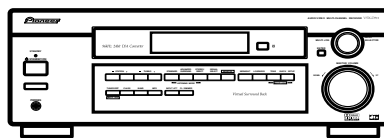


Service Manual



VSX-D511

ORDER NO.
RRV2581

AUDIO/VIDEO MULTI-CHANNEL RECEIVER

VSX-D511

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

Model	Type	Power Requirement	Remarks
VSX-D511	KUXJI	AC120V	
VSX-D511	KCXJI	AC120V	



For details, refer to "Important symbols for good services" on the next page.

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.

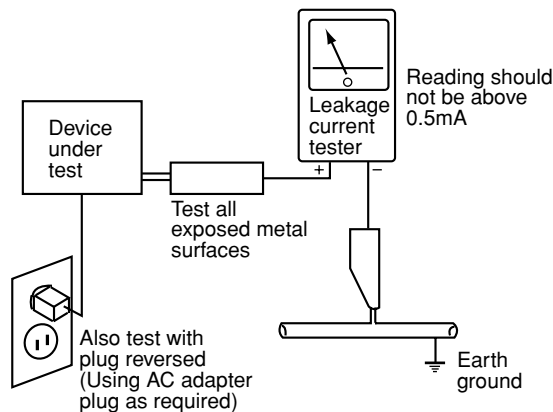
(FOR USA MODEL ONLY)

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 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



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.

CONTENTS

	SAFTY INFORMATION	2
	1. SPECIFICATIONS	5
	2. EXPLODED VIEWS AND PARTS LIST	6
A	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
	3.7 AMP & PRIMARY(1/2), TRANS2 and TRANS3 ASSYS	24
	3.8 AMP & PRIMARY(2/2), REGULATOR, AMP INPUT and TRANS1 ASSYS	26
	3.9 VIDEO, 6CH IN and S.VIDEO ASSYS.	28
	3.10 FRONT, R.ENCODER and POWER SW ASSYS	30
	3.11 DIGITAL IN, H.P. and KAWA ASSYS	32
B	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 ASSYS.	42
	4.4 FRONT, POWER SW, H.P. and R.ENCODER ASSYS	44
	4.5 REGULATOR, HASHIGETA and KAWA ASSYS.	48
	4.6 DIGITAL IN, 6CH IN, VIDEO and BOARD TO BOARD ASSYS	50
	4.7 FM/AM TUNER MODULE	52
	5. PCB PARTS LIST	53
	6. ADJUSTMENT	58
	7. GENERAL INFORMATION.	59
	7.1 DISASSEMBLY and DIAGNOSI	59
	7.2 PARTS	64
	7.2.1 IC	64
C	7.2.2 DISPLAY	73
	8. PANEL FACILITIES	75

D

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 ⇒ MONITOR 5 Hz to 7 MHz ±0 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 2 are trademarks of Dolby Laboratories.

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

FM Tuner Section

Frequency Range 87.5 MHz to 108 MHz
 Usable Sensitivity Mono:13.2 dBf, IHF (1.3 μV/ 75 Ω)
 50 dB Quieting Sensitivity Mono: 20.2 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 μV/m
 Selectivity 25 dB
 Signal-to-Noise Ratio 50 dB
 Antenna Loop antenna

Miscellaneous

Power Requirements AC 120 V, 60Hz
 Power Consumption
 VSX-D511 260W (KU)
 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-D511 9.0 kg
 (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

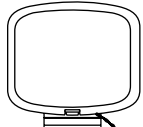
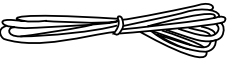
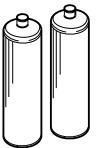
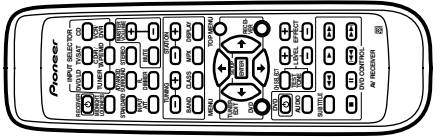
Note

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.

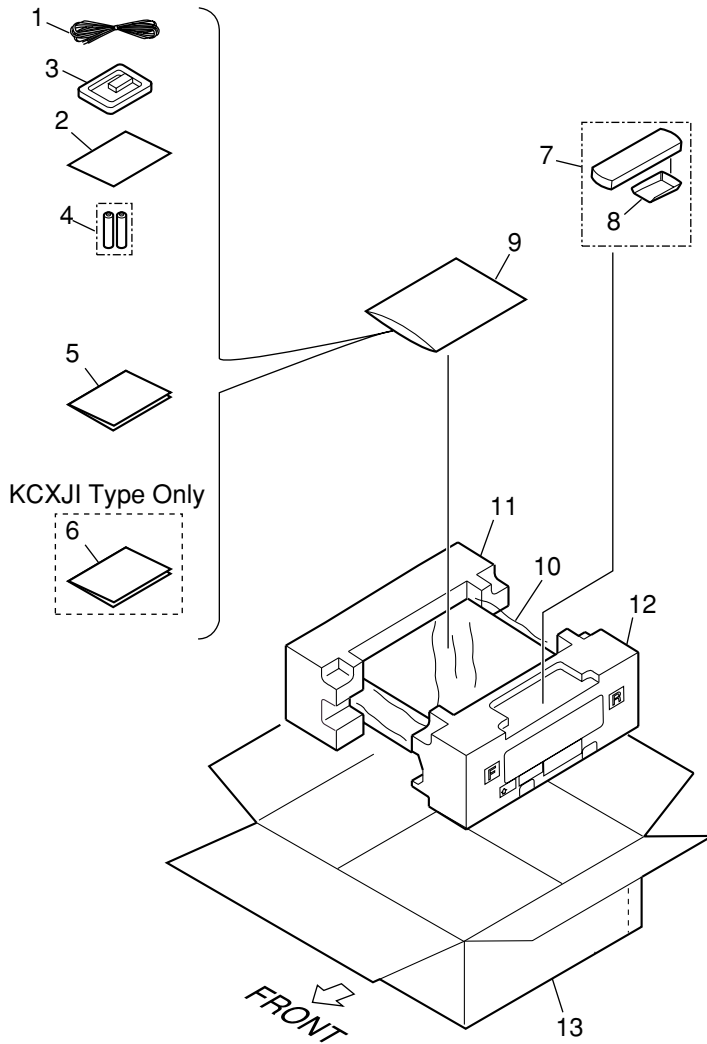
Accessories

			
AM loop antenna (ATB7009)	FM wire antenna (ADH7004)	AA size IEC R6P Dry cell batteries (x2)	Remote control unit (XXD3038)

2. EXPLODED VIEWS AND PARTS LIST

- NOTES :
- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
 - The  mark found on some component parts indicates the importance of the safety factor of the part.
 - Therefore, when replacing, be sure to use parts of identical designation.
 - Screw adjacent to  mark on the product are used for disassembly.

2.1 PACKING



PACKING partsList

<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	7	Remote Control Unit	XXD3038
2	Warranty Card	ARY7045	8	Battery Cover	AZA7378
3	AM loop antenna	ATB7009	9	Polyethylene Bag	Z21-038
4	Dry cell batteries (AA/R6P)	VEM-013	10	Packing Sheet	AHG7069
5	Operating instructions (English)	XRB3011	11	Left Pad R5	XHA3032
			12	Right Pad R5	XHA3033
6	Operating instructions (French)	See Contrast table(2)	13	Packing Case	XHD3200

(2) CONTRAST TABLE

VSX-D511/KUXJI and KCXJI are constructed the same except for the following :

<u>Mark</u>	<u>NO</u>	<u>Symbol and Description</u>	<u>VSX-D511/KUXJI</u>	<u>VSX-D511/KCXJI</u>
	6	Operating Instructions (French)	Not used	XRC3053

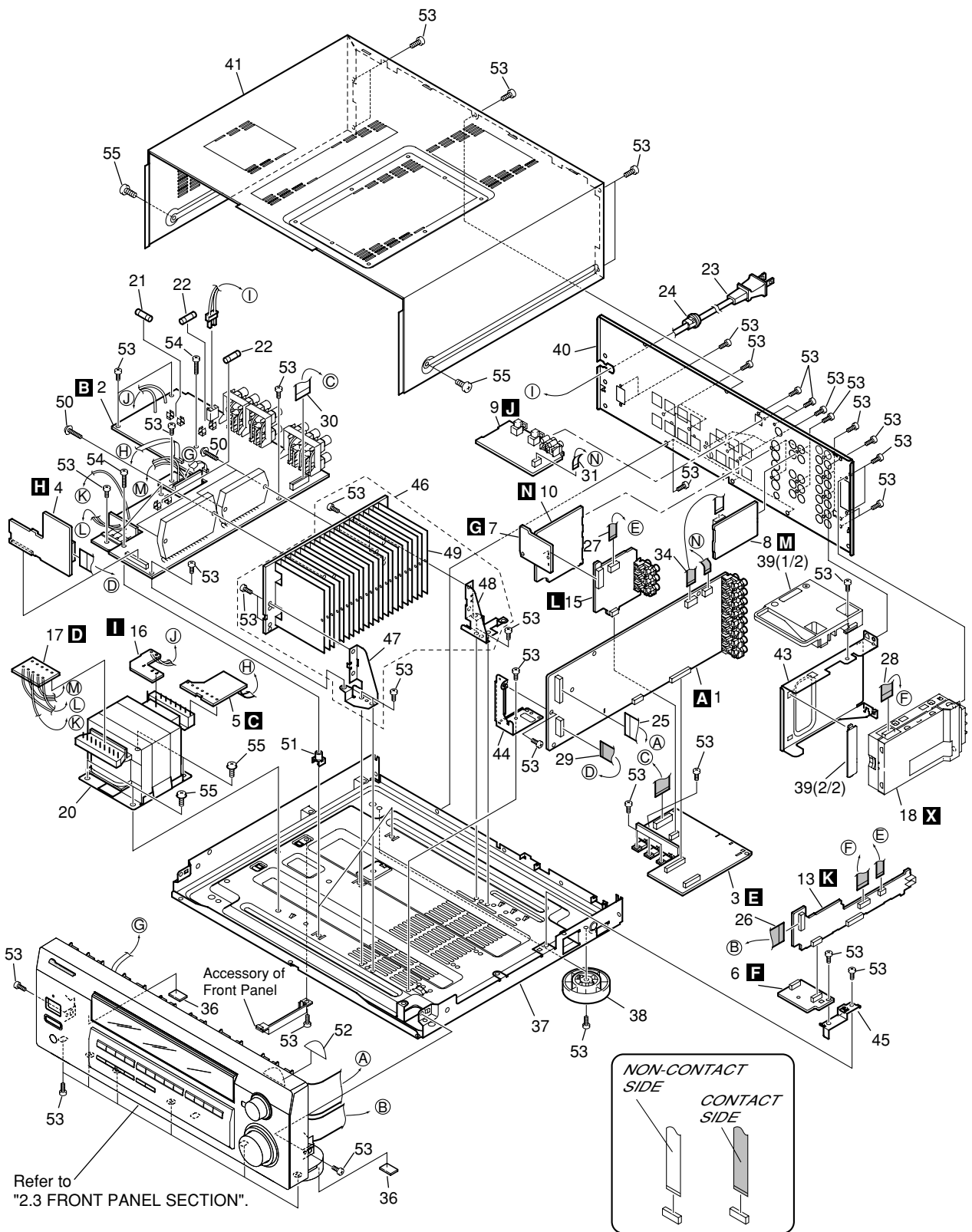
2.2 EXTERIOR SECTION

A

B

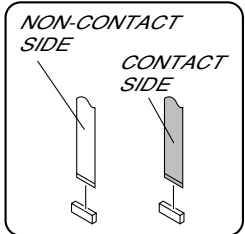
C

D



Accessory of Front Panel 36

Refer to "2.3 FRONT PANEL SECTION".

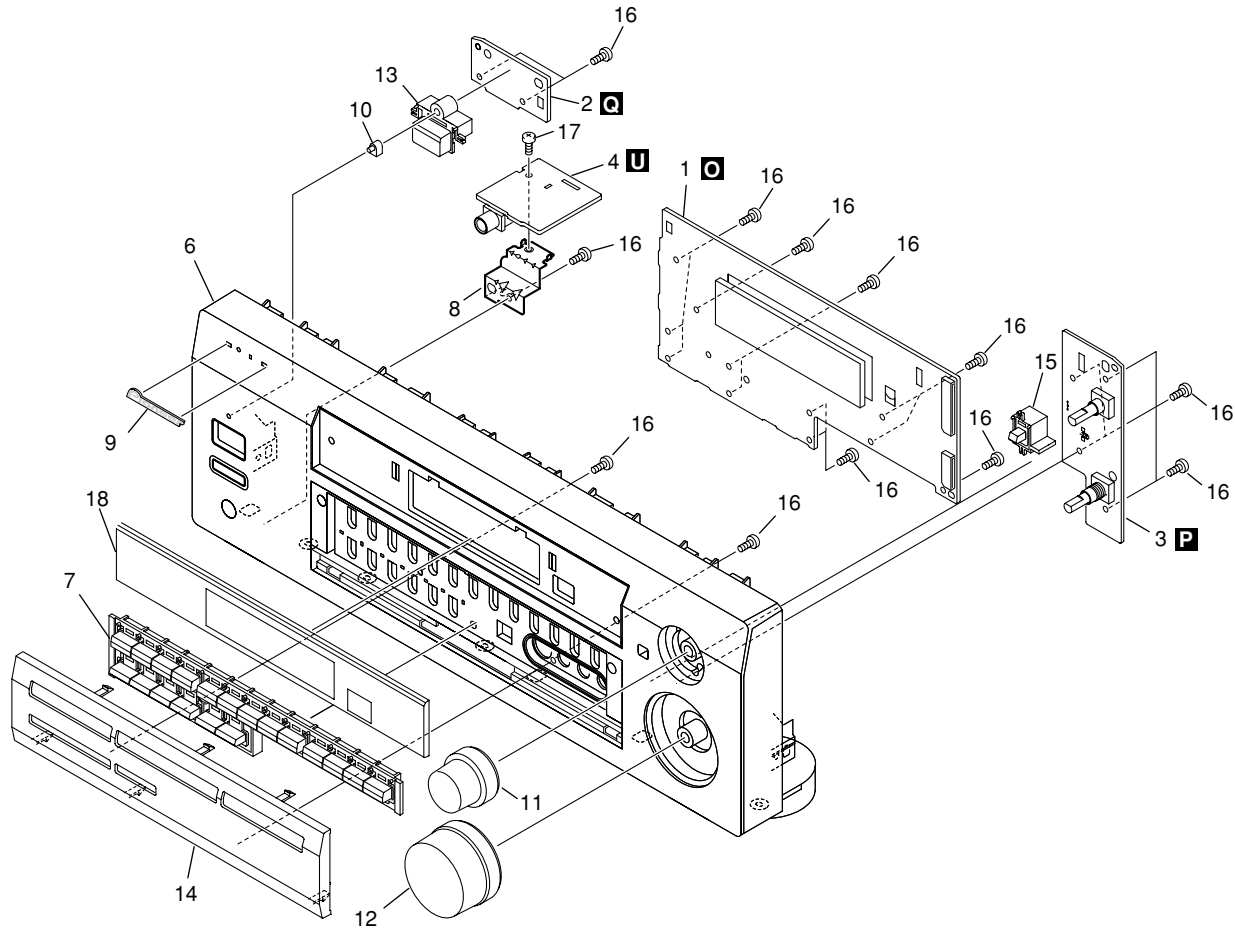


EXTERIOR SECTION partsList

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	D.D & INPUT ASSY	XWX3044	43	Tuner Shield R5	XNG3072
2	AMP ASSY	XWZ3532	44	PCB Angle R5	XNG3073
3	REGULATOR ASSY	XWZ3544	45	Reg Support R5	XNG3074
4	AMP INPUT ASSY	XWZ3547	46	Heat Sink Assy 0.4*40	ANH7112
5	TRANS2 ASSY	XWZ3555	47	Heat Sink Angle F	ANG7251
6	HASHIGETA ASSY	XWZ3566	48	Heat Sink Angle R	ANG7252
7	BOARD TO BOARD ASSY	XWZ3527	49	Heat Sink	ANH7109
8	6CH IN ASSY	XWZ3507	50	Screw 3x23	ABA7043
9	DIGITAL IN ASSY	XWZ3517	51	PCB Mold	AMR2533
10	S. VIDEO ASSY	XWZ3521	52	Energy Star Label	AAX7876
11	.....		53	Screw	BBZ30P080FMC
12	.....		54	Screw	BBZ30P200FMC
13	KAWA ASSY	XWZ3529	55	Screw	FBT40P080FZK
14	.....			
15	VIDEO ASSY	XWZ3490			
16	TRANS1 ASSY	XWZ3552			
17	TRANS3 ASSY	XWZ3560			
18	FM/AM TUNER MODULE	AXQ7231			
19	.....			
⚠ 20	Power Transformer (T1)	XTS3058			
⚠ 21	Fuse (FU2:8A)	REK1086			
⚠ 22	Fuse (FU1, FU701:10A)	REK1087			
⚠ 23	AC Power Cord	ADG7024			
24	Cord Stopper	CM-22C			
25	28P F•F•C/30V (J31) DD CN102 - FRONT CN402	XDD3097			
26	17P F•F•C/30V (J32) KAWA CN5001 - FRONT CN401	XDD3098			
27	7P F•F•C/30V (J33) KAWA CN5004 - VIDEO CN503	XDD3099			
28	13P F•F•C/30V (J34) KAWA CN5005 - FM/AM TUNER CN201	XDD3100			
29	19P F•F•C/30V (J35) DD CN106 - AMP INPUT CN254	XDD3101			
30	23P F•F•C/30V (J36) AMP CN53 - REGULATOR CN801	XDD3102			
31	7P F•F•C/30V (J37) DD CN9101 - DIGITAL IN CN1901	XDD3103			
32	.....			
33	.....			
34	9P F•F•C/30V (J48) DD CN104 - 6CH IN CN307	XDD3106			
35	.....			
36	Rubber Sheet	AEB1111			
37	Under Base 409	ANA7094			
38	Insulator	AMR7198			
39	FFC Cover R5	XMR3047			
40	Rear Panel	XNC3139			
41	Bonnet D510	XZN3112			
42	.....			

2.3 FRONT PANEL SECTION

A



B

C

D

FRONT PANEL SECTION partsList

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	FRONT ASSY	XWZ3492
2	POWER SW ASSY	XWZ3510
3	H.P. ASSY	XWZ3513
4	R. ENCODER ASSY	XWZ3511
5	.....
6	Front Panel	XMB3060
7	Sub Button	XAD3125
8	Earth Plate R5 HP	XNG3066
9	Pioneer Badge B	XAM3006
10	Led Lens	XAK3308
11	Select Knob R5BH	XAB3023
12	Volume Knob R5BH	XAB3025
13	Power Button R5B	XAD3123
14	Sub Panel	XAK3272
15	Jog Button R5B	XAD3124
16	Screw	PPZ30P080FMC
17	Screw	BBZ30P080FMC
18	D Panel R5 W	XAK3274

A

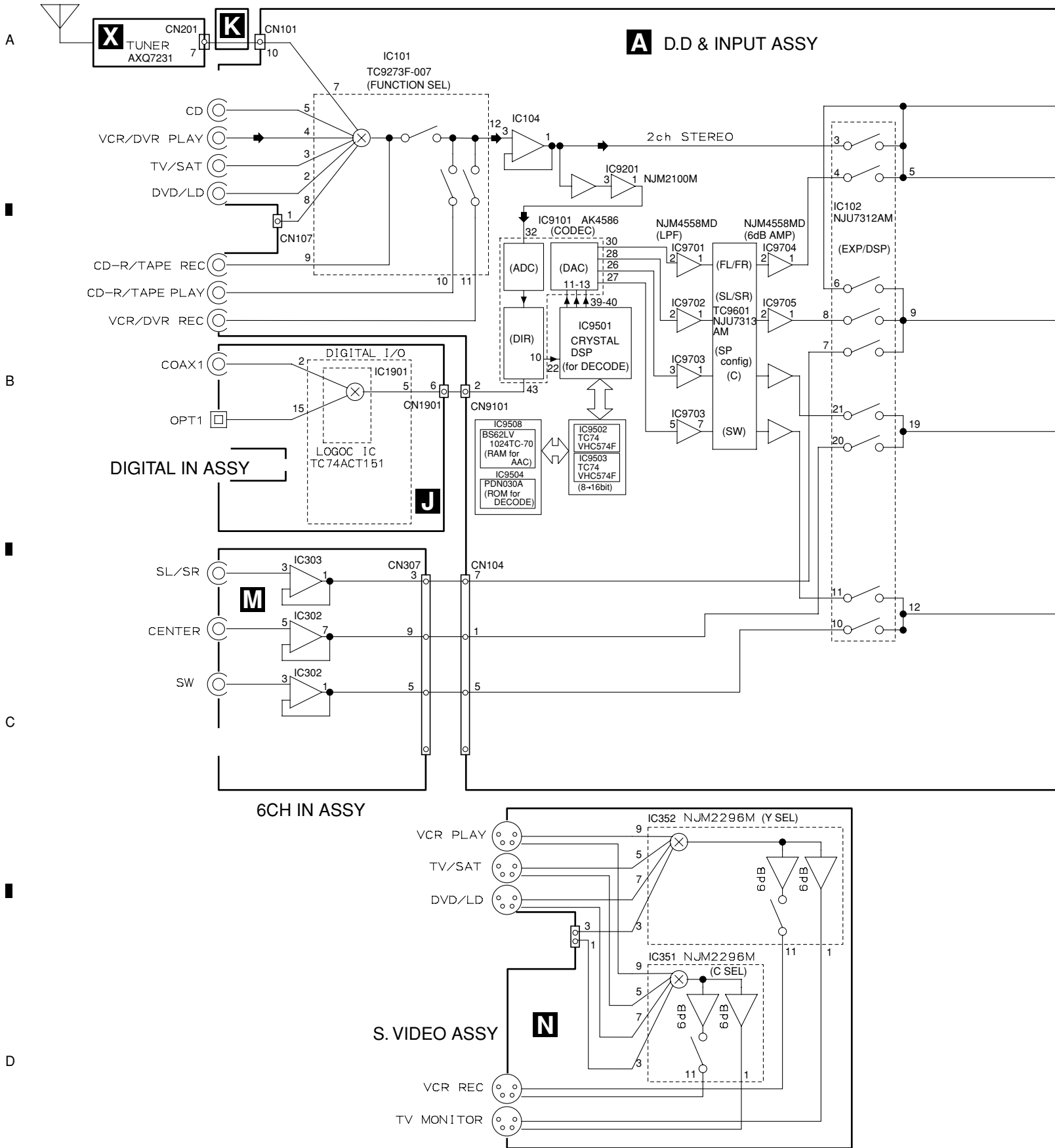
B

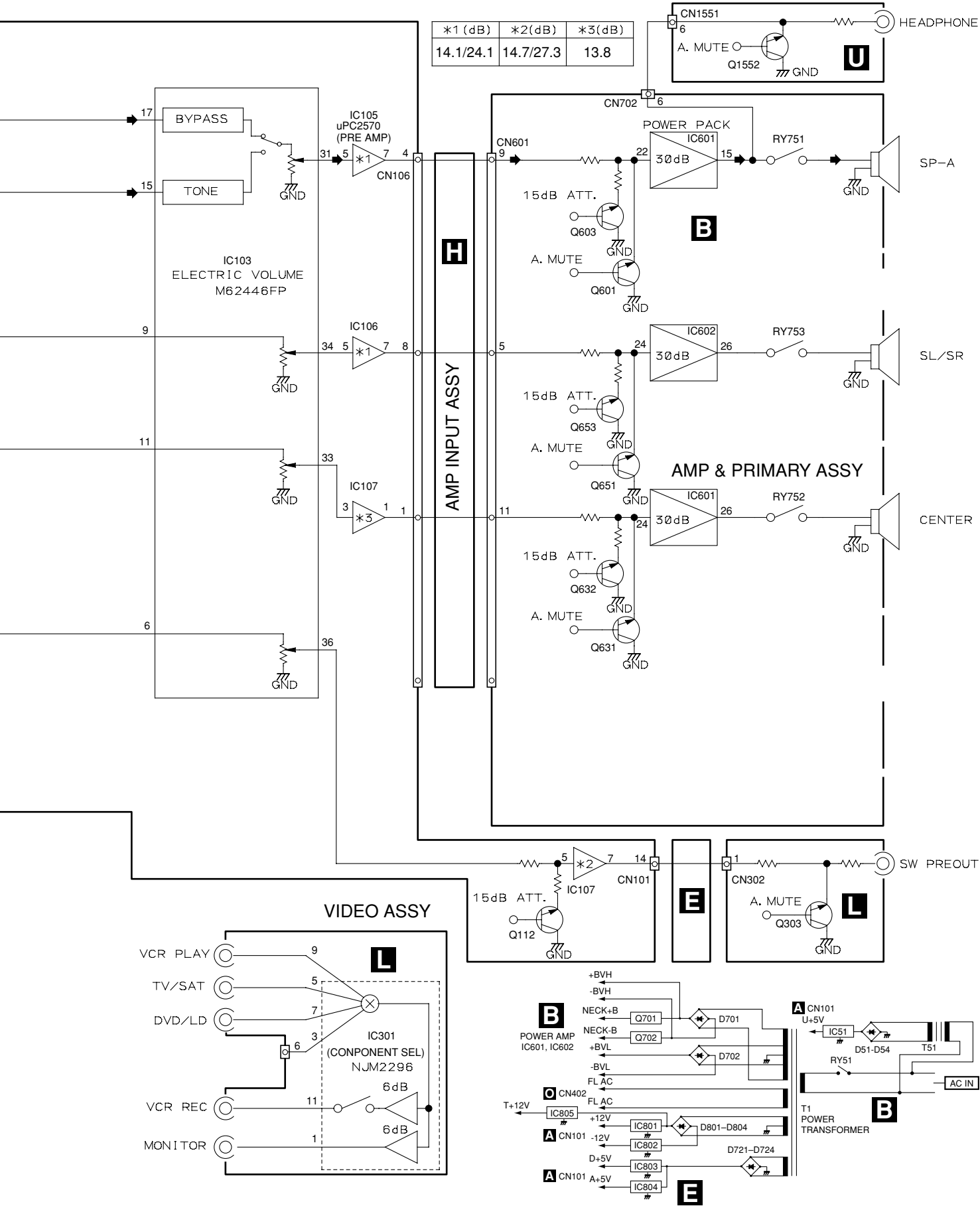
C

D

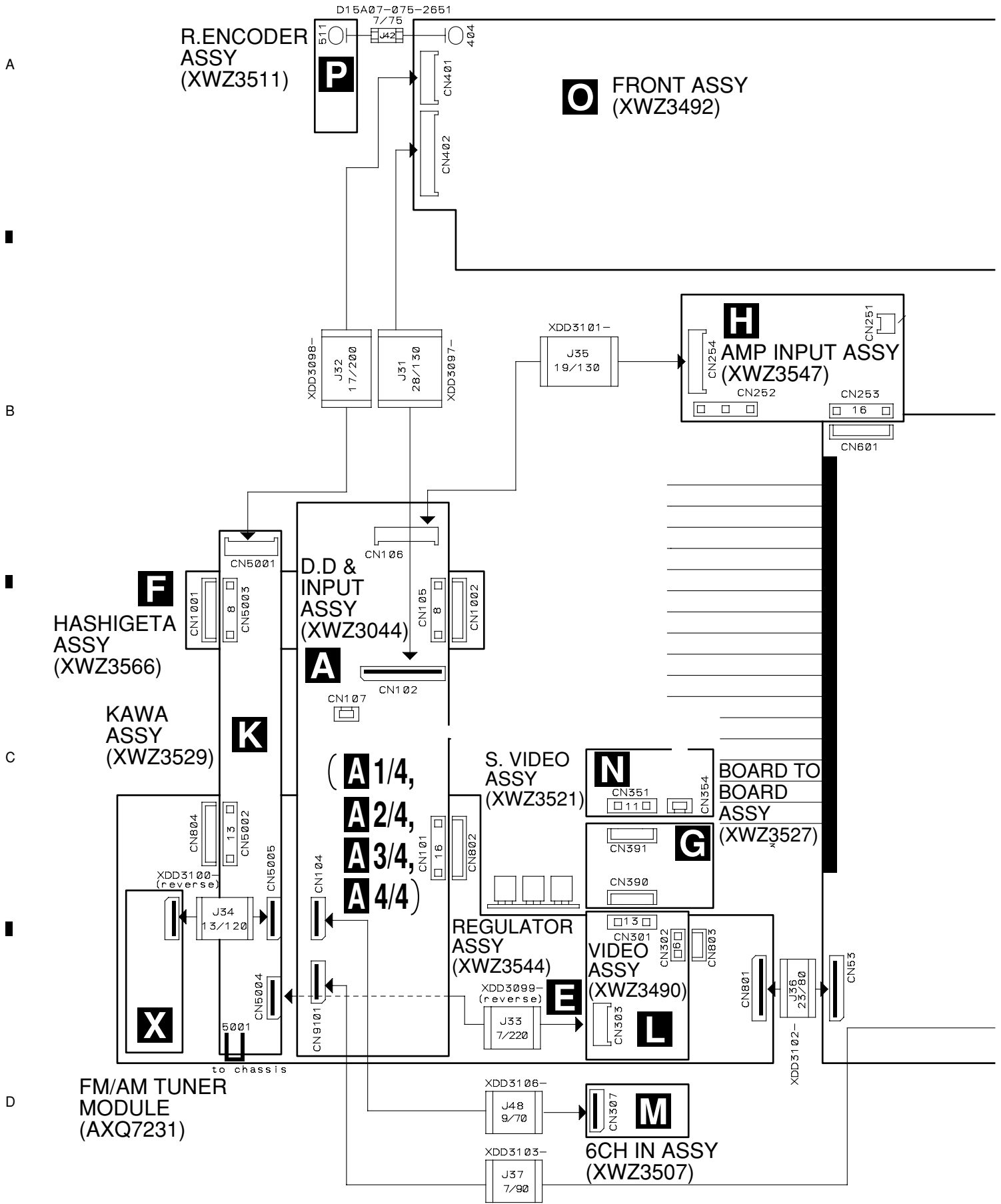
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

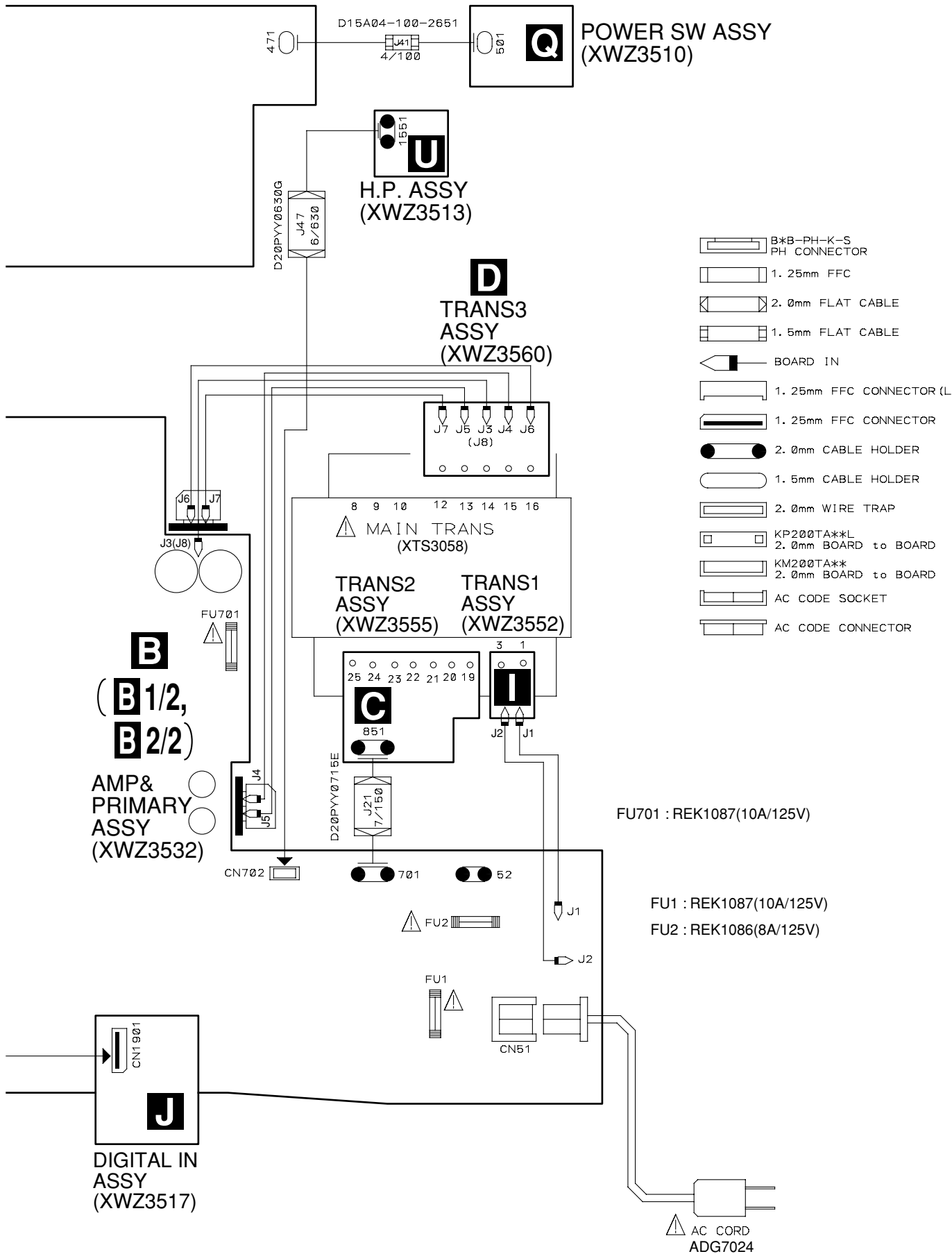
3.1 BLOCK DIAGRAM





3.2 OVERALL WIRING CONNECTION DIAGRAM





A

B

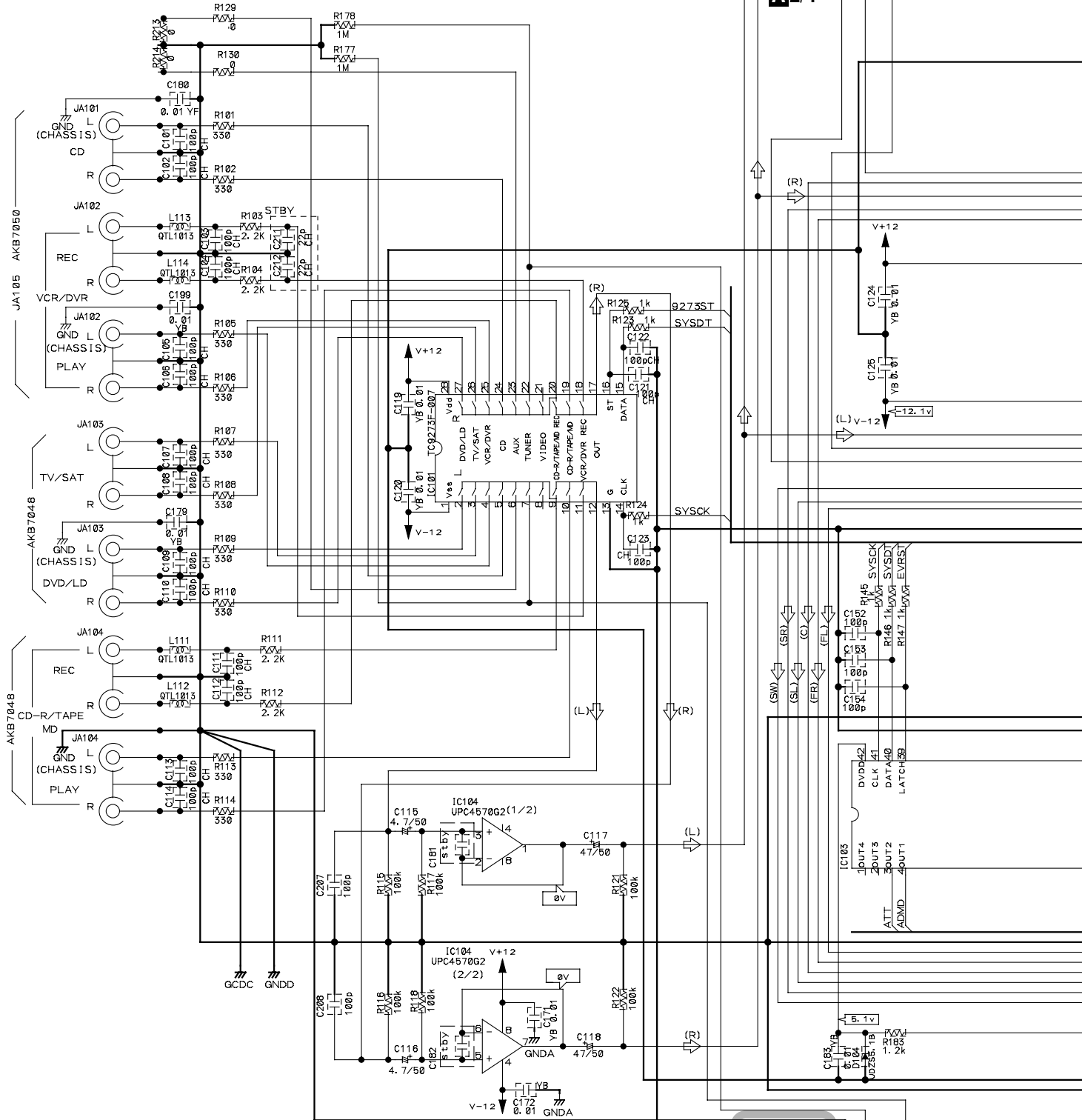
C

D

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

A 1/4 D.D & INPUT ASSY (XWZ3044)

TO CODEC &
PRE AMP BLOCK



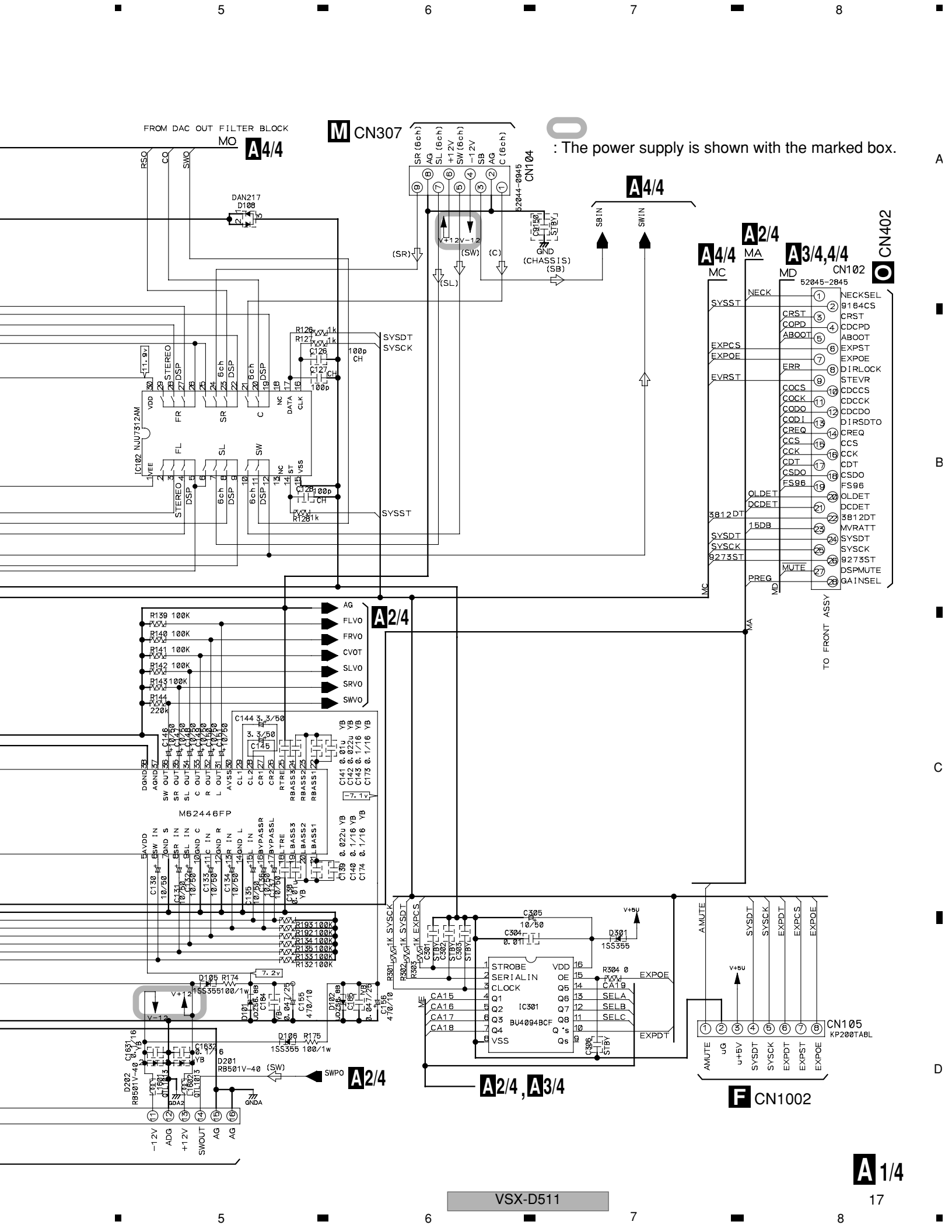
NOTES: NO INDICATED PARTS IS...
RESISTOR: RS1/16S***J-T, RS1/10S***J-T
CEMICAL CAPASITOR: CEAT***M**T, -TS
CERAMIC CAPASITOR: CCSRCH***50-T
CKSRYB***50-T
(SQ): CKSQ, CCSQ

↻ : AUDIO SIGNAL FLOW

TO REG. ASSY

E CN802

A 1/4



FROM DAC OUT FILTER BLOCK

A4/4

M CN307

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

A4/4

A4/4 **A2/4**

A3/4,4/4

O CN402

52045-2845 CN102

1	NECKSEL
2	9184CS
3	CRST
4	CDCPD
5	ABOOT
6	EXPST
7	EXPST
8	DIRLOCK
9	STEV
10	CCCS
11	CCCK
12	CCDO
13	CCDI
14	CCREQ
15	CCS
16	CCK
17	CDT
18	CSDO
19	FS96
20	OLDET
21	DCDET
22	3812DT
23	15DB
24	MVRATT
25	SYSST
26	SYSCK
27	9273ST
28	DSPMUTE
29	GAINSEL

TO FRONT ASSY

A2/4

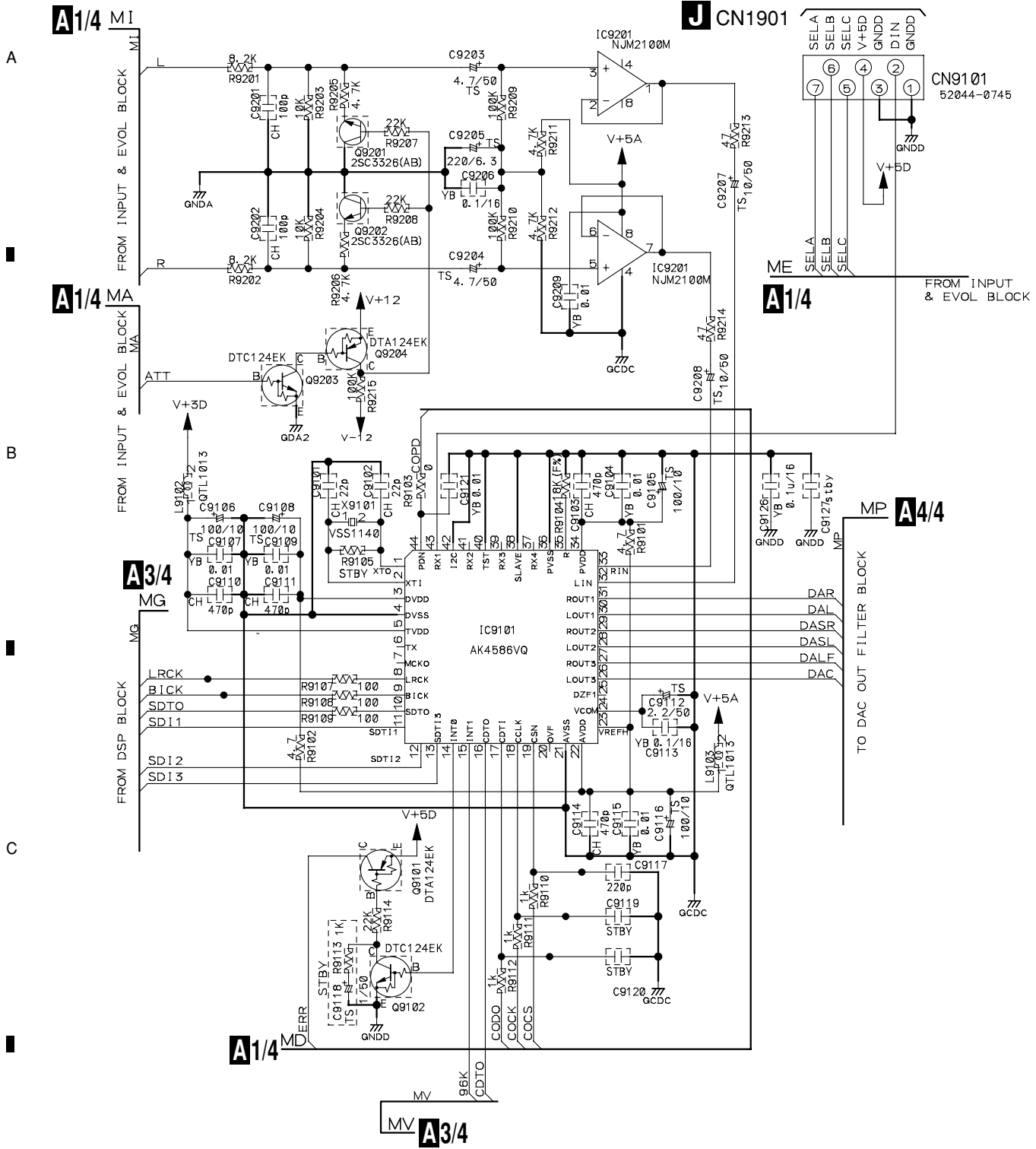
A2/4

A2/4, A3/4

F CN1002

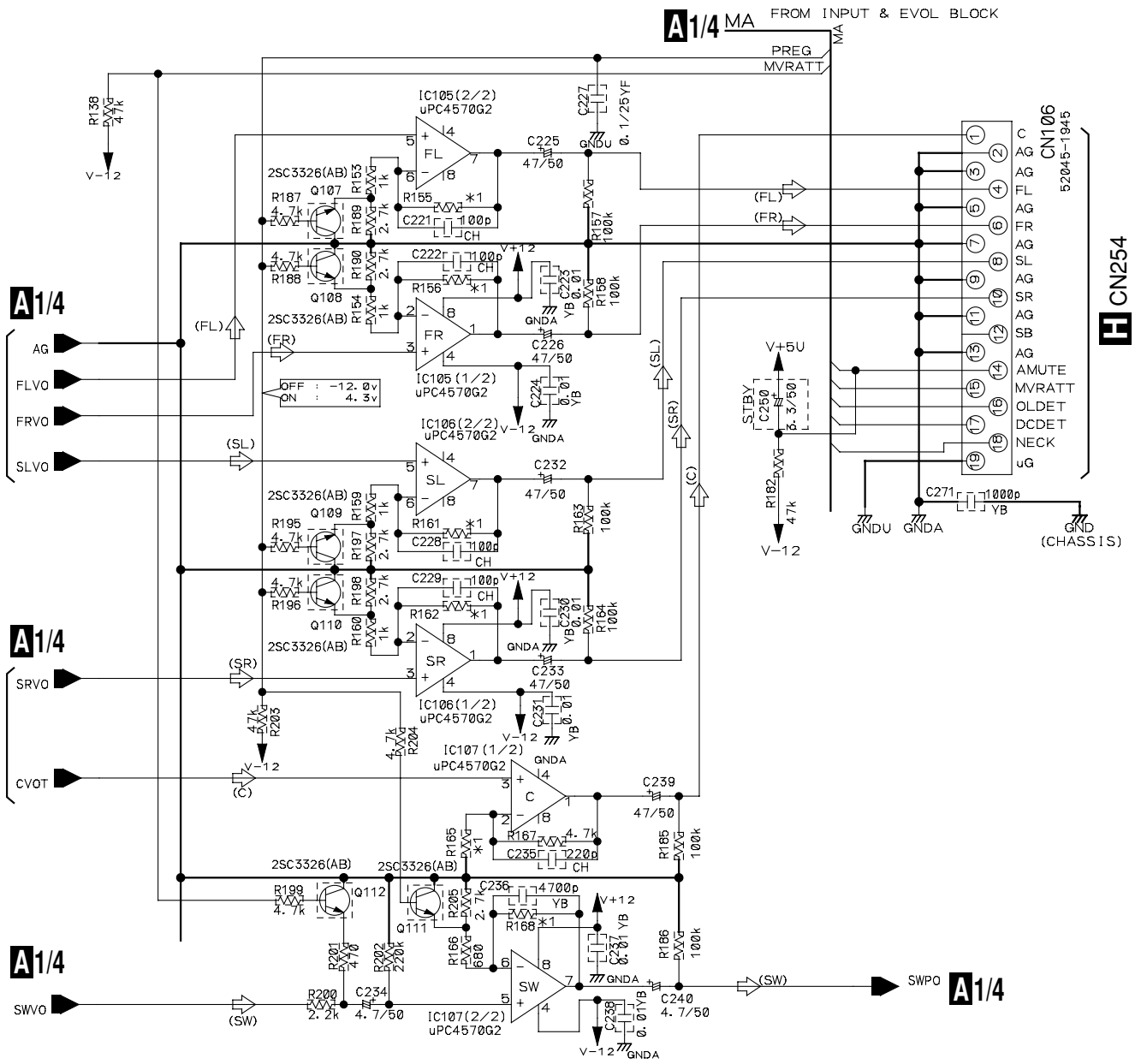
A1/4

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



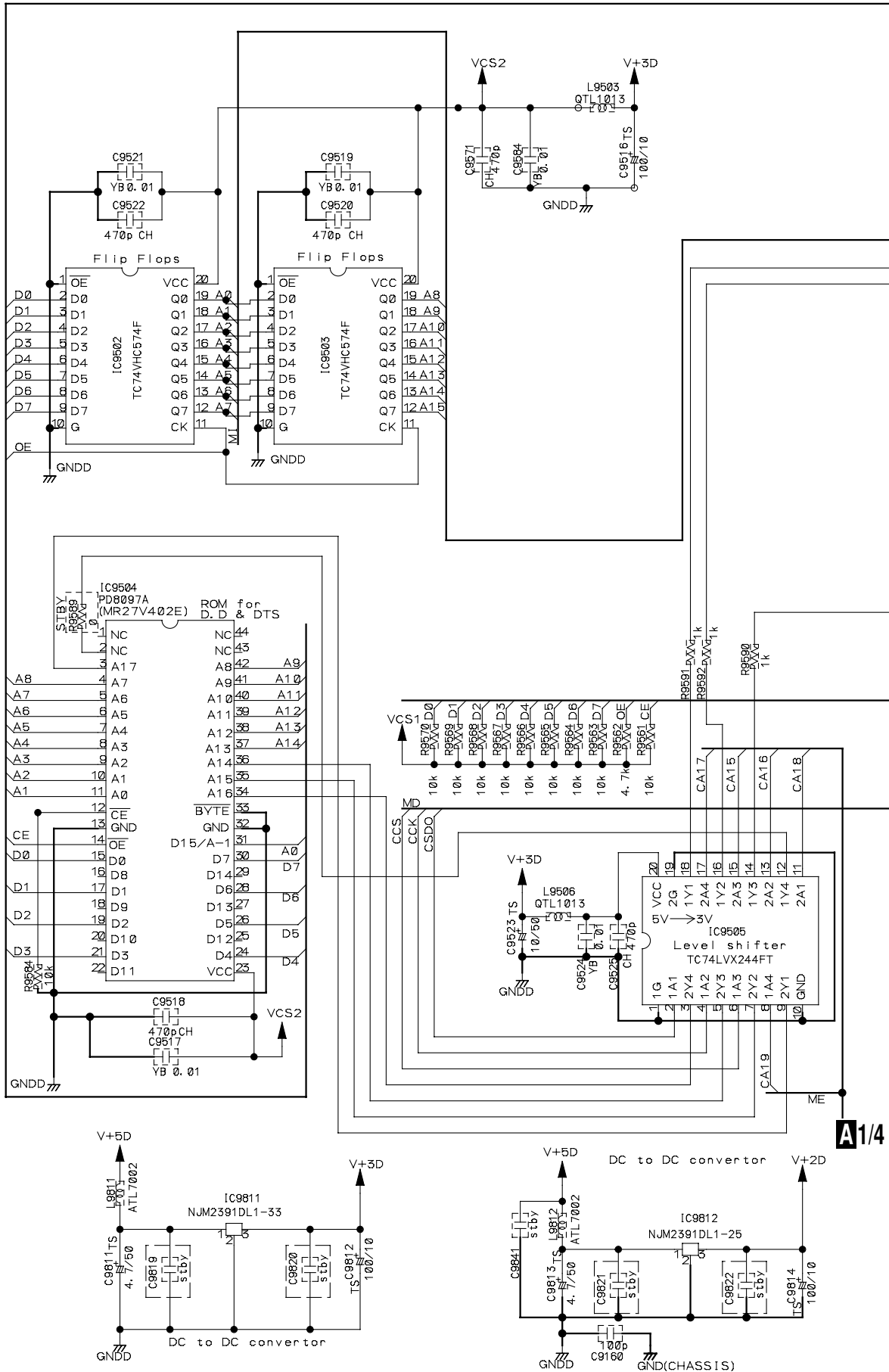
A 2/4 D.D & INPUT ASSY (XWZ3044)

A 2/4



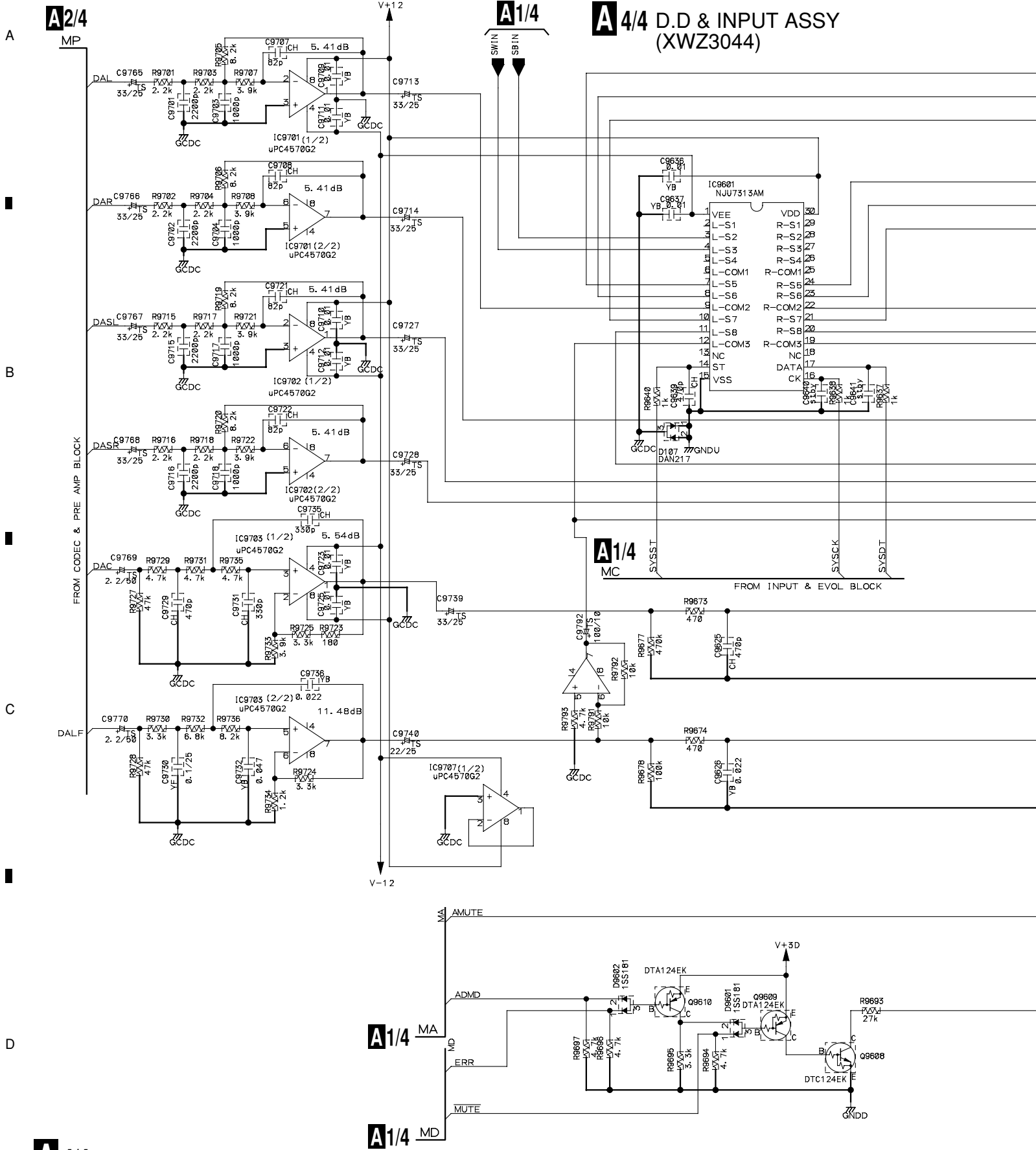
*1	FRONT, SURROUND		SW		CENTER, SB	
	R155 R156 R161 R162 (Ω)	GAIN (dB)	R168 (Ω)	GAIN (dB)	R165 (Ω)	GAIN (dB)
	15k	14. 1/24. 1	15k	14. 7/27. 3	1. 2k	13. 8

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

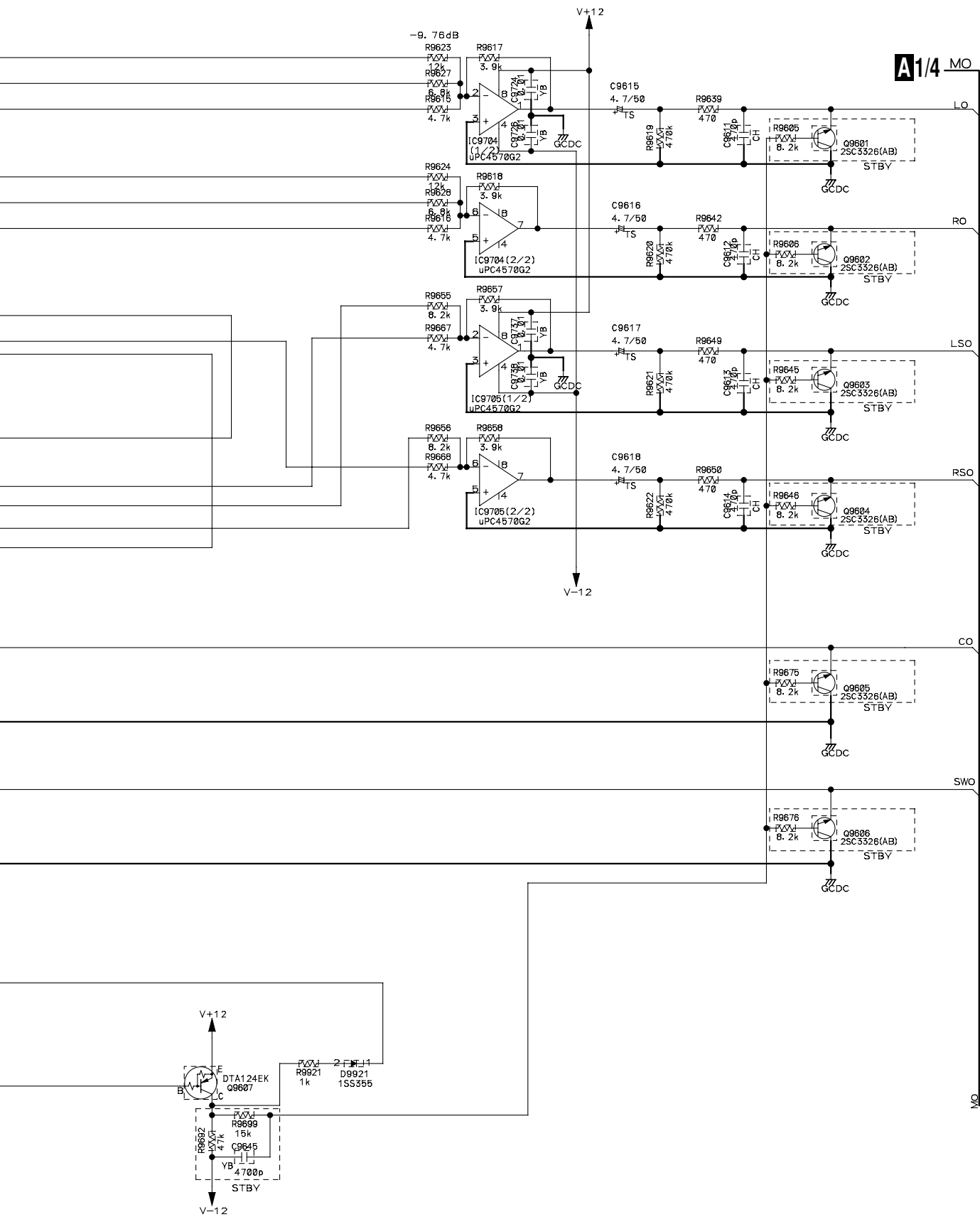


A 3/4

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



A/4



A

B

C

D

TO INPUT & EVOL BLOCK

A1/4 MO

LO

RO

LSO

RSO

CO

SWO

MO

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

B 1/2 AMP&PRIMARY ASSY (XWZ3532)

A

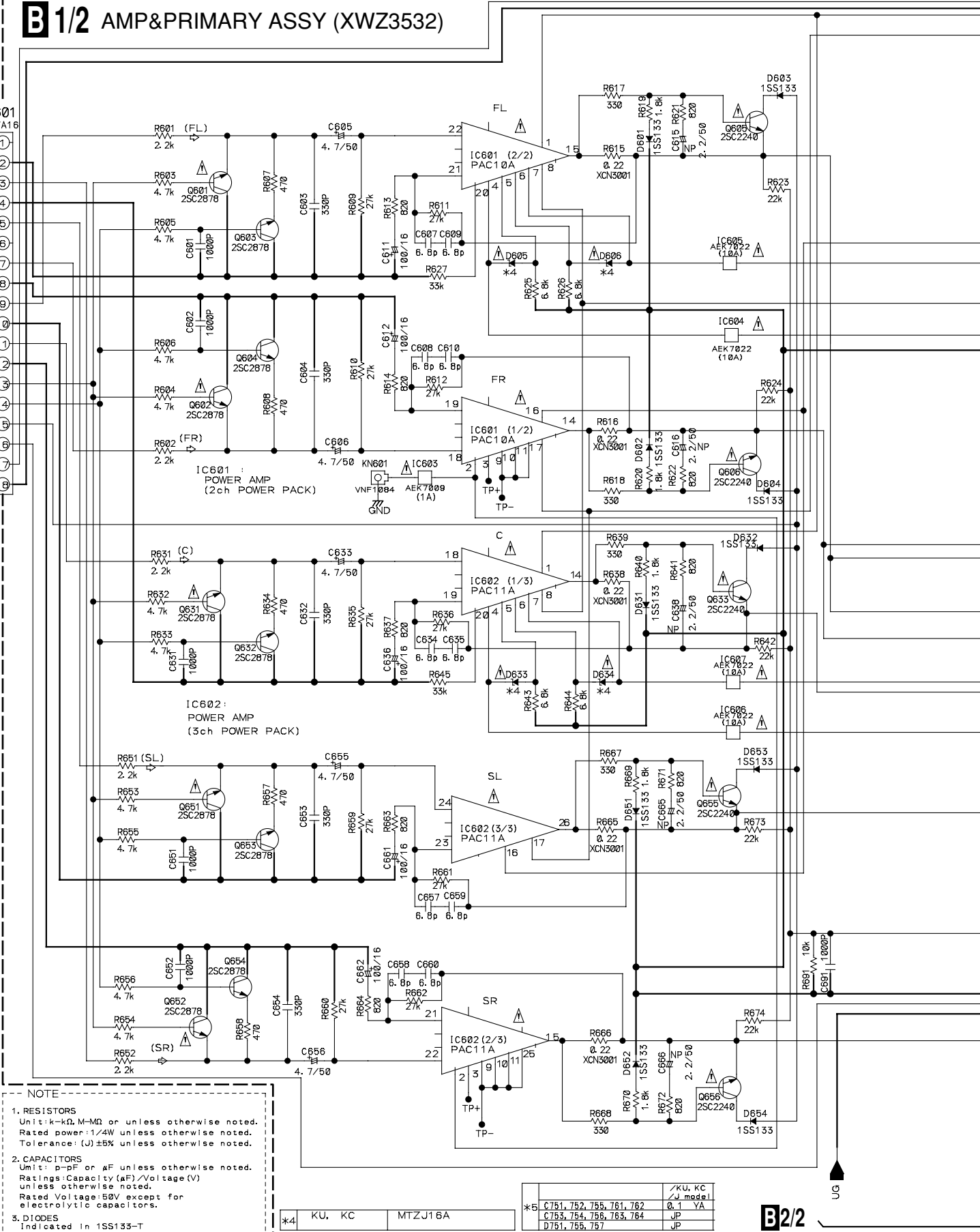
B

C

D

- CN601 KM200TA16
- SB ①
- AG ②
- SR ③
- AG ④
- SL ⑤
- AG ⑥
- FR ⑦
- AG ⑧
- FL ⑨
- AG ⑩
- C ⑪
- AG ⑫
- A. MUTE ⑬
- ATT. ⑭
- OL ⑮
- DC DET. ⑯
- NECK ⑰
- UG ⑱

H CN253



NOTE

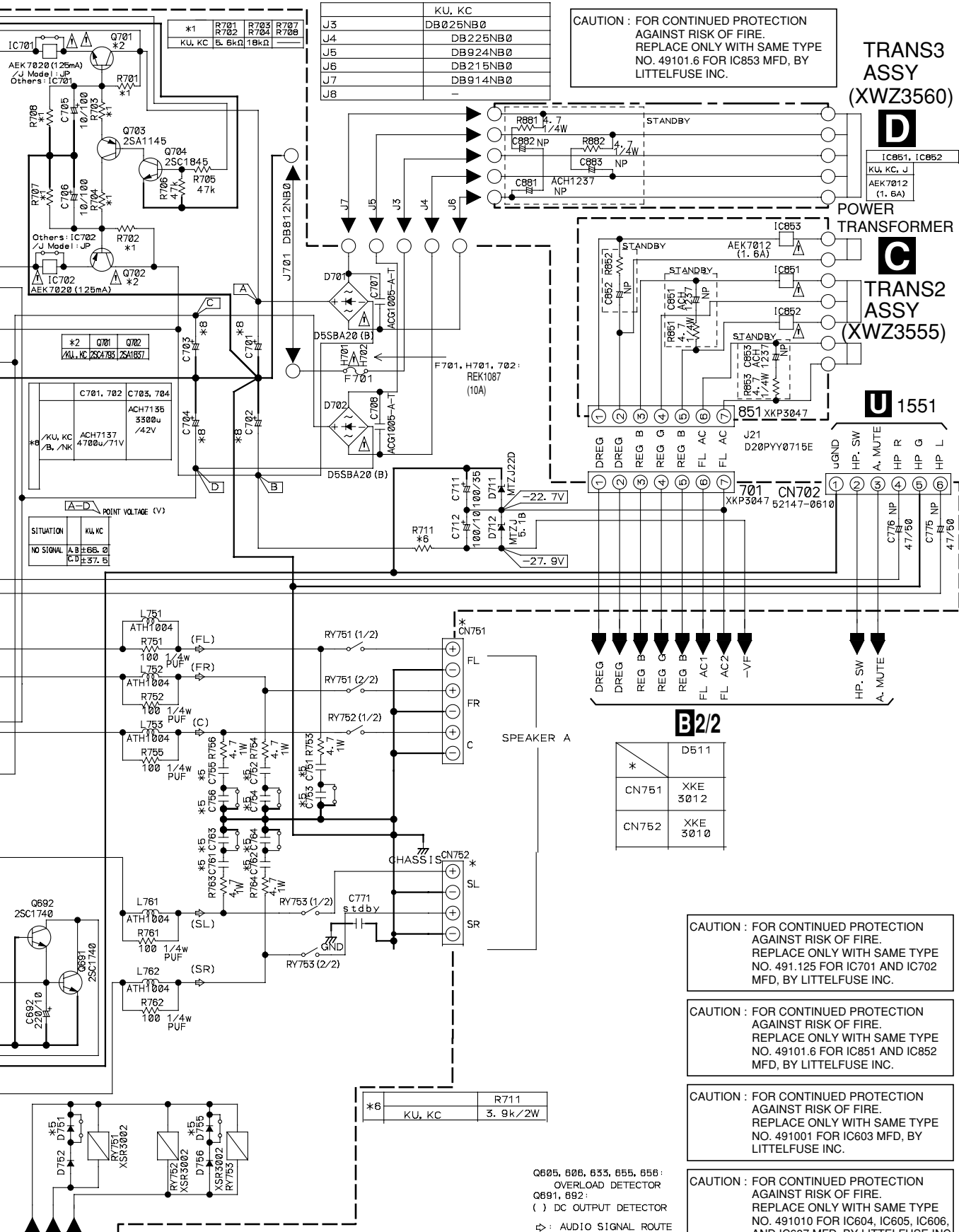
1. RESISTORS
Unit: k- Ω , M- Ω or unless otherwise noted.
Rated power: 1/4W unless otherwise noted.
Tolerance: (J) $\pm 5\%$ unless otherwise noted.
2. CAPACITORS
Unit: p-pF or μ F unless otherwise noted.
Ratings: Capacity (μ F)/Voltage (V)
unless otherwise noted.
Rated Voltage: 50V except for electrolytic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

*4	KU, KC	MTZJ16A
*5	C751, 752, 755, 761, 762	/KU, KC 0.1 YA
	C753, 754, 756, 763, 764	JP
	D751, 755, 757	JP

B 1/2

B 2/2

VSX-D511



J3	KU, KC
J4	DB025NB0
J5	DB225NB0
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)

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

POWER TRANSFORMER

TRANS2 ASSY (XWZ3555)

U 1551

*2	Q701	Q702
KU, KC	2SA1145	2SA1145

C701, 702	C705, 704
ACH7155	3500u
42V	

POINT VOLTAGE (V)	
SITUATION	KU, KC
NO SIGNAL	A B R 66.0
CD	E 57.5

B2/2	
*	D511
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.

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

• NOTE FOR FUSE REPLACEMENT

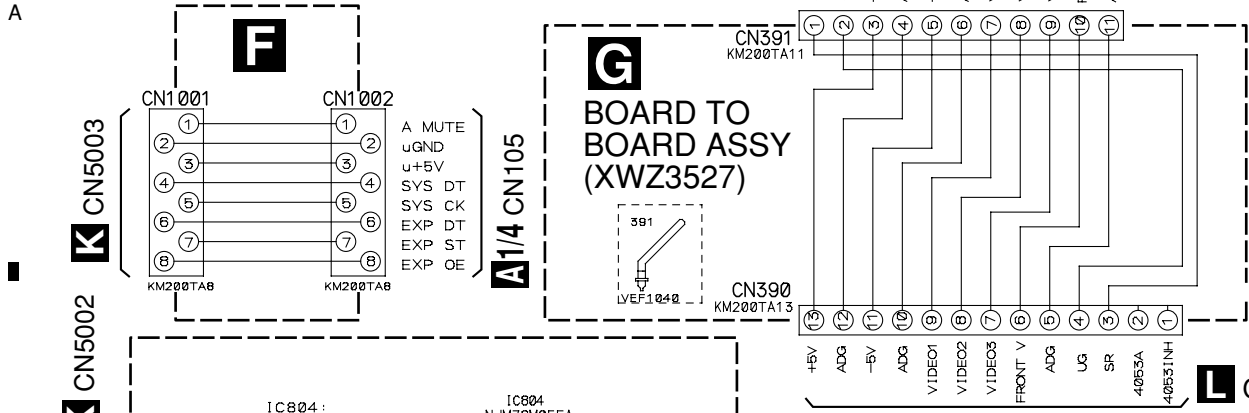
CAUTION - FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE WITH SAME TYPE AND RATINGS ONLY.

B 1/2 C D

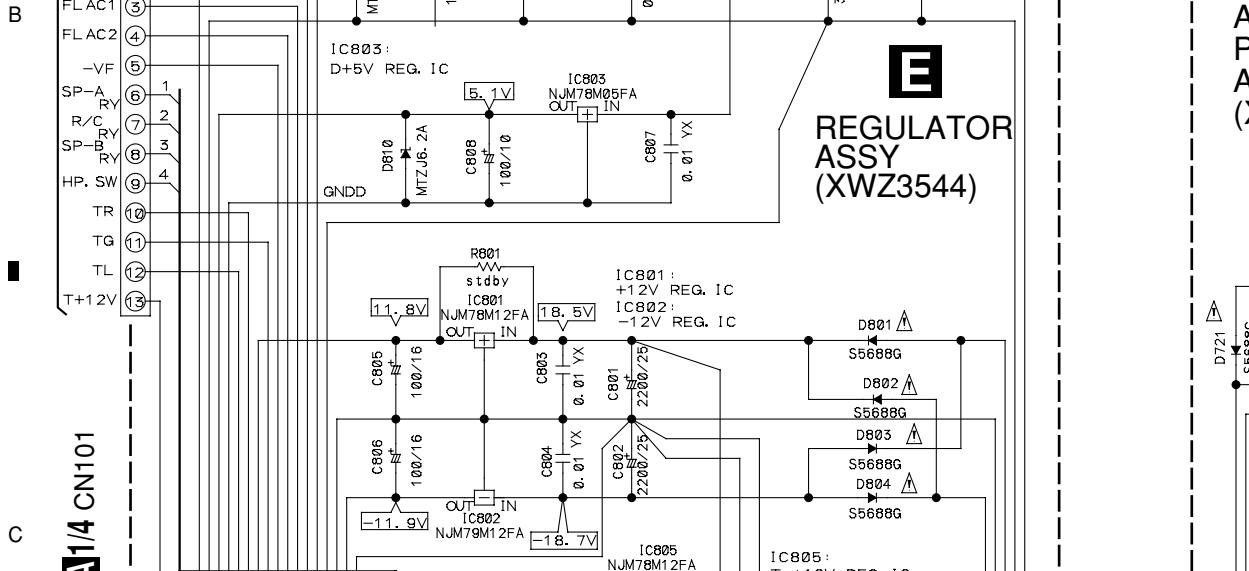
3.8 AMP & PRIMARY(2/2), REGULATOR, AMP INPUT and TRANS1 ASSYS

HASHIGETA ASSY (XWZ3566)

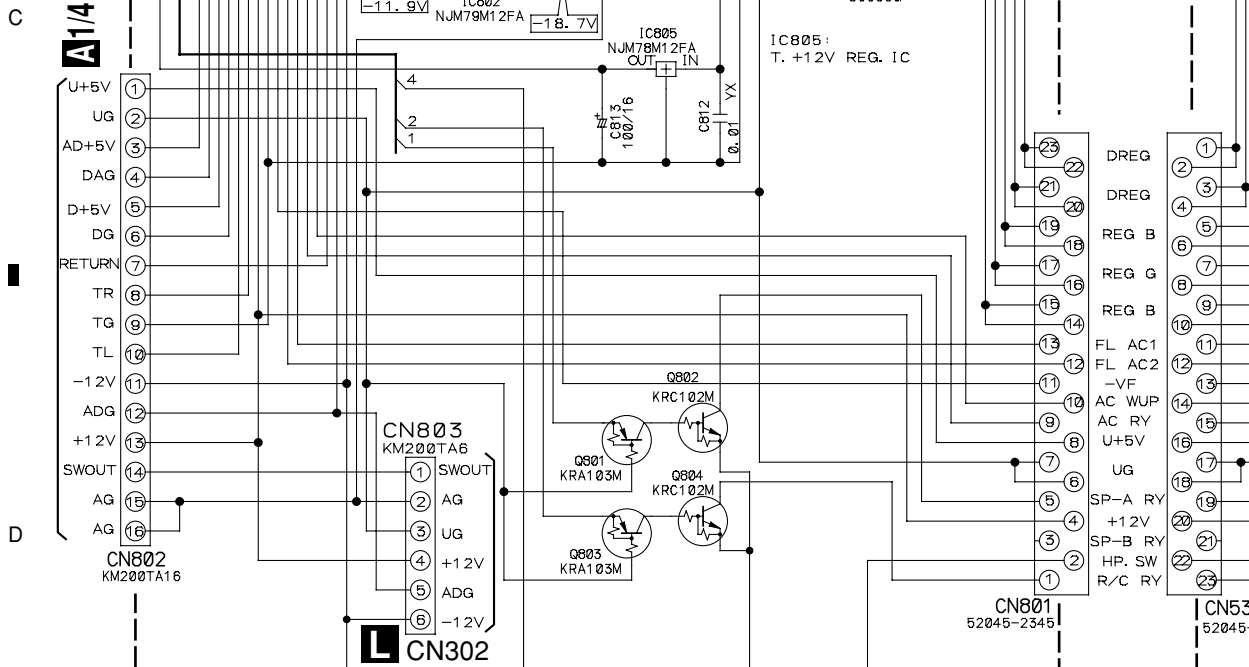
A



B



C



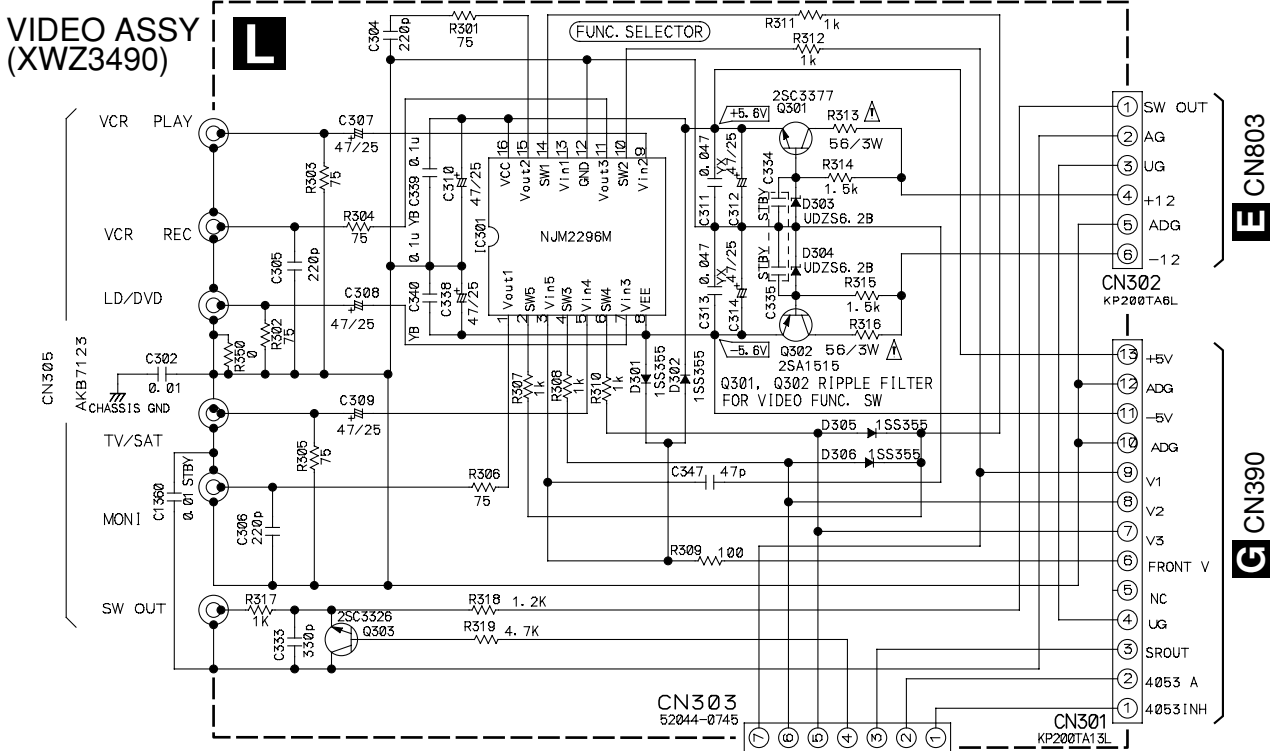
D

B 1/2 **E** **F** **G**

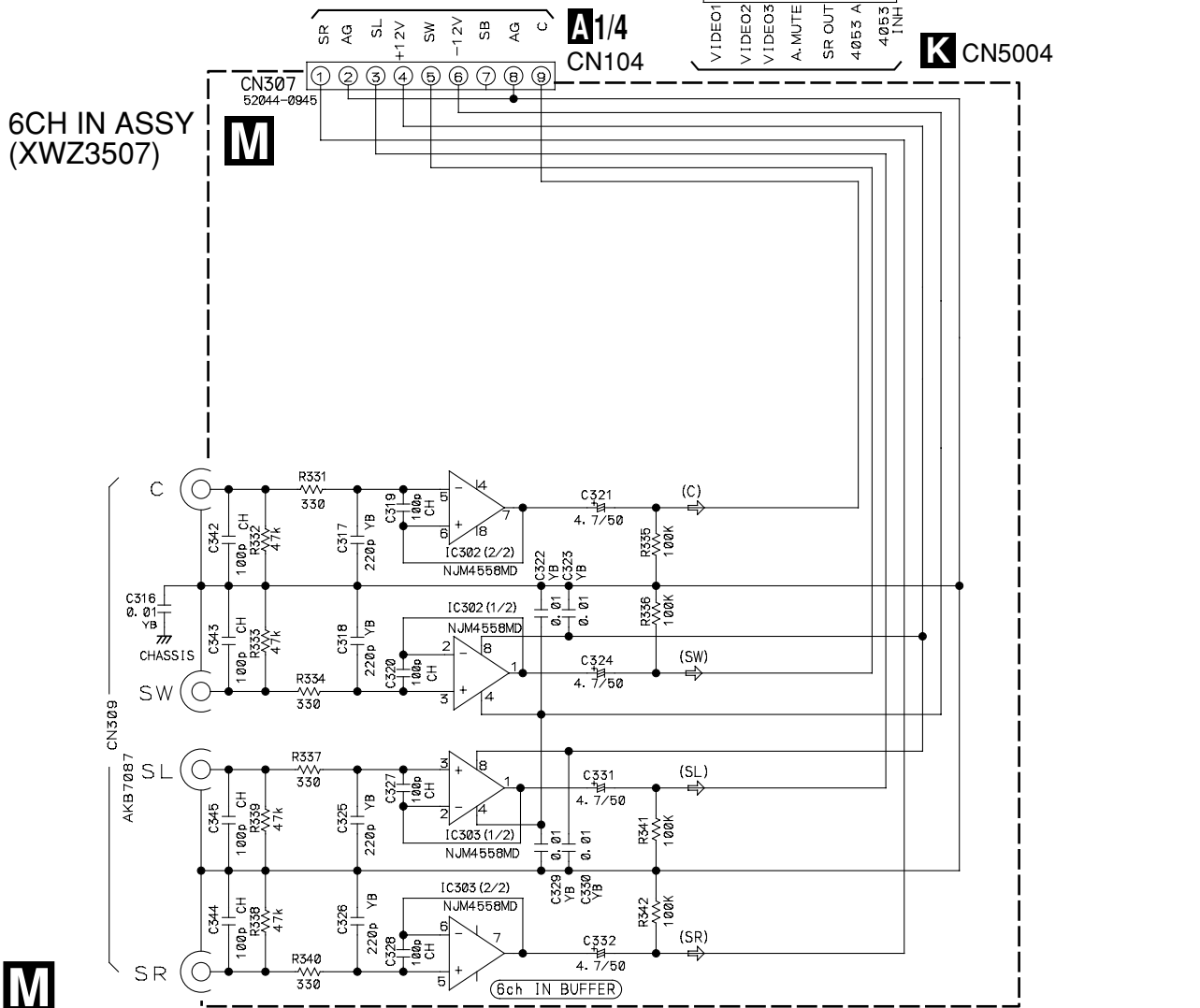
B 1/2

3.9 VIDEO, 6CH IN and S.VIDEO ASSYS

A



B



C

D

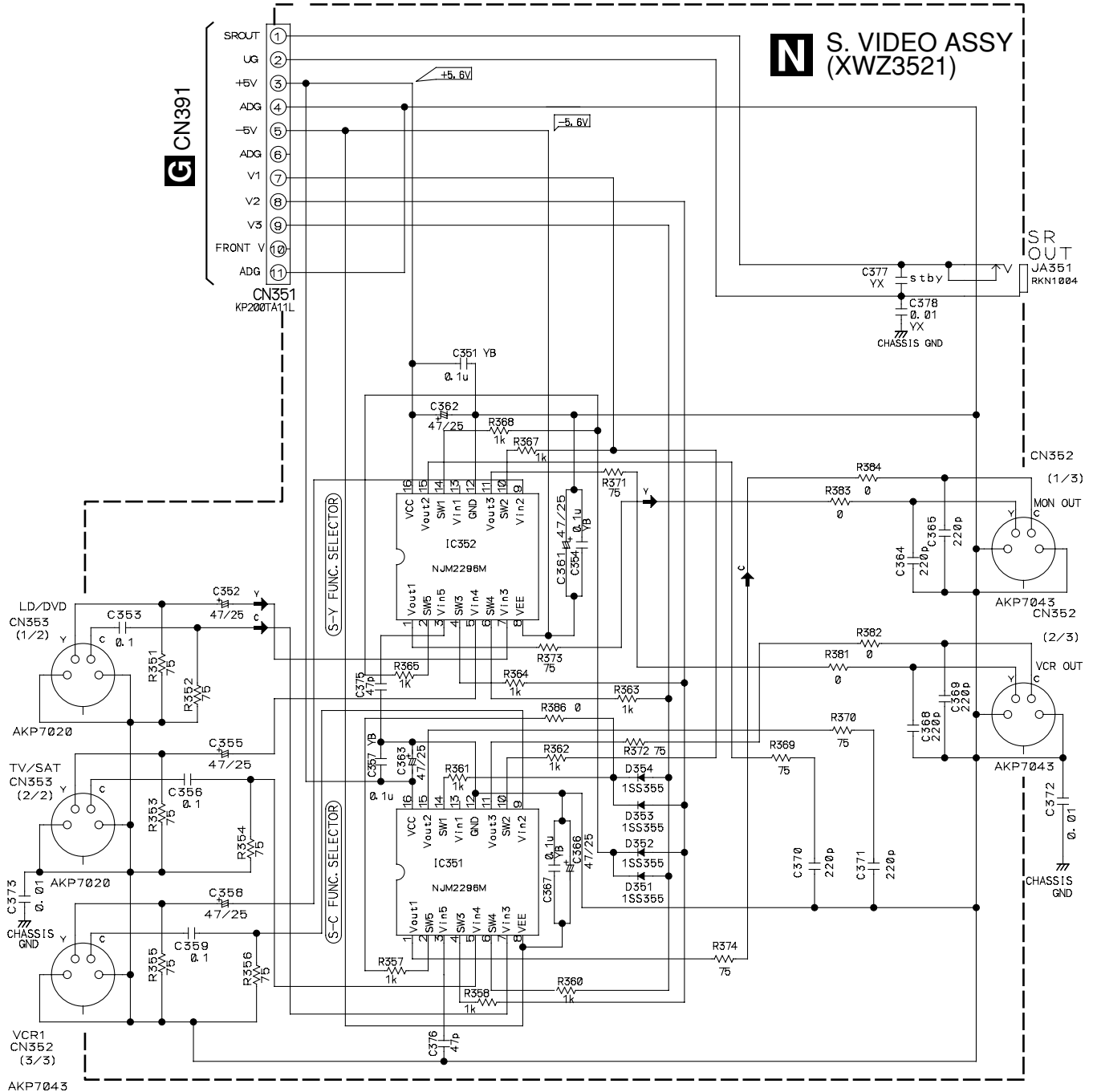


NOTE

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

NJM2296D control port status

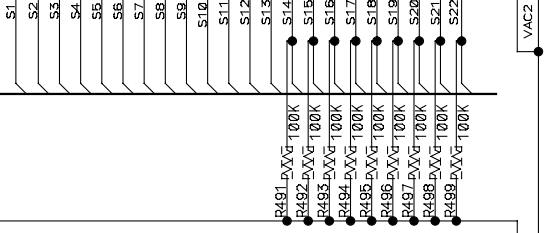
SW1	SW2	SW3	SW4	SW5	Vout1	Vout2	Vout3	
1	0	(1)	0	1	Vin2	Vin2	mute	VIN 2. VCR
1	1	(1)	0	1	Vin3	Vin3	Vin3	VIN 3. DVD/LD
1	1	0	1	1	Vin4	Vin4	Vin4	VIN 4. TV/SAT
1	1	1	1	1	Vin5	Vin5	Vin5	VIN 5. FRONT
0	0	(0)	(0)	0	mute	mute	mute	Vout1. MON out
								Vout2. MR out
								Vout3. VCR out



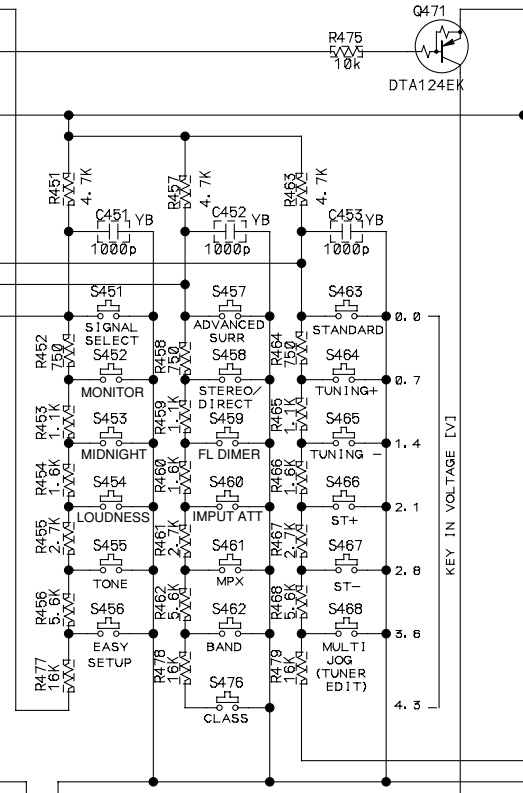
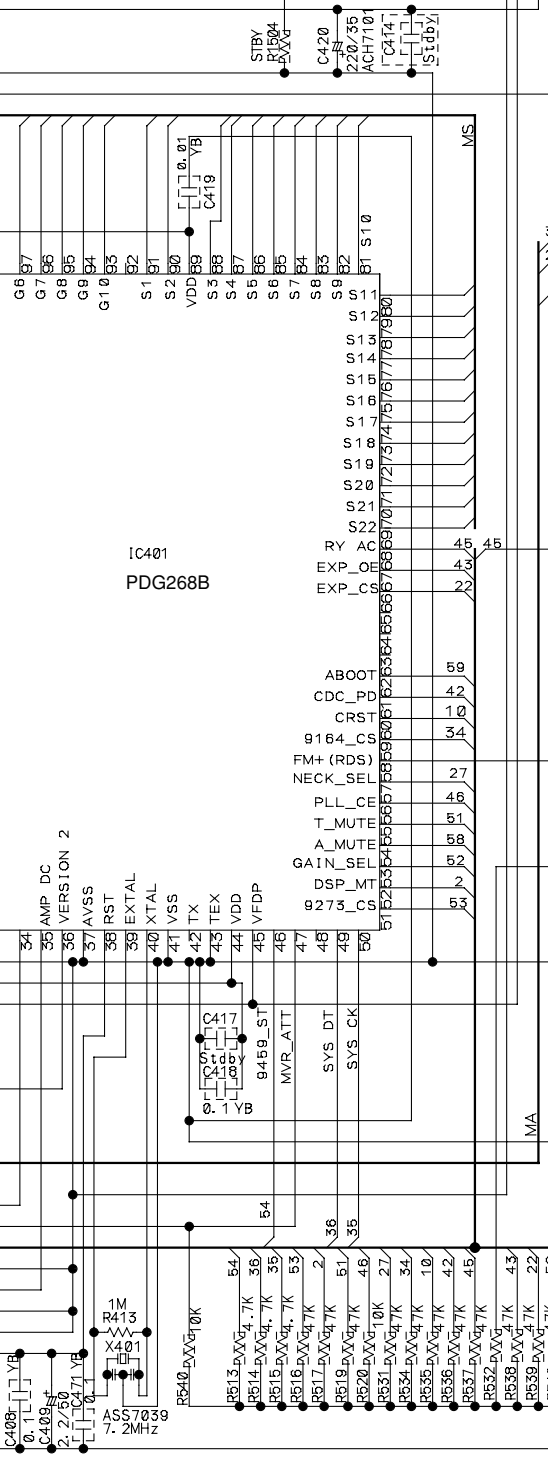
➔ VIDEO SIGNAL FLOW
➞ AUDIO SIGNAL FLOW

(402 FL HOLDER VNF1096-)

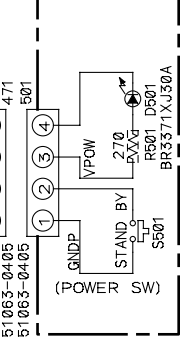
24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 48 49



- NOTE
- RESISTORS
Unit: k-Ω, M-Ω 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-TBR.
 - TACT SWITCHES
Indicated in ASG1051.



Q
POWER SW ASSY (XWZ3510)



POWER SW ASSY
 S501 : POWER STANDBY/ON

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



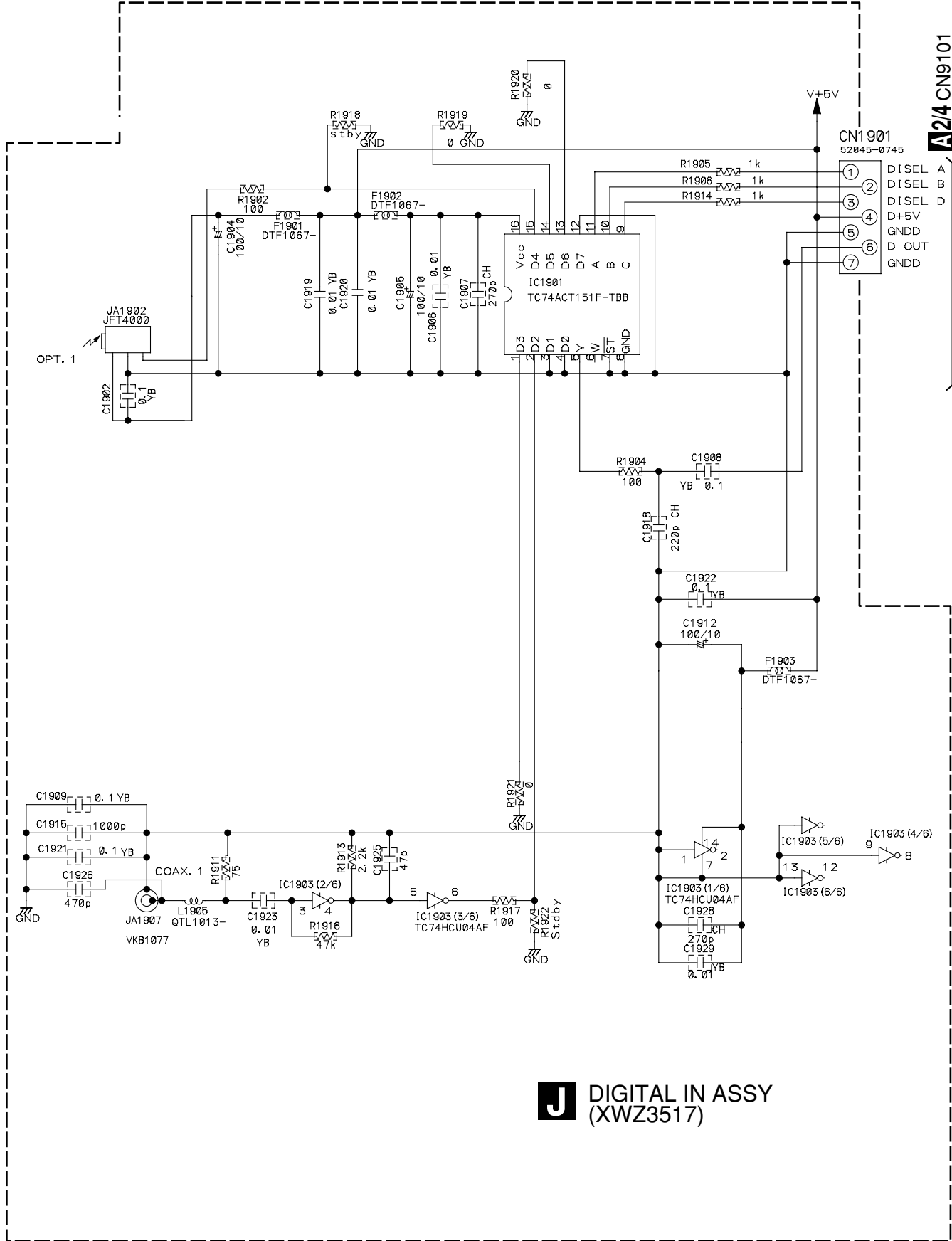
3.11 DIGITAL IN, H.P. and KAWA ASSYS

A

B

C

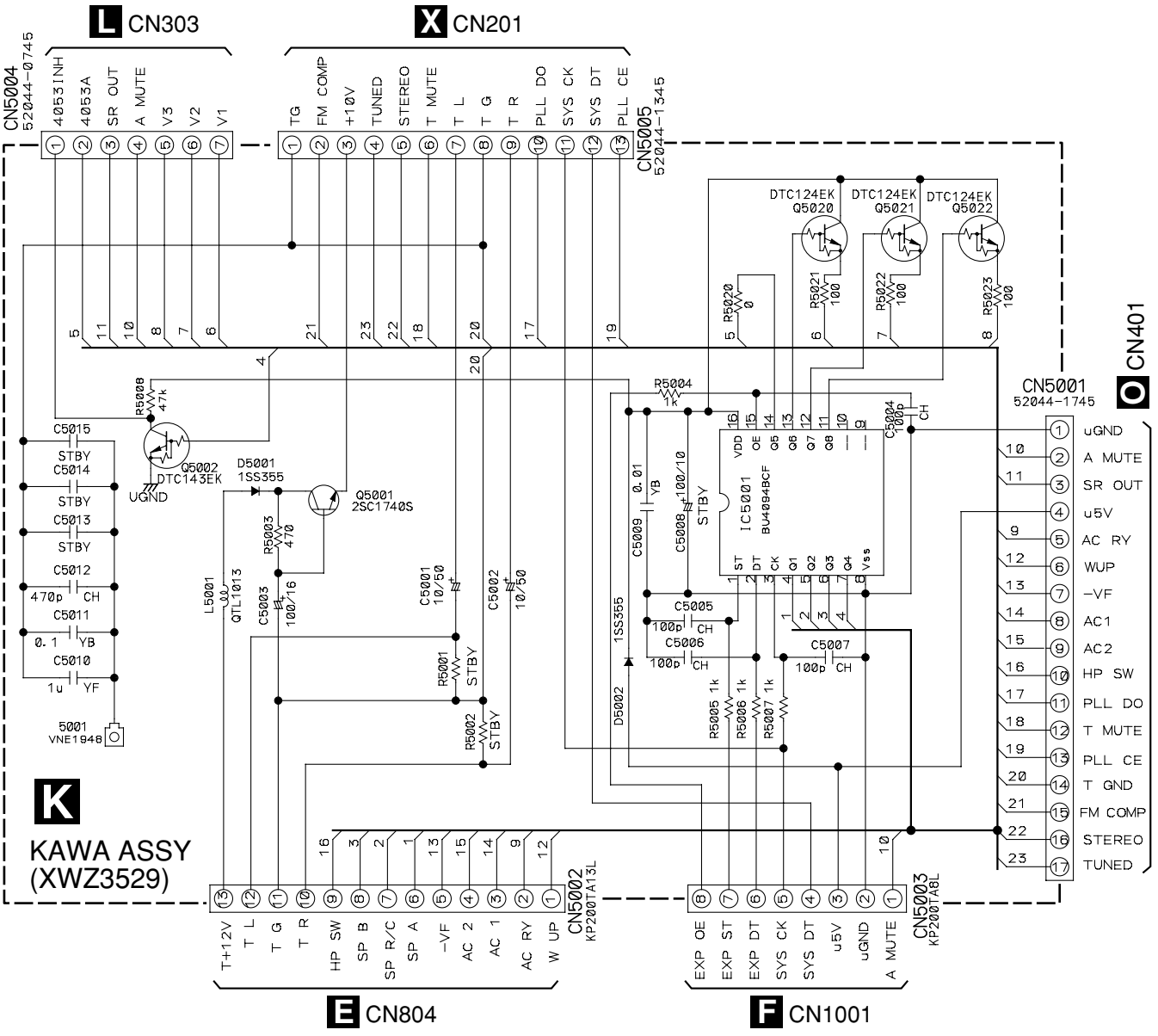
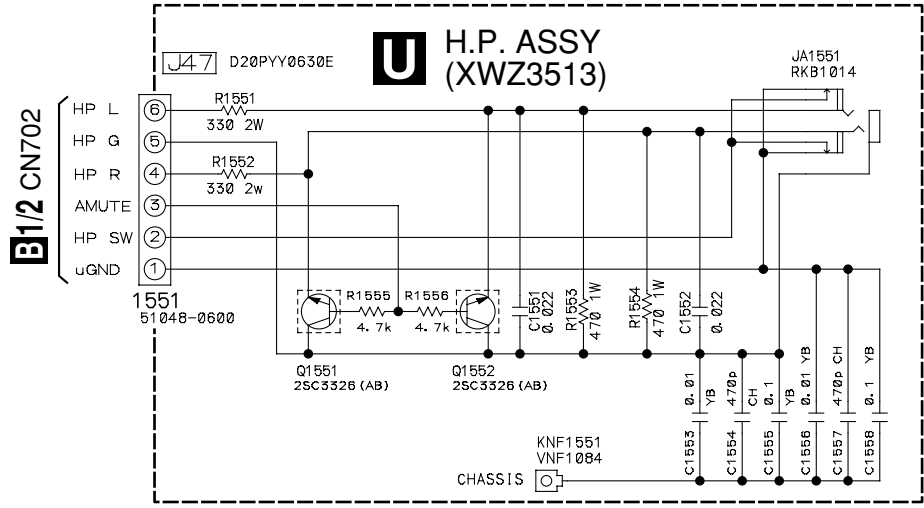
D



A2/4 CN9101

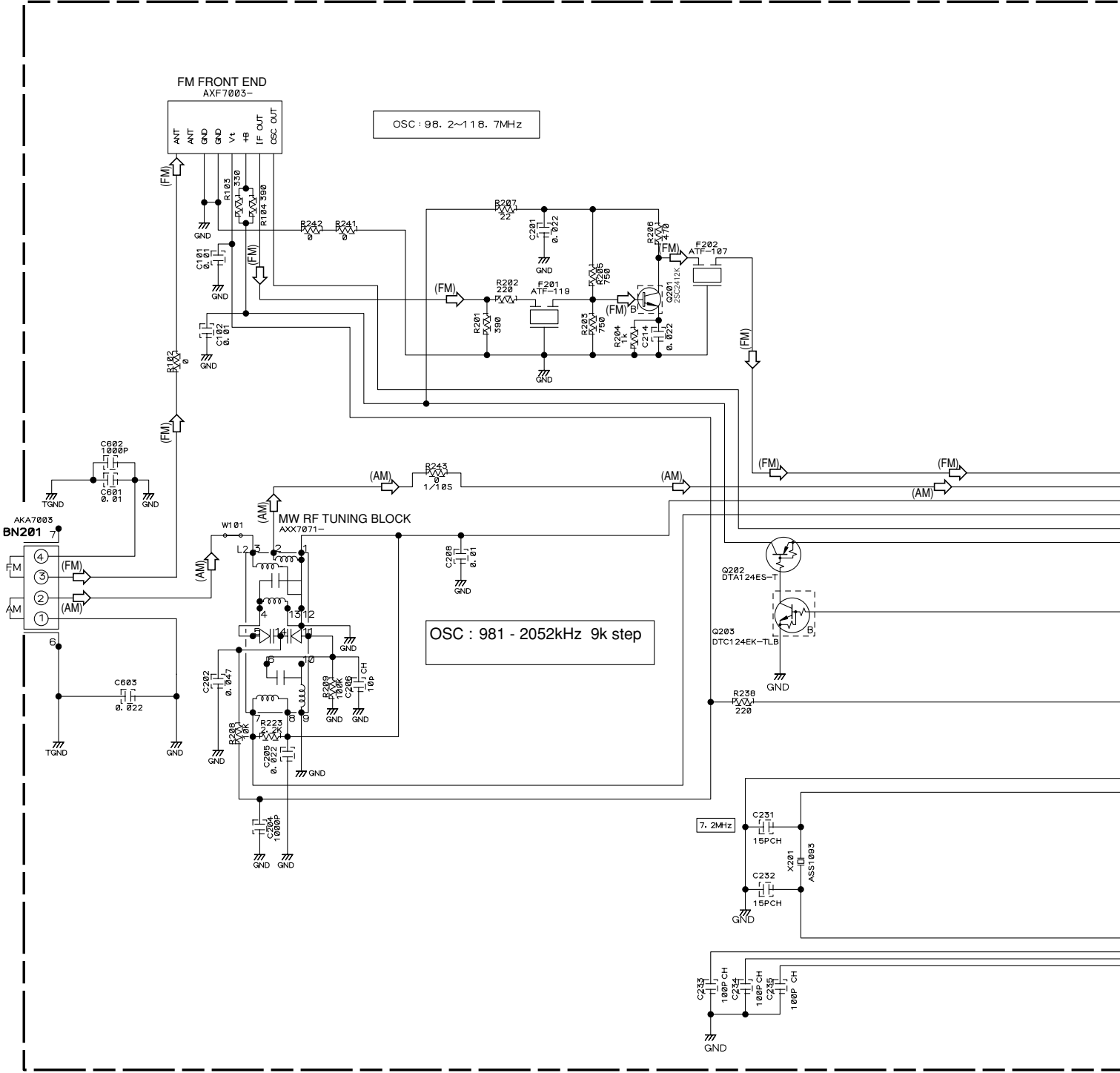
J DIGITAL IN ASSY (XWZ3517)

J



3.12 FM/AM TUNER MODULE

FM/AM TUNER MODULE (AXQ7231)



Notes

1. RESISTORS


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




2. CAPACITORS

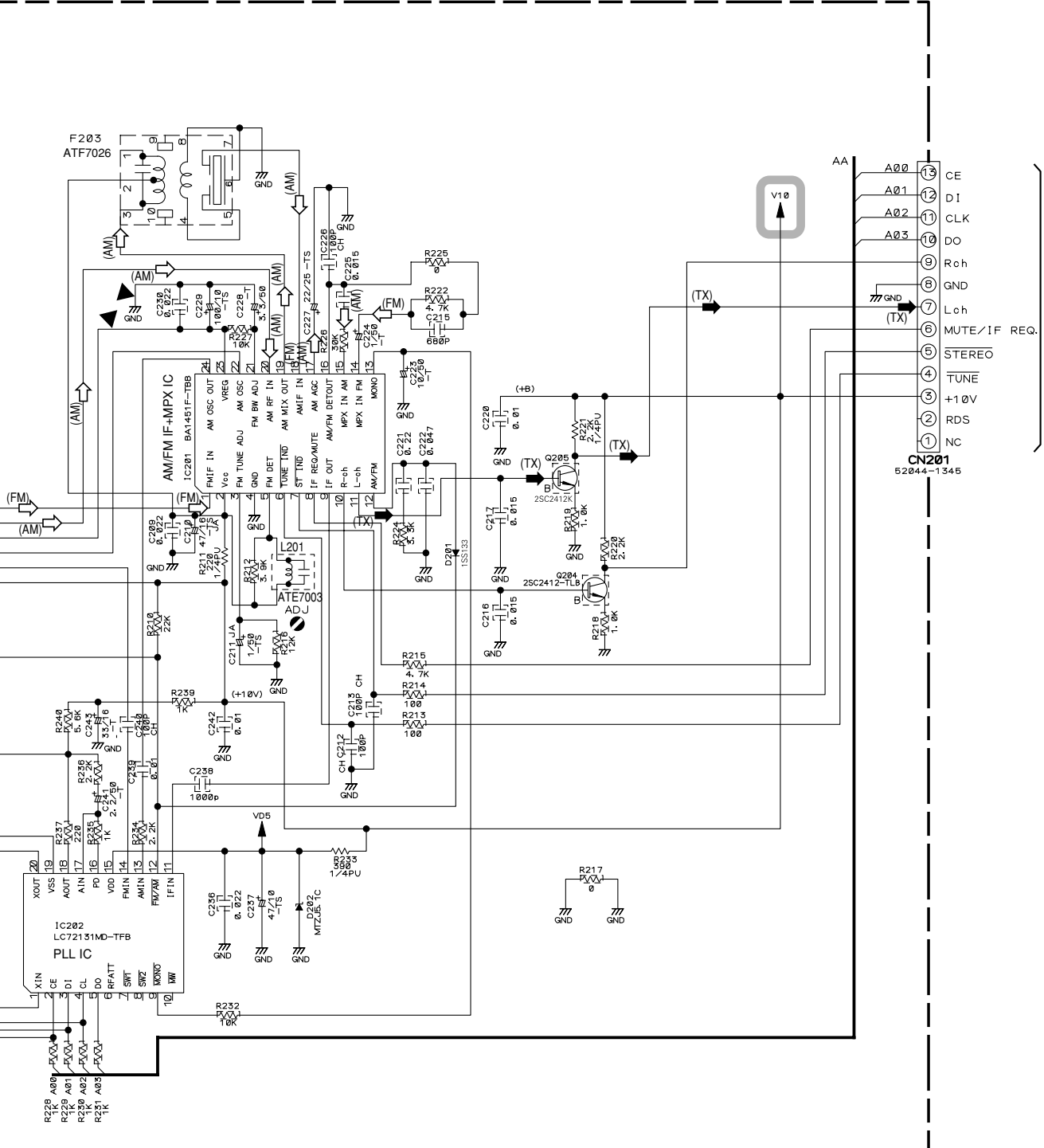
Indicated in Capacity (μF)/VOLTAGE (V) unless otherwise noted P:PF.


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




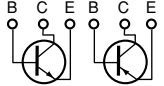

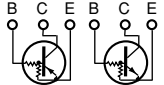

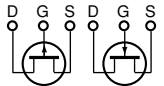

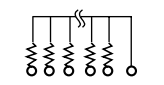


 CN5005



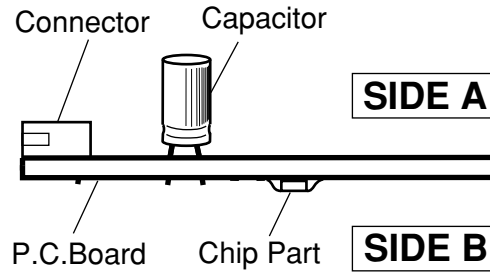
4. PCB CONNECTION DIAGRAM

A NOTE FOR PCB DIAGRAMS :

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

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

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



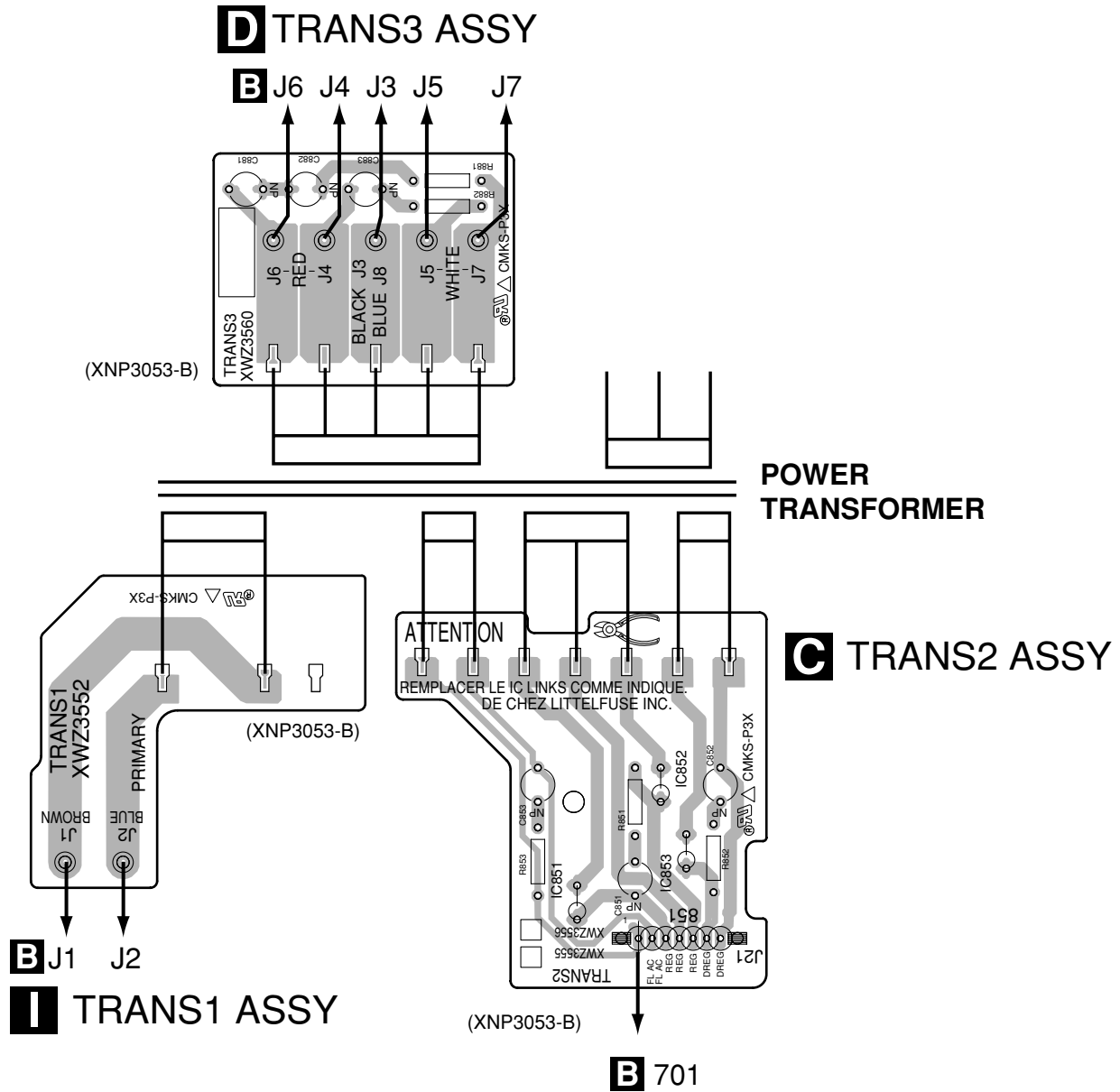
B

C

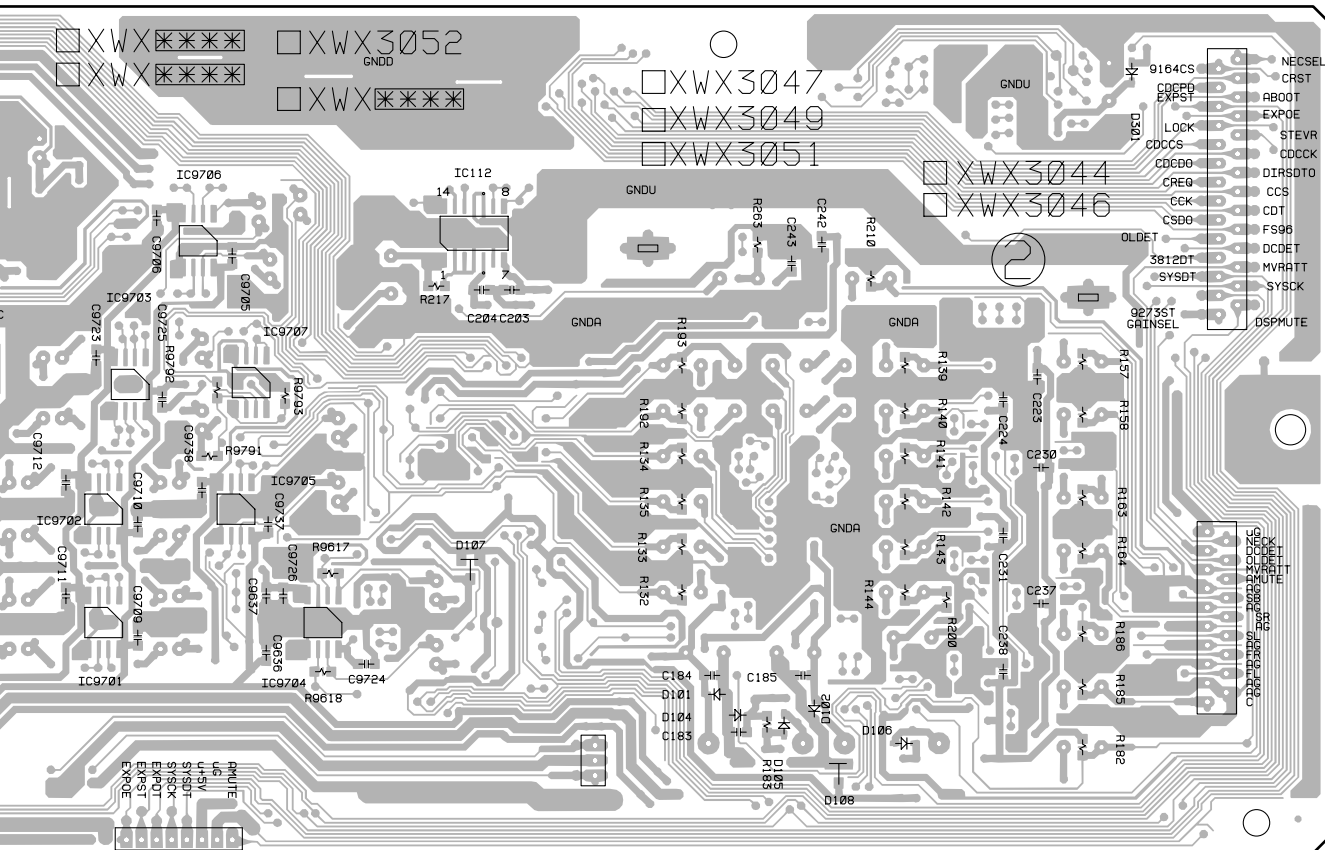
D

4.1 TRANS1, TRANS2 and TRANS3 ASSYS

SIDE A



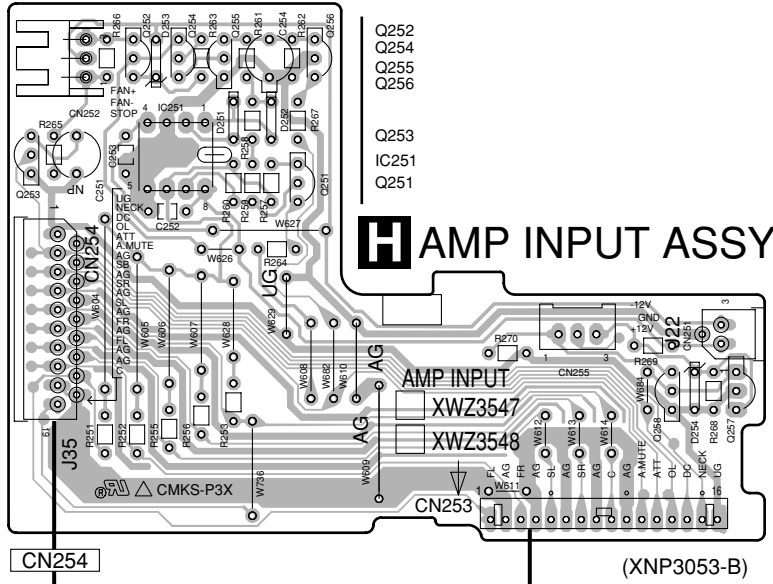
C D I



4.3 AMP INPUT and AMP ASSYS

SIDE A

A



A CN106

B AMP & PRIMARY ASSY

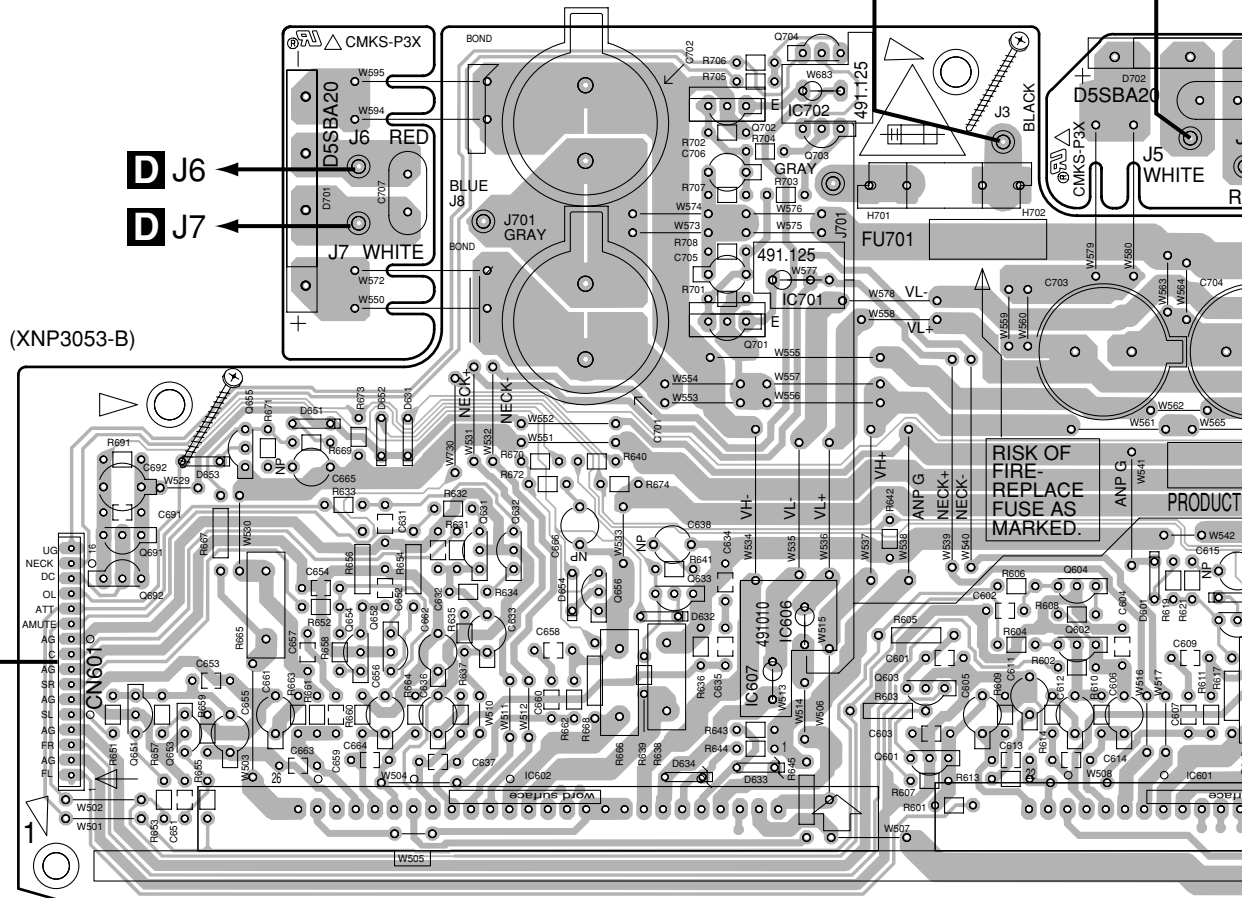
D J3

D J5

C

- Q704
- Q702
- IC702
- Q703

D J6
D J7



- Q701
- IC701

Q655

- Q697
- Q696
- Q681
- Q682
- Q652
- Q654
- Q633
- Q656
- Q683
- Q602
- Q604
- Q606
- Q605

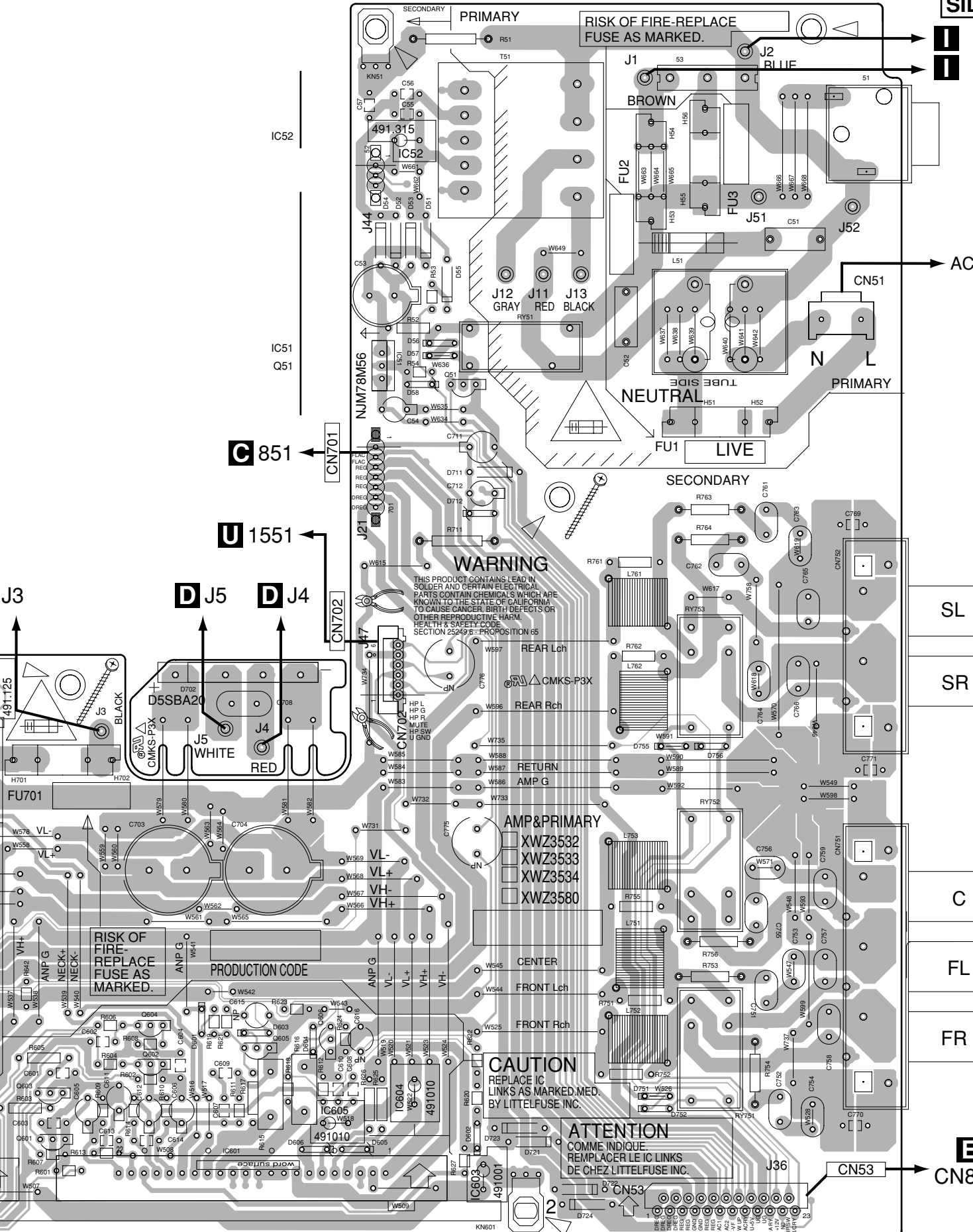
- Q651
- Q631
- Q653
- Q601
- Q603
- IC605
- IC604

- IC602
- IC601
- IC603

B H

SIDE A

I J2
I J1



C 851

U 1551

D J5

D J4

SL

SR

C

FL

FR

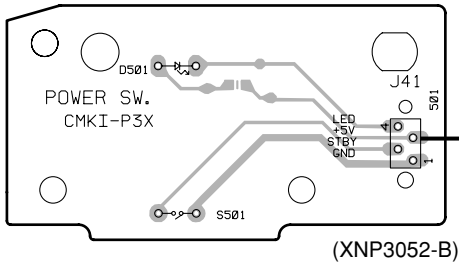
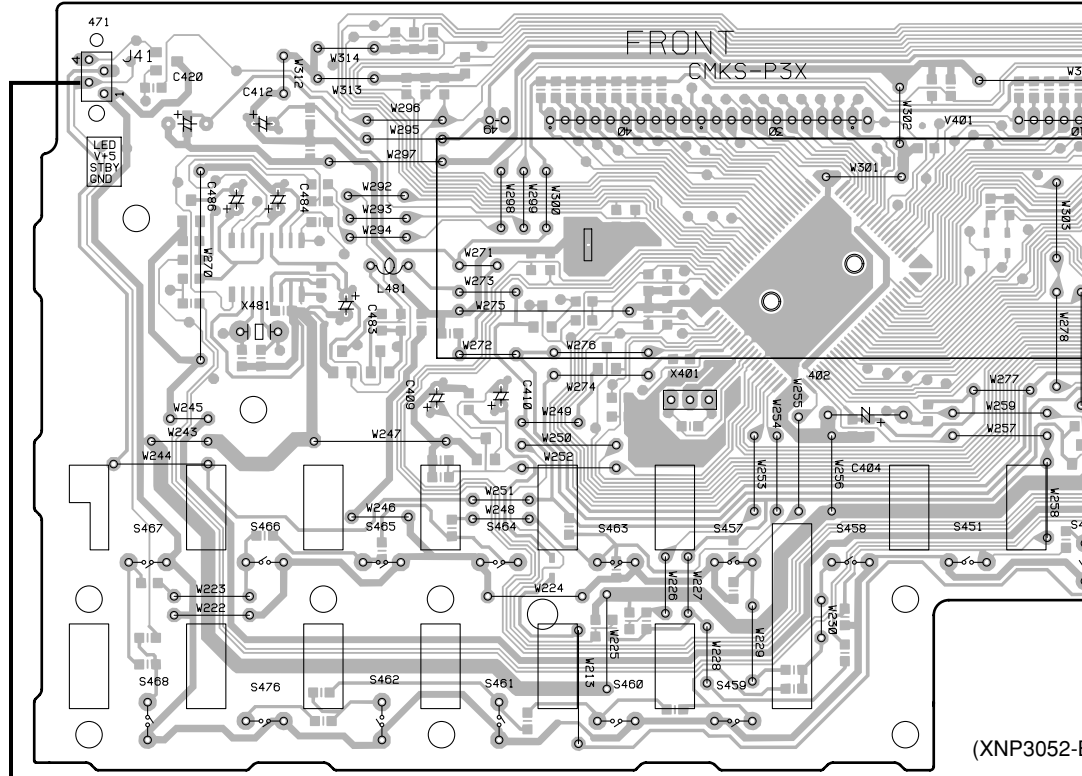
E CN801

B

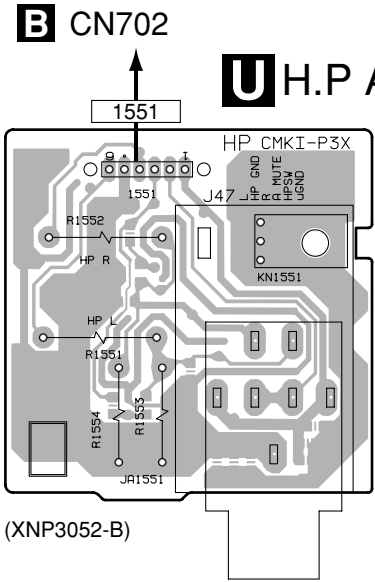
4.4 FRONT, POWER SW, H.P. and R.ENCODER ASSYS

SIDE A

○ FRONT ASSY

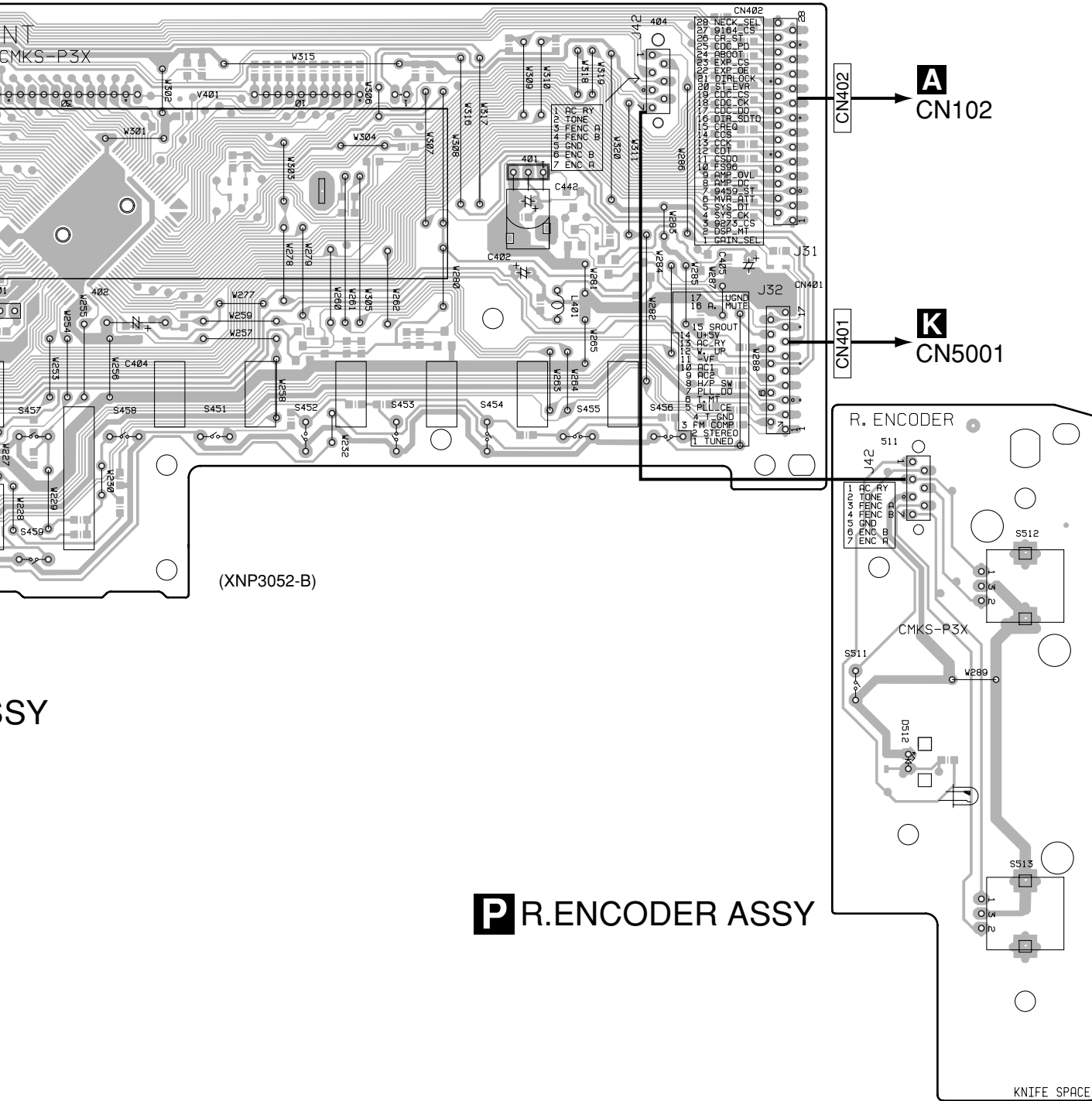


Q POWER SW ASSY



U H.P. ASSY

○ Q U



(XNP3052-B)

P R.ENCODER ASSY

(XNP3052-B)

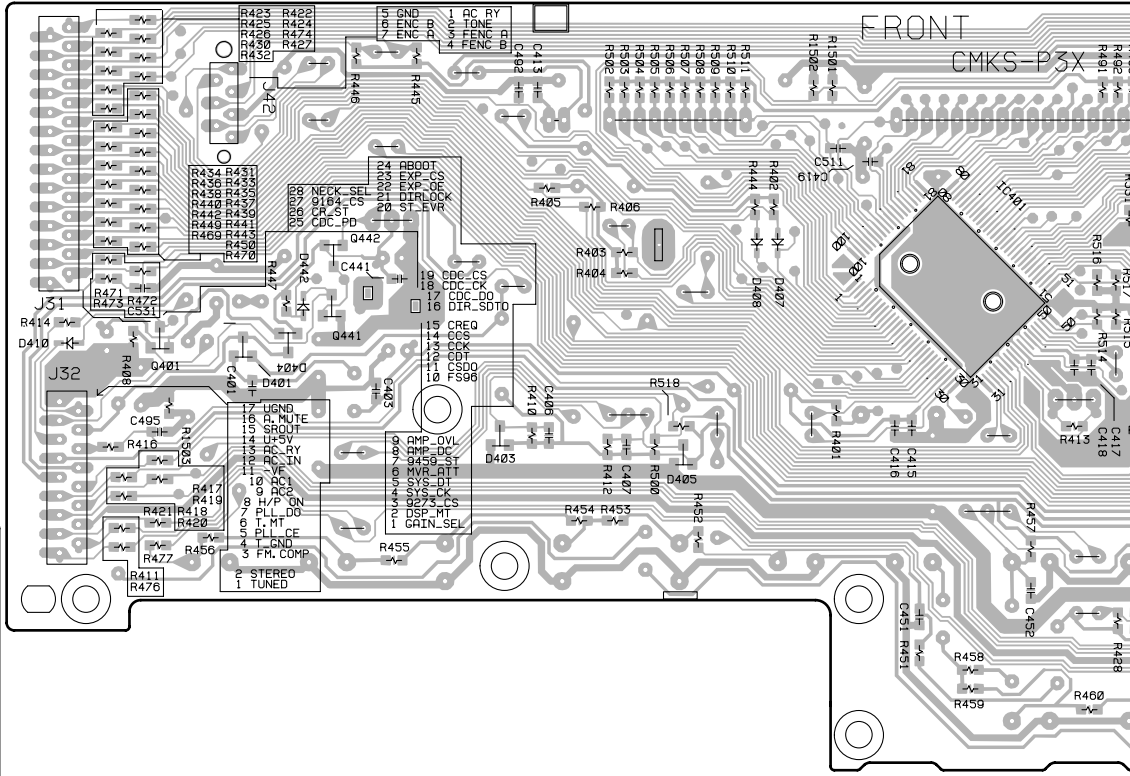
KNIFE SPACE



SIDE B

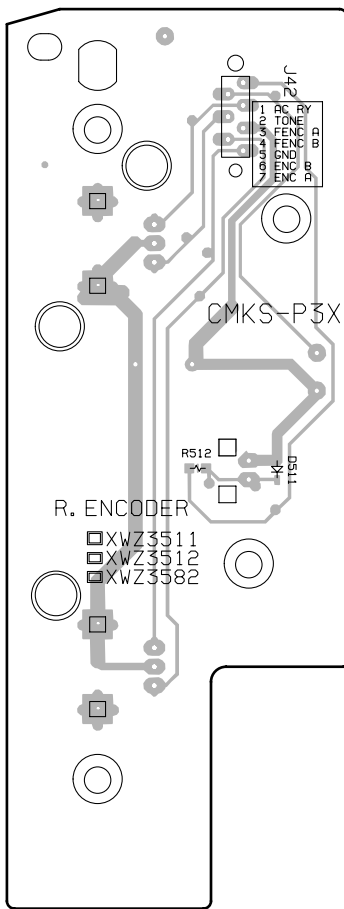
A

FRONT ASSY



B

C



R.ENCODER ASSY

(XNP3052-B)

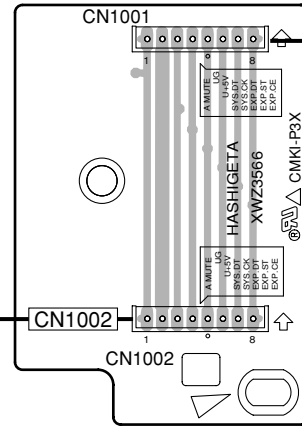
OP

4.5 REGULATOR, HASHIGETA and KAWA ASSYS

SIDE A

SIDE A

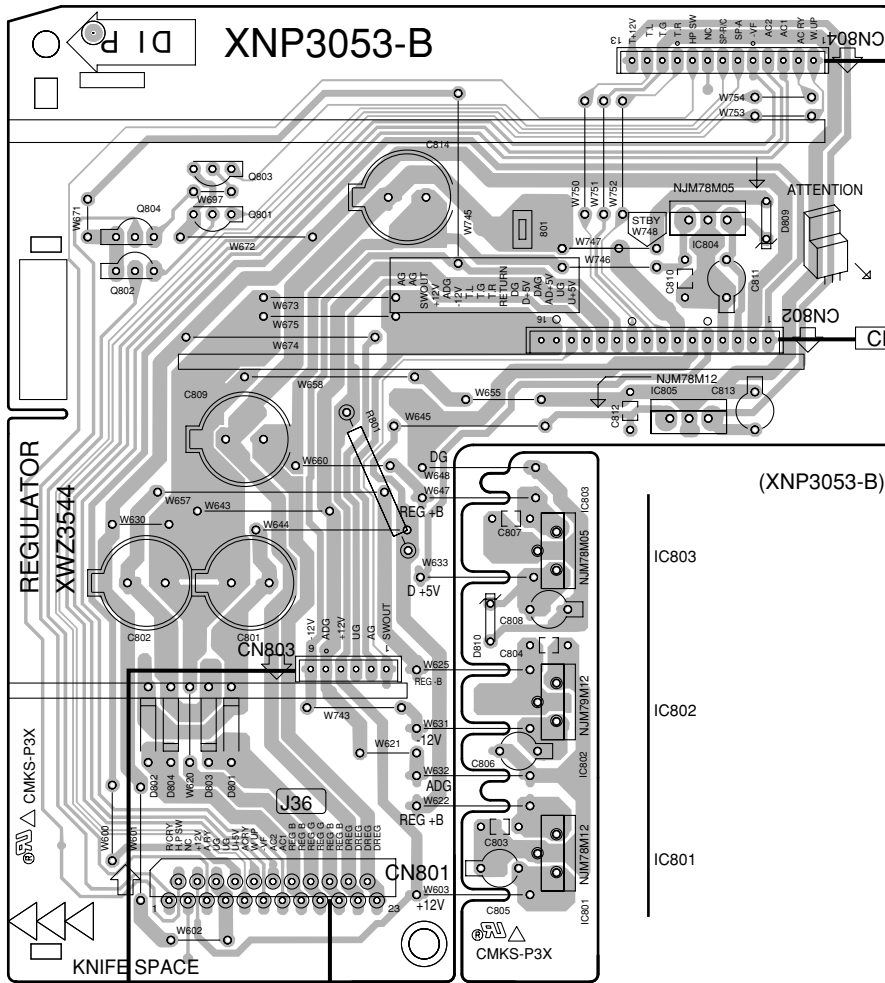
F HASHIGETA ASSY



A CN105

(XNP3053-B)

E REGULATOR ASSY



Q805
Q803
Q806
Q801
IC804
Q804
Q802

A CN101

IC805

(XNP3053-B)

IC803

IC802

IC801

Q5001

L CN302

B CN53

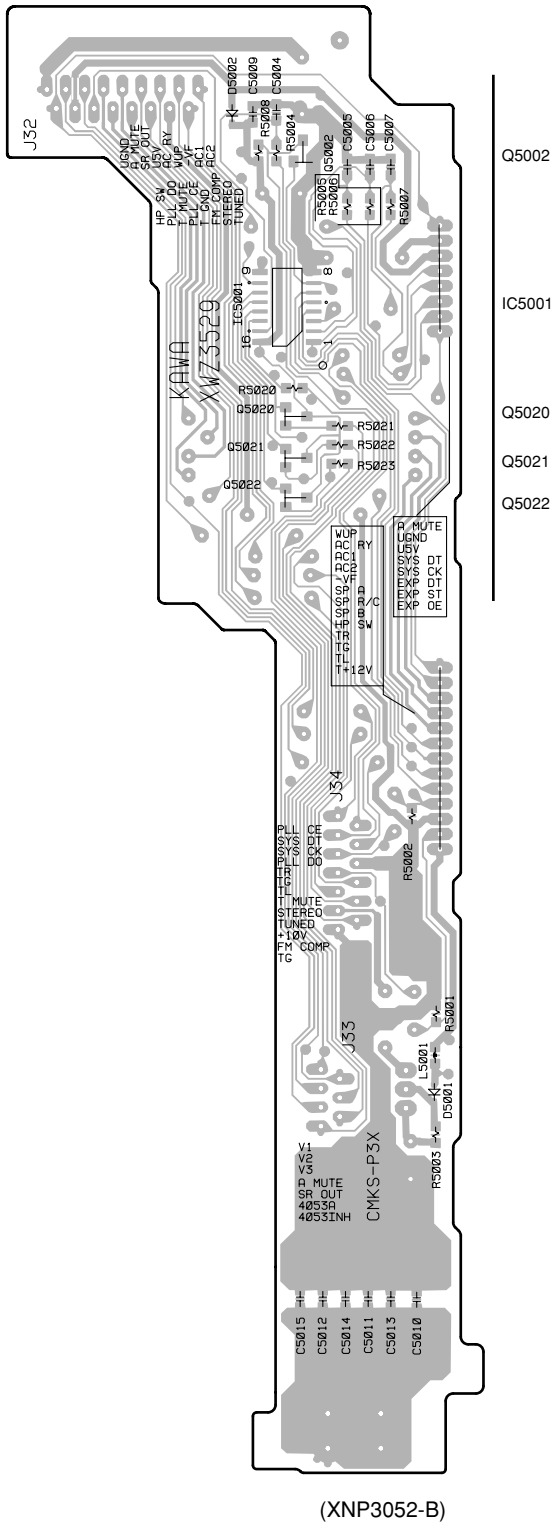
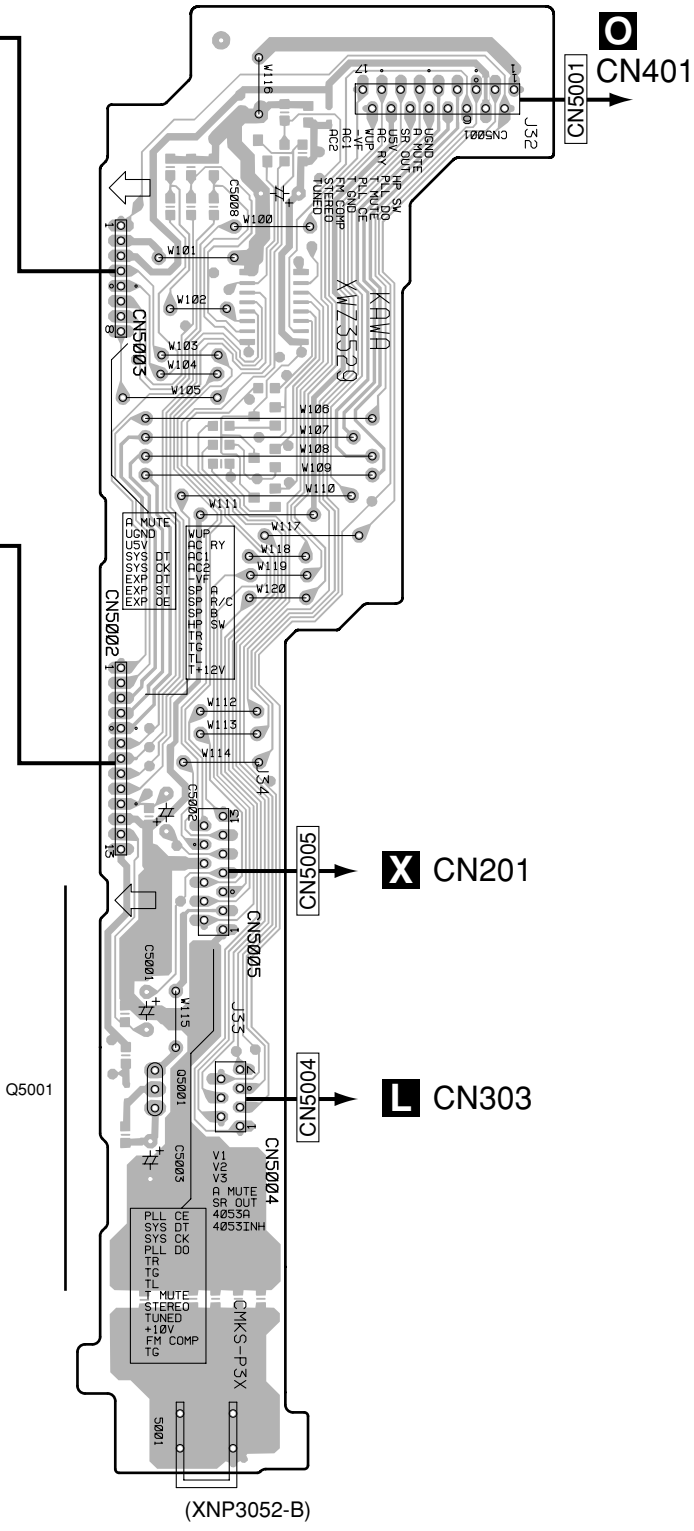
E F

SIDE A

SIDE B

K KAWA ASSY

K KAWA ASSY



101

Q5001

Q5002
IC5001
Q5020
Q5021
Q5022

A
B
C
D

(XNP3052-B)

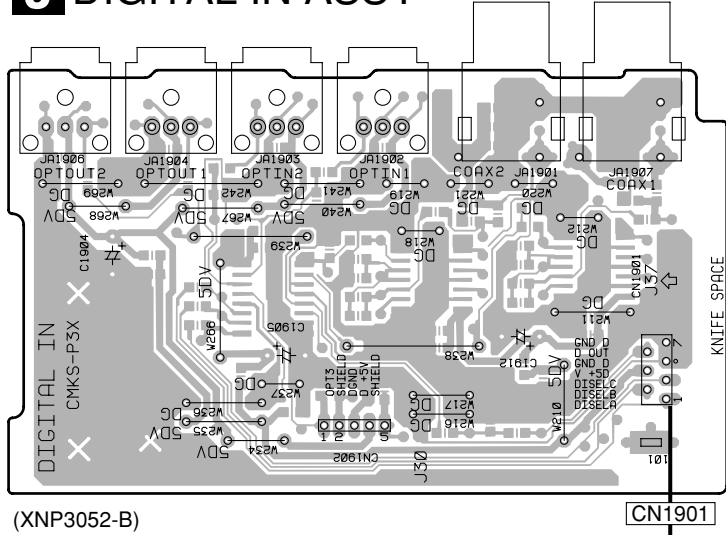
(XNP3052-B)



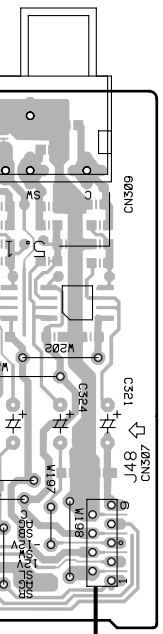
4.6 DIGITAL IN, 6CH IN, VIDEO and BOARD TO BOARD ASSYS

SIDE A

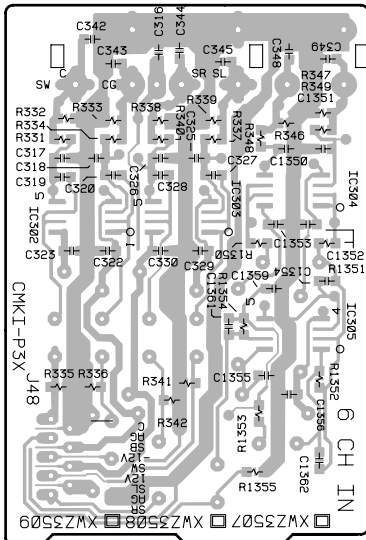
J DIGITAL IN ASSY



ASSY

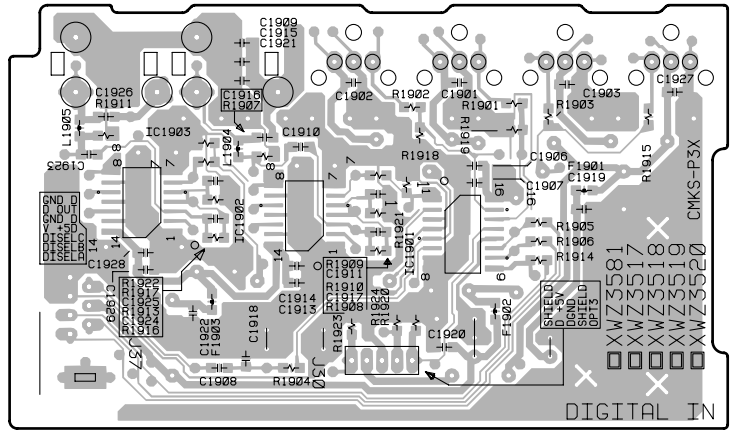


M 6CH IN ASSY



(XNP3052-B)

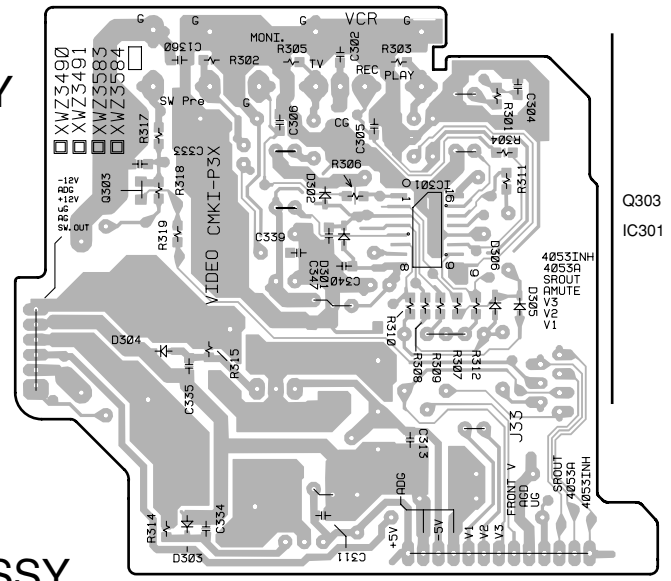
J DIGITAL IN ASSY



IC1903 IC1902 IC1901 (XNP3052-B)

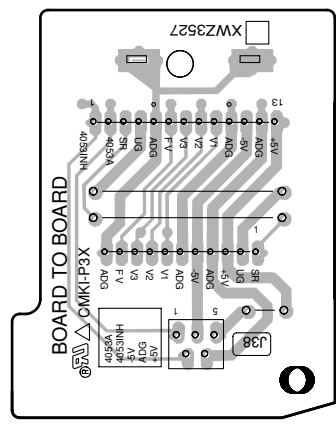
A CN104

L VIDEO ASSY



(XNP3052-B)

G BOARD TO BOARD ASSY



(XNP3053-B)

G J L M

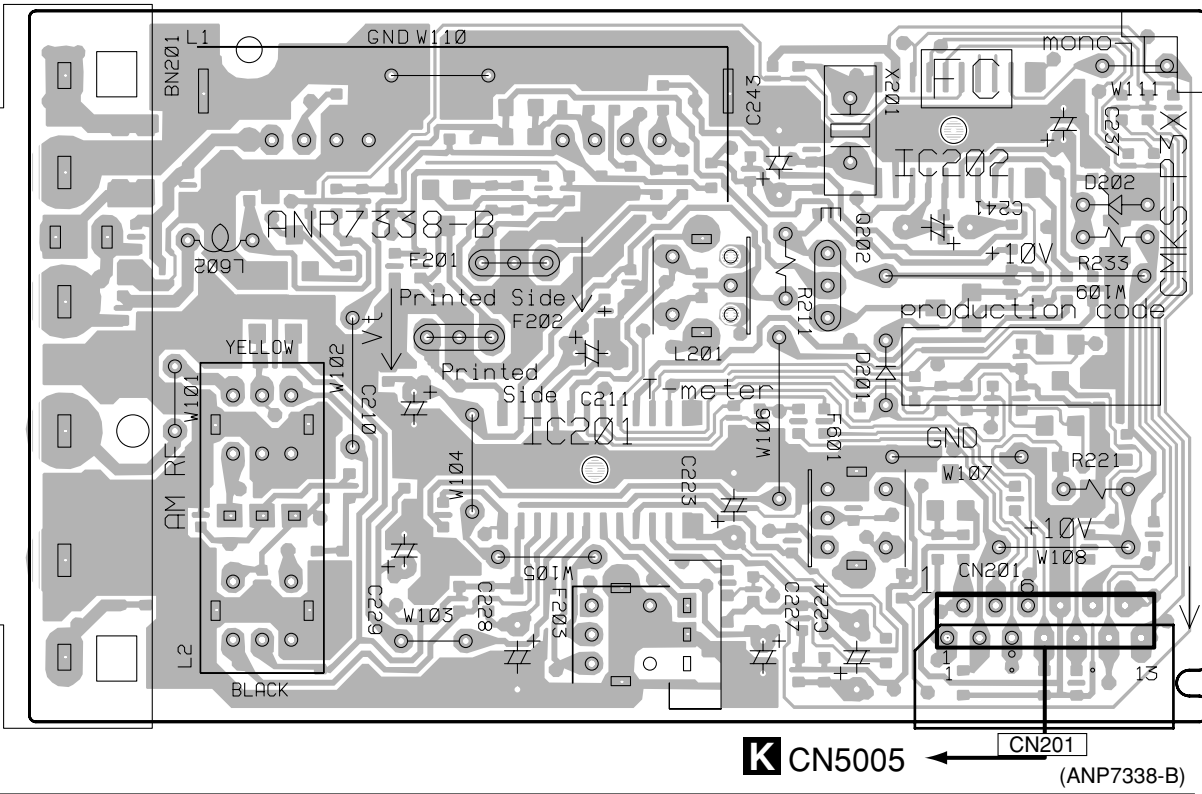
4.7 FM/AM TUNER MODULE

SIDE A

SIDE B

X FM/AM TUNER MODULE

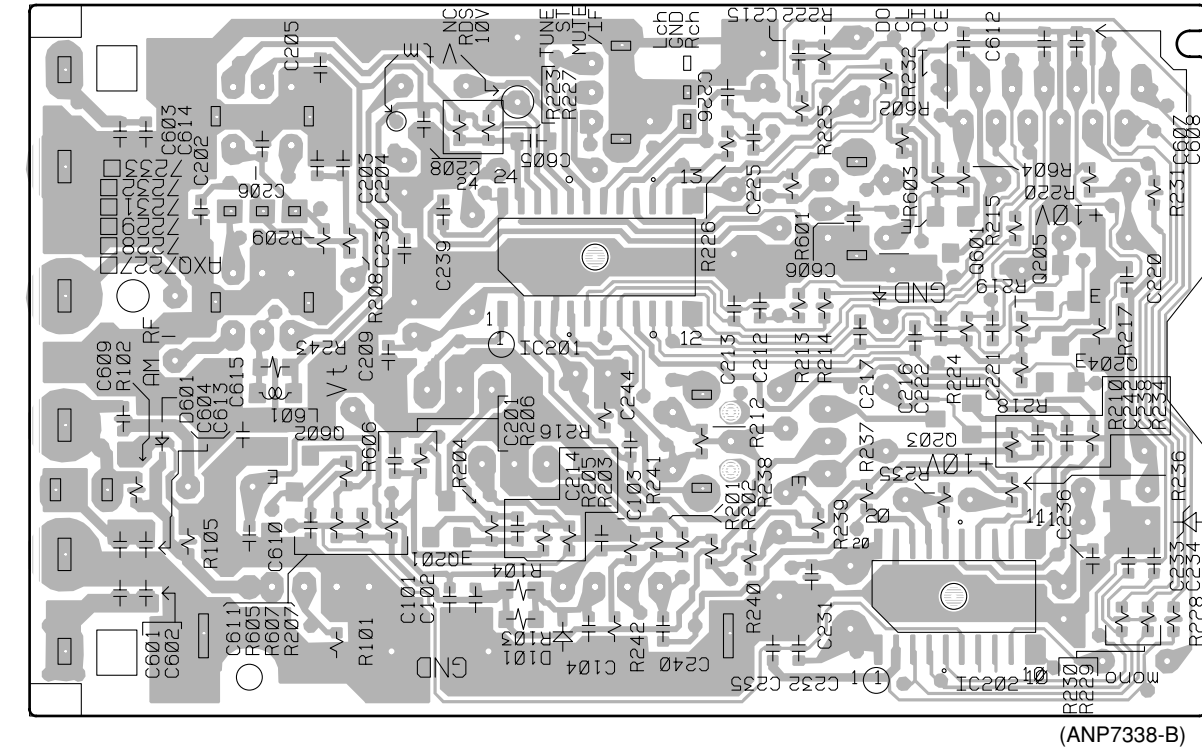
SIDE A



Q202

X FM/AM TUNER MODULE

SIDE B



Q201

IC201

Q203

IC202

Q205

Q204



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 $\overline{561}J$
 47k Ω \rightarrow 47 x 10³ \rightarrow 473 RD1/4PU $\overline{473}J$
 0.5 Ω \rightarrow R50 RN2H $\overline{R50}K$
 1 Ω \rightarrow 1R0 RSIP $\overline{1R0}K$

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 $\overline{5621}F$

Mark No. Description Part No.
LIST OF ASSEMBLIES

	1..D.D & INPUT ASSY	XWX3044
NSP	1..AMP & PS ASSY	XWK3052
	2..AMP & PRIMARY ASSY	XWZ3532
	2..REGULATOR ASSY	XWZ3544
	2..AMP INPUT ASSY	XWZ3547
NSP	2..TRANS1 ASSY	XWZ3552
	2..TRANS2 ASSY	XWZ3555
NSP	2..TRANS3 ASSY	XWZ3560
	2..HASHIGETA ASSY	XWZ3566
	2..BOARD TO BOARD ASSY	XWZ3527
NSP	1..COMPLEX ASSY	XWK3037
	2..FRONT ASSY	XWZ3492
	2..6CH IN ASSY	XWZ3507
	2..POWER SW ASSY	XWZ3510
	2..H.P. ASSY	XWZ3513
	2..DIGITAL IN ASSY	XWZ3517
	2..S. VIDEO ASSY	XWZ3521
	2..KAWA ASSY	XWZ3529
	2..R. ENCODER ASSY	XWZ3511
	2..VIDEO ASSY	XWZ3490
	1..FM/AM TUNER MODULE	AXQ7231

Mark No. Description Part No.
COMPLEX ASSY

OTHERS

J 41 (JUMPER WIRED)	D15A04-100-2651
J 42 (JUMPER WIRED)	D15A07-075-2651
J 47 (JUMPER WIRED)	D20PYY0630E

AMP & PS ASSY

OTHERS

J 701 (AWG14 BOARD IN)	DB812NBO
J 21 (JUMPER WIRED)	D20PYY0715E

A D.D & INPUT ASSY

SEMICONDUCTORS

IC9101	AK4586VQ
IC301	BU4094BCF
IC9501	CS493292
IC103	M62446FP
IC9201	NJM2100M
IC9812	NJM2391DL1-25
IC9811	NJM2391DL1-33
IC102	NJU7312AM

Mark No. Description Part No.

IC9601	NJU7313AM
IC9504	PD8097A
IC9505	TC74LVX244FT
IC9502, IC9503	TC74VHC574F
IC9506	TC74VHCT244AFT
IC9507	TC7WU04FU
IC101	TC9273F-007
IC104-IC107, IC9701-IC9705, IC9707	UPC4570G2
Q107-Q112, Q9201, Q9202	2SC3326
Q9101, Q9204, Q9607, Q9609, Q9610	DTA124EK
Q9102, Q9203, Q9608	DTC124EK
D9601, D9602	1SS181
D105, D106, D301, D9921	1SS355
D107, D108	DAN217
D201, D202	RB501V-40
D104	UDZS5.1B
D101, D102	UDZS6.8B

COILS AND FILTERS

L9101, L9501, L9504, L9811, L9812	ATL7002
L111-L114, L1601, L1602	QTL1013
L9102, L9103, L9502, L9503	QTL1013
L9506, L9507	QTL1013

CAPACITORS

C9510, C9511	CCSRCH100D50
C101-C114, C121-C123	CCSRCH101J50
C126-C128, C152-C154	CCSRCH101J50
C207, C208, C221, C222	CCSRCH101J50
C228, C229, C9160, C9201, C9202	CCSRCH101J50
C9101, C9102	CCSRCH220J50
C235, C9117	CCSRCH221J50
C9509	CCSRCH271J50
C9530, C9731, C9735	CCSRCH331J50
C9103, C9110, C9111, C9114, C9503	CCSRCH471J50
C9505, C9507, C9513, C9515, C9518	CCSRCH471J50
C9520, C9522, C9525, C9528, C9571	CCSRCH471J50
C9611-C9614, C9625, C9639, C9729	CCSRCH471J50
C9815, C9816	CCSRCH471J50
C9707, C9708, C9721, C9722	CCSRCH820J50
C130-C137, C146-C151, C305	CEAT100M50
C9207, C9208, C9523, C9526	CEAT100M50
C9105, C9106, C9108, C9116, C9516	CEAT101M10
C9551, C9792, C9812, C9814	CEAT101M10
C9740	CEAT220M25
C9205	CEAT221M6R3
C9112, C9529, C9769, C9770	CEAT2R2M50
C9713, C9714, C9727, C9728, C9739	CEAT330M25

Mark No.	Description	Part No.
C9765-C9768 C144, C145		CEAT330M25 CEAT3R3M50
C117, C118, C225, C226 C232, C233, C239 C155, C156 C115, C116, C234, C240 C9203, C9204, C9615-C9618, C9811		CEAT470M50 CEAT470M50 CEAT471M10 CEAT4R7M50 CEAT4R7M50
C9813 C271, C9703, C9704, C9717, C9718 C119, C120, C124, C125, C138 C141, C171, C172, C179, C180 C183, C199, C223, C224		CEAT4R7M50 CKSRBYB102K50 CKSRBYB103K50 CKSRBYB103K50 CKSRBYB103K50
C230, C231, C237, C238, C304 C9104, C9107, C9109, C9121, C9209 C9502, C9504, C9506, C9508, C9512 C9514, C9517, C9519, C9521, C9524 C9527, C9531, C9584, C9636, C9637		CKSRBYB103K50 CKSRBYB103K50 CKSRBYB103K50 CKSRBYB103K50 CKSRBYB103K50

Mark No.	Description	Part No.
Q651-Q654 Q701 Q51		2SC2878 2SC4793 KRC101M
D56, D601-D604, D631, D632 D651-D654, D752, D756 ⚠ D701, D702 D605, D606, D633, D634 D711		1SS133 1SS133 D5SBA20(B) MTZJ16A MTZJ22D
D58 D712 ⚠ D51-D55, D721-D724		MTZJ5.1A MTZJ5.1B S5688G

COILS AND FILTERS

⚠ L51 L751-L753, L761, L762	ATF7018 ATH1004
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SWITCHES AND RELAYS

RY751-RY753 ⚠ RY51	XSR3002 XSR3003
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CAPACITORS

C707, C708 ⚠ C51, C52 C703, C704 C701, C702 C607-C610, C634, C635	ACG1005 ACG7020 ACH7135 ACH7137 CCPUCH6R8K50
---	--

C657-C660 C615, C616, C638, C665, C666 C775, C776 C705, C706 C712	CCPUCH6R8K50 CEANP2R2M50 CEANP470M50 CEAT100M2A CEAT101M10
---	--

C611, C612, C636, C661, C662 C711 C53 C692 C54	CEAT101M16 CEAT101M35 CEAT102M16 CEAT221M10 CEAT470M25
--	--

C605, C606, C633, C655, C656 C751, C752, C755, C761, C762 C601, C602, C631, C651, C652 C691 C603, C604, C632, C653, C654	CEAT4R7M50 CFTYA104J50 CKPUYB102K50 CKPUYB102K50 CKPUYB331K50
--	---

C55-C57	CKPUYF103Z25
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RESISTORS

⚠ R51 ⚠ R52 ⚠ R751, R752, R755, R761, R762 ⚠ R753, R754, R756, R763, R764 ⚠ R711	RCN1080 RD1/2PM270J RD1/4PUF101J RS1LMF4R7J RS2LMF392J
--	--

⚠ R615, R616, R638, R665, R666 OtherResistors	XCN3001 RD1/4PU###J
--	------------------------

OTHERS

CN53(23P FFC CONNECTOR) CN702(6P CONNECTOR) 51(1P AC SOCKET) H51-H54, H701, H702(FUSE CLIP) ⚠ T51(SUB TRANS FORMER)	52045-2345 52147-0610 AKP1060 AKR7001 ATT7057
CN601(16P PLUG) CN51(AC INLET) KN51,KN601 (EARTH METAL FITTING) CN752(4P SPEAKER TERMINAL) CN751(6P SPEAKER TERMINAL)	KM200TA16 RKP1751 VNF1084 XKE3010 XKE3012

C9709-C9712, C9723-C9726 C9737, C9738, C9817 C140, C143, C1631, C1632 C173, C174, C9113, C9115, C9126 C9206, C9818		CKSRBYB103K50 CKSRBYB103K50 CKSRBYB104K16 CKSRBYB104K16 CKSRBYB104K16
C9701, C9702, C9715, C9716 C9736 C139, C142, C9626 C236 C184, C185, C9732		CKSRBYB222K50 CKSRBYB223K25 CKSRBYB223K50 CKSRBYB472K50 CKSRBYB473K25
C227, C9730		CKSRYP104Z25

RESISTORS

R9104 ⚠ R174, R175 OtherResistors	RS1/16S1802F RS1LMF101J RS1/16S###J
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OTHERS

CN9101 7P FFC CONNECTOR CN104 9P FFC CONNECTOR CN106 19P FFC CONNECTOR CN102 28P FFC CONNECTOR JA103, JA104 4P PIN JACK	52044-0745 52044-0945 52045-1945 52045-2845 AKB7048
---	---

JA105 6P PIN JACK CN101 16P SOCKET CN105 8P SOCKET X9501 (CRYSTAL RES. 27.0MHz) X9101 (CRYSTAL RES. 12.3MHz)	AKB7050 KP200TA16L KP200TA8L VSS1086 VSS1140
--	--

B AMP & PRIMARY ASSY

SEMICONDUCTORS

⚠ IC603 ⚠ IC701, IC702 ⚠ IC604-IC607 IC51 ⚠ IC601	AEK7009 AEK7020 AEK7022 NJM78M56FA PAC010A
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⚠ IC602 Q703 Q702 Q691, Q692 Q704	PAC011A 2SA1145 2SA1837 2SC1740S 2SC1845
---	--

Q605, Q606, Q633, Q655, Q656 Q601-Q604, Q631, Q632	2SC2240 2SC2878
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Mark No.	Description	Part No.
	701 7P CABLE HOLDER	XKP3047
	J21 20P JUMPER WIRE	D20PYY0715E
	J6 JUMPER WIRE	DB215NB0

C TRANS 2 ASSY SEMICONDUCTORS

⚠ IC851-IC853	AEK7012
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OTHERS

851	XKP3047
-----	---------

D TRANS 3 ASSY

TRANS3 ASSY has no service part.

E REGULATOR ASSY SEMICONDUCTORS

IC803, IC804	NJM78M05FA
IC801, IC805	NJM78M12FA
IC802	NJM79M12FA
Q801, Q803	KRA103M
Q802, Q804	KRC102M

D809, D810	MTZJ6.2A
⚠ D801-D804	S5688G

CAPACITORS

C808, C811	CEAT101M10
C805, C806, C813	CEAT101M16
C801, C802	CEAT222M25
C809	CEAT332M16
C803, C804, C807, C810, C812	CKPUYF103Z25

OTHERS

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

F HASHICETA ASSY

OTHERS

CN1001, CN1002(8P PLUG)	KM200TA8
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G BOARD TO BOARD ASSY

OTHERS

CN391 (11P PLUG)	KM200TA11
CN390 (13P PLUG)	KM200TA13

H AMP INPUT ASSY

OTHERS

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

I TRANS1 ASSY

TRANS1 ASSY has no service part.

J DIGITAL IN ASSY SEMICONDUCTORS

IC1901	TC74ACT151F
IC1903	TC74HCU04AF

COILS AND FILTERS

Mark No.	Description	Part No.
F1901-F1903		DTF1067
L1905		QTL1013

CAPACITORS

C1918	CCSRCH221J50
C1907, C1928	CCSRCH271J50
C1925	CCSRCH470J50
C1926	CCSRCH471J50
C1904, C1905, C1912	CEAT101M10

C1915	CKSRYB102K50
C1906, C1919, C1920, C1923, C1929	CKSRYB103K50
C1902, C1908, C1909, C1921, C1922	CKSRYB104K25

RESISTORS

OtherResistors	RS1/16S###J
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OTHERS

CN1901(7P FFC CONNECTOR)	52045-0745
JA1902 (REMOTE RECEIVER UNIT)	JFJ4000-010020
JA1907 (1P PIN JACK)	VKB1077

K KAWA ASSY SEMICONDUCTORS

IC5001	BU4094BCF
Q5001	2SC1740S
Q5020-Q5022	DTC124EK
Q5002	DTC143EK
D5001, D5002	1SS355

COILS AND FILTERS

L5001	QTL1013
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CAPACITORS

C5004-C5007	CCSRCH101J50
C5012	CCSRCH471J50
C5001, C5002	CEAT100M50
C5003	CEAT101M16
C5009	CKSRYB103K50

C5011	CKSRYB104K16
C5010	CKSRYF105Z10

RESISTORS

All Resistors	RS1/16S###J
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OTHERS

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

5001 (SCREW TERMINAL)	VNE1948
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L VIDEO ASSY SEMICONDUCTORS

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

D303, D304	UDZS6.2B
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CAPACITORS

C347	CCSRCH470J50
C307-C310, C312, C314, C338	CEAT470M25

Mark No.	Description	Part No.	Mark No.	Description	Part No.
C1360, C302 C339, C340 C304-C306		CKSRYB103K50 CKSRYB104K25 CKSRYB221K50	D407, D408		RB501V-40
C333 C311, C313		CKSRYB331K50 CKSRYB473K25	COILS AND FILTERS		
RESISTORS			L401		LFEA2R2J
⚠ R313, R316 OtherResistors		RS3LMF560J RS1/16S###J	SWITCHESANDRELAYS		
OTHERS			S451-S468, S476		ASG1051
CN303 (7P CONNECTOR) CN305 (6P PIN JACK) CN301 (13P SOCKET) CN302 (6P SOCKET)		52044-0745 AKB7123 KP200TA13L KP200TA6L	CAPACITORS		
M 6CH IN ASSY SEMICONDUCTORS			C420 (220mF/35V) C404 (0.047F/5.5V) C511 C442 C402		ACH7101 ACH7132 CCSRCH471J50 CEAL470M10 CEAT221M6R3
IC302, IC303		NJM4558MD	C409, C410 C412 C405 C451-C453, C472, C492, C495 C401, C403, C411, C419, C441		CEAT2R2M50 CEAT470M50 CEAT471M6R3 CKSRYB102K50 CKSRYB103K50
CAPACITORS			C531 C408, C416, C418, C471 C406, C407		CKSRYB103K50 CKSRYB104K16 CKSRYB473K16
C319, C320, C327, C328 C342-C345 C321, C324, C331, C332 C316, C322, C323, C329, C330 C317, C318, C325, C326		CCSRCH101J50 CCSRCH101J50 CEAT4R7M50 CKSRYB103K50 CKSRYB221K50	RESISTORS		
RESISTORS			All Resistors		RS1/16S###J
All Resistors		RS1/16S###J	OTHERS		
OTHERS			471 (4P CABLE HOLDER) 404 (7P CABLE HOLDER) CN401 (17P FFC CONNCTOR) CN402 (28P FFC CONNCTOR) V401 (FL TUBE)		51063-0405 51063-0705 52044-1745 52044-2845 XAV3013
CN307 (9P CONNECTOR) CN309 (6P PIN JACK)		52044-0945 AKB7087	401 (REMOTE CONTROL UNIT) J41 (4P JUMPER WIRE) J42 (7P JUMPER WIRE) X401 CERAMIC RESO.(7.2MHz)		GP1U27X D15A04-100-2651 D15A07-075-2651 ASS7039
N S.VIDEO ASSY SEMICONDUCTORS			P R.ENCODER ASSY SWITCHESANDRELAYS		
IC351, IC352 D351-D354		NJM2296M 1SS355	S511 S513 (ROTARY ENCODER) S512 (ROTARY ENCODER)		ASG1051 XSX3005 XSX3006
CAPACITORS			OTHERS		
C375, C376 C352, C355, C358, C361-C363 C366 C372, C373, C378 C351, C353, C354, C356, C357		CCSRCH470J50 CEAT470M25 CEAT470M25 CKSRYB103K50 CKSRYB104K25	511 (7P CABLE HOLDER)		51063-0705
C359, C367 C364, C365, C368-C371		CKSRYB104K25 CKSRYB221K50	Q POWER SW ASSY SEMICONDUCTORS		
RESISTORS			D501		BR3371XJ30A
All Resistors		RS1/16S###J	SWITCHESANDRELAYS		
OTHERS			S501		ASG1051
CN353 (4Px2 MINI DIN SOCKET) CN352 (4Px3 MINI DIN SOCKET) CN351 (11P SOCKET) JA351 (REMOTE JACK)		AKP7020 AKP7043 KP200TA11L RKN1004	RESISTORS		
O FRONT ASSY SEMICONDUCTORS			All Resistors		RS1/16S###J
IC401 Q401, Q402, Q442, Q471 Q403, Q441 D406, D410, D442 D403, D405		PDG268B DTA124EK DTC143EK 1SS355 DAN217	OTHERS		
D401, D404		DAP202K	501(CABLEB HOLDER 4P)		51063-0405
U H.P. ASSY SEMICONDUCTORS			CAPACITORS		
			Q1551, Q1552		2SC3326

Mark No.	Description	Part No.
C1554, C1557		CCSRCH471J50
C1553, C1556		CKSRYB103K50
C1555, C1558		CKSRYB104K16
C1551, C1552		CKSRYB223K50

RESISTORS

⚠ R1553, R1554	RS1LMF471J
⚠ R1551, R1552	RS2LMF331J
Other Resistors	RS1/16S###J

OTHERS

1551 (6P CABLE HOLDER)	51048-0600
JA1551 (HEADPHONE JACK)	RKB1014
KN1551 (EARTH METAL FITTING)	VNF1084
J47	D20PYY0630E

X FM/AM TUNER MODULE

SEMICONDUCTORS

IC201	BA1451F
IC202	LC72131MD
Q201, Q204, Q205	2SC2412K
Q202	DTA124ES
Q203	DTC124EK
D201	1SS133
D202	MTZJ5.1C

COILS AND FILTERS

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

CAPACITORS

C206	CCSRCH100D50
C212, C213, C226, C233-C235	CCSRCH101J50
C240	CCSRCH101J50
C231, C232	CCSRCH150J50
C223	CEAT100M50
C229	CEAT101M10
C224	CEAT1R0M50
C227	CEAT220M25
C241	CEAT2R2M50
C243	CEAT330M16
C228	CEAT3R3M50
C237	CEAT470M10
C211	CEJA1R0M50
C210	CEJA470M16
C204, C238, C602	CKSRYB102K50
C101, C102, C208, C220, C239	CKSRYB103K50
C242, C601	CKSRYB103K50
C216, C217, C225	CKSRYB153K50
C201, C205, C209, C214, C230	CKSRYB223K50
C236, C603	CKSRYB223K50
C221	CKSRYB224K10
C202, C222	CKSRYB473K16
C215	CKSRYB681K50

RESISTORS

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

Mark No.	Description	Part No.
R104		RS1/10S391J
Other Resistors		RS1/16S###J

OTHERS

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

6. ADJUSTMENT



A Notice) Even if it removes TUNER, other functions operate.

■ 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 \pm 50mV.

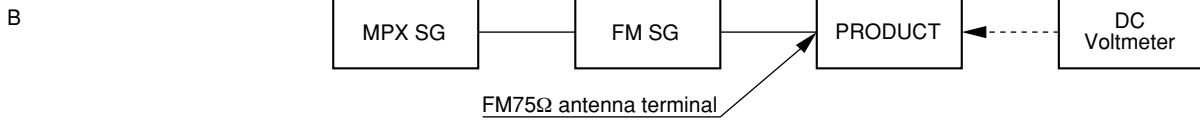
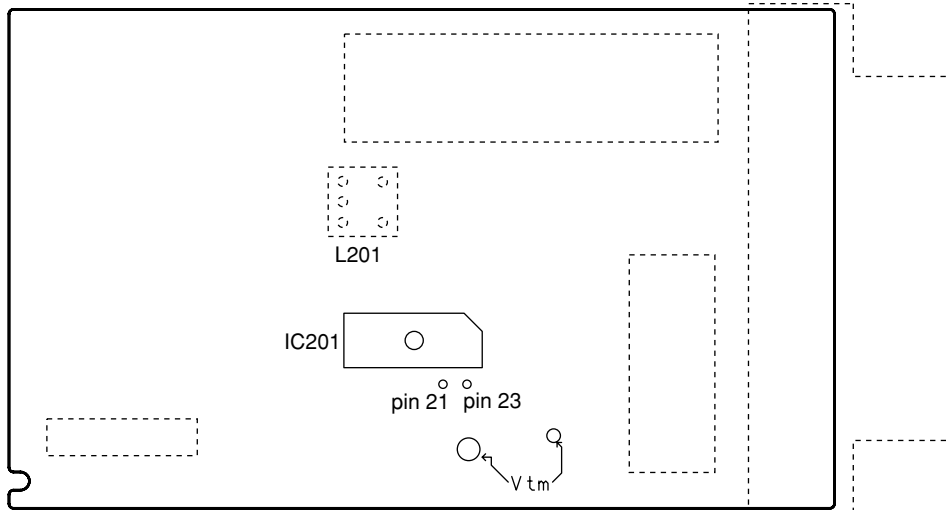


Fig.1 Adjustment Wiring Diagram

U FM/AM TUNER MODULE



SIDE B

Fig.2 Adjustment Point

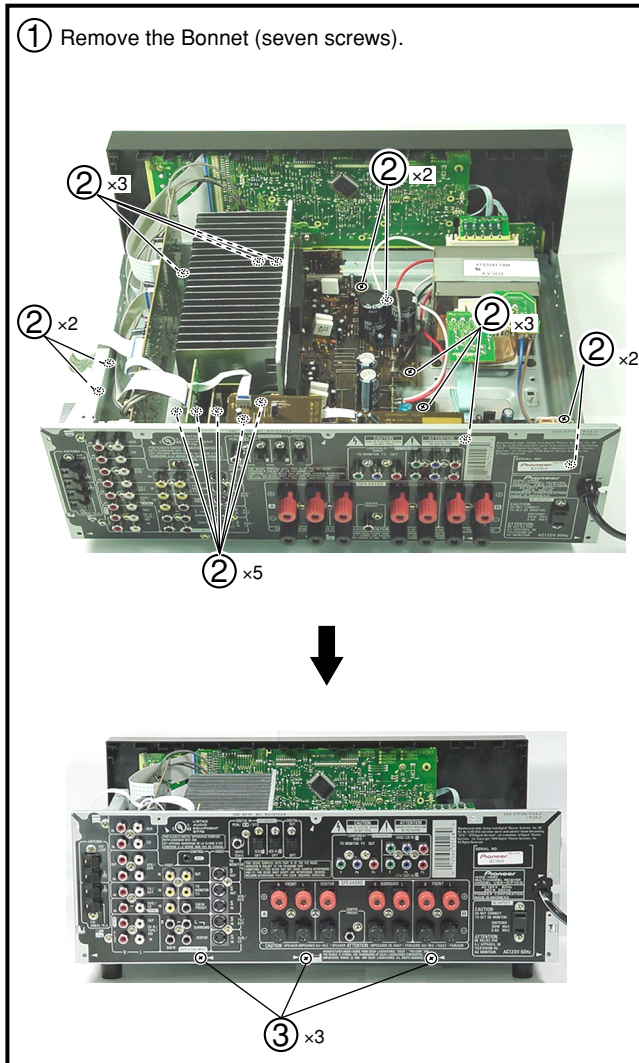
7. GENERAL INFORMATION

7.1 DISASSEMBLY and DIAGNOSI

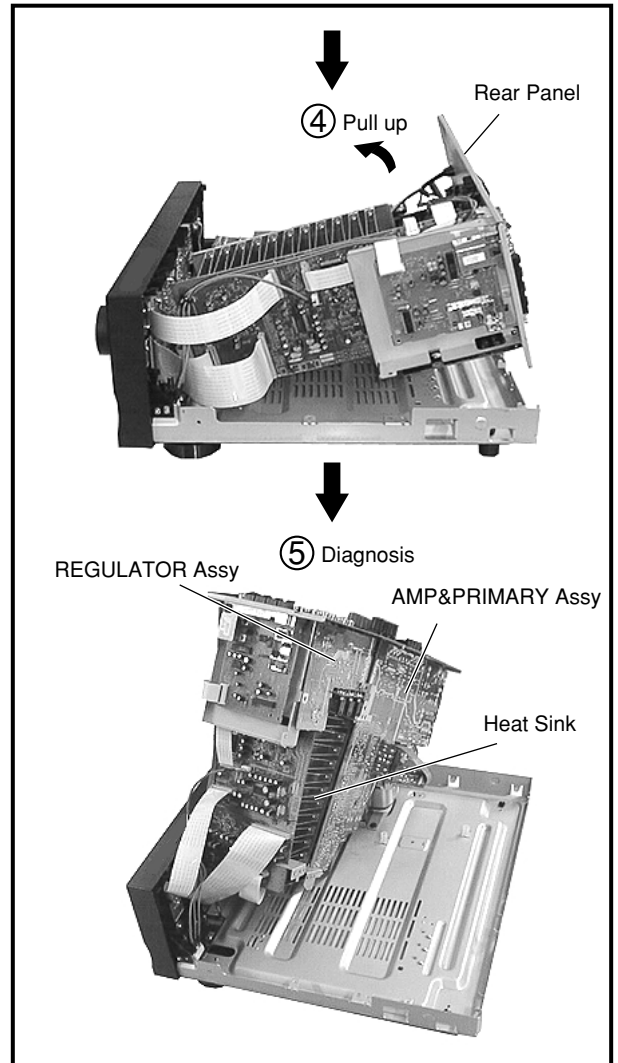
7.1.1 DISASSEMBLY and PCB LOCATION

Disassembly

① Remove the Bonnet (seven screws).



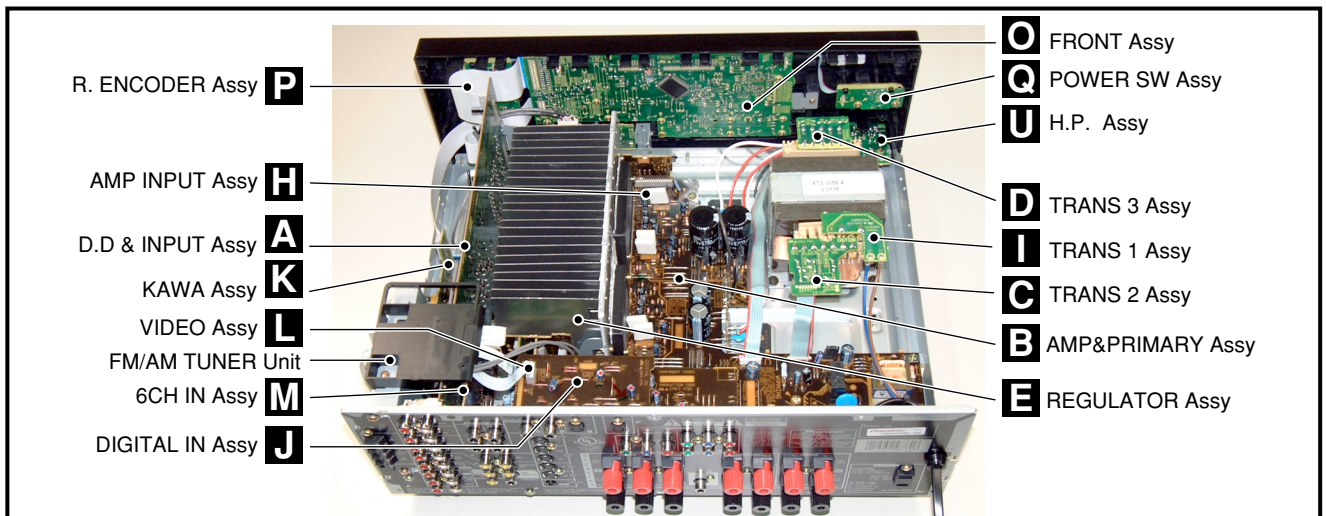
Note : This photograph shows other models. However, the work method is the same.



Note : If a speaker and the screw of a rear panel are removed, a set will stop moving. Even if it removes TUNER Unit, it is uninfuential in operation of those other than TUNER Unit.

PCB Location

NOTE : This photograph is VSX-D711



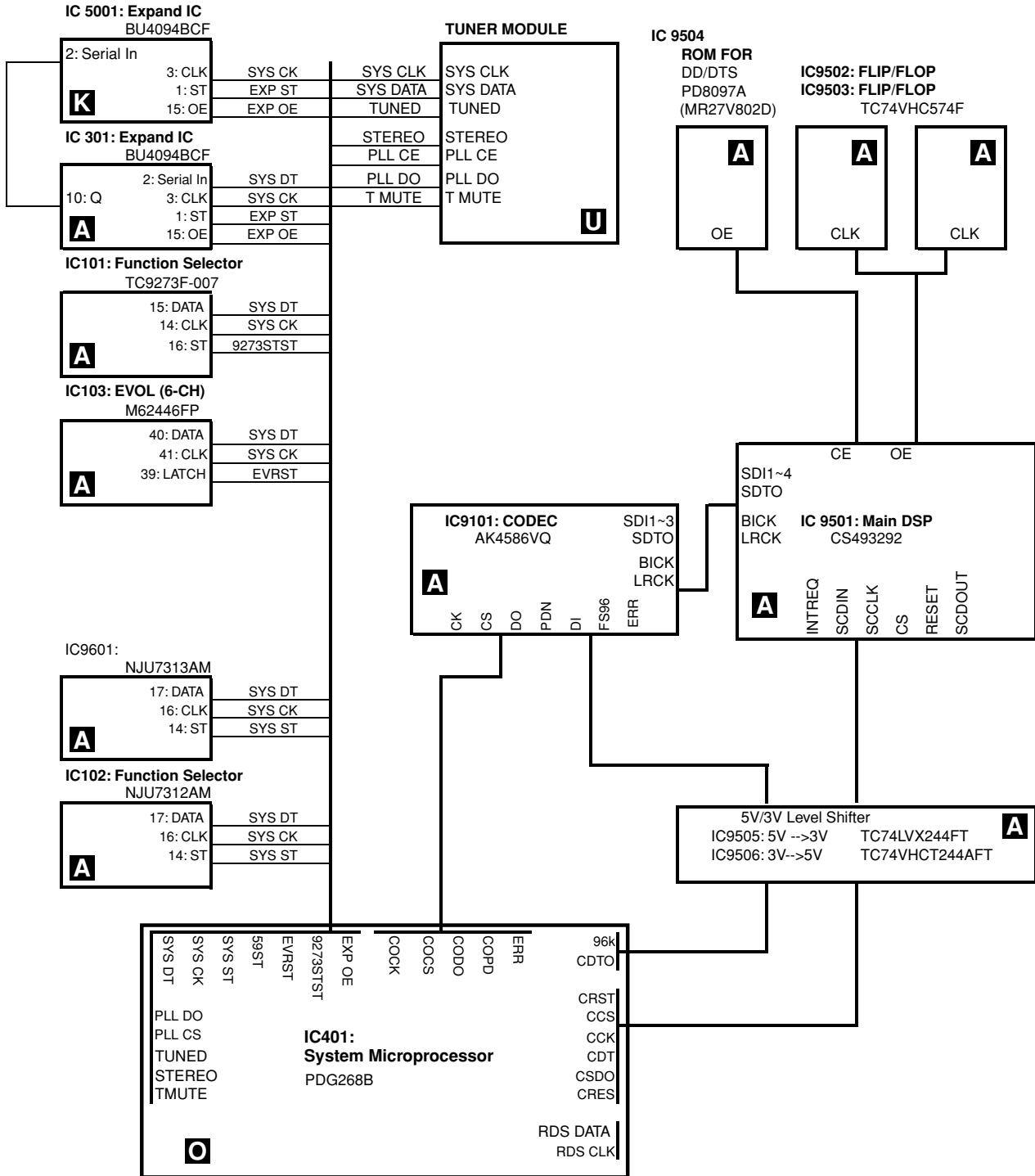
7.1.2 U-COM BLOCKDIAGRAM

A

B

C

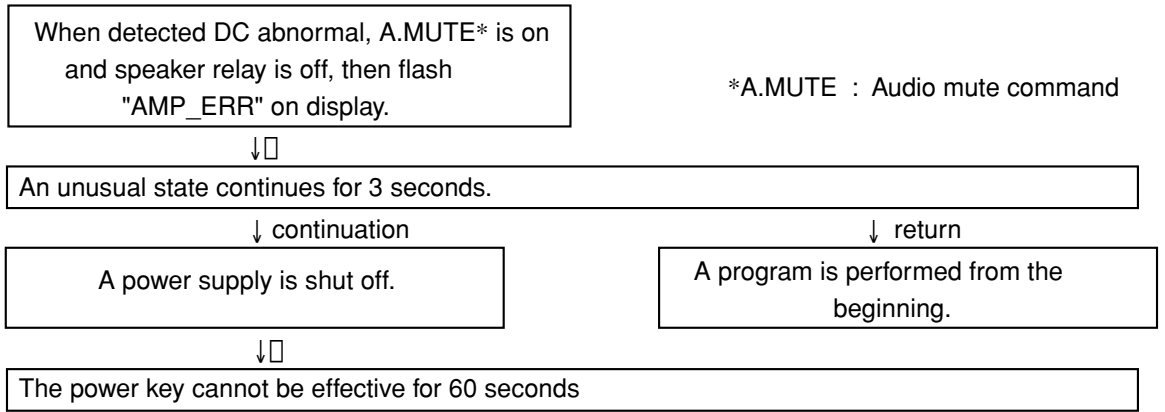
D



7.1.3 PROTECTION CIRCUIT

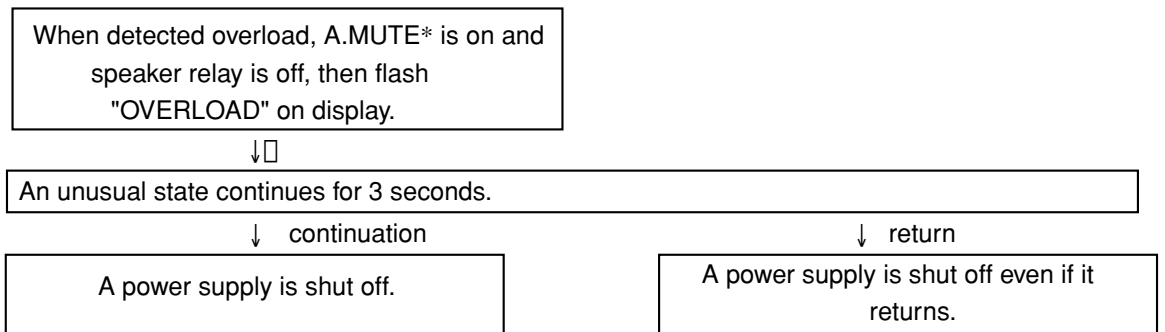
1. DC abnormal detection

It processes more preferentially than overload detection.



If the AC plug is pulled off within 60 sec, and then it is plugged in again, the unit will be reset for 60 se

2. Overload detection



7.1.4 POWER ON SEQUENCE

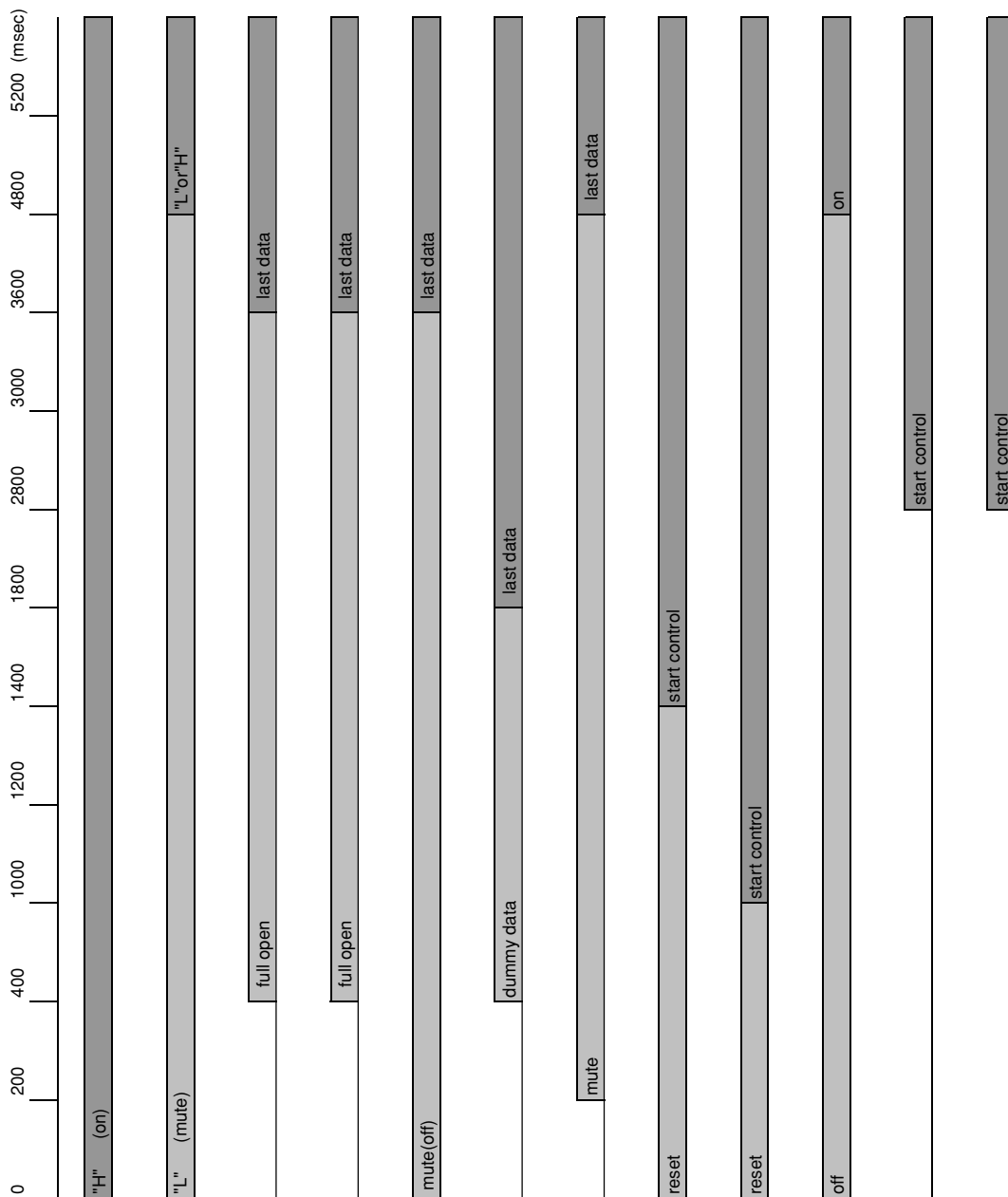
A

B

C

D

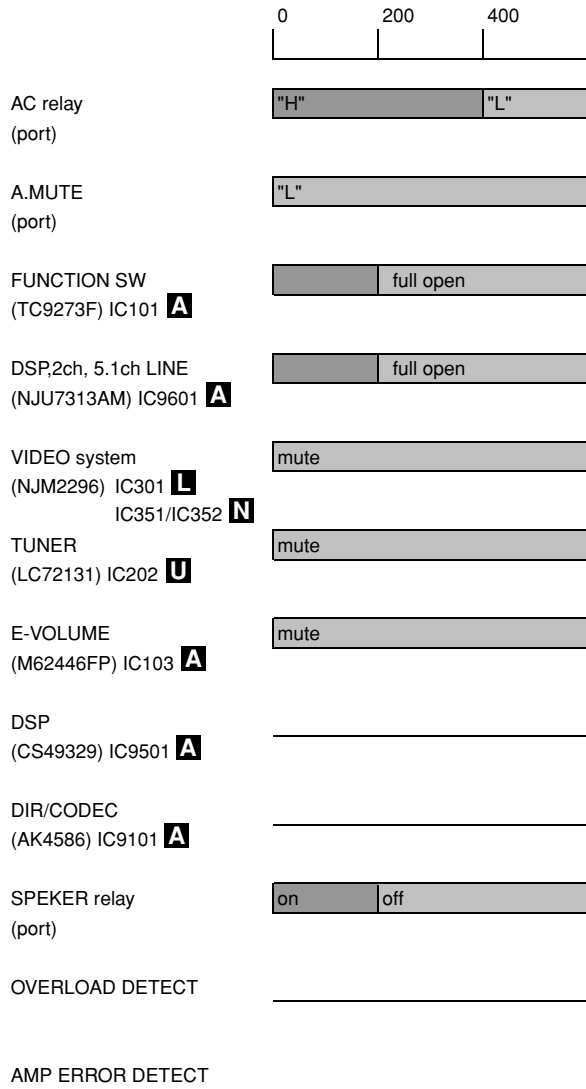
POWER ON SEQUENCE



- AC relay (port)
- A.MUTE (port)
- FUNCTION SW (TC9273F) IC101 **A**
- DSP2ch, 5.1ch LINE (NJU7313AM) IC9601 **A**
- VIDEO system (NJM2296) IC301 **L**
IC351/IC352 **N**
- TUNER (LC72131) IC202 **U**
- E-VOLUME (M62446FP) IC103 **A**
- DSP (CS49329) IC9501 **A**
- DIR/CODEC (AK4586) IC9101 **A**
- SPEAKER relay
- OVERLOAD DETECT
- AMP ERROR DETECT

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.

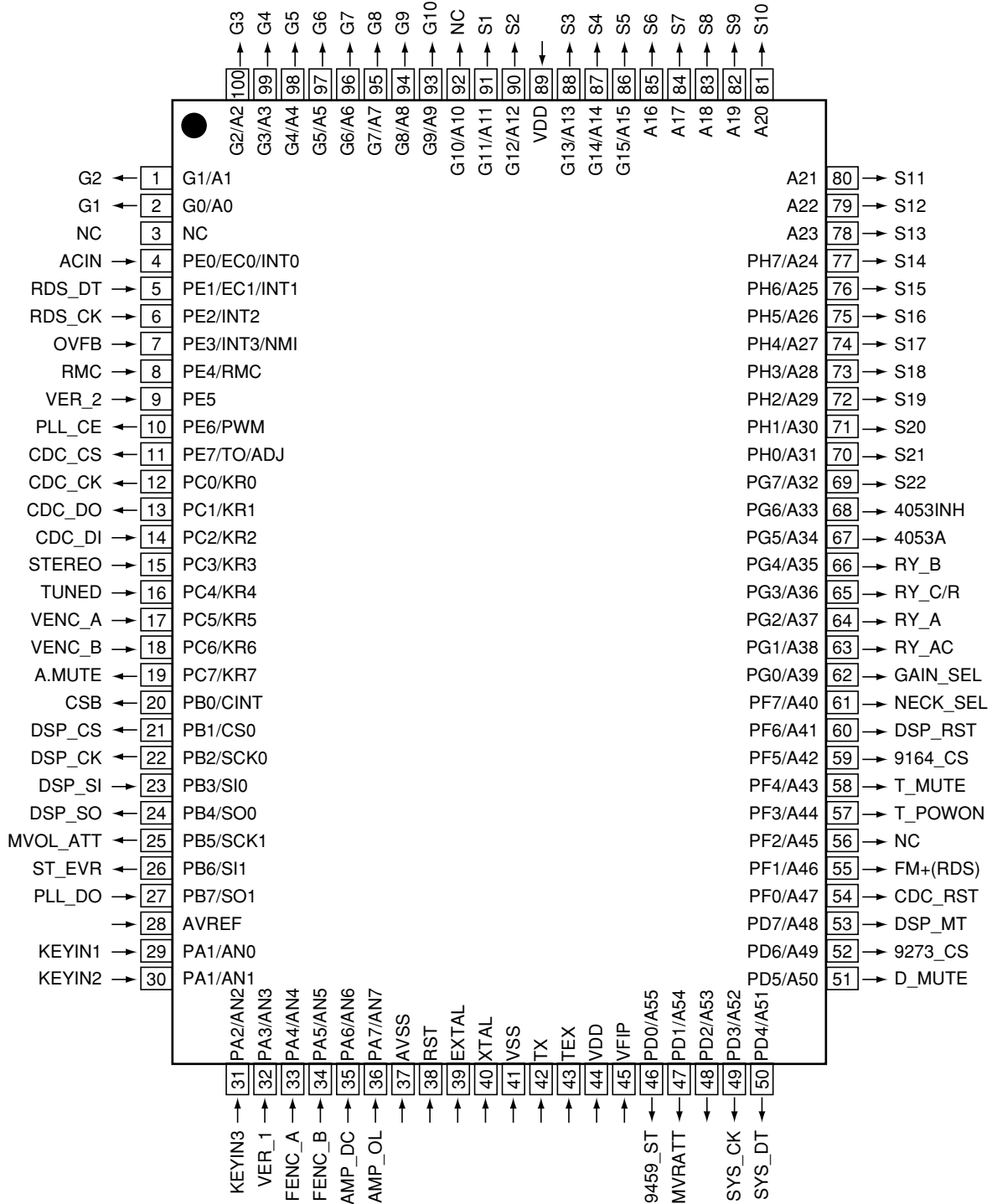
• List of IC

PDG268A, AK4586VQ, BD3812F, NJU7312AM, PD8097A, AK4382

■ PDG268A (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

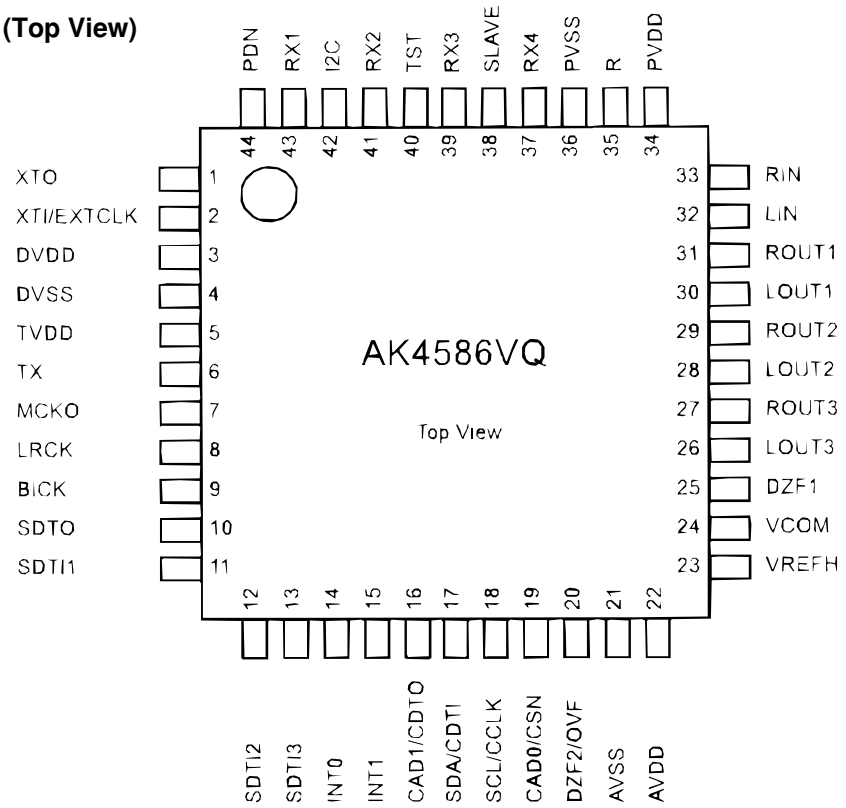
• Pin Function

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	

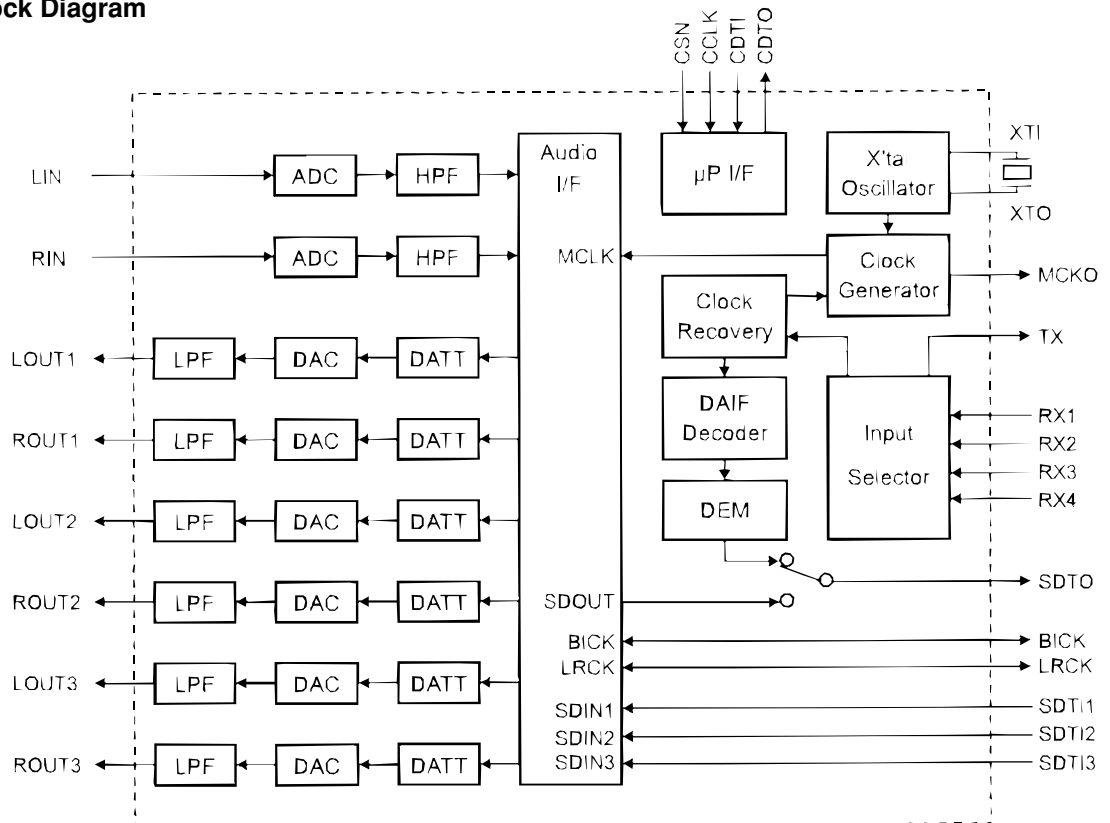
AK4586VQ (DD & INPUT ASSY : IC9101)

• 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.

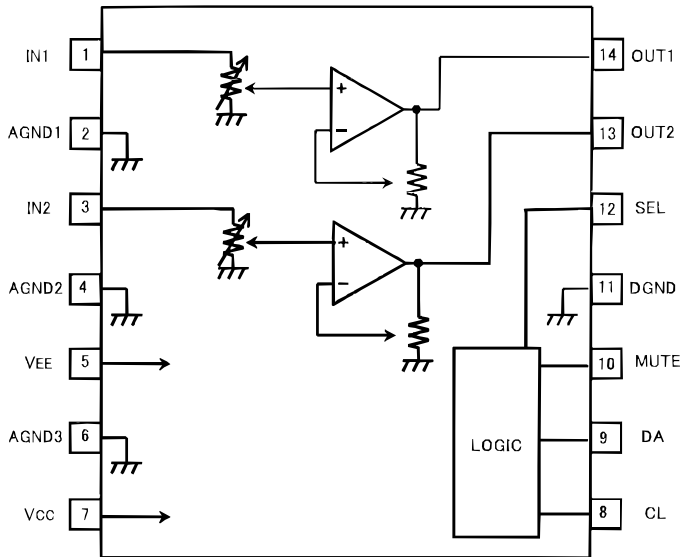
Notes:

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**



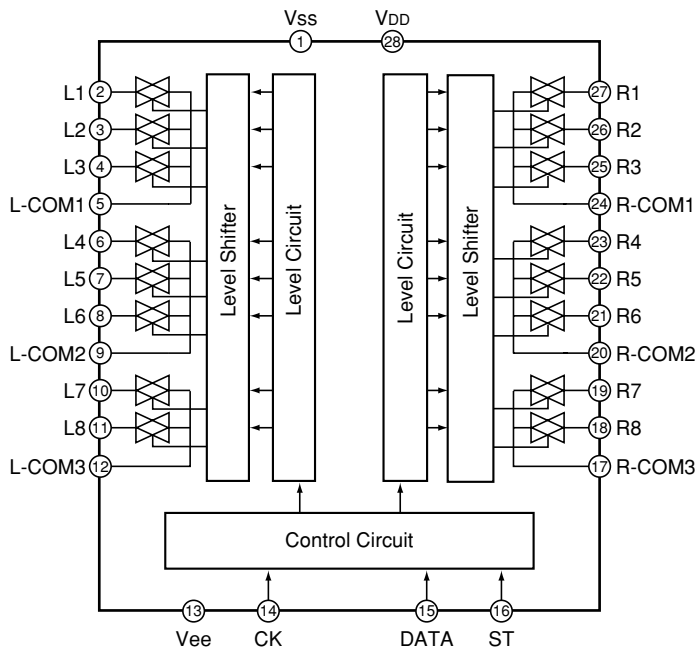
• **Pin Function**

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**



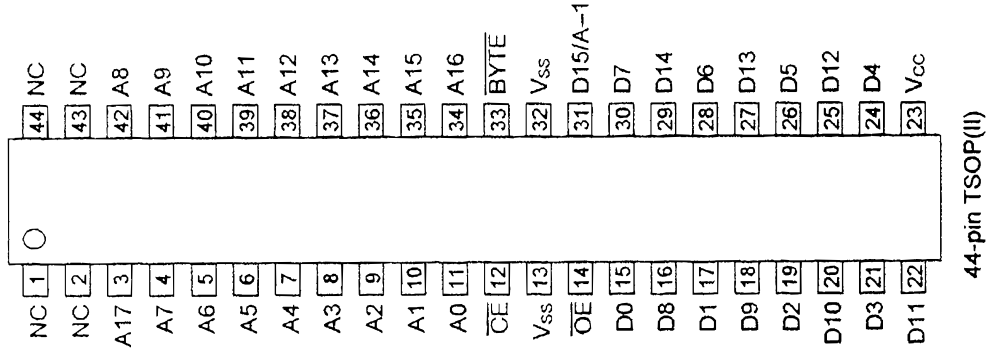
• **Pin Function**

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

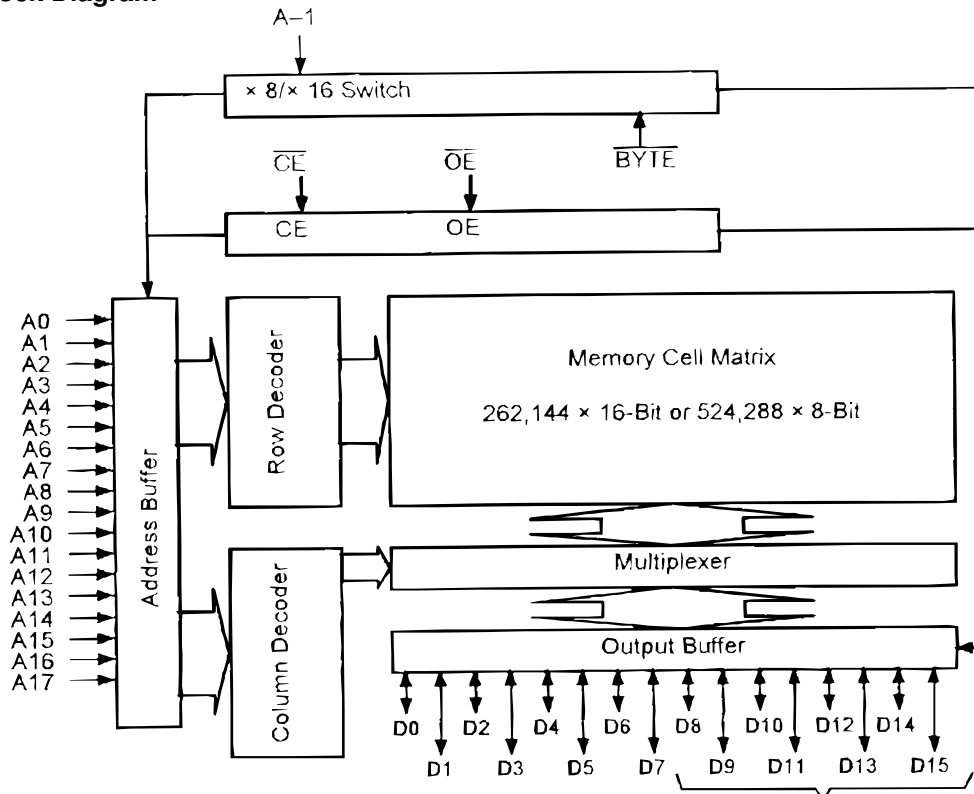
■ PD8097A (D.D & INPUT ASSY : IC9504)

• 4Mb P2ROM

■ Pin Arrangement (Top View)



■ Block Diagram



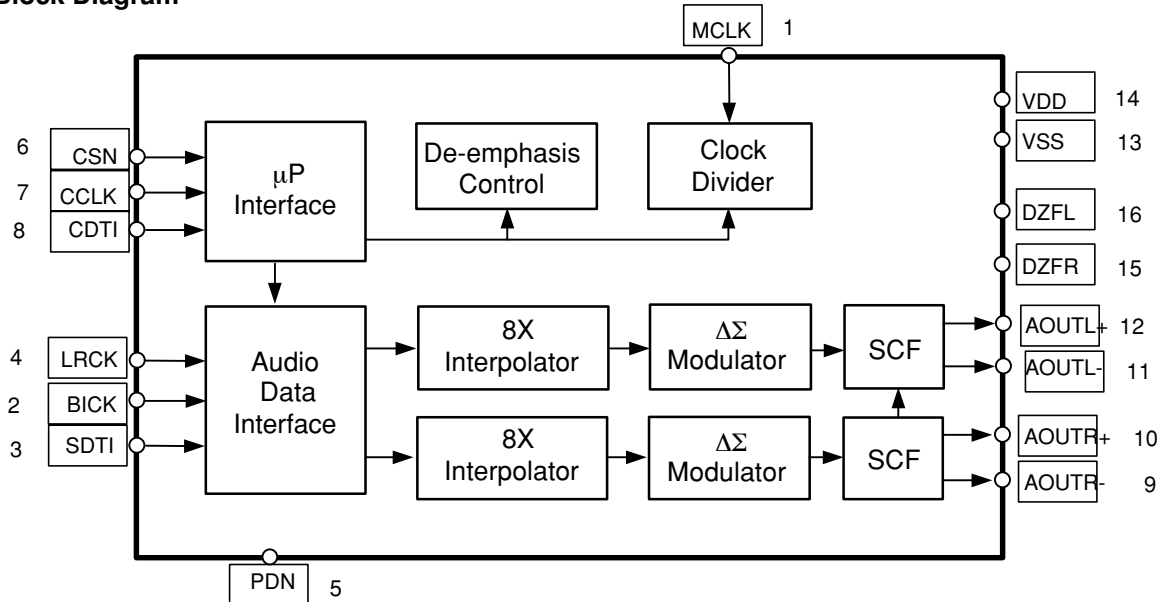
In 8-bit output mode, these pins are placed in a high-Z state and pin D15 functions as the A-1 address pin.

AK4382AVT (DD & INPUT ASSY : IC9102)

• D/A Converter IC

A

Block Diagram



B

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 at $\bar{L}1$, 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

C

D

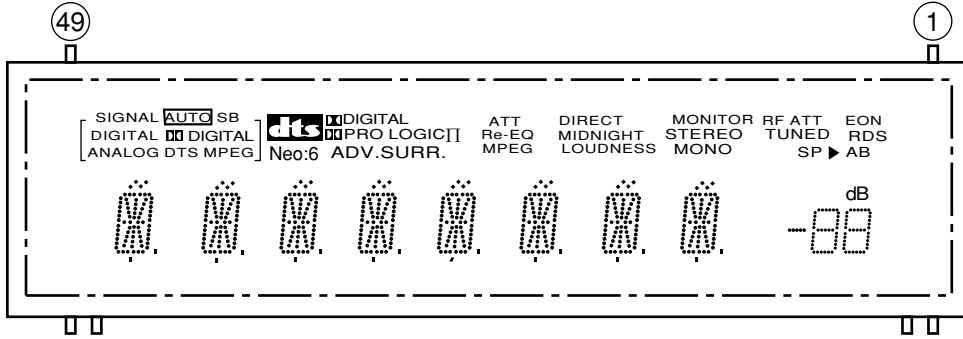
Note: All input pins should not be left floating.

7.2.2 DISPLAY

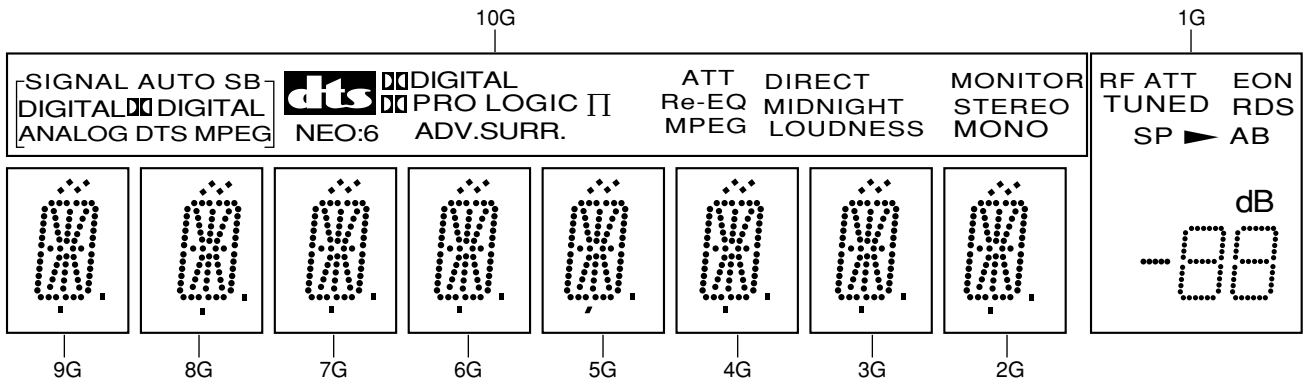
■ XAV3013 (FRONT ASSY : V401)

• FL DISPLAY

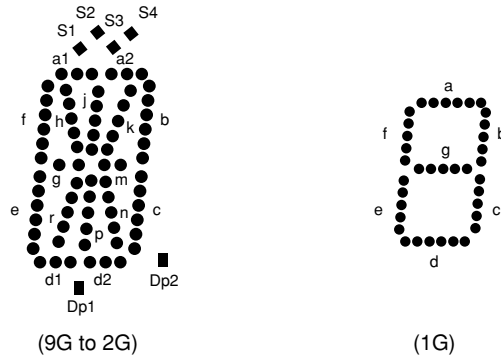
• Pin Assignment



• 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	

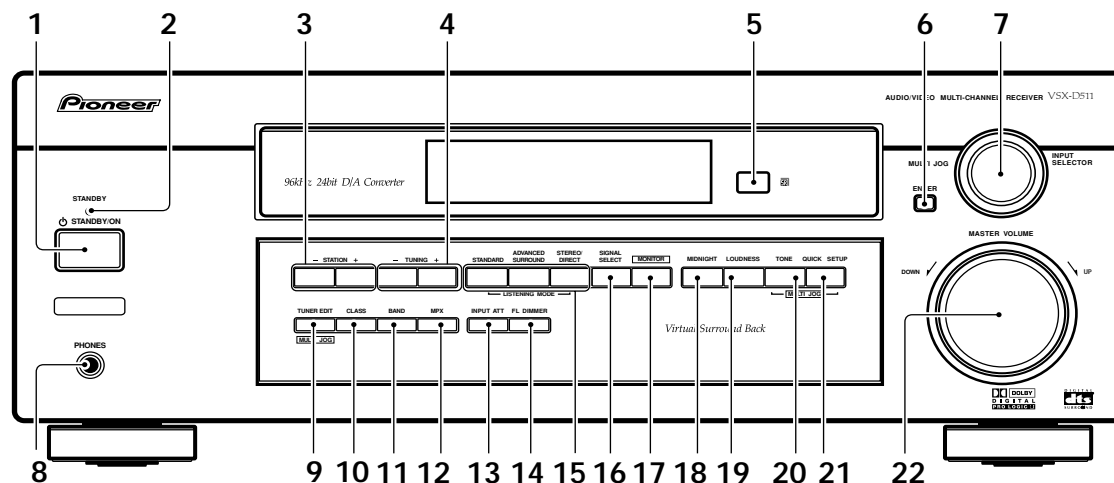
- NOTE
- 1) F1, F2..... Filament
 - 2) NP..... No pin
 - 3) NX..... No extend pin
 - 4) DL..... Datum Line
 - 5) 1G to 10G..... Grid
 - 6) Field of vision is a minimum of 21.8° from the lower side.

• 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	dts	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

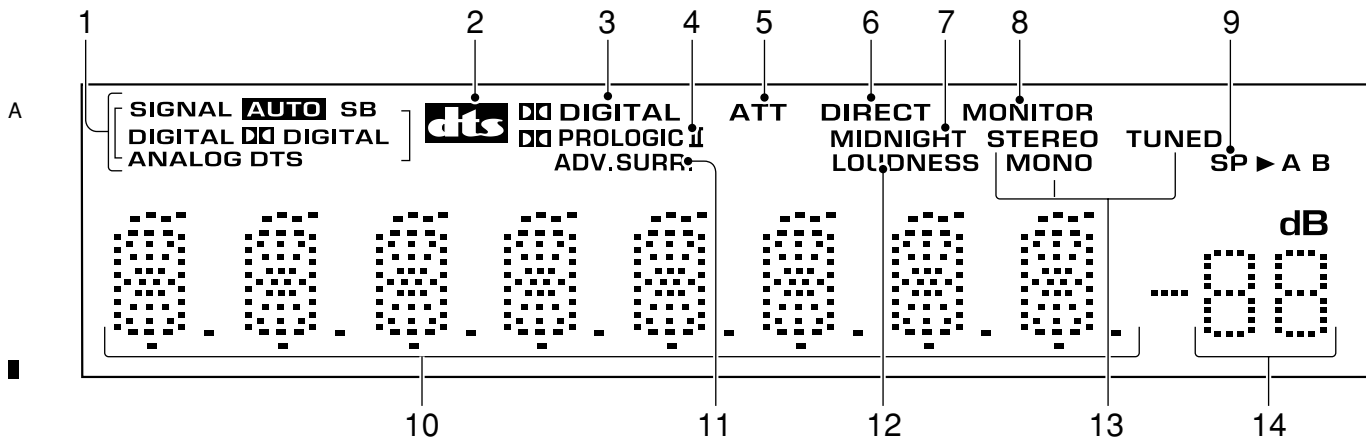
8. PANEL FACILITIES

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.
- 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:

A AUTO

Lights when AUTO signal select is on

B SB

Depending on the source, this lights when a signal with surround back channel encoding is detected.

DIGITAL

Lights when a digital audio signal is detected.

2 DIGITAL

Lights when a Dolby Digital encoded signal is detected.

ANALOG

Lights when an analog signal is detected.

DTS

Lights when a source with DTS encoded 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 2 DIGITAL

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

4 2 PRO LOGIC II

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

5 ATT

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

6 DIRECT

Lights when source direct playback is in use. This function bypasses all tone, balance, Advanced surround, and Dolby Surround effects.

7 MIDNIGHT

Lights during Midnight listening.

8 MONITOR

Lights when MONITOR is selected

9 Speaker indicator

Shows the speaker system currently in use.

10 Character display

11 ADV. SURR (Advanced Surround)

Lights when one of the Advanced Surround modes has been 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.

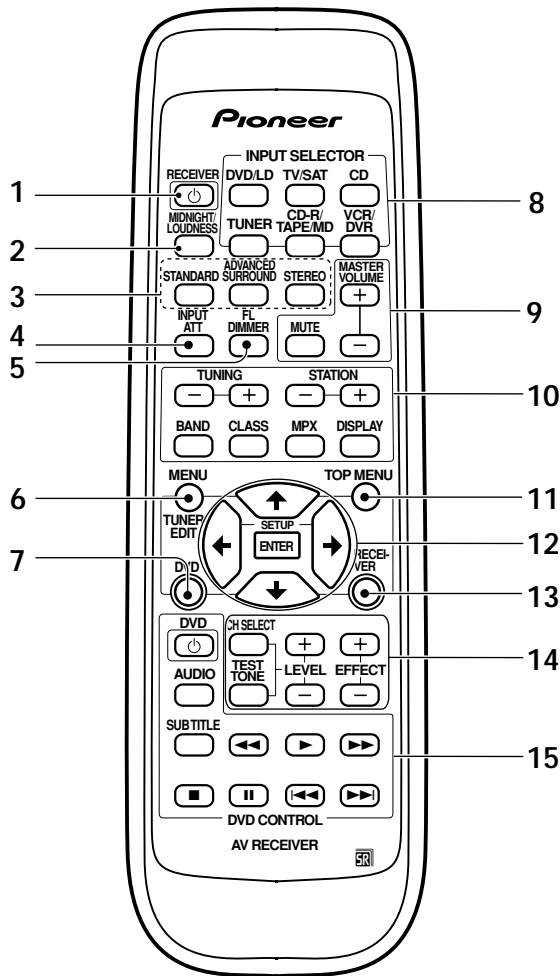
14 Master volume level

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



Depending on your level settings 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/DIRECT (pages 24–25)
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) (pages 35–36)
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.

The DVD controls on the remote control (**TOP MENU**, **MENU**, and **ENTER/SETUP** buttons) can only be used for DVD control after pressing **DVD** 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.

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.

15 DVD CONTROL buttons

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

Rear Panel

