

# TA-F448E

## SERVICE MANUAL

*AEP Model*  
*UK Model*  
*Australian Model*



### SPECIFICATIONS

#### Amplifier section

##### DIN power output

85 W + 85 W (4 ohms at 1 kHz)  
55 W + 55 W (8 ohms at 1 kHz)

##### Total harmonic distortion

Less than 0.008% (at 10 W output)

##### Frequency response

PHONO (20 Hz - 20 kHz): RIAA equalization curve  
+/- 0.5 dB  
TUNER, CD, AUX, TAPE1/DAT, TAPE2/MD (7 Hz -  
100 kHz): +0/-3 dB

##### S/N (network A)

PHONO: 94 dB  
TUNER, CD, AUX, TAPE1/DAT, TAPE2/MD: 105 dB

##### Output voltage / impedance

RECOU: 150 mV, 1 kilohm  
PHONES: 10 mW (at 8 ohms)

##### Speakers impedance

4 - 16 ohms

##### Damping factor

100 (8 ohms, 1 kHz)

#### General

##### System

Power amplifier: Pure-complementary SEPP OCL  
power amplifier with all stages directly coupled  
Preamplifier: Low-noise, equalizer amplifier

##### Power requirements

220 - 230 V AC, 50/60 Hz

##### Power consumption

180 W

##### Dimensions (approx.) (w/h/d)

430 x 135 x 365 mm  
incl. projecting parts and controls

##### Mass (approx.)

6.8 kg

Design and specifications are subject to change without  
notice.

INTEGRATED STEREO AMPLIFIER  
**SONY**®

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### SAFETY-RELATED COMPONENT WARNING!!

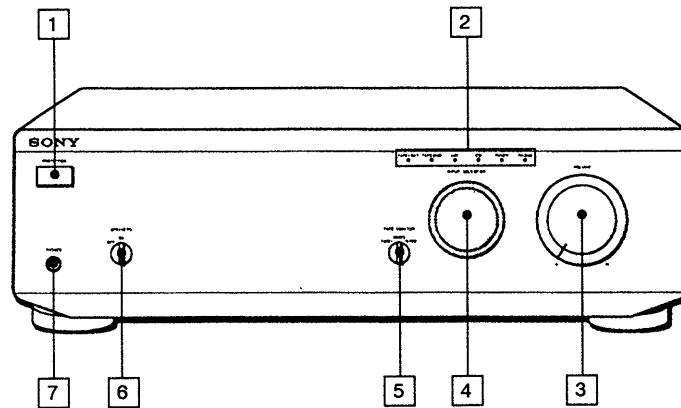
COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

## SECTION 1 GENERAL

This section is extracted from instruction manual.

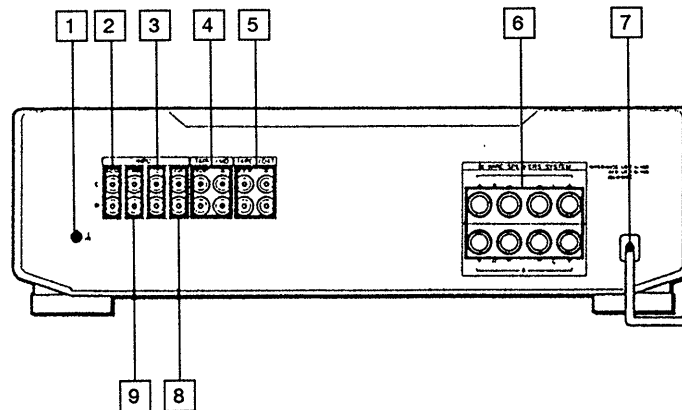
### LOCATION OF PARTS AND CONTROLS

#### FRONT PANEL Section



- |                       |                                                   |
|-----------------------|---------------------------------------------------|
| 1 POWER button        | 5 TAPE MONITOR knob<br>(TAPE 1 - SOURCE - TAPE 2) |
| 2 indicator           | 6 SPEAKER knob (ON-OFF)                           |
| 3 VOLUME knob         | 7 PHONES                                          |
| 4 INPUT SELECTOR knob |                                                   |

#### BACK PANEL Section



- |             |                |
|-------------|----------------|
| 1 (earth)   | 6 SPEAKERS A/B |
| 2 PHONO     | 7 Mains lead   |
| 3 CD        | 8 AUX          |
| 4 TAPE2/MD  | 9 TUNER        |
| 5 TAPE1/DAT |                |

## SECTION 2 ELECTRICAL ADJUSTMENTS

### Bias Adjustment

1. Rotate fully the bias adjusting semi-fixed resistors (RV301, RV351) to the minimum position (counterclockwise).
2. Connect a digital voltmeter to the CN406 and CN407.

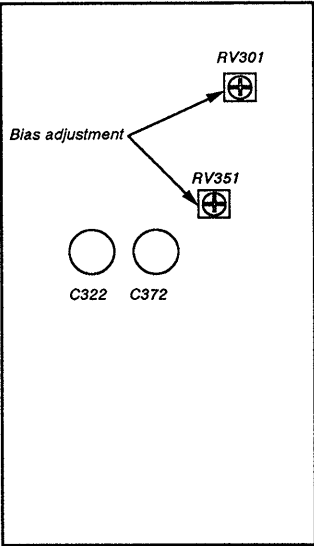
|       | 1 pin | 3 pin |
|-------|-------|-------|
| CN406 | —     | +     |
| CN407 | +     | —     |

3. Set the slide regulator to 0V AC, and press the POWER button (ON) on the set.
4. Raise gradually the slide regulator voltage up to the rated voltage (230V AC).
5. At this time, confirm that the Speaker relay is turned on (it will click).
6. Adjust the RV301 and RV351 so that a reading of digital voltmeter is from 10mV to 20mV.
7. Return the slide regulator to 0V, and press the POWER button (OFF) on the set.

### Adjustment Location :

#### [MAIN A BOARD]

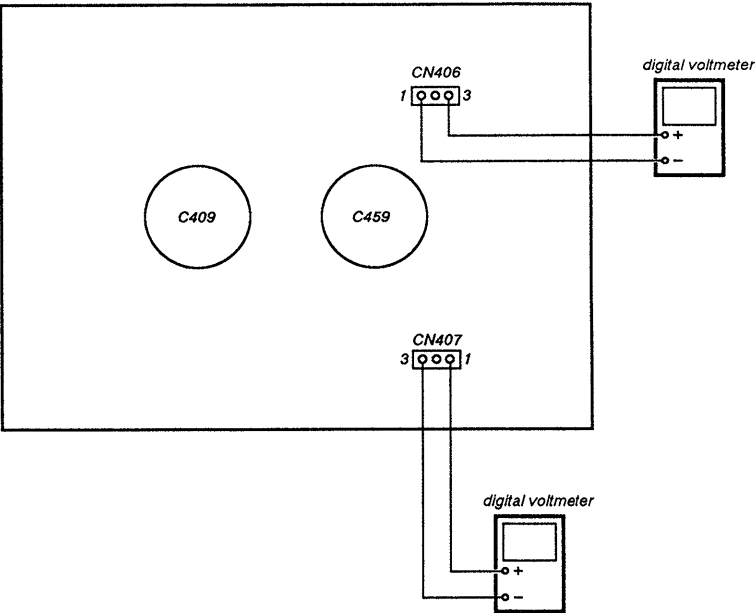
— Component side —



### Test Point Location :

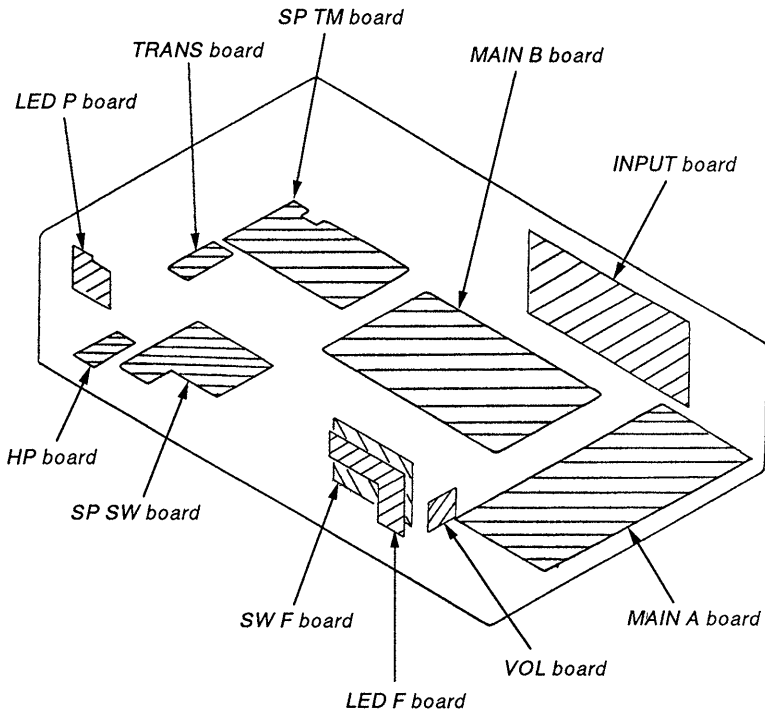
#### [MAIN B BOARD]

— Component side —



## SECTION 3 DIAGRAMS

### 3-1. CIRCUIT BOARDS LOCATION



3-2. PRINTED WIRING BOARDS

• SEMICONDUCTOR LOCATION

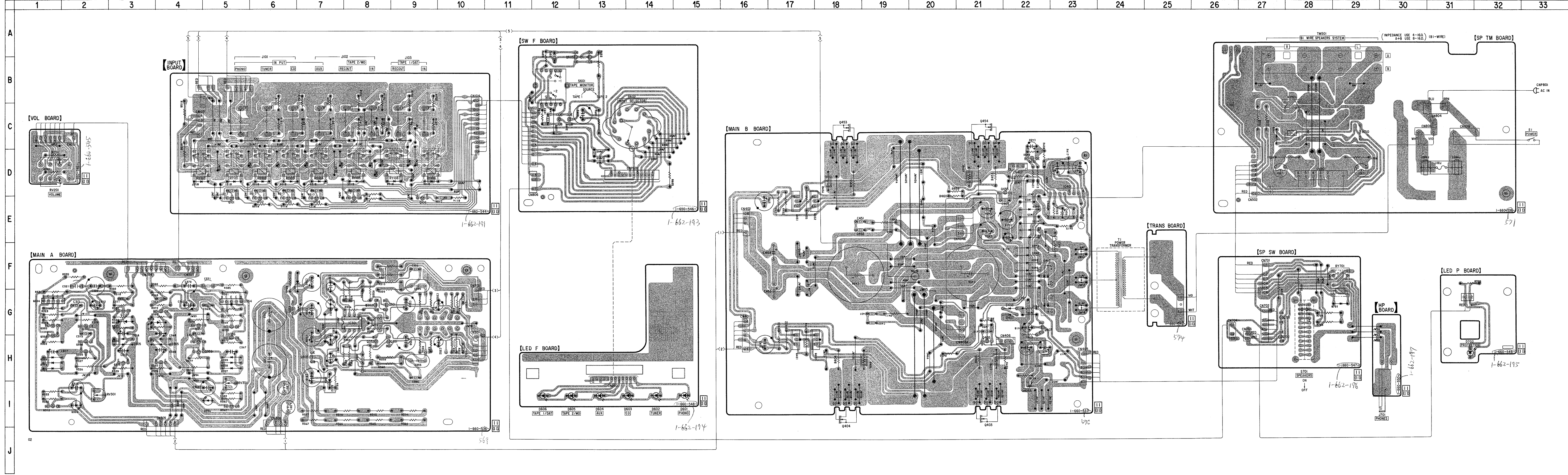
| Ref. No. | Location | Ref. No. | Location |
|----------|----------|----------|----------|
| D101     | D-5      | Q103     | E-6      |
| D102     | D-6      | Q104     | E-7      |
| D103     | D-6      | Q105     | E-8      |
| D104     | D-7      | Q106     | E-9      |
| D105     | D-8      | Q301     | G-8      |
| D106     | D-9      | Q302     | G-8      |
| D107     | D-4      | Q303     | H-7      |
| D108     | D-9      | Q304     | G-1      |
| D301     | G-7      | Q305     | G-1      |
| D302     | I-7      | Q306     | H-1      |
| D303     | G-3      | Q307     | G-2      |
| D304     | H-3      | Q308     | H-2      |
| D305     | H-3      | Q309     | H-2      |
| D306     | I-2      | Q310     | H-3      |
| D307     | H-1      | Q311     | G-3      |
| D308     | H-1      | Q312     | I-1      |
| D309     | H-1      | Q351     | H-8      |
| D351     | H-7      | Q352     | H-8      |
| D352     | F-7      | Q353     | G-6      |
| D353     | G-4      | Q354     | G-5      |
| D354     | H-4      | Q355     | G-5      |
| D355     | H-4      | Q356     | H-5      |
| D356     | I-5      | Q357     | G-4      |
| D357     | H-5      | Q358     | H-4      |
| D358     | H-5      | Q359     | H-4      |
| D359     | H-5      | Q360     | H-4      |
| D403     | F-22     | Q361     | G-4      |
| D404     | F-22     | Q362     | I-5      |
| D405     | F-22     | Q401     | H-17     |
| D406     | F-22     | Q402     | H-18     |
| D407     | G-22     | Q403     | I-21     |
| D408     | G-22     | Q404     | I-18     |
| D409     | E-22     | Q405     | H-21     |
| D410     | E-22     | Q407     | G-22     |
| D411     | E-22     | Q430     | D-22     |
| D412     | F-22     | Q451     | E-17     |
| D501     | C-27     | Q452     | E-18     |
| D601     | I-15     | Q453     | C-18     |
| D602     | I-14     | Q454     | C-21     |
| D603     | I-14     | Q455     | D-22     |
| D604     | I-13     | Q601     | C-12     |
| D605     | I-12     | Q602     | C-12     |
| D606     | I-12     | Q603     | A-12     |
| D701     | G-29     | Q604     | A-13     |
| D702     | H-31     | Q701     | G-27     |
| IC301    | G-8      | Q702     | H-27     |
| IC401    | D-23     | Q406A    | I-22     |
| Q101     | E-5      |          |          |
| Q102     | E-6      |          |          |

Note:

- : parts extracted from the component side.
- Pattern from the side which enables seeing.  
(The other layers' patterns are not indicated)

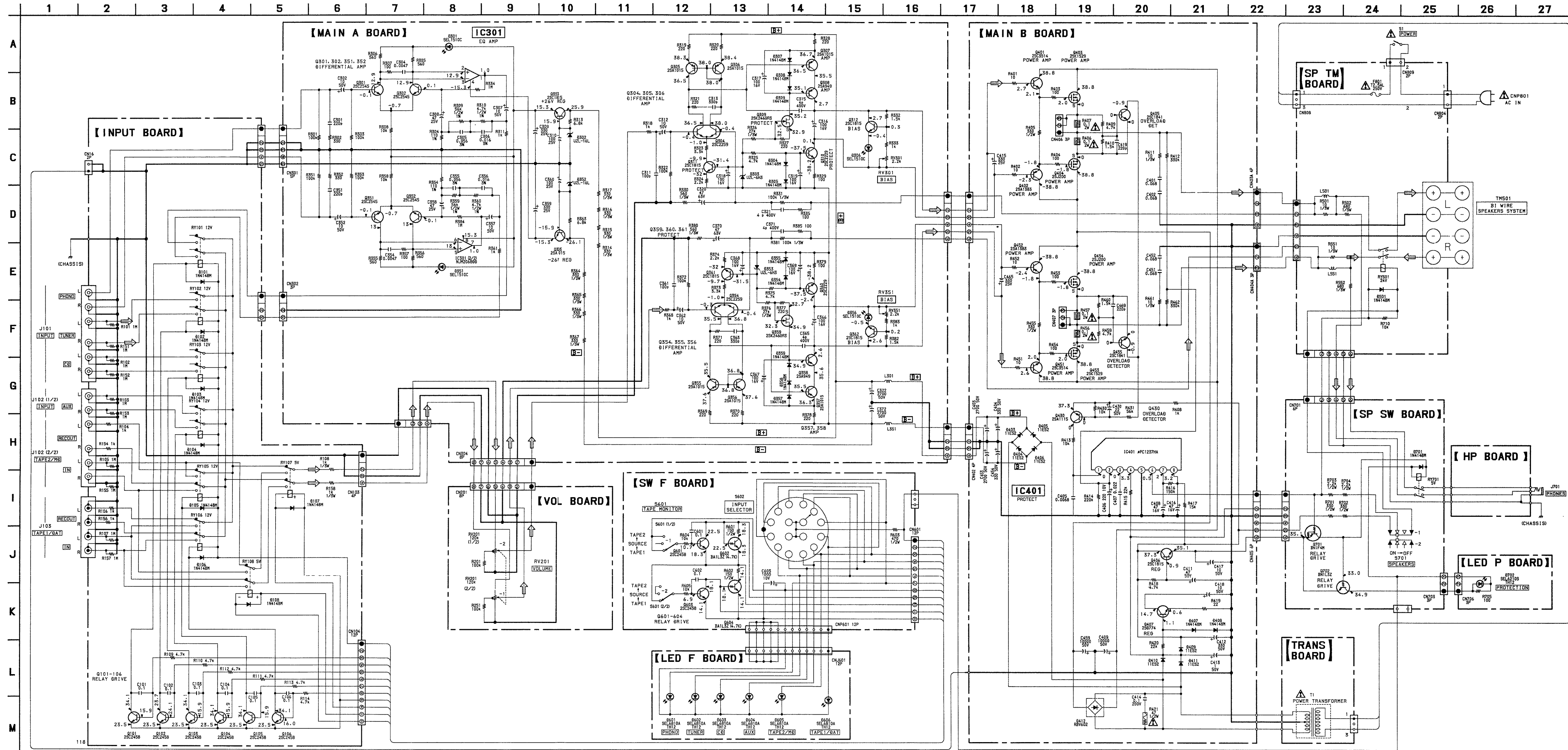
Caution :

Pattern face side : Parts on the pattern face side seen from  
(Conductor Side) the pattern face are indicated.  
Parts face side : Parts on the parts face side seen from the  
(Component side) parts face are indicated.

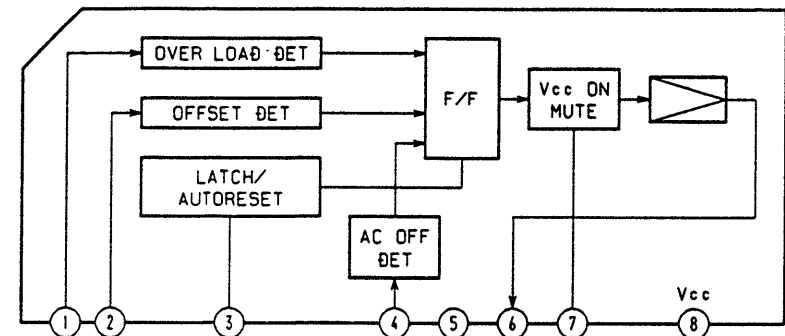




3-3. SCHEMATIC DIAGRAM



• IC BLOCK DIAGRAM  
IC401  $\mu$  PC1237HA



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.
- % : indicates tolerance.
- $\square$  : nonflammable resistor.
- $\sim$  : fusible resistor.
- $\square$  : panel designation

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

• B+ : B+ Line

• B- : B- Line

• Voltage and waveforms are dc with respect to ground under no-signal conditions.

no mark : TUNER

• Voltages are taken with a VOM ( Input impedance 10M  $\Omega$  ). Voltage variations may be noted due to normal production tolerances.

• Signal path.



## SECTION 4 EXPLODED VIEWS

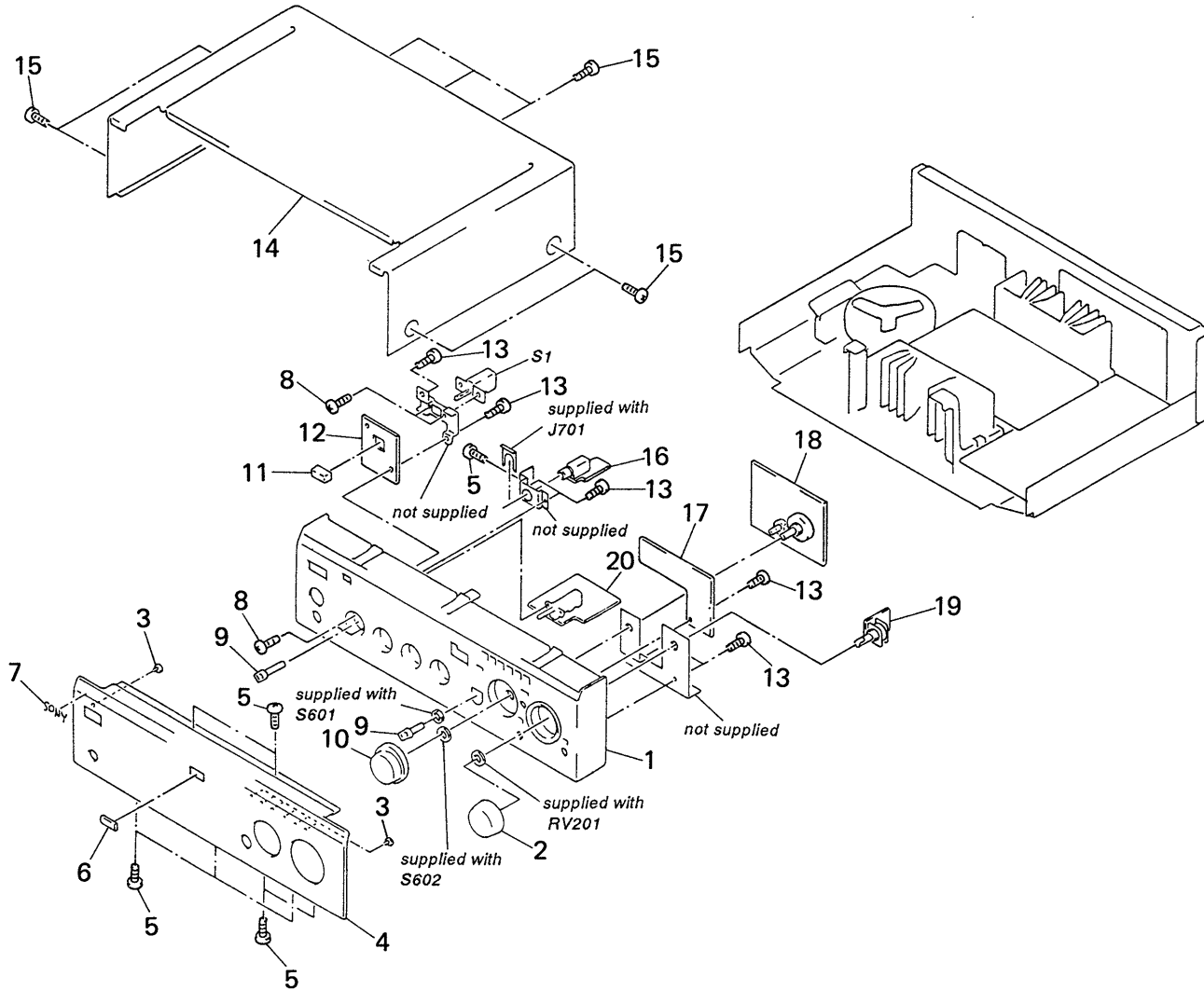
### NOTE :

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- 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.
- Abbreviation  
AUS : Australian

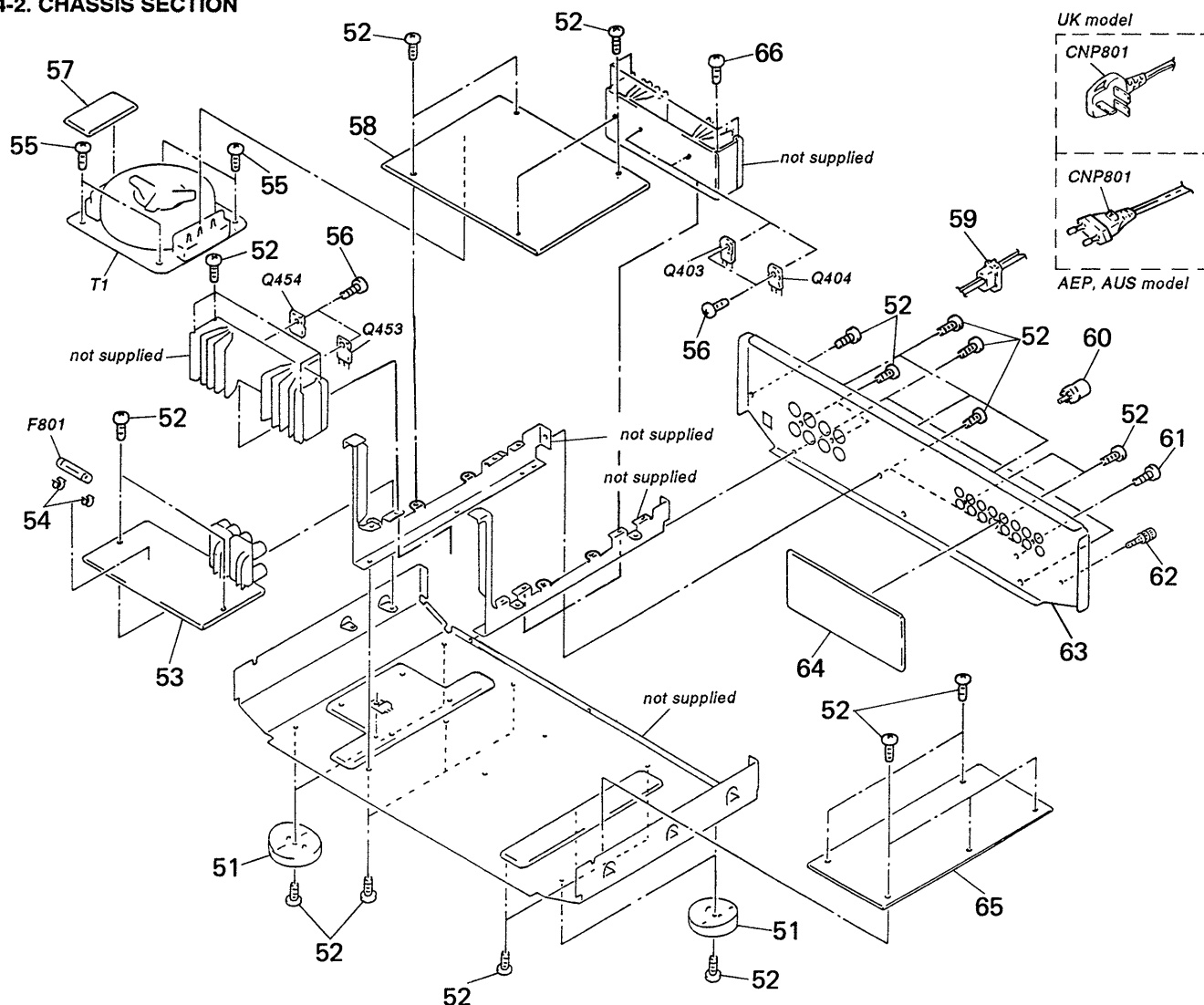
The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

### 4-1. FRONT PANEL SECTION



| Ref. No. | Part No.     | Description         | Remark | Ref. No.    | Part No.     | Description                             | Remark |
|----------|--------------|---------------------|--------|-------------|--------------|-----------------------------------------|--------|
| 1        | X-4946-944-1 | PANEL ASSY, BASE    |        | * 12        | 1-660-549-11 | LED P BOARD                             |        |
| 2        | X-4946-920-1 | KNOB (VOL) ASSY     |        | 13          | 4-951-620-01 | SCREW (2.6X8), +BVTP                    |        |
| 3        | 4-980-775-01 | LENS, LED           |        | 14          | 4-983-899-11 | CASE                                    |        |
| 4        | 4-980-767-01 | PANEL, FRONT        |        | 15          | 3-704-366-01 | SCREW (CASE)(M3X8)                      |        |
| 5        | 4-967-961-01 | SCREW (3X8)         |        | * 16        | 1-660-550-11 | HP BOARD                                |        |
| 6        | 4-965-651-01 | EMBLEM (MOS)        |        | * 17        | 1-660-548-11 | LED F BOARD                             |        |
| 7        | 4-979-587-01 | EMBLEM, SONY        |        | * 18        | 1-660-546-11 | SW F BOARD                              |        |
| 8        | 7-682-548-04 | SCREW +BVTT 3X8 (S) |        | * 19        | 1-660-545-11 | VOL BOARD                               |        |
| 9        | 4-980-774-01 | KNOB (DIA.11)       |        | * 20        | 1-660-547-11 | SP SW BOARD                             |        |
| 10       | 4-980-771-01 | KNOB (DIA. 47)      |        | $\Delta$ S1 | 1-554-920-11 | SWITCH, PUSH (AC POWER) (1 KEY) (POWER) |        |
| 11       | 4-980-199-01 | BUTTON (POWER)      |        |             |              |                                         |        |

## 4-2. CHASSIS SECTION



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

| Ref. No. | Part No.     | Description            | Remark | Ref. No.           | Part No.     | Description                  | Remark |
|----------|--------------|------------------------|--------|--------------------|--------------|------------------------------|--------|
| 51       | X-4947-025-1 | FOOT ASSY              |        | * 63               | 4-982-978-11 | PANEL, BACK (UK)             |        |
| 52       | 4-967-961-01 | SCREW (3X8)            |        | * 64               | 1-660-544-11 | INPUT BOARD                  |        |
| * 53     | 1-660-538-11 | SP TM BOARD            |        | * 65               | A-4389-819-A | MAIN A BOARD, COMPLETE       |        |
| 54       | 1-533-233-11 | HOLDER, FUSE           |        | 66                 | 4-981-016-11 | SCREW (H)                    |        |
| 55       | 4-967-960-01 | SCREW (4X8)            |        | $\triangle$ CNP801 | 1-751-523-11 | CORD, POWER (UK)             |        |
| 56       | 3-905-609-11 | SCREW (TRANSISTOR)     |        | $\triangle$ CNP801 | 1-777-185-11 | CORD, POWER (AEP,AUS)        |        |
| * 57     | 1-660-542-11 | TRANS BOARD            |        | $\triangle$ F801   | 1-532-464-51 | FUSE, TIME-LUG (T2.5AL/250V) |        |
| * 58     | A-4389-820-A | MAIN B BOARD, COMPLETE |        | Q403               | 8-729-232-45 | TRANSISTOR 2SK1529-Y         |        |
| * 59     | 3-703-244-00 | BUSHING (2104), CORD   |        | Q404               | 8-729-232-46 | TRANSISTOR 2SJ200-Y          |        |
| 60       | 1-506-113-00 | SHORT PLUG             |        | Q453               | 8-729-232-45 | TRANSISTOR 2SK1529-Y         |        |
| 61       | 3-704-515-41 | SCREW (BV/RING)        |        | Q454               | 8-729-232-46 | TRANSISTOR 2SJ200-Y          |        |
| 62       | 4-947-010-01 | SCREW, FEEDER FIXED    |        | $\triangle$ T1     | 1-429-493-11 | TRANSFORMER, POWER           |        |
| * 63     | 4-982-978-01 | PANEL, BACK (AEP,AUS)  |        |                    |              |                              |        |



# SECTION 5

## ELECTRICAL PARTS LIST

HP INPUT

### 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

### ● Abbreviation

AUS : Australian

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 |
|---------------|----------------------------------------------------|---------------------------------------|--------|
| *             | <del>1-660-550-11</del><br>1-662-197-11            | HP BOARD<br>*****<br>< JACK >         |        |
| J701          | 1-750-735-11                                       | JACK (LARGE TYPE) (PHONES)            |        |
| *****         |                                                    |                                       |        |
| *             | <del>1-662-191-11</del><br><del>1-660-544-11</del> | INPUT BOARD<br>*****<br>< CAPACITOR > |        |
| C101          | 1-136-165-00                                       | FILM 0.1uF 5% 50V                     |        |
| C102          | 1-136-165-00                                       | FILM 0.1uF 5% 50V                     |        |
| C103          | 1-136-165-00                                       | FILM 0.1uF 5% 50V                     |        |
| C104          | 1-136-165-00                                       | FILM 0.1uF 5% 50V                     |        |
| C105          | 1-136-165-00                                       | FILM 0.1uF 5% 50V                     |        |
| C106          | 1-136-165-00                                       | FILM 0.1uF 5% 50V                     |        |
| < CONNECTOR > |                                                    |                                       |        |
| CN16          | 1-564-320-00                                       | PIN, CONNECTOR (B2P-VH) 2P            |        |
| CN103         | 1-691-766-11                                       | PLUG (MICRO CONNECTOR) 4P             |        |
| * CN104       | 1-564-527-11                                       | PLUG, CONNECTOR 12P                   |        |
| < DIODE >     |                                                    |                                       |        |
| D101          | 8-719-987-63                                       | DIODE 1N4148M                         |        |
| 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                         |        |
| D108          | 8-719-987-63                                       | DIODE 1N4148M                         |        |
| < JACK >      |                                                    |                                       |        |
| J101          | 1-568-978-51                                       | JACK (INPUT)                          |        |
| J102          | 1-568-978-11                                       | JACK 6P (TAPE2/MD)                    |        |
| * J103        | 1-573-142-21                                       | JACK, PIN 4P (TAPE1/DAT)              |        |

| Ref. No.       | Part No.     | Description            | Remark |
|----------------|--------------|------------------------|--------|
| < TRANSISTOR > |              |                        |        |
| Q101           | 8-729-119-78 | TRANSISTOR 2SC2785-HFE |        |
| Q102           | 8-729-119-78 | TRANSISTOR 2SC2785-HFE |        |
| Q103           | 8-729-119-78 | TRANSISTOR 2SC2785-HFE |        |
| Q104           | 8-729-119-78 | TRANSISTOR 2SC2785-HFE |        |
| Q105           | 8-729-119-78 | TRANSISTOR 2SC2785-HFE |        |
| Q106           | 8-729-119-78 | TRANSISTOR 2SC2785-HFE |        |
| < RESISTOR >   |              |                        |        |
| R101           | 1-259-500-11 | CARBON 1M 5% 1/6W      |        |
| R102           | 1-259-500-11 | CARBON 1M 5% 1/6W      |        |
| R103           | 1-259-500-11 | CARBON 1M 5% 1/6W      |        |
| R104           | 1-259-428-11 | CARBON 1K 5% 1/6W      |        |
| R105           | 1-259-500-11 | CARBON 1M 5% 1/6W      |        |
| R106           | 1-259-428-11 | CARBON 1K 5% 1/6W      |        |
| R107           | 1-259-500-11 | CARBON 1M 5% 1/6W      |        |
| R108           | 1-249-210-11 | CARBON 1K 5% 1/3W      |        |
| R109           | 1-259-444-11 | CARBON 4.7K 5% 1/6W    |        |
| R110           | 1-259-444-11 | CARBON 4.7K 5% 1/6W    |        |
| R111           | 1-259-444-11 | CARBON 4.7K 5% 1/6W    |        |
| R112           | 1-259-444-11 | CARBON 4.7K 5% 1/6W    |        |
| R113           | 1-259-444-11 | CARBON 4.7K 5% 1/6W    |        |
| R114           | 1-259-444-11 | CARBON 4.7K 5% 1/6W    |        |
| R151           | 1-259-500-11 | CARBON 1M 5% 1/6W      |        |
| R152           | 1-259-500-11 | CARBON 1M 5% 1/6W      |        |
| R153           | 1-259-500-11 | CARBON 1M 5% 1/6W      |        |
| R154           | 1-259-428-11 | CARBON 1K 5% 1/6W      |        |
| R155           | 1-259-500-11 | CARBON 1M 5% 1/6W      |        |
| R156           | 1-259-428-11 | CARBON 1K 5% 1/6W      |        |
| R157           | 1-259-500-11 | CARBON 1M 5% 1/6W      |        |
| R158           | 1-249-210-11 | CARBON 1K 5% 1/3W      |        |
| < RELAY >      |              |                        |        |
| RY101          | 1-515-614-11 | RELAY                  |        |
| RY102          | 1-515-614-11 | RELAY                  |        |
| RY103          | 1-515-614-11 | RELAY                  |        |
| RY104          | 1-515-614-11 | RELAY                  |        |

INPUT

LED F

LED P

MAIN A

| Ref. No. | Part No.      | Description                    | Remark |
|----------|---------------|--------------------------------|--------|
| RY105    | 1-515-614-11  | RELAY                          |        |
| RY106    | 1-515-614-11  | RELAY                          |        |
| RY107    | 1-515-622-11  | RELAY                          |        |
| RY108    | 1-515-622-11  | RELAY                          |        |
| *****    |               |                                |        |
| *        | 1-660-548-11  | LED F BOARD                    |        |
|          | *****         |                                |        |
|          | < CONNECTOR > |                                |        |
| CNJ601   | 1-766-796-11  | CONNECTOR, BOARD TO BOARD 12P  |        |
|          | < DIODE >     |                                |        |
| D601     | 8-719-313-72  | LED SEL3810A-CD (PHONO)        |        |
| D602     | 8-719-313-72  | LED SEL3810A-CD (TUNER)        |        |
| D603     | 8-719-313-72  | LED SEL3810A-CD (CD)           |        |
| D604     | 8-719-313-72  | LED SEL3810A-CD (AUX)          |        |
| D605     | 8-719-313-72  | LED SEL3810A-CD (TAPE2/MD)     |        |
| D606     | 8-719-313-72  | LED SEL3810A-CD (TAPE1/DAT)    |        |
| *****    |               |                                |        |
| *        | 1-660-549-11  | LED P BOARD                    |        |
|          | *****         |                                |        |
|          | < DIODE >     |                                |        |
| D702     | 8-719-313-48  | LED SEL6210S-TH12 (PROTECTION) |        |
|          | < RESISTOR >  |                                |        |
| R705     | 1-259-143-21  | CARBON 100 5% 1/4W             |        |
| *****    |               |                                |        |
| *        | A-4389-819-A  | MAIN A BOARD, COMPLETE         |        |
|          | *****         |                                |        |
|          | < CAPACITOR > |                                |        |
| C301     | 1-102-978-00  | CERAMIC 220PF 5% 50V           |        |
| C302     | 1-126-059-11  | ELECT 10uF 20% 50V             |        |
| C304     | 1-106-359-00  | MYLAR 4700PF 5% 200V           |        |
| C305     | 1-130-341-00  | FILM 0.056uF 3% 100V           |        |
| C306     | 1-130-971-00  | FILM 0.016uF 3% 100V           |        |
| C307     | 1-126-059-11  | ELECT 10uF 20% 50V             |        |
| C308     | 1-126-022-11  | ELECT 47uF 20% 25V             |        |
| C309     | 1-126-025-11  | ELECT 330uF 20% 25V            |        |
| C310     | 1-126-023-11  | ELECT 100uF 20% 25V            |        |
| C311     | 1-102-973-00  | CERAMIC 100PF 5% 50V           |        |
| C312     | 1-126-059-11  | ELECT 10uF 20% 50V             |        |
| C313     | 1-104-290-11  | POLYSTYRENE 330PF 5% 50V       |        |
| C315     | 1-102-230-00  | CERAMIC 4PF 0.25PF 500V        |        |
| C316     | 1-126-023-11  | ELECT 100uF 20% 16V            |        |
| C317     | 1-126-023-11  | ELECT 100uF 20% 16V            |        |
| C318     | 1-126-023-11  | ELECT 100uF 20% 16V            |        |
| C319     | 1-126-023-11  | ELECT 100uF 20% 16V            |        |

| Ref. No. | Part No.      | Description               | Remark |
|----------|---------------|---------------------------|--------|
| C320     | 1-110-392-11  | ELECT 47uF 20% 63V        |        |
| C321     | 1-113-496-11  | POLYSTYRENE 4PF 10% 50V   |        |
| C322     | 1-109-871-11  | ELECT 2700uF 20% 50V      |        |
| C351     | 1-102-978-00  | CERAMIC 220PF 5% 50V      |        |
| C352     | 1-126-059-11  | ELECT 10uF 20% 50V        |        |
| C354     | 1-106-359-00  | MYLAR 4700PF 5% 200V      |        |
| C355     | 1-130-341-00  | FILM 0.056uF 3% 100V      |        |
| C356     | 1-130-971-00  | FILM 0.016uF 3% 100V      |        |
| C357     | 1-126-059-11  | ELECT 10uF 20% 50V        |        |
| C358     | 1-126-022-11  | ELECT 47uF 20% 25V        |        |
| C359     | 1-126-025-11  | ELECT 330uF 20% 25V       |        |
| C360     | 1-126-023-11  | ELECT 100uF 20% 25V       |        |
| C361     | 1-102-973-00  | CERAMIC 100PF 5% 50V      |        |
| C362     | 1-126-059-11  | ELECT 10uF 20% 50V        |        |
| C363     | 1-104-290-11  | POLYSTYRENE 330PF 5% 50V  |        |
| C365     | 1-102-230-00  | CERAMIC 4PF 0.25PF 500V   |        |
| C366     | 1-126-023-11  | ELECT 100uF 20% 16V       |        |
| C367     | 1-126-023-11  | ELECT 100uF 20% 16V       |        |
| C368     | 1-126-023-11  | ELECT 100uF 20% 16V       |        |
| C369     | 1-126-023-11  | ELECT 100uF 20% 16V       |        |
| C370     | 1-110-392-11  | ELECT 47uF 20% 63V        |        |
| C371     | 1-113-496-11  | POLYSTYRENE 4PF 10% 50V   |        |
| C372     | 1-109-871-11  | ELECT 2700uF 20% 50V      |        |
|          | < CONNECTOR > |                           |        |
| CN301    | 1-691-767-11  | PLUG (MICRO CONNECTOR) 5P |        |
| CN302    | 1-691-765-11  | PLUG (MICRO CONNECTOR) 3P |        |
|          | < DIODE >     |                           |        |
| D301     | 8-719-310-60  | LED SEL1510C-C            |        |
| D302     | 8-719-933-88  | DIODE HZS16-2L            |        |
| D303     | 8-719-933-41  | DIODE HZS6C3L             |        |
| D304     | 8-719-987-63  | DIODE 1N4148M             |        |
| D305     | 8-719-987-63  | DIODE 1N4148M             |        |
| D306     | 8-719-310-60  | LED SEL1510C-C            |        |
| D307     | 8-719-987-63  | DIODE 1N4148M             |        |
| D308     | 8-719-987-63  | DIODE 1N4148M             |        |
| D309     | 8-719-987-63  | DIODE 1N4148M             |        |
| D351     | 8-719-310-60  | LED SEL1510C-C            |        |
| D352     | 8-719-933-88  | DIODE HZS16-2L            |        |
| D353     | 8-719-933-41  | DIODE HZS6C3L             |        |
| D354     | 8-719-987-63  | DIODE 1N4148M             |        |
| D355     | 8-719-987-63  | DIODE 1N4148M             |        |
| D356     | 8-719-310-60  | LED SEL1510C-C            |        |
| D357     | 8-719-987-63  | DIODE 1N4148M             |        |
| D358     | 8-719-987-63  | DIODE 1N4148M             |        |
| D359     | 8-719-987-63  | DIODE 1N4148M             |        |
|          | < IC >        |                           |        |
| IC301    | 8-759-701-25  | IC NJM2068D-D             |        |

| Ref. No. | Part No.     | Description                | Remark | Ref. No. | Part No.     | Description                  | Remark |
|----------|--------------|----------------------------|--------|----------|--------------|------------------------------|--------|
|          |              | < COIL >                   |        |          |              |                              |        |
| * L301   | 1-428-203-11 | COIL, AIR-CORE             |        | R322     | 1-259-215-21 | CARBON 100K 5%               | 1/4W   |
| * L351   | 1-428-203-11 | COIL, AIR-CORE             |        | R323     | 1-259-179-21 | CARBON 3.3K 5%               | 1/4W   |
|          |              | < TRANSISTOR >             |        | R324     | 1-249-931-11 | CARBON 2.2K 5%               | 1/4W   |
| Q301     | 8-729-354-52 | TRANSISTOR 2SC2545         |        | R325     | 1-259-444-11 | CARBON 4.7K 5%               | 1/6W   |
| Q302     | 8-729-354-52 | TRANSISTOR 2SC2545         |        | R326     | 1-249-490-11 | CARBON 27K 5%                | 1/3W   |
| Q303     | 8-729-281-54 | TRANSISTOR 2SC1815-BL      |        | R327     | 1-259-151-21 | CARBON 220 5%                | 1/4W   |
| Q304     | 8-729-620-17 | TRANSISTOR 2SC2259-FG      |        | R328     | 1-259-151-21 | CARBON 220 5%                | 1/4W   |
| Q305     | 8-729-201-53 | TRANSISTOR 2SA1015-GR      |        | R329     | 1-249-899-11 | CARBON 100 5%                | 1/4W   |
| Q306     | 8-729-201-53 | TRANSISTOR 2SA1015-GR      |        | R330     | 1-247-749-11 | CARBON 560 5%                | 1/2W   |
| Q307     | 8-729-201-53 | TRANSISTOR 2SA1015-GR      |        | R331     | 1-249-496-11 | CARBON 100K 5%               | 1/3W   |
| Q308     | 8-729-021-74 | TRANSISTOR 2SA949-OY-TPE6  |        | R332     | 1-259-171-21 | CARBON 1.5K 5%               | 1/4W   |
| Q309     | 8-729-202-67 | TRANSISTOR 2SK246-GR3      |        | R333     | 1-259-167-21 | CARBON 1K 5%                 | 1/4W   |
| Q310     | 8-729-021-73 | TRANSISTOR 2SC2229-OY-TPE6 |        | R334     | 1-124-995-11 | CARBON 1M 5%                 | 1/4W   |
| Q311     | 8-729-281-54 | TRANSISTOR 2SC1815-BL      |        | R335     | 1-259-143-21 | CARBON 100 5%                | 1/4W   |
| Q312     | 8-729-281-54 | TRANSISTOR 2SC1815-BL      |        | R351     | 1-259-215-21 | CARBON 100K 5%               | 1/4W   |
| Q351     | 8-729-354-52 | TRANSISTOR 2SC2545         |        | R352     | 1-249-911-11 | CARBON 330 5%                | 1/4W   |
| Q352     | 8-729-354-52 | TRANSISTOR 2SC2545         |        | R353     | 1-259-215-21 | CARBON 100K 5%               | 1/4W   |
| Q353     | 8-729-201-53 | TRANSISTOR 2SA1015-GR      |        | R354     | 1-249-900-11 | CARBON 110 1%                | 1/4W   |
| Q354     | 8-729-620-17 | TRANSISTOR 2SC2259-FG      |        | R355     | 1-259-161-21 | CARBON 560 5%                | 1/4W   |
| Q355     | 8-729-201-53 | TRANSISTOR 2SA1015-GR      |        | R356     | 1-259-161-21 | CARBON 560 5%                | 1/4W   |
| Q356     | 8-729-201-53 | TRANSISTOR 2SA1015-GR      |        | R357     | 1-259-143-21 | CARBON 100 5%                | 1/4W   |
| Q357     | 8-729-201-53 | TRANSISTOR 2SA1015-GR      |        | R358     | 1-259-191-21 | CARBON 10K 5%                | 1/4W   |
| Q358     | 8-729-021-74 | TRANSISTOR 2SA949-OY-TPE6  |        | R359     | 1-249-844-11 | CARBON 56K 1%                | 1/2W   |
| Q359     | 8-729-202-67 | TRANSISTOR 2SK246-GR3      |        | R360     | 1-249-818-11 | CARBON 4.7K 1%               | 1/2W   |
| Q360     | 8-729-021-73 | TRANSISTOR 2SC2229-OY-TPE6 |        | R361     | 1-259-167-21 | CARBON 1K 5%                 | 1/4W   |
| Q361     | 8-729-281-54 | TRANSISTOR 2SC1815-BL      |        | R363     | 1-249-943-11 | CARBON 6.8K 5%               | 1/4W   |
| Q362     | 8-729-281-54 | TRANSISTOR 2SC1815-BL      |        | R364     | 1-249-198-11 | CARBON 330 5%                | 1/3W   |
|          |              | < RESISTOR >               |        | R365     | 1-249-198-11 | CARBON 330 5%                | 1/3W   |
| R301     | 1-259-215-21 | CARBON 100K 5%             | 1/4W   | R366     | 1-249-198-11 | CARBON 330 5%                | 1/3W   |
| R302     | 1-249-911-11 | CARBON 330 5%              | 1/4W   | R367     | 1-249-198-11 | CARBON 330 5%                | 1/3W   |
| R303     | 1-259-215-21 | CARBON 100K 5%             | 1/4W   | R368     | 1-259-167-21 | CARBON 1K 5%                 | 1/4W   |
| R304     | 1-249-900-11 | CARBON 110 1%              | 1/4W   | R369     | 1-259-151-21 | CARBON 220 5%                | 1/4W   |
| R305     | 1-259-161-21 | CARBON 560 5%              | 1/4W   | R370     | 1-259-151-21 | CARBON 220 5%                | 1/4W   |
| R306     | 1-259-161-21 | CARBON 560 5%              | 1/4W   | R371     | 1-259-151-21 | CARBON 220 5%                | 1/4W   |
| R307     | 1-259-143-21 | CARBON 100 5%              | 1/4W   | R372     | 1-259-215-21 | CARBON 100K 5%               | 1/4W   |
| R308     | 1-259-191-21 | CARBON 10K 5%              | 1/4W   | R373     | 1-259-179-21 | CARBON 3.3K 5%               | 1/4W   |
| R309     | 1-249-844-11 | CARBON 56K 1%              | 1/2W   | R374     | 1-249-931-11 | CARBON 2.2K 5%               | 1/4W   |
| R310     | 1-249-818-11 | CARBON 4.7K 1%             | 1/2W   | R375     | 1-259-444-11 | CARBON 4.7K 5%               | 1/6W   |
| R311     | 1-259-167-21 | CARBON 1K 5%               | 1/4W   | R376     | 1-249-490-11 | CARBON 27K 5%                | 1/3W   |
| R313     | 1-249-943-11 | CARBON 6.8K 5%             | 1/4W   | R377     | 1-259-151-21 | CARBON 220 5%                | 1/4W   |
| R314     | 1-249-198-11 | CARBON 330 5%              | 1/3W   | R378     | 1-259-151-21 | CARBON 220 5%                | 1/4W   |
| R315     | 1-249-198-11 | CARBON 330 5%              | 1/3W   | R379     | 1-249-899-11 | CARBON 100 5%                | 1/4W   |
| R316     | 1-249-198-11 | CARBON 330 5%              | 1/3W   | R380     | 1-247-749-11 | CARBON 560 5%                | 1/2W   |
| R317     | 1-249-198-11 | CARBON 330 5%              | 1/3W   | R381     | 1-249-496-11 | CARBON 100K 5%               | 1/3W   |
| R318     | 1-259-167-21 | CARBON 1K 5%               | 1/4W   | R382     | 1-259-171-21 | CARBON 1.5K 5%               | 1/4W   |
| R319     | 1-259-151-21 | CARBON 220 5%              | 1/4W   | R383     | 1-259-167-21 | CARBON 1K 5%                 | 1/4W   |
| R320     | 1-259-151-21 | CARBON 220 5%              | 1/4W   | R384     | 1-124-995-11 | CARBON 1M 5%                 | 1/4W   |
| R321     | 1-259-151-21 | CARBON 220 5%              | 1/4W   | R385     | 1-259-143-21 | CARBON 100 5%                | 1/4W   |
|          |              | < VARIABLE RESISTOR >      |        |          |              |                              |        |
|          |              |                            |        | RV301    | 1-241-762-11 | RES, ADJ, CARBON 2.2K (BIAS) |        |
|          |              |                            |        | RV351    | 1-241-762-11 | RES, ADJ, CARBON 2.2K (BIAS) |        |

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# MAIN B

| Ref. No.      | Part No.     | Description                     | Remark |
|---------------|--------------|---------------------------------|--------|
| *             | A-4389-820-A | MAIN B BOARD, COMPLETE<br>***** |        |
| < CAPACITOR > |              |                                 |        |
| C401          | 1-136-163-00 | FILM 0.068uF 5% 50V             |        |
| C402          | 1-136-163-00 | FILM 0.068uF 5% 50V             |        |
| C403          | 1-109-871-11 | ELECT 2700uF 20% 50V            |        |
| C404          | 1-124-920-11 | ELECT 330uF 20% 50V             |        |
| C405          | 1-136-163-00 | FILM 0.068uF 5% 50V             |        |
| C406          | 1-126-923-11 | ELECT 220uF 20% 10V             |        |
| C407          | 1-136-157-00 | FILM 0.022uF 5% 50V             |        |
| C408          | 1-126-967-11 | ELECT 47uF 20% 16V              |        |
| C409          | 1-115-424-11 | ELECT 10000uF 20% 50            |        |
| C411          | 1-126-967-11 | ELECT 47uF 20% 50V              |        |
| C412          | 1-126-970-11 | ELECT 330uF 20% 50V             |        |
| C413          | 1-124-903-11 | ELECT 1uF 20% 50V               |        |
| C414          | 1-106-391-12 | MYLAR 0.1uF 5% 200V             |        |
| C415          | 1-126-025-11 | ELECT 330uF 20% 25V             |        |
| C416          | 1-126-967-11 | ELECT 47uF 20% 16V              |        |
| C417          | 1-126-964-11 | ELECT 10uF 20% 50V              |        |
| C418          | 1-126-964-11 | ELECT 10uF 20% 50V              |        |
| C419          | 1-164-077-11 | CERAMIC 220PF 10% 50V           |        |
| C430          | 1-126-965-11 | ELECT 22uF 20% 50V              |        |
| C451          | 1-136-163-00 | FILM 0.068uF 5% 50V             |        |
| C452          | 1-136-163-00 | FILM 0.068uF 5% 50V             |        |
| C453          | 1-109-871-11 | ELECT 2700uF 20% 50V            |        |
| C454          | 1-124-920-11 | ELECT 330uF 20% 50V             |        |
| C459          | 1-115-424-11 | ELECT 10000uF 20% 50            |        |
| C465          | 1-126-025-11 | ELECT 330uF 20% 25V             |        |
| C469          | 1-164-077-11 | CERAMIC 220PF 10% 50V           |        |
| < CONNECTOR > |              |                                 |        |
| CN401         | 1-691-768-11 | PLUG (MICRO CONNECTOR) 6P       |        |
| CN402         | 1-691-766-11 | PLUG (MICRO CONNECTOR) 4P       |        |
| CN405         | 1-691-768-11 | PLUG (MICRO CONNECTOR) 6P       |        |
| CN406         | 1-564-506-11 | PLUG, CONNECTOR 3P              |        |
| CN407         | 1-564-506-11 | PLUG, CONNECTOR 3P              |        |
| * CN403A      | 1-564-241-11 | PIN, CONNECTOR (B4P-VH) 4P      |        |
| * CN404A      | 1-564-104-00 | PIN, CONNECTOR (B3P-VH) 3P      |        |
| < DIODE >     |              |                                 |        |
| D403          | 8-719-024-99 | DIODE 11ES2-NTA2B               |        |
| D404          | 8-719-024-99 | DIODE 11ES2-NTA2B               |        |
| D405          | 8-719-024-99 | DIODE 11ES2-NTA2B               |        |
| D406          | 8-719-024-99 | DIODE 11ES2-NTA2B               |        |
| D407          | 8-719-987-63 | DIODE 1N4148M                   |        |
| D408          | 8-719-987-63 | DIODE 1N4148M                   |        |
| D409          | 8-719-024-99 | DIODE 11ES2-NTA2B               |        |
| D410          | 8-719-024-99 | DIODE 11ES2-NTA2B               |        |
| D411          | 8-719-024-99 | DIODE 11ES2-NTA2B               |        |
| D412          | 8-719-302-38 | DIODE RBV-602-01                |        |

| Ref. No.       | Part No.     | Description               | Remark |
|----------------|--------------|---------------------------|--------|
| < IC >         |              |                           |        |
| IC401          | 8-759-111-68 | IC uPC1237HA              |        |
| < TRANSISTOR > |              |                           |        |
| Q401           | 8-729-104-18 | TRANSISTOR 2SC3514-Q      |        |
| Q402           | 8-729-104-91 | TRANSISTOR 2SA1383        |        |
| Q403           | 8-729-232-45 | TRANSISTOR 2SK1529-Y      |        |
| Q404           | 8-729-232-46 | TRANSISTOR 2SA1383        |        |
| Q405           | 8-729-140-84 | TRANSISTOR 2SC1841-PAFAEA |        |
| Q407           | 8-729-140-96 | TRANSISTOR 2SD774-34      |        |
| Q430           | 8-729-119-76 | TRANSISTOR 2SA1175-HFE    |        |
| Q451           | 8-729-104-18 | TRANSISTOR 2SC3514-Q      |        |
| Q452           | 8-729-104-91 | TRANSISTOR 2SA1383        |        |
| Q453           | 8-729-232-45 | TRANSISTOR 2SK1529-Y      |        |
| Q454           | 8-729-232-46 | TRANSISTOR 2SJ200-Y       |        |
| Q455           | 8-729-140-84 | TRANSISTOR 2SC1841-PAFAEA |        |
| Q406A          | 8-729-281-54 | TRANSISTOR 2SC1815-BL     |        |
| < RESISTOR >   |              |                           |        |
| R401           | 1-249-393-11 | CARBON 10 5% 1/4W         |        |
| R402           | 1-249-393-11 | CARBON 10 5% 1/4W         |        |
| R403           | 1-249-405-11 | CARBON 100 5% 1/4W        |        |
| R404           | 1-249-405-11 | CARBON 100 5% 1/4W        |        |
| R405           | 1-247-745-11 | CARBON 330 5% 1/2W        |        |
| △ R406         | 1-208-601-11 | WIREWOUND 0.1 10% 2W F    |        |
| △ R407         | 1-208-601-11 | WIREWOUND 0.1 10% 2W F    |        |
| R408           | 1-259-428-11 | CARBON 1K 5% 1/6W         |        |
| R409           | 1-259-444-11 | CARBON 4.7K 5% 1/6W       |        |
| R410           | 1-259-432-11 | CARBON 1.5K 5% 1/6W       |        |
| R411           | 1-249-162-11 | CARBON 10 5% 1/3W         |        |
| R412           | 1-259-488-11 | CARBON 330K 5% 1/6W       |        |
| R413           | 1-259-452-11 | CARBON 10K 5% 1/6W        |        |
| R414           | 1-259-484-11 | CARBON 220K 5% 1/6W       |        |
| R415           | 1-259-460-11 | CARBON 22K 5% 1/6W        |        |
| R416           | 1-259-480-11 | CARBON 150K 5% 1/6W       |        |
| R417           | 1-259-456-11 | CARBON 15K 5% 1/6W        |        |
| R418           | 1-259-444-11 | CARBON 4.7K 5% 1/6W       |        |
| R419           | 1-259-388-11 | CARBON 22 5% 1/6W         |        |
| R420           | 1-259-460-11 | CARBON 22K 5% 1/6W        |        |
| △ R421         | 1-212-974-00 | FUSIBLE 47 5% 1/2W F      |        |
| R430           | 1-259-452-11 | CARBON 10K 5% 1/6W        |        |
| R431           | 1-259-470-11 | CARBON 56K 5% 1/6W        |        |
| R451           | 1-249-393-11 | CARBON 10 5% 1/4W         |        |
| R452           | 1-249-393-11 | CARBON 10 5% 1/4W         |        |
| R453           | 1-249-405-11 | CARBON 100 5% 1/4W        |        |
| R454           | 1-249-405-11 | CARBON 100 5% 1/4W        |        |
| R455           | 1-247-745-11 | CARBON 330 5% 1/2W        |        |
| △ R456         | 1-208-601-11 | WIREWOUND 0.1 10% 2W F    |        |
| △ R457         | 1-208-601-11 | WIREWOUND 0.1 10% 2W F    |        |
| R459           | 1-259-444-11 | CARBON 4.7K 5% 1/6W       |        |
| R460           | 1-259-432-11 | CARBON 1.5K 5% 1/6W       |        |

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

## MAIN B

## SP SW

## SP TM

## SW F

## TRANS

| Ref. No.       | Part No.     | Description                     | Remark |    |      |
|----------------|--------------|---------------------------------|--------|----|------|
| R461           | 1-249-162-11 | CARBON                          | 10     | 5% | 1/3W |
| R462           | 1-259-488-11 | CARBON                          | 330K   | 5% | 1/6W |
| *****          |              |                                 |        |    |      |
| *              | 1-660-547-11 | SP SW BOARD                     | *****  |    |      |
| < CONNECTOR >  |              |                                 |        |    |      |
| CN701          | 1-564-510-11 | PLUG (MICRO CONNECTOR) 6P       |        |    |      |
| CN703          | 1-564-505-11 | PLUG, CONNECTOR 2P              |        |    |      |
| < DIODE >      |              |                                 |        |    |      |
| D701           | 8-719-987-63 | DIODE 1N4148M                   |        |    |      |
| < TRANSISTOR > |              |                                 |        |    |      |
| Q701           | 8-729-900-63 | TRANSISTOR DTA124ES             |        |    |      |
| Q702           | 8-729-142-36 | TRANSISTOR BN1L3Z (AEP)         |        |    |      |
| Q702           | 8-729-115-28 | TRANSISTOR BN1L3Z-K (UK,AUS)    |        |    |      |
| < RESISTOR >   |              |                                 |        |    |      |
| R701           | 1-260-093-11 | CARBON                          | 330    | 5% | 1/2W |
| R702           | 1-260-093-11 | CARBON                          | 330    | 5% | 1/2W |
| R703           | 1-260-103-11 | CARBON                          | 2.2K   | 5% | 1/2W |
| R704           | 1-260-103-11 | CARBON                          | 2.2K   | 5% | 1/2W |
| < RELAY >      |              |                                 |        |    |      |
| RY701          | 1-515-622-11 | RELAY                           |        |    |      |
| < SWITCH >     |              |                                 |        |    |      |
| S701           | 1-762-655-11 | SWITCH, ROTARY SLIDE (SPEAKERS) |        |    |      |
| *****          |              |                                 |        |    |      |
| *              | 1-660-538-11 | SP TM BOARD                     | *****  |    |      |
|                | 1-533-233-11 | HOLDER, FUSE                    |        |    |      |
| < CONNECTOR >  |              |                                 |        |    |      |
| CN804          | 1-580-230-11 | PIN, CONNECTOR (PC BOARD) 2P    |        |    |      |
| * CN808        | 1-564-321-21 | PIN, CONNECTOR 2P               |        |    |      |
| * CN809        | 1-565-792-11 | PIN, CONNECTOR 2P               |        |    |      |
| < DIODE >      |              |                                 |        |    |      |
| D501           | 8-719-987-63 | DIODE 1N4148M                   |        |    |      |
| < FUSE >       |              |                                 |        |    |      |
| △F801          | 1-532-464-51 | FUSE, TIME-LAG (T2.5AL/250V)    |        |    |      |
| < COIL >       |              |                                 |        |    |      |
| L501           | 1-411-906-11 | COIL, AIR-CORE                  |        |    |      |
| L551           | 1-411-906-11 | COIL, AIR-CORE                  |        |    |      |

| Ref. No.        | Part No.     | Description                      | Remark  |     |      |
|-----------------|--------------|----------------------------------|---------|-----|------|
| < RESISTOR >    |              |                                  |         |     |      |
| R501            | 1-249-162-11 | CARBON                           | 10      | 5%  | 1/3W |
| R502            | 1-247-750-11 | CARBON                           | 680     | 5%  | 1/2W |
| R551            | 1-249-162-11 | CARBON                           | 10      | 5%  | 1/3W |
| R552            | 1-247-750-11 | CARBON                           | 680     | 5%  | 1/2W |
| R710            | 1-249-429-11 | CARBON                           | 10K     | 5%  | 1/4W |
| < RELAY >       |              |                                  |         |     |      |
| RY501           | 1-515-920-11 | RELAY (24V)                      |         |     |      |
| < TERMINAL >    |              |                                  |         |     |      |
| * TM501         | 1-537-519-11 | TERMINAL BOARD (BI WIRE SPEAKERS | SYSTEM) |     |      |
| *****           |              |                                  |         |     |      |
| *               | 1-660-546-11 | SW F BOARD                       | *****   |     |      |
| < CAPACITOR >   |              |                                  |         |     |      |
| C601            | 1-136-165-00 | FILM                             | 0.1uF   | 5%  | 50V  |
| C602            | 1-136-165-00 | FILM                             | 0.1uF   | 5%  | 50V  |
| C603            | 1-126-926-11 | ELECT                            | 1000uF  | 20% | 10V  |
| < CONNECTOR >   |              |                                  |         |     |      |
| CN601           | 1-691-773-11 | PLUG (MICRO CONNECTOR) 12P       |         |     |      |
| CNP601          | 1-774-936-11 | CONNECTOR, BOARD TO BOARD 12P    |         |     |      |
| < TRANSISTOR >  |              |                                  |         |     |      |
| Q601            | 8-729-119-78 | TRANSISTOR 2SC2785-HFE           |         |     |      |
| Q602            | 8-729-900-74 | TRANSISTOR DTC143TS              |         |     |      |
| Q603            | 8-729-119-78 | TRANSISTOR 2SC2785-HFE           |         |     |      |
| Q604            | 8-729-900-74 | TRANSISTOR DTC143TS              |         |     |      |
| < RESISTOR >    |              |                                  |         |     |      |
| R601            | 1-260-089-11 | CARBON                           | 150     | 5%  | 1/2W |
| R602            | 1-260-089-11 | CARBON                           | 150     | 5%  | 1/2W |
| R603            | 1-260-095-11 | CARBON                           | 470     | 5%  | 1/2W |
| R604            | 1-259-452-11 | CARBON                           | 10K     | 5%  | 1/6W |
| R605            | 1-259-452-11 | CARBON                           | 10K     | 5%  | 1/6W |
| < SWITCH >      |              |                                  |         |     |      |
| S601            | 1-762-656-12 | SWITCH, ROTARY (TAPE MONITOR)    |         |     |      |
| S602            | 1-692-974-11 | SWITCH, ROTARY (INPUT SELECTOR)  |         |     |      |
| *****           |              |                                  |         |     |      |
| *               | 1-660-542-11 | TRANS BOARD                      | *****   |     |      |
| < TRANSFORMER > |              |                                  |         |     |      |
| △T1             | 1-429-493-11 | TRANSFORMER, POWER               |         |     |      |
| *****           |              |                                  |         |     |      |

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

VOL

| Ref. No. | Part No.                                | Description                                                         | Remark |
|----------|-----------------------------------------|---------------------------------------------------------------------|--------|
| *        | 1-660-545-11<br><del>1-662-192-11</del> | VOL BOARD<br>*****                                                  |        |
|          |                                         | < CONNECTOR >                                                       |        |
| CN201    | 1-691-770-11                            | PLUG (MICRO CONNECTOR) 8P                                           |        |
|          |                                         | < RESISTOR >                                                        |        |
| R201     | 1-259-476-11                            | CARBON 100K 5% 1/6W                                                 |        |
| R251     | 1-259-476-11                            | CARBON 100K 5% 1/6W                                                 |        |
|          |                                         | < VARIABLE RESISTOR >                                               |        |
| RV201    | 1-225-228-11                            | RES, VAR, CARBON 120K/120K (VOLUME)                                 |        |
| *****    |                                         |                                                                     |        |
|          |                                         | MISCELLANEOUS                                                       |        |
|          |                                         | *****                                                               |        |
| 54       | 1-533-233-11                            | HOLDER, FUSE                                                        |        |
| 60       | 1-506-113-00                            | SHORT PLUG                                                          |        |
| △ CNP801 | 1-751-523-11                            | CORD, POWER (UK)                                                    |        |
| △ CNP801 | 1-777-185-11                            | CORD, POWER (AEP,AUS)                                               |        |
| △ F801   | 1-532-464-51                            | FUSE, TIME-LAG (T2.5AL/250V)                                        |        |
| △ S1     | 1-554-920-11                            | SWITCH, PUSH (AC POWER) (1 KEY) (POWER)                             |        |
| △ T1     | 1-429-493-11                            | TRANSFORMER, POWER                                                  |        |
| *****    |                                         |                                                                     |        |
|          |                                         | ACCESSORIES & PACKING MATERIALS                                     |        |
|          |                                         | *****                                                               |        |
|          | 3-856-215-11                            | MANUAL, INSTRUCTION (ENGLISH,FRENCH,<br>SWEDISH,ITALIAN,PORTUGUESE) |        |
| *        | 4-981-575-01                            | CUSHION                                                             |        |
| *        | 4-982-295-01                            | INDIVIDUAL CARTON                                                   |        |

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△ or dotted line with mark △ are critical  
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