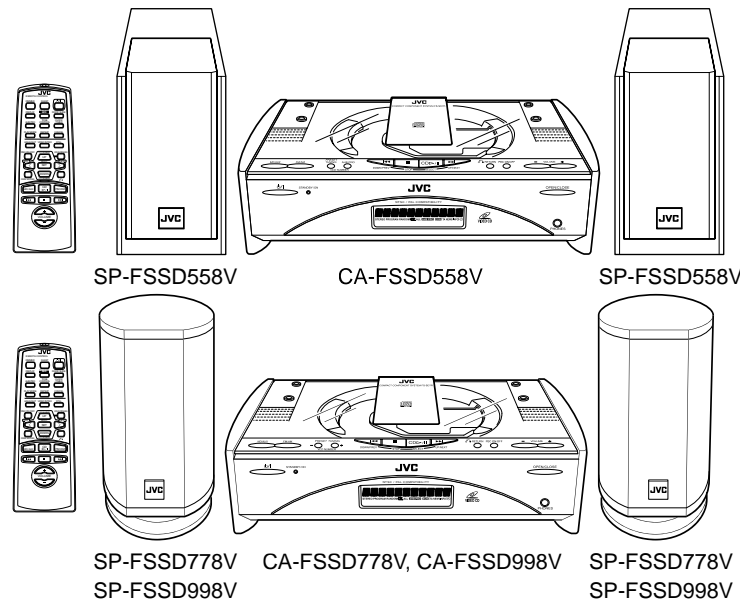


JVC

SERVICE MANUAL

COMPACT COMPONENT SYSTEM

FS-SD998V/FS-SD778V FS-SD558V



The difference between FS-SD558V and FS-SD778V·FS-SD998V is only the speaker systems.
The difference between FS-SD778V and FS-SD998V is cabinets of the speaker.

Contents These models not have adjustment.

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Safety Precautions

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

5. Leakage current check (Electrical shock hazard testing)

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

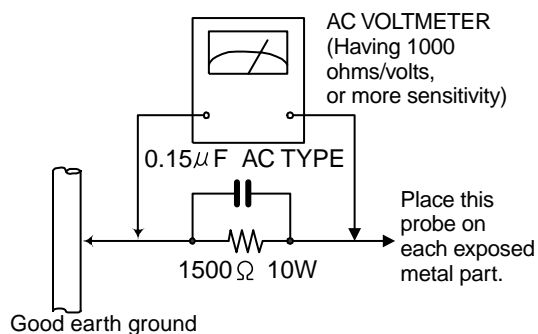
Do not use a line isolation transformer during this check.

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

- Alternate check method

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

Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured 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 performing 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 " \triangle " mark nearby are critical for safety.

When replacing them, be sure to use the parts of the same type and rating as specified by the manufacturer. (Except the JC version)

Important for laser products

1.CLASS 1 LASER PRODUCT

2.DANGER : Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.

3.CAUTION : There are no serviceable parts inside the Laser Unit. Do not disassemble the Laser Unit. Replace the complete Laser Unit if it malfunctions.

4.CAUTION : The compact disc player uses invisible laser radiation and is equipped with safety switches which prevent emission of radiation when the drawer is open and the safety interlocks have failed or are defeated. It is dangerous to defeat the safety switches.

5.CAUTION : If safety switches malfunction, the laser is able to function.

6.CAUTION : Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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

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

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

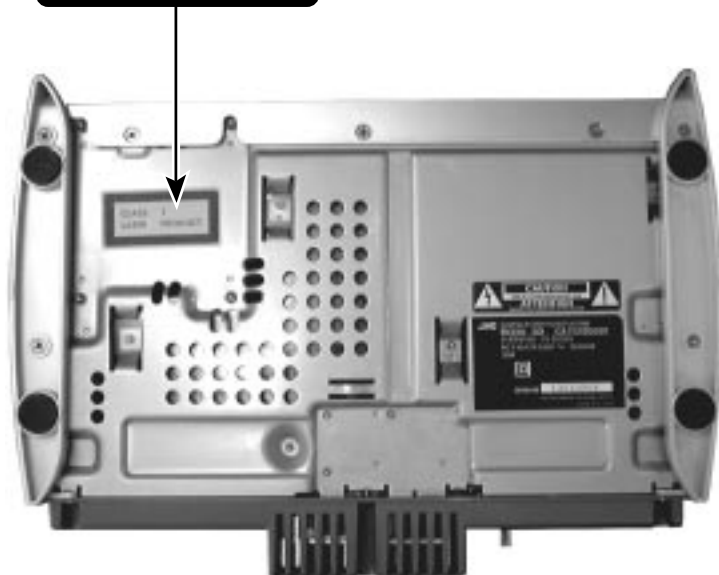
ADVARSEL : Usynlig laserstråling ved åbning , når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

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

REPRODUCTION AND POSITION OF LABELS

WARNING LABEL

**CLASS 1
LASER PRODUCT**



DANGER : Invisible laser radiation when open and interlock or defeated.
AVOID DIRECT EXPOSURE TO BEAM (e)

VARNING : Osynlig laserstrålning är denna del är öppnad och spärren är urkopplad. Betrakta ej strålen. (s)

VARO : Avattaessa ja suojalukitus ohitettaessa olet alltiina näkymättömälle lasersäteilylle.Älä katso säteeseen. (d)

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



Preventing 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.

1.1. Grounding to prevent damage by static electricity

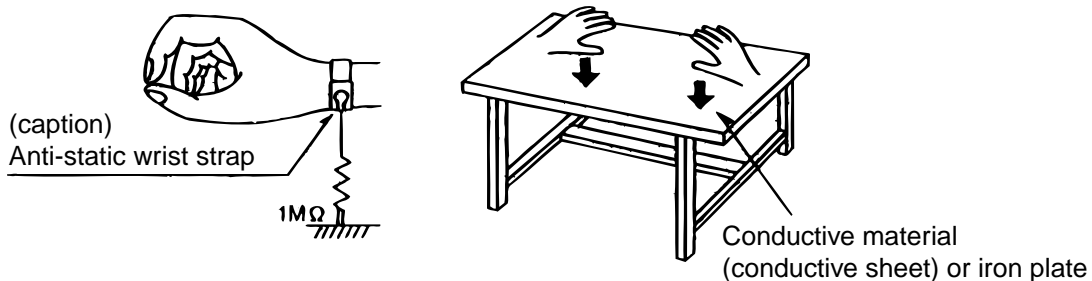
Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as DVD players. Be careful to use proper grounding in the area where repairs are being performed.

1.1.1. Ground the workbench

1. 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.

1.1.2. Ground yourself

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



1.1.3. 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.

1.2. 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. Cut off the shorted part of the flexible cable using nippers, etc. 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 flexible cable 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

Disassembly method

<Main body>

■ Removing the CD door (See Fig.1)

1. Remove the four screws **A** attaching the CD door on the upper side of the body.

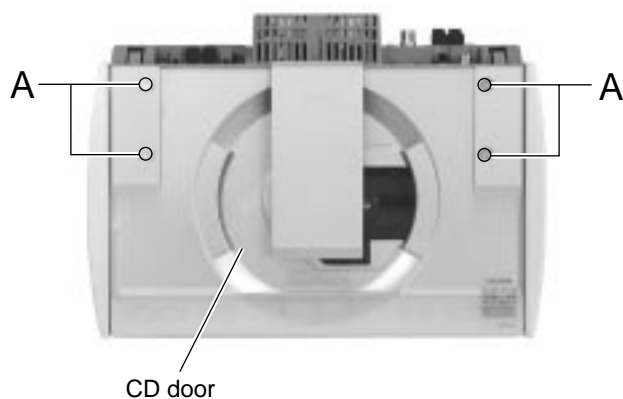


Fig.1

■ Removing the rear cover (See Fig.2)

- Prior to performing the following procedure, remove the CD door.

1. Remove the ten screws **B** and the five screws **C** attaching the rear cover on the back of the body.

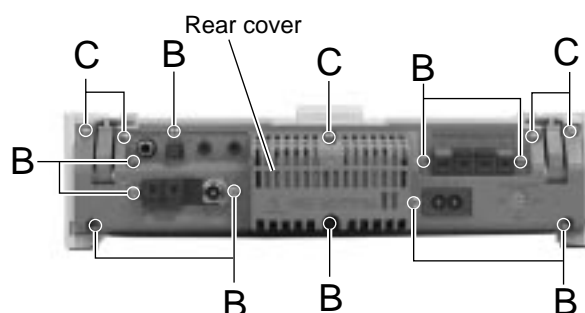


Fig.2

■ Removing the right and left covers (See Fig.3)

- Prior to performing the following procedure, remove the CD door, the rear cover.

1. Remove the four screws **D** attaching the side covers on the bottom of the body.
2. Move the left cover backward and remove outward. Also remove the right cover in the same way.

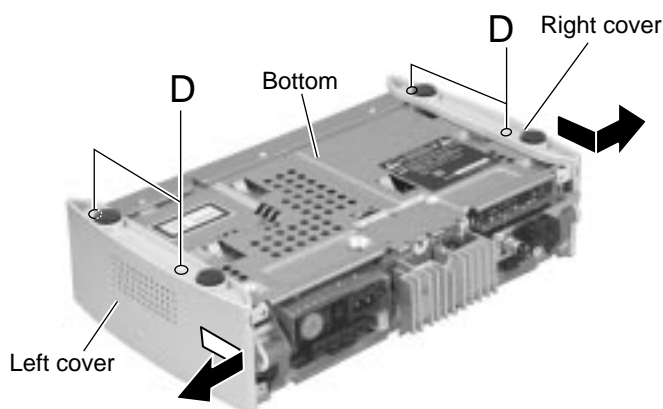


Fig.3

■Removing the front panel assembly (See Fig.4 to 6)

• Prior to performing the following procedure, remove the CD door, the rear cover and the side covers.

1. Remove the three screws **E** on the bottom of the body.
2. Release two joints **a** and two joints **b** on both sides of the body using a screwdriver and remove the front panel assembly toward the front.

If necessary remove the screw **F** which retains the wire extending from the front panel assembly.

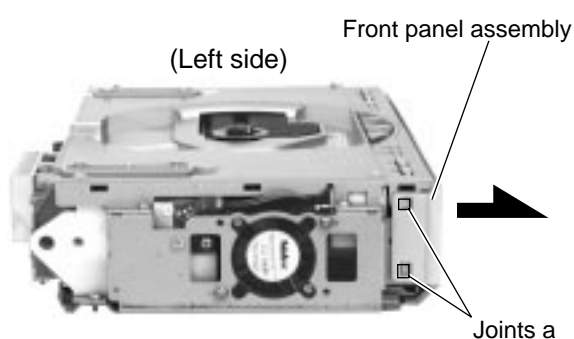
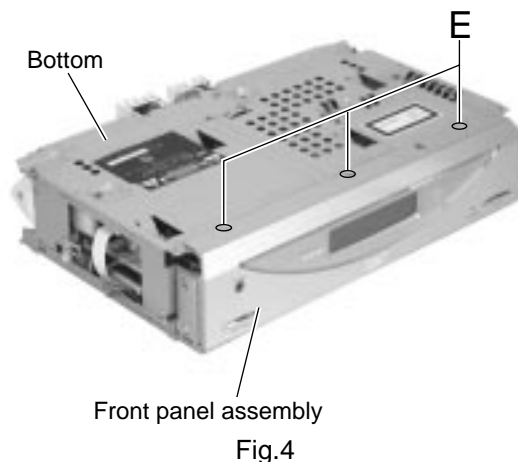


Fig.5

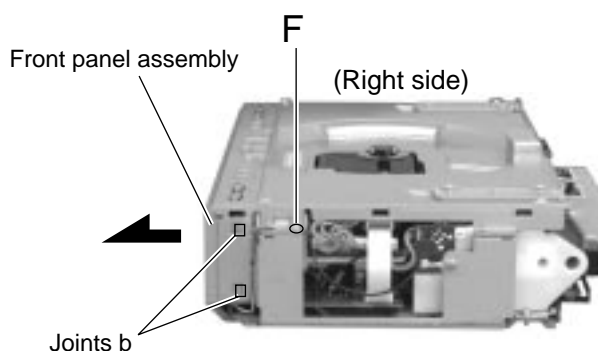


Fig.6

■Removing the CD mechanism base assembly (See Fig.7 to 14)

• Prior to performing the following procedure, remove the CD door, the rear cover, the side covers and the front panel assembly.

1. Disconnect the card wire from connector CN104 and CN105 of the main board in the front part of the body. Disconnect the card wire from CN101 of the main board on the right side, and the wire from CN705 and CN708 of the CD mechanism base assembly respectively.
2. Remove the four screws **F** attaching the CD mechanism base assembly on the upper side of the body. Remove the screw **I** attaching the earth terminal on the right side.

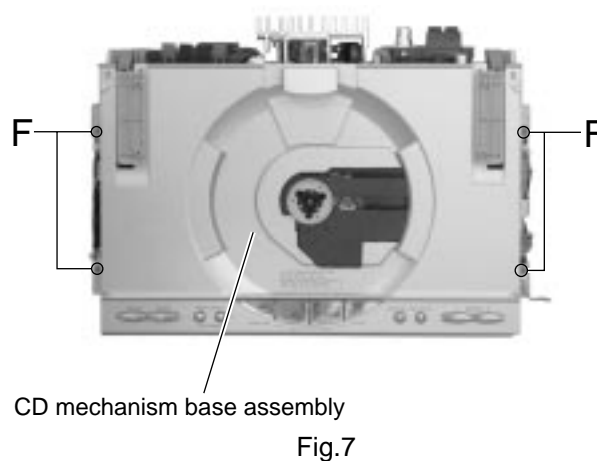


Fig.7

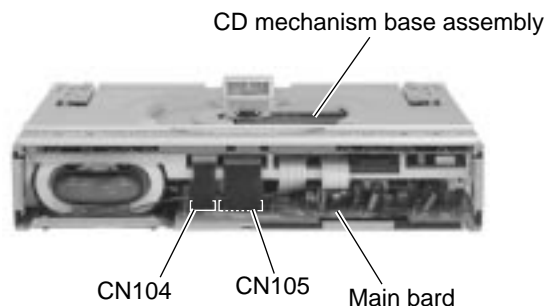
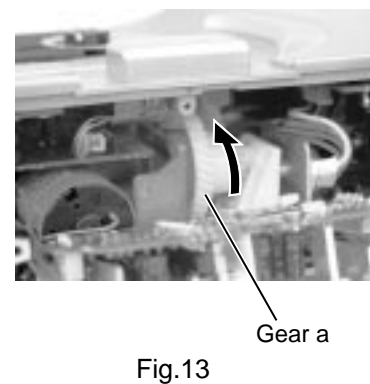
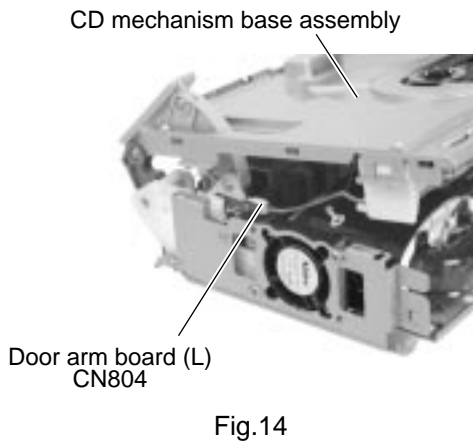
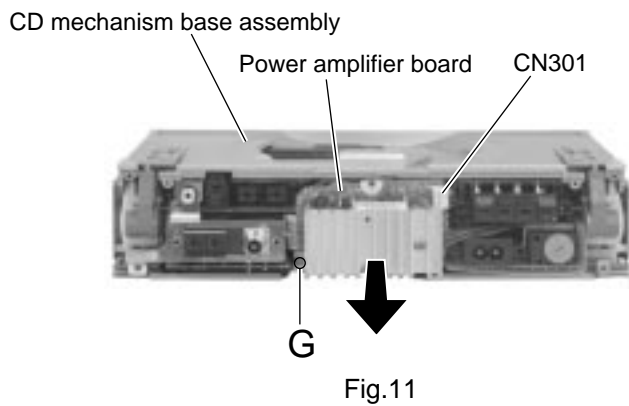
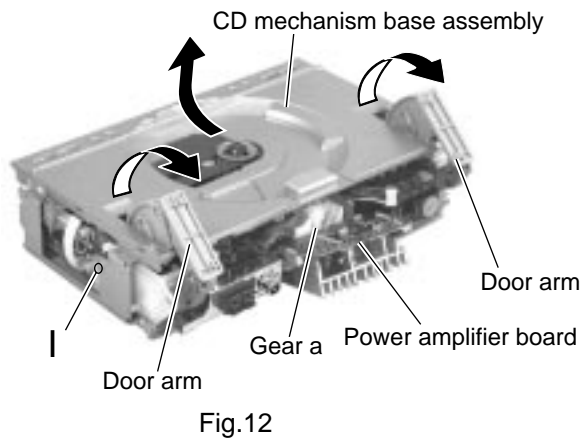
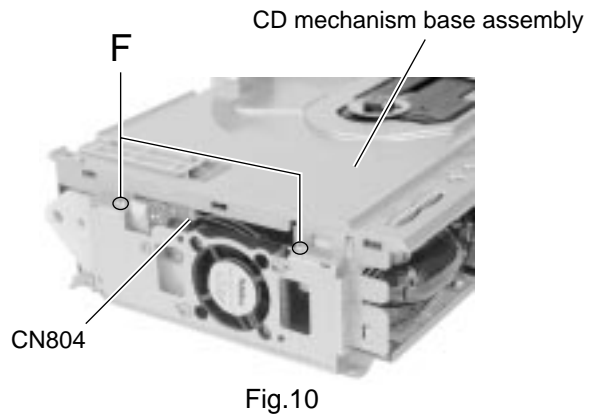
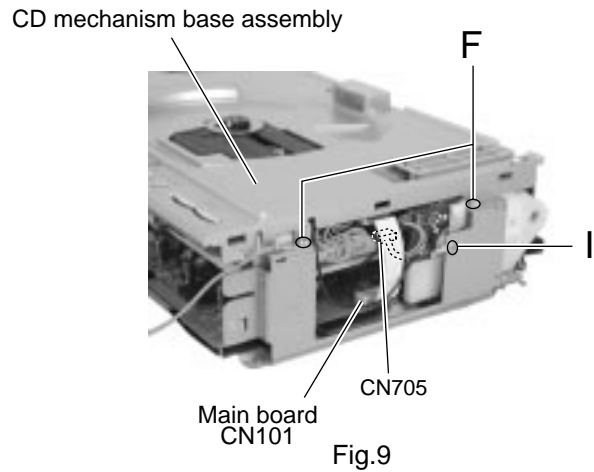


Fig.8

3. Remove the screw **G** attaching the power amplifier board on the back of the body. Disconnect the wire from connector CN301 and pull the power amplifier board fully outward.
4. Raise the right and left door arms by turning the gear **a** in the rear of the power amplifier board.
5. After the CD mechanism base assembly is detached from the door arms, pull the CD mechanism base assembly toward the front and disconnect the wire from connector CN804 on the left side of the door arm board.
6. Pull out the CD mechanism base assembly toward the front.



■Removing the door arm assembly / the door arm board (R) and (L)

(See Fig.15 to 20)

• Prior to performing the following procedure, remove the rear cover, the side covers, the front panel assembly and the CD mechanism base assembly.

1. In case that the upper parts of the door arms attached to the CD door are not level, let down them to the level position by turning the gear **a** in the direction of the arrow.

ATTENTION: When the door arms incline, the door arm assembly and the door arm board (R) and (L) may not be removed.

2. Remove the four screws **H** on the upper side and the one screw **I** on the left side of the body.
3. Remove the four screws **J** attaching the door arm board (L) and (R) on both sides of the door arm assembly.

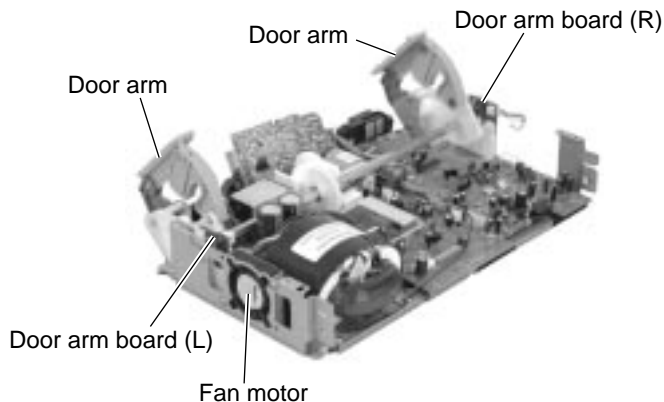


Fig.15

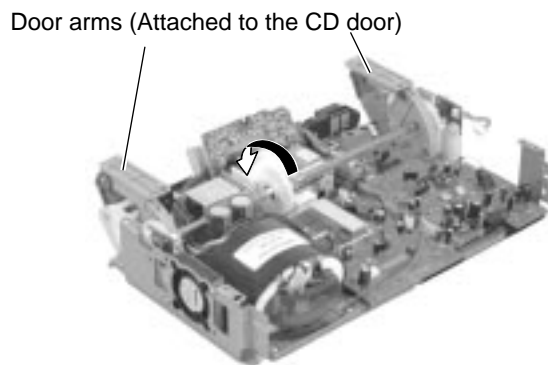


Fig.16

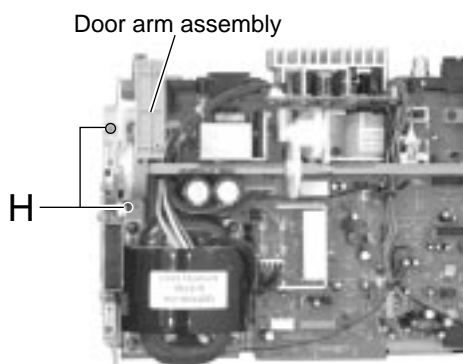


Fig.17

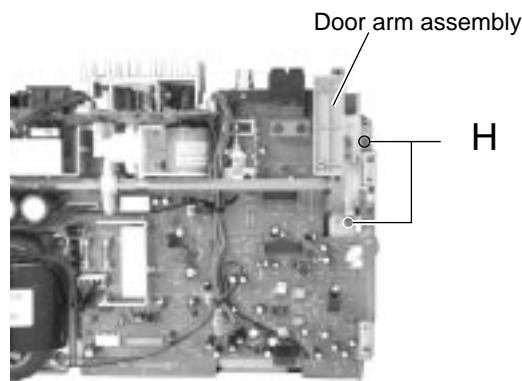


Fig.18

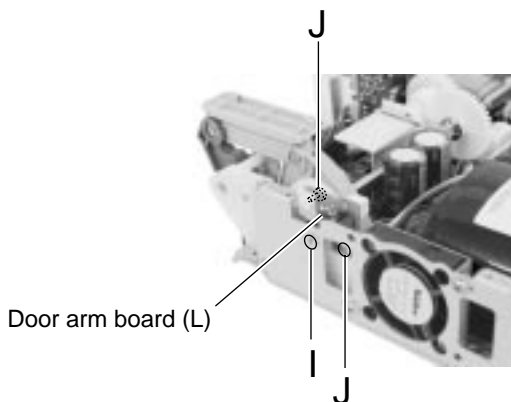


Fig.19

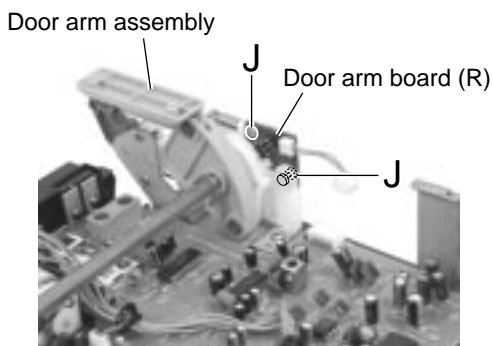


Fig.20

■ Removing the power amplifier board (See Fig.21 and 22)

- Prior to performing the following procedure, remove the CD mechanism base assembly.
1. Disconnect the wires from connector CN102 and CN193 on the main board and release them from the cord stopper respectively.
 2. Remove the screw **K** and the two screws **L** attaching the heat sink and the power amplifier board.

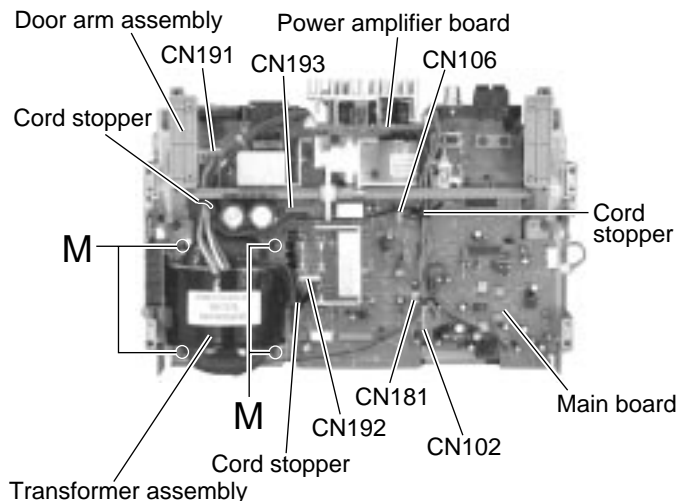


Fig.21

■ Removing the transformer assembly (See Fig.21)

- Prior to performing the following procedure, remove the CD mechanism base assembly.
1. Disconnect the wires from connector CN191 and CN192 on the main board and release them from the cord stopper respectively.
 2. Remove the four screws **M** attaching the transformer assembly.

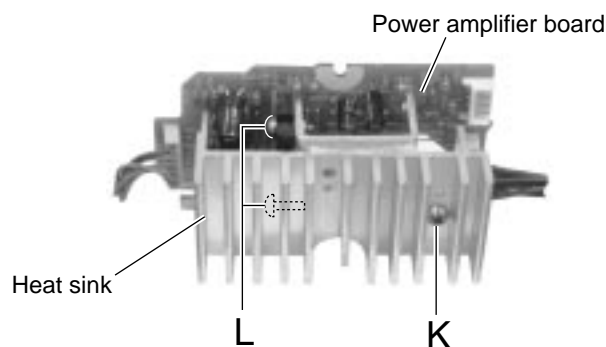


Fig.22

■ Removing the gear motor assembly (See Fig.23 and 24)

- Prior to performing the following procedure, remove the CD mechanism base assembly and the door arm assembly.
1. Disconnect the wires from connector CN106 on the main board and release it from the cord stopper.
 2. Remove the three screws **N** attaching the gear motor assembly. Remove the gear motor assembly with the gear motor stopper.
 3. Remove the belt from the gear motor assembly.
 4. Remove the two screws **O** from the gear motor assembly.

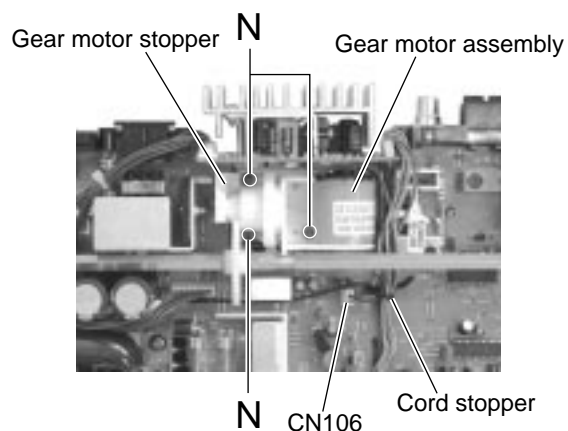


Fig.23

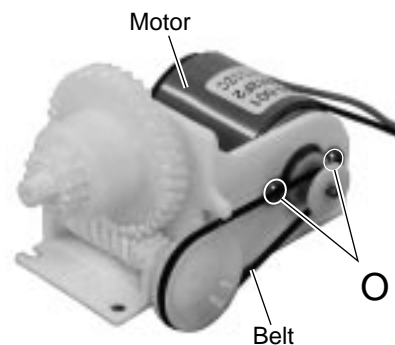


Fig.24

■Removing the fan motor assembly (See Fig.25 and 26)

- Prior to performing the following procedure, remove the CD mechanism base assembly.
1. Disconnect the wires from connector CN181 on the main board.
 2. Remove the two screws **P** on the left side of the body. Move the fan motor assembly upward to remove it from the base chassis.
 3. Remove the two screws **Q** and the fan motor from the fan bracket.

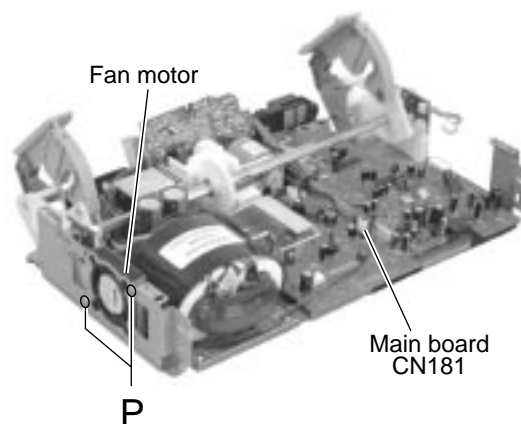


Fig.25

■Removing the main board (See Fig.27)

- Prior to performing the following procedure, remove the CD mechanism base assembly and the door arm assembly.
- To facilitate operation process, remove the gear motor assembly before performing the following procedure.

1. Disconnect the wires from connector CN102, CN106, CN191, CN192, CN193 and CN181 on the main board.
2. Remove the five screws **R** attaching the main board with the cord stopper.

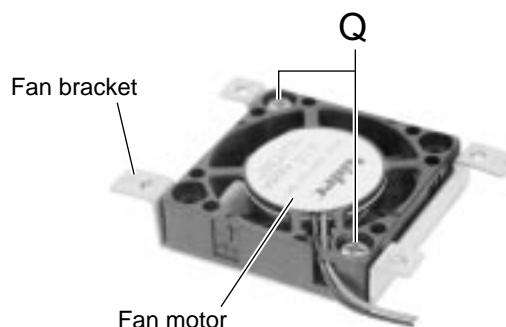


Fig.26

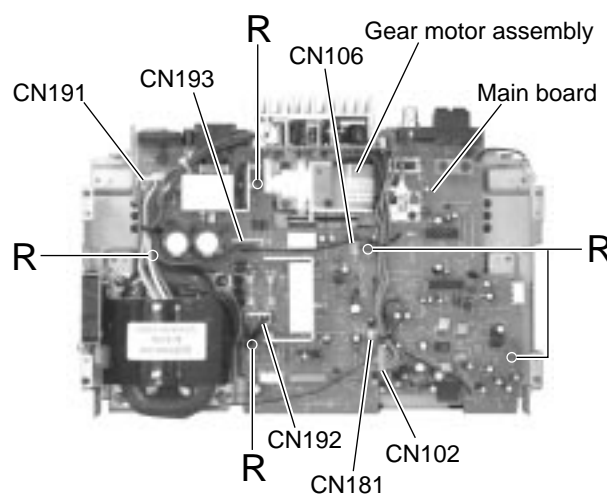


Fig.27

<Front panel assembly>

■Removing the front panel board (See Fig.28)

- Prior to performing the following procedure, remove the front panel assembly.
1. Remove the seven screws **S** attaching the front panel board inside the front panel assembly.

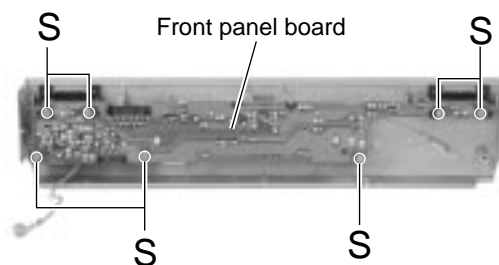


Fig.28

<CD mechanism base assembly>

- Prior to performing the following procedure, remove the CD mechanism base assembly.

■ Removing the speaker terminal board (See Fig.29)

1. Remove the screw **T** attaching the speaker terminal board on the underside of the CD mechanism base assembly.

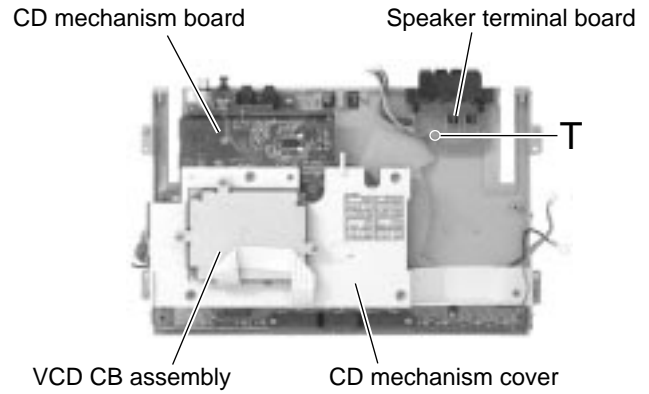


Fig.29

■ Removing the VCD CB assembly / VCD CB board (See Fig.30 to 33)

1. Disconnect the card wire from connector CN101 and CN102 on the VCD CB board.
2. Remove the three screws **U** attaching the VCD CB assembly.
3. Release the six joints **c** of the VCD shilde (L) and VCD shilde (U), then remove the VCD shilde (L) in the direction of the arrow.
4. Remove the VCD CB board from the VCD shilde (U).

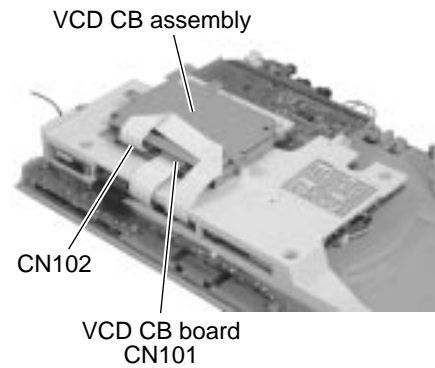


Fig.30

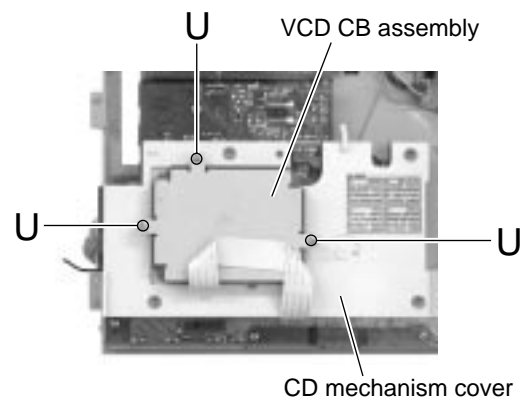


Fig.31

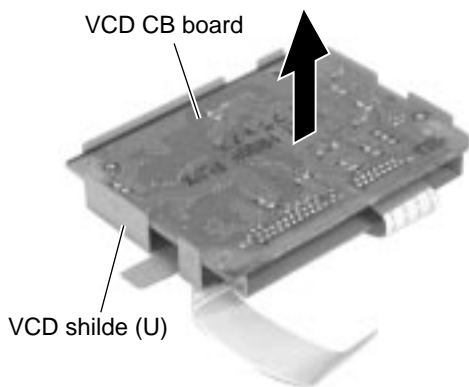


Fig.33

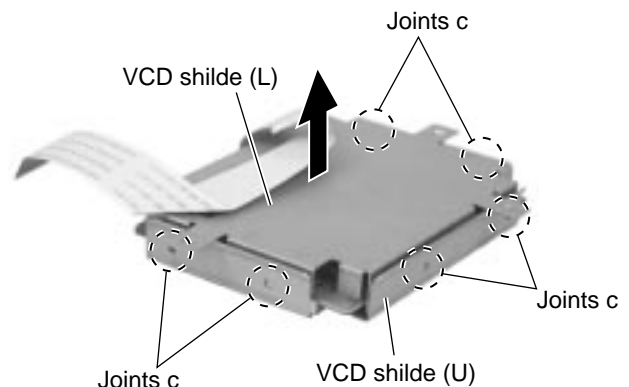


Fig.32

■ Removing the CD mechanism board / mechanism assembly (See Fig.34 to 39)

- Prior to performing the following procedure, remove the VCD CB assembly.

CAUTION: Make sure to solder the short circuit round before disconnecting the flexible wire extending from the pick up. No-observance of this instruction may cause damage of the pick up.

1. Turn over the CD mechanism base assembly and disconnect the wires from connector CN703 and CN706 on the CD mechanism board.
2. Remove the seven screws **V** attaching the CD mechanism cover and the CD mechanism board.
3. Turn back the CD mechanism assembly and detach the CD mechanism cover while pulling the CD mechanism assembly outward to release the two joint tabs marked **d**.
4. For the flexible wire extending from the CD mechanism assembly to connector CN603 on the CD mechanism board, solder it on the short circuit round.
5. Disconnect the flexible wire from connector CN603 and the card wire from connector CN605 on the CD mechanism board.

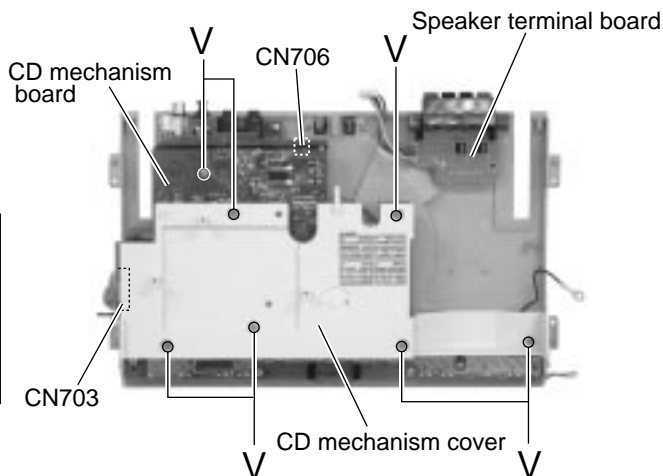


Fig.34

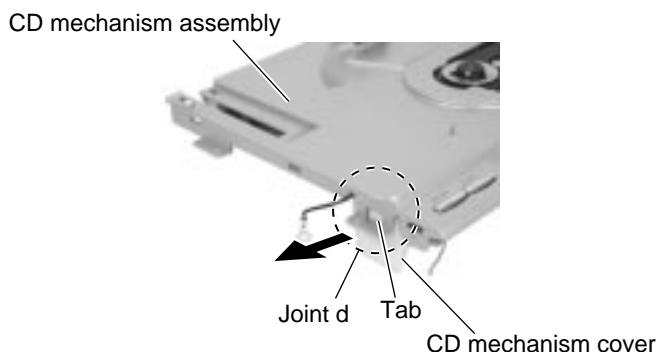


Fig.35

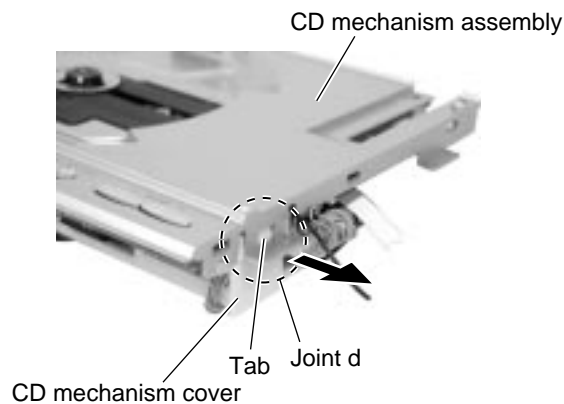


Fig.36

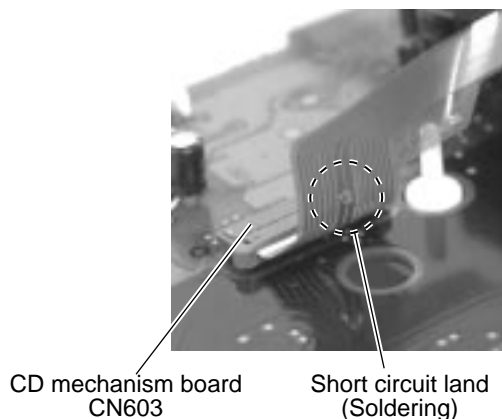


Fig.38

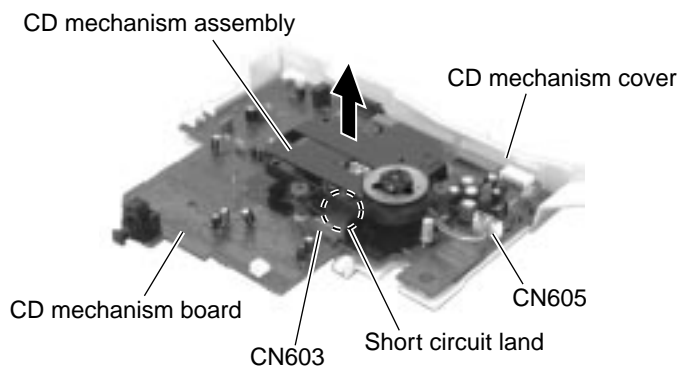


Fig.37

- Pull out the CD mechanism assembly from the three shafts of the CD mechanism cover in the direction of the arrow.

ATTENTION: When reassembling, confirm that the cushion of the CD mechanism assembly is reattached to the three shafts.

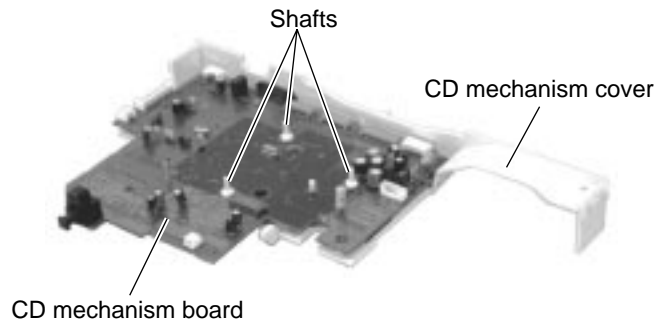


Fig.39

- Remove the CD mechanism board from the CD mechanism cover.

CAUTION: When reassembling, unsolder the short circuit round after connecting the flexible wire to the connector.

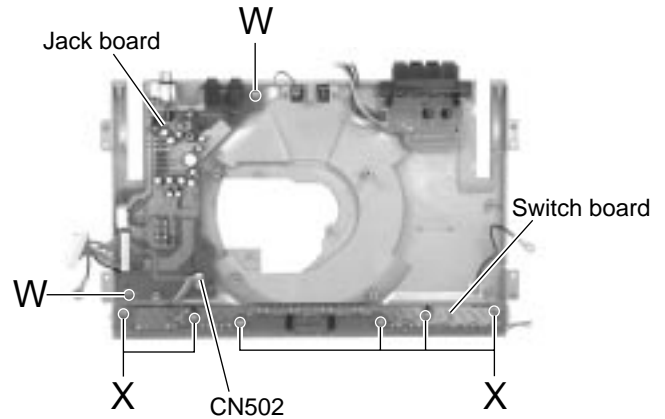


Fig.40

■ Removing the jack board (See Fig.40)

- Prior to performing following procedure, remove the CD mechanism board.

- Disconnect the wire from connector CN502 on the jack board.
- Remove the two screws **W** attaching the jack board.

■ Removing the switch board (See Fig.41)

- Prior to performing following procedure, remove the CD mechanism board.

- Disconnect the wire from connector CN502 on the jack board.
- Remove the six screws **X** attaching the switch board.

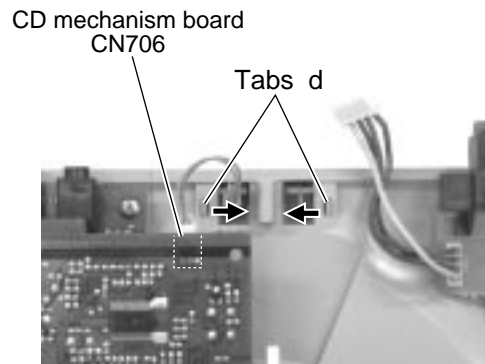


Fig.41

■ Removing the LED board (See Fig.41 and 42)

- Disconnect the harness from connector CN706 on the CD mechanism board on the underside of the CD mechanism base assembly.
- Push inward the two tabs **d** attaching the LED board case and release them.
- Pull out the LED board from the LED board case.

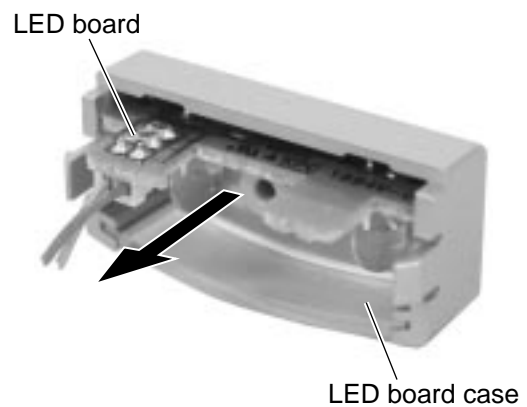


Fig.42

Maintenance of laser pickup

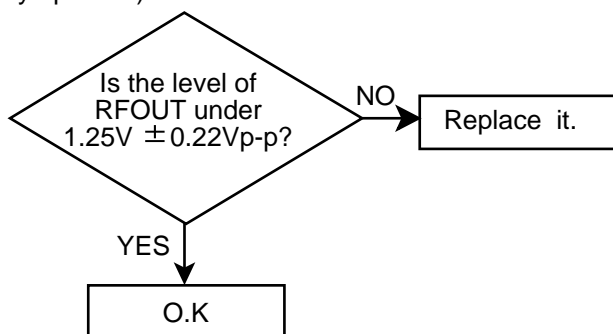
(1) Cleaning the pick up lens

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

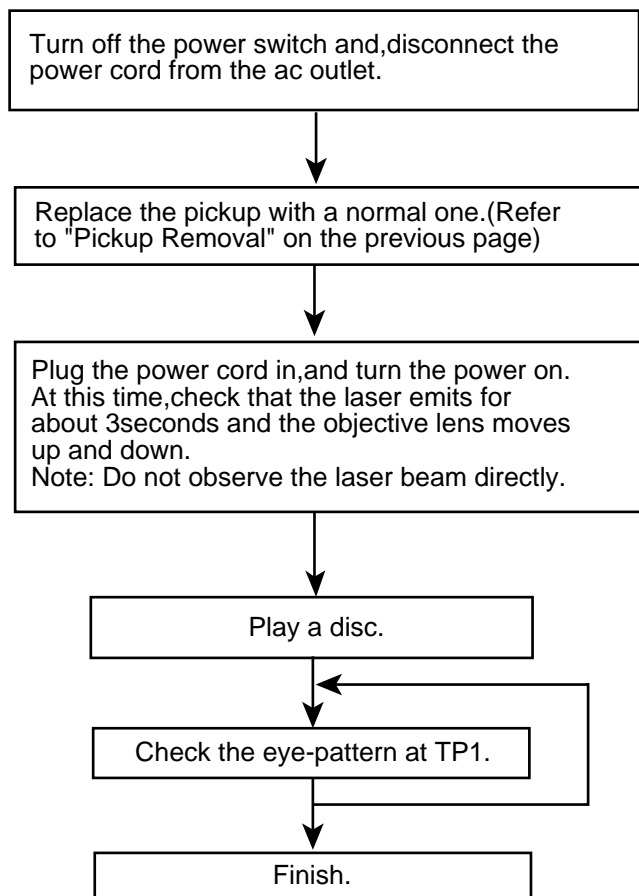
(2) Life of the laser diode

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

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

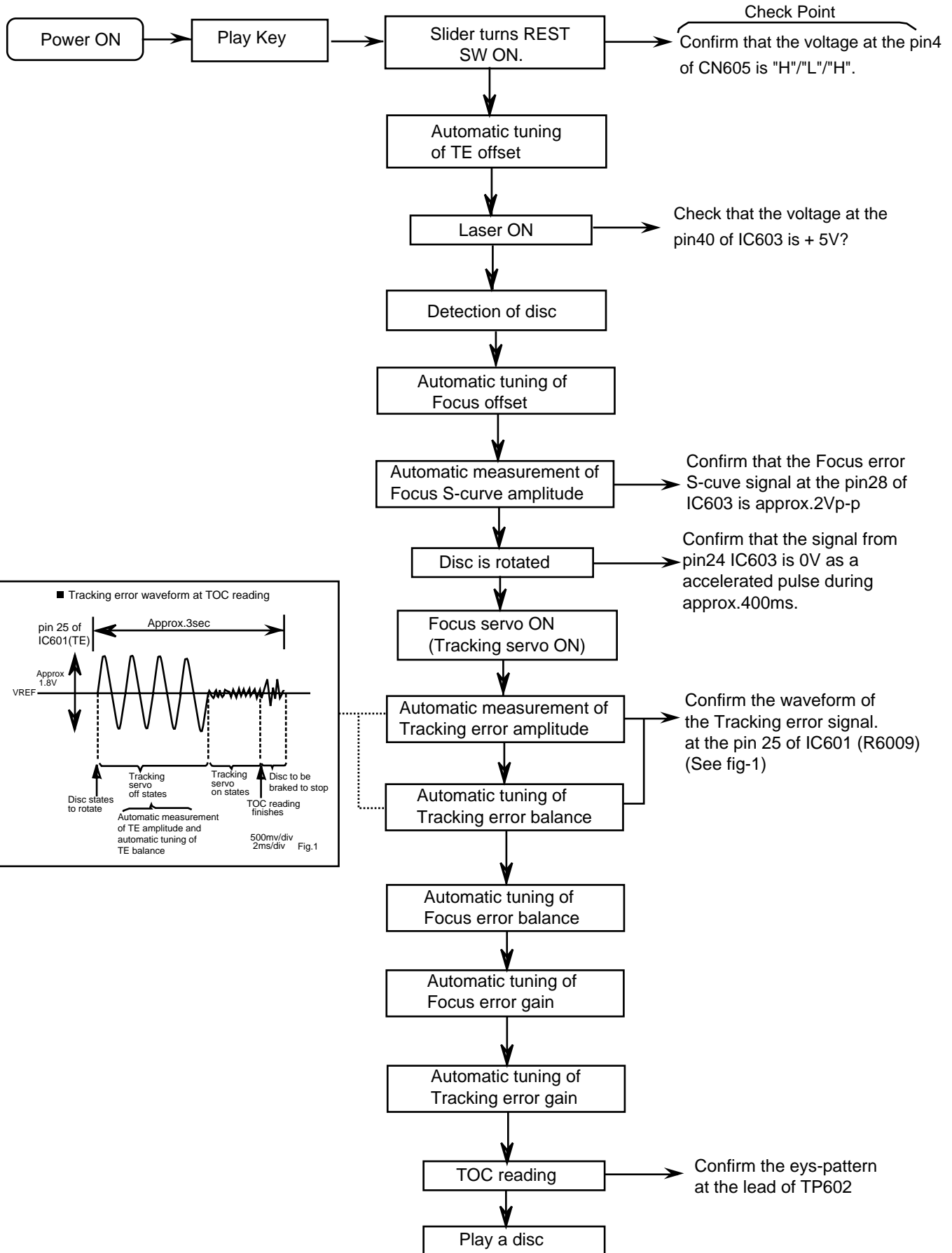


Replacement of laser pickup

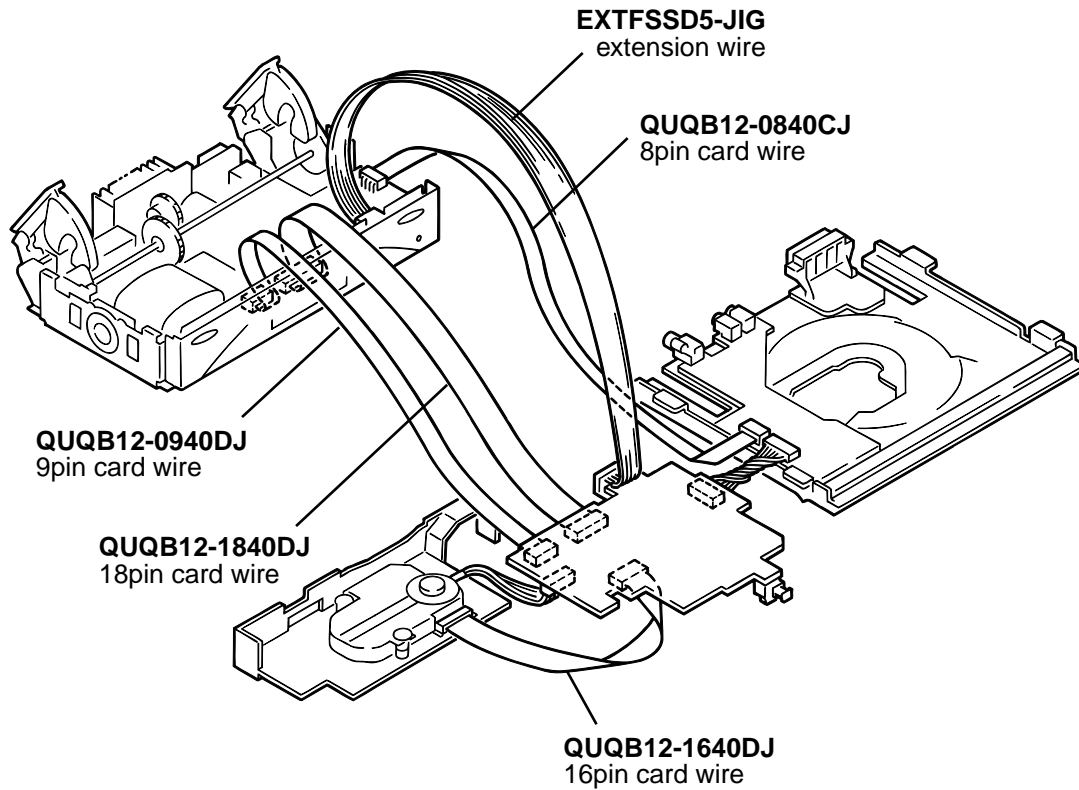


- (3) Semi-fixed resistor on the APC PC board The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power.Since this adjustment should be performed to match the characteristics of the whole optical block, do not touch the semi-fixed resistor.
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 is adjusted while the pickup is functioning normally,the laser pickup may be damaged due to excessive current.

Flow of functional operation until TOC read



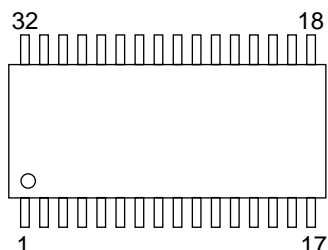
Method of connecting treatment device wire



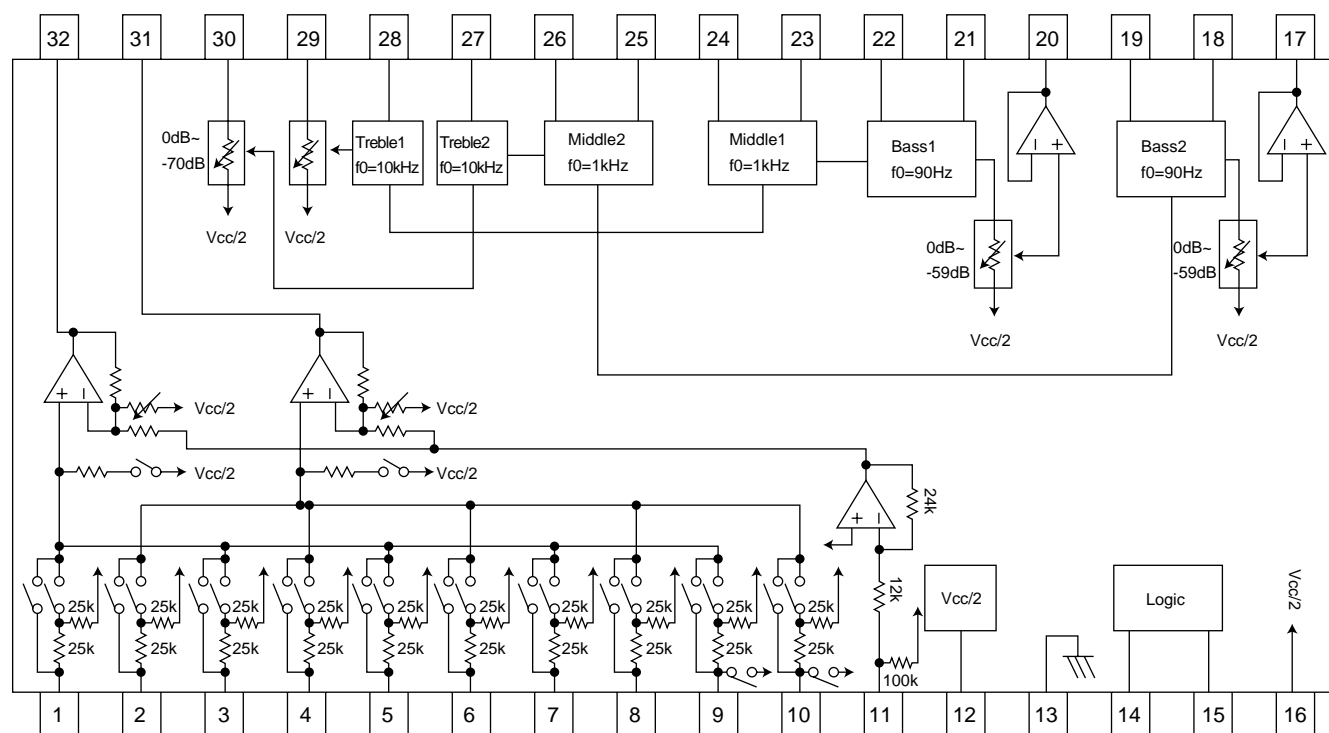
Description of major ICs

■ BD3861FS-X (IC501) : Audio sound control

1. Pin layout



2. Block diagram

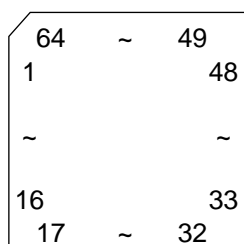


3. Pin function

Pin No.	Symbol	Function	Symbol	Function	
1	A1	CH1 input pin A	17	OUT2	CH2 output pin
2	A2	CH2 input pin A	18	BASS21	CH2 bass filter setting pin
3	B1	CH1 input pin B	19	BASS22	CH2 bass filter setting pin
4	B2	CH2 input pin B	20	OUT1	CH1 output pin
5	C1	CH1 input pin C	21	BASS11	CH1 bass filter setting pin
6	C2	CH2 input pin C	22	BASS12	CH1 bass filter setting pin
7	D1	CH1 input pin D	23	MID11	CH1 middle filter setting pin
8	D2	CH2 input pin D	24	MID12	CH1 middle filter setting pin
9	E1	CH1 input pin E	25	MID21	CH2 middle filter setting pin
10	E2	CH2 input pin E	26	MID22	CH2 middle filter setting pin
11	MIC	Microphone input pin	27	TRE2	CH2 treble filter setting pin
12	FIL	Filter pin	28	TRE1	CH1 treble filter setting pin
13	GND	Ground pin	29	VOL1	CH1 input volume input pin
14	DATA	Serial data latch receiving pin	30	VOL2	CH2 input volume input pin
15	CLK	Serial clock receiving pin	31	GOUT2	CH2 input gain output pin
16	Vcc	Power supply pin	32	GOUT1	CH1 input gain output pin

■ UPD780024AGKB45(IC701) : System control

1. Pin layout

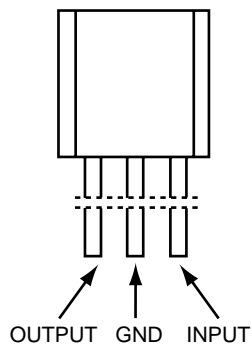


2. Pin function (1/2)

Pin No.	Symbol	I/O	Function
1	DIMMER	O	EEPROM serial clock output
2	FANSW	O	EEPROM serial data I/O
3	POUT	O	Synchronization / asynchronous system
4	FTU	I	Ready signal input terminal
5	MT0	O	Tray play position 3
6	MT1	O	Tray play position 2
7	MTS	O	Tray play position 1
8	BLCTL	I	Sub tray open/close
9	VSSO	I	Ground
10	VDDO	I	Reference power supply voltage
11	AHB	I	Rest switch
12	SMUTE	O	CD emphasis
13	TUST	I	CD track No. change
14	MPX	O	CD copy right or wrong
15	TUDATA(I)	I	Sub Q data input
16	TUDATA(O)	O	Cam position 1
17	TUCK	O	Sub Q clock output
18	NC	-	Non connected
19	NC	-	Non connected
20	NC	-	Non connected
21	MSTAT	I	(Command in)
22	KCMND	O	(Status out)
23	CDMRST	O	Cam position 2
24	VDD1	I	Reference power supply 1
25	AVSS	I	Ground
26	SAFETY	I	key1 signal from running jig
27	LOCK	I	Key2 signal from running jig
28	KEY1	I	Tray 3 close signal input
29	KEY2	I	Tray 3 open signal input
30	KEY3	I	Tray 2 close signal input
31	THERM	I	Tray 2 open signal input
32	VERSION	I	Tray 1 open signal input

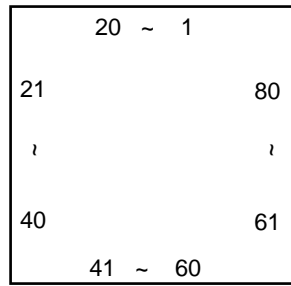
Pin No.	Symbol	I/O	Function
33	DOOR1	I	Tray 1 close signal input
34	AVREF	I	Reference power supply voltage
35	AVDD	I	Reference power supply voltage
36	RESET	I	CD reset signal input
37	XT2	O	Non connect
38	XT1	I	Reference power supply voltage
39	IC	I	No use (for Flash micon)
40	X2	O	X'tal osc output
41	X1	I	X'tal osc input
42	VSS1	I	Ground
43	FCDSW	O	FLAG for C1 error
44	REM	O	Sub Q block clock signal output
45	XKILL	O	Cam motor rotation clockwise
46	BEAT	O	Cam motor rotation counter clockwise
47	BUP	O	Actuator motor rotation counter clockwise
48	+BCTL	O	Actuator motor rotation clockwise
49	VDATA	I	Gain select 2/4 speed
50	VCLK	I	Equalizer select 2/4 speed
51	CDL ED	I	Cam position 3
52	DOOR2	I	Cam position 4
53	DOOR3	O	Reset signal output
54	LOMUTE	I	Status signal input
55	RS	I	Digital mute signal input
56	ENA	I	Power on signal input
57	DB4	I	Command load signal input
58	DB5	I	Command data input
59	DB6	I	Command clock input
60	DB7	I	Communication select signal input
61	NC	-	Non connected
62	NC	-	Non connected
63	NC	-	Non connected
64	SCD	I	Running clock signal input from running jig

■ UPC78L05J-T(IC191):US5V

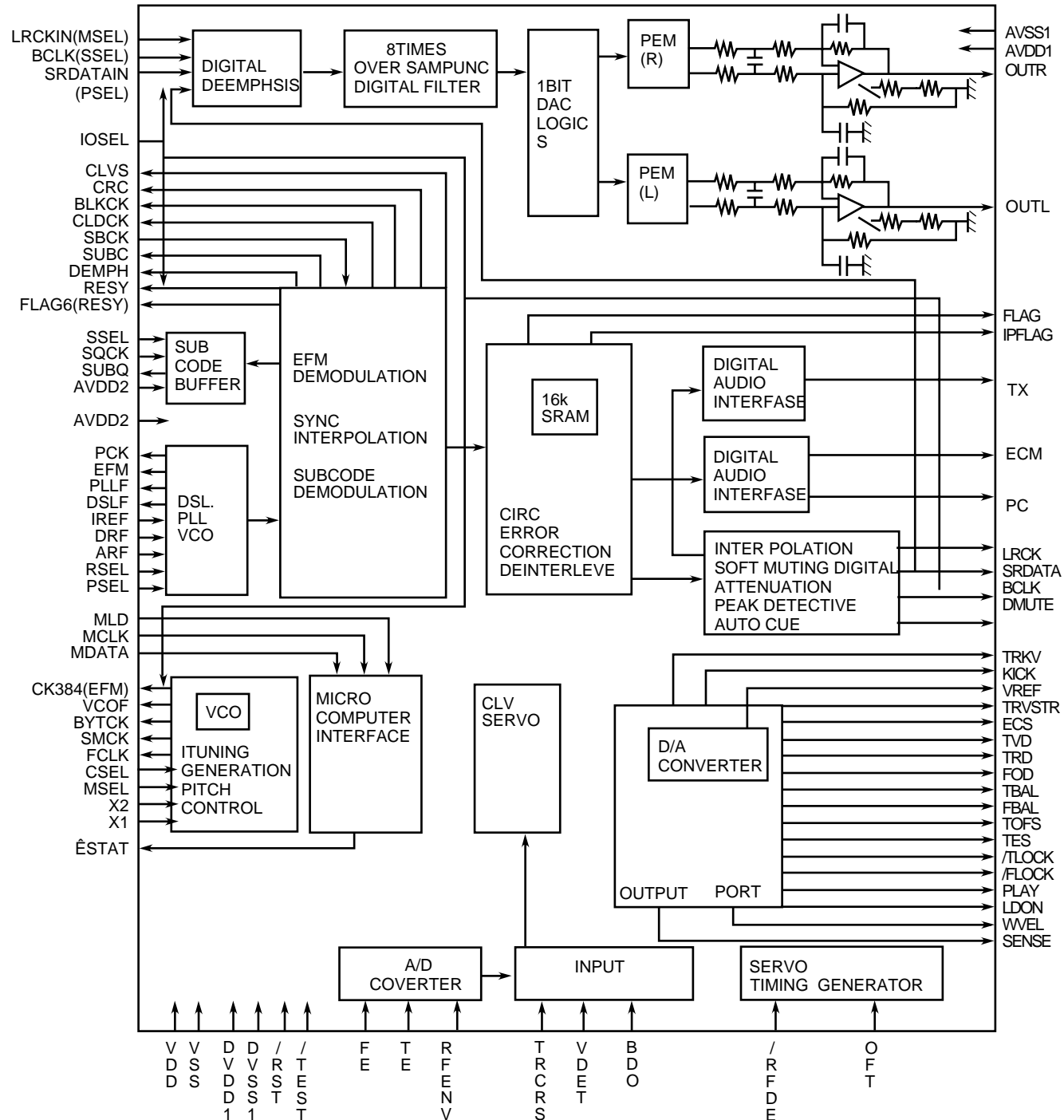


■ MN662748RPMFA (IC603) : Digital servo & Digital signal processor

1. Pin layout



2. Block diagram



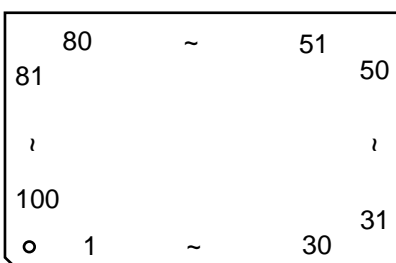
3. Pin function

MN662748RPMFA

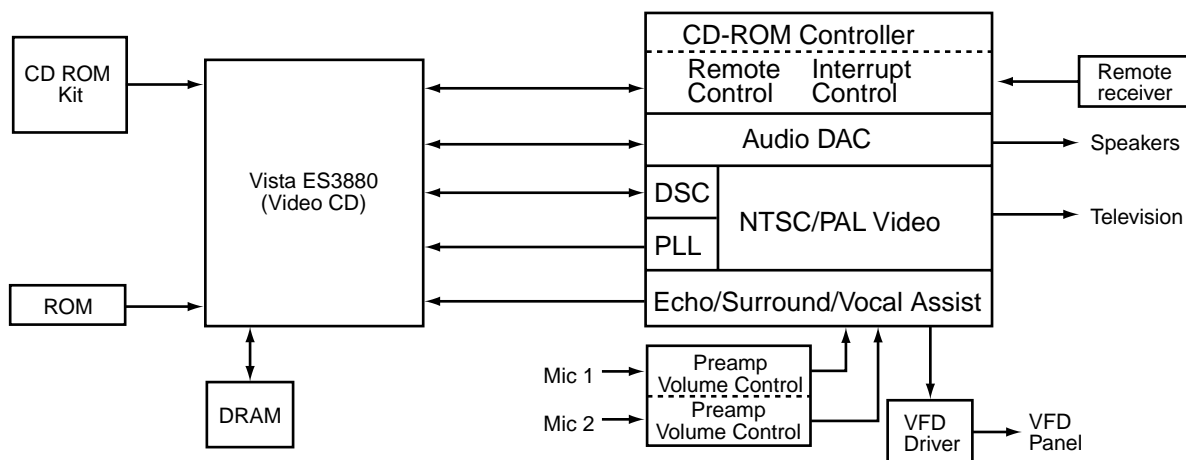
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	BCLK	O	Not used	41	PLL2	O	Tracking error shunt signal output (H:shunt)
2	LRCK	O	Not used	42	TOFS	—	Not used
3	SRDATA	O	Not used	43	WVEL	—	Not used
4	DVDD1	—	Power supply (Digital)	44	ARF	I	RF signal input
5	DVSS1	—	Connected to GND	45	IREF	I	Reference current input pin
6	TX	O	Digital audio interface output	46	DRF	I	Bias pin for DSL
7	MCLK	I	CPU command clock signal input (Data is latched at signal's rising point)	47	DSL2	I/O	Loop filter pin for DSL
8	MDATA	I	CPU command data input	48	PLL	I/O	Loop filter pin for PLL
9	MLD	I	CPU command load signal input	49	VCOF	—	Not used
10	SENSE	O	Sense signal output	50	AVDD2	—	Power supply (Analog)
11	FLOCK	O	Focus lock signal output Active :Low	51	AVSS2	—	Connected to GND (Analog)
12	TLOCK	O	Tracking lock signal output Active :Low	52	XCLK	—	Not used
13	BLKCK	O	sub-code/block/clock signal output	53	PCK	—	Not used
14	SQCK/GIO0	I	Outside clock for sub-code Q resistor input	54	VCOF2	—	Not used
15	SUBQ	O	Sub-code Q -code output	55	SUBC	—	Not used
16	DMUTE	—	Connected to GND	56	SBCK	—	Not used
17	STATUS	O	Status signal (CRC,CUE,CLVS,TTSTOP,ECLV,SQOK)	57	VSS	—	Connected to GND (for X'tal oscillation circuit)
18	RST	I	Reset signal input (L:Reset)	58	X1	I	Input of 16.9344MHz X'tal oscillation circuit
19	SMCK	—	Not used	59	X2	O	Output of X'tal oscillation circuit
20	PMCK/PLAY	—	Not used	60	VDD	—	Power supply (for X'tal oscillation circuit)
21	TRV	O	Traverse enforced output	61	BYTCK/TRVSTP	—	Not used
22	TVD	O	Traverse drive output	62	GI01/CLDCK	—	Not used
23	PC	—	Not used	63	GI02/FLAG	—	Not used
24	ECM	O	Spindle motor drive signal (Enforced mode output) 3-State	64	IPFLAG	—	Not used
25	ECS	O	Spindle motor drive signal (Servo error signal output)	65	FLAG	—	Not used
26	KICK	O	Kick pulse output	66	CLVS	—	Not used
27	TRD	O	Tracking drive output	67	CRC	—	Not used
28	FOD	O	Focus drive output	68	DEMPH	—	Not used
29	VREF	I	Reference voltage input pin for D/A output block (TVD,FOD,FBA,TBAL)	69	RESY/FLAG5	—	Not used
30	FBAL	O	Focus Balance adjust signal output	70	IOSEL	—	pull up
31	TBAL	O	Tracking Balance adjust signal output	71	TEST	—	pull up
32	FE	I	Focus error signal input (Analog input)	72	AVDD1	—	Power supply (Digital)
33	TE	I	Tracking error signal input (Analog input)	73	OUT L	O	Lch audio output
34	RF ENV	I	RF envelope signal input (Analog input)	74	AVSS1	—	Connected to GND
35	VDET	I	Vibration detect signal input (H:detect)	75	OUT R	O	Rch audio output
36	OFT	I	Off track signal input (H:off track)	76	GI03/RSEL	—	pull up
37	TRCRS	I	Track cross signal input	77	CSEL	—	Connected to GND
38	RFDET	I	RF detect signal input (L:detect)	78	PSEL	—	Connected to GND
39	BDO	I	BDO input pin (L:detect)	79	MSEL	—	Connected to GND
40	LDON	O	Laser ON signal output (H:on)	80	SSEL	—	Pull up

■ ES3883F(IC104):VCD Companion chip

1.Pin function



2.Blockdiagram



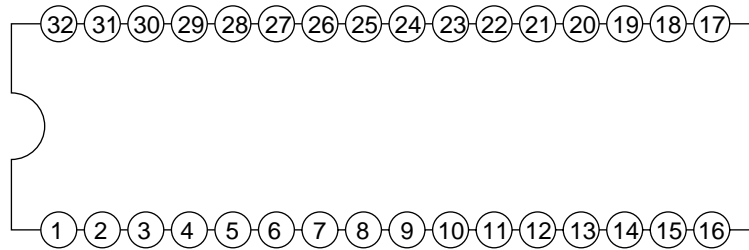
3.Pin function

Pin No.	Symbol	I/O	Function
1,25,26,31,72,75,77,91,100	VSS	I	Ground.
5,16,32,66,73,78,90	VCC	I	Voltage supply 5v.
6	DSC_C	I	Clock programming to access internal registers.
7	AUX0	I/O	Servo Foward or Control Pin.
9	AUX1	I/O	Servo Reverse or Control Pin.
11	AUX2	I/O	Servo LDON or Control Pin.
70	AUX3	I/O	Servo CW/Limit or Control Pin.
69	AUX4	I/O	Servo CCW/Close or Control Pin.
68	AUX5	I/O	Servo Data or Control Pin.
67	AUX6	I/O	Servo XLAT or Control Pin/VFD_DO.
14	AUX7	I/O	Servo BRKM/Sense or Control Pin/VFD_DI.
18	AUX8	I/O	Servo Mute/Open or Control Pin/VFD_CLK.
20	AUX9	I/O	Servo SQS0 or Control Pin.
34	AUX10	I/O	Servo SQCK or Control Pin.
35	AUX11	I/O	3880 IRQ or Interrupt Output or Control Pin.
36	AUX12	I/O	CD C2PO or Interrupt input or Control Pin.
38	AUX13	I/O	Serial Interrupt/CD-Mute or Control Pin.
39	AUX14	I/O	Servo SCOR(S0S1) or Interrupt Input or Control Pin.
40	AUX15	I/O	Interrupt Input or Control Pin.
81,83,85,93,95,97,99,8	DSC_D[7:0]	I/O	Data for programming to access Internal registers.
10	DSC_S	I	Strobe for programming to access Internal registers.
12	DCLK	O	Dual-purpose pin DCLK is the MPEG decoder clock.
12	EXT_CLK	I	EXT_CLK is the external clock EXT_CLK is an input during bypass PLL mode.
13	RESET_B	I	Video reset(active-low).
15	MUTE	O	Audio mute.
17	MCLK	I	Audio master clock.
19	TWS	I	Dual-purpose pin TWS is the transmit audio frame sync.
19	SPLL_OUT	O	SPLL_OUT is the select PLL output.

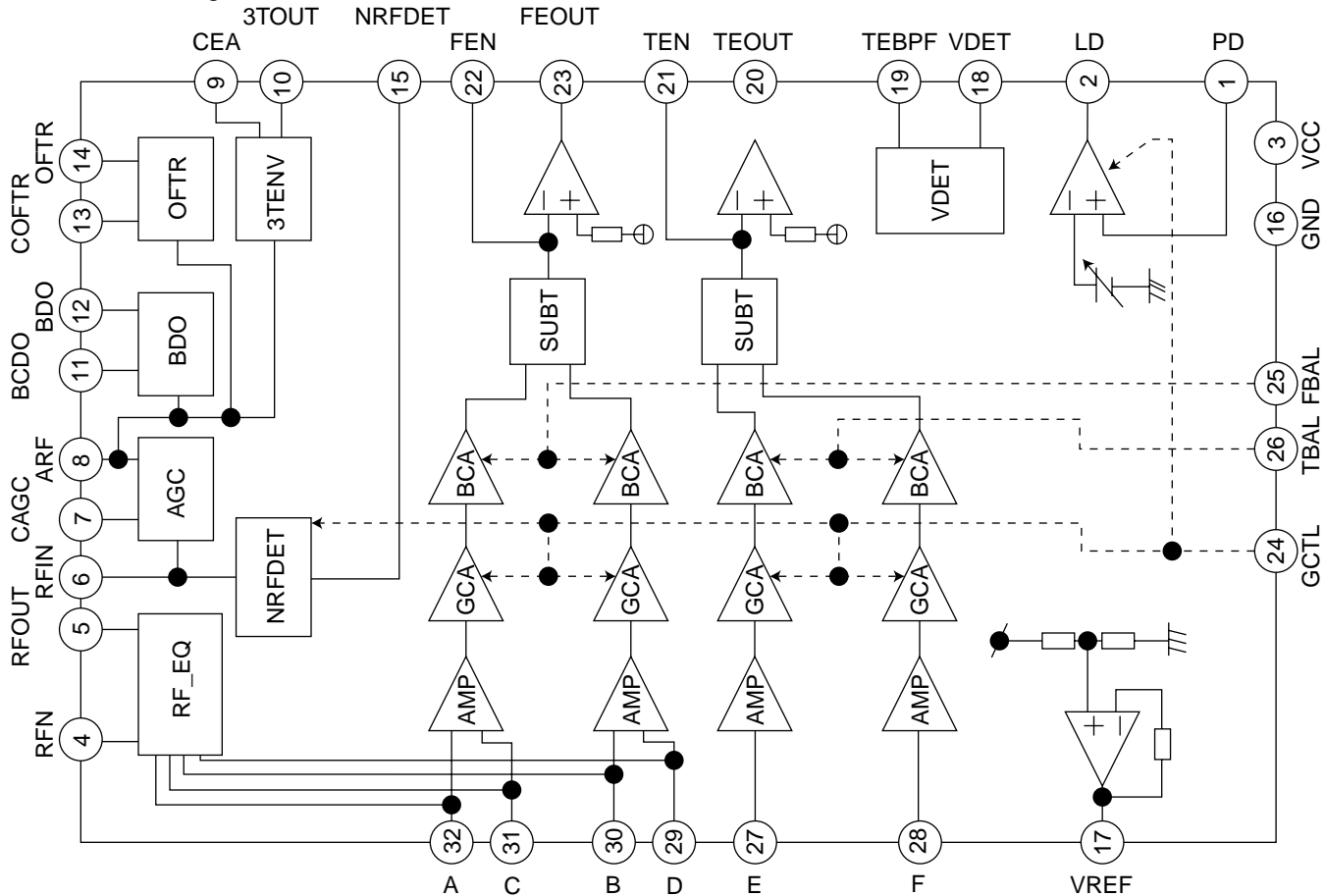
Number	Name	I/O	Function															
21	TSD	I	Transmit audio data input.															
22	TBCK	I	Transmit audio bit clock.															
23	RWS	O	Dual-purpose pin RWS is the audio frame sync.															
	SEL_PLL1	I	Pins SEL_PLL[1.0] select the PLL clock frequency for the DCLK output. <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>SEL_PLL1</th> <th>SEL_PLL0</th> <th>DCLK</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>Bypass PLL(input mode)</td> </tr> <tr> <td>0</td> <td>0</td> <td>27 MHz(output mode)</td> </tr> <tr> <td>1</td> <td>0</td> <td>32.4 MHz(output mode)</td> </tr> <tr> <td>1</td> <td>1</td> <td>40.5 MHz(output mode)</td> </tr> </tbody> </table>	SEL_PLL1	SEL_PLL0	DCLK	0	0	Bypass PLL(input mode)	0	0	27 MHz(output mode)	1	0	32.4 MHz(output mode)	1	1	40.5 MHz(output mode)
	SEL_PLL1	SEL_PLL0	DCLK															
	0	0	Bypass PLL(input mode)															
0	0	27 MHz(output mode)																
1	0	32.4 MHz(output mode)																
1	1	40.5 MHz(output mode)																
24	RSTOUT_B	O	Reset output(active-low).															
2:4,27:30,76	NC		No connect.Do not connect to these pins.															
33	RSD	O	Dual-purpose pin. RSD is the receive audio data input.															
	SEL_PLL0	I	SEL_PLL0 along with SEL_PLL1 select the PLL clock frequency for the DCLK output.See the table for pin number 23.															
37	RBCK	O	Dual-purpose pin.RBCK is the receive audio bit clock.															
	SER_IN	I	SER_IN is the serial input DSC mode. 0-Parallel DSC mode. 1-Serial DSC mode.															
41,51	VSSAA	I	Audio Analog Ground.															
42	VCM	I	ADC Common Mode Reference(CMR) buffer output.CMR is approximately 2.25V.Bypass to analog ground with 47 μ F electrolytic in parallel with 0.1 μ F.															
43	VREFP	I	DAC and ADC maximum reference. Bypass to VCMR with 10 μ F in parallel with 0.1 μ F.															
44	VCCAA	I	Analog VCC, 5V.															
45:46	AOR+,AOR-	O	Right channel output.															
47:48	AOL-,AOL+	O	Left channel input.															
49	MIC1	I	Microphone input 1.															
50	MIC2	I	Microphone 2.															
52	VREF	I	Internal resistor divider generates Common Mode Reference(CMR) voltage. Bypass to analog ground with 0.1 μ F.															
53	VREFM	I	DAC and ADC minimum reference. Bypass to VCMR with 10 μ F in parallel with 0.1 μ F.															
54	RSET	I	Full scale DAC current adjustment.															
55	COMP	I	Compensation pin.															
56:57,62:63	VSSAV	I	Video Analog Ground															
58	CDAC	O	Modulates chrominance output.															
59,60	VCCAV	I	Video VCC, 5V															
61	YDAC	O	Y luminance data bus for screen video port.															
64	VDAC	O	Composite video output.															
65	ACAP	I	Audio CAP.															
71	XOUT	O	Crystal output.															
74	XIN	I	27 MHz crystal input.															
79	PCLK	I/O	13.5 MHz pixel clock.															
80	2XPCLK	I/O	27 MHz(2 times pixel clock).															
82	HSYN_B	O	Horizontal sync(active-low).															
84	VSYN_B	O	Vertical sync(active-low).															
86:89,92,94,96,98	YUV[7:0]	I	YUV data bus for screen video port.															

■ AN22000A-W (IC601) : RF head amp.

1. Pin layout



2. Block diagram

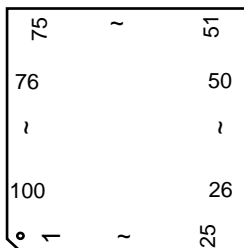


3. Pin function

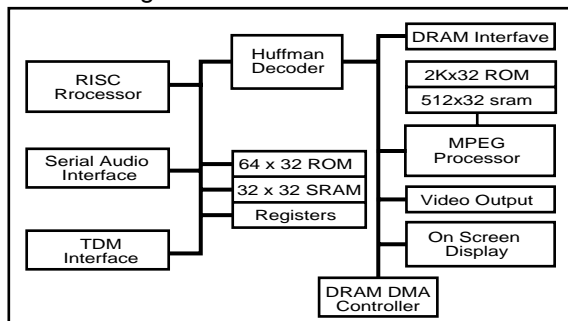
Pin No.	Function	Pin No.	Function
1	APC amp input terminal.	17	VREF output terminal.
2	APC amp output terminal.	18	VDET output terminal.
3	Power supply.	19	VDET input terminal.
4	RF amp negative input terminal.	20	TE amp. output terminal.
5	RF amp output terminal.	21	TE amp. negative input terminal.
6	AGC input terminal.	22	FE amp. negative input terminal.
7	AGC loop filter capacitor connection terminal.	23	FE amp. output terminal.
8	AGC output terminal.	24	GCTL & APC terminal.
9	Capacitor connection terminal for HPF-amp.	25	FBAL control terminal.
10	3TENV output terminal.	26	TBAL control terminal.
11	Capacitor connection terminal for RF envelope detection.	27	Tracking signal input terminal 1.
12	BDO output terminal.	28	Tracking signal input terminal 2.
13	Capacitor connection terminal for RF envelope detection.	29	Focus signal input terminal 4.
14	OFTR output terminal.	30	Focus signal input terminal 3.
15	NRDET output terminal.	31	Focus signal input terminal 2.
16	Ground terminal.	32	Focus signal input terminal 1.

■ ES3880F(IC101):VCD Processor

1.Terminal layout



2.Blockdiagram

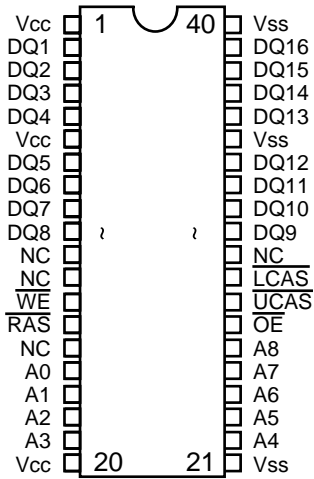


3.Pin function

Pin No.	Symbol	I/O	Function
1,31,51	VDD	I	Voltage supply for 3.3 V.
2	RAS#	O	DRAM row address strobe(active low.)
3	DWE#	O	DRAM write enable(active low).
12:4	DA[8:0]	O	DRAM multiplexed row and column address bus.
28:13	DBUS[15:0]	I/O	DRAM data bus.
29	RESET#	I	System reset(active low).
30,50,80,100	VSS	I	Ground
39:32	YUV[7:0]	O	Y is luminance, UV are chrominance data bus for screen video interface. YUV[7:0] for 8bit YUV mode.
40	VSYNC	I/O	Vertical sync for screen video interface,programmable for rising or falling edge.
41	HSYNC	I/O	Horizontal sync for screen video interface, programmable for rising edge.
42	CPUCLK	I	RISC and system clock input. CPUCLK is used only if SEL_PLL[1:0]=00.
43	PCLKX2	I/O	Pixel clock;two times the actual pixel clock for screen video interface.
44	PCLK	I/O	Pixel clock qualifier in for screen video interface.
54,52,53, 49:45	AUX[7:0]	I/O	Auxiliary control pins (AUX0 and AUX1 are open collectors).
62:55	LD[7:0]	I/O	RISC interface data bus.
63	LWR#	O	RISC interface write inable(active low).
64	LOE#	O	RISC interface output enable(active low).
65,66,67	LCS[3.1.0]#	O	RISC interface chip select(active low).
87:82,79:68	LA[17:0]	O	RISC interface address bus.
81	VPP	I	Digital supply voltage for 5V.
88	ACLK	I/O	Master clock for external audio DAC(8.192 MHz 11.2896MHz,12.288MHz, 16.9344MHz, and 18.432MHz)
89	AOUT/ SEL_PLL0	O I	Dual-purpose pin.AOUT is the audio interface serial data output. Pins SEL_PLL[1:0]select phase-clock loop(PLL) clock frequency CPUCLK for the Visba: 00 = bypass PLL. 01 = 54MHz PLL. 10= 67.5MHz PLL. 11 = 81MHz PLL.
90	ATCLK	I/O	Audio transmit bit clock.
91	ATFS/ SEL_PLL1	O I	Dual-purpose pin. ATFS is the audio interface transmit frame sync. Pins SEL_PLL[1:0]select phase-lock loop(PLL)clock frequency CPUCLK for the Visba. See the SEL_PLL0 pin above for the settings.
92	DA9/DOE#	O	Dual purpose pin:DRAM output enable(active low) DRAM multiplexed row and column address bus.
93	AIN	I	Audio interface serial data input.
94	ARCLK	I	Audio receive bit clock.
95	ARFS	I	Audio interface receive frame sync.
96	TDMCLK	I	TDM interface serial clock.
97	TDMDR	I	TDM interface serial data receive.
98	TDMFS	I	TDM interface frame sync.
99	CAS#	O	DRAM column address strobe bank 0(active low).

■ GLT44016-35J(IC103):DRAM

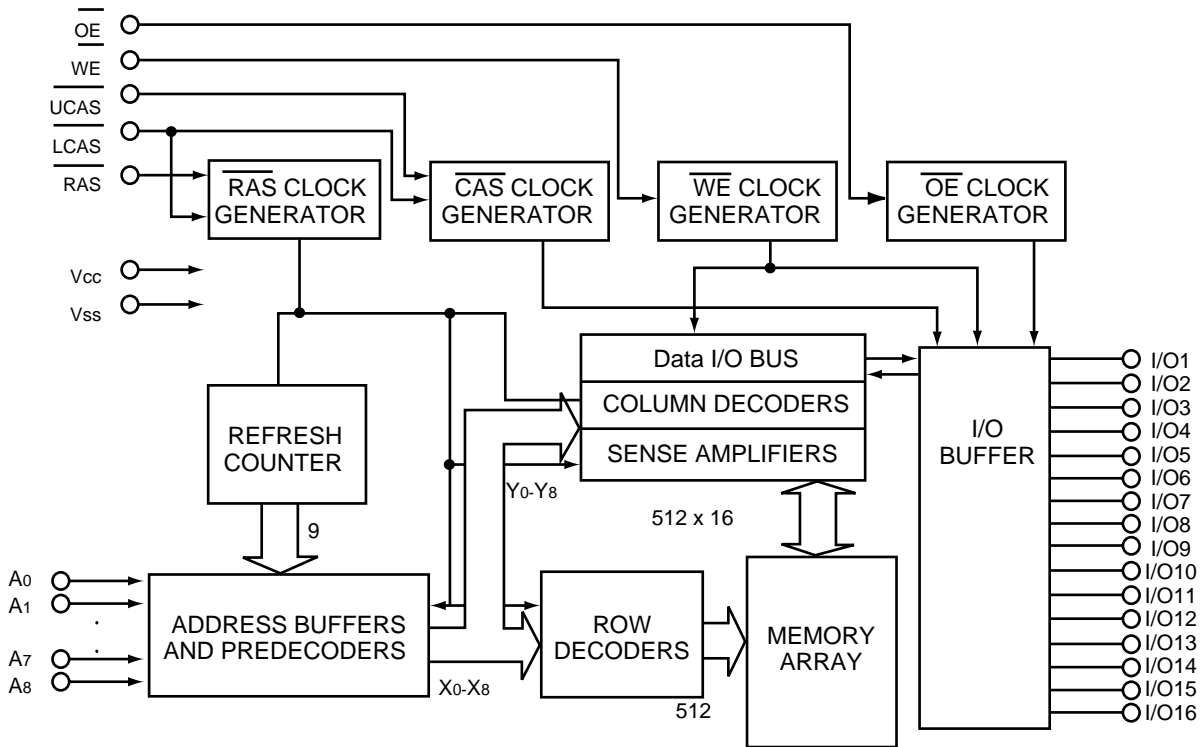
1.Terminal layout



2.Pin function

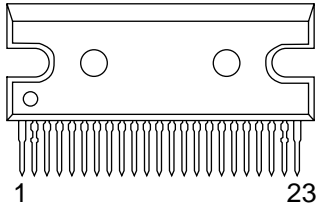
Name	Function
A0-A8	Address Inputs
$\overline{\text{RAS}}$	Row Address Strobe
$\overline{\text{UCAS}}$	Column Address Strobe/Upper Byte Control
$\overline{\text{LCAS}}$	Column Address Strobe/Lower Byte Control
WE	Write Enable
$\overline{\text{OE}}$	Output Enable
DQ1-DQ16	Data Inputs / Outputs
Vcc	+5V Power Supply
Vss	Ground
NC	No Connection

3.Block diagram

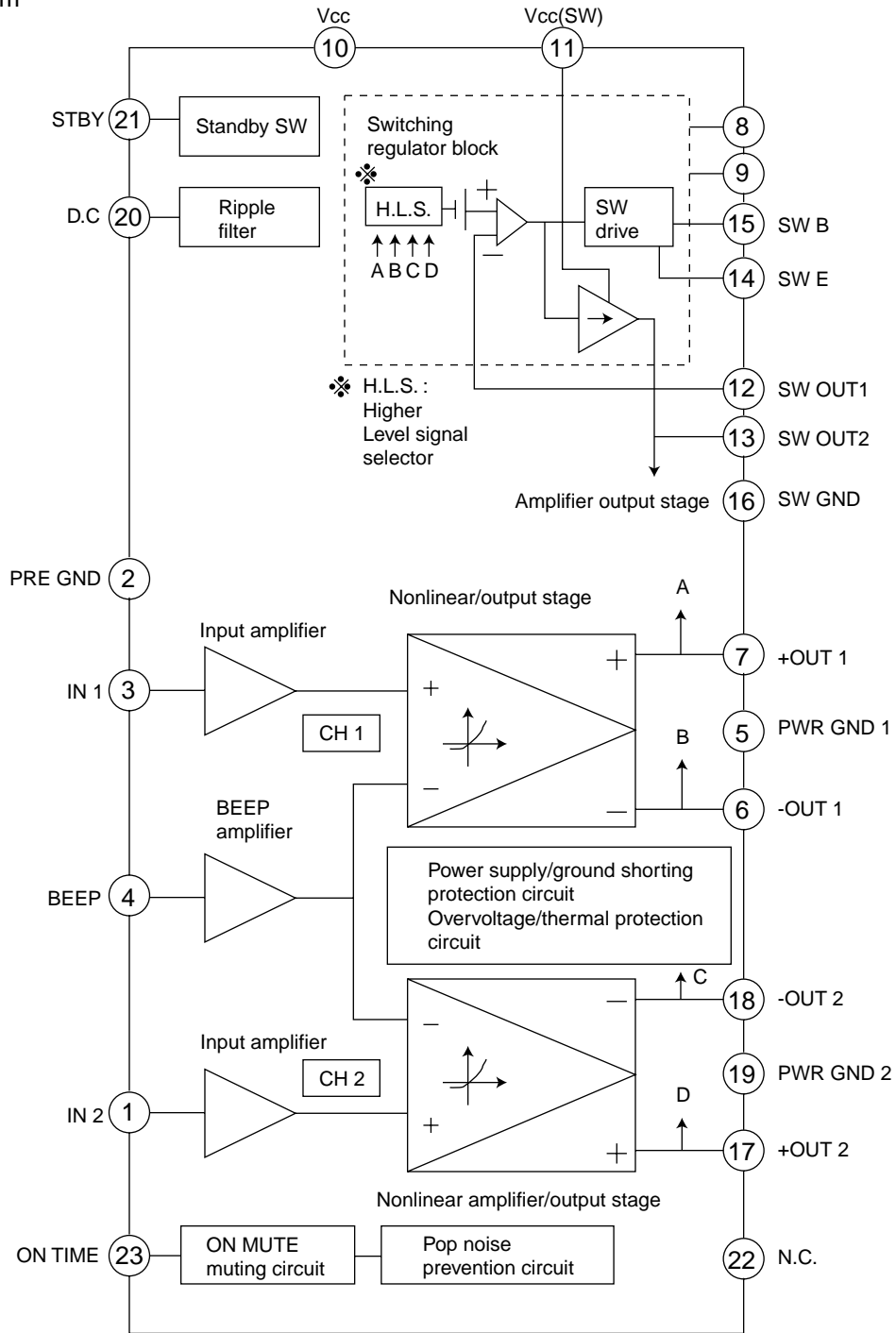


■ LA4905 (IC301) : 2ch BTL power IC

1. Pinlayput

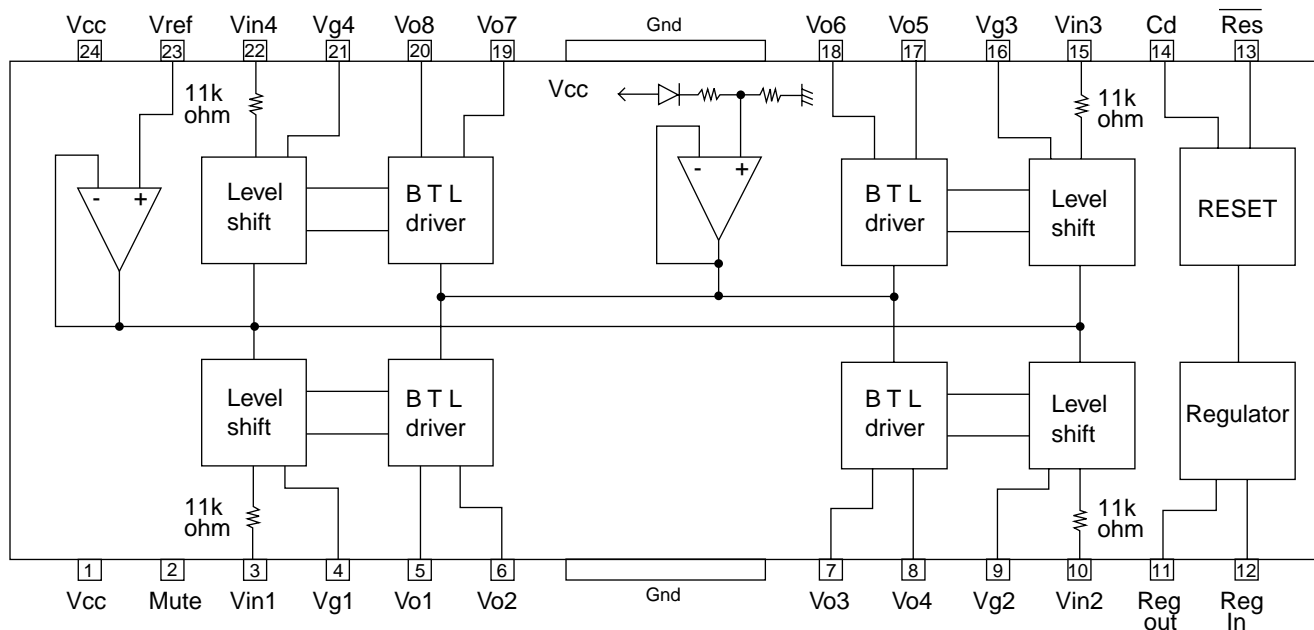


2. Block diagram



■ LA6541-X (IC602) : Servo driver

1. Pin Layout & block diagram



2. Pin function

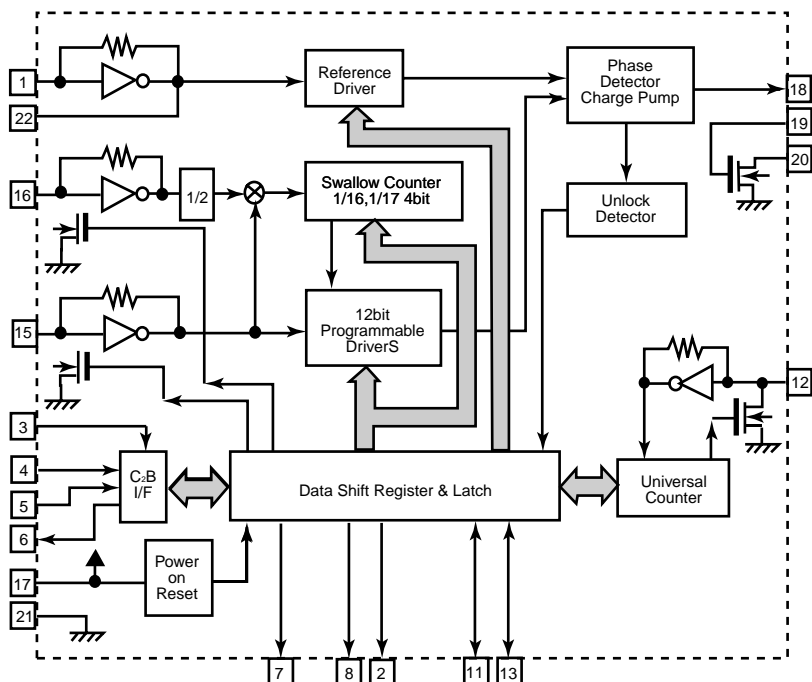
Pin No.	Symbol	Function
1	Vcc	Power supply (Shorted to pin 24)
2	Mute	All BTL amplifier outputs ON/OFF
3	Vin1	BTL AMP 1 input pin
4	Vg1	BTL AMP 1 input pin (For gain adjustment)
5	Vo1	BTL AMP 1 input pin (Non inverting side)
6	Vo2	BTL AMP 1 input pin (Inverting side)
7	Vo3	BTL AMP 2 input pin (Inverting side)
8	Vo4	BTL AMP 2 input pin (Non inverting side)
9	Vg2	BTL AMP 2 input pin (For gain adjustment)
10	Vin2	BTL AMP 2 input pin
11	Reg Out	External transistor collector (PNP) connection. 5V power supply output
12	Reg In	External transistor (PNP) base connection
13	Res	Reset output
14	Cd	Reset output delay time setting (Capacitor connected externally)
15	Vin3	BTL AMP 3 input pin
16	Vg3	BTL AMP 3 input pin (For gain adjustment)
17	Vo5	BTL AMP 3 output pin (Non inverting side)
18	Vo6	BTL AMP 3 output pin (Inverting side)
19	Vo7	BTL AMP 4 output pin (Inverting side)
20	Vo8	BTL AMP 4 output pin (Non inverting side)
21	Vg4	BTL AMP 4 output pin (For gain adjustment)
22	Vin4	BTL AMP 4 output pin
23	Vref	Level shift circuit's reference voltage application
24	Vcc	Power supply (Shorted to pin 1)

■ LC72136N (IC2) : PLL frequency synthesizer

1. Pin layout

XT	1	22	XT
FM/AM	2	21	GND
CE	3	20	LPFOUT
DI	4	19	LPFIN
CLOCK	5	18	PD
DO	6	17	VCC
FM/ST/VCO	7	16	FMIN
AM/FM	8	15	AMIN
	9	14	
	10	13	IFCONT
SDIN	11	12	IFIN

2. Block diagram

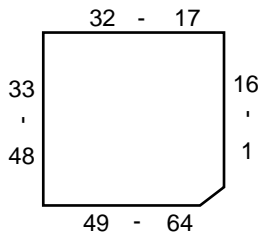


3. Pin function

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	XT	I	X'tal oscillator connect (75kHz)	12	IFIN	I	IF counter signal input
2	FM/AM	O	LOW:FM mode	13	IFCONT	O	IF signal output
3	CE	I	When data output/input for 4pin(input) and 6pin(output): H	14	-	-	Not use
4	DI	I	Input for receive the serial data from controller	15	AMIN	I	AM Local OSC signal output
5	CLOCK	I	Sync signal input use	16	FMIN	I	FM Local OSC signal input
6	DO	O	Data output for Controller Output port	17	VCC	-	Power suply(VDD=4.5-5.5V) When power ON:Reset circuit move
7	FM/ST/VCO	O	"Low": MW mode	18	PD	O	PLL charge pump output(H: Local OSC frequency Height than Reference frequency. L: Low Agreement: Height impedance)
8	AM/FM	O	Open state after the power on reset	19	LPFIN	I	Input for active lowpassfilter of PLL
9	LW	I/O	Input/output port	20	LPFOUT	O	Output for active lowpassfilter of PLL
10	MW	I/O	Input/output port	21	GND	-	Connected to GND
11	SDIN	I/O	Data input/output	22	XT	I	X'tal oscillator(75KHz)

■ MN101C30AJP(IC711):CD/VCD/MP3 CONTROL

1. Terminal layout

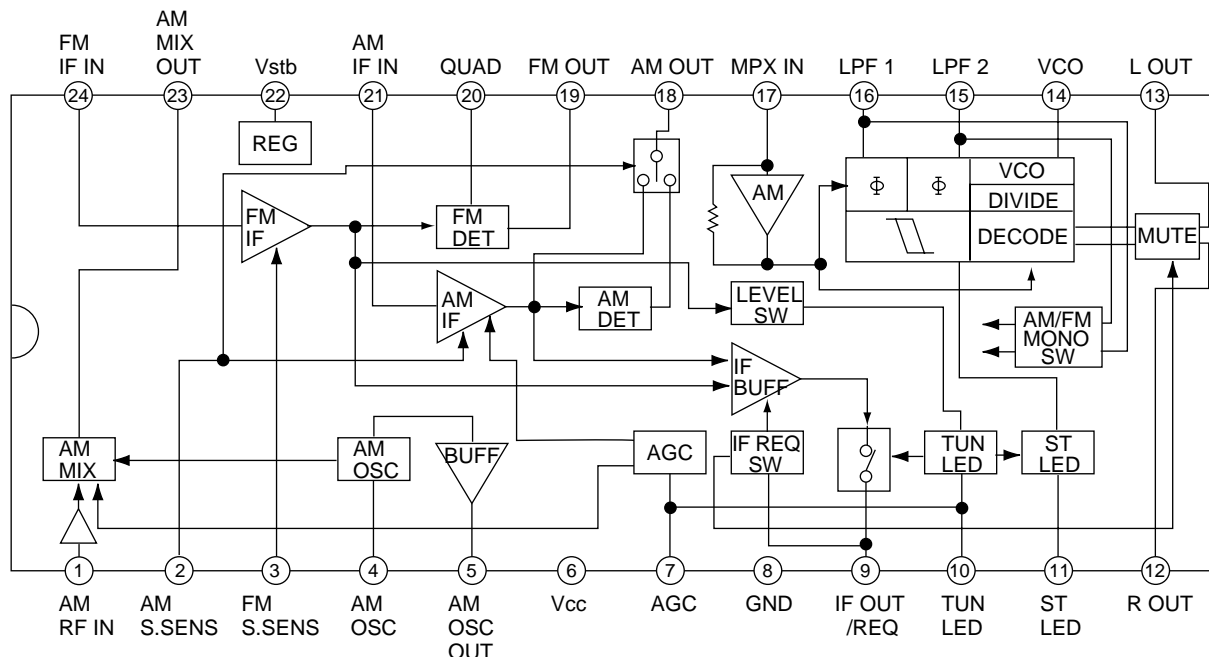


2. Pin function

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	NC	-	Non connected	33	DSADAT	I	Door open/close sw detection input
2	NC	-	Non connected	34	DSAACK	O	Muting output
3	NC	-	Non connected	35	C0	O	Digital mute output
4	NC	-	Non connected	36	C1	I	Power off detect input
5	NC	-	Non connected	37	C2	-	Connect to GND
6	VREF+	-	Reference Voltage	38	C3	-	Connect to GND
7	VDD	-	Power supply	39	C4	-	Connect to GND
8	OSC2	O	X'tal OSC output terminal	40	C5	-	Connect to GND
9	OSC1	I	X'tal OSC input terminal	41	C6	-	Connect to GND
10	VSS	-	Connect to GND	42	C7	-	Connect to GND
11	/I	I	Connect to GND	43	1S	-	Connect to GND
12	/O	O	Non connect	44	2S	-	Connect to GND
13	NC	I	Non connected	45	3S	-	Connect to GND
14	MSTAT	-	NC	46	3M	-	Connect to GND
15	KCMND	I	Sub-code Q-code output	47	2M	-	Connect to GND
16	FLAG	O	Outside clock for sub-code Q resitor input	48	1M	-	Connect to GND
17	NC	O	Non connected	49	REST	-	Connect to GND
18	SUBQ	I/O	Sireal data	50	DRMUTE	-	Connect to GND
19	SQCK	I	Shift clock input	51	CLSW	-	Connect to GND
20	VCDRST	O	Start signal output	52	OPSW	-	Connect to GND
21	CDMRST	I	Reset signal input	53	OPEN	-	Connect to GND
22	PON	I	Micon command data signal input	54	CLOSE	-	Connect to GND
23	UDSASTB	I	Micon command load signal input	55	DISC	-	Connect to GND
24	UDSADAT	I	Micon command clock signal input	56	LSIRST	-	Connect to GND
25	UDSADAT	O	Status signal output	57	STAT	-	Connect to GND
26	UDSAACK	O	Reset output	58	MDATA	-	Connect to GND
27	MCK	I	Feed Kick control output	59	MCLK	-	Connect to GND
28	BLOKCK	-	Enable signal	60	MLD	-	Connect to GND
29	PON	-	Connect to GND	61	VREF-	-	Connect to GND
30	NC	-	Non connected	62	TLOCK	-	Connect to GND
31	NC	-	Non connected	63	FLOCK	-	Connect to GND
32	DSASB	I	Rest sw input	64	SENSE	-	Connect to GND

■ TA2057N (IC1) : FM / AM IF AMP & Detector

1. Block diagrams

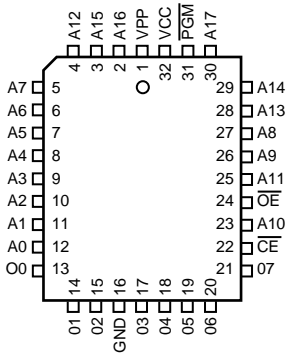


2. Pin function

Pin No.	I/O	Symbol	Function	Pin No.	I/O	Symbol	Function
1	I	AM RF	AMRF signal input	13	O	Lch OUT	Output Lch
2		AM S.SENS		14	O	VCO	Voltage controlled terminal
3		FM S.SENS		15	O	LPF2	When voltage of terminal is MONO at "H" and ST at "L"
4	-	AM OSC	AM local oscillation circuit	16	O	LPF1	When voltage of terminal is AM at "H" and FM at "L"
5	O	AM OSC OUT	AM local oscillation signal output	17	I	MPX IN	Multi plex signal input
6	-	VCC	Power supply	18	O	AM OUT	AM detection signal output
7	I	AGC	AGC voltage input terminal	19	O	FM OUT	FM detection signal output
8	-	GND	Connect to GND	20	I	FM QUAD	Bypass to FMIF
9	O	IF OUT	IF REQ signal output to IC2	21	I	AM IF IN	Input of AMIF signal
10	O	TU IND	Indicator drive output when tuning	22	-	Vst	Fixed voltage output terminal
11	O	ST IND	Stereo indicator output "H"mono . "L"stereo	23	O	AM MIX OUT	Output terminal for AM mixer
12	O	Rch OUT	Output Rch	24	I	FM IF IN	Input of FMIF signal

■ **AT27C020(IC102):OTP EPROM 2MBIT**

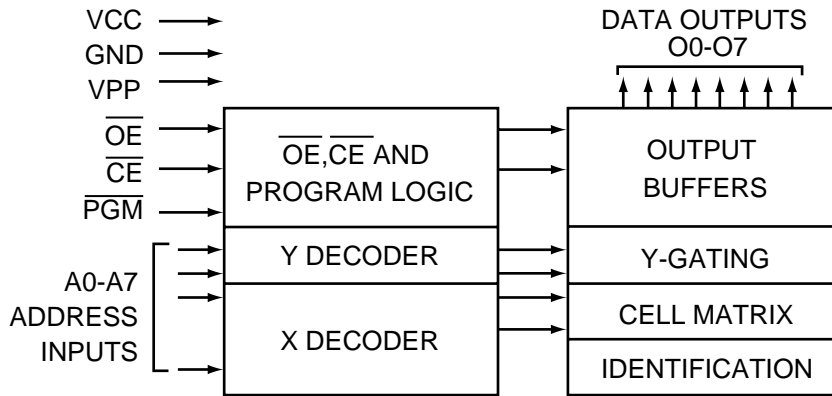
1.Terminal layout



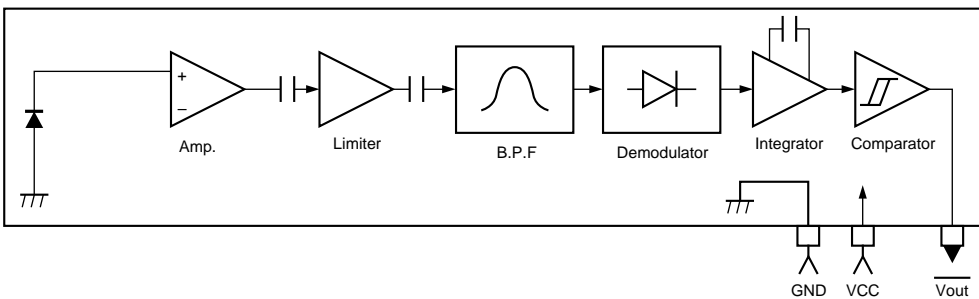
2.Pin function

Pin No.	Function
A0-A17	Addresses
O0-O7	Outputs
CE	Chip Enable
OE	Output Enable
PGM	Program Strobe

3.Blockdiagram

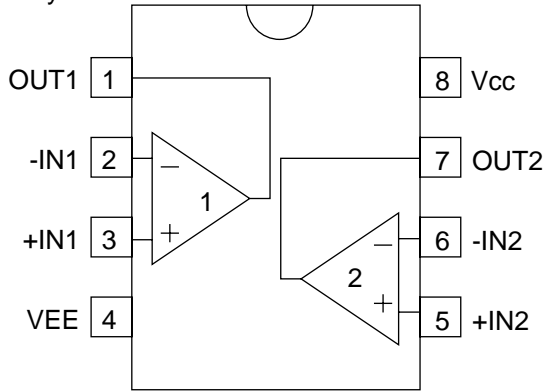


■ **GP1U271X(IC801):Receiver for remote**

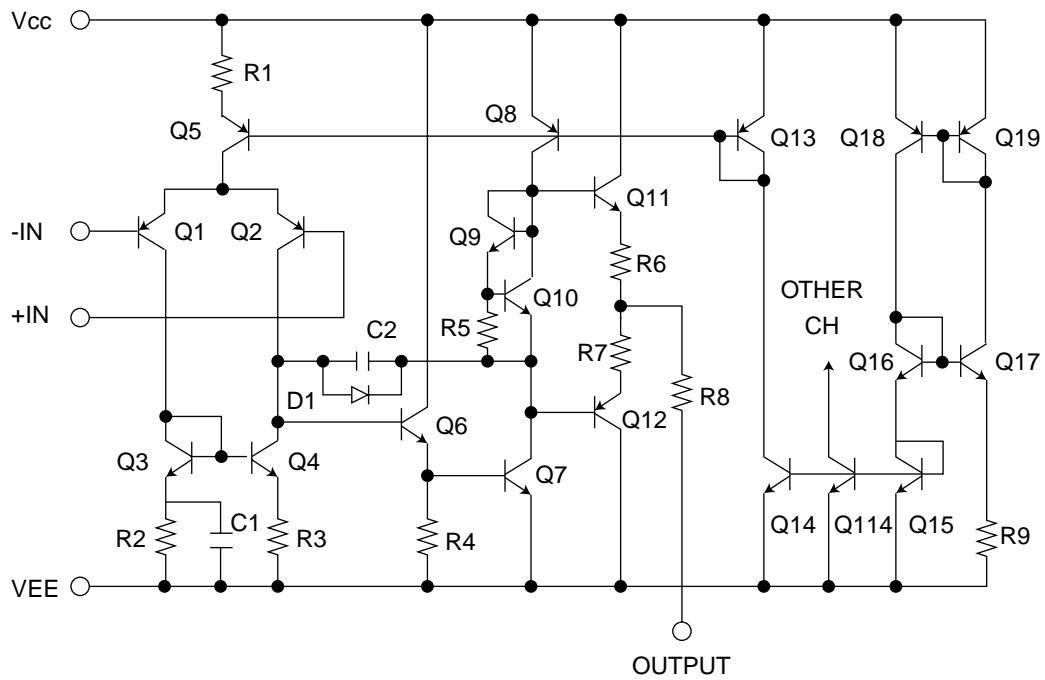


■ **BA15218F-XE (IC102) : Dual operation amplifier**

1. Pin layout

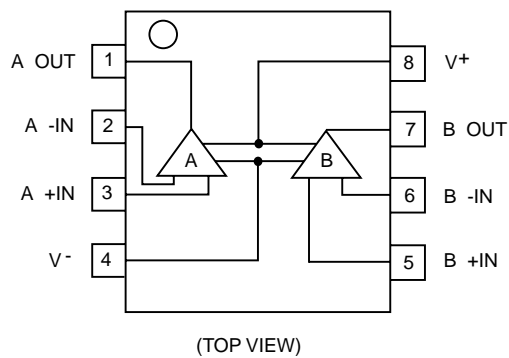


2. Block diagram

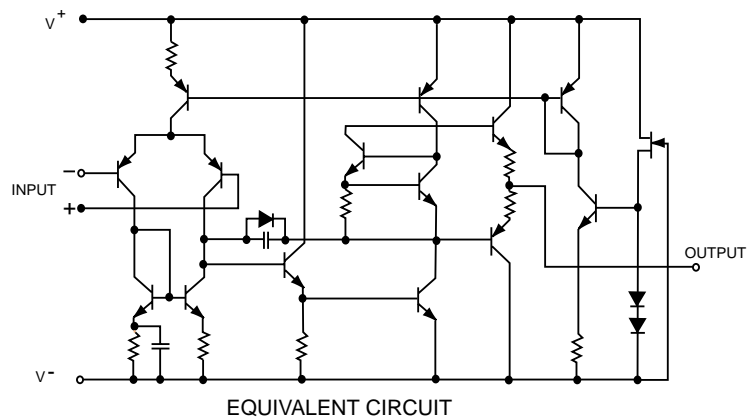


■ **NJM4580D-D (IC101):Dual op. amp**

1. Terminal layout

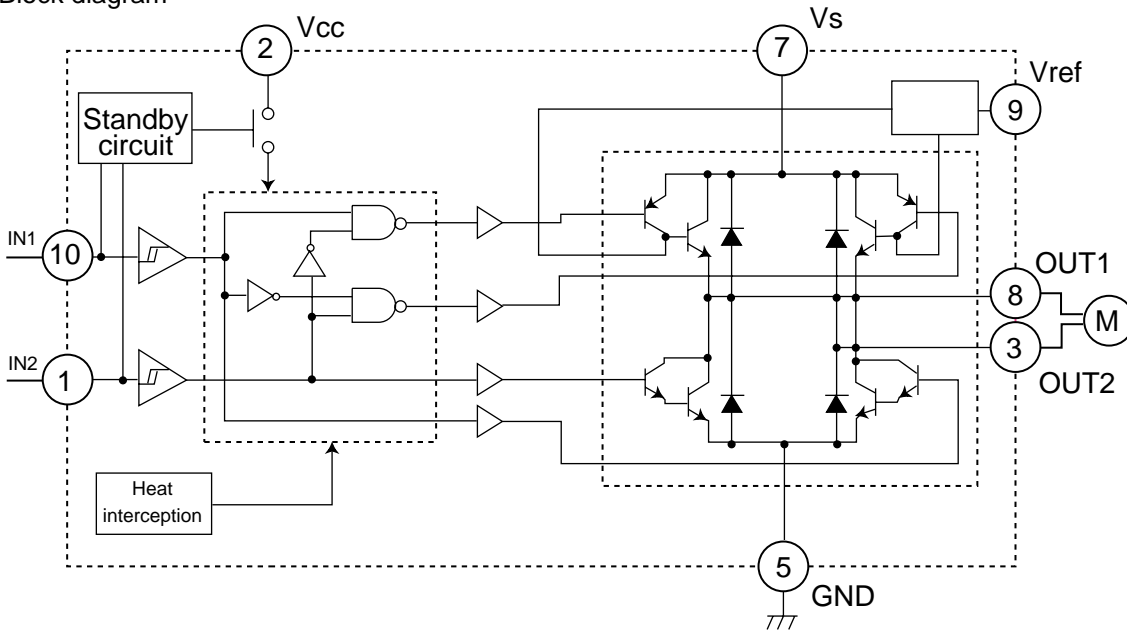


2. Block diagram



■ TA8409F-W(IC108):Motor driver

1. Block diagram

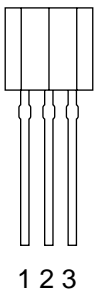


2. Pin function

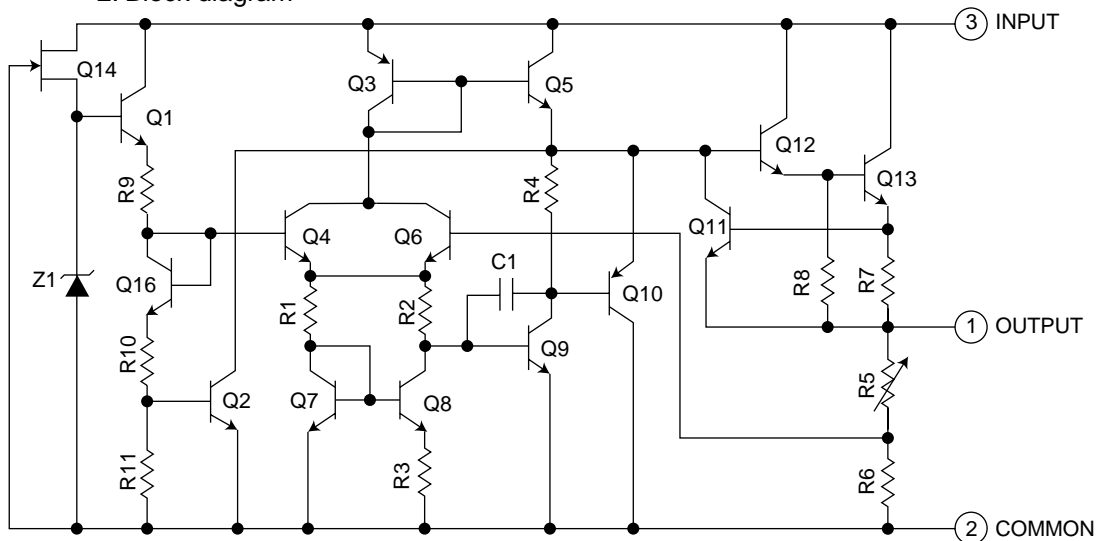
Input		Output		Mode
IN1	IN2	OUT1	OUT2	MOTOR
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

■ KIA78S06P-T (IC702) : Regulator

1. Pin layout



2. Block diagram



FS-SD998V/FS-SD778V
FS-SD558V

JVC

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