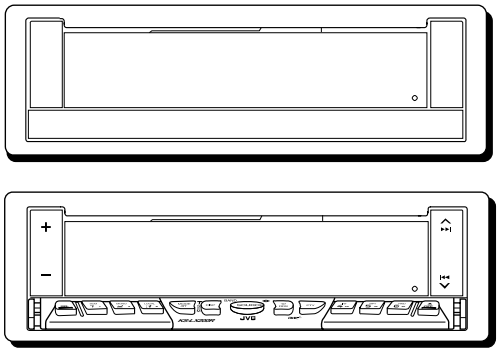
JVC

# SERVICE MANUAL

## CASSETTE RECEIVER

# KS-LX200R



**Area Suffix**

E ----- Continental Europe
EX -------- Central Europe

RDS EON

BBE II

### Contents





No.49573
Oct. 2000

# Safety precaution

⚠ ***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.**

# Disassembly method

## ■ Removing the top chassis

**(See Fig.1 to 5)**

1. Remove the two screws **A** attaching the bottom cover to the top chassis on the bottom of the body.
2. Remove the two screws **B** attaching the top chassis on both sides of the body.
3. Remove the screw **C** and the three screws **D** attaching the heat sink on the left side of the body.
4. Remove the two screws **E** and the screw **F** on the back of the body.
5. Remove the two screws **G** on the upper side of the body.
6. Move the top chassis upward and disconnect the cassette mechanism connector from the main board connector by pulling it. Remove the top chassis from the body.

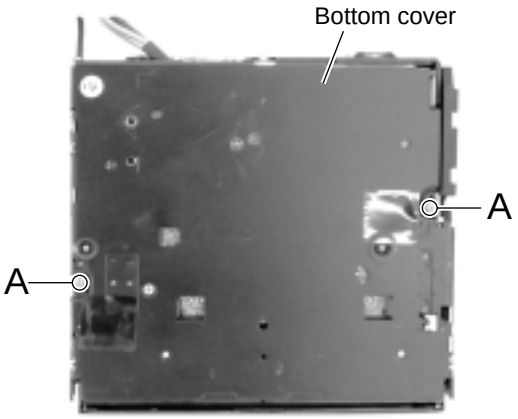



Fig.1

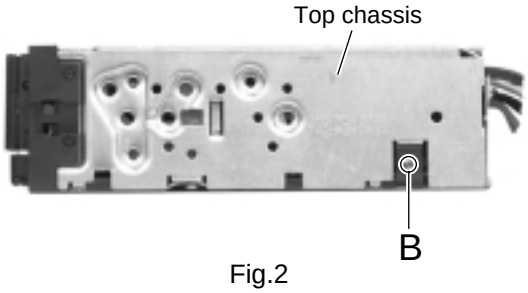



Fig.2

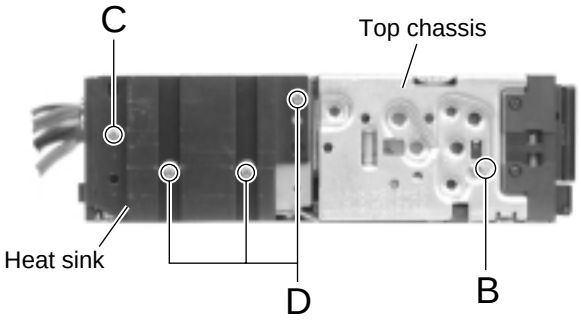



Fig.3

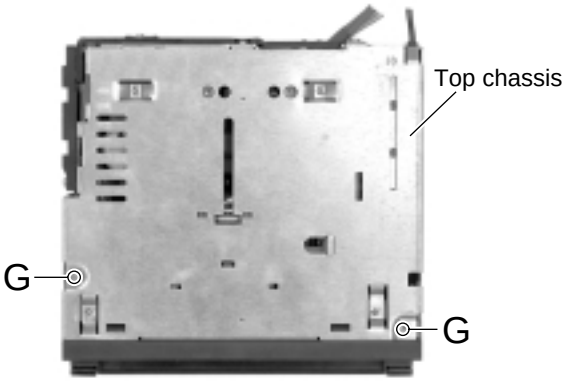



Fig.5

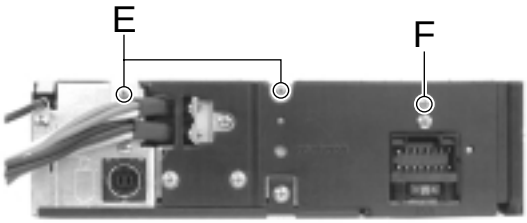



Fig.4

## ■ Removing the main board assembly (See Fig.6 to 8)

・ Prior to performing the following procedure, remove the top chassis.

1. Remove the screw **S** attaching the bracket (L).
2. Disconnect the flexible harness from connector CN701, the card wire from CN702 on the main board and the harness from CN503 and CN504 respectively.
3. Remove the three screws **H** attaching the main board assembly to the bottom cover on the upper side of the body.
4. Remove the screw **I** attaching the rear panel and the bottom cover on the back of the body. Move the main board in the direction of the arrow and release the two joints **a**. (At this point, the main board can be removed with the rear panel and the rear heat sink.)
5. Remove the screw **J** and the two screws **K** attaching the rear heat sink on the back of the body.
6. Remove the two screws **L** and the screw **M** attaching the rear panel. Now, the main board assembly will be removed.

ATTENTION: When reassembling, correctly engage the switch S561 and S562 on the main board with the part **e** of the operation assembly (Refer to Fig.7, 18 and 19).

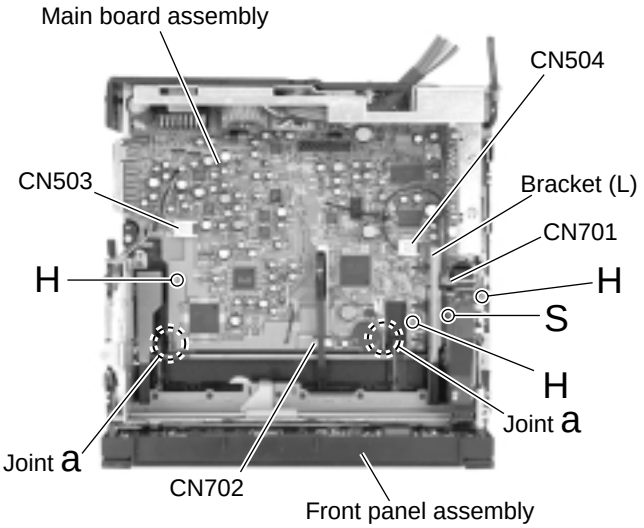



Fig.6

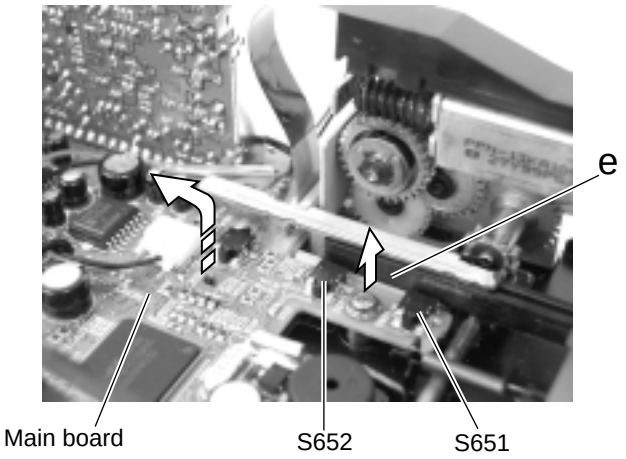



Fig.7

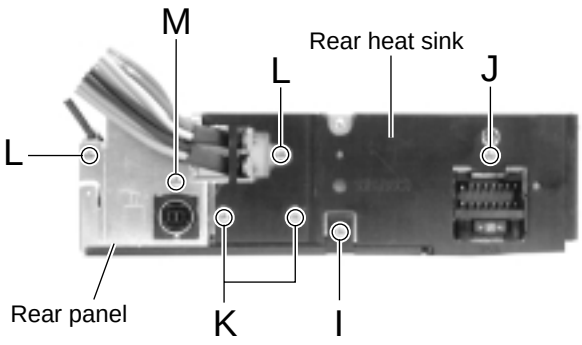



Fig.8

## ■ Removing the front panel assembly (See Fig.9 to 11)

・ Prior to performing the following procedure, remove the top chassis assembly.

1. Disconnect the flexible harness from connector CN701 on the main board assembly.

2. Remove the four screws **N** attaching the front panel assembly on both sides of the body. Remove the front panel toward the front.

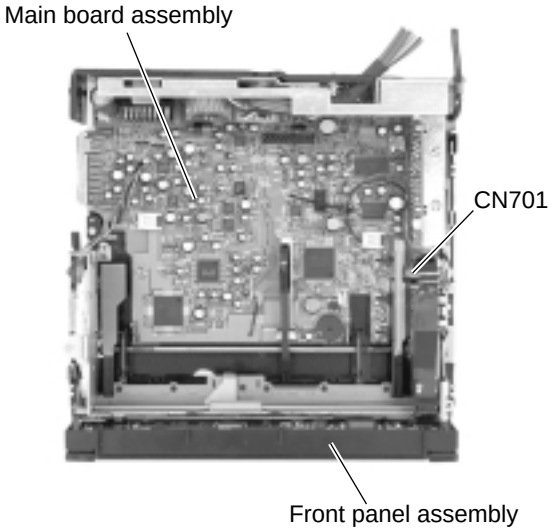



Fig.9

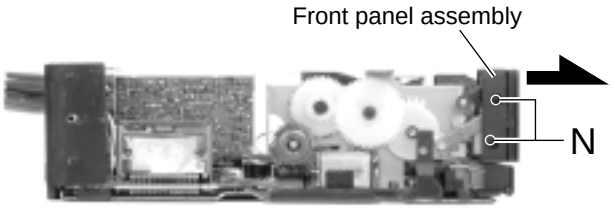



Fig.11

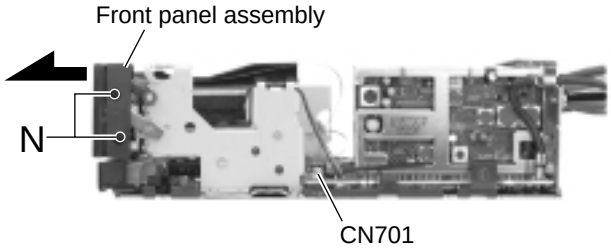



Fig.10

## ■ Removing the Front Board (See Fig.12)

・ Prior to performing the following procedure, remove the top chassis assembly and the front panel assembly.

1. Remove the four screws **O** attaching the front board on the back of the front panel assembly and release the eight joints **b**.

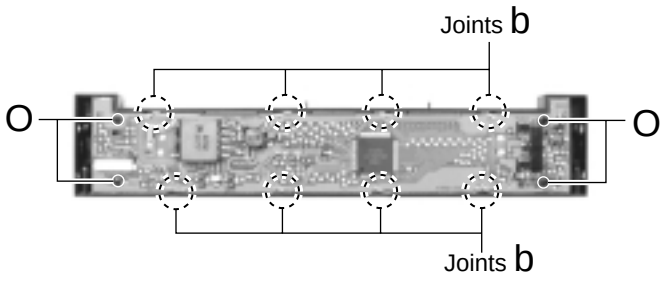



Fig.12

## ■ Removing the lifter unit (See Fig.13)

・ Prior to performing the following procedure, remove the top chassis assembly and the front panel assembly.

1. Disconnect the harness from connector CN503 and CN504 on the main board.

2. Remove the four screws **P** and detach the lifter unit from the bottom cover.

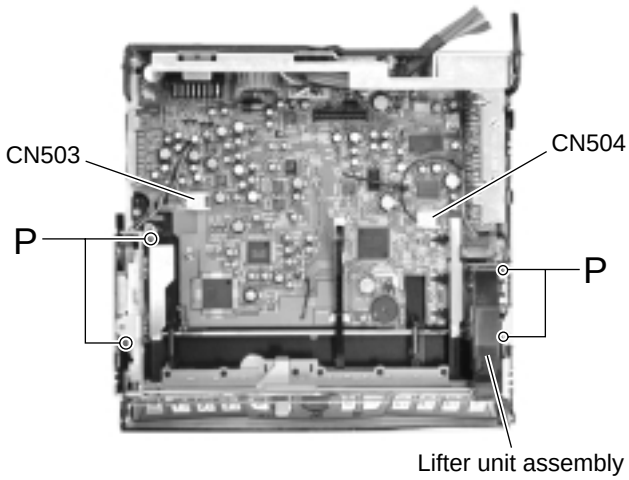



Fig.13

## ■ Removing the feed motor (L) (See Fig.14)

・ Prior to performing the following procedure, remove the lifter unit.

1. Remove the washer attaching the clutch assembly and detach the clutch assembly from the shaft of the lifter unit.

2. Remove the two screws **Q** attaching the feed motor (L).

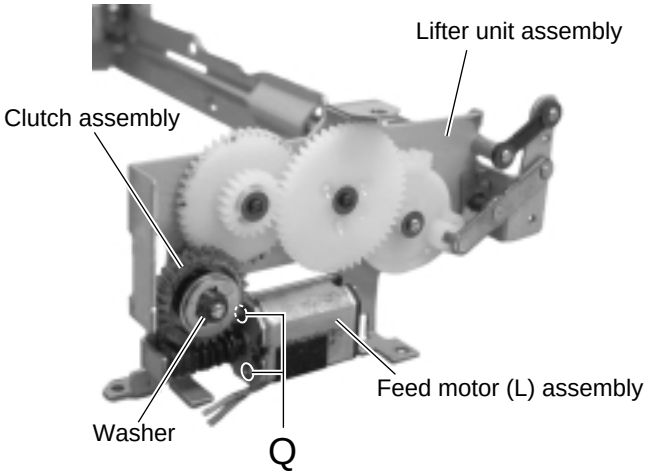



Fig.14

## ■ Removing the feed motor (R) (See Fig.15)

・ Prior to performing the following procedure, remove the lifter unit.

1. Remove the washer attaching the clutch assembly and detach the clutch assembly from the shaft of the lifter unit.

2. Remove the two screws **R** attaching the feed motor (R).

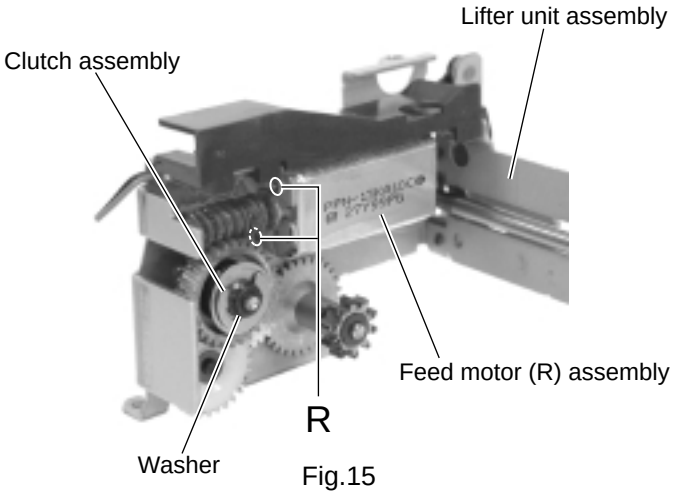



Fig.15

## ■ Removing the operation assembly (See Fig.16 to 19)

- Prior to performing the following procedure, remove the top chassis assembly, the front panel assembly and the lifer unit.

1. Remove the three screws **S** attaching the right and left brackets which fix gears on both sides of the operation assembly.

2. Remove the springs 5 and 6 from the operation assembly.

3. Disconnect the card wire from connector CN702 on the main board and remove the operation assembly.

| | |
|---|---|
| ATTENTION: | When reassembling, correctly engage the switch S561 and S562 on the main board and the right gear with the part **c** of the operation assembly. |

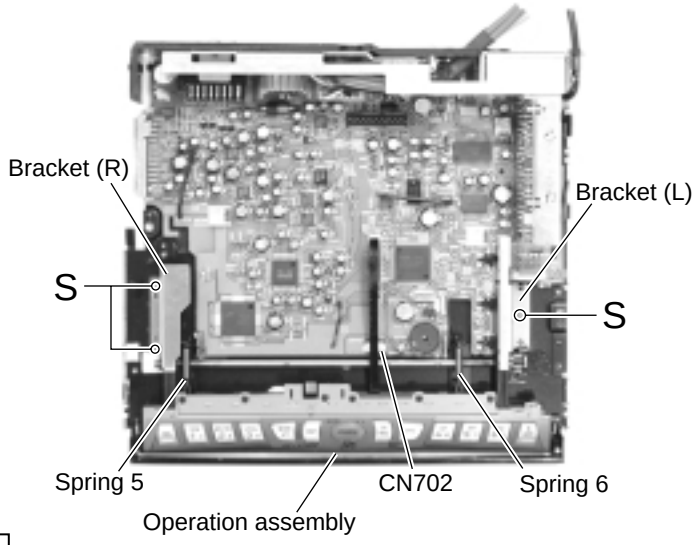



Fig.16

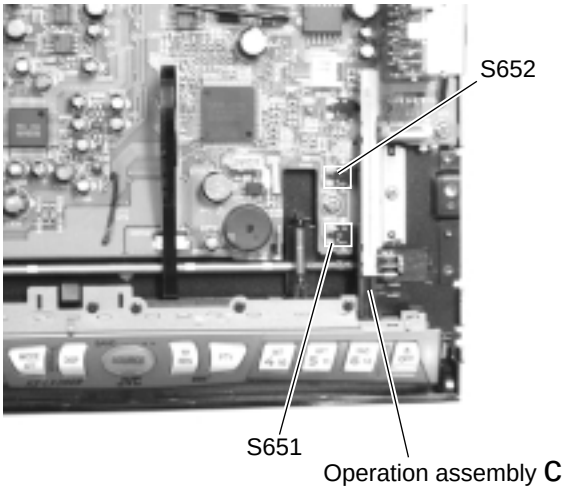



Fig.17

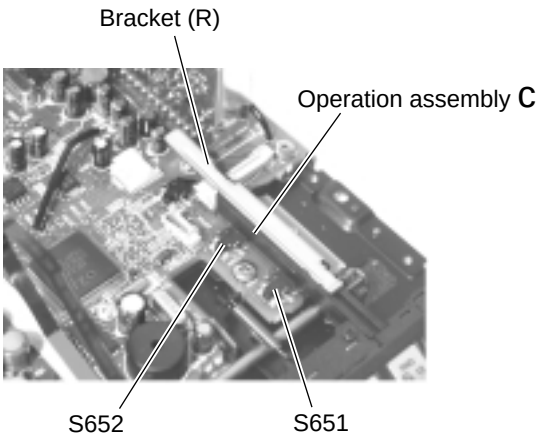



Fig.19

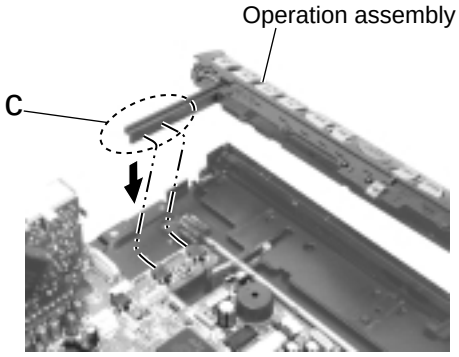



Fig.18

## ■ Removing the operation switch board (See Fig.20 and 21)

・ Prior to performing the following procedure, remove the operation assembly.

1. Remove the six screws **T** attaching the button panel on the operation assembly.

2. Pull out the operation switch board from inside of the button panel.

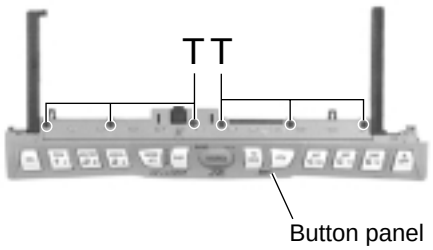



Fig.20

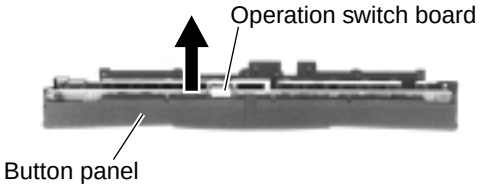



Fig.21

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

・ Prior to performing the following procedure, remove the top chassis.

1. Remove the four screws **U** and the cassette mechanism assembly from the top chassis.

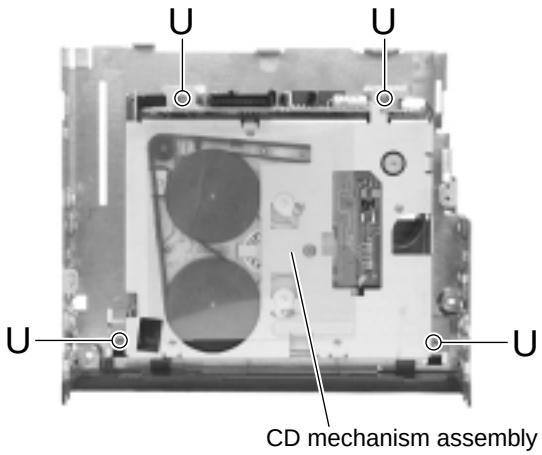



Fig.22

# Disassembly method

### <Cassette mechanism assembly>

### ■Removing the head amplifier board
**(See Fig.1)**

1. Disconnect the wire from connector CP401 on the head amplifier board.
2. Remove the screw **A**.
3. Remove the head amplifier board in the direction of the arrow to unhook two joints **a**.
4. Disconnect connector CP402 on the head amplifier board from the connector board.

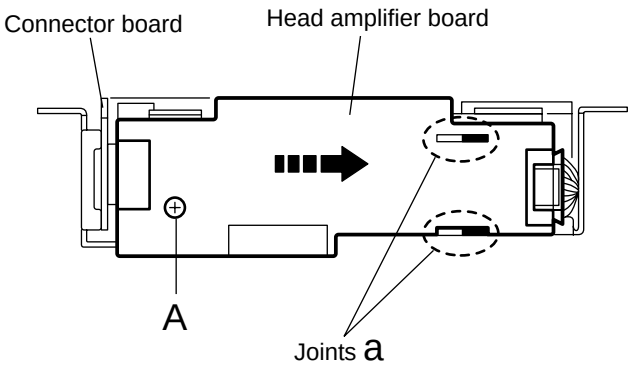



Fig.1

### ■Removing the mechanism bracket
**(See Fig.2)**

・ Prior to performing the following procedure, remove the head amplifier board.

1. Remove the four screws **B** on the underside of the cassette mechanism assembly.

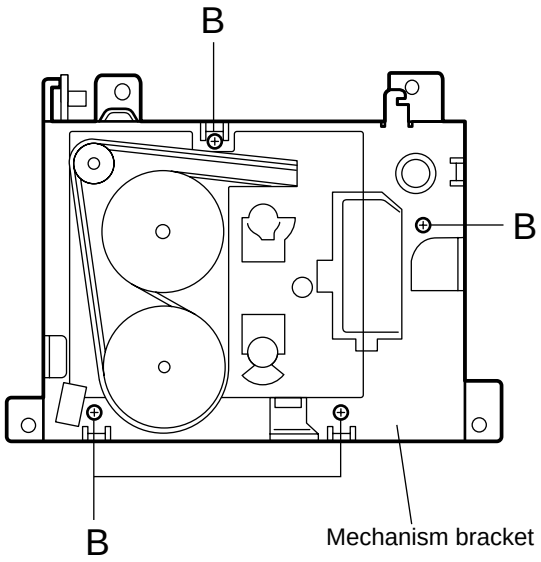



Fig.2

### <Cassette mechanism>

・ Prior to performing the following procedure, remove the head amplifier board and the mechanism bracket.

### ■Removing the connector board
**(See Fig.3)**

1. Unsolder soldering **b** and **c** on the connector board.
2. Remove the three screws **C**.
3. Remove the connector board in the direction of the arrow to unhook joint **d**.

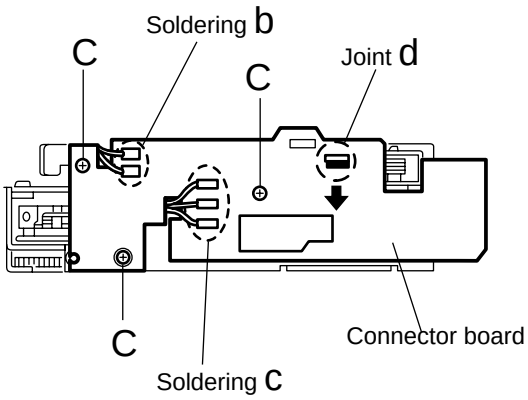



Fig.3

## ■Removing the load arm assembly (See Fig.4)

・Prior to performing the following procedure, remove the connector board.

1. Remove the slit washer **e** retaining the load arm assembly.
2. Remove the spring **g** in the load arm assembly marked joint **f**.
3. Draw out the load arm assembly from the shaft and rotate in the direction of the arrow to remove it from the cach.

ATTENTION: The spring **g** comes off as the load arm assembly is drawn out from the shaft.

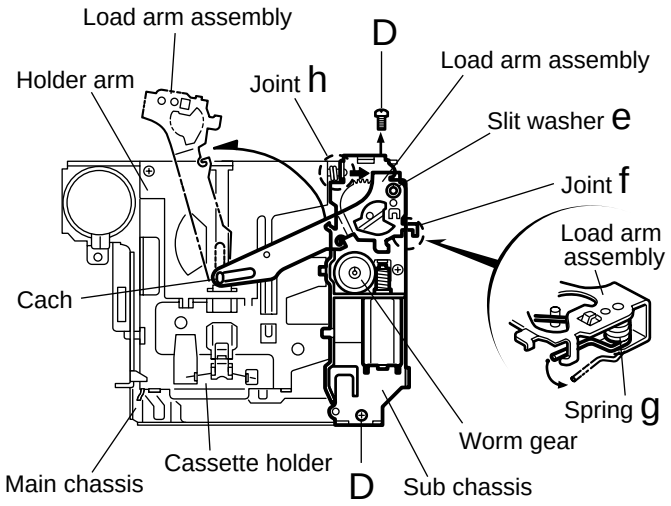



Fig.4

## ■Removing the sub chassis (See Fig.4)

・Prior to performing the following procedure, remove the connector board and the load arm assembly.

1. Remove the two screws **D** attaching the sub chassis.
2. Draw out the sub chassis from the holder arm shaft in the direction of the arrow (marked joint **h**). Remove the sub chassis from the main chassis upwards.

## ■Removing the cassette holder / holder arm (See Fig.5)

・Prior to performing the following procedure, remove the connector board and the load arm assembly.

1. Remove the screw **E** attaching the cassette holder / holder arm.
2. Draw out the holder arm shaft from the sub chassis in the direction of the arrow (marked joint **h**).
3. Disengage two joints **i** and remove the cassette holder / holder arm.

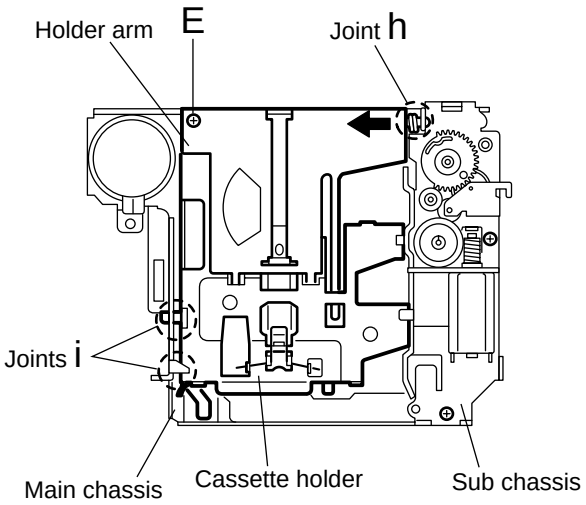



Fig.5

## ■Removing the sub motor

**(See Fig.4 and 6)**

・ Prior to performing the following procedure, remove the connector board and the load arm assembly.

1. Remove the slit washer **j** and the worm gear.
2. Remove the two screws **F**.

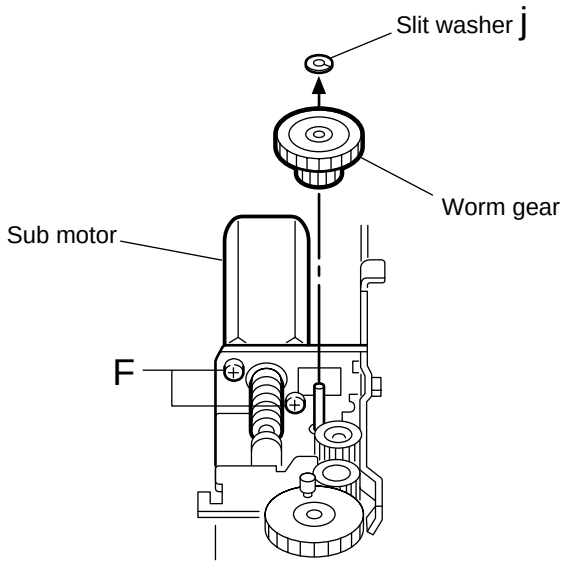



Fig.6

## ■Removing the play head / pinch roller assembly (twin set) (See Fig.7)

・ Prior to performing the following procedure, remove the connector board, the load arm assembly and the sub chassis.

1. Remove the spring **K** retaining the play head assembly and pull out the play head assembly.
2. Remove the two screws **G**.
3. Remove the two slit washers **l** attaching the pinch roller assembly (twin set). Pull out each pinch roller assembly.

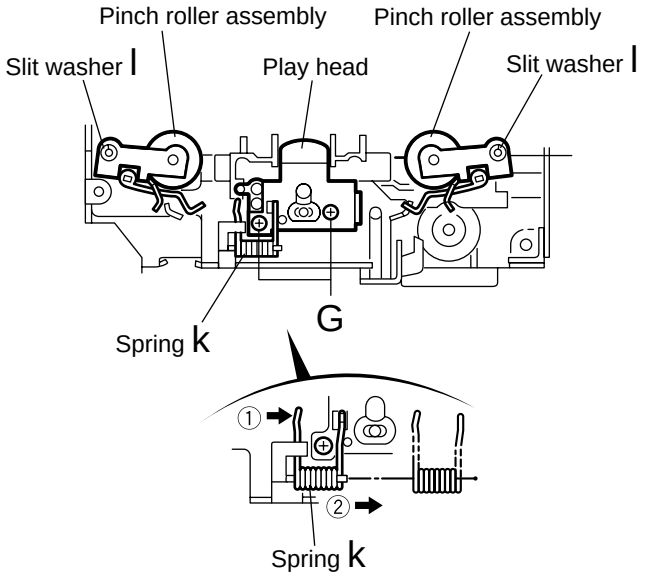



Fig.7

## ■Removing the reel disc assembly (twin set) (See Fig.8 to 10)

・Prior to performing the following procedure, remove the connector board, the load arm assembly, the sub chassis and the cassette holder / holder arm.

1. Remove the two slit washers **m** while pushing down the reel driver on the two reel disc assemblies.
2. Pull out the two screws **l** from the shaft with the reel driver and the spring respectively.

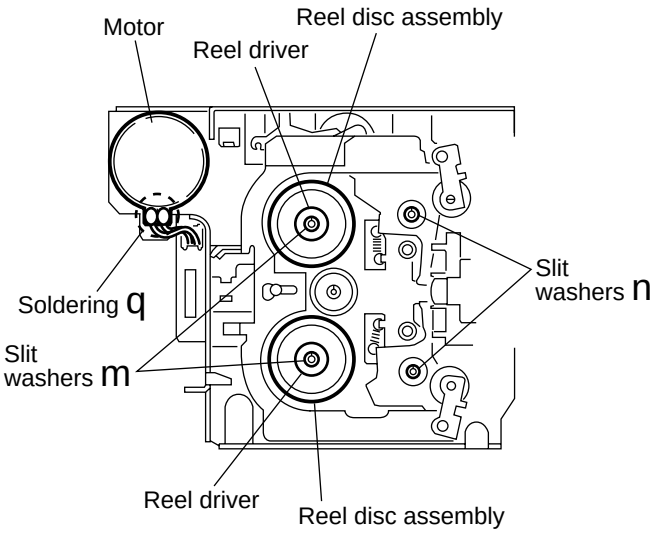



Fig.8

## ■Removing the flywheel assembly (F) and (R) (See Fig.8 and 11)

・Prior to performing the following procedure, remove the connector board, the load arm assembly, the sub chassis and the cassette holder / holder arm.

1. Remove the belt from the underside of the mechanism assembly.
2. Remove the two slit washers on the upper side of the mechanism assembly.
3. Pull out the flywheel assembly (F) and (R) from underside of the mechanism assembly.

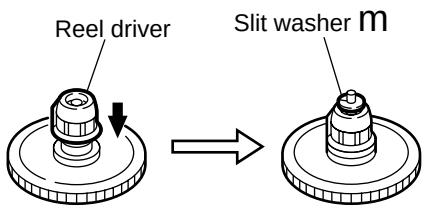



Fig.9

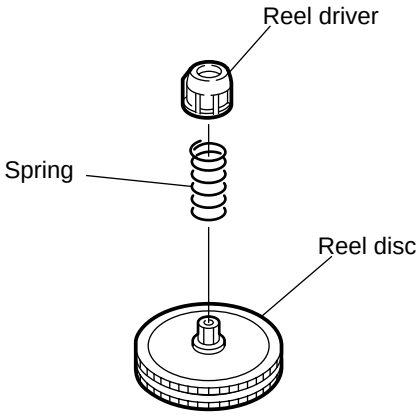



Fig.10

## ■Removing the reel disc board (See Fig.11)

1. From the underside of the mechanism assembly, unsolder soldering **o** on the reel disc board.
2. Unbend the joint hook **p** retaining the reel disc board.
3. Remove the screw **H**.

## ■Removing the motor (See Fig.8and 11)

1. Unsolder soldering **q** on the motor.
2. Remove the belt from the underside of the mechanism assembly.
3. Remove the two screws **l** from the underside of the mechanism assembly.

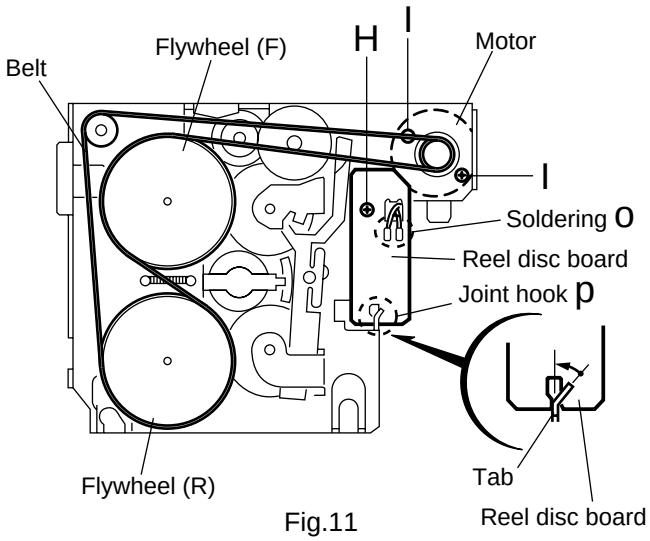



Fig.11

# Adjustment method

## ■ Test Instruments reqired for adjustment

1.Digital osclloscope(100MHz)

2.Frequency Counter meter

3.Electric voltmeter

4.Wow & flutter meter

5.Test Tapes

VT724 ---------- for DOLBY level measurement

VT739 --------- For playback frequency measurement

VT712 ----For wow flutter & tape speed measurement

VT703 ---------- For head azimuth measurement

6.Torque gauge ---------- Cassette type for CTG-N (mechanism adjustment)

## ■ Measuring conditions(Amplifier section)

Power supply voltage ---------- DC14.4V(10.5~16V)

Load impedance ---------- 4Ω (2Speakers connection)

Line out ---------- 20kΩ

## ■ Standard volume position

Balance and Bass,Treble volume .Fader :Center(Indication"0")

Loudness,Dolby NR,Sound,Cruise:Off

Volume position is about 2V at speaker output with following conditions.Playback the test tape VT721.

| | |
|---|---|
| AM mode | 999kHz/62dB,INT/400Hz,30% modulation signal on receiving. |
| FM mono mode | 97.9MHz/66dB,INT/400Hz,22.5kHz deviation pilot off mono. |
| FM stereo mode | 1kHz,67.5kHz dev. pilot7.5kHz dev. |
| Output level | 0dB(1μV,50 Ω/open terminal). |

## ■ Tuner section

BAND STEP

FM : 100kHz (Seek), 50kHz (Manual)

AM : 9kHz step

## ■ Preset Memory Initialization

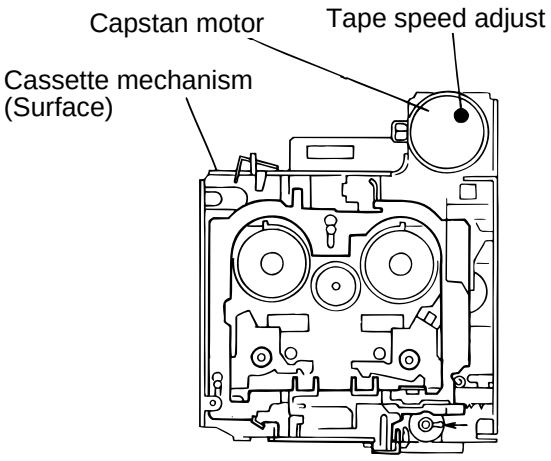
| Band | Preset Memory | | | | | |
|---|---|---|---|---|---|---|
| | M1 | M2 | M3 | M4 | M5 | M6 |
| FM(MHz) | 87.5 | 89.9 | 97.9 | 105.9 | 108.0 | 87.5 |
| AM(kHz) | 153 | 216 | 603 | 999 | 1404 | 1620 |

DUMMY LOAD

Exclusive dummy load should be used for AM and FM dummy load,there is a loss of 6dB between SSG output and antenna input. The loss of 6dB need not be considered since direct reading of figures are applied in this working standard.

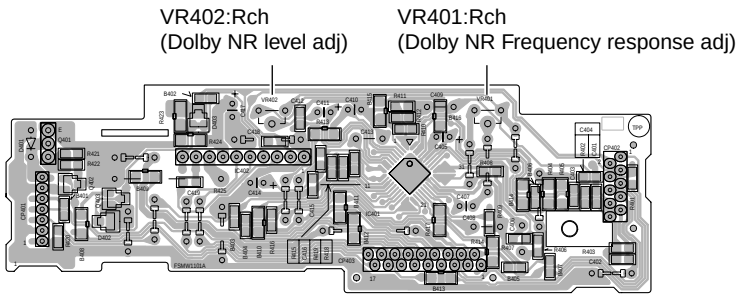
## ■ Arrangement of Adjusting

Cassette Mechanism Section



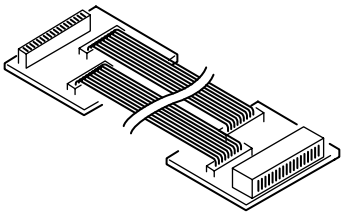
## ■ Arrangment of adjusting

Head amplifier board section (Reverse side)




## ■ Information for using a Car Stereo service jig (for adjustment and checking)

- We are advancing efforts to make our extension cords comman for all Car Stereo products. Please use this type of extension cord as follows.
- As a U -shape type top cover is employed,this type of extension cord needed to check operation of the mechanism assembly after disassembly.
- Extension cords



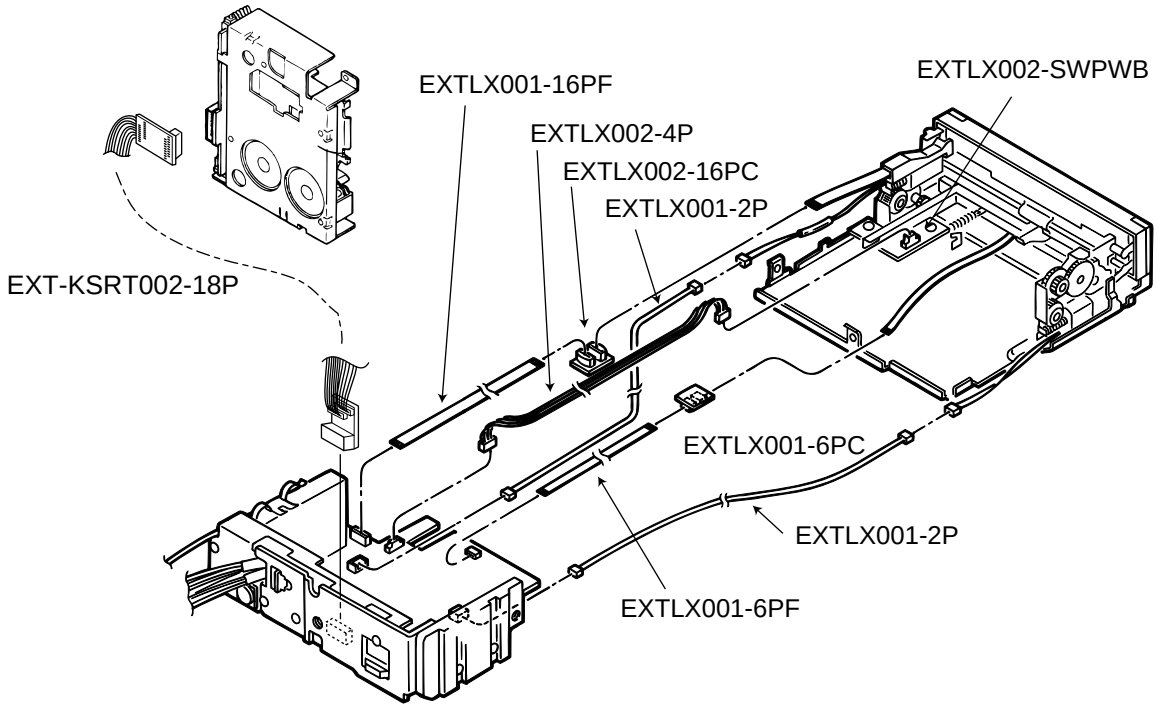
EXT-KSRT002-18P(18 pin extension cord)

For connection between mechanism assembly
and main board assembly.
Check for mechanism-driving section such as moter ,etc.

- Disassembly method. (Refer to mthod to remove main parts)

1.Remove the bottom cover.
2.Remove the front panel assembly.
3.Remove the top cover. (Remove the screws at each side of heat sink and rear panel)
4.Install the front panel (whose assembly was removed in step 2) to the main unit.
5.Confirm that current is being is carried by connecting an extension cord jig.

- Connection diagram

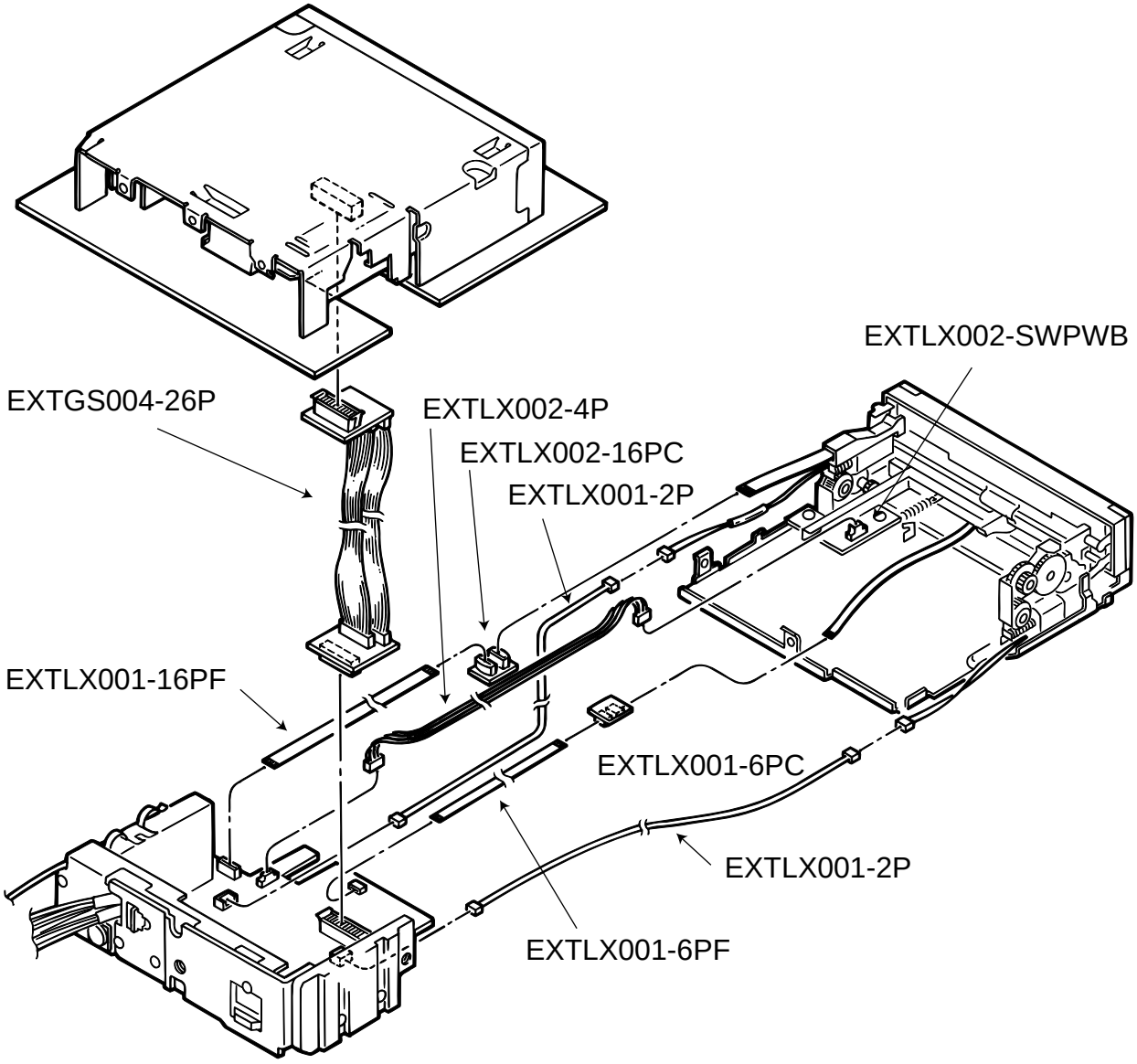


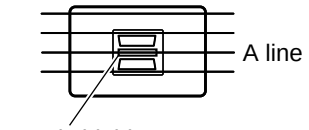
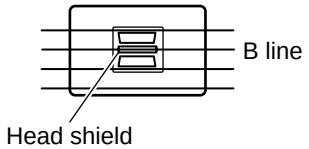
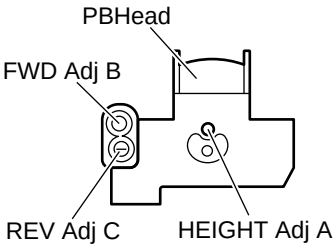
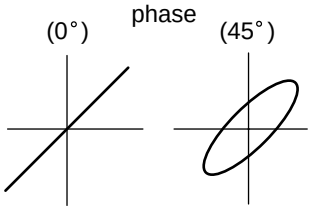
## ■ Extension cord list

EXTLX002-JIG : Kit including the following 8 extension parts.

| No. | Parts number | Quantity | Description |
|---|---|---|---|
| 1 | EXTLX001-2P | 2 | 2Pin, 30cm extension cord |
| 2 | EXTLX001-6PF | 1 | 6Pin, 30cm flat wire |
| 3 | EXTLX001-6PC | 1 | 6Pin x 2, interlocking connector |
| 4 | EXTLX002-16PF | 1 | 16Pin flat wire |
| 5 | EXTLX002-16PC | 1 | 16Pin, interlocking connector |
| 6 | EXTLX002-SWPWB | 1 | 3 switch PWB |
| 7 | EXTLX002-4P | 1 | 4Pin, 30cm extension cord |

Besides the above kit, we offer the conventional extension cord for CASSETTE mechanism which are not essential to operation check or service.
The mechanism should be directly connected to the board using the extension wire.
EXT-KSRT002-18P



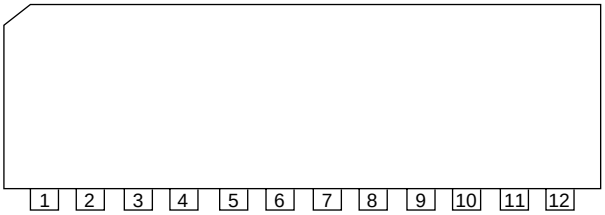
| Item | Conditions | Adjustment and Confirmation methods | S.Values | Adjust |
|---|---|---|---|---|
| 1. Head azimuth adjustment | Test tape:<br>SCC-1659<br>VT703(10kHz) | ◆ Head height adjustment<br>※ Adjust the azimuth directly. When you adjust the height using a mirror tape, remove the cassette housing from the mechanism chassis. After installing the cassette housing, perform the azimuth adjustment.<br><br>1. Load the SCC-1659 mirror tape. Adjust with height adjustment screw A and azimuth adjustment screw B so that line A of the mirror tape runs in the center between Lch and Rch in the reverse play mode.<br><br>2. After switching from REV to FWD then to REV, check that the head position set in procedure 1 is not changed. (If the position has shifted, adjust again and check.)<br><br>3. Adjust with azimuth adjustment screw B so that line B of the mirror tape runs in the center between Lch and Rch in the forward play mode.<br><br>◆ Head azimuth adjustment<br><br>1. Load VTT724 (VT724) (1kHz) and play it back in the reverse play mode. Set the Rch output level to max.<br><br>2. Load VTT703 (VT703) (10kHz) and play it back in the forward play mode. Adjust the Rch and Lch output levels to max, with azimuth adjustment screw B. In this case, the phase difference should be within 45°.<br><br>3. Engage the reverse mode and adjust the output level to max, with azimuth adjustment screw C.<br>(The phase difference should be 45° or more.)<br><br>4. When switching between forward and reverse modes, the difference between channels should be within 3dB. (Between FWD L and R, REV L and R.)<br><br>5. When VTT721 (VT721) (315Hz) is played back, the level difference between channels should be within 1.5dB. |  <br><br>Head shield<br>The head is at low position during.<br>  <br><br>Head shield<br>The head is at High position during REV.<br><br>Output level: Maximum<br>  <br><br>  <br> | |
| 2. Tape speed and wow flutter confirmation | Test tape: VTT712<br>(3kHz) | 1. Check to see if the reading of the F, counter / wow flutter meter is within 3015～3045(FWD / REV), and less than 0.35% (JIS RMS).<br><br>2. In case of out of specification, adjust the motor with a built-in volume resistor. | Tape speed: 3015 ～3045Hz<br>Wow flutter: less than 0.35% | Built-in volume resistor |
| 3. Play back frequency response confiramation | Test tape: VTT724<br>(1kHz)<br>VTT739<br>(63Hz / 1kHz / 10kHz) | 1. Play test tape VTT724, and set the volume position at 2V.<br><br>2. Play test tape VTT739 and confirm.<br>1kHz / 10kHz: -1 ± 3dB,<br>1kHz / 63Hz: 0 ± 3dB,<br><br>3. When 10kHz is out of specification, it will be necessary to read adjust the azimuth. | Speaker out<br>1kHz / 63Hz : 0± 3db<br>1kHz / 10kHz : -1± 3db | |

The tuner section is of an adjustment-freedesign. In case the tuner is in trouble, replace the tuner pack.

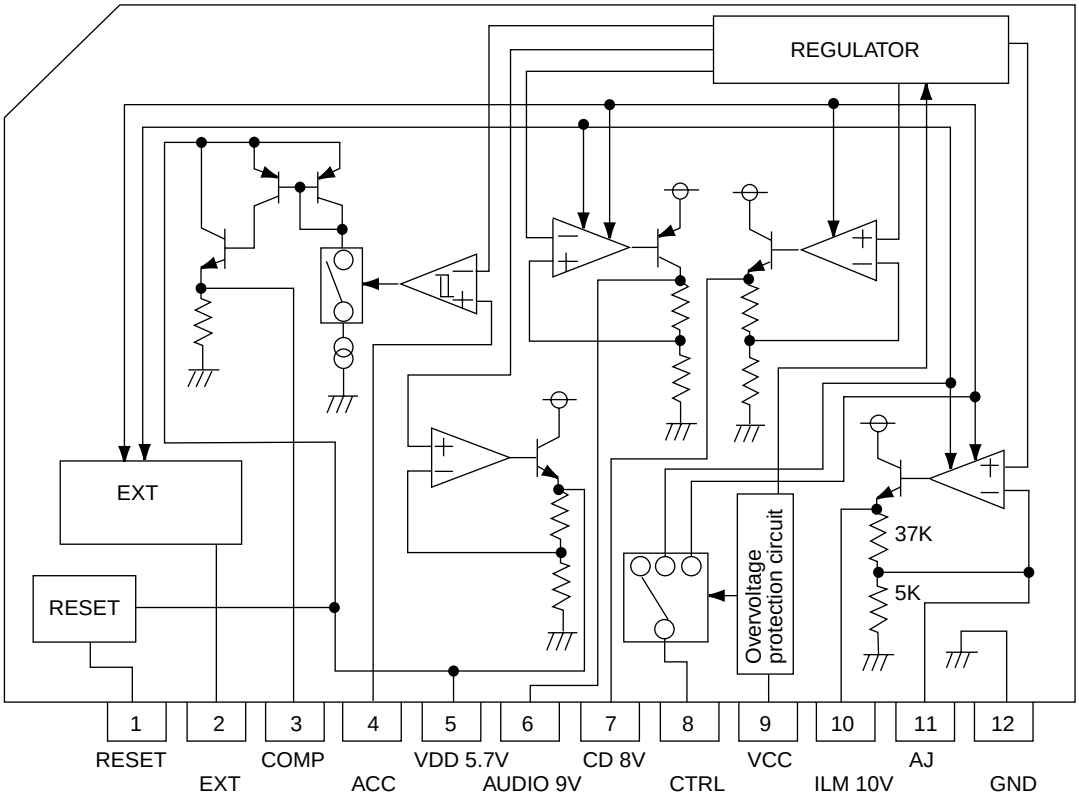
# Description of major ICs

## ■ BA4905-V3 (IC961) : Regulator

1.Pin layout




2.Block diagram

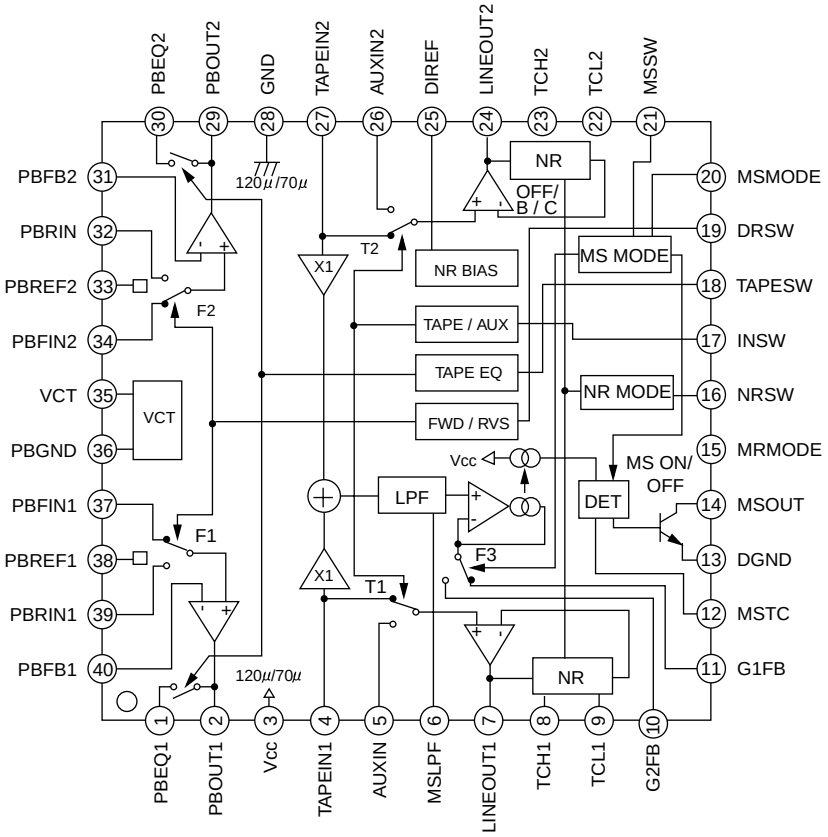



3.Pin function

| Pin no. | Symbol | Function |
|---|---|---|
| 1 | RESET | If VDD voltage becomes 4V or less.RESET output becomes low level. |
| 2 | EXT output | This output voltage is approximately 0.5V lower than VCC. and max output current is 300mA. |
| 3 | COMP output | A voltage supply for ACC block. This output voltage is approximately 0.7V lower than VDD'S. The max output current is 100mA. |
| 4 | ACC | Control of the COMP output by inputting voltage. |
| 5 | VDD output | This output voltage is 5.7V, and max output current is 100mA. This voltage supply is for microcomputer. Whenever back up voltage supply is connected, the output keeps on running. |
| 6 | AUDIO output | This output voltage is 9.0v, and max output current is 500mA. This voltage supply for AUDIO. |
| 7 | CD output | This output voltage is 8.0V, and max output current is 1A. This voltage supply for CD. |
| 8 | CTRL | Output selector of CD. AUDIO, ILM and EXT. |
| 9 | VCC | To be connected with the BACK UP of car. |
| 10 | ILM output | This output voltage is 10V, and max output current is 500mA. Output voltage is adjustable. |
| 11 | AJ | Putting a resistance between ILM and AJ or between AJ and GND makes ILM output voltage adjustable. |
| 12 | GND | Ground. |

## ■ CXA2510AQ (IC401) : Head AMP / Dolby

1. Pin layout & Block diagram

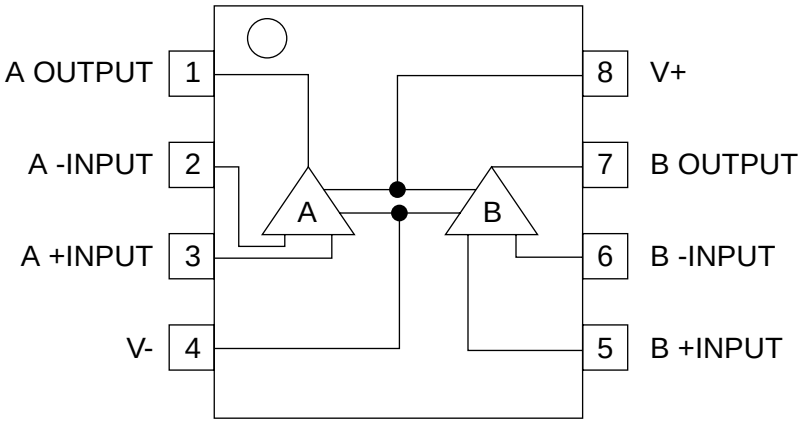



2. Pin functions

| Pin No. | Symbol | I/O | Functions |
|---|---|---|---|
| 1 | PBEQ1 | O | Resistance for selecting the equalizer amplifier time constant. |
| 2 | PBOUT1 | O | Playback equalizer amplifier out put. |
| 3 | Vcc | - | Power supply |
| 4 | TAPEIN1 | I | TAPE input. |
| 5 | AUXIN1 | I | External input. |
| 6 | MSLPF | - | Cut-off frequency adjustment of the music sensor LPF. |
| 7 | LINEOUT1 | O | Line out. |
| 8 | TCH1 | - | Time constant for the HLS. |
| 9 | NC | - | Non connection. |
| 10 | G2FB | - | Music signal interval detection level setting. |
| 11 | G1FB | | |
| 12 | MSTC | | Time constant for detecting the music signal interval. |
| 13 | DGND | - | Logic ground (Connect to GND) |
| 14 | MSUOT | O | Music sensor output. |
| 15 | NC | I | Non connection. |

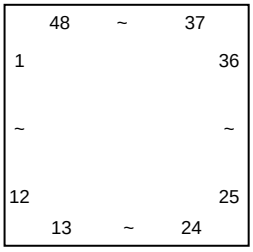
| Pin No. | Symbol | I/O | Functions |
|---|---|---|---|
| 16 | NRSW | I | Dolby NR control L:NR OFF H:NR ON |
| 17 | INSW | I | Line amplifier input select control L:TAPE IN H:AUX IN |
| 18 | METAL | I | Playback equalizer amplifier control L:120us H:70us |
| 19 | DRSW | I | Head select control L:FORWARD H:REVERSE |
| 20 | FF/REW | I | Music sensor mode control Low(open):G1 High:G2 |
| 21 | MSSW | I | Music sensor control Low(open):MS on High:MS OFF |
| 22 | NC | - | Non connection |
| 23 | TCH2 | - | Time constant for the HLS |
| 24 | LINEOUT2 | O | Line output |
| 25 | DIREF | - | Resistance for setting the reference current (Connects 20(18)KΩ between DIREF pin and GND for the standard setting.) |
| 26 | NC | - | Non connection. |
| 27 | TAPEIN2 | I | TAPE input. |
| 28 | GND | - | To ground. |
| 29 | PBOUT2 | O | Playback equalizer amplifier output. |
| 30 | PBEQ2 | O | Resistance for selecting the playback equalizer amplifier time constant |
| 31 | PBFB2 | I | Playback equalizer amplifier feedback. |
| 32 | NC | - | Non connection. |
| 33 | PBREF2 | O | Playback equalizer amplifier reference (Vcc/2 output) |
| 34 | PBFIN2 | I | Playback equalizer amplifier input (FORWARD head connected) |
| 35 | VCT | O | Center (Vcc/2 output) |
| 36 | PBGND | - | Playback equalizer amplifier ground (Connect to ground) |
| 37 | PBFIN1 | I | Playback equalizer amplifier input (FORWARD head connected) |
| 38 | PBREF1 | O | Playback equalizer amplifier reference (Vcc/2 output) |
| 39 | NC | - | Non connection. |
| 40 | PBFB1 | I | Playback equalizer amplifier feedback. |

## ■ NJM4565M-W (IC951,IC171,IC323) : Ope amp.

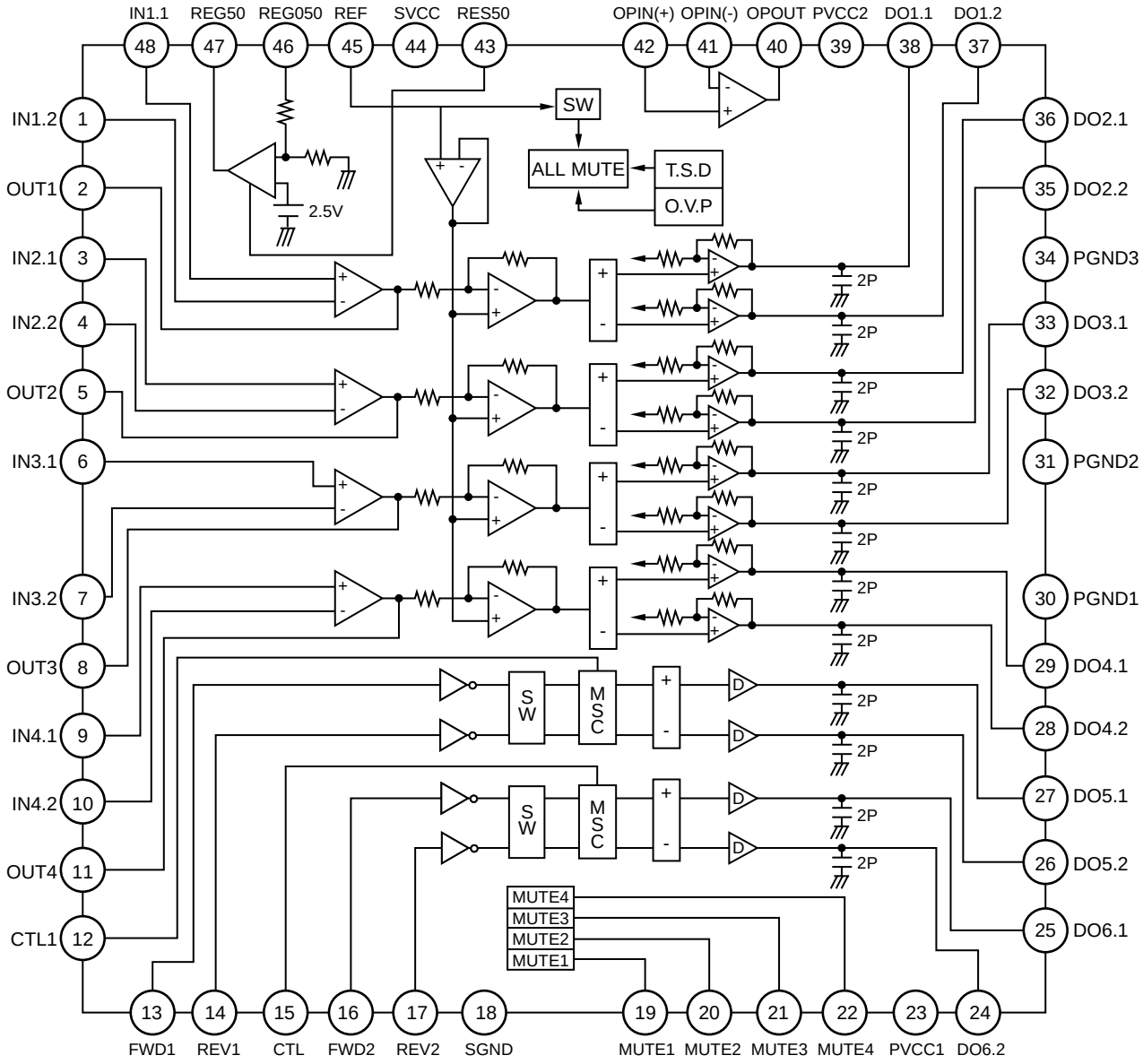


## ■ KA3031 (IC831) : Motor driver

1. Pin layout




2. Block diagram

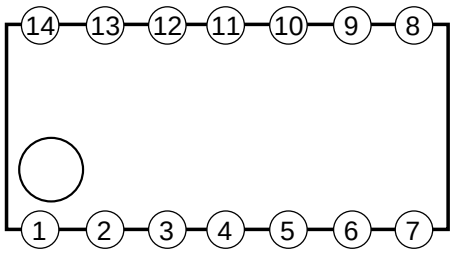


3. Pin function

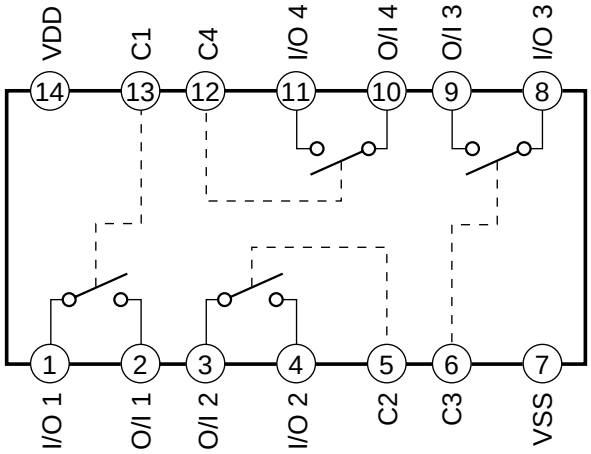
| Pin No. | Symbol | I/O | Function | Pin No. | Symbol | I/O | Function |
|---|---|---|---|---|---|---|---|
| 1 | IN1.2 | I | CH 1 op-amp input (-) | 25 | DO6.1 | O | CH 6 drive outout |
| 2 | OUT1 | O | CH 1 op-amp output | 26 | DO5.2 | O | CH 5 drive output |
| 3 | IN2.1 | I | CH 2 op-amp input (+) | 27 | DO5.1 | O | CH 5 drive output |
| 4 | IN2.2 | I | CH 2 op-amp input (-) | 28 | SO4.2 | O | CH 4 drive output |
| 5 | OUT2 | O | CH 2 op-amp output | 29 | DO4.1 | O | CH 4 drive output |
| 6 | IN3.1 | I | CH 3 op-amp input (+) | 30 | PGND | | Power ground |
| 7 | IN3.2 | I | CH 3 op-amp input (-) | 31 | PGND | - | Power ground |
| 8 | OUT3 | O | CH 3 op-amp output | 32 | DO3.2 | O | CH 3 drive output |
| 9 | IN4.1 | I | CH 4 op-amp input(+) | 33 | DO3.1 | O | CH 3 drive output |
| 10 | IN4.2 | I | CH 4 op-amp input (-) | 34 | PGND | | Power ground |
| 11 | OUT4 | O | CH 4 op-amp output | 35 | DO2.2 | O | CH 2 drive output |
| 12 | CTL1 | I | CH 5 motor speed control | 36 | SO2.1 | O | CH 2 drive output |
| 13 | FWD1 | I | CH 5 forward input | 37 | SO1.2 | O | CH 1 drive output |
| 14 | REW1 | I | CH 5 reverse input | 38 | DO1.1 | O | CH 1 drive output |
| 15 | CTL2 | I | CH 6 motor speed control | 39 | PVCC2 | - | Power supply voltage (For CH 1, CH 2, CH 3, CH 4) |
| 16 | FED2 | I | CH 6 torward input | 40 | OPOUT | O | Opamp output |
| 17 | REW2 | I | CH 6 reverse input | 41 | OPIN(-) | I | Opamp input (-) |
| 18 | SGND | - | Signal ground | 42 | OPIN(+) | I | Opamp input (+) |
| 19 | MUTE1 | I | CH 1 mute | 43 | RES50 | I | Regulator 5V reset |
| 20 | MUTE2 | I | CH 2 mute | 44 | SVCC | - | Signal supply voltage |
| 21 | MUTE3 | I | CH 3 mute | 45 | REF | I | Bias voltage input |
| 22 | MUTE4 | I | CH 4 mute | 46 | REG050 | O | regulator 5V output |
| 23 | PVCC1 | - | Power supply voltage (For CH 5, CH 6) | 47 | REG50 | O | Regulator output |
| 24 | DO6.2 | O | CH 6 drive output | 48 | IN1.1 | I | CH 1 opamp onput (+) |

## ■ BU4066BCF-X (IC322) : Switch

1.Pin l ayout

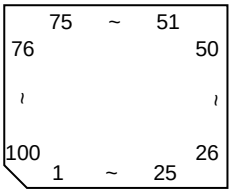



2.Block diagram



## ■ UPD784215AGC113 (IC701) : UNIT CPU

1.Pin layout



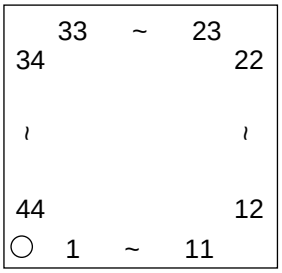

2.Pin function

| Pin No. | Symbol | I/O | Function |
|---|---|---|---|
| 1 | FF/REW | O | Output for input signal level switching for MS. |
| 2 | DOLBY | O | Dolby on "H" output. |
| 3 | MS-OUT | O | MS output. |
| 4 | F/R | I | Fwd, REV direction switch signal input. |
| 5 | HOLD | - | Non connect |
| 6 | TRAYCNT | O | Tray light control signal output. |
| 7 | DIMMER-OUT | O | Dimmer signal output. |
| 8 | LCD-POWER | - | Non connect. |
| 9 | VDD | - | Power supply terminal. |
| 10 | X2 | O | Connecting the crystal oscillator for system main clock. |
| 11 | X1 | I | Connecting the crystal oscillator for system main clock. |
| 12 | VSS | - | Connect to GND. |
| 13 | XT2 | O | Connecting the crystal oscillator for system sub clock. |
| 14 | XT1 | I | Connecting the crystal oscillator for system sub clock. |
| 15 | RESET | I | System reset signal input. |
| 16 | SW1 | I | Cassette mechanism detect switch. |
| 17 | BUS-IN | I | J-BUS signal cut in input. |
| 18 | PS2 | I | Power save 2. |
| 19 | CURUISE | I | CRUISE signal input. |
| 20 | RDS-SCK | I | RDS selial clock input. |
| 21 | RDS-DA | I | RDS data input. |
| 22 | REMOCON | I | Remove control signal input. |
| 23 | AVDD | - | Power supply terminal. |
| 24 | AVREF0 | - | Connect to GND. |
| 25 | NC | - | Connect to GND. |
| 26 | NC | - | Connect to GND. |
| 27 | KEY0 | I | Key control 0 input. |
| 28 | KEY1 | I | Key control 1 input. |
| 29 | KEY2 | I | Key control 2 input. |
| 30 | LEVEL | I | Level meter signal input. |
| 31 | SQ | I | S.quality level input. |
| 32 | S.METER | I | S.meter level input. |
| 33 | AVSS | - | Connect to GND. |
| 34 | W-VOL | O | Woofer volume signal output. |
| 35 | DOT CONT | O | Dot contrast signal input. |
| 36 | AVREF | - | Power supply terminal. |
| 37 | BUS-SI | I/O | J-BUS data I/O terminal. |
| 38 | BUS-SO | O | J-BUS data output. |
| 39 | BUS-SCK | I/O | J-BUS serial clock signal I/O. |
| 40 | STAGE2 | I | Initial setting. |
| 41 | LCD-DA | O | Data output for LCD driver. |
| 42 | LCD-CL | O | Clock otput for LCD driver. |
| 43 | LCD-LEI | O | Chip enable 1 output for LCD driver. |
| 44 | BUZZER | O | BUZZER control signal output. |
| 45 | E2PR-DA-I | I | Data input terminal from EEPROM. |
| 46 | E2PR-DA-O | O | Data output terminal from EEPROM. |
| 47 | E2PR-CLK | I/O | Data input terminal from EEPROM. |
| 48 | BUS-I/O | I/O | J-BUS I/O signal terminal. |
| 49 | TM0 | O | Tray motor negative signal output. |
| 50 | TM1 | O | Tray motor positive signal output. |

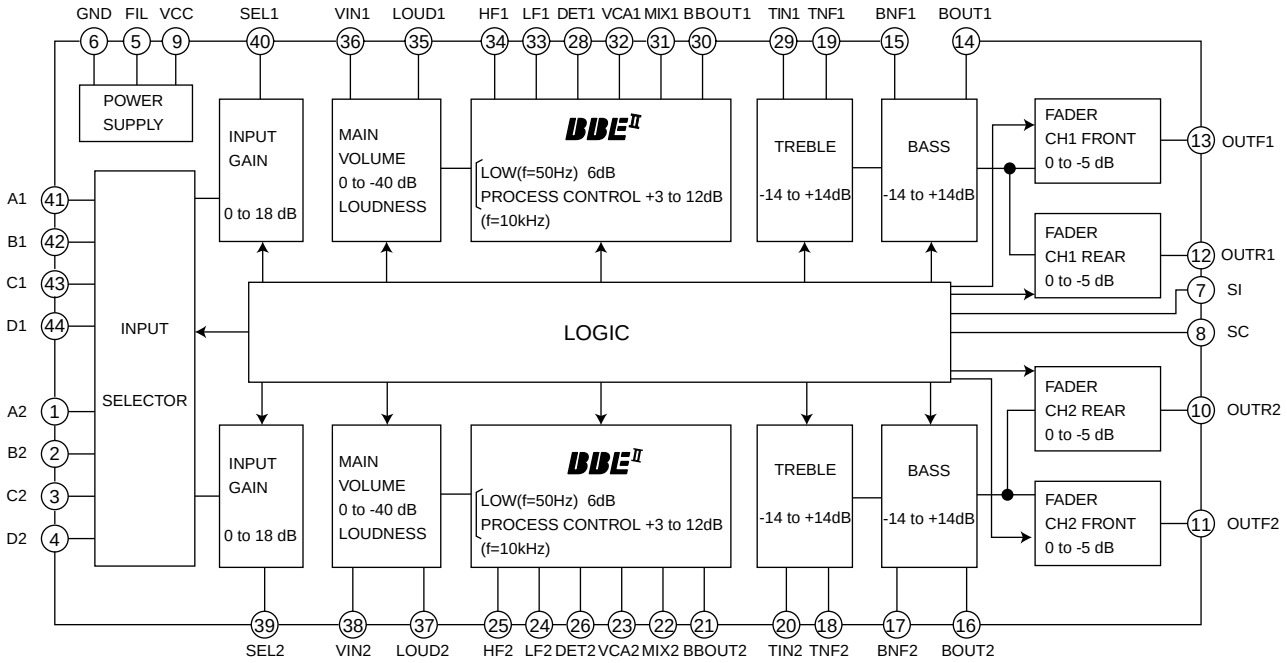
| Pin No. | Symbol | I/O | Function |
|---|---|---|---|
| 51 | DM0 | O | Door motor negative signal output. |
| 52 | DM1 | O | Door motor positive signal output. |
| 53 | ST | I | Stereo signal input. |
| 54 | LOCAL | - | Non connect. |
| 55 | MONO | O | Manual ON/OFF select signal output. |
| 56 | CA-SW1 | I | DOOR/TRAY open/close detect switch signal input. |
| 57 | CA-SW2 | I | DOOR/TRAY open/close detect switch signal input. |
| 58 | CA-SW3 | I | DOOR/TRAY open/close detect switch signal input. |
| 59 | CA-SW4 | I | DOOR/TRAY open/close detect switch signal input. |
| 60 | CA-SW5 | I | DOOR/TRAY open/close detect switch signal input. |
| 61 | VCR-CONT | - | Non connect. |
| 62 | AFCK | O | AF check output. |
| 63 | SEEK/STOP | O | AUTO SEEK/STOP select signal output. |
| 64 | SD | I | Station detector input. |
| 65 | FM/AM | O | FM/AM select signal output. |
| 66 | PLL-CE | O | Chip enable signal output. |
| 67 | PLL-DA | O | Data output. |
| 68 | PLL-CK | O | Clock signal output. |
| 69 | BAND IN | I | AM detect signal input. |
| 70 | TEL-MUTE | I | Telephone. |
| 71 | AMP KILL | - | Non connect. |
| 72 | VSS | - | Connect to GND |
| 73 | DIMMER-IN | I | DIMMER signal input. |
| 74 | DSI | I | Power save 1. |
| 75 | POWER | O | Power ON/OFF select signal output. |
| 76 | CD-ON | - | Non connect. |
| 77 | MUTE | O | Mute signal output. |
| 78 | W-LPF1 | O | Woofer LPF 1 signal output. |
| 79 | W-LPF2 | O | Woofer LPF 2 signal output. |
| 80 | W-MUTE | O | Woofer mute signal output. |
| 81 | VDD | - | Power supply. |
| 82 | VOL-DA | O | Data output. |
| 83 | VOL-CLK | O | Clock signal output. |
| 84 | CF-SEL | I | CF select signal input. |
| 85 | NC | - | Non connect. |
| 86 | LCD RST | O | LCD reset signal output. |
| 87 | LCD-CE2 | O | Chip enable 2 output. |
| 88 | DMK | O | Motor speed control signal output. |
| 89 | TMK | O | Tray motor control signal output. |
| 90 | STAGE1 | I | Initial setting. |
| 91 | MOTOR | O | Mecha Motor signal output. |
| 92 | MODE | I | Mecha mode position detection input. |
| 93 | STANDBY | I | Standby position derection input. |
| 94 | TEST | I | Test terminal |
| 95 | TAPE-IN | O | Cassette in detection input. |
| 96 | SUBMO- | O | Sub motor clock direction drive output. |
| 97 | SUBMO+ | | Sub motor clock opposite direction drive output. |
| 98 | TAPE-END | I | Tape end detection input. |
| 99 | KICK | O | Kick output. |
| 100 | VOICE IN | I | Voice control signal input. |

## ■ BD3860K (IC911) : E. volume

1. Pin layout




2. Block diagram

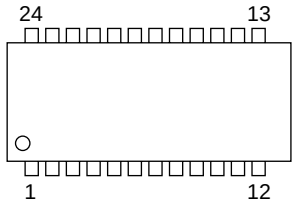



3. Pin function

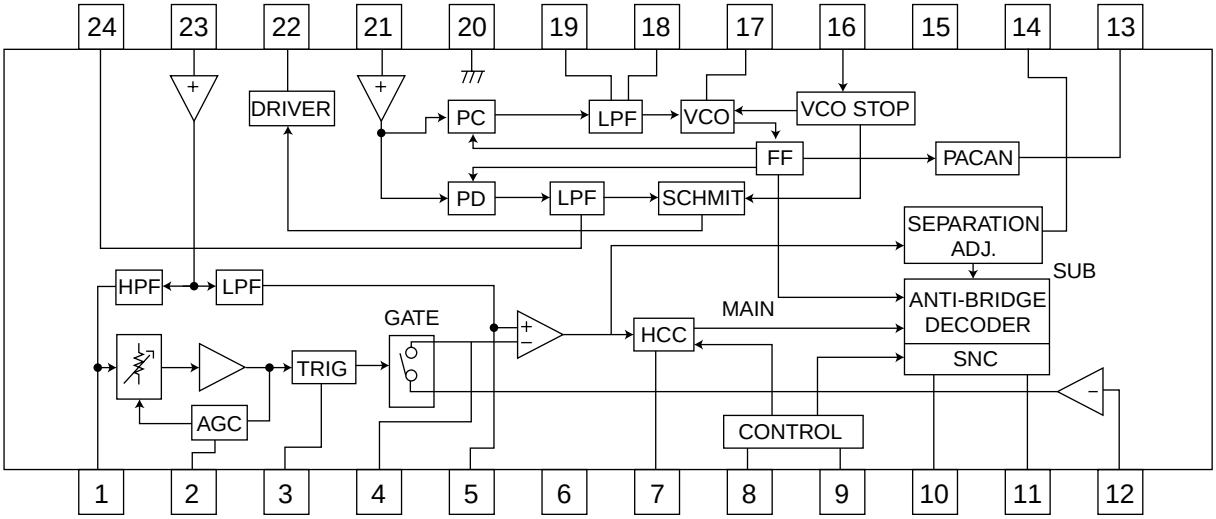
| Pin No. | Symbol | Function | Pin No. | Symbol | Function |
|---|---|---|---|---|---|
| 1 | A2 | CH2 input terminal A | 23 | VCA2 | CH2 high frequency VCA output terminal |
| 2 | B2 | CH2 input terminal B | 24 | LF2 | CH2 low frequency filter setting terminal |
| 3 | C2 | CH2 input terminal C | 25 | HF2 | CH2 high frequency filter setting terminal |
| 4 | D2 | CH2 input terminal D | 26 | DET2 | CH2 high frequency attack release time setting |
| 5 | FIL | 1/2 VCC terminal | 27 | NC | Non connect |
| 6 | GND | Ground terminal | 28 | DET1 | CH1 high frequency attack release time setting |
| 7 | SI | Serial data input terminal | 29 | TIN1 | CH1 treble input terminal |
| 8 | SC | Serial clock input terminal | 30 | BBOUT1 | CH1 BBE II signal output terminal |
| 9 | VCC | Power supply | 31 | MIX1 | CH1 output mix amp. negative input terminal |
| 10 | OUTR2 | CH2 rear output terminal | 32 | VCA1 | CH1 high frequency VCA output terminal |
| 11 | OUTF2 | CH2 front output terminal | 33 | LF1 | CH1 low frequency filter setting terminal |
| 12 | OUTR1 | CH1 rear output terminal | 34 | HF1 | CH1 high frequency filter setting terminal |
| 13 | OUTF1 | CH1 front output terminal | 35 | LOUD1 | CH1 loudness filter setting terminal |
| 14 | BOUT1 | CH1 bus filter setting terminal | 36 | VIN1 | CH1 main volume input terminal |
| 15 | BNF1 | CH1 bus filter setting terminal | 37 | LOUD2 | CH2 loudness filter setting terminal |
| 16 | BOUT2 | CH2 bus filter setting terminal | 38 | VIN2 | CH2 main volume input terminal |
| 17 | BNF2 | CH2 bus filter setting terminal | 39 | SEL2 | CH2 input gain output terminal |
| 18 | TNF2 | CH2 treble filter setting terminal | 40 | SEL1 | CH1 input gain output terminal |
| 19 | TNF1 | CH1 treble setting terminal | 41 | A1 | CH1 input terminal A |
| 20 | TIN2 | CH2 treble input terminal | 42 | B1 | CH1 input terminal B |
| 21 | BBOUT2 | CH2 BBE II signal output terminal | 43 | C1 | CH1 input terminal C |
| 22 | MIX2 | CH2 output mix amp negative input terminal | 44 | D1 | CH1 input terminal D |

## ■ LA3460M-X (IC31) : FM noise canceller & Stereo MPX demodulator

1. Pin layout




2. Block diagram

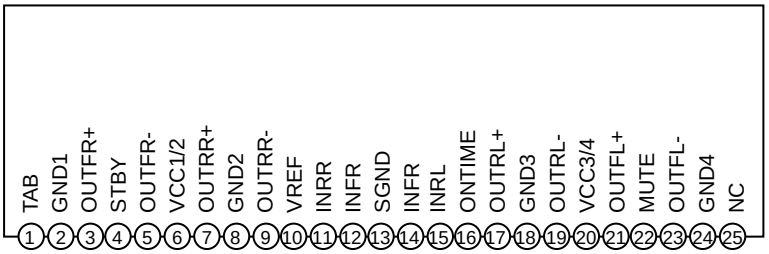



3. Pin function

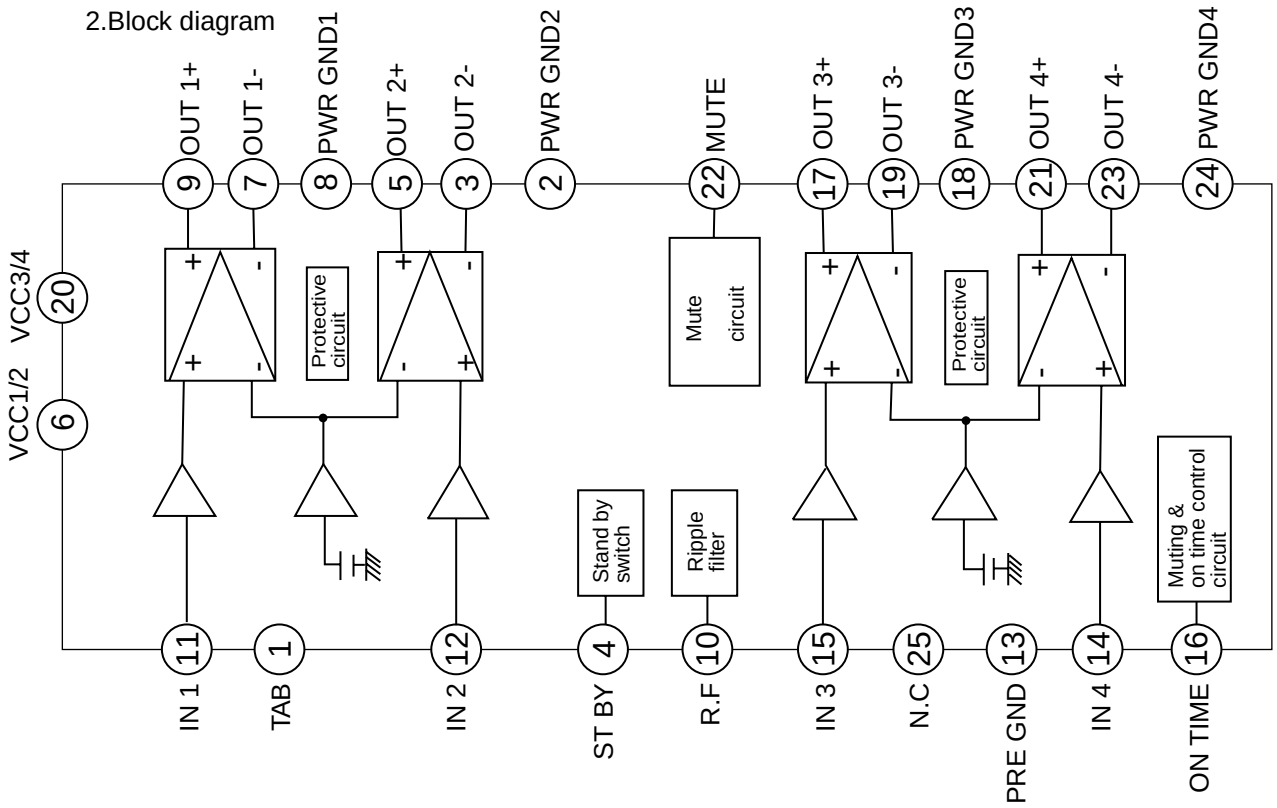
| Pin No. | Function | Description |
|---|---|---|
| 1 | Noise sense | Noise sensitivity adjustment |
| 2 | Noise AGC | |
| 3 | Gate time | |
| 4 | Signal hold | |
| 5 | Pilot output | |
| 6 | Vcc | Vcc=+8.0V |
| 7 | Capacitor for HCC | High pass filter |
| 8 | SNC control | Stereo noise controlled voltage |
| 9 | HCC control | High cut controlled voltage |
| 10 | Lch output | |
| 11 | Rch output | |
| 12 | Pican input | pilot cancel signal input |
| 13 | Pican output | pilot cancel signal outpt |
| 14 | Separation ADJ | |
| 15 | NC | |
| 16 | NC | |
| 17 | 456kHz OSC | Ceramic resonator |
| 18 | Phase comp LPF (+) | Phase comparator low pass filter |
| 19 | Phase comp LPF (-) | Phase comparator low pass filter |
| 20 | GND | |
| 21 | PLL input | Phase locked loop signal input |
| 22 | Stereo indicator | Active low |
| 23 | Composite input | Composite signal input |
| 24 | Pilot det LPF | |

## ■ LA4743B (IC941) :Power amp

1.Terminal layout




2.Block diagram

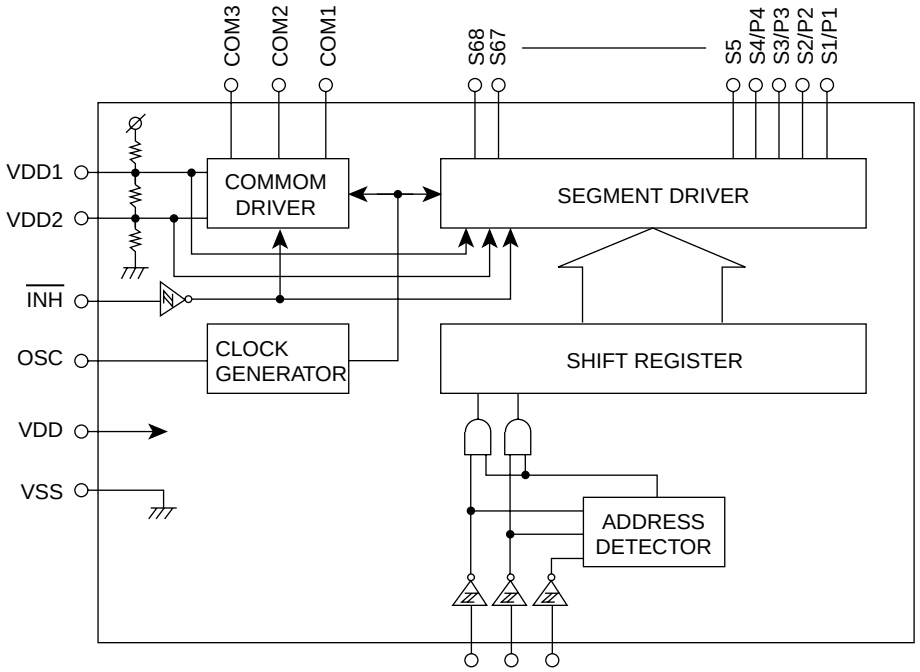



3.Pin function

| Pin No. | Symbol | Function | Pin No. | Symbol | Function |
|---|---|---|---|---|---|
| 1 | TAB | Header of IC | 14 | LFIN | Front Lch input |
| 2 | GND1 | Power GND | 15 | LRIN | Rear Lch input |
| 3 | RFO- | Output (-) for front Rch | 16 | ONTIME | Power on time control |
| 4 | STBY | Stand by input | 17 | LRO+ | Output (+) for rear Lch |
| 5 | RFO+ | Output (+) for front Rch | 18 | GND3 | Power GND |
| 6 | VCC1/2 | Power input | 19 | LRO- | Output (-) for rear Lch |
| 7 | RRO- | Output (-) for rear Rch | 20 | VCC3/4 | Power input |
| 8 | GND2 | Power GND | 21 | LFO+ | Output (+) for front |
| 9 | RRO+ | Output (+) for rear Rch | 22 | MUTE | Muting control input |
| 10 | R.F | Ripple filter | 23 | LFO- | Output (-) for front |
| 11 | RRIN | Rear Rch input | 24 | GND4 | Power GND |
| 12 | RFIN | Front Rch input | 25 | NC | Non connection |
| 13 | SGND | Signal GND | | | |

## ■ LC75873NW (IC601) : LCD driver

1.Block diagram

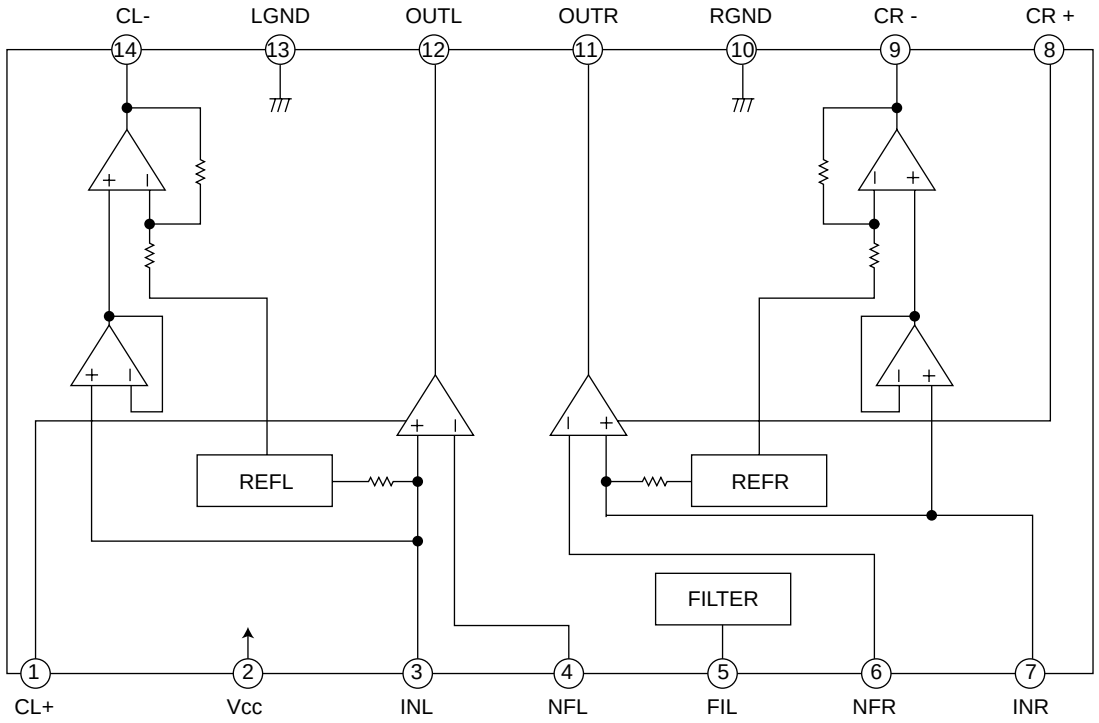



2.Pin functions

| Pin No. | Symbol | I/O | Description |
|---|---|---|---|
| 1~66 | S3~S68 | O | Segment Output. |
| 67~69 | COM1~3 | O | Common Driver Output. |
| 70 | VDD | - | Power Supply Connection. |
| 71 | VDD1 | I | Used for applying the LCD drive 2/3 bias voltage externally.<br>Must be connected to VDD2 when a 1/2 bias drive scheme in used. |
| 72 | VDD2 | I | Used for applying the LCD drive 1/3 bias voltage externally.<br>Must be connected to VDD1 when a 1/2 bias drive scheme in used. |
| 73 | VSS | - | Power supply connection. |
| 74 | OSC | I/O | Oscillator connection. An oscillator circuit is formed by connecting an external resistor and capacitor to this pin. |
| 75 | INH | I | Display off control input. |
| 76 | $\overline{CE}$ | I | Chip enable input. |
| 77 | CLOCK | I | Synchronization clock input. |
| 78 | DI | I | Serial data input. |
| 79 | S1 | O | Signal output. |
| 80 | S2 | O | Signal output. |

## ■ BA3220FV-X (IC301) : Driver

1. Pin layout & Block diagram

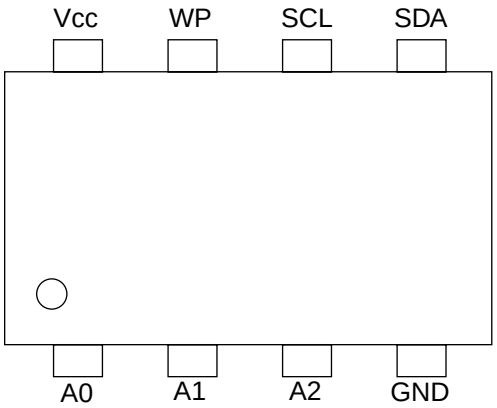



2. Pin function

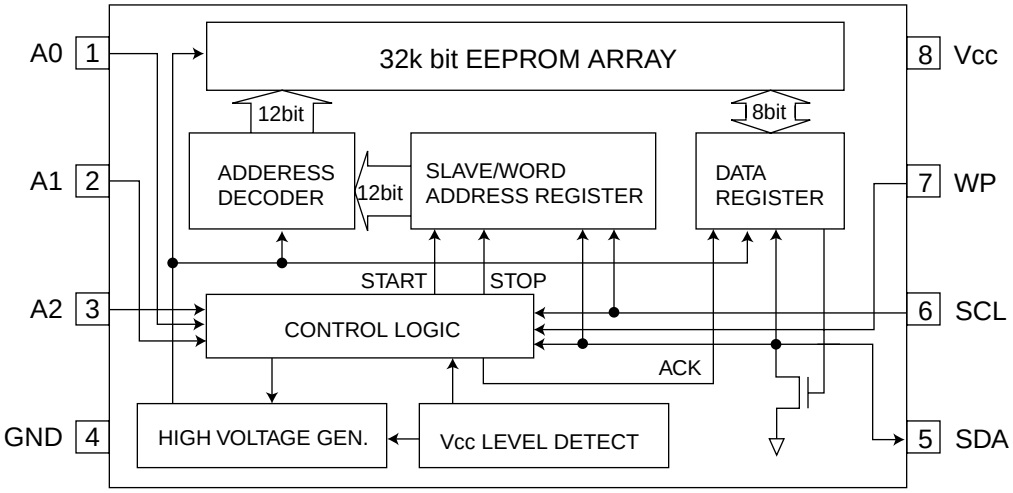
| Pin No. | Symbol | Function |
|---|---|---|
| 1 | CL+ | Powe supply terminal for amp. |
| 2 | Vcc | power supply terminal. |
| 3 | INL | input terminal. |
| 4 | NFL | Negative feedback terminal. |
| 5 | FIL | Filter terminal. |
| 6 | NFR | Negative feedback terminal. |
| 7 | INR | Input terminal |
| 8 | CR+ | Power supply terminal for amp. |
| 9 | CR- | Output terminal of internal amp. |
| 10 | RGND | Rch GND terminal. |
| 11 | OUTR | Rch output terminal. |
| 12 | OUTL | Lch output terminal. |
| 13 | LGND | Lch GND terminal. |
| 14 | CL- | Output terminal of internal amp. |

## ■ BR24C32F-X (IC703) : EEPROM

1. Pin layout




2. Block diagram

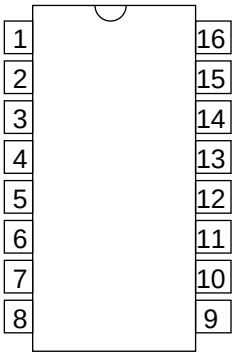



3. Pin function

| Pin No. | I/O | Functions |
|---|---|---|
| Vcc | - | Power supply |
| GND | - | Ground (0V) |
| AO,A1,A2 | IN | Slave address set |
| SCL | IN | Serial clock input |
| SDA | I/O | Slave and word address/Serial data output |
| WP | IN | Write protect input |

## ■ SAA6579T-X (IC51) : RDS demodulator

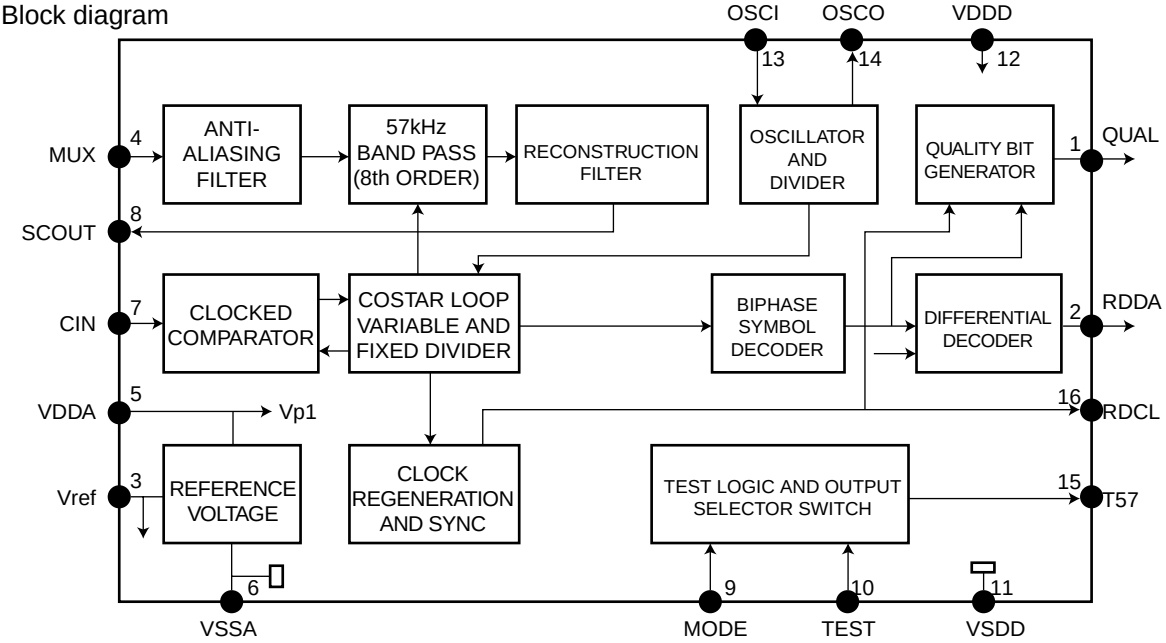
1. Pin layout



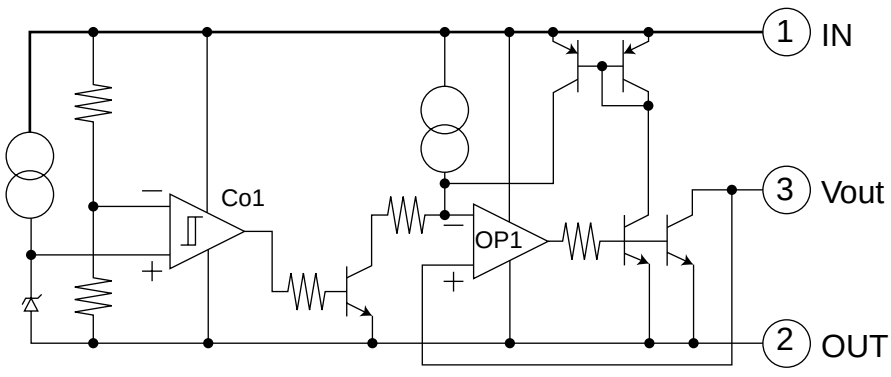

2. Pin function

| Pin No. | Symbol | Function |
|---|---|---|
| 1 | QUAL | Quality indication output |
| 2 | RDDA | RDS data output |
| 3 | Vref | Reference voltage output (0.5VDDA) |
| 4 | MUX | Multiplex signal input |
| 5 | VDDA | +5V supply voltage for analog part |
| 6 | VSSA | Ground for analog part (0V) |
| 7 | CIN | Sub carrier input to comparator |
| 8 | SCOUT | Sub carrier output of reconstruction filter |
| 9 | MODE | Oscillator mode / test control input |
| 10 | TEST | Test enable input |
| 11 | VSSD | Ground for digital part (0V) |
| 12 | VDDD | +5V supply voltage for digital part |
| 13 | OSCI | Oscillator input |
| 14 | OSCO | Oscillator output |
| 15 | T57 | 57kHz clock signal output |
| 16 | RDCL | RDS clock output |

3. Block diagram

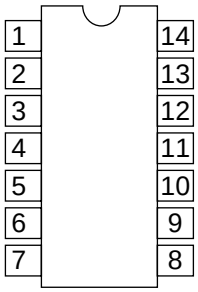



## ■ IC-PST600M/G/-W (IC702) : System reset



## ■HD74HC126FP-X (IC771) : Buffer

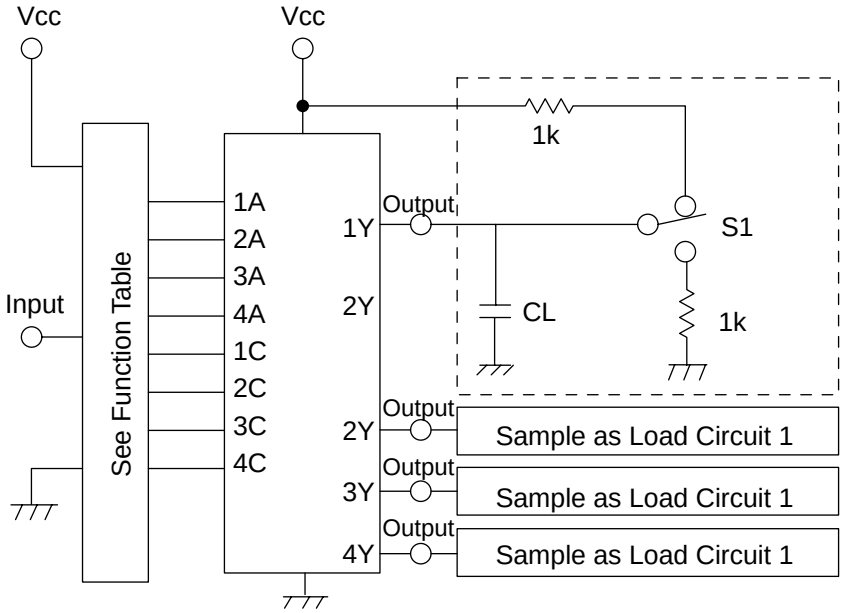
1. Pin layout



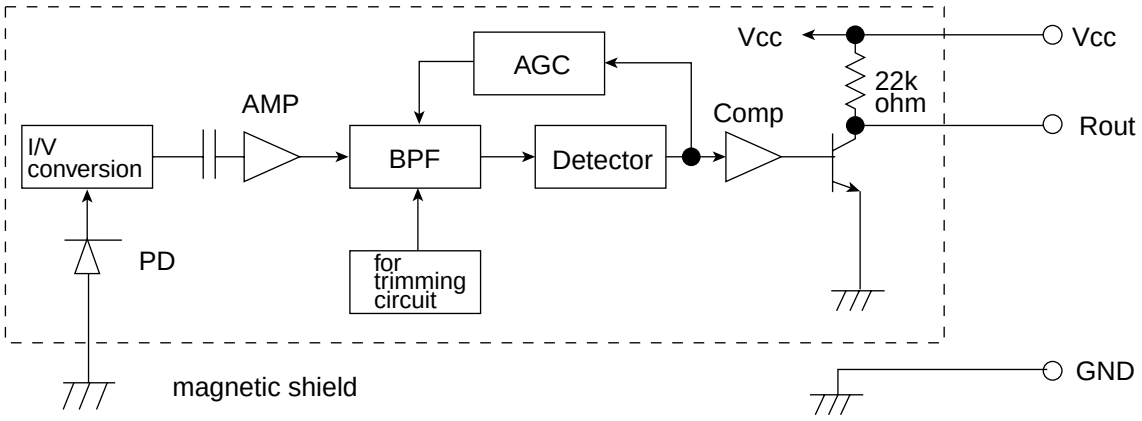

2. Pin function

| Inputs | | Outputs |
|---|---|---|
| C | A | Y |
| L | X | Z |
| H | L | H |
| H | H | L |

3. Block diagram

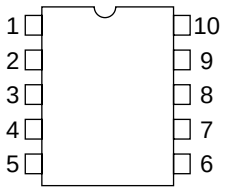



## ■ RPM6938-SV4 (IC602) : Remote control receiver

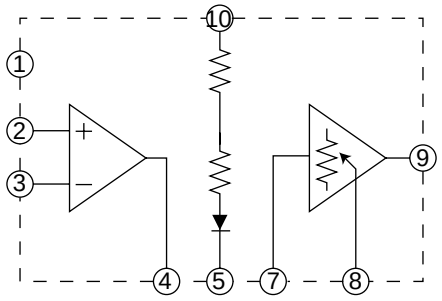


## ■ M5282FP-XE (IC321) : E. volume

1. Pin layout




2. Block diagram

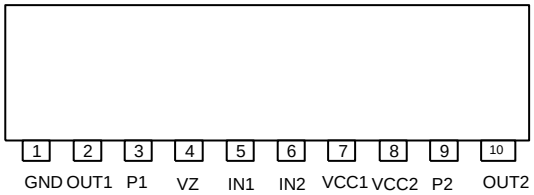



3. Pin function

| Pin No. | Symbol | Function |
|---|---|---|
| 1 | Vcc/2 | Vcc/2 output for microphone amp. |
| 2 | Amp+IN | Microphone amp. positive input terminal. |
| 3 | Amp-IN | Microphone amp. negative input terminal. |
| 4 | Amp OUT | Microphone amp. output terminal. |
| 5 | GND | Ground. |
| 6 | NC | Non connection. |
| 7 | VCA IN | VCA input terminal. |
| 8 | Vc | VCA control terminal. |
| 9 | VCA OUT | VCA output terminal. |
| 10 | Vcc | Power supply. |

## ■ LB1641 (IC402) : DC Motor driver

1. Pin layout




2. Pin function

| Input | | Output | | Mode |
|---|---|---|---|---|
| IN1 | IN2 | OUT1 | OUT2 | |
| 0 | 0 | 0 | 0 | Brake |
| 1 | 0 | 1 | 0 | CLOCKWISE |
| 0 | 1 | 0 | 1 | COUNTER-CLOCKWISE |
| 1 | 1 | 0 | 0 | Brake |

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