

# TA-F248E

## SERVICE MANUAL

AEP Model  
UK Model



### SPECIFICATIONS

#### Amplifier section

##### DIN power output

70 W + 70 W (4 ohms at 1 kHz)  
50 W + 50 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  
 $\pm 0.5$  dB  
TUNER, CD, AUX, TAPE1/DAT, TAPE2/MD:  
7 Hz - 100 kHz  $\pm 0.5$  dB

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

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

##### Output voltage / impedance

RECOUT: 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

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.)

6.4 kg

Design and specifications are subject to change without notice.

## INTEGRATED STEREO AMPLIFIER



# SONY®

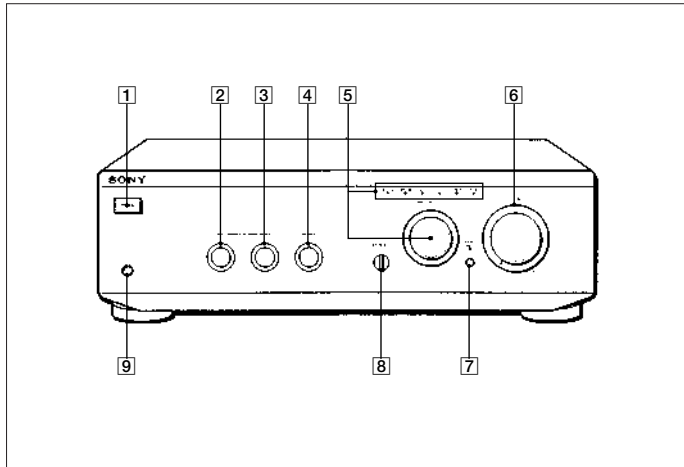
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### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  $\triangle$  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.

**SECTION 1  
GENERAL**

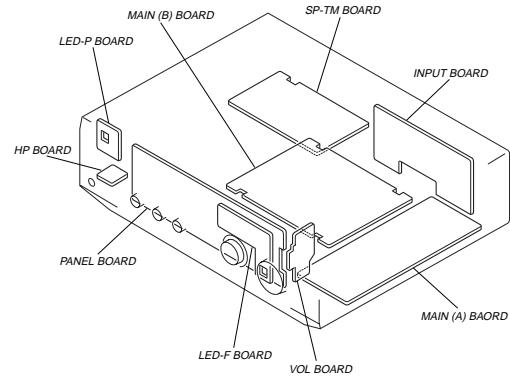


- 1 POWER button
- 2 BASS
- 3 TREBLE
- 4 BALANCE
- 5 INPUT SELECTOR

- 6 VOLUME
- 7 SOURCE DIRECT button
- 8 TAPE MONITOR switch
- 9 PHONES jack

**SECTION 2  
DIAGRAMS**

**2-1. CIRCUIT BOARDS LOCATION**

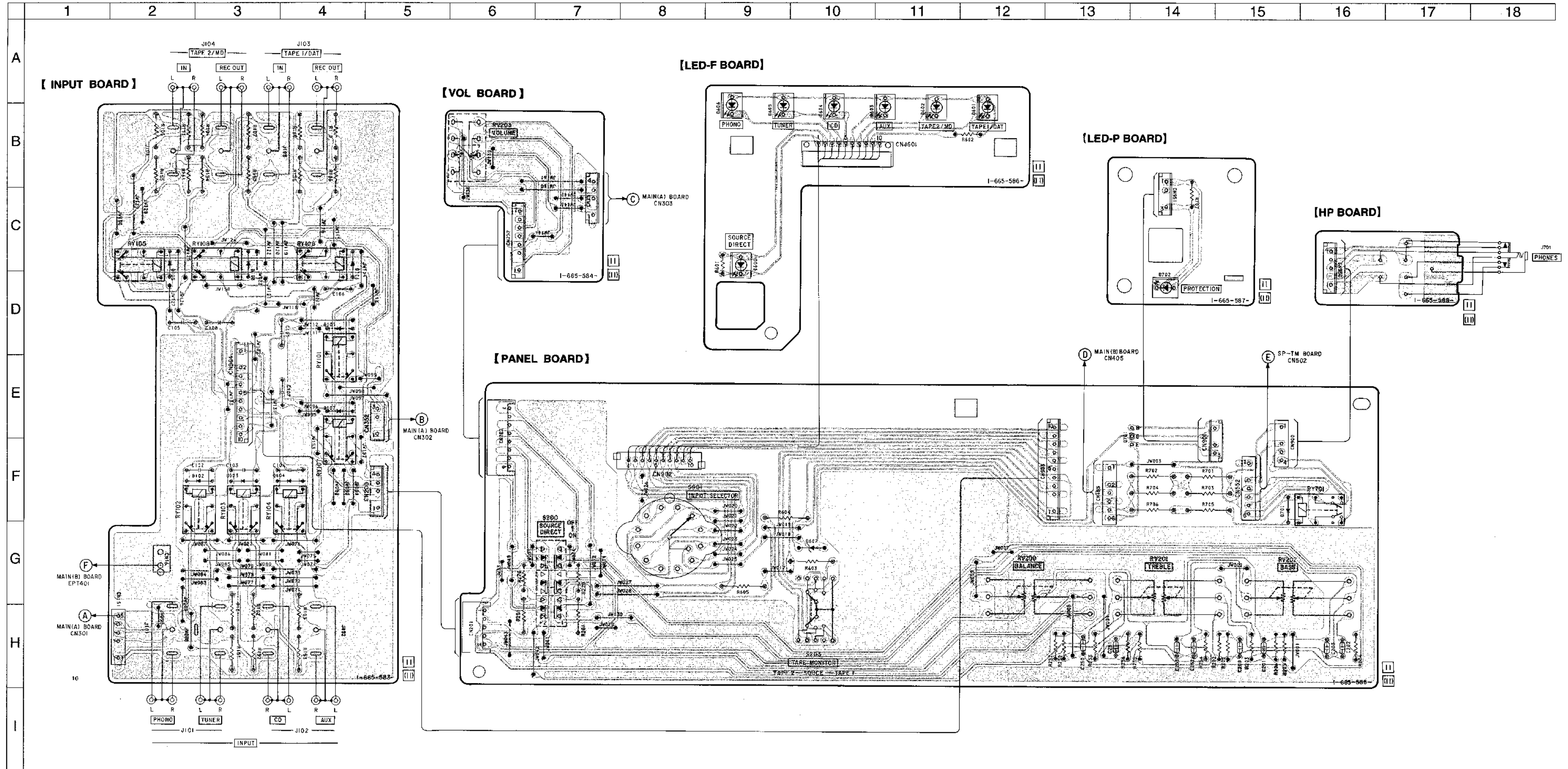


TA-F248E

2-2. PRINTED WIRING BOARD — PANEL SECTION —

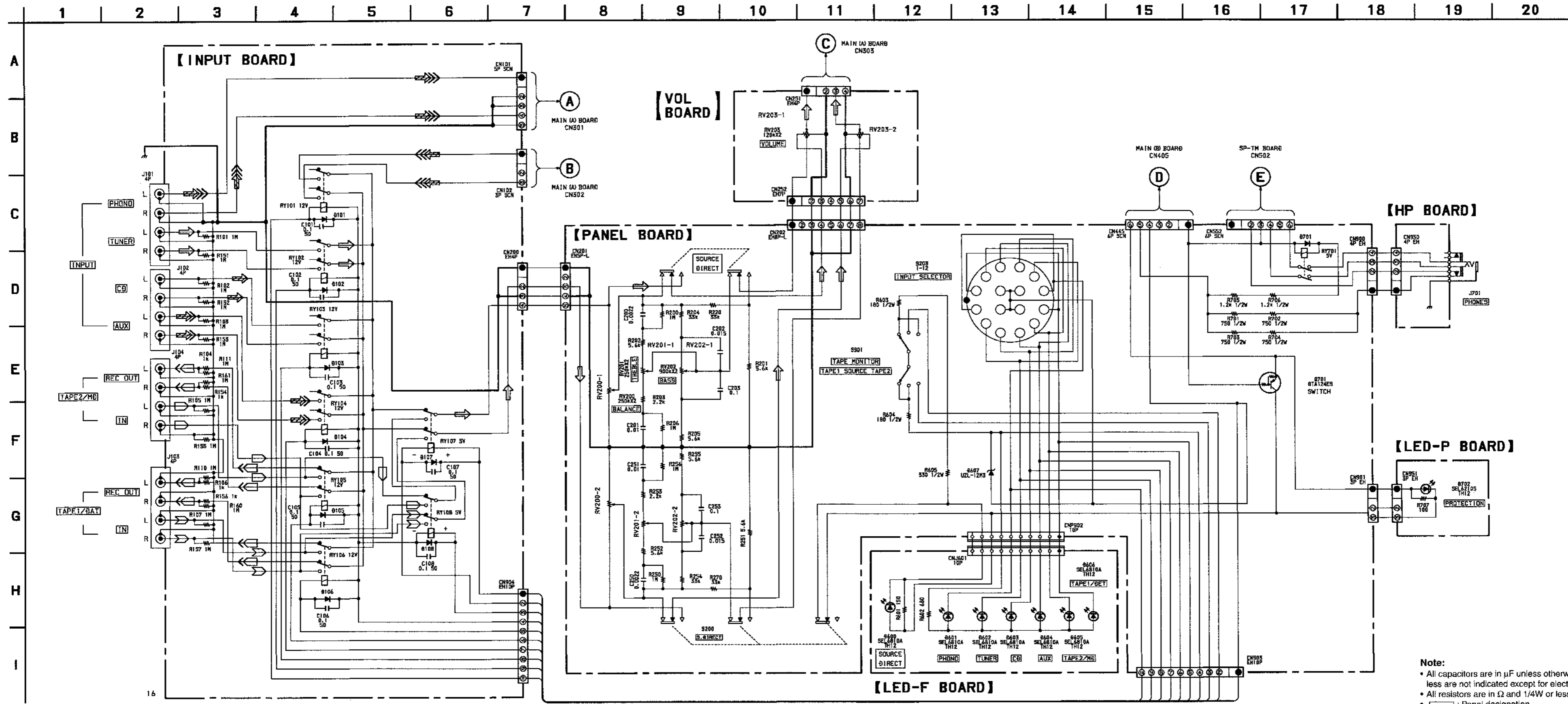
• Semiconductor Location

| Ref. No. | Location |
|----------|----------|
| D101     | D-4      |
| D102     | F-3      |
| D103     | F-3      |
| D104     | F-4      |
| D105     | C-2      |
| D106     | C-4      |
| D107     | E-4      |
| D108     | C-3      |
| D600     | C-9      |
| D601     | B-12     |
| D602     | B-11     |
| D603     | B-11     |
| D604     | B-10     |
| D605     | B-9      |
| D606     | B-9      |
| D607     | G-10     |
| D701     | F-15     |
| D702     | D-14     |
| Q701     | E-14     |



Note:  
 • — : Parts extracted from the component side.  
 • Δ : Internal component.  
 • — : Pattern on the side which is seen.

2-3. SCHEMATIC DIAGRAM — PANEL SECTION —



**Note:**

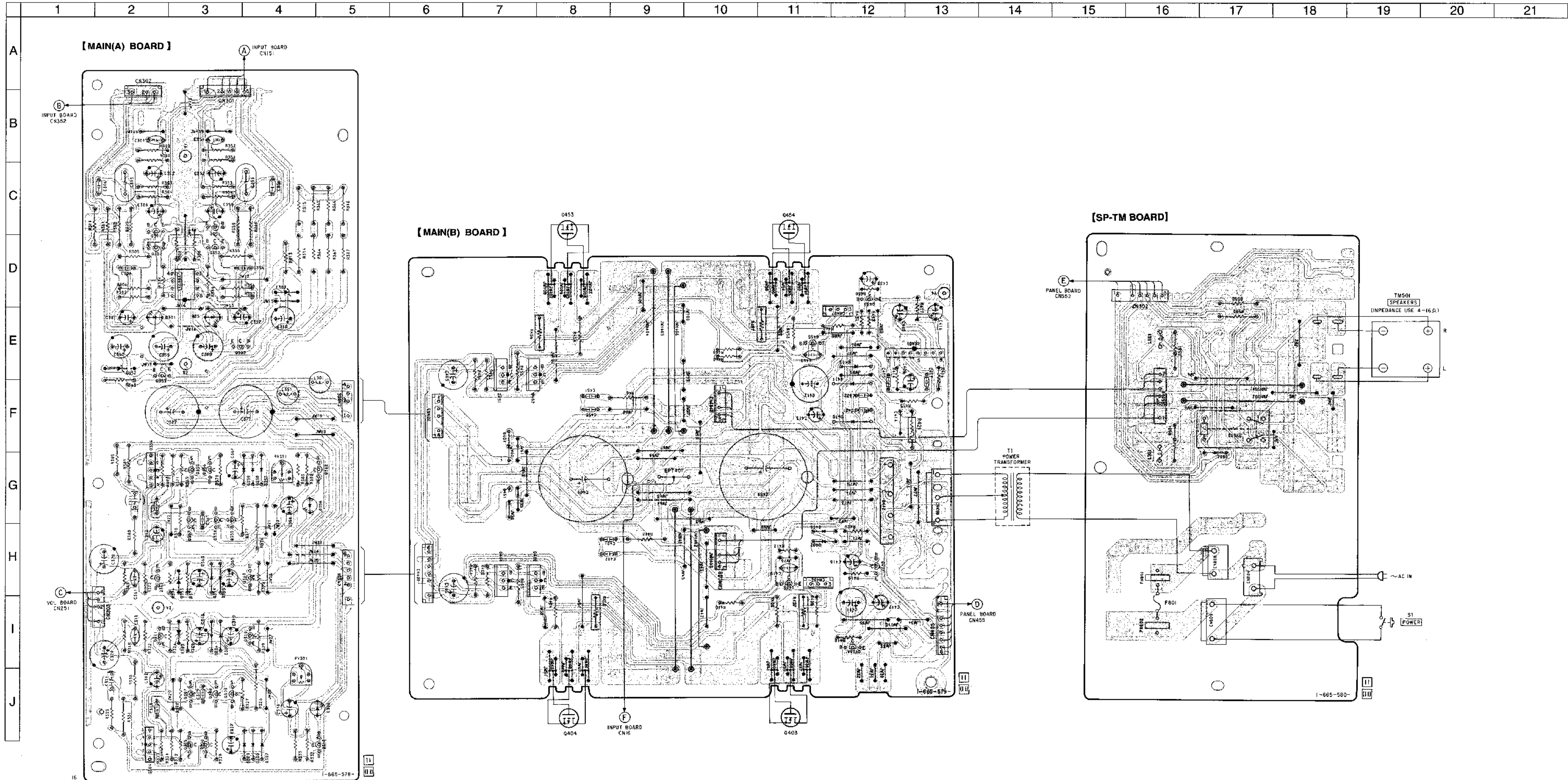
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $1/4\text{W}$  or less unless otherwise specified.
- $\square$ : Panel designation
- Voltages are taken with a VOM (Input impedance  $10\text{M}\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Voltages are dc with respect to ground under no-signal conditions.
- Signal path

$\Rightarrow$ : TUNER     $\Sigma$ : PB (TAPE 1/DAT)     $\square$ : PB (TAPE 2/MD)  
 $\Rightarrow$ : AUX     $\Rightarrow$ : CD     $\Rightarrow$ : PHONO  
 $\Rightarrow$ : REC (TAPE 1/DAT)     $\square$ : REC (TAPE 2/MD)

2-4. PRINTED WIRING BOARD — MAIN SECTION —

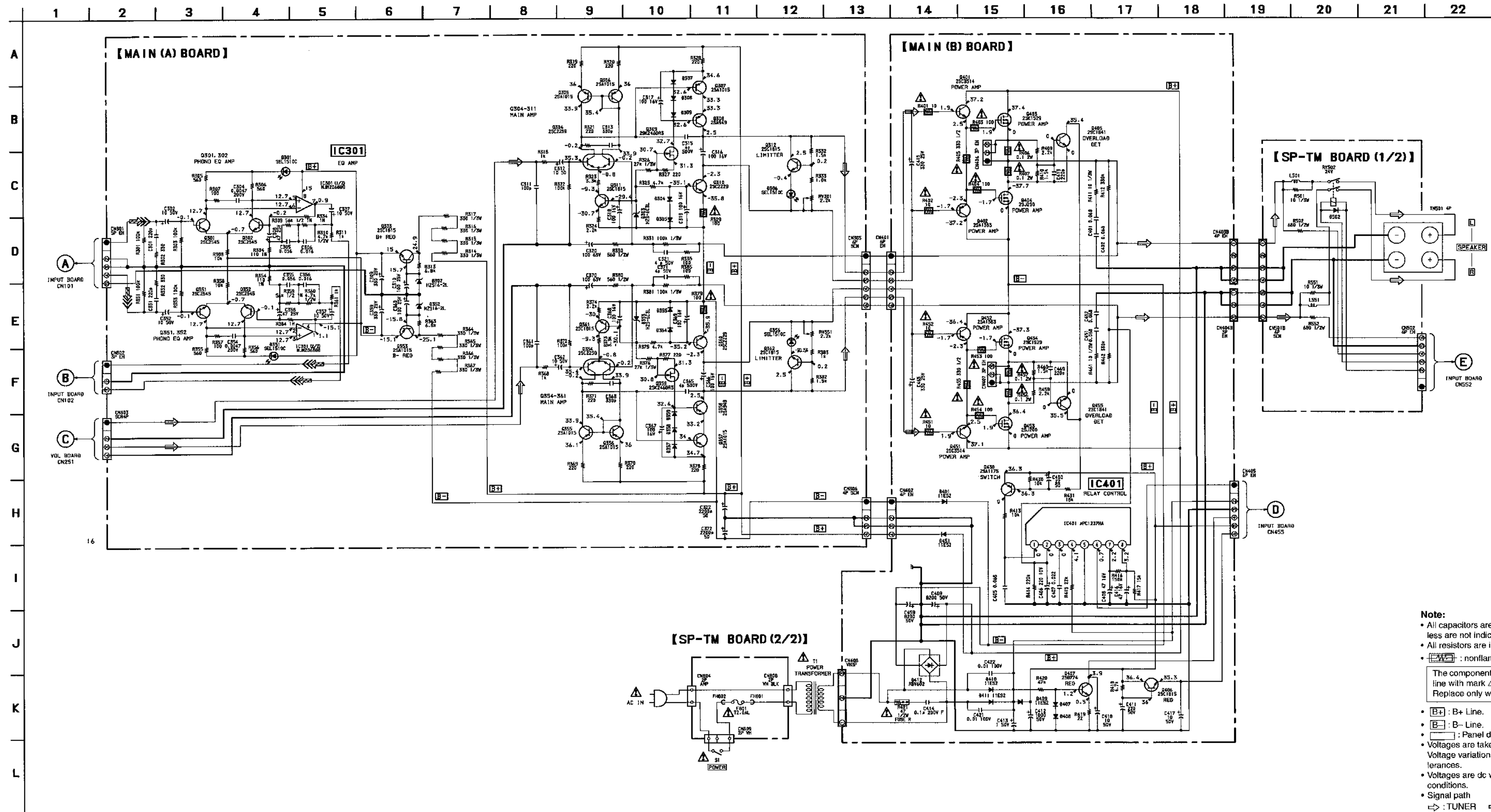
• Semiconductor Location

| Ref. No. | Location |
|----------|----------|
| D301     | E-2      |
| D302     | D-4      |
| D303     | I-3      |
| D304     | I-3      |
| D305     | I-3      |
| D306     | J-5      |
| D307     | J-4      |
| D308     | J-4      |
| D309     | J-4      |
| D351     | E-3      |
| D352     | E-2      |
| D353     | H-3      |
| D354     | H-3      |
| D355     | H-3      |
| D356     | G-4      |
| D357     | G-4      |
| D358     | G-4      |
| D359     | G-4      |
| D401     | F-7      |
| D407     | H-11     |
| D408     | H-11     |
| D409     | F-12     |
| D410     | F-12     |
| D411     | F-12     |
| D412     | G-12     |
| D451     | G-7      |
| D502     | F-17     |
| IC301    | D-3      |
| IC401    | F-13     |
| Q301     | C-2      |
| Q302     | D-2      |
| Q303     | E-3      |
| Q304     | J-2      |
| Q305     | J-3      |
| Q306     | J-3      |
| Q307     | J-3      |
| Q308     | J-3      |
| Q309     | J-3      |
| Q310     | I-4      |
| Q311     | I-2      |
| Q312     | J-5      |
| Q351     | C-3      |
| Q352     | D-3      |
| Q353     | F-2      |
| Q354     | G-2      |
| Q355     | G-3      |
| Q356     | G-3      |
| Q357     | G-3      |
| Q358     | G-3      |
| Q359     | G-3      |
| Q360     | H-4      |
| Q361     | H-2      |
| Q362     | G-5      |
| Q401     | H-7      |
| Q402     | H-7      |
| Q405     | H-11     |
| Q406A    | I-12     |
| Q407     | H-12     |
| Q430     | D-12     |
| Q451     | E-7      |
| Q452     | E-7      |
| Q455     | E-11     |



Note:  
 • — : Parts extracted from the component side.  
 • Δ : Internal component.  
 • — : Pattern on the side which is seen.

2-5. SCHEMATIC DIAGRAM — MAIN SECTION —



**Note:**

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $1/4\text{W}$  or less unless otherwise specified.
- $\square$ : nonflammable resistor.

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

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





**LED-P**

**MAIN (A)**

| Ref. No. | Part No.     | Description                       | Remarks | Ref. No. | Part No.     | Description                | Remarks |
|----------|--------------|-----------------------------------|---------|----------|--------------|----------------------------|---------|
| *        | 1-665-587-11 | LED-P BOARD<br>*****              |         |          |              | < CONNECTOR >              |         |
|          |              | < CONNECTOR >                     |         | CN301    | 1-691-767-11 | PLUG (MICRO CONNECTOR) 5P  |         |
|          |              |                                   |         | CN302    | 1-691-765-11 | PLUG (MICRO CONNECTOR) 3P  |         |
| CN951    | 1-691-765-11 | PLUG (MICRO CONNECTOR) 3P         |         |          |              | < DIODE >                  |         |
|          |              | < DIODE >                         |         | D301     | 8-719-310-61 | DIODE SEL1510C-D           |         |
|          |              |                                   |         | D302     | 8-719-933-88 | DIODE HZS16-2L             |         |
| D702     | 8-719-313-48 | DIODE SEL6210S-TH12 (PROTECTION)  |         | D303     | 8-719-933-41 | DIODE HZS6C3L              |         |
|          |              | < RESISTOR >                      |         | D304     | 8-719-987-63 | DIODE 1N4148M              |         |
|          |              |                                   |         | D305     | 8-719-987-63 | DIODE 1N4148M              |         |
| R707     | 1-259-143-21 | CARBON 100 5% 1/4W                |         | D306     | 8-719-310-61 | DIODE SEL1510C-D           |         |
| *****    |              |                                   |         |          |              |                            |         |
| *        | A-4398-006-A | MAIN (A) BOARD, COMPLETE<br>***** |         | D307     | 8-719-987-63 | DIODE 1N4148M              |         |
|          |              | < CAPACITOR >                     |         | D308     | 8-719-987-63 | DIODE 1N4148M              |         |
|          |              |                                   |         | D309     | 8-719-987-63 | DIODE 1N4148M              |         |
| C301     | 1-102-978-00 | CERAMIC 220PF 5% 50V              |         | D351     | 8-719-310-61 | DIODE SEL1510C-D           |         |
| C302     | 1-126-059-11 | ELECT 10uF 20% 50V                |         |          |              | < DIODE >                  |         |
| C304     | 1-106-359-00 | MYLAR 4700PF 5% 200V              |         | D352     | 8-719-933-88 | DIODE HZS16-2L             |         |
| C305     | 1-136-162-00 | FILM 0.056uF 5% 50V               |         | D353     | 8-719-933-41 | DIODE HZS6C3L              |         |
| C306     | 1-137-471-11 | FILM 0.016uF 5% 50V               |         | D354     | 8-719-987-63 | DIODE 1N4148M              |         |
|          |              |                                   |         | D355     | 8-719-987-63 | DIODE 1N4148M              |         |
| C307     | 1-126-059-11 | ELECT 10uF 20% 50V                |         | D356     | 8-719-310-61 | DIODE SEL1510C-D           |         |
| C308     | 1-126-022-11 | ELECT 47uF 20% 25V                |         |          |              | < DIODE >                  |         |
| C309     | 1-126-025-11 | ELECT 330uF 20% 25V               |         | D357     | 8-719-987-63 | DIODE 1N4148M              |         |
| C310     | 1-126-023-11 | ELECT 100uF 20% 25V               |         | D358     | 8-719-987-63 | DIODE 1N4148M              |         |
| C311     | 1-102-973-00 | CERAMIC 100PF 5% 50V              |         | D359     | 8-719-987-63 | DIODE 1N4148M              |         |
|          |              |                                   |         |          |              | < IC >                     |         |
| C312     | 1-124-721-11 | ELECT 10uF 20% 50V                |         | IC301    | 8-759-701-25 | IC NJM2068D-D              |         |
| C313     | 1-104-290-11 | POLYSTYRENE 330PF 5% 50V          |         |          |              | < COIL >                   |         |
| C315     | 1-102-230-00 | CERAMIC 4PF 0.25PF 500V           |         | L301     | 1-428-203-11 | COIL, AIR-CORE             |         |
| C316     | 1-126-023-11 | ELECT 100uF 20% 16V               |         | L351     | 1-428-203-11 | COIL, AIR-CORE             |         |
| C317     | 1-126-023-11 | ELECT 100uF 20% 16V               |         |          |              | < TRANSISTOR >             |         |
| C318     | 1-126-023-11 | ELECT 100uF 20% 16V               |         | Q301     | 8-729-354-52 | TRANSISTOR 2SC2545         |         |
| C319     | 1-126-023-11 | ELECT 100uF 20% 16V               |         | Q302     | 8-729-354-52 | TRANSISTOR 2SC2545         |         |
| C320     | 1-110-393-11 | ELECT 100uF 20% 63V               |         | Q303     | 8-729-281-54 | TRANSISTOR 2SC1815-BL      |         |
| C321     | 1-113-496-11 | POLYSTYRENE 4PF 10% 50V           |         | Q304     | 8-729-620-17 | TRANSISTOR 2SC2259-FG      |         |
| C322     | 1-126-057-11 | ELECT 2200uF 20% 50V              |         | Q305     | 8-729-201-53 | TRANSISTOR 2SA1015-GR      |         |
|          |              |                                   |         | Q306     | 8-729-201-53 | TRANSISTOR 2SA1015-GR      |         |
| C351     | 1-102-978-00 | CERAMIC 220PF 5% 50V              |         | Q307     | 8-729-201-53 | TRANSISTOR 2SA1015-GR      |         |
| C352     | 1-126-059-11 | ELECT 10uF 20% 50V                |         | Q308     | 8-729-021-74 | TRANSISTOR 2SA949-OY-TPE6  |         |
| C354     | 1-106-359-00 | MYLAR 4700PF 5% 200V              |         | Q309     | 8-729-202-67 | TRANSISTOR 2SK246-GR3      |         |
| C355     | 1-136-162-00 | FILM 0.056uF 5% 50V               |         | Q310     | 8-729-021-73 | TRANSISTOR 2SC2229-OY-TPE6 |         |
| C356     | 1-137-471-11 | FILM 0.016uF 5% 50V               |         |          |              | < TRANSISTOR >             |         |
| C357     | 1-126-059-11 | ELECT 10uF 20% 50V                |         | Q311     | 8-729-281-54 | TRANSISTOR 2SC1815-BL      |         |
| C358     | 1-126-022-11 | ELECT 47uF 20% 25V                |         | Q312     | 8-729-281-54 | TRANSISTOR 2SC1815-BL      |         |
| C359     | 1-126-025-11 | ELECT 330uF 20% 25V               |         | Q351     | 8-729-354-52 | TRANSISTOR 2SC2545         |         |
| C360     | 1-126-023-11 | ELECT 100uF 20% 25V               |         | Q352     | 8-729-354-52 | TRANSISTOR 2SC2545         |         |
| C361     | 1-102-973-00 | CERAMIC 100PF 5% 50V              |         | Q353     | 8-729-201-53 | TRANSISTOR 2SA1015-GR      |         |
|          |              |                                   |         | Q354     | 8-729-620-17 | TRANSISTOR 2SC2259-FG      |         |
| C362     | 1-124-721-11 | ELECT 10uF 20% 50V                |         | Q355     | 8-729-201-53 | TRANSISTOR 2SA1015-GR      |         |
| C363     | 1-104-290-11 | POLYSTYRENE 330PF 5% 50V          |         | Q356     | 8-729-201-53 | TRANSISTOR 2SA1015-GR      |         |
| C365     | 1-102-230-00 | CERAMIC 4PF 0.25PF 500V           |         | Q357     | 8-729-201-53 | TRANSISTOR 2SA1015-GR      |         |
| C366     | 1-126-023-11 | ELECT 100uF 20% 16V               |         | Q358     | 8-729-021-74 | TRANSISTOR 2SA949-OY-TPE6  |         |
| C367     | 1-126-023-11 | ELECT 100uF 20% 16V               |         |          |              | < TRANSISTOR >             |         |
| C368     | 1-126-023-11 | ELECT 100uF 20% 16V               |         | Q359     | 8-729-202-67 | TRANSISTOR 2SK246-GR3      |         |
| C369     | 1-126-023-11 | ELECT 100uF 20% 16V               |         | Q360     | 8-729-021-73 | TRANSISTOR 2SC2229-OY-TPE6 |         |
| C370     | 1-110-393-11 | ELECT 100uF 20% 63V               |         | Q361     | 8-729-281-54 | TRANSISTOR 2SC1815-BL      |         |
| C371     | 1-113-496-11 | POLYSTYRENE 4PF 10% 50V           |         | Q362     | 8-729-281-54 | TRANSISTOR 2SC1815-BL      |         |
| C372     | 1-126-057-11 | ELECT 2200uF 20% 50V              |         |          |              |                            |         |

**MAIN (A)**

**MAIN (B)**

| Ref. No.     | Part No.     | Description    | Remarks |
|--------------|--------------|----------------|---------|
| < RESISTOR > |              |                |         |
| R301         | 1-259-215-21 | CARBON 100K 5% | 1/4W    |
| R302         | 1-249-911-11 | CARBON 330 5%  | 1/4W    |
| R303         | 1-259-215-21 | CARBON 100K 5% | 1/4W    |
| R304         | 1-249-900-11 | CARBON 110 1%  | 1/4W    |
| R305         | 1-259-161-21 | CARBON 560 5%  | 1/4W    |
| R306         | 1-259-161-21 | CARBON 560 5%  | 1/4W    |
| R307         | 1-259-143-21 | CARBON 100 5%  | 1/4W    |
| R308         | 1-259-191-21 | CARBON 10K 5%  | 1/4W    |
| R309         | 1-249-844-11 | CARBON 56K 1%  | 1/2W    |
| R310         | 1-259-320-11 | CARBON 4.7K 1% | 1/2W    |
| R311         | 1-259-167-21 | CARBON 1K 5%   | 1/4W    |
| R313         | 1-249-943-11 | CARBON 6.8K 5% | 1/4W    |
| R314         | 1-249-198-11 | CARBON 330 5%  | 1/3W    |
| R315         | 1-249-198-11 | CARBON 330 5%  | 1/3W    |
| R316         | 1-249-198-11 | CARBON 330 5%  | 1/3W    |
| R317         | 1-249-198-11 | CARBON 330 5%  | 1/3W    |
| R318         | 1-259-167-21 | CARBON 1K 5%   | 1/4W    |
| R319         | 1-259-151-21 | CARBON 220 5%  | 1/4W    |
| R320         | 1-259-151-21 | CARBON 220 5%  | 1/4W    |
| R321         | 1-259-151-21 | CARBON 220 5%  | 1/4W    |
| R322         | 1-259-215-21 | CARBON 100K 5% | 1/4W    |
| R323         | 1-259-179-21 | CARBON 3.3K 5% | 1/4W    |
| R324         | 1-259-175-11 | CARBON 2.2K 5% | 1/4W    |
| R325         | 1-259-183-11 | CARBON 4.7K 5% | 1/4W    |
| R326         | 1-249-490-11 | CARBON 27K 5%  | 1/2W    |
| R327         | 1-259-151-21 | CARBON 220 5%  | 1/4W    |
| R328         | 1-259-151-21 | CARBON 220 5%  | 1/4W    |
| △R329        | 1-249-899-11 | CARBON 100 5%  | 1/4W F  |
| R330         | 1-247-749-11 | CARBON 560 5%  | 1/2W F  |
| R331         | 1-249-496-11 | CARBON 100K 5% | 1/2W    |
| R332         | 1-259-171-21 | CARBON 1.5K 5% | 1/4W    |
| R333         | 1-259-167-21 | CARBON 1K 5%   | 1/4W    |
| R334         | 1-259-239-11 | CARBON 1M 5%   | 1/4W    |
| R335         | 1-259-143-21 | CARBON 100 5%  | 1/4W    |
| R351         | 1-259-215-21 | CARBON 100K 5% | 1/4W    |
| R352         | 1-249-911-11 | CARBON 330 5%  | 1/4W    |
| R353         | 1-259-215-21 | CARBON 100K 5% | 1/4W    |
| R354         | 1-249-900-11 | CARBON 110 1%  | 1/4W    |
| R355         | 1-259-161-21 | CARBON 560 5%  | 1/4W    |
| R356         | 1-259-161-21 | CARBON 560 5%  | 1/4W    |
| R357         | 1-259-143-21 | CARBON 100 5%  | 1/4W    |
| R358         | 1-259-191-21 | CARBON 10K 5%  | 1/4W    |
| R359         | 1-249-844-11 | CARBON 56K 1%  | 1/2W    |
| R360         | 1-259-320-11 | CARBON 4.7K 1% | 1/2W    |
| R361         | 1-259-167-21 | CARBON 1K 5%   | 1/4W    |
| R363         | 1-249-943-11 | CARBON 6.8K 5% | 1/4W    |
| R364         | 1-249-198-11 | CARBON 330 5%  | 1/3W    |
| R365         | 1-249-198-11 | CARBON 330 5%  | 1/3W    |
| R366         | 1-249-198-11 | CARBON 330 5%  | 1/3W    |
| R367         | 1-249-198-11 | CARBON 330 5%  | 1/3W    |
| R368         | 1-259-167-21 | CARBON 1K 5%   | 1/4W    |
| R369         | 1-259-151-21 | CARBON 220 5%  | 1/4W    |
| R370         | 1-259-151-21 | CARBON 220 5%  | 1/4W    |
| R371         | 1-259-151-21 | CARBON 220 5%  | 1/4W    |
| R372         | 1-259-215-21 | CARBON 100K 5% | 1/4W    |

| Ref. No.              | Part No.     | Description               | Remarks |
|-----------------------|--------------|---------------------------|---------|
| R373                  | 1-259-179-21 | CARBON 3.3K 5%            | 1/4W    |
| R374                  | 1-259-175-11 | CARBON 2.2K 5%            | 1/4W    |
| R375                  | 1-259-183-11 | CARBON 4.7K 5%            | 1/4W    |
| R376                  | 1-249-490-11 | CARBON 27K 5%             | 1/2W    |
| R377                  | 1-259-151-21 | CARBON 220 5%             | 1/4W    |
| R378                  | 1-259-151-21 | CARBON 220 5%             | 1/4W    |
| △R379                 | 1-249-899-11 | CARBON 100 5%             | 1/4W F  |
| R380                  | 1-247-749-11 | CARBON 560 5%             | 1/2W F  |
| R381                  | 1-249-496-11 | CARBON 100K 5%            | 1/2W    |
| R382                  | 1-259-171-21 | CARBON 1.5K 5%            | 1/4W    |
| R383                  | 1-259-167-21 | CARBON 1K 5%              | 1/4W    |
| R384                  | 1-259-239-11 | CARBON 1M 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     |         |
| RV351                 | 1-241-762-11 | RES, ADJ, CARBON 2.2K     |         |
| *****                 |              |                           |         |
| *                     | A-4398-007-A | MAIN (B) BOARD, COMPLETE  |         |
| *****                 |              |                           |         |
| < CAPACITOR >         |              |                           |         |
| C401                  | 1-136-163-00 | FILM 0.068uF 5%           | 50V     |
| C402                  | 1-136-163-00 | FILM 0.068uF 5%           | 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                  | 1-109-870-11 | ELECT 8200uF 20%          | 50V     |
| C411                  | 1-126-969-11 | ELECT 220uF 20%           | 50V     |
| C412                  | 1-126-972-11 | ELECT 1000uF 20%          | 50V     |
| C413                  | 1-126-960-11 | ELECT 1uF 20%             | 50V     |
| C414                  | 1-104-999-11 | MYLAR 0.1uF 10%           | 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     |
| C421                  | 1-137-150-11 | MYLAR 0.01uF 10%          | 100V    |
| C422                  | 1-137-150-11 | MYLAR 0.01uF 10%          | 100V    |
| 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     |
| C459                  | 1-109-870-11 | ELECT 8200uF 20%          | 50V     |
| 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        |         |
| * CN408               | 1-564-687-11 | PIN, CONNECTOR 3P         |         |
| CN403B                | 1-691-765-21 | PLUG (MICRO CONNECTOR) 3P |         |
| CN404B                | 1-691-765-11 | PLUG (MICRO CONNECTOR) 3P |         |

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

**MAIN (B)**

**PANEL**

| Ref. No. | Part No.     | Description               | Remarks |
|----------|--------------|---------------------------|---------|
|          |              | < DIODE >                 |         |
| D401     | 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          |         |
| D451     | 8-719-024-99 | DIODE 11ES2-NTA2B         |         |
|          |              | < TERMINAL >              |         |
| * EPT401 | 4-924-264-21 | TERMINAL, MOUNT           |         |
|          |              | < IC >                    |         |
| IC401    | 8-759-111-68 | IC uPC1237HA              |         |
|          |              | < TRANSISTOR >            |         |
| Q401     | 8-729-104-18 | TRANSISTOR 2SC3514-Q      |         |
| Q402     | 8-729-104-91 | 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        |         |
| 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 F  |
| △ R402   | 1-249-393-11 | CARBON 10 5%              | 1/4W F  |
| △ R403   | 1-249-405-11 | CARBON 100 5%             | 1/4W F  |
| △ R404   | 1-249-405-11 | CARBON 100 5%             | 1/4W F  |
| △ R405   | 1-247-745-11 | CARBON 330 5%             | 1/2W F  |
| △ R406   | 1-208-601-11 | WIREWOUND 0.1 10%         | 2W F    |
| △ R407   | 1-208-601-11 | WIREWOUND 0.1 10%         | 2W F    |
| R409     | 1-259-436-11 | CARBON 2.2K 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     | 1-259-468-11 | CARBON 47K 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     | 1-259-458-11 | CARBON 18K 5%             | 1/6W    |
| △ R451   | 1-249-393-11 | CARBON 10 5%              | 1/4W F  |
| △ R452   | 1-249-393-11 | CARBON 10 5%              | 1/4W F  |
| △ R453   | 1-249-405-11 | CARBON 100 5%             | 1/4W F  |
| △ R454   | 1-249-405-11 | CARBON 100 5%             | 1/4W F  |
| △ R455   | 1-247-745-11 | CARBON 330 5%             | 1/2W F  |
| △ R456   | 1-208-601-11 | WIREWOUND 0.1 10%         | 2W F    |
| △ R457   | 1-208-601-11 | WIREWOUND 0.1 10%         | 2W F    |
| R459     | 1-259-436-11 | CARBON 2.2K 5%            | 1/6W    |

| Ref. No. | Part No.     | Description                   | Remarks |
|----------|--------------|-------------------------------|---------|
| R460     | 1-259-432-11 | CARBON 1.5K 5%                | 1/6W    |
| R461     | 1-249-162-11 | CARBON 10 5%                  | 1/3W    |
| R462     | 1-259-488-11 | CARBON 330K 5%                | 1/6W    |
| *****    |              |                               |         |
| *        | A-4398-012-A | PANEL BOARD, COMPLETE         | *****   |
|          |              | < CAPACITOR >                 |         |
| C200     | 1-130-475-00 | MYLAR 0.0022uF 5%             | 50V     |
| C201     | 1-136-153-00 | FILM 0.01uF 5%                | 50V     |
| C202     | 1-136-155-00 | FILM 0.015uF 5%               | 50V     |
| C203     | 1-136-165-00 | FILM 0.1uF 5%                 | 50V     |
| C250     | 1-130-475-00 | MYLAR 0.0022uF 5%             | 50V     |
| C251     | 1-136-153-00 | FILM 0.01uF 5%                | 50V     |
| C252     | 1-136-155-00 | FILM 0.015uF 5%               | 50V     |
| C253     | 1-136-165-00 | FILM 0.1uF 5%                 | 50V     |
|          |              | < CONNECTOR >                 |         |
| * CN201  | 1-564-520-11 | PLUG, CONNECTOR 5P            |         |
| CN202    | 1-564-523-11 | PLUG, CONNECTOR 8P            |         |
| CN901    | 1-691-765-11 | PLUG (MICRO CONNECTOR) 3P     |         |
| CN903    | 1-691-772-11 | PLUG (MICRO CONNECTOR) 10P    |         |
|          |              | < CONNECTOR >                 |         |
| CNP902   | 1-774-460-11 | CONNECTOR, BOARD TO BOARD 10P |         |
|          |              | < DIODE >                     |         |
| D607     | 8-719-001-76 | DIODE UZL-12M3                |         |
| D701     | 8-719-987-63 | DIODE 1N4148M                 |         |
|          |              | < TRANSISTOR >                |         |
| Q701     | 8-729-900-63 | TRANSISTOR DTA124ES           |         |
|          |              | < RESISTOR >                  |         |
| R200     | 1-259-500-11 | CARBON 1M 5%                  | 1/6W    |
| R201     | 1-259-446-11 | CARBON 5.6K 5%                | 1/6W    |
| R202     | 1-259-446-11 | CARBON 5.6K 5%                | 1/6W    |
| R203     | 1-259-436-11 | CARBON 2.2K 5%                | 1/6W    |
| R204     | 1-259-464-11 | CARBON 33K 5%                 | 1/6W    |
| R205     | 1-259-446-11 | CARBON 5.6K 5%                | 1/6W    |
| R206     | 1-259-500-11 | CARBON 1M 5%                  | 1/6W    |
| R220     | 1-259-464-11 | CARBON 33K 5%                 | 1/6W    |
| R250     | 1-259-500-11 | CARBON 1M 5%                  | 1/6W    |
| R251     | 1-259-446-11 | CARBON 5.6K 5%                | 1/6W    |
| R252     | 1-259-446-11 | CARBON 5.6K 5%                | 1/6W    |
| R253     | 1-259-436-11 | CARBON 2.2K 5%                | 1/6W    |
| R254     | 1-259-464-11 | CARBON 33K 5%                 | 1/6W    |
| R255     | 1-259-446-11 | CARBON 5.6K 5%                | 1/6W    |
| R256     | 1-259-500-11 | CARBON 1M 5%                  | 1/6W    |
| R270     | 1-259-464-11 | CARBON 33K 5%                 | 1/6W    |
| R603     | 1-247-742-11 | CARBON 180 5%                 | 1/2W F  |
| R604     | 1-247-742-11 | CARBON 180 5%                 | 1/2W F  |
| R605     | 1-247-745-11 | CARBON 330 5%                 | 1/2W F  |
| R701     | 1-260-170-11 | CARBON 750 5%                 | 1/2W    |
| R702     | 1-260-170-11 | CARBON 750 5%                 | 1/2W    |
| R703     | 1-260-170-11 | CARBON 750 5%                 | 1/2W    |
| R704     | 1-260-170-11 | CARBON 750 5%                 | 1/2W    |
| R705     | 1-247-753-11 | CARBON 1.2K 5%                | 1/2W    |
| R706     | 1-247-753-11 | CARBON 1.2K 5%                | 1/2W    |

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| Ref. No. | Part No.     | Description                          | Remarks |
|----------|--------------|--------------------------------------|---------|
|          |              | < VARIABLE RESISTOR >                |         |
| RV200    | 1-223-933-21 | RES, VAR, CARBON 250K/250K           |         |
| RV201    | 1-223-934-21 | RES, VAR, CARBON 250K/250K           |         |
| RV202    | 1-223-935-21 | RES, VAR, CARBON 900K/900K           |         |
|          |              | < RELAY >                            |         |
| RY701    | 1-515-614-11 | RELAY                                |         |
|          |              | < SWITCH >                           |         |
| S200     | 1-571-828-11 | SWITCH, PUSH (1 KEY) (SOURCE DIRECT) |         |
| S203     | 1-762-656-11 | SWITCH, ROTARY (TAPE MONITOR)        |         |
| S901     | 1-692-974-11 | SWITCH, ROTARY (INPUT SELECTOR)      |         |
| *****    |              |                                      |         |
| *        | 1-665-580-11 | SP-TM BOARD                          |         |
|          |              | *****                                |         |
|          | 1-533-233-11 | HOLDER, FUSE                         |         |
|          |              | < CONNECTOR >                        |         |
| CN502    | 1-564-510-11 | PLUG (MICRO CONNECTOR) 6P            |         |
| 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 >                            |         |
| D502     | 8-719-987-63 | DIODE 1N4148M                        |         |
|          |              | < FUSE >                             |         |
| △F801    | 1-532-388-51 | FUSE TIME LAG 2A                     |         |
|          |              | < COIL >                             |         |
| L501     | 1-411-906-11 | COIL, AIR-CORE                       |         |
| L551     | 1-411-906-11 | COIL, AIR-CORE                       |         |
|          |              | < RESISTOR >                         |         |
| R501     | 1-249-162-11 | CARBON 10 5% 1/3W                    |         |
| R502     | 1-247-750-11 | CARBON 680 5% 1/2W F                 |         |
| R551     | 1-249-162-11 | CARBON 10 5% 1/3W                    |         |
| R552     | 1-247-750-11 | CARBON 680 5% 1/2W F                 |         |
|          |              | < RELAY >                            |         |
| RY502    | 1-515-920-11 | RELAY (24V)                          |         |
|          |              | < TERMINAL >                         |         |
| TM501    | 1-537-893-11 | TERMINAL BOARD (SP) (SPEAKERS)       |         |
| *****    |              |                                      |         |

| Ref. No.     | Part No.     | Description  | Remarks |
|--------------|--------------|--|---------|
| *            | 1-665-584-11 | VOL BOARD  |         |
|              |              | *****  |         |
|              |              | < CONNECTOR >  |         |
| CN251        | 1-691-766-11 | PLUG (MICRO CONNECTOR) 4P                              |         |
| CN252        | 1-691-769-11 | PLUG (MICRO CONNECTOR) 7P                              |         |
|              |              | < VARIABLE RESISTOR >                                  |         |
| RV203        | 1-225-228-11 | RES, VAR, CARBON 120K/120K (VOLUME)                    |         |
| *****        |              |  |         |
|              |              | MISCELLANEOUS  |         |
|              |              | *****  |         |
| △59          | 1-777-185-11 | CORD, POWER  |         |
| △60          | 1-770-019-11 | ADAPTOR, CONVERSION PLUG 3P (UK)                       |         |
| △S1          | 1-554-920-11 | SWITCH, PUSH (AC POWER)(1 KEY)                         |         |
| △T1          | 1-431-277-11 | TRANSFORMER, POWER                                     |         |
| *****        |              |  |         |
|              |              | ACCESSORIES & PACKING MATERIALS                        |         |
|              |              | *****  |         |
| 3-860-500-11 |              | MANUAL, INSTRUCTION                                    |         |
|              |              | (ENGLISH/FRENCH/GERMAN/SWEDISH/<br>ITALIAN/PORTUGUESE) |         |

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

# TA-F248E

SONY®

AEP Model  
UK Model

## SERVICE MANUAL

### SUPPLEMENT-1

File this supplement with the service manual.(9-920-925-11)

Subject: ELECTRICAL ADJUSTMENT ADDITION

(SFD-98001)

#### BIAS ADJUSTMENT

##### Adjustment Procedure:

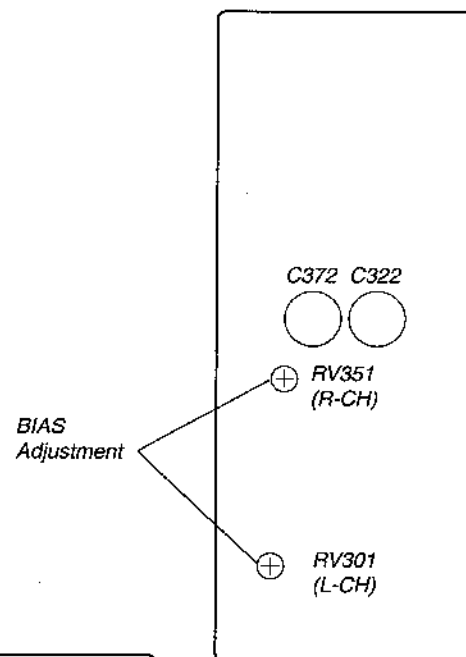
1. Rotate fully the bias adjusting semi-fixed resistors (RV301 (L-CH), RV351 (R-CH)) to the minimum position (counterclockwise).
2. Connect a digital voltmeter to the CN406 (L-CH) and CN407 (R-CH).

|              | pin① | pin③ |
|--------------|------|------|
| CN406 (L-CH) | -    | +    |
| CN407 (R-CH) | +    | -    |

3. Set the slidack to 0 V AC, and press the **POWER** button (ON) on the set.
4. Raise gradually the slidack voltage up to the rated voltage (230 V AC).
5. At this time, confirm that the speaker relay is turned on (it will click).
6. Adjust the RV301 (L-CH) and RV351 (R-CH) so that a reading of digital voltmeter is 10 mV  $\pm$  1mV.
7. Return the slidack to 0 V AC, and press the **POWER** button (OFF) on the set.

##### Connection and Adjustment Location:

[MAIN (A) BOARD]  
- Component side -



[MAIN (B) BOARD] - Component side -

