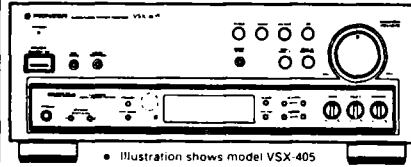


# Service Manual



ORDER NO.  
**RRV1467**

**AUDIO/VIDEO STEREO RECEIVER**

# VSX-405

## VSX-305

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

Type	Model		Power Requirement	Remarks
	VSX-405	VSX-305		
KUXJ	○	○	AC120V	
KCXJ	○	○	AC120V	

## CONTENTS

1. SAFETY INFORMATION .....	2
2. EXPLODED VIEWS, PACKING AND PARTS LIST .....	3
3. BLOCK DIAGRAM .....	9
4. SCHEMATIC AND PCB CONNECTION DIAGRAMS .....	11
5. PCB PARTS LIST .....	35
6. ADJUSTMENTS .....	40
7. IC INFORMATION .....	42
8. FL INFORMATION .....	44
9. DISASSEMBLY .....	45
10. PANEL FACILITIES .....	47
11. SPECIFICATIONS .....	51

# 1. SAFETY 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**

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5). When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.



**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.

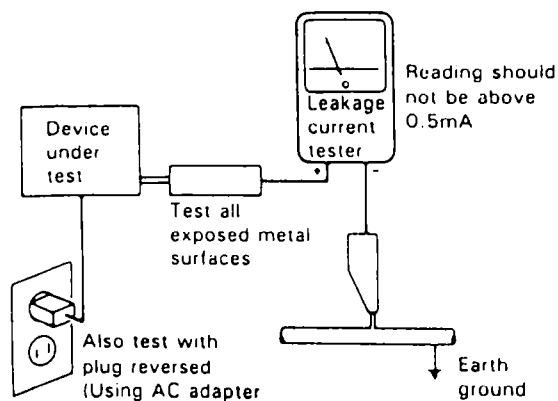
(FOR USA MODEL ONLY)

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

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

## 2. EXPLODED VIEWS, PACKING AND PARTS LIST

### NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

### 2.1 PACKING

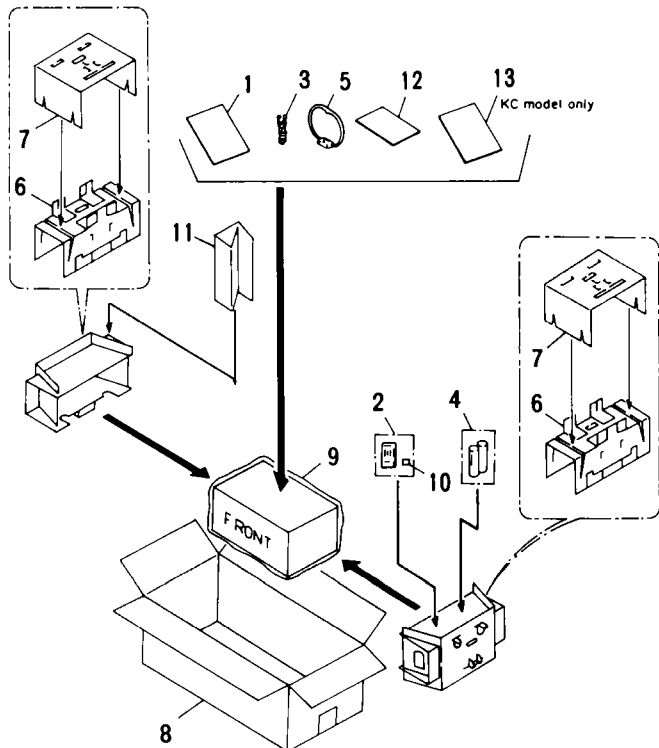
#### ■ CONTRAST OF VSX-405/KUXJ, KCXJ, VSX-305/KUXJ AND KCXJ

VSX-405/KUXJ, KCXJ, VSX-305/KUXJ and KCXJ have the same construction except for the following:

Mark	No.	Symbol & Description	Part No.				Remarks
			VSX-405		VSX-305		
			KUXJ	KCXJ	KUXJ	KCXJ	
NSP	8	Packing Case	AHD7268	AHD7268	AHD7263	AHD7263	
	12	Warranty Card	ARY1051	ARY1075	ARY1051	ARY1075	
	13	Operating Instructions (French)	Not Used	ARC7104	Not Used	ARC7104	

#### ■ PARTS LIST FOR VSX-405/KUXJ

Mark	No.	Description	Part No.
	1	Operating Instructions (English)	ARB7065
	2	Remote Control Unit (CU-VSX105)	AXD7083
NSP	3	FM Antenna	ADH1017
	4	Battery (R6P, AA)	VEM-013
	5	Loop Antenna	ATB7004
	6	Pad Side A	AHA7119
	7	Pad Side B	AHA7120
	8	Packing Case	AHD7268
	9	Packing Sheet	AHG1218
	10	Battery Cover	AZA7123
NSP	11	Sub Pad	AHA7051
	12	Warranty Card	ARY1051
	13	.....	



# VSX-405, VSX-305

## 2.2 EXTERIOR

### ■ CONTRAST OF VSX-405/KUXJ, KCXJ, VSX-305/KUXJ AND KCXJ

VSX-405/KUXJ, KCXJ, VSX-305/KUXJ and KCXJ have the same construction except for the following:

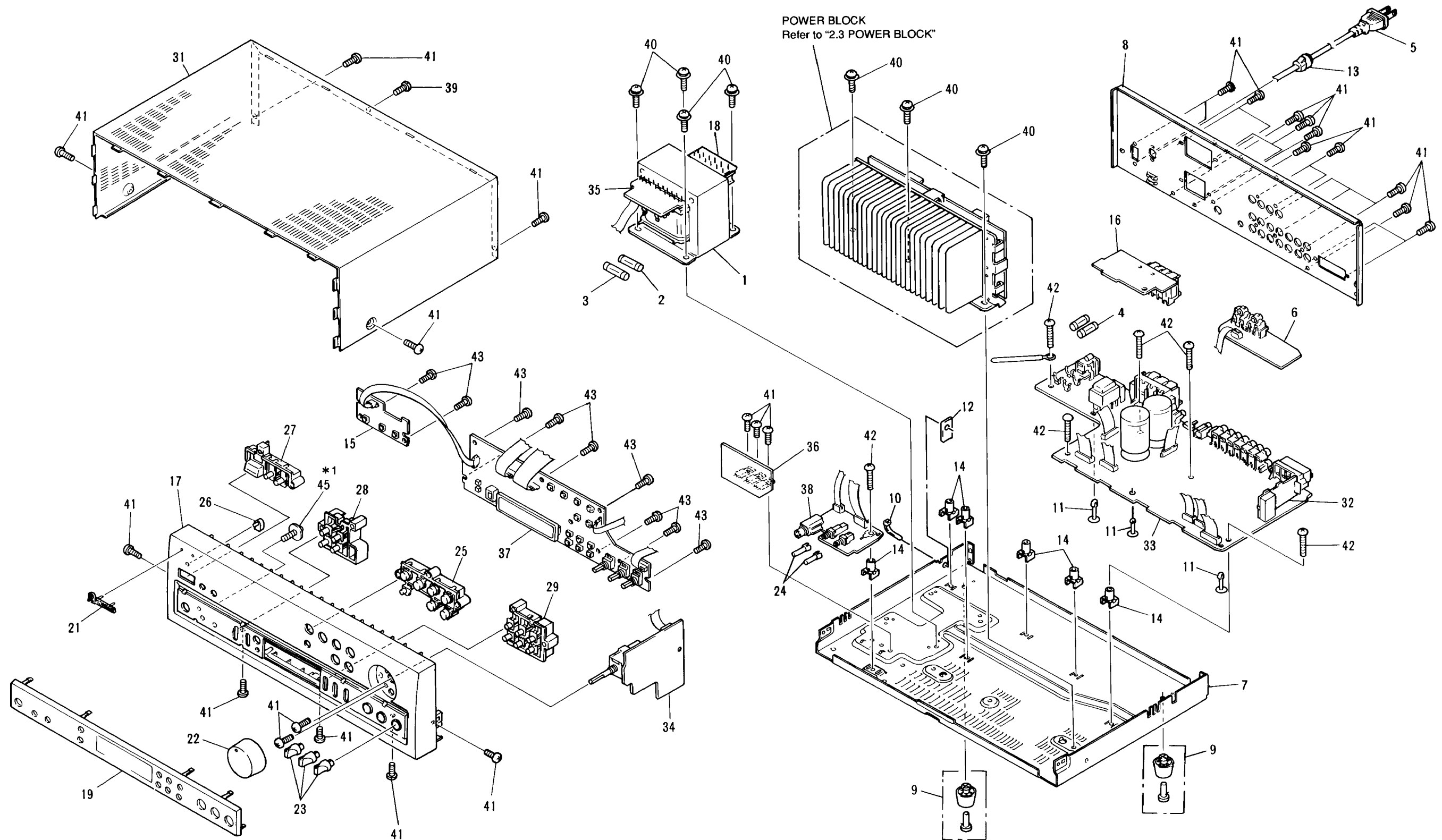
Mark	No.	Symbol & Description	Part No.				Remarks
			VSX-405		VSX-305		
			KUXJ	KCXJ	KUXJ	KCXJ	
△	1	Power Transformer (T1)	ATS7108	ATS7109	ATS7112	ATS7113	
	8	Rear Panel	ANC7341	ANC7388	ANC7337	ANC7389	
	17	Front Panel	AMB7334	AMB7334	AMB7329	AMB7329	
	33	MOTHER Assy	AWZ8053	AWZ8053	AWZ8056	AWZ8056	

### ■ PARTS LIST FOR VSX-405/KUXJ

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
△	1	Power Transformer (T1)	ATS7108		36	REG. Assy	AWZ8067
△	2	Fuse (1A, FU3)	REK1075		37	FL AND UCOM Assy	AWZ8060
△	3	Fuse (1A, FU4)	REK1075		38	SP. SW AND H.P Assy	AWZ8068
△	4	Fuse (6.3A, FU1)	REK1085		39	Screw	BCZ30P080FZK
△	5	AC Power Cord	PDG1015		40	Screw	ABA7019
	6	VIDEO Assy	AWZ8066		41	Screw	BBZ30P080FZK
NSP	7	Chassis	ANA7042		42	Screw	BBZ30P200FMC
	8	Rear Panel	ANC7341		43	Screw	BPZ26P080FMC
	9	Foot	AEC1505	NSP	44	Washer	AEE7002
NSP	10	Binder	Z09-BK1		45	Screw	ABA7009
	11	PCB Support	AEC1581				
NSP	12	BINDING Assy	AWZ8370				
	13	Cord Stopper	CM-22C				
	14	PCB Mold	AMR2533				
	15	ST. IND. Assy	AWZ8065				
	16	FRONT SP. Assy	AWZ8080				
	17	Front Panel	AMB7334				
NSP	18	PRIMARY Assy	AWZ8368				
	19	FL Panel	AAK7237				
	20	.....					
	21	Name Plate	PAM1608				
	22	Round Knob L	AAB7082				
	23	Round Knob S	AAB7083				
	24	Push Button	AAD7282				
	25	Function Button	AAD7281				
	26	LED Lens	PNW2019				
	27	Power Button	AAD7278				
	28	Hinge Button A	AAD7279				
	29	Hinge Button B	AAD7280				
	30	.....					
	31	Bonnet Case	ANE7102				
	32	FM/AM TUNER MODULE	AXQ1002				
	33	MOTHER Assy	AWZ8053				
	34	VOL. Assy	AWZ8078				
	35	TRANS Assy	AWZ8072				

Exterior

NOTE: Screws adjacent to ▼ mark on the product are used for disassembly



Note \* 1: Screw for fixing the headphone jack.

# VSX-405, VSX-305

## 2.3 POWER BLOCK

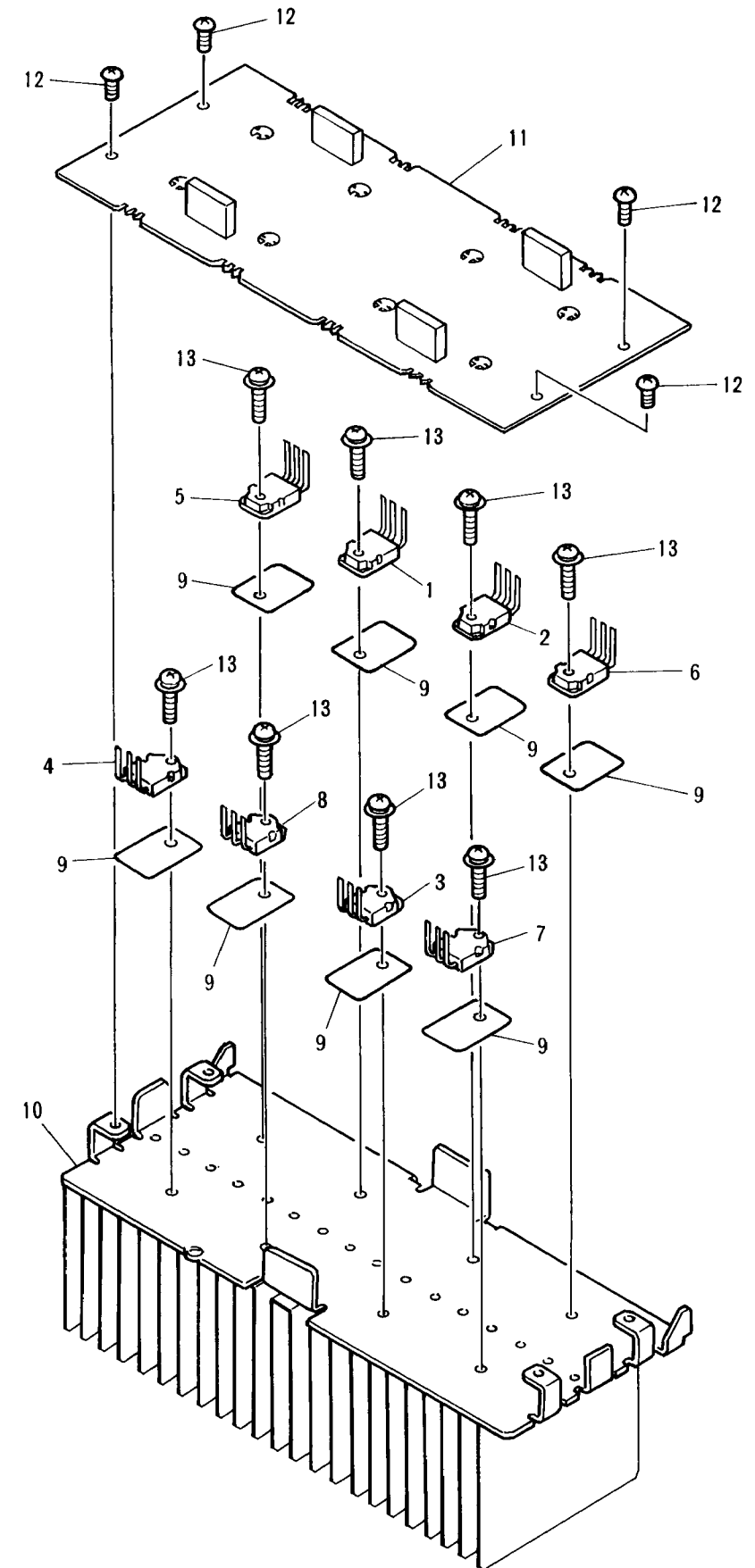
### ■ CONTRAST OF VSX-405/KUXJ, KCXJ, VSX-305/KUXJ AND KCXJ

VSX-405/KUXJ, KCXJ, VSX-305/KUXJ and KCXJ have the same construction except for the following:

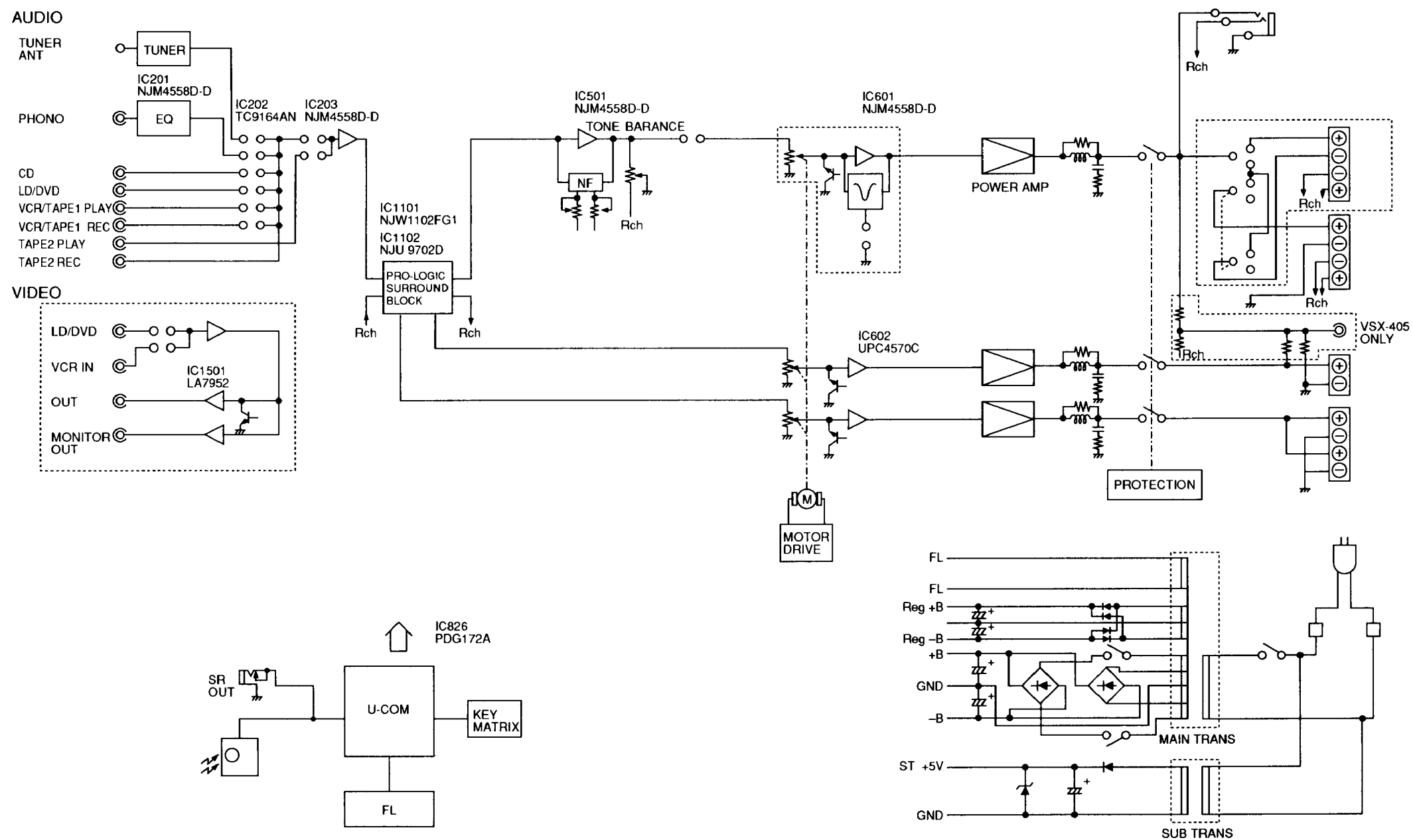
Mark	No.	Symbol & Description	Part No.				Remarks
			VSX-405		VSX-305		
			KUXJ	KCXJ	KUXJ	KCXJ	
△	1	Transistor (Q2)	2SC5200	2SC5200	2SC5198	2SC5198	
△	2	Transistor (Q1)	2SC5200	2SC5200	2SC5198	2SC5198	
△	3	Transistor (Q11)	2SC5200	2SC5200	2SC5198	2SC5198	
△	4	Transistor (Q14)	2SA1943	2SA1943	2SA1941	2SA1941	
△	5	Transistor (Q4)	2SA1943	2SA1943	2SA1941	2SA1941	
△	6	Transistor (Q3)	2SA1943	2SA1943	2SA1941	2SA1941	
△	7	Transistor (Q13)	2SA1943	2SA1943	2SA1941	2SA1941	
△	8	Transistor (Q12)	2SC5200	2SC5200	2SC5198	2SC5198	
	11	AMP Assy	AWZ8074	AWZ8074	AWZ8075	AWZ8075	

### ■ PARTS LIST FOR VSX-405/KUXJ

Mark	No.	Description	Part No.
△	1	Transistor (Q2)	2SC5200
△	2	Transistor (Q1)	2SC5200
△	3	Transistor (Q11)	2SC5200
△	4	Transistor (Q14)	2SA1943
△	5	Transistor (Q4)	2SA1943
△	6	Transistor (Q3)	2SA1943
△	7	Transistor (Q13)	2SA1943
△	8	Transistor (Q12)	2SC5200
	9	Sheet	AEE1014
NSP	10	Radiator	ANH7037
	11	AMP Assy	AWZ8074
	12	Screw	BBZ30P080FZK
	13	Screw	ABA1037

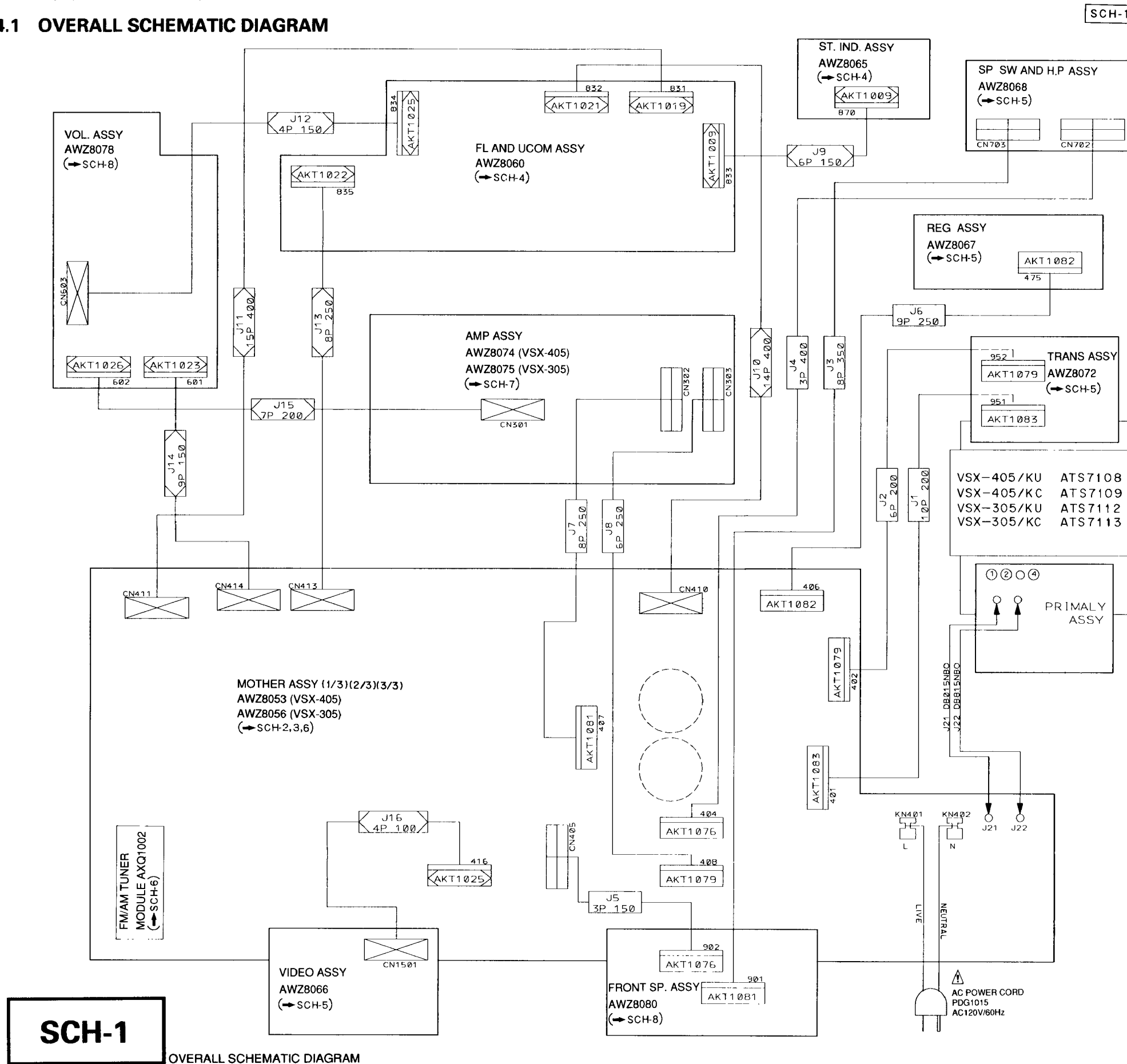


### 3. BLOCK DIAGRAM



# 4. SCHEMATIC AND PCB CONNECTION DIAGRAMS

## 4.1 OVERALL SCHEMATIC DIAGRAM



SCH-1

NOTE FOR SCHEMATIC DIAGRAMS (Type 1A)

1. When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".

2. Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.

3. RESISTORS:  
Unit: k: kΩ, M: MΩ, or Ω unless otherwise noted.  
Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.  
Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted

4. CAPACITORS:  
Unit: p: pF or μF unless otherwise noted  
Ratings: capacitor (μF)/ voltage (V) unless otherwise noted.  
Rated voltage: 50V except for electrolytic capacitors.

5. COILS:  
Unit: m: mH or μH unless otherwise noted

6. VOLTAGE AND CURRENT:  
V : Signal voltage at rated output  
V : or - V :  
DC voltage (V) at no input signal unless otherwise noted.  
Value in ( ) is DC voltage at rated power.  
mA : or - mA :  
DC current at no input signal unless otherwise noted

7. OTHERS:  
⊗ or ⊙ : Adjusting point.  
• : Measurement point.  
• The Δ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.

8. SCH-□ ON THE SCHEMATIC DIAGRAM.  
• SCH-□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)

9. SWITCHES (Underline indicates switch position):  
ST IND. ASSY  
S876 : POWER STANDBY/ON  
S877 : SFC MODE  
S878 : DOLBY PRO LOGIC

FL AND UCOM ASSY  
S825 : STATION +  
S826 : STATION -  
S827 : CLASS  
S829 : MPX MODE  
S830 : TUNING +  
S831 : TUNING -  
S832 : FM/AM  
S835 : TAPE 2 MONITOR  
S836 : VCR/TAPE 1  
S837 : SUPER BASS  
S839 : MEMORY  
S840 : CD  
S841 : LD/DVD  
S842 : TUNER  
S843 : PHONO

SP SW AND HP. ASSY  
S701 : SPEAKER A OFF/ON  
S702 : SPEAKER B OFF/ON

OVERALL SCHEMATIC DIAGRAM

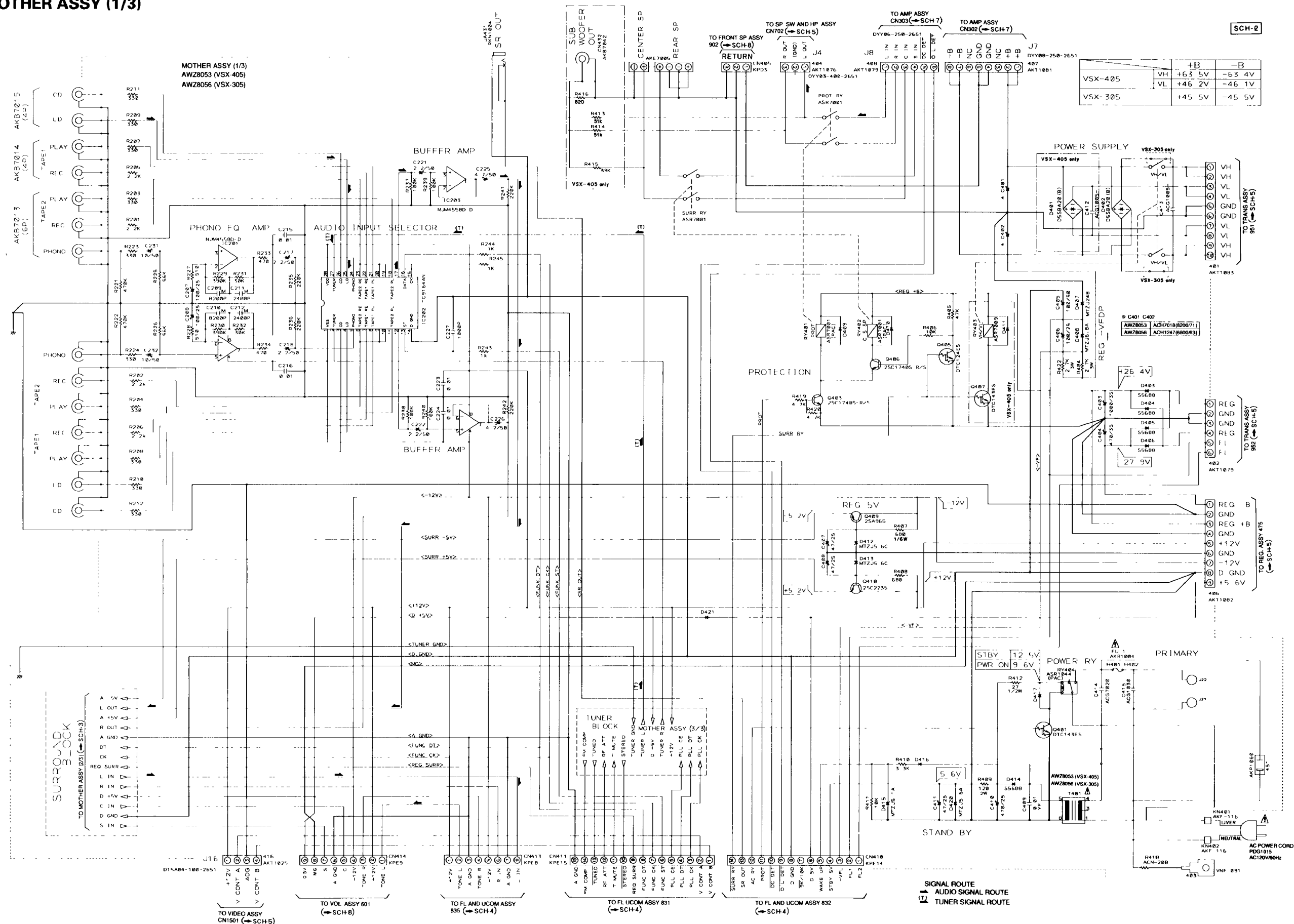
SCH-1

OVERALL SCHEMATIC DIAGRAM

SCH-1



4.2 MOTHER ASSY (1/3)



SCH-2

SCH-2

MOTHER ASSY (1/3)

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

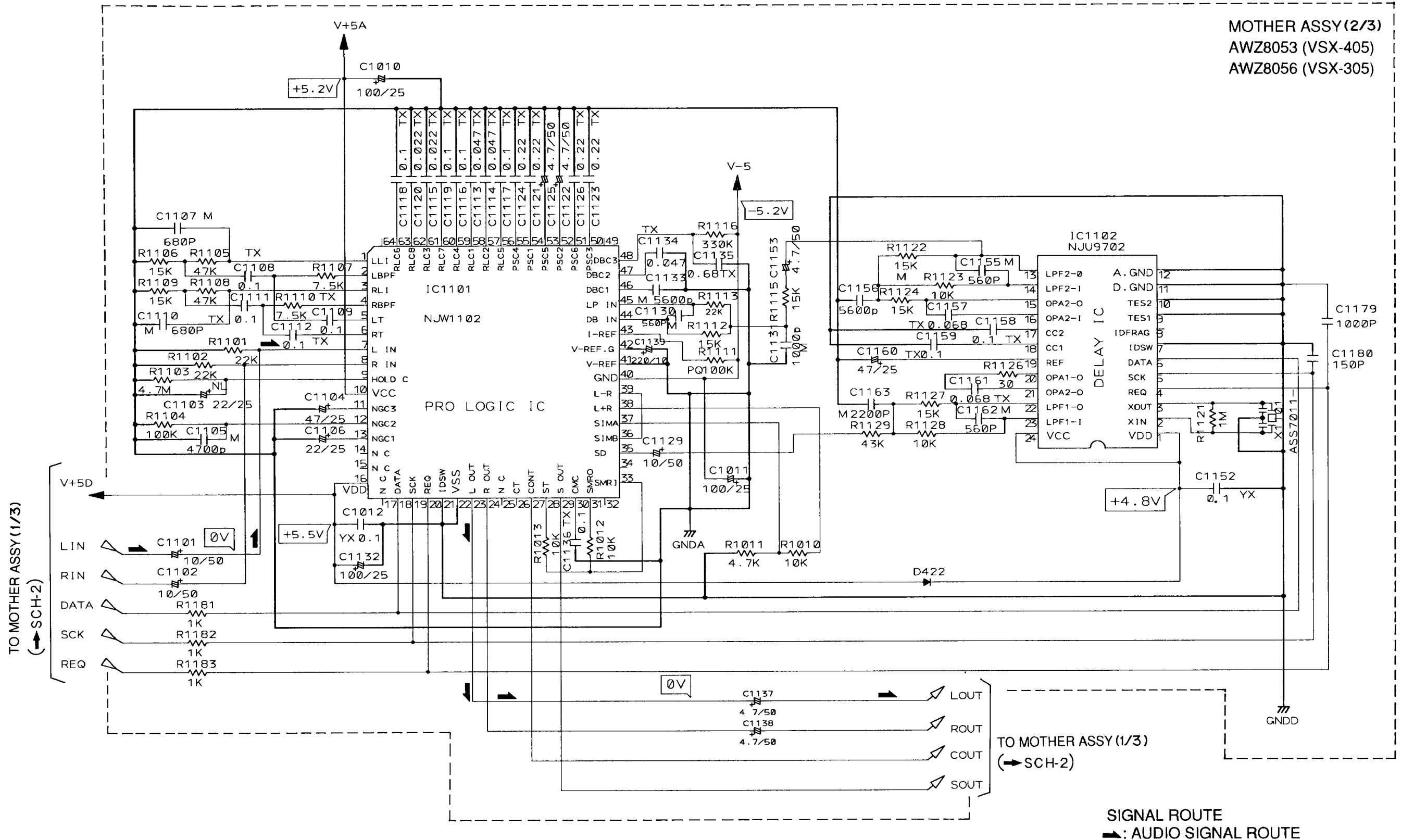
MOTHER ASSY (1/3)

SCH-2

4.3 MOTHER ASSY (2/3)

SCH-3

MOTHER ASSY (2/3)  
AWZ8053 (VSX-405)  
AWZ8056 (VSX-305)



TO MOTHER ASSY (1/3)  
(SCH-2)

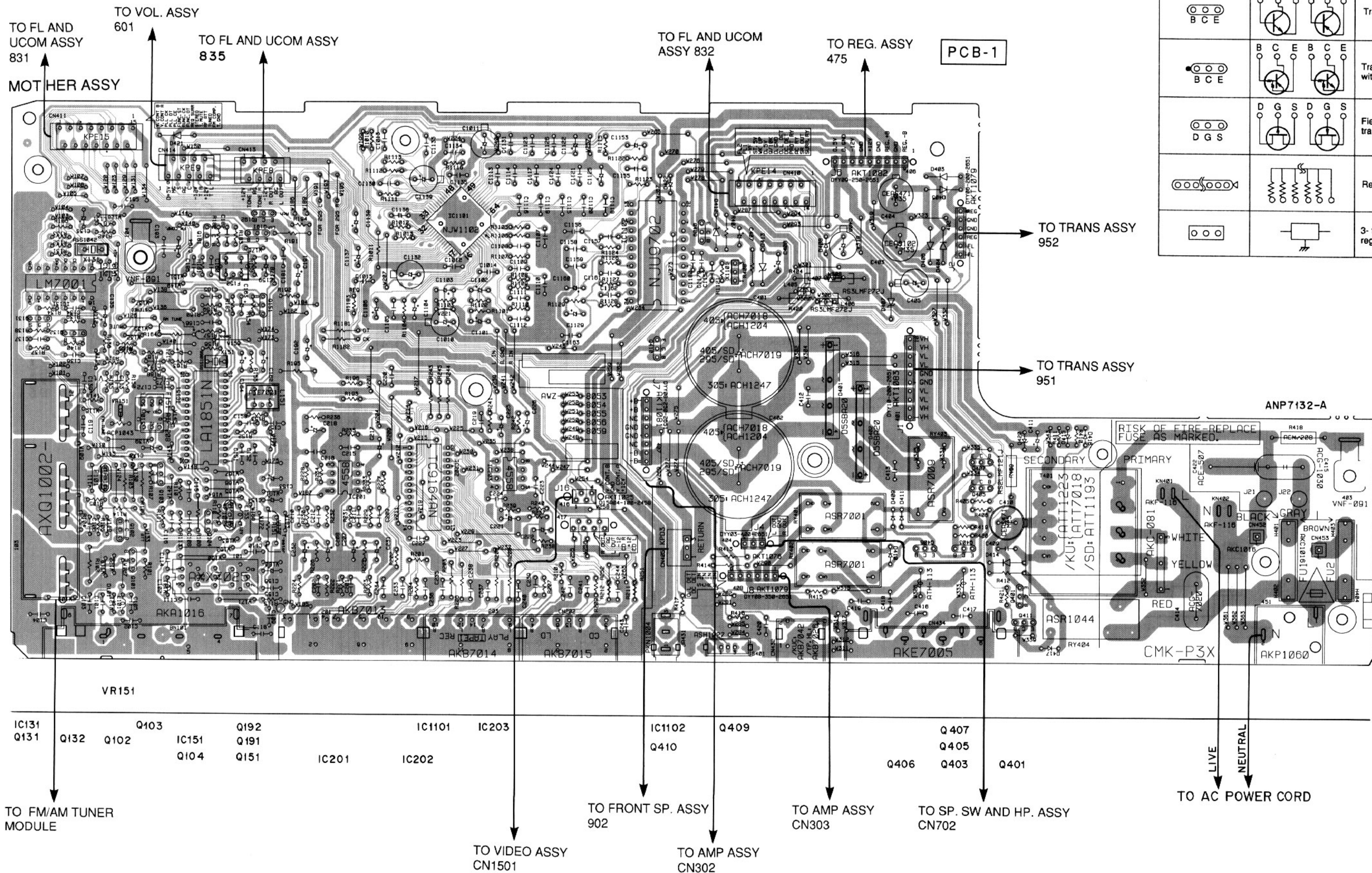
SIGNAL ROUTE  
▲: AUDIO SIGNAL ROUTE

- 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.

- This diagram is viewed from the mounted parts side.

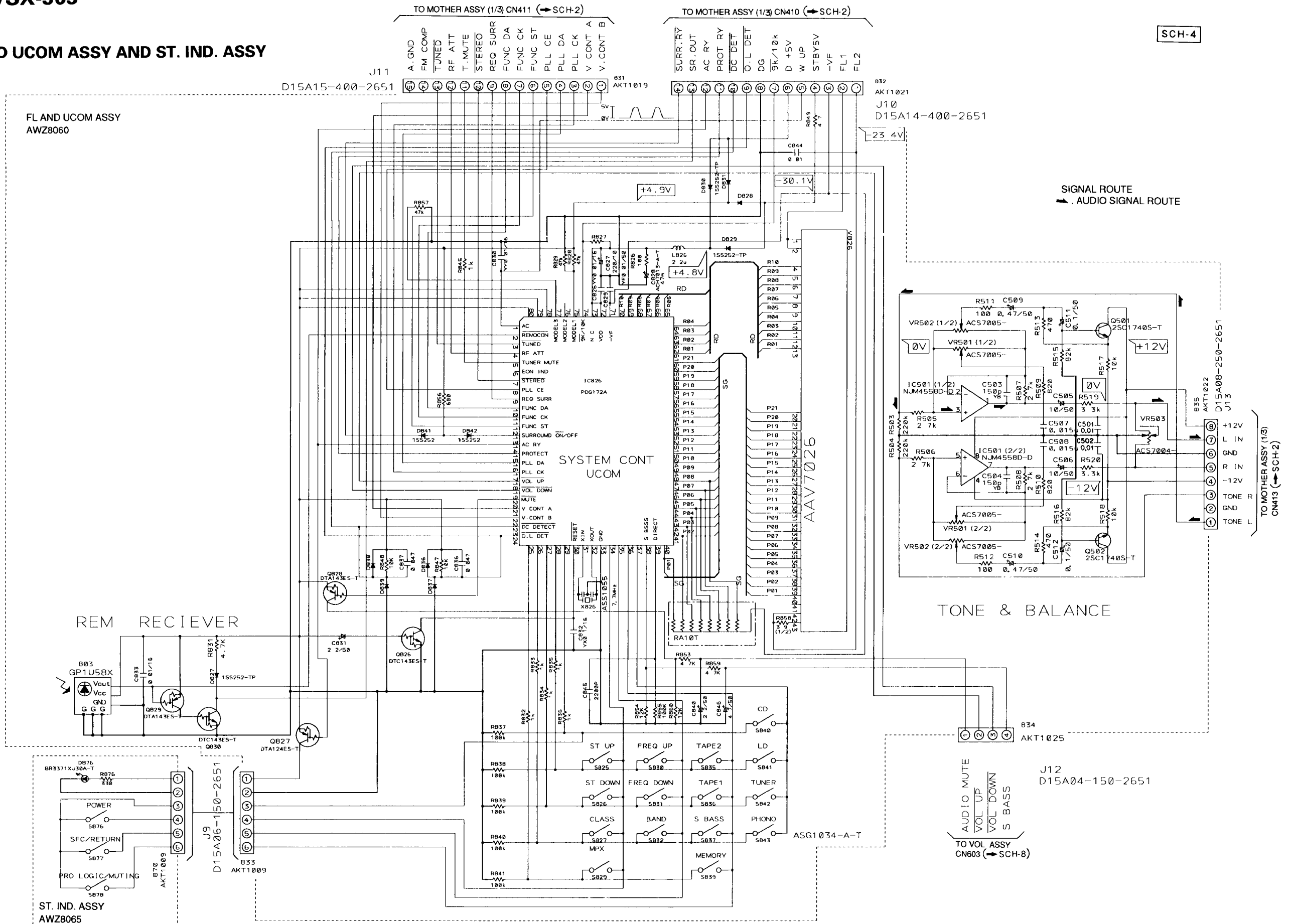
- Part numbers in PCB diagrams match those in the schematic diagrams.
- A comparison between the main parts of PCB and schematic diagrams is shown below.

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



4.4 FL AND UCOM ASSY AND ST. IND. ASSY

SCH-4



FL AND UCOM ASSY  
AWZ8060

REM RECIEVER

ST. IND. ASSY  
AWZ8065

TONE & BALANCE

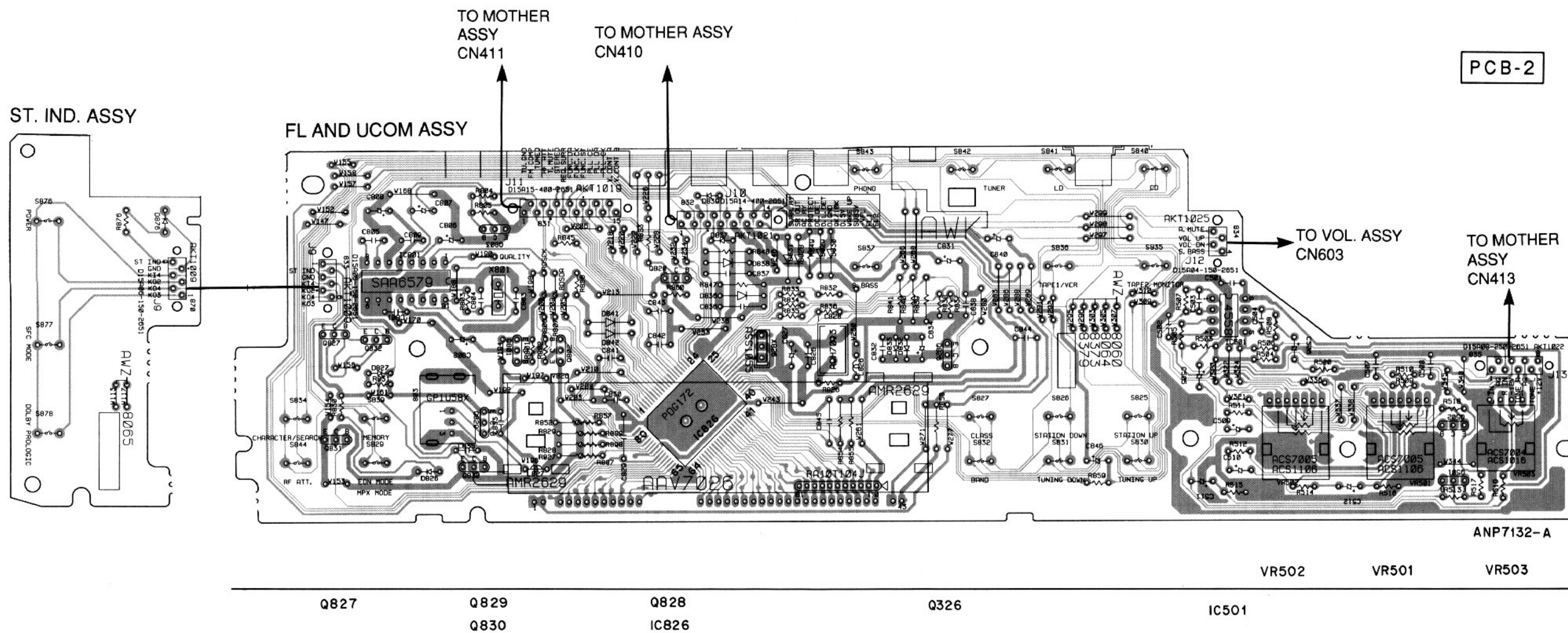
SIGNAL ROUTE  
AUDIO SIGNAL ROUTE

FL AND UCOM ASSY,  
ST. IND. ASSY

FL AND UCOM ASSY,  
ST. IND. ASSY

SCH-4

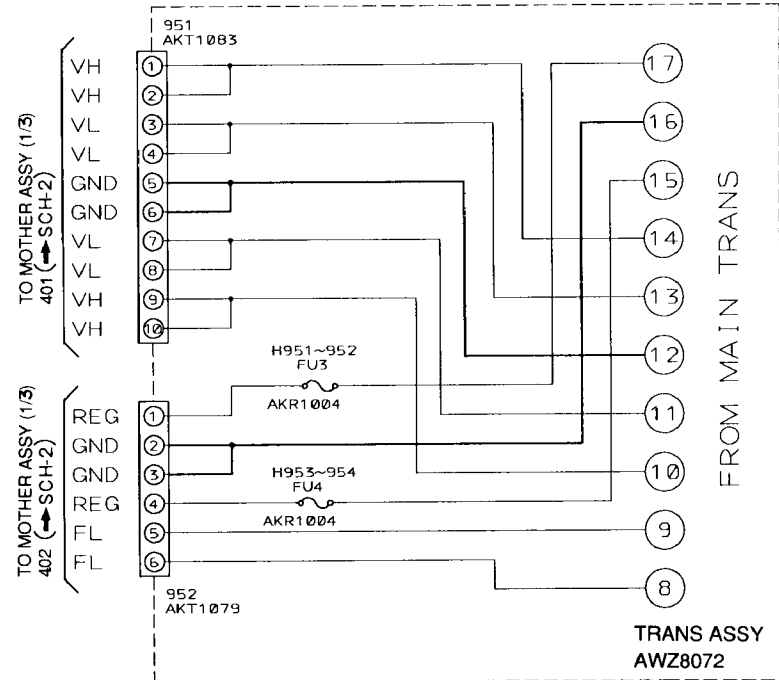
SCH-4



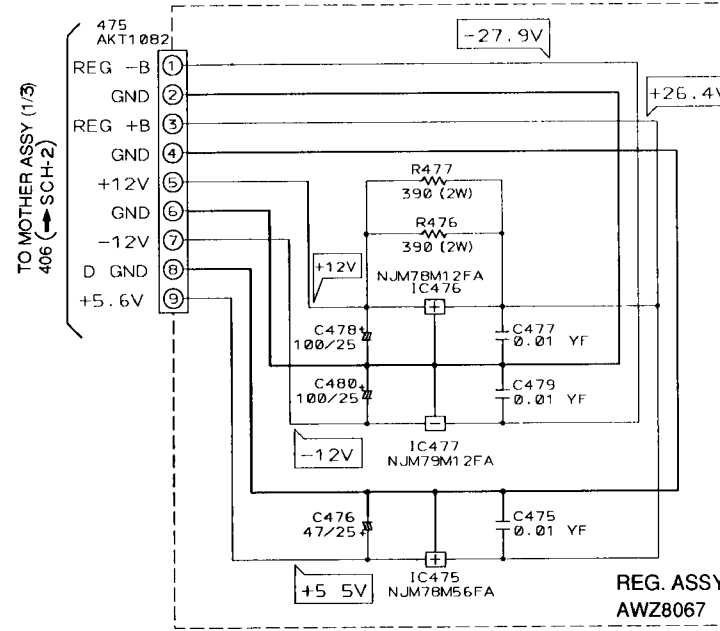
- The parts mounted on this PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.

- This diagram is viewed from the mounted parts side.

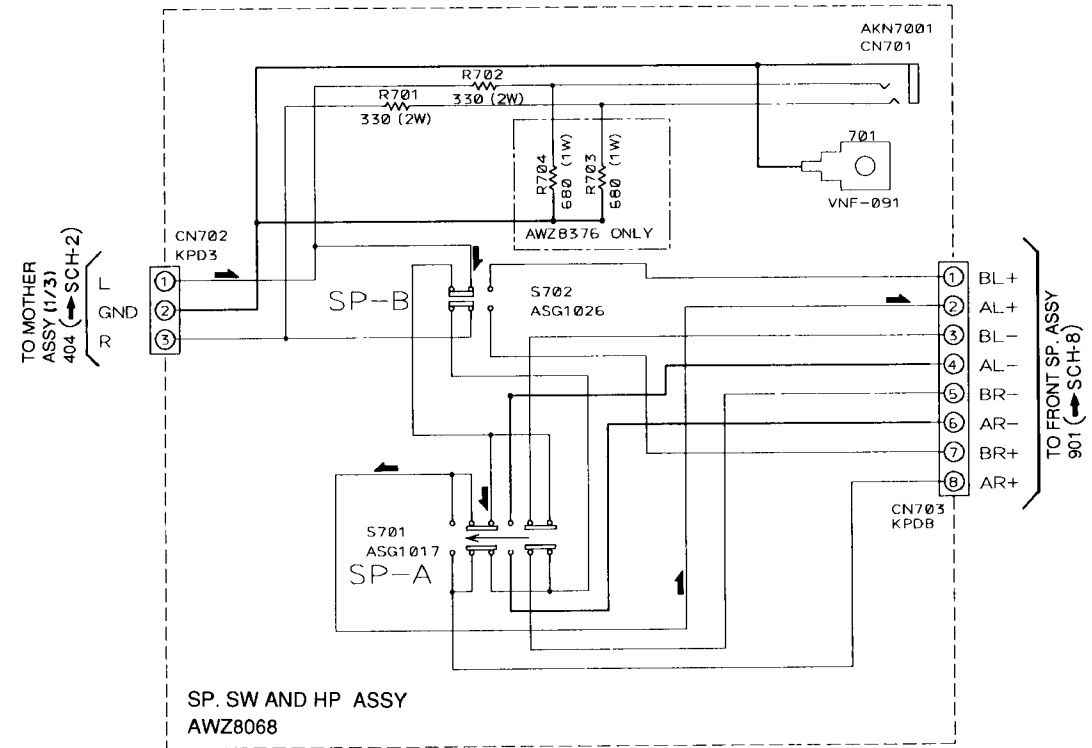
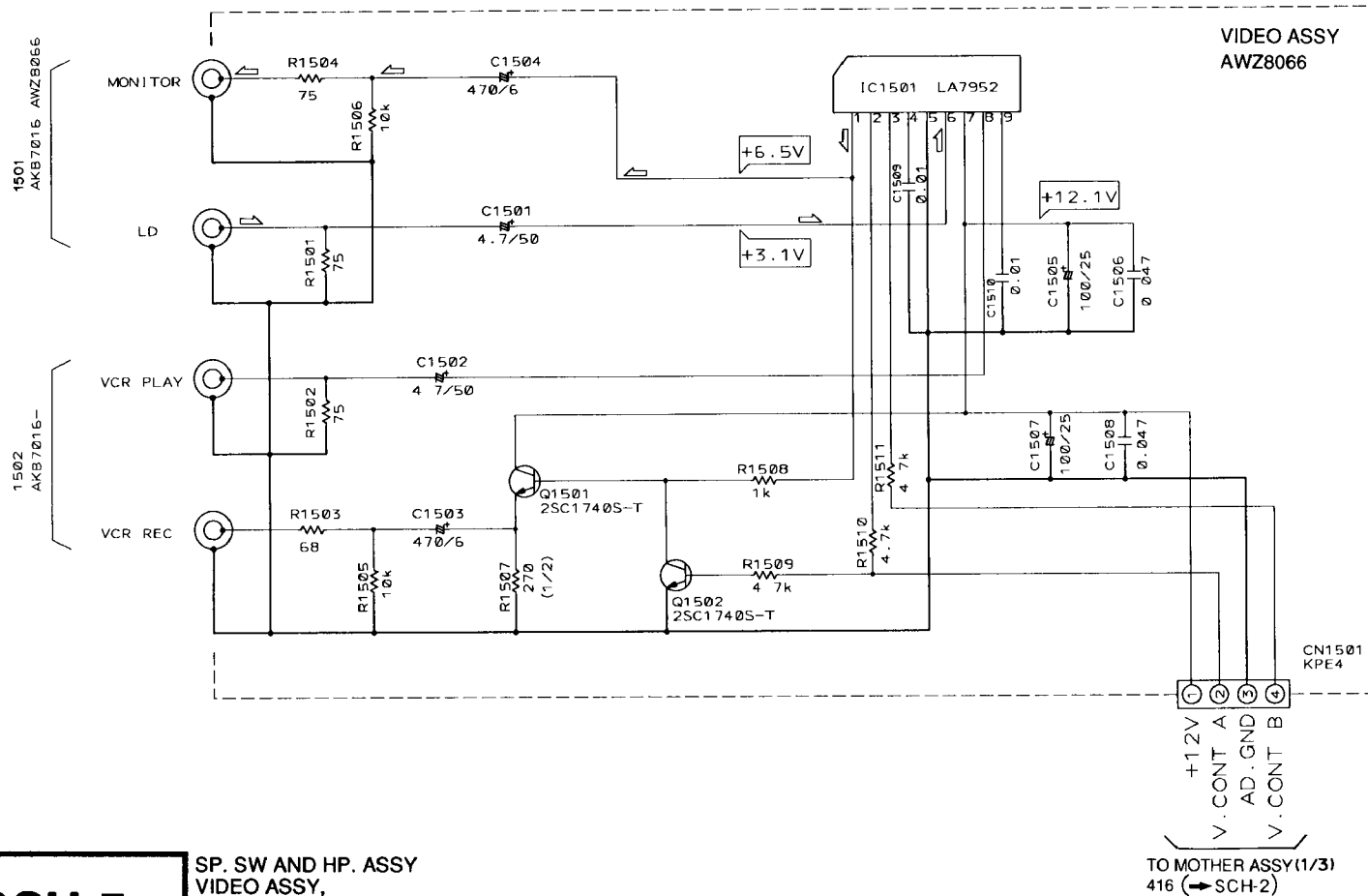
4.5 SP. SW AND HP. ASSY, VIDEO ASSY, TRANS ASSY AND REG. ASSY



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



SCH-5



SIGNAL ROUTE  
 ➔ : AUDIO SIGNAL ROUTE  
 ⇨ : VIDEO SIGNAL ROUTE

SCH-5

SP. SW AND HP. ASSY  
 VIDEO ASSY,  
 TRANS ASSY,  
 REG. ASSY

SP. SW AND HP. ASSY  
 VIDEO ASSY,  
 TRANS ASSY,  
 REG. ASSY

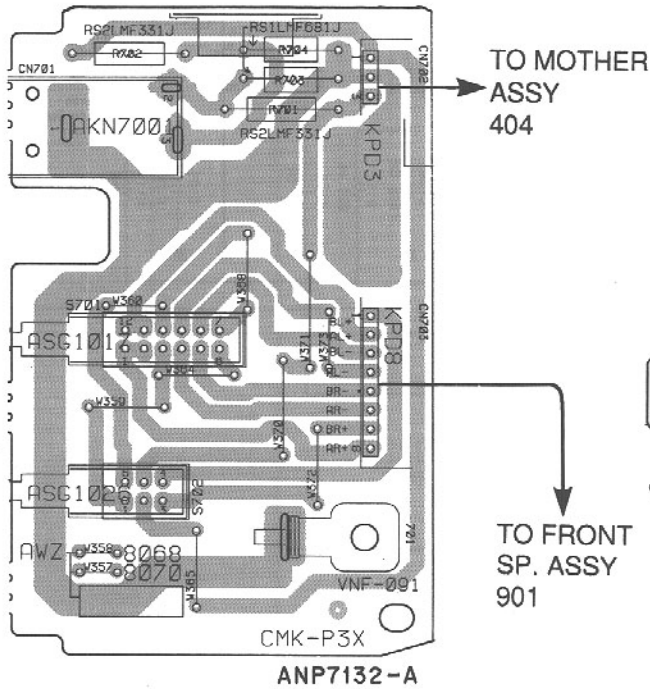
SCH-5

- 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.

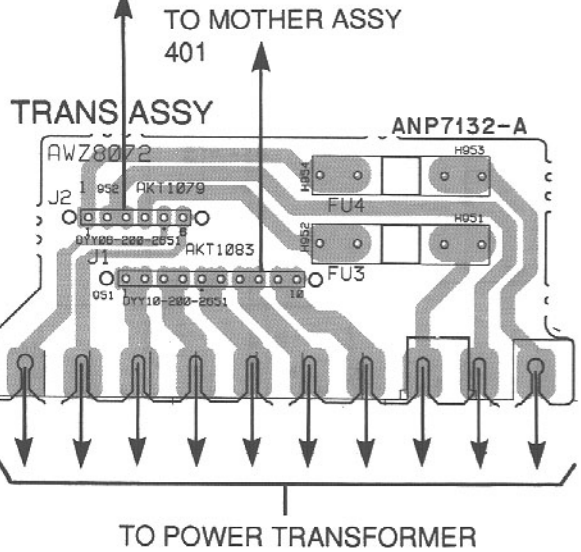
- This diagram is viewed from the mounted parts side.

PCB-3

SP. SW AND HP. ASSY

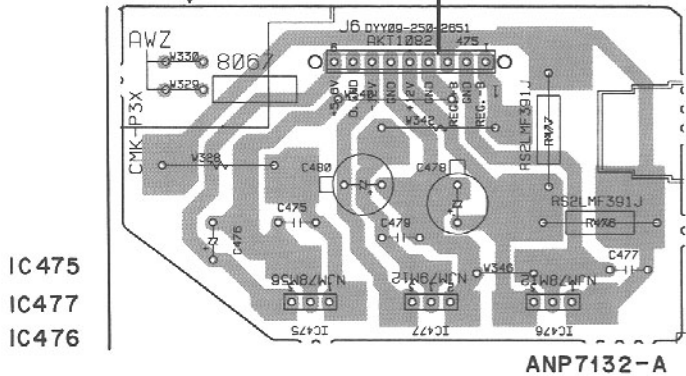


TO MOTHER ASSY 402

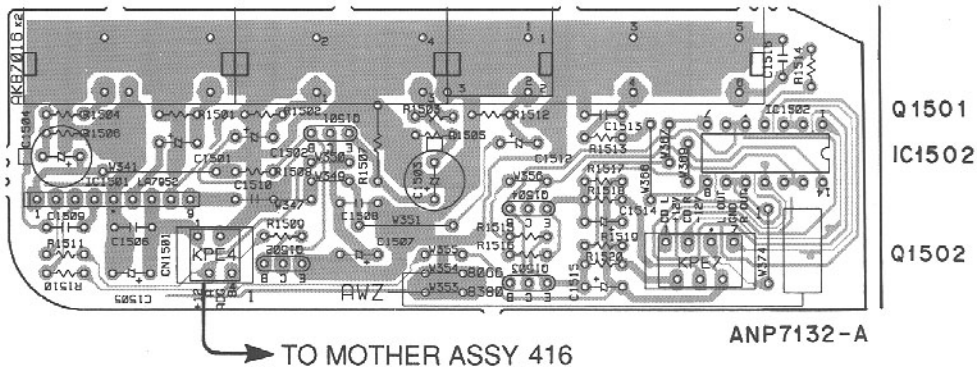


TO MOTHER ASSY 406

REG. ASSY

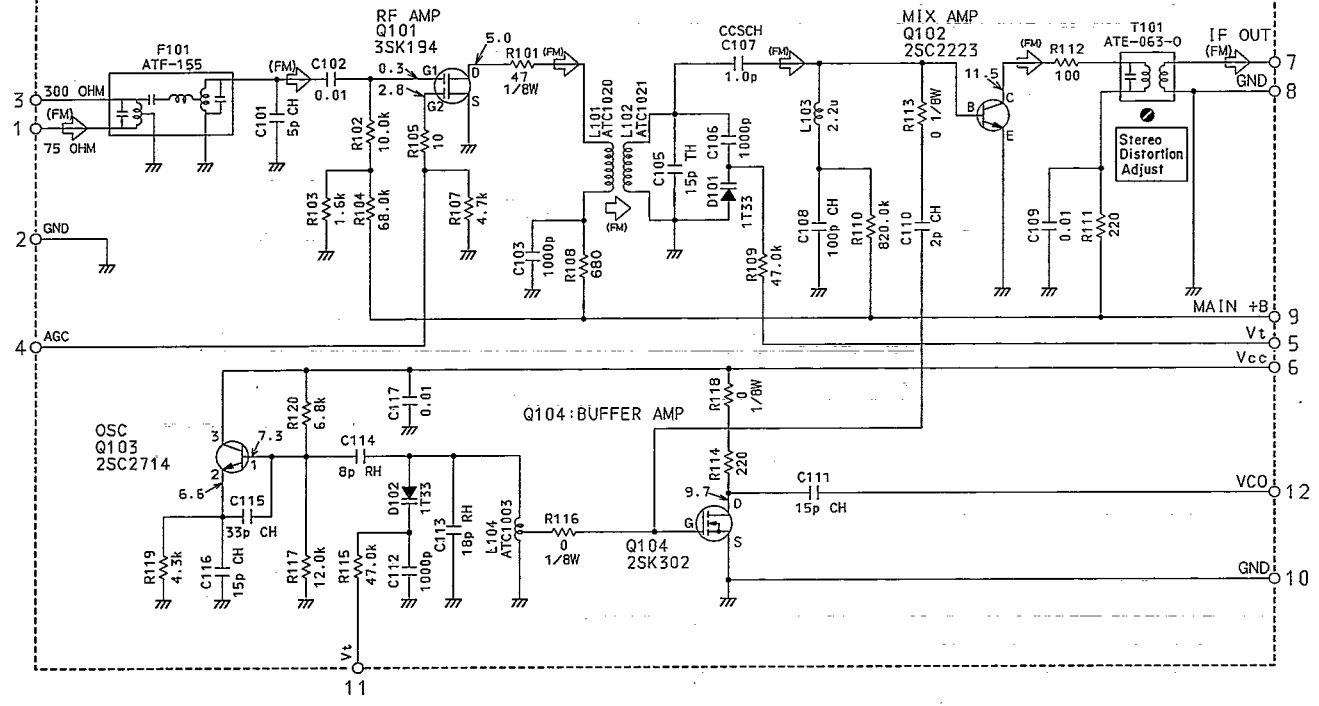


VIDEO ASSY



## 4.6 MOTHER ASSY (3/3)

### FM/AM TUNER FE MODULE (AXQ1002)

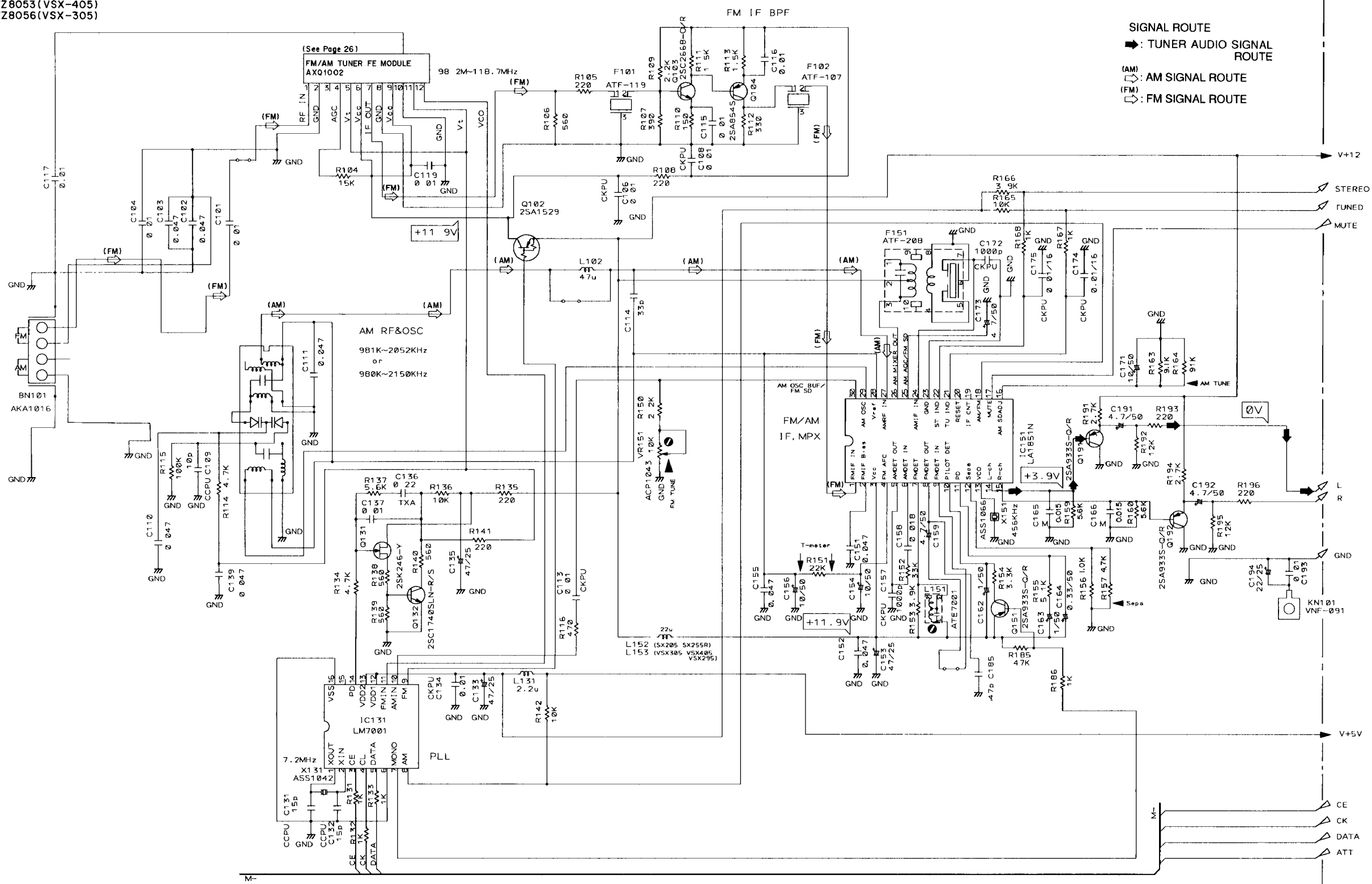


SIGNAL ROUTE  
 (FM) → FM SIGNAL ROUTE

**SCH-6**



MOTHER ASSY(3/3)  
AWZ8053 (VSX-405)  
AWZ8056 (VSX-305)

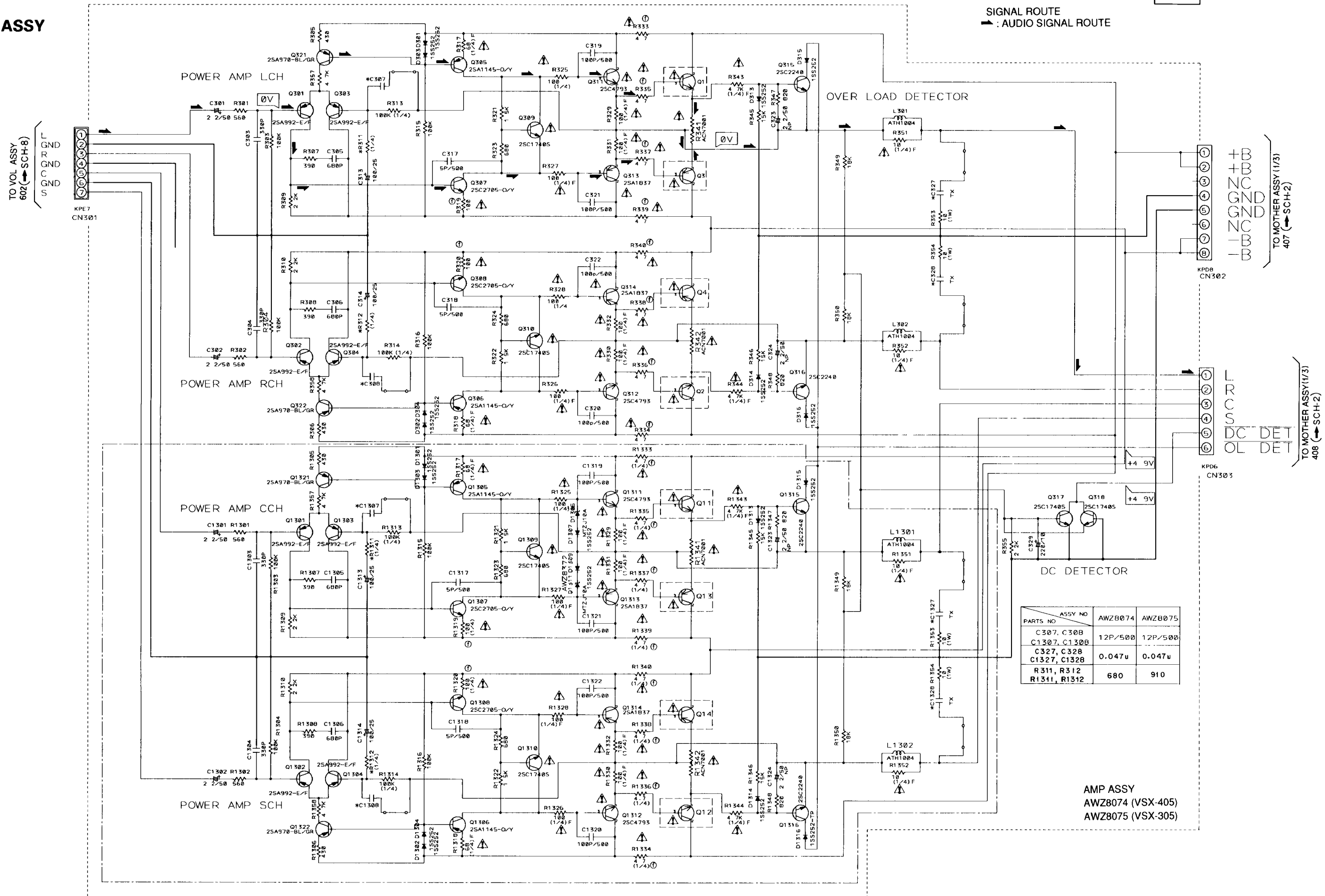


SIGNAL ROUTE  
 ➡ : TUNER AUDIO SIGNAL ROUTE  
 (AM) : AM SIGNAL ROUTE  
 (FM) : FM SIGNAL ROUTE

Noted  
 1 Resistors  
 Indicated in ohm 1/6W±5% tolerance unless otherwise noted  
 K Kohm , M Mohm  
 2 Capacitors  
 Indicated in capacity(uF)/volatge (V) unless otherwise noted  
 p-pF  
 Indication without voltae is 50V except electrolytic capacitor  
 M-CGMA , TXA-CFTXA

4.7 AMP ASSY

SIGNAL ROUTE  
 ▲ : AUDIO SIGNAL ROUTE



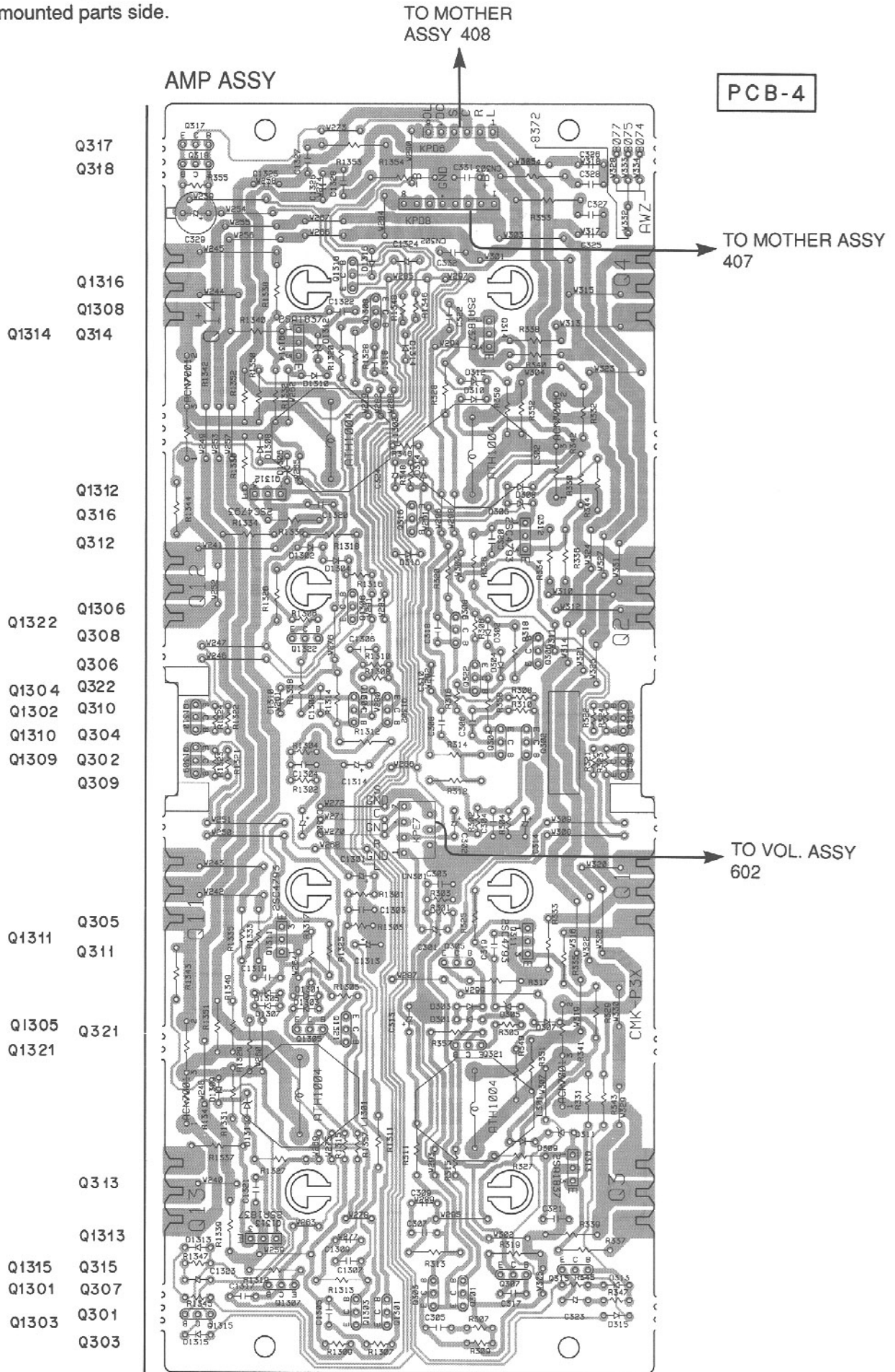
PARTS NO	ASSY NO	AWZ8074	AWZ8075
C307, C308		12P/500	12P/500
C1307, C1308			
C327, C328		0.047u	0.047u
C1327, C1328			
R311, R312		680	910
R1311, R1312			

AMP ASSY  
 AWZ8074 (VSX-405)  
 AWZ8075 (VSX-305)

SCH-7

SCH-7

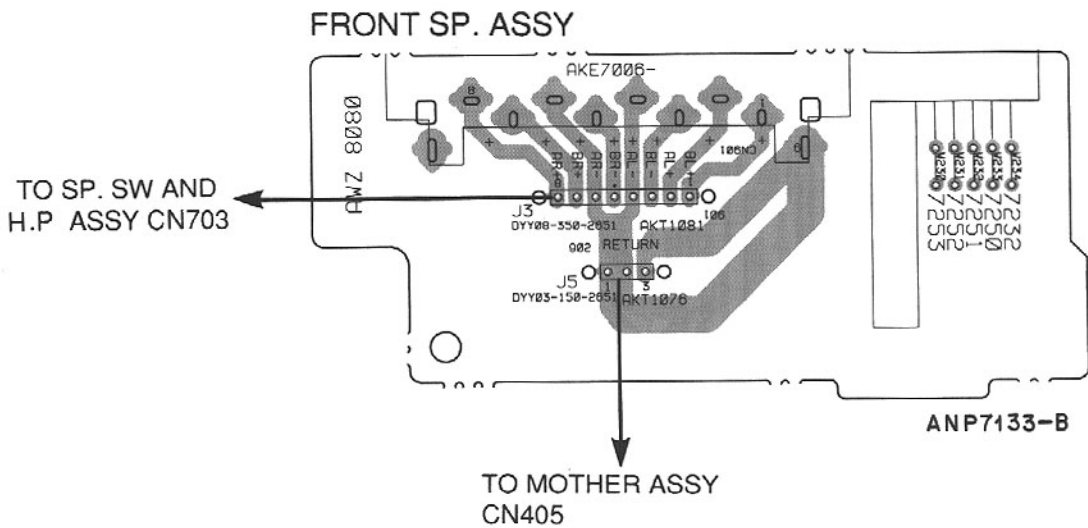
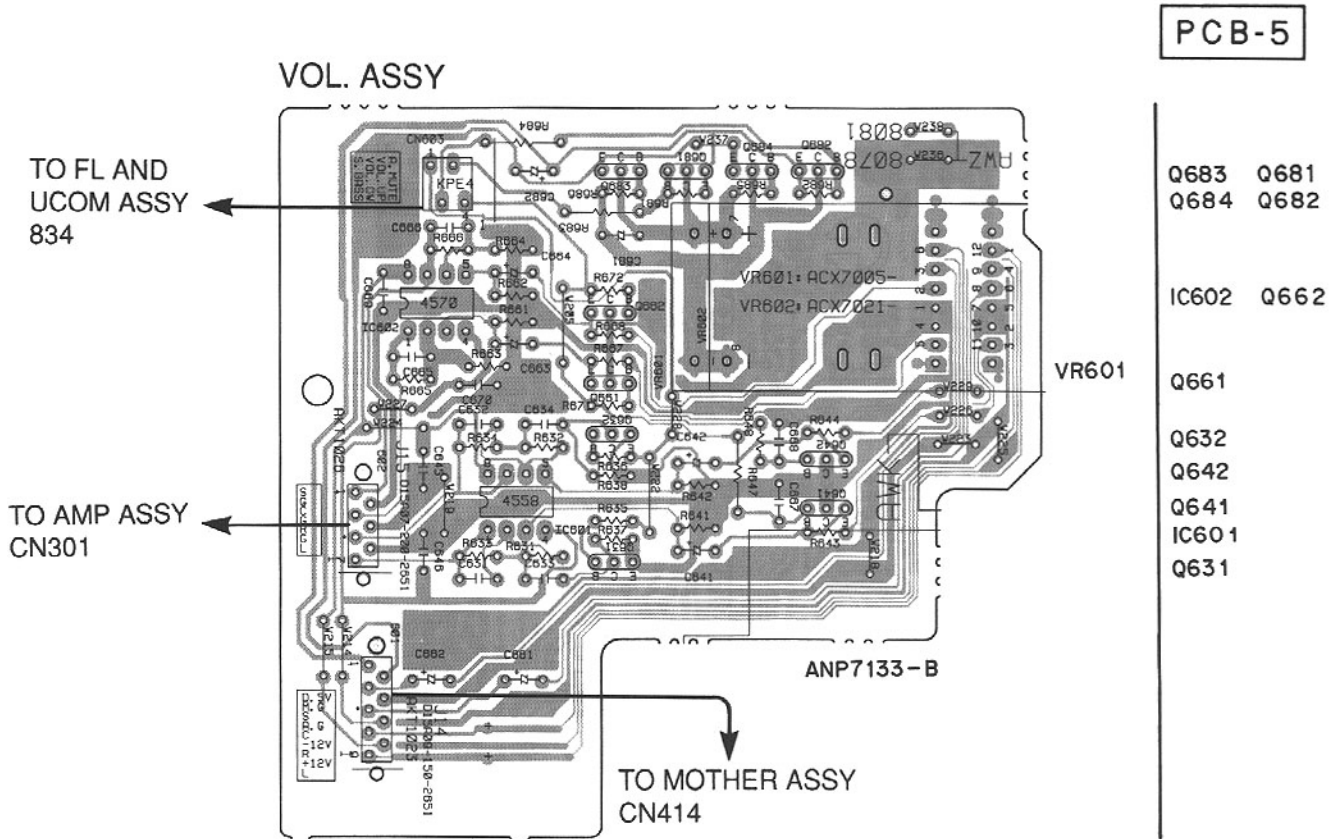
- This diagram is viewed from the mounted parts side.



# VSX-405, VSX-305

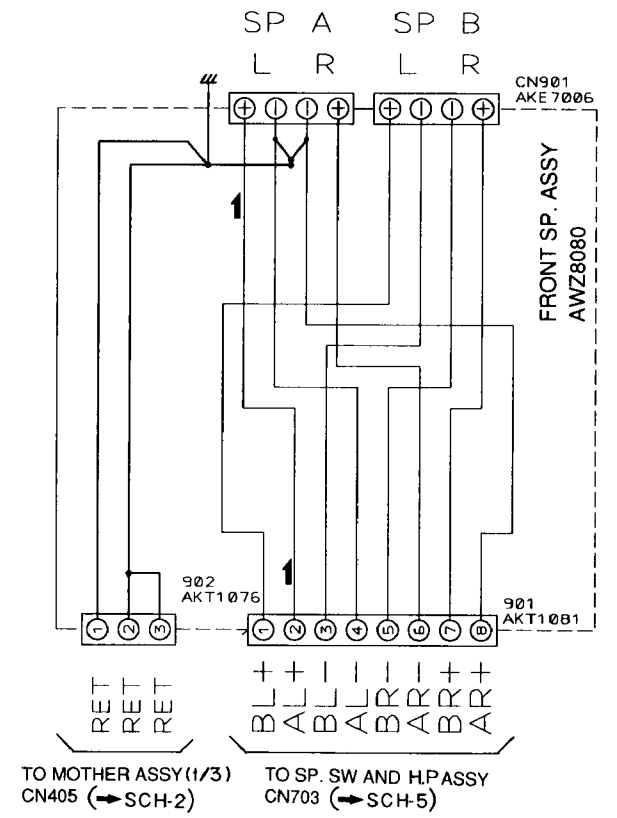
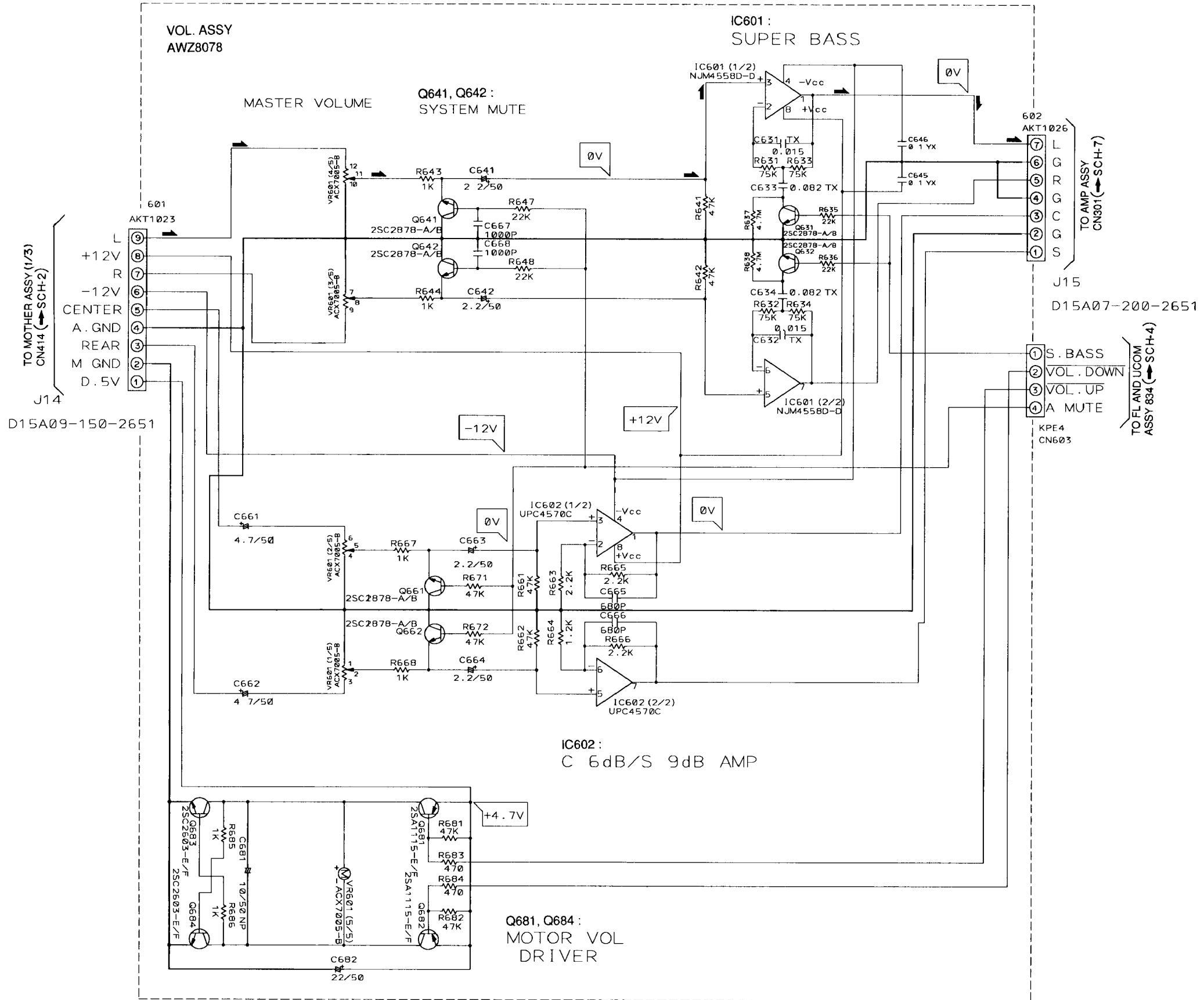
- This diagram is viewed from the mounted parts side.

- 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.



4.8 VOL. ASSY AND FRONT SP. ASSY

SCH-8



SIGNAL ROUTE  
 ▲ : AUDIO SIGNAL ROUTE

SCH-8

VOL. ASSY,  
 FRONT SP. ASSY

SCH-8

VOL. ASSY,  
 FRONT SP. ASSY



Mark	No.	Description	Part No.
C225, C226		ELECT. CAPACITOR	CEAS4R7M50
C227		CERAMIC CAPACITOR	CKPUYB102K50
C231, C232		ELECT. CAPACITOR	CEAS100M50
C401, C402		ELECTROLYTIC CAPACIT (8200µF/71V)	ACH7018
C403		ELECT. CAPACITOR	CEAS102M35
C404		ELECT. CAPACITOR	CEAS471M35
C405		ELECT. CAPACITOR	CEAS101M50
C406		ELECT. CAPACITOR	CEAS101M25
C407, C408		ELECT. CAPACITOR	CEAS470M25
C409		CERAMIC CAPACITOR	CKCYF103Z50
C410		ELECT. CAPACITOR	CEAS471M25
C411		ELECT. CAPACITOR	CEAS470M25
C412, C413		CKA (0.01µF/AC250V)	ACG1005
C414		CKA (10000PF/AC250V)	ACG7020
C415		CKA (0.022µF/AC400V)	ACG1030
C1010, C1011		ELECT. CAPACITOR	CEAS101M25
C1012		CERAMIC CAPACITOR	CGCYX104M16
C1101, C1102		ELECT. CAPACITOR	CEAS100M50
C1103		ELECT. CAPACITOR	CEANL220M25
C1104		ELECT. CAPACITOR	CEAS470M25
C1105		PLASTIC FILM CAPACITOR	CQMA472J50
C1106		ELECT. CAPACITOR	CEAS220M25
C1107		PLASTIC FILM CAPACITOR	CQMA681J50
C1108, C1109		AUDIO FILM CAPACITOR	CFTXA104J50
C1110		PLASTIC FILM CAPACITOR	CQMA681J50
C1111, C1112		AUDIO FILM CAPACITOR	CFTXA104J50
C1113, C1114		AUDIO FILM CAPACITOR	CFTXA473J50
C1115		AUDIO FILM CAPACITOR	CFTXA223J50
C1116-C1119		AUDIO FILM CAPACITOR	CFTXA104J50
C1120		AUDIO FILM CAPACITOR	CFTXA223J50
C1121		AUDIO FILM CAPACITOR	CFTXA224J50
C1122		ELECT. CAPACITOR	CEAS4R7M50
C1123, C1124		AUDIO FILM CAPACITOR	CFTXA224J50
C1125		ELECT. CAPACITOR	CEAS4R7M50
C1126		AUDIO FILM CAPACITOR	CFTXA224J50
C1129		ELECT. CAPACITOR	CEAS100M50
C1130		PLASTIC FILM CAPACITOR	CQMA561J50
C1131		PLASTIC FILM CAPACITOR	CQMA102J50
C1132		ELECT. CAPACITOR	CEAS101M25
C1133		PLASTIC FILM CAPACITOR	CQMA562J50
C1134		AUDIO FILM CAPACITOR	CFTXA473J50
C1135		AUDIO FILM CAPACITOR	CFTXA684J50
C1136		AUDIO FILM CAPACITOR	CFTXA104J50
C1137, C1138		ELECT. CAPACITOR	CEAS4R7M50
C1139		ELECT. CAPACITOR	CEAS221M10
C1152		CERAMIC CAPACITOR	CGCYX104M16
C1153		ELECT. CAPACITOR	CEAS4R7M50
C1155		PLASTIC FILM CAPACITOR	CQMA561J50
C1156		PLASTIC FILM CAPACITOR	CQMA562J50
C1157		AUDIO FILM CAPACITOR	CFTXA683J50
C1158, C1159		AUDIO FILM CAPACITOR	CFTXA104J50
C1160		ELECT. CAPACITOR	CEAS470M25
C1161		AUDIO FILM CAPACITOR	CFTXA683J50
C1162		PLASTIC FILM CAPACITOR	CQMA561J50

Mark	No.	Description	Part No.
	C1163	PLASTIC FILM CAPACITOR	CQMA222J50
	C1179	CERAMIC CAPACITOR	CKPUYB102K50
	C1180	CERAMIC CAPACITOR	CKPUYB151K50

## RESISTORS

	VR151	VR (10kΩ, 0.1W)	ACPI043
	R404	METAL OXIDE RESISTOR	RS3LMF272J
	R409	METAL OXIDE RESISTOR	RS2LMF121J
	R412	CARBON FILM RESISTOR	RD1/2PM270J
	R418	RESISTOR(2.2MΩ, 1/2W)	ACN-208
	R422	METAL OXIDE RESISTOR	RS3LMF272J
	R1111	METALFILM RESISTOR	RN1/6PQ1003F
		Other Resistors	RD1/4PU□□□

## OTHERS

	101	AM RF TUNING BLOCK	AXX7025
	104	EARTH METAL FIT	VNF-091
	201	PIN JACK(6P)	AKB7013
	203	PIN JACK(4P)	AKB7014
	402	CABLE HOLDER (6P)	AKT1079
	403	EARTH METAL FIT	VNF-091
	404	CABLE HOLDER (3P)	AKT1076
	406	CABLE HOLDER (9P)	AKT1082
	407	CABLE HOLDER (8P)	AKT1081
	408	CABLE HOLDER (6P)	AKT1079
	451	AC SOCKET 1-P	AKP1060
	BN101	TERMINAL 4-P	AKA1016
	CN202	PIN JACK(4P)	AKB7015
	CN410	CONNECTOR(14P)	KPE14
	CN411	CONNECTOR(15P)	KPE15
	CN413	CONNECTOR(8P)	KPE8
	CN414	CONNECTOR(9P)	KPE9
	CN432	PIN JACK 1-P	AKB7042
	CN434	SPEAKER TERMINAL 6-P	AKE7005
△	JA431	JACK/12V	PKN1004
	T401	POWER TRANSFORMER	ATT1223
	X1101	CERAMIC RESONATOR (2.00MHz)	ASS7011
	X131	CRYSTAL RESONATOR (7.200MHz)	ASS1042
	X151	CRYSTAL RESONATOR (456kHz)	ASS1066

## FM/AM TUNER MODULE

No service part.

## FL AND UCOM ASSY

### SEMICONDUCTORS

	IC501	OP-AMP IC	NJM4558D-D
	IC826	CONTROL MCU	PDG172A
	Q501, Q502	TRANSISTOR	2SC1740S
	Q826	TRANSISTOR	DTC143ES
	Q827	TRANSISTOR	DTA124ES
	Q828, Q829	TRANSISTOR	DAT143ES
	Q830	TRANSISTOR	DTC143ES
	D827-D831	DIODE	1SS252
	D836-D839	DIODE	1SS252
	D841, D842	DIODE	1SS252

# VSX-405, VSX-305

Mark	No.	Description	Part No.
<b>SWITCH AND RELAYS</b>			
	S825-S827	SWITCH	ASG1034
	S829-S832	SWITCH	ASG1034
	S835-S837	SWITCH	ASG1034
	S839-S843	SWITCH	ASG1034
<b>COILS AND FILTERS</b>			
	L826	AXIAL INDUCTOR	LAU2R2J
<b>CAPACITORS</b>			
	C501, C502	CERAMIC CAPACITOR	CKCYF103Z50
	C503, C504	CERAMIC CAPACITOR	CKPUYB151K50
	C505, C506	ELECT. CAPACITOR	CEAS100M50
	C507, C508	AUDIO FILM CAPACITOR	CFTXA153J50
	C509, C510	ELECT. CAPACITOR	CEASR47M50
	C511, C512	ELECT. CAPACITOR	CEAS0R1M50
	C826	CERAMIC CAPACITOR	CKPUYY103M16
	C827	ELECT. CAPACITOR	CEAS221M10
	C828	CAPACITOR	ACH7013
	C829	CERAMIC CAPACITOR	CKPYF103Z50
	C830	CERAMIC CAPACITOR	CKPUYY103M16
	C831	ELECT. CAPACITOR	CEAS2R2M50
	C832	CERAMIC CAPACITOR	CGCYX104M16
	C833	CERAMIC CAPACITOR	CKPUYY103M16
	C836, C837	CERAMIC CAPACITOR	CKPUYF473Z16
	C840	ELECT. CAPACITOR	CEAS2R2M50
	C844	CERAMIC CAPACITOR	CKCYF103Z50
	C845	CERAMIC CAPACITOR	CKPUYX222M16
	C846	ELECT. CAPACITOR	CEAS4R7M50
<b>RESISTORS</b>			
	VR501, VR502	VARIABLE RESISTOR (30k $\Omega$ -B5x2)	ACS7005
	VR503	VARIABLE(500k $\Omega$ -B)	ACS7004
	R858	CARBON FILM RESISTOR Other Resistors	RD1/2PM3R9J RD1/4PU□□□□
<b>OTHERS</b>			
	803	REMOTE RECEIVER UNIT	GPIU58X
	V826	FL TUBE	AAV7026
	X826	CERAMIC RESONATOR (7.70MHZ)	ASS1055
<b>ST. IND. ASSY</b>			
<b>SEMICONDUCTORS</b>			
	D876	LED	BR3371XJ30A
<b>SWITCHES AND RELAYS</b>			
	S876-S878	SWITCH	ASG1034
<b>RESISTORS</b>			
	R876	CARBON FILM RESISTOR	RD1/4PU331J
<b>VIDEO ASSY</b>			
<b>SEMICONDUCTORS</b>			
	IC1501	VIDEO SEITCH	LA7952
	Q1501, Q1502	TRANSISTOR	2SC1740S
<b>CAPACITORS</b>			
	C1501, C1502	ELECT. CAPACITOR	CEAS4R7M50

Mark	No.	Description	Part No.
	C1503, C1504	ELECT. CAPACITOR	CEAS471M6
	C1505	ELECT. CAPACITOR	CEAS101M25
	C1506	CERAMIC CAPACITOR	CGCYX473M16
	C1507	ELECT. CAPACITOR	CEAS101M25
	C1508	CERAMIC CAPACITOR	CGCYX473M16
	C1509, C1510	CERAMIC CAPACITOR	CKCYF103Z50
<b>RESISTORS</b>			
	R1507	CARBON FILM RESISTOR Other Resistors	RD1/2PM271J RD1/4PU□□□□
<b>OTHERS</b>			
	1501, 1502	PIN JACK(2P)	AKB7016
	CN1501	CONNECTOR(4P)	KPE4
<b>REG ASSY</b>			
<b>SEMICONDUCTORS</b>			
	IC475	REGULATOR IC	NJM78M56FA
	IC476	REGULATOR IC	NJM78M12FA
	IC477	REGULATOR IC	NJM79M12FA
<b>CAPACITORS</b>			
	C475	CERAMIC CAPACITOR	CKCYF103Z50
	C476	ELECT. CAPACITOR	CEAS470M25
	C477	CERAMIC CAPACITOR	CKCYF103Z50
	C478	ELECT. CAPACITOR	CEAS101M25
	C479	CERAMIC CAPACITOR	CKCYF103Z50
	C480	ELECT. CAPACITOR	CEAS101M25
<b>RESISTORS</b>			
	R476, R477	METAL OXIDE RESISTOR	RS2LMF391J
<b>OTHERS</b>			
	475	CABLE HOLDER (9P)	AKT1082
<b>SP. SW AND H.P ASSY</b>			
<b>SWITCHES AND RELAYS</b>			
	S701	PUSH SWITCH	ASG1017
	S702	PUSH SWITCH	ASG1026
<b>RESISTORS</b>			
	R701, R702	METAL OXIDE RESISTOR	RS2LMF331J
<b>OTHERS</b>			
	701	EARTH METAL FIT	VNF-091
	CN701	JACK	AKN7001
<b>TRANS ASSY</b>			
<b>OTHERS</b>			
	952	CABLE HOLDER (6P)	AKT1079
<b>PRIMARY ASSY</b>			
No service part.			
<b>BINDING ASSY</b>			
No service part.			
<b>AMP ASSY</b>			
<b>SEMICONDUCTORS</b>			
	Q301-Q304	TRANSISTOR	2SA992
	Q305, Q306	TRANSISTOR	2SA1145



Mark	No.	Description	Part No.
	Q307, Q308	TRANSISTOR	2SC2705
△	Q309, Q310	TRANSISTOR	2SC1740S
△	Q311, Q312	TRANSISTOR	2SC4793
△	Q313, Q314	TRANSISTOR	2SA1837
	Q315, Q316	TRANSISTOR	2SC2240
	Q317, Q318	TRANSISTOR	2SC1740S
	Q321, Q322	TRANSISTOR	2SA970
	Q1301-Q1304	TRANSISTOR	2SA992
	Q1305, Q1306	TRANSISTOR	2SA1145
	Q1307, Q1308	TRANSISTOR	2SC2705
△	Q1309, Q1310	TRANSISTOR	2SC1740S
△	Q1311, Q1312	TRANSISTOR	2SC4793
△	Q1313, Q1314	TRANSISTOR	2SA1837
	Q1315, Q1316	TRANSISTOR	2SC2240
	Q1321, Q1322	TRANSISTOR	2SA970
	D301-D304	DIODE	1SS252
	D313-D316	DIODE	1SS252
	D1301-D1304	DIODE	1SS252
	D1313-D1316	DIODE	1SS252
<b>COILS AND FILTERS</b>			
	L301, L302	COIL (0.7μH)	ATH1004
	L1301, L1302	COIL (0.7μH)	ATH1004
<b>CAPACITORS</b>			
	C301, C302	ELECT. CAPACITOR	CEAS2R2M50
	C303, C304	CERAMIC CAPACITOR	CCCSL331J50
	C305, C306	CERAMIC CAPACITOR	CCCSL681J50
	C307, C308	CERAMIC CAPACITOR	CCCSL120K500
	C313, C314	ELECT. CAPACITOR	CEAS101M25
	C317, C318	CERAMIC CAPACITOR	CCCSL050C500
	C319-C322	CERAMIC CAPACITOR	CCCSL101K500
	C323, C324	ELECT. CAPACITOR	CEANP2R2M50
	C327, C328	AUDIO FILM CAPACITOR	CFTXA473J50
	C329	ELECT. CAPACITOR	CEAS221M10
	C1301, C1302	ELECT. CAPACITOR	CEAS2R2M50
	C1303, C1304	CERAMIC CAPACITOR	CCCSL331J50
	C1305, C1306	CERAMIC CAPACITOR	CCCSL681J50
	C1307, C1308	CERAMIC CAPACITOR	CCCSL120K500
	C1313, C1314	ELECT. CAPACITOR	CEAS101M25
	C1317, C1318	CERAMIC CAPACITOR	CCCSL050C500
	C1319-C1322	CERAMIC CAPACITOR	CCCSL101K500
	C1323, C1324	ELECT. CAPACITOR	CEANP2R2M50
	C1327, C1328	AUDIO FILM CAPACITOR	CFTXA473J50
<b>RESISTORS</b>			
	R311, R312	CARBON FILM RESISTOR	RD1/4PM681J
	R313, R314	CARBON FILM RESISTOR	RD1/4PM104J
△	R317, R318	CARBON FILM RESISTOR	RD1/4PMF680J
△	R319, R320	FUSLIBLE RESISTOR	RF1/4PS101J
△	R325-R332	CARBON FILM RESISTOR	RD1/4PMF101J
△	R333-R340	FUSLIBLE RESISTOR	RF1/4PS4R7J
△	R341, R342	RESISTOR (0.33Ω, 5W)	ACN7001
△	R343, R344	CARBON FILM RESISTOR	RD1/4PMF472J
△	R351, R352	CARBON FILM RESISTOR	RD1/4PMF100J
	R353, R354	METAL OXIDE RESISTOR	RS1LMF100J
	R1311, R1312	CARBON FILM RESISTOR	RD1/4PM681J

Mark	No.	Description	Part No.
△	R1317, R1318	CARBON FILM RESISTOR	RD1/4PMF680J
△	R1319, R1320	FUSLIBLE RESISTOR	RF1/4PS101J
△	R1325-R1332	CARBON FILM RESISTOR	RD1/4PMF101J
△	R1333-R1340	FUSLIBLE RESISTOR	RF1/4PS4R7J
△	R1341, R1342	RESISTOR (0.33Ω, 5W)	ACN7001
△	R1343, R1344	CARBON FILM RESISTOR	RD1/4PMF472J
△	R1351, R1352	CARBON FILM RESISTOR	RD1/4PMF100J
	R1353, R1354	METAL OXIDE RESISTOR	RS1LMF100J
		Other Resistors	RD1/4PU□□□□

### OTHERS

CN301 CONNECTOR(7P) KPE7

### VOL. ASSY

#### SEMICONDUCTORS

IC601 OP-AMP IC NJM4558D-D  
 IC602 IC UPC4570C  
 Q631, Q632 TRANSISTOR 2SC2878  
 Q641, Q642 TRANSISTOR 2SC2878  
 Q661, Q662 TRANSISTOR 2SC2878  
 Q681, Q682 TRANSISTOR 2SA1115  
 Q683, Q684 TRANSISTOR 2SC2603

#### CAPACITORS

C631, C632 AUDIO FILM CAPACITOR CFTXA153J50  
 C633, C634 AUDIO FILM CAPACITOR CFTXA823J50  
 C641, C642 ELECT. CAPACITOR CEAS2R2M50  
 C645, C646 CERAMIC CAPACITOR CGCYX104M16  
 C661, C662 ELECT. CAPACITOR CEAS4R7M50  
 C663, C664 ELECT. CAPACITOR CEAS2R2M50  
 C665, C666 CERAMIC CAPACITOR CCCSL681J50  
 C667, C668 CERAMIC CAPACITOR CKCYB102K50  
 C681 ELECT. CAPACITOR CEANP100M16  
 C682 ELECT. CAPACITOR CEAS220M50

#### RESISTORS

VR601 VARIABLE RESISTOR ACX7005  
 (100kΩ-A5x4)  
 Other Resistors RD1/4PU□□□□

#### OTHERS

601 CABLE HOLDER AKT1023  
 CN603 CONNECTOR(4P) KPE4

### FRONT SP. ASSY

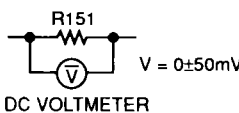
#### OTHERS

901 CABLE HOLDER (8P) AKT1081  
 902 CABLE HOLDER (3P) AKT1076  
 CN901 SPEAKER TERMINAL 8-P AKE7006

## 6. ADJUSTMENTS

### ADJUSTMENT OF FM TUNER SECTION

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

Step No.	Adjustment Title	FM SG (1kHz, ±75kHz dev.)		Reception Frequency Display	Adjustment Location	Specifications
		Frequency (MHz)	Level (dBμV)			
1	Center Adjustment	98	60	98.0 MHz	L151	Adjust so that the DC voltage of R151's both ends becomes 0V±50mV. 
2	Front-end Sensitivity Check	98	Less than 10	98.0 MHz	—	Less than 10 dBμV.
3	Stereo Distortion Check	89	60	89.0 MHz	T101	Less than 2%. Check that it becomes within the standard by turning the IFT T101 in the FM/AM TUNER FE MODULE less than ±90° in case out of standard.
4	Stereo Separation Check	89	60	89.0 MHz	—	Less than 23 dB. In case out of standard, cut the R157.
5	TUNED IND. Lighting Level	98	18 (±3 dB)	98.0 MHz	VR151	18 dBμV±3 dB. Adjust so that the indicator of TUNED IND. starts to light up.

Note:

- Make indicator adjustments in order of AM → FM.

### ADJUSTMENT OF MW TUNER SECTION

- Set the FM/AM selector to AM (MW) BAND.
- Connect the wiring as shown in Fig. 1-1.

Step No.	Adjustment Title	AM SG (400Hz, 30% Mod.)		Reception Frequency Display	Adjustment Location	Specifications
		Frequency (kHz)	Level (dBμV/m)			
1	TUNED IND. Lighting Level Check	999*1	Less than 65	999 kHz*1	—	Less than 65 dBμV/m. In case out of standard, cut the R164.

\*1: For the area using 10 kHz step, frequencies should be 1000 kHz.

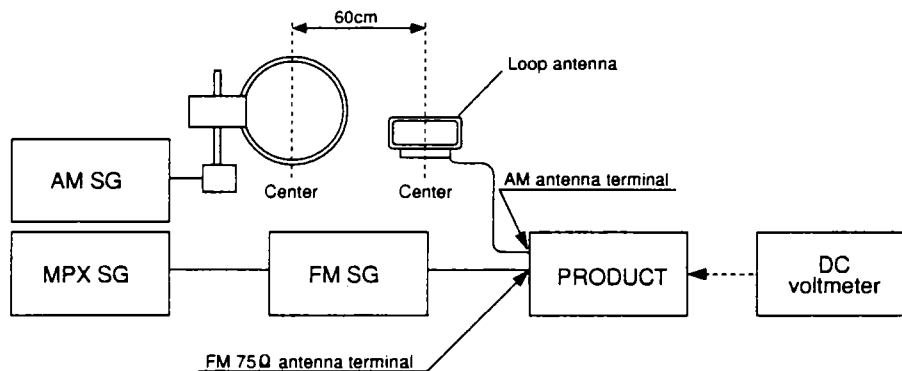
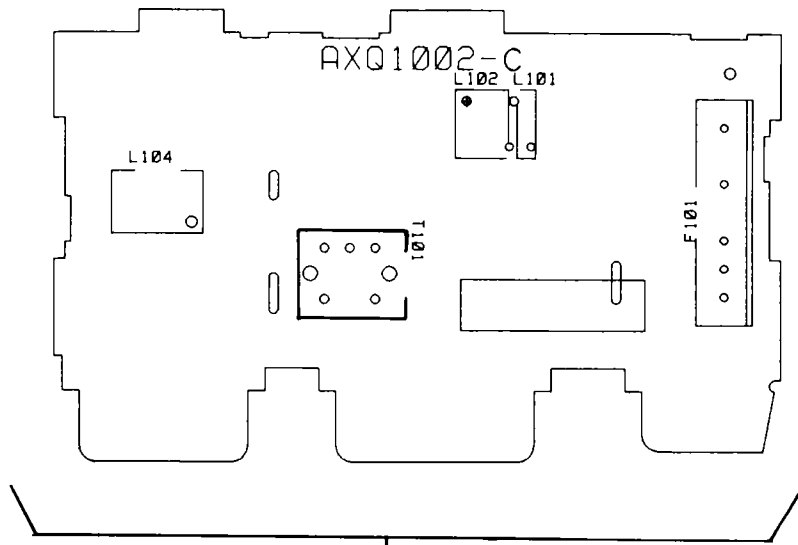


Fig. 1-1. AM and FM Adjustment Wiring Diagram

FM/AM TUNER FE MODULE



MOTHER ASSY

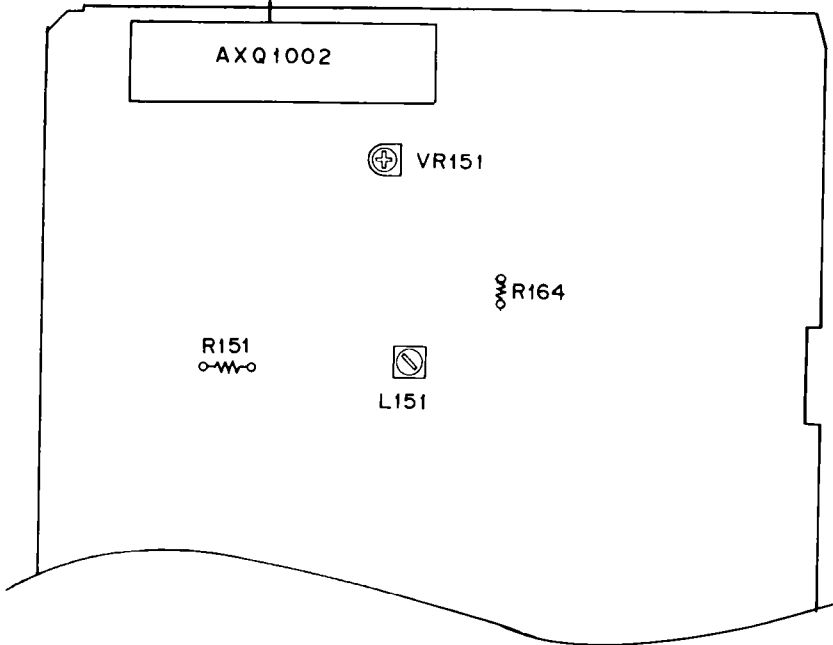


Fig. 1-2. Adjustment Points

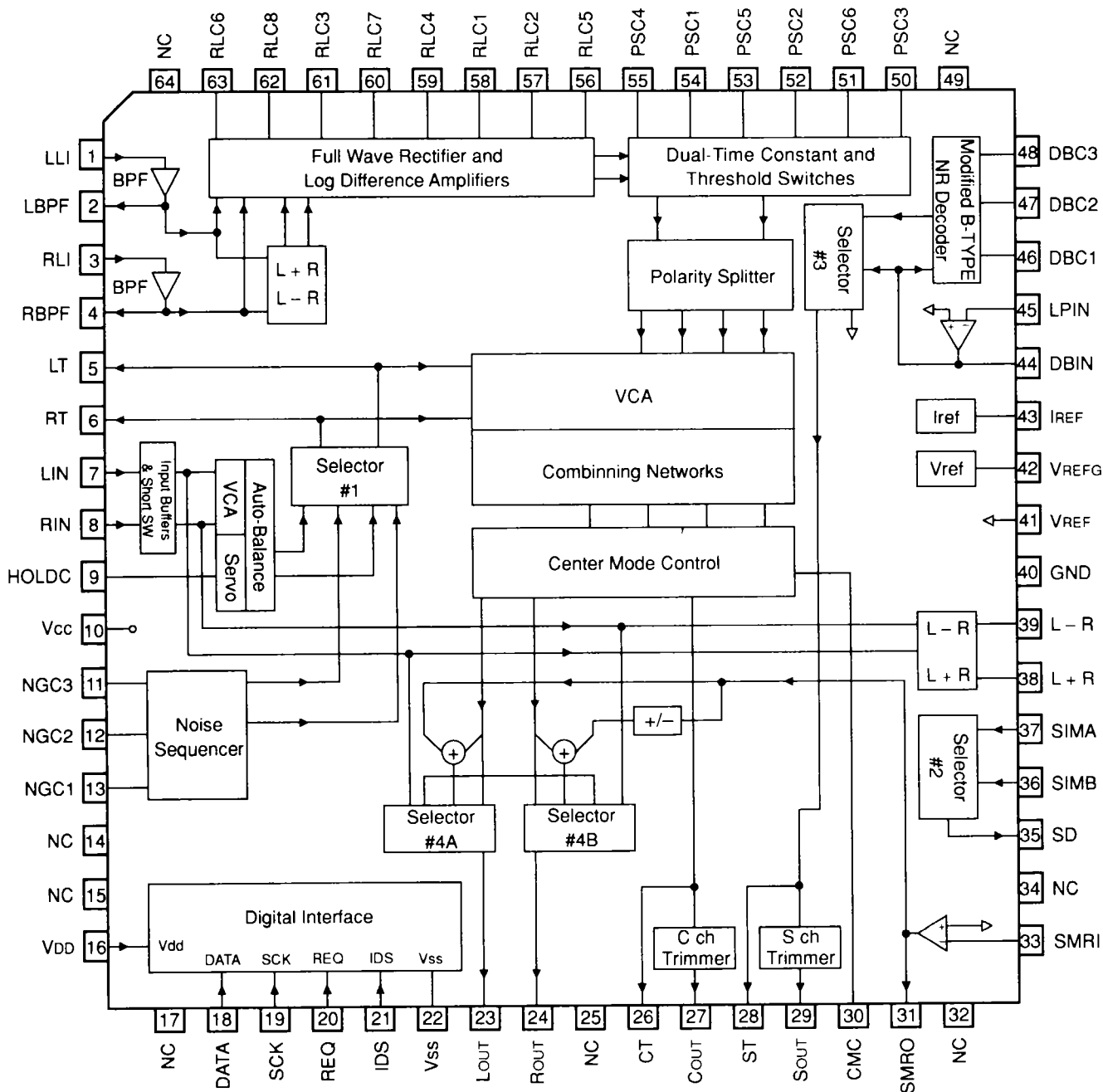
## 7. IC INFORMATION

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

### ■ NJW1102FG1 (MOTHER ASSY: IC1101)

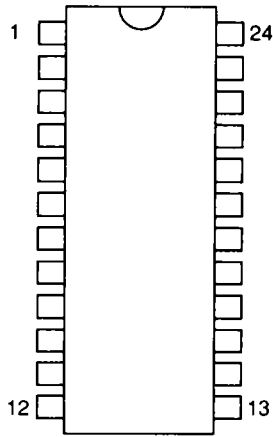
#### DOLBY PROLOGIC IC

#### ● Block Diagram

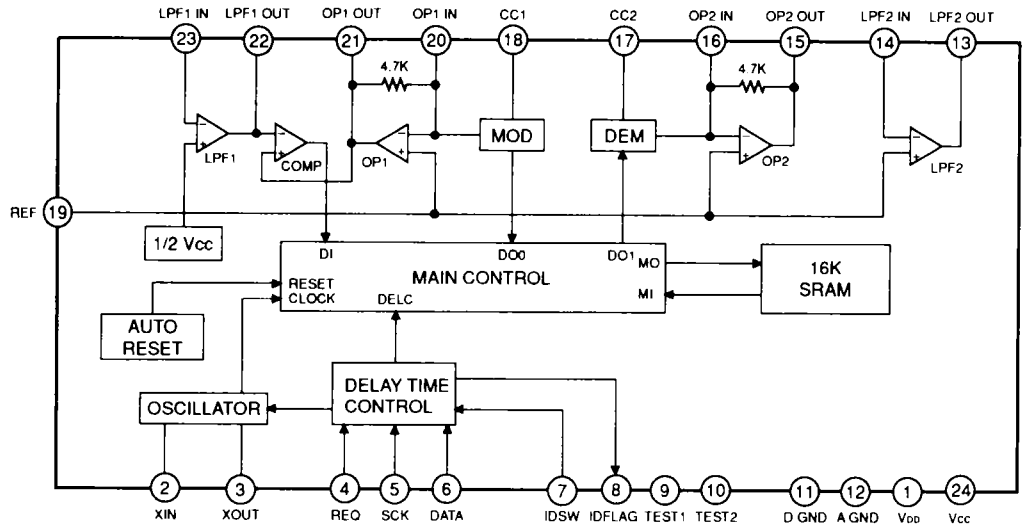


■ NJU9702D (MOTHER ASSY: IC1102)  
DIGITAL DELAY IC

● Pin Arrangement  
(Top View)



● Block Diagram

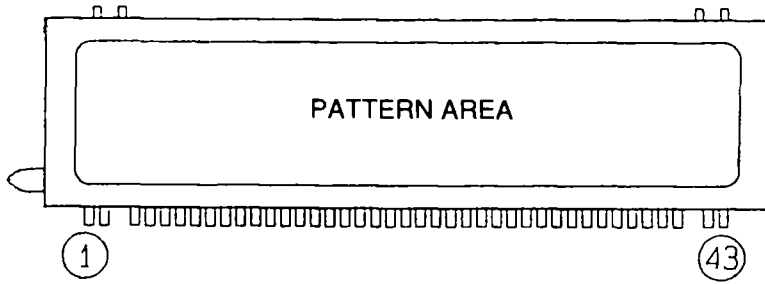


● Pin Function

Pin No.	Abbreviation	Pin Name	I/O	Function
1	VDD	Digital power supply	-	
2	XIN	Oscillator input	I	Connected to a 2 MHz ceramic oscillator.
3	XOUT	Oscillator output	O	Input to Pin ② when the external clock is used.
4	REQ	Request	I	Data request input
5	SCK	Shift clock	I	Serial data shift clock input
6	DATA	Data	I	Serial data input
7	IDSW	ID switch	I	External input pin for the 4th bit of ID code
8	IDFLAG	ID flag	O	Outputs a data input identification pulse and serial data.
9	TEST1	Test 1	-	L = Normal mode
10	TEST2	Test 2	-	L = Normal mode
11	D GND	Digital GND	-	
12	A GND	Analog GND	-	
13	LPF2 OUT	Low-pass filter 2 output	O	Forms the output side low-pass filter with external CR.
14	LPF2 IN	Low-pass filter 2 input	I	
15	OP2 OUT	Operation amplifier 2 output	O	Forms the demodulation integrator with external CR.
16	OP2 IN	Operation amplifier 2 input	I	
17	CC2	Current control 2	-	Demodulator ADM control
18	CC1	Current control 1	-	Modulator ADM control
19	REF	Reference	-	Analog reference voltage = 1/2 Vcc
20	OP1 IN	Operation amplifier 1 input	I	Forms the modulation integrator with external CR.
21	OP1 OUT	Operation amplifier 1 output	O	
22	LPF1 OUT	Low-pass filter 1 output	O	Forms the input side low-pass filter with external CR.
23	LPF1 IN	Low-pass filter 1 input	I	
24	Vcc	Analog power supply	-	

## 8. FL INFORMATION

### ■ AAV7026 (FL AND UCOM ASSY: V826)



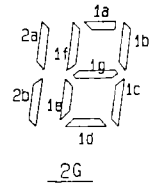
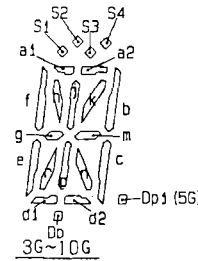
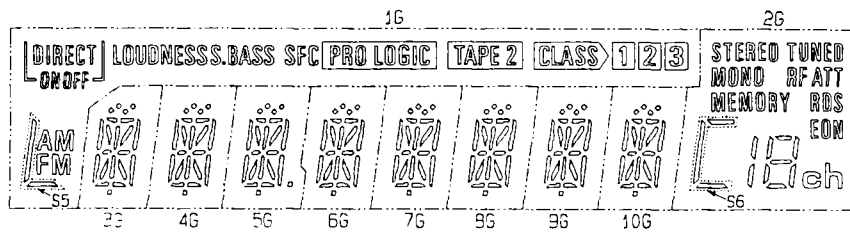
#### ● Pin Assignment

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Assignment	F1	F1	NP	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	NL	NL	NL	NL	NL	NL	S21	S16	S17

Pin No.	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
Assignment	S15	S13	S12	S14	S11	S10	S9	S8	S7	S6	S5	S3	S4	S2	S1	S18	S19	S20	NP	F2	NL

F1, F2: Filament    G1~G10: Grid    S1~S21: Anode    NL: No Lead    NP: No Pin

#### ● Grid Assignment



#### ● Anode Assignment

	1G	2G	3G, 4G, 6G~10G	5G
S1	S5	S6	a1	a1
S2	FM	2a, 2b	a2	a2
S3	AM	1a	h	h
S4	[DIRECT]	1b	j	j
S5	ON	1c	k	k
S6	OFF	1d	b	b
S7	[PRO LOGIC]	1e	f	f
S8	SFC	1f	m	m
S9	LOUDNESS	1g	g	g
S10	S. BASS	ch	c	c
S11	[TAPE 2]	STEREO	e	e
S12	[CLASS]	TUNED	r	r
S13	[ ]	MONO	p	p
S14	[2]	RF ATT	n	n
S15	[3]	MEMORY	d1	d1
S16		RDS	d2	d2
S17		EON	Dp	Dp
S18			S1, S3	S1, S3
S19			S4	S4
S20			S2	S2
S21				Dp1

## 9. DISASSEMBLY

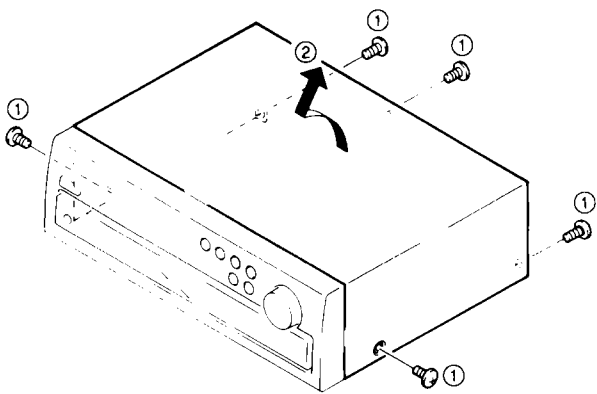
### CAUTION !

You will get an electric shock if you touch the Radiator (Heat-sink) when the power cord is connected to the power source. Also, the Electrolytic Capacitor contains a charge even when the power cord is unplugged, so the charge must be removed when the bonnet has been taken off.

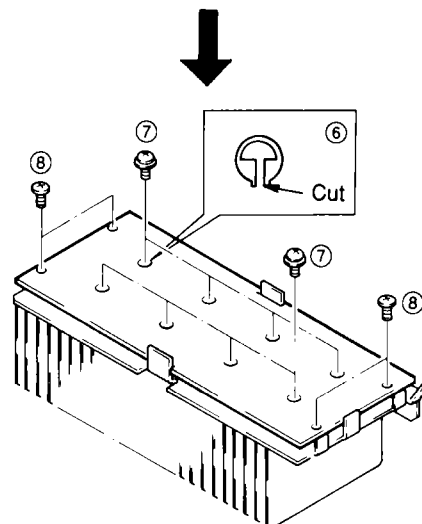
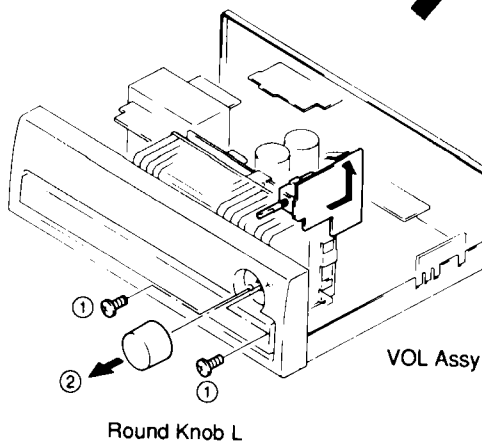
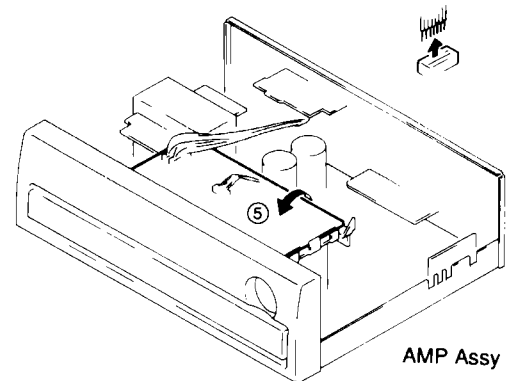
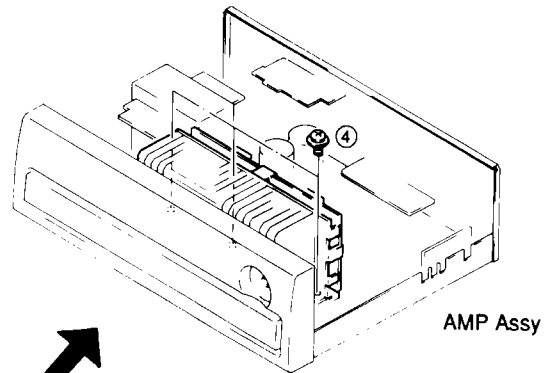
#### < Removing the Charge >

- ① Connect the Radiator (top side) and either the Chassis or the Rear panel for 2 to 3 seconds with a Resistor of more than 5W/10Ω.
- ② Connect the +B lead on the J2 and either the Chassis or the Rear panel for 2 to 3 seconds with a Resistor of more than 5W/10Ω.

### ■ BONNET



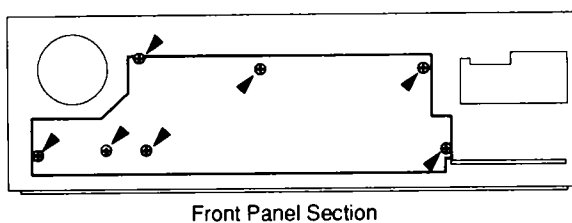
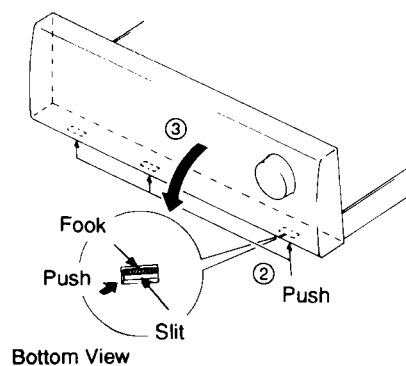
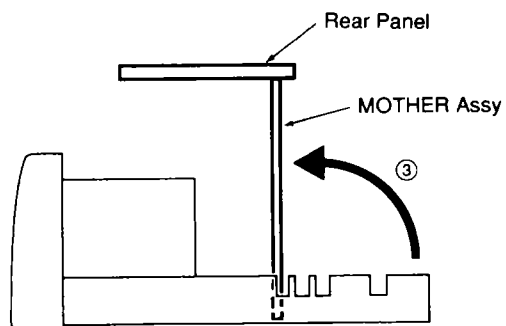
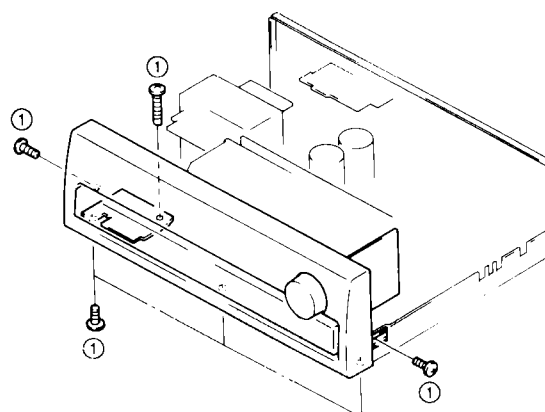
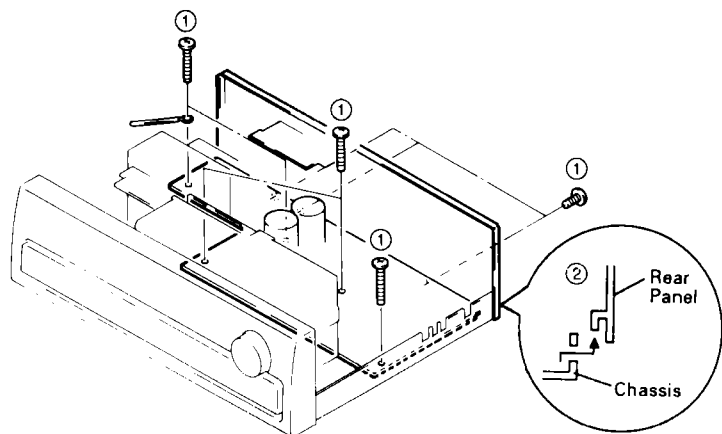
### ■ AMP ASSY



# VSX-405, VSX-305

## ■ MOTHER ASSY

## ■ FL AND UCOM ASSY

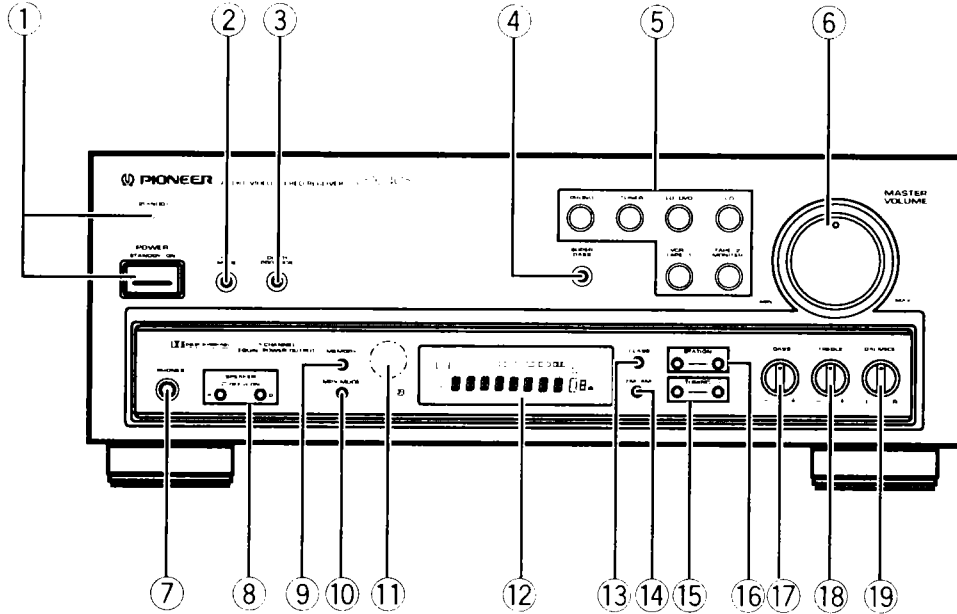




# 10. PANEL FACILITIES

## FRONT PANEL FACILITIES

● Illustration shows model VSX-405.



### 1 POWER STANDBY/ON switch **STANDBY** indicator

This is the switch for electric power.

**ON** : When set to the ON position, power is supplied and the unit becomes operational.

**STANDBY** : When set to STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.

The STANDBY indicator lights when the power is set to STANDBY, and goes out when set to ON.

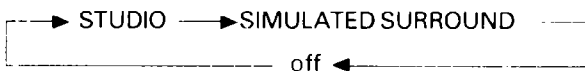
#### (Timer ON/OFF possible)

When the unit is switched ON, ON/OFF control can be performed by means of the optional timer.

NOTE:

When the power is initially turned ON, muting will be applied to prevent sound from being output for about 5 seconds.

### 2 SFC MODE button (Not available on the VSX-295 model)



### RETURN button (VSX-295 only)

Press this button to return the receiver into the initial state. TUNER is selected at this initial state. Adjust the sound level by using the MASTER VOLUME control.

TAPE 2 MONITOR .....	OFF	MUTING .....	OFF
SUPER BASS .....	OFF	FUNCTION .....	TUNER (FM)

NOTE:

Press the RETURN button, and the last FM station selected is received. If reception of a station is not possible with that frequency, the mode automatically switches to AUTO TUNING

### 3 DOLBY PRO LOGIC button

Switches DOLBY PRO LOGIC SURROUND on and off.

### 4 SUPER BASS button

Press this button when you want to boost the bass.

### 5 Input selector buttons

**PHONO** : Press when playing records on a turntable.

**TUNER** : Press when listening to radio broadcasts.

**LD/DVD** : Press when performing playback on an LD player or DVD player.

**CD** : Press when playing compact discs on a CD player.

### VCR/TAPE 1

: Press when performing playback on a VCR unit or cassette deck.

### TAPE 2 MONITOR

: Press when performing playback on a second cassette deck and when monitoring recording.

### 6 MASTER VOLUME control

Use it to simultaneously adjust the sound volume from the front, center, and rear speakers.

### 7 PHONES jack

Connect the plug on your headphones to this jack. Set SPEAKERS A and B switches to OFF if you want to cut the sound from the speakers and listen to it only through the headphones.

# VSX-405, VSX-305

## 8 SPEAKERS buttons (A,B)

ON/OFF switches for the A and B speaker systems.

## 9 MEMORY button

Press this button to switch to the frequency preset mode.

## 10 MPX MODE buttons

Use to select the auto stereo mode or monaural mode when listening to FM broadcasts. The monaural mode has been selected when the MONO indicator in the display section is lit.

### Auto stereo mode:

Normally, leave in this mode for reception. When a stereo FM broadcast is received, it will be automatically reproduced in stereo.

### Monaural mode:

When receiving distant stations or stations with weak broadcast signals, the input signal may be weak, thus resulting in increased noise during FM stereo broadcasts. In this event, setting the receiver to the monaural mode will reduce the noise. In this case, however, FM stereo broadcasts will be reproduced in monaural sound.

### NOTE:

This button has no effect on reception of AM broadcasts.

## 11 Remote sensor

## 12 Display section

## 13 CLASS button

Use to switch between preset memory classes 1 to 3. In each class, one station can be memorized in each of the 1 to 10 stations, enabling a total of 30 stations to be memorized.

## 14 FM/AM button

Use this to switch between FM and AM frequency band reception.

## 15 TUNING buttons

+: Performs tuning from the currently displayed station frequency in ascending frequency order.

-: Performs tuning in order of descending frequencies.

### Auto tuning (FM only):

Press TUNING + (up) or - (down) button until the frequency starts to change, then release it. The tuner will automatically search for a broadcasting station and stops when one is found, and the TUNED indicator lights up. To search for another station, press again.

### Manual tuning:

Press TUNING + (up) or - (down) button and release quickly. The tuning frequency will change by one step each time the button is pressed. Press as many times as necessary to tune in the desired station. The TUNED indicator lights up when the station is tuned in best.

- If you keep the TUNING (+/-) button depressed after the frequency has begun to change, the reception frequency changes continuously, and stops when the button is released.

### NOTE:

When AUTO TUNING is in use, reception may not be possible over long distances or when signals are weak. At these times MANUAL TUNING is recommended.

## 16 STATION (+,-) button

+: Use to call preset station numbers in ascending order.

-: Use to call preset station numbers in descending order.

## 17 BASS control

Use to adjust the low-frequency level. Turn clockwise to boost bass and counterclockwise to attenuate bass.

## 18 TREBLE control

Use to adjust the high-frequency level. Turn clockwise to boost treble and counterclockwise to attenuate treble.

## 19 BALANCE control

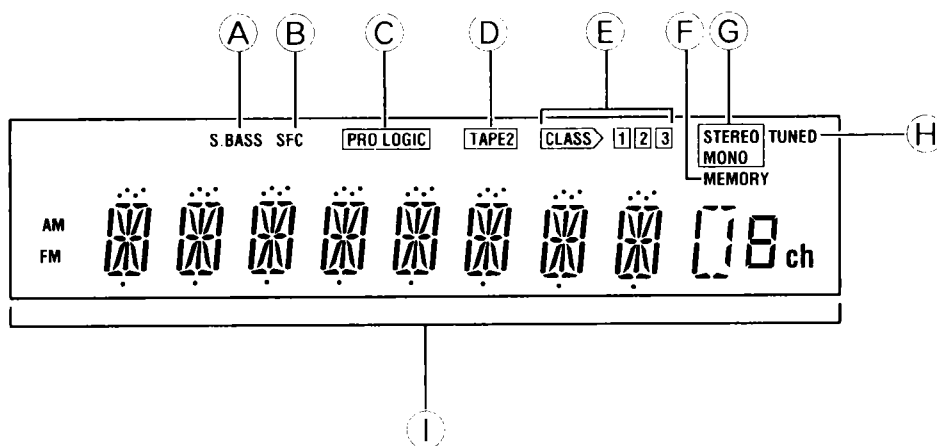
Use to adjust the sound volume balance between left and right speakers.

L : Decrease the sound on the right side.

R : Decrease the sound on the left side.

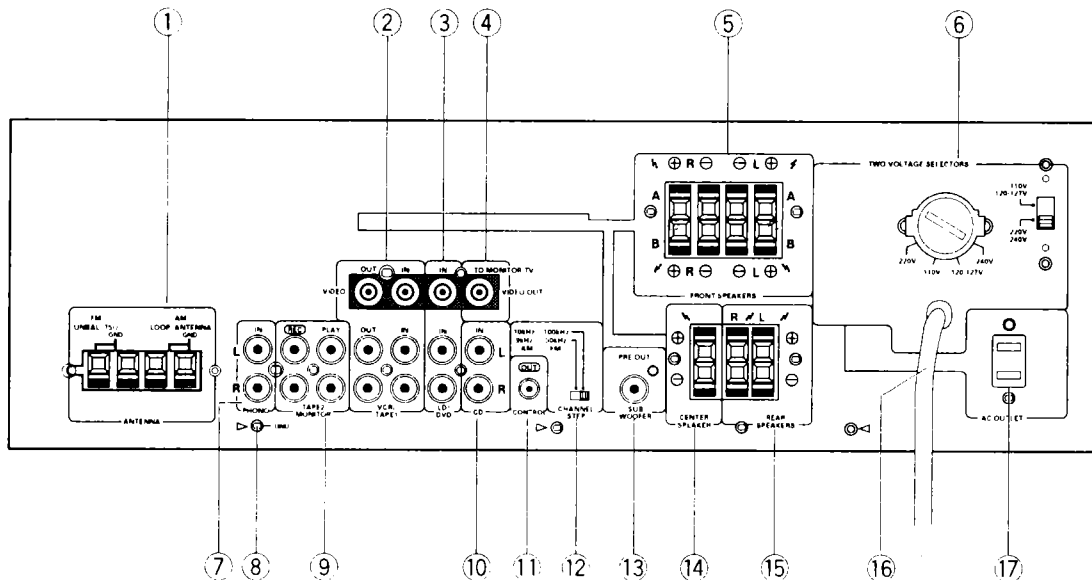
Usually, left and right volume levels should be the same.

## DISPLAY SECTION



## REAR PANEL FACILITIES

Illustration shows VSX-405 Multi-voltage model.



**1 FM/AM ANTENNA terminals**

**2 VCR/TAPE 1 jacks**

Connect to the first cassette deck or a VCR. With a VCR, also connect the video jacks.

**3 LD/DVD input jacks**

**4 VIDEO OUT (TO MONITOR TV) jack**

**5 FRONT SPEAKERS terminals**

A: Connect to the first set of speakers.  
B: Connect to the second set of speakers.

**NOTE:**

Do not allow any of the cord's conductors to protrude from the terminals or touch any other conductors. Malfunctions or breakdowns may occur when conductors come into contact with each other. Use front speakers with an impedance of 8 Ω to 16 Ω.

**6 TWO VOLTAGE SELECTORS switches (Multi-voltage model only)**

**7 PHONO input jacks**

Connect to the output cables from a turntable.

**8 GND terminal**

Connect the turntable ground lead to this terminal.

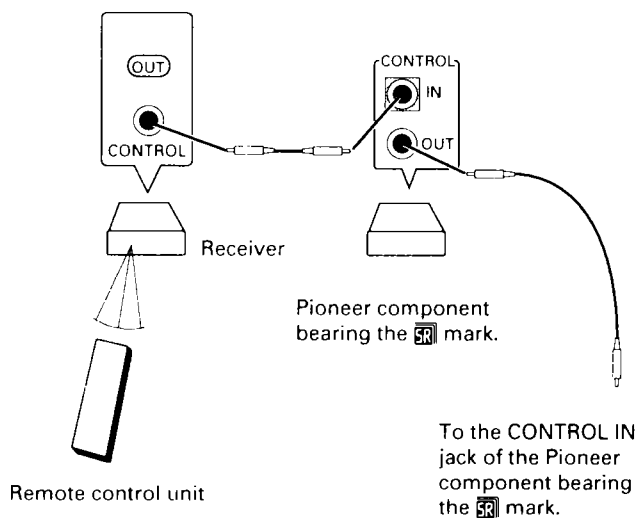
**9 TAPE 2 MONITOR jacks**

Connect to audio components such as a second cassette deck or a graphic equalizer.

**10 CD input jacks**

**11 CONTROL OUT jacks**

OUT: Connect this jack to other Pioneer components when using the remote control of this unit to control the other components.



To the CONTROL IN jack of the Pioneer component bearing the SRi mark.

# VSX-405, VSX-305

## 12 CHANNEL STEP switch (Multi-voltage model only)

## 13 SUB WOOFER PRE-OUT jack (Not available on the VSX-305 model)

If you want to boost the low frequencies, connect to a subwoofer power amplifier.

## 14 CENTER SPEAKER terminals

Connect the center speaker to these terminals.

### NOTE:

*Do not allow any of the cord's conductors to protrude from the terminals or touch any other conductors. Malfunctioning or breakdowns may occur when conductors come into contact with each other. Use center speakers with impedance of 8  $\Omega$  to 16  $\Omega$ .*

## 15 REAR SPEAKERS terminals

Connect the rear speakers to these terminals.

### NOTE:

- *Do not allow any of the cord's conductors to protrude from the terminals or touch any other conductors. Malfunctioning or breakdowns may occur when conductors come into contact with each other. Use rear speakers with impedance of 8  $\Omega$  to 16  $\Omega$ .*
- *Be sure to connect two speakers (L, R). There will be no sound if only one speaker is connected.*

## 16 Power cord

## 17 AC OUTLET

(U.S. and Canadian models)

### [SWITCHED 100 W (0.8 A) MAX]

Power supplied through this outlet is turned on and off by the receiver's POWER switch. Electrical power consumption of connected equipment should not exceed 100 W (0.8 A).

(Multi-voltage model)

### [SWITCHED 100 W MAX]

Power supplied through this outlet is turned on and off by the receiver's POWER switch. Total electrical power consumption of connected equipment should not exceed 100 W.

### NOTE:

- *This unit should be disconnected by removing the power plug from the wall socket when not in regular use, e.g. when on vacation.*
- *Do not connect appliances with high power consumption such as heaters, irons, or television sets to this AC OUTLET in order to avoid overheating and fire risk.  
This can cause the receiver to malfunction.*

### CAUTION:

**DO NOT CONNECT MONITOR OR TV SET.**

### POWER-CORD CAUTION

Handle the power cord by the plug. Do not pull out the plug by tugging the cord and never touch the power cord when your hands are wet as this could cause a short circuit or electric shock. Do not place the unit, a piece of furniture, etc., on the power cord, or pinch the cord. Never make a knot in the cord or tie it with other cords. The power cords should be routed such that they are not likely to be stepped on. A damaged power cord can cause fire or give you an electrical shock. Check the power cord once in a while. When you find it damaged, ask your nearest PIONEER authorized service center or your dealer for a replacement.

# 11. SPECIFICATIONS

## Amplifier section

### <VSX-405>

**Continuous average power output of 100 watts\* per channel, min., at 8 ohms, from 20 Hz to 20,000 Hz with no more than 0.9 %\*\* total harmonic distortion (front).**

[Multi-voltage model only]

Continuous Power Output (DIN)

Front (1kHz, T.H.D. 1%, 8Ω) ..... 115W+115W

### <VSX-405>

Continuous Power Output

Front ..... 70 W + 70 W (1 kHz, 0.8 %, 8 Ω)

Center ..... 70 W (1 kHz, 0.8 %, 8 Ω)

Rear ..... 70 W (1 kHz, 0.8 %, 8 Ω)

### <VSX-305>

**Continuous average power output of 60 watts\* per channel, min., at 8 ohms, from 20 Hz to 20,000 Hz with no more than 0.9 %\*\* total harmonic distortion (front).**

Continuous Power Output

Front ..... 60 W + 60 W (1 kHz, 0.9 %, 8 Ω)

Center ..... 60 W (1 kHz, 0.9 %, 8 Ω)

Rear ..... 60 W (1 kHz, 0.9 %, 8 Ω)

Dynamic Power (2 Ω/4 Ω/8 Ω)

VSX-405/VSX-295 ..... 170 W/160 W/130 W

VSX-305 ..... 110 W/100 W/70 W

Input (Sensitivity/Impedance)

PHONO MM ..... 2.8 mV/47 kΩ

CD, VCR/TAPE 1, TAPE 2, LD/DVD ..... 200 mV/47 kΩ

Phono Overload Level (T.H.D. 0.1 %, 1 kHz)

PHONO MM ..... 100 mV

Frequency Response

PHONO MM ..... 20 Hz to 20,000 Hz ± 0.3 dB

CD, VCR/TAPE 1, TAPE 2, LD/DVD ..... 5 Hz to 100,000 Hz ± 3 dB

Output (Level/Impedance)

VCR/TAPE 1 REC, TAPE 2 REC ..... 200 mV/2.2 kΩ

VCR OUT ..... 200 mV/2.2 kΩ

Tone Control

BASS ..... ± 8 dB (150 Hz)

TREBLE ..... ± 8 dB (10 kHz)

SUPER BASS ..... +8 dB (80 Hz)

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

PHONO MM ..... 72 dB

CD, VCR/TAPE 1, TAPE 2, LD/DVD ..... 96 dB

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

PHONO MM ..... 75 dB

CD, VCR/TAPE 1, TAPE 2, LD/DVD ..... 79 dB

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

\*\* Measured by Audio Spectrum Analyzer.

## VIDEO Section

Input (Sensitivity/Impedance)

VCR, LD ..... 1 Vp-p/75 Ω

Output (Level/Impedance)

VCR ..... 1 Vp-p/75 Ω

Frequency Response

VCR, LD → MONITOR ..... 5 Hz to 7 MHz ± 3 dB

Signal-to-Noise Ratio ..... 55 dB

Cross Talk ..... 55 dB

## FM Tuner Section

Frequency Range ..... 87.5 MHz to 108 MHz

Usable Sensitivity ..... Mono:11.2 dBf, IHF (1.0 μV/75 Ω)

50 dB Quieting Sensitivity ..... Mono:16.8 dBf

Stereo: 38.6 dBf

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

Stereo:70 dB (at 85 dBf)

Distortion ..... Stereo: 0.5 % (1 kHz)

Alternate Channel Selectivity ..... 60 dB (400 kHz)

Stereo Separation ..... 40 dB (1 kHz)

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

Antenna Input ..... 75 Ω unbalanced

## AM Tuner Section

Frequency Range ..... 531 kHz to 1,602 kHz (9 kHz step)

530 kHz to 1,700 kHz (10 kHz step)

Sensitivity (IHF, Loop antenna) ..... 350 μV/m

Selectivity ..... 25 dB

Signal-to-Noise Ratio ..... 50 dB

Antenna ..... Loop antenna

## Miscellaneous

Power Requirements

U.S. and Canadian models ..... AC 120 V, 60 Hz

Multi-voltage model .. AC 110 V/120-127 V/220 V/240 V (Switchable), 50/60 Hz

Power Consumption

VSX-405

U.S. and Canadian models ..... 200 W, 300 VA

Multi-voltage model ..... 570 W

VSX-305 ..... 185W,290VA

In Standby Condition ..... 3 W

AC Outlet

U.S. and Canadian models

SWITCHED ..... 100 W (0.8 A) MAX

Multi-voltage model

SWITCHED ..... 100 W MAX

Dimensions ..... 420 (W) x 140 (H) x 328 (D) mm

16-9/16 (W) x 5-1/2 (H) x 12-15/16 (D) in

Weight (without package)

U.S. and Canadian models ..... 7.2 kg (15 lb 13 oz)

Multi-voltage model

VSX-405 ..... 7.5 kg (15lb 76oz)

## Furnished Parts

FM Antenna ..... 1

AM Loop Antenna ..... 1

Dry Cell Batteries

[size "AA" (IEC R6)] ..... 2

Remote Control Unit ..... 1

Operating Instructions ..... 1

NOTE:

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