

SA-S1

SERVICE MANUAL





*AEP Model
UK Model
Singapore Model
Tourist Model*

SA-S1 is the active speaker system section in SHC-S1.

SPECIFICATIONS

Speaker system	Music power output
Active speaker, 2-way bass reflex	Woofer: 125 watts (6 ohms at 1 kHz 10% THD)
Speaker units	Tweeter: 125 watts (6 ohms at 10 kHz 10% THD)
Woofer: 17 cm dia., Motional Feedback (MFB) system, cone type	Input sensitivity and impedance
Tweeter: 2.5 × 10 cm, electrostatic type	INPUT 1.2 V, 47 kΩ
Power requirement	Power consumption
AEP, German, Italian model : 220 - 230 V AC, 50/60 Hz	50 watts
UK model : 240V AC, 50Hz	Dimensions
Singapore, Tourist model : 110 - 120V	Approx. 220 × 500 × 345 mm (8 3/4 × 19 3/4 × 13 5/8 inches) (w/h/d)
220 - 240V AC, 50/60Hz	Mass
Selectable	Approx. 11 kg (24 lb 4 oz) net per speaker
Continuous RMS power output	Supplied accessories
Woofer: 50 watts (6 ohms at 1 kHz, DIN)	Speaker connecting cord (2)
65 watts (6 ohms at 1 kHz, 5% THD)	Mains lead (2)
50 watts (6 ohms at 20 - 2700 Hz, 0.8% THD)	
Tweeter: 8 watts (50 ohms at 5 kHz, DIN)	Design and specifications are subject to change without notice.
10 watts (50 ohms at 5 kHz, 5% THD)	
8 watts (50 ohms at 2700 - 20 kHz, 0.8% THD)	

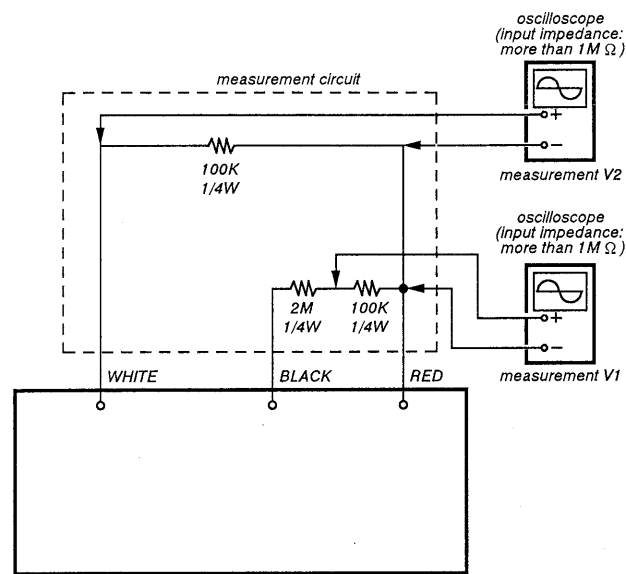
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  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.

ACTIVE SPEAKER SYSTEM
SONY®

SECTION 1
OPERATION CHECK OF BIAS BLOCK

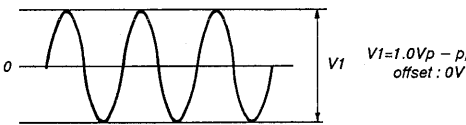
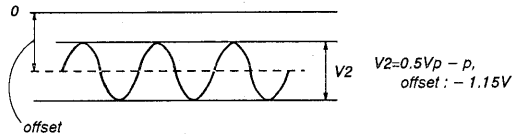
Setting :



[BIAS BOARD] (Component side)

Checking method :

- 1. Input 5kHz, - 46dBm from audio frequency oscillator.
- 2. Confirm the output waveform with an oscilloscope.



※ Since V1 and V2 are high impedance, noise (hum component) may easily occur, but this is not an abnormality.



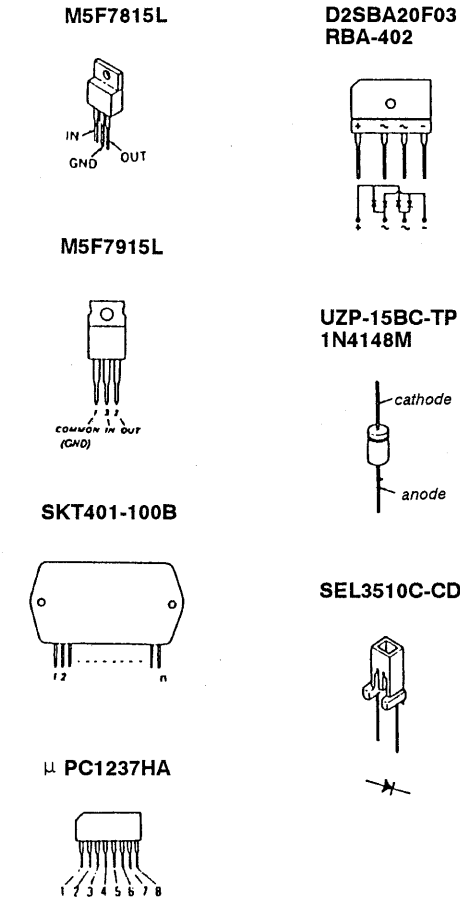
SECTION 2
DIAGRAMS

2-1. PRINTED WIRING BOARDS

• SEMICONDUCTOR
LOCATION

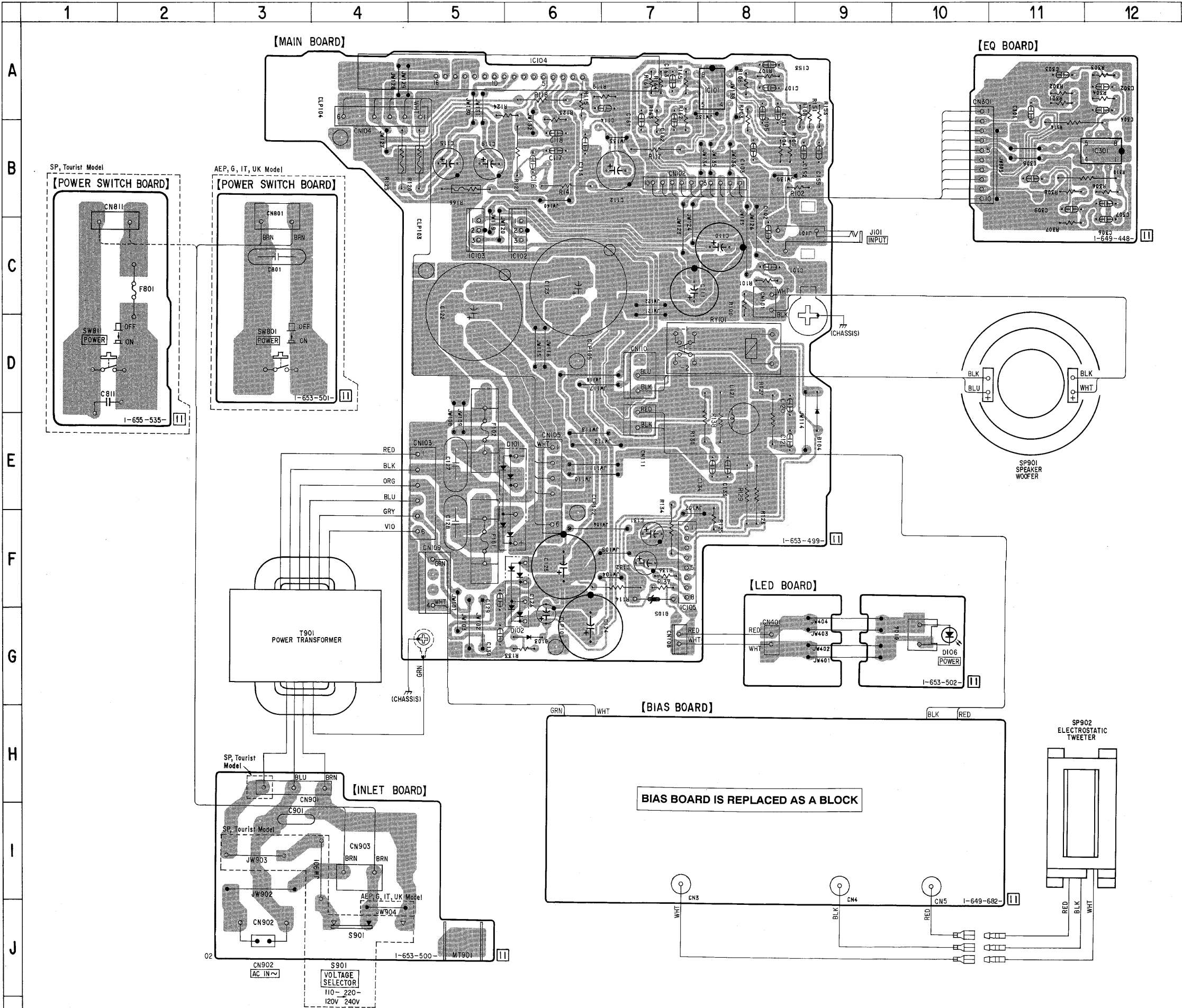
Ref. No.	Location
D101	E - 6
D102	G - 6
D103	G - 6
D104	E - 9
D105	F - 7
D106	G - 10
IC101	A - 8
IC102	C - 6
IC103	C - 5
IC104	A - 6
IC105	F - 7
IC301	B - 12

• SEMICONDUCTOR LEAD LAYOUTS



Note:

- : parts extracted from the component side.
- ▨ : Pattern on the side which is seen.





SECTION 3 EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

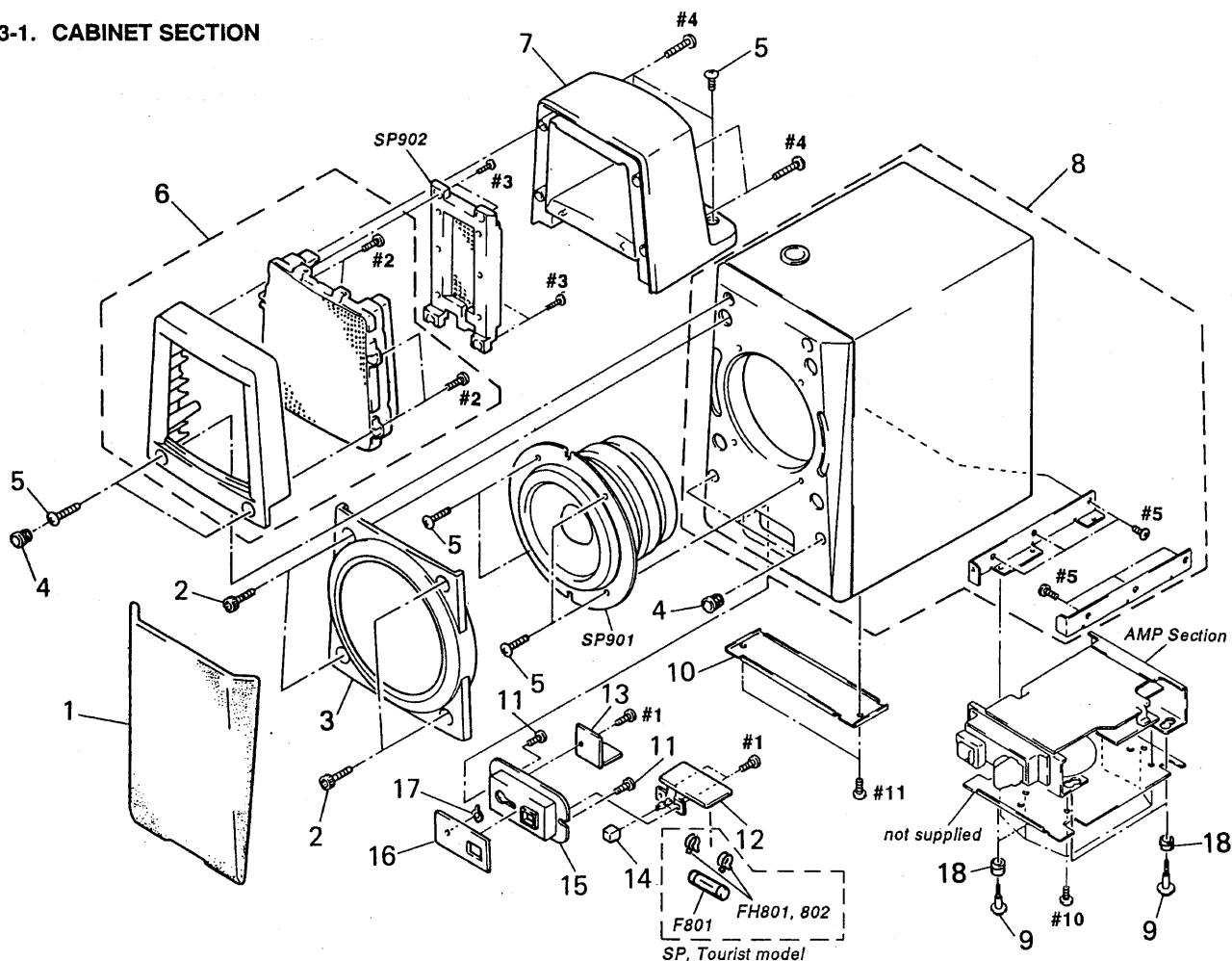
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

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

• Abbreviations

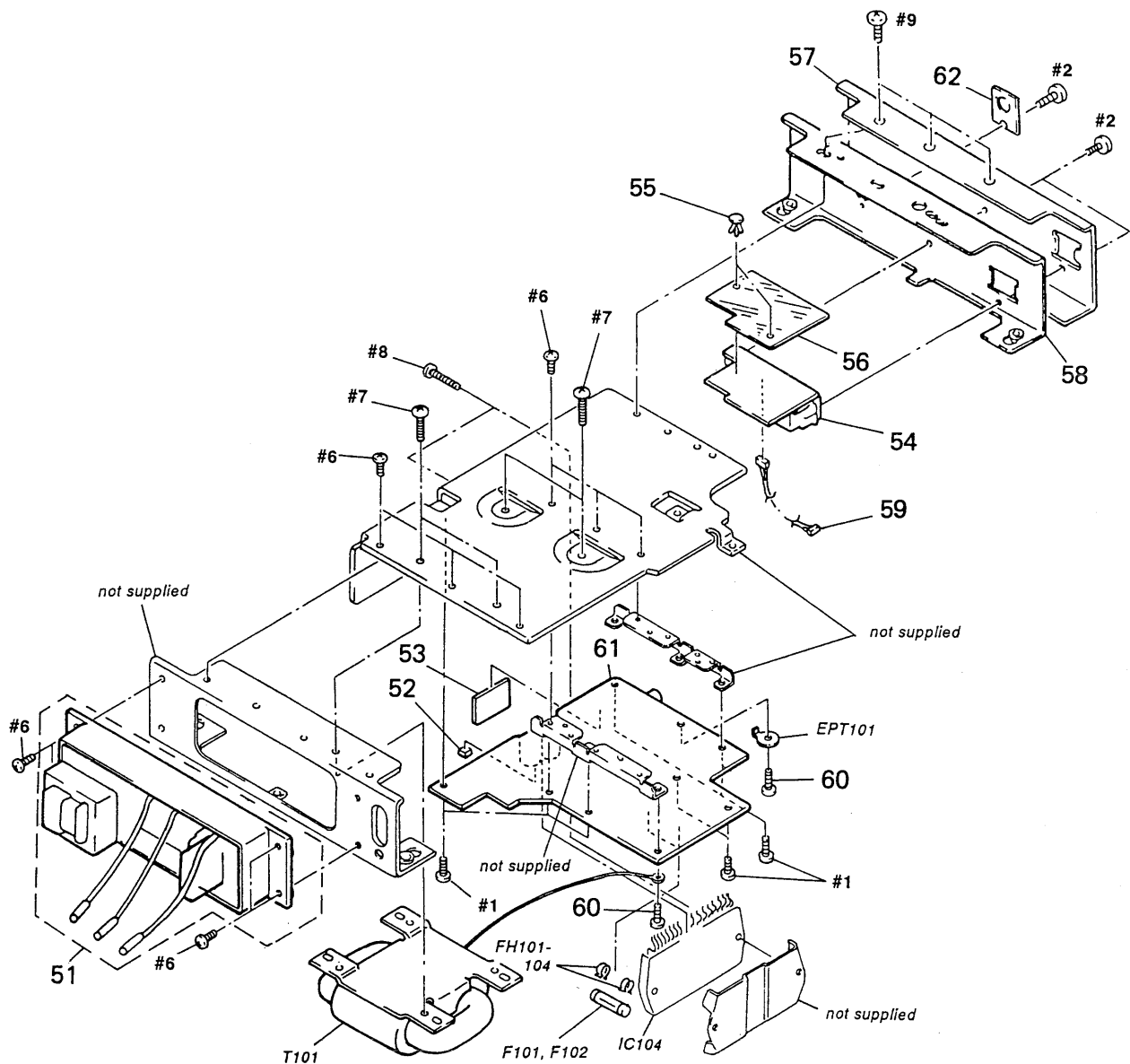
G : German
IT : Italian
SP : Singapore



3-1. CABINET SECTION







Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
1	X-4945-081-2	FRAME ASSY, GRILLE		* 12	1-655-535-11	POWER SW BOARD (SP,Tourist)	
2	4-929-107-11	SCREW, TAPPING		* 13	1-653-502-11	LED BOARD	
3	4-967-310-02	FRAME, W		14	4-968-269-02	KNOB	
4	4-912-253-01	CATCHER		* 15	4-968-268-01	BRACKET	
5	4-914-430-11	SCREW (4×20), TAPPING		16	4-968-267-02	PLATE, ORNAMENTAL	
6	X-4945-080-2	PANEL ASSY, FRONT		17	4-938-518-01	INDICATOR (C)	
7	X-4945-083-1	CABINET ASSY, REAR		* 18	4-941-563-01	BUSHING	
* 8	A-4361-060-A	CABINET ASSY, SPEAKER	(AEP, SP, Tourist, UK)	SP901	1-504-619-11	SPEAKER WOOFER (160W048W)	
* 8	A-4361-062-B	CABINET ASSY, SPEAKER (G, IT)		SP902	1-504-388-11	SPEAKER TWEETER (025C001)	
9	4-962-061-01	SCREW, STEP		Δ F801	1-532-350-00	FUSE (4.0A TIME LAG) (SP,Tourist)	
* 10	4-967-634-01	PLATE (S), BOTTOM		FH801	1-533-293-11	FUSE HOLDER (SP,Tourist)	
11	4-874-614-21	SCREW (4) (3.5×14), TAPPING		FH802	1-533-293-11	FUSE HOLDER (SP,Tourist)	
* 12	1-653-501-11	POWER SW BOARD (AEP, G, IT, UK)					

3-2. AMP SECTION



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

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
* 51	A-4361-071-A	BIAS BLOCK ASSY		* 61	A-4377-213-A	MAIN BOARD, COMPLETE (SP,Tourist)	
52	4-962-147-02	CUSHION		62	4-970-589-01	PLATE (PIN JACK 1P), INDICATION	
* 53	1-649-448-11	EQ BOARD		EPT101	1-537-770-11	TERMINAL BOARD, GROUND	
* 54	1-653-500-11	INLET BOARD		 F101	1-532-299-00	FUSE (5.0A/250V)	
55	4-812-134-11	RIVET NYLON, 3.5		 F102	1-532-299-00	FUSE (5.0A/250V)	
* 56	4-962-148-01	SHEET (INSULATED)		FH101	1-533-293-11	FUSE HOLDER	
* 57	4-966-374-01	COVER (SP,Tourist)		FH102	1-533-293-11	FUSE HOLDER	
* 57	4-966-374-11	COVER (AEP, G, IT, UK)		FH103	1-533-293-11	FUSE HOLDER	
* 58	4-962-014-81	PANEL, REAR (AEP, G, IT, UK)		FH104	1-533-293-11	FUSE HOLDER	
* 58	4-962-014-91	PANEL, REAR (SP,Tourist)		IC104	8-749-924-68	IC STK401-100B	
59	1-765-691-11	LEAD (WITH CONNECTOR) (3 CORE)		 T101	1-426-680-11	TRANSFORMER, POWER (AEP, G, IT, UK)	
60	3-363-099-01	SCREW (CASE 3 TP2)		 T101	1-426-681-11	TRANSFORMER, POWER (SP,Tourist)	
* 61	A-4371-533-A	MAIN BOARD, COMPLETE (AEP, G, IT, UK)					

SECTION 4 ELECTRICAL PARTS LIST

EQ

INLET

LED

MAIN

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 : μ , for example :
uA..... : μ A..... , uPA..... : μ PA.....
uPB..... : μ PB..... , uPC..... : μ PC.....
uPD..... : μ PD.....
- CAPACITORS**
uF : μ F
- COILS**
uH : μ H

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

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

- Abbreviations**
G : German
IT : Italian
SP : Singapore

Ref.No.	Part No.	Description	Remark			
*	1-649-448-11	EQ BOARD	*****			
		< CAPACITOR >				
C301	1-136-168-00	FILM	0.18uF	5%	50V	
C302	1-136-164-00	FILM	0.082uF	5%	50V	
C303	1-136-158-00	FILM	0.027uF	5%	50V	
C304	1-130-475-00	MYLAR	0.0022uF	5%	50V	
C306	1-110-336-51	MYLAR	120PF	5%	50V	
C307	1-130-476-00	MYLAR	0.0027uF	5%	50V	
C308	1-130-476-00	MYLAR	0.0027uF	5%	50V	
C309	1-130-476-00	MYLAR	0.0027uF	5%	50V	
		< CONNECTOR >				
* CN301	1-750-970-11	CONNECTOR (L TYPE) 10P				
		< IC >				
IC301	8-759-100-06	IC uPC4556C				
		< RESISTOR >				
R301	1-215-449-00	METAL	15K	1%	1/6W	
R302	1-215-433-00	METAL	3.3K	1%	1/6W	
R303	1-215-433-00	METAL	3.3K	1%	1/6W	
R304	1-215-433-00	METAL	3.3K	1%	1/6W	
R306	1-215-490-81	METAL	750K	1%	1/4W	
R307	1-215-449-00	METAL	15K	1%	1/6W	
R308	1-215-443-00	METAL	8.2K	1%	1/6W	
R310	1-247-735-11	CARBON	47	5%	1/2W	
R516	1-247-735-11	CARBON	47	5%	1/2W	

*	1-653-500-11	INLET BOARD	*****			
		< CAPACITOR >				
Δ C901	1-161-743-00	CERAMIC	0.0047uF		400V	

Ref.No.	Part No.	Description	Remark			
< CONNECTOR >						
	CN901A	1-564-321-00 PIN, CONNECTOR 2P (AEP,G,IT,UK)				
*	CN901B	1-564-687-11 PIN, CONNECTOR 3P (SP,Tourist)				
△	CN902	1-526-931-11 INLET, AC (AC IN~)				
	CN903	1-564-321-00 PIN, CONNECTOR 2P				
< SWITCH >						
△	S901	1-572-675-11 SWITCH, POWER VOLTAGE CHANGE (VOLTAGE SELECTOR) (SP,Tourist)				

*	1-653-502-11	LED BOARD *****				
< CONNECTOR >						
	CN401	1-564-517-11 PLUG, CONNECTOR 2P				
< DIODE >						
	D106	8-719-018-46 LED SEL3510C-CD (POWER)				

*	A-4371-533-A	MAIN BOARD, COMPLETE (AEP,G,IT,UK)				
*	A-4377-213-A	MAIN BOARD, COMPLETE (SP,Tourist) *****				
< CAPACITOR >						
C101	1-136-166-00	FILM	0.12uF	5%	50V	
C102	1-110-335-11	MYLAR	100PF	5%	50V	
C103	1-136-162-00	FILM	0.056uF	5%	50V	
C105	1-136-163-00	FILM	0.068uF	5%	50V	
C107	1-130-473-00	MYLAR	0.0015uF	5%	50V	
C110	1-126-857-11	ELECT	470uF	20%	35V	
C111	1-126-857-11	ELECT	470uF	20%	35V	
C112	1-124-122-11	ELECT	100uF	20%	50V	
C113	1-130-469-00	MYLAR	680PF	5%	50V	
C114	1-136-165-00	FILM	0.1uF	5%	50V	

MAIN

Ref.No.	Part No.	Description	Remark
C115	1-124-910-11	ELECT 47uF	20% 50V
C116	1-136-169-00	FILM 0.22uF	5% 50V
C117	1-130-469-00	MYLAR 680PF	5% 50V
C118	1-136-165-00	FILM 0.1uF	5% 50V
C119	1-124-910-11	ELECT 47uF	20% 50V
C120	1-136-165-00	FILM 0.1uF	5% 50V
C121	1-136-165-00	FILM 0.1uF	5% 50V
C122	1-110-520-11	ELECT 6800uF	20% 50V
C123	1-110-520-11	ELECT 6800uF	20% 50V
C124	1-126-873-51	ELECT 1000uF	20% 50V
C125	1-126-873-51	ELECT 1000uF	20% 50V
C126	1-124-257-00	ELECT 2.2uF	20% 50V
C127	1-106-391-12	MYLAR 0.1uF	5% 200V
C128	1-106-391-12	MYLAR 0.1uF	5% 200V
C129	1-136-165-00	FILM 0.1uF	5% 50V
C130	1-136-165-00	FILM 0.1uF	5% 50V
C131	1-124-584-00	ELECT 100uF	20% 10V
C132	1-124-584-00	ELECT 100uF	20% 10V
C133	1-136-165-00	FILM 0.1uF	5% 50V
C134	1-136-165-00	FILM 0.1uF	5% 50V
C151	1-136-163-00	FILM 0.068uF	5% 50V
C152	1-136-159-00	FILM 0.033uF	5% 50V
C153	1-136-154-00	FILM 0.012uF	5% 50V
C155	1-130-479-00	MYLAR 0.0047uF	5% 50V
C161	1-136-173-00	FILM 0.47uF	5% 50V
C162	1-136-165-00	FILM 0.1uF	5% 50V
C163	1-136-155-00	FILM 0.015uF	5% 50V
< CONNECTOR >			
CN101	1-564-320-00	PIN, CONNECTOR 2P	
* CN103	1-564-243-11	PIN, CONNECTOR 6P	
CN108	1-564-517-11	PLUG, CONNECTOR 2P	
CN109	1-564-241-00	PIN, CONNECTOR 4P	
CN110	1-564-104-00	PIN, CONNECTOR 3P	
CN111	1-564-320-00	PIN, CONNECTOR 2P	
< DIODE >			
D101	8-719-312-09	DIODE RBA-402	
D102	8-719-043-53	DIODE D2SBA20F03	
D103	8-719-987-63	DIODE 1N4148M	
D104	8-719-987-63	DIODE 1N4148M	
D105	8-719-015-53	DIODE UZP-15BC-TP	
< GROUND TERMINAL >			
EPT101	1-537-770-21	TERMINAL BOARD, GROUND	
< FUSE >			
△F101	1-532-299-00	FUSE (5.0A/250V)	

Ref.No.	Part No.	Description	Remark
△F102	1-532-299-00	FUSE (5.0A/250V)	
< FUSE HOLDER >			
FH101	1-533-293-11	FUSE HOLDER	
FH102	1-533-293-11	FUSE HOLDER	
FH103	1-533-293-11	FUSE HOLDER	
FH104	1-533-293-11	FUSE HOLDER	
< IC >			
IC101	8-759-100-06	IC uPC4556C	
IC102	8-759-231-59	IC M5F7815L	
IC103	8-759-604-52	IC M5F7915L	
IC104	8-749-924-68	IC STK401-100B	
IC105	8-759-111-68	IC uPC1237HA	
< JACK >			
J101	1-750-969-11	JACK, PIN (INPUT)	
< COIL >			
* L121	1-420-872-00	COIL, AIR CORE	
< RESISTOR >			
R100	1-215-429-00	METAL 2.2K 1% 1/6W	
R101	1-215-413-00	METAL 470 1% 1/6W	
R102	1-215-485-00	METAL 470K 1% 1/6W	
R103	1-215-421-00	METAL 1K 1% 1/6W	
R104	1-215-461-00	METAL 47K 1% 1/6W	
R105	1-215-451-00	METAL 18K 1% 1/6W	
R106	1-215-465-00	METAL 68K 1% 1/6W	
R107	1-215-459-00	METAL 39K 1% 1/6W	
R108	1-215-453-00	METAL 22K 1% 1/6W	
R114	1-260-099-11	CARBON 1K 5% 1/2W	
R115	1-215-427-00	METAL 1.8K 1% 1/6W	
R117	1-247-762-11	CARBON 6.8K 5% 1/3W	
R118	1-249-491-11	CARBON 39K 5% 1/3W	
R119	1-215-459-00	METAL 39K 1% 1/6W	
△R120	1-212-982-00	FUSIBLE 100 5% 1/2W F	
R121	1-249-210-11	CARBON 1K 5% 1/3W	
R123	1-215-459-00	METAL 39K 1% 1/6W	
R124	1-215-459-00	METAL 39K 1% 1/6W	
△R125	1-212-982-00	FUSIBLE 100 5% 1/2W F	
R126	1-215-463-00	METAL 56K 1% 1/6W	
R127	1-260-076-11	CARBON 10 5% 1/2W	
R129	1-215-463-00	METAL 56K 1% 1/6W	
R130	1-260-076-11	CARBON 10 5% 1/2W	
R133	1-215-421-00	METAL 1K 1% 1/6W	
R134	1-215-421-00	METAL 1K 1% 1/6W	
R135	1-215-445-00	METAL 10K 1% 1/6W	

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

MAIN

POWER SW

Ref.No.	Part No.	Description	Remark
R136	1-215-463-00	METAL 56K 1%	1/6W
R137	1-215-441-00	METAL 6.8K 1%	1/6W
R138	1-249-162-11	CARBON 10 5%	1/3W
R141	1-247-762-11	CARBON 6.8K 5%	1/3W
R151	1-215-471-00	METAL 120K 1%	1/6W
R153	1-215-453-00	METAL 22K 1%	1/6W
R161	1-215-449-00	METAL 15K 1%	1/6W
R162	1-215-451-00	METAL 18K 1%	1/6W
R163	1-215-429-00	METAL 2.2K 1%	1/6W
R164	1-215-451-00	METAL 18K 1%	1/6W
R165	1-215-471-00	METAL 120K 1%	1/6W
△R166	1-212-942-00	FUSIBLE 2.2 5%	1/2W F
< RELAY >			
RY101	1-515-676-11	RELAY	

*	1-653-501-11	POWER SW BOARD (AEP, G, IT, UK)	
*	1-655-535-11	POWER SW BOARD (SP, Tourist)	

< CAPACITOR >			
△C801	1-161-743-00	CERAMIC 0.0047uF	400V (AEP, G, IT, UK)
△C811	1-161-743-00	CERAMIC 0.0047uF	400V (SP, Tourist)
< CONNECTOR >			
CN801	1-564-321-00	PIN, CONNECTOR 2P (AEP, G, IT, UK)	
CN811	1-564-321-00	PIN, CONNECTOR 2P (SP, Tourist)	
< FUSE >			
△F801	1-532-350-00	FUSE (4.0A TIME LAG) (SP, Tourist)	
< SWITCH >			
△SW801	1-554-920-61	SWITCH, PUSH (AC POWER) (1 KEY) (POWER) (AEP, G, IT, UK)	
△SW811	1-554-920-61	SWITCH, PUSH (AC POWER) (1 KEY) (POWER) (SP, Tourist)	

MISCELLANEOUS			

51	A-4361-071-A	BIAS BLOCK ASSY	
59	1-765-691-11	LEAD (WITH CONNECTOR) (3 CORE)	
△F101	1-532-299-00	FUSE (5.0A/250V)	
△F102	1-532-299-00	FUSE (5.0A/250V)	
△F801	1-532-350-00	FUSE (4.0A TIME LAG) (SP, Tourist)	
SP901	1-504-619-11	SPEAKER WOOFER (160W048W)	

Ref.No.	Part No.	Description	Remark
SP902	1-504-388-12	SPEAKER TWEETER (025C001)	
△T101	1-426-680-11	TRANSFORMER, POWER (AEP, G, IT, UK)	
△T101	1-426-681-11	TRANSFORMER, POWER (SP, Tourist)	

ACCESSORIES & PACKING MATERIALS			

△	1-765-293-31	CORD, POWER (AEP, G, IT, SP, Tourist)	
△	1-765-371-31	CORD, POWER (UK)	
	1-769-329-11	CORD, CONNECTION (PIN-PIN) (SPEAKER CONNECT) (AEP, G, IT, SP, Tourist)	
	1-765-388-11	CORD, CONNECTION (PIN-PIN) (SPEAKER CONNECT) (UK)	
	3-759-458-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (AEP)	
	3-759-458-41	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN)	
	3-759-458-51	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, CHINESE) (SP, Tourist)	
	3-759-458-61	MANUAL, INSTRUCTION (ENGLISH) (UK)	
*	4-969-059-01	CUSHION (UPPER)	
*	4-969-060-01	CUSHION (LOWER)	
*	4-969-063-01	INDIVIDUAL CARTON (AEP, G, IT, UK)	
*	4-971-861-01	INDIVIDUAL CARTON (Tourist)	
*	4-971-862-01	INDIVIDUAL CARTON (SP)	

HARDWARE LIST			

#1	7-685-646-79	SCREW +BVTP 3×8 TYPE2 IT-3	
#2	7-685-647-79	SCREW +BVTP 3×10 TYPE2 N-S	
#3	7-685-650-79	SCREW +P 3×16 TYPE2 NON-SLIT	
#4	7-685-663-79	SCREW +BVTP 4×16 TYPE2 IT-3	
#5	7-685-162-01	SCREW (4×14), (+) (B) TAPPING	
#6	7-682-548-04	SCREW +BVTT 3×8 (S)	
#7	7-682-562-04	SCREW +BVTT 4×10 (S)	
#8	7-682-552-04	SCREW +BVTT 3×16 (S)	
#9	7-682-549-04	SCREW +BVTT 3×10 (S)	
#10	7-685-871-01	SCREW +BVTT 3×6 (S)	
#11	7-621-849-00	SCREW +P 3×10 TYPE1	

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

