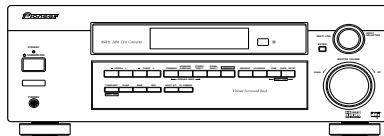


Service Manual



VSX-D412-K

ORDER NO.
RRV2727

AUDIO/VIDEO MULTI-CHANNEL RECEIVER

VSX-D412-K

VSX-D412-S

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

Model	Type	Power Requirement	Remarks
VSX-D412-K	KUXJI	AC120V	
VSX-D412-S	KUXJI	AC120V	
VSX-D412-K	KCXJI	AC120V	
VSX-D412-S	KCXJI	AC120V	



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

SAFTY INFORMATION



This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.



WARNING

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

Health & Safety Code Section 25249.6 – Proposition 65



NOTICE

(FOR CANADIAN MODEL ONLY)

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

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

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

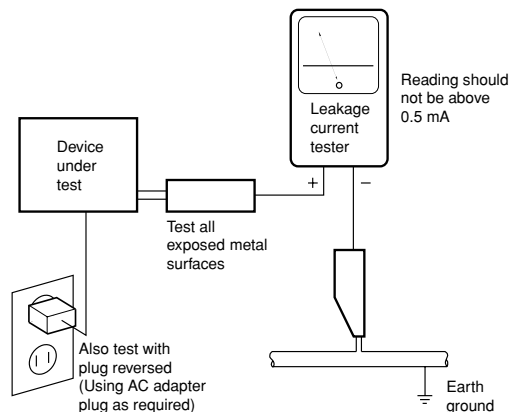
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

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

LEAKAGE CURRENT CHECK

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



AC Leakage Test

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

2. PRODUCT SAFETY NOTICE

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

Electrical components having such features are identified by marking with a 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 symbols for good services]

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

1. Product safety

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

2. Adjustments

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

3. Cleaning

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

4. Shipping mode and shipping screws

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

5. Lubricants, glues, and replacement parts

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

A

B

C

D

E

F

CONTENTS

	SAFTY INFORMATION	2
	1. SPECIFICATIONS	5
A	2. EXPLODED VIEWS AND PARTS LIST	6
	2.1 PACKING	6
	2.2 EXTERIOR SECTION.....	8
	2.3 FRONT PANEL SECTION	10
	3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM	12
	3.1 BLOCK DIAGRAM	12
	3.2 OVERALL WIRING CONNECTION DIAGRAM.....	14
	3.3 D.D & INPUT(1/4) ASSY	16
	3.4 D.D & INPUT(2/4) ASSY	18
	3.5 D.D & INPUT(3/4) ASSY	20
	3.6 D.D & INPUT(4/4) ASSY	22
B	3.7 AMP & PRIMARY(1/2), TRANS2 and TRANS3 ASSYS	24
	3.8 AMP & PRIM.(2/2), REG., HASHIGETA, AMP INPUT and TRANS1 ASSYS.....	26
	3.9 VIDEO and 6CH IN ASSYS	28
	3.10 FRONT, R.ENCODER and POWER SW ASSYS	30
	3.11 DIGITAL IN, H.P. and KAWA ASSYS	32
	3.12 FM/AM TUNER MODULE	34
	4. PCB CONNECTION DIAGRAM	36
	4.1 TRANS1, TRANS2 and TRANS3 ASSYS	37
	4.2 D.D & INPUT ASSY	38
	4.3 AMP INPUT and AMP & PRIMARY ASSYS	42
	4.4 FRONT, POWER SW, H.P. and R.ENCODER ASSYS	44
	4.5 REGULATOR, HASHIGETA and KAWA ASSYS.....	48
C	4.6 DIGITAL IN, 6CH IN and VIDEO ASSYS	50
	4.7 FM/AM TUNER MODULE	52
	5. PCB PARTS LIST	53
	6. ADJUSTMENT	62
	7. GENERAL INFORMATION	63
	7.1 DISASSEMBLY and DIAGNOSIS	63
	7.1.1 DISASSEMBLY and PCB LOCATION.....	63
	7.1.2 U-COM BLOCKDIAGRAM	64
	7.1.3 PROTECTION CIRCUIT	65
	7.1.4 POWER ON SEQUENCE	66
	7.1.5 POWER OFF SEQUENCE	67
	7.2 PARTS.....	68
D	7.2.1 IC	68
	7.2.2 DISPLAY	77
	8. PANEL FACILITIES	79

1. SPECIFICATIONS

Amplifier Section

Continuous average power output of 100 watts* per channel, min., at 8 ohms, from 20 Hz to 20,000 Hz with no more than 0.2%** total harmonic distortion (front).

Continuous Power Output

Front 100 W per channel (1kHz, 1.0 %, 8 Ω)
Center 100 W (1kHz, 1.0 %, 8 Ω)
Surround 100 W per channel (1kHz, 1.0 %, 8 Ω)
Surround Back 100 W per channel (1kHz, 1.0 %, 8 Ω)

Input (Sensitivity/Impedance)

CD, VCR/DVR, CD-R/TAPE/MD, DVD/LD, TV/SAT ... 200 mV/47 kΩ

Frequency Response

CD, VCR/DVR, CD-R/TAPE/MD, DVD/LD, TV/SAT
..... 5 Hz to 100,000 Hz ± 3 dB

Output (Level/Impedance)

VCR/DVR REC, CD-R/TAPE/MD REC 200 mV/2.2 kΩ

Tone Control

BASS ± 6 dB (100 Hz)
TREBLE ± 6 dB (10 kHz)
LOUDNESS +9 dB/+9 dB (100 Hz/10 kHz)

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

CD, VCR/DVR, CD-R/TAPE/MD, DVD/LD, TV/SAT 96 dB

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

CD, VCR/DVR, CD-R/TAPE/MD, DVD/LD, TV/SAT 79 dB

Video Section

Input (Sensitivity/Impedance)

VCR/DVR, DVD/LD, TV/SAT 1 Vp-p/75 Ω

Output (Level/Impedance)


VCR/DVR 1 Vp-p/75 Ω

Frequency Response

VCR/DVR, DVD/LD, TV/SAT \leftrightarrow MONITOR 5 Hz to 7 MHz ± 3 dB

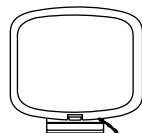
Signal-to-Noise Ratio 55 dB

Cross Talk 55 dB

Manufactured under license from Dolby Laboratories.
"Dolby", "Pro Logic II" and the double D symbol  are trademarks of Dolby Laboratories.

"DTS", "ES" and "DTS Digital Surround" are trademarks of Digital Theater Systems, Inc.

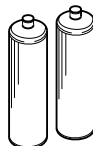
Accessories



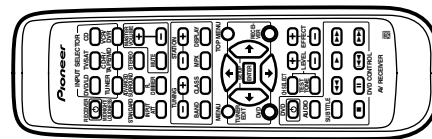
AM loop antenna
(ATB7009)



FM wire antenna
(ADH7004)



AA size IEC R6P
Dry cell batteries (x2)



Remote control unit
(XXD3038)

FM Tuner Section

Frequency Range 87.5 MHz to 108 MHz

Usable Sensitivity Mono:13.2 dBf, IHF (1.3 μ V/ 75 Ω)

50 dB Quieting Sensitivity Mono: 20.2 dB

Stereo: 38.6 dBf

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

Stereo: 70 dB (at 85 dBf)

Distortion Stereo: 0.5 % (1 kHz)

Alternate Channel Selectivity 60 dB (400 kHz)

Stereo Separation 40 dB (1 kHz)

Frequency Response 30 Hz to 15 kHz (± 1 dB)

Antenna Input (DIN) 75 Ω unbalanced

AM Tuner Section

Frequency Range 530 kHz to 1,700 kHz

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

Selectivity 25 dB

Signal-to-Noise Ratio 50 dB

Antenna Loop antenna

Miscellaneous

Power Requirements AC 120 V, 60Hz

Power Consumption

VSX-D412-K 260W (KU)

VSX-D412-S 340VA (KC)

In Standby 1 W

AC Outlet 100 W MAX. (SWITCHED)

Dimensions 420 (W) x 158 (H) x 393 (D) mm

(16-9/16 (W) x 6-4/16 (H) x 15-8/16 (D) in.)

Weight (without package)

VSX-D412-K 9.0 kg

VSX-D412-S (19.8 lb)

Furnished Parts

AM loop antenna 1

FM wire antenna 1

Dry cell batteries (AA size IEC R6P) 2

Remote control 1

Operating instructions 1



Note

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

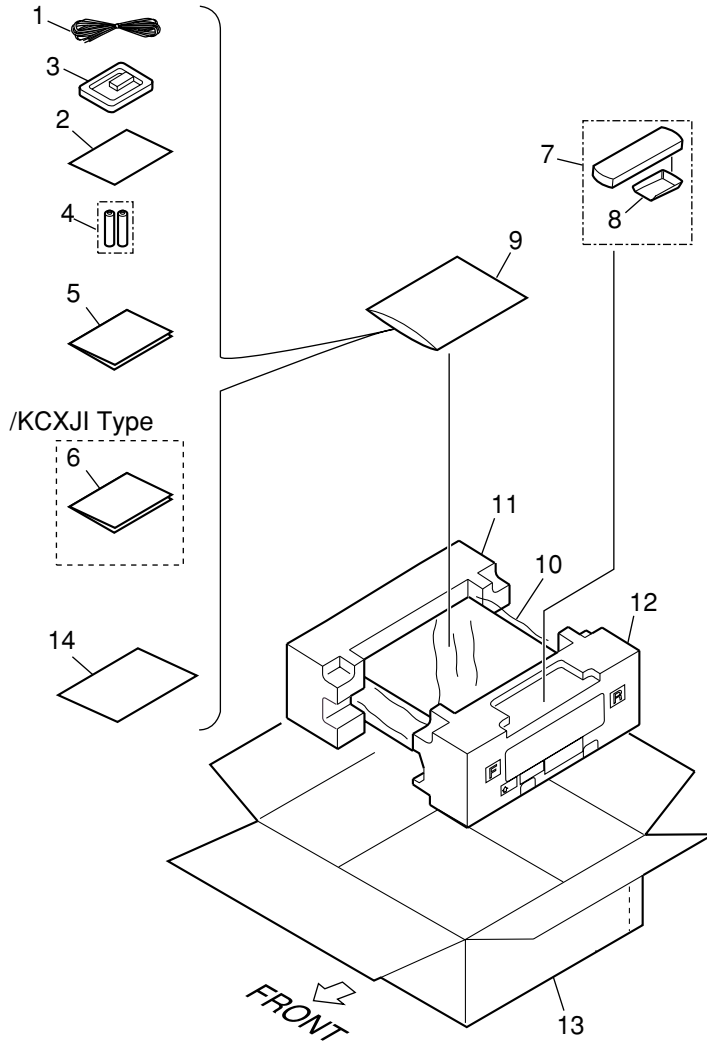
* Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifiers.

** Measured by Audio Spectrum Analyzer.

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 \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - Screws adjacent to \blacktriangledown 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>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	FM wire antenna	ADH7004	8	Battery Cover	AZA7378
NSP 2	Warranty Card	ARY7045	NSP 9	Literature Bag	AHG1180
3	AM loop antenna	ATB7009	10	Packing Sheet	AHG7069
NSP 4	Dry cell batteries (AA/R6P)	VEM1031	11	Left Pad R5	XHA3032
5	Operating instructions (English)	XR3019	12	Right Pad R5	XHA3033
6	Operating instructions	See Contrast table(2)	13	Packing Case	See Contrast table(2)
7	Remote Control Unit	XXD3038	NSP 14	Accessory Board	XHB3008

(2) CONTRAST TABLE

VSX-D412-K/KUXJI, /KCXJI and VSX-D412-S/KUXJI, /KCXJI are constructed the same except for the following :

Mark	No.	Symbol and Description	VSX-D412-K/ KUXJI	VSX-D412-S/ KUXJI	VSX-D412-K/ KCXJI	VSX-D412-S/ KCXJI
	6	Operating Instructions (French)	Not used	Not used	XRC3077	XRC3077
	13	Packing Case	XHD3322	XHD3323	XHD3322	XHD3323

2.2 EXTERIOR SECTION

A

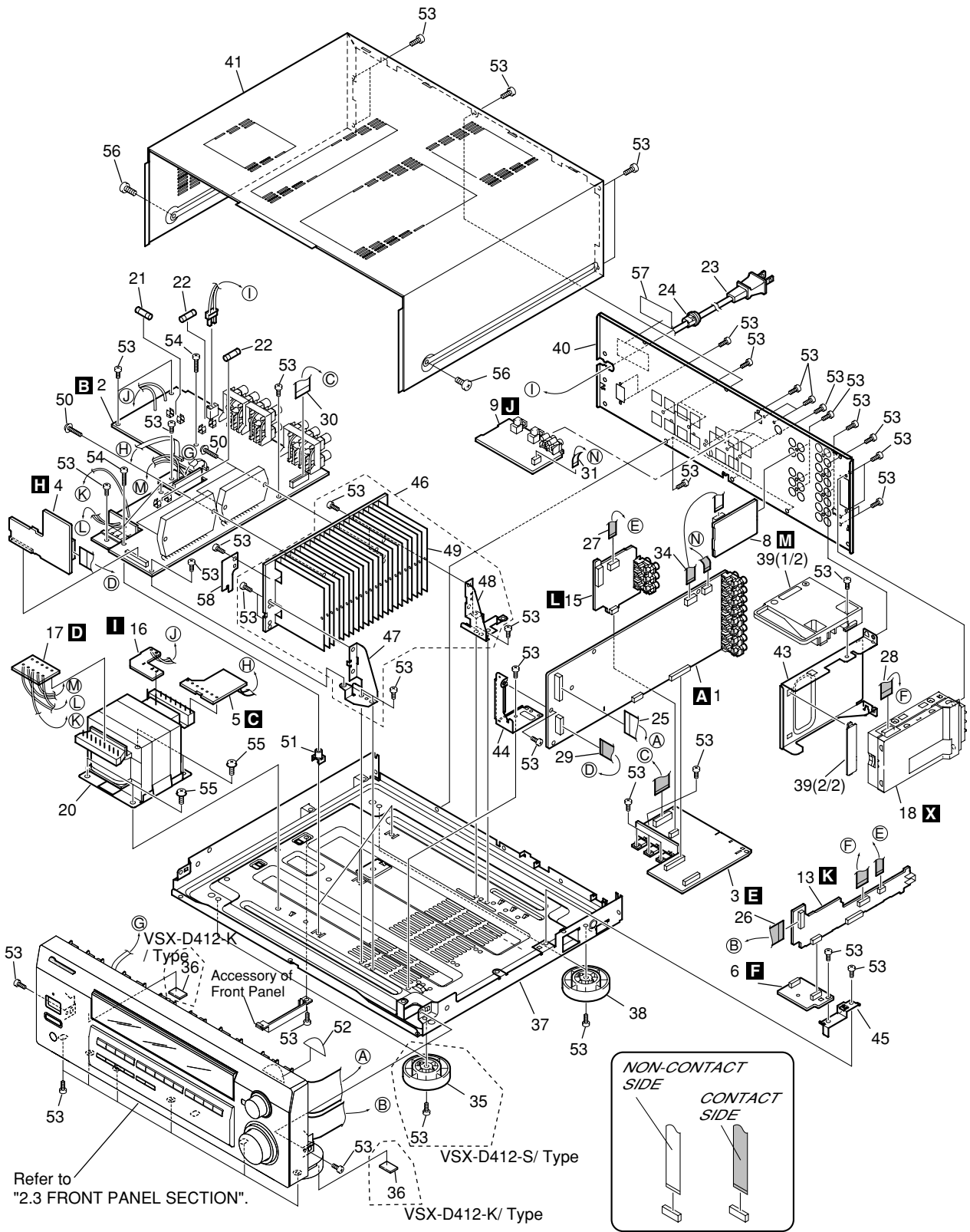
B

C

D

E

F



EXTERIOR SECTION parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	D.D & INPUT ASSY	XWX3044	30	23P F•F•C/30V (J36)	XDD3102
2	AMP & PRIMAR ASSY	XWZ3532		AMP CN53 - REGULATOR CN801	
3	REGULATOR ASSY	XWZ3544	31	7P F•F•C/30V (J37)	XDD3103
4	AMP INPUT ASSY	XWZ3547		DD CN9101 - DIGITAL IN CN1901	
5	TRANS2 ASSY	XWZ3555	32	•••••	
6	HASHIGETA ASSY	XWZ3566	33	•••••	
7	•••••		34	9P F•F•C/30V (J48)	XDD3106
8	6CH IN ASSY	XWZ3507		DD CN104 - 6CH IN CN307	
9	DIGITAL IN ASSY	XWZ3517	35	Insulator	See Contrast table(2)
10	•••••		36	Rubber Sheet	See Contrast table(2)
11	•••••		NSP 37	Under Base 409	ANA7094
12	•••••		38	Insulator	AMR7198
13	KAWA ASSY	XWZ3529	39	FFC Cover R5	XMR3047
14	•••••		40	Rear Panel	XNC3193
15	VIDEO ASSY	XWZ3490	41	Bonnet D412	See Contrast table(2)
NSP 16	TRANS1 ASSY	XWZ3552	42	•••••	
NSP 17	TRANS3 ASSY	XWZ3560	43	Tuner Shield R5	XNG3072
18	FM/AM TUNER MODULE	AXQ7231	44	PCB Angle R5	XNG3073
19	•••••		45	Reg Support R5	XNG3074
⚠ 20	Power Transformer (T1)	XTS3058	NSP 46	Heat Sink Assy 0.4	ANH7112
21	Fuse (FU2 : 8A)	REK1086	47	Heat Sink Angle F	ANG7251
⚠ 22	Fuse (FU1, FU701: 10A)	REK1087	48	Heat Sink Angle R	ANG7252
⚠ 23	Power Cord	ADG7024	NSP 49	Heat Sink 0.4	ANH7109
24	Cord Stopper	CM-22C	50	Screw 3x23	ABA7043
25	28P F•F•C/30V (J31)	XDD3097	51	PCB Mold	AMR2533
	DD CN102 - FRONT CN402		NSP 52	Energy Star Label	AAX7876
26	17P F•F•C/30V (J32)	XDD3098	53	Screw	BBZ30P080FMC
	KAWA CN5001 - FRONT CN401		54	Screw	BBZ30P200FMC
27	7P F•F•C/30V (J33)	XDD3099	55	Screw	FBT40P080FZK
	KAWA CN5004 - VIDEO CN503		56	Screw	See Contrast table(2)
28	13P F•F•C/30V (J34)	XDD3100	NSP 57	N Label 412S	See Contrast table(2)
	KAWA CN5005 - FM/AM TUNER CN201		58	Holder	XWZ3572
29	19P F•F•C/30V (J35)	XDD3101			
	DD CN106 - AMP INPUT CN254				

(2) CONTRAST TABLE

VSX-D412-K/KUXJI, /KCXJI and VSX-D412-S/KUXJI, /KCXJI are constructed the same except for the following :

Mark	No.	Symbol and Description	VSX-D412-K/ KUXJI	VSX-D412-S/ KUXJI	VSX-D412-K/ KCXJI	VSX-D412-S/ KCXJI
	36	Rubber Sheet	AEB1111	Not used	AEB1111	Not used
	35	Insulator	Not used	PNW2766	Not used	PNW2766
	41	Bonnet	XZN3112	XZN3123	XZN3112	XZN3113
	56	Screw	FBT40P080FZK	FBT40P080FNI	FBT40P080FZK	FBT40P080FZI
NSP	57	N Label 412S	Not used	XAL3149	Not used	XAL3149

2.3 FRONT PANEL SECTION

A

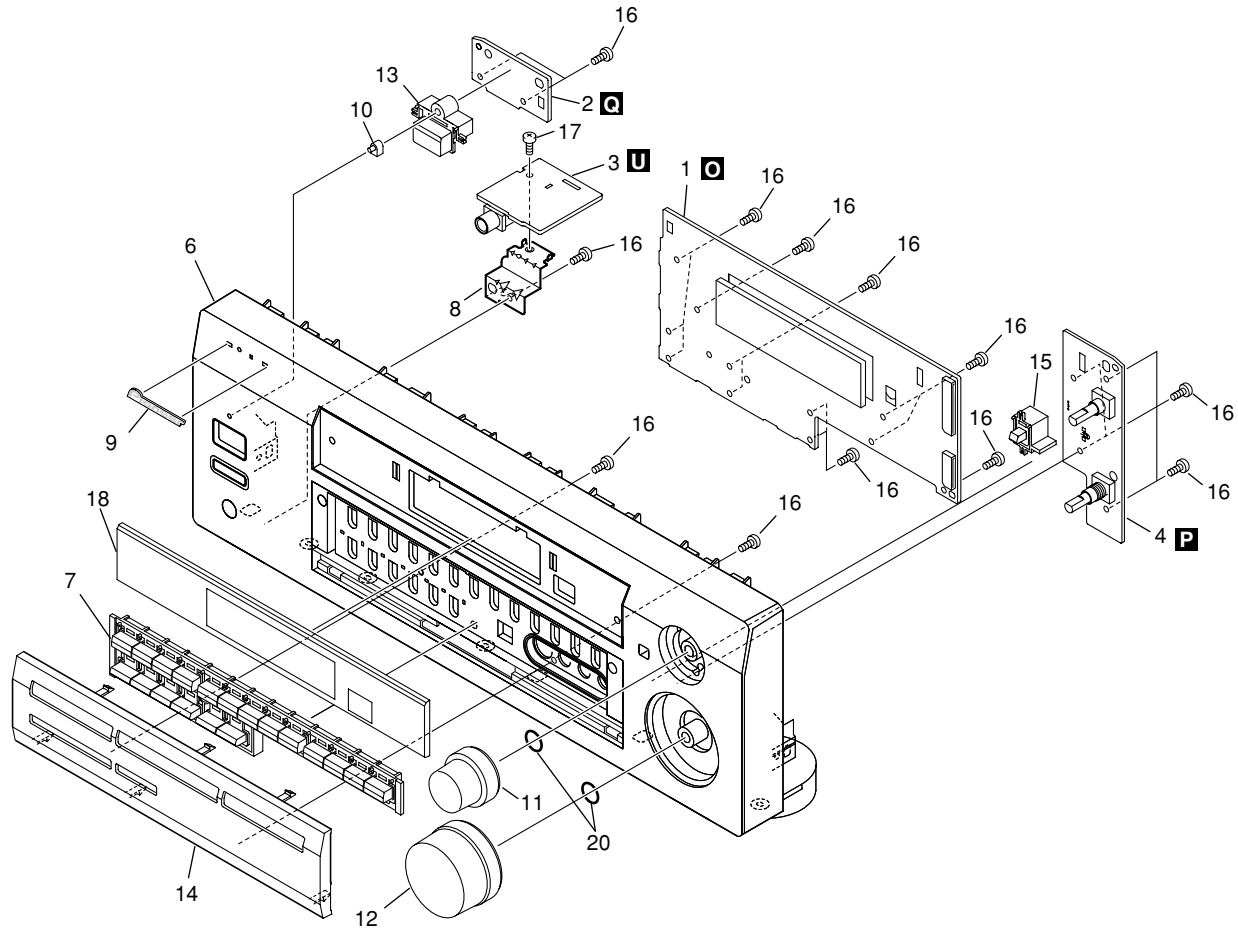
B

C

D

E

F



FRONT PANEL 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	FRONT ASSY	XWZ3587	11	Select Knob	See Contrast table(2)
2	POWER SW ASSY	XWZ3510	12	Volume Knob	See Contrast table(2)
3	H.P. ASSY	XWZ3513	13	Power Button	See Contrast table(2)
4	R. ENCODER ASSY	XWZ3511	14	Sub Panel	See Contrast table(2)
5		15	Jog Button	See Contrast table(2)
6	Front Panel	See Contrast table(2)	16	Screw	PPZ30P080FMC
7	Sub Button	See Contrast table(2)	17	Screw	BBZ30P080FMC
8	Earth Plate R5 HP	XNG3066	18	D Panel R5 W	XAK3274
9	Pioneer Badge	See Contrast table(2)	19	
10	Led Lens 1.6	XAK3308	NSP 20	C Ring Dim 8.1	XBH3016

(2) CONTRAST TABLE

VSX-D412-K/KUXJI, /KCXJI and VSX-D412-S/KUXJI, /KCXJI are constructed the same except for the following :

Mark	No.	Symbol and Description	VSX-D412-K/ KUXJI	VSX-D412-S/ KUXJI	VSX-D412-K/ KCXJI	VSX-D412-S/ KCXJI
	6	Front Panel	XMB3110	XMB3111	XMB3110	XMB3111
	7	Sub Button	XAD3125	XAD3133	XAD3125	XAD3133
	9	Pioneer Badge	XAM3006	VAM1129	XAM3006	VAM1129
	11	Select Knob	XAB3023	XAB3024	XAB3023	XAB3024
	12	Volume Knob	XAB3025	XAB3026	XAB3025	XAB3026
	13	Power Button	XAD3123	XAD3129	XAD3123	XAD3129
	14	Sub Panel	XAK3338	XAK3386	XAK3338	XAK3386
	15	Jog Button	XAD3124	XAD3131	XAD3124	XAD3131

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

A

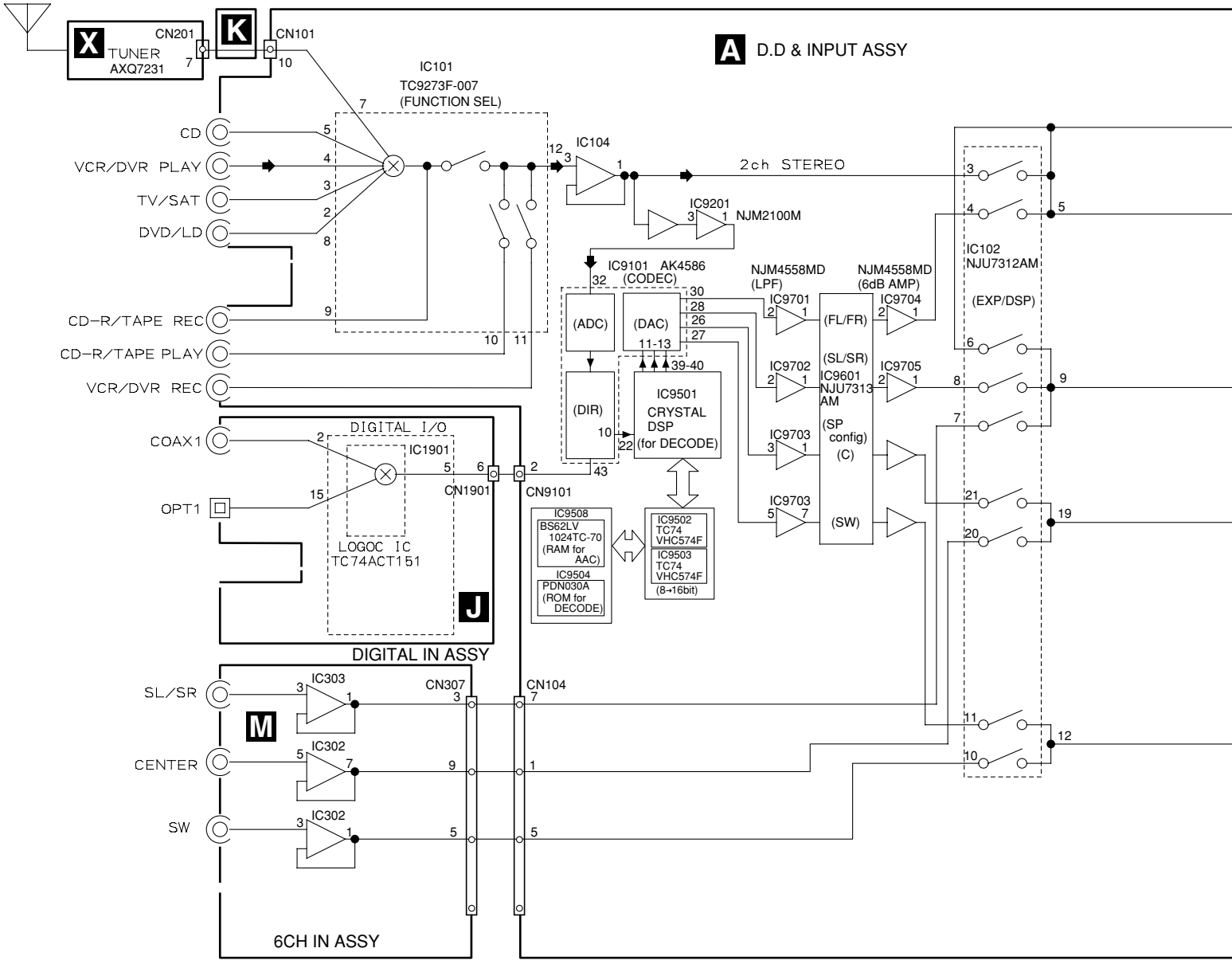
B

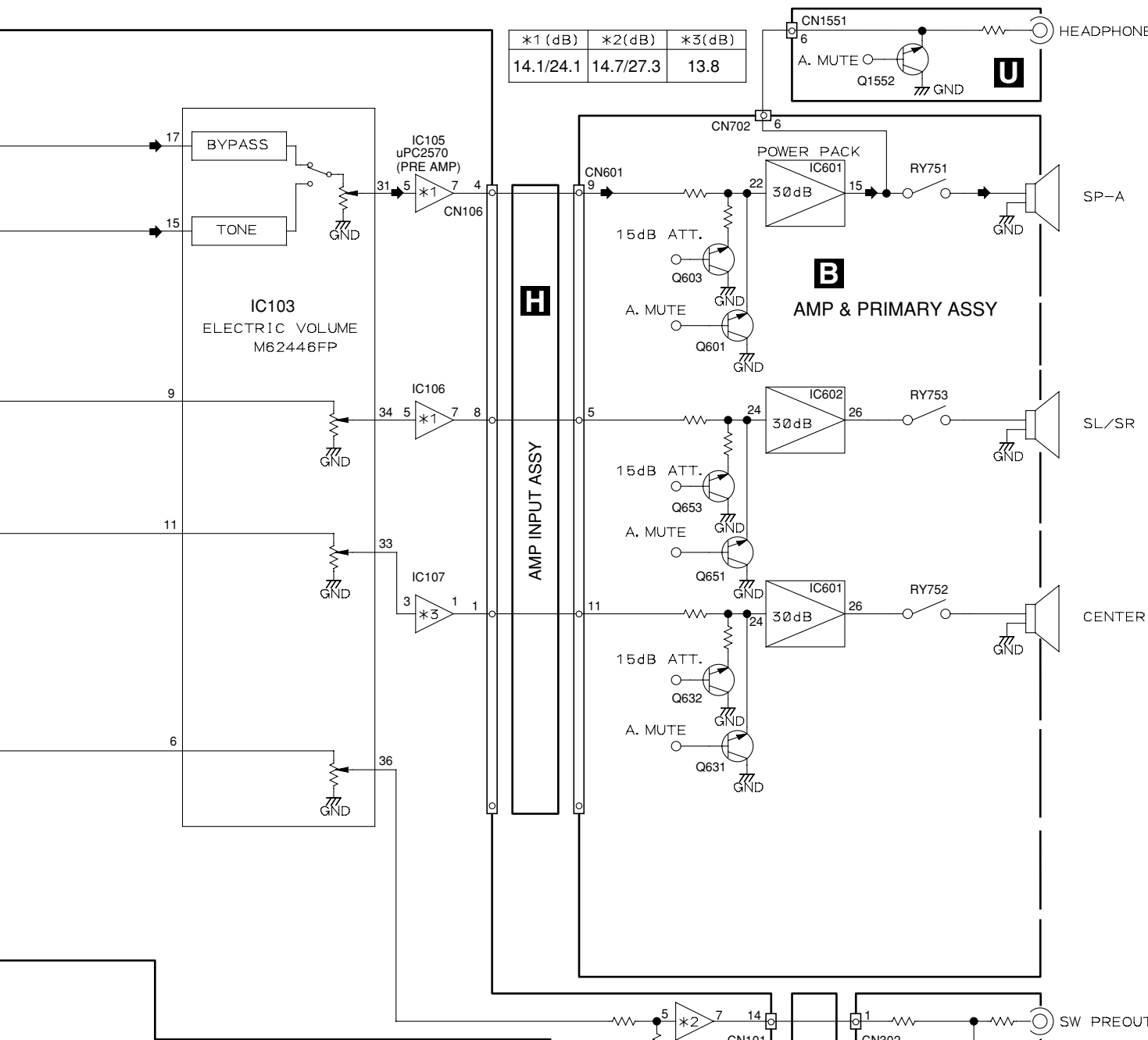
C

D

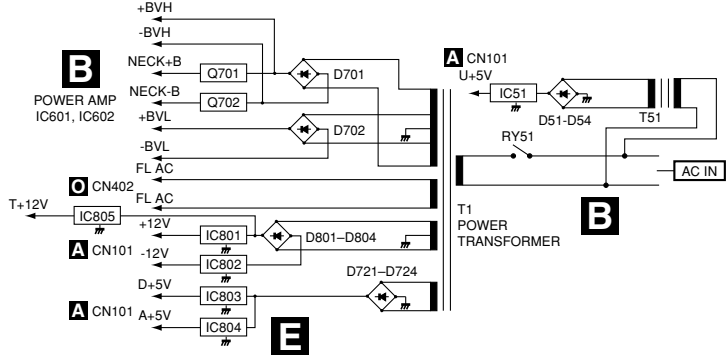
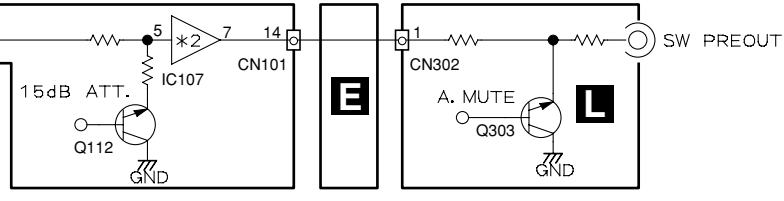
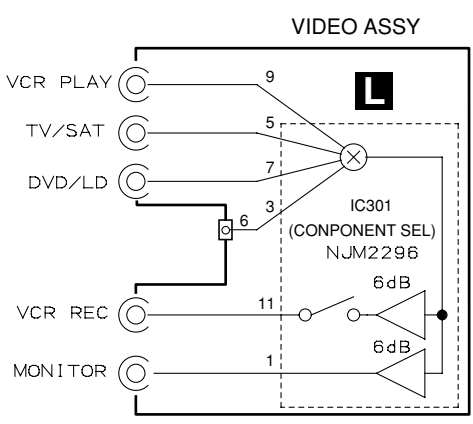
E

F





*1 (dB)	*2(dB)	*3(dB)
14.1/24.1	14.7/27.3	13.8



3.2 OVERALL WIRING CONNECTION DIAGRAM

A

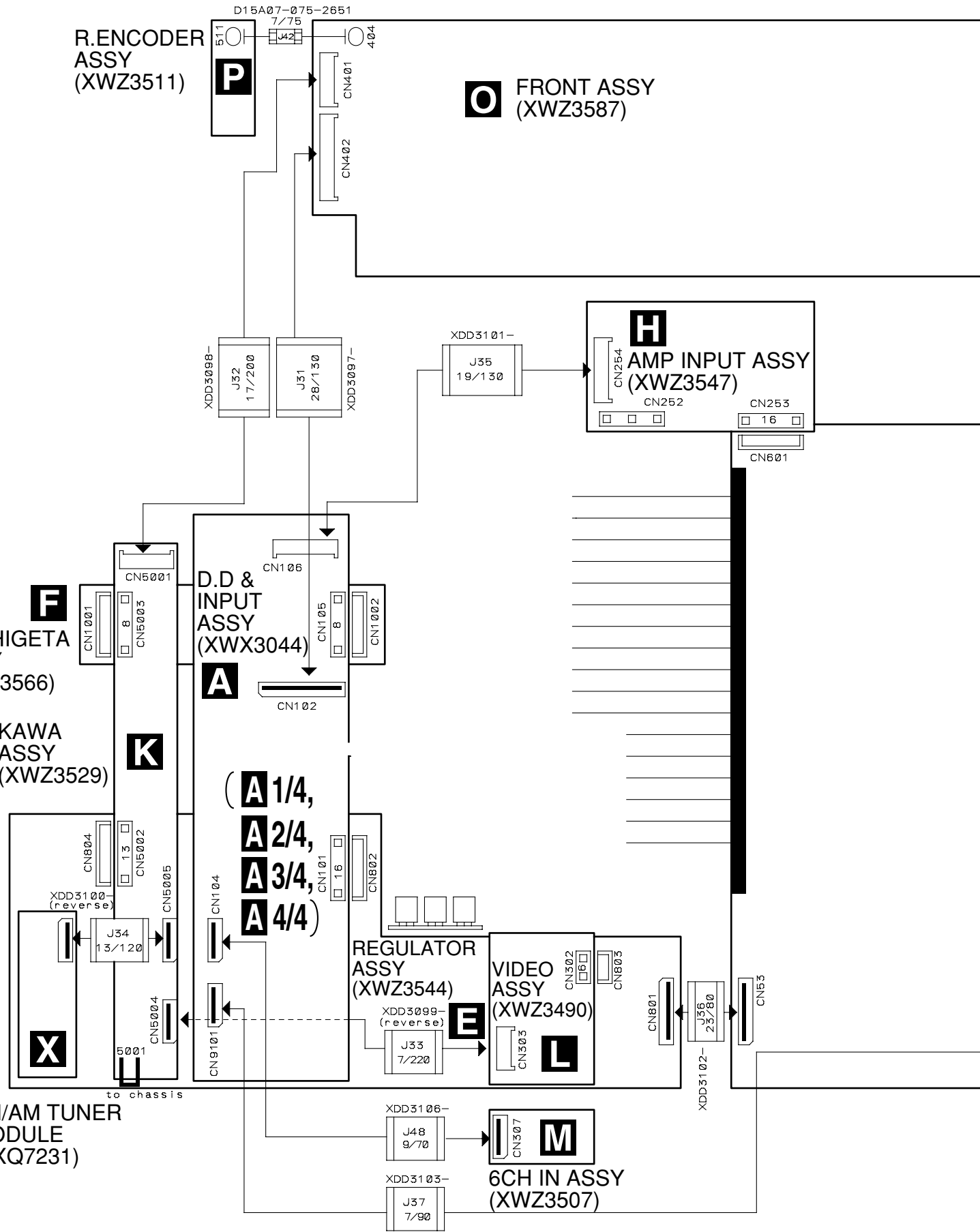
B

C

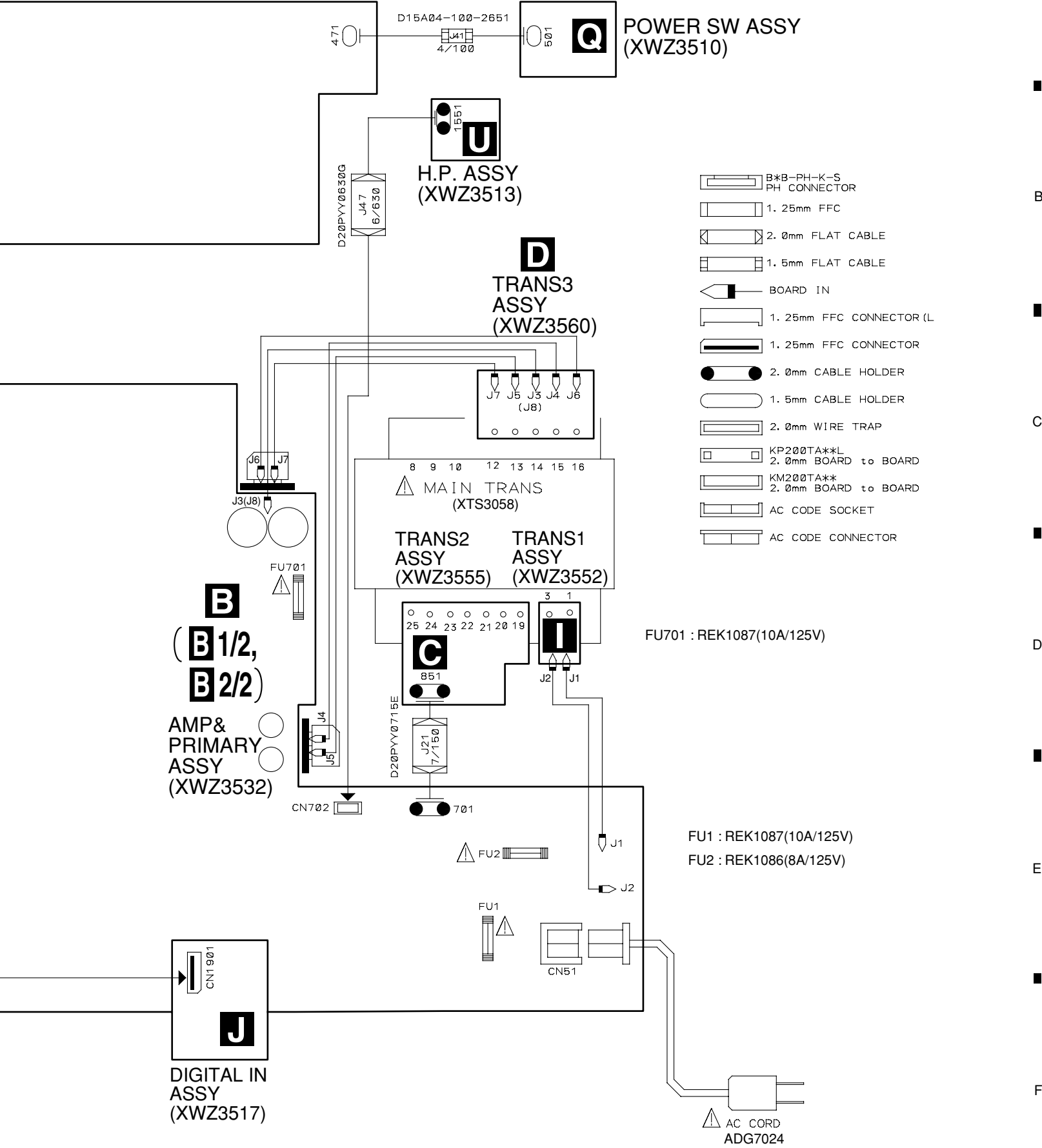
D

E

F



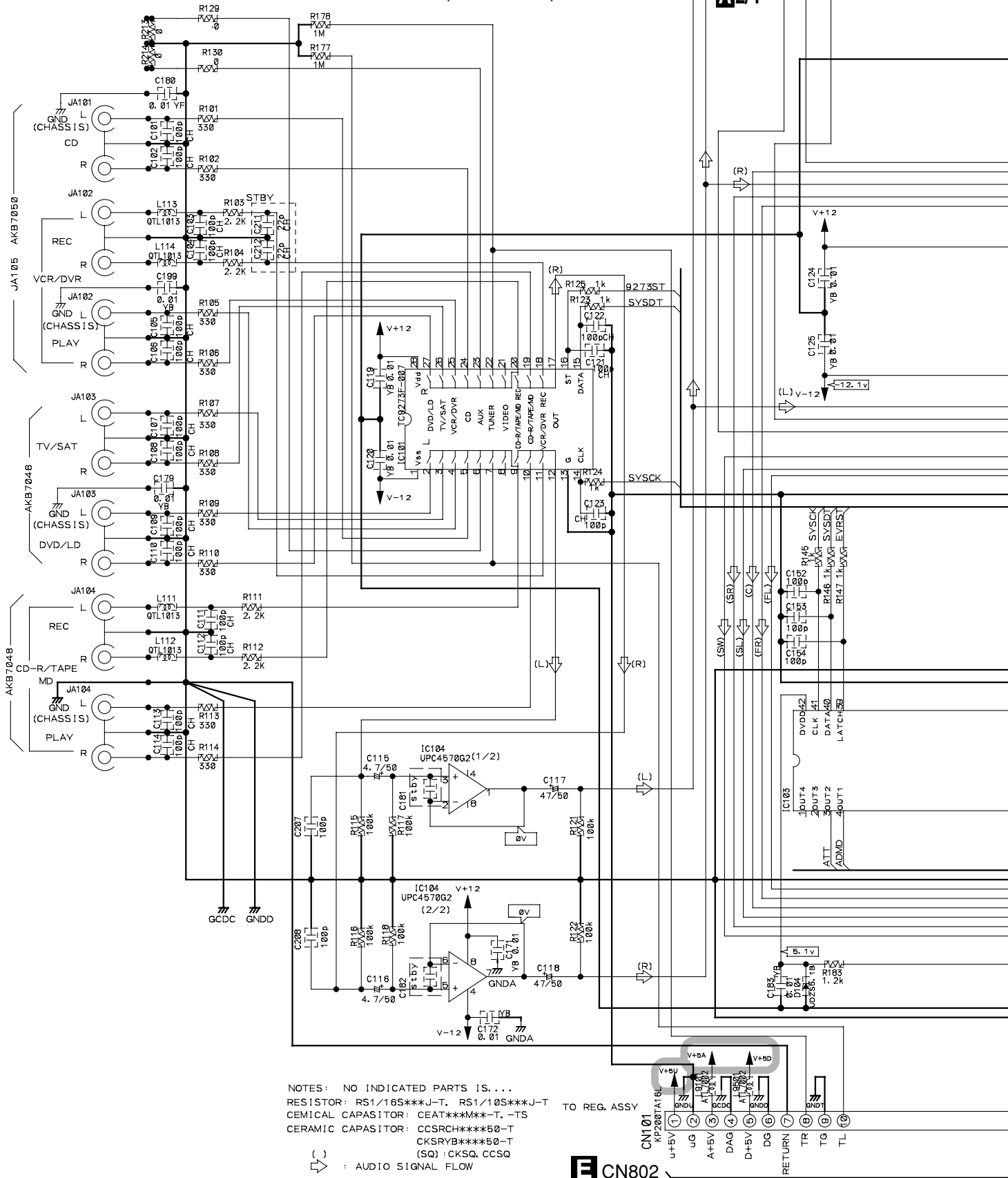
Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".



3.3 D.D & INPUT(1/4) ASSY

A 1/4 D.D & INPUT ASSY (XWX3044)

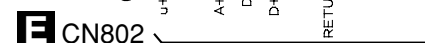
TO CODEC & PRE AMP BLOCK



NOTES: NO INDICATED PARTS IS...
 RESISTOR: RS1/16S***J-T, RS1/10S***J-T
 CEMICAL CAPASITOR: CEAT***M**T, -TS
 CERAMIC CAPASITOR: CCSRCH***50-T
 CKSRYB***50-T
 (SQ): CKSQ, CCSQ

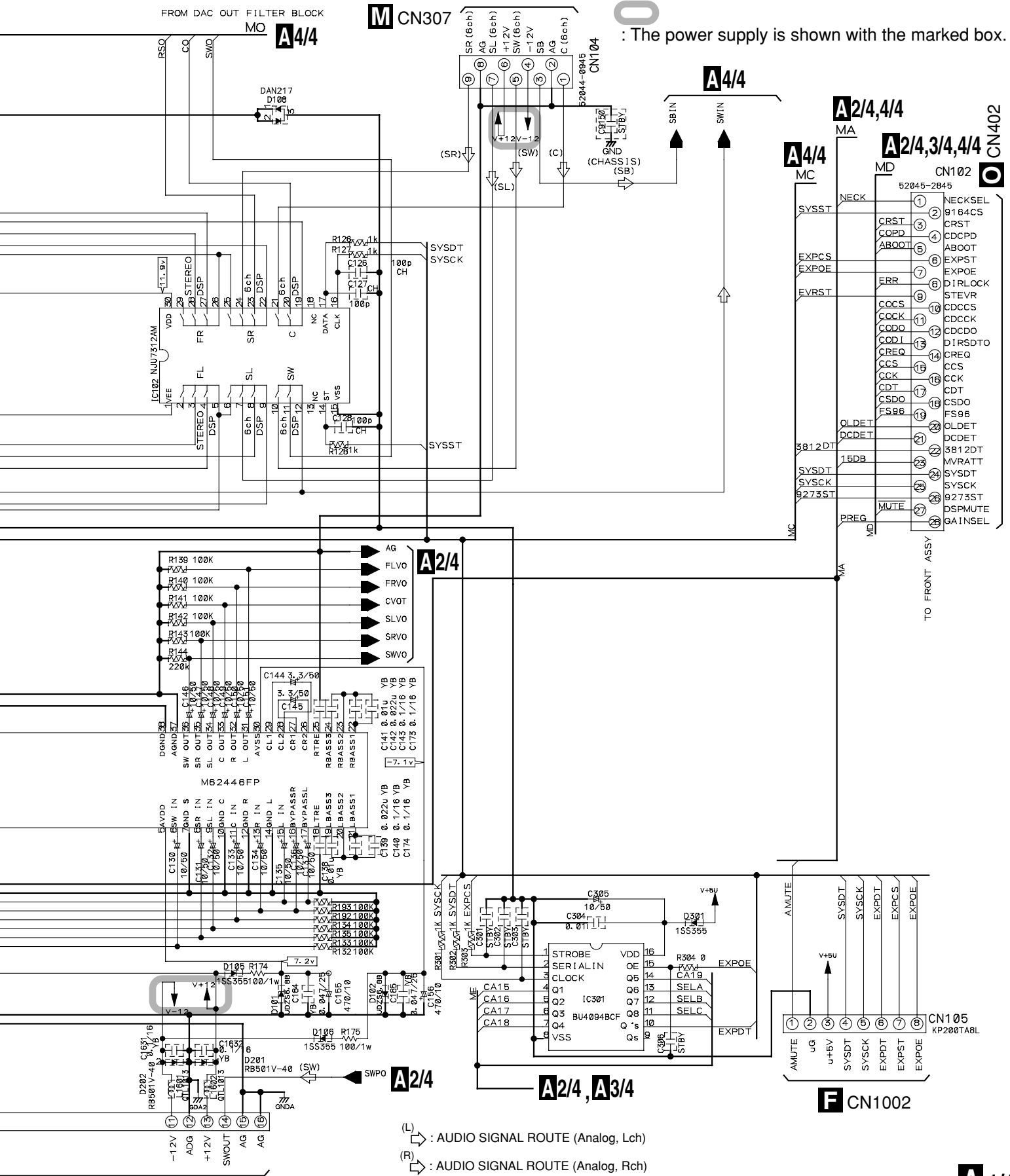
↻ : AUDIO SIGNAL FLOW

TO REG. ASSY



A 1/4

VSX-D412-K



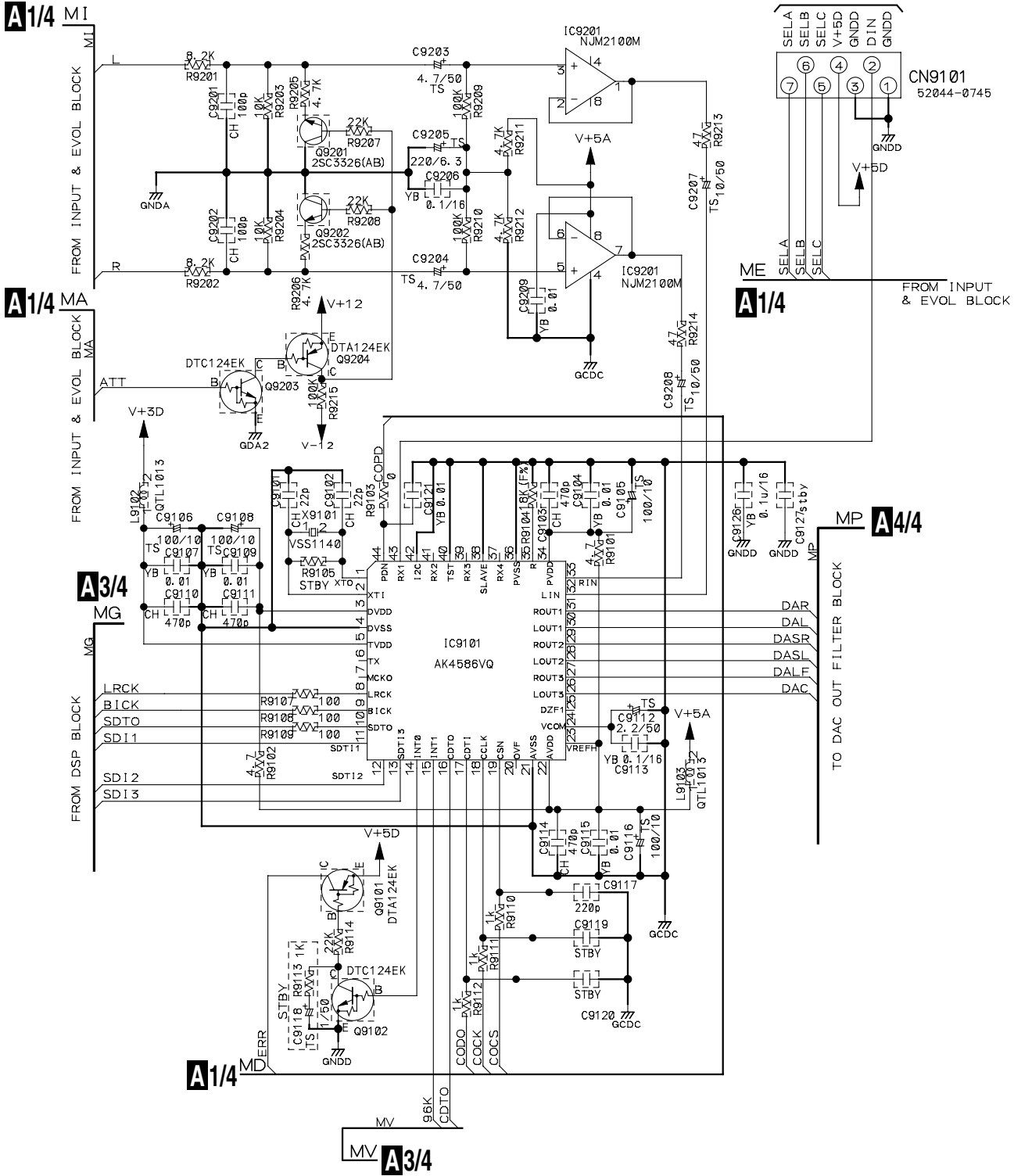
O : The power supply is shown with the marked box.

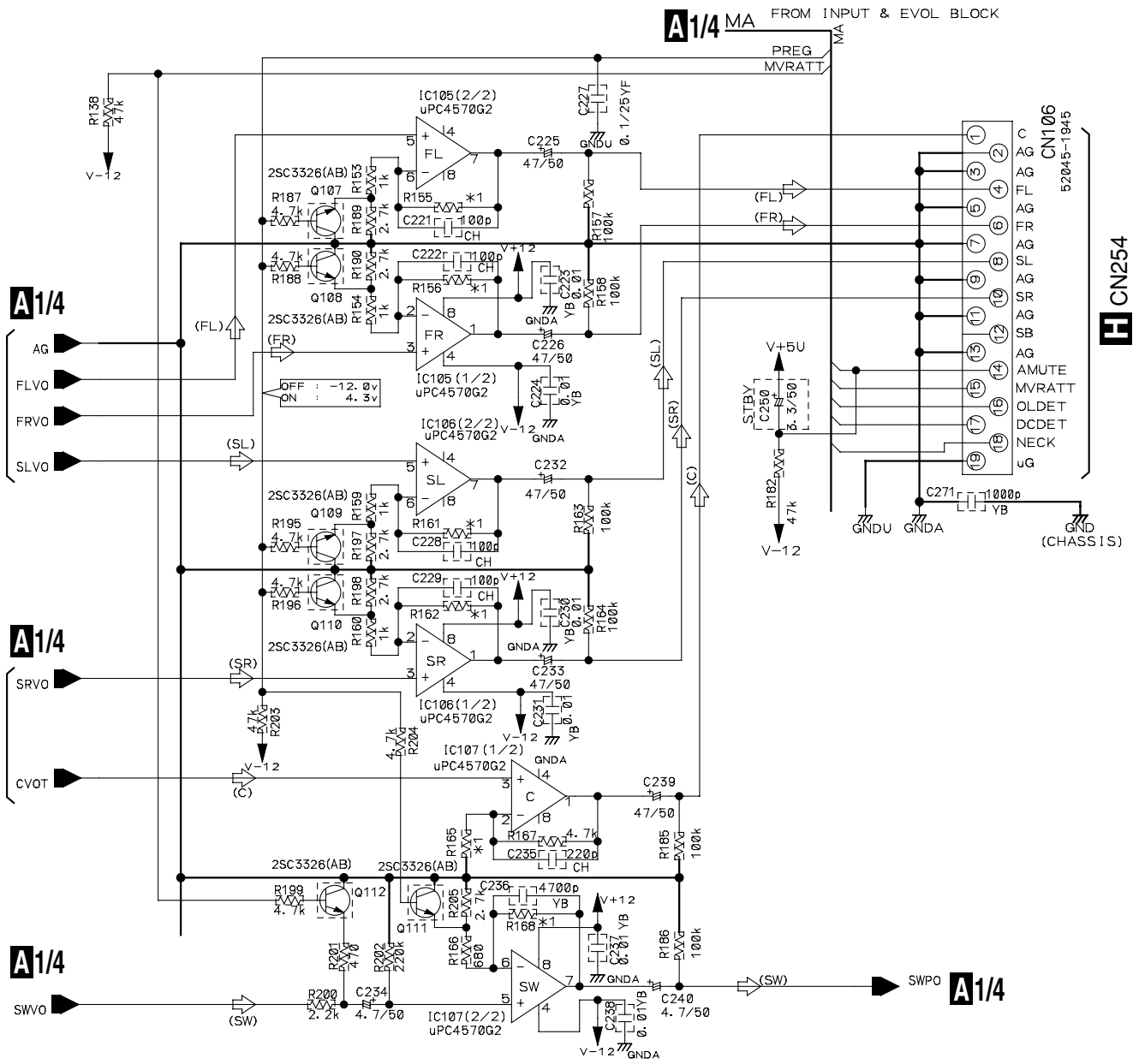
(L) : AUDIO SIGNAL ROUTE (Analog, Lch)
 (R) : AUDIO SIGNAL ROUTE (Analog, Rch)

A 1/4

3.4 D.D & INPUT(2/4) ASSY

A 2/4 D.D & INPUT ASSY (XWX3044)

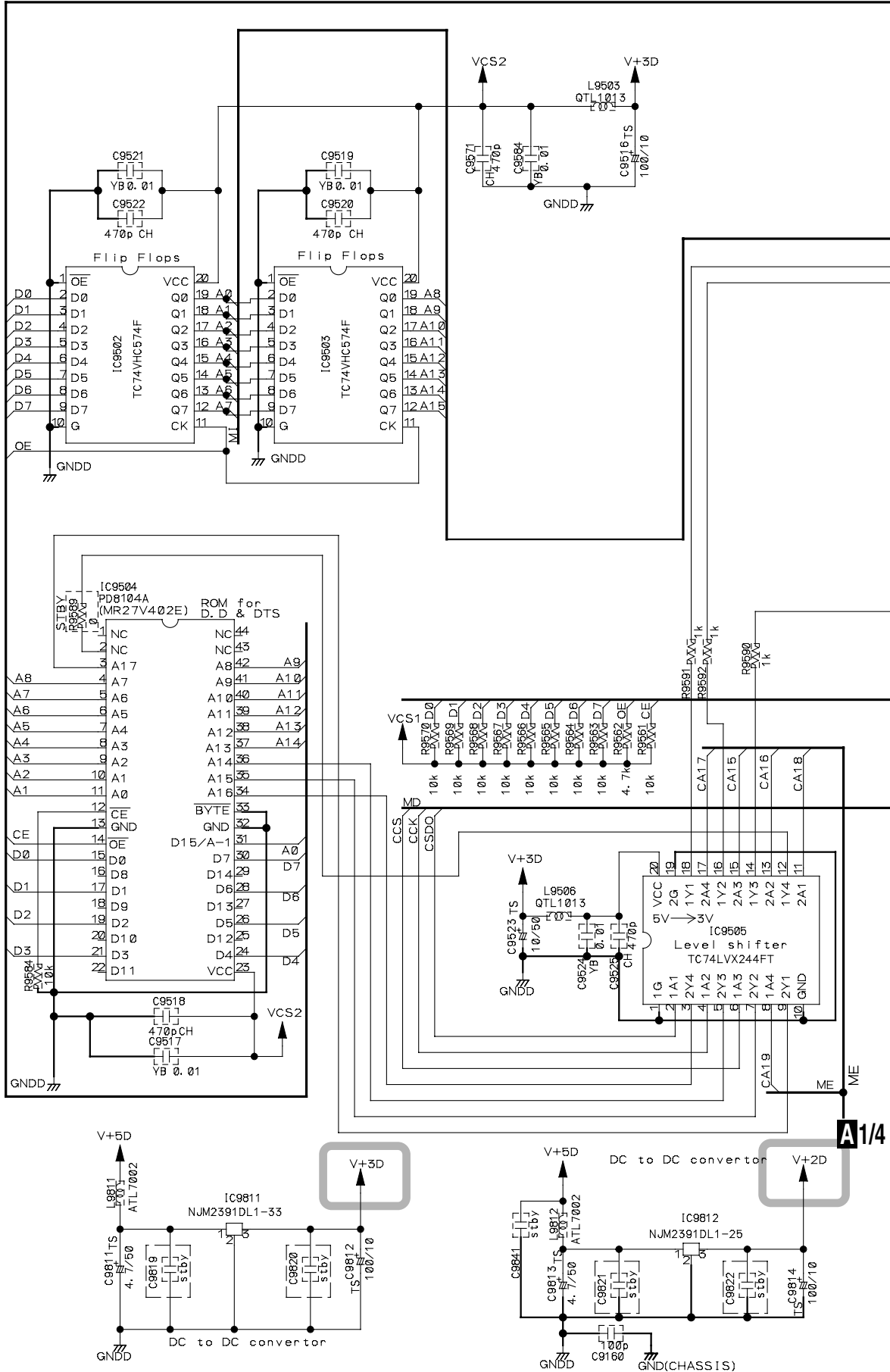




- ⇨ : AUDIO SIGNAL ROUTE
- (FL) ⇨ : AUDIO SIGNAL ROUTE (Front L ch)
- (SL) ⇨ : AUDIO SIGNAL ROUTE (Rear L ch)
- (SW) ⇨ : AUDIO SIGNAL ROUTE (Sub Woofer)
- (C) ⇨ : AUDIO SIGNAL ROUTE (Center)

*1	FRONT, SURROUND		SW		CENTER, SB	
	R155 R156 R161 R162 (Ω)	GAIN (dB)	R168 (Ω)	GAIN (dB)	R165 (Ω)	GAIN (dB)
	15k	14. 1/24. 1	15k	14. 7/27. 3	1. 2k	13. 8

3.5 D.D & INPUT(3/4) ASSY

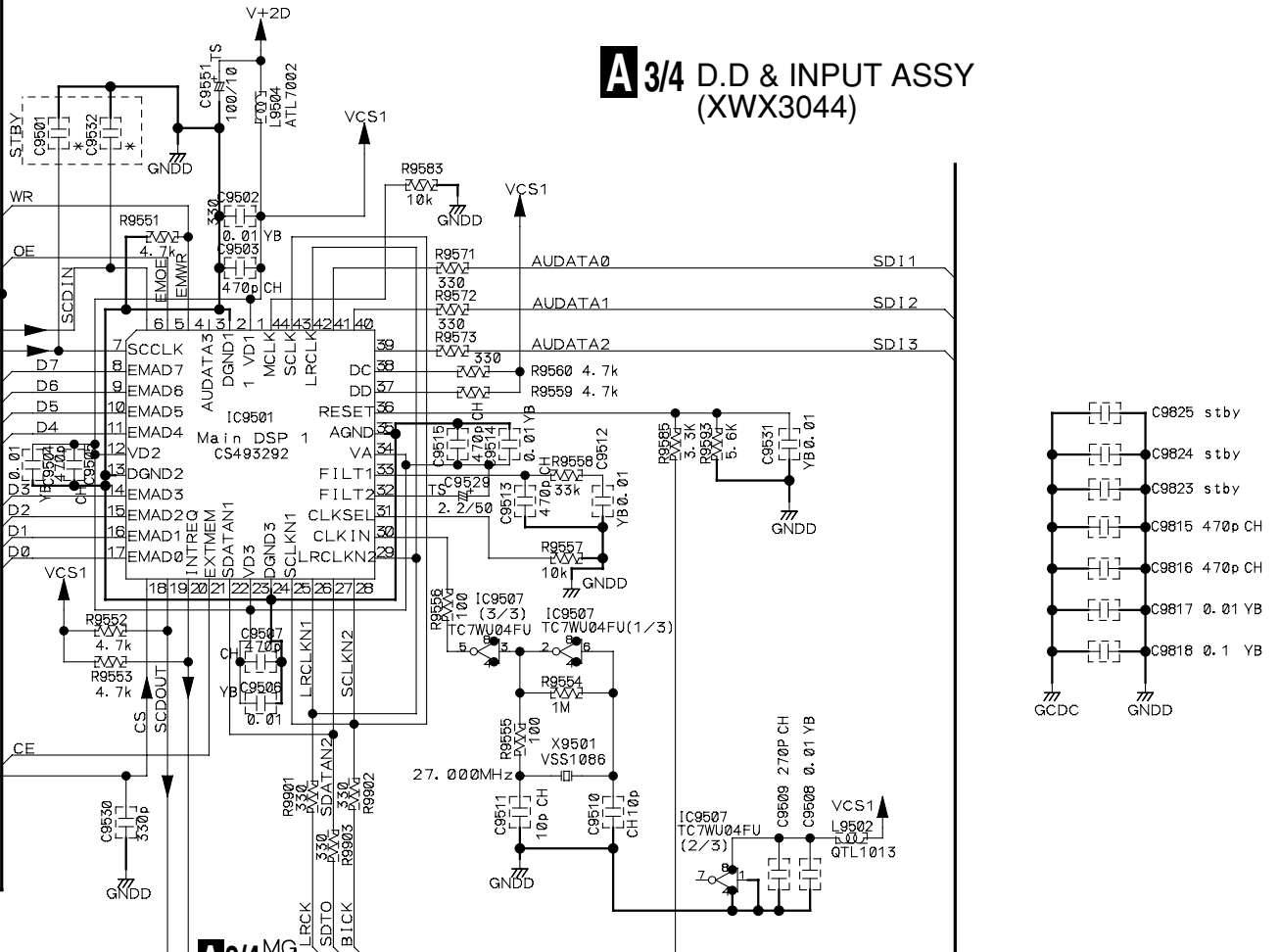


A 3/4

VSX-D412-K

Main DSP 1 decodes D.D and DTS signals.

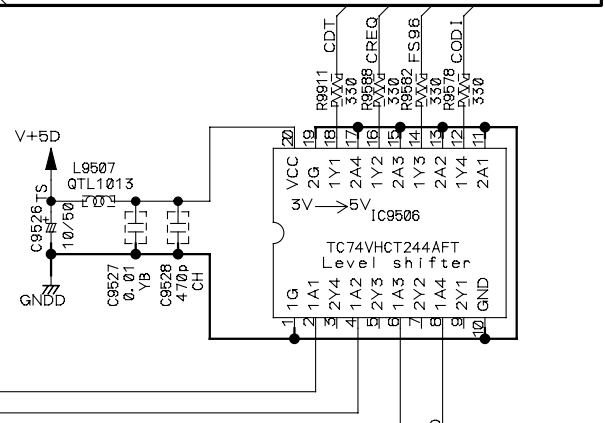
A 3/4 D.D & INPUT ASSY (XWX3044)



A2/4 MG

TO CODEC & PRE AMP BLOCK

A1/4 MD



A2/4 MV

TO CODEC & PRE AMP BLOCK

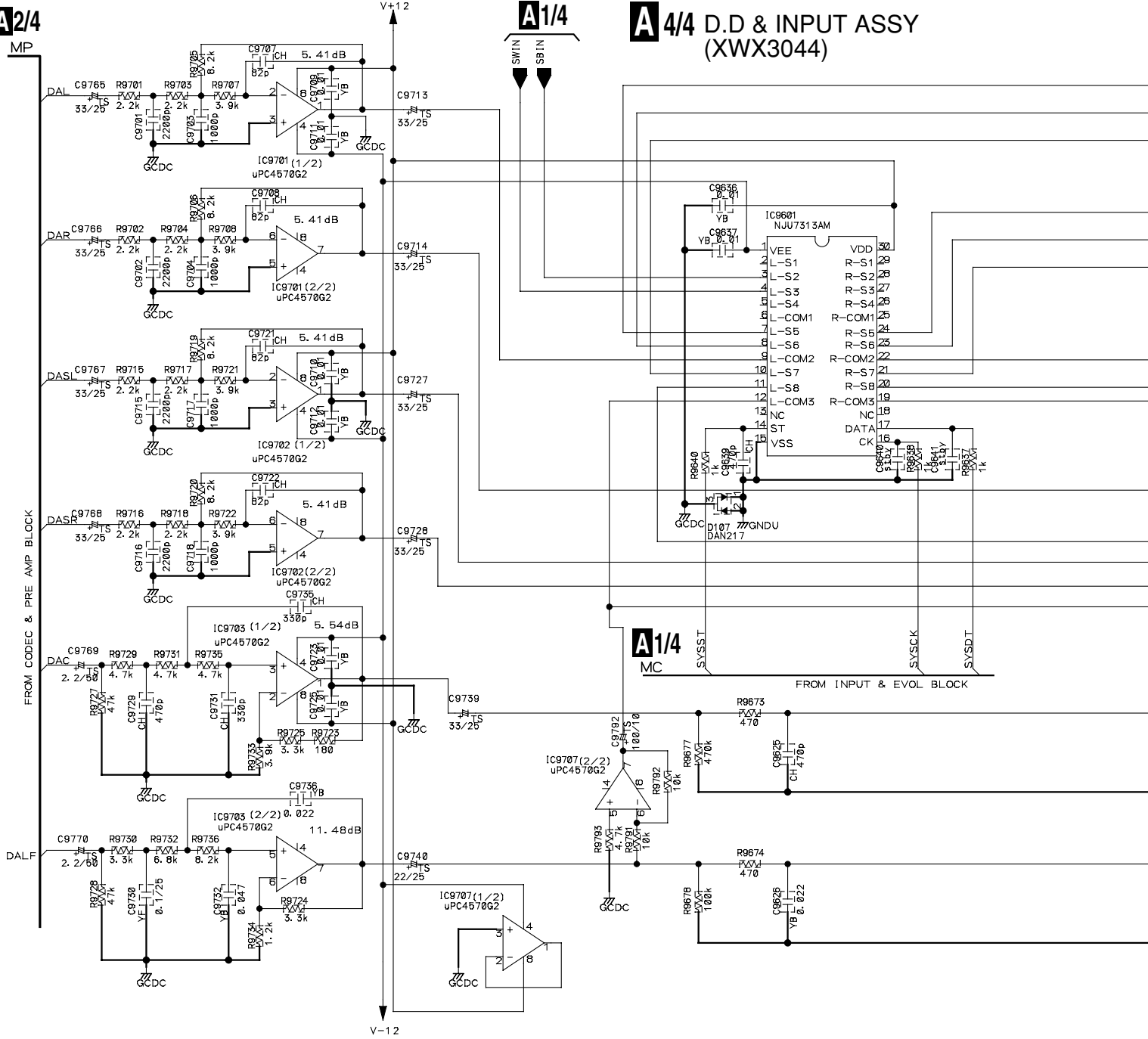
: The power supply is shown with the marked box.

A 3/4

3.6 D.D & INPUT(4/4) ASSY

A/4

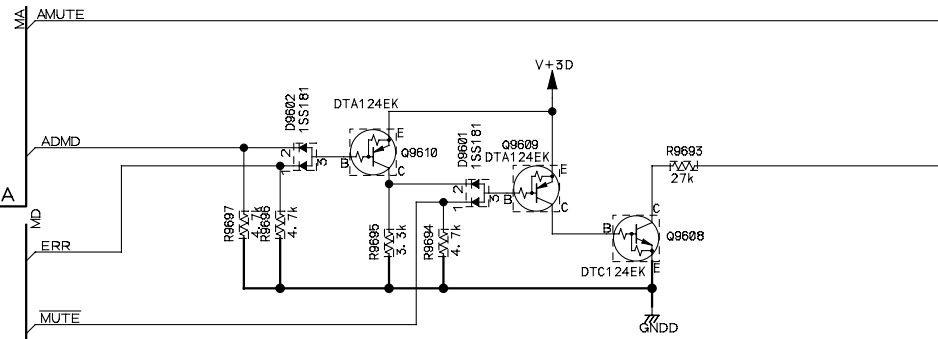
A/4 D.D & INPUT ASSY (XWX3044)



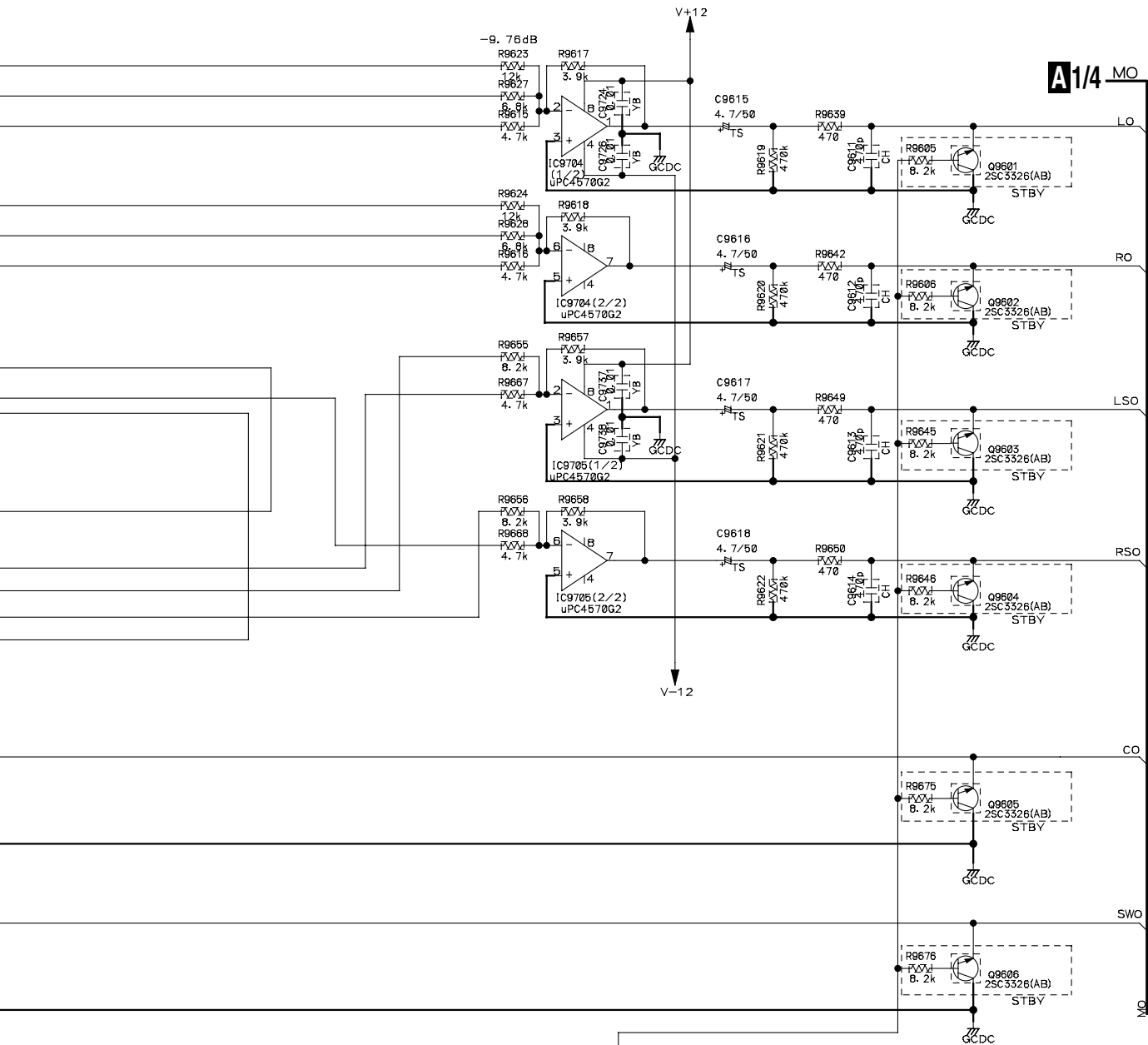
A/4 MC

A/4 MA

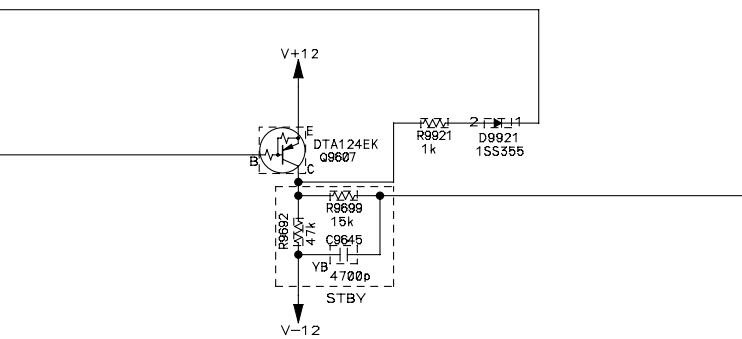
A/4 MD



A/4



TO INPUT & EVOL BLOCK

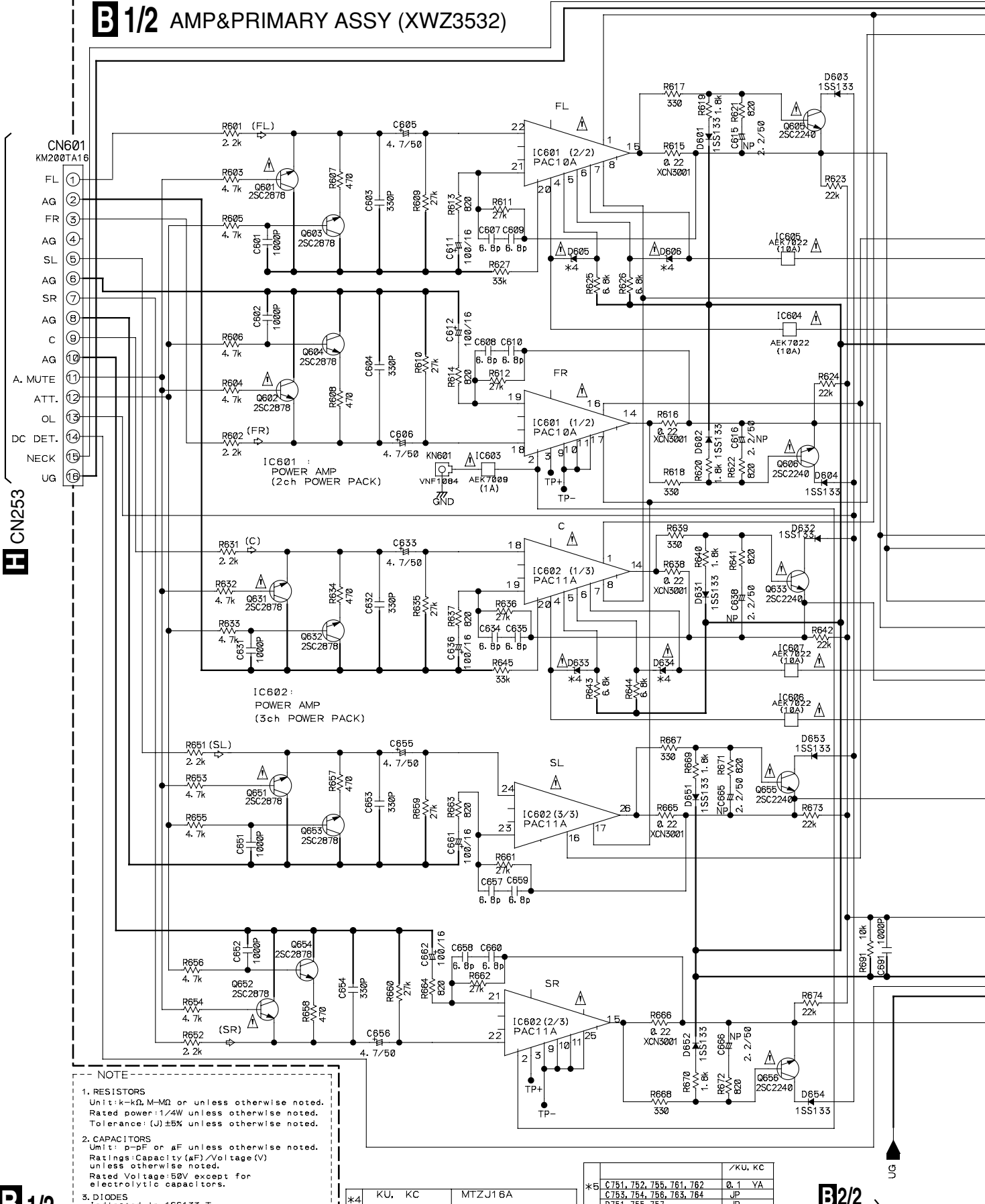


A1/4 MO

3.7 AMP & PRIMARY(1/2), TRANS2 and TRANS3 ASSYS

A
B
C
D
E
F

B 1/2 AMP&PRIMARY ASSY (XWZ3532)



NOTE

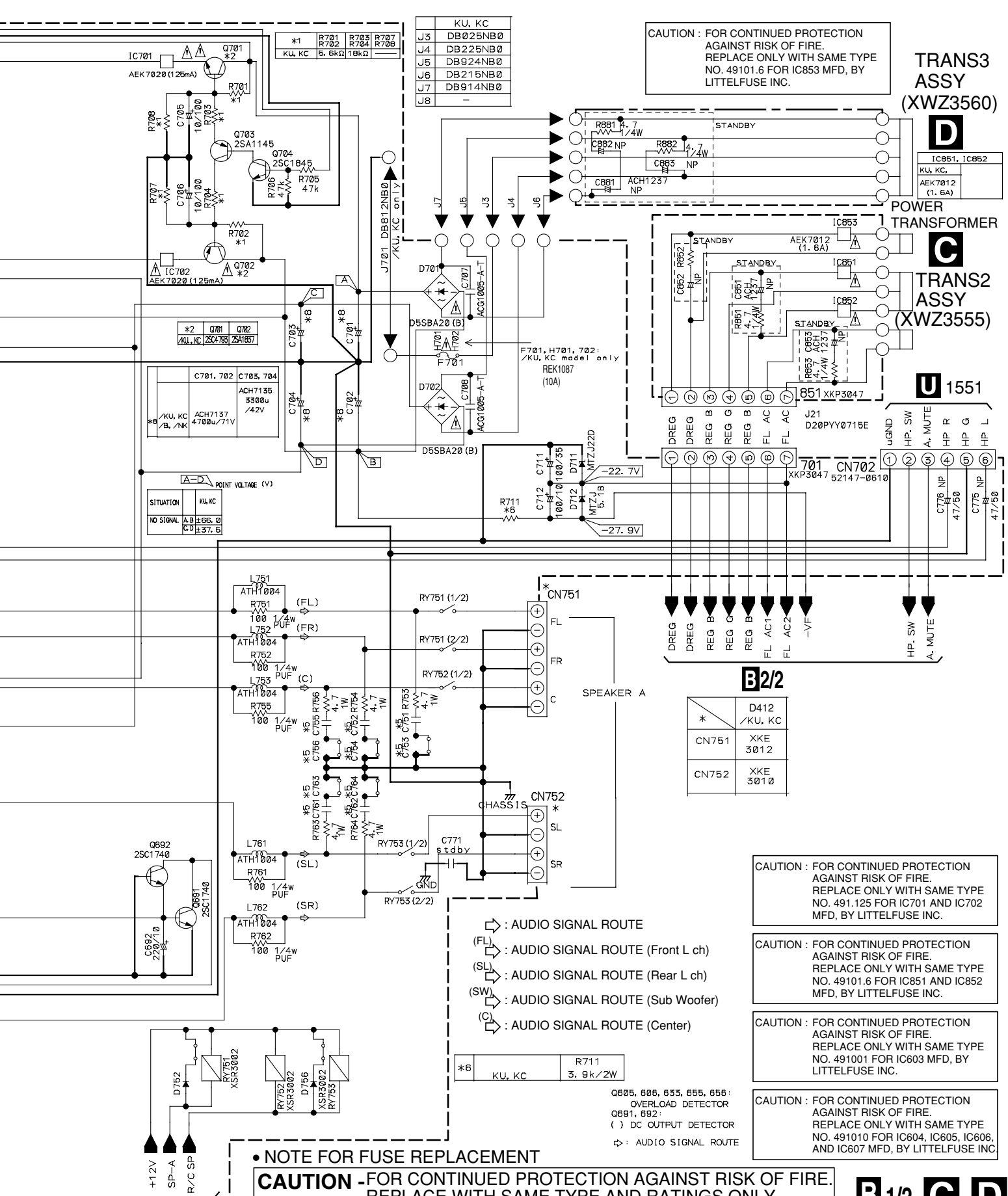
- RESISTORS**
Unit: k- Ω , M- Ω or μ F unless otherwise noted.
Rated power: 1/4W unless otherwise noted.
Tolerance: (J) \pm 5% unless otherwise noted.
- CAPACITORS**
Unit: p-pF or μ F unless otherwise noted.
Ratings: Capacity (μ F)/Voltage (V) unless otherwise noted.
Rated Voltage: 50V except for electrolytic capacitors.
- DIODES**
Indicated in 1SS133-T

*4	KU, KC	MTZJ1 6A
----	--------	----------

*5	C751, 752, 755, 761, 762	/KU, KC
	C753, 754, 756, 763, 764	0.1 YA
	D751, 755, 757	JP

B 1/2

B 2/2



J3	KU, KC
J4	DB025NB0
J5	DB924NB0
J6	DB215NB0
J7	DB914NB0
J8	-

CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 49101.6 FOR IC853 MFD, BY LITTELFUSE INC.

TRANS3 ASSY (XWZ3560)

D

IC851, IC852
KU, KC,
AEK7012 (1.6A)

POWER TRANSFORMER

C

TRANS2 ASSY (XWZ3555)

U 1551

A-D POINT VOLTAGE (V)

SITUATION	KU, KC
NO SIGNAL	A B ±66.0
CD	D ±37.5

B2/2

*	D412 /KU, KC
CN751	XKE 3012
CN752	XKE 3010

CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 491.125 FOR IC701 AND IC702 MFD, BY LITTELFUSE INC.

CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 49101.6 FOR IC851 AND IC852 MFD, BY LITTELFUSE INC.

CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 491001 FOR IC603 MFD, BY LITTELFUSE INC.

CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 491010 FOR IC604, IC605, IC606, AND IC607 MFD, BY LITTELFUSE INC.

- ↔ : AUDIO SIGNAL ROUTE
- (FL) : AUDIO SIGNAL ROUTE (Front L ch)
- (SL) : AUDIO SIGNAL ROUTE (Rear L ch)
- (SW) : AUDIO SIGNAL ROUTE (Sub Woofer)
- (C) : AUDIO SIGNAL ROUTE (Center)

*6	KU, KC
	R711 3.9k/2W

Q605, 606, 635, 655, 656 : OVERLOAD DETECTOR
 Q691, 692 : () DC OUTPUT DETECTOR
 () : AUDIO SIGNAL ROUTE

• NOTE FOR FUSE REPLACEMENT

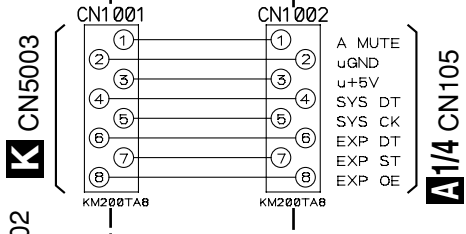
CAUTION - FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE WITH SAME TYPE AND RATINGS ONLY.

B 1/2 C D

3.8 AMP & PRIM.(2/2), REG., HASHIGETA, AMP INPUT and TRANS1 ASSYS

HASHIGETA ASSY (XWZ3566)

F



K CN5003

K CN5002

- ① AC WUP
- ② AC RY
- ③ FL AC1
- ④ FL AC2
- ⑤ -VF
- ⑥ SP-A RY
- ⑦ R/C RY
- ⑧ SP-B RY
- ⑨ HP. SW
- ⑩ TR
- ⑪ TG
- ⑫ TL
- ⑬ T+1 2V

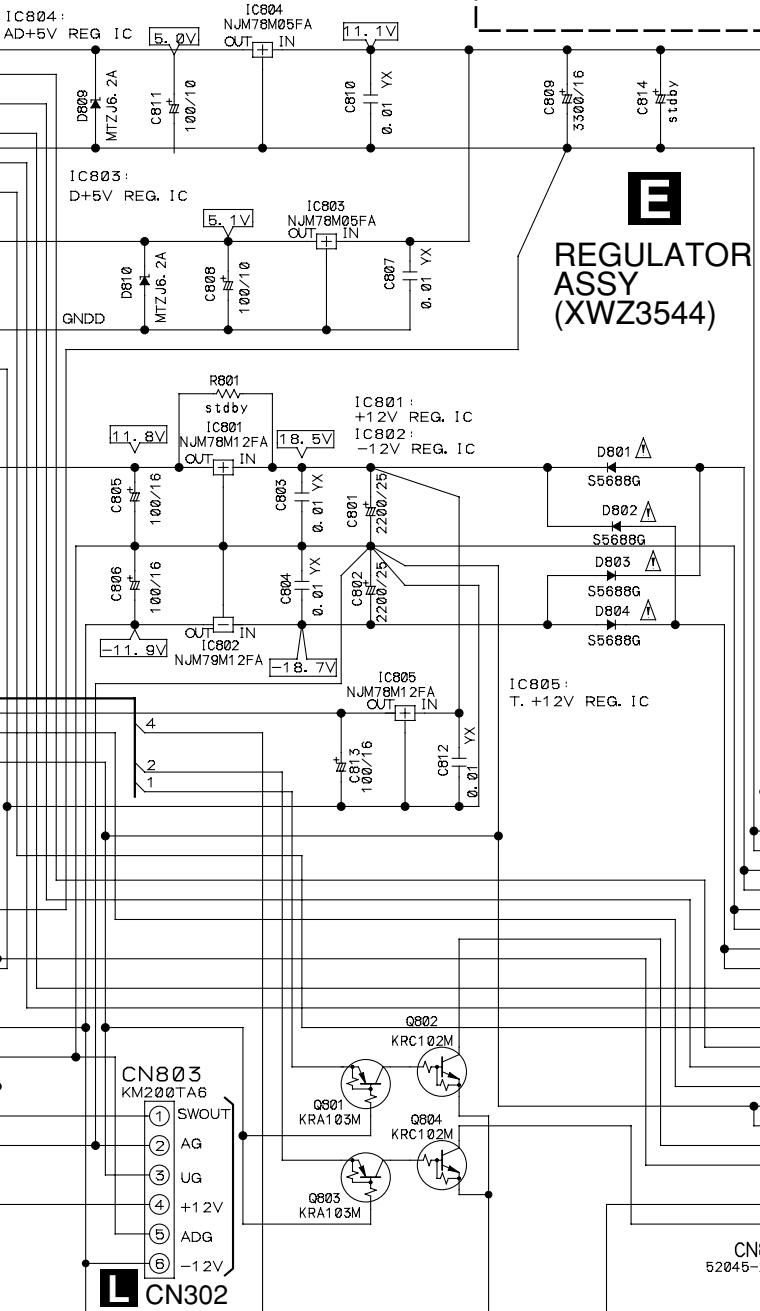
A1/4 CN101

- ① U+5V
- ② UG
- ③ AD+5V
- ④ DAG
- ⑤ D+5V
- ⑥ DG
- ⑦ RETURN
- ⑧ TR
- ⑨ TG
- ⑩ TL
- ⑪ -1 2V
- ⑫ ADG
- ⑬ +1 2V
- ⑭ SWOUT
- ⑮ AG
- ⑯ AG

CN802 KM200TA16

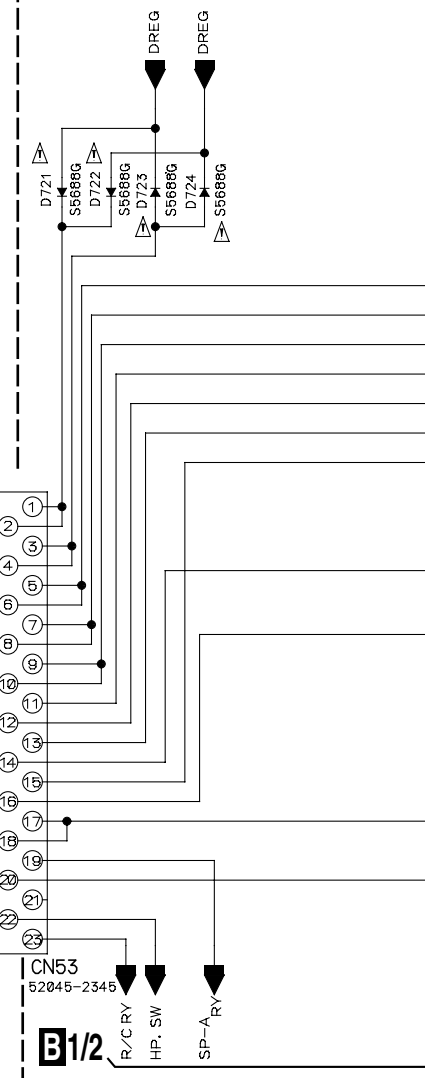
CN803 KM200TA6

CN302



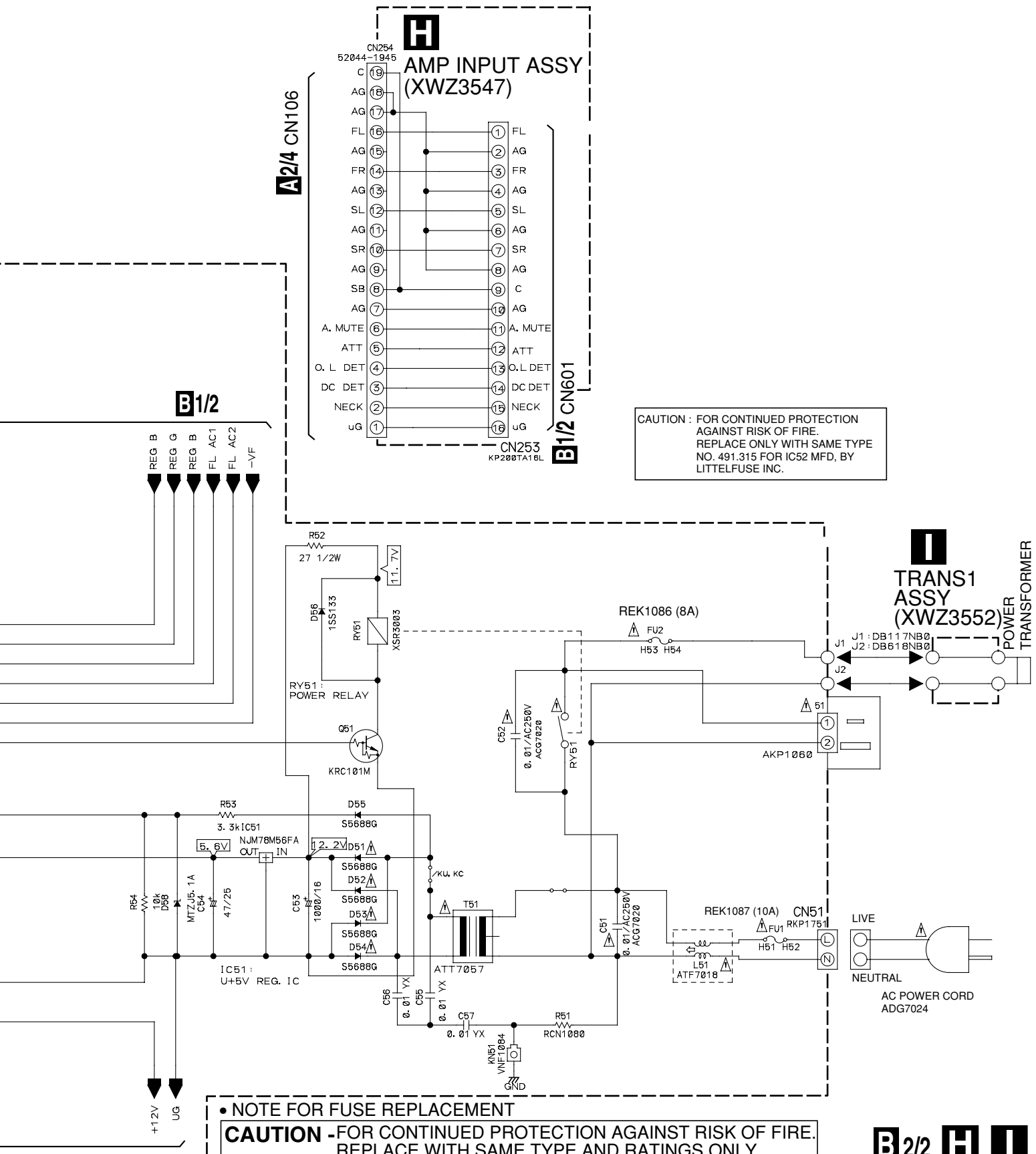
E REGULATOR ASSY (XWZ3544)

B 2/2 AMP & PRIMARY ASSY (XWZ3532)



B1/2

A
B
C
D
E
F

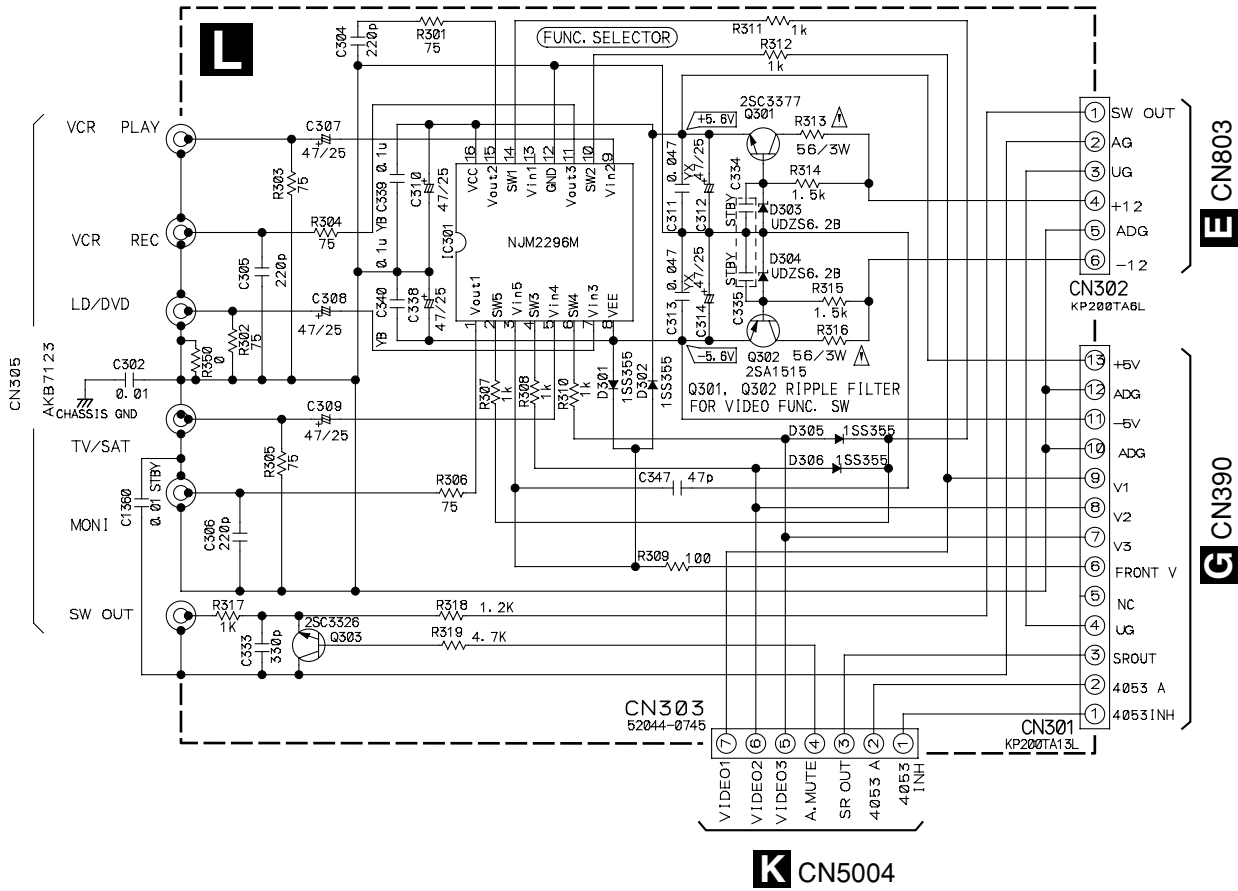


CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 491.315 FOR IC52 MFD, BY LITTELFUSE INC.

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

3.9 VIDEO and 6CH IN ASSYS

VIDEO ASSY (XWZ3490)



NJM2296D control port status

SW1	SW2	SW3	SW4	SW5	Vout1	Vout2	Vout3
1	0	(1)	0	1	Vin2	Vin2	mute
1	1	(1)	0	1	Vin3	Vin3	Vin3
1	1	0	1	1	Vin4	Vin4	Vin4
1	1	1	1	1	Vin5	Vin5	Vin5
0	0	(0)	(0)	0	mute	mute	mute

VIN 2. VCR
 VIN 3. DVD/LD
 VIN 4. TV/SAT
 VIN 5. FRONT
 Vout1. MON out
 Vout2.
 Vout3. VCR out

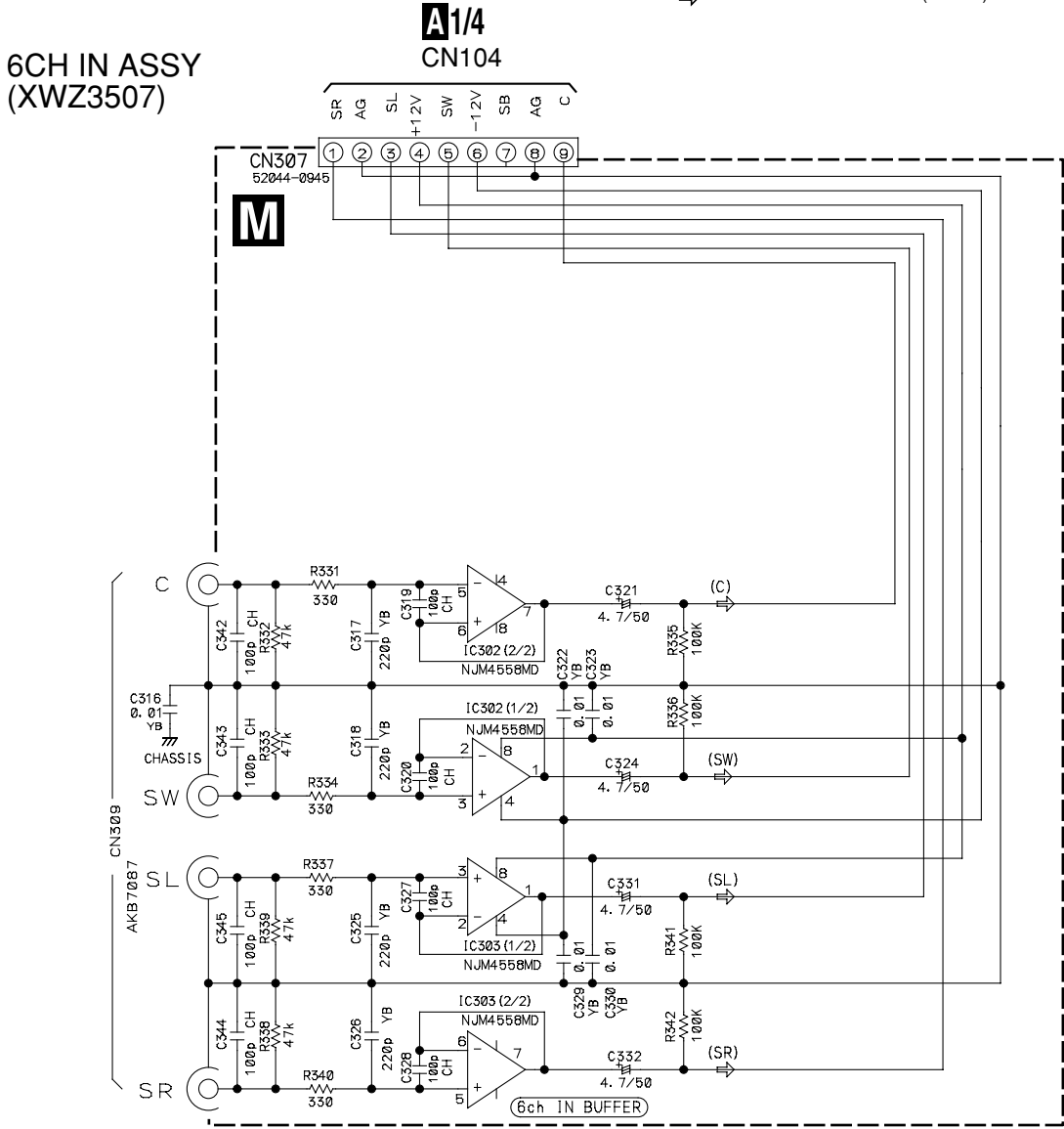
NOTE

1. RESISTORS
 Unit: k- Ω , M- Ω or Ω unless otherwise noted.
 Rated power: 1/10W unless otherwise noted.
 Tolerance: (J) \pm 5% unless otherwise noted.

2. CAPACITORS
 Unit: p-pF or μ F unless otherwise noted.
 Ratings: Capacity(μ F)/Voltage(V) unless otherwise noted.
 Rated Voltage: 50V except for electrolytic capacitors.

3. DIODES
 Indicated in 1SS355-TRB

- : AUDIO SIGNAL ROUTE
- (FL) : AUDIO SIGNAL ROUTE (Front L ch)
- (SL) : AUDIO SIGNAL ROUTE (Rear L ch)
- (SW) : AUDIO SIGNAL ROUTE (Sub Woofer)
- (C) : AUDIO SIGNAL ROUTE (Center)



3.10 FRONT, R.ENCODER and POWER SW ASSYS

A

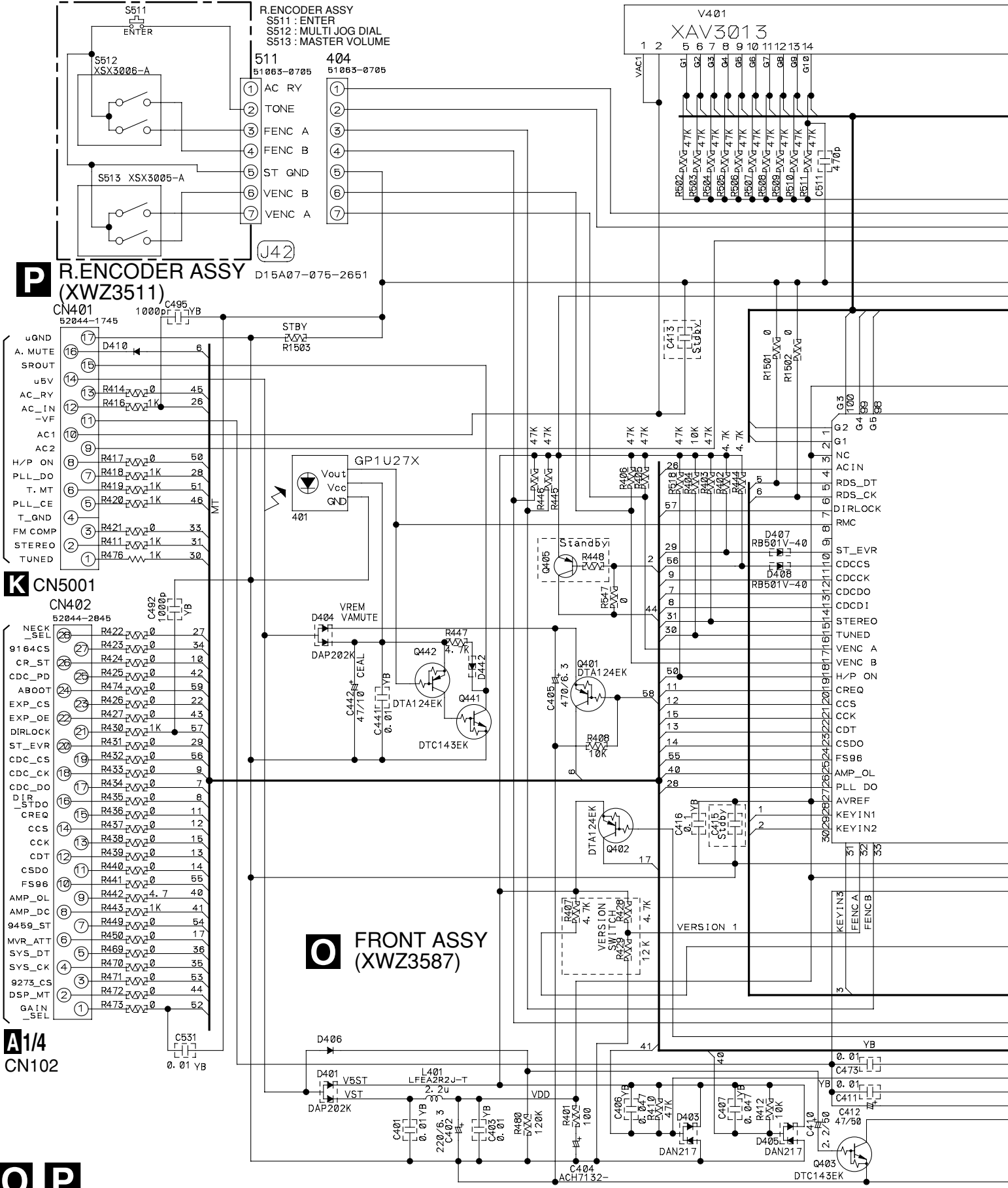
B

C

D

E

F



P R.ENCODER ASSY (XWZ3511)
 D15A07-075-2651

K CN5001
 CN402
 52044-2045

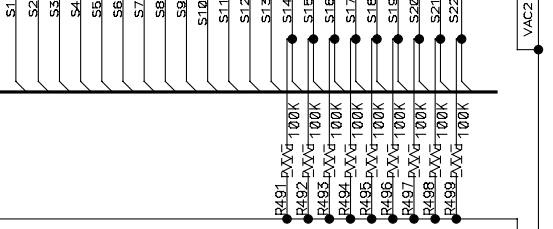
A1/4
 CN102

O FRONT ASSY (XWZ3587)

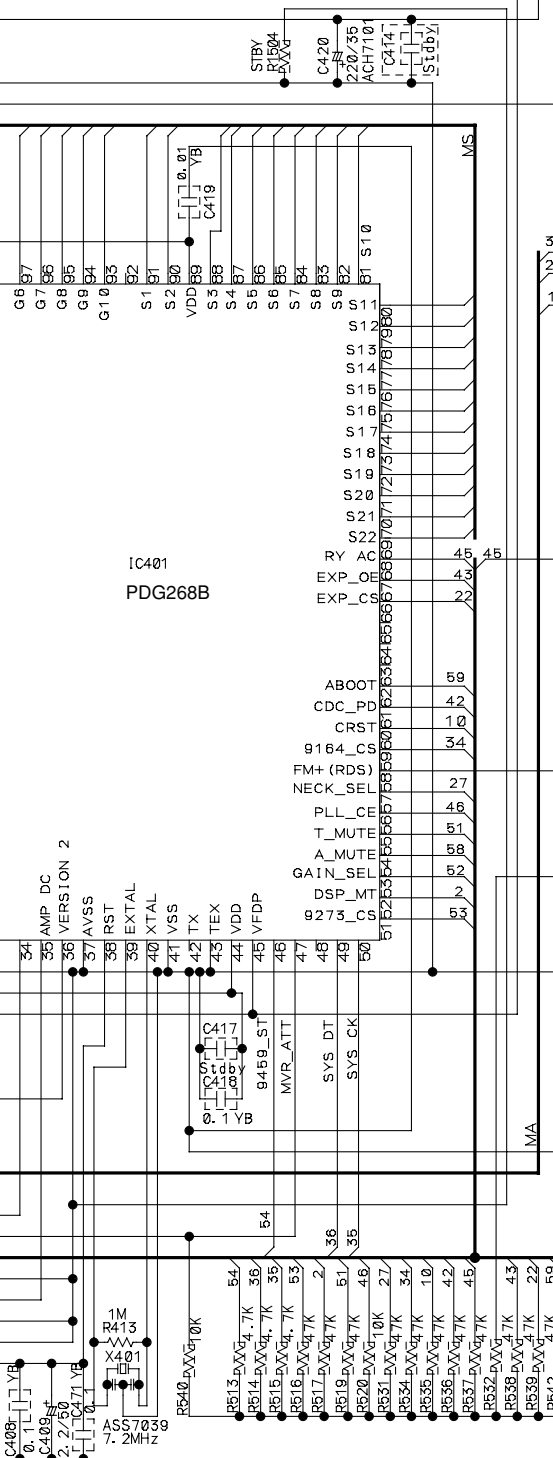
OP

(402 FL HOLDER VNF1096-)

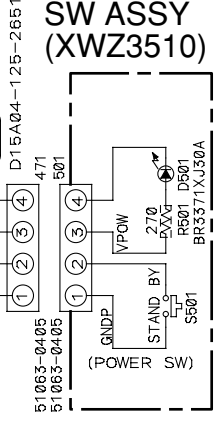
24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 48 49



- NOTE**
- RESISTORS**
Unit: k-kΩ, M-MΩ or Ω unless otherwise noted.
Rated power: 1/10W unless otherwise noted.
Tolerance: (J)±5% unless otherwise noted.
 - CAPACITORS**
Unit: p-pF or μF unless otherwise noted.
Ratings: Capacity (μF)/Voltage (V) unless otherwise noted.
Rated Voltage: 50V except for electrolytic capacitors.
JA: CEJA
 - DIODES**
Indicated in 1SS355-TRB.
 - TACT SWITCHES**
Indicated in ASG1051.



Q
POWER SW ASSY (XWZ3510)

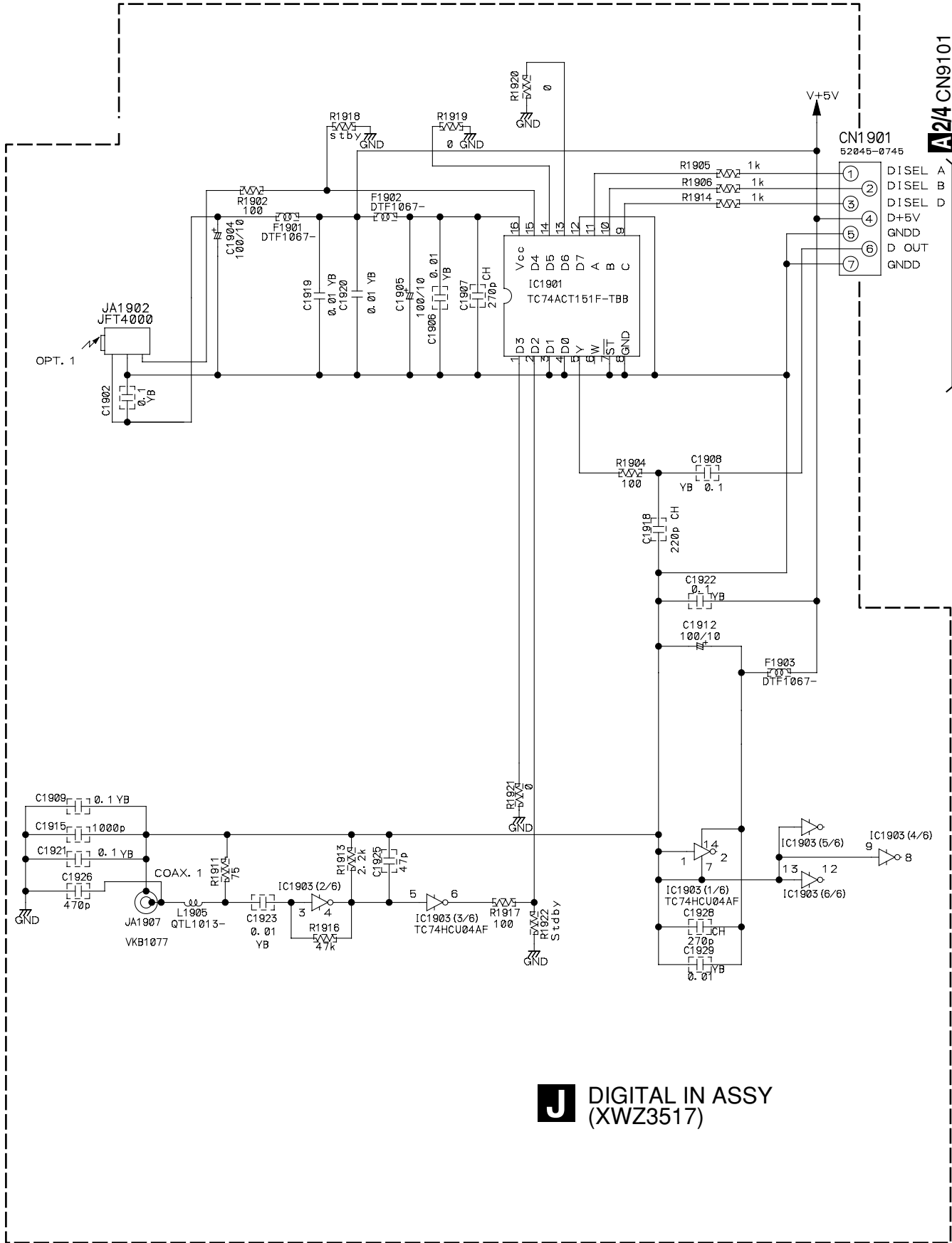


POWER SW ASSY
S501 : POWER
STANDBY/ON

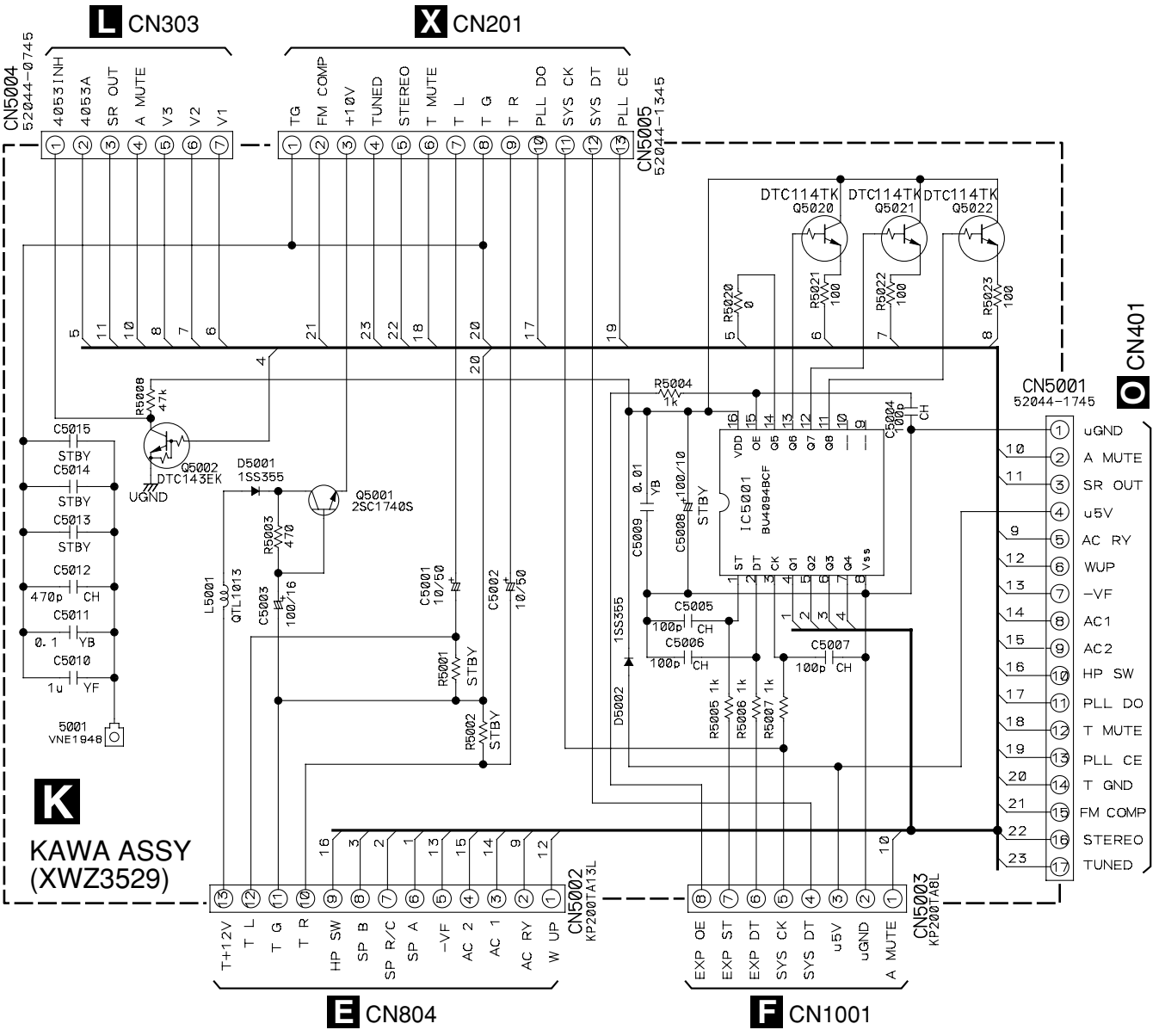
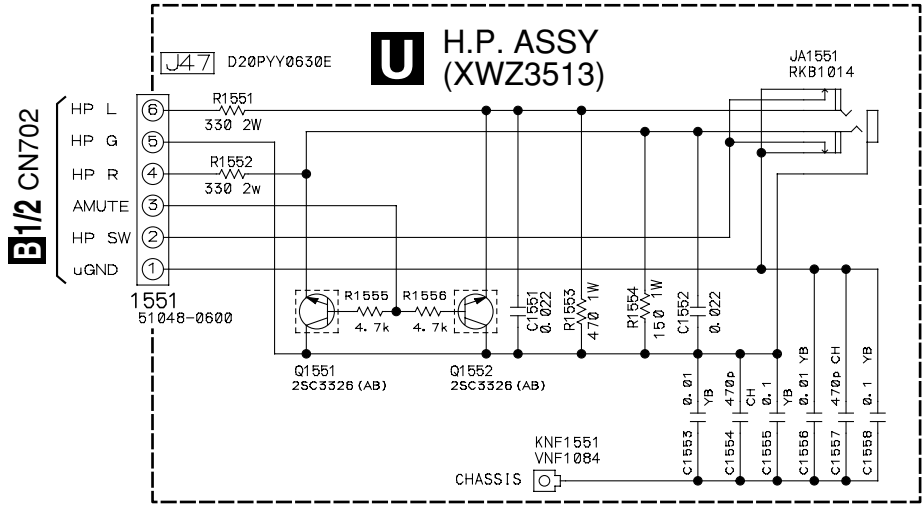
- FRONT ASSY
- S451 : SIGNAL SELECT
 - S452 : MIDNIGHT/LOUDNESS
 - S453 : SPEAKER
 - S454 : MONITOR
 - S455 : TONE
 - S456 : SETUP
 - S457 : ADVANCED SURR
 - S458 : STEREO/DIRECT
 - S459 : FL DIMER
 - S460 : INPUT ATT
 - S461 : MPX
 - S462 : BAND
 - S463 : STANDARD
 - S464 : TUNING(+)
 - S465 : TUNING(-)
 - S466 : STATION(+)
 - S467 : STATION(-)
 - S468 : MULTI JOG (TUNER EDIT)
 - S476 : CLASS

KEY IN VOLTAGE [V]

3.11 DIGITAL IN, H.P. and KAWA ASSYS



J DIGITAL IN ASSY (XWZ3517)



3.12 FM/AM TUNER MODULE

A

B

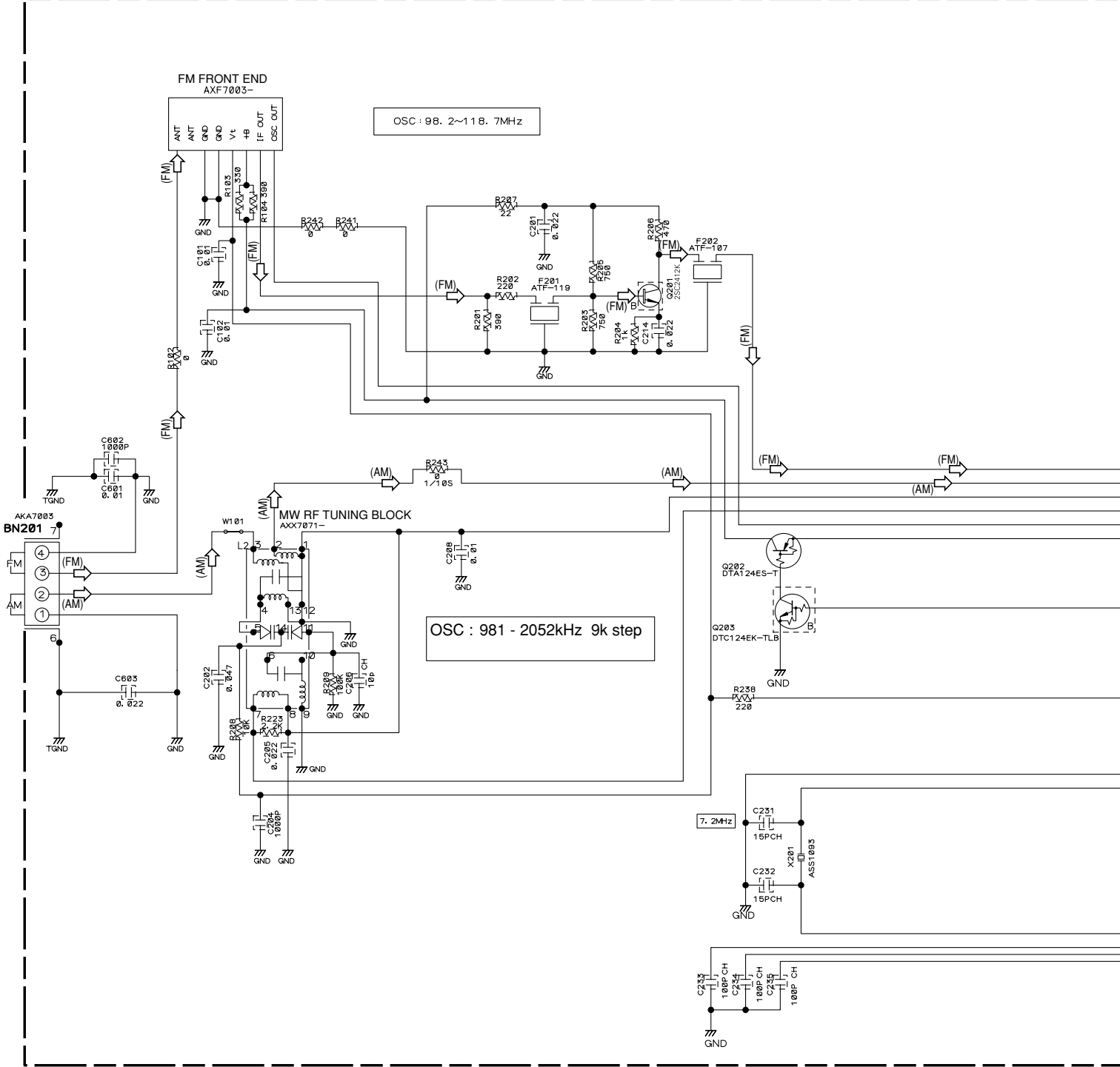
C

D

E

F

X FM/AM TUNER MODULE (AXQ7231)



Notes

1. RESISTORS


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




2. CAPACITORS

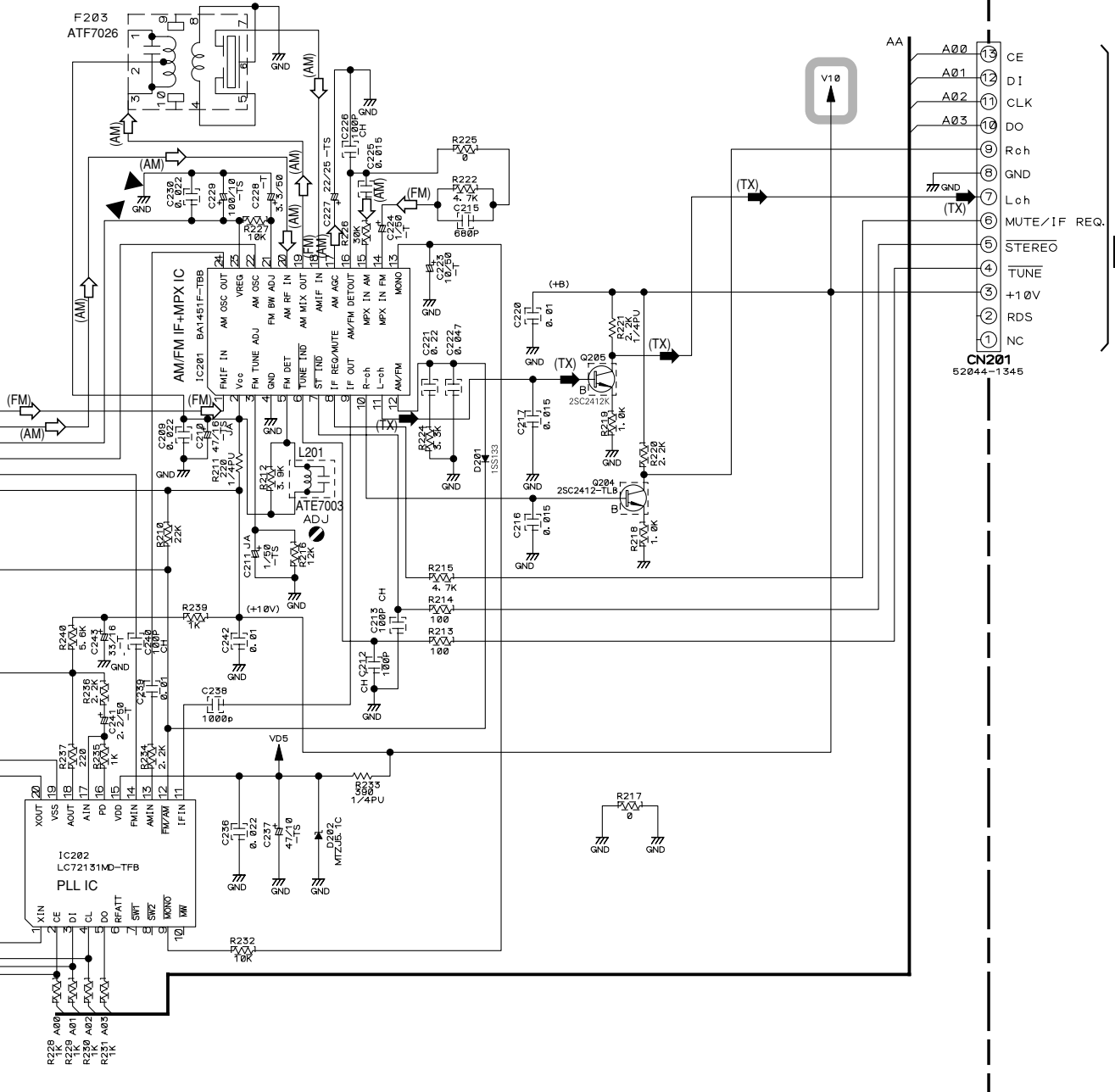
Indicated in Capacity (μF)/VOLTAGE (V) unless otherwise noted P:PF.


3. DIODES

No mark diode is 1SS133.

 : The power supply is shown with the marked box.

-  (TX) : AUDIO SIGNAL ROUTE (TUNER)
-  (AM) : AM SIGNAL ROUTE
-  (FM) : FM SIGNAL ROUTE


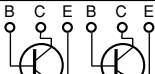

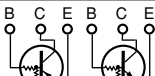

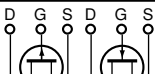

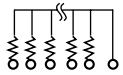




 CN5005

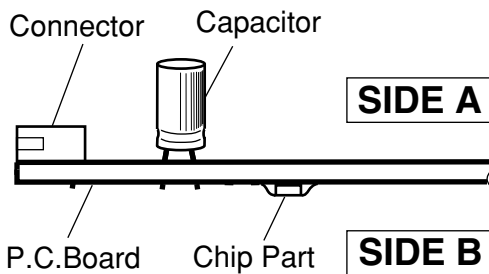
4. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

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

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

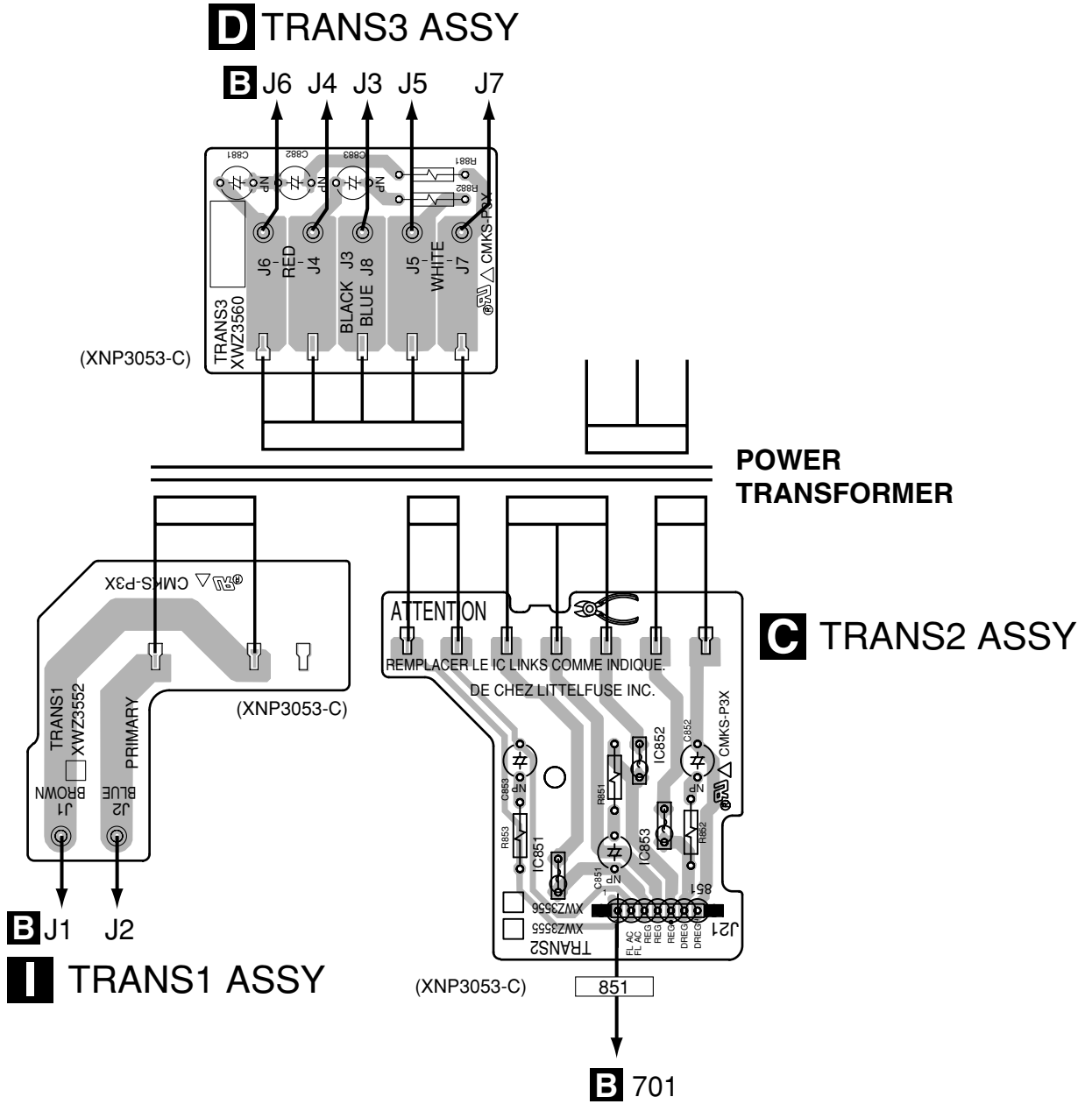
- 3. The parts mounted on this PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.
- 4. View point of PCB diagrams.



4.1 TRANS1, TRANS2 and TRANS3 ASSYS

SIDE A

SIDE A



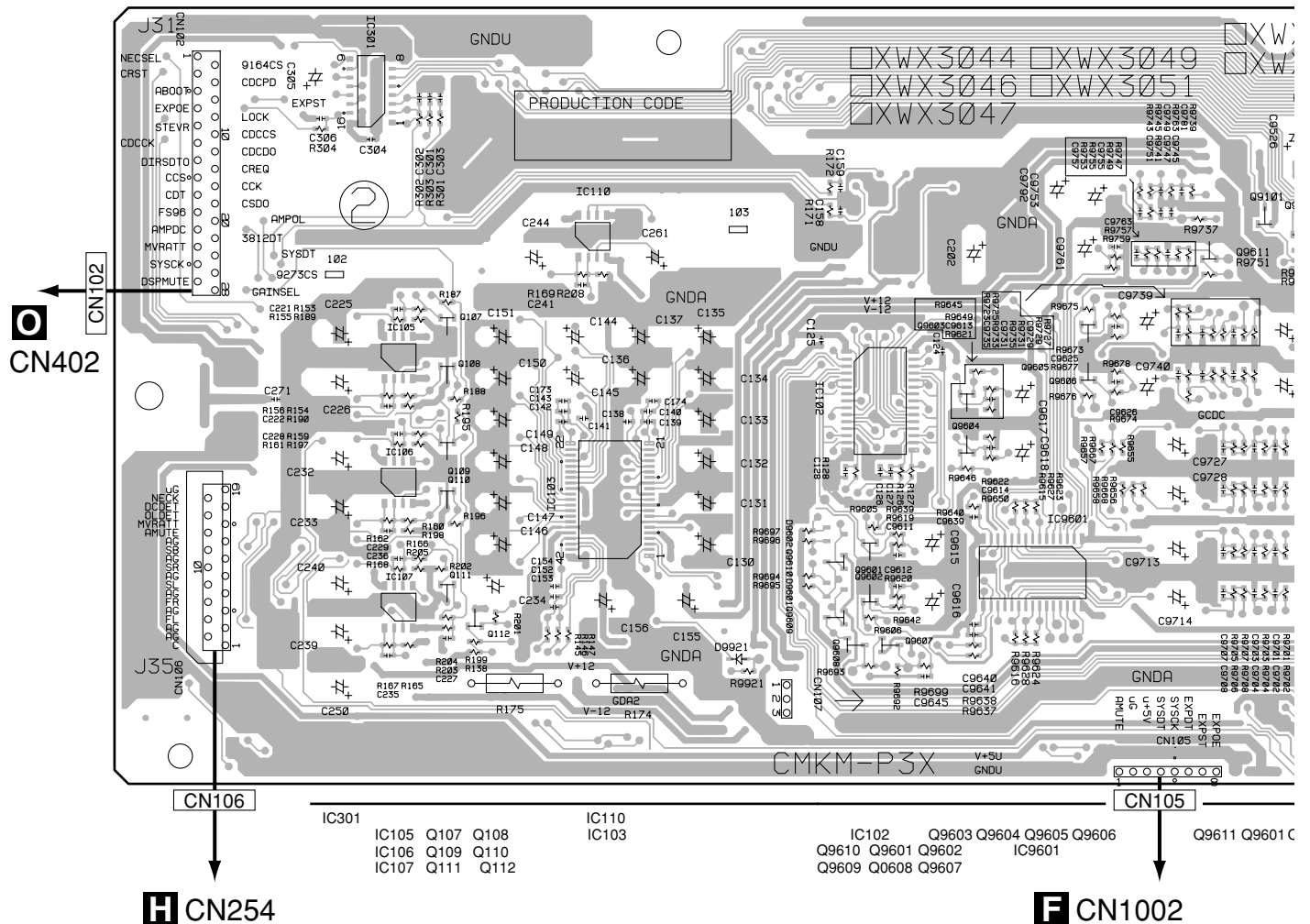
C D I

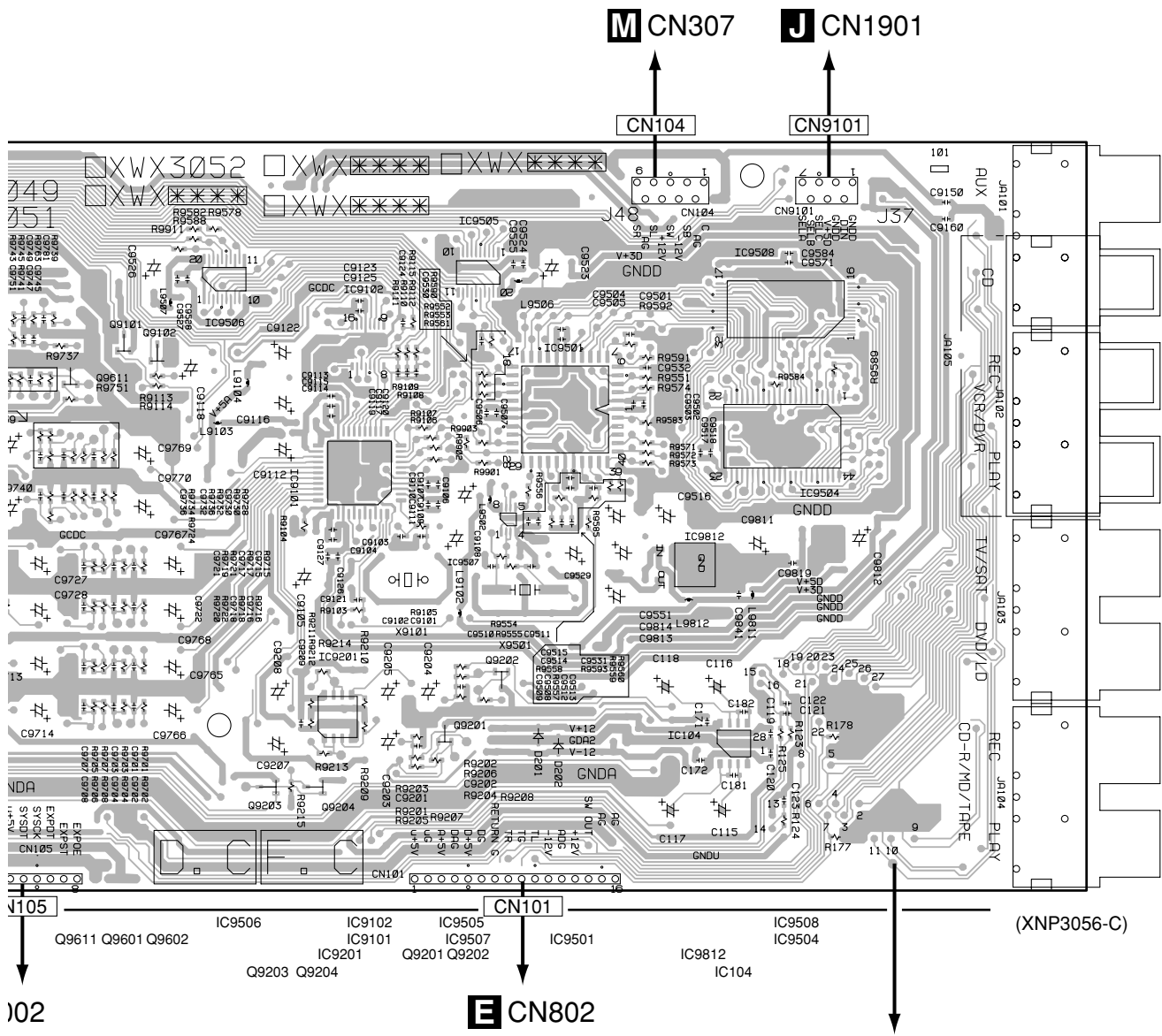
C D I

4.2 D.D & INPUT ASSY

SIDE A

A D.D & INPUT ASSY

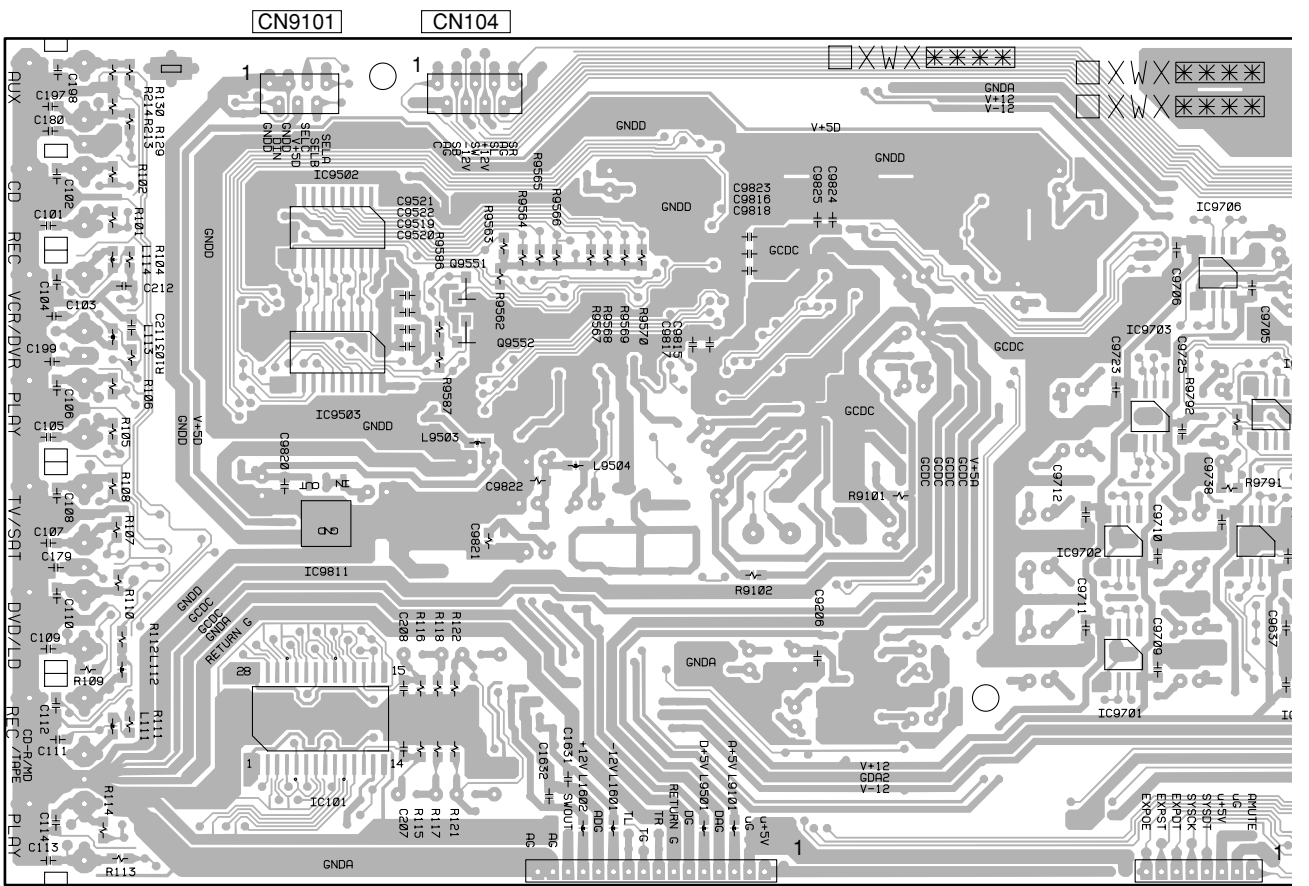




Note : The pin of function IC(IC101 TC9273F-007) can be checked from side-A by the through-hole round. The pin No. is printed on the side-A.

SIDE B

A D.D & INPUT ASSY



- | | | | | |
|--------|-------|-------|-------|--------|
| IC9502 | Q9551 | Q9552 | CN101 | IC9705 |
| IC9503 | | | | IC9703 |
| IC9811 | | | | IC9702 |
| IC101 | | | | IC9705 |

SIDE B

A

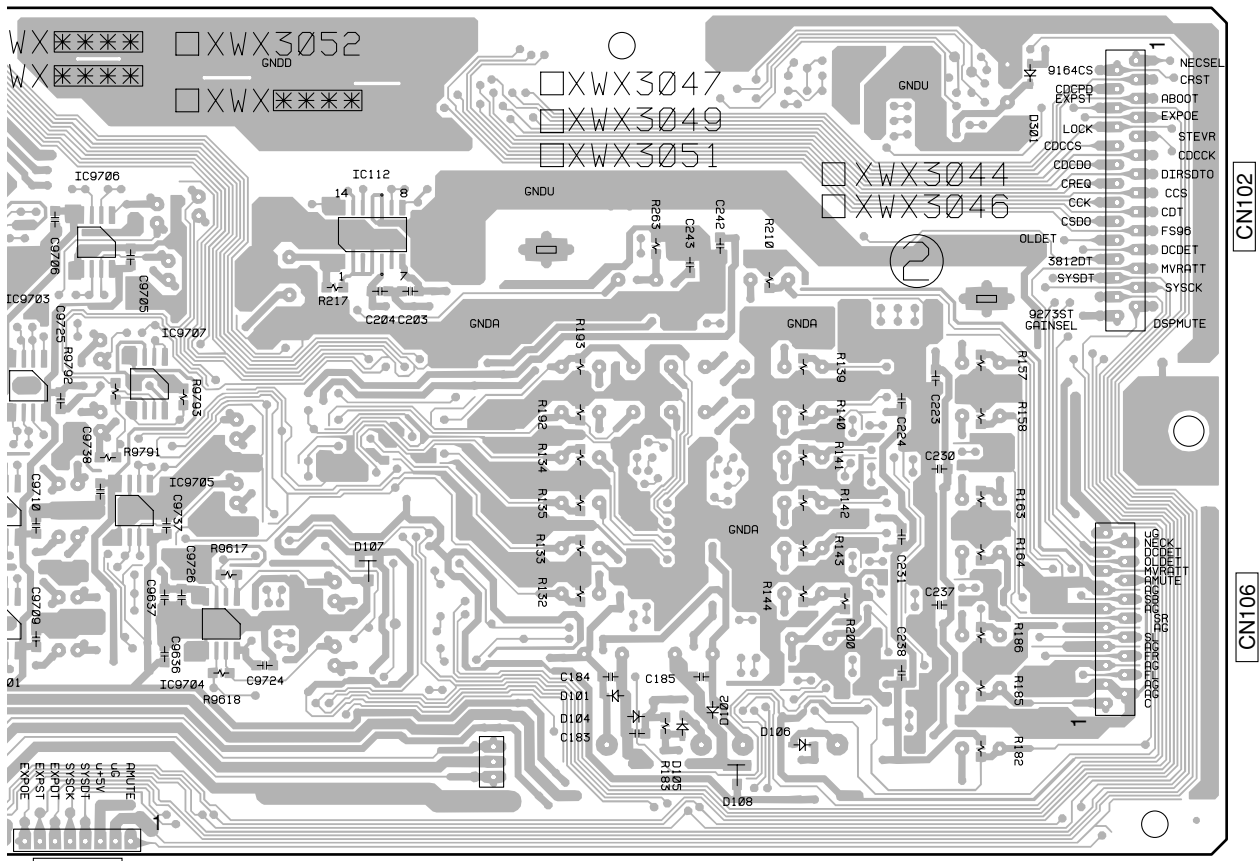
B

C

D

E

F



IC9705 IC112 (XNP3056-C)

IC9707

IC9705

IC9704

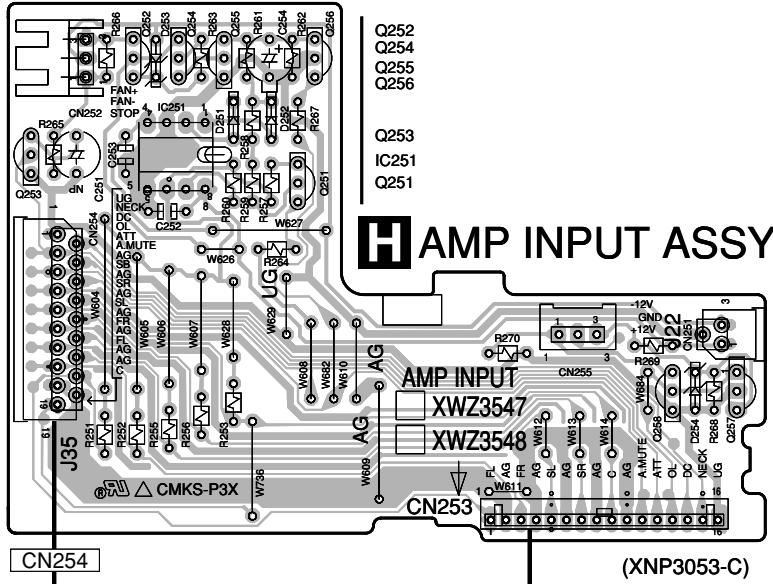
CN105

CN106

CN102

4.3 AMP INPUT and AMP & PRIMARY ASSYS

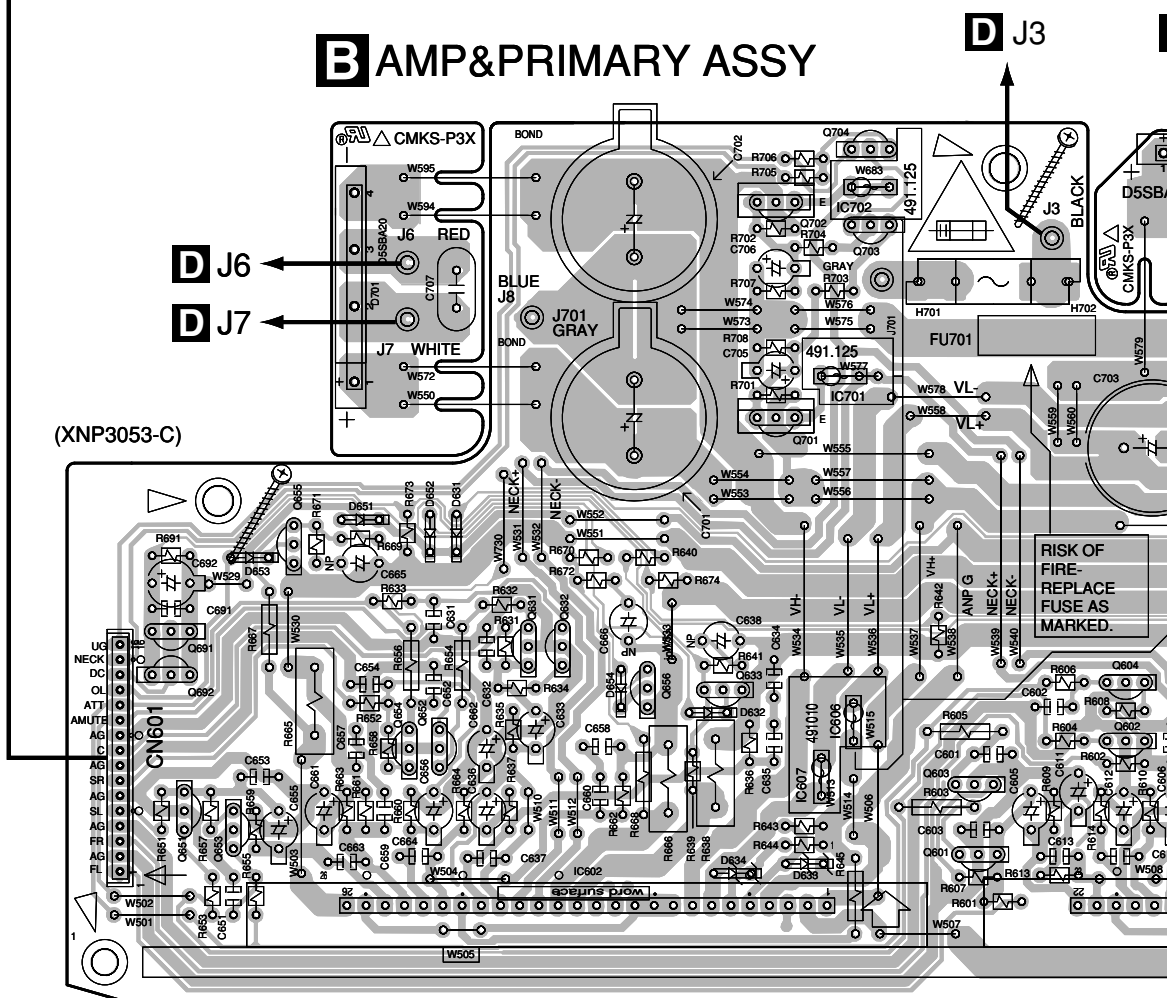
SIDE A



A AMP INPUT ASSY

A CN106

B AMP & PRIMARY ASSY



D J6

D J7

D J3

Q704
Q702
IC702
Q703

Q701
IC701

Q655

Q697
Q696
Q681
Q682
Q652
Q654

Q633
Q656
Q683
Q606
Q605

IC607
IC606

Q601
Q603

Q651
Q653

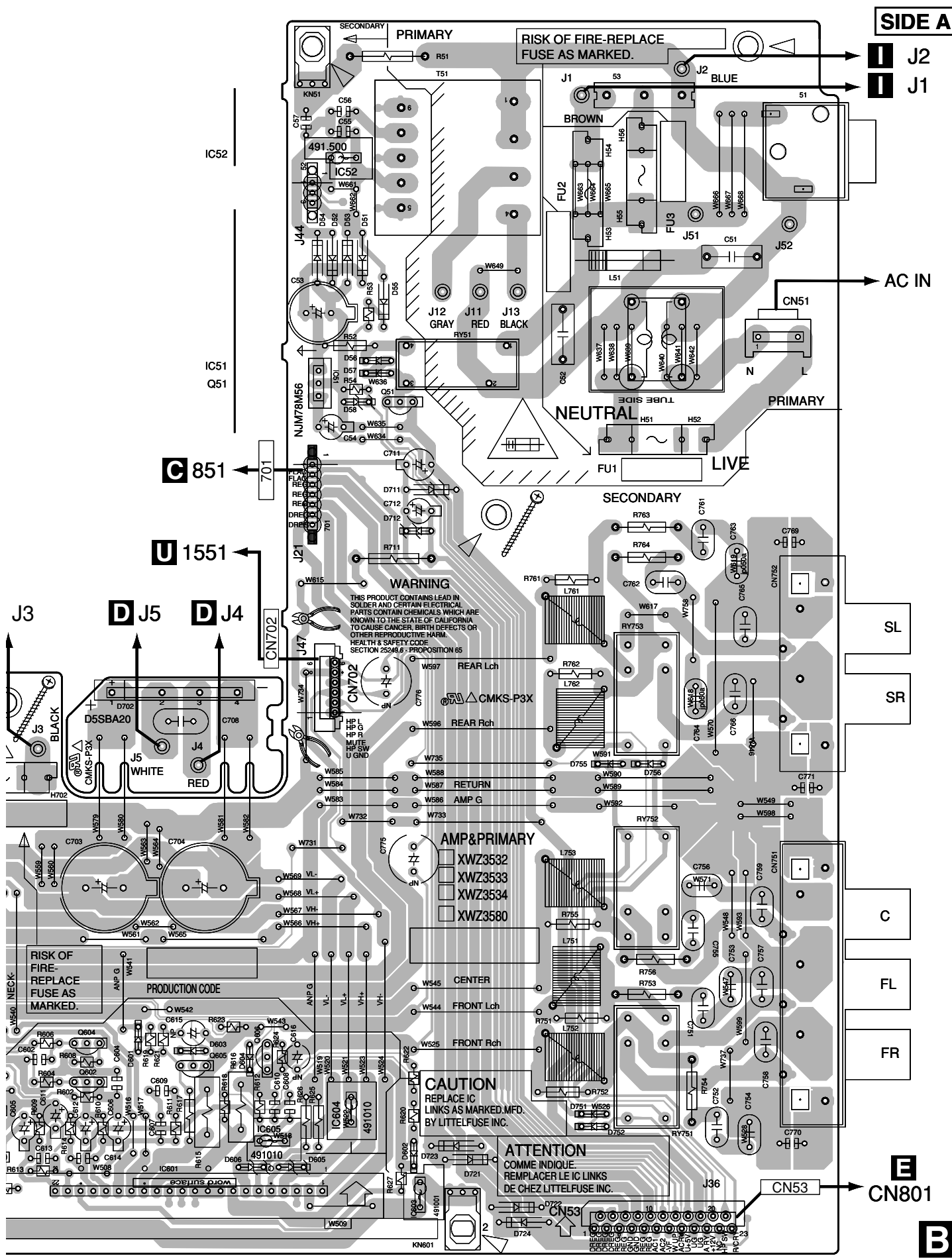
Q631
Q632

IC605
IC604

IC602
IC601
IC603

B H

VSX-D412-K



SIDE A

J2
J1

AC IN

C 851

U 1551

D J5 **D** J4

AMP&PRIMARY

- XWZ3532
- XWZ3533
- XWZ3534
- XWZ3580

RISK OF FIRE-REPLACE FUSE AS MARKED.

PRODUCTION CODE

CAUTION
REPLACE IC LINKS AS MARKED.MFD. BY LITTELFUSE INC.

ATTENTION
COMME INDIQUE.
REPLACER LE IC LINKS DE CHEZ LITTELFUSE INC.

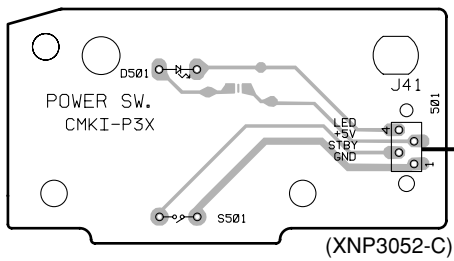
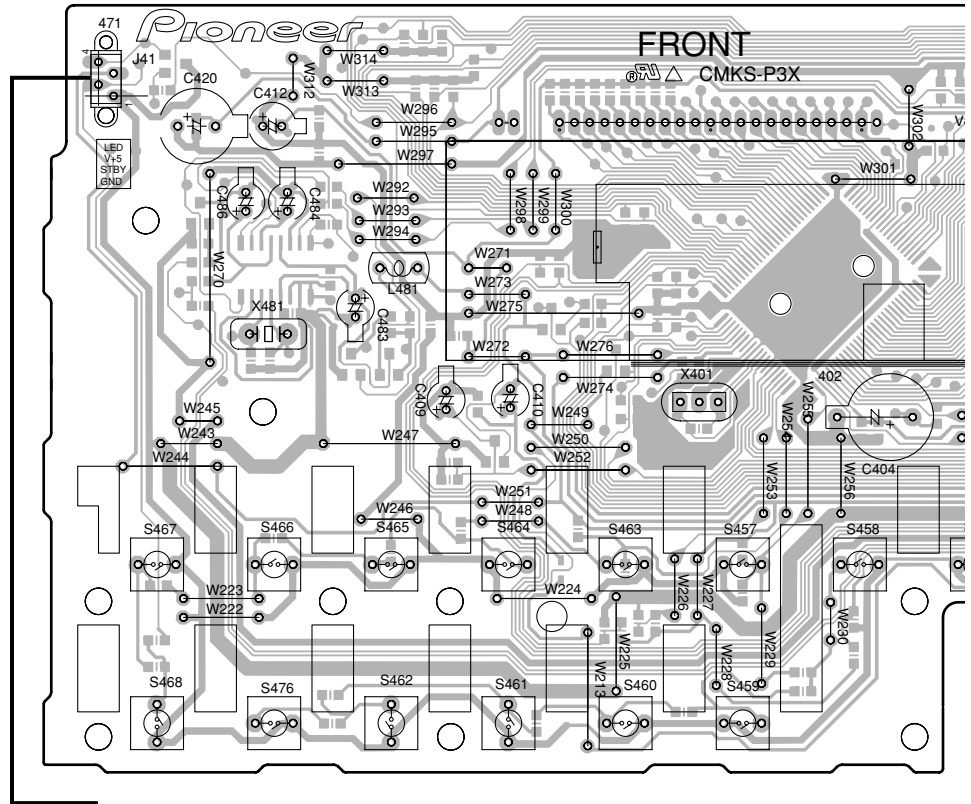
E CN801

B

4.4 FRONT, POWER SW, H.P. and R.ENCODER ASSYS

SIDE A

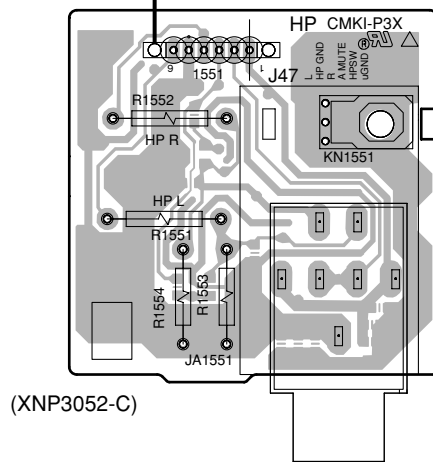
O FRONT ASSY



Q POWER SW ASSY

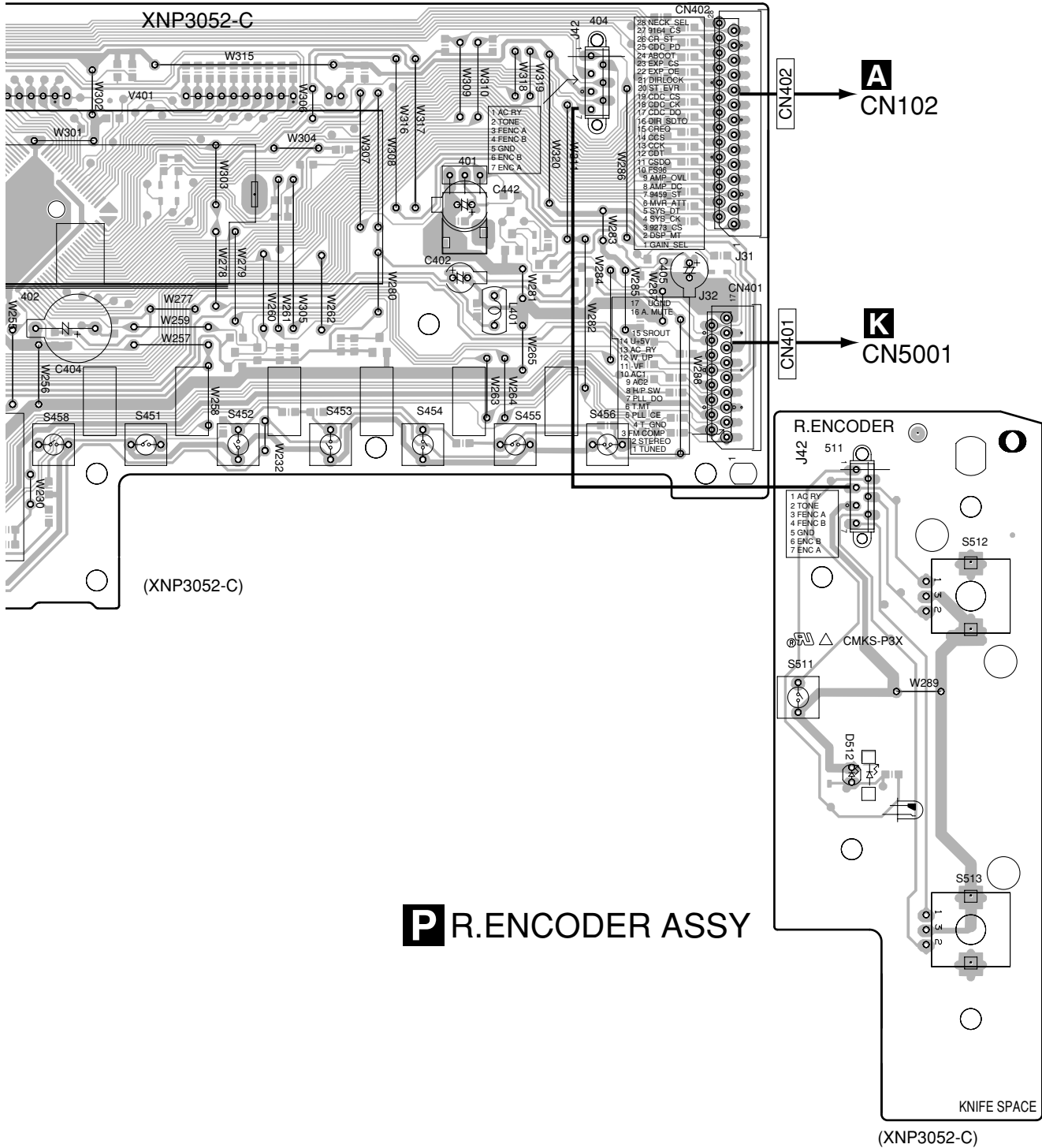
B CN702

U H.P ASSY



O Q U

SIDE A

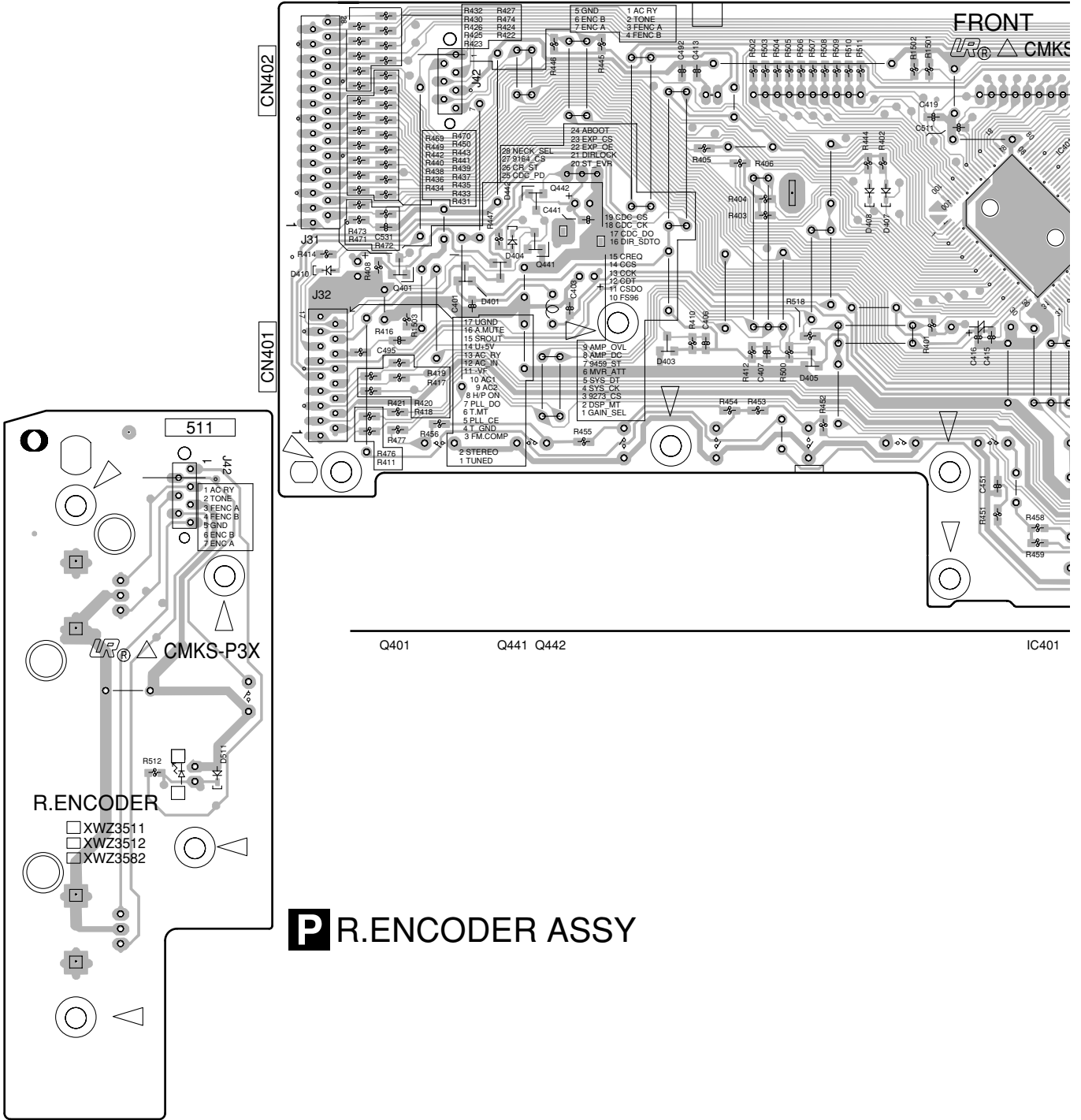


P R.ENCODER ASSY

OP

SIDE B

FRONT ASSY



R.ENCODER ASSY

OP

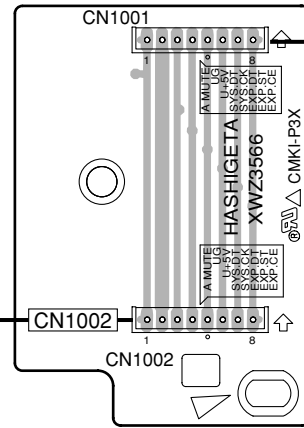
VSX-D412-K

4.5 REGULATOR, HASHIGETA and KAWA ASSYS

SIDE A

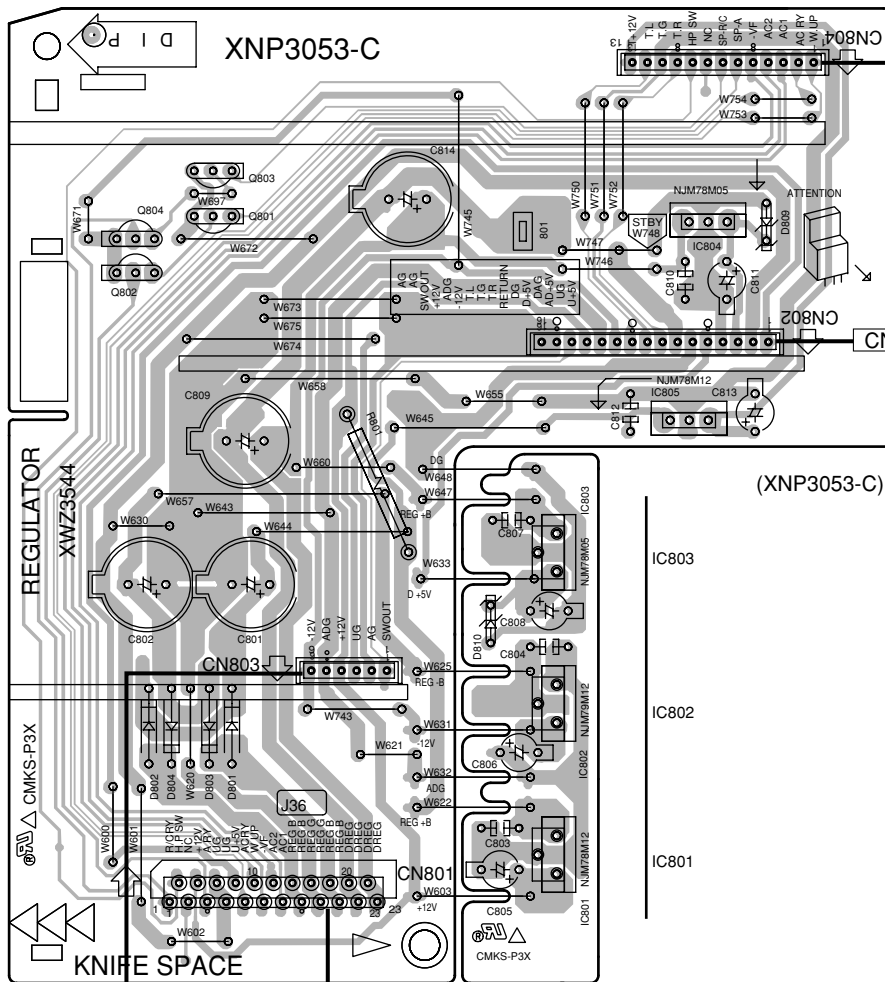
S

F HASHIGETA ASSY



E REGULATOR ASSY

(XNP3053-C)



- Q805
- Q803
- Q806
- Q801
- IC804
- Q804
- Q802

A CN101

(XNP3053-C)

IC803

IC802

IC801

Q5001

L CN302

B CN53

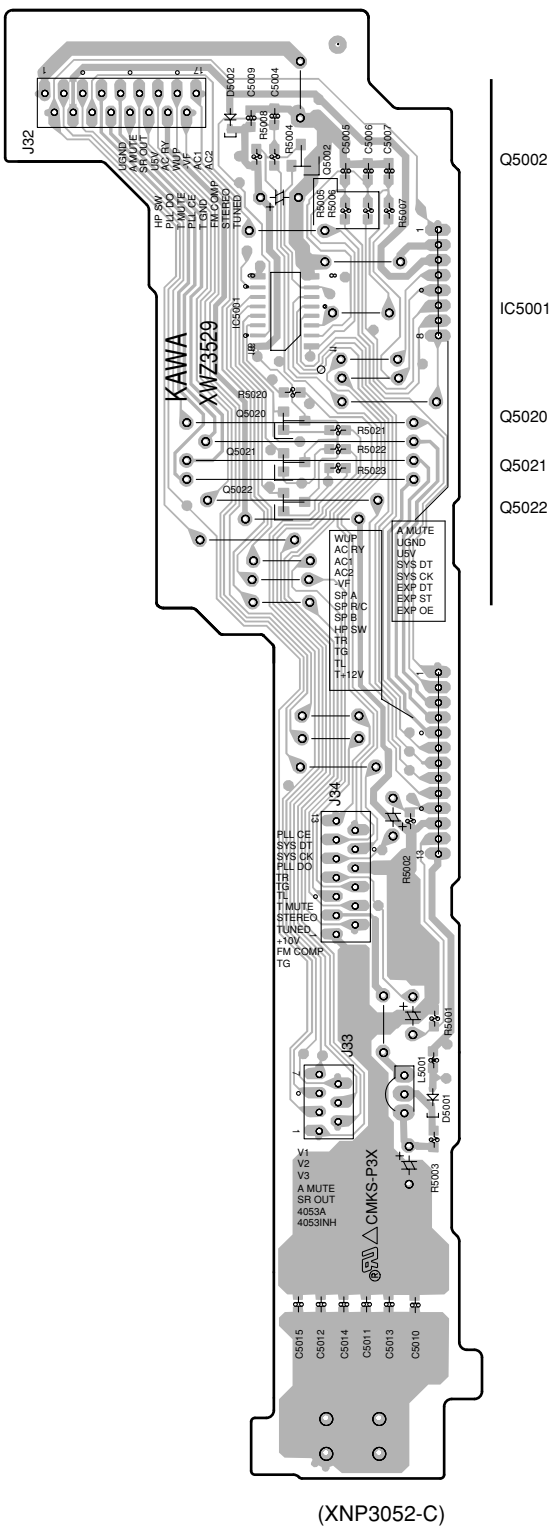
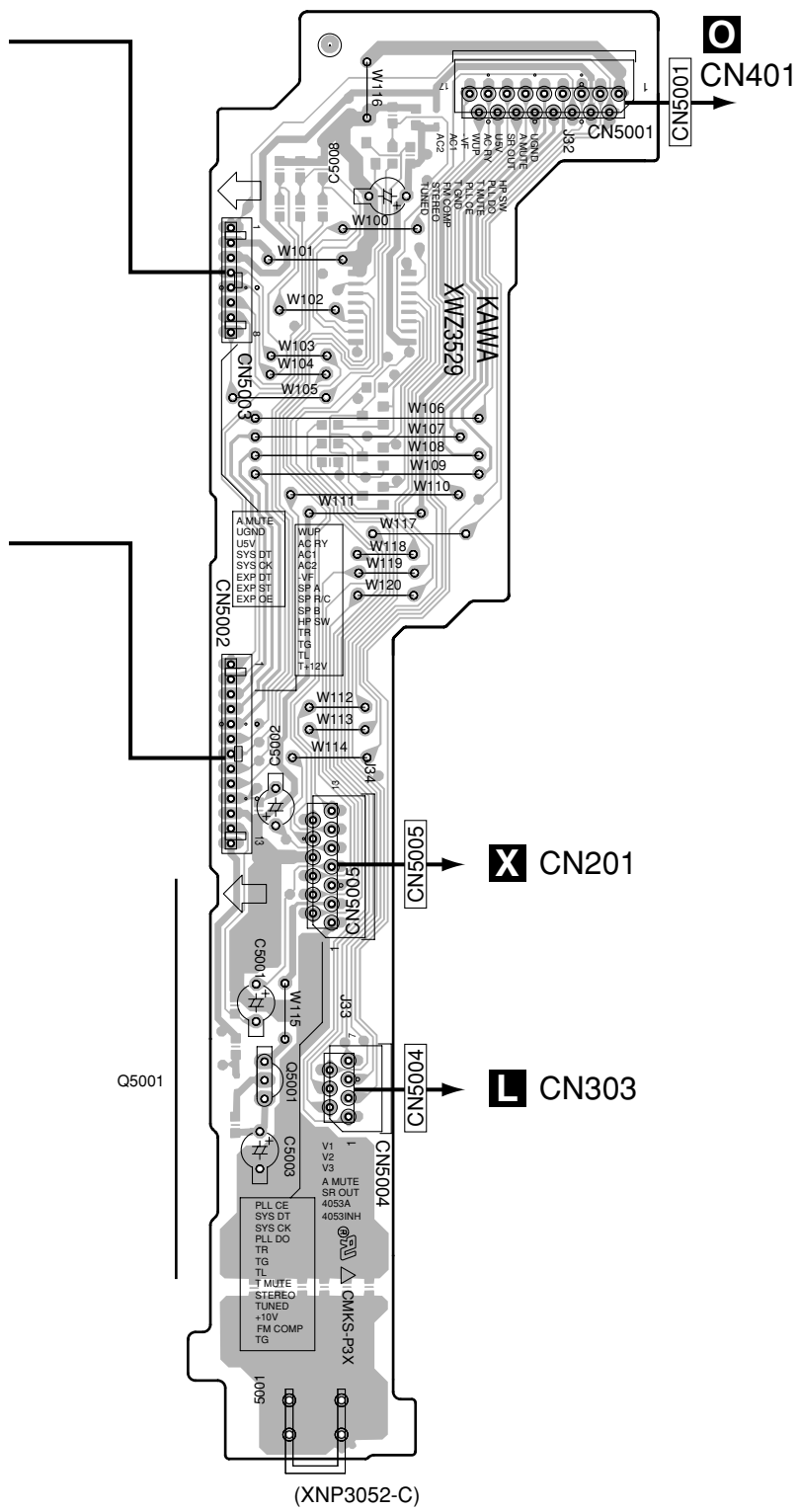
E F

SIDE A

SIDE B

KAWA ASSY

KAWA ASSY



(XNP3052-C)

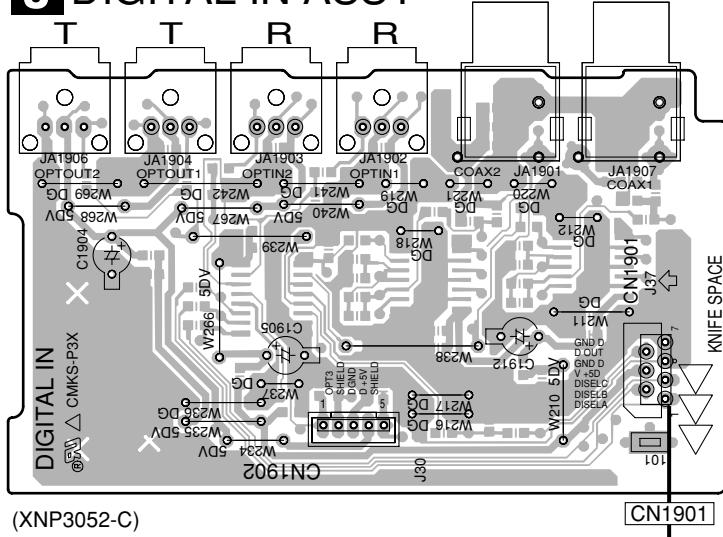
(XNP3052-C)



4.6 DIGITAL IN, 6CH IN and VIDEO ASSYS

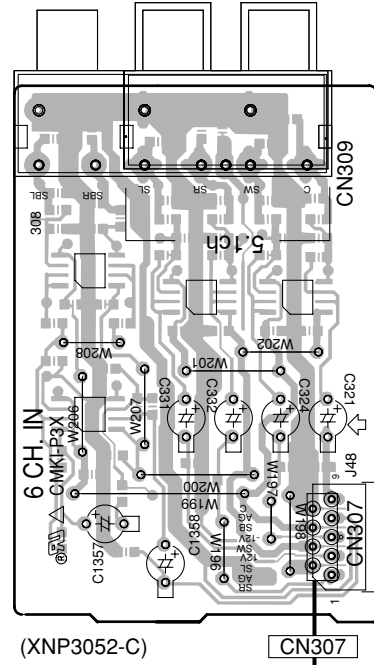
SIDE A

J DIGITAL IN ASSY



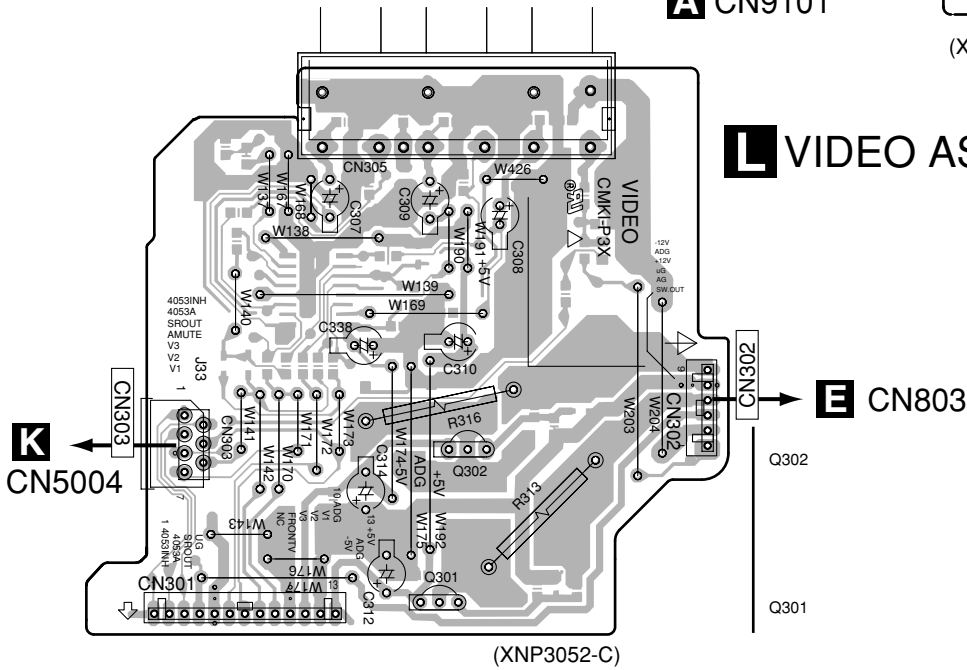
A CN9101

M 6CH IN ASSY



A CN104

L VIDEO ASSY

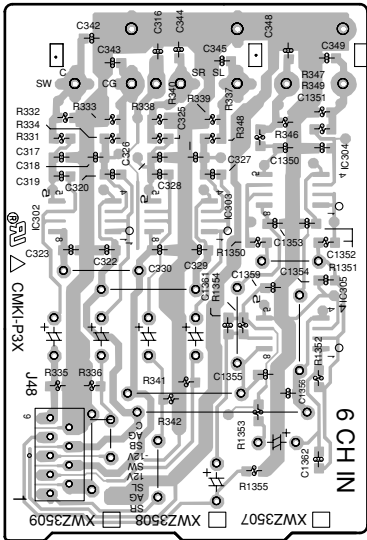


E CN803

K CN5004

SIDE B

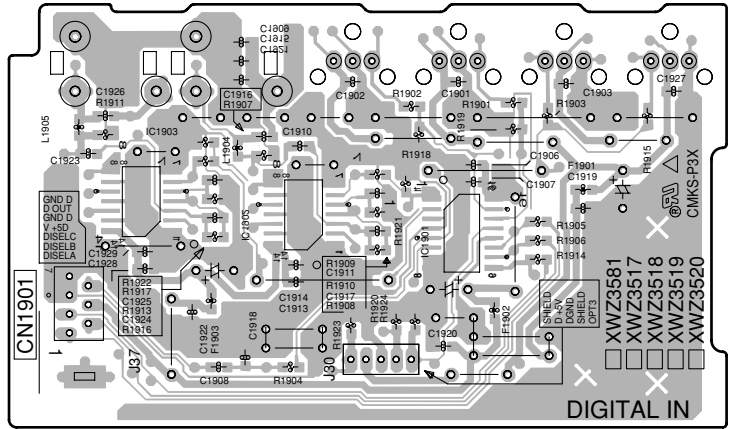
M 6CH IN ASSY



CN307

(XNP3052-C)

J DIGITAL IN ASSY



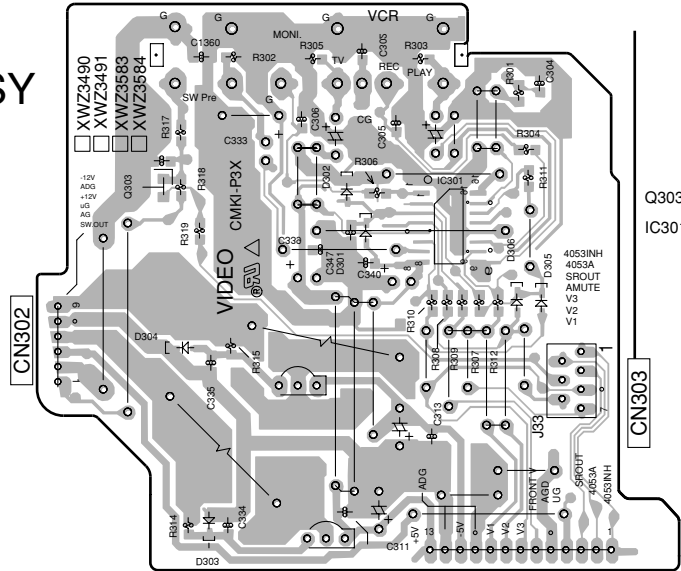
IC1903

IC1902

IC1901

(XNP3052-C)

L VIDEO ASSY



CN302

Q303
IC301

CN303

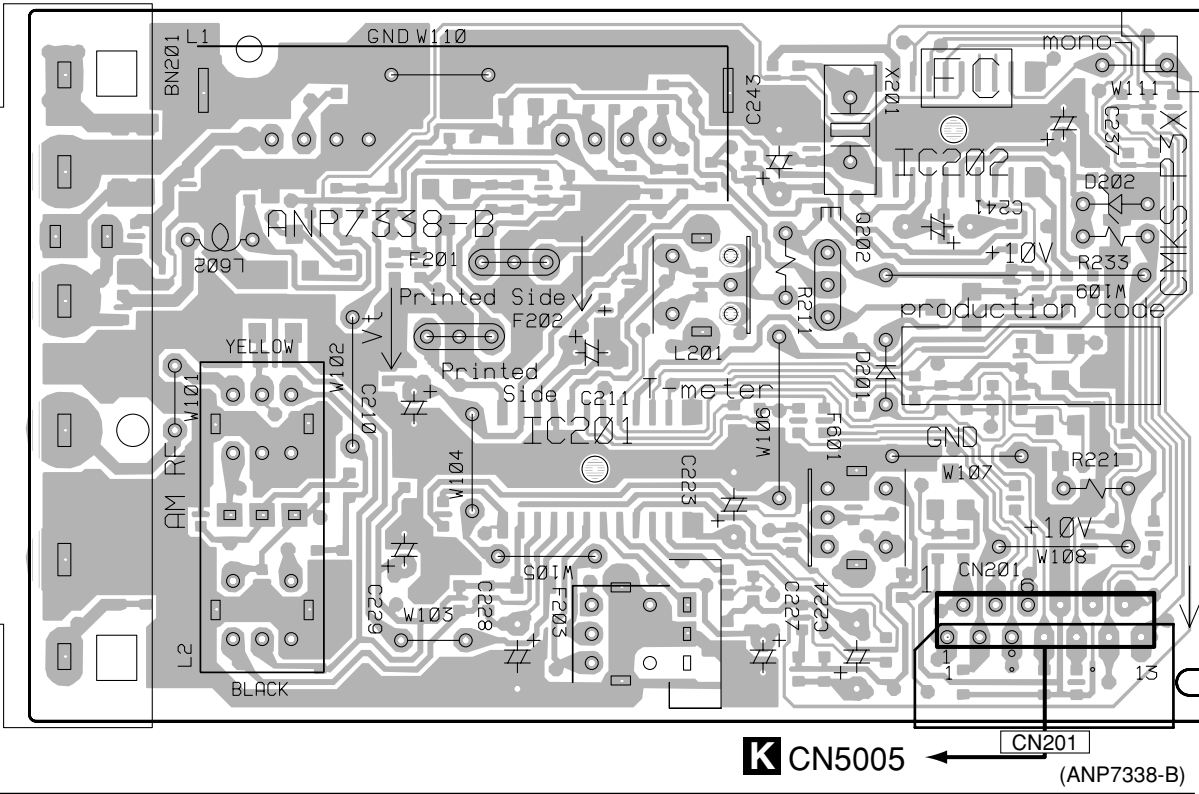
(XNP3052-C)

4.7 FM/AM TUNER MODULE

SIDE B

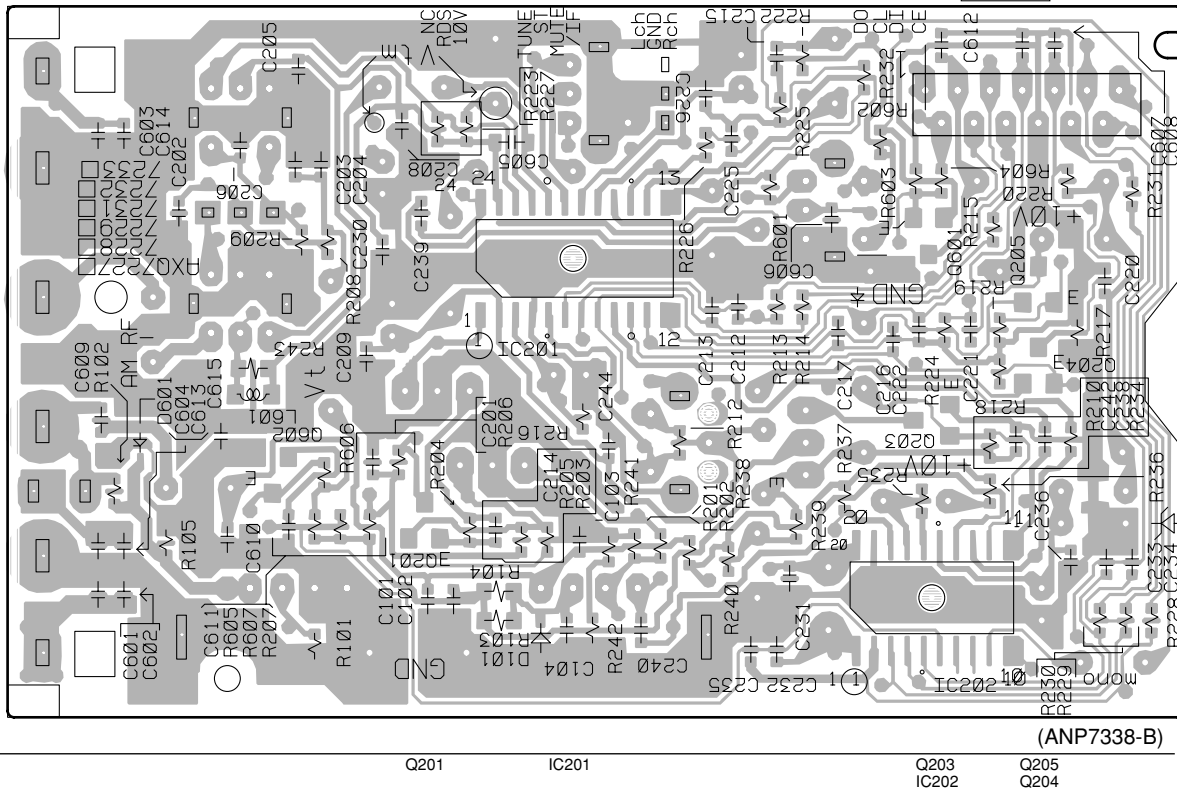
SIDE A

X FM/AM TUNER MODULE



X FM/AM TUNER MODULE

SIDE B



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 x 10¹ \rightarrow 561 RD1/4PU 561J
 47k Ω \rightarrow 47 x 10³ \rightarrow 473 RD1/4PU 473J
 0.5 Ω \rightarrow R50 RN2H R50K
 1 Ω \rightarrow 1R0 RSIP 1R0K

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

5.62k Ω \rightarrow 562 x 10¹ \rightarrow 5621 RN1/4PC 5621F

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
LIST OF ASSEMBLIES					
	1..D.D & INPUT ASSY	XWX3044	IC9505 IC	TC74LVX244FT	
			IC9502 LOGIC IC	TC74VHC574F	
			IC9503 LOGIC IC	TC74VHC574F	
NSP	1..AMP & PS ASSY	XWK3071	IC9506 IC	TC74VHC244AFT	
	2..AMP & PRIMARY ASSY	XWZ3532	IC9507 IC	TC7WU04FU	
	2..REGULATOR ASSY	XWZ3544			
	2..AMP INPUT ASSY	XWZ3547	IC101 ANALOGSWITCH IC	TC9273F-007	
NSP	2..TRANS1 ASSY	XWZ3552	IC104 OP-AMP	ICUPC4570G2	
	2..TRANS2 ASSY	XWZ3555	IC105 OP-AMP	ICUPC4570G2	
NSP	2..TRANS3 ASSY	XWZ3560	IC106 OP-AMP	ICUPC4570G2	
	2..HASHIGETA ASSY	XWZ3566	IC107 OP-AMP	ICUPC4570G2	
NSP	1..COMPLEX ASSY	XWK3070	IC9701 OP-AMP	ICUPC4570G2	
	2..FRONT ASSY	XWZ3587	IC9702 OP-AMP	ICUPC4570G2	
	2..6CH IN ASSY	XWZ3507	IC9703 OP-AMP	ICUPC4570G2	
	2..POWER SW ASSY	XWZ3510	IC9704 OP-AMP	ICUPC4570G2	
	2..H.P. ASSY	XWZ3513	IC9705 OP-AMP	ICUPC4570G2	
	2..DIGITAL IN ASSY	XWZ3517			
	2..KAWA ASSY	XWZ3529	IC9707 OP-AMP	ICUPC4570G2	
	2..R. ENCODER ASSY	XWZ3511	Q107 TRANSISTOR	2SC3326	
	2..VIDEO ASSY	XWZ3490	Q108 TRANSISTOR	2SC3326	
			Q109 TRANSISTOR	2SC3326	
	1..FM/AM TUNER MODULE	AXQ7231	Q110 TRANSISTOR	2SC3326	
			Q111 TRANSISTOR	2SC3326	
			Q112 TRANSISTOR	2SC3326	
Mark No.	Description	Part No.			
COMPLEX ASSY					
OTHERS					
	J 41 (JUMPER WIRED)	D15A04-100-2651	Q9101 TRANSISTOR	DTA124EK	
	J 42 (JUMPER WIRED)	D15A07-075-2651	Q9102 TRANSISTOR	DTC124EK	
	J 47 (JUMPER WIRED)	D20PYY0630E	Q9201 TRANSISTOR	2SC3326	
			Q9202 TRANSISTOR	2SC3326	
			Q9203 TRANSISTOR	DTC124EK	
			Q9204 TRANSISTOR	DTA124EK	
			Q9607 TRANSISTOR	DTA124EK	
			Q9608 TRANSISTOR	DTC124EK	
			Q9609 TRANSISTOR	DTA124EK	
			Q9610 TRANSISTOR	DTA124EK	
			D101 ZENER DIODE	UDZS6.8B	
			D102 ZENER DIODE	UDZS6.8B	
			D104 ZENER DIODE	UDZS5.1B	
			D105 DIODE	1SS355	
			D106 DIODE	1SS355	
			D107 DIODE	DAN217	
			D108 DIODE	DAN217	
			D201 DIODE	RB501V-40	
			D202 DIODE	RB501V-40	
			D301 DIODE	1SS355	
			D9601 DIODE	1SS181	
			D9602 DIODE	1SS181	
			D9921 DIODE	1SS355	
Mark No.	Description	Part No.			
AMP & PS ASSY					
OTHERS					
	J 701 (AWG14 BOARD IN)	DB812NBO			
	J 21 (JUMPER WIRED)	D20PYY0715E			
A	D.D & INPUT ASSY				
SEMICONDUCTORS					
	IC9101 CODEC IC	AK4586VQ			
	IC301 PORTEXPANDER	BU4094BCF			
	IC9501 DSP	CS493292			
	IC103	M62446FP			
	IC9201 IC	NJM2100M			
	IC9812 REGULATOR IC(2.5V)	NJM2391DL1-25			
	IC9811 IC	NJM2391DL1-33			
	IC102 E-SW IC	NJU7312AM			
	IC9601 E-SW IC	NJU7313AM			
	IC9504 P2ROM(4MBIT)	PD8104A			

Mark No.	Description	Part No.	Mark No.	Description	Part No.
COILS AND FILTERS					
A	L111 CHIP INDUCTOR	QTL1013	C142 CAPACIOR		CKSRYP223K50
	L112 CHIP INDUCTOR	QTL1013	C143 CAPACIOR		CKSRYP104K16
	L113 CHIP INDUCTOR	QTL1013	C144 CAPACIOR		CEAT3R3M50
	L114 CHIP INDUCTOR	QTL1013	C145 CAPACIOR		CEAT3R3M50
	L1601 CHIP INDUCTOR	QTL1013	C146 CAPACIOR		CEAT100M50
	L1602 CHIP INDUCTOR	QTL1013	C147 CAPACIOR		CEAT100M50
	L9101 CHIP INDUCTOR	ATL7002	C148 CAPACIOR		CEAT100M50
	L9102 CHIP INDUCTOR	QTL1013	C149 CAPACIOR		CEAT100M50
	L9103 CHIP INDUCTOR	QTL1013	C150 CAPACIOR		CEAT100M50
	L9501 CHIP INDUCTOR	ATL7002	C151 CAPACIOR		CEAT100M50
	L9502 CHIP INDUCTOR	QTL1013	C152 CAPACIOR		CCSRCH101J50
	L9503 CHIP INDUCTOR	QTL1013	C153 CAPACIOR		CCSRCH101J50
B	L9504 CHIP INDUCTOR	ATL7002	C154 CAPACIOR		CCSRCH101J50
	L9506 CHIP INDUCTOR	QTL1013	C155 CAPACIOR		CEAT471M10
	L9507 CHIP INDUCTOR	QTL1013	C156 CAPACIOR		CEAT471M10
	L9811 CHIP INDUCTOR	ATL7002	C1631 CAPACIOR		CKSRYP104K16
	L9812 CHIP INDUCTOR	ATL7002	C1632 CAPACIOR		CKSRYP104K16
			C171 CAPACIOR		CKSRYP103K50
			C172 CAPACIOR		CKSRYP103K50
			C173 CAPACIOR		CKSRYP104K16
CAPACITORS					
	C101 CAPACIOR	CCSRCH101J50	C174 CAPACIOR		CKSRYP104K16
	C102 CAPACIOR	CCSRCH101J50	C179 CAPACIOR		CKSRYP103K50
	C103 CAPACIOR	CCSRCH101J50	C180 CAPACIOR		CKSRYP103K50
	C104 CAPACIOR	CCSRCH101J50	C183 CAPACIOR		CKSRYP103K50
C	C105 CAPACIOR	CCSRCH101J50	C184 CAPACIOR		CKSRYP473K25
	C106 CAPACIOR	CCSRCH101J50	C185 CAPACIOR		CKSRYP473K25
	C107 CAPACIOR	CCSRCH101J50	C199 CAPACIOR		CKSRYP103K50
	C108 CAPACIOR	CCSRCH101J50	C207 CAPACIOR		CCSRCH101J50
	C109 CAPACIOR	CCSRCH101J50	C208 CAPACIOR		CCSRCH101J50
	C110 CAPACIOR	CCSRCH101J50	C221 CAPACIOR		CCSRCH101J50
	C111 CAPACIOR	CCSRCH101J50	C222 CAPACIOR		CCSRCH101J50
	C112 CAPACIOR	CCSRCH101J50	C223 CAPACIOR		CKSRYP103K50
	C113 CAPACIOR	CCSRCH101J50	C224 CAPACIOR		CKSRYP103K50
	C114 CAPACIOR	CCSRCH101J50	C225 CAPACIOR		CEAT470M50
	C115 CAPACIOR	CEAT4R7M50	C226 CAPACIOR		CEAT470M50
D	C116 CAPACIOR	CEAT4R7M50	C227 CAPACIOR		CKSRYP104Z25
	C117 CAPACIOR	CEAT470M50	C228 CAPACIOR		CCSRCH101J50
	C118 CAPACIOR	CEAT470M50	C229 CAPACIOR		CCSRCH101J50
	C119 CAPACIOR	CKSRYP103K50	C230 CAPACIOR		CKSRYP103K50
	C120 CAPACIOR	CKSRYP103K50	C231 CAPACIOR		CKSRYP103K50
	C121 CAPACIOR	CCSRCH101J50	C232 CAPACIOR		CEAT470M50
	C122 CAPACIOR	CCSRCH101J50	C233 CAPACIOR		CEAT470M50
	C123 CAPACIOR	CCSRCH101J50	C234 CAPACIOR		CEAT4R7M50
	C124 CAPACIOR	CKSRYP103K50	C235 CAPACIOR		CCSRCH221J50
	C125 CAPACIOR	CKSRYP103K50	C236 CAPACIOR		CKSRYP472K50
E	C126 CAPACIOR	CCSRCH101J50	C237 CAPACIOR		CKSRYP103K50
	C127 CAPACIOR	CCSRCH101J50	C238 CAPACIOR		CKSRYP103K50
	C128 CAPACIOR	CCSRCH101J50	C239 CAPACIOR		CEAT470M50
	C130 CAPACIOR	CEAT100M50	C240 CAPACIOR		CEAT4R7M50
	C131 CAPACIOR	CEAT100M50	C271 CAPACIOR		CKSRYP102K50
	C132 CAPACIOR	CEAT100M50	C304 CAPACIOR		CKSRYP103K50
	C133 CAPACIOR	CEAT100M50	C305 CAPACIOR		CEAT100M50
	C134 CAPACIOR	CEAT100M50	C9101 CAPACIOR		CCSRCH220J50
	C135 CAPACIOR	CEAT100M50	C9102 CAPACIOR		CCSRCH220J50
	C136 CAPACIOR	CEAT100M50	C9103 CAPACIOR		CCSRCH471J50
	C137 CAPACIOR	CEAT100M50	C9104 CAPACIOR		CKSRYP103K50
F	C138 CAPACIOR	CKSRYP103K50	C9105 CAPACIOR		CEAT101M10
	C139 CAPACIOR	CKSRYP223K50	C9106 CAPACIOR		CEAT101M10
	C140 CAPACIOR	CKSRYP104K16	C9107 CAPACIOR		CKSRYP103K50
	C141 CAPACIOR	CKSRYP103K50	C9108 CAPACIOR		CEAT101M10

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
C9109	CAPACIOR	CKSRYB103K50	C9617	CAPACIOR	CEAT4R7M50
C9110	CAPACIOR	CCSRCH471J50	C9618	CAPACIOR	CEAT4R7M50
C9111	CAPACIOR	CCSRCH471J50	C9625	CAPACIOR	CCSRCH471J50
C9112	CAPACIOR	CEAT2R2M50	C9626	CAPACIOR	CKSRYB223K50
C9113	CAPACIOR	CKSRYB104K16	C9636	CAPACIOR	CKSRYB103K50
C9114	CAPACIOR	CCSRCH471J50	C9637	CAPACIOR	CKSRYB103K50
C9115	CAPACIOR	CKSRYB104K16	C9639	CAPACIOR	CCSRCH471J50
C9116	CAPACIOR	CEAT101M10	C9701	CAPACIOR	CKSRYB222K50
C9117	CAPACIOR	CCSRCH221J50	C9702	CAPACIOR	CKSRYB222K50
C9121	CAPACIOR	CKSRYB103K50	C9703	CAPACIOR	CKSRYB102K50
C9126	CAPACIOR	CKSRYB104K16	C9704	CAPACIOR	CKSRYB102K50
C9160	CAPACIOR	CCSRCH101J50	C9707	CAPACIOR	CCSRCH820J50
C9201	CAPACIOR	CCSRCH101J50	C9708	CAPACIOR	CCSRCH820J50
C9202	CAPACIOR	CCSRCH101J50	C9709	CAPACIOR	CKSRYB103K50
C9203	CAPACIOR	CEAT4R7M50	C9710	CAPACIOR	CKSRYB103K50
C9204	CAPACIOR	CEAT4R7M50	C9711	CAPACIOR	CKSRYB103K50
C9205	CAPACIOR	CEAT221M6R3	C9712	CAPACIOR	CKSRYB103K50
C9206	CAPACIOR	CKSRYB104K16	C9713	ELECT.CAPACIOR	CEAT330M25
C9207	CAPACIOR	CEAT100M50	C9714	ELECT.CAPACIOR	CEAT330M25
C9208	CAPACIOR	CEAT100M50	C9715	CAPACIOR	CKSRYB222K50
C9209	CAPACIOR	CKSRYB103K50	C9716	CAPACIOR	CKSRYB222K50
C9502	CAPACIOR	CKSRYB103K50	C9717	CAPACIOR	CKSRYB102K50
C9503	CAPACIOR	CCSRCH471J50	C9718	CAPACIOR	CKSRYB102K50
C9504	CAPACIOR	CKSRYB103K50	C9721	CAPACIOR	CCSRCH820J50
C9505	CAPACIOR	CCSRCH471J50	C9722	CAPACIOR	CCSRCH820J50
C9506	CAPACIOR	CKSRYB103K50	C9723	CAPACIOR	CKSRYB103K50
C9507	CAPACIOR	CCSRCH471J50	C9724	CAPACIOR	CKSRYB103K50
C9508	CAPACIOR	CKSRYB103K50	C9725	CAPACIOR	CKSRYB103K50
C9509	CAPACIOR	CCSRCH271J50	C9726	CAPACIOR	CKSRYB103K50
C9510	CAPACIOR	CCSRCH100D50	C9727	ELECT.CAPACIOR	CEAT330M25
C9511	CAPACIOR	CCSRCH100D50	C9728	ELECT.CAPACIOR	CEAT330M25
C9512	CAPACIOR	CKSRYB103K50	C9729	CAPACIOR	CCSRCH471J50
C9513	CAPACIOR	CCSRCH471J50	C9730	CAPACIOR	CKSRYF104Z25
C9514	CAPACIOR	CKSRYB103K50	C9731	CAPACIOR	CCSRCH331J50
C9515	CAPACIOR	CCSRCH471J50	C9732	CAPACIOR	CKSRYB473K25
C9516	CAPACIOR	CEAT101M10	C9735	CAPACIOR	CCSRCH331J50
C9517	CAPACIOR	CKSRYB103K50	C9736	CAPACIOR	CKSRYB223K25
C9518	CAPACIOR	CCSRCH471J50	C9737	CAPACIOR	CKSRYB103K50
C9519	CAPACIOR	CKSRYB103K50	C9738	CAPACIOR	CKSRYB103K50
C9520	CAPACIOR	CCSRCH471J50	C9739	ELECT.CAPACIOR	CEAT330M25
C9521	CAPACIOR	CKSRYB103K50	C9740	ELECT.CAPACIOR	CEAT220M25
C9522	CAPACIOR	CCSRCH471J50	C9765	ELECT.CAPACIOR	CEAT330M25
C9523	CAPACIOR	CEAT100M50	C9766	ELECT.CAPACIOR	CEAT330M25
C9524	CAPACIOR	CKSRYB103K50	C9767	ELECT.CAPACIOR	CEAT330M25
C9525	CAPACIOR	CCSRCH471J50	C9768	ELECT.CAPACIOR	CEAT330M25
C9526	CAPACIOR	CEAT100M50	C9769	CAPACIOR	CEAT2R2M50
C9527	CAPACIOR	CKSRYB103K50	C9770	CAPACIOR	CEAT2R2M50
C9528	CAPACIOR	CCSRCH471J50	C9792	CAPACIOR	CEAT101M10
C9529	CAPACIOR	CEAT2R2M50	C9811	CAPACIOR	CEAT4R7M50
C9530	CAPACIOR	CCSRCH331J50	C9812	CAPACIOR	CEAT101M10
C9531	CAPACIOR	CKSRYB103K50	C9813	CAPACIOR	CEAT4R7M50
C9551	CAPACIOR	CEAT101M10	C9814	CAPACIOR	CEAT101M10
C9571	CAPACIOR	CCSRCH471J5	C9815	CAPACIOR	CCSRCH471J50
C9584	CAPACIOR	CKSRYB103K50	C9816	CAPACIOR	CCSRCH471J50
C9611	CAPACIOR	CCSRCH471J50	C9817	CAPACIOR	CKSRYB103K50
C9612	CAPACIOR	CCSRCH471J50	C9818	CAPACIOR	CKSRYB104K16
C9613	CAPACIOR	CCSRCH471J50			
C9614	CAPACIOR	CCSRCH471J50			
C9615	CAPACIOR	CEAT4R7M50			
C9616	CAPACIOR	CEAT4R7M50			

RESISTORS

R9104 RESISTOR
 ⚠ R174 METAL OXIDE

RS1/16S1802F
 RESISTORRS1LMF101

Mark No.	Description	Part No.
⚠ R175	METAL OXIDE Other Resistors	RESISTORRS1LMF101 RS1/16S###J

OTHERS

CN101	16P SOCKET	KP200TA16L
CN104	9P FFC CONNECTOR	52044-0945
CN105	8P SOCKET	KP200TA8L
CN106	19P FFC CONNECTOR	52045-1945
CN102	28P FFC CONNECTOR	52045-2845

CN9101	7P FFC CONNECTOR	52044-0745
JA103	4P PIN JACK	AKB7048
JA104	4P PIN JACK	AKB7048
JA105	6P PIN JACK	AKB7050
X9501	(CRYSTAL RES. 27.0MHz)	VSS1086

X9101	(CRYSTAL RES. 12.3MHz)	VSS1140
-------	------------------------	---------

B AMP & PRIMARY ASSY

SEMICONDUCTORS

IC51	REGULATOR IC	NJM78M56F
⚠ IC601	POWER IC	APC010
⚠ IC602	POWER IC	APC011
⚠ IC603	PROTECTOR(1A)	AEK7009
⚠ IC604	PROTECTOR(10A)	AEK7022

⚠ IC605	PROTECTOR(10A)	AEK7022
⚠ IC606	PROTECTOR(10A)	AEK7022
⚠ IC607	PROTECTOR(10A)	AEK7022
⚠ IC701	PROTECTOR(125mA)	AEK7020
⚠ IC702	PROTECTOR(125mA)	AEK7020

Q51	NPN TRANSISTOR	KRC101M
Q601	TRANSISTOR	2SC2878
Q602	TRANSISTOR	2SC2878
Q603	TRANSISTOR	2SC2878
Q604	TRANSISTOR	2SC2878

Q605	TRANSISTOR	2SC2240
Q606	TRANSISTOR	2SC2240
Q631	TRANSISTOR	2SC2878
Q632	TRANSISTOR	2SC2878
Q633	TRANSISTOR	2SC2240

Q651	TRANSISTOR	2SC2878
Q652	TRANSISTOR	2SC2878
Q653	TRANSISTOR	2SC2878
Q654	TRANSISTOR	2SC2878
Q655	TRANSISTOR	2SC2240

Q656	TRANSISTOR	2SC2240
Q691	TRANSISTOR	2SC1740S
Q692	TRANSISTOR	2SC1740S
Q701	POWER TR	2SC4793D1
Q702	POWER TR	2S1837D1

Q703	TRANSISTOR	2S1145
Q704	TRANSISTO	2SC1845

⚠ D51	DIODE	S5688G
⚠ D52	DIODE	S5688G
⚠ D53	DIODE	S5688G

⚠ D54	DIODE	S5688G
⚠ D55	DIODE	S5688G
D56	DIODE	1SS133
D58	ZENER DIODE	MTZJ5.1
D601	DIODE	1SS133

D602	DIODE	1SS133
------	-------	--------

Mark No.	Description	Part No.
D603	DIODE	1SS133
D604	DIODE	1SS133
D605	ZENER DIODE	MTZJ16
D606	ZENER DIODE	MTZJ16

D631	DIODE	1SS133
D632	DIODE	1SS133
D633	ZENER DIODE	MTZJ16
D634	ZENER DIODE	MTZJ16
D651	DIODE	1SS133

D652	DIODE	1SS133
D653	DIODE	1SS133
D654	DIODE	1SS133
⚠ D701	DIODE	D5SB20(B)
⚠ D702	DIODE	D5SB20(B)

D711	ZENER DIODE	MTZJ22D
D712	ZENER DIODE	MTZJ5.1B
⚠ D721	DIODE	S5688G
⚠ D722	DIODE	S5688G
⚠ D723	DIODE	S5688G

⚠ D724	DIODE	S5688G
D752	DIODE	1SS133
D756	DIODE	1SS133

COILS AND FILTERS

⚠ L51	LINE FILTER	ATF7018
L751	F COIL	ATH1004
L752	F COIL	ATH1004
L753	F COIL	ATH1004
L761	F COIL	ATH1004
L762	F COIL	ATH1004

SWITCHES AND RELAYS

RY751	RELAY	XSR3002
RY752	RELAY	XSR3002
RY753	RELAY	XSR3002
⚠ RY51	JOELOW POWERREL	XSR3003

CAPACITORS

⚠ C51	CKA(10000P/AC250V)	ACG7020
⚠ C52	CKA(10000P/AC250V)	ACG7020
C53	ELECT.CAPACITOR	CET102M16
C54	CAPACITOR	CET470M25
C55	CAPACITOR	CKPUYF103Z25

C56	CAPACITOR	CKPUYF103Z25
C57	CAPACITOR	CKPUYF103Z25
C601	CAPACITOR	CKPUYB102K50
C602	CAPACITOR	CKPUYB102K50
C603	CAPACITOR	CKPUYB331K50

C604	CAPACITOR	CKPUYB331K50
C605	CAPACITOR	CET4R7M50
C606	CAPACITOR	CET4R7M50
C607	AXIAL CAPACITOR	CCPUCH6R8K50
C608	AXIAL CAPACITOR	CCPUCH6R8K50

C609	AXIAL CAPACITOR	CCPUCH6R8K50
C610	AXIAL CAPACITOR	CCPUCH6R8K50
C611	CAPACITOR	CET101M16
C612	CAPACITOR	CET101M16
C615	CAPACITOR	CENP2R2M50

C616	CAPACITOR	CENP2R2M50
C631	CAPACITOR	CKPUYB102K50
C632	CAPACITOR	CKPUYB331K50
C633	CAPACITOR	CET4R7M50

Mark No.	Description	Part No.
C634	AXIAL CAPACITOR	CCPUCH6R8K50
C635	AXIAL CAPACITOR	CCPUCH6R8K50
C636	CAPACITOR	CET101M16
C638	CAPACITOR	CENP2R2M50
C651	CAPACITOR	CKPUYB102K50
C652	CAPACITOR	CKPUYB102K50
C653	CAPACITOR	CKPUYB331K50
C654	CAPACITOR	CKPUYB331K50
C655	CAPACITOR	CET4R7M50
C656	CAPACITOR	CET4R7M50
C657	AXIAL CAPACITOR	CCPUCH6R8K50
C658	AXIAL CAPACITOR	CCPUCH6R8K50
C659	AXIAL CAPACITOR	CCPUCH6R8K50
C660	AXIAL CAPACITOR	CCPUCH6R8K50
C661	CAPACITOR	CET101M16
C662	CAPACITOR	CET101M16
C665	CAPACITOR	CENP2R2M50
C666	CAPACITOR	CENP2R2M50
C691	CAPACITOR	CKPUYB102K50
C692	CAPACITOR	CET221M10
C701	ELECT.C4700/71	CH7137
C702	ELECT.C4700/71	CH7137
C703	ELECT.C3300/42	CH7135
C704	ELECT.C3300/42	CH7135
C705	ELECT.CAPACITOR	CET100M2
C706	ELECT.CAPACITOR	CET100M2
C707	CKA (0.01/AC250V)	ACG1005
C708	CKA (0.01/AC250V)	ACG1005
C711	ELECT.CAPACITOR	CET101M35
C712	CAPACITOR	CET101M10
C751	AUDIO FILM CAPACITOR	CFTY104J50
C752	AUDIO FILM CAPACITOR	CFTY104J50
C755	AUDIO FILM CAPACITOR	CFTY104J50
C761	AUDIO FILM CAPACITOR	CFTY104J50
C762	AUDIO FILM CAPACITOR	CFTY104J50
C775	ELECT.CAPACITOR	CENP470M50
C776	ELECT.CAPACITOR	CENP470M50

RESISTORS

⚠ R51	RESISTOR(2.2M/1/2W)	RCN1080
⚠ R52	CARBON RESISTOR	RD1/2PM270J
R53	CARBON RESISTOR	RD1/4PU332J
R54	CARBON RESISTOR	RD1/4PU103J
⚠ R615	RESISTOR(0.22/5W)	XCN3001
⚠ R616	RESISTOR(0.22/5W)	XCN3001
⚠ R638	RESISTOR(0.22/5W)	XCN3001
⚠ R665	RESISTOR(0.22/5W)	XCN3001
⚠ R666	RESISTOR(0.22/5W)	XCN3001
⚠ R711	METAL OXIDE RESISTOR	RS2LMF392J
⚠ R751	CARBON FILM RESISTOR	RD1/4PUF101J
⚠ R752	CARBON FILM RESISTOR	RD1/4PUF101J
⚠ R753	METAL OXIDE RESISTOR	RS1LMF4R7J
⚠ R754	METAL OXIDE RESISTOR	RS1LMF4R7J
⚠ R755	CARBON FILM RESISTOR	RD1/4PUF101J
⚠ R756	METAL OXIDE RESISTOR	RS1LMF4R7J
⚠ R761	CARBON FILM RESISTOR	RD1/4PUF101J
⚠ R762	CARBON FILM RESISTOR	RD1/4PUF101J
⚠ R763	METAL OXIDE RESISTOR	RS1LMF4R7J
⚠ R764	METAL OXIDE RESISTOR	RS1LMF4R7J

Mark No.	Description	Part No.
	Other Resistors	RD1/4PU###J

OTHERS

51	1PC AC SOCKET	KP1060
701	7P CABLE HOLDER	XKP3047
CN51	AC CODE SOCKET	RKP1751
CN53	23PFFC CONNECTOR	52045-2345
CN601	16P PLUG	KM200T16
CN702	6PJUMPER CONNECTOR	52147-0610
CN751	6P SPEAKER TERMINAL	XKE3012
CN752	4P SPEAKER TERMINAL	XKE3010
H51	FUSE CLIP	AKR7001
H52	FUSE CLIP	AKR7001
H53	FUSE CLIP	AKR7001
H54	FUSE CLIP	AKR7001
H701	FUSE CLIP	AKR7001
H702	FUSE CLIP	AKR7001
KN51	EARTH FITTING	VNF1084
KN601	EARTH FITTING	VNF1084
⚠ T51	(SUB TRANS FORMER)	ATT7057

C TRANS 2 ASSY SEMICONDUCTORS

⚠ IC851	PROTECTOR(1.6A)	AEK7012
⚠ IC852	PROTECTOR(1.6A)	AEK7012
⚠ IC853	PROTECTOR(1.6A)	AEK7012

OTHERS

851	7P CABLE HOLDER	XKP3047
-----	-----------------	---------

D TRANS 3 ASSY TRANS3 ASSY has no service part.

E REGULATOR ASSY SEMICONDUCTORS

IC801	REGULTORIC	NJM78M12F
IC802	REGULTORIC	NJM79M12F
IC803	IC	NJM78M05F
IC804	IC	NJM78M05F
IC805	REGULTOR IC	NJM78M12F

Q801	PNP TRANSISTOR	KR103M
Q802	NPN TRANSISTOR	KRC102M
Q803	PNP TRANSISTOR	KR103M
Q804	NPN TRANSISTOR	KRC102M
⚠ D801	DIODE	S5688G

⚠ D802	DIODE	S5688G
⚠ D803	DIODE	S5688G
⚠ D804	DIODE	S5688G
D809	DIODE	MTZJ6.2
D810	DIODE	MTZJ6.2

CAPACITORS

C801	ELECT.CAPACITOR	CET222M25
C802	ELECT.CAPACITOR	CET222M25
C803	CAPACITOR	CKPUYF103Z25
C804	CAPACITOR	CKPUYF103Z25
C805	CAPACITOR	CET101M16
C806	CAPACITOR	CET101M16
C807	CAPACITOR	CKPUYF103Z25
C808	CAPACITOR	CET101M10
C809	CAPACITOR	CET332M16

Mark No.	Description	Part No.
	C810 CAPACITOR	CKPUYF103Z25
A	C811 CAPACITOR	CET101M10
	C812 CAPACITOR	CKPUYF103Z25
	C813 CAPACITOR	CET101M16

OTHERS

CN801 (23P CONNECTOR)	52045-2345
CN802 (16P PLUG)	KM200TA16
CN803 (6P PLUG)	KM200TA6
CN804 (13P PLUG)	KM200TA13

F HASHIGETA ASSY**OTHERS**

CN1001 (8P PLUG)	KM200TA8
CN1002 (8P PLUG)	KM200TA8

H AMP INPUT ASSY**OTHERS**

CN253 (16P SOCKET)	KP200TA16L
CN254 (19P FFC SOCKET)	52044-1945

I TRANS1 ASSY

TRANS1 ASSY has no service part.

J DIGITAL IN ASSY**SEMICONDUCTORS**

IC1901 LOGIC IC	TC74ACT151F
IC1903 IC	TC74HCU04AF

COILS AND FILTERS

F1901 CHIP BEAD	DTF1067
F1902 CHIP BEAD	DTF1067
F1903 CHIP BEAD	DTF1067
L1905 CHIP INDUCTOR	QTL1013

CAPACITORS

C1902 CAPACIOR	CKSRYB104K25
C1904 CAPACIOR	CEAT101M1
C1905 CAPACIOR	CEAT101M1
C1906 CAPACIOR	CKSRYB103K50
C1907 CAPACIOR	CCSRCH271J50

C1908 CAPACIOR	CKSRYB104K25
C1909 CAPACIOR	CKSRYB104K25
C1912 CAPACIOR	CEAT101M10
C1915 CAPACIOR	CKSRYB102K50
C1918 CAPACIOR	CCSRCH221J50

C1919 CAPACIOR	CKSRYB103K50
C1920 CAPACIOR	CKSRYB103K50
C1921 CAPACIOR	CKSRYB104K250
C1922 CAPACIOR	CKSRYB104K25
C1923 CAPACIOR	CKSRYB103K50

C1925 CAPACIOR	CCSRCH470J50
C1926 CAPACIOR	CCSRCH471J50
C1928 CAPACIOR	CCSRCH271J50
C1929 CAPACIOR	CKSRYB103K50

RESISTORS

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

OTHERS

CN1901(7P FFC CONNECTOR)	52045-0745
JA1902 (OPTICAL LINK IN)	JFJ4000-010020

Mark No.	Description	Part No.
	JA1907(1P PIN JACK)	VKB1077

K KAWA ASSY
SEMICONDUCTORS

IC5001 PORTEXPANDER	BU4094BCF
Q5001 TRANSISTOR	2SC1740S
Q5002 TRANSISTOR	DTC143EK
Q5020 TRANSISTOR	DTC114TK
Q5021 TRANSISTOR	DTC114TK
Q5022 TRANSISTOR	DTC114TK
D5001 DIODE	1SS355
D5002 DIODE	1SS355

COILS AND FILTERS

L5001 CHIP INDUCTOR	QTL1013
---------------------	---------

CAPACITORS

C5001 CAPACIOR	CEAT100M50
C5002 CAPACIOR	CEAT100M50
C5003 CAPACIOR	CEAT101M16
C5004 CAPACIOR	CCSRCH101J50
C5005 CAPACIOR	CCSRCH101J50

C5006 CAPACIOR	CCSRCH101J50
C5007 CAPACIOR	CCSRCH101J50
C5009 CAPACIOR	CKSRYB103K50
C5010 CAPACIOR	CKSRYF105Z10
C5011 CAPACIOR	CKSRYB104K16

C5012 CAPACIOR	CCSRCH471J50
----------------	--------------

C5011	CKSRYB104K16
C5010	CKSRYF105Z10

RESISTORS

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

OTHERS

CN5001 (17P FFC CONNECTOR)	52044-1745
CN5002 (13P SOCKET)	KP200TA13L
CN5003 (8P SOCKET)	KP200TA8L
CN5004 (7P FFC CONNECTOR)	52044-0745
CN5005 (13P FFC CONNECTOR)	52044-1345

5001 (SCREW PLATE)	VNE1948
--------------------	---------

L VIDEO ASSY
SEMICONDUCTORS

IC301	NJM2296M
Q302	2SA1515
Q303	2SC3326
Q301	2SC3377
D301, D302, D305, D306	1SS355

D303, D304	UDZS6.2B
------------	----------

CAPACITORS

C347	CCSRCH470J50
C307-C310, C312, C314, C338	CEAT470M25
C1360, C302	CKSRYB103K50
C339, C340	CKSRYB104K25
C304-C306	CKSRYB221K50

C333	CKSRYB331K50
C311, C313	CKSRYB473K25

RESISTORS

Mark No.	Description	Part No.
⚠ R313, R316	Other Resistors	RS3LMF560J RS1/16S###J

OTHERS

CN303 (7P CONNECTOR)	52044-0745
CN305 (6P PIN JACK)	AKB7123
CN301 (13P SOCKET)	KP200TA13L
CN302 (6P SOCKET)	KP200TA6L

M 6CH IN ASSY SEMICONDUCTORS

IC302, IC303	NJM4558MD
--------------	-----------

CAPACITORS

C319, C320, C327, C328	CCSRCH101J50
C342-C345	CCSRCH101J50
C321, C324, C331, C332	CEAT4R7M50
C316, C322, C323, C329, C330	CKSRYB103K50
C317, C318, C325, C326	CKSRYB221K50

RESISTORS

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

OTHERS

CN307 (9P CONNECTOR)	52044-0945
CN309 (6P PIN JACK)	AKB7087

N S.VIDEO ASSY SEMICONDUCTORS

IC351, IC352	NJM2296M
D351-D354	1SS355

CAPACITORS

C375, C376	CCSRCH470J50
C352, C355, C358, C361-C363	CEAT470M25
C366	CEAT470M25
C372, C373, C378	CKSRYB103K50
C351, C353, C354, C356, C357	CKSRYB104K25

C359, C367	CKSRYB104K25
C364, C365, C368-C371	CKSRYB221K50

RESISTORS

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

OTHERS

CN353 (4P×2 MINI DIN SOCKET)	AKP7020
CN352 (4P×3 MINI DIN SOCKET)	AKP7043
CN351 (11P SOCKET)	KP200TA11L
JA351 (REMOTE JACK)	RKN1004

O FRONT ASSY SEMICONDUCTORS

IC401 CONTROL MCU	PDG268B
Q401 TRANSISTOR	DTA124EK
Q402 TRANSISTOR	DTA124EK
Q403 TRANSISTOR	DTC143EK
Q441 TRANSISTOR	DTC143EK

D401 DIODE	DAP202K
D403 DIODE	DAN217
D404 DIODE	DAP202K
D405 DIODE	DAN217
D406 DIODE	1SS355

D407 CHIP DIODE	RB501V-40
D408 CHIP DIODE	RB501V-40
D410 DIODE	1SS355
D442 DIODE	1SS355

Mark No.	Description	Part No.
----------	-------------	----------

COILS AND FILTERS

L401 RADIAL INDUCTOR	LFEA2R2J
----------------------	----------

SWITCHES AND RELAYS

S451 TAKT SWITCH	ASG1051
S452 TAKT SWITCH	ASG1051
S453 TAKT SWITCH	ASG1051
S454 TAKT SWITCH	ASG1051
S455 TAKT SWITCH	ASG1051

S456 TAKT SWITCH	ASG1051
S457 TAKT SWITCH	ASG1051
S458 TAKT SWITCH	ASG1051
S459 TAKT SWITCH	ASG1051
S460 TAKT SWITCH	ASG1051

S461 TAKT SWITCH	ASG1051
S462 TAKT SWITCH	ASG1051
S463 TAKT SWITCH	ASG1051
S464 TAKT SWITCH	ASG1051
S465 TAKT SWITCH	ASG1051

S466 TAKT SWITCH	ASG1051
S467 TAKT SWITCH	ASG1051
S468 TAKT SWITCH	ASG1051
S476 TAKT SWITCH	ASG1051

CAPACITORS

C401 CAPACIOR	CKSRYB103K50
C402 CAPACIOR	CEAT221M6R3
C403 CAPACIOR	CKSRYB103K50
C404 EDL (0.047F/5.5V)	ACH7132
C405 CAPACIOR	CEAT471M6R3

C406 CAPACIOR	CKSRYB473K16
C407 CAPACIOR	CKSRYB473K16
C408 CAPACIOR	CKSRYB104K16
C409 CAPACIOR	CEAT2R2M50
C410 CAPACIOR	CEAT2R2M50

C411 CAPACIOR	CKSRYB103K50
C412 CAPACIOR	CEAT470M50
C416 CAPACIOR	CKSRYB104K16
C418 CAPACIOR	CKSRYB104K16
C419 CAPACIOR	CKSRYB103K50

C420 ELECT.(220uF/35V)	ACH7101
C441 CAPACIOR	CKSRYB103K50
C442 CAPACIOR	CEAL470M10
C451 CAPACIOR	CKSRYB102K50
C452 CAPACIOR	CKSRYB102K50

C453 CAPACIOR	CKSRYB102K50
C471 CAPACIOR	CKSRYB104K16
C472 CAPACIOR	CKSRYB102K50
C492 CAPACIOR	CKSRYB102K50
C495 CAPACIOR	CKSRYB102K50

C511 CAPACIOR	CCSRCH471J50
C531 CAPACIOR	CKSRYB103K50

RESISTORS

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

OTHERS

401 (REMOTE CONTROL UNIT)	GP1U27X
404 (7P CABLE HOLDER)	51063-0705
471 (4P CABLE HOLDER)	51063-0405
CN401 (17P FFC CONNCTOR)	52044-1745
CN402 (28P FFC CONNCTOR)	52044-2845

Mark No.	Description	Part No.
V401	(FL TUBE)	XAV3013
X401	CERAMIC RESO.(7.2MHz)	ASS7039

Mark No.	Description	Part No.
D201	DIODE	1SS133
D202	ZENER DIODE	MTZJ5.1C

P R.ENCODER ASSY SWITCHES AND RELAYS

S511	TAKT SWITCH	ASG1051
S512	(ROTARY ENCODER)	XSX3006
S513	(ROTARY ENCODER)	XSX3005

OTHERS

511	(7P CABLE HOLDER)	51063-0705
-----	-------------------	------------

Q POWER SW ASSY SEMICONDUCTORS

D501	LED(RED)	BR3371XJ30A
------	----------	-------------

SWITCHES AND RELAYS

S501	SWITCH	ASG1051
------	--------	---------

RESISTORS

R501	RESISTOR	RS1/16S271J
------	----------	-------------

OTHERS

501	(CABLEB HOLDER 4P)	51063-0405
-----	--------------------	------------

U H.P. ASSY SEMICONDUCTORS

Q1551	TRANSISTOR	2SC3326
Q1552	TRANSISTOR	2SC3326

CAPACITORS

C1551	CAPACIOR	CKSRYB223K50
C1552	CAPACIOR	CKSRYB223K50
C1553	CAPACIOR	CKSRYB103K50
C1554	CAPACIOR	CCSRCH471J50
C1555	CAPACIOR	CKSRYB104K16

C1556	CAPACIOR	CKSRYB103K50
C1557	CAPACIOR	CCSRCH471J50
C1558	CAPACIOR	CKSRYB104K16

RESISTORS

⚠ R1551	METAL OXIDE RESISTOR	RS2LMF331J
⚠ R1552	METAL OXIDE RESISTOR	RS2LMF331J
⚠ R1553	METAL OXIDE RESISTOR	RS1LMF151J
⚠ R1554	METAL OXIDE RESISTOR	RS1LMF151J
R1555	RESISTOR	RS1/16S472J

R1556	RESISTOR	RS1/16S472J
-------	----------	-------------

OTHERS

1551	(6P CABLE HOLDER)	51048-0600
JA1551	(HEADPHONE JACK)	RKB1014
KN1551	(EARTH METAL FITTING)	VNF1084

X FM/AM TUNER MODULE SEMICONDUCTORS

IC201	M/FMIF+MPX IC	BA1451F
IC202	PLL IC	LC72131MD
Q201	TRANSISTOR	2SC2412K
Q202	TRANSISTOR	DT124ES
Q203	TRANSISTOR	DTC124EK

Q204	TRANSISTOR	2SC2412K
Q205	TRANSISTOR	2SC2412K

COILS AND FILTERS

L201	(FM DETECTOR COIL)	ATE7003
F201	(CERAMIC FILTER)	ATF-119
F202	(CERAMIC FILTER)	ATF-107
F203	(AM CERAMIC FILTER)	ATF7026

CAPACITORS

C101	CAPACITOR	CKSRYB103K50
C102	CAPACITOR	CKSRYB103K50
C201	CAPACITOR	CKSRYB223K50
C202	CAPACITOR	CKSRYB473K16
C204	CAPACITOR	CKSRYB102K50

C205	CAPACITOR	CKSRYB223K50
C206	CAPACITOR	CCSRCH100D50
C208	CAPACITOR	CKSRYB103K50
C209	CAPACITOR	CKSRYB223K50
C210	CAPACITOR	CEJ470M16

C211	CAPACITOR	CEJ1R0M50
C212	CAPACITOR	CCSRCH101J50
C213	CAPACITOR	CCSRCH101J50
C214	CAPACITOR	CKSRYB223K50
C215	CAPACITOR	CKSRYB681K50

C216	CAPACITOR	CKSRYB153K50
C217	CAPACITOR	CKSRYB153K50
C220	CAPACITOR	CKSRYB103K50
C221	CAPACITOR	CKSRYB224K10
C222	CAPACITOR	CKSRYB473K16

C223	CAPACITOR	CET100M50
C224	CAPACITOR	CET1R0M50
C225	CAPACITOR	CKSRYB153K50
C226	CAPACITOR	CCSRCH101J50
C227	ELECT.CAPACITOR	CET220M25

C228	CAPACITOR	CET3R3M50
C229	CAPACITOR	CET101M10
C230	CAPACITOR	CKSRYB223K50
C231	CAPACITOR	CCSRCH150J50
C232	CAPACITOR	CCSRCH150J50

C233	CAPACITOR	CCSRCH101J50
C234	CAPACITOR	CCSRCH101J50
C235	CAPACITOR	CCSRCH101J50
C236	CAPACITOR	CKSRYB223K50
C237	CAPACITOR	CET470M10

C238	CAPACITOR	CKSRYB102K50
C239	CAPACITOR	CKSRYB103K50
C240	CAPACITOR	CCSRCH101J50
C241	CAPACITOR	CET2R2M50
C242	CAPACITOR	CKSRYB103K50

C243	CAPACITOR	CET330M16
C601	CAPACITOR	CKSRYB103K50
C602	CAPACITOR	CKSRYB102K50
C603	CAPACITOR	CKSRYB223K50

RESISTORS

R103	RESISTOR	RS1/10S221J
R104	RESISTOR	RS1/10S221J
R211	RESISTOR	RD1/4PU221J
R221	RESISTOR	RD1/4PU222J
R233	RESISTOR	RD1/4PU391J

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
	R243 RESISTOR	RS1/10S0R0J
	Other Resistors	RS1/16S###J

OTHERS

	CN201 (13P SOCKET)	52044-1345
	BN201 (4P ANTENNA TERM.) (SHIELD CASE T)	AKA7003 ANK7072
	(SHIELD CASE B)	ANK7073
	X201 (CRYSTAR RESO. 7.2MHz)	ASS1093
1	FM FRONT END	AXF7003
2	AM RF TUNING BLOCK	AXX7071

A

B

C

D

E

F

6. ADJUSTMENT



■ AM Tuner Section

• There is no adjustment in the AM tuner.

■ FM Tuner Section

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

Step No.	Adjustment Title	ANT. Input level and signal condition			Adjustment	
		Frequency (MHz)	Modulation	Input Level (dB μ V)	Adjust point	Contents
1	T-METER Adjustment	98	OFF	80	L201	Adjust L201 so that the DC voltage between Pin 21 and Pin 23 of IC201 (Test point V _{tm}) gets within 0 ± 50 mV.

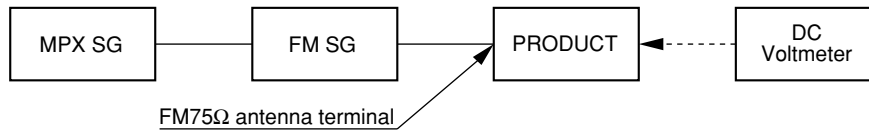


Fig.1 Adjustment Wiring Diagram

X FM/AM TUNER MODULE

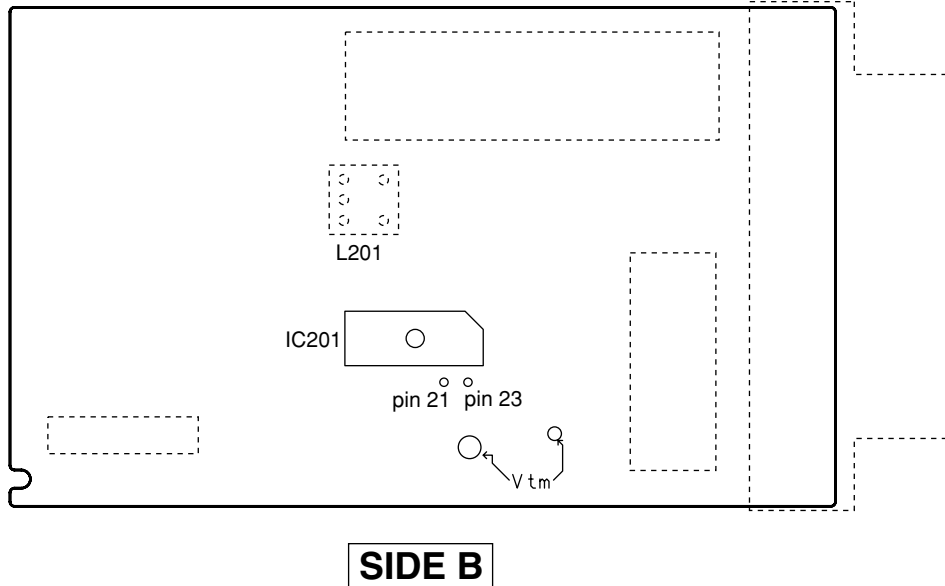


Fig.2 Adjustment Point

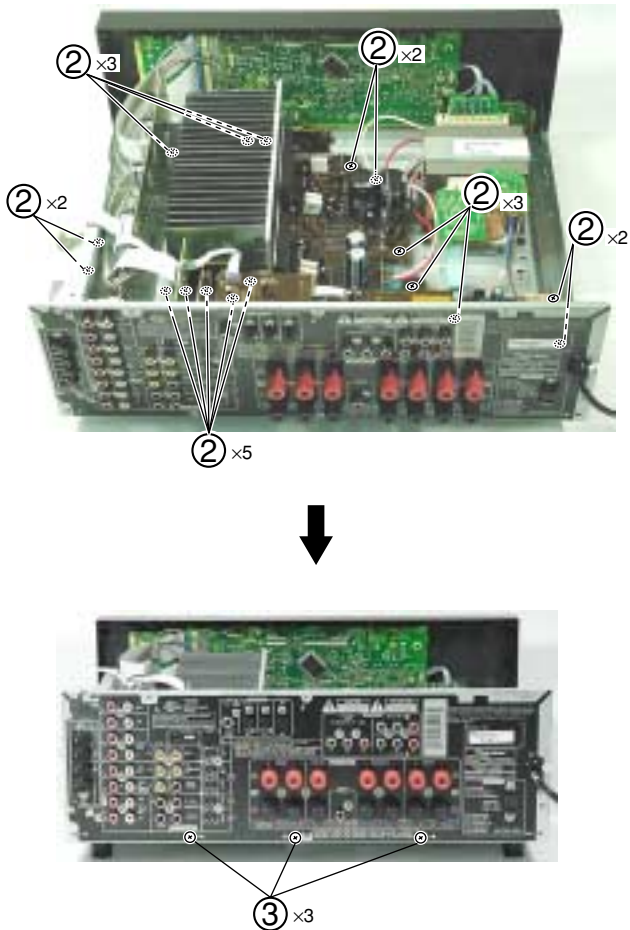
7. GENERAL INFORMATION

7.1 DISASSEMBLY and DIAGNOSIS

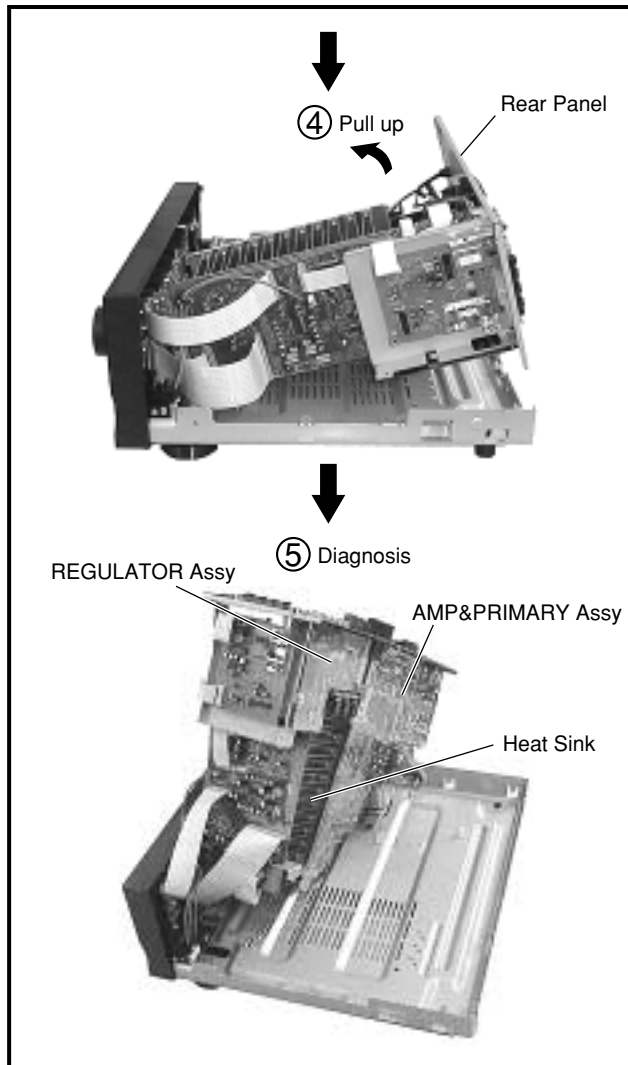
7.1.1 DISASSEMBLY and PCB LOCATION

■ Diagnosis

① Remove the top cover (seven screws).



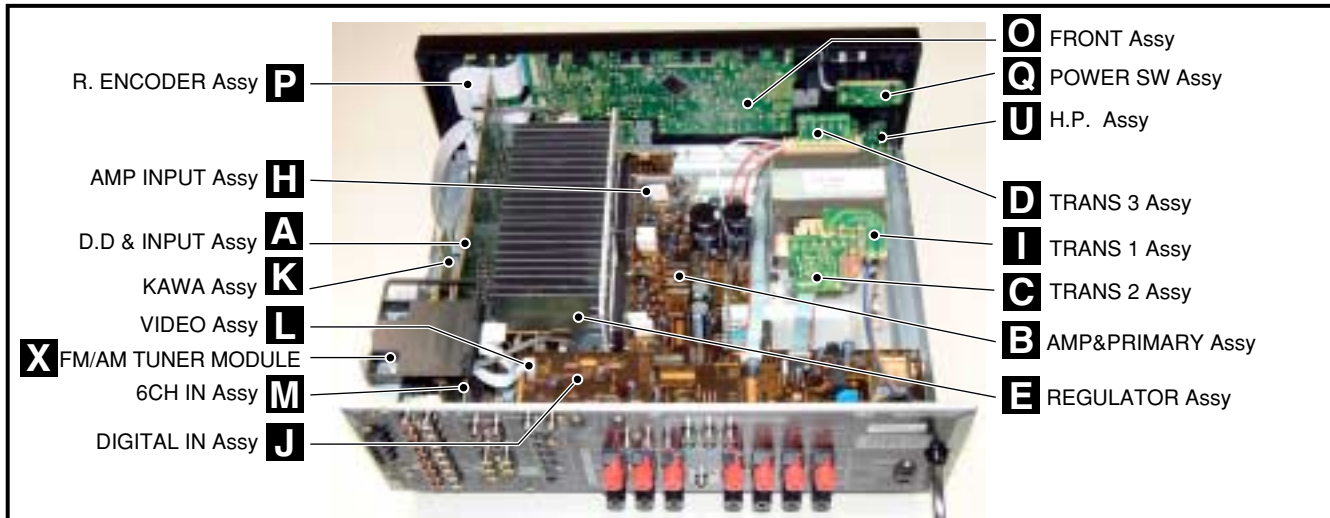
Note : This photograph may show a different model, however, the method for disassembly is the same.



Note : If the speaker and the screw of the rear panel are removed, the unit will stop operating. Even if the FM/AM TUNER MODULE is disconnected, other functions can operate.

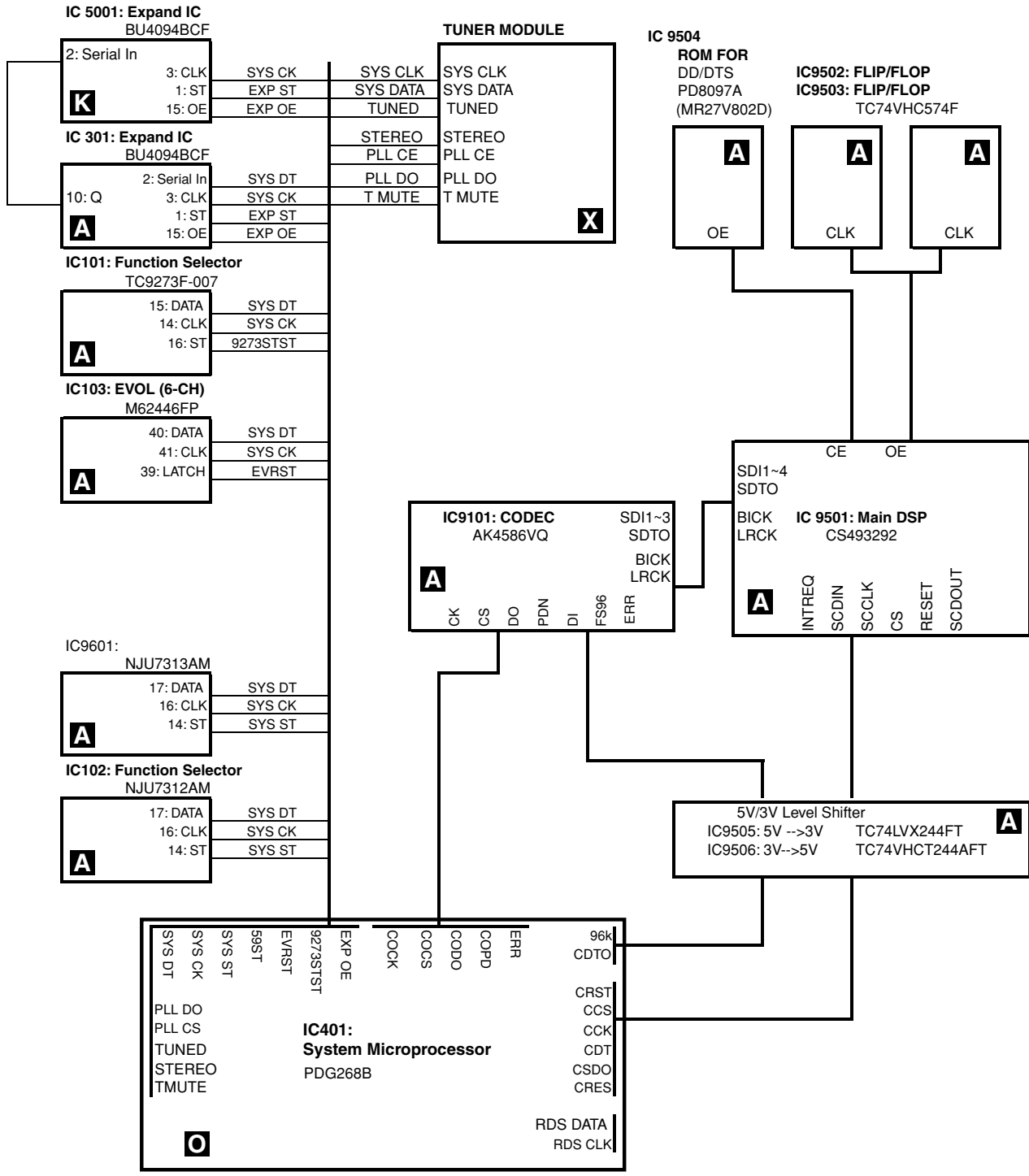
■ PCB Location

NOTE : This photograph is VSX-D711



7.1.2 U-COM BLOCKDIAGRAM

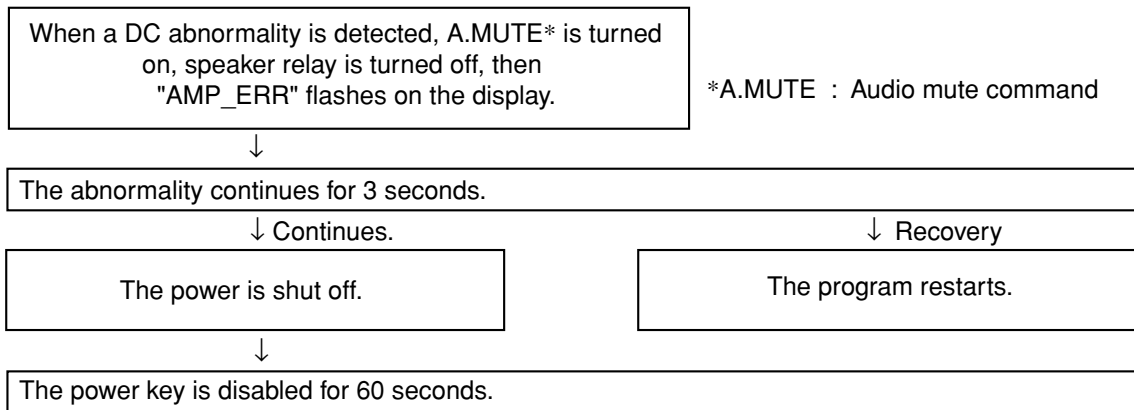
A
B
C
D
E
F



7.1.3 PROTECTION CIRCUIT

1. DC-abnormality detection

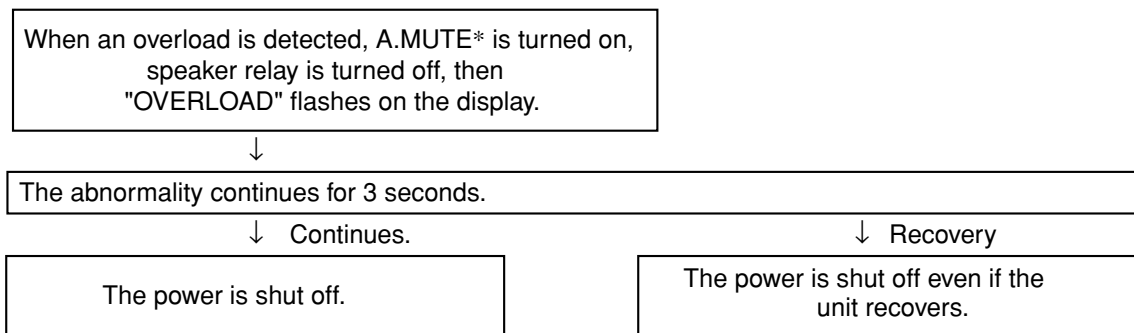
In the case of simultaneous detection with the overload protection circuit, DC-abnormality detection is performed preferentially to overload detection.



*A.MUTE : Audio mute command

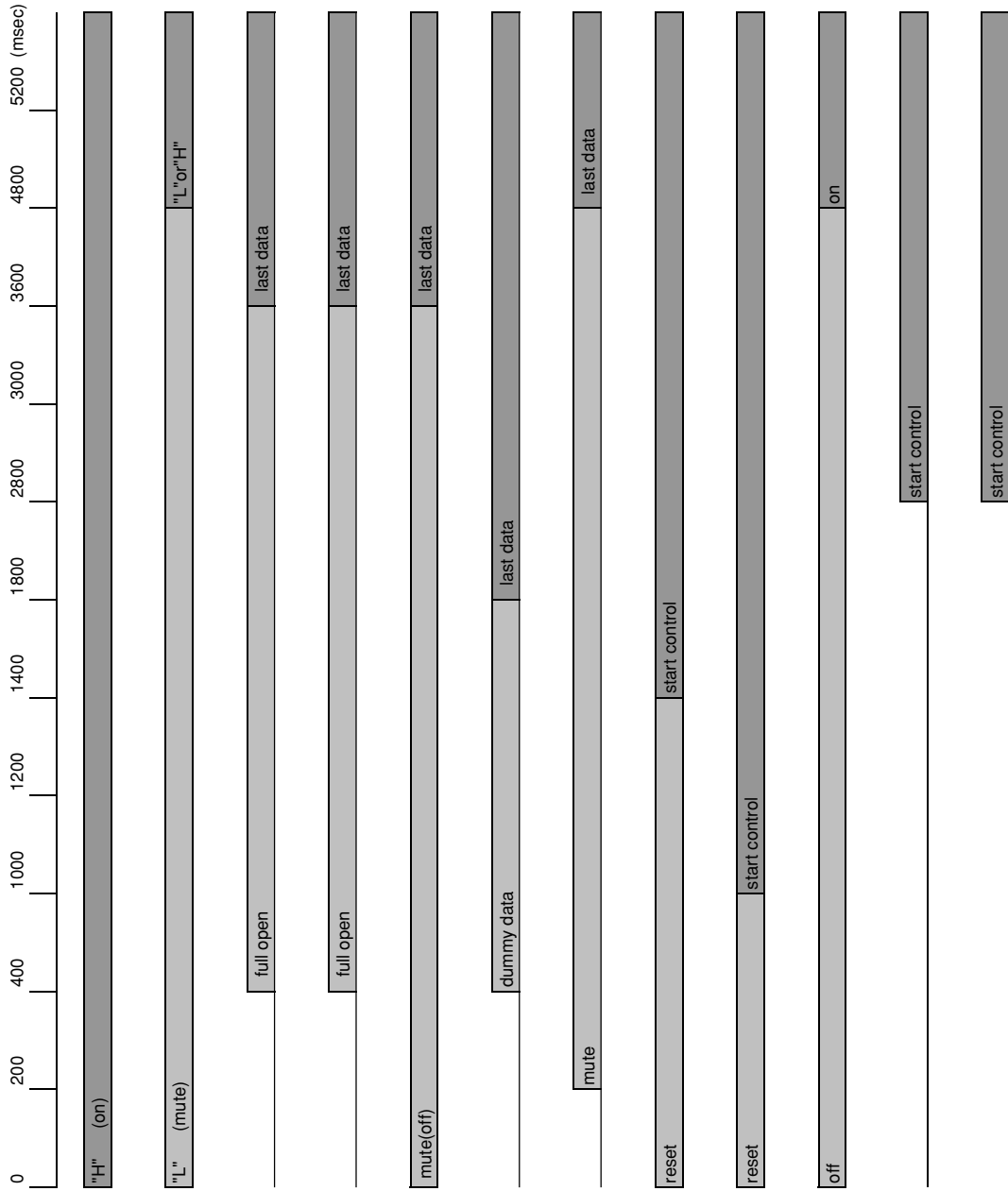
If the AC power cord is unplugged within 60 seconds after the power is shut off then plugged in again, the unit will be reset in 60 seconds.

2. Overload detection



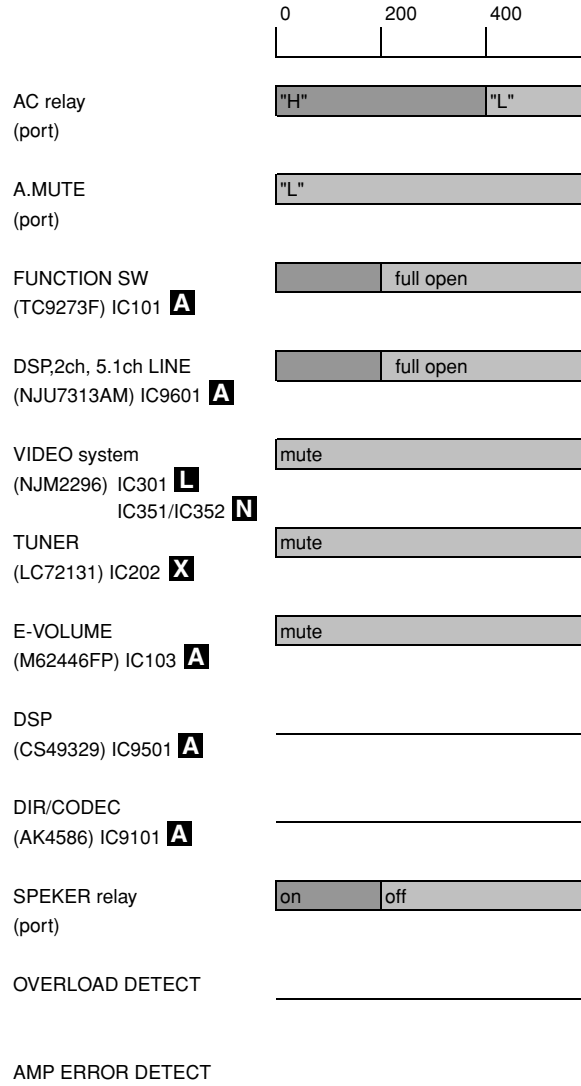
7.1.4 POWER ON SEQUENCE

POWER ON SEQUENCE



7.1.5 POWER OFF SEQUENCE

■ POWER OFF SEQUENCE



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.

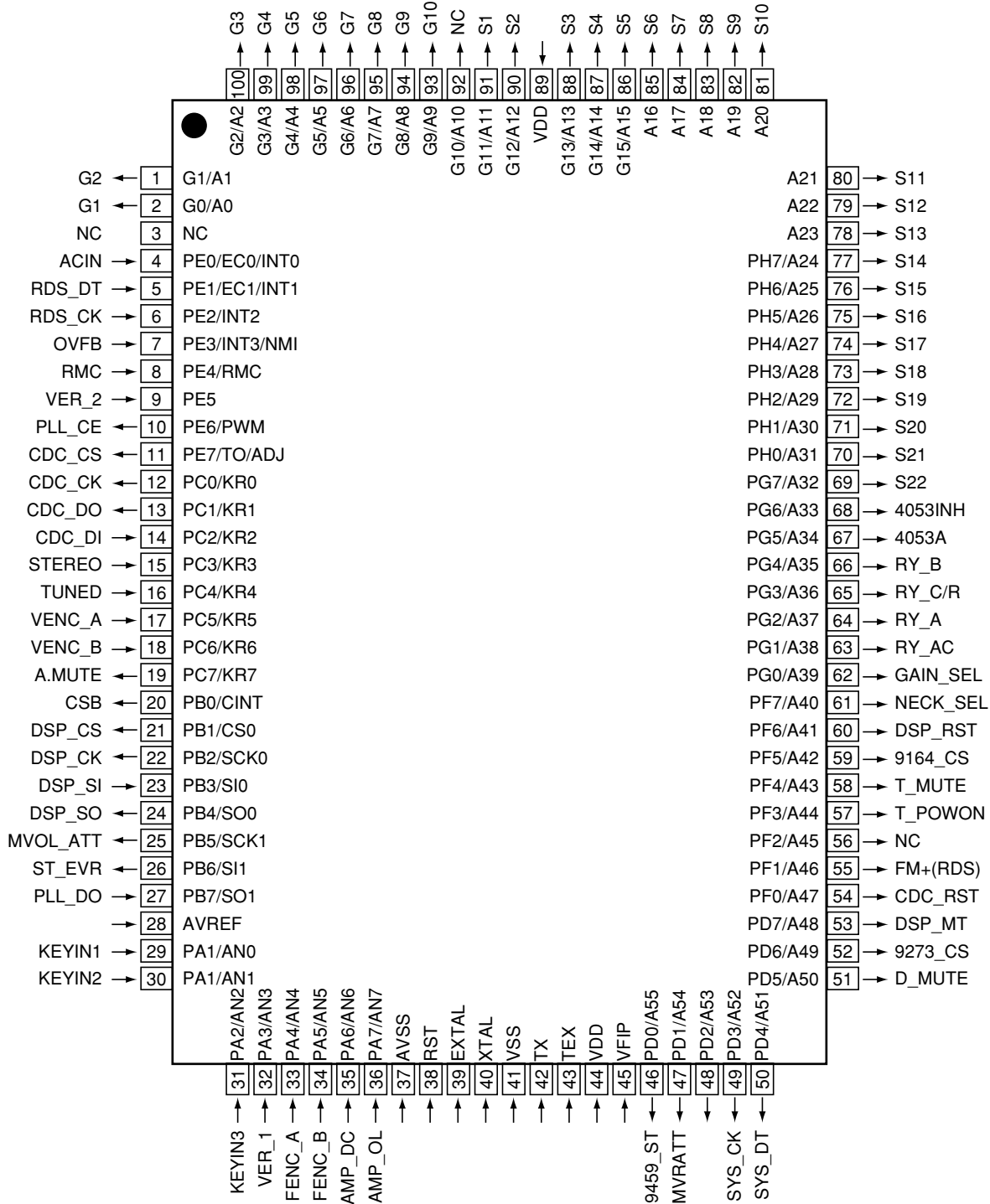
List of IC

PDG268B, AK4586VQ, BD3812F, NJU7312AM, PD8104A, AK4382

PDG268B (FRONT ASSY : IC401)

System Control MCU

Pin Arrangement (Top View)



• Pin Function

No.	Pin Name	I/O	Pin Function	Active
1	G2	O	Grid output 2	H
2	G1	O	Grid output 1	H
3	NC	–	Connect to Vdd	
4	ACIN	I	Input AC pulse	
5	RDS_DT	I	Serial control DATA signal of RDS communication	
6	RDS_CK	I	Serial control CLOCK signal of RDS communication (Use external interrupt)	
7	DIRLOCK	I	ERR/OVER input from CODEC	
8	RMC	I	Remote control signal input (no-carrier signal)	
9	VER_2	I	Destination switch 2	
10	ST_EVR	O	Strobe of communication for E-volume	H
11	CDC_CS	O	Chip select for CODEC	
12	CDC_CK	O	Control clock for CODEC & TC9164	
13	CDC_DO	O	Control data for CODEC & TC9164	
14	CDC DI	I	Data input from DIR	
15	STEREO	I	Signal to switch Stereo / Monoral	
16	TUNED	I	Condition of TUNED	
17	VENC_A	I	Input from rotary encoder of E-volume (A)	
18	VENC_B	I	Input from rotary encoder of E-volume (B)	
19	HP ON	I	Headphone detect	L
20	CREQ	I	Request for DSP	L
21	CCS	O	Chip select for DSP	L
22	CCK	O	Clock signal for DSP	H
23	CDT	I	DATA input signal for DSP	
24	CSDO	O	DATA output signal for DSP	H
25	FS 96	I	96 k	H
26	AMP_OL	I	Detect overload of protection circuit (L: overload)	H
27	PLL_DO	I	Data input signal for communication with LC72131 (Tuner)	
28	AVref	–	Connect to Vdd	
29	KEYIN1	I	Key input A/D conversion port 1	
30	KEYIN2	I	Key input A/D conversion port 2	
31	KEYIN3	I	Key input A/D conversion port 3	
32	VER_1	I	Input 1 to switch region (A/D input)	
33	FENC_A	I	FUNC Rotary encoder signal input (A)	
34	FENC_B	I	FUNC Rotary encoder signal input (B)	
35	AMP_DC	I	Detect trouble DC of protection circuit (L : Trouble)	L
36	VER_2	I	Input 2 to switch region (A/D input)	L
37	AVSS	–	Connect to Vss	
38	RST	–	Reset	
39	EXTAL	–	Connect to the oscillator (7.2MHz)	
40	XTAL	–		
41	VSS	–	Connect to Vss	
42	TX	–	NC	
43	TEX	–	Connect to Vss	
44	VDD	–	+5V	
45	VFDP	–	-30V	
46	9459_ST	O	Strobe for E-volume (TC9459) of SB	
47	MVRATT	O	ATT control of master volume for E-volume (less than -15dB : L)	H
48				H
49	SYS_DT	O	Data signal for communication with M62446, TC9163, TC9164 and PLL	H
50	SYS_CK	O	Clock signal for communication with M62446, TC9163, TC9164 and PLL	H

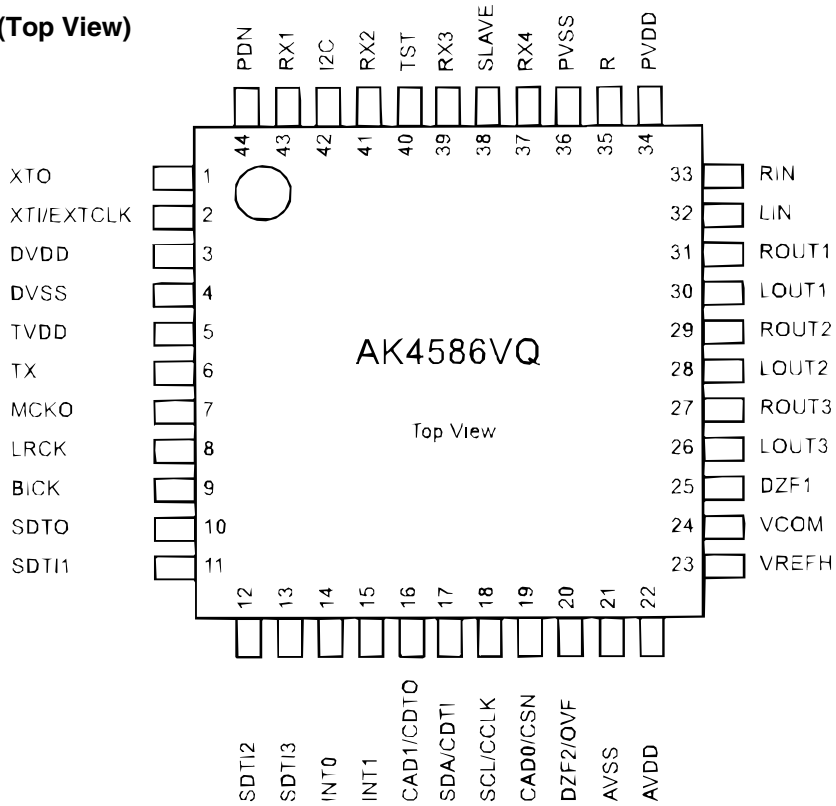
• Pin Function

No.	Pin Name	I/O	Pin Function	Active
51	9273_CS	O	Chip select for TC9273	H
52	DSP_MT	O	DSP Mute (ASSY mute)	H
53	GAIN_SEL	O	Gain select (5.1ch and Stereo of analog input : H)	H
54	AMUTE	O	Audio mute	H
55	T_MUTE	O	Tuner mute	H
56	PLL_CE	O	Chip select for communication to LC72131 (Tuner)	
57	NECK_SEL	O	5.1ch, surround mode and A+B Stereo : H / Stereo : L	H
58	FM+(RDS)	O	Tr switch ON/OFF for power supply of RDS decoder (L : AM, power OFF , H : Other)	H
59	9164_CS	O	TC9163, TC9164 Chip select	
60	CRST	O	Reset for DSP	
61	CDC_PD	O	Power down for CODEC	
62	ABOT	O	Abort for DSP	H
63	RY_AC	O	AC relay ON/OFF	H
64	RY_A	O	Speaker A relay ON/OFF	H
65	RY_C/R	O	Rear/Center Speaker relay ON/OFF	H
66	EXP_CS	O	Chip select for expand IC	H
67	EXP_OE	O	Chip select for expand IC	H
68	RY_AC	O	AC relay ON/OFF control	H
69	S22	O	Segment output 22	H
70	S21		Segment output 21	
71	S20		Segment output 20	
72	S19		Segment output 19	
73	S18		Segment output 18	
74	S17		Segment output 17	
75	S16		Segment output 16	
76	S15		Segment output 15	
77	S14		Segment output 14	
78	S13		Segment output 13	
79	S12		Segment output 12	
80	S11		Segment output 11	
81	S10		Segment output 10	
82	S9		Segment output 9	
83	S8		Segment output 8	
84	S7		Segment output 7	
85	S6		Segment output 6	
86	S5		Segment output 5	
87	S4		Segment output 4	
88	S3		Segment output 3	
89	VDD	-	5V	
90	S2	O	Segment output 2	H
91	S1		Segment output 1	
92	Not used	O	Not used (Fixed Vfdp)	
93	G10	O	Grid output 10	H
94	G9		Grid output 9	
95	G8		Grid output 8	
96	G7		Grid output 7	
97	G6		Grid output 6	
98	G5		Grid output 5	
99	G4		Grid output 4	
100	G3		Grid output 3	

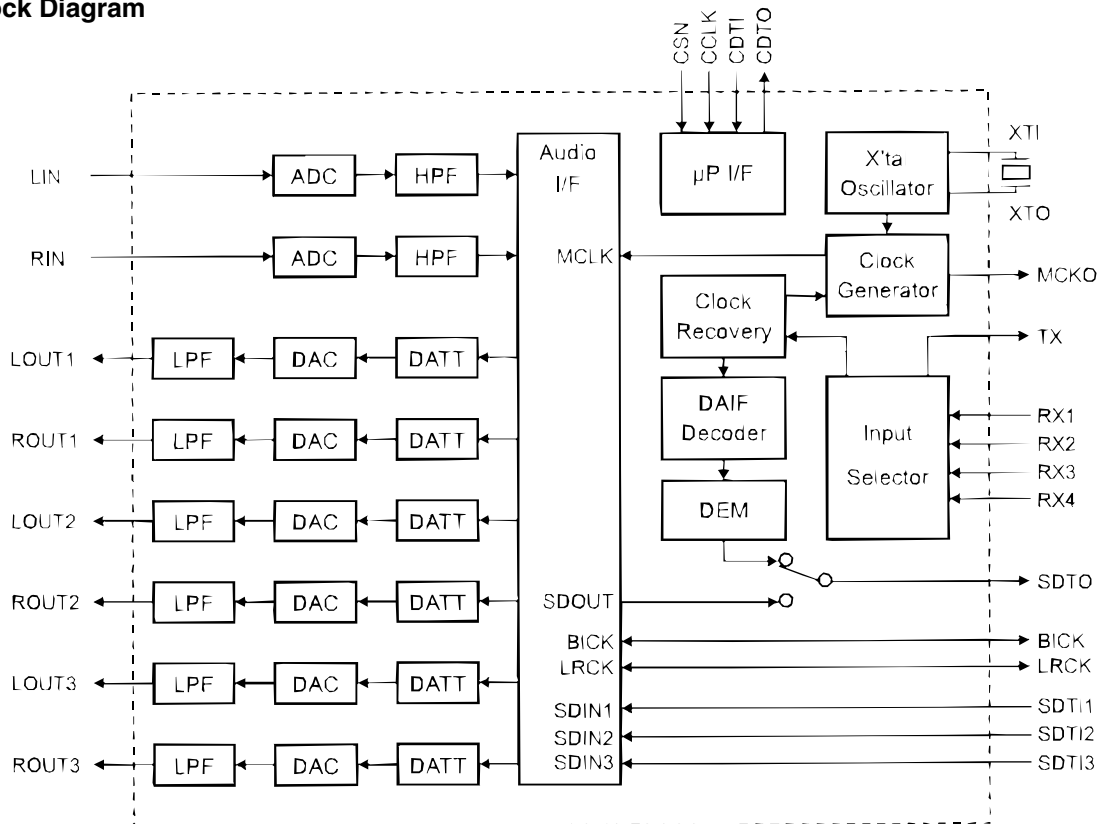
AK4586VQ (DD & INPUT ASSY : IC9101)

• 96kHz 24Bit 6-channel CODEC with DIR

Pin Arrangement (Top View)



Block Diagram



■ Pin / Function

PIN/FUNCTION

No.	Pin Name	I/O	Function
1	XTO	O	X'tal Output Pin
2	XTI	I	X'tal Input Pin
	EXTCLK	I	External Master Clock Input Pin
3	TVDD	-	Output Buffer Power Supply Pin, 2.7V~5.5V
4	DVSS	-	Digital Ground Pin, 0V
5	DVDD	-	Digital Power Supply Pin, 4.5V~5.5V
6	TX	O	Transmit channel (through data) Output Pin
7	MCKO	O	Master Clock Output Pin
8	LRCK	I/O	Input/Output Channel Clock Pin
9	BICK	I/O	Audio Serial Data Clock Pin
10	SDTO	O	Audio Serial Data Output Pin
11	SDTI1	I	DAC1 Audio Serial Data Input Pin
12	SDTI2	I	DAC2 Audio Serial Data Input Pin
13	SDTI3	I	DAC3 Audio Serial Data Input Pin
14	INT0	O	Interrupt 0 pin
15	INT1	O	Interrupt 1 pin
16	CDTO	O	Control Data Output Pin in 4-wire serial control mode
	CAD1	I	Chip Address 1 Pin in I ² C bus control mode
17	CDTI	I	Control Data Input Pin in 4-wire serial control mode
	SDA	I/O	Control Data Input/Output Pin in I ² C bus control mode
18	CCLK	I	Control Data Clock Pin in 4-wire serial control mode
	SCL	I	Control Data Clock Pin in I ² C bus control mode
19	CSN	I	Chip Select Pin in 4-wire serial control mode
	CAD0	I	Chip Address 0 Pin in I ² C bus control mode
20	DZF2	O	Zero Input Detect 2 Pin (Note 1) When the input data of the group 1 follow total 8192 LRCK cycles with "0" input data, this pin goes to "H".
	OVF	O	Analog Input Overflow Detect Pin (Note 2) This pin goes to "H" if the analog input of Lch or Rch is overflows.
21	AVSS	-	Analog Ground Pin, 0V
22	AVDD	-	Analog Power Supply Pin, 4.5V~5.5V

■ Pin / Function

No.	Pin Name	I/O	Function
23	VREFH	I	Positive Voltage Reference Input Pin, AVDD
24	VCOM	O	Common Voltage Output Pin, AVDD/2 Large external capacitor around 2.2 μ F is used to reduce power-supply noise.
25	DZF1	O	Zero Input Detect 1 Pin (Note 1) When the input data of the group 1 follow total 8192 LRCK cycles with "0" input data, this pin goes to "H".
26	LOUT3	O	DAC3 Lch Analog Output Pin
27	ROUT3	O	DAC3 Rch Analog Output Pin
28	LOUT2	O	DAC2 Lch Analog Output Pin
29	ROUT2	O	DAC2 Rch Analog Output Pin
30	LOUT1	O	DAC1 Lch Analog Output Pin
31	ROUT1	O	DAC1 Rch Analog Output Pin
32	LIN	I	Lch Analog Input Pin
33	RIN	I	Rch Analog Input Pin
34	PVDD	-	PLL Power Supply Pin, 4.5V~5.5V
35	R	-	External Resistor Pin 18k Ω +/-1% resistor to PVSS externally.
36	PVSS	-	PLL Ground Pin, 0V
37	RX4	I	Receiver Channel 4 Pin (Internal biased pin)
38	SLAVE	I	Slave Mode Pin "L": Master mode or Slave mode, "H": Slave mode
39	RX3	I	Receiver Channel 3 Pin (Internal biased pin)
40	TST	I	Test Pin This pin should be connected to DVSS.
41	RX2	I	Receiver Channel 2 Pin (Internal biased pin)
42	I2C	I	Control Mode Select Pin "L": 4-wire Serial, "H": I ² C Bus
43	RX1	I	Receiver Channel 1 Pin (Internal biased pin)
44	PDN	I	Power-Down & Reset Pin When "L", the AK4586 is powered-down, all output pins go to "L" and the control registers are reset to default state. If the state of CAD1-0 changes, then the AK4586 must be reset by PDN.

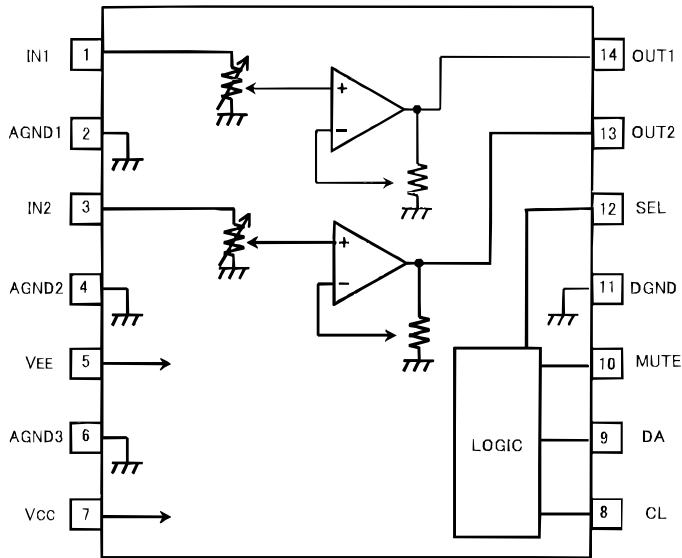
Notes:

1. The group 1 and 2 can be selected by DZFM2-0 bits.
2. This pin becomes OVF pin if OVFE bit is set to "1".
3. All input pins except internal biased pins should not be left floating.

BD3812F (D.D & INPUT ASSY : IC112)

• Audio Sound Processor

• Block Diagram



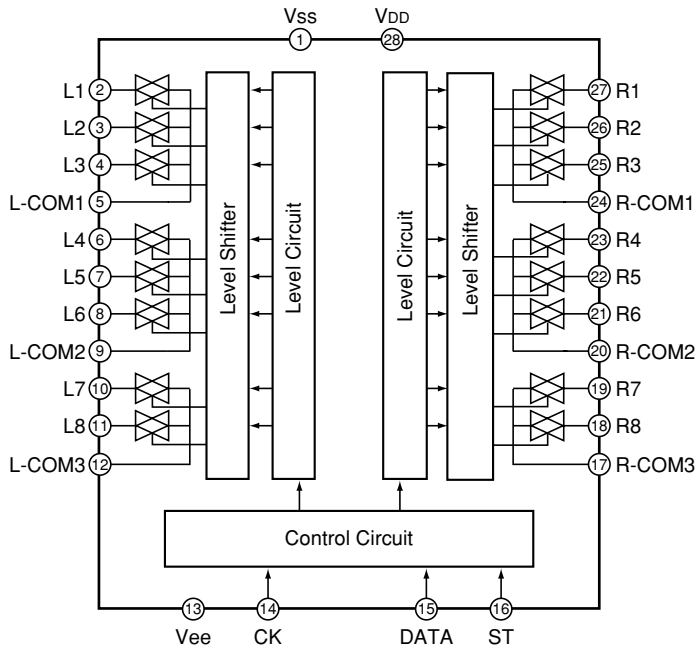
• Pin Function

No.	Pin Name	Function
1	IN1	1ch input terminal
2	AGND1	Analog ground terminal
3	IN2	2ch input terminal
4	AGND2	Analog ground terminal
5	Vee	(-) Power supply terminal
6	AGND3	Analog ground terminal
7	Vcc	(+) Power supply terminal
8	CL	Serial clock input terminal
9	DA	Serial data an latch input terminal
10	MUTE	Mute terminal
11	DGND	Ground terminal for comparator
12	SEL	Serial data select terminal
13	OUT2	2ch output terminal
14	OUT1	1ch output terminal

NJU7312AM (D.D & INPUT ASSY : IC102)

• Analog Switch Array

• Block Diagram



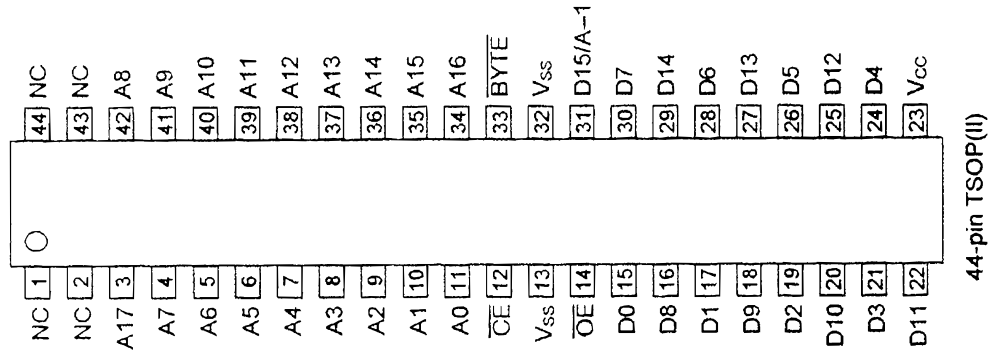
• Pin Function

No.	Pin Name	Function
1	VSS	Minus Power Supply
2, 27	L1,R1	Input and Output
3, 26	L2,R2	
4, 25	L3,R3	
5, 24	COM1	
6, 23	L4,R4	
7, 22	L5,R5	
8, 21	L6,R6	
9, 20	COM2	
10, 19	L7,R7	
21, 18	L8,R8	
26, 17	COM3	
13	GND	Digital Ground
14	CK	Clock Input
15	DATA	Data Input
16	ST	Strobe Input
28	VDD	Plus Power Supply

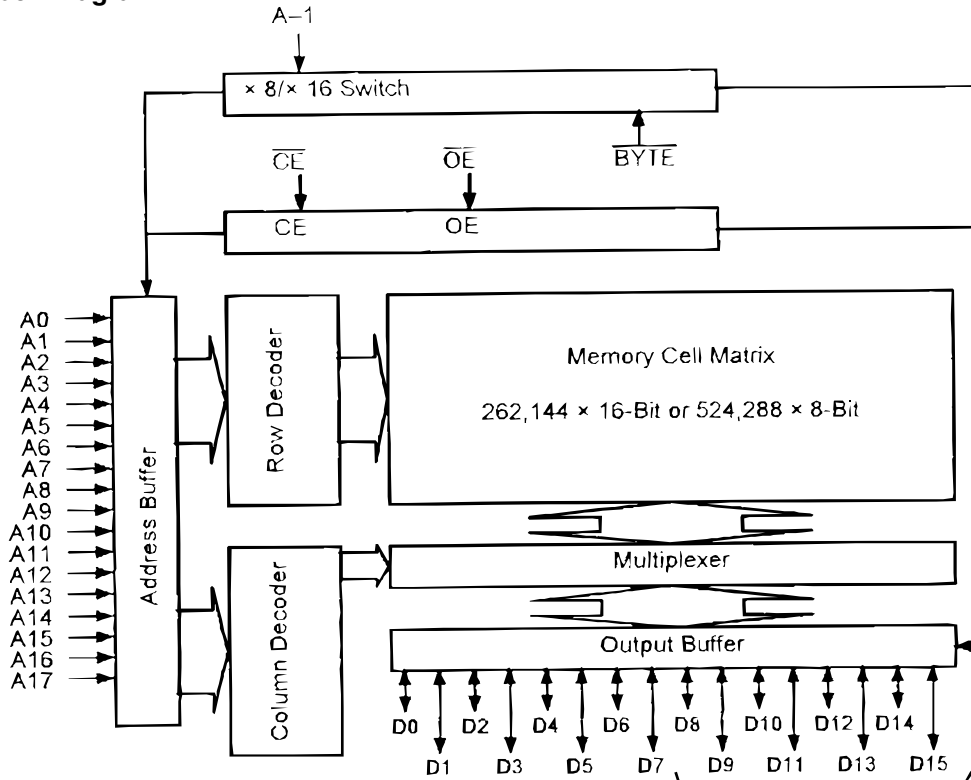
PD8104A (D.D & INPUT ASSY : IC9504)

• 4Mb P2ROM

Pin Arrangement (Top View)



Block Diagram

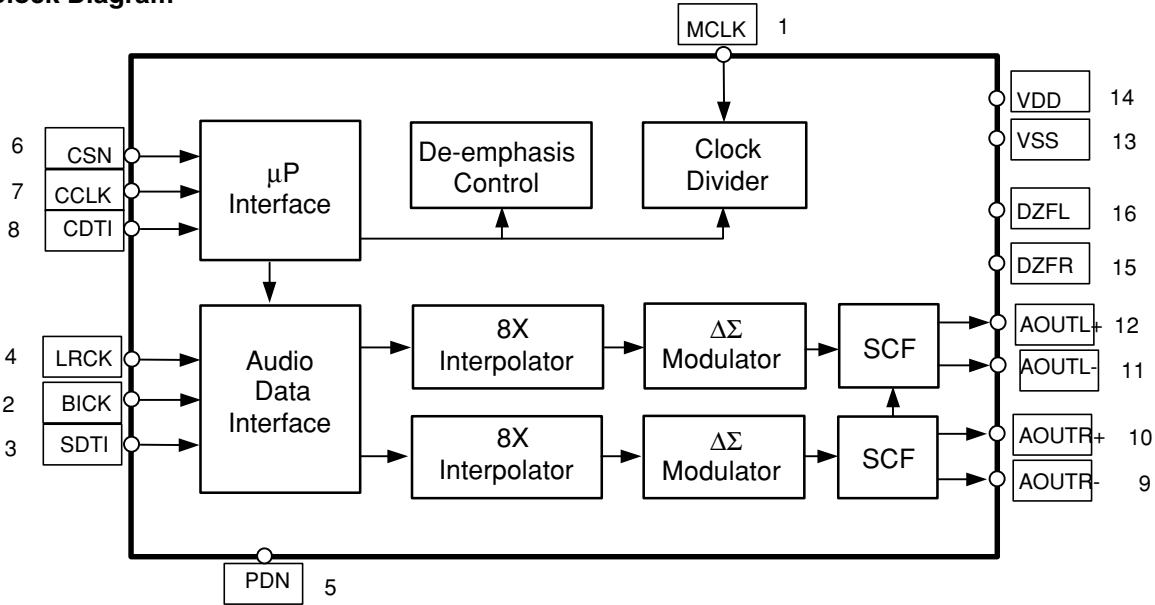


In 8-bit output mode, these pins are placed in a high-Z state and pin D15 functions as the A-1 address pin.

AK4382AVT (DD & INPUT ASSY : IC9102)

• D/A Converter IC

Block Diagram



Pin Function

Pin / Function			
No.	Pin Name	I/O	Function
1	MCLK	I	Master Clock Input Pin An external TTL clock should be input on this pin.
2	BICK	I	Audio Serial Data Clock Pin
3	SDTI	I	Audio Serial Data Input Pin
4	LRCK	I	L/R Clock Pin
5	PDN	I	PowerDown Mode Pin When $\bar{L}\hat{1}$, the AK4382 is in the power down mode and is held in reset. The AK4382 should always be reset upon power-up.
6	CSN	I	Chip Select Pin
7	CCLK	I	Control Data Input Pin
8	CDTI	I	Control Data Input Pin
9	AOUTR-	O	Rch Negative Analog Output Pin
10	AOUTR+	O	Rch Positive Analog Output Pin
11	AOUTL-	O	Lch Negative Analog Output Pin
12	AOUTL+	O	Lch Positive Analog Output Pin
13	VSS	-	Ground Pin
14	VDD	-	Power Supply Pin
15	DZFR	O	Rch Data Zero Input Detect Pin
16	DZFL	O	Lch Data Zero Input Detect Pin

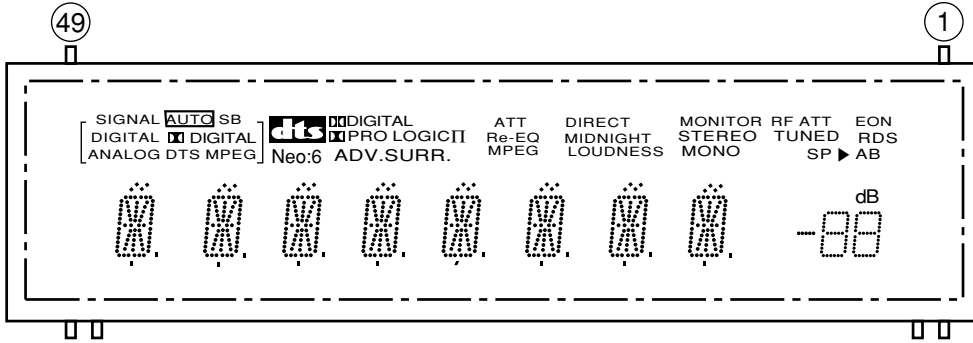
Note: All input pins should not be left floating.

7.2.2 DISPLAY

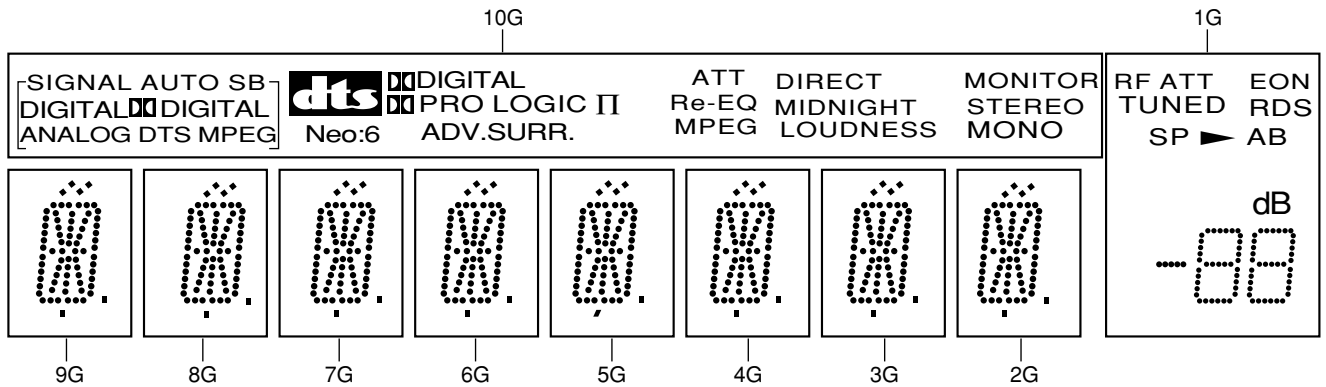
■ XAV3013 (FRONT ASSY : V401)

• FL DISPLAY

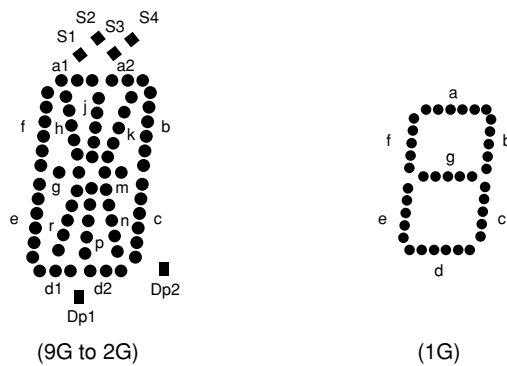
• Pin Assignment



• Grid Assignment



• Segment Designation



• Pin Connection

Pin No.	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
Connection	F2	F2	NP	NP	P22	P21	P20	P19	P18	P17	P16	P15	P14	P13	P12	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2
Pin No.	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
Connection	P1	NX	NX	NX	NX	NX	NX	NX	NX	NX	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NP	NP	F1	F1	

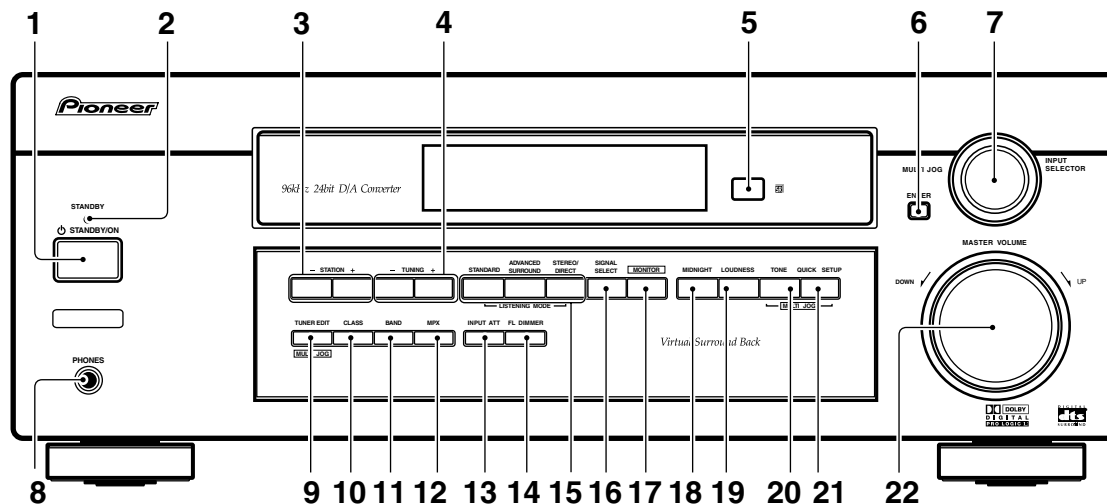
- NOTE 1) F1, F2..... Filament
 2) NP..... No pin
 3) NX..... No extend pin
 4) DL..... Datum Line
 5) 1G to 10G..... Grid
 6) Field of vision is a minimum of 21.8° from the lower side.

• Anode Connection

	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	S1	a1	a1	a1	a1	a1	a1	a1	a1	RFATT
P2	AUTO	a2	a2	a2	a2	a2	a2	a2	a2	EON
P3	SB	h	h	h	h	h	h	h	h	○
P4	DIGITAL	j	j	j	j	j	j	j	j	TUNED
P5	ANALOG	k	k	k	k	k	k	k	k	RDS
P6	DIGITAL (L)	b	b	b	b	b	b	b	b	S1
P7	DTS	f	f	f	f	f	f	f	f	A
P8	MPEG	m	m	m	m	m	m	m	m	B
P9	dtc	g	g	g	g	g	g	g	g	1a
P10	MPEG	c	c	c	c	c	c	c	c	1b
P11	DIGITAL (R)	e	e	e	e	e	e	e	e	1f
P12	PROLOGIC II	r	r	r	r	r	r	r	r	1g
P13	Neo:6	p	p	p	p	p	p	p	p	1c
P14	ATT	n	n	n	n	n	n	n	n	1e
P15	ADV.SURR.	d1	d1	d1	d1	d1	d1	d1	d1	1d
P16	Re-EQ	d2	d2	d2	d2	d2	d2	d2	d2	2a
P17	DIRECT	Dp2	Dp2	Dp2	Dp2	Dp2	Dp2	Dp2	Dp2	2b
P18	MIDNIGHT	Dp1	Dp1	Dp1	Dp1	Dp1	Dp1	Dp1	Dp1	2f
P19	LOUDNESS	S1	S1	S1	S1	S1	S1	S1	S1	2g
P20	MONITOR	S4	S4	S4	S4	S4	S4	S4	S4	2c
P21	STEREO	S2	S2	S2	S2	S2	S2	S2	S2	2e
P22	MONO	S3	S3	S3	S3	S3	S3	S3	S3	2d

8. PANEL FACILITIES

Front panel



1 STANDBY/ON

Switches the receiver between on and standby.

2 STANDBY indicator

Lights when the receiver is in standby mode.

3 STATION (+/-) buttons

Selects station presets when using the tuner.

4 TUNING (+/-) buttons

Selects the frequency when using the tuner.

5 Remote sensor

Receives the signals from the remote control.

6 ENTER

7 MULTI JOG/INPUT SELECTOR dial

The MULTI JOG/INPUT SELECTOR dial performs a number of tasks. Use it to select options after pressing TONE, CONTROL, QUICK SETUP or TUNER EDIT.

8 PHONES jack

Use to connect headphones.

9 TUNER EDIT

Press to memorize and name a station for recall using the station (+/-) buttons.

10 CLASS

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

11 BAND

Switches between AM and FM radio bands.

12 MPX

Press the MPX button to receive a radio broadcast in mono.



Note

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

13 INPUT ATT

Use to attenuate (lower) the level of an analog input signal to prevent distortion.

14 FL DIMMER

Use this button to make the fluorescent display (FL) dimmer or brighter.

15 LISTENING MODE buttons

STANDARD

Press for Standard decoding and to switch between the various Pro Logic II options.

ADVANCED SURROUND

Use to switch between the various surround modes.

STEREO/DIRECT

Switches direct playback on or off. Direct playback bypasses the tone controls and channel levels for the most accurate reproduction of a source.

16 SIGNAL SELECT

Use to select between an analog or digital signal.

17 MONITOR

Press to switch tape monitoring on/off.

18 MIDNIGHT

Use when listening to movie soundtracks at low volumes.

19 LOUDNESS

Use to boost the bass and treble at low volumes.

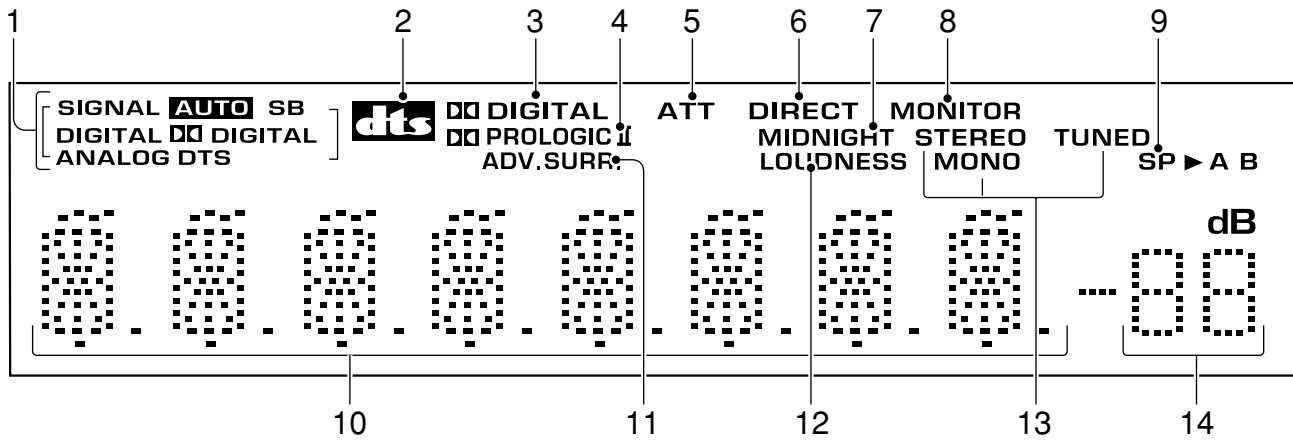
20 TONE

Press this button to access the bass and treble controls, which you can then adjust with the MULTI JOG/INPUT SELECTOR dial.

21 QUICK SETUP

22 MASTER VOLUME

Display



1 SIGNAL SELECT indicators

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

AUTO

Lights when AUTO signal select is on.

DIGITAL

Lights when a digital audio signal is detected.

DIGITAL

Lights when a Dolby Digital signal is detected.

ANALOG

Lights when an analog signal is detected.

DTS

Lights when a source with DTS audio signals is detected.

2 DTS

When the Standard mode of the receiver is on, this lights to indicate decoding of a DTS signal.

3 DIGITAL

When the Standard mode of the receiver is on, this lights to indicate decoding of a Dolby Digital signal.

4 PRO LOGIC II

When the Standard mode of the receiver is on, this lights to indicate Prologic II decoding.

5 ATT

Lights when INPUT ATT is used to attenuate (reduce) the level of the input signal (can only be used with an analog signal).

6 DIRECT

Lights when source direct playback is in use. Direct playback bypasses the tone controls and channel levels for the most accurate reproduction of source.

7 MIDNIGHT

Lights during Midnight listening.

8 MONITOR

Lights when MONITOR is selected

9 Speaker indicator

Shows if the speaker system is on or not.

SP > A means speakers are switched on. SP > means the headphones are connected.

10 Character display

11 ADV. SURR (Advanced Surround)

Lights when one of the Advanced Surround listening modes of the receiver is selected.

12 LOUDNESS

Lights when LOUDNESS has been selected.

13 TUNER indicators

STEREO:

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

MONO:

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

TUNED:

Lights when a broadcast is being received.

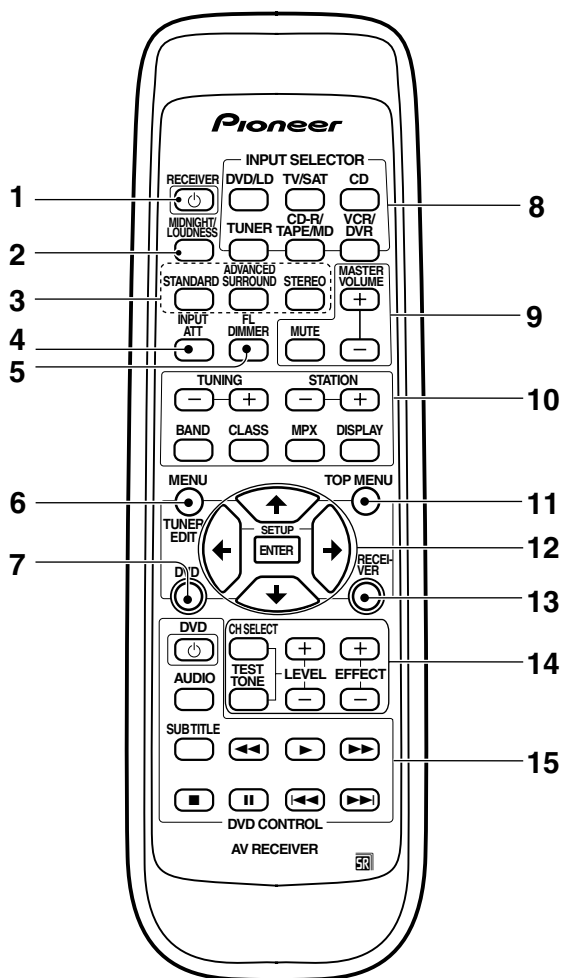
14 Master volume level

Shows the overall volume level. ---dB indicates the minimum level, and -0 dB indicates the maximum level.

Note

Depending on your level settings you make for each channel, the maximum level can range between -10 dB and -0 dB.

Remote control



1 RECEIVER

Switches the receiver between on and standby.

2 MIDNIGHT/LOUDNESS

Use to switch to Midnight or Loudness listening.

3 LISTENING MODE buttons STANDARD

Press for Standard decoding and to switch between the various Pro Logic II options.

ADVANCED SURROUND

Use to switch between the various surround modes.

STEREO

Switches direct playback on or off. Direct playback bypasses the tone controls and channel levels for the most accurate reproduction of a source.

4 INPUT ATT

Use to attenuate (lower) the level of an analog input signal to prevent distortion.

5 FL DIMMER

Use this button to make the fluorescent display (FL) dimmer or brighter.

6 MENU (DVD control)

Use to access different menus associated with your DVD player.

TUNER EDIT (Receiver control)

Press to memorize and name a station for recall using the STATION (+/-) buttons.

7 DVD

Use to switch over to the DVD controls on the remote control.



Note

The DVD controls on the remote control (**TOP MENU**, **MENU**, and **ENTER/SETUP** buttons) can only be used for DVD control after pressing **DVD/LD** on the remote. See the next page for more on the separate **DVD CONTROL** buttons.

8 INPUT SELECTOR buttons

Use to select the input source.

9 Volume buttons

Use **MASTER VOLUME +/-** to set the overall listening volume. Use **MUTE** to mute the sound or restore the sound if it has been muted.

10 Tuner controls

The **TUNING +/-** buttons can be used to find radio frequencies. The **STATION +/-** buttons can be used to select preset radio stations.

BAND

Use to switch between the AM and FM bands when the tuner is selected.

CLASS

Use to switch between the three banks (classes) of station presets.

MPX

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

DISPLAY

Use to switch the display between the station preset name and the frequency.

11 TOP MENU

Displays the disc 'top' menu of a DVD.

12 and ENTER/SETUP buttons

Use these arrow buttons when setting up your surround sound system. These buttons are also used to control DVD menus/options.

13 RECEIVER

Use to switch to the receiver controls on the remote control. Also used when setting up the surround sound for the receiver.

14 CHANNEL SELECT

Use to select a channel when setting up the surround sound of the receiver.

TEST TONE

Use to sound the test tones when setting up the surround sound of the receiver.

LEVEL +/-

Use to set up the levels of the surround sound of the receiver.

EFFECT +/-

Use to add or subtract the amount of effect in different sound modes or advanced listening modes.

15 DVD CONTROL buttons

You can use these buttons to control a Pioneer DVD player connected to your system.

Button	What it does
DVD	Turns DVD power on/off.
AUDIO	Changes the audio language or channel.
SUBTITLE	Displays/changes the subtitles included in multilingual DVD-Video discs.
◀◀	Press to start fast reverse scanning.
▶	Starts playback.
▶▶	Press to start fast forward scanning.
■	Stops playback.
	Pauses a disc that's playing, or restarts a paused disc.
◀◀	Skips to the start of the current track or chapter, then to previous tracks/chapters.
▶▶	Skips to the next track or chapter.

Rear Panel

