JVC

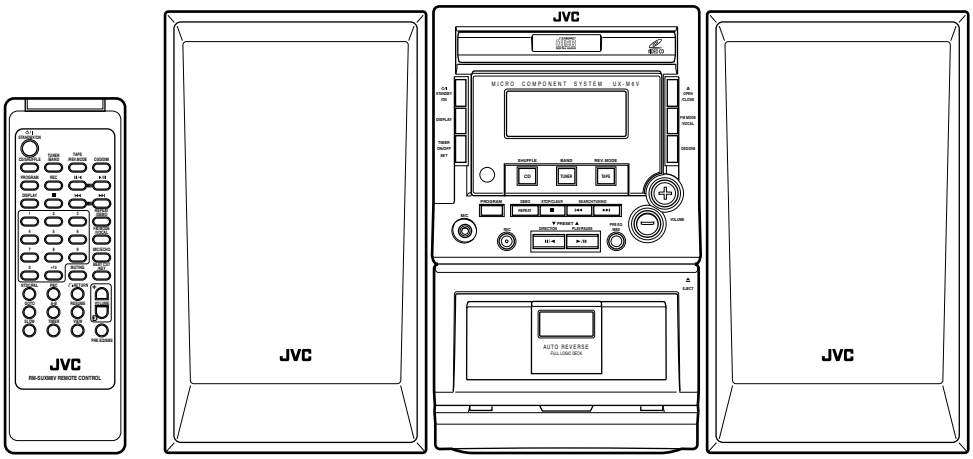
SERVICE MANUAL

COMPACT COMPONENT SYSTEM

UX-M6V

Area suffix

US ---------- Singapore
UB ---------- Hong Kong



SP-UXM6V CA-UXM6V SP-UXM6V

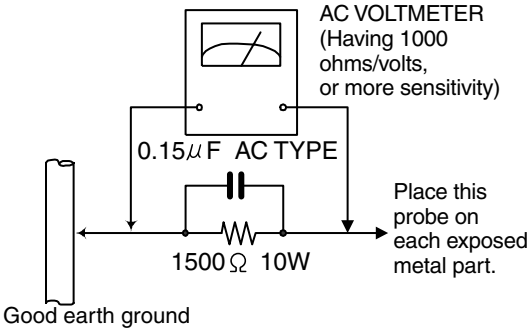
VIDEO CD COMPACT disc DIGITAL VIDEO COMPACT disc DIGITAL AUDIO

Contents

No.21053
Dec. 2001

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

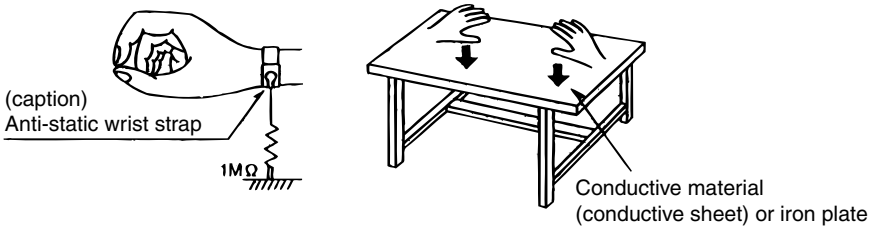
Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as CD players.
Be careful to use proper grounding in the area where repairs are being performed.

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.

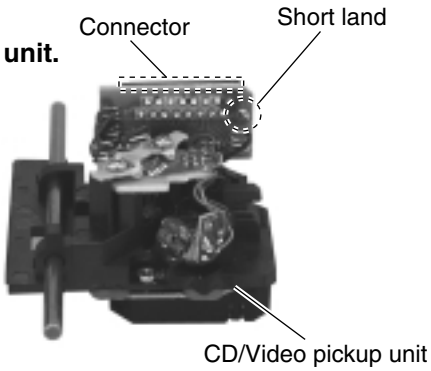
3. Handle the card wire carefully as it may break when subjected to strong force.

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/Video pickup unit.**

- Apply solder to the short land before the card wire is disconnected from the connector on the CD/Video pickup unit.
  (If the card wire is disconnected without applying solder, the CD/Video 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.

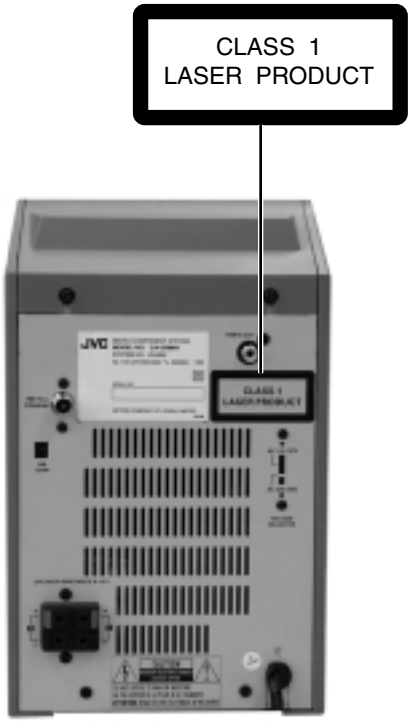
VARO : Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle.Älä katso säteeseen.

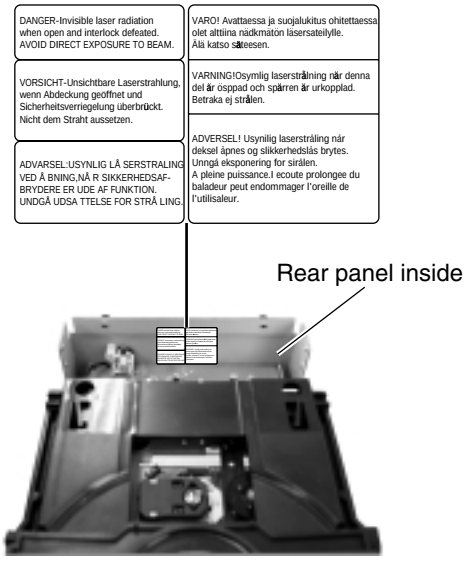
ADVARSEL : Usynlig laserstråling ved åbning , når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

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>

Fuse Replacement for the power supply IC and power amplifier IC

■ Replacing the fuses (See Fig. 1.)

- Remove the left side panel according to its disassembly method (see **Figs. 7** and **8**).

Fuses are located inside the left side panel.

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

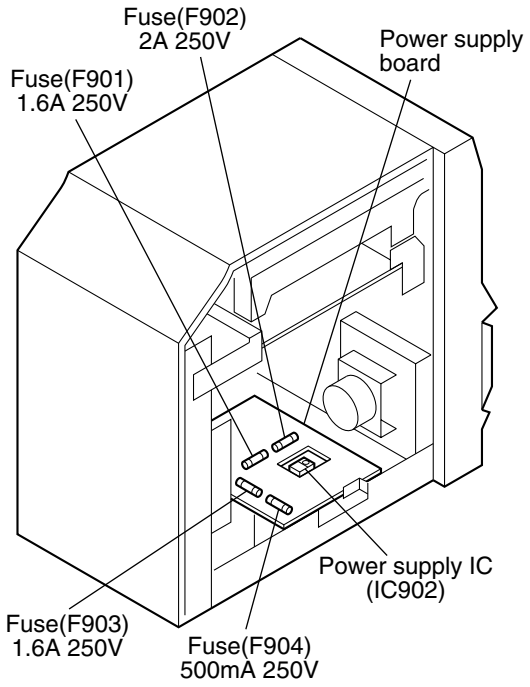


Fig.1

■ Replacing the power supply IC on the power supply board (See Figs. 1 and 2.)

- Remove the left side panel and power supply board according to their disassembly methods (see **Figs. 7**, **8**, **18** and **19**).

1. The power supply IC is located below the power supply board.

2. In order to replace the power supply IC, remove the solder from the soldered part **a**.

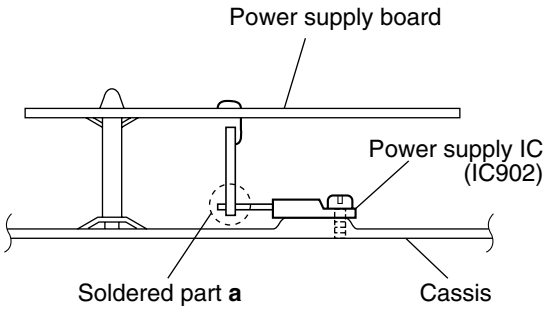


Fig.2

■ Replacing the power amplifier IC on the main board (See Fig. 3.)

- Remove the main board according to its disassembly method (see Figs. **20** and **21**).

1. Remove the two screws **A** that attach the power amplifier IC onto the heat sink.

2. In order to replace the power amplifier IC, remove the solder from soldered part **b** on the back side of the main board.

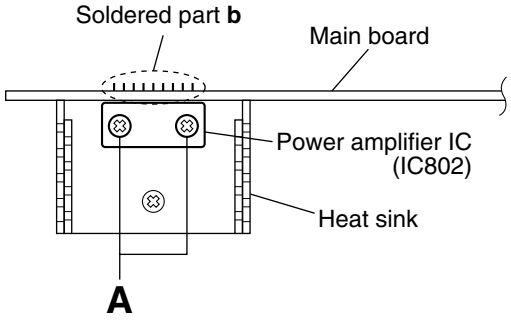


Fig.3

■ Removing the right side panel (See Figs. 4 to 6.)

1. From the right side of the main body, remove the four screws **B** and two screws **C** retaining the right side panel.

2. Slide the right side panel toward the rear (in the direction of arrow **1**) until the claw **c** at the back of the panel is hooked by the chassis.

3. Turn the right side panel counterclockwise (in the direction of arrow **2**) and then in order to remove it, lift the panel upward (in the direction of arrow **3**).

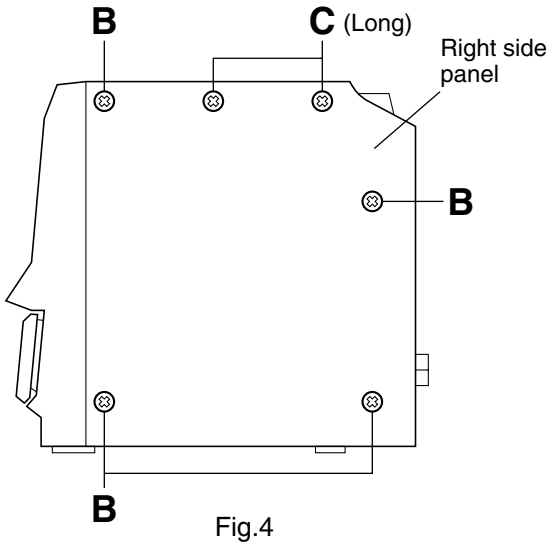


Fig.4

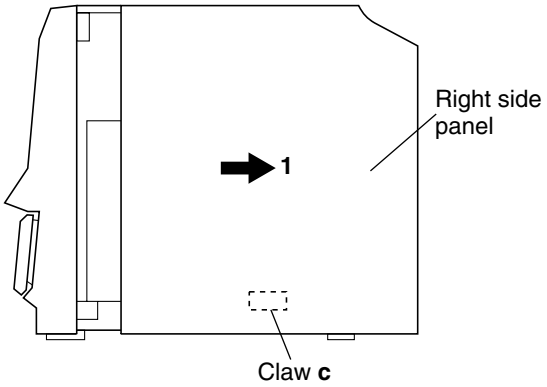


Fig.5

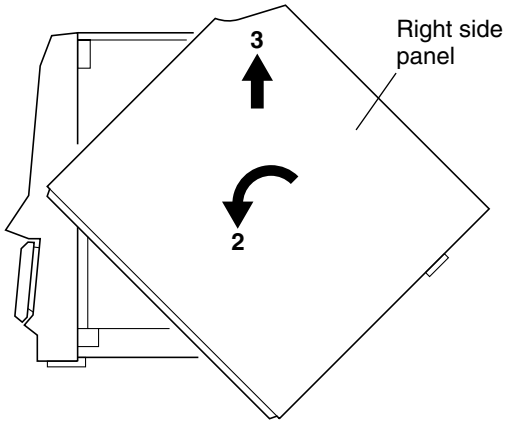


Fig.6

■ Removing the left side panel (See Figs. 7 and 8.)

1. From the left side of the main body, remove the four screws **B** and the two screws **C** retaining the left side panel.

2. Slide the left side panel toward the rear (in the direction of arrow **4**) until the claw **d** at the back of the panel is hooked by the chassis, and then lift the panel upward (in the direction of arrow **5**) to remove it.

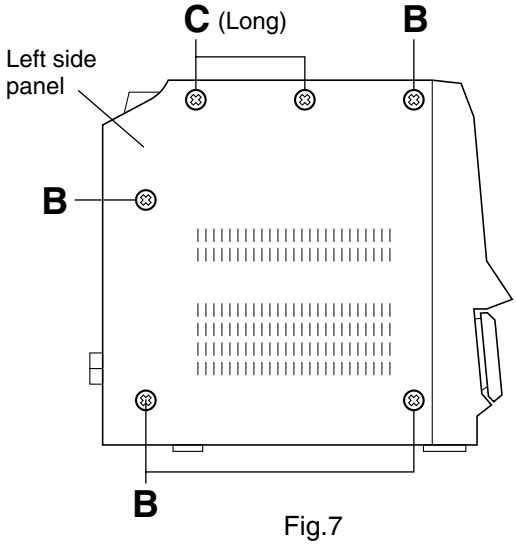


Fig.7

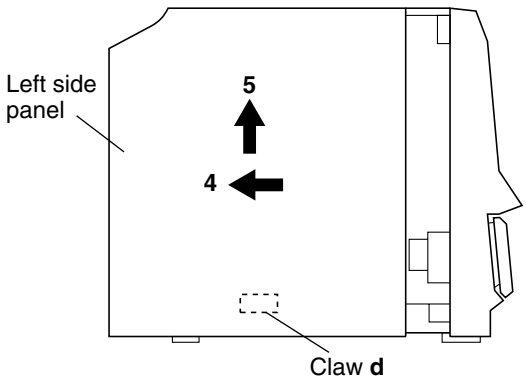


Fig.8

■ Removing the top cover (See Figs. 9 and 10.)

- Remove the left and right side panels.

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

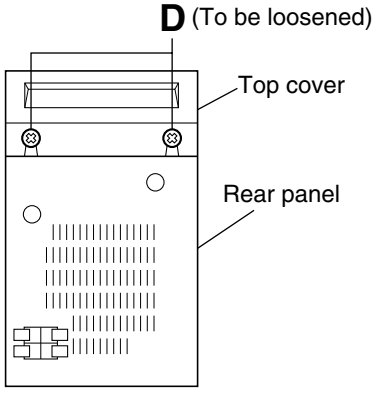


Fig.9

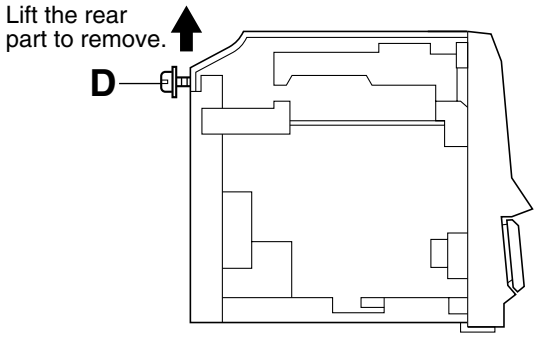


Fig.10

■ Removing the front panel assembly (See Figs. 11 to 13.)

- Remove the left and right side panels.
- Remove the top cover.

1. Remove the two tie bands bundling the wires.
2. Disconnect the wire from connector CN901 on the power supply board.
3. Disconnect the wire from the connector on the cassette switch board.
4. Remove the screw **E** retaining the bracket on the microphone jack board.
5. Disconnect the wire from the connector CN303 on the main board.
6. Remove the four screws **F** and the two screws **G** retaining the bracket of the CD/Video mechanism assembly from the left and right.
7. Remove the screw **H** retaining the front panel assembly from the bottom side of the main body.
8. While opening the hooks **e** to the left and right of the lower part of the front panel assembly (in the direction of arrows **1**), slide the front panel assembly toward the front (in the direction of arrow **2**).
9. Disconnect the wire from the connector on the PB/REC head board and remove the front panel assembly.

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

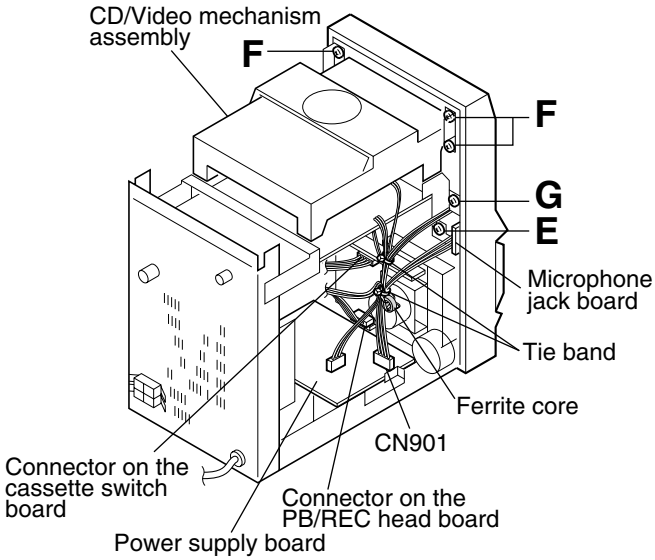


Fig.11

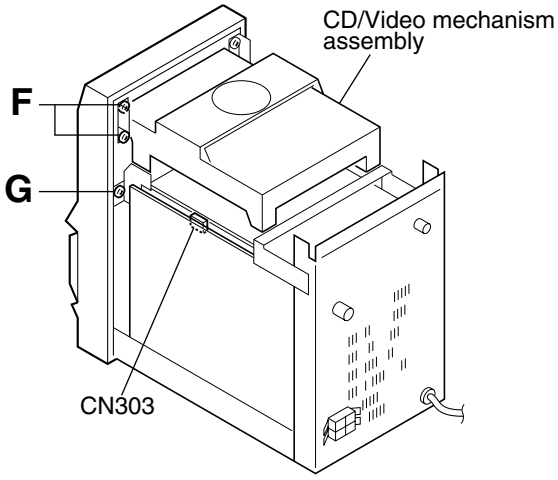


Fig.12

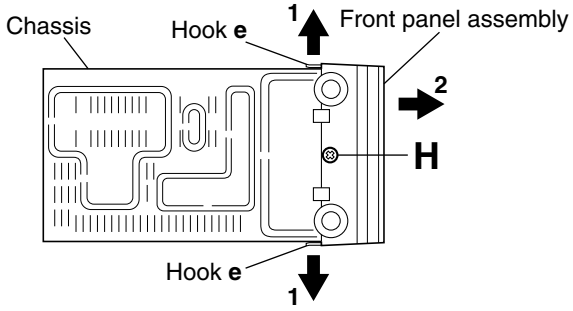


Fig.13

■ Removing the CD/Video mechanism assembly (See Figs. 14 to 17.)

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

1. From the back side of the main body, remove the screw **J** retaining the video jack of the CD/Video board.

2. From the left and right sides of the main body, remove the two screws **K** retaining the bracket.

3. From the left and right sides of the main body, remove the two tie bands bundling the wires.

4. Disconnect the wires from connectors CN506, CN508, CN509 and CN510 on the CD/Video board.

5. Remove the solder from the soldered part **f** that attaches the earth wire to the back of the CD/Video board.

6. Disconnect the wire from connector CN302 on the main board.

7. Disconnect the wire from connector CN903 on the power supply board.

8. Slide the CD/Video mechanism assembly toward the front and remove it from the studs of the main board.

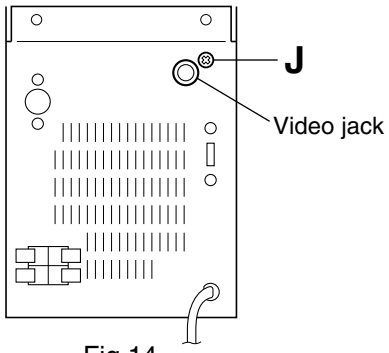


Fig.14

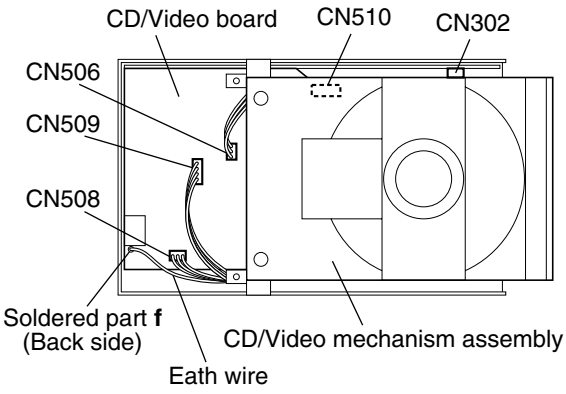


Fig.15

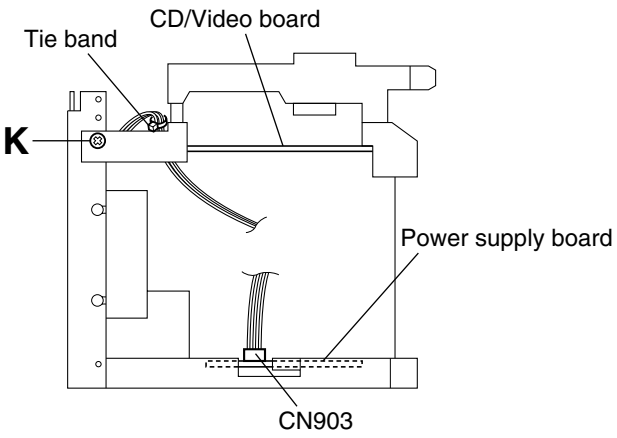


Fig.16

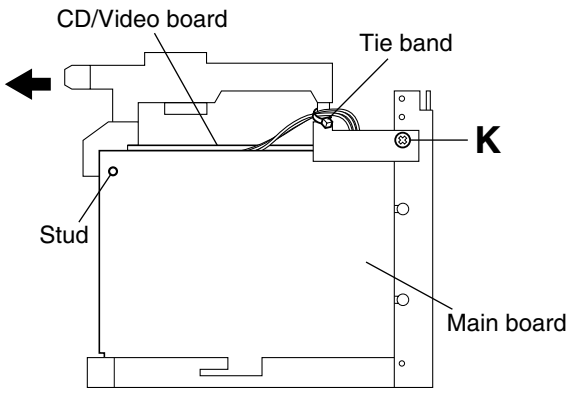


Fig.17

■ Removing the power supply board (See Figs. 18 and 19.)

- Remove the left and right side panels.

1. Disconnect the wires from connectors CN901, CN902, CN903 and CN904 on the power supply board.

2. Remove the screw **L** retaining the earth wire.

3. Remove the screw **M** retaining the power supply IC.

4. Remove the power supply board by pinching the four studs retaining the board using radio pliers, etc.

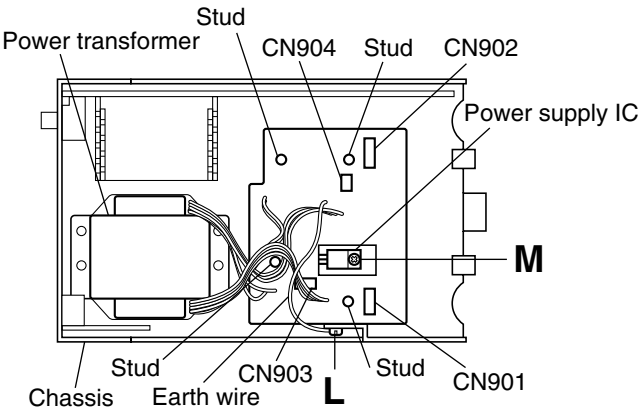


Fig.18

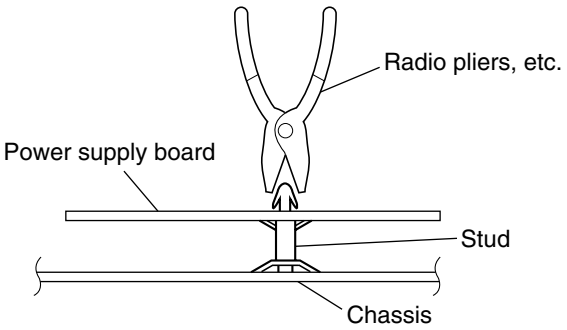


Fig.19

■ Removing the main board (See Figs. 20 and 21.)

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

1. From the back side of the main body, remove the two screws **N** retaining the FM antenna terminal of the main board.

2. Remove the two screws **P** retaining the speaker terminal of the main board.

3. From the top side of the main body, remove the screw **Q** retaining the heat sink of the main board.

4. Slide the main board toward the front to remove it from the chassis.

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

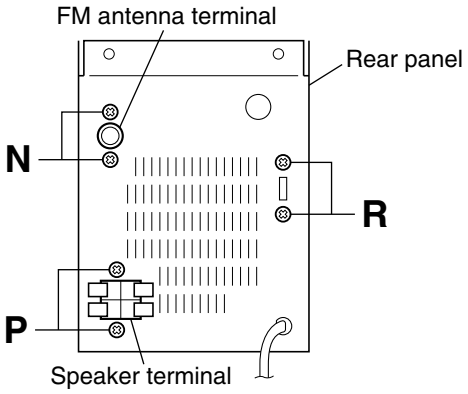


Fig.20

■ Removing the voltage selector board (See Figs. 20 and 21.)

- Remove the left and right side panels.
- Remove the top cover.

1. From the back side of the main body, remove the two screws **R** retaining the voltage selector board.

2. Slide the voltage selector board toward the front to release it from the studs.

[Reference] To replace the voltage selector board, it is required to disconnect all of the wires from the power transformer and the power cord.

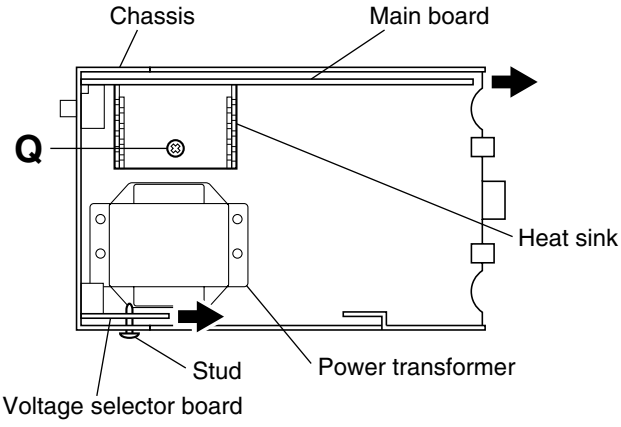


Fig.21

<Front panel assembly section>

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

■ Removing the display board (See Fig. 22.)

Remove the ten screws **S** retaining the display board.

■ Removing the cassette mechanism assembly (See Fig. 22.)

Remove the two screws **T** and the two screws **U** retaining the cassette mechanism assembly.

[Caution] After assembly, apply a locking agent to the screws T and U.

■ Removing the cassette door damper (See Fig. 22.)

Remove the screw **V** retaining the damper bracket and take out the cassette door damper.

■ Removing the cassette door stopper (See Fig. 22.)

Remove the two screws **W** retaining the cassette door stopper and remove the cassette door stopper.

■ Removing the cassette door cover (See Fig. 23.)

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

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

■ Removing the cassette door (See Figs. 24 and 25.)

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

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

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

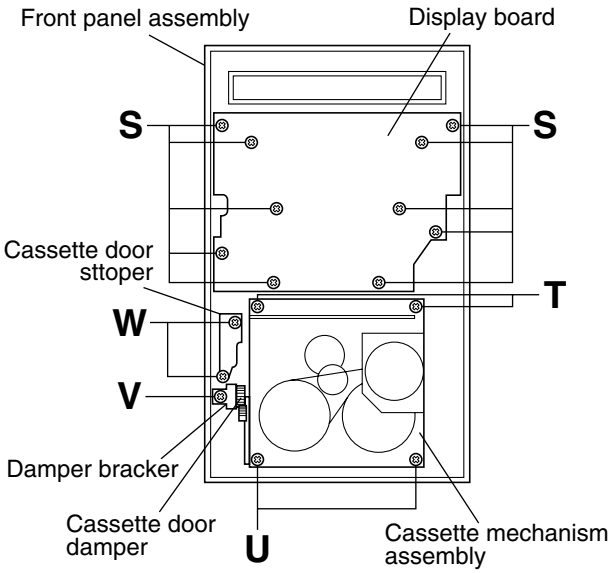


Fig.22

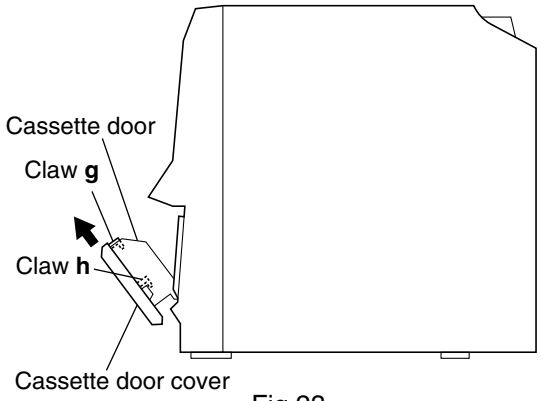


Fig.23

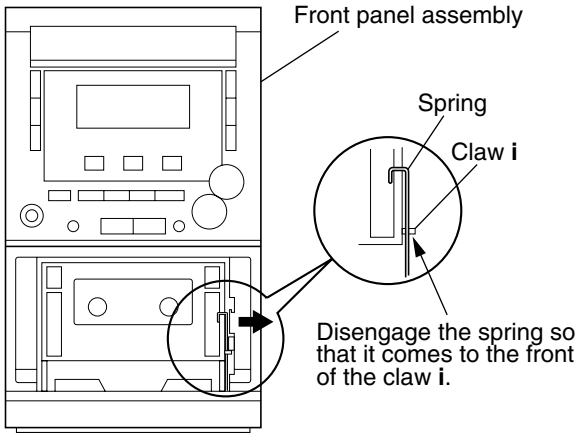


Fig.24

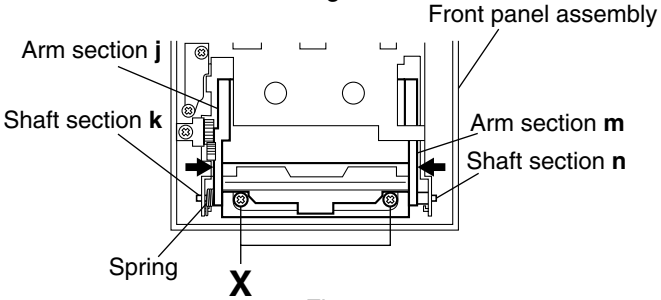


Fig.25

<CD/Video mechanism section>

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

■ Removing the CD/Video board (See Figs. 26 and 27.)

1. From the back side of the CD/Video mechanism assembly, remove the two screws **Y** retaining the CD/Video board.

2. Disengage the two studs retaining the CD/Video board.

3. Disconnect the wire from connector on the CD/Video pickup assembly.

4. Lift the CD/Video board and attach solder to the short land part **p** on the CD/Video pickup assembly.

5. Disconnect the card wire from connector CN501 on the CD/Video board, and take out the CD/Video board.

[Caution]
- **Be sure to solder the short land part p on the CD/Video pickup unit before disconnecting the card wire from the CD/Video pickup assembly (see Fig. 27).**
  If the card wire is disconnected without attaching solder, the CD/Video pickup may be destroyed by static electricity.
- **In the assembly, be sure to remove solder from the short land part p after connecting the card wire.**

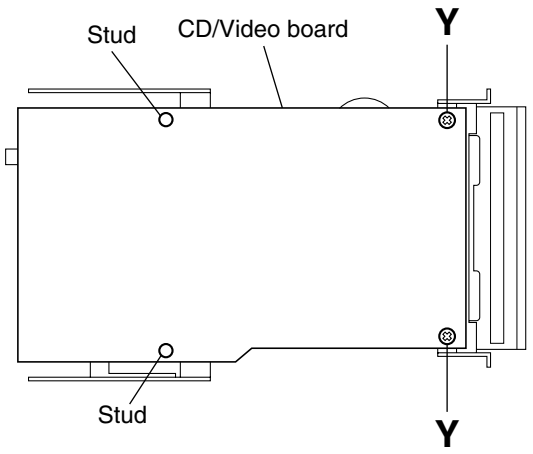


Fig.26

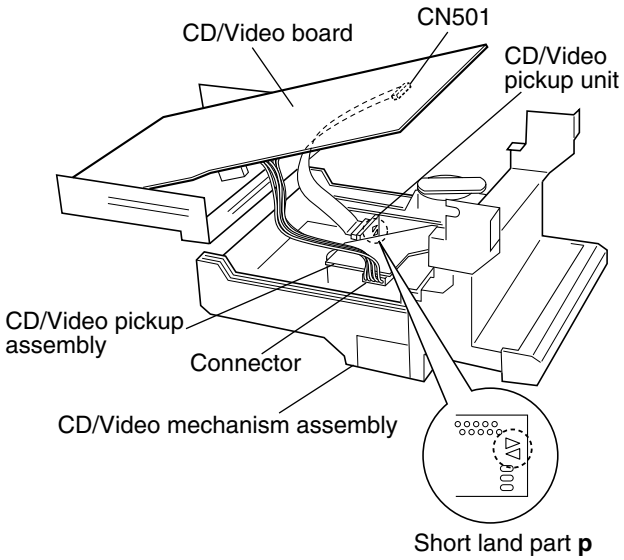


Fig.27

■ Removing the CD/Video pickup assembly (See Fig. 28.)

- Remove the CD/Video board.

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

2. Take out the CD/Video pickup assembly.

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

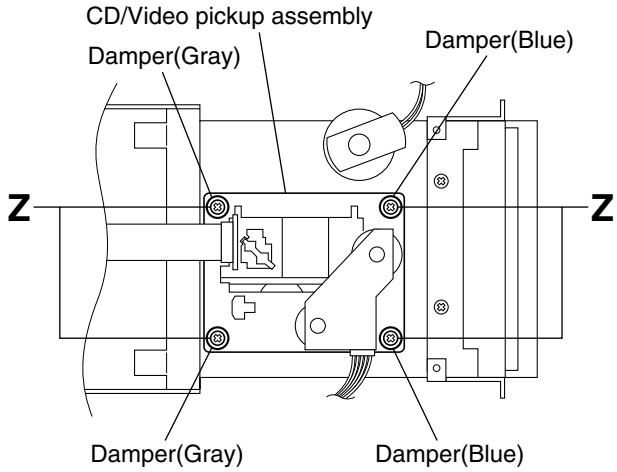


Fig.28

■ Removing the tray motor (See Figs. 29 to 32.)

- Remove the CD/Video board.

1. On the top of the CD/Video mechanism assembly, open up the claws **q** and **r** at the left and right of the clamper assembly and lift the assembly to remove it.

2. On the top of the CD/Video mechanism assembly, push the section **s** of the elevator in the direction of the arrow and lower the CD/Video pickup assembly.

3. Pull out the tray.

4. While opening up the claws **t** at the left and right of the tray in the directions of the arrows, remove the tray.

5. While pushing the claw **w** on the CD/Video mechanism assembly downwards, slide the elevator fully in the direction of the arrow.

6. Remove the transparent cover.

7. Remove the belt from the tray motor pulley.

8. Remove the two screws **AA** retaining the tray motor and remove it.

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

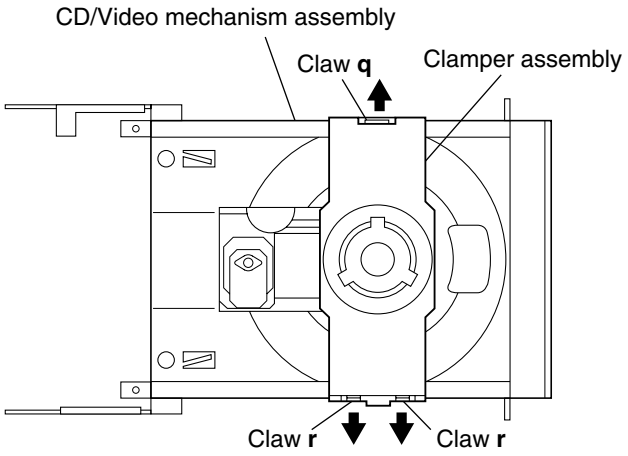


Fig.29

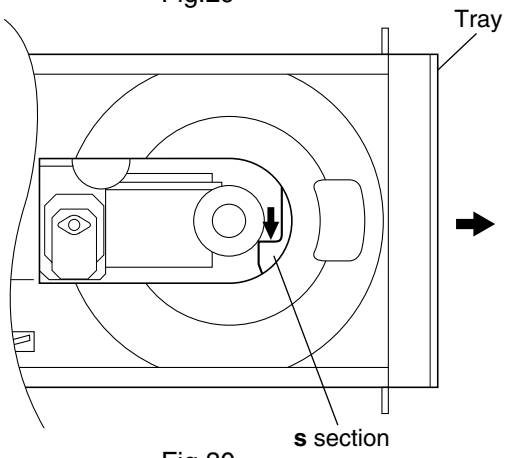


Fig.30

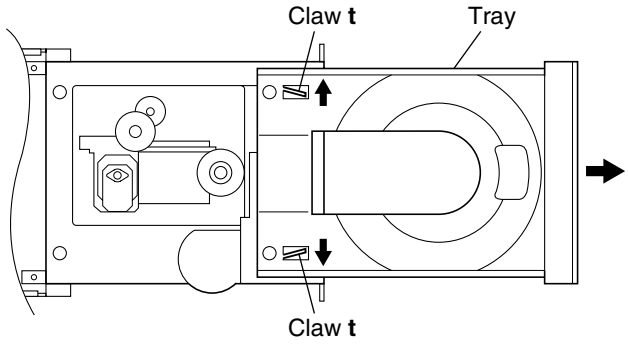


Fig.31

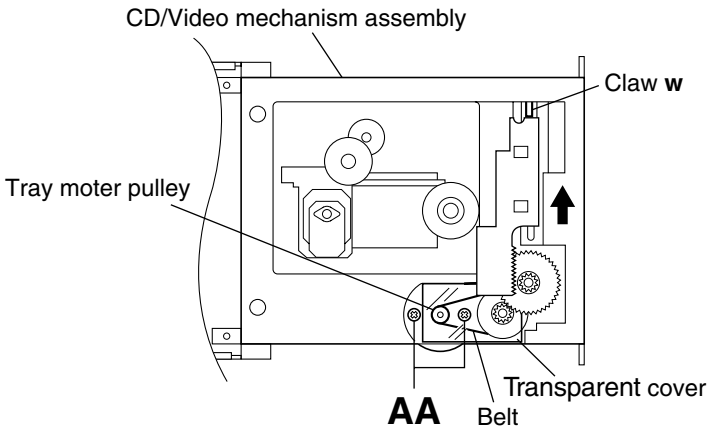


Fig.32

■ Replacing the CD/Video pickup unit (See Figs. 33 to 36.)

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

1. Remove the left and right side panels (see **Figs. 4** to **8**).

2. Remove the top cover (see **Figs. 9** and **10**).

3. On the top of the main body, open up the claws **q** and **r** on the left and right of the clamper assembly in the direction of the arrows and lift the assembly to remove it.

4. On the top of the main body, push section **s** on the elevator of the CD/Video mechanism assembly and lower the CD/Video pickup assembly.

5. Pull out the tray.

6. Remove the slit washer retaining the feed middle gear, and take out the feed middle gear.

7. Remove the two screws **AB** retaining the shaft.

8. Turn the CD/Video pickup unit upside down and apply solder to the short land part **p**.

9. Disconnect the card wire from the CD/Video pickup unit and replace the unit.

[Caution]
- **Be sure to solder the short land part p on the CD/Video pickup unit before disconnecting the card wire from the CD/Video pickup unit (see Fig. 36).**
  If the card wire is disconnected without attaching solder, the CD/Video pickup may be destroyed by static electricity.
- **In the assembly, be sure to remove solder from the short land part p after connecting the card wire.**

[Note]
- **Removing the CD/Video 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/Video pickup unit (see Fig. 36).**

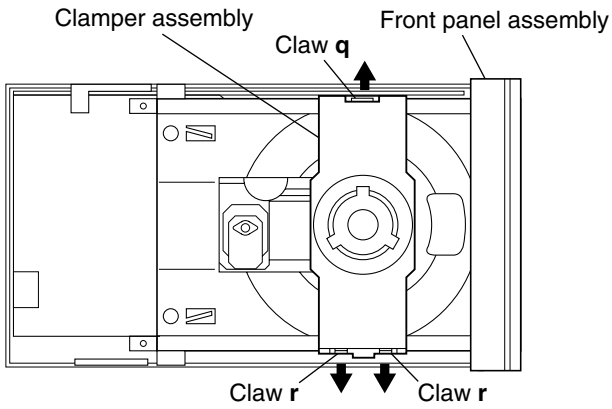


Fig.33

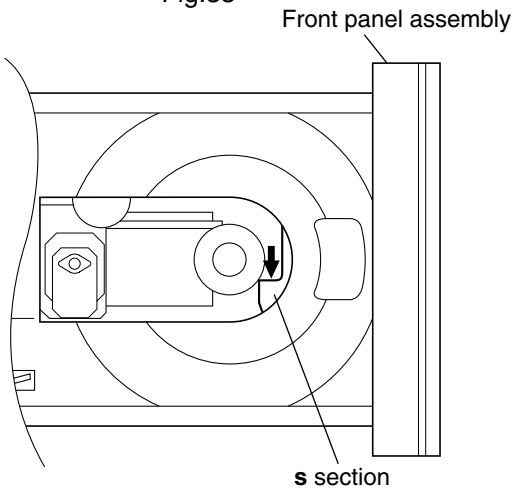


Fig.34

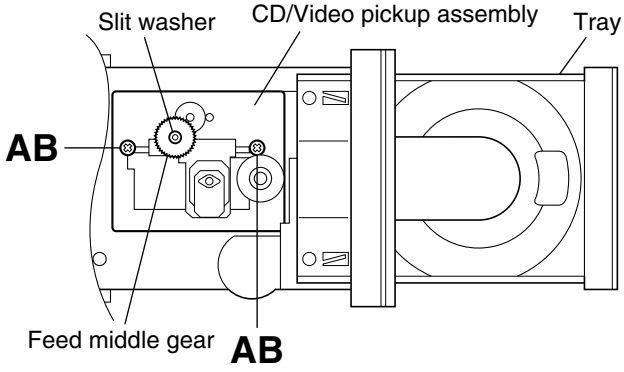


Fig.35

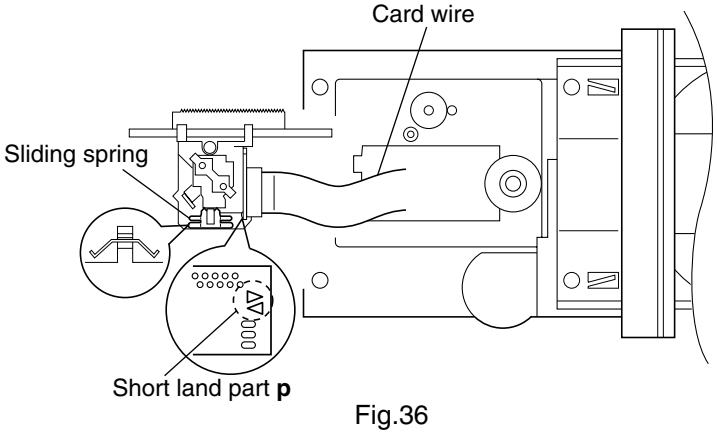


Fig.36

< MEMO >

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
    VT703 : For playback frequency
    VT703 : For head azimuth adjustment
    VT751 : For separation
    (1kHz Band pass Filter is used.)
    VT752 : For cross talk
    (1kHz Band pass Filter is used.)
13. Blank tape
    TAPE Ⅰ: AC-225

■ Measurement conditions

Power supply voltage
AC110-127V/220-240V : US/UB
(Adjustable with the voltage selector)

■ 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 1W(2.8V) 8 ohm
Standard mode of function knob :
Selects FM or AM in tuner mode
Bass boost : OFF
Preset EQ : Flat
Main volume : Reference output

Cassette amplifier section
Reference output :
Speaker output 1W(2.8V) 8 ohm
Standard mode of function knob :
Press TAPE knob of select TAPE mode

CD section
CD test disc : CTS-1000

■ Cassette amplifier section

Item	Measuring condition	Check and adjustment procedure	Standard value	Adjusting part
Head azimuth adjustment	▪Test tape: VT703 (10kHz) ▪Signal output terminal: H.phone out and speakers	1. Play back the test tape VT703 (10kHz). 2. Adjust the head azimuth adjusting screw so that the phase difference between the R and L channels is minimized at an output level that is within ±2dB of the maximum output level in the FWD and REV operations. 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 in the FWD and REV operations alternately.	▪Output level: ▪Within ±2dB of maximum output level ▪Phase difference R and L channels: Minimum	Head azimuth adjusting screw (To be used only after head replacement) See Fig.1 on page 1-18.
Tape speed and wow/flutter check and adjustment	▪Test tape: VT712 (3kHz) ▪Signal output terminal: H.phone out and speakers	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 1-18. ▪Check only
PB frequency response check	▪Test tape: VT703 ▪Signal output terminal: PHONES (with 32 ohm load)	Play back the test tape VT703 while confirming that deviation between the 1kHz signal and 8kHz signal should be 0 (+3~-6)dB.	Deviation between 1kHz and 8kHz: 0 (+3~-6)dB	
Bias frequency check	▪Tape: Normal ▪Signal output terminal: Cassette REC./PLAY HEAD	While recording, check to see if the frequency at the measuring point is 68kHz ± 2kHz if not adjust L203 until the frequency counter indicates 68 kHz ± 2kHz.		L203 See Fig.3 on page 1-18.
REC and PB frequency response adjustment	▪Test tape: AC225 ▪Signal input: SG 1kHz -20dBs with emphasis ▪Signal output terminal: H.phone out	In recording FM mode, and record the reference 1kHz signal and 8kHz signal alternately repeatedly. While playing back the recorded signal of the 1kHz signal differ from that of the 8kHz signal by within 0 (+4~-4)dB.	Level difference for 1kHz singnal: Within 0 (+4~-4)dB	

■ Tuner section

Item	Measuring condition	Check and adjustment procedure	Standard value	Adjusting part
FM VT adjustment	Signal input: FM antenna VT test point: IC101 pin8	1. Set the FM signal generator at 108MHz and output level at 60dBμ. 2. Adjust L102 so that the VT is within 8V±0.2V.	VT=8V±0.2V	L102
AM VT adjustment	Signal input: AM loop antenna VT test point: IC101 pin8	1. Set the AM signal generator at 1602kHz and output level at 100dBμ. 2. Adjust T102 so that the VT is within 7.2V±0.1V.	VT=7.2V±0.1V	T102
FM IF adjustment	Signal input: IC101 pin3 Voltage test point: IC101 pin19 and pin20	1. Set the FM signal generator at 10.7MHz with no signal deviation and output level at 90dBμ. 2. Short IC101 pin21 to GND. 3. Adjust T103 so that the voltage between IC101 pin19 and pin20 is within 0±3mV.	0±3mV	T103
AM IF adjustment	Signal input: IC101 pin2 Signal output: IC101 pin10	1. Set the intermediate frequency sweep generator to AM 450kHz. 2. Adjust T104 and T105 for maximum and center output. 3. Adjust T106 so that the voltage between IC101 pin19 and pin20 is within 0±2mV.	0±2mV	T104, T105 T106
FM tracking adjustment	Signal input: FM antenna Signal output: IC101 pin14 or pin15	1. Set the FM signal generator at 90MHz and the unit receiving 90MHz, adjust TC102 for maximum output. 2. Set the FM signal generator at 106MHz and the unit receiving 106MHz, adjust L101 for maximum output.		TC102 L101
AM tracking adjustment	Signal input: Loop antenna Signal output: IC101 pin14 or pin15	1. Set the AM signal generator at 603kHz and the unit receiving 603kHz, adjust TC101 for maximum output. 2. Set the AM signal generator at 1404kHz and the unit receiving 1404kHz, adjust T101 for maximum output.		TC101 T101
FM stereo separation adjustment	Signal input: FM antenna Signal output: IC101 pin14 and pin15	1. Set the FM signal generator at 98MHz with stereo deviation and the unit receiving 98MHz. 2. Adjust VR101 so that the separation between the R and L channels for maximum.		VR101

■ Location of adjusting parts

· Cassette mechanism section

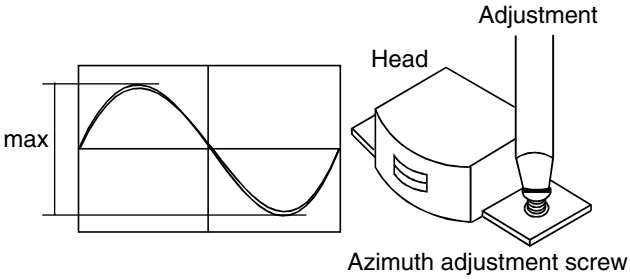


Fig.1 Head output signal

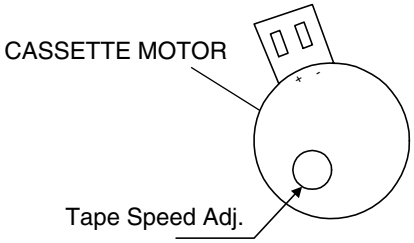


Fig.2

· Main board

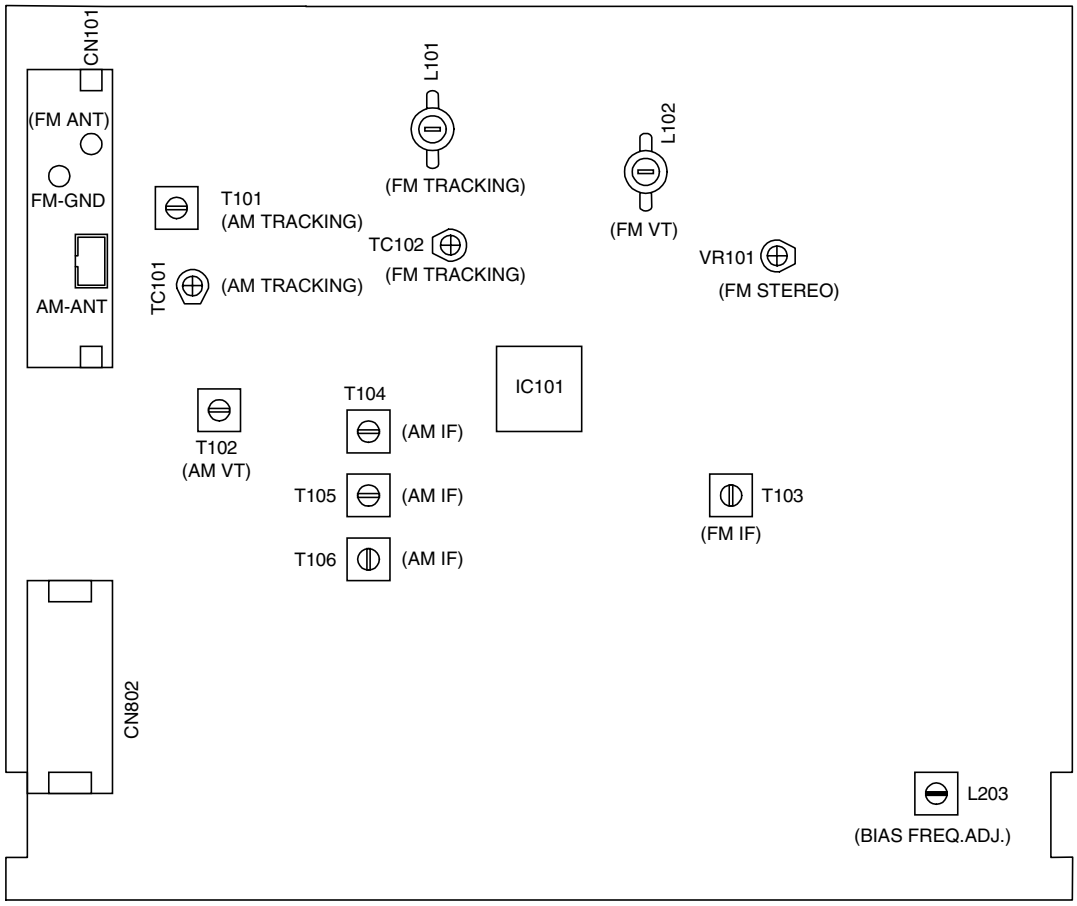
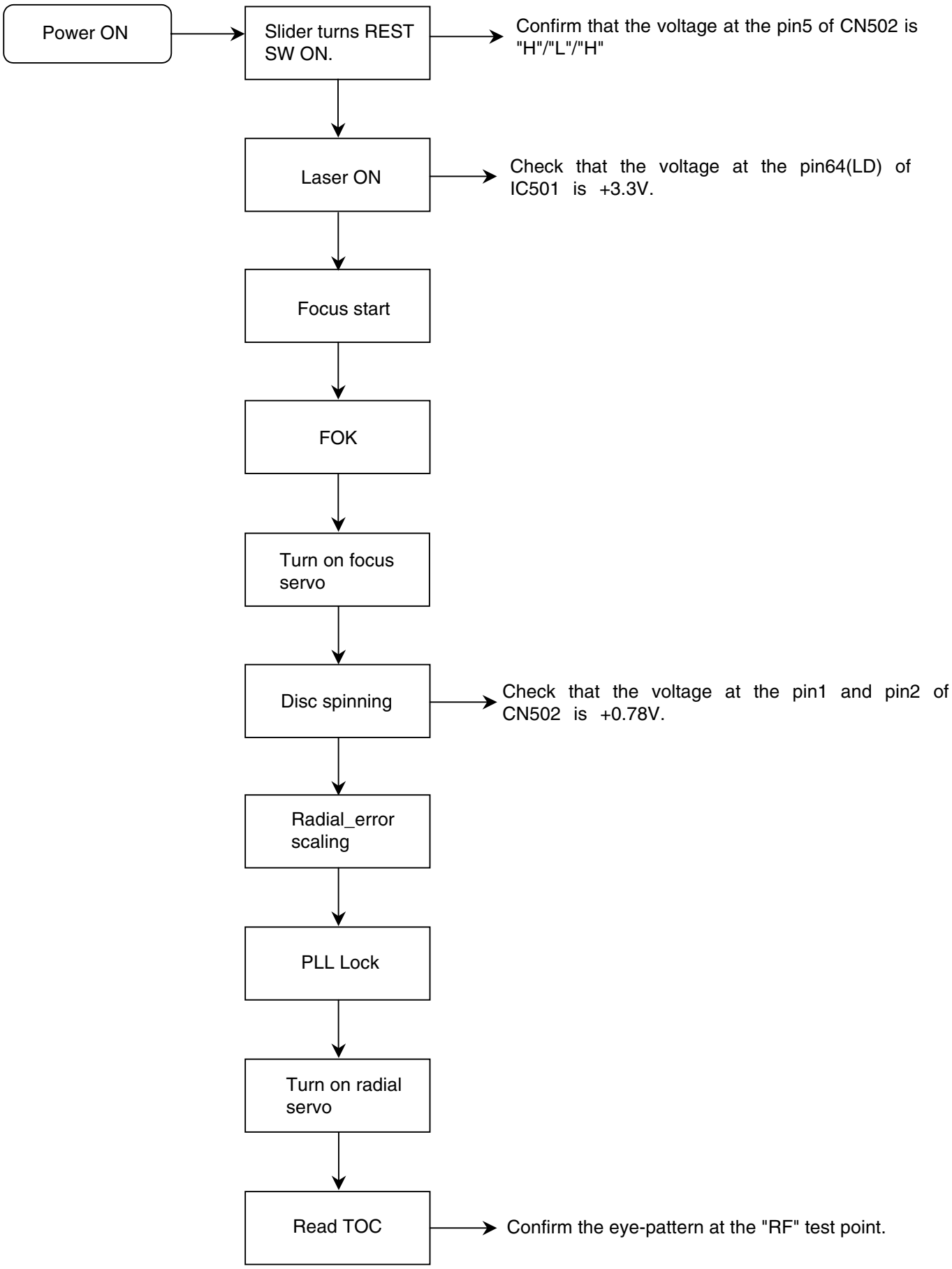


Fig.3

Flow of functional operation until TOC read

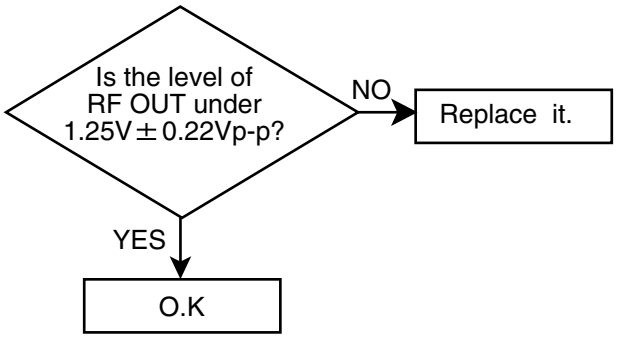


Maintenance of laser pickup

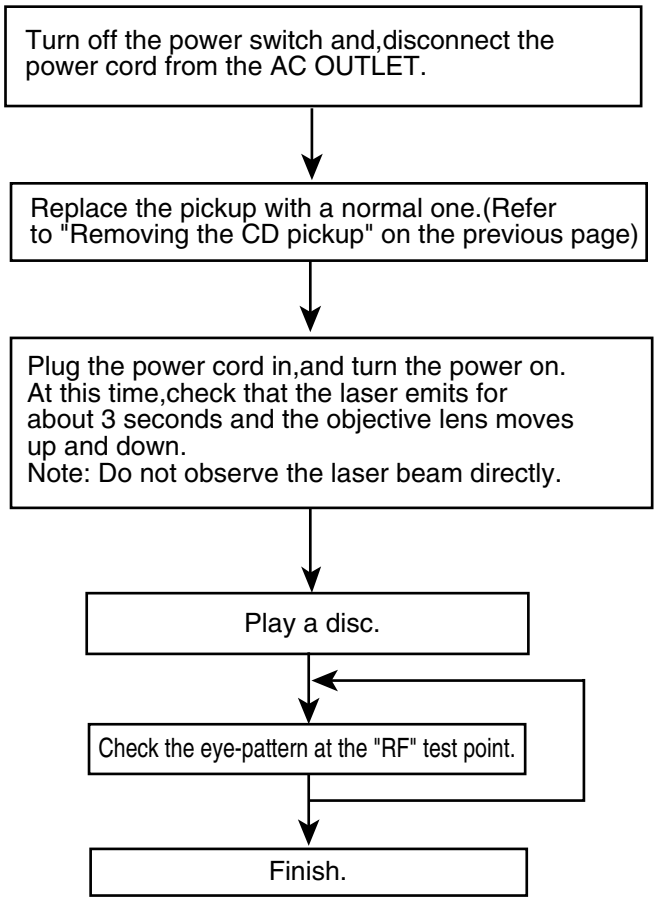
(1) Cleaning the pick up lens
Before you replace the pick up, please try to clean the lens with a alcohol soaked cotton swab.

(2) Life of the laser diode
When the life of the laser diode has expired, the following symptoms will appear.

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



Replacement of laser pickup



(3) Semi-fixed resistor on the APC PC board
The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power.
Since this adjustment should be performed to match the characteristics of the whole optical block, do not touch the semi-fixed resistor.
If the laser power is lower than the specified value,the laser diode is almost worn out, and the laser pickup should be replaced.
If the semi-fixed resistor would be adjusted when the pickup operates normally,the laser pickup may be damaged due to excessive current.

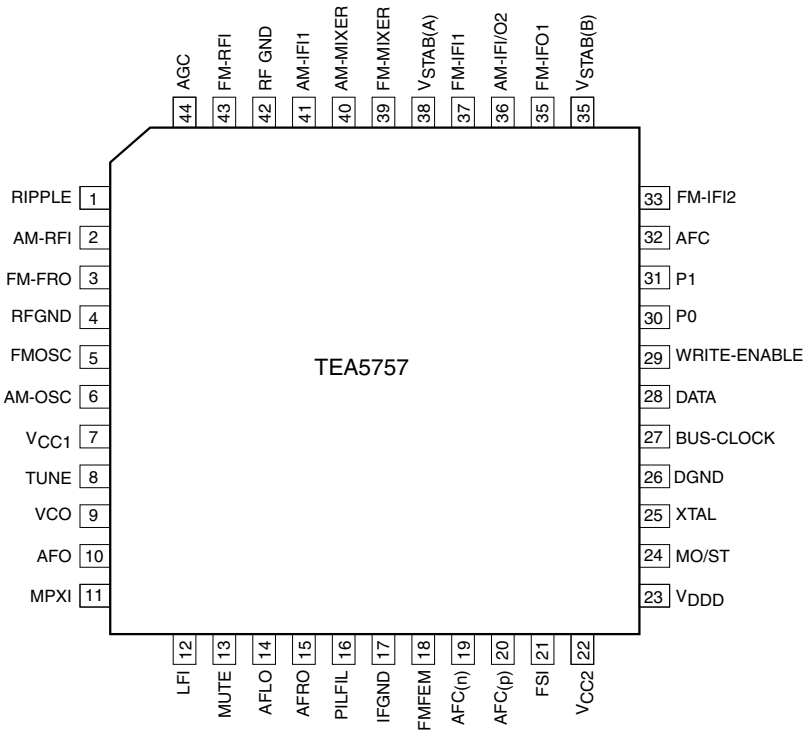
Trouble shooting

Circuit	Symptom	Cause	Remedy
General	No sound	▪ Speakers are not connected.	Check the speaker connection.
		▪ The unit is on STANDBY mode.	Press STANDBY/ON button to turn on the unit.
		▪ Defective volume control	Set the volume control to a proper sound level.
		▪ The unit is on MUTE mode.	Press MUTE on the remote control.
AM	No sound, weak sound (Low sensitivity)	▪ Improper location of the AM loop antenna	Place the antenna away from the unit and adjust its position for the best reception.
		▪ Defect AM loop antenna or oscilloscope coil	Replace if necessary.
		▪ AM VT faulty	Readjust (see "Adjustment method").
		▪ Intermediate frequency tuning faulty	Readjust (see "Adjustment method").
		▪ RF tracking faulty	Readjust (see "Adjustment method").
		▪ Defective IC101	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 supplied FM wire antenna properly and adjust its position for the best reception.
		▪ Defective IC101	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 IC202	Check voltages. Replace if necessary.
		▪ Cassette erasure prevention tabs broken out	Replace tape or cover tab openings with adhesive tape.
CD CD-R CD-RW MP3-CD	Cannot read the table of content. No display, 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.
		▪ Defect in the servo control board	Replace or repair as required.
		▪ Defect in the CD pickup mechanism	Replace as required.
		▪ MP3 formats not supported.	Use MP3-CD formats supported on this unit.
VCD	No picture/No color is shown on TV screen	▪ The unit is not connect to the TV or the connection is loose.	Connect the cable between the unit and TV set correctly.
		▪ The unit is not switched to the PAL or NTSC setting corresponding to the TV set.	Change the PAL/NTSC setting of the unit.
KARAOKE	No sound, no echo	▪ Defective MIC volume and ECHO level	Adjust MIC volume and echo level to proper level.

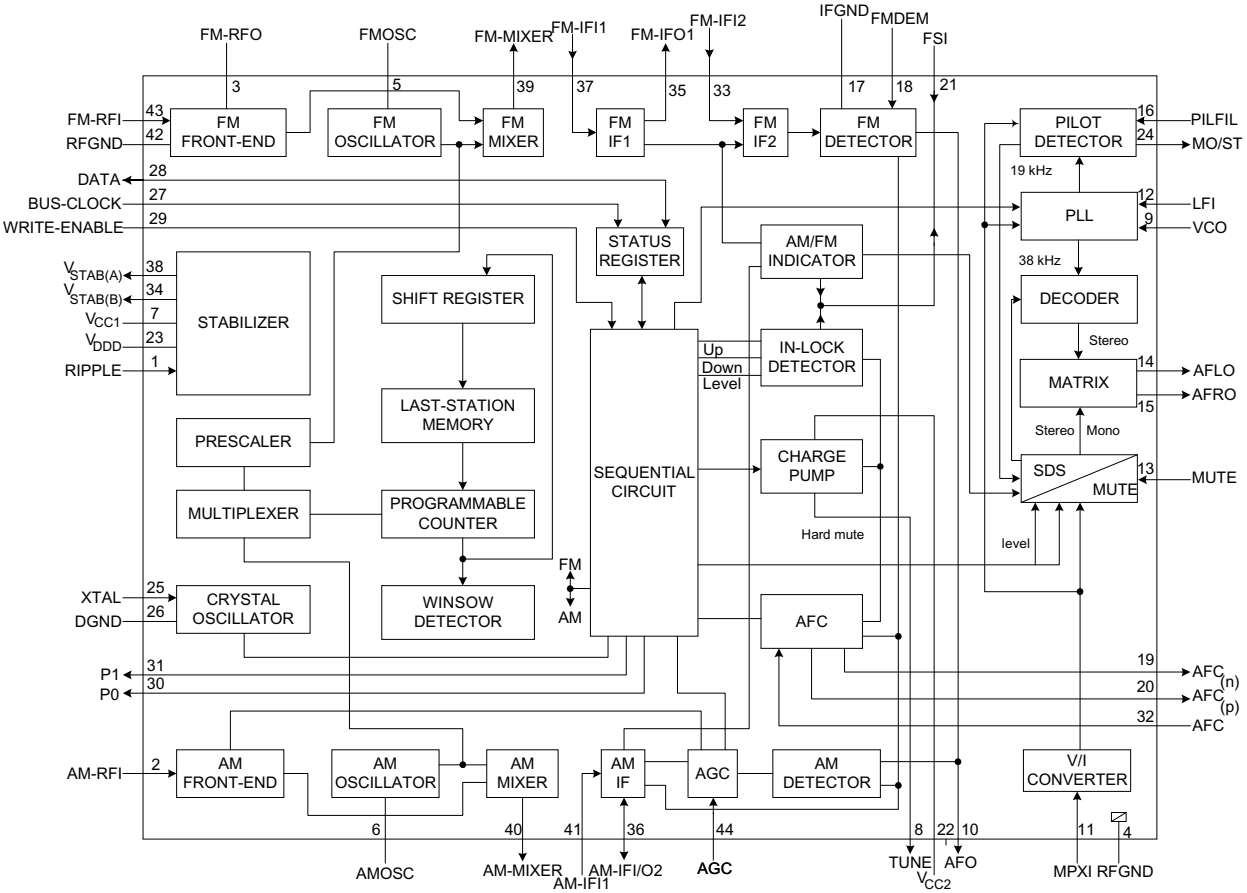
Description of major ICs

■ TEA5757(IC101): Tuner RF/IF/DET

1. Terminal layout



2. Block diagram

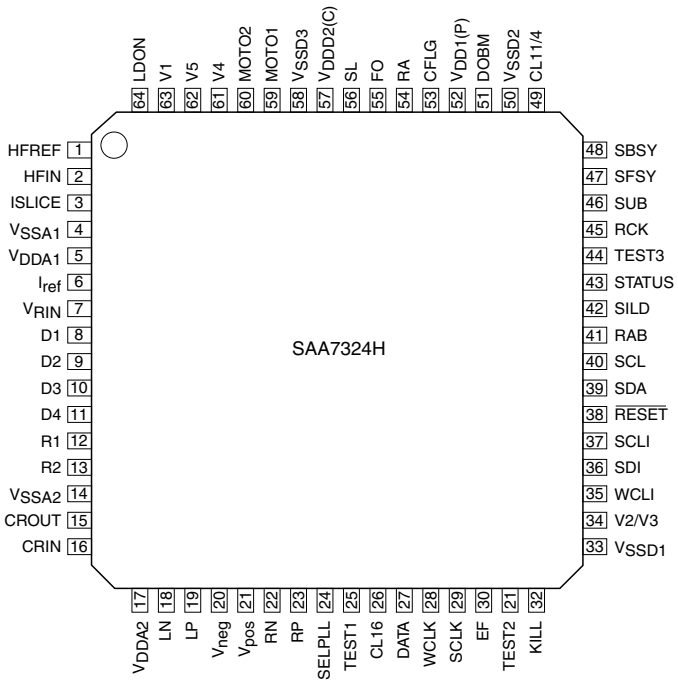


3. Pin function

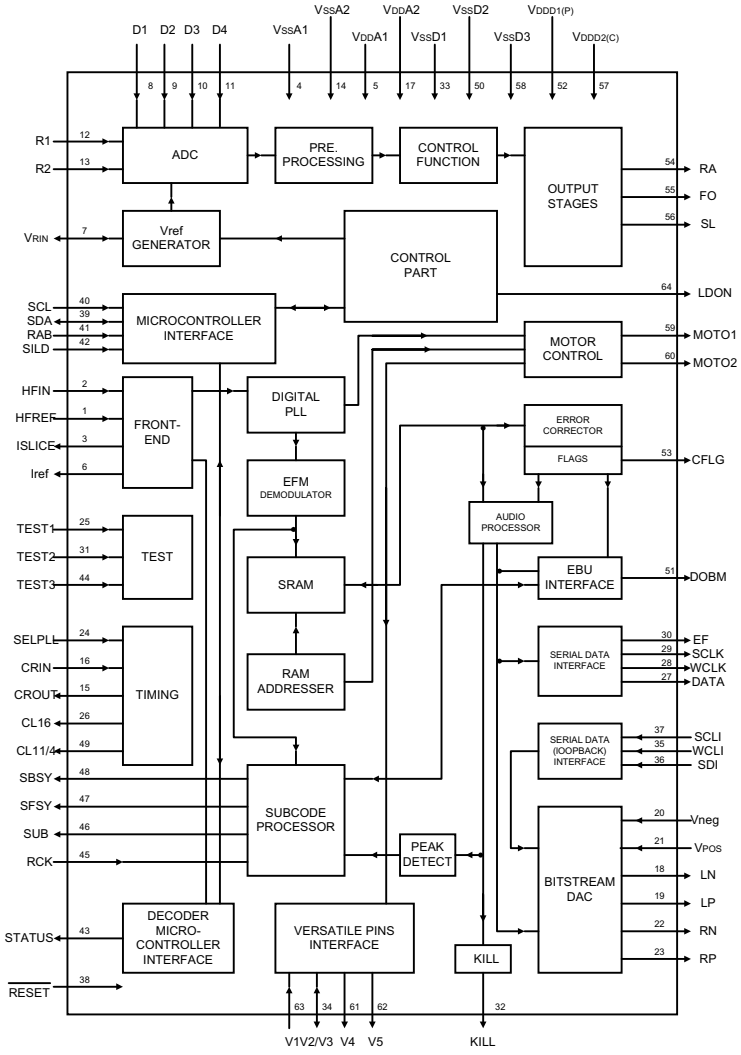
Pin No.	Symbol	I/O	Function
1	RIPPLE	I	Ripple capacitor input
2	AM-RFI	I	AM-RF input
3	FM-RFO	-	Parallel tuned FM-RF circuit to ground
4	RFGND	-	RF ground and substrate
5	FMOSC	-	Parallel tuned FM-oscillator circuit to ground
6	AMOSC	-	Parallel tuned AM-oscillator circuit to ground
7	V_{CC1}	-	Supply voltage
8	TUNE	O	Tuning current output
9	VCO	I	Voltage controlled oscillator input
10	AFO	O	AM/FM AF output (output impedance typical 5kΩ)
11	MPXI	I	Stereo decoder input (input impedance typical 150kΩ)
12	LFI	I	Loop-filter input
13	MUTE	I	Mute input
14	AFLO	O	Left channel output (output impedance typical 4.3kΩ)
15	AFRO	O	Right channel output (output impedance typical 4.3kΩ)
16	PILFIL	I	Pilot detector filter input
17	IFGND	-	Grond of IF,detector and MPX stage
18	FMDEM	I	Ceramic discriminator input
19	$AFC_{(n)}$	O	AFC negative output
20	$AFC_{(p)}$	O	AFC positive output
21	FSI	-	Field-strength indicator
22	V_{CC2}	-	Supply voltage for tuning
23	V_{DDD}	-	Digital supply voltage
24	MO/ST	O	Mono/stereo and tunig indication output
25	XTAL	I	Crystal input
26	DGND	-	Digital ground
27	BUS-CLOCK	I	Bus-clock input
28	DATA	I/O	Bus data input/output
29	WRITE-ENABLE	I	Bus write-enable input
30	P0	O	Programmable output port (P0)
31	P1	O	Programmable output port (P1)
32	AFC	I	450kHz LC-input circuit
33	FM-IFI2	I	FM-IF input 2(input impedanc typical 330Ω)
34	$V_{STAB(B)}$	-	Internal stabilized supply voltage (B)
35	FM-IFO1	O	FM-IF output1 (output impedance typical 330Ω)
36	AM-IFI/O2	I/O	Input/output to IF-Tank (IFT);output:current souce
37	FM-IFI1	I	FM-IF input1 (input impedance typical 330Ω)
38	$V_{STAB(A)}$	-	Internal stabilized supply voltage (A)
39	FM-MIXER	O	Ceramic filter output (output impedance typical 330Ω)
40	AM-MIXER	O	Open-collector output to IFT
41	AM-IFI1	I	IFT or ceramic filter input (input impedance typical 3kΩ)
42	RFGND	-	FM-RF ground
43	FM-RFI	I	FM-RF aerial input (input impedance typical 40Ω)
44	AGC	I	AGC capacitor input

■ SAA7324 (IC501) : Digital servo processor & compact disc decoder

1. Terminal layout



2. Block diagram

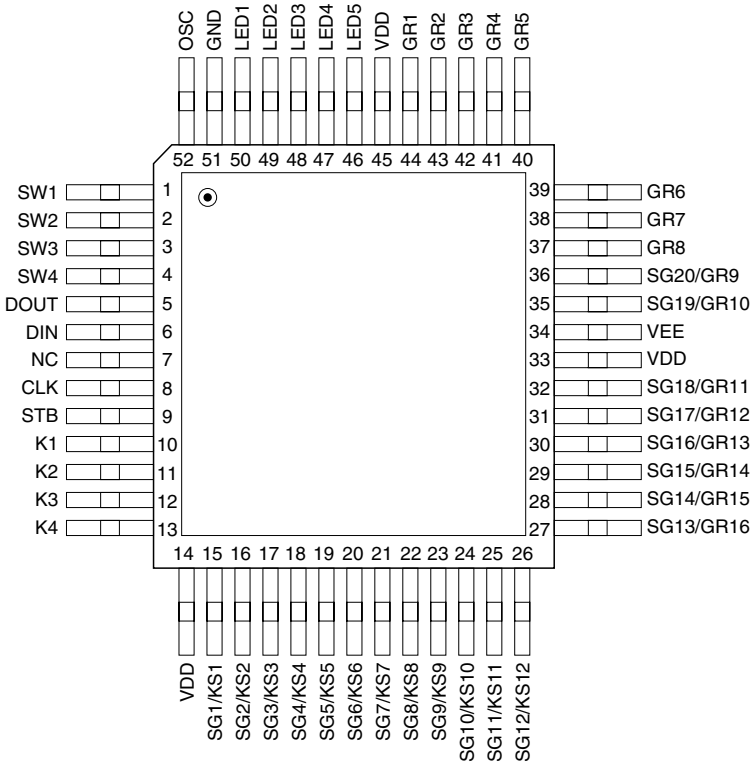


3. Pin function

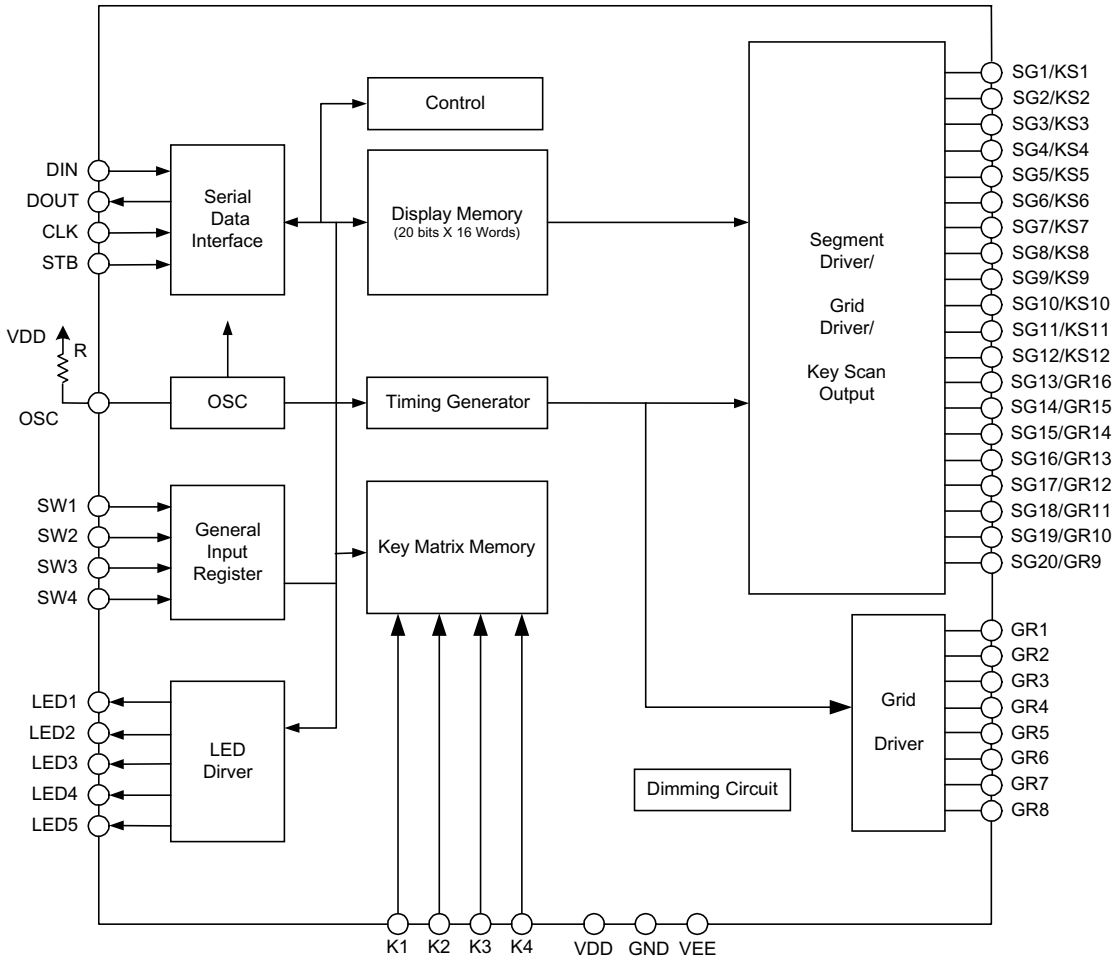
Pin No.	Symbol	I/O	Function
1	HFREF	I	Comparator common mode input
2	HFIN	I	Comparator signal input
3	ISLICE	O	Current feedback output from data slicer
4	V_{SSA1}	-	Analog ground1
5	V_{DDA1}	-	Analog supply voltage1
6	Iref	O	Reference current output
7	V_{RIN}	-	Reference voltage for servo ADCs
8	D1	I	Unipolar current input1(central diode signal input)
9	D2	I	Unipolar current input2(central diode signal input)
10	D3	I	Unipolar current input3(central diode signal input)
11	D4	I	Unipolar current input4(central diode signal input)
12	R1	I	Unipolar current input1(satelite diode signal input)
13	R2	I	Unipolar current input2(satelite diode signal input)
14	V_{SSA2}	-	Analog ground2
15	CROUT	O	Crystal/resonator output
16	CRIN	I	Crystal/resonator input
17	V_{DDA2}	-	Analog supply voltage2
18	LN	O	DAC left channel differential nagative output
19	LP	O	DAC left channel differential positive output
20	V_{neg}	I	DAC negative reference input
21	V_{pos}	I	DAC positive reference input
22	RN	O	DAC right channel differential negative output
23	RP	O	DAC right channel differential positive output
24	SELPLL	-	Selects whether internal clock multiplier PLL is used
25	TEST1	I	Test control input1(this pin should be tied LOW)
26	CL16	O	16.9344MHz system clock output
27	DATA	O	Serial d4(1) data output(3-state)
28	WCLK	O	Word clock output(3-state)
29	SCLK	O	Serial bit clock output(3-state)
30	EF	O	C2 error flag output(3-state)
31	TEST2	I	Test control input2(this pin should be tied LOW)
32	KILL	O	Kill output(programmable;open-drain)
33	V_{SSD1}	-	Digital ground1
34	V2/V3	I/O	Versatile I/O:versatile input2 or versatile output3(open-drain)
35	WCLI	I	Word clock input(for data loopback to DAC)
36	SDI	I	Serial data input(for data loopback to DAC)
37	SCLI	I	Serial bit clock input(for data loopback to DAC)
38	$\overline{\text{RESET}}$	I	Power-on reset input(active LOW)
39	SDA	I/O	Microcontroller interface data I/O line(IIC-bus;open-drain output)
40	SCL	I	Microcontroller interface clock line input(IIC-bus)
41	RAB	I	Microcontroller interface R/W and load control line input(4-wire bus mode)
42	SILD	I	Microcontroller interface R/W and load contorl line input(4-wire bus mode)
43	STATUS	O	Servo interrupt request line/decoder status registar output(open-drain)
44	TEST3	I	Test control input3(this pin shuld be tied LOW)
45	RCK	I	Subcode clock input
46	SUB	O	P-to-W subcode bits output(3-states)
47	SFSY	O	Subcode frame sync output(3-sates)
48	SBSY	O	Subcode block sync output(3-sates)
49	CL11/4	O	11.2896 or 4.2336MHz(for microcontroller) clock output
50	V_{SSD2}	-	Digital ground2
51	DOBM	O	Bi-phase mark output(externally buffered;3-state)
52	$V_{DDD1(P)}$	-	Digital supply voltage 1 for periphery
53	CFLG	O	Correction flag output(open-drain)
54	RA	O	Radial actuator output
55	FO	O	Focus actuator output
56	SL	O	Sledge control output
57	$V_{DDD2(C)}$	-	Digital supply voltage2 for core
58	V_{SSD3}	-	Digital ground3
59	MOTO1	O	Motor output1;versatile(3-state)
60	MOTO2	O	Motor output2;versatile(3-state)
61	V4	O	Versatile output4
62	V5	O	Versatile output5
63	V1	I	Versatile input1
64	LDON	O	Laser drive on output(open-drain)

■ PT6311 (IC401) : VFD driver

1. Terminal layout



2. Block diagram

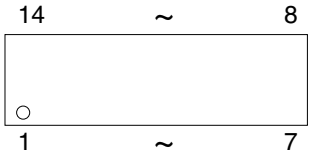


3. Pin function

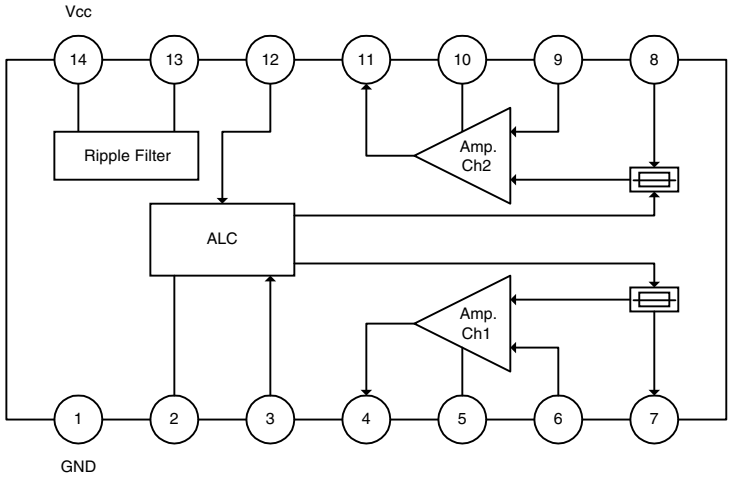
Pin No.	Symbol	I/O	Function
1~4	SW1~SW4	I	General purpose input pins
5	DOUT	O	Data output pin (N-channel,open-drain). This pin outputs serial data at the falling edge of the shift clock (starting from the lower bit).
6	DIN	I	Data input pin. This pin inputs serial data at the rising edge of the shift clock (starting from the lower bit).
7	NC	-	No connection
8	CLK	I	Clock input pin. This pin reads serial data at the rising edge and outputs data at the falling edge.
9	STB	I	Serial interface strobe pin. The data input after the STB has fallen is processed as a command. When this pin is "HIGH", CLK is ignored.
10~13	K1~K4	I	Key data input pins. The data inputted to these pins are latched at the end of the display cycle.
14	VDD	-	Logic power supply
15~26	SG1~SG12 KS1~S12	O	High-voltage segment output pins. Also acts as the key source.
27~32	SG13~SG18 GR16~GR11	O	High voltage segment/Grid output pins
33	VDD	-	Logic power supply
34	VEE	-	Pull-down level
35,36	SG19/GR10 SG20/GR9	O	High voltage segment/Grid output pins
37~44	GR8~GR1	O	High-voltage grid output pins
45	VDD	-	Logic power supply
46~50	LED5~LED1	O	LED output pin
51	GND	-	Ground pin
52	OSC	I	Oscillator input pin. A resistor is connected to this pin to determine the oscillation frequency.

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

1. Terminal layout



2. Block diagram

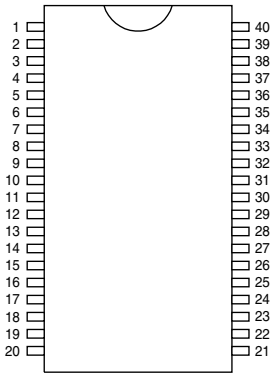


3. Pin function

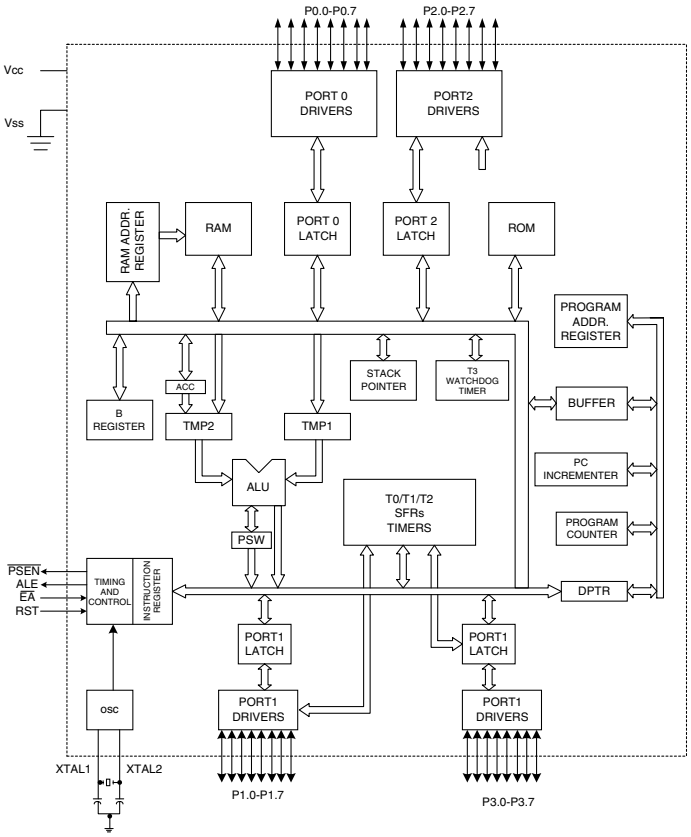
Pin No.	Symbol	I/O	Function
1	GND	-	GND
2	ALC time constant	-	ALC time constant by resistance and capacitor
3	ALC input Ch.1	I	Right channel ALC input
4	Output Ch.1	O	Right channel output
5	Phase compensation Ch.1	-	No connect
6	N.E.B. Ch.1	I	Right channel negative feed back input
7	Input Ch.1	I	Right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

■ P89CX38MCU (IC301) : MCU

1. Terminal layout



2. Block diagram

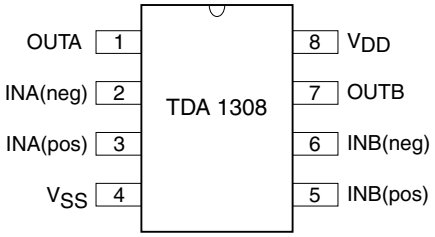


3. Pin function

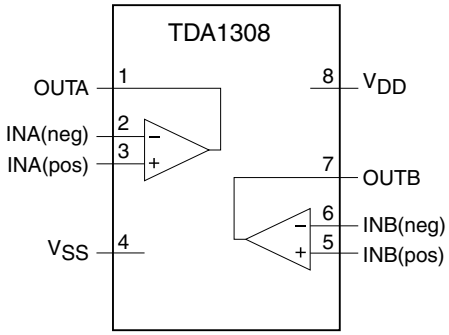
Pin No.	Symbol	I/O	Function
P1.0 to P1.7	A0 to A7	I	Input low order address bits
P2.0 to P2.5,P3.4 to P3.5	A8 to A13,A14 to A15	I	Input high order address bits
P0.0 to P0.7	Q0 to Q7	I/O	Data input/output
P3.3	$\overline{CE}$	I	Chip enable input
P2.7	$\overline{OE}$	I/O	Output enable input
ALE	$\overline{WE}$	I	Write enable input
EA	Vpp	-	Program supply voltage, 12.5-13volts
P3.7,P3.1,P3.0	MS2 to MS0	-	Flash mode selection
VDD	VDD	-	Power supply voltage (+5V)
GND	GND	-	Ground pin

■ TDA1308 (IC702,IC703) : Class AB stereo headphone driver

1. Terminal layout



2. Block diagram

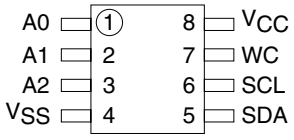


3. Pin function

Pin No.	Symbol	I/O	Function
1	OUTA	O	Output A
2	INA(neg)	I	Inverting input A
3	INA(pos)	I	Non-inverting input A
4	Vss	-	Negative supply
5	INB(pos)	I	Non-inverting input B
6	INB(neg)	I	Inverting input B
7	OUTB	O	Output B
8	VDD	-	Positive supply

■ ST24C01 (IC302) : Serial access 1K(128x8) EEPROM

1. Terminal layout

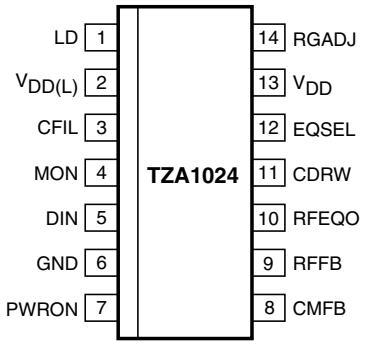


2. Pin function

Pin No.	Symbol	I/O	Function
1	A0	I	Chip enable input
2	A1	I	Chip enable input
3	A2	I	Chip enable input
4	Vss	-	Ground
5	SDA	I/O	Serial data adress input/output
6	SCL	-	Serial clock
7	WC	-	Write control (W version)
8	VCC	-	Supply voltage

■ TZA1024 (IC504) : Data amplifier and laser supply

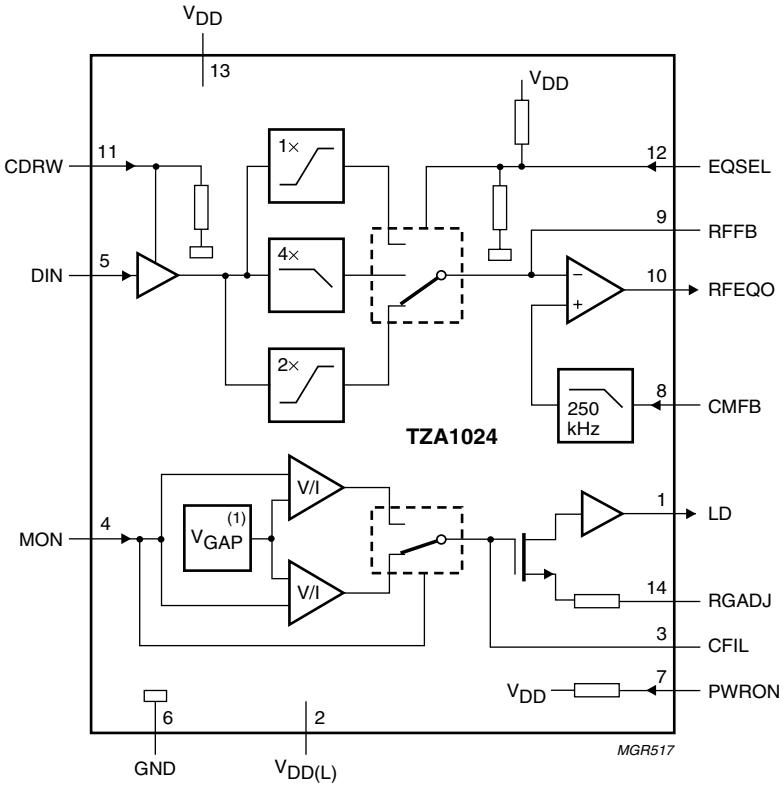
1. Pin Layout



2. Pin function

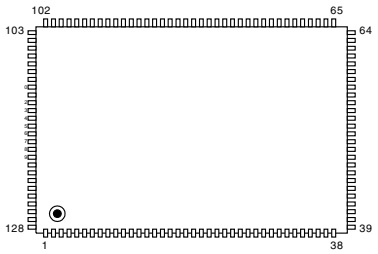
Pin No.	Symbol	I/O	Function
1	LD	O	Current output to laser diode
2	$V_{DD(L)}$	-	Laser supply voltage
3	CFIL	-	External filter capacitor
4	MON	I	Laser monitor diode input
5	DIN	I	Central diode input
6	GND	-	Ground
7	PWRON	I	Power-on select input
8	CMFB	I	Common mode feedback voltage input
9	RFFB	-	External RF feedback resistor
10	RFEQO	O	RF amplifier output
11	CDRW	I	Gain select input for CD-A/V , CD-R/W
12	EQSEL	I	Equalizer/speed select input (n = 1, 2 or 4)
13	V_{DD}	-	Supply voltage
14	RGADJ	-	External laser supply gain adjust resistor

3. Block diagram

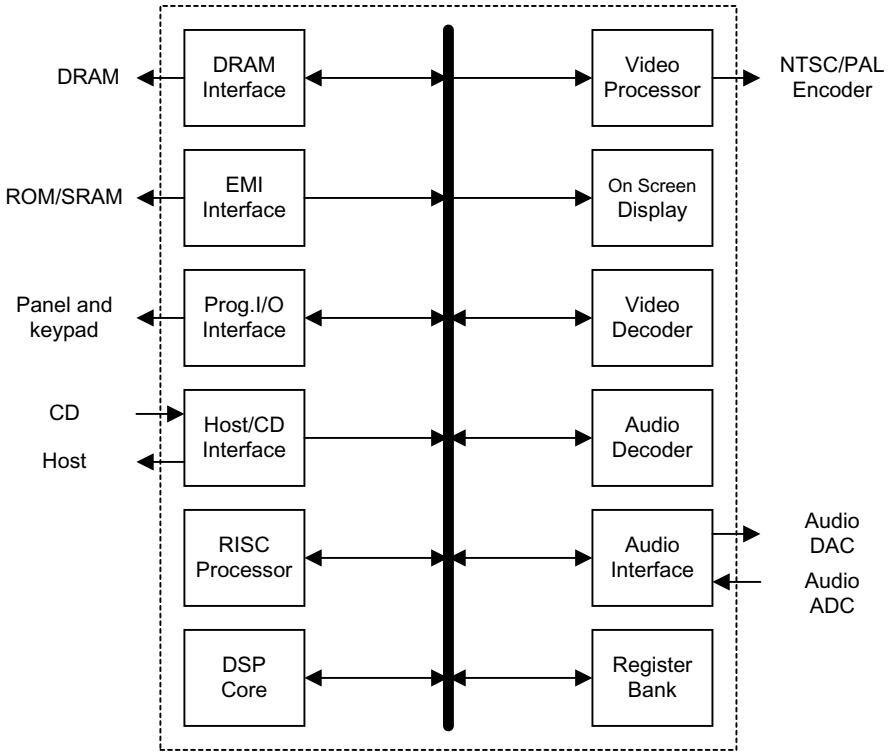


■ LS188 (IC601) : VCD decoder

1. Terminal layout



2. Block diagram



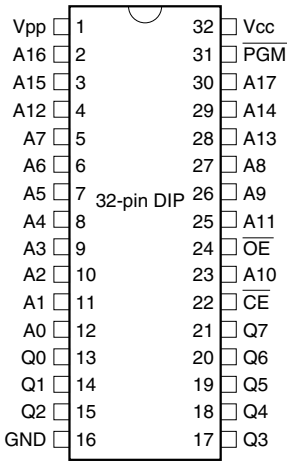
3. Pin function

Pin No.	Symbol	I/O	Function
1 to 3,22	EMI_A_9 to EMI_A_12	O	EMI address bus
4 to 11	EMI_D_7 to EMI_D_0	I	EMI data bus
12 to15	EMI_A_0 to EMI_A_3	O	EMI address bus
16	VDD_IO_00	-	+3.3V
17,18,20,21	EMI_A_4 to EMI_A_7	O	EMI address bus
19	VSS_IO_00	-	+3.3V
23,24	EMI_A_15 to EMI_A_16	O	EMI address bus
25	EMI_A_18	O	EMI address bus
26	I2C_CLK	O	I2C clock
27	I2C_DAT	-	I2C data
28	VSS_OSC_0	-	GND
29	XTLCLK_I	I	Crystal input
30	XTLCLK_O	O	Crystal output
31	VDD_OSC_0	-	+3.3V
32	TEST_H	I	Test
33	RESET_L	I	Hardware reset
34	HSYNC_L	I	Horizontal sync
35	VSYNC_L	I	Vertical sync
36	CLK27_O	O	CLK 27MHz output
37 to 42	VDAT_7 to VDAT_2	O	Luminance output
43	VSS_CORE_00	-	GND
44,45	VDAT_1 to VDAT_0	O	Luminance output
46	VDD_CORE_00	-	+2.5V
47	AUD_XCK	-	External audio clock
48	AUD_BCK	O	Audio bit clock
49	AUD_LRCK	O	Audio left/right clock
50	AUD_DOUT	O	Audio data output
51	AUD_DIN	I	Audio data input
52 to 55	GPIO_23 to GPIO_20	-	Programmable I/O
56	VDD_IO_10	-	+3.3V
57,58	GPIO_19,GPIO_18	-	Programmable I/O
59	VSS_CORE_10	-	GND
60,61	GPIO_17,GPIO_16	-	Programmable I/O
62	VDD_CORE_10	-	+2.5V
63,64	GPIO_15,GPIO_14	-	Programmable I/O

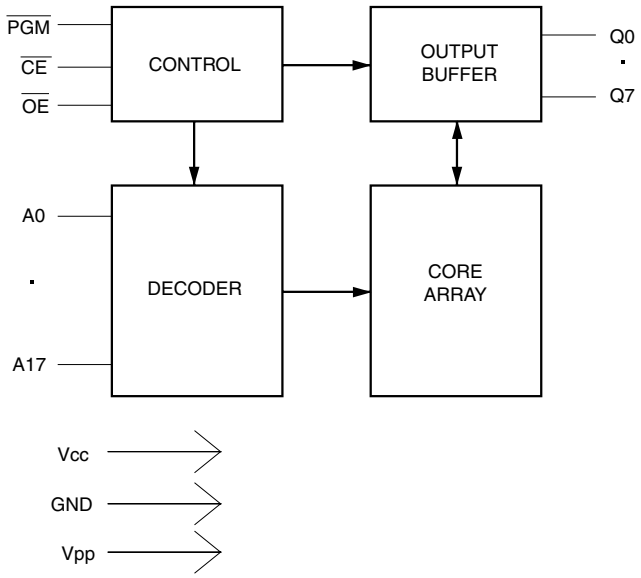
Pin No.	Symbol	I/O	Function
65	VSS_IO_10	-	GND
66 to 79	GPIO_13 to GPIO_0	-	Programmable I/O
80	IR_IN	I	IR input
81	CD_DATA	I	CD serial data
82	CD_LRCK	I	CD left/right clock
83	CD_BCK	I	CD bit clock
84	CD_C2P0	I	CD data error flag
85	DR_D_0	-	DRAM data bus
86	DR_D_15	-	DRAM data bus
87	DR_D_1	-	DRAM data bus
88	DR_D_14	-	DRAM data bus
89	VDD_IO_20	-	+2.5V
90,91	DR_D_2,DR_D_13	-	DRAM data bus
92	VSS_IO_20	-	GND
93	DR_D_3	-	DRAM data bus
94	DR_D_12	-	DRAM data bus
95	DR_D_4	-	DRAM data bus
96	DR_D_11	-	DRAM data bus
97	DR_D_5	-	DRAM data bus
98	DR_D_10	-	DRAM data bus
99	VSS_PLL_0	-	GND
100	VDD_PLL_0	-	+2.5V
101	DR_D_6	-	DRAM data bus
102	DR_D_9	-	DRAM data bus
103,104	DR_D_7,DR_D_8	-	DRAM data bus
105	VSS_CORE_20	-	GND
106	LCAS_L	O	Lower column address strobe
107	DR_WE_L	O	Memory write enable
108	VDD_IO_30	-	+3.3V
109	UCAS_L	O	Upper column address strobe
110	URAS_L	O	Upper row address strobe
111	VDD_CORE_20	-	+2.5V
112	LRAS_L	O	Lower row address strobe
113	DR_A_8	O	DRAM address bus
114	DR_A_0	O	DRAM address bus
115	DR_A_7	O	DRAM address bus
116	DR_A_1	O	DRAM address bus
117	DR_A_6	O	DRAM address bus
118	VSS_IO_30	-	GND
119,120	DR_A_2,DR_A_5	O	DRAM address bus
121	VSS_CORE_30	-	GND
122,123	DR_A_3,DR_A_4	O	DRAM address bus
124	VDD_CORE_30	-	+2.5V
125	EMI_A_17	O	EMI address bus
126	EMI_A_14	O	EMI address bus
127	EMI_A_13	O	EMI address bus
128	EMI_A_8	O	EMI address bus

■ W27C020 (IC602) : EEPROM

1. Terminal layout



2. Block diagram

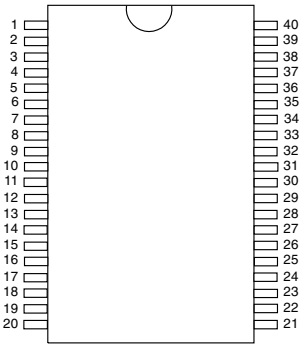


3. Pin function

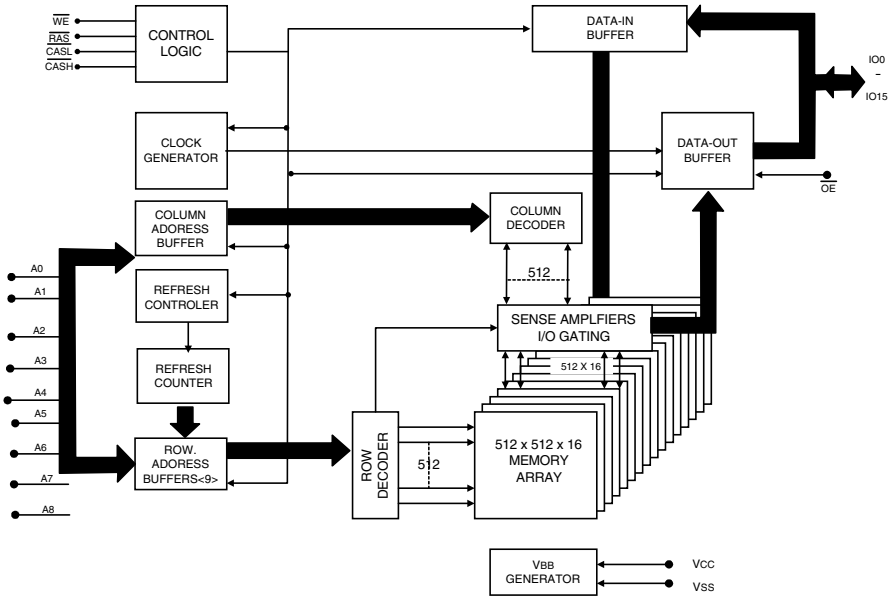
Pin No.	Symbol	I/O	Function
1	Vpp	-	Program/erase supply voltage
2～12	A16,A15,A12,A7～A0	I	Adress input
13～15	Q0～Q2	I/O	Data input/ output
16	GND	-	Connect to GND
17～21	Q3～Q7	I/O	Data input/ output
22	$\overline{CE}$	I	Chip enable input
23	A10	I	Adress input
24	$\overline{OE}$	O	Output enable
25～30	A11,A9,A8,A13,A14,A17	I	Adress input
31	$\overline{PGM}$	I	Program enable
32	Vcc	I	Power supply

■ AS4C256KEO (IC604) : DRAM

1. Termianl layout



2. Block diagram

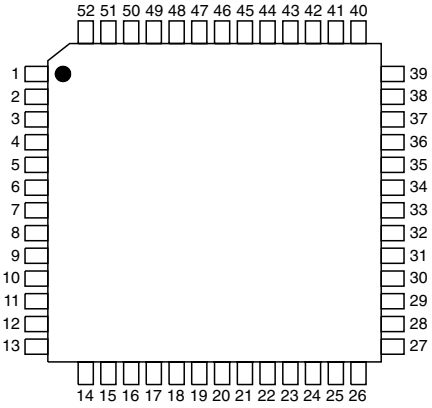


3. Pin function

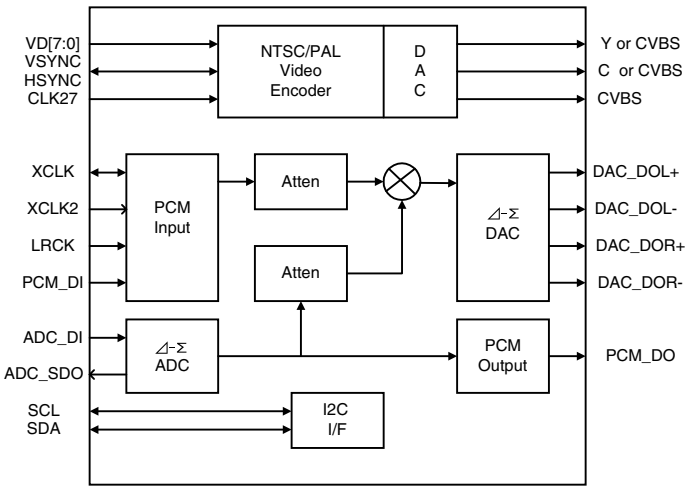
Pin No.	Symbol	I/O	Function
1	VCC	-	Power (5V±0.5V)
2 to 5	I/O0 to I/O3	I/O	Input/output
6	Vcc	-	Power (5V±0.5V)
7 to 10	I/O4 tO I/O7	I/O	Input/output
11,12	NC	-	Not connected
13	$\overline{WE}$	-	Read/write control
14	$\overline{RAS}$	-	Row address strobe
15	NC	-	Not connected
16 to 19	A0 to A3	I	Address inputs
20	Vcc	-	Power (5V±0.5V)
21	GND	-	Ground
22 to 26	A4 to A8	I	Address inputs
27	$\overline{OE}$	O	Output enable
28	$\overline{UCAS}$	-	Column address strobe,upper byte
29	$\overline{LCAS}$	-	Column address strobe,lower byte
30	NC	-	Not connected
31 to 34	I/O8 to I/O11	I/O	Input/output
35	GND	-	Ground
36 to 39	I/O12 tO I/O15	I/O	Input/output
40	GND	-	Ground

■ LS128 (IC701) : Video encoder

1. Terminal layout



2. Block diagram

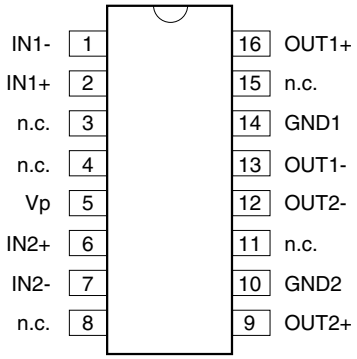


3. Pin function

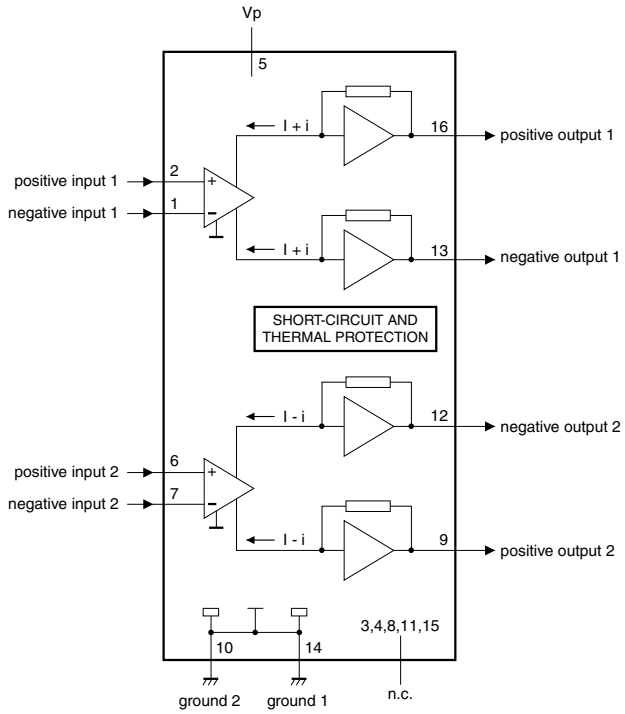
Pin No.	Symbol	I/O	Function
1	DGND_PRE	-	Analog pad post driver digital ground
2	D2V5_PRE	-	Analog pad pre-driver digital power:2.5V
3	AGND_PST	-	Analog pad post driver analog ground
4	A3V3_PST	-	Analog pad post-driver analog power:3.3V
5~12	VD[7]～VD[0]	I	8-bit video input data in Cb,Y0,Cr,Y1 format
13	DGND_COR	-	Core digital ground
14	CLK27	I	27MHz video clock input. Sync outputs and video/sync inputs can be separately programmed to use rising or falling edge of CLK27.
15	TEST	I	Manufacturing test-tie low for normal operation
16	VSYNC	I/O	VSYNC output (master mode), VSYNC input (slave mode), polarity for master and slave mode is active low. Can be GPIO during CCIR-656 slave mode.
17	HSYNC	I/O	HSYNC output (master mode), HSYNC input (slave mode), polarity for master and slave mode is active low. Can be GPIO during CCIR-656 slave mode.
18	SCL	I/O	I2C clock for register programming/status
19	SDA	I/O	I2C data for register programming/status
20	RST_L	I	Hardware reset, active low. Also resets setup regiaters.
21	XCLK	I/O	Audio 256x/384x clock input. May be redefined as clock output if XCLK2 is used as the clock input.
22	XCLK2	I/O	Secondary audio clock 256x/384x input. May be redefined as a GPIO if not used as a clock.
23	LRCK	I/O	Audio LRCK input. May be redefined as a GPIO audio section of the chip is not being used.
24	PCM_DI	I/O	Audio DAC PCM input. May be redefined as a GPIO audio DAC is not being used.
25	PCM_DO	I/O	Audio ADC PCM output. May be redefined as a GPIO audio ADC is not being used.
26	D3V3_IO	-	I/O digital power:3.3V
27	DAC_DOL+	O	Audio DAC+ output to left channel external integrator. May be used as a GPIO if audio DAC is not used.
28	DAC_DOL-	O	Audio DAC- output to left channel external integrator. May be used as a GPIO if audio DAC is not used.
29	DGND_IO	-	I/O digital ground
30	DAC_DOR+	O	Audio DAC+ output to right channel external integrator. May be used as a GPIO if audio DAC is not used.
31	DAC_DOR-	O	Audio DAC- output to right channel external integrator. May be used as a GPIO if audio DAC is not used.
32	D2V5_COR	-	Core digital power:2.5V
33	ADC_DI	I/O	Audio ADC digital input from external demodulator. May be used as a GPIO if audio ADC is not used.
34	ADC_SDO	I/O	Audio ADC control output to external demodulator. May be used as a GPIO if audio ADC is not used.
35	DV25_VID	-	Video DAC digital power:2.5V
36	DGND_VID	-	Video DAC digital ground
37	D2V5_RNG	-	Video DAC guard ring power:2.5V
38	DGND_RNG	-	Video DAC guard ring ground
39	VID_CV	O	Analog composite video output
40	A3V3_VID	-	Video analog power:3.3V
41	AGND_VID	-	Video analog ground
42	VID_C_CV	O	Analog chroma or composite video output
43	A3V3_VID	-	Video analog power:3.3V
44	AGND_VID	-	Video analog ground
45	VID_Y_CV	O	Analog luma or composite video output
46	A3V3_VID	-	Video analog power:3.3V
47	AGND_VID	-	Video analog ground
48	VID_RSET	O	Connect resistor from this pin to ground to set DAC full scale current
49	VID_COMP	O	Bypass to analog 3.3V with capacitor
50	VID_VREF	O	Bypass to ground with capacitor
51	A2V5_VID	-	Video DAC analog power:2.5V
52	AGND_VID	-	Video DAC analog ground

■ TDA7073A (IC502, IC503) : Dual BTL power driver

1. Terminal layout



2. Block diagram

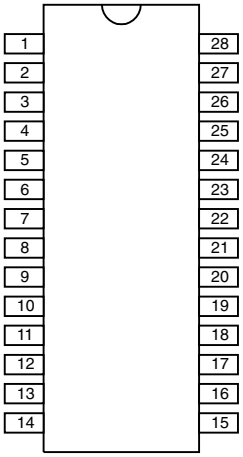


3. Pin function

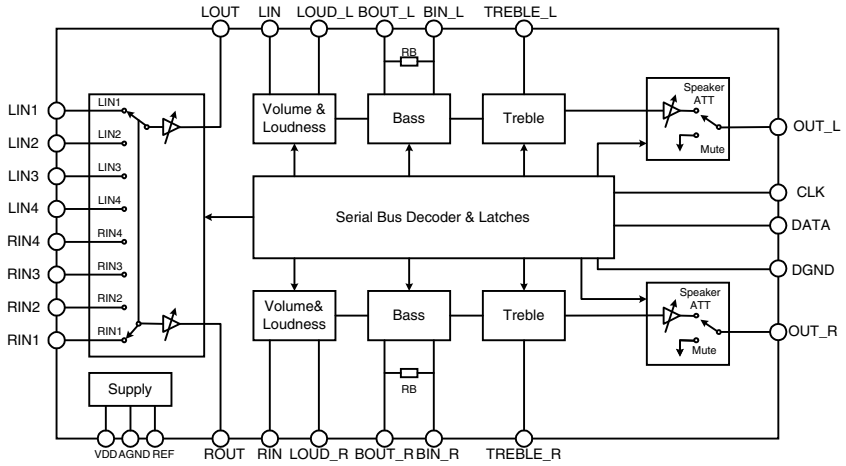
Pin No.	Symbol	I/O	Function
1	IN1-	I	Negative input1
2	IN1+	I	Positive input1
3	NC	-	Not connected
4	NC	-	Not connected
5	Vp	-	Positive supply voltage
6	IN2+	I	Positive input2
7	IN2-	I	Negative input2
8	NC	-	Not connected
9	OUT2+	O	Positive output2
10	GND2	-	Ground 2
11	NC	-	Not connected
12	OUT2-	O	Negative output2
13	OUT1-	O	Negative output1
14	GND1	-	Ground 1
15	NC	-	Not connected
16	OUT1+	O	Positive output1

■ PT2314 (IC801) : 4ch input audio processor

1. Terminal layout



2. Block diagram

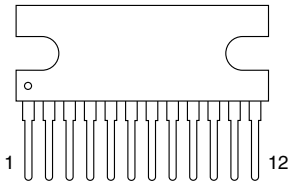


3. Pin function

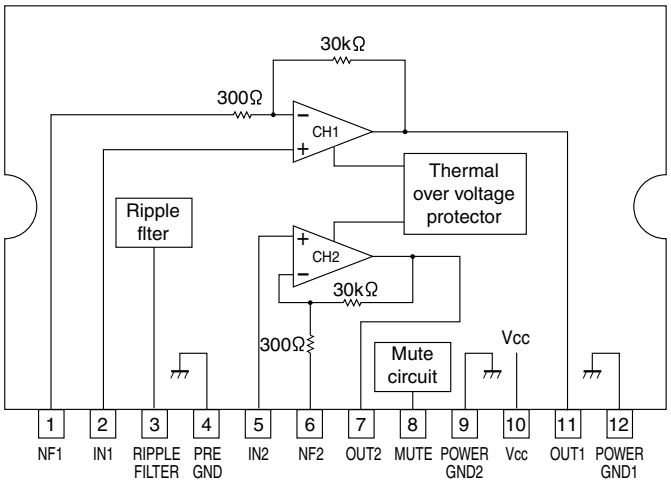
Pin No.	Symbol	I/O	Function
1	VDD	-	Supply input voltage
2	AGND	-	Analog ground
3	TREB_L	I	Left channel input for treble controller
4	TREB_R	I	Right channel input for treble controller
5	RIN	I	Audio processor right channel input
6	ROUT	O	Gain output and input selector for right channel
7	LOUD_R	I	Right channel loudness input
8	RIN4	I	Right channel input4
9	RIN3	I	Right channel input3
10	RIN2	I	Right channel input2
11	RIN1	I	Right channel input1
12	LOUD_L	I	Left channel loudness input
13	LIN4	I	Left channel input4
14	LIN3	I	Left channel input3
15	LIN2	I	Left channel input2
16	LIN1	I	Left channel input1
17	LIN	I	Audio processor left channel input
18	LOUT	O	Gain output and input selector for left channel
19	BIN_L	I	Left channel input for bass controller
20	BOUT_L	O	Left channel output for bass controller
21	BIN_R	I	Right channel input for bass controller
22	BOUT_R	O	Right channel output for bass controller
23	OUT_R	O	Right speaker output
24	OUT_L	O	Left speaker output
25	DGND	-	Digital ground
26	DATA	I	Control data input
27	CLK	I	Clock input for serial data transmission
28	REF	-	Analog reference voltage (1/2 VDD)

■ LA4282 (IC802) : Operational amplifier

1. Terminal layout



2. Block diagram

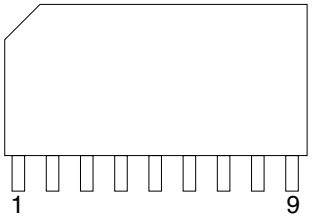


3. Pin function

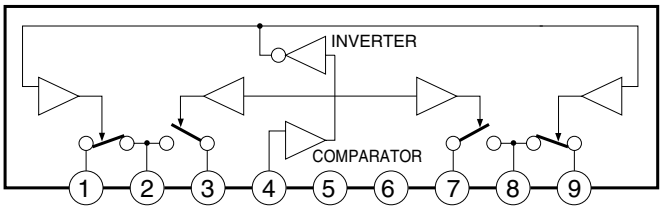
Pin No.	Symbol	I/O	Function
1	NF1	-	Right channel negative feed back
2	IN1	I	Right channel signal input
3	RIPPLE FILTER	-	External pin for ripple filter
4	PRE GND	-	PRE GND
5	IN2	I	Left channel signal input
6	NF2	-	Left channel negative feed back
7	OUT2	O	Left channel output
8	MUTE	-	Mute control
9	POWER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

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

1. Terminal layout



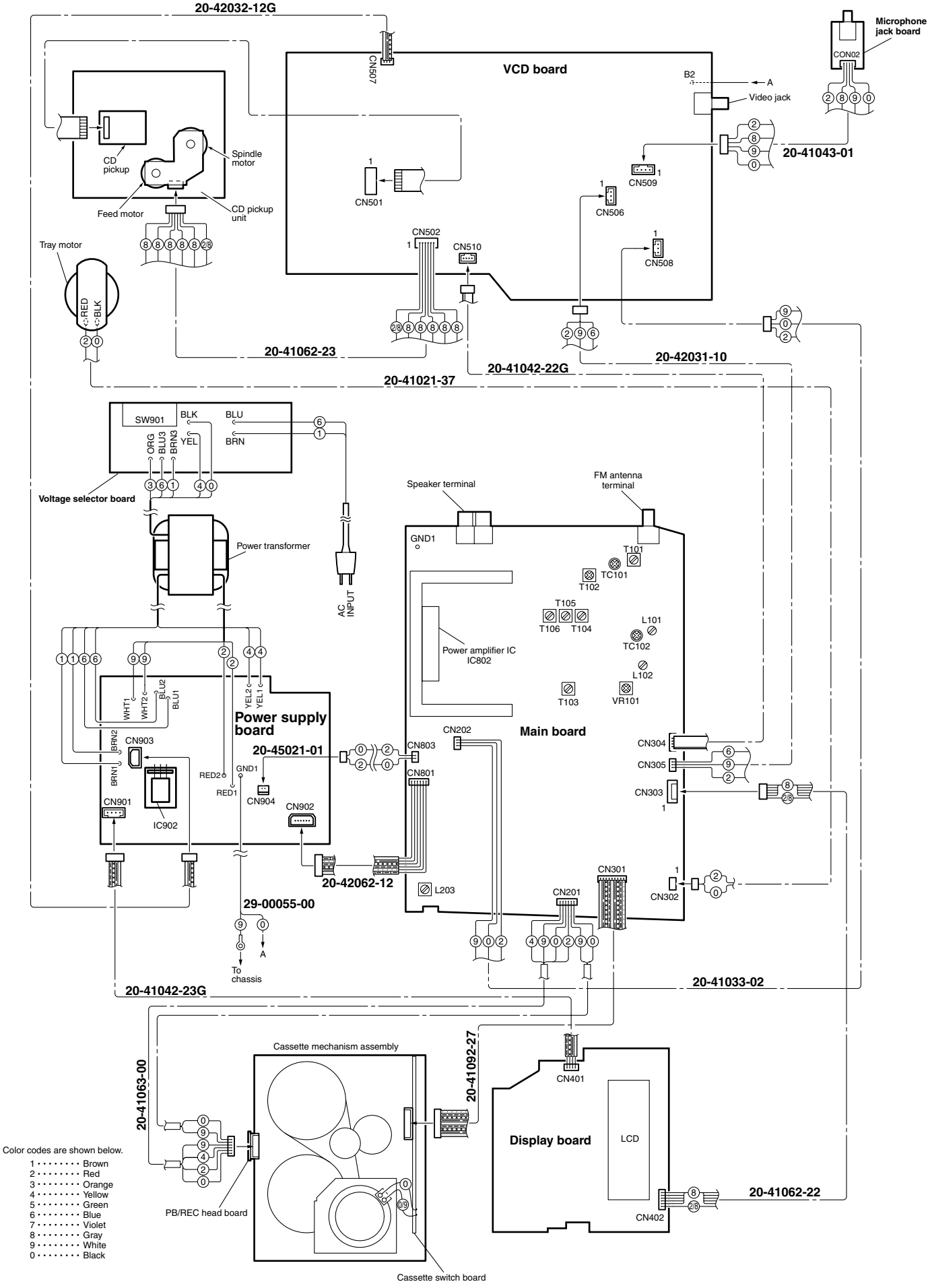
2. Block diagram



3. Pin function

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

Wiring connections



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