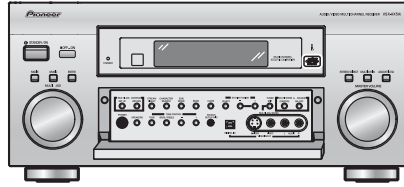


Service Manual



VSX-AX5Ai-S

ORDER NO.
RRV3018

AUDIO/VIDEO MULTI-CHANNEL RECEIVER

VSX-AX5Ai-S

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

Model	Type	Power Requirement	The voltage can be converted by the following method.
VSX-AX5Ai-S	HYXJ	AC220-230V	AC240V, *

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



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

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.

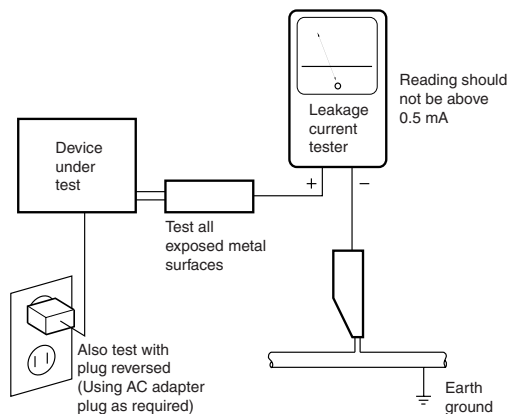
(FOR USA MODEL ONLY)

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 Δ on the schematics and on the parts list in this Service Manual.

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

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

[Important Check Points for Good Servicing]

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

1. Product safety



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

- ① Use specified parts for repair.

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

- ② Do not perform modifications without proper instructions.

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

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

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

- ④ Make sure the screws are tightly fastened.

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

- ⑤ Make sure each connectors are correctly inserted.

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

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

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

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

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

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

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

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

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

- ⑩ Safe environment should be secured during servicing.

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

2. Adjustments



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

3. Lubricants, Glues, and Replacement parts



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

4. Cleaning



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

5. Shipping mode and Shipping screws



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

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1. SPECIFICATIONS

Amplifier section

Continuous Power Output (DIN)

Stereo

Front 160 W + 160 W (DIN 1kHz, THD 1%, 6 Ω)

Multichannel

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

Center 120 W (DIN 1kHz, THD 1%, 8 Ω)

Surround 120 W + 120 W (DIN 1kHz, THD 1%, 8 Ω)

Surround back 120 W + 120 W (DIN 1kHz, THD 1%, 8 Ω)

Rated Power Output (Stereo) 140W+140W
(20Hz – 20kHz, 0.09%, 6 Ω)

Rated Power Output 110W+110W
(20Hz – 20kHz, 0.09%, 8 Ω)

Audio Section

Input (Sensitivity/Impedance)

PHONO MM 4.7 mV/47 k Ω

LINE 335 mV/47 k Ω

Frequency Response

PHONO MM 20 Hz to 20,000 Hz \pm 0.3 dB

LINE 5 Hz to 100,000 Hz \pm 0.3 dB

Output (Level/Impedance)

LINE 335 mV/2.2 k Ω

Tone Control

BASS \pm 6 dB (100 Hz)

TREBLE \pm 6 dB (10 kHz)

LOUDNESS +4/+2 dB (100Hz/10 kHz)

(at volume position -40dB)

Signal-to-Noise Ratio (IHF, short circuited, A network)

LINE 101 dB

Signal-to-Noise Ratio

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

LINE 92/65 dB

Composite Video / S-Video Section

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

Output (Level/Impedance) 1 Vp-p/75 Ω

Signal-to-Noise Ratio 65 dB

Frequency Response 5 Hz to 10 MHz \pm 0.3 dB

Component Video Section

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

Output (Level/Impedance) 1 Vp-p/75 Ω

Signal-to-Noise Ratio 65 dB

Frequency Response 5Hz to 100 MHz \pm 0.3 dB

FM Tuner Section

Frequency Range 87.5 MHz to 108 MHz

Usable Sensitivity Mono: 15.2 dBf, IHF (1.6 μ V/75 Ω)

50 dB Quieting Sensitivity Mono: 20.2 dBf

Stereo: 41.2 dBf

Sensitivity (DIN) Mono: 1.1 μ V (S/N 26 dB)

Stereo: 50 μ V (S/N 46 dB)

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

Stereo: 72 dB (at 85 dBf)

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

Stereo: 58 dB

Distortion Stereo: 0.6% (1 kHz)

Alternate Channel Selectivity 70 dB (400 kHz)

Stereo Separation 40 dB (1 kHz)

Frequency Response 30 Hz to 15 kHz \pm 1dB

Antenna Input 75 Ω unbalanced

AM Tuner Section

Frequency Range 531 kHz to 1,602 kHz

Sensitivity (IHF, Loop antenna) 350 μ V/m

Selectivity 30 dB

Signal-to-Noise Ratio 50 dB

Antenna Loop antenna

Miscellaneous

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

Power Consumption 600 W

Power Consumption in standby 0.8W

AC outlet (switched) 100 W MAX

Dimensions 420 (W) x 188 (H) x 464 (D) mm

Weight (without package) 21.2 kg

Furnished Parts

Microphone (for Auto Surround Setup) 1

Microphone stand 1

Remote control unit 1

Alkaline batteries (AA IEC LR6) 4

AM loop antenna 1

FM wire antenna 1

Power cord 1

These operating instructions



Note

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

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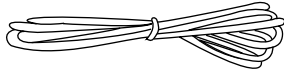
• Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic", "Surround EX" and double-D symbol are trademarks of Dolby Laboratories.

• "DTS", "DTS-ES Extended Surround" and "Neo:6" are trademarks of Digital Theater Systems, Inc.

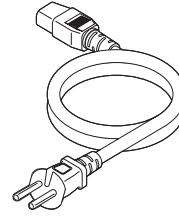
● Accessories



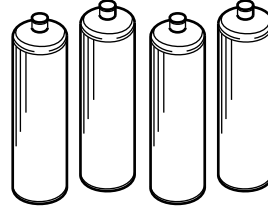
AM Loop Antenna (ATB7013)



FM Wire Antenna (ADH7030)



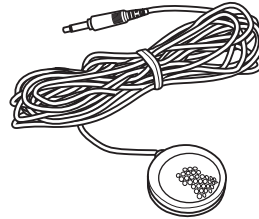
AC Power Cord (ADG7062)



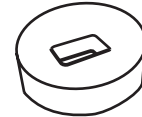
"AA" IEC LR6 batteries



Remote Control Unit (AXD7364)





Microphone for Auto Surround Sound Setup (APM7004)



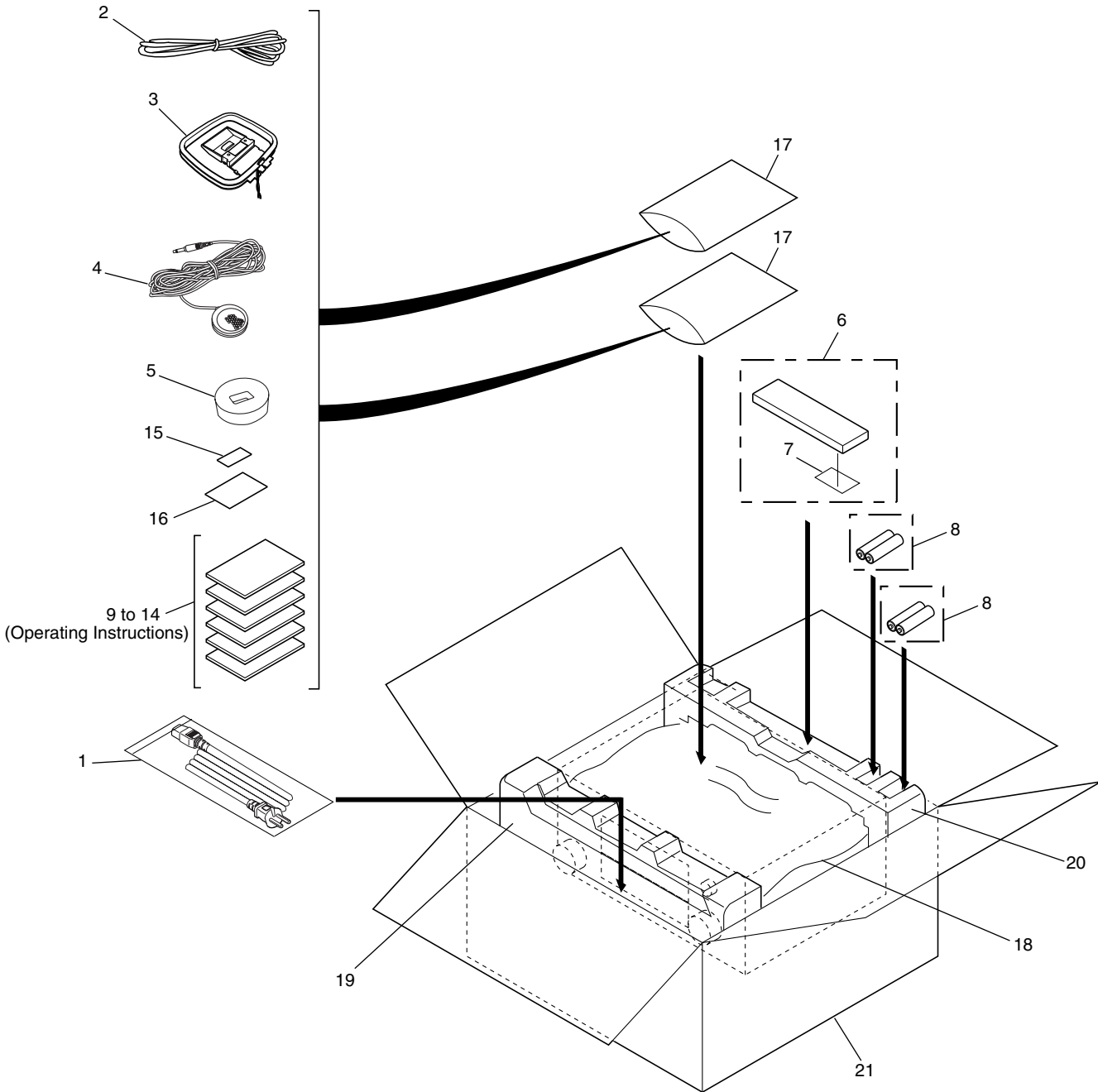
Microphone Stand for Auto Surround Sound Setup (AEB7269)

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2. EXPLODED VIEWS AND PARTS LIST

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

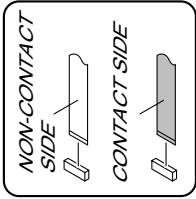
2.1 PACKING



PACKING parts List

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	
△ 1	Power Cord	ADG7062	
2	FM Wire Antenna	ADH7030	A
3	AM Loop Antenna	ATB7013	
4	Microphone for Auto Surround Sound Setup	APM7004	
5	Microphone Stand for Auto Surround Sound Setup	AEB7269	
6	Remote Control Unit	AXD7364	
7	Battery Cover	AZN7940	
NSP 8	Dry Cell Battery (AA/LR6)	VEM1023	
9	Operating Instructions (English / French)	ARB7308	B
10	Operating Instructions (French)	ARC7541	
11	Operating Instructions (German)	ARC7542	
12	Operating Instructions (Italian)	ARC7543	
13	Operating Instructions (French / Spanish)	ARC7544	
14	Operating Instructions (Dutch)	ARC7545	C
15	Caution Sheet SP, E	ARM7056	
NSP 16	Warranty Card	ARY7065	
NSP 17	Polyethylene Bag	AHG7117	
18	Packing Sheet	RHC1023	
19	Front Pad 45	AHA7374	
20	Rear Pad 45	AHA7375	
21	Packing Case AX5A/HY	AHD8273	D

2.2 EXTERIOR SECTION



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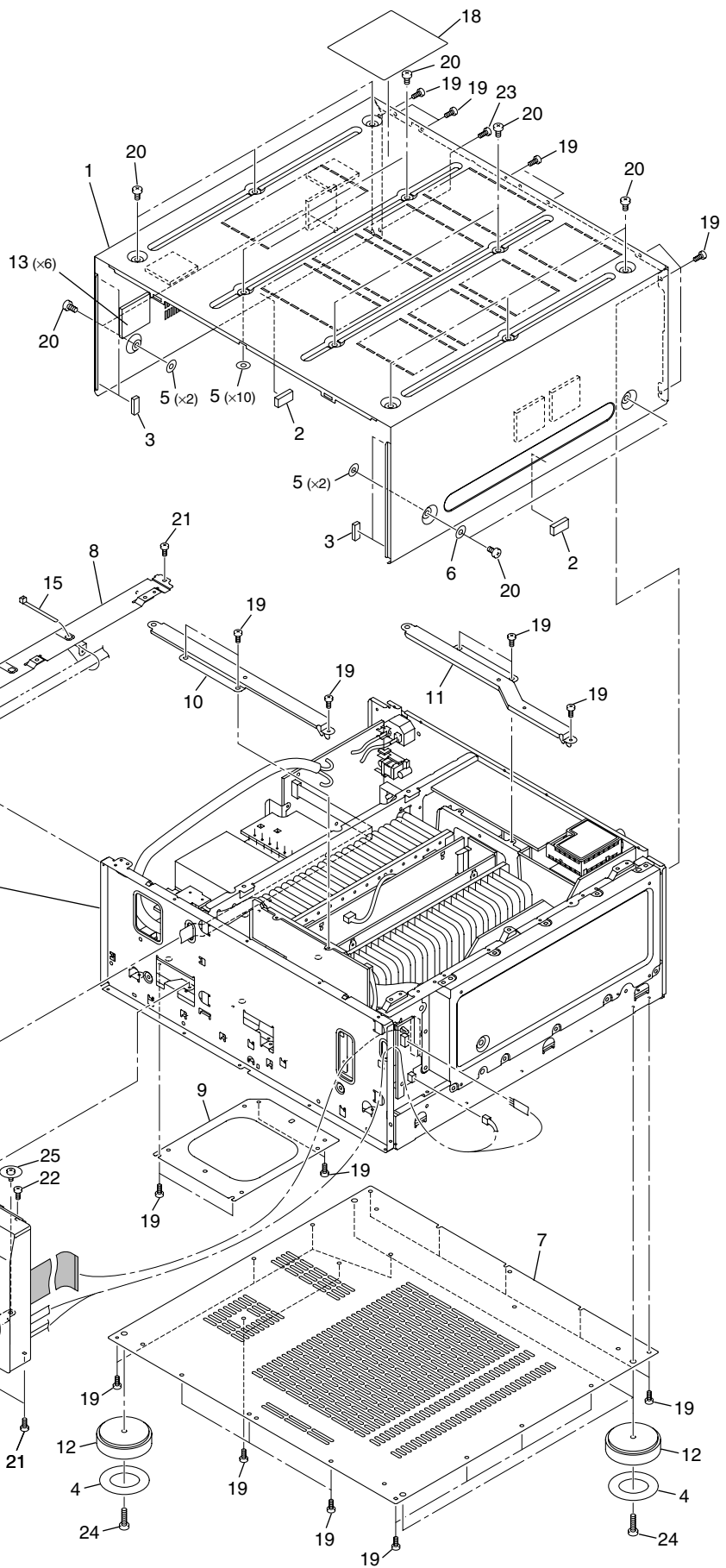
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Refer to "2.3 CHASSIS SECTION".

Refer to "2.6 FRONT PANEL SECTION".

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EXTERIOR SECTION parts List

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	Bonnet Case 56S	AZN7993
2	Spacer 45A (3.5 x 10 x 27)	AEB7263
3	Spacer 45B (6 x 7 x 13)	AEB7264
4	Cushion	AEC7224
5	Spacer Circle (10 x 5)	AEC7330
6	Spacer Circle (CLEAR)	AEC7531
7	Bottom Plate 56	ANF7039
8	Left Beam 45	ANG7401
9	Stabilizer 45	ANG7408
10	Bridge Frame 45F	ANG7409
11	Bridge Frame 45R	ANG7410
12	Insulator 56	ANL7028
13	Bonnet Sheet (2 x 50 x 50)	AEB7329
14	•••••	
NSP 15	Binder	ZCA-BK1
16	•••••	
17	•••••	
18	Label (DD/DTS/THX)	ARW7281
19	Screw	ABA7098
20	Screw	ABA7119
21	Screw	ABA7102
22	Screw	ABA7118
23	Screw	ABA7101
24	Screw	ABA7120
25	Screw	ABA7110

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B

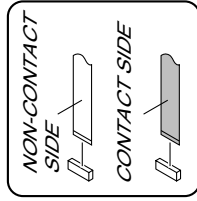
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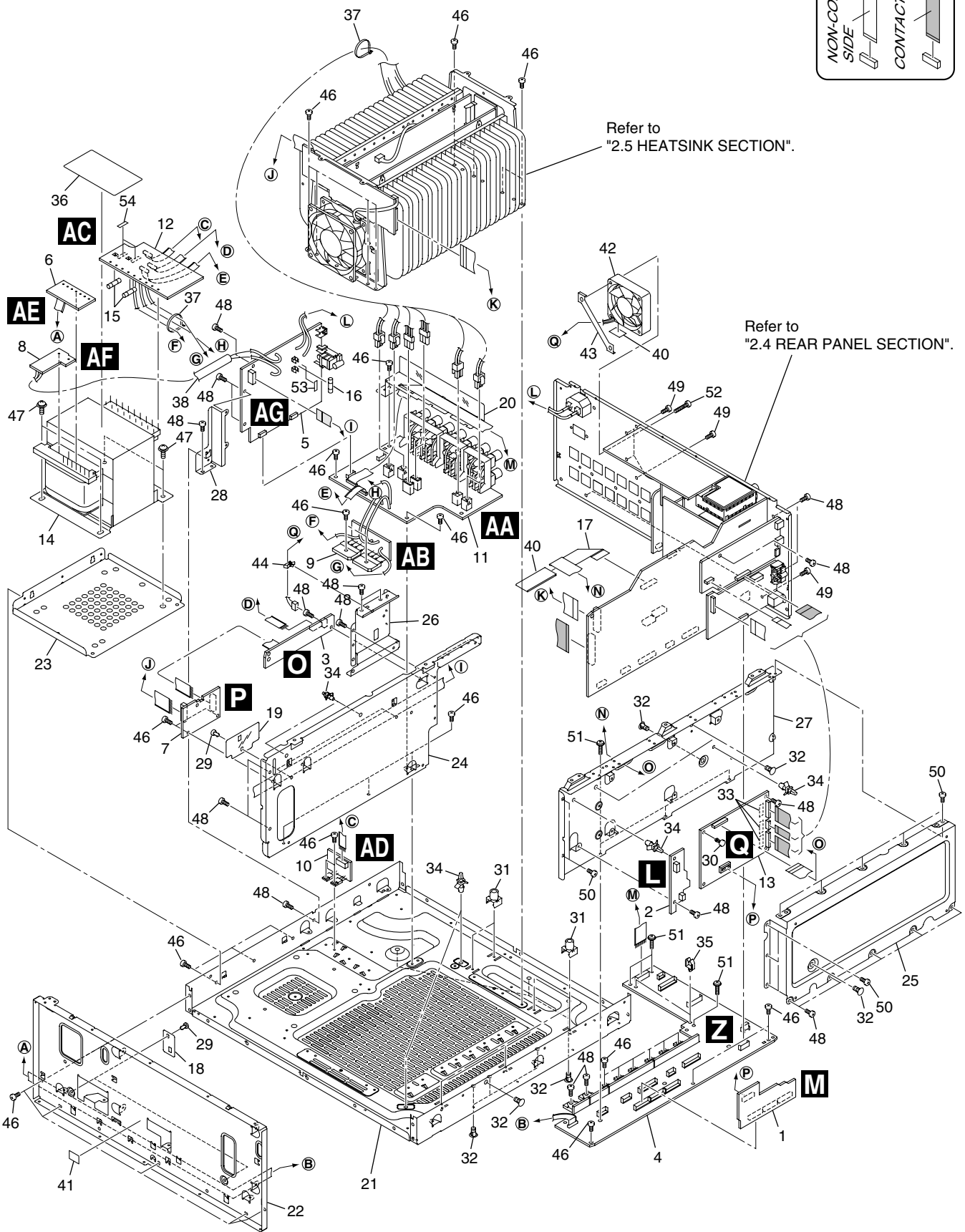
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2.3 CHASSIS SECTION



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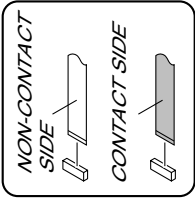


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CHASSIS SECTION parts List

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	
1	DSP CONNECTION Assy	AWX8441	50	Screw	ABA7118	
2	MIC AMP Assy	AWX8447				A
3	FAN CONNECTION Assy	AWX8448	51	Screw	ABA7100	
4	REGULATOR Assy	AWX8541	52	Screw	BBZ30P200FCC	
5	PRIMARY Assy	AWX8461	NSP 53	Fuse Card	AAX7099	
			NSP 54	Fuse Card	AAX7277	
6	TRANS 2-2 Assy	AWX8542				
7	FAN DRIVE Assy	AWX8488				
8	TRANS 1 Assy	AWX8464				
9	DIODE Assy	AWX8555				
10	VH TR Assy	AWX8557				
11	SP/PS Assy	AWX8470				B
12	TRANS 2-1 Assy	AWX8551				
13	DSP Assy	AWX8489				
⚠ 14	Power Transformer (T1)	ATS7381				
⚠ 15	Fuse (FU4, 5 : T2.5AL250V)	REK1026				
⚠ 16	Fuse (FU1 : T4AL250V)	REK-106				
17	21P Flexible Cable (J7)	ADD7355				
18	Styling Sheet	AEC7413				
19	Styling Sheet B	AEC7437				
20	Barrier 45	AEC7444				C
NSP 21	Under Base 56	ANA7170				
NSP 22	Panel Stay 45	AND7047				
23	Trans. Frame 45	ANG7399				
24	Trans. Shield 45	ANG7400				
25	DSP Shield 45 B	ANG7403				
26	Fan Box 45	ANG7413				
27	DSP Shield 1394 A	ANG7420				
28	Primary Angle 56	ANG7526				
29	Push Rivet	AEC7370				
30	Nyron Rivet	AEC7408				D
31	PCB Mold	AMR2534				
32	Card Spacer	DNK2769				
NSP 33	Tape	PNM1249				
34	Locking Card Spacer	PNW2917				
35	Holder	VEC1355				
NSP 36	Trans. Label 56	AAX8048				
NSP 37	Binder	ZCA-BK1				
38	Glass Tube (14 x 260)	ADN7009				E
39	•••••					
NSP 40	Tape	ZTA-156A-19				
41	Cushion 11 x 11	AED7088				
⚠ 42	Fan Motor (Rear)	AXM7031				
43	Fan Plate	ANG7153				
NSP 44	Mini Clamp	VEC1597				
45	•••••					
46	Screw	ABA7098				
47	Screw	ABA7109				F
48	Screw	ABA7102				
49	Screw	ABA7101				

2.4 REAR PANEL SECTION



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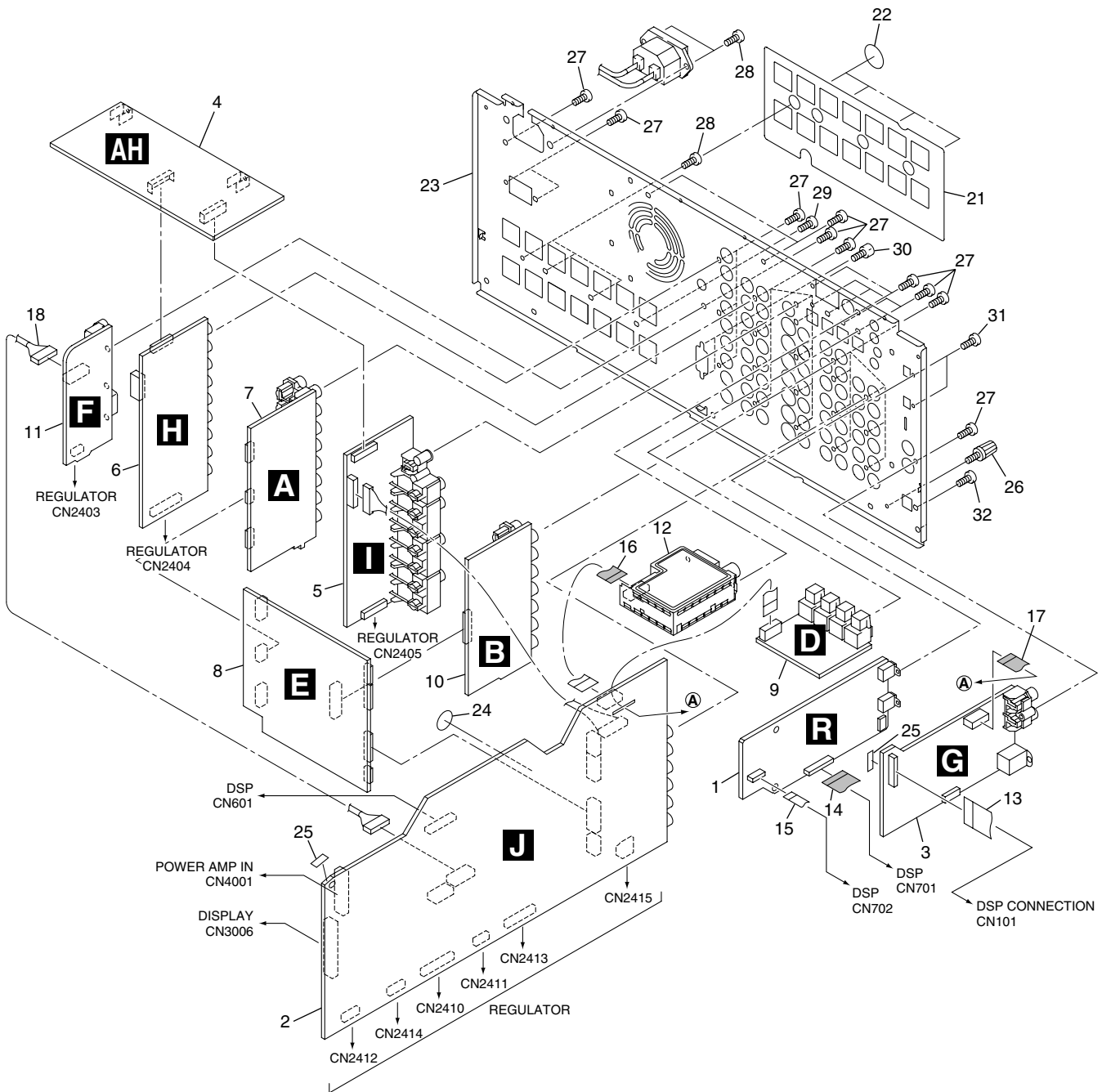
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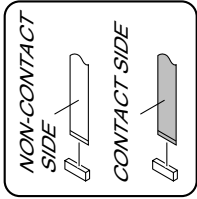
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REAR PANEL SECTION parts List

Mark No.	Description	Part No.	
1	1394 Assy	AWK7834	
2	MAIN CONTROL Assy	AWX8435	A
3	COAXIAL IN Assy	AWX8443	
4	VIDEO CONVERT Assy	AWX8451	
5	VIDEO Assy	AWX8452	
6	COMPONENT Assy	AWX8454	
7	7.1CH I/O Assy	AWX8543	
8	INPUT CONNECT Assy	AWX8546	
9	OPTICAL IN Assy	AWX8556	
10	V-AUDIO IN Assy	AWX8558	
11	12V TRIGGER Assy	AWX8548	B
12	FM/AM TUNER Unit	AXX7170	
13	20P Flexible Cable (J6)	ADD7354	
14	22P Flexible Cable (J16)	ADD7431	
15	10P Flexible Cable (J17)	ADD7432	
16	11P Flexible Cable (J8)	ADD7468	
17	9P Flexible Cable (J5)	ADD7469	
18	Connector Assy (8P)(J1902)	ADE7085	
19	•••••		
20	•••••		C
21	Speaker Sheet KU	AAK8016	
22	Cushion Circle 16B	AED7052	
23	Rear Panel AX5AI	ANC8280	
24	Cushion Circle 6B	AED7044	
NSP 25	Tape	PNM1249	
26	Terminal Screw	AKE-031	
27	Screw	ABA7098	
28	Screw	ABA7102	
29	Screw	ABA1208	
30	Screw	ABA7078	D
31	Screw	PCZ26P060FCC	
32	Screw	PMZ30P060FCC	

2.5 HEAT SINK SECTION



A

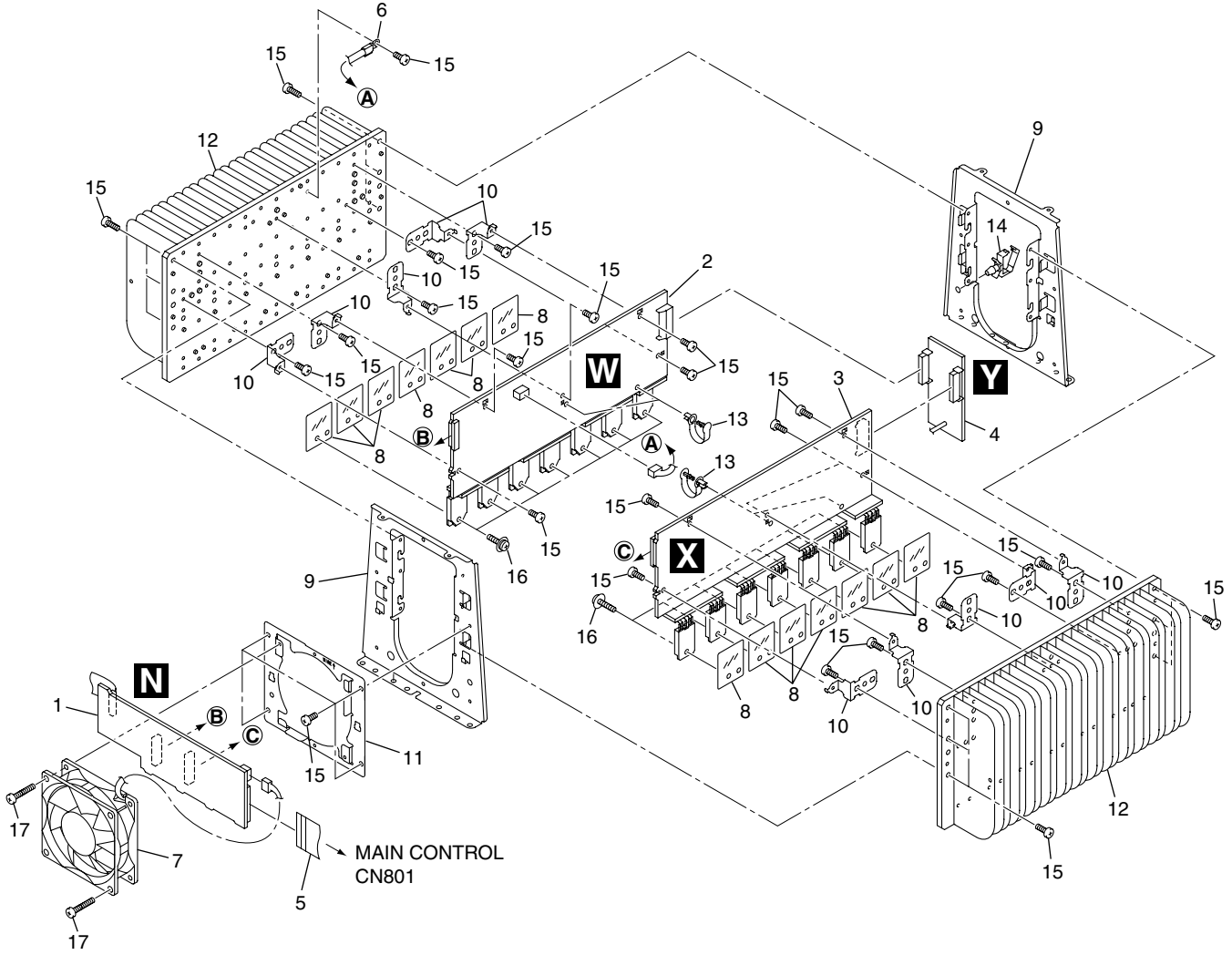
B

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HEAT SINK SECTION parts List

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
NSP 1	POWER AMP IN Assy	AWX8544
2	POWER AMP-L Assy	AWX8560
3	POWER AMP-R Assy	AWX8561
4	POWER AMP-C Assy	AWX8562
5	24P Flexible Cable (J14)	ADD7357
△ 6	Thermistor (TH1)	AEX7014
△ 7	Fan Motor (Front)	AXM7032
8	Mica Sheet 45	AEE7047
9	H.S Angle 45	ANG7404
10	PCB Angle 45	ANG7406
11	Fan Holder 80	ANG7407
NSP 12	Heatsink 45	ANH7152
NSP 13	Speed Clamp	AEC7445
NSP 14	Wire Saddle	DEC1450
15	Screw	ABA7102
16	Screw	ABA7085
17	Screw	BBZ30P300FTC

A
B
C
D
E
F

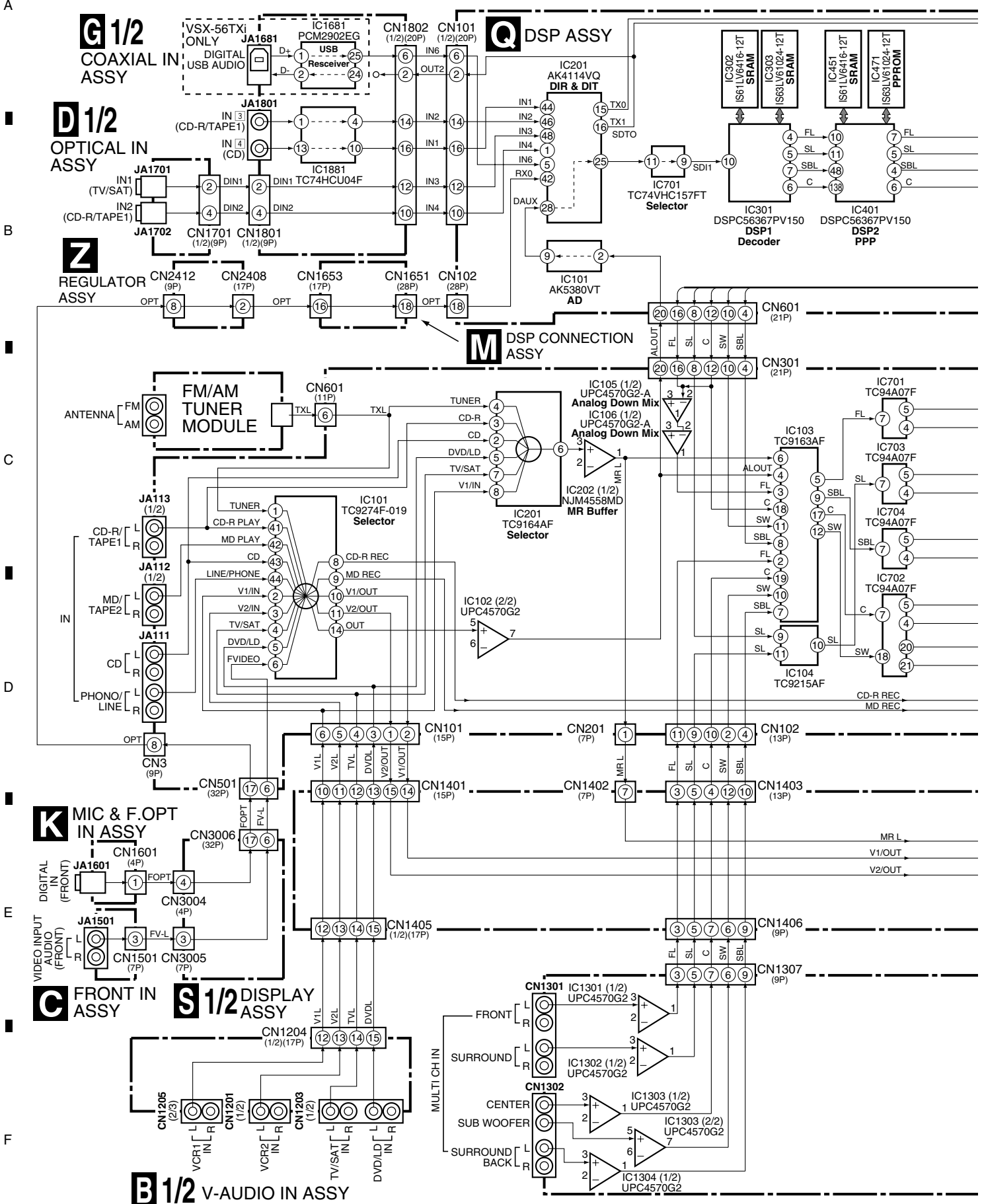
FRONT PANEL SECTION parts List

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	
1	MIC & F. OPT IN Assy	AWX8545	
NSP 2	VOLUME Assy	AWX8550	A
NSP 3	MULTI JOG Assy	AWX8552	
NSP 4	FRONT IN Assy	AWX8549	
NSP 5	HEADPHONE Assy	AWX8554	
6	DISPLAY Assy	AWX8559	
7	MECHA SW Assy	AWX8553	
8	11P Flexible Cable (J2)	ADD7350	
9	4P Flexible Cable (J3)	ADD7351	
10	7P Flexible Cable (J4)	ADD7352	
11	3P Flexible Cable (J15)	ADD7371	B
12	Connector Assy (3P)(J1901)	ADE7084	
13	Cord with Plug	ADH7022	
14	Spacer 45A (3.5 x 10 x 27)	AEB7263	
15	Door Stay 45S	AAH7097	
16	Door Hinge L 45S	AMR7424	
17	Door Hinge R 45S	AMR7425	
18	Door 2011S	ANB7280	
19	Rotary Knob L SL	AAA7017	
20	FL Sheet 45W	AAK7956	C
21	Window AX5AI S	AAK8234	
22	D. Sheet AX5A	AAK8239	
23	Cushion Circle 56S	AED7087	
24	Cushion 11 x 11	AED7088	
25	Panel Base 56S	AMB7884	
26	Magnet 35	AMF7007	
27	Door Shaft 35	AMR7295	
28	F. Panel AX5A SHY	ANB7349	
29	Earth Plate A	ANG7411	
30	Earth Plate B	ANG7412	D
31	Damper Assy (200)	AXA7088	
32	Pioneer Badge	VAM1124	
33	Holder	VEC1355	
NSP 34	Styling Assy	•••••	
35	Nut	NK90FUC	
36	Screw	ABA7098	
37	Screw	ABA7110	
38	Screw	BPZ30P100FTC	E
39	32P Flexible Cable (J1)	ADD7349	
40	Power Button 56S	AAD7734	

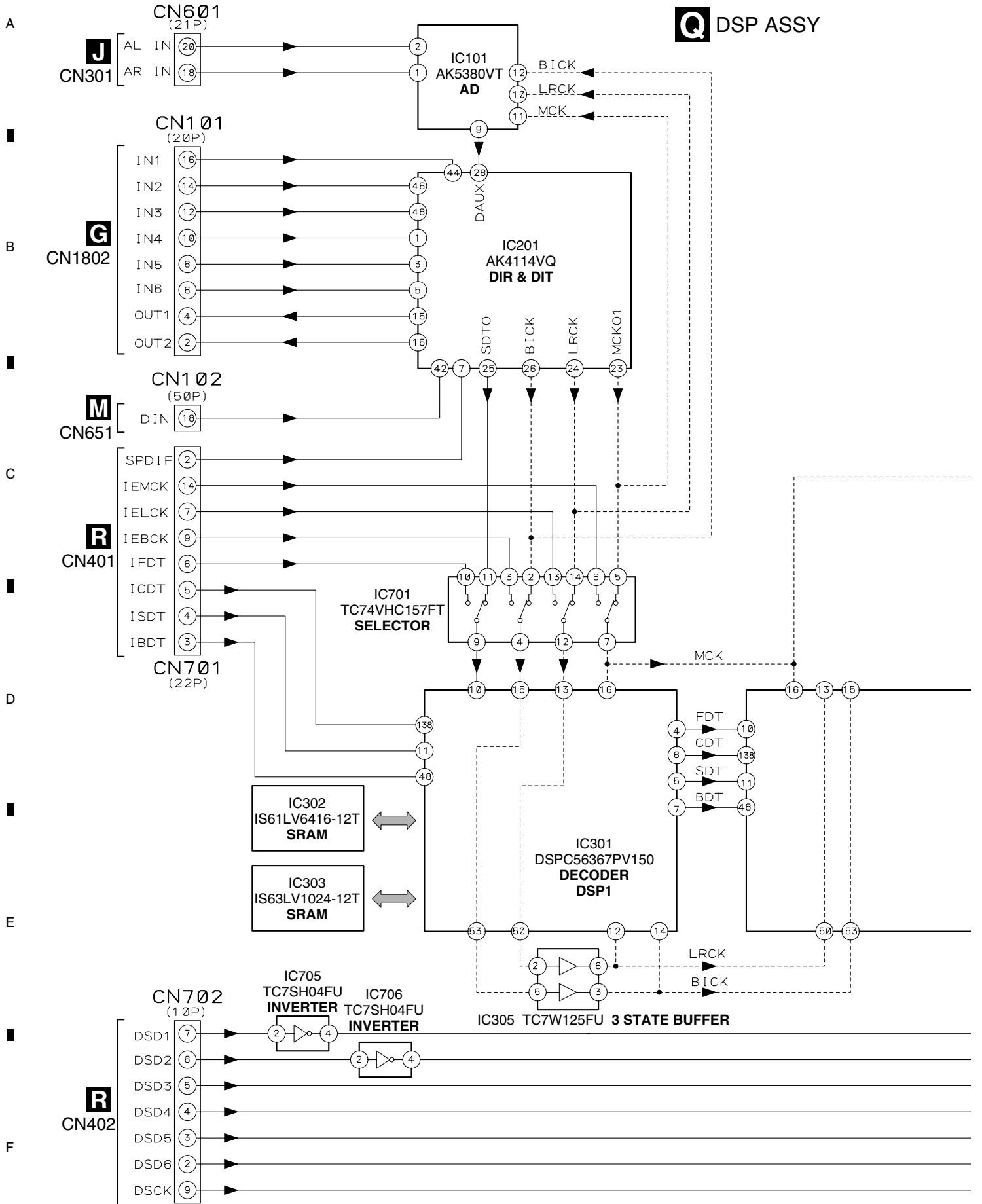
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

3.1.1 AUDIO BLOCK DIAGRAM

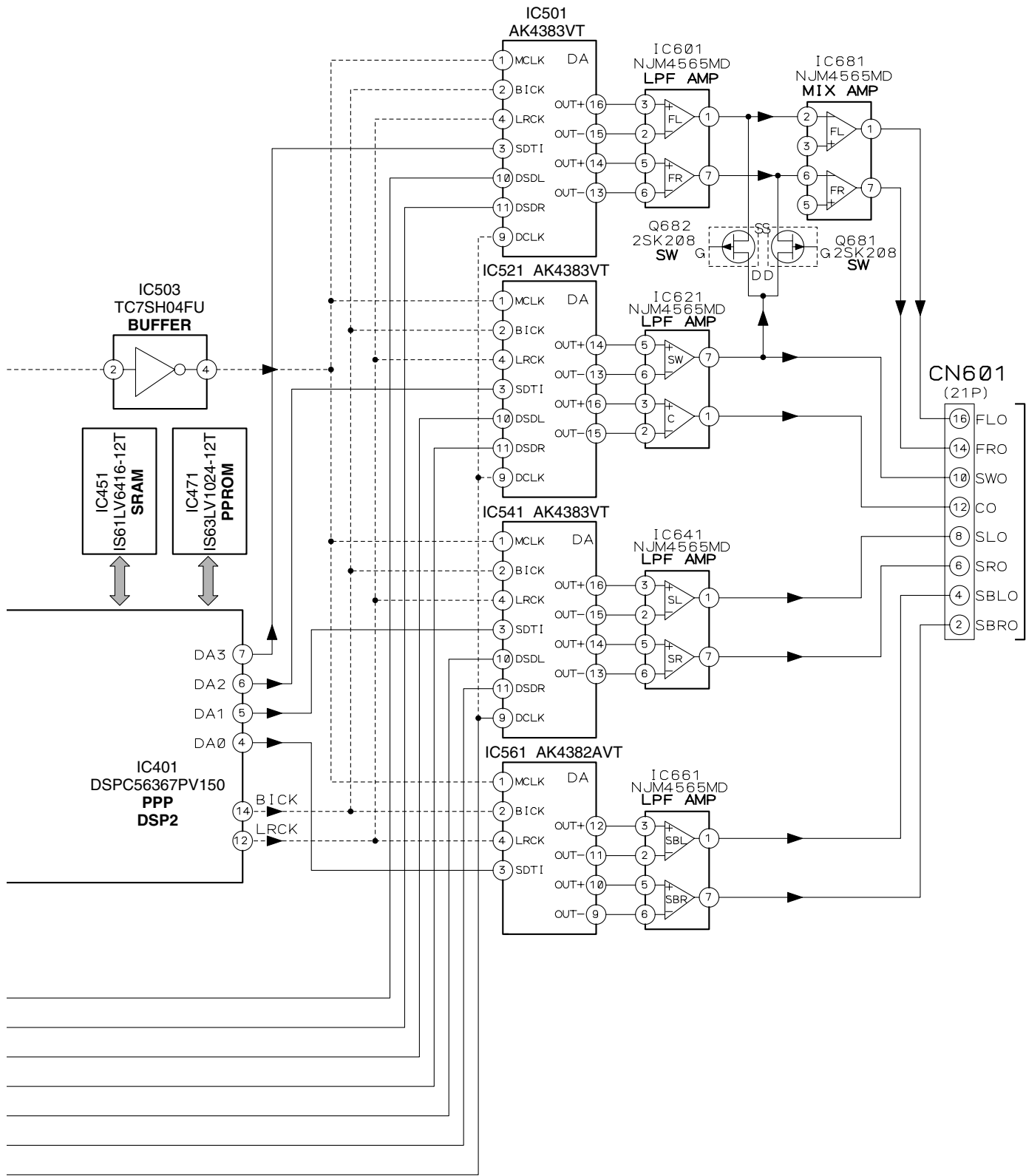


3.1.2 DSP BLOCK DIAGRAM



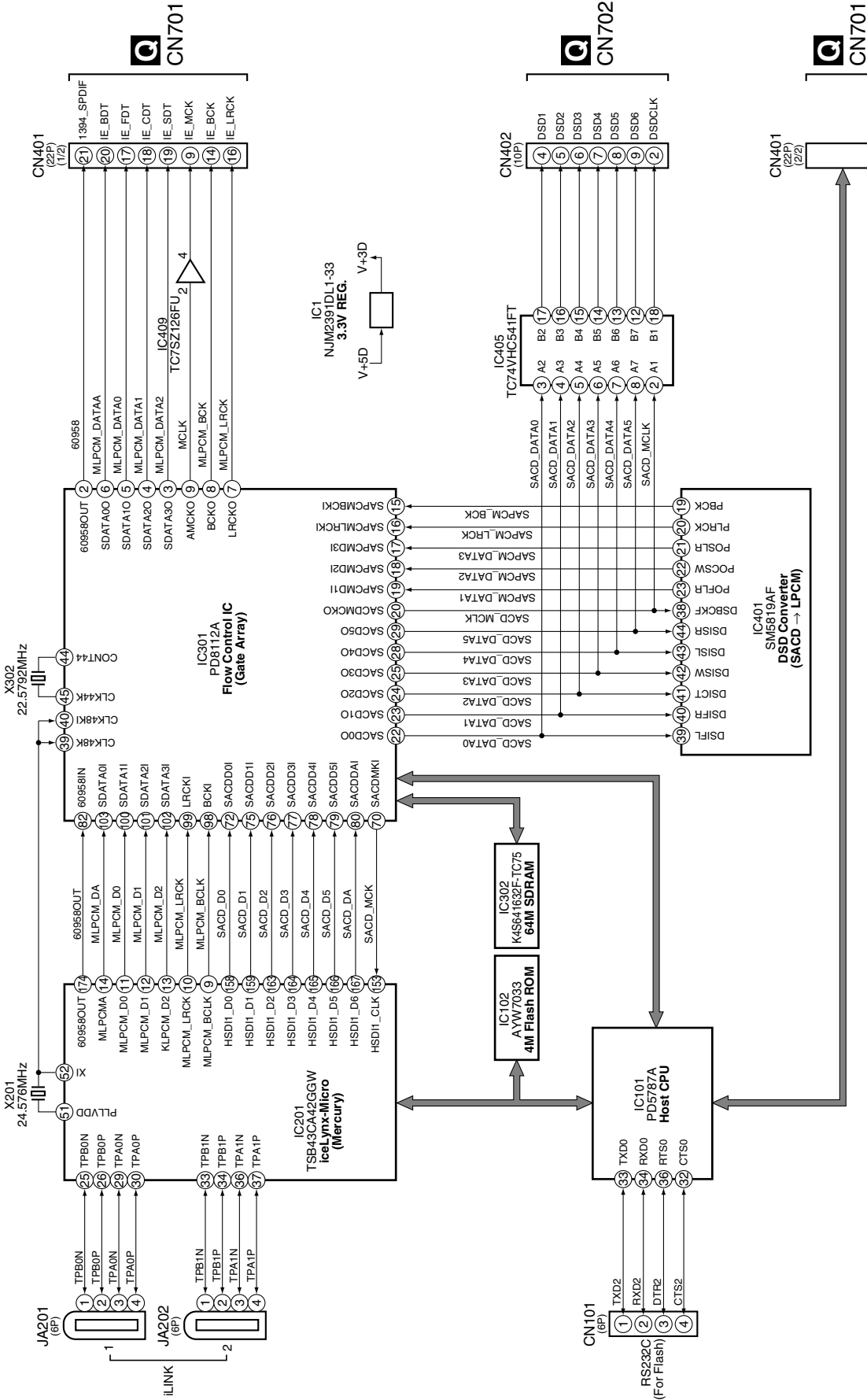
A
B
C
D
E
F

----- CLOCK LINE
———— DATA LINE

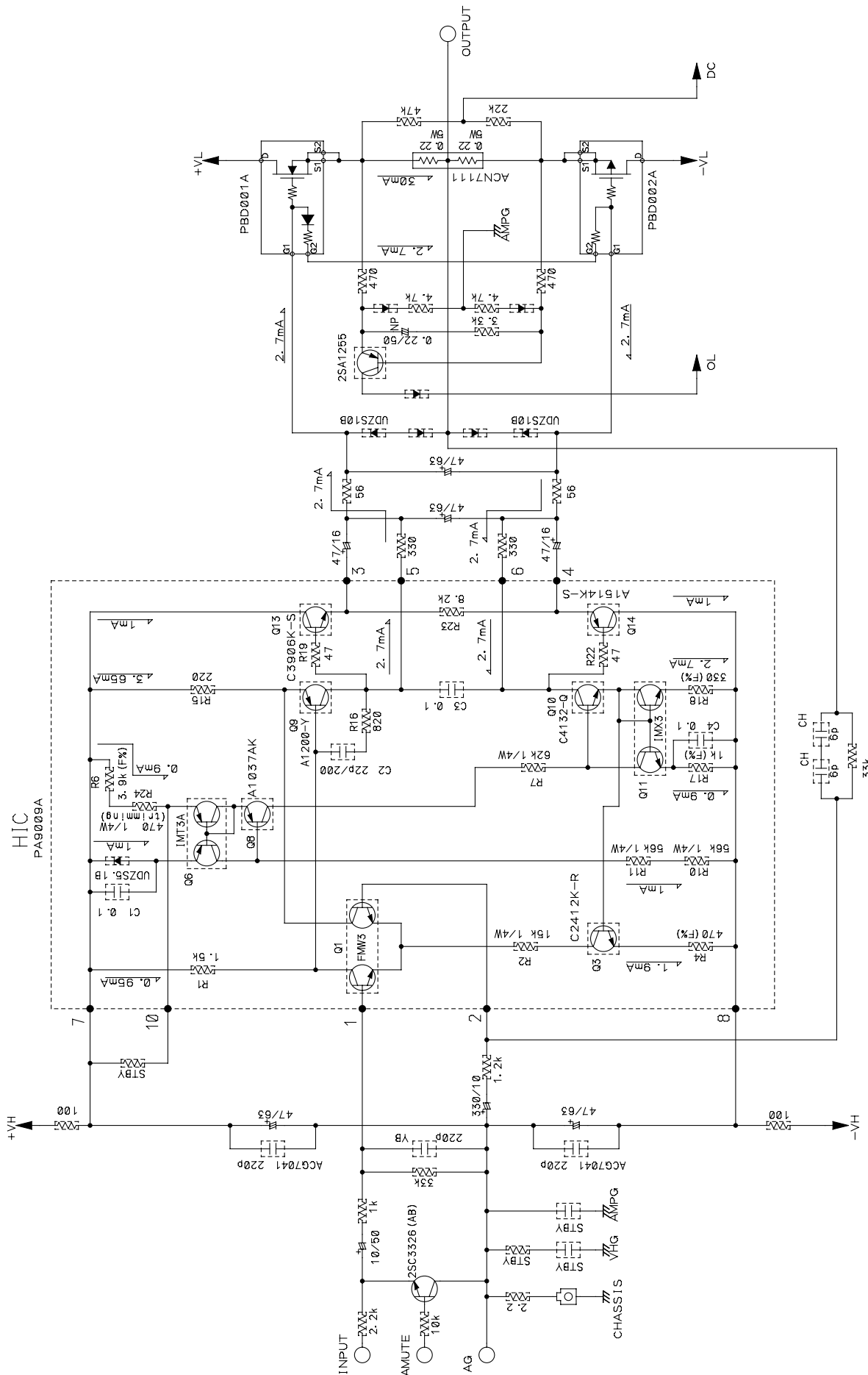


3.1.3 1394 BLOCK DIAGRAM

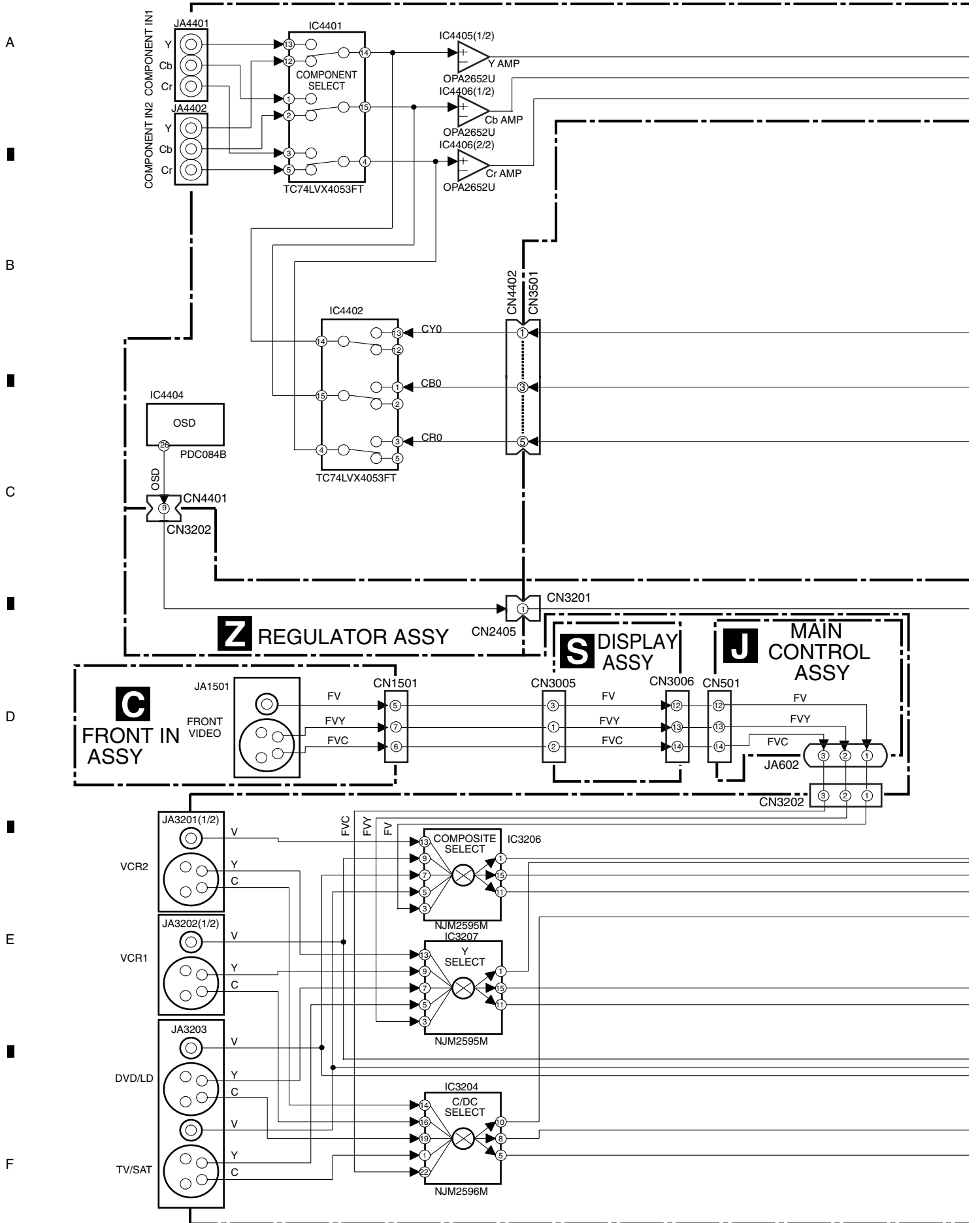
R 1394 ASSY



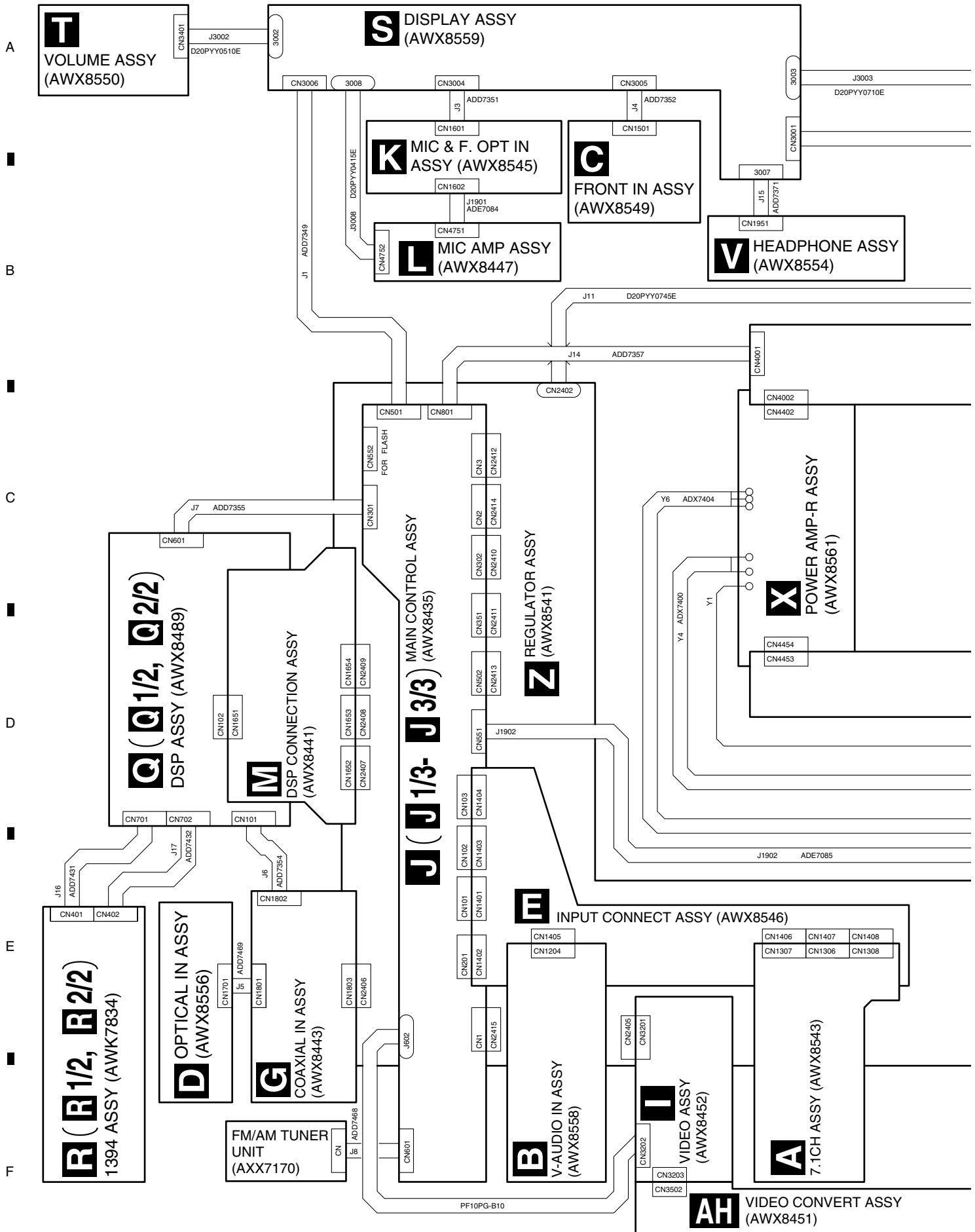
3.1.4 POWER AMP BLOCK DIAGRAM

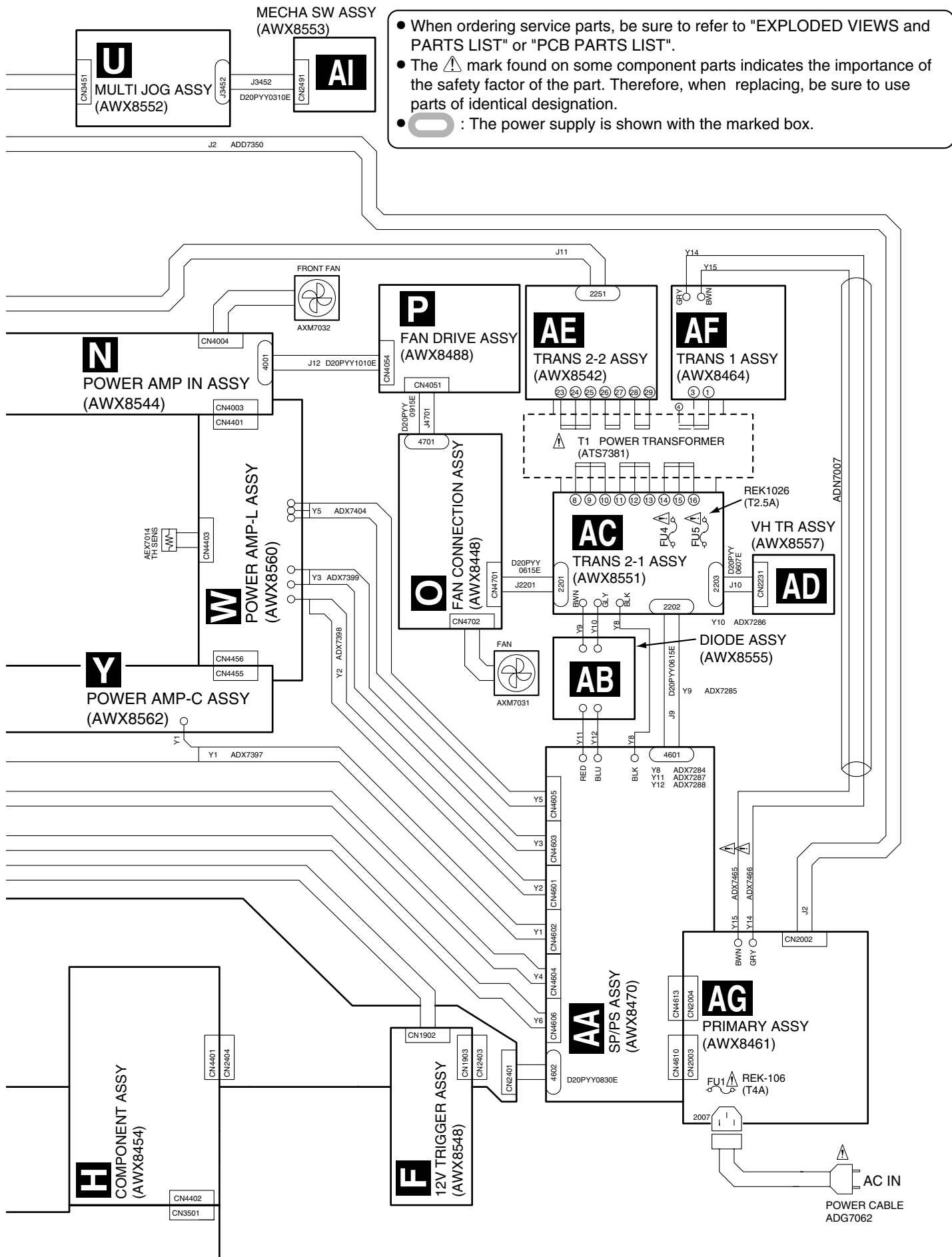



3.1.5 VIDEO BLOCK DIAGRAM



3.2 OVERALL WIRING DIAGRAM



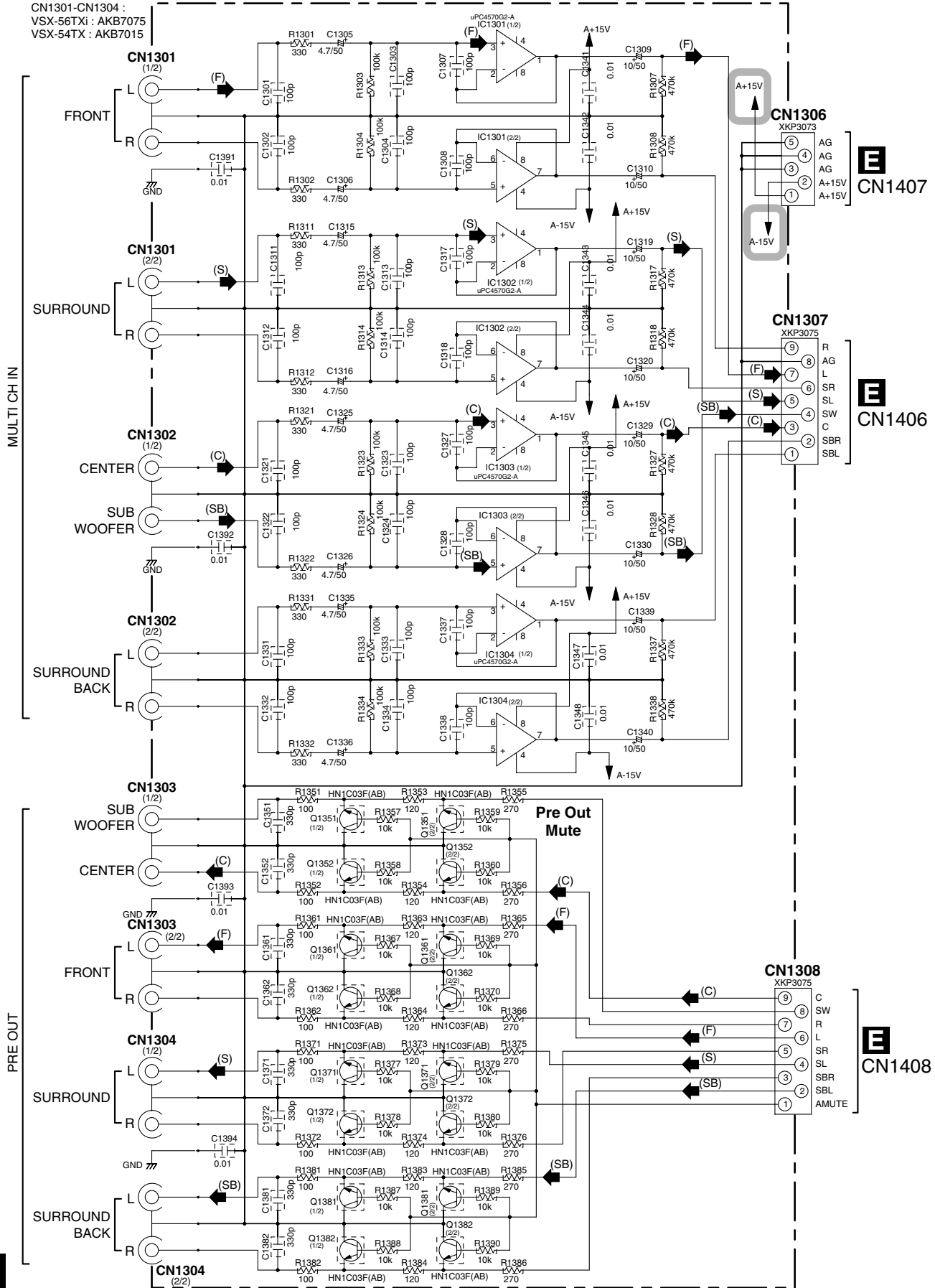


- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
-  : The power supply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

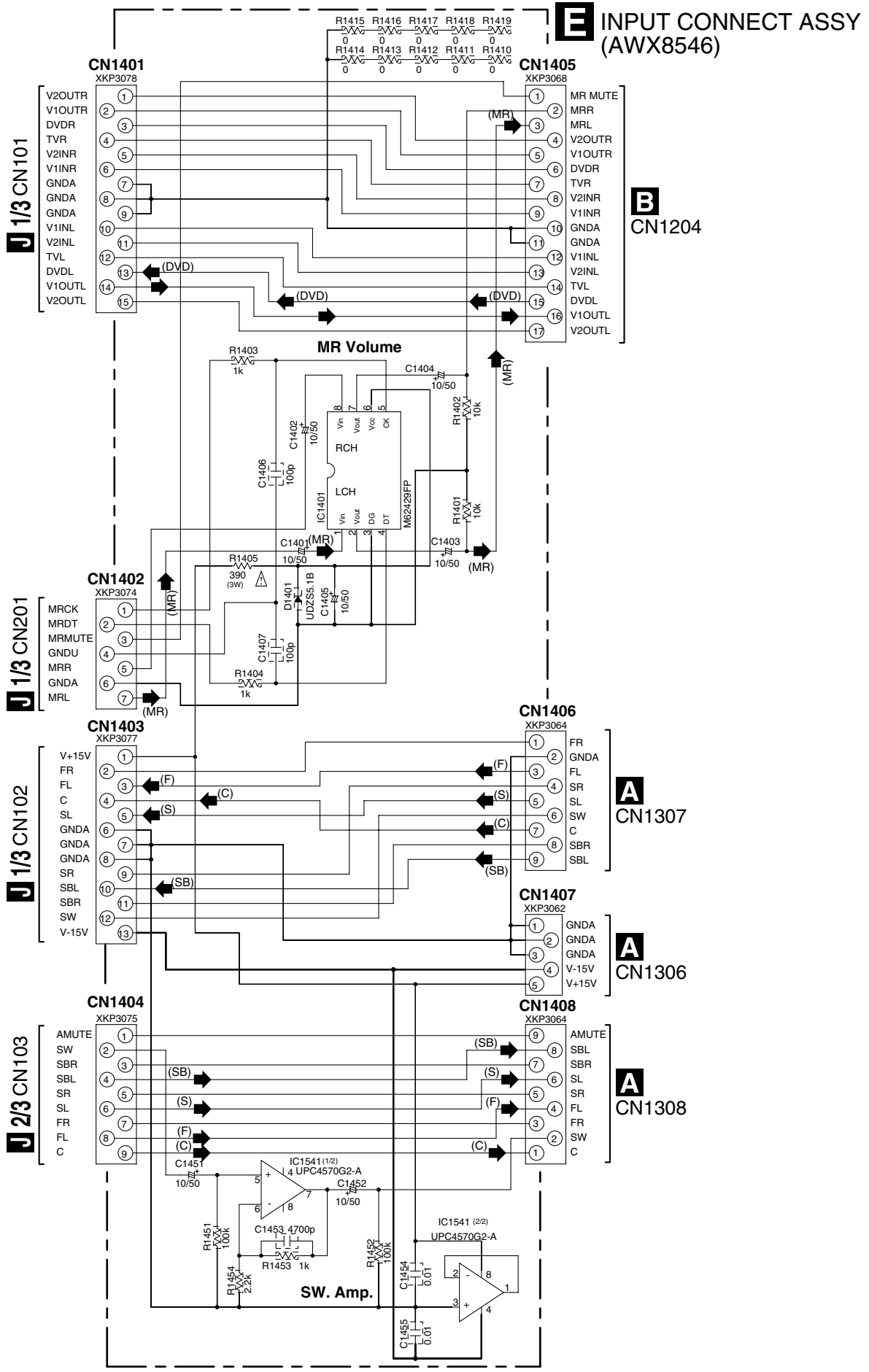
3.3 7.1 CH I/O, V-AUDIO IN, FRONT IN and OPTICAL IN ASSYS

A 7.1CH ASSY (AWX8543)

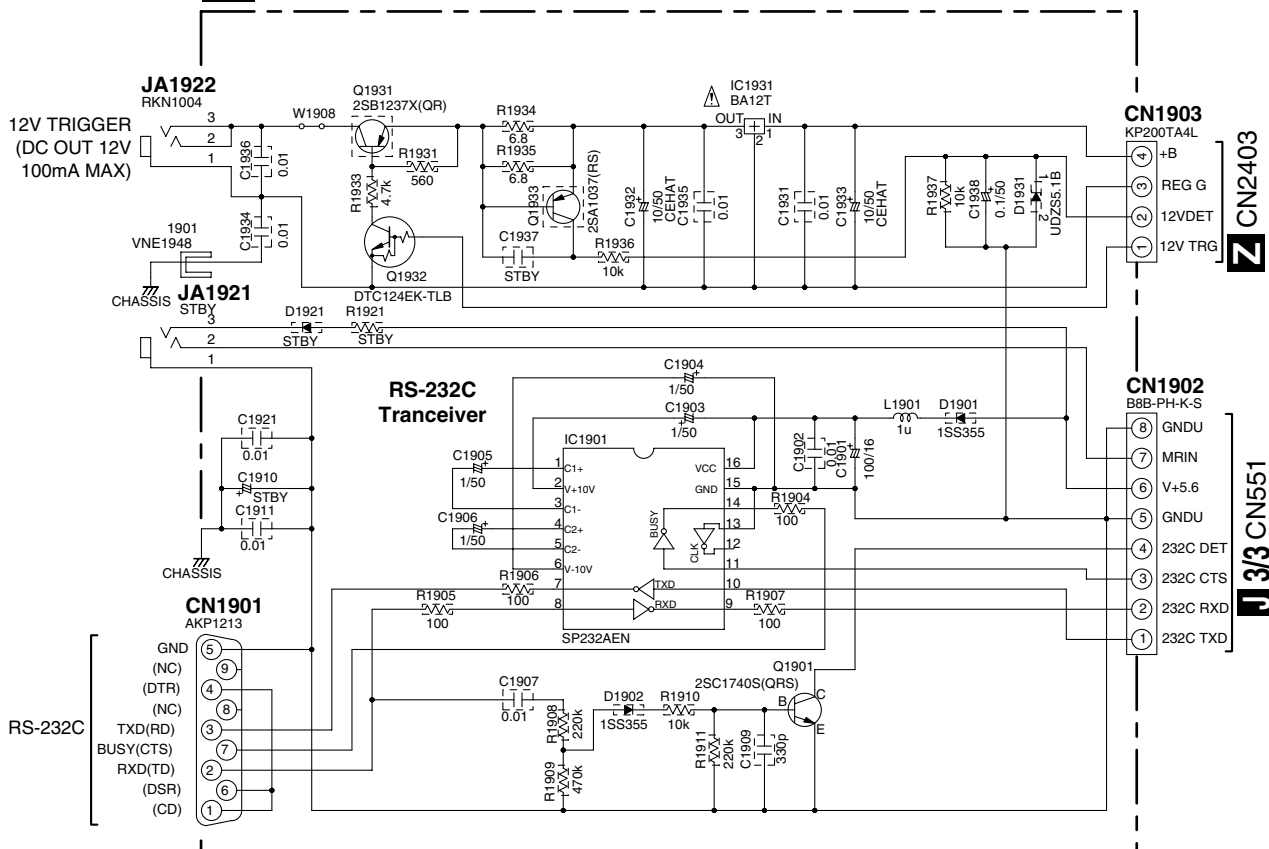
CN1301-CN1304 :
VSX-56TXi : AKB7075
VSX-54TX : AKB7015



3.4 INPUT CONNECT and 12V TRIGGER ASSYS



F 12V TRIGGER ASSY (AWX8548)



- : 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)

3.5 COAXIAL IN ASSY

G COAXIAL IN ASSY (AWX8443)

A

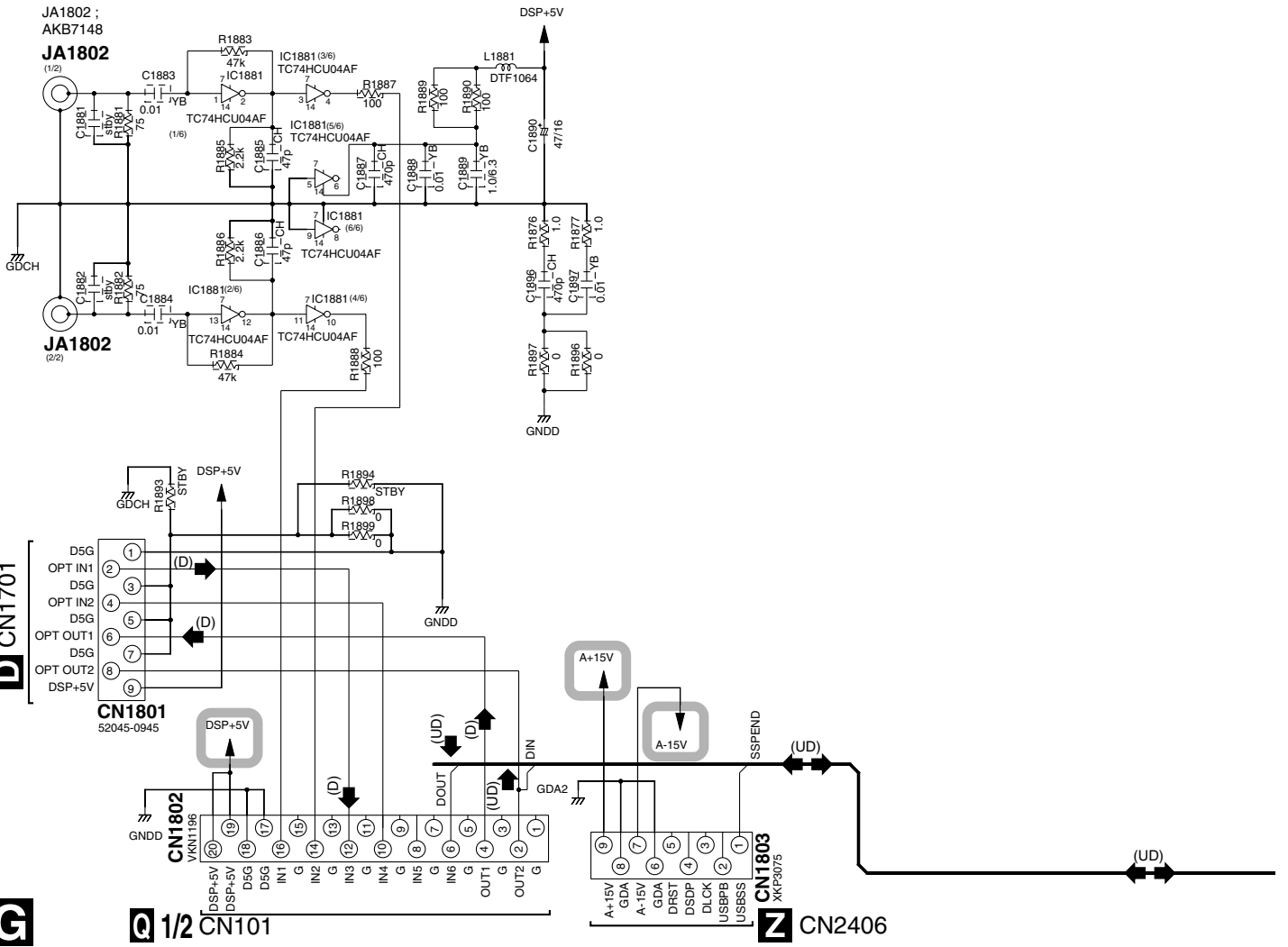
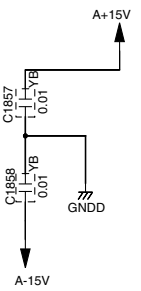
B

C

D

E

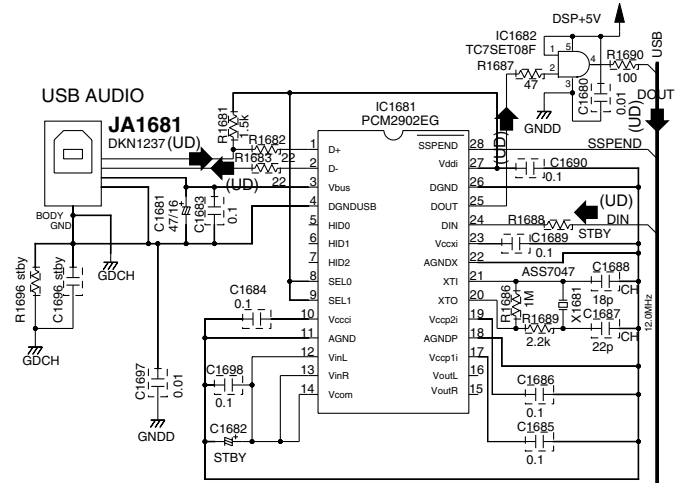
F



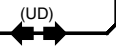
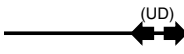
Q 1/2 CN101

Z CN2406

(D) : AUDIO SIGNAL ROUTE (DIGITAL)
 (UD) : AUDIO SIGNAL ROUTE (USB DIGITAL)

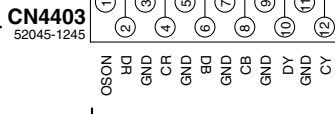
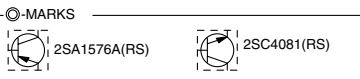
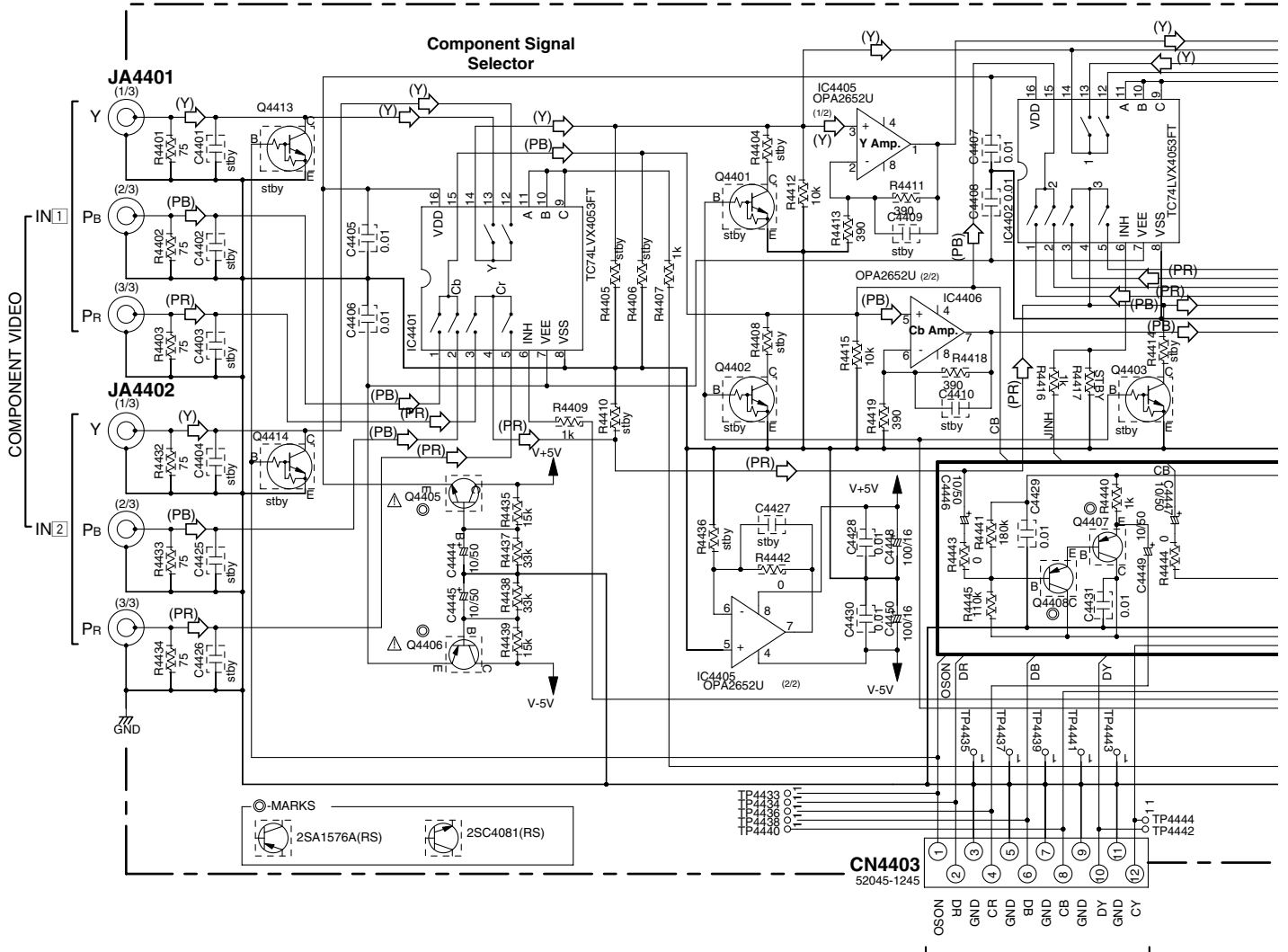


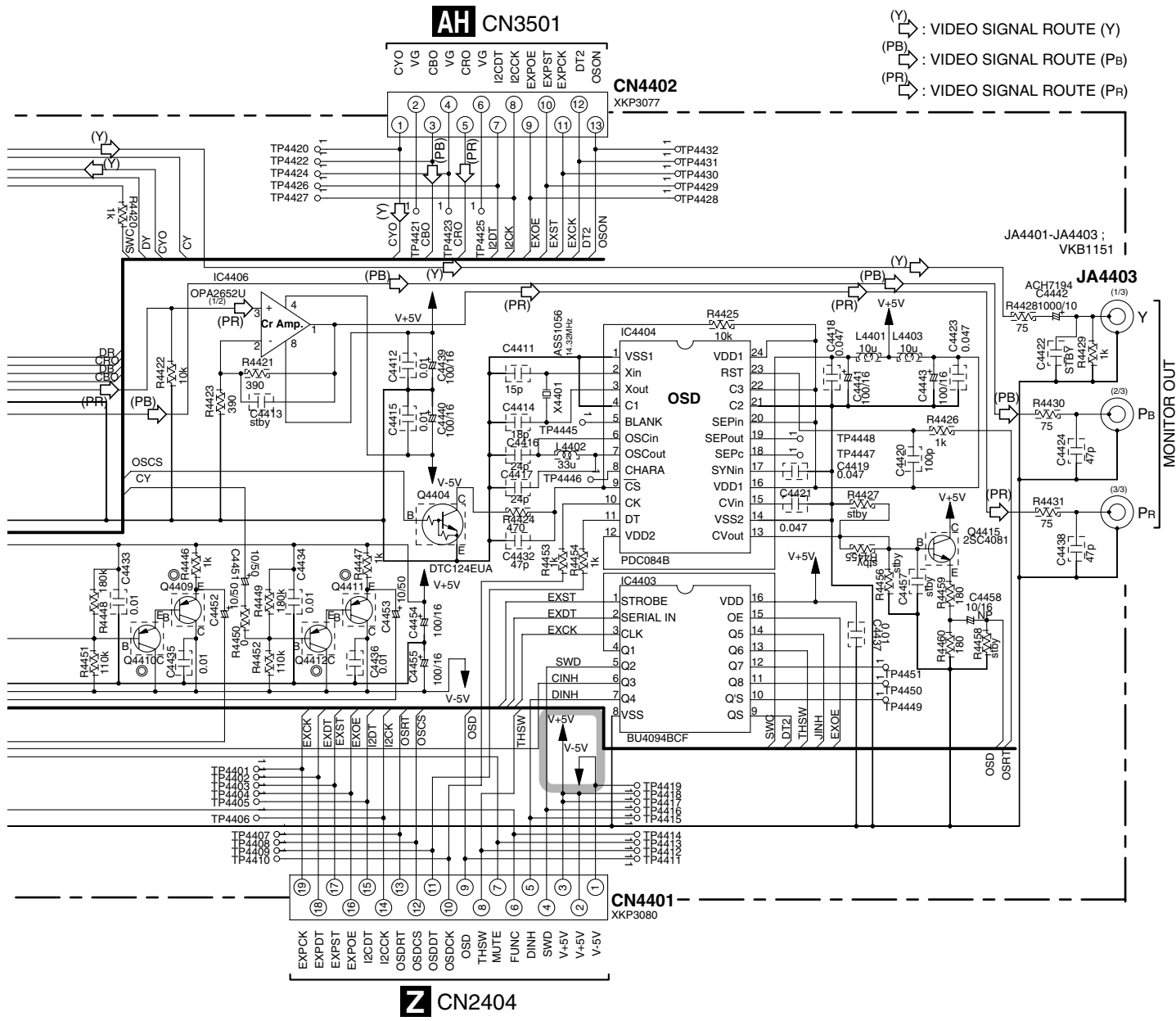
A
B
C
D
E
F



3.6 COMPONENT ASSY

COMPONENT ASSY (AWX8454)

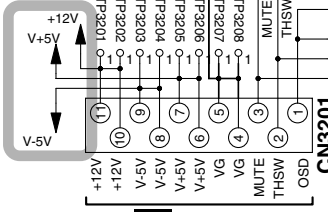
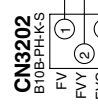
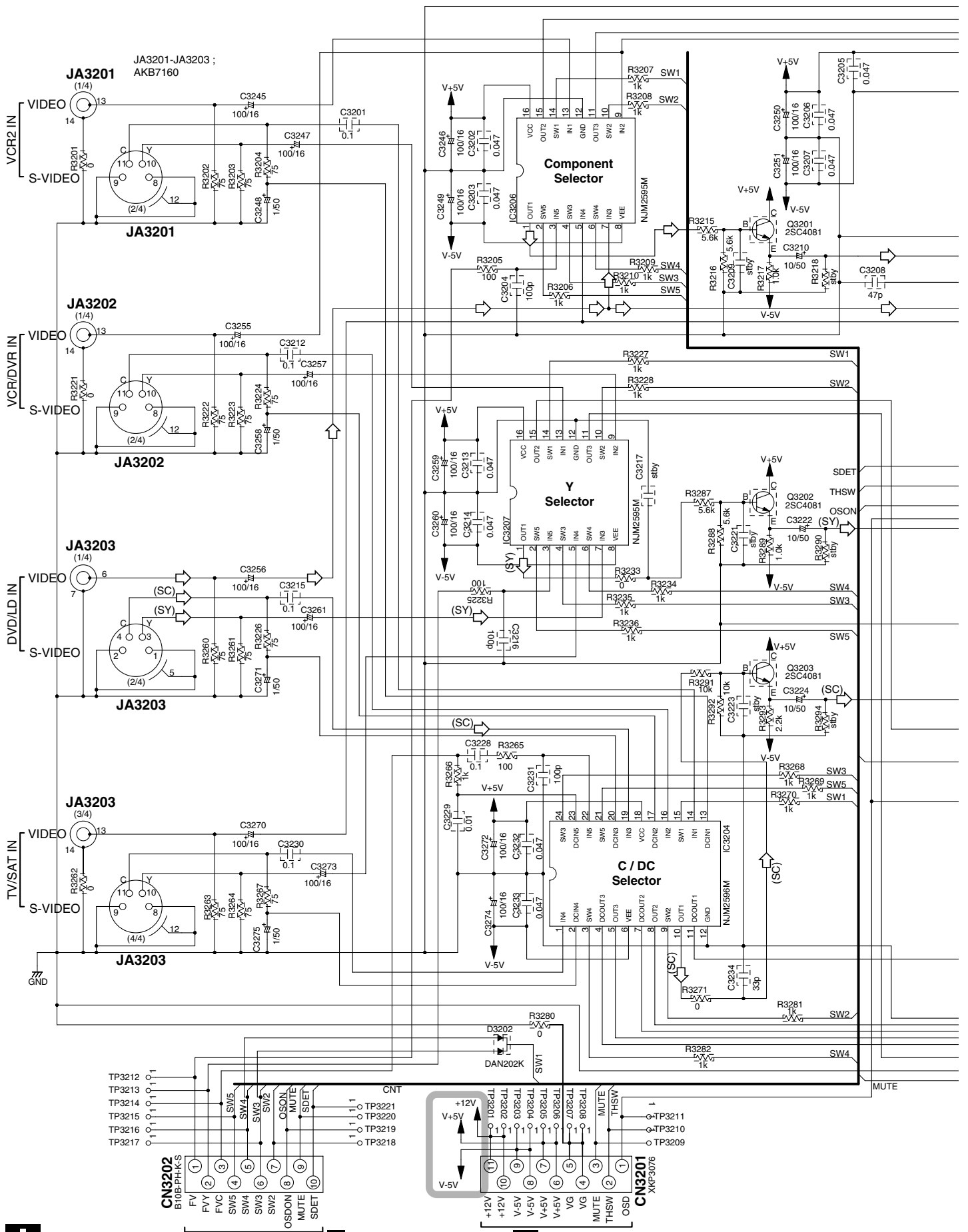




3.7 VIDEO ASSY

1 2 3 4

A
B
C
D
E
F

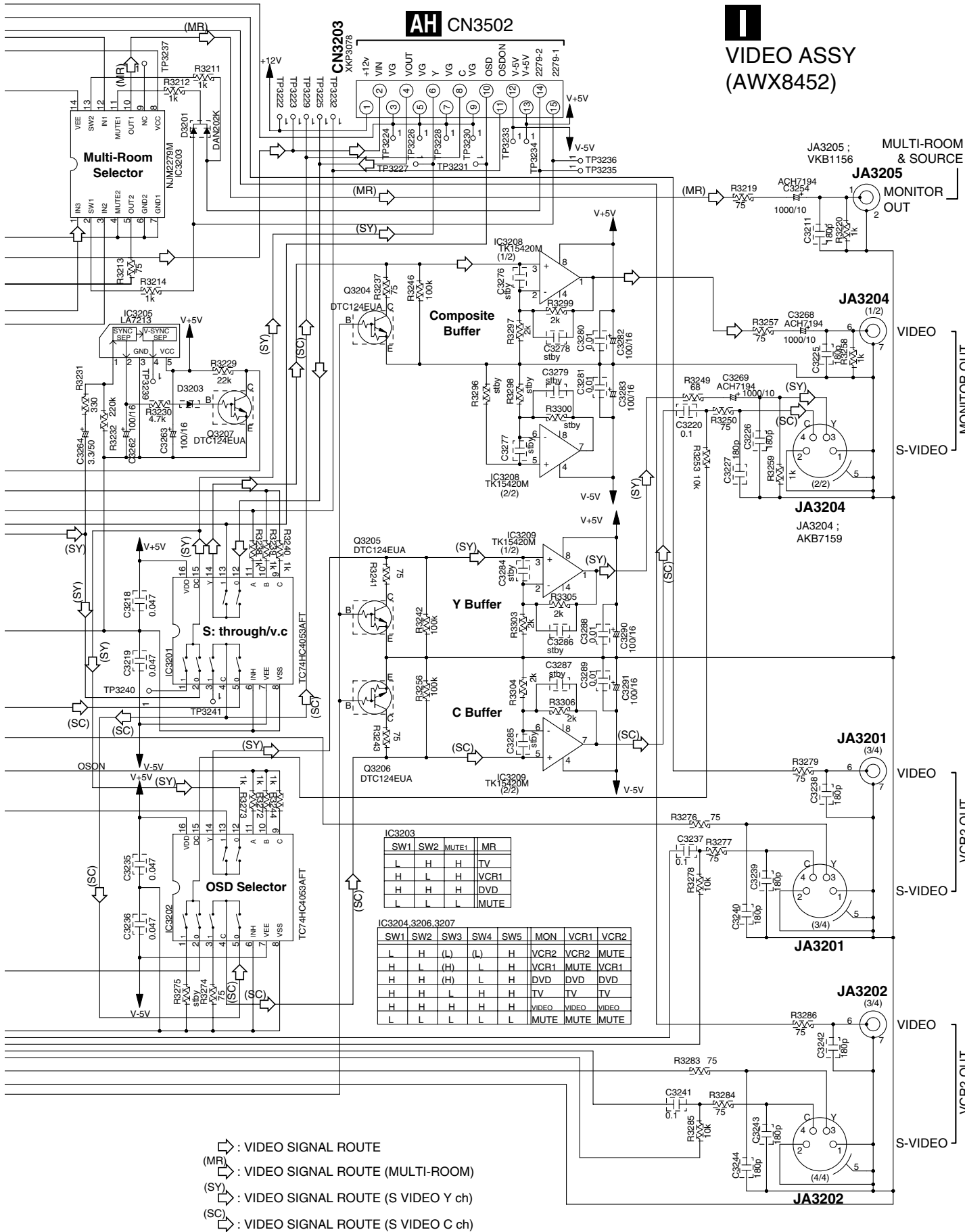


J 3/3 J602

Z CN2405

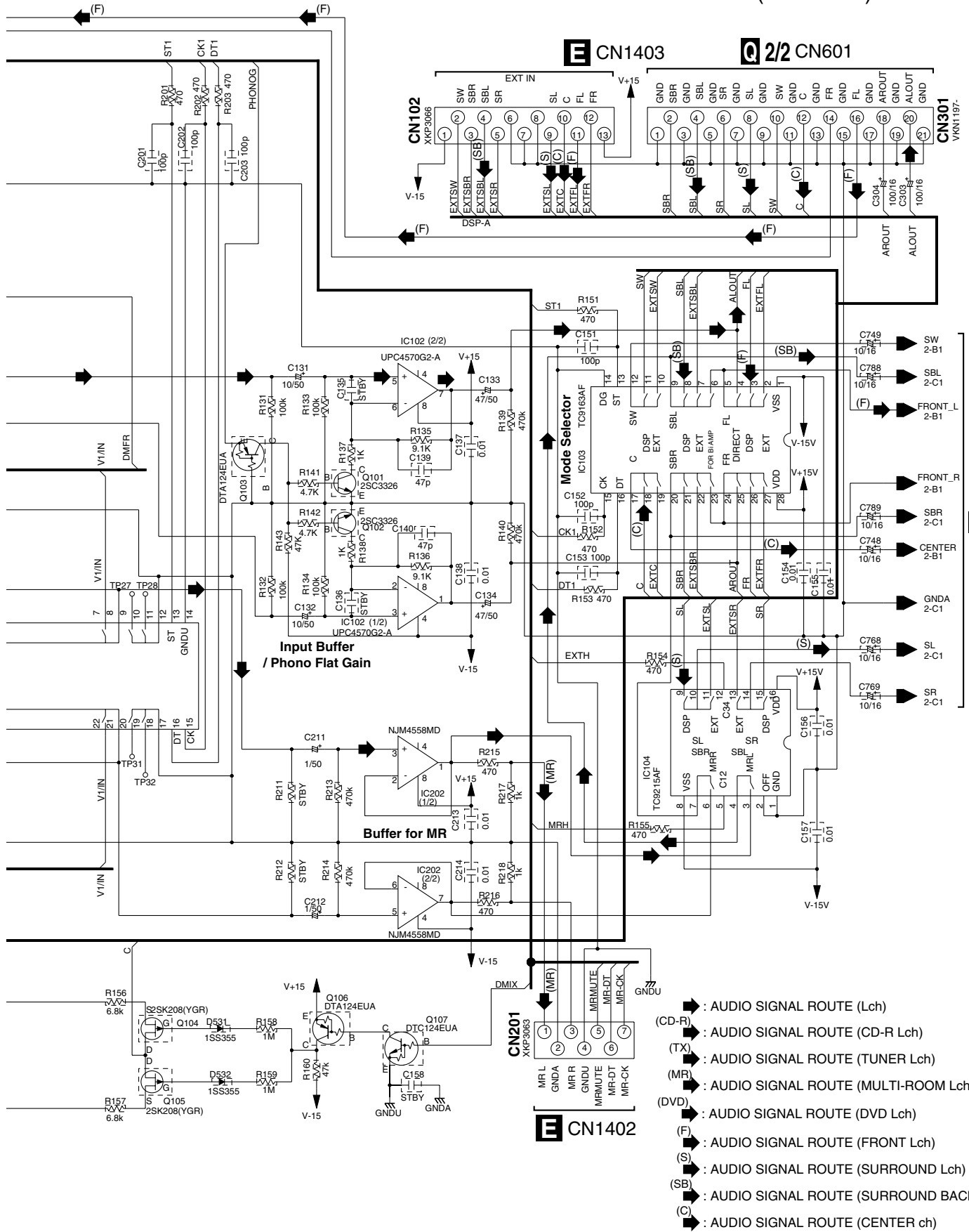
VSX-AX5Ai-S

1 2 3 4



VIDEO ASSY (AWX8452)

J 1/3 MAIN CONTROL ASSY (AWX8435)



- ➔ (CD-R) : AUDIO SIGNAL ROUTE (Lch)
- ➔ (TX) : AUDIO SIGNAL ROUTE (CD-R Lch)
- ➔ (MR) : AUDIO SIGNAL ROUTE (TUNER Lch)
- ➔ (DVD) : AUDIO SIGNAL ROUTE (MULTI-ROOM Lch)
- ➔ (F) : AUDIO SIGNAL ROUTE (DVD Lch)
- ➔ (S) : AUDIO SIGNAL ROUTE (FRONT Lch)
- ➔ (SB) : AUDIO SIGNAL ROUTE (SURROUND Lch)
- ➔ (C) : AUDIO SIGNAL ROUTE (SURROUND BACK Lch)
- ➔ : AUDIO SIGNAL ROUTE (CENTER ch)

3.9 MAIN CONTROL ASSY (2/3)

A
B
C
D
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F

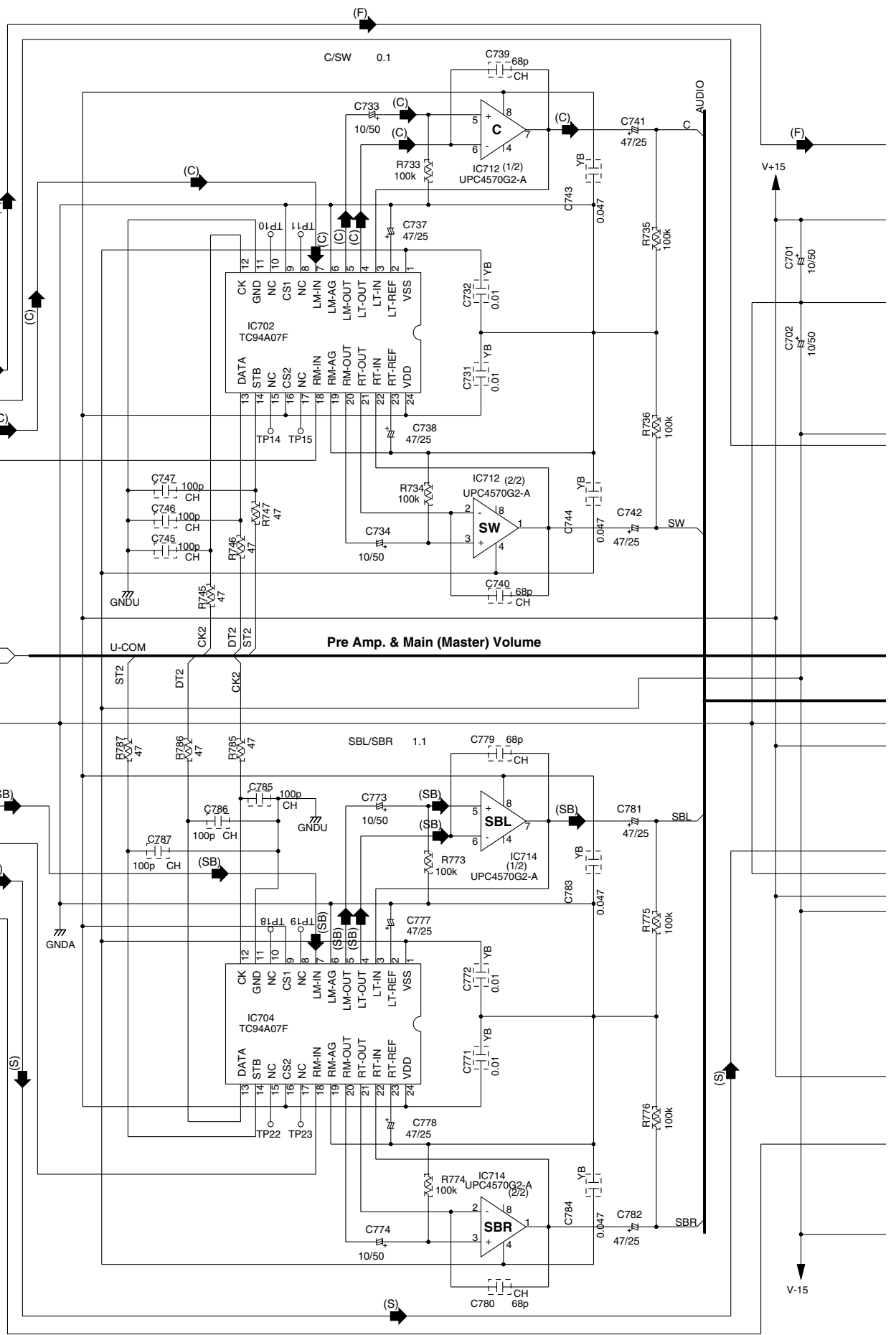
1 2 3 4

J 1/3

J 1/3, 3/3
1-A3,3-D4
U-COM

J 1/3

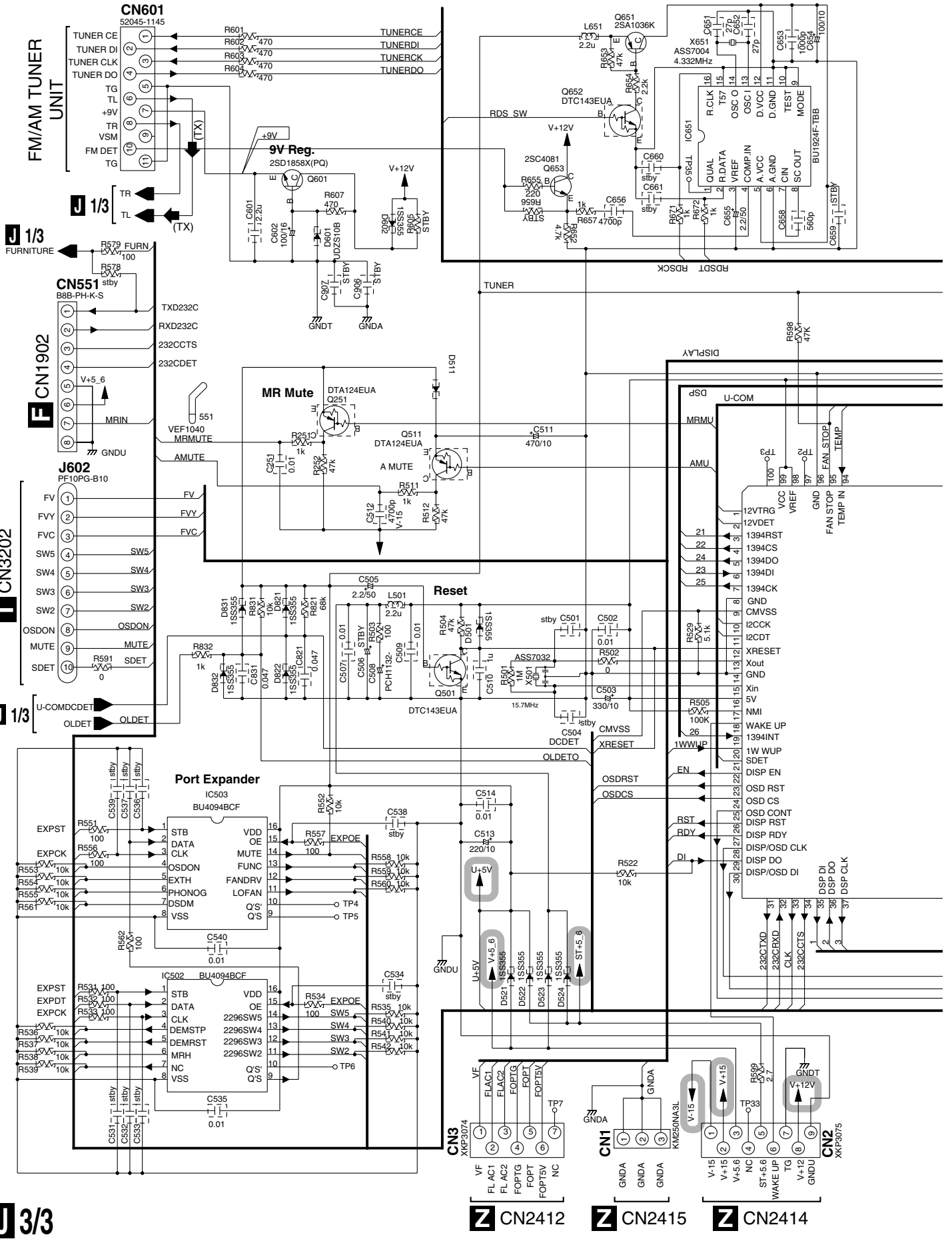
J 2/3



1 2 3 4

3.10 MAIN CONTROL ASSY (3/3)

A
B
C
D
E
F



J 1/3

S CN3006

J 3/3 MAIN CONTROL ASSY (AWX8435)

A

B

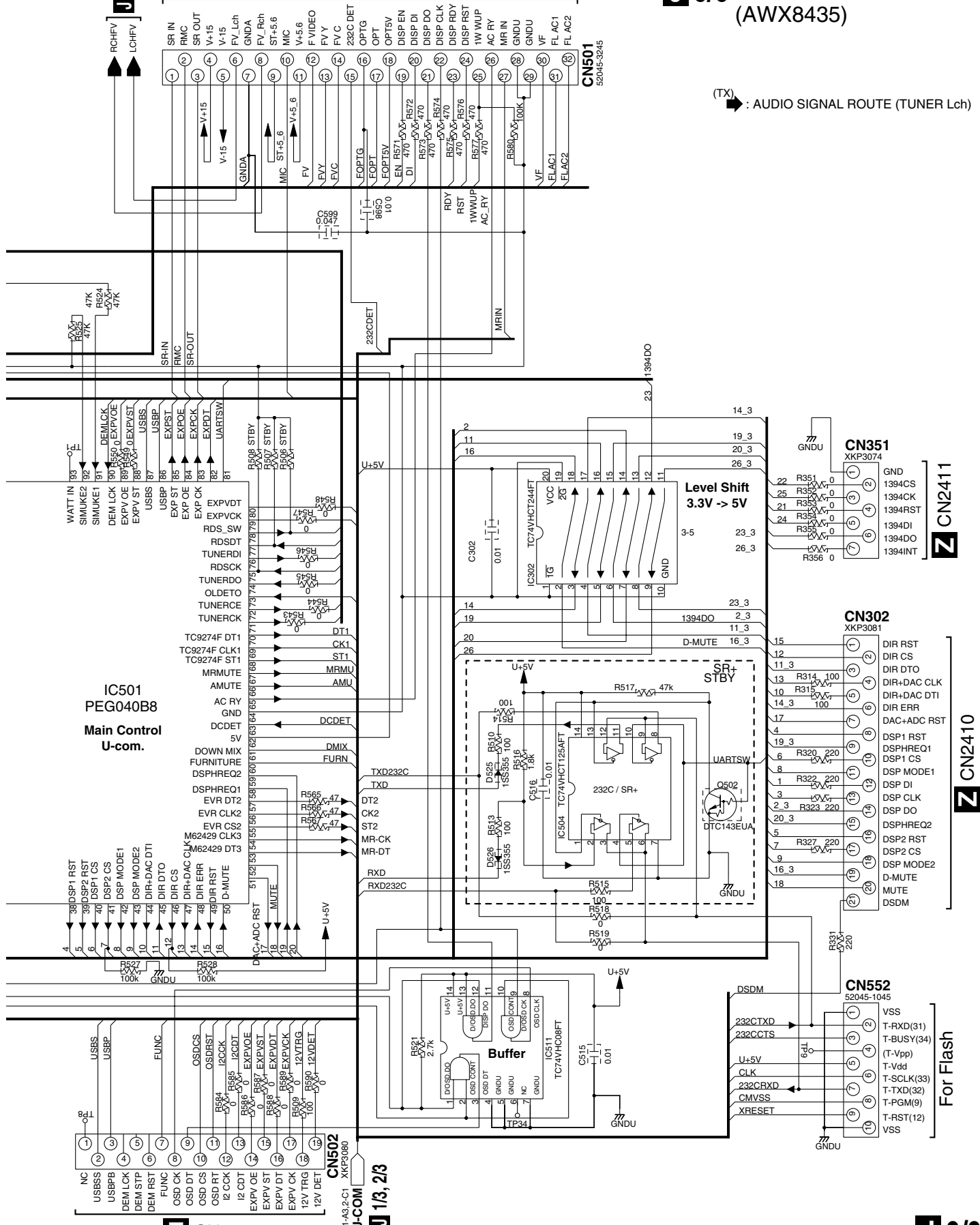
C

D

E

F

(TX) : AUDIO SIGNAL ROUTE (TUNER Lch)



CN2413

J 1/3, 2/3

CN2411

CN2410

CN351

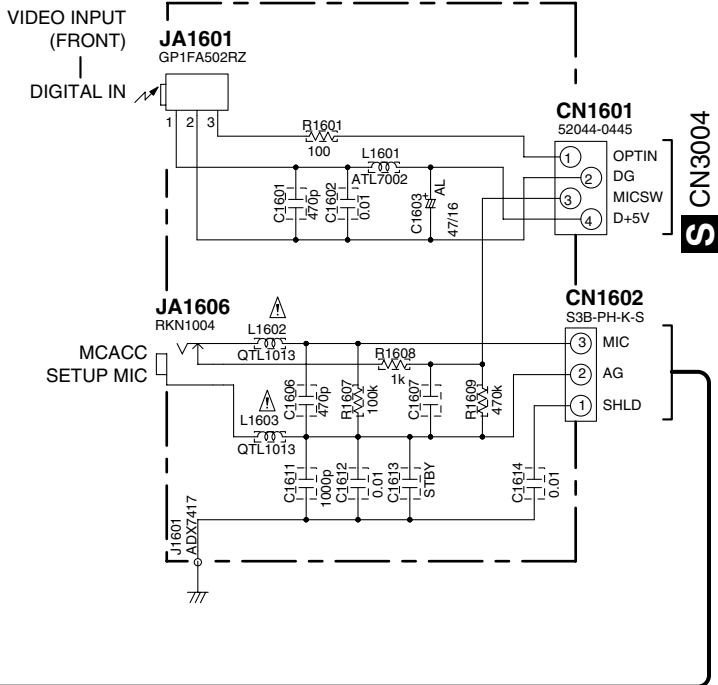
CN302

CN552

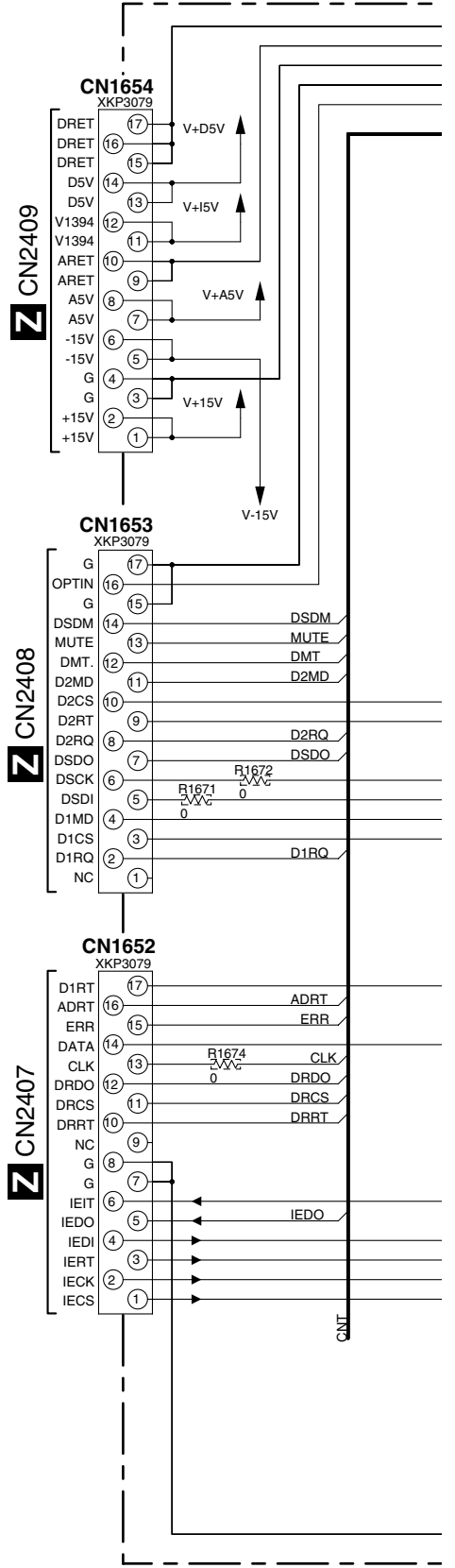
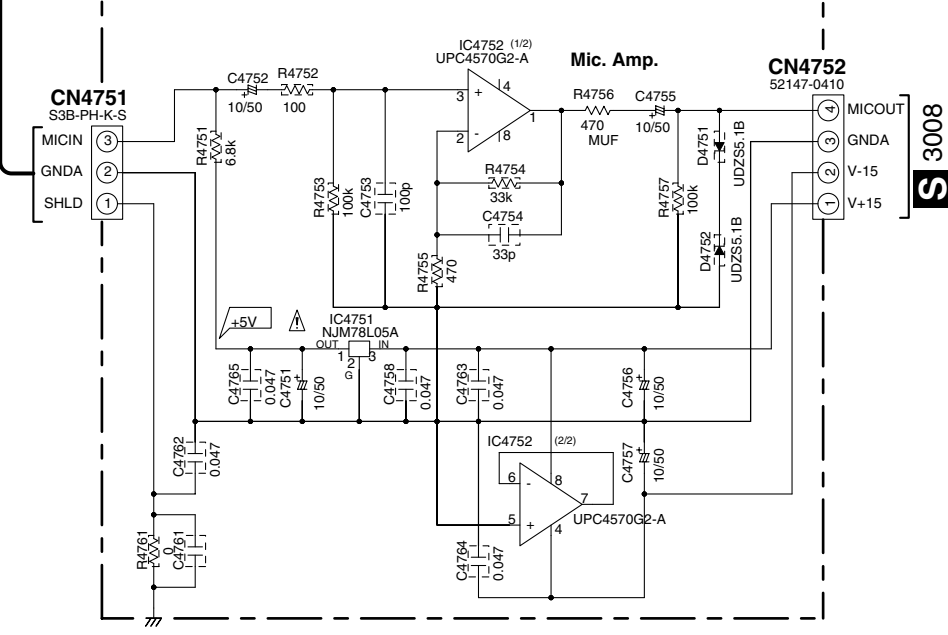
For Flash

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

K MIC & F. OPT IN ASSY (AWX8545)

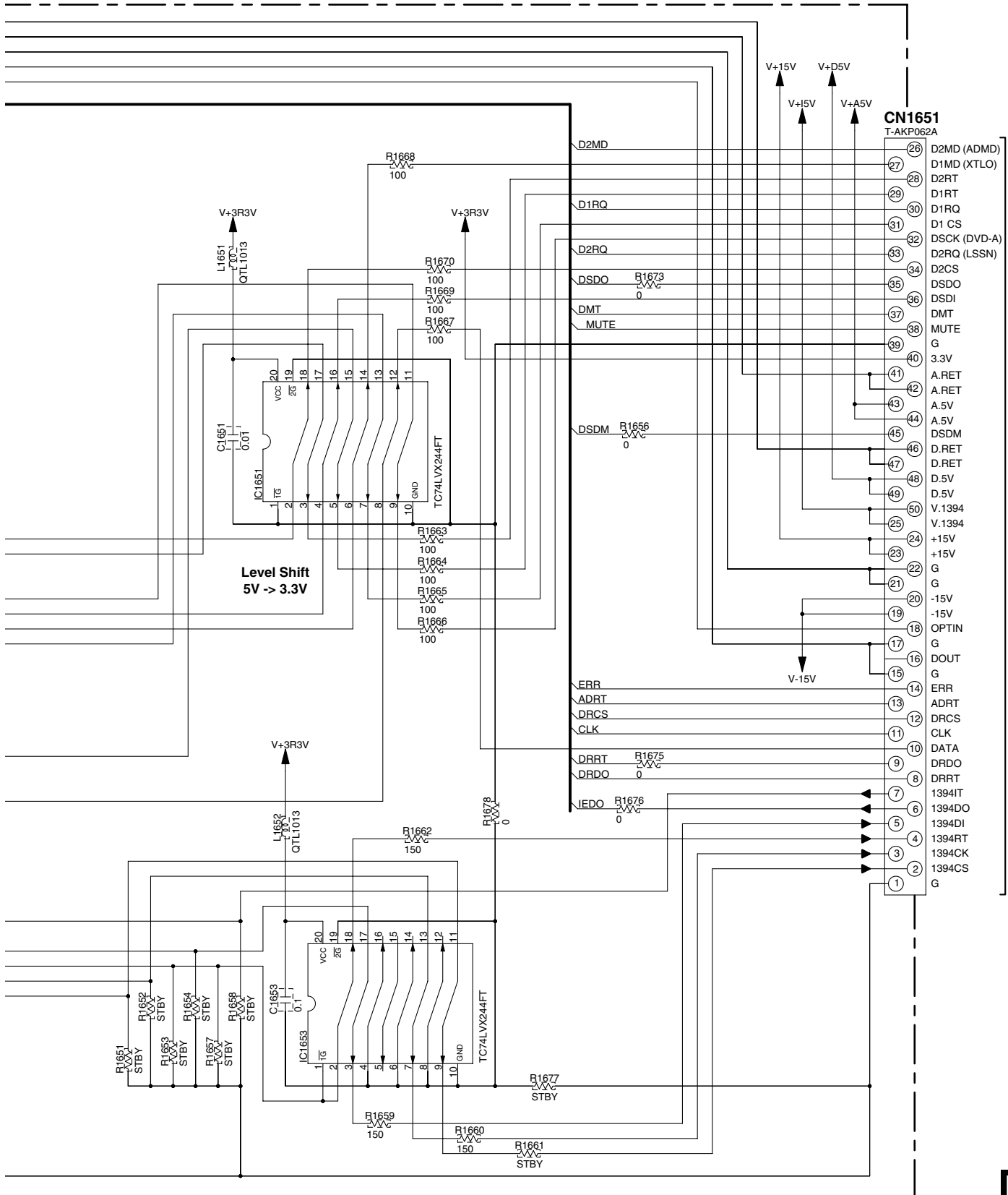


L MIC AMP ASSY (AWX8447)



K L M

M DSP CONNECTION ASSY (AWX8441)



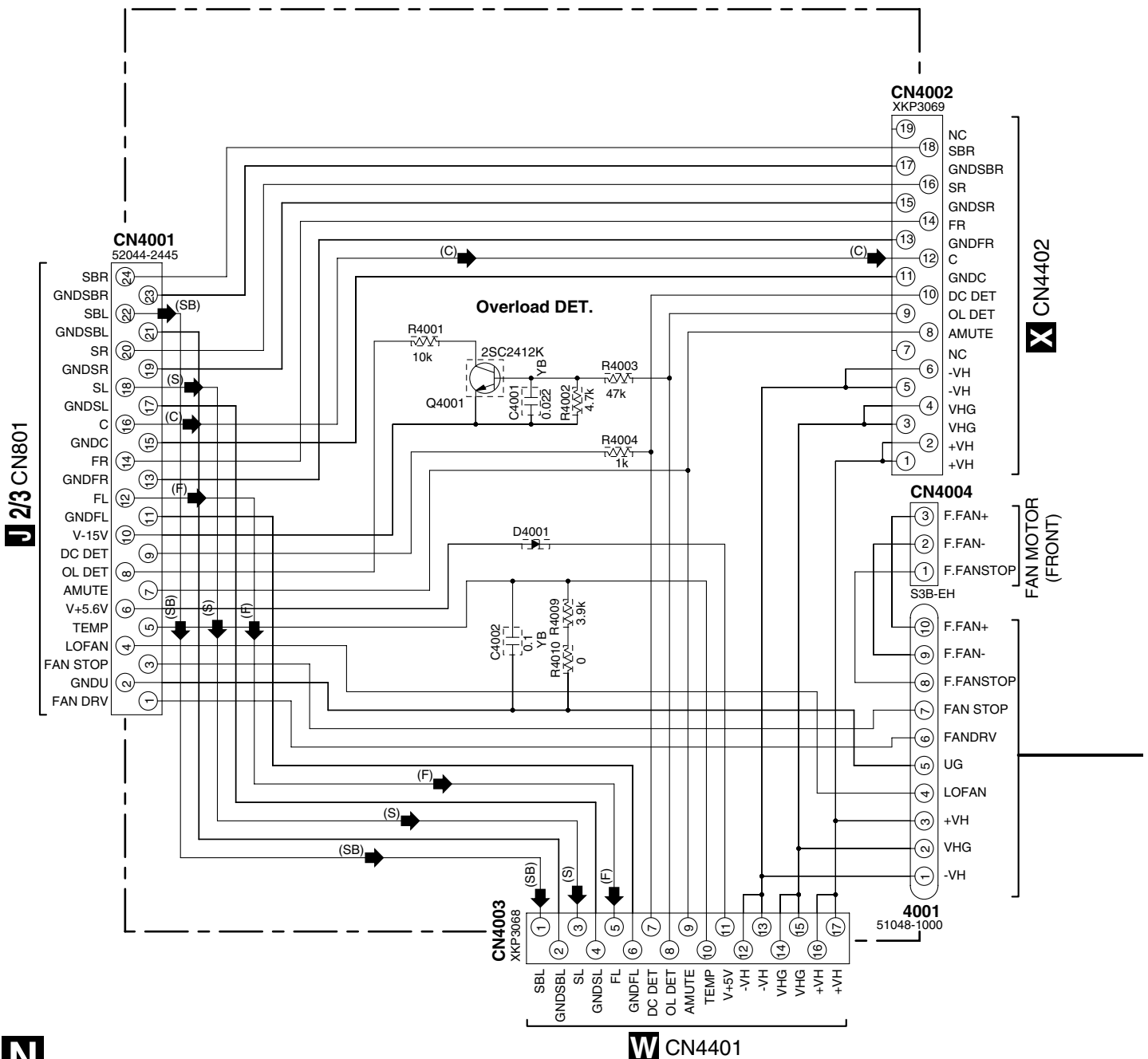
1/2 CN102



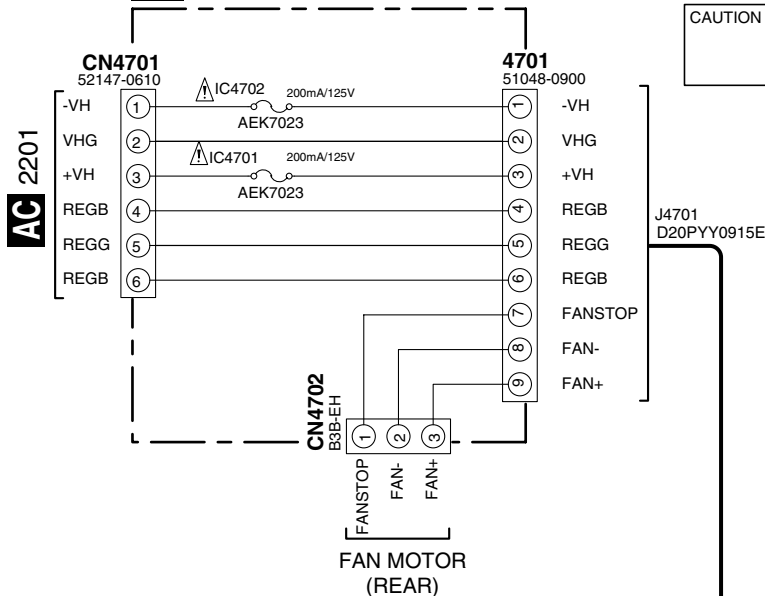
3.12 POWER AMP IN, FAN CONNECTION and FAN DRIVE ASSYS

- (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 (AWX8544)

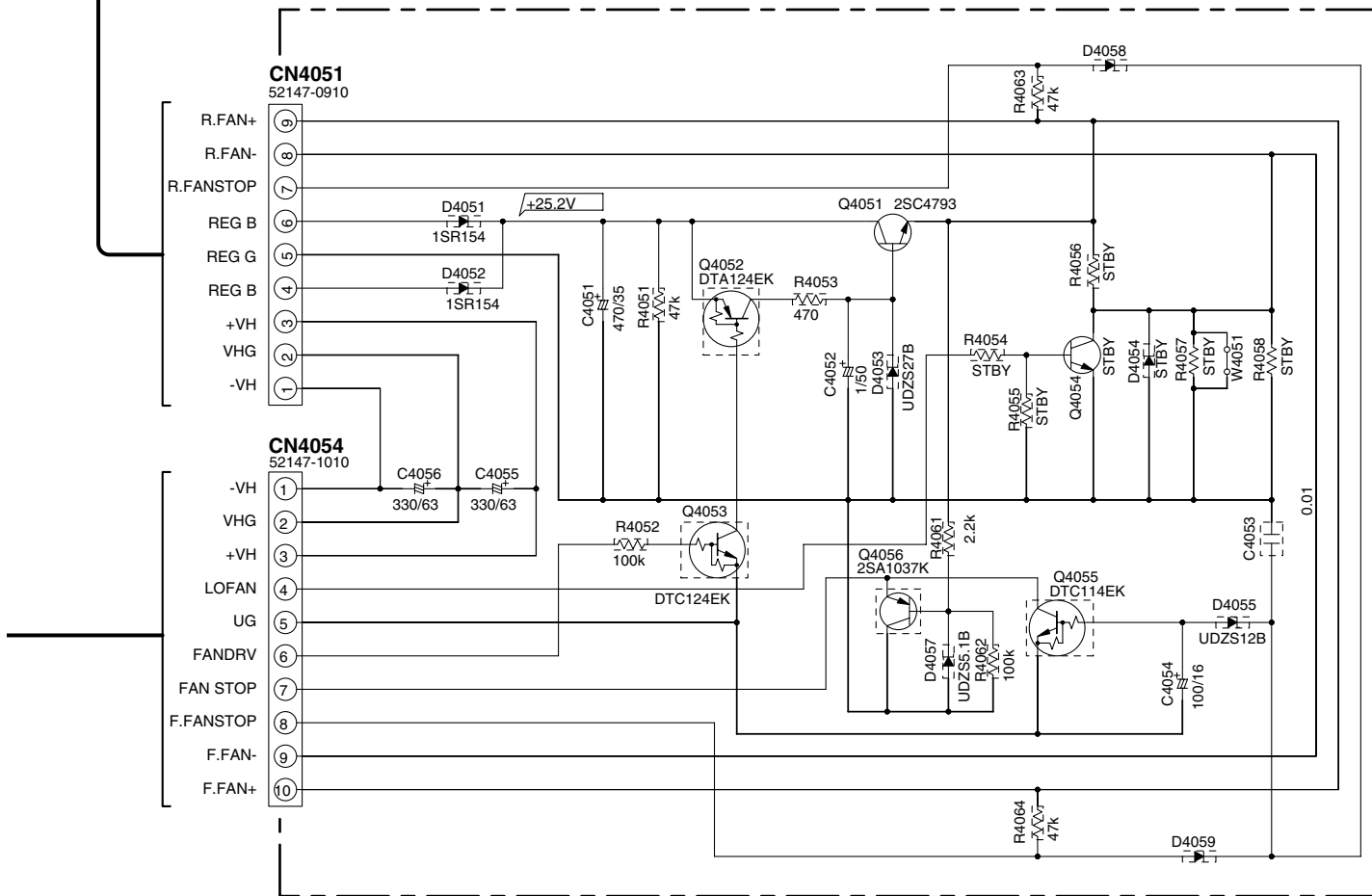


O FAN CONNECTION ASSY (AWX8448)



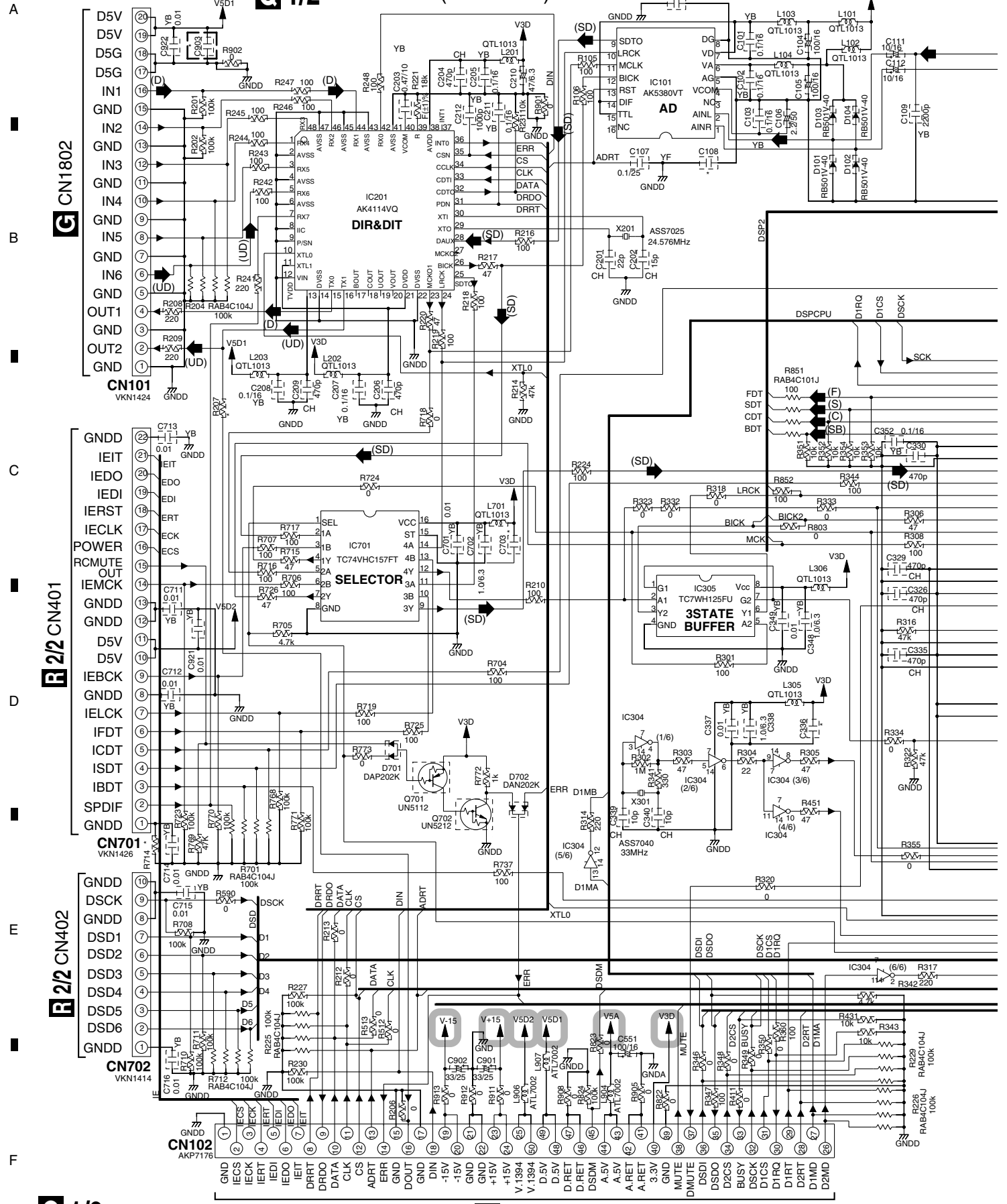
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE NO. 491.200 MFD, BY LITTELFUSE INK. FOR IC4701 AND IC4702

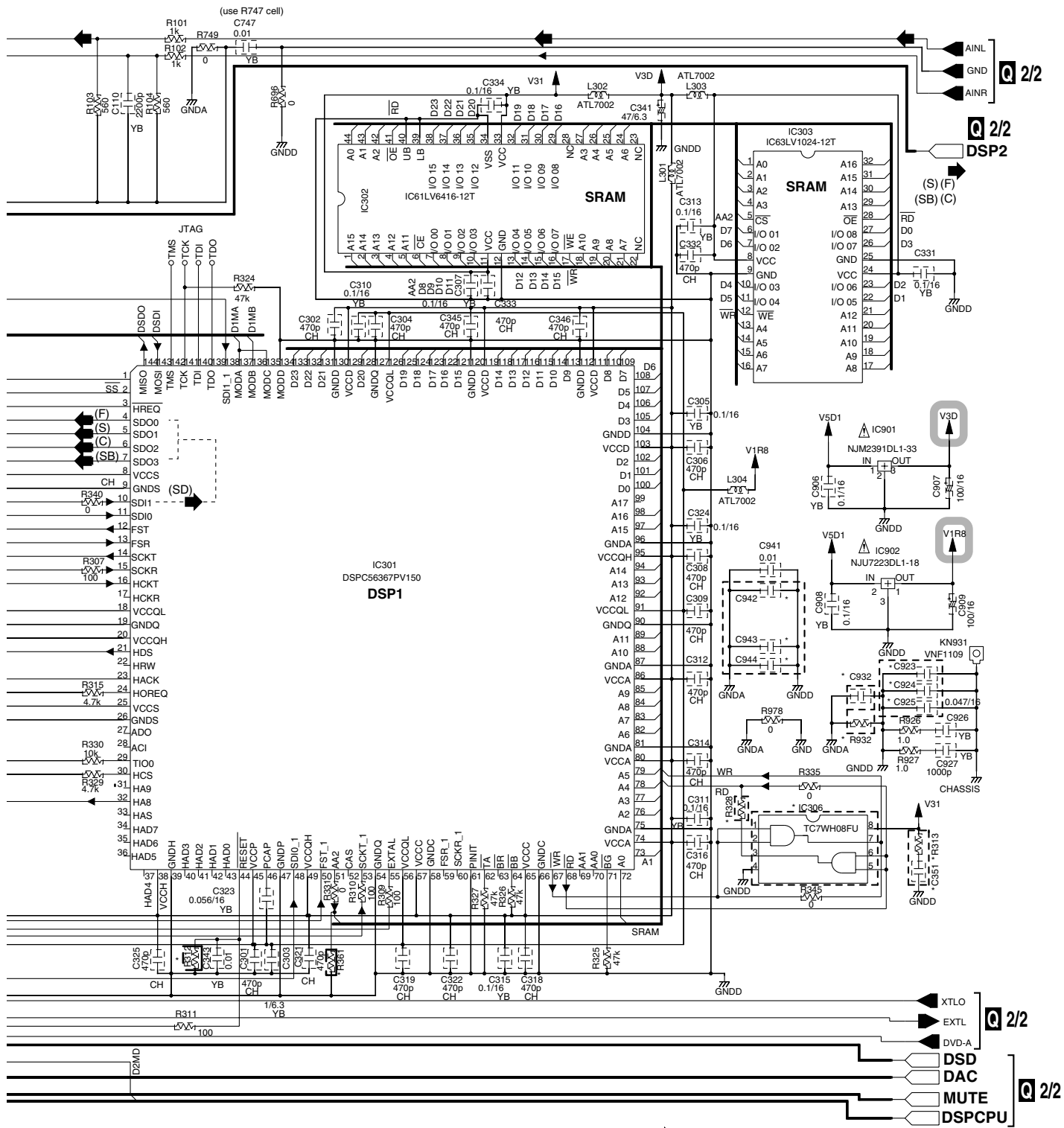
P FAN DRIVE ASSY (AWX8488)



3.13 DSP ASSY (1/2)

Q 1/2 DSP ASSY (AWX8489)



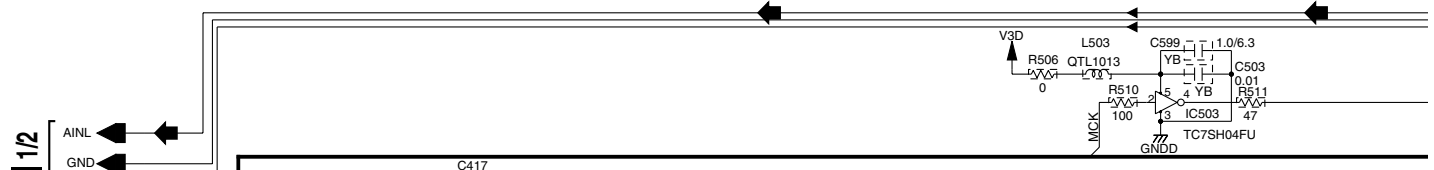


- [---] : STBY
- [>] : AUDIO SIGNAL ROUTE (Lch)
- (F) : AUDIO SIGNAL ROUTE (FRONT Lch)
- (S) : AUDIO SIGNAL ROUTE (SURROUND Lch)
- (SB) : AUDIO SIGNAL ROUTE (SURROUND BACK Lch)
- (C) : AUDIO SIGNAL ROUTE (CENTER ch)
- (SD) : SURROUND DATA SIGNAL ROUTE
- (D) : AUDIO SIGNAL ROUTE (DIGITAL)
- (UD) : AUDIO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

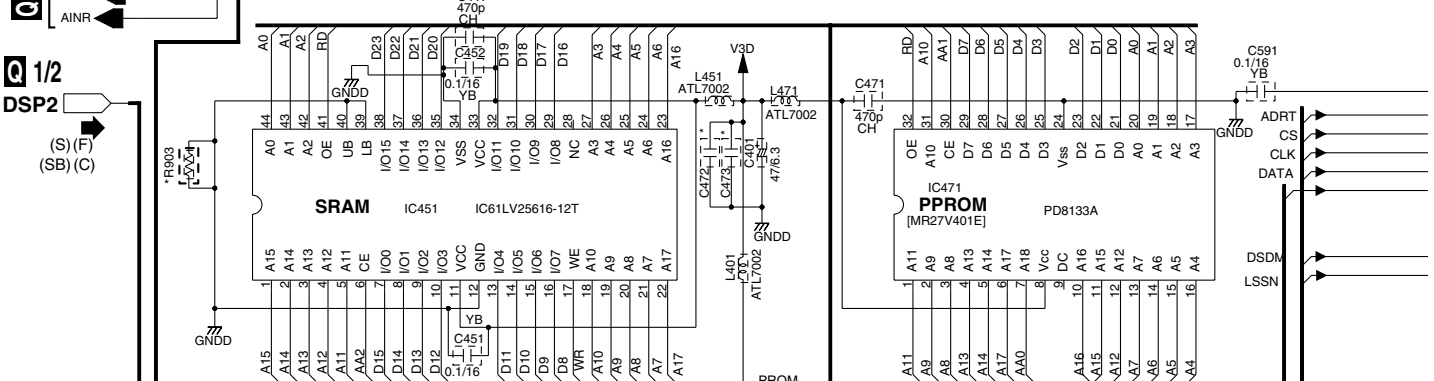
3.14 DSP ASSY (2/2)

Q 2/2 DSP ASSY (AWX8489)

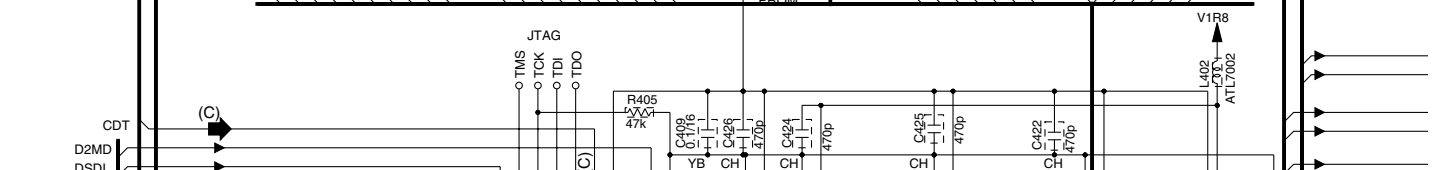
A



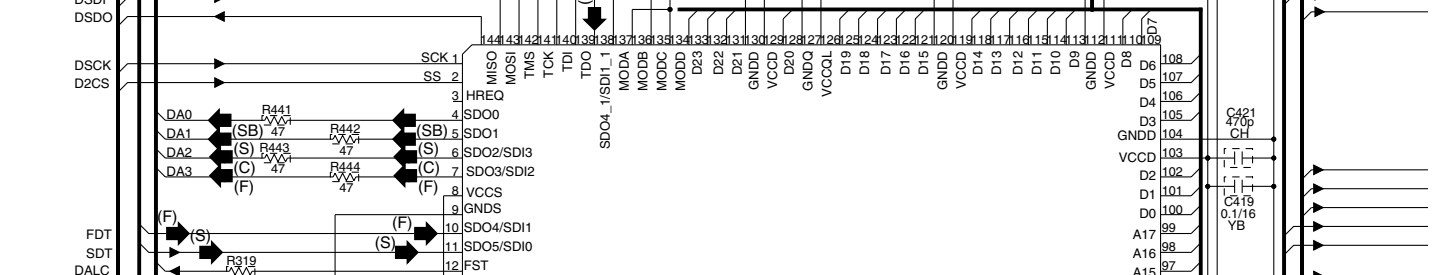
B



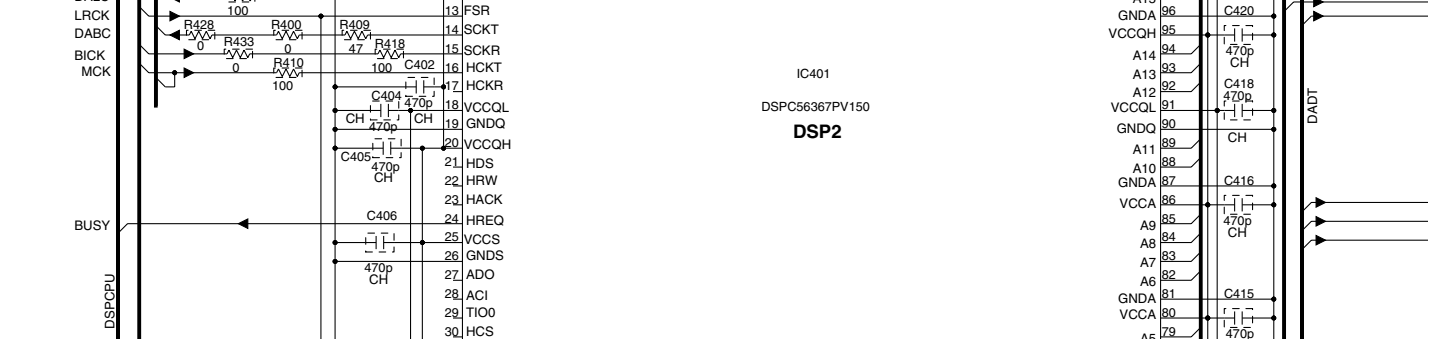
C



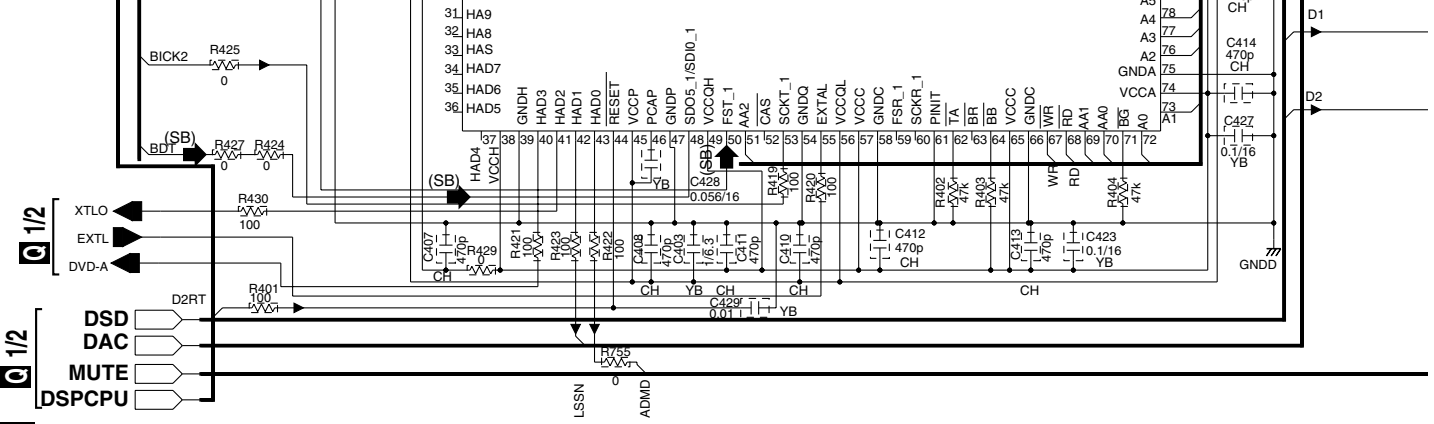
D



E

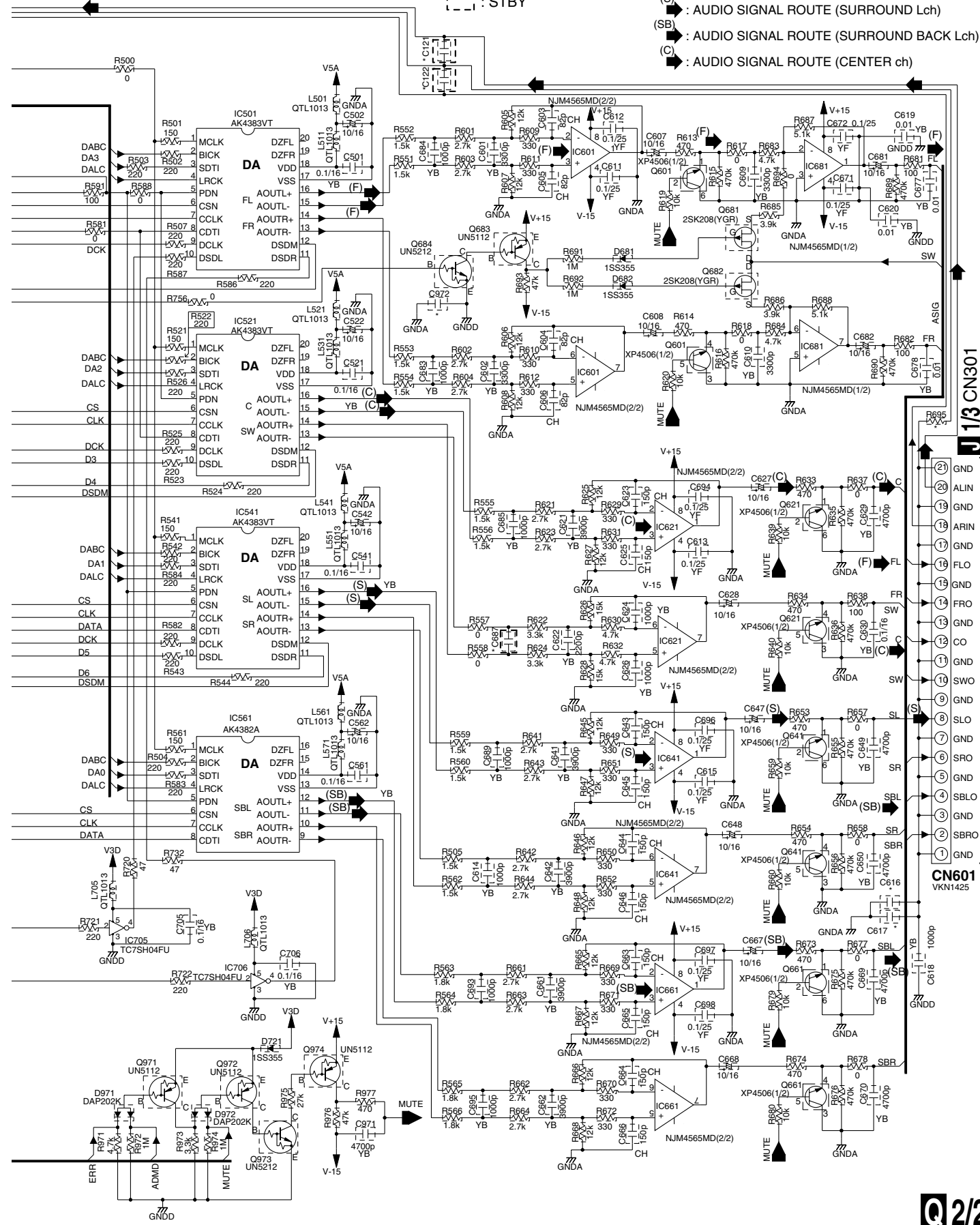


F



- ▶ : 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)

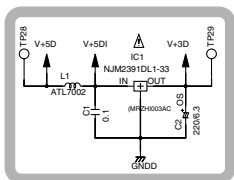
--- : STBY



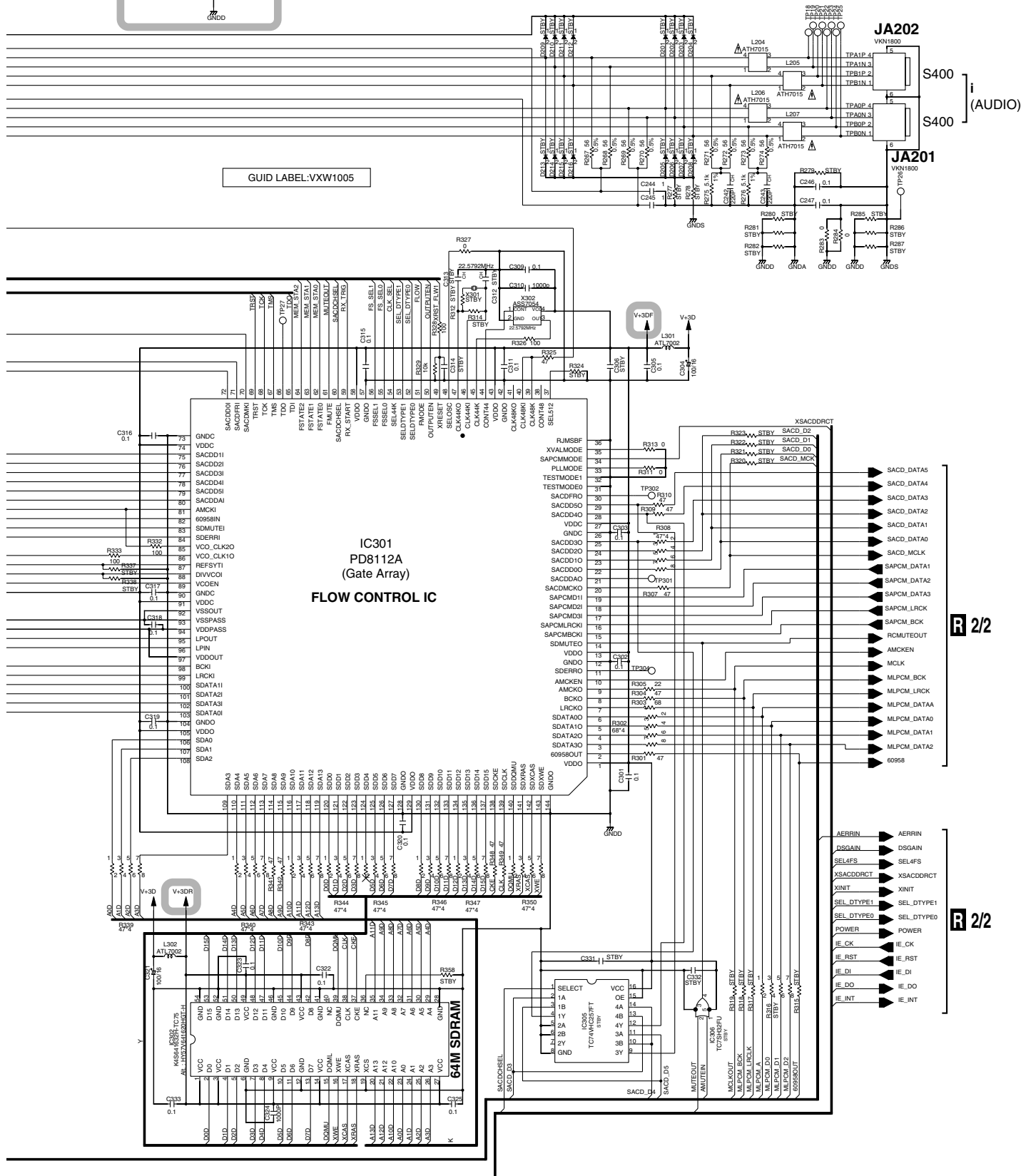
J1/3 CN301

CN601
VKN1425

R 1/2 1394 ASSY (AWK7834)



GUID LABEL:VXW1005



IC301
PD8112A
 (Gate Array)
FLOW CONTROL IC

64M SDRAM

S400
 S400
 (AUDIO)

R 2/2

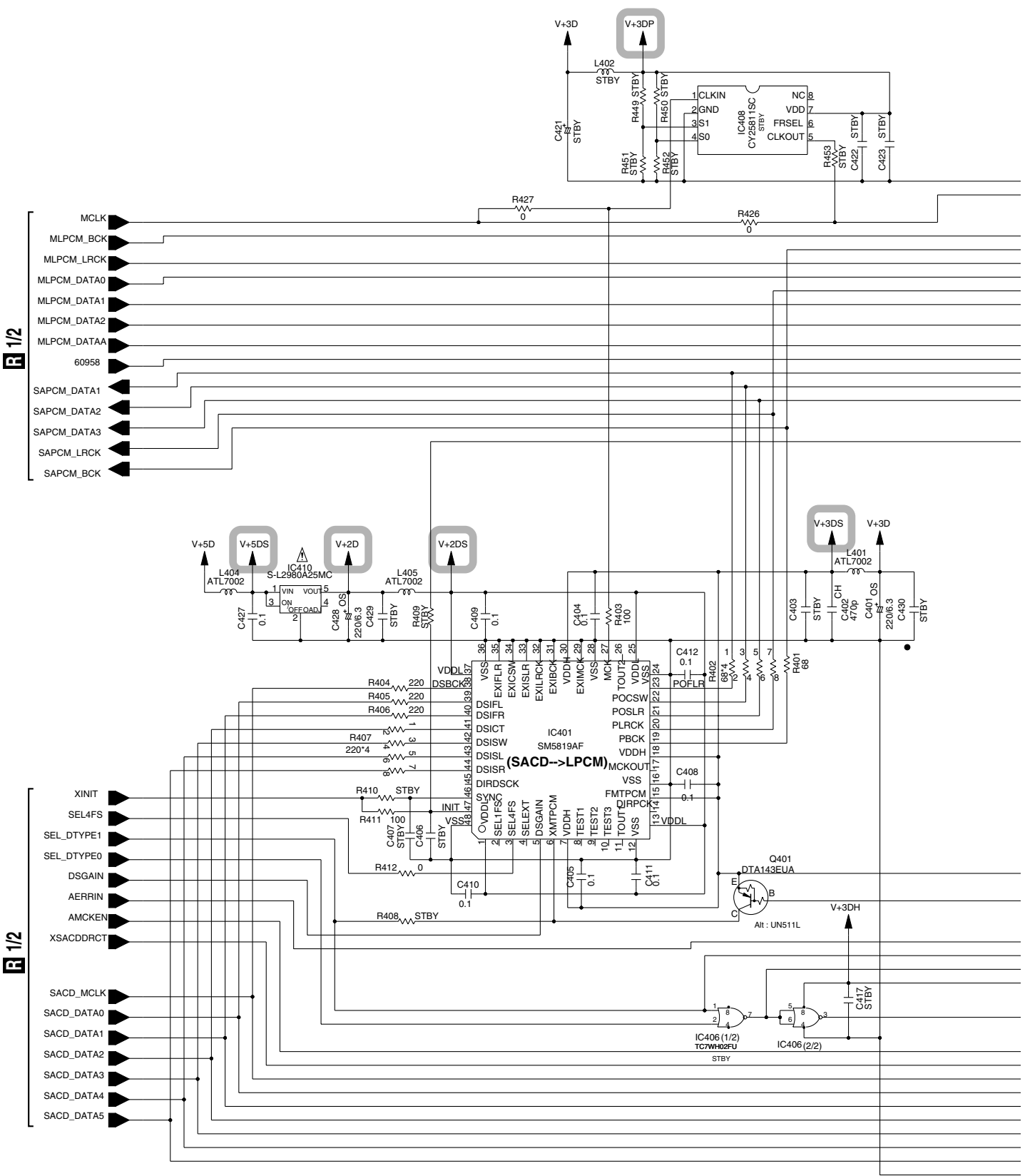
R 2/2

R 1/2

3.16 1394 ASSY (2/2)

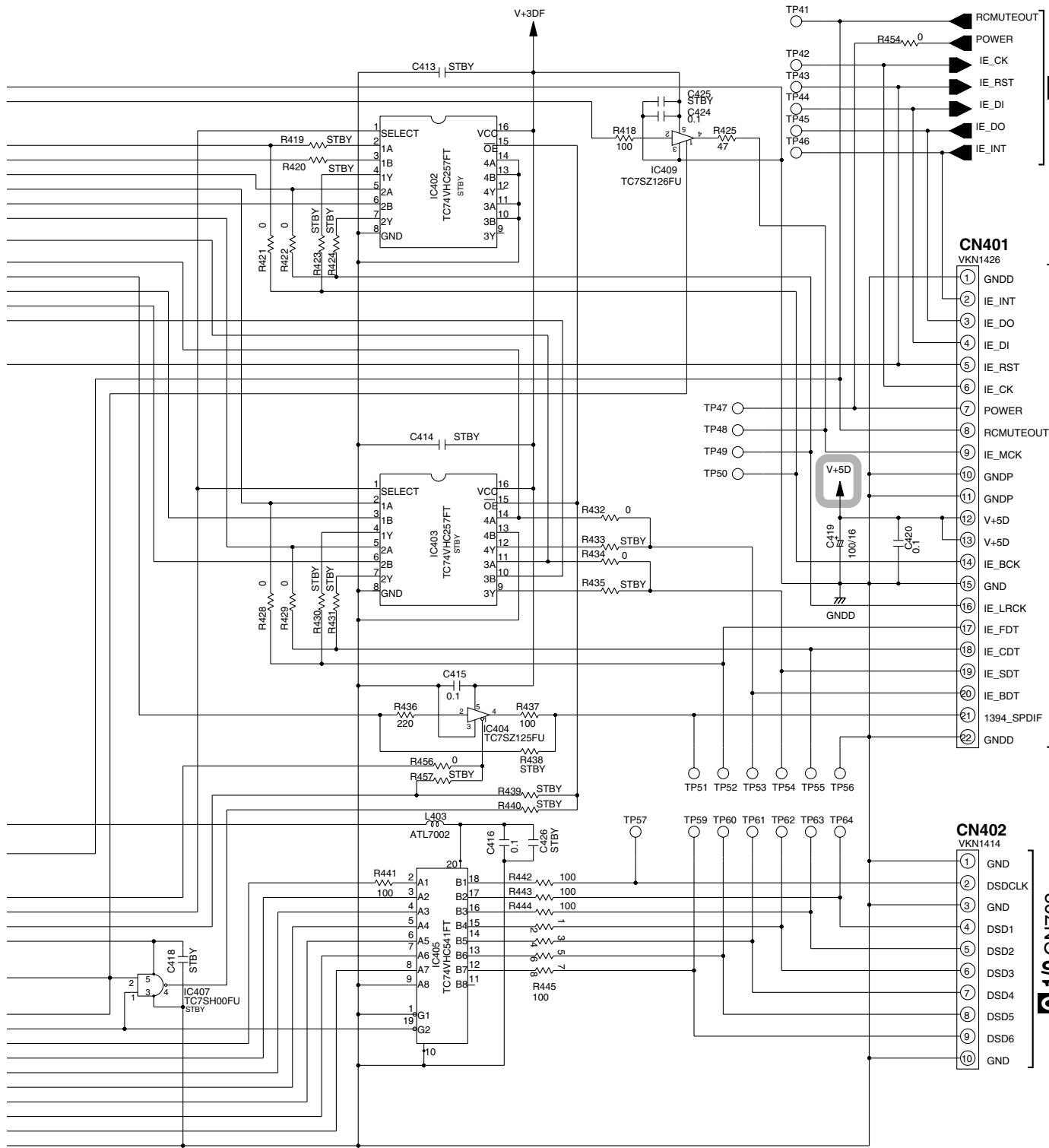
R 2/2 1394 ASSY (AWK7834)

A
B
C
D
E
F



R 2/2

A
B
C
D
E
F



R 1/2

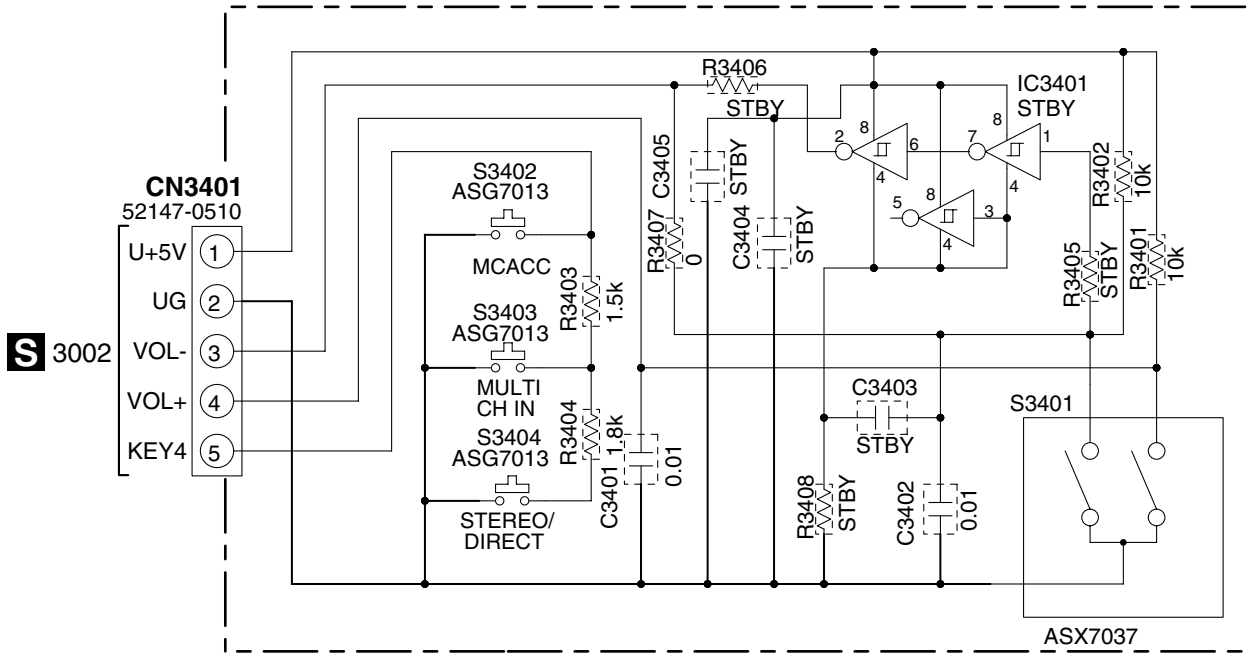
C 1/2 CN701

C 1/2 CN702

R 2/2

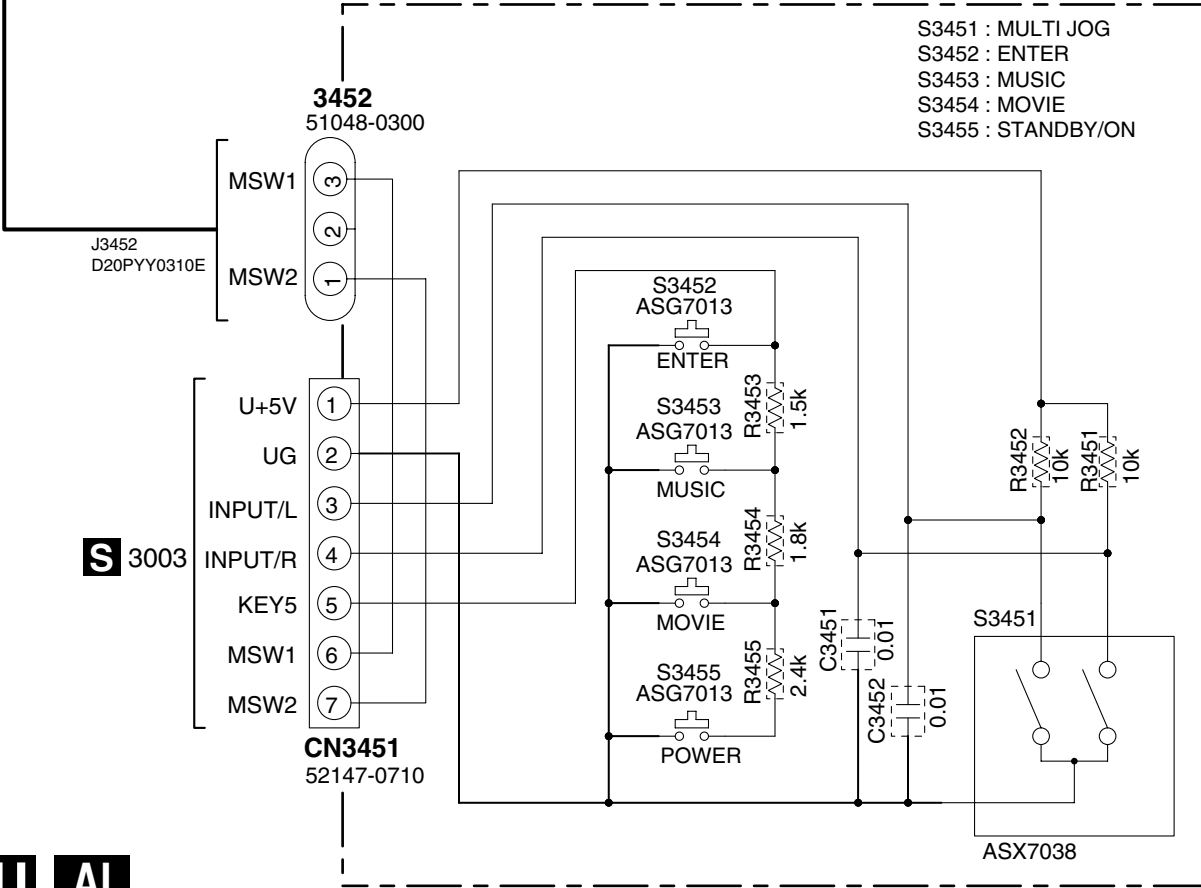
3.18 VOLUME, MULTI JOG, HEADPHONE and MECHA SW ASSYS

T VOLUME ASSY (AWX8550)



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

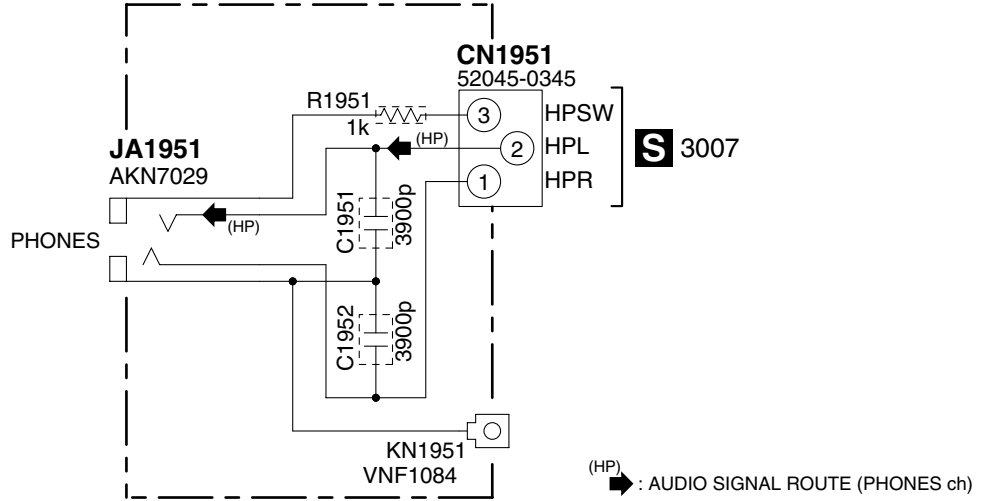
U MULTI JOG ASSY (AWX8552)



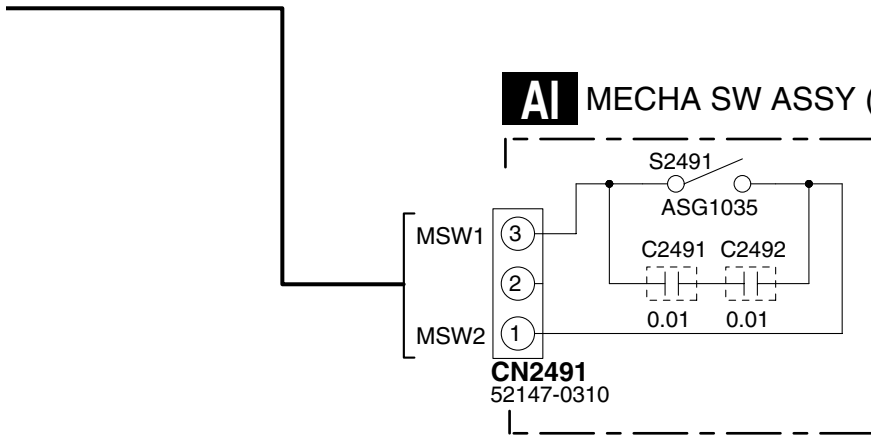
- S3451 : MULTI JOG
- S3452 : ENTER
- S3453 : MUSIC
- S3454 : MOVIE
- S3455 : STANDBY/ON

T U AI

V HEADPHONE ASSY (AWX8554)



AI MECHA SW ASSY (AWX8553)



3.19 POWER AMP-L ASSY

POWER AMP-L ASSY (AWX8560)

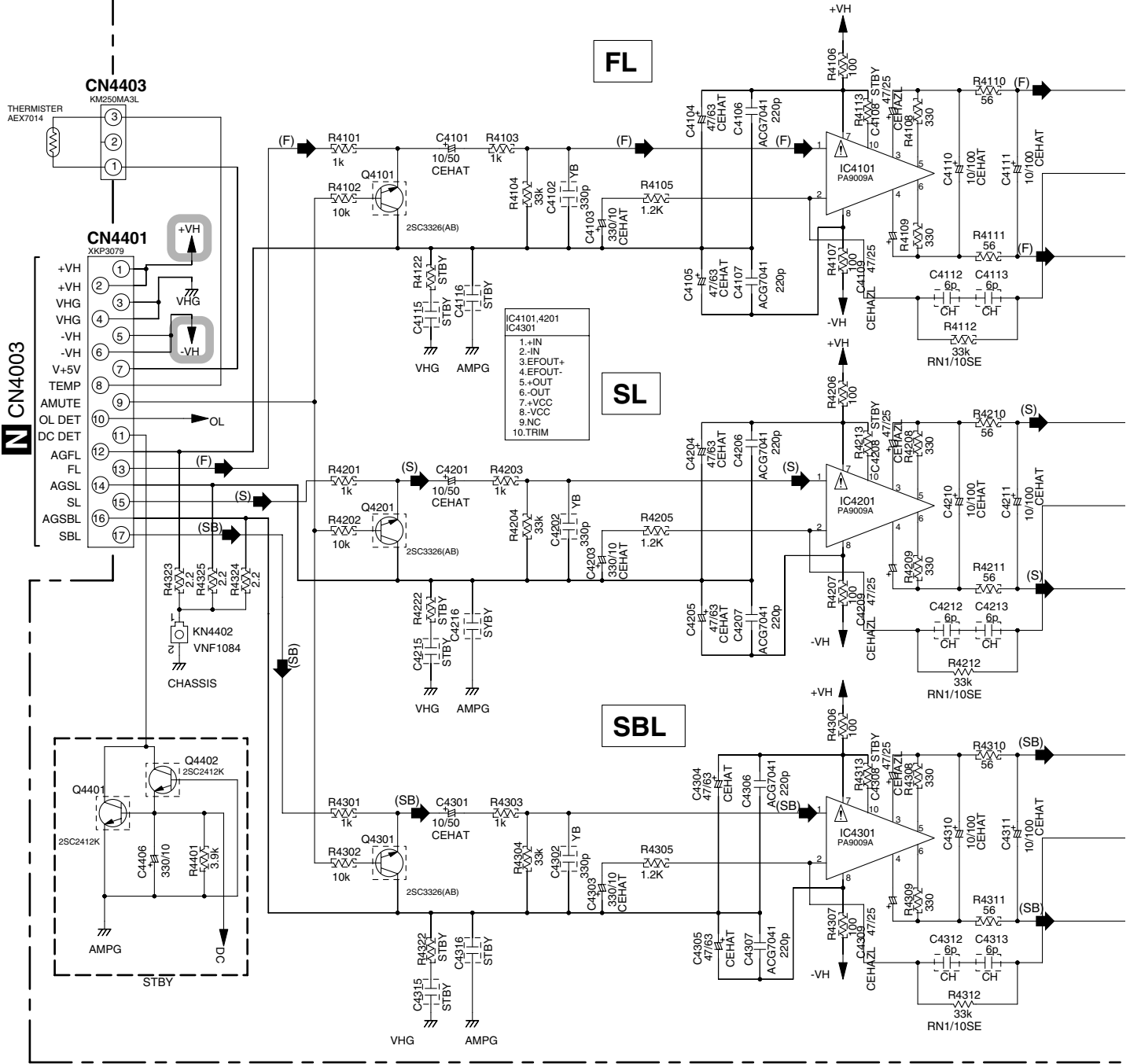
A

B

C

D

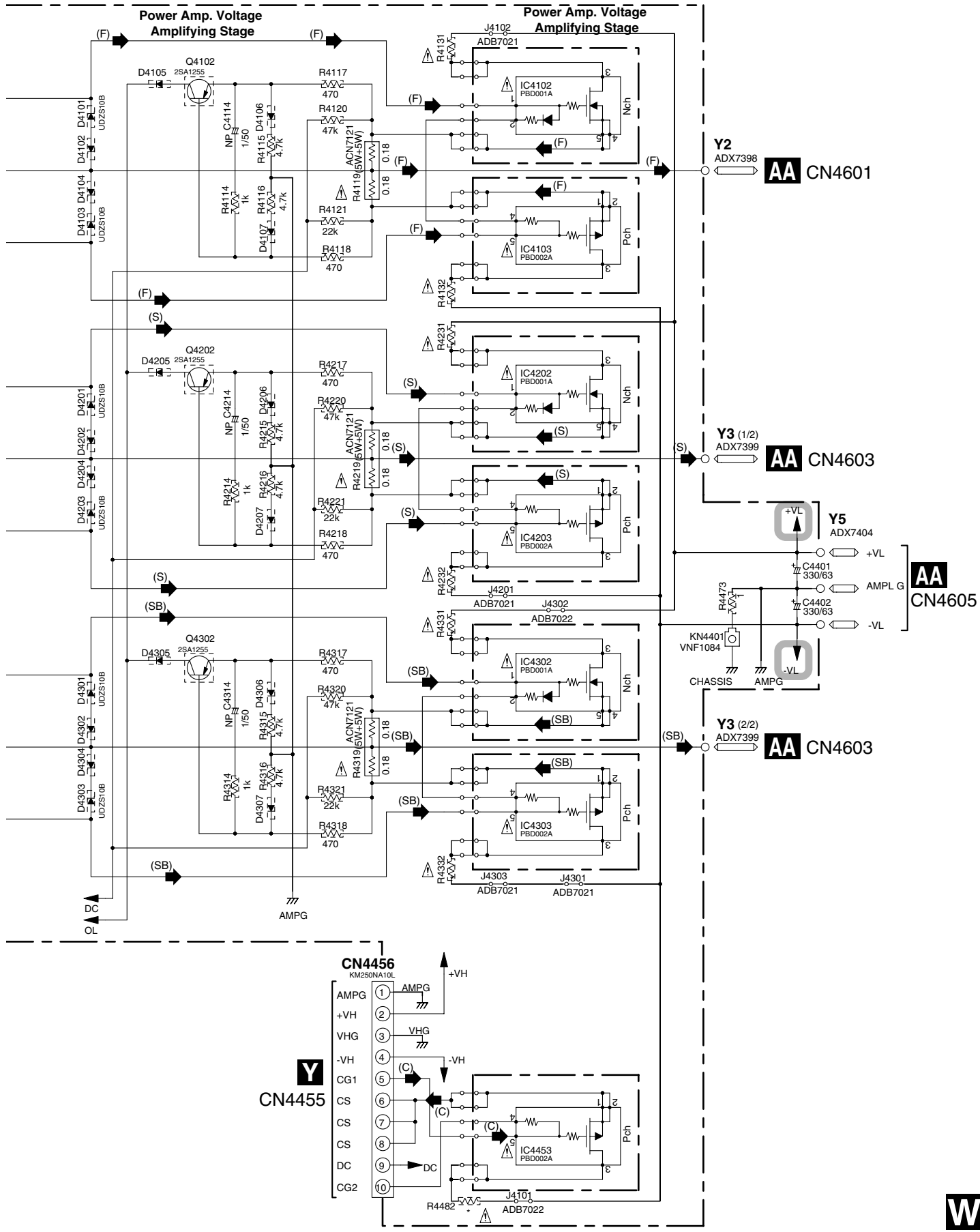
E



- (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)

F





3.20 POWER AMP-R and POWER AMP-C ASSYS

X POWER AMP-R ASSY (AWX8561)

FR

SR

SBR

Y POWER AMP-C ASSY (AWX8562)

C

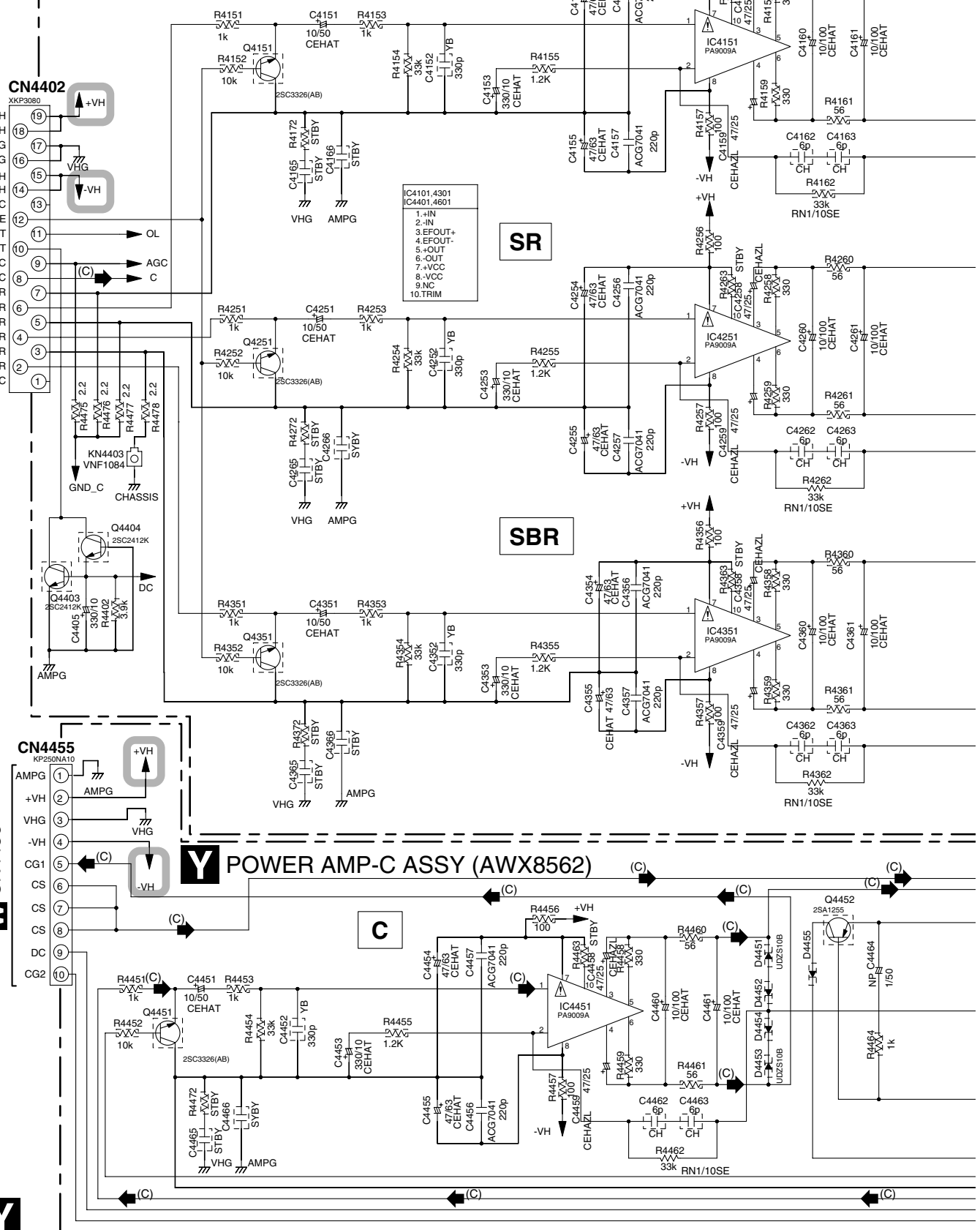
A
B
C
D
E
F

CN4402

CN4455

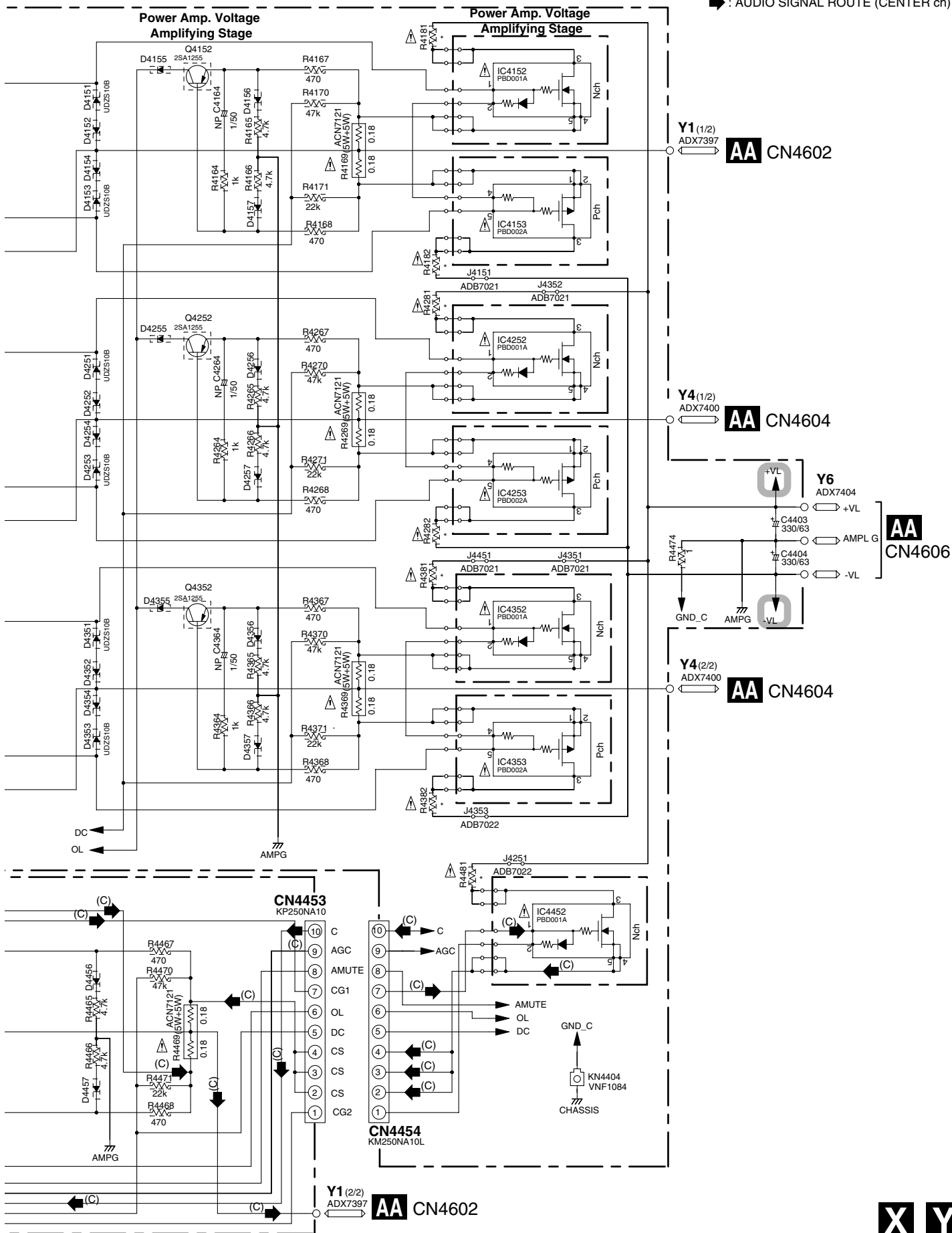
- 18 +VH
- 17 +VH
- 16 VH G
- 15 -VH
- 14 -VH
- 13 NC
- 12 AMUTE
- 11 OL DET
- 10 DC DET
- 9 AGC C
- 8 AGFR
- 7 FR
- 6 AGSR
- 5 SR
- 4 AGSBR
- 3 SBR
- 2 NC
- 1

- 1 AMPG
- 2 +VH
- 3 VH G
- 4 -VH
- 5 CG1
- 6 CS
- 7 CS
- 8 CS
- 9 DC
- 10 CG2



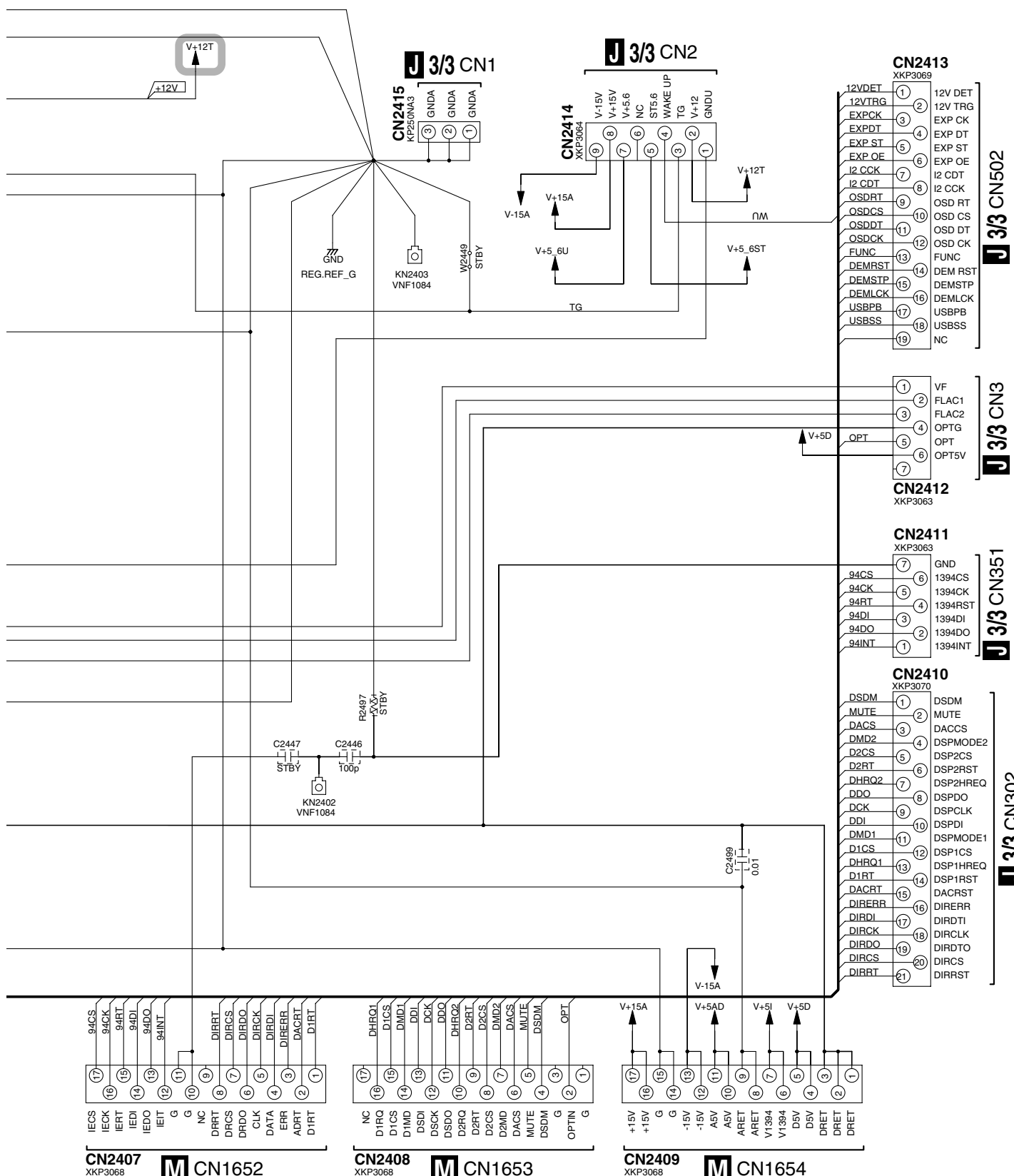
X Y

(C) : AUDIO SIGNAL ROUTE (CENTER ch)



A
B
C
D
E
F





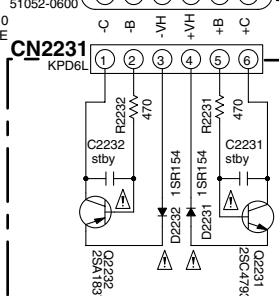
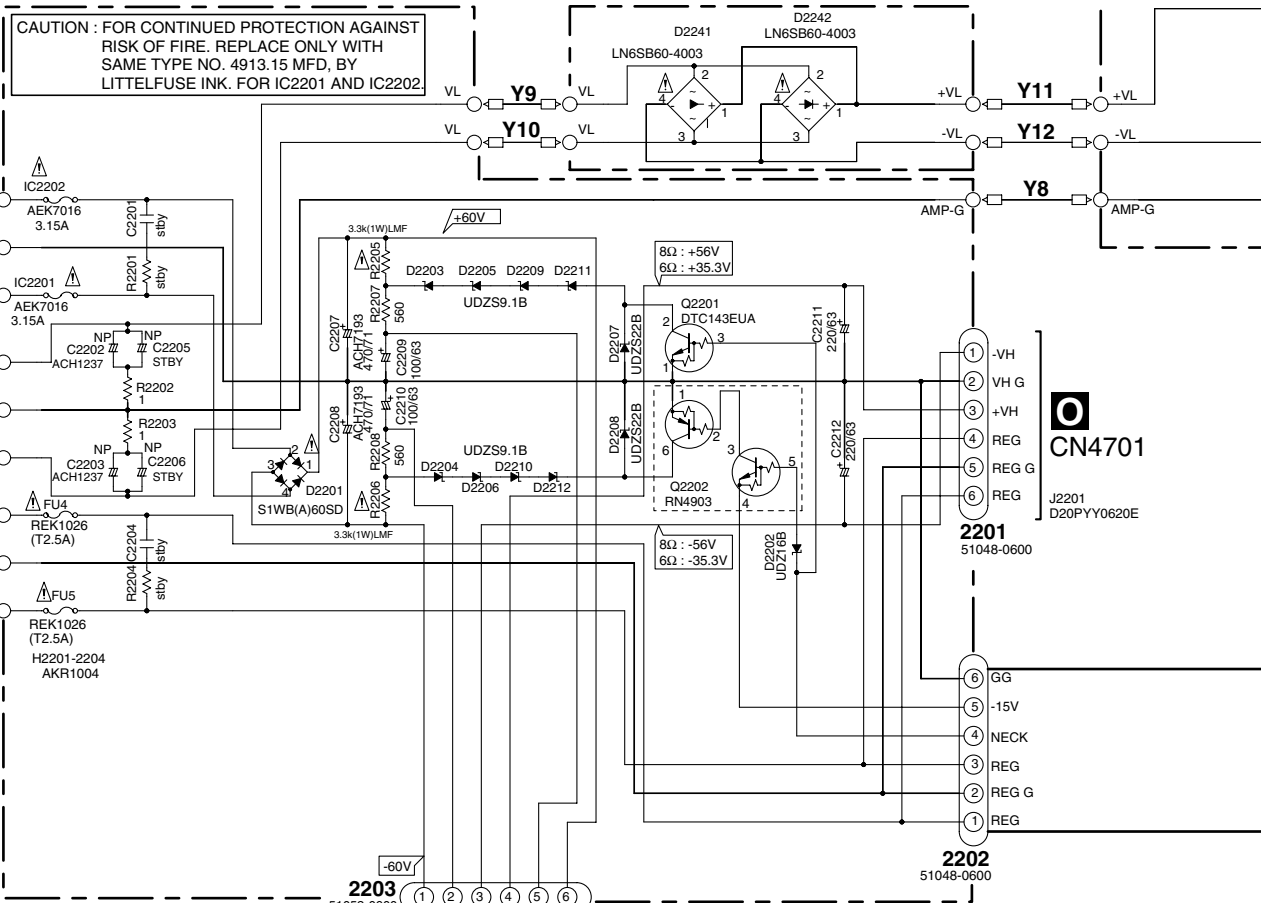
3.22 SP/PS, DIODE, TRANS 2-1 and VH TR ASSYS

• NOTE FOR FUSE REPLACEMENT

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

AC TRANS 2-1 ASSY (AWX8551)

AB DIODE ASSY (AWX8555)



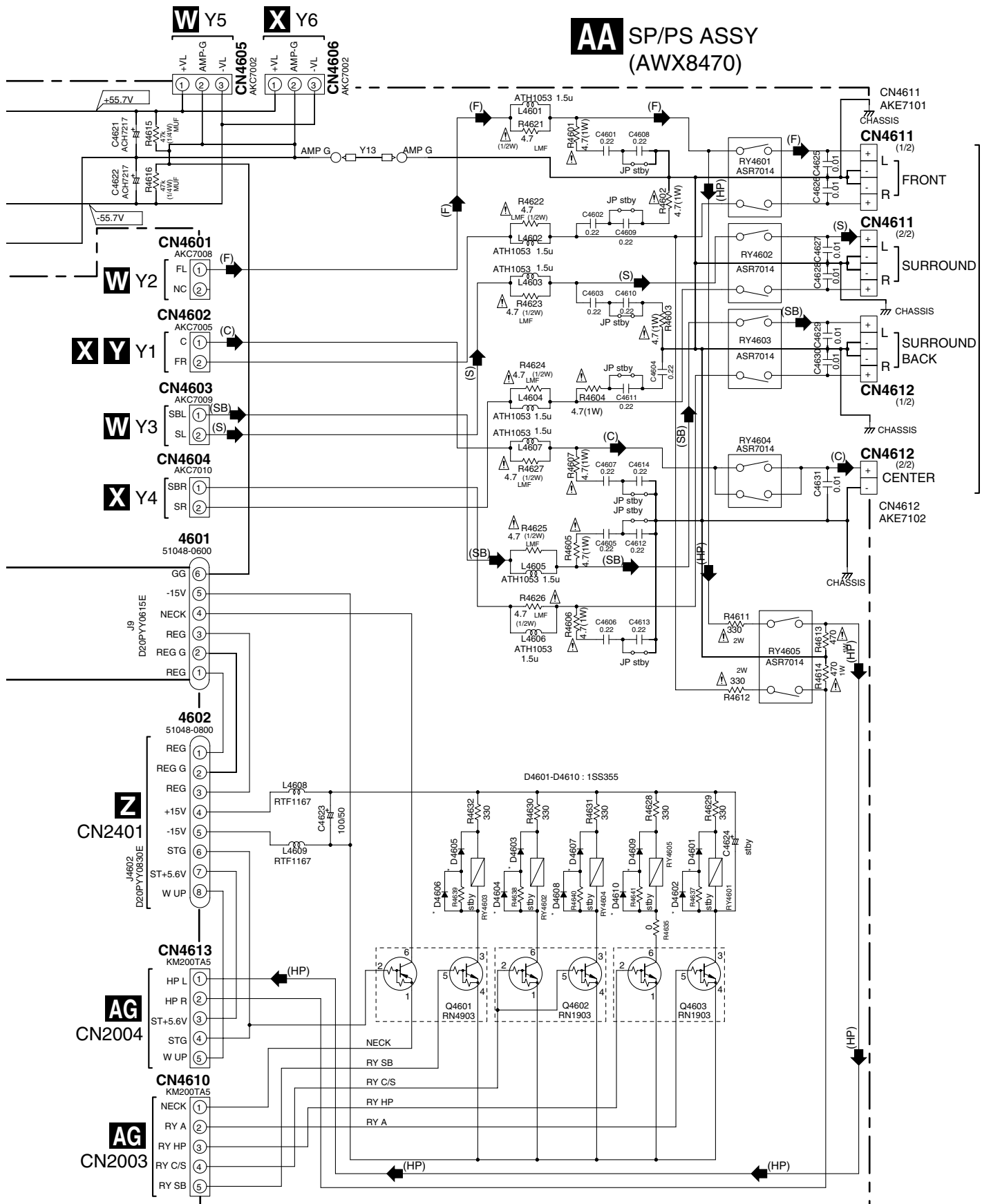
AD VH TR ASSY (AWX8557)

- Y8 : ADX7284-(BLK)
- Y9 : ADX7285-(BWN)
- Y10 : ADX7286-(GLY)
- Y11 : ADX7287-(RED)
- Y12 : ADX7288-(BLU)
- Y13 : ADX7291-(BLK)

- (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)
- (HP) : AUDIO SIGNAL ROUTE (PHONES ch)

A
B
C
D
E
F

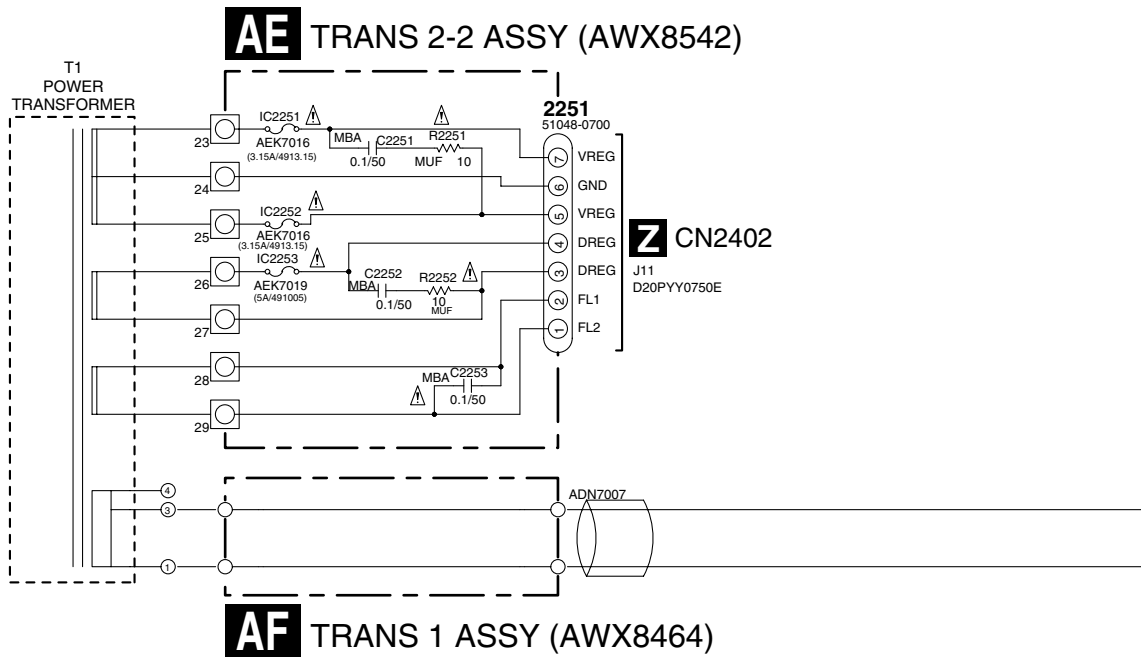
AA SP/PS ASSY (AWX8470)



3.23 TRANS 2-2, TRANS 1 and PRIMARY ASSYS

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

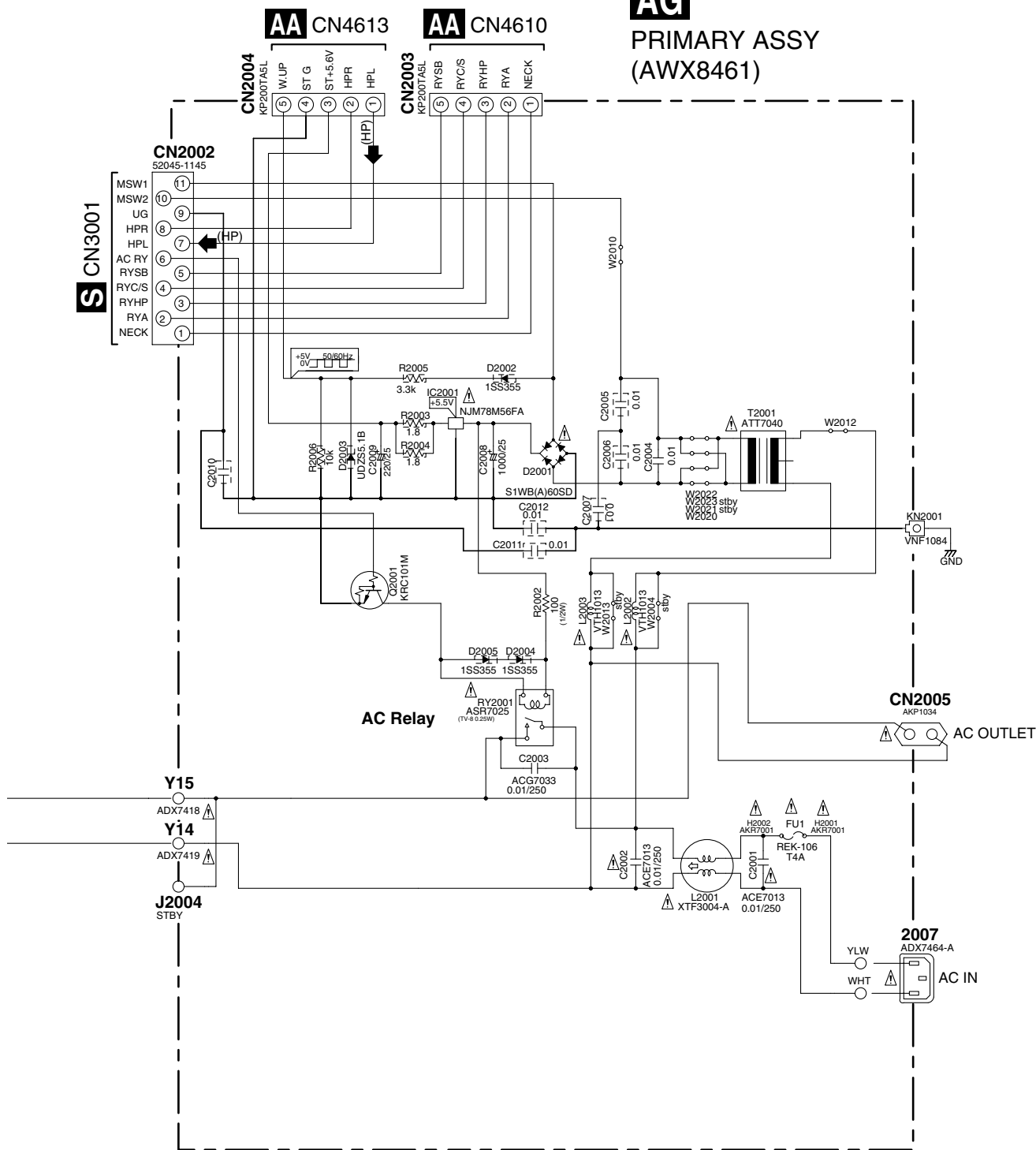
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 491005 MFD, BY LITTELFUSE INK. FOR IC2253.



AE AF

(HP) : AUDIO SIGNAL ROUTE (PHONES ch)

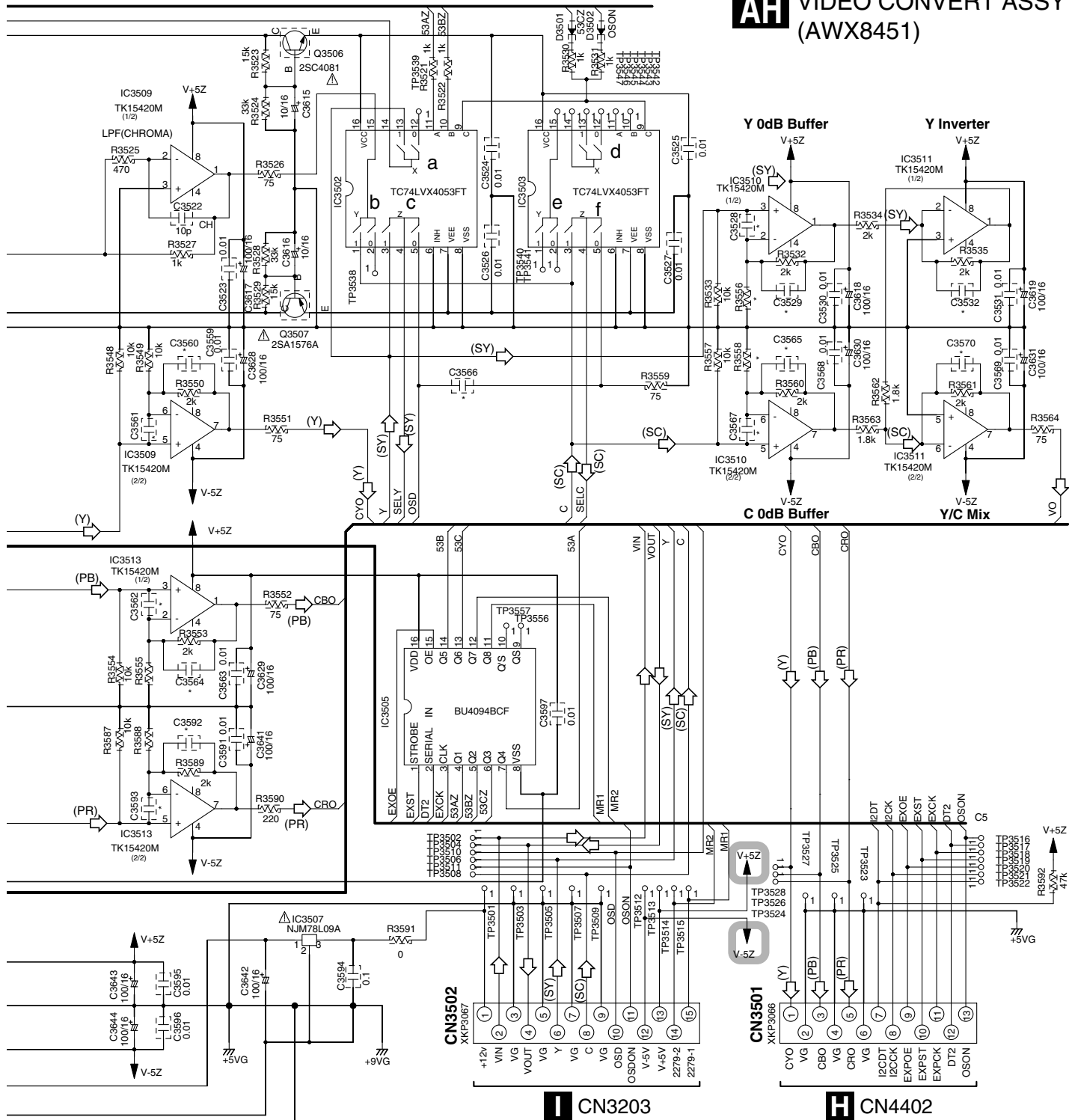
AG PRIMARY ASSY (AWX8461)



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



AH VIDEO CONVERT ASSY (AWX8451)


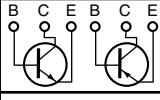

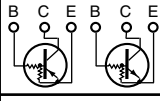

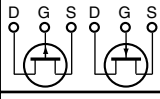

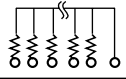




- (V) : VIDEO SIGNAL ROUTE
- (SY) : VIDEO SIGNAL ROUTE (S VIDEO Y ch)
- (SC) : VIDEO SIGNAL ROUTE (S VIDEO C ch)
- (Y) : VIDEO SIGNAL ROUTE (Y)
- (PB) : VIDEO SIGNAL ROUTE (Pb)
- (PR) : VIDEO SIGNAL ROUTE (Pr)

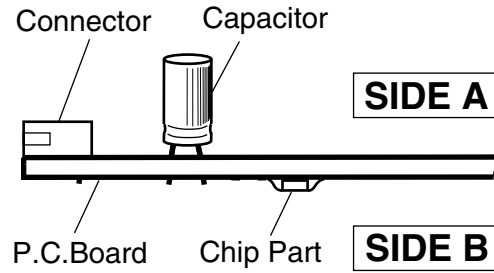
4. PCB CONNECTION DIAGRAM

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.

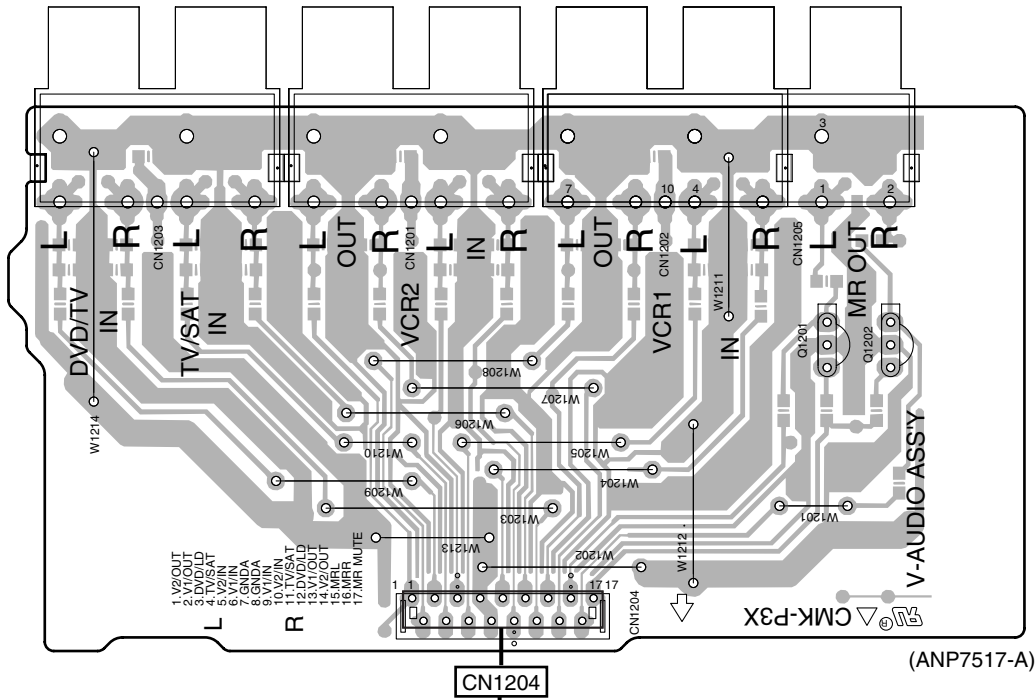


4.2 V-AUDIO IN ASSY

SIDE A

SIDE A

B V-AUDIO IN ASSY



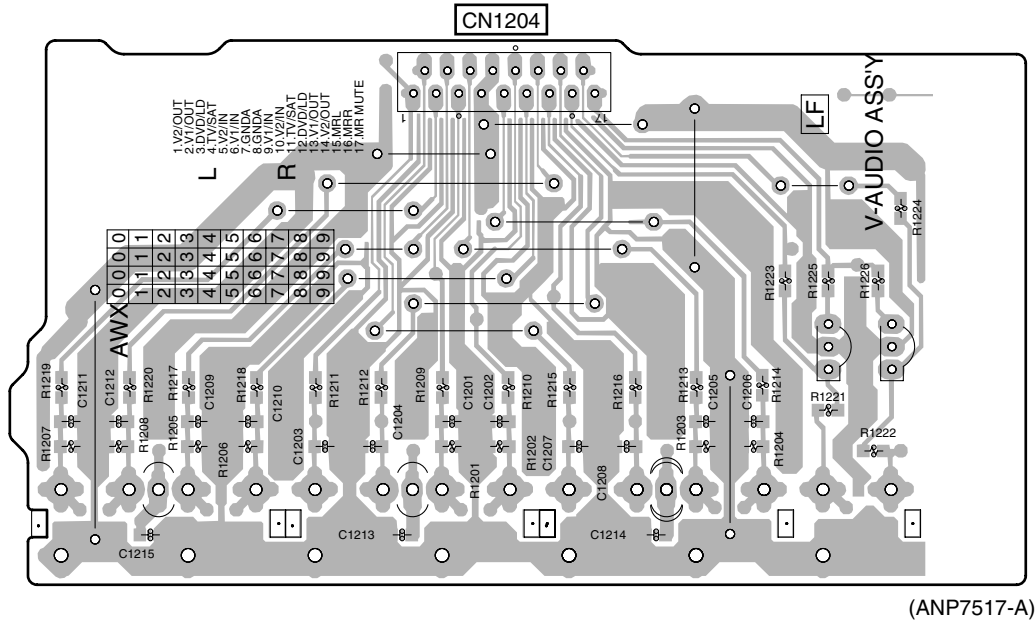
CN1204
↓
E CN1405

Q1201
Q1202

SIDE B

SIDE B

B V-AUDIO IN ASSY



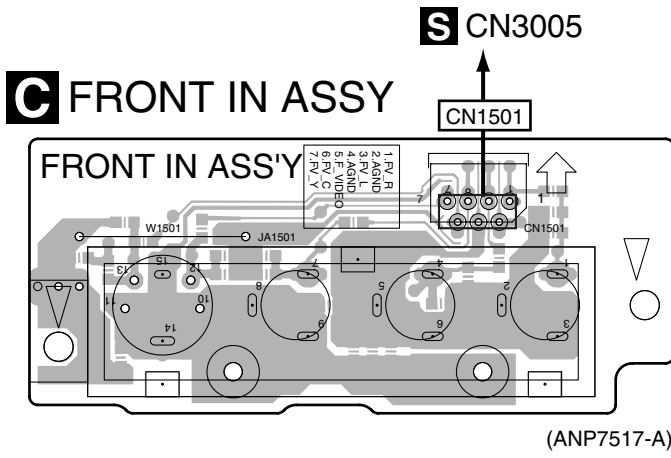
B

B

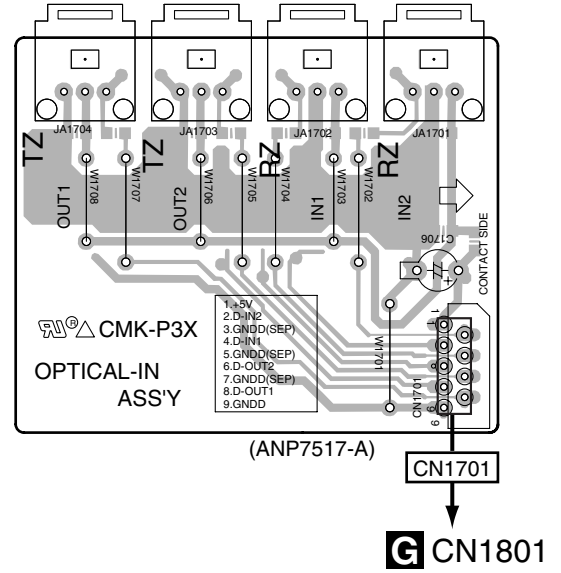
4.3 FRONT IN and OPTICAL IN ASSYS

SIDE A

SIDE A



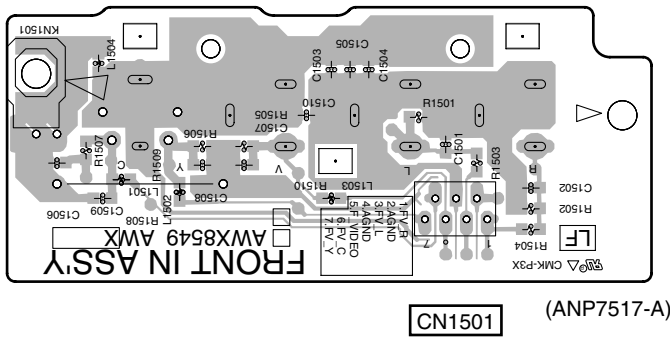
D OPTICAL IN ASSY



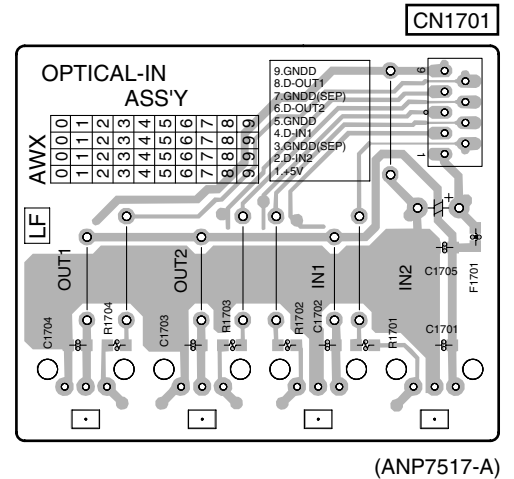
SIDE B

SIDE B

C FRONT IN ASSY



D OPTICAL IN ASSY



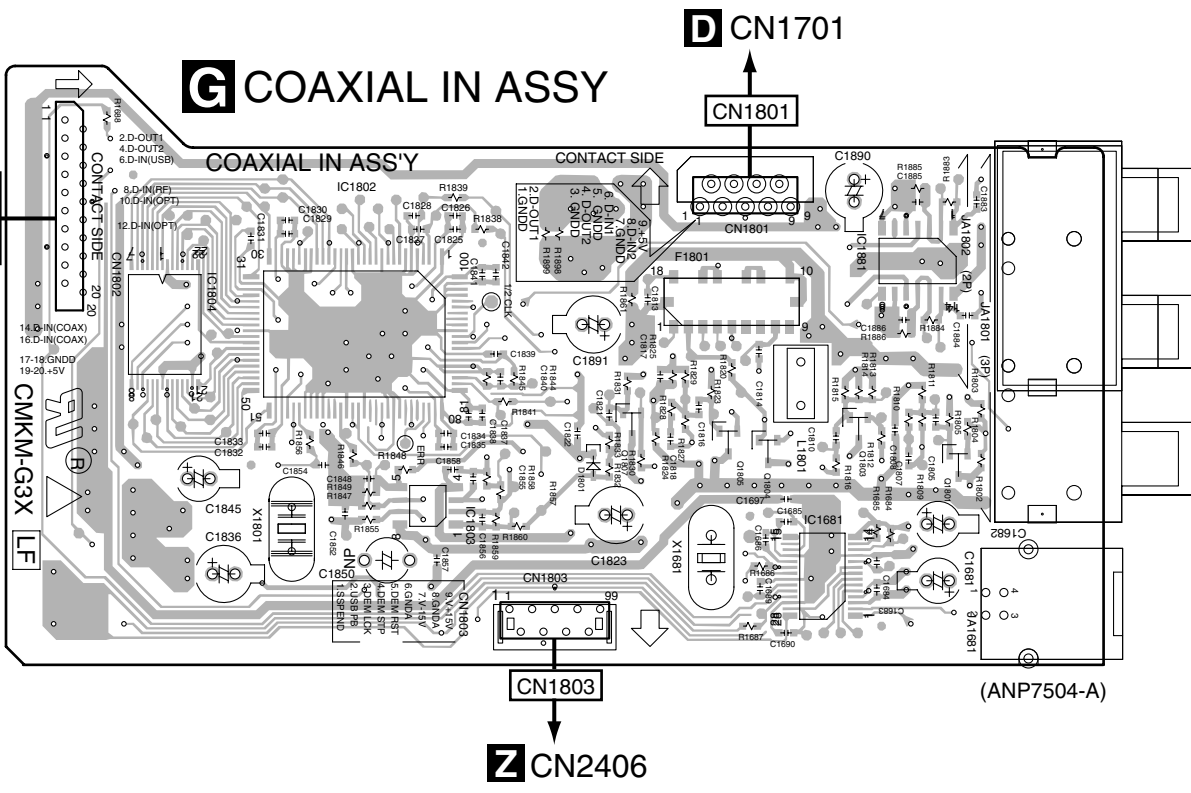
CD

CD

4.4 COAXIAL IN ASSY

SIDE A

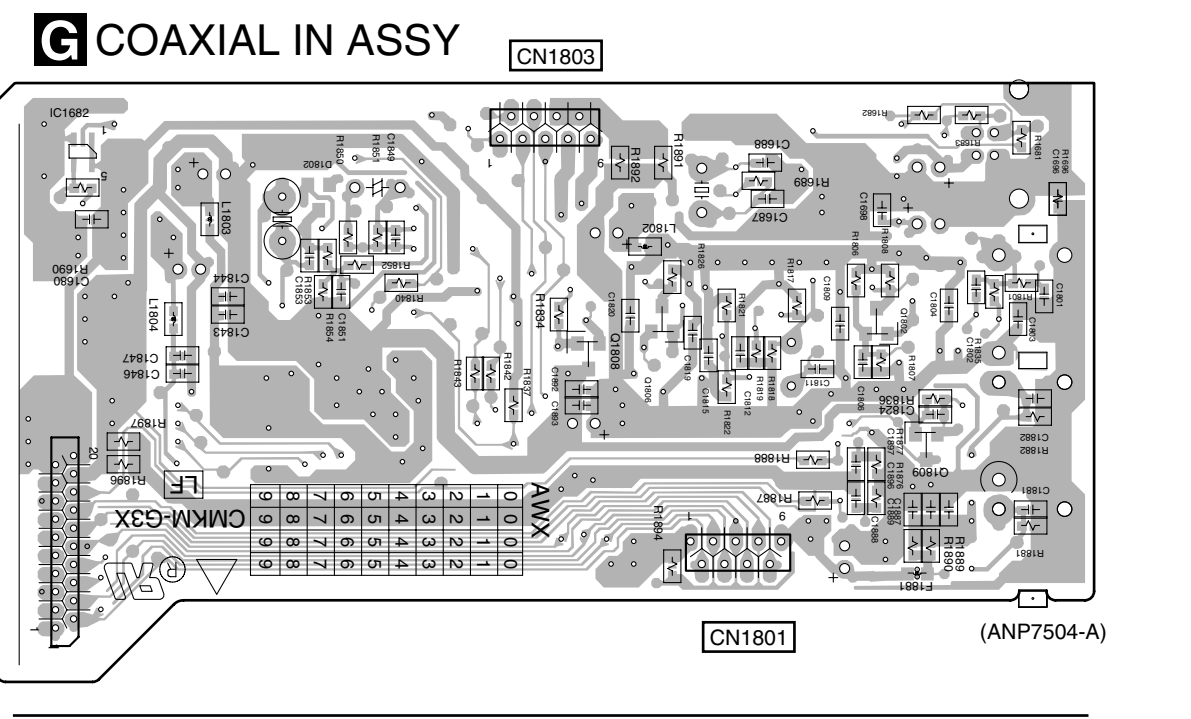
SIDE A



IC1804 IC1802 IC1803 Q1807 Q1805 Q1804 Q1803 IC1881 Q1801 IC1681

SIDE B

SIDE B



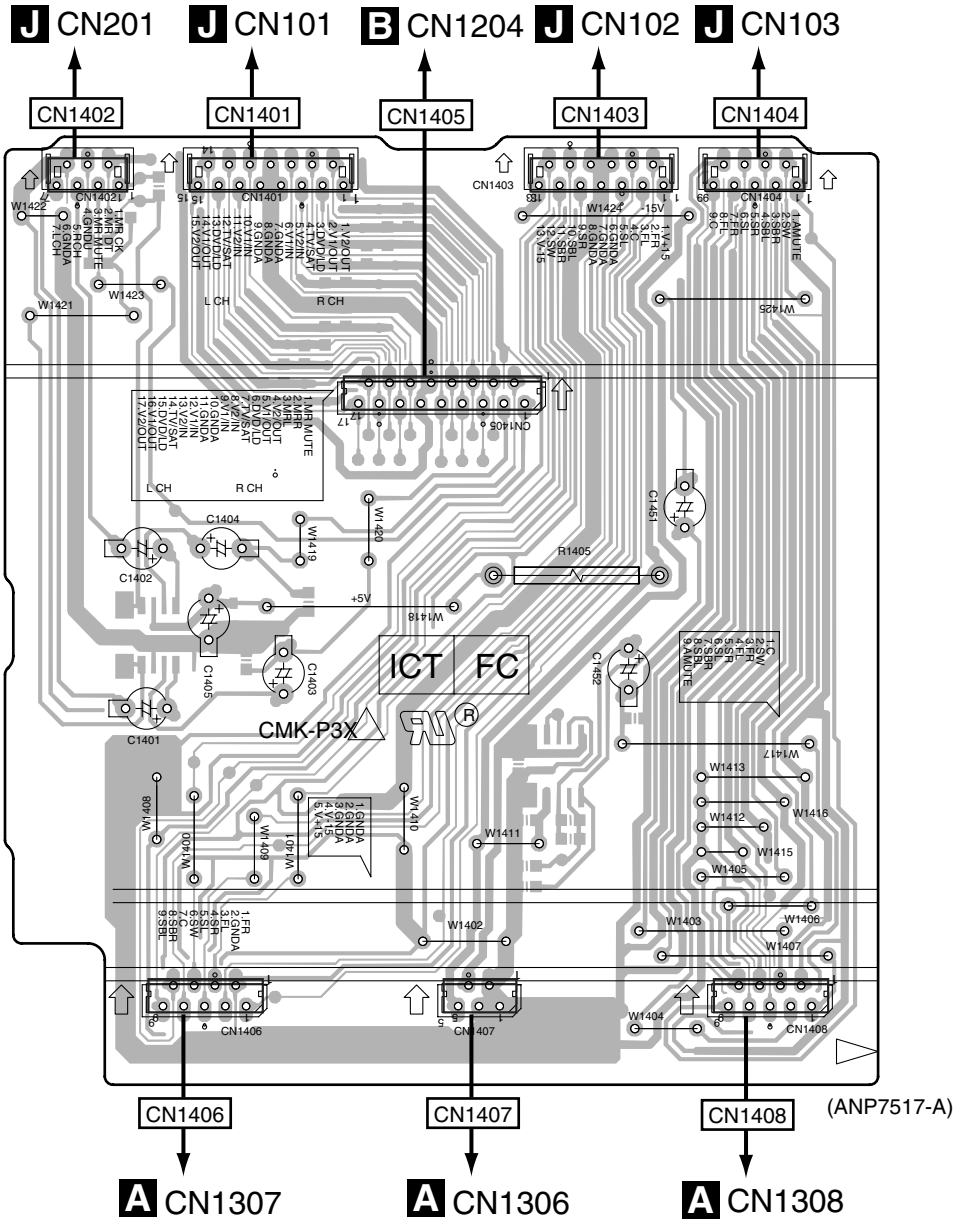
IC1682 Q1808 Q1806 Q1802 Q1809

4.5 INPUT CONNECT and 12V TRIGGER ASSYS

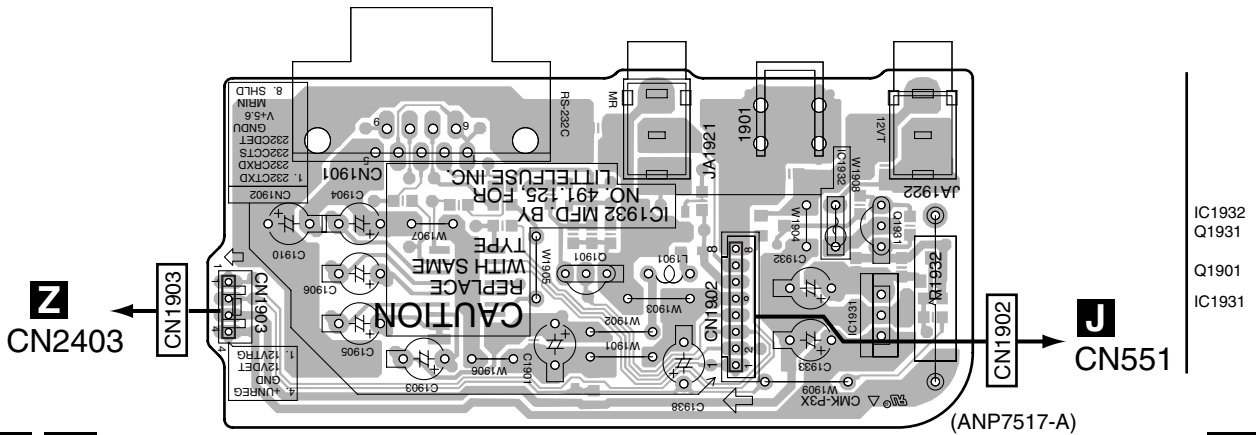
SIDE A

E INPUT CONNECT ASSY

SIDE A



F 12V TRIGGER ASSY



E F

E F

SIDE B

SIDE B

A

B

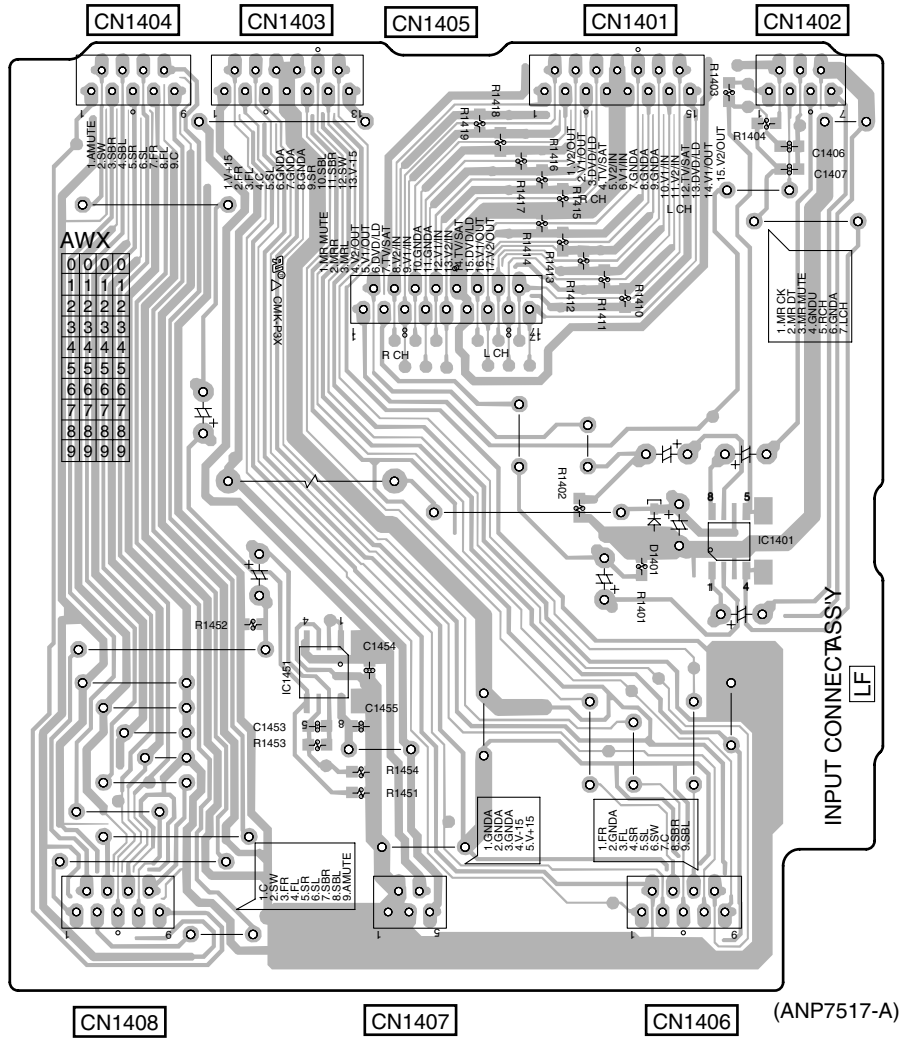
C

D

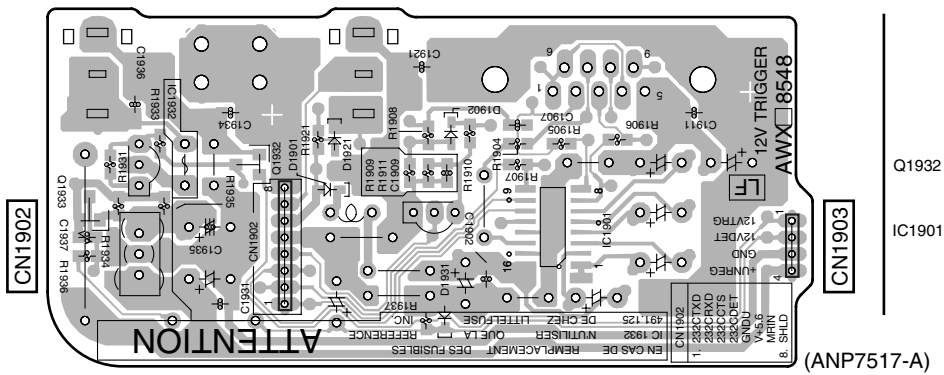
E

F

E INPUT CONNECT ASSY



F 12V TRIGGER ASSY



E F

E F

■

5

■

6

■

7

■

8

■

A

■

B

■

C

■

D

■

E

■

F

■

5

■

6

VSX-AX5Ai-S

■

7

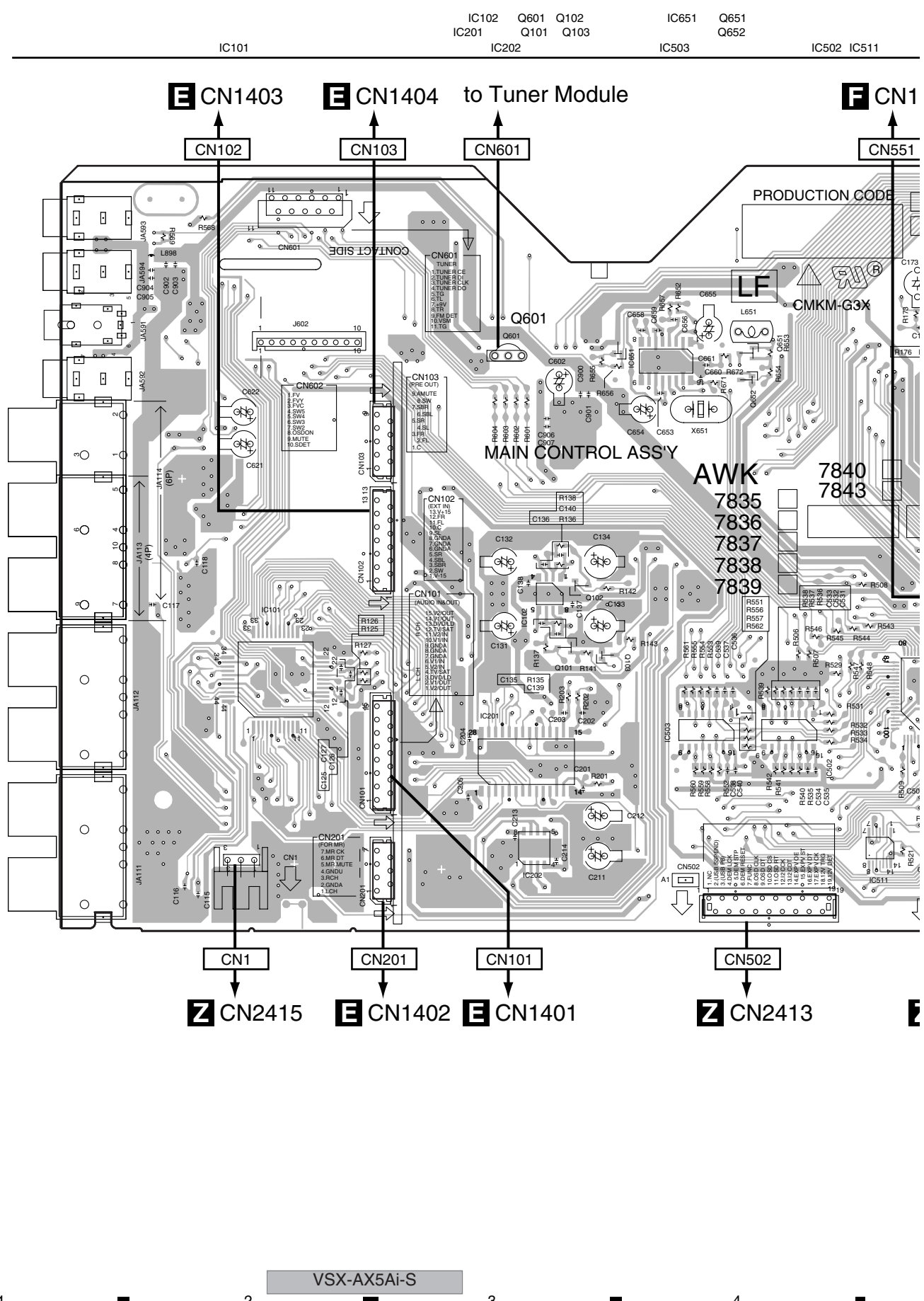
■

8

■

4.8 MAIN CONTROL ASSY

SIDE A



SIDE B

A

IC711
IC712
IC713
IC714

Q501 IC302 Q511

B

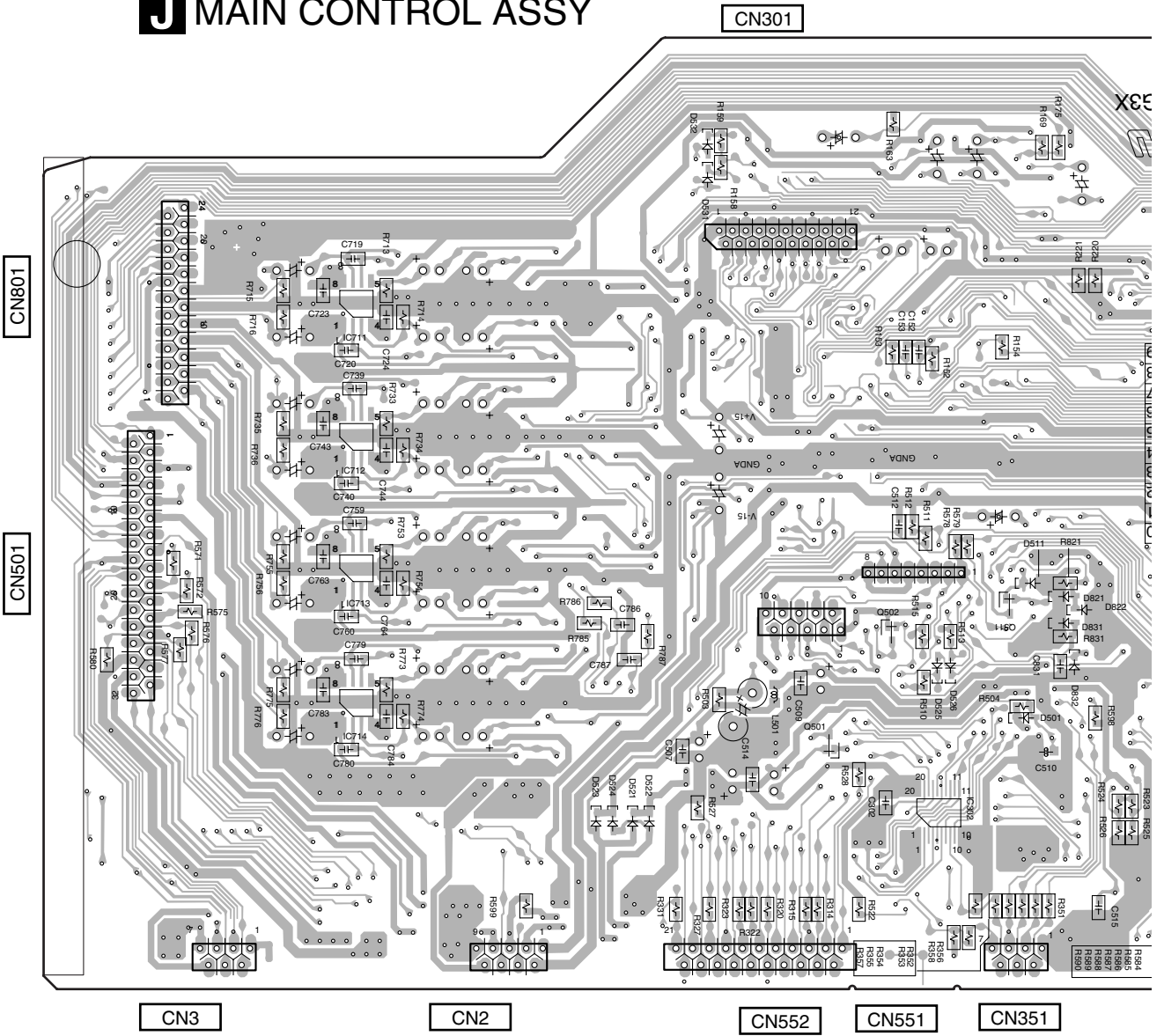
C

D

E

F

J MAIN CONTROL ASSY



SIDE B

A

B

C

D

E

F

J

Q251

CN601

CMKM-G3X



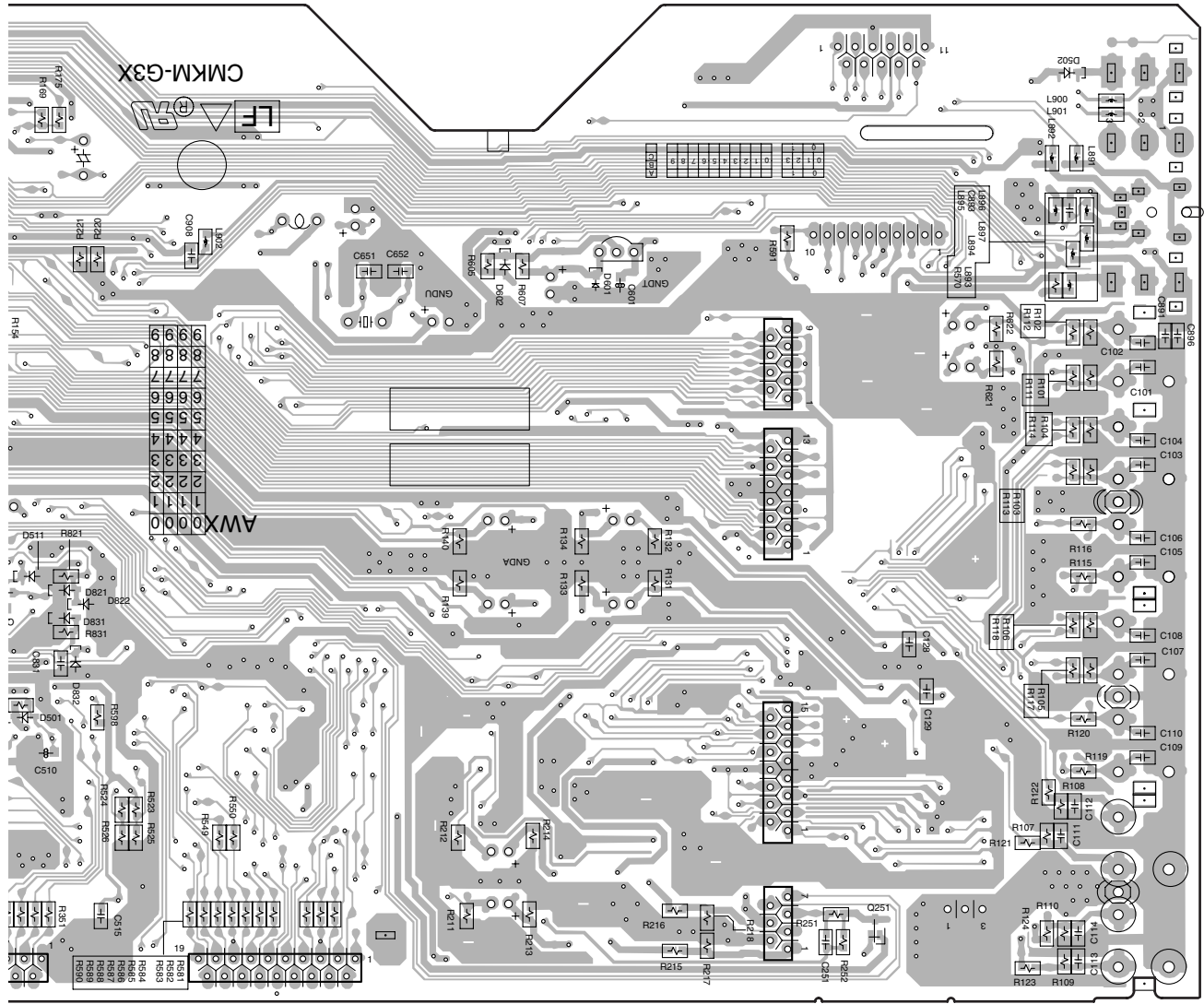
AWX

CN103

CN102

CN101

CN201



J351

CN502

CN1

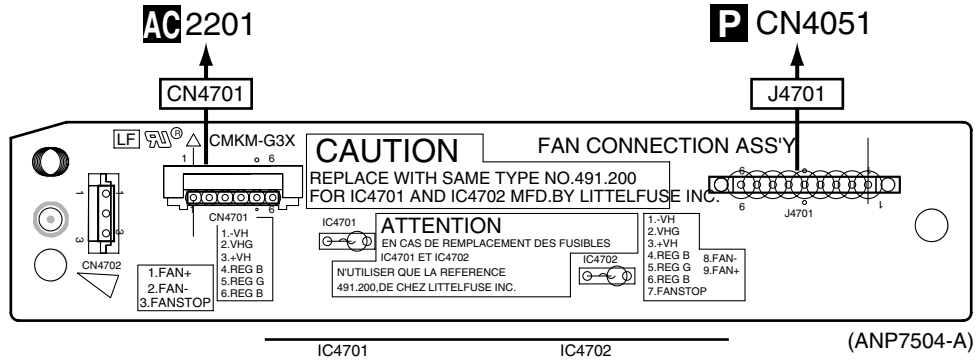
(ANP7504-A)

4.11 FAN CONNECTION ASSY

SIDE A

SIDE A

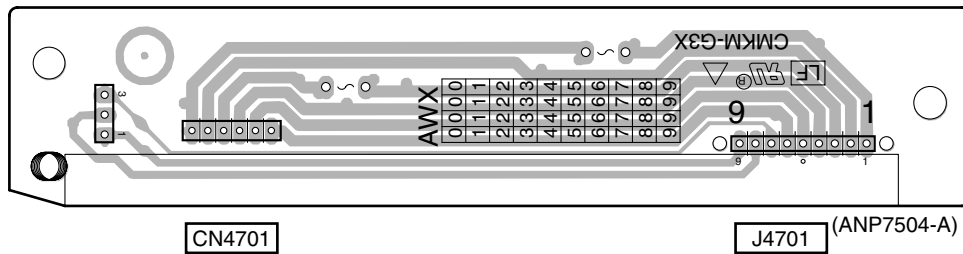
FAN CONNECTION ASSY



SIDE B

SIDE B

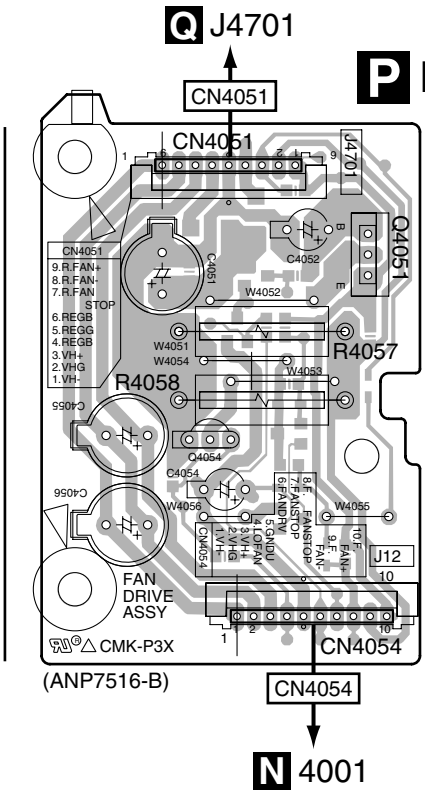
FAN CONNECTION ASSY



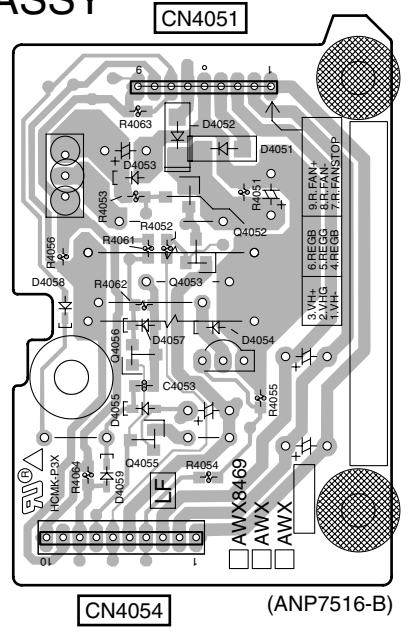
4.12 FAN DRIVE ASSY

SIDE A

SIDE B



P FAN DRIVE ASSY



P

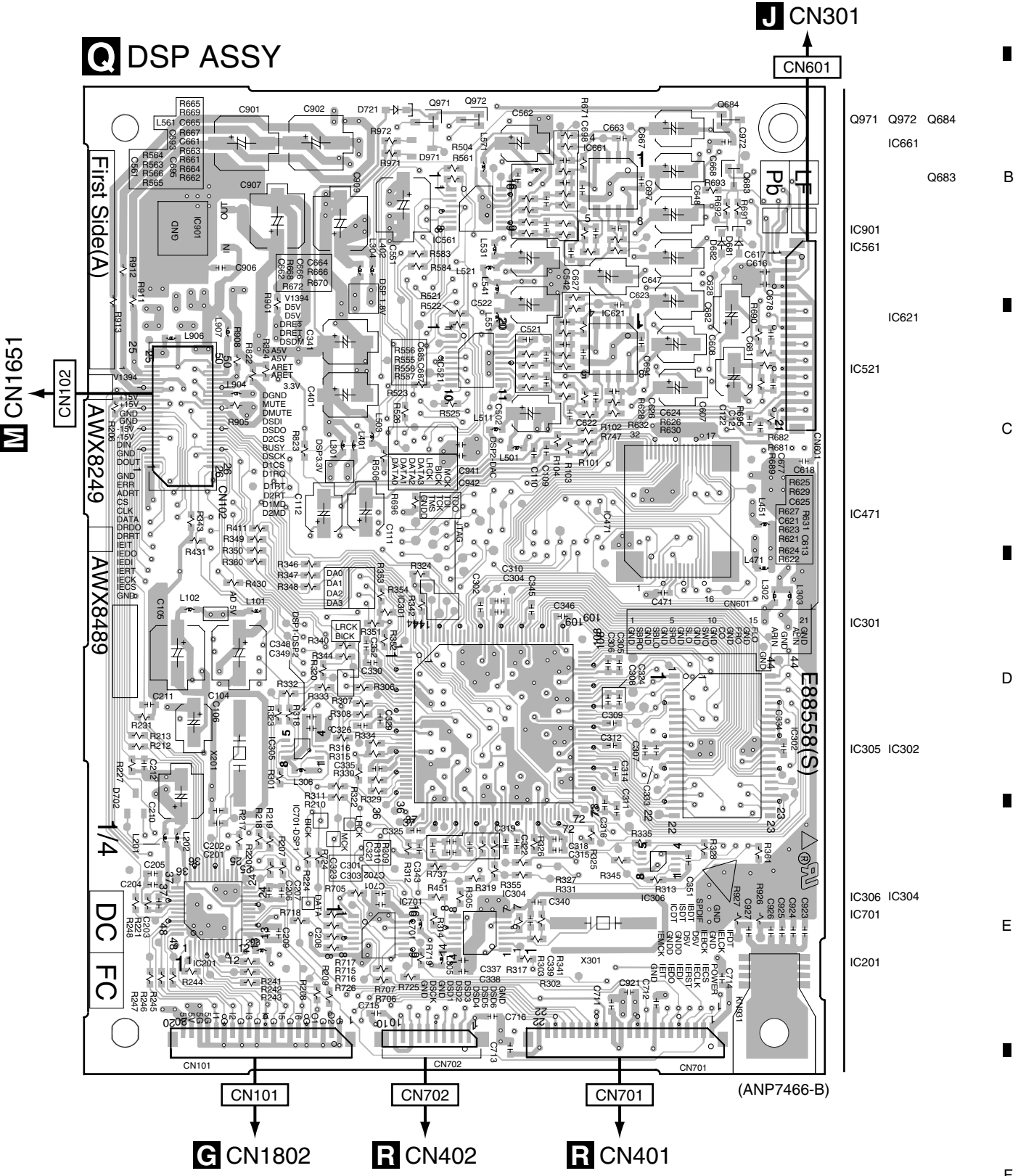
P

4.13 DSP ASSY

SIDE A

SIDE A

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



SIDE B

SIDE B

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

DSP ASSY

A

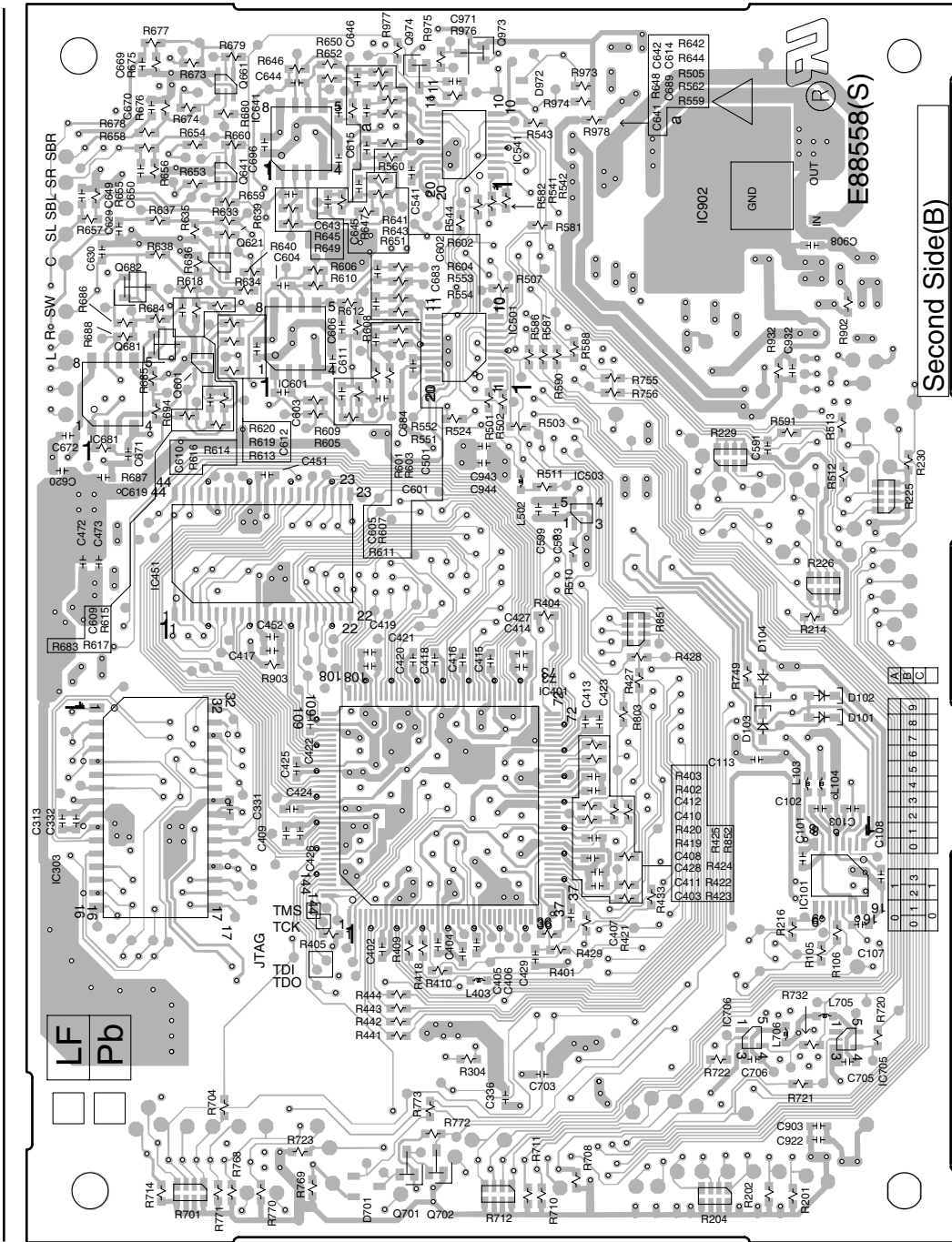
B

C

D

E

F



Second Side(B)

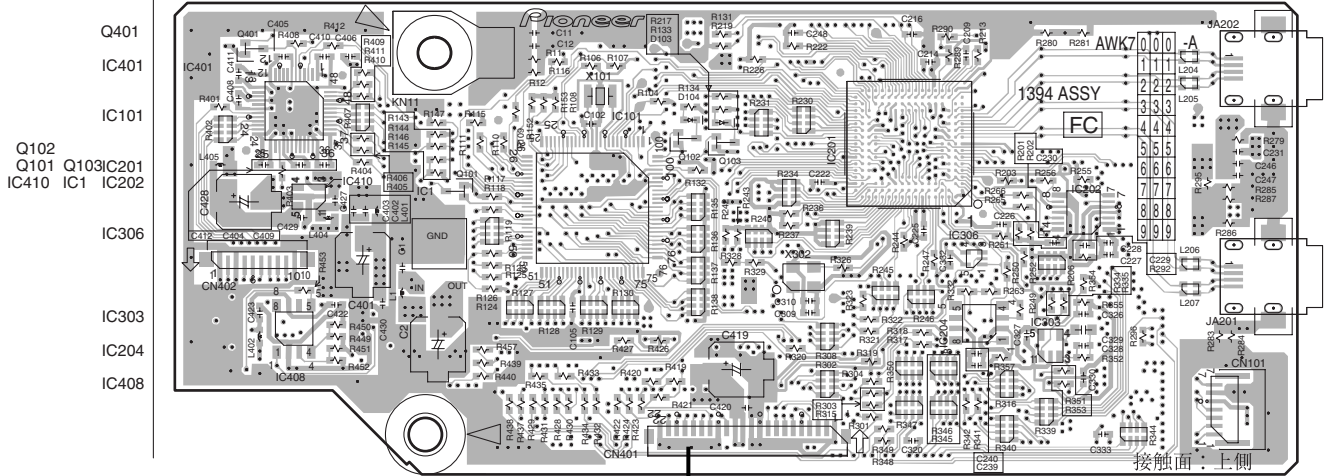
(ANP7466-A)



R 1394 ASSY

SIDE A

SIDE A



- Q401
- IC401
- IC101
- Q102
- Q101 Q103 IC201
- IC410 IC1 IC202
- IC306
- IC303
- IC204
- IC408

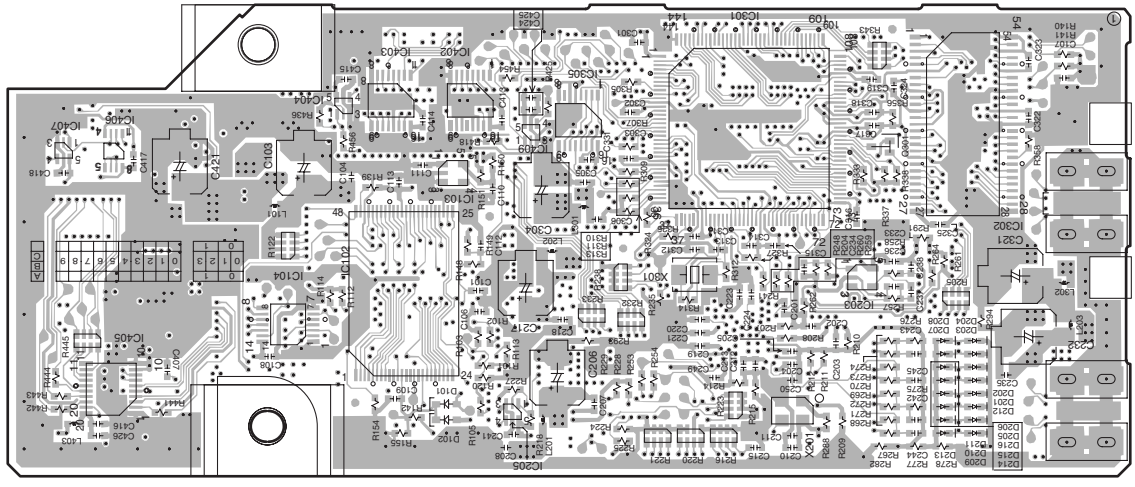
CN401

(ANP7489-A)

Q CN705

SIDE B

SIDE B



- IC205
- IC301
- IC403 IC402
- IC305
- IC404
- IC406
- IC407
- IC409
- Q301
- IC103
- IC302
- IC104 IC102
- IC203
- IC405
- IC205

(ANP7489-A)

R

R

4.15 DISPLAY ASSY

SIDE A

A

B

C

D

E

F

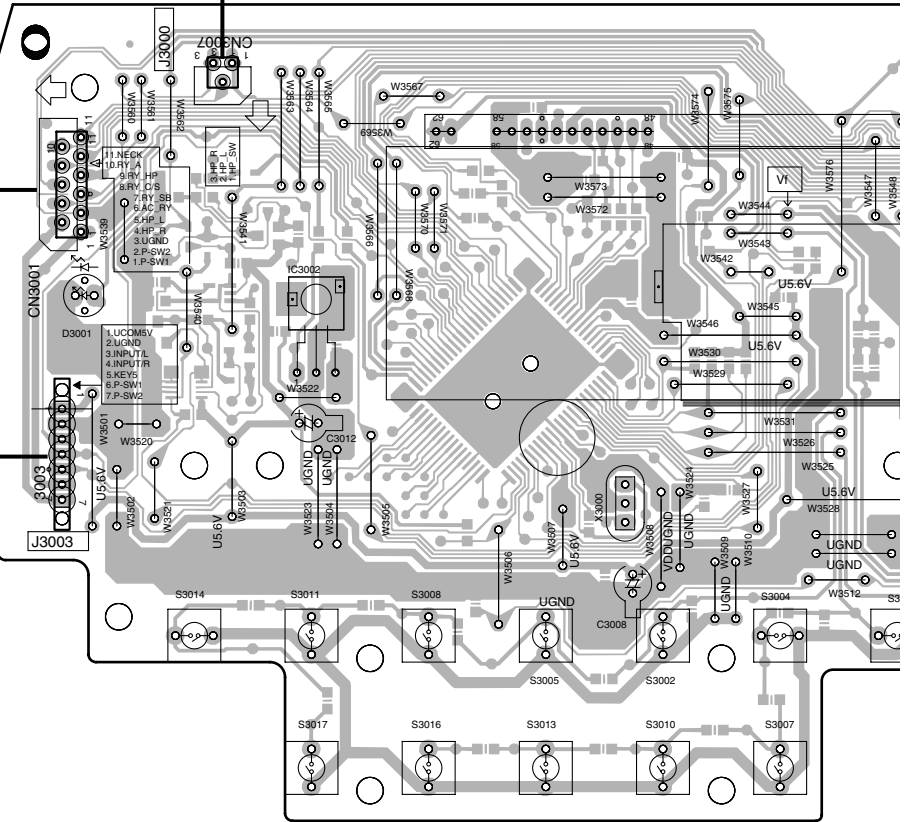
96

S DISPLAY ASSY

AG CN2002

U CN3451

CN3007 → **V** CN1951



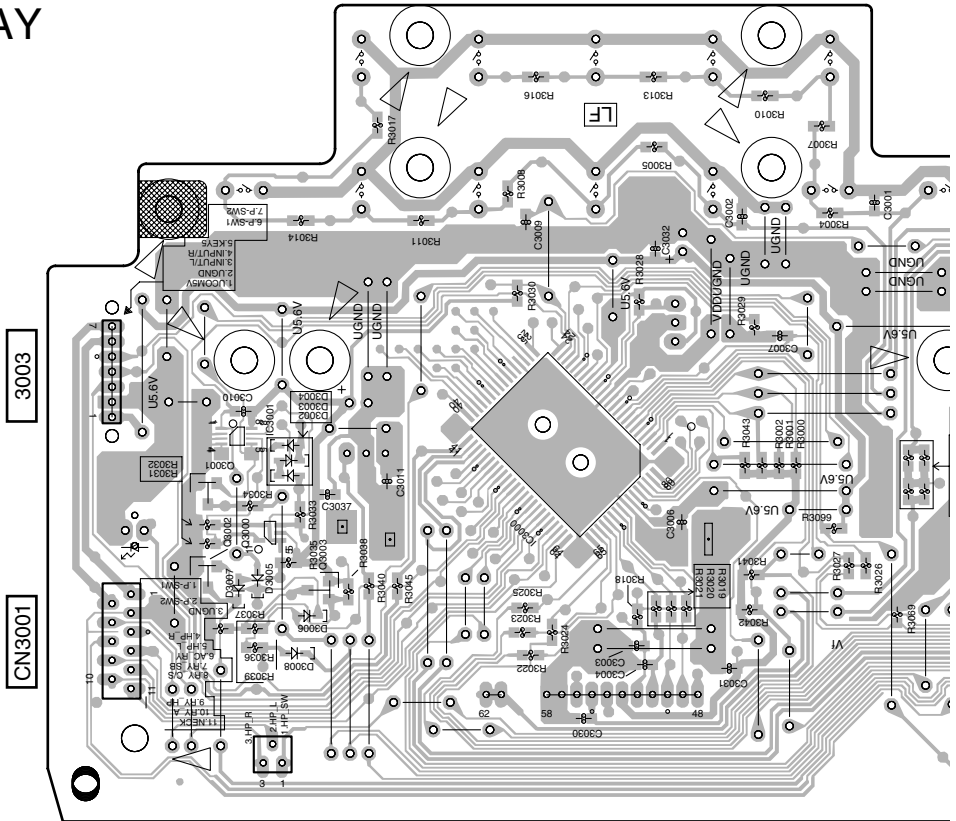
IC3002

SIDE B

S DISPLAY ASSY

Q3001 IC3001
Q3002 Q3000 Q3003

IC3000



CN3007

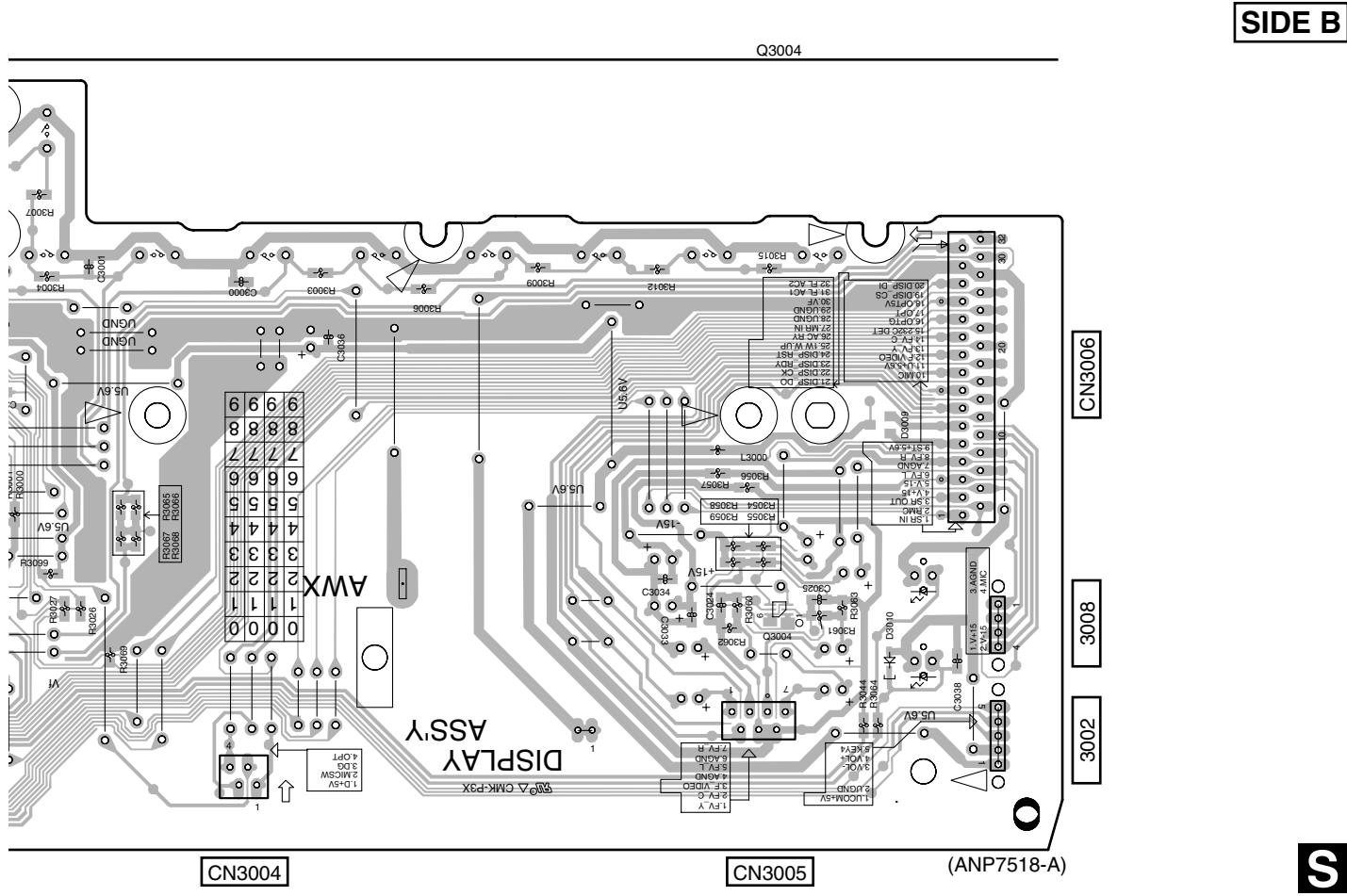
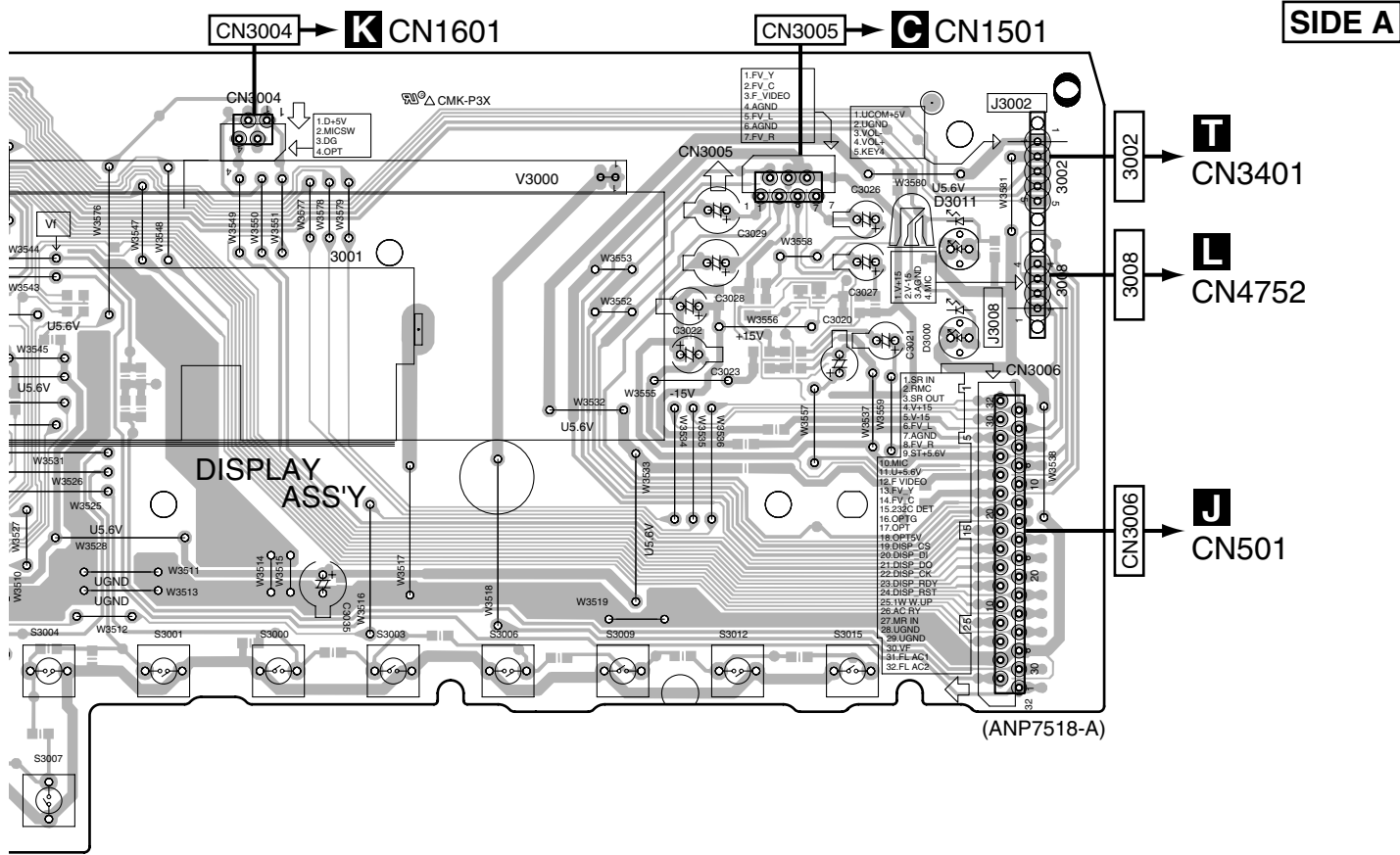
VSX-AX5Ai-S

1

2

3

4

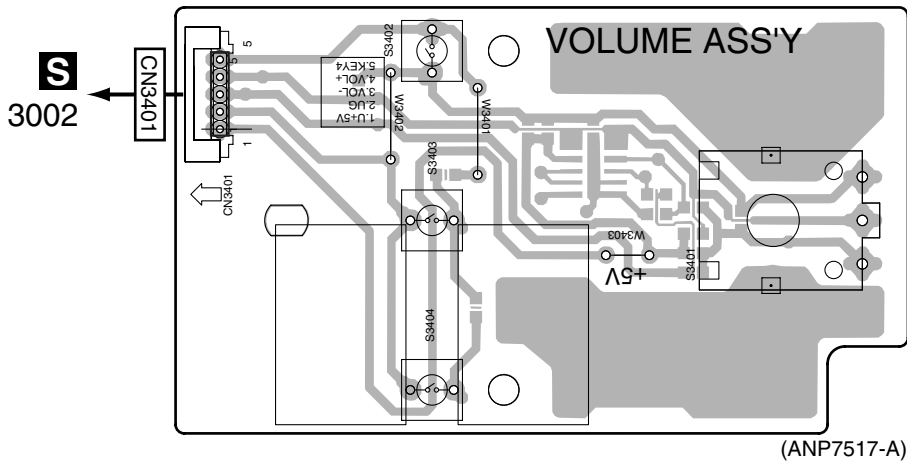


4.16 VOLUME, MULTI JOG, HEADPHONE and MECHA SW ASSYS

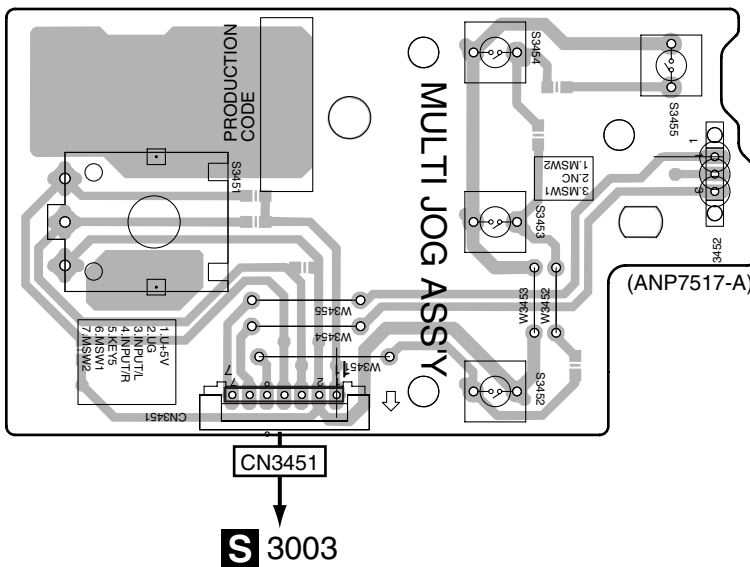
SIDE A

SIDE A

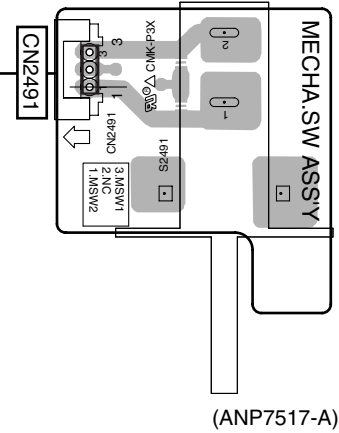
T VOLUME ASSY



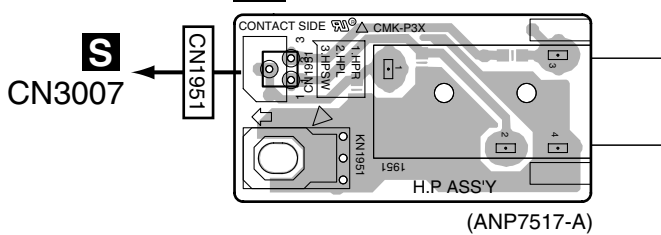
U MULTI JOG ASSY



AI MECHA SW ASSY



V HEADPHONE ASSY



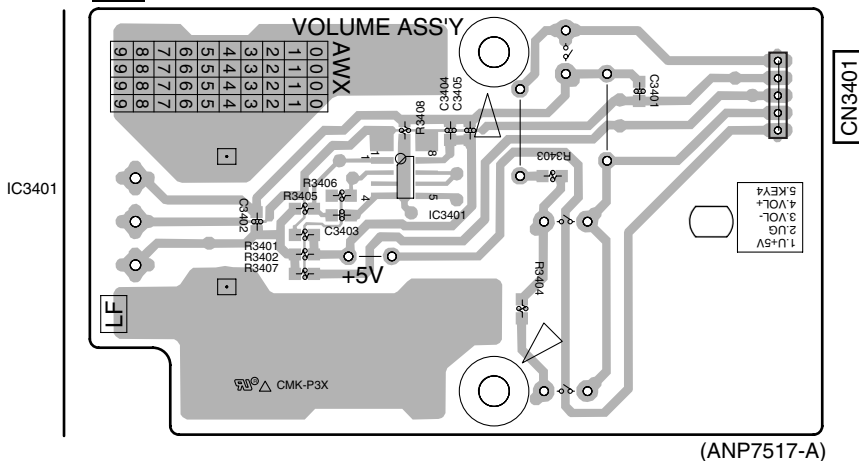
T U V AI

T U V AI

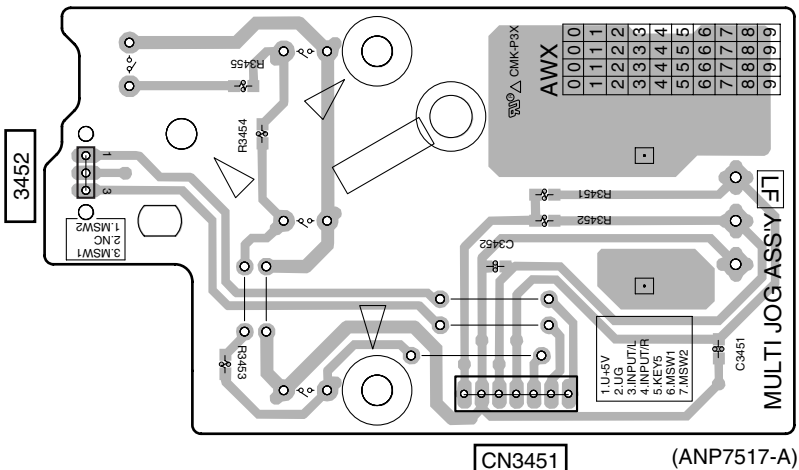
SIDE B

SIDE B

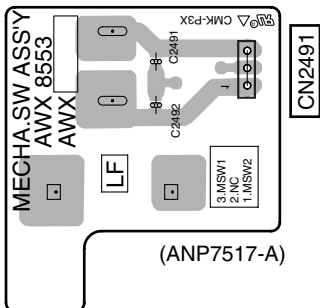
T VOLUME ASSY



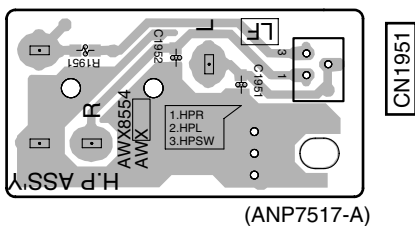
U MULTI JOG ASSY



AI MECHA SW ASSY



V HEADPHONE ASSY



T U V AI

T U V AI

SIDE B

A

B

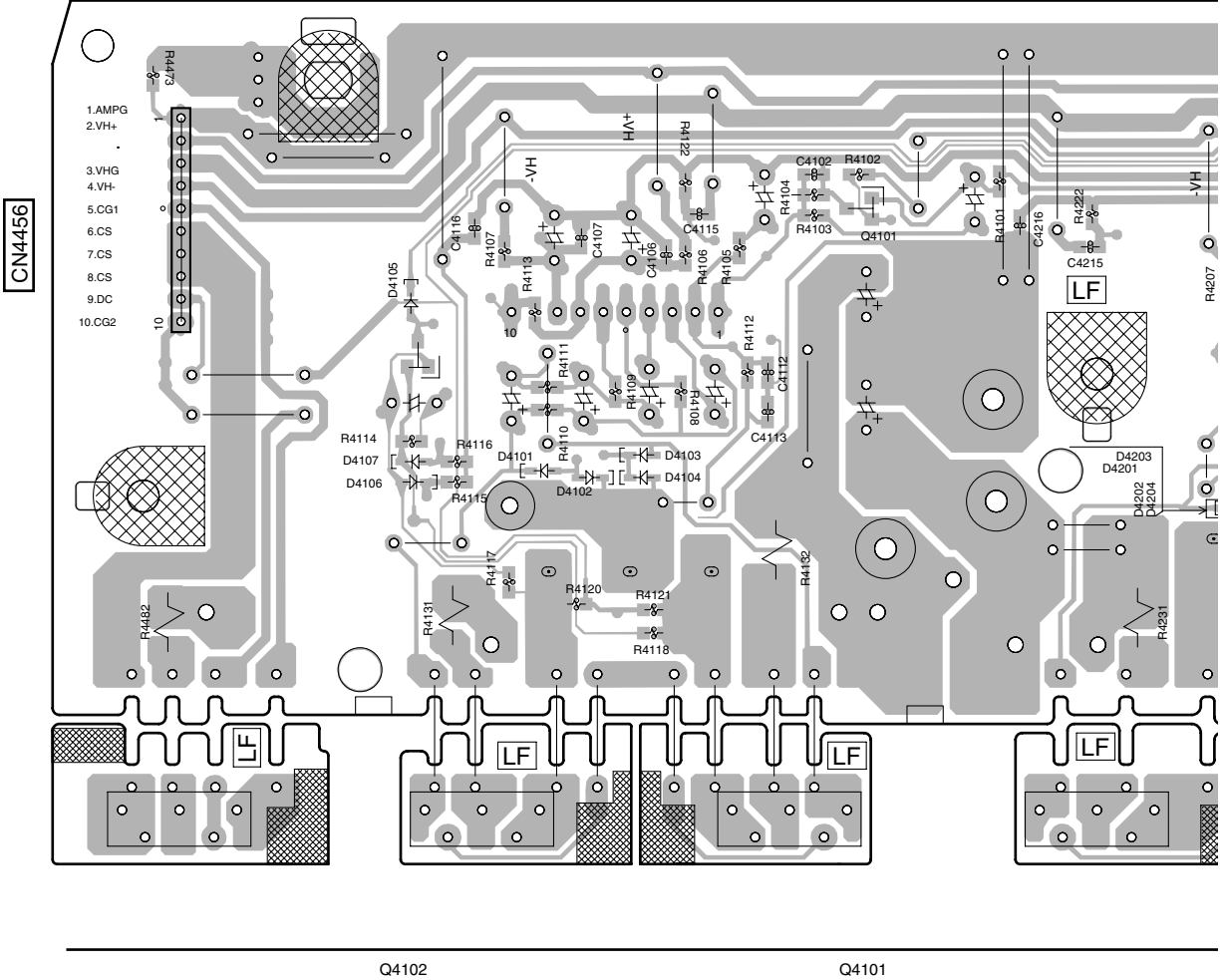
C

D

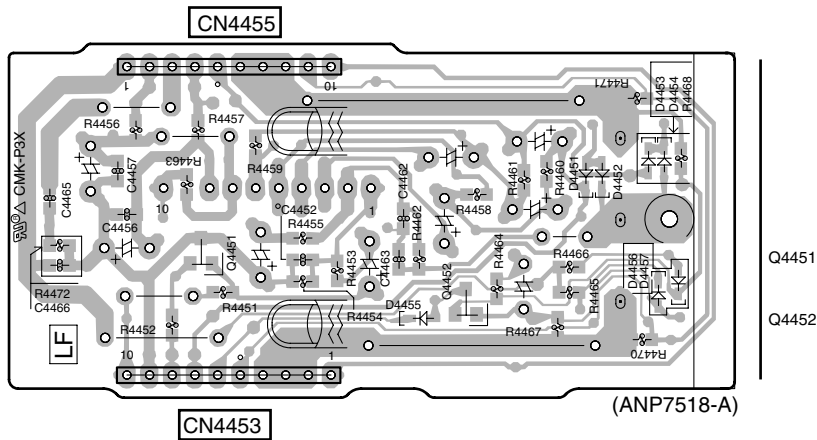
E

F

W POWER AMP-L ASSY



Y POWER AMP-C ASSY



W Y

SIDE B

A

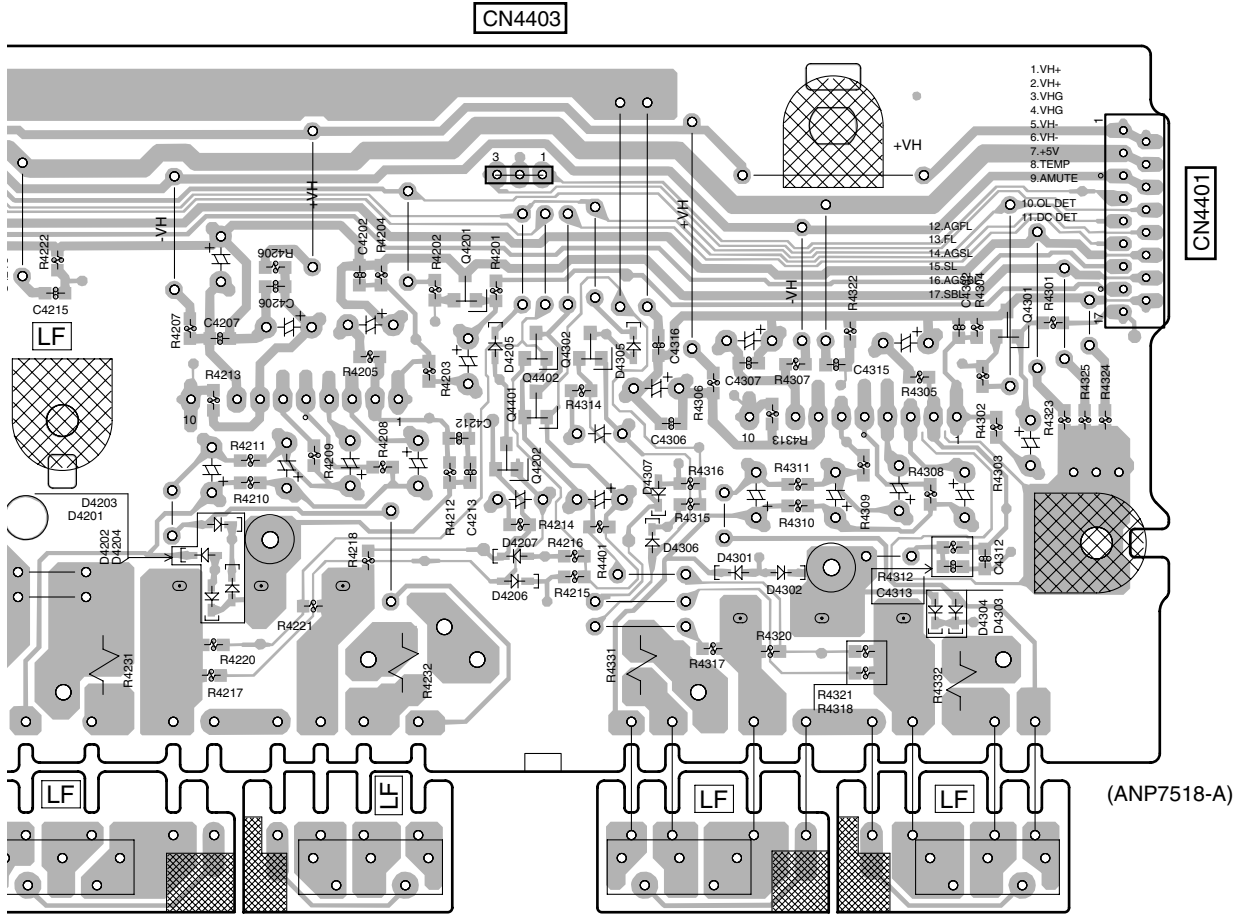
B

C

D

E

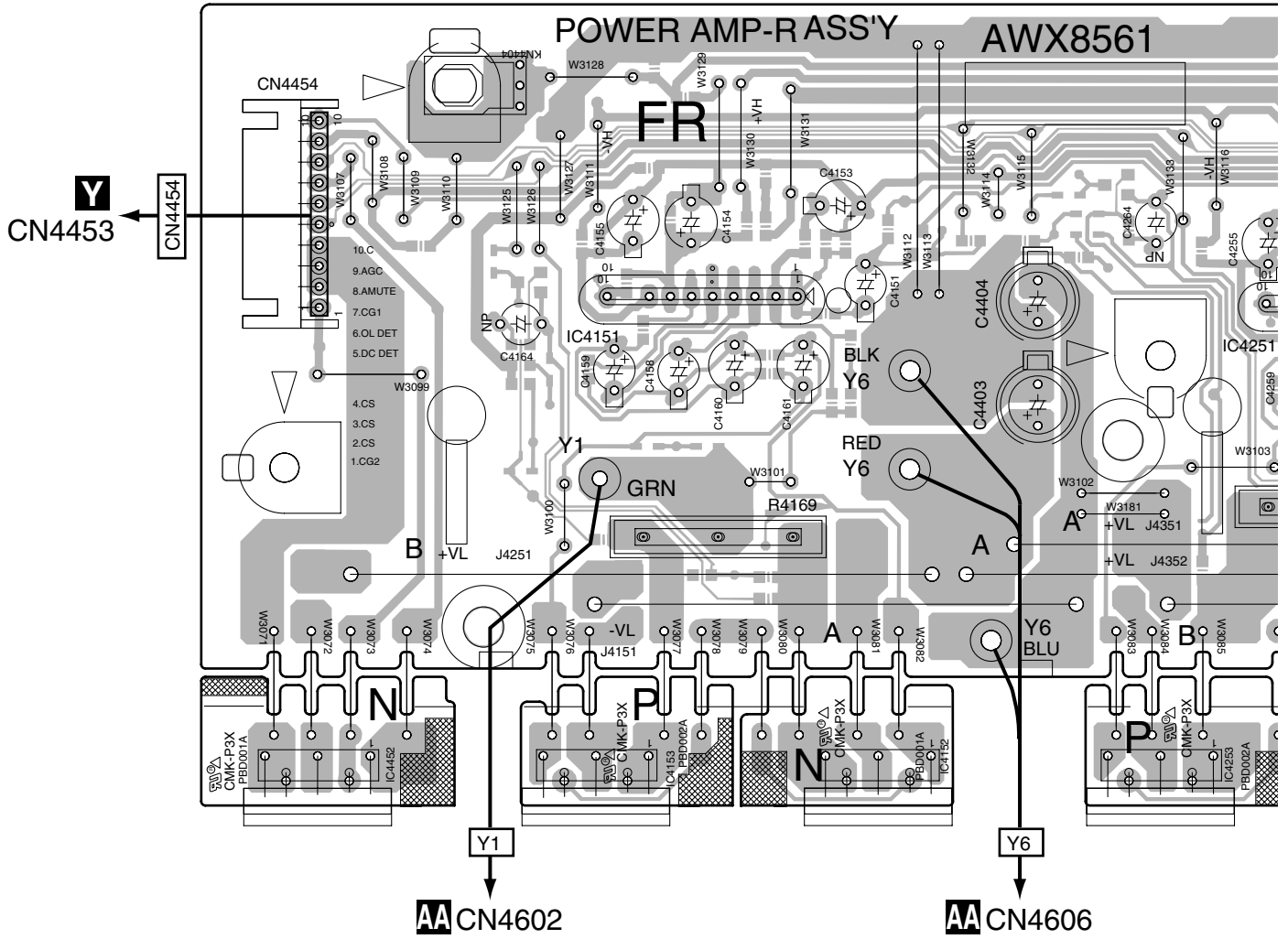
F



4.18 POWER AMP R ASSY

SIDE A

X POWER AMP-R ASSY



IC4452 IC4153 IC4151 IC4152 IC4253 IC4251



SIDE B

A

B

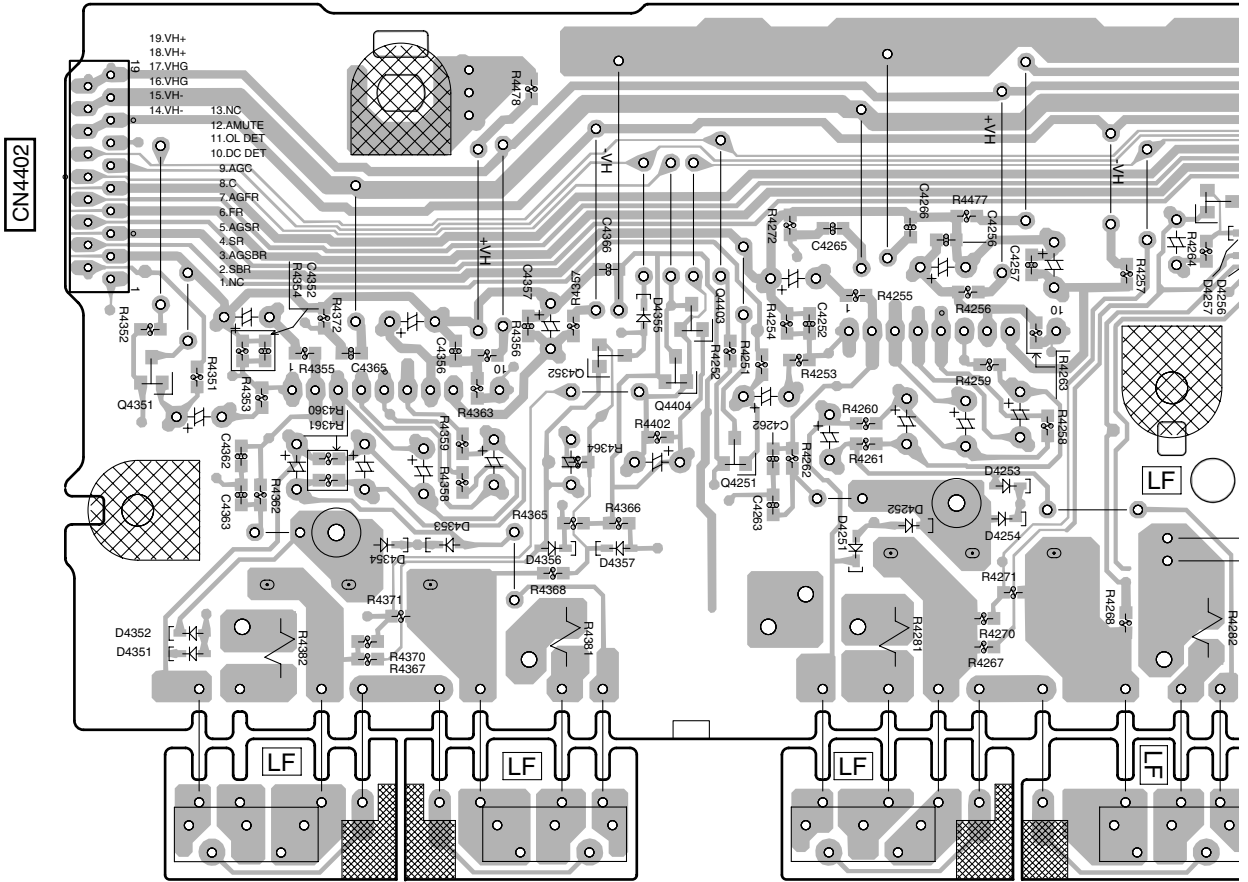
C

D

E

F

X POWER AMP-R ASSY



Q4351

Q4403

Q4252

Q4352

Q4404

Q4251



SIDE B

A

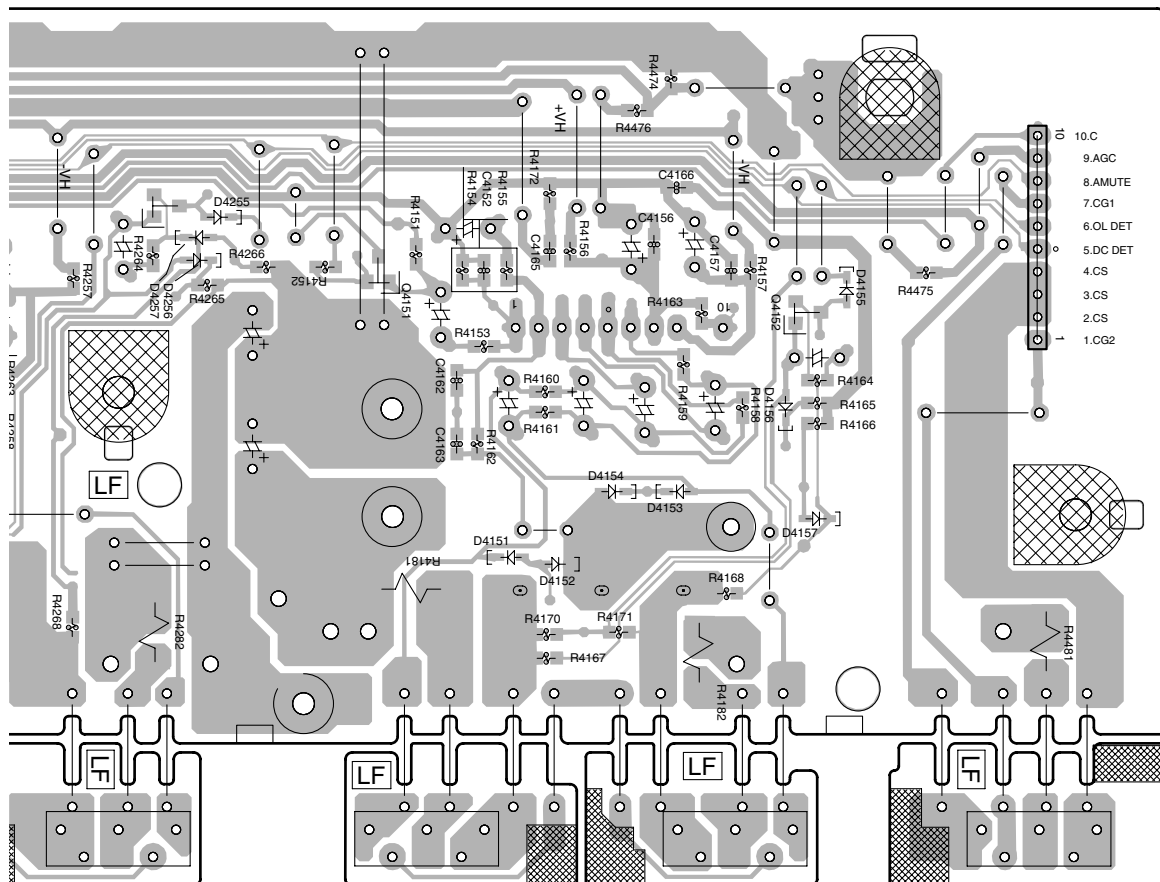
B

C

D

E

F



CN4454

(ANP7518-A)

Q4252

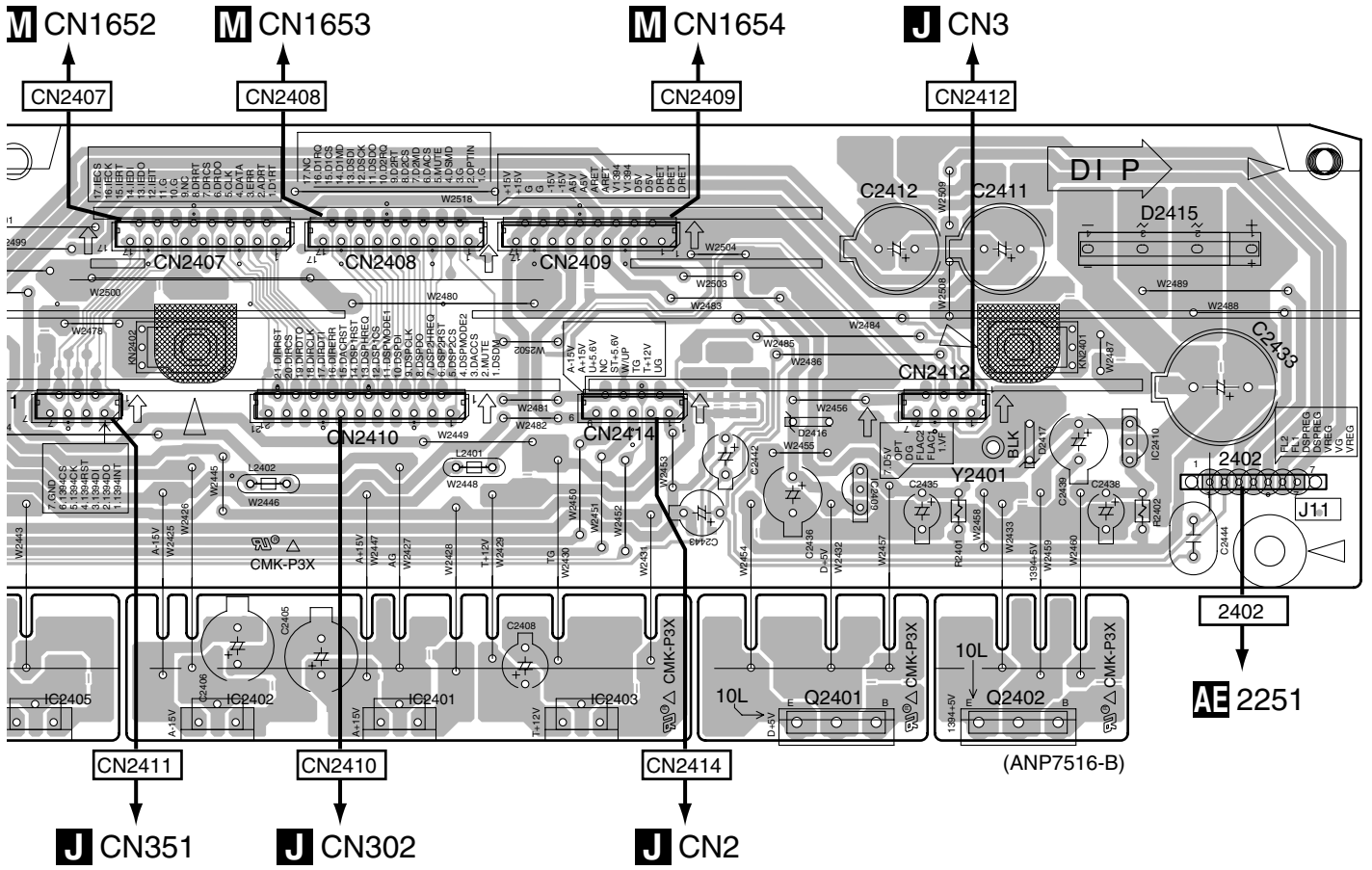
Q4151

Q4152



SIDE A

A



B

C

:2405 IC2402 IC2401 IC2403 Q2401 IC2409 Q2402 IC2410

D

E

F

Z

SIDE B

A

Z REGULATOR ASSY

B

C

D

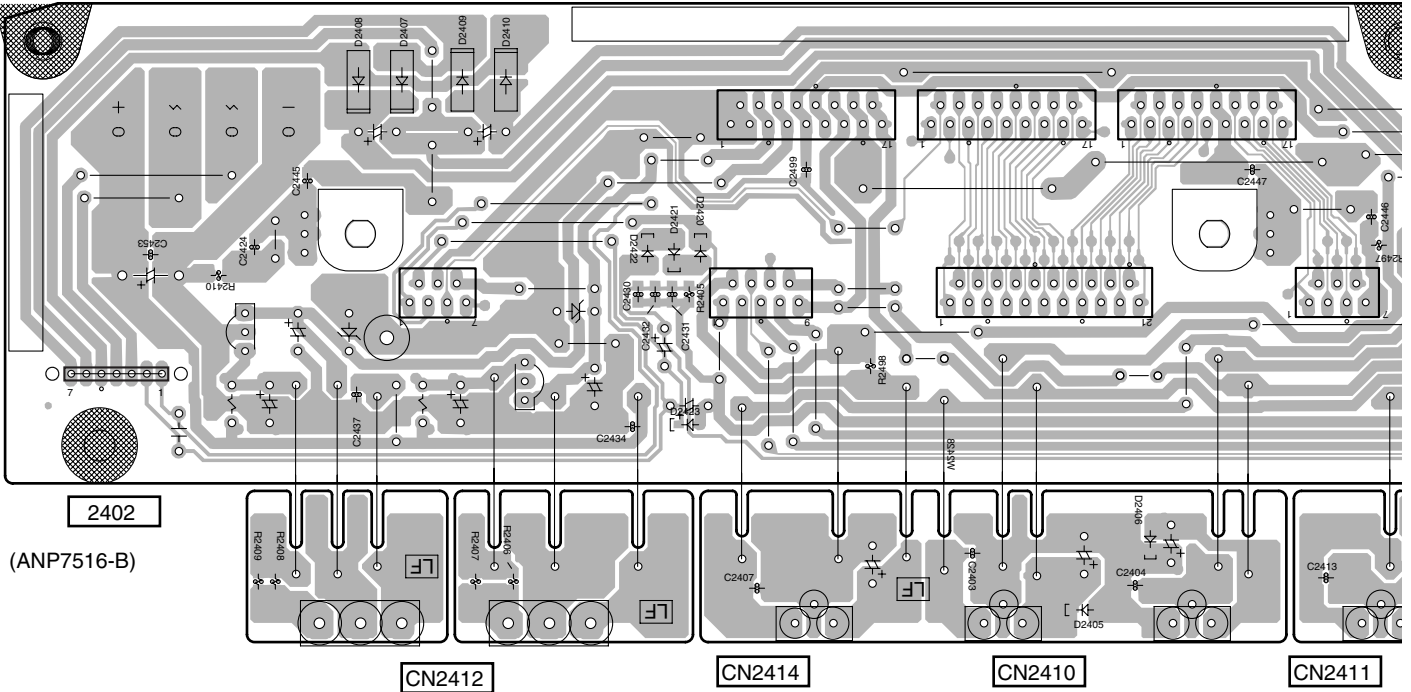
E

F

CN2409

CN2408

CN2407



2402

(ANP7516-B)

CN2412

CN2414

CN2410

CN2411



SIDE B

A

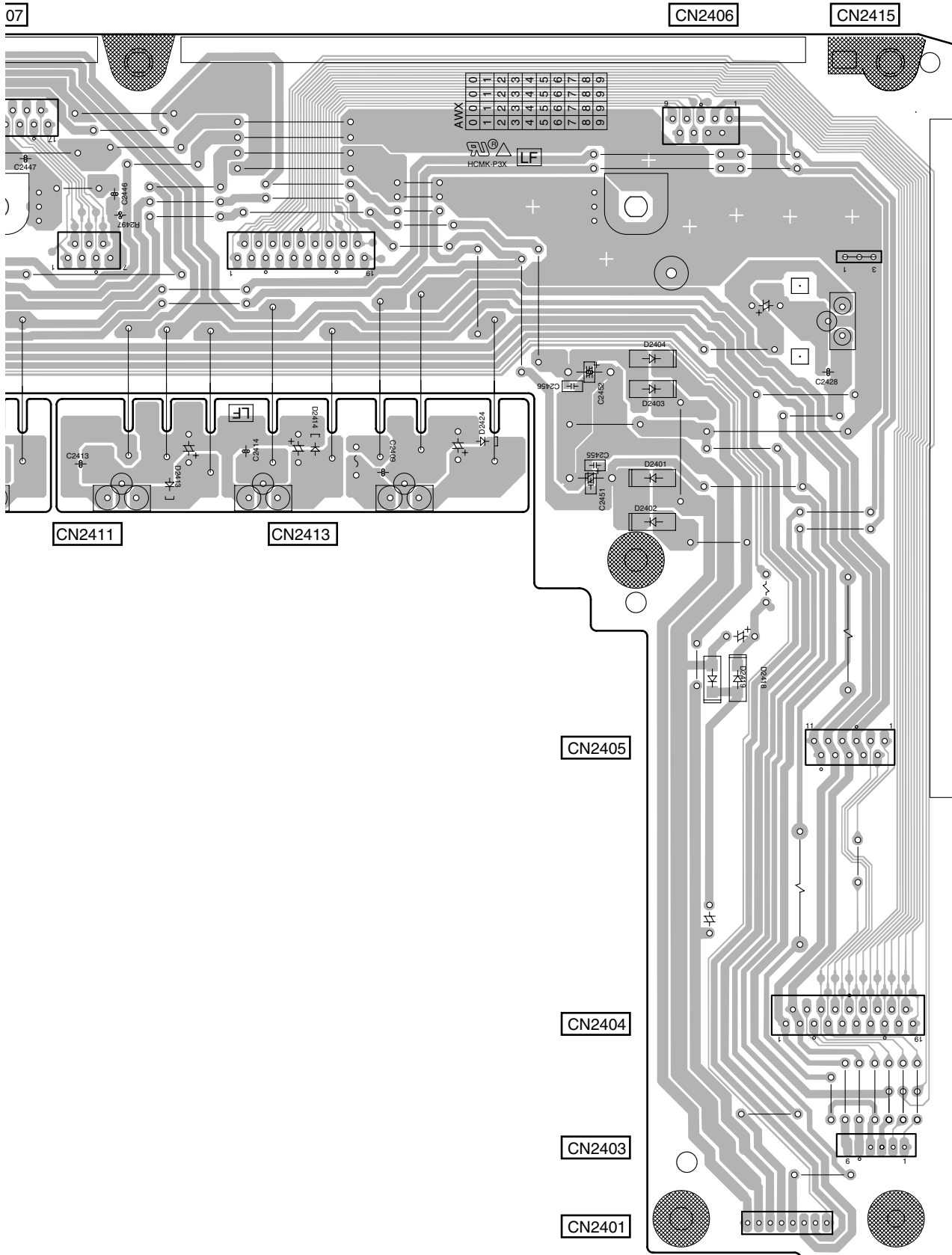
B

C

D

E

F

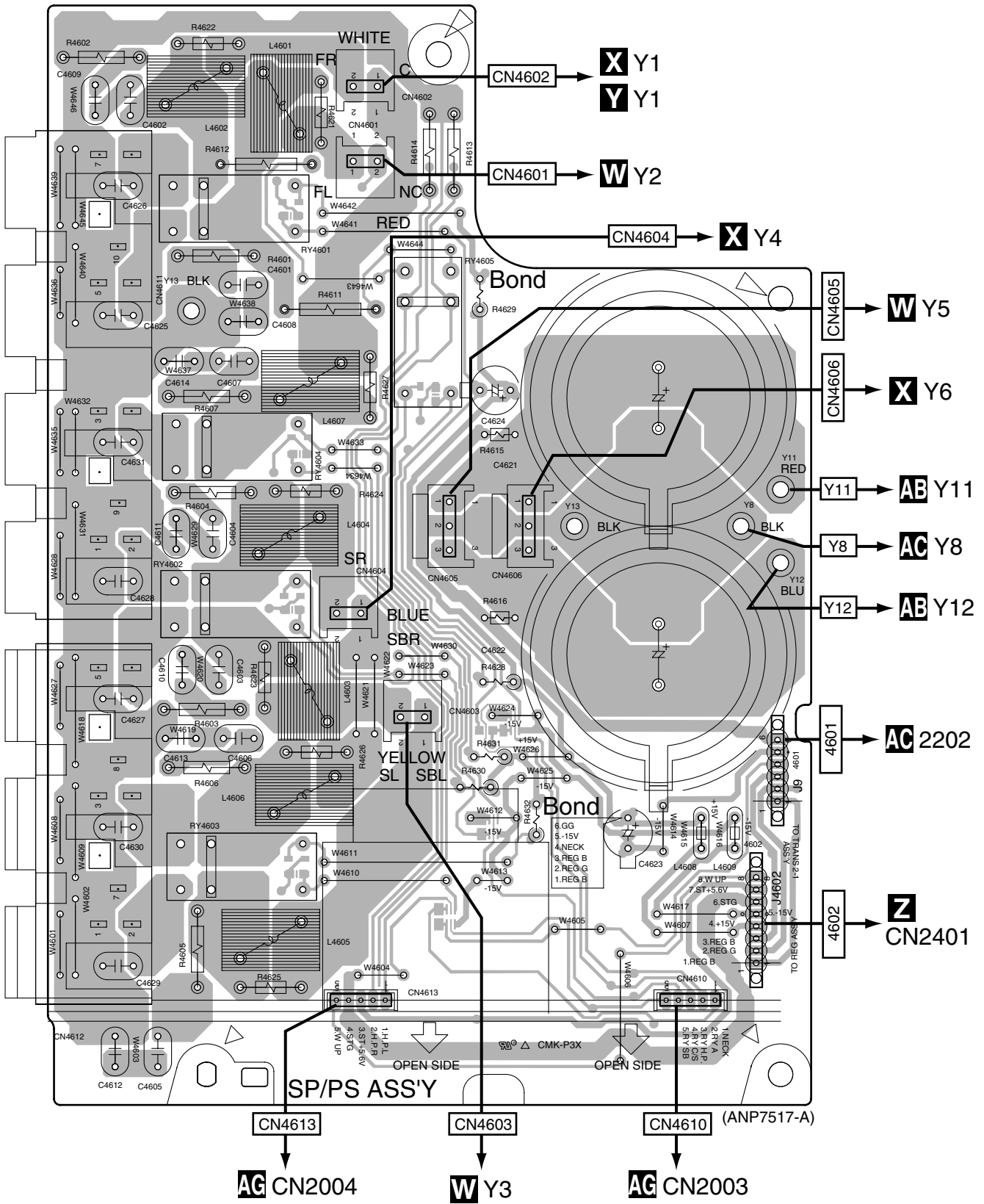


4.20 SP/PS ASSY

SIDE A

SIDE A

AA SP/PS ASSY



AA

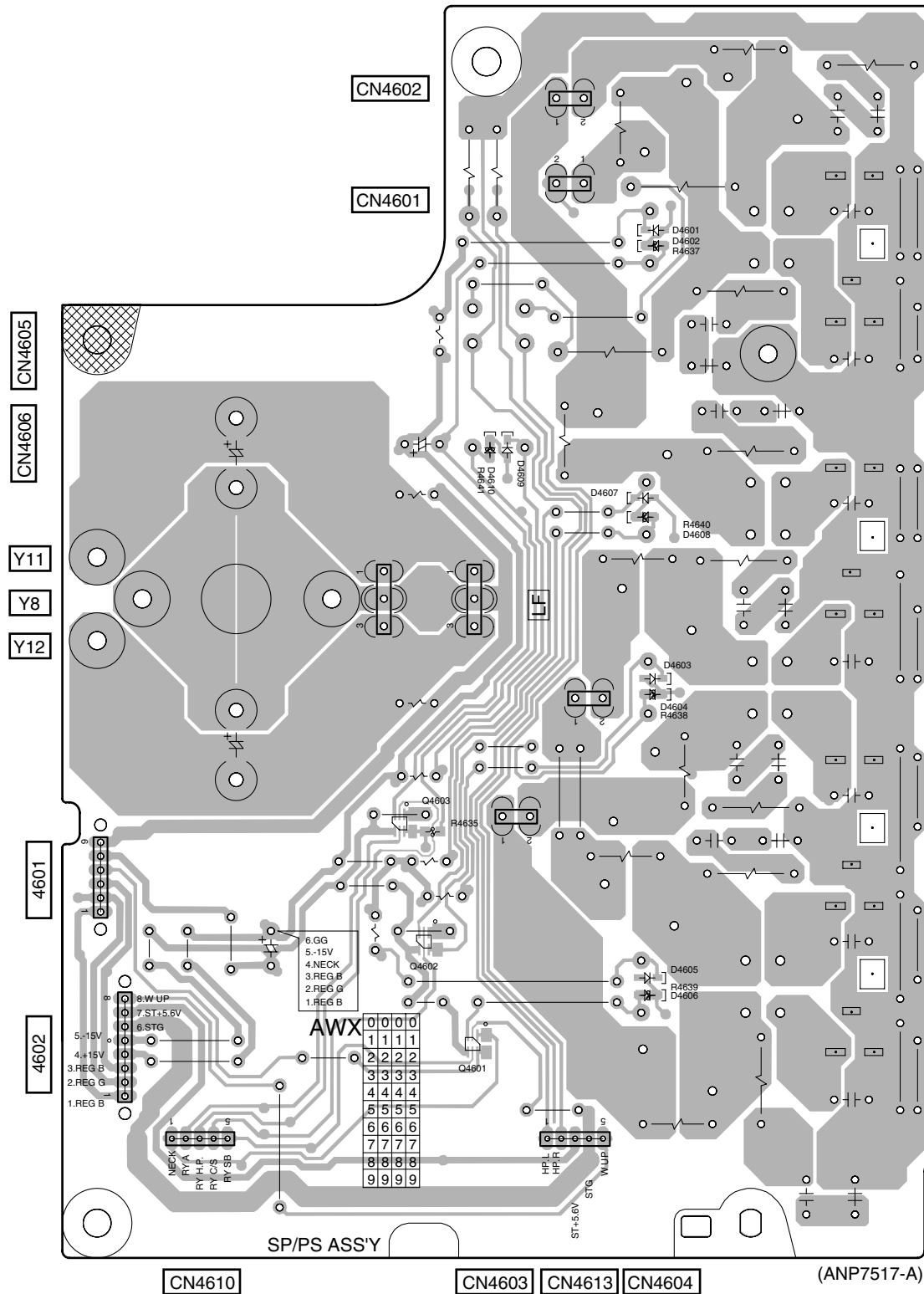
AA

SIDE B

SIDE B

A

AA SP/PS ASSY



B

C

D

E

F

AA

AA

Q4603
Q4602
Q4601

4.21 DIODE, TRANS 2-1 and VH TR ASSYS

SIDE A

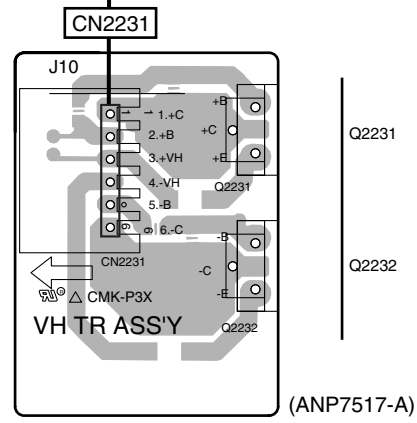
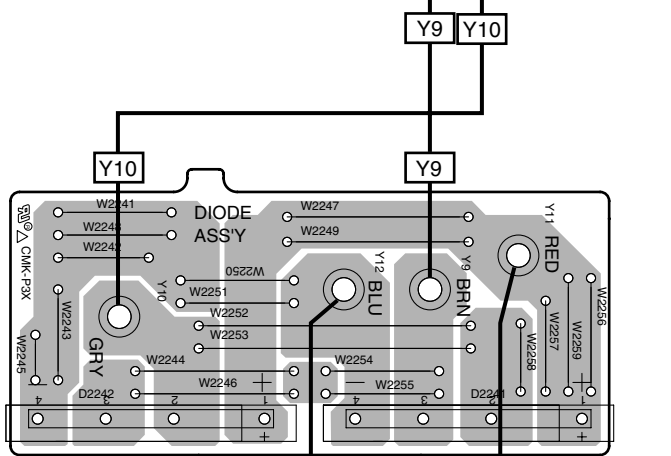
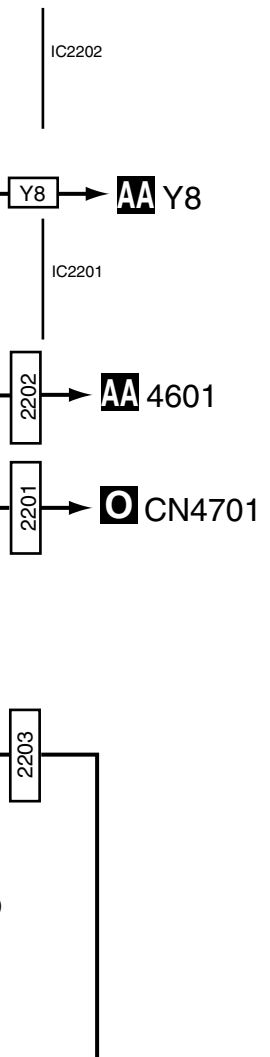
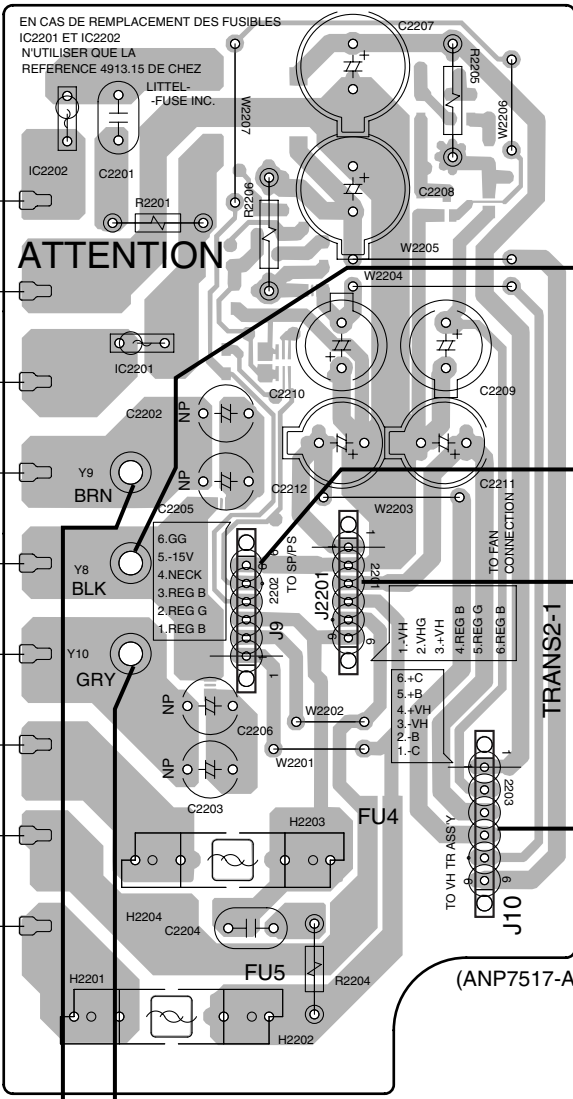
SIDE A

AC TRANS 2-1 ASSY

T1
POWER
TRANSFORMER

AF
TRANS 1
ASSY

AE
TRANS 2-2
ASSY



AB DIODE ASSY

AD VH TR ASSY

AA Y12

AA Y11

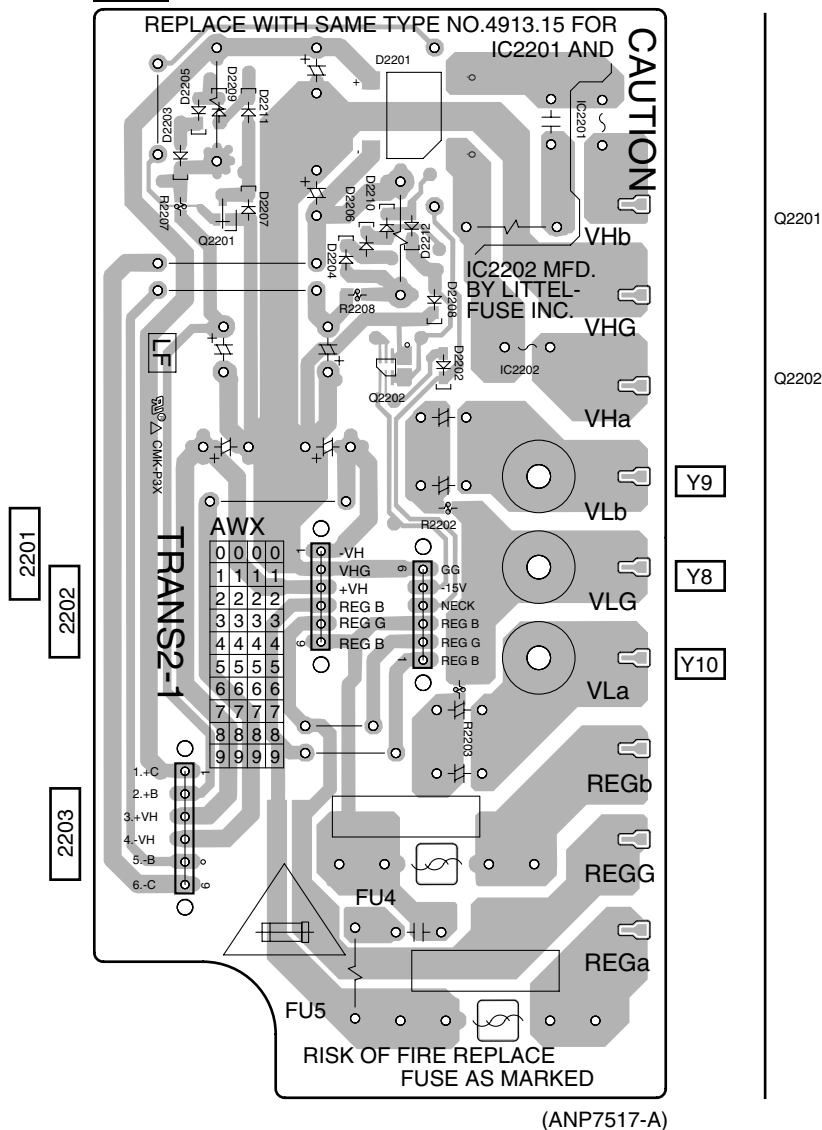
AB AC AD

AB AC AD

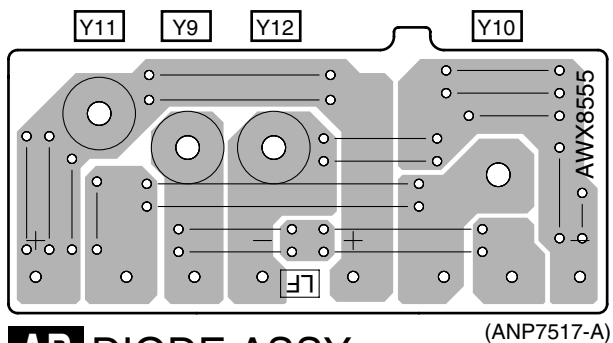
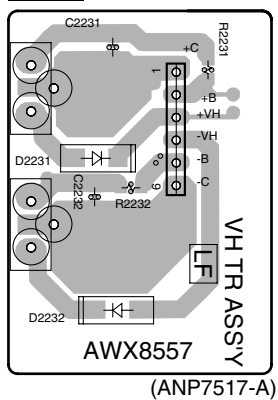
SIDE B

SIDE B

AC TRANS 2-1 ASSY



AD VH TR ASSY



AB DIODE ASSY

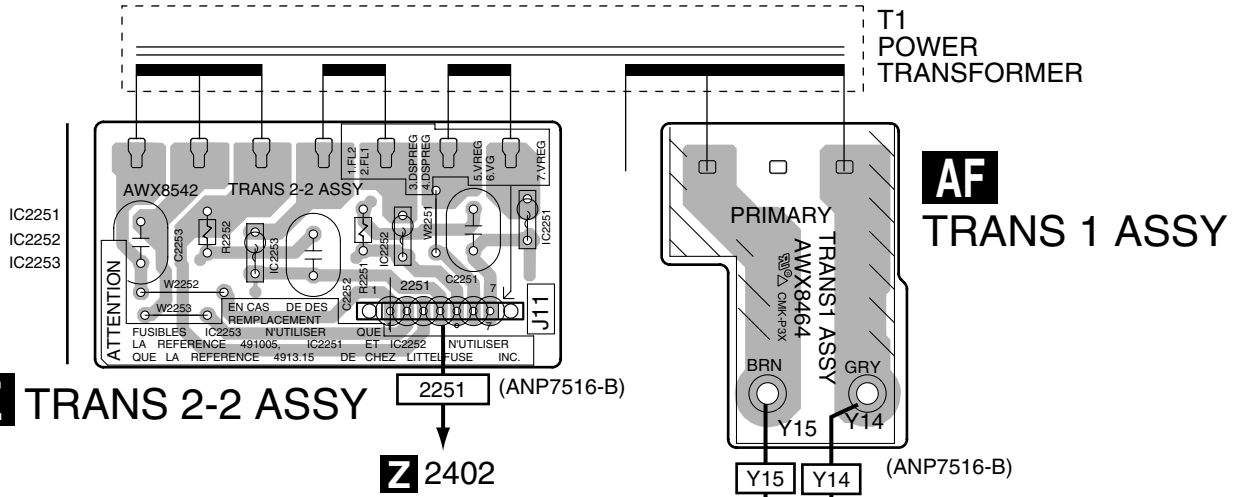
AB AC AD

AB AC AD

4.22 TRANS 2-2, TRANS 1 and PRIMARY ASSYS

SIDE A

SIDE A



AE TRANS 2-2 ASSY

AF TRANS 1 ASSY

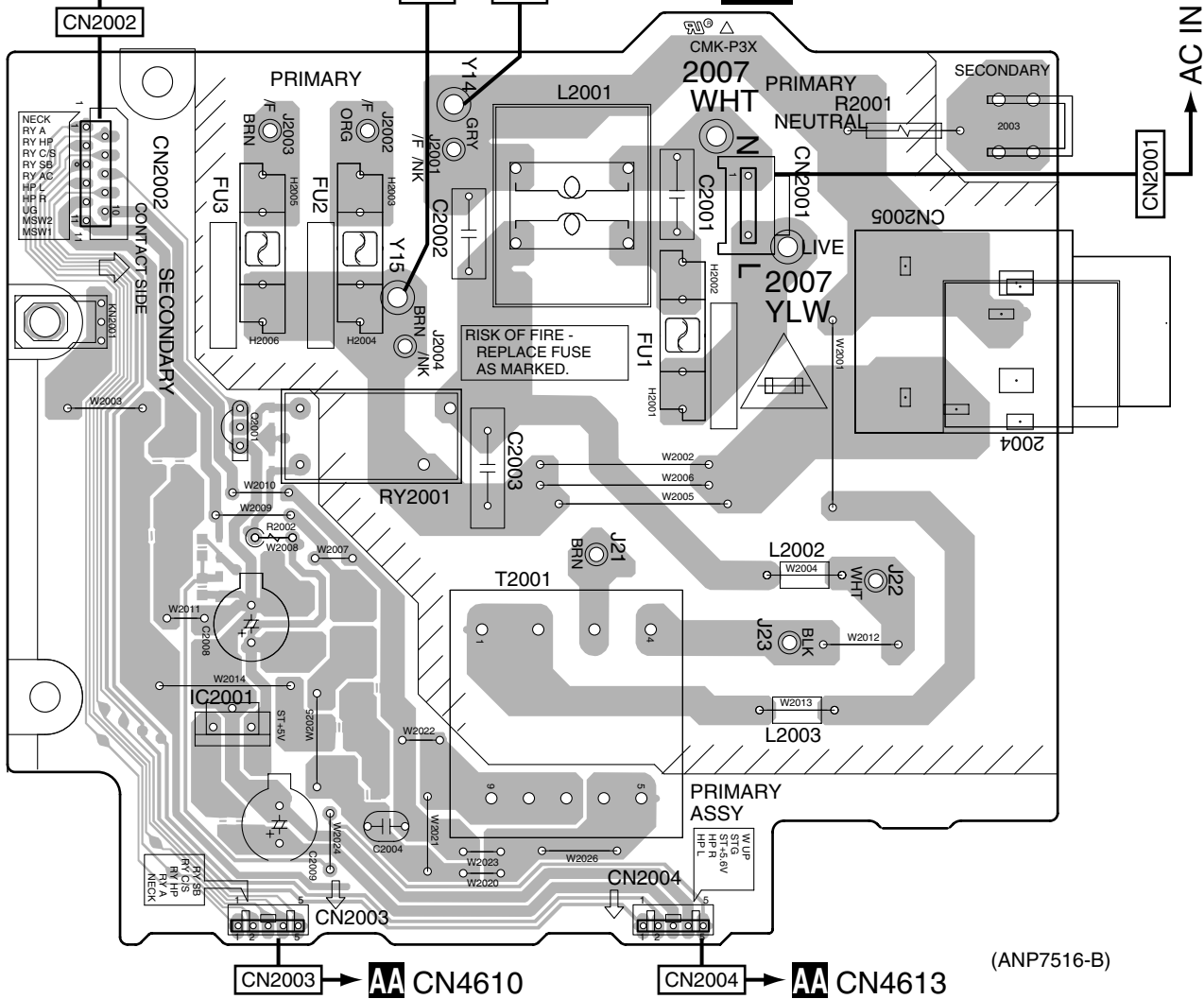
2251 (ANP7516-B)

Z 2402

Y15 Y14 (ANP7516-B)

S CN3001

AG PRIMARY ASSY



CN2003 → **AA CN4610**

CN2004 → **AA CN4613**

(ANP7516-B)

AE AF AG

AE AF AG

SIDE B

SIDE B

AF

TRANS 1 ASSY

AE

TRANS 2-2 ASSY

● **Line Voltage Selection**

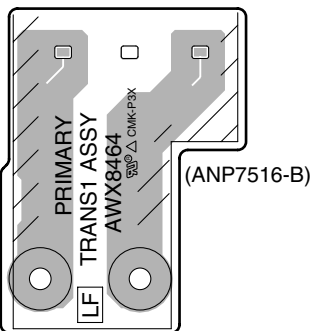
Line Voltage can be changed by the following modification:

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

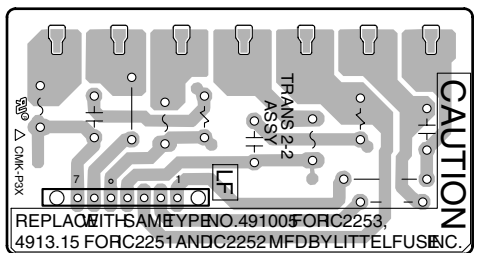
Voltage	Terminal No.
220-230V	Y15 of TRANS 1 ASSY
240V	240V terminal of power transformer

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

Description	Part No.
220V label	AAX-193
240V label	AAX-192



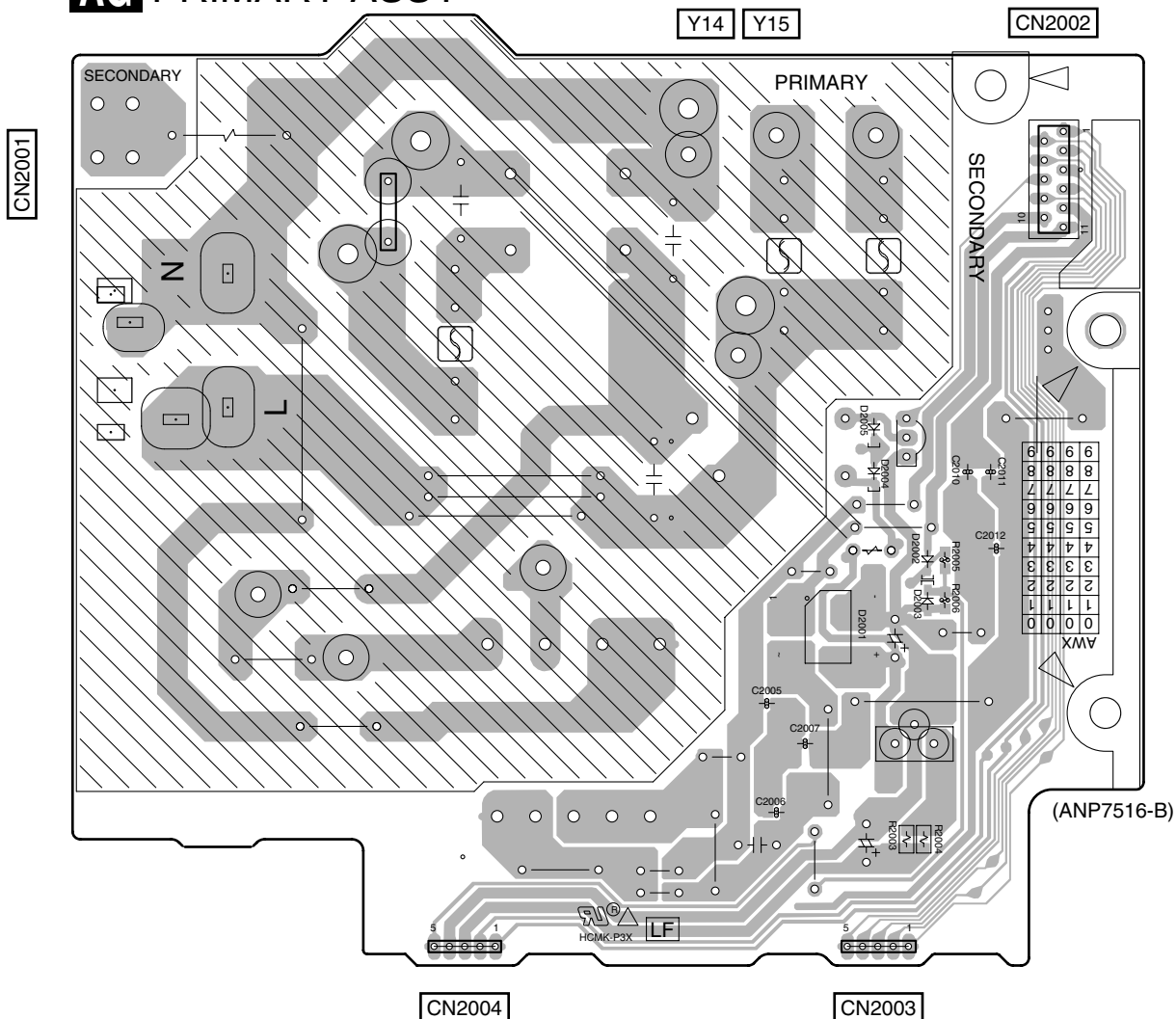
Y14 Y15



2251

(ANP7516-B)

AG PRIMARY ASSY



AE AF AG

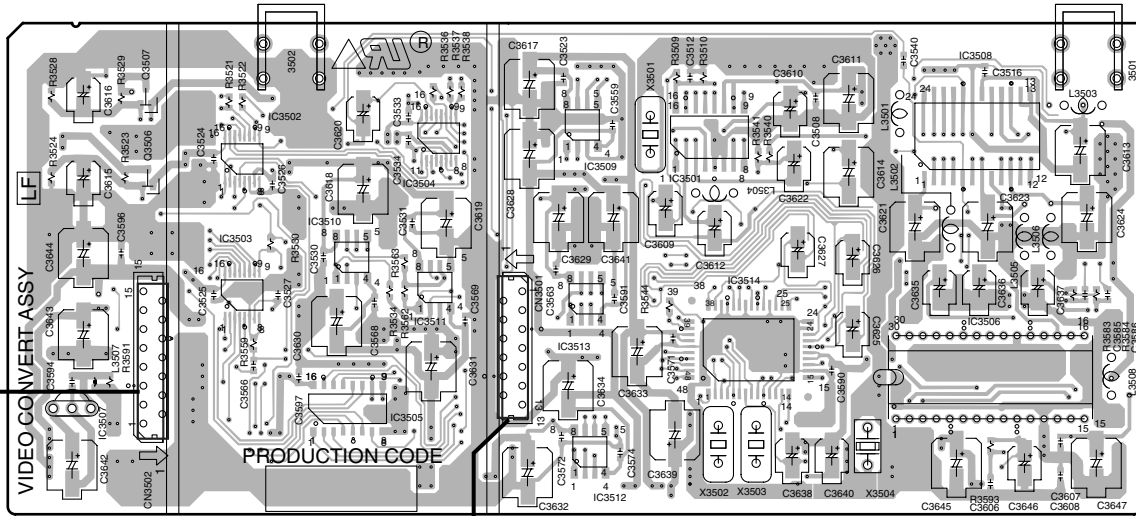
AE AF AG

4.23 VIDEO CONVERT ASSY

SIDE A

SIDE A

AH VIDEO CONVERT ASSY

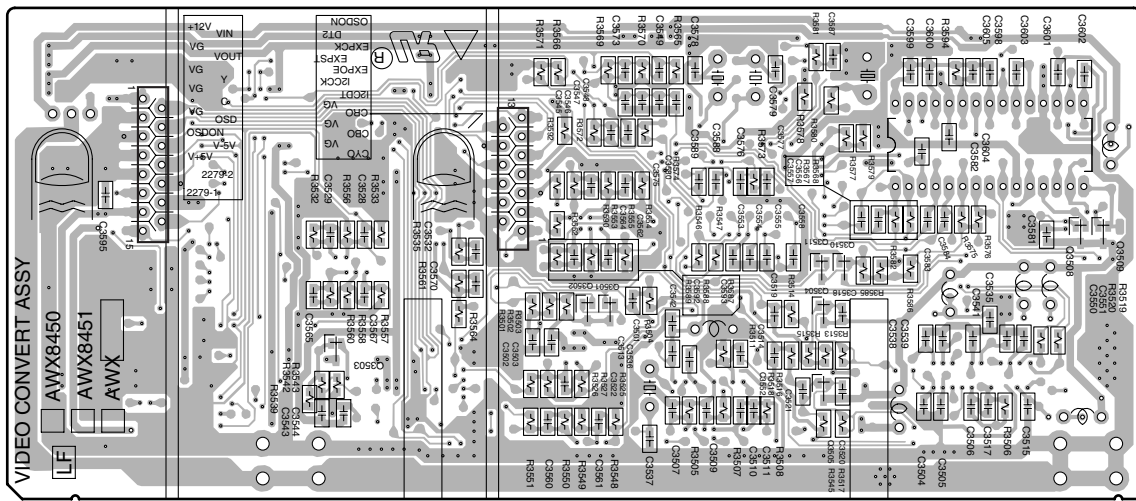


Q3507	IC3503	IC3510	IC3504	IC3513	IC3514	IC3508
Q3506	IC3502		IC3505	IC3512		
			IC3511			

SIDE B

SIDE B

AH VIDEO CONVERT ASSY



IC933	Q3502	Q3501	Q3504	Q3510	Q3508
			Q3505	Q3511	Q3509

AH

AH

5. PCB PARTS LIST

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

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

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

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

560 Ω \rightarrow 56×10^1 \rightarrow 561 RD1/4PU $\overline{561}J$
 47k Ω \rightarrow 47×10^3 \rightarrow 473 RD1/4PU $\overline{473}J$
 0.5 Ω \rightarrow R50 RN2H $\overline{R50}K$
 1 Ω \rightarrow 1R0 RS1P $\overline{1R0}K$

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

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

• LIST OF WHOLE PCB ASSEMBLIES

Mark	No.	Description	Part No.
	1..	FM/AM TUNER MODULE	AXX7170
NSP	1..	REGULATOR ASSY	AWK7846
	2..	MIC & FOPT IN ASSY	AWX8545
	2..	REGULATOR ASSY	AWX8541
	2..	PRIMARY ASSY	AWX8461
	2..	TRANS2-2 ASSY	AWX8542
	2..	7.1CH I/O ASSY	AWX8543
NSP	2..	POWER AMP IN ASSY	AWX8544
	2..	FAN DRIVE ASSY	AWX8488
NSP	1..	COMPLEX ASSY	AWK7851
NSP	2..	VOLUME ASSY	AWX8550
NSP	2..	MULTI JOG ASSY	AWX8552
	2..	INPUT CONNECT ASSY	AWX8546
NSP	2..	FRONT IN ASSY	AWX8549
	2..	OPTICAL IN ASSY	AWX8556
NSP	2..	HEADPHONE ASSY	AWX8554
	2..	DIODE ASSY	AWX8555
	2..	VH TR ASSY	AWX8557
	2..	V-AUDIO IN ASSY	AWX8558
	2..	SP/PS ASSY	AWX8470
	2..	12V TRIGGER ASSY	AWX8548
	2..	TRANS 2-1 ASSY	AWX8551
	2..	MECHA SW ASSY	AWX8553
NSP	1..	MAIN ASSY	AWK7836
	2..	MAIN CONTROLASSY	AWX8435
	2..	DSP CONNECTION ASSY	AWX8441
	2..	COAXIAL IN ASSY	AWX8443
	2..	MIC AMP ASSY	AWX8447
	2..	FAN CONNECTION ASSY	AWX8448
NSP	1..	VIDEO CONVERT ASSY	AWK7842
	2..	VIDEO CONVERT ASSY	AWX8451
	2..	VIDEO ASSY	AWX8452
	2..	COMPONENT ASSY	AWX8454
NSP	1..	POWER AMP ASSY	AWK7863
	2..	POWER AMP-L ASSY	AWX8560
	2..	POWER AMP-R ASSY	AWX8561
	2..	POWER AMP-C ASSY	AWX8562
	2..	DISPLAY ASSY	AWX8559
	1..	DSP ASSY	AWX8489
	1..	1394 ASSY	AWK7834

Mark No. Description Part No.

REGULATOR ASSY

OTHERS

Y15 ADX7465
 Y14 ADX7466
 J11 D20PYY0745E

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

A 7.1CH I/O ASSY SEMICONDUCTORS

IC1301-IC1304 UPC4570G2-A
 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 CKSRYB103K50

RESISTORS

Other Resistors RS1/16S###J

OTHERS

1301-1304 4P PIN JACK AKB7075
 CN1306 5P SOCKET XKP3073
 CN1307, CN1308 9P SOCKET XKP3075

1

2

3

4

Mark No. **Description****Part No.****Mark No.** **Description****Part No.****B V-AUDIO IN ASSY
SEMICONDUCTORS**

Q1201, Q1202

2SC2878

CAPACITORSC1201-C1212
C1213-C1215CCSRCH221J50
CKSRYB103K50**RESISTORS**

Other Resistors

RS1/16S###J

OTHERS1201, 1203 4P PIN JACK
CN1205 6P PIN JACK
CN1204 17P SOCKETAKB7075
AKB7162
XKP3079**C FRONT IN ASSY
CAPACITORS**C1501, C1502
C1505
C1504, C1506
C1503CCSRCH221J50
CKSRYB102K50
CKSRYB103K50
CKSRYB472K50

C1510

CKSRYB473K50

RESISTORS

Other Resistors

RS1/16S###J

OTHERSCN1501 7P FFC CONNECTOR
JA1501 FRONT INPUT
KN1501 EARTH METAL FITTING52044-0745
AKX7016
VNF1084**D OPTICAL IN ASSY
COILS AND FILTERS**

F1701

DTF1064

CAPACITORSC1706
C1701-C1705CEAT470M16
CKSRYF104Z16**RESISTORS**

Other Resistors

RS1/16S###J

OTHERSCN1701 9P FFC CONNECTOR
JA1701, JA1702 OPTICAL LINK IN
JA1703, JA1704 OPTICAL LINK OUT52045-0945
GP1FA502RZ
GP1FA502TZ**E INPUT CONNECT ASSY
SEMICONDUCTORS**IC1401
IC1451
D1401M62429FP
UPC4570G2-A
UDZS5R1(B)**CAPACITORS**C1406, C1407
C1401-C1405, C1451, C1452
C1454, C1455
C1453CCSQCH101J50
CEAT100M50
CKSRYB103K50
CKSRYB472K50**RESISTORS**R1405
Other ResistorsRS3LMF391J
RS1/16S###J**OTHERS**CN1407 5P PLUG
CN1406, CN1408 9P PLUG
CN1405 17P PLUG
CN1402 9P PLUG
CN1404 9P SOCKETXKP3062
XKP3064
XKP3068
XKP3074
XKP3075CN1403 13P SOCKET
CN1401 15P SOCKETXKP3077
XKP3078**F 12V TRIGGER ASSY
SEMICONDUCTORS**⚠ IC1931
IC1901
Q1933
Q1931
Q1901BA12T
SP232AEN
2SA1037K
2SB1237X
2SC1740SQ1932
D1901, D1902
D1931DTC124EK
1SS355
UDZS5R1(B)**COILS AND FILTERS**

L1901

LAU1R0J

CAPACITORSC1901
C1903-C1906
C1938
C1932, C1933
C1902, C1907, C1911, C1921, C1931CEAT101M16
CEAT1R0M50
CEATR10M50
CEHAT100M50
CKSRYB103K50C1934-C1936
C1909CKSRYB103K50
CKSRYB331K50**RESISTORS**

Other Resistors

RS1/16S###J

OTHERSCN1901 D-SUB SOCKET
CN1902 KR CONNECTOR
CN1903 4P SOCKET
JA1922 REMOTE CONTROL JACK
1901 SCREW TERMINALAKP1213
B8B-PH-K
KP200TA4L
RKN1004
VNE1948**G COAXIAL IN ASSY
SEMICONDUCTORS**IC1681
IC1881
IC1682PCM2902EG
TC74HCU04AF
TC7SET08F**COILS AND FILTERS**

F1881

DTF1064

CAPACITORSC1688
C1687
C1885, C1886
C1887, C1896
C1681CCSRCH180J50
CCSRCH220J50
CCSRCH470J50
CCSRCH471J50
CEAT470M16

C1890

CEAT470M25

1

2

3

4

Mark No.	Description	Part No.
C1680, C1697, C1857, C1858		CKSRYB103K50
C1883, C1884, C1888, C1897		CKSRYB103K50
C1683-C1686, C1689, C1690, C1698		CKSRYB104K16
C1889		CKSRYB105K6R3

RESISTORS

Other Resistors RS1/16S###J

OTHERS

X1681 (12.0MHz) ASS7047
 CN1801 19P FFC CONNECTOR 52045-0945
 JA1802 2P PIN JACK AKB7148
 JA1681 USB CONNECTOR DKN1237
 CN1802 20P FFC CCONECTOR VKN1196
 CN1803 9P SOCKET XKP3075

H COMPONENT ASSY SEMICONDUCTORS

IC4403 BU4094BCF
 IC4405, IC4406 OPA2652U
 IC4404 PDC084B
 IC4401, IC4402 TC74LVX4053FT
 ⚠ Q4406 2SA1576A
 Q4407-Q4412 2SA1576A
 ⚠ Q4405 2SC4081
 Q4415 2SC4081
 Q4404 DTC124EUA

COILS AND FILTERS

L4401, L4403 LAU100J
 L4402 LAU330J

CAPACITORS

C4442 (1000u/10V) ACH7194
 C4420 CCSRCH101J50
 C4411 CCSRCH150J50
 C4414 CCSRCH180J50
 C4416, C4417 CCSRCH240J50
 C4424, C4432, C4438 CCSRCH470J50
 C4458 CEANP100M16
 C4444-C4447, C4449, C4451-C4453 CEAT100M50
 C4439-C4441, C4443, C4448, C4450 CEAT101M16
 C4454, C4455 CEAT101M16
 C4405, C4406, C4412, C4415 CKSRYB103K50
 C4428-C4431, C4433-C4437 CKSRYB103K50
 C4418, C4419, C4421, C4423 CKSRYB473K50

RESISTORS

Other Resistors RS1/16S###J

OTHERS

X4401 (14.32MHz) ASS1056
 CN4403 12P FFC CONNECTOR 52045-1245
 JA4401-JA4403 3P PIN JACK VKB1151
 CN4402 13P SOCKET XKP3077
 CN4401 19P SOCKET XKP3080

I VIDEO ASSY SEMICONDUCTORS

IC3205 LA7213
 IC3203 NJM2279M

Mark No.	Description	Part No.
IC3206, IC3207		NJM2595M
IC3204		NJM2596M
IC3201, IC3202		TC74HC4053AFT
IC3208, IC3209		TK15420M
Q3201-Q3203		2SC4081
Q3204-Q3207		DTC124EUA
D3203		1SS355
D3201, D3202		DAN202K

CAPACITORS

C3254, C3268, C3269 (1000u/10V) ACH7194
 C3204, C3216, C3231 CCSRCH101J50
 C3211, C3225-C3227, C3238-C3240 CCSRCH181J50
 C3242-C3244 CCSRCH181J50
 C3234 CCSRCH330J50
 C3208 CCSRCH470J50
 C3210, C3222, C3224 CEAT100M50
 C3245-C3247, C3249-C3251 CEAT101M16
 C3255-C3257, C3259-C3263, C3270 CEAT101M16
 C3272-C3274, C3282, C3283 CEAT101M16
 C3290, C3291 CEAT101M16
 C3248, C3258, C3271, C3275 CEAT1R0M50
 C3264 CEAT3R3M50
 C3229, C3280, C3281, C3288, C3289 CKSRYB103K50
 C3201, C3212, C3215, C3220, C3228 CKSRYB104K16
 C3230, C3237, C3241 CKSRYB104K16
 C3202, C3203, C3205-C3207 CKSRYB473K50
 C3213, C3214, C3218, C3219 CKSRYB473K50
 C3232, C3233, C3235, C3236 CKSRYB473K50

RESISTORS

Other Resistors RS1/16S###J

OTHERS

JA3204 CMOB. JACK (S+1P) AKB7159
 JA3201-JA3203 COMB. JACK (2S+2P) AKB7160
 CN3202 CONNECTOR B10B-PH-K
 JA3205 1P PIN JACK VKB1156
 CN3201 11P SOCKET XKP3076
 CN3203 15P SOCKET XKP3078

J MAIN CONTROL ASSY SEMICONDUCTORS

IC651 BU1924F
 IC502, IC503 BU4094BCF
 IC202 NJM4558MD
 IC501 PEG040B8
 IC511 TC74VHC08FT
 IC302 TC74VHCT244AFT
 IC103 TC9163AF
 IC201 TC9164AF
 IC104 TC9215AF
 IC101 TC9274F-019
 IC701-IC704 TC94A07F
 IC102, IC105, IC106, IC711-IC714 UPC4570G2-A
 Q651 2SA1036K
 Q101, Q102 2SC3326
 Q653 2SC4081
 Q601 2SD1858X
 Q104, Q105 2SK208

Mark No. Description**Part No.**

Q103, Q106, Q251, Q511
Q107
Q501, Q652

DTA124EUA
DTC124EUA
DTC143EUA

D501, D502, D511, D521-D524
D531, D532, D602, D821, D822
D831, D832
D601

1SS355
1SS355
1SS355
UDZS10(B)

COILS AND FILTERS

L501
L651
⚠ L891-L897
L898, L900-L902

LCYA2R2J2520
LFCA2R2J
QTL1013
QTL1013

CAPACITORS

C113, C114, C125-C127
C151-C153, C201-C203
C725-C727, C745-C747
C765-C767, C785-C787
C103-C112, C115, C116

CCSRCH101J50
CCSRCH101J50
CCSRCH101J50
CCSRCH101J50
CCSRCH221J50

C651, C652
C117, C118, C139, C140
C719, C720, C739, C740
C759, C760, C779, C780
C131, C132, C163, C167

CCSRCH270J50
CCSRCH470J50
CCSRCH680J50
CCSRCH680J50
CEAT100M50

C172, C173, C621, C622
C701, C702, C713, C714
C733, C734, C753, C754
C773, C774
C654

CEAT100M50
CEAT100M50
CEAT100M50
CEAT100M50
CEAT101M10

C303, C304, C602
C211, C212
C506, C513
C505, C655
C503

CEAT101M16
CEAT1R0M50
CEAT221M10
CEAT2R2M50
CEAT331M10

C717, C718, C721, C722
C737, C738, C741, C742
C757, C758, C761, C762
C777, C778, C781, C782
C133, C134

CEAT470M25
CEAT470M25
CEAT470M25
CEAT470M25
CEAT470M50

C511
C748, C749, C768, C769
C788, C789
C510
C601

CEAT471M10
CEVW100M16
CEVW100M16
CKSQYF105Z16
CKSQYF225Z16

C653, C901, C903
C128, C129, C137, C138
C155-C157, C162, C166, C176
C178, C204, C205, C213, C214
C251, C302, C502, C507, C509

CKSRYB102K50
CKSRYB103K50
CKSRYB103K50
CKSRYB103K50
CKSRYB103K50

C514, C515, C535, C540, C598
C711, C712, C723, C724
C731, C732, C743, C744
C751, C752, C763, C764
C771, C772, C783, C784, C891

CKSRYB103K50
CKSRYB103K50
CKSRYB103K50
CKSRYB103K50
CKSRYB103K50

C908
C896, C900, C902
C512, C656
C154, C599, C821, C831
C658

CKSRYB103K50
CKSRYB104K16
CKSRYB472K50
CKSRYB473K50
CKSRYB561K50

C161, C164, C174, C175

CKSRYF104Z25

Mark No. Description**Part No.**

C508 (1.0F/5.5V)

PCH1132

RESISTORS

Other Resistors

RS1/16S###J

OTHERS

X651 (4.332MHZ)
X501 (15.7MHZ)
CN552 10PFFC CONNECTOR
CN601 11P FFC CONNECTOR
CN801 24P FFC CONNECTOR

ASS7004
ASS7032
52045-1045
52045-1145
52045-2445

CN501 32P FFC CONNECTOR
CN201 7P PLUG
CN103 9P PLUG
CN102 13P PLUG
CN101 15P PLUG

52045-3245
AKP7056
AKP7057
AKP7059
AKP7060

CN3, CN351 7P SOCKET
CN2 9P SOCKET
CN502 19P SOCKET
CN302 21P SOCKET
CN551 KR CONNECTOR

AKP7067
AKP7068
AKP7073
AKP7074
B8B-PH-K

CN1 3P PLUG
J602 CONNECTOR ASSY
JA594 REMOTE CONTROL JACK
JA592, JA593 REMOTE CONTROL JACK
551 PCB BINDER

KM250NA3L
PF10PG-B10
RKN1004
RKN1026
VEF1040

JA111-JA113 4P PIN JACK
CN301 21P FFC CONNECTOR
JA591 MINI JACK (4P)

VKB1133
VKN1197
XKN3015

**K MIC & F.OPT IN ASSY
COILS AND FILTERS**

L1601
⚠ L1602, L1603

ATL7002
QTL1013

CAPACITORS

C1601, C1606
C1603
C1611
C1602, C1612, C1614

CCSRCH471J50
CEAL470M16
CKSRYB102K50
CKSRYB103K50

RESISTORS

Other Resistors

RS1/16S###J

OTHERS

CN1601 4P FFC CONNECTOR
J1601 CORD WITH PLUG
JA1601 OPTICAL LINK IN
JA1606 REMOTE CONTROL JACK
CN1602 KR CONNECTOR

52044-0445
ADX7417
GP1FA502RZ
RKN1004
S3B-PH-K

**L MIC AMP ASSY
SEMICONDUCTORS**

⚠ IC4751
IC4752
D4751, D4752

NJM78L05A
UPC4570G2-A
UDZS5R1(B)

CAPACITORS

C4753
C4754
C4751, C4752, C4755-C4757
C4758, C4762-C4765

CCSRCH101J50
CCSRCH330J50
CEAT100M50
CKSRYB473K50

5	6	
Mark No.	Description	Part No.

RESISTORS

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

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

**M DSP CONNECTION ASSY
SEMICONDUCTORS**

IC1651, IC1653	TC74LVX244FT
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COILS AND FILTERS

L1651, L1652	QTL1013
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CAPACITORS

C1651	CKSRYB103K50
C1653	CKSRYB104K16

RESISTORS

Other Resistors	RS1/16S###J
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OTHERS

CN1651	B TO B CONNECTOR 50P	AKP7177
CN1652-CN1654	17P SOCKET	XKP3079

**N POWER AMP IN ASSY
SEMICONDUCTORS**

Q4001	2SC2412K
D4001	1SS355

CAPACITORS

C4002	CKSRYB104K16
C4001	CKSRYB223K50

RESISTORS

Other Resistors	RS1/16S###J
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OTHERS

4001	10P CABLE HOLDER	51048-1000
CN4001	24P FFC CONNECTOR	52044-2445
J12	JUMPER WIRE 10P	D20PYY1010E
CN4004	3PIN CONNECTOR	S3B-EH
CN4003	17P PLUG	XKP3068
CN4002	19P PLUG	XKP3069

**O FAN CONNECTION ASSY
SEMICONDUCTORS**

△IC4701, IC4702	AEK7023
PROTECTOR(200mA)	

OTHERS

4701	9P CABLE HOLDER	51048-0900
CN4701	6P JUMPER CONNECTOR	52147-0610
CN4702	3P TOP POST	B3B-EH
J4701	JUMPER WIRE 9P	D20PYY0915E

7	8	
Mark No.	Description	Part No.

**P FAN DRIVE ASSY
SEMICONDUCTORS**

Q4056	2SA1037K
Q4051	2SC4793D1
Q4052	DTA124EK
Q4055	DTC114EK
Q4053	DTC124EK

△D4051, D4052	1SR154-400
D4058, D4059	1SS355
D4055	UDZS12(B)
D4053	UDZS27(B)
D4057	UDZS5R1(B)

CAPACITORS

C4054	CEAT101M16
C4052	CEAT1ROM50
C4055, C4056	CEAT331M63
C4051	CEAT471M35
C4053	CKSRYB103K50

RESISTORS

Other Resistors	RS1/16S###J
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OTHERS

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

**Q DSP ASSY
SEMICONDUCTORS**

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

IC451	IC61LV25616-12T
IC302	IC61LV6416-12T
IC303	IC63LV1024-12T
△IC901	NJM2391DL1-33
IC601, IC621, IC641, IC661, IC681	NJM4565MD

△IC902	NJU7223DL1-18
IC471	PD8133A
IC701	TC74VHC157FT
IC304	TC74VHCU04FT
IC503, IC705, IC706	TC7SH04FU

IC305	TC7WH125FU
Q681, Q682	2SK208
Q683, Q701, Q971, Q972, Q974	UN5112
Q684, Q702, Q973	UN5212
Q601, Q621, Q641, Q661	XP4506

D681, D682, D721	1SS355
D702	DAN202K
D701, D971, D972	DAP202K
D101-D104	RB501V-40

COILS AND FILTERS

L301-L304, L401, L402, L451	ATL7002
L471, L904, L906, L907	ATL7002
L101-L104, L201-L203	QTL1013
L305, L306, L501, L503, L511	QTL1013
L521, L531, L541, L551, L561	QTL1013

L571, L701, L705, L706	QTL1013
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Mark No. Description**Part No.****Mark No. Description****Part No.****CAPACITORS**

A C339, C340 CCSRCH100D50
C202 CCSRCH150J50
C623, C625, C643-C646 CCSRCH151J50
C663-C666 CCSRCH151J50
C201 CCSRCH220J50

C204, C206, C209, C301, C302
C304, C306, C308, C309, C312
C314, C316, C318, C319
C321, C322, C325, C326
C329, C330, C332, C333, C335

CCSRCH471J50
CCSRCH471J50
CCSRCH471J50
CCSRCH471J50
CCSRCH471J50

B C345, C346, C402, C404-C408 CCSRCH471J50
C410-C418, C420-C422 CCSRCH471J50
C424-C426, C471 CCSRCH471J50
C603-C606 CCSRCH820J50
C111, C112, C502, C522, C542 CEVW100M16

C562, C607, C608, C627, C628
C647, C648, C667, C668
C681, C682
C104, C105, C551, C907, C909
C106

CEVW100M16
CEVW100M16
CEVW100M16
CEVW101M16
CEVW2R2M50

C C901, C902 CEVW330M25
C210, C341, C401 CEVW470M6R3
C212, C614, C618, C624, C626 CKSRYB102K50
C683-C685, C689, C693, C695 CKSRYB102K50
C927 CKSRYB102K50

C337, C343, C349, C429, C503
C619, C620, C677, C678, C701
C711-C716, C747, C921, C922
C941
C101-C103, C205, C207, C208

CKSRYB103K50
CKSRYB103K50
CKSRYB103K50
CKSRYB103K50
CKSRYB104K16

D C211, C305, C307, C310, C311 CKSRYB104K16
C313, C315, C324, C331, C334 CKSRYB104K16
C352, C409, C419, C423, C427 CKSRYB104K16
C451, C452, C501, C521, C541 CKSRYB104K16
C561, C591, C630, C705, C706 CKSRYB104K16

C906, C908 CKSRYB104K16
C303, C338, C348, C403, C599 CKSRYB105K6R3
C702 CKSRYB105K6R3
C109, C110, C622 CKSRYB222K50
C601, C602, C609, C610 CKSRYB332K50

CKSRYB104K16
CKSRYB105K6R3
CKSRYB105K6R3
CKSRYB222K50
CKSRYB332K50

E C621, C641, C642, C661, C662 CKSRYB392K50
C629, C649, C650, C669, C670 CKSRYB472K50
C971 CKSRYB472K50
C926 CKSRYB473K16
C203 CKSRYB474K10

CKSRYB392K50
CKSRYB472K50
CKSRYB472K50
CKSRYB473K16
CKSRYB474K10

C323, C428 CKSRYB563K16
C107, C611-C613, C615 CKSRYF104Z25
C671, C672, C694, C696-C698 CKSRYF104Z25

CKSRYB563K16
CKSRYF104Z25
CKSRYF104Z25

RESISTORS

R851 RAB4C101J
R204, R225, R226, R229, R701 RAB4C104J
R712 RAB4C104J
R221 RS1/16S1802F
Other Resistors RS1/16S###J

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

OTHERS

CN102 B TO B CONNECTOR 50P AKP7176
X201 (24MHz) ASS7025
X301 (33MHz) ASS7040

AKP7176
ASS7025
ASS7040

**R1394 ASSY
SEMICONDUCTORS**

IC302 K4S641632H-TC75
△ IC1 NJM2391DL1-33
IC303 NJU7093AF
IC101 PD5787A
IC301 PD8112A

IC103 PST9245
△ IC410 S-L2980A25MC-C6K
IC401 SM5819AF
IC405 TC74VHC541FT
IC104 TC74VHCT125AFT

IC205 TC7SH08FU
IC404 TC7SZ125FU
IC409 TC7SZ126FU
IC201 TSB43CA42ZGW
Q101, Q301 DTA124EUA

Q401 DTA143EUA
D102 RB501V-40

COILS AND FILTERS

△ L204-L207 ATH7015
L1, L101, L201-L203 ATL7002
L301, L302, L401, L403-L405 ATL7002

CAPACITORS

C329 (10u/6.3V) ACG7046
C2, C401, C428 (220u/6.3V) ACH7195
C242, C243 CCSRCH221J50
C402 CCSRCH471J50
C103, C206, C217, C232, C304 CEVW101M16

C321, C419 CEVW101M16
C113, C211, C213, C215, C216 CKSRYB102K50
C310, C324 CKSRYB102K50
C101, C111 CKSRYB103K50
C1, C102, C104-C110 CKSRYB104K16

C201-C205, C207, C209, C210 CKSRYB104K16
C212, C214, C218-C226, C235 CKSRYB104K16
C241, C246-C249, C301-C303 CKSRYB104K16
C305, C309, C311, C315-C320 CKSRYB104K16
C322, C323, C325, C327, C333 CKSRYB104K16

C404, C405, C408-C412 CKSRYB104K16
C415, C416, C420, C424, C427 CKSRYB104K16
C244, C245, C326 CKSRYB105K6R3
C330 CKSRYB472K50
C328 CKSRYB474K10

RESISTORS

R119, R127-R130, R205 RAB4C101J
R230-R233, R245, R246, R445 RAB4C101J
R122 RAB4C103J
R407 RAB4C221J
R308, R339, R340, R343-R347 RAB4C470J

R350 RAB4C470J
R135-R138, R206, R216 RAB4C472J

Mark No.	Description	Part No.
R220, R221, R223, R234 R238-R240 R302, R402		RAB4C472J RAB4C472J RAB4C680J
R275, R276 R267-R274 R213 Other Resistors		RS1/16S5101F RS1/16S56R0D RS1/16S6341D RS1/16S###J

OTHERS

X101 (6.14MHz) X302 (22.5792MHz) X201 (24.5760MHz) CN101 7P CONNECTOR CN402 10P CONNECTOR	VSS1179 ASS7054 ASS7055 RKN1048 VKN1414
CN401 22P CONNECTOR JA201, JA202 1394 TERMINAL	VKN1426 VKN1800

S DISPLAY ASSY SEMICONDUCTORS

IC3000 IC3002 IC3001 Q3003 Q3001, Q3002	PEG041B RPM7140-H4 TC7W53FU 2SA1037K DTC124EK
Q3000 Q3004 D3002-D3008 D3001 D3009	FMA1A HN1C01FU 1SS355 BR5064X DAN202K
D3011 D3000 D3010	NSPB510-2283 SLI-343DUW UDZS6R2(B)

COILS AND FILTERS

L3000	ATL7002
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SWITCHES AND RELAYS

S3000-S3017	VSG1024
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CAPACITORS

C3003, C3004, C3007, C3024, C3025 C3020, C3021, C3026, C3027 C3028, C3029 C3008, C3012, C3035 C3022, C3023	CCSRCH101J50 CEJQ100M16 CEJQ101M10 CEJQ101M6R3 CEJQ330M25
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C3000-C3002 C3009, C3011, C3032-C3034 C3036, C3037 C3006, C3031 C3010	CKSRYB102K50 CKSRYB103K50 CKSRYB103K50 CKSRYB104K16 CKSRYB153K50
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C3030	CKSRYF104Z50
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RESISTORS

Other Resistors	RS1/16S###J
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OTHERS

X3000 (4.19MHz) 3008 4P CABLE HOLDER 3002 5P CABLE HOLDER 3003 7P CABLE HOLDER CN3007 3P FFC CONNECTOR	ASS7042 51048-0400 51048-0500 51048-0700 52045-0345
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Mark No.	Description	Part No.
CN3004 4P FFC CONNECTOR CN3005 7P FFC CONNECTOR CN3001 11P FFC CONNECTOR CN3006 32P FFC CONNECTOR V3000 FL TUBE		52045-0445 52045-0745 52045-1145 52045-3245 AAV7087
J3008 JUMPER WIRE 4P J3002 JUMPER WIRE 5P J3003 JUMPER WIRE 7P 3001 FL HOLDER		D20PYY0415E D20PYY0510E D20PYY0715E VNF1085

T VOLUME ASSY SWITCHES AND RELAYS

S3401 S3402-S3404	ASX7037 VSG1024
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CAPACITORS

C3401, C3402	CKSRYB103K50
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RESISTORS

Other Resistors	RS1/16S###J
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OTHERS

CN3401 5P JUMPER CONNECTOR	52147-0510
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U MULTI JOG ASSY SWITCHES AND RELAYS

S3451 S3452-S3455	ASX7038 VSG1024
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CAPACITORS

C3451, C3452	CKSRYB103K50
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RESISTORS

Other Resistors	RS1/16S###J
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OTHERS

CN3451 7P JUMPER CONNECTOR 3452 3P CABLE HOLDER J3452 JUMPER WIRE	52147-0710 51048-0300 D20PYY0310E
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V HEADPHONE ASSY CAPACITORS

C1951, C1952	CKSRYB392K50
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RESISTORS

Other Resistors	RS1/16S###J
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OTHERS

CN1951 3P FFC CONNECTOR 1951 PHONE JACK KN1951 EARTH METAL FITTING	52045-0345 AKN7029 VNF1084
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W POWER AMP-L ASSY SEMICONDUCTORS

△ IC4101, IC4201, IC4301 △ IC4102, IC4202, IC4302 △ IC4103, IC4203, IC4303, IC4453 Q4102, Q4202, Q4302 Q4101, Q4201, Q4301	PA9009A PBD001A PBD002A 2SA1255 2SC3326
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Mark No. Description Part No.

D4102, D4104-D4107, D4202 1SS355
 D4204-D4207, D4302, D4304-D4307 1SS355
 D4101, D4103, D4201, D4203, D4301 UDZS10(B)
 D4303 UDZS10(B)

CAPACITORS

C4106, C4107, C4206, C4207 ACG7041
 C4306, C4307 (220u/100V) ACG7041
 C4102, C4202, C4302 CCSRCH331J50
 C4112, C4113, C4212, C4213 CCSRCH6R0D50
 C4312, C4313 CCSRCH6R0D50

C4114, C4214, C4314 CEANP1R0M50
 C4401, C4402 CEAT331M63
 C4110, C4111, C4210, C4211 CEHAT100M2A
 C4310, C4311 CEHAT100M2A
 C4101, C4201, C4301 CEHAT100M50

C4103, C4203, C4303 CEHAT331M10
 C4104, C4105, C4204, C4205 CEHAT470M63
 C4304, C4305 CEHAT470M63
 C4108, C4109, C4208, C4209 CEHAZL470M25
 C4308, C4309 CEHAZL470M25

RESISTORS

△ R4131, R4132, R4231, R4232 ACN7107
 △ R4331, R4332, R4482 (0.1) ACN7107
 △ R4119, R4219, R4319 (0.22/5W) ACN7121
 R4112, R4212, R4312 RN1/10SE3302D
 Other Resistors RS1/16S###J

OTHERS

Y2 LEAD WITH HOUSING ADX7398
 Y3 LEAD WITH HOUSING ADX7399
 Y5 LEAD WITH HOUSING ADX7404
 CN4403 3P TOP POST B3B-EH
 CN4456 10P PLUG KM250NA10L
 KN4401, KN4402 VNF1084
 ERATH METAL FITTING
 CN4401 17P SOCKET XKP3079

X POWER AMP-R ASSY**SEMICONDUCTORS**

△ IC4151, IC4251, IC4351 PA9009A
 △ IC4152, IC4252, IC4352, IC4452 PBD001A
 △ 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 UDZS10(B)
 D4353 UDZS10(B)

CAPACITORS

C4156, C4157, C4256, C4257 ACG7041
 C4356, C4357 (220u/100V) ACG7041
 C4152, C4252, C4352 CCSRCH331J50
 C4162, C4163, C4262, C4263 CCSRCH6R0D50
 C4362, C4363 CCSRCH6R0D50

C4164, C4264, C4364 CEANP1R0M50
 C4405 CEAT331M10
 C4403, C4404 CEAT331M63
 C4160, C4161, C4260, C4261 CEHAT100M2A
 C4360, C4361 CEHAT100M2A

Mark No. Description Part No.

C4151, C4251, C4351 CEHAT100M50
 C4153, C4253, C4353 CEHAT331M10
 C4154, C4155, C4254, C4255 CEHAT470M63
 C4354, C4355 CEHAT470M63
 C4158, C4159, C4258, C4259 CEHAZL470M25

C4358, C4359

CEHAZL470M25

RESISTORS

△ R4181, R4182, R4281, R4282 ACN7107
 △ R4381, R4382, R4481 (0.1) ACN7107
 △ R4169, R4269, R4369 (0.22/5W) ACN7121
 R4162, R4262, R4362 RN1/10SE3302D
 Other Resistors RS1/16S###J

OTHERS

Y1 LEAD WITH HOUSING ADX7397
 Y4 LEAD WITH HOUSING ADX7400
 Y6 LEAD WITH HOUSING ADX7404
 CN4454 10P PLUG KM250NA10L
 KN4403, KN4404 VNF1084
 EARTH METAL FITTING
 CN4402 19P SOCKET XKP3080

Y POWER AMP-C ASSY**SEMICONDUCTORS**

△ IC4451 PA9009A
 Q4452 2SA1255
 Q4451 2SC3326
 D4452, D4454-D4457 1SS355
 D4451, D4453 UDZS10(B)

CAPACITORS

C4456, C4457 (220u/100V) ACG7041
 C4452 CCSRCH331J50
 C4462, C4463 CCSRCH6R0D50
 C4464 CEANP1R0M50
 C4460, C4461 CEHAT100M2A
 C4451 CEHAT100M50
 C4453 CEHAT331M10
 C4454, C4455 CEHAT470M63
 C4458, C4459 CEHAZL470M25

RESISTORS

△ R4469 (0.22/5W) ACN7121
 R4462 RN1/10SE3302D
 Other Resistors RS1/16S###J

OTHERS

CN4453, CN4455 10P SOCKET KP250NA10

Z REGULATOR ASSY**SEMICONDUCTORS**

△ IC2411 AEK7003
 △ IC2409 NJM78L05A
 IC2410 NJM78L05A
 △ IC2404, IC2405 NJM78M05FA
 △ IC2403 NJM78M12FA

△ IC2401 NJM78M15FA
 △ IC2407 NJM78M56FA
 △ IC2406 NJM79M05FA
 △ IC2402 NJM79M15FA
 △ Q2401 2SA1803

Mark No.	Description	Part No.
Q2402		2SA1803
△ D2401-D2404, D2407-D2410		1SR154-400
△ D2418, D2419		1SR154-400
△ D2415		D3SBA20(B)
D2405, D2406, D2413, D2414		RB501V-40
D2420		UDZS10(B)
D2421, D2422		UDZS15(B)
D2423, D2424		UDZS6R2(B)

CAPACITORS

C2401, C2402 (3300u/35V)	ACH7191
C2433 (4700u/16V)	ACH7192
C2446	CCSRCH101J50
C2440	CEANP470M35
C2415, C2416	CEAT101M16

C2408	CEAT101M25
C2405, C2406, C2410, C2429	CEAT221M35
C2411, C2412	CEAT222M16
C2435, C2438	CEAT2R2M50
C2443	CEAT331M10

C2442	CEAT470M50
C2441	CEAT470M63
C2436, C2439	CEAT471M16
C2451, C2452	CKSRYB102K50
C2403, C2404, C2407, C2409	CKSRYB103K50

C2413, C2414, C2428, C2434, C2437	CKSRYB103K50
C2453, C2499	CKSRYB103K50
C2424	CKSRYB473K50
C2444	CQMBA104J50

RESISTORS

R2403	RD1/4MUF121J
R2401, R2402	RD1/4MUF470J
R2499	RS3LMF101J
R2496	RS3LMF470J
Other Resistors	RS1/16S###J

OTHERS

2402 7P CABLE HOLDER	51048-0700
CN2401 8P JUMPER CONNECTOR	52147-0810
Y2401 BOARD IN JUMPER	ADX7420
CN2403 4P PLUG	KM200TA4
CN2415 3P SOCKET	KP250NA3

KN2401-KN2403	VNF1084
EARTH METAL FITTING	
CN2411, CN2412 7P PLUG	XKP3063
CN2406, CN2414 9P PLUG	XKP3064
CN2405 11P PLUG	XKP3065

CN2407-CN2409 17P PLUG	XKP3068
CN2404, CN2413 19P PLUG	XKP3069
CN2410 21P PLUG	XKP3070

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

Mark No.	Description	Part No.
SWITCHES AND RELAYS		
	RY4601-RY4605	ASR7014

CAPACITORS

△ C4621, C4622	ACH7217
C4623	CEAT101M50
C4601-C4614	CFTNA224J50
C4625-C4631	CQMBA103J50

RESISTORS

△ R4621-R4627	RD1/2LMF4R7J
R4628-R4632	RD1/2VM331J
R4615, R4616	RD1/4MUF473J
△ R4601-R4607	RS1LMF4R7J
△ R4613, R4614	RS1LMF471J
△ R4611, R4612	RS2LMF331J

Other Resistors

RS1/16S###J

OTHERS

4601 6P CABLE HOLDER	51048-0600
4602 8P CABLE HOLDER	51048-0800
Y13 BOARD IN JUMPER	ADX7291
CN4611 8P SPEAKER TERMINAL	AKE7101
CN4612 6P SPEAKER TERMINAL	AKE7102
J4602 JUMPER WIRE 8P	D20PYY0830E
CN4610, CN4613 5P PLUG	KM200TA5

AB DIODE ASSY SEMICONDUCTORS

△ D2241, D2242	LN6SB60-4003
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AC TRANS 2-1 ASSY SEMICONDUCTORS

△ IC2201, IC2202 PROTECTOR(3.15A)	AEK7016
Q2201	DTC143EUA
Q2202	RN4903
△ D2201	S1WB(A)60SD
D2202	UDZS16(B)

D2207, D2208	UDZS22(B)
D2203-D2206, D2209-D2212	UDZS9R1(B)

CAPACITORS

△ C2202, C2203 (81u/100V)	ACH1237
C2207, C2208 (470u/71V)	ACH7193
C2209, C2210	CEAT101M63
C2211, C2212	CEAT221M63

RESISTORS

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

OTHERS

2201, 2202 6P CABLE HOLDER	51048-0600
2203 6P CABLE HOLDER	51052-0600
H2201-H2204 FUSE CLIP	AKR1004
J2201 JUMPER WIRE 6P	D20PYY0615E
J10 JUMPER WIRE	D25PYY0607E

AD VH TR ASSY SEMICONDUCTORS

△ Q2232	2SA1837D1
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Mark No. Description Part No.

△ Q2231 2SC4793D1
 △ D2231, D2232 1SR154-400

A RESISTORS
Other Resistors RS1/16S###J

OTHERS
 CN2231 6P LTYPE CONNECTOR KPD6L

AE TRANS2-2 ASSY SEMICONDUCTORS

△ IC2251, IC2252 PROTECTOR(3.15A) AEK7016
 △ IC2253 PROTECTOR(5A) AEK7019

B CAPACITORS
C2251-C2253 CQMBA104J50

RESISTORS
 △ R2251, R2252 RD1/4MUF100J

OTHERS
 2251 7P CABLE HOLDER 51048-0700

AF TRANS 1 ASSY

C TRANS1 ASSY has no service parts.

AG PRIMARY ASSY SEMICONDUCTORS

△ IC2001 NJM78M56FA
 Q2001 KRC101M
 D2002, D2004, D2005 1SS355
 △ D2001 S1WB(A)60SD
 D2003 UDZS5R1(B)

COILS AND FILTERS
 L2002, L2003 FERRITE BEAD VTH1013
 △ L2001 LINE FILTER XTF3004

TRANSFORMERS
 △ T2001 ATT7040

SWITCHES AND RELAYS
 △ RY2001 ASR7025

CAPACITORS
 △ C2001, C2002 (0.01u/275V) ACE7013
 △ C2003 (10000pF/250V) ACG7033
 C2008 CEAT102M25
 C2009 CEAT221M25
 C2005-C2007, C2011, C2012 CKSRYB103K50
 C2004 CQMA103J50

RESISTORS
 R2002 RD1/2VM101J
 Other Resistors RS1/16S###J

OTHERS
 CN2002 11P FFC CONNECTOR 52045-1145
 △ 2007 AC INLET ASSY ADX7464
 △ CN2005 1P AC OUTLET AKP1034
 H2001, H2002 FUSE CLIP AKR7001
 CN2003, CN2004 5P SOCKET KP200TA5L

Mark No. Description Part No.

KN2001 EARTH METAL FITTING VNF1084

AH VIDEO CONVERT ASSY SEMICONDUCTORS

IC3505 BU4094BCF
 IC3501 MM1093NF
 △ IC3507 NJM78L09A
 IC3514 TA1270BF
 IC3506 TA8772AN

IC3504 TC74HC4053AFT
 IC3502, IC3503 TC74LVX4053FT
 IC3508 TC90A49F
 IC3509-IC3513 TK15420M
 Q3501, Q3502 2SA1576A

△ Q3507 2SA1576A
 △ Q3503 2SC4081
 Q3504-Q3506, Q3508, Q3509 2SC4081
 Q3510, Q3511 DTC124EUA

COILS AND FILTERS
 L3507 ATL7002
 L3502, L3503, L3505, L3506, L3508 LAU100J
 L3501 LAU1R0J
 L3504 LAU270J

CAPACITORS
 C3515, C3522, C3537 CCSRCH100D50
 C3519 CCSRCH101J50
 C3578, C3579 CCSRCH120J50
 C3517 CCSRCH181J50
 C3552 CCSRCH390J50

C3507 CCSRCH391J50
 C3542 CCSRCH560J50
 C3510 CCSRCH6R0D50
 C3615, C3616, C3620, C3625-C3627 CEVW100M16
 C3646 CEVW100M16

C3613, C3617-C3619, C3621 CEVW101M16
 C3623, C3624, C3628-C3634, C3639 CEVW101M16
 C3641-C3644, C3647 CEVW101M16
 C3609, C3635-C3637 CEVW1R0M50
 C3638, C3640 CEVW2R2M50

C3611, C3614, C3645 CEVW470M16
 C3610, C3612, C3622 CEVW4R7M35
 C3509 CKSRYB102K50
 C3504-C3506, C3508, C3511, C3513 CKSRYB103K50
 C3516, C3523-C3527, C3530, C3531 CKSRYB103K50

C3533-C3536, C3538, C3539, C3541 CKSRYB103K50
 C3550, C3551, C3559, C3563 CKSRYB103K50
 C3568, C3569, C3571-C3575, C3582 CKSRYB103K50
 C3588, C3590, C3591, C3595-C3597 CKSRYB103K50
 C3599, C3604, C3607 CKSRYB103K50

C3501-C3503, C3521, C3553-C3558 CKSRYB104K16
 C3581, C3583-C3586, C3589, C3594 CKSRYB104K16
 C3598, C3600, C3603, C3605, C3606 CKSRYB104K16
 C3545-C3547 CKSRYB105K6R3
 C3514 CKSRYB122K50

C3576 CKSRYB222K50
 C3587 CKSRYB223K50
 C3577 CKSRYB224K10
 C3540, C3601, C3602 CKSRYB474K10
 C3512 CKSRYB561K50

5	6
Mark No.	Description Part No.

6. ADJUSTMENT

There is no information to be shown in this chapter.

RESISTORS

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

OTHERS

CN3501 13P PLUG	AKP7059
CN3502 15P PLUG	AKP7060
X3503 (3.579545MHz)	ASS1091
X3501, X3502 (4.433619MHz)	ASS1092
X3504 (503kHz)	ASS7036
3501, 3502 SCREW PLATE	VNE1948

A MECHA SW ASSY SWITCHES AND RELAYS

S2491	ASG1035
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CAPACITORS

C2491, C2492	CKSRYB103K50
--------------	--------------

OTHERS

CN2491 3P JUMPER CONNECTOR	52147-0310
----------------------------	------------

FM/AM TUNER UNIT

FM/AM TUNER UNIT has no service parts.

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

12V_DET (pin 2)

Input port : To detect 12V trigger

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

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

① Fan control

1) Fan control

TEMPIN	Temperature (°C)	Fan	Remarks
More than 191	More than 100	ON	Mute ON & speaker relay OFF : The warning indication "OVERHEAT" Leading hold Mute OFF & speaker relay ON : Normal mode
175 to 190	90 to 100	ON	
156 to 174	80 to 90	ON	
134 to 155	70 to 80	Leading hold	
Less than 133	Less than 70	OFF	

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 1 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.

3) Thermistor open detection

If a total (total of 50 times) of A/D value (TEMPIN) for one second is less than 250, the indication "THDCT NG" flashes.

If this status continues for 3 seconds, the power becomes the standby mode.

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 STREAM DIRECT key are both held pressed for 2 seconds.

(It is effective only when turned the power off with DC detection regarding step 2.)

④ Diagnostic mode

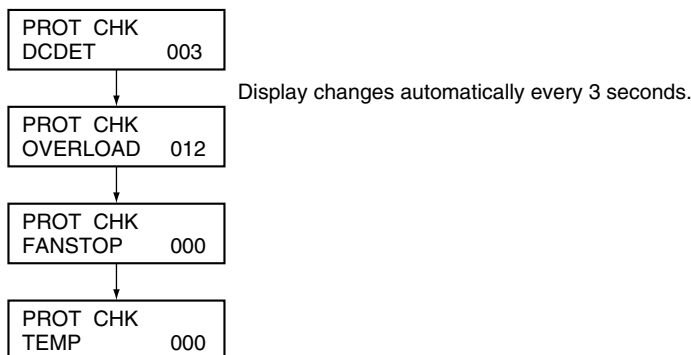
This mode is only for servicing and checking the circuit design, and not open to users.

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	Detect temperature more than 100°C.	Turns muting on and speaker relay off. Rotate the fan	Continue flashing with "OVERHEAT"	
		Detect temperature of 90 to 100°C.	Rotate the fan		Mute, relay and warning indications is leading hold.
		Detect temperature of 74 to 90°C.	Rotate the fan		Mute off & relay on (normal mode)
		Detect temperature of 69 to 74°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.
12V trigger	To detect the shortcircuit of 12V trigger circuit	Detects when the 12V_DET port becomes "H".	Turns 12V_TRG port to "L", then turns off the 12V output.	Flashing "12V TRI ERR"	Only a fan that is assigned 12V TRIG is valid. Release the FL indication with the power on/off.

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).**

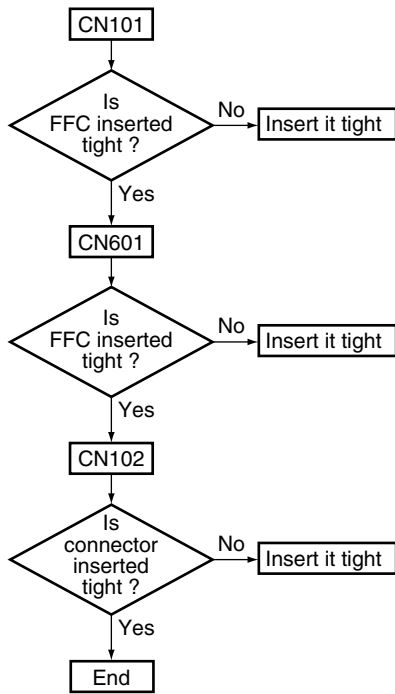
About parts with damaged possibility, explain FL ch to an example in order.

1. R4131, 4132 (ACN7107: 0.1 Ω , 1W chip drain resistor)
IC 4102, 4103
(PBD001A: Nch, PBD002A: Pch output POWER MOS Tr.)
2. R4119 (ACN7111: 0.22 Ω .5W \times 2 cement source resistor)
R4117, 4118
(RS1/16S471J: 470 Ω 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 Ω chip gate resistor)
R4106, 4107
(RS1/16S101J: 100 Ω 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)

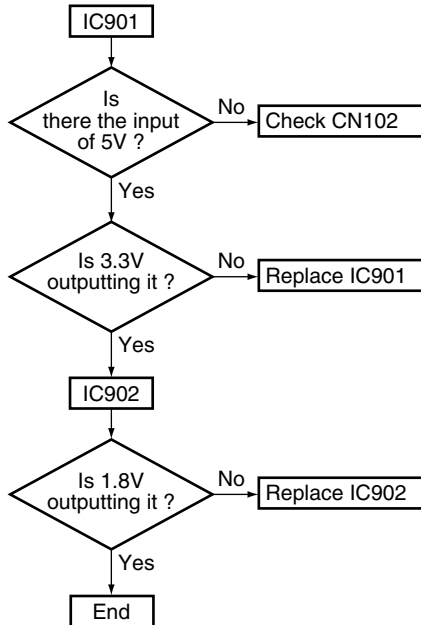
7.1.3 TROUBLE SHOOTING

- 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.

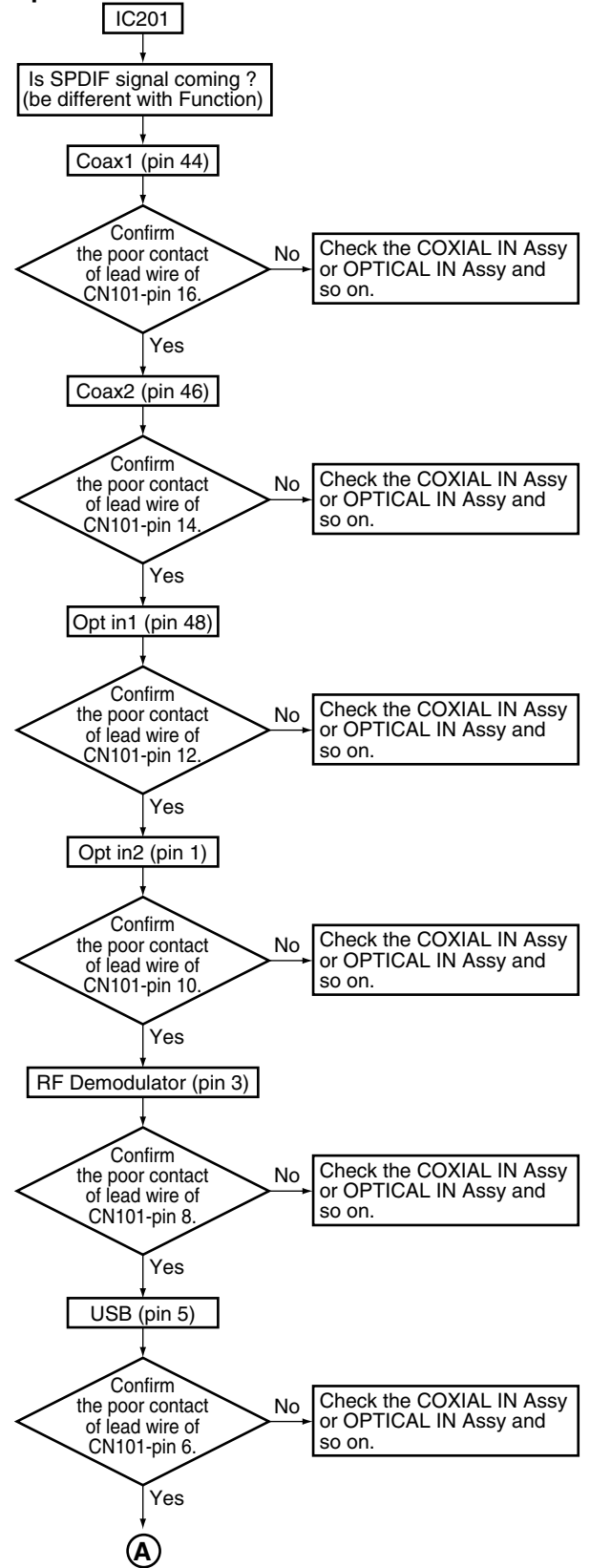
Step 1



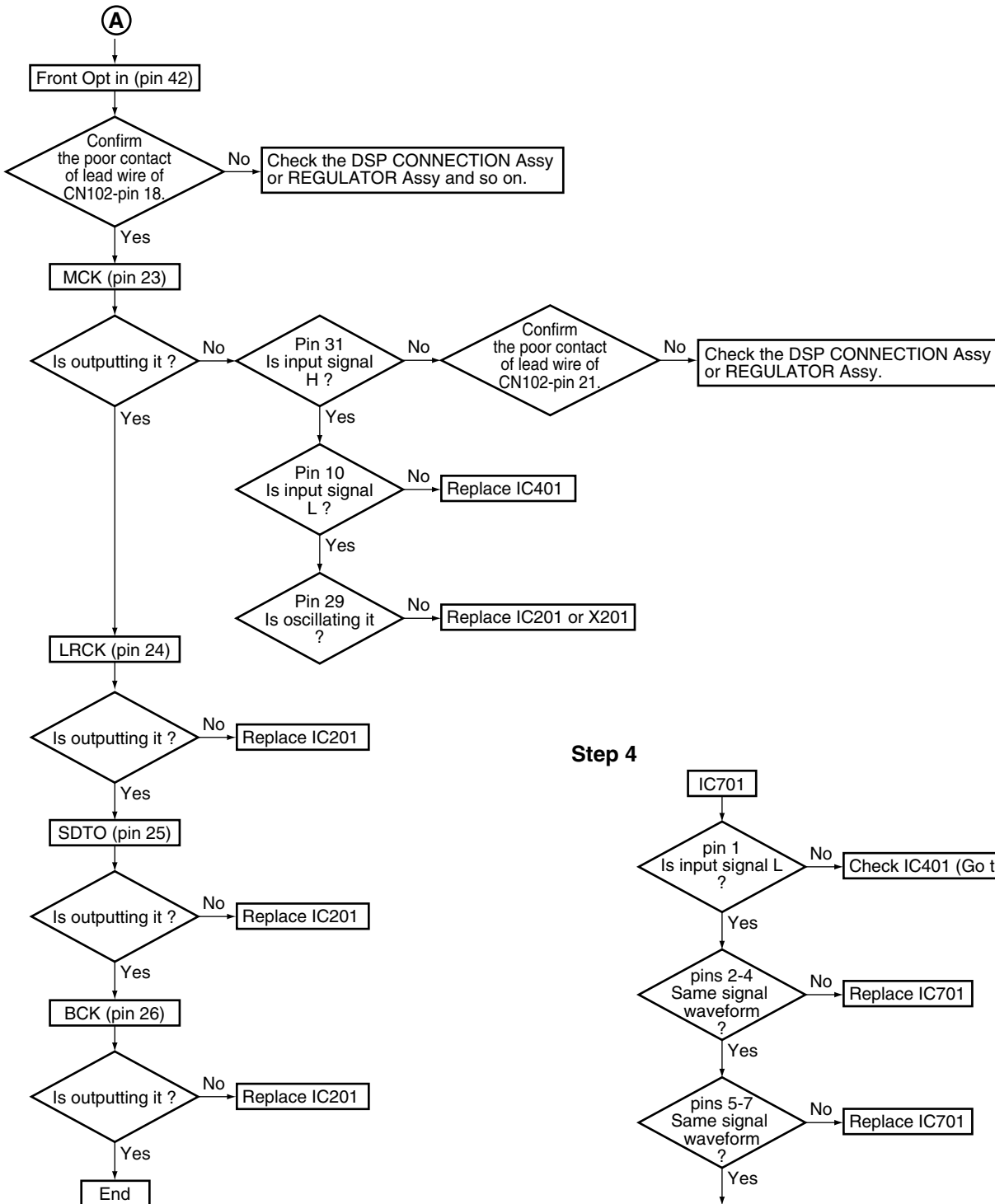
Step 2



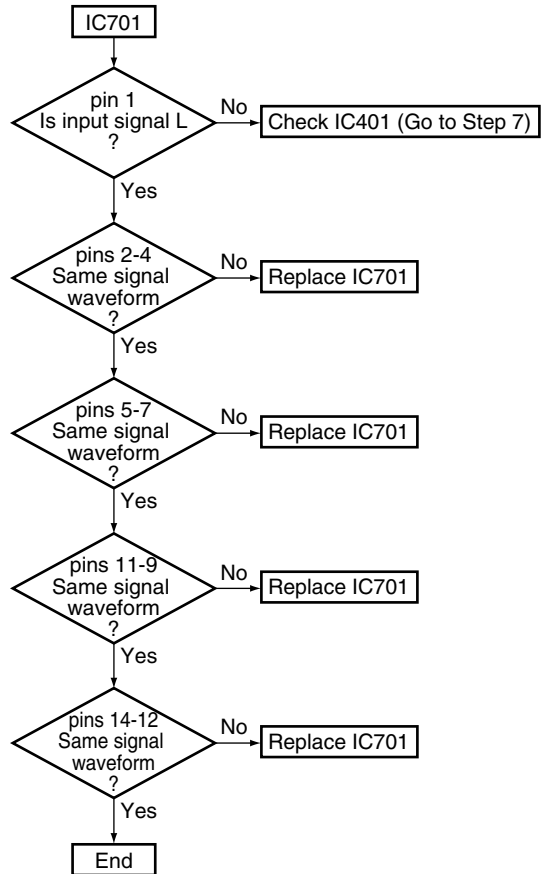
Step 3



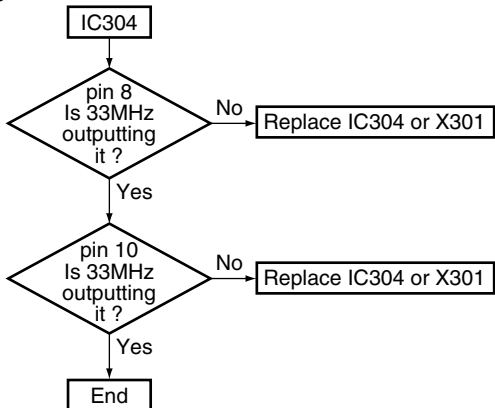
A
B
C
D
E
F



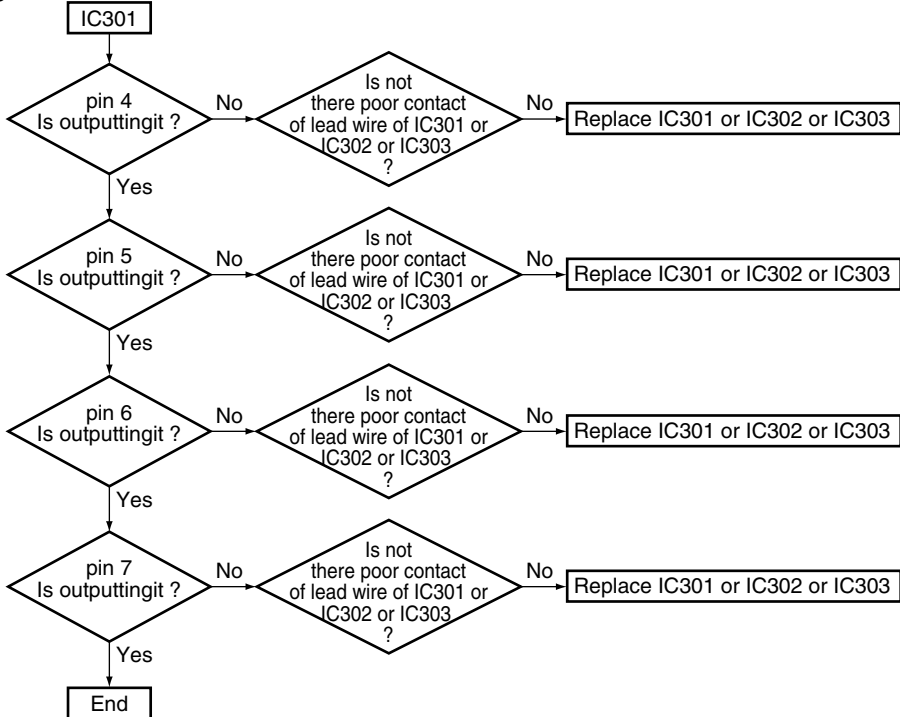
Step 4



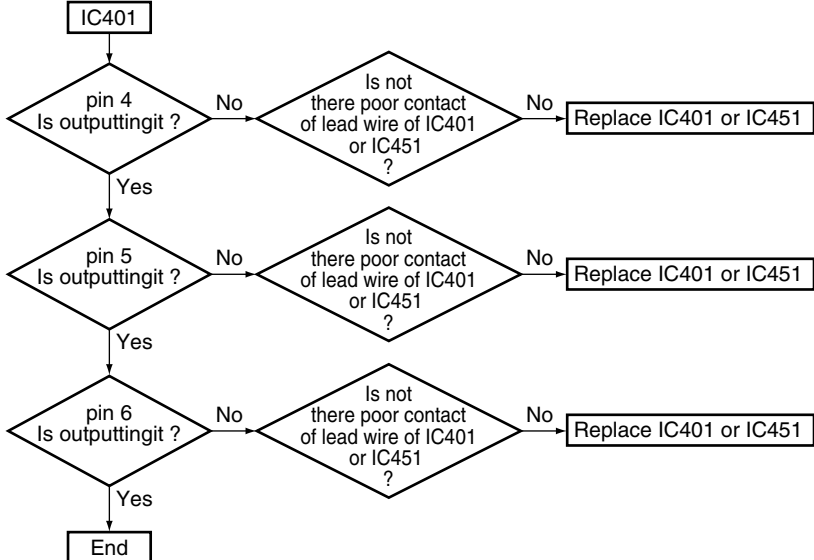
Step 5



Step 6

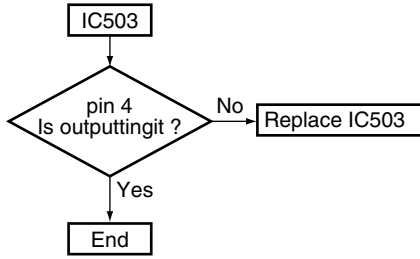


Step 7



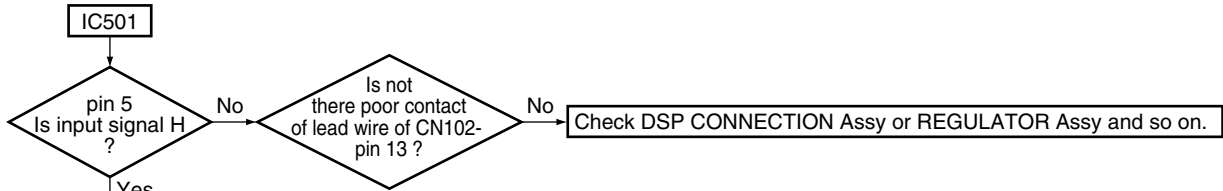
Step 8

A

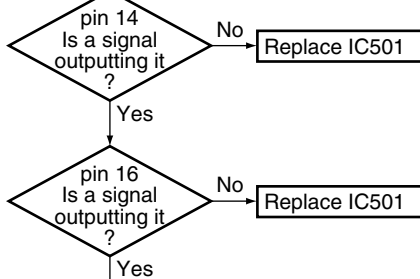


Step 9

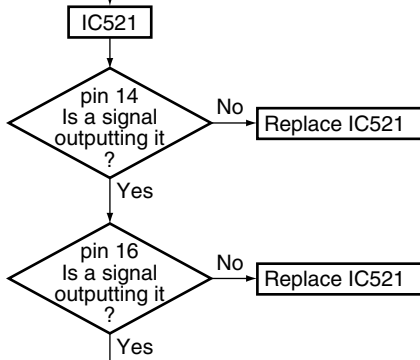
B



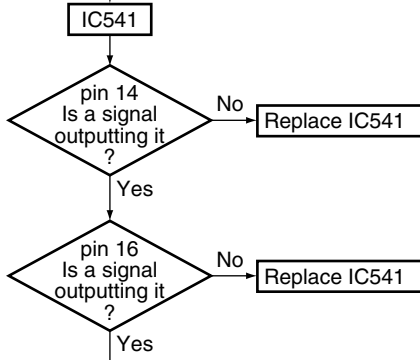
C



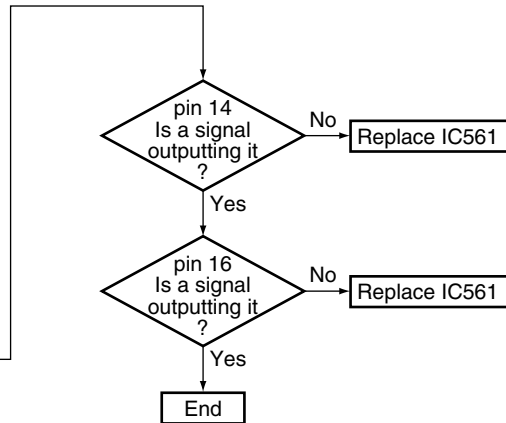
D



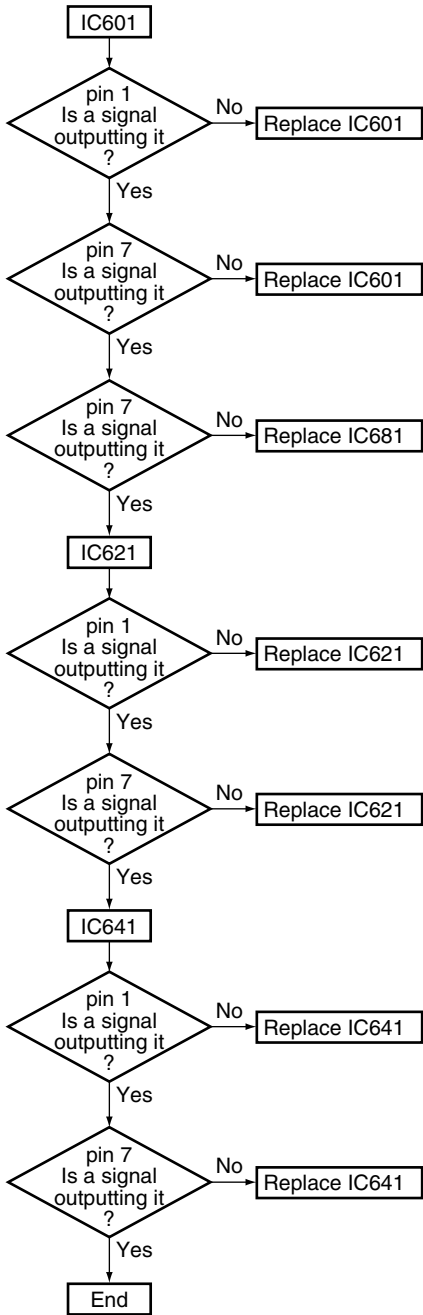
E



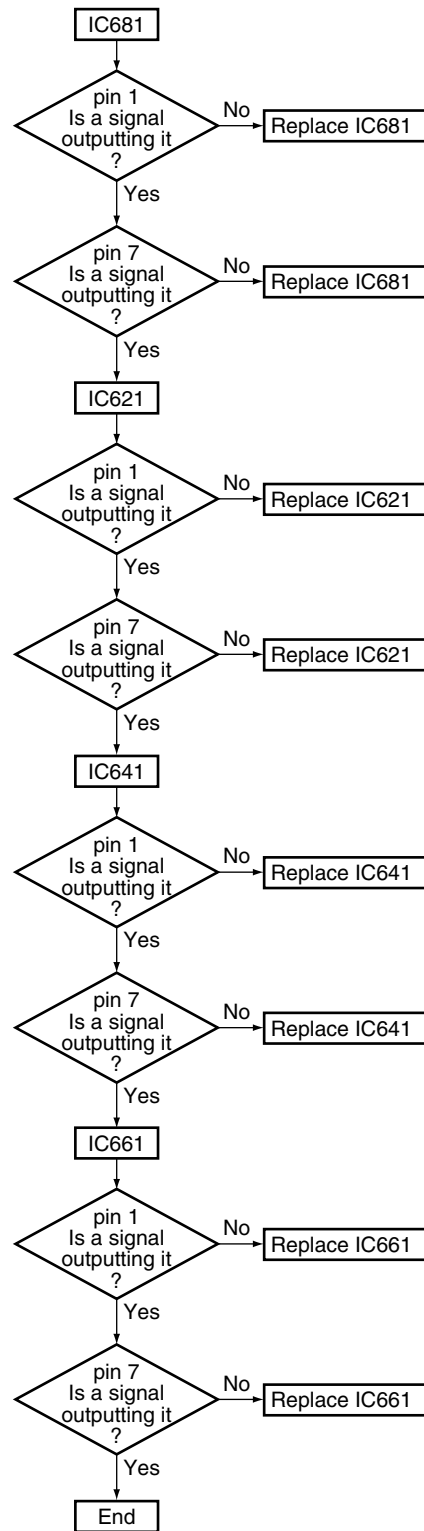
F



Step 10



Step 11



A
B
C
D
E
F

7.1.4 OUTLINE OF THE 1394 UNIT

●Operational Outline of the IEEE 1394 Unit

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

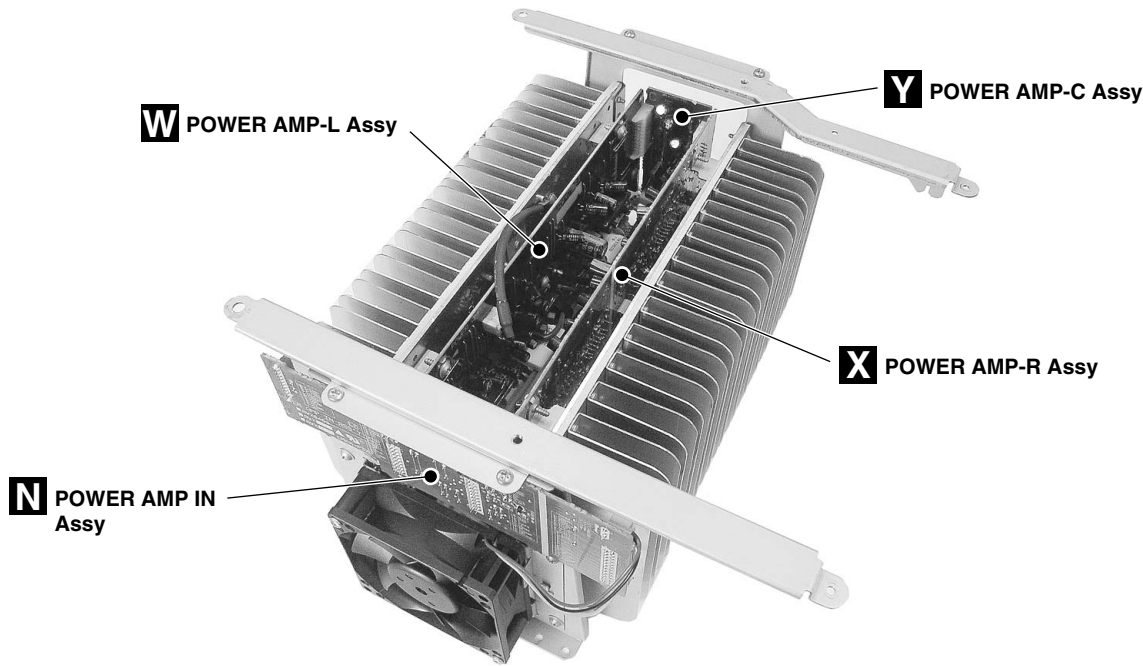
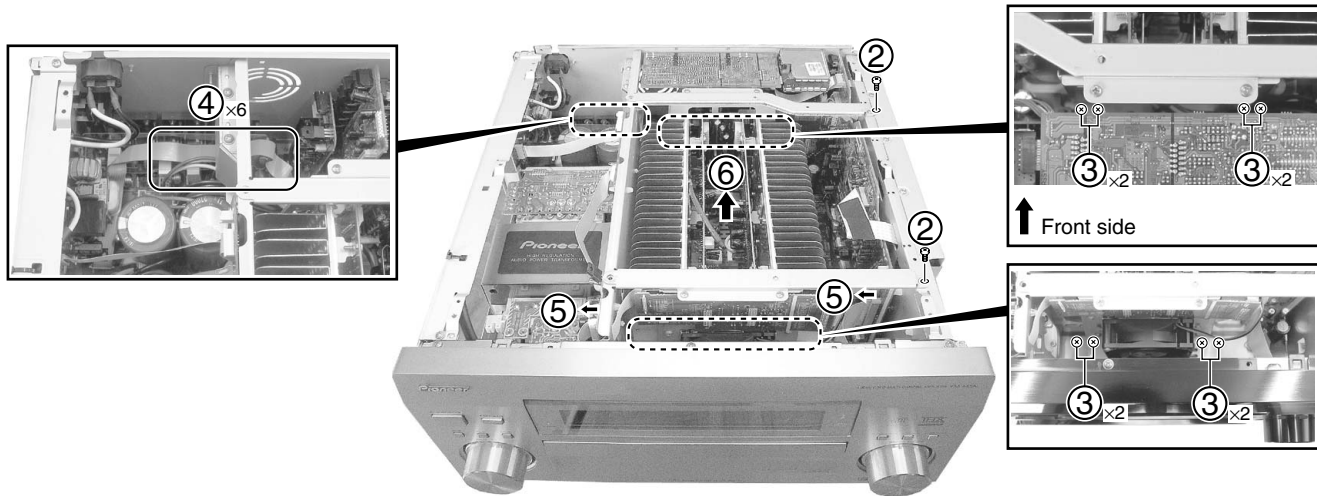
Note: If downloading of the GUID cannot be performed for corrective measures for messages 1 and 2, replace the host board with a new one.

7.1.5 DISASSEMBLY

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

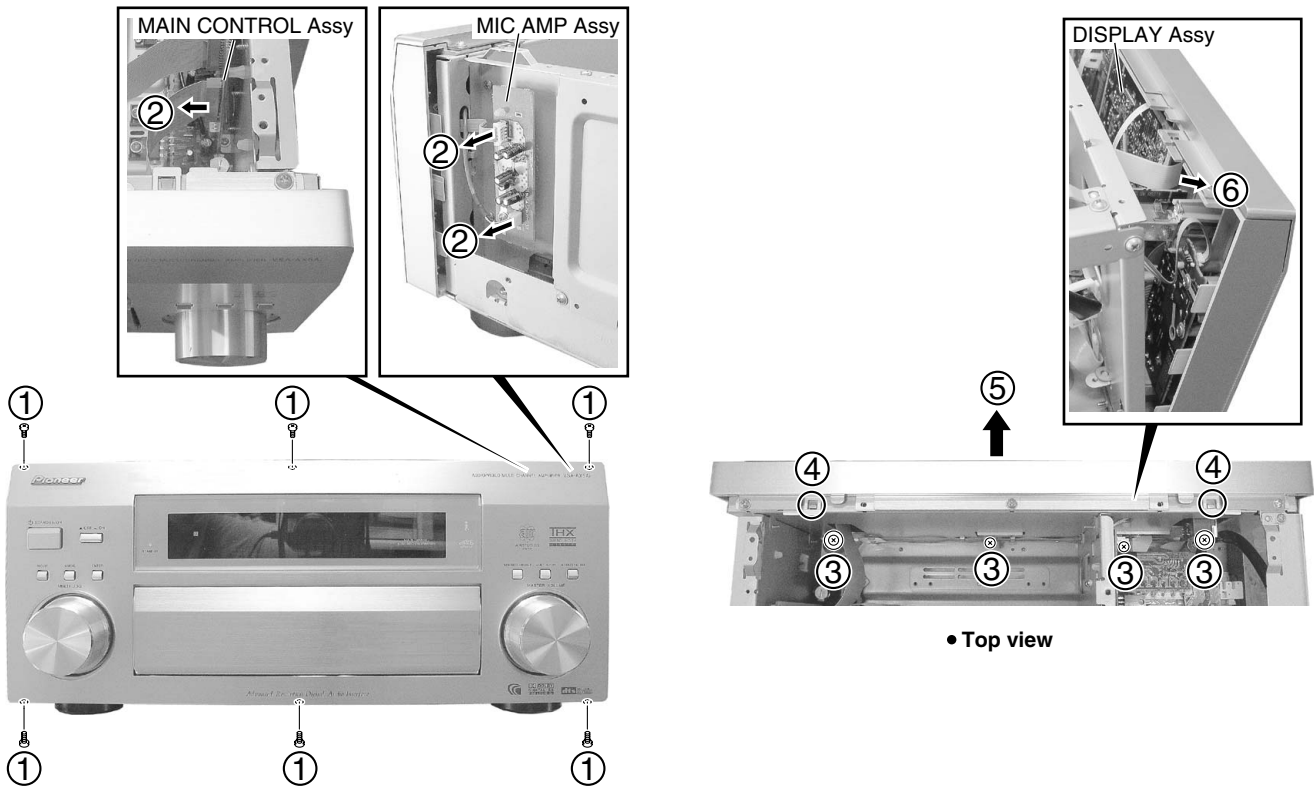
1 Bonnet Case 56S and Heatsink Section

- ① Remove the bonnet case 56S by removing the 23 screws.
- ② Remove the two screws.
- ③ Remove the eight screws.
- ④ Disconnect the six connectors.
- ⑤ Disconnect the one flexible cable and the one connector.
- ⑥ Remove the heatsink section.

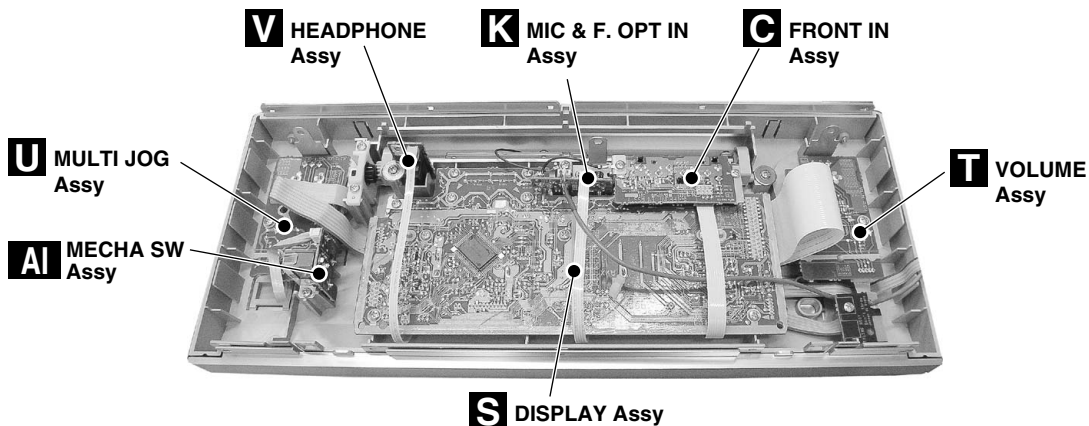


2 Front Panel Section

- ① Remove the six screws.
- ② Disconnect the one flexible cable and the two connectors.
- ③ Remove the four screws.
- ④ Unhook the two hooks.
- ⑤ Remove the front panel section.
- ⑥ Disconnect the one flexible cable.

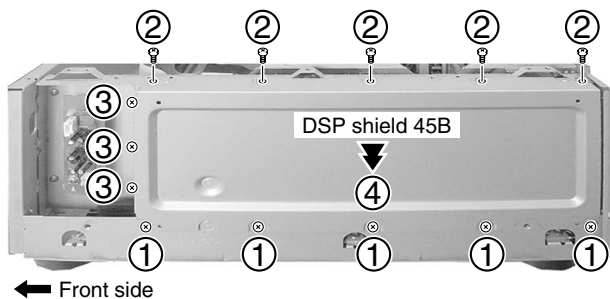


• Top view

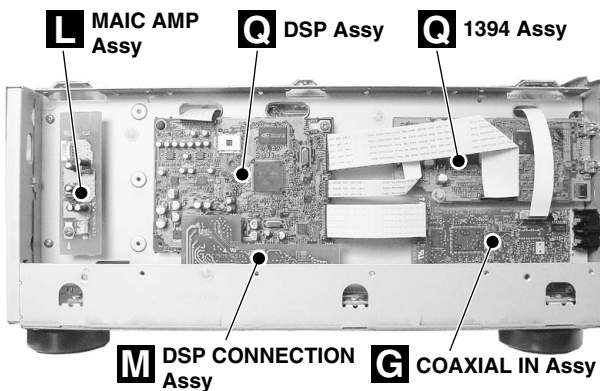


3 DSP Section

- ① Remove the five screws.
- ② Remove the five screws.
- ③ Remove the three screws.
- ④ Remove the DSP shield 45B.



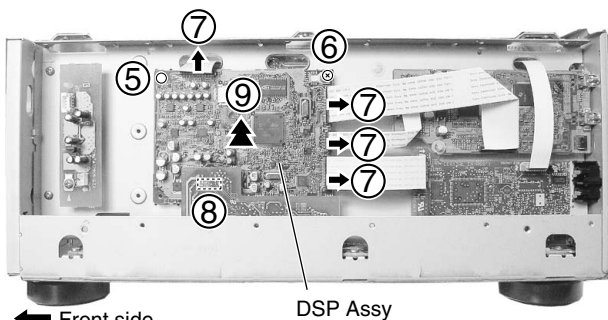
← Front side



← Front side



- ⑤ Remove the one nylon rivet.
- ⑥ Remove the one screw.
- ⑦ Disconnect the four flexible cables.
- ⑧ Disconnect the one connector.
- ⑨ Remove the DSP Assy.

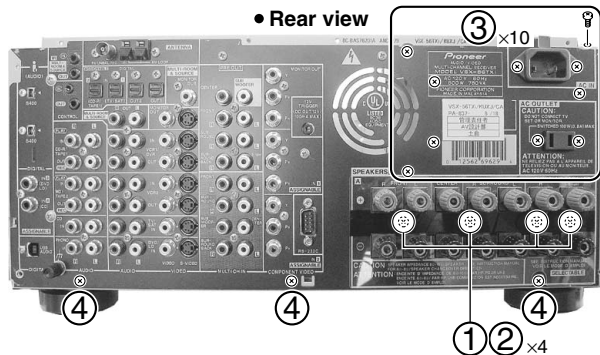


← Front side



4 Rear Panel and Main Sections

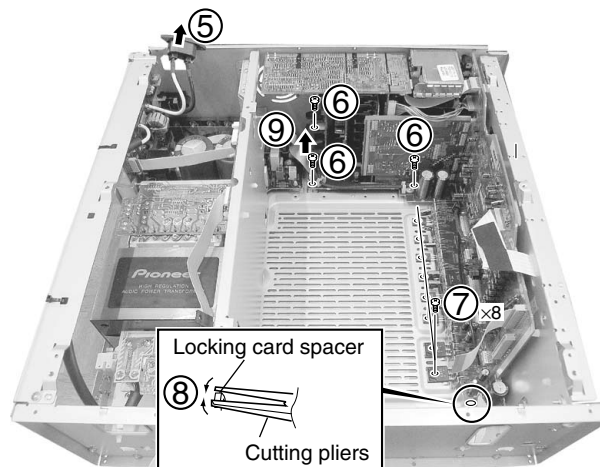
- ① Remove the four cushion circle 16B.
- ② Remove the four screws.
- ③ Remove the ten screws.
- ④ Remove the three screws.



• Rear view



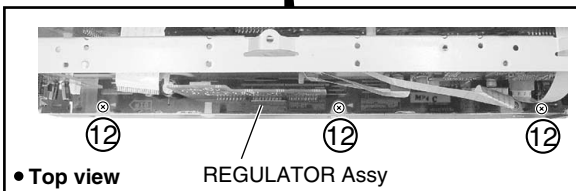
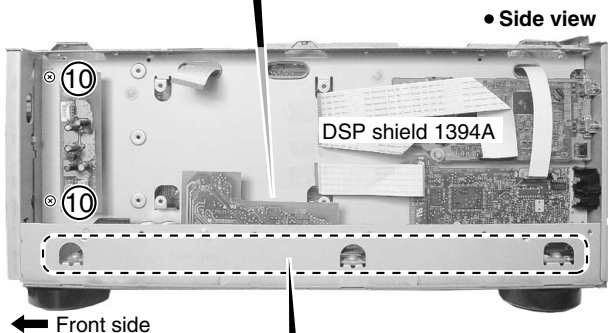
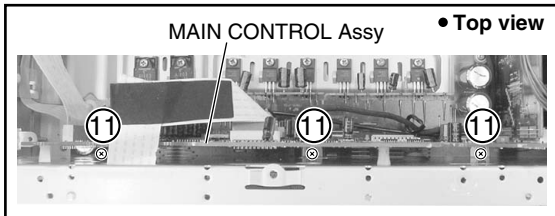
- ⑤ Remove the AC IN socket.
- ⑥ Remove the three screws.
- ⑦ Remove the eight screws.
- ⑧ Remove the locking card spacer.
- ⑨ Disconnect the one connector.



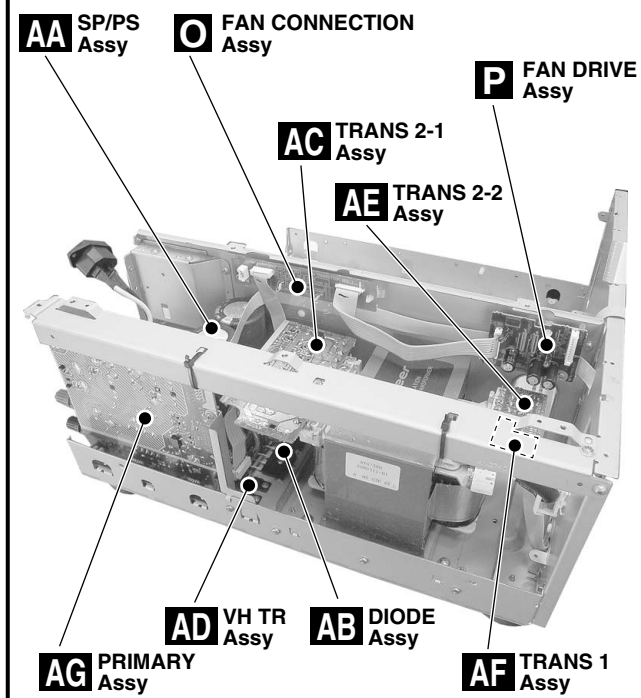
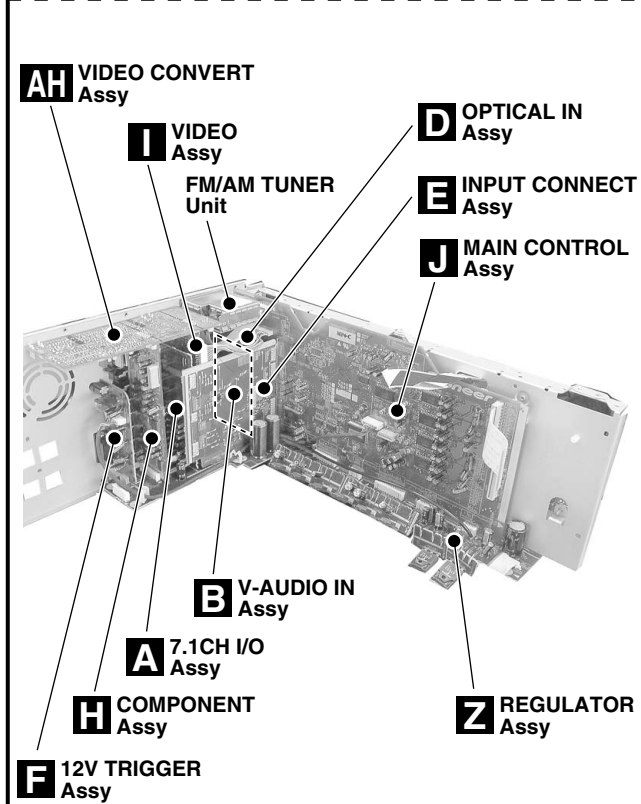
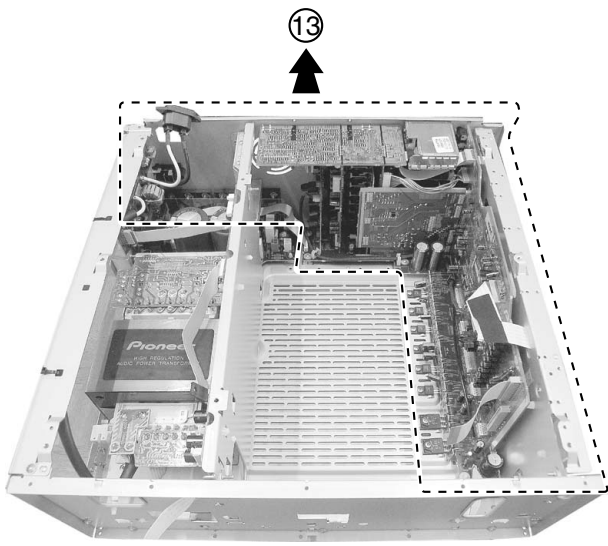
Locking card spacer
Cutting pliers



- ⑩ Remove the two screws.
- ⑪ Remove the three screws.
- ⑫ Remove the three screws.



- ⑬ Remove the rear panel section with the main section.



How to Diagnose the Unit with the Heatsink Section Removed

With the following method, the Assys that cannot be diagnosed while the unit is powered because the Heatsink Section obstructs access to them can be diagnosed.

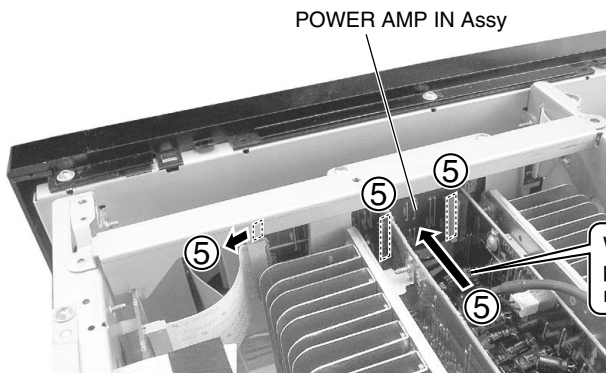
Notes:

1. This method is merely an expedient way of diagnosing sections that are difficult to access, such as the MAIN CONTROL Assy and REGULATOR Assy. Diagnoses involving the Power Amplifier section, such as DC detection, are not possible with this method, nor are diagnoses regarding temperature detection.
2. After diagnosis is finished, discharge the electrolytic capacitor using a resistor, not by short-circuiting it.

Procedures

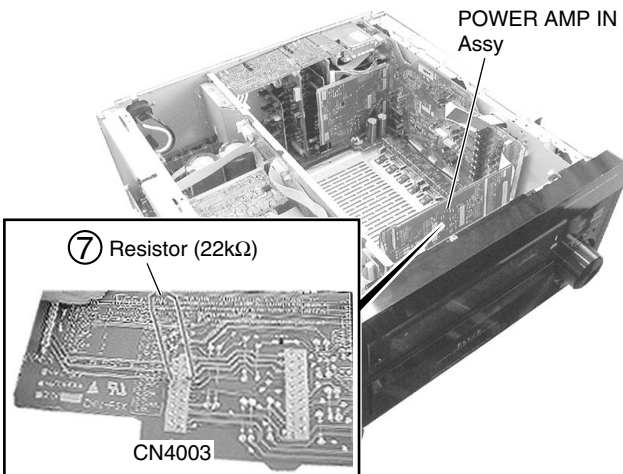
- ① Remove the bonnet case 56B by removing the 23 screws.
- ② Remove the two screws that secure Bridge Frames 45F and 45R.
- ③ Disconnect the six connectors connected between the Heatsink Section and the SP/PS Assy.
- ④ Disconnect the eight screws that secure the Heatsink Section.
- ⑤ Disconnect the three connectors of the POWER AMP IN Assy. In this case, you can easily remove the Assy once the flexible cable connecting the POWER AMP IN Assy and the MAIN CONTROL Assy has been disconnected.

See Step ①.



When removing the POWER AMP IN Assy, pull out the Assy while pushing on the board at the center from the rear, for easier removal with less stress on the connector.

- ⑥ Remove the Heatsink Section, leaving the POWER AMP IN Assy intact.
- ⑦ Jump with a 22kΩ resistor between Pins 10 and 11 of CN4003 on the POWER AMP IN Assy.
- ⑧ Turn on the power. The power will then be on without the protection circuits activated.



Diagnosis

⚠ After finishing diagnosis, perform the following before returning the Heatsink Section to its original position:

- ① Remove the resistor used in Step ⑦.
- ② Discharge the electrolytic capacitors on the VH line shown below. If you do not, the resistors may be damaged by a surge of current.

Electrolytic capacitors to be discharged:

TRANS 2-1 Assy: C2207, C2208, C2211
FAN DRIVE Assy: C4055, C4056

- ③ Return the Heatsink Section to its original position.

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

PD8112A, PEG040B8, PEG041B, BU4094BCF, PCM2902EG, TSB43CA42, SM5819AF, TA1270BF, TC90A49F

■ PD8112A (1394 ASSY: IC301)

• Flow Control IC

● Pin Function

No.	Pin Name	I/O	Pin Function
1	VDDOUT	–	Digital VDD (3.3V)
2	SPDIFOUT	O	IEC60958 output
3	SDATA3O	O	MBLA data output (5 ch, 6 ch) (at flow: I2S)
4	SDATA2O	O	MBLA data output (3 ch, 4 ch) (at flow: I2S)
5	SDATA1O	O	MBLA data output (1 ch, 2 ch) (at flow: I2S)
6	SDATA0O	O	MBLA ancillary data output (at flow: I2S)
7	LRCKOUT	O	MBLA LRCK output
8	BCKOUT	O	MBLA BCK output (64fs)
9	AMCLKOUT	O	Master clock output (When AMCLKEN output is LOW, active Hi-Z.)
10	AMCLKEN	O	When 60958 is selected or OUTPUTEN=L output, active LOW. For external clock control
11	SDERRO	O	Data error flag output
12	VSSOUT	–	Digital GND
13	VDDOUT	–	Digital VDD (3.3V)
14	SDMUTEO	O	Data mute flag output MUTE: H
15	SAPCMBCKIN	I	BCK input when converting SACD to MLPCM
16	SAPCMLRCKIN	I	LRCK input when converting SACD to MLPCM
17	SAPCMD3IN	I	DATA3 input when converting SACD to MLPCM
18	SAPCMD2IN	I	DATA2 input when converting SACD to MLPCM
19	SAPCMD1IN	I	DATA1 input when converting SACD to MLPCM
20	SACDMKO	O	SACD master clock output (2.8224MHz)
21	SACDDAO	O	SACD ancillary data output
22	SACDD0O	O	SACD data output (L)
23	SACDD1O	O	SACD data output (R)
24	SACDD2O	O	SACD data output (C)
25	SACDD3O	O	SACD data output (Lfe)
26	VSSCORE	–	Digital GND (for inside)
27	VDDCORE	–	Digital VDD (3.3V, for inside)
28	SACDD4O	O	SACD data output (Ls)
29	SACDD5O	O	SACD data output (Rs)
30	SACDFRO	O	SACD frame data output (75Hz)
31	TESTMODE0	I	LSI test mode input Normally, "L" fixed
32	TESTMODE1	I	LSI test mode input Normally, "L" fixed
33	PLLMODE	I	VCOCLK division ratio selection Normally, "L"
34	SAPCMODE	I	0: normal, 1: When the data type is SACD, output SAPCM*** input to MLPCM.
35	XVALMODE	I	0: 64M•128M bit SDRAM, 1: 256M bit SDRAM
36	RJMSEBF	I	MLPCM output format setting at flow 0: I2S, 1: Right aligned MSB first
37	SEL512	I	Master clock selection at flow 0: 768fs, 1: 512fs
38	CONT48	O	Output for controlling the oscillator (When FMODE="1" and SEL44K="1", active High)
39	CLK48K	I	Master clock input of fs48kHz (36.864MHz or 24.576MHz)
40	CLK48KI	I	Crystal resonator input of fs48kHz (24.576MHz)
41	CLK48KO	O	Crystal resonator output of fs48kHz (24.576MHz)
42	VSSOUT	–	Digital GND
43	VDDOUT	–	Digital VDD (3.3V)
44	CONT44	O	Output for controlling the oscillator (When FMODE="1" and SEL44K="0", active High)
45	CLK44K	I	Master clock input of fs44.1kHz (33.8688MHz or 22.5792MHz)
46	CLK44KI	I	Crystal resonator input of fs44.1kHz (22.5792MHz)
47	CLK44KO	O	Crystal resonator output of fs44.1kHz (22.5792MHz)
48	SELOSC	I	L: CLK4XK input selection, H: crystal resonator I/O selection As for the crystal resonator, less than 30MHz are insured.

A

B

C

D

E

F

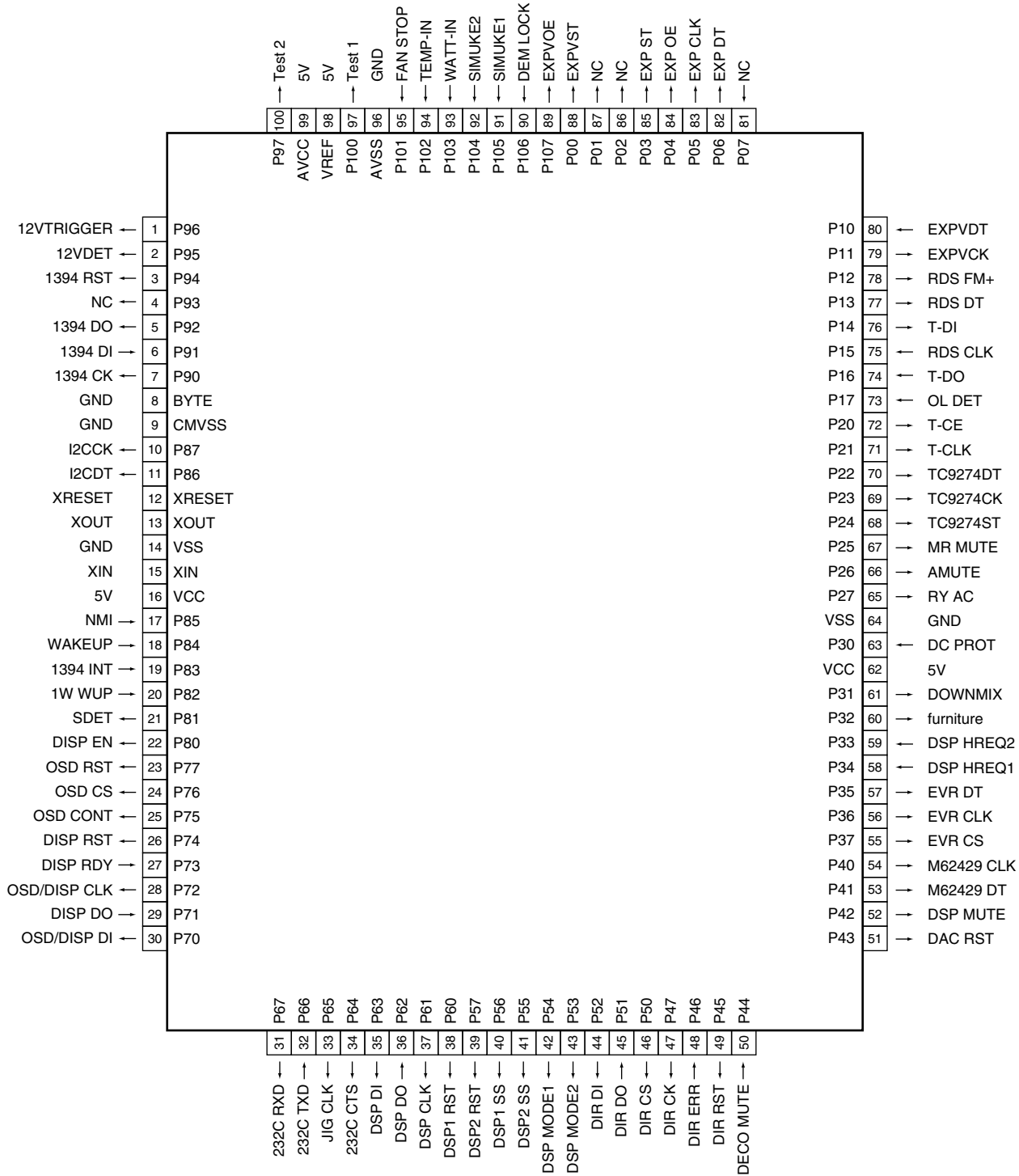
No.	Pin Name	I/O	Function
49	XRESET	I	Logic reset input Reset for L
50	OUTPUTEN	I	Pin for controlling the audio system output H: output, L: Hi-Z
51	FMODE	I	Flow mode control input at flow: H, at through: L
52	SELDTYPE0	I	Data type input 0 00: IEC60958, 01: MBLA
53	SELDTYPE1	I	Data type input 1 1X: SACD
54	SEL44K	I	Selecting signal of master clock input at flow L: CLK48K, H: CLK44K
55	FSSEL0	I	fs setting input 0 00: 44.1/48kHz, 01: 88.2/96kHz
56	FSSEL1	I	fs setting input 1 10: 176.4/192kHz, 11: 29.4/32kHz
57	VSSOUT	-	Digital GND
58	VDDOUT	-	Digital VDD (3.3V)
59	RXSTART	I	Trigger signal input of flow receiving start
60	SACDCHSEL	I	In a through mode, set to 1 in SACD 5 channel receiving. 0: 2ch*6 ch, 1: In 5ch flow receiving, a channel is distinguished automatically by ansillary data.
61	FMUTE	I	Forced mute control signal input Reflect to SDMUTE0.
62	FSTATE0	O	Status output 0 of memory in the flow
63	FSTATE1	O	Status output 1 of memory in the flow 00: Empty < 01: fast < 11: standard < 10: slow • full
64	FSTATE2	O	Status output 2 of flow receive data When received data type to be different from the set data type, active High.
65	TDI	I	Boundary Scan TAP pin
66	TDO	O	Boundary Scan TAP pin
67	TMS	I	Boundary Scan TAP pin
68	TCK	I	Boundary Scan TAP pin
69	TRST	I	Boundary Scan TAP pin
70	SACDMKIN	I	SACD bit clock input
71	SACDFRIN	I	SACD frame signal input
72	SACDD0IN	I	SACD data input 0 (ch1)
73	VSSCORE	-	Digital GND (for inside)
74	VDDCORE	-	Digital VDD (3.3V, for inside)
75	SACDD1IN	I	SACD data input 1 (ch2)
76	SACDD2IN	I	SACD data input 2 (ch3)
77	SACDD3IN	I	SACD data input 3 (ch4)
78	SACDD4IN	I	SACD data input 4 (ch5)
79	SACDD5IN	I	SACD data input 5 (ch6)
80	SACDDAIN	I	SACD ansillary data input
81	AMCLKIN	I	Master clock input (VCO) at through mode
82	SPDIFIN	I	IEC60958 input Data valid input at flow
83	SDMUTEIN	I	Mute flag input at through mode
84	SDERRIN	I	Data error flag input
85	VCOCLK2O	O	VCO clock output 2 (for 512fs)
86	VCOCLK1O	O	VCO clock output 1 (for 768fs)
87	REFSYT	I	PLL reference input (at passive filter)
88	DIVVCO	I	PLL VCO dividing input (at passive filter)
89	VCOEN	I	Built-in VCO control input Low: stop, High: oscillation
90	VSSCORE	-	Digital GND (for inside)
91	VDDCORE	-	Digital VDD (3.3V, for inside)
92	VSSOUT	-	Connect to analog GND
93	VSSPASS	-	Analog GND
94	VDDPASS	-	Analog VDD (3.3V)
95	LPOUT	O	Phase comparator output (analog)
96	LPIN	I	VCO control voltage input (analog)

No.	Pin Name	I/O	Function
97	VDDOUT	–	Connect to analog VDD (3.3V)
98	BCKIN	I	MBLA flow BCK input
99	LRCKIN	I	MBLA flow LRCK input
100	SDATA1IN	I	MBLA flow data input 1
101	SDATA2IN	I	MBLA flow data input 2
102	SDATA3IN	I	MBLA flow data input 3
103	SDATA0IN	I	MBLA flow data input 0
104	VSSOUT	–	Digital GND
105	VDDOUT	–	Digital VDD (3.3V)
106	SDA0	O	Address output for external SDRAM
107	SDA1	O	Address output for external SDRAM
108	SDA2	O	Address output for external SDRAM
109	SDA3	O	Address output for external SDRAM
110	SDA4	O	Address output for external SDRAM
111	SDA5	O	Address output for external SDRAM
112	SDA6	O	Address output for external SDRAM
113	SDA7	O	Address output for external SDRAM
114	SDA8	O	Address output for external SDRAM
115	SDA9	O	Address output for external SDRAM
116	SDA10	O	Address output for external SDRAM
117	SDA11	O	Address output for external SDRAM
118	SDA12	O	Address output for external SDRAM
119	SDA13	O	Address output for external SDRAM
120	SDD0	I/O	Data input/output for external SDRAM
121	SDD1	I/O	Data input/output for external SDRAM
122	SDD2	I/O	Data input/output for external SDRAM
123	SDD3	I/O	Data input/output for external SDRAM
124	SDD4	I/O	Data input/output for external SDRAM
125	SDD5	I/O	Data input/output for external SDRAM
126	SDD6	I/O	Data input/output for external SDRAM
127	SDD7	I/O	Data input/output for external SDRAM
128	VSSOUT	–	Digital GND
129	VDDOUT	–	Digital VDD (3.3V)
130	SDD8	I/O	Data input/output for external SDRAM
131	SDD9	I/O	Data input/output for external SDRAM
132	SDD10	I/O	Data input/output for external SDRAM
133	SDD11	I/O	Data input/output for external SDRAM
134	SDD12	I/O	Data input/output for external SDRAM
135	SDD13	I/O	Data input/output for external SDRAM
136	SDD14	I/O	Data input/output for external SDRAM
137	SDD15	I/O	Data input/output for external SDRAM
138	SDCKE	I/O	Data input/output for external SDRAM
139	SDCLK	O	Data input/output for external SDRAM
140	SDDQMU	O	Data input/output for external SDRAM
141	SDXRAS	O	XRAS output for external SDRAM
142	SDXCAS	O	XCAS output for external SDRAM
143	SDXWE	O	XWE output for external SDRAM
144	VSSOUT	–	Digital GND

PEG040B8 (MAIN CONTROL ASSY: IC501)

• Main Microcomputer

A • Pin Assignment (Top view)



● Pin Function

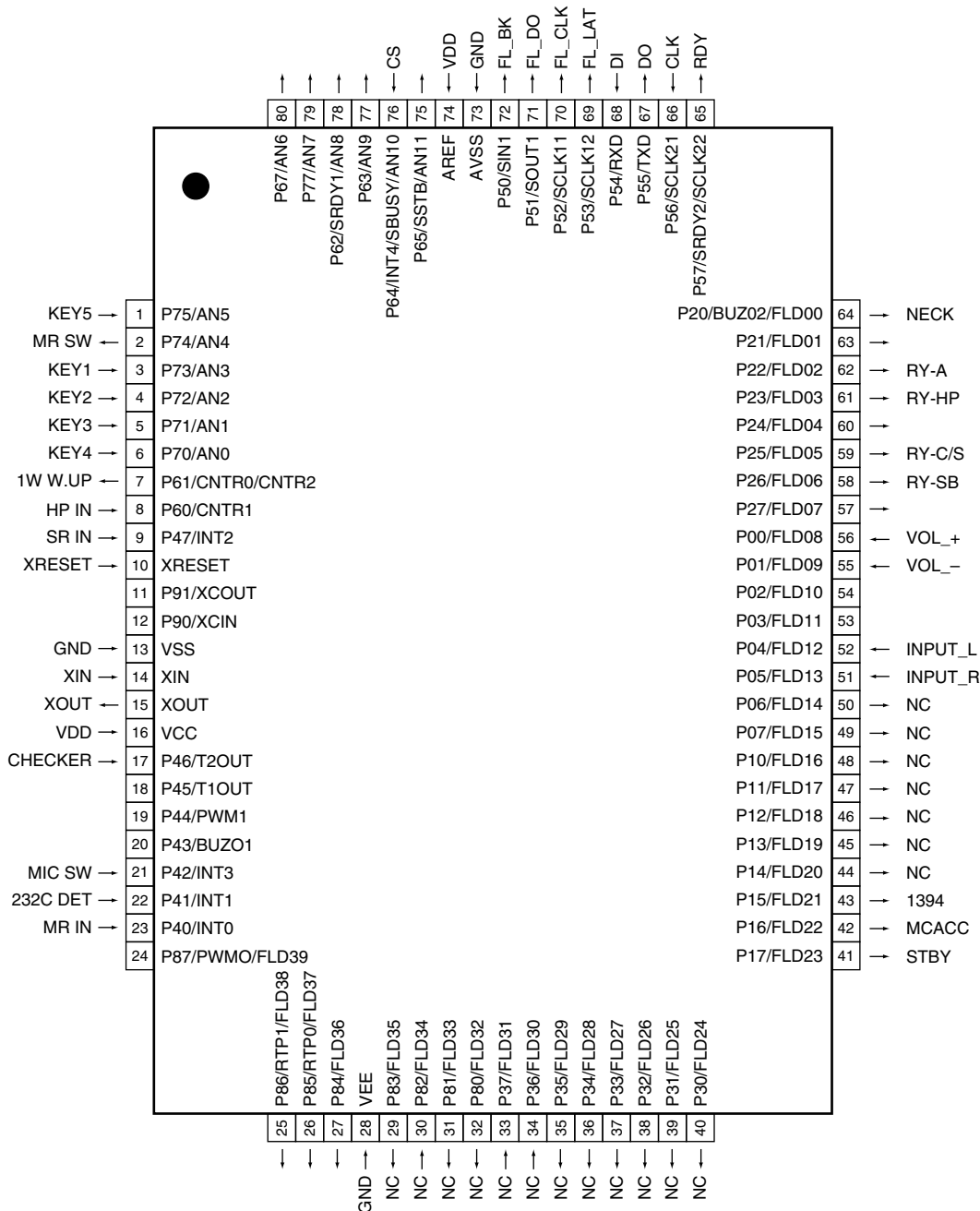
No.	Pin Name	I/O	Pin Function	Active
1	12VTRIGGER	O	12V TRIGGER control port , "H" at ON	
2	12VDET	I	12V TRIGGER monitoring port	
3	1394 RST	O	Reset for 1394	
4	1394 CS	O	Standby for 1394 (Not used) "L" fixed.	
5	1394 DO	O	DO for 1394	
6	1394 DI	I	DI for 1394	
7	1394 CK	O	CK for 1394	
8	GND	-	Ground	
9	CNVSS	-	5.1kΩ pulldown	
10	I2CCK	O	Communication clock signal for video-chroma synchro. IC/YC sep. IC	
11	I2CDT	O	Communication data-out signal for video-chroma synchro. IC/YC sep. IC	
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	AC pulse In (Wake up)	H
19	1394 INT	I	INT for 1394	
20	1W WUP	I	Wakeup signal at standby (from the display microcomputer) (pulldown)	H
21	SDET	I	S signal detection	
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 permission)	
35	DSP DI	O	Communication data out signal with the DSP1 microcomputer	
36	DSP DO	I	Communication data in signal with the DSP2 microcomputer	
37	DSP CLK	O	Communication clock signal with the DSP microcomputer	
38	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	DOWNMIX	O	DSD analog down mix control signal	
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 (Strobe)	
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	RDS module clock in signal	
76	TUNER DI	O	Data output signal of tuner control	
77	RDS DT	O	RDS module data in signal	
78	RDS FM+	O	RDS decoder power on/off	
79	EXPVCK	O	Control clock signal for VC extension IC	
80	EXPVDT	O	Control data signal for VC extension IC	
81	UARTSW	O	Not used, L" fixed	
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	EXPVST	O	Control chip clock signal for VC extension IC	
89	EXPVOE	O	Control output enable signal for VC extension IC	
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 A/D	A/D
94	TEMP-IN	I	Temperature detection Level detection with A/D	A/D
95	FAN STOP	I	Fan forced stop detection	H
96	AVSS	-	Connect to VSS	
97	TEST1	O	Test terminal	
98	VREF	-	Connect to VCC	
99	AVCC	-	Connect to VCC	
100	TEST2	O	Test terminal	

PEG041B (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
A 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		
B 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 - direction
16	Vcc	-	Power supply 5V	56	VOL_+	I	Volume + direction
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
C 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
D 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				
E 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	MRH	TC9215C12(Pin 5) control	H
4	NC	Not used	
5	NJM2596_SW5	NJM2596 video control of main system	H
6	NJM2596_SW4		H
7	NJM2596_SW3		H
8	NJM2596_SW2		

■ 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	DSD DIRECT control	H
5	MUTE	"H" at Power ON processing and muting	H
6	FUNC	COMPONENT D4 Input selection (2 Input to 1 Output)	
7	FAN DRIVE	ON when rotates the FAN	H
8	LOFAN	Not used, "H" fixed	

■ PCM2902EG (COAXIAL IN ASSY: IC1681)

● USB Codec IC

A ● 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}
D+	D-	VBUS	DGNDU	HID0	HID1	HID2	SEL0	SEL1	VCCCI	AGNDC	VINL	VINR	VCOM
1	2	3	4	5	6	7	8	9	10	11	12	13	14

● 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

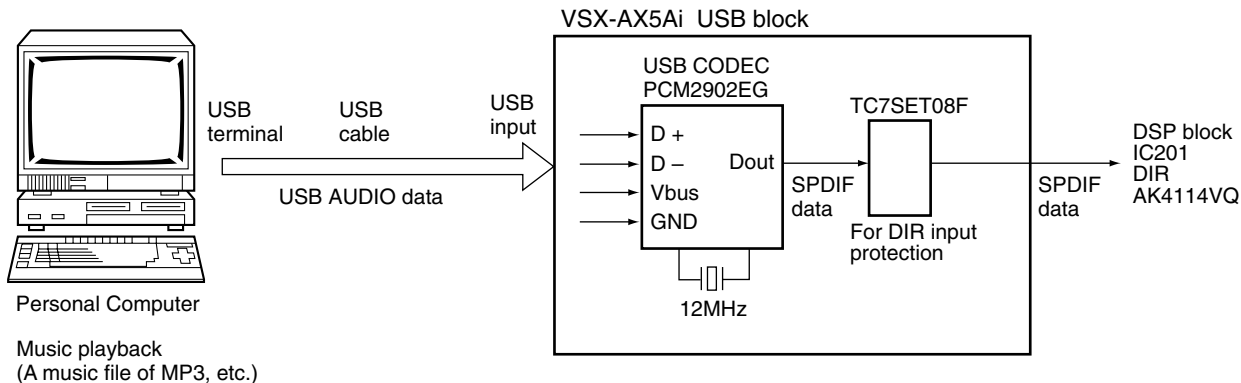
(3) 3.3-V CMOS level input with internal pulldown. This pin informs the PC of serviceable control signals such as mute, volume up, or volume down, which has no connection with the internal DAC or ADC directly. See the volume control and mute control section.

(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



About PCM2902EG

- With codec of USB BUS POWERED, power is supplied from Vbus of USB, and work. (work with a power supply of VSX-AX5Ai irrelatively.)
- Be USB codec, but analog I/O and digital (SPDIF) input are not using in VSX-AX5Ai.
- When only connects to PC and receiver (VSX-AX5Ai) 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-AX5Ai?
- 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

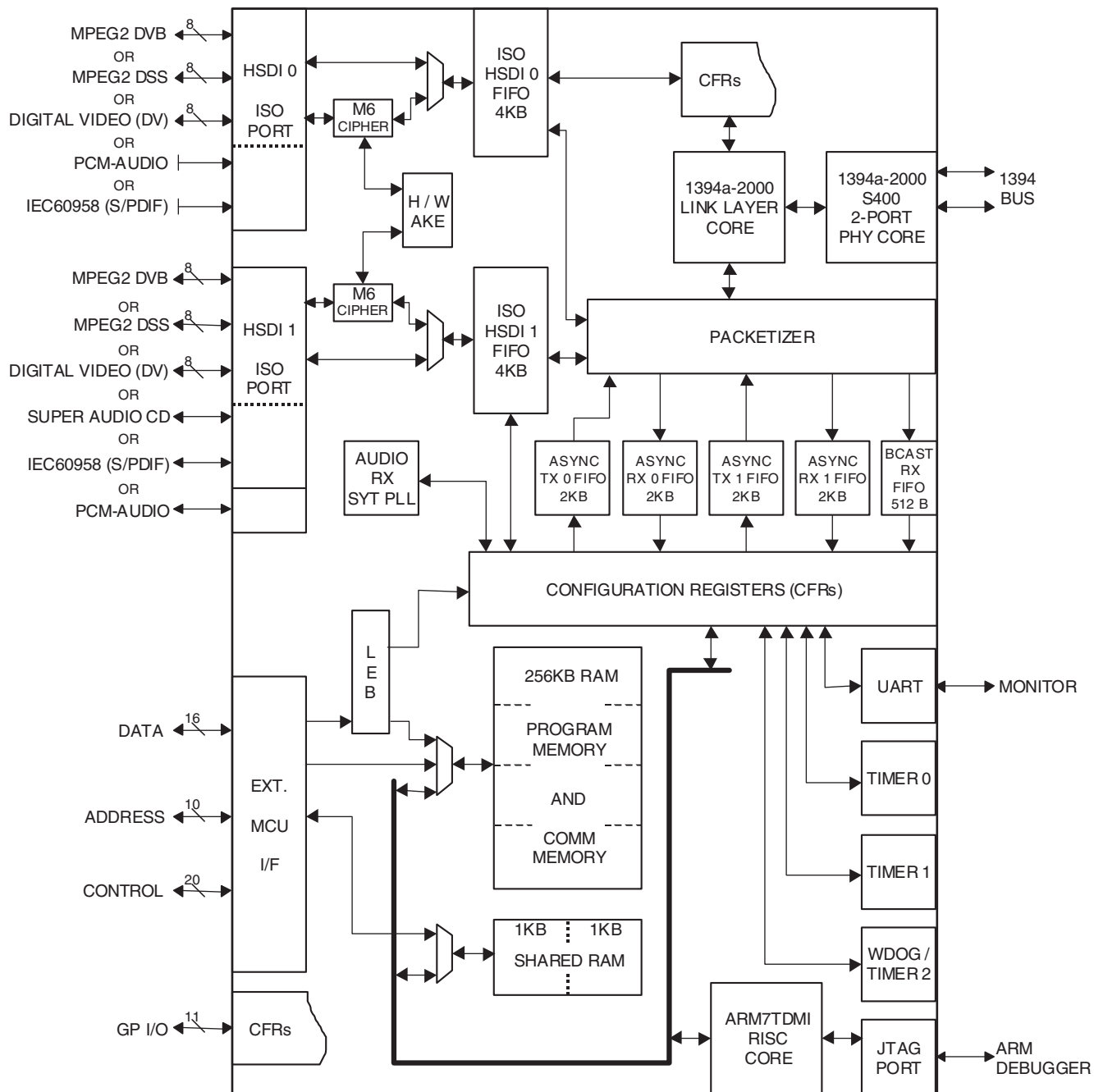
Evaluation PC: Libretto PAL2060 TNML made by Toshiba

- (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.

● Block Diagram



● Pin Function

Miscellaneous Pins

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

Power and Ground Pins

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

Regulator Pins

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

External CPU Interface Pins

No.	Pin Name	I/O	Pin Function
95	MCIF_ACKz	I/O	MCIF acknowledge pin. Default active low. iceLynx-Micro asserts this signal if it has completed the MCIF request. This signal is driven when chip select (CS) is asserted. This signal is used for the following modes: <ul style="list-style-type: none"> • 68000 + wait I/O access • I/O Type-3 MPC850
120	MCIF_ADDR1	I	MCIF address 1 pin. This data pin is the least significant bit of the MCIF address bus. MCIF_ADDR0 is internally grounded. Only 16-bit addressing is allowed. MCIF_ADDR1 must be connected to the Address1 signal of the system CPU.

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

Universal Asynchronous Receiver Transmitter Pins

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

Joint Test Action Group (JTAG) and ARM Pins

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

General-Purpose Input/Out Pins (GPIO)

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

Physical Layer Pins

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

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

High Speed Data Interface (HSDI) Port 0 Pins

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

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

High Speed Data Interface (HSDI) Port 1 Pins

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

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

DVD-Audio Interface Pins

No.	Pin Name	I/O	Pin Function
14	MLPCM_A	I/O	Audio MLPCM interface ancillary data. Ancillary data is input/output using this pin. For DVD-Audio, MLPCM_LRCLK determines if ancillary left or ancillary right data is present. This signal also functions as FLWCTL_A in flow control mode
9	MLPCM_BCLK	I/O	Audio MLPCM interface bit clock. Multiple functions: <ul style="list-style-type: none"> • DVD audio BCK (I) • DVD audio BCK (O) • Flow control BCK (I/O) MLPCM interface, HSDI1 audio port, and HSDI1 video port share IsoPathBuffer 1. Only one interface can access the buffer at a time.
11	MLPCM_D0	I/O	Audio MLPCM interface D0. Contains channel 1 and channel 2 information. MLPCM_LRCLK determines which channel is present. This signal also functions as FLWCTL_D0 in flow control mode.
12	MLPCM_D1	I/O	Audio MLPCM interface D1. Contains channel 3 and channel 4 information. MLPCM_LRCLK determines which channel is present. This signal also functions as FLWCTL_D0 in flow control mode
13	MLPCM_D2	I/O	Audio MLPCM interface D2. Contains channel 5 and channel 6 information. MLPCM_LRCLK determines which channel is present. This signal also functions as FLWCTL_D0 in flow control mode
10	MLPCM_LRCLK	I/O	Audio MLPCM interface left-right clock. Multiple functions: <ul style="list-style-type: none"> • DVD audio LRCLK (I) • DVD audio LRCLK (O) • Flow control LRCLK (I/O)

Audio Phase Lock Loops Pins

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

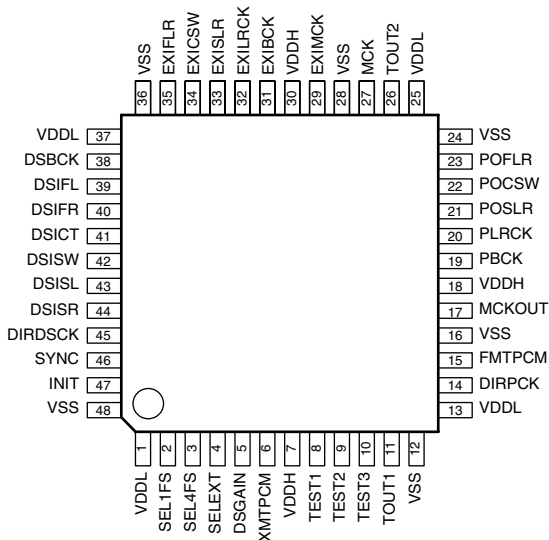
Test Mode Pins

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

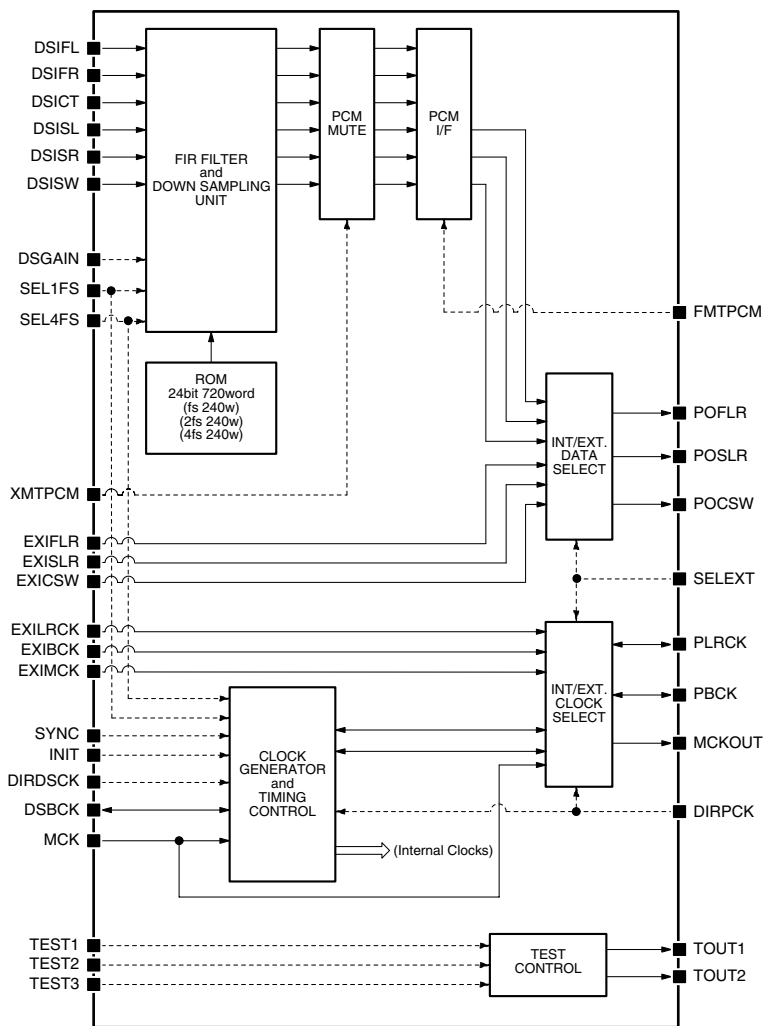
SM5819AF (1394 ASSY : IC401)

• 6-channel DS-PCM Converter

• Pin Arrangement (Top view)



• Block Diagram



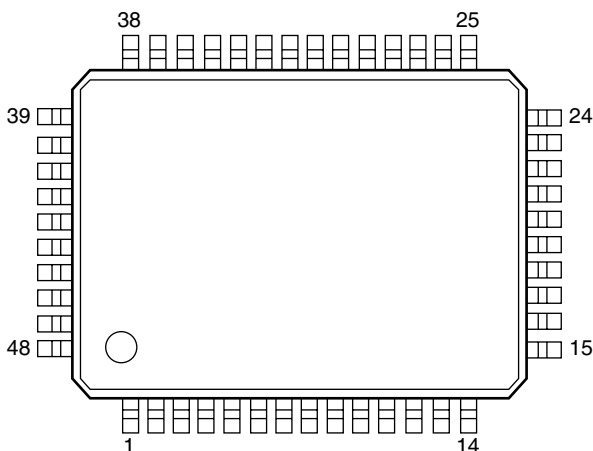
● Pin Function

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

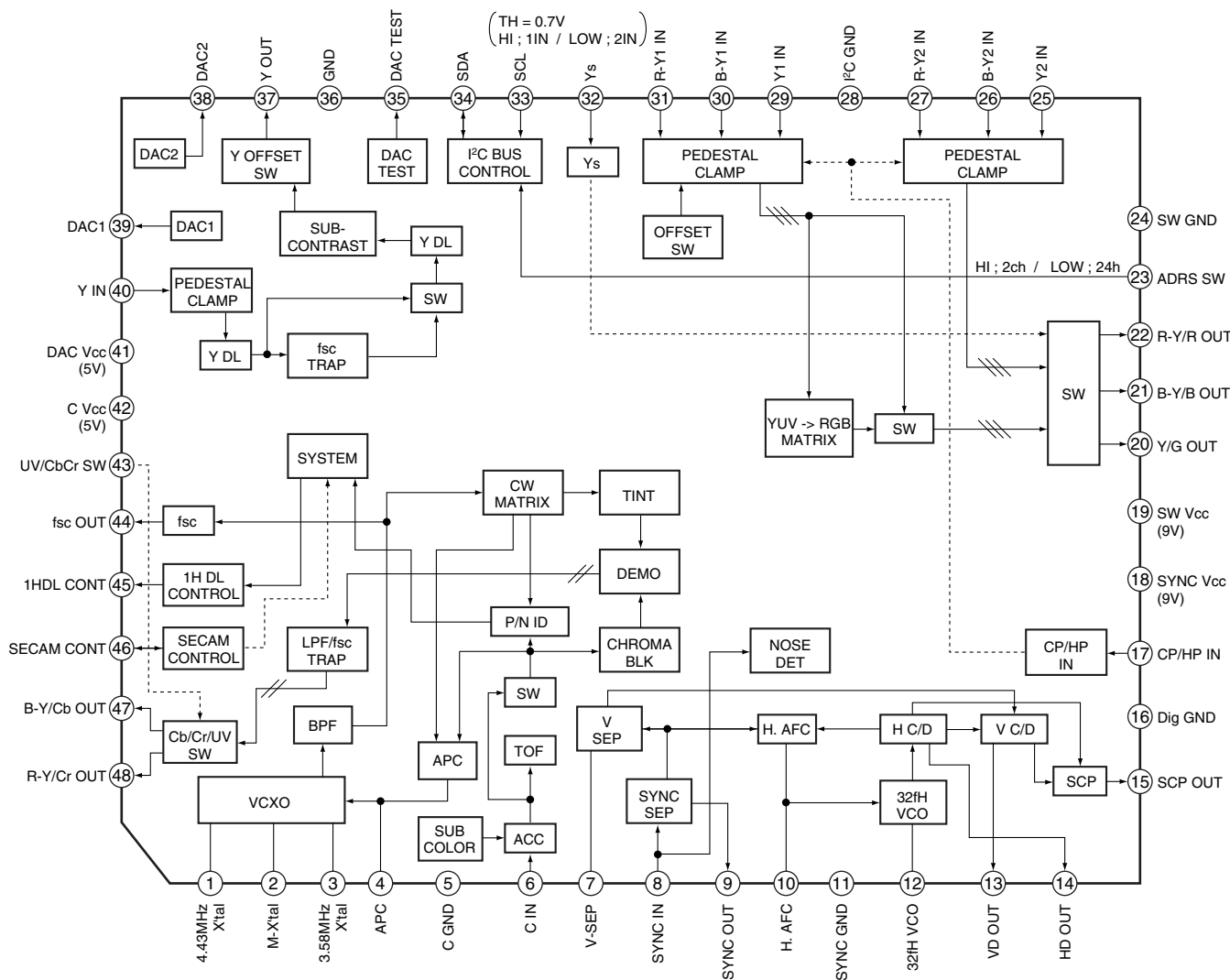
TA1270BF (VIDEO CONVERT ASSY : IC3514)

• PAL/NTSC Video Chroma and Sync Processing System for PIP/POP/PAP

• Pin Arrangement (Top view)



• Block Diagram



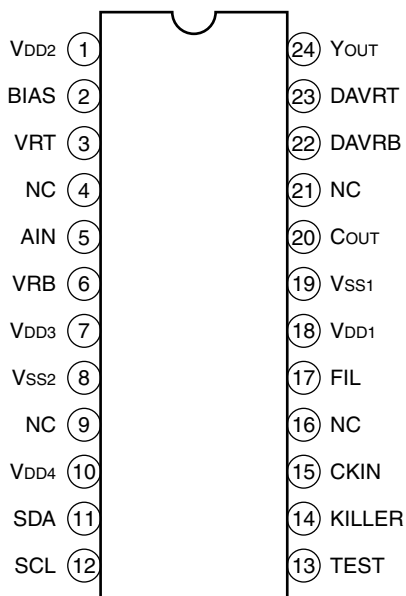
● Pin Function

No.	Name	Function
1	X'tal-1	Connect crystal. Serial capacitance can vary oscillator frequency f_0 ; parallel capacitance can vary oscillator adjustment range.
2	X'tal-2	
3	X'tal-3	
4	APC filter	Connect APC filter for CHROMA demodulation. The voltage of this pin determines the VCXO oscillator frequency.
5	C GND	CHROMA processor GND pin
6	CHROMA input	CHROMA input pin. Input CHROMA signal after Y / C separation.
7	V-SEP	Connect vertical sync separation filter.
8	Sync input	Sync separator circuit input pin. Input via the clamp capacitor.
9	Sync output	Outputs sync signal separated using the sync separator circuit. Open collector output. Connect a pull-up resistor.
10	AFC filter	Connect a horizontal AFC filter. The voltage of this pin determines the horizontal output frequency.
11	SYNC GND	Sync processor GND pin
12	32 fH VCO	Connect a ceramic oscillator for horizontal oscillation.
13	VP output	Vertical pulse output pin
14	HD output	Outputs HD pulse processed by the AFC. HD output phase or pulse width can be changed by bus setting.
15	SCP output	Outputs sand castle pulse (SCP). The output signals are clamp pulse, horizontal blanking pulse, and vertical blanking pulse. The minimum load resistance is 3 k Ω .
16	Dig GND	Logic block GND pin
17	CP / HP input	Input pin for CP / HP pulse used to operate the SW circuit. CP is used as clamp pulse ; HP as blanking pulse.
18	SYNC Vcc	Vcc pins for sync processor block and SW block. Connect 9 V (Typ.).
19	SW Vcc	
20	Y / G output	Output Y / B-Y / R-Y or R / G / B. YUV / RGB output is switched by bus setting.
21	B-Y / B output	
22	R-Y / R output	
23	ADRS SW	Pin used to switch slave addresses. GND – 24H, VCC – 2CH
24	SW GND	Switch block GND pin
25	Y2 input	Y2 / B-Y2 / R-Y2 (YUV2 input) or R2/ G2 / B2 input pin. Input via capacitor used for clamp operation.
26	B-Y2 input	
27	R-Y2 input (YUV2)	
28	I ² C GND	I ² C block GND pin
29	Y1 input	Y1 / B-Y1 / R-Y1 (YUV1 input) or R1/ G1 / B1 input pin. Input via capacitor used for clamp operation.
30	B-Y1 input	
31	R-Y1 input (YUV1)	
32	Ys	High-speed switch for switching input pins 25, 26, and 27 (YUV2) and input pins 29, 30, and 31 (YUV1). The threshold is 0.7 V.
33	SCL	I ² C Bus SCL pin
34	SDA	I ² C Bus SDA pin
35	DAC TEST	DAC monitor pin for IC shipping inspection.
36	GND	GND pin
37	Y output	Outputs Y signal which passed fsc trap (trap is set on or off by Bus) and Y delay line circuit.
38	DAC2	1 bit DAC output pins
39	DAC1	
40	Y input	Composite video signal or Y signal input pin. Input via the clamp capacitor.
41	DAC Vcc	Vcc pins for DAC block and CHROMA processing block. Connect 5V (Typ.).
42	C Vcc	
43	UV / CbCr SW	UV / CbCr demodulation switch. OPEN – UV GND – CbCr CbCr demodulation is effective for NTSC only.
44	fsc output	Outputs crystal oscillator fsc. The pin voltage goes high only when 3.58NTSC is received.
45	1HDL CONT	Outputs PAL / SECAM / NTSC identification result. Adjust to DC and connect output to 1H DL IC.
46	SECAM CONT	I / O pin used to control SECAM demodulator IC. If 250 μ A or more flows from this pin, SECAM is determined.
47	B-Y / Cb output	Outputs B-Y (U) signal or Cb signal. Incorporates LPF to reject carrier.
48	R-Y / Cr output	Outputs R-Y (V) signal or Cr signal. Incorporates LPF to reject carrier. Pulling up the pin with 10 k Ω monitors CHROMA signal after ACC and TOF circuits (before demo input).

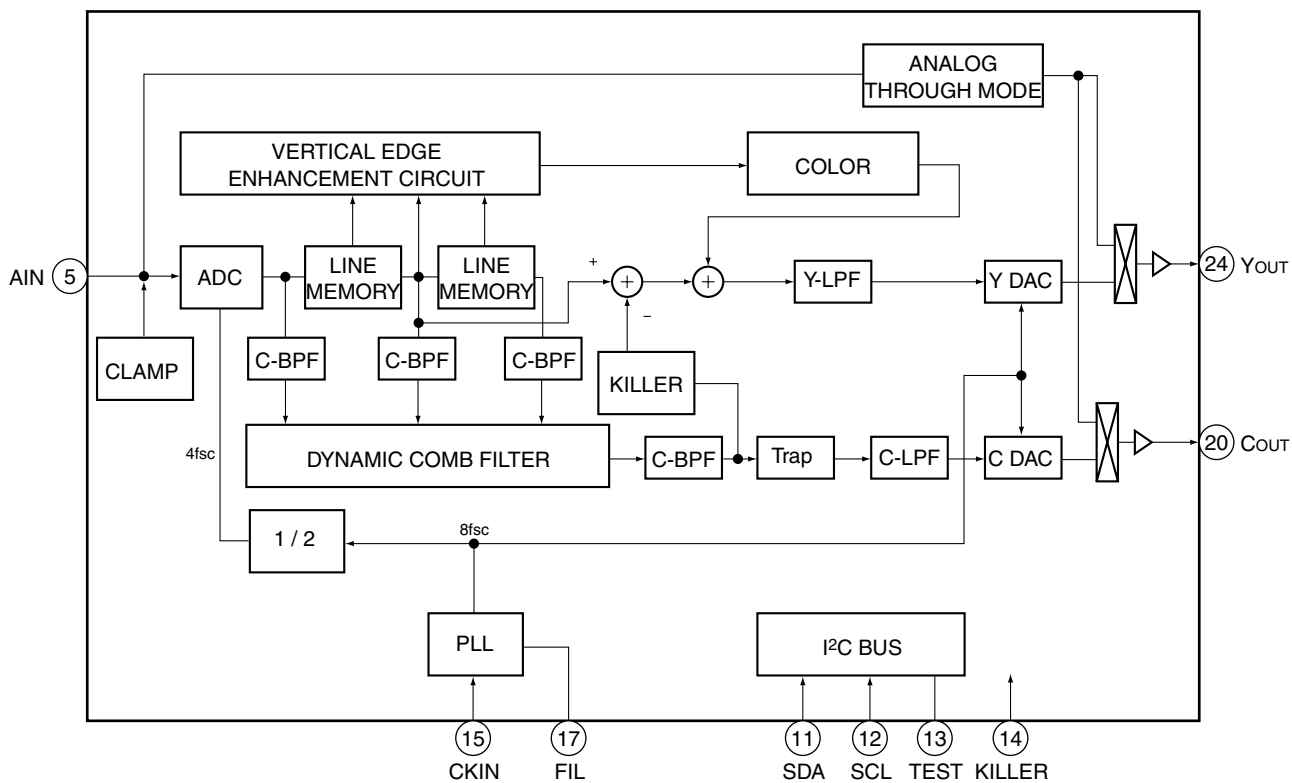
TC90A49F (VIDEO CONVERT ASSY : IC3508)

• 3 Line Digital Y/C Separator IC

• Pin Arrangement (Top view)



• Block Diagram



● Pin Function

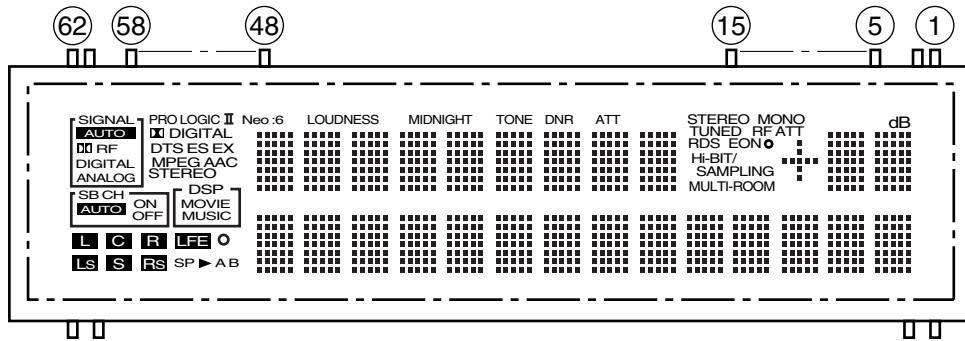
No.	Pin Name	I/O	Function
1	VDD2	–	ADC and DAC analog power supply
2	BIAS	–	ADC bias voltage. Stabilize by attaching a 0.01μF capacitor.
3	VRT	–	ADC input range D upper limit voltage. Stabilize by attaching a 0.01μF capacitor.
4	NC	–	Non connection
5	AIN	I	ADC input. Inputs 1.0 Vp-p video signal. Sync tip clamp is performed.
6	VRB	–	ADC input range D lower limit voltage. Stabilize by attaching a 0.01μF capacitor.
7	VDD3	–	ADC and DAC logic power supply
8	VSS2	–	Logic and internal DRAM GND (digital)
9	NC	–	Non connection
10	VDD4	–	Internal DRAM power supply
11	SDA	–	I ² C BUS SDA
12	SCL	–	I ² C BUS SCL
13	TEST	I	Shipment test mode switch or I ² C bus setting reset pin. When High, test mode, setting all I ² C bus settings to 0. Hold High for at least 100μs. Send I ² C bus settings when this pin is Low.
14	KILLER	I	Y signal comb function ON / OFF switch. When High, comb OFF. When Low, comb ON. When [data 3 : bit 0] is 1, used as vertical edge enhancement circuit ON / OFF switch.
15	CKIN	I	Clock input pin. This pin put a sine wave which is locked to the frequency of the burst signal in the input video signal. Amplitude is 300 mV p-p to 2 Vp-p. Input as high an amplitude as possible without affecting peripheral circuits.
16	NC	–	Non connection
17	FIL	O	Connect the APC filter in the 8 fsc PLL circuit
18	VDD1	–	PLL power supply
19	VSS1	–	ADC, DAC, and PLL GND (analog)
20	CO _{UT}	O	Outputs chrominance signal. External simple LPF for clock elimination recommended.
21	NC	–	Non connection
22	DAVRB	–	DAC output range D lower limit voltage. Stabilize by attaching a 0.01μF capacitor.
23	DAVRT	–	DAC output range D upper limit voltage. Stabilize by attaching a 0.01μF capacitor.
24	YO _{UT}	O	Outputs luminance signal. External simple LPF for clock elimination recommended.

7.2.2 DISPLAY

■ AAV7087 (DISPLAY ASSY : V3000)

• FL DISPLAY

• Pin Assignment

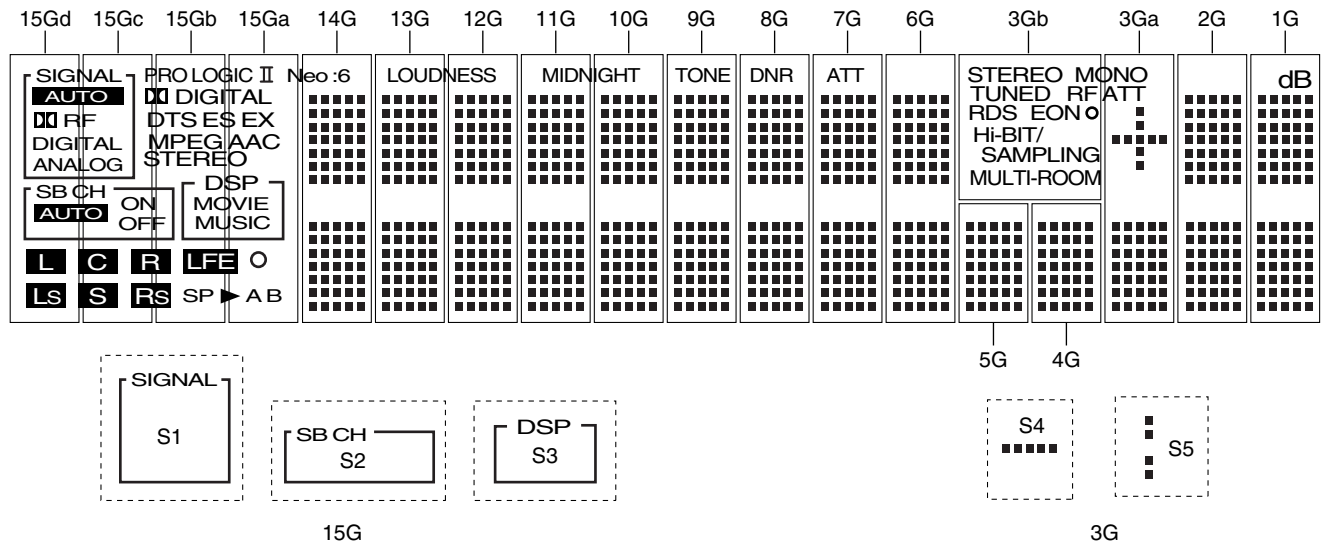


• Pin Connection

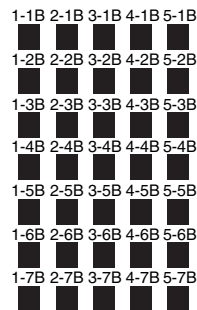
Pin No.	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47-3	2	1
Connection	F2	F2	NP	NP	GND	GND	NC	VH	NC	VDD	BK	LAT	CLK	SI	SO	NP	F1	F1

- 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 | 11) SI..... Serial Data Input |
| 3) DL..... Datum Line | (NC pin should be electrically open on the PC board) | 12) SO..... Serial Data Output |
| 4) GND..... GND pin | 8) BK..... Driver Output Blanking | (to be open, if don't use) |
| 5) VH..... High Voltage Supply pin | 9) LAT..... Latch Control Input | 13) Field of vision is a minimum of 21° from the lower side. |

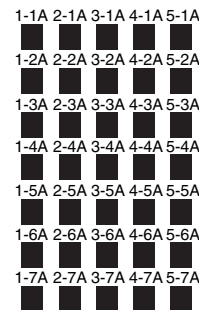
• Grid Assignment



• Segment Designation



(Lower stage)
(14G to 1G)



(Upper stage)
(14G to 6G, 2G, 1G)

• 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

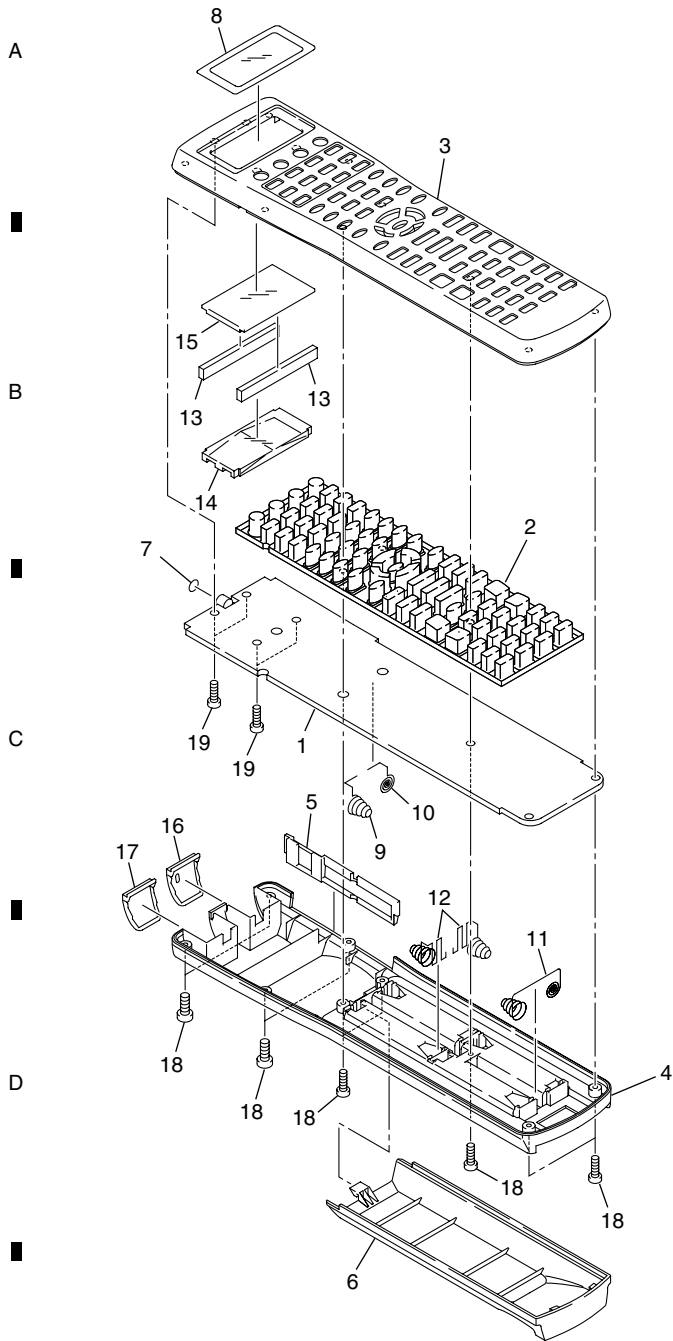


Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools:

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

7.4 REMOTE CONTROL UNIT

7.4.1 EXPLODED VIEWS AND PARTS LIST



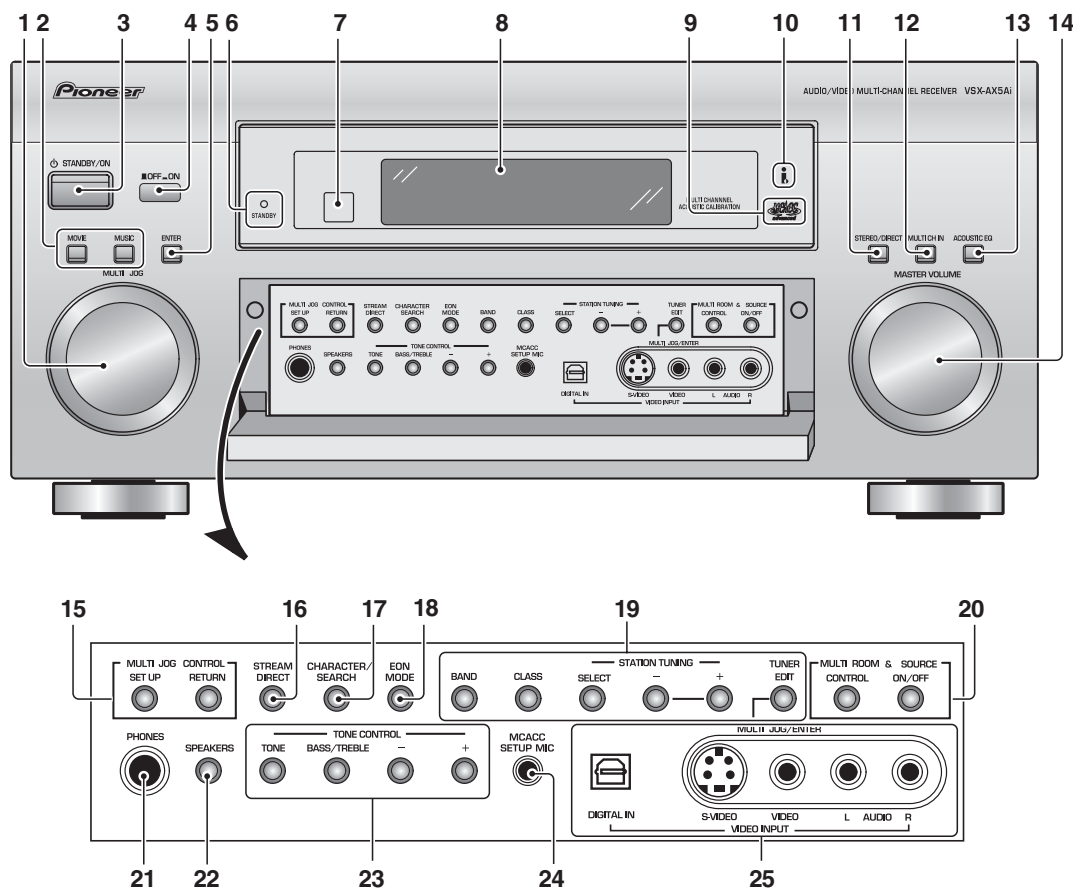
Mark No.	Description	Part No.
1	PCB Assy	AZC7301
2	Rubber Key	AZA7425
3	Case A	AZN7938
4	Case B	AZN7939
5	Frame	AZN7941
6	Battery Cover	AZN7940
7	MIC Cap	AZN7942
8	Name Plate	201RRC-314-01L
9	Terminal A	411RRC-212-01G
10	Terminal B	411RRC-213-01G
11	Battery Terminal	413RRC-143-01R
12	Spring	413RRC-171-01G

Mark No.	Description	Part No.
13	Connector	423RRC-046-01G
14	Plate	481RRC-018-01G
15	Shield Plate	801RRC-020-01L
16	Filter A	811RRC-109-01G
17	Filter B	811RRC-110-01G
18	Screw	A-BA2008-225002
19	Screw	A-BJ2006

8. PANEL FACILITIES

8.1 FRONT PANEL

Front panel



1 MULTI JOG dial

Depending on the operation, you can use this to select an input source or listening mode, as well as for tuner and system settings. It can often be used instead of the remote control ▲/▼ (cursor up/down) buttons.

2 Surround listening mode buttons

Use to select the **MOVIE** and **MUSIC** surround listening modes.

3 **STANDBY/ON**

Press **STANDBY/ON** to switch the receiver on or into standby.

4 **OFF ON**

Switch the receiver on or into standby when this button is in the **ON** position. When in the **OFF** position, the power to the receiver is switched off.

5 **ENTER**

Use to confirm your selection (with the **MULTI JOG** dial).

6 **STANDBY** indicator

Lights when the receiver is in standby.

7 **Remote sensor**

Receives the signals from the remote control.

8 **Display**

9 **Advanced MCACC** indicator

Lights when Acoustic Calibration EQ is on (Acoustic Calibration EQ is automatically set to **ALL CH ADJUST** after the Auto Surround Setup has been completed).

10 **i.LINK** indicator

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

11 STEREO/DIRECT

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

12 MULTI CH IN

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

13 ACOUSTIC EQ

Press to select an acoustic calibration EQ setting.

14 MASTER VOLUME dial

Adjusts the volume.

15 MULTI JOG CONTROL

Use the **SET UP** button to access the System Setup menu, and **RETURN** to exit the current menu screen.

16 STREAM DIRECT

Press to switch on/off Auto playback.

17 CHARACTER/SEARCH

Use this button to search for RDS program types.

Multi-voltage model:

MIDNIGHT

Press to switch on/off Midnight listening.

18 EON MODE

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

Multi-voltage model:

LOUDNESS

Press to switch Loudness on/off.

19 TUNER controls

Use the front panel tuner controls for tuning into stations and recalling station presets.

BAND

Press to select the AM or FM band.

CLASS

Press repeatedly to switch the preset station classes.

SELECT

Switches between the station memory and frequency select mode when using the **-/+** buttons.

-/+

Selects station memories or frequencies when using the tuner.

TUNER EDIT

Press to memorize and name a station for recall with the **MULTI JOG** dial.

20 MULTI ROOM & SOURCE controls

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

CONTROL

Use together with the **MULTI JOG** dial to select the function or use with the **MASTER VOLUME** to select the volume of the sub room.

ON/OFF

Use to switch the multi-room feature on or off.

21 PHONES jack

Use to connect headphones (no sound will be heard through the speakers).

22 SPEAKERS

Depending on the surround back speaker setting, press either to switch the speaker system or simply to switch it off.

23 TONE CONTROL**TONE**

Press to switch the tone controls on or off (bypass).

BASS/TREBLE

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

+/-

Use to adjust the frequency setting.

24 MCACC SETUP MIC jack

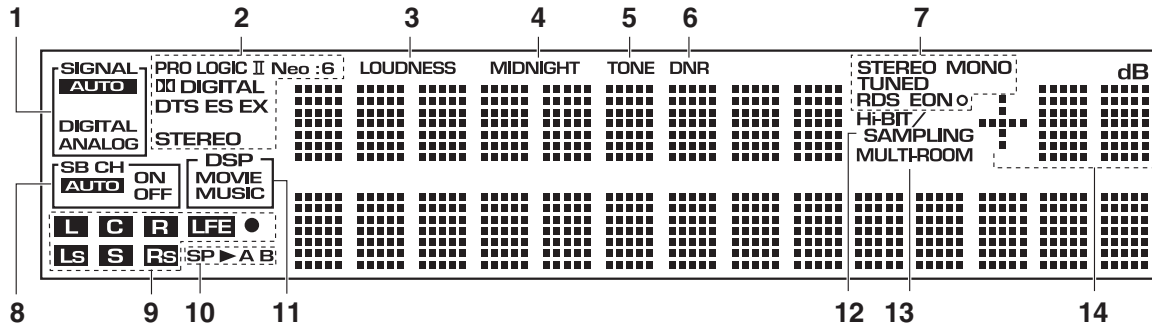
Use to connect the supplied microphone.

25 VIDEO INPUT jacks

- **DIGITAL IN** – Connect a game console, portable DVD player, video camera (etc.), that has an optical digital connection.
- **S-VIDEO** – Connect a video camera (etc.), that has an S-video out.
- **VIDEO / AUDIO (L/R)** – Connect a video camera, etc. that has standard RCA video/audio outputs.

8.2 DISPLAY

Display



1 SIGNAL indicators

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

2 Digital format indicators

- **PRO LOGIC II** – Lights during Dolby Pro Logic II and Pro Logic IIx processing.
- **Neo:6** – Lights during Neo:6 processing with 2-channel sources.
- **DIGITAL** – Lights when a Dolby Digital signal is detected.
- **DTS** – Lights when a DTS signal is detected.
- **ES** – Lights when a DTS-ES signal is detected.
- **EX** – Lights when a Dolby Digital EX signal is detected.
- **STEREO** – Lights during 2-channel playback.

3 LOUDNESS

Lights when Loudness listening is active.

4 MIDNIGHT

Lights when Midnight listening is active.

5 TONE

Lights when the tone control is switched on.

6 DNR

Lights when digital noise reduction is switched on.

7 Tuner indicators

STEREO

Lights when listening to a stereo FM broadcast in auto/stereo mode.

MONO

Lights when the tuner MPX mode is set to mono.

TUNED

Lights when tuned to a broadcast.

RDS

Lights when an RDS broadcast is received.

EON ●

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

8 SB CH

Indicates the surround back channel (or Virtual Surround Back) setting (**AUTO**, **ON** or **OFF**).

9 Program format indicators

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

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

- **L** – Left front channel
- **C** – Center channel
- **R** – Right front channel
- **LS** – Left surround channel
- **S** – Surround channel (mono) or surround back channel
- **RS** – Right surround channel
- **LFE** – Low frequency effects channel
- ● – Lights when an LFE signal is detected

10 Speaker indicators

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

11 Listening mode indicators

Shows **MOVIE** or **MUSIC** when a surround listening mode is selected. **DSP** will light with a box around it when one of the advanced (DSP) listening modes is selected.

12 Hi-BIT/SAMPLING

Lights when the audio scaler is switched on.

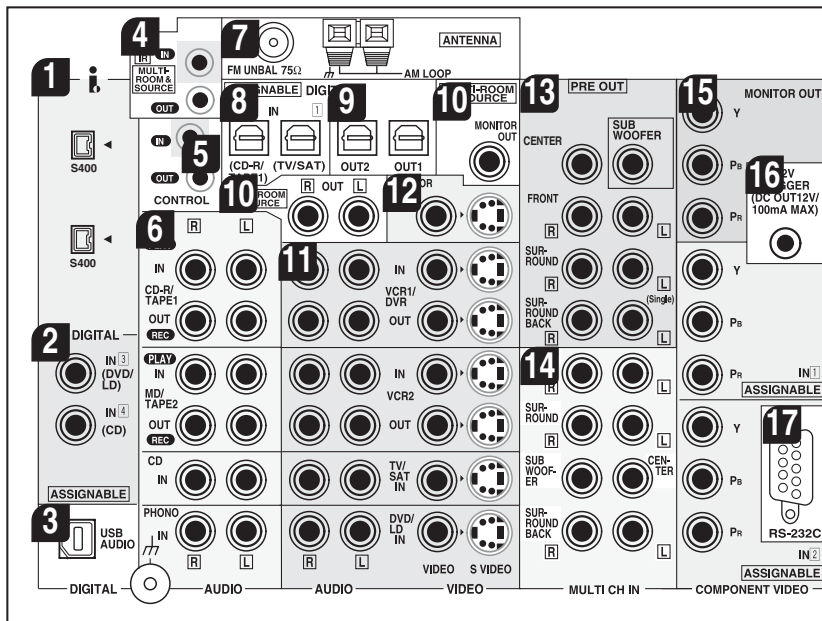
13 MULTI-ROOM

Lights when the multi room feature is active.

14 Volume level indicator

8.3 REAR PANEL

Rear panel



1 i.LINK connectors

Two S400-type i.LINK connectors allow you to connect this receiver to other compatible i.LINK audio devices for high-resolution, multichannel digital audio input/output.

2 Digital audio coaxial inputs

Two coaxial digital audio inputs for connecting digital audio sources to this receiver. All the inputs are freely assignable to input functions for maximum flexibility.

3 USB audio input

The USB audio input allows you to use your PC as a playback source for audio.

4 IR input/output

An IR connection allows you to connect an external remote control sensor, when your component system is in a closed cabinet or shelving unit, for example.

5 Control input/output

Mini-plug terminals for connection to other Pioneer components to enable you to control all your equipment from a single remote sensor.

6 Stereo analog audio source inputs/outputs

Four sets of analog audio jacks for connection to audio sources such as CD players, tape decks and turntables. The **CD-R/TAPE1** and **MD/TAPE2** functions also feature outputs for recording.

- The grounding (⏏) terminal is for use with turntables that require it.

7 Antenna terminals

Connections for AM and FM radio antennas.

8 Digital audio optical inputs

Two optical digital audio inputs for connecting digital audio sources to this receiver. All the inputs are freely assignable to input functions for maximum flexibility.

9 Digital audio outputs

Two optical digital audio outputs for connecting to a CD-R, MD or other digital recorder.

10 Multi-room and source outputs

The analog audio outputs are for connection to a second amplifier in a separate room. The **MULTI-ROOM & SOURCE** composite video output is for connection to a second monitor or TV in a separate room.

11 Audio/video source inputs

Each of the six source input functions has stereo analog audio jacks, a composite video jack and an S-video jack for basic connections. On top of these, you can assign digital audio and component video jacks to input functions as necessary. As well as audio/video inputs, the two input functions **VCR 1/DVR** and **VCR 2** also have audio/video outputs for recording.

12 Monitor video outputs

Two video outputs consisting of a standard composite video output and an S-video output, for connection to monitors and TVs.

13 Multichannel pre-amplifier outputs

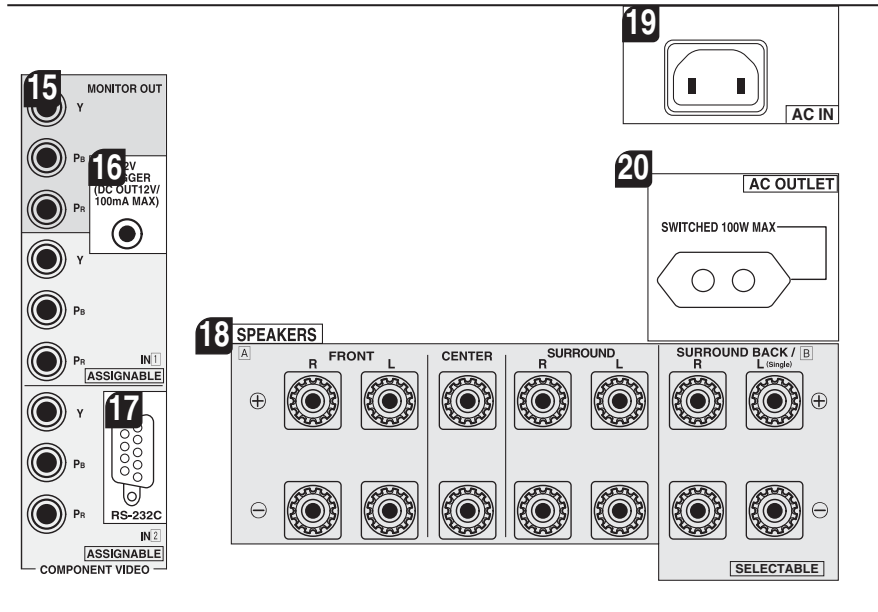
Multichannel pre-amp outputs that you can use to connect separate amplifiers for center, surround, surround back and subwoofer channels.

14 Multichannel analog audio inputs

7.1 channel analog inputs for connection to a component with multichannel analog outputs.

15 Component video inputs/output

The two component video inputs are freely assignable to any of the audio/video input functions. The component video output is for connection to a monitor or TV.



16 12V trigger jack

This terminal outputs DC 12V according to the input functions (100 mA max.).

17 RS-232C connector

This port is provided for connecting a personal computer for graphical output when using Advanced MCACC.

18 Speaker terminals

These are the main speaker terminals for front, center, surround and surround back speakers.

19 AC power inlet

Connect the supplied power cord here.

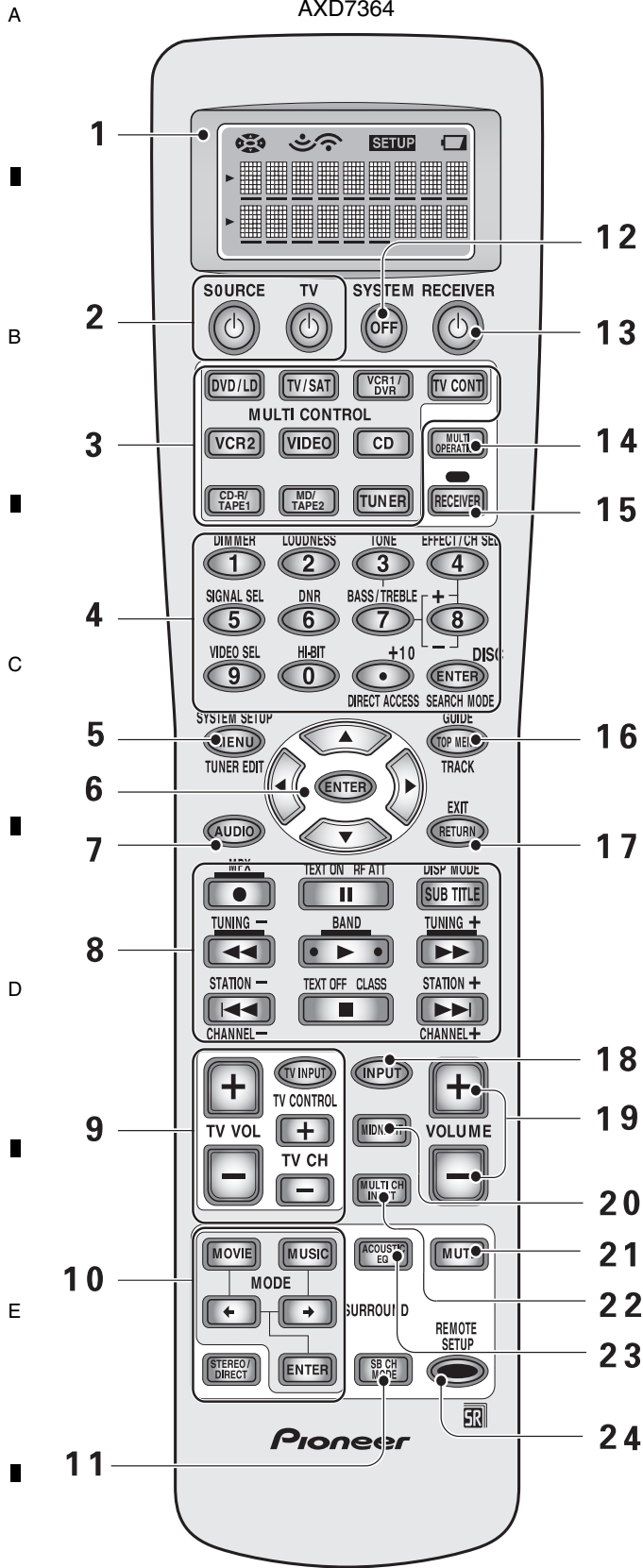
20 AC power outlet (Switched 100W max.)

This 230V AC power outlet can be used to power another component in your setup (up to 100 W). Power to this outlet is switched off when the receiver is in standby.

8.4 REMOTE CONTROL UNIT

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

AXD7364



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:

DIMMER button

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

LOUDNESS button

Switches the LOUDNESS mode on or off.

TONE button

This button switches between TONE on and off, 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, channel level and sound delay 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, Dolby Pro Logic II MUSIC parameters and sound delay settings.

You can then use the + and - buttons to make these adjustments.

SIGNAL SEL button

Press 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.

DNR (DIGITAL NR) button

Switches the DIGITAL NR on or off.

VIDEO SEL button

Use to toggle between the different video input possibilities.

HI-BIT button

Use this button to switch the AUDIO SCALER on or off.

5 SYSTEM SETUP button

Use for all system setups, including the speaker and sound systems. For more information see "Setting Up for Surround Sound".
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.

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.

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.

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 including USB, PHONO and i.LINK components.

19 VOLUME (+/-) buttons

Use to raise or lower the volume of the receiver.

20 MIDNIGHT button

Switches the MIDNIGHT listening mode on or off.

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 CAL 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.