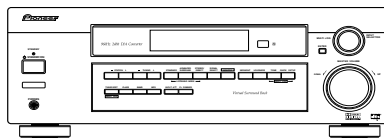


Service Manual



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.

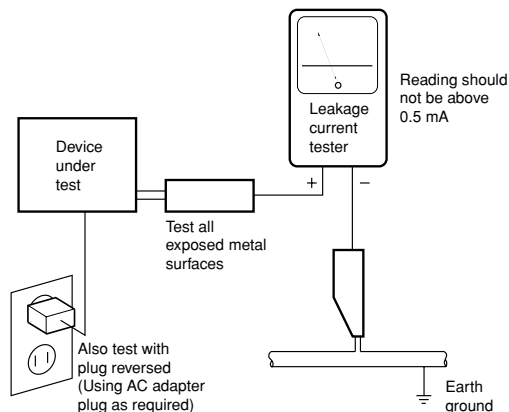
(FOR USA MODEL ONLY)

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

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

[Important symbols for good services]

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

1. Product safety



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

2. Adjustments



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

3. Cleaning



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

4. Shipping mode and shipping screws



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

5. Lubricants, glues, and replacement parts



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

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1. SPECIFICATIONS

Amplifier Section

Continuous average power output of 100 watts* per channel, min., at 8 ohms, from 20 Hz to 20,000 Hz with no more than 0.2 %** 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 k Ω

Frequency Response

CD, VCR/DVR, CD-R/TAPE/MD, DVD/LD, TV/SAT
..... 5 Hz to 100,000 Hz ± 0.5 dB

Output (Level/Impedance)

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

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 $\Rightarrow$ MONITOR 5 Hz to 7 MHz ± 0.5 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.

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



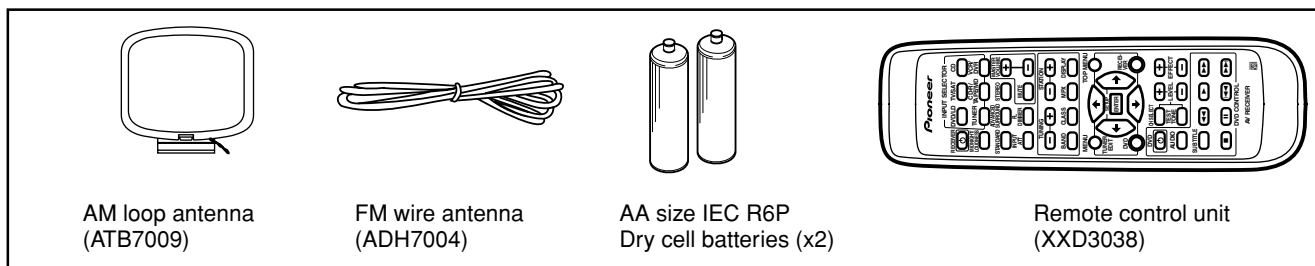
Note

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.

Accessories

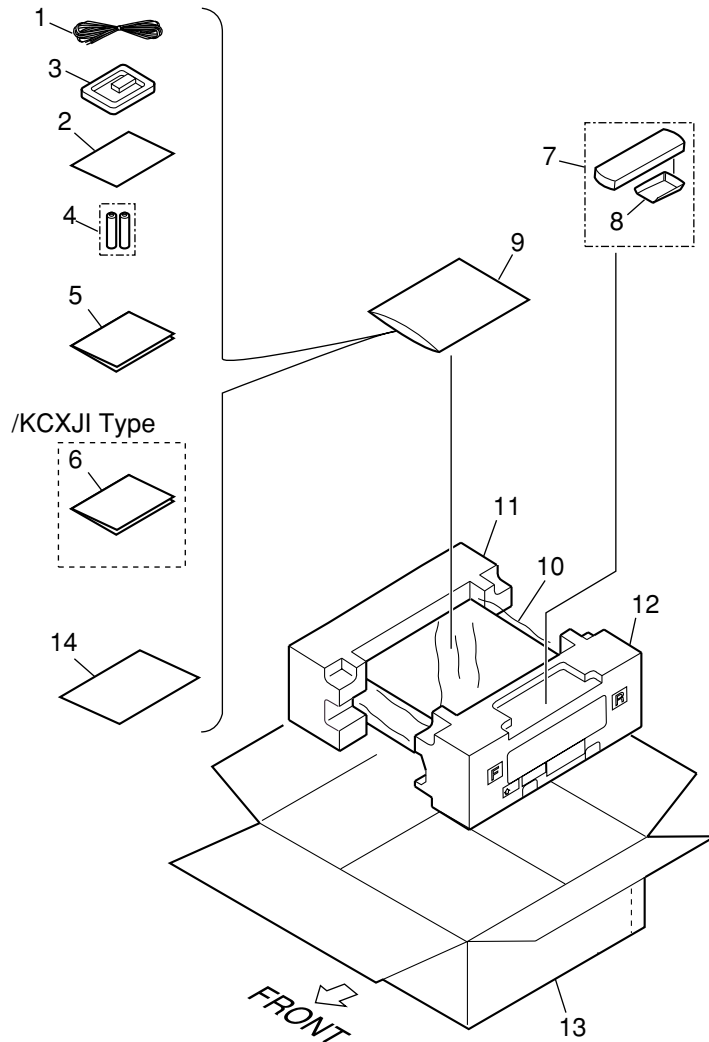


2. EXPLODED VIEWS AND PARTS LIST

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 ∇ 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)	XRB3019	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

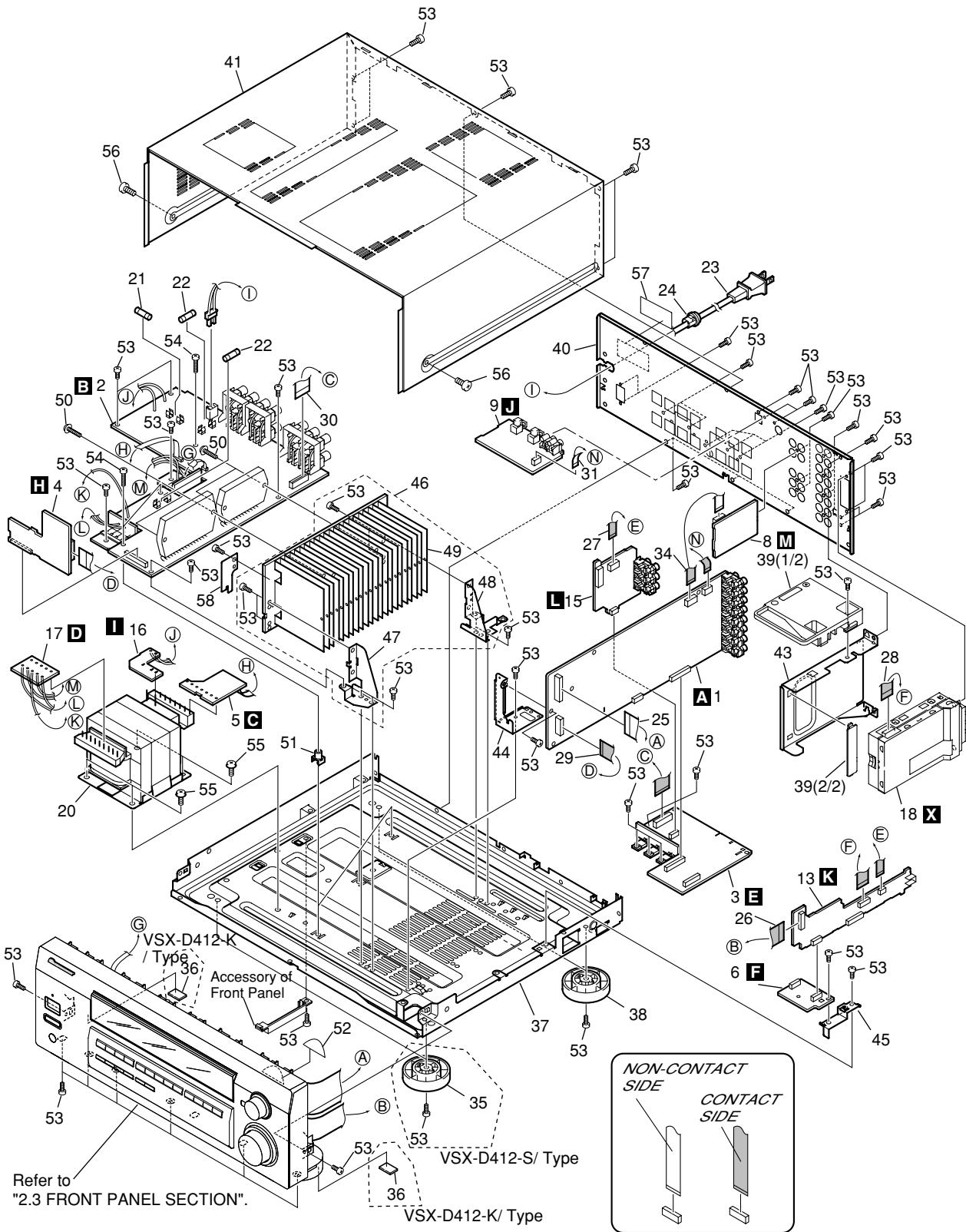
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EXTERIOR SECTION parts List

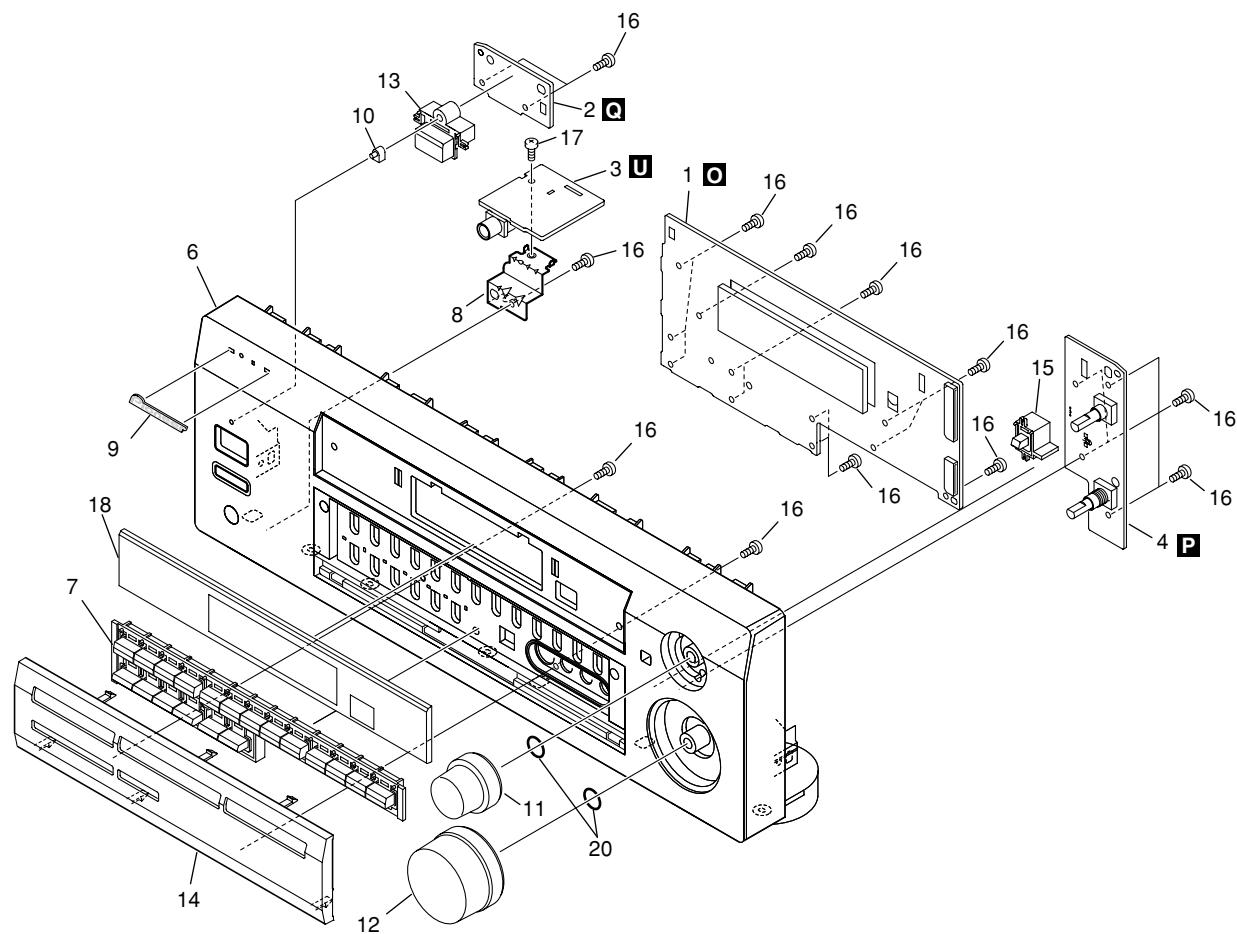
Mark No.	Description	Part No.	Mark No.	Description	Part No.	
1	D.D & INPUT ASSY	XWX3044	30	23P F•F•C/30V (J36)	XDD3102	A
2	AMP & PRIMAR ASSY	XWZ3532		AMP CN53 - REGULATOR CN801		
3	REGULATOR ASSY	XWZ3544	31	7P F•F•C/30V (J37)	XDD3103	
4	AMP INPUT ASSY	XWZ3547		DD CN9101 - DIGITAL IN CN1901		
5	TRANS2 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	B
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	C
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	D
	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



FRONT PANEL SECTION parts List

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

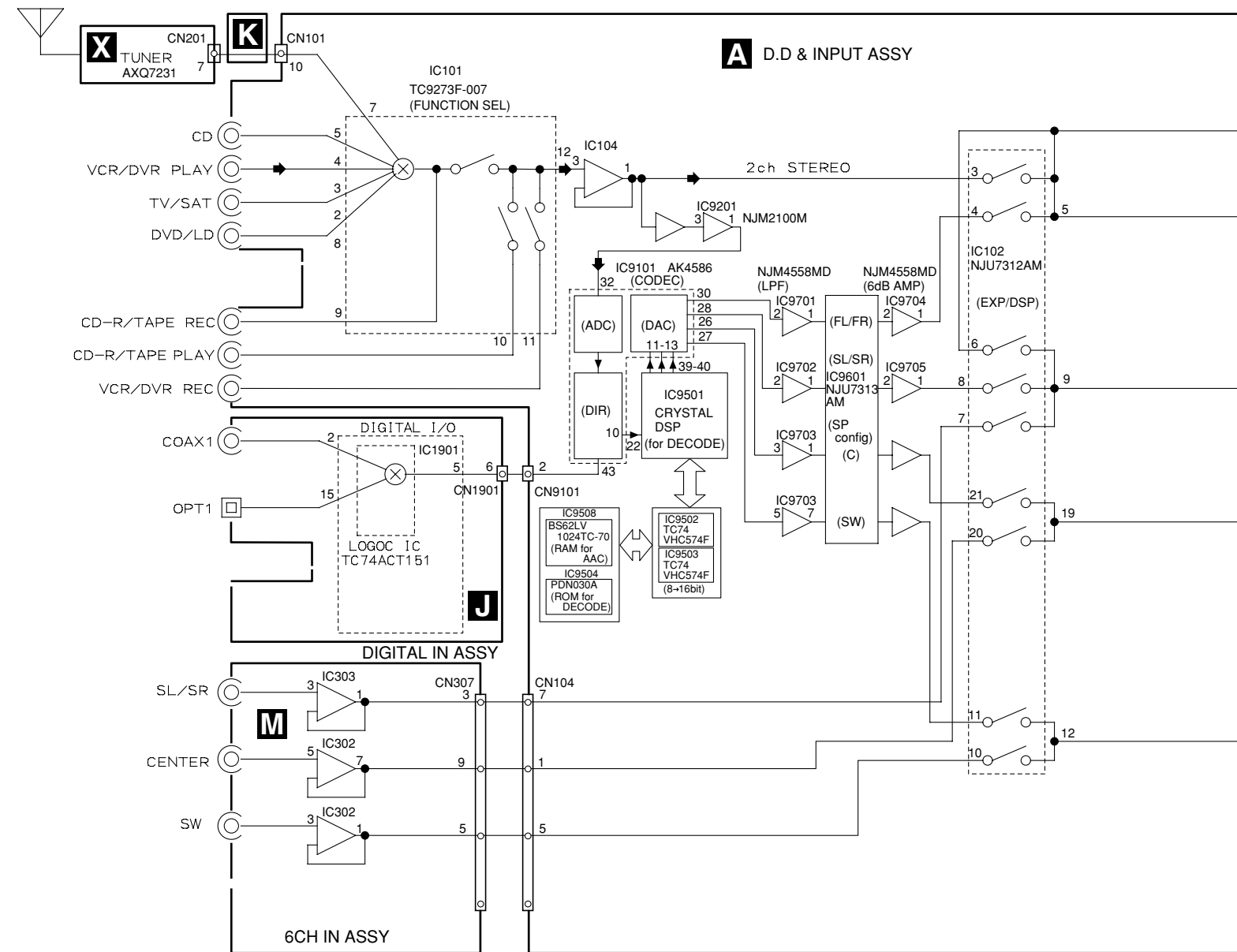
(2) CONTRAST TABLE

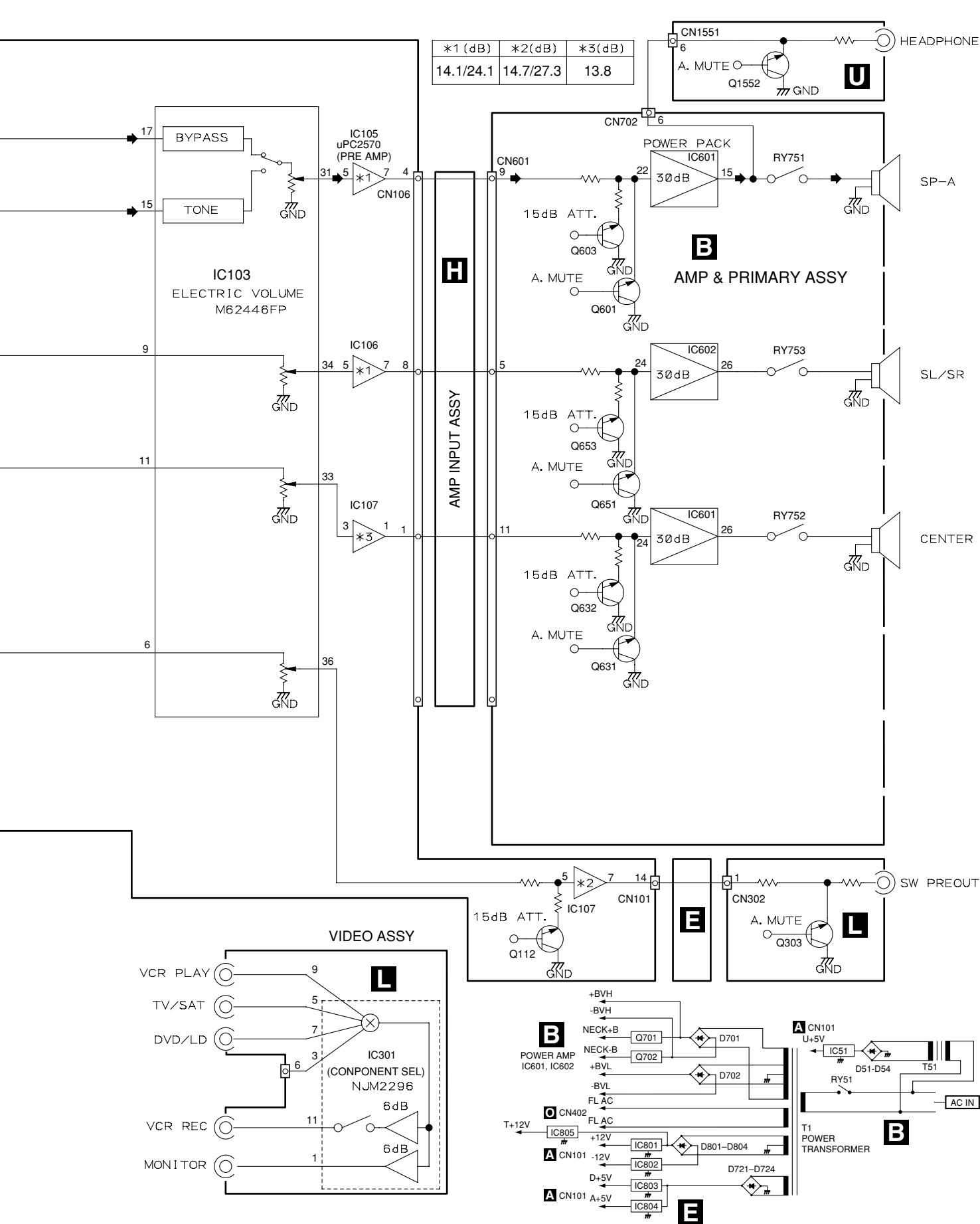
VSX-D412-K/KUXJI, /KCXJI and VSX-D412-S/KUXJI, /KCXJI are constructed the same except for the following :

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





3.2 OVERALL WIRING CONNECTION DIAGRAM

A

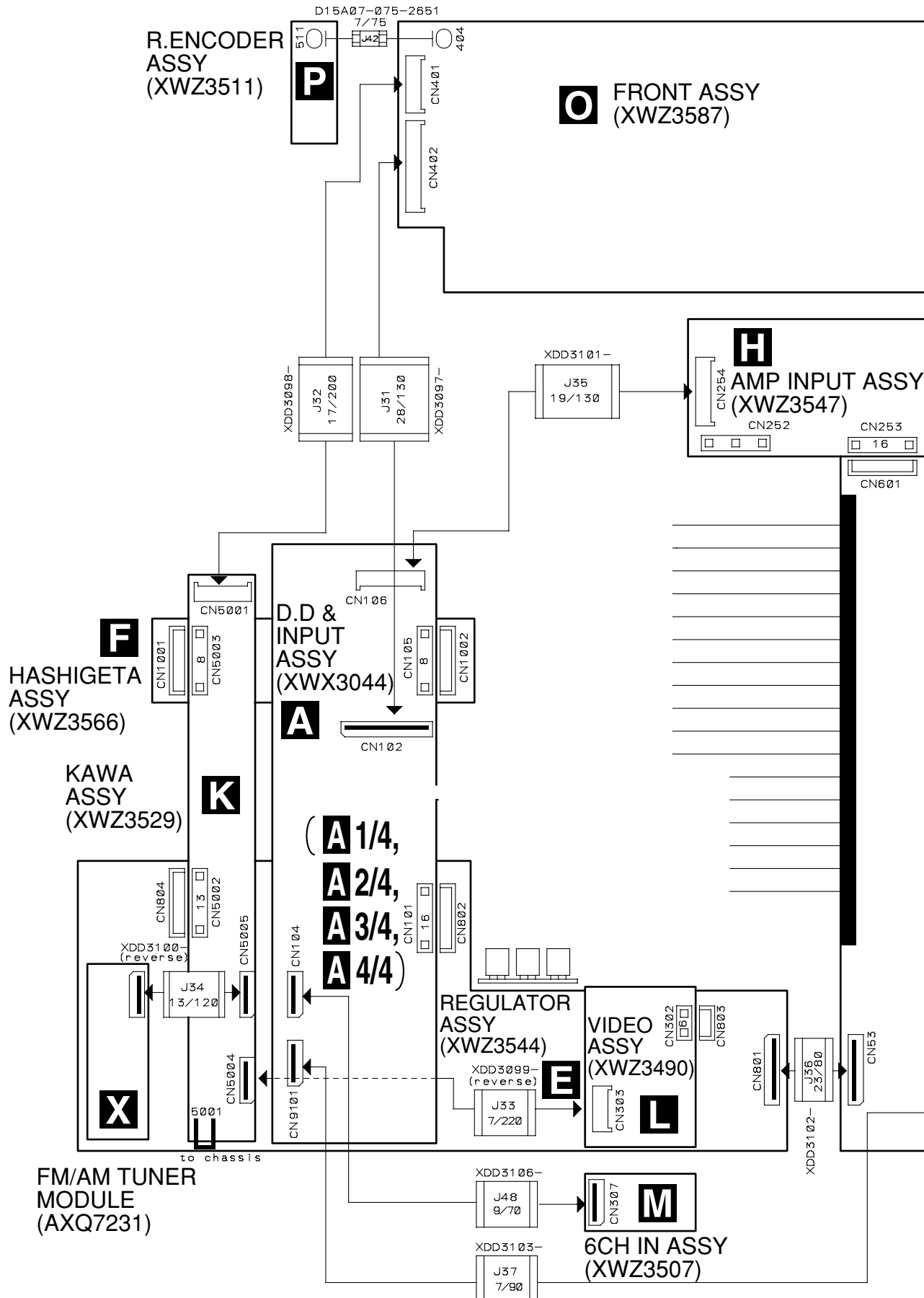
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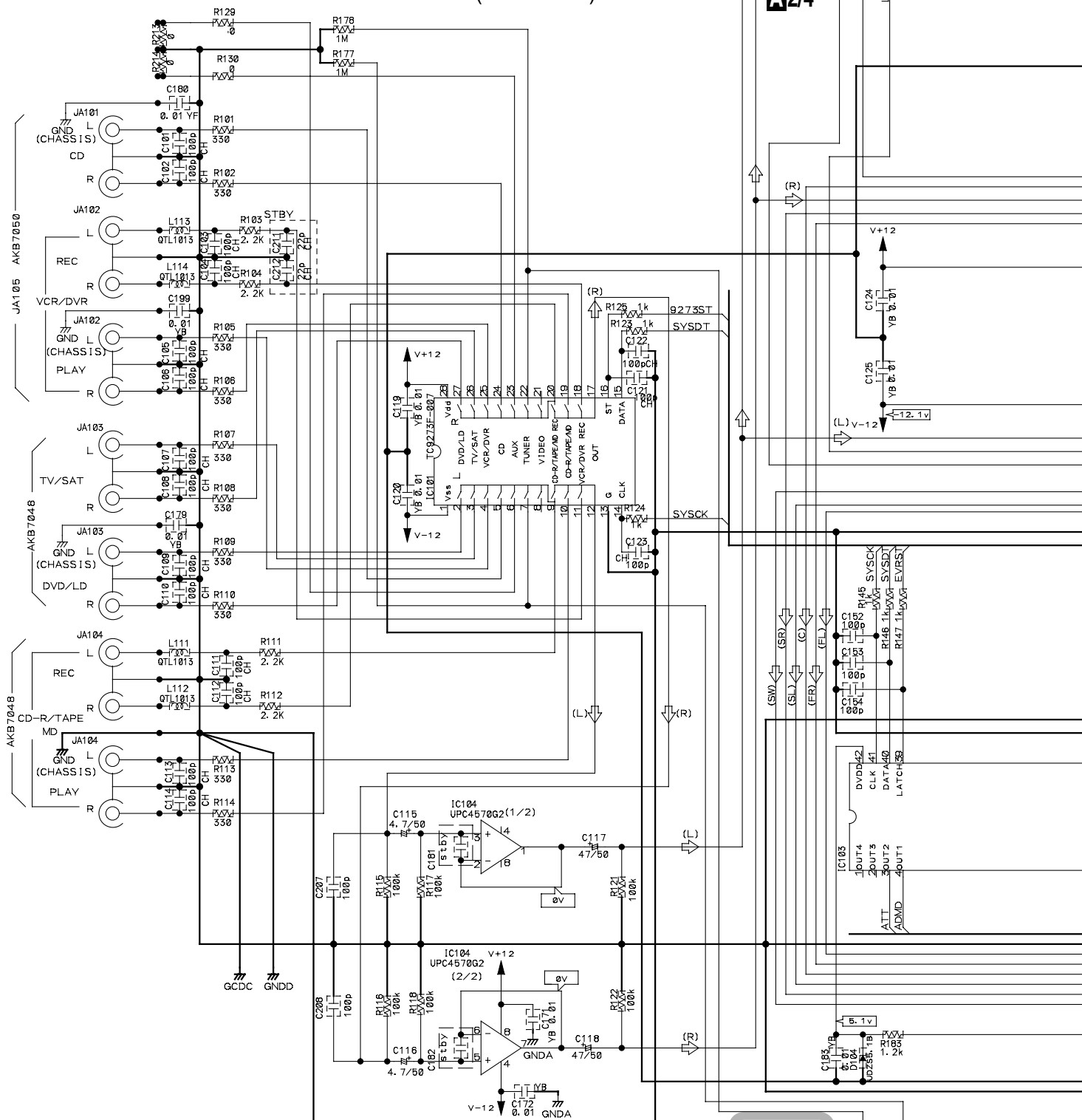


3.3 D.D & INPUT(1/4) ASSY

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

TO CODEC &
PRE AMP BLOCK

A2/4



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

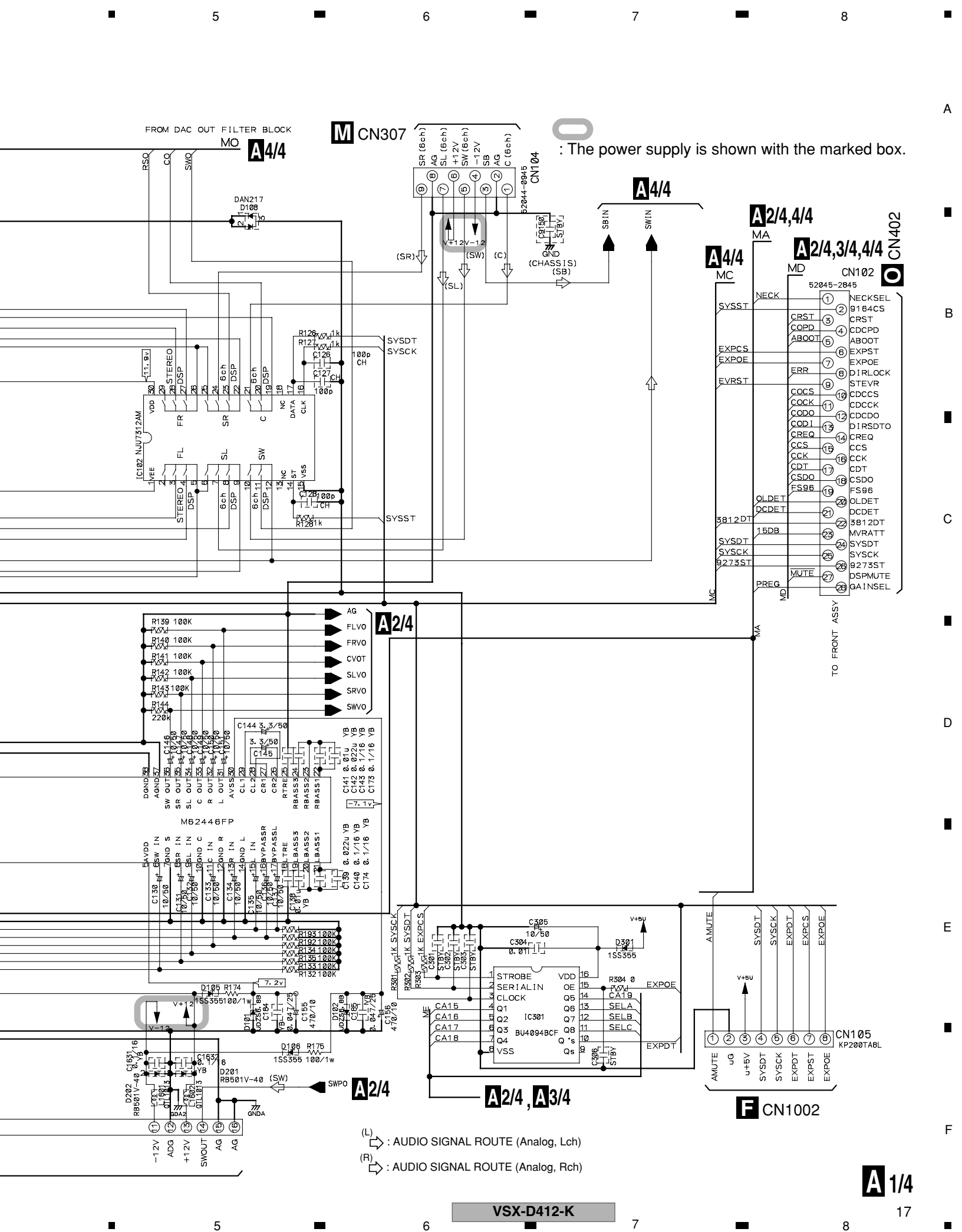
⤴ : AUDIO SIGNAL FLOW

TO REG. ASSY

E CN802

A 1/4

VSX-D412-K



The power supply is shown with the marked box.

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

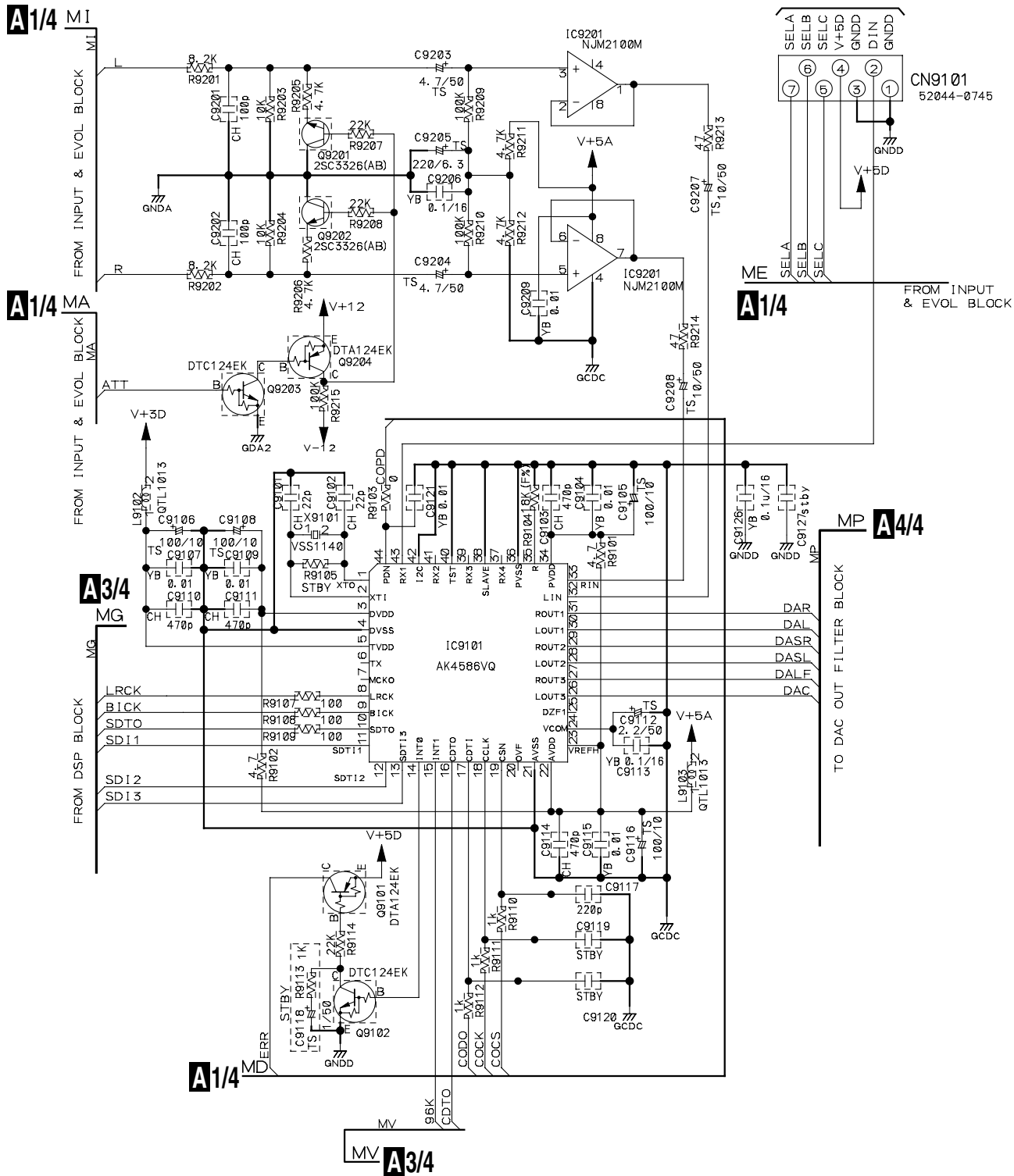
A 1/4

VSX-D412-K

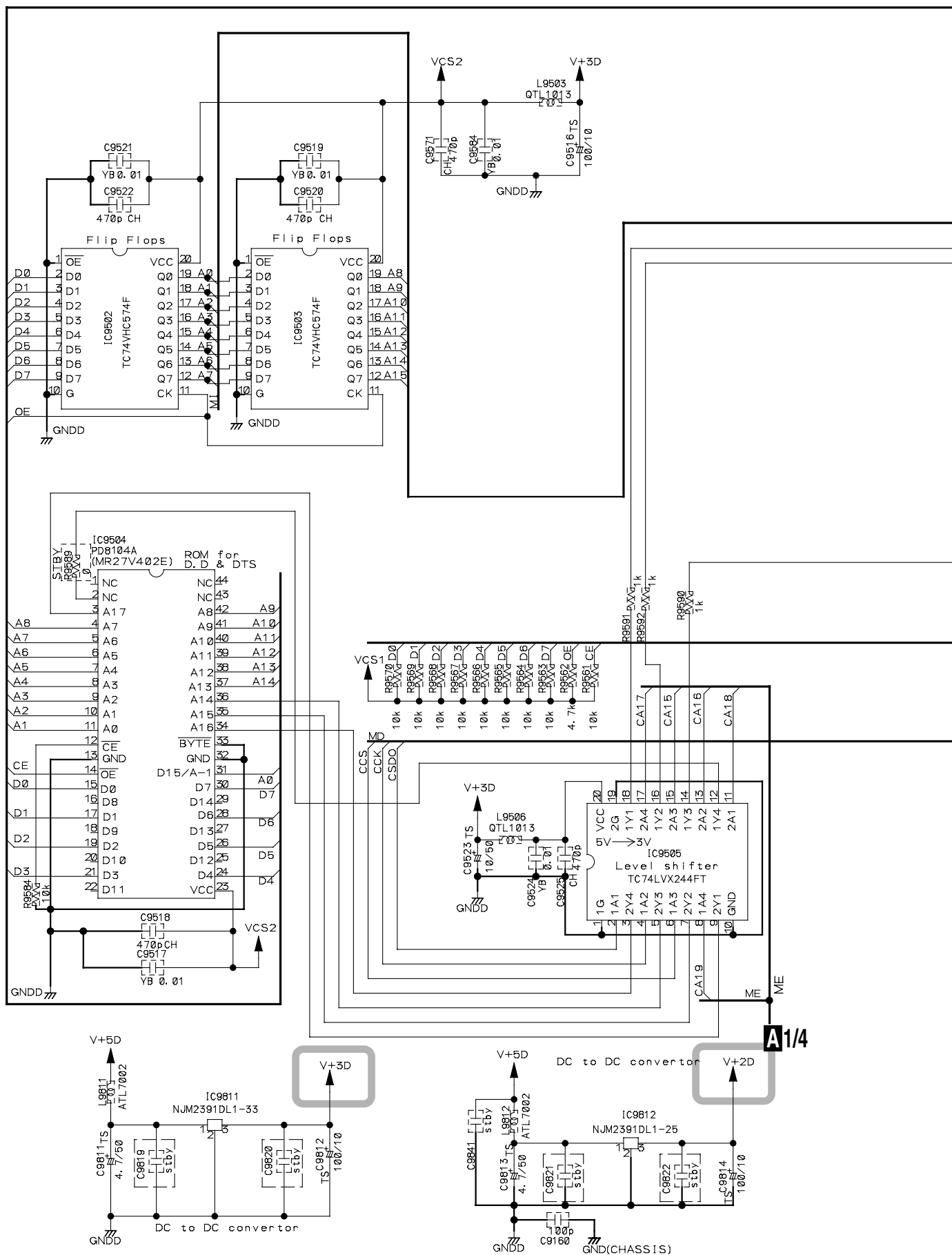
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3.4 D.D & INPUT(2/4) ASSY

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



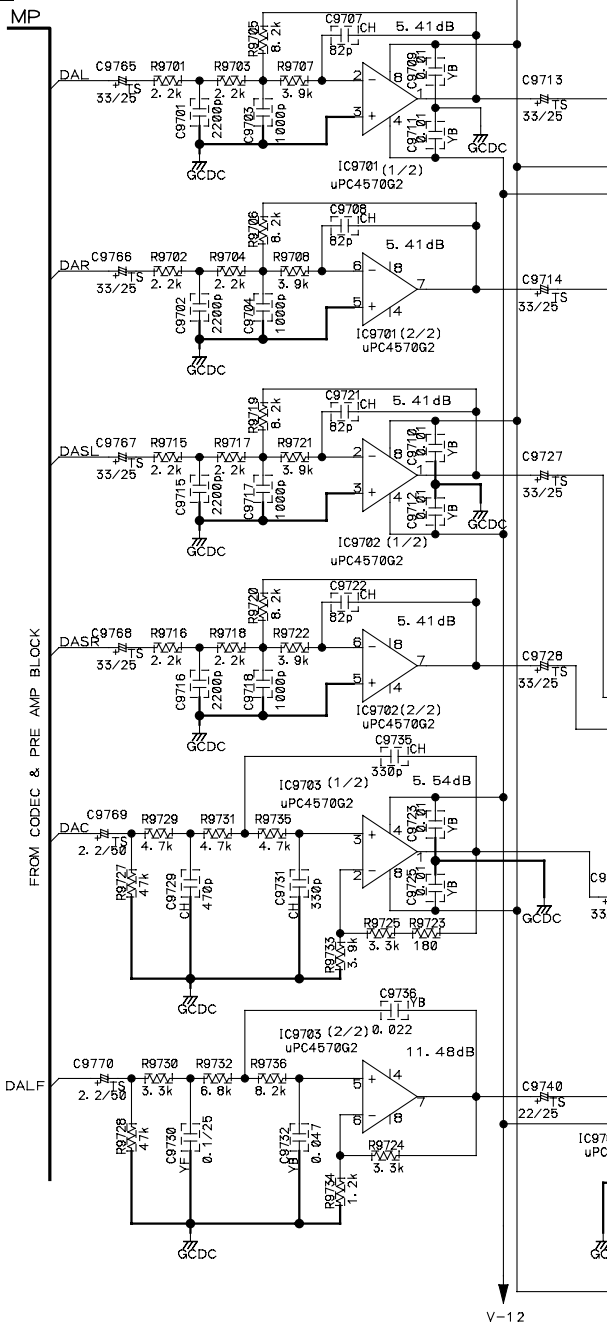
3.5 D.D & INPUT(3/4) ASSY



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

A

A2/4



B

C

D

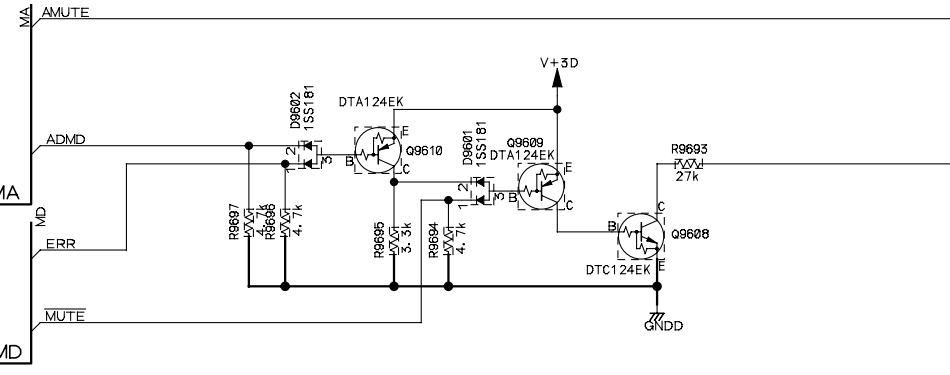
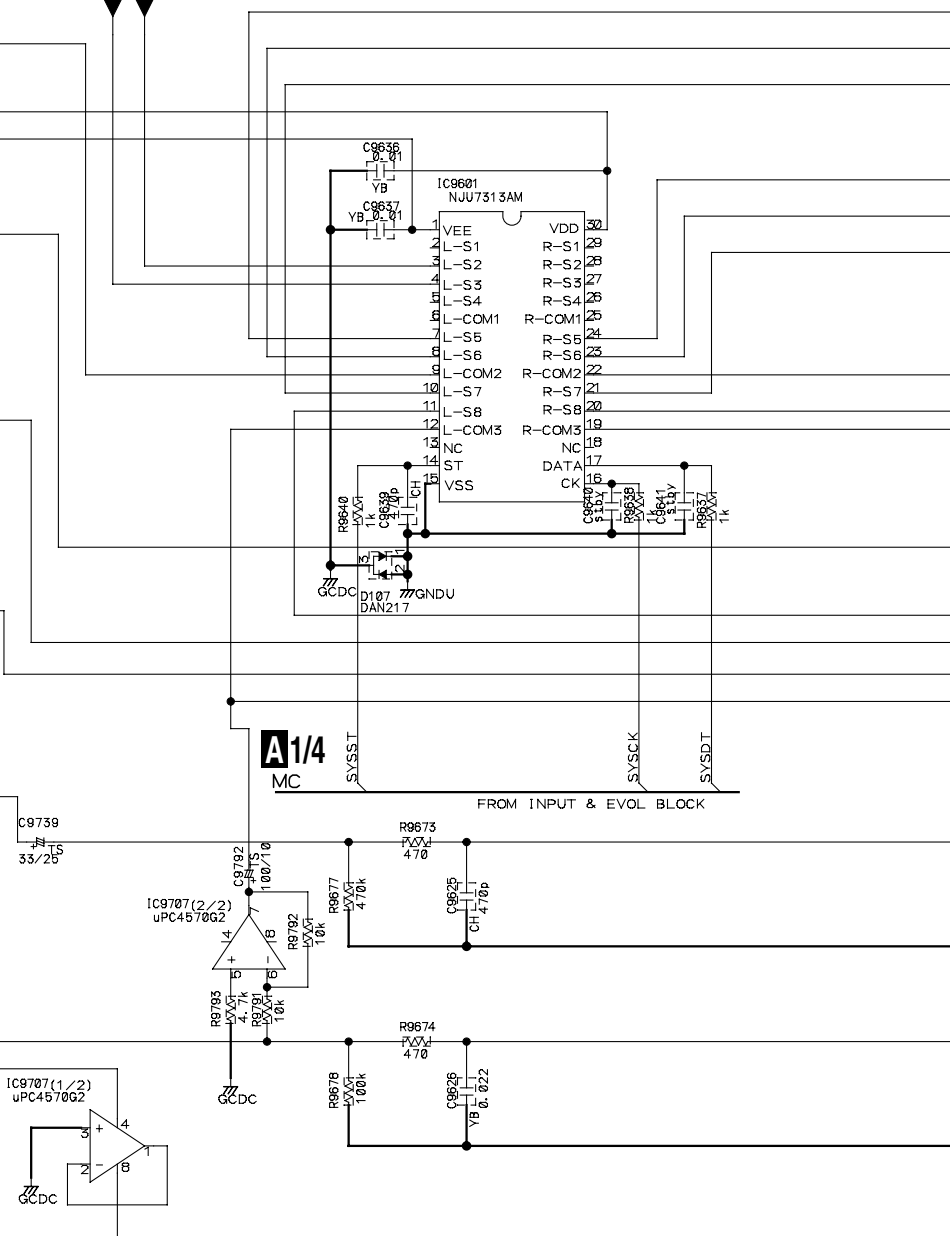
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A4/4

A1/4

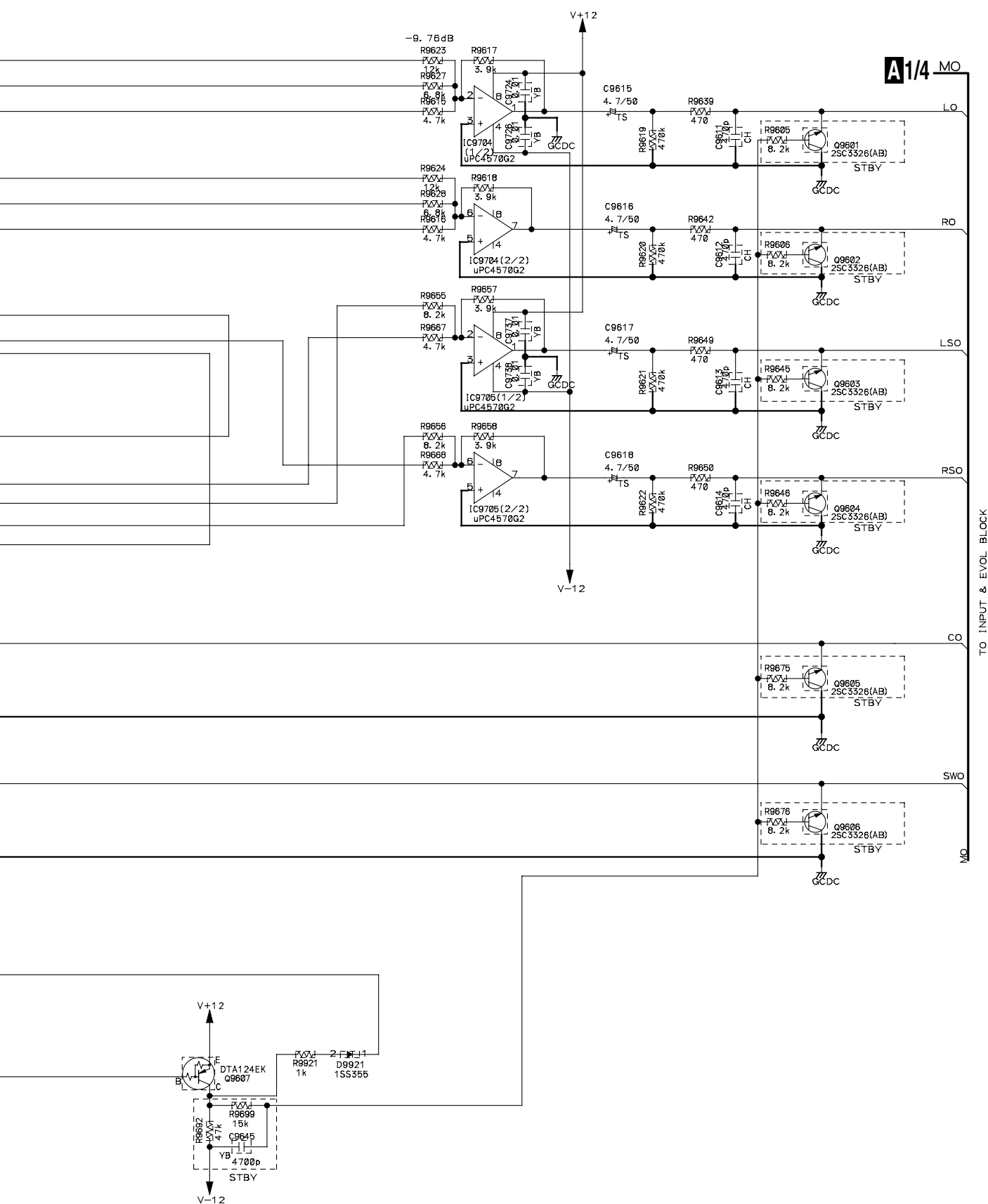
A4/4 D.D & INPUT ASSY (XWX3044)



A1/4

A1/4

VSX-D412-K



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

A

B

C

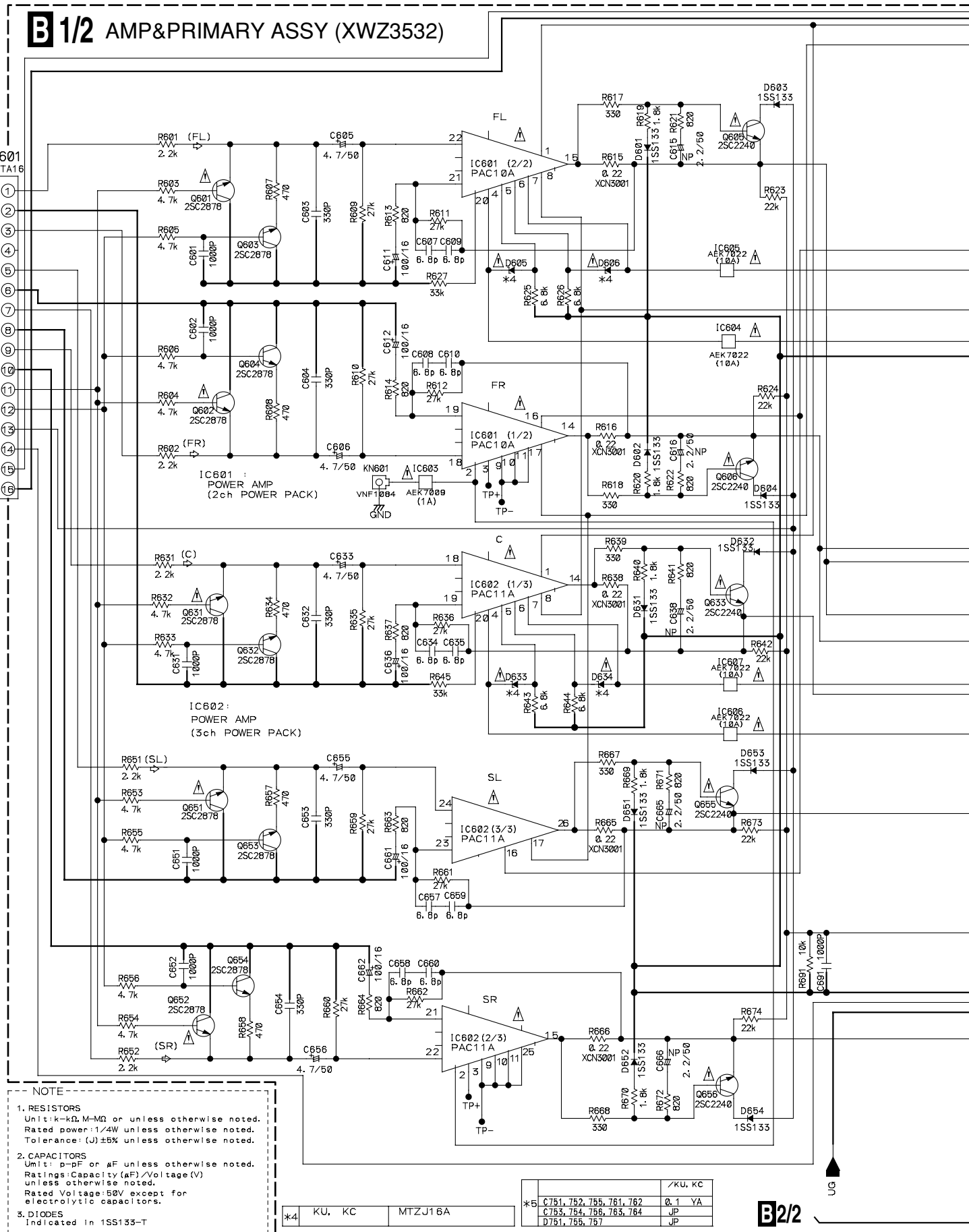
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B 1/2

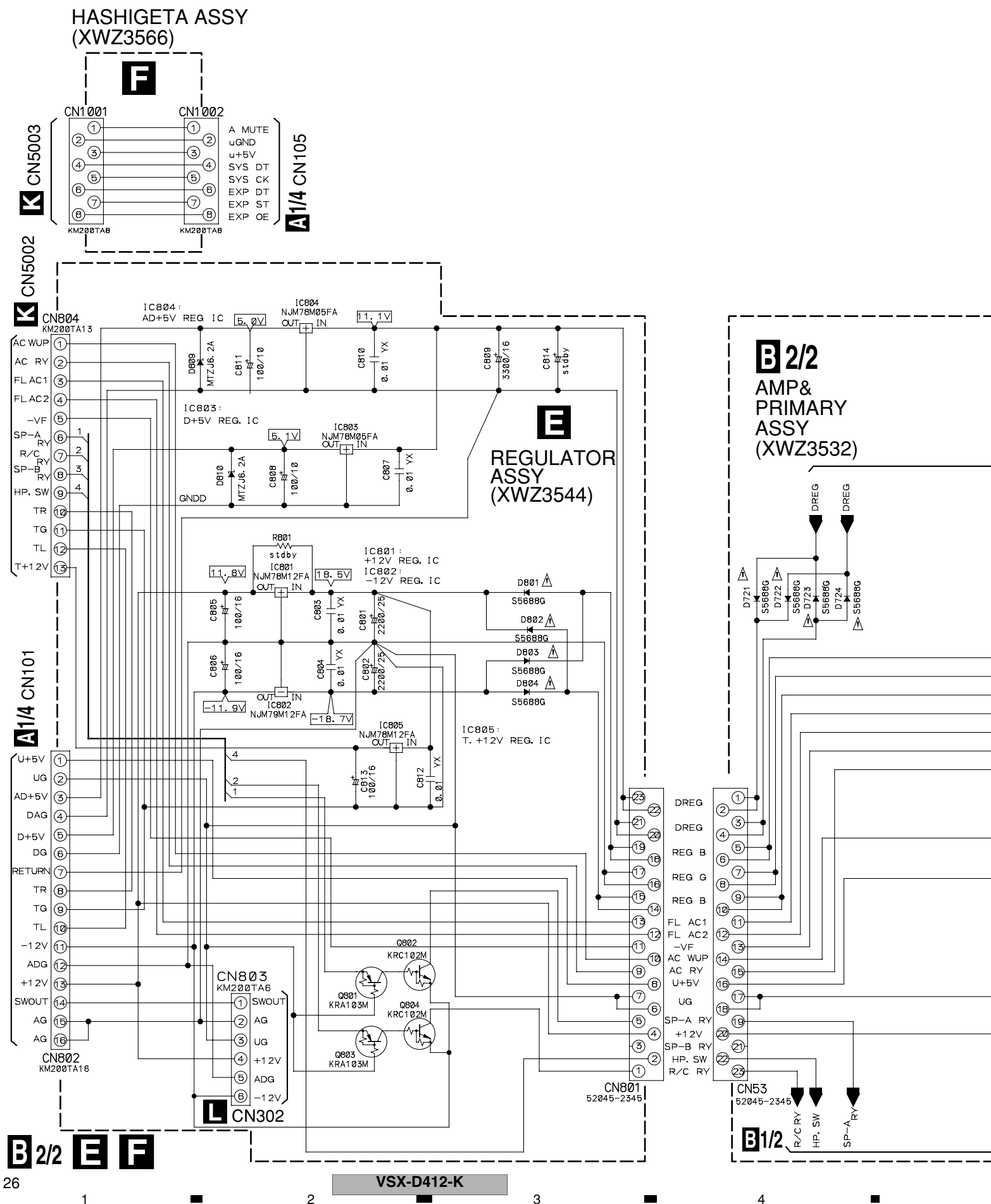
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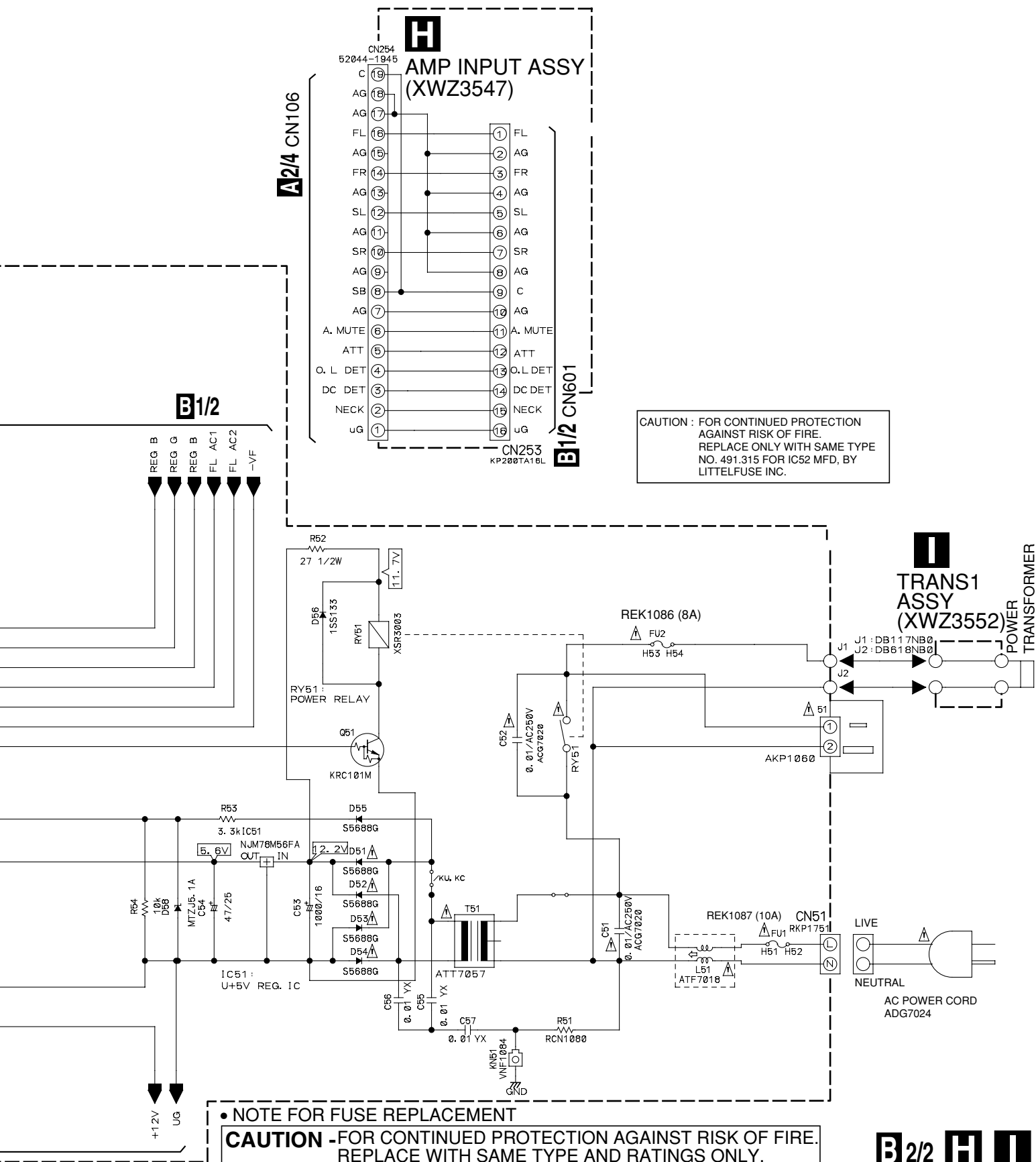


B 2/2



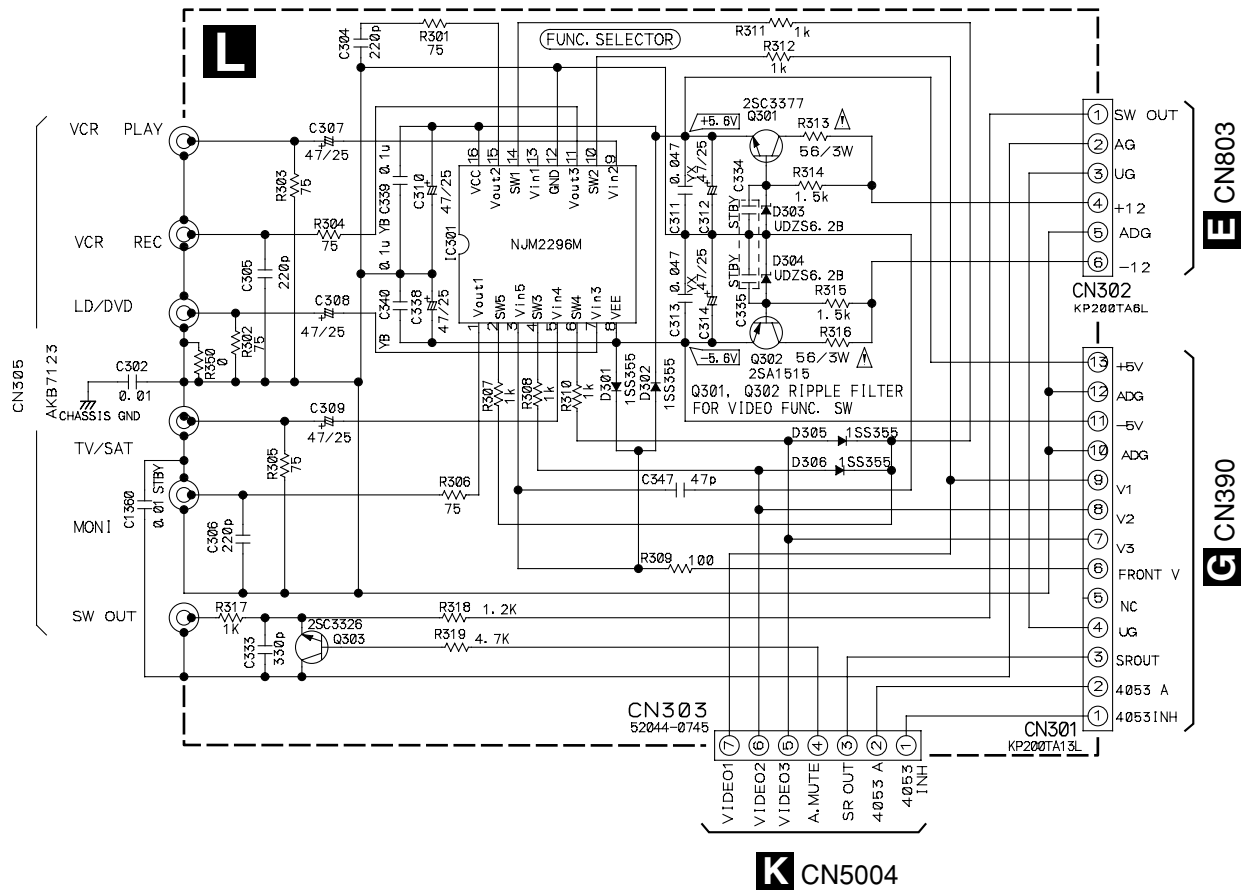
3.8 AMP & PRIM.(2/2), REG., HASHIGETA, AMP INPUT and TRANS1 ASSYS





3.9 VIDEO and 6CH IN ASSYS

VIDEO ASSY
(XWZ3490)

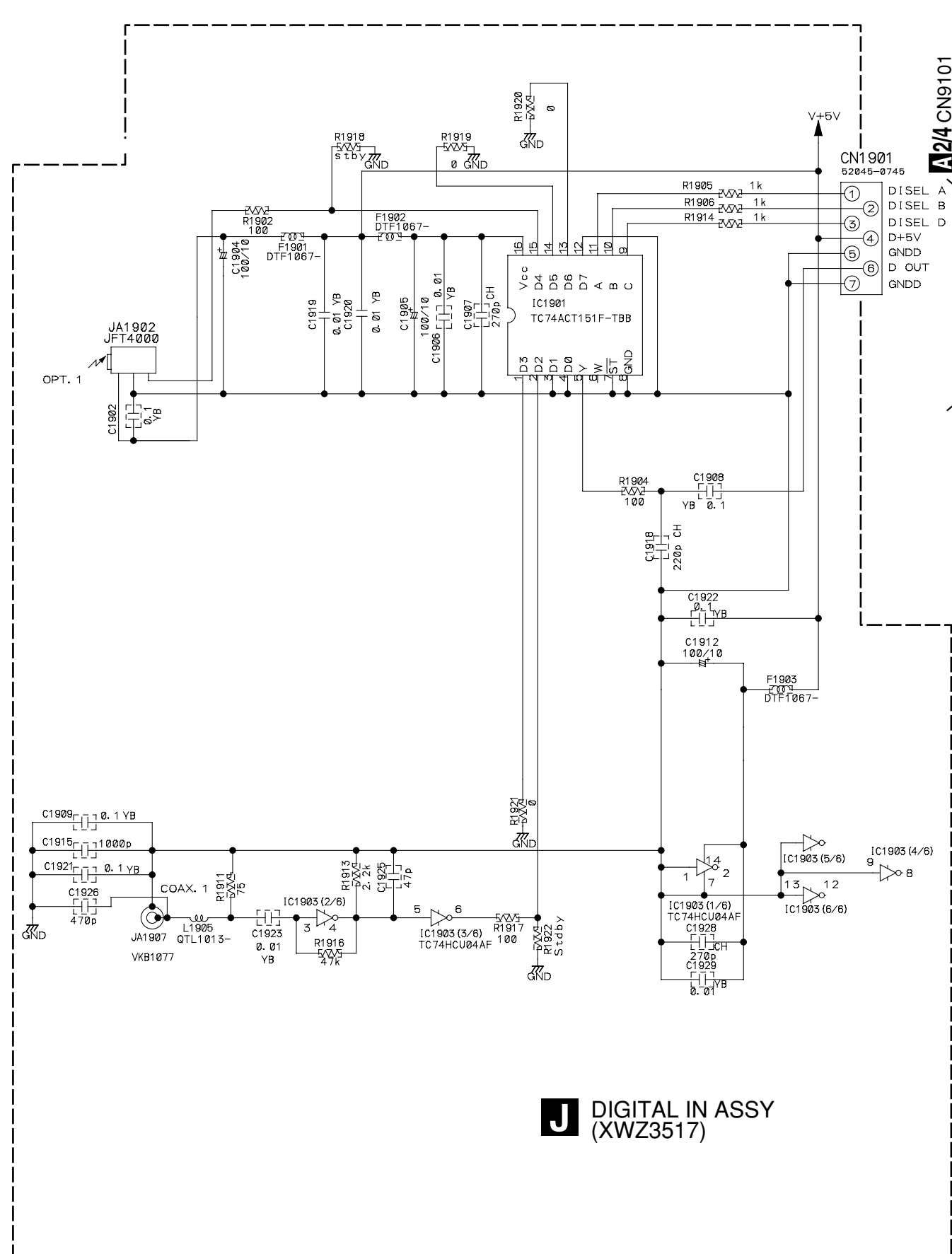


4

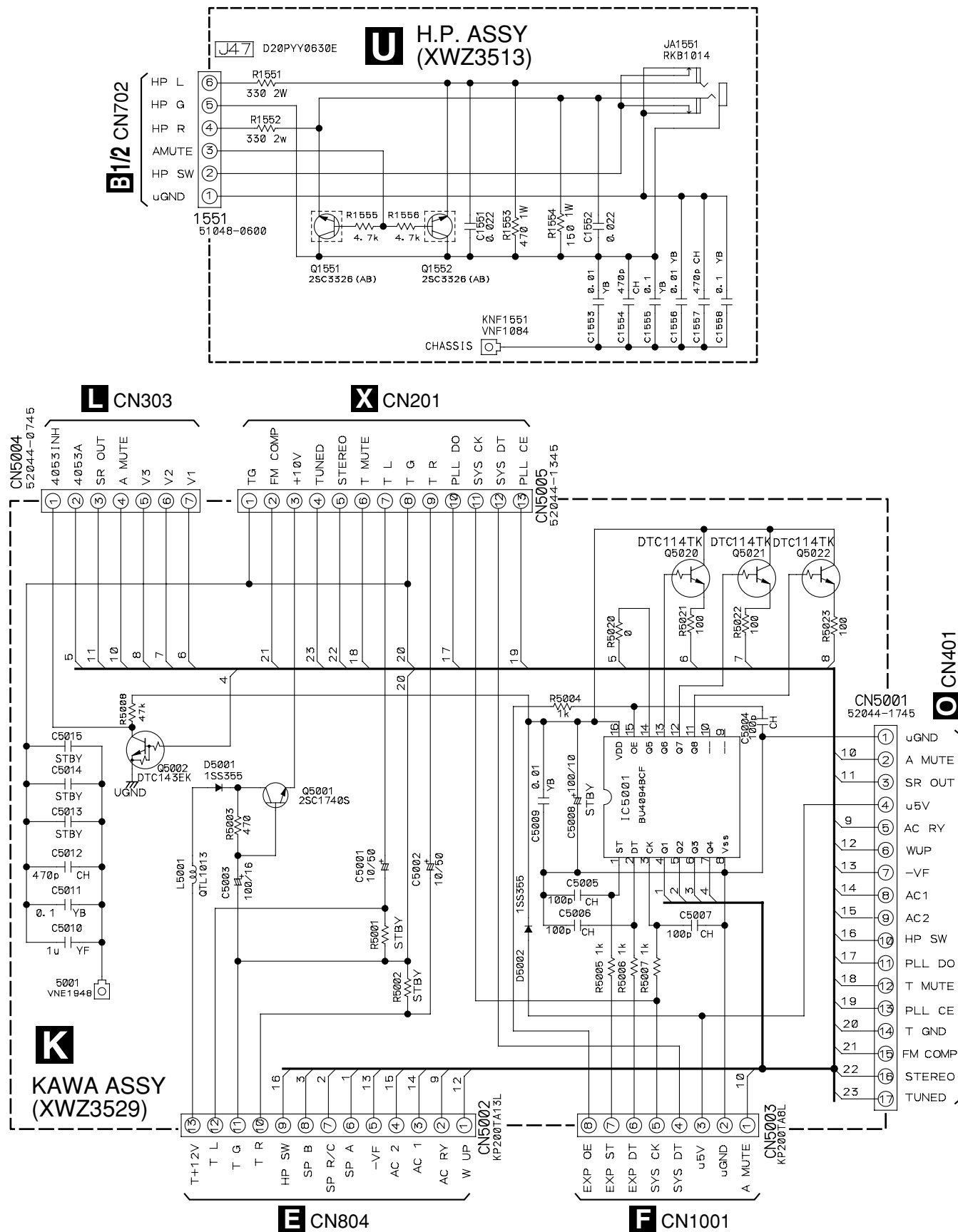
F



3.11 DIGITAL IN, H.P. and KAWA ASSYS



J DIGITAL IN ASSY (XWZ3517)



Notes

1. RESISTORS

Indicated in Ω , $1/16W \pm 5\%$ Tolerance unless otherwise noted K:K Ω , M:M Ω .

2. CAPACITORS

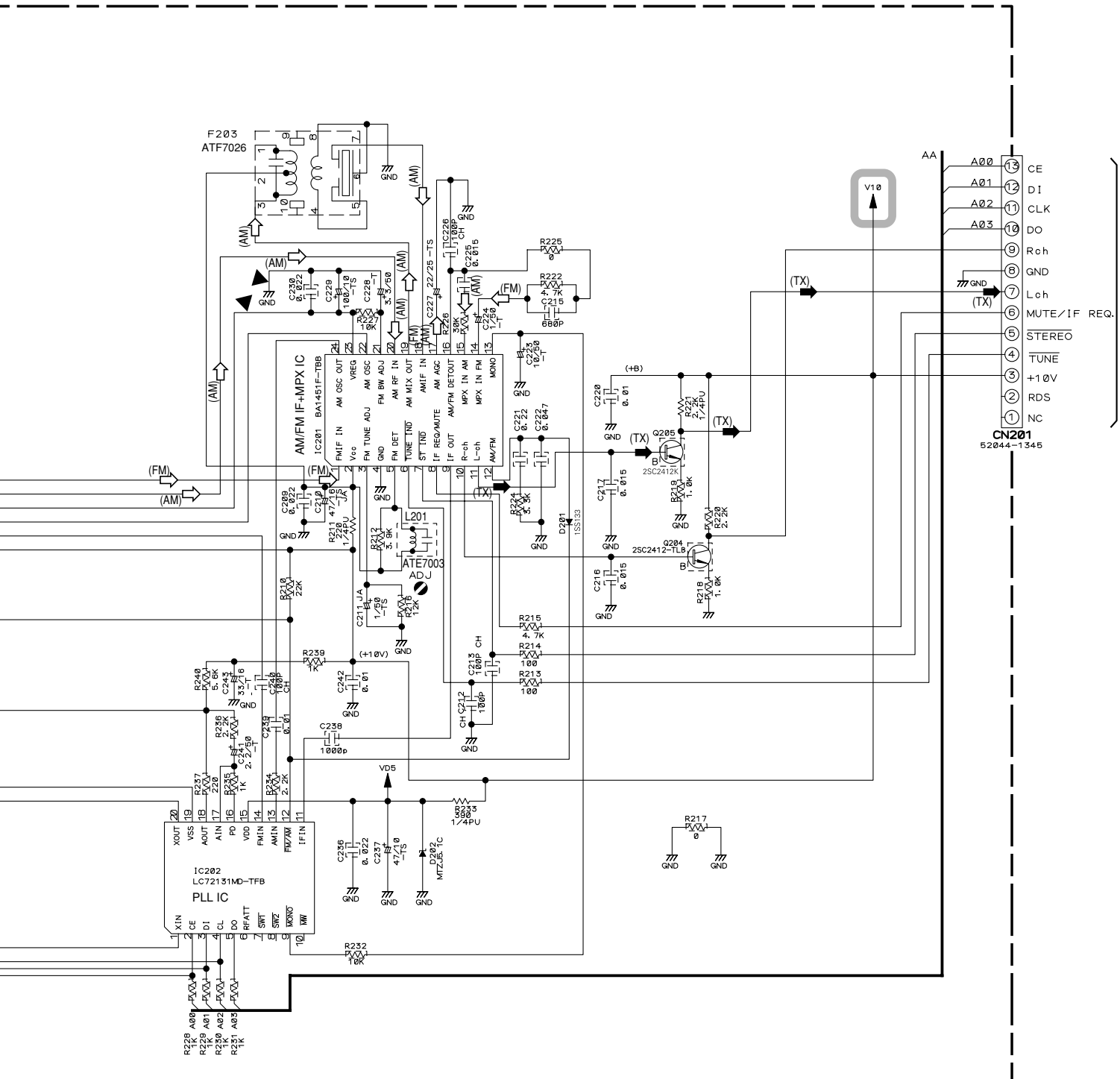
Indicated in Capacity (μF)/VOLTAGE (V) unless otherwise noted P:P.F.

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

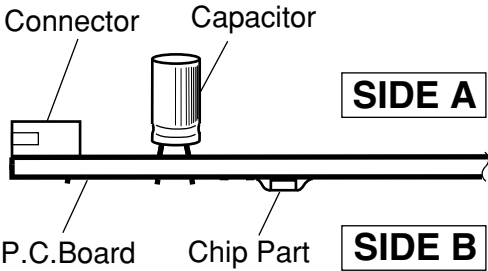


4. PCB CONNECTION DIAGRAM

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.
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.

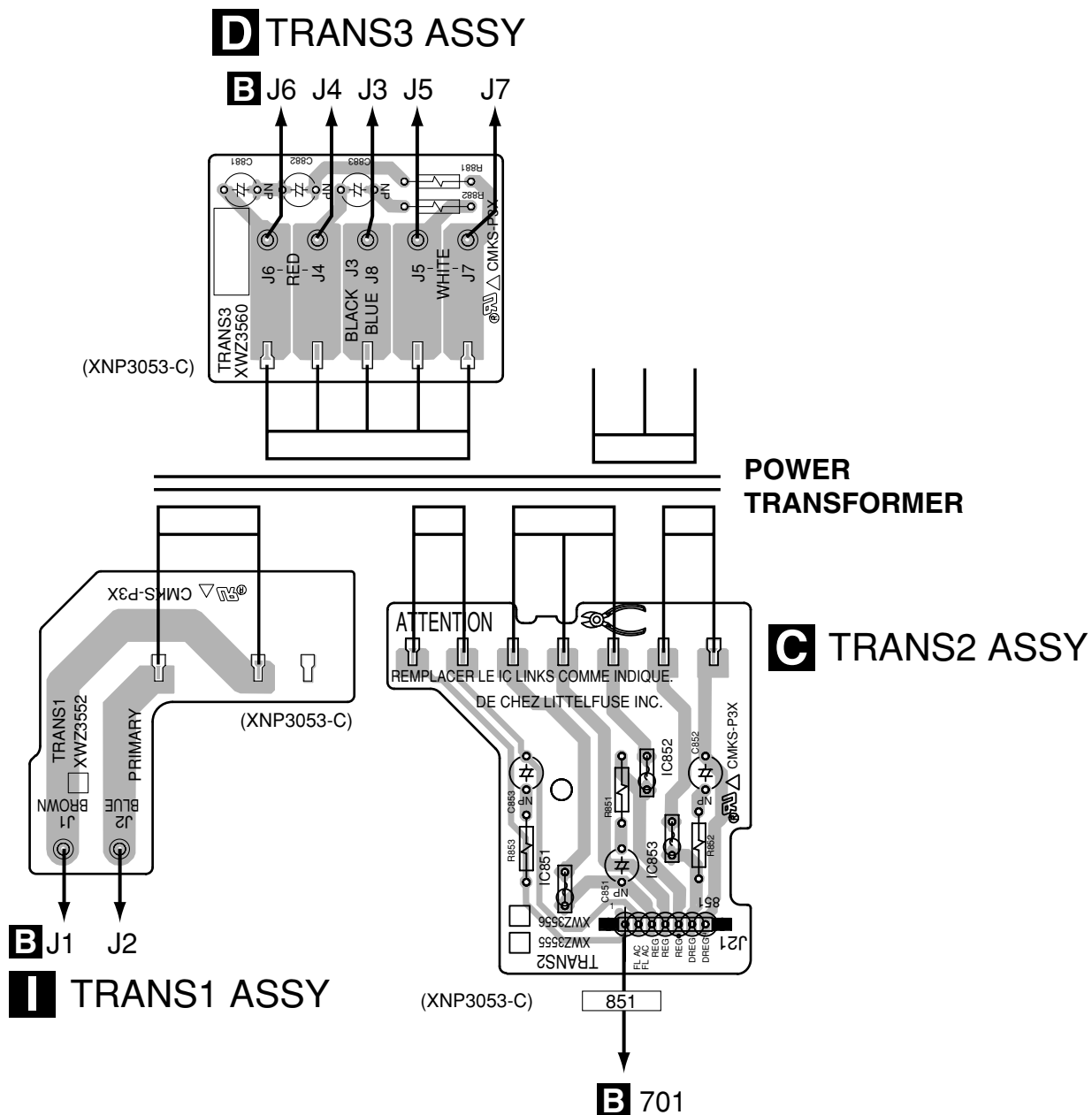
Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator



4.1 TRANS1, TRANS2 and TRANS3 ASSYS

SIDE A

SIDE A



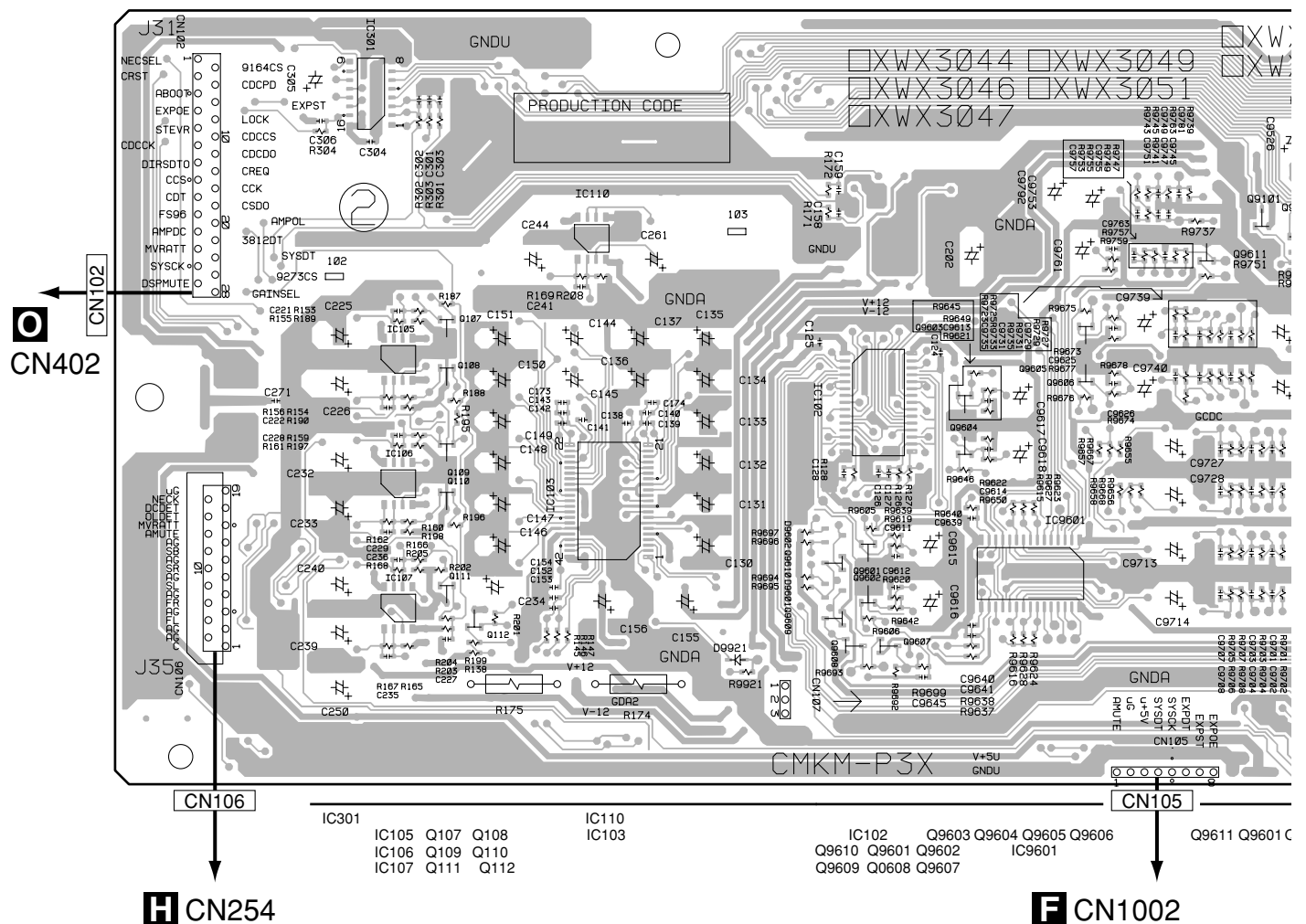
C D I

C D I

4.2 D.D & INPUT ASSY

SIDE A

A D.D & INPUT ASSY



A

B

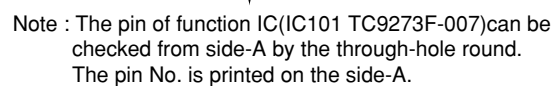
C

D

E

F

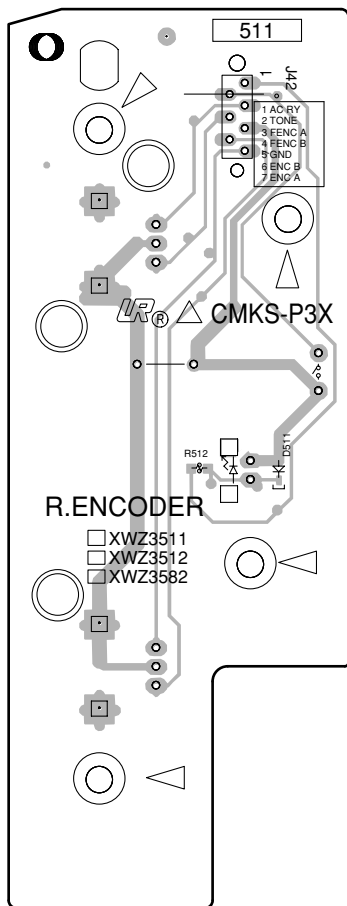
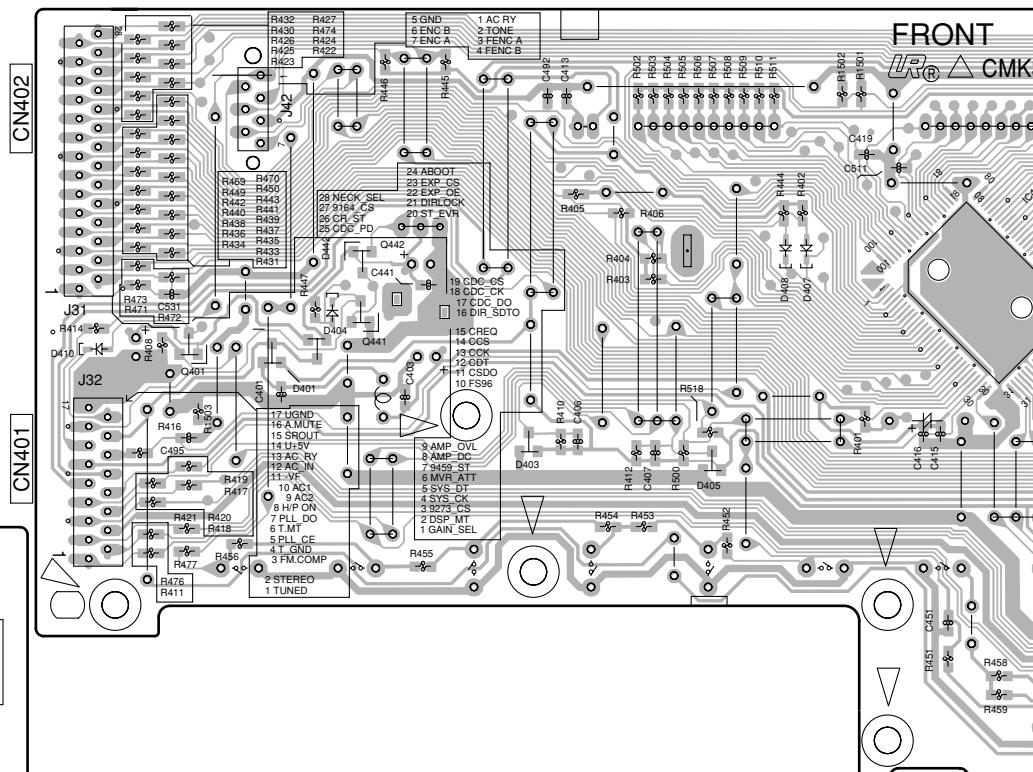
39





SIDE B

FRONT ASSY



(XNP3052-C)

P R.ENCODER ASSY

OP

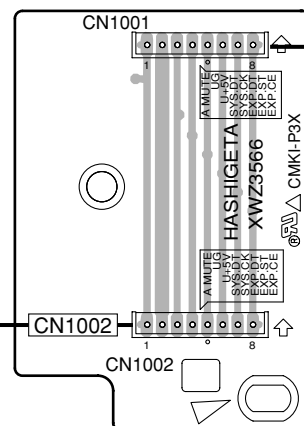
VSX-D412-K

4.5 REGULATOR, HASHIGETA and KAWA ASSYS

SIDE A

S

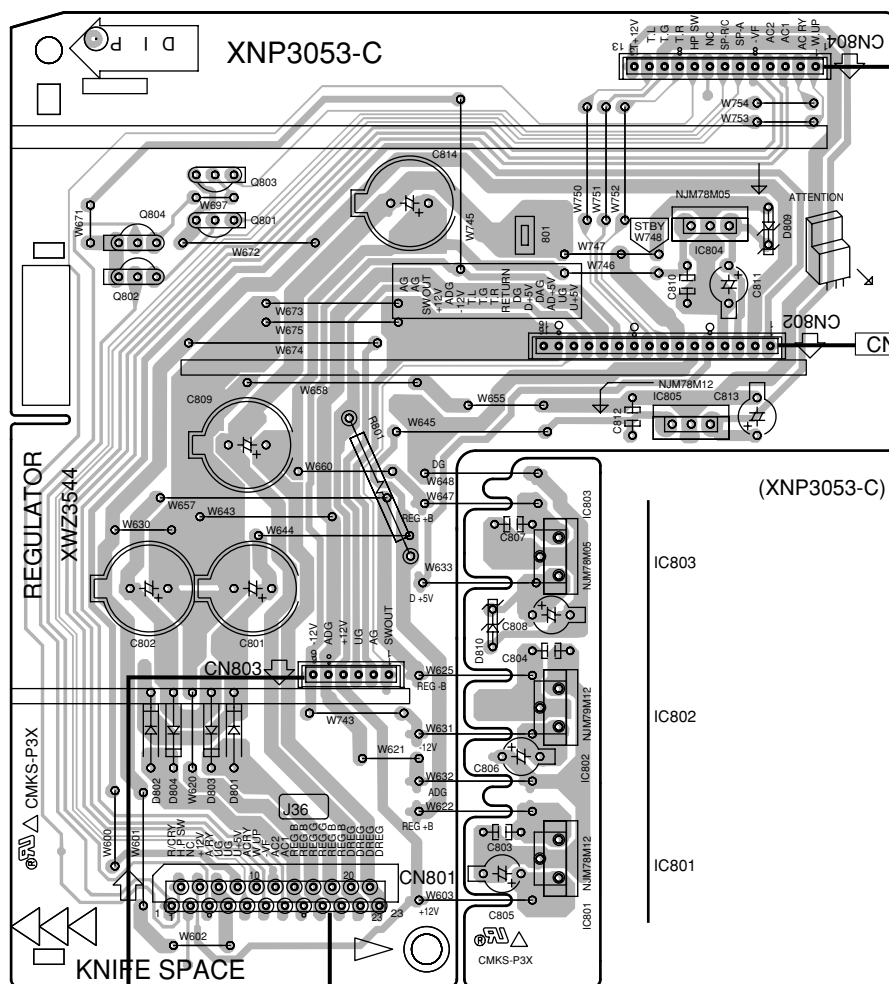
F HASHIGETA ASSY



A CN105

E REGULATOR ASSY

(XNP3053-C)



Q805
Q803
Q806
Q801
IC804
Q804
Q802

A CN101

(XNP3053-C)

IC803
IC802
IC801

Q5001

L CN302

B CN53

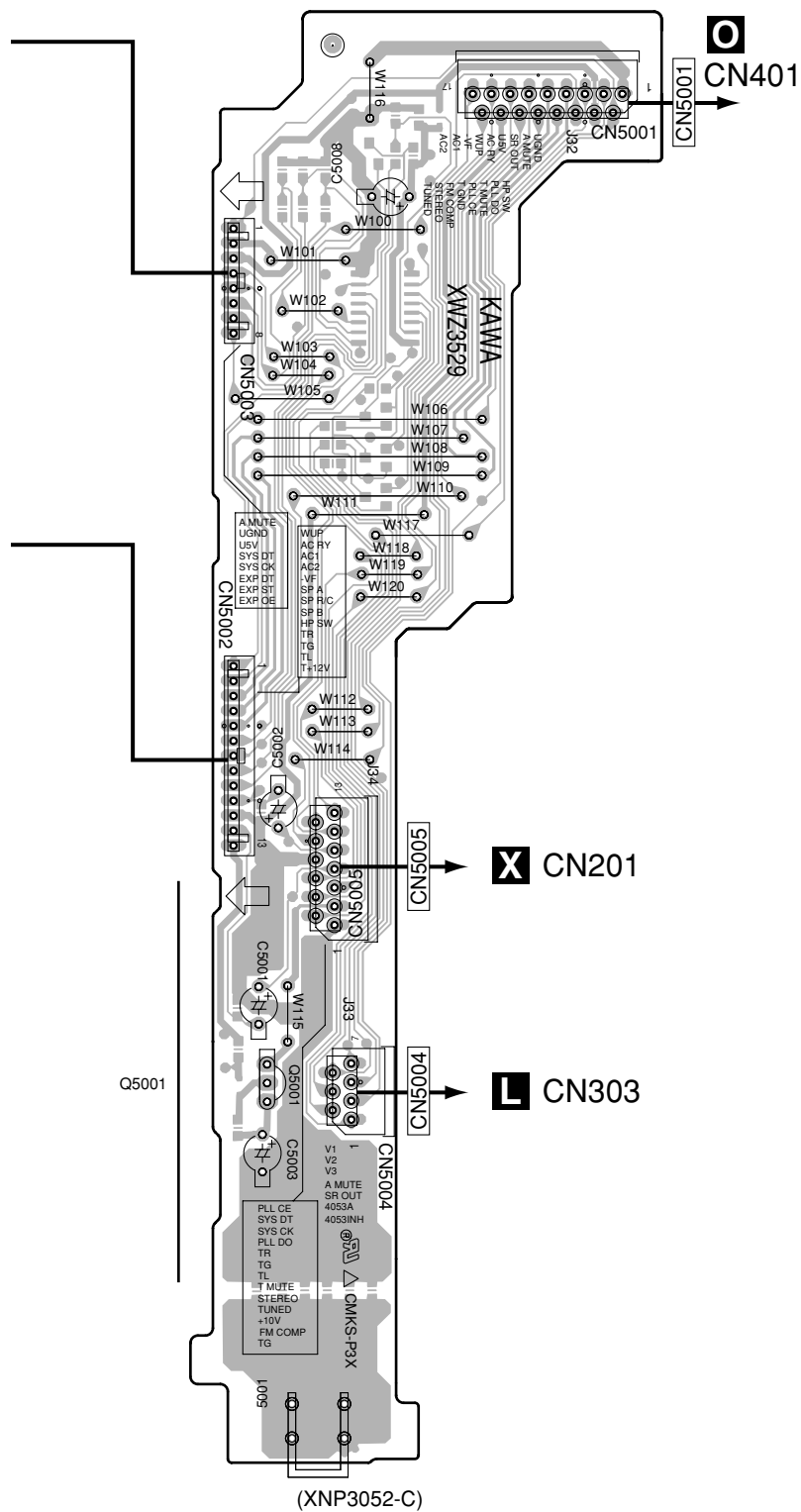
E F

SIDE A

SIDE B

K KAWA ASSY

K KAWA ASSY



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5. PCB PARTS LIST

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

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

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

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

560 Ω $\rightarrow$ 56 $\times 10^1$ $\rightarrow$ 561 RD1/4PU $\overline{561}J$

47k Ω $\rightarrow$ 47 $\times 10^3$ $\rightarrow$ 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 $\times 10^1$ $\rightarrow$ 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	XWK3071
	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
NSP	1..COMPLEX ASSY	XWK3070
	2..FRONT ASSY	XWZ3587
	2..6CH IN ASSY	XWZ3507
	2..POWER SW ASSY	XWZ3510
	2..H.P. ASSY	XWZ3513
	2..DIGITAL IN ASSY	XWZ3517
	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 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

IC9505 IC	TC74LVX244FT
IC9502 LOGIC IC	TC74VHC574F
IC9503 LOGIC IC	TC74VHC574F
IC9506 IC	TC74VHCT244AFT
IC9507 IC	TC7WU04FU
IC101 ANALOGSWITCH IC	TC9273F-007
IC104 OP-AMP	ICUPC4570G2
IC105 OP-AMP	ICUPC4570G2
IC106 OP-AMP	ICUPC4570G2
IC107 OP-AMP	ICUPC4570G2
IC9701 OP-AMP	ICUPC4570G2
IC9702 OP-AMP	ICUPC4570G2
IC9703 OP-AMP	ICUPC4570G2
IC9704 OP-AMP	ICUPC4570G2
IC9705 OP-AMP	ICUPC4570G2
IC9707 OP-AMP	ICUPC4570G2
Q107 TRANSISTOR	2SC3326
Q108 TRANSISTOR	2SC3326
Q109 TRANSISTOR	2SC3326
Q110 TRANSISTOR	2SC3326
Q111 TRANSISTOR	2SC3326
Q112 TRANSISTOR	2SC3326
Q9101 TRANSISTOR	DTA124EK
Q9102 TRANSISTOR	DTC124EK
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.	Mark No.	Description	Part No.
COILS AND FILTERS					
A	L111 CHIP INDUCTOR	QTL1013	C142 CAPACIOR		CKSRYB223K50
	L112 CHIP INDUCTOR	QTL1013	C143 CAPACIOR		CKSRYB104K16
	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
B	L9502 CHIP INDUCTOR	QTL1013	C152 CAPACIOR		CCSRCH101J50
	L9503 CHIP INDUCTOR	QTL1013	C153 CAPACIOR		CCSRCH101J50
	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		CKSRYB104K16
	L9812 CHIP INDUCTOR	ATL7002	C1632 CAPACIOR		CKSRYB104K16
			C171 CAPACIOR		CKSRYB103K50
CAPACITORS			C172 CAPACIOR		CKSRYB103K50
C	C101 CAPACIOR	CCSRCH101J50	C173 CAPACIOR		CKSRYB104K16
	C102 CAPACIOR	CCSRCH101J50	C174 CAPACIOR		CKSRYB103K50
	C103 CAPACIOR	CCSRCH101J50	C179 CAPACIOR		CKSRYB103K50
	C104 CAPACIOR	CCSRCH101J50	C180 CAPACIOR		CKSRYB103K50
	C105 CAPACIOR	CCSRCH101J50	C183 CAPACIOR		CKSRYB103K50
	C106 CAPACIOR	CCSRCH101J50	C184 CAPACIOR		CKSRYB473K25
	C107 CAPACIOR	CCSRCH101J50	C185 CAPACIOR		CKSRYB473K25
	C108 CAPACIOR	CCSRCH101J50	C199 CAPACIOR		CKSRYB103K50
	C109 CAPACIOR	CCSRCH101J50	C207 CAPACIOR		CCSRCH101J50
	C110 CAPACIOR	CCSRCH101J50	C208 CAPACIOR		CCSRCH101J50
	C111 CAPACIOR	CCSRCH101J50	C221 CAPACIOR		CCSRCH101J50
	C112 CAPACIOR	CCSRCH101J50	C222 CAPACIOR		CCSRCH101J50
	C113 CAPACIOR	CCSRCH101J50	C223 CAPACIOR		CKSRYB103K50
	C114 CAPACIOR	CCSRCH101J50	C224 CAPACIOR		CKSRYB103K50
	C115 CAPACIOR	CEAT4R7M50	C225 CAPACIOR		CEAT470M50
D	C116 CAPACIOR	CEAT4R7M50	C226 CAPACIOR		CEAT470M50
	C117 CAPACIOR	CEAT470M50	C227 CAPACIOR		CKSRYF104Z25
	C118 CAPACIOR	CEAT470M50	C228 CAPACIOR		CCSRCH101J50
	C119 CAPACIOR	CKSRYB103K50	C229 CAPACIOR		CCSRCH101J50
	C120 CAPACIOR	CKSRYB103K50	C230 CAPACIOR		CKSRYB103K50
	C121 CAPACIOR	CCSRCH101J50	C231 CAPACIOR		CKSRYB103K50
	C122 CAPACIOR	CCSRCH101J50	C232 CAPACIOR		CEAT470M50
	C123 CAPACIOR	CCSRCH101J50	C233 CAPACIOR		CEAT470M50
	C124 CAPACIOR	CKSRYB103K50	C234 CAPACIOR		CEAT4R7M50
	C125 CAPACIOR	CKSRYB103K50	C235 CAPACIOR		CCSRCH221J50
E	C126 CAPACIOR	CCSRCH101J50	C236 CAPACIOR		CKSRYB472K50
	C127 CAPACIOR	CCSRCH101J50	C237 CAPACIOR		CKSRYB103K50
	C128 CAPACIOR	CCSRCH101J50	C238 CAPACIOR		CKSRYB103K50
	C130 CAPACIOR	CEAT100M50	C239 CAPACIOR		CEAT470M50
	C131 CAPACIOR	CEAT100M50	C240 CAPACIOR		CEAT4R7M50
	C132 CAPACIOR	CEAT100M50	C271 CAPACIOR		CKSRYB102K50
	C133 CAPACIOR	CEAT100M50	C304 CAPACIOR		CKSRYB103K50
	C134 CAPACIOR	CEAT100M50	C305 CAPACIOR		CEAT100M50
	C135 CAPACIOR	CEAT100M50	C9101 CAPACIOR		CCSRCH220J50
	C136 CAPACIOR	CEAT100M50	C9102 CAPACIOR		CCSRCH220J50
F	C137 CAPACIOR	CEAT100M50	C9103 CAPACIOR		CCSRCH471J50
	C138 CAPACIOR	CKSRYB103K50	C9104 CAPACIOR		CKSRYB103K50
	C139 CAPACIOR	CKSRYB223K50	C9105 CAPACIOR		CEAT101M10
	C140 CAPACIOR	CKSRYB104K16	C9106 CAPACIOR		CEAT101M10
	C141 CAPACIOR	CKSRYB103K50	C9107 CAPACIOR		CKSRYB103K50
			C9108 CAPACIOR		CEAT101M10

Mark No.	Description	Part No.	Mark No.	Description	Part No.	
C9109	CAPACIOR	CKSRYB103K50	C9617	CAPACIOR	CEAT4R7M50	A
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	B
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	C
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	D
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	E
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	F
C9613	CAPACIOR	CCSRCH471J50	RESISTORS			
C9614	CAPACIOR	CCSRCH471J50				
C9615	CAPACIOR	CEAT4R7M50				
C9616	CAPACIOR	CEAT4R7M50				
			⬆	R9104 RESISTOR	RS1/16S1802F	
				R174 METAL OXIDE	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
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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
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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
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SWITCHES AND RELAYS

RY751	RELAY	XSX3002
RY752	RELAY	XSX3002
RY753	RELAY	XSX3002
⚠ RY51	JOELOW POWERREL	XSX3003

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
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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

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
	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
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OTHERS

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

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
	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
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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
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C5011	CKSRYB104K16
C5010	CKSRYF105Z10

RESISTORS

All Resistors	RS1/16S###J
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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
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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
C1360, C302	CKSRYB103K50
C339, C340	CKSRYB104K25
C304-C306	CKSRYB221K50

C333	CKSRYB331K50
C311, C313	CKSRYB473K25

RESISTORS

Mark No. Description

⚠ R313, R316
Other Resistors

Part No.

RS3LMF560J
RS1/16S###J

OTHERS

CN303 (7P CONNECTOR)
CN305 (6P PIN JACK)
CN301 (13P SOCKET)
CN302 (6P SOCKET)

52044-0745
AKB7123
KP200TA13L
KP200TA6L

M 6CH IN ASSY **SEMICONDUCTORS**

IC302, IC303

NJM4558MD

CAPACITORS

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

All Resistors

RS1/16S###J

OTHERS

CN307 (9P CONNECTOR)
CN309 (6P PIN JACK)

52044-0945
AKB7087

N S.VIDEO ASSY **SEMICONDUCTORS**

IC351, IC352
D351-D354

NJM2296M
1SS355

CAPACITORS

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

CCSRCH470J50
CEAT470M25
CEAT470M25
CKSRYB103K50
CKSRYB104K25

C359, C367
C364, C365, C368-C371

CKSRYB104K25
CKSRYB221K50

RESISTORS

All Resistors

RS1/16S###J

OTHERS

CN353 (4Px2 MINI DIN SOCKET)
CN352 (4Px3 MINI DIN SOCKET)
CN351 (11P SOCKET)
JA351 (REMOTE JACK)

AKP7020
AKP7043
KP200TA11L
RKN1004

O FRONT ASSY **SEMICONDUCTORS**

IC401 CONTROL MCU
Q401 TRANSISTOR
Q402 TRANSISTOR
Q403 TRANSISTOR
Q441 TRANSISTOR

PDG268B
DTA124EK
DTA124EK
DTC143EK
DTC143EK

D401 DIODE
D403 DIODE
D404 DIODE
D405 DIODE
D406 DIODE

DAP202K
DAN217
DAP202K
DAN217
1SS355

D407 CHIP DIODE
D408 CHIP DIODE
D410 DIODE
D442 DIODE

RB501V-40
RB501V-40
1SS355
1SS355

Mark No. Description**Part No.****COILS AND FILTERS**

L401 RADIAL INDUCTOR

LFEA2R2J

SWITCHES AND RELAYS

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

ASG1051
ASG1051
ASG1051
ASG1051
ASG1051

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

ASG1051
ASG1051
ASG1051
ASG1051
ASG1051

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

ASG1051
ASG1051
ASG1051
ASG1051
ASG1051

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

ASG1051
ASG1051
ASG1051
ASG1051

CAPACITORS

C401 CAPACIOR
C402 CAPACIOR
C403 CAPACIOR
C404 EDL (0.047F/5.5V)
C405 CAPACIOR

CKSRYB103K50
CEAT221M6R3
CKSRYB103K50
ACH7132
CEAT471M6R3

C406 CAPACIOR
C407 CAPACIOR
C408 CAPACIOR
C409 CAPACIOR
C410 CAPACIOR

CKSRYB473K16
CKSRYB473K16
CKSRYB104K16
CEAT2R2M50
CEAT2R2M50

C411 CAPACIOR
C412 CAPACIOR
C416 CAPACIOR
C418 CAPACIOR
C419 CAPACIOR

CKSRYB103K50
CEAT470M50
CKSRYB104K16
CKSRYB104K16
CKSRYB103K50

C420 ELECT.(220uF/35V)
C441 CAPACIOR
C442 CAPACIOR
C451 CAPACIOR
C452 CAPACIOR

ACH7101
CKSRYB103K50
CEAL470M10
CKSRYB102K50
CKSRYB102K50

C453 CAPACIOR
C471 CAPACIOR
C472 CAPACIOR
C492 CAPACIOR
C495 CAPACIOR

CKSRYB102K50
CKSRYB104K16
CKSRYB102K50
CKSRYB102K50
CKSRYB102K50

C511 CAPACIOR
C531 CAPACIOR

CCSRCH471J50
CKSRYB103K50

RESISTORS

All Resistors

RS1/16S###J

OTHERS

401 (REMOTE CONTROL UNIT)
404 (7P CABLE HOLDER)
471 (4P CABLE HOLDER)
CN401 (17P FFC CONNCTOR)
CN402 (28P FFC CONNCTOR)

GP1U27X
51063-0705
51063-0405
52044-1745
52044-2845

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

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
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Q POWER SW ASSY **SEMICONDUCTORS**

D501	LED(RED)	BR3371XJ30A
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SWITCHES AND RELAYS

S501	SWITCH	ASG1051
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RESISTORS

R501	RESISTOR	RS1/16S271J
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OTHERS

501	(CABLEB HOLDER 4P)	51063-0405
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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
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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

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

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.)	AKA7003
	(SHIELD CASE T)	ANK7072
	(SHIELD CASE B)	ANK7073
X201	(CRYSTAR RESO. 7.2MHz)	ASS1093
1	FM FRONT END	AXF7003
2	AM RF TUNING BLOCK	AXX7071

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 (dBμV)	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 $0 \pm 50\text{mV}$.

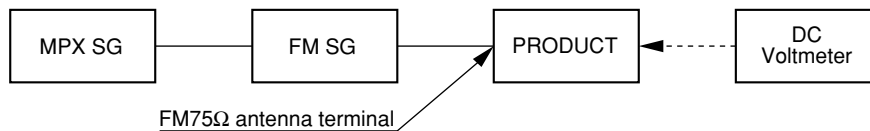


Fig.1 Adjustment Wiring Diagram

X FM/AM TUNER MODULE

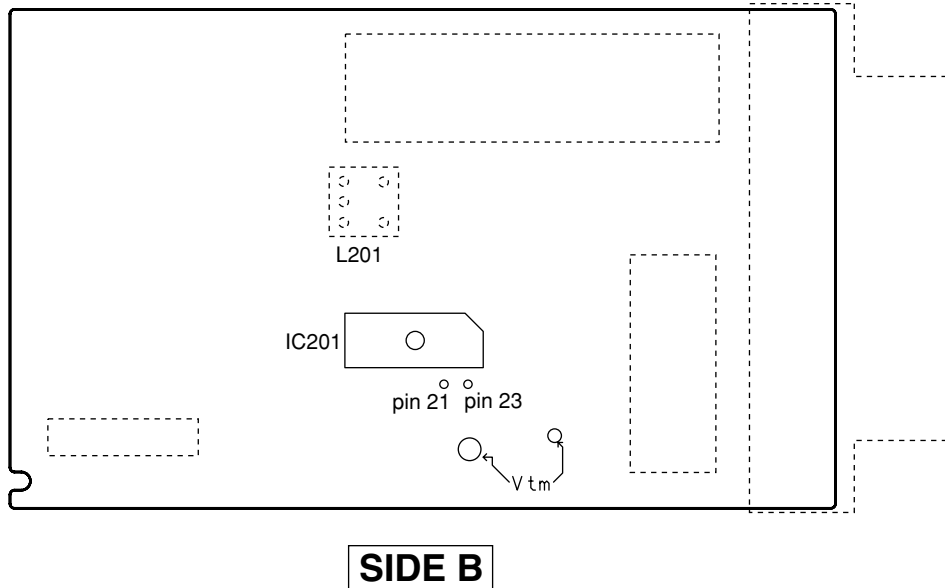


Fig.2 Adjustment Point

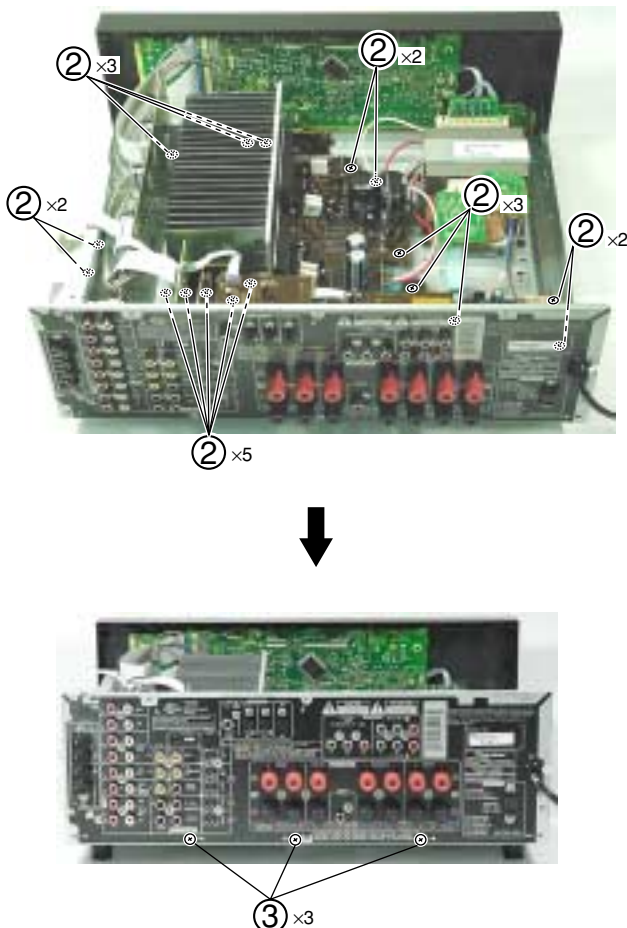
7. GENERAL INFORMATION

7.1 DISASSEMBLY and DIAGNOSIS

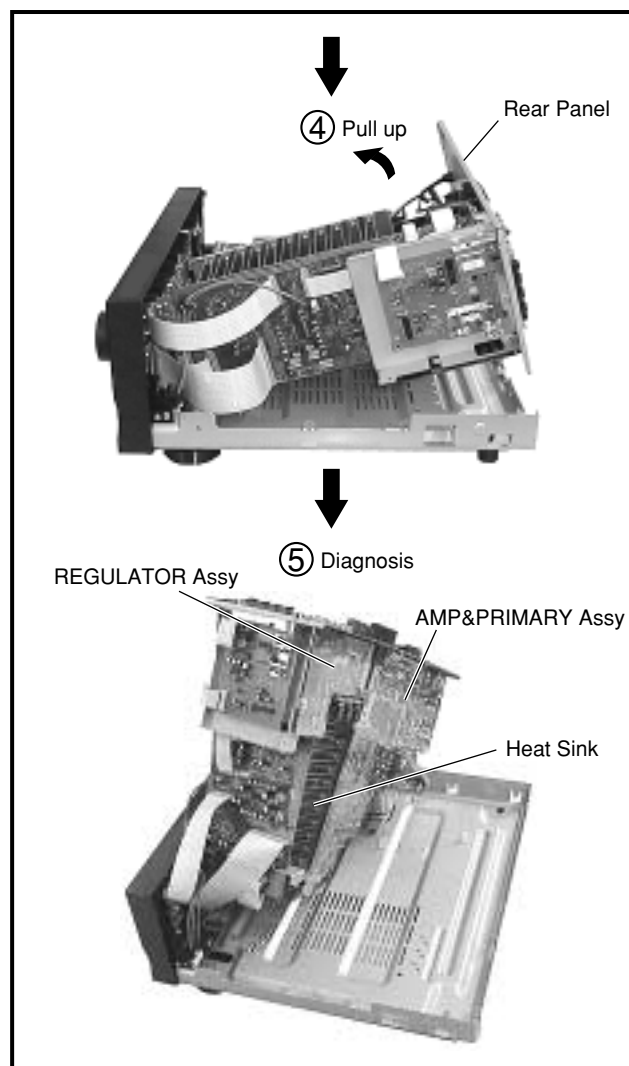
7.1.1 DISASSEMBLY and PCB LOCATION

■ Diagnosis

① Remove the top cover (seven screws).



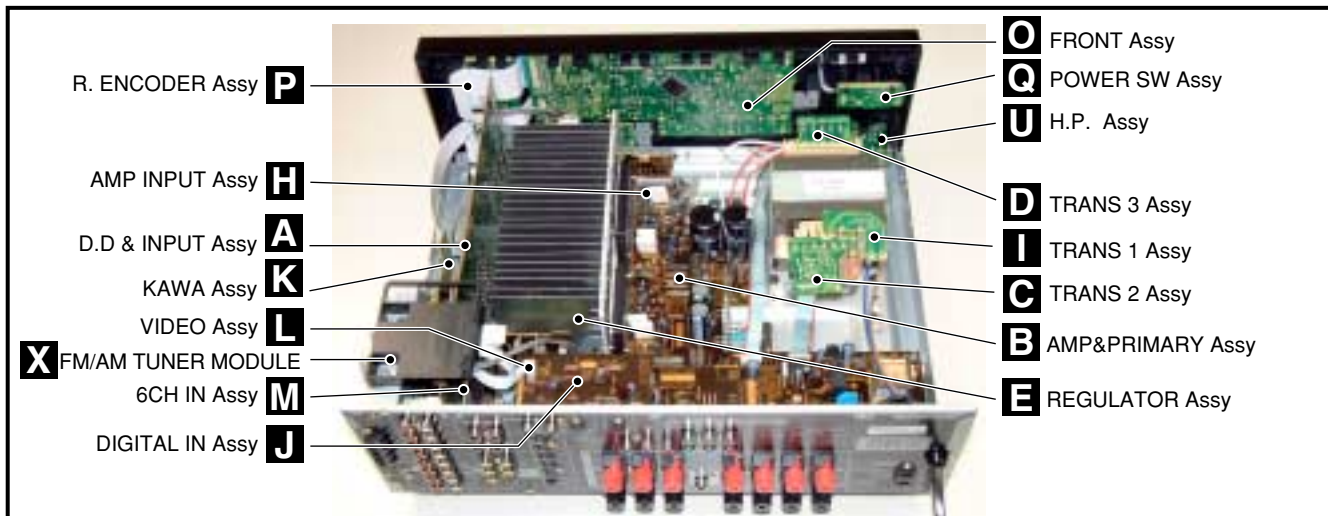
Note : This photograph may show a different model, however, the method for disassembly is the same.



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

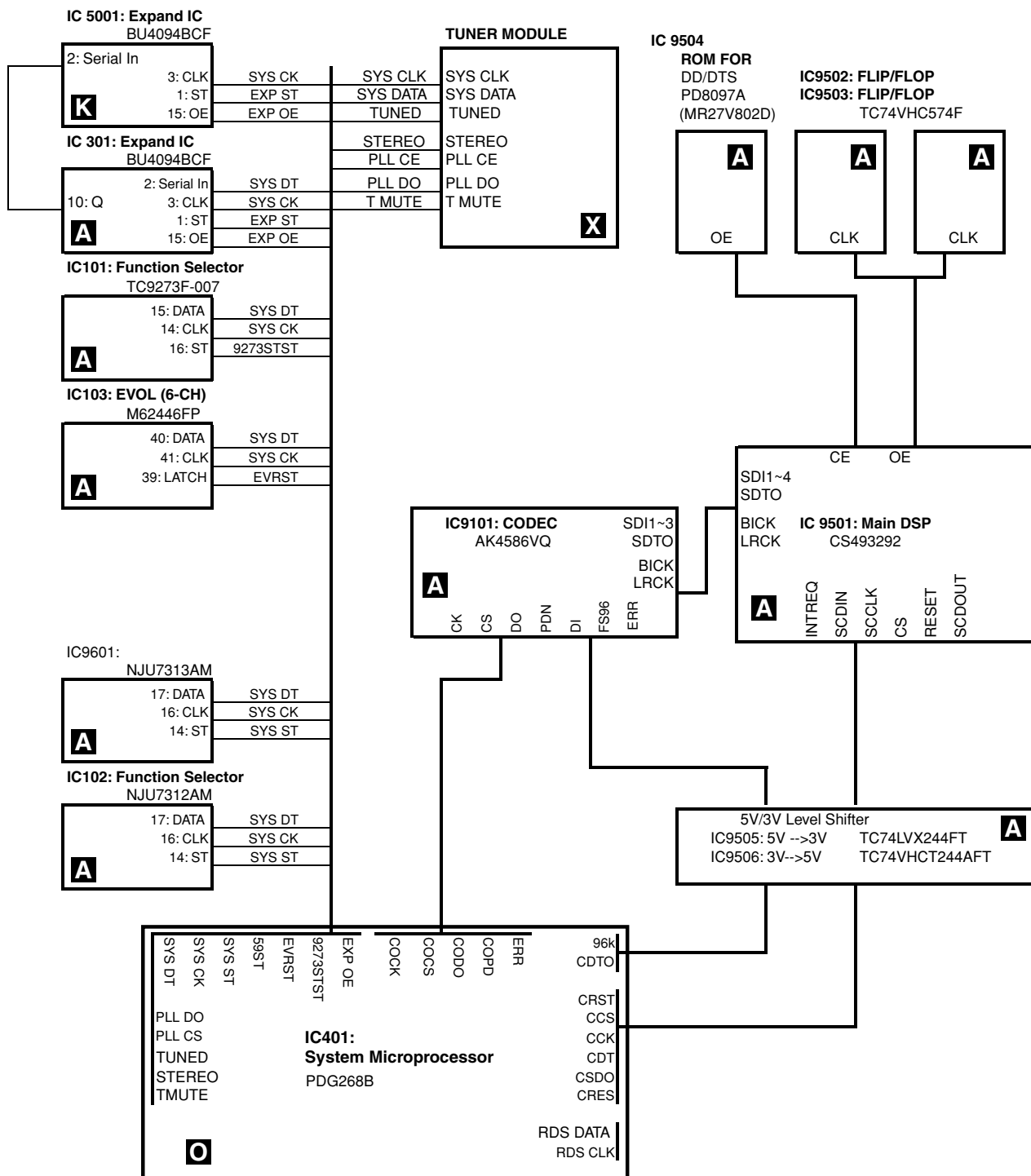
B

C

D

E

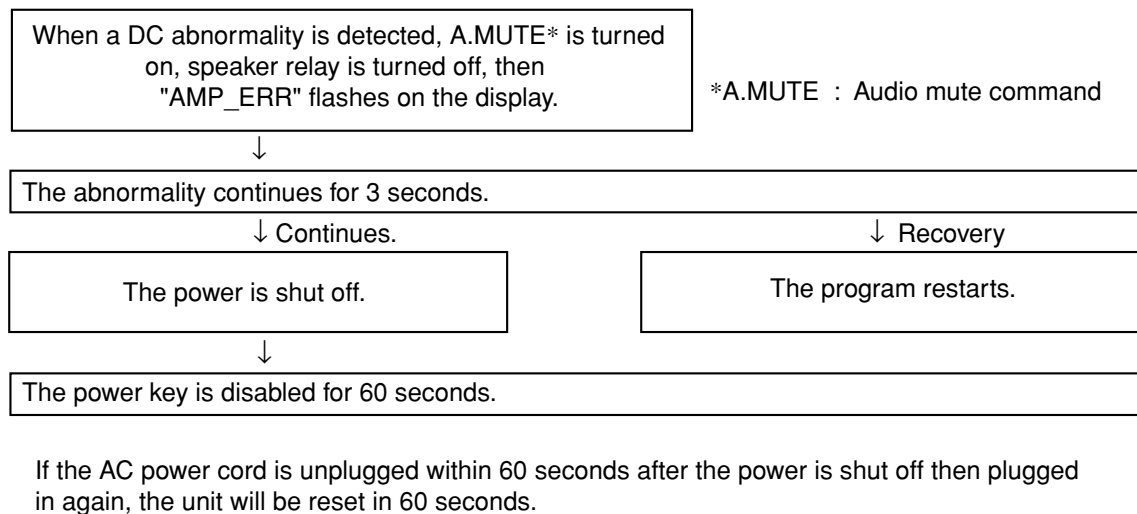
F



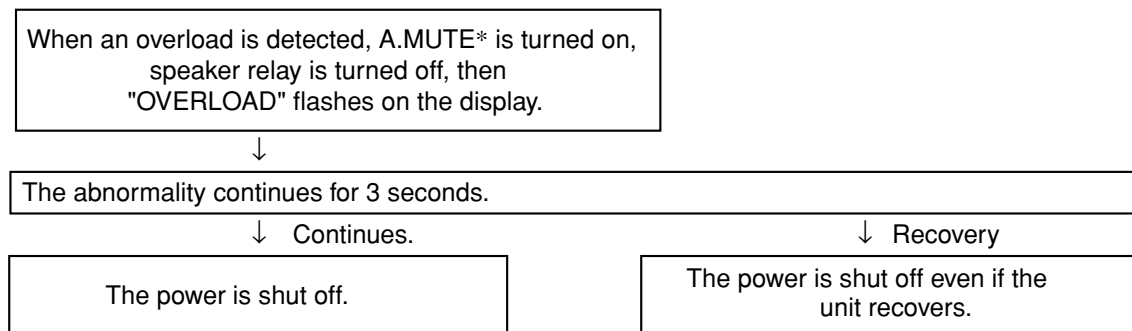
7.1.3 PROTECTION CIRCUIT

1. DC-abnormality detection

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

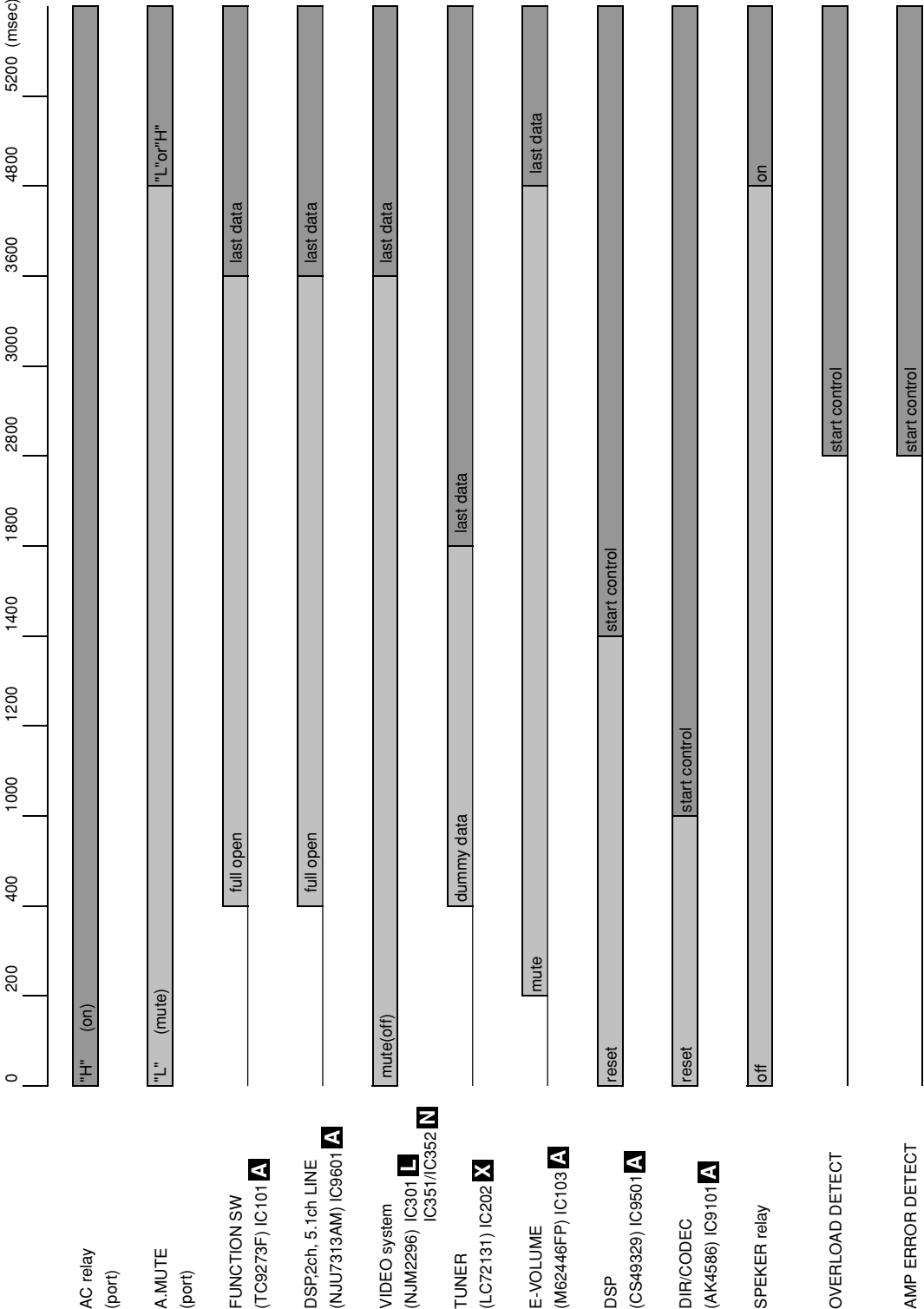


2. Overload detection



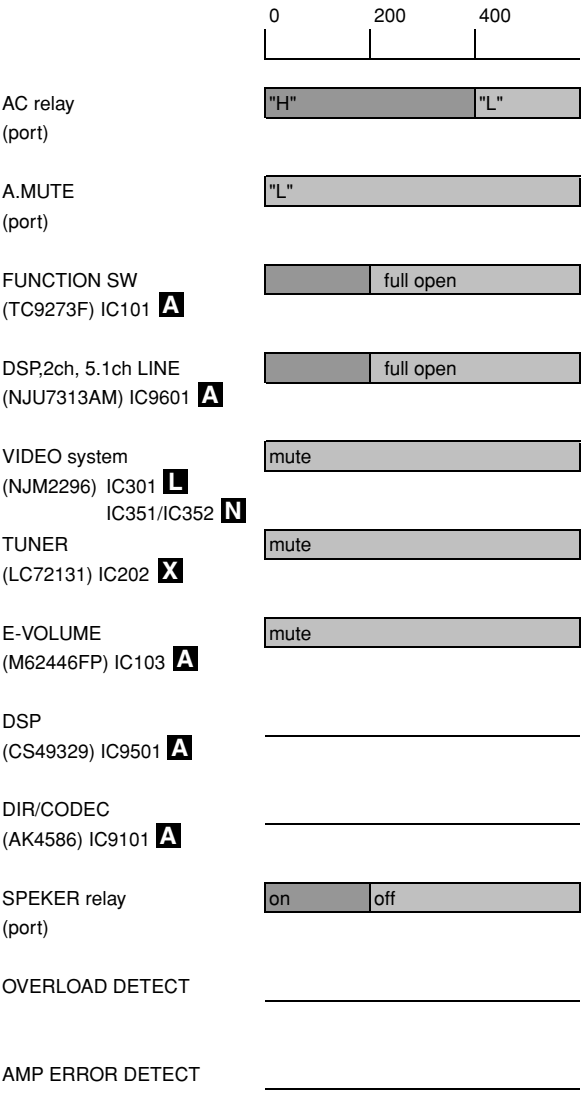
7.1.4 POWER ON SEQUENCE

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.

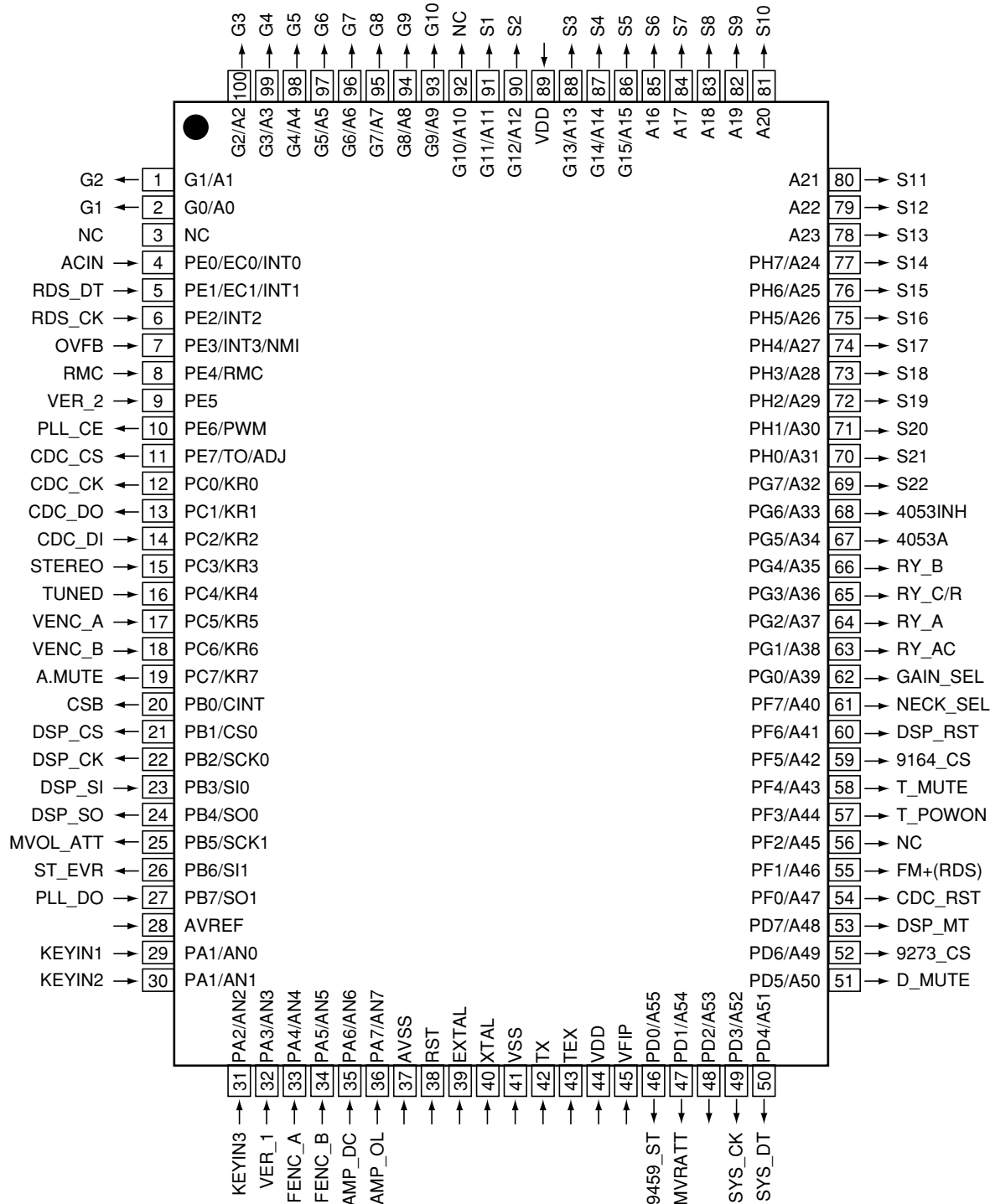
• List of IC

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

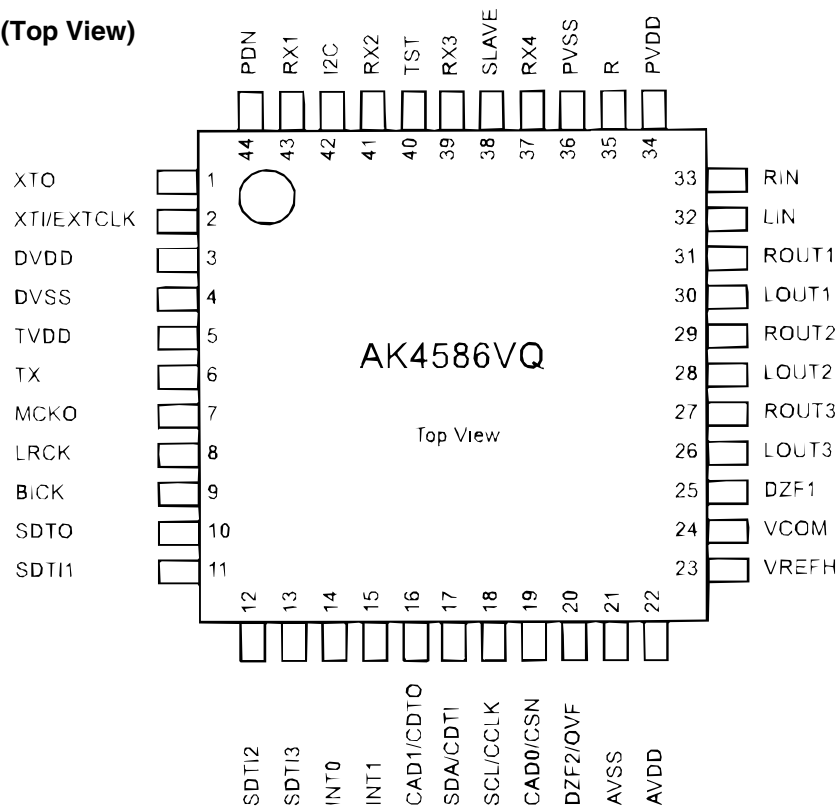
• Pin Function

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	

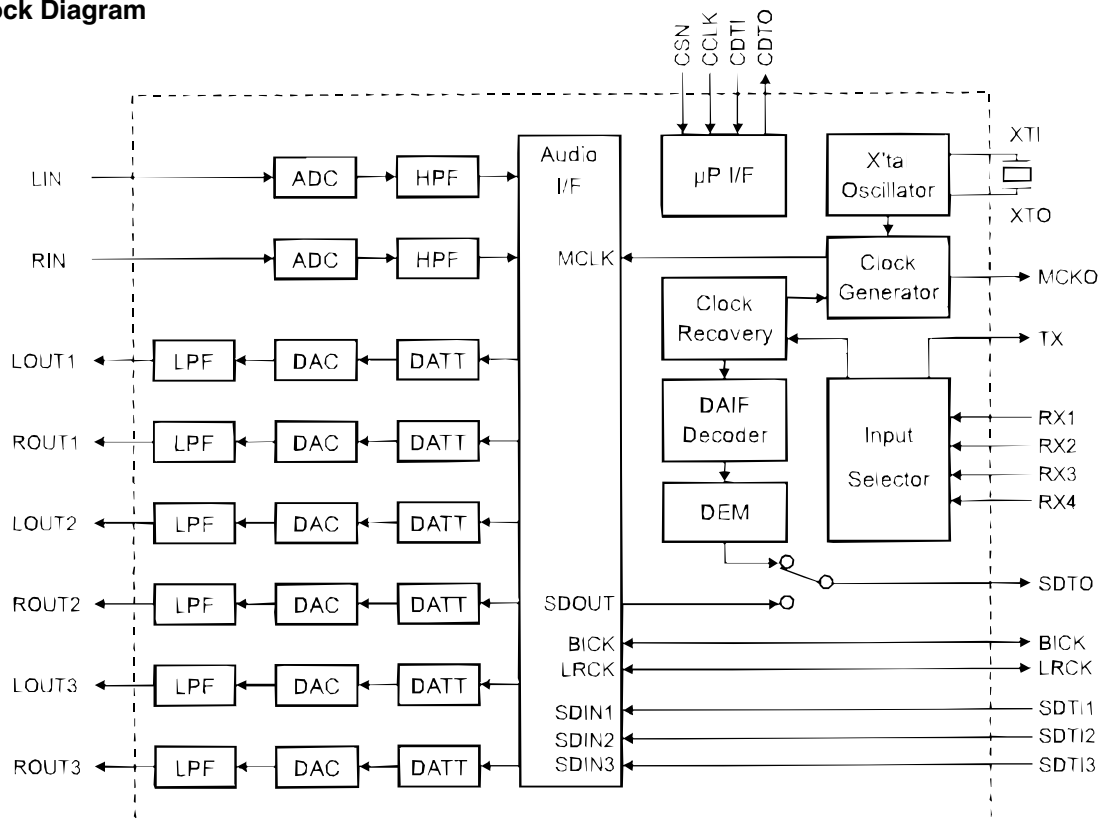
■ AK4586VQ (DD & INPUT ASSY : IC9101)

• 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 2.2μF 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 18kΩ +/-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.

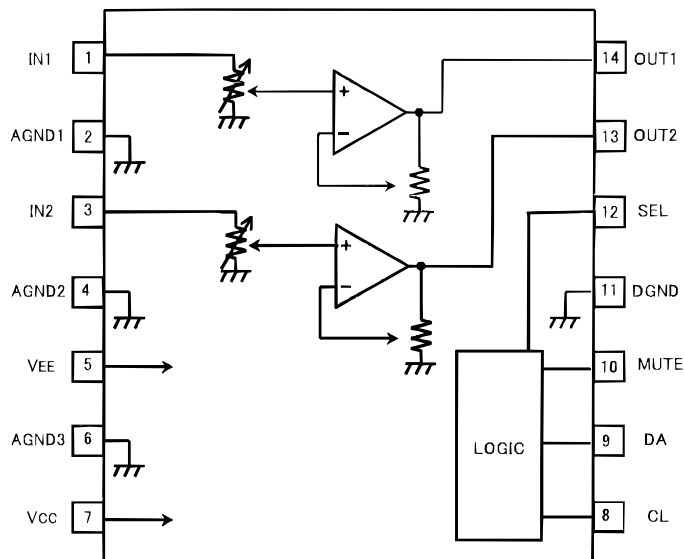
Notes:

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



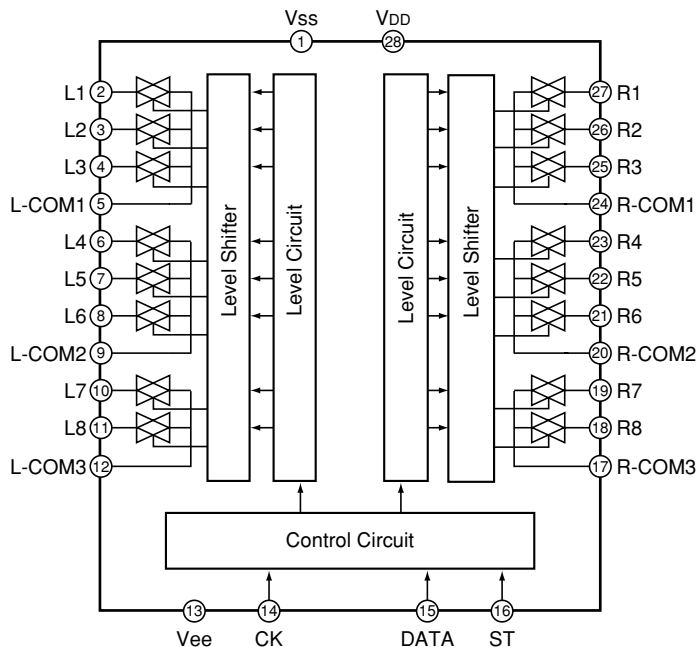
• Pin Function

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



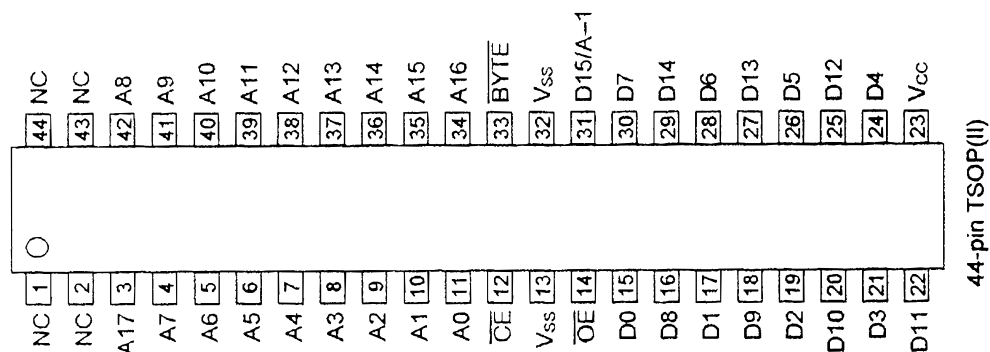
• Pin Function

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	Input and Output
21, 18	L8,R8	
26, 17	COM3	Input and Output
13	GND	
14	CK	Clock Input
15	DATA	Data Input
16	ST	Strobe Input
28	VDD	Plus Power Supply

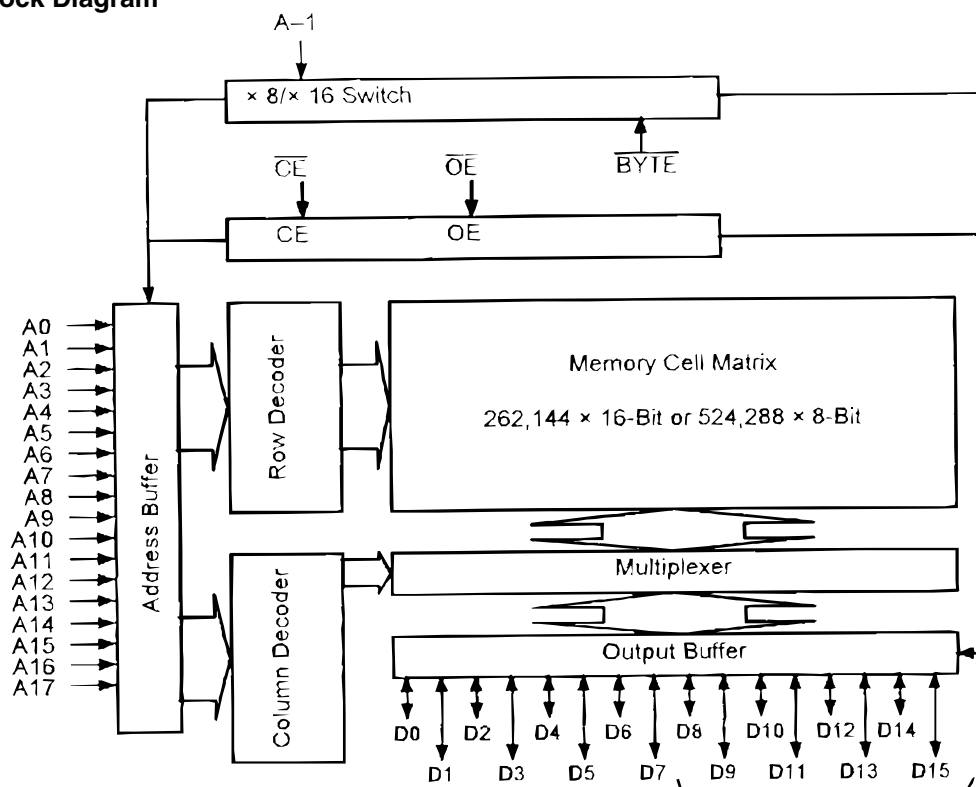
■ PD8104A (D.D & INPUT ASSY : IC9504)

• 4Mb P2ROM

■ Pin Arrangement (Top View)



■ Block Diagram

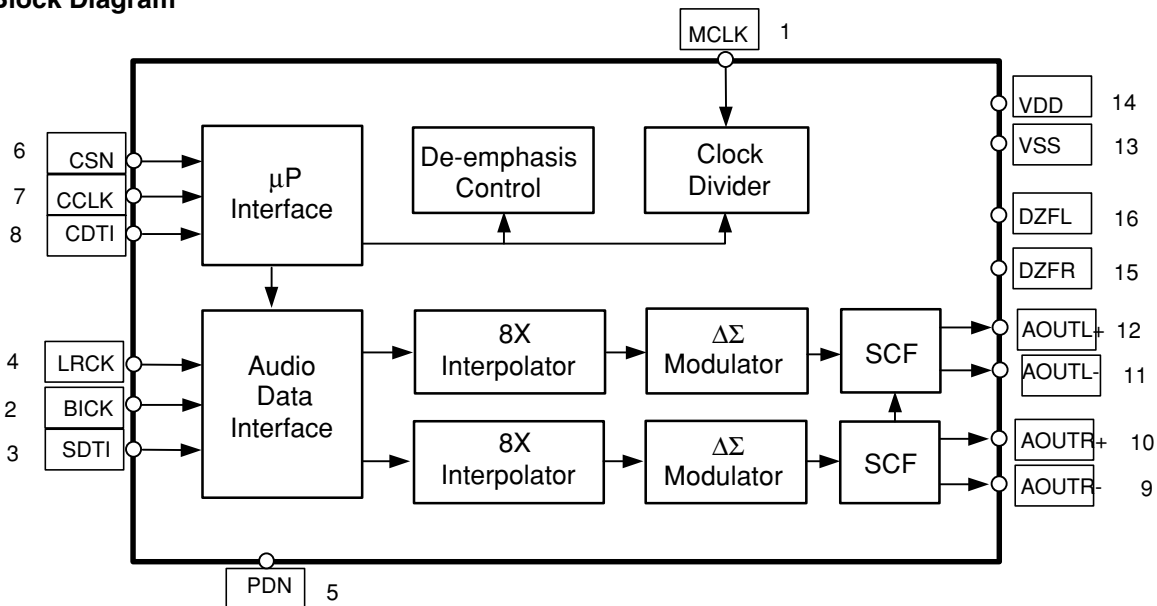


In 8-bit output mode, these pins are placed in a high-Z state and pin D15 functions as the A-1 address pin.

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 $\bar{L}1$, 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

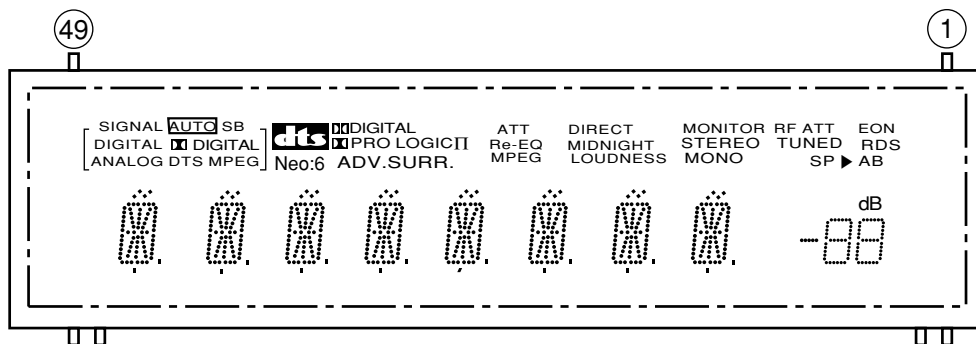
Note: All input pins should not be left floating.

7.2.2 DISPLAY

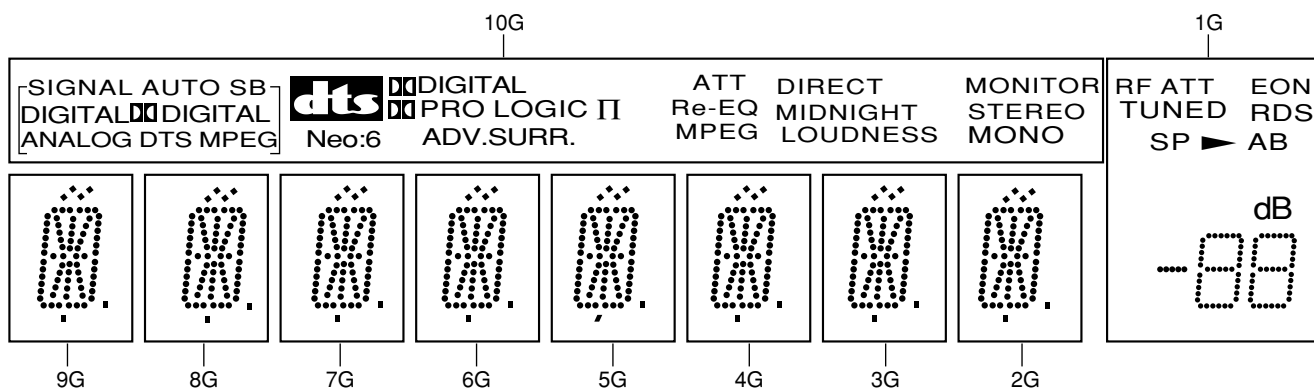
■ XAV3013 (FRONT ASSY : V401)

• FL DISPLAY

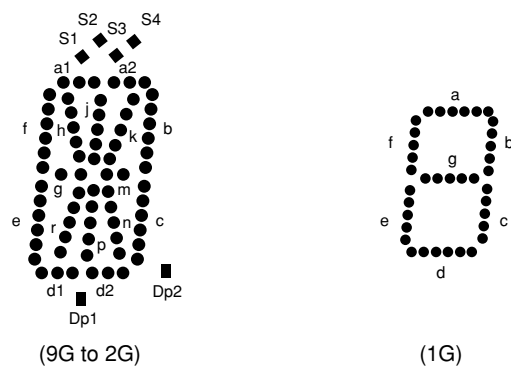
• Pin Assignment



• 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	

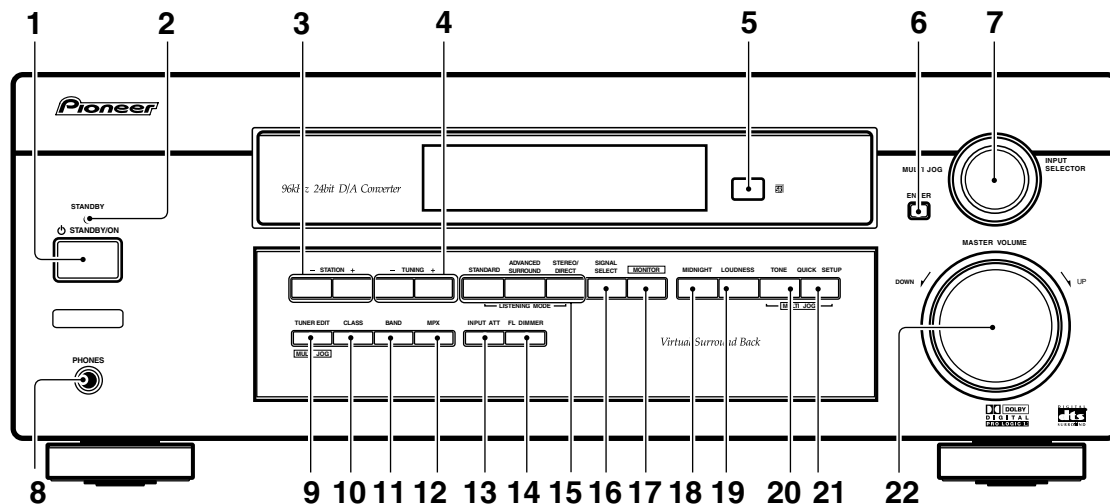
NOTE 1) F1, F2..... Filament
 2) NP..... No pin
 3) NX..... No extend pin
 4) DL..... Datum Line
 5) 1G to 10G..... Grid
 6) Field of vision is a minimum of 21.8° from the lower side.

• 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.

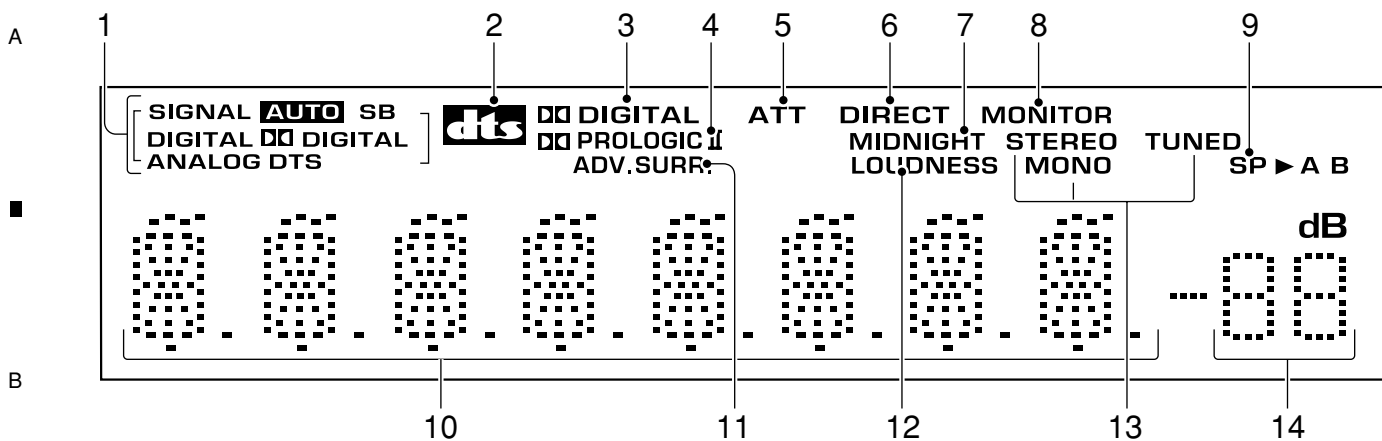
20 **TONE**

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

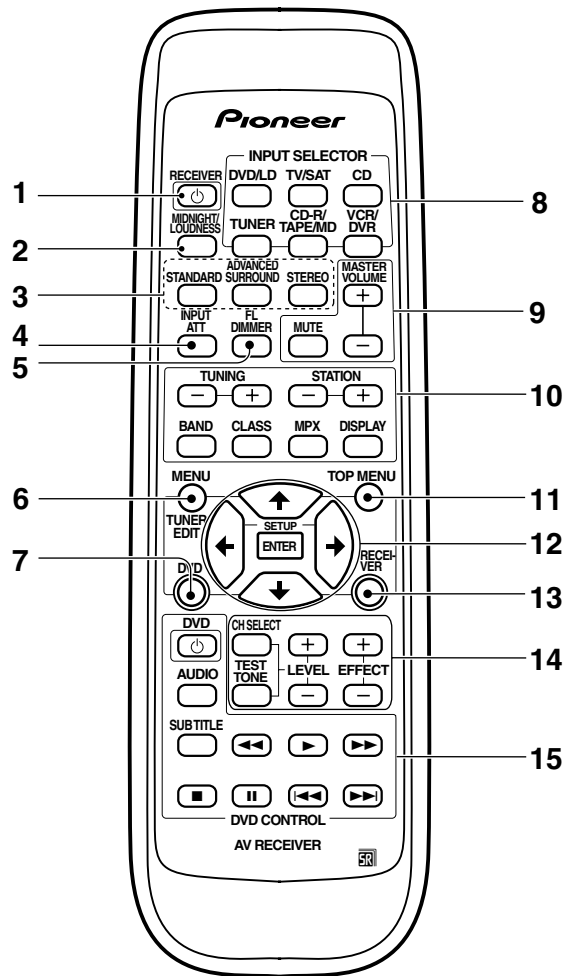
Shows the overall volume level. ---dB indicates the minimum level, and -0 dB indicates the maximum level.



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

