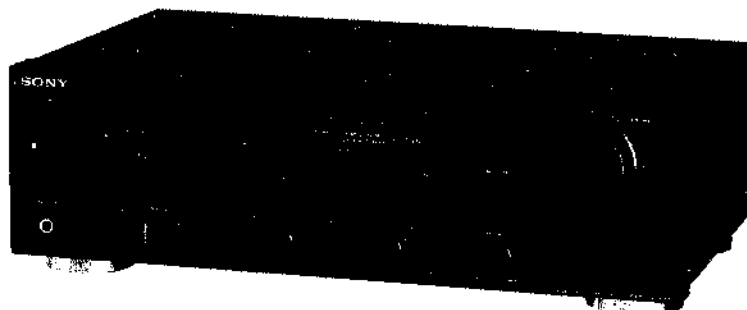


# TA-F319R

## SERVICE MANUAL

AEP Model  
UK Model  
E Model



### SPECIFICATIONS

#### Amplifier

Continuous RMS power output (both channels driven simultaneously)

Model for Germany

DIN, 1 kHz	4 ohms	50 W + 50 W
	8 ohms	40 W + 40 W
20 Hz - 20 kHz	4 ohms	—
	8 ohms	30 W + 30 W

Model for Scandinavian countries, Switzerland, Spain and Portugal

DIN, 1 kHz	6 ohms	—
	8 ohms	50 W + 50 W
20 Hz - 20 kHz	6 ohms	—
	8 ohms	40 W + 40 W

Model for other countries

DIN, 1 kHz	4 ohms	—
	8 ohms	50 W + 50 W
20 Hz - 20 kHz	4 ohms	—
	8 ohms	40 W + 40 W

#### Input

Input jack	Jack type	Sensitivity	Impedance
PHONO	Phono	2.0 mV	50 kilohms
TUNER, CD, AUX, DAT/TAPE 1 TAPE 2	Phono	150 mV	50 kilohms

#### S/N

PHONO (MM)	—
TUNER, CD, AUX, DAT/TAPE 1 TAPE 2	100 dB

#### Output

Output jack	Jack type	Voltage/impedance
REC OUT	Phono jack	Voltage 150 mV Impedance 1 kohm
HEADPHONES	Stereo phono jack	Accepts low and high impedance headphones

#### Tone controls

	Response	Turnover frequency
BASS	±7 dB (100 Hz)	300 Hz
TREBLE	±6 dB (10 kHz)	5 kHz



INTEGRATED STEREO AMPLIFIER  
**SONY**®

Harmonic distortion	Less than 0.03% at 10 W output
Intermodulation (IM) distortion (60 Hz : 7 kHz = 4:1)	Less than 0.03% at 10 W output
Frequency response	PHONO: RIAA equalization curve ±0.5 dB TUNER, CD, AUX, DAT/TAPE 1, TAPE 2: 7 Hz – 100 kHz ±3 dB
Residual noise	Less than 170 µV (network A)
Damping factor	50 (8 ohms, 1 kHz)

<b>General</b>	
System	Preamplifier: Low-noise, equalizer amplifier Power amplifier: Pure-complementary SEPP OCL power amplifier with all stages directly coupled
Power requirements	UK model : 240 V AC, 50/60 Hz AEP, Germany model : 220 V – 230 V AC, 50/60 Hz E model : 120 V, 220 V or 240 V AC adjustable, 50/60 Hz
Power consumption	130 W
Dimensions	Approx. 430 x 135 x 315 mm (w/h/d) (17 x 5 3/8 x 12 1/2 inches)
Weight	Approx. 6.3 kg (13 lb 14 oz)
Supplied accessories	Remote commander RM-S311 (1) Sony SUM-3 (NS) batteries (2)

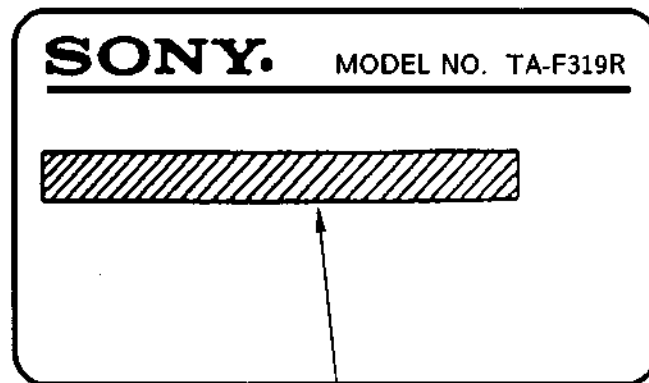
The above values are measured at 230 V AC. (Models for European countries)

Design and specifications are subject to change without notice.

Note  
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

**MODEL IDENTIFICATION**

- Specification Label Printed on Back Panel -



AEP, Germany Model : AC : 220 - 230V ~ 50/60Hz  
UK Model : AC : 240V ~ 50/60Hz  
E Model : AC : 120/220/240V ~ 50/60Hz

**Note :**

There are two type of AEP models which are depend on countries.

AEP2 model : Model for Scandinavian countries, Switzerland, Spain and Portugal

AEP1 model : Model for other European countries

**TABLE OF CONTENTS**

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<b>5. ELECTRICAL PARTS LIST</b>	.....	22

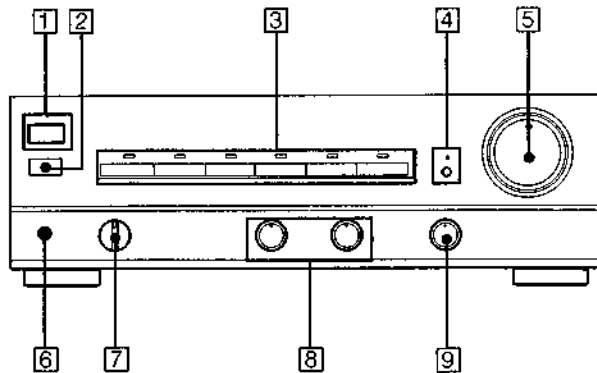
**SAFETY-RELATED COMPONENT WARNING!!**

COMPONENTS IDENTIFIED BY MARK  $\Delta$  OR DOTTED LINE WITH MARK  $\Delta$  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

## SECTION 1 GENERAL

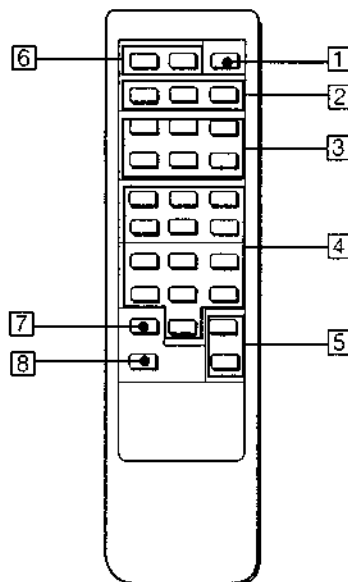
### Identifying the Parts and Controls

This section describes about each name of this amplifier and remote commander.



#### Front Panel

- ❶ POWER switch and STANDBY indicator
- ❷ Remote control sensor
- ❸ Function selectors and indicators (MONITOR indicator: Only for TA-F319R)
- ❹ SOURCE DIRECT button and indicator
- ❺ VOLUME control and indicator  
Adjusts the sound level.  
Immediately after turning on the POWER switch, the VOLUME indicator blinks when the built-in muting circuit activates and the unit detects shorting of circuit of the speaker outputs or in case of short-circuit of the inputs of DC components. In such case, turn off the unit and check the connected components and speaker system. (For TA-F319R, the VOLUME indicator does not blink.)
- ❻ HEADPHONES jack
- ❼ SPEAKERS selector
- ❽ TONE (BASS/TREBLE) controls
- ❾ BALANCE control



RM-S311

#### Remote Commander

- ❶ POWER switch
- ❷ TUNER operation buttons  
TUNER: Select the TUNER mode.  
PRESET +/- buttons: Select the preset station.
- ❸ CD operation buttons  
◀▶: Automatic music sensor.  
D. (Disc) SKIP: Disc skip (for CD player equipped with a multi-disc changer)  
▶: The amplifier enters the CD mode and the CD player starts playback automatically.  
■: Stop.  
⏸: Pause.
- ❹ TAPE 2 DECK A/DECK B operation buttons  
◀▶: Fast winding.  
■: Stop.  
◀: The amplifier enters the TAPE 2 mode and the tape deck starts reverse playback automatically.  
▶: The amplifier enters the TAPE 2 mode and the tape deck starts forward playback automatically.  
●: Recording.  
⏸: Pause. (Only for DECK B)
- ❺ VOL (Volume) +/- buttons
- ❻ PHONO operation buttons  
START: Pressing START automatically selects the PHONO mode on the amplifier and starts playback of the turntable system.  
STOP: Stops playback of the turntable system.
- ❼ DAT/TAPE 1 button  
Selects the DAT or TAPE 1 mode.
- ❽ AUX button  
Selects the AUX mode.

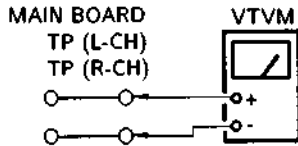
## SECTION 2 ELECTRICAL ADJUSTMENTS

**Note :**

1. DC BIAS adjustments should be made within 2 to 3 minutes after the POWER switch is turned on (POWER ON).
2. After replacing the power transistors, DC BIAS adjustments should be made.

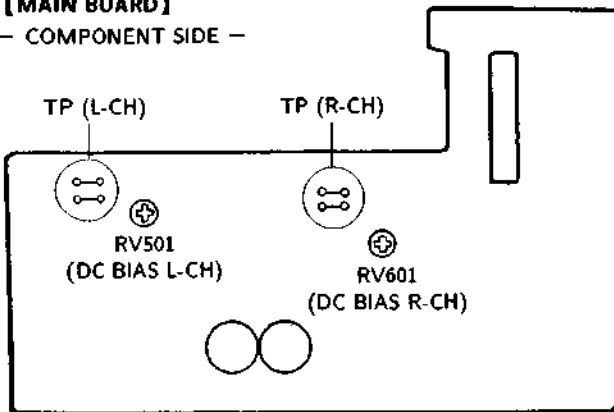
**DC Bias Adjustment (with no signal input)**

**Procedure :**



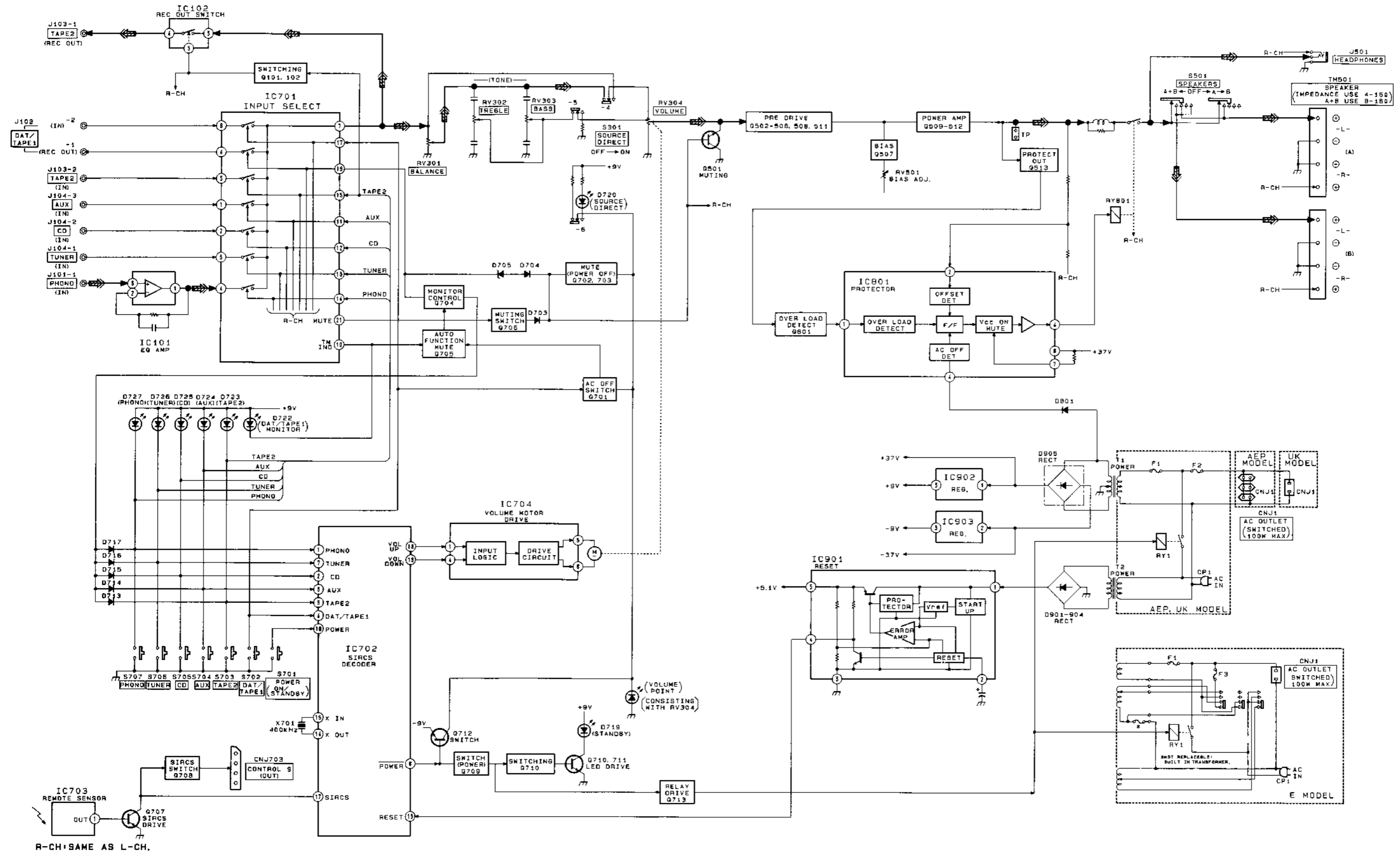
	Adjustment part	Reading on VTVM
L-CH	RV501	6.5mV
R-CH	RV601	6.5mV

**[MAIN BOARD]**  
— COMPONENT SIDE —



### SECTION 3 DIAGRAMS

3-1. BLOCK DIAGRAM



3-2. CIRCUIT

TRANS

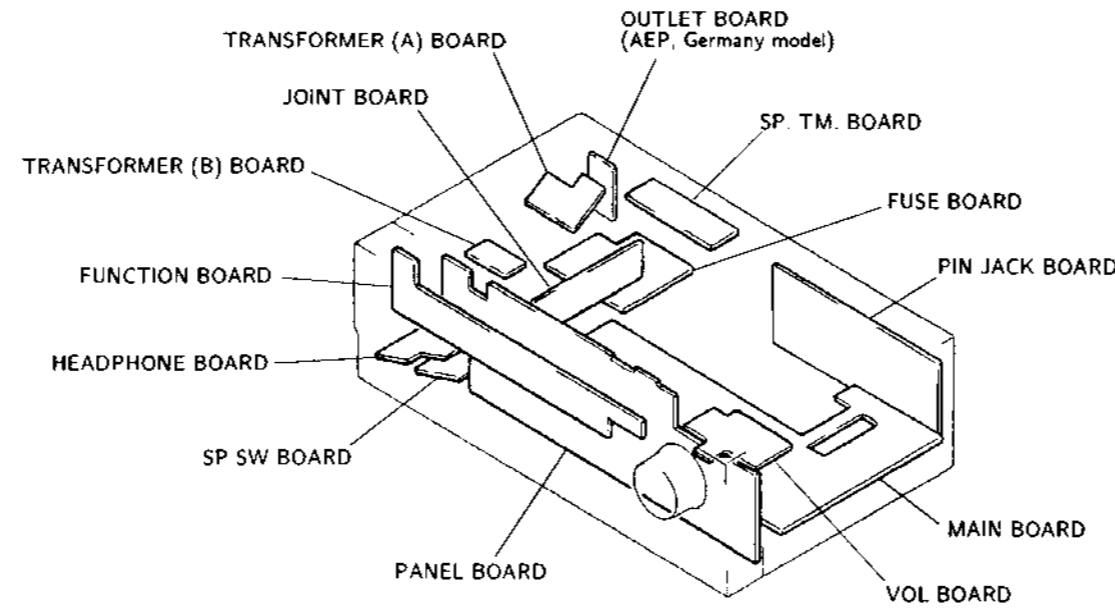
F

HEA

• IC702 Func  
Micro Process  
code signal inp

Pin No.	Pin
1	PH
2	CD
3	AU
4	CN
5	VS
6	TA
7	TU
8	PO
9	TA
10	PO
11	MC
12	NO
13	RE
14	X
15	X
16	NO
17	SIF
18	VO
19	VO
20	VD

### 3-2. CIRCUIT BOARDS LOCATION



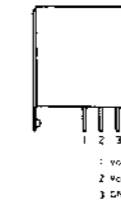
#### ● IC702 Function Controller (M50761-291P)

Micro Processor M50761-291P is used for control the volume up/down, function select and power on/standby by SIRCS code signal input and power on/standby key code signal input.

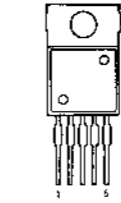
Pin No.	Pin Name	I/O	Description						
1	PHONO	O	Function select output. (one-shot output) (L: PHONO)						
2	CD	O	Function select output. (one-shot output) (L: CD)						
3	AUX	O	Function select output. (one-shot output) (L: AUX)						
4	CN VSS	-	Ground						
5	VSS	-	Ground						
6	TAPE1	O	Function select output. (one-shot output) (L: TAPE1)						
7	TUNER	O	Function select output. (one-shot output) (L: TUNER)						
8	POWER	O	Power supply ON/OFF relay (RY1) control output. (L: POWER ON, H: POWER OFF)						
9	TAPE2	O	Function select output. (one-shot output) (L: TAPE2)						
10	POWER IN	I	POWER ON/STANDBY key switch input.						
11	MODE	I	Mode select input. This model is used "H" level only. <table border="1" style="margin-left: 20px;"> <thead> <tr> <th colspan="2">POWER ON/OFF mode</th> </tr> </thead> <tbody> <tr> <td>H</td> <td>USED</td> </tr> <tr> <td>L</td> <td>NOT USED</td> </tr> </tbody> </table>	POWER ON/OFF mode		H	USED	L	NOT USED
POWER ON/OFF mode									
H	USED								
L	NOT USED								
12	NC	-	Ground						
13	RESET	I	Reset signal input.						
14	X OUT	O	Ceramic vibrator connection terminal. (400Hz)						
15	X IN	O	Ceramic vibrator connection terminal. (400Hz)						
16	NC	-	Ground						
17	SIRCS	I	SIRCS code signal input. (serial input)						
18	VOL UP	O	Volume motor up control output. (contineous output)						
19	VOL DOWN	O	Volume motor down control output. (contineous output)						
20	VDD	-	+5V power supply.						

### • SEMICONDUCTOR LEAD LAYOUTS

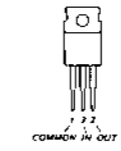
GP1U52XB



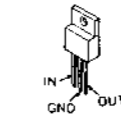
L76MR05



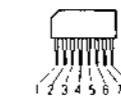
M5F7909L



RC7809FA



PC1237HA



DTA124ES  
DTC114ES  
DTC124ES  
2SC2603-EF  
2SC3622A-LK  
2SC4048



DTC114TS  
2SA1175-HFE



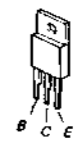
2SA979-FG



2SA988-PAFAEA  
2SA1371-E



2SA1489-OPY  
2SC3853-OPY  
2SD2012



2SA1684-LK



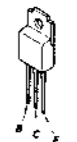
2SC1841-PAFAEA



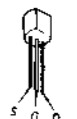
2SC1941-LK



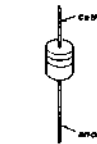
2SC4431-LK



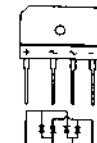
2SK246-GR



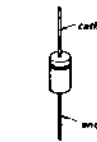
HZS6A11  
HZS6B11



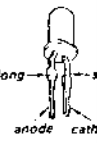
RBV-620-



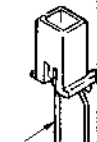
1N4148M  
10E2N

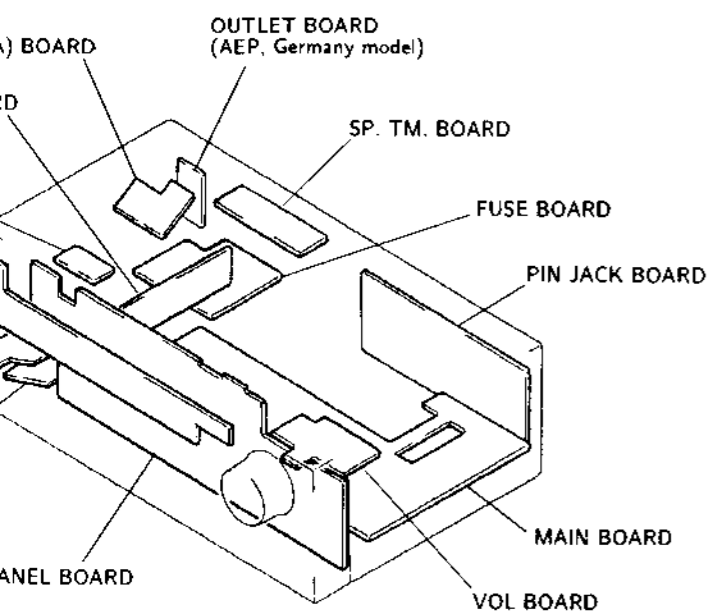


SEL3210S  
SEL3810A



SEL3510-





1P)  
Control the volume up/down, function select and power on/standby by SIRCS  
code signal input.

Description	
select output. (one-shot output) (L: PHONO)	
select output. (one-shot output) (L: CD)	
select output. (one-shot output) (L: AUX)	
select output. (one-shot output) (L: TAPE1)	
select output. (one-shot output) (L: TUNER)	
ply ON/OFF relay (RY1) control output. ER ON, H: POWER OFF)	
select output. (one-shot output) (L: TAPE2)	
ON/STANDBY key switch input.	
ct input. This model is used "H" level only.	
POWER ON/OFF mode	
USED	
NOT USED	
al input.	
ibrator connection terminal. (400Hz)	
ibrator connection terminal. (400Hz)	
le signal input. (serial input)	
otor up control output. (contineous output)	
otor down control output. (contineous output)	
r supply.	

• SEMICONDUCTOR LEAD LAYOUTS

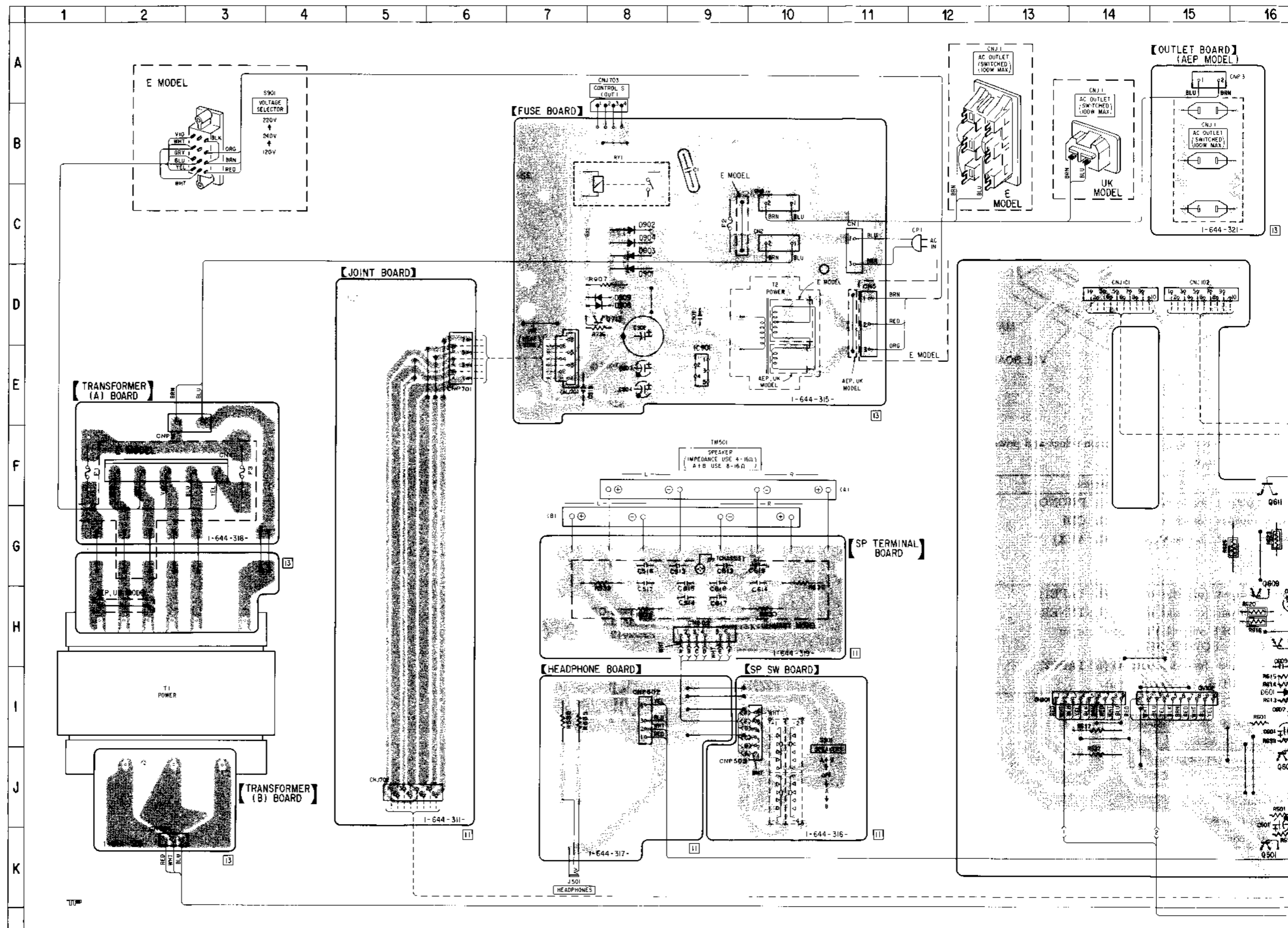
<p><b>GP1U52XB</b></p>	<p><b>DTA124ES</b> <b>DTC114ES</b> <b>DTC124ES</b> <b>2SC2603-EF</b> <b>2SC3622A-LK</b> <b>2SC4048</b></p>	<p><b>2SA1684-LK</b></p>	<p><b>HZS6A1L</b> <b>HZS6B1L</b></p>
<p><b>L78MR05</b></p>	<p><b>DTC114TS</b> <b>2SA1175-HFE</b></p>	<p><b>2SC1841-PAFAEA</b></p>	<p><b>RBV-620-01</b></p>
<p><b>M5F7909L</b></p>	<p><b>2SA979-FG</b></p>	<p><b>2SC1941-LK</b></p>	<p><b>1N4148M</b> <b>10E2N</b></p>
<p><b>RC7809FA</b></p>	<p><b>2SA988-PAFAEA</b> <b>2SA1371-E</b></p>	<p><b>2SC4431-LK</b></p>	<p><b>SEL3210S-CD</b> <b>SEL3810A-CD</b></p>
<p><b>PC1237HA</b></p>	<p><b>2SA1489-OPY</b> <b>2SC3853-OPY</b> <b>2SD2012</b></p>	<p><b>2SK246-GR</b></p>	<p><b>SEL3510-CD</b></p>

3-3. PRINTED WIRING BOARDS

• Refer to Page 8 for Semiconductor Lead Layouts.

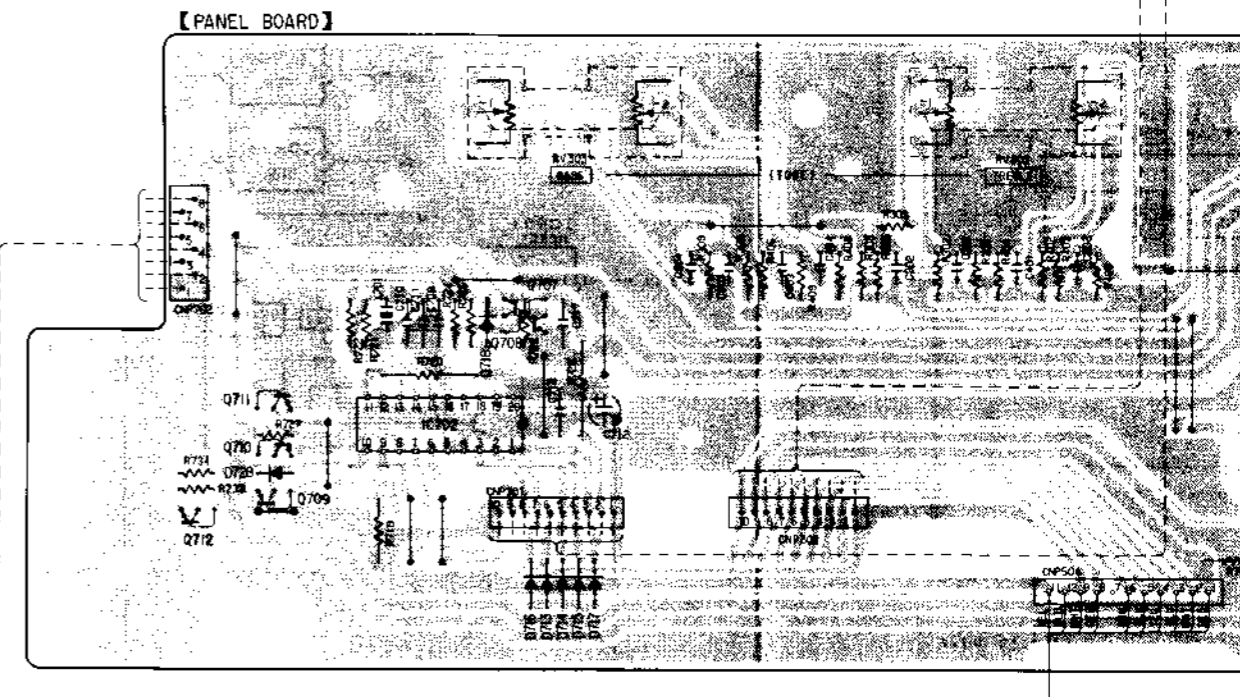
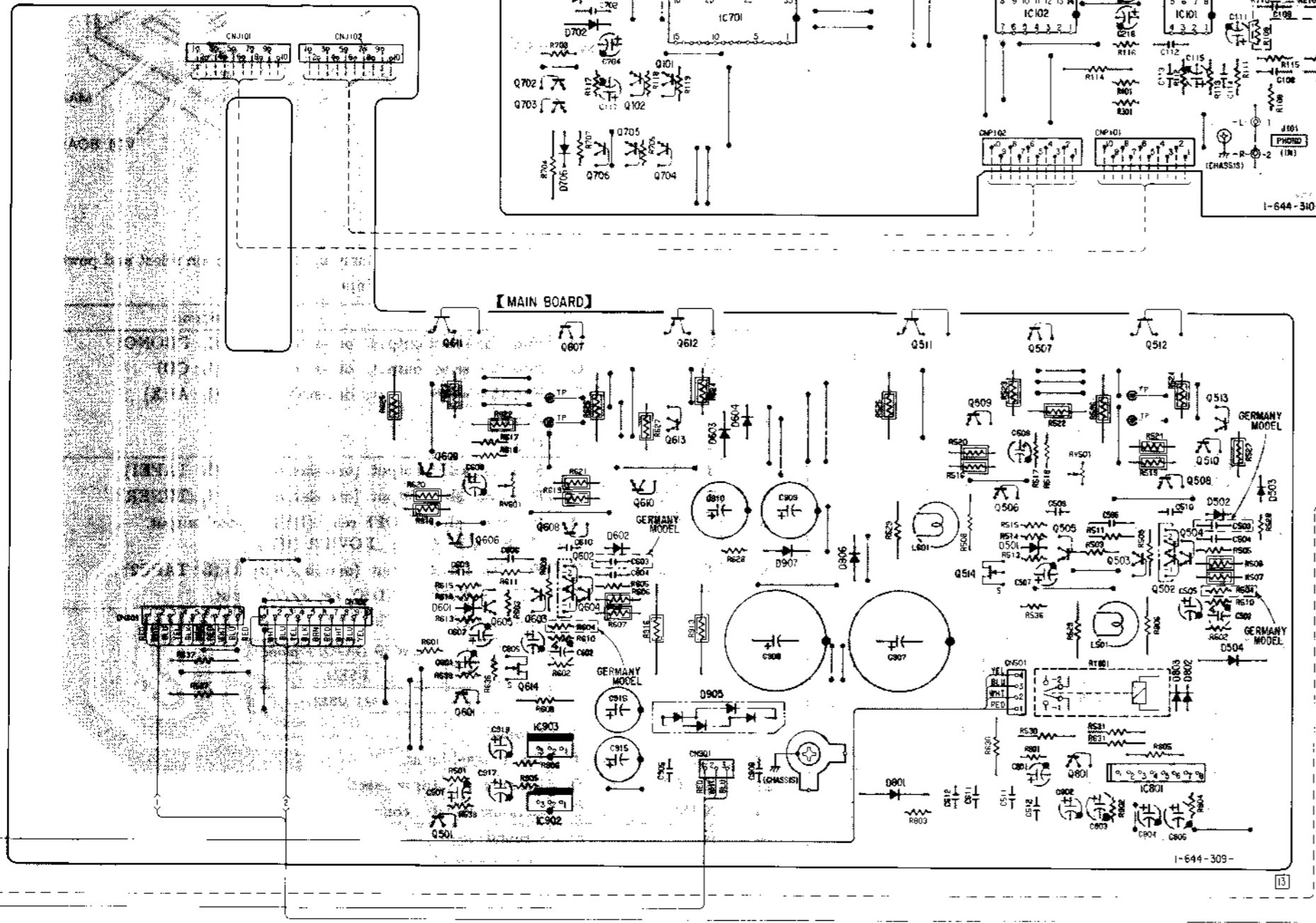
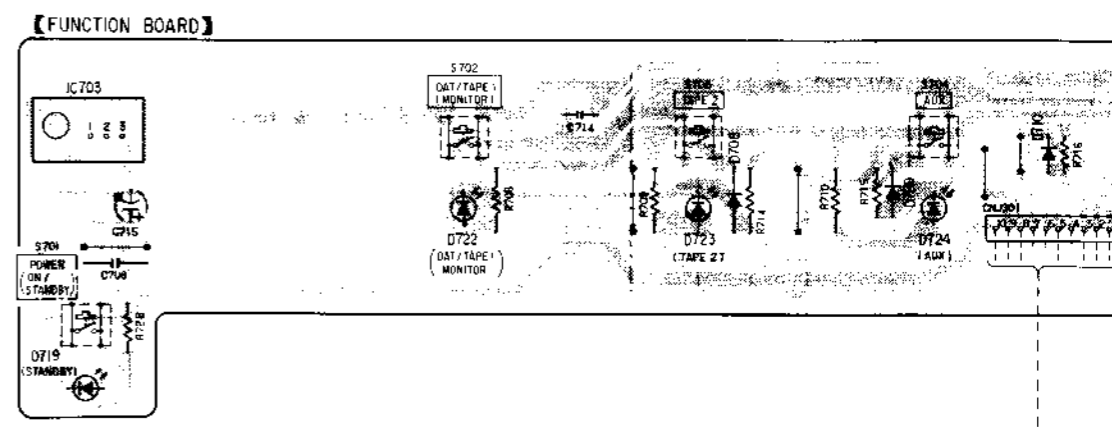
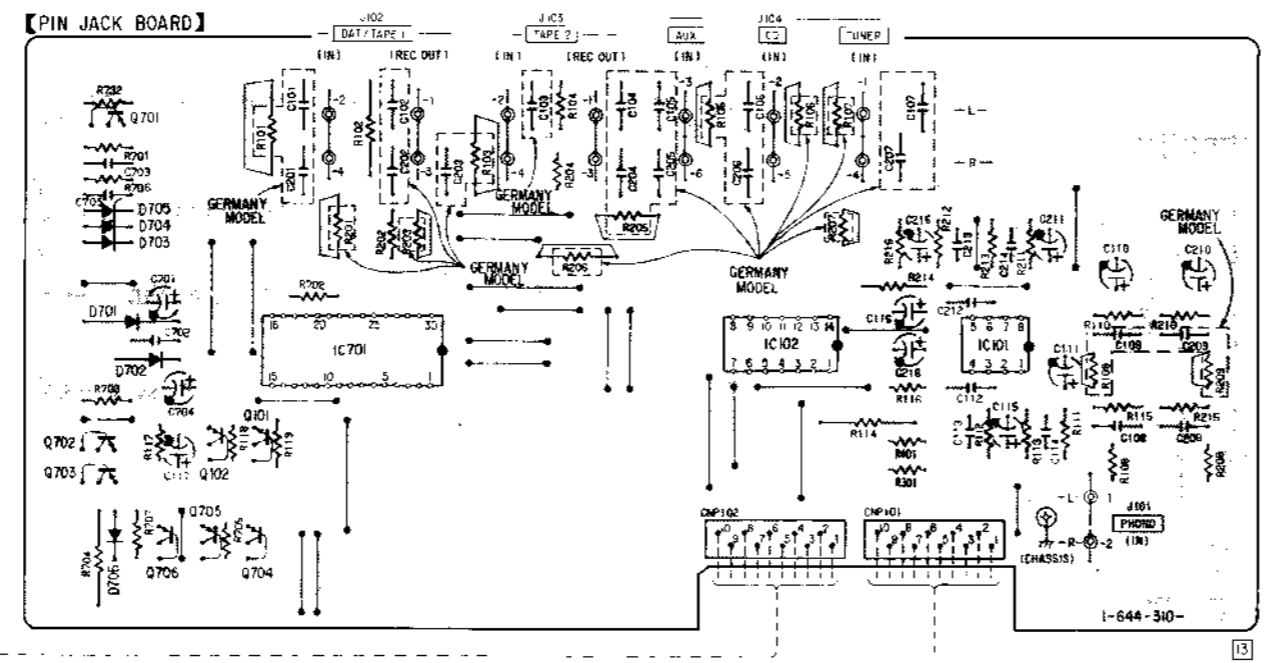
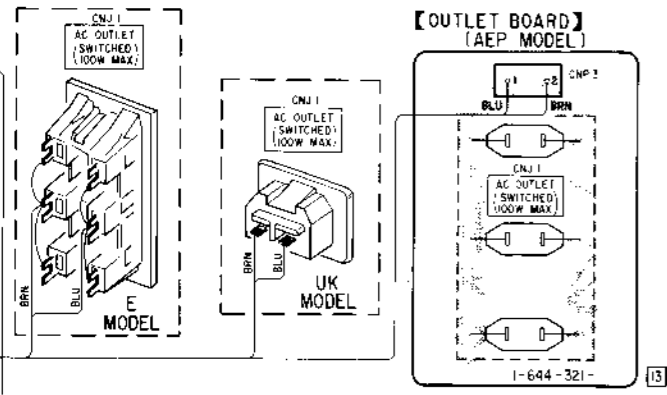
• SEMICONDUCTOR LOCATION

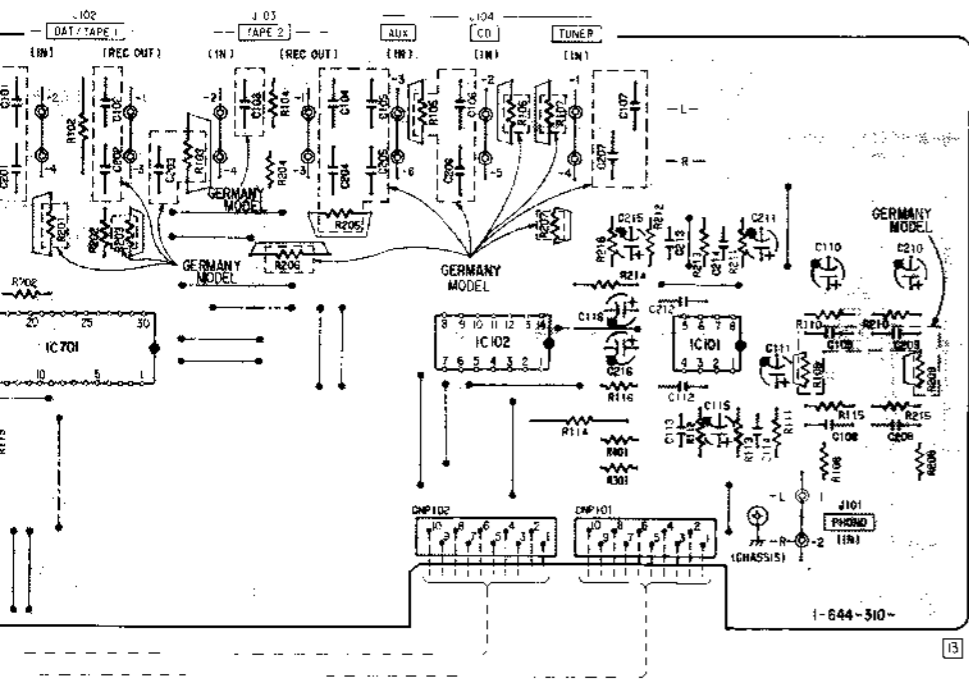
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D501	H-21	D903	C-8	Q605	I-16
D502	H-23	D904	C-8	Q606	H-16
D503	H-23	D905	J-18	Q607	F-17
D504	I-23	D906	H-20	Q608	H-17
D601	I-16	D907	H-19	Q609	H-16
D602	H-18	D908	D-8	Q610	H-18
D603	G-18	D909	D-8	Q611	F-16
D604	G-19			Q612	F-18
D701	C-17			Q613	G-18
D702	D-17	IC101	D-23	Q614	I-17
D703	C-17	IC102	D-21	Q701	B-17
D704	C-17	IC701	D-19	Q702	D-17
D705	C-17	IC702	I-27	Q703	D-17
D706	E-17	IC703	C-25	Q704	E-18
D707	C-33	IC704	G-35	Q705	E-18
D708	C-29	IC801	J-22	Q706	E-17
D709	C-30	IC901	E-9	Q707	H-27
D710	C-31	IC902	K-17	Q708	H-27
D711	C-34	IC903	J-17	Q709	I-25
D712	C-35			Q710	I-25
D713	J-27	Q101	D-18	Q711	I-25
D714	J-27	Q102	D-18	Q712	J-25
D715	J-27	Q501	K-16	Q713	D-8
D716	J-27	Q502	H-22	Q801	J-22
D717	J-27	Q503	H-22		
D718	H-27	Q504	H-23		
D719	D-25	Q505	H-21		
D720	C-37	Q506	H-21		
D722	C-27	Q507	F-21		
D723	C-29	Q508	H-22		
D724	C-30	Q509	G-21		
D725	C-32	Q510	G-23		
D726	C-33	Q511	F-20		
D727	C-35	Q512	F-22		
D728	I-25	Q513	G-23		
D801	J-20	Q514	I-21		
D802	J-23	Q601	J-16		
D803	J-23	Q602	I-17		
D901	D-8	Q603	I-17		
D902	C-8	Q604	I-17		



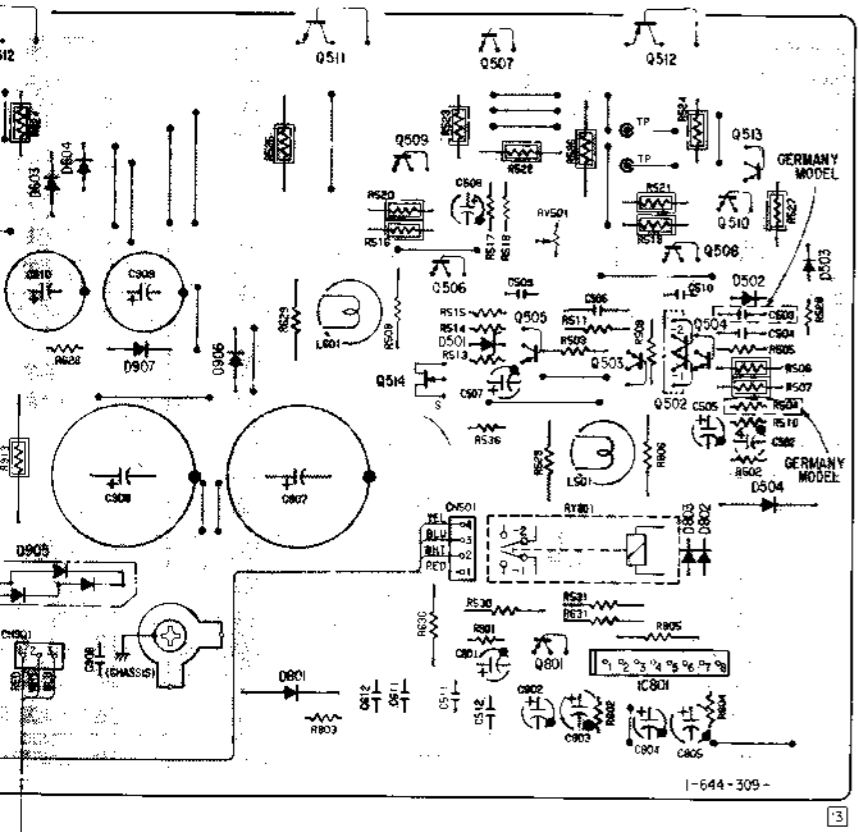
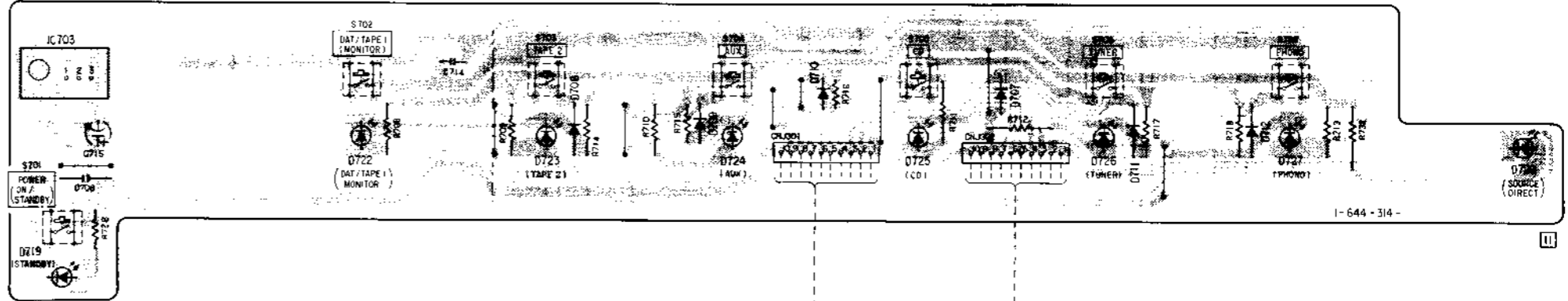
Note:  
 ○ : parts extracted from the component side.  
 ◻ : Pattern on the side which is seen.



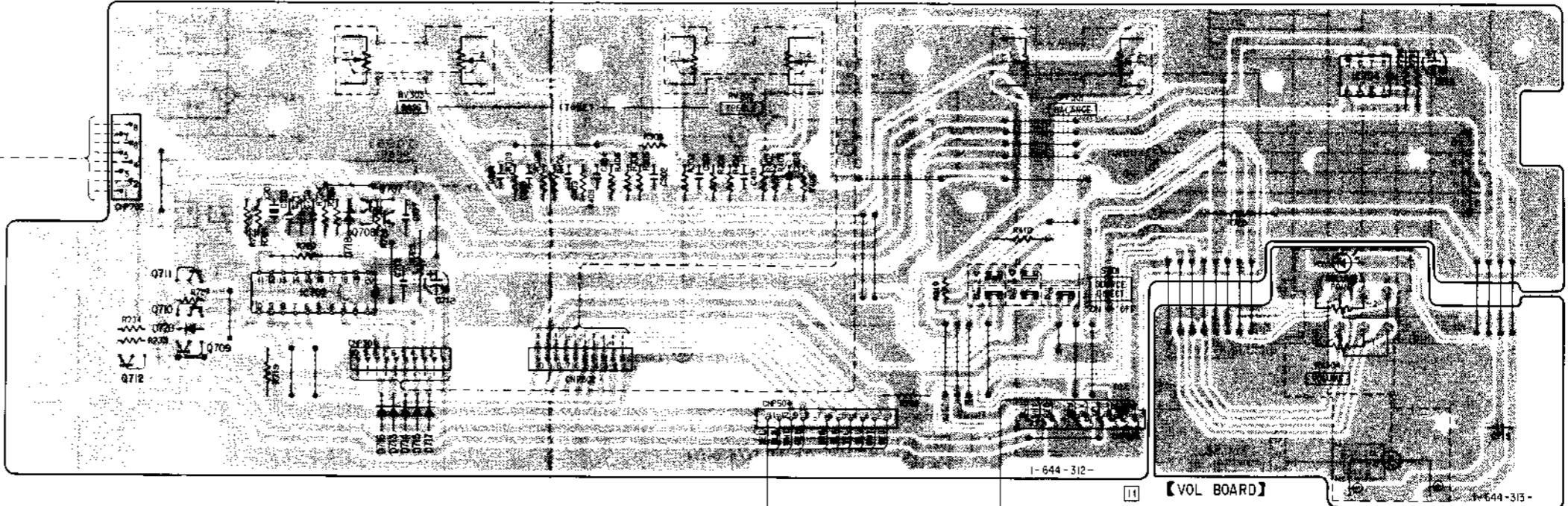




**FUNCTION BOARD**

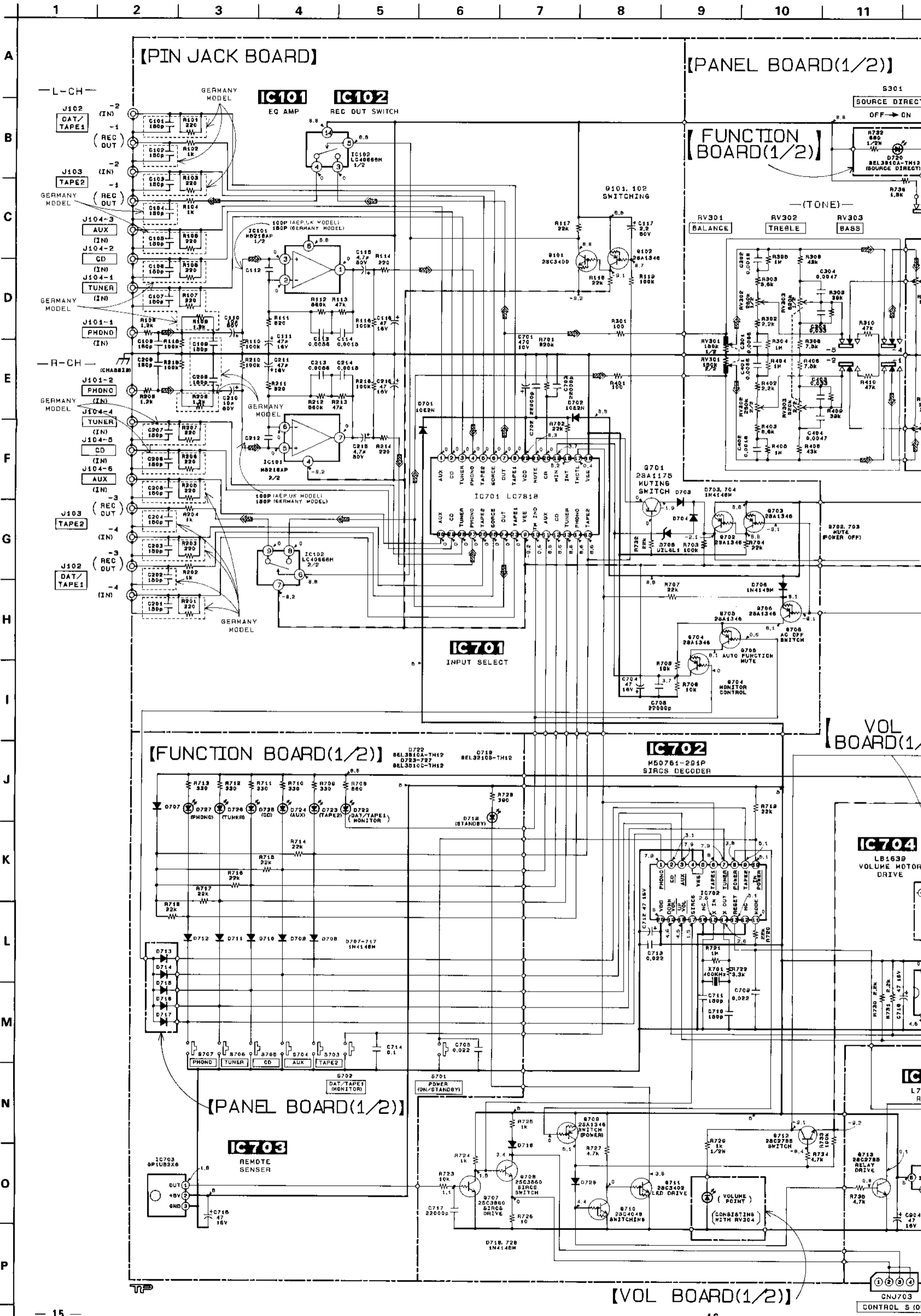


**PANEL BOARD**



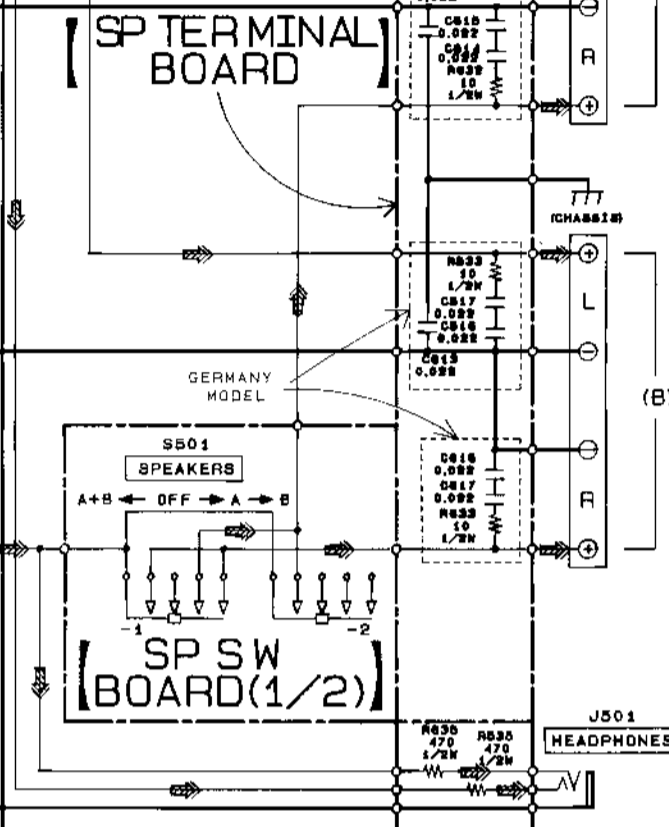
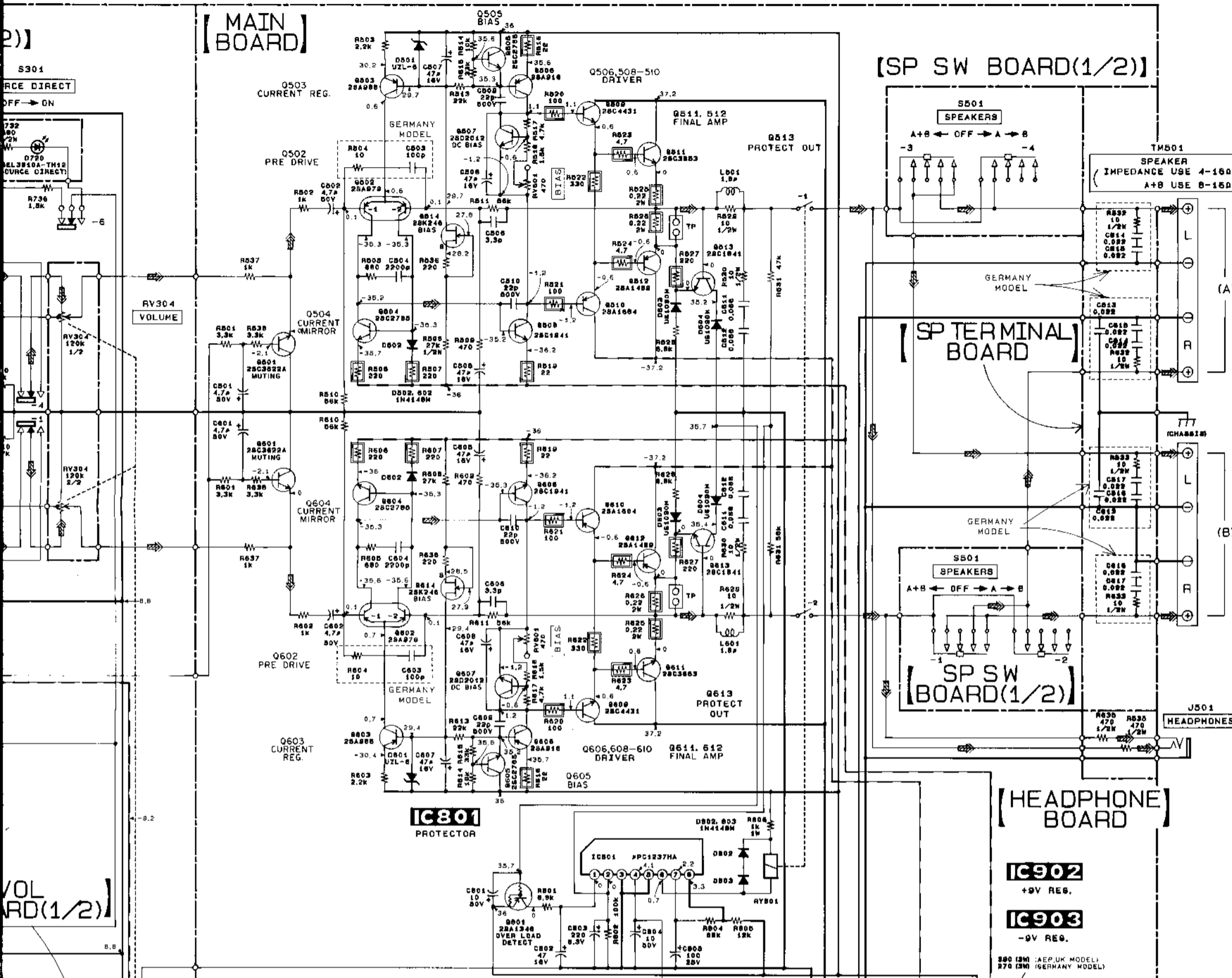
**VOL BOARD**



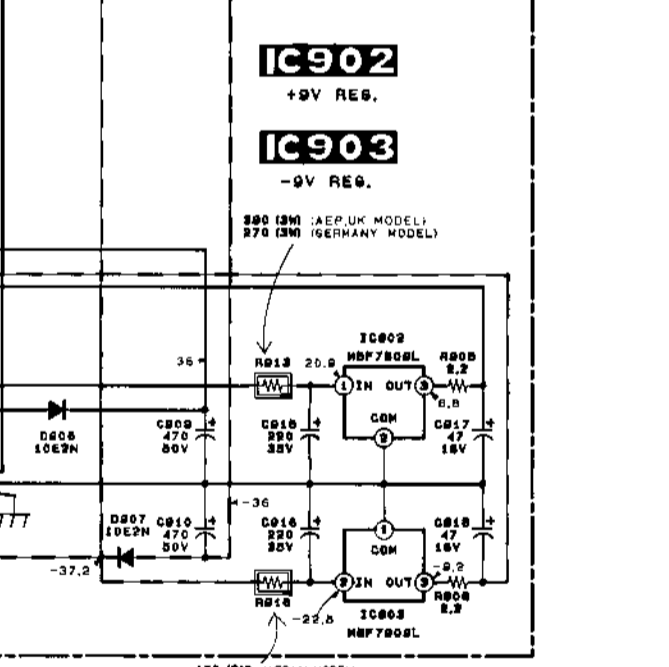


**MAIN BOARD**

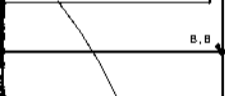
**[SP SW BOARD(1/2)]**



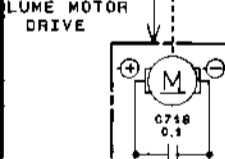
**[HEADPHONE BOARD]**



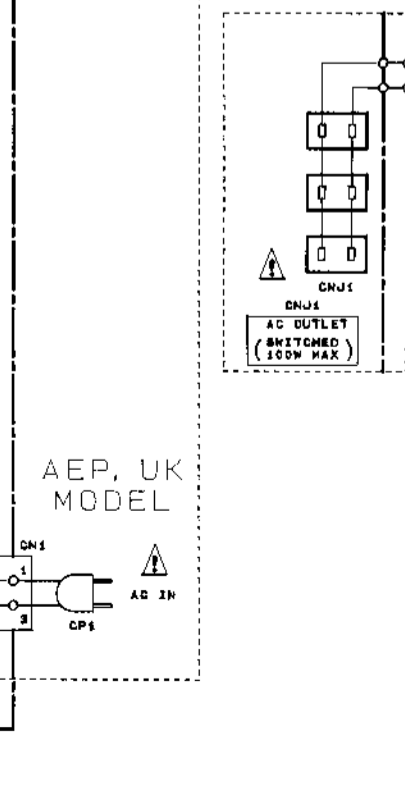
**[VOL CONTROL BOARD(1/2)]**



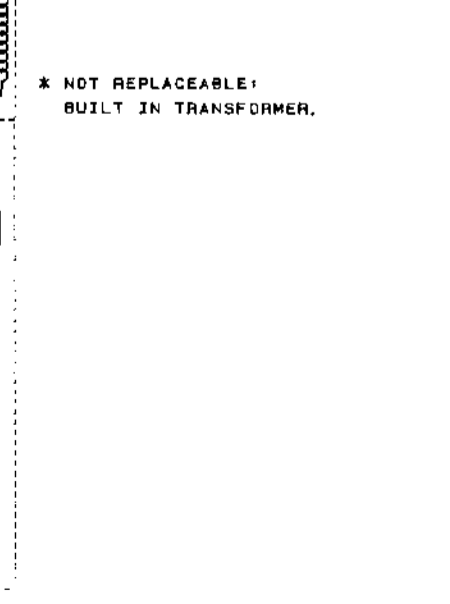
**[L7804]**



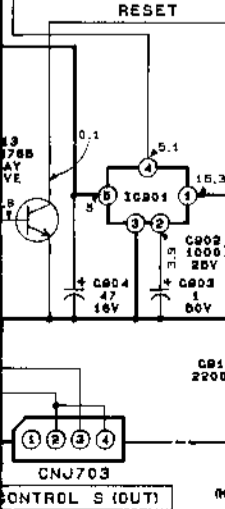
**[TRANSFORMER (A) BOARD]**



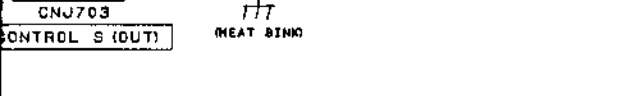
**[TRANSFORMER (A) BOARD]**

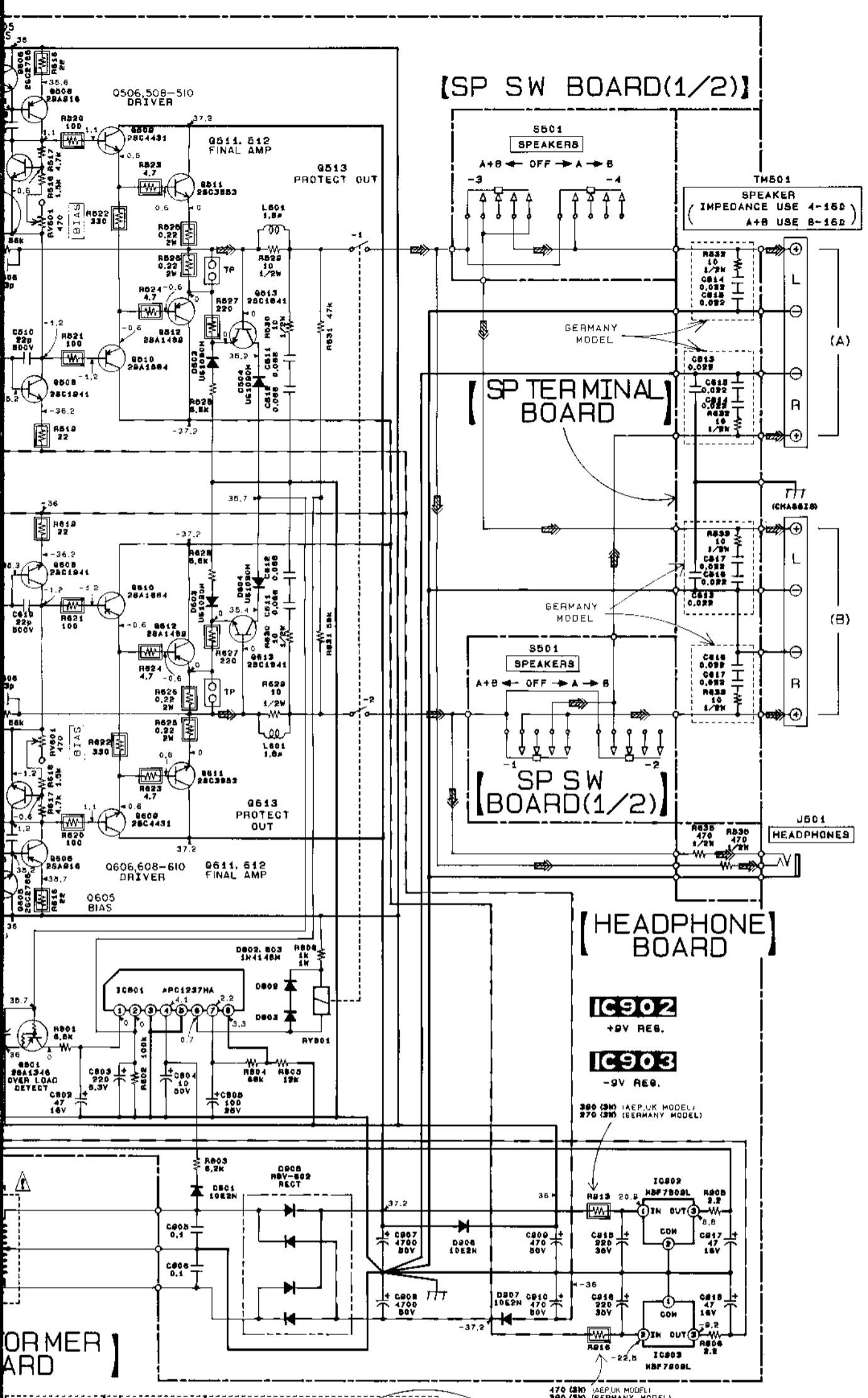


**[IC901]**

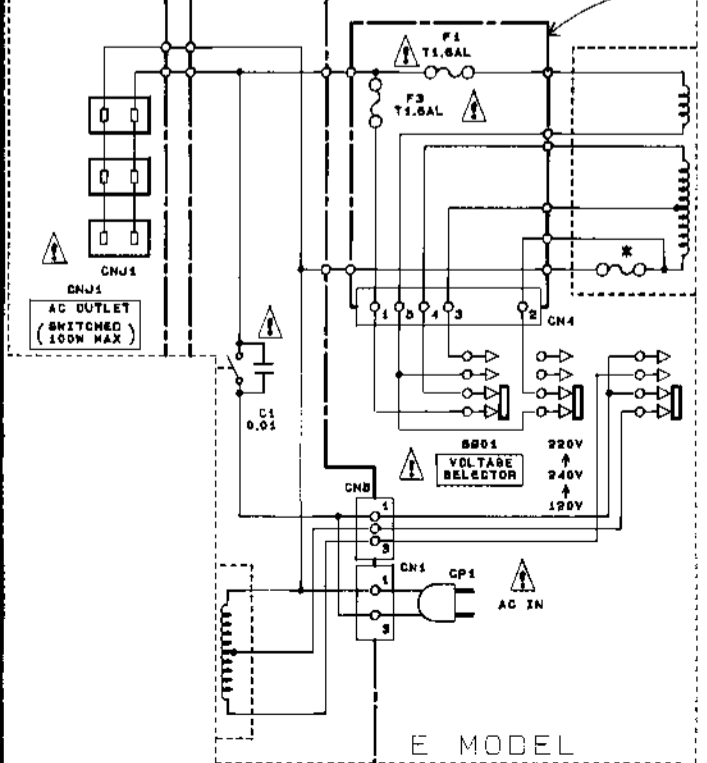


**[FUSE BOARD]**





- Note :**
- All capacitors are in  $\mu F$  unless otherwise noted. pF:  $\mu \mu F$
  - 50WV or less are not indicated except for electrolytics and tantalums.
  - All resistors are in  $\Omega$  and  $\frac{1}{4}W$  or less unless otherwise specified.
  - : nonflammable resistor.
  - : fusible resistor.
- Note :** The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.
- : B+ Line
  - : B- Line
  - : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.  
no mark : CD
- Voltages are taken with a VOM ( Input impedance  $10M \Omega$  ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- : PHONO



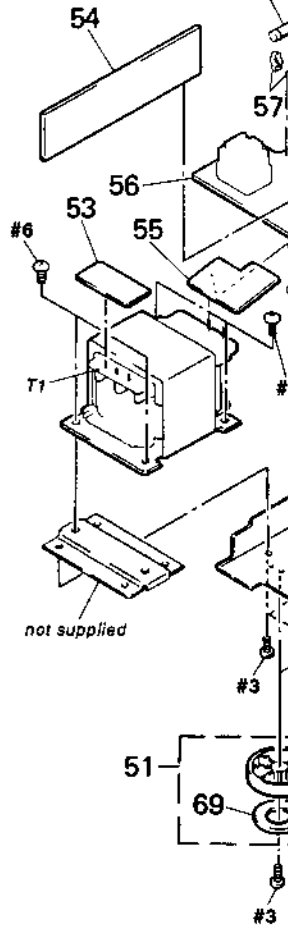
**[ TRANSFORMER (A) BOARD ]**

\* NOT REPLACEABLE:  
BUILT IN TRANSFORMER.

SECTION 4  
EXPLODED VIEWS

4-2. CHASSIS SECTION

F2 (AEP, UK, G4)



Ref. No.	Part No.	Description
51	X-3304-938-2	FOOT
+ 52	3-704-198-31	SUPP
+ 53	1-644-320-11	TRAN
+ 54	1-644-311-11	JOIN
+ 55	1-644-318-11	TRAN
+ 56	1-644-315-11	FUSE
+ 57	1-533-213-31	HOLD
+ 58	A-4347-660-A	MAIN
+ 58	A-4347-661-A	MAIN
+ 59	1-644-319-11	SP. T
+ 60	A-4347-662-A	PIN
+ 60	A-4347-663-A	PIN
+ 62	3-703-244-00	BUSH
+ 62	3-703-571-11	BUSH
+ 64	4-949-235-01	HOOK
+ 65	4-951-972-11	PANE
+ 65	4-951-972-21	PANE
+ 65	4-951-972-31	PANE
+ 65	4-951-972-41	PANE

NOTE:

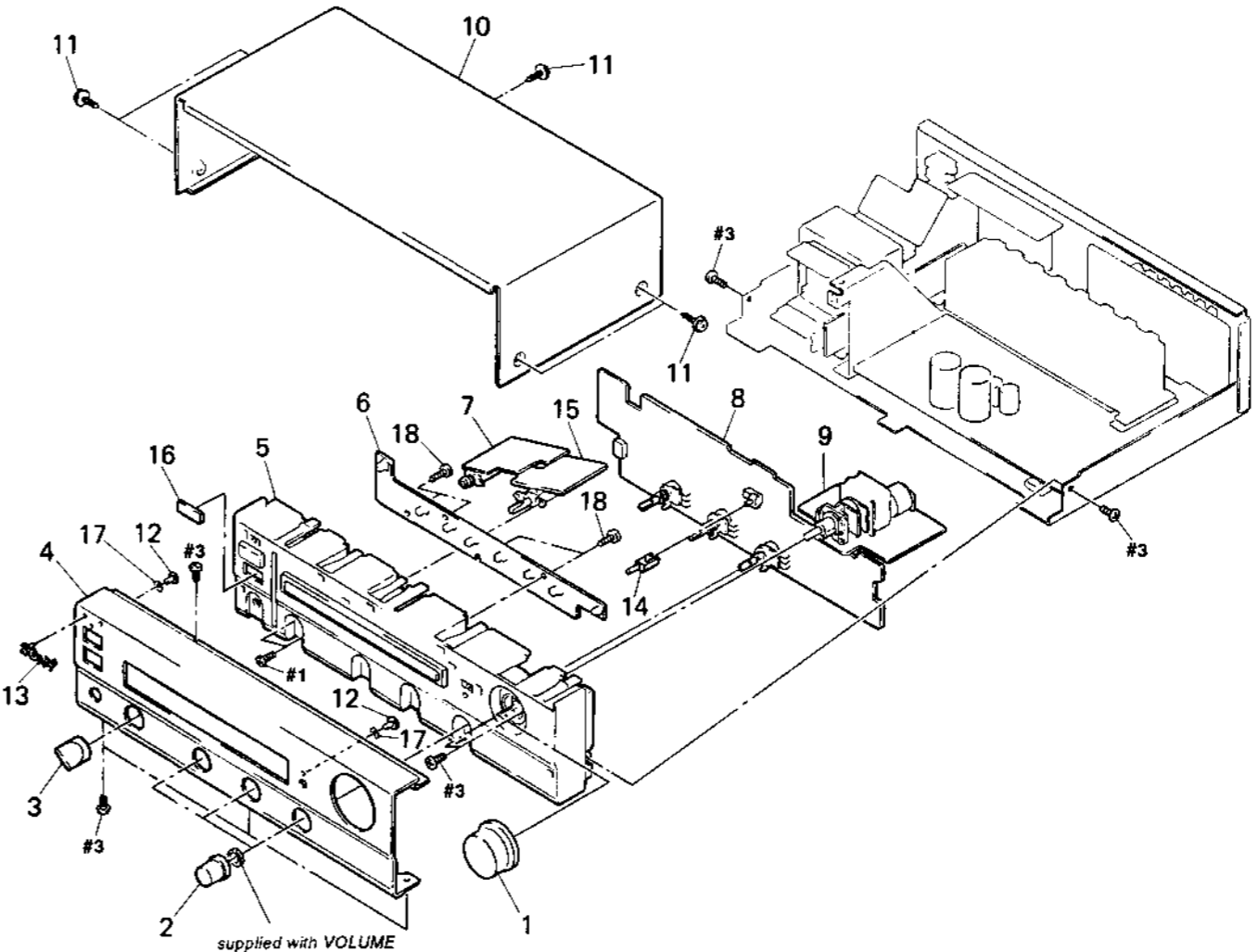
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Color indication of Appearance Parts Example: KNOB, BALANCE (WHITE)....(RED)
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

Parts color      Cabinet's color

The components identified by mark **A** or dotted line with mark **A** are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

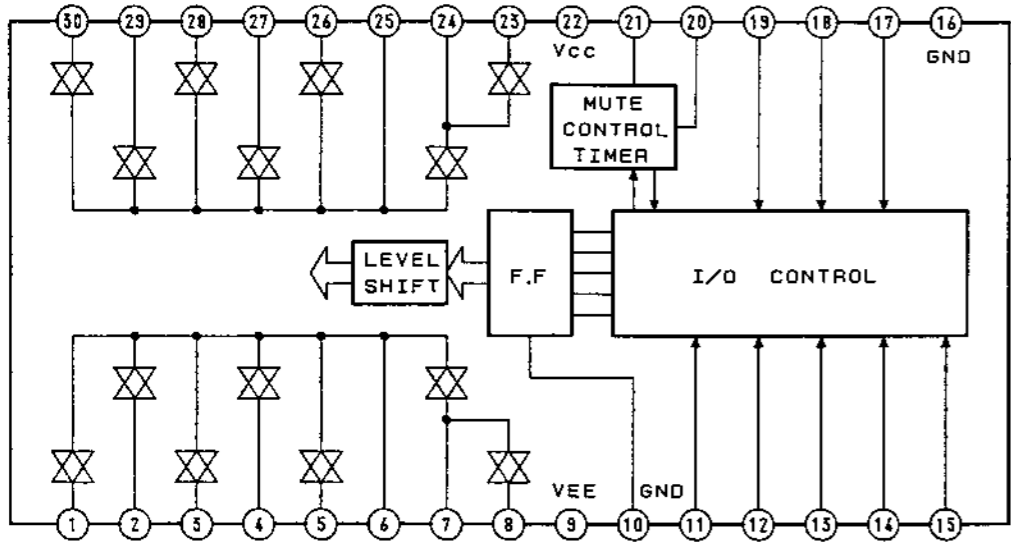
4-1. FRONT PANEL SECTION



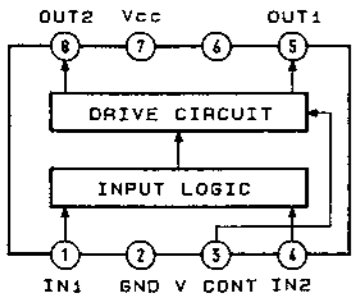
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	X-4942-798-1	KNOB (R53) ASSY		10	4-929-294-11	CASE	
2	4-945-173-01	KNOB (R21)		11	3-704-366-01	SCREW (CASE) (M3X8)	
3	4-916-745-01	KNOB (DIA. 21)		12	4-938-518-01	INDICATOR (C)	
4	4-952-244-01	PANEL, FRONT		13	4-908-848-01	EMBLEM, SONY	
5	X-4942-672-1	PANEL (BASE) ASSY		14	4-952-242-01	BUTTON (S/D)	
+ 6	A-4347-667-A	FUNCTION BOARD, COMPLETE		+ 15	1-644-316-11	SP. SW. BOARD	
+ 7	1-644-317-11	HEADPHONE BOARD		16	4-931-911-01	FILTER	
+ 8	A-4347-665-A	PANEL BOARD, COMPLETE		+ 17	4-927-881-01	SHEET, ADHESIVE	
+ 9	1-644-313-11	VOL BOARD		18	4-951-620-01	SCREW (2.6X8), +BVTP	

3-5. IC BLOCK DIAGRAM

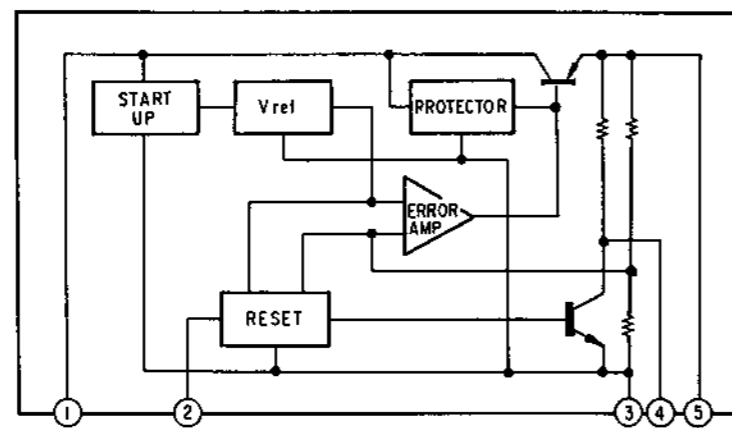
IC701 LC7818



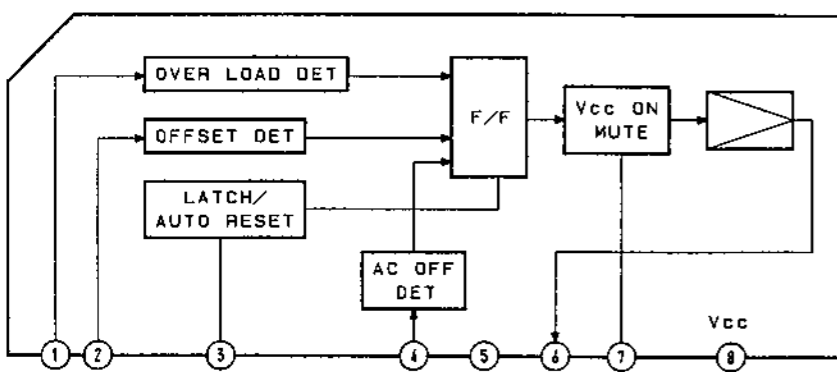
IC704 LB1639



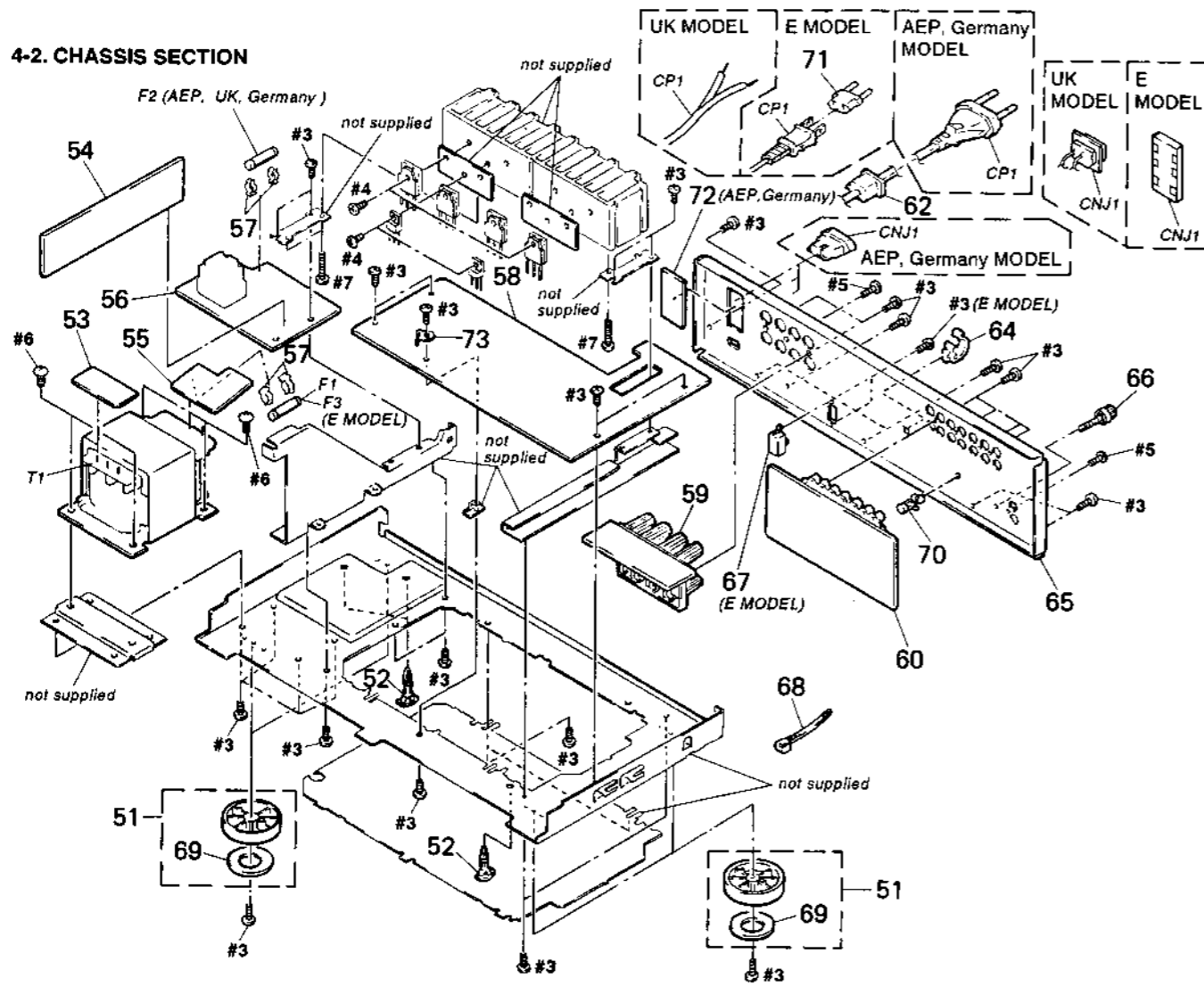
IC901 L78MR-05



IC801 UPC1237HA



4-2. CHASSIS SECTION



Note: The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
	51	X-3304-938-2 FOOT ASSY	
*	52	3-704-198-31 SUPPORT, PC	
*	53	1-644-320-11 TRANSFORMER (B) BOARD	
*	54	1-644-311-11 JOINT BOARD	
*	55	1-644-318-11 TRANSFORMER (A) BOARD	
*	56	1-644-315-11 FUSE BOARD	
*	57	1-533-213-31 HOLDER, FUSE	
*	58	A-4347-660-A MAIN BOARD, COMPLETE (E, AEP, UK)	
*	58	A-4347-661-A MAIN BOARD, COMPLETE (Germany)	
*	59	1-644-319-11 SP. TM. BOARD	
*	60	A-4347-662-A PIN JACK BOARD, COMPLETE (E, AEP, UK)	
*	60	A-4347-663-A PIN JACK BOARD, COMPLETE (Germany)	
*	62	3-703-244-00 BUSHING (2104), CORD (AEP, Germany, UK)	
*	62	3-703-571-11 BUSHING (S) (4516), CORD (E)	
*	64	4-949-235-01 HOOK	
*	65	4-951-972-11 PANEL, BACK (AEP)	
*	65	4-951-972-21 PANEL, BACK (Germany)	
*	65	4-951-972-31 PANEL, BACK (UK)	
*	65	4-951-972-41 PANEL, BACK (E)	

Ref. No.	Part No.	Description	Remark
	66	4-947-010-01 SCREW, FEEDER FIXED	
$\Delta$	67	1-571-515-11 SWITCH, POWER VOLTAGE SELECTION (E)	
	68	3-655-653-21 BAND (TAITON), BINDING (UK, E)	
	69	4-923-836-11 CUSHION	
*	70	3-349-025-31 HOLDER, PC BOARD	
$\Delta$	71	1-569-007-11 ADAPTER, CONVERSION 2P (E)	
*	72	1-644-321-11 OUTLET BOARD (AEP, Germany)	
*	73	4-942-204-01 PLATE, GROUND	
$\Delta$	CNJ1	1-526-696-31 OUTLET, AC (3 GANG) (E)	
$\Delta$	CNJ1	1-526-751-00 OUTLET, AC (UK)	
$\Delta$	CNJ1	1-526-794-11 OUTLET, AC (AEP, Germany)	
$\Delta$	CP1	1-558-946-21 CORD, POWER (UK)	
$\Delta$	CP1	1-575-651-21 CORD, POWER (AEP, Germany)	
$\Delta$	CP1	1-575-653-21 CORD, POWER (E)	
$\Delta$	F1	1-532-259-00 FUSE, TIME-LAG (T1, 6A)	
$\Delta$	F2	1-532-286-00 FUSE, TIME-LAG (T2, 5A) (AEP, Germany, UK)	
$\Delta$	F3	1-532-259-00 FUSE, TIME-LAG (T1, 6A) (E)	
$\Delta$	T1	1-450-953-11 TRANSFORMER, POWER (AEP)	
$\Delta$	T1	1-450-954-11 TRANSFORMER, POWER (UK)	
$\Delta$	T1	1-450-955-11 TRANSFORMER, POWER (Germany)	
$\Delta$	T1	1-450-956-11 TRANSFORMER, POWER (E)	

Remark

SECTION 5  
ELECTRICAL PARTS LIST

FUNCTION FUSE

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms  
METAL: Metal-film resistor  
METAL OXIDE: Metal oxide-film resistor  
F: nonflammable

- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA:  $\mu$ A, uPA:  $\mu$ PA  
uPB:  $\mu$ PB, uPC:  $\mu$ PC  
uPD:  $\mu$ PD
- CAPACITORS  
uF:  $\mu$ F
- COILS  
uH:  $\mu$ H

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-4347-667-A	FUNCTION BOARD, COMPLETE		< CONNECTOR >			
				+ CN1	1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P	
				+ CN2	1-564-321-00	PIN, CONNECTOR 2P	
				+ CN3	1-564-321-00	PIN, CONNECTOR 2P	
				CN5	1-564-687-11	PIN, CONNECTOR 3P (E)	
				< JACK >			
				CNJ701	1-695-087-11	PIN, CONNECTOR (PC BOARD) 7P	
				CNJ703	1-566-213-11	PIN, CONNECTOR 4P (CONTROL S OUT)	
				< DIODE >			
D707	8-719-987-63	DIODE 1N4148M		D901	8-719-200-77	DIODE 10E2N	
D708	8-719-987-63	DIODE 1N4148M		D902	8-719-200-77	DIODE 10E2N	
D709	8-719-987-63	DIODE 1N4148M		D903	8-719-200-77	DIODE 10E2N	
D710	8-719-987-63	DIODE 1N4148M		D904	8-719-200-77	DIODE 10E2N	
D711	8-719-987-63	DIODE 1N4148M		D908	8-719-987-63	DIODE 1N4148M	
				D909	8-719-987-63	DIODE 1N4148M	
				< DIODE >			
D712	8-719-987-63	DIODE 1N4148M					
D719	8-719-313-69	DIODE SEL3210S-CD					
D720	8-719-313-72	LED SEL3810A-CD					
D722	8-719-313-72	LED SEL3810A-CD					
D723	8-719-018-46	LED SEL3510C-CD					
				< FUSE >			
D724	8-719-018-46	LED SEL3510C-CD		$\Delta$ F2	1-532-286-00	FUSE, TIME-LAG (T2, 5A) (AEP, Germany, UK)	
D725	8-719-018-46	LED SEL3510C-CD					
D726	8-719-018-46	LED SEL3510C-CD					
D727	8-719-018-46	LED SEL3510C-CD					
				< IC >			
				IC703	8-749-920-83	IC GPU52XB	
				< TRANSISTOR >			
				Q713	8-729-620-05	TRANSISTOR 2SC2603-EF	
				< RESISTOR >			
				R735	1-249-425-11	CARBON 4.7K 5% 1/4W	
				R907	1-247-738-11	CARBON 82 5% 1/2W	
				< RELAY >			
				$\Delta$ RY1	1-515-516-00	RELAY	
				< TRANSFORMER >			
				$\Delta$ T2	1-448-523-11	TRANSFORMER, POWER	
				< CAPACITOR >			
$\Delta$ C1	1-161-744-00	CERAMIC 0.01uF 400V					
C901	1-136-153-00	FILM 0.01uF 5% 50V					
C902	1-124-557-11	ELECT 1000uF 20% 25V					
C903	1-124-903-11	ELECT 1uF 20% 50V					
C904	1-124-477-11	ELECT 47uF 20% 25V					
C919	1-161-494-00	CERAMIC 0.022uF 25V					

**HEADPHONE JOINT MAIN**

Ref. No.	Part No.	Description	Remark
*	1-644-317-11	HEADPHONE BOARD *****	
		< JACK >	
J501	1-507-863-51	JACK, PHONE (HEADPHONES)	
		< RESISTOR >	
R535	1-247-747-11	CARBON 470 5% 1/2W	
R635	1-247-747-11	CARBON 470 5% 1/2W	
*****			
*	1-644-311-11	JOINT BOARD *****	
		< CONNECTOR >	
CNJ702	1-568-319-11	SOCKET, CONNECTOR 8P	
CNP701	1-695-092-11	SOCKET, CONNECTOR 7P	
*****			
*	A-4347-660-A	MAIN BOARD, COMPLETE (E, AEP, UK)	
*	A-4347-661-A	MAIN BOARD, COMPLETE (Germany) *****	
*	4-942-204-01	PLATE, GROUND	
		< CAPACITOR >	
C501	1-124-927-11	ELECT 4.7uF 20% 100V	
C502	1-124-927-11	ELECT 4.7uF 20% 100V	
C503	1-162-282-31	CERAMIC 100PF 10% 50V (Germany)	
C504	1-161-375-00	CERAMIC 0.022uF 20% 50V	
C505	1-124-477-11	ELECT 47uF 20% 25V	
C506	1-162-193-31	CERAMIC 3.3PF 10% 50V	
C507	1-124-477-11	ELECT 47uF 20% 25V	
C508	1-124-477-11	ELECT 47uF 20% 25V	
C509	1-161-959-00	CERAMIC 22PF 10% 500V	
C510	1-161-959-00	CERAMIC 22PF 10% 500V	
C511	1-136-163-00	FILM 0.068uF 5% 50V	
C512	1-136-163-00	FILM 0.068uF 5% 50V	
C601	1-124-927-11	ELECT 4.7uF 20% 100V	
C602	1-124-927-11	ELECT 4.7uF 20% 100V	
C603	1-162-282-31	CERAMIC 100PF 10% 50V (Germany)	
C604	1-161-375-00	CERAMIC 0.022uF 20% 50V	
C605	1-124-477-11	ELECT 47uF 20% 25V	
C606	1-162-193-31	CERAMIC 3.3PF 10% 50V	
C607	1-124-477-11	ELECT 47uF 20% 25V	
C608	1-124-477-11	ELECT 47uF 20% 25V	
C609	1-161-959-00	CERAMIC 22PF 10% 500V	

Ref. No.	Part No.	Description	Remark
C610	1-161-959-00	CERAMIC 22PF 10% 500V	
C611	1-136-163-00	FILM 0.068uF 5% 50V	
C612	1-136-163-00	FILM 0.068uF 5% 50V	
C801	1-124-907-11	ELECT 10uF 20% 50V	
C802	1-124-477-11	ELECT 47uF 20% 25V	
C803	1-126-176-11	ELECT 220uF 20% 10V	
C804	1-124-907-11	ELECT 10uF 20% 50V	
C805	1-124-478-11	ELECT 100uF 20% 25V	
C905	1-136-165-00	FILM 0.1uF 5% 50V	
C906	1-136-165-00	FILM 0.1uF 5% 50V	
C907	1-126-138-11	ELECT 4700uF 20% 50V	
C908	1-126-138-11	ELECT 4700uF 20% 50V	
C909	1-124-913-11	ELECT 470uF 20% 50V	
C910	1-124-913-11	ELECT 470uF 20% 50V	
C915	1-124-484-11	ELECT 220uF 20% 35V	
C916	1-124-484-11	ELECT 220uF 20% 35V	
C917	1-124-477-11	ELECT 47uF 20% 25V	
C918	1-124-477-11	ELECT 47uF 20% 25V	
*****			
		< CONNECTOR >	
* CN301	1-564-512-11	PLUG, CONNECTOR 9P	
* CN302	1-564-513-11	PLUG, CONNECTOR 10P	
CN501	1-564-507-11	PLUG, CONNECTOR 4P	
* CN901	1-564-506-11	PLUG, CONNECTOR 3P	
CNJ101	1-568-321-11	SOCKET, CONNECTOR 10P	
CNJ102	1-568-321-11	SOCKET, CONNECTOR 10P	
*****			
		< DIODE >	
D501	8-719-933-36	DIODE HZS681L	
D502	8-719-987-63	DIODE 1N4148M	
D503	8-719-987-63	DIODE 1N4148M	
D504	8-719-987-63	DIODE 1N4148M	
D601	8-719-933-36	DIODE HZS681L	
D602	8-719-987-63	DIODE 1N4148M	
D603	8-719-987-63	DIODE 1N4148M	
D604	8-719-987-63	DIODE 1N4148M	
D801	8-719-200-77	DIODE 10E2N	
D802	8-719-987-63	DIODE 1N4148M	
D803	8-719-987-63	DIODE 1N4148M	
D905	8-719-302-38	DIODE R2V-602-01	
D906	8-719-200-77	DIODE 10E2N	
D907	8-719-200-77	DIODE 10E2N	
*****			
		< IC >	
IC801	8-759-111-68	IC uPC1237HA	
IC902	8-759-982-10	IC RC7809FA	
IC903	8-759-604-49	IC MSF7909L	

**MAIN**

Ref. No.	Part No.	Description	Remark
< COIL >			
L501	1-420-872-00	COIL, AIR CORE	
L601	1-420-872-00	COIL, AIR CORE	
< TRANSISTOR >			
Q501	8-729-141-26	TRANSISTOR 2SC3622A-LK	
Q502	8-729-620-18	TRANSISTOR 2SA979-FG	
Q503	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
Q504	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q505	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q506	8-729-803-76	TRANSISTOR 2SA1371-E	
Q507	8-729-209-15	TRANSISTOR 2SD2012	
Q508	8-729-142-01	TRANSISTOR 2SC1941-LK	
Q509	8-729-141-46	TRANSISTOR 2SC4431-LK	
Q510	8-729-141-37	TRANSISTOR 2SA1684-LK	
Q511	8-729-015-83	TRANSISTOR 2SC3853-OPY	
Q512	8-729-015-80	TRANSISTOR 2SA1489-OPY	
Q513	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	
Q514	8-729-224-62	TRANSISTOR 2SK246-GR	
Q601	8-729-141-26	TRANSISTOR 2SC3622A-LK	
Q602	8-729-620-18	TRANSISTOR 2SA979-FG	
Q603	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
Q604	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q605	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q606	8-729-803-76	TRANSISTOR 2SA1371-E	
Q607	8-729-209-15	TRANSISTOR 2SD2012	
Q608	8-729-142-01	TRANSISTOR 2SC1941-LK	
Q609	8-729-141-46	TRANSISTOR 2SC4431-LK	
Q610	8-729-141-37	TRANSISTOR 2SA1684-LK	
Q611	8-729-015-83	TRANSISTOR 2SC3853-OPY	
Q612	8-729-015-80	TRANSISTOR 2SA1489-OPY	
Q613	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	
Q614	8-729-224-62	TRANSISTOR 2SK246-GR	
Q801	8-729-900-63	TRANSISTOR DTA124ES	
< RESISTOR >			
R501	1-249-423-11	CARBON 3.3K 5% 1/4W	
R502	1-249-417-11	CARBON 1K 5% 1/4W	
R503	1-249-421-11	CARBON 2.2K 5% 1/4W	
R504	1-249-393-11	CARBON 10 5% 1/4W	
R506	1-247-704-11	CARBON 220 5% 1/4W	
R507	1-247-704-11	CARBON 220 5% 1/4W	
R508	1-249-490-11	CARBON 27K 5% 1/2W	
R509	1-249-413-11	CARBON 470 5% 1/4W	
R510	1-249-438-11	CARBON 56K 5% 1/4W	
R511	1-249-438-11	CARBON 56K 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R513	1-249-433-11	CARBON 22K 5% 1/4W	
R514	1-249-429-11	CARBON 10K 5% 1/4W	
R515	1-249-435-11	CARBON 33K 5% 1/4W	
R516	1-247-692-11	CARBON 22 5% 1/4W	
R517	1-249-425-11	CARBON 4.7K 5% 1/4W	
R518	1-249-419-11	CARBON 1.5K 5% 1/4W	
R519	1-247-692-11	CARBON 22 5% 1/4W	
R520	1-247-700-11	CARBON 100 5% 1/4W	
R521	1-247-700-11	CARBON 100 5% 1/4W	
R522	1-247-706-11	CARBON 330 5% 1/4W	
R523	1-249-455-11	CARBON 4.7 5% 1/4W	
R524	1-249-455-11	CARBON 4.7 5% 1/4W	
R525	1-216-361-00	METAL OXIDE 0.22 5% 2W F	
R526	1-216-361-00	METAL OXIDE 0.22 5% 2W F	
R527	1-247-704-11	CARBON 220 5% 1/4W	
R528	1-249-427-11	CARBON 6.8K 5% 1/4W	
R529	1-247-727-11	CARBON 10 5% 1/2W	
R530	1-247-727-11	CARBON 10 5% 1/2W	
R531	1-249-437-11	CARBON 47K 5% 1/4W	
R536	1-249-409-11	CARBON 220 5% 1/4W	
R537	1-249-417-11	CARBON 1K 5% 1/4W	
R538	1-249-423-11	CARBON 3.3K 5% 1/4W	
R601	1-249-423-11	CARBON 3.3K 5% 1/4W	
R602	1-249-417-11	CARBON 1K 5% 1/4W	
R603	1-249-421-11	CARBON 2.2K 5% 1/4W	
R604	1-249-393-11	CARBON 10 5% 1/4W	
R606	1-247-704-11	CARBON 220 5% 1/4W	
R607	1-247-704-11	CARBON 220 5% 1/4W	
R608	1-249-490-11	CARBON 27K 5% 1/2W	
R609	1-249-413-11	CARBON 470 5% 1/4W	
R610	1-249-438-11	CARBON 56K 5% 1/4W	
R611	1-249-438-11	CARBON 56K 5% 1/4W	
R613	1-249-433-11	CARBON 22K 5% 1/4W	
R614	1-249-429-11	CARBON 10K 5% 1/4W	
R615	1-249-435-11	CARBON 33K 5% 1/4W	
R616	1-247-692-11	CARBON 22 5% 1/4W	
R617	1-249-425-11	CARBON 4.7K 5% 1/4W	
R618	1-249-419-11	CARBON 1.5K 5% 1/4W	
R619	1-247-692-11	CARBON 22 5% 1/4W	
R620	1-247-700-11	CARBON 100 5% 1/4W	
R621	1-247-700-11	CARBON 100 5% 1/4W	
R622	1-247-706-11	CARBON 330 5% 1/4W	
R623	1-249-455-11	CARBON 4.7 5% 1/4W	
R624	1-249-455-11	CARBON 4.7 5% 1/4W	
R625	1-216-361-00	METAL OXIDE 0.22 5% 2W F	
R626	1-216-361-00	METAL OXIDE 0.22 5% 2W F	
R627	1-247-704-11	CARBON 220 5% 1/4W	
R628	1-249-427-11	CARBON 6.8K 5% 1/4W	
R629	1-247-727-11	CARBON 10 5% 1/2W	



**MAIN    OUTLET    PANEL**

Ref. No.	Part No.	Description	Remark
R630	1-247-727-11	CARBON	10 5% 1/2W
R631	1-249-438-11	CARBON	56K 5% 1/4W
R636	1-249-409-11	CARBON	220 5% 1/4W
R637	1-249-417-11	CARBON	1K 5% 1/4W
R638	1-249-423-11	CARBON	3.3K 5% 1/4W
R801	1-249-427-11	CARBON	6.8K 5% 1/4W
R802	1-249-441-11	CARBON	100K 5% 1/4W
R803	1-249-428-11	CARBON	8.2K 5% 1/4W
R804	1-249-439-11	CARBON	68K 5% 1/4W
R805	1-249-430-11	CARBON	12K 5% 1/4W
R806	1-215-869-11	METAL OXIDE	1K 5% 1W F
R905	1-249-385-11	CARBON	2.2 5% 1/6W
R906	1-249-385-11	CARBON	2.2 5% 1/6W
R913	1-216-478-11	METAL OXIDE	390 5% 3W F (E. AEP, UK)
R913	1-216-477-11	METAL OXIDE	270 5% 3W F (Germany)
R916	1-215-915-11	METAL OXIDE	470 5% 3W F (E. AEP, UK)
R916	1-216-478-11	METAL OXIDE	390 5% 3W F (Germany)
< VARIABLE RESISTOR >			
RV501	1-238-011-11	RES. ADJ. CARBON 470	(DC BIAS L-CH)
RV601	1-238-011-11	RES. ADJ. CARBON 470	(DC BIAS R-CH)
< RELAY >			
RY801	1-515-533-11	RELAY	
*****			
*	1-644-321-11	OUTLET BOARD (AEP, Germany)	
*****			
< OUTLET >			
△	1-526-794-11	OUTLET. AC (AEP, Germany)	
*****			
*	A-4347-665-A	PANEL BOARD, COMPLETE	
*****			
< CAPACITOR >			
C301	1-130-481-00	MYLAR	0.0068uF 5% 50V
C302	1-130-474-00	MYLAR	0.0018uF 5% 50V
C303	1-136-159-00	FILM	0.033uF 5% 50V
C304	1-130-479-00	MYLAR	0.0047uF 5% 50V
C401	1-130-481-00	MYLAR	0.0068uF 5% 50V
C402	1-130-474-00	MYLAR	0.0018uF 5% 50V
C403	1-136-159-00	FILM	0.033uF 5% 50V
C404	1-130-479-00	MYLAR	0.0047uF 5% 50V
C708	1-161-494-00	CERAMIC	0.022uF 25V
C709	1-161-494-00	CERAMIC	0.022uF 25V

Ref. No.	Part No.	Description	Remark
C710	1-162-284-31	CERAMIC	150PF 10% 50V
C711	1-162-284-31	CERAMIC	150PF 10% 50V
C712	1-124-477-11	ELECT	47uF 20% 25V
C713	1-161-494-00	CERAMIC	0.022uF 25V
C714	1-136-165-00	FILM	0.1uF 5% 50V
C715	1-124-477-11	ELECT	47uF 20% 25V
C717	1-161-494-00	CERAMIC	0.022uF 25V
C718	1-124-477-11	ELECT	47uF 20% 25V
< CONNECTOR >			
CNP301	1-695-415-11	PIN, CONNECTOR (PC BOARD)	10P
CNP302	1-695-415-11	PIN, CONNECTOR (PC BOARD)	10P
* CNP702	1-568-320-11	PLUG, CONNECTOR	8P
< DIODE >			
D713	8-719-987-63	DIODE 1N4148M	
D714	8-719-987-63	DIODE 1N4148M	
D715	8-719-987-63	DIODE 1N4148M	
D716	8-719-987-63	DIODE 1N4148M	
D717	8-719-987-63	DIODE 1N4148M	
D718	8-719-987-63	DIODE 1N4148M	
D728	8-719-987-63	DIODE 1N4148M	
< IC >			
IC702	8-759-077-08	IC M50761-291P	
IC704	8-759-820-62	IC LB1639	
< TRANSISTOR >			
Q707	8-729-904-39	TRANSISTOR DTC114TS	
Q708	8-729-904-39	TRANSISTOR DTC114TS	
Q709	8-729-900-63	TRANSISTOR DTA124ES	
Q710	8-729-806-30	TRANSISTOR 2SC4048	
Q711	8-729-900-80	TRANSISTOR DTC114ES	
Q712	8-729-620-05	TRANSISTOR 2SC2603-EF	
< RESISTOR >			
R302	1-249-421-11	CARBON	2.2K 5% 1/4W
R303	1-249-426-11	CARBON	5.6K 5% 1/4W
R304	1-247-903-00	CARBON	1M 5% 1/4W
R305	1-247-903-00	CARBON	1M 5% 1/4W
R306	1-247-852-11	CARBON	7.5K 5% 1/4W
R308	1-247-870-11	CARBON	43K 5% 1/4W
R309	1-249-436-11	CARBON	39K 5% 1/4W
R310	1-249-437-11	CARBON	47K 5% 1/4W
R402	1-249-421-11	CARBON	2.2K 5% 1/4W
R403	1-249-426-11	CARBON	5.6K 5% 1/4W
R404	1-247-903-00	CARBON	1M 5% 1/4W
R405	1-247-903-00	CARBON	1M 5% 1/4W
R406	1-247-852-11	CARBON	7.5K 5% 1/4W

**PANEL    PIN JACK**

Ref. No.	Part No.	Description	Remark
R408	1-247-870-11	CARBON	43K 5% 1/4W
R409	1-249-436-11	CARBON	39K 5% 1/4W
R410	1-249-437-11	CARBON	47K 5% 1/4W
R708	1-249-414-11	CARBON	560 5% 1/4W
R709	1-249-411-11	CARBON	330 5% 1/4W
R710	1-249-411-11	CARBON	330 5% 1/4W
R711	1-249-411-11	CARBON	330 5% 1/4W
R712	1-249-411-11	CARBON	330 5% 1/4W
R713	1-249-411-11	CARBON	330 5% 1/4W
R714	1-249-433-11	CARBON	22K 5% 1/4W
R715	1-249-433-11	CARBON	22K 5% 1/4W
R716	1-249-433-11	CARBON	22K 5% 1/4W
R717	1-249-433-11	CARBON	22K 5% 1/4W
R718	1-249-433-11	CARBON	22K 5% 1/4W
R719	1-249-433-11	CARBON	22K 5% 1/4W
R720	1-249-433-11	CARBON	22K 5% 1/4W
R721	1-247-903-00	CARBON	1M 5% 1/4W
R722	1-249-423-11	CARBON	3.3K 5% 1/4W
R723	1-249-429-11	CARBON	10K 5% 1/4W
R724	1-249-417-11	CARBON	1K 5% 1/4W
R725	1-249-417-11	CARBON	1K 5% 1/4W
R726	1-249-393-11	CARBON	10 5% 1/4W
R727	1-249-425-11	CARBON	4.7K 5% 1/4W
R728	1-249-412-11	CARBON	390 5% 1/4W
R729	1-249-417-11	CARBON	1K 5% 1/4W
R730	1-249-421-11	CARBON	2.2K 5% 1/4W
R731	1-249-421-11	CARBON	2.2K 5% 1/4W
R732	1-247-750-11	CARBON	680 5% 1/2W
R733	1-249-441-11	CARBON	100K 5% 1/4W
R734	1-249-425-11	CARBON	4.7K 5% 1/4W
R736	1-249-419-11	CARBON	1.5K 5% 1/4W
< VARIABLE RESISTOR >			
RV301	1-238-513-11	RES. VAR. CARBON 150K/150K	(BALANCE)
RV302	1-238-514-11	RES. VAR. 250K/250K	(TREBLE)
RV303	1-238-515-11	RES. VAR. CARBON 520K/520K	(BASS)
< SWITCH >			
S301	1-572-642-11	SWITCH. PUSH (1 KEY)	(SOURCE DIRECT)
S701	1-554-303-21	SWITCH. TACTILE	(POWER)
S702	1-554-303-21	SWITCH. TACTILE	(DAT/TAPE1)
S703	1-554-303-21	SWITCH. TACTILE	(TAPE2)
S704	1-554-303-21	SWITCH. TACTILE	(AUX)
S705	1-554-303-21	SWITCH. TACTILE	(CD)
S706	1-554-303-21	SWITCH. TACTILE	(TUNER)
S707	1-554-303-21	SWITCH. TACTILE	(PHONE)
< VIBRATOR >			
X701	1-577-077-11	VIBLATOR, CERAMIC	

Ref. No.	Part No.	Description	Remark
* A-4347-662-A	PIN JACK BOARD, COMPLETE (E. AEP, UK)		
* A-4347-663-A	PIN JACK BOARD, COMPLETE (Germany)		
*****			
< CAPACITOR >			
C101	1-162-284-31	CERAMIC	150PF 10% 50V (Germany)
C102	1-162-284-31	CERAMIC	150PF 10% 50V (Germany)
C103	1-162-284-31	CERAMIC	150PF 10% 50V (Germany)
C104	1-162-284-31	CERAMIC	150PF 10% 50V (Germany)
C105	1-162-284-31	CERAMIC	150PF 10% 50V (Germany)
C106	1-162-284-31	CERAMIC	150PF 10% 50V (Germany)
C107	1-162-284-31	CERAMIC	150PF 10% 50V (Germany)
C108	1-162-285-31	CERAMIC	180PF 10% 50V
C109	1-162-282-31	CERAMIC	100PF 10% 50V (Germany)
C110	1-124-907-11	ELECT	10uF 20% 50V
C111	1-124-477-11	ELECT	47uF 20% 25V
C112	1-162-282-31	CERAMIC	100PF 10% 50V (AEP, UK, E)
C112	1-162-284-31	CERAMIC	150PF 10% 50V (Germany)
C113	1-130-480-00	MYLAR	0.0056uF 5% 50V
C114	1-130-473-00	MYLAR	0.0015uF 5% 50V
C115	1-124-927-11	ELECT	4.7uF 20% 100V
C116	1-124-477-11	ELECT	47uF 20% 25V
C117	1-124-925-11	ELECT	2.2uF 20% 100V
C201	1-162-284-31	CERAMIC	150PF 10% 50V (Germany)
C202	1-162-284-31	CERAMIC	150PF 10% 50V (Germany)
C203	1-162-284-31	CERAMIC	150PF 10% 50V (Germany)
C204	1-162-284-31	CERAMIC	150PF 10% 50V (Germany)
C205	1-162-284-31	CERAMIC	150PF 10% 50V (Germany)
C206	1-162-284-31	CERAMIC	150PF 10% 50V (Germany)
C207	1-162-284-31	CERAMIC	150PF 10% 50V (Germany)
C208	1-162-285-31	CERAMIC	180PF 10% 50V
C209	1-162-282-31	CERAMIC	100PF 10% 50V (Germany)
C210	1-124-907-11	ELECT	10uF 20% 50V
C211	1-124-477-11	ELECT	47uF 20% 25V
C212	1-162-282-31	CERAMIC	100PF 10% 50V (AEP, UK, E)
C212	1-162-284-31	CERAMIC	150PF 10% 50V (Germany)
C213	1-130-480-00	MYLAR	0.0056uF 5% 50V
C214	1-130-473-00	MYLAR	0.0015uF 5% 50V
C215	1-124-927-11	ELECT	4.7uF 20% 100V
C216	1-124-477-11	ELECT	47uF 20% 25V
C701	1-124-472-11	ELECT	470uF 20% 10V
C702	1-161-494-00	CERAMIC	0.022uF 25V
C703	1-161-494-00	CERAMIC	0.022uF 25V
C704	1-124-477-11	ELECT	47uF 20% 25V
C705	1-161-494-00	CERAMIC	0.022uF 25V

Note: The components identified by mark **△** or dotted line with mark **△** are critical for safety. Replace only with part number specified.

**PIN JACK**

**SP. SW.**

**SP. TM.**

Ref. No.	Part No.	Description	Remark
< CONNECTOR >			
* CNP101	1-568-322-21	PLUG, CONNECTOR 10P	
* CNP102	1-568-322-21	PLUG, CONNECTOR 10P	
< DIODE >			
D701	8-719-200-77	DIODE 10E2N	
D702	8-719-200-77	DIODE 10E2N	
D703	8-719-987-63	DIODE 1N4148M	
D704	8-719-987-63	DIODE 1N4148M	
D705	8-719-933-33	DIODE HZS6A1L	
D706	8-719-987-63	DIODE 1N4148M	
< IC >			
IC101	8-759-636-74	IC M5218AP-22	
IC102	8-759-801-01	IC LC4966	
IC701	8-759-802-52	IC LC7818	
< JACK >			
J101	1-573-141-21	JACK 2P (PHONE)	
* J102	1-573-142-21	JACK, PIN 4P (DAT/TAPE1)	
* J103	1-573-142-21	JACK, PIN 4P (TAPE2)	
J104	1-568-978-11	JACK 6P (TUNER/CD/AUX)	
< TRANSISTOR >			
Q101	8-729-900-36	TRANSISTOR DTC124ES	
Q102	8-729-900-63	TRANSISTOR DTA124ES	
Q701	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q702	8-729-900-63	TRANSISTOR DTA124ES	
Q703	8-729-900-63	TRANSISTOR DTA124ES	
Q704	8-729-900-63	TRANSISTOR DTA124ES	
Q705	8-729-900-63	TRANSISTOR DTA124ES	
Q706	8-729-900-63	TRANSISTOR DTA124ES	
< RESISTOR >			
R101	1-249-409-11	CARBON 220 5% 1/4W (Germany)	
R102	1-249-417-11	CARBON 1K 5% 1/4W	
R103	1-249-409-11	CARBON 220 5% 1/4W (Germany)	
R104	1-249-417-11	CARBON 1K 5% 1/4W	
R105	1-249-409-11	CARBON 220 5% 1/4W (Germany)	
R106	1-249-409-11	CARBON 220 5% 1/4W (Germany)	
R107	1-249-409-11	CARBON 220 5% 1/4W (Germany)	
R108	1-249-418-11	CARBON 1.2K 5% 1/4W	
R109	1-249-418-11	CARBON 1.2K 5% 1/4W (Germany)	
R110	1-249-441-11	CARBON 100K 5% 1/4W	
R111	1-249-416-11	CARBON 820 5% 1/4W	
R112	1-247-897-11	CARBON 560K 5% 1/4W	
R113	1-249-437-11	CARBON 47K 5% 1/4W	
R114	1-249-409-11	CARBON 220 5% 1/4W	
R115	1-249-441-11	CARBON 100K 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R116	1-249-441-11	CARBON 100K 5% 1/4W	
R117	1-249-433-11	CARBON 22K 5% 1/4W	
R118	1-249-433-11	CARBON 22K 5% 1/4W	
R119	1-249-441-11	CARBON 100K 5% 1/4W	
R201	1-249-409-11	CARBON 220 5% 1/4W (Germany)	
R202	1-249-417-11	CARBON 1K 5% 1/4W	
R203	1-249-409-11	CARBON 220 5% 1/4W (Germany)	
R204	1-249-417-11	CARBON 1K 5% 1/4W	
R205	1-249-409-11	CARBON 220 5% 1/4W (Germany)	
R206	1-249-409-11	CARBON 220 5% 1/4W (Germany)	
R207	1-249-409-11	CARBON 220 5% 1/4W (Germany)	
R208	1-249-418-11	CARBON 1.2K 5% 1/4W	
R209	1-249-418-11	CARBON 1.5K 5% 1/4W (Germany)	
R210	1-249-441-11	CARBON 100K 5% 1/4W	
R211	1-249-416-11	CARBON 820 5% 1/4W	
R212	1-247-897-11	CARBON 560K 5% 1/4W	
R213	1-249-437-11	CARBON 47K 5% 1/4W	
R214	1-249-409-11	CARBON 220 5% 1/4W	
R215	1-249-441-11	CARBON 100K 5% 1/4W	
R216	1-249-441-11	CARBON 100K 5% 1/4W	
R301	1-249-405-11	CARBON 100 5% 1/4W	
R401	1-249-405-11	CARBON 100 5% 1/4W	
R701	1-247-901-11	CARBON 820K 5% 1/4W	
R702	1-249-433-11	CARBON 22K 5% 1/4W	
R703	1-249-441-11	CARBON 100K 5% 1/4W	
R704	1-249-433-11	CARBON 22K 5% 1/4W	
R705	1-249-429-11	CARBON 10K 5% 1/4W	
R706	1-249-429-11	CARBON 10K 5% 1/4W	
R707	1-249-433-11	CARBON 22K 5% 1/4W	
R732	1-249-433-11	CARBON 22K 5% 1/4W	

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\* 1-644-316-11 SP. SW. BOARD  
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< SWITCH >

S501 1-692-168-11 SWITCH, ROTARY SLIDE (SPEAKER)

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\* 1-644-319-11 SP. TM. BOARD  
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< CAPACITOR >

C513 1-136-157-00 FILM 0.022uF 5% 50V (Germany)  
 C514 1-136-157-00 FILM 0.022uF 5% 50V (Germany)  
 C515 1-136-157-00 FILM 0.022uF 5% 50V (Germany)  
 C516 1-136-157-00 FILM 0.022uF 5% 50V (Germany)  
 C517 1-136-157-00 FILM 0.022uF 5% 50V (Germany)

**SP. TM.**

**TRANSFORMER (A)**

**TRANSFORMER (B)**

**VOL**

Ref. No.	Part No.	Description	Remark
C613	1-136-157-00	FILM 0.022uF 5% 50V (Germany)	
C614	1-136-157-00	FILM 0.022uF 5% 50V (Germany)	
C615	1-136-157-00	FILM 0.022uF 5% 50V (Germany)	
C616	1-136-157-00	FILM 0.022uF 5% 50V (Germany)	
C617	1-136-157-00	FILM 0.022uF 5% 50V (Germany)	

< CONNECTOR >

\* CN502 1-564-509-11 PLUG, CONNECTOR 6P

< RESISTOR >

R532	1-247-727-11	CARBON 10 5% 1/2W (Germany)	
R533	1-247-727-11	CARBON 10 5% 1/2W (Germany)	
R632	1-247-727-11	CARBON 10 5% 1/2W (Germany)	
R633	1-247-727-11	CARBON 10 5% 1/2W (Germany)	

< TERMINAL >

TMS01	1-537-235-11	TERMINAL BOARD (SP) (E, AEP1, UK)	
TMS01	1-537-227-11	TERMINAL BOARD (SP) (AEP2)	
TMS01	1-537-228-11	TERMINAL BOARD (SP) (Germany)	

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\* 1-644-318-11 TRANSFORMER (A) BOARD  
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\* 1-533-213-31 HOLDER, FUSE

< CONNECTOR >

\* CN4 1-580-633-11 PIN, CONNECTOR 5P (E)

< FUSE >

△F1	1-532-259-00	FUSE, TIME-LAG (T1, 6A)	
△F3	1-532-259-00	FUSE, TIME-LAG (T1, 6A) (E)	

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\* 1-644-320-11 TRANSFORMER (B) BOARD  
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NOTE:

- AEP2: Model for Scandinavian countries, Switzerland, Spain and Portugal
- AEP1: Model for other European countries

Ref. No.	Part No.	Description	Remark
*	1-644-313-11	VOL BOARD *****	
		< CAPACITOR >	

C719 1-136-165-00 FILM 0.1uF 5% 50V

< VARIABLE RESISTOR >

RV304 1-241-921-11 RES, VAR, CARBON 120K/120K (VOLUME)

\*\*\*\*\*

MISCELLANEOUS  
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△67 1-571-515-11 SWITCH, POWER VOLTAGE SELECTION (E)

△71 1-569-007-11 ADAPTER, CONVERSION 2P (E)

△CNJ1 1-526-696-31 OUTLET, AC (3 GANG) (E)

△CNJ1 1-526-751-00 OUTLET, AC (UK)

△CP1 1-558-946-21 CORD, POWER (UK)

△CP1 1-575-651-21 CORD, POWER (AEP, Germany)

△CP1 1-575-653-21 CORD, POWER (E)

△T1 1-450-953-11 TRANSFORMER, POWER (AEP)

△T1 1-450-954-11 TRANSFORMER, POWER (UK)

△T1 1-450-955-11 TRANSFORMER, POWER (Germany)

△T1 1-450-956-11 TRANSFORMER, POWER (E)

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ACCESSORIES & PACKING MATERIALS  
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1-693-131-11 REMOTE COMMANDER (RM-S311)

2-181-754-0J COVER, BATTERY (REMOTE COMMANDER)

3-755-074-11 MANUAL, INSTRUCTION (E, AEP, UK)  
(ENGLISH/FRENCH/SPANISH/PORTUGUESE)

3-755-074-41 MANUAL, INSTRUCTION (AEP, Germany)  
(GERMAN/DUTCH/SWEDISH/ITALIAN)

\* 4-945-810-02 CUSHION (LEFT)

\* 4-945-811-01 CUSHION (RIGHT)

\* 4-951-289-01 INDIVIDUAL CARTON

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HARDWARE LIST  
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#1	7-682-548-09	SCREW +B 3X8
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
#4	7-685-648-79	SCREW +BVTP 3X12 TYPE2
#5	7-621-849-00	SCREW (BV/RING)
#6	7-682-560-04	SCREW +BVIT 4X6 (S)
#7	7-685-647-79	SCREW +BVTP 3X10 TYPE2 1T-3

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.