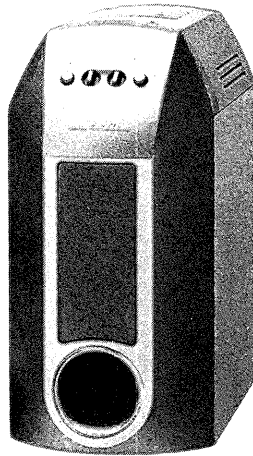


SA-W10

SERVICE MANUAL



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

SPECIFICATIONS

For the US model

Audio power specifications

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 8 ohm loads, from 20 – 20,000 Hz; rated 23 watts per channel minimum RMS power, with no more than 0.8 % total harmonic distortion from 250 milliwatts to rated output.

System

Type Active Super Woofer (magnetically shielded design)

Speaker unit Woofer: 16 cm (6 ⁵/₁₆ inches), cone type

Practical maximum output

US, Canadian model: 23W
AEP, UK, German model: 28W (8ohms, DIN)
50W (MUSIC)

E, Australian, Saudi Arabia,
Hong Kong, Singapore model: 35W

Reproduction frequency range

28 Hz – 200 Hz

High frequency cut-off frequency

50 Hz – 200 Hz

Phase switch NORMAL, REVERSE

Inputs

Input jacks INPUT 1: Input pin jack
INPUT 2: Input terminals

General

Power requirements

Where purchased	Power requirements
US, Canadian model	120 V AC, 60 Hz
AEP, UK, German model	220 - 230 V AC, 50/60 Hz
E, Australian, Saudi Arabia, Hong Kong, Singapore model	110 - 120/220 - 240 V AC, adjustable, 50/60 Hz

Power consumption

30 W

Dimensions Approx. 205 x 415 x 365 mm (w/h/d)
(8 ¹/₁₆ x 16 ⁵/₁₆ x 14 ³/₈ inches)

Mass 8 kg (17 lb 10 oz)

Supplied accessories

Audio connecting cord
(1 phono plug - 1 phono plug) (1)
Speaker cord (2)

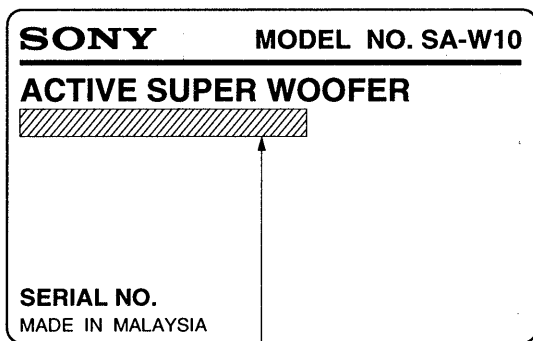
Design and specifications are subject to change without notice.

ACTIVE SUPER WOOFER
SONY®

TABLE OF CONTENTS

1. GENERAL	3
2. DIAGRAMS	
2-1. Schematic Diagram	5
2-2. Printed Wiring Boards	7
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MODEL IDENTIFICATION



US, Canadian model: 120V 60Hz 30W
 AEP, UK, German model: 220-230V 50/60Hz 30W
 E, Australian, Saudi Arabia, Hong Kong,
 Singapore model: 110-120/220-240V 50/60Hz 30W

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer: Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

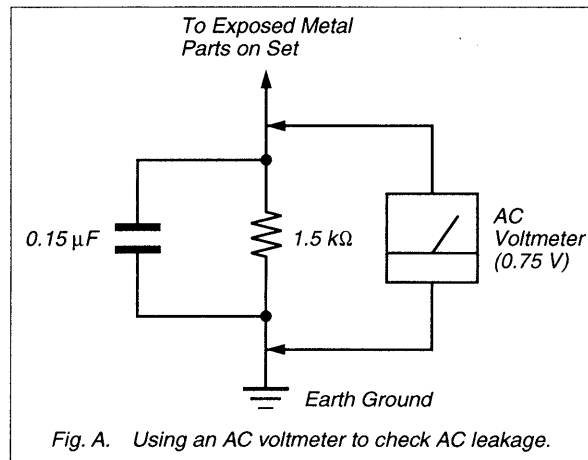


Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK Δ OR DOTTED LINE WITH MARK Δ 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.

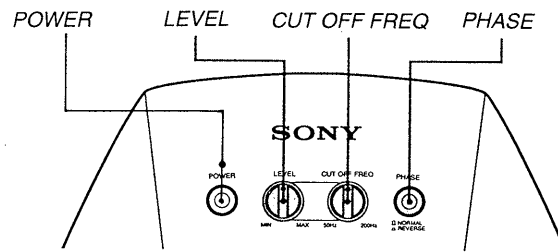
ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE Δ 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.

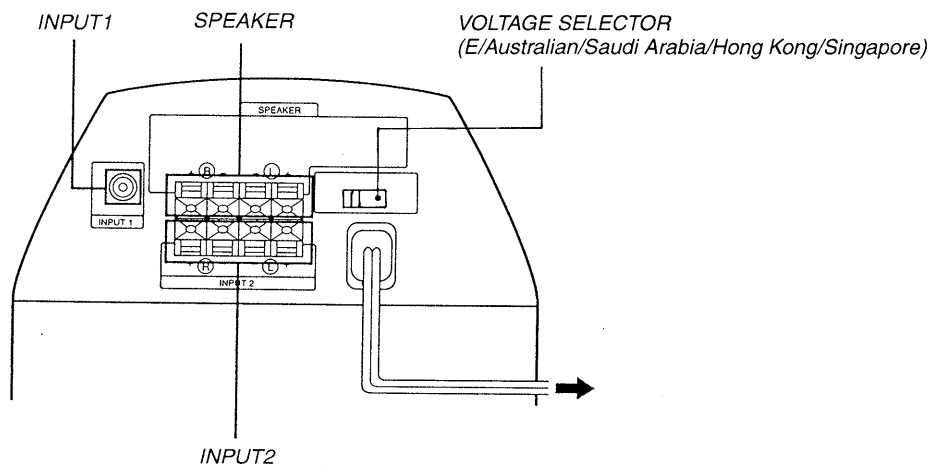
SECTION 1 GENERAL

- Location of controls

FRONT

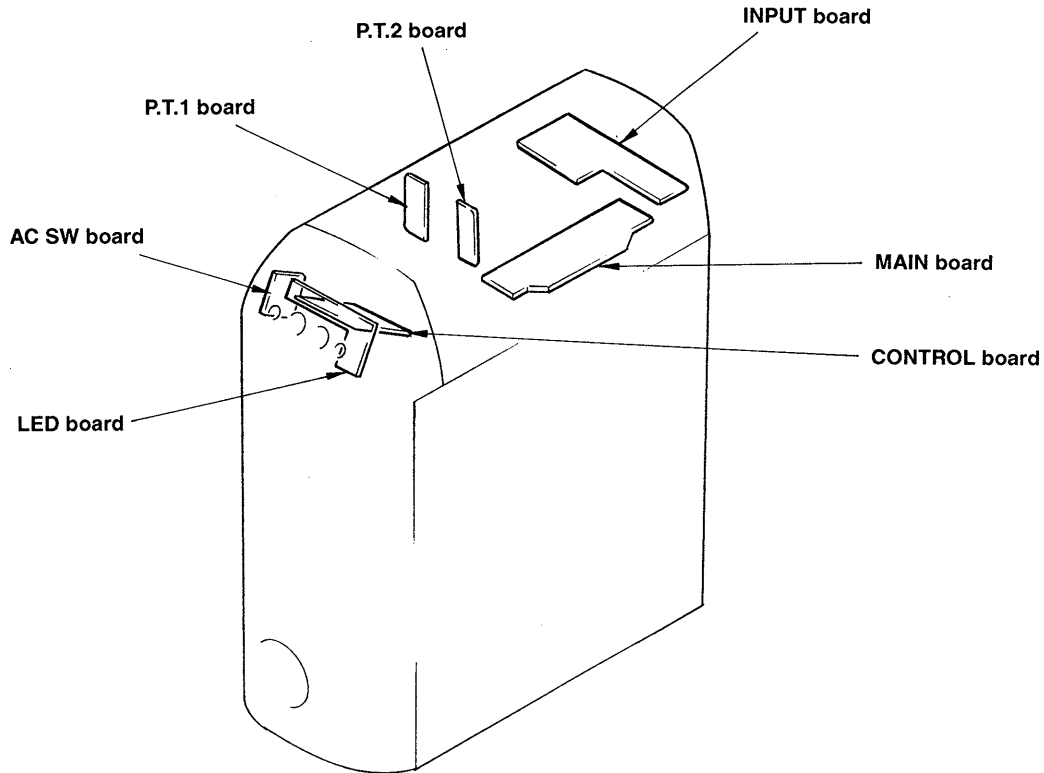


REAR



SECTION 2 DIAGRAM


• Circuit Boards Location



Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μpF
50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4} W$ or less unless otherwise specified.

Note on Printed Wiring Board:





-  : parts extracted from the component side.
- Abbreviation
CND: Canadian G: German AUS: Australian
EA: Saudi Arabia HK: Hong Kong SP: Singapore

Note:

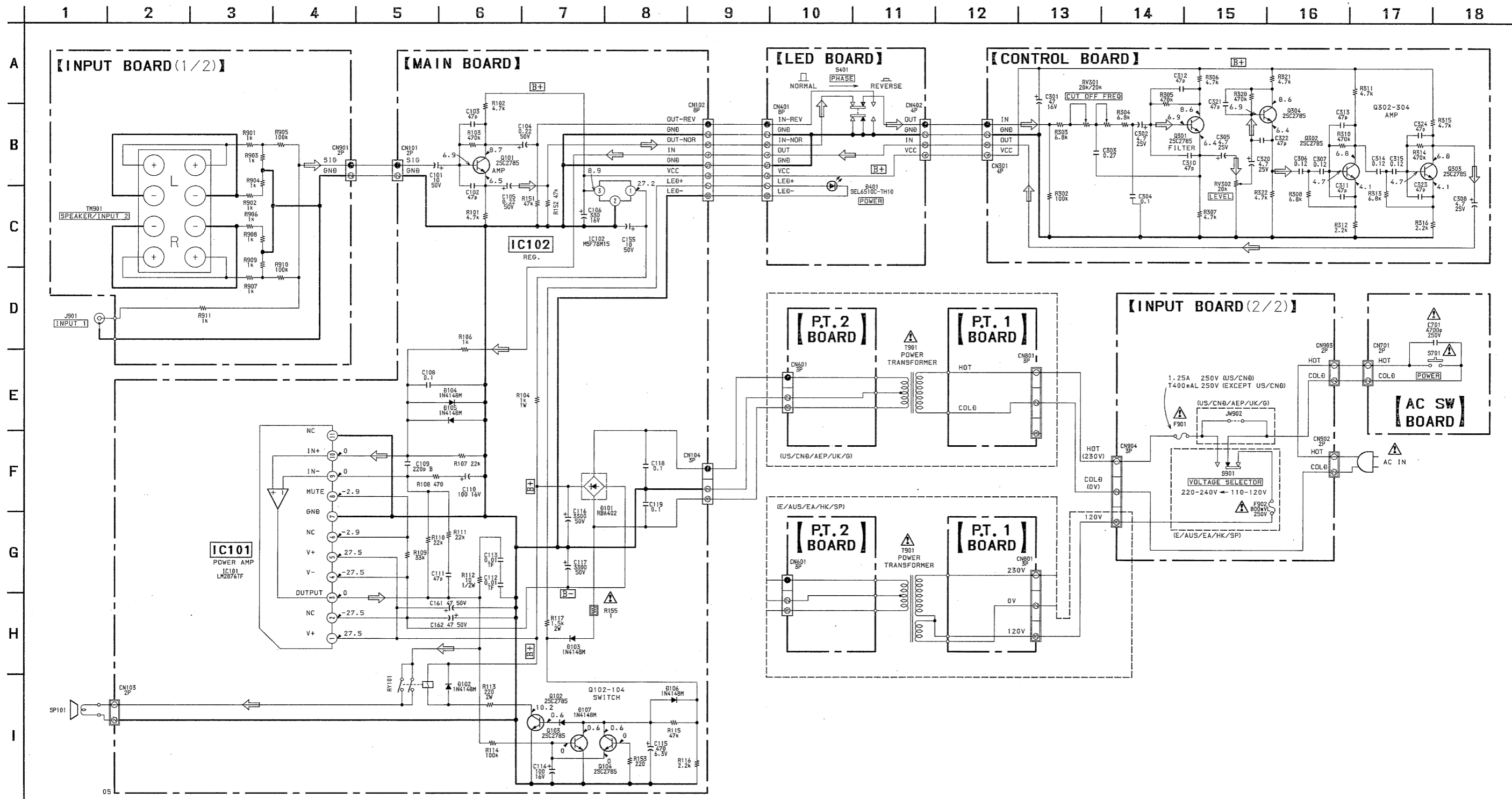
The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.
Replace only with part number specified.

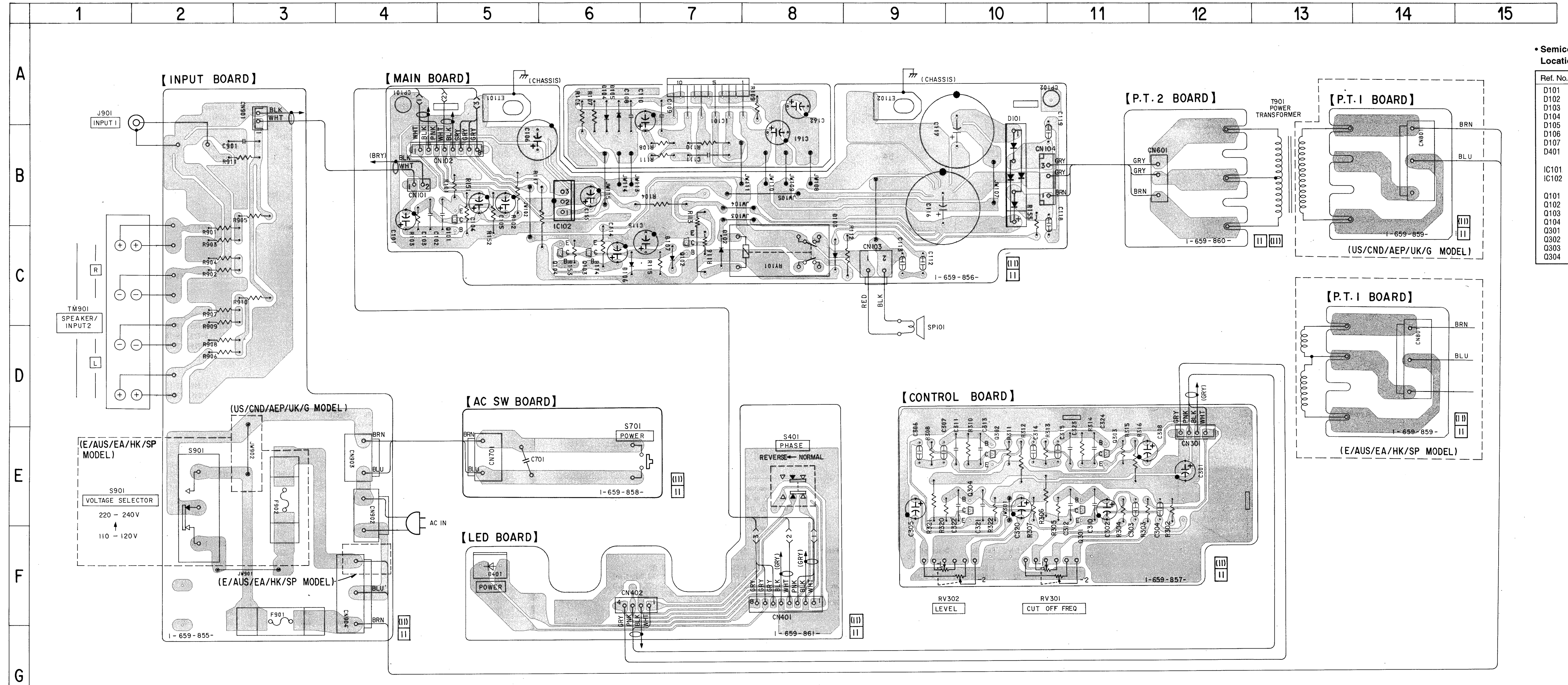
Note:

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

-  : B+ Line.
-  : B- Line.
-  : panel designation.
- Voltages are dc with respect to ground under no-signal conditions.
- Voltages are taken with a VOM (10 M Ω/V).
Voltage variations may be noted due to normal production tolerances.
- Signal path.

- Abbreviation
CND: Canadian G: German AUS: Australian
EA: Saudi Arabia HK: Hong Kong SP: Singapore

2-1. SCHEMATIC DIAGRAM • See page 4 for Note.





• Semiconductor Location

Ref. No.	Location
D101	B-10
D102	C-7
D103	C-8
D104	A-6
D105	A-6
D106	C-6
D107	C-7
D401	F-5
IC101	A-7
IC102	B-6
Q101	B-5
Q102	C-7
Q103	C-6
Q104	C-6
Q301	E-11
Q302	E-10
Q303	E-11
Q304	E-10

SECTION 3 EXPLODED VIEWS

NOTE:

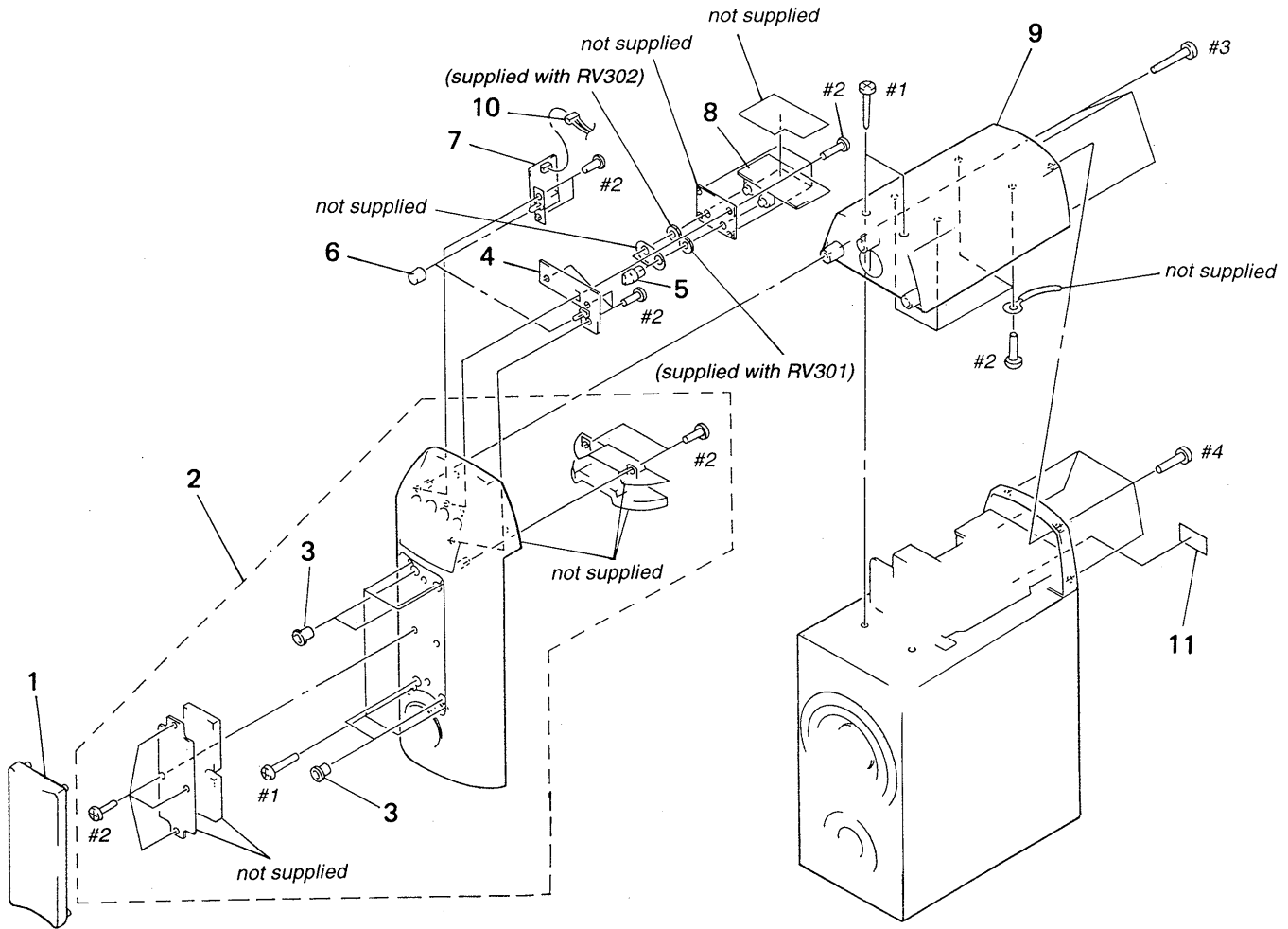
- -XX and -X mean standardized parts, so they may have some difference from the original one.
 - Color Indication of Appearance Parts Example: KNOB, BALANCE (WHITE) ... (RED)

↑
Parts Color
↑
Cabinet's Color
 - 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 the electrical parts list.
- Abbreviation
 G: German EA: Saudi Arabia HK: Hong Kong SP: Singapore AUS: Australian

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

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

(1) FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	X-4946-805-2	FRAME ASSY, GRILLE		* 7	1-659-858-11	AC SW BOARD	
2	X-4946-804-3	PANEL ASSY, FRONT		* 8	A-4389-203-A	CONTROL BOARD, COMPLETE	
	4-951-733-01	CATCHER		9	4-980-262-03	COVER, TOP	
* 4	1-659-861-11	LED BOARD		10	1-777-048-12	LEAD (WITH CONNECTOR)	
5	4-980-286-01	KNOB (VOL)		11	3-550-458-00	LABEL, CAUTION, POWER SELECTOR	(E, AUS, EA, HK)
6	4-973-938-01	KNOB (A), PUSH					

AC SW CONTROL

**SECTION 4
ELECTRICAL PARTS LIST**

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 and -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
- Abbreviation
CND: Canadian AUS: Australian G: German
EA: Saudi Arabia HK: Hong Kong SP: Singapore

- 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

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

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

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

Ref. No.	Part No.	Description	Remark
*	1-659-858-11	AC SW BOARD *****	
		< CAPACITOR >	
Δ C701	1-113-924-11	ELECT 0.0047uF 20% 250V	
		< CONNECTOR >	
CN701	1-564-321-00	PIN, CONNECTOR 2P	
		< SWITCH >	
Δ S701	1-554-920-61	SWITCH, PUSH (1 KEY) (POWER) *****	
*	A-4389-203-A	CONTROL BOARD, COMPLETE *****	
		< CAPACITOR >	
C301	1-124-589-11	ELECT 47uF 20% 16V	
C302	1-126-163-11	ELECT 4.7uF 20% 50V	
C303	1-136-170-00	FILM 0.27uF 5% 50V	
C304	1-136-165-00	FILM 0.1uF 5% 50V	
C305	1-126-163-11	ELECT 4.7uF 20% 50V	
C306	1-136-166-00	FILM 0.12uF 5% 50V	
C307	1-136-166-00	FILM 0.12uF 5% 50V	
C308	1-126-163-11	ELECT 4.7uF 20% 50V	
C310	1-162-215-31	CERAMIC 47PF 5% 50V	
C311	1-162-215-31	CERAMIC 47PF 5% 50V	
C312	1-162-215-31	CERAMIC 47PF 5% 50V	
C313	1-162-215-31	CERAMIC 47PF 5% 50V	
C314	1-136-166-00	FILM 0.12uF 5% 50V	
C315	1-136-166-00	FILM 0.12uF 5% 50V	
C320	1-126-163-11	ELECT 4.7uF 20% 50V	
C321	1-162-215-31	CERAMIC 47PF 5% 50V	
C322	1-162-215-31	CERAMIC 47PF 5% 50V	
C323	1-162-215-31	CERAMIC 47PF 5% 50V	
C324	1-162-215-31	CERAMIC 47PF 5% 50V	

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
CN301	1-506-469-11	PIN, CONNECTOR 4P	
		< TRANSISTOR >	
Q301	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q302	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q303	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q304	8-729-119-78	TRANSISTOR 2SC403SP-51	
		< RESISTOR >	
R302	1-249-441-11	CARBON 100K 5% 1/4W	
R303	1-249-427-11	CARBON 6.8K 5% 1/4W F	
R304	1-249-427-11	CARBON 6.8K 5% 1/4W F	
R305	1-247-895-00	CARBON 470K 5% 1/4W	
R306	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R307	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R308	1-249-427-11	CARBON 6.8K 5% 1/4W F	
R310	1-247-895-00	CARBON 470K 5% 1/4W	
R311	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R312	1-249-421-11	CARBON 2.2K 5% 1/4W F	
R313	1-249-427-11	CARBON 6.8K 5% 1/4W F	
R314	1-247-895-00	CARBON 470K 5% 1/4W	
R315	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R316	1-249-421-11	CARBON 2.2K 5% 1/4W F	
R320	1-247-895-00	CARBON 470K 5% 1/4W	
R321	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R322	1-249-425-11	CARBON 4.7K 5% 1/4W F	
		< VARIABLE RESISTOR >	
RV301	1-223-905-11	RES, VAR, CARBON 20K/20K (CUT OFF FREQ)	
RV302	1-223-905-11	RES, VAR, CARBON 20K/20K (LEVEL)	

Ref. No.	Part No.	Description	Remark
*	1-659-855-11	INPUT BOARD *****	
	1-533-293-11	FUSE HOLDER < CONNECTOR >	
* CN901	1-568-951-11	PIN, CONNECTOR 2P	
CN902	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P	
CN903	1-564-321-00	PIN, CONNECTOR 2P	
* CN904	1-564-687-11	PIN, CONNECTOR 3P < FUSE >	
△F901	1-576-101-11	FUSE (1.25A 250V) (US/CND)	
△F901	1-532-066-00	FUSE (T400mAL 250V) (AEP/UK/G/E/AUS/EA/HK/SP)	
△F902	1-532-215-00	FUSE (T800mAL 250V) (E/AUS/EA/HK/SP) < JACK >	
J901	1-774-785-11	JACK, PIN 1P (INPUT 1) < RESISTOR >	
R901	1-249-417-11	CARBON 1K 5% 1/4W F	
R902	1-249-417-11	CARBON 1K 5% 1/4W F	
R903	1-249-417-11	CARBON 1K 5% 1/4W F	
R904	1-249-417-11	CARBON 1K 5% 1/4W F	
R905	1-249-441-11	CARBON 100K 5% 1/4W	
R906	1-249-417-11	CARBON 1K 5% 1/4W F	
R907	1-249-417-11	CARBON 1K 5% 1/4W F	
R910	1-249-441-11	CARBON 100K 5% 1/4W	
R911	1-249-417-11	CARBON 1K 5% 1/4W F	
		< SWITCH >	
△S901	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (VOLTAGE SELECTOR) (E/AUS/EA/HK/SP) < TERMINAL >	
TM901	1-537-376-11	TERMINAL BOARD (SP) (SPEAKER/INPUT 2) *****	
*	1-659-861-11	LED BOARD ***** < CONNECTOR >	
* CN401	1-568-935-11	PIN, CONNECTOR 8P	
CN402	1-506-469-11	PIN, CONNECTOR 4P < DIODE >	
D401	8-719-303-02	DIODE SEL2510C-D	

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
S401	1-554-118-00	SWITCH, PUSH (1 KEY) (PHASE) *****	
*	A-4389-202-A	MAIN BOARD, COMPLETE *****	
	1-537-771-21	TERMINAL BOARD, GROUND < CAPACITOR >	
C101	1-126-964-11	ELECT 10uF 20% 50V	
C102	1-162-215-31	CERAMIC 47PF 5% 50V	
C103	1-162-215-31	CERAMIC 47PF 5% 50V	
C104	1-124-464-11	ELECT 0.22uF 20% 50V	
C105	1-124-464-11	ELECT 0.22uF 20% 50V	
C106	1-104-661-00	ELECT 330uF 20% 16V	
C108	1-164-159-21	CERAMIC 0.1uF 5% 50V	
C109	1-162-286-21	CERAMIC 220PF 10% 50V	
C110	1-126-933-11	ELECT 100uF 20% 16V	
C111	1-162-215-31	CERAMIC 47PF 5% 50V	
C112	1-136-153-00	FILM 0.01uF 5% 50V	
C113	1-136-153-00	FILM 0.01uF 5% 50V	
C114	1-126-933-11	ELECT 100uF 20% 16V	
C115	1-126-935-11	ELECT 470uF 20% 6.3V	
C116	1-126-974-11	ELECT 3300uF 20% 50V	
C117	1-126-974-11	ELECT 3300uF 20% 50V	
C118	1-136-165-00	FILM 0.1uF 5% 50V	
C119	1-136-165-00	FILM 0.1uF 5% 50V	
C155	1-126-964-11	ELECT 10uF 20% 50V	
C161	1-126-967-11	ELECT 47uF 20% 50V	
C162	1-126-967-11	ELECT 47uF 20% 50V	
		< CONNECTOR >	
* CN101	1-568-951-11	PIN, CONNECTOR 2P	
* CN102	1-568-935-11	PIN, CONNECTOR 8P	
CN103	1-564-320-00	PIN, CONNECTOR (B2P-VH) 2P	
* CN104	1-766-265-11	PIN, CONNECTOR (PC BOARD) 3P < DIODE >	
D101	8-719-025-03	DIODE RBA-402-SL	
D102	8-719-987-63	DIODE 1N4148M	
D103	8-719-987-63	DIODE 1N4148M	
D104	8-719-987-63	DIODE 1N4148M	
D105	8-719-987-63	DIODE 1N4148M	
D106	8-719-987-63	DIODE 1N4148M	
D107	8-719-987-63	DIODE 1N4148M	

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

MAIN **P.T.1** **P.T.2**

Ref. No.	Part No.	Description	Remark
< IC >			
IC101	8-759-331-40	IC LM2876-TF	
IC102	8-759-604-40	IC MSF78M15	
< TRANSISTOR >			
Q101	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q102	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q103	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q104	8-729-119-78	TRANSISTOR 2SC403SP-51	
< RESISTOR >			
R101	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R102	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R103	1-247-895-00	CARBON 470K 5% 1/4W	
R104	1-215-869-11	METAL OXIDE 1K 5% 1W F	
R106	1-249-417-11	CARBON 1K 5% 1/4W F	
R107	1-247-863-00	CARBON 22K 5% 1/4W	
R108	1-249-413-11	CARBON 470 5% 1/4W	
R109	1-249-435-11	CARBON 33K 5% 1/4W	
R110	1-247-863-00	CARBON 22K 5% 1/4W	
R111	1-247-863-00	CARBON 22K 5% 1/4W	
R112	1-260-076-11	CARBON 10 5% 1/2W	
R113	1-215-888-00	METAL OXIDE 220 5% 2W F	
R114	1-249-441-11	CARBON 100K 5% 1/4W	
R115	1-249-437-11	CARBON 47K 5% 1/4W	
R116	1-249-421-11	CARBON 2.2K 5% 1/4W F	
R117	1-215-893-11	METAL OXIDE 1.5K 5% 2W F	
R151	1-249-437-11	CARBON 47K 5% 1/4W	
R152	1-249-437-11	CARBON 47K 5% 1/4W	
R153	1-247-815-00	CARBON 220 5% 1/4W	
△R155	1-249-381-11	CARBON 1 5% 1/4W F	
< RELAY >			
RY101	1-515-920-11	RELAY (24V)	

*	1-659-859-11	P. T. 1 BOARD	

< CONNECTOR >			
* CN801	1-564-687-11	PIN, CONNECTOR 3P	

*	1-659-860-11	P. T. 2 BOARD	

< CONNECTOR >			
* CN601	1-766-265-11	PIN, CONNECTOR (PC BOARD) 3P	

Ref. No.	Part No.	Description	Remark
MISCELLANEOUS			

10	1-777-048-12	LEAD (WITH CONNECTOR)	
53	1-777-049-11	LEAD (WITH CONNECTOR) (US, CND, AEP, G, SP)	
53	1-777-050-11	LEAD (WITH CONNECTOR) (E, AUS, EA, HK)	
△59	1-558-943-41	CORD, POWER (E)	
△59	1-575-042-21	CORD, POWER (US, CND)	
△59	1-575-651-21	CORD, POWER (AEP, G, SP, EA)	
△59	1-696-845-11	CORD, POWER (AUS)	
△59	1-751-522-11	CORD, POWER (UK, HK)	
SP1	1-505-232-11	SPEAKER	
△T1	1-429-444-11	TRANSFORMER, POWER (US, CND)	
△T1	1-429-445-11	TRANSFORMER, POWER (E, AUS, EA, HK)	
△T1	1-429-446-11	TRANSFORMER, POWER (AEP, UK, G, SP)	

HARDWARE LIST			

#1	7-621-846-60	SCREW (4X25), TAPPING	
#2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#3	7-685-666-79	SCREW +BVTP 4X30 TYPE2 N-S	
#4	7-685-663-79	SCREW +BVTP 4X16 TYPE2 N-S	
#5	7-682-560-04	SCREW +BVTT 4X6 (S)	
#6	7-685-645-79	SCREW +BVTP 3X6 TYPE2 N-S	
#7	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	

ACCESSORIES & PACKING MATERIALS			

	1-558-642-21	CORD (SPEAKER)	
△	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
△	1-569-008-11	ADAPTER, CONVERSION 2P (SP)	
	1-751-598-11	CORD, CONNECTION (PIN-PIN) (INPUT)	
	3-810-594-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, ARABIC) (US, CND, AUS, EA, HK)	
	3-810-594-21	MANUAL, INSTRUCTION (GERMAN, SPANISH, DUTCH, SWEDISH, ITALIAN, PORTUGUESE, POLISH, RUSSIAN, FINNISH, DANISH, CHINESE, ARABIC) (AEP, UK, E, G, SP, AUS, EA, HK)	
*	4-982-429-01	CUSHION	
*	4-982-597-01	INDIVIDUAL CARTON	

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