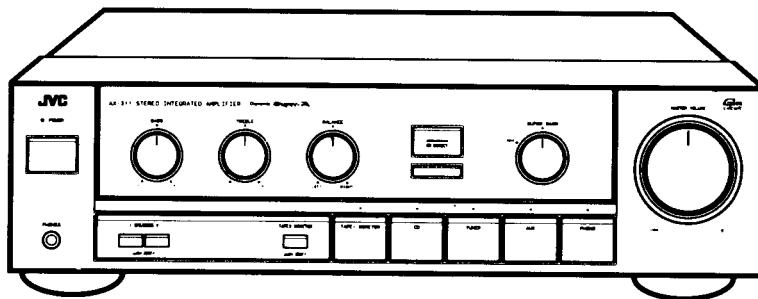


JVC

SERVICE MANUAL

STEREO INTEGRATED AMPLIFIER

MODEL No. **AX-311BK**



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Safety Precautions

1. The design of this product contains special hardware and many circuits and components specially for safety purpose. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (▲) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage current check (Electrical shock hazard testing)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

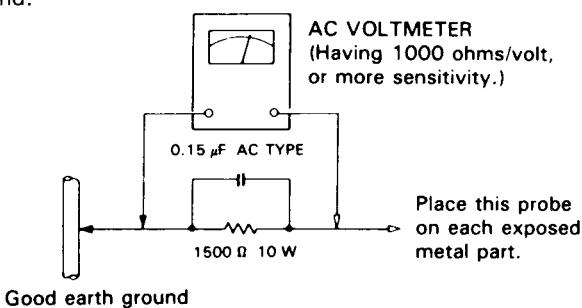
Do not use a line isolation transformer during this check.

- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5 mA AC (r.m.s.).
- Alternate check method

Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a $1,500 \Omega$ 10 W resistor paralleled by a $0.15 \mu\text{F}$ AC-type capacitor between an exposed metal part and a known good earth ground.

Measure the AC voltage across the resistor with the AC voltmeter.

Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

CONNECTION DIAGRAM

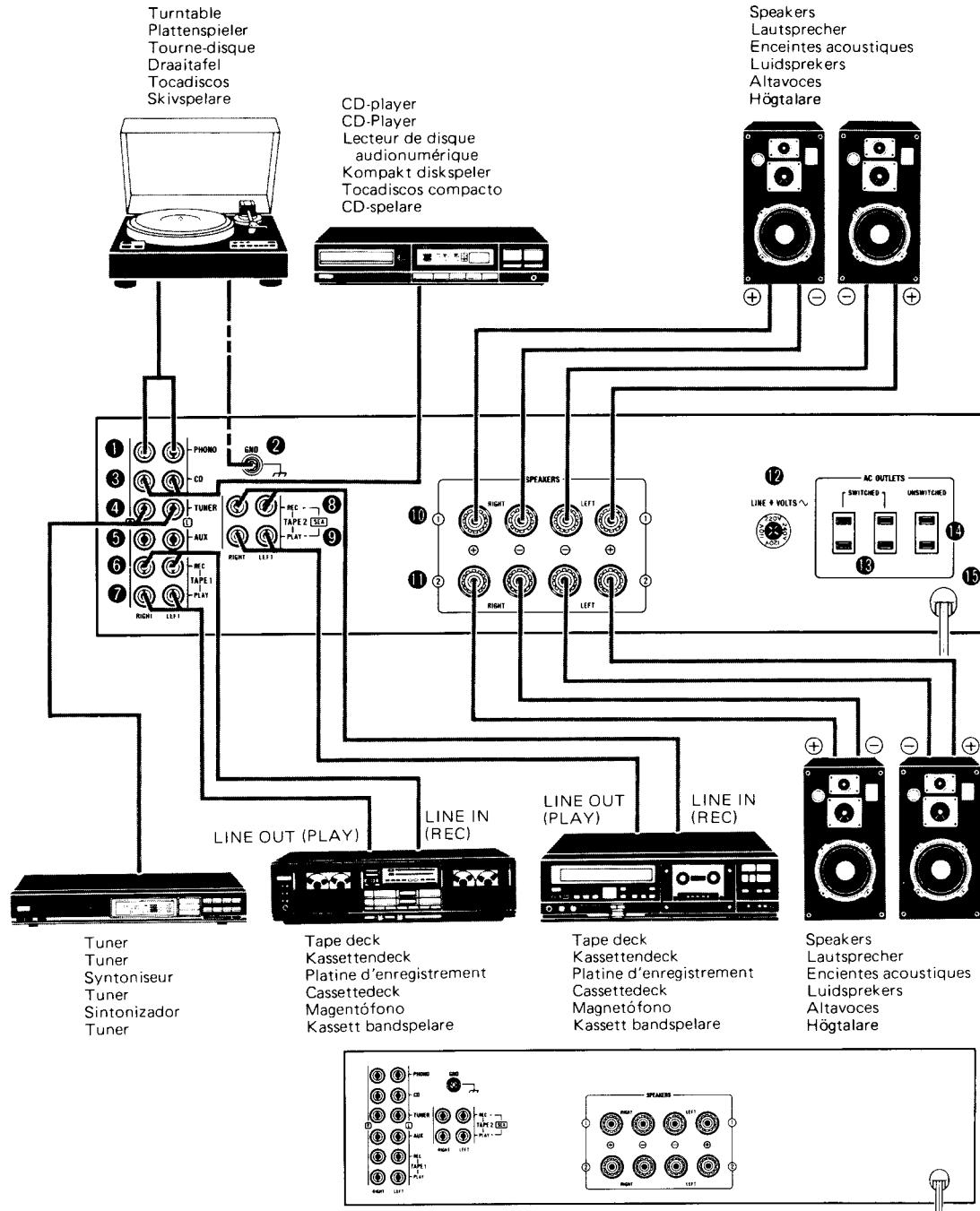
ANSCHLUSSDIAGRAMM

SCHEMA DE RACCORDEMENTS

AANSLUITINGSSCHEMA

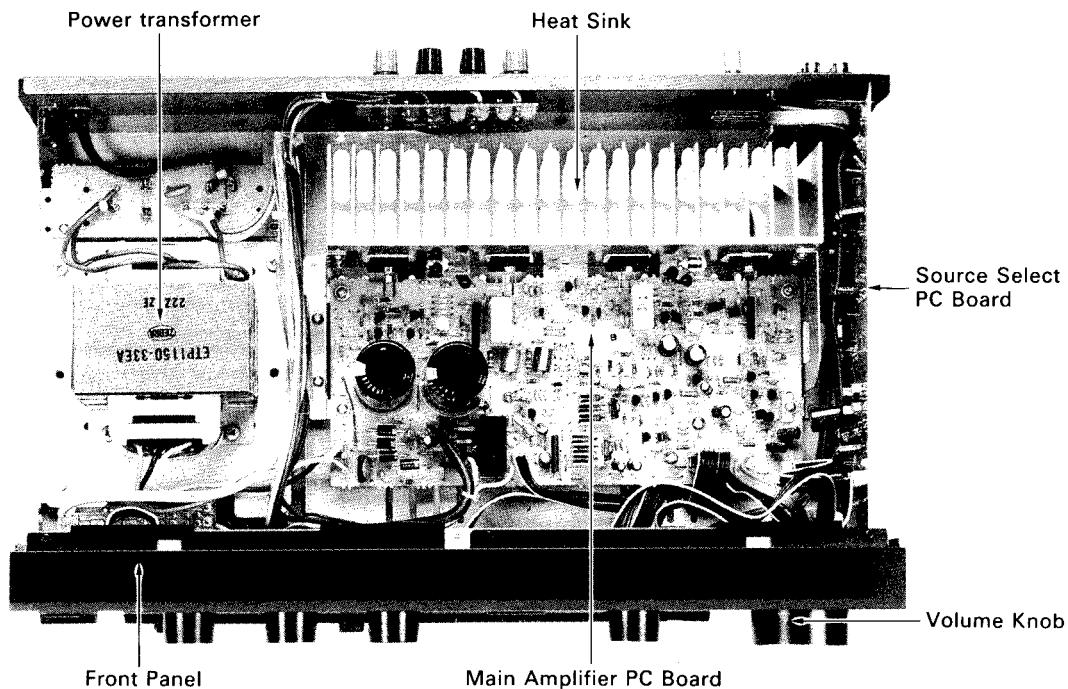
DIAGRAMA DE CONEXIONES

ANSLUTNINGSSCHEMA



Provided on units for Continental Europe, the United Kingdom and Australia.
Vorhanden an Geräten für Kontinentaleuropa, Großbritannien und Australien.
Fourni sur les appareils pour l'Europe Continentale, le Royaume-Uni et l'Australie.
Aanwezig op apparaten voor het Europees Vasteland, Groot-Brittannië en Australië.
Se provee en las unidades para Europa Continental, el Reino Unido y Australia.
För kontinentala Europa, Storbritannien och Australien.

Removal Procedures



■ Removing the Top Cover

1. Remove six screws.
2. Remove the top cover by lifting up its rear section and pulling it backward while holding it on incline.

■ Removing the Front Panel

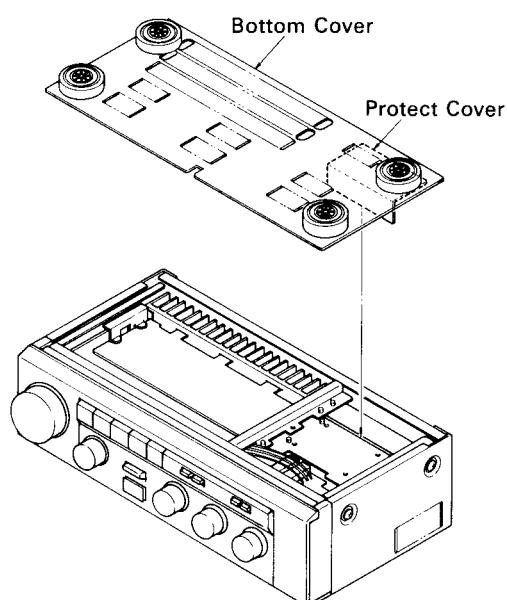
1. Remove the top cover.
2. Pull out the volume knob.
3. Remove three plastic rivets on the upper part of the front panel and three screws from the lower part.

■ Removing the Bottom Cover

1. Remove 17 screws fixing the bottom cover.
- Note :** When installing the bottom cover, properly insert the protect cover between the power transformer and the power primary PC board as shown in the figure at right.

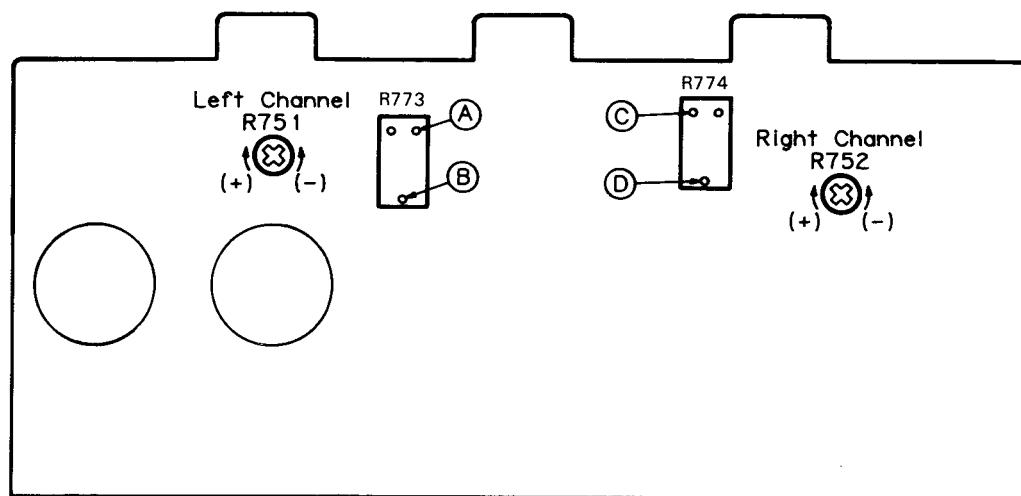
■ Removing the Power Transistors

1. Remove the top cover.
2. Remove the bottom cover.
3. Remove the retaining screw from the defective power transistor and replace it.



Adjustment Procedures

■ Power Amplifier Idling Adjustment

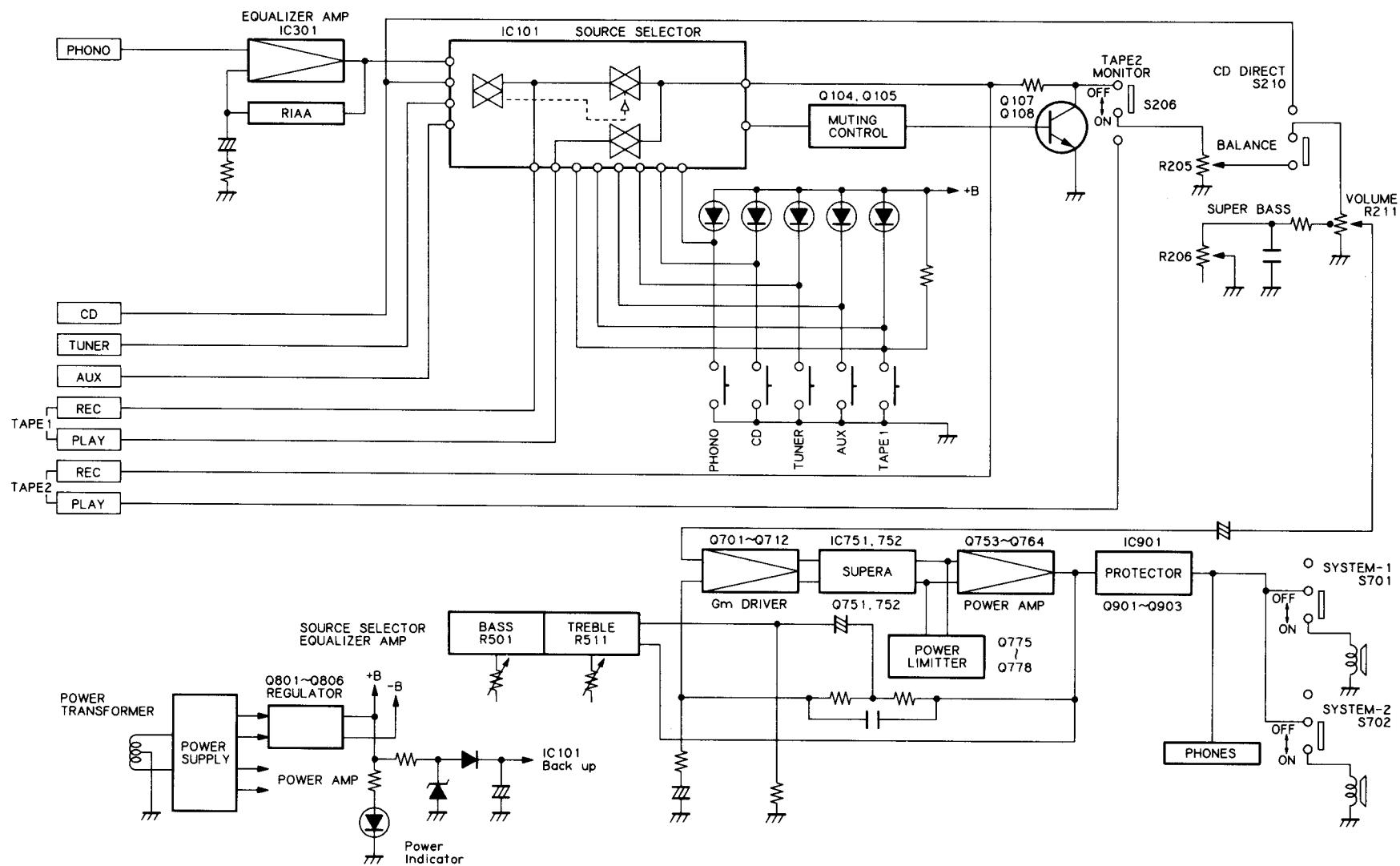


1. Before turning on the power, turn the the semi-fixed resistors (R751 for L channel and R752 for R channel) of the power amplifier circuit board fully counterclockwise.
2. Adjust the semi-fixed resistor (R751 and R752) so that the voltage at the following test points of the power amplifier circuit board is within a range of 3 ~ 5 mV after the power is turned on.
L channel: Measure the voltage between test point A (emitter of Q761) and output at the test point B.
R channel: Meaure the voltage between test point C (emitter of Q762) and output at the test point D.

3. Readjust resistors R751 and R752 about 10 minutes after the power is turned on (the heatsink temperature must be sufficiently high) so that the voltage at the test points becomes 11 mV.
Confirm that the voltage does not vary when the heat-sink temperature increases further.

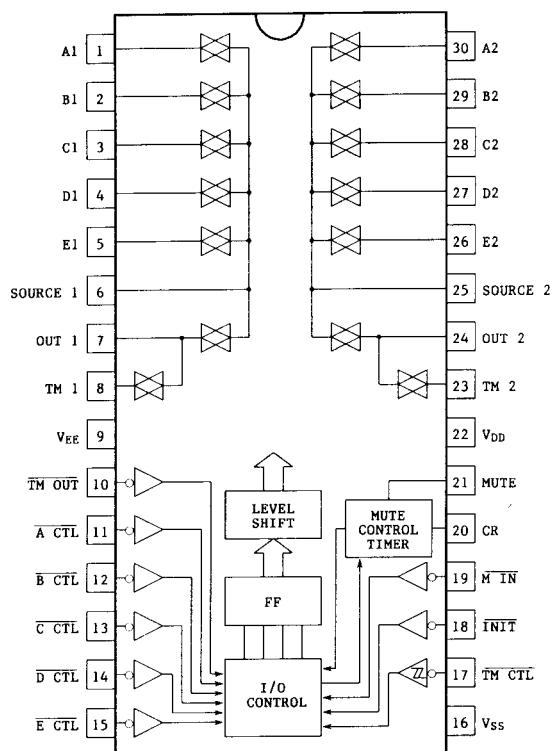
Note: Be sure to perform the measurement with the probes and cabinet of the measuring equipment separated from the grounding terminals of AX-311BK or other measuring equipment.

Block Diagram

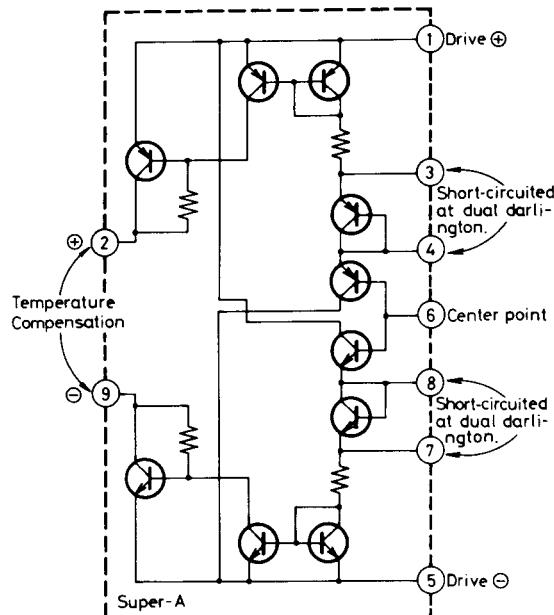


Internal Block Diagrams of ICs

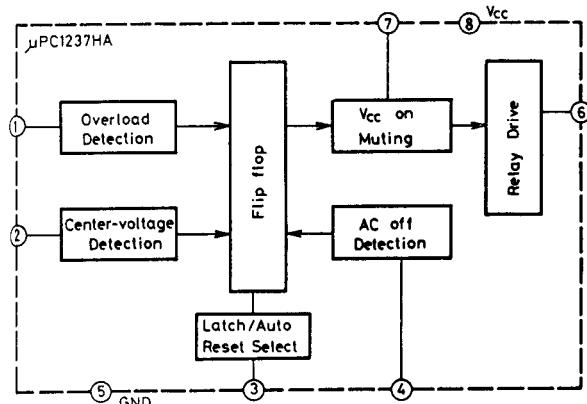
■ LC7818 (IC101): Analog Switch



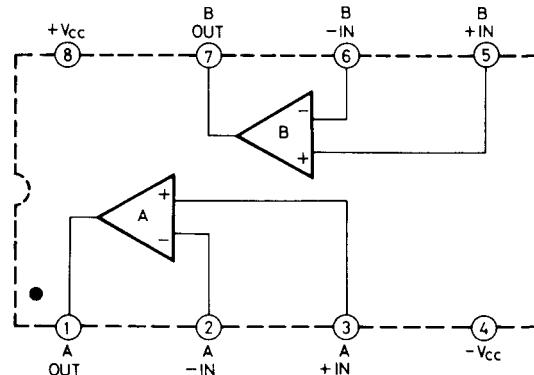
■ VC5022 [X, Y] (IC751, IC752): Super-A



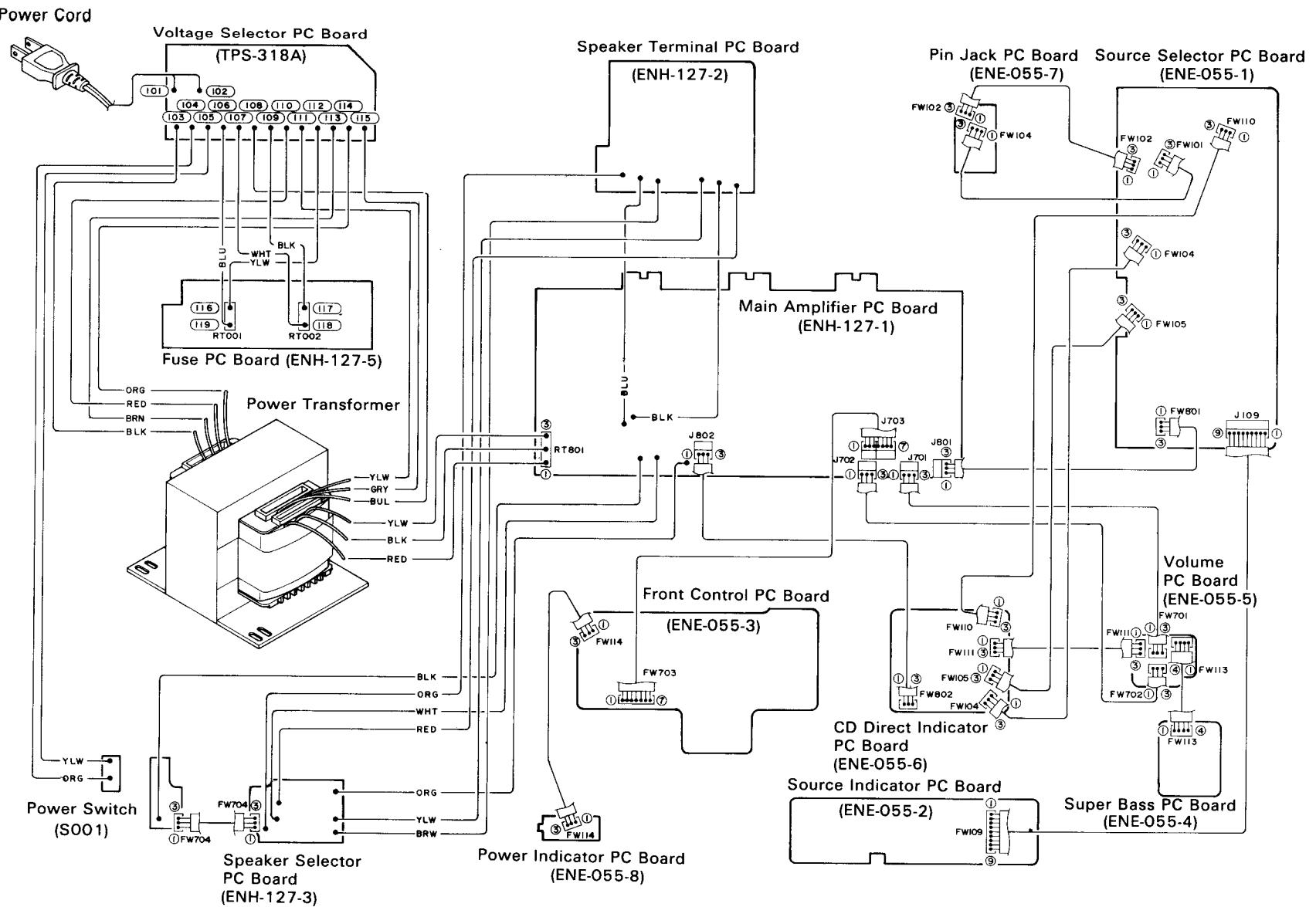
■ μPC1237HA (IC901): Relay Driver



■ NJM4558D-D (IC301): Dual OP Amp



Connection Diagram



- MEMO -

AX-311BK

JVC

VICTOR COMPANY OF JAPAN LIMITED
AUDIO PRODUCTS DIVISION, YAMATO PLANT, 1644, SHIMOTSURUMA, YAMATO-SHI, KANAGAWA-KEN, 242, JAPAN

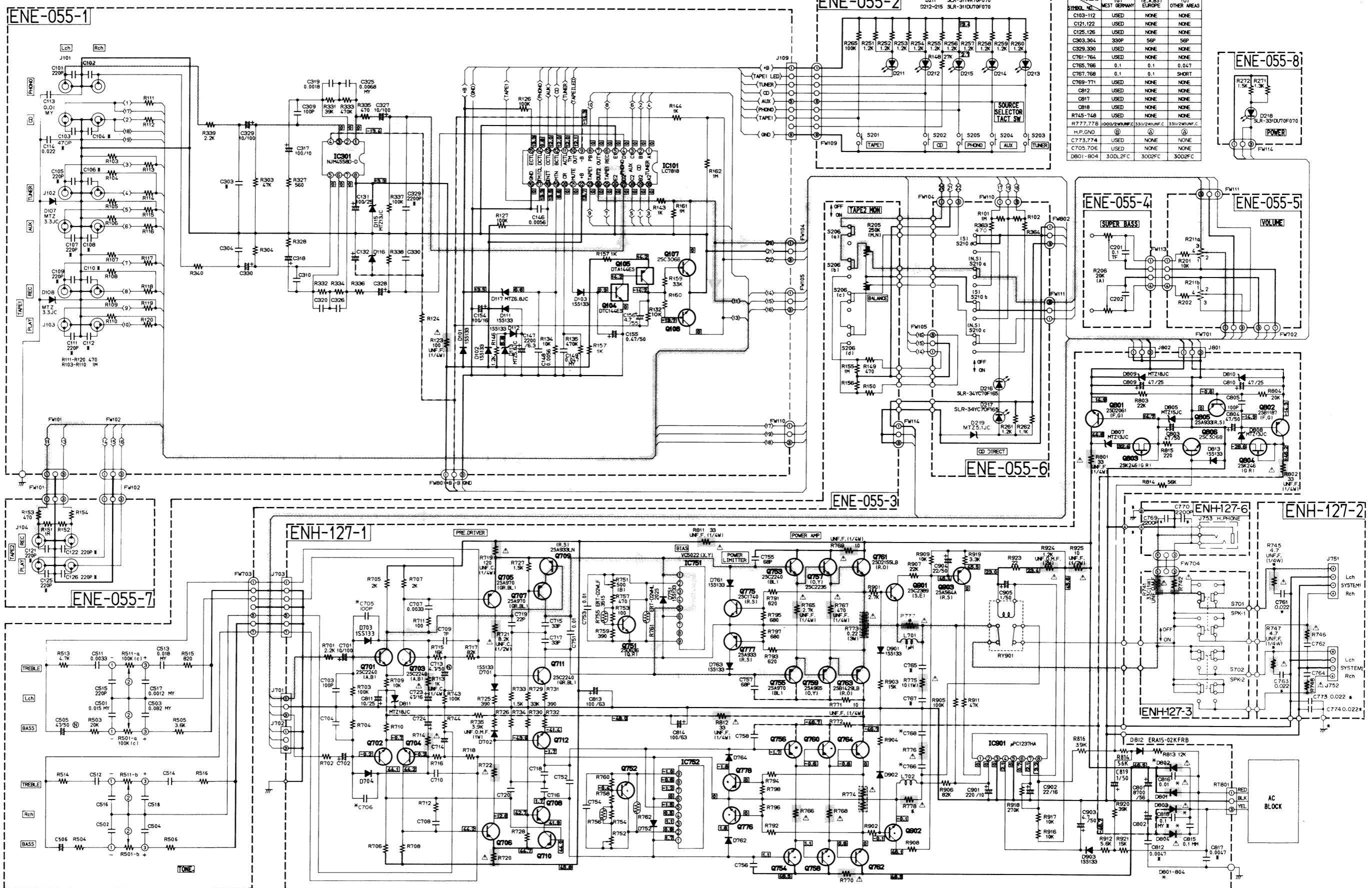
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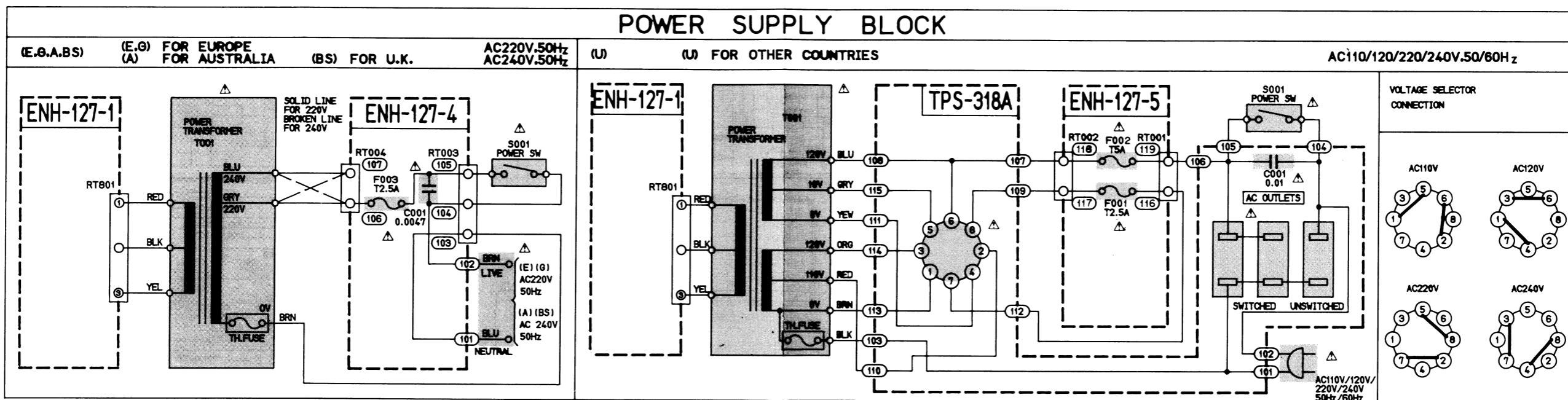
Printed in Japan
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Schematic Diagrams

(1) Source Select and Main Amplifier Section

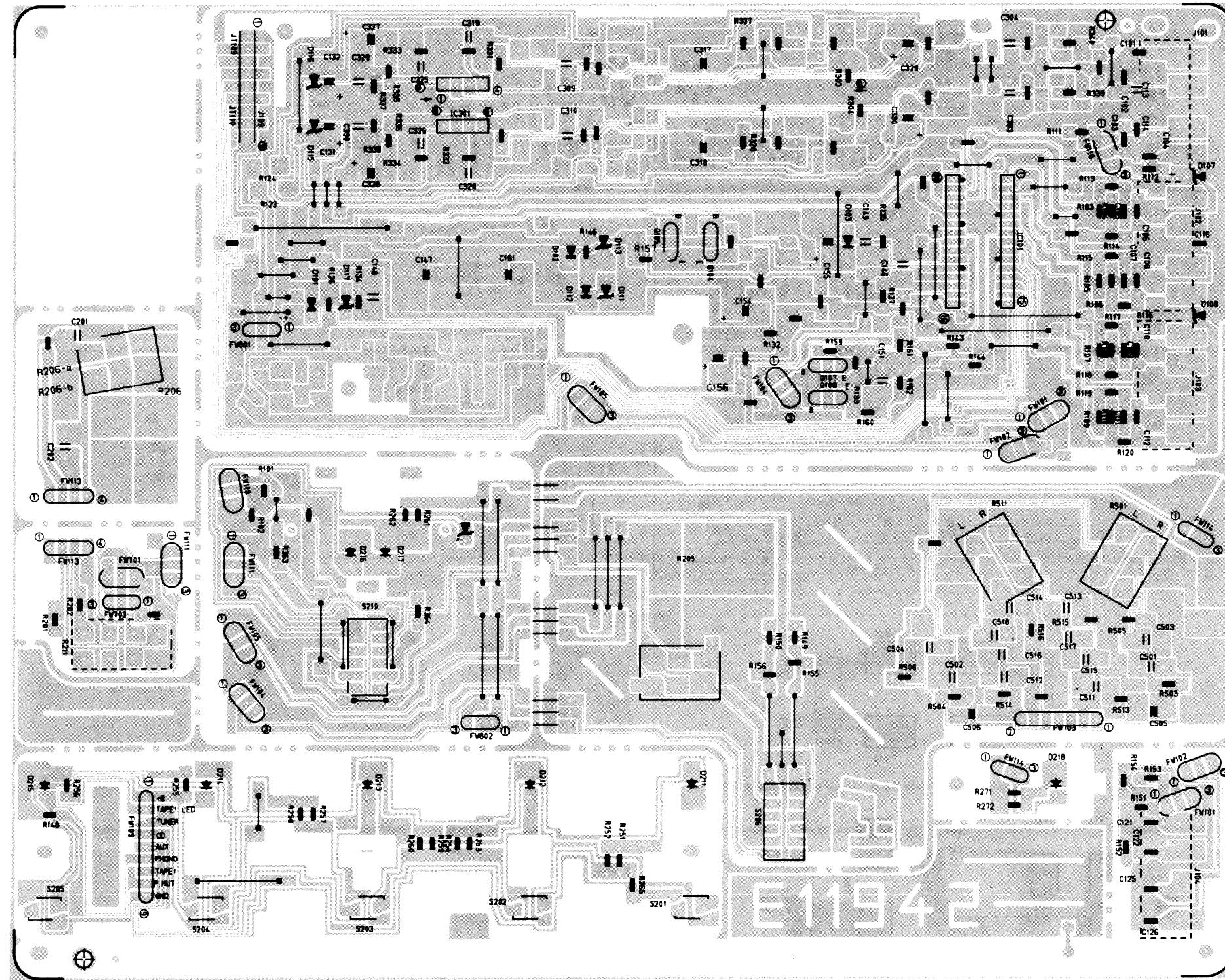


(2) Power Supply Section

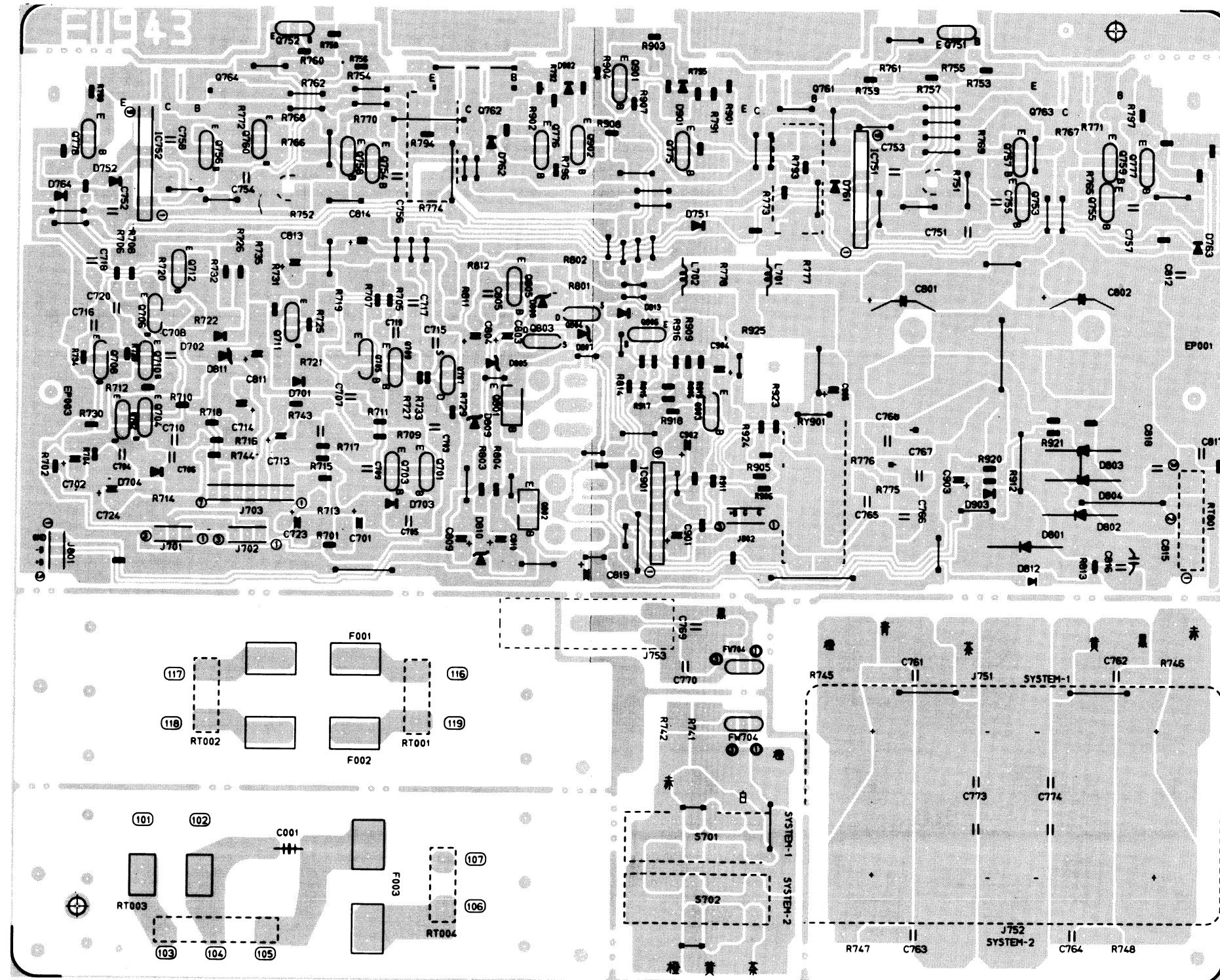


Printed Circuit Boards

■ Source Select PC Board (ENE-055)



■ Main Amplifier PC Board (ENH-127)

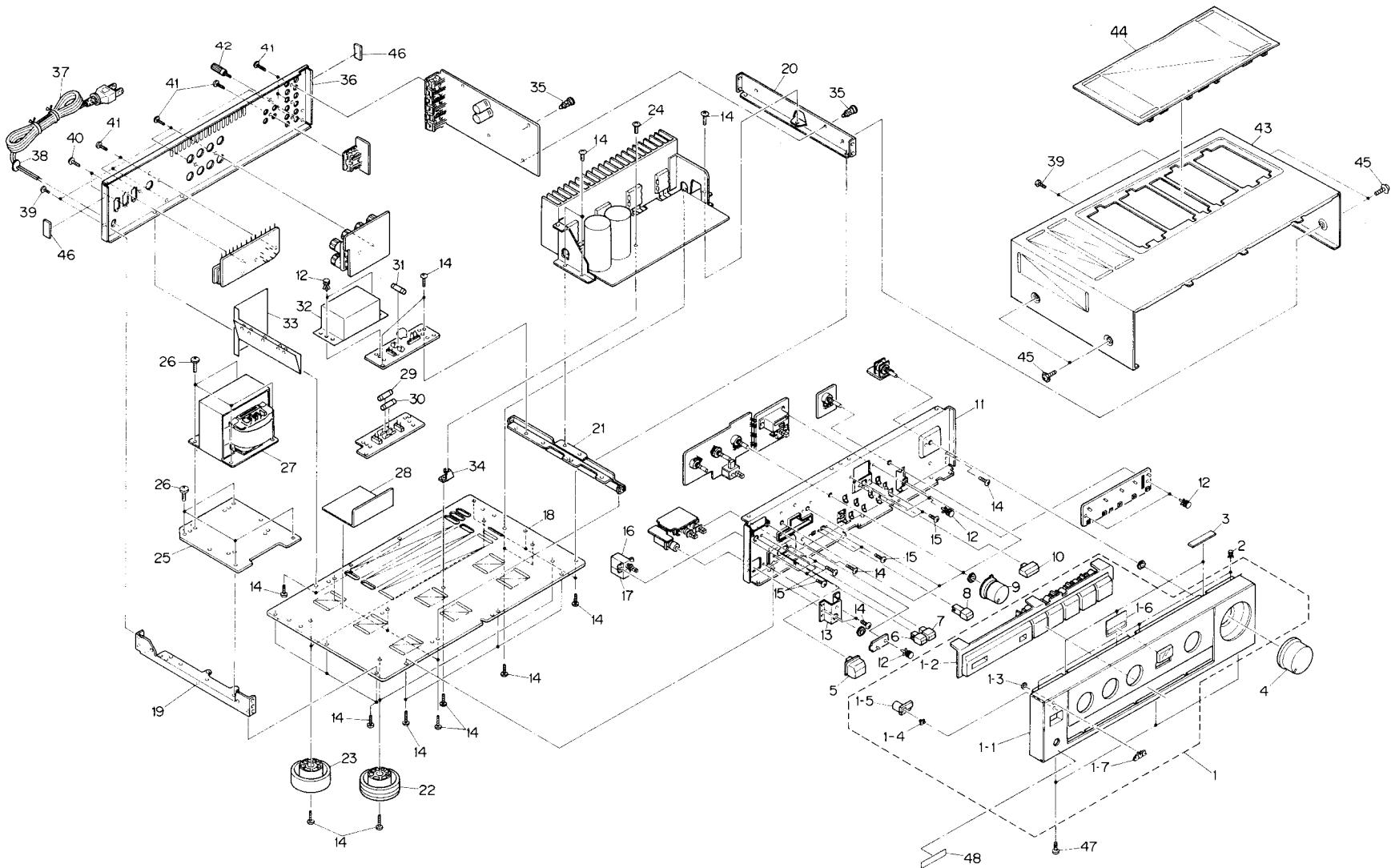


PARTS LIST

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Exploded View and Parts List



⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
	33 34 35 36	E305986-001 E68587-008 E303216-001 E26334-001 E26334-002	Protect Cover Bracket Fastener Rear Panel Rear Panel	1 1 2 1 1		U except U
⚠ ⚠ ⚠ ⚠ ⚠	37 38	QMP2560-244 QMP3900-200 QMP7600-200 QMP9017-008BS QHS3876-162	Power Cord Power Cord Power Cord Power Cord Cord Stopper	1 1 1 1 1		A E, G, EF U BS except BS
⚠	39 40 41	QHS3876-162BS SBSG3008M SDSB3008M E73273-001 E73273-001	Cord Stopper Screw Screw Special Screw Special Screw	1 5 2 8 6	AC Outlet	BS U U except U
	42 43 44 45	E70078-001 E26336-001 E26336-002 E24134-008 E61660-004	GND Terminal Metal Cover Metal Cover Grill Special Screw	1 1 1 1 4		G, A, U E, EF, BS E, EF, BS
	46 47 48	EXO040010R10S10 SBSG3006M E49267-001	Spacer Screw Olign Marking Label	2 3 1		BS

⚠: Safety Parts

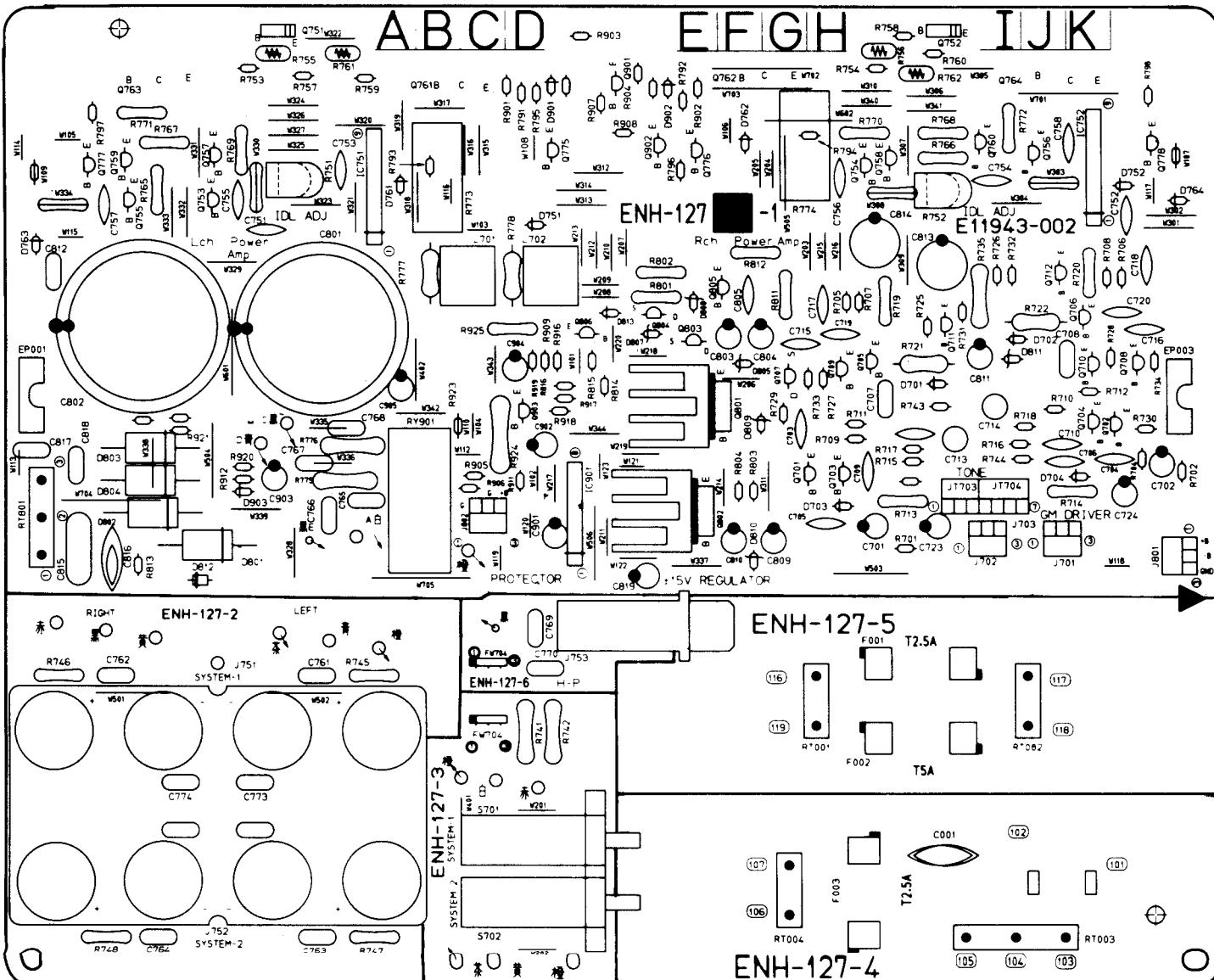
The Marks for Designated Areas

- | | | | |
|-------------|--------------------|-------------------------------------|-----------------|
| E, EF | Continental Europe | BS | the U.K. |
| G | West Germany | U | Other Countries |
| A | Australia | No mark indicates all areas. | |

Printed Circuit Board Ass'y and Parts List

■ ENH-127 □ Main Amplifier PC Board Ass'y

Note: ENH-127 □ varies according to the areas employed. See note (1) when placing an order.

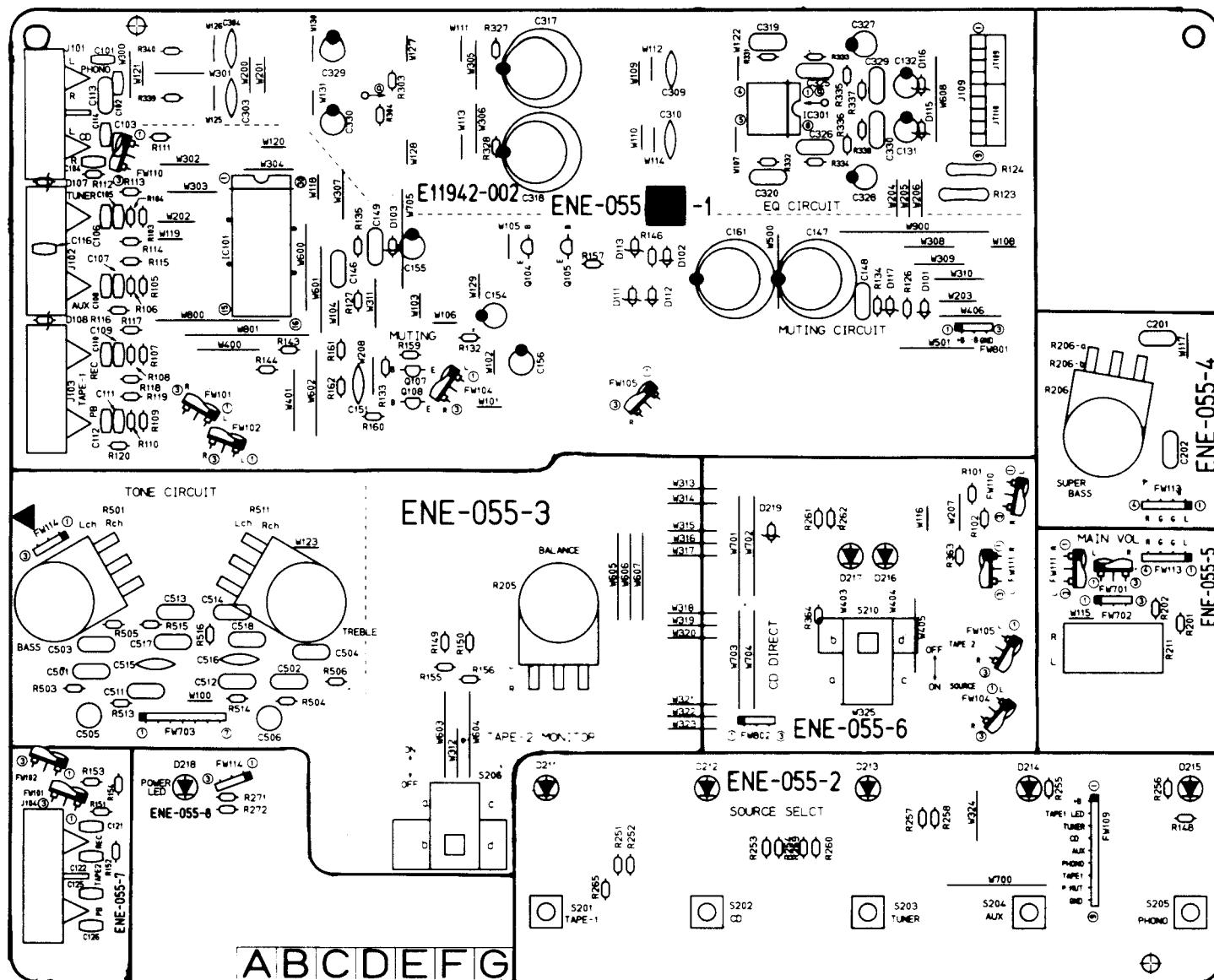


Note (1)

PC Board Ass'y	Designated Areas	PC Board Ass'y	Designated Areas
ENH-127 [A]	Other Countries	ENH-127 [C]	West Germany
ENH-127 [B]	Continental Europe, Australia	ENH-127 [D] BS	the U.K.

■ ENE-055 □ Source Selector PC Board Ass'y

Note: ENE-055 □ varies According to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Assy	Designated Areas
ENE-055 A	Other Countries
ENE-055 B	Continental Europe, the U.K., Australia
ENE-055 C	West Germany

Resistors

△ ITEM	PART NUMBER	DESCRIPTION			AREA
R258	QRD167J-122	1.2K	1/6W	CARBON	
R259	QRD167J-122	1.2K	1/6W	CARBON	
R260	QRD167J-122	1.2K	1/6W	CARBON	
R261	QRD167J-122	1.2K	1/6W	CARBON	
R262	QRD167J-112	1.1K	1/6W	CARBON	
R265	QRD167J-104	100K	1/6W	CARBON	
R271	QRD167J-132	1.3K	1/6W	CARBON	
R272	QRD167J-152	1.5K	1/6W	CARBON	
R303	QRD167J-473	47K	1/6W	CARBON	
R304	QRD167J-473	47K	1/6W	CARBON	
R327	QRD167J-561	560	1/6W	CARBON	
R328	QRD167J-561	560	1/6W	CARBON	
R331	QRD167J-393	39K	1/6W	CARBON	
R332	QRD167J-393	39K	1/6W	CARBON	
R333	QRD167J-474	470K	1/6W	CARBON	
R334	QRD167J-474	470K	1/6W	CARBON	
R335	QRD167J-471	470	1/6W	CARBON	
R336	QRD167J-471	470	1/6W	CARBON	
R337	QRD167J-104	100K	1/6W	CARBON	
R338	QRD167J-104	100K	1/6W	CARBON	
R339	QRD167J-222	2.2K	1/6W	CARBON	
R340	QRD167J-222	2.2K	1/6W	CARBON	
R363	QRD167J-471	470	1/6W	CARBON	
R364	QRD167J-471	470	1/6W	CARBON	
R501	QVD887C-E15B	100K	VARIABLE		
R503	QRD167J-203	20K	1/6W	CARBON	
R504	QRD167J-203	20K	1/6W	CARBON	
R505	QRD167J-362	3.6K	1/6W	CARBON	
R506	QRD167J-362	3.6K	1/6W	CARBON	
R511	QVD887C-E15B	100K	VARIABLE		
R513	QRD167J-472	4.7K	1/6W	CARBON	
R514	QRD167J-472	4.7K	1/6W	CARBON	
R515	QRD167J-821	820	1/6W	CARBON	
R516	QRD167J-821	820	1/6W	CARBON	

△ : SAFETY PARTS

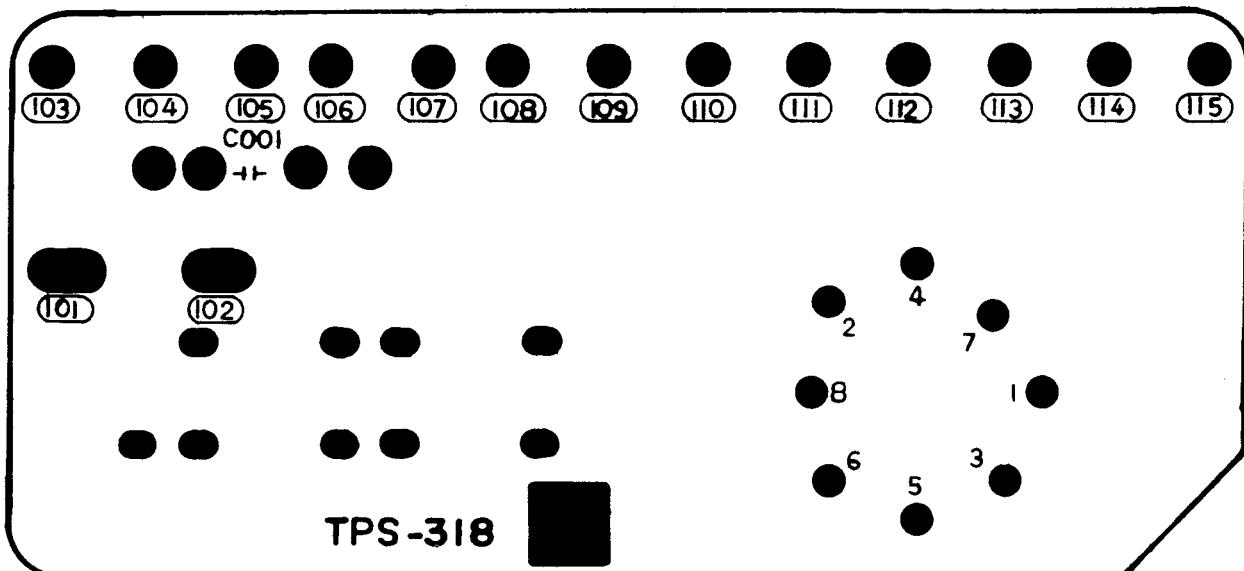
Others

△ ITEM	PART NUMBER	DESCRIPTION	AREA
	E11942-002	CIRCUIT BOARD	
	E305983-001	HOLDER	
J101	EMNOOTV-405A	4P PIN JACK	
J102	EMNOOTV-402A	4P PIN JACK	
J103	EMNOOTV-402A	4P PIN JACK	
J104	EMNOOTV-402A	4P PIN JACK	
S201	ESP0001-018	TACT SWITCH	
S202	ESP0001-018	TACT SWITCH	
S203	ESP0001-018	TACT SWITCH	
S204	ESP0001-018	TACT SWITCH	
S205	ESP0001-018	TACT SWITCH	
S206	QSTL101-E03	PUSH SWITCH	
S210	QSTL101-E04	PUSH SWITCH	
FW101	EW23C-20NN	FLAT WIRE	
FW102	EW23C-20NN	FLAT WIRE	
FW104	EW23C-30NN	FLAT WIRE	
FW105	EW23C-25NN	FLAT WIRE	
FW109	EW39B-20KST	FLAT WIRE	
FW110	EW23C-35NN	FLAT WIRE	
FW111	EW23C-16NN	FLAT WIRE	
FW113	EW34B-20SS	FLAT WIRE	
FW114	EW33B-13SS	FLAT WIRE	
FW701	EW23C-10JN	FLAT WIRE	
FW702	EW33B-13KST	FLAT WIRE	
FW703	EW37B-35KST	FLAT WIRE	
FW801	EW33B-10KST	FLAT WIRE	
FW802	EW33B-13KST	FLAT WIRE	
JT109	EMV7122-004	CONNECTOR	
JT110	EMV7122-005	CONNECTOR	

△ : SAFETY PARTS

■ TPS-318 [A] Voltage Selector PC Board Ass'y

(Except for Europe, Australia, West Germany, the U.K.)

**Capacitors**

△ ITEM	PART NUMBER	DESCRIPTION			AREA
	C001	0CZ9018-103	0.01MF		CERAMIC

△ : SAFETY PARTS

Others

△ ITEM	PART NUMBER	DESCRIPTION	AREA
	E302057-002	CIRCUIT BOARD	
	E65508-002	TAB	
	E67764-302	WRAPPING TERMINAL	
	E67764-303	WRAPPING TERMINAL	
	E67764-304	WRAPPING TERMINAL	
▲	QMC0637-004	AC OUTLET	
▲	QSR0085-006U	VOLTAGE SELECTOR	

△ : SAFETY PARTS

Accessories List

	Part Number	Part Name	Q'ty	Description	Areas
	E30580-1517A E30580-1517ABS BT20029C BT20060 BT-20064A	Instruction Book Instruction Book Warranty Card Warranty Card Warranty Card	1 1 1 1 1	for Australia	except BS BS A BS G
	BT20066A BT20098 QZL1008-001 E43486-340A E04056	EEC Agency Audio Warranty Card FTZ Information Sheet Safety Sheet Siemens Plug	1 1 1 1 1	for New Zealand	G, BS A G BS U
	E41202-2 E41202-2B	Envelope Envelope	1 1		except BS BS

: Safety Parts

The Marks for Designated Areas

E, EF Continental Europe BS the U.K.

G West Germany U Other Countries

A Australia **No mark indicates all areas.**

Packing Materials and Part Numbers

