

# Service Manual

Stereo Integrated Amplifier

Amplifier

SU-500

06100217  
SM-SU500  
SVC MNL

08000538

14

1 ST

Color

(K) . . . . Black Type

(S) . . . . Silver Type



| Color  | Area                                                                       |
|--------|----------------------------------------------------------------------------|
| (K)(S) | [E] . . . . Continental Europe                                             |
| (K)(S) | [EH] . . . . Holland                                                       |
| (K)(S) | [EB] . . . . Belgium                                                       |
| (K)(S) | [EF] . . . . France                                                        |
| (K)(S) | [EK] . . . . United Kingdom                                                |
| (K)(S) | [EG] . . . . F.R. Germany                                                  |
| (K)(S) | [Ei] . . . . Italy                                                         |
| (K)(S) | [XL] . . . . Australia                                                     |
| (K)(S) | [XA] . . . . Asia, Latin America,<br>Middle Near East,<br>Africa & Oceania |

## SPECIFICATIONS

(DIN 45 500)

### ■ AMPLIFIER SECTION

40 Hz~20 kHz continuous power output  
both channels driven  $2 \times 40\text{W}$  (8 $\Omega$ )

1 kHz continuous power output  
both channels driven  $2 \times 50\text{W}$  (8 $\Omega$ )

Total harmonic distortion  
rated power at 40 Hz~20 kHz 0.05% (8 $\Omega$ )  
half power at 1 kHz 0.03% (8 $\Omega$ )

Intermodulation distortion  
rated power at 60 Hz: 7 kHz=4:1, SMPTE, 8 $\Omega$  0.05%

Power bandwidth  
both channels driven, -3 dB 10 Hz~25 kHz (8 $\Omega$ , 0.05%)

Damping factor 50 (8 $\Omega$ )

Input sensitivity and impedance

|                                          |                     |
|------------------------------------------|---------------------|
| PHONO                                    | 2.5 mV/47k $\Omega$ |
| TUNER, CD/AUX                            | 150 mV/22k $\Omega$ |
| TAPE/EXT                                 | 150 mV/22k $\Omega$ |
| PHONO maximum input voltage (1 kHz, RMS) | 150 mV              |

rated power (8 $\Omega$ )

PHONO 71 dB (IHF, A: 72 dB)

TUNER, CD/AUX, TAPE/EXT 90 dB (IHF, A: 98 dB)

### Frequency response

PHONO RIAA standard curve

 $\pm 0.8$  dB (30 Hz~15 kHz)

TUNER, CD/AUX, TAPE/EXT 5 Hz~70 kHz (-3 dB)

### Tone controls

BASS 50 Hz, +10 dB~-10 dB

TREBLE 20 kHz, +10 dB~-10 dB

Loudness control (volume at -30 dB) 50 Hz, +9 dB

### Output voltage and impedance

REC OUT 150 mV

Channel balance, CD/AUX 250 Hz~6,300 Hz  $\pm 1$  dB

Channel separation, AUX 1 kHz 45 dB

Headphones output level and impedance 470 mV/330 $\Omega$ 

### Load impedance

MAIN or REMOTE 4 $\Omega$ ~16 $\Omega$ MAIN and REMOTE 8 $\Omega$ ~16 $\Omega$ 

### ■ GENERAL

Power consumption 250W

### Power supply

For Australia and United Kingdom AC 50 Hz/60 Hz, 240V

For continental Europe AC 50 Hz/60 Hz, 220V

For others AC 50 Hz/60 Hz, 110V/127V/220V/240V

Dimensions (W×H×D) 430 × 86 × 240 mm

(16-15/16" × 3-3/8" × 9-7/16")

Weight 4.7 kg (10.4 lb.)

### Note:

Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).

Specifications are subject to change without notice for further improvement.

# Technics

Matsushita Electric Trading Co., Ltd.

P.O. Box 288, Central Osaka Japan

# TECHNISCHE DATEN

(DIN 45 500)

## VERSTÄRKERTEIL

|                                                      |               |
|------------------------------------------------------|---------------|
| Dauerton-Ausgangsleistung bei 40 Hz ~ 20 kHz         | 2 × 40W (8 Ω) |
| beide Kanäle ausgesteuert                            |               |
| Dauerton-Ausgangsleistung bei 1 kHz                  | 2 × 50W (8 Ω) |
| beide Kanäle ausgesteuert                            |               |
| Gesamtklirrfaktor                                    |               |
| Nennleistung bei 40 Hz ~ 20 kHz                      | 0,05% (8 Ω)   |
| halbe Nennleistung bei 1 kHz                         | 0,03% (8 Ω)   |
| Intermodulationsfaktor                               |               |
| Nennleistung bei 60 Hz: 7 kHz = 4:1, nach SMPTE, 8 Ω | 0,05%         |

|                                            |                             |
|--------------------------------------------|-----------------------------|
| Leistungsbandbreite                        |                             |
| beide Kanäle ausgesteuert bei -3 dB        | 10 Hz ~ 25 kHz (8 Ω, 0,05%) |
| Dämpfungsfaktor                            | 50 (8 Ω)                    |
| Eingangsempfindlichkeit und -impedanz      |                             |
| Phono                                      | 2,5 mV/47 kΩ                |
| Tuner, CD/Aux                              | 150 mV/22 kΩ                |
| TAPE/EXT                                   | 150 mV/22 kΩ                |
| Maximale TA-Eingangsspannung (1 kHz, eff.) | 150 mV                      |
| Geräuschspannungsabstand                   |                             |
| Nennleistung (8 Ω)                         |                             |
| Phono                                      | 71 dB (nach IHF, A: 72 dB)  |
| Tuner, CD/Aux, TAPE/EXT                    | 90 dB (nach IHF, A: 98 dB)  |

## Frequenzgang

Phono

RIAA-Standardkurve,  
±0,8 dB (30 Hz ~ 15 kHz)  
5 Hz ~ 70 kHz (-3 dB)

Tuner, CD/Aux, Tape/EXT

## Klangregler

Baßregler (BASS)

50 Hz, +10 dB ~ -10 dB

Höhenregler (TREBLE)

20 kHz, +10 dB ~ -10 dB

## Gehörliche Lautstärkekorrektur (Loudness)

(bei -30 dB Ausgangsleistung)

50 Hz, +9 dB

## Ausgangsspannung und -impedanz

Aufnahmeausgang (REC OUT)

150 mV

Kanalabweichung (CD/Aux, 250 Hz ~ 6300 Hz)

±1 dB

Übersprechdämpfung (Aux, 1 kHz)

45 dB

Kopfhörerpegel und -impedanz

470 mV/330 Ω

Lautsprecherimpedanz

MAIN oder REMOTE

4 Ω ~ 16 Ω

MAIN und REMOTE

8 Ω ~ 16 Ω

## ALLGEMEINE DATEN

Leistungsaufnahme

250W

Netzspannung

Für Kontinentaleuropa

Wechselstrom 50 Hz/60 Hz, 220V

Für andere Länder

Wechselstrom 50 Hz/60 Hz,

110V/127V/220V/240V

430 × 86 × 240 mm

Abmessungen (B×H×T)

Gewicht

4,7 kg

## Bemerkung:

Der Gesamtklirrfaktor wurde mit einem digitalen Rauschspektrometer (Anlage H.P. 3045) gemessen.

(Die technischen Daten können infolge von Verbesserungen ohne Ankündigung geändert werden.)

# CARACTERISTIQUES

(DIN 45 500)

## SECTION AMPLIFICATEUR

|                                                     |               |
|-----------------------------------------------------|---------------|
| Puissance de sortie continue de 40 Hz ~ 20 kHz,     | 2 × 40W (8 Ω) |
| les deux canaux en circuit                          |               |
| Puissance de sortie continue à 1 kHz                | 2 × 50W (8 Ω) |
| les deux canaux en circuit                          |               |
| Distorsion harmonique totale                        |               |
| à puissance nominale (40 Hz ~ 20 kHz)               | 0,05% (8 Ω)   |
| à demi-puissance (1 kHz)                            | 0,03% (8 Ω)   |
| Distorsion d'intermodulation                        |               |
| à puissance nominale à 60 Hz: 7 kHz=4:1, SMPTE, 8 Ω | 0,05%         |

## Réponse de fréquences

les deux canaux en circuit, -3 dB

10 Hz ~ 25 kHz (8 Ω, 0,05%)

## Coefficient d'amortissement

50 (8 Ω)

## Sensibilité et impédance d'entrée

PHONO

2,5 mV/47kΩ

SYNTHONISATEUR, CD/AUX (TUNER, CD/AUX)

150 mV/22kΩ

BANDE/EXT (TAPE/EXT)

150 mV/22kΩ

PHONO (tension d'entrée maximum, 1 kHz RMS)

150 mV

## Signal/Bruit

à puissance nominale (8 Ω)

71 dB (IHF, A: 72 dB)

PHONO

90 dB (IHF, A: 98 dB)

SYNTHONISATEUR, CD/AUX, BANDE/EXT

(TUNER, CD/AUX, TAPE/EXT) 90dB (IHF, A: 98 dB)

## Réponse de fréquence

PHONO

Courbe nominale RIAA

±0,8 dB (30 Hz ~ 15 kHz)

## SYNTHONISATEUR, CD/AUX, BANDE/EXT

(TUNER, CD/AUX, TAPE/EXT)

5 Hz ~ 70 kHz (-3 dB)

## Réglage de la tonalité

BASSES (BASS)

50 Hz, +10 dB ~ -10 dB

AIGUS (TREBLE)

20 kHz, +10 dB ~ -10 dB

Compensateur physiologique (volume à -30 dB) 50 Hz, +9 dB

## Tension de sortie et impédance

SORTIE ENREGISTREMENT (REC OUT)

150 mV

Equilibrage des canaux, CD/AUX 250 Hz ~ 6 300 Hz

±1 dB

Séparation des canaux, AUX 1 kHz

45 dB

Niveau de sortie des casques et impédance

470 mV/330 Ω

Impédance de charge

PRINCIPALE ou AUXILIAIRE (MAIN or REMOTE)

4 Ω ~ 16 Ω

PRINCIPALE et AUXILIAIRE (MAIN and REMOTE)

8 Ω ~ 16 Ω

## DIVERS

Consommation

250W

Alimentation

Pour l'Europe

CA 50 Hz/60 Hz, 220V

Autres

CA 50 Hz/60 Hz, 110V/127V/220V/240V

Dimensions (L×H×Pr)

430 × 86 × 240 mm

Poids

4,7 kg

## Remarque:

On mesure la distorsion harmonique totale au moyen d'un analyseur de spectre digital (Système H.P. 3045).

(Sujet à changement sans préavis)

# ESPECIFICACIONES (DIN 45 500) IONS

## SECCION AMPLIFICADOR

|                                                         |                                               |
|---------------------------------------------------------|-----------------------------------------------|
| Potencia continua de 40 Hz~20 kHz<br>en ambos canales   | 2 × 40W (8Ω)                                  |
| Potencia continua de 1 kHz<br>en ambos canales          | 2 × 50W (8Ω)                                  |
| Distorsión armónica total                               |                                               |
| potencia de régimen a 40 Hz~20 kHz                      | 0,05% (8Ω)                                    |
| mitad de potencia a 1 kHz                               | 0,03% (8Ω)                                    |
| Distorsión por intermodulación                          |                                               |
| potencia de régimen a 60 Hz: 7 kHz=4:1, SMPTE, 8Ω       | 0,05%                                         |
| Ancho de banda de potencia<br>con ambos canales, -3 dB  | 10 Hz~25 kHz (8Ω, 0,05%)                      |
| Factor de amortiguamiento                               | 50 (8Ω)                                       |
| Sensibilidad e impedancia de entrada                    |                                               |
| TOCADISC. (PHONO)                                       | 2,5 mV/47kΩ                                   |
| SINTON., CD/AUX. (TUNER, CD/AUX)                        | 150 mV/22kΩ                                   |
| GRAB/EXT (TAPE/EXT)                                     | 150 mV/22kΩ                                   |
| Voltaje máximo de entrada de PHONO (1 kHz, RMS)         | 150 mV                                        |
| Relación de señal a ruido                               |                                               |
| potencia de régimen (8Ω)                                |                                               |
| TOCADISC. (PHONO)                                       | 71 dB (IHF, A: 72 dB)                         |
| SINTON., CD/AUX., GRAB/EXT<br>(TUNER, CD/AUX, TAPE/EXT) | 90 dB (IHF, A: 98 dB)                         |
| Respuesta de frecuencia                                 |                                               |
| TOCADISC. (PHONO)                                       | curva RIAA estándar<br>±0,8 dB (30 Hz~15 kHz) |

## SINTON., CD/AUX., GRAB/EXT (TUNER, CD/AUX, TAPE/EXT)

5 Hz~70 kHz (-3 dB)

|                                                 |                       |
|-------------------------------------------------|-----------------------|
| Controles de tono                               |                       |
| BAJOS (BASS)                                    | 50 Hz, +10 dB~-10 dB  |
| AGUDOS (TREBLE)                                 | 20 kHz, +10 dB~-10 dB |
| Control de sonoridad (volumen a -30 dB)         | 50 Hz, +9 dB          |
| Voltaje e impedancia de salida                  |                       |
| SAL. GRAB. (REC OUT)                            | 150 mV                |
| Equilibrio de canales, CD/AUX 250 Hz~6 300 Hz   | ±1 dB                 |
| Separación de canales, AUX 1 kHz                | 45 dB                 |
| Impedancia y nivel de salida de los auriculares | 470 mV/330Ω           |
| Impedancia de carga                             |                       |
| MAIN o REMOTE                                   | 4Ω~16Ω                |
| MAIN y REMOTE                                   | 8Ω~16Ω                |

## GENERAL

|                             |                                     |
|-----------------------------|-------------------------------------|
| Consumo de energía          | 250W                                |
| Alimentación de energía     |                                     |
| Para Europa continental     | CA 50 Hz/60 Hz, 220V                |
| Para otros países           | CA 50 Hz/60 Hz, 110V/127V/220V/240V |
| Dimensiones (An.×Al.×Prof.) | 430 × 86 × 240 mm                   |
| Peso                        | 4,7 kg                              |

### Nota:

La distorsión armónica total se mide con el analizador de espectro digital (sistema H.P. 3045).

(Estas especificaciones están sujetas a cualquier cambio sin previo aviso.)

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## PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:

- No sound is heard when the power is switched ON.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of this unit are used.

If this occurs, follow the procedure outlined below:

1. Switch OFF the power.
2. Determine the cause of the problem and correct it.
3. Switch ON the power once again.

### Note:

When the protection circuitry functions, the unit will not operate unless the power is first switched OFF and then ON again.

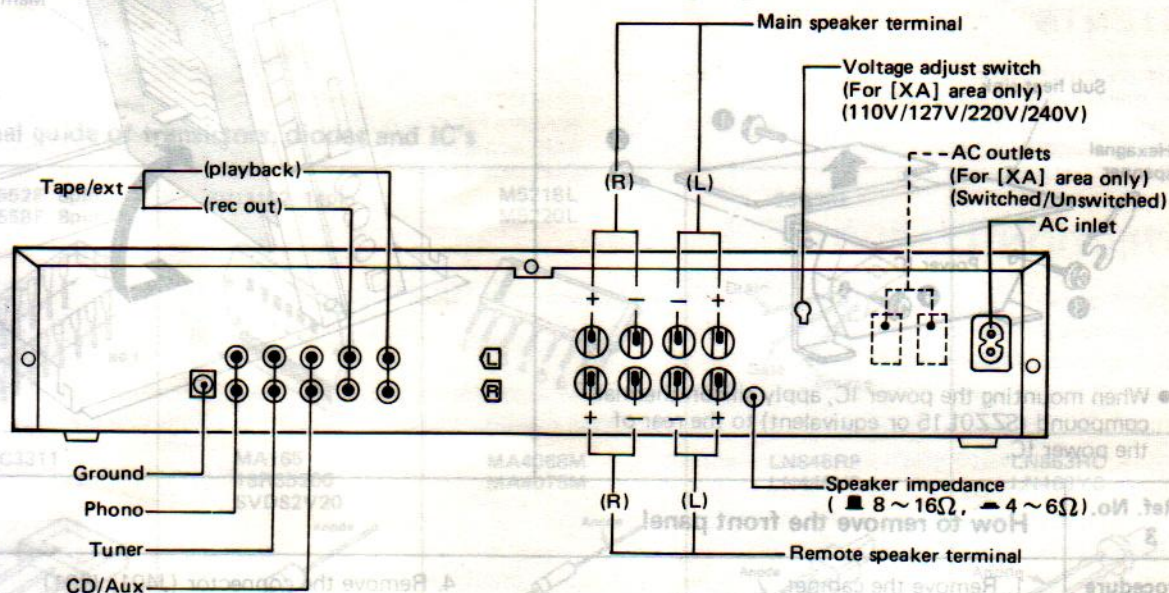
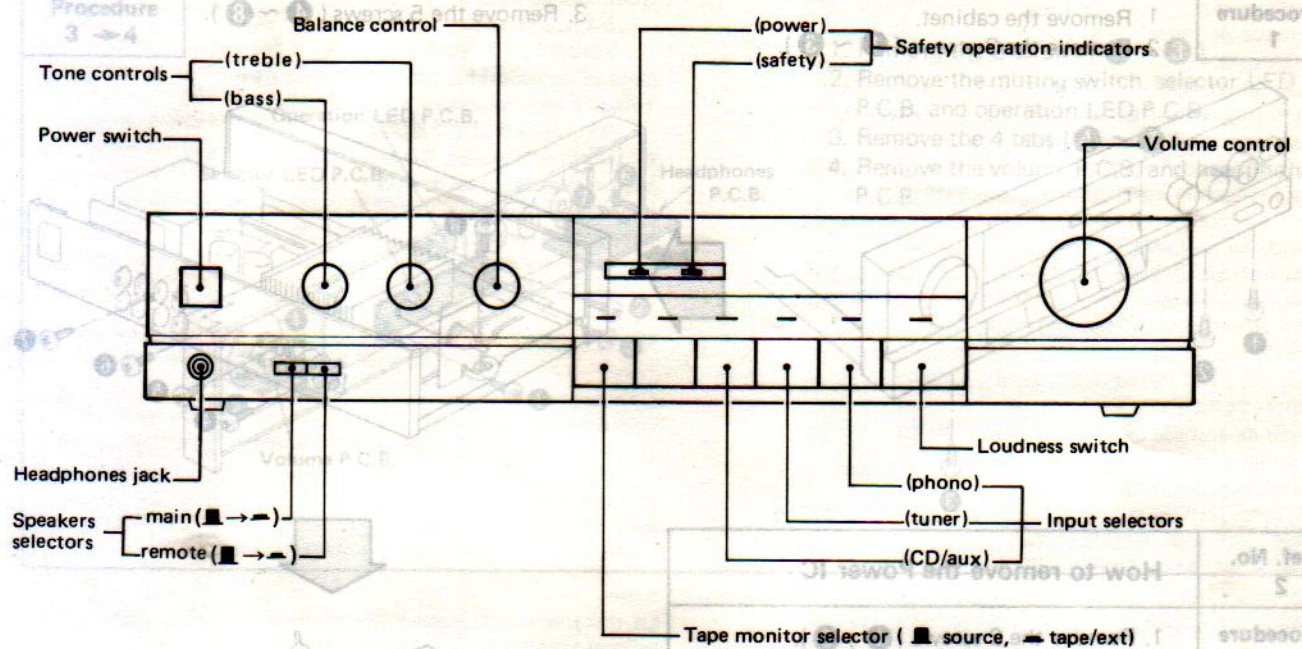
## BEFORE REPAIR AND ADJUSTMENT

- (1) Turn off the power supply. Using a 10Ω, 5W resistor, shortcircuit both ends of power supply capacitors (C901, C902, 4700μF) in order to discharge the voltage.
- (2) Before turning the power supply on, after completion of repair, slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current at 50/60 Hz in NO SIGNAL mode should be shown below with respect to supply voltage 110V/127V/220V/240V.

| Power supply voltage |      | AC110V      | AC127V      | AC220V     | AC240V     |
|----------------------|------|-------------|-------------|------------|------------|
| Consumed current     | 50Hz | 130 ~ 290mA | 120 ~ 260mA | 65 ~ 145mA | 60 ~ 140mA |
|                      | 60Hz | 120 ~ 260mA | 110 ~ 250mA | 60 ~ 140mA | 50 ~ 130mA |

# LOCATION OF CONTROLS

## DISASSEMBLY INSTRUCTIONS



- The power supply for this unit varies depending upon the areas. Also, the parts used for power supply are different. So, refer to the circuit diagram and replacement parts list.
- [XA] area is provided with voltage selector and AC outlets.
- 240V (50/60Hz) for Australia and United Kingdom.
- 220V (50/60Hz) for Continental Europe.
- 110V/127V/220V/240V (50/60Hz) for other [XA] area.
- Phono input capacitance is about 150pF.

# DISASSEMBLY INSTRUCTIONS

LOCATION OF CONTROLS

|                                                          |                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>Ref. No.<br/>1</div> <div>Procedure<br/>1</div>     | <div>How to remove the main P.C.B.</div> <div>           1. Remove the cabinet.<br/>           2. Remove the 3 screws ( ① ~ ③ ).<br/>           3. Remove the 5 screws ( ④ ~ ⑧ ).         </div> <div> </div>                                                                                                                                                                                              |
| <div>Ref. No.<br/>2</div> <div>Procedure<br/>1 → 2</div> | <div>How to remove the Power IC</div> <div>           1. Remove the 2 screws ( ① , ② ).<br/>           2. Remove the sub heat-sink.<br/>           3. Unsolder the power IC.<br/>           4. Remove the 4 screws ( ③ , ④ ).         </div> <div> </div> <div>           • When mounting the power IC, apply silicon thermal compound (SZZOL15 or equivalent) to the rear of the power IC.         </div> |
| <div>Ref. No.<br/>3</div> <div>Procedure<br/>3</div>     | <div>How to remove the front panel</div> <div>           1. Remove the cabinet.<br/>           2. Remove the 3 screws ( ① ~ ③ ).<br/>           3. Remove the 4 nuts ( ④ ~ ⑦ ).<br/>           4. Remove the connector (J401, J801)<br/>           5. Remove the front panel in the direction of the arrow.         </div> <div> </div>                                                                    |

|                                                     |                    |
|-----------------------------------------------------|--------------------|
| Ref. No.<br>4                                       | Procedure<br>3 → 4 |
| • Terminal<br>AN655<br>AN655<br>2SC3<br>E<br>C<br>B |                    |

|                           |                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ref. No.</b><br>4      | <b>How to remove the P.C.B.</b>                                                                                                                                                                                                                                                                                                                             |
| <b>Procedure</b><br>3 → 4 | <div data-bbox="235 328 812 714"> </div> <div data-bbox="844 260 1380 442"> <ol style="list-style-type: none"> <li>1. Remove the 3 screws ( ① ~ ③ )</li> <li>2. Remove the muting switch, selector LED P.C.B. and operation LED P.C.B.</li> <li>3. Remove the 4 tabs ( ④ ~ ⑦ )</li> <li>4. Remove the volume P.C.B. and headphones P.C.B.</li> </ol> </div> |

Notes:  
La distribución armónica total se mide con el amplificador de  
respetivo digital (sistema H.P. 3045).  
(Estas especificaciones están sujetas a cualquier cambio  
sin previo aviso.)

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● Terminal guide of transistors, diodes and IC's

|                                      |                                        |                            |                                                       |
|--------------------------------------|----------------------------------------|----------------------------|-------------------------------------------------------|
| <p>AN6552F 8pin<br/>AN6558F 8pin</p> | <p>SVI3102 14pin</p>                   | <p>M5218L<br/>M5220L</p>   | <p>2SK381</p>                                         |
| <p>2SC3311</p>                       | <p>MA165<br/>1SR35200<br/>SVD52V20</p> | <p>MA4068M<br/>MA4075M</p> | <p>LN846RP<br/>LN446YP</p> <p>LN863RC<br/>LN463YC</p> |

Turn off the power supply. Using a 100 ΩW resistor, shortcircuit both ends of power supply capacitor (C907, C902).  
Before turning the power supply on, after completion of repair, slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current is below with respect to supply voltage.

| Power supply voltage | Consumed current                     |
|----------------------|--------------------------------------|
| AC110V               | 50Hz 130 ~ 200mA<br>60Hz 120 ~ 200mA |
| AC127V               | 110 ~ 250mA                          |
| AC220V               | 80 ~ 140mA                           |
| AC240V               | 80 ~ 140mA                           |

# RESISTORS & CAPACITORS

- Notes:**
- Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
  - Important safety notice:  
Components identified by  $\Delta$  mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
  - Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
  - The "S" mark is service standard parts and may differ from production parts.
  - The unit of resistance is OHM ( $\Omega$ ).  
K = 1000  $\Omega$ , M = 1000k $\Omega$
  - The unit of capacitance is MICROFARAD ( $\mu$ F).  
P =  $10^{-6}$   $\mu$ F

## Numbering System of Resistor

Example

|      |         |       |           |       |
|------|---------|-------|-----------|-------|
| ERD  | 25      | F     | J         | 101   |
| Type | Wattage | Shape | Tolerance | Value |

## Numbering System of Capacitor

Example

|      |         |       |           |             |
|------|---------|-------|-----------|-------------|
| ECKD | 1H      | 103   | Z         | F           |
| Type | Voltage | Value | Tolerance | Peculiarity |

|      |         |                 |       |             |
|------|---------|-----------------|-------|-------------|
| ECEA | 50      | M               | R47   | R           |
| Type | Voltage | Peculiarity use | Value | Special use |

| Resistor Type    | Wattage   | Tolerance      |
|------------------|-----------|----------------|
| ERD : Carbon     | 25 : 1/4W | J : $\pm 5\%$  |
| ERX : Metal film | S1 : 1/2W | K : $\pm 10\%$ |
|                  | S2 : 1/4W |                |

| Capacitor Type       | Voltage   |             | Tolerance      |
|----------------------|-----------|-------------|----------------|
|                      | ECEA Type | Other       |                |
| ECEA : Electrolytic  | 0J : 6.3V | 1H : 50V DC | J : $\pm 5\%$  |
| ECCD : Ceramic       | 1C : 16V  |             | K : $\pm 10\%$ |
| ECKD : Ceramic       | 1E : 25V  |             | Z : +80%, -20% |
| ECQM : Polyester     | 1H : 50V  |             | P : +100%, -0% |
| ECFT : Semiconductor | 42 : 42V  |             |                |
| ECET : Electrolytic  |           |             |                |

## Resistor

| Ref. No.               | Part No.   | Value |
|------------------------|------------|-------|
| R101, 102<br>[EG only] | ERDS2TJ471 | 470   |
| R103, 104<br>[EG only] | ERDS2TJ471 | 470   |
| R105, 106<br>[EG only] | ERDS2TJ471 | 470   |
| R107, 108<br>[EG only] | ERDS2TJ471 | 470   |
| R201, 202              | ERDS2TJ391 | 390   |
| R203, 204              | ERDS2TJ224 | 220K  |
| R205, 206              | ERDS2TJ563 | 56K   |
| R207, 208              | ERDS2TJ271 | 270   |
| R209, 210              | ERDS2TJ184 | 180K  |
| R211, 212              | ERDS2TJ123 | 12K   |

| Ref. No.  | Part No.   | Value |
|-----------|------------|-------|
| R213, 214 | ERDS2TJ563 | 56K   |
| R215, 216 | ERDS2TJ561 | 560   |
| R301, 302 | ERDS2TJ222 | 2.2K  |
| R303, 304 | ERDS2TJ123 | 12K   |
| R307, 308 | ERDS2TJ563 | 56K   |
| R309, 310 | ERDS2TJ474 | 470K  |
| R311, 312 | ERDS2TJ474 | 470K  |
| R313, 314 | ERDS2TJ183 | 18K   |
| R315, 316 | ERDS2TJ332 | 3.3K  |
| R317, 318 | ERDS2TJ821 | 820   |
| R319, 320 | ERDS2TJ821 | 820   |
| R321, 322 | ERDS2TJ333 | 33K   |
| R323, 324 | ERDS2TJ822 | 8.2K  |

| Ref. No.               | Part No.   | Value |
|------------------------|------------|-------|
| R325, 326              | ERDS2TJ392 | 3.9K  |
| R401, 402              | ERDS2TJ222 | 2.2K  |
| R403, 404              | ERDS2TJ393 | 39K   |
| R405, 406              | ERDS2TJ272 | 2.7K  |
| R407, 408              | ERDS2TJ393 | 39K   |
| R409, 410<br>[EG only] | ERD25FJ4R7 | 4.7   |
| R411, 412              | ERDS2TJ470 | 47    |
| R413, 414              | ERG1ANJ331 | 330   |
| R415, 416              | ERDS2TJ561 | 560   |
| R504                   | ERDS2TJ564 | 560K  |
| R505                   | ERDS2TJ154 | 150K  |
| R601                   | ERDS2TJ561 | 560   |

| Ref. No. | Part No.   | Value |
|----------|------------|-------|
| R602     | ERDS2TJ221 | 220   |
| R603     | ERDS2TJ680 | 68    |
| R611     | ERDS2TJ824 | 820K  |
| R612     | ERDS2TJ564 | 560K  |
| R613     | ERDS2TJ563 | 56K   |
| R801     | ERDS2TJ561 | 560   |
| R802     | ERDS2TJ471 | 470   |
| R901     | ERG2ANJ391 | 390   |
| R902     | ERG2ANJ331 | 330   |
| R903     | ERG2ANJ391 | 390   |
| R904     | ERG2ANJ331 | 330   |

## Capacitor

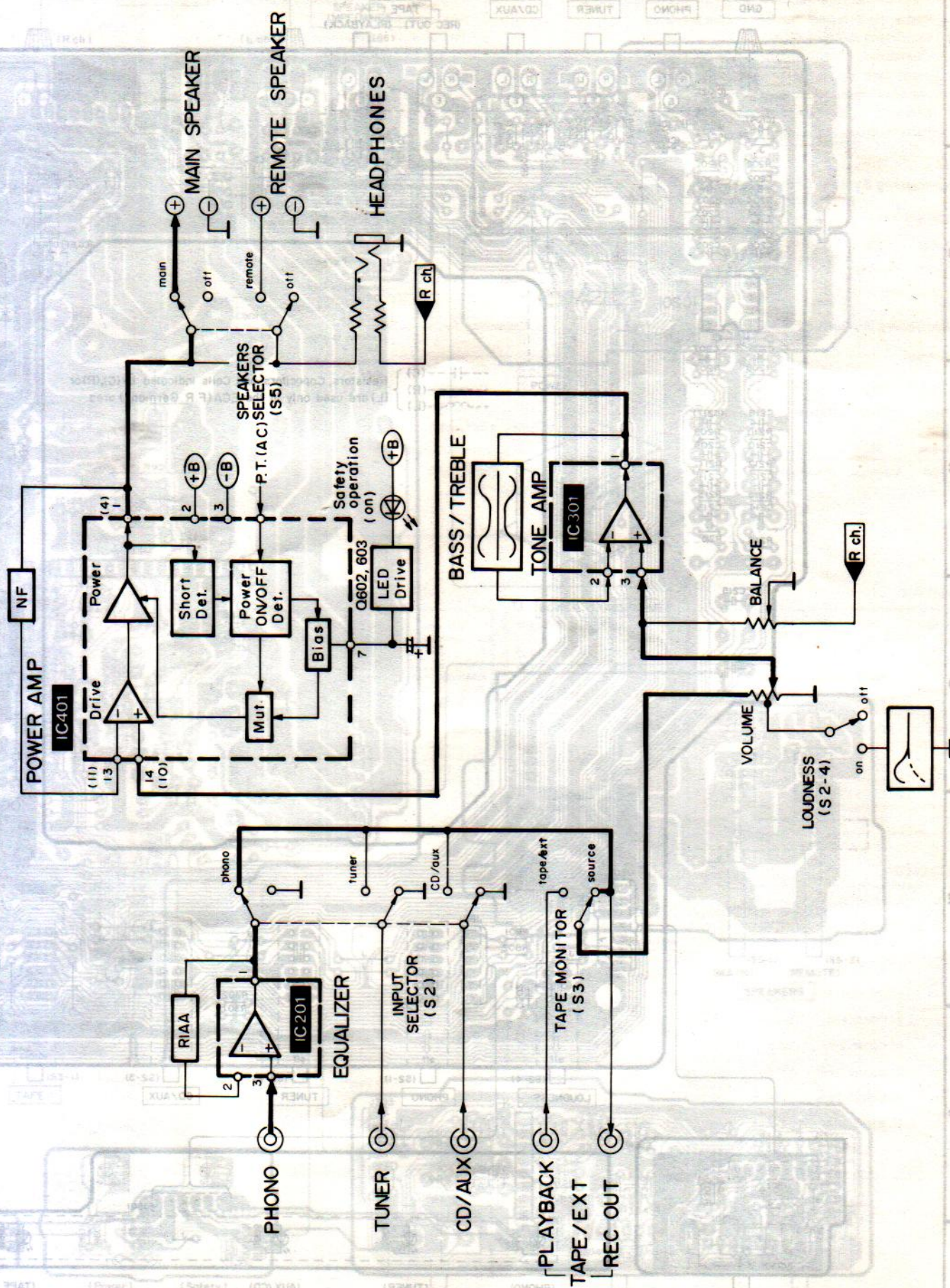
| Ref. No.               | Part No.              | Value |
|------------------------|-----------------------|-------|
| C1<br>[EG only]        | $\Delta$ ECKDKC103PF2 | 0.01  |
| C101, 102<br>[EG only] | ECCD1H180K            | 18P   |
| C103, 104<br>[EG only] | ECCD1H151K            | 150P  |
| C105, 106<br>[EG only] | ECCD1H151K            | 150P  |
| C107, 108<br>[EG only] | ECCD1H151K            | 150P  |
| C109, 110<br>[EG only] | ECCD1H151K            | 150P  |
| C117, 118<br>[EG only] | ECKD1H271KB           | 270P  |
| C119, 120<br>[EG only] | ECKD1H271KB           | 270P  |
| C121, 122<br>[EG only] | ECKD1H223ZF           | 0.022 |
| C123, 124<br>[EG only] | ECKD1H223ZF           | 0.022 |

| Ref. No.                   | Part No.    | Value  |
|----------------------------|-------------|--------|
| C125, 126<br>[EG, EF only] | ECQM1H823JZ | 0.082  |
| C125, 126<br>[other]       | ECKD1H223ZF | 0.022  |
| C127<br>[EG, EF only]      | ECKD1H103ZF | 0.01   |
| C128<br>[EG only]          | ECKD1H103ZF | 0.01   |
| C201, 202                  | ECEA1EU3R3  | 3.3    |
| C203, 204                  | ECCD1H101K  | 100P   |
| C205, 206<br>[EG only]     | ECKD1H102KB | 0.001  |
| C205, 206<br>[other]       | ECKD1H471KB | 470P   |
| C207, 208                  | ECEA0JU330  | 33     |
| C209, 210                  | ECFTD223KXL | 0.022  |
| C211, 212                  | ECFTD682KXL | 0.0068 |
| C213, 214                  | ECEA1HN010S | 1      |

| Ref. No.          | Part No.    | Value  |
|-------------------|-------------|--------|
| C215, 216         | ECEA1CU101  | 100    |
| C217<br>[EG only] | ECKD1H103ZF | 0.01   |
| C218              | ECKD1H103ZF | 0.01   |
| C301, 302         | ECFTD333KXL | 0.033  |
| C303, 304         | ECEA1EU3R3  | 3.3    |
| C305, 306         | ECCD1H151K  | 150P   |
| C307, 308         | ECKD1H331KB | 330P   |
| C309, 310         | ECCD1H390K  | 39P    |
| C311, 312         | ECFTD123KXL | 0.012  |
| C313, 314         | ECFTD683KXL | 0.068  |
| C315, 316         | ECFTD562KXL | 0.0056 |
| C317, 318         | ECFTD273KXL | 0.027  |
| C319, 320         | ECEA1CU100  | 10     |
| C321<br>[EG only] | ECKD1H103ZF | 0.01   |
| C322              | ECKD1H103ZF | 0.01   |
| C401, 402         | ECEA1EU3R3  | 3.3    |

| Ref. No.               | Part No.    | Value  |
|------------------------|-------------|--------|
| C403, 404              | ECKD1H391KB | 390P   |
| C405, 406              | ECKD1H102KB | 0.001  |
| C407, 408              | ECEA1CU220  | 22     |
| C409, 410              | ECCD1H120K  | 12P    |
| C411, 412              | ECKD1H473ZF | 0.047  |
| C501                   | ECKD1H473ZF | 0.047  |
| C502                   | ECEA0JU330  | 33     |
| C606                   | ECEA1EU4R7  | 4.7    |
| C701                   | ECEA1CU471  | 470    |
| C901, 902              | ECES1HU472M | 4700   |
| C904, 905<br>[EG only] | ECKD1H472ZF | 0.0047 |

**BLOCK DIAGRAM**

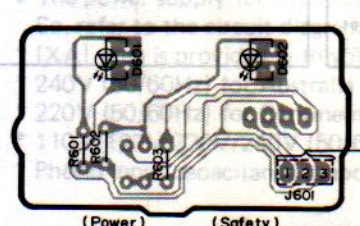
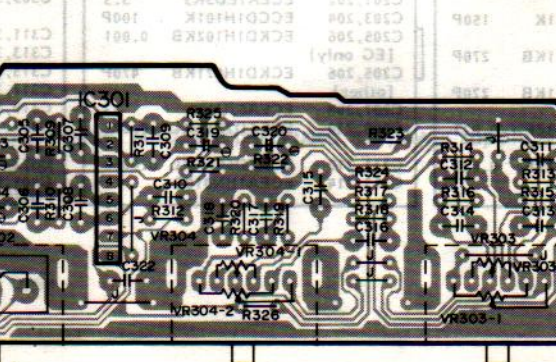
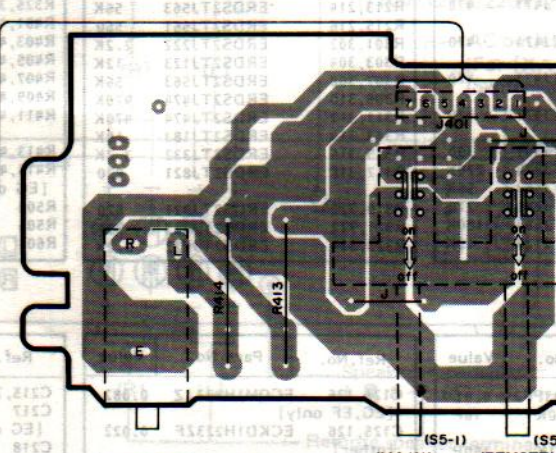
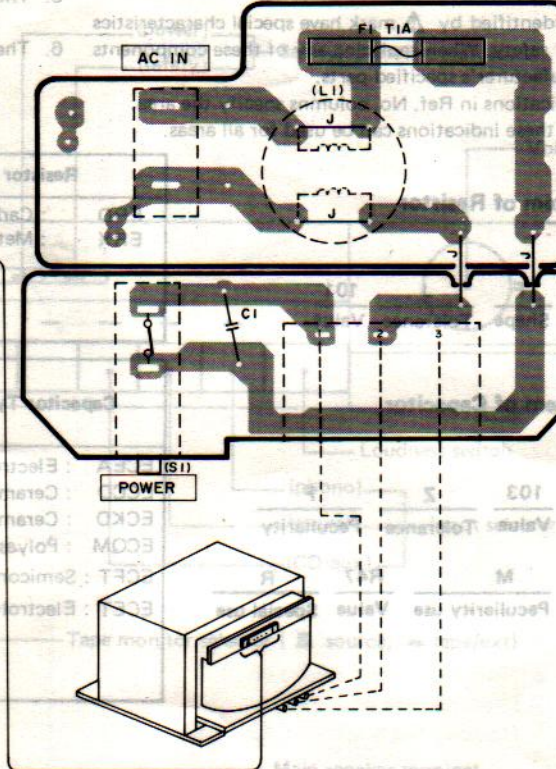
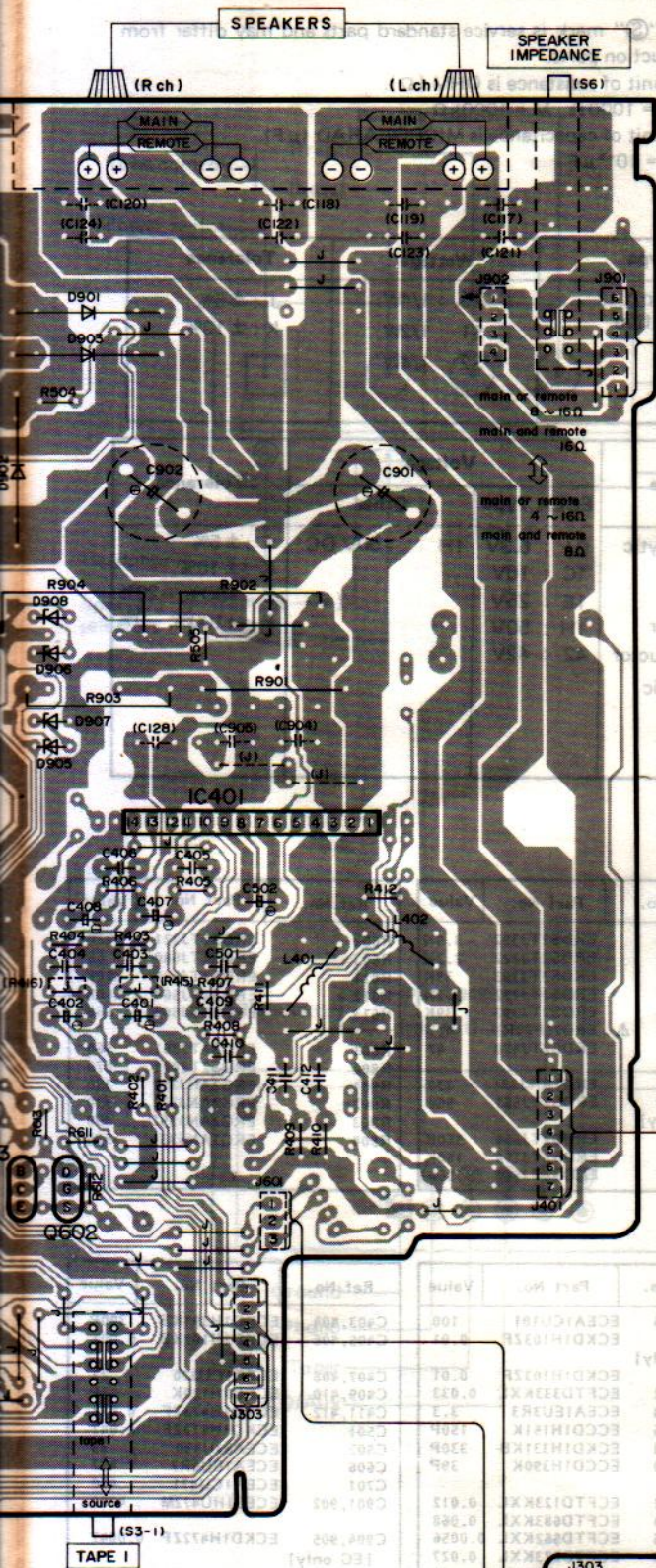


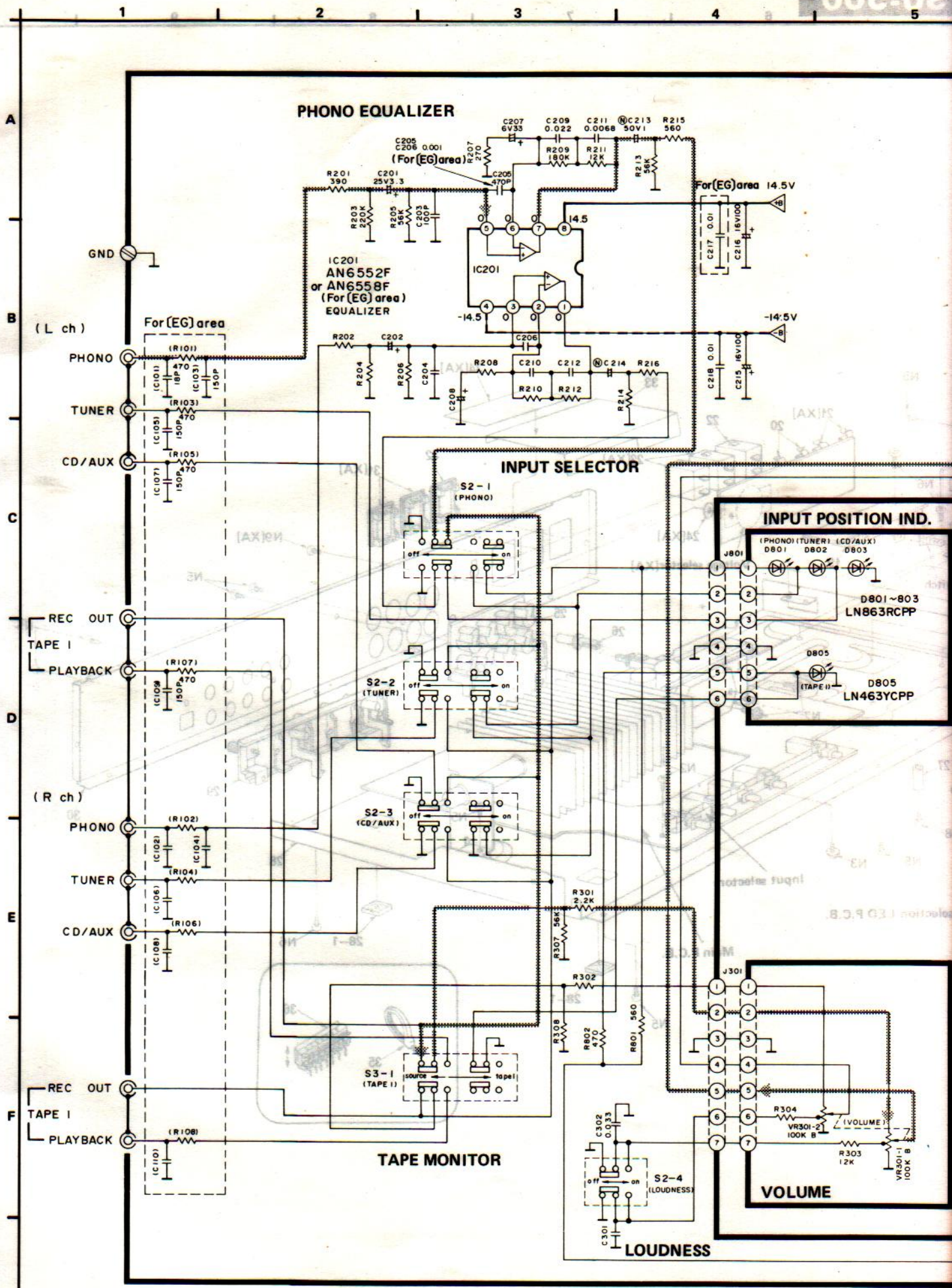
**BLOCK DIAGRAM**



# LOCATION OF CONTROLS

# RESISTORS & CAPACITORS





■ EXPLODED VIEW

## POWER AMPLIFIER/MUTING



**POWER**

## SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)

### Notes:

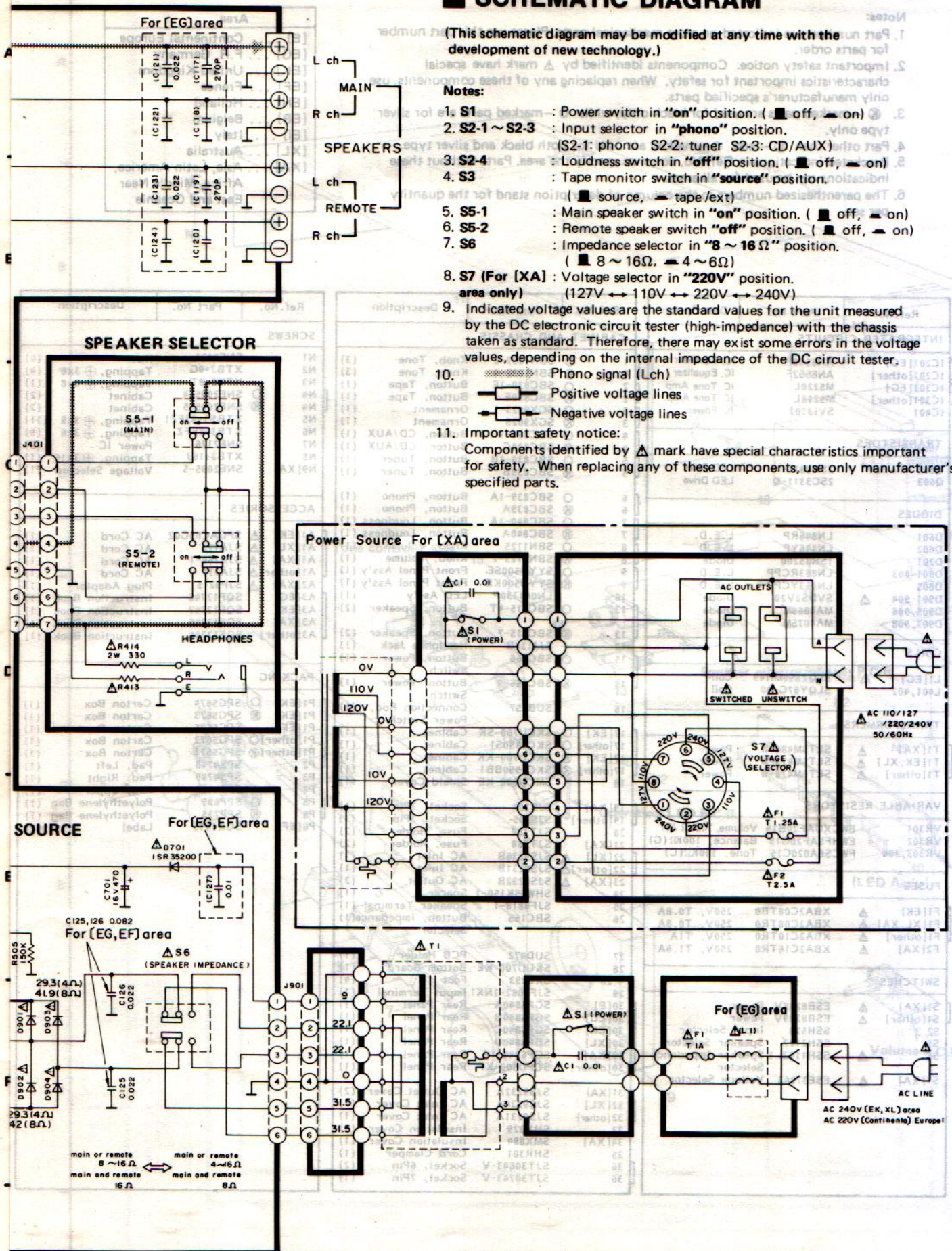
1. **S1** : Power switch in "on" position. ( ☐ off, ☒ on )
2. **S2-1 ~ S2-3** : Input selector in "phono" position.  
(S2-1: phono S2-2: tuner S2-3: CD/AUX)
3. **S2-4** : Loudness switch in "off" position. ( ☐ off, ☒ on )
4. **S3** : Tape monitor switch in "source" position.  
( ☐ source, ☒ tape/ext )
5. **S5-1** : Main speaker switch in "on" position. ( ☐ off, ☒ on )
6. **S5-2** : Remote speaker switch "off" position. ( ☐ off, ☒ on )
7. **S6** : Impedance selector in "8 ~ 16 Ω" position.  
( ☐ 8 ~ 16 Ω, ☒ 4 ~ 6 Ω )
8. **S7 (For [XA] area only)** : Voltage selector in "220V" position.  
(127V ↔ 110V ↔ 220V ↔ 240V)

9. Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

10.  Positive voltage lines  
 Negative voltage lines

11. Important safety notice:

Components identified by  $\Delta$  mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.



# REPLACEMENT PARTS LIST

## Notes:

1. Part numbers are indicated on most mechanical parts. Please use this part number for parts order.
2. Important safety notice: Components identified by  $\Delta$  mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3.  $\odot$  -marked parts are used for black only, while  $\circ$  -marked parts are for silver type only.
4. Part other than  $\odot$  - and  $\circ$  -marked are used for both black and silver type.
5. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
6. The parenthesized numbers in the column of description stand for the quantity per set.

## Area

|      |                                                               |
|------|---------------------------------------------------------------|
| [E]  | ... Continental Europe                                        |
| [EG] | ... F.R. Germany                                              |
| [EK] | ... United Kingdom                                            |
| [EF] | ... France                                                    |
| [EH] | ... Holland                                                   |
| [EB] | ... Belgium                                                   |
| [Ei] | ... Italy                                                     |
| [XL] | ... Australia                                                 |
| [XA] | ... Asia, Latin America, Africa, Middle Near East and Oceania |

| Ref. No.                   | Part No.             | Description                |
|----------------------------|----------------------|----------------------------|
| <b>INTEGRATED CIRCUITS</b> |                      |                            |
| IC201[EG]                  | AN6558F              | IC, Equalizer              |
| IC201[other]               | AN6552F              | IC, Equalizer              |
| IC301[EG]                  | M5220L               | IC, Tone Amp.              |
| IC301[other]               | M5218L               | IC, Tone Amp.              |
| IC401                      | SV13102              | IC, Power                  |
| <b>TRANSISTORS</b>         |                      |                            |
| Q602                       | 2SK381D              | LED Drive                  |
| Q603                       | 2SC3311-Q            | LED Drive                  |
| <b>DIODES</b>              |                      |                            |
| D601                       | LN846RP              | L.E.D.                     |
| D602                       | LN446YP              | L.E.D.                     |
| D701                       | 1SR35200             | Diode                      |
| D801-803                   | LN863RCP             | L.E.D.                     |
| D805                       | LN463YCP             | L.E.D.                     |
| D901-904                   | $\Delta$ SVD52V20    | Diode                      |
| D905, 906                  | MA4068M              | Diode                      |
| D907, 908                  | MA4075M              | Diode                      |
| <b>COILS</b>               |                      |                            |
| L1[EG]                     | $\Delta$ SLQ2650MH49 | Coil                       |
| L401, 402                  | SLQY07G-40           | Coil                       |
| <b>TRANSFORMERS</b>        |                      |                            |
| T1[XA]                     | $\Delta$ SLT5M480-W  | Power                      |
| T1[EK, XL]                 | $\Delta$ SLT5M479-W  | Power                      |
| T1[other]                  | $\Delta$ SLT5M478-W  | Power                      |
| <b>VARIABLE RESISTORS</b>  |                      |                            |
| VR301                      | EWXUAF20B15          | Volume, 100k $\Omega$ (B)  |
| VR302                      | EWHF5AF20C15         | Balance, 100k $\Omega$ (C) |
| VR303, 304                 | FWC56A020C15         | Tone, 100k $\Omega$ (C)    |
| <b>FUSES</b>               |                      |                            |
| F1[EK]                     | $\Delta$ XBA2C08TB0  | 250V, T0.8A                |
| F1[XL, XA]                 | $\Delta$ XBA2C08TR0  | 250V, T0.8A                |
| F1[other]                  | $\Delta$ XBA2C10TR0  | 250V, T1A                  |
| F2[XA]                     | $\Delta$ XBA2C16TR0  | 250V, T1.6A                |
| <b>SWITCHES</b>            |                      |                            |
| S1[XA]                     | $\Delta$ ESB8248V    | Power                      |
| S1[other]                  | $\Delta$ ESB8249V    | Power                      |
| S2, 3                      | SSH578               | Input Selector             |
| S5                         | SSH2122              | Speaker Selector           |
| S6                         | $\Delta$ SSH1193-1   | Speaker Impedance Selector |
| S7[XA]                     | $\Delta$ ESE37263    | Voltage Selector           |

| Ref. No.                   | Part No.           | Description                   |
|----------------------------|--------------------|-------------------------------|
| <b>CABINET AND CHASSIS</b> |                    |                               |
| 1                          | $\circ$ SBN1032-2  | Knob, Tone (3)                |
| 1                          | $\odot$ SBN1032-4  | Knob, Tone (3)                |
| 2                          | $\circ$ SBC839-1E  | Button, Tape (1)              |
| 2                          | $\odot$ SBC839E    | Button, Tape (1)              |
| 3                          | $\circ$ SCX9025-1  | Ornament (1)                  |
| 3                          | $\odot$ SCX9025    | Ornament (1)                  |
| 4                          | $\odot$ SBC839-1C  | Button, CD/AUX (1)            |
| 4                          | $\odot$ SBC839C    | Button, CD/AUX (1)            |
| 5                          | $\odot$ SBC839-1B  | Button, Tuner (1)             |
| 5                          | $\odot$ SBC839B    | Button, Tuner (1)             |
| 6                          | $\circ$ SBC839-1A  | Button, Phono (1)             |
| 6                          | $\odot$ SBC839A    | Button, Phono (1)             |
| 7                          | $\odot$ SBC840-1A  | Button, Loudness (1)          |
| 7                          | $\odot$ SBC840A    | Button, Loudness (1)          |
| 8                          | $\odot$ SBN1125    | Knob, Volume (1)              |
| 8                          | $\odot$ SBN1125-2  | Knob, Volume (1)              |
| 9                          | $\odot$ SYU500SE   | Front Panel Ass'y (1)         |
| 9                          | $\odot$ SYU500KE   | Front Panel Ass'y (1)         |
| 10                         | LN041330P          | LED Ass'y (1)                 |
| 13                         | $\circ$ SBC315-4T  | Button, Speaker (2)           |
| 13                         | $\odot$ SBC315-7   | Button, Speaker (2)           |
| 14                         | SJJ134B            | Headphone Jack (1)            |
| 15                         | $\circ$ SBC666     | Button, Power (1)             |
| 15                         | $\odot$ SBC666-4   | Button, Power (1)             |
| 16                         | SUB257             | Connection Rod, (1)           |
| 17[EK]                     | $\circ$ SKCU700-SK | Cabinet (1)                   |
| 17[other]                  | $\circ$ SKC1550S1  | Cabinet (1)                   |
| 17[EK]                     | $\odot$ SKCU700-KK | Cabinet (1)                   |
| 17[other]                  | $\odot$ SKC1550BB1 | Cabinet (1)                   |
| 18                         | SMCU500-KE         | Shield Cover (1)              |
| 19[XA]                     | SJS702             | Socket, 7Pin (1)              |
| 19[other]                  | SJS305             | Socket, 3Pin (1)              |
| 20                         | SJT388             | Fuse, Holder (2)              |
| 21[XA]                     | SJT388             | Fuse, Holder (2)              |
| 22[XL]                     | $\Delta$ SJS9234B  | AC Inlet (1)                  |
| 22[other]                  | $\Delta$ SJS9231B  | AC Inlet (1)                  |
| 23[XA]                     | $\Delta$ SJS9232B  | AC Outlet (2)                 |
| 24                         | SHW35K150-1        | Spacer (1)                    |
| 25                         | SJF4818-1          | Speaker Terminal (1)          |
| 26                         | SBC165             | Button, Impedance(1) Selector |
| 27                         | SUD472             | PCB Holder (1)                |
| 28                         | SKUU700-KE         | Bottom Board (1)              |
| 28-1                       | SKL293             | Foot (4)                      |
| 29                         | SJF3062-1NK1       | Input Terminal (1)            |
| 30[E]                      | SGP6840A           | Rear Panel (1)                |
| 30[EG]                     | SGP6840B           | Rear Panel (1)                |
| 30[EK]                     | SGP6840C           | Rear Panel (1)                |
| 30[XL]                     | SGP6840D           | Rear Panel (1)                |
| 30[XA]                     | SGP6840-1A         | Rear Panel (1)                |
| 30[other]                  | SGPU500-KF         | Rear Panel (1)                |
| 31[XA]                     | SJS9232A           | AC Outlet Cover (2)           |
| 32[XL]                     | SJS9234A           | AC Inlet Cover (1)            |
| 32[other]                  | SJS9231A           | AC Inlet Cover (1)            |
| 33                         | SMX879             | Insulation Cover (1)          |
| 34[XA]                     | SMX884             | Insulation Cover (1)          |
| 35                         | SHR301             | Cord Clamper (1)              |
| 36                         | SJT30643-V         | Socket, 6Pin (2)              |
| 36                         | SJT30743-V         | Socket, 7Pin (1)              |

| Ref. No.           | Part No.            | Description                |
|--------------------|---------------------|----------------------------|
| <b>SCREWS</b>      |                     |                            |
| N1                 | SNE4021             | Nut (4)                    |
| N2                 | XTB3+8G             | Tapping, $\oplus$ 3x8 (4)  |
| N3                 | XTW3+8T             | Tapping, $\oplus$ 3x8 (1)  |
| N4                 | $\circ$ SNE2095-4   | Cabinet (2)                |
| N4                 | $\odot$ SNE2095-5   | Cabinet (2)                |
| N5                 | XTB53+8JFZ1         | Tapping, $\oplus$ 3x8 (11) |
| N6                 | XTB3+6FFZ           | Tapping, $\oplus$ 3x6 (9)  |
| N7                 | SNE1216             | Power IC (2)               |
| N8                 | XTB3+16J            | Tapping, $\oplus$ 3x16 (1) |
| N9[XA]             | SNE2095-5           | Voltage Selector (1)       |
| <b>ACCESSORIES</b> |                     |                            |
| A1[EK]             | $\Delta$ SFDAC05G02 | AC Cord (1)                |
| A1[XL]             | $\Delta$ SJA173     | AC Cord (1)                |
| A1[XA]             | $\Delta$ SJA168-1   | AC Cord (1)                |
| A1[other]          | $\Delta$ SJA171     | AC Cord (1)                |
| A2[XA]             | $\Delta$ SJP9215    | Plug Adaptor (1)           |
| A3[EG]             | SQF12746            | Instruction Book (1)       |
| A3[EK]             | SQF12747            | Instruction Book (1)       |
| A3[XA]             | SQF12748            | Instruction Book (1)       |
| A3[other]          | SQF12745            | Instruction Book (1)       |
| <b>PACKING</b>     |                     |                            |
| P1[EK]             | $\circ$ SPG5674     | Carton Box (1)             |
| P1[EK]             | $\odot$ SPG5673     | Carton Box (1)             |
| P1[EF]             | SPG5675             | Carton Box (1)             |
| P1[other]          | $\circ$ SPG5672     | Carton Box (1)             |
| P1[other]          | $\odot$ SPG5671     | Carton Box (1)             |
| P2                 | SPS4748             | Pad, Left (1)              |
| P3                 | SPS4749             | Pad, Right (1)             |
| P4                 | SPS4141             | Pad, Upper (1)             |
| P5                 | $\circ$ SPP699      | Polyethylene Bag (1)       |
| P5                 | $\odot$ SPP735      | Polyethylene Bag (1)       |
| P6[EF]             | SGK1413             | Label (2)                  |

# EXPLODED VIEW

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erica,  
Near  
la

| Description           |      |
|-----------------------|------|
| ut                    | (4)  |
| apping, $\oplus$ 3x8  | (4)  |
| apping, $\oplus$ 3x8  | (1)  |
| abinet                | (2)  |
| abinet                | (2)  |
| apping, $\oplus$ 3x8  | (11) |
| apping, $\oplus$ 3x6  | (9)  |
| ower IC               | (2)  |
| apping, $\oplus$ 3x16 | (1)  |
| oltage Selector       | (1)  |
|                       |      |
| C Cord                | (1)  |
| C Cord                | (1)  |
| C Cord                | (1)  |
| C Cord                | (1)  |
| ug Adaptor            | (1)  |
| struction Book        | (1)  |
| struction Book        | (1)  |
| struction Book        | (1)  |
| struction Book        | (1)  |
|                       |      |
| arton Box             | (1)  |
| arton Box             | (1)  |
| arton Box             | (1)  |
| arton Box             | (1)  |
| arton Box             | (1)  |
| ad, Left              | (1)  |
| ad, Right             | (1)  |
| ad, Upper             | (1)  |
| lyethylene Bag        | (1)  |
| lyethylene Bag        | (1)  |
| label                 | (2)  |

A  
B  
C  
D  
E  
F

