

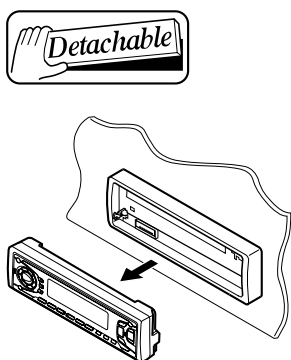
JVC

SERVICE MANUAL

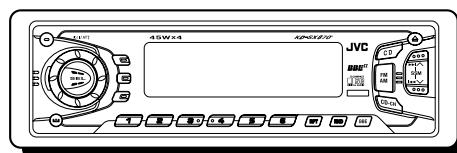
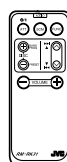
CD RECEIVER

KD-SX870 KD-SX770

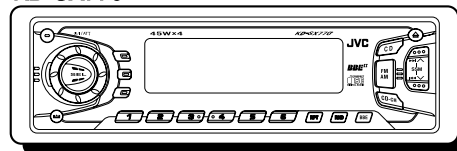
Area Suffix
J Northern America



KD-SX870



KD-SX770




BBE^{II}

COMPACT
disc
DIGITAL AUDIO

Contents

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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 performing repair of this system.

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

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

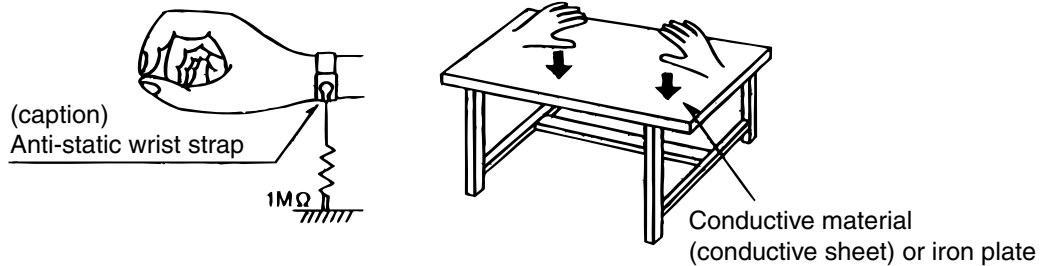
Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as DVD players. Be careful to use proper grounding in the area where repairs are being performed.

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.

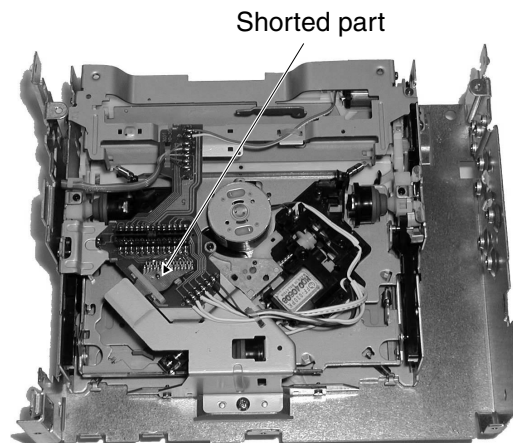


1.1.3. Handling the optical pickup

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.

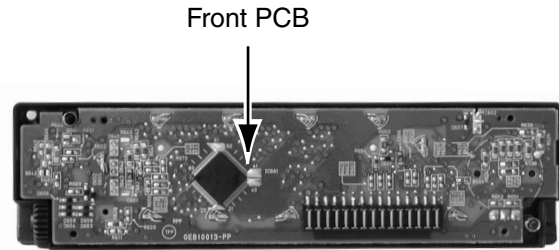
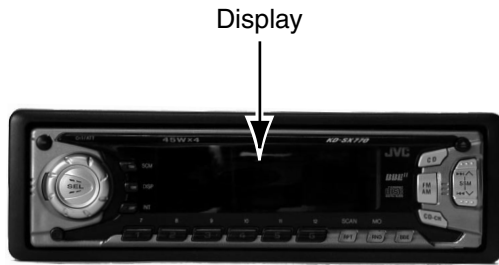
1.2. Handling the traverse unit (optical pickup)

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

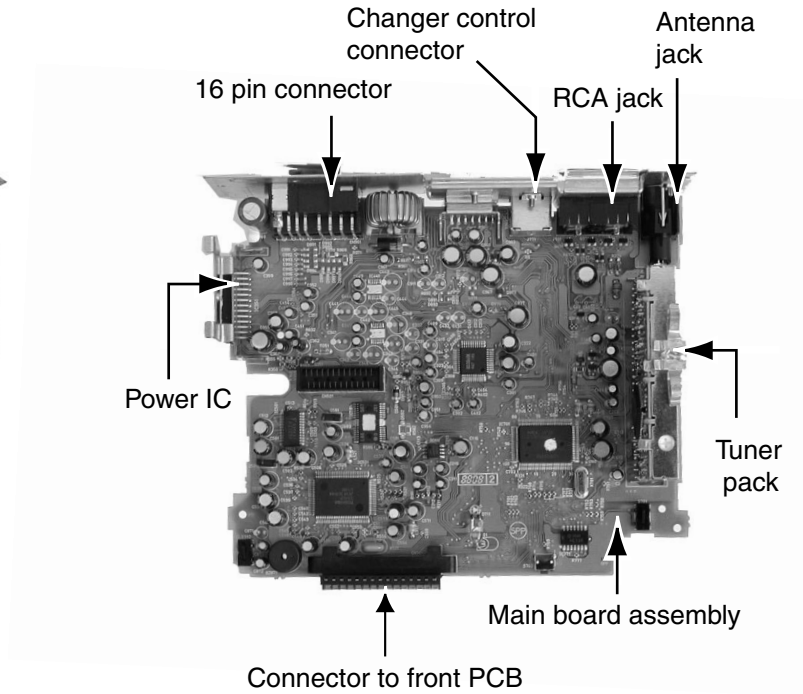
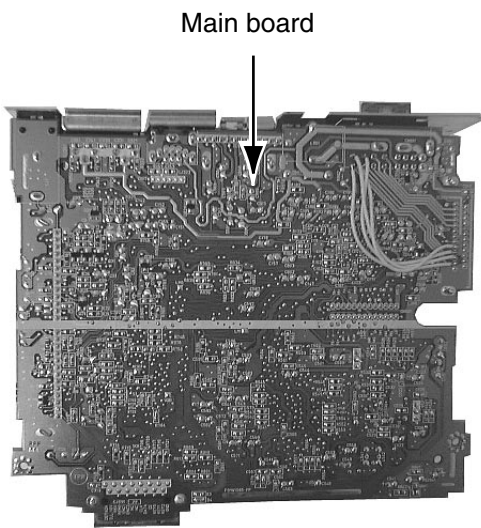


Location of main parts

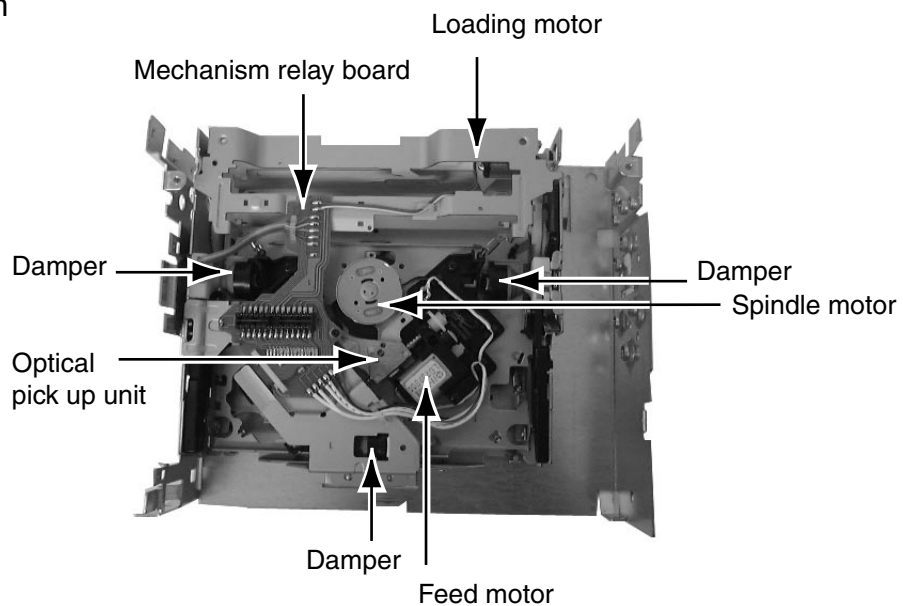
■ Control unit



■ Main unit



■ CD mechanism



Disassembly method

■ Removing the front chassis (See Fig.1)

1. Remove two screws A and insert a screwdriver to the joints a on the side of the front chassis and two joints b on the right side, then detach the front chassis toward the front side.

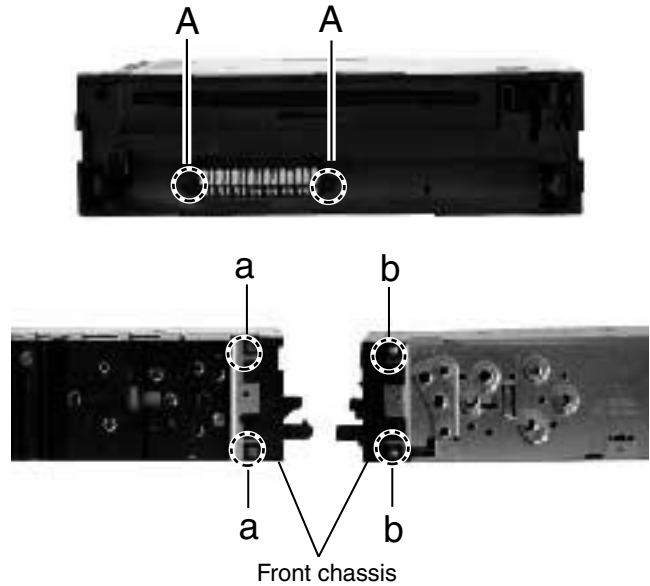


Fig.1

■ Removing the heat sink (See Fig.2)

1. Remove the three screws B attaching the heat sink on the left side of the body, and remove the heat sink.

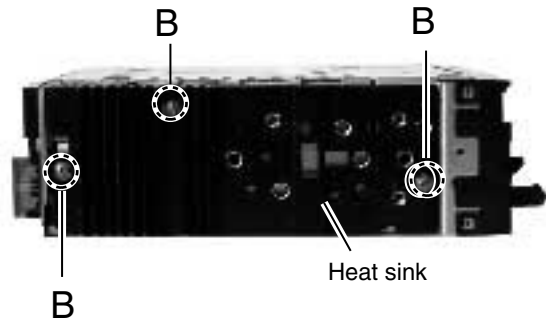


Fig.2

■ Removing the bottom cover (See Fig.3)

1. Turn the body upside down.
2. Insert a screwdriver to the two joints c and two joints d on both sides of the body and the joint e on the back of the body, then detach the bottom cover from the body.

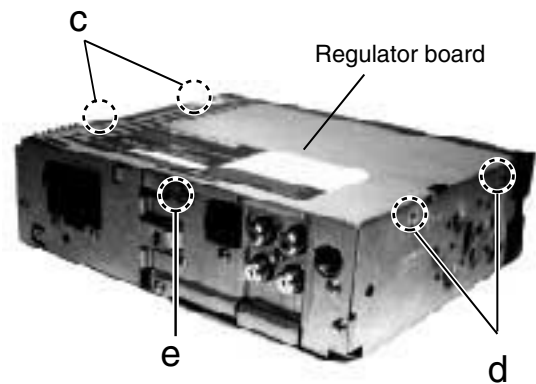


Fig. 3

■ **Removing the main amplifier board assembly**

(See Fig.4 and 5)

1. Remove the front chassis.
2. Remove the bottom cover.
3. Remove the two screws C attaching the main amplifier board assembly on the bottom of the body.
4. Remove the three screws D attaching the main amplifier board assembly on the back of the body.
5. Disconnect connector CN501 on the main amplifier board assembly from the CD mechanism assembly.

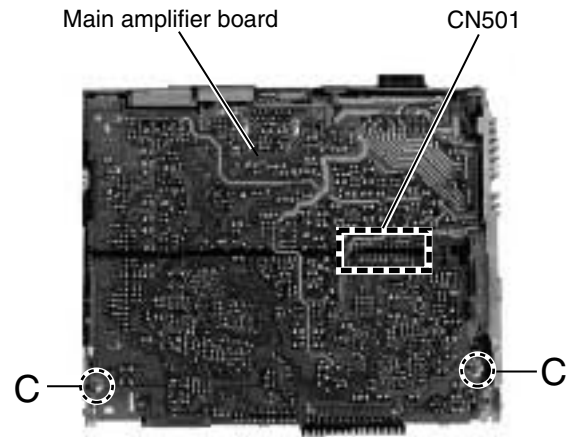


Fig.4

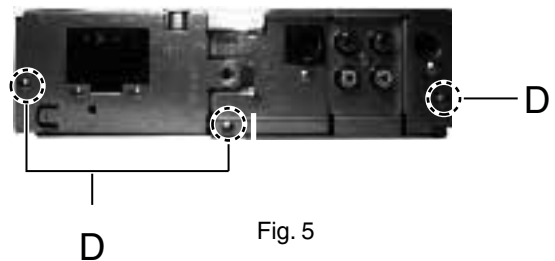


Fig. 5

■ **Removing the CD mechanism assembly**

(See Fig.6)

1. Remove the front chassis.
2. Remove the bottom cover.
3. Remove the main amplifier board assembly.
4. Remove the three screws E attaching the CD mechanism assembly from the top cover.

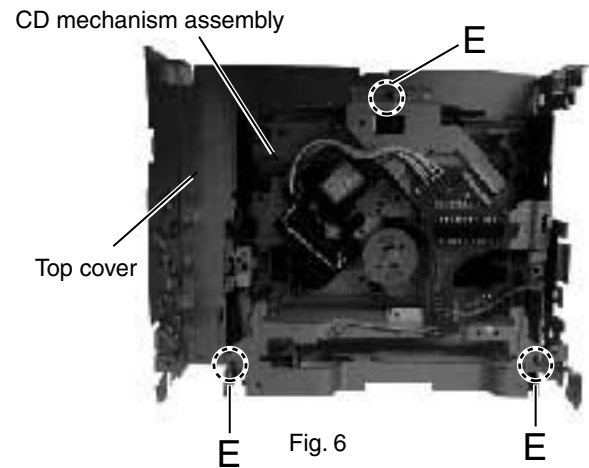


Fig. 6

■ **Removing the control switch board**

(See Fig.7 and 8)

1. Remove the front chassis.
2. Remove the four screws F attaching the rear cover on the back of the front panel unit.
3. Remove the control switch board from the front panel unit.

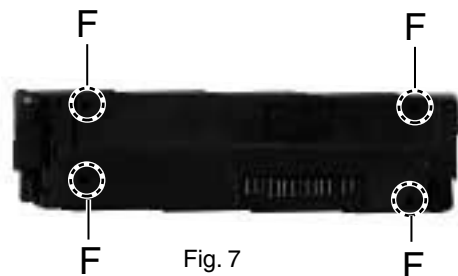


Fig. 7

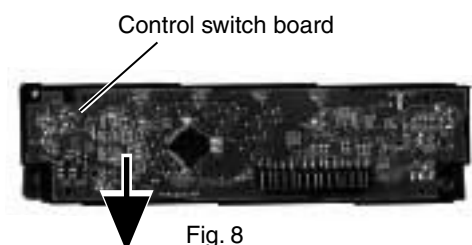


Fig. 8

■ **Removing the CD mechanism control board(See Fig.1 and 2)**

Unsolder the part f and g on the CD mechanism control board.

Remove the stator fixing the CD mechanism control board and the damper bracket (To remove the stator smoothly, pick up the center part).

Remove the screw F attaching the CD mechanism control board.

Remove the CD mechanism control board in the direction of the arrow while releasing it from the two damper bracket slots i and the front bracket slot j.

Disconnect the flexible wire from connector on the pickup unit.

ATTENTION: Turn the FD gear in the direction of the arrow to move the entire pickup unit to the appropriate position where the flexible wire of the CD mechanism unit can be disconnected easily (Refer to Fig.2).

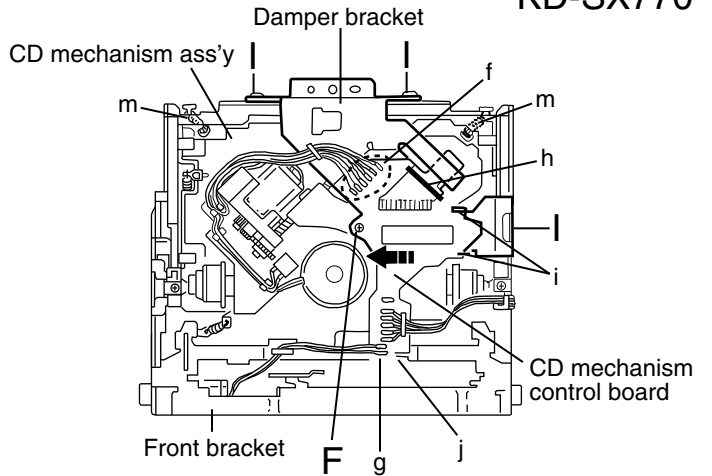


Fig.1

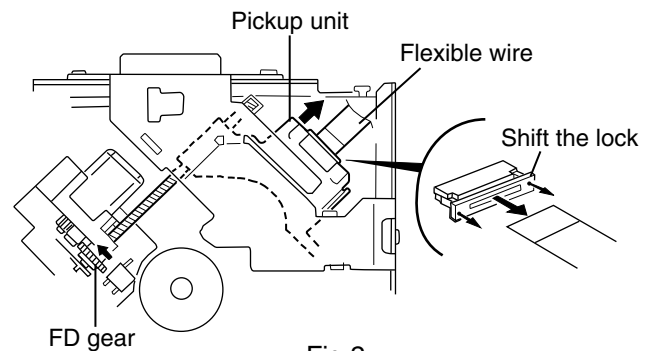


Fig.2

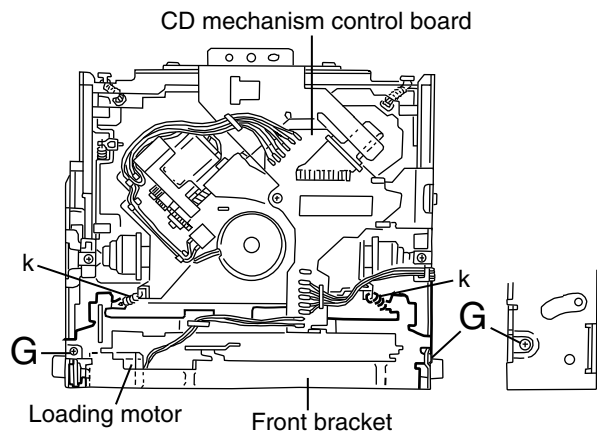


Fig.3

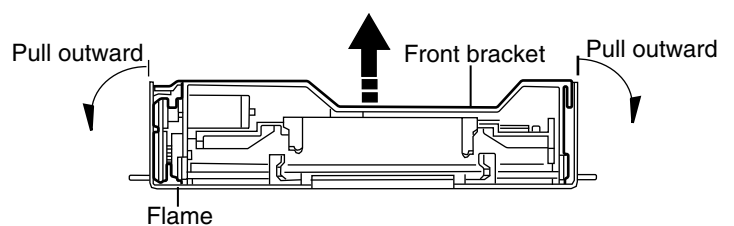


Fig.4

■ Removing the loading motor
(See Fig.3 to 5)

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

1. Remove the two springs k attaching the CD mechanism ass'y and the front bracket.
2. Remove the two screws G and the front bracket while pulling the flame outward.
3. Remove the belt and the screw H from the loading motor.

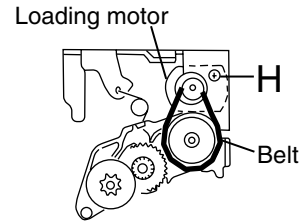


Fig.5

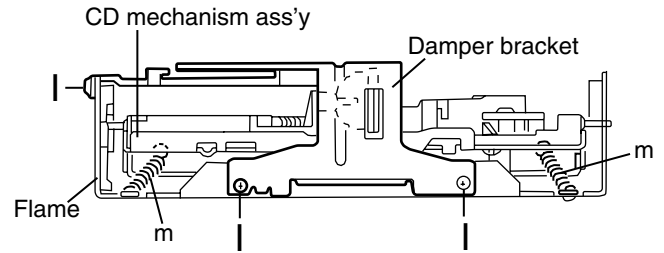


Fig.6

■ Removing the CD mechanism ass'y
(See Fig.1, 6 to 9)

• Prior to performing the following procedure, remove the CD mechanism control PWB and the front bracket (loading motor).

1. Remove the three screws I and the damper bracket.
2. Raise the both sides fix arms and move the fix plates in the direction of the arrow to place the four shafts I as shown in Fig.8 and 9.
3. Remove the CD mechanism ass'y and the two springs m attaching the flame.
4. Remove the two screws J and both sides rear damper brackets from the dampers. Detach the CD mechanism ass'y from the left side to the right side.

ATTENTION: The CD mechanism ass'y can be removed if only the rear damper bracket on the left side is removed.

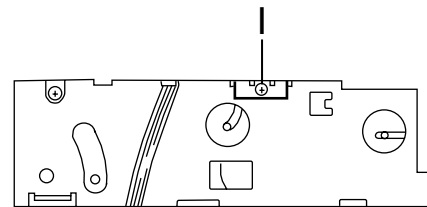


Fig.7

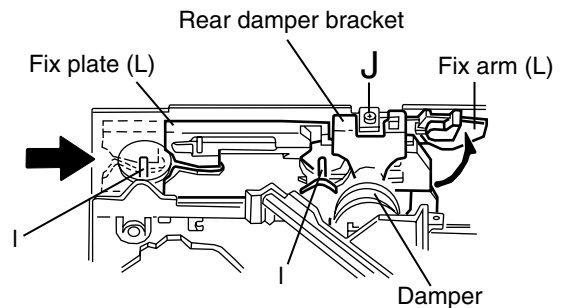


Fig.8

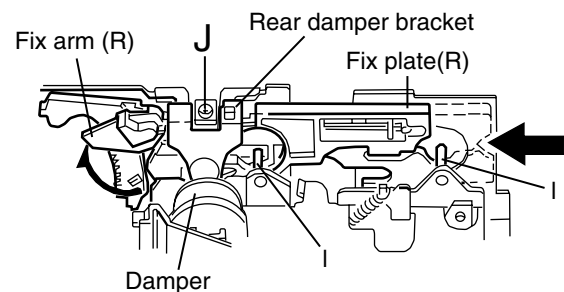


Fig.9

■ Removing the feed motor ass'y (See Fig.10)

- Prior to performing the following procedure, remove the CD mechanism control board, the front bracket (loading motor) and the CD mechanism ass'y.

1. Remove the two screws K and the feed motor ass'y.

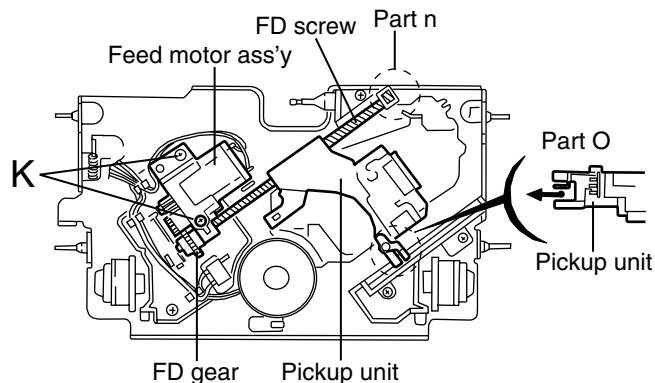


Fig.10

■ Removing the pickup unit (See Fig.10 and 11)

- *Prior to performing the following procedure, remove the CD mechanism control board, the front bracket (loading motor), the CD mechanism ass'y and the feed motor ass'y.

1. Detach the FD gear part of the pickup unit upward. Then remove the pickup unit while pulling out the part n of the FD screw.

ATTENTION: When reattaching the pickup unit, reattach the part o of the pickup unit, then the part n of the FD screw.

2. Remove the screw L attaching the nut push spring plate and the pickup mount nut from the pickup unit. Pull out the FD screw.

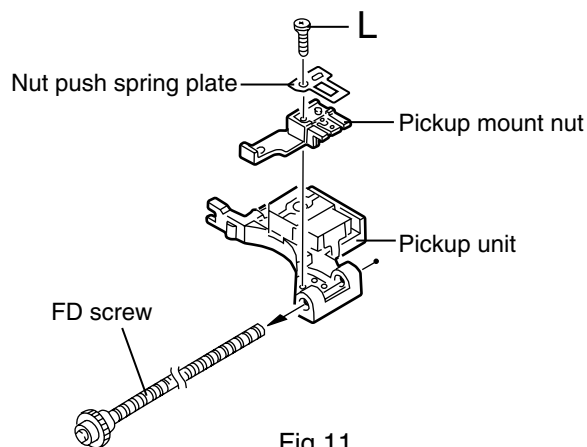


Fig.11

■ Removing the spindle motor (See Fig.12 and 13)

- Prior to performing the following procedure, remove the CD mechanism control board, the front bracket (loading motor), the CD mechanism ass'y and the feed motor ass'y.

1. Turn up the CD mechanism ass'y and remove the two springs p on both sides of the clamber arms. Open the clamber arm upward.
2. Turn the turn table, and remove the two screws M and the spindle motor.

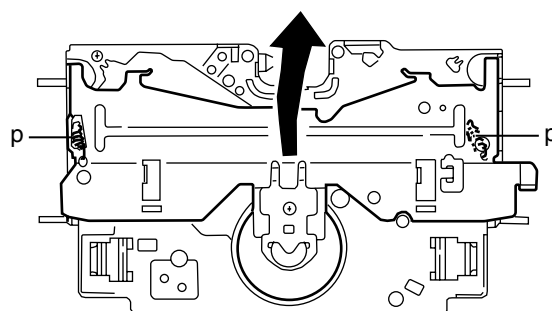


Fig.12

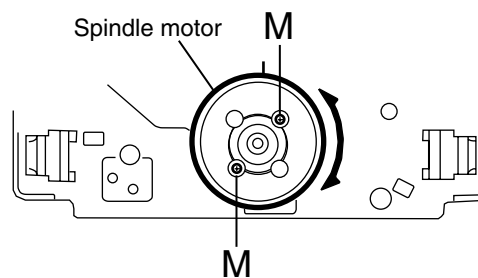


Fig.13

Adjustment method

■ Test instruments required adjustment

1. Digital oscilloscope (100MHz)
2. AM Standard signal generator
3. FM Standard signal generator
4. Stereo modulator
5. Electric voltmeter
6. Digital tester
7. Tracking offset meter
8. Test Disc JVC : CTS-1000
9. Extension cable for check
EXTGS004-26P

■ Standard volume position

Balance and Bass & Treble volume : Indication "0"
Loudness : OFF

■ Frequency Band

FM 1 -3 87.5MHz -107.9MHz
AM 530kHz -1710kHz

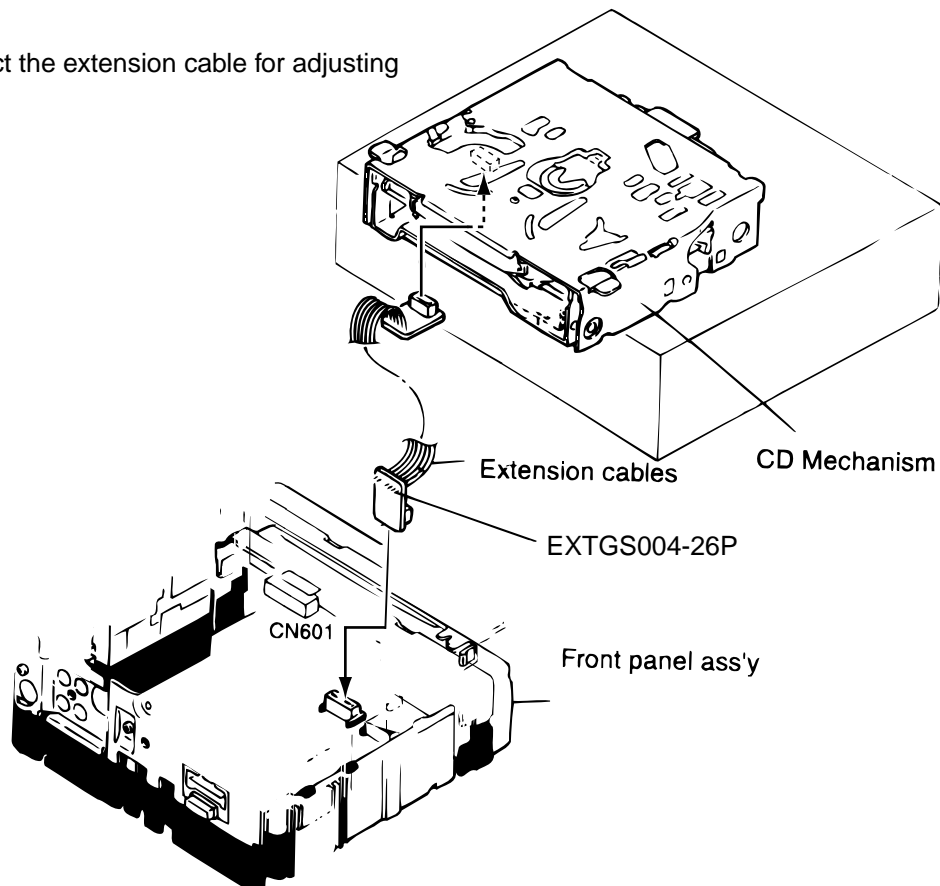
■ Dummy load

Exclusive dummy load should be used for AM, and FM.
For 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.

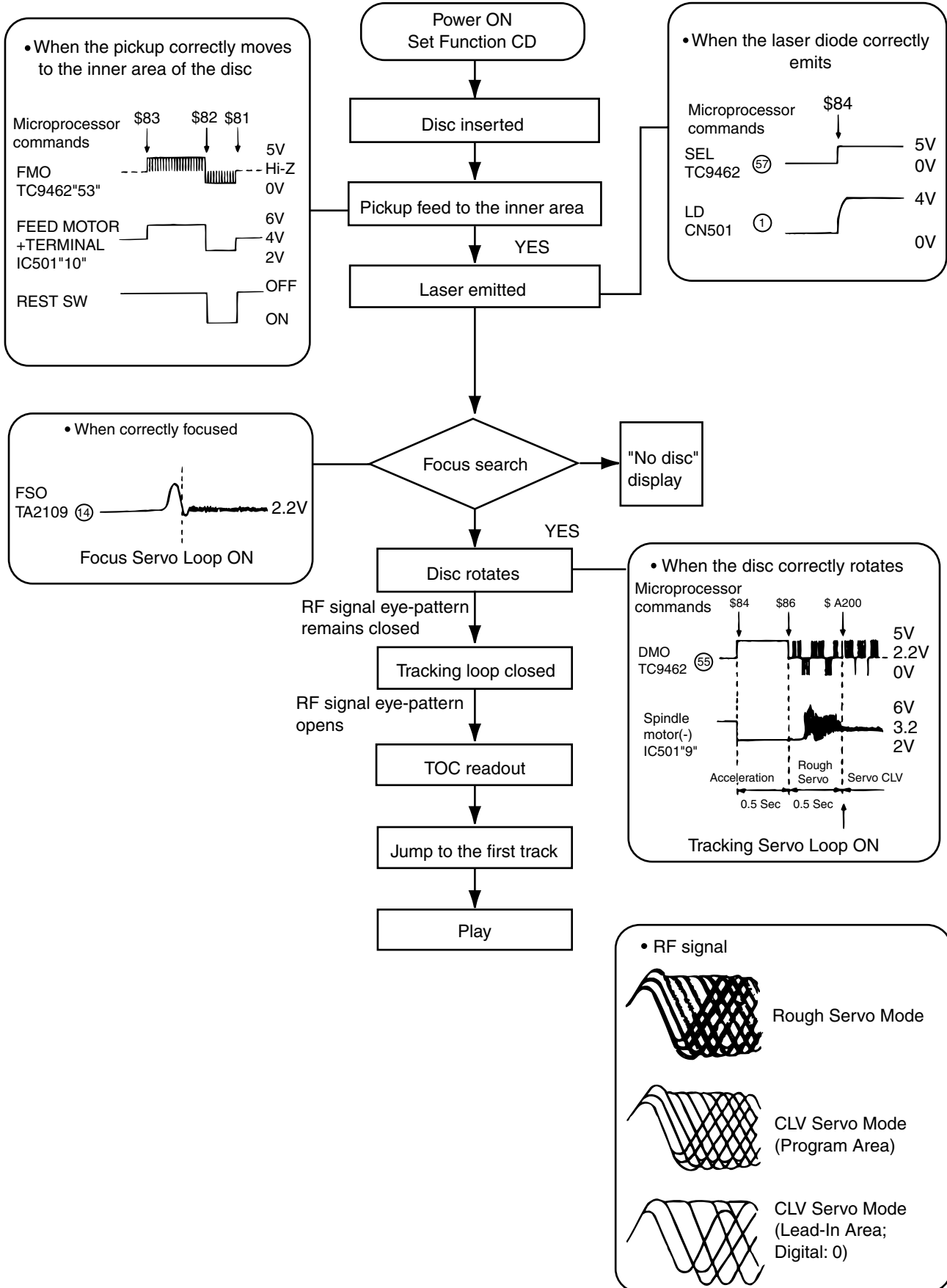
■ Standard measuring conditions

Power supply voltage DC14.4V(10.5 - 16V)
Load impedance 4Ω (4Ω to 8Ω allowance)
Line-out Level/Impedance
KD-SX870 : 4.0 V/ $20k\Omega$ load(full scale)
KD-SX770 : 2.0 V/ $20k\Omega$ load(full scale)
Output impedance : $1k\Omega$

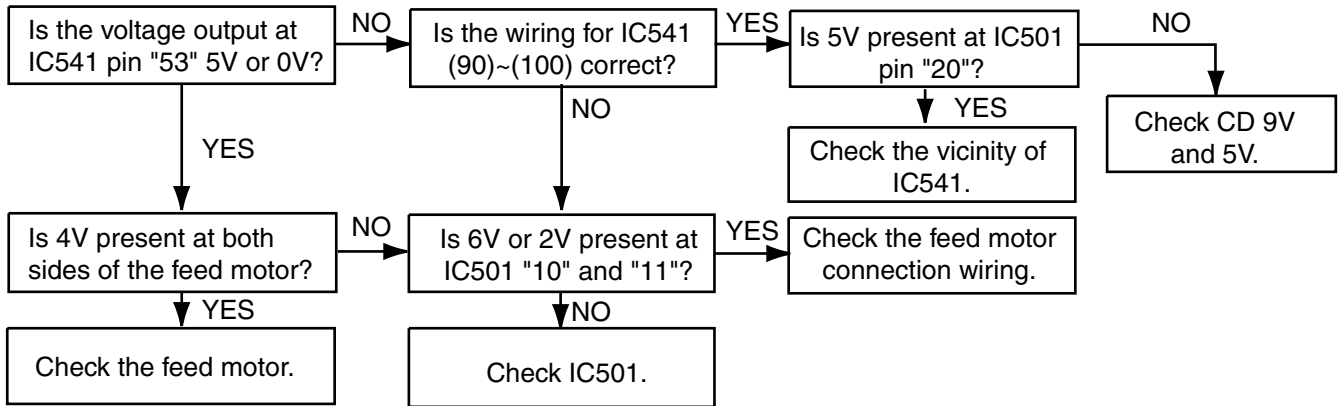
■ How to connect the extension cable for adjusting



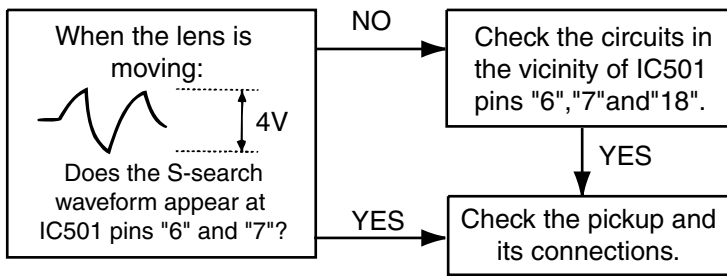
Flow of Functional Operation Unit TOC Read



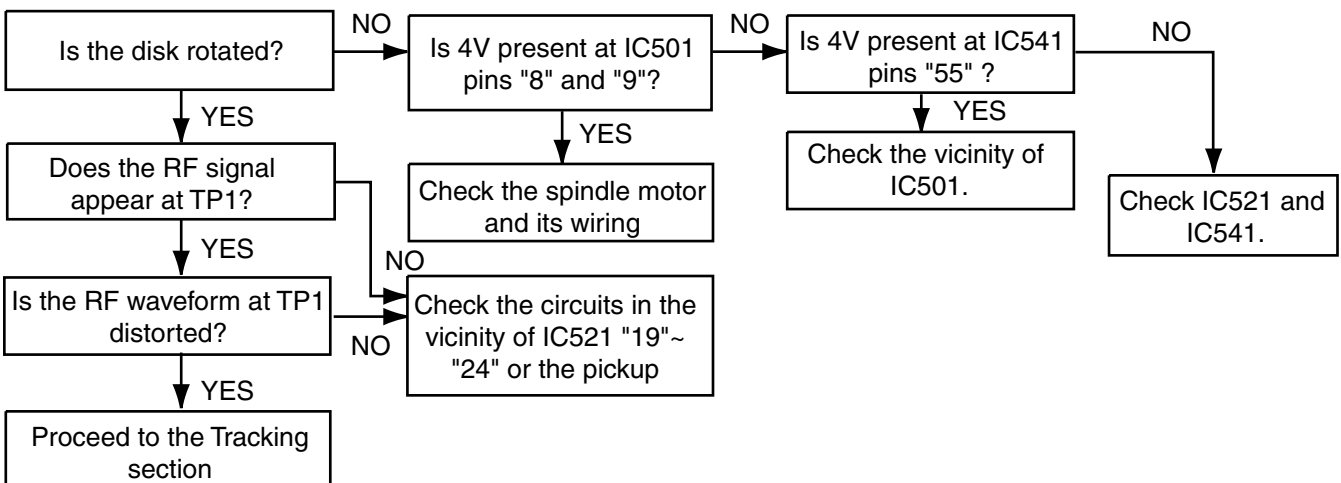
■ **Feed section**



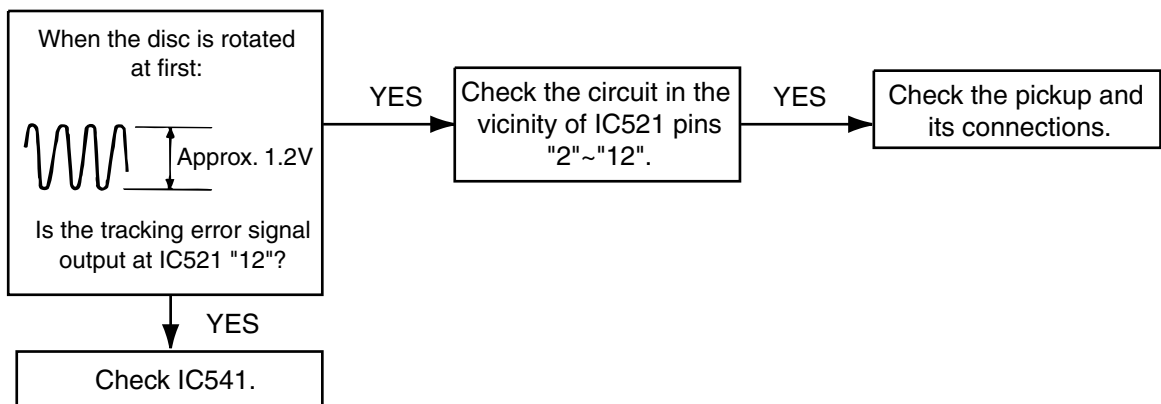
■ **Focus section**



■ **Spindle section**

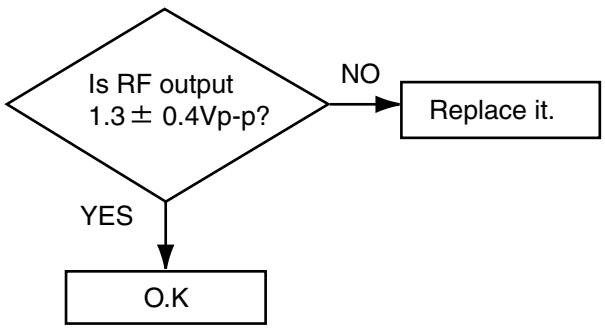


■ **Tracking section**



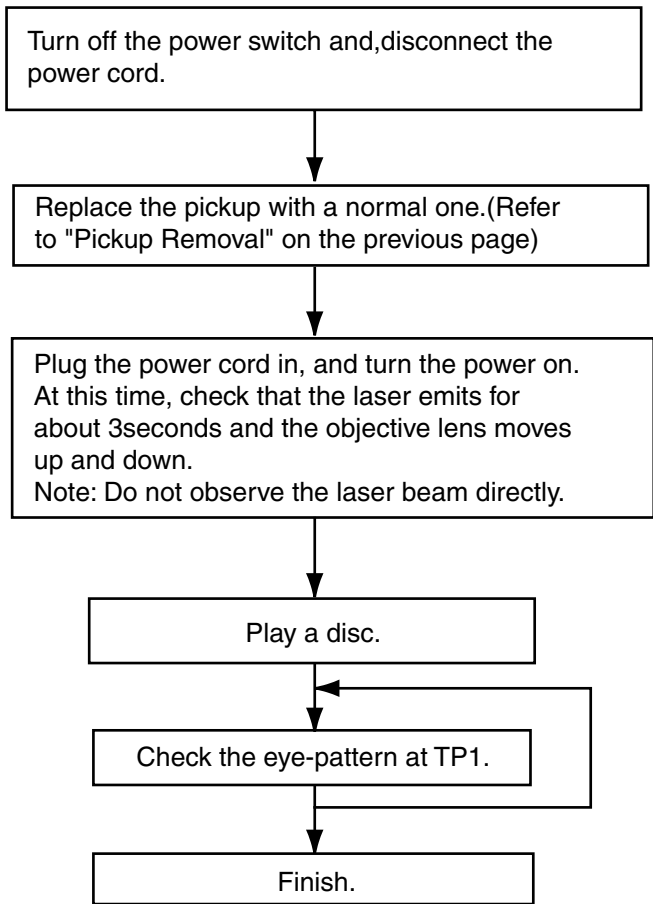
Maintenance of laser pickup

- (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 be low.



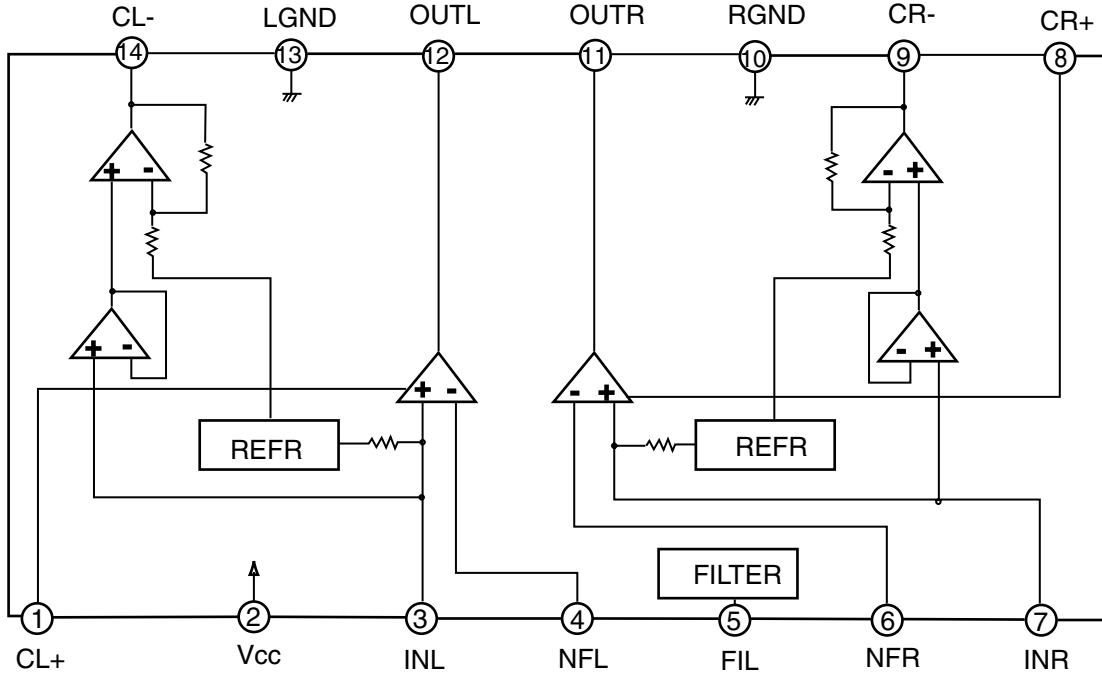
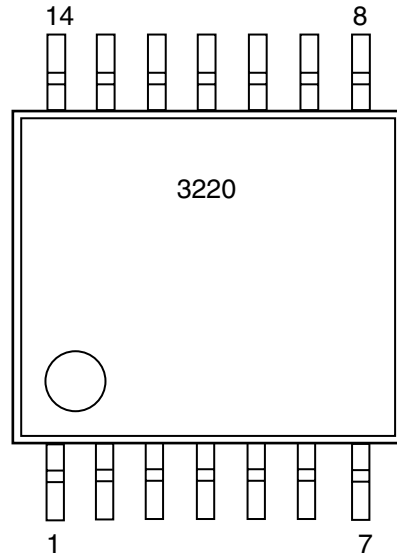
- (3) Semi-fixed resistor on the APC PC board
 The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power. Since this adjustment should be performed to match the characteristics of the whole optical block, do not touch the semi-fixed resistor.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

Replacement of laser pickup



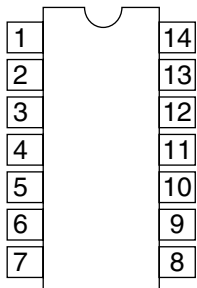
Description of major ICs

■ BA3220FV-X(IC341/IC441) : Line Out Amp



■ HD74HC126FP-X (IC771) : Buffer

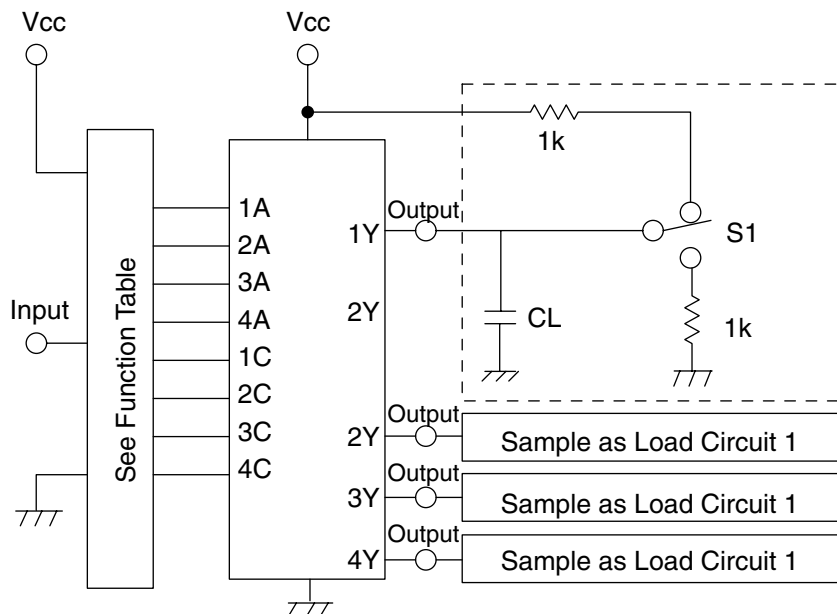
1. Terminal layout



3. Pin function

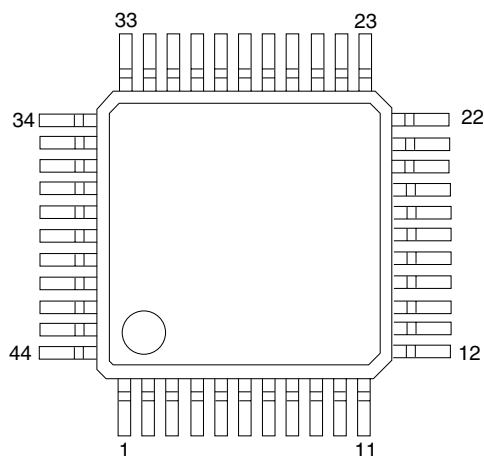
Input		Outout
C	A	Y
L	X	Z
H	L	H
H	H	L

2. Block diagram



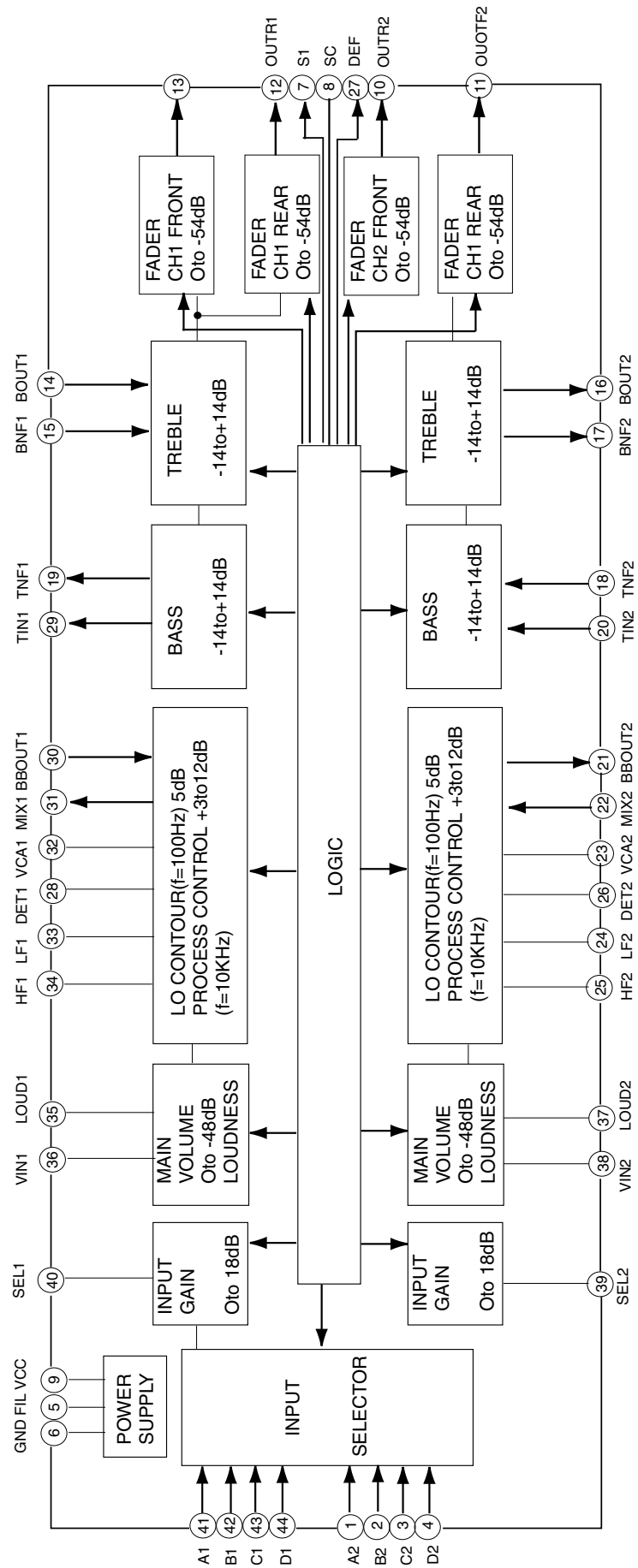
■ **BD3860K (IC301): Audio sound processor**

1. Terminal layout



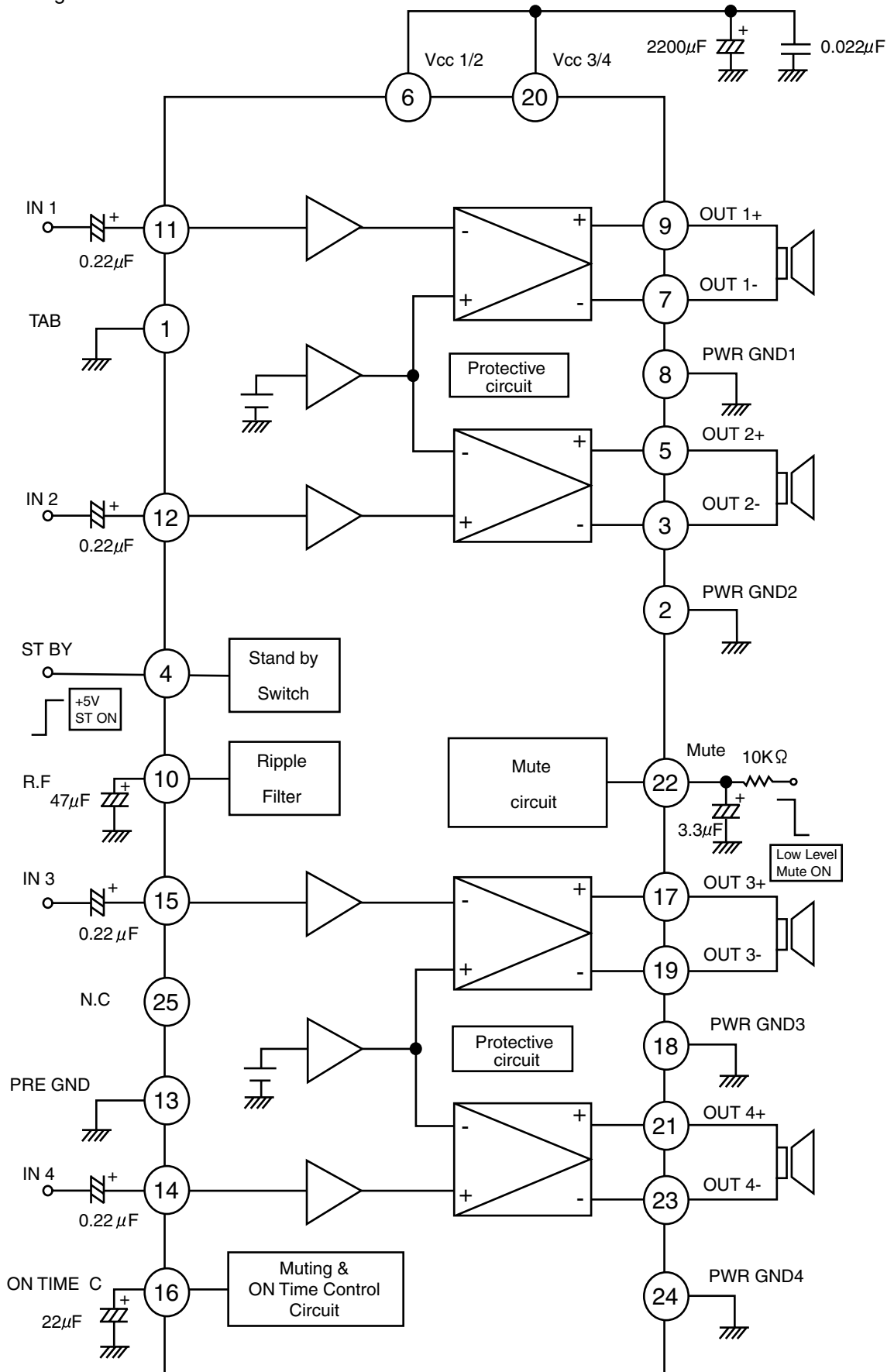
3. Pin function

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

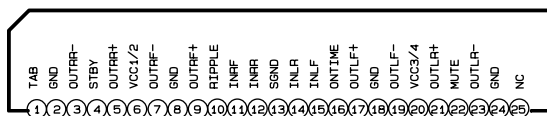


■ **LA4743K(IC351):Power AMP**

1. Block diagram



2. Terminal layout

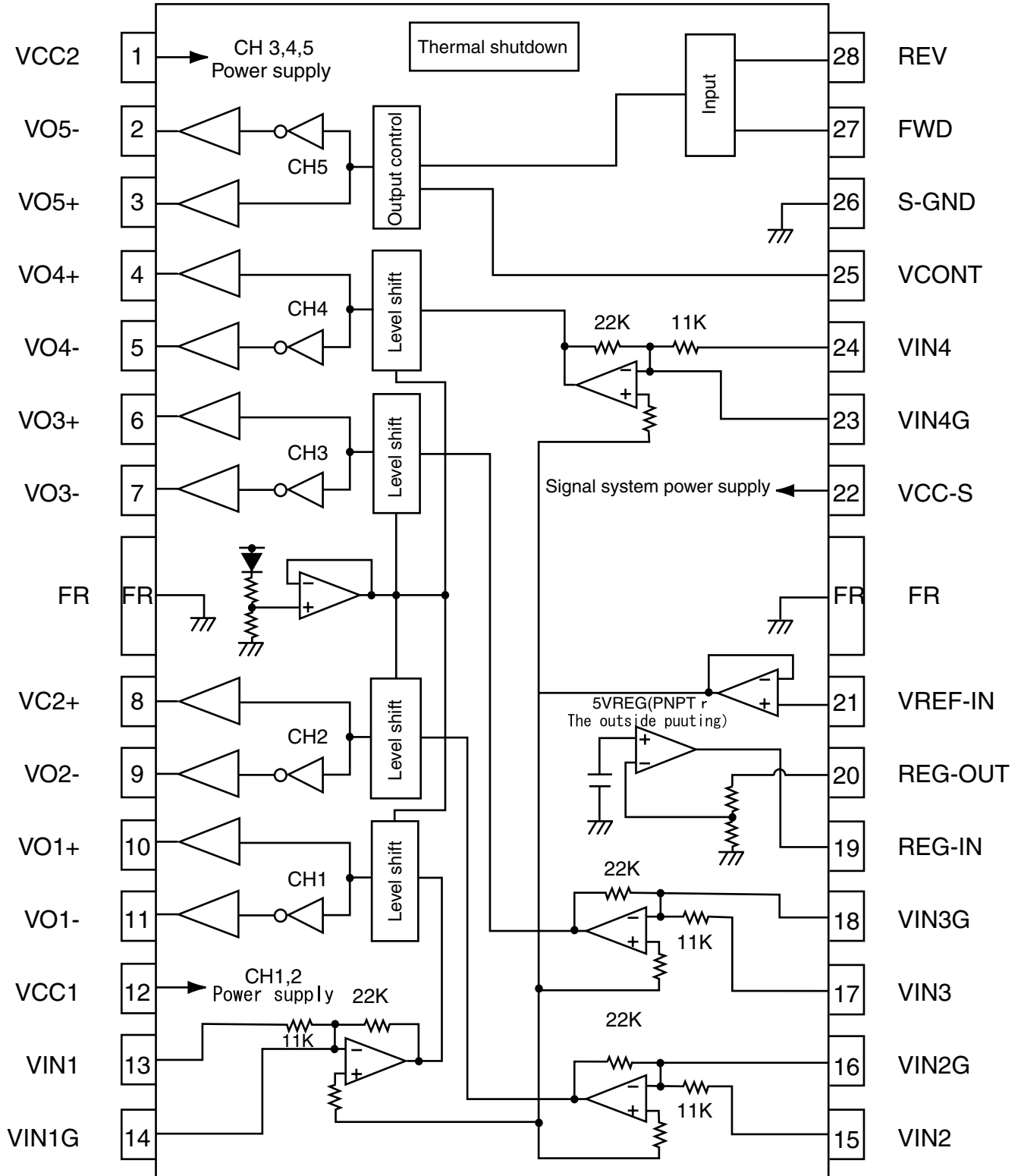


3. Pin function

Pin No.	Symbol	Function
1	TAB	Header of IC
2	GND	Power GND
3	OUTRR-	Output (-) for front Rch
4	STBY	Stand by input
5	OUTRR+	Output (+) for front Rch
6	VCC1/2	Power input
7	OUTRF-	Output (-) for rear Rch
8	GND	Power GND
9	OUTRF+	Output (+) for rear Rch
10	RIPPLE	Ripple filter
11	INRF	Rear Rch input
12	INRR	Front Rch input
13	SGND	Signal GND
14	INLR	Front Lch input
15	INLF	Rear Lch input
16	ONTIME	Power on time control
17	OUTLF+	Output (+) for rear Lch
18	GND	Power GND
19	OUTLF-	Output (-) for rear Lch
20	VCC3/4	Power input
21	OUTLR+	Output (+) for front
22	MUTE	Muting control input
23	OUTLR-	Output (-) for front
24	GND	Power GND
25	NC	Non connection

■ LA6567H-X(IC581):CD DRIVE

1.Pin layout & blockdiagram



2. Pin function

LA6567H-X(2/2)

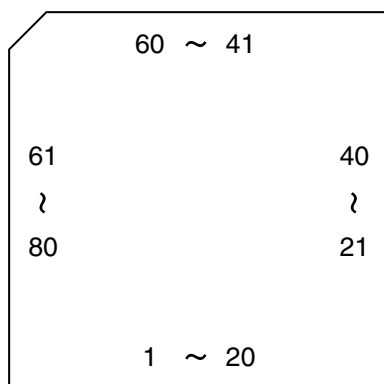
Pin no.	Symbol	Function
1	VCC2	CH3,4,5 Power supply(It is short with VCC1,VCC-S)
2	VO5-	Loading output(-)
3	VO5+	Loading terminal (+)
4	VO4+	CH4 Output terminal(+)
5	VO4-	CH4 Output terminal(-)
6	VO3+	CH3 Output terminal(+)
7	VO3-	CH3 Output terminal(-)
8	VO2+	CH2 Output terminal(+)
9	VO2-	CH2 Output terminal(-)
10	VO1+	CH1 Output terminal(+)
11	VO1-	CH1 Output terminal(-)
12	VCC1	CH1,2(BTL) Power supply(It is short with VCC-S,VCC2)
13	VIN1	CH1 Input terminal
14	VIN1G	CH1 Input terminal(For gain adjustment)
15	VIN2	CH2 Input terminal
16	VIN2G	CH2 Input terminal(For gain adjustment)
17	VIN3	CH3 Input terminal
18	VIN3G	CH3 Input terminal(For gain adjustment)
19	REG-IN	Regulator terminal(Outside putting PNP base)
20	REG-OUT	Regulator terminal(Outside putting PNP collector)
21	VREF-IN	Standard voltage input terminal
22	VCC-S	Signal system power supply(It is short with VCC1,VCC2)
23	VIN4G	CH4 Input terminal(For gain adjustment)
24	VIN4	CH4 Input terminal
25	VCONT	5CH(VLO) Output voltag set terminal
26	S-GND	Signal system GND
27	FWD	5CH(VLO)Signal output switch terminal(FWD),Input of logic of loading part 5CH(VLO)Signal output switch terminal(REV),
28	REV	Input of logic of loading part

* Frame(FR)at the center bocomes system GND power.

* Please be short-circuited on the outside and use the terminal of the power supply system and three teminals of VCC-S, VCC1,VCC2.

■ LC75873NW (IC601) : LCD Driver

1. Terminal layout

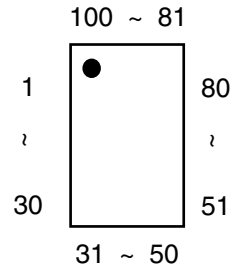


2. Pin function

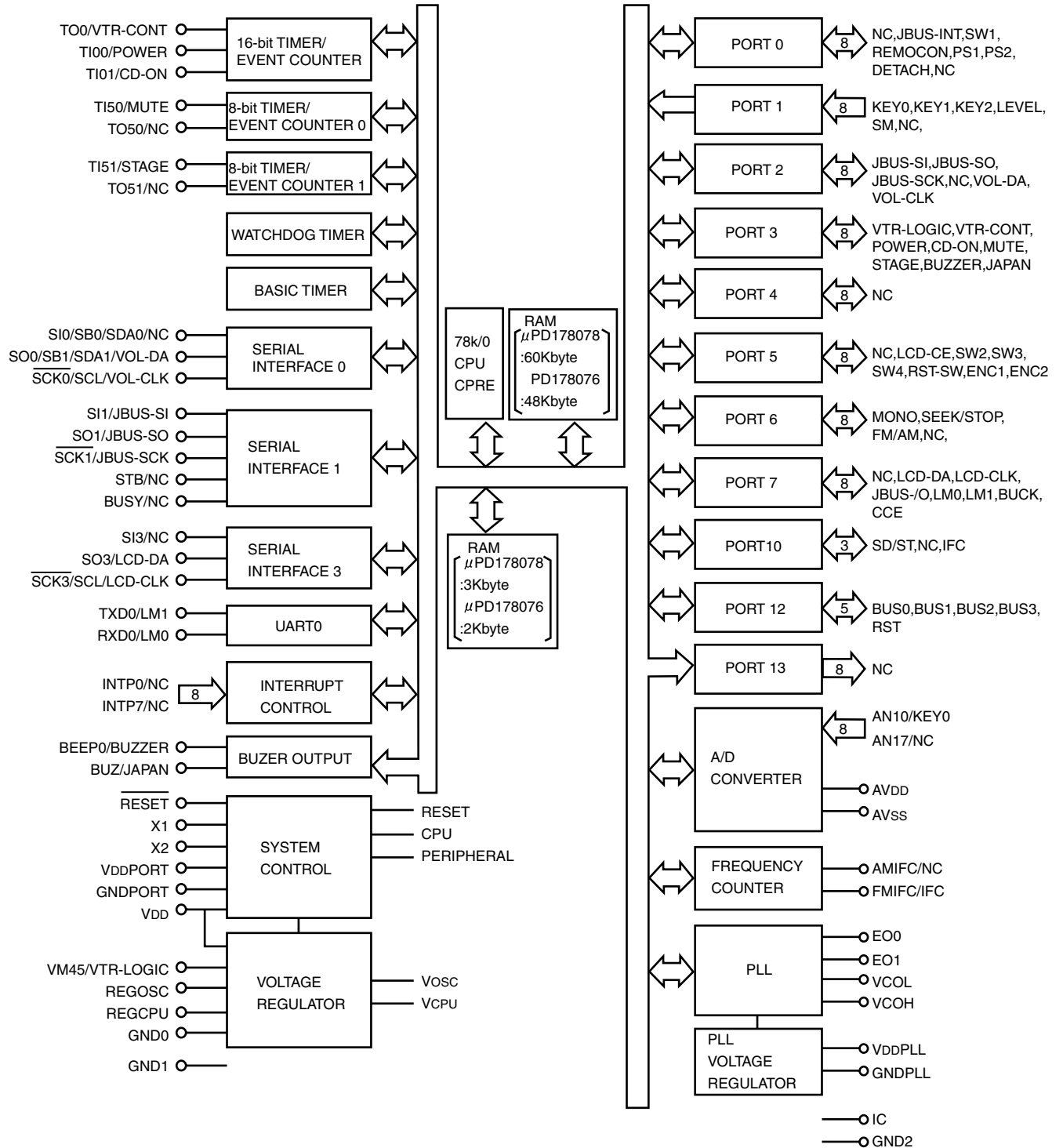
Pin No.	Symbol	I/O	Function
1~58	SEG3~SEG60	O	Segment outputs
59~66	—	—	Non connection
67~69	COM1~COM3	O	Common driver outputs
70	VDD	—	Power supply terminal
71	VDD1	I	LCD drive bias 2/3 voltage input
72	VDD2	I	LCD drive bias 1/3 voltage input
73	VSS	—	Power supply termina
74	OSC	I/O	Comected to oscilator
75	INH	I	Display off input
76	CE2	I	Serial data transfer:Chip enable
77	CL	I	Serial data transfer:Sync.clock
78	DI	I	Serial data transfer:data
79,80	SEG1,SEG2	O	Segment outputs

■ UPD178078GF-543 (IC701): SYSTEM CPU

1. Terminal layout



2. Block diagram



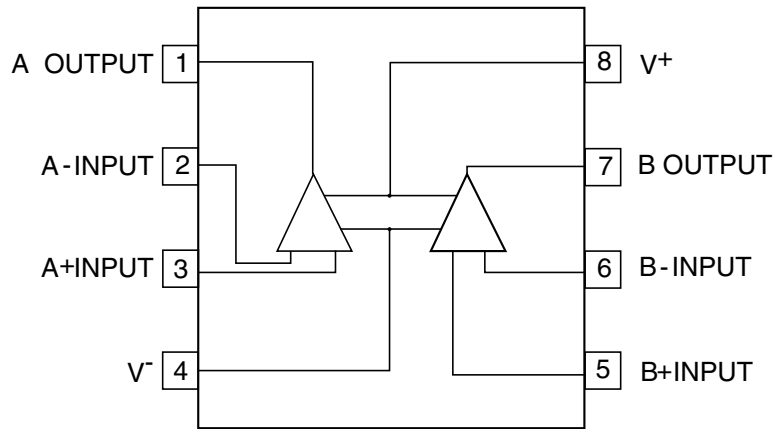
3.Pin function

UPD178078GF(1/2)

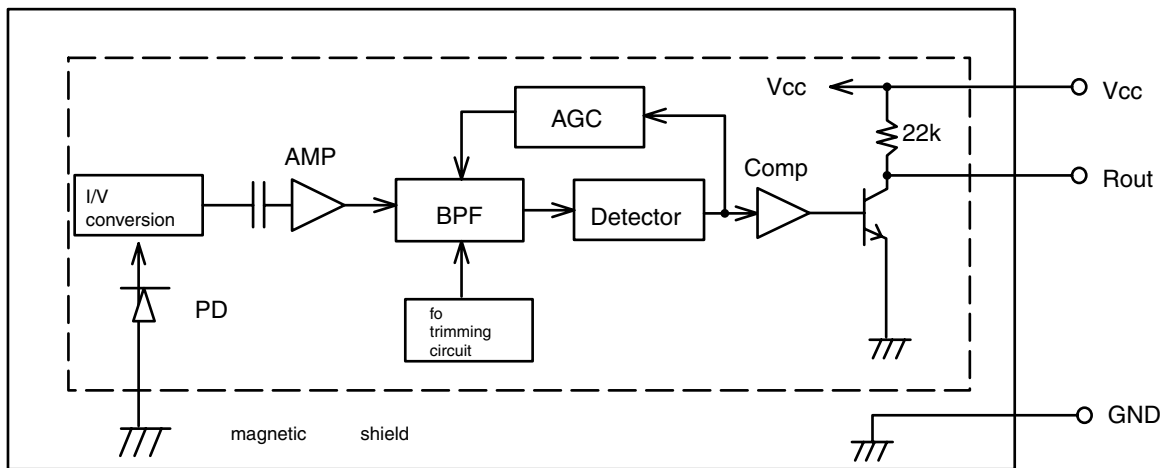
Pin NO.	Symbol	I/O	FUNCTION
1	NC	-	Non connection
2	JBUS-INT	I	JVC BUS COMMUNICATION LINE
3	JBUS-SI	I	JVC BUS COMMUNICATION LINE
4	JBUS-SO	O	JVC BUS COMMUNICATION LINE
5	JBUS-SCK	O	JVC BUS COMMUNICATION LINE
6	NC	-	Non connection
7	NC	-	Non connection
8	NC	-	Non connection
9	VOL-DA	O	VOL IC COMMUNICATION LINE
10	VOL-CLK	O	VOL IC COMMUNICATION LINE
11	NC	-	Non connection
12	LCD-DA	O	CD DRIVER COMMUNICATION LINE
13	LCD-CLK	O	LCD DRIVER COMMUNICATION LINE
14	JBUS-I/O	O	JVC BUS OUTPUT SELECT
15	NC	-	Non connection
16	LCD-CE	O	LCD DRIVER COMMUNICATION LINE
17	SW2	I	CD MECHA SW
18	SW3	I	CD MECHA SW
19	SW4	I	CD MECHA SW
20	RST-SW	I	TRAVERSE MECHA REST SW
21	ENC1	I	ENCODER INPUT
22	ENC2	I	ENCORDER INPUT
23	KEY0	I	KEY INPUT
24	KEY1	I	KEY INPUT
25	KEY2	I	KEY INPUT
26	LEVEL	I	AUDIO LEVEL INPUT
27	AVDD	-	-
28	SM	I	SIGNAL LEVEL METER INPUT
29	OPEN	I	DOOR OPEN DATECTION
30	NC	-	Non connection
31	NC	-	-
32	AVSS	-	-
33	REGCPU	-	-
34	VDD	-	-
35	REGOSC	-	SYSTEM CLOCK
36	X2	I	SYSTEM CLOCK
37	X1	-	-
38	GND0	I	STATION DETECTOR & STEREO IND.
39	SD/ST	-	-
40	GND2	-	Non connection
41	NC	I	IF COUNT INPUT
42	IFC	-	-
43	VDDPLL	I	FM,AM OSC INPUT
44	OSC-INPUT	-	Non connection
45	NC	-	-
46	GNDPLL	O	PLL ERROR OUTPUT FOR AM
47	AME0	O	PLL ERROR OUTPUT FOR FM
48	FME0	-	SETTING TO WRITE FOR FLASH
49	ICVPP	I	SYSTEM RESET
50	RESET		

Pin NO.	Symbol	I/O	FUNCTION
51	SW1	I	CD MECHA SW
52	REMOCON	I	REMOCON INPUT
53	VTR-LOGIC	-	Non connection
54	VTR-CONT	-	Non connection
55	POWER	O	POWER CONT.
56	CD-ON	O	CD POWER CONT.
57	MUTE	O	MUTE CONT
58	NC	-	Non connection
59	BUZZER	I	BEEP FOR SW OPERATION
60	NC	-	Non connection
61	NC	-	Non connection
62	NC	-	Non connection
63	NC	-	Non connection
64	NC	-	Non connection
65	NC	-	Non connection
66	NC	-	Non connection
67	NC	-	Non connection
68	NC	-	Non connection
69	LM0	O	CD MECHA DRIVER CONT.
70	LM1	O	CD MECHA DRIVER CONT.
71	BUCK	O	CD LSI COMMUNICATION LINE
72	CCE	O	CD LSI COMMUNICATION LINE
73	BUS0	I/O	CD LSI COMMUNICATION LINE
74	BUS1	I/O	CD LSI COMMUNICATION LINE
75	BUS2	I/O	CD LSI COMMUNICATION LINE
76	BUS3	I/O	CD LSI COMMUNICATION LINE
77	RST	O	CD LSI COMMUNICATION LINE
78	PS1	I	ACC DETECTION INPUT
79	PS2	I	MEMORY DETECTION
80	DETACH	I	DETACH DETECTION
81	NC	-	Non connection
82	GND1	-	MONO BY FORCE
83	MONO	O	SWITCHING SEEK & STOP
84	SEEK/STOP	O	BAND SW
85	FM/AM	O	OUTPUT L
86	DIMIN	-	ILM CONTROL
87	ANT	-	ANT COTROL
88	TEL MUTE	-	TEL MUTE IN
89	STAGE1	-	Non connection
90	STAGE2	-	Non connection
91	NC	-	Non connection
92	NC	-	Non connection
93	NC	-	Non connection
94	NC	-	Non connection
95	NC	-	Non connection
96	NC	-	Non connection
97	NC	-	Non connection
98	DIMMER	-	DIMMER CONTROL
99	VDDPORT	-	-
100	GNDPORT	-	-

■ NJM4565M-WE (IC111) : Ope. amp

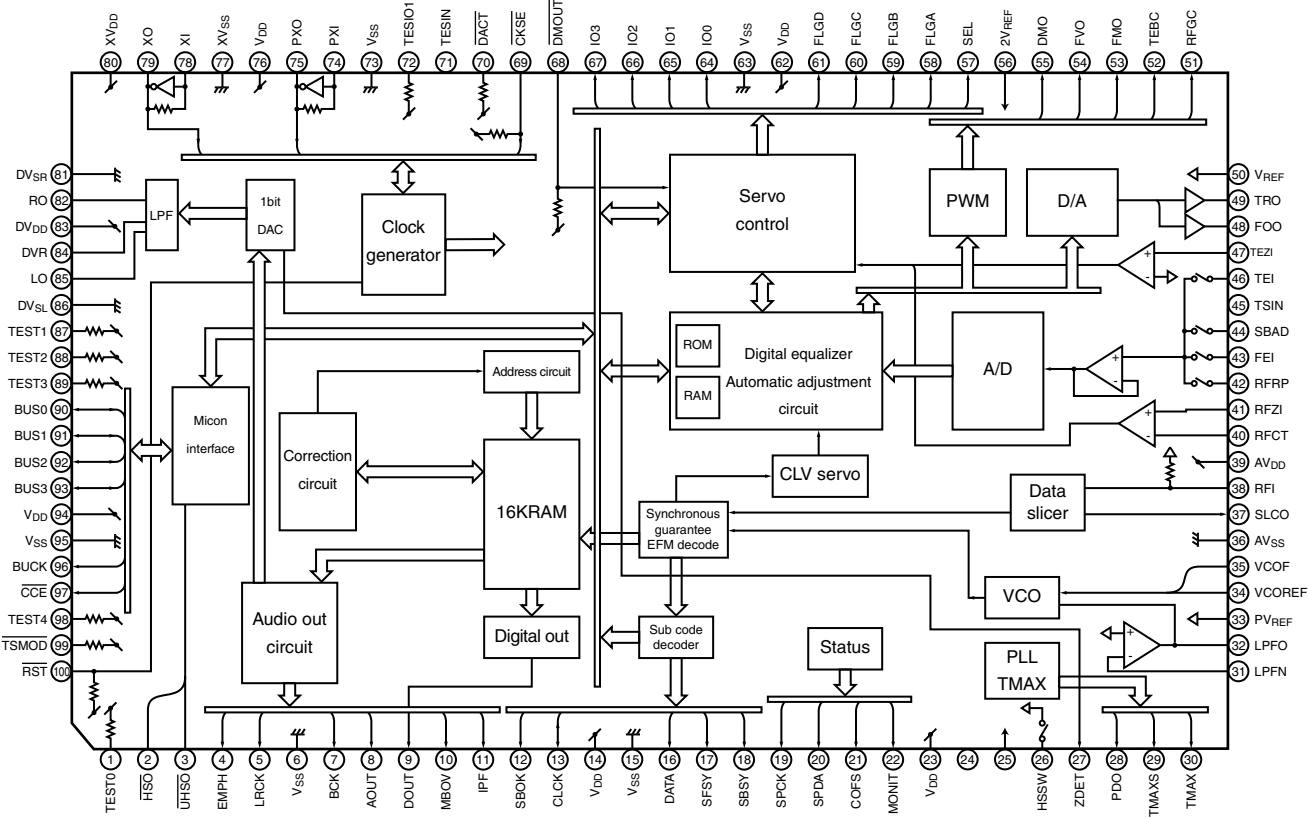


■ RPM6938-SV4(IC602) : Remote Sensor



TC9462F(IC521) : DSP&DAC

1.Pin layout & Block Diagram



2.Pin function

PIN No.	SYMBOL	I/O	FUNCTIONAL DESCRIPTION	REMARKS															
1	TEST0	I	Test mode terminal. Normally, Keep at open.	With pull-up resistor.															
2	H \overline{S} O	O	Playback speed mode flag output terminal. <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>U\overline{H}S\overline{O}</th> <th>H\overline{S}O</th> <th>PLAYBACK SPEED</th> </tr> </thead> <tbody> <tr> <td>H</td> <td>H</td> <td>Normal</td> </tr> <tr> <td>H</td> <td>L</td> <td>2 times</td> </tr> <tr> <td>L</td> <td>H</td> <td>4 times</td> </tr> <tr> <td>L</td> <td>L</td> <td>--</td> </tr> </tbody> </table>	U \overline{H} S \overline{O}	H \overline{S} O	PLAYBACK SPEED	H	H	Normal	H	L	2 times	L	H	4 times	L	L	--	--
U \overline{H} S \overline{O}	H \overline{S} O	PLAYBACK SPEED																	
H	H	Normal																	
H	L	2 times																	
L	H	4 times																	
L	L	--																	
3	U \overline{H} S \overline{O}	O																	
4	EMPH	O	Subcode Q data emphasis flag output terminal. Emphasis ON at "H" level and OFF at "L" level. The output polarity can invert by command.	--															
5	LRCK	O	Channel clock output terminal. (44.1kHz) L-ch at "L" level and R-ch at "H" level. the output polarity can invert by command.	--															
6	VSS	--	Digital GND terminal.	--															
7	BCK	O	Bit clock output terminal. (1.4122MHz)	--															
8	AOUT	O	Audio data output terminal.	--															
9	DOUT	O	Digital data output terminal.	--															
10	MBOV	O	Buffer memory over signal output terminal. Over at "H" level.	--															
11	IPF	O	Correction flag output terminal. At "H" level, AOUT output is made to correction impossibility by C2 correction processing.	--															
12	SBOK	O	Subcode Q data CRCC check adjusting result output terminal. The adjusting result is OK at "H" level.	--															
13	CLCK	I/O	Subcode P~W data reabout clock input/output terminal. This terminal can select by command bit.	--															
14	VDD	--	Digital power supply voltage terminal.	--															
15	VSS	--	Digital GND terminal.	--															
16	DATA	O	Subcode P~W data output terminal.	--															
17	SFSY	O	Play-back frame sync signal output terminal.	--															
18	SBSY	O	Subcode block sync signal output terminal.	--															
19	SPCK	O	Processor status signal reabout clock output terminal.	--															
20	SADA	O	Processor status signal output terminal.	--															
21	COFS	O	Correction frame clock output terminal. (7.35kHz)	--															
22	MONIT	O	Internal signal (DSP internal flag and PLL clock) output terminal. Selected by command. This terminal output the text data with serial by command.	--															
23	VDD	--	Digital power supply voltage terminal.	--															
24	TESIO0	I	Test input/output terminal. Normally, keep at "L" level. The terminal that inputted the clock for read of text data by command.	--															
25	P2VREF	--	PLL double reference voltage supply terminal.																
26	HSSW	O	2/8 times speed at "VREF" voltage.	2-state output. (PVREF, Hiz)															
27	ZDET	O	1bit DA converter zero detect flag output terminal.																
28	PDO	O	Phase difference signal output terminal of EFM signal and PLCK signal.	3-state output. (P2VREF, PVREF, VSS)															
29	TMAXS	O	TMAX detection result output terminal. Selected by command bit (TMPS).	3-state output. (P2VREF, PVREF, VSS)															
30	TMAX	O	TMAX detection result output terminal. Selected by command bit (TMPS). <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>DIFFERENCE RESULT</th> <th>TMAX OUTPUT</th> </tr> </thead> <tbody> <tr> <td>Longer than fixed freq.</td> <td>"P2VREF"</td> </tr> <tr> <td>Shorter than fixed freq.</td> <td>"VSS"</td> </tr> <tr> <td>Within the fixed freq.</td> <td>"Hiz"</td> </tr> </tbody> </table>	DIFFERENCE RESULT	TMAX OUTPUT	Longer than fixed freq.	"P2VREF"	Shorter than fixed freq.	"VSS"	Within the fixed freq.	"Hiz"	3-state output. (P2VREF, Hiz, VSS)							
DIFFERENCE RESULT	TMAX OUTPUT																		
Longer than fixed freq.	"P2VREF"																		
Shorter than fixed freq.	"VSS"																		
Within the fixed freq.	"Hiz"																		
31	LPFN	I	LPF amplifier inverting input terminal for PLL.	Analog input.															
32	LPFO	O	LPF amplifier output terminal for PLL.	Analog output.															
33	PVREF	--	PLL reference voltage supply terminal.	--															
34	VCORE	I	VCO center frequency reference level terminal. Normally, keep at "PVREF" level.	--															
35	VCOF	O	VCO filter terminal.	Analog output.															
36	AVSS	--	Analog GND terminal.	--															
37	SLCO	O	Data slice level output terminal.	Analog output.															
38	RFI	I	RF signal input terminal.	Analog input. (Zin: selected by command)															
39	AVDD	--	Analog power supply voltage terminal.	Analog output.															
40	RFCT	I	RFRP signal center level input terminal.	Analog output. (Zin: 50k)															
41	RFZI	I	RFRP zero cross input terminal.	Analog input.															
42	RFRP	I	RF ripple signal input terminal.	Analog input.															
43	FEI	I	Focus error signal input terminal.	Analog input.															

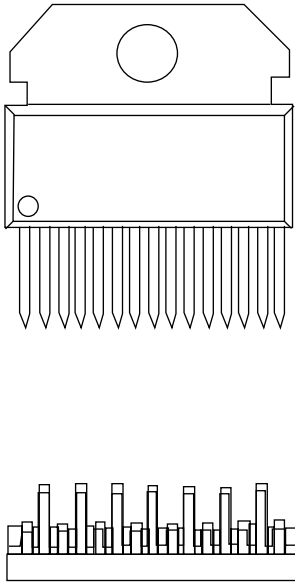
2.Pin Function

TC9462F(2/2)

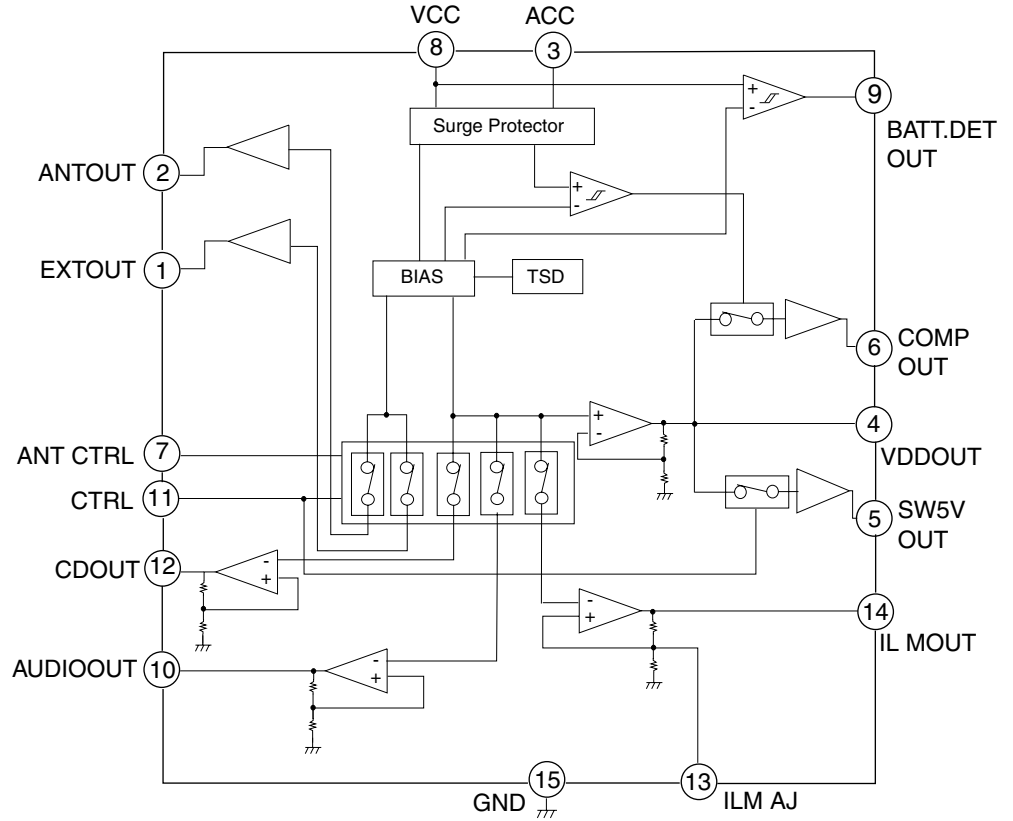
Pin No.	Symbol	I/O	Function	Remarks
44	SBAD	I	Sub-beam adder signal input terminal	Analog input.
45	TSIN	I	Test input terminal Normally, keep at "vref" level	Analog input.
46	TEI	I	Tracking error signal input terminal. Take in at tracking servo ON.	Analog input.
47	TEZI	I	Tracking error zero cross input terminal	Analog input.(Zin:10k)
48	FOO	O	Focus servo equalizer output terminal	Analog output (2VREF~AVSS)
49	TRO	O	Tracking servo equalizer output terminal	3-state PWM signal output. 2VREF.VREF.VSS (PWM carrier=88.2kHz)
50	VREF	-	Analog reference voltage supply terminal	
51	RFGC	O	RF amplitude adjustment control signal output terminal	
52	TEBC	O	Tracking balance control signal output terminal	
53	FMO	O	Feed equalizer output terminal	
54	FVO	O	Speed error signal or feed search equalizer output terminal	
55	DMO	O	Disk equalizer output terminal (PWM carrier=88.2kHz for DSP, Synchronize to PXO)	3-state output (2VREF.VREF.VSS)
56	2VREF	-	Analog double reference voltage supply terminal	--
57	SEL	O	APC circuit ON/OFF indication signal output terminal	--
58~61	FLGA~D	O	External flag output terminal for internal signal	--
62	VDD	-	Digital power supply voltage terminal	--
63	VSS	-	Digital GND terminal	--
64~67	IO0~3	I/O	General I/O terminal	--
68	DMOUT	I	This terminal control IO0~IO3 terminal	With pull-up resistor.
69	CKSE	I	Normally, keep at open	With pull-up resistor.
70	DACT	I	DAC test mode terminal. Normally, keep at open	With pull-up resistor.
71	TESIN	I	Test input terminal, Normally, keep at "L" level	Analog input.
72	TESIO1	I	Test input/output terminal. Normally, keep at "L" level	Analog input.
73	VSS	-	Digital GND terminal	--
74	PXI	I	Crystal oscillator connecting input terminal for DSP	--
75	PXO	O	Crystal oscillator connecting output terminal for DSP	--
76	VDD	-	Digital power supply voltage terminal	--
77	XVSS	-	Oscillator GND terminal for system clock	--
78	XI	I	Crystal oscillator connecting input terminal for system clock	--
79	XO	O	Crystal oscillator connecting output terminal for system clock	--
80	XVDD	-	Oscillator power supply voltage terminal for system clock	--
81	DVSR	-	Analog GND terminal for DA converter (Rch)	--
82	RO	O	R channel data forward output terminal	--
83	DVDD	-	Analog supply voltage terminal for DA converter	--
84	DVR	-	Reference voltage terminal for DA converter	--
85	LO	O	L channel data forward output terminal	--
86	DVSL	-	Analog GND terminal for DA converter (Lch)	--
87~89	TEST1~3	I	Test mode terminal . Normal keep at open	With pull-up resistor.
90~93	BUS0~3	I/O	Micon interface data input/output terminal	Schmit input. With pull-up resistor.
94	VDD	-	Digital power supply voltage terminal	--
95	VSS	-	Digital GND terminal	--
96	BUCK	I	Micon interface clock input terminal	Schmit input.
97	CCE	I	Command and data sending/receiving chip enable signal input terminal	Schmit input.
98	TEST4	I	Test mode terminal. Normal, keep at open	With pull-up resistor.
99	TSMOD	I	Local test mode selection terminal	With pull-up resistor.
100	RST	I	Reset signal input terminal. Reset at "L" level	With pull-up resistor.

■HA13164A (IC961) : Regulator

1. Pin layout



2. Block diagram



HA13164 (IC901)
 Regulator


Pin No.	Symbol	I/O	Function
1	EXT OUT	O	Output voltage is VCC-1V controlled by CTRL pin (M or H).
2	ANT OUT	O	Output voltage is VCC-1V controlled by CTRL (M or H) and ANT-CTRL(H).
3	ACCIN	I	Connected to ACC.
4	VDD OUT	O	Regulated 5.7V output.
5	SW 5VOUT	O	Output voltage is 5V controlled by CTRL pin (M or H).
6	COMPOUT	O	Output for ACC detector.
7	ANT CTRL	I	L: ANT output off, H: ANT output on.
8	VCC	-	Connected to VCC.
9	BATT DET	I	Low battery detect.
10	AUDIO OUT	O	Output voltage is 9V controlled by CTRL pin (M or H).
11	CTRL	I	L: Bias off, M: Bias on, H: CD on.
12	CD OUT	O	Output voltage is 8V controlled by CTRL pin (H).
13	ILM AJ	I	ILM output voltage adjust.
14	ILM OUT	O	Output voltage is 10V controlled by CTRL pin (H).
15	GND	-	Connected to GND.

KD-SX870
KD-SX770

JVC

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