

# SA-H7900

## SERVICE MANUAL



*US Model*  
*Canadian Model*  
*AEP Model*  
*UK Model*  
*E Model*  
*Australian Model*  
*Tourist Model*

This unit is a speaker system for MHC-7900/P100X.

### SPECIFICATIONS

Speaker system	Active speaker, 2-way bass reflex	Music power output	
Speaker units		Woofer:	125 watts (6 ohms at 1 kHz, 10% THD)
Woofer:	17 cm dia., Motion Feedback (MFB) system, cone type	Tweeter:	125 watts (6 ohms, at 5 kHz, 10% THD)
Tweeter:	2.5 x 10 cm, electrostatic type	Peak music power output	250 + 250 watts
Power requirement		Power consumption	50 watts
US, Canadian Model :	120 V AC, 60 Hz	Dimensions	Approx. 220 x 500 x 315mm (8 3/4 x 19 3/4 x 12 1/2 inches) (W/H/D)
UK Model :	240 V AC, 50 Hz	Mass	Approx. 9.6 kg (21 lb 3 oz) net per speaker
AEP, German, Italian, Australian Model :	220 - 230 V AC, 50/60 Hz	<b>Supplied accessories</b>	
E, Tourist Model :	110 - 120 V/220 - 240 V AC, 50/60 Hz	AC power cords (2)	
Continuous RMS power output		Audio cords (2)	
Woofer:	50 watts (6 ohms at 1 kHz, DIN) 65 watts (6 ohms at 1 kHz, 5% THD) 50 watts (6 ohms at 20 - 2700 Hz, 0.8% THD)	This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.	
Tweeter:	8 watts (50 ohms at 5 kHz, DIN) 10 watts (50 ohms, at 5 kHz, 5% THD) 8 watts (50 ohms at 2700 - 20 kHz, 0.8% THD)		

SPEAKER SYSTEM  
**SONY**®

**SAFETY-RELATED COMPONENT WARNING!!**

COMPONENTS IDENTIFIED BY MARK  $\triangle$  OR DOTTED LINE WITH MARK  $\triangle$  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.

**ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!**

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE  $\triangle$  SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

**Flexible Circuit Board Repairing**

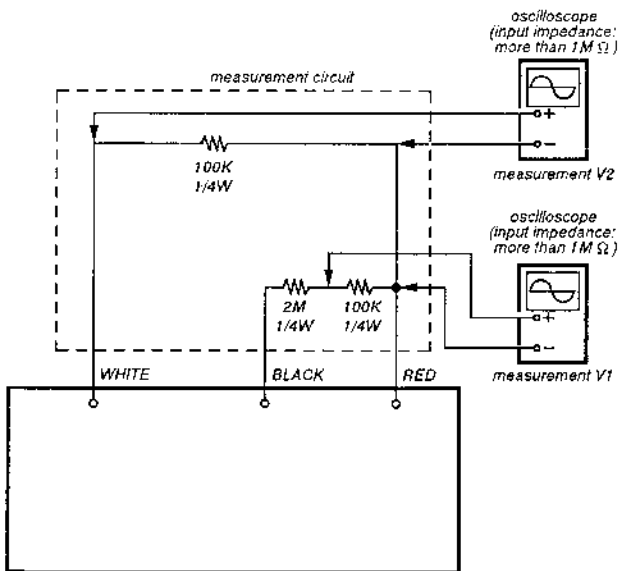
- Keep the temperature of the soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

**Notes on chip component replacement**

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

**SECTION 1  
OPERATION CHECK OF BIAS BLOCK**

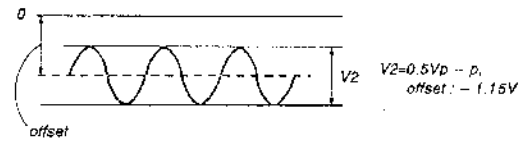
Setting :



[BIAS BOARD] (Component side)

Checking method :

1. Input 5kHz, 46dBm from SG.
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.

example :

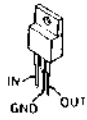


SECTION 2  
DIAGRAMS

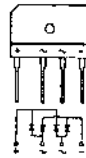
2-1. PRINTED WIRING BOARDS

• SEMICONDUCTOR LEAD LAYOUTS

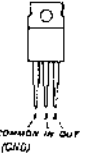
M5F7815



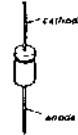
D2SBA20F03  
RBA-402



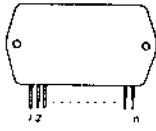
M5F7915



UZP-15BC-TP  
1N4148M



SKT401-100B



SEL3510C-CD



TL072ACP



PC1237HA

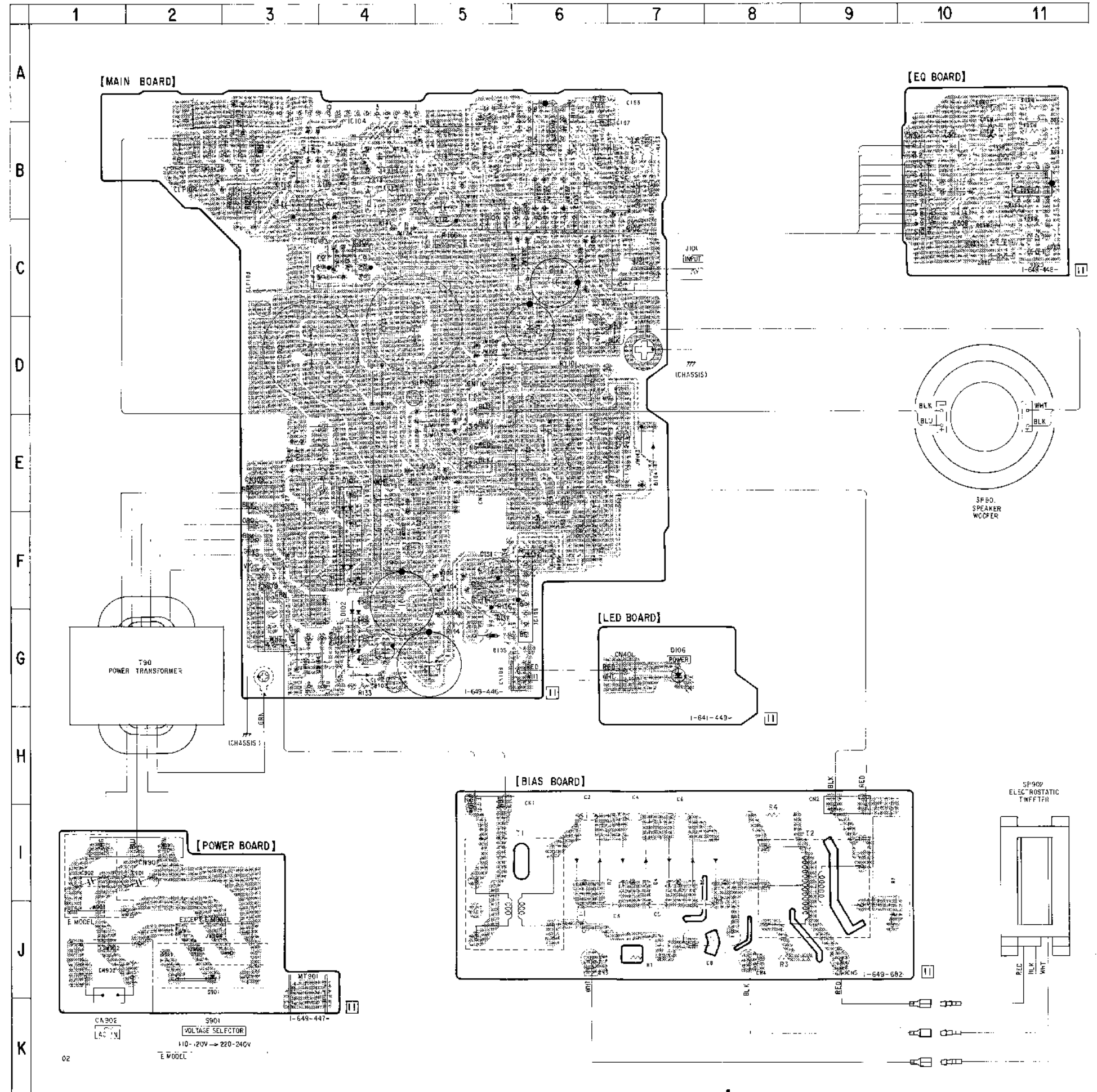


• SEMICONDUCTOR LOCATION

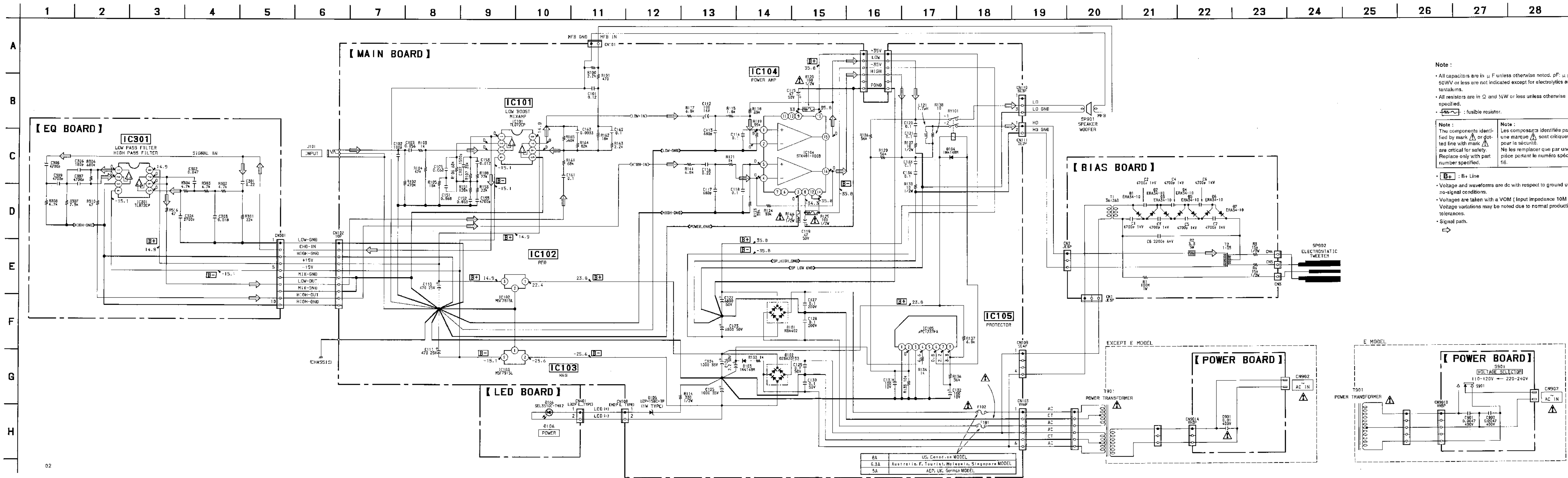
Ref. No.	Location
D1	I-6
D2	I-6
D3	I-7
D4	I-7
D5	I-7
D6	I-7
D7	I-8
D101	F-4
D102	G-4
D103	G-4
D104	E-7
D105	G-5
D106	G-7
IC101	B-6
IC102	C-4
IC103	C-4
IC104	A-4
IC105	F-6
IC301	B-11

Note:

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



2-2. SCHEMATIC DIAGRAM



**Note:**

- All capacitors are in  $\mu$ F unless otherwise noted. pF:  $\mu$ 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.
- : fusible resistor.

**Note:**

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

**Note:**

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



- B+** : B+ Line
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- Voltages are taken with a VOM ( Input impedance 10M  $\Omega$  ). Voltage variations may be noted due to normal production tolerances.
- Signal path.


## SECTION 3 EXPLODED VIEWS

**NOTE :**

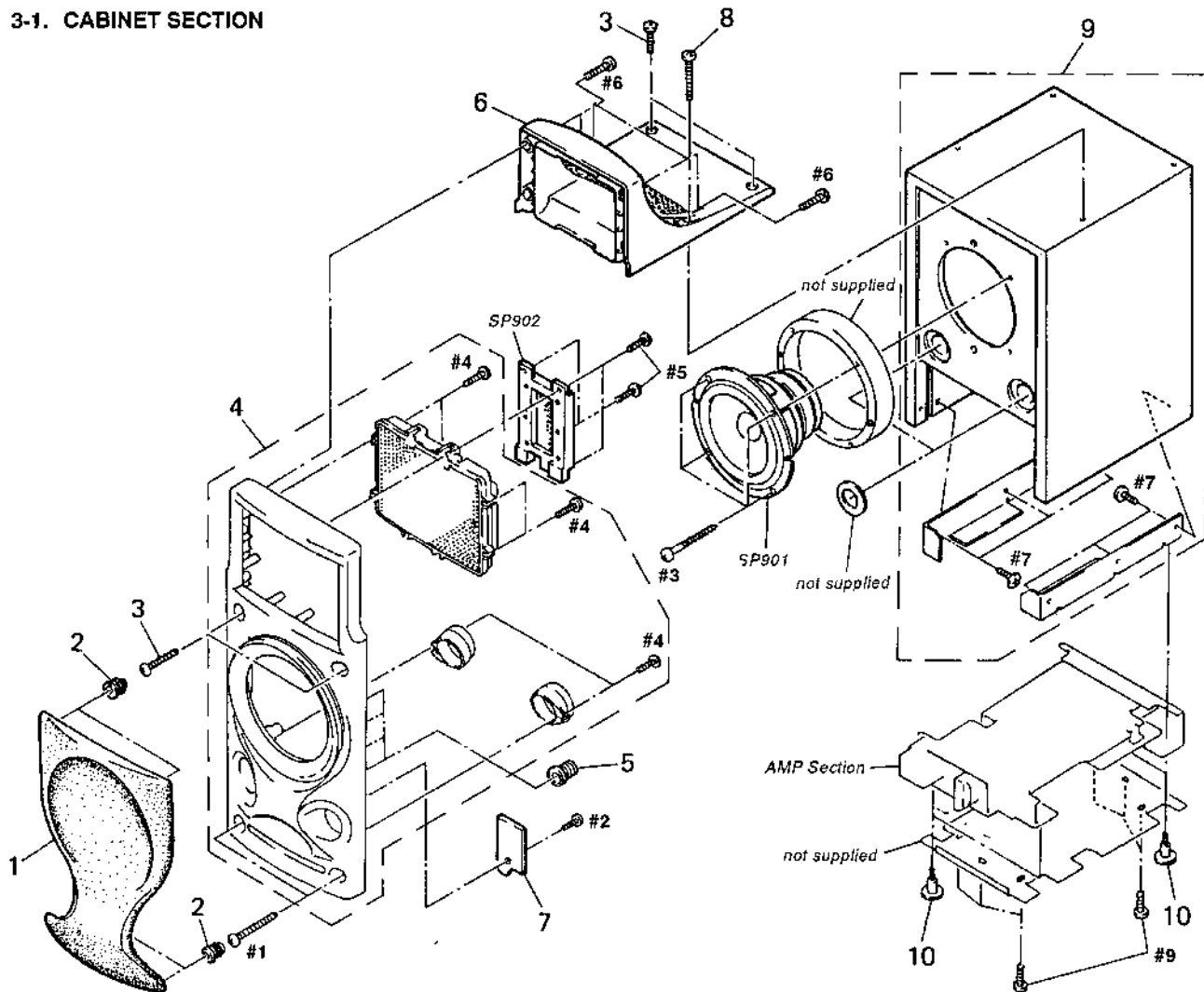
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should 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.
- SP : Singapore      ● IT : Italian  
 MY : Malaysia      AUS : Australian  
 G : German          JE : Tourist

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

Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

### 3-1. CABINET SECTION



Ref. No.	Part No.	Description	Remark
1	X-4944-031-1	FRAME ASSY, GRILLE	
2	4-912-253-01	CATCHER	
3	4-962-063-C1	SCREW	
4	X-4944-030-1	PANEL ASSY, FRONT (AEP, UK, E, SP, MY, G, IT, AUS, JE)	
4	X-4944-290-2	PANEL ASSY, FRONT (US, Canadian)	
* 5	4-963-075-01	CATCHER	
6	X-4944-033-1	CABINET ASSY, REAR (AEP, UK, E, SP, MY, G, IT, AUS, JE)	
6	X-4944-293-2	CABINET ASSY, REAR (US, Canadian)	

Ref. No.	Part No.	Description	Remark
* 7	1-649-449-11	LED BOARD	
8	4-964-224-01	SCREW	
* 9	X-4944-032-1	CABINET ASSY, SPEAKER (US, Canadian, UK, E, SP, MY, AUS, JE)	
10	4-962-061-01	SCREW, STEP	
10	X-4944-297-1	CABINET ASSY, SPEAKER (AEP, G, IT)	
SP901	1-504-385-11	WOOFER (EXCEPT E, JE)	
SP901	1-504-532-11	WOOFER (E, JE)	
SP902	1-504-388-11	TWEETER (EXCEPT US, Canadian)	
SP902	1-504-511-11	TWEETER (US, Canadian)	



## SECTION 4 ELECTRICAL PARTS LIST

EQ
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 :  $\mu$  , 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
- SP : Singapore      ● IT : Italian  
MY : Malaysia        AUS : Australian  
G : German            JE : Tourist

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

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

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

Ref.No.	Part No.	Description	Remark
*	1-649 448-11	EQ BOARD *****	
	1-751-762-11	CORD, CONNECTION (C)	
	1-751-763-11	CORD, CONNECTION (B)	
	1-751-764-11	CORD, CONNECTION (A)	
		< CAPACITOR >	
C301	1-136-169-00	FILM      0.22uF      5%      50V	
C302	1-136-161-00	FILM      0.047uF      5%      50V	
C303	1-136-158-00	FILM      0.018uF      5%      50V	
C304	1-130-475-00	MYLAR    0.0027uF    5%      50V	
C306	1-110-338-51	MYLAR    180PF        5%      50V	
C307	1-130-479-00	MYLAR    0.0047uF    5%      50V	
C308	1-130-479-00	MYLAR    0.0047uF    5%      50V	
C309	1-130-479 00	MYLAR    0.0047uF    5%      50V	
		< CONNECTOR >	
* CN301	1-750-970-11	CONNECTOR (I. TYPE) 10P	
		< DIODE >	
D1	8-719-018-82	DIODE    RGP02-20EL-6394	
D2	8-719-018-82	DIODE    RGP02-20EL-6394	
D3	8-719-018-82	DIODE    RGP02-20EL-6394	
D4	8-719-018-82	DIODE    RGP02-20EL-6394	
D5	8-719-018-82	DIODE    RGP02-20EL-6394	
D6	8-719-018-82	DIODE    RGP02-20EL-6394	
D7	8-719-018-82	DIODE    RGP02-20EL-6394	
		< IC >	
IC301	8-753-910-83	IC        TL072ACP	

Ref.No.	Part No.	Description	Remark
		< RESISTOR >	
R301	1-259-460-11	CARBON      22K    5%    1/6W	
R302	1-259-444-11	CARBON      4.7K   5%    1/6W	
R303	1-259-444-11	CARBON      4.7K   5%    1/6W	
R304	1-259-444-11	CARBON      4.7K   5%    1/6W	
R306	1-259-496-11	CARBON      680K   5%    1/6W	
R307	1-259-449-11	CARBON      7.5K   5%    1/6W	
R308	1-259-444-11	CARBON      4.7K   5%    1/6W	
R310	1-259 396 11	CARBON      47     5%    1/6W	
R516	1-259-396-11	CARBON      47     5%    1/6W	
*****			
*	1-649-449-11	LED BOARD *****	
		< CONNECTOR >	
CN401	1-564-517-11	PLUG, CONNECTOR 2P	
		< DIODE >	
D106	8-719-018-46	LED        SEL3510C-CD(POWER)	
*****			
*	A-4365-406-A	MAIN BOARD, COMPLETE *****	
		< 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	1-124-913-11	ELECT      470uF        20%    50V	
C111	1-124-913-11	ELECT      470uF        20%    50V	
C112	1-124-122-11	ELECT      100uF        20%    50V	





<b>MAIN</b>	<b>POWER</b>
-------------	--------------

Ref. No.	Part No.	Description	Remark
R137	1-259-448-11	CARBON	6.8K 5% 1/6W
R138	1-259-380-11	CARBON	10 5% 1/6W
R141	1-259-448-11	CARBON	6.8K 5% 1/6W
R151	1-259-478-11	CARBON	120K 5% 1/6W
R153	1-259-450-11	CARBON	22K 5% 1/6W
R161	1-259-472-11	CARBON	68K 5% 1/6W
R162	1-259-458-11	CARBON	18K 5% 1/6W
R163	1-259-436-11	CARBON	2.2K 5% 1/6W
R164	1-259-474-11	CARBON	82K 5% 1/6W
R165	1-259-494-11	CARBON	560K 5% 1/6W
△R166	1-212-942-00	FUSIBLE	2.2 5% 1/2W F
		< RELAY >	
RY101	1-515-676-11	RELAY	
*****			
*	1-649-447-11	POWER BOARD	
		*****	
		< CAPACITOR >	
△C901	1-162-599-12	CERAMIC	0.0047uF 400V
△C902	1-162-599-12	CERAMIC	0.0047uF 400V
		(E, SP, MY, AUS, JE)	
		< CONNECTOR >	
* CN901	1-564-321-00	PIN, CONNECTOR 2P	
		(US, Canadian, AEP, UK, G, IT)	
* CN901	1-564-687-11	PIN, CONNECTOR 3P	(E, SP, MY, AUS, JE)
△CN902	1-526-930-11	INLET, AC(AC IN)	(US, Canadian)
△CN902	1-526-931-11	INLET, AC(AC IN)	(AEP, UK, E, SP, MY, G, IT, AUS, JE)
		< SWITCH >	
△S901	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE	
		(VOLTAGE SELECTOR) (E, SP, MY, AUS, JE)	
*****			
		MISCELLANEOUS	
		*****	
* EPI101	4 870 539-00	PLATE, GROUND	
△F101	1-532-299-00	FUSE(5A/250V) (E, SP, MY, AUS, JE)	
△F101	1-532-506-51	FUSE(6.3A/250V) (AEP, UK, IT)	
△F101	1-532-749-11	FUSE, GLASS TUBE(8A/125V) (US, Canadian)	
△F102	1-532-299-00	FUSE(5A/250V) (E, SP, MY, AUS, JE)	
△F102	1-532-506-51	FUSE(6.3A/250V) (AEP, UK, IT)	
△F102	1-532-749-11	FUSE, GLASS TUBE(8A/125V) (US, Canadian)	
SP901	1-504-385-11	WOOFER(EXCEPT E, JE)	
SP901	1-504-532-11	WOOFER(E, JE)	

Ref. No.	Part No.	Description	Remark
SP902	1-504-388-11	TWEETER(EXCEPT US, Canadian)	
SP902	1-504-511-11	TWEETER(US, Canadian)	
△T901	1-426-678-11	TRANSFORMER, POWER(US, Canadian)	
△T901	1-426-679-11	TRANSFORMER, POWER(UK)	
△T901	1-426-680-11	TRANSFORMER, POWER(AEP, G, IT)	
△T901	1-426-681-11	TRANSFORMER, POWER(E, SP, MY, AUS, JE)	
*****			
		ACCESSORIES & PACKING MATERIALS	
		*****	
△	1-575-131-11	CORD, POWER(AEP, E, SP, MY, G, IT, AUS, JE)	
△	1-575-706-11	CORD, POWER(US, Canadian)	
	1-751-598-11	CORD, CONNECTION (PIN-PIN)	(US, Canadian, AEP, E, SP, MY, G, IT, AUS, JE)
△	1-765-371-11	CORD, POWER(UK)	
	1-765-388-11	CORD, CONNECTION (PIN-PIN) (UK)	
	3-701-940-01	LABEL, BEAB(UK)	
	3-758-615-11	MANUAL, INSTRUCTION(ENGLISH/FRENCH/ GERMAN/ITALIAN/SPANISH/DUTCH/SWEDISH/ PORTUGUESE/ARABIC/CHINESE/KOREAN)	
	4-889-140-01	BAG, PROTECTION	
*	4-961-905-01	CUSHION (UPPER)	
*	4 961 906-01	CUSHION (LOWER)	
*	4-964-732-01	INDIVIDUAL CARTON(AEP, UK, G, IT, AUS)	
*	4-964-733-01	INDIVIDUAL CARTON(US, Canadian)	
*	4-964-734-01	INDIVIDUAL CARTON(E, SP, MY)	
*	4 966 213-01	INDIVIDUAL CARTON(JE)	
*****			
		<b>HARDWARE LIST</b>	
		*****	
#1	7-682-553-04	SCREW +BVTT 3X20 (S)	
#2	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT	
#3	7-621-849-50	SCREW, WOOD +R 4.1X40	
#4	7-685-647-79	SCREW +P 3X10 TYPE2 NON SLIT	
#5	7 685 650 79	SCREW +P 3X16 TYPE2 NON-SLIT	
#6	7-685-663-79	SCREW +BVTP 4X16 TYPE2 IT-3	
#7	7-685-162-01	SCREW (4X14), (+) (B) TAPPING	
#8	7-682-548-04	SCREW +BVTT 3X8 (S)	
#9	7-682-547-09	SCREW +BVTT 3X6 (S)	
#10	7-682-552-04	SCREW +BVTT 3X16 (S)	
#11	7-682-562-04	SCREW +BVTT 4X10 (S)	
#12	7-682-549-04	SCREW +BVTT 3X10 (S)	
#13	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#14	7-685-646-79	SCREW +BV 1P 3X8 IT3 CZN	

<p>The components identified by mark <b>△</b> or dotted line with mark <b>△</b> are critical for safety. Replace only with part number specified.</p>	<p>Les composants identifiés par une marque <b>△</b> sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
---	--

