

JVC

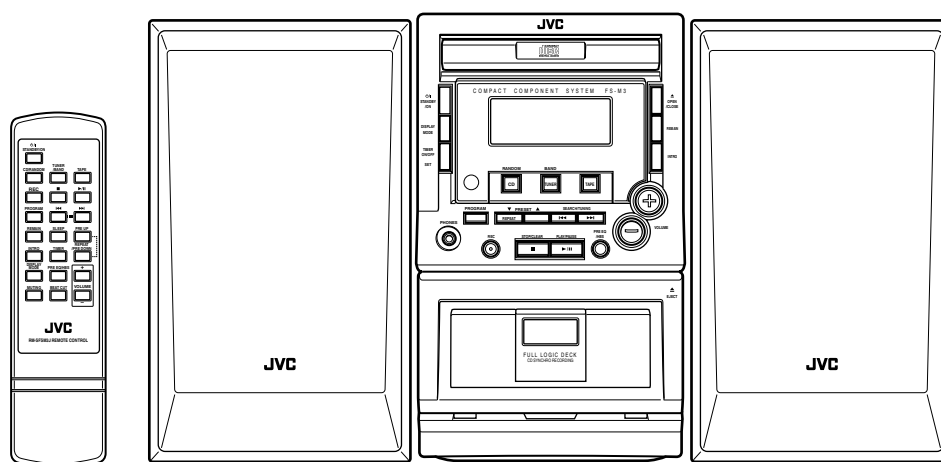
SERVICE MANUAL

COMPACT COMPONENT SYSTEM

FS-M3

Area suffix

J ----- U.S.A.
C ----- Canada



COMPACT
disc
DIGITAL AUDIO

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Safety Precautions

1. This design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by ($\triangle$) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.

5. Leakage current check (Electrical shock hazard testing)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

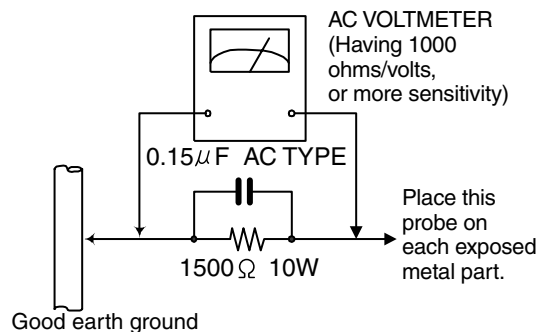
Do not use a line isolation transformer during this check.

- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).

● Alternate check method

Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500 Ω 10W resistor paralleled by a 0.15 μ F AC-type capacitor between an exposed metal part and a known good earth ground. Measure the AC voltage across the resistor with the AC voltmeter.

Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Voltage measured any must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

CAUTION

Burrs formed during molding may be left over on some parts of the chassis. Therefore, pay attention to such burrs in the case of preforming repair of this system.

In regard with component parts appearing on the silk-screen printed side (parts side) of the PWB diagrams, the parts that are printed over with black such as the resistor ($\blacksquare$), diode ($\blacksquare$) and ICP ($\bullet$) or identified by the " $\triangle$ " mark nearby are critical for safety.

(This regulation does not correspond to J and C version.)

Preventing static electricity

1. Grounding to prevent damage by static electricity

Electrostatic discharge (ESD), which occurs when static electricity stored in the body, fabric, etc. is discharged, can destroy the laser diode in the traverse unit (optical pickup). Take care to prevent this when performing repairs.

2. About the earth processing for the destruction prevention by static electricity

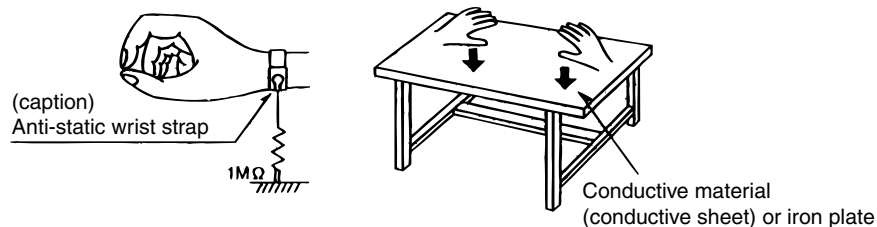
Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as CD players. Be careful to use proper grounding in the area where repairs are being performed.

2-1 Ground the workbench

Ground the workbench by laying conductive material (such as a conductive sheet) or an iron plate over it before placing the traverse unit (optical pickup) on it.

2-2 Ground yourself

Use an anti-static wrist strap to release any static electricity built up in your body.



3. Handling the optical pickup

1. In order to maintain quality during transport and before installation, both sides of the laser diode on the replacement optical pickup are shorted. After replacement, return the shorted parts to their original condition. (Refer to the text.)
2. Do not use a tester to check the condition of the laser diode in the optical pickup. The tester's internal power source can easily destroy the laser diode.

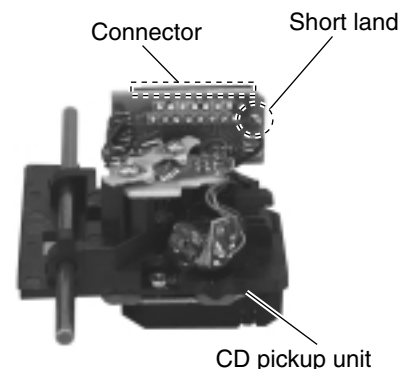
4. Handling the traverse unit (optical pickup)

1. Do not subject the traverse unit (optical pickup) to strong shocks, as it is a sensitive, complex unit.
2. Remove solder of the short land on the card wire after replacing the optical pickup. For specific details, refer to the replacement procedure in the text. Remove the anti-static pin when replacing the traverse unit. Be careful not to take too long a time when attaching it to the connector.
3. Handle the card wire carefully as it may break when subjected to strong force.
4. It is not possible to adjust the semi-fixed resistor that adjusts the laser power. Do not turn it.

5. Attention when traverse unit is decomposed

***Please refer to "Disassembly method" in the text for the CD pickup unit.**

- Apply solder to the short land before the card wire is disconnected from the connector on the CD pickup unit.
(If the card wire is disconnected without applying solder, the CD pickup may be destroyed by static electricity.)
- In the assembly, be sure to remove solder from the short land after connecting the card wire.



Important for laser products

- 1. **CLASS 1 LASER PRODUCT**
- 2. **DANGER** : Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.
- 3. **CAUTION** : There are no serviceable parts inside the Laser Unit. Do not disassemble the Laser Unit. Replace the complete Laser Unit if it malfunctions.
- 4. **CAUTION** : The compact disc player uses invisible laserradiation and is equipped with safety switches which prevent emission of radiation when the drawer is open and the safety interlocks have failed or are defeated. It is dangerous to defeat the safety switches.

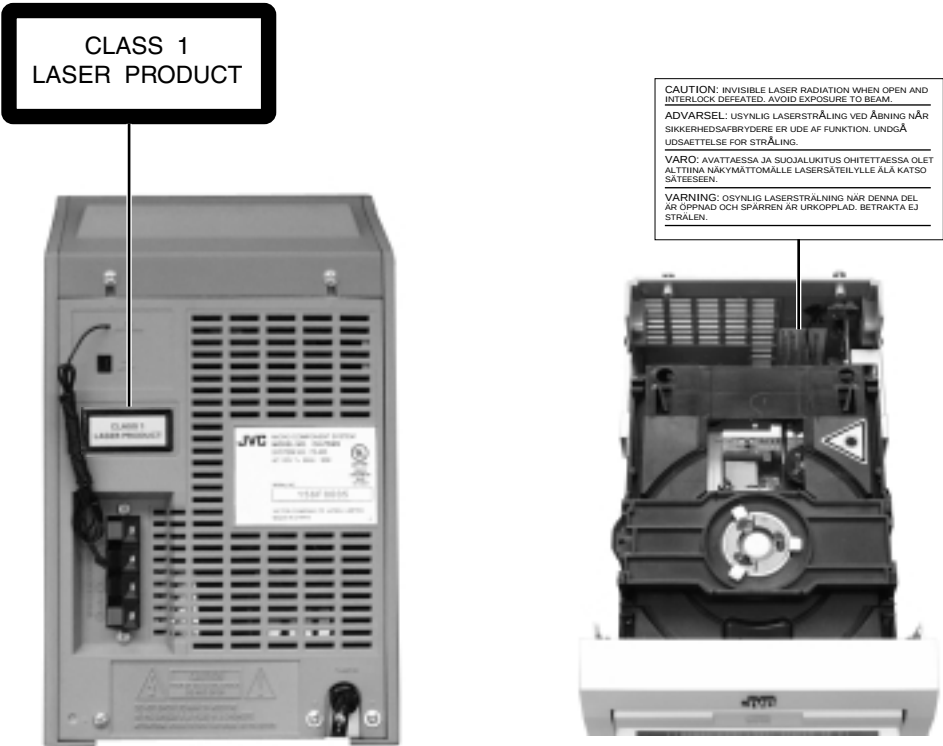
- 5. **CAUTION** : If safety switches malfunction, the laser is able to function.
- 6. **CAUTION** : Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

**CAUTION** Please use enough caution not to see the beam directly or touch it in case of an adjustment or operation check.

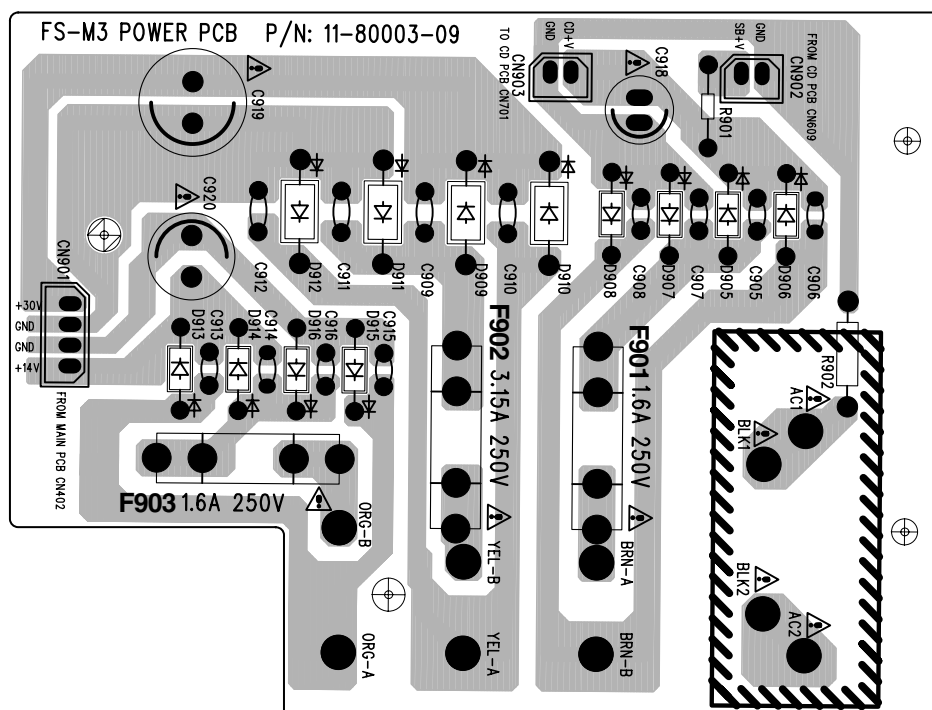
VARNING : Osynlig laserstrålning är denna del är öppnad och spårren är urkopplad. Betrakta ej strålen. VARO : Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.	ADVARSEL : Usynlig laserstrålning ved åbning , når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling. ADVARSEL : Usynlig laserstrålning ved åbning,når sikkerhedsbryteren er avslott. unngå utsettelse for stråling.
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REPRODUCTION AND POSITION OF LABELS

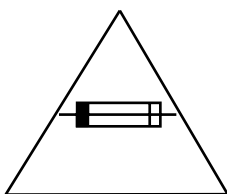
WARNING LABEL



Importance administering point on the safety



For USA and Canada / pour États - Unis d' Amérique et Canada



Caution: For continued protection against risk of fire, replace only with same type 1.6A/250V for F901, 3.15A/250V for F902, 1.6A/250V for F903. This symbol specifies type of fast operating fuse.

Precaution: Pour éviter risques de feux, remplacez le fusible de sûreté de F901 comme le même type que 1.6A/250V, F902 comme le même type que 3.15A/250V, et 1.6A/250V pour F903.

Ce sont des fusibles sûretés qui fonctionnent rapidement.

Disassembly method

<Main body section>

Replacement of the fuses and power amplifier IC

■ Replacing the fuses (See Fig. 1.)

- Remove the left side panel according to its disassembly method (see **Figs. 5 and 6**).

Fuses are located inside the left side panel.

[Caution] Be sure to replace the required fuses with designated ones.

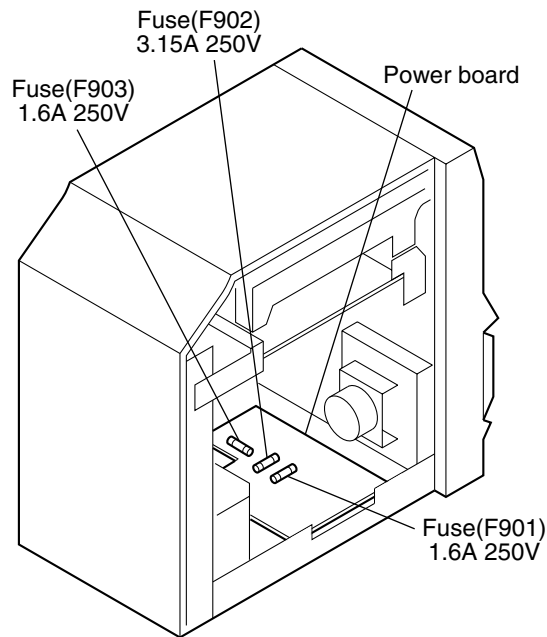


Fig.1

■ Replacing the power amplifier IC on the main board (See Fig. 2.)

- Remove the main board according to its disassembly method (see **Figs. 17 and 18**).
- Remove the two screws **A** that attach the power amplifier IC onto the heat sink.
 - In order to replace the power amplifier IC, remove the solder from soldered part **a** on the back side of the main board.

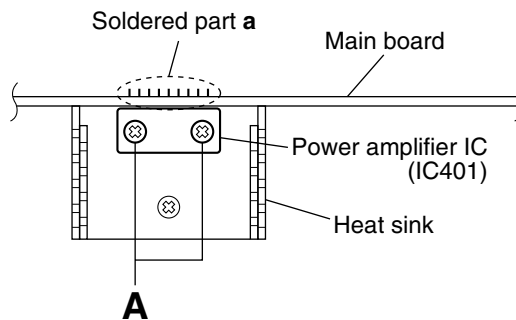


Fig.2

■ Removing the right side panel

(See Figs. 3 and 4.)

1. From the right side of the main body, remove the three screws **B** and three screws **C** retaining the right side panel.
2. Slide the right side panel toward the rear (in the direction of arrow **1**) until the claw **b** at the back of the panel is hooked by the chassis and then lift the panel upward (in the direction of arrow **2**) to remove it.

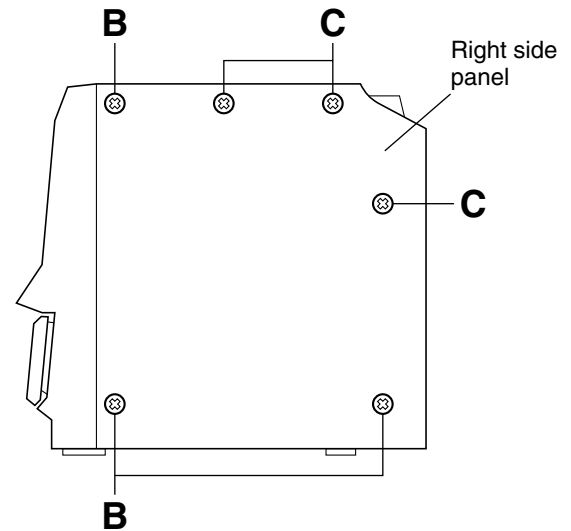


Fig.3

■ Removing the left side panel

(See Figs. 5 and 6.)

1. From the left side of the main body, remove the three screws **B** and three screws **C** retaining the left side panel.
2. Slide the left side panel toward the rear (in the direction of arrow **3**) until the claw **c** at the back of the panel is hooked by the chassis, and then lift the panel upward (in the direction of arrow **4**) to remove it.

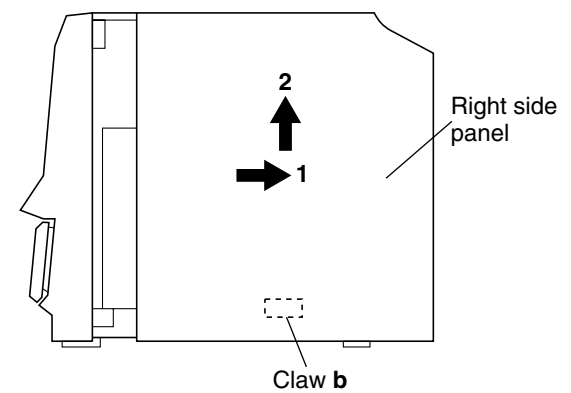


Fig.4

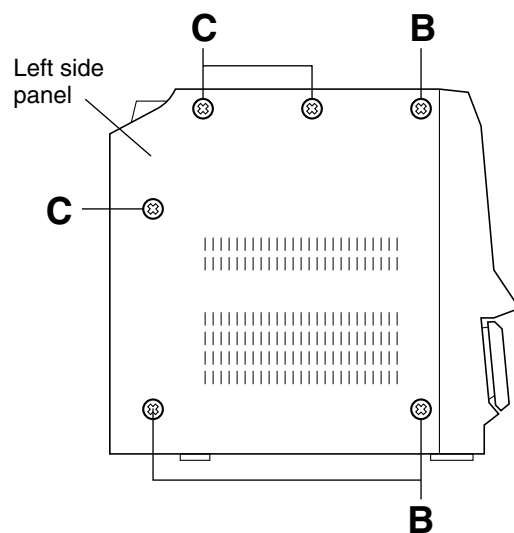


Fig.5

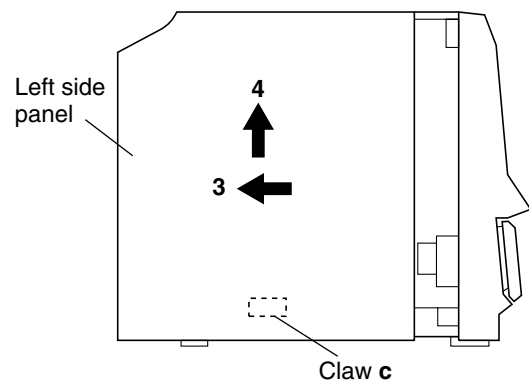


Fig.6

■ Removing the top cover

(See Figs. 7 and 8.)

- Remove the left and right side panels.
- 1. From the back side of the main body, loosen the two screws **D** retaining the top cover.
- 2. Lift the rear part of the top cover to remove it.

■ Removing the front panel assembly

(See Figs. 9 to 11.)

- Remove the left and right side panels.
- Remove the top cover.
- 1. Remove the tie band bundling the wires.
- 2. Disconnect the wire from the connector CN902 on the power board.
- 3. Disconnect the wire from the connector on the cassette switch board.
- 4. Remove the screw **E** retaining the bracket on the H.P. jack board.
- 5. Disconnect the wires from the two connectors CN201 and CN402 on the main board.
- 6. Disconnect the wires from the two connectors CN607 and CN608 on the CD & MCU board.
- 7. Remove the four screws **F** and the two screws **G** retaining the bracket of the CD mechanism assembly from the left and right.
- 8. Remove the screw **H** retaining the front panel assembly from the bottom side of the main body.
- 9. While opening the hooks **d** to the left and right of the lower part of the front panel assembly (in the direction of arrows **1**), slide the front panel assembly toward the front (in the direction of arrow **2**).

[Note] After assembly, apply a locking agent to the screws **F** and **G**.

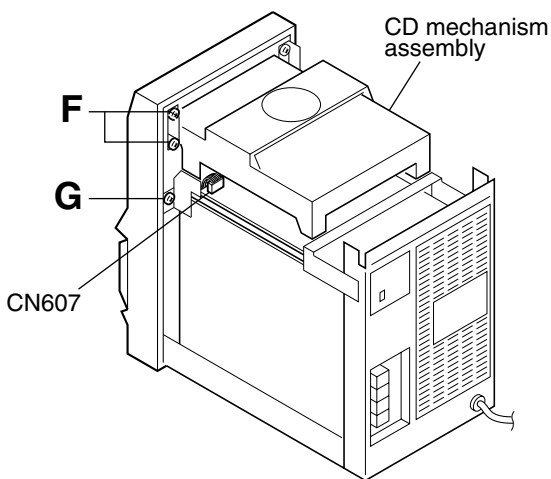


Fig.10

D (To be loosened)

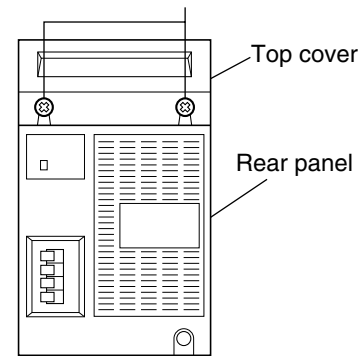


Fig.7

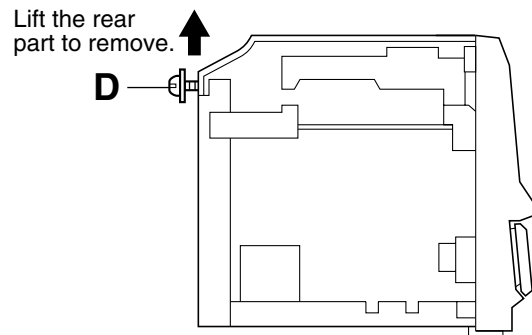


Fig.8

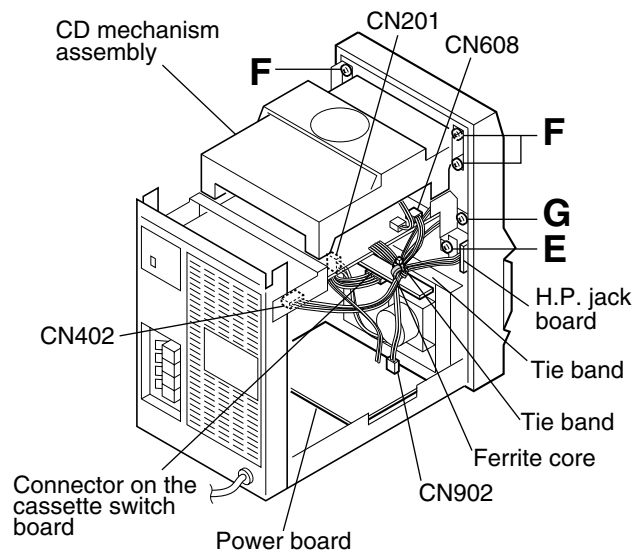


Fig.9

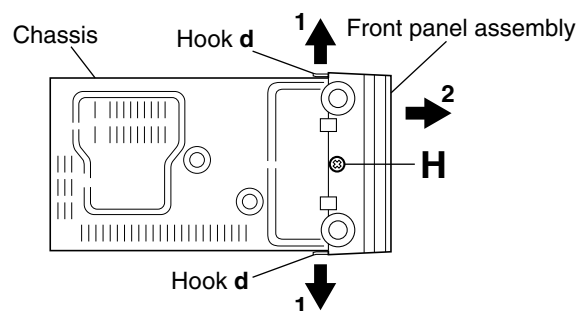


Fig.11

■ Removing the CD mechanism assembly (See Figs. 12 to 14.)

- Remove the left and right side panels.
 - Remove the top cover.
 - Remove the front panel assembly.
1. Disconnect the wires from the four connectors CN601, CN602, CN603 and CN701 on the CD & MCU board.
 2. From the left side of the main body, remove the tie band bundling the wires.
 3. Loosen the screw **J** retaining the main board.
 4. From the left and right sides of the main body, remove the four screws **K** retaining the bracket.
 5. Slide the CD mechanism assembly toward the front and remove it from the studs of the main board.

[Note] After assembly, apply a adhesive agent to the stud.

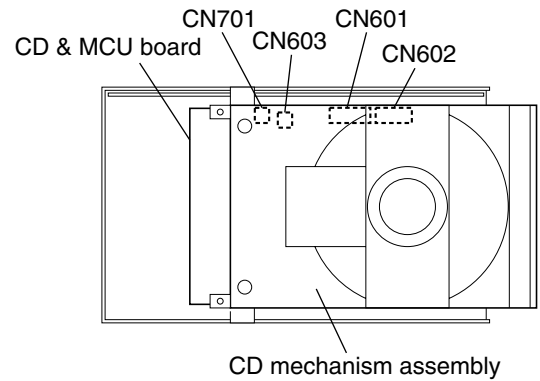


Fig.12

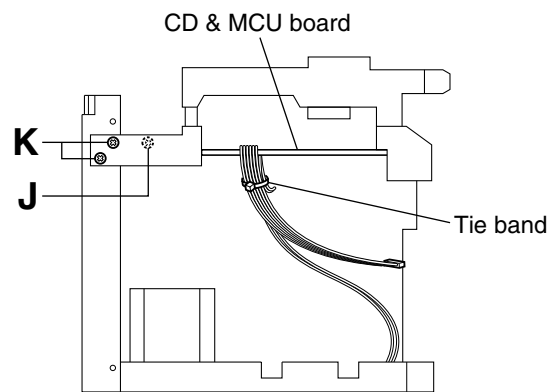


Fig.13

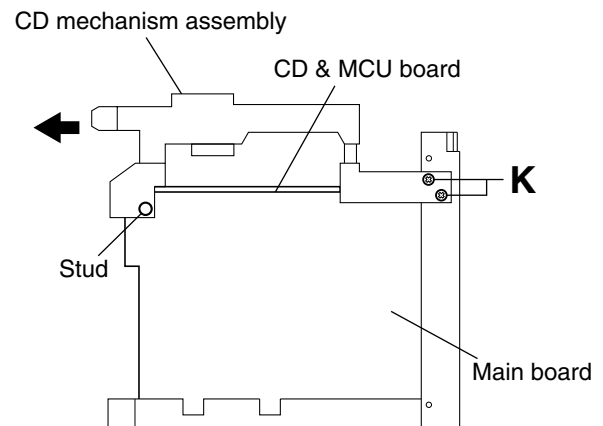


Fig.14

■ Removing the power board

(See Figs. 15 and 16.)

- Remove the left and right side panels.
1. Disconnect the wire from the connector CN901 on the power board.
 2. Remove the two screws **L** retaining the chassis .
 3. Remove the power board by pinching the two studs retaining the board using radio pliers, etc.

[Note] ▪ **After assembly, apply a locking agent to the screw L.**
 ▪ **After assembly, apply an adhesive agent to the studs.**

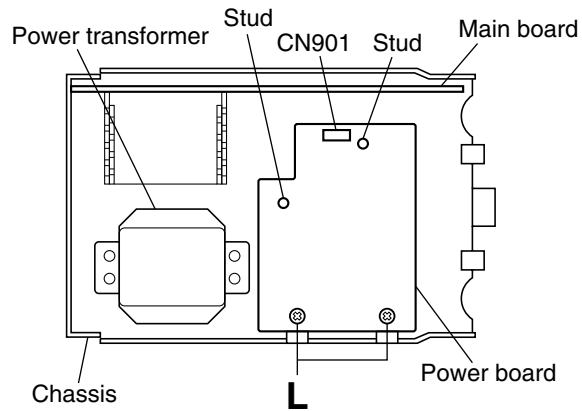


Fig.15

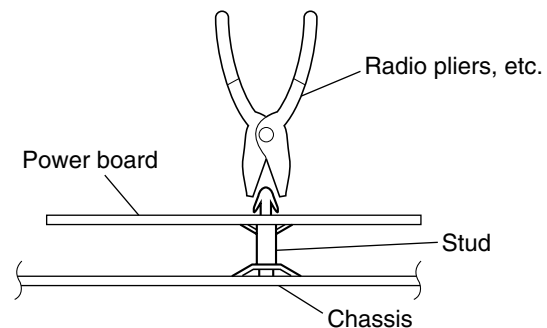


Fig.16

■ Removing the main board

(See Figs. 17 and 18.)

- Remove the left and right side panels.
 - Remove the top cover.
 - Remove the front panel assembly.
 - Remove the CD mechanism assembly.
1. Remove the two screws **M** retaining the speaker terminal of the main board.
 2. From the top side of the main body, remove the screw **N** retaining the heat sink of the main board.
 3. Remove the solder from the soldered part **e** that attaches the FM antenna wire to the main board.
 4. Slide the main board toward the front to remove it from the chassis.

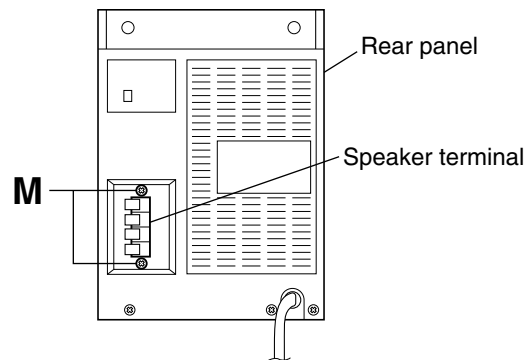


Fig.17

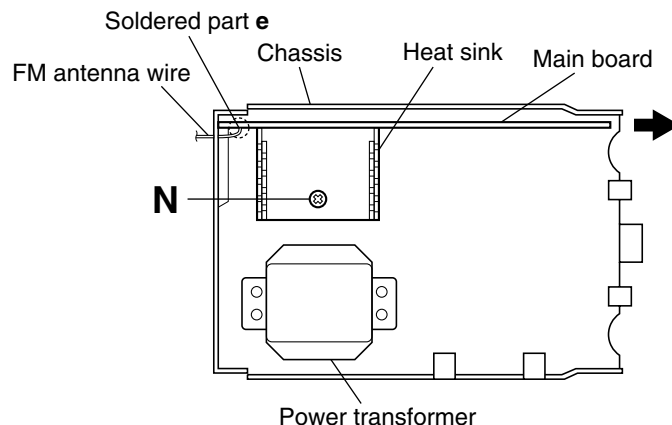


Fig.18

[Note] **After assembly, apply a locking agent to the screw N.**

<Front panel assembly section>

- Remove the left and right side panels.
- Remove the top cover.
- Remove the front panel assembly.

■ Removing the key switch board

(See Fig. 19.)

Remove the ten screws **P** retaining the key switch board.

■ Removing the cassette mechanism assembly

(See Fig. 19.)

1. Remove the two screws **Q** and the two screws **R** retaining the cassette mechanism assembly.

2. Remove the tie band bundling the REC/PB head wire.

[Note] After assembly, apply a locking agent to the screws **Q** and **R**.

■ Removing the cassette door damper and cassette door stopper

(See Fig. 19.)

1. Remove the screw **S** retaining the damper bracket and take out the cassette door damper.
2. Remove the two screws **T** retaining the cassette door stopper and remove the cassette door stopper.

[Note] After assembly, apply a locking agent to the screws **S** and **T**.

■ Removing the cassette door cover

(See Fig. 20.)

[Note] Use the following procedure to remove only the cassette door cover. This procedure does not require the removal of exterior parts such as the side panels.

1. Open the cassette door.
2. Slide the cassette door cover in the direction of the arrow and disengage the two claws **f** and the two claws **g** on the left and right of the cassette door cover from the cassette door.

■ Removing the cassette door

(See Figs. 21 and 22.)

- Remove the cassette mechanism assembly.
 - Remove the cassette door cover.
1. Open the cassette door, disengage the spring hooked across the front of the front panel assembly and the cassette door in the outward direction, and remove it from the claw **h**.
 2. From the back side of the front panel assembly, remove the two screws **U** retaining the bracket.
 3. While pushing the arm section **i** of the cassette door in the direction of the arrow, remove the shaft section **j** of the cassette door from the front panel assembly.
 4. While pushing the cassette door arm section **k** in the direction of the arrow, remove the shaft section **m** of the cassette door from the front panel assembly.
 5. Take out the cassette door from the back side of the front panel assembly.

[Caution] In the assembly, be sure to put the spring around the shaft **j** before attaching the cassette door.

[Note] After assembly, apply a locking agent to the screw **U**.

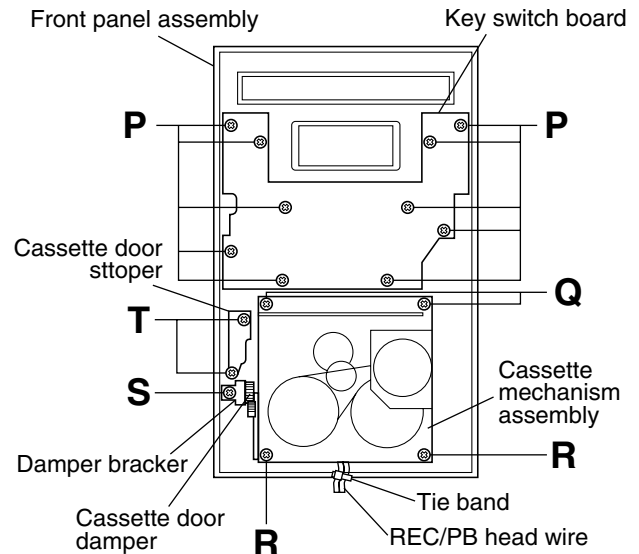


Fig. 19

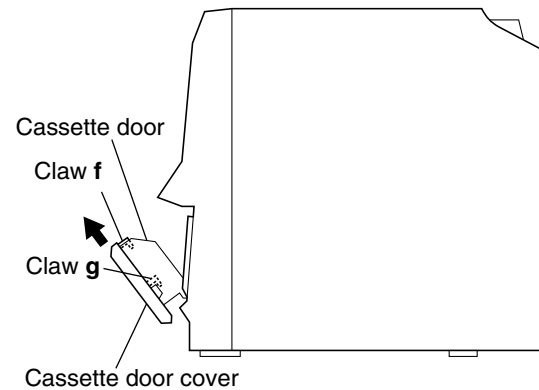


Fig. 20

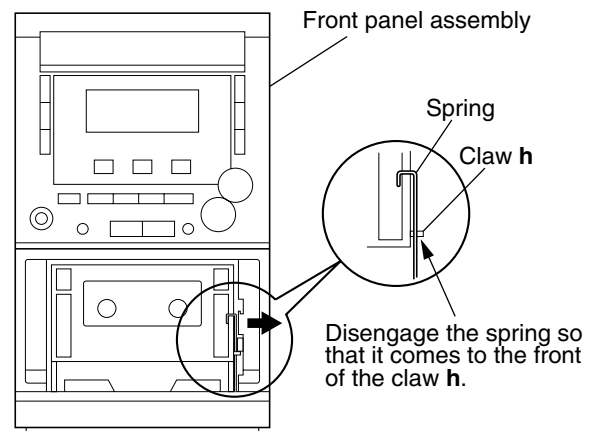


Fig. 21

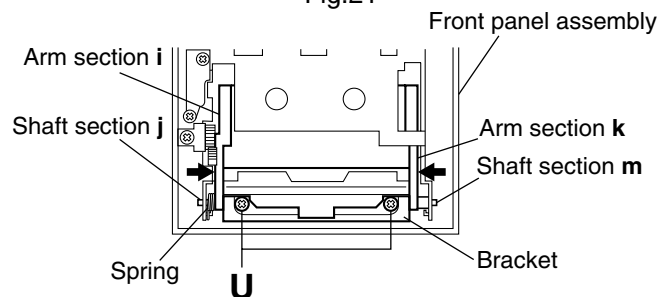


Fig. 22

<CD mechanism section>

- Remove the left and right side panels.
- Remove the top cover.
- Remove the front panel assembly.
- Remove the CD mechanism assembly.

■ Removing the CD & MCU board

(See Figs. 23 and 24.)

- From the back side of the CD mechanism assembly, remove the four screws **V** retaining the CD & MCU board.
- Disengage the two studs retaining the CD & MCU board.
- Disconnect the wires from the two connectors CN702 and CN703 on the CD & MCU board.
- Lift the CD & MCU board and attach solder to the short land part **n** on the CD pickup assembly.
- Disconnect the card wire from the connector CN704 on the CD & MCU board, and take out the CD & MCU board.

[Caution] • Be sure to solder the short land part **n** on the CD pickup unit before disconnecting the card wire from the CD pickup assembly (see Fig. 24). If the card wire is disconnected without attaching solder, the CD pickup may be destroyed by static electricity.

- In the assembly, be sure to remove solder from the short land part **n** after connecting the card wire.

[Note] • After assembly, apply a locking agent to the screw **V**.
• After assembly, apply an adhesive agent to the studs.

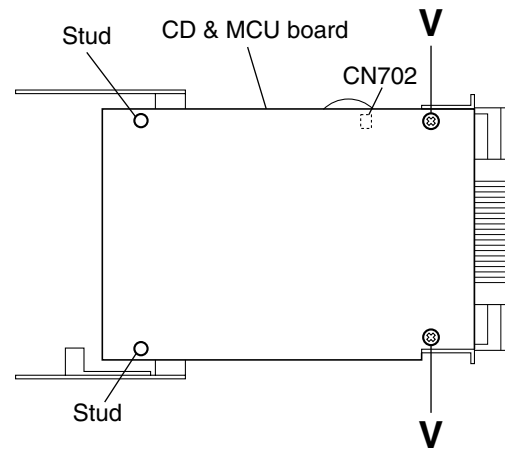


Fig.23

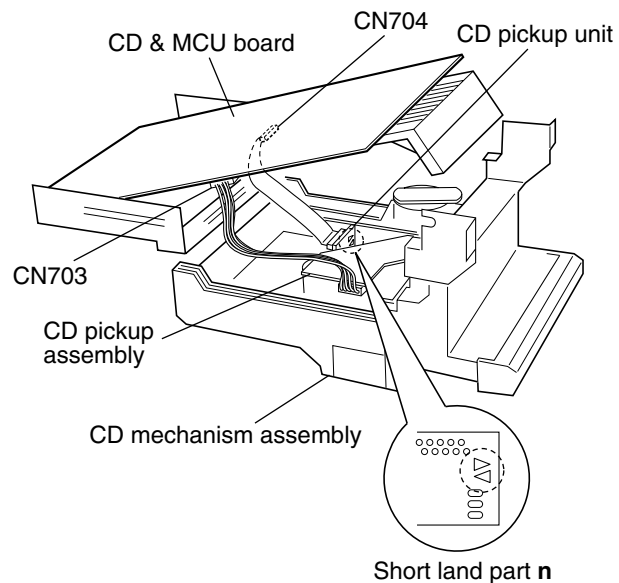


Fig.24

■ Removing the CD pickup assembly

(See Fig. 25.)

- Remove the CD & MCU board.

- From the back side of the CD mechanism assembly, remove the four screws **W** retaining the CD pickup assembly.
- Take out the CD pickup assembly.

[Note] When removing or replacing the dampers, note their colors and be sure to attach them in their correct positions.

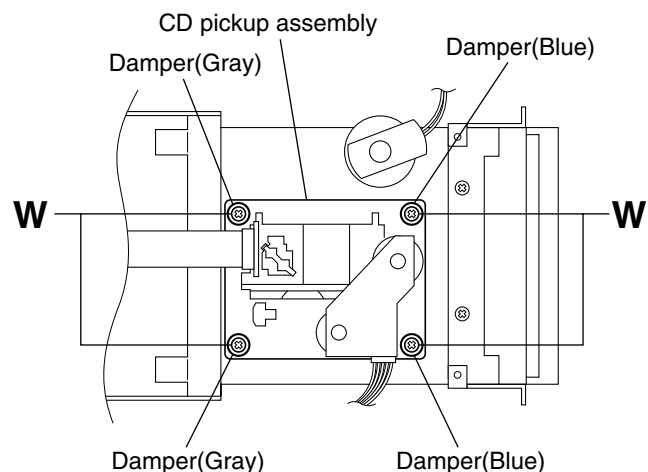


Fig.25

■ Removing the tray motor

(See Figs. 26 to 29.)

- Remove the CD & MCU board.
1. On the top of the CD mechanism assembly, open up the claws **p** and **q** at the left and right of the clamber assembly and lift the assembly to remove it.
 2. On the top of the CD mechanism assembly, push the section **r** of the elevator in the direction of the arrow and lower the CD pickup assembly.
 3. Pull out the tray.
 4. While opening up the claws **s** at the left and right of the tray in the directions of the arrows, remove the tray.
 5. While pushing the claw **t** on the CD mechanism assembly downwards, slide the elevator fully in the direction of the arrow.
 6. Remove the transparent cover.
 7. Remove the belt from the tray motor pulley.
 8. Remove the two screws **X** retaining the tray motor and remove it.

[Note] • Take care not to attach grease on the belt.

• After attaching the tray motor in the assembly, apply a locking agent to the screws **X**.

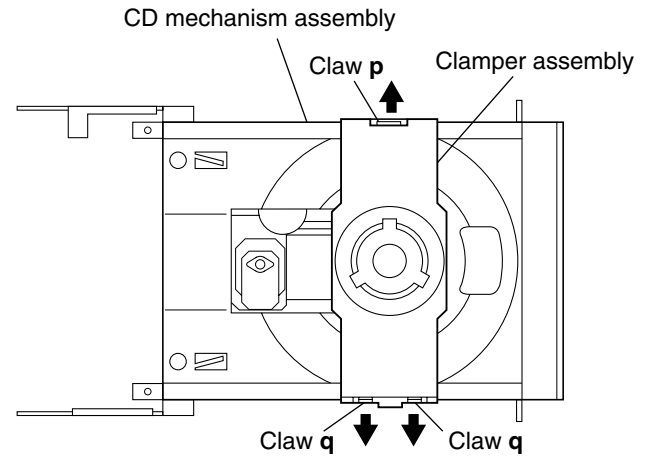


Fig.26

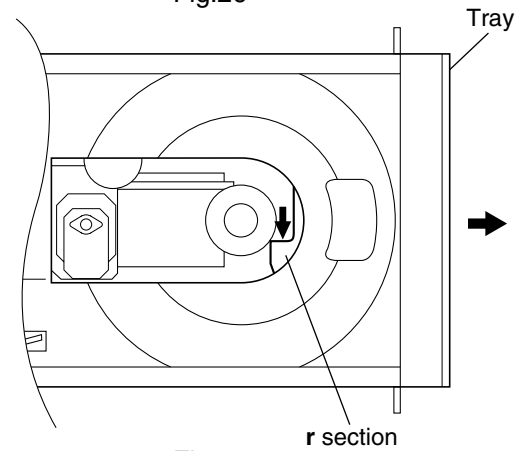


Fig.27

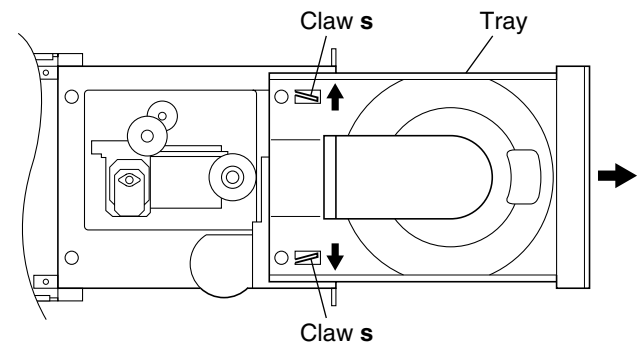


Fig.28

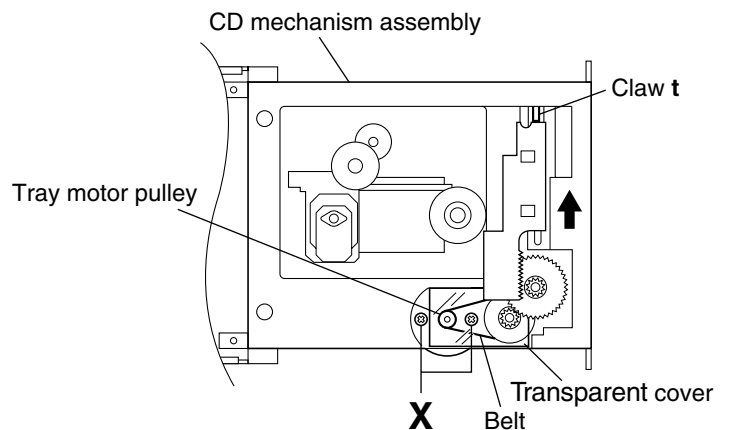


Fig.29

■ Replacing the CD pickup unit

(See Figs. 30 to 33.)

[Note] Use the following procedure to replace only the CD pickup unit.

1. Remove the left and right side panels (see **Figs. 3** to **6**).
2. Remove the top cover (see **Figs. 7** and **8**).
3. On the top of the main body, open up the claws **p** and **q** on the left and right of the clamber assembly in the direction of the arrows and lift the assembly to remove it.
4. On the top of the main body, push section **r** on the elevator of the CD mechanism assembly and lower the CD pickup assembly.
5. Pull out the tray.
6. Remove the slit washer retaining the feed middle gear, and take out the feed middle gear.
7. Remove the two screws **Y** retaining the shaft.
8. Turn the CD pickup unit upside down and apply solder to the short land part **n**.
9. Disconnect the card wire from the CD pickup unit and replace the unit.

[Caution] • Be sure to solder the short land part **n** on the CD pickup unit before disconnecting the card wire from the CD pickup unit (see Fig. 33).
If the card wire is disconnected without attaching solder, the CD pickup may be destroyed by static electricity.

• In the assembly, be sure to remove solder from the short land part **n** after connecting the card wire.

[Note] • Removing the CD pickup unit involves the removal of the sliding spring. In the assembly, be sure to attach the spring in the correct orientation before attaching the CD pickup unit (see Fig. 33).

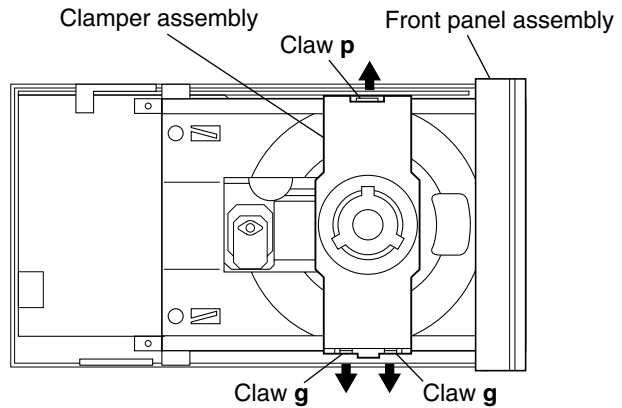


Fig.30

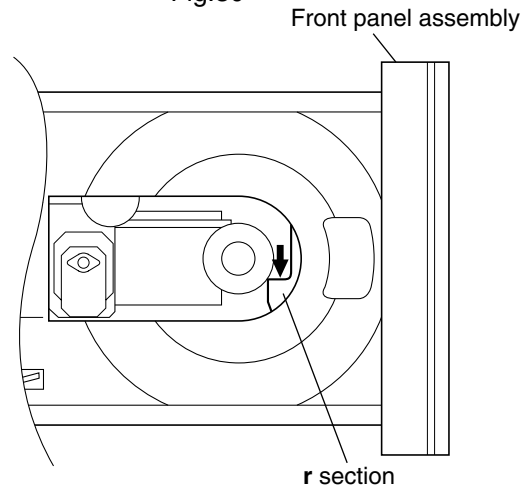


Fig.31

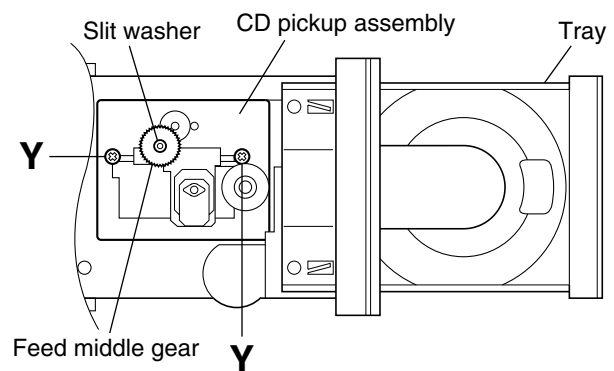


Fig.32

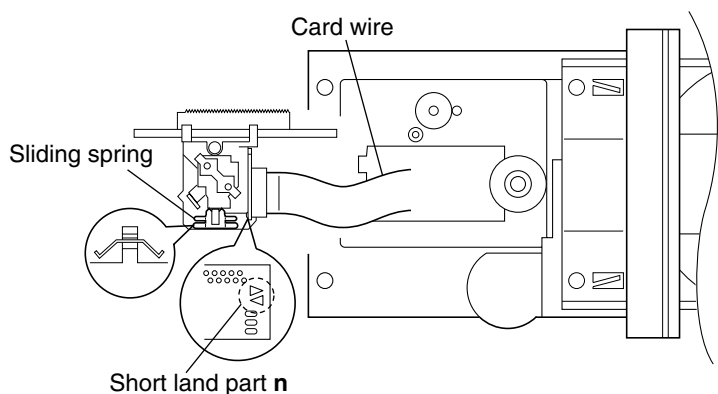


Fig.33

Adjustment method

■ Measuring instructions required for adjustment

1. AM signal generator
2. FM signal generator
3. Intermediate frequency sweep generator
4. FM stereo signal generator
5. Low-frequency oscillator
(oscillation frequency 50Hz-20kHz, 0dB output with 600 ohm impedance)
6. Attenuator (600 ohm impedance)
7. Electronic voltmeter
8. Distortion meter
9. Torque gauge (cassette for CTG-N)
10. Wow & flutter meter
11. Frequency counter meter
12. Test tape
VT712 : For tape speed and wow flutter
VT724 : For reference level
VT703 : For playback frequency
VT703 : For head azimuth adjustment
13. Blank tape
TAPE I : AC-225

■ Measurement conditions

Power supply voltage
AC120V/60Hz

■ Measuring instruments

Radio section

FM 1kHz, 22.5kHz deviation
FM STEREO : 1kHz, 67.5kHz deviation
pilot signal 7.5kHz
AM : 1kHz, 30% modulation
Reference output :
H.phone output -10dBs(0.245V) 32 ohm
Speaker output 0dBs(2.8V) 8 ohm

Cassette amplifier section

Reference output :
H.phone output -10dBs(0.245V) 32 ohm
Speaker output 0dBs(2.8V) 8 ohm
Standard mode of function knob :
Press TAPE knob of select TAPE mode

CD section

CD test disc : CTS-1000

■ Cassette amplifier section

Item	Measuring condition	Check and adjustment procedure	Standard value	Adjusting part
Head azimuth adjustment	- Test tape: VT703 (10kHz) - Signal output terminal: H.phone out (with 32 ohm load)	1.Play back the test tape VT703 (10kHz). 2.Adjust the head azimuth adjusting screw so that the phase difference between the R and L channels is minimized at an output level that is within ± 2dB of the maximum output level. After this adjustment, lock the head azimuth adjusting screw with screw sealant to cover more than a half of the screw head. 3.When the head azimuth is maladjusted, correct it with the head azimuth adjusting screw.	- Output level: Within ± 2dB of maximum output level - Phase difference R and L channels: Minimum	Head azimuth adjusting screw (To be used only after head replacement) See Fig.1 on page 1-16.
Tape speed and wow/flutter check and adjustment	- Test tape: VT712 (3kHz) - Signal output terminal: H.phone out (with 32 ohm load)	1.Play back the test tape VT712 (3kHz) by the end portion. 2.Connect a frequency counter and check that it reads between 2940 and 3090Hz. If not, adjust the frequency with the motor semifixed resistor. 3.Check that the wow/flutter is within 0.38% (unweighted).	2940 to 3090Hz - Within 0.38% (unweighted)	- Tape speed: - Motor semifixed resistor - See Fig.2 on page 1-16. - Check only
PB frequency response check	- Test tape: VT703 - Signal output terminal: H.phone out (with 32 ohm load)	Play back the test tape VT703 while con-firming that deviation between the 1kHz signal and 8kHz signal should be (0+3dB-6dB).	Deviation between 1kHz and 8kHz: (0+3dB-6dB)	
Bias frequency check	- Tape: Normal - Signal output terminal: Cassette REC./PLAY HEAD	Set the TUNER or CD function and with TAPE to record. Check to see if the frequency at the measuring point P207 is 68kHz ± 1 kHz if not adjust L203 until the frequency counter indicates 68 kHz ± 1 kHz.		L203, P207 See Fig.3 on page 1-16.
REC and PB frequency response adjustment	- Test tape: AC225 - Signal input: SG 1kHz -20dBs with emphasis - Signal output terminal: H.phone out (with 32 ohm load)	At TUNER, set the BAND to the FM position, and record the reference 1kHz signal and 8kHz signal alternately repeatedly. While playing back the recorded signal of the 1kHz signal differ from that of the 8kHz signal by within (0+3dB-6dB).	Level difference for 1kHz signal: Within (0+3dB-6dB)	

■ Tuner section

Item	Measuring condition	Check and adjustment procedure	Standard value	Adjusting part
AM IF adjustment	- Signal input: Loop antenna - Signal output: IC101 pin19	1.Set the intermediate frequency sweep generator to AM 450kHz. 2.Adjust T101 for maximum and center output.		T101 See Fig.3 on page 1-16.
AM tracking adjustment	- Signal input: Loop antenna - Signal output: H.phone out (with 32 ohm load)	1.Set the TUNER at 530kHz adjust L101 until the test point P101 voltage at $1.1V \pm 0.1V$. 2.Set the TUNER at 1710kHz, check the test point P101 voltage at $7.0V \pm 0.3V$. 3.Set the TUNER and S/G at 600kHz, adjust L102 for maximum output. 4.Set the TUNER and S/G at 1400kHz, adjust the TC102 for maximum output. 5.Repeat the above steps 3 and 4.		L101 L102 TC102 See Fig.3 on page 1-16.
FM tracking adjustment	- Signal input: Dummy antenna FM ANT FM GND - Signal output: H.phone out (with 32 ohm load)	1.Set the TUNER at 87.5MHz adjust L106 until the test point P102 voltage at $2.3V \pm 0.1V$. 2.Set the TUNER at 108MHz, check the test point P102 voltage at $6.5V \pm 0.3V$. 3.Set the TUNER and S/G at 90.1MHz, adjust L105 for maximum output. 4.Set the TUNER and S/G at 106.1MHz, adjust the TC101 for maximum output. 5.Repeat the above steps 3 and 4.		L106 L105 TC101 See Fig.3 on page 1-16.

■ Location of adjusting parts

• Cassette mechanism section

(Caution) For adjusting any head, be sure to use a screw driver degaussed.

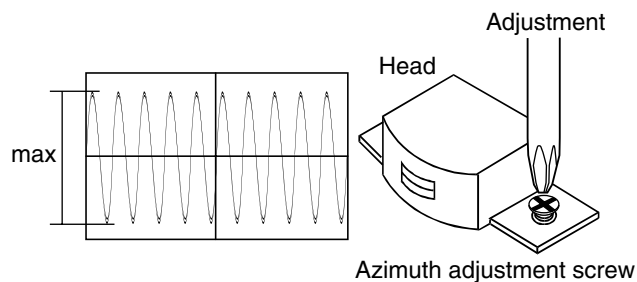


Fig.1 Head output signal

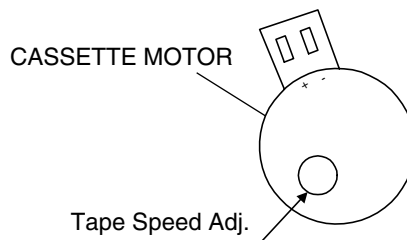


Fig.2

• Main board

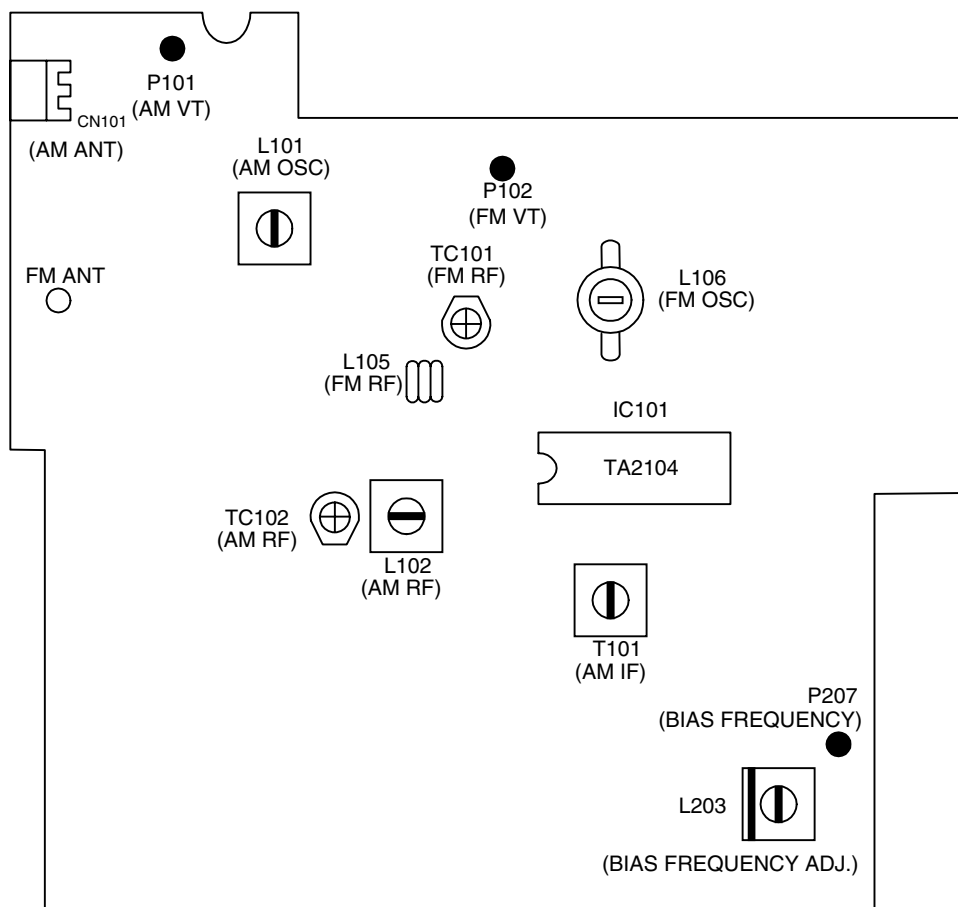
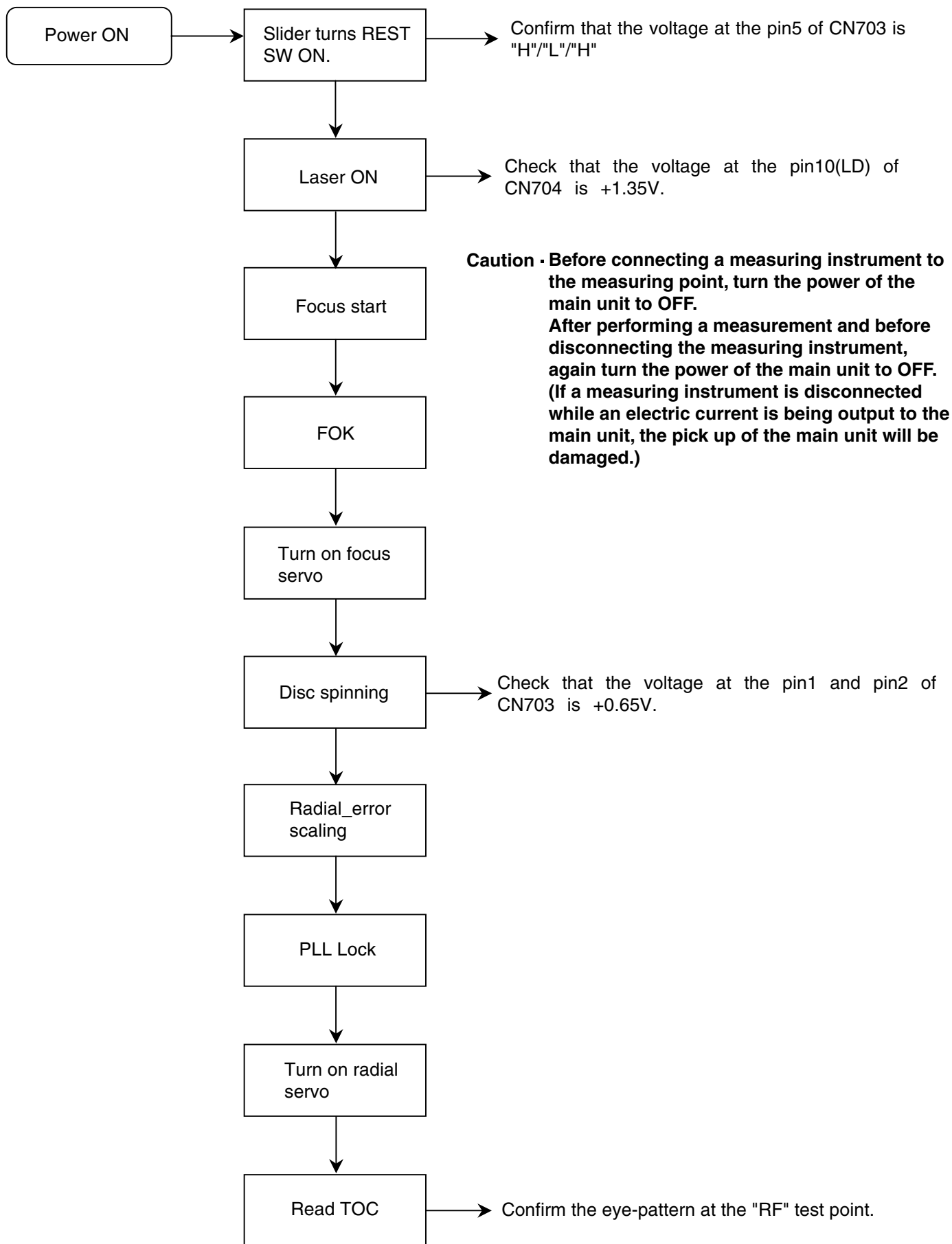


Fig.3

Flow of functional operation until TOC read



Maintenance of laser pickup

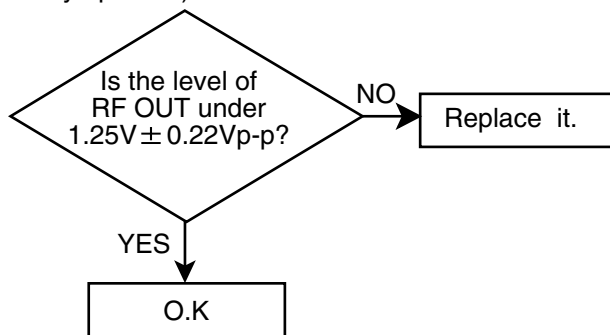
(1) Cleaning the pick up lens

Before you replace the pick up, please try to clean the lens with a alcohol soaked cotton swab.

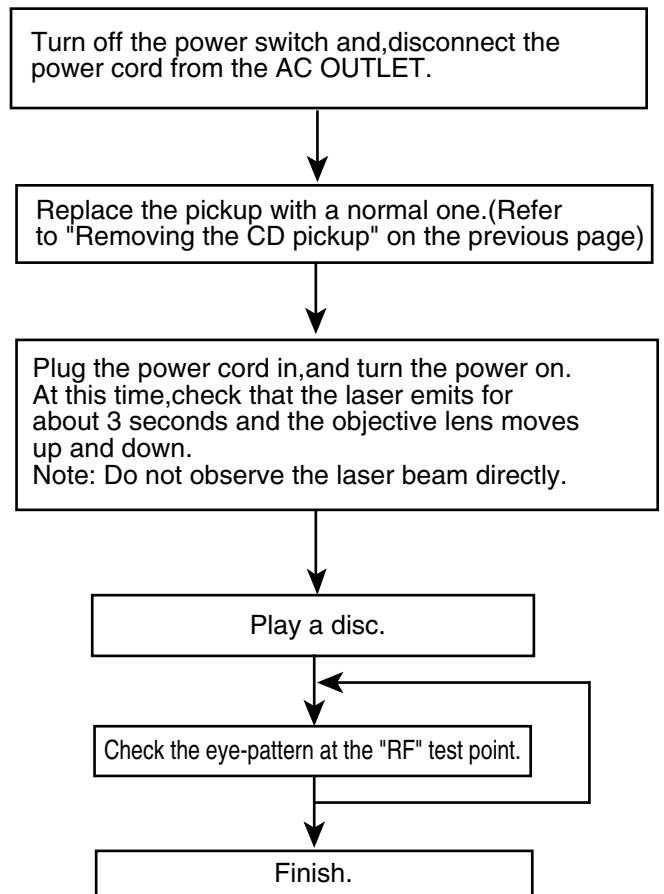
(2) Life of the laser diode

When the life of the laser diode has expired, the following symptoms will appear.

The level of RF output (EFM output: amplitude of eye pattern) will below.



Replacement of laser pickup



(3) Semi-fixed resistor on the APC PC board

The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power.

Since this adjustment should be performed to match the characteristics of the whole optical block, do not touch the semi-fixed resistor.

If the laser power is lower than the specified value,the laser diode is almost worn out, and the laser pickup should be replaced.

If the semi-fixed resistor would be adjusted when the pickup operates normally,the laser pickup may be damaged due to excessive current.

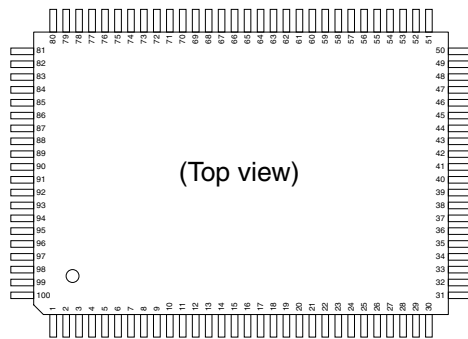
Trouble shooting

Circuit	Symptom	Cause	Remedy
General	No sound	• Speakers are not connected. • Wrong function is selected. • Defective volume control • Defective earphone jack • Defect in IC601 • Defect in IC301	Check the speaker connection. Set switch to the proper position. Set the volume control to a proper sound level. Replace the earphone jack. Check voltages. Replace if necessary. Check voltages. Replace if necessary.
AM	No sound, weak sound (Low sensitivity)	• Improper location of unit • Defect in IFT101 • Defect AM antenna coil or oscilloscope coil • Intermediate frequency tuning faulty • RF tracking faulty • Defective IC101 • Defective IC102 • Poor contact in antenna circuit	Rotate or resposition the unit. Check resistance, voltage, and current. Replace as needed. Replace if necessary. Readjust (see "Adjustment method"). Readjust (see "Adjustment method"). Check voltages. Replace if necessary. Check resistance and resolder. Check resistance and resolder.
FM	No sound, weak sound (Low sensitivity)	• FM antenna not connected • Defective band selector switch • Defective IC101 • Defective IC102 • Intermediate frequency tuning faulty • Poor contact in FM antenna circuit	Connect the built-in or external antenna. Replace or repair the switch. Check voltages. Replace if necessary. Check voltages. Replace if necessary. Readjust (see "Adjustment method"). Resolder or repair as required.
Tape	No sound/recording, unsteady tape sound, weak sound	• Dirty capstan or head • Irregular cassette tape winding • Defective IC202 • Cassette erasure prevention tabs broken out	Clean the capstan or head with alcohol. Replace tape. Check voltages. Replace if necessary. Replace tape or cover tab openings with adhesive tape.
CD	Cannot read the table of content. No sound	• Disc is inserted upside down. • Disc is dirty. • Disc is scratched. • Disc is seriously warped. • A non-standard disc has been inserted. • Moisture has formed inside the CD deck. • Defective IC701 • Defective IC704 • Defective TA2092N • Defect in the CD pickup mechanism	Insert disc correctly. Wipe clean with a soft cloth. Use a new disc. Use a new disc. Use only a brand name disc. Wait about 20 to 30 minutes. Check voltages. Replace if necessary. Check voltages. Replace if necessary. Check voltages. Replace if necessary. Replace as required.

Description of major ICs

■ 87EP26F-1J15 (IC601) : MCU

1. Terminal layout

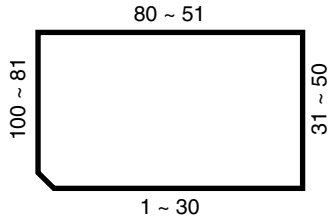


2.Pin function

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	VSS	-	GND (0V)	28	B-PHOTO OUTPUT	I	Reel pulse input of deck B. Have pulse input means the tape is rotating.
2	XOUT	O	Resonator connecting pins for high clock(4-8MHz).	29	CD-RW	O	CD-RW control output
3	XIN	I	For inputting external clock, XIN is used and XOUT is opened.	30	RES	O	CD servo reset output
4	RESET	I/O	Reset signal input or watchdog timer output/address-trap-reset output	31	CCE	O	Servo DSP chip enable output
5	XTOUT	O	Resonator connecting pins for slow clock(32.768kHz)	32	BUCK	O	Servo DSP clock output
6	XTIN	I	or general purpose I/O.	33	BUS0	I/O	Servo DSP command and data I/O
7	TEST	I	Test pin for out-going test. Always fixed to low.	34	BUS1	I/O	Servo DSP command and data I/O
8	SHIFT FREQ.	O	Shift the crystal oscillation frequency to reduce tuner noise.	35	BUS2	I/O	Servo DSP command and data I/O
9	REMOTE	I	Remote control signal input	36	BUS3	I/O	Servo DSP command and data I/O
10	MUTE	O	Audio mute output	37	TRAY IN (SLOUT)	O	Tray open/close outputs for current sensor drawer type mechanism.
11	PLAY MUTE	O	Muting output during play	38	TRAY OUT (SLIN)	O	
12	REC MUTE	O	Muting output during recording	39	SLT	I	CD pick up position input: L if pick up is in inner side.
13	PLAY/REC	O	Play or recording output, low for recording.	40	CLT (SLEND)	I	Current sensor input
14	(SCK2)	-	Not connected	41	NC	-	Not connected
15	(SI2)	-	Not connected	42	RDS DATA	I	BU1923F(RDS demodulator) interface data input
16	(SO2)	-	Not connected	43	STEREO	I	Stereo input pin for tuner stereo indication
17	REC SW (RCS)/(WAIT)	I	Deck reverse record protection input. Low means can record on reverse side.	44	PWR DET	I	Power down detection
18	REC SW (FWD)	I	Deck forward record protection input. Low means can record on forward side.	45	AD K3	I	Panel key analog input
19	SOL.	O	Solenoid output for deck B.	46	AD K2	I	Panel key analog input
20	MODE SW	I	Mode switch input of deck B. Low means the head is up.	47	AD K1	I	Panel key analog input
21	VOL STB	O	TC9422F volume STB output	48	VAREF	-	Analog reference voltage input
22	POWER	O	Power output control	49	(BOOT)	I	Control input for writing MCU program area via ICU interface.
23	B-HALF SW	I	Half switch input of deck B. Low means deck B have tape.	50	VSS	-	GND (0V)
24	JOG-B/VOL DATA	I/O	Jog dial input and TC9422F volume data output	51	VDD	-	VDD (+5V)
25	JOG-A/VOL CLK	I/O	Jog dial input and TC9422F volume clock output	52~91	SEG39~0	O	LCD segment outputs
26	RDS CLK	I	BU1923F(RDS demodulator) interface CLK input	92~95	COM3~0	O	LCD common outputs
27	V-MOTOR	O	Motor output	96	VLC	-	LCD drive power supply
				97	PLL DATA	I/O	TC9257P (PLL) interface
				98	PLL CLK	O	TC9257P (PLL) interface
				99	PLL PRD	O	TC9257P (PLL) interface
				100	VDD	-	VDD (+5V)

■ TC9462F (IC701) : Digital servo single chip processor

1. Terminal layout



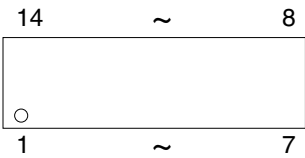
2. Pin function

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function															
1	TEST0	I	Test mode terminal. Normally, keep at open	23	VDD2	-	Digital power supply voltage terminal.															
2	HSO	O	Playback speed mode flag output terminal. <table><tr><th>UHSO</th><th>HSO</th><th>PLAYBACK SPEED</th></tr><tr><td>H</td><td>H</td><td>Normal</td></tr><tr><td>H</td><td>L</td><td>2 times</td></tr><tr><td>L</td><td>H</td><td>4 times</td></tr><tr><td>L</td><td>L</td><td>-</td></tr></table>	UHSO	HSO	PLAYBACK SPEED	H	H	Normal	H	L	2 times	L	H	4 times	L	L	-	24	TESIO0	I	Test input/output terminal. Normally, keep at "L" level. The terminal that inputted the clock for read of text data by command.
UHSO	HSO	PLAYBACK SPEED																				
H	H	Normal																				
H	L	2 times																				
L	H	4 times																				
L	L	-																				
3	UHSO	O	25	P2VREF	-	PLL double reference voltage supply terminal.																
			26	HSSW	O	2/4 times speed at "VREF" voltage.																
			27	ZDET	O	1 bit DA converter zero detect flag output terminal.																
4	EMPH	O	Subcode Q data emphasis flag output terminal. Emphasis ON at "H" level and OFF at "L" level. The output polarity can invert by command.	28	PDO	O	Phase difference signal output terminal of EFM signal and PLCK signal.															
5	LRCK	O	Channel clock output terminal. (44.1kHz) L-ch at "L" level and R-ch at "H" level. The output polarity can invert by command.	29	TMAXS	O	TMAX detection result output terminal. Selected by command bit (TMPS).															
6	VSS1	-	Digital ground terminal.	30	TMAX	O	TMAX detection result output terminal. Selected by command bit (TMPS). <table><tr><th>DIFFERENCE RESULT</th><th>TMAX OUTPUT</th></tr><tr><td>Longer than fixed freq.</td><td>"P2VREF"</td></tr><tr><td>Shorter than fixed freq.</td><td>"Vss"</td></tr><tr><td>Within the fixed freq.</td><td>"HiZ"</td></tr></table>	DIFFERENCE RESULT	TMAX OUTPUT	Longer than fixed freq.	"P2VREF"	Shorter than fixed freq.	"Vss"	Within the fixed freq.	"HiZ"							
DIFFERENCE RESULT	TMAX OUTPUT																					
Longer than fixed freq.	"P2VREF"																					
Shorter than fixed freq.	"Vss"																					
Within the fixed freq.	"HiZ"																					
7	BCK	O	Bit clock output terminal. (1.4112MHz)																			
8	AOUT	O	Audio data output terminal.																			
9	DOUT	O	Digital data output terminal.																			
10	MBOV	O	Buffer memory over signal output terminal. Over at "H" level.	31	LPFN	I	LPF amplifier inverting input terminal for PLL.															
11	IPF	O	Correction flag output terminal. At "H" level, AOUT output is made to correction impossibility by C2 correction processing.	32	LPFO	O	LPF amplifier output terminal for PLL.															
12	SBOK	O	Subcode Q data CRCC check adjusting result output terminal. The adjusting result is OK at "H" level.	33	PVREF	-	PLL reference voltage supply terminal.															
				34	VCOREF	I	VCO center frequency reference level terminal. Normally, keep at "PVREF" level.															
				35	VCOF	O	VCO filter terminal.															
				36	AVSS1	-	Analog ground terminal.															
13	CLK	I/O	Subcode P-W data readout clock input/output terminal. This terminal can select by command bit.	37	SLCO	O	Data slice level output terminal.															
14	VDD1	-	Digital power supply voltage terminal.	38	RFI	I	RF signal input terminal.															
15	VSS2	-	Digital ground terminal.	39	AVDD1	-	Analog power supply voltage terminal.															
16	DATA	O	Subcode P-W data output terminal.	40	RFCT	I	RFRP signal center level input terminal.															
17	SFSY	O	Playback frame sync signal output terminal.	41	RFZI	I	RFRP zero cross input terminal.															
18	SBSY	O	Subcode block sync signal output terminal.	42	RFRP	I	RF ripple signal input terminal.															
19	SPCK	O	Processor status signal readout clock output terminal.	43	FEI	I	Focus error signal input terminal.															
20	SPDA	O	Processor status signal output terminal.	44	SBAD	I	Sub-beam adder signal input terminal.															
21	COFS	O	Correction frame clock output terminal. (7.35kHz)	45	TSIN	I	Test input terminal. Normally, keep at "VREF" level.															
				46	TEI	I	Tracking error signal input terminal. Take in at tracking servo on.															
				47	TEZI	I	Tracking error zero cross input terminal.															
22	MONIT	O	Internal signal (DSP internal flag and PLL clock) output terminal. Selected by command. This terminal output the text data with serial by command.	48	FOO	O	Focus servo equalizer output terminal.															
				49	TRO	O	Tracking servo equalizer output terminal.															
				50	VREF	-	Analog reference voltage supply terminal.															

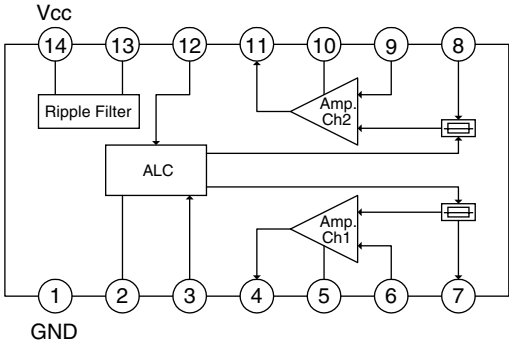
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
51	RFGC	O	RF amplitude adjustment control signal output terminal.	71	TESIN	I	Test input terminal. Normally, keep at "L" level.
52	TEBC	O	Tracking balance control signal output terminal.	72	TESIO1	I	Test input/output terminal. Normally, keep at "L" level.
53	FMO	O	Feed equalizer output terminal.	73	VSS4	-	Digital ground terminal.
54	FVO	O	Speed error signal or feed search equalizer output terminal.	74	PXI	I	Crystal oscillator connecting input terminal for DSP. Normally, keep at "L" level.
55	DMO	O	Disk equalizer output terminal. (PWM carrier= 88.2kHz for DSP, Synchronize to PXO)	75	PXO	O	Crystal oscillator connecting output terminal for DSP.
56	2VREF	-	Analog double reference voltage supply terminal.	76	VDD4	-	Digital power supply voltage terminal.
57	SEL	O	APC circuit ON/OFF indication signal output terminal. At the laser on time, UHF = L at "HiZ" level and UHF = H at "H" level.	77	XVSS	-	Oscillator ground terminal for system clock.
58	FLGA	O	External flag output terminal for internal signal. Can select signal from TEZC, FOON, FOK and RFZC by command.	78	XI	I	Crystal oscillator connecting input terminal for system clock.
59	FLGB	O	External flag output terminal for internal signal. Can select signal from DFCT, FOON, FMON and RFZC by command.	79	XO	O	Crystal oscillator connecting output terminal for system clock.
60	FLGC	O	External flag output terminal for internal signal. Can select signal from TRON, TRSR, FOK and SRCH by command.	80	XVDD	-	Oscillator power supply voltage terminal for system clock.
61	FLGD	O	External flag output terminal for internal signal. Can select signal from TRON, DMON, HYS and SHC by command.	81	DVSR	-	Analog ground terminal for DA converter.(R-ch)
62	VDD3	-	Digital power supply voltage terminal.	82	RO	O	R channel data forward output terminal.
63	VSS3	-	Digital ground terminal.	83	DVDD	-	Analog supply voltage terminal for DA converter.
64	IO0	I/O	General I/O terminal. Can change over input port or output port by command. At the input mode time can readout a state of terminal (H/L) by read command. At the output mode time can control a state of terminal (H/L/HiZ) by command.	84	DVR	-	Reference voltage terminal for DA converter.
65	IO1	I/O		85	LO	O	L channel data forward output terminal.
66	IO2	I/O		86	DVSL	-	Analog ground terminal for DA converter.(L-ch)
67	IO3	I/O		87	TEST1	I	Test mode terminal. Normal, keep at open.
68	DMOUT	I	This terminal controls IO0~IO3 terminal. At "L" level time, IO0, 1 out feed equalizer signal of 2-state PWM, IO2,3 out disk equalizer signal of 2-state PWM.	88	TEST2	I	Test mode terminal. Normal, keep at open.
69	CKSE	I	Normally, keep at open.	89	TEST3	I	Test mode terminal. Normal, keep at open.
70	DACT	I	DAC test mode terminal. Normally, keep at open.	90	BUS0	I/O	Micon interface data input/output terminal.
				91	BUS1	I/O	
				92	BUS2	I/O	
				93	BUS3	I/O	
				94	VDD5	-	Digital power supply voltage terminal.
				95	VSS5	-	Digital ground terminal.
				96	BUCK	I	Micon interface clock input terminal.
				97	CCE	I	Command and data sending/receiving chip enable signal input terminal. The bus line becomes active at "L" level.
				98	TEST4	I	Test mode terminal. Normal, keep at open.
				99	TSMOD	I	Local test mode selection terminal.
				100	RST	I	Reset signal input terminal. Reset at "L" level.

■ AN7312 (IC202) : Dual recording/Playback pre-amplifier circuit with ALC

1. Terminal layout



2. Block diagram

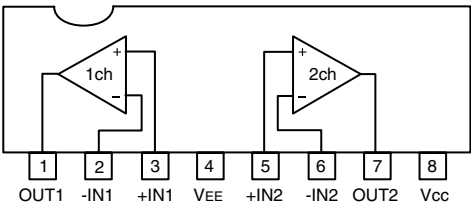


3. Pin function

Pin No.	Symbol	I/O	Function
1	GND	-	GND
2	ALC time constant	-	ALC time constant by resistance and capacitor
3	ALC input Ch.1	I	Right channel ALC input
4	Output Ch.1	O	Right channel output
5	Phase compensation Ch.1	-	No connect
6	N.E.B. Ch.1	I	Right channel negative feed back input
7	Input Ch.1	I	Right channel signal input
8	Input Ch.2	I	Left channel signal input
9	N.E.B. Ch.2	I	Left channel negative feed back input
10	Phase compensation Ch.2	-	No connect
11	Output Ch.2	O	Left channel output
12	ALC input Ch.2	I	Left channel ALC input
13	Ripple filter	-	Ripple filter
14	Vcc	-	Power supply

■ BA4558N (IC402) : Dual operational amplifier

1. Terminal layout & Block diagram

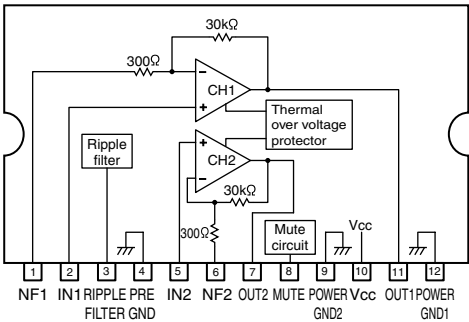


2. Pin function

PIN No.	Symbol	I/O	Function
1	OUT1	O	A output
2	-IN1	I	A - input
3	+IN1	I	A + input
4	VEE	-	V-
5	+IN2	I	B + input
6	-IN2	I	B - input
7	OUT2	O	B output
8	Vcc	-	V+

■ LA4282 (IC401) : Power amplifier

1. Terminal layout & Block diagram



2. Pin function

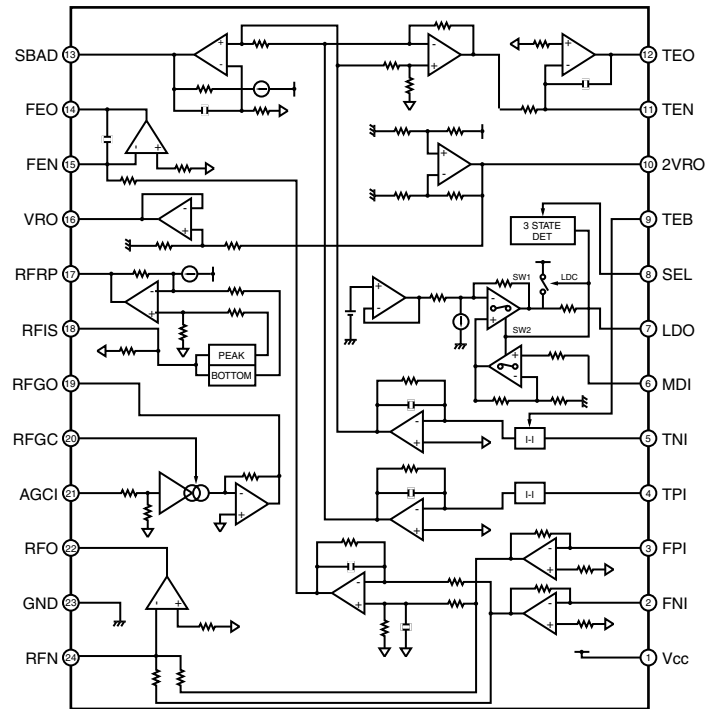
PIN No.	Symbol	I/O	Function
1	NF1	-	Right channel negative feed back
2	IN1	I	Right channel signal input
3	RIPPLE FILTER	-	Ripple filter
4	PRE GND	-	PRE GND
5	IN2	I	Left channel signal input
6	NF2	-	Left channel negative feed back
7	OUT2	O	Left channel output
8	MUTE	-	Mute control
9	POWER GND2	-	Power GND
10	Vcc	-	Power supply
11	OUT1	O	Right channel output
12	POWER GND1	-	Power GND

■ TA2109F (IC704) : RF Amplifier

1. Terminal Layout

VCC	1	24	RFN
FNI	2	23	GND
FPI	3	22	RFO
TPI	4	21	AGCI
TNI	5	20	RFGC
MDI	6	19	RFGO
LDO	7	18	RFIS
SEL	8	17	RFRP
TEB	9	16	VRO
2VRO	10	15	FEN
TEN	11	14	FEO
TEO	12	13	SBAD

2. Block Diagram



3. Pin Function

Pin No.	Symbol	I/O	Function
1	VCC	-	Power supply input terminal
2	FNI	I	Main beam I-V amplifier input terminal
3	FPI	I	Main beam I-V amplifier input terminal
4	TPI	I	Sub beam I-V amplifier input terminal
5	TNI	I	Sub beam I-V amplifier input terminal
6	MDI	I	Monitor photo diode amplifier input terminal
7	LDO	O	Laser diode amplifier output terminal
8	SEL	I	Laser diode control signal input terminal and APC circuit ON/OFF control signal input terminal
9	TEB	I	Tracking error balance adjustment signal input terminal Controlled by 3 PWM signal
10	2VRO	O	Reference voltage (2Vref) output terminal 2Vref=4.2V when Vcc=5V
11	TEN	I	TE amplifier negative input terminal
12	TEO	O	TE error signal output terminal
13	SBAD	O	Sub beam adder signal output terminal
14	FEO	O	Focus error signal output terminal
15	FEN	I	FE amplifier negative input terminal
16	VRO	O	Reference voltage (Vref) output terminal Vref=2.1V when Vcc=5V
17	RFRP	O	Track count signal output terminal
18	RFIS	I	RFRP detect circuit input terminal
19	RFGO	O	RF gain signal output terminal
20	RFGC	I	RF amplitude adjustment control signal input terminal controlled by 3 PWM signal (PWM carrier =88.2 kHz)
21	AGCI	I	RF signal amplitude adjustment amplifier input terminal
22	RFO	O	RF signal output terminal
23	GND	-	Connect to GND
24	RFN	I	RF amplifier negative input terminal

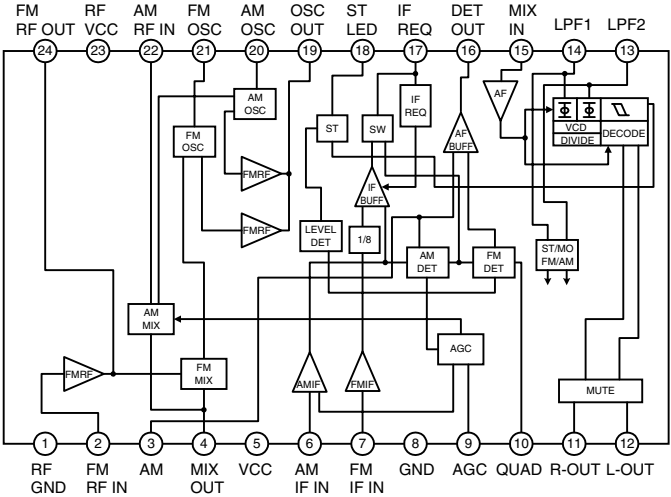
■ TA2104BN (IC101) : 1chip AM/FM, MPX tuner system

1. Terminal layout
2. Pin function

RFGND	1	24	FMRF OUT
FMRF IN	2	23	RF VCC
AM	3	22	AMRF IN
MIX OUT	4	21	FM OSC
VCC	5	20	AM OSC
AMIF IN	6	19	OSC OUT
FMIF IN	7	18	ST LED
GND	8	17	IF REQ
AGC	9	16	DET OUT
QUAD	10	15	MPX IN
R OUT	11	14	LPF1
L OUT	12	13	LPF2

PIN No.	Symbol	I/O	Function	PIN No.	Symbol	I/O	Function
1	RFGND	-	Ground terminal for RF	13	LPF2	I	FM/AM switch
2	FMRF IN	I	Input of FMRF signal	14	LPF1	I	Stereo/monoral switch
3	AM	I	AM low frequency cut	15	MPX IN	I	Multiplex signal input
4	MIX OUT	O	Output of FM/AM RF mix	16	DET OUT	O	AM/FM detection output
5	VCC	-	Power supply terminal	17	IF REQ	O	IF out/REQ out
6	AMIF IN	I	Input of AMIF signal	18	ST LED	O	Stereo indicator output
7	FMIF IN	I	Input of FMIF signal	19	OSC OUT	O	PLL data bus for FM or AM
8	GND	-	Ground terminal	20	AM OSC	-	AM local oscillation circuit
9	AGC	I	AGC voltage input terminal	21	FM OSC	-	FM local oscillation circuit
10	QUAD	I	OSC terminal for FM DET.	22	AMRF IN	I	Input of AMRF signal
11	R OUT	O	Output R-channel	23	RF VCC	-	Power supply terminal for RF
12	L OUT	O	Output L-channel	24	FMRF OUT	O	Output of FMRF signal

3. Block diagram



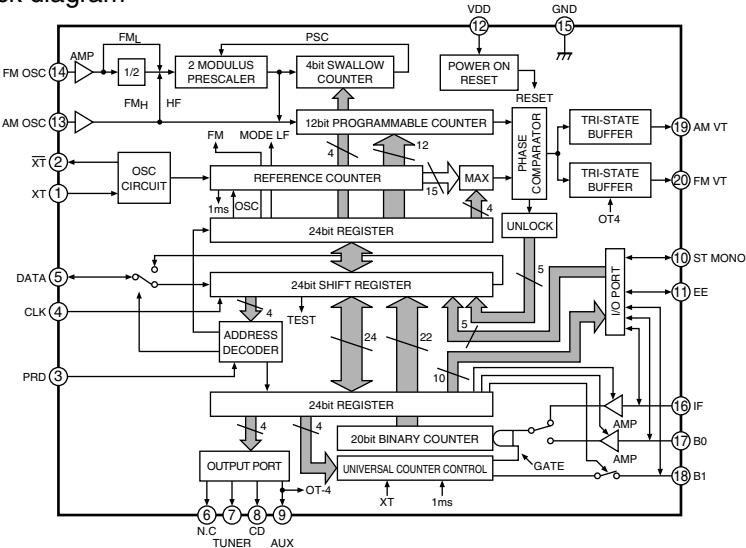
■ TC9257F (IC102) : PLL frequency synthesizer

1. Terminal layout
2. Pin function

XT	1	20	FM VT
XT	2	19	AM VT
PRD	3	18	B1
CLK	4	17	B0
DATA	5	16	IF
N.C	6	15	GND
TUNER	7	14	FM OSC
CD	8	13	AM OSC
AUX	9	12	VDD
ST MONO	10	11	EE

PIN No.	Symbol	I/O	Function	PIN No.	Symbol	I/O	Function
1	XT	I	Crystal oscillator pins	11	EE	I/O	General-purpose I/O port
2	XT	O	Crystal oscillator pins	12	VDD	-	Power supply pin
3	PRD	I	Period signal input	13	AM OSC	I	Programmable counter input
4	CLK	I	Clock signal input	14	FM OSC	I	Programmable counter input
5	DATA	I/O	Serial data input/output	15	GND	-	Ground pin
6	N.C	O	General-purpose output port	16	IF	I/O	General-purpose I/O port
7	TUNER	O	General-purpose output port	17	B0	I/O	General-purpose I/O port
8	CD	O	General-purpose output port	18	B1	I/O	General-purpose I/O port
9	AUX	O	General-purpose output port	19	AM VT	O	Phase comparator output
10	ST MONO	I/O	General-purpose I/O port	20	FM VT	O	Phase comparator output

3. Block diagram

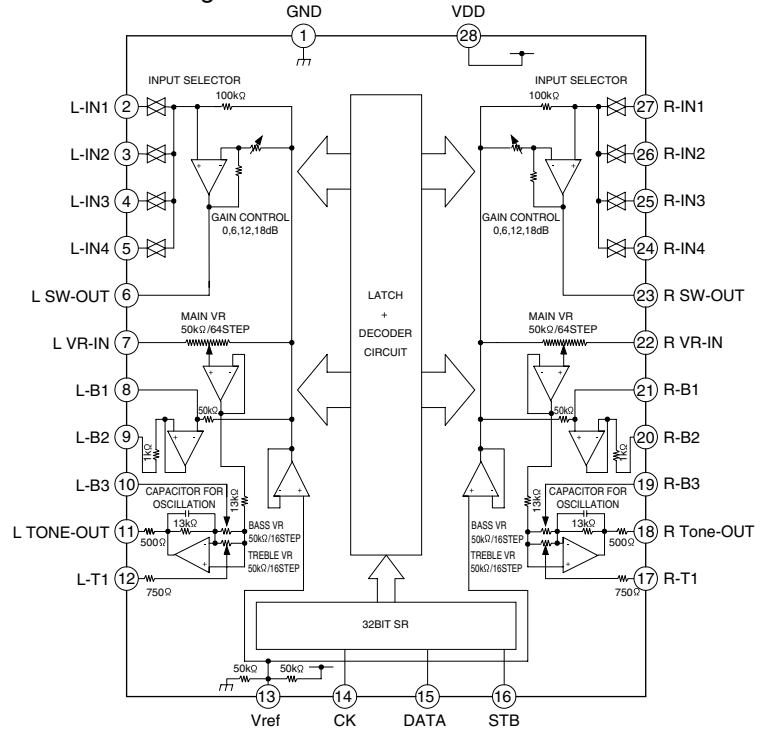


■ TC9422F (IC301) : System electronic volume

1. Terminal Layout

GND	1	28	VDD
L-IN1	2	27	R-IN1
L-IN2	3	26	R-IN2
L-IN3	4	25	R-IN3
L-IN4	5	24	R-IN4
L SW-OUT	6	23	R SW-OUT
L VR-IN	7	22	R VR-IN
L-B1	8	21	R-B1
L-B2	9	20	R-B2
L-B3	10	19	R-B3
L TONE-OUT	11	18	R TONE-OUT
L-T1	12	17	R-T1
Vref	13	16	STB
CK	14	15	DATA

2. Block Diagram

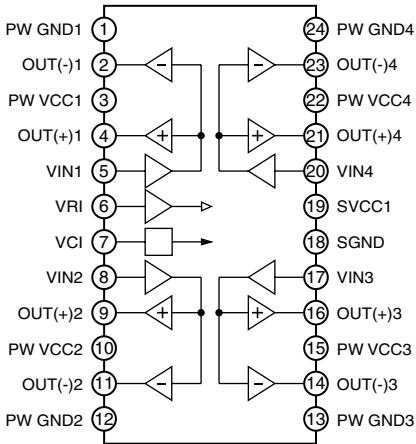


3. Pin Function

Pin No.	Symbol	I/O	Function
1	GND	-	Ground pin
2	L-IN1	I	Audio signal input pin (L-ch)
3	L-IN2	I	Audio signal input pin (L-ch)
4	L-IN3	I	Audio signal input pin (L-ch)
5	L-IN4	I	Audio signal input pin (L-ch)
6	L SW-OUT	O	Audio signal output pin (L-ch)
7	L VR-IN	I	Main volume input pin (L-ch)
8	L-B1	I	Tone control tap pin 1 for bus
9	L-B2	I	Tone control tap pin 2 for bus
10	L-B3	I	Tone control tap pin 3 for bus
11	L TONE-OUT	O	Tone control output pin (L-ch)
12	L-T1	I	Tone control tap pin for treble (L-ch)
13	Vref	I	Reference voltage input pin
14	CK	I	Clock input pin
15	DATA	I	Data input pin
16	STB	I	Strobe input pin
17	R-T1	I	Tone control tap pin for treble (R-ch)
18	R TONE-OUT	O	Tone control output pin (R-ch)
19	R-B3	I	Tone control tap pin 3 for bus
20	R-B2	I	Tone control tap pin 2 for bus
21	R-B1	I	Tone control tap pin 1 for bus
22	R VR-IN	I	Main volume input pin (R-ch)
23	R SW-OUT	O	Audio signal output pin (R-ch)
24	R-IN4	I	Audio signal input pin (R-ch)
25	R-IN3	I	Audio signal input pin (R-ch)
26	R-IN2	I	Audio signal input pin (R-ch)
27	R-IN1	I	Audio signal input pin (R-ch)
28	VDD	-	Power supply voltage pin

■ TA2092N (IC703) : Power driver IC

1.Terminal Layout & Block Diagram

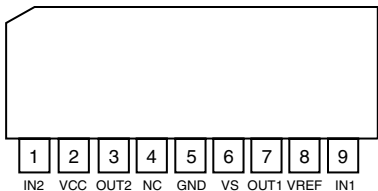


2.Pin Function

Pin No.	Symbol	I/O	Function
1	PW GND1	-	Power GND
2	OUT(-)1	O	Inverted output for CH1
3	PW VCC1	-	Supply terminal of output stage for CH1
4	OUT(+)1	O	Non-inverted output for CH1
5	VIN1	I	Input for CH1
6	VRI	-	Input reference voltage
7	VCI	-	Output reference voltage
8	VIN2	I	Input for CH2
9	OUT(+)2	O	Non-inverted output for CH2
10	PW VCC2	-	Supply terminal of output stage for CH2
11	OUT(-)2	O	Inverted output for CH2
12	PW GND2	-	Power GND
13	PW GND3	-	Power GND
14	OUT(-)3	O	Inverted output for CH3
15	PW VCC3	-	Supply terminal of output stage for CH3
16	OUT(+)3	O	Non-inverted output for CH3
17	VIN3	I	Input for CH3
18	SGND	-	Supply terminal of small signal GND
19	SVCC1	-	Small signal GND
20	VIN4	I	Input for CH4
21	OUT(+)4	O	Non-inverted output for CH4
22	PW VCC4	-	Supply terminal of output stage for CH4
23	OUT(-)4	O	Inverted output for CH4
24	PW GND4	-	Power GND

■ TA7291S (IC702) : Bridge driver

1.Terminal Layout

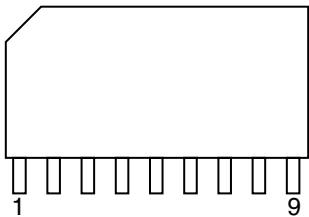


2.Truth table

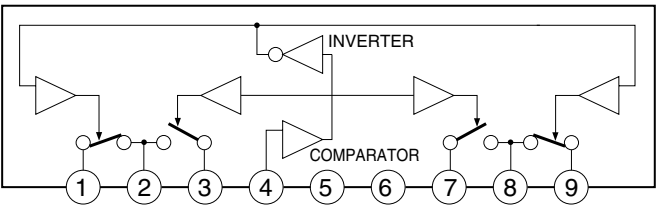
INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

■ UPC1330HA(IC201): REC/PB audio head switch

1. Terminal layout



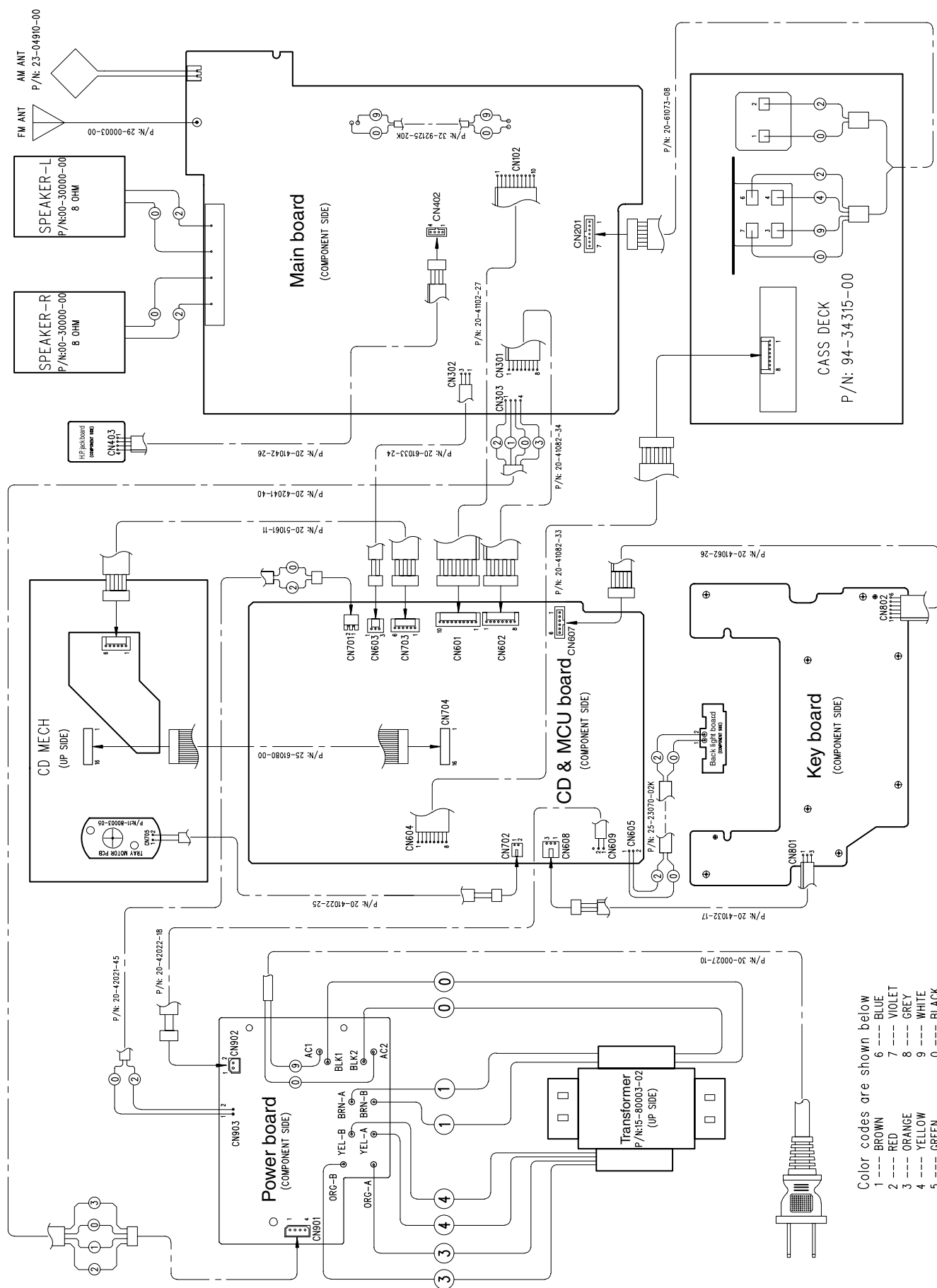
2. Block diagram



3. Pin function

Pin No.	Symbol	I/O	Function
1	SW _{R1}	-	Record SW (Left channel)
2	GND	-	GND
3	SW _{P1}	-	Play SW (Left channel)
4	CONT	-	Record/play control pin
5	GND	-	GND
6	Vcc	-	Power supply
7	SW _{P2}	-	Play SW (Right channel)
8	GND	-	GND
9	SW _{R2}	-	Record SW (Right channel)

Wiring connections





VICTOR COMPANY OF JAPAN, LIMITED

AUDIO & COMMUNICATION BUSINESS DIVISION

PERSONAL & MOBILE NETWORK BUSINESS UNIT. 10-1,1Chome,Ohwatari-machi,maebashi-city,371-8543,Japan

PARTS LIST

[FS-M3]

* All printed circuit boards and its assemblies are not available as service parts.

Area suffix	
J	U.S.A.
C	Canada

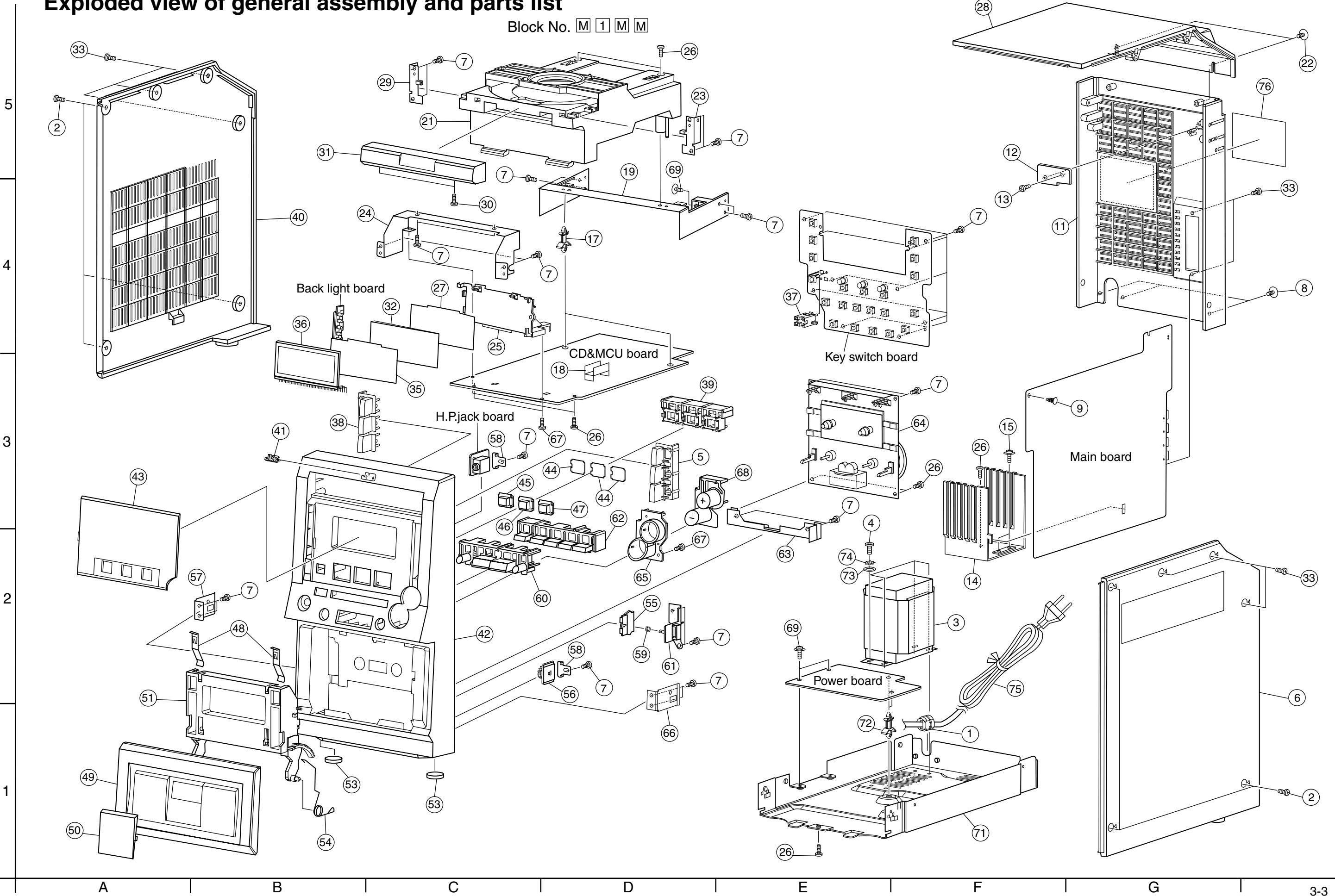
- Contents -

Exploded view of general assembly and parts list (Block No.M1)	3- 3
Electrical parts list (Block No.01~04)	3- 5
Packing materials and accessories parts list (Block No.M3,M5)	3-12

< M E M O >

Exploded view of general assembly and parts list

Block No. M 1 M M



■ Parts list (General assembly)

Block No. M1MM

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
⚠	1	OW84-10002-02	S.R BUSHING	1	SR-F41 AC CORD	
	2	OW40-23010-52	SCREW	6	M3X10 BH/MS TAP.	
⚠	3	OW15-80003-02	TRANSFORMER	1	EI-66 WHS66-36Q1E M3	
	4	OW40-10408-81	SCREW	4	D4X8 BH	
	5	OW53-30000-01	KEY BUTTON	1	OPEN/CLOSE	
	6	OW61-30000-02	SIDE PLATE	1	RIGHT	C
		OW61-30000-06	SIDE PLATE	1	RIGHT	J
	7	OW40-13008-91	SCREW	34	D3X8,BH/ST, PITCH	
	8	OW40-03008-53	SCREW	3	M3X8 WH/MS TAPTITE	
	9	OW84-30000-02	PCB LOCK SUPPOR	1	RS-3	
	11	OW61-30000-04	REAR CABINET	1	94V2	J
		OW61-30000-07	REAR CABINET	1	94HB	C
	12	OW11-80003-08	PCB WASHER	1	94HB 1.6MM	
	13	OW40-12606-21	SCREW	1	D2.6X6 BH/ST BLK	
	14	OW39-00155-07	HEAT SINK	1	MC155 POWER IC	
	15	OW40-13008-03	SCREW	2	D3X8 WH/ST	
	17	OW84-30000-05	PCB LOCK SUPPOR	2	H=12.7	
	18	OW39-00013-00A	HEAT SINK	1	CDT13	
	19	OW39-30000-03	MOUNT BRACKET	1	CD REAR	
	21	OW98-00110-02	CD MECHA	1	TCP11TK3+TD001	
	22	OW40-13010-03	SCREW	2	D3X10 WH/ST	
	23	OW39-30000-01	CD F. MOUNT BKT	1	RIGHT	
	24	OW39-30000-02	CD F. MOUNT BKT	1		
	25	OW48-30000-01	LCD BLACKET	1		
	26	OW40-03006-81	SCREW	8	M3X6 BH/MS BLK	
	27	OW68-30000-00	LIGHT GUIDE PAPER	1	0.1TH	
	28	OW60-30000-04	TOP CABINET	1		J
		OW60-30000-01	TOP CABINET	1		C
	29	OW39-30000-00	CD F. MOUNT BKT	1	LEFT	
	30	OW40-12605-21	SCREW	2	D2.6X5 BH/ST BLK	
	31	OW66-30000-00	CD DOOR	1		
	32	OW43-30000-05	LIGHT GUIDE	1		
	33	OW40-13012-01	SCREW	8	D3X12 BH/ST	
	35	OW68-30000-01	LCD FILTER	1		
	36	OW91-80003-00	LCD	1	914117T-P(YEEBO)	
	37	OW48-30000-02	REMOTE SENSOR	1		
	38	OW53-30000-00	KEY BUTTON	1	STANDBY	
	39	OW53-30000-04	KEY BUTTON	1	FUNCTION	
	40	OW61-30000-01	SIDE PLATE	1	LEFT 94HB	C
		OW61-30000-05	SIDE PLATE	1	LEFT 94V2	J
	41	OW55-30000-00	BAGE	1		
	42	OW60-30000-03	FRONT CABINET	1	94V2	J
		OW60-30000-05	FRONT CABINET	1	94HB	C
	43	OW43-30000-09	DISPLAY LENS	1		
	44	OW68-30000-02	F.KEY FILTER	3	TD207	
	45	OW43-30000-02	LENS	1	FUNCTION KEY CD	
	46	OW43-30000-03	LENS	1	FUNCTION KEY TUNER	
	47	OW43-30000-04	LENS	1	FUNCTION KEY TAPE	

■ Parts list (General assembly)

Block No. M1MM

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	48	OW39-30000-07	CASS TAPE SPRING	2		
	49	OW66-30000-01	CASS DOOR COVER	1		
	50	OW43-30000-01	CASS DOOR LENS	1		
	51	OW66-00155-03	TECHNICAL DOOR	1	MC155	
	53	OW81-00155-01	MC155 RUBER FOOT	2	D16X3MM PORON	
	54	OW36-30000-00	TORSION SPRING	1	D1.0MM	
	55	OW49-00155-01	LATCH CAM	1	MC155	
	56	OW63-00155-01	DAMP GEAR	1	313911873620	
	57	OW39-30000-04	BRACKET	1	LEFT	
	58	OW39-00155-13	D. GEAR HOLDER	2		
	59	OW36-00155-03A	COMPRESS SPRING	1	M155 (4MML)	
	60	OW53-30000-02	KEY BUTTON	1	RECORD/DIRECTION	
	61	OW49-00155-02	LATCH CAM HOLDER	1	MC155	
	62	OW53-30000-03	KEY BUTTON	1	STOP/PROGRAM	
	63	OW39-00055-01	DECK MECHA BKT	1	MC55	
	64	OW94-34315-00	CASSETTE MECHA	1	CFL4315	
	65	OW48-30000-00	ORNAMENT	1	RING	
	66	OW39-30000-05	BRACKET	1	RIGHT	
	67	OW40-12608-21	SCREW	3	D2.6X8 BH/ST	
	68	OW53-30000-05	KEY BUTTON	1	VOLUME	
	69	OW40-03006-53	SCREW	3	M3X6 WH/MS TAP	
	71	OW39-30000-06	BOTTOM CASE	1		
	72	OW84-30000-04	PCB LOCK SUPPOR	2	H=9.6	
	73	OW35-00010-03	METAL WASHER	4	D10XD4X1MM	
	74	OW35-20001-01	TOOTH WASHER	4	EXTERNAL M4	
⚠	75	OW30-00027-10	AC CORD	1		
	76	OW87-30000-21	RATING LABEL	1		J
		OW87-30000-23	RATING LABEL	1		C

■ Electrical parts list (Main board)

Block No. 01

△	Item	Parts number	Parts name	Remarks	Area	△	Item	Parts number	Parts name	Remarks	Area
	CF101	OW09-50450-00J	CER FILTER	SFU450B 450HK2			C201	OW05-00151-00	C.CAPACITOR	150PF	
	CF102	OW09-50107-20J	CER FILTER	LT10.7MFS3(REL)			C202	OW05-02182-10	MYLAR CAPACITOR	0.0018MF 10%	
	CF103	OW09-50107-07J	CER.DIS	JT10.7MFG82			C203	OW06-50105-02T	E.CAPACITOR	1MF 50V	
	CN101	OW20-12020-01K	CONNECTOR	P=2.5MM 2PIN			C204	OW06-16227-02	E.CAPACITOR	220MF 16V	
	CN102	OW20-41102-27	CONNECTOR	P=2MM 10PIN			C205	OW05-02102-10	MYLAR CAPACITOR	0.001MF 10%	
	CN201	OW20-11070-00	CONNECTOR	P=2MM 7PIN			C206	OW05-02102-10	MYLAR CAPACITOR	0.001MF 10%	
	CN301	OW20-41082-34	CONNECTOR	P=2MM 8PIN			C207	OW06-50475-02	E.CAPACITOR	4.7MF 50V	
	CN302	OW20-61033-24	CONNECTOR	GRY 3PIN			C208	OW06-16227-02	E.CAPACITOR	220MF 16V	
	CN303	OW20-42041-40	CONNECTOR	P=2.5MM 4PIN			C209	OW05-02272-10	MYLAR CAPACITOR	0.0027MF 10%	
	CN401	OW12-00006-00Q	CONNECTOR	SPK TERMINAL			C210	OW05-00331-00	C.CAPACITOR	330PF	
	CN402	OW20-11040-00	CONNECTOR	P=2MM 4PIN			C211	OW06-50475-02	E.CAPACITOR	4.7MF 50V	
	C102	OW05-00223-00	C.CAPACITOR	0.022MFF 10% 50V			C212	OW05-02332-10	MYLAR CAPACITOR	0.0033MF 10%	
	C104	OW05-09391-05	MYLAR CAPACITOR	390MF 5%			C213	OW05-02563-10	MYLAR CAPACITOR	0.056MF 10%	
	C105	OW05-00100-06	C.CAPACITOR	10PF 5%			C214	OW05-02473-10	MYLAR CAPACITOR	0.047MF 10%	
	C116	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V			C215	OW06-50224-02	E.CAPACITOR	0.22MF 50V	
	C117	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V			C216	OW06-16476-02	E.CAPACITOR	47MF 16V	
	C118	OW05-00102-00	C.CAPACITOR	0.001MF 10% 50V			C217	OW05-02272-10	MYLAR CAPACITOR	0.0027MF 10%	
	C119	OW05-00102-00	C.CAPACITOR	0.001MF 10% 50V			C220	OW05-00151-00	C.CAPACITOR	150PF	
	C120	OW05-00120-06	C.CAPACITOR	12PF 5%			C221	OW05-00151-00	C.CAPACITOR	150PF	
	C121	OW05-00102-00	C.CAPACITOR	0.001MF 10% 50V			C222	OW05-00151-00	C.CAPACITOR	150PF	
	C122	OW05-00331-00	C.CAPACITOR	330PF			C223	OW05-02182-10	MYLAR CAPACITOR	0.0018MF 10%	
	C123	OW06-16106-02	E.CAPACITOR	10MF 16V			C224	OW06-50105-02T	E.CAPACITOR	1MF 50V	
	C124	OW06-50105-02T	E.CAPACITOR	1MF 50V			C225	OW06-16227-02	E.CAPACITOR	220MF 16V	
	C125	OW06-50104-00	E.CAPACITOR	0.1MF 50V			C226	OW06-50475-02	E.CAPACITOR	4.7MF 50V	
	C126	OW06-50104-00	E.CAPACITOR	0.1MF 50V			C227	OW06-16227-02	E.CAPACITOR	220MF 16V	
	C127	OW06-50474-20	E.CAPACITOR	0.47MF 50V			C228	OW05-00331-00	C.CAPACITOR	330PF	
	C128	OW05-00103-00	C.CAPACITOR	0.01MF 10% 50V			C229	OW06-50475-02	E.CAPACITOR	4.7MF 50V	
	C129	OW06-16227-02	E.CAPACITOR	220MF 16V			C230	OW05-02272-10	MYLAR CAPACITOR	0.0027MF 10%	
	C131	OW05-00333-00	C.CAPACITOR	0.033MF 10% 50V			C231	OW05-02473-10	MYLAR CAPACITOR	0.047MF 10%	
	C132	OW06-50475-02	E.CAPACITOR	4.7MF 50V			C232	OW05-02332-10	MYLAR CAPACITOR	0.0033MF 10%	
	C133	OW06-50475-02	E.CAPACITOR	4.7MF 50V			C233	OW05-02563-10	MYLAR CAPACITOR	0.056MF 10%	
	C134	OW06-50475-02	E.CAPACITOR	4.7MF 50V			C234	OW06-16106-02	E.CAPACITOR	10MF 16V	
	C137	OW05-02123-10	MYLAR CAPACITOR	0.012MF 10%			C235	OW06-16227-02	E.CAPACITOR	220MF 16V	
	C138	OW05-02123-10	MYLAR CAPACITOR	0.012MF 10%			C236	OW05-00223-00	C.CAPACITOR	0.022MF 10% 50V	
	C139	OW05-00222-00	C.CAPACITOR	0.0022MF 50V			C237	OW06-50224-02	E.CAPACITOR	0.22MF 50V	
	C140	OW05-00103-00	C.CAPACITOR	0.01MF 10% 50V			C238	OW06-16106-02	E.CAPACITOR	10MF 16V	
	C141	OW06-16227-02	E.CAPACITOR	220MF 16V			C239	OW05-02272-10	MYLAR CAPACITOR	0.0027MF 10%	
	C142	OW05-00101-06	C.CAPACITOR	100PF 5%			C240	OW05-02682-10	MYLAR CAPACITOR	0.0068MF 10%	
	C143	OW05-00103-00	C.CAPACITOR	0.01MF 10% 50V			C241	OW05-02102-10	MYLAR CAPACITOR	0.001MF 10%	
	C144	OW05-00101-06	C.CAPACITOR	100PF 5%			C242	OW05-02102-10	MYLAR CAPACITOR	0.001MF 10%	
	C145	OW05-00222-00	C.CAPACITOR	0.0022MF 50V			C243	OW06-16107-02	E.CAPACITOR	100MF 16V	
	C147	OW06-50335-02	E.CAPACITOR	3.3MF 50V			C250	OW05-00223-00	C.CAPACITOR	0.022MF 10% 50V	
	C148	OW05-00223-00	C.CAPACITOR	0.022MF 10% 50V			C251	OW05-02102-10	MYLAR CAPACITOR	0.001MF 10%	
	C149	OW06-16227-02	E.CAPACITOR	220MF 16V			C301	OW05-00223-00	C.CAPACITOR	0.022MF 10% 50V	
	C150	OW05-00223-00	C.CAPACITOR	0.022MF 10% 50V			C302	OW06-16476-02	E.CAPACITOR	47MF 16V	
	C152	OW05-00102-00	C.CAPACITOR	0.001MF 10% 50V			C303	OW06-50475-02	E.CAPACITOR	4.7MF 50V	
	C155	OW06-50105-02T	E.CAPACITOR	1MF 50V			C304	OW06-50475-02	E.CAPACITOR	4.7MF 50V	
	C156	OW05-00223-00	C.CAPACITOR	0.022MF 10% 50V			C305	OW06-50475-02	E.CAPACITOR	4.7MF 50V	
	C157	OW05-00300-06	C.CAPACITOR	30PF 5%			C306	OW06-50475-02	E.CAPACITOR	4.7MF 50V	
	C158	OW05-00300-06	C.CAPACITOR	30PF 5%			C307	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C159	OW05-00223-00	C.CAPACITOR	0.022MF 10% 50V			C308	OW06-50475-02	E.CAPACITOR	4.7MF 50V	
	C160	OW06-16227-02	E.CAPACITOR	220MF 16V			C309	OW06-50475-02	E.CAPACITOR	4.7MF 50V	
	C161	OW05-00220-06	C.CAPACITOR	22PF 5%			C310	OW06-50475-02	E.CAPACITOR	4.7MF 50V	
	C162	OW05-00103-00	C.CAPACITOR	0.01MF 10% 50V			C311	OW06-50225-02	E.CAPACITOR	2.2MF 50V	
	C163	OW05-00470-06	C.CAPACITOR	47PF 5%			C312	OW06-50225-00	E.CAPACITOR	2.2MF 50V	
	C164	OW05-00200-06	C.CAPACITOR	20PF 5%			C313	OW05-00470-06	C.CAPACITOR	47PF 5%	
	C165	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V			C314	OW05-00470-06	C.CAPACITOR	47PF 5%	
	C166	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V			C320	OW06-50475-02	E.CAPACITOR	4.7MF 50V	
	C167	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V			C321	OW06-50475-02	E.CAPACITOR	4.7MF 50V	
	C168	OW05-00223-00	C.CAPACITOR	0.022MF 10% 50V			C322	OW05-02104-10	MYLAR CAPACITOR	0.1MF 10%	
	C169	OW06-16227-02	E.CAPACITOR	220MF 16V			C323	OW05-02104-10	MYLAR CAPACITOR	0.1MF 10%	
	C171	OW05-00223-00	C.CAPACITOR	0.022MF 10% 50V			C324	OW06-50105-90	E.CAPACITOR	1MF 10% 50V	
	C190	OW05-00102-00	C.CAPACITOR	0.001MF 10% 50V			C325	OW06-50105-90	E.CAPACITOR	1MF 10% 50V	

■ Electrical parts list (Main board) Block No. 01

△	Item	Parts number	Parts name	Remarks	Area	△	Item	Parts number	Parts name	Remarks	Area
	C326	OW06-50475-02	E.CAPACITOR	4.7MF 50V			D401	OW02-04148-00R	DIODE	1N4148	
	C327	OW06-50475-02	E.CAPACITOR	4.7MF 50V			D402	OW02-04148-00R	DIODE	1N4148	
	C328	OW05-02103-10	MYLAR CAPACITOR	0.01MF 10%			FMANT	OW29-00003-00	FM ANT WIRE	26UL-1007 BLK.	
	C329	OW05-02103-10	MYLAR CAPACITOR	0.01MF 10%			IC101	OW03-02104-01	IC	TA2104BN	
	C330	OW06-16227-02	E.CAPACITOR	220MF 16V			IC102	OW03-09257-01	IC	TC9257F	
	C331	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V			IC201	OW03-01330-00	IC	UPC1330HA	
	C332	OW06-16337-02	E.CAPACITOR	330MF 16V			IC202	OW03-07312-00	IC	AN7312	
	C334	OW06-16227-02	E.CAPACITOR	220MF 16V			IC301	OW03-09422-00	IC	TC9422F	
	C335	OW05-00223-00	C.CAPACITOR	0.022MF 10% 50V		△	IC302	OW03-07812-00	IC	NJM7812A	
	C336	OW06-16476-02	E.CAPACITOR	47MF 16V		△	IC401	OW03-04282-00	IC	LA4282	
	C341	OW06-16107-02	E.CAPACITOR	100MF 16V			IC402	OW03-04558-03	IC	BA4558N	
	C342	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V			LL105	OW81-10001-00	CUSHION	10X10X10MM	
	C343	OW06-25107-00T	E.CAPACITOR	100MF 25V			L101	OW08-01014-02	IFT	1A1014N 10MM	
	C344	OW06-25228-00	E.CAPACITOR	2200MF 25V			L102	OW08-45635-00	AM ANT COIL	MRHNF-45635GG	
	C401	OW06-50225-02	E.CAPACITOR	2.2MF 50V			L105	OW09-45045-00	FM COIL	D4.5X4.5T 0.8MM	
	C402	OW06-50225-02	E.CAPACITOR	2.2MF 50V			L106	OW09-02750-05	FM OSC.COIL	2422 549 43772	
	C403	OW05-00331-00	C.CAPACITOR	330PF			L107	OW09-70101-00	INDUCTOR	10MH	
	C404	OW05-00331-00	C.CAPACITOR	330PF			L108	OW09-70101-00	INDUCTOR	10MH	
	C405	OW06-16106-02	E.CAPACITOR	10MF 16V			L201	OW09-40474-00W	CHOKE COIL	47MH D6X8MM	
	C406	OW06-50225-02	E.CAPACITOR	2.2MF 50V			L202	OW09-40474-00W	CHOKE COIL	47MH D6X8MM	
	C407	OW06-50225-02	E.CAPACITOR	2.2MF 50V			L203	OW08-07163-00	BIAS OSC COIL	7LIA63N LIK HANG	
	C408	OW06-25107-00T	E.CAPACITOR	100MF 25V			Q113	OW01-00945-16	TRANSISTOR	2SC945P	
	C409	OW06-25107-00T	E.CAPACITOR	100MF 25V			Q114	OW01-00945-16	TRANSISTOR	2SC945P	
	C410	OW05-02104-10	MYLAR CAPACITOR	0.1MF 10%			Q115	OW01-00945-16	TRANSISTOR	2SC945P	
	C411	OW05-02104-10	MYLAR CAPACITOR	0.1MF 10%			Q117	OW01-00733-16	TRANSISTOR	2SA733P	
	C412	OW06-25108-00	E.CAPACITOR	1000MF 25V			Q118	OW01-00945-16	TRANSISTOR	2SC945P	
	C413	OW06-25108-00	E.CAPACITOR	1000MF 25V			Q119	OW01-09018-07	TRANSISTOR	9018G	
	C414	OW06-50107-02	E.CAPACITOR	100MF 50V			Q121	OW01-00945-16	TRANSISTOR	2SC945P	
△	C415	OW06-50228-00	E.CAPACITOR	2200MF 20% 50V			Q122	OW01-00945-16	TRANSISTOR	2SC945P	
	C416	OW05-07104-00	C.CAPACITOR	0.1MF 50V			Q123	OW01-00945-16	TRANSISTOR	2SC945P	
	C417	OW06-16107-02	E.CAPACITOR	100MF 16V			Q124	OW01-00945-16	TRANSISTOR	2SC945P	
	C420	OW06-50225-02	E.CAPACITOR	2.2MF 50V			Q201	OW01-08050-04S	TRANSISTOR	8050D	
	C421	OW06-50225-02	E.CAPACITOR	2.2MF 50V			Q202	OW01-00945-16	TRANSISTOR	2SC945P	
	C422	OW06-16476-02	E.CAPACITOR	47MF 16V			Q203	OW01-00945-16	TRANSISTOR	2SC945P	
	C423	OW05-00101-06	C.CAPACITOR	100PF 5%			Q204	OW01-00945-16	TRANSISTOR	2SC945P	
	C424	OW05-00101-06	C.CAPACITOR	100PF 5%			Q205	OW01-00945-16	TRANSISTOR	2SC945P	
	C425	OW05-00101-06	C.CAPACITOR	100PF 5%			Q206	OW01-08050-04S	TRANSISTOR	8050D	
	C426	OW05-00101-06	C.CAPACITOR	100PF 5%			Q207	OW01-00945-16	TRANSISTOR	2SC945P	
	C427	OW06-16476-02	E.CAPACITOR	47MF 16V			Q208	OW01-00945-16	TRANSISTOR	2SC945P	
	C428	OW06-16476-02	E.CAPACITOR	47MF 16V			Q209	OW01-00945-16	TRANSISTOR	2SC945P	
	C429	OW06-16227-02	E.CAPACITOR	220MF 16V			Q210	OW01-00945-16	TRANSISTOR	2SC945P	
	C430	OW06-16227-02	E.CAPACITOR	220MF 16V			Q211	OW01-00733-16	TRANSISTOR	2SA733P	
	C431	OW05-00223-00	C.CAPACITOR	0.022MF 10% 50V			Q212	OW01-00945-16	TRANSISTOR	2SC945P	
	C432	OW06-35227-00	E.CAPACITOR	220MF 35V			Q213	OW01-00945-16	TRANSISTOR	2SC945P	
	C433	OW05-00101-06	C.CAPACITOR	100PF 5%			Q214	OW01-00945-16	TRANSISTOR	2SC945P	
	C434	OW05-00101-06	C.CAPACITOR	100PF 5%			Q215	OW01-00945-16	TRANSISTOR	2SC945P	
	C435	OW06-35107-00	E.CAPACITOR	100MF 35V			Q301	OW01-00945-16	TRANSISTOR	2SC945P	
	C451	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V			Q302	OW01-00945-16	TRANSISTOR	2SC945P	
	C452	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V			Q303	OW01-01383-18	TRANSISTOR	2SC1383R	
	C453	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V			Q304	OW01-00945-16	TRANSISTOR	2SC945P	
	D101	OW02-00348-00	TUNING DIODE	SVC348-S		△	Q305	OW01-01240-00	TRANSISTOR	2SB1240Q	
	D103	OW02-00201-00	TUNING DIODE	SVC201SPA			Q401	OW01-08050-04S	TRANSISTOR	8050D	
	D104	OW02-00201-00	TUNING DIODE	SVC201SPA			Q402	OW01-08050-04S	TRANSISTOR	8050D	
	D105	OW02-04148-00R	DIODE	1N4148			Q403	OW01-00733-16	TRANSISTOR	2SA733P	
	D108	OW02-04148-00R	DIODE	1N4148			Q404	OW01-08050-04S	TRANSISTOR	8050D	
	D109	OW02-04148-00R	DIODE	1N4148			Q405	OW01-08050-04S	TRANSISTOR	8050D	
	D110	OW02-04148-00R	DIODE	1N4148			Q406	OW01-08050-04S	TRANSISTOR	8050D	
	D111	OW02-04148-00R	DIODE	1N4148			Q409	OW01-00945-16	TRANSISTOR	2SC945P	
	D201	OW02-04148-00R	DIODE	1N4148			R102	OW07-15104-50T	CARBON RESISTOR	100K 1/8W 5%	
	D202	OW02-04148-00R	DIODE	1N4148			R103	OW07-15104-50T	CARBON RESISTOR	100K 1/8W 5%	
	D301	OW02-04148-00R	DIODE	1N4148			R121	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	D302	OW02-04148-00R	DIODE	1N4148			R122	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	D303	OW02-04148-00R	DIODE	1N4148			R123	OW07-15202-50T	CARBON RESISTOR	2K 1/8W 5%	

■ Electrical parts list (Main board)

Block No. 01

△	Item	Parts number	Parts name	Remarks	Area	△	Item	Parts number	Parts name	Remarks	Area
	R124	OW07-15180-50T	CARBON RESISTOR	18 1/8W 5%			R225	OW07-15101-00	CARBON RESISTOR	100 1/4W	
	R125	OW07-15203-50T	CARBON RESISTOR	20K 1/8W 5%			R226	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R126	OW07-15332-50T	CARBON RESISTOR	3.3K 1/8W 5%			R227	OW07-15180-50T	CARBON RESISTOR	18 1/8W 5%	
	R127	OW07-15331-50T	CARBON RESISTOR	330 1/8W 5%			R228	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R128	OW07-15153-50T	CARBON RESISTOR	15K 1/8W 5%			R229	OW07-15153-50T	CARBON RESISTOR	15K 1/8W 5%	
	R129	OW07-15153-50T	CARBON RESISTOR	15K 1/8W 5%			R231	OW07-15472-50T	CARBON RESISTOR	4.7K 1/8W 5%	
	R130	OW07-15183-50T	CARBON RESISTOR	18K 1/8W 5%			R241	OW07-15273-50T	CARBON RESISTOR	27K 1/8W 5%	
	R131	OW07-15183-50T	CARBON RESISTOR	18K 1/8W 5%			R242	OW07-15100-50T	CARBON RESISTOR	10 1/8W 5%	
	R135	OW07-15104-50T	CARBON RESISTOR	100K 1/8W 5%			R243	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R136	OW07-15223-50T	CARBON RESISTOR	22K 1/8W 5%			R244	OW07-15104-50T	CARBON RESISTOR	100K 1/8W 5%	
	R137	OW07-15332-50T	CARBON RESISTOR	3.3K 1/8W 5%			R245	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R138	OW07-15472-50T	CARBON RESISTOR	4.7K 1/8W 5%			R246	OW07-15333-50T	CARBON RESISTOR	33K 1/8W 5%	
	R139	OW07-15221-50T	CARBON RESISTOR	220 1/8W 5%			R247	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R142	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%			R248	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R143	OW07-15563-50T	CARBON RESISTOR	56K 1/8W 5%			R249	OW07-15472-50T	CARBON RESISTOR	4.7K 1/8W 5%	
	R144	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R250	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R145	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R251	OW07-15104-50T	CARBON RESISTOR	100K 1/8W 5%	
	R146	OW07-15820-50T	CARBON RESISTOR	82 1/8W 5%			R252	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R147	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%			R253	OW07-15223-50T	CARBON RESISTOR	22K 1/8W 5%	
	R148	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%			R254	OW07-15223-50T	CARBON RESISTOR	22K 1/8W 5%	
	R149	OW07-15471-50T	CARBON RESISTOR	470 1/8W 5%			R255	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R150	OW07-15333-50T	CARBON RESISTOR	33K 1/8W 5%			R256	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R153	OW07-15152-50T	CARBON RESISTOR	1.5K 1/8W 5%			R257	OW07-15104-50T	CARBON RESISTOR	100K 1/8W 5%	
	R154	OW07-15472-50T	CARBON RESISTOR	4.7K 1/8W 5%			R258	OW07-15104-50T	CARBON RESISTOR	100K 1/8W 5%	
	R155	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%			R301	OW07-15680-50T	CARBON RESISTOR	68 1/8W 5%	
	R156	OW07-15472-50T	CARBON RESISTOR	4.7K 1/8W 5%			R302	OW07-15471-50T	CARBON RESISTOR	470 1/8W 5%	
	R157	OW07-15561-50T	CARBON RESISTOR	560 1/8W 5%			R303	OW07-15394-50T	CARBON RESISTOR	390K 1/8W 5%	
	R158	OW07-15152-50T	CARBON RESISTOR	1.5K 1/8W 5%			R304	OW07-15681-50T	CARBON RESISTOR	680 1/8W 5%	
	R159	OW07-15221-50T	CARBON RESISTOR	220 1/8W 5%			R306	OW07-15222-50T	CARBON RESISTOR	2.2K 1/8W 5%	
	R160	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R307	OW07-15471-50T	CARBON RESISTOR	470 1/8W 5%	
	R161	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R308	OW07-15394-50T	CARBON RESISTOR	390K 1/8W 5%	
	R162	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R309	OW07-15472-50T	CARBON RESISTOR	4.7K 1/8W 5%	
	R163	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R310	OW07-15681-50T	CARBON RESISTOR	680 1/8W 5%	
	R164	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%			R312	OW07-15472-50T	CARBON RESISTOR	4.7K 1/8W 5%	
	R165	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%			R313	OW07-15471-50T	CARBON RESISTOR	470 1/8W 5%	
	R166	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%			R314	OW07-05100-00	CARBON RESISTOR	10 1/4W	
	R170	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%			R315	OW07-15561-50T	CARBON RESISTOR	560 1/8W 5%	
	R171	OW07-15274-50T	CARBON RESISTOR	270K 1/8W 5%			R320	OW07-15222-50T	CARBON RESISTOR	2.2K 1/8W 5%	
	R178	OW07-15220-50T	CARBON RESISTOR	22 1/8W 5%			R341	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R201	OW07-15183-50T	CARBON RESISTOR	18K 1/8W 5%			R345	OW07-15104-50T	CARBON RESISTOR	100K 1/8W 5%	
	R202	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%			R346	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R203	OW07-15333-50T	CARBON RESISTOR	33K 1/8W 5%			R347	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R204	OW07-15180-50T	CARBON RESISTOR	18 1/8W 5%			R351	OW07-15123-50T	CARBON RESISTOR	12K 1/8W 5%	
	R205	OW07-15333-50T	CARBON RESISTOR	33K 1/8W 5%			R352	OW07-15123-50T	CARBON RESISTOR	12K 1/8W 5%	
	R206	OW07-15472-50T	CARBON RESISTOR	4.7K 1/8W 5%			R353	OW07-15222-50T	CARBON RESISTOR	2.2K 1/8W 5%	
	R207	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R354	OW07-15222-50T	CARBON RESISTOR	2.2K 1/8W 5%	
	R208	OW07-15153-50T	CARBON RESISTOR	15K 1/8W 5%			R401	OW07-15273-50T	CARBON RESISTOR	27K 1/8W 5%	
	R209	OW07-15684-50T	CARBON RESISTOR	680K 1/8W 5%			R402	OW07-15273-50T	CARBON RESISTOR	27K 1/8W 5%	
	R210	OW07-15153-50T	CARBON RESISTOR	15K 1/8W 5%			R403	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R211	OW07-15333-50T	CARBON RESISTOR	33K 1/8W 5%			R404	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R212	OW07-15823-50T	CARBON RESISTOR	82K 1/8W 5%			R405	OW07-15222-50T	CARBON RESISTOR	2.2K 1/8W 5%	
	R213	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R406	OW07-15223-50T	CARBON RESISTOR	22K 1/8W 5%	
	R214	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%			R407	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R215	OW07-15511-50T	CARBON RESISTOR	510 1/8W 5%			R408	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R216	OW07-15823-50T	CARBON RESISTOR	82K 1/8W 5%			R409	OW07-05022-00	CARBON RESISTOR	2.2 1/4W	
	R217	OW07-15010-50T	CARBON RESISTOR	1 1/8W 5%			R410	OW07-05022-00	CARBON RESISTOR	2.2 1/4W	
	R218	OW07-15273-50T	CARBON RESISTOR	27K 1/8W 5%			R411	OW07-15102-00	CARBON RESISTOR	1K 1/4W 5%	
	R219	OW07-15273-50T	CARBON RESISTOR	27K 1/8W 5%			R412	OW07-15102-00	CARBON RESISTOR	1K 1/4W 5%	
	R220	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%			R413	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R221	OW07-15221-50T	CARBON RESISTOR	220 1/8W 5%			R414	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R222	OW07-15183-50T	CARBON RESISTOR	18K 1/8W 5%			R415	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R223	OW07-15333-50T	CARBON RESISTOR	33K 1/8W 5%			R416	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R224	OW07-15331-50T	CARBON RESISTOR	330 1/8W 5%			R417	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	

■ Electrical parts list (Main board)

Block No. 01

△	Item	Parts number	Parts name	Remarks	Area
	R418	OW07-15334-50T	CARBON RESISTOR	330K 1/8W 5%	
	R419	OW07-15334-50T	CARBON RESISTOR	330K 1/8W 5%	
	R420	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R421	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R422	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R423	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R424	OW07-15223-50T	CARBON RESISTOR	22K 1/8W 5%	
	R425	OW07-15223-50T	CARBON RESISTOR	22K 1/8W 5%	
	R426	OW07-15272-50T	CARBON RESISTOR	2.7K 1/8W 5%	
	R427	OW07-15272-50T	CARBON RESISTOR	2.7K 1/8W 5%	
	R428	OW07-15221-50T	CARBON RESISTOR	220 1/8W 5%	
	R429	OW07-15221-50T	CARBON RESISTOR	220 1/8W 5%	
	R430	OW07-15104-50T	CARBON RESISTOR	100K 1/8W 5%	
	R431	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R432	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R435	OW07-15122-50T	CARBON RESISTOR	1.2K 1/8W 5%	
	R436	OW07-15100-50T	CARBON RESISTOR	10 1/8W 5%	
	R448	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R449	OW07-15223-50T	CARBON RESISTOR	22K 1/8W 5%	
	R450	OW07-15472-50T	CARBON RESISTOR	4.7K 1/8W 5%	
	R451	OW07-15472-50T	CARBON RESISTOR	4.7K 1/8W 5%	
	TC101	OW05-08100-02	TRIMMER	10PF	
	TC102	OW05-08100-02	TRIMMER	10PF	
	T101	OW08-00332-24C	IFT	810017 YELLOW	
	X101	OW04-07200-05	CRYSTAL	7.2MHZ HC-49U 30PPM	
	Z101	OW02-50100-00	ZENER DIODE	10V 0.5W	
	Z301	OW02-50091-00	ZENER DIODE	9.1V 0.5W	
	Z401	OW02-50270-00	ZENER DIODE	27V 0.5W	

■ Electrical parts list (Power board)

Block No. 02

△	Item	Parts number	Parts name	Remarks	Area
	CN901	OW20-12040-00	CONNECTOR	P=2.5MM 4PIN	
	CN902	OW20-12020-00	CONNECTOR	P=2.5MM 2PIN	
	CN903	OW20-42021-45	CONNECTOR	P=2.5MM 2PIN	
△	C905	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
△	C906	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
△	C907	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
△	C908	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
△	C909	OW05-00104-01T	C.CAPACITOR	0.1/100V 10%	
△	C910	OW05-00104-01T	C.CAPACITOR	0.1/100V 10%	
△	C911	OW05-00104-01T	C.CAPACITOR	0.1/100V 10%	
△	C912	OW05-00104-01T	C.CAPACITOR	0.1/100V 10%	
△	C913	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
△	C914	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
△	C915	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
△	C916	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
△	C918	OW06-16477-00	E.CAPACITOR	470MF 16V	
△	C919	OW06-50477-00	E.CAPACITOR	470MF 20% 50V	
△	C920	OW06-25477-00	E.CAPACITOR	470MF 25V	
△	D905	OW02-04001-00	DIODE	1N4001	
△	D906	OW02-04001-00	DIODE	1N4001	
△	D907	OW02-04001-00	DIODE	1N4001	
△	D908	OW02-04001-00	DIODE	1N4001	
△	D909	OW02-00202-00	DIODE RECTIFIER	RL202	
△	D910	OW02-00202-00	DIODE RECTIFIER	RL202	
△	D911	OW02-00202-00	DIODE RECTIFIER	RL202	
△	D912	OW02-00202-00	DIODE RECTIFIER	RL202	
△	D913	OW02-04001-00	DIODE	1N4001	
△	D914	OW02-04001-00	DIODE	1N4001	
△	D915	OW02-04001-00	DIODE	1N4001	
△	D916	OW02-04001-00	DIODE	1N4001	
△	F901	OW33-50162-02	FUSE	GMC 1.6A 250V	
△	F902	OW33-50312-02B	FUSE	GMC 3.15A 250V	
△	F903	OW33-50162-02	FUSE	GMC 1.6A 250V	
	HF901	OW39-10001-00A	FUSE HOLDER	C2680	
	HF902	OW39-10001-00A	FUSE HOLDER	C2680	
	HF903	OW39-10001-00A	FUSE HOLDER	C2680	

■ Electrical parts list (Key switch board)

Block No. 03

△	Item	Parts number	Parts name	Remarks	Area
	CNLED	OW25-23070-02K	CONNECTOR	70MM 2PIN	
	CN801	OW20-41032-17	CONNECTOR	P=2MM 3PIN	
	CN802	OW20-41062-26	CONNECTOR	P=2MM 6PIN	
	C801	OW06-10476-00S	E.CAPACITOR	47MF 10V NICON	
	C802	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
	C803	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
	D801	OW02-30004-15	LED	3G4SC-6	
	D802	OW02-30004-15	LED	3G4SC-6	
	D803	OW02-30004-15	LED	3G4SC-6	
	D804	OW02-50000-10D	LED	L-59EGW	
	D805	OW02-50000-10D	LED	L-59EGW	
	D806	OW02-50000-10D	LED	L-59EGW	
	D807	OW02-04148-00R	DIODE	IN4148	
	D808	OW02-04148-00R	DIODE	IN4148	
	D809	OW02-04148-00R	DIODE	IN4148	
	D810	OW02-04148-00R	DIODE	IN4148	
	D811	OW02-30004-15	LED	3G4SC-6	
	D812	OW02-30004-15	LED	3G4SC-6	
	JK401	OW12-00035-42	PHONE JACK	D3.5 MSJ-035-10AB	
	Q801	OW01-00945-16	TRANSISTOR	2SC945P	
	Q802	OW01-00733-16	TRANSISTOR	2SA733P	
	Q803	OW01-00945-16	TRANSISTOR	2SC945P	
	Q804	OW01-00733-16	TRANSISTOR	2SA733P	
	Q805	OW01-00945-16	TRANSISTOR	2SC945P	
	Q806	OW01-00733-16	TRANSISTOR	2SA733P	
	R801	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R802	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R803	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%	
	R804	OW07-15121-50T	CARBON RESISTOR	120 1/8W 5%	
	R805	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R806	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R807	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%	
	R808	OW07-15121-50T	CARBON RESISTOR	120 1/8W 5%	
	R809	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R810	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R811	OW07-15121-50T	CARBON RESISTOR	120 1/8W 5%	
	R812	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%	
	R813	OW07-15750-50T	CARBON RESISTOR	75 1/8W 5%	
	R814	OW07-15471-50T	CARBON RESISTOR	470 1/8W 5%	
	R815	OW07-15152-50T	CARBON RESISTOR	1.5K 1/8W 5%	
	R816	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R817	OW07-15272-50T	CARBON RESISTOR	2.7K 1/8W 5%	
	R818	OW07-15562-50T	CARBON RESISTOR	5.6K 1/8W 5%	
	R819	OW07-15682-50T	CARBON RESISTOR	6.8K 1/8W 5%	
	R820	OW07-15333-50T	CARBON RESISTOR	33K 1/8W 5%	
	R821	OW07-15273-50T	CARBON RESISTOR	27K 1/8W 5%	
	R822	OW07-15823-50T	CARBON RESISTOR	82K 1/8W 5%	
	R823	OW07-15750-50T	CARBON RESISTOR	75 1/8W 5%	
	R824	OW07-15471-50T	CARBON RESISTOR	470 1/8W 5%	
	R825	OW07-15681-50T	CARBON RESISTOR	680 1/8W 5%	
	R826	OW07-15182-50T	CARBON RESISTOR	1.8K 1/8W 5%	
	R827	OW07-15912-50T	CARBON RESISTOR	9.1K 1/8W 5%	
	R828	OW07-15392-50T	CARBON RESISTOR	3.9K 1/8W 5%	
	R829	OW07-15822-50T	CARBON RESISTOR	8.2K 1/8W 5%	
	R830	OW07-15153-50T	CARBON RESISTOR	15K 1/8W 5%	
	R831	OW07-15273-50T	CARBON RESISTOR	27K 1/8W 5%	
	R832	OW07-15823-50T	CARBON RESISTOR	82K 1/8W 5%	
	R833	OW07-15100-50T	CARBON RESISTOR	10 1/8W 5%	
	R834	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R835	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R836	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R837	OW07-15560-50T	CARBON RESISTOR	56 1/8W 5%	
	R841	OW07-15680-50T	CARBON RESISTOR	68 1/8W 5%	

△	Item	Parts number	Parts name	Remarks	Area
	SEN81	OW02-66938-00	SENSORE	RPMF6938 V4	
	SW801	OW16-10101-08S	TACT SWITCH	EVQJAE05R	
	SW802	OW16-10101-08S	TACT SWITCH	EVQJAE05R	
	SW803	OW16-10101-08S	TACT SWITCH	EVQJAE05R	
	SW804	OW16-10101-08S	TACT SWITCH	EVQJAE05R	
	SW805	OW16-10101-08S	TACT SWITCH	EVQJAE05R	
	SW806	OW16-10101-08S	TACT SWITCH	EVQJAE05R	
	SW807	OW16-10101-08S	TACT SWITCH	EVQJAE05R	
	SW808	OW16-10101-08S	TACT SWITCH	EVQJAE05R	
	SW809	OW16-10101-08S	TACT SWITCH	EVQJAE05R	
	SW810	OW16-10101-08S	TACT SWITCH	EVQJAE05R	
	SW811	OW16-10101-08S	TACT SWITCH	EVQJAE05R	
	SW812	OW16-10101-08S	TACT SWITCH	EVQJAE05R	
	SW813	OW16-10101-08S	TACT SWITCH	EVQJAE05R	
	SW814	OW16-10101-08S	TACT SWITCH	EVQJAE05R	
	SW815	OW16-10101-08S	TACT SWITCH	EVQJAE05R	
	SW816	OW16-10101-08S	TACT SWITCH	EVQJAE05R	
	SW817	OW16-10101-08S	TACT SWITCH	EVQJAE05R	
	SW818	OW16-10101-08S	TACT SWITCH	EVQJAE05R	
	SW819	OW16-10101-08S	TACT SWITCH	EVQJAE05R	
	SW820	OW16-10101-08S	TACT SWITCH	EVQJAE05R	

■ Electrical parts list (CD&MCU board)

Block No. 04

△	Item	Parts number	Parts name	Remarks	Area
	CN601	OW20-21100-00	CONNECTOR	P=2MM 10PIN	
	CN602	OW20-21080-00	CONNECTOR	P=2MM 8PIN	
	CN603	OW20-21030-00	CONNECTOR	P=2MM 3PIN	
	CN604	OW20-41082-33	CONNECTOR	P=2MM 8PIN	
	CN607	OW20-11060-00	CONNECTOR	P=2MM 6PIN	
	CN608	OW20-21030-00	CONNECTOR	P=2MM 3PIN	
	CN609	OW20-42022-13	CONNECTOR	P=2.5MM 2PIN	
	CN701	OW20-22020-01	CONNECTOR	P=2.5MM 2PIN	
	CN702	OW20-21020-00	CONNECTOR	P=2MM 2PIN	
	CN703	OW20-21060-00	CONNECTOR	P=2MM 6PIN	
	CN704	OW20-80160-00I	CONNECTOR	P=1MM 16PIN	
	C601	OW06-10477-00	E.CAPACITOR	470MF 10V	
	C602	OW06-10108-00	E.CAPACITOR	1000MF 10V	
	C602A	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C603	OW06-10227-00S	E.CAPACITOR	220MF 10V	
	C605	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V	
	C606	OW05-00250-06	C.CAPACITOR	25PF	
	C607	OW05-00250-06	C.CAPACITOR	25PF	
	C608	OW05-00250-06	C.CAPACITOR	25PF	
	C609	OW05-00250-06	C.CAPACITOR	25PF	
	C610	OW06-10107-00S	E.CAPACITOR	100MF 10V	
	C611	OW06-10107-00S	E.CAPACITOR	100MF 10V	
	C612	OW06-10476-00S	E.CAPACITOR	47MF 10V	
	C613	OW06-10107-00S	E.CAPACITOR	100MF 10V	
	C614	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C622	OW06-10106-02	E.CAPACITOR	10MF 10V	
	C630	OW05-07102-10A	C.CAPACITOR	1000PF 10%	
	C641	OW06-10107-02	E.CAPACITOR	100MF 10V	
	C642	OW06-10476-02	E.CAPACITOR	47MF 10V	
	C643	OW06-16226-02	E.CAPACITOR	22MF 16V	
	C646	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C701	OW05-07103-20A	C.CAPACITOR	0.01MF 20%	
	C702	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C703	OW05-07223-82A	C.CAPACITOR	0.022MF	
	C704	OW06-10227-00S	E.CAPACITOR	220MF 10V	
	C705	OW06-10477-00	E.CAPACITOR	470MF 10V	
	C706	OW06-10106-00	E.CAPACITOR	10MF 10V	
	C707	OW06-10106-02	E.CAPACITOR	10MF 10V	
	C708	OW05-07222-82A	C.CAPACITOR	2200PF	
	C709	OW06-10476-02	E.CAPACITOR	47MF 10V	
	C710	OW06-10226-00	E.CAPACITOR	22MF 10V	
	C711	OW05-07222-82A	C.CAPACITOR	2200PF	
	C712	OW05-07473-82B	C.CAPACITOR	0.047MF	
	C713	OW06-10476-00S	E.CAPACITOR	47MF 10V	
	C714	OW06-10105-02	E.CAPACITOR	1MF 10V	
	C716	OW05-07473-82B	C.CAPACITOR	0.047MF	
	C717	OW05-00150-06	C.CAPACITOR	15PF 5%	
	C718	OW05-00150-06	C.CAPACITOR	15PF 5%	
	C719	OW06-10476-00S	E.CAPACITOR	47MF 10V	
	C720	OW05-07473-82B	C.CAPACITOR	0.047MF	
	C721	OW05-07473-82B	C.CAPACITOR	0.047MF	
	C722	OW06-10476-00S	E.CAPACITOR	47MF 10V	
	C723	OW06-10476-00S	E.CAPACITOR	47MF 10V	
	C724	OW06-10227-00S	E.CAPACITOR	220MF 10V	
	C725	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C726	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C727	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C728	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C729	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C730	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C731	OW05-07473-82B	C.CAPACITOR	0.047MF	
	C732	OW05-07473-82B	C.CAPACITOR	0.047MF	
	C733	OW06-10476-00S	E.CAPACITOR	47MF 10V	

△	Item	Parts number	Parts name	Remarks	Area
	C734	OW06-10476-02	E.CAPACITOR	47MF 10V	
	C735	OW05-07473-82B	C.CAPACITOR	0.047MF	
	C736	OW05-07153-00	C.CAPACITOR	0.015MF	
	C737	OW05-07103-20A	C.CAPACITOR	0.01MF 20%	
	C738	OW05-07470-00A	C.CAPACITOR	47PF 5%	
	C739	OW05-07272-00	C.CAPACITOR	0.0027MF 10% 50V	
	C740	OW06-10476-00S	E.CAPACITOR	47MF 10V	
	C741	OW05-07333-00A	C.CAPACITOR	0.033MF 50V	
	C742	OW05-07471-10A	C.CAPACITOR	470PF 10%	
	C743	OW05-07471-10A	C.CAPACITOR	470PF 10%	
	C744	OW05-07473-82B	C.CAPACITOR	0.047MF	
	C745	OW05-00560-06	C.CAPACITOR	56PF 5%	
	C746	OW05-02682-10	MYLAR CAPACITOR	0.0068MF 10%	
	C747	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C748	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C749	OW05-07473-82B	C.CAPACITOR	0.047MF	
	C750	OW06-10107-02	E.CAPACITOR	100MF 10V	
	C751	OW06-10476-02	E.CAPACITOR	47MF 10V	
	C752	OW06-10476-00S	E.CAPACITOR	47MF 10V	
	C753	OW05-07473-82B	C.CAPACITOR	0.047MF	
	C755	OW05-02103-10	MYLAR CAPACITOR	0.01MF 10%	
	C756	OW05-00020-00	C.CAPACITOR	2PF	
	C757	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C760	OW06-10227-02	C.CAPACITOR	220MF 10V	
	C761	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C762	OW06-10106-02	E.CAPACITOR	10MF 10V	
	C763	OW06-50225-02	E.CAPACITOR	2.2MF 50V	
	C790	OW06-16228-00	E.CAPACITOR	2200MF 16V	
	C791	OW05-00104-00	C.CAPACITOR	0.1MF 50V 10%	
	D601	OW02-04148-00R	DIODE	IN4148	
	D602	OW02-04148-00R	DIODE	IN4148	
	D603	OW02-04148-00R	DIODE	IN4148	
	D604	OW02-04148-00R	DIODE	IN4148	
	D605	OW02-50091-00	ZENER DIODE	9.1V 0.5W	
	D606	OW02-50062-00	ZENER DIODE	6.2V 0.5W	
	D607	OW02-04148-00R	DIODE	IN4148	
	D608	OW02-04148-00R	DIODE	IN4148	
	D609	OW02-50062-00	ZENER DIODE	6.2V 0.5W	
	D610	OW02-04001-00	DIODE	1N4001	
	D611	OW02-04148-00R	DIODE	IN4148	
	D701	OW02-04148-00R	DIODE	IN4148	
	D702	OW02-50056-00	ZENER DIODE	5.6V 0.5W	
	D703	OW02-50062-00	ZENER DIODE	6.2V 0.5W	
	D704	OW02-04148-00R	DIODE	IN4148	
	D705	OW02-04148-00R	DIODE	IN4148	
	IC601	OW03-87261-15	IC CPU TMP	87EP26F-1J15	
	IC701	OW03-09462-00	IC	TC9462F	
	IC702	OW03-07291-00	IC	TA7291S	
	IC703	OW03-02092-00	IC	TA2092N	
	IC704	OW03-02109-00	IC	TA2109F	
	LCD61	OW91-80003-00	LCD	91411TT-P	
	L601	OW09-70102-00C	INDUCTOR	100MH	
	L602	OW09-70102-00C	INDUCTOR	100MH	
	L603	OW09-70102-00C	INDUCTOR	100MH	
	L604	OW08-01122-00	FERRITE BEAD	RH03509ST-B246	
	L607	OW08-01122-00	FERRITE BEAD	RH03509ST-B246	
	L608	OW08-01122-00	FERRITE BEAD	RH03509ST-B246	
	L701	OW08-01122-00	FERRITE BEAD	RH03509ST-B246	
	L702	OW08-01122-00	FERRITE BEAD	RH03509ST-B246	
	L703	OW09-70101-00	INDUCTOR	10MH	
	L704	OW09-70101-00	INDUCTOR	10MH	
	Q601	OW01-00945-16	TRANSISTOR	2SC945P	
	Q602	OW01-01240-00	TRANSISTOR	2SB1240Q	

■ Electrical parts list (CD&MCU board)

Block No. 04

△	Item	Parts number	Parts name	Remarks	Area	△	Item	Parts number	Parts name	Remarks	Area
	Q603	OW01-00945-16	TRANSISTOR	2SC945P			R704	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	Q604	OW01-01240-00	TRANSISTOR	2SB1240Q			R705	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	Q605	OW01-00945-16	TRANSISTOR	2SC945P			R706	OW07-15271-50T	CARBON RESISTOR	270 1/8W 5%	
	Q606	OW01-08050-04S	TRANSISTOR	8050D			R707	OW07-15271-50T	CARBON RESISTOR	270 1/8W 5%	
	Q607	OW01-01383-18	TRANSISTOR	2SC1383R			R708	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	Q610	OW01-08050-04S	TRANSISTOR	8050D			R709	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	Q701	OW01-00945-16	TRANSISTOR	2SC945P			R710	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	Q702	OW01-00945-16	TRANSISTOR	2SC945P			R711	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	Q703	OW01-00733-16	TRANSISTOR	2SA733P			R712	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	Q704	OW01-01383-18	TRANSISTOR	2SC1383R			R713	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	Q705	OW01-00733-16	TRANSISTOR	2SA733P			R714	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	Q707	OW01-00733-16	TRANSISTOR	2SA733P			R715	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	Q708	OW01-00945-16	TRANSISTOR	2SC945P			R716	OW07-15561-50T	CARBON RESISTOR	560 1/8W 5%	
	Q709	OW01-00945-16	TRANSISTOR	2SC945P			R717	OW07-15100-50T	CARBON RESISTOR	10 1/8W 5%	
	Q791	OW01-01240-00	TRANSISTOR	2SB1240Q			R721	OW07-15332-50T	CARBON RESISTOR	3.3K 1/8W 5%	
	Q792	OW01-00945-16	TRANSISTOR	2SC945P			R722	OW07-15332-50T	CARBON RESISTOR	3.3K 1/8W 5%	
	R602	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%			R723	OW07-15332-50T	CARBON RESISTOR	3.3K 1/8W 5%	
	R603	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%			R724	OW07-15332-50T	CARBON RESISTOR	3.3K 1/8W 5%	
	R604	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%			R725	OW07-15332-50T	CARBON RESISTOR	3.3K 1/8W 5%	
	R605	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%			R726	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R606	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%			R727	OW07-15332-50T	CARBON RESISTOR	3.3K 1/8W 5%	
	R607	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%			R728	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R608	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%			R729	OW07-15104-50T	CARBON RESISTOR	100K 1/8W 5%	
	R609	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%			R730	OW07-15683-50T	CARBON RESISTOR	68K 1/8W 5%	
	R610	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%			R731	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R612	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R732	OW07-15153-50T	CARBON RESISTOR	15K 1/8W 5%	
	R614	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%			R733	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R615	OW07-15223-50T	CARBON RESISTOR	22K 1/8W 5%			R734	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R616	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R735	OW07-15222-50T	CARBON RESISTOR	2.2K 1/8W 5%	
	R617	OW07-15153-50T	CARBON RESISTOR	15K 1/8W 5%			R736	OW07-15333-50T	CARBON RESISTOR	33K 1/8W 5%	
	R618	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R737	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R620	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R738	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R622	OW07-05022-10	CARBON RESISTOR	2.2 1/2W			R739	OW07-15100-50T	CARBON RESISTOR	10 1/8W 5%	
	R623	OW07-15223-50T	CARBON RESISTOR	22K 1/8W 5%			R740	OW07-15393-50T	CARBON RESISTOR	39K 1/8W 5%	
	R624	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%			R741	OW07-15683-50T	CARBON RESISTOR	68K 1/8W 5%	
	R625	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R742	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%	
	R626	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R743	OW07-15154-50T	CARBON RESISTOR	150K 1/8W 5%	
	R627	OW07-15122-50T	CARBON RESISTOR	1.2K 1/8W 5%			R744	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R628	OW07-15270-50T	CARBON RESISTOR	27 1/8W 5%			R745	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R630	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%			R746	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R631	OW07-15222-50T	CARBON RESISTOR	2.2K 1/8W 5%			R747	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R632	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%			R748	OW07-15154-50T	CARBON RESISTOR	150K 1/8W 5%	
	R633	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%			R750	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R634	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R751	OW07-05561-00	CARBON RESISTOR	560 1/4W	
	R635	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R752	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R636	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R753	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%	
	R637	OW07-15472-50T	CARBON RESISTOR	4.7K 1/8W 5%			R754	OW07-05082-10	CARBON RESISTOR	8.2 1/2W	
	R641	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%			R755	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%	
	R642	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R757	OW07-15562-50T	CARBON RESISTOR	5.6K 1/8W 5%	
	R643	OW07-15682-50T	CARBON RESISTOR	6.8K 1/8W 5%			R758	OW07-15104-50T	CARBON RESISTOR	100K 1/8W 5%	
	R644	OW07-15682-50T	CARBON RESISTOR	6.8K 1/8W 5%			R759	OW07-15512-50T	CARBON RESISTOR	5.1K 1/8W 5%	
	R645	OW07-15222-50T	CARBON RESISTOR	2.2K 1/8W 5%			R760	OW07-15222-50T	CARBON RESISTOR	2.2K 1/8W 5%	
	R646	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R761	OW07-15562-50T	CARBON RESISTOR	5.6K 1/8W 5%	
	R647	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R762	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R648	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R763	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R649	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R764	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R650	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R791	OW07-15223-50T	CARBON RESISTOR	22K 1/8W 5%	
	R651	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R792	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R652	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R793	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R653	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R794	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R701	OW07-15104-50T	CARBON RESISTOR	100K 1/8W 5%			X601	OW04-07200-00H	CEYAL	7.2MFHZ HC-49S	
	R702	OW07-15104-50T	CARBON RESISTOR	100K 1/8W 5%			X602	OW04-32768-03S	CRYSTAL	U3X8 32.768KHZ	
	R703	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%			X701	OW04-16934-41M	CRYSTAL	16.9344MFHZ	

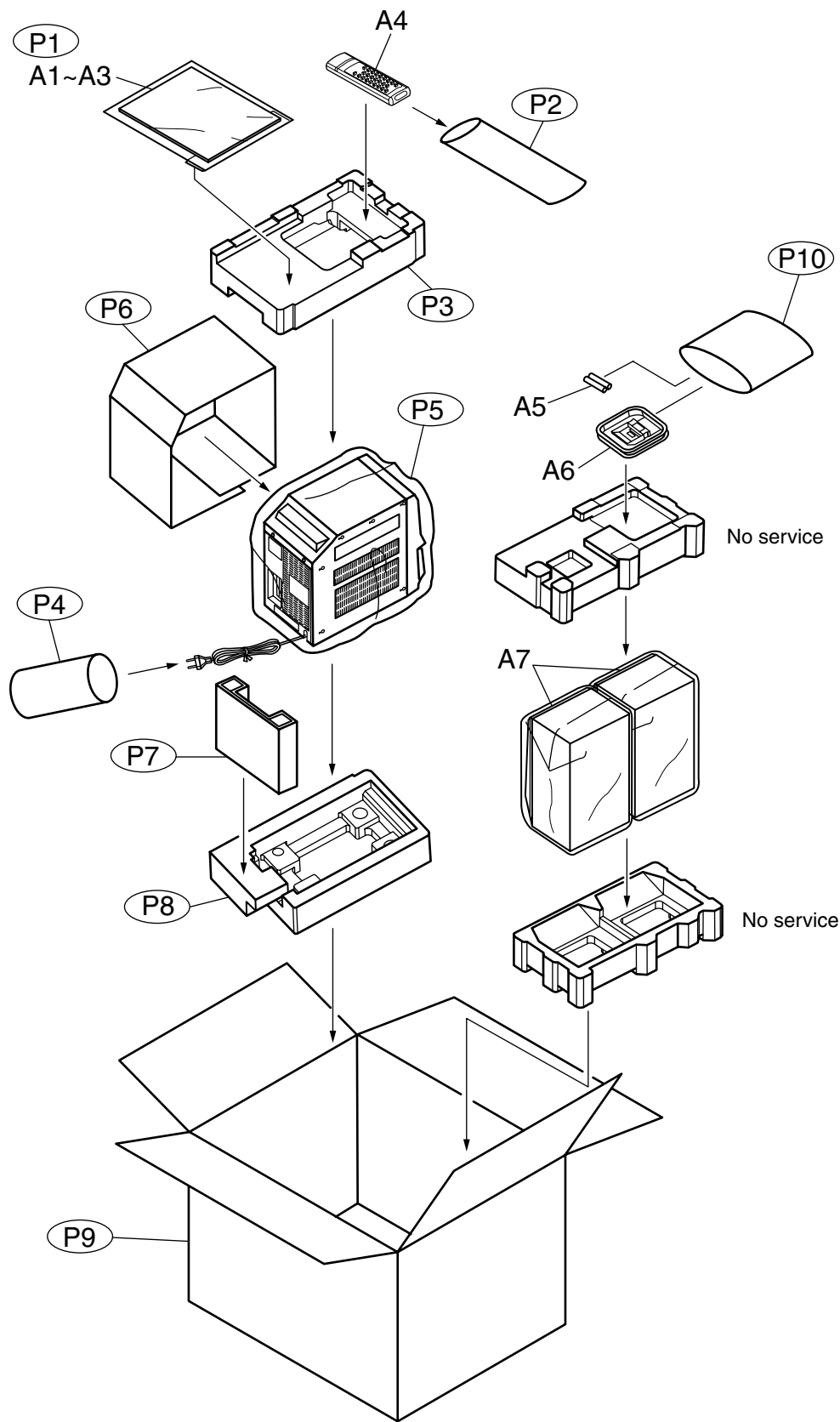
Packing materials and accessories parts list

Block No.

M	3	M	M
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Block No.

M	5	M	M
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■ Parts list (Packing)

Block No. M3MM

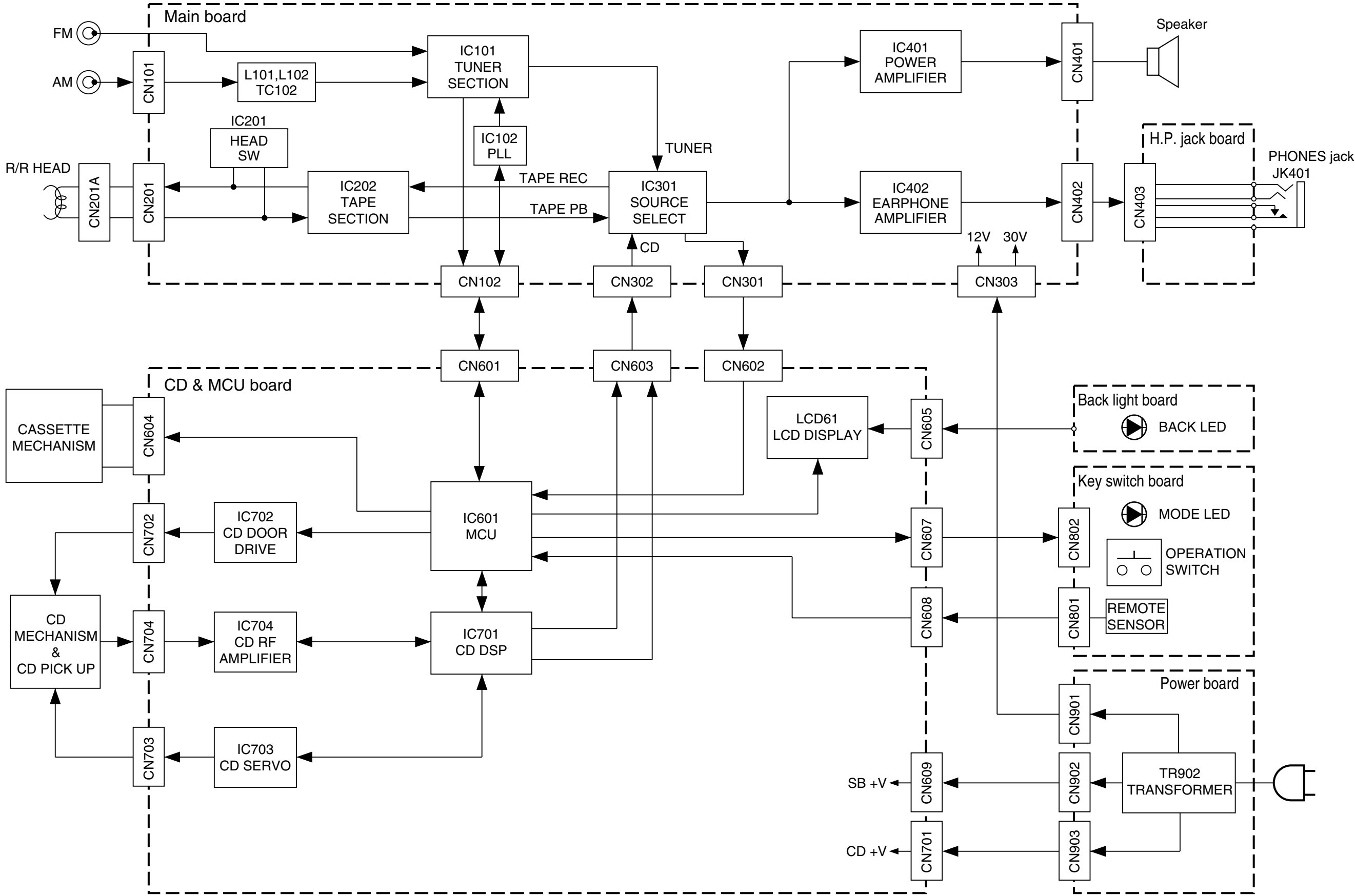
△	Item	Parts number	Parts name	Q'ty	Description	Area
	P 1	OW85-91014-02	POLY BAG	1	INSTRUCTIONS	J C
	P 2	OW85-00025-01A	POLY BAG	1	RREMOTE UNIT	
	P 3	OW86-30000-00	CUSHION	1	TOP	
	P 4	OW85-00025-01A	POLY BAG	1	AC CORD	
	P 5	OW85-92123-02	POLY BAG	1	SET	
	P 6	OW81-30000-01	PROTECT SHEET	1		
	P 7	OW89-30000-00	SUPPORT PAPER	1		
	P 8	OW86-30000-01	CUSHION	1	BOTTOM	
	P 9	OW83-30000-10	GIFT BOX	1		
		OW83-30000-11	GIFT BOX	1		
	P10	OW85-90710-04	POLY BAG	1	AM LOOP ANT.	

■ Parts list (Accessories)

Block No. M5MM

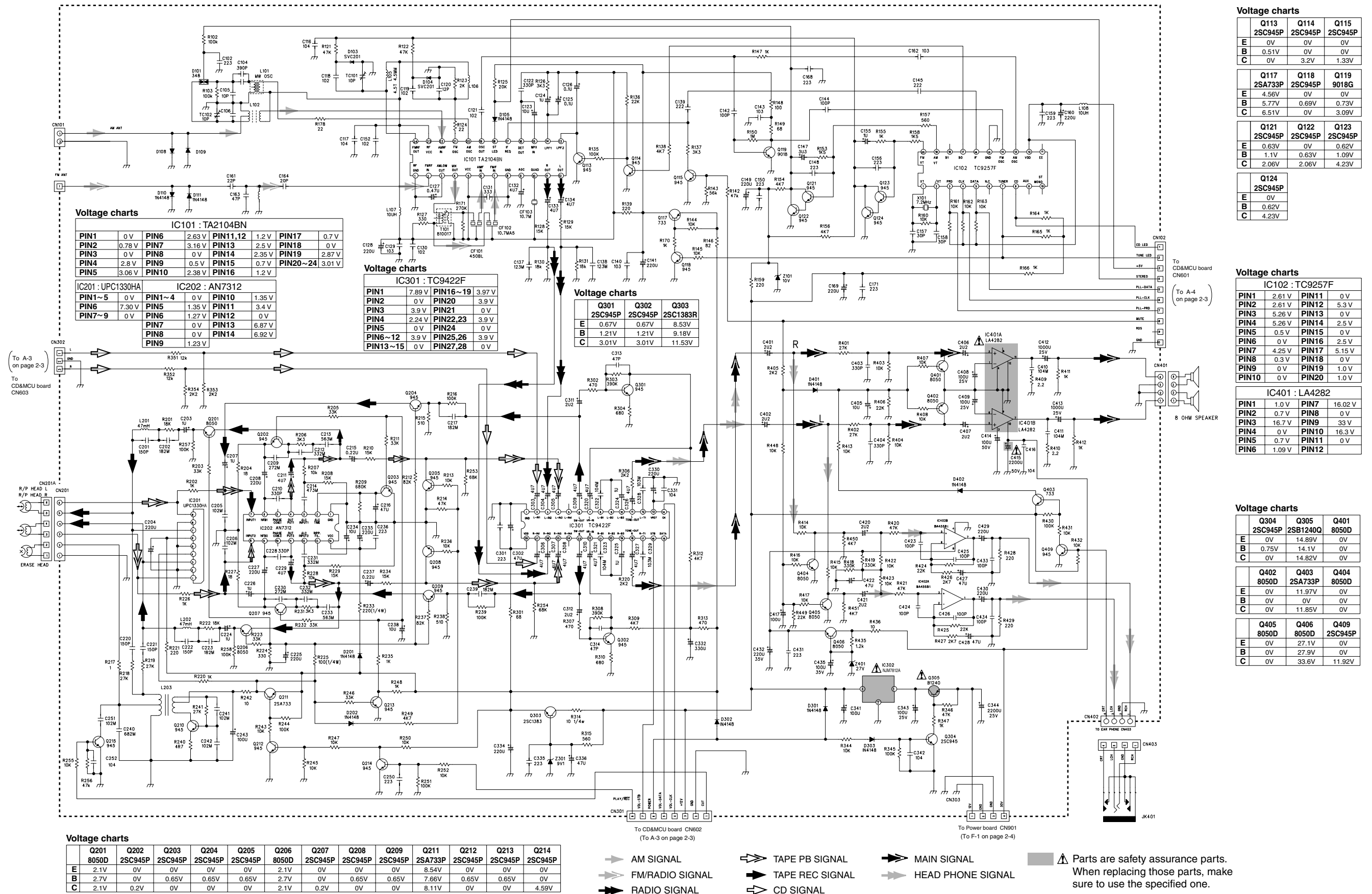
△	Item	Parts number	Parts name	Q'ty	Description	Area
	A 1	OW88-30000-50	INSTRUCTIONS	1	ENG	J
		OW88-30000-52	INSTRUCTIONS	1	ENG,FRA	C
	A 2	OW88-30000-43	USER CARD	1	VAN3000-204	C
	A 3	OW88-30000-47	WARRANTY CARD	1	BT52004-2	
	A 4	OWU-RE-JVC	RREMOTE UNIT	1		
	A 5	-----	BATTERY	2		
	A 6	OW23-04910-02	AM LOOP ANT.	1	4910 L=1M W/JST	
	A 7	UXM3R-SPBOX	SPK.WITH BOX	2		

Block diagram



Standard schematic diagrams

Main section



	Q113 2SC945P	Q114 2SC945P	Q115 2SC945P
E	0V	0V	0V
B	0.51V	0V	0V
C	0V	3.2V	1.33V

	Q117 2SA733P	Q118 2SC945P	Q119 9018G
E	4.56V	0V	0V
B	5.77V	0.69V	0.73V
C	6.51V	0V	3.09V

	Q121 2SC945P	Q122 2SC945P	Q123 2SC945P
E	0.63V	0V	0.62V
B	1.1V	0.63V	1.09V
C	2.06V	2.06V	4.23V

	Q124 2SC945P
E	0V
B	0.62V
C	4.23V

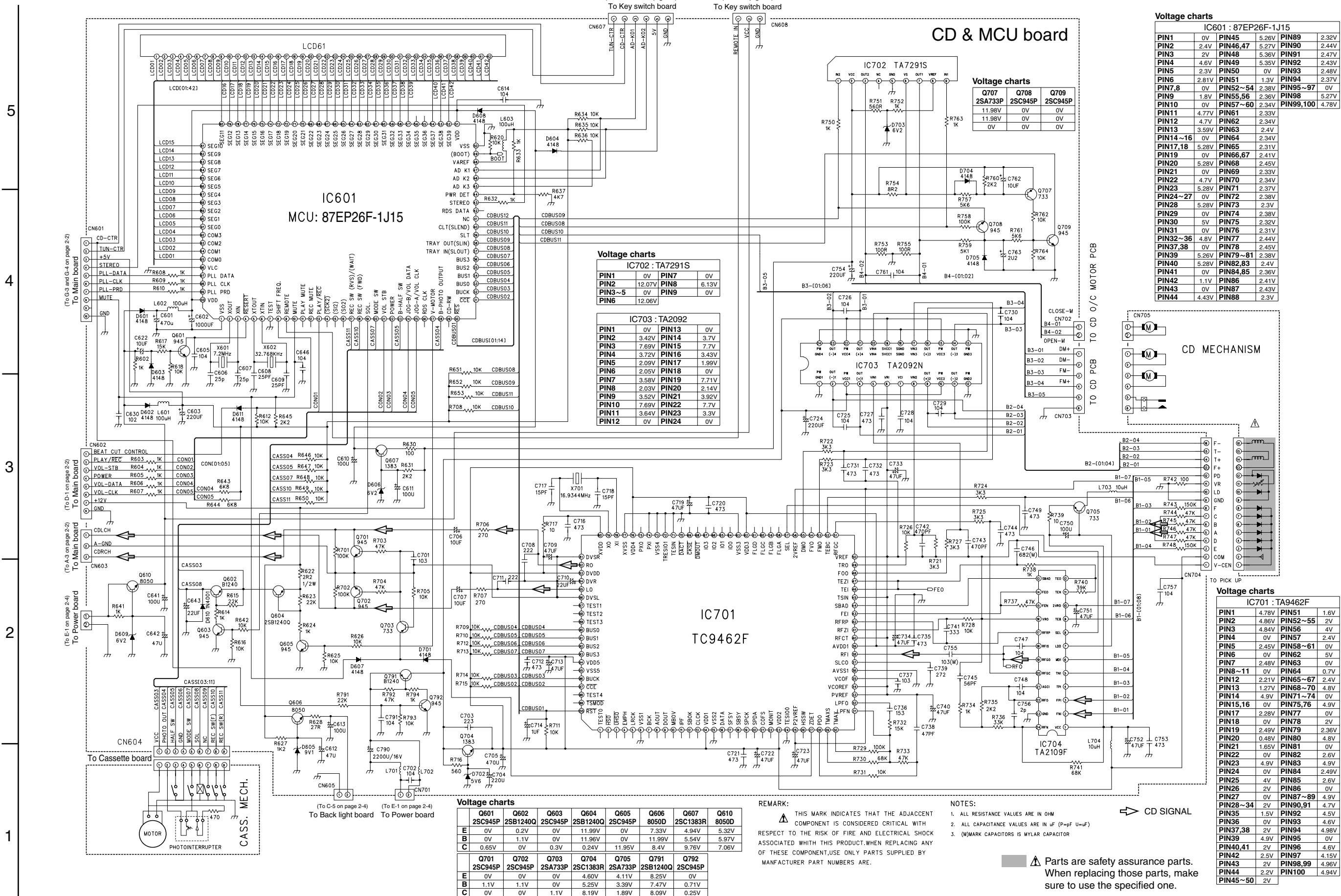
	PIN1	PIN2	PIN3	PIN4	PIN5	PIN6	PIN7	PIN8	PIN9	PIN10	PIN11	PIN12	PIN13	PIN14	PIN15	PIN16	PIN17	PIN18	PIN19	PIN20
E	2.61V	2.61V	5.26V	5.26V	0.5V	0V	4.25V	0.3V	0V	0V	0V	5.3V	0V	2.5V	0V	2.5V	5.15V	0V	1.0V	1.0V
B	2.61V	2.61V	5.26V	5.26V	0.5V	0V	4.25V	0.3V	0V	0V	0V	5.3V	0V	2.5V	0V	2.5V	5.15V	0V	1.0V	1.0V
C	2.61V	2.61V	5.26V	5.26V	0.5V	0V	4.25V	0.3V	0V	0V	0V	5.3V	0V	2.5V	0V	2.5V	5.15V	0V	1.0V	1.0V

	PIN1	PIN2	PIN3	PIN4	PIN5	PIN6	PIN7	PIN8	PIN9	PIN10	PIN11	PIN12
E	1.0V	0.7V	16.7V	0V	0.7V	1.0V	16.02V	0V	33V	16.3V	0V	0V
B	1.0V	0.7V	16.7V	0V	0.7V	1.0V	16.02V	0V	33V	16.3V	0V	0V
C	1.0V	0.7V	16.7V	0V	0.7V	1.0V	16.02V	0V	33V	16.3V	0V	0V

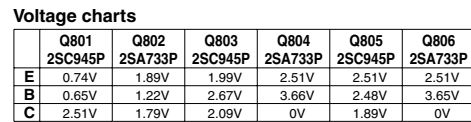
	Q402 8050D	Q403 2SA733P	Q404 8050D
E	0V	11.97V	0V
B	0V	0V	0V
C	0V	11.85V	0V

	Q405 8050D	Q406 8050D	Q409 2SC945P
E	0V	27.1V	0V
B	0V	27.9V	0V
C	0V	33.6V	11.92V

CD & MCU section



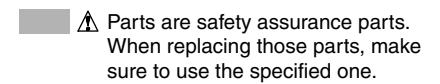
■ Power section



AFTER COMPLETING THE SERVICING OF THIS PRODUCT AND BEFORE RETURNING IT TO YOUR CUSTOMER MEASURE THE RESISTANCE BETWEEN BOTH PRONGS OF THE AC PLUG AND ALL EXPOSED METAL PARTS TO BE SURE IT EXCEEDS 2.2 MEGAOHMS (POWER SWITCH IF ANY SHOULD BE IN ITS ON POSITION). IF THE RESISTANCE MEASURED IS LESS THAN 2.2 MEGAOHMS, THE UNIT SHOULD NOT BE RETURNED TO THE CUSTOMER UNTIL THE CAUSE FOR THE REDUCED POWER LINE. TO EXPOSED METAL PARTS RESISTANCE HAS BEEN CORRECTED AND THE UNIT PASSED THE ABOVE TEST.

SERVICING INSTRUCTIONS

1. DISCONNECT POWER CORD BEFORE SERVICING.
2. REPLACE CRITICAL COMPONENTS  ONLY WITH FACTORY PARTS OR RECOMMENDED EQUIVALENTS.
3. FOR AC LINE POWERED UNITS - BEFORE RETURNING REPAIRED UNIT TO USER, USE AN OHMMETER TO MEASURE FROM BOTH AC PLUG BLADES TO ALL EXPOSED METALLIC PARTS. THE RESISTANCE SHOULD BE MORE THAN 100,000 OHMS.

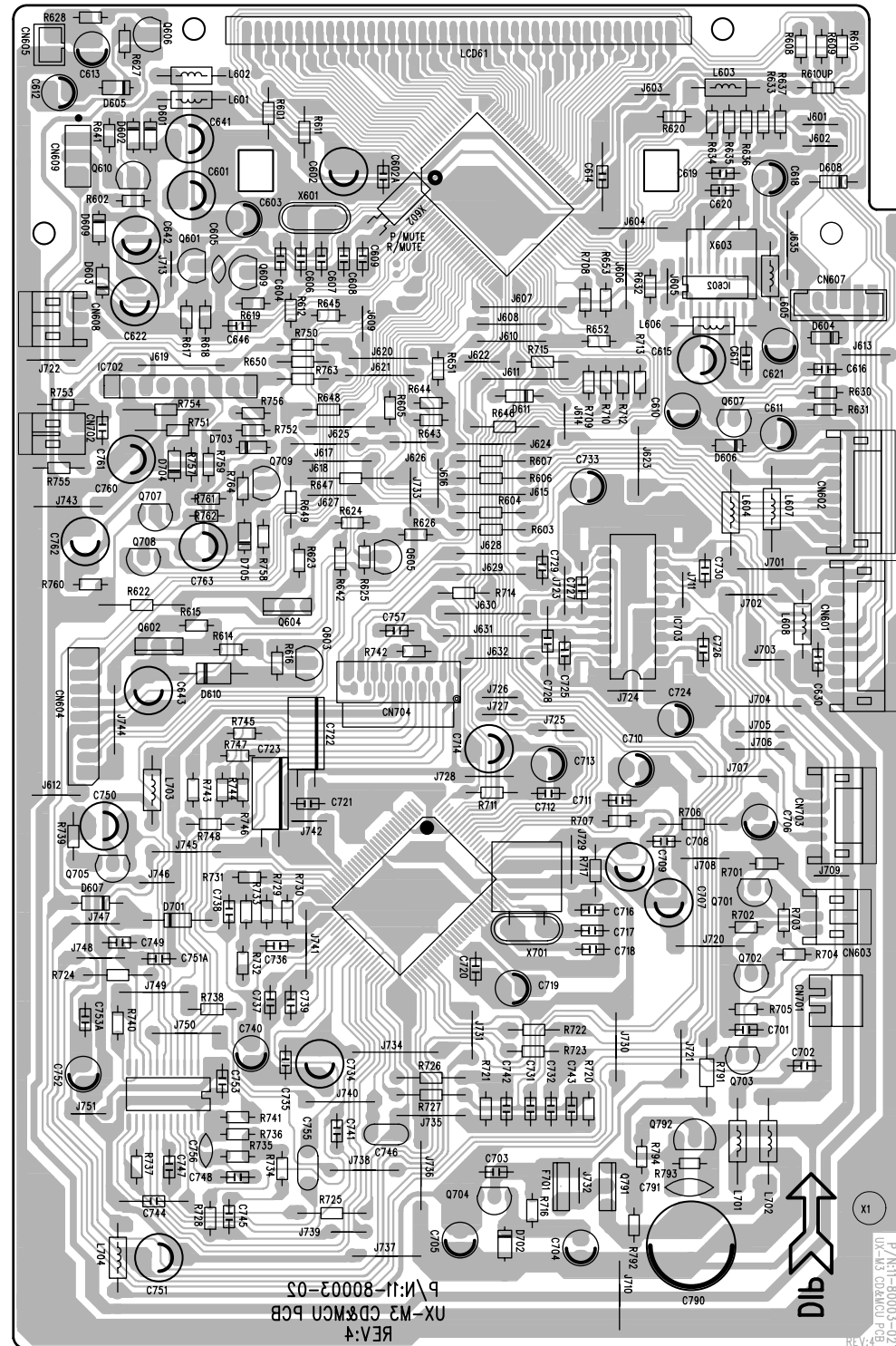


■ Main board



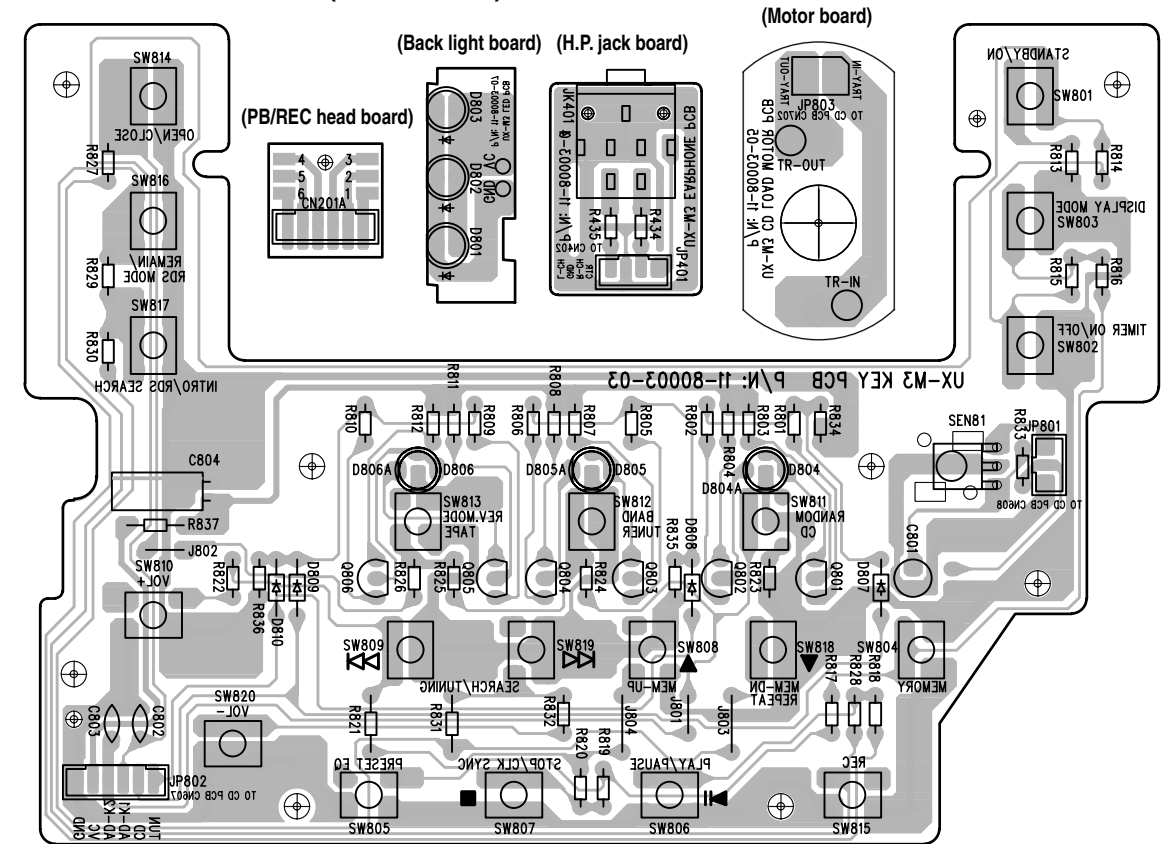
■ CD & MCU board

(Bottom view)



■ Key switch board

(Bottom view)



■ Power board

(Bottom view)

