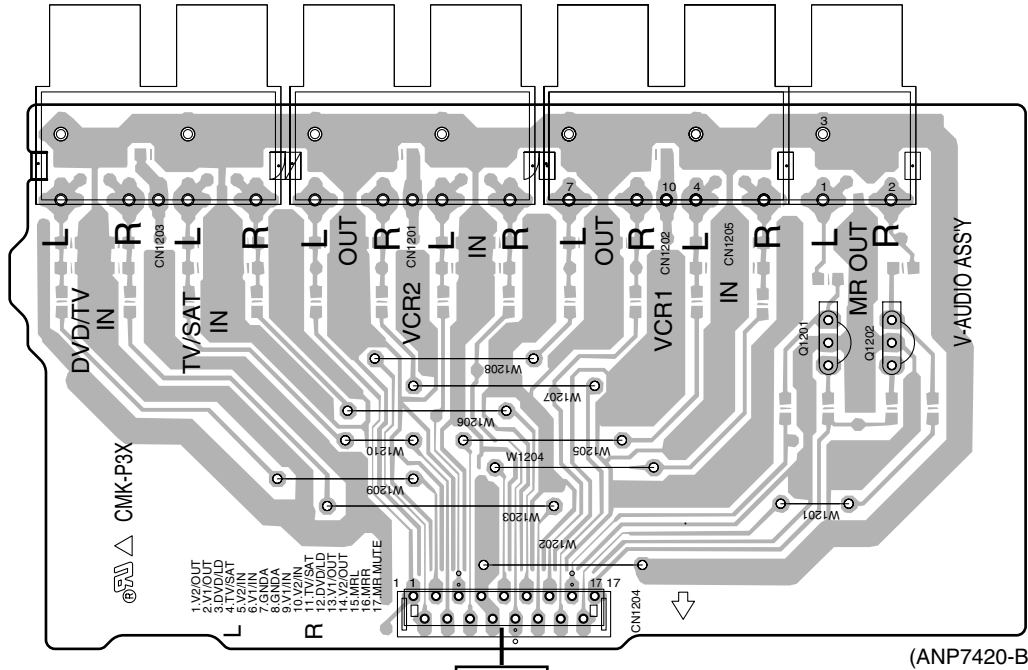


### 4.3 V-AUDIO IN ASSY

**SIDE A**

**SIDE A**

## **C** V-AUDIO IN ASSY



Q1201  
Q1202

(ANP7420-B)

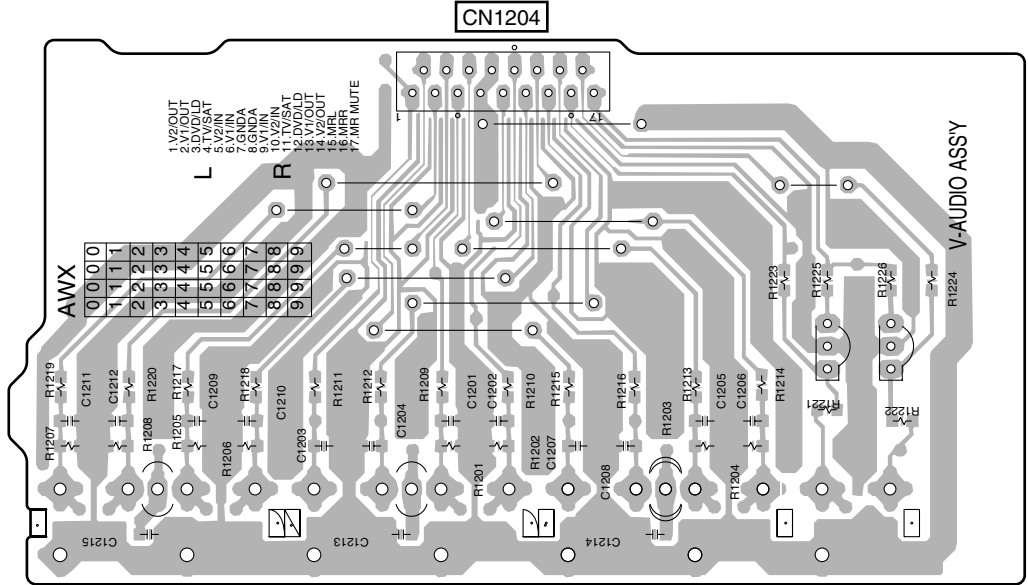
CN1204

**F** CN1405

**SIDE B**

**SIDE B**

## **C** V-AUDIO IN ASSY



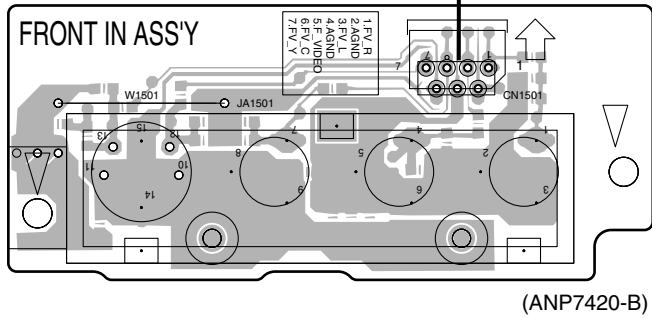
(ANP7420-B)

VSX-45TX

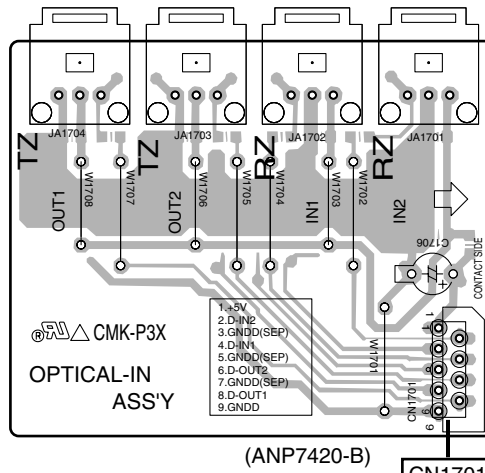
# 4.4 FRONT IN, OPTICAL IN and INPUT CONNECT ASSYS

**SIDE A**

**D FRONT IN ASSY**

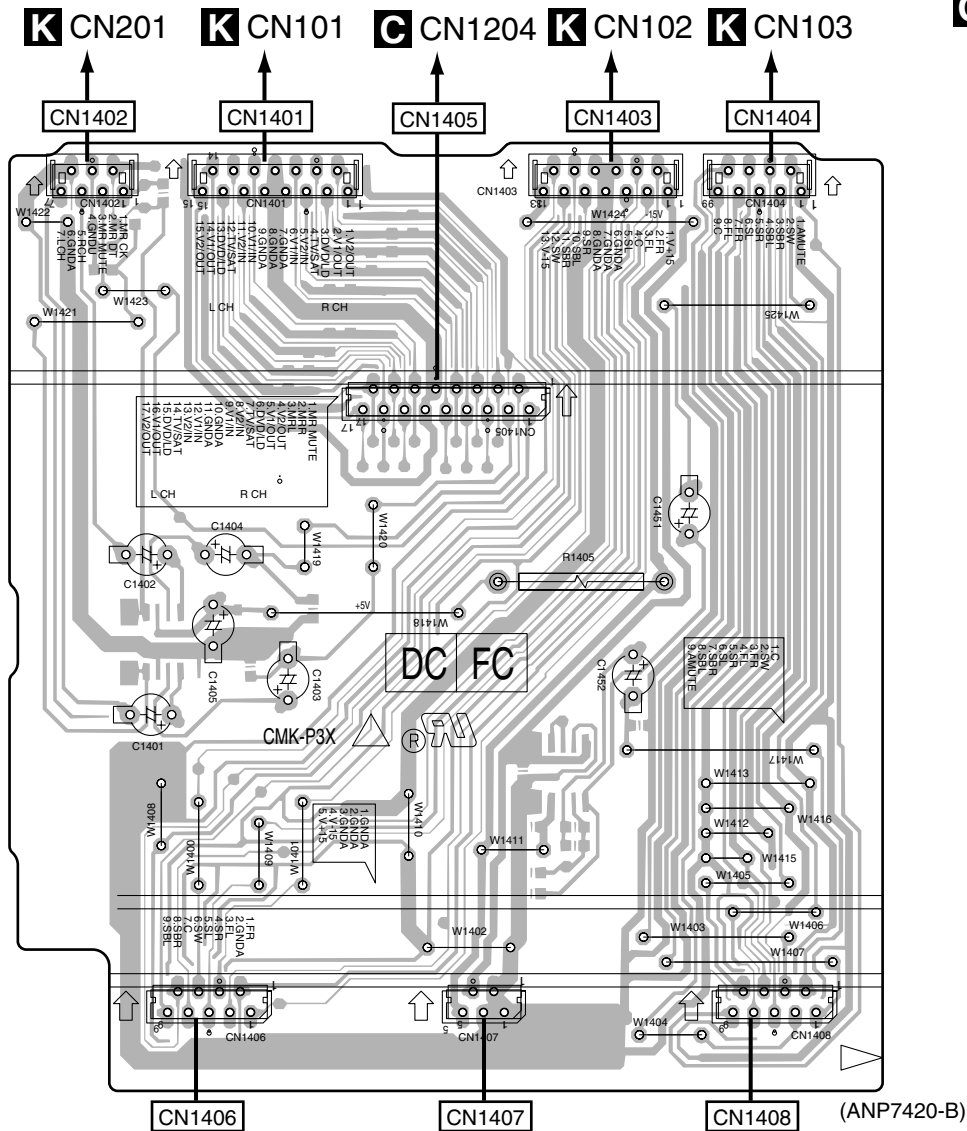


**E OPTICAL IN ASSY**



**G CN1801**

**F INPUT CONNECT ASSY**



**B CN1307**

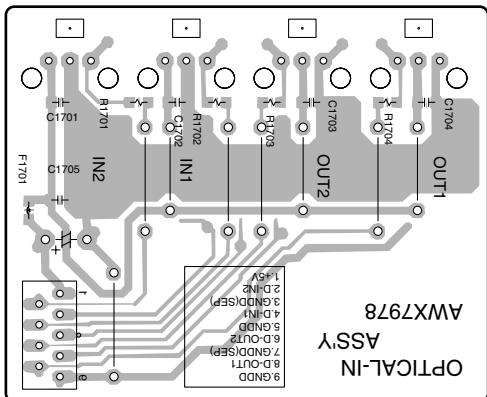
**B CN1306**

**B CN1308**

**D E F**

**SIDE B**

**E OPTICAL IN ASSY**

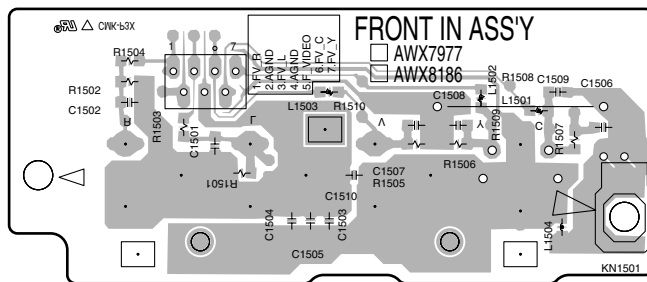


**CN1701**

(ANP7420-B)

**CN1501**

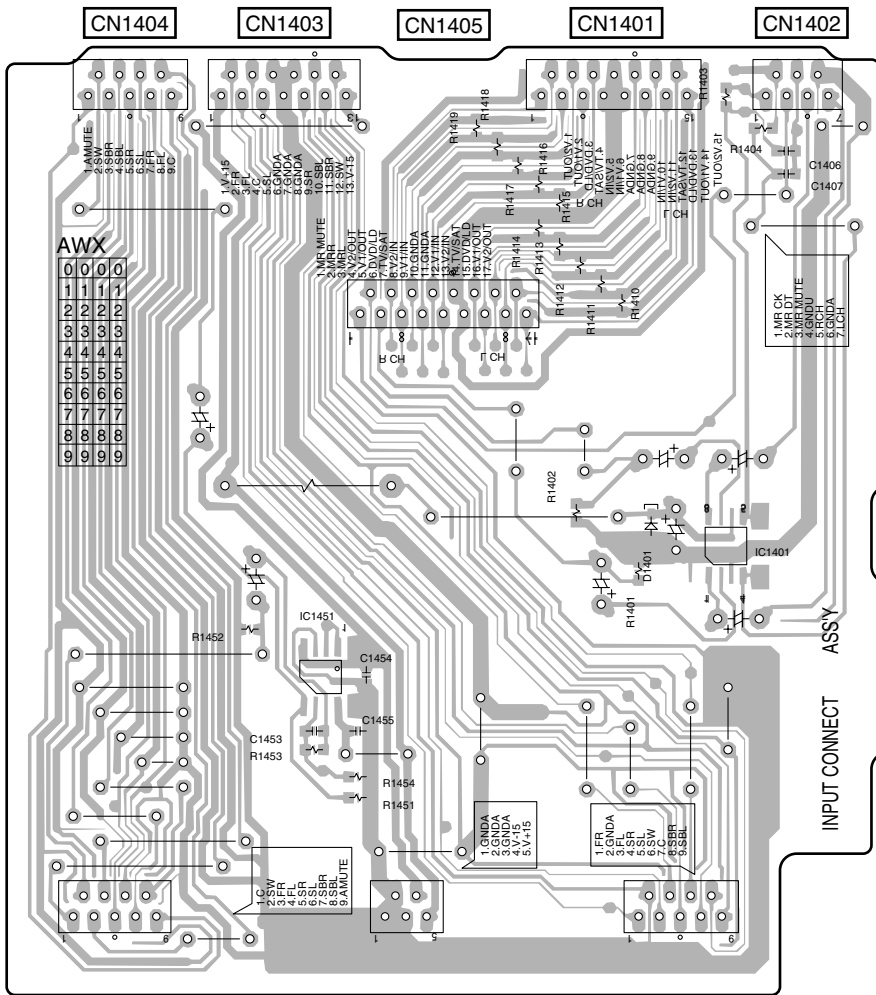
**D FRONT IN ASSY**



(ANP7420-B)

1801

**F INPUT CONNECT ASSY**



**CN1408**

**CN1407**

**CN1406**

(ANP7420-B)

IC1401

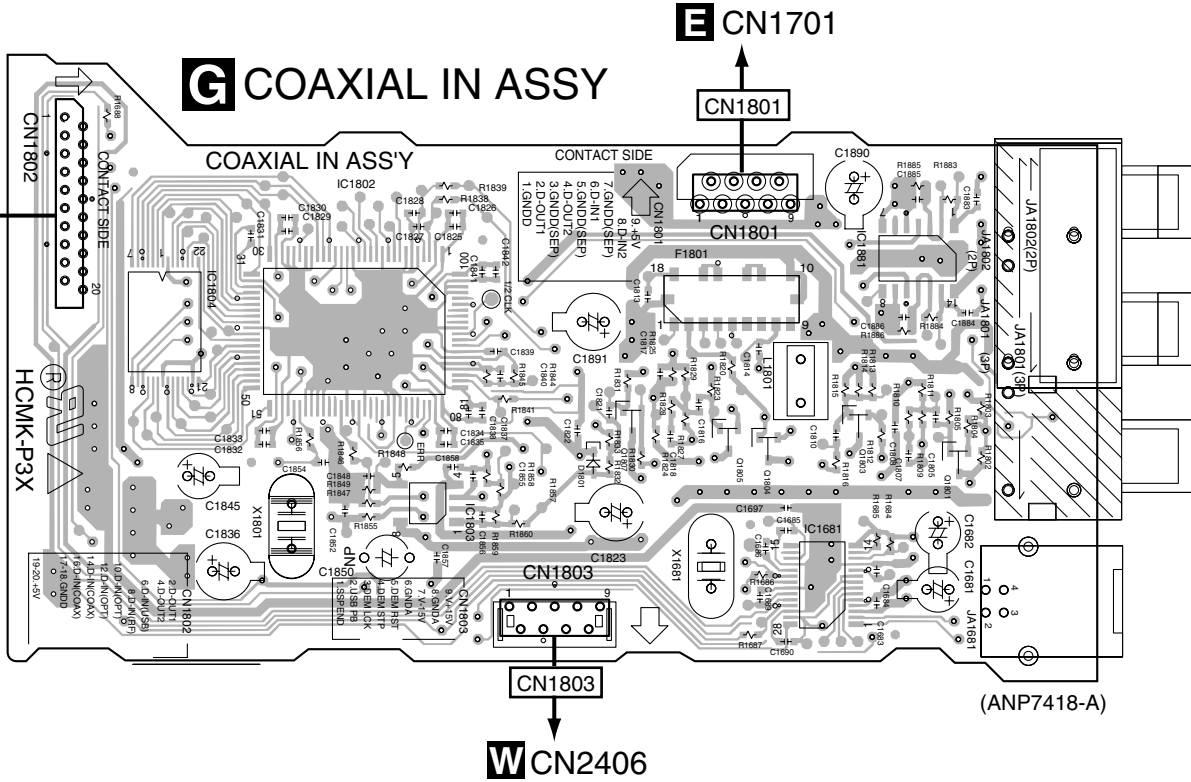
IC1451

**DEF**

# 4.5 COAXIAL IN ASSY

**SIDE A**

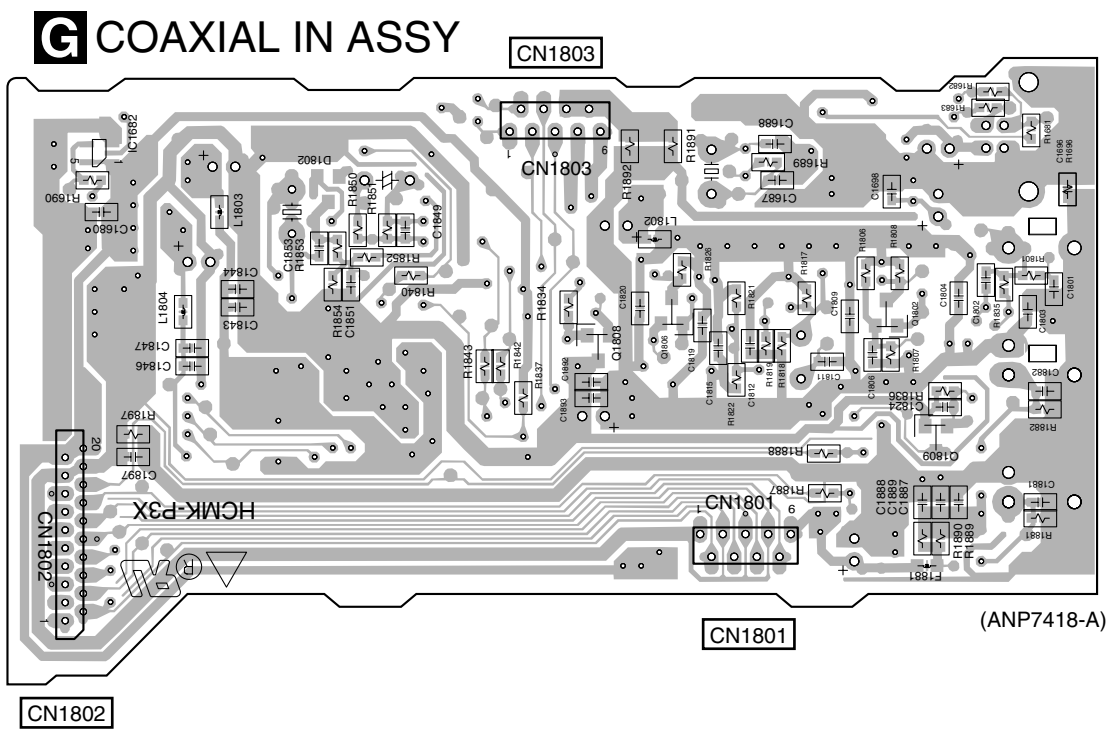
**SIDE A**



IC1804      IC1802      IC1803      Q1807    Q1805    Q1804    Q1801  
 IC1881  
 IC1681

**SIDE B**

**SIDE B**



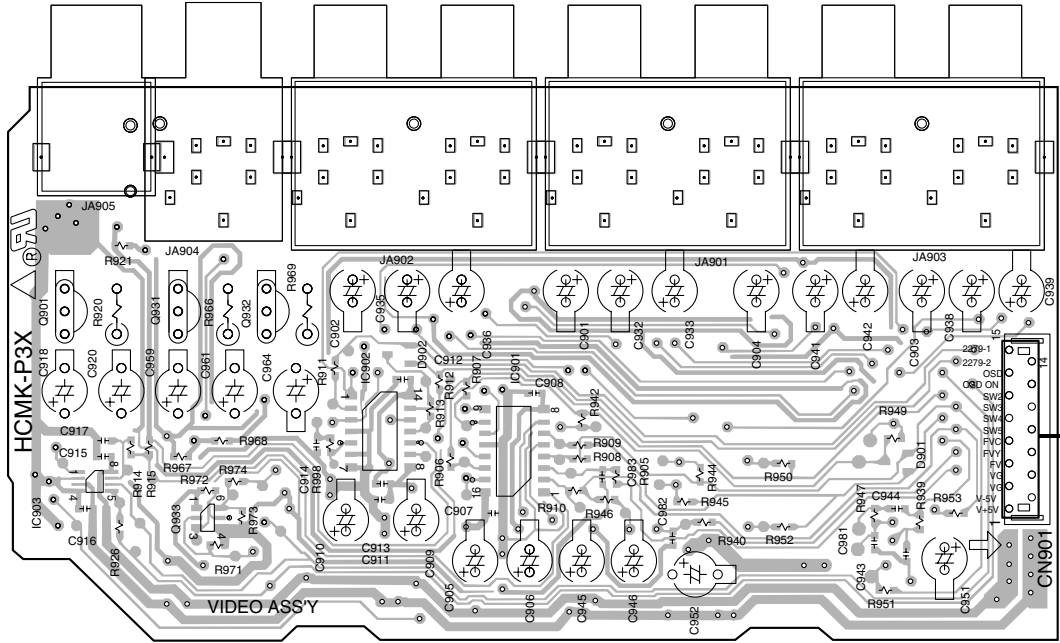
IC1682      Q1808    Q1806      Q1802      Q1809

# 4.6 VIDEO ASSY

**SIDE A**

**SIDE A**

## VIDEO ASSY



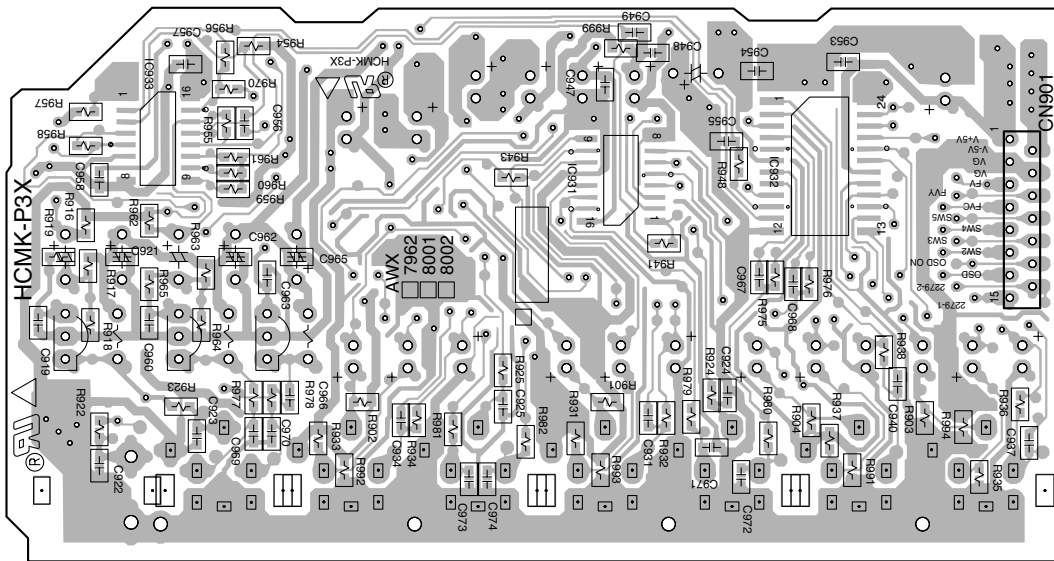
(ANP7418-A)

Q901    Q931    Q932    IC902    IC901  
 IC903    Q933

**SIDE B**

**SIDE B**

## VIDEO ASSY



(ANP7418-A)

IC933    IC931    IC932



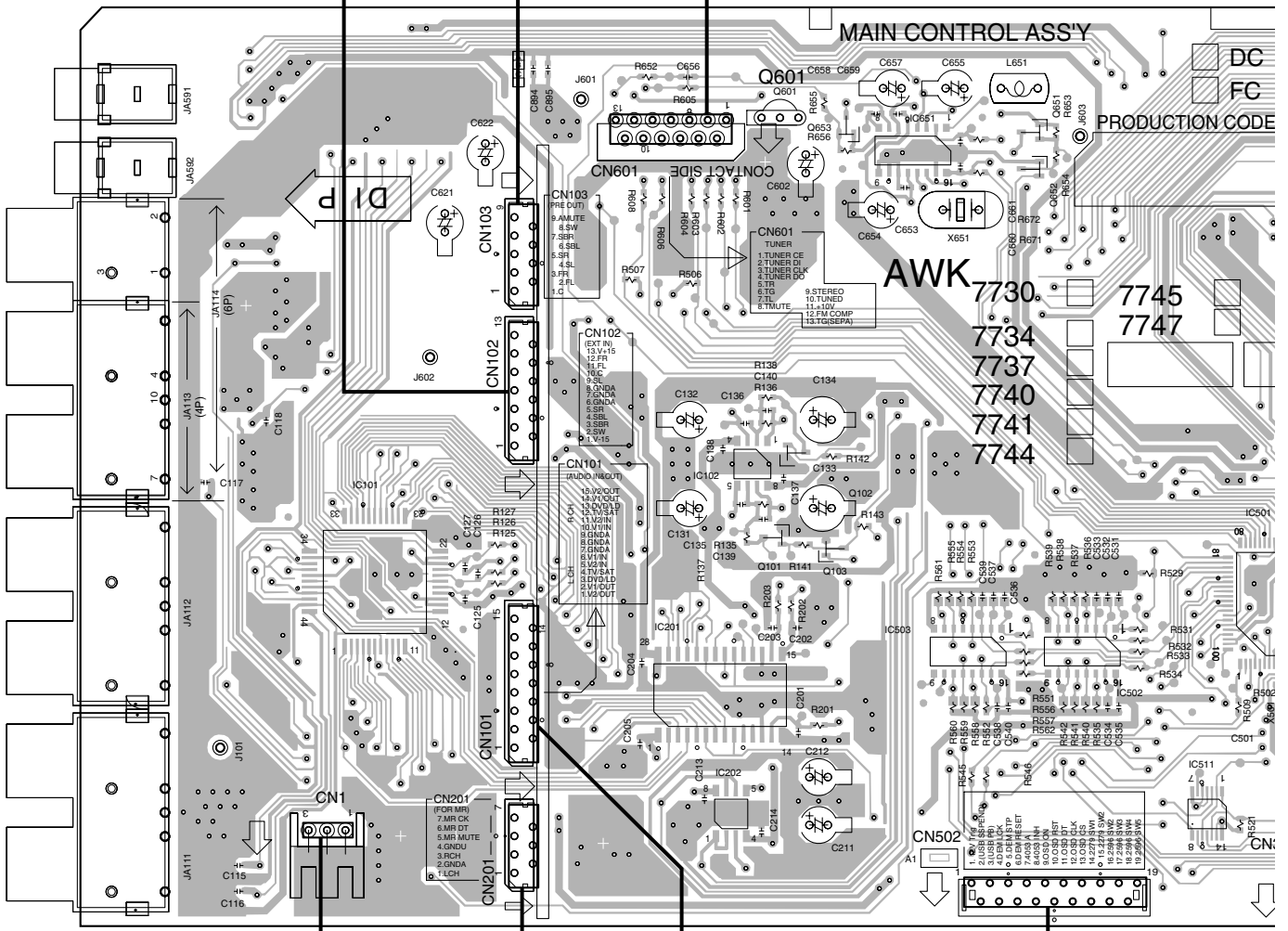
# 4.7 MAIN CONTROL and RS232C ASSYS

**SIDE A**

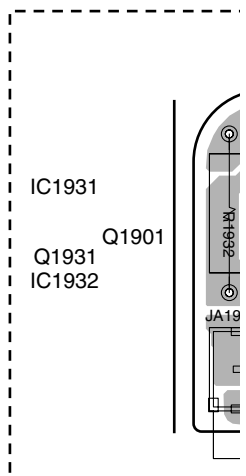
Q601 IC102 Q102 IC651 Q651  
 IC201 Q101 Q103 IC503 Q652  
 IC202 IC502 IC511

**F** CN1403 **F** CN1404 **A** CN201

**K** MAIN CONTROL ASS



**W** CN2415 **F** CN201 **F** CN101 **W** CN502



**J K**

IC511 IC501 IC104

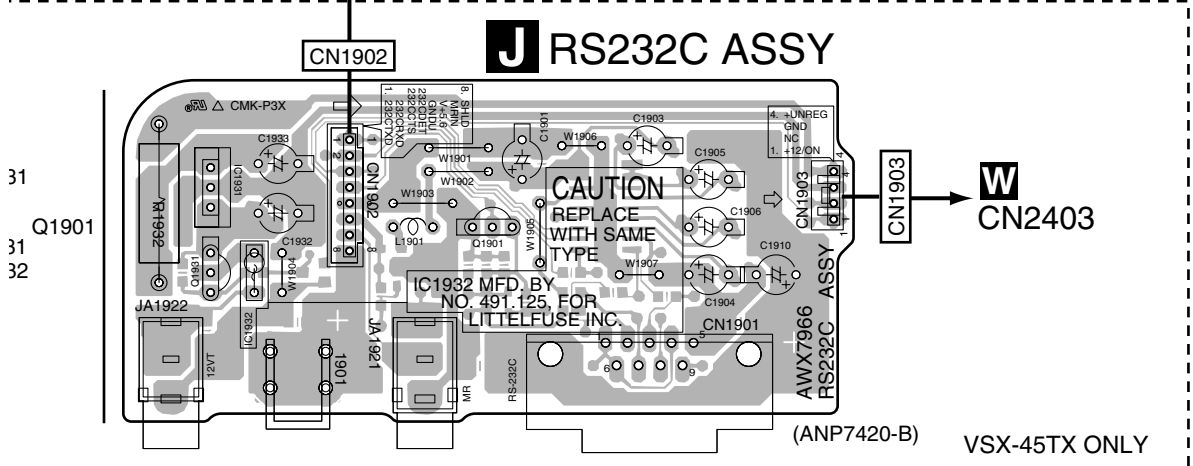
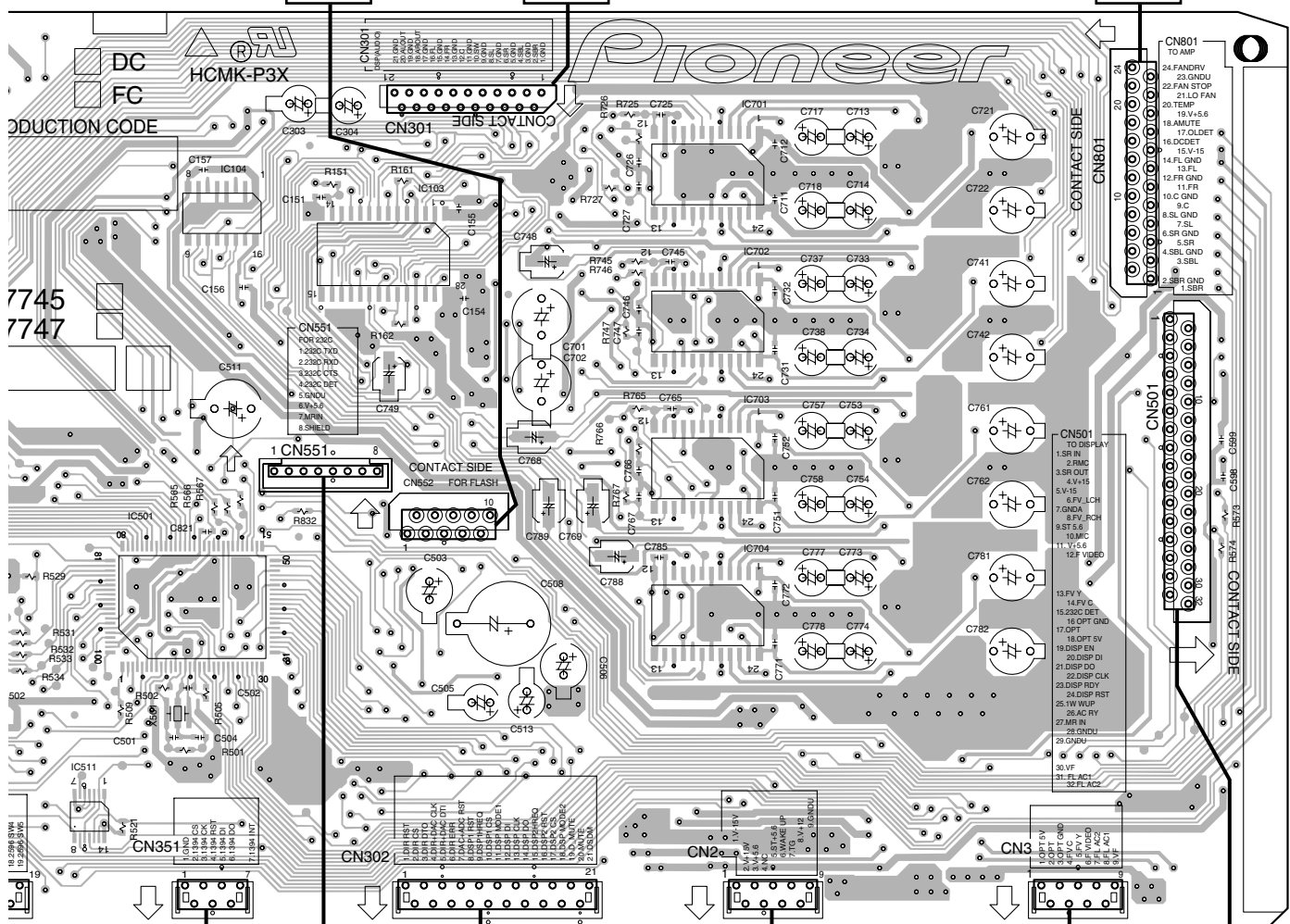
IC702 IC701 IC704 IC703

For Flash

R CN601

O CN4001

I/O ASSY



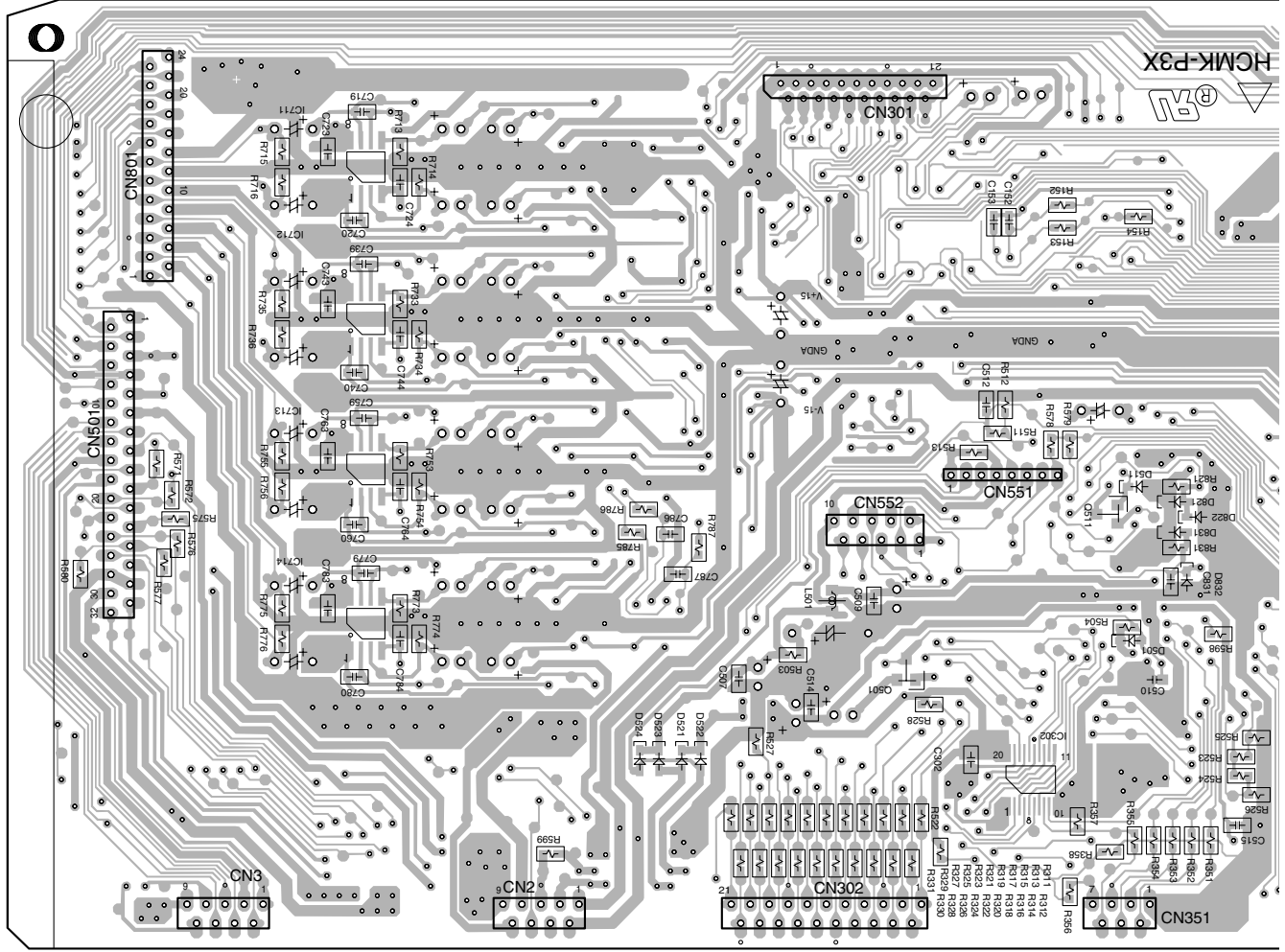
**SIDE B**

IC711  
IC712  
IC713  
IC714

Q501 IC302 Q511

**K MAIN CONTROL ASSY**

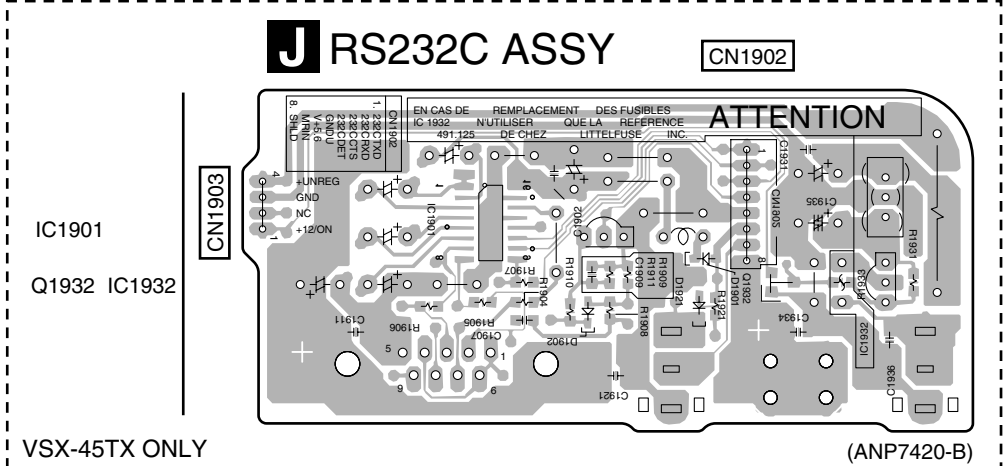
A  
B  
C  
D  
E  
F



CN3 CN2 CN552 CN551 CN351 CN302

**J RS232C ASSY**

CN1902



VSX-45TX ONLY

(ANP7420-B)

**J K**

VSX-45TX



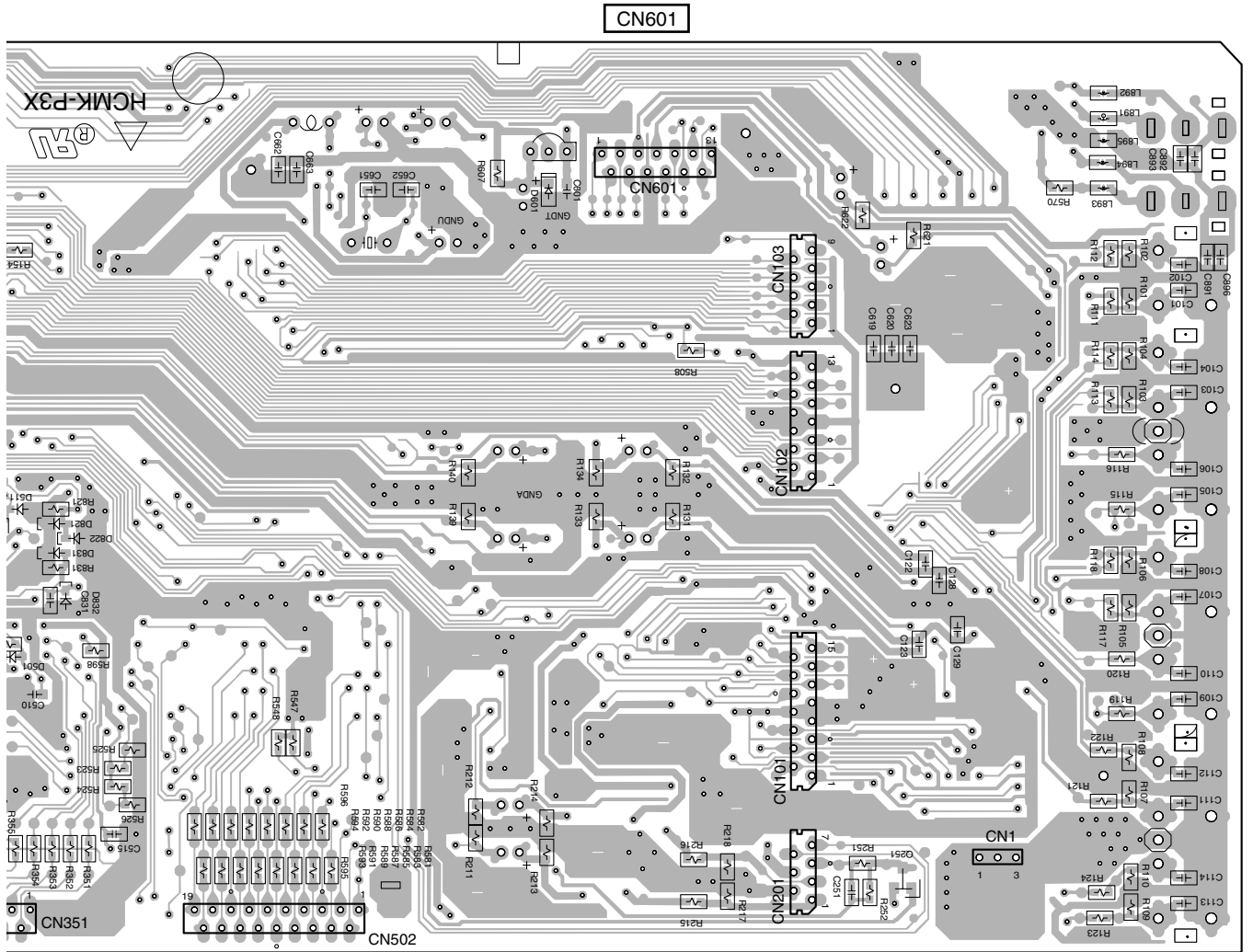
SIDE B

A

1

Q601

Q251



B

C

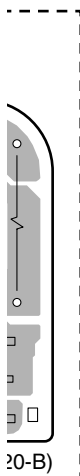
D

351

CN502

CN1

(ANP7418-A)



E

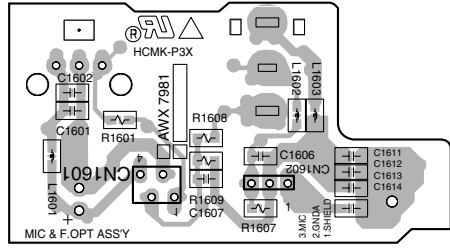
F

**J K**



**SIDE B**

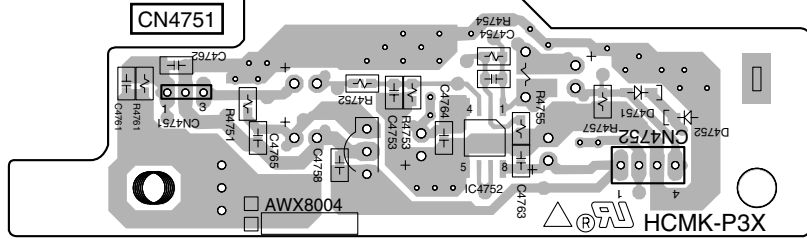
**L** MIC & F.OPT IN ASSY



VSX-45TX ONLY

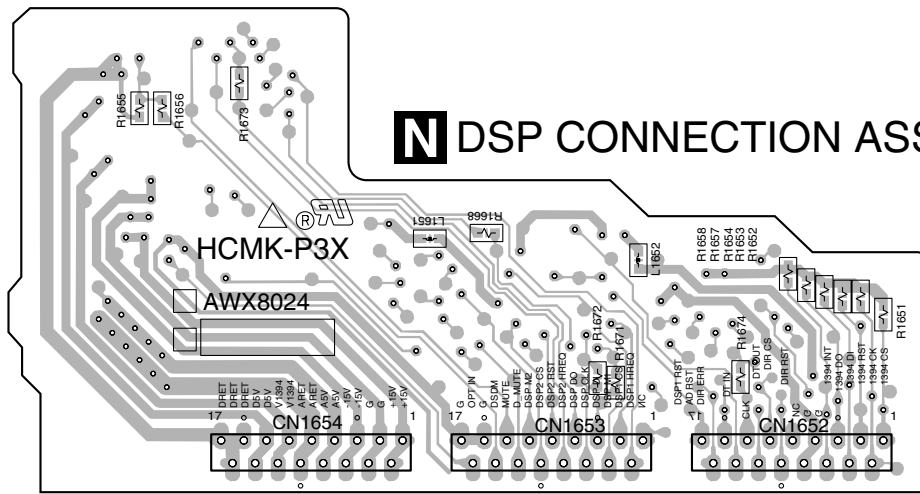
CN1601 CN1602 (ANP7418-A)

**M** MIC AMP ASSY



CN4752 (ANP7418-A)

**N** DSP CONNECTION ASSY



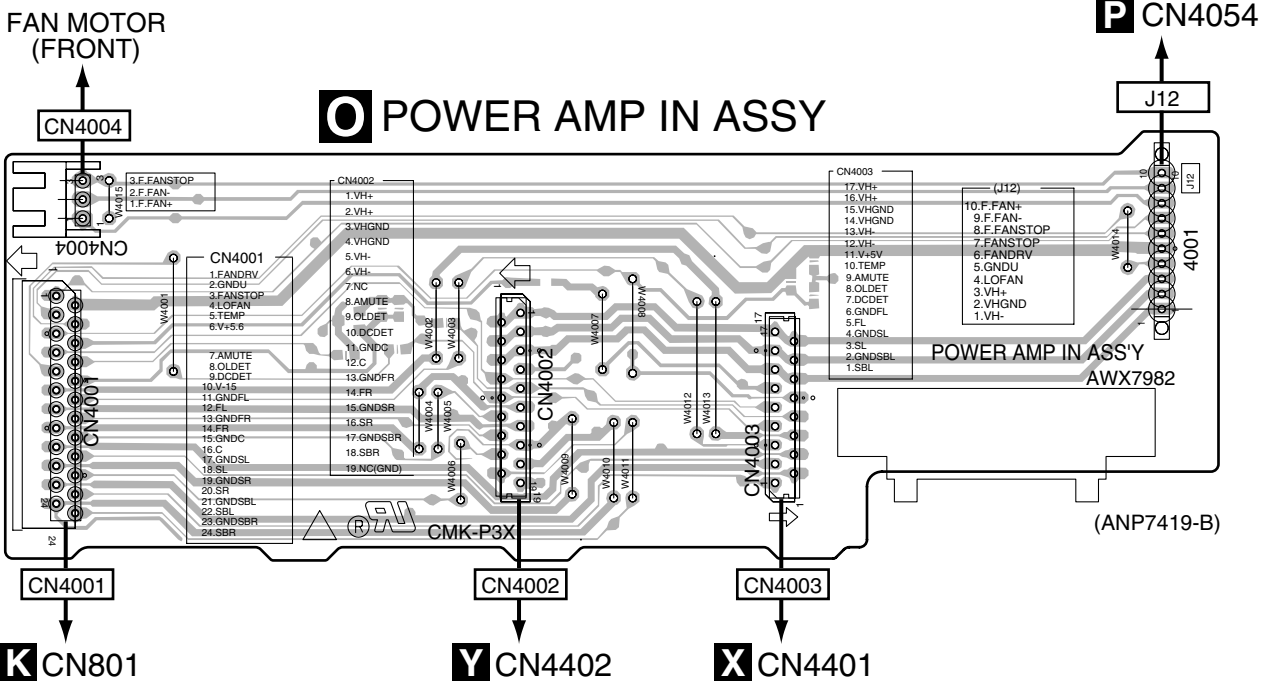
CN1654 CN1653 CN1652 (ANP7418-A)

**L M N**

# 4.9 POWER AMP IN ASSY

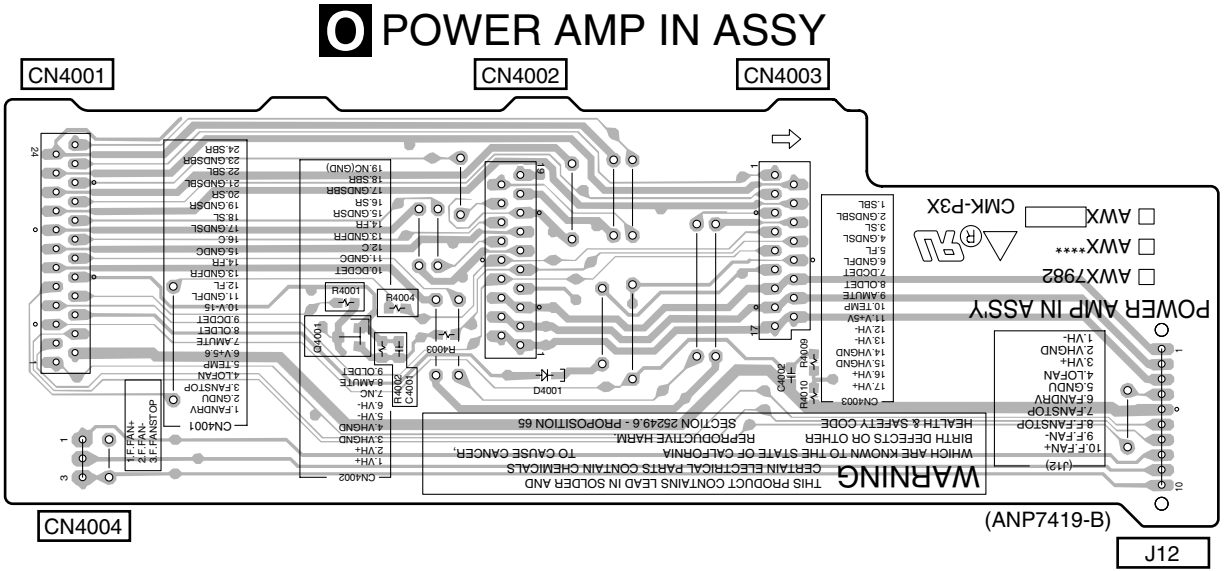
**SIDE A**

**SIDE A**



**SIDE B**

**SIDE B**

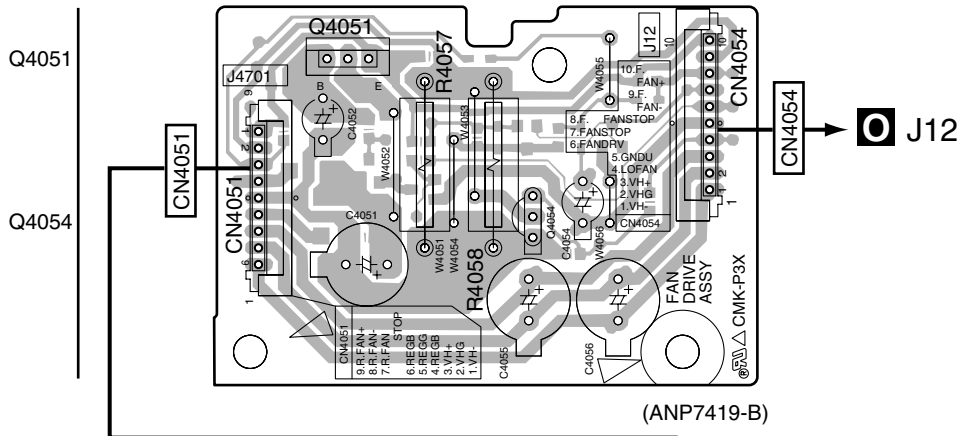


# 4.10 FAN DRIVE and FAN CONNECTION ASSYS

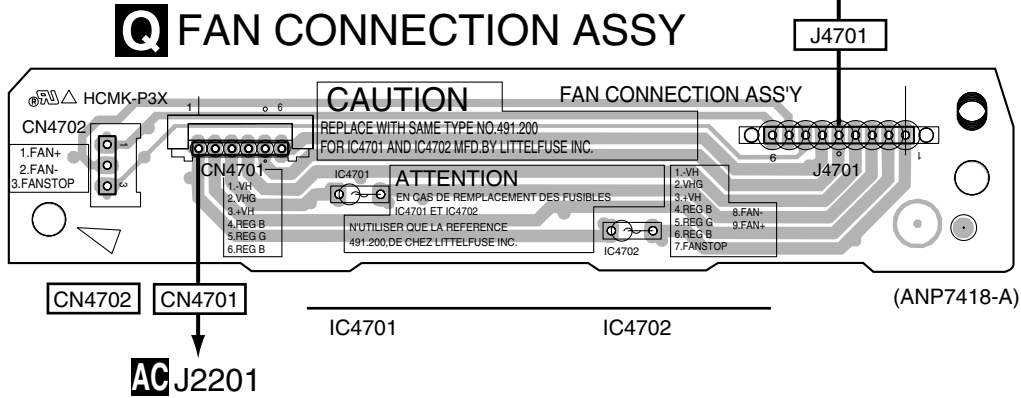
**SIDE A**

**SIDE A**

## P FAN DRIVE ASSY



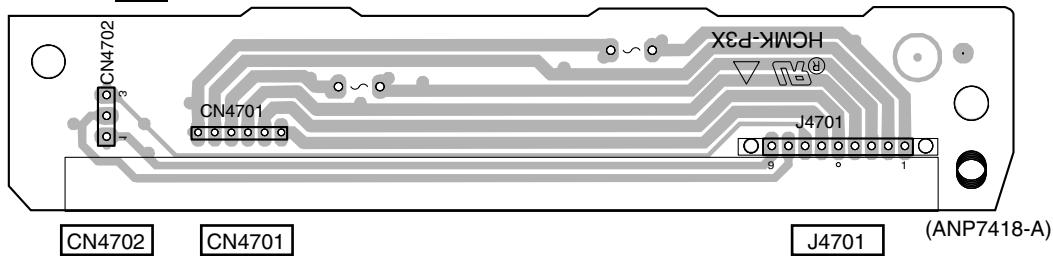
## Q FAN CONNECTION ASSY



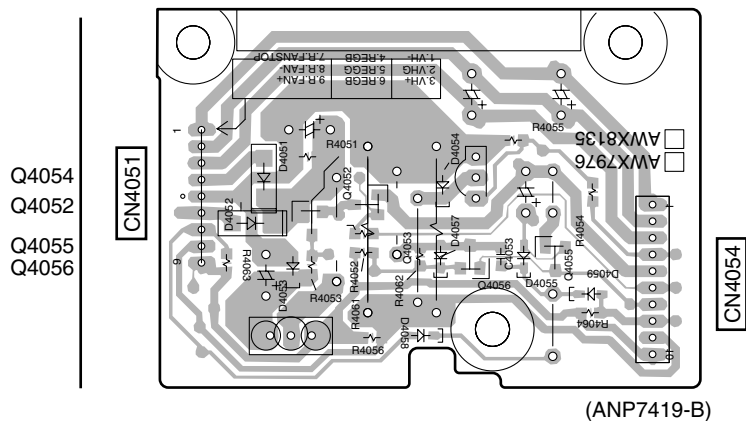
**SIDE B**

**SIDE B**

## Q FAN CONNECTION ASSY



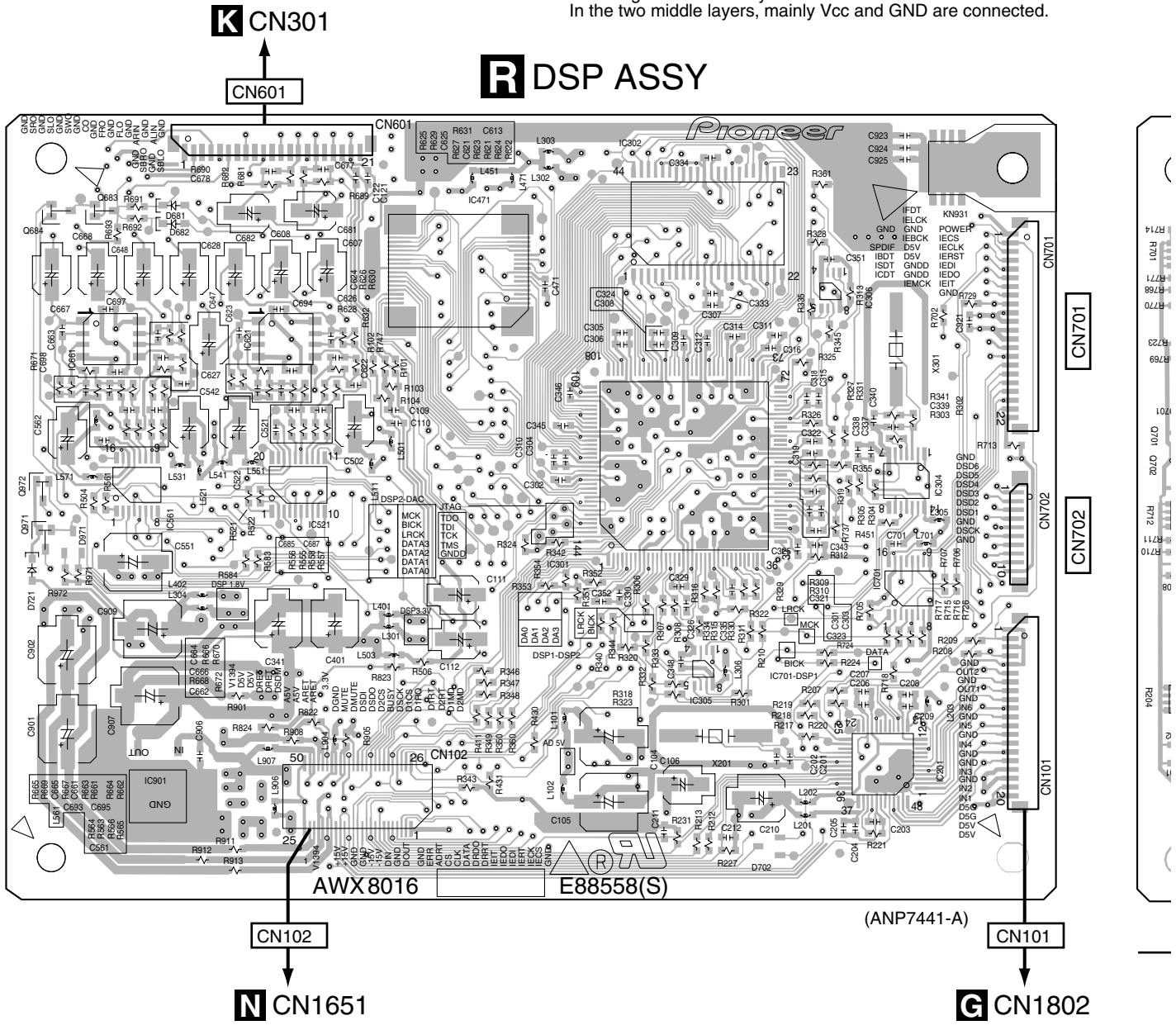
## P FAN DRIVE ASSY



# 4.11 DSP ASSY

**SIDE A**

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



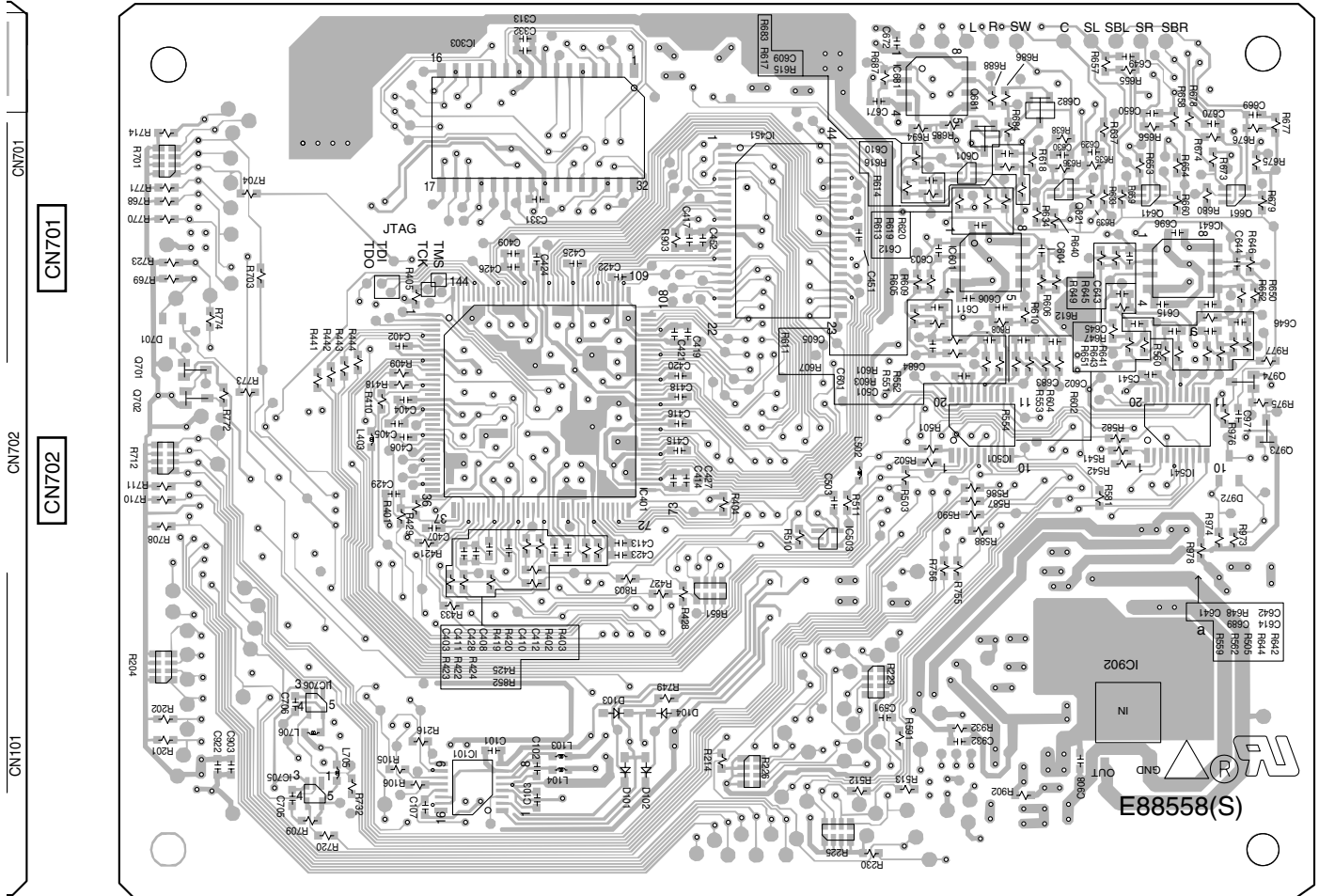
Q972	IC661	IC621	IC471	IC302	IC306	IC304
Q971	IC561	IC521		IC301		IC701
	IC901			IC305		IC201

**R**

1.

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

# R DSP ASSY



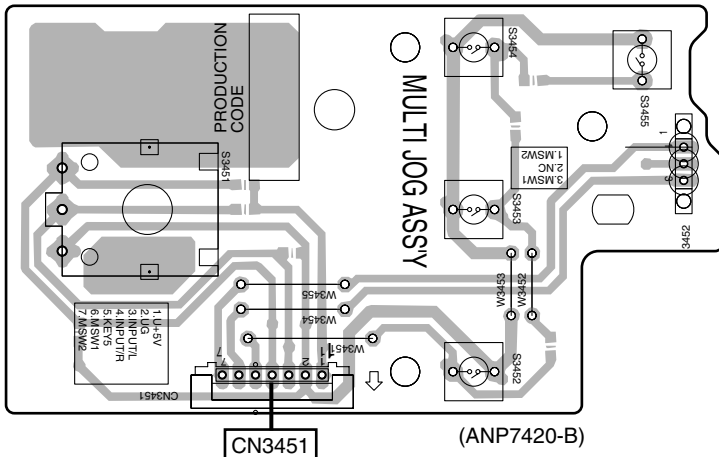
(ANP7441-A)

1802	Q701	IC303	IC451	IC681	Q682		
	Q702	IC706			Q621	Q641	Q661
		IC705			IC601	IC611	Q974
			IC503	IC501		IC902	Q973

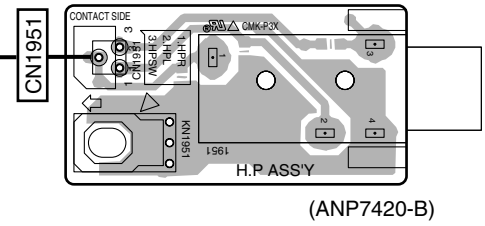
# 4.12 DISPLAY, VOLUME, MULTI JOG and HEADPHONE ASSYS

**SIDE A**

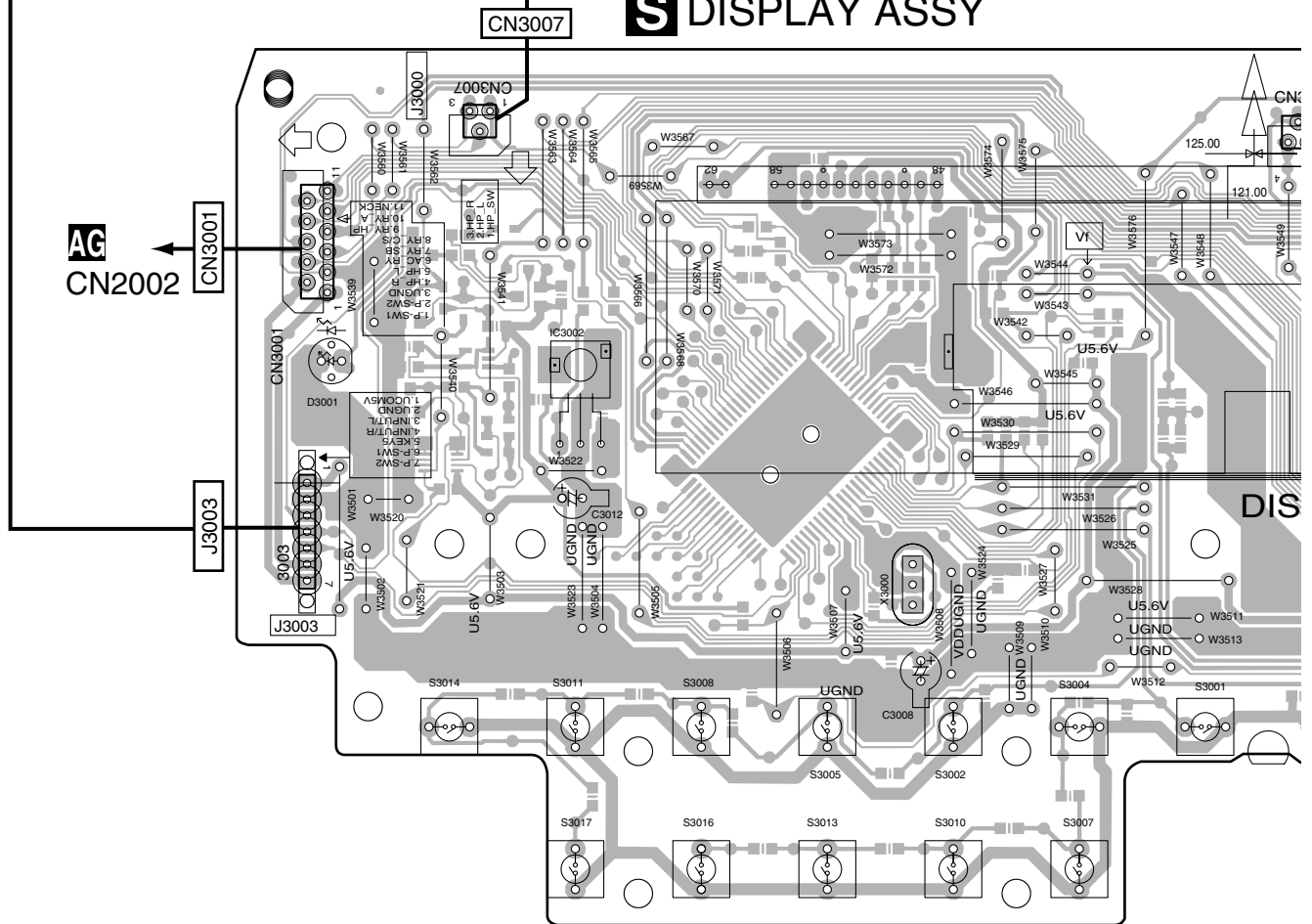
## U MULTI JOG ASSY



## V HEADPHONE ASSY



## S DISPLAY ASSY



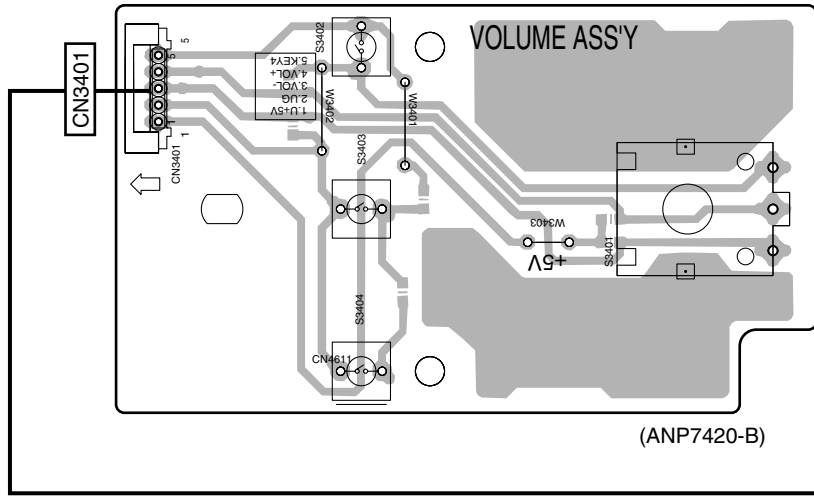
IC3002

**S U V**

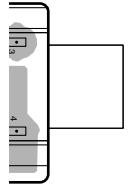


SIDE A

# T VOLUME ASSY



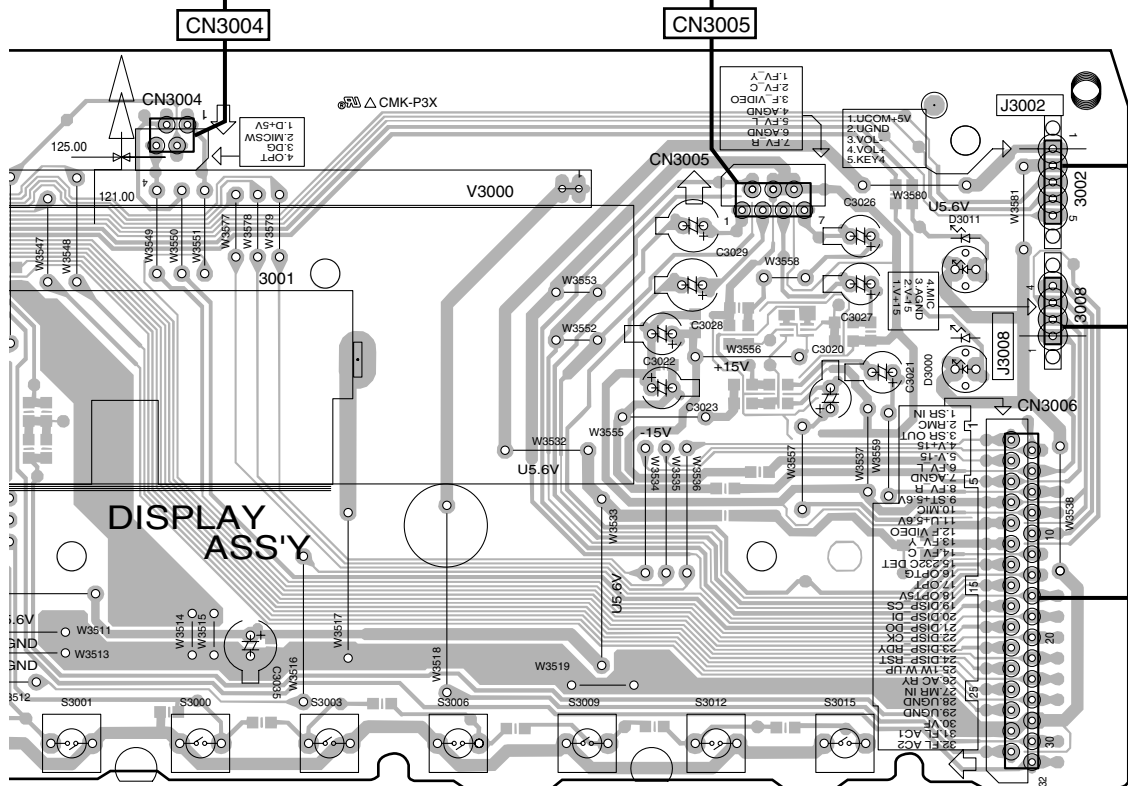
# E ASSY



'420-B)

# L CN1601

# D CN1501



(ANP7421-A)

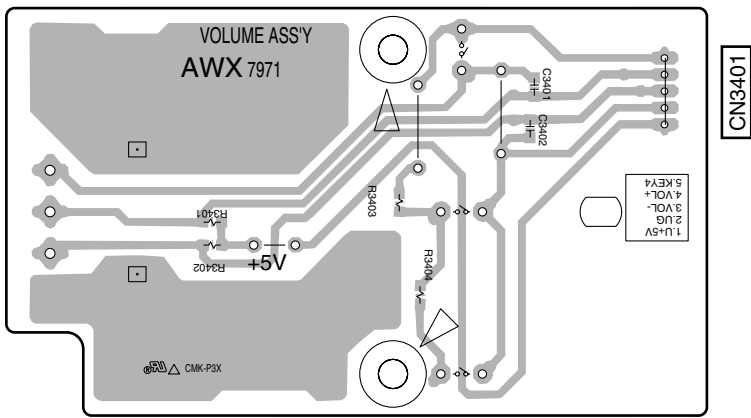
# M CN4752

# K CN501



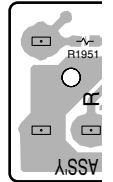
**SIDE B**

**T VOLUME ASSY**

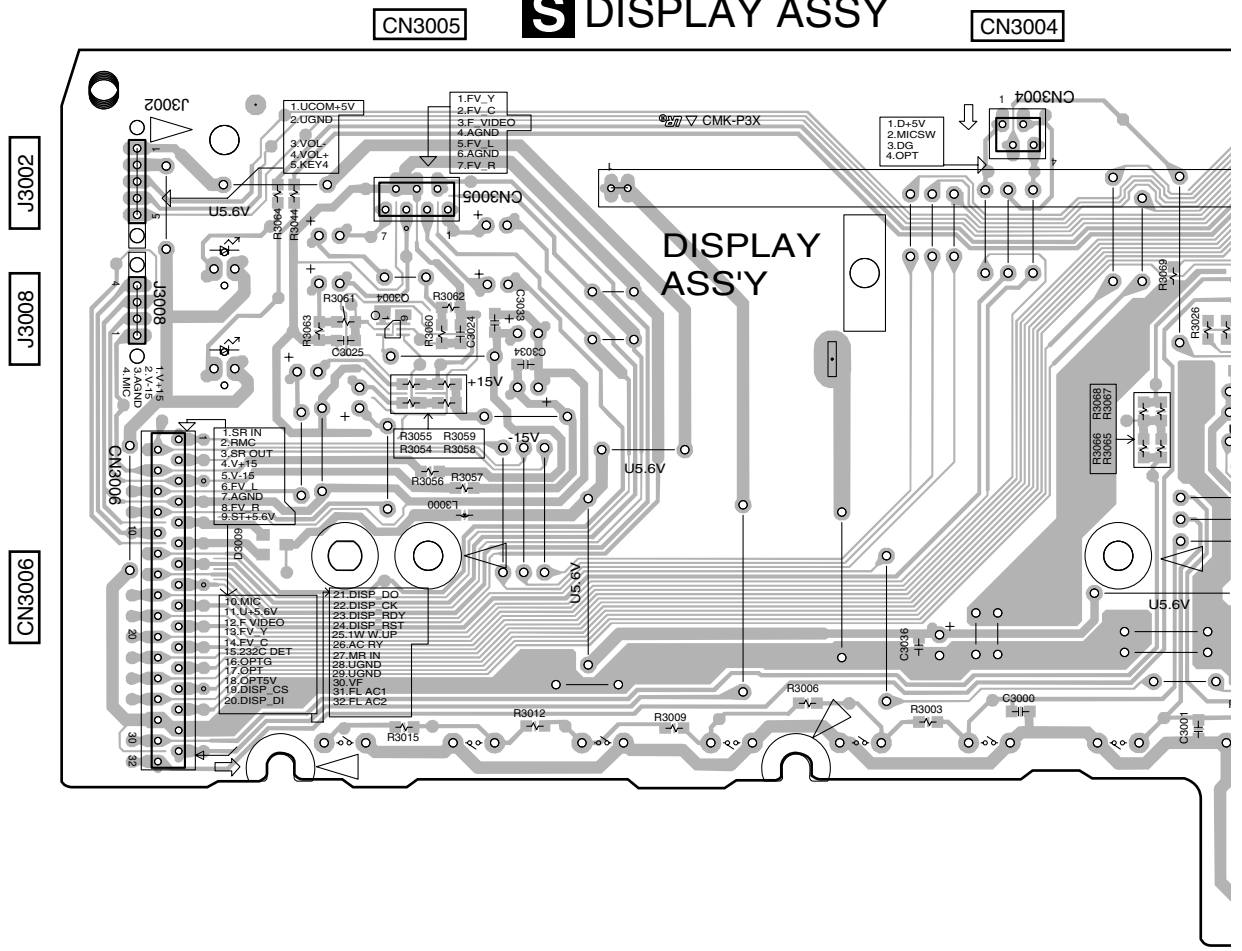


(ANP7420-B)

**V HEAD ASSY**

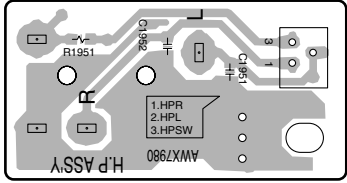


**S DISPLAY ASSY**



Q3004

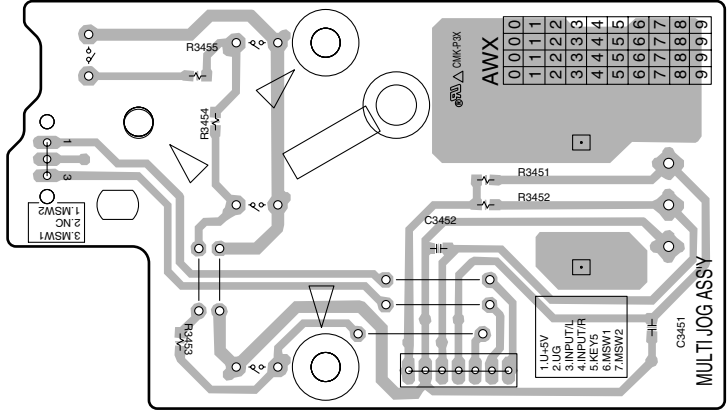
# V HEADPHONE ASSY



CN1951

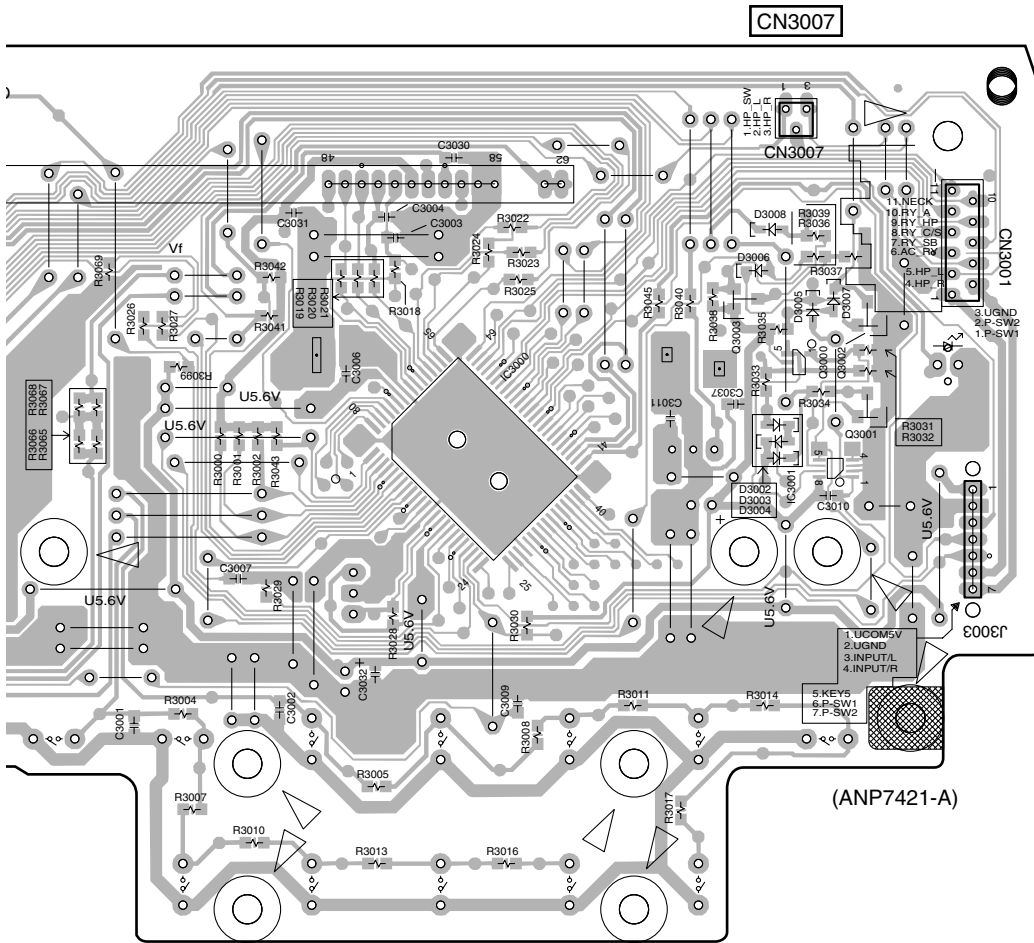
(ANP7420-B)

# U MULTI JOG ASSY



CN3451

(ANP7420-B)



CN3007

CN3001

J3003

(ANP7421-A)

IC3000

Q3003

Q3002

Q3000 Q3001

IC3001

# 4.13 REGULATOR and COMPONENT ASSYS

**SIDE A**

A

B

C

D

E

F

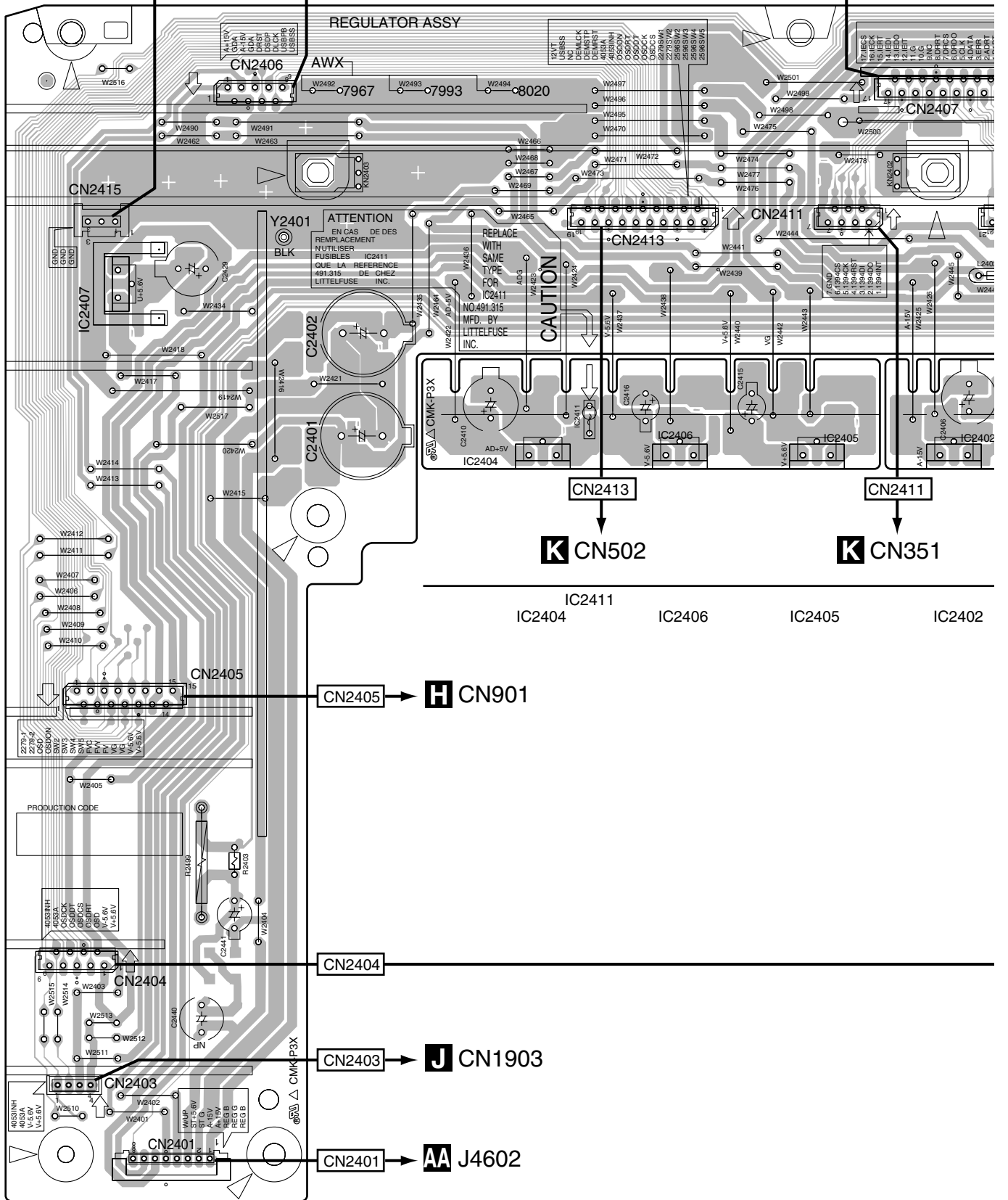
**K** CN1

**G** CN1803

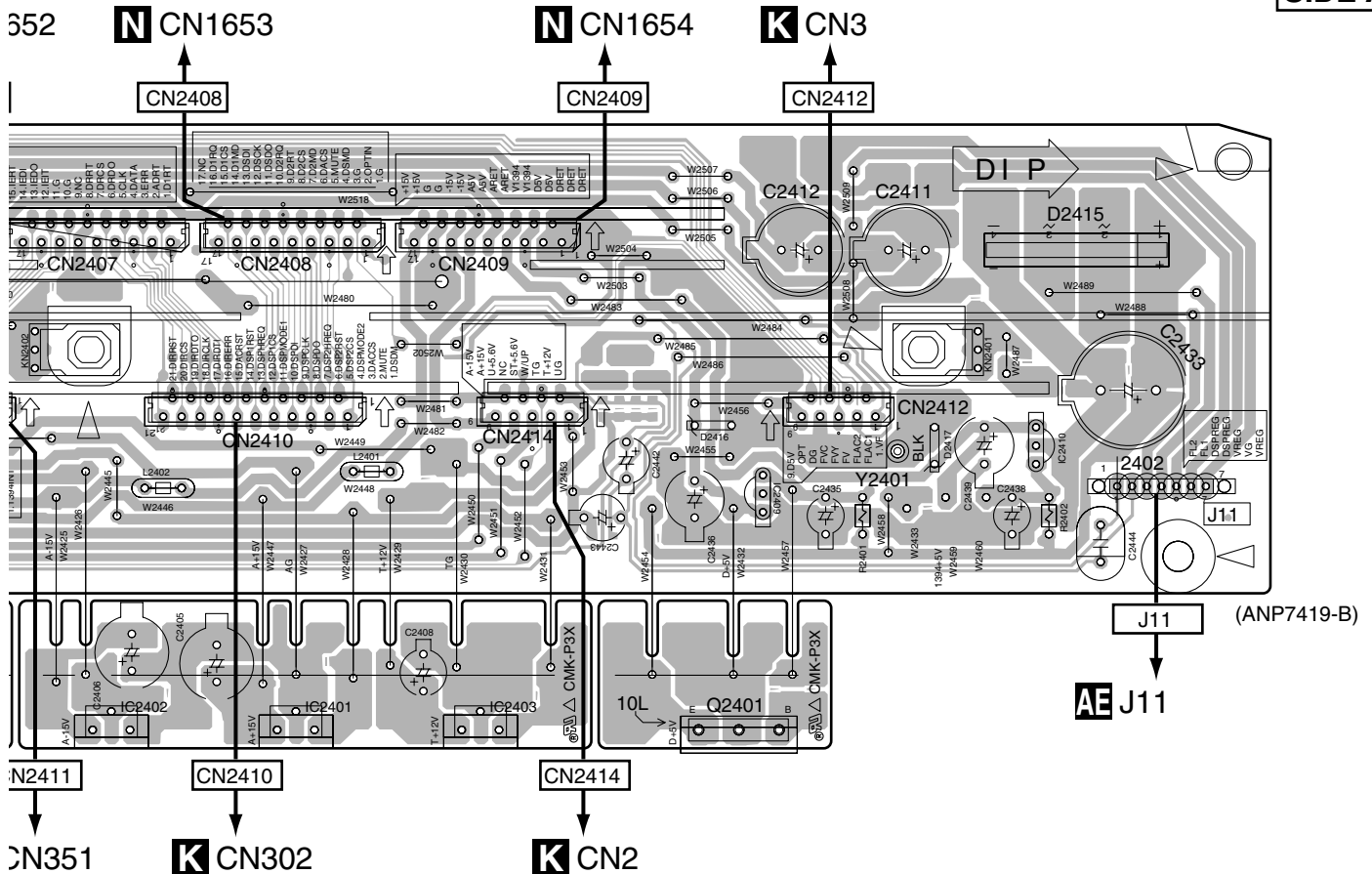
**N** CN1652

**N** CN1653

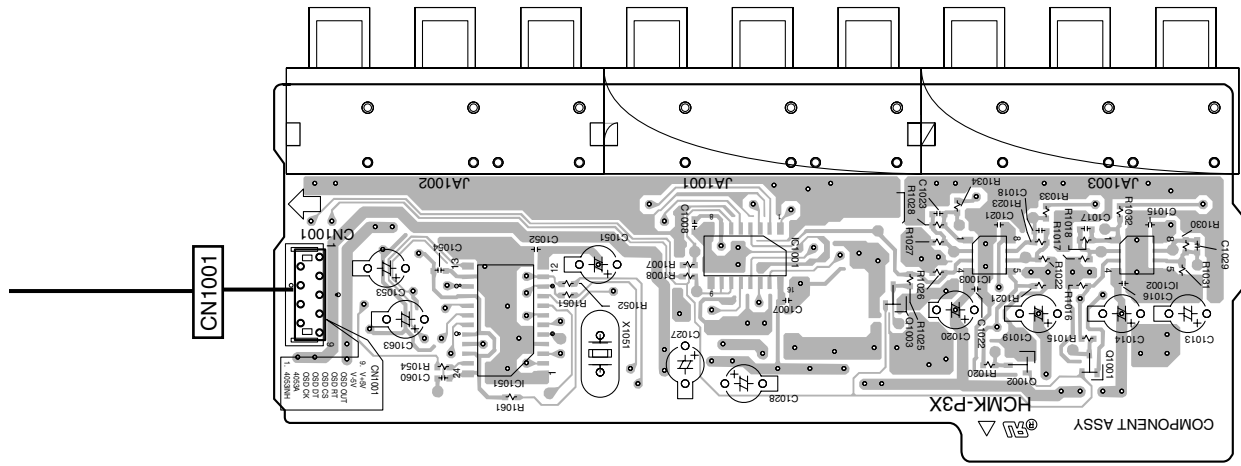
## REGULATOR ASSY



**SIDE A**

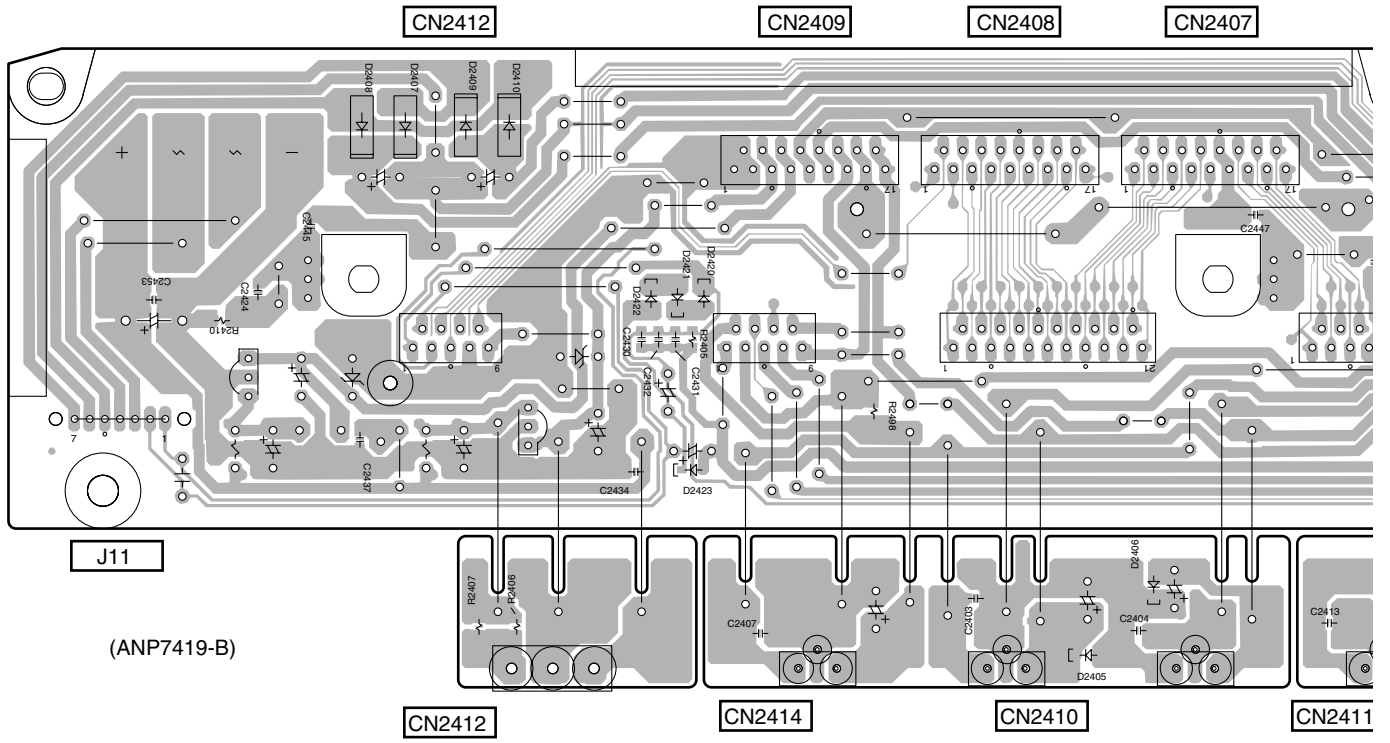


### **I** COMPONENT ASSY

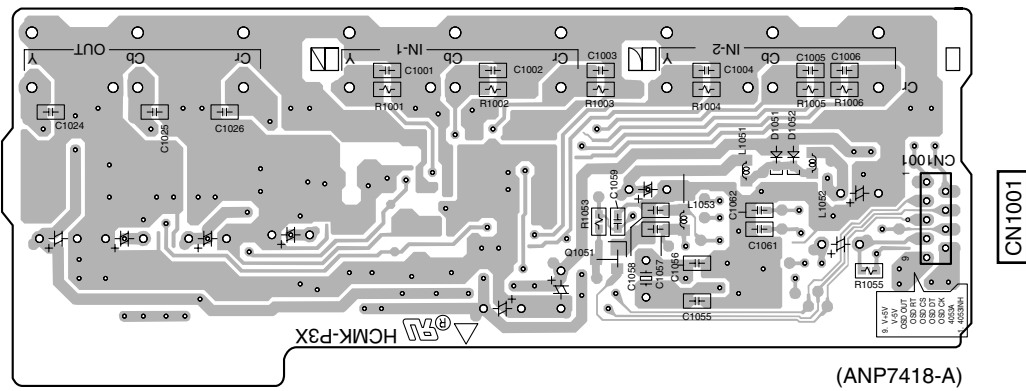


**SIDE B**

# REGULATOR ASSY



# COMPONENT ASSY



Q1051



SIDE B

A

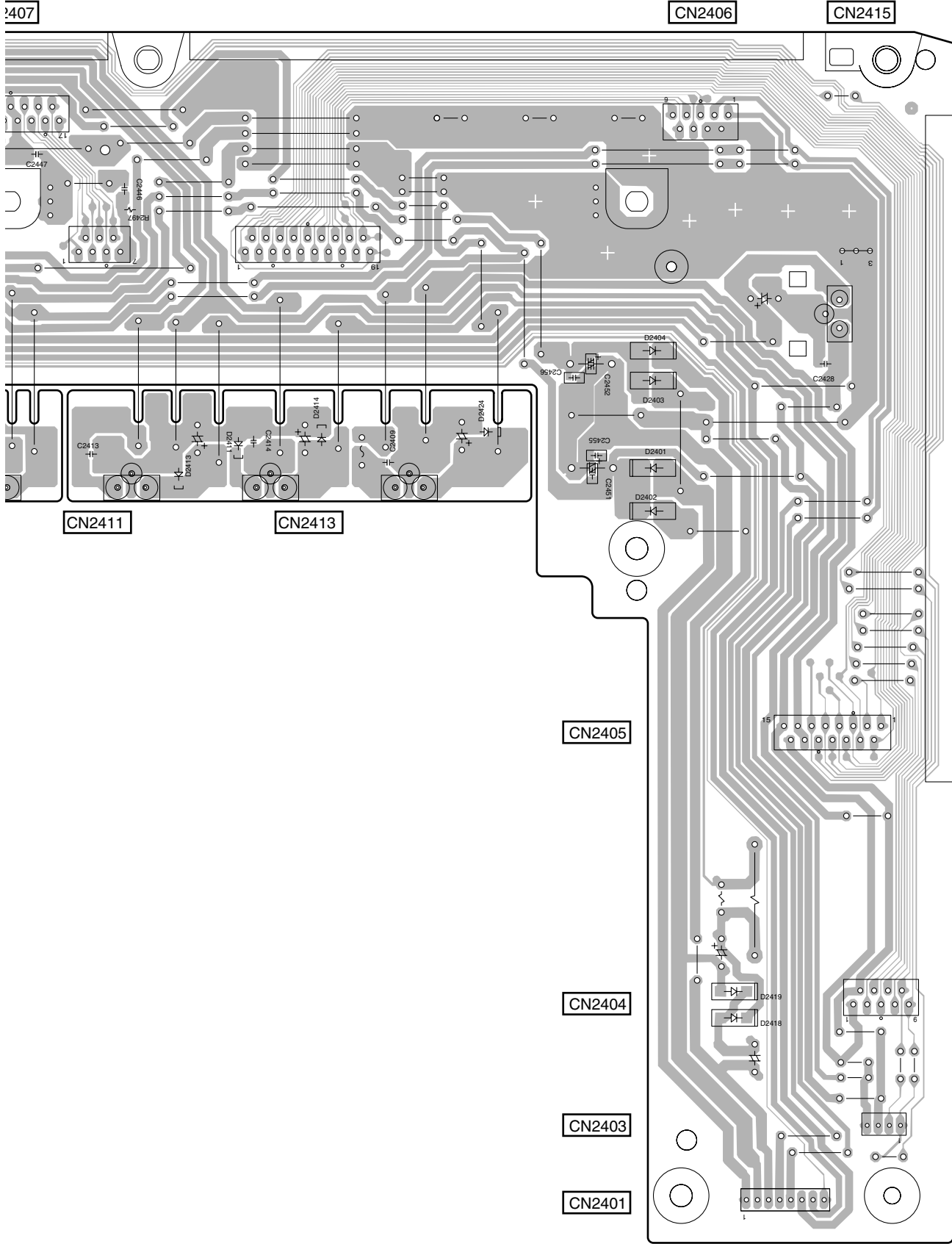
B

C

D

E

F



2407

CN2406

CN2415

CN2411

CN2413

CN2405

CN2404

CN2403

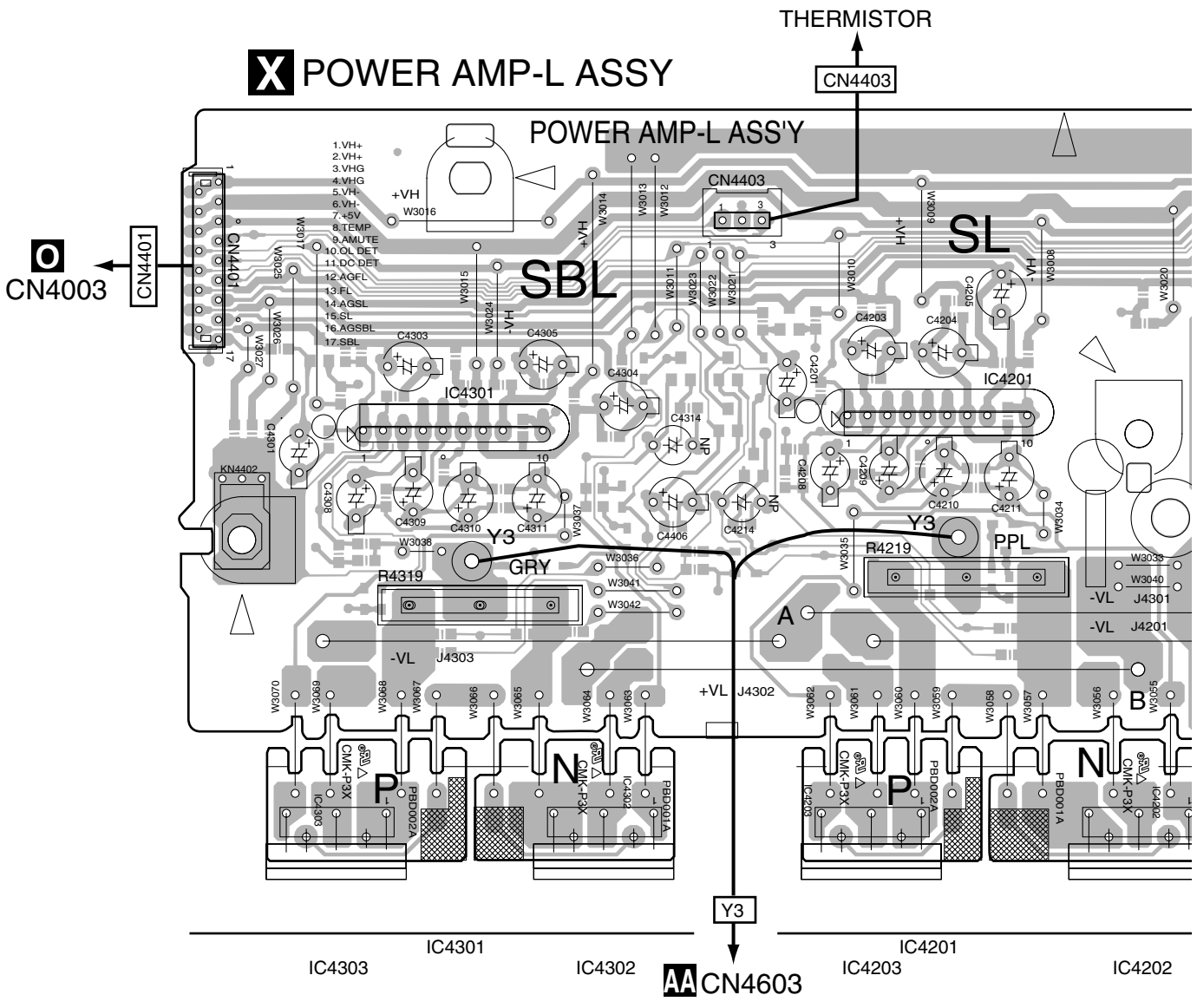
CN2401

VSX-45TX



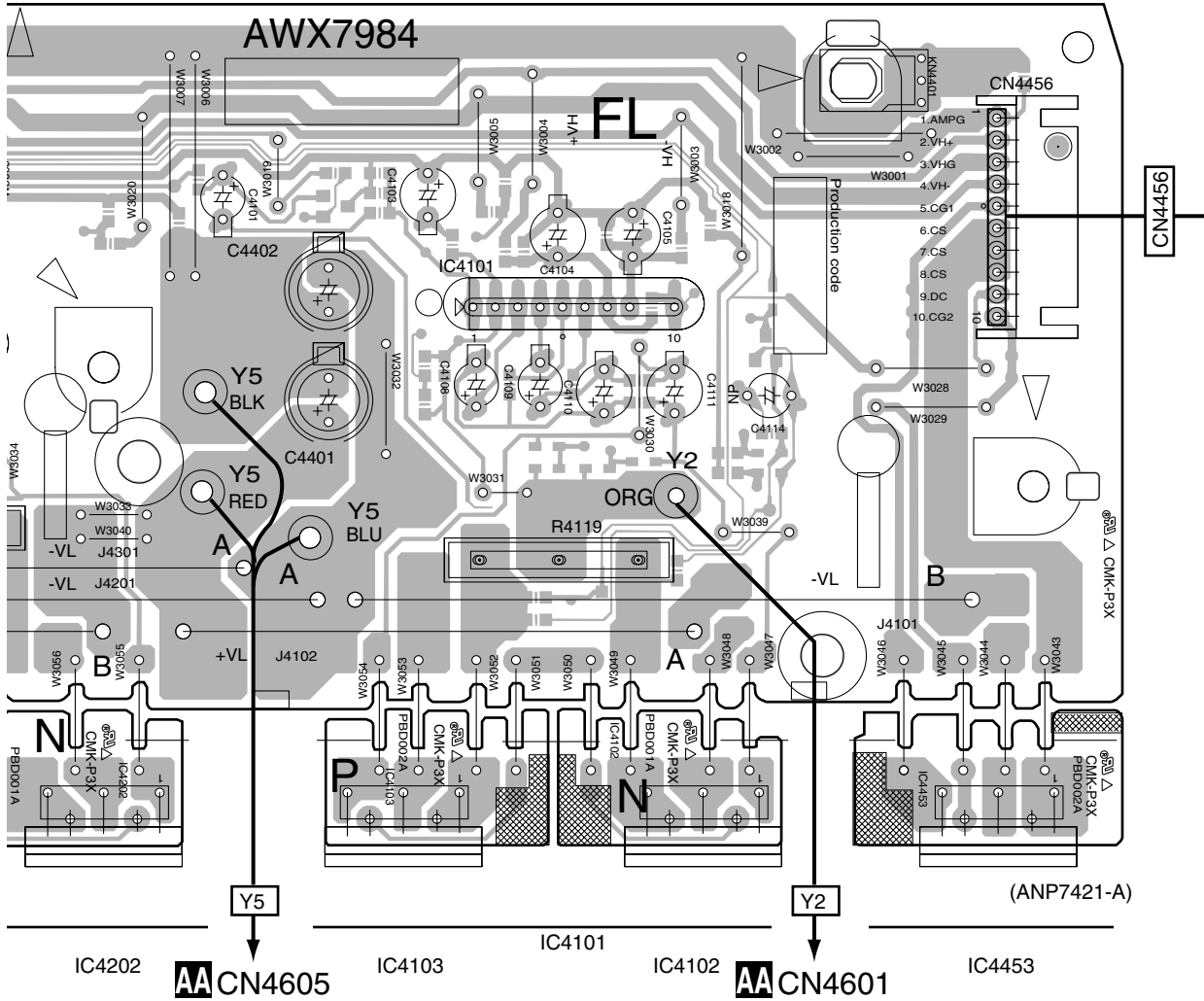
# 4.14 POWER AMP L and POWER AMP C ASSYS

**SIDE A**

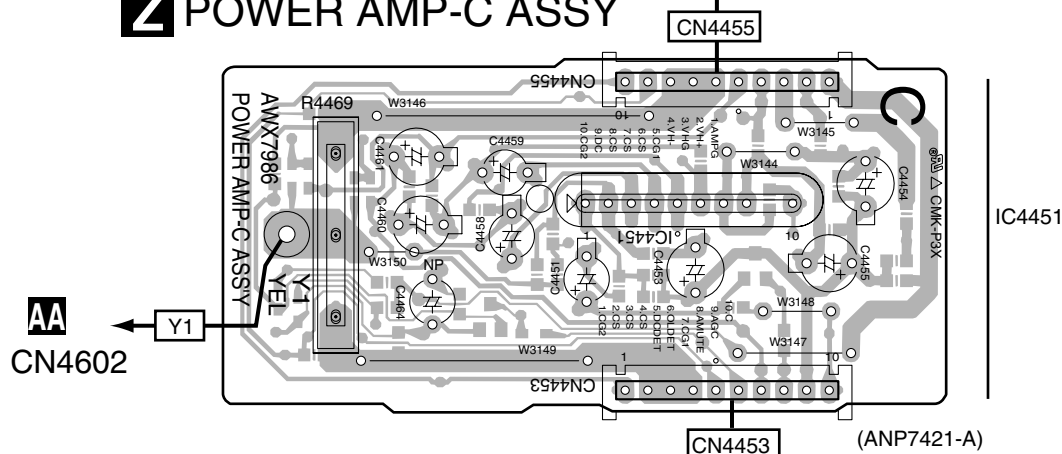




SIDE A

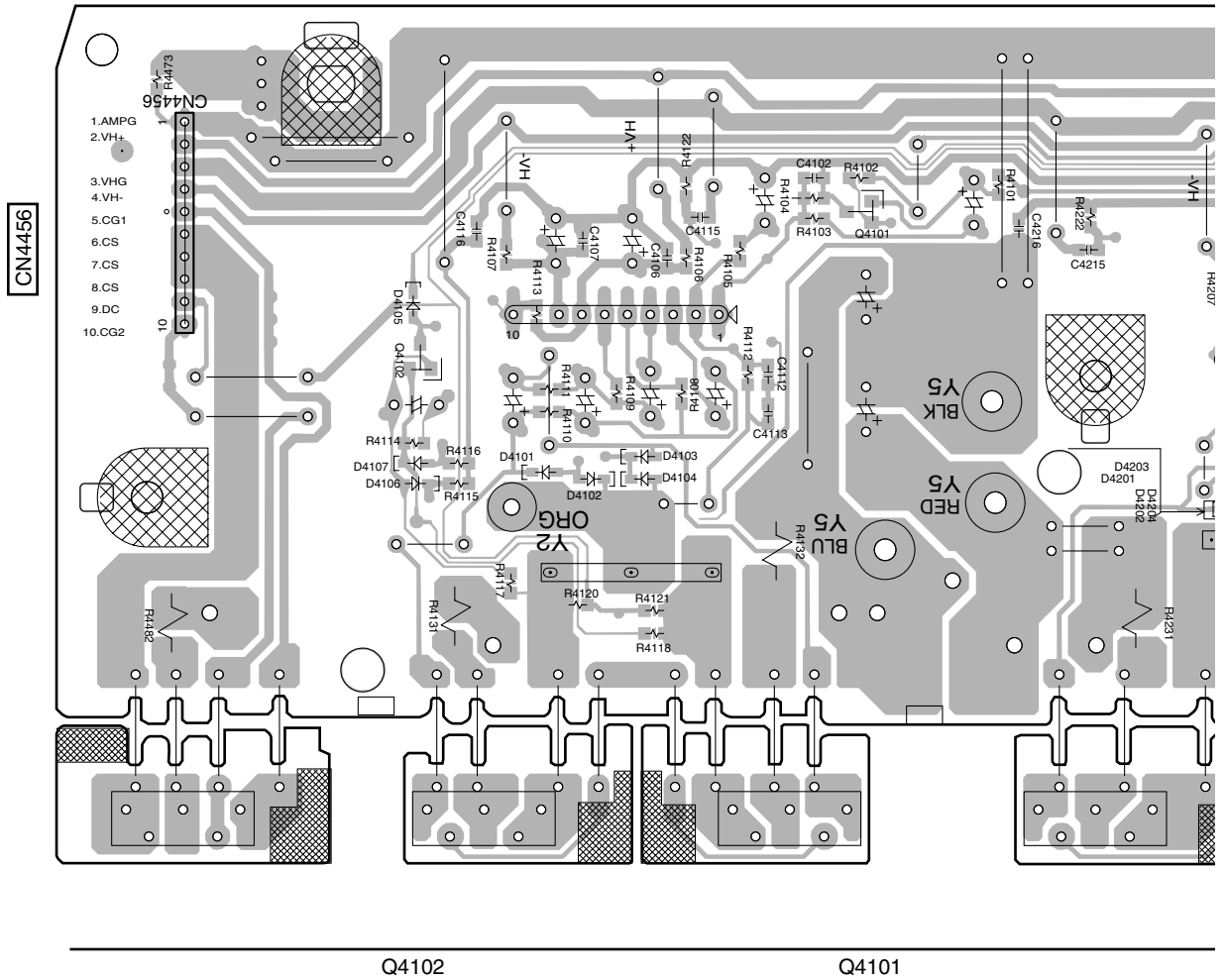


**Z** POWER AMP-C ASSY



**SIDE B**

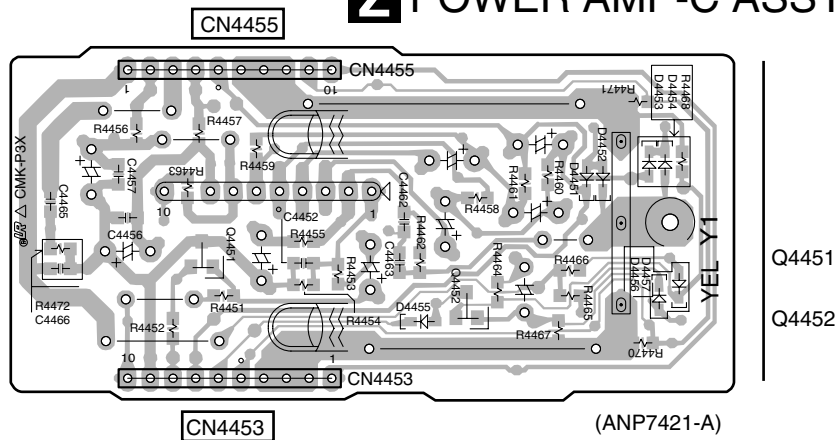
# X POWER AMP-L ASSY



Q4102

Q4101

# Z POWER AMP-C ASSY



Q4451

Q4452

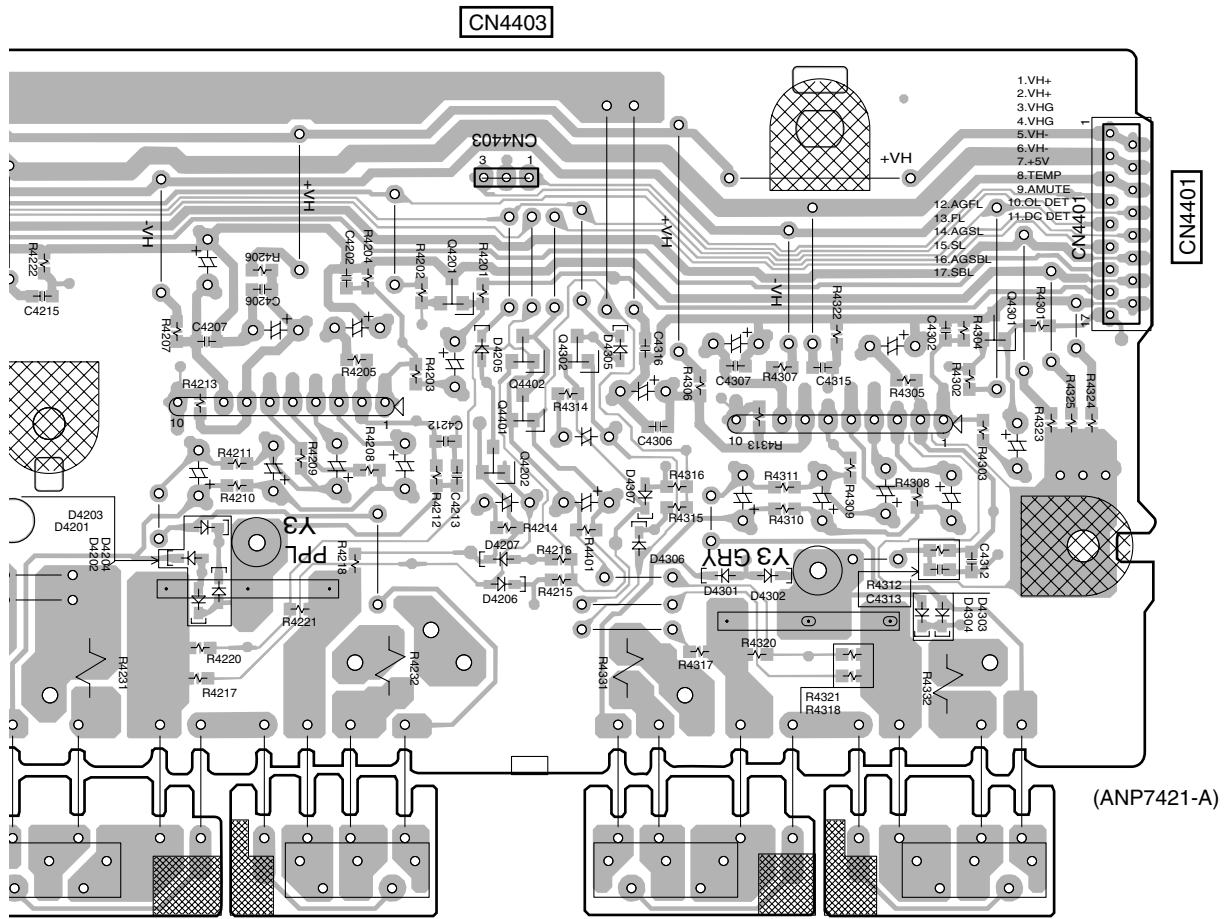
CN4453

(ANP7421-A)

**X Z**

SIDE B

A  
B  
C  
D  
E  
F



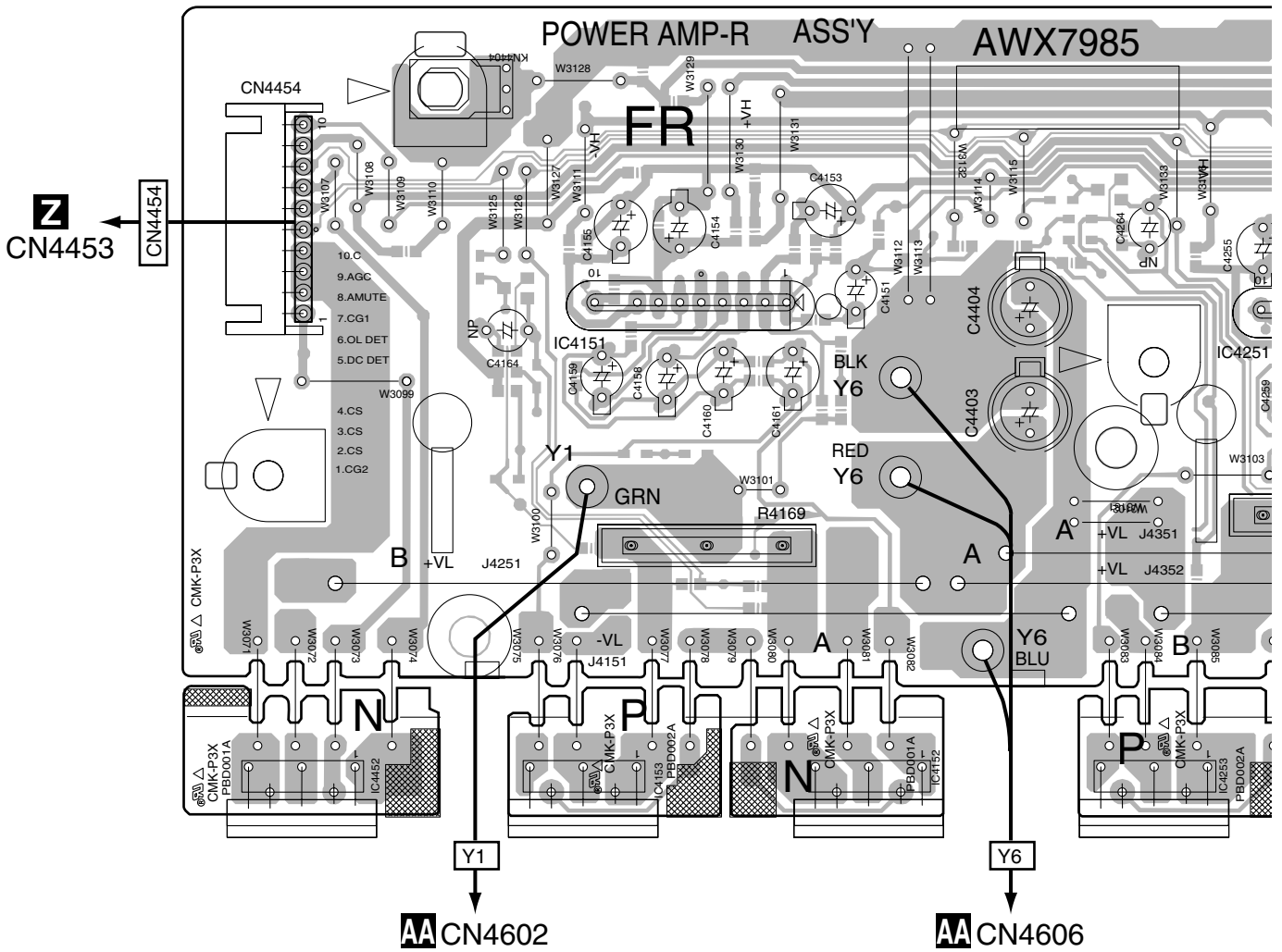
Q4201 Q4402 Q4302 Q4301  
 Q4401  
 Q4202



# 4.15 POWER AMP R ASSY

**SIDE A**

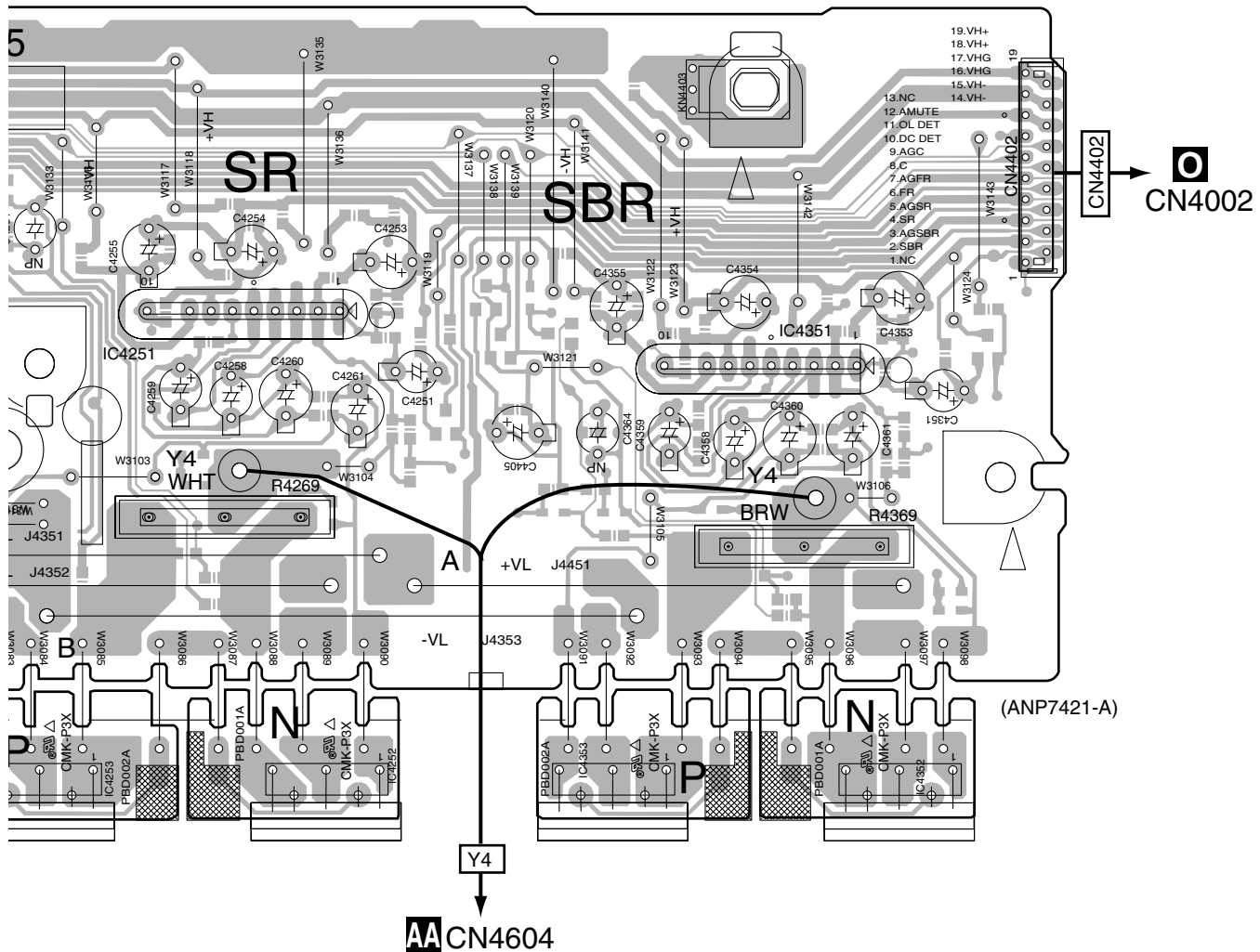
## **Y** POWER AMP-R ASSY



IC4452      IC4151      IC4152      IC4253

**Y**

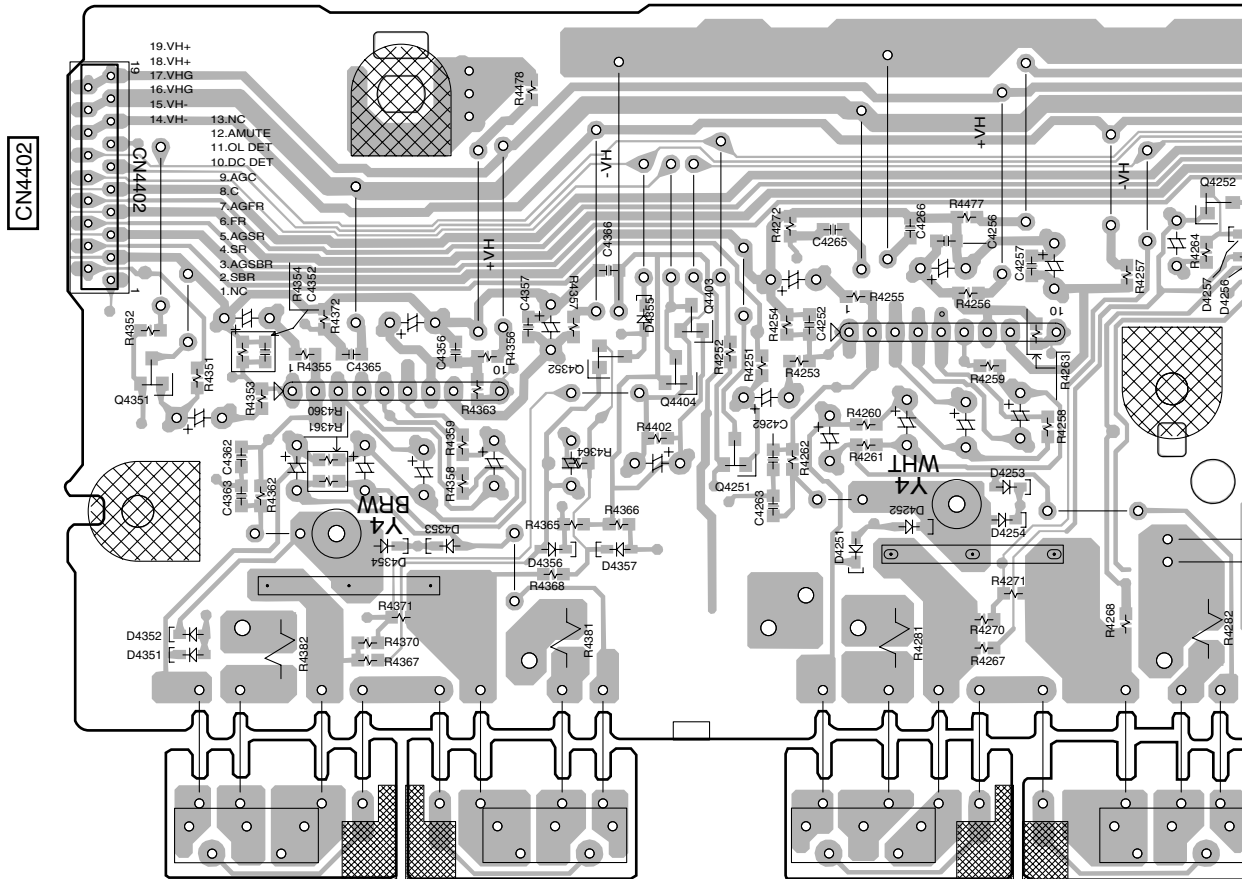
SIDE A



IC4253                      IC4251                      IC4252                      IC4353                      IC4351                      IC4352

SIDE B

# POWER AMP-R ASSY



Q4351

Q4403

Q4252

Q4352 Q4404 Q4251



SIDE B

A

B

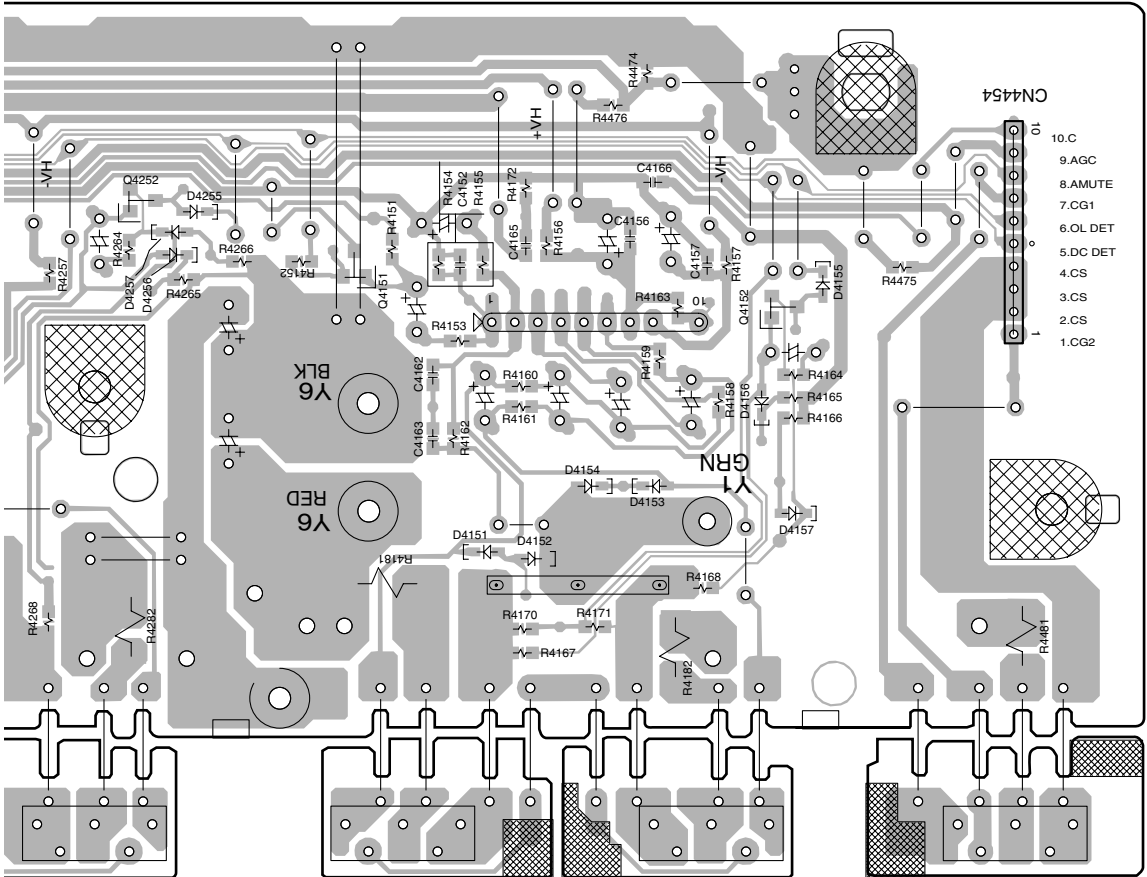
C

D

E

F

Y



CN4454

CN4454

- 10.C
- 9.AGC
- 8.AMUTE
- 7.CG1
- 6.OL DET
- 5.DC DET
- 4.CS
- 3.CS
- 2.CS
- 1.CG2

(ANP7421-A)

Q4252

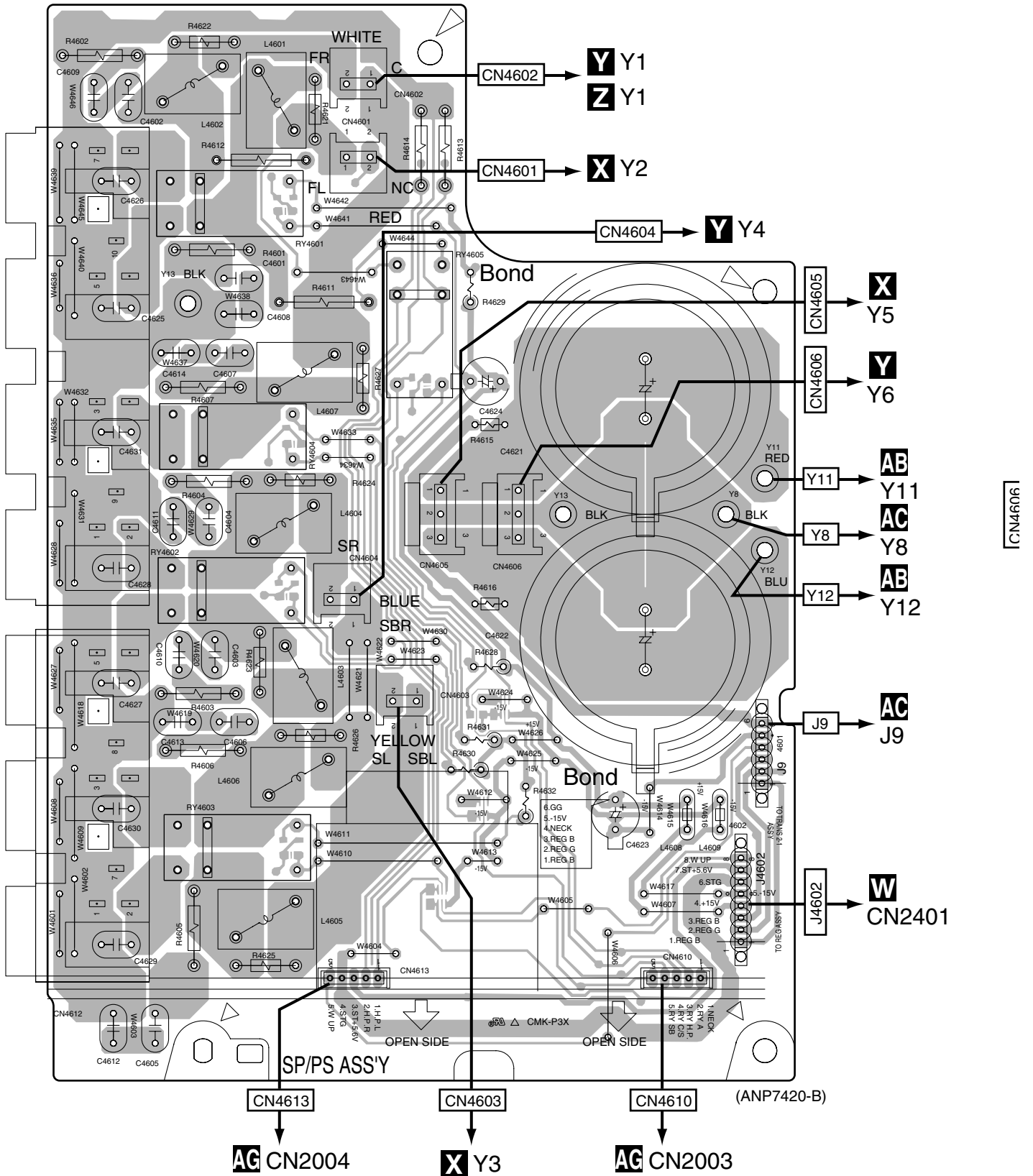
Q4151

Q4152

# 4.16 SP/PS ASSY

**SIDE A**

## AA SP/PS ASSY



**AA**

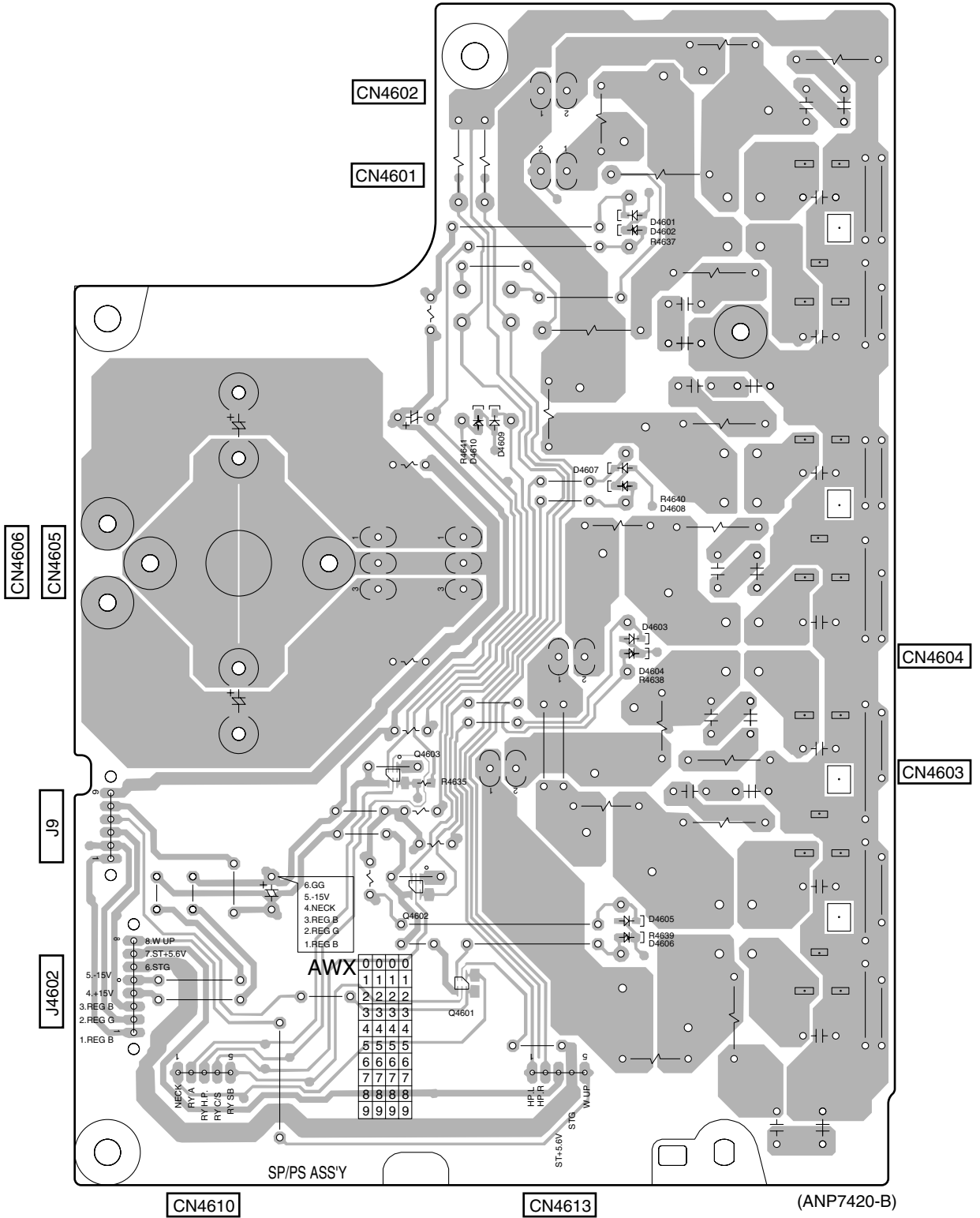


SIDE B

# AA SP/PS ASSY

1  
2  
3  
4

2401



A  
B  
C  
D  
E  
F

SP/PS ASSY

(ANP7420-B)

Q4603  
Q4602 Q4601

### 4.17 DIODE, TRANS 2-1 and VH TR ASSYS

**SIDE A**

A

B

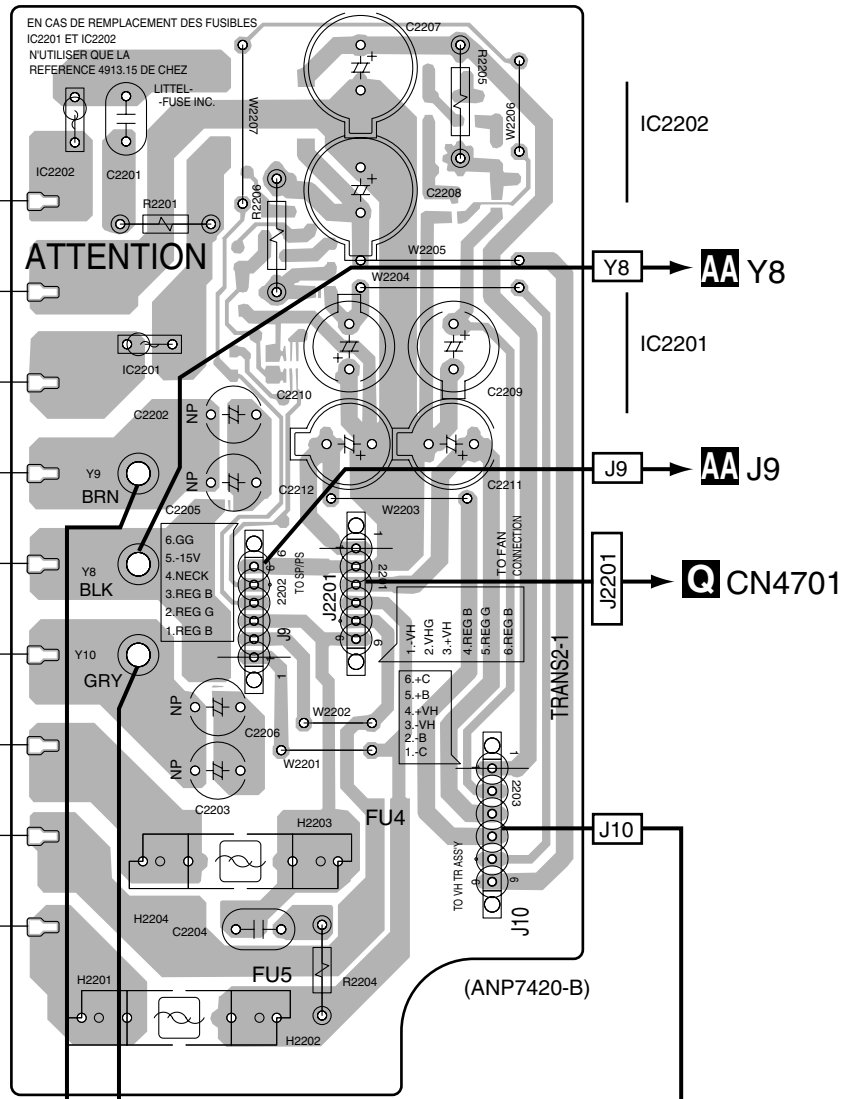
C

D

E

F

## AC TRANS 2-1 ASSY



**AF** TRANS 1 ASSY

**AE** TRANS 2-2 ASSY

IC2202

IC2201

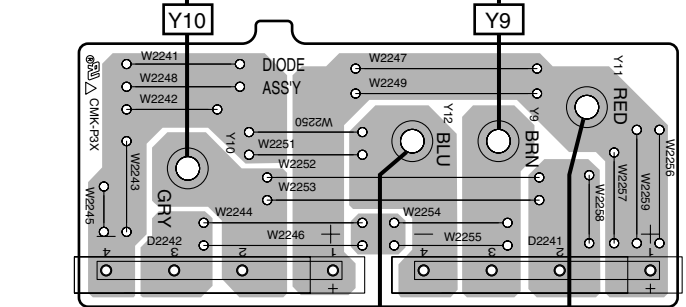
**AA** Y8

**AA** J9

**Q** CN4701

TRANS 2-1

(ANP7420-B)

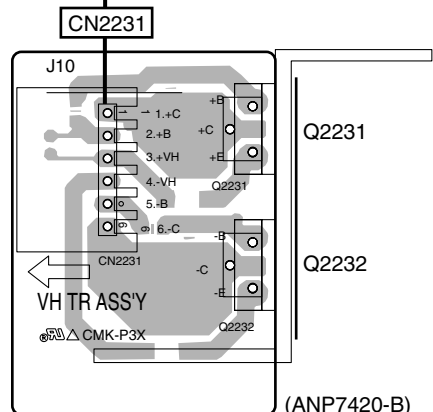


**AB** DIODE ASSY

**AA** Y12

**AA** Y11

(ANP7420-B)



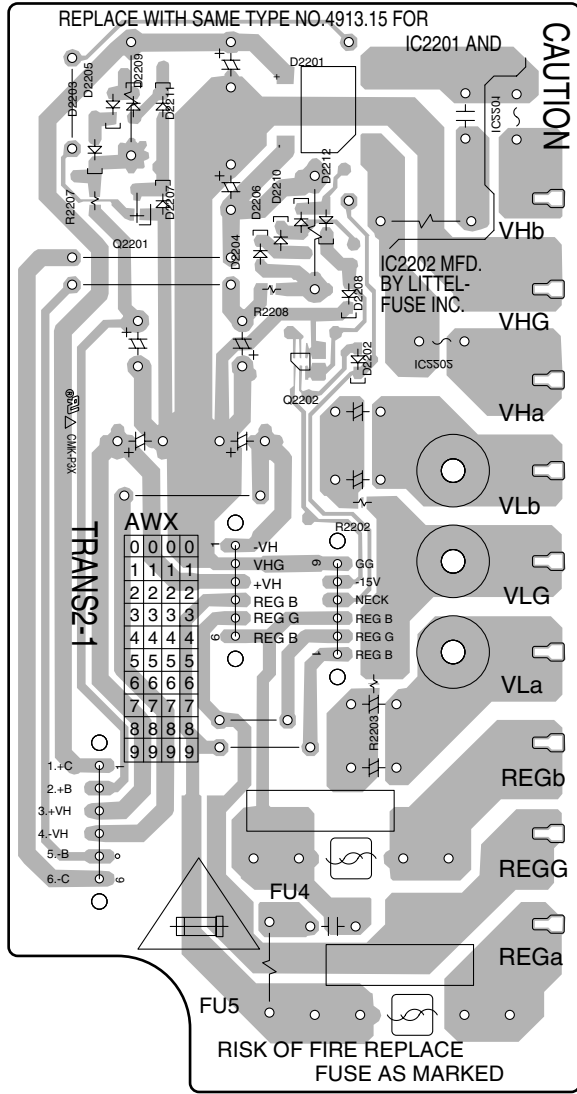
**AD** VH TR ASSY

(ANP7420-B)

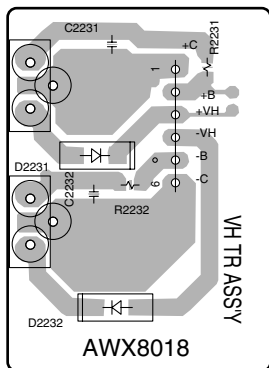
**AB AC AD**

**SIDE B**

# AC TRANS 2-1 ASSY

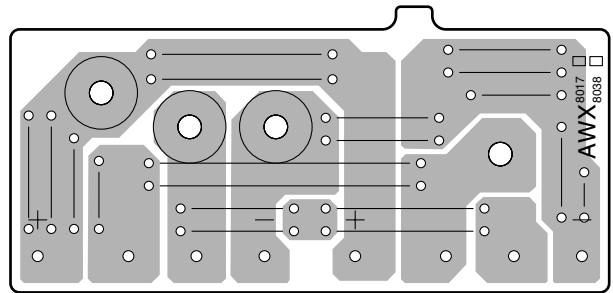


(ANP7420-B)



(ANP7420-B)

## AD VH TR ASSY



(ANP7420-B)

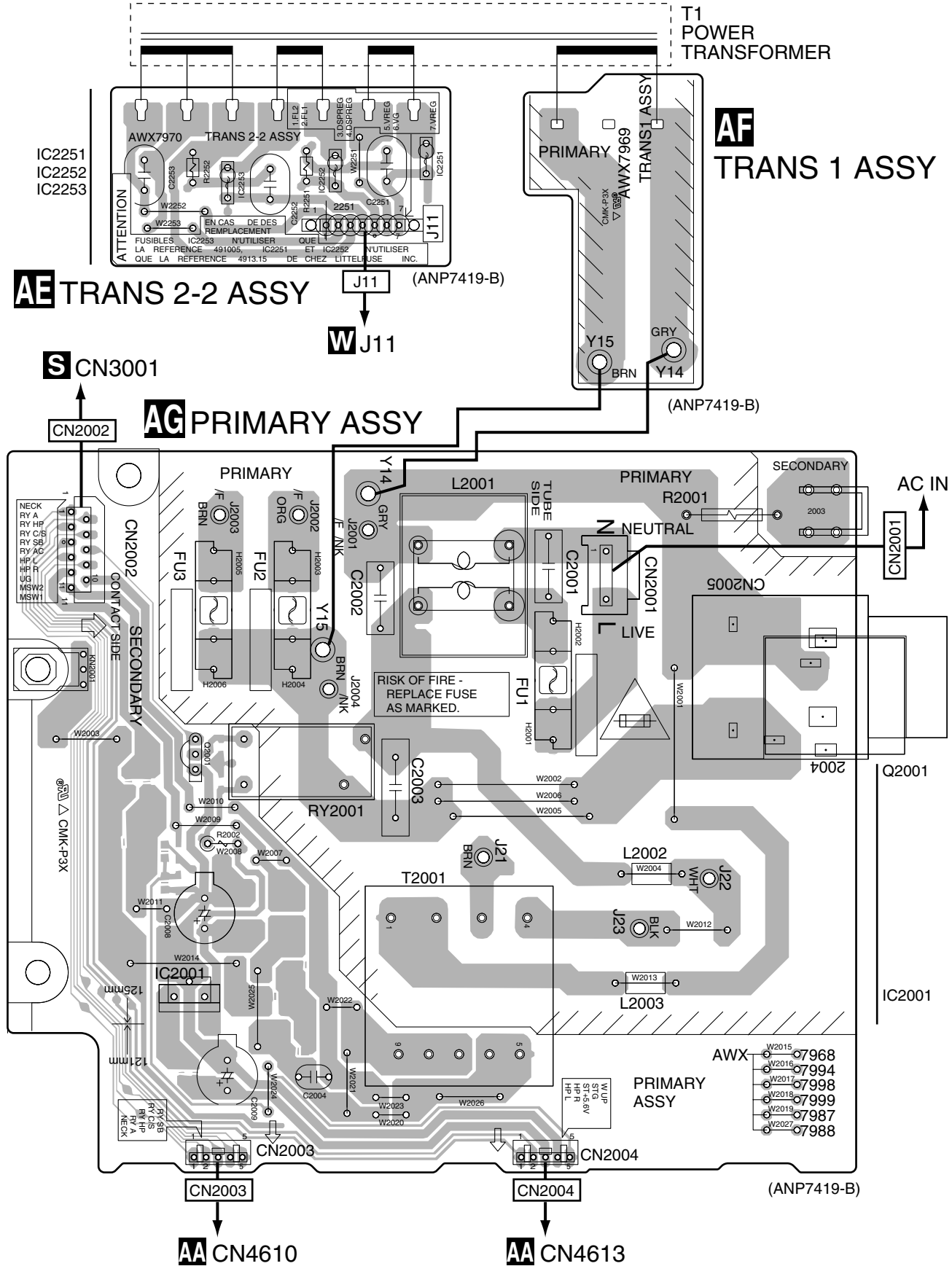
## AB DIODE ASSY

01

20-B)

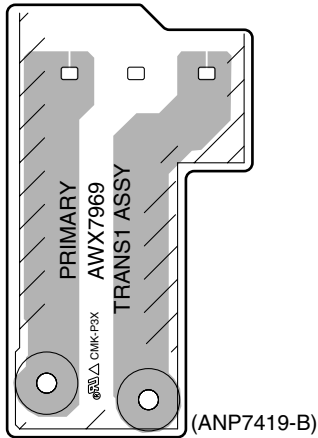
# 4.18 TRANS 2-1, TRANS 1 and PRIMARY ASSYS

**SIDE A**

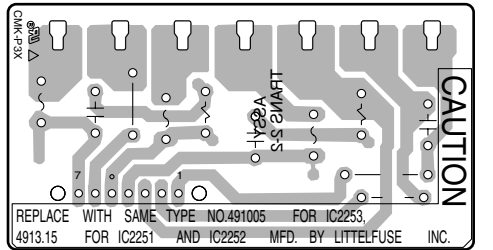


**SIDE B**

**AF**  
TRANS 1 ASSY

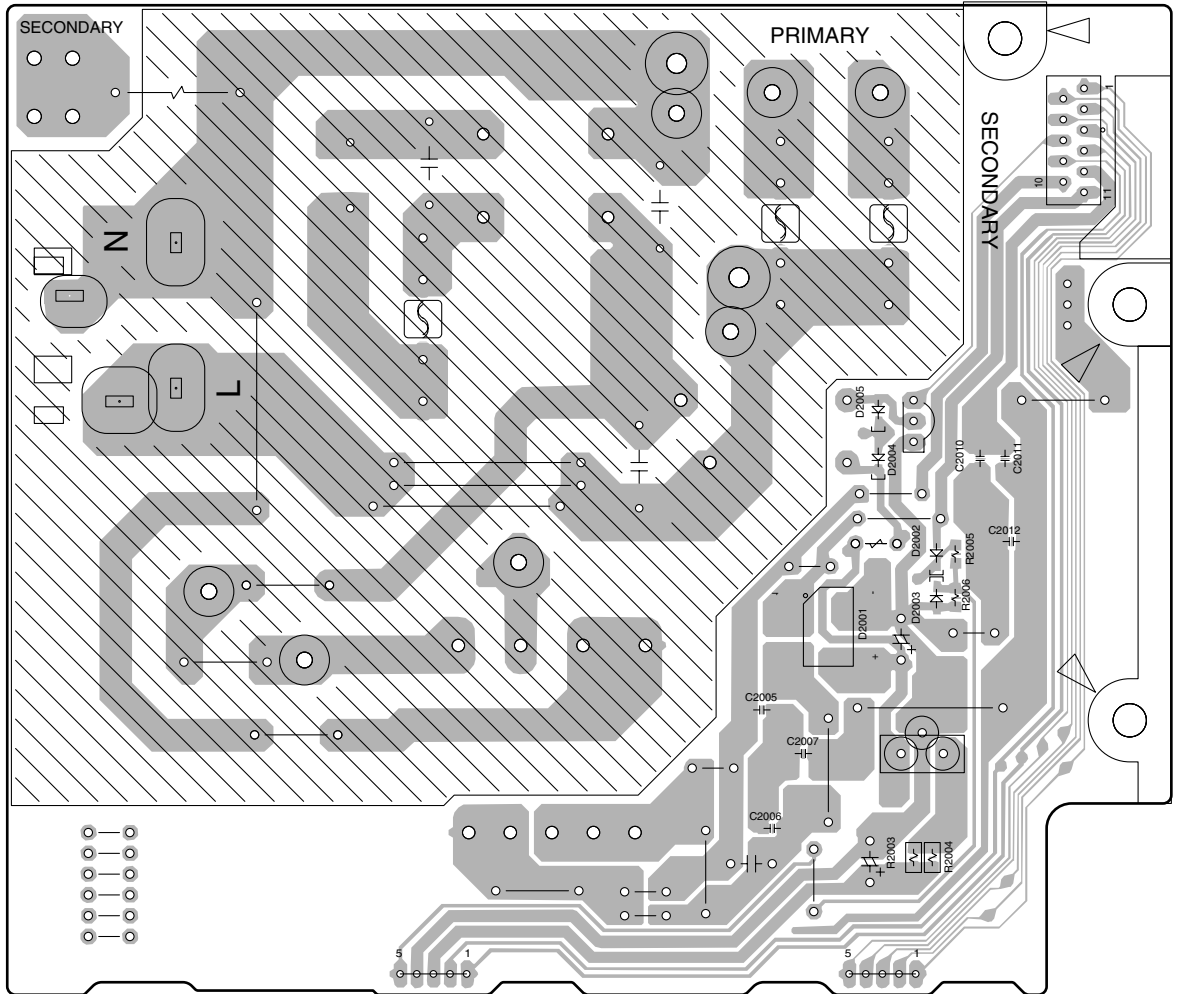


**AE** TRANS 2-2 ASSY



(ANP7419-B)

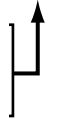
**AG** PRIMARY ASSY



(ANP7419-B)

SY

AC IN



001

2001

CN2002

CN2001

CN2004

CN2003

**AE AF AG**

## 5. PCB PARTS LIST

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

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

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

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

560  $\Omega$   $\rightarrow$  56 x 10<sup>1</sup>  $\rightarrow$  561 ..... RD1/4PU  $\overline{561} J$

47k  $\Omega$   $\rightarrow$  47 x 10<sup>3</sup>  $\rightarrow$  473 ..... RD1/4PU  $\overline{473} J$

0.5  $\Omega$   $\rightarrow$  R50 ..... RN2H  $\overline{R50} K$

1  $\Omega$   $\rightarrow$  1R0 ..... RS1P  $\overline{1R0} K$

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

5.62k  $\Omega$   $\rightarrow$  562 x 10<sup>1</sup>  $\rightarrow$  5621 ..... RN1/4PC  $\overline{5621} F$

### • LIST OF WHOLE PCB ASSEMBLIES

Mark	Symbol and Description	VSX-45TX/	VSX-43TX/
		KUXJI/CA	KUXJI/CA
	1..FM/AM TUNER MODULE	AXQ7231	AXQ7231
NSP	1..REGULATOR ASSY	AWK7731	AWK7731
	2..7.1 CH I/O ASSY	AWX7973	AWX7973
	2..POWER AMP IN ASSY	AWX7982	AWX7982
	2..FAN DRIVE ASSY	AWX7976	AWX7976
	2..REGULATOR ASSY	AWX7967	AWX7967
	2..TRANS 2-2 ASSY	AWX7970	AWX7970
	2..TRANS 1 ASSY	AWX7969	AWX7969
	2..PRIMARY ASSY	AWX7968	AWX7968
NSP	1..COMPLEX ASSY	AWK7732	AWK7742
	2..V-AUDIO IN ASSY	AWX7964	AWX7991
	2..FRONT IN ASSY	AWX7977	AWX7977
	2..OPTICAL IN ASSY	AWX7978	AWX7978
	2..INPUT CONNECT ASSY	AWX7974	AWX8041
	2..RS232C ASSY	AWX7966	Not used
	2..VOLUME ASSY	AWX7971	AWX7971
	2..MULTI JOG ASSY	AWX7972	AWX7972
	2..HEADPHONE ASSY	AWX7980	AWX7980
	2..SP/PS ASSY	AWX7975	AWX8037
	2..DIODE ASSY	AWX8017	AWX8038
	2..TRANS 2-1 ASSY	AWX7979	AWX7979
	2..VH TR ASSY	AWX8018	AWX8018
NSP	1..MAIN ASSY	AWK7730	AWK7740
	2..COAXIAL IN ASSY	AWX7965	AWX8013
	2..VIDEO ASSY	AWX7962	AWX8002
	2..COMPONENT ASSY	AWX7963	AWX8021
	2..MAIN CONTROL ASSY	AWX7961	AWX8000
	2..MIC & F.OPT IN ASSY	AWX7981	Not used
	2..MIC AMP ASSY	AWX8004	Not used
	2..DSP CONNECTION ASSY	AWX8024	AWX8024
	2..FAN CONNECTION ASSY	AWX8005	AWX8005
NSP	1..POWER AMP ASSY	AWK7733	AWK7743
	2..DISPLAY ASSY	AWX7983	AWX8011
	2..POWER AMP-L ASSY	AWX7984	AWX7984
	2..POWER AMP-R ASSY	AWX7985	AWX7985
	2..POWER AMP-C ASSY	AWX7986	AWX7986
	1..DSP ASSY	AWX8016	AWX8016

## • CONTRAST OF PCB ASSEMBLIES

### **C** V-AUDIO IN ASSY

AWX7964 and AWX7991 are constructed the same except for the following :

<b>Mark</b>	<b>Symbol and Description</b>	<b>AWX7964</b>	<b>AWX7991</b>
	Q1201, Q1202	2SC2878	Not used
	R1221-R1224	RS1/16S102J	Not used
	R1225, R1226	RS1/16S473J	Not used
	CN1202 4P PIN JACK	Not used	AKB7015
	CN1205 6P PIN JACK	AKB7009	Not used

### **F** INPUT CONNECT ASSY

AWX7974 and AWX8041 are constructed the same except for the following :

<b>Mark</b>	<b>Symbol and Description</b>	<b>AWX7974</b>	<b>AWX8041</b>
	IC1401	M62429FP	Not used
	D1401	UDZS5.1B	Not used
	C1401-C1405	CEAT100M50	Not used
	C1406, C1407	CCSQCH101J50	Not used
	R1401, R1402	RS1/16S103J	Not used
	R1403, R1404	RS1/16S102J	Not used
	R1405	RS3LMF391J	Not used
	CN1402 7P SOCKET	AKP7067	Not used

### **G** COAXIAL IN ASSY

AWX7965 and AWX8013 are constructed the same except for the following :

<b>Mark</b>	<b>Symbol and Description</b>	<b>AWX7965</b>	<b>AWX8013</b>
	IC1681	PCM2902EG	Not used
	IC1682	TC7SET08F	Not used
	C1680, C1697	CKSRBY103K50	Not used
	C1681	CEAT470M16	Not used
	C1683-C1686, C1689, C1690, C1698	CKSRBY104K16	Not used
	C1687	CCSRCH220J50	Not used
	C1688	CCSRCH180J50	Not used
	R1681	RS1/16S152J	Not used
	R1682, R1683	RS1/16S220J	Not used
	R1686	RS1/16S105J	Not used
	R1687	RS1/16S470J	Not used
	R1689	RS1/16S222J	Not used
	R1690	RS1/16S101J	Not used
	X1681 CRYSTAL RESONATOR (12.0MHz)	ASS7047	Not used
	JA1681 USB CONNECTOR	DKN1237	Not used

### **H** VIDEO ASSY

AWX7962 and AWX8002 are constructed the same except for the following :

<b>Mark</b>	<b>Symbol and Description</b>	<b>AWX7962</b>	<b>AWX8002</b>
	IC902	NJM2279M	Not used
	IC903	TC4W53FU	Not used
	IC933	BU4053BCF	Not used
	Q901	2SA933S	Not used
	D902	DAN202K	Not used
	C909, C910, C918	CEAT101M16	Not used
	C911-C913, C915, C916, C921, C957, C958	CKSRBY473K50	Not used
	C914	CCSRCH470J50	Not used
	C919	CCSRCH150J50	Not used
	C920	CEAT470M25	Not used

Mark	Symbol and Description	AWX7962	AWX8002
A	C922	CCSRCH181J50	Not used
	R911-R913, R926, R959, R960, R961	RS1/16S102J	Not used
	R914	RS1/16S101J	Not used
	R915, R921, R955, R956, R958	Not used	RS1/16S0R0J
	R916	RS1/16S104J	Not used
	R917	RS1/16S153J	Not used
	R918	RS1/16S103J	Not used
	R919	RS1/16S101J	Not used
	R920	RD1/2VM221J	Not used
	R922, R998	RS1/16S750J	Not used
	R954	RS1/16S0R0J	Not used
	JA905 1P PIN JACK	VKB1122	Not used

## I COMPONENT ASSY

AWX7963 and AWX8021 are constructed the same except for the following :

Mark	Symbol and Description	AWX7963	AWX8021
C	IC1051	PDC084A	Not used
	Q1051	DTC124EK	Not used
	D1051, D1052	1SS355	Not used
	L1051, L1052	LCYA100J2520	Not used
	L1053	LCYA330J2520	Not used
	C1051, C1053, C1063	CEAT101M16	Not used
	C1052, C1054, C1061, C1062	CKSRYB473K50	Not used
	C1055	CCSRCH150J50	Not used
	C1056	CCSRCH180J50	Not used
	C1057, C1058	CCSRCH240J50	Not used
	C1059	CCSRCH470J50	Not used
	C1060	CCSRCH101J50	Not used
	R1051, R1052, R1054	RS1/16S102J	Not used
	R1053	RS1/16S471J	Not used
	R1061	RS1/16S103J	Not used
	X1051 CRYSTAL RESONATOR (14.32MHz)	ASS1056	Not used

## K MAIN CONTROL ASSY

AWX7961 and AWX8000 are constructed the same except for the following :

Mark	Symbol and Description	AWX7961	AWX8000
E	IC201	TC9164AF	Not used
	IC202	NJM4558MD	Not used
	Q101, Q102	2SC3326	Not used
	Q103, Q251	DTA124EK	Not used
	C139, C140	CCSRCH470J50	Not used
	C201-C203	CCSRCH101J50	Not used
	C204, C205, C213, C214, C251	CKSRYB103K50	Not used
	C211, C212	CEAT1R0M50	Not used
	R135, R136	RS1/16S912J	RS1/16S0R0J
	R137, R138, R217, R218, R251	RS1/16S102J	Not used
	R141, R142	RS1/16S472J	Not used
	R143, R252	RS1/16S473J	Not used
	R161, R162	Not used	RS1/16S0R0J
	R201-R203, R215, R216	RS1/16S471J	Not used
	R213, R214	RS1/16S474J	Not used
	R523, R524	Not used	RS1/16S473J
	CN201 7P PLUG	AKP7056	Not used
CN551 KR CONNECTOR PCB BINDER	B8B-PH-K-S VEF1040	Not used	



## S DISPLAY ASSY

AWX7983 and AWX8011 are constructed the same except for the following :

Mark	Symbol and Description	AWX7983	AWX8011
	IC3001	TC7W53FU	Not used
	Q3000	FMA1A	Not used
	Q3001	DTC124EK	Not used
	D3002-D3005	1SS355	Not used
	C3010	CKSRYP153K50	Not used
	R3031, R3034	RS1/16S103J	Not used
	R3032	RS1/16S392J	Not used
	R3033	RS1/16S223J	Not used
	R3099	Not used	RS1/16S473J
	4P CABLE HOLDER	51048-0400	Not used
	J3008 JUMPER WIRE 04P	D20PYY0415E	Not used

## AA SP/PS ASSY

AWX7975 and AWX8037 are constructed the same except for the following :

Mark	Symbol and Description	AWX7975	AWX8037
⚠	L4608, L4609	RTF1167	Not used
	RY4601-RY4605	ASR7014	ASR7026
	C4621, C4622	ACH7169	ACH7170
	C4623	CEAT101M50	Not used
	R4628-R4632	RD1/2VM331J	RD1/2VM471J

## AB DIODE ASSY

AWX8017 and AWX8038 are constructed the same except for the following :

Mark	Symbol and Description	AWX8017	AWX8038
⚠	D2241, D2242	LN6SB60-4003	D5SBA20(B)

### • PARTS LIST FOR VSX-45TX

Mark No.	Description	Part No.	Mark No.	Description	Part No.
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#### OTHERS

Y15	BOARD IN JUMPER	ADX7418
Y14	BOARD IN JUMPER	ADX7419
J11	JUMPER WIRE 7P	D20PYY0745E

D201	1SS133
D202	MTZJ5.1C

#### COILS AND FILTERS

L201	FL COIL	ATE7003
F202	FM CERAMIC FILTER	ATF-107
F201	FM CERAMIC FILTER	ATF-119
F203	AM CERAMIC FILTER	ATF7026

### COMPLEX ASSY

#### OTHERS

Y8	BOARD IN JUMPER	ADX7284
Y9	BOARD IN JUMPER	ADX7285
Y10	BOARD IN JUMPER	ADX7286
Y11	BOARD IN JUMPER	ADX7287
Y12	BOARD IN JUMPER	ADX7288
J9	JUMPER WIRE 6P	D20PYY0615E

#### CAPACITORS

C206	CCSRCH100D50
C212, C213, C226, C233-C235	CCSRCH101J50
C240	CCSRCH101J50
C231, C232	CCSRCH150J50
C223	CEAT100M50
C229	CEAT101M10
C224	CEAT1R0M50
C227	CEAT220M25
C241	CEAT2R2M50
C243	CEAT330M16

## A FM/AM TUNER MODULE

### SEMICONDUCTORS

IC201	BA1451F
IC202	LC72131MD
Q201, Q204, Q205	2SC2412K
Q202	DTA124ES
Q203	DTC124EK

C228	CEAT3R3M50
C237	CEAT470M10
C211	CEJA1R0M50
C210	CEJA470M16
C204, C238, C602	CKSRYP102K50

Mark No.	Description	Part No.
A	C101,C102,C208,C220,C239 C242,C601 C216,C217,C225 C201,C205,C209,C214,C230 C236,C603	CKSRYP103K50 CKSRYP103K50 CKSRYP153K50 CKSRYP223K50 CKSRYP223K50
	C221 C202,C222 C215	CKSRYP224K10 CKSRYP473K16 CKSRYP681K50

**RESISTORS**

R211	RD1/4PU221J
R221	RD1/4PU222J
R233	RD1/4PU391J
R243	RS1/10S0R0J
R103	RS1/10S331J

R104	RS1/10S391J
Other Resistors	RS1/16S###J

**OTHERS**

CN201	13P FFC CONNECTOR	52044-1345
BN201	4P ANTENNA TERMINAL SHIELD CASE T SHIELD CASE B	AKA7003 ANK7072 ANK7073

X201	CRYSTAL RESONATOR (7.2MHz)	ASS1093
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**B 7.1 CH I/O ASSY  
SEMICONDUCTORS**

IC1301-IC1304	UPC4570G2
Q1351,Q1352,Q1361,Q1362	HN1C03F
Q1371,Q1372,Q1381,Q1382	HN1C03F

**CAPACITORS**

C1301-C1304,C1307,C1308	CCSRCH101J50
C1311-C1314,C1317,C1318	CCSRCH101J50
C1321-C1324,C1327,C1328	CCSRCH101J50
C1331-C1334,C1337,C1338	CCSRCH101J50
C1351,C1352,C1361,C1362	CCSRCH331J50

C1371,C1372,C1381,C1382	CCSRCH331J50
C1309,C1310,C1319,C1320	CEAT100M50
C1329,C1330,C1339,C1340	CEAT100M50
C1305,C1306,C1315,C1316	CEAT4R7M50
C1325,C1326,C1335,C1336	CEAT4R7M50

C1341-C1348,C1391-C1394	CKSRYP103K50
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**RESISTORS**

All Resistors	RS1/16S###J
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**OTHERS**

CN1301-CN1304	4P PIN JACK	AKB7015
CN1306	5P SOCKET	AKP7066
CN1307,CN1308	9P SOCKET	AKP7068

**C V-AUDIO IN ASSY  
SEMICONDUCTORS**

Q1201,Q1202	2SC2878
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**CAPACITORS**

C1201-C1212	CCSRCH221J50
C1213-C1215	CKSRYP103K50

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

All Resistors	RS1/16S###J
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**OTHERS**

CN1205	6P PIN JACK	AKB7009
CN1201,CN1203	4P PIN JACK	AKB7015
CN1204	17P SOCKET	AKP7072

**D FRONT IN ASSY  
COILS AND FILTERS**

L1501-L1504	CHIP BEAD	VTL1077
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**CAPACITORS**

C1507-C1509	CCSRCH101J50
C1501,C1502	CCSRCH221J50
C1505	CKSRYP102K50
C1504,C1506	CKSRYP103K50
C1503	CKSRYP472K50

C1510	CKSRYP473K50
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**RESISTORS**

All Resistors	RS1/16S###J
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**OTHERS**

CN1501	7P FFC CONNECTOR	52044-0745
JA1501	FRONT INPUT	AKX7016
KN1501	EARTH METAL FITTING	VNF1084

**E OPTICAL IN ASSY  
COILS AND FILTERS**

F1701	CHIP BEAD	DTF1064
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**CAPACITORS**

C1706	CEAT470M16
C1701-C1705	CKSRYP104Z16

**RESISTORS**

All Resistors	RS1/16S###J
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**OTHERS**

CN1701	9P FFC CONNECTOR	52045-0945
JA1701,JA1702	OPTICAL LINK IN	GP1FA502RZ
JA1703,JA1704	OPTICAL LINK OUT	GP1FA502TZ

**F INPUT CONNECT ASSY  
SEMICONDUCTORS**

IC1401	M62429FP
IC1451	UPC4570G2
D1401	UDZS5.1B

**CAPACITORS**

C1406,C1407	CCSQCH101J50
C1401-C1405,C1451,C1452	CEAT100M50
C1454,C1455	CKSRYP103K50
C1453	CKSRYP472K50

**RESISTORS**

R1405	RS3LMF391J
Other Resistors	RS1/16S###J

**OTHERS**

Mark No.	Description	Part No.
CN1407	5P PLUG	AKP7055
CN1406,CN1408	9P PLUG	AKP7057
CN1405	17P PLUG	AKP7061
CN1402	7P SOCKET	AKP7067
CN1404	9P SOCKET	AKP7068
CN1403	13P SOCKET	AKP7070
CN1401	15P SOCKET	AKP7071

## **G** COAXIAL IN ASSY SEMICONDUCTORS

IC1681	PCM2902EG
IC1881	TC74HCU04AF
IC1682	TC7SET08F

## COILS AND FILTERS

F1881	CHIP BEAD	DTF1064
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## CAPACITORS

C1688	CCSRCH180J50
C1687	CCSRCH220J50
C1885,C1886	CCSRCH470J50
C1887	CCSRCH471J50
C1681	CEAT470M16
C1890	CEAT470M25
C1680,C1697,C1857,C1858	CKSRYB103K50
C1883,C1884,C1888,C1897	CKSRYB103K50
C1683-C1686,C1689,C1690,C1698	CKSRYB104K16

## RESISTORS

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

X1681	CRYSTAL RESONATOR (12.0MHz)	ASS7047
CN1801	19P FFC CONNECTOR	52045-0945
JA1801	2P PIN JACK	AKB7131
CN1803	9P SOCKET	AKP7068
JA1681	USB CONNECTOR	DKN1237
CN1802	20P FFC CONNECTOR	VKN1196

## **H** VIDEO ASSY SEMICONDUCTORS

IC933	BU4053BCF
IC902	NJM2279M
IC901,IC931	NJM2296M
IC932	NJM2596M
IC903	TC4W53FU

Q901,Q931,Q932	2SA933S
Q933	IMZ1A
D901,D902	DAN202K

## CAPACITORS

C981-C983	CCSRCH101J50
C919,C960,C963	CCSRCH150J50
C922-C925,C969-C974	CCSRCH181J50
C955	CCSRCH330J50
C914	CCSRCH470J50
C901-C904,C932,C935,C938	CEAT101M10
C941	CEAT101M10
C905,C906,C909,C910,C918	CEAT101M16
C945,C946,C951,C952,C959	CEAT101M16

Mark No.	Description	Part No.
C933,C936,C939,C942		CEAT1ROM50
C920,C961,C964		CEAT470M25
C943		CKSRYB103K50
C931,C934,C937,C940,C944		CKSRYB104K16
C966-C968		CKSRYB104K16
C907,C908,C911-C913		CKSRYB473K50
C915,C916,C921,C947,C948		CKSRYB473K50
C953,C954,C957,C958,C962		CKSRYB473K50
C965		CKSRYB473K50

## RESISTORS

R920,R966	RD1/2VM221J
R969	RD1/2VM471J
Other Resistors	RS1/16S###J

## OTHERS

JA904	COMB. JACK (S+1P)	AKB7146
JA901-JA903	COMB. JACK (2S+2P)	AKB7147
CN901	15P SOCKET	AKP7071
JA905	1P PIN JACK	VKB1122

## **I** COMPONENT ASSY SEMICONDUCTORS

IC1051	PDC084A
IC1001	TC74HC4053AF
IC1002,IC1003	TK15450M
Q1051	DTC124EK
D1051,D1052	1SS355

## COILS AND FILTERS

L1051,L1052	LCYA100J2520
L1053	LCYA330J2520

## CAPACITORS

C1060	CCSRCH101J50
C1055	CCSRCH150J50
C1056	CCSRCH180J50
C1057,C1058	CCSRCH240J50
C1024-C1026,C1059	CCSRCH470J50
C1017,C1018,C1023,C1029	CCSRCK2R0C50
C1013,C1014,C1019,C1020	CEAT101M16
C1027,C1028,C1051,C1053,C1063	CEAT101M16
C1007,C1008,C1015,C1016	CKSRYB103K50
C1021,C1022	CKSRYB103K50

C1052,C1054,C1061,C1062	CKSRYB473K50
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## RESISTORS

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

X1051	CRYSTAL RESONATOR (14.32MHz)	ASS1056
CN1001	9P SOCKET	AKP7068
JA1001-JA1003	3P PIN JACK	VKB1150

## **J** RS232C ASSY SEMICONDUCTORS

⚠ IC1932	AEK7020
⚠ IC1931	BA12T
IC1901	SP232AEN
Q1931	2SB1237X
Q1901	2SC1740S

Mark No.	Description	Part No.	Mark No.	Description	Part No.
	Q1932	DTC124EK		C701,C702,C713,C714	CEAT100M50
A	D1901,D1902,D1921	1SS355		C733,C734,C753,C754	CEAT100M50
	<b>COILS AND FILTERS</b>			C773,C774	CEAT100M50
	L1901	LAU1R0J		C303,C304,C602	CEAT101M16
	<b>CAPACITORS</b>			C211,C212	CEAT1R0M50
	C1901	CEAT101M16		C506,C513	CEAT221M10
	C1903-C1906	CEAT1R0M50		C505	CEAT2R2M50
	C1932,C1933	CEHAT100M50		C503	CEAT331M10
	C1902,C1907,C1911,C1921,C1931	CKSRYB103K50		C717,C718,C721,C722	CEAT470M25
	C1934-C1936	CKSRYB103K50		C737,C738,C741,C742	CEAT470M25
				C757,C758,C761,C762	CEAT470M25
B	C1909	CKSRYB331K50		C777,C778,C781,C782	CEAT470M25
	<b>RESISTORS</b>			C133,C134	CEAT470M50
	R1932	RS3LMF470J		C511	CEAT471M10
	Other Resistors	RS1/16S###J		C748,C749,C768,C769	CEV100M16
				C788,C789	CEV100M16
	<b>OTHERS</b>			C510	CKSQYF105Z16
	JA1921 MULTI-ROOM JACK	AKN7014		C601	CKSQYF225Z16
	CN1901 D-SUB SOCKET	AKP1213		C128,C129,C137,C138	CKSRYB103K50
	CN1902 KR CONNECTOR	B8B-PH-K		C155-C157,C204,C205	CKSRYB103K50
	CN1903 4P SOCKET	KP200TA4L		C213,C214,C251,C302,C502	CKSRYB103K50
	JA1922 REMOTE CONTROL JACK	RKN1004			
C	SCREW TERMINAL	VNE1948		C507,C509,C514,C515,C535	CKSRYB103K50
				C540,C598,C711,C712	CKSRYB103K50
				C723,C724,C731,C732	CKSRYB103K50
				C743,C744,C751,C752	CKSRYB103K50
				C763,C764,C771,C772	CKSRYB103K50
				C783,C784,C891,C892,C894	CKSRYB103K50
				C512	CKSRYB472K50
				C154,C599,C821,C831	CKSRYB473K50
	<b>K MAIN CONTROL ASSY</b>			<b>RESISTORS</b>	
	<b>SEMICONDUCTORS</b>			All Resistors	RS1/16S###J
	IC502,IC503	BU4094BCF		<b>OTHERS</b>	
	IC202	NJM4558MD		X501 CERAMIC RESONATOR	ASS7032
	IC501	PD5770B8		(15.7MHz)	
	IC511	TC74VHC08FT		CN552 10P FFC CONNECTOR	52045-1045
	IC302	TC74VHCT244AFT		CN601 13P FFC CONNECTOR	52045-1345
				CN801 24P FFC CONNECTOR	52045-2445
D	IC103	TC9163AF		CN501 32P FFC CONNECTOR	52045-3245
	IC201	TC9164AF		CN201 7P PLUG	AKP7056
	IC104	TC9215AF		CN103 9P PLUG	AKP7057
	IC101	TC9274F-019		CN102 13P PLUG	AKP7059
	IC701-IC704	TC94A07F		CN101 15P PLUG	AKP7060
				CN351 7P SOCKET	AKP7067
	IC102,IC711-IC714	UPC4570G2		CN2,CN3 9P SOCKET	AKP7068
	Q601	2SC1740S		CN502 19P SOCKET	AKP7073
	Q101,Q102	2SC3326		CN302 21P SOCKET	AKP7074
	Q103,Q251,Q511	DTA124EK		CN551 KR CONNECTOR	B8B-PH-K
	Q501	DTC143EK		CN1 3P PLUG	KM250NA3L
				JA591 REMOTE CONTROL JACK	RKN1004
E	D501,D511,D521-D524	1SS355		JA592 REMOTE CONTROL JACK	RKN1026
	D821,D822,D831,D832	1SS355		PCB BINDER	VEF1040
	D601	UDZ11B		JA111-JA113 4P PIN JACK	VKB1132
	<b>COILS AND FILTERS</b>			CN301 21P FFC CONNECTOR	VKN1197
	L501	LCYA2R2J2520			
	L891-L895 CHIP SOLID INDUCTOR	QTL1013			
	<b>CAPACITORS</b>				
	C508	ACH7132			
	C719,C720,C739,C740	CCSRCH100D50			
	C759,C760,C779,C780	CCSRCH100D50			
	C125-C127,C151-C153	CCSRCH101J50			
	C201-C203,C725-C727	CCSRCH101J50			
F	C745-C747,C765-C767	CCSRCH101J50			
	C785-C787	CCSRCH101J50			
	C139,C140,C662	CCSRCH470J50			
	C131,C132,C621,C622	CEAT100M50			
				<b>L MIC &amp; F.OPT IN ASSY</b>	
				<b>COILS AND FILTERS</b>	
				L1601 CHIP FERRITE BEAD	ATL7002

Mark No.	Description	Part No.
L1602,L1603	CHIP SOLID INDUCTOR	QTL1013

**CAPACITORS**

C1601,C1606	CCSRCH471J50
C1603	CEAL470M16
C1611	CKSRYB102K50
C1602,C1612,C1614	CKSRYB103K50

**RESISTORS**

All Resistors	RS1/16S###J
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**OTHERS**

CN1601	4P FFC CONNECTOR	52044-0445
J1601	CORD WITH PLUG	ADX7417
JA1601	OPTICAL LINK IN	GP1FA502RZ
JA1606	REMOTE CONTROL JACK	RKN1004
CN1602	KR CONNECTOR	S3B-PH-K

**M MIC AMP ASSY  
SEMICONDUCTORS**

△ IC4751	NJM78L05A
IC4752	UPC4570G2
D4751,D4752	UDZS5.1B

**CAPACITORS**

C4753	CCSRCH101J50
C4754	CCSRCH330J50
C4751,C4752,C4755-C4757	CEAT100M50
C4758,C4762-C4765	CKSRYB473K50

**RESISTORS**

R4756	RD1/4MUF471J
Other Resistors	RS1/16S###J

**OTHERS**

CN4752	4P JUMPER CONNECTOR	52147-0410
CN4751	KR CONNECTOR	B3B-PH-K
	PCB BINDER	VEF1040
KN4751	EARTH METAL FITTING	VNF1084

**N DSP CONNECTION ASSY  
SEMICONDUCTORS**

IC1651	TC74LVX244FT
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**COILS AND FILTERS**

L1651	QTL1013
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**CAPACITORS**

C1651	CKSRYB103K50
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**RESISTORS**

All Resistors	RS1/16S###J
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**OTHERS**

CN1652-CN1654	17P SOCKET	AKP7072
CN1651	B TO B CONNECTOR 50P	AKP7177

**O POWER AMP IN ASSY  
SEMICONDUCTORS**

Q4001	2SC2412K
D4001	1SS355

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

C4002	CKSRYB104K16
C4001	CKSRYB223K50

**RESISTORS**

All Resistors	RS1/16S###J
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**OTHERS**

	10P CABLE HOLDER	51048-1000
CN4001	24P FFC CONNECTOR	52044-2445
CN4003	17P PLUG	AKP7061
CN4002	19P PLUG	AKP7062
J12	JUMPER WIRE 10P	D20PYY1010E

CN4004	3P L TYPE PLUG	KM250MA3L
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**P FAN DRIVE ASSY  
SEMICONDUCTORS**

Q4056	2SA1037K
Q4051	2SC4793
Q4054	2SD1859X
Q4052	DTA124EK
Q4055	DTC114EK

△ Q4053	DTC124EK
△ D4051,D4052	1SR154-400
D4059	1SS355
D4054,D4055	UDZ12B
D4053	UDZ27B

D4057	UDZS5.1B
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**CAPACITORS**

C4054	CEAT101M16
C4052	CEAT1R0M50
C4055,C4056	CEAT221M63
C4051	CEAT471M35
C4053	CKSRYB103K50

**RESISTORS**

R4057,R4058	RS3LMF331J
Other Resistors	RS1/16S###J

**OTHERS**

CN4051	9P JUMPER CONNECTOR	52147-0910
CN4054	10P JUMPER CONNECTOR	52147-1010

**Q FAN CONNECTION ASSY  
SEMICONDUCTORS**

△ IC4701,IC4702	AEK7023
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**OTHERS**

	9P CABLE HOLDER	51048-0900
CN4701	6P JUMPER CONNECTOR	52147-0610
J4701	JUMPER WIRE 9P	D20PYY0915E
CN4702	3P PLUG	KM250MA3

**R DSP ASSY  
SEMICONDUCTORS**

IC201	AK4114VQ
IC561	AK4382AVT
IC501,IC521,IC541	AK4383VT
IC101	AK5380VT
IC301,IC401	DSPC56367PV150

Mark No.	Description	Part No.	Mark No.	Description	Part No.
A	IC302,IC451 IC303 ⚠ IC901 IC601,IC621,IC641,IC661,IC681 ⚠ IC902	IS61LV6416-12T IS63LV1024-12T NJM2391DL1-33 NJM4565MD NJU7223DL1-18	C925 C343,C429,C677,C678,C924 C101-C103,C205,C207,C208 C211,C305,C307,C310,C311 C313,C315,C324,C331,C334	CKSRYB102K50 CKSRYB103K50 CKSRYB104K16 CKSRYB104K16 CKSRYB104K16	
	IC471 IC701 IC304 IC503,IC705,IC706 IC305	PD8100A TC74VHC157FT TC74VHCU04FT TC7SH04FU TC7WH125FU	C338,C348,C352,C409,C419 C423,C427,C452,C501,C503 C521,C541,C561,C591,C630 C701,C705,C706,C906,C908 C303,C403	CKSRYB104K16 CKSRYB104K16 CKSRYB104K16 CKSRYB104K16 CKSRYB105K6R3	
B	Q681,Q682 Q683,Q701,Q971,Q972,Q974 Q684,Q702,Q973 Q601,Q621,Q641,Q661 D681,D682,D721	2SK208 UN5112 UN5212 XP4506 1SS355	C109,C110,C622 C601,C602,C609,C610 C621,C641,C642,C661,C662 C629,C649,C650,C669,C670 C971	CKSRYB222K50 CKSRYB332K50 CKSRYB392K50 CKSRYB472K50 CKSRYB472K50	
	D702 D701,D971,D972 D101-D104	DAN202K DAP202K RB501V-40	C923 C203 C323,C428 C107,C611-C613,C615 C671,C672,C694,C696-C698	CKSRYB473K16 CKSRYB474K10 CKSRYB563K16 CKSRYF104Z25 CKSRYF104Z25	
<b>COILS AND FILTERS</b>			<b>RESISTORS</b>		
C	L301-L304,L401,L402,L451 CHIP FERRITE BEAD L471,L904,L906,L907 CHIP FERRITE BEAD L101-L104,L201-L203 CHIP SOLID INDUCTOR  L305,L306,L501,L503,L511 CHIP SOLID INDUCTOR L521,L531,L541,L551,L561 CHIP SOLID INDUCTOR L571,L701,L705,L706 CHIP SOLID INDUCTOR  L403 CHIP BEAD L502 CHIP BEAD	ATL7002 ATL7002 QTL1013  QTL1013 QTL1013 QTL1013  VTL1072 VTL1077	R851 R204,R225,R226,R229,R701 R712 R221 Other Resistors	RAB4C101J RAB4C104J RAB4C104J RS1/16S1802F RS1/16S###J	
D	<b>CAPACITORS</b> C339,C340 C202 C623,C625,C643-C646 C663-C666 C201  C204,C206,C209,C301,C302 C304,C306,C308,C309,C312 C314,C316,C318,C319 C321,C322,C325,C326 C329,C330,C332,C333,C335	CCSRCH100D50 CCSRCH150J50 CCSRCH151J50 CCSRCH151J50 CCSRCH220J50  CCSRCH471J50 CCSRCH471J50 CCSRCH471J50 CCSRCH471J50 CCSRCH471J50	<b>OTHERS</b> CN102 B TO B CONNECTOR 50P X201 CRYSTAL RESONATOR (24MHz) X301 CRYSTAL RESONATOR (33MHz)  CN702 10P FFC CONNECTOR CN101 20P FFC CONNECTOR CN601 21P FFC CONNECTOR CN701 22P FFC CONNECTOR KN931 EARTH METAL FITTING	AKP7176 ASS7025 ASS7040  VKN1414 VKN1424 VKN1425 VKN1426 VNF1109	
E	C337,C345,C346,C402 C404-C408,C410-C418 C420-C422,C424-C426,C451 C471 C603-C606  C111,C112,C502,C522,C542 C562,C607,C608,C627,C628 C647,C648,C667,C668 C681,C682 C104,C105,C551,C907,C909	CCSRCH471J50 CCSRCH471J50 CCSRCH471J50 CCSRCH471J50 CCSRCH471J50  CCSRCH471J50 CCSRCH471J50 CCSRCH471J50 CCSRCH471J50 CCSRCH820J50  CEV100M16 CEV100M16 CEV100M16 CEV100M16 CEV101M16	Q3000 Q3004 D3002-D3008 D3001 D3009  D3000	PD5771A RPM7140-H4 TC7W53FU 2SA1037K DTC124EK  FMA1A HN1C01FU 1SS355 BR5064X DAN202K  MAA5064X	
F	C106 C901,C902 C210,C341,C401 C212,C614,C624,C626 C683-C685,C689,C693,C695	CEV2R2M50 CEV330M25 CEV470M6R3 CKSRYB102K50 CKSRYB102K50	S3000-S3017	ASG7013	
<b>COILS AND FILTERS</b>			<b>COILS AND FILTERS</b>		
L3000 CHIP FERRITE BEAD			ATL7002		
<b>SWITCHES AND RELAYS</b>			<b>SWITCHES AND RELAYS</b>		
S3000-S3017			ASG7013		
<b>CAPACITORS</b>			<b>CAPACITORS</b>		

Mark No.	Description	Part No.
C3003,C3004,C3007,C3024,C3025 C3020,C3021,C3026,C3027 C3028,C3029 C3008,C3012,C3035 C3022,C3023		CCSRCH101J50 CEJQ100M16 CEJQ101M10 CEJQ101M6R3 CEJQ330M25
C3000-C3002 C3009,C3011,C3032-C3034 C3036,C3037 C3006,C3031 C3010		CKSRYB102K50 CKSRYB103K50 CKSRYB103K50 CKSRYB104K16 CKSRYB153K50
C3030		CKSRYF104Z50

**RESISTORS**

All Resistors

RS1/16S###J

**OTHERS**

X3000	CERAMIC RESONATOR (4.19MHz)	ASS7042
	4P CABLE HOLDER	51048-0400
	5P CABLE HOLDER	51048-0500
	7P CABLE HOLDER	51048-0700
CN3007	3P FFC CONNECTOR	52045-0345
CN3004	4P FFC CONNECTOR	52045-0445
CN3005	7P FFC CONNECTOR	52045-0745
CN3001	11P FFC CONNECTOR	52045-1145
CN3006	32P FFC CONNECTOR	52045-3245
V3000	FL TUBE	AAV7087
J3008	JUMPER WIRE 4P	D20PYY0415E
J3002	JUMPER WIRE 5P	D20PYY0510E
J3003	JUMPER WIRE 7P FL HOLDER	D20PYY0715E VNF1085

**T VOLUME ASSY  
SWITCHES AND RELAYS**S3402-S3404  
S3401ASG7013  
ASX7037**CAPACITORS**

C3401,C3402

CKSRYB103K50

**RESISTORS**

All Resistors

RS1/16S###J

**OTHERS**

CN3401 5P JUMPER CONNECTOR 52147-0510

**U MULTI JOG ASSY  
SWITCHES AND RELAYS**S3452-S3455  
S3451ASG7013  
ASX7038**CAPACITORS**

C3451,C3452

CKSRYB103K50

**RESISTORS**

All Resistors

RS1/16S###J

**OTHERS**

CN3451 7P JUMPER CONNECTOR 52147-0710

**Mark No. Description Part No.**  
**V HEADPHONE ASSY  
CAPACITORS**

C1951,C1952

CKSRYB392K50

**RESISTORS**

All Resistors

RS1/16S###J

**OTHERS**

CN1951	3P FFC CONNECTOR PHONE JACK	52045-0345 AKN7029
KN1951	EARTH METAL FITTING	VNF1084

**W REGULATOR ASSY  
SEMICONDUCTORS**

IC2411	AEK7003
△ IC2409	NJM78L05A
△ IC2404	NJM78M05FA
△ IC2403	NJM78M12FA
△ IC2401	NJM78M15FA

△ IC2405,IC2407	NJM78M56FA
△ IC2406	NJM79M05FA
△ IC2402	NJM79M15FA
△ Q2401	2SA1803
△ D2401-D2404,D2407-D2410	1SR154-400

△ D2418,D2419 D2411	1SR154-400 1SS355
△ D2415	D3SBA20(B)
D2405,D2406,D2413,D2414 D2421,D2422	RB501V-40 UDZ15B

D2420	UDZS10B
D2423,D2424	UDZS6.2B

**CAPACITORS**

C2446	CCSRCH101J50
C2440	CEANP470M35
C2443	CEAT101M10
C2415,C2416	CEAT101M16
C2408	CEAT101M25

C2405,C2406,C2410,C2429 C2411,C2412	CEAT221M35 CEAT222M16
C2435	CEAT2R2M50
C2401,C2402	CEAT332M35
C2442	CEAT470M50

C2441	CEAT470M63
C2436,C2439	CEAT471M16
C2433	CEAT472M16
C2451,C2452	CKSRYB102K50
C2403,C2404,C2407,C2409	CKSRYB103K50

C2413,C2414,C2428,C2434,C2453 C2424	CKSRYB103K50 CKSRYB473K50
C2444	CQ MBA104J50

**RESISTORS**

R2403	RD1/4MUF121J
R2401	RD1/4MUF470J
Other Resistors	RS1/16S###J

**OTHERS**

	7P CABLE HOLDER	51048-0700
CN2401	8P JUMPER CONNECTOR	52147-0810
Y2401	BOARD IN JUMPER	ADX7420

Mark No.	Description	Part No.
CN2411	7P PLUG	AKP7056
CN2404, CN2406, CN2412, CN2414	9P PLUG	AKP7057
CN2405	15P PLUG	AKP7060
CN2407-CN2409	17P PLUG	AKP7061
CN2413	19P PLUG	AKP7062
CN2410	21P PLUG	AKP7063
CN2403	4P PLUG	KM200TA4
CN2415	3P SOCKET	KP250NA3
KN2401-KN2403	EARTH METAL FITTING	VNF1084

Mark No.	Description	Part No.
⚠ IC4153, IC4253, IC4353		PBD002A
Q4152, Q4252, Q4352		2SA1255
Q4403, Q4404		2SC2412K
Q4151, Q4251, Q4351		2SC3326
D4152, D4154-D4157, D4252		1SS355
D4254-D4257, D4352, D4354-D4357		1SS355
D4151, D4153, D4251, D4253, D4351		UDZS10B
D4353		UDZS10B

### CAPACITORS

C4156, C4157, C4256, C4257	ACG7041
C4356, C4357	ACG7041
C4152, C4252, C4352	CCSRCH331J50
C4162, C4163, C4262, C4263	CCSRCH6R0D50
C4362, C4363	CCSRCH6R0D50
C4164, C4264, C4364	CEANPR22M50
C4153, C4253, C4353, C4405	CEAT331M10
C4403, C4404	CEAT331M63
C4158, C4159, C4258, C4259	CEAT470M16
C4358, C4359	CEAT470M16
C4154, C4155, C4254, C4255	CEAT470M63
C4354, C4355	CEAT470M63
C4160, C4161, C4260, C4261	CEHAT100M2A
C4360, C4361	CEHAT100M2A
C4151, C4251, C4351	CEHAT100M50

### RESISTORS

⚠ R4181, R4182, R4281, R4282 (0.1W)	ACN7107
⚠ R4381, R4382, R4481 (0.1W)	ACN7107
⚠ R4169, R4269, R4369 (0.22W/5W)	ACN7111
Other Resistors	RS1/16S###J

### OTHERS

Y1 LEAD WITH HOUSING	ADX7397
Y4 LEAD WITH HOUSING	ADX7400
Y6 LEAD WITH HOUSING	ADX7404
CN4402 19P SOCKET	AKP7073
CN4454 10P PLUG	KM250NA10L
KN4403, KN4404	VNF1084
EARTH METAL FITTING	

## Z POWER AMP-C ASSY

### SEMICONDUCTORS

⚠ IC4451	PA9009A
Q4452	2SA1255
Q4451	2SC3326
D4452, D4454-D4457	1SS355
D4451, D4453	UDZS10B

### CAPACITORS

C4456, C4457	ACG7041
C4452	CCSRCH331J50
C4462, C4463	CCSRCH6R0D50
C4464	CEANPR22M50
C4453	CEAT331M10
C4458, C4459	CEAT470M16
C4454, C4455	CEAT470M63
C4460, C4461	CEHAT100M2A
C4451	CEHAT100M50

### RESISTORS

⚠ R4469 (0.22W/5W)	ACN7111
Other Resistors	RS1/16S###J

## X POWER AMP-L ASSY

### SEMICONDUCTORS

⚠ IC4101, IC4201, IC4301	PA9009A
⚠ IC4102, IC4202, IC4302	PBD001A
⚠ IC4103, IC4203, IC4303, IC4453	PBD002A
Q4102, Q4202, Q4302	2SA1255
Q4101, Q4201, Q4301	2SC3326
D4102, D4104-D4107, D4202	1SS355
D4204-D4207, D4302, D4304-D4307	1SS355
D4101, D4103, D4201, D4203, D4301	UDZS10B
D4303	UDZS10B

### CAPACITORS

C4106, C4107, C4206, C4207	ACG7041
C4306, C4307	ACG7041
C4102, C4202, C4302	CCSRCH331J50
C4112, C4113, C4212, C4213	CCSRCH6R0D50
C4312, C4313	CCSRCH6R0D50
C4114, C4214, C4314	CEANPR22M50
C4103, C4203, C4303	CEAT331M10
C4401, C4402	CEAT331M63
C4108, C4109, C4208, C4209	CEAT470M16
C4308, C4309	CEAT470M16
C4104, C4105, C4204, C4205	CEAT470M63
C4304, C4305	CEAT470M63
C4110, C4111, C4210, C4211	CEHAT100M2A
C4310, C4311	CEHAT100M2A
C4101, C4201, C4301	CEHAT100M50

### RESISTORS

⚠ R4131, R4132, R4231, R4232 (0.1W)	ACN7107
⚠ R4331, R4332, R4482 (0.1W)	ACN7107
⚠ R4119, R4219, R4319 (0.22W/5W)	ACN7111
Other Resistors	RS1/16S###J

### OTHERS

Y1 LEAD WITH HOUSING	ADX7398
Y3 LEAD WITH HOUSING	ADX7399
Y5 LEAD WITH HOUSING	ADX7404
CN4401 17P SOCKET	AKP7072
CN4403 3P L TYPE PLUG	KM250MA3
CN4456 10P PLUG	KM250NA10L
KN4401, KN4402	VNF1084
EARTH METAL FITTING	

## Y POWER AMP-R ASSY

### SEMICONDUCTORS

⚠ IC4151, IC4251, IC4351	PA9009A
⚠ IC4152, IC4252, IC4352, IC4452	PBD001A



**Mark No. Description Part No.**

**OTHERS**

CN4453,CN4455 10P SOCKET KP250NA10

**AA SP/PS ASSY  
SEMICONDUCTORS**

Q4602,Q4603 RN1903  
Q4601 RN4903  
D4601-D4610 1SS355

**COILS AND FILTERS**

L4601-L4607 AF CHOKE COIL ATH1053  
L4608,L4609 NOISE FILTER RTF1167

**SWITCHES AND RELAYS**

RY4601-RY4605 ASR7014

**CAPACITORS**

⚠ C4621,C4622 ACH7169  
C4623 CEAT101M50  
C4601-C4607 CFTYA104J50  
C4625-C4631 CQMBA103J50

**RESISTORS**

⚠ R4621-R4627 RD1/2LMF4R7J  
R4628-R4632 RD1/2VM331J  
R4615,R4616 RD1/4MUF473J  
⚠ R4601-R4607 RS1LMF4R7J  
⚠ R4611,R4612 RS2LMF331J

Other Resistors RS1/16S###J

**OTHERS**

6P CABLE HOLDER 51048-0600  
8P CABLE HOLDER 51048-0800  
Y13 BOARD IN JUMPER ADX7291  
CN4611 8P SPEAKER TERMINAL AKE7074  
CN4612 6P SPEAKER TERMINAL AKE7075  
J4602 JUMPER WIRE 8P D20PYY0830E  
CN4610,CN4613 5P PLUG KM200TA5

**AB DIODE ASSY  
SEMICONDUCTORS**

⚠ D2241,D2242 LN6SB60-4003

**AC TRANS 2-1 ASSY  
SEMICONDUCTORS**

⚠ IC2201,IC2202 AEK7016  
Q2202 RN4903  
Q2201 UN521L  
⚠ D2201 S1WB(A)60SD  
D2202 UDZ16B

D2207,D2208 UDZS22B  
D2203-D2206,D2209-D2212 UDZS9.1B

**CAPACITORS**

⚠ C2202,C2203 ACH1237  
C2207,C2208 ACH7173  
C2209,C2210 CEAT101M63  
C2211,C2212 CEAT221M63

**Mark No. Description Part No.**

**RESISTORS**

⚠ R2205,R2206 RS1LMF332J  
Other Resistors RS1/16S###J

**OTHERS**

6P CABLE HOLDER 51048-0600  
6P CABLE HOLDER 51052-0600  
H2201-H2204 FUSE CLIP AKR1004  
J2201 JUMPER WIRE6P D20PYY0615E  
J10 JUMPER WIRE D25PYY0607E

**AD VH TR ASSY  
SEMICONDUCTORS**

⚠ Q2232 2SA1837  
⚠ Q2231 2SC4793  
⚠ D2231,D2232 1SR154-400

**RESISTORS**

All Resistors RS1/16S###J

**OTHERS**

CN2231 6P L TYPE CONNECTOR KPD6L

**AE TRANS 2-2 ASSY  
SEMICONDUCTORS**

⚠ IC2251,IC2252 AEK7016  
⚠ IC2253 AEK7019

**CAPACITORS**

C2251-C2253 CQMBA104J50

**RESISTORS**

⚠ R2252 RD1/4MUF100J

**OTHERS**

7P CABLE HOLDER 51048-0700

**AF TRANS 1 ASSY**

TRANS 1 Assy has no service parts.

**AG PRIMARY ASSY  
SEMICONDUCTORS**

⚠ IC2001 NJM78M56FA  
Q2001 KRC101M  
D2002,D2004,D2005 1SS355  
⚠ D2001 S1WB(A)60SD  
D2003 UDZS5.1B

**COILS AND FILTERS**

⚠ L2001 LINE FILTER ATF7018  
L2002,L2003 FERRITE BEAD VTH1013

**TRANSFORMERS**

⚠ T2001 ATT7043

**SWITCHES AND RELAYS**

⚠ RY2001 ASR7025

**CAPACITORS**

⚠ C2001,C2002 ACE7013  
⚠ C2003 ACG7033

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
	C2008	CEAT102M25
	C2009	CEAT221M25
A	C2005-C2007,C2011,C2012	CKSRYB103K50
	C2004	CQMA103J50

**RESISTORS**

⚠	R2001 (2.2MW, 1/2W)	RCN1080
	R2002	RD1/2VM101J
	Other Resistors	RS1/16S###J

**OTHERS**

	CN2002 11P FFC CONNECTOR	52045-1145
⚠	2004 1P AC OUTLET	AKP1033
	H2001,H2002 FUSE CLIP	AKR7001
B	CN2003,CN2004 5P SOCKET	KP200TA5L
⚠	CN2001 AC CORD SOCKET	RKP1751
	SCREW TERMINAL	VNE1948
	KN2001 EARTH METAL FITTING	VNF1084

# 6. ADJUSTMENT



## ■ AM Tuner Section

- There is no adjustment in the AM tuner.

## ■ FM Tuner Section

- Set the mode selector to FM BAND.
- Connect the wiring as shown in Fig. 1.

Step No.	Adjustment Title	ANT. Input level and signal condition			Adjustment	
		Frequency (MHz)	Modulation	Input Level (dB $\mu$ V)	Adjust point	Contents
1	T-METER Adjustment	98	OFF	80	L201	Adjust L201 so that the DC voltage between Pin 21 and Pin 23 of IC201 (Test point V <sub>tm</sub> ) gets within 0 $\pm$ 50mV.

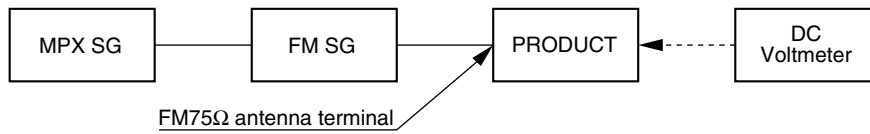


Fig.1 Adjustment Wiring Diagram

## A FM/AM TUNER MODULE

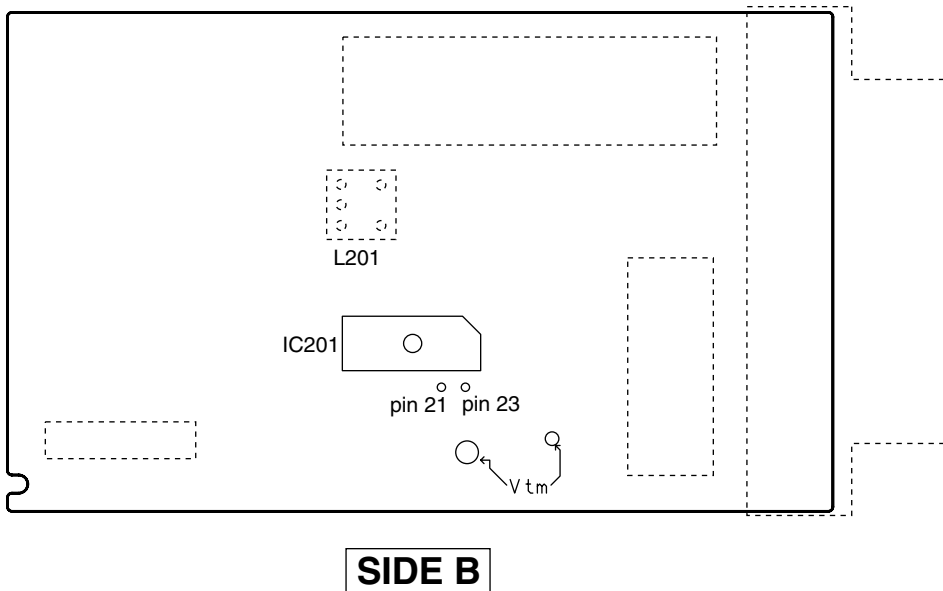


Fig.2 Adjustment Point

# 7. GENERAL INFORMATION

## 7.1 DIAGNOSIS

### 7.1.1 PROTECTION CIRCUIT CONTROL SPECIFICATION

#### Microcomputer-related ports

FAN\_DRIVE (Expansion IC) : For Fan on/off

TEMP\_IN (pin 94)

Input port (A/D) : To detect temperature

FAN\_STOP (pin 95)

Input port : To detect Fan forced stop

OL\_DET (pin 73)

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

DC\_DET (pin 63)

Input port : For DC detection

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 Thermal and Fan detection, and Fan control

##### 1) Thermal detection and Fan control

Valid with American and Japanese models only.

TEMPIN (V)	Temperature (°C)	Fan	Remarks
More than 4.10	More than 125	ON	Mute ON & speaker relay OFF : The warning indication "OVERHEAT" Leading hold Mute OFF & speaker relay ON : Normal mode
3.83 to 4.09	110 to 125	ON	
2.91 to 3.82	80 to 110	ON	
2.58 to 2.90	70 to 80	Leading hold	
Less than 2.52	Less than 70	OFF	

Valid with European and other general-area models only.

TEMPIN (V)	Temperature (°C)	Fan	Remarks
More than 3.58	More than 100	ON	Mute ON & speaker relay OFF : The warning indication "OVERHEAT" Leading hold Mute OFF & speaker relay ON : Normal mode
3.30 to 3.57	90 to 100	ON	
2.91 to 3.29	80 to 90	ON	
2.53 to 2.90	70 to 80	Leading hold	
Less than 2.52	Less than 70	OFF	

\* By poor contact of Thermistor and alien substance mixture, there are the following cases displayed FL.

Become STBY after having done flushing with "THDCT NG" for three seconds.

By opening of thermistor junction or energization in very cold place (less than -15°C), TEMP line becomes high impedance. And when TEMP port became equal to or less than 0.1V.

##### 2) Fan detection

If the fan is forcibly stopped, the FAN\_DET 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\_DET 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\_DET port with a main loop.

#### 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 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\_DET 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) and flashes the standby LED.

Do not accept the key input afterward.

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

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

DC\_DET 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\_DET port with a main loop.

Even if turns the primary side off and turns on once again, standby LED flashes as it is.

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

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

1. Test mode (remote control code : A55F)
2. When the STEREO/DIRECT key and SIGNAL SELECT key are both held pressed for 2 seconds.

(Be effective when turned the power off by DC detection regarding 2.)

## ④ Diagnostic mode

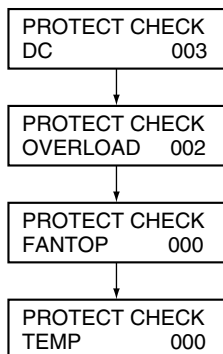
This mode is only for servicing and checking the circuit design, and not open to users.

When the STEREO/DIRECT key and TONE + 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 STEREO/DIRECT key and TONE + key pressed for 2 seconds in Standby mode.



When the MULTI CH IN key and TONE – key are both held pressed for 2 seconds in standby mode, all clear the counter for detection.

## ● Protection Process List

Item	Purpose	Detection Method	Process	Warning Indication	Remarks
DC detection	To detect amplifier damage (defect status) A process to protect speakers (for protection of connected external devices)	Detects when the DC_DET port becomes "L".	Turns muting on and speaker relay off, then turns off the power after 3 seconds.	Flashing "AMP ERR" for 3 seconds. Flash the standby LED after the power off.	Once detected and turned the power off, input a key never again.
AMP overload	To detect overloading (abnormal status) With low-load driving or a short circuit of the speaker terminals (for protection of the amplifier)	Detects when the AMP_OL port becomes "L" (checks by interrupt).	Turns muting on and speaker relay off, and immediately turns off the power.	None	
Fan control	Protection function against a temperature rise at the heat sink	HY, F : Detect temperature more than 100°C. KU, J : Detect temperature more than 125°C.	Turns muting on and speaker relay off. Rotate the fan	Continue flashing with "OVERHEAT"	
		HY, F : Detect temperature of 90 to 100°C. KU, J : Detect temperature of 110 to 125°C.	Rotate the fan		Mute, relay and warning indications is leading hold.
		HY, F : Detect temperature of 80 to 90°C. KU, J : Detect temperature of 80 to 110°C.	Rotate the fan		Mute off & relay on (normal mode)
		Detect temperature of 70 to 80°C.	Fan is leading hold		
		A condition except the above.	Stop the fan		
Fan stop	To know that the rotating fan is forcibly stopped	Detects when the FAN_DET 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.

## 7.1.2 DIAGNOSTICS OF AMPLIFIER SECTION

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

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

### Caution:

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

- According to a symptom, perform the following confirmation beforehand.
  1. Are not Fuse and IC protector opening it?
  - 2-a. When can turn on electricity, confirm that supply voltage of the point that can measure is appropriate.
  - 2-b. Furthermore, confirm that voltage ((in a no signal) DC and the appropriate signal output) between GND and R4621-4627 (Either of the amplifier side and the speaker terminal side is possible) (Or remove either of CN4601-4604). And limit failure CH.

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

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

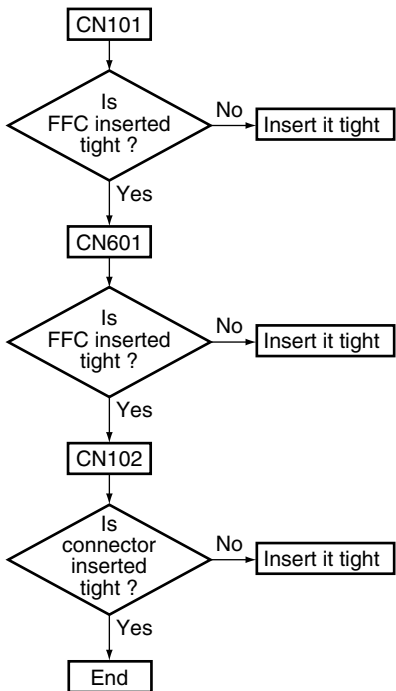
About parts with damaged possibility, explain FL ch to an example in order.

1. R4131, 4132 (ACN7107: 0.1  $\Omega$ , 1W chip drain resistor)  
IC 4102, 4103  
(PBD001A: Nch, PBD002A: Pch output POWER MOS Tr.)
2. R4119 (ACN7111: 0.22  $\Omega$  .5W  $\times$ 2 cement source resistor)  
R4117, 4118  
(RS1/16S471J: 470  $\Omega$  chip resistor for protection circuit)  
D4101, 4103  
(UDZS10B: 10V Zener diode for current limiting)  
D4102, 4104 (1SS355: Small signal diodes same as above)  
R4110, 4111 (RS1/16S560J: 56  $\Omega$  chip gate resistor)  
R4106, 4107  
(RS1/16S101J: 100  $\Omega$  chip IC4101 power filter resistor)
3. IC4101 (PA9009A: Power amplifier with output current bias Voltage step HIC)  
IC4701, 4702  
(AEK7023: 200mA IC protector /FAN CONNECTION Assy)
4. Q2231, 2232 (2SC4793, 2SA1837 TO-220 Tr. /VH TR Assy)

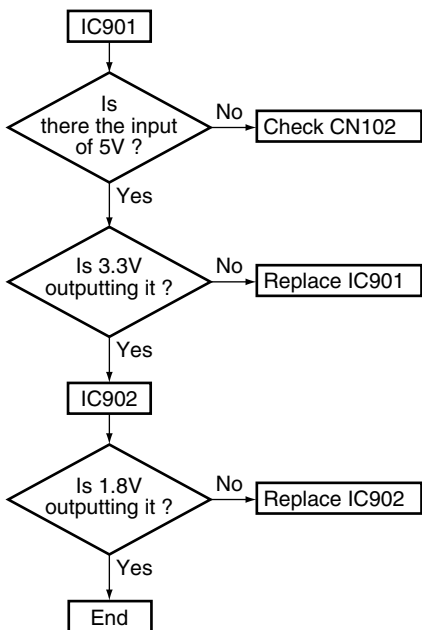
### 7.1.3 TROUBLE SHOOTING

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

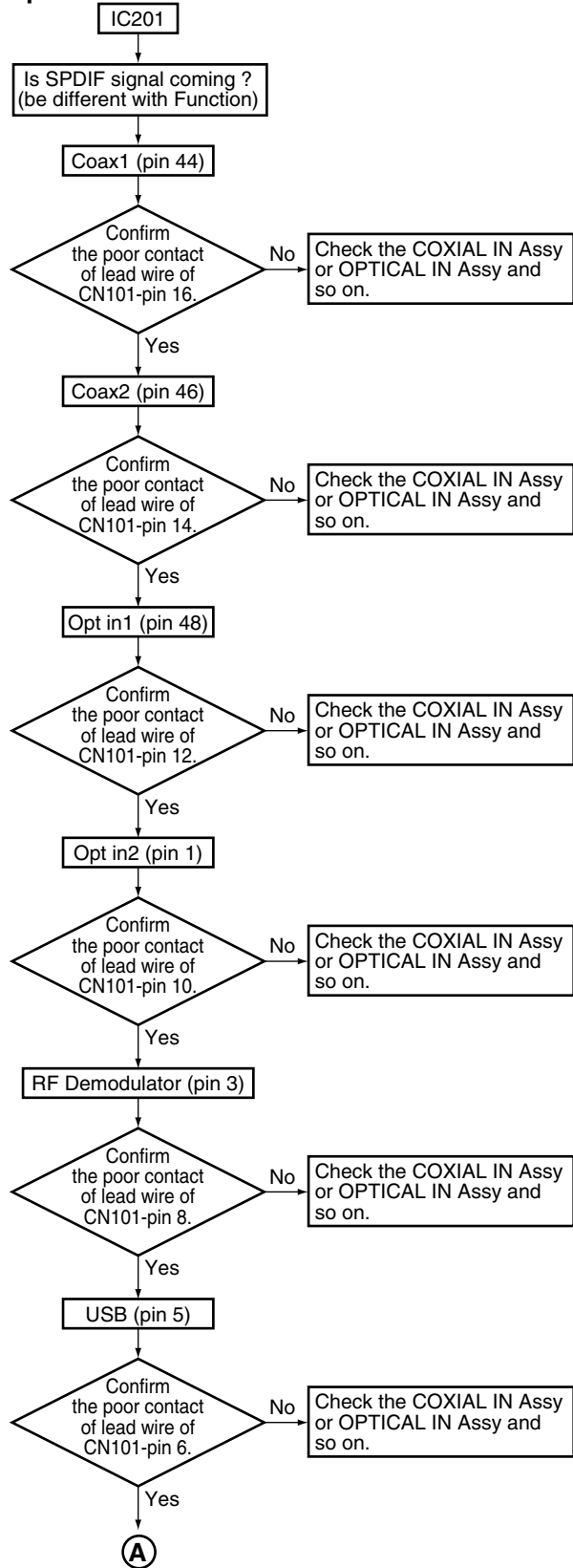
#### Step 1

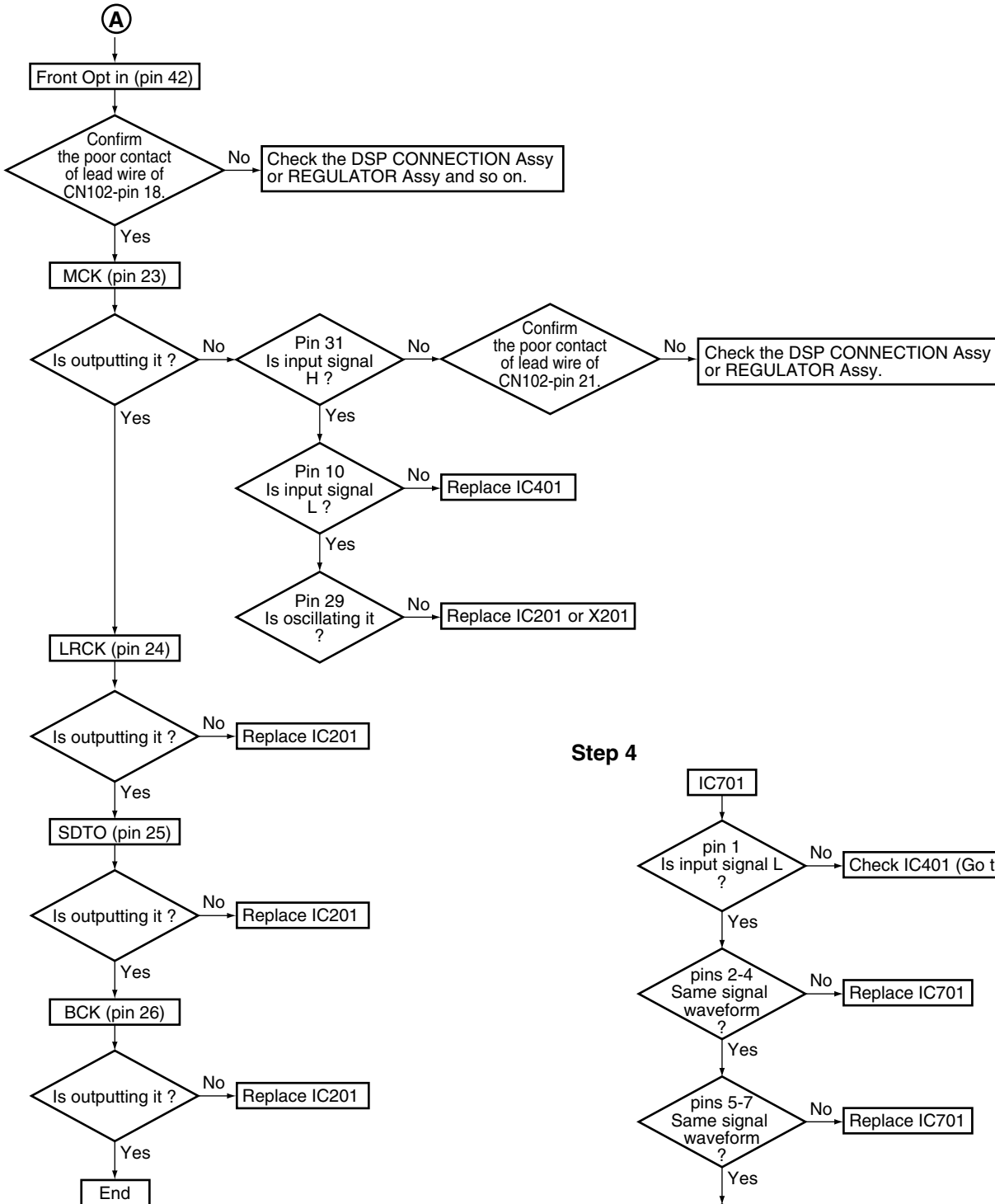


#### Step 2

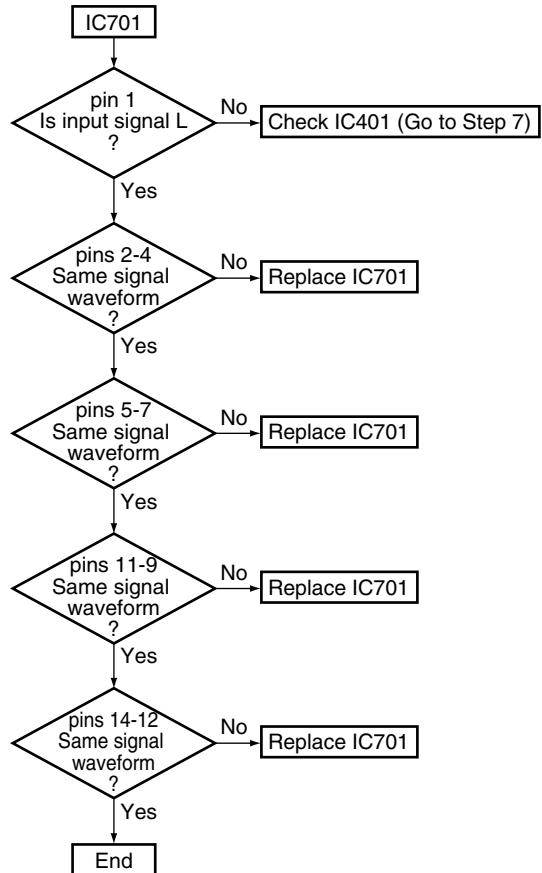


#### Step 3



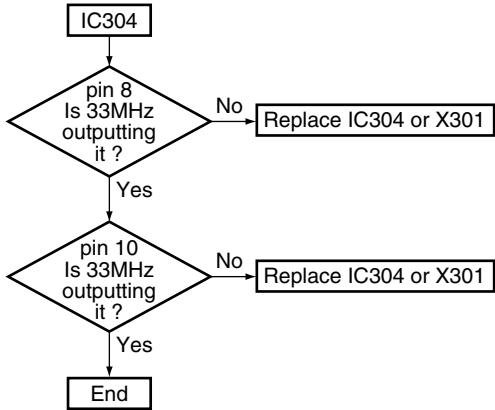


**Step 4**

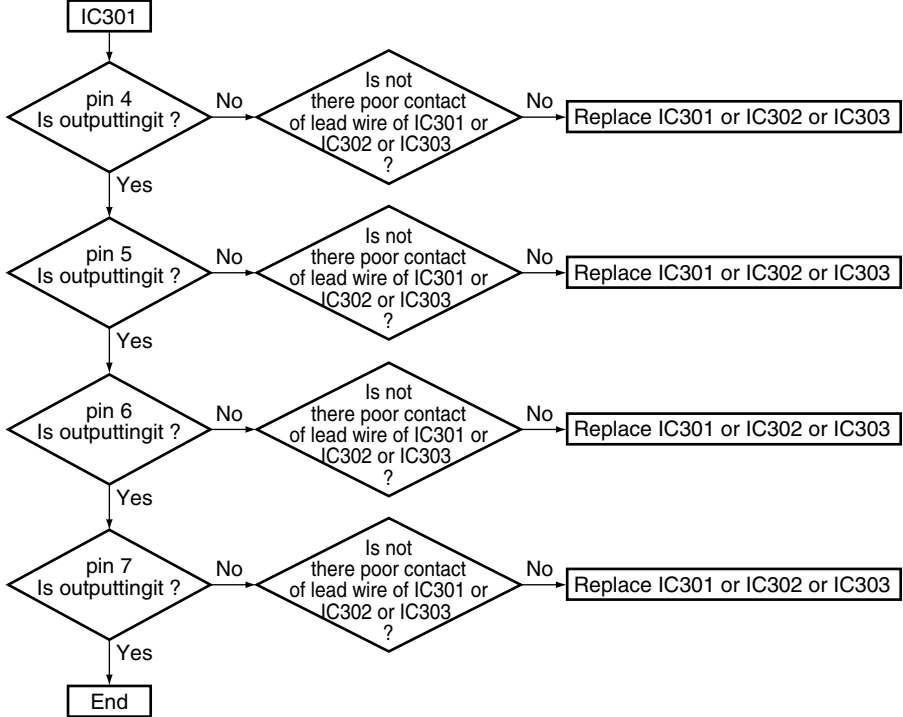




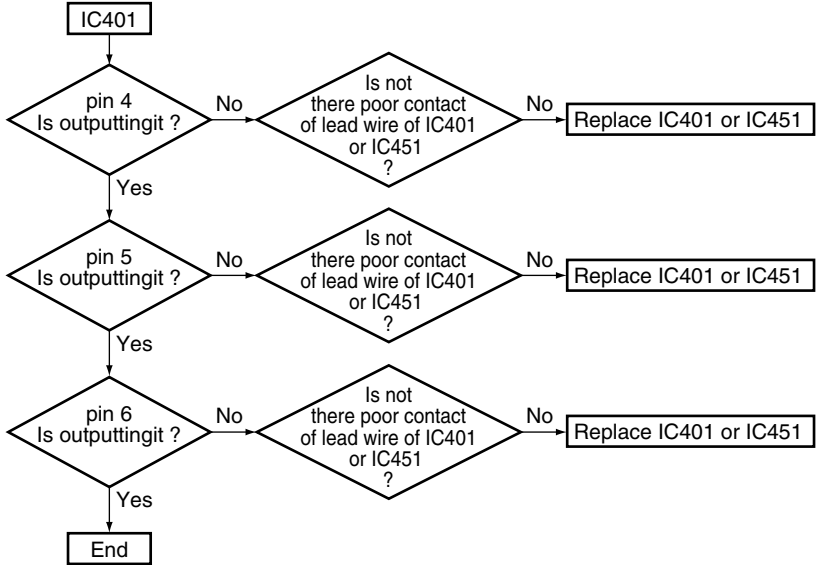
Step 5



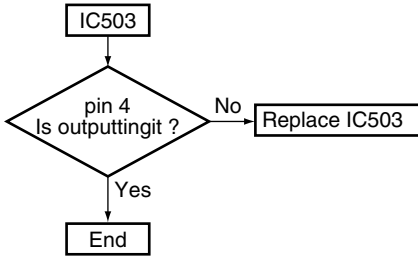
Step 6



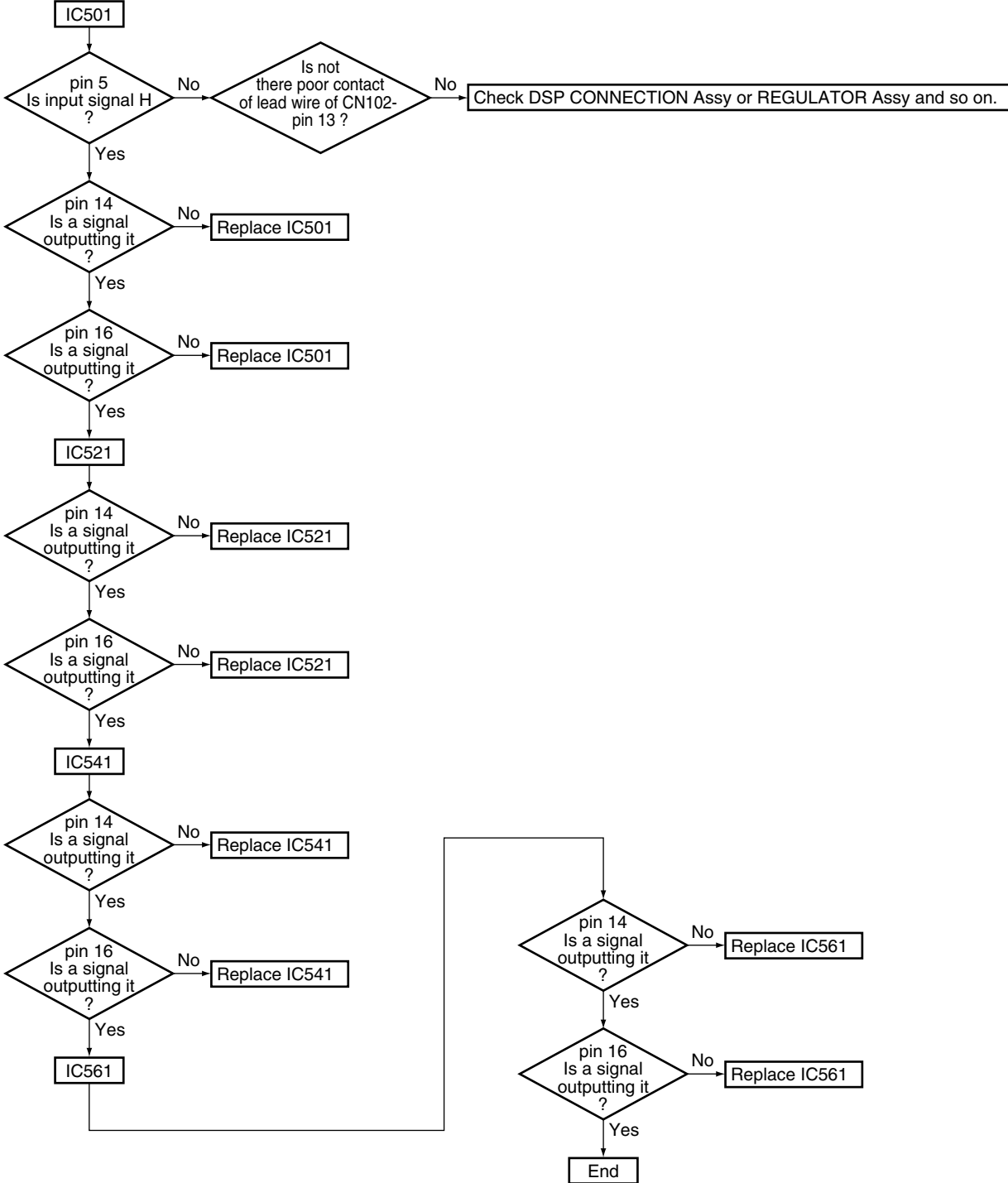
Step 7



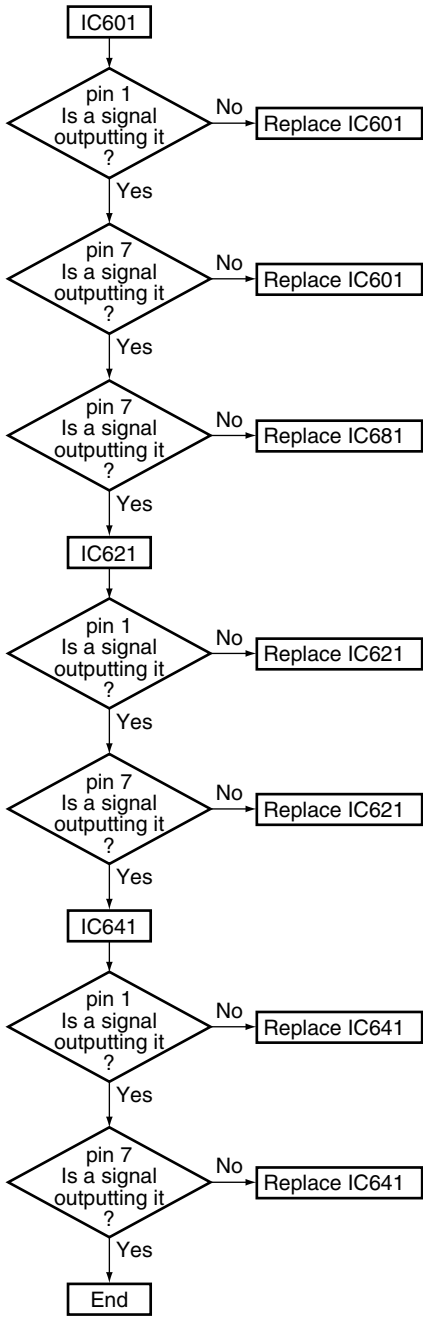
### Step 8



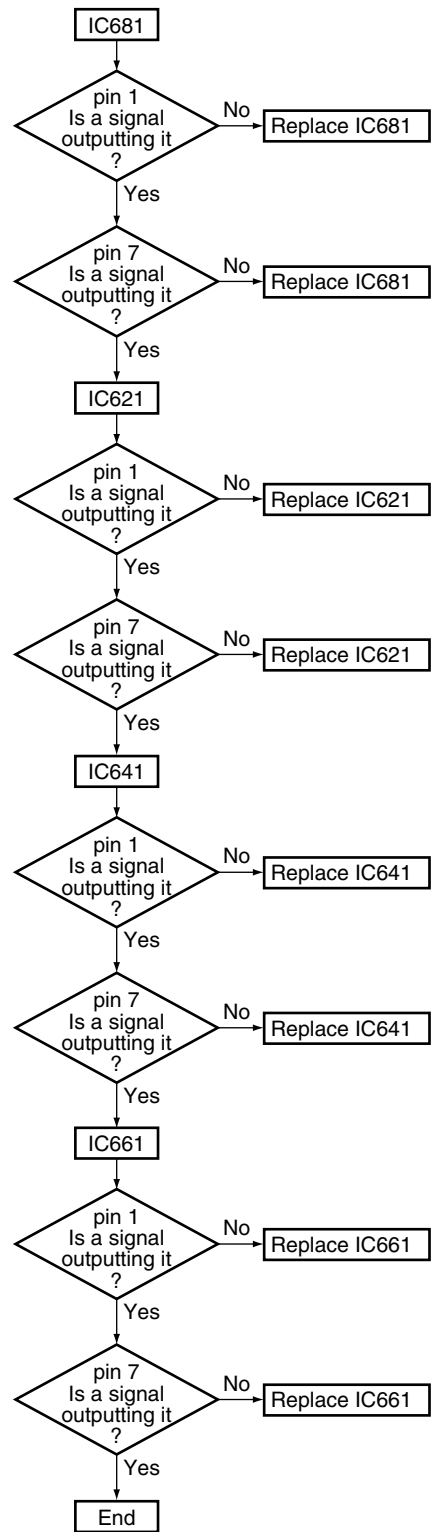
### Step 9



Step 10



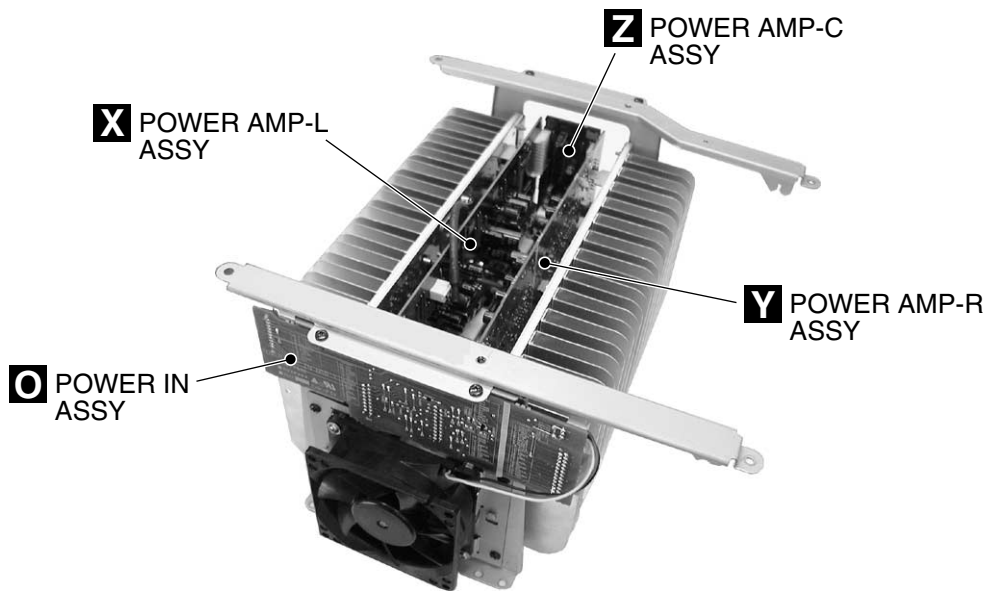
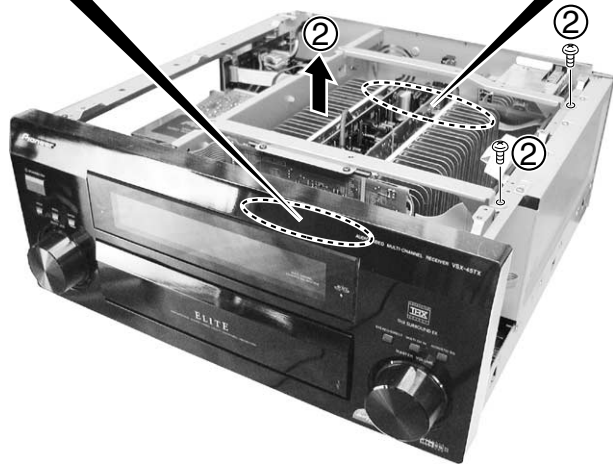
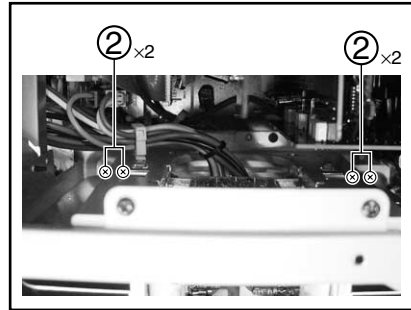
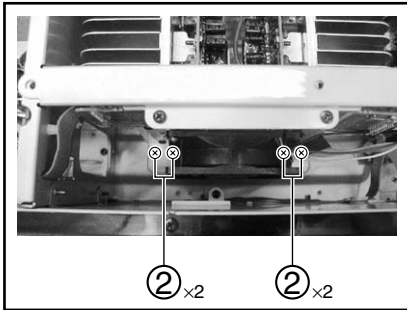
Step 11



### 7.1.4 DISASSEMBLY

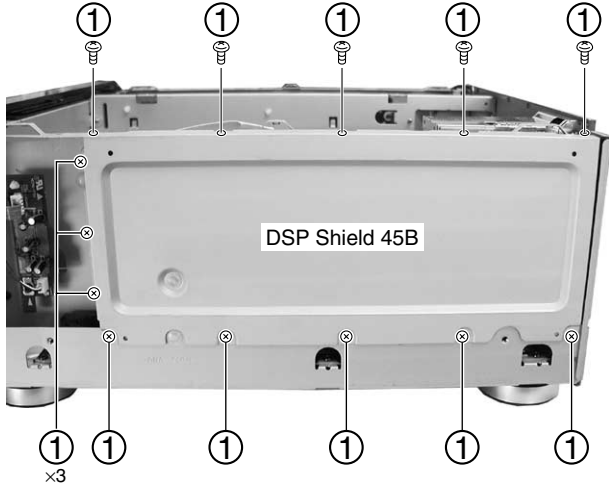
#### 1 Bonnet and Heat Sink Block

- ① Remove the bonnet case (screws × 23)
- ② Remove the heat sink block (screws × 10, connectors × 8)

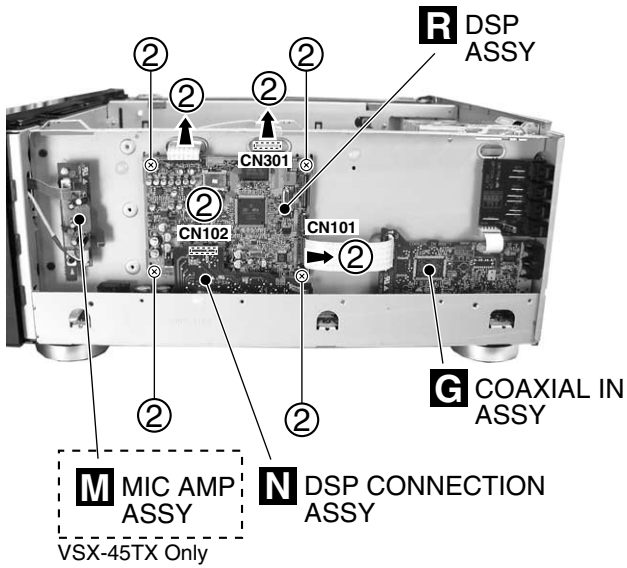


### 2 DSP Block

① Remove the DSP shield 45B (screws × 13)

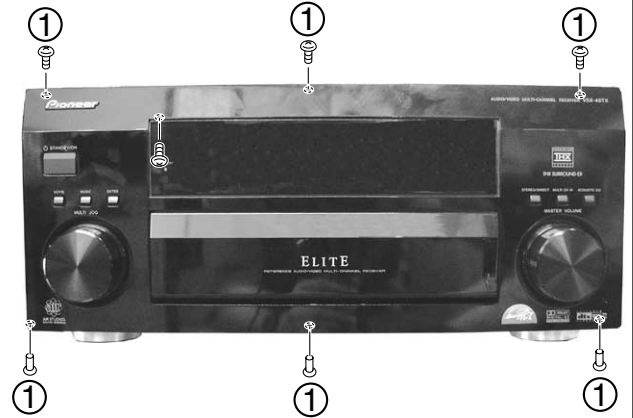


② Remove the DSP ASSY (screws × 4, connectors × 4)



### 3 Front Panel Block

① Remove six screws

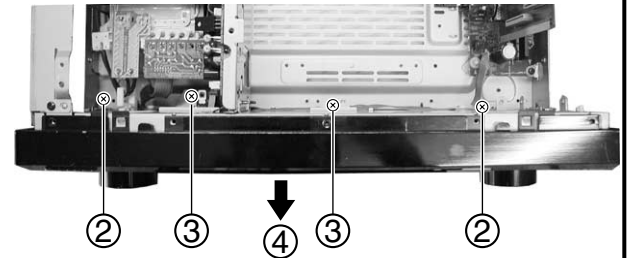


② Remove two screws

③ Remove two screws

④ Remove the front panel block

● Top View



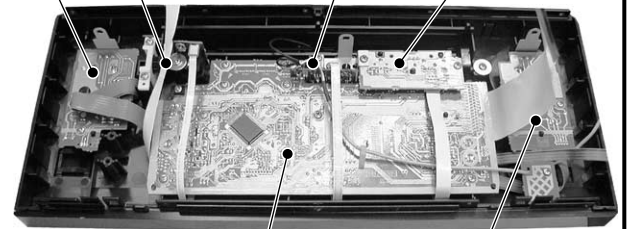
U MULTI JOG ASSY

VSX-45TX Only

L MIC & F.OPT IN ASSY

V HEADPHONE ASSY

D FRONT IN ASSY

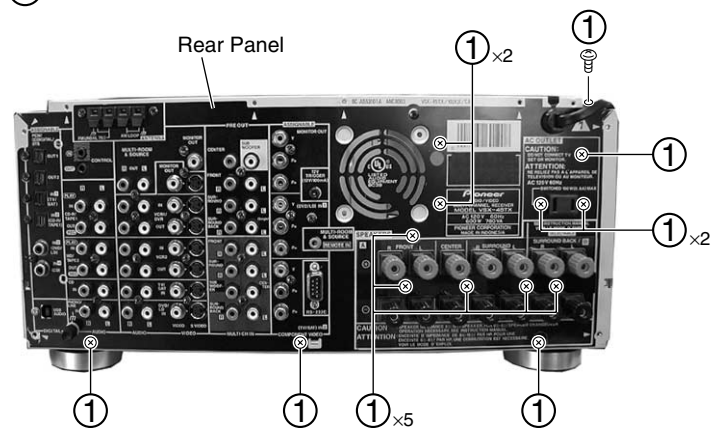


S DISPLAY ASSY

T VOLUME ASSY

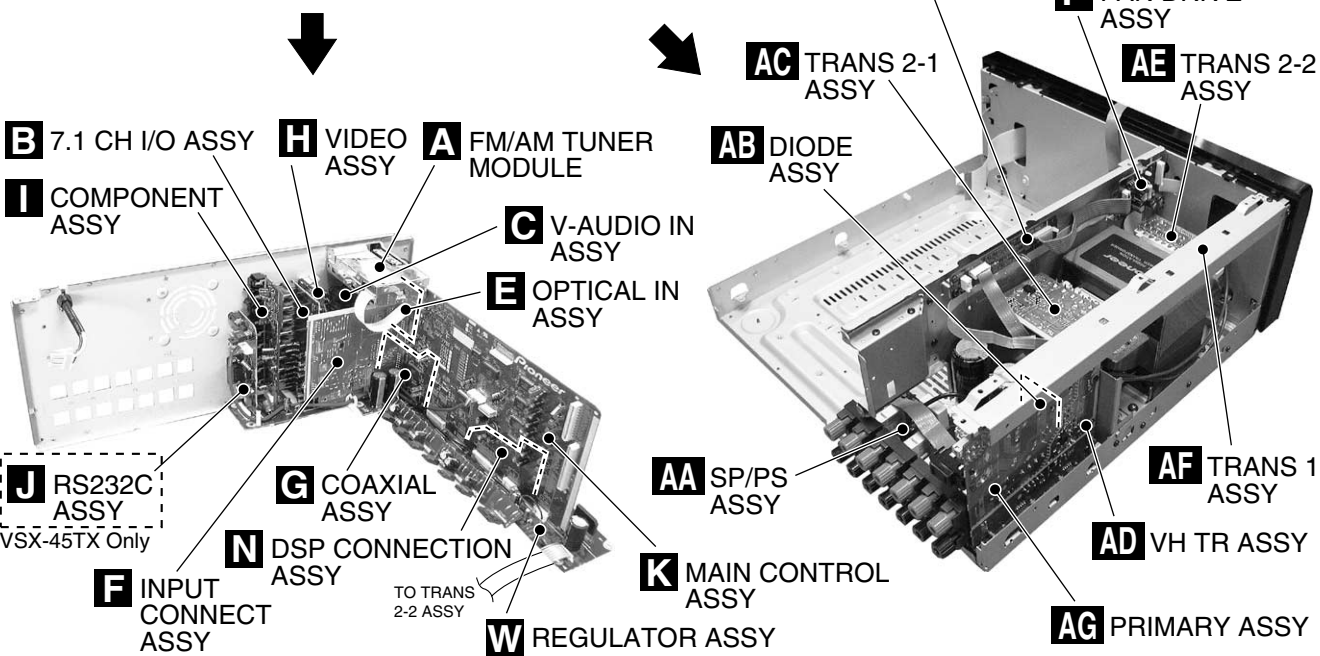
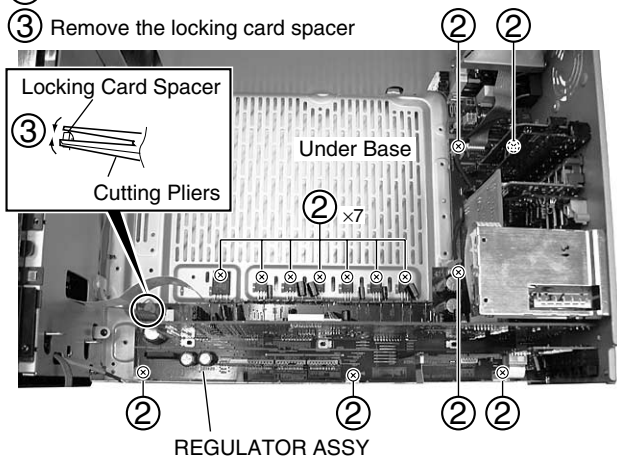
### 4 Rear Panel Block

① Remove 14 screws



② Remove 13 screws

③ Remove the locking card spacer



## 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

PDSPC56367PV150, PD5770A8, PD5771A, BU4094BCF, PCM2902EG

#### ■ DSPC56367PV150 (DSP ASSY: IC301)

##### • DSP Microcomputer

#### ● Pin Function

No.	Pin Name	I/O	Function
1	SCK1	I	Microcomputer communication clock
2	SS	I	Microcomputer communication chip select
3	HREQ	O	Microcomputer communication request
4	SDO0	O	Digital audio data (Front L/R)
5	SDO1	O	Digital audio data (Surround L/R)
6	SDO2	O	Digital audio data (Center/Subwoofer)
7	SDO3	O	Digital audio data (Front L/R)
8	VCCS	–	Interface power supply (3.3V)
9	GNDS	–	Interface GND
10	SDI1	I	Digital audio data (Front L/R)
11	SDI0	I	Digital audio data (Surround L/R)
12	FST	O	Digital audio LR clock
13	FSR	I	Digital audio LR clock
14	SCKT	O	Digital audio Bit clock
15	SCKR	I	Digital audio Bit clock
16	HCKT	I	Digital audio master clock
17	HCKR	I	Digital audio master clock
18	VCCQL	–	Quiet core power supply (1.8V)
19	GNDQ	–	Quiet GND
20	VCCQH	–	Quiet external power supply (3.3V)
21	HDS	I	Host data strobe
22	HRW	I	Host write data
23	HACK	I	Host acknowledge
24	HOREQ	O	Host request
25	VCCS	–	Interface power supply (3.3V)
26	GNDS	–	Interface GND
27	ADO	O	Digital audio data output
28	ACI	I	Digital audio master clock input
29	TIO0	I	Timer input
30	HCS	I	Host chip select
31	HA9	O	General-purpose port
32	HA8	O	DSP master switch
33	HAS	O	General-purpose port
34	HAD7	O	General-purpose port
35	HAD6	O	General-purpose port
36	HAD5	O	General-purpose port
37	HAD4	O	General-purpose port
38	VCCH	–	Host power supply (3.3V)
39	GNDH	–	Host GND
40	HAD3	O	General-purpose port
41	HAD2	O	General-purpose port
42	HAD1	O	General-purpose port
43	HAD0	O	General-purpose port
44	RESET	I	Reset
45	VCCP	–	PLL power supply (1.8V)
46	PCAP	I	PLL capacitor connection pin
47	GNDP	–	PLL GND
48	SDI0_1	I	Digital audio data (Surroundback L/R)

No.	Pin Name	I/O	Function
A 49	VCCQH	–	Quiet external power supply (3.3V)
50	FST_1	I	Digital audio LR clock
51	AA2	O	External memory chip select
52	CAS	O	Column address
53	SCKT_1	I	Digital audio Bit clock
54	GNDQ	–	Quiet GND
55	EXTAL	I	External clock input
56	VCCQL	–	Quiet core power supply (1.8V)
57	VCCC	–	Bus control power supply (3.3V)
58	GNDC	–	Bus control GND
B 59	FSR_1	O	Digital audio LR clock
60	SCKR_1	O	Digital audio Bit clock
61	PINIT	I	PLL initial pin
62	TA	I	Transfer acknowledge
63	BR	O	Bus request
64	BB	I	Bus busy
65	VCCC	–	Bus control power supply (3.3V)
66	GNDC	–	Bus control GND
67	WR	O	External memory read enable
68	RD	O	External memory write enable
69	AA1	O	Address control (Not used)
C 70	AA0	O	Address control (Not used)
71	BG	O	Bus control
72	A0	O	External memory address
73	A1	O	External memory address
74	VCCA	–	Address bus power supply (3.3V)
75	GNDA	–	Address bus GND
76	A2	O	External memory address
77	A3	O	External memory address
78	A4	O	External memory address
79	A5	O	External memory address
80	VCCA	–	Address bus power supply (3.3V)
D 81	GNDA	–	Address bus GND
82	A6	O	External memory address
83	A7	O	External memory address
84	A8	O	External memory address
85	A9	O	External memory address
86	VCCA	–	Address bus power supply (3.3V)
87	GNDA	–	Address bus GND
88	A10	O	External memory address
89	A11	O	External memory address
90	GNDQ	–	Quiet GND
91	VCCQL	–	Quiet core power supply (1.8V)
E 92	A12	O	External memory address
93	A13	O	External memory address
94	A14	O	External memory address
95	VCCQH	–	Quiet external power supply (3.3V)
F 96	GNDA	–	Address bus GND



No.	Pin Name	I/O	Function
97	A15	O	External memory address
98	A16	O	External memory address
99	A17	O	External memory address
100	D0	I/O	External memory data
101	D1	I/O	External memory data
102	D2	I/O	External memory data
103	VCCD	–	Data bus power supply (3.3V)
104	GNDD	–	Data bus GND
105	D3	I/O	External memory data
106	D4	I/O	External memory data
107	D5	I/O	External memory data
108	D6	I/O	External memory data
109	D7	I/O	External memory data
110	D8	I/O	External memory data
111	VCCD	–	Data bus power supply (3.3V)
112	GNDD	–	Data bus GND
113	D9	I/O	External memory data
114	D10	I/O	External memory data
115	D11	I/O	External memory data
116	D12	I/O	External memory data
117	D13	I/O	External memory data
118	D14	I/O	External memory data
119	VCCD	–	Data bus power supply (3.3V)
120	GNDD	–	Data bus GND
121	D15	I/O	External memory data
122	D16	I/O	External memory data
123	D17	I/O	External memory data
124	D18	I/O	External memory data
125	D19	I/O	External memory data
126	VCCQL	–	Quiet core power supply (1.8V)
127	GNDQ	–	Quiet GND
128	D20	I/O	External memory data
129	VCCD	–	Data bus power supply (3.3V)
130	GNDD	–	Data bus GND
131	D21	I/O	External memory data
132	D22	I/O	External memory data
133	D23	I/O	External memory data
134	MODD	I	Mode select D
135	MODC	I	Mode select C
136	MODB	I	Mode select B
137	MODA	I	Mode select A
138	SDI1_1	I	Digital audio data (Center/Subwoofer)
139	TDO	O	JTAG data output
140	TDI	I	JTAG data input
141	TCK	I	JTAG test clock
142	TMS	I	JTAG mode select
143	MOSI	I	Microcomputer communication data input
144	MISO	O	Microcomputer communication data output

## ■ DSPC56367PV150 (DSP ASSY: IC401)

### • DSP Microcomputer

#### ● Pin Function

No.	Pin Name	I/O	Function
1	SCK1	I	Microcomputer communication clock
2	SS	I	Microcomputer communication chip select
3	HREQ	O	Microcomputer communication request
4	SDO0	O	Digital audio data (Front L/R)
5	SDO1	O	Digital audio data (Surround L/R)
6	SDO2	O	Digital audio data (Center/Subwoofer)
7	SDO3	O	Digital audio data (Front L/R)
8	VCCS	–	Interface power supply (3.3V)
9	GNDS	–	Interface GND
10	SDI1	I	Digital audio data (Front L/R)
11	SDI0	I	Digital audio data (Surround L/R)
12	FST	O	Digital audio LR clock
13	FSR	I	Digital audio LR clock
14	SCKT	O	Digital audio Bit clock
15	SCKR	I	Digital audio Bit clock
16	HCKT	I	Digital audio master clock
17	HCKR	I	Digital audio master clock
18	VCCQL	–	Quiet core power supply (1.8V)
19	GNDQ	–	Quiet GND
20	VCCQH	–	Quiet external power supply (3.3V)
21	HDS	I	Host data strobe
22	HRW	I	Host write data
23	HACK	I	Host acknowledge
24	HOREQ	O	Host request
25	VCCS	–	Interface power supply (3.3V)
26	GNDS	–	Interface GND
27	ADO	O	Digital audio data output
28	ACI	I	Digital audio master clock input
29	TIO0	I	Timer input
30	HCS	I	Host chip select
31	HA9	O	General-purpose port
32	HA8	O	General-purpose port
33	HAS	O	General-purpose port
34	HAD7	O	General-purpose port
35	HAD6	O	General-purpose port
36	HAD5	O	General-purpose port
37	HAD4	O	General-purpose port
38	VCCH	–	Host power supply (3.3V)
39	GNDH	–	Host GND
40	HAD3	O	DVD-A switch
41	HAD2	O	DIR oscillation stop
42	HAD1	O	LSSN modxe (LFE addition)
43	HAD0	O	Analog mode
44	RESET	I	Reset
45	VCCP	–	PLL power supply (1.8V)
46	PCAP	I	PLL capacitor connection pin
47	GNDP	–	PLL GND
48	SDI0_1	I	Digital audio data (Surroundback L/R)

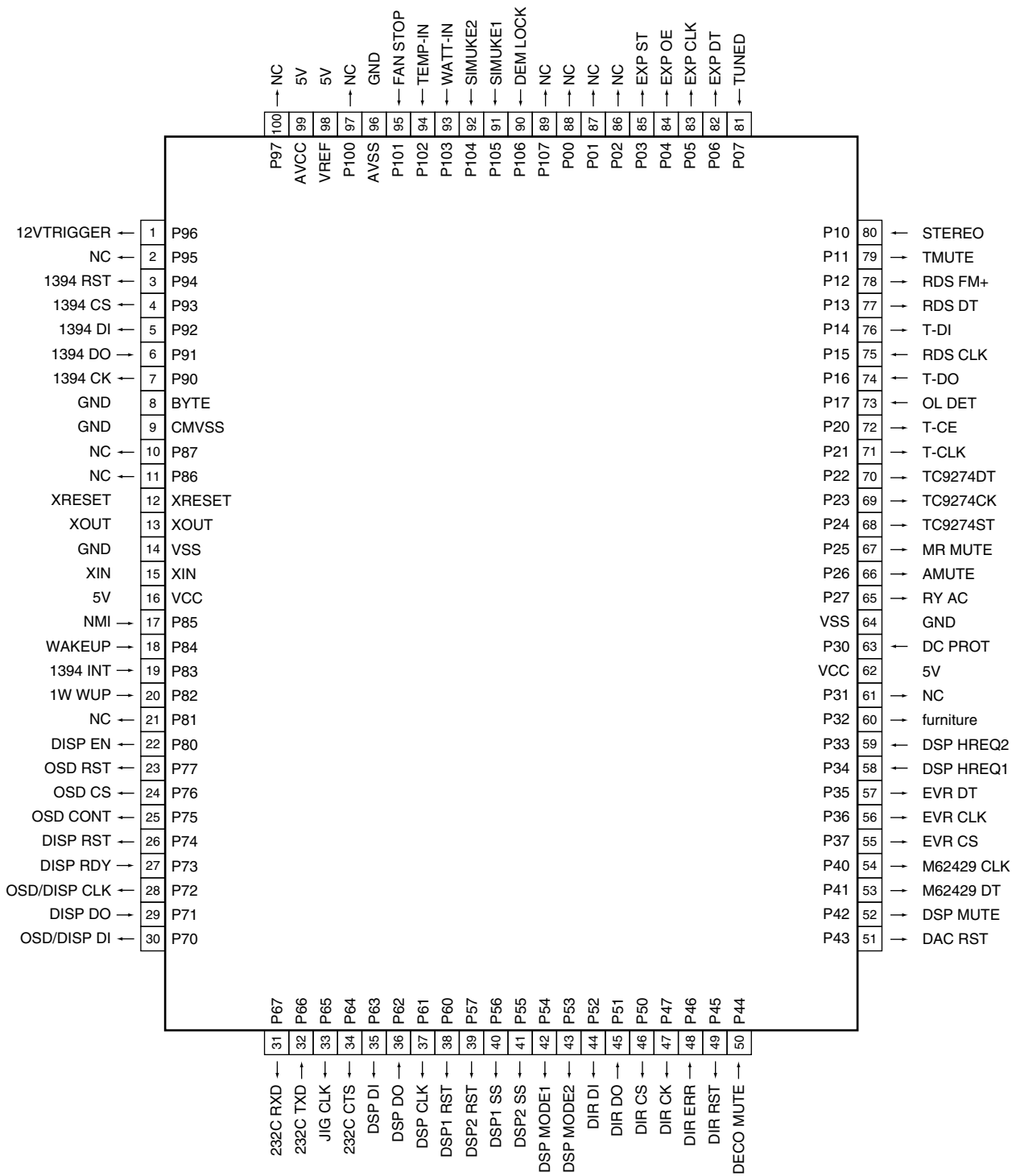
No.	Pin Name	I/O	Function
49	VCCQH	–	Quiet external power supply (3.3V)
50	FST_1	I	Digital audio LR clock
51	AA2	O	External memory chip select
52	CAS	O	Column address
53	SCKT_1	I	Digital audio Bit clock
54	GNDQ	–	Quiet GND
55	EXTAL	I	External clock input
56	VCCQL	–	Quiet core power supply (1.8V)
57	VCCC	–	Bass control power supply (3.3V)
58	GNDC	–	Bass control GND
59	FSR_1	O	Digital audio LR clock
60	SCKR_1	O	Digital audio Bit clock
61	PINIT	I	PLL initial pin
62	TA	I	Transfer acknowledge
63	BR	O	Bus request
64	BB	I	Bus busy
65	VCCC	–	Bus control power supply (3.3V)
66	GNDC	–	Bus control GND
67	WR	O	External memory read enable
68	RD	O	External memory write enable
69	AA1	O	Address control (Not used)
70	AA0	O	Address control (Not used)
71	BG	O	Bus control
72	A0	O	External memory address
73	A1	O	External memory address
74	VCCA	–	Address bus power supply (3.3V)
75	GNDA	–	Address bus GND
76	A2	O	External memory address
77	A3	O	External memory address
78	A4	O	External memory address
79	A5	O	External memory address
80	VCCA	–	Address bus power supply (3.3V)
81	GNDA	–	Address bus GND
82	A6	O	External memory address
83	A7	O	External memory address
84	A8	O	External memory address
85	A9	O	External memory address
86	VCCA	–	Address bus power supply (3.3V)
87	GNDA	–	Address bus GND
88	A10	O	External memory address
89	A11	O	External memory address
90	GNDQ	–	Quiet GND
91	VCCQL	–	Quiet core power supply (1.8V)
92	A12	O	External memory address
93	A13	O	External memory address
94	A14	O	External memory address
95	VCCQH	–	Quiet external power supply (3.3V)
96	GNDA	–	Address bus GND

No.	Pin Name	I/O	Function
A 97	A15	O	External memory address
98	A16	O	External memory address
99	A17	O	External memory address
100	D0	I/O	External memory data
101	D1	I/O	External memory data
102	D2	I/O	External memory data
103	VCCD	–	Data bus power supply (3.3V)
104	GNDD	–	Data bus GND
105	D3	I/O	External memory data
106	D4	I/O	External memory data
B 107	D5	I/O	External memory data
108	D6	I/O	External memory data
109	D7	I/O	External memory data
110	D8	I/O	External memory data
111	VCCD	–	Data bus power supply (3.3V)
112	GNDD	–	Data bus GND
113	D9	I/O	External memory data
114	D10	I/O	External memory data
115	D11	I/O	External memory data
116	D12	I/O	External memory data
117	D13	I/O	External memory data
C 118	D14	I/O	External memory data
119	VCCD	–	Data bus power supply (3.3V)
120	GNDD	–	Data bus GND
121	D15	I/O	External memory data
122	D16	I/O	External memory data
123	D17	I/O	External memory data
124	D18	I/O	External memory data
125	D19	I/O	External memory data
126	VCCQL	–	Quiet core power supply (1.8V)
127	GNDQ	–	Quiet GND
128	D20	I/O	External memory data
D 129	VCCD	–	Data bus power supply (3.3V)
130	GNDD	–	Data bus GND
131	D21	I/O	External memory data
132	D22	I/O	External memory data
133	D23	I/O	External memory data
134	MODD	I	Mode select D
135	MODC	I	Mode select C
136	MODB	I	Mode select B
137	MODA	I	Mode select A
138	SDI1_1	I	Digital audio data (Center/Subwoofer)
139	TDO	O	JTAG data output
E 140	TDI	I	JTAG data input
141	TCK	I	JTAG test clock
142	TMS	I	JTAG mode select
143	MOSI	I	Microcomputer communication data input
144	MISO	O	Microcomputer communication data output

# PD5770B8 (MAIN CONTROL ASSY: IC501)

## • Main Microcomputer

### ● Pin Assignment (Top view)



## ● Pin Function

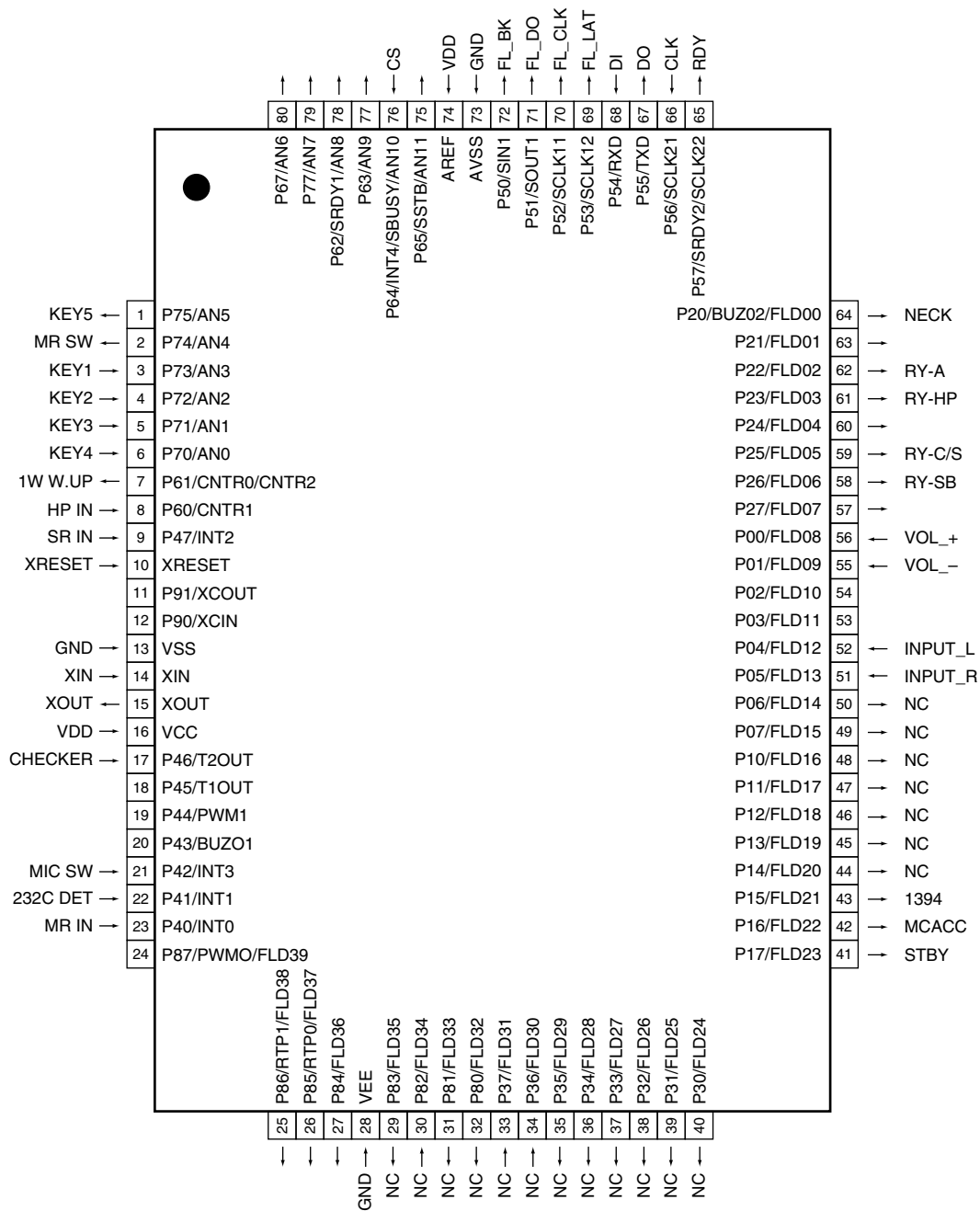
No.	Pin Name	I/O	Pin Function	Active
1	12VTRIGGER	O	"H" at O	
2	–	O	NC "L" fixed.	
3	1394 RST	O	Standby for 1394 (Not used) "L" fixed.	
4	1394 CS	O	Standby for 1394 (Not used) "L" fixed.	
5	1394 DI	O	Standby for 1394 (Not used) "L" fixed.	
6	1394 DO	I	Standby for 1394 (Not used) Standby with the circuit.	
7	1394 CK	O	Standby for 1394 (Not used) "L" fixed.	
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	Standby for 1394 (Not used) Standby with the circuit.	
20	1W WUP	I	Wakeup signal at standby (from the display microcomputer) (pulldown)	H
21	–	O	L" fixed	
22	DISP EN	O	Communication enabling signal to the display microcomputer	H
23	OSD RST	O	OSD-IC reset signal L: reset, H: release reset	
24	OSD CS	O	OSD-IC chip select signal	H
25	OSD CONT.	O	At data transfer to the OSD-IC: "H"	
26	DISP RST	O	Display microcomputer reset signal L: reset, H: release reset (pulldown)	
27	DISP RDY	I	Communication enabling signal from the display microcomputer	H
28	OSD/DISP CLK	O	Communication clock signal with the OSD-IC/display microcomputer	
29	DISP DO	I	Communication data in signal with the display microcomputer (N ch open drain)	
30	OSD/DISP DI	O	Communication data out signal with the OSD-IC/display microcomputer (N ch open drain: pullup)	
31	232C RXD	O	For 232C rewriting (data output)	
32	232C TXD	I	For 232C rewriting (data input)	
33	CLK	O	Not used	
34	232C CTS	O	For 232C rewriting (communication enabling)	
35	DSP DI	O	Communication data out signal with the DSP1 microcomputer	
36	DSP DO	I	Communication data in signal with the DSP2 microcomputer	
37	DSP CLK	O	Communication clock signal with the DSP microcomputer	
38	DSP1 RST	O	DSP1 microcomputer reset signal L: reset, H: release reset	
39	DSP2 RST	O	DSP2 microcomputer reset signal L: reset, H: release reset	
40	DSP1 SS	O	Slave select signal to DSP1 microcomputer	L
41	DSP2 SS	O	Slave select signal to DSP2 microcomputer	L
42	DSP MODE1	O	Mode selection of DSP1 microcomputer (ROM/RAM) H: ROM mode, L: RAM (PPP) mode	H
43	DSP MODE2	O	Mode selection of DSP2 microcomputer (ROM/RAM) H: ROM mode, L: RAM (PPP) mode	H
44	DIR DI	O	Communication data out signal with the DIR	
45	DIR DO	I	Communication data in signal with the DIR/DAC	
46	DIR CS	O	Communication chip select signal with the DIR/DAC	
47	DIR CK	O	Communication clock signal with the DIR/DAC	
48	DIR ERR	I	Lock/Unlock signal	
49	DIR RST	O	DIR reset signal	
50	DECO MUTE	I	Boot success detecting port of 1st DSP	

No.	Pin Name	I/O	Pin Function	Active
51	DAC RST	O	DAC/AD reset	
52	DSP MUTE	O	DSP Assy mute	H
53	M62429 DT	O	Data signal for multi room volume IC control	
54	M62429 CLK	O	Clock signal for multi room volume IC control	
55	EVR CS	O	Chip select signal for electronic volume	
56	EVR CLK	O	Clock signal for electronic volume	
57	EVR DT	O	Data signal for electronic volume	
58	DSP HREQ1	I	Error detection signal of DSP1 microcomputer	
59	DSP HREQ2	I	Error detection signal of DSP2 microcomputer	
60	furniture	O	Furniture control signal	
61	–	O	L" fixed	
62	5V	–	5V power supply	
63	DC PROT	I	DC detection L: Detection	L
64	GND	–	Ground	
65	RC-AC	O	AC relay ON/OFF	H
66	AMUTE	O	System mute L: Mute ON	L
67	MRMUTE	O	Multi room mute L: Mute ON	L
68	tc9274f-st	O	Function SW control (STEREO)	
69	tc9274f-ck	O	Function SW control (CLOCK)	
70	tc9274f-dt	O	Function SW control (DATA)	
71	TUNER CLK	O	Clock signal of tuner control	
72	TUNER CE	O	Chip select signal of tuner control	
73	OL DET	I	Amp. overload detection L: Detection	L
74	TUNER DO	I	Data input signal of tuner control (pullup)	
75	RDS CLK	O	L" fixed	
76	TUNER DI	I	Data output signal of tuner control	
77	RDS DT	O	L" fixed	
78	RDS FM+	O	L" fixed	
79	TMUTE	O	Tuner mute	H
80	STEREO	I	L: STEREO (pullup)	L
81	TUNED	I	L: TUNED (pullup)	L
82	EXP DT	O	Data signal of expansion IC control	
83	EXP CLK	O	Clock signal of expansion IC control	
84	EXP OE	O	Output enable signal of expansion IC control	
85	EXP ST	O	Chip clock signal of expansion IC control	
86	–	O	NC	
87	–	O	NC	
88	–	O	NC	
89	–	O	NC	
90	DEM LOCK	I	Not used	
91	SIMUKE1	I	Destination read 1	
92	SIMUKE2	I	Destination read 2	
93	WATT-IN	I	Wattage detection Level detection with AD	A/D
94	TEMP-IN	I	Temperature detection Level detection with AD	A/D
95	FAN STOP	I	Fan forced stop detection	H
96	AVSS	–	Connect to VSS	
97	–	O	NC	L
98	VREF	–	Connect to VCC	
99	AVCC	–	Connect to VCC	
100	–	O	NC	

# PD5771A (DISPLAY ASSY: IC3000)

• Display Microcomputer

## • Pin Assignment (Top view)





### ● Pin Function

No.	Pin Name	I/O	Pin Function	No.	Pin Name	I/O	Pin Function
1	KEY5	I	KEY AD input	41	STANDBY	O	Standby LED
2	MR SW	O	Multi room input Pioneer/others L: Pioneer	42	MCACC	O	MCACC LED
3	KEY1	I	KEY AD input	43	1394	O	1394 LED
4	KEY2			44	NC	O	Non connection
5	KEY3			45	NC		
6	KEY4			46	NC		
7	1W WUP	O	1W correspondence main wakeup	47	NC		
8	HP	I	Headphone detection (active: H)	48	NC		
9	SR IN	I	Remote control input of main room	49	NC		
10	RESET	-	Reset input from the main microcomputer	50	NC		
11	NC	O	Non connection	51	INPUT_R	I	Input selector RIGHT
12	NC			52	INPUT_L	I	Input selector LEFT
13	Vss	-	Ground	53	NC	O	Non connection
14	XIN	-	Oscillator	54	NC	O	Non connection
15	XOUT	-	Oscillator	55	VOL_-	I	Volume -
16	Vcc	-	Power supply 5V	56	VOL_+	I	Volume +
17	CHECKER	I	Checker mode detection (10kΩ pulldown)	57	NC	O	Non connection
18	NC	O	Non connection	58	RY-SB	O	Surround back/SP-B relay ON/OFF (active: H)
19	NC			59	RY-C/S	O	C/S relay ON/OFF (active: H)
20	NC			60	NC	O	Non connection
21	MIC SW	I	MIC detection	61	RY-HP	O	Headphone relay ON/OFF (active: H)
22	232C DET	I	232C signal input detection	62	RY-A	O	Speaker A relay ON/OFF (active: H)
23	MR IN	I	Remote control input of sub room (active: H)	63	NC	O	Non connection
24	NC	O	Non connection	64	NECK	O	6/8Ω switch L: 6Ω, H: 8Ω, Initial: 8Ω
25	NC	O	Non connection	65	RDY	O	Communication ready with main UCOM
26	NC			66	CLK	O	Communication clock with main UCOM
27	NC			67	DO	O	Communication data out with main UCOM
28	VEE	-	Ground	68	DI	I	Communication data in with main UCOM
29	NC	O	Non connection	69	FL_LAT	O	FL DRV LAT
30	NC			70	FL_CLK	O	FL DRV CLK
31	NC			71	FL_DO	O	FL DRV DATA
32	NC			72	FL_BK	O	FL DRV BK
33	NC			73	AVSS	-	Ground
34	NC			74	VREF	-	5V reference voltage
35	NC			75	NC	O	Non connection
36	NC			76	CS	I	Communication CS with main UCOM
37	NC			77	NC	O	Non connection
38	NC			78	NC		
39	NC			79	NC		
40	NC			80	NC		

## ■ BU4094BCF (MAIN CONTROL ASSY: IC502)

### • Expansion IC

#### ● Pin Function

No.	Pin Name	Pin Function	Active
1	DEM_STP	Demodulator oscillation OFF/ON	H
2	DEM_RST	Demodulator reset L: RESET	L
3	NJM2279_SW1	NJM2279 video control of sub room system	
4	NJM2279_SW2		H
5	NJM2596_SW2	NJM2596 video control of main system	H
6	NJM2596_SW3		H
7	NJM2596_SW4		H
8	NJM2596_SW5		

## ■ BU4094BCF (MAIN CONTROL ASSY: IC503)

### • Expansion IC

#### ● Pin Function

No.	Pin Name	Pin Function	Active
1	OSD ON	ON at OSD on	H
2	TC9215_C34	Switch the DSP/DIRECT/MULTI CH IN of surround signal H: Multi ch input path	
3	PHONO GAIN	"H" at PHONO equalizer ON	H
4	DSDM	For SACD "L" fixed	
5	TC74HC4053_INH	Select the Component/D4 input (2 inputs → 1 output)	
6	TC74HC4053_A		
7	FAN DRIVE	ON when rotates the FAN	H
8	LOFAN	Not used "H" fixed	

## PCM2902EG (COAXIAL IN ASSY: IC1681)

### • USB Codec IC

#### ● Pin Assignment (Top view)

28	27	26	25	24	23	22	21	20	19	18	17	16	15
SSPND	VDDI	DGND	DOUT	DIN	VCCXI	AGNDX	XTI	XTO	VCCP2I	AGNDP	VCCP1I	VOU TL	VOU TR
1	2	3	4	5	6	7	8	9	10	11	12	13	14
D+	D-	VBUS	DGNDU	HID0	HID1	HID2	SEL0	SEL1	VCCCI	AGNDC	VINL	VINR	VCOM

#### ● Pin Function

No.	Pin Name	I/O	Pin Function
1	D+	I/O	USB differential input/output plus(1)
2	D-	I/O	USB differential input/output minus(1)
3	VBUS	I	Connect to USB power (VBUS)
4	DGNDU	-	Digital ground for USB transceiver
5	HID0	I	HID key state input (mute), active high(3)
6	HID1	I	HID key state input (volume up), active high(3)
7	HID2	I	HID key state input (volume down), active high(3)
8	SEL0	I	Must be set to high(6)
9	SEL1	I	Must be set to high(6)
10	VCCCI	-	Internal analog power supply for codec(4)
11	AGNDC	-	Analog ground for codec
12	VINL	I	ADC analog input for L-channel
13	VINR	I	ADC analog input for R-channel
14	VCOM	-	Common for ADC/DAC (VCCCI/2) (4)
15	VOU TR	O	DAC Analog output for R-channel
16	VOU TL	O	DAC analog output for L-channel
17	VCCP1I	-	Internal analog power supply for PLL(4)
18	AGNDP	-	Analog ground for PLL
19	VCCP2I	-	Internal analog power supply for PLL(4)
20	XTO	O	Crystal oscillator output
21	XTI	I	Crystal oscillator input(2)
22	AGNDX	-	Analog ground for oscillator
23	VCCXI	-	Internal analog power supply for oscillator(4)
24	DIN	I	S/PDIF input(5)
25	DOUT	O	S/PDIF output
26	DGND	-	Digital ground
27	VDDI	-	Internal digital power supply(4)
28	SSPND	O	Suspend flag, active low (Low: suspend, High: operational)

(1) LV-TTL level

(2) 3.3-V CMOS level input

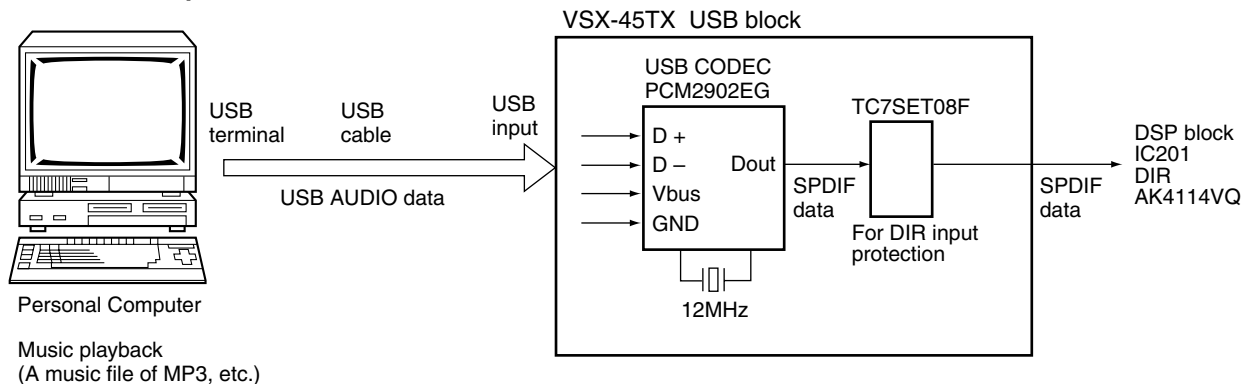
(3) 3.3-V CMOS level input with internal pulldown. This pin informs the PC of serviceable control signals such as mute, volume up, or volume down, which has no connection with the internal DAC or ADC directly. See the volume control and mute control section.

(4) Connect a decouple capacitor to GND

(5) 3.3-V CMOS level input with internal pulldown, 5 V tolerant

(6) TTL Schmitt trigger, 5 V tolerant

## ● Flow of USB Input Data



Music playback  
(A music file of MP3, etc.)

### About PCM2902EG

- With codec of USB BUS POWERED, power is supplied from Vbus of USB, and work. (work with a power supply of VSX-45TX irrelatively.)
- Be USB codec, but analog I/O and digital (SPDIF) input are not using in VSX-45TX.
- When only connects to PC and receiver (VSX-45TX) is turned on, the output of TC7SET08F outputs.

## ● Help of Non-failure Decision

### Symptom when a sound is not output (Symptom is different by each OS)

- Confirm a driver whether PC is recognizing it. (With a device manager).
- Is a switch of sound source performed properly? (Control Panel, Sound or Multimedia)
- Is volume control of PC adjusted?
- How is other PC?
- In the state that does not change PC setting, is sound output in other VSX-45TX?
- When uses CD-ROM and playback a music CD, and a sound is not output, is digital playback of CD-ROM checked?

### When contain noise

- There is a bug in early USB AUDIO driver of WINDOWS XP, and contain noise once for several minutes. (Correspond with WINDOWS UPDATE.)
- An affinity problem with chip set
- Adaptation problem with chip set (refer to next item)
- Performance issue of PC. (Release resident software as measures.)
- Noise when using the other software during music playback. (Do not guarantee or do not use the other software)
- Do contain the same noise even if changes the PC?

### Reference

Confirmation item of the USB part with Function checker.  
Supply a power supply (+5V: pin 3, GND: pin 4) of IC1681 (PCM2902EG), and connect D+ (pin1) to GND.  
Confirm that X1681 (ASS7047) starts oscillating.

#### Support OS

Windows	98 / 98SE / ME
Windows	2000 Professional
Windows	XP Home / Professional

## ● Adaptation Problem with Chip Set

### PCM2902EG caution of operation

Operating environment and findings of PCM2902EG

Evaluation PC: Libretto PAL2060 TNML made by Toshiba

- (1) CPU: Crusoe 600MHz made by Transmeta  
Use chip set: Transmeta N/B (North Bridge)  
M1533 (South Bridge) made by ALI  
OS: Windows ME
- (2) CPU: Celeron 566MHz made by Intel  
Use chip set: Aladdin Pro 5 (North Bridge) and M1533 (South Bridge) made by ALI  
OS: Windows ME
- (3) CPU: K6-2 400MHz made by AMD  
Use chip set: Aladdin 5 (North Bridge) and M1543 (South Bridge) made by ALI  
OS: Windows ME

When contain noise by a problem of the chip set side, there is a problem in the PC side because even other USB audio equipment contains noise.

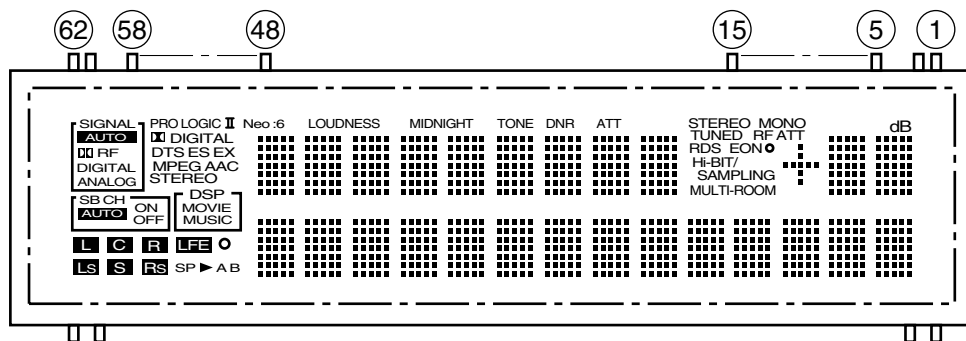
Therefore, do not recommend use in the condition and environment as mentioned above.

## 7.2.2 DISPLAY

### ■ AAV7087 (DISPLAY ASSY : V3000)

#### • FL DISPLAY

#### • Pin Assignment

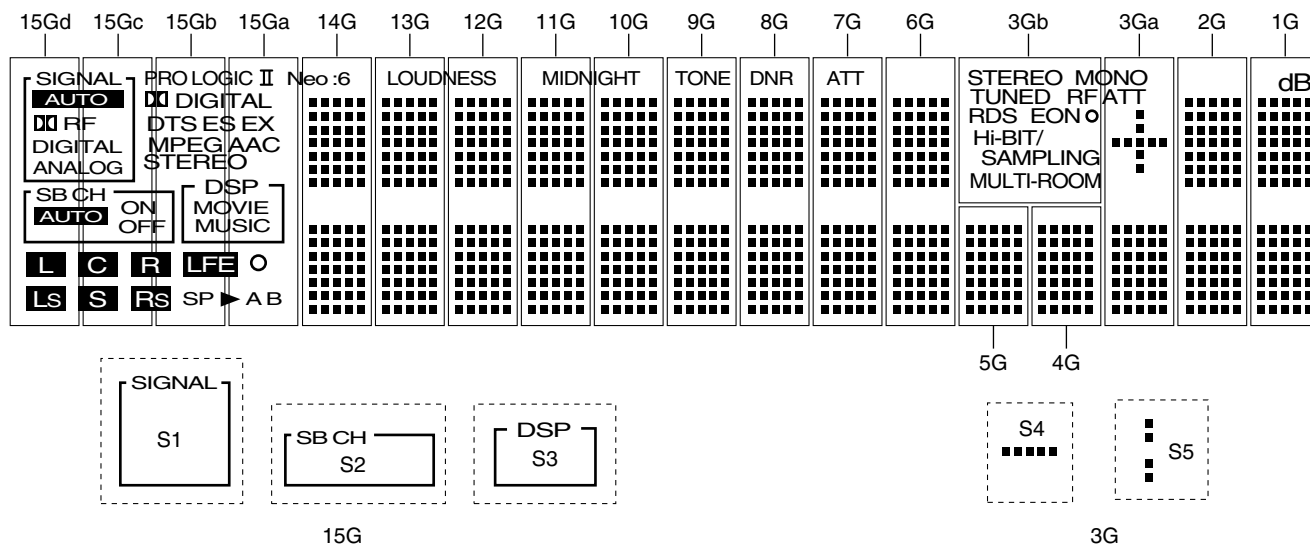


#### • Pin Connection

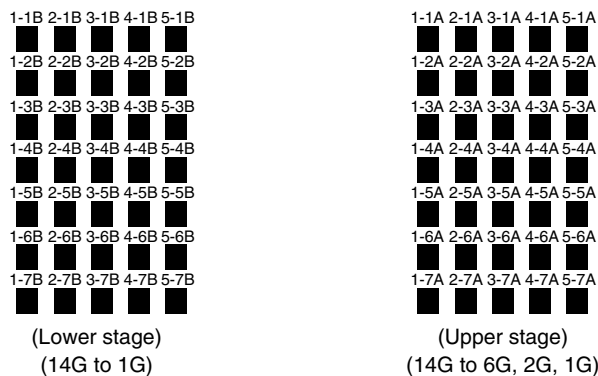
Pin No.	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47-3	2	1
Connection	F2	F2	NP	NP	GND	GND	NC	VH	NC	VDD	BK	LAT	CLK	SI	SO	NP	F1	F1

- NOTE
- |  |  |   |
|--|--|---|
| 1) F1, F2..... Filament                | 6) VDD..... Logic Voltage Supply pin   | 10) CLK..... Shift Register Clock                               |
| 2) NP..... No pin (5-15 cut it by 2mm) | 7) NC..... No connection<br>(NC pin should be electrically open on the PC board) | 11) SI..... Serial Data Input                                   |
| 3) DL..... Datum Line                  | 8) BK..... Driver Output Blanking  | 12) SO..... Serial Data Output<br>(to be open, if don't use)    |
| 4) GND..... GND pin                    | 9) LAT..... Latch Control Input  | 13) Field of vision is a minimum of 21°<br>from the lower side. |
| 5) VH..... High Voltage Supply pin     |  |   |

#### • Grid Assignment



#### • Segment Designation



• Anode Connection

	15Gd-15Ga	14G	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3Gb, 3Ga	2G	1G
P1	Neo:6		LOUDNESS	MIDNIGHT	TONE	DNR	ATT	-	-	-	-	-	STEREO	-	dB
P2	PROLOGIC	1-1A	1-1A	1-1A	1-1A	1-1A	1-1A	1-1A	1-1A	1-1A	-	-	MONO	1-1A	1-1A
P3	II	2-1A	2-1A	2-1A	2-1A	2-1A	2-1A	2-1A	2-1A	2-1A	-	-	TUNED	2-1A	2-1A
P4	S1	3-1A	3-1A	3-1A	3-1A	3-1A	3-1A	3-1A	3-1A	3-1A	-	-	RF ATT	3-1A	3-1A
P5	AUTO	4-1A	4-1A	4-1A	4-1A	4-1A	4-1A	4-1A	4-1A	4-1A	-	-	RDS	4-1A	4-1A
P6	RF	5-1A	5-1A	5-1A	5-1A	5-1A	5-1A	5-1A	5-1A	5-1A	-	-	EON	5-1A	5-1A
P7	DIGITAL	1-2A	1-2A	1-2A	1-2A	1-2A	1-2A	1-2A	1-2A	1-2A	-	-	○	1-2A	1-2A
P8	ANALOG	2-2A	2-2A	2-2A	2-2A	2-2A	2-2A	2-2A	2-2A	2-2A	-	-	HI-BIT/ SAMPLING	2-2A	2-2A
P9	DIGITAL	3-2A	3-2A	3-2A	3-2A	3-2A	3-2A	3-2A	3-2A	3-2A	-	-	S4	3-2A	3-2A
P10	DTS	4-2A	4-2A	4-2A	4-2A	4-2A	4-2A	4-2A	4-2A	4-2A	-	-	S5	4-2A	4-2A
P11	ES	5-2A	5-2A	5-2A	5-2A	5-2A	5-2A	5-2A	5-2A	5-2A	-	-	-	5-2A	5-2A
P12	EX	1-3A	1-3A	1-3A	1-3A	1-3A	1-3A	1-3A	1-3A	1-3A	-	-	-	1-3A	1-3A
P13	MPEG	2-3A	2-3A	2-3A	2-3A	2-3A	2-3A	2-3A	2-3A	2-3A	-	-	-	2-3A	2-3A
P14	AAC	3-3A	3-3A	3-3A	3-3A	3-3A	3-3A	3-3A	3-3A	3-3A	-	-	-	3-3A	3-3A
P15	STEREO	4-3A	4-3A	4-3A	4-3A	4-3A	4-3A	4-3A	4-3A	4-3A	-	-	-	4-3A	4-3A
P16	S2	5-3A	5-3A	5-3A	5-3A	5-3A	5-3A	5-3A	5-3A	5-3A	-	-	-	5-3A	5-3A
P17	AUTO	1-4A	1-4A	1-4A	1-4A	1-4A	1-4A	1-4A	1-4A	1-4A	-	-	-	1-4A	1-4A
P18	ON	2-4A	2-4A	2-4A	2-4A	2-4A	2-4A	2-4A	2-4A	2-4A	-	-	-	2-4A	2-4A
P19	OFF	3-4A	3-4A	3-4A	3-4A	3-4A	3-4A	3-4A	3-4A	3-4A	-	-	-	3-4A	3-4A
P20	S3	4-4A	4-4A	4-4A	4-4A	4-4A	4-4A	4-4A	4-4A	4-4A	-	-	-	4-4A	4-4A
P21	MOVIE	5-4A	5-4A	5-4A	5-4A	5-4A	5-4A	5-4A	5-4A	5-4A	-	-	-	5-4A	5-4A
P22	MUSIC	1-5A	1-5A	1-5A	1-5A	1-5A	1-5A	1-5A	1-5A	1-5A	-	-	-	1-5A	1-5A
P23	L	2-5A	2-5A	2-5A	2-5A	2-5A	2-5A	2-5A	2-5A	2-5A	-	-	-	2-5A	2-5A
P24	C	3-5A	3-5A	3-5A	3-5A	3-5A	3-5A	3-5A	3-5A	3-5A	-	-	-	3-5A	3-5A
P25	R	4-5A	4-5A	4-5A	4-5A	4-5A	4-5A	4-5A	4-5A	4-5A	-	-	-	4-5A	4-5A
P26	LS	5-5A	5-5A	5-5A	5-5A	5-5A	5-5A	5-5A	5-5A	5-5A	-	-	-	5-5A	5-5A
P27	S	1-6A	1-6A	1-6A	1-6A	1-6A	1-6A	1-6A	1-6A	1-6A	-	-	-	1-6A	1-6A
P28	RS	2-6A	2-6A	2-6A	2-6A	2-6A	2-6A	2-6A	2-6A	2-6A	-	-	-	2-6A	2-6A
P29	LFE	3-6A	3-6A	3-6A	3-6A	3-6A	3-6A	3-6A	3-6A	3-6A	-	-	-	3-6A	3-6A
P30	○	4-6A	4-6A	4-6A	4-6A	4-6A	4-6A	4-6A	4-6A	4-6A	-	-	-	4-6A	4-6A
P31	SP ▶	5-6A	5-6A	5-6A	5-6A	5-6A	5-6A	5-6A	5-6A	5-6A	-	-	-	5-6A	5-6A
P32	A	1-7A	1-7A	1-7A	1-7A	1-7A	1-7A	1-7A	1-7A	1-7A	-	-	-	1-7A	1-7A
P33	B	2-7A	2-7A	2-7A	2-7A	2-7A	2-7A	2-7A	2-7A	2-7A	-	-	-	2-7A	2-7A
P34	-	3-7A	3-7A	3-7A	3-7A	3-7A	3-7A	3-7A	3-7A	3-7A	-	-	-	3-7A	3-7A
P35	-	4-7A	4-7A	4-7A	4-7A	4-7A	4-7A	4-7A	4-7A	4-7A	-	-	-	4-7A	4-7A
P36	-	5-7A	5-7A	5-7A	5-7A	5-7A	5-7A	5-7A	5-7A	5-7A	-	-	-	5-7A	5-7A
P37	-	1-1B	1-1B	1-1B	1-1B	1-1B	1-1B	1-1B	1-1B	1-1B	1-1B	1-1B	1-1B	1-1B	1-1B
P38	-	2-1B	2-1B	2-1B	2-1B	2-1B	2-1B	2-1B	2-1B	2-1B	2-1B	2-1B	2-1B	2-1B	2-1B
P39	-	3-1B	3-1B	3-1B	3-1B	3-1B	3-1B	3-1B	3-1B	3-1B	3-1B	3-1B	3-1B	3-1B	3-1B
P40	-	4-1B	4-1B	4-1B	4-1B	4-1B	4-1B	4-1B	4-1B	4-1B	4-1B	4-1B	4-1B	4-1B	4-1B
P41	-	5-1B	5-1B	5-1B	5-1B	5-1B	5-1B	5-1B	5-1B	5-1B	5-1B	5-1B	5-1B	5-1B	5-1B
P42	-	1-2B	1-2B	1-2B	1-2B	1-2B	1-2B	1-2B	1-2B	1-2B	1-2B	1-2B	1-2B	1-2B	1-2B
P43	-	2-2B	2-2B	2-2B	2-2B	2-2B	2-2B	2-2B	2-2B	2-2B	2-2B	2-2B	2-2B	2-2B	2-2B
P44	-	3-2B	3-2B	3-2B	3-2B	3-2B	3-2B	3-2B	3-2B	3-2B	3-2B	3-2B	3-2B	3-2B	3-2B
P45	-	4-2B	4-2B	4-2B	4-2B	4-2B	4-2B	4-2B	4-2B	4-2B	4-2B	4-2B	4-2B	4-2B	4-2B
P46	-	5-2B	5-2B	5-2B	5-2B	5-2B	5-2B	5-2B	5-2B	5-2B	5-2B	5-2B	5-2B	5-2B	5-2B
P47	-	1-3B	1-3B	1-3B	1-3B	1-3B	1-3B	1-3B	1-3B	1-3B	1-3B	1-3B	1-3B	1-3B	1-3B
P48	-	2-3B	2-3B	2-3B	2-3B	2-3B	2-3B	2-3B	2-3B	2-3B	2-3B	2-3B	2-3B	2-3B	2-3B
P49	-	3-3B	3-3B	3-3B	3-3B	3-3B	3-3B	3-3B	3-3B	3-3B	3-3B	3-3B	3-3B	3-3B	3-3B
P50	-	4-3B	4-3B	4-3B	4-3B	4-3B	4-3B	4-3B	4-3B	4-3B	4-3B	4-3B	4-3B	4-3B	4-3B
P51	-	5-3B	5-3B	5-3B	5-3B	5-3B	5-3B	5-3B	5-3B	5-3B	5-3B	5-3B	5-3B	5-3B	5-3B
P52	-	1-4B	1-4B	1-4B	1-4B	1-4B	1-4B	1-4B	1-4B	1-4B	1-4B	1-4B	1-4B	1-4B	1-4B
P53	-	2-4B	2-4B	2-4B	2-4B	2-4B	2-4B	2-4B	2-4B	2-4B	2-4B	2-4B	2-4B	2-4B	2-4B
P54	-	3-4B	3-4B	3-4B	3-4B	3-4B	3-4B	3-4B	3-4B	3-4B	3-4B	3-4B	3-4B	3-4B	3-4B
P55	-	4-4B	4-4B	4-4B	4-4B	4-4B	4-4B	4-4B	4-4B	4-4B	4-4B	4-4B	4-4B	4-4B	4-4B
P56	-	5-4B	5-4B	5-4B	5-4B	5-4B	5-4B	5-4B	5-4B	5-4B	5-4B	5-4B	5-4B	5-4B	5-4B
P57	-	1-5B	1-5B	1-5B	1-5B	1-5B	1-5B	1-5B	1-5B	1-5B	1-5B	1-5B	1-5B	1-5B	1-5B
P58	-	2-5B	2-5B	2-5B	2-5B	2-5B	2-5B	2-5B	2-5B	2-5B	2-5B	2-5B	2-5B	2-5B	2-5B
P59	-	3-5B	3-5B	3-5B	3-5B	3-5B	3-5B	3-5B	3-5B	3-5B	3-5B	3-5B	3-5B	3-5B	3-5B
P60	-	4-5B	4-5B	4-5B	4-5B	4-5B	4-5B	4-5B	4-5B	4-5B	4-5B	4-5B	4-5B	4-5B	4-5B
P61	-	5-5B	5-5B	5-5B	5-5B	5-5B	5-5B	5-5B	5-5B	5-5B	5-5B	5-5B	5-5B	5-5B	5-5B
P62	-	1-6B	1-6B	1-6B	1-6B	1-6B	1-6B	1-6B	1-6B	1-6B	1-6B	1-6B	1-6B	1-6B	1-6B
P63	-	2-6B	2-6B	2-6B	2-6B	2-6B	2-6B	2-6B	2-6B	2-6B	2-6B	2-6B	2-6B	2-6B	2-6B
P64	-	3-6B	3-6B	3-6B	3-6B	3-6B	3-6B	3-6B	3-6B	3-6B	3-6B	3-6B	3-6B	3-6B	3-6B
P65	-	4-6B	4-6B	4-6B	4-6B	4-6B	4-6B	4-6B	4-6B	4-6B	4-6B	4-6B	4-6B	4-6B	4-6B
P66	-	5-6B	5-6B	5-6B	5-6B	5-6B	5-6B	5-6B	5-6B	5-6B	5-6B	5-6B	5-6B	5-6B	5-6B
P67	-	1-7B	1-7B	1-7B	1-7B	1-7B	1-7B	1-7B	1-7B	1-7B	1-7B	1-7B	1-7B	1-7B	1-7B
P68	-	2-7B	2-7B	2-7B	2-7B	2-7B	2-7B	2-7B	2-7B	2-7B	2-7B	2-7B	2-7B	2-7B	2-7B
P69	-	3-7B	3-7B	3-7B	3-7B	3-7B	3-7B	3-7B	3-7B	3-7B	3-7B	3-7B	3-7B	3-7B	3-7B
P70	-	4-7B	4-7B	4-7B	4-7B	4-7B	4-7B	4-7B	4-7B	4-7B	4-7B	4-7B	4-7B	4-7B	4-7B
P71	-	5-7B	5-7B	5-7B	5-7B	5-7B	5-7B	5-7B	5-7B	5-7B	5-7B	5-7B	5-7B	5-7B	5-7B

### • Anode Timing Chart

	15Gd-15Ga	14G	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3Gb, 3Ga	2G	1G
P1	T18		T17		T16		T9	T8	T7	-	-	-	T3	-	T1
P2	T15	T14	T13	T12	T11	T10	T9	T8	T7	T6	-	-	T3	T2	T1
P11	T15	T14	T13	T12	T11	T10	T9	T8	T7	T6	-	-	T3	T2	T1
P12	T15	T14	T13	T12	T11	T10	T9	T8	T7	T6	-	-	-	T2	T1
P12	T15	T14	T13	T12	T11	T10	T9	T8	T7	T6	-	-	-	T2	T1
P33	-	T14	T13	T12	T11	T10	T9	T8	T7	T6	-	-	-	T2	T1
P71	-	T14	T13	T12	T11	T10	T9	T8	T7	T6	-	-	-	T2	T1

## 7.3 CLEANING

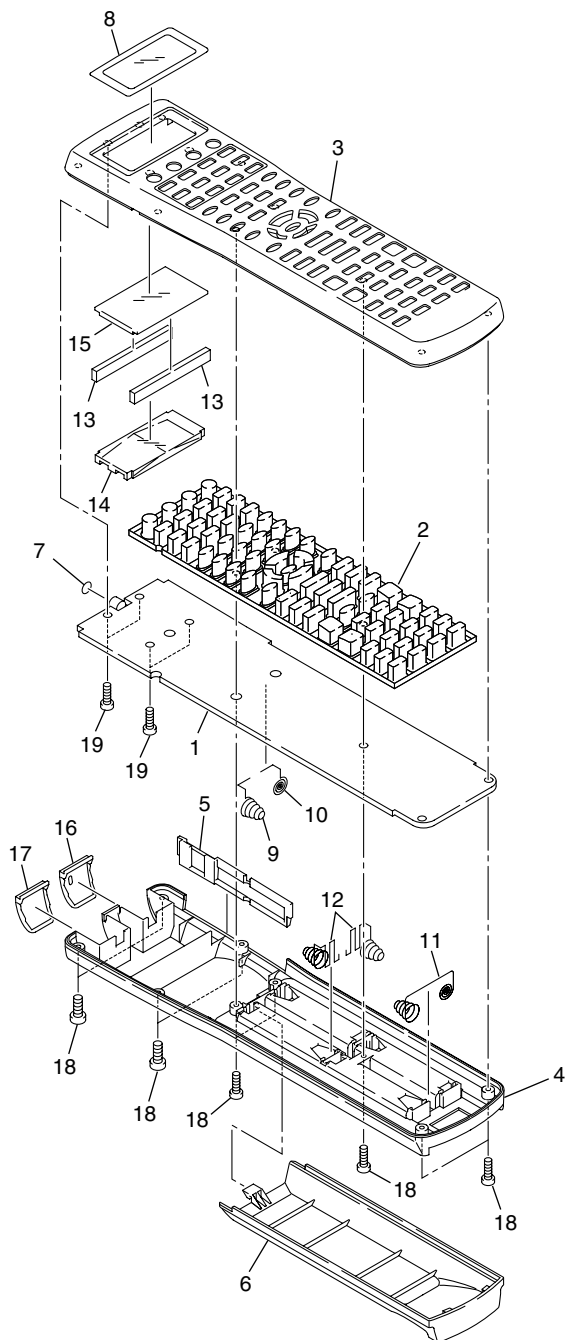


Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools:

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

## 7.4 REMOTE CONTROL UNIT

### 7.4.1 EXPLODED VIEWS AND PARTS LIST (VSX-45TX : AXD7325)



Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	PCB Assy	AZC7301	13	Connector	423RRC-046-01G
2	Rubber Key	AZA7425	14	Plate	481RRC-018-01G
3	Case A	AZN7905	15	Shield Plate	801RRC-020-01L
4	Case B	AZN7892			
5	Frame	AZN7908	16	Filter A	811RRC-109-01G
6	Battery Cover	AZN7896	17	Filter B	811RRC-110-01G
7	MIC Cap	AZN7909	18	Screw	A-BA2008-225002
8	Name Plate	201RRC-314-01L	19	Screw	A-BJ2006
9	Terminal A	411RRC-212-01G			
10	Terminal B	411RRC-213-01G			
11	Battery Terminal	413RRC-143-01R			
12	Spring	413RRC-171-01G			



5 6 7 8

# 8. PANEL FACILITIES

## 8.1 FRONT PANEL

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

The diagram shows the front panel of the Pioneer VSX-45TX receiver. It features a central LCD display (7) and a large volume knob (9). The top section includes a standby button (2), multi-jog controls (1), and listening mode buttons (3). The middle section contains a control panel with buttons for signal select (13), hi-bit hi-sampling (14), sb ch mode (15), band (16), class (17), station tuning (18), tuner edit (19), and multi-room & source control (20). Below this are tone controls (21) and a setup mic (22). The bottom section shows input terminals for digital (23), s-video (24), video (25), and audio (26).

**1 MULTI JOG dial**

You can use this dial for many purposes. When you press the SET UP button (12), you can use it to perform SYSTEM SETUP operations; select a function (like a DVD) or a listening mode (like Dolby Pro logic II) or do TUNER EDIT functions (in TUNER mode).

**2 STANDBY/ON button**

Press to switch the receiver ON or into STANDBY mode.

**3 Listening mode buttons**

**There are two types of SURROUND modes:**

**MOVIE:** Press to put the receiver into MOVIE listening mode.

**MUSIC:** Press to put the receiver into MUSIC listening mode.

**STEREO/DIRECT:** Switches the receiver into STEREO mode if it was in a different sound mode or toggles between DIRECT and STEREO mode.

DIRECT playback bypasses the tone controls and channel level for the most accurate reproduction of a program source.

**4 ENTER button**

Use this button to enter information concerning the system setup, listening mode or the tuner.

**5 STANDBY indicator**

Lights when the receiver is in STANDBY mode. (Please note that this receiver consumes a small amount of power [0.8 W] in the standby mode.)

**6 Remote sensor**

Receives the signals from the remote control.

**7 Display**

**8 MCACC indicator**

Lights when the ACOUSTIC CAL EQ is on. (After the Auto Surround Sound has been completed the ACOUSTIC CAL EQ is set on and this display will light.)

**9 MULTI CH IN button**

Use this button to select the component you have hooked up to the MULTI CH IN terminals (for example, a DVD-Audio player).

VSX-45TX

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**10 ACOUSTIC EQ button**

Press to switch on/off and select the type of acoustic calibration EQ.

**11 MASTER VOLUME dial**

Use to raise or lower the volume of the receiver.

**12 MULTI JOG CONTROL buttons****SET UP**

Press to switch the SYSTEM SETUP mode.

**RETURN**

Press to move back one step in the SYSTEM SETUP process.

**13 SIGNAL SELECT button**

Press SIGNAL SELECT repeatedly to select one of the following:

**AUTO** – If there are analog and digital signals input, the receiver automatically selects the digital signal.

**DIGITAL** – To select an optical or coaxial digital signal.

**ANALOG** – To select an analog signal.

**14 Hi-BIT Hi-SAMPLING button**

Use this button to switch the Hi-BIT Hi-SAMPLING mode on or off. Use to hear CD and DVD, as well as other digital soundtracks, at a wider dynamic range, allowing for finer audio reproduction.

**15 SB CH MODE button**

Use this button to turn the surround back channels on/off/auto or switch the virtual surround back mode between on/off/auto.

**16 TUNER CONTROL buttons****BAND**

Press to select the AM or FM band.

**CLASS**

Press repeatedly to switch the preset station classes.

**SELECT**

Switches the  $-/+$  buttons between station memory and frequency select modes.

 **$-/+$** 

Selects station memories or frequencies when using the tuner.

**TUNER EDIT**

Press to memorize and name a station for recall using the MULTI JOG and ENTER buttons.

**17 MULTI ROOM & SOURCE buttons**

Press to use the multi room feature (requires an optional PIONEER Multi-Room Remote Sensor Unit MR-100 or another IR receiver).

**CONTROL button**

Used together with the INPUT SELECTOR to select the function or use with the MASTER VOLUME to select the volume of the MULTI ROOM system.

**ON/OFF button**

Use to switch MULTI ROOM function on or off.

**18 PHONES jack**

Connect headphones for private listening (no sound will be heard through the speakers).

**19 SPEAKERS (A/B) button**

The use of this button depends on how the SURRBACK SYSTEM is set. If NORMAL SYSTEM or MR&S is chosen this button toggles between A and OFF. If SECOND ZONE is chosen this button toggles between A, B, A+B and OFF.

**20 TONE control buttons****TONE button**

This button switches between TONE ON and TONE BYPASS, which bypasses the tone circuitry.

**BASS/TREBLE button**

Use to select whether the bass or treble will be adjusted.

 **$-/+$  buttons**

Use to adjust the frequency levels.

**21 SET UP MIC jack**

Plug in the set up mic here. This is very important in order to set up your system and get proper surround sound.

**22 VIDEO INPUT jacks****DIGITAL IN**

Digital input for connecting a game console, DVD player, video camera (etc.), that has an optical digital connection.

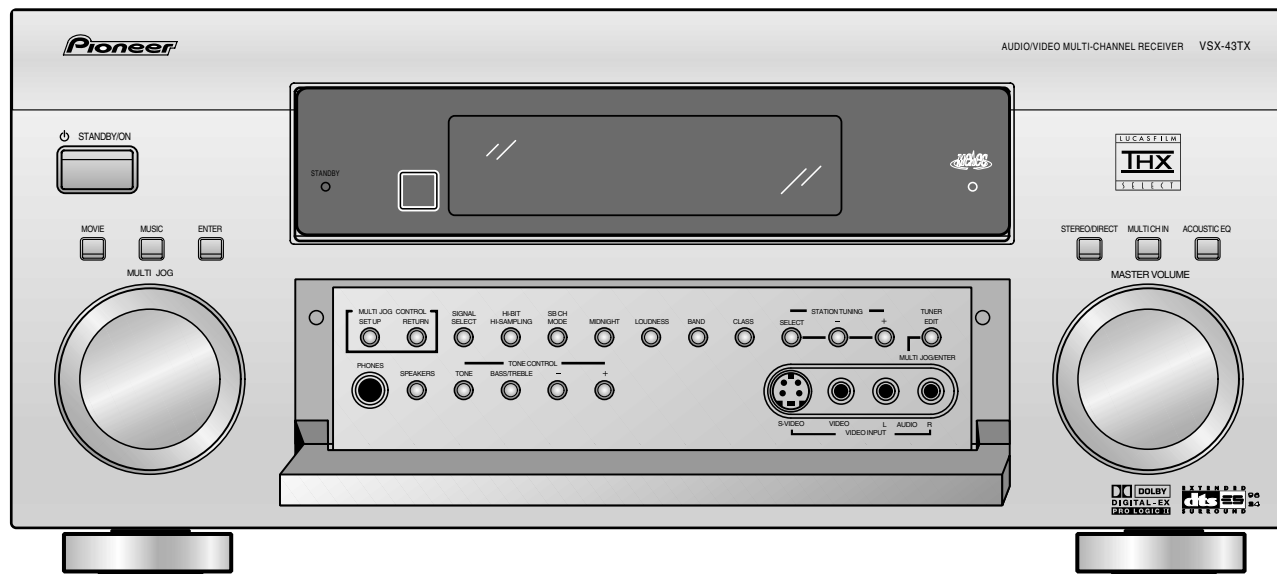
**S-VIDEO**

Video input for connecting a portable DVD player, video camera (etc.), that has an S video out.

**RCA VIDEO /AUDIO (L/R)**

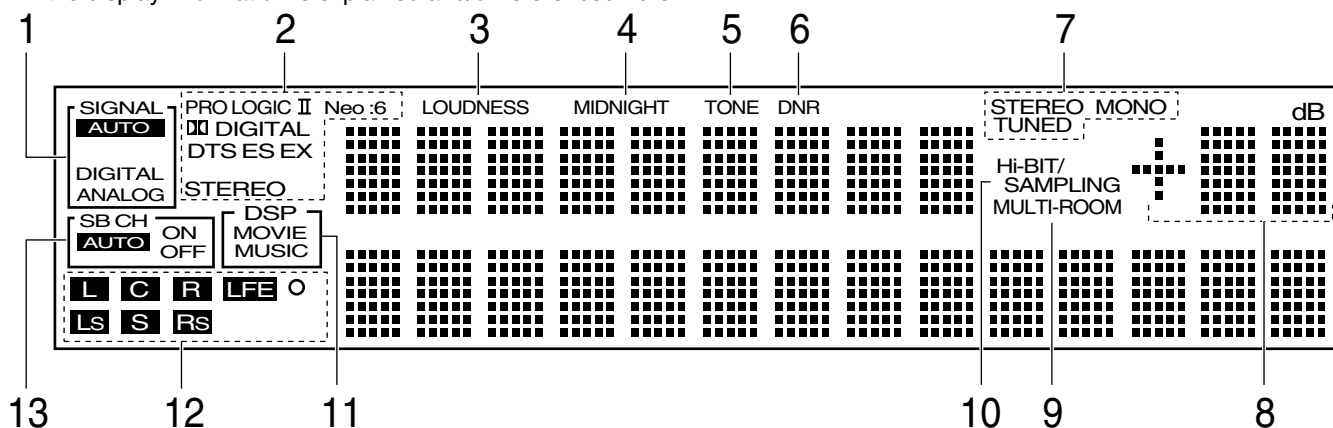
Video input for connecting a portable DVD player, video camera, etc. That has standard RCA video/audio outputs.

VSX-43TX



## 8.2 DISPLAY

All the display information is explained and/or referenced here.



### 1 SIGNAL SELECT indicators

Light to indicate the input signal you selected.

**AUTO:** Lights when the receiver is set to select the input signal automatically.

**DIGITAL:** Lights when digital audio signals are selected.

**ANALOG:** Lights when analog signals are selected.

### 2 Digital format indicators

**PRO LOGIC II:** Lights during Dolby Pro Logic II processing.

**NEO:6:** Lights during NEO:6 processing.

**DIGITAL:** Lights when a Dolby Digital signal is detected.

**dts:** Lights when a DTS signal is detected.

**ES:** Lights when playing back a DTS ES signal.

**EX:** Lights when playing back a Dolby Digital EX signal.

**STEREO:** Lights during two-channel playback.

### 3 LOUDNESS indicator

Lights when LOUDNESS is on.

### 4 MIDNIGHT indicator

Lights when MIDNIGHT is on.

### 5 TONE indicator

Lights when the TONE control is on.

### 6 DNR indicator

Lights when DIGITAL NR is on.

### 7 TUNER indicators

**STEREO:** Lights when an FM stereo broadcast is received in the auto stereo mode.

**MONO:** Lights when the tuner is set to receive FM broadcasts and when MPX mode is selected.

**TUNED:** Lights when a broadcast is received.

### 8 Volume level indicator

### 9 MULTI ROOM indicator

Lights when the MULTI ROOM system is on.

### 10 Hi-BIT/SAMPLING indicator

Lights when a hi-bit/sampling mode is on.

### 11 DSP indicators

**MOVIE:** Lights when a MOVIE mode is selected. When a DSP MOVIE mode is selected DSP will light with a box around it.

**MUSIC:** Lights when a MUSIC mode is selected. When a DSP MUSIC mode is selected DSP will light with a box around it.

### 12 Program Format indicators

For Dolby Digital or DTS sources: these indicators change according to which channels are active in the source. When all three **LS** (left surround), **S** (surround) and **RS** (right surround) light at the same time it means a source with a 6.1 channel playback flag is being used.

**L** – Left front channel.

**C** – Center channel.

**R** – Right front channel.

**LS** – Left surround channel.

**S** – Surround channel or Surround back channel.

**RS** – Right surround channel.

**LFE** – Low Frequency Effects channel.

**○** – Lights when LFE signal is input.

### 13 SB CH indicators

Light to indicate the status of the surround back channels.

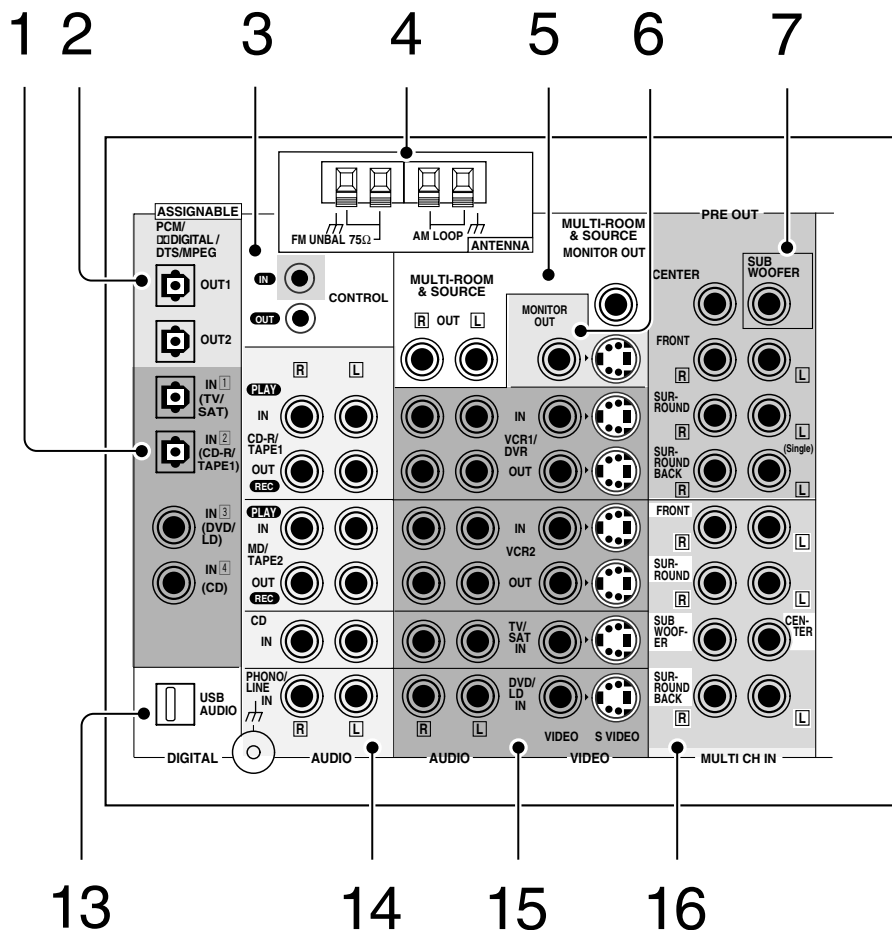
**AUTO** – Lights when the SB CH MODE or VIRTUAL SURROUND BACK mode is set to AUTO.

**ON** – Lights when the SB CH MODE or VIRTUAL SURROUND BACK mode is set to ON.

**OFF** – Lights when the SB CH MODE or VIRTUAL SURROUND BACK mode is set to OFF.

## 8.3 REAR PANEL

All the display information is explained and/or referenced here.



### 1 DIGITAL IN terminals

Use these terminals to input the signal from a DVD, CD player or any other kind of digital player. To be able to play Dolby Digital and other surround soundtracks you need to make digital connections. To do this use the digital terminals here. If you don't connect as per the default settings you need to complete "Assigning the Digital Inputs".

### 2 DIGITAL OUT terminals

Use these terminals to output a digital signal to a DVD-R, CD-R, MD recorder or any other kind of digital recorder.

### 3 CONTROL IN/OUT terminal

You can use this jack to hook up other PIONEER equipment, that has a CONTROL terminal, so that you can control them all by pointing the remote control(s) at one remote sensor.

### 4 Radio antenna terminals

Hook up antennas for the radio tuner built into the receiver here.

### 5 MULTI ROOM & SOURCE OUT terminals

These terminals output the audio & video signal to a sub-system in a secondary room. Note that the MONITOR OUT here is different than the MONITOR OUT for the main system. These are analog jacks.

### 6 MONITOR OUT terminals

Use this terminal to output the video signal to your TV, video projector or monitor in your main room. Be careful not to confuse this jack with the MULTI ROOM & SOURCE MONITOR OUT.

### 7 PRE OUT analog terminals (connect an amplifier here)

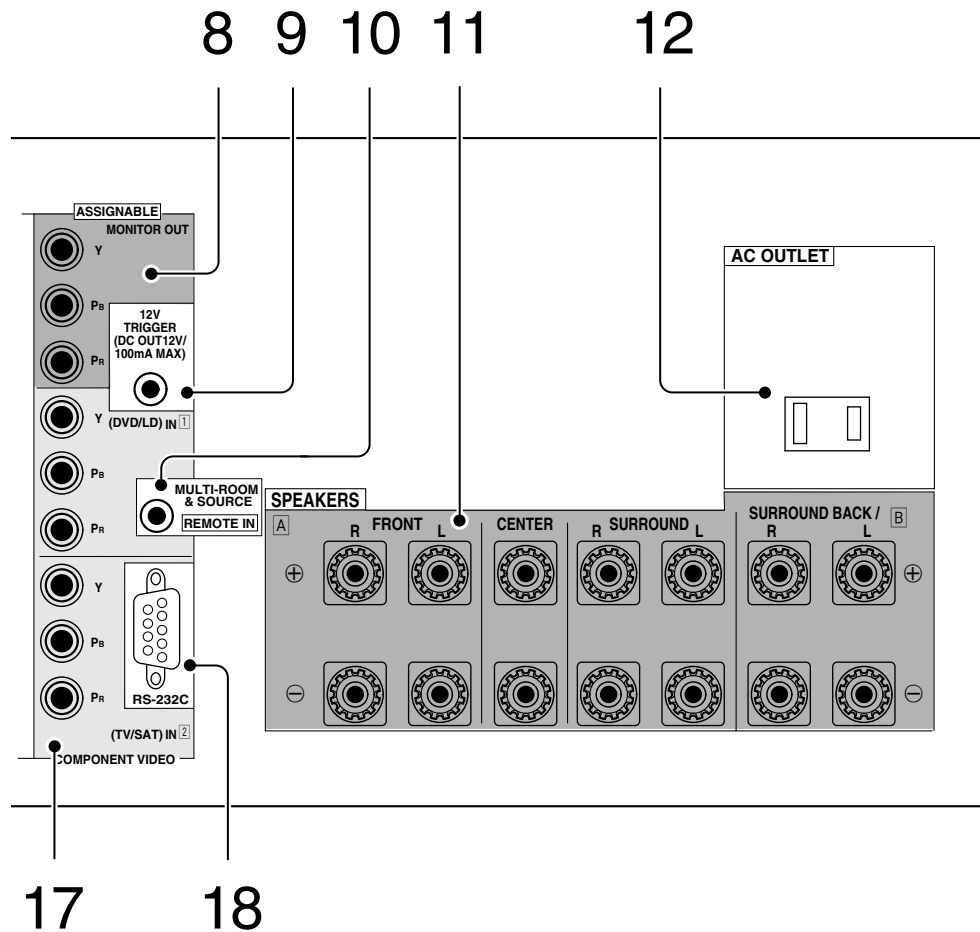
Use these terminals to output the audio signal from this amplifier to a different amplifier if that's how you choose to set up your system.

### 8 COMPONENT VIDEO MONITOR OUT terminals

Use these terminals to output the video signal from the COMPONENT VIDEO IN terminals to your TV. See #17 for more information.

### 9 12V TRIGGER terminal

Use this terminal to output a signal that can automatically turn on another component. DC OUT12V/100mA is the maximum power.



#### 10 MULTI ROOM & SOURCE REMOTE IN terminals

Use these terminals to hook up a sub-system in a secondary room. This hook up requires a separately sold IR receiver and allows you to use the receiver to hear different audio sources in different rooms.

#### 11 SPEAKERS terminals

Use these terminals to connect speakers to the receiver. The FRONT, CENTER and SURROUND terminals are for the main speaker system and the SURROUND BACK speakers can be set to either the main system, the SECOND ZONE, or the MULTI ROOM.

#### 12 AC OUTLET (switched, 100 W max)

Hook up an external component to the power supply of this receiver. Only do this with audio or video components being used in this system and never hook up heavy equipment (like TVs, heaters, air conditioners, refrigerators, etc.) to this receiver.

#### 13 USB AUDIO IN terminal

Use this terminal to connect a PC to this receiver.

#### 14 Audio input/output terminals (connect analog components here)

Use these terminals to input/output the audio signal from analog components (like a cassette deck or turntable). These are analog jacks.

#### 15 Video components input/output terminals

Input/output signals from your video components (DVD, VCR, TV tuners, SAT tuners, etc.) here.

#### 16 MULTI CH IN terminals

Use these terminals to input a multichannel surround signal (for example, a DVD-Audio signal) in an analog fashion. These are analog jacks.

#### 17 COMPONENT VIDEO IN terminals

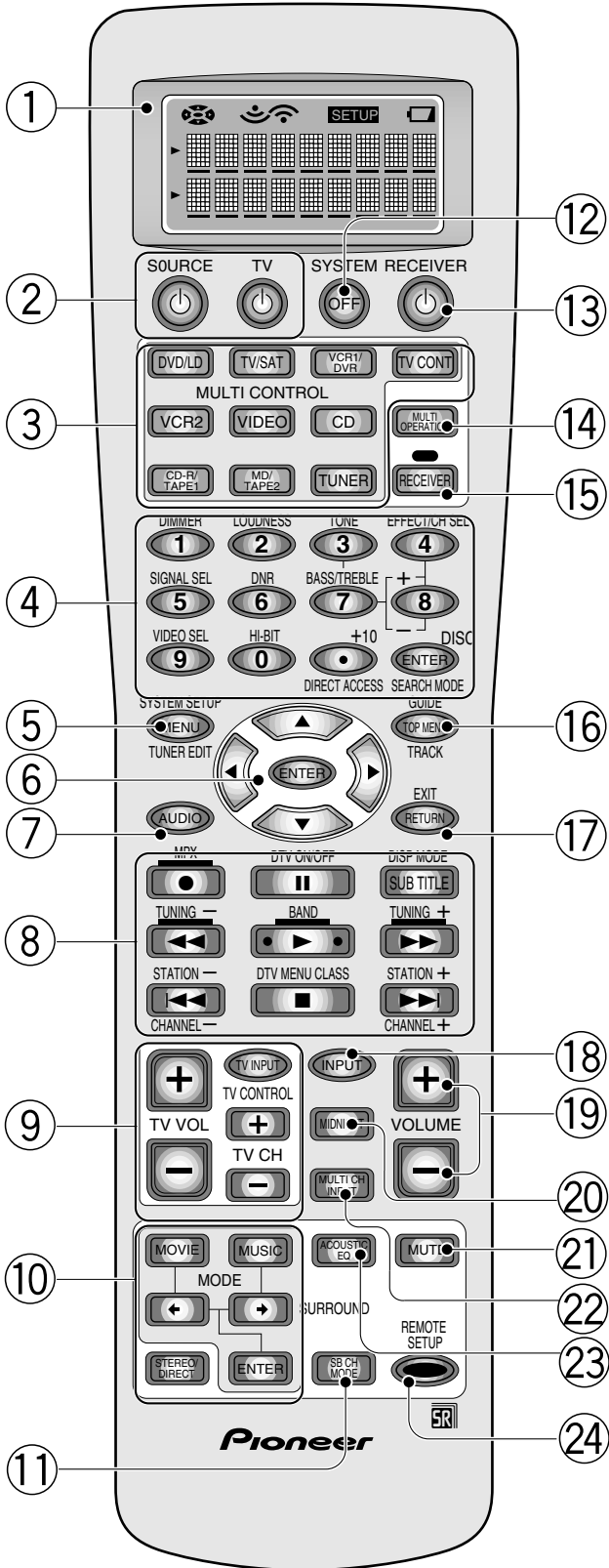
Use these terminals to hook up the video connections of your video components with this high quality method. Your components will have to have the terminals as well to take advantage of this kind of connection. If you don't connect as per the default settings you need to complete "Assigning the Component Video Inputs".

#### 18 RS-232C Connection

This is a future-oriented port that has the possibility on inputting and/or outputting information to/from the receiver.

## 8.4 REMOTE CONTROL UNIT

This page describes the buttons on the remote control used to operate the receiver.



### ① Remote Control Display Screen

### ② SOURCE button

Use this button to turn on/off other components. You must input the preset code in order to use this function.

### TV button

This is a dedicated TV button. Use it to turn on/off your TV.

### ③ MULTI CONTROL buttons

These buttons are the basic controls that switch the mode of the receiver and the remote control, which allows you to control your other components.

**TV CONT:** Press so that the remote control can operate the TV control commands.

### ④ Number buttons

These can be used for many purposes depending on the mode of the remote control.

When in receiver mode the buttons operate as below:

#### Display DIMMER

Use to adjust the brightness of the receiver's display.

#### LOUDNESS button

Switches the LOUDNESS mode on or off (for all modes except THX CINEMA and MULTI CH IN).

#### TONE button

This button switches between TONE ON and TONE BYPASS, which bypasses the tone circuitry.

#### BASS/TREBLE buttons

Use to select whether the bass or treble will be adjusted.

#### (+/-) buttons

Use to adjust the TONE level, effect level and channel level as well as make Dolby Pro Logic II music parameter settings.

#### EFFECT/CH SEL. button

Switches between the different channels so you can add volume individually to each channel with the + and - buttons. Also selects EFFECT mode of Pioneer original sound modes and Dolby Pro Logic II music parameter settings. You can then use the + and - buttons to make these adjustments.

#### SIGNAL SELECT button

Press SIGNAL SELECT repeatedly to select one of the following:

**AUTO** – If there are analog and digital signals input, the receiver automatically selects the digital signal.

**DIGITAL** – To select an optical or coaxial digital signal.

**ANALOG** – To select an analog signal.

**DIGITAL NR (DNR) button**

Switches the DIGITAL NR on or off.

#### VIDEO SELECT button

Use to toggle between the different video input possibilities.

#### HI-BIT button

Use this button to switch the Hi-BIT Hi-SAMPLING on or off. Use to hear CD and DVD, as well as other digital soundtracks at a wider dynamic range, allowing for finer audio reproduction.

### ⑤ **SYSTEM SET UP button**

Use for all system setups, including the speaker and sound systems. For more information see "Setting up for Surround Sound" starting on page 36. For a DVD player use this button to bring up the DVD menu and for a tuner use this button in the same way as the TUNER EDIT button.

### ⑥ ▲/▼/◀/▶/ENTER buttons

These buttons can be used for a variety of operations in the SYSTEM SETUP menu.

These buttons are used to control the menus for other components when in those modes (DVD, digital TV tuner, satellite tuner, cable tuner, etc.). In TUNER mode, they can select a station and/or a frequency.

### ⑦ **AUDIO button**

Use to switch the audio tracks of a DVD when in DVD mode.

### ⑧ **Command button for other components**

Use these buttons to control other components you selected with the MULTI CONTROL buttons. You must input the preset code in order use this function.

### ⑨ **TV CONTROL buttons**

The following buttons are used to control the TV only and can be used once they are preset to control your TV.

**TV INPUT:** Press to select the input source for the TV.

**TV CH +/- :** Use these buttons to change the channel of the TV.

**TV VOL +/- :** Press to control the volume of the TV.

### ⑩ **Listening mode buttons**

**SURROUND buttons (MOVIE, MUSIC, ◀ ▶ & ENTER):**

**MOVIE:** Press to put the receiver into MOVIE listening mode.

**MUSIC:** Press to put the receiver into MUSIC listening mode.

**◀ ▶:** Use to select the MOVIE or MUSIC listening mode.

**ENTER:** Use this button to enter information concerning the listening modes.

**STEREO/DIRECT:** Switches the receiver into STEREO mode if it was in a different sound mode or toggles between DIRECT and STEREO mode.

DIRECT playback bypasses the tone controls and channel level for the most accurate reproduction of a program source.

### ⑪ **SB CH MODE button**

Use this button to turn the surround back channels on/off/auto or switch the virtual surround back mode between on/off/auto.

### ⑫ **SYSTEM OFF button**

This button turns off components in two ways. First, when pressed it will turn off all PIONEER components. Secondly, any component that has programmed into the SYSTEM OFF settings will be turned off.

**For example:** If you programmed power off in the SYSTEM OFF settings for your TV and VCR, pressing the SYSTEM OFF button will turn off these components even if they are not PIONEER products.

### ⑬ **RECEIVER (standby/on) button**

Press to turn power of the receiver on or to standby (off).

### ⑭ **MULTI OPERATION button**

Use this button to start the MULTI OPERATION mode. For how to program and use the MULTI OPERATION mode.

### ⑮ **RECEIVER button**

Use this button to switch the remote control into receiver mode in order to get certain receiver functions or do receiver setups.

### ⑯ **TOP MENU/GUIDE button**

Use to find stations or menus on a digital TV tuner. For a DVD player use this button to bring up the DVD menu.

### ⑰ **RETURN button**

When you are in a receiver setup operation this button will go back one step in the SYSTEM SETUP procedure. When you are using your DVD menu screen this button acts the same as the DVD player's "Return" button. When you are using cable tuners, satellite tuners or digital TV tuners this button will either exit you from the menu screen or act like a "Return" button above, depending on the maker of the unit.

### ⑱ **INPUT button**

Press to select an input source. The button will cycle through all the possible sources.

### ⑲ **VOLUME (+/-) buttons**

Use to raise or lower the volume of the receiver.

### ⑳ **MIDNIGHT button**

Switches the MIDNIGHT listening mode on or off (for all modes except THX CINEMA and MULTI CH IN).

### ㉑ **MUTE button**

Press to mute or restore the volume.

### ㉒ **MULTI CH INPUT button**

Use this button to select the component you have hooked up to the MULTI CH IN terminals (for example, a DVD-Audio player).

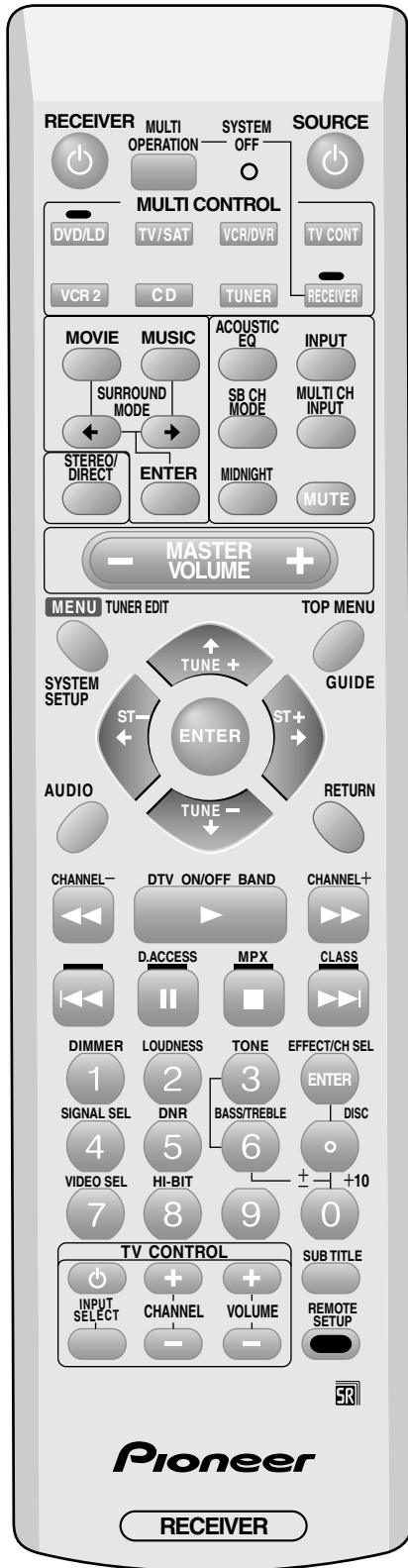
### ㉓ **ACOUSTIC EQ button**

Press to switch on/off and select the type of acoustic calibration EQ.

### ㉔ **REMOTE SETUP button**

Use to customize the remote control functions and the remote control itself.

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