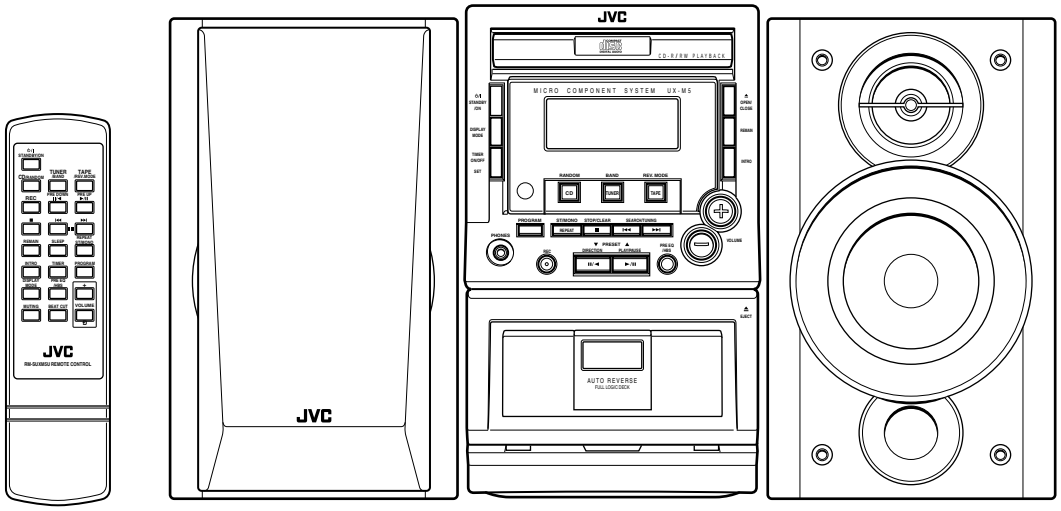
JVC

SERVICE MANUAL

MICRO COMPONENT SYSTEM

UX-M5

Area suffix
UP ---------- Korea



SP-UXM5 CA-UXM5 SP-UXM5

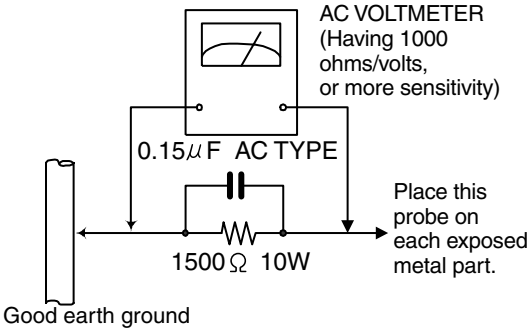
COMPACT disc DIGITAL AUDIO

Contents

No.21170
Jan. 2003

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 (⚠) 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 currnet 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 1,500Ω 10W resistor paralleled by a 0.15μF 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 meausre 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 (▬), diode (▮) and ICP (⬤) or identified by the "⚠" 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

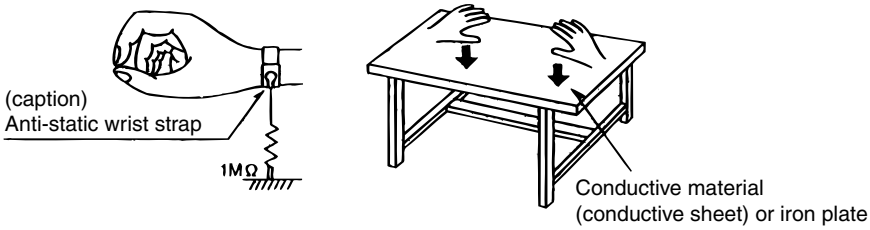
Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as CD players.
Be careful to use proper grounding in the area where repairs are being performed.

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.

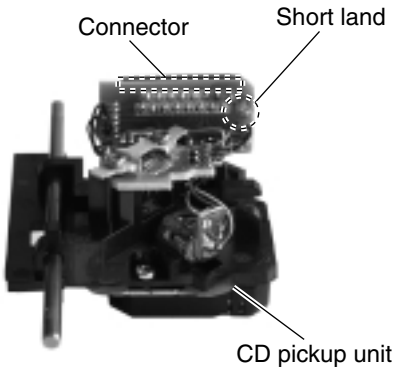
3. Handle the card wire carefully as it may break when subjected to strong force.

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 inter lock 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 whichprevent emission of radiation when the drawer is open and the safety interlocks have failed or are de feated. 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.**

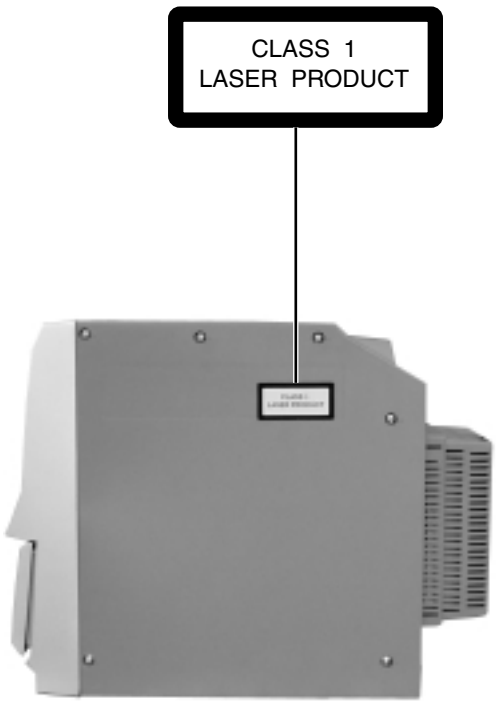
VARNING : Osynlig laserstrålning är denna del är öppnad och spårren är urkopplad. Betrakta ej strålen.

VARO : Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle.Älä katso säteeseen.

ADVARSEL : Usynlig laserstråling ved åbning , når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

ADVARSEL : Usynlig laserstråling ved åpning,når sikkerhetsbryteren er avslott. unngå utsettelse for stråling.

REPRODUCTION AND POSITION OF LABELS



WARNING LABEL

Disassembly method

<Main body section>

Replacement of the fuses and power amplifier IC

■ Replacing the fuses (See Fig. 1.)

- Remove the left side plate according to its disassembly method. (See Figs. 6 and 7.)

Fuses are located inside the left side plate.

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

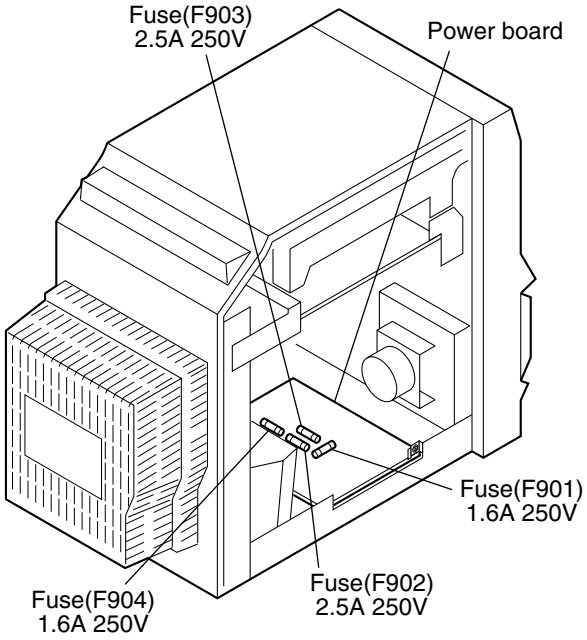


Fig.1

■ Replacing the power amplifier IC on the main board (See Figs. 2 and 3.)

- Remove the main board according to its disassembly method. (See Figs. 18 and 19.)

1. From the reverse side of the main board, remove the two screws **A** retaining the bracket. (See Fig. 2.)
2. From the forward side of the main board, remove the four screws **B** retaining the bracket. (See Fig. 3.)
3. Remove the screw **C** attaching the power amplifier IC onto the heat sink. (See Fig. 3.)
4. In order to replace the power amplifier IC, remove the solder from the soldered part **a** on the reverse side of the main board. (See Fig. 3.)

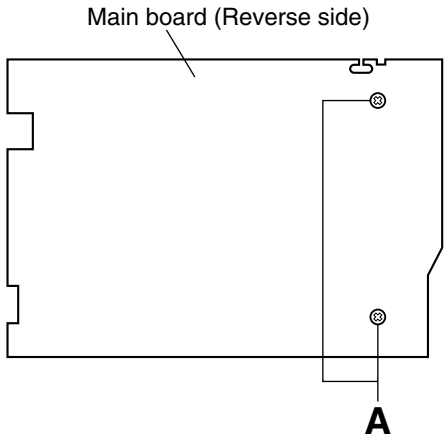


Fig.2

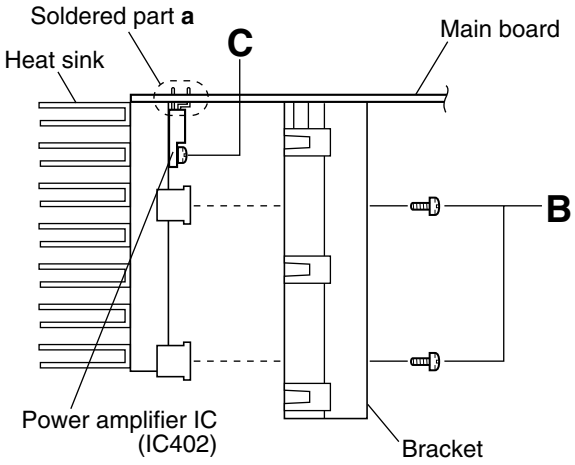


Fig.3

■ Removing the right side plate

(See Figs. 4 and 5.)

1. From the right side of the main body, remove the three screws **D** and three screws **E** retaining the right side plate. (See Fig.4.)

2. Slide the right side plate toward the rear (in the direction of the arrow **1**) until the claw **b** at the back of the right side plate is hooked by the bottom case and then lift the right side plate upward (in the direction of the arrow **2**) to remove it. (See Fig.5.)

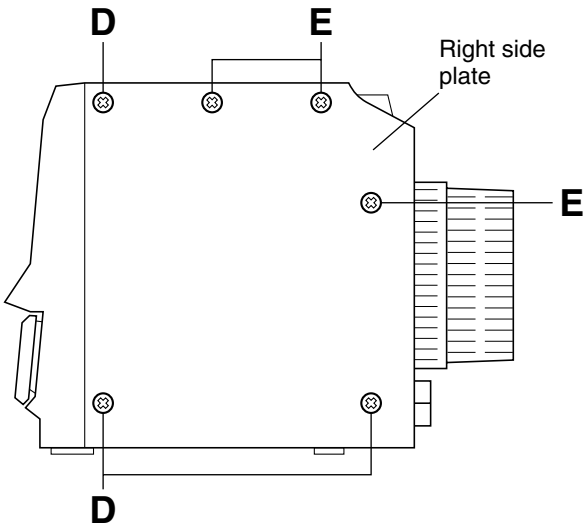


Fig.4

■ Removing the left side plate

(See Figs. 6 and 7.)

1. From the left side of the main body, remove the three screws **D** and three screws **E** retaining the left side plate. (See Fig.6.)

2. Slide the left side plate toward the rear (in the direction of the arrow **3**) until the claw **c** at the back of the left side plate is hooked by the bottom case, and then lift the left side plate upward (in the direction of the arrow **4**) to remove it. (See Fig.7.)

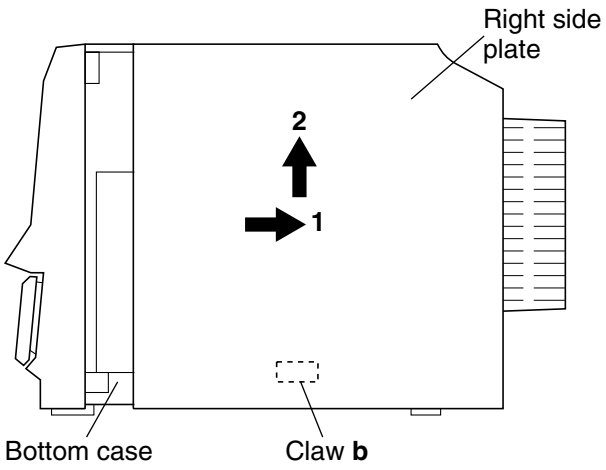


Fig.5

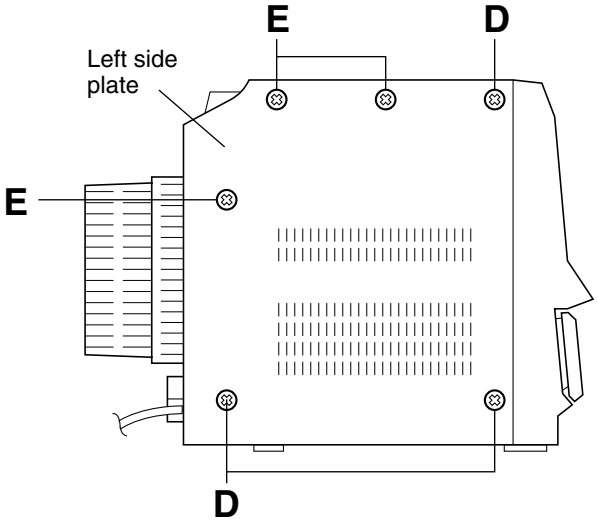


Fig.6

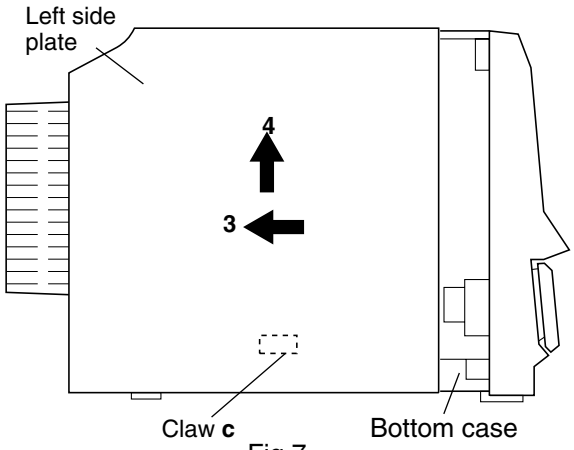


Fig.7

■ Removing the top cabinet

(See Figs. 8 and 9.)

- Remove the left and right side plates.

1. From the back side of the main body, loosen the two screws **F** retaining the top cabinet. (See Fig.8.)
2. Lift the rear part of the top cabinet to remove it. (See Fig.9.)

■ Removing the front cabinet assembly

(See Figs. 10 to 12.)

- Remove the left and right side plates.
- Remove the top cabinet.

1. From the left side of the main body, remove the tie band bundling the wires. (See Fig.10.)
2. Disconnect the wire from the connector on the cassette switch board. (See Fig.10.)
3. Remove the screw **G** retaining the holder on the H.phone j. board. (See Fig.10.)
4. Disconnect the wires from the two connectors CN607 and CN608 on the CD & MCU board. (See Figs.10 and 11.)
5. Remove the four screws **H** and the two screws **J** retaining the CD mechanism assembly from the left and right. (See Figs.10 and 11.)
6. Remove the screw **K** retaining the front cabinet assembly from the bottom side of the main body. (See Fig.12.)
7. While opening the hooks **d** to the left and right of the lower part of the front cabinet assembly (in the direction of the arrows **1**), slide the front cabinet assembly toward the front (in the direction of the arrow **2**). (See Fig.12.)
8. Disconnect the wire from the connector on the PB/REC head board, and then remove the front cabinet assembly. (See Fig.12.)

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

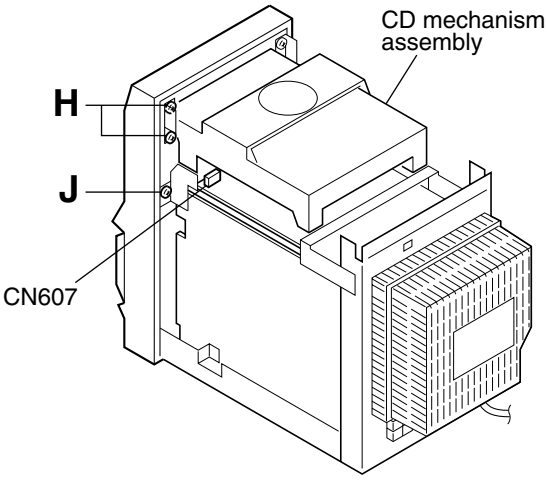


Fig.11

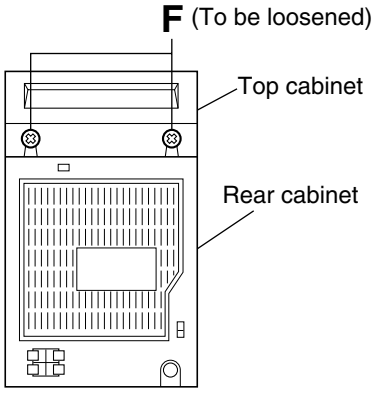


Fig.8

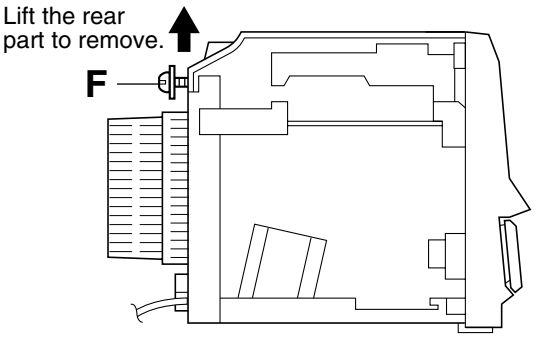


Fig.9

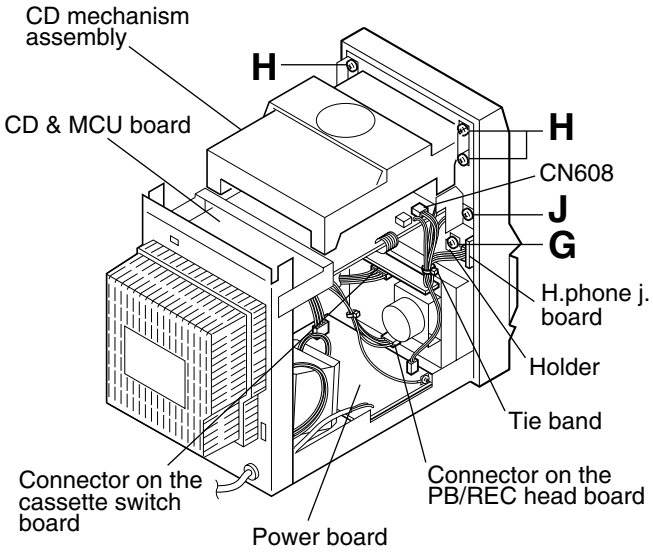


Fig.10

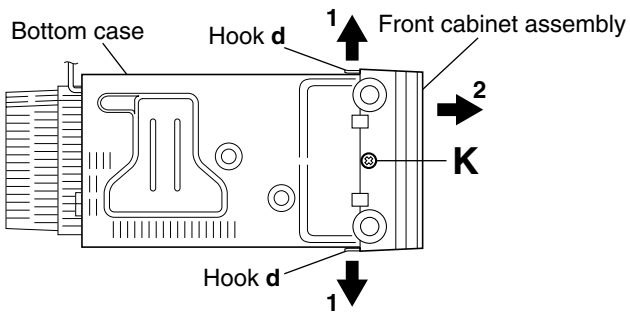


Fig.12

■ Removing the CD mechanism assembly (See Figs. 13 to 15.)

- Remove the left and right side plates.
- Remove the top cabinet.
- Remove the front cabinet assembly.

1. From the top side of the main body, disconnect the wires from the four connectors CN601, CN602, CN603 and CN701 on the CD & MCU board. (See Fig.13.)

2. From the left side of the main body, remove the tie band bundling the wires. (See Fig.14.)

3. Disconnect the wire from the connector CN902 on the power board. (See Fig.14.)

4. From the left and right sides of the main body, remove the four screws **L** retaining the CD rear mount bracket. (See Figs.14 and 15.)

5. Slide the CD mechanism assembly toward the front (in the direction of the arrow) and remove it from the board lock support of the main board. (See Fig.15.)

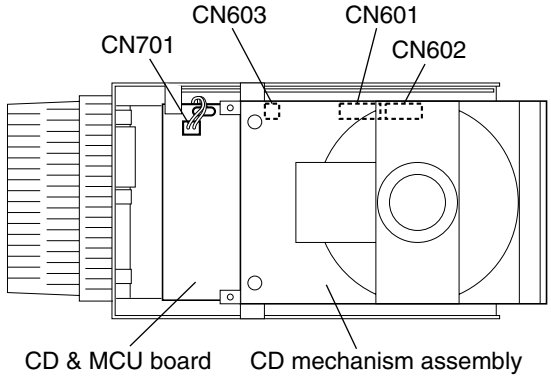


Fig.13

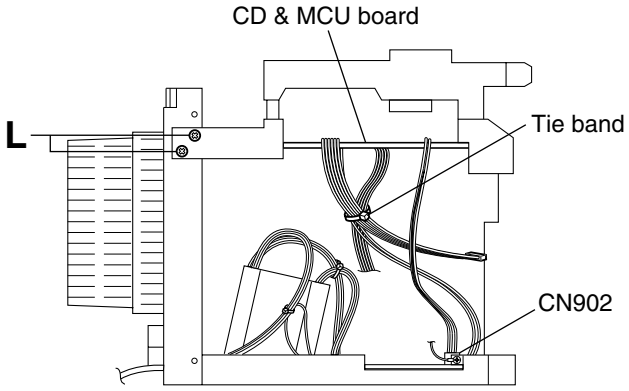


Fig.14

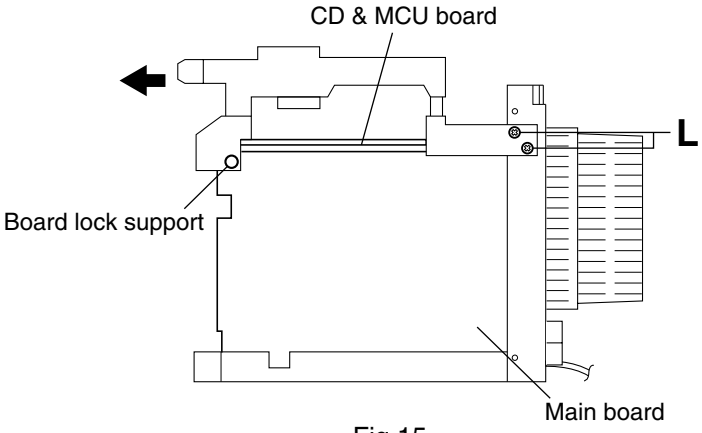


Fig.15

■ Removing the power board

(See Figs. 16 and 17.)

- Remove the left and right side plates.

1. Disconnect the wires from the connector CN901 on the power board. (See Fig.16.)

2. Remove the tie band bundling the wires. (See Fig.16.)

3. Remove the screw **M** retaining the lug wire. (See Fig.16.)

4. Remove the two screws **N** retaining the bottom case. (See Fig.16.)

5. Remove the power board by pinching the two board lock supports retaining the power board using radio pliers, etc. (See Fig.17.)

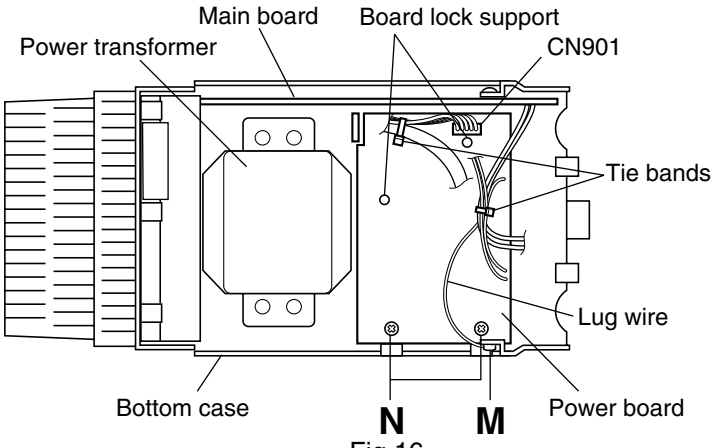


Fig.16

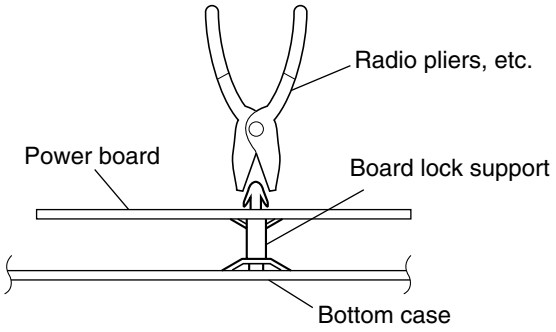


Fig.17

■ Removing the main board

(See Figs. 18 and 19.)

- Remove the left and right side plates.
- Remove the top cabinet.
- Remove the front cabinet assembly.
- Remove the CD mechanism assembly.

1. From the inside of the rear cabinet, remove the five screws **P** retaining the bracket. (See Fig.18.)

2. From the rear side of the main body, remove the two screws **Q** retaining the speaker terminal of the main board. (See Fig.18.)

3. Remove the three screws **R** retaining the rear cabinet, then remove the rear cabinet. (See Fig.18.)

4. From the top side of the main body, remove the screw **S** retaining the bracket of the main board. (See Fig.19.)

5. Remove the screw **T** retaining the regulator IC(IC302). (See Fig.19.)

6. Remove the tie band bundling the wires. (See Fig.19.)

7. Disconnect the wire from the connector CN901 on the power board. (See Fig.19.)

8. Remove the solder from the soldered part **e** that attaches the FM antenna wire to the main board. (See Fig.19.)

9. Remove the stud on the main board, and then take out the main board from the bottom case.

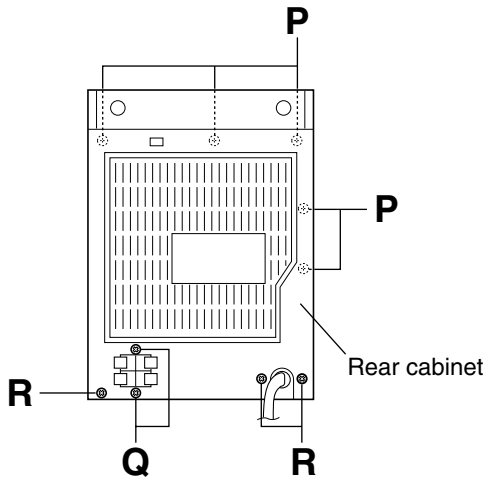


Fig.18

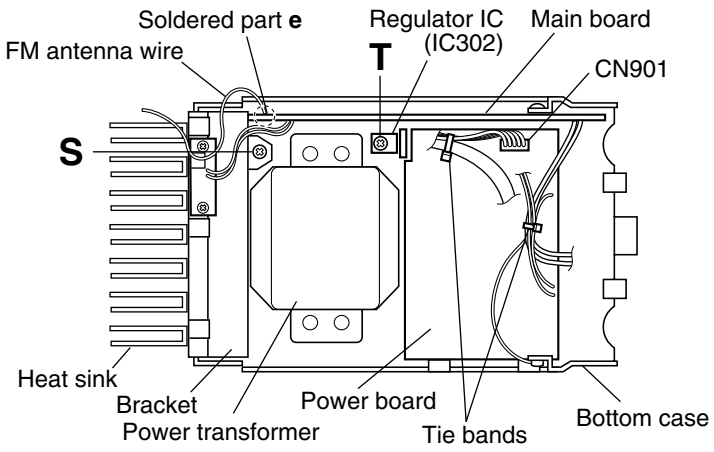


Fig.19

<Front cabinet assembly section>

- Remove the left and right side plates.
- Remove the top cabinet.
- Remove the front cabinet assembly.

■ Removing the key switch board

(See Fig. 20.)

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

■ Removing the cassette mechanism assembly

(See Fig. 20.)

Remove the two screws **V** and the two screws **W** retaining the cassette mechanism assembly.

[Note] After assembly, apply a locking agent to the screws V and W.

■ Removing the damper gear

(See Fig. 20.)

Remove the screw **X** retaining the D.gear bracket and take out the damper gaer.

■ Removing the latch cam holder

(See Fig. 20.)

Remove the two screws **Y** retaining the latch cam holder and remove the latch cam holder.

■ Removing the cassette door cover

(See Fig. 21.)

[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 plates.

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 technical door.

■ Removing the technical door

(See Figs. 22 and 23.)

- Remove the cassette mechanism assembly.
- Remove the cassette door cover.

1. Open the technical door, disengage the torsion spring hooked across the front of the front cabinet assembly and the technical door in the outward direction, and remove it from the claw **h**.
(See Fig.22.)

2. From the back side of the front cabinet assembly, remove the two screws **Z** retaining the deck mechanism bracket. (See Fig.23.)

3. While pushing the arm section **i** of the technical door in the direction of the arrow, remove the shaft section **j** of the technical door from the front cabinet assembly. (See Fig.23.)

4. While pushing the technical door arm section **k** in the direction of the arrow, remove the shaft section **m** of the technical door from the front cabinet assembly. (See Fig.23.)

5. Take out the technical door from the back side of the front cabinet assembly.

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

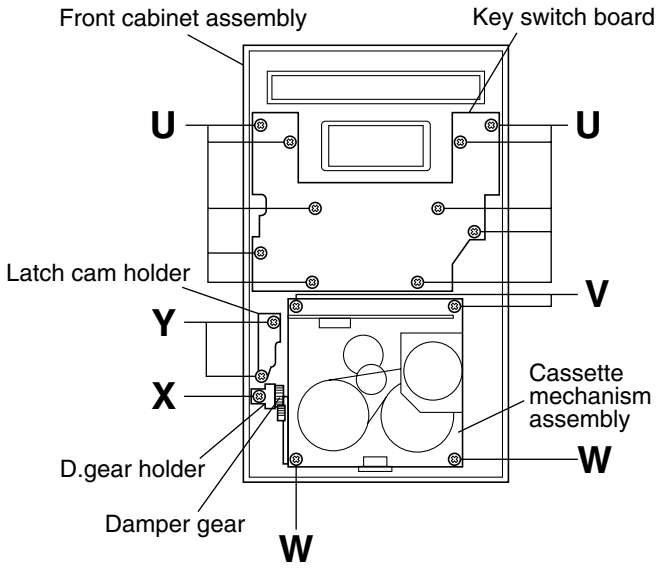


Fig.20

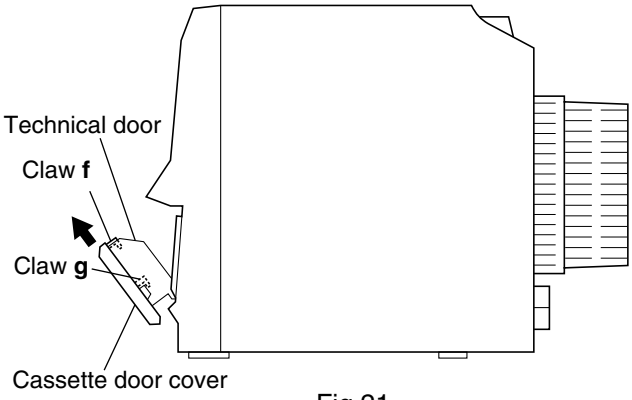


Fig.21

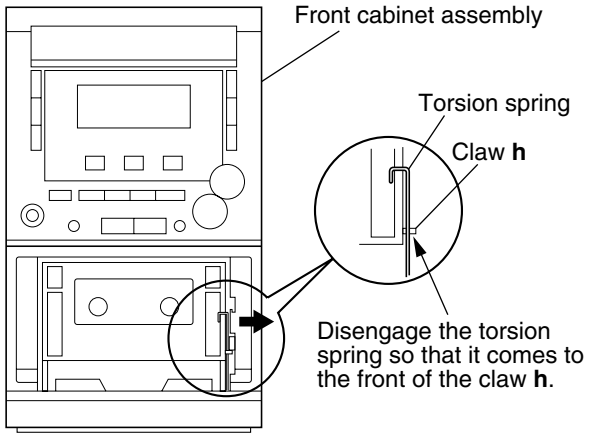


Fig.22

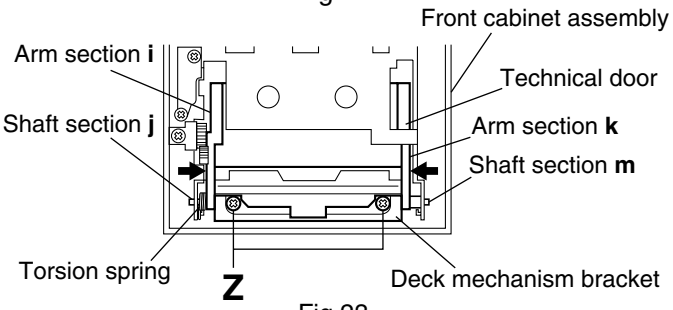


Fig.23

<CD mechanism section>

- Remove the left and right side plates.
- Remove the top cabinet.
- Remove the front cabinet assembly.
- Remove the CD mechanism assembly.

■ Removing the CD & MCU board

(See Figs. 1 and 2.)

1. From the bottom side of the CD mechanism assembly, remove the two screws **A** retaining the CD & MCU board. (See Fig.1.)

2. Disengage the two board lock supports retaining the CD & MCU board. (See Fig.1.)

3. Disconnect the wires from the two connectors CN702 and CN703 on the CD & MCU board. (See Figs.1 and 2.)

4. Lift the CD & MCU board and attach solder to the short land part **a** on the CD pickup assembly. (See Fig.2.)

5. Disconnect the card wire from the connector CN704 on the CD & MCU board, and take out the CD & MCU board. (See Fig.2.)

[Cautions]
- **Be sure to solder the short land part a on the CD pickup unit before disconnecting the card wire from the CD pickup assembly. (See Fig. 2.) 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 a after connecting the card wire.**

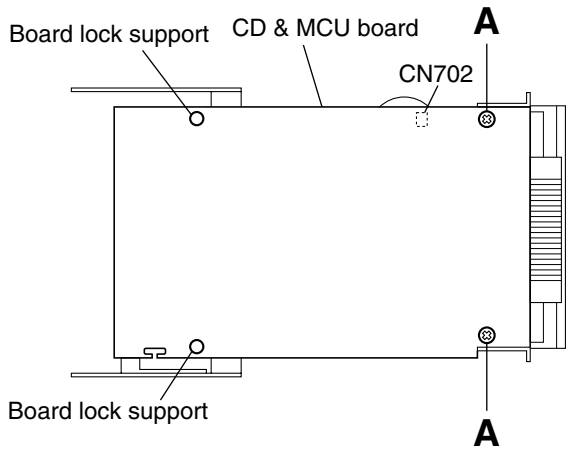


Fig.1

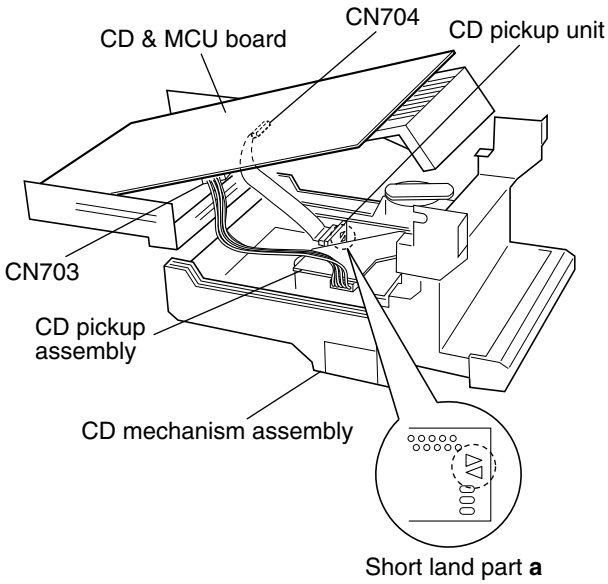


Fig.2

■ Removing the CD pickup assembly

(See Fig. 3.)

- Remove the CD & MCU board.

1. From the back side of the CD mechanism assembly, remove the four screws **B** retaining the CD pickup assembly.

2. 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.

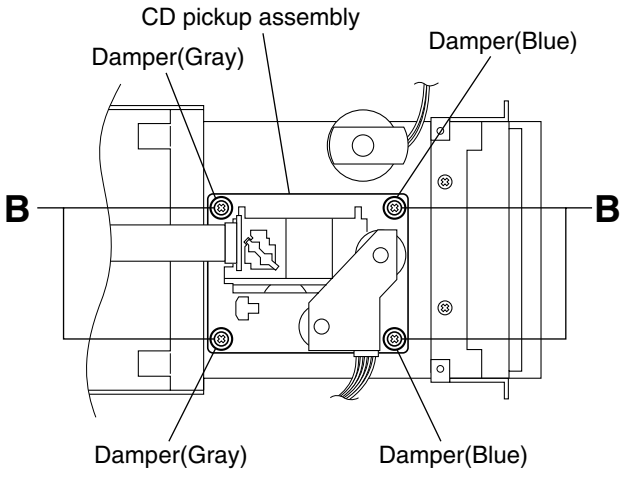


Fig.3

■ Removing the tray motor

(See Figs. 4 to 7.)

- Remove the CD & MCU board.

1. From the top side of the CD mechanism assembly, open up the claws **b** and **c** at the left and right of the clamper assembly and lift the assembly to remove it. (See Fig.4.)

2. Push the section **d** of the elevator in the direction of the arrow and lower the CD pickup assembly. (See Fig.5.)

3. Pull out the tray. (See Fig.5.)

4. While opening up the claws **e** at the left and right of the tray in the directions of the arrows, remove the tray. (See Fig.6.)

5. While pushing the claw **f** on the CD mechanism assembly downwards, slide the elevator fully in the direction of the arrow. (See Fig.7.)

6. Lift the gear slightly, remove the transparent cover. (See Fig.7.)

7. Remove the belt from the tray motor pulley. (See Fig.7.)

8. Remove the two screws **C** retaining the tray motor and remove it from the bottom side of the CD mechanism assembly. (See Fig.7.)

[Notes]
- **Take care not to attach grease on the belt.**
- **After attaching the tray motor in the assembly, apply a locking agent to the screws C.**

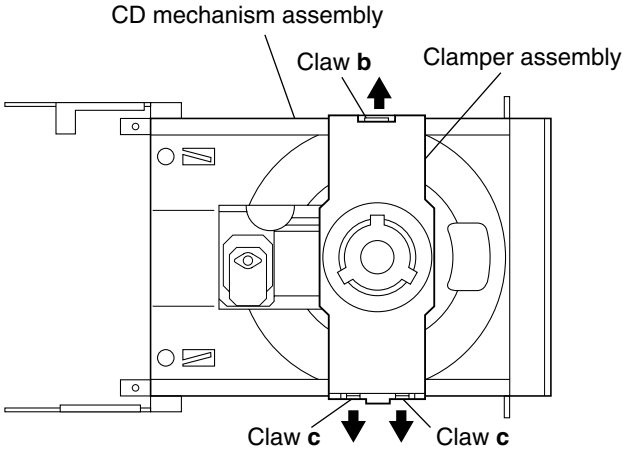


Fig.4

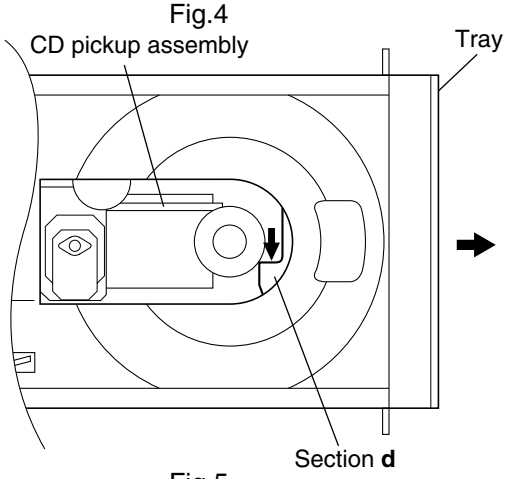


Fig.5

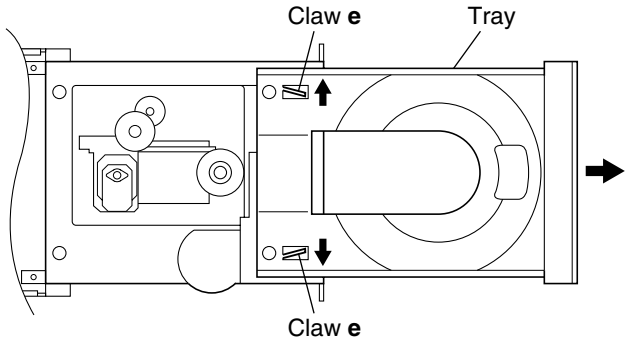


Fig.6

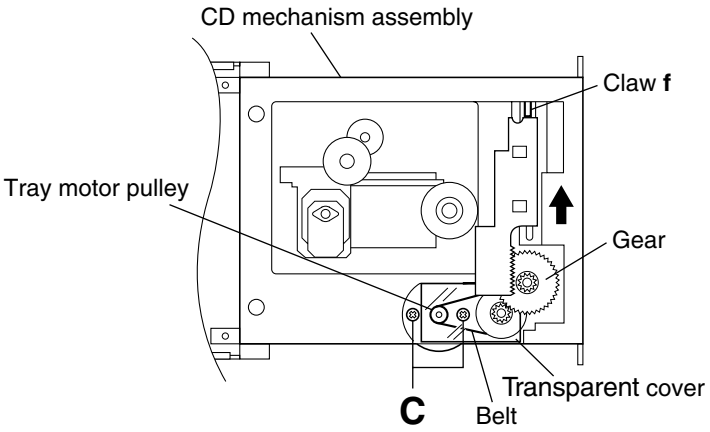


Fig.7

■ Replacing the CD pickup unit (See Figs. 8 to 11.)

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

1. Remove the left and right side plates. (See Figs.4 to 7 of "Main body section" on page 1-7.)

2. Remove the top cabinet. (See Figs.8 and 9 "Main body section" on page 1-8.)

3. From the top side of the main body, open up the claws **b** and **c** on the left and right of the clamper assembly in the direction of the arrows and lift the assembly to remove it. (See Fig.8.)

4. Push the section **d** on the elevator of the CD mechanism assembly and lower the CD pickup assembly. (See Fig.9.)

5. Pull out the tray. (See Fig.10.)

6. Remove the slit washer retaining the feed middle gear, and take out the feed middle gear. (See Fig.10.)

7. Loosen the two screws **D** retaining the shaft. (See Fig.10.)

8. Turn the CD pickup unit upside down and apply solder to the short land part **a**. (See Fig.11.)

9. Disconnect the card wire from the CD pickup unit and replace the unit. (See Fig.11.)

[Caution] ・**Be sure to solder the short land part a on the CD pickup unit before disconnecting the card wire from the CD pickup unit (see Fig. 11). 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 a 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. 11).**

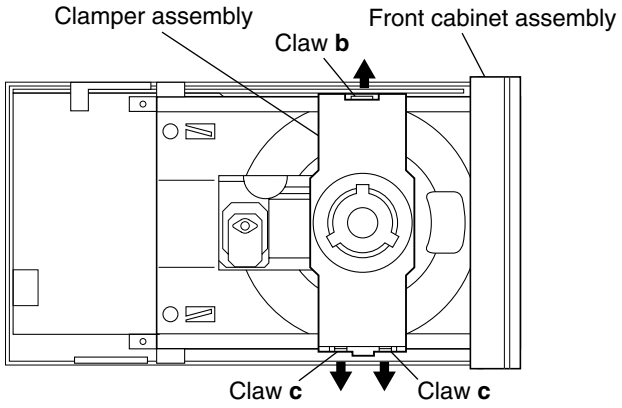


Fig.8

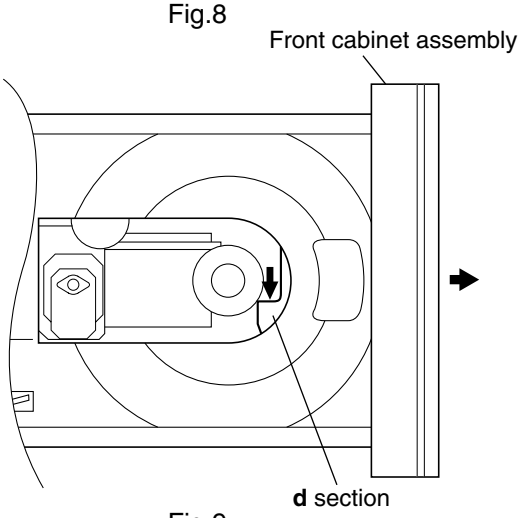


Fig.9

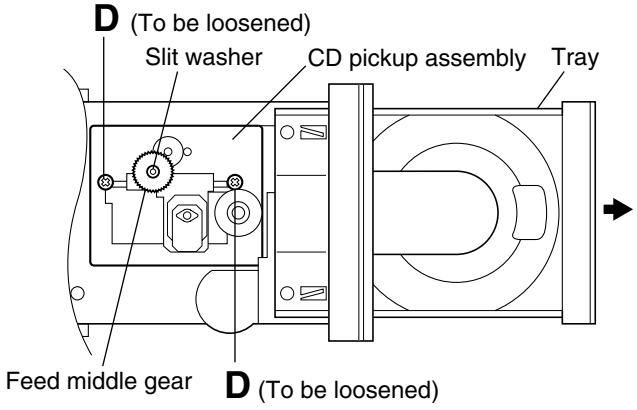


Fig.10

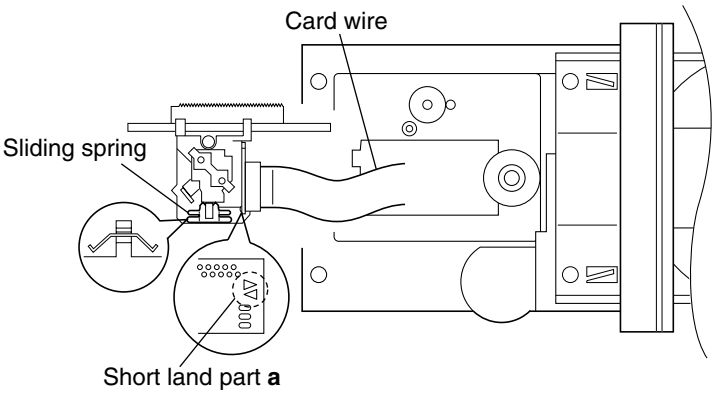


Fig.11

Adjustment method

■ Measuring instructions required for adjustment

1. AM signal generator
2. FM signal generator
3. Inter mediate 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
    VT702 : For playback frequency
    VT702 : For head azimuth adjustment

13. Blank tape
    TAPE Ⅰ : AC-225

■ 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 :
Speaker output 0dBs(2.8V) 8 ohm
H.phone output -10dBs(0.245V) 32 ohm

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

CD section
CD test disc : CTS-1000

■ Measurement conditions

Power supply voltage
AC220V/60Hz

■ Cassette amplifier section

Item	Measuring condition	Check and adjustment procedure	Standard value	Adjusting part
Head azimuth adjustment	▪ Test tape: VT702 (8kHz) ▪ Signal output terminal: PHONES (with 32 ohm load)	1. Play back the test tape VT702 (8kHz). 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 (0+2dB-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 (0+2dB-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: PHONES (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: VT702 ▪ Signal output terminal: PHONES (with 32 ohm load)	Play back the test tape VT702 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 P201 is (67kHz+1kHz-1kHz) if not adjust L203 until the frequency counter indicates (67kHz+1kHz -1kHz).		L203, P201 See Fig.3 on page 1-16.
REC and PB frequency response adjustment	▪ Test tape: AC225 ▪ Signal input: FM 22.5 DEV 60dBu with emphasis ▪ Signal output terminal: PHONES (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 differ from that of the 1kHz signal by within (0+3dB-6dB).	Level difference between REC and PB: 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 the T101 for maximum and center output.		T101 See Fig.3 on page 1-16.
AM tracking adjustment	▪ Signal input: Loop antenna ▪ Signal output: PHONES (with 32 ohm load)	1. Set the TUNER at 522kHz, adjust the L101 until the test point P107 voltage at (1.1V+0.1V-0.1V). 2. Set the TUNER at 1629kHz, check the test point P107 voltage at (7.0V+0.3V-0.3V). 3. Set the TUNER and S/G at 603kHz, adjust the L102 for maximum output. 4. Set the TUNER and S/G at 1404kHz, adjust the TC101 for maximum output. 5. Repeat the above steps 3 and 4.		L101, P107 L102 TC101 See Fig.3 on page 1-16.
FM tracking adjustment	▪ Signal input: Dummy antenna FM ANT FM GND ▪ Signal output: PHONES (with 32 ohm load)	1. Set the TUNER at 87.5MHz, adjust the L104 until the test point P105 voltage at (2.3V+0.1V-0.1V). 2. Set the TUNER at 108MHz, check the test point P105 voltage at (6.5V+0.3V-0.3V). 3. Set the TUNER and S/G at 90.1MHz, adjust L103 for maximum output. 4. Set the TUNER and S/G at 106.1MHz, adjust the TC102 for maximum output. 5. Repeat the above steps 3 and 4.		L104, P105 L103 TC102 See Fig.3 on page 1-16.

■ Location of adjusting parts

· Cassette mechanism section

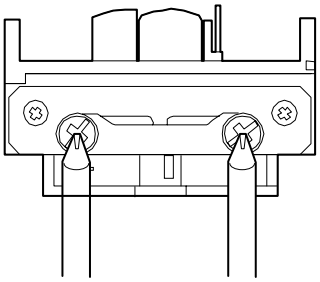


Fig.1 Head azimuth adjustment

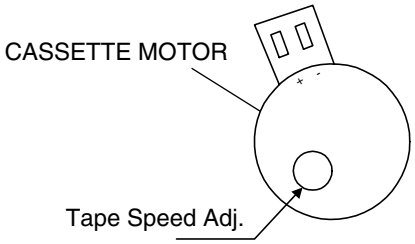


Fig.2

· Main board (Forward side)

Note: Measuring points (P105, P107 and P201) are located on the reverse side.

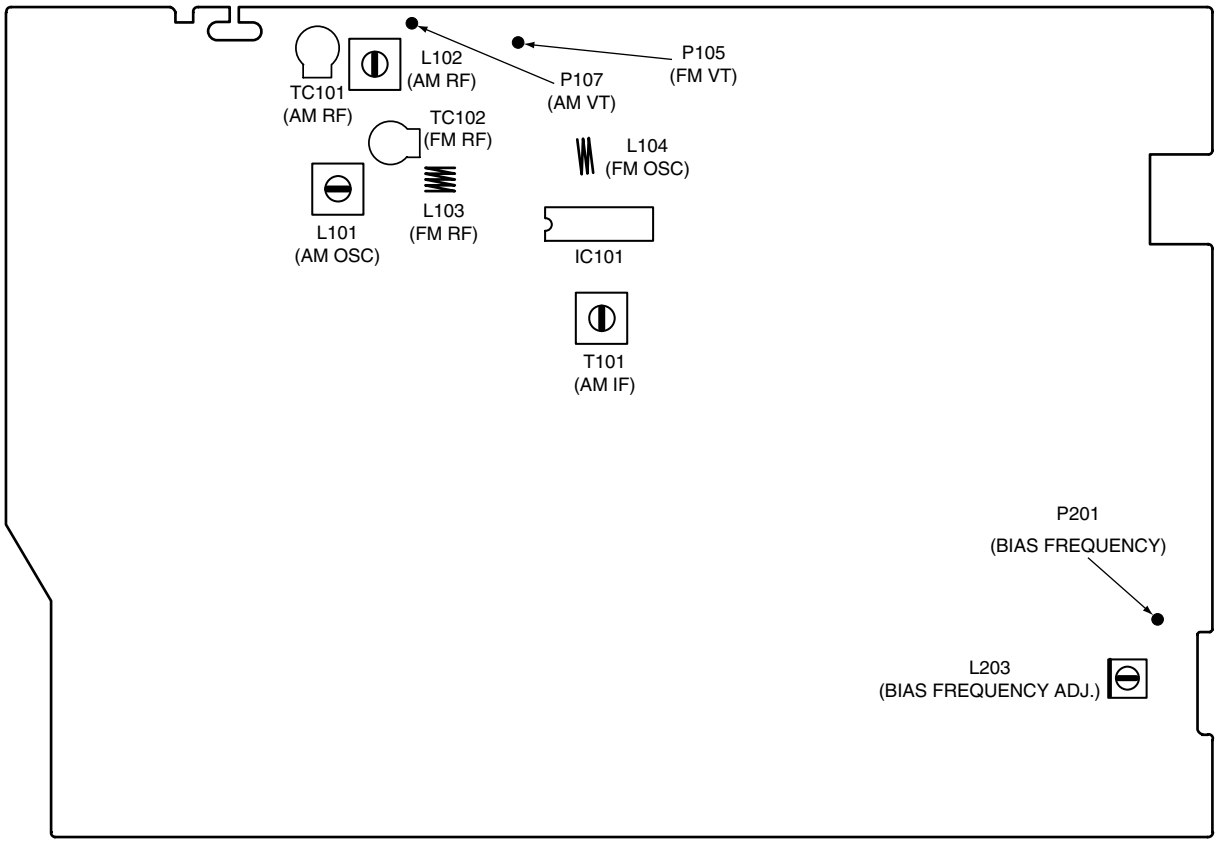
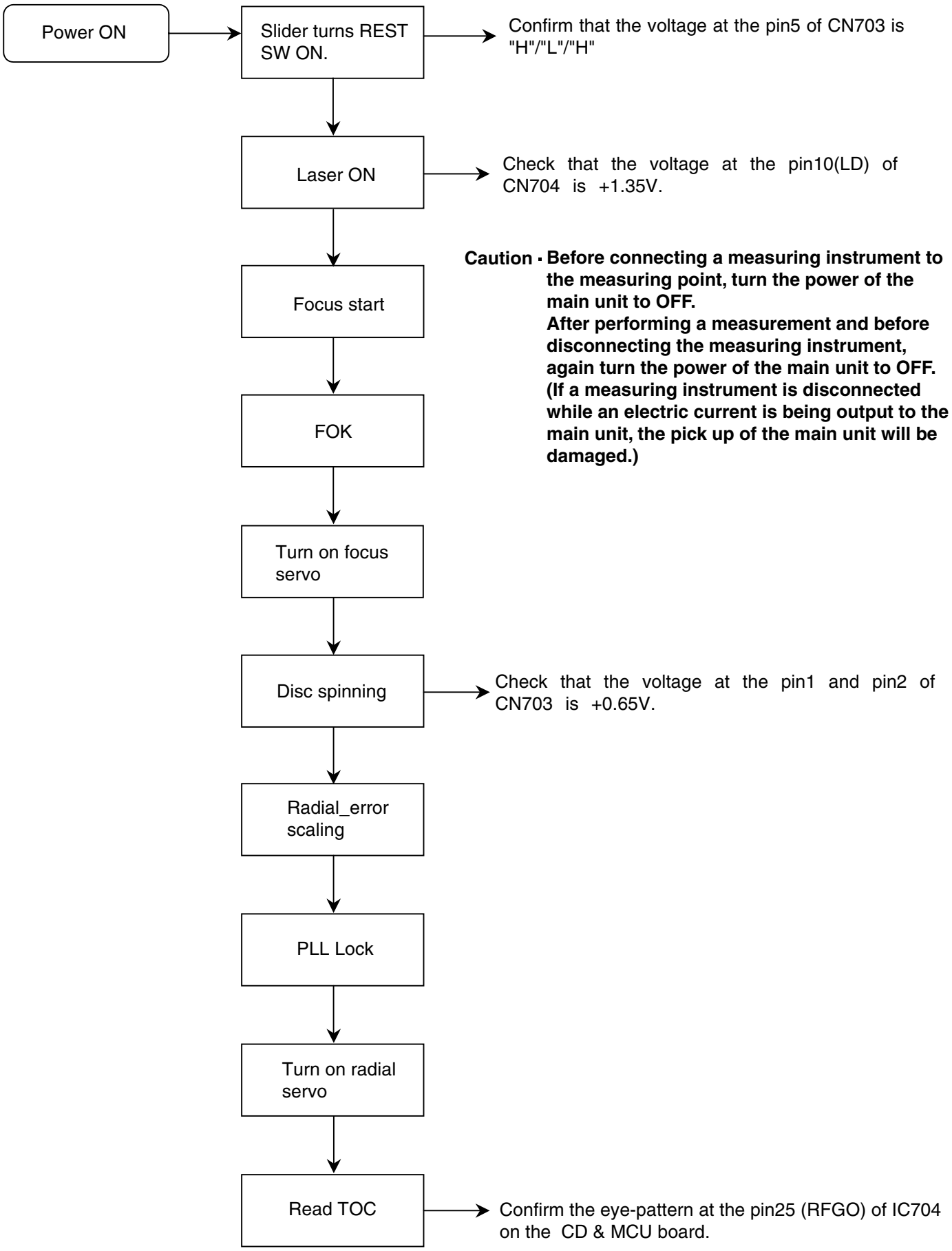


Fig.3

Flow of functional operation until TOC read



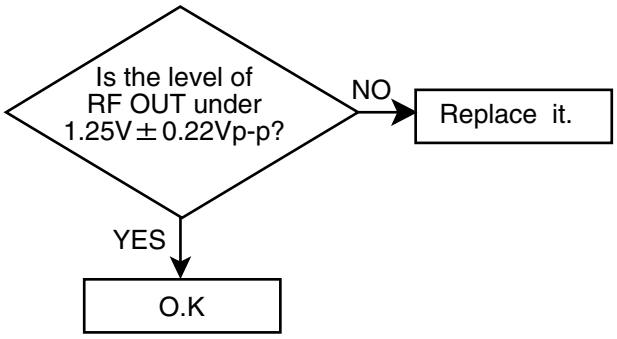
Caution · Before connecting a measuring instrument to the measuring point, turn the power of the main unit to OFF.
After performing a measurement and before disconnecting the measuring instrument, again turn the power of the main unit to OFF.
(If a measuring instrument is disconnected while an electric current is being output to the main unit, the pick up of the main unit will be damaged.)

Maintenance of laser pickup

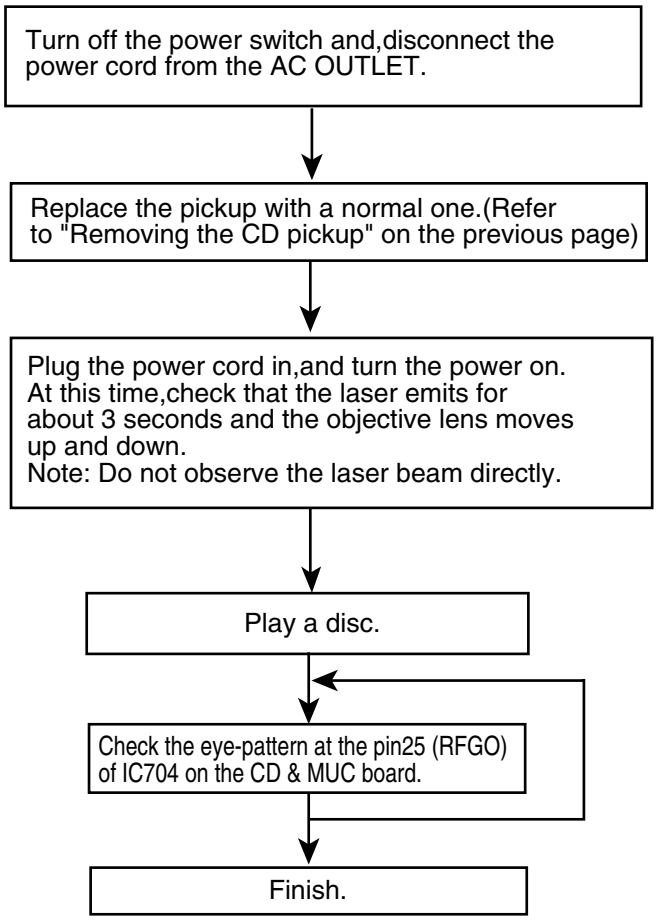
(1) Cleaning the pick up lens
Before you replace the pick up, please try to clean the lens with a alcohol soaked cotton swab.

(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.

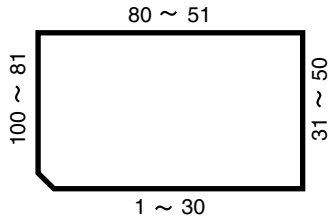
Trouble shooting

Circuit	Symptom	Cause	Remedy
General	No sound	▪ Speakers are not connected.	Check the speaker connection.
		▪ Wrong function is selected.	Set switch to the proper position.
		▪ Defective volume control	Set the volume control to a proper sound level.
		▪ Defective earphone jack	Replace the earphone jack.
		▪ Defect in IC402	Check voltages. Replace if necessary.
		▪ Defect in IC301	Check voltages. Replace if necessary.
AM	No sound, weak sound (Low sensitivity)	▪ Improper location of unit	Rotate or reposition the unit.
		▪ Defect in IF T101	Check resistance, voltage, and current. Replace as needed.
		▪ Defect AM antenna coil L102 or oscilloscope coil L101	Replace if necessary.
		▪ Intermediate frequency tuning faulty	Readjust (see "Adjustment method").
		▪ RF tracking faulty	Readjust (see "Adjustment method").
		▪ Defective IC101	Check voltages. Replace if necessary.
		▪ Defective IC102	Check voltages. Replace if necessary.
		▪ Poor contact in antenna circuit	Check resistance and resolder.
FM	No sound, weak sound (Low sensitivity)	▪ FM antenna not connected	Connect the built-in or external antenna.
		▪ Defective band selector switch	Replace or repair the switch.
		▪ Defective IC101	Check voltages. Replace if necessary.
		▪ Defective IC102	Check voltages. Replace if necessary.
		▪ Intermediate frequency tuning faulty	Readjust (see "Adjustment method").
		▪ Poor contact in FM antenna circuit	Resolder or repair as required.
Tape	No sound/recording, unsteady tape sound, weak sound	▪ Dirty capstan or head	Clean the capstan or head with alcohol.
		▪ Irregular cassette tape winding	Replace tape.
		▪ Defective IC201	Check voltages. Replace if necessary.
		▪ Defective IC202	Check voltages. Replace if necessary.
		▪ Cassette erasure prevention tabs broken out	Replace tape or cover tab openings with adhesive tape.
CD	Cannot read the table of content. No sound	▪ Disc is inserted upside down.	Insert disc correctly.
		▪ Disc is dirty.	Wipe clean with a soft cloth.
		▪ Disc is scratched.	Use a new disc.
		▪ Disc is seriously warped.	Use a new disc.
		▪ A non-standard disc has been inserted.	Use only a brand name disc.
		▪ Moisture has formed inside the CD deck.	Wait about 20 to 30 minutes.
		▪ Defective IC701	Check voltages. Replace if necessary.
		▪ Defective IC704	Check voltages. Replace if necessary.
		▪ Defective IC703	Check voltages. Replace if necessary.
		▪ Defect in the CD pickup mechanism	Replace as required.

Description of major ICs

■ TC9462F (IC701) : Digital servo single chip processor

1. Terminal layout



2. Pin function

TC9462F (1/3)

Pin No.	Symbol	I/O	Function
1	TEST0	I	Test mode terminal. Normally, keep at open.
2 3	$\overline{HSO}$ $\overline{UHSO}$	O O	Playback speed mode flag output terminal. $\overline{UHSO}$ / $\overline{HSO}$ / PLAYBACK SPEED H / H / Normal H / L / 2 times L / H / 4 times L / L / -
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.
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.
6	VSS1	-	Digital ground terminal.
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.
11	IPF	O	Correction flag output terminal. At "H" level, AOUT output is made to correction impossibility by C_2 correction processing.
12	SBOK	O	Subcode Q data CRCC check adjusting result output terminal. The adjusting result is OK at "H" level.
13	CLCK	I/O	Subcode P~W data readout clock input/output terminal. This terminal can select by command bit.
14	VDD1	-	Digital power supply voltage terminal.
15	VSS2	-	Digital ground terminal.
16	DATA	O	Subcode P~W data output terminal.
17	SFSY	O	Playback frame sync signal output terminal.
18	SBSY	O	Subcode block sync signal output terminal.
19	SPCK	O	Processor status signal readout clock output terminal.
20	SPDA	O	Processor status signal output terminal.
21	COFS	O	Correction frame clock output terminal. (7.35kHz)
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.
23	VDD2	-	Digital power supply voltage terminal.
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.
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.
28	PDO	O	Phase difference signal output terminal of EFM signal and PLCK signal.

TC9462F (2/3)

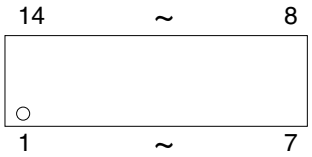
Pin No.	Symbol	I/O	Function
29	TMAXS	O	TMAX detection result output terminal. Selected by command bit (TMPS).
30	TMAX	O	TMAX detection result output terminal. Selected by command bit (TMPS). DIFFERENCE RESULT / TMAX OUTPUT Longer than fixed freq. / "P2VREF" Shorter than fixed freq. / "Vss" Within the fixed freq. / "HiZ"
31	LPFN	I	LPF amplifier inverting input terminal for PLL.
32	LPFO	O	LPF amplifier output terminal for PLL.
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.
37	SLCO	O	Data slice level output terminal.
38	RFI	I	RF signal input terminal.
39	AVDD1	-	Analog power supply voltage terminal.
40	RFCT	I	RFRP signal center level input terminal.
41	RFZI	I	RFRP zero cross input terminal.
42	RFRP	I	RF ripple signal input terminal.
43	FEI	I	Focus error signal input terminal.
44	SBAD	I	Sub-beam adder signal input terminal.
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.
48	FOO	O	Focus servo equalizer output terminal.
49	TRO	O	Tracking servo equalizer output terminal.
50	VREF	-	Analog reference voltage supply terminal.
51	RFGC	O	RF amplitude adjustment control signal output terminal.
52	TEBC	O	Tracking balance control signal output terminal.
53	FMO	O	Feed equalizer output terminal.
54	FVO	O	Speed error signal or feed search equalizer output terminal.
55	DMO	O	Disk equalizer output terminal. (PWM carrier=88.2kHz for DSP, Synchronize to PXO)
56	2VREF	-	Analog double reference voltage supply 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.
58	FLGA	O	External flag output terminal for internal signal. Can select signal from TEZC, $\overline{\text{FOON}}$, $\overline{\text{FOK}}$ and RFZC by command.
59	FLGB	O	External flag output terminal for internal signal. Can select signal from $\overline{\text{DFCT}}$, $\overline{\text{FOON}}$, $\overline{\text{FMON}}$ and RFZC by command.
60	FLGC	O	External flag output terminal for internal signal. Can select signal from $\overline{\text{TRON}}$, $\overline{\text{TRSR}}$, $\overline{\text{FOK}}$ and $\overline{\text{SRCH}}$ by command.
61	FLGD	O	External flag output terminal for internal signal. Can select signal from $\overline{\text{TRON}}$, $\overline{\text{DMON}}$, $\overline{\text{HYS}}$ and $\overline{\text{SHC}}$ by command.
62	VDD3	-	Digital power supply voltage terminal.
63	VSS3	-	Digital ground terminal.
64 65 66 67	IO0 IO1 IO2 IO3	I/O I/O I/O 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.

TC9462F (3/3)

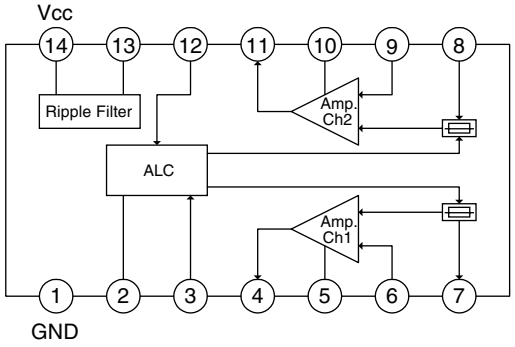
Pin No.	Symbol	I/O	Function
68	$\overline{\text{DMOUT}}$	I	This terminal controls IO0～IO3 terminal. At "L" level time, IO0, 1 out feed equalizer signal of 2-state PWM, IO2,3 out disk equalizer signal of 2-state PWM.
69	$\overline{\text{CKSE}}$	I	Normally, keep at open.
70	$\overline{\text{DACT}}$	I	DAC test mode terminal. Normally, keep at open.
71	TESIN	I	Test input terminal. Normally, keep at "L" level.
72	TESIO1	I	Test input/output terminal. Normally, keep at "L" level.
73	VSS4	-	Digital ground terminal.
74	PXI	I	Crystal oscillator connecting input terminal for DSP. Normally, keep at "L" level.
75	PXO	O	Crystal oscillator connecting output terminal for DSP.
76	VDD4	-	Digital power supply voltage terminal.
77	XVSS	-	Oscillator ground terminal for system clock.
78	XI	I	Crystal oscillator connecting input terminal for system clock.
79	XO	O	Crystal oscillator connecting output terminal for system clock.
80	XVDD	-	Oscillator power supply voltage terminal for system clock.
81	DVSR	-	Analog ground terminal for DA converter.(R-ch)
82	RO	O	R channel data forward output terminal.
83	DVDD	-	Analog supply voltage terminal for DA converter.
84	DVR	-	Reference voltage terminal for DA converter.
85	LO	O	L channel data forward output terminal.
86	DVSL	-	Analog ground terminal for DA converter.(L-ch)
87	TEST1	I	Test mode terminal. Normal, keep at open.
88	TEST2	I	Test mode terminal. Normal, keep at open.
89	TEST3	I	Test mode terminal. Normal, 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	$\overline{\text{CCE}}$	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	$\overline{\text{TSMOD}}$	I	Local test mode selection terminal.
100	$\overline{\text{RST}}$	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

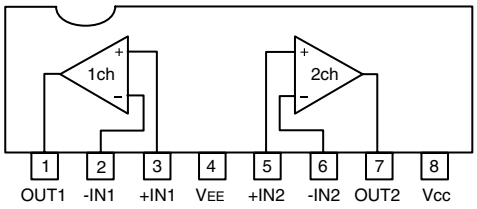


3. Pin function

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.F.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.F.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 (IC401,IC403) : Dual operational amplifier

1. Terminal layout & Block diagram

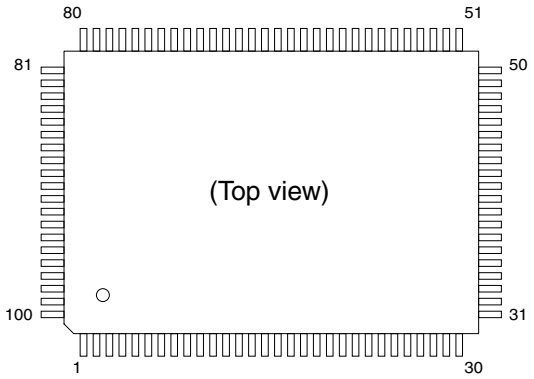


2. Pin function

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+

■TMP87EP26F-1J15 (IC601) : MCU

1. Terminal layout



2.Pin function

TMP87EP26F-1J15 (1/2)

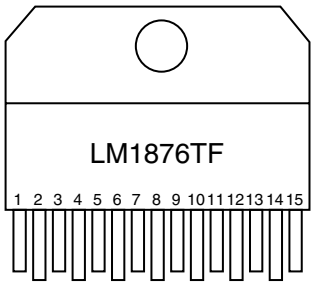
Pin No.	Symbol	I/O	Function
1	VSS	-	GND (0V)
2	XOUT	O	Resonator connecting pins for high clock(4-8MHz).
3	XIN	I	For inputting external clock, XIN is used and XOUT is opened.
4	$\overline{\text{RESET}}$	I/O	Reset signal input or watchdog timer output/address-trap-reset output
5	XTOUT(P22)	I/O	Resonator connecting pins for slow clock(32.768kHz)
6	XTIN(P21)	I/O	or general purpose I/O.
7	TEST	I	Test pin for out-going test. Always fixed to low.
8	SHIFT FREQ	O	Shift the crystal oscillation frequency to reduce tuner noise.
9	REMOTE	I	Remote control signal input
10	MUTE	O	Audio mute output
11	PLAY MUTE	O	Muting output during play
12	REC MUTE	O	Muting output during recording
13	PLAY/REC	O	Play or recording output, low for recording.
14	NC($\overline{\text{SCK2}}$)	-	Not connect
15	NC(SI2)	-	Not connect
16	NC(SO2)	-	Not connect
17	REC SW (RVS)/(WAIT)	I	Deck reverse record protection input. Low means can record on reverse side.
18	REC SW (FWD)	I	Deck forward record protection input. Low means can record on forward side.
19	B-SOL+	O	Solenoid output for deck B.
20	B-MODE SW	I	Mode switch input of deck B. Low means the head is up.
21	VOL STB	O	TC9422F volume STB output
22	POWER	O	Power output control
23	B-HALF SW	I	Half switch input of deck B. Low means deck B have tape.
24	JOG-B/VOL DATA	I/O	Jog dial input and TC9422F volume data output
25	JOG-A/VOL CLK	I/O	Jog dial input and TC9422F volume clock output
26	RDS CLK	I	BU1923F(RDS demodulator) interface CLK input
27	V MOTOR	O	Motor output
28	B-PHOTO OUT	I	Reel pulse input of deck B. Have pulse input means the tape is rotating.
29	CD-RW	O	CD-RW control output
30	$\overline{\text{RES}}$	O	CD servo reset output

TMP87EP26F-1J15 (2/2)

Pin No.	Symbol	I/O	Function
31	$\overline{CCE}$	O	Servo DSP chip enable output
32	BUCK	O	Servo DSP clock output
33	BUS0	I/O	Servo DSP command and data I/O
34	BUS1	I/O	Servo DSP command and data I/O
35	BUS2	I/O	Servo DSP command and data I/O
36	BUS3	I/O	Servo DSP command and data I/O
37	SLOUT	O	Tray open/close outputs for current sensor drawer type mechanism.
38	SLIN	O	
39	SLT	I	CD pick up position input: L if pick up is in inner side.
40	SLEND	I	Current sensor input
41	NC	-	Not connected
42	RDS DATA	I	BU1923F(RDS demodulator) interface data input
43	STEREO	I	Stereo input pin for tuner stereo indication
44	POWER DETECT	I	Power down detection
45	AD K3	I	Panel key analog input
46	AD K2	I	Panel key analog input
47	AD K1	I	Panel key analog input
48	VAREF	-	Analog reference voltage input
49	BOOT	I	Control input for writing MCU program area via ICU interface.
50	VSS	-	GND (0V)
51	VDD	-	VDD (+5V)
52~91	SEG39 ~ 0	O	LCD segment outputs
92~95	COM3~ 0	O	LCD common outputs
96	VLC	-	LCD drive power supply
97	PLL DATA	I/O	TC9257P (PLL) interface
98	PLL CLK	O	TC9257P (PLL) interface
99	PLL PERIOD	O	TC9257P (PLL) interface
100	VDD	-	VDD (+5V)

■ LM1876TF (IC402) : Overture audio power amplifier series

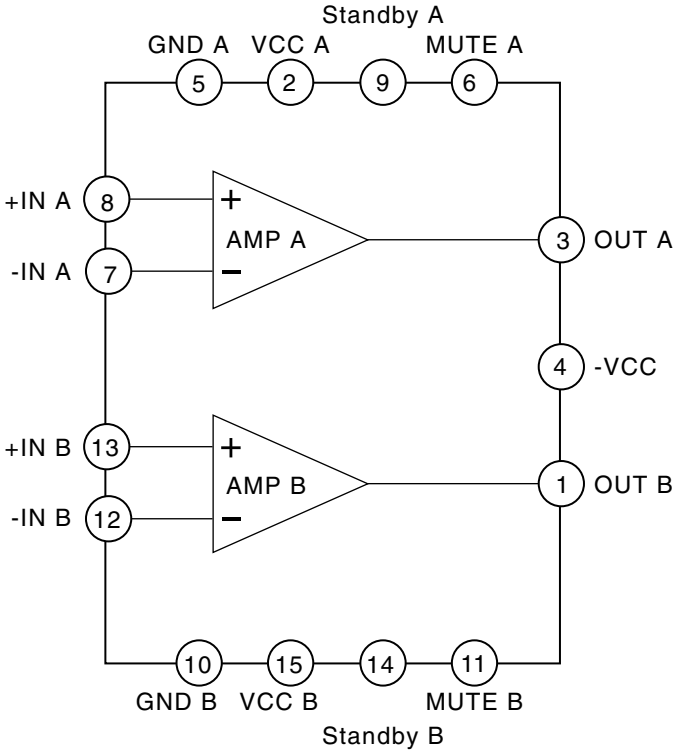
1. Terminal layout



2. Pin function

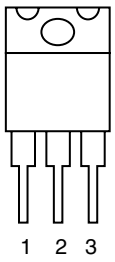
Pin No.	Symbol	I/O	Function
1	OUT B	O	B output
2	VCC A	-	A V+
3	OUT A	O	A output
4	-Vcc	-	V-
5	GND A	-	Power terminal
6	MUTE A	-	Control
7	-IN A	I	A -input
8	+IN A	I	A +input
9	Standby A	-	Control
10	GND B	-	Power terminal
11	MUTE B	-	Control
12	-IN B	I	B -input
13	+IN B	I	B +input
14	Standby B	-	Control
15	VCC B	-	B V+

3. Block diagram



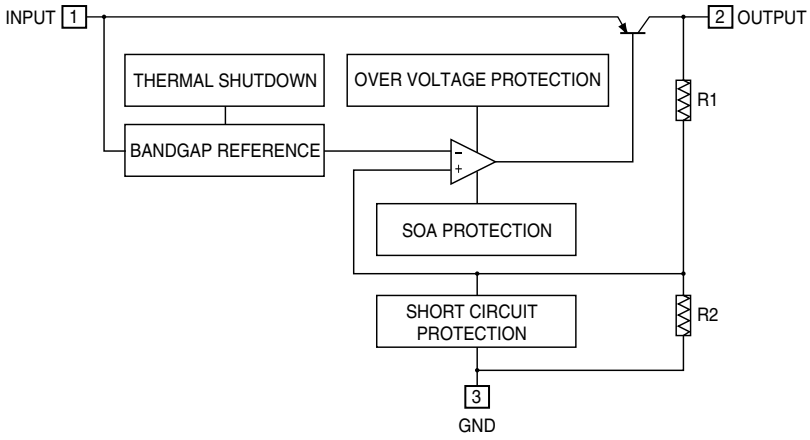
■ NJM7812A (IC302) : Regulator

1. Terminal layout



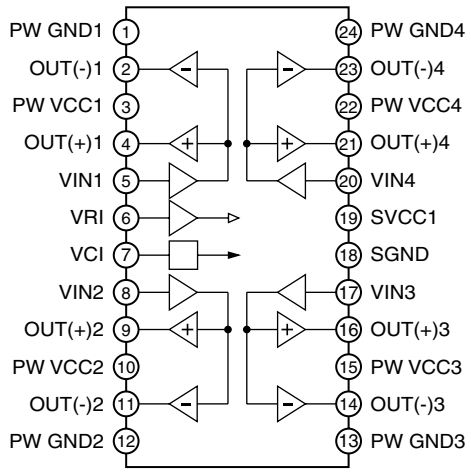
1.INPUT
2.OUTPUT (+12V)
3.GND

2. Block diagram



■ TA2092N (IC703) : Power driver

1.Terminal Layout & Block Diagram

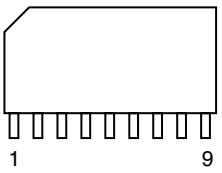


2. Pin function

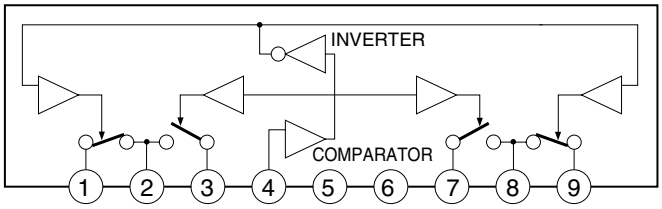
Pin No.	Symbol	I/O	Function
1	PW GND1	-	Power GND
2	OUT(-)1	O	Inverted output for CH1
3	PW VCC1	-	Supply terminal of output stage for CH1
4	OUT(+)1	O	Non-inverted output for CH1
5	VIN1	I	Input for CH1
6	VRI	I	Input reference voltage
7	VCI	O	Output reference voltage
8	VIN2	I	Input for CH2
9	OUT(+)2	O	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

■ UPC1330 (IC201) : REC/PB audio head switch

1. Terminal layout



2. Block diagram

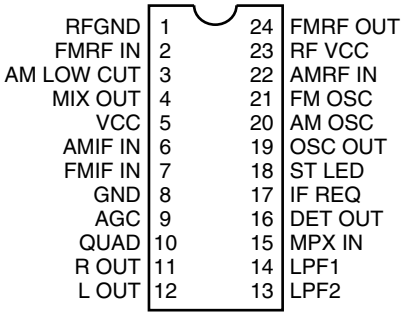


3. Pin function

Pin No.	Symbol	I/O	Function
1	SWR1	-	Record SW (Left channel)
2	GND	-	GND
3	SWP1	-	Play SW (Left channel)
4	CONT	-	Record/play control pin
5	GND	-	GND
6	VCC	-	Power supply
7	SWP2	-	Play SW (Right channel)
8	GND	-	GND
9	SWR2	-	Record SW (Right channel)

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

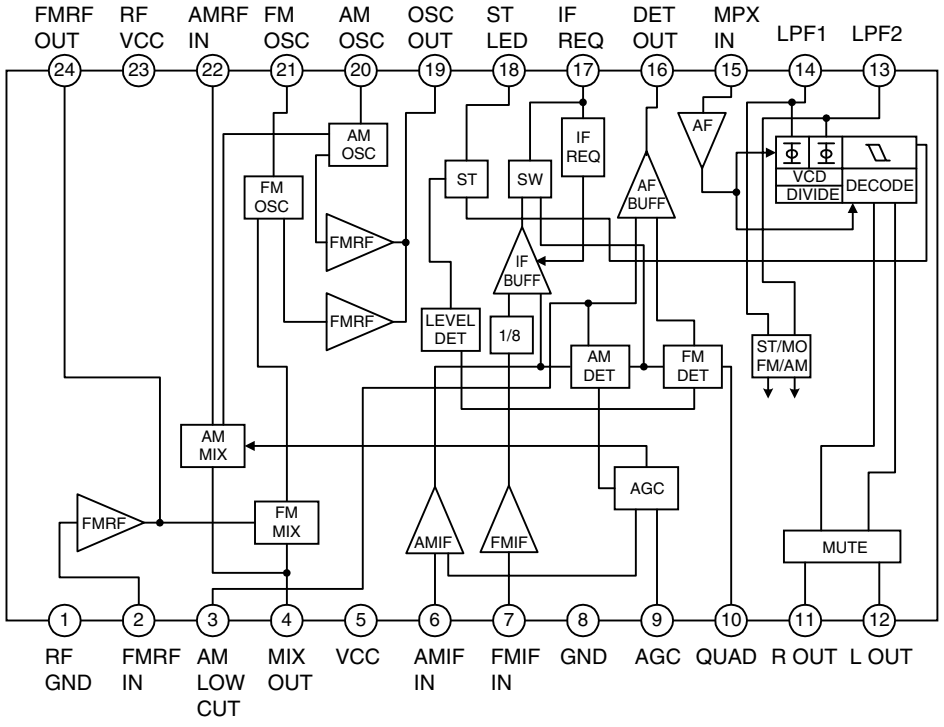
1. Terminal layout



2. Pin function

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

3. Block diagram

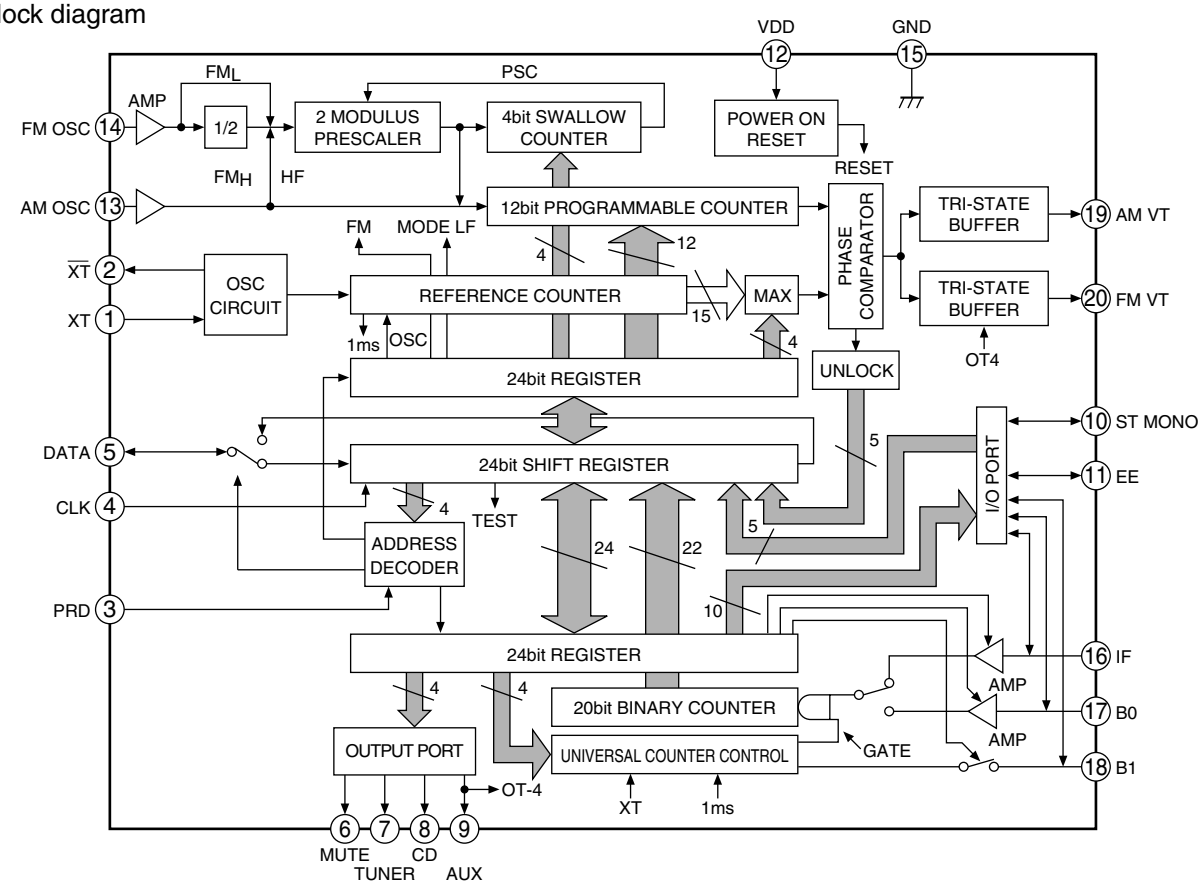


■ TC9257F (IC102) : PLL frequency synthesizer

1. Terminal layout

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

2. Block diagram

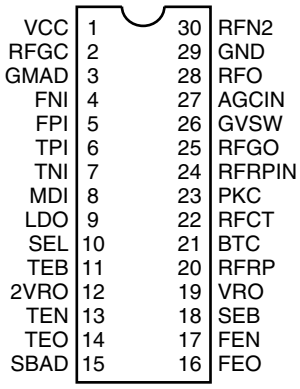


3. Pin function

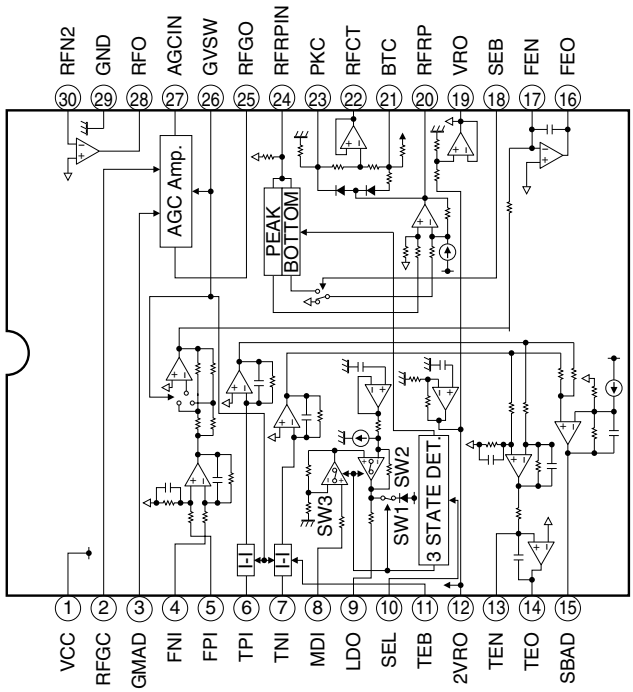
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	XT	I	Crystal oscillator pins	11	EE	I/O	General-purpose I/O port
2	$\overline{XT}$	O	Crystal oscillator pins	12	VDD	-	Power supply pin
3	PRD	I	Period signal input	13	AM OSC	I	Programmable counter input
4	CLK	I	Clock signal input	14	FM OSC	I	Programmable counter input
5	DATA	I/O	Serial data input/output	15	GND	-	Ground pin
6	MUTE	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

■TA2153FN (IC704) : RF amplifier for digital servo

1. Terminal layout



2. Block diagram



3. Pin function

TA2153FN (1/2)

Pin No.	Symbol	I/O	Function
1	VCC	-	Power supply input terminal
2	RFGC	I	RF amplitude adjustment control signal input terminal. Controlled by 3-PWM signals. (PWM carrier = 88.2kHz)
3	GMAD	I	Open loop gain adjustment terminal for AGC amplifier
4	FNI	I	Main beam I-V amplifier input terminal
5	FPI	I	Main beam I-V amplifier input terminal
6	TPI	I	Sub beam I-V amplifier input terminal
7	TNI	I	Sub beam I-V amplifier input terminal
8	MDI	I	Monitor photo diode amplifier input terminal
9	LDO	O	Laser diode amplifier input terminal
10	SEL	I	Laser diode control signal input terminal and APC circuit ON/OFF control signal terminal
11	TEB	I	Tracking error balance adjustment signal input terminal. Controlled by 3-PWM signals. (PWM carrier = 88.2kHz)
12	2VRO	O	Reference voltage (2VRO) output terminal 2RVO = 4.2V when Vcc = 5V
13	TEN	I	TE amplifier negative input terminal
14	TEO	O	TE error signal output terminal
15	SBAD	O	Sub beam adder signal output terminal
16	FEO	O	Focus error signal output terminal
17	FEN	I	FE amplifier negative input terminal

Pin 10 (SEL) detail:

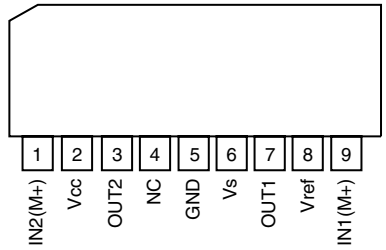
SEL level	APC circuit	LDO	Detect frequency
GND	OFF	Connected to Vcc through	Low
		resistor (1kohm)	
Hiz	ON	Control signal output	Low
Vcc	ON	Control signal output	High

TA2153FN (2/2)

Pin No.	Symbol	I/O	Function
18	SEB	I	RFRP output circuit switching terminal SEL level / Bottom detection / Peak detection GND / ON / ON Vcc / OFF / ON
19	VRO	O	Reference signal (VRO) output terminal
20	RFRP	O	Track count signal output terminal
21	BTC	I	Time constant adjustment terminal for bottom detection
22	RFCT	O	RFRP signal center level output terminal
23	PKC	I	Time constant adjustment terminal for peak detection
24	RFRPIN	I	Input terminal for track count signal output amplifier
25	RFGO	O	Output terminal for RF signal amplitude adjustment amplifier
26	GVSW	I	Amplifier (AGC, FE, TE) gain switching terminal GVSW / Mode GND / CD-RW Hiz / Normal Vcc / Normal
27	AGCIN	I	Input terminal for RF signal amplitude adjustment amplifier
28	RFO	O	Output terminal RF signal amplifier
29	GND	-	Ground terminal
30	RFN2	I	Input terminal for RF signal amplifier

■TA7291S (IC702) : Bridge driver

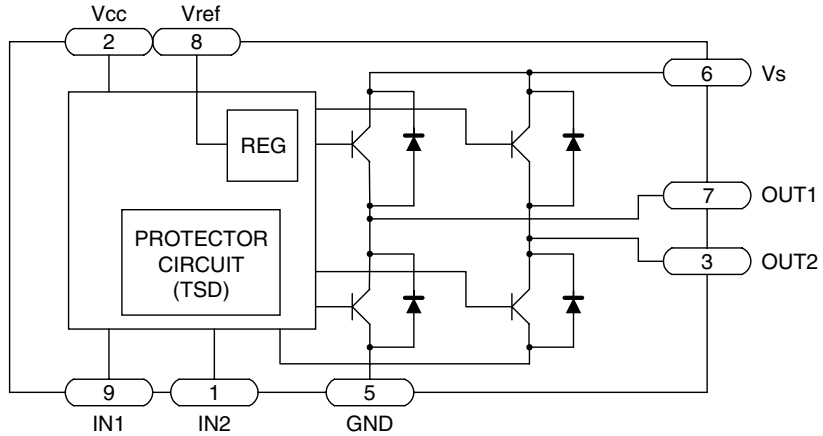
1.Terminal Layout



2.Pin function

Pin No.	Symbol	I/O	Function
1	IN2(M-)	I	Input terminal
2	Vcc	-	Supply voltage terminal for logic
3	OUT2	O	Output terminal
4	NC	-	Not connect
5	GND	-	Ground terminal
6	Vs	-	Supply voltage terminal for motor driver
7	OUT1	O	Output terminal
8	Vref	-	Supply voltage terminal for control
9	IN1(M+)	I	Input terminal

3.Block diagram

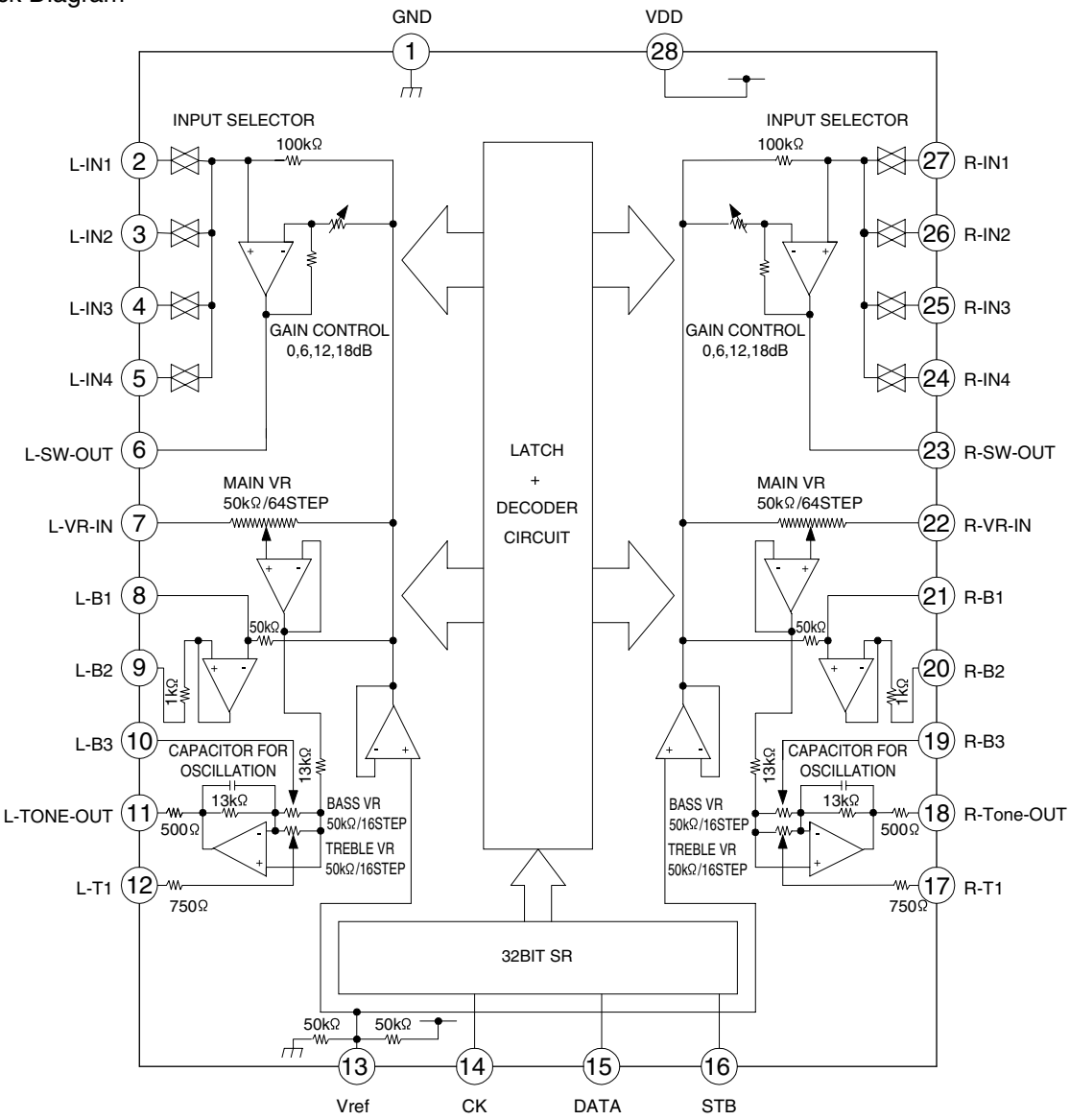


■TC9422F (IC301) : System electronic volume

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

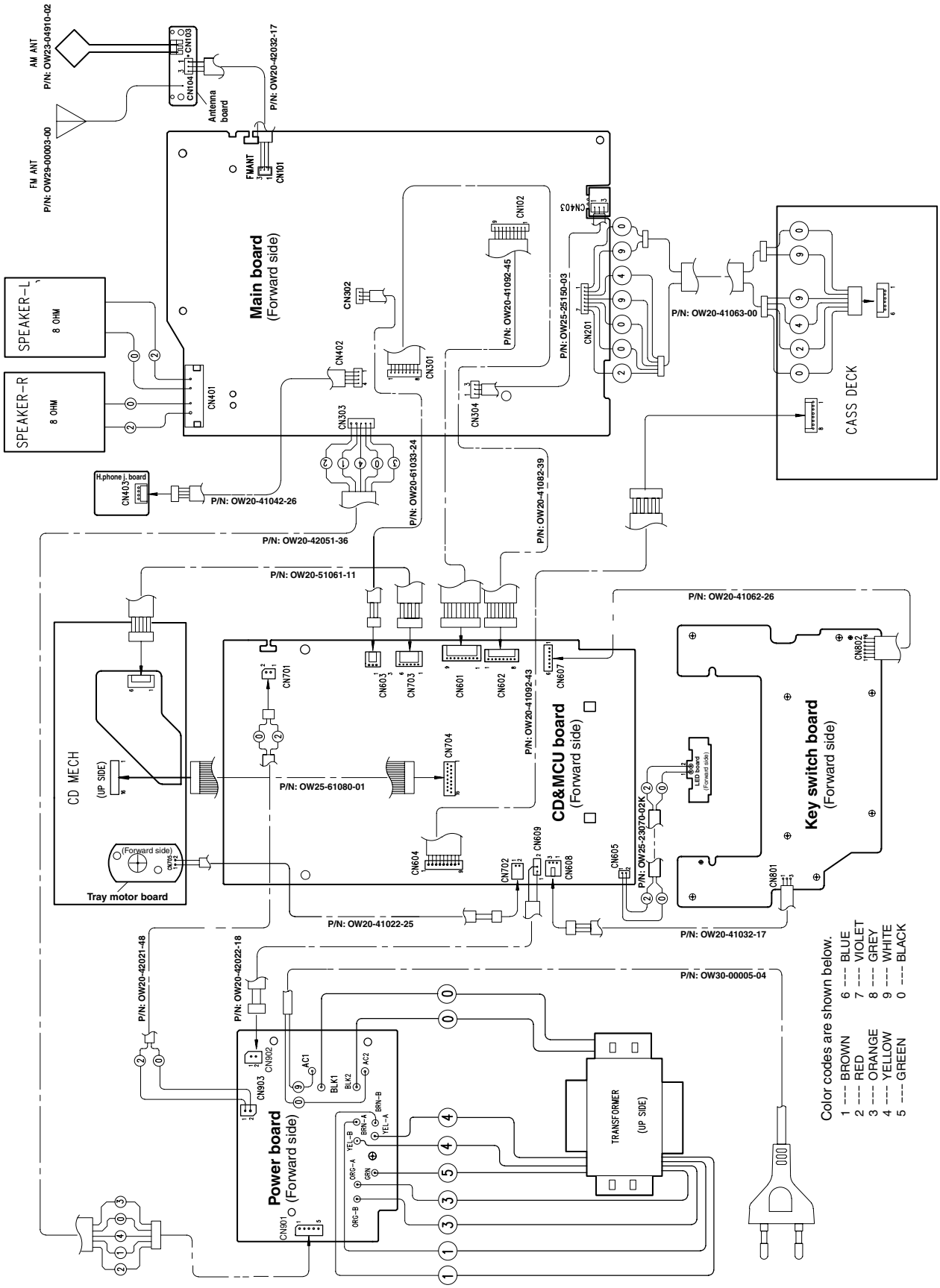


3.Pin Function

TC9422F

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

Wiring connection



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No.21170

200301

JVC

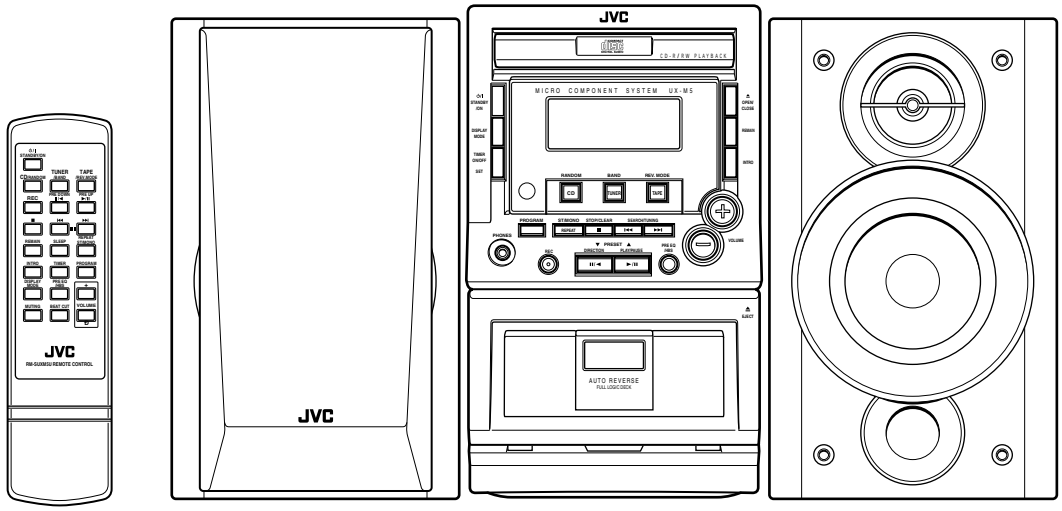
SCHEMATIC DIAGRAMS

MICRO COMPONENT SYSTEM

UX-M5

CD-ROM No.SML200301

Area suffix	
UP	Korea



SP-UXM5 CA-UXM5 SP-UXM5

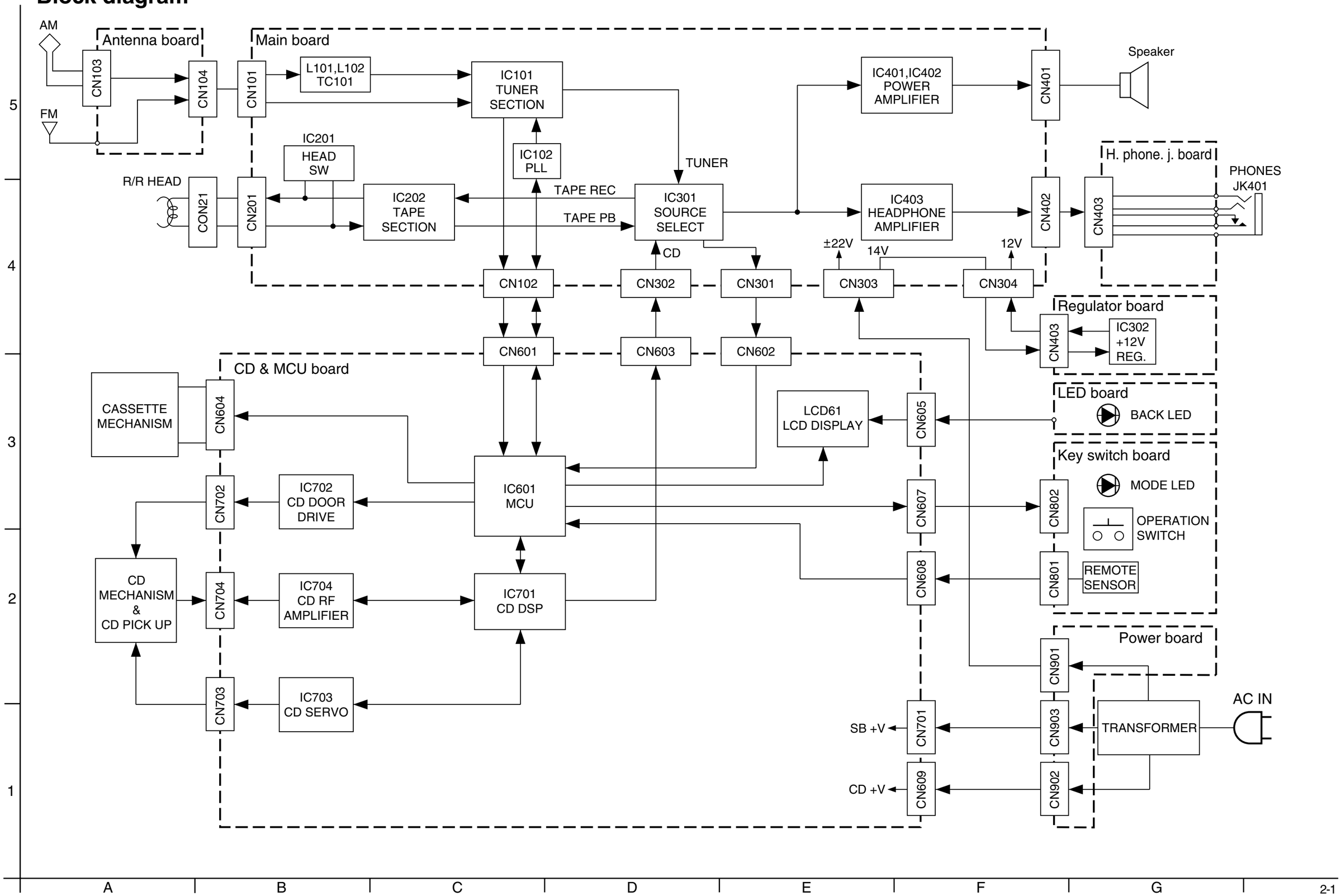
COMPACT disc DIGITAL AUDIO

Contents

No.21170SCH
Jan. 2003

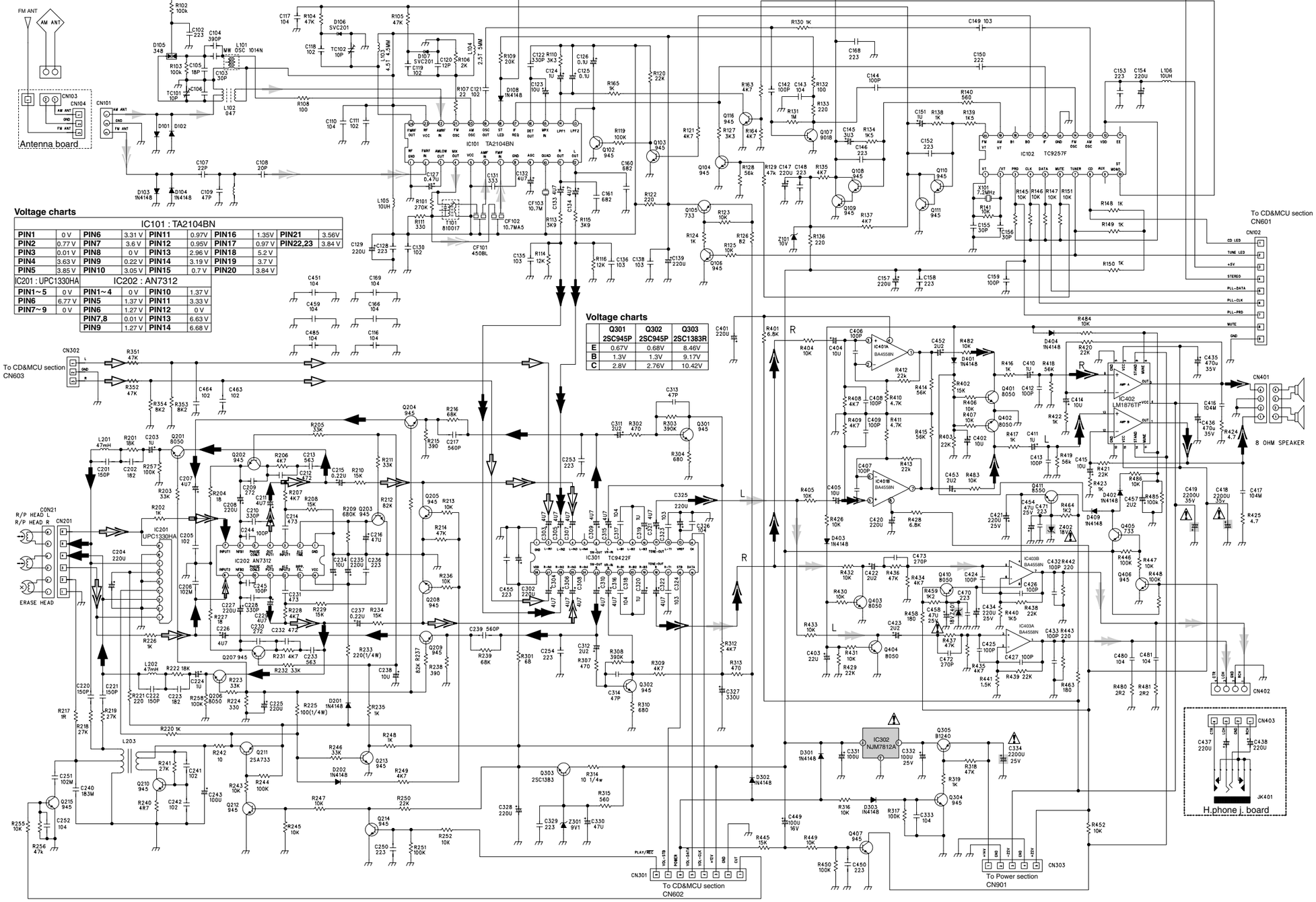
In regard with component parts appearing on the silk-screen printed side (parts side) of the PWB diagrams, the parts that are printed over with black such as the resistor (▬), diode (▬) and ICP (⬤) or identified by the "⚠" mark nearby are critical for safety.
(This regulation does not correspond to J and C version.)

Block diagram



Standard schematic diagrams

■ Main section



Voltage charts

IC101 : TA2104BN									
PIN1	0 V	PIN6	3.31 V	PIN11	0.97V	PIN16	1.35V	PIN21	3.56V
PIN2	0.77 V	PIN7	3.6 V	PIN12	0.95V	PIN17	0.97 V	PIN22,23	3.84 V
PIN3	0.01 V	PIN8	0 V	PIN13	2.96 V	PIN18	5.2 V		
PIN4	3.63 V	PIN9	0.22 V	PIN14	3.19 V	PIN19	3.7 V		
PIN5	3.85 V	PIN10	3.05 V	PIN15	0.7 V	PIN20	3.84 V		
IC201 : UPC1330HA		IC202 : AN7312							
PIN1~5	0 V	PIN1~4	0 V	PIN10	1.37 V				
PIN6	6.77 V	PIN5	1.37 V	PIN11	3.33 V				
PIN7~9	0 V	PIN6	1.27 V	PIN12	0 V				
		PIN7,8	0.01 V	PIN13	6.63 V				
		PIN9	1.27 V	PIN14	6.68 V				

Voltage charts

	Q301 2SC945P	Q302 2SC945P	Q303 2SC1383R
E	0.67V	0.68V	8.46V
B	1.3V	1.3V	9.17V
C	2.8V	2.76V	10.42V

Voltage charts

	Q102 2SC945P	Q103 2SC945P	Q104 2SC945P	Q105 2SA733P
E	0V	0V	0V	6.75V
B	0V	0.7V	0.03V	6.71V
C	2.95V	0V	0.92V	5.95V
	Q106 2SC945P	Q107 9018G	Q108 2SC945P	Q109 2SC945P
E	0.7V	0V	0.64V	0V
B	0.05V	0.72V	1.13V	0.64V
C	0V	6.53V	0V	0V
	Q110 2SC945P	Q111 2SC945P	Q116 2SC945P	
E	0.62V	0V	0V	
B	1.1V	0.62V	0.62V	
C	5.69V	5.69V	5.69V	

Voltage charts

IC102 : TC9257F			
PIN1	2.25 V	PIN12	4.68 V
PIN2	2.27 V	PIN13	0 V
PIN3	4.67 V	PIN14	2.21 V
PIN4	4.68 V	PIN15	0 V
PIN5	0.45 V	PIN16	2.21 V
PIN6	0.05 V	PIN17	4.55 V
PIN7	4.29 V	PIN18	0 V
PIN8	0.38 V	PIN19	1.11 V
PIN9~11	0.02 V	PIN20	0 V

IC401 : BA4558N		IC403 : BA4558N	
PIN1 ~ 3	0 V	PIN1 ~ 3	0 V
PIN4	-7.58 V	PIN4	-17.33 V
PIN5 ~ 7	0 V	PIN5 ~ 7	0 V
PIN8	7.48 V	PIN8	-17.07 V

IC402 : LA1876TF			
PIN1	0 V	PIN4	-25.4 V
PIN2	25.4 V	PIN5~14	0 V
PIN3	0 V	PIN15	25.4V

Voltage charts

IC301 : TC9422F			
PIN1,2	0 V	PIN14,15	0.06 V
PIN3	3.87 V	PIN16	0.01 V
PIN4	0.03 V	PIN17~20	3.9 V
PIN5	0.31 V	PIN21	3.89 V
PIN6	3.9 V	PIN22	3.88 V
PIN7	3.88 V	PIN23	3.9 V
PIN8	3.89 V	PIN24	0.2 V
PIN9	3.90 V	PIN25	0 V
PIN10	3.89 V	PIN26	3.88 V
PIN11	3.90 V	PIN27	0.59 V
PIN12	3.89 V	PIN28	7.80 V
PIN13	3.90 V		
IC302 : NJM7812A			
PIN1	17.43 V		
PIN2	0 V		
PIN3	12.13 V		

Voltage charts

	Q304 2SC945P	Q305 2SB1240Q	Q401 8050D
E	0V	16.78V	0V
B	0.69V	16V	0V
C	0.12V	16.72V	0.01V
	Q402 8050D	Q403 8050D	Q404 8050D
E	0V	0V	0V
B	0V	0V	0V
C	0V	0.97V	0.93V
	Q405 2SA733P	Q406 2SC945P	Q407 2SC945P
E	12.12V	0V	0V
B	12V	0V	0.67V
C	-0.27V	11.98V	0V
	Q410 8050D	Q411 8050D	
E	17.04V	-17.2V	
B	17.63V	-17.8V	
C	23.8V	-23.8V	

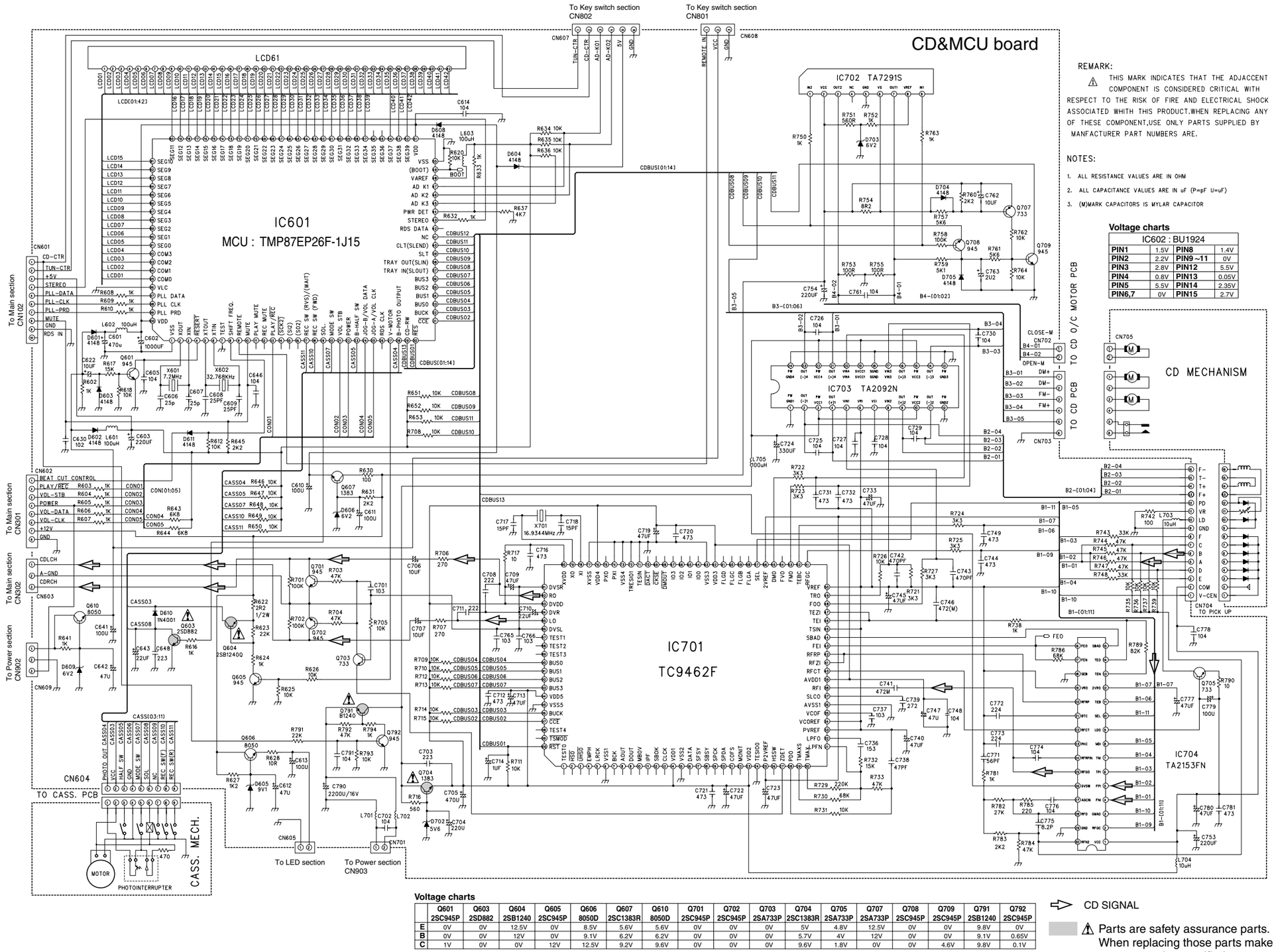
Voltage charts

	Q201 8050D	Q202 2SC945P	Q203 2SC945P	Q204 2SC945P	Q205 2SC945P	Q206 8050D	Q207 2SC945P	Q208 2SC945P	Q209 2SC945P	Q210 2SC945P	Q211 2SA733P	Q212 2SC945P	Q213 2SC945P	Q214 2SC945P	Q215 2SC945P
E	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	6.75V	0V	0V	0V	0V
B	0V	0.65V	0.64V	0V	0V	0V	0.65V	0V	0V	0V	6.71V	0V	0V	0.66V	0V
C	0V	0.01V	0V	0.1V	0.49V	0V	0.01V	0.52V	0.04V	0V	5.95V	8.29V	7.8V	0.01V	0.01V

AM SIGNAL
FM SIGNAL
RADIO SIGNAL
TAPE PB SIGNAL
TAPE REC SIGNAL
CD SIGNAL
MAIN SIGNAL
HEAD PHONE SIGNAL

⚠ Parts are safety assurance parts. When replacing those parts make sure to use the specified one.

■ CD & MCU section



REMARK:

⚠ THIS MARK INDICATES THAT THE ADJACCENT COMPONENT IS CONSIDERED CRITICAL WITH RESPECT TO THE RISK OF FIRE AND ELECTRICAL SHOCK ASSOCIATED WHITH THIS PRODUCT.WHEN REPLACING ANY OF THESE COMPONENT,USE ONLY PARTS SUPPLIED BY MANFACTURER PART NUMBERS ARE.

NOTES:

1. ALL RESISTANCE VALUES ARE IN OHM
2. ALL CAPACITANCE VALUES ARE IN uF (P=pF U=uF)
3. (M)MARK CAPACITORS IS MYLAR CAPACITOR

Voltage charts

IC602 : BU1924

PIN1	1.5V	PIN8	1.4V
PIN2	2.2V	PIN9~11	0V
PIN3	2.8V	PIN12	5.5V
PIN4	0.8V	PIN13	0.05V
PIN5	5.5V	PIN14	2.35V
PIN6,7	0V	PIN15	2.7V

Voltage charts

IC601 : TMP87PE26F-1J15

PIN1	0V	PIN30	4.93V
PIN2	2.38V	PIN31	4.02V
PIN3	2.03V	PIN32	4.57V
PIN4	0.02V	PIN33	4.7V
PIN5	2.22V	PIN34	4.65V
PIN6	1.64V	PIN35	4.53V
PIN7	0V	PIN36	0V
PIN8	0.04V	PIN37,38	0.04V
PIN9	5.47V	PIN39,40	4.74V
PIN10	0.06V	PIN41,42	0.01V
PIN11	4.78V	PIN43	0V
PIN12	4.78V	PIN44	3.98V
PIN13	4.75V	PIN45~48	4.74V
PIN14~16	0V	PIN49,50	0V
PIN17,18	4.74V	PIN51	4.78V
PIN19	0.05V	PIN52	2.38V
PIN20	4.74V	PIN53	0.01V
PIN21	0.01V	PIN54~58	2.38V
PIN22	4.65V	PIN59	2.37V
PIN23	4.74V	PIN60~95	2.38V
PIN24,25	0.06V	PIN96	0V
PIN26,27	0.01V	PIN97	0.04V
PIN28	4.74V	PIN98,99	4.72V
PIN29	4.77V	PIN100	4.76V

IC701 : TC9462F

PIN1~3	4.9V	PIN53	2V
PIN4	0V	PIN54	2.1V
PIN5	1.2V	PIN55	2.3V
PIN6	0V	PIN56	4.2V
PIN7	2.8V	PIN57	2.4V
PIN8~11	0V	PIN58	0V
PIN12	3.5V	PIN59	4.9V
PIN13	0.6V	PIN60	0V
PIN14	4.9V	PIN61	4.9V
PIN15,16	0V	PIN62	4.93V
PIN17	2.2V	PIN63	0V
PIN18	0V	PIN64	0.95V
PIN19	2.5V	PIN65~67	0.96V
PIN20	0.5V	PIN68~70	4.9V
PIN21	1.6V	PIN71~74	0V
PIN22	0V	PIN75,76	4.93V
PIN23	4.9V	PIN77	0V
PIN24	0V	PIN78	2V
PIN25	4.2V	PIN79	2.48V
PIN26,27	2.1V	PIN80	4.89V
PIN28	0V	PIN81	0V
PIN29	2.1V	PIN82	2.7V
PIN30	2.0V	PIN83	5V
PIN31	2.1V	PIN84	2.7V
PIN32	2V	PIN85	2.5V
PIN33,34	2.1V	PIN86	0V
PIN35	1.5V	PIN87~89	4.15V
PIN36	0V	PIN90,91	4.6V
PIN37,38	2.1V	PIN92	4.5V
PIN39	4.9V	PIN93	4.6V
PIN40~42	1.9V	PIN94	5V
PIN43	2V	PIN95	0V
PIN44	1.9V	PIN96	4.25V
PIN45~50	2.1V	PIN97	4.1V
PIN51	3.2V	PIN98,99	4.15V
PIN52	2.3V	PIN100	4.9V

IC702 : TA7291S

PIN1	0V	PIN7	0V
PIN2	12.1V	PIN8	6.1V
PIN3~5	0V	PIN9	0V
PIN6	12.1V		

IC703 : TA2092N

PIN1	0V	PIN13	0V
PIN2	3V	PIN14	3.7V
PIN3	8.3V	PIN15	8.3V
PIN4	4.6V	PIN16	3.9V
PIN5	2.4V	PIN17	2.1V
PIN6	8V	PIN18	3.9V
PIN7	0V	PIN19	2.1V
PIN8	2V	PIN20	2.1V
PIN9	3.8V	PIN21	3.8V
PIN10	8.3V	PIN22	8V
PIN11	3.8V	PIN23	8V
PIN12	0V	PIN24	0V

IC704 : TA2153FN

PIN1	4.8V	PIN18	0V
PIN2	3.2V	PIN19	2.1V
PIN3~7	2.1V	PIN20	1.8V
PIN8	0.1V	PIN21	2.6V
PIN9	3.9V	PIN22	1.8V
PIN10	2.4V	PIN23	1.2V
PIN11	2.3V	PIN24	2.1V
PIN12	4.2V	PIN25	1.9V
PIN13	2.1V	PIN26	4.7V
PIN14	2.1V	PIN27	2.1V
PIN15	1.9V	PIN28	2.6V
PIN16	2V	PIN29	2.5V
PIN17	2.1V	PIN30	2.1V

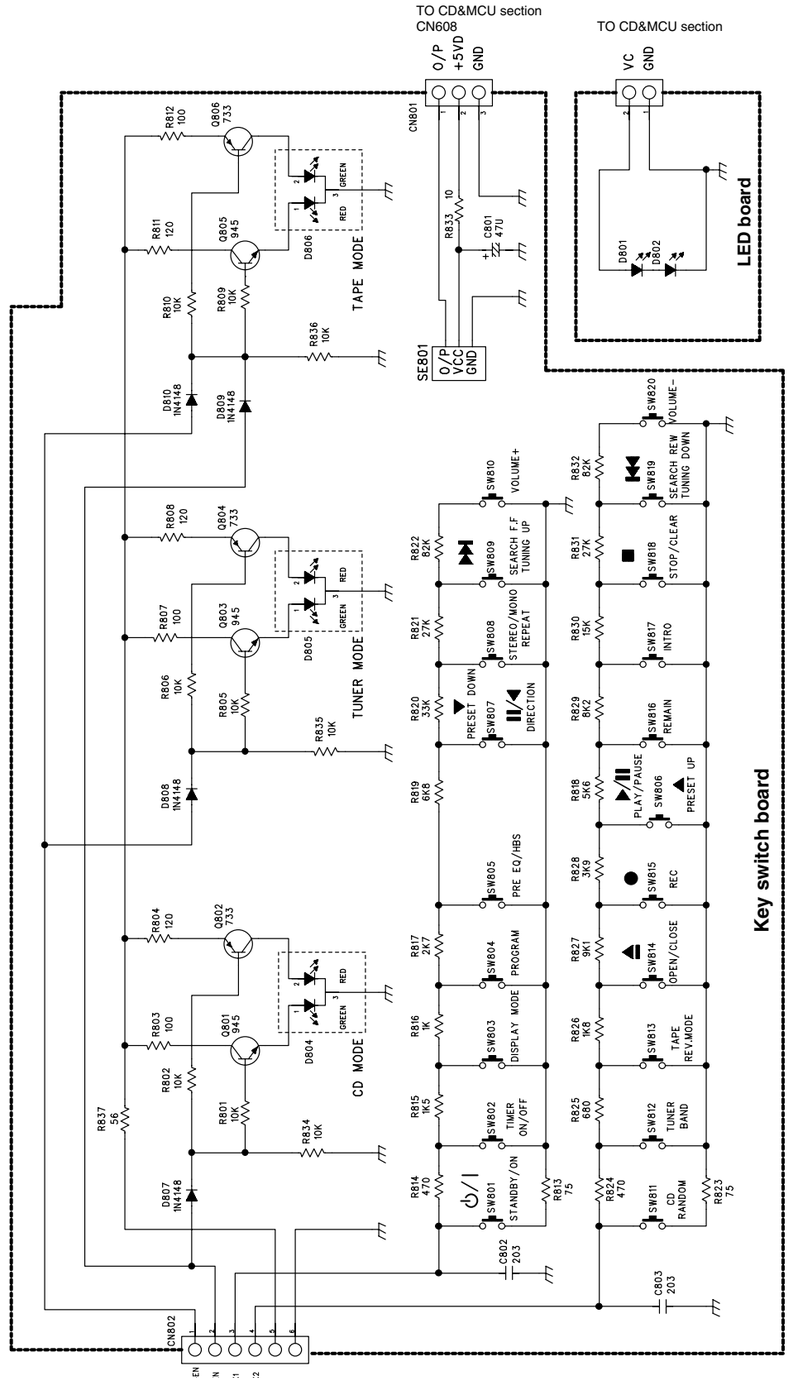
Voltage charts

	Q601 2SC945P	Q603 2SD882	Q604 2SB1240	Q605 2SC945P	Q606 8050D	Q607 2SC1383R	Q610 8050D	Q701 2SC945P	Q702 2SC945P	Q703 2SA733P	Q704 2SC1383R	Q705 2SA733P	Q707 2SA733P	Q708 2SC945P	Q709 2SC945P	Q791 2SB1240	Q792 2SC945P
E	0V	0V	12.5V	0V	8.5V	5.6V	5.6V	0V	0V	0V	5V	4.8V	12.5V	0V	0V	9.8V	0V
B	0V	0V	12V	0V	9.1V	6.2V	6.2V	0V	0V	0V	5.7V	4V	12V	0V	0V	9.1V	0.65V
C	1V	0V	0V	12V	12.5V	9.2V	9.6V	0V	0V	0V	9.6V	1.8V	0V	0V	4.6V	9.8V	0.1V

⇨ CD SIGNAL

⚠ Parts are safety assurance parts. When replacing those parts make sure to use the specified one.

■ Key switch & LED sections

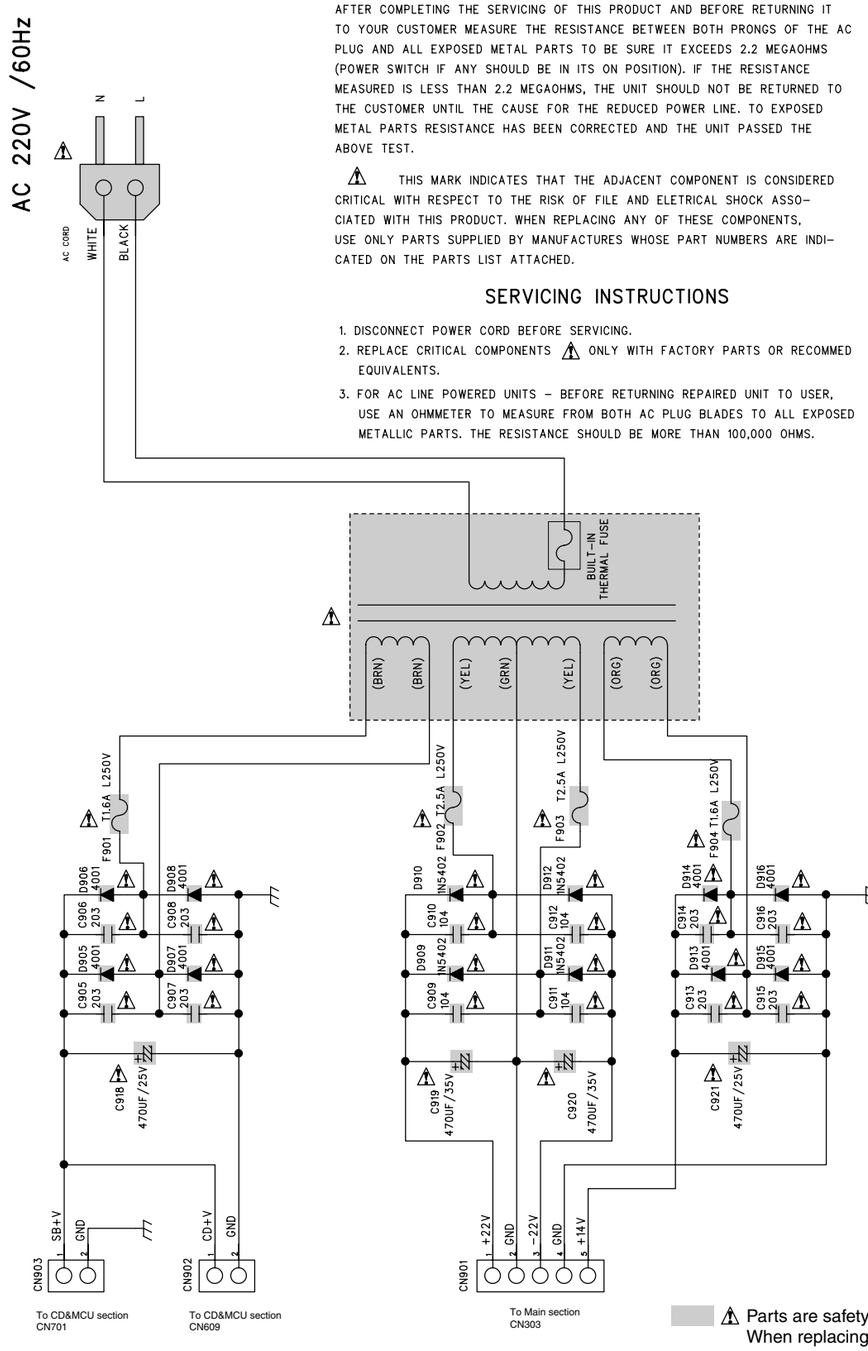


TO CD&MCU section
CN607

Voltage charts

	Q801 2SC945P	Q802 2SA733P	Q803 2SC945P	Q804 2SA733P	Q805 2SC945P	Q806 2SA733P
E	2V	3V	0V	1.9V	1.8V	3V
B	2.7V	3.7V	0.5V	1.25V	2.5V	3.65V
C	2.1V	0V	3V	1.85V	1.9V	0V

■ Power section



WARNING

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.

⚠ THIS MARK INDICATES THAT THE ADJACENT COMPONENT IS CONSIDERED CRITICAL WITH RESPECT TO THE RISK OF FILE AND ELETRICAL SHOCK ASSOCIATED WITH THIS PRODUCT. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY PARTS SUPPLIED BY MANUFACTURES WHOSE PART NUMBERS ARE INDICATED ON THE PARTS LIST ATTACHED.

SERVICING INSTRUCTIONS

1. DISCONNECT POWER CORD BEFORE SERVICING.
2. REPLACE CRITICAL COMPONENTS ⚠ ONLY WITH FACTORY PARTS OR RECOMMED 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.

To CD&MCU section
CN701

To CD&MCU section
CN609

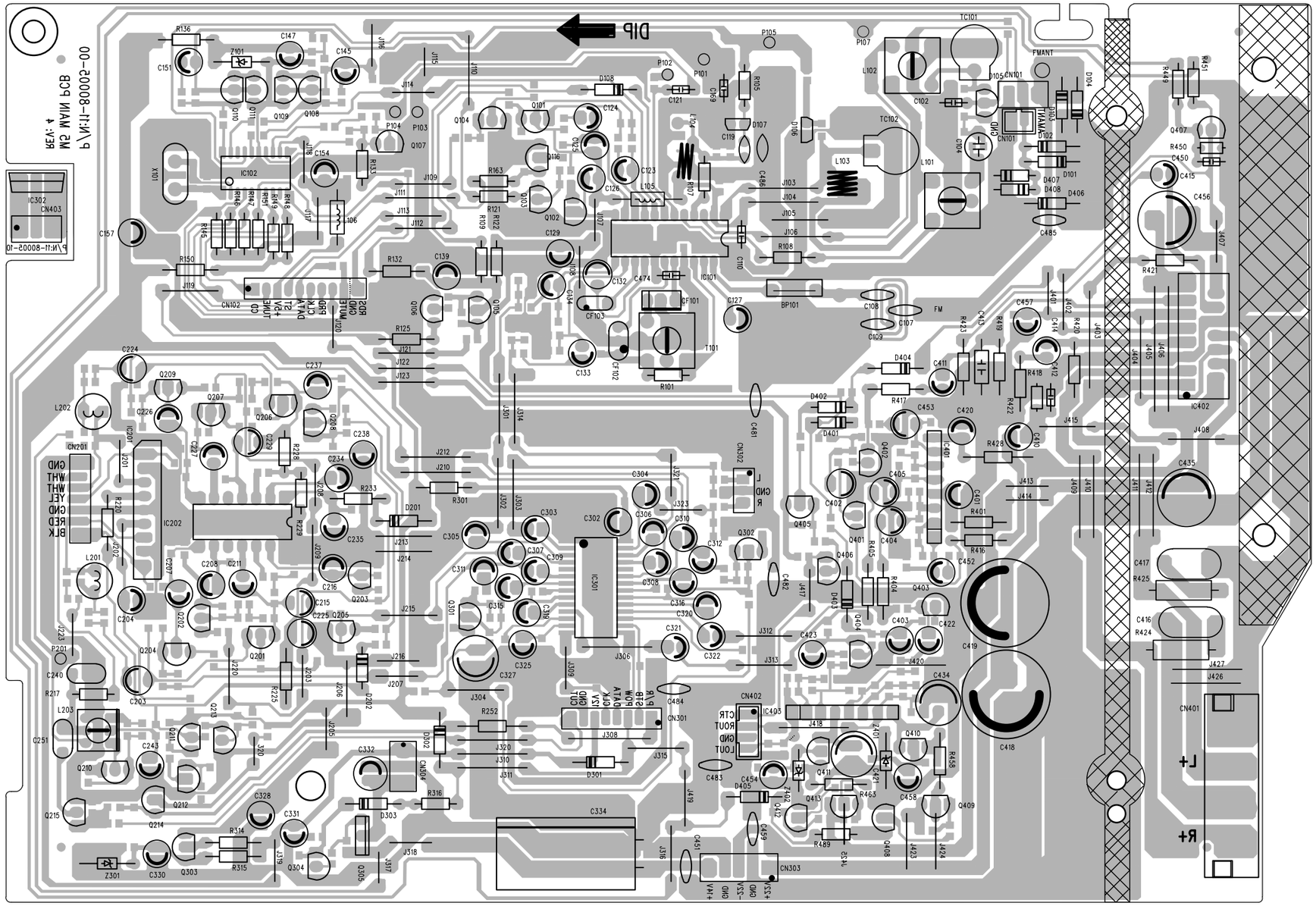
To Main section
CN303

⚠ Parts are safety assurance parts. When replacing those parts make sure to use the specified one.

Printed circuit boards

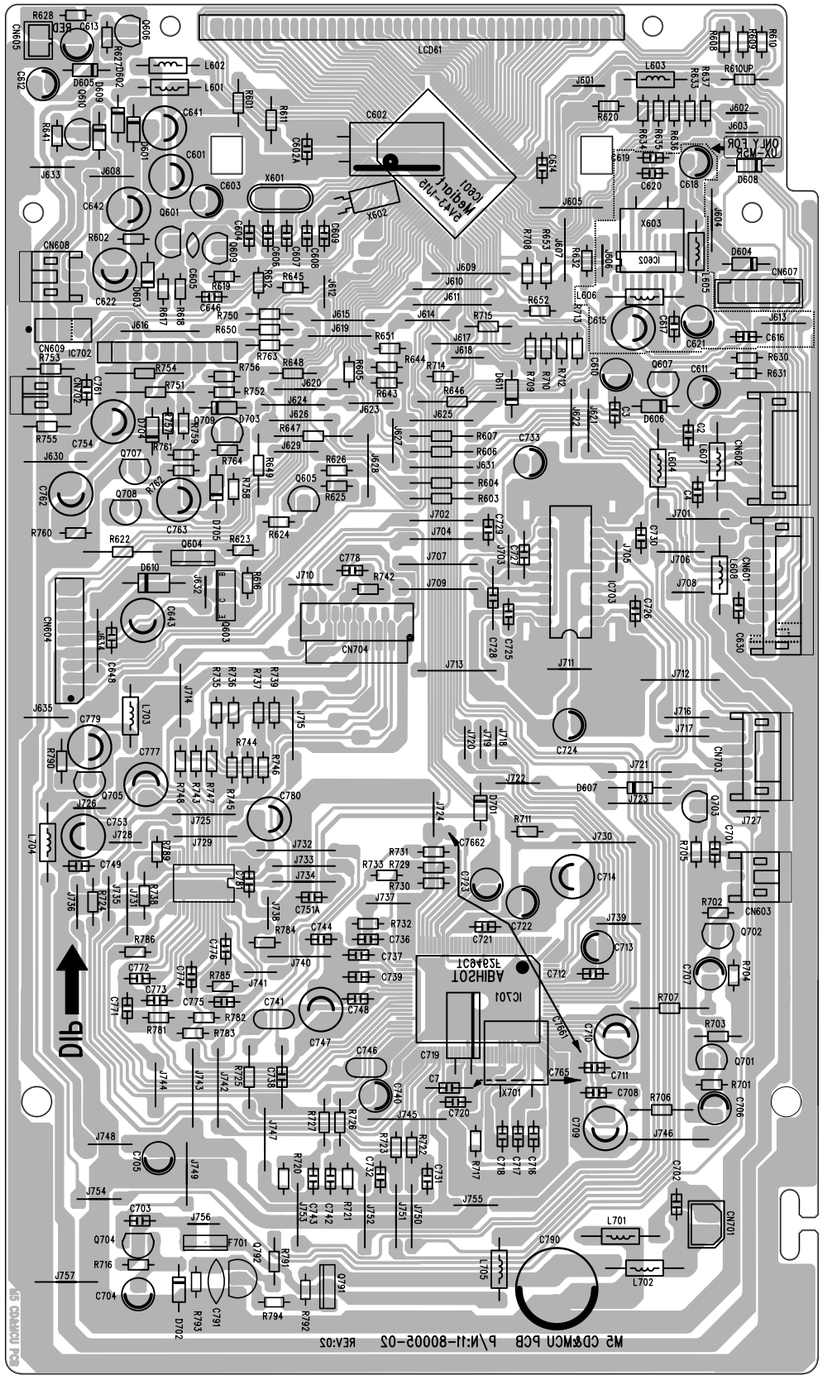
■ Main board

Reverse side



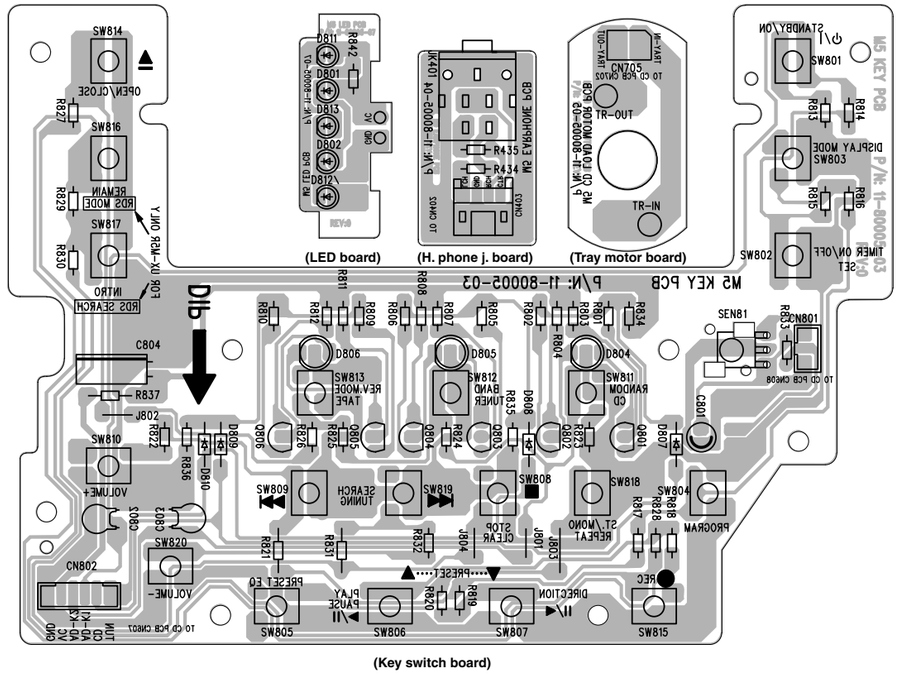
■ CD & MCU board

Reverse side



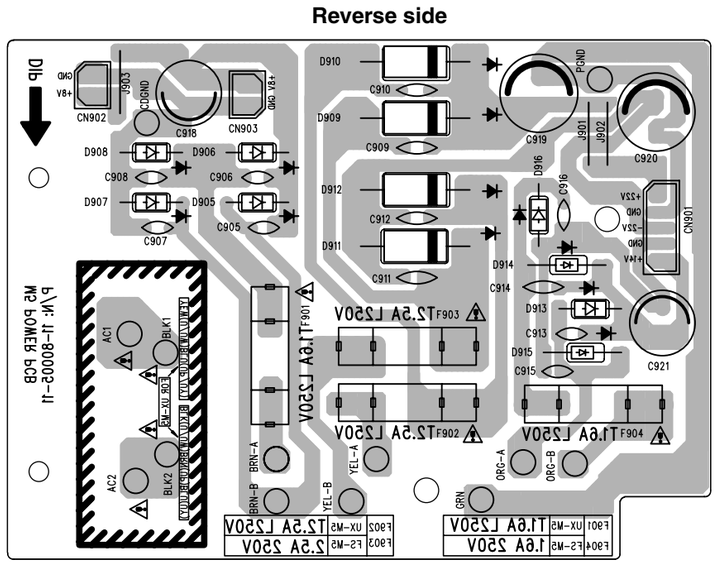
■ Key switch/LED/H. phone j. /Tray motor/Antenna boards

Reverse side



■ Power board

Reverse side



< MEMO >

JVC

VICTOR COMPANY OF JAPAN, LIMITED
AUDIO & COMMUNICATION BUSINESS DIVISION
PERSONAL & MOBILE NETWORK BUSINESS UNIT. 10-1,1Chome,Ohwatari-machi,maebashi-city,371-8543,Japan

No.21170SCH

200301

PARTS LIST

[UX-M5]

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

Area suffix

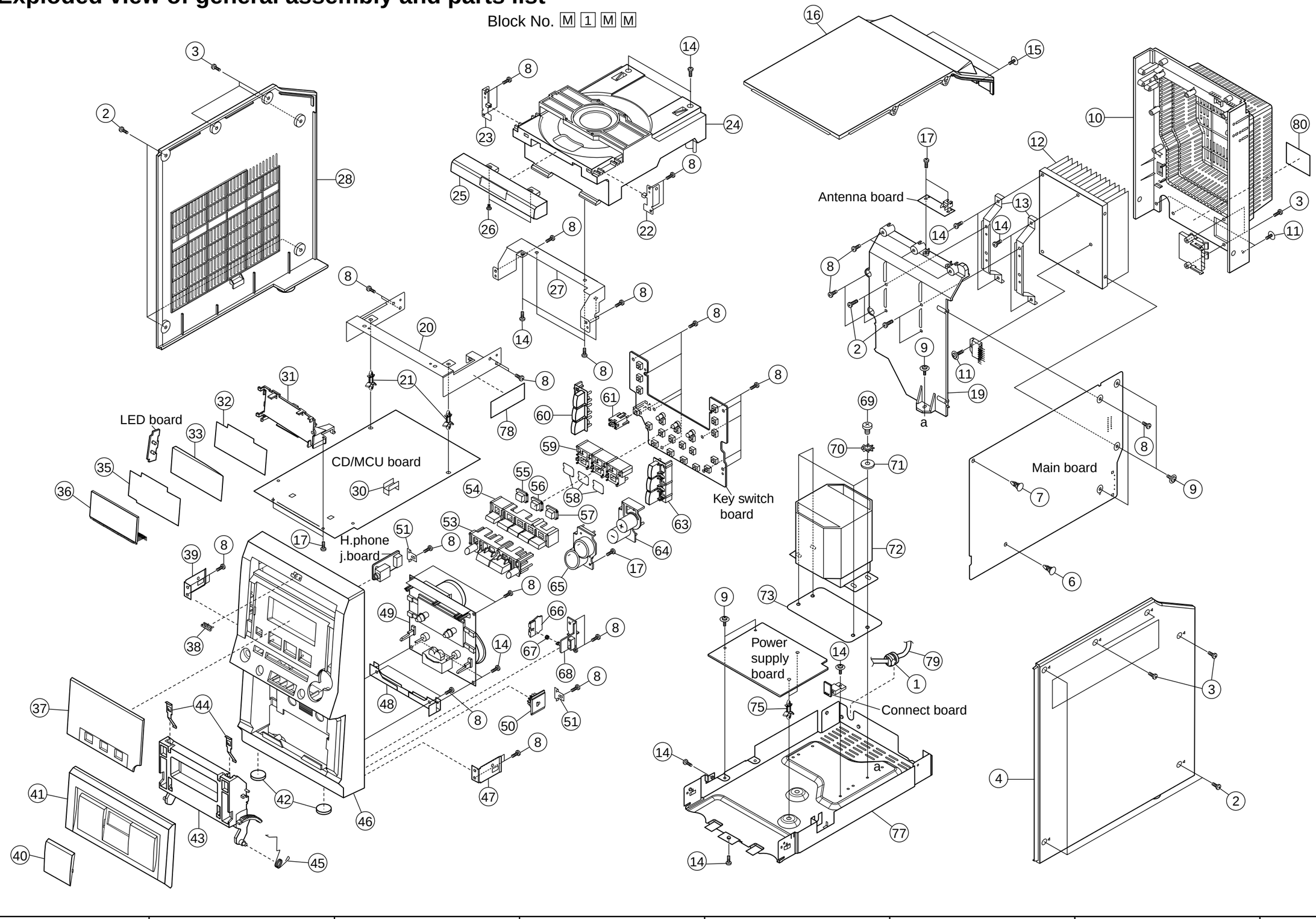
UP ---------- Korea

- Contents -

< MEMO >

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	
	2	OW40-23010-52	SCREW	10	M3X10 BH/MS	
	3	OW40-13012-01	SCREW	8	M3X12 BH/ST	
	4	OW61-30000-02	RIGHT SIDE PLATE	1		
	6	OW84-00006-01	PCB LOCK SUPPORT	1		
	7	OW84-30000-02	PCB LOCK SUPPORT	1	RS-3	
	8	OW40-13008-91	SCREW	41	M3X8 BH /ST	
	9	OW40-03006-53	SCREW	5	M3X6 WH/MS	
	10	OW61-50000-02	REAR CABINET	1		
	11	OW40-03008-53	SCREW	4	M3X8 WH/MS	
	12	OW39-50000-01	HEAT SINK	1		
	13	OW39-50000-02	HEAT SINK	2	BRACKET	
	14	OW40-03006-81	SCREW	13	M3X6 BH/MS	
	15	OW40-13012-03	SCREW	2	M3X12 WH/ST	
	16	OW60-30000-01	TOP CABINET	1		
	17	OW40-12608-21	SCREW	5	2.6X8 BH/ST	
	19	OW48-50000-01	MAIN PCB BKT	1		
	20	OW39-30000-03	CD REAR MOUNT BKT	1		
	21	OW84-30000-05	PCB LOCK SUPPORT	2	CS-0813	
	22	OW39-30000-01	CD F.MOUNT BKT	1	RIGHT	
	23	OW39-30000-00	CD F.MOUNT BKT	1	LEFT	
	24	OW98-00110-03	CD MACHA	1	TCP11TK4+TD001	
	25	OW66-30000-04	CD DOOR	1		
	26	OW40-12605-11	SCREW	2	M2.6X5 BH/ST	
	27	OW39-30000-02	CD F.MOUNT BKT	1		
	28	OW61-30000-01	SIDE PLATE	1	LEFT	
	30	OW39-00013-00A	HEAT SINK	1	CDT13	
	31	OW48-30000-01	LCD BLACKET	1		
	32	OW68-50000-00	LIGHT GUIDE PAPER	1		
	33	OW43-30000-05	LIGHT GUIDE	1		
	35	OW68-30000-03	LCD FILTER	1		
	36	OW91-80005-00	LCD	1	92194TT-P YEEBO	
	37	OW43-30000-17	DISPLAY LENS	1		
	38	OW55-30000-00	BADGE	1	JVC	
	39	OW39-30000-04	FP MOUNT BKT	1	LEFT SIDE BASE	
	40	OW43-30000-11	CASS DOOR LENS	1		
	41	OW66-30000-01	CASS DOOR COVER	1		
	42	OW81-00155-01	RUBER FOOT	2		
	43	OW66-00155-03	TECHNICAL DOOR	1		
	44	OW39-30000-07	CASS TAPE SPRING	2		
	45	OW36-30000-00	TORSION SPRING	1		
	46	OW60-30000-06	FRONT CABINET	1		
	47	OW39-30000-05	FP MOUNT BKT	1	RIGHT SIDE BASE	
	48	OW39-00055-01	DECK MECHA BKT	1		
	49	OW94-33439-01	CASSETTE MECHA	1	12V/AUTO-REV	
	50	OW63-00155-01	DAMPER GEAR	1		
	51	OW39-00155-13	D.GERA HOLDER	2		
	53	OW53-30000-06	KEY BUTTON	1	RECORD/DIRECTION	

■ Parts list (General assembly)

Block No. M1MM

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	54	OW53-30000-09	KEY BUTTON	1	STOP/PROGRAM	
	55	OW43-30000-14	LENS FUNCTION	1	CD	
	56	OW43-30000-15	LENS FUNCTION	1	TUNER	
	57	OW43-30000-16	LENS FUNCTION	1	TAPE	
	58	OW68-30000-02	F.KEY FILTER	3	FUNCTION	
	59	OW53-30000-04	KEY BUTTON	1	FUNCTION	
	60	OW53-30000-01	KEY BUTTON	1	OPEN/CLOSE	
	61	OW48-30000-02	REMOTE SENSOR BKT	1		
	63	OW53-30000-00	KEY BUTTON	1	STANDBY	
	64	OW53-30000-05	KEY BUTTON	1	VOLUME	
	65	OW48-30000-00	ORNAMENT	1	RING	
	66	OW49-00155-01	LACH CAM	1		
	67	OW36-00155-03A	COMPRESS SPRING	1		
	68	OW49-00155-02	LACH CAM HOLDER	1		
	69	OW40-10408-81	SCREW	4	M4X8 BH	
	70	OW35-20001-01	TOOTH WASHER	4		
	71	OW35-00010-03	METAL WASHER	4		
⚠	72	OW15-80005-03	POWER TRANS	1	EI-76 220V/60HZ	
	73	OW39-00006-02	BRACKET	1	TRANSFORMER	
	75	OW84-30000-04	PCB LOCK SUPPORT	2	CS-0610	
	77	OW39-50000-00	BOTTOM CASE	1		
	78	OW68-05000-07	SPONGE	1		
⚠	79	OW30-00005-04	AC POWER CORD	1	2M W/ SOLDER	
	80	OW87-50000-16	RATING LABEL	1		

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

⚠	Item	Parts number	Parts name	Remarks	Area
	CF101	OW09-50450-00J	CERAMIC FILTER	SFU450B 450HKZ	
	CF102	OW09-50107-20J	CERAMIC FILTER	LT10.7MS3 RED	
	CF103	OW09-50107-07J	CER.DIS	JT10.7MG82	
	CN01A	OW20-12030-00	CONNECTOR HEAD	P=2.5 3PIN	
	CN102	OW20-41092-45	CONNECTOR	P=2 L=110 9PIN	
	CN201	OW20-41063-00	CONNECTOR HOUG	P=2 L=140 6PIN	
	CN301	OW20-41082-39	CONNECTOR HOUG	P=2 L=270 8PIN	
	CN302	OW20-61033-24	CONNECTOR	GRY L=240 3PIN	
	CN303	OW20-42051-36	CONNECTOR HOUG	P=2.5 5PIN	
	CN401	OW12-00006-02	CONNECTOR	CJ-9007-040 SPK	
	CN402	OW20-41042-26	CONNECTOR HOUG	P=2 L=320 4PIN	
	CN403	OW25-25150-03	3P CABLE	3.5+150+3.5	
	C102	OW05-00223-02	C.CAPACITOR	0.022MF	
	C103	OW05-03300-10	CHIP CAPACITOR	30PF 5% NPO	
	C104	OW05-09391-05	PP CAPACITOR	390PF 5%	
	C105	OW05-03180-06T	C.CAPACITOR	18PF N180J 500A	
	C107	OW05-00220-06	C.CAPACITOR	22PF 5% NPO	
	C108	OW05-00200-06	C.CAPACITOR	20PF 5% NPO	
	C109	OW05-00470-06	C.CAPACITOR	47PF NPO 5%	
	C110	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C111	OW05-03102-06T	C.CAPACITOR	1000PF K102	
	C116	OW05-03104-03T	CHIP CAPACITOR	0.1MF 10%	
	C117	OW05-03104-03T	CHIP CAPACITOR	0.1MF 10%	
	C118	OW05-03102-06T	C.CAPACITOR	1000PF K102	
	C119	OW05-00102-00	C.CAPACITOR	0.001MF 10% 50V	
	C120	OW05-03120-03T	C.CAPACITOR	12PF N500 J120 500V	
	C121	OW05-00102-00	C.CAPACITOR	0.001MF 10% 50V	
	C122	OW05-03331-03T	CHIP CAPACITOR	330PF N500 J331	
	C123	OW06-16106-00	E.CAPACITOR	10MF 16V	
	C124	OW06-50105-00	E.CAPACITOR	1MF 50V	
	C125	OW06-50104-00	E.CAPACITOR	0.1MF 50V	
	C126	OW06-50104-00	E.CAPACITOR	0.1MF 50V	
	C127	OW06-50474-00	E.CAPACITOR	0.47MF 50V	
	C128	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	C129	OW06-16227-00	E.CAPACITOR	220MF 16V	
	C131	OW05-03333-06T	C.CAPACITOR	0.033MF K333	
	C132	OW06-50475-02	E.CAPACITOR	4.7MF 50V	
	C133	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C134	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C135	OW05-03103-06T	C.CAPACITOR	0.01MF K103	
	C136	OW05-03103-06T	C.CAPACITOR	0.01MF K103	
	C138	OW05-03103-06T	C.CAPACITOR	0.01MF K103	
	C139	OW06-16227-00	E.CAPACITOR	220MF 16V	
	C142	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C143	OW05-03104-03T	CHIP CAPACITOR	0.1MF 10%	
	C144	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C145	OW06-50335-00	E.CAPACITOR	3.3MF 50V	
	C146	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	C147	OW06-16227-00	E.CAPACITOR	220MF 16V	
	C148	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	C149	OW05-03103-06T	C.CAPACITOR	0.01MF K103	
	C150	OW05-03222-06T	C.CAPACITOR	2200PF K222	
	C151	OW06-50105-00	E.CAPACITOR	1MF 50V	
	C152	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	C153	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	C154	OW06-16227-00	E.CAPACITOR	220MF 16V	
	C155	OW05-03300-10	CHIP CAPACITOR	30PF 5% NPO	
	C156	OW05-03300-10	CHIP CAPACITOR	30PF 5% NPO	
	C157	OW06-16227-00	E.CAPACITOR	220MF 16V	
	C158	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	C159	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C160	OW05-03682-06T	CHIP CAPACITOR	6800PF K682	
	C161	OW05-03682-06T	CHIP CAPACITOR	6800PF K682	

⚠	Item	Parts number	Parts name	Remarks	Area
	C166	OW05-03104-03T	CHIP CAPACITOR	0.1MF 10%	
	C168	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	C201	OW05-03151-03T	C.CAPACITOR	150PF N151J 500A	
	C202	OW05-03182-06T	C.CAPACITOR	0.0018MF K182	
	C203	OW06-50105-02	E.CAPACITOR	1MF 50V	
	C204	OW06-16227-00	E.CAPACITOR	220MF 16V	
	C205	OW05-03102-06T	C.CAPACITOR	1000PF K102	
	C206	OW05-03102-06T	C.CAPACITOR	1000PF K102	
	C207	OW06-50105-00	E.CAPACITOR	1MF 50V	
	C208	OW06-16227-00	E.CAPACITOR	220MF 16V	
	C209	OW05-03272-06T	C.CAPACITOR	0.0027MF K272	
	C210	OW05-03331-03T	CHIP CAPACITOR	330PF N500 J331	
	C211	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C212	OW05-03472-06T	C.CAPACITOR	4700PF K472	
	C213	OW05-03563-06T	C.CAPACITOR	0.056MF	
	C214	OW05-03473-06T	C.CAPACITOR	0.047MF K473	
	C215	OW06-50224-02	E.CAPACITOR	0.22MF 50V	
	C216	OW06-16476-00	E.CAPACITOR	47MF 16V	
	C217	OW05-03561-03T	CHIP CAPACITOR	560PF N500 J560	
	C220	OW05-03151-03T	C.CAPACITOR	150PF N151J 500A	
	C221	OW05-03151-03T	C.CAPACITOR	150PF N151J 500A	
	C222	OW05-03151-03T	C.CAPACITOR	150PF N151J 500A	
	C223	OW05-03182-06T	C.CAPACITOR	0.0018MF K182	
	C224	OW06-50105-02	E.CAPACITOR	1MF 50V	
	C225	OW06-16227-02	E.CAPACITOR	220MF 16V	
	C226	OW06-50105-00	E.CAPACITOR	1MF 50V	
	C227	OW06-16227-00	E.CAPACITOR	220MF 16V	
	C228	OW05-03331-03T	CHIP CAPACITOR	330PF N500 J331	
	C229	OW06-50475-02	E.CAPACITOR	4.7MF 50V	
	C230	OW05-03272-06T	C.CAPACITOR	0.0027MF K272	
	C231	OW05-03473-06T	C.CAPACITOR	0.047MF K473	
	C232	OW05-03472-06T	C.CAPACITOR	4700PF K472	
	C233	OW05-03563-06T	C.CAPACITOR	0.056MF	
	C234	OW06-16106-00	E.CAPACITOR	10MF 16V	
	C235	OW06-16227-00	E.CAPACITOR	220MF 16V	
	C236	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	C237	OW06-50224-00	E.CAPACITOR	0.22MF 50V	
	C238	OW06-16106-00	E.CAPACITOR	10MF 16V	
	C239	OW05-03561-03T	CHIP CAPACITOR	560PF N500 J560	
	C240	OW05-02183-10	M.CAPACITOR	0.018MF 10%	
	C241	OW05-03102-06T	C.CAPACITOR	1000PF K102	
	C242	OW05-03222-06T	C.CAPACITOR	2200PF K222	
	C243	OW06-16107-00	E.CAPACITOR	100MF 16V	
	C244	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C245	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C250	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	C251	OW05-02102-10	M.CAPACITOR	0.001MF 10%	
	C253	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	C254	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	C302	OW06-16227-00	E.CAPACITOR	220MF 16V	
	C303	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C304	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C305	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C306	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C307	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C308	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C309	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C310	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C311	OW06-50225-05	E.CAPACITOR	2.2MF 50V	
	C312	OW06-50225-05	E.CAPACITOR	2.2MF 50V	
	C313	OW05-03470-03T	C.CAPACITOR	47PF N500 J470	
	C314	OW05-03470-03T	C.CAPACITOR	47PF N500 J470	
	C317	OW05-03104-03T	CHIP CAPACITOR	0.1MF 10%	

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

⚠	Item	Parts number	Parts name	Remarks	Area
	C318	OW05-03104-03T	CHIP CAPACITOR	0.1MF 10%	
	C319	OW06-50105-90	E.CAPACITOR	1MF 50V 10%	
	C320	OW06-50105-90	E.CAPACITOR	1MF 50V 10%	
	C321	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C322	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C323	OW05-03103-06T	C.CAPACITOR	0.01MF K103	
	C324	OW05-03103-06T	C.CAPACITOR	0.01MF K103	
	C325	OW06-16227-00	E.CAPACITOR	220MF 16V	
	C326	OW05-03104-03T	CHIP CAPACITOR	0.1MF 10%	
	C327	OW06-16337-00	E.CAPACITOR	330MF 16V	
	C328	OW06-16227-00	E.CAPACITOR	220MF 16V	
	C329	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	C330	OW06-16476-00	E.CAPACITOR	47MF 16V	
	C331	OW06-16107-00	E.CAPACITOR	100MF 16V	
	C332	OW06-25107-00	E.CAPACITOR	100MF 25V	
	C333	OW05-03104-03T	CHIP CAPACITOR	0.1MF 10%	
⚠	C334	OW06-25228-00	E.CAPACITOR	2200MF 25V	
	C401	OW06-16227-00	E.CAPACITOR	220MF 16V	
	C402	OW06-16106-02	E.CAPACITOR	10MF 16V	
	C403	OW06-16226-00	E.CAPACITOR	22MF 16V	
	C404	OW06-16106-02	E.CAPACITOR	10MF 16V	
	C405	OW06-16106-02	E.CAPACITOR	10MF 16V	
	C406	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C407	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C408	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C409	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C410	OW06-50105-00	E.CAPACITOR	1MF 50V	
	C411	OW06-50105-00	E.CAPACITOR	1MF 50V	
	C412	OW05-07101-10A	C.CAPACITOR	100PF 10%	
	C413	OW05-07101-10A	C.CAPACITOR	100PF 10%	
	C414	OW06-16106-00	E.CAPACITOR	10MF 16V	
	C415	OW06-16106-00	E.CAPACITOR	10MF 16V	
	C416	OW05-02104-10	M.CAPACITOR	0.1MF 10%	
	C417	OW05-02104-10	M.CAPACITOR	0.1MF 10%	
⚠	C418	OW06-35228-00	E.CAPACITOR	2200MF 35V	
⚠	C419	OW06-35228-00	E.CAPACITOR	2200MF 35V	
	C420	OW06-16227-00	E.CAPACITOR	220MF 16V	
	C421	OW06-25227-00	E.CAPACITOR	220MF 25V 20%	
	C422	OW06-50225-00	E.CAPACITOR	2.2MF 50V	
	C423	OW06-50225-00	E.CAPACITOR	2.2MF 50V	
	C424	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C425	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C426	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C427	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C432	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C433	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C434	OW06-25227-00	E.CAPACITOR	220MF 25V 20%	
	C435	OW06-35477-00	E.CAPACITOR	470MF 35V	
	C449	OW06-16107-00	E.CAPACITOR	100MF 16V	
	C450	OW05-07223-82A	C.CAPACITOR	0.022MF	
	C451	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V	
	C452	OW06-50225-00	E.CAPACITOR	2.2MF 50V	
	C453	OW06-50225-02	E.CAPACITOR	2.2MF 50V	
	C454	OW06-25476-00	E.CAPACITOR	47MF 25V	
	C455	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	C456	OW06-35477-00	E.CAPACITOR	470MF 35V	
	C457	OW06-50225-00	E.CAPACITOR	2.2MF 50V	
	C458	OW06-25476-00	E.CAPACITOR	47MF 25V	
	C459	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V	
	C463	OW05-03102-06T	C.CAPACITOR	1000PF K102	
	C464	OW05-03102-06T	C.CAPACITOR	1000PF K102	
	C470	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	C471	OW05-03223-06T	C.CAPACITOR	0.022MF K223	

⚠	Item	Parts number	Parts name	Remarks	Area
	C472	OW05-03271-03T	C.CAPACITOR	270PF N271J 500A	
	C473	OW05-03271-03T	C.CAPACITOR	270PF N271J 500A	
	C480	OW05-07104-00	C.CAPACITOR	0.1MF F50V	
	C481	OW05-07104-00	C.CAPACITOR	0.1MF F50V	
	C482	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V	
	C483	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V	
	C484	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V	
	C485	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V	
	D101	OW02-04148-00R	DIODE	IN4148	
	D102	OW02-04148-00R	DIODE	IN4148	
	D103	OW02-04148-00R	DIODE	IN4148	
	D104	OW02-04148-00R	DIODE	IN4148	
	D105	OW02-00348-00	TUNING DIODE	SVC348-S	
	D106	OW02-00201-00	TUNING DIODE	SVC201SPA	
	D107	OW02-00201-00	TUNING DIODE	SVC201SPA	
	D108	OW02-04148-00R	DIODE	IN4148	
	D201	OW02-04148-00R	DIODE	IN4148	
	D202	OW02-04148-00R	DIODE	IN4148	
	D301	OW02-04148-00R	DIODE	IN4148	
	D302	OW02-04148-00R	DIODE	IN4148	
	D303	OW02-04148-00R	DIODE	IN4148	
	D401	OW02-04148-00R	DIODE	IN4148	
	D402	OW02-04148-00R	DIODE	IN4148	
	D403	OW02-04148-00R	DIODE	IN4148	
	D404	OW02-04148-00R	DIODE	IN4148	
	D406	OW02-04148-00R	DIODE	IN4148	
	D408	OW02-04148-00R	DIODE	IN4148	
	D409	OW02-04148-00R	DIODE	IN4148	
	IC101	OW03-02104-01	IC	TA2104BN	
	IC102	OW03-09257-01	IC	TC9257F	
	IC201	OW03-01330-00	IC	UPC1330HA	
	IC202	OW03-07312-00	IC	AN7312	
	IC301	OW03-09422-00	IC	TC9422F	
⚠	IC302	OW03-07812-00	IC	NJM7812A	
	IC401	OW03-04558-03	IC	BA4558N	
	IC402	OW03-01876-00	IC	LM1876TF	
	IC403	OW03-04558-03	IC	BA4558N	
	J315	OW07-15153-50T	CARBON RESISTOR	15K 1/8W 5%	
	J456	OW07-25000-60K	CARBON RESISTOR	0 1/16 000J	
	L101	OW08-01014-02	IFT	1A1014N	
	L102	OW08-86436-70	AM ANT COIL	OA10-864367	
	L103	OW09-45045-00	FM COIL	D=4.5X4 1/2T 0.8MM	
	L104	OW09-25050-00W	FM COIL	D5X2 1/2T 0.8MM	
	L105	OW09-70101-00	INDUCTOR	10MH	
	L106	OW09-70101-00	INDUCTOR	10MH	
	L201	OW09-40474-00W	CHOKE COIL	47MH D6X8MM	
	L202	OW09-40474-00W	CHOKE COIL	47MH D6X8MM	
	L203	OW08-07163-00	CHOKE COIL	7L1A63N LIK HANG	
	O102	OW01-00945-16	TRANSISTOR	2SC945P	
	Q103	OW01-00945-16	TRANSISTOR	2SC945P	
	O104	OW01-00945-16	TRANSISTOR	2SC945P	
	O105	OW01-00733-16	TRANSISTOR	2SA733P	
	O106	OW01-00945-16	TRANSISTOR	2SC945P	
	O107	OW01-09018-07	TRANSISTOR	9018G	
	O108	OW01-00945-16	TRANSISTOR	2SC945P	
	O109	OW01-00945-16	TRANSISTOR	2SC945P	
	O110	OW01-00945-16	TRANSISTOR	2SC945P	
	O111	OW01-00945-16	TRANSISTOR	2SC945P	
	O116	OW01-00945-16	TRANSISTOR	2SC945P	
	O201	OW01-08050-04S	TRANSISTOR	8050D	
	Q202	OW01-00945-16	TRANSISTOR	2SC945P	
	O203	OW01-00945-16	TRANSISTOR	2SC945P	
	O204	OW01-00945-16	TRANSISTOR	2SC945P	

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

⚠	Item	Parts number	Parts name	Remarks	Area
	O205	OW01-00945-16	TRANSISTOR	2SC945P	
	O206	OW01-08050-04S	TRANSISTOR	8050D	
	O207	OW01-00945-16	TRANSISTOR	2SC945P	
	O208	OW01-00945-16	TRANSISTOR	2SC945P	
	O209	OW01-00945-16	TRANSISTOR	2SC945P	
	Q210	OW01-00945-16	TRANSISTOR	2SC945P	
	O211	OW01-00733-16	TRANSISTOR	2SA733P	
	O212	OW01-00945-16	TRANSISTOR	2SC945P	
	O213	OW01-00945-16	TRANSISTOR	2SC945P	
	O214	OW01-00945-16	TRANSISTOR	2SC945P	
	Q215	OW01-00945-16	TRANSISTOR	2SC945P	
	O301	OW01-00945-16	TRANSISTOR	2SC945P	
	O302	OW01-00945-16	TRANSISTOR	2SC945P	
	O303	OW01-01383-18	TRANSISTOR	2SC1383R	
	Q304	OW01-00945-16	TRANSISTOR	2SC945P	
	O305	OW01-01240-00	TRANSISTOR	2SB1240O	
	Q401	OW01-08050-04S	TRANSISTOR	8050D	
	O402	OW01-08050-04S	TRANSISTOR	8050D	
	O403	OW01-08050-04S	TRANSISTOR	8050D	
	Q404	OW01-08050-04S	TRANSISTOR	8050D	
	O405	OW01-00733-16	TRANSISTOR	2SA733P	
	Q406	OW01-00945-16	TRANSISTOR	2SC945P	
	O407	OW01-00945-16	TRANSISTOR	2SC945P	
	O410	OW01-08050-04S	TRANSISTOR	8050D	
	Q411	OW01-08550-04B	TRANSISTOR	8550D	
	R101	OW07-15274-50T	CARBON RESISTOR	270K 1/8W 5%	
	R102	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104J	
	R103	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104J	
	R104	OW07-25473-60K	CARBON RESISTOR	47K 1/16 473J	
	R105	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R106	OW07-25202-60K	CARBON RESISTOR	2K 1/16 202J	
	R107	OW07-15220-50T	CARBON RESISTOR	22 1/8W 5%	
	R108	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%	
	R109	OW07-15203-50T	CARBON RESISTOR	20K 1/8W 5%	
	R110	OW07-25332-60K	CARBON RESISTOR	3.3K 1/16 332J	
	R111	OW07-25331-60K	CARBON RESISTOR	330 1/8W	
	R113	OW07-25392-60K	CARBON RESISTOR	3.9K 1/16 392J	
	R114	OW07-25123-60K	CARBON RESISTOR	12K 1/16 123J	
	R115	OW07-25392-60K	CARBON RESISTOR	3.9K 1/16 392J	
	R116	OW07-25123-60K	CARBON RESISTOR	12K 1/16 123J	
	R119	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104J	
	R120	OW07-25223-60K	CARBON RESISTOR	22K 1/16 223J	
	R121	OW07-15472-50T	CARBON RESISTOR	4.7K 1/8W 5%	
	R122	OW07-15221-50T	CARBON RESISTOR	220 1/8W 5%	
	R123	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103J	
	R124	OW07-25102-60K	CARBON RESISTOR	1K 1/16 102J	
	R125	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R126	OW07-25820-60K	CARBON RESISTOR	82 1/16 J820	
	R127	OW07-25332-60K	CARBON RESISTOR	3.3K 1/16 332J	
	R128	OW07-25563-60K	CARBON RESISTOR	56K 1/16 563J	
	R129	OW07-25473-60K	CARBON RESISTOR	47K 1/16 473J	
	R130	OW07-25102-60K	CARBON RESISTOR	1K 1/16 102J	
	R131	OW07-25105-60K	CARBON RESISTOR	1M 1/16 105J	
	R132	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%	
	R133	OW07-15221-50T	CARBON RESISTOR	220 1/8W 5%	
	R134	OW07-25152-60K	CARBON RESISTOR	1.5K 1/16 152J	
	R135	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472J	
	R136	OW07-15221-50T	CARBON RESISTOR	220 1/8W 5%	
	R137	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472J	
	R138	OW07-25102-60K	CARBON RESISTOR	1K 1/16 102J	
	R139	OW07-25152-60K	CARBON RESISTOR	1.5K 1/16 152J	
	R140	OW07-25561-60K	CARBON RESISTOR	560 1/16 561J	
	R141	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103J	

⚠	Item	Parts number	Parts name	Remarks	Area
	R145	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R146	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R147	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R148	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R149	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R150	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R151	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R163	OW07-15472-50T	CARBON RESISTOR	4.7K 1/8W 5%	
	R164	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472J	
	R165	OW07-25102-60K	CARBON RESISTOR	1K 1/16 102J	
	R201	OW07-25183-60K	CARBON RESISTOR	18K 1/16 183J	
	R202	OW07-25102-60K	CARBON RESISTOR	1K 1/16 102J	
	R203	OW07-25333-60K	CARBON RESISTOR	33K 1/16 333J	
	R204	OW07-25180-60K	CARBON RESISTOR	18 1/16 180J	
	R205	OW07-25333-60K	CARBON RESISTOR	33K 1/16 333J	
	R206	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472J	
	R207	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472J	
	R208	OW07-25153-60K	CARBON RESISTOR	15K 1/16 153J	
	R209	OW07-25684-60K	CARBON RESISTOR	680K 1/16 684J	
	R210	OW07-25153-60K	CARBON RESISTOR	15K 1/16 153J	
	R211	OW07-25333-60K	CARBON RESISTOR	33K 1/16 333J	
	R212	OW07-25823-60K	CARBON RESISTOR	82K 1/16 823J	
	R213	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103J	
	R214	OW07-25473-60K	CARBON RESISTOR	47K 1/16 473J	
	R215	OW07-25391-60K	CARBON RESISTOR	390 1/16 391J	
	R216	OW07-25683-60K	CARBON RESISTOR	68K 1/16 683J	
	R217	OW07-15010-50T	CARBON RESISTOR	1 1/8W 5%	
	R218	OW07-25273-60K	CARBON RESISTOR	27K 1/16 273J	
	R219	OW07-25273-60K	CARBON RESISTOR	27K 1/16 273J	
	R220	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R221	OW07-25221-60K	CARBON RESISTOR	220 1/16 221J	
	R222	OW07-25183-60K	CARBON RESISTOR	18K 1/16 183J	
	R223	OW07-25333-60K	CARBON RESISTOR	33K 1/16 333J	
	R224	OW07-25331-60K	CARBON RESISTOR	330 1/8W	
	R225	OW07-15101-26T	CARBON RESISTOR	100 1/4W 5%	
	R226	OW07-25102-60K	CARBON RESISTOR	1K 1/16 102J	
	R227	OW07-25180-60K	CARBON RESISTOR	18 1/16 180J	
	R228	OW07-15472-50T	CARBON RESISTOR	4.7K 1/8W 5%	
	R229	OW07-15153-50T	CARBON RESISTOR	15K 1/8W 5%	
	R231	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472J	
	R232	OW07-25333-60K	CARBON RESISTOR	33K 1/16 333J	
	R233	OW07-15221-26T	CARBON RESISTOR	220 1/4W	
	R234	OW07-25153-60K	CARBON RESISTOR	15K 1/16 153J	
	R235	OW07-25102-60K	CARBON RESISTOR	1K 1/16 102J	
	R236	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103J	
	R237	OW07-25823-60K	CARBON RESISTOR	82K 1/16 823J	
	R238	OW07-25391-60K	CARBON RESISTOR	390 1/16 391J	
	R239	OW07-25683-60K	CARBON RESISTOR	68K 1/16 683J	
	R240	OW07-25047-60K	CARBON RESISTOR	4.7 1/16 4R7J	
	R241	OW07-25273-60K	CARBON RESISTOR	27K 1/16 273J	
	R242	OW07-25100-60K	CARBON RESISTOR	10 1/16 100J	
	R243	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103J	
	R244	OW07-25104-60K	CARBON RESISTOR	100K 1/16 J104	
	R245	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103J	
	R246	OW07-25333-60K	CARBON RESISTOR	33K 1/16 333J	
	R247	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103J	
	R248	OW07-25102-60K	CARBON RESISTOR	1K 1/16 102J	
	R249	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472J	
	R250	OW07-25223-60K	CARBON RESISTOR	22K 1/16 223J	
	R251	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104J	
	R252	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R255	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103J	
	R256	OW07-25473-60K	CARBON RESISTOR	47K 1/16 473J	

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

⚠	Item	Parts number	Parts name	Remarks	Area
	R257	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104J	
	R258	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104J	
	R301	OW07-15680-50T	CARBON RESISTOR	68 1/8W 5%	
	R302	OW07-25471-60K	CARBON RESISTOR	470 1/16 471J	
	R303	OW07-25394-60K	CARBON RESISTOR	390K 1/16 394J	
	R304	OW07-25681-60K	CARBON RESISTOR	680 1/16 681J	
	R307	OW07-25471-60K	CARBON RESISTOR	470 1/16 471J	
	R308	OW07-25394-60K	CARBON RESISTOR	390K 1/16 394J	
	R309	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472J	
	R310	OW07-25681-60K	CARBON RESISTOR	680 1/16 681J	
	R312	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472J	
	R313	OW07-25471-60K	CARBON RESISTOR	470 1/16 471J	
	R314	OW07-15100-26T	CARBON RESISTOR	10 1/4W 5%	
	R315	OW07-15561-50T	CARBON RESISTOR	560 1/8W 5%	
	R316	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R317	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104J	
	R318	OW07-25473-60K	CARBON RESISTOR	47K 1/16 473J	
	R319	OW07-25102-60K	CARBON RESISTOR	1K 1/16 102J	
	R351	OW07-25473-60K	CARBON RESISTOR	47K 1/16 473J	
	R352	OW07-25473-60K	CARBON RESISTOR	47K 1/16 473J	
	R353	OW07-25822-60K	CARBON RESISTOR	8.2K 1/16 822J	
	R354	OW07-25822-60K	CARBON RESISTOR	8.2K 1/16 822J	
	R401	OW07-15682-26T	CARBON RESISTOR	6.8K 1/4W 5%	
	R402	OW07-25153-60K	CARBON RESISTOR	15K 1/16 153J	
	R403	OW07-25223-60K	CARBON RESISTOR	22K 1/16 223J	
	R404	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R405	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R406	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103J	
	R407	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103J	
	R408	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472J	
	R409	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472J	
	R410	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472J	
	R411	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472J	
	R412	OW07-25223-60K	CARBON RESISTOR	22K 1/16 223J	
	R413	OW07-25223-60K	CARBON RESISTOR	22K 1/16 223J	
	R414	OW07-25563-60K	CARBON RESISTOR	56K 1/16 563J	
	R415	OW07-25563-60K	CARBON RESISTOR	56K 1/16 563J	
	R416	OW07-15102-26T	CARBON RESISTOR	1K 1/4W 5%	
	R417	OW07-15102-26T	CARBON RESISTOR	1K 1/4W 5%	
	R418	OW07-15563-50T	CARBON RESISTOR	56K 1/8W 5%	
	R419	OW07-15563-50T	CARBON RESISTOR	56K 1/8W 5%	
	R420	OW07-15223-00	CARBON RESISTOR	22K 1/4W 5%	
	R421	OW07-15223-00	CARBON RESISTOR	22K 1/4W 5%	
	R422	OW07-15102-26T	CARBON RESISTOR	1K 1/4W 5%	
	R423	OW07-15102-26T	CARBON RESISTOR	1K 1/4W 5%	
	R424	OW07-05047-10	CARBON RESISTOR	4.7 1/2W	
	R425	OW07-05047-10	CARBON RESISTOR	4.7 1/2W	
	R426	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103J	
	R428	OW07-15682-26T	CARBON RESISTOR	6.8K 1/4W 5%	
	R429	OW07-25223-60K	CARBON RESISTOR	22K 1/16 223J	
	R433	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103J	
	R434	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472J	
	R435	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472J	
	R436	OW07-25473-60K	CARBON RESISTOR	47K 1/16 473J	
	R437	OW07-25473-60K	CARBON RESISTOR	47K 1/16 473J	
	R438	OW07-25223-60K	CARBON RESISTOR	22K 1/16 223J	
	R439	OW07-25223-60K	CARBON RESISTOR	22K 1/16 223J	
	R440	OW07-25152-60K	CARBON RESISTOR	1.5K 1/16 152J	
	R441	OW07-25152-60K	CARBON RESISTOR	1.5K 1/16 152J	
	R442	OW07-25221-60K	CARBON RESISTOR	220 1/16 221J	
	R443	OW07-25221-60K	CARBON RESISTOR	220 1/16 221J	
	R446	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104J	
	R447	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103J	

⚠	Item	Parts number	Parts name	Remarks	Area
	R448	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104J	
	R449	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R450	OW07-15104-50T	CARBON RESISTOR	100K 1/8W 5%	
	R452	OW07-05103-50	CARBON RESISTOR	10K 1/8W	
	R458	OW07-15181-01T	CARBON RESISTOR	180 1/4W 5%	
	R459	OW07-25122-60K	CARBON RESISTOR	1.2K 1/16 122J	
	R462	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104J	
	R463	OW07-15181-01T	CARBON RESISTOR	180 1/4W 5%	
	R464	OW07-25122-60K	CARBON RESISTOR	1.2K 1/16 122J	
	R480	OW07-05022-30	CARBON RESISTOR	2.2 1/16 W	
	R481	OW07-05022-30	CARBON RESISTOR	2.2 1/16 W	
	R482	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103J	
	R483	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103J	
	R484	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103J	
	R485	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104J	
	R486	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103J	
	TC101	OW05-08100-03	TRIM CAPACITOR	10PF 3PIN	
	TC102	OW05-08100-03	TRIM CAPACITOR	10PF 3PIN	
	T101	OW08-00332-24C	IFT YEL	10MM 810017	
	X101	OW04-07200-05	CRYSTAL	7.2MHZ HC-49U	
	Z101	OW02-50100-00	ZENER DIODE	10V 0.5W	
	Z301	OW02-50091-00	ZENER DIODE	9.1V 0.5W	
⚠	Z401	OW02-50180-00	ZENER DIODE	18V 0.5W	
⚠	Z402	OW02-50180-00	ZENER DIODE	18V 0.5W	

■ **Electrical parts list (CD&MCU board)** **Block No. 02**

⚠	Item	Parts number	Parts name	Remarks	Area
	CN601	OW20-21090-00	CONNECTOR	P=2 9PIN	
	CN602	OW20-21080-00	CONNECTOR	P=2 8PIN	
	CN603	OW20-21030-00	CONNECTOR	P=2 3PIN	
	CN604	OW20-41092-43	CONNECTOR HOUG	P=2 L=220 9PIN	
	CN607	OW20-11060-00	CONNECTOR	2MM 6PIN	
	CN608	OW20-21030-00	CONNECTOR	P=2 3PIN	
	CN609	OW20-42022-18	CONNECTOR HOUG	P=2.5 2PIN	
	CN701	OW20-12020-00	CONNECTOR	P=2.5 2PIN	
	CN702	OW20-21020-00	CONNECTOR	P=2 2PIN	
	CN703	OW20-21060-00	CONNECTOR	P=2 6PIN	
	CN704	OW20-80160-00I	CONNECTOR	P=1 16PIN	
	C601	OW06-10477-00	E.CAPACITOR	470MF 10V	
	C602	OW06-10228-00	E.CAPACITOR	2200MF 10V	
	C602A	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C603	OW06-10227-00S	E.CAPACITOR	220MF 10V	
	C605	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C606	OW05-07250-06T	C.CAPACITOR	25PF NPO	
	C607	OW05-07250-06T	C.CAPACITOR	25PF NPO	
	C608	OW05-07250-06T	C.CAPACITOR	25PF NPO	
	C609	OW05-07250-06T	C.CAPACITOR	25PF NPO	
	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	
	C648	OW05-07223-82A	C.CAPACITOR	0.022MF	
	C701	OW05-07103-20A	C.CAPACITOR	0.01MF20%	
	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	OW06-10106-00	E.CAPACITOR	10MF 10V	
	C708	OW05-07222-82A	C.CAPACITOR	2200PF	
	C709	OW06-10476-02	E.CAPACITOR	47MF 10V	
	C710	OW06-10226-02	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	OW05-07150-06T	C.CAPACITOR	15PF NPO	
	C718	OW05-07150-06T	C.CAPACITOR	15PF NPO	
	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	OW06-16337-00	E.CAPACITOR	330MF 16V	
	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	

⚠	Item	Parts number	Parts name	Remarks	Area
	C733	OW06-10476-00S	E.CAPACITOR	47MF 10V	
	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 50V 10%	
	C740	OW06-10476-00S	E.CAPACITOR	47MF 10V	
	C741	OW05-02472-10	M.CAPACITOR	0.0047MF 10%	
	C742	OW05-07471-10A	C.CAPACITOR	470PF 10%	
	C743	OW05-07471-10A	C.CAPACITOR	470PF 10%	
	C744	OW05-07473-82B	C.CAPACITOR	0.047MF	
	C746	OW05-02472-10	M.CAPACITOR	0.0047MF 10%	
	C747	OW06-10476-02	E.CAPACITOR	47MF 10V	
	C748	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C749	OW05-07473-82B	C.CAPACITOR	0.047MF	
	C753	OW06-10227-02	E.CAPACITOR	220MF 10V	
	C754	OW06-10227-02	E.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	
	C765	OW05-07103-20A	C.CAPACITOR	0.01MF 20%	
	C766	OW05-07103-20A	C.CAPACITOR	0.01MF 20%	
	C771	OW05-00560-06	C.CAPACITOR	56PF NPO 5%	
	C772	OW05-07224-00	C.CAPACITOR	0.22MF	
	C773	OW05-07224-00	C.CAPACITOR	0.22MF	
	C774	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C775	OW05-07082-10A	C.CAPACITOR	8.2PF 10%	
	C776	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C777	OW06-10476-02	E.CAPACITOR	47MF 10V	
	C778	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C779	OW06-10107-02	E.CAPACITOR	100MF 10V	
	C780	OW06-10476-02	E.CAPACITOR	47MF 10V	
	C781	OW05-07473-82B	C.CAPACITOR	0.047MF	
	C790	OW06-16228-00	E.CAPACITOR	2200MF 16V	
	C791	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	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	
	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	
	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	TMP87EP26F-1J15	
	IC701	OW03-09462-00	IC	TC9462F	
	IC702	OW03-07291-00	IC	TA7291S	
	IC703	OW03-02092-00	IC	TA2092N	
	IC704	OW03-02153-00	IC	TA2153FN	
	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	

■ **Electrical parts list (CD&MCU board)** **Block No. 02**

⚠	Item	Parts number	Parts name	Remarks	Area
	L705	OW09-70102-00C	INDUCTOR	100MH	
	O601	OW01-00945-16	TRANSISTOR	2SC945P	
⚠	O603	OW01-00882-00	TRANSISTOR	2SD882O	
⚠	O604	OW01-01240-00	TRANSISTOR	2SB1240O	
	O605	OW01-00945-16	TRANSISTOR	2SC945P	
	Q606	OW01-08050-04S	TRANSISTOR	8050D	
	O607	OW01-01383-18	TRANSISTOR	2SC1383R	
	O610	OW01-08050-04S	TRANSISTOR	8050D	
	O701	OW01-00945-16	TRANSISTOR	2SC945P	
	O702	OW01-00945-16	TRANSISTOR	2SC945P	
	Q703	OW01-00733-16	TRANSISTOR	2SA733P	
⚠	O704	OW01-01383-18	TRANSISTOR	2SC1383R	
	O705	OW01-00733-16	TRANSISTOR	2SA733P	
	O707	OW01-00733-16	TRANSISTOR	2SA733P	
	Q708	OW01-00945-16	TRANSISTOR	2SC945P	
	O709	OW01-00945-16	TRANSISTOR	2SC945P	
⚠	O791	OW01-01240-00	TRANSISTOR	2SB1240O	
	O792	OW01-00945-16	TRANSISTOR	2SC945P	
	R602	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R603	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R604	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R605	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R606	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R607	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R608	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R609	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R610	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R612	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R616	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R617	OW07-15153-50T	CARBON RESISTOR	15K 1/8W 5%	
	R618	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R620	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R622	OW07-05022-10	CARBON RESISTOR	2.2 1/2W	
	R623	OW07-15223-50T	CARBON RESISTOR	22K 1/8W 5%	
	R624	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R625	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R626	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R627	OW07-15122-50T	CARBON RESISTOR	1.2K 1/8W 5%	
	R628	OW07-15100-50T	CARBON RESISTOR	10 1/8W 5%	
	R630	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%	
	R631	OW07-15222-50T	CARBON RESISTOR	2.2K 1/8W 5%	
	R632	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R633	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R634	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R635	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R636	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R637	OW07-15472-50T	CARBON RESISTOR	4.7K 1/8W 5%	
	R641	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R643	OW07-15682-50T	CARBON RESISTOR	6.8K 1/8W 5%	
	R644	OW07-15682-50T	CARBON RESISTOR	6.8K 1/8W 5%	
	R645	OW07-15222-50T	CARBON RESISTOR	2.2K 1/8W 5%	
	R646	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R647	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R648	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R649	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R650	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R651	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R652	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R653	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R701	OW07-15104-50T	CARBON RESISTOR	100K 1/8W 5%	
	R702	OW07-15104-50T	CARBON RESISTOR	100K 1/8W 5%	
	R703	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R704	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	

⚠	Item	Parts number	Parts name	Remarks	Area
	R705	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R706	OW07-15271-50T	CARBON RESISTOR	270 1/8W 5%	
	R707	OW07-15271-50T	CARBON RESISTOR	270 1/8W 5%	
	R708	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R709	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R710	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R711	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R712	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R713	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R714	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R715	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R716	OW07-15561-50T	CARBON RESISTOR	560 1/8W 5%	
	R717	OW07-15100-50T	CARBON RESISTOR	10 1/8W 5%	
	R721	OW07-15332-50T	CARBON RESISTOR	3.3K 1/8W 5%	
	R722	OW07-15332-50T	CARBON RESISTOR	3.3K 1/8W 5%	
	R723	OW07-15332-50T	CARBON RESISTOR	3.3K 1/8W 5%	
	R724	OW07-15332-50T	CARBON RESISTOR	3.3K 1/8W 5%	
	R725	OW07-15332-50T	CARBON RESISTOR	3.3K 1/8W 5%	
	R726	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R727	OW07-15332-50T	CARBON RESISTOR	3.3K 1/8W 5%	
	R729	OW07-15224-50T	CARBON RESISTOR	220K 1/8W 5%	
	R730	OW07-15683-50T	CARBON RESISTOR	68K 1/8W 5%	
	R731	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R732	OW07-15153-50T	CARBON RESISTOR	15K 1/8W 5%	
	R733	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R735	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R736	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R737	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R738	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R739	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R742	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%	
	R743	OW07-15333-50T	CARBON RESISTOR	33K 1/8W 5%	
	R744	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R745	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R746	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R747	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R748	OW07-15333-50T	CARBON RESISTOR	33K 1/8W 5%	
	R750	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R751	OW07-15561-00	CARBON RESISTOR	560 1/4W 5%	
	R752	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R753	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%	
	R754	OW07-05082-10	CARBON RESISTOR	8.2 1/2W	
	R755	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%	
	R757	OW07-15562-50T	CARBON RESISTOR	5.6K 1/8W 5%	
	R758	OW07-15104-50T	CARBON RESISTOR	100K 1/8W 5%	
	R759	OW07-15512-50T	CARBON RESISTOR	5.1K 1/8W 5%	
	R760	OW07-15222-50T	CARBON RESISTOR	2.2K 1/8W 5%	
	R761	OW07-15562-50T	CARBON RESISTOR	5.6K 1/8W 5%	
	R762	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R763	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R764	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R781	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R782	OW07-15273-50T	CARBON RESISTOR	27K 1/8W 5%	
	R783	OW07-15222-50T	CARBON RESISTOR	2.2K 1/8W 5%	
	R784	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R785	OW07-15221-50T	CARBON RESISTOR	220 1/8W 5%	
	R786	OW07-15683-50T	CARBON RESISTOR	68K 1/8W 5%	
	R789	OW07-15823-50T	CARBON RESISTOR	82K 1/8W 5%	
	R790	OW07-15100-50T	CARBON RESISTOR	10 1/8W 5%	
	R791	OW07-15223-50T	CARBON RESISTOR	22K 1/8W 5%	
	R792	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R793	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R794	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	

■ **Electrical parts list (CD&MCU board)** **Block No. 02**

⚠	Item	Parts number	Parts name	Remarks	Area
	X601	OW04-07200-00H	CRYSTAL	7.2MHZ HC-49S	
	X602	OW04-32768-03S	CRYSTAL	32.768KHZ U3X8	
	X701	OW04-16934-41M	CRYSTAL	16.9344MHZ	

■ **Electrical parts list (Power board)** **Block No. 03**

⚠	Item	Parts number	Parts name	Remarks	Area
	CN403	OW20-21040-00	CONNECTOR HEAD	P=2 4PIN	
	CN705	OW20-41022-25	CONNECTOR HOUG	P=2 L=70 2PIN	
	CN901	OW20-12050-00	CONNECTOR HEAD	P=2.5 5PIN	
	CN902	OW20-12020-00	CONNECTOR	P=2.5 2PIN	
	CN903	OW20-42021-48	CONNECTOR HOUG	P=2.5 L=400 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	OW05-00104-01	C.CAPACITOR	0.1MF 100V 10%	
⚠	C910	OW05-00104-01	C.CAPACITOR	0.1MF 100V 10%	
⚠	C911	OW05-00104-01	C.CAPACITOR	0.1MF 100V 10%	
⚠	C912	OW05-00104-01	C.CAPACITOR	0.1MF 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	OW06-25477-00	E.CAPACITOR	470MF 25V	
⚠	C919	OW06-35477-00	E.CAPACITOR	470MF 35V	
⚠	C920	OW06-35477-00	E.CAPACITOR	470MF 35V	
⚠	C921	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	OW02-05402-00	DIODE	IN5402-F	
⚠	D910	OW02-05402-00	DIODE	IN5402-F	
⚠	D911	OW02-05402-00	DIODE	IN5402-F	
⚠	D912	OW02-05402-00	DIODE	IN5402-F	
⚠	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	OW33-57162-02	FUSE	1.6A 250V BUSS	
⚠	F902	OW33-57252-02	FUSE	2.5A 250V BUSS	
⚠	F903	OW33-57252-02	FUSE	2.5A 250V BUSS	
⚠	F904	OW33-57162-02	FUSE	1.6A 250V BUSS	
	HF901	OW39-10001-00A	FUSE HOLDER		
	HF902	OW39-10001-00A	FUSE HOLDER		
	HF903	OW39-10001-00A	FUSE HOLDER		
	HF904	OW39-10001-00A	FUSE HOLDER		
	JK401	OW12-00035-42	PHONE JACK	MSJ-0350-10AB	
	R434	OW06-10227-01	E.CAPACITOR	220MF 10V	
	R435	OW06-10227-01	E.CAPACITOR	220MF 10V	

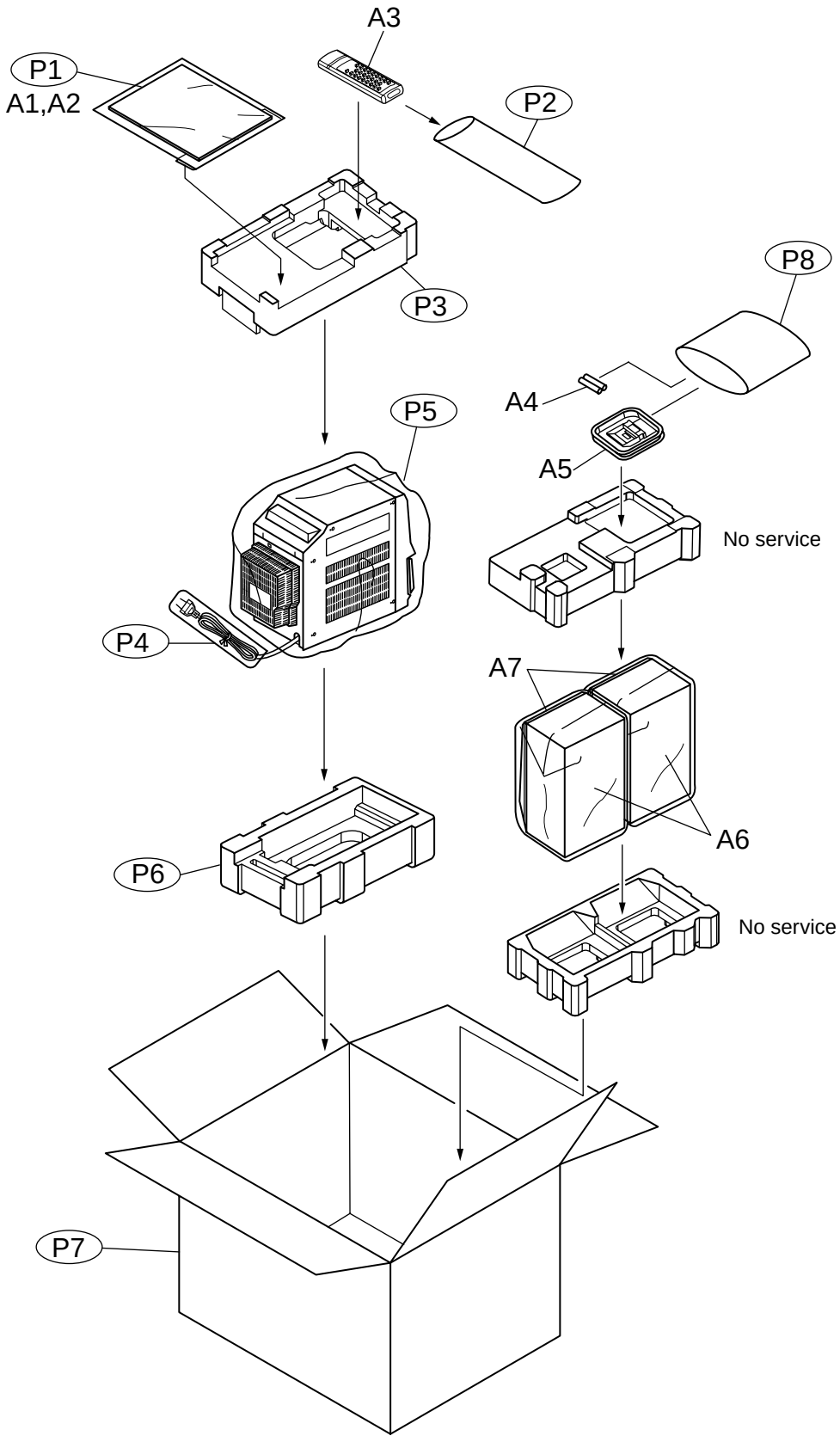
■ **Electrical parts list (Key board)** **Block No. 04**

⚠	Item	Parts number	Parts name	Remarks	Area
	CN103	OW20-12020-01K	CONNECTOR HEADE	P=2.5 2PIN	
	CN104	OW20-42032-17	CONNECTOR HOUG	P=2.5 3PIN	
	CN801	OW20-41032-17	CONNECTOR HOUG	P=2 L=150 3PIN	
	CN802	OW20-41062-26	CONNECTOR HOUG	P=2 L=160 6PIN	
	C801	OW06-10476-00S	E.CAPACITOR	47MF 10V	
	C802	OW05-00203-82	C.CAPACITOR	0.02MF +80-20%	
	C803	OW05-00203-82	C.CAPACITOR	0.02MF +80-20%	
	D801	OW02-30004-07	LED	BLUE 31B4SCB04	
	D802	OW02-30004-07	LED	BLUE 31B4SCB04	
	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	
	LEDPC	OW25-23070-02K	CONNECTOR	UL2651 2PIN	
	O801	OW01-00945-16	TRANSISTOR	2SC945P	
	O802	OW01-00733-16	TRANSISTOR	2SA733P	
	Q803	OW01-00945-16	TRANSISTOR	2SC945P	
	O804	OW01-00733-16	TRANSISTOR	2SA733P	
	Q805	OW01-00945-16	TRANSISTOR	2SC945P	
	O806	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%	
	SE801	OW02-67138-00	SENSORE	RPM7138-V4	
	SW801	OW16-10101-08S	TACT SWITCH	EVOJAE05R H=5MM	
	SW802	OW16-10101-08S	TACT SWITCH	EVOJAE05R H=5MM	
	SW803	OW16-10101-08S	TACT SWITCH	EVOJAE05R H=5MM	
	SW804	OW16-10101-08S	TACT SWITCH	EVOJAE05R H=5MM	
	SW805	OW16-10101-08S	TACT SWITCH	EVOJAE05R H=5MM	
	SW806	OW16-10101-08S	TACT SWITCH	EVOJAE05R H=5MM	
	SW807	OW16-10101-08S	TACT SWITCH	EVOJAE05R H=5MM	
	SW808	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	
	SW809	OW16-10101-08S	TACT SWITCH	EVOJAE05R H=5MM	
	SW810	OW16-10101-08S	TACT SWITCH	EVOJAE05R H=5MM	
	SW811	OW16-10101-08S	TACT SWITCH	EVOJAE05R H=5MM	
	SW812	OW16-10101-08S	TACT SWITCH	EVOJAE05R H=5MM	
	SW813	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	
	SW814	OW16-10101-08S	TACT SWITCH	EVOJAE05R H=5MM	
	SW815	OW16-10101-08S	TACT SWITCH	EVOJAE05R H=5MM	
	SW816	OW16-10101-08S	TACT SWITCH	EVOJAE05R H=5MM	
	SW817	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	
	SW818	OW16-10101-08S	TACT SWITCH	EVOJAE05R H=5MM	
	SW819	OW16-10101-08S	TACT SWITCH	EVOJAE05R H=5MM	
	SW820	OW16-10101-08S	TACT SWITCH	EVOJAE05R H=5MM	

Packing materials and accessories parts list

Block No. M 3 M M

Block No. M 5 M M



■ Parts list (Packing)

Block No. M3MM

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	P 1	OW85-91014-02	POLY BAG	1	INSTRUCTIONS	
	P 2	OW85-00025-01A	POLY BAG	1	REMOTE UNIT	
	P 3	OW86-50000-00	POLYFOAM	1	TOP	
	P 4	OW85-00025-01A	POLY BAG	1	AC POWER CORD	
	P 5	OW85-92224-04	POLY BAG	1	SET	
	P 6	OW86-50000-01	POLYFOAM	1	BOTTOM	
	P 7	OW83-30000-14	GIFT BOX	1		
	P 8	OW85-90710-04	POLY BAG	1		

■ Parts list (Accessories)

Block No. M5MM

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	A 1	OW88-50000-53	INSTRUCTIONS	1	KOR	
	A 2	OW88-50000-54	WARRANTY CARD	1	BT-56010-1	
	A 3	OWA-RE-JVC	REMOTE UNIT	1	RM-SUXM5U	
	A 4	----------	BATTERY	2		
	A 5	OW23-04910-02	AM ANT LOOP	1	4910 L=1M W/JST	
	A 6	OW00-50000-02	SPEAKER BOX	2		
	A 7	OW55-5000-00	SPK NET ASSY	2		