

Service Manual

Portable CD Player

SL-S311C



MASH *
multi-stage noise shaping

* MASH is a trademark of NTT.

Please file and use this manual together with the service manual for Model No. SL-S360, Order No. AD9902009C1.

- Notes:**
- This simplified service manual is provided to indicate the differences between the original No. SL-S360 (P),(PC) and the subsequent model No. SL-S311C (E),(EG),(GN).
 - SL-S311C is equipped with Car Kit on SL-S360.

Colour
(S) Silver Type

Areas
(E) Great Britain.
(EG) Europe.
(GN) Australia and New Zealand.

Traverse Deck: RAE0145Z Mechanism Series

Specifications

Audio

No. of channels: 2 channels (left and right, stereo)
Frequency response: 20 to 20,000 Hz (+0.5 dB to -1.5 dB)
Output voltage: 0.6 V (50 k Ω)
S/N: More than 94 dB
(Anti-shock memory OFF)

Wow and flutter: Below measurable limit
DA converter: 1 bit, MASH*
Headphone output level: Max.9 mW+9 mW/16 Ω (adjustable)

Pickup

Light source: Semiconductor laser
Wavelength: 780 nm

General

Operational temperature range: 0-40 degree
Rechargeable temperature range: 5-40 degree
Power supply: DC 4.5 V
Power consumption: Anti-shock memory OFF/ON
AC adaptor: 3.5 W/3.6 W
Battery (DC 3 V); 0.4 W/0.4 W
When recharging; 4.6 W

Playing time

When used in hold mode, at 25 degree temperature and on flat and stable surface.

Battery used: Anti-shock memory OFF/ON
Panasonic Alkaline dry cell batteries (LR6, 2pcs);
Approximately 22 h/25 h
Optional rechargeable batteries (P-3GAVE(T)/2B);
Approximately 10 h/11 h

The play time may be less depending on the operating conditions.

Recharging time:

P-3GAVE(T)/2B; Approximately. 5 h
Dimensions (W x H x D): 128 x 25.8 x 144 mm
Weight: 257 g with batteries
212 g without batteries

Car kit

Cassette adaptor
Frequency response: 30 to 20,000 Hz
(This is the rating for the head section of the product.)
Dimensions (W x H x D): 102.4 x 12.1 x 63.8 mm
Weight: 42 g
Cable length: More than 1.4 m

Car adaptor

Input: DC 12/24 V
Output: DC 4.5 V (0.8 A)
Dimensions (W x H x D): 104 x 32 x 23 mm
Cable length: More than 1.5 m

Notes: Specifications are subject to change without notice.
Weight and dimensions are approximate.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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When the sound volume is extremely low

- ① Set the play direction for the car audio system to the forward (FWD) direction.
- If the sound volume is still low:
- ② Adjust the balance between the left and right channels of the car audio system.

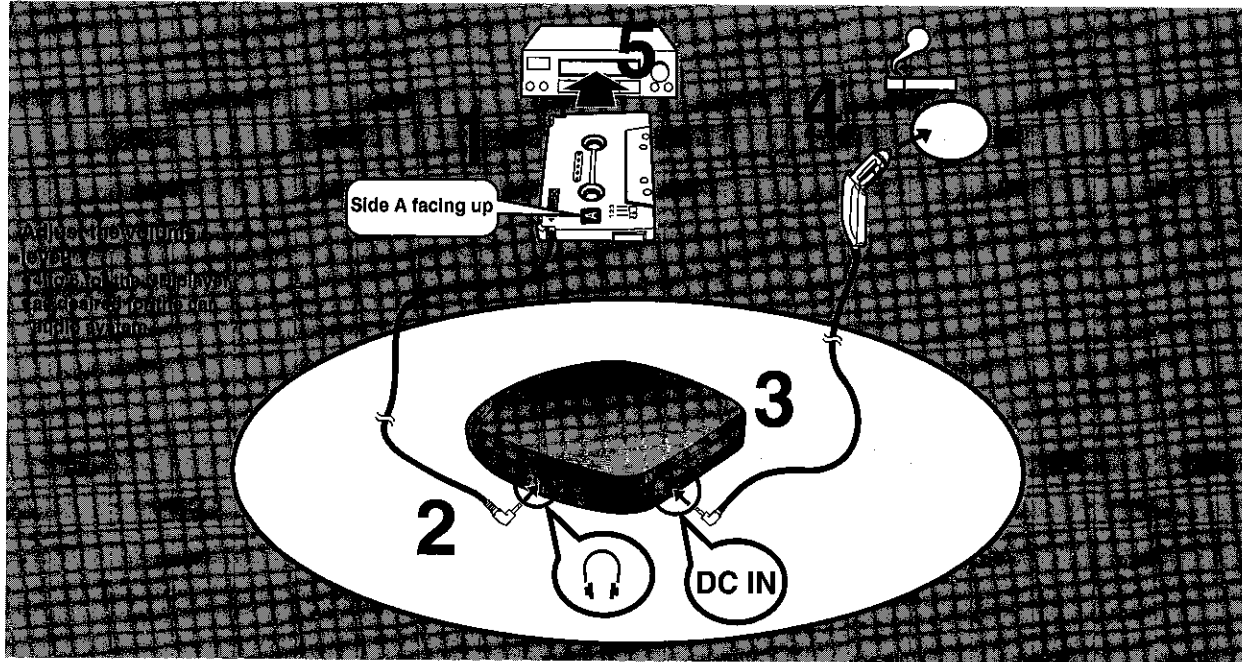
Concerning the Car Audio System

Position the cassette adaptor with side A facing up and set the play direction for the car audio system to the forward (FWD) direction.

The head positions of the cassette adaptor and the car audio system do not match in the reverse direction, causing the sound volume from the speakers to be extremely low.

- When model SH-CDM10B is used with the auto-reverse car audio system, the play direction is automatically set to forward (FWD).
- For manual reverse systems, switch to the side where the sound comes out.

■ Connection



Car audio system

■ **When the car audio system has a blank skip function**
 The blank skip function may operate when the CD player stops. Therefore, be sure to set the blank skip function to off.

Note:
 Depending on the type of vehicle, static may be heard if the unit is connected via line cord to the car audio system's CD IN jack or AUX IN jack. If this occurs, it is recommended that you use the provided cassette adaptor.

When you leave the car
 Push the eject button to remove the cassette adaptor.

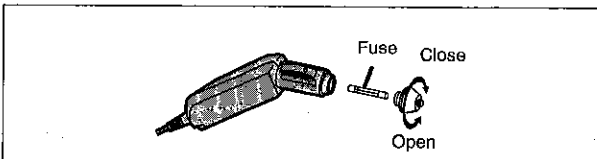
Car adaptor

The provided car adaptor must be connected.

- This car adaptor can be used in an automobile which has a 12 V or 24 V battery. You can use it in a truck or other large vehicle. (This is a special-purpose negative ground car adaptor.)
- Do not connect the adaptor immediately after using the cigarette lighter.
- Leave a little slack in the car adaptor's cord, making sure that it does not run underneath the unit.

■ **To replace the fuse**

- 1 Remove the plug cap by rotating it in the direction shown by the arrow, and take out the old fuse.
- 2 Insert the new fuse (125 V/250 V, 500 mA type) into the fuse receptacle and reinstall the plug cap.



If the fuse blows frequently, there may be something wrong with the adaptor.

Cautions

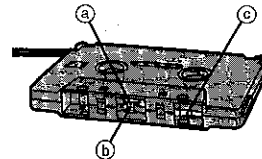
Please understand that we cannot take responsibility for the unit falling or any other damage that may occur as a result of faulty installation.

■ **Car adaptor**

- The provided car adaptor is made specifically for use with DC 4.5 V Panasonic portable CD players. Do not use it with other devices.
- Do not use the adaptor for a long period with the batteries left in the unit because this may shorten the life of the batteries.
- Pay attention to the car battery capacity when using this adaptor for a long period.
- Do not expose this adaptor to strong sunlight or very high temperatures.
- Be sure to remove this adaptor from the cigarette lighter socket when not using this adaptor or before leaving the automobile.
- The power source polarities of this unit are $\ominus \oplus$, check the DC IN Jack.

■ **Cassette adaptor**

- Bunch the excess cord together or place it so that it will not interfere with operation.
- Do not touch the head or tape.
- A protective film has been placed over the heads to prevent them from being damaged. Do not remove this film.
- ① Protective film ② Head ③ Tape



- After use, remove the cassette adaptor and keep it so that no dust will adhere to the head section.
- After installing the cassette adaptor in the car audio system, do not allow its cord to make contact with the control section.
- The sound quality deteriorates when the head section of the car audio system becomes dirty. It is, therefore, a good idea to clean it periodically.
- Do not leave this adaptor in a vehicle which is exposed to direct sunlight.
- Do not bring any magnetized objects near this adaptor's head position.
- Because of the nature of its construction, the sound of something rotating can be heard in this adaptor. This is normal and not indicative of a malfunction.
- During the winter months when the temperature inside the vehicle falls to an extremely low level, there may be times when the unit cannot be used because the cord is too stiff to allow the adaptor to be installed in its proper position.
- If the pinch rollers or car audio capstans of the car audio system are dirty, it may no longer be possible to install the cassette adaptor in the car audio system. Clean the rollers and capstan using a cotton swab.

■ Schematic Diagram

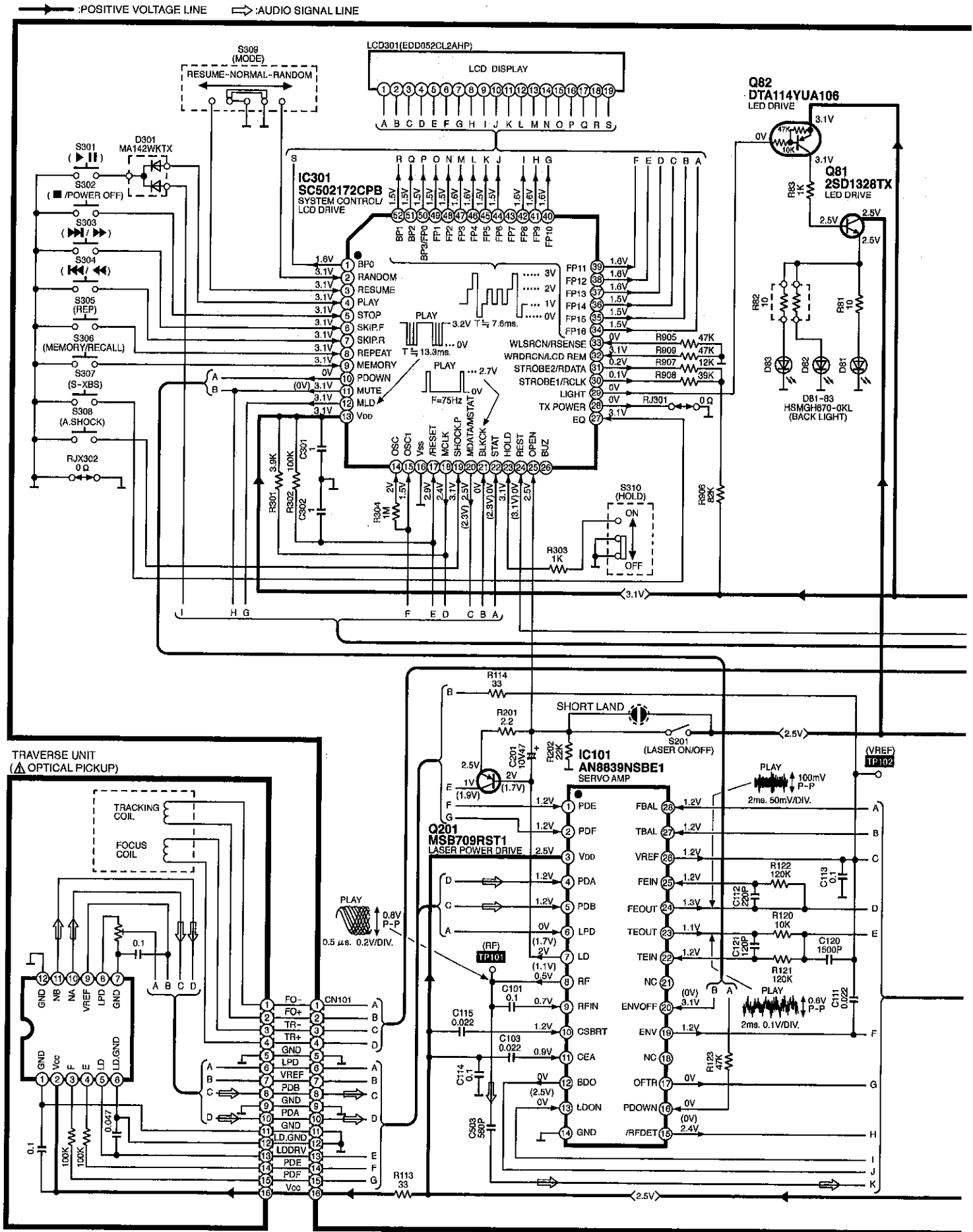
(This schematic diagram may be modified at any time with the development of new technology.)

Notes:

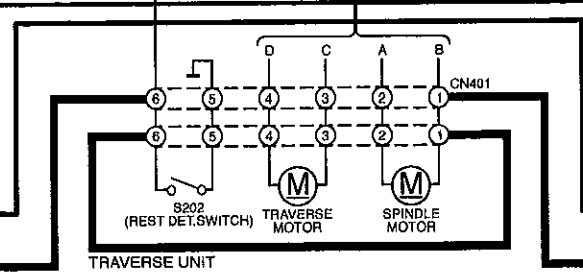
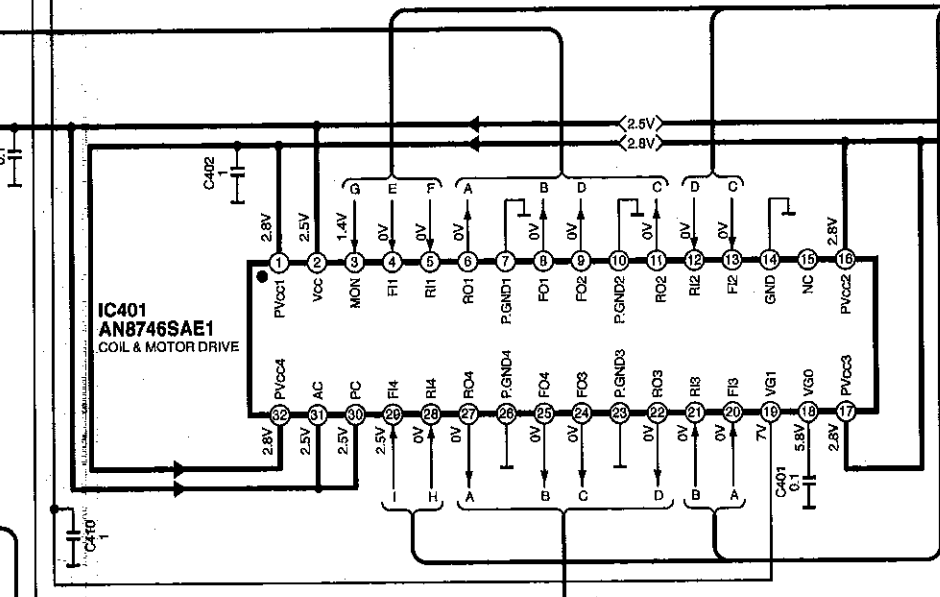
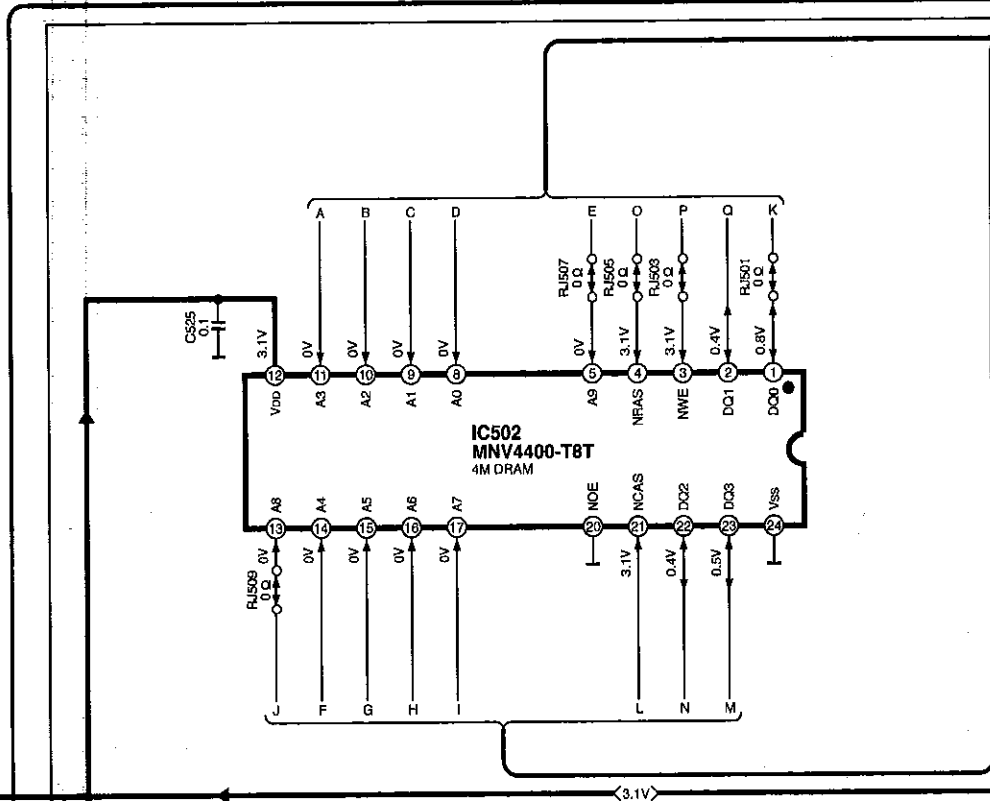
- S201 : Laser ON/OFF switch in "OFF" position.
(It turns "ON" with disc holder closed.)
 - S202 : Rest detector switch in "OFF" position.
(It turns "ON" when optical pickup comes to innermost periphery.)
 - S301 : Play/pause (▶ ||) switch.
 - S302 : Stop/operation off (■ POWER OFF) switch.
 - S303, 304: Skip/search (S303:▶▶,▶▶ S304:◀◀,◀◀) switches.
 - S305 : Repeat (REP) switch.
 - S306 : Memory/recall (MEMORY/RECALL) switch.
 - S307 : S-XBS Selector (S-XBS) switch.
 - S308 : Anti-shock (A.SHOCK) switch.
 - S309 : Play mode selector (MODE) in "NORMAL" position.
(RANDOM↔NORMAL↔RESUME)
 - S310 : Hold (HOLD) switch in "OFF" position.
 - VR11 : Power supply voltage adjustment VR.
 - VR701-1, VR701-2: Volume control VR.
- The voltage value and waveforms are the reference voltage of this measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of GND terminal (DC IN Jack). Accordingly, there may arise some errors in the voltage values and waveforms depending upon the internal impedance of the tester or measuring unit.
 - The parenthesized is the voltage for test disc (1kHz, L+R, 0 dB) in play mode, and the other, for no disc in stop mode.
 - AC adaptor is used for power supply.
 - Signal line
 - ▶ : Positive voltage line.
 - ◻ : Audio signal line.
 - Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacture's specified parts shown in the parts list.

Caution!

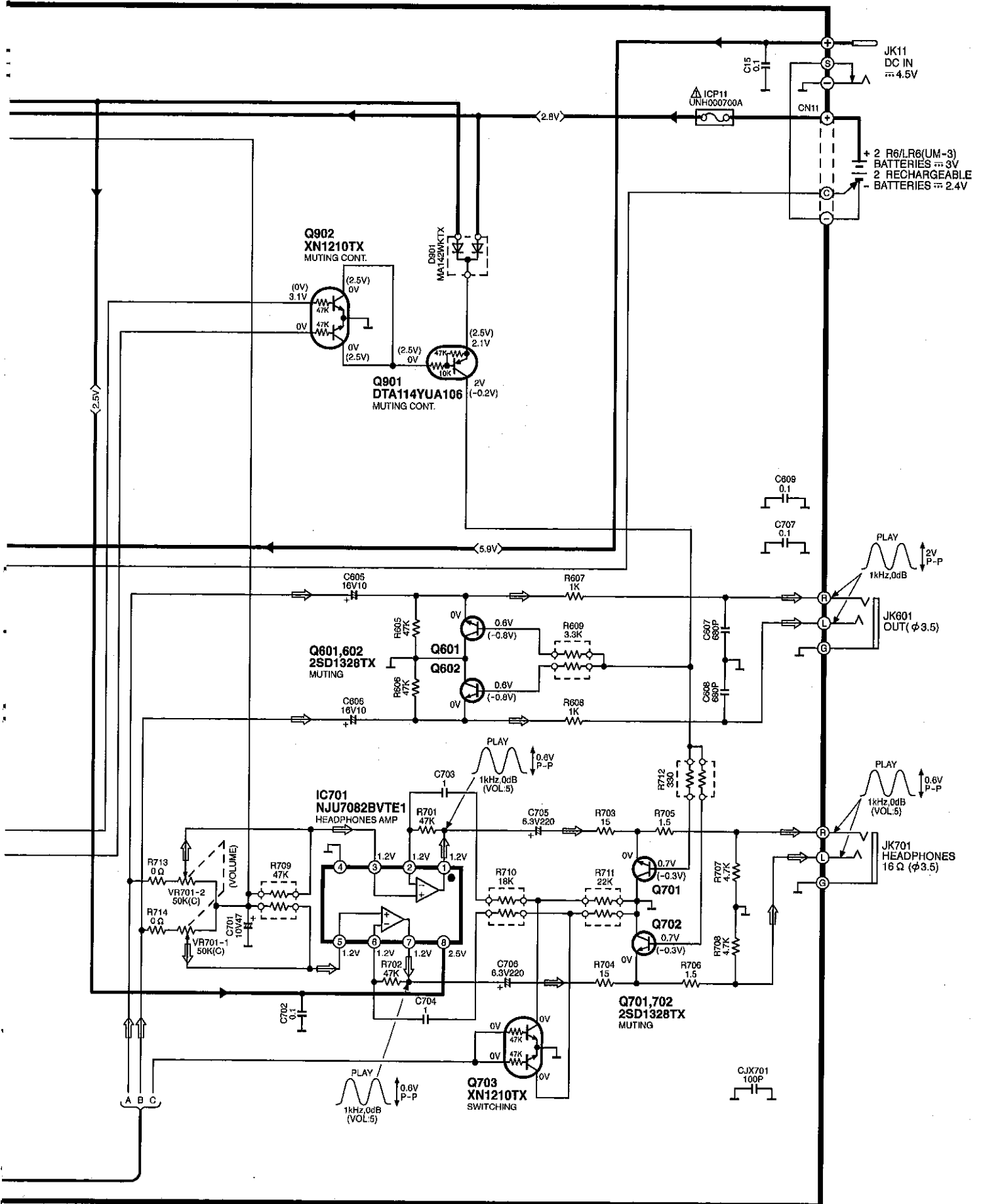
- IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.
- Cover the parts boxes made of plastics with aluminum foil.
 - Ground the soldering iron.
 - Put a conductive mat on the work table.
 - Do not touch the pins of IC or LSI with fingers directly.



POSITIVE VOLTAGE LINE

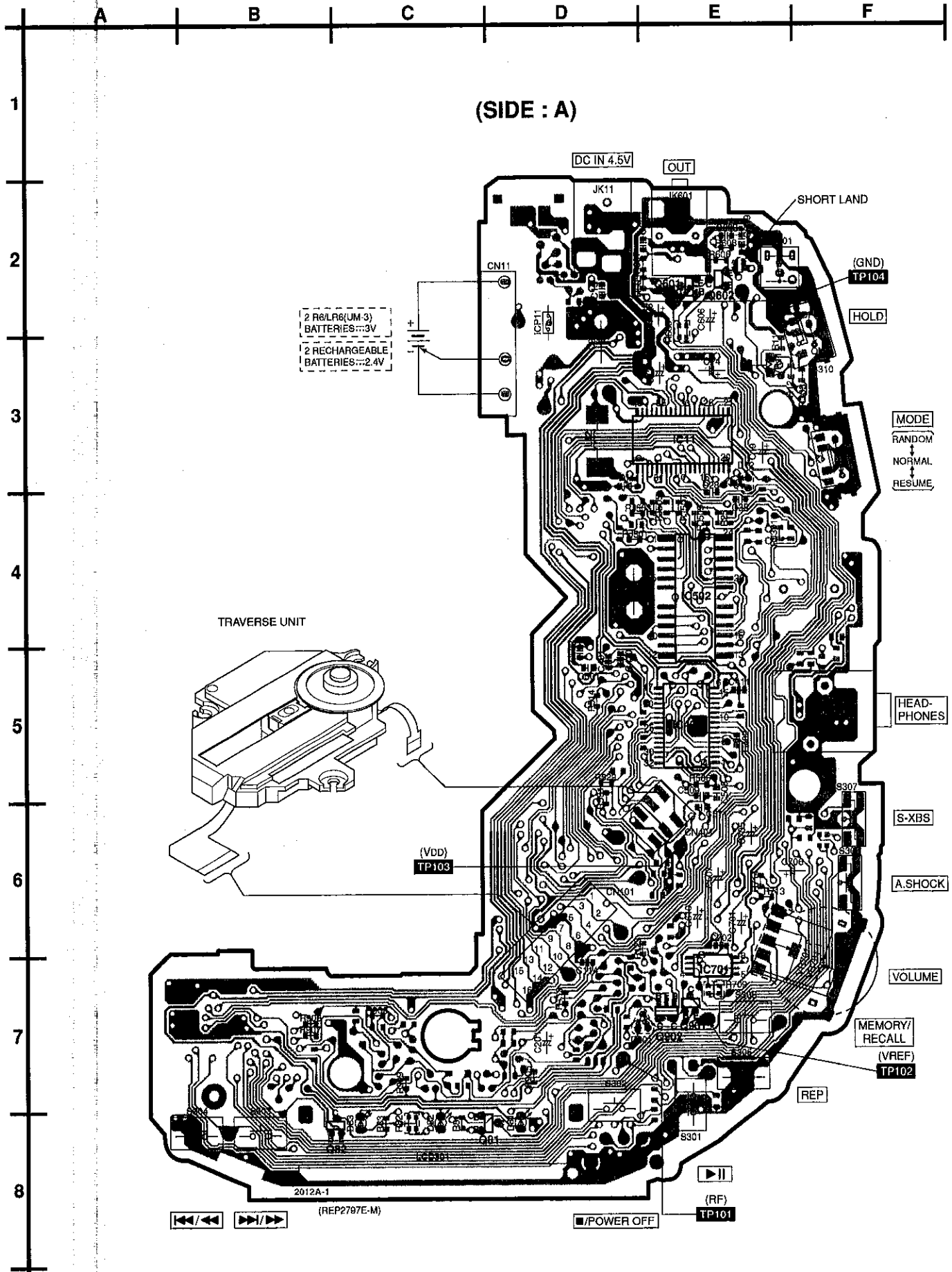


→ POSITIVE VOLTAGE LINE ⇨ AUDIO SIGNAL LINE



Printed Circuit Board and Wiring Connection Diagram

This circuit board diagram may be modified at any time with the development of new technology.



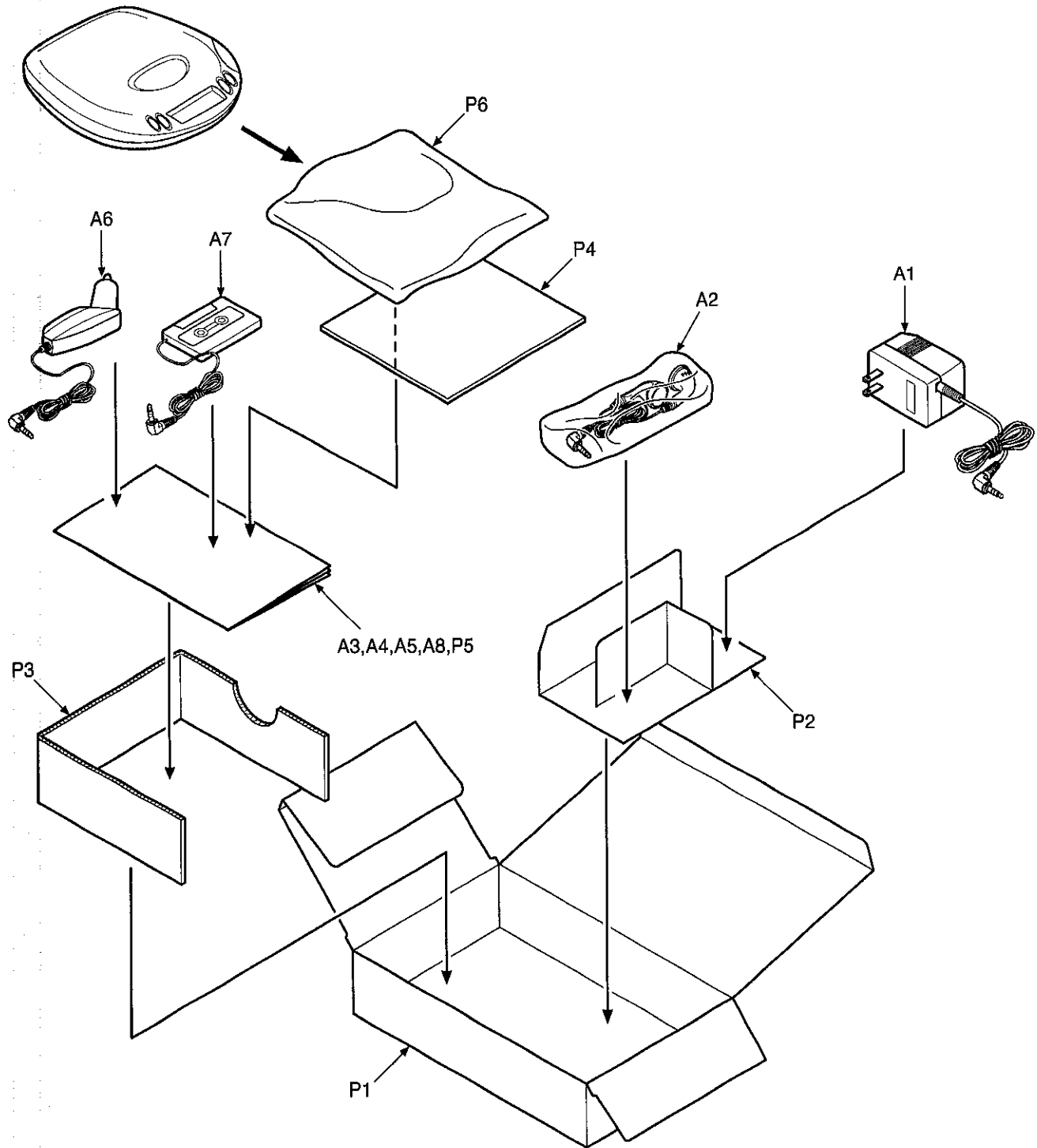
| Ref.No. | Part No. | Part Name & Description | Pcs | Remarks |
|---------|--------------|-------------------------|-----|---------|
| R121,22 | ERJ3GEYJ124V | 1/16W 120K | 2 | |
| R123 | ERJ3GEYJ473V | 1/16W 47K | 1 | |
| R201 | ERJ3GEYJ2R2V | 1/16W 2.2 | 1 | |
| R202 | ERJ3GEYJ223V | 1/16W 22K | 1 | |
| R301 | ERJ3GEYJ392V | 1/16W 3.9K | 1 | |
| R302 | ERJ3GEYJ104Z | 1/16W 100K | 1 | |
| R303 | ERJ3GEYJ102Z | 1/16W 1K | 1 | |
| R304 | ERJ3GEYJ105V | 1/16W 1M | 1 | |
| R501 | ERJ3GEYJ683V | 1/16W 68K | 1 | |
| R502 | ERJ3GEYJ563V | 1/16W 56K | 1 | |
| R505 | ERJ3GEYJ391V | 1/16W 390 | 1 | |
| R506 | ERJ3GEYJ222V | 1/16W 2.2K | 1 | |
| R508 | ERJ3GEYJ1R0V | 1/16W 1 | 1 | |
| R509 | ERJ3GEYJ223V | 1/16W 22K | 1 | |
| R510 | EXBV4V103JV | 1/32W 10K | 1 | |
| R511 | ERJ3GEYJ472V | 1/16W 4.7K | 1 | |
| R512 | EXBV4V222JV | 1/32W 2.2K | 1 | |
| R514 | ERJ3GEYJ681V | 1/16W 680 | 1 | |
| R529 | ERJ3GEYJ104Z | 1/16W 100K | 1 | |
| R531 | ERJ3GEYJ104Z | 1/16W 100K | 1 | |
| R601,02 | ERJ3GEYJ681V | 1/16W 680 | 2 | |
| R603,04 | MCR03PZHJ561 | 1/16W 560 | 2 | |
| R605,06 | ERJ3GEYJ473V | 1/16W 47K | 2 | |
| R607,08 | ERJ3GEYJ102Z | 1/16W 1K | 2 | |
| R609 | EXBV4V332JV | 1/32W 3.3K | 1 | |
| R701,02 | ERJ3GEYJ473V | 1/16W 47K | 2 | |
| R703,04 | ERJ3GEYJ150V | 1/16W 15 | 2 | |
| R705,06 | ERJ3GEYJ1R5V | 1/16W 1.5 | 2 | |
| R707,08 | ERJ3GEYJ472V | 1/16W 4.7K | 2 | |
| R709 | EXBV4V473JV | 1/32W 47K | 1 | |
| R710 | EXBV4V183JV | 1/32W 18K | 1 | |

| Ref.No. | Part No. | Part Name & Description | Pcs | Remarks |
|---------|--------------|-------------------------|-----|---------|
| R711 | EXBV4V223JV | 1/32W 22K | 1 | |
| R712 | EXBV4V331JV | 1/32W 330 | 1 | |
| R713,14 | ERJ3GEY0R00V | 1/16W 0 | 2 | |
| R905 | ERJ3GEYJ473V | 1/16W 47K | 1 | |
| R906 | ERJ3GEYJ823V | 1/16W 82K | 1 | |
| R907 | ERJ3GEYJ123V | 1/16W 12K | 1 | |
| R908 | ERJ3GEYJ393V | 1/16W 39K | 1 | |
| R909 | ERJ3GEYJ473V | 1/16W 47K | 1 | |
| RJ301 | ERJ3GEY0R00V | CHIP JUMPER | 1 | |
| RJ501 | ERJ3GEY0R00V | CHIP JUMPER | 1 | |
| RJ503 | ERJ3GEY0R00V | CHIP JUMPER | 1 | |
| RJ505 | ERJ3GEY0R00V | CHIP JUMPER | 1 | |
| RJ507 | ERJ3GEY0R00V | CHIP JUMPER | 1 | |
| RJ509 | ERJ3GEY0R00V | CHIP JUMPER | 1 | |
| RJX302 | ERJ3GEY0R00V | CHIP JUMPER | 1 | |
| S201 | ESE11SV6 | SW,LASER ON/OFF | 1 | |
| S301-06 | EVQ11G05R | SW,PUSH | 6 | |
| S307,08 | EVOPUM02K | SW,PUSH | 2 | |
| S309 | RSS3A007-1A | SW,MODE | 1 | |
| S310 | RSS2A010-1A | SW,HOLD | 1 | |
| VR11 | RRN3A05B33WL | VR,POWER SUPPLY VOLT. | 1 | |
| VR701 | EVUTUFB11C54 | VR,VOLUME | 1 | |
| X501 | RSXZ16M9M01T | OSCILLATOR | 1 | |

■ Replacement Parts List (Cabinet Parts)

| Ref. No. | Change of Parts No. | | Part Name & Description | Remarks |
|------------------------|---------------------|---------------------|-------------------------|---------|
| | SL-S360(P) | → SL-S311C(E/EG/GN) | | |
| CABINET PART(S) | | | | |
| 1 | RFKJLS360P-S | RFKJLS311CES | BOTTOM CABINET ASS'Y | (E) |
| | | RFKJLS311CEG | | (EG) |
| | | RFKJLS311CGN | | (GN) |
| 3 | EDD052CL2A4P | EDD052CL2AHP | LCD (LCD301) | |
| 10 | RYF0504-S | RYF0504E-S | CD LID ASS'Y | |

■ Packaging



| Ref.No. | Part No. | Part Name & Description | Pcs | Remarks |
|---------|--------------|-------------------------|-----|-------------|
| | ACCESSORIES | | | |
| △ A1 | RFEA403B-S | AC ADAPTOR | 1 | (E) |
| △ A1 | RFEA401E-3S | AC ADAPTOR | 1 | (EG) |
| △ A1 | RFEA403A-S | AC ADAPTOR | 1 | (GN) |
| A2 | RFEV324P-KS | INSIDEPHONE | 1 | |
| A3 | RQT4836-E | OPERATING INSTRUCTIONS | 1 | (E,EG) <IA> |
| A3 | RQT4838-H | OPERATING INSTRUCTIONS | 1 | (EG) <IB> |
| A3 | RQT4841-B | OPERATING INSTRUCTIONS | 1 | (GN) <IC> |
| A4 | RQA0117 | WARRANTY CARD | 1 | (E,EG) |
| A4 | RQX7433ZA | WARRANTY CARD | 1 | (GN) |
| A5 | RQCB0189-1 | SERVICE CENTER LIST | 1 | |
| △ A6 | SH-CDC11EY | CAR ADAPTOR | 1 | |
| A7 | SH-CDM10BPYK | CASSETTE ADAPTOR | 1 | |

| Ref.No. | Part No. | Part Name & Description | Pcs | Remarks |
|---------|------------|-------------------------|-----|---------|
| A8 | RQT4960-E | CAR KIT INSTRUCTIONS | 1 | (E,EG) |
| A8 | RQT4961-D | CAR KIT INSTRUCTIONS | 1 | (E,EG) |
| A8 | RQT4965-R | CAR KIT INSTRUCTIONS | 1 | (EG) |
| A8 | RQT3825-4P | CAR KIT INSTRUCTIONS | 1 | (GN) |
| | PACKAGING | | | |
| P1 | RPK1161 | PACKING CASE | 1 | |
| P2 | RPQ0753 | SPACER | 1 | |
| P3 | RPQ0836-2 | PAD | 1 | |
| P4 | RPQ0869 | PAD | 1 | |
| P5 | RPF0046 | PROTECTION BAG | 1 | |
| P6 | RPF0111 | PROTECTION COVER | 1 | |

