

Service Manual

ORDER NO.
RRV1598

AUDIO/VIDEO STEREO RECEIVER

VSX-405

VSX-295

VSX-425

● Refer to the service manual RRV1467 for VSX-405/KUXJ.

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

Type	Model			Power Requirement	The voltage can be converted by the following method.
	VSX-405	VSX-295	VSX-425		
SDXJ	○	○	-	AC110V/120-127V/220V/240V	With the voltage selector
HLXJ	-	-	○	AC220-230V	AC240V, *
YPWXJ	-	-	○	AC240V	_____

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

CONTENTS

1. CONTRAST OF MISCELLANEOUS PARTS 2
2. SCHEMATIC DIAGRAMS 8

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T-SSM APR. 1996 Printed in Japan

VSX-405, VSX-295, VSX-425

1. CONTRAST OF MISCELLANEOUS PARTS

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.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- 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 10¹ \rightarrow 561 RD1/4PU 561 J
 47 k Ω \rightarrow 47 \times 10³ \rightarrow 473 RD1/4PU 473 J
 0.5 Ω \rightarrow 0R5 RN2H 0R5 K
 1 Ω \rightarrow 1R0 RS1P 1R0 K

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

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

■ CONTRAST OF VSX-405/SDXJ, VSX-295/SDXJ, VSX-425/HLXJ, YPWXJ AND VSX-405/KUXJ

VSX-405/SDXJ, VSX-295/SDXJ, VSX-425/HLXJ, YPWXJ and VSX-405/KUXJ have the same construction except for the following:

Mark	Symbol & Description	Part No.					Remarks
		VSX-405		VSX-295	VSX-425		
		KUXJ	SDXJ	SDXJ	HLXJ	YPWXJ	
NSP	MAIN Assy	AWK7228	AWK7246	AWK7249	AWK7247	AWK7247	
	└ MOTHER Assy	AWZ8053	AWZ8054	AWZ8059	AWZ8055	AWZ8055	
	└ FL AND UCOM Assy	AWZ8060	AWZ8060	AWZ8064	AWZ8373	AWZ8373	
	└ VIDEO Assy	AWZ8066	AWZ8380	AWZ8380	AWZ8380	AWZ8380	
	└ SP. SW AND H.P Assy	AWZ8068	AWZ8068	AWZ8068	AWZ8376	AWZ8376	
NSP	└ PRIMARY Assy	AWZ8368	Not used	Not used	AWZ8368	AWZ8368	
NSP	AMP AND VOL. Assy	AWK7232	AWK7250	AWK7253	AWK7251	AWK7251	
	└ AMP Assy	AWZ8074	AWZ8074	AWZ8077	AWZ8372	AWZ8372	
	└ VOL. Assy	AWZ8078	AWZ8078	AWZ8081	AWZ8078	AWZ8078	
NSP	└ PRIMARY Assy	Not used	AWZ8375	AWZ8375	Not used	Not used	
	PACKING						
	Operating instructions (English)	ARB7065	ARB7065	ARB7065	Not used	ARB7066	
	Operating Instructions (English/Chinese)	Not used	Not used	Not used	ARE7061	Not used	
	Operating Instructions (Chinese/Spanish)	Not used	ARC7105	ARC7105	Not used	Not used	
	Remote Control Unit (CU-VSX105)	AXD7083	AXD7083	Not used	AXD7083	AXD7083	
	Remote Control Unit (CU-VSX110)	Not used	Not used	AXD7088	Not used	Not used	
NSP	Packing Case	AHD7268	AHD7274	AHD7272	AHD7275	AHD7275	
	Warranty Card	ARY1051	Not used	Not used	Not used	PRY1003	
	Caution 220V Label	Not used	ARR1003	ARR1003	Not used	Not used	
	EXTERIOR						
Δ	Power Transformer (AC120V)	ATS7108	Not used	Not used	Not used	Not used	
Δ	Power Transformer (AC110V/120-127V/220V/240V)	Not used	ATS7110	ATS7110	Not used	Not used	
Δ	Power Transformer (AC220-230V/240V)	Not used	Not used	Not used	ATS7111	ATS7111	
Δ	Fuse (1A, FU3, FU4)	REK1075	REK1075	REK1075	Not used	Not used	
Δ	Fuse (T1A, FU3, FU4)	Not used	Not used	Not used	AEK1054	AEK1054	
Δ	Fuse (6.3A, FU1)	REK1085	Not used	Not used	Not used	Not used	
Δ	Fuse (3.15A, FU1, FU2)	Not used	REK1081	REK1081	Not used	Not used	No. 1
Δ	Fuse (T2.5A, FU1)	Not used	Not used	Not used	AEK1058	AEK1058	
Δ	Voltage Selector S1	Not used	AKX-507	AKX-507	Not used	Not used	No. 2
Δ	Voltage Selector S2	Not used	AKX1004	AKX1004	Not used	Not used	No. 3

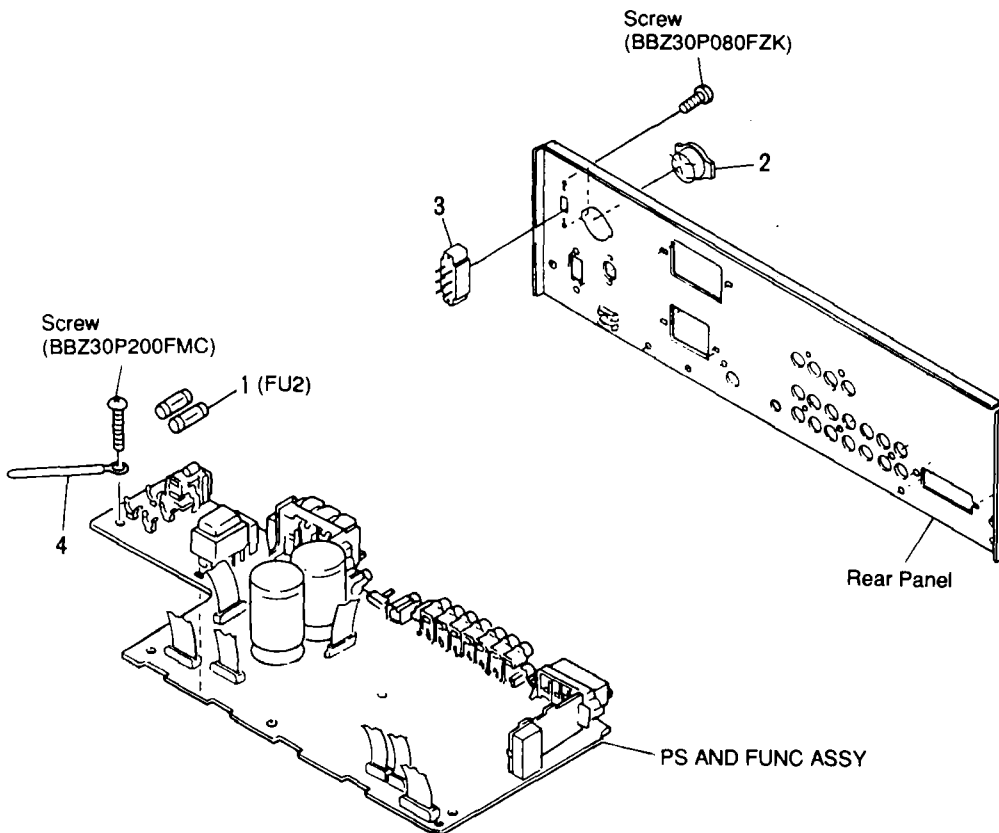
VSX-405, VSX-295, VSX-425

Mark	Symbol & Description	Part No.					Remarks
		VSX-405		VSX-295	VSX-425		
		KUXJ	SDXJ	SDXJ	HLXJ	YPWXJ	
△	AC Power Cord	PDG1015	ADG1157	ADG1157	ADG1153	ADG1159	No. 4
	Rear Panel	ANC7341	ANC7349	ANC7346	ANC7350	ANC7352	
	Cord Stopper	CM-22C	CM-22B	CM-22B	CM-22B	CM-22B	
	Front Panel	AMB7334	AMB7340	AMB7336	AMB7338	AMB7338	
	FL Panel	AAK7237	AAK7237	AAK7239	AAK7237	AAK7237	
	Insulator	Not used	PNW1912	PNW1912	PNW1912	PNW1912	
	Insulator ASSY	Not used	Not used	Not used	Not used	DXA1490	
	Foot	AEC1505	AEC1505	AEC1505	AEC1505	Not used	
	Binder	Not used	RNE1277	RNE1277	RNE1277	RNE1277	
	POWER BLOCK						
△	Transistor (Q3, Q4)	2SA1943(P)	2SA1943(P)	2SA1943(P)	2SA1940(P)	2SA1940(P)	
△	Transistor (Q13, Q14)	2SA1943(P)	2SA1943(P)	Not used	2SA1940(P)	2SA1940(P)	
△	Transistor (Q1, Q2)	2SC5200(P)	2SC5200(P)	2SC5200(P)	2SC5197(P)	2SC5197(P)	
△	Transistor (Q11, Q12)	2SC5200(P)	2SC5200(P)	Not used	2SC5197(P)	2SC5197(P)	

Note : The numbers in the remarks column correspond to the numbers on the exploded diagram.

Refer to "EXPLODED VIEWS".

EXPLODED VIEWS



VSX-405, VSX-295, VSX-425

■ CONTRAST OF PCB ASSEMBLIES

MOTHER ASSY

AWZ8054, AWZ8059, AWZ8055 and AWZ8053 have the same construction except for the following:

Mark	Symbol & Description	Part No.				Remarks
		AWZ8053	AWZ8054	AWZ8059	AWZ8055	
IC1101 IC1102 Q405 Q406 Q407		NJW1102FG1 NJU9702D DTC124ES 2SC1740S DTC143ES	NJW1102FG1 NJU9702D DTC124ES 2SC1740S DTC143ES	Not used Not used Not used Not used Not used	NJW1102FG1 NJU9702D DTC124ES 2SC1740S Not used	
Q409 Q410 D401 D402 D410, D422		2SA965 2SC2235 D5SBA20 D5SBA20 1SS252	2SA965 2SC2235 D5SBA20 D5SBA20 1SS252	Not used Not used Not used D5SBA20 Not used	2SA965 2SC2235 D5SBA20 Not used 1SS252	
D411 D412, D413 RY402 RY403 S401		1SS252 MTZJ5.6C ASR7001 ASR7009 Not used	1SS252 MTZJ5.6C ASR7001 ASR7009 ASH1027	Not used Not used Not used Not used ASH1027	Not used MTZJ5.6C ASR7001 Not used Not used	*
C165, C166 C401, C402 C407, C408, C1104, C1160 C412 C413		CFTXA153J50 ACH7018 CEAS470M25 ACG1005 ACG1005	CFTXA123J50 ACH7019 CEAS470M25 ACG1005 ACG1005	CFTXA123J50 ACH7019 Not used Not used ACG1005	CFTXA103J50 ACH1105 CEAS470M25 ACG1005 Not used	
C415 C422 C1010, C1011, C1132 C1012, C1152 C1101, C1102, C1129		ACG1030 Not used CEAS101M25 CGCYX104M16 CEAS100M50	Not used ACE7004 CEAS101M25 CGCYX104M16 CEAS100M50	Not used ACE7004 Not used Not used Not used	Not used ACE7004 CEAS101M25 CGCYX104M16 CEAS100M50	*
C1103 C1105 C1106 C1107, C1110 C1108, C1109, C1111, C1112, C1116-C1119, C1136, C1158, C1159		CEANL220M25 CQMA472J50 CEAS220M25 CQMA681J50 CFTXA104J50	CEANL220M25 CQMA472J50 CEAS220M25 CQMA681J50 CFTXA104J50	Not used Not used Not used Not used Not used	CEANL220M25 CQMA472J50 CEAS220M25 CQMA681J50 CFTXA104J50	
C1113, C1114, C1134 C1115, C1120 C1121, C1123, C1124, C1126 C1122, C1125, C1137, C1138, C1153 C1130, C1155, C1162		CFTXA473J50 CFTXA223J50 CFTXA224J50 CEAS4R7M50	CFTXA473J50 CFTXA223J50 CFTXA224J50 CEAS4R7M50	Not used Not used Not used Not used	CFTXA473J50 CFTXA223J50 CFTXA224J50 CEAS4R7M50	
C1131 C1133, C1156 C1135 C1139 C1157, C1161		CQMA561J50	CQMA561J50	Not used	CQMA561J50	
C1163 C1179 C1180 R405, R1105, R1108 R406, R1010, R1012, R1013, R1123, R1128		CQMA102J50 CQMA562J50 CFTXA684J50 CEAS221M10 CFTXA683J50	CQMA102J50 CQMA562J50 CFTXA684J50 CEAS221M10 CFTXA683J50	Not used Not used Not used Not used Not used	CQMA102J50 CQMA562J50 CFTXA684J50 CEAS221M10 CFTXA683J50	
C1163 C1179 C1180 R405, R1105, R1108 R406, R1010, R1012, R1013, R1123, R1128		CQMA222J50 CKPUYB102K50 CKPUYB151K50 RD1/6PM473J RD1/6PM103J	CQMA222J50 CKPUYB102K50 CKPUYB151K50 RD1/4PU473J RD1/4PU103J	Not used Not used Not used Not used Not used	CQMA222J50 CKPUYB102K50 CKPUYB151K50 RD1/4PU473J RD1/4PU103J	
R407, R408 R413, R414 R415 R416 R1011		RD1/6PM681J RD1/6PM513J RD1/6PM393J RD1/6PM821J RD1/6PM472J	RD1/4PU681J RD1/4PU513J RD1/4PU393J RD1/4PU821J RD1/4PU472J	Not used RD1/4PU473J Not used RD1/4PU821J Not used	RD1/4PU681J RD1/4PU513J RD1/4PU393J RD1/4PU182J RD1/4PU472J	

VSX-405, VSX-295, VSX-425

Mark	Symbol & Description	Part No.				Remarks
		AWZ8053	AWZ8054	AWZ8059	AWZ8055	
△	R1101, R1102, R1113 R198 R417 R418 R1103	RD1/6PM223J RD1/4PU102J Not used ACN-208 RD1/6PM475J	RD1/4PU223J Not used RD1/4PU102J Not used RD1/4PU475J	Not used Not used RD1/4PU102J Not used Not used	RD1/4PU223J Not used Not used Not used RD1/4PU475J	*
	R1104 R1106, R1109, R1112, R1115, R1122, R1124, R1127 R1107, R1110 R1111 R1116	RD1/6PM104J RD1/6PM153J RD1/6PM752J RN1/6PQ1003F RD1/6PM334J	RD1/4PU104J RD1/4PU153J RD1/4PU752J RN1/6PQ1003F RD1/4PU334J	Not used Not used Not used Not used Not used	RD1/4PU104J RD1/4PU153J RD1/4PU752J RN1/6PQ1003F RD1/4PU334J	
	R1121 R1126 R1129 R1181, R1182, R1183 451 (AC Socket 1P)	RD1/6PM105J RD1/6PM300J RD1/6PM433J RD1/6PM102J AKP1060	RD1/4PU105J RD1/4PU300J RD1/4PU433J RD1/4PU102J AKP1060	Not used Not used Not used Not used AKP1060	RD1/4PU105J RD1/4PU300J RD1/4PU433J RD1/4PU102J Not used	
	CN432 CN434 CN452, CN453 H403, H404 J22	AKB7042 AKE7005 Not used Not used Not used	AKB7026 AKE7005 AKC1016 AKR1004 DB825EB0	AKB7026 Not used AKC1016 AKR1004 DB825EB0	AKB7026 AKE7005 Not used Not used Not used	* * *
	△ T401 X1101 (2.00MHz)	ATT1223 ASS7011	ATT1193 ASS7011	ATT1193 Not used	ATT1193 ASS7011	

Note * : Refer to SCH-2F.

FL AND UCOM ASSY

AWZ8064, AWZ8373 and AWZ8060 have the same construction except for the following:

Mark	Symbol & Description	Part No.			Remarks
		AWZ8060	AWZ8064	AWZ8373	
	R828, R857 R852, R898 R827 R897	RD1/4PU473J Not used RD1/4PU473J Not used	Not used RD1/4PU473J RD1/4PU473J Not used	RD1/4PU473J Not used Not used RD1/4PU473J	

VIDEO ASSY

AWZ8380 and AWZ8066 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ8066	AWZ8380	
	1501 Pin Jack 2P	AKB7016	AKB7017	

SP SW AND HP ASSY

AWZ8376 and AWZ8068 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ8068	AWZ8376	
	R703, R704	Not Used	RS1LMF681J	*

Note * : Refer to SCH-3F.

VSX-405, VSX-295, VSX-425

AMP ASSY

AWZ8077, AWZ8372 and AWZ8074 have the same construction except for the following:

Mark	Symbol & Description	Part No.			Remarks
		AWZ8074	AWZ8077	AWZ8372	
	Q1301-Q1304	2SA992	Not used	2SA992	
	Q1305, Q1306	2SA1145	Not used	2SA1145	
	Q1307, Q1308	2SC2705	Not used	2SC2705	
	Q1309, Q1310	2SC1740S	Not used	2SC1740S	
	Q1311, Q1312	2SC4793	Not used	2SC4793	
	Q1313, Q1314	2SA1837	Not used	2SA1837	
	Q1315, Q1316	2SC2240	Not used	2SC2240	
	Q1321, Q1322	2SA970	Not used	2SA970	
	D305, D306, D311, D312, D1305, D1306, D1311, D1312	Not used	Not used	MTZJ10A	*
	D307-D310, D1307-D1310	Not used	Not used	1SS252	*
	D1301-D1304, D1313-D1316	1SS252	Not used	1SS252	
	L1301, L1302	ATH1004	Not used	ATH1004	
	C307, C308	CCCSL120K500	CCCSL120K500	CCCSL270K500	
	C309, C310, C1309, C1310	Not used	Not used	CCCSL270K500	*
	C325, C326, C1325, C1326	Not used	Not used	CFTXA104J50	*
	C327, C328	CFTXA473J50	CFTXA473J50	CFTXA104J50	
	C1301, C1302	CEAS2R2M50	Not used	CEAS2R2M50	
	C1303, C1304	CCCSL331J50	Not used	CCCSL331J50	
	C1305, C1306	CCCSL681J50	Not used	CCCSL681J50	
	C1307, C1308	CCCSL120K500	Not used	CCCSL270K50	
	C1313, C1314	CEAS101M25	Not used	CEAS101M25	
	C1317, C1318	CCCSL050C500	Not used	CCCSL050C500	
	C1319-C1322	CCCSL101K50	Not used	CCCSL101K50	
	C1323, C1324	CEANP2R2M50	Not used	CEANP2R2M50	
	C1327, C1328	CFTXA473J50	Not used	CFTXA104J50	
	C1331, C1332	CEAS101M10	Not used	CEAS101M10	
	R311, R312	RD1/4PM681J	RD1/4PM681J	RD1/4PM102J	
	R317, R318	RD1/4PMF680J	RD1/4PMF680J	RD1/4PMFL680J	
	R325-R332	RD1/4PMF101J	RD1/4PMF101J	RD1/4PMFL101J	
	R343, R344	RD1/4PMF472J	RD1/4PMF472J	RD1/4PMFL472J	
	R351, R352	RD1/4PMF100J	RD1/4PMF100J	RD1/4PMFL100J	
	R1301, R1302	RD1/4PU561J	Not used	RD1/4PU561J	
	R1303, R1304, R1315, R1316	RD1/4PU104J	Not used	RD1/4PU104J	
	R1305, R1306	RD1/4PU431J	Not used	RD1/4PU431J	
	R1307, R1308	RD1/4PU391J	Not used	RD1/4PU391J	
	R1309, R1310	RD1/4PU222J	Not used	RD1/4PU222J	
	R1311, R1312	RD1/4PM681J	Not used	RD1/4PM102J	
	R1313, R1314	RD1/4PM104J	Not used	RD1/4PM104J	
	R1317, R1318	RD1/4PMF680J	Not used	RD1/4PMFL680J	
	R1319, R1320	RD1/4PS101J	Not used	RD1/4PS101J	
	R1321, R1322	RD1/4PU152J	Not used	RD1/4PU152J	
	R1323, R1324	RD1/4PU681J	Not used	RD1/4PU681J	
	R1325-R1332	RD1/4PMF101J	Not used	RD1/4PMFL101J	
	R1333-R1340	RF1/4PS4R7J	Not used	RD1/4PS4R7J	
	R1341, R1342	ACN7001	Not used	ACN7001	
	R1343, R1344	RD1/4PMF472J	Not used	RD1/4PMFL472J	
	R1345, R1346	RD1/4PU153J	Not used	RD1/4PU153J	
	R1347, R1348	RD1/4PU821J	Not used	RD1/4PU821J	
	R1349, R1350	RD1/4PU183J	Not used	RD1/4PU183J	
	R1351, R1352	RD1/4PMF100J	Not used	RD1/4PMFL100J	
	R1353, R1354	RS1LMF100J	Not used	RS1LMF100J	
	R1357, R1358	RD1/4PU472J	Not used	RD1/4PU472J	

Note * : Refer to SCH-4F.

VSX-405, VSX-295, VSX-425

VOL. ASSY

AWZ8081 and AWZ8078 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ8078	AWZ8081	
	IC602 Q661, Q662 C661, C662 C663, C664 C665, C666 R661, R662, R671, R672 R667, R668 R663, R665, R666 R664 VR601 VR602	UPC4570C 2SC2878 CEAS4R7M50 CEAS2R2M50 CCCSL681J50 RD1/4PU473J RD1/4PU102J RD1/4PU222J RD1/4PU122J ACX7005 Not used	Not used Not used Not used Not used Not used Not used Not used Not used Not used Not used ACX7021	*

Note * : Refer to SCH-3F.

PRIMARY ASSY

AWZ8375 and AWZ8368 have the same construction except for the following:

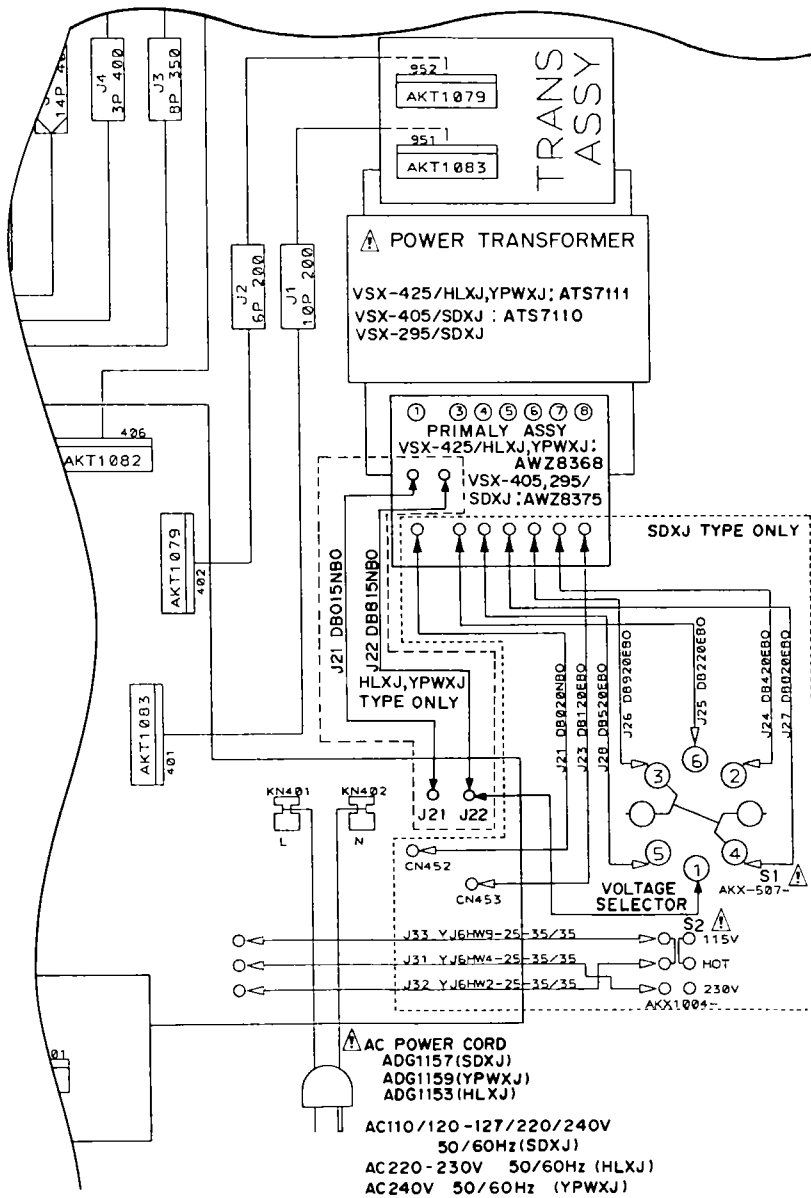
Mark	Symbol & Description	Part No.		Remarks
		AWZ8368	AWZ8375	
J21	LEAD WIRE UNIT	DB015NB0	DB020EB0	
J22	LEAD WIRE UNIT	DB815NB0	Not used	
J23	LEAD WIRE UNIT	Not used	DB120EB0	*
J25	LEAD WIRE UNIT	Not used	DB220EB0	*
J24	LEAD WIRE UNIT	Not used	DB420EB0	*
J28	LEAD WIRE UNIT	Not used	DB520EB0	*
J27	LEAD WIRE UNIT	Not used	DB820EB0	*
J26	LEAD WIRE UNIT	Not used	DB920EB0	*

Note * : Refer to SCH-1F.

2. SCHEMATIC DIAGRAMS

2.1 OVERALL SCHEMATIC DIAGRAM

SCH-1F



NOTE FOR SCHEMATIC DIAGRAMS (Type 1A)

- When ordering service parts, be sure to refer to "PARTS LIST OF EXPLODED VIEWS" or "PCB PARTS LIST".
- Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.
- 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.
- CAPACITORS:**
Unit: p: pF or μF unless otherwise noted.
Ratings: capacitor (μF)/ voltage (V) unless otherwise noted.
Rated voltage: 50V except for electrolytic capacitors.
- COILS:**
Unit: m: mH or μH unless otherwise noted.
- VOLTAGE AND CURRENT:**
V : Signal voltage at rated output.
 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.
- OTHERS:**
• ⊙ or ⊛ : Adjusting point.
• Δ : 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.
- SCH-□ ON THE SCHEMATIC DIAGRAM:**
• SCH-□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)

Line Voltage Selection

Line Voltage can be changed by the following modification:

- Disconnect the AC power cord.
- Remove the cover.
- Change the connection of the power transformer primary taps.
- Stick a line voltage label on the rear panel.

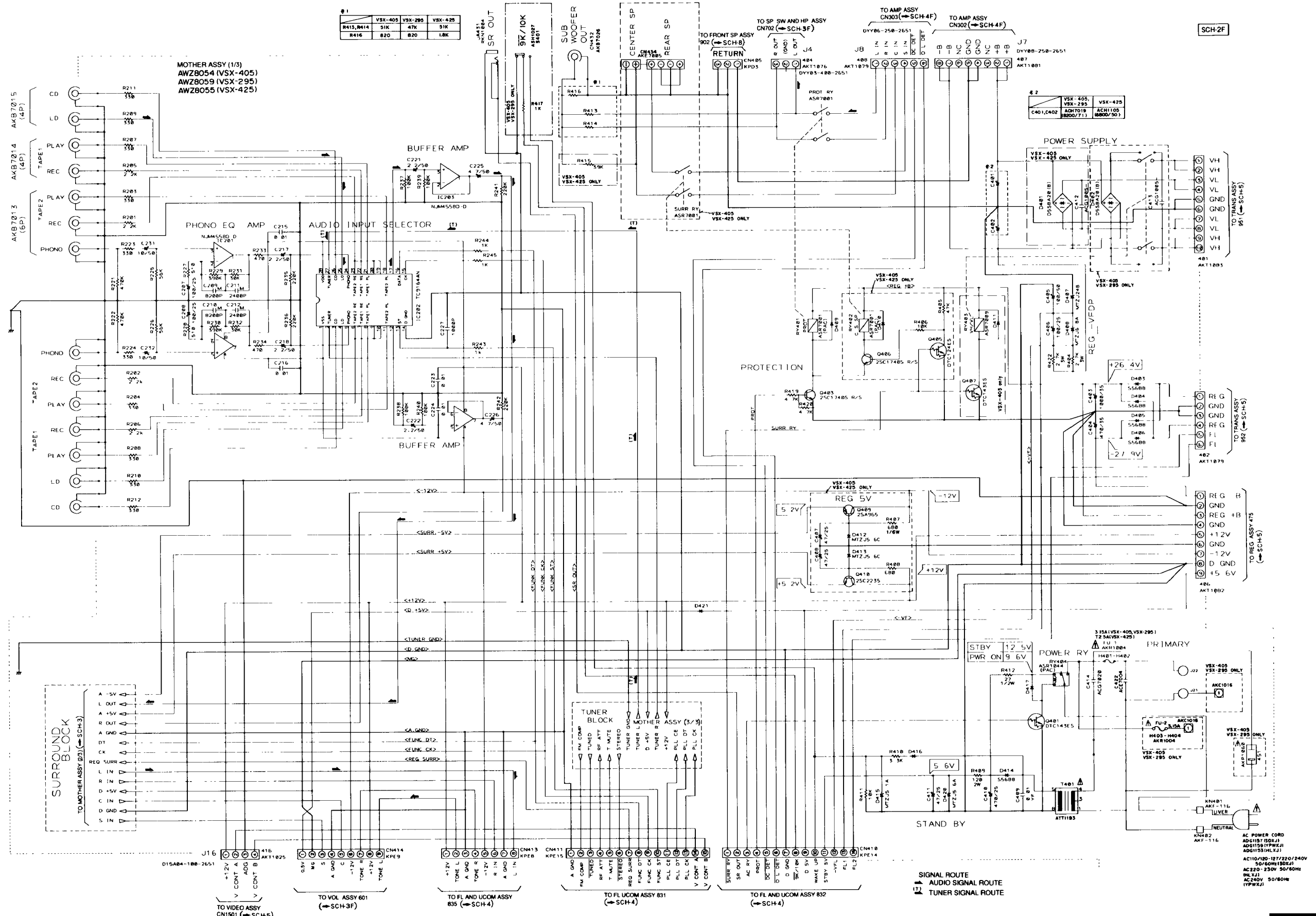
Part No.	Description
AAX-193	220V label
AAX-192	240V label

SCH-1F

OVERALL SCHEMATIC DIAGRAM

OVERALL SCHEMATIC DIAGRAM

SCH-1F



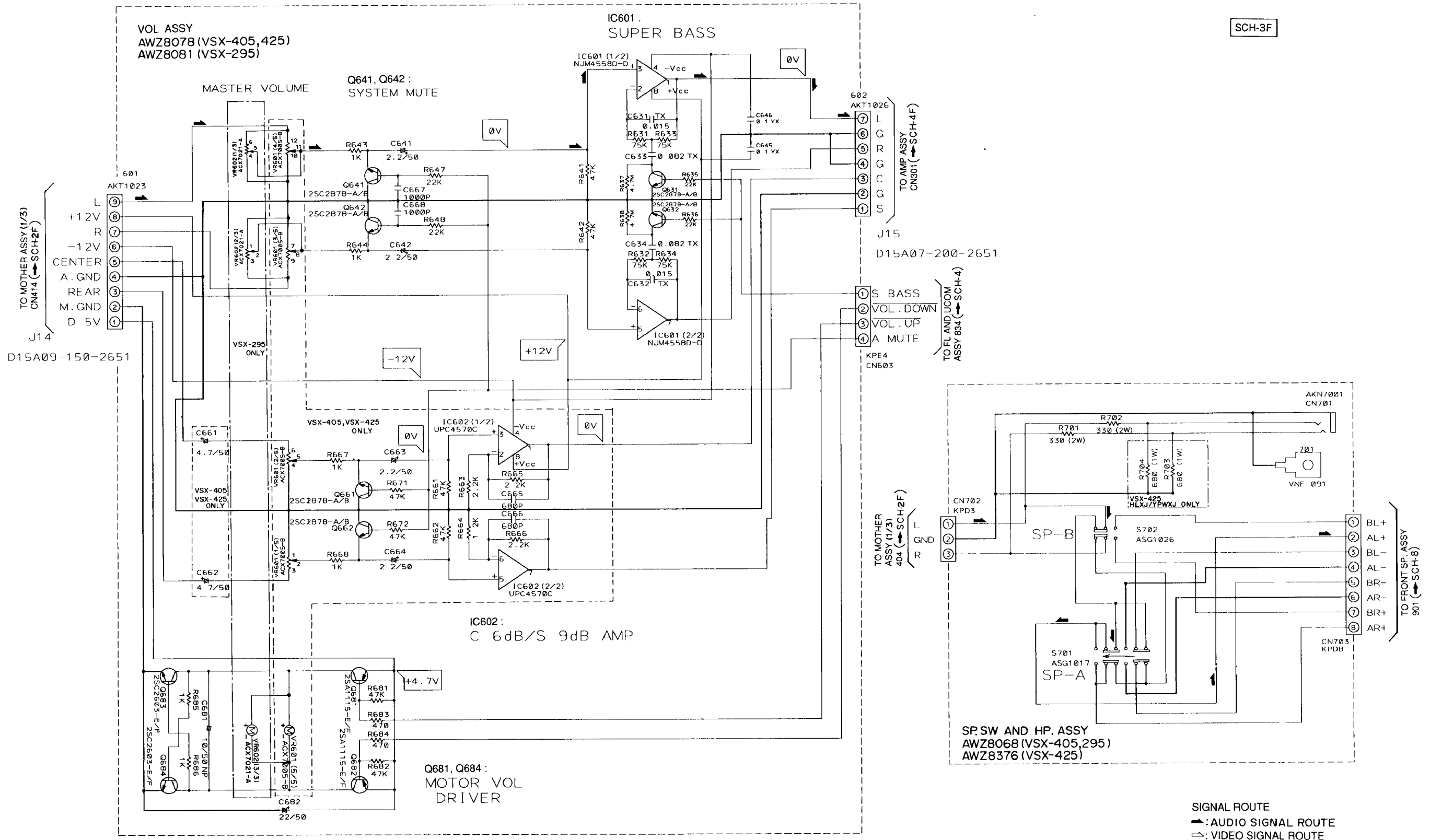
SCH-2F
 MOTHER ASSY (1/3)

MOTHER ASSY (1/3)
SCH-2F

VSX-405, VSX-295, VSX-425

2.3 SP SW AND HP, VOL ASSY

SCH-3F



SCH-3F

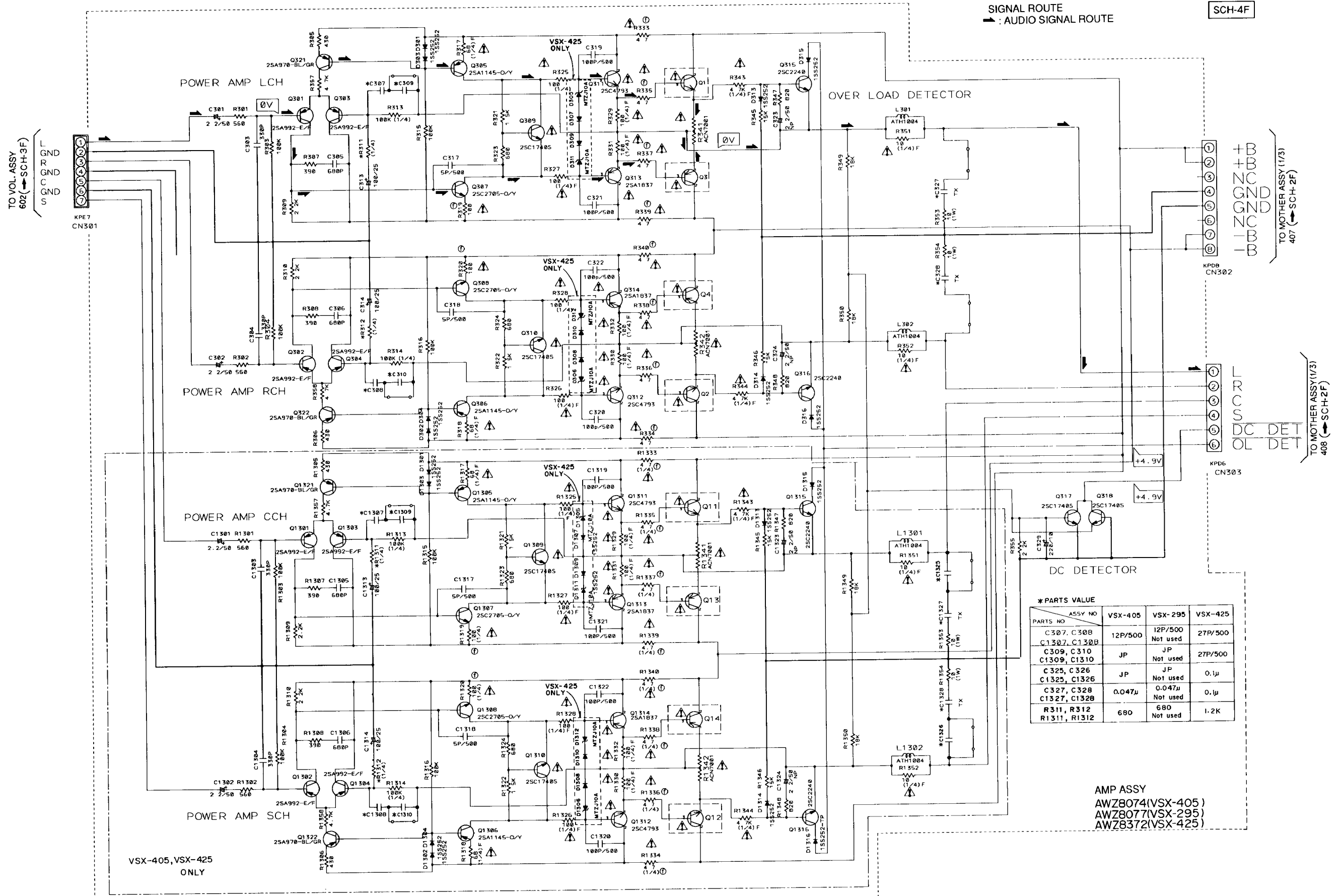
SP. SW AND HP. ASSY,
VOL ASSY

SP. SW AND HP. ASSY,
VOL ASSY

SCH-3F

SCH-4F

SIGNAL ROUTE
 ▲ : AUDIO SIGNAL ROUTE



AMP ASSY
 AWZ8074(VSX-405)
 AWZ8077(VSX-295)
 AWZ8372(VSX-425)

AMP ASSY

SCH-4F

SCH-4F