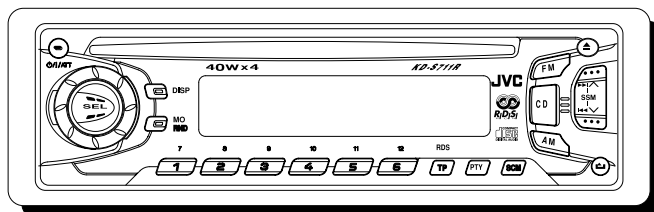
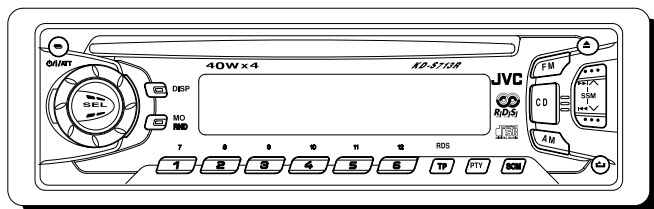
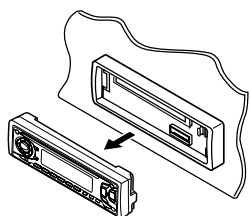


JVC

SERVICE MANUAL

CD RECEIVER

KD-S713R / KD-S711R



Area Suffix
E Continental Europe




Difference piont	LCD back light	Control buttons	SCM buttons
KD-S713R	AMBER	AMBER	GREEN
KD-S711R	GREEN	GREEN	RED

Contents

- Safety preccaution 1-2
- Preventing static electricity 1-3
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- Adjustment method 1-9
- Flow of functional operation
 - until TOC read 1-10
- Maintenance of laser pickup 1-11
- Replacement of laser pickup 1-11
- Description of major ICs 1-12~25

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

1. Grounding to prevent damage by static electricity

Electrostatic discharge (ESD), which occurs when static electricity stored in the body, fabric, etc. is discharged, can destroy the laser diode in the traverse unit (optical pickup). Take care to prevent this when performing repairs.

2. About the earth processing for the destruction prevention by static electricity

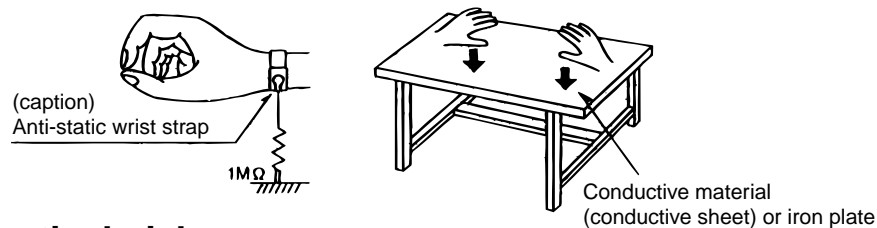
Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as CD players. Be careful to use proper grounding in the area where repairs are being performed.

2-1 Ground the workbench

Ground the workbench by laying conductive material (such as a conductive sheet) or an iron plate over it before placing the traverse unit (optical pickup) on it.

2-2 Ground yourself

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



3. Handling the optical pickup

1. In order to maintain quality during transport and before installation, both sides of the laser diode on the replacement optical pickup are shorted. After replacement, return the shorted parts to their original condition. (Refer to the text.)
2. Do not use a tester to check the condition of the laser diode in the optical pickup. The tester's internal power source can easily destroy the laser diode.

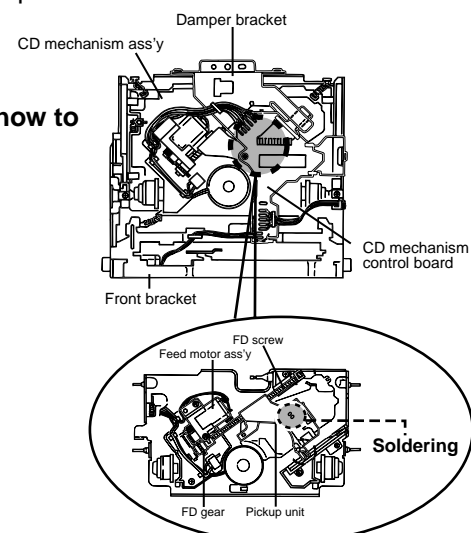
4. Handling the traverse unit (optical pickup)

1. Do not subject the traverse unit (optical pickup) to strong shocks, as it is a sensitive, complex unit.
2. 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

Attention when traverse unit is decomposed

***Please refer to "Disassembly method" in the text for pick-up and how to detach the substrate.**

1. Solder is put up before the card wire is removed from connector on the CD substrate as shown in Figure.
(When the wire is removed without putting up solder, the CD pick-up assembly might destroy.)
2. Please remove solder after connecting the card wire with when you install picking up in the substrate.



Disassembly method

■ Removing the front chassis (See Fig.1)

1. 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.

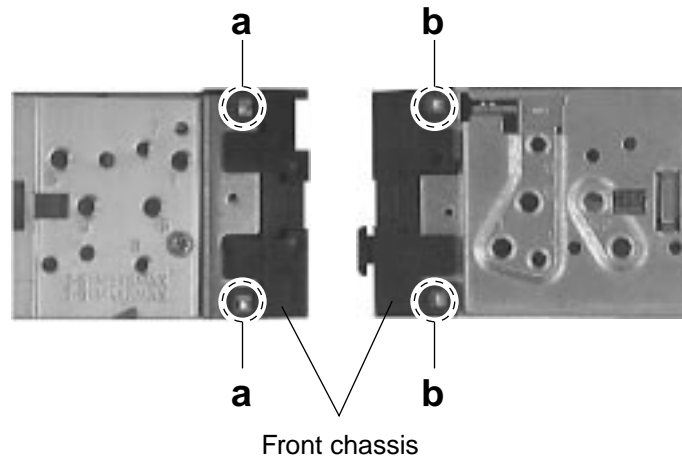


Fig. 1

■ Removing the heat sink (See Fig.2)

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

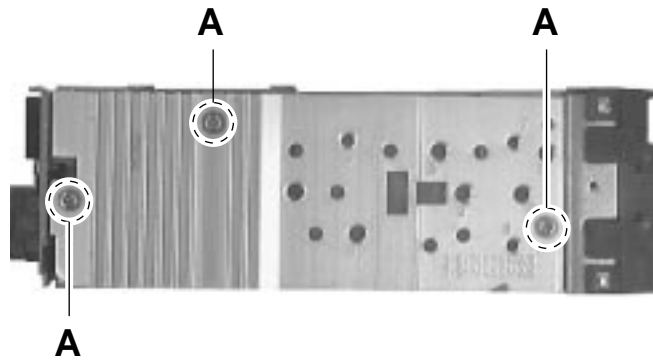


Fig. 2

■ 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 the both sides of the body and the joint **e** on the back of the body, then detach the bottom cover from the body.

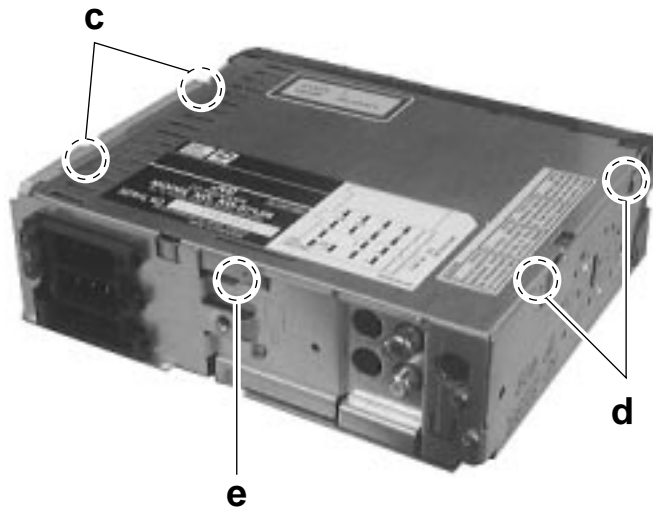


Fig. 3

■ Removing the main board
(See Fig.4 and 5)

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

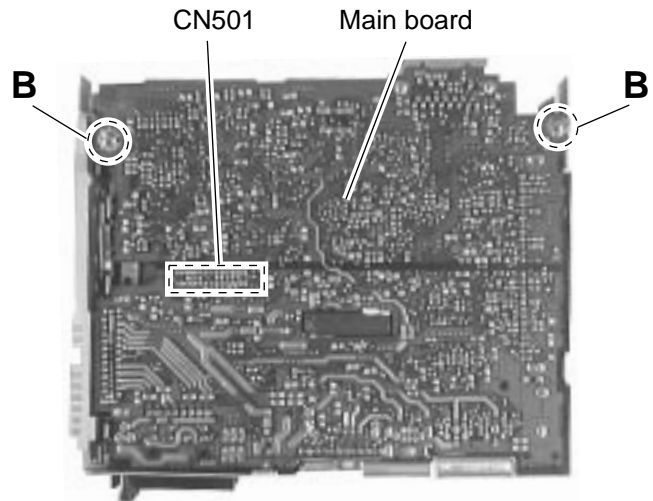


Fig. 4

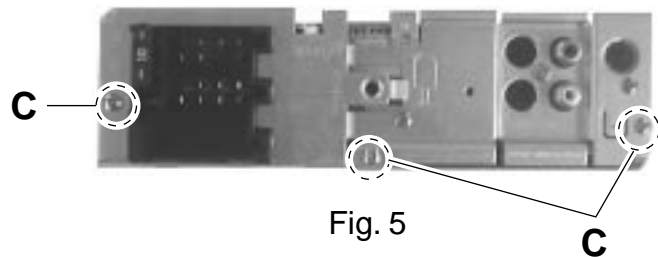


Fig. 5

■ Removing the CD mechanism assembly
(See Fig.6)

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

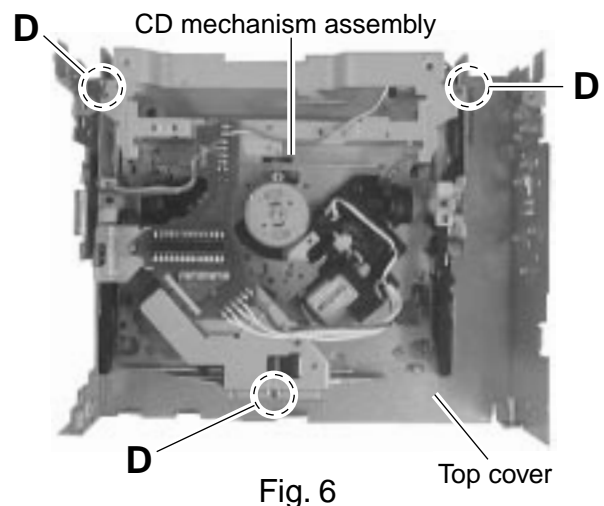


Fig. 6

■ Removing the front board
(See Fig.7 and 8)

- 1.Remove the front chassis.
- 2.Remove the four screws **E** attaching the rear cover on the back of the front panel unit.
- 3.Remove the front board from the front panel unit.



Fig. 7



Fig. 8

<CD mechanism section>

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

1. Unsolder the part **a** and **b** on the CD mechanism control board.
2. Remove the stator fixing the CD mechanism control board and the damper bracket (To remove the stator smoothly, pick up the center part).
3. Remove the screw **A** attaching the CD mechanism control board.
4. Remove the CD mechanism control board in the direction of the arrow while releasing it from the two damper bracket slots **d** and the front bracket slot **e**.
5. Disconnect the flexible wire from connector on the pickup unit.

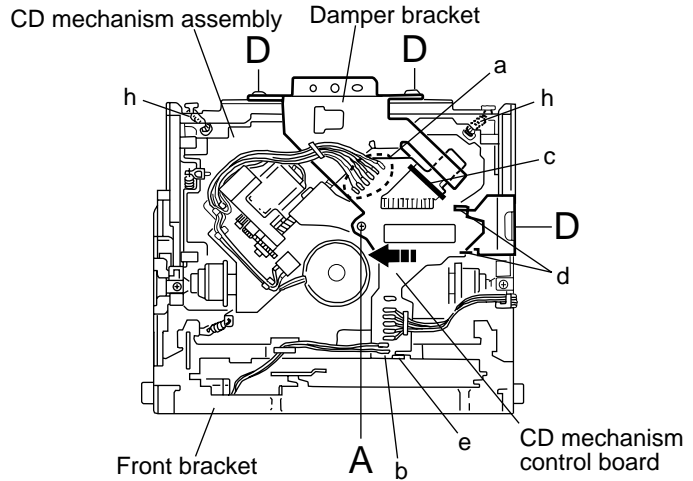


Fig.1

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)

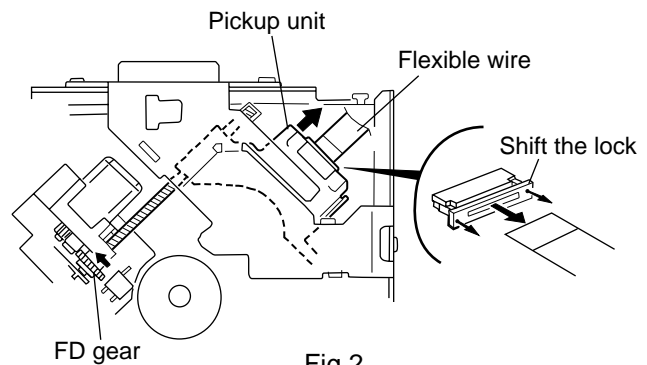


Fig.2

■ 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 **f** attaching the CD mechanism assembly and the front bracket.
 2. Remove the two screws **B** and the front bracket while pulling the flame outward.
 3. Remove the belt and the screw **C** from the loading motor.

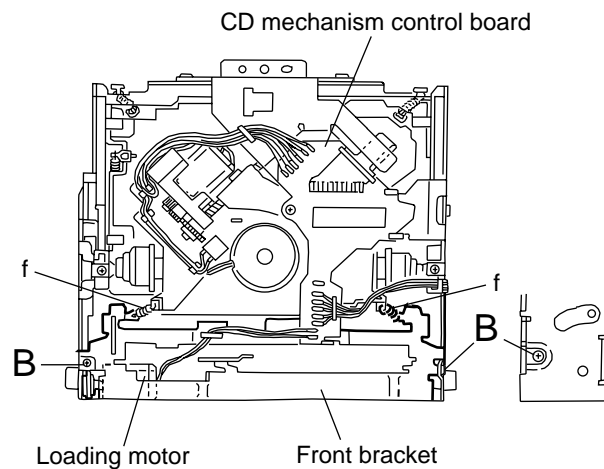


Fig.3

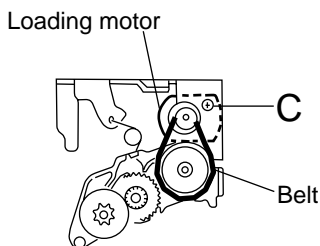


Fig.5

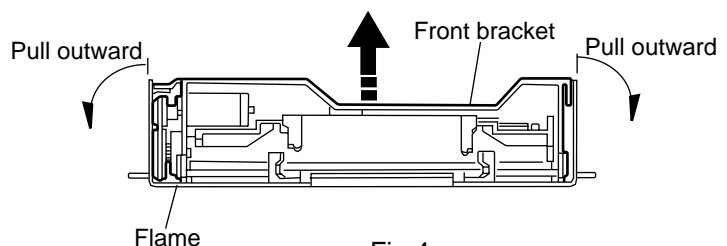


Fig.4

**■ Removing the CD mechanism assembly
(See Fig.1, 6 to 9)**

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

1. Remove the three screws **D** 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 **g** as shown in Fig.8 and 9.
3. Remove the CD mechanism assembly and the two springs **h** attaching the flame.
4. Remove the two screws **E** and both sides rear damper brackets from the dampers. Detach the CD mechanism assembly from the left side to the right side.

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

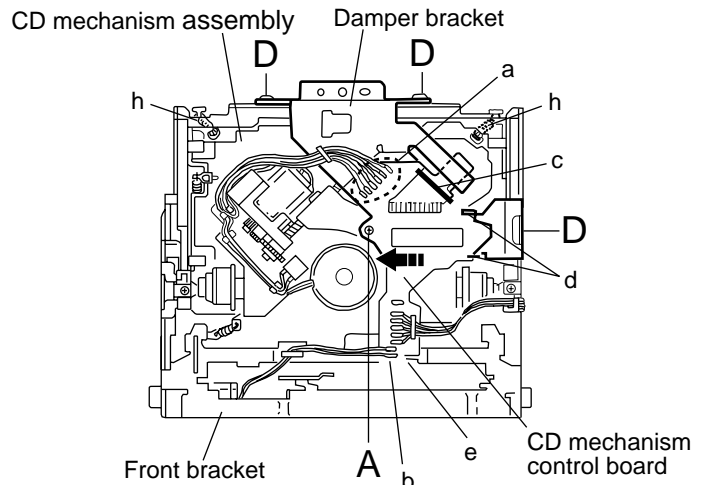


Fig.1

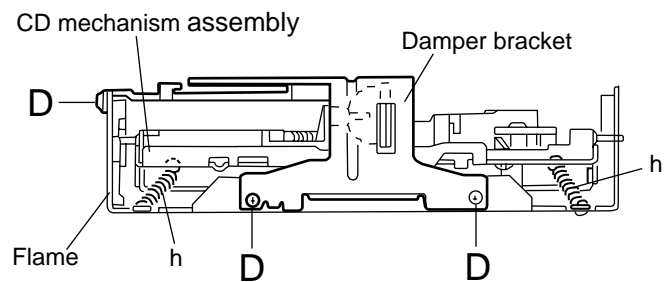


Fig.6

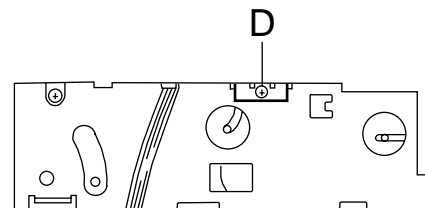


Fig.7

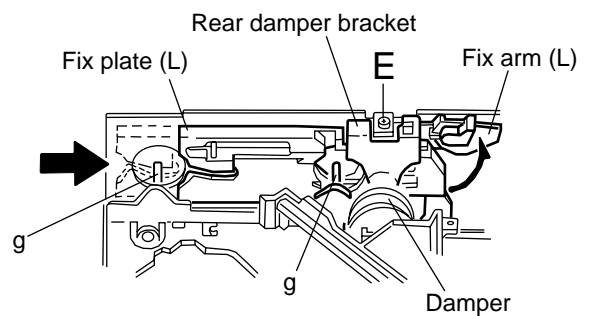


Fig.8

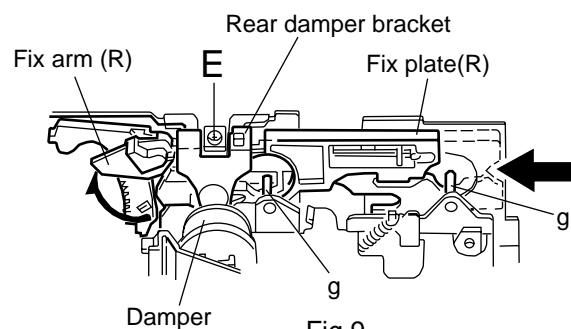


Fig.9

■ Removing the feed motor assembly
(See Fig.10)

- Prior to performing the following procedure, remove the CD mechanism control board, the front bracket (loading motor) and the CD mechanism assembly.
1. Remove the two screws **F** and the feed motor assembly.

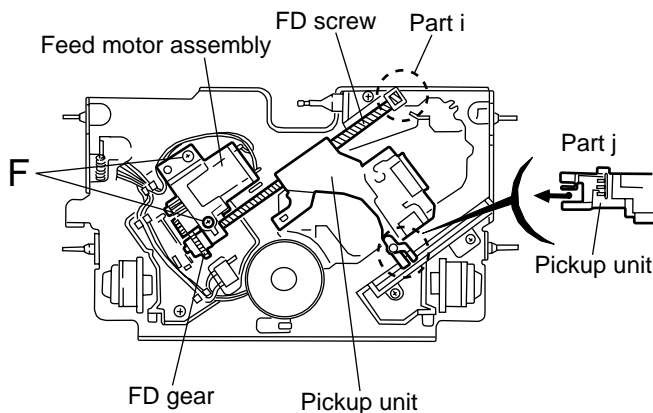


Fig.10

■ 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 assembly and the feed motor assembly.
1. Detach the FD gear part of the pickup unit upward. Then remove the pickup unit while pulling out the part i of the FD screw.

ATTENTION: When reattaching the pickup unit, reattach the part j of the pickup unit, then the part i of the FD screw.

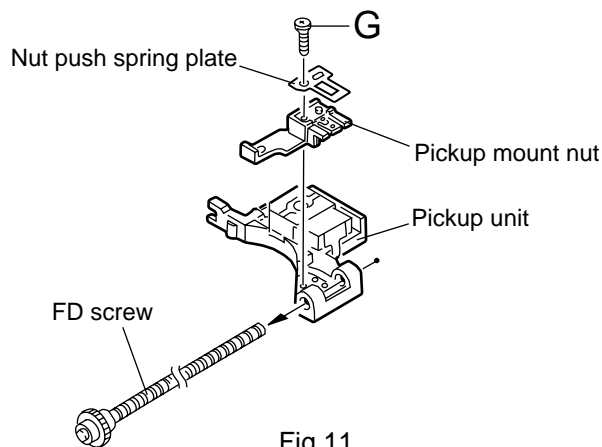


Fig.11

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

■ 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 assembly and the feed motor assembly.

1. Turn up the CD mechanism assembly and remove the two springs **k** on both sides of the clamber arms. Open the clamber arm upward.
2. Turn the turn table, and remove the two screws **H** and the spindle motor.

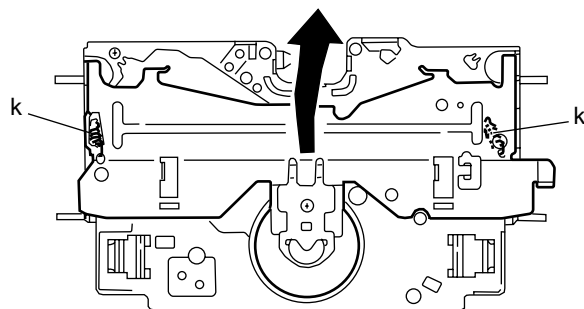


Fig.12

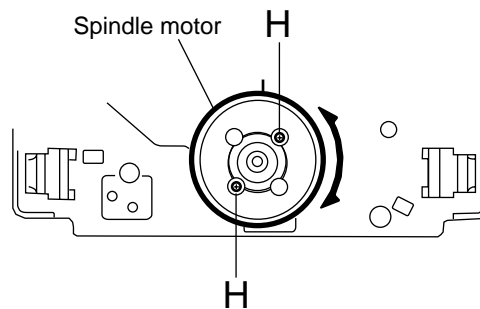


Fig.13

Adjustment method

■ Test instruments required for 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 × 1

■ Standard volume position

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

■ Frequency Band

FM 87.5MHz ~ 108.0MHz
MW 144kHz ~ 279kHz, 520kHz ~ 1620 kHz

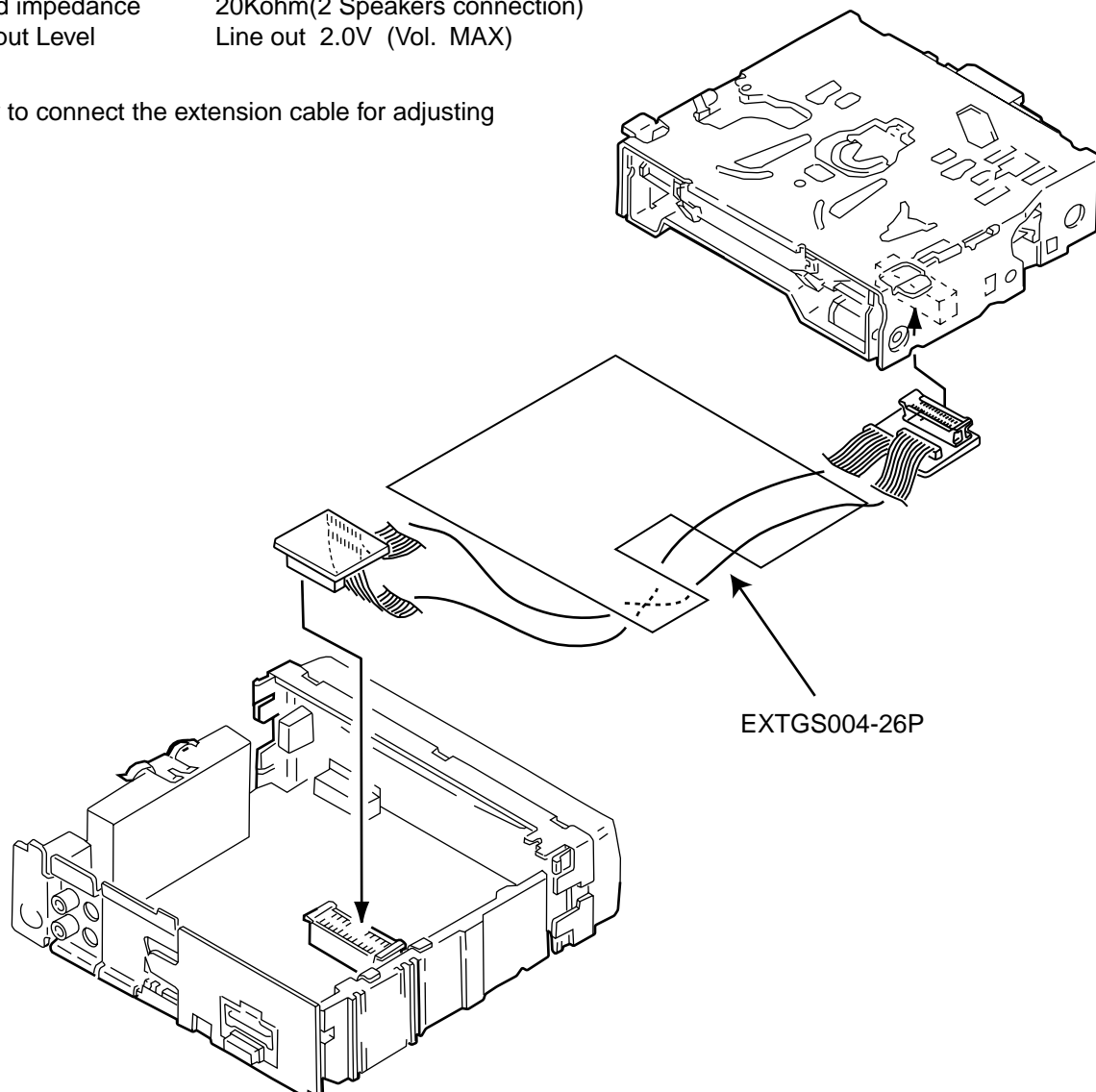
■ Dummy load

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.

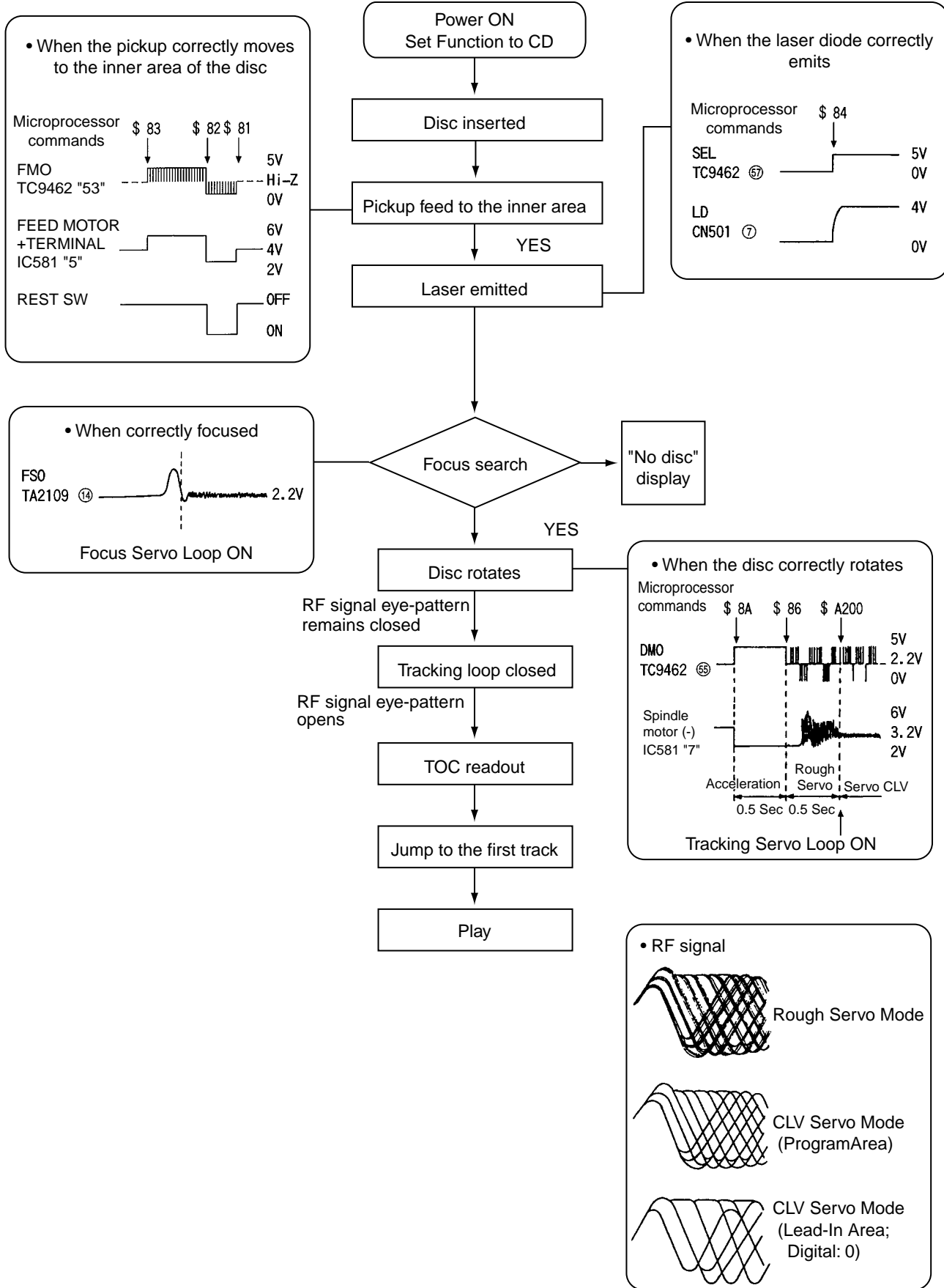
■ Standard measuring conditions

Power supply voltage DC14.4V(10.5~16V)
Load impedance 20Kohm(2 Speakers connection)
Output Level Line out 2.0V (Vol. MAX)

■ How to connect the extension cable for adjusting

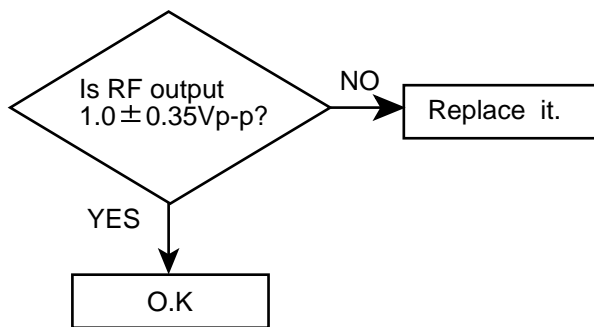


Flow of functional operation until TOC read



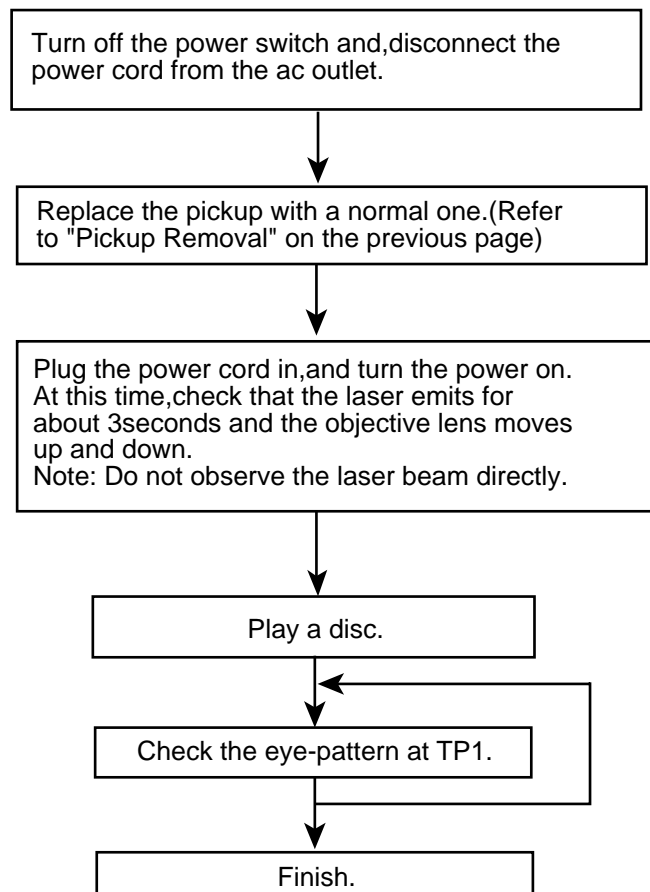
Maintenance of laser pickup

- (1) Cleaning the pick up lens
Before you replace the pick up, please try to clean the lens with a alcohol soaked cotton swab.
- (2) Life of the laser diode
When the life of the laser diode has expired, the following symptoms will appear.
 - (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.

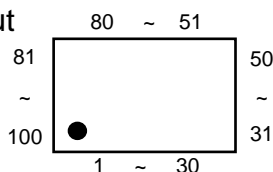
Replacement of laser pickup



Description of major ICs

■ UPD178078GF-540 (IC701) : System CPU

1.Pin layout



2.Pin function (1/2)

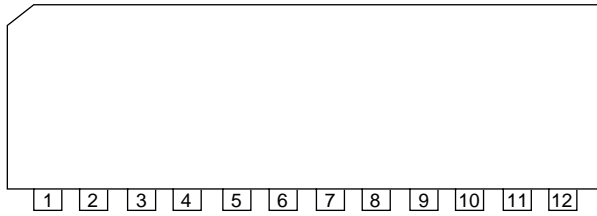
Pin NO.	Symbol	I/O	FUNCTION
1	NC	-	Non connection
2	BUSINT	I	JVC bus communication line
3	BUSSI	I	JVC bus communication line
4	BUSO	O	JVC bus communication line
5	JBUS-SCK	O	JVC bus communication line
6,7	NC	-	Non connection
8	I2CDAI	I	Serial data input
9	I2CDAO	O	Serial data output
10	I2CCLK	O	Serial clock output
11	NC	-	Non connection
12	LCDDA	O	LCD driver serial data output
13	LCDSCK	O	LCD driver serial clock output
14	BUSI/O	O	JVC bus output select
15	NC	-	Non connection
16	LCDCE	O	LCD driver communication line
17	SW2	I	CD mech switch
18	SW3	I	CD mech switch
19	SW4	I	CD mech switch
20	RSTSW	I	Traverse mech rest switch
21	ENC1	I	Encoder input
22	ENC2	I	Encoder input
23	KEY0	I	Key input
24	KEY1	I	Key input
25	KEY2	I	Key input
26	LEVEL	I	Audio level input
27	AVDD	-	Power supply
28	SM	I	Signal level meter input
29	SQ	I	Signal quality input
30,31	NC	-	Non connection
32	AVSS	-	Connect to GND
33	REGCPU	-	Connect to GND with capacitor
34	VDD	-	Power supply
35	REGOSC	-	Connect to GND with capacitor
36	X2	-	System clock
37	X1	I	System clock
38	GND0	-	Connect to GND
39	SD/ST	I	Station detector & Stereo indicator
40	GND2	-	Connect to GND
41	NC	-	Non connection
42	IFC	I	IF count input
43	VDDPLL	-	---
44	OSC	I	FM,AM osc input
45	NC	-	Non connection

2.Pin function (2/2)

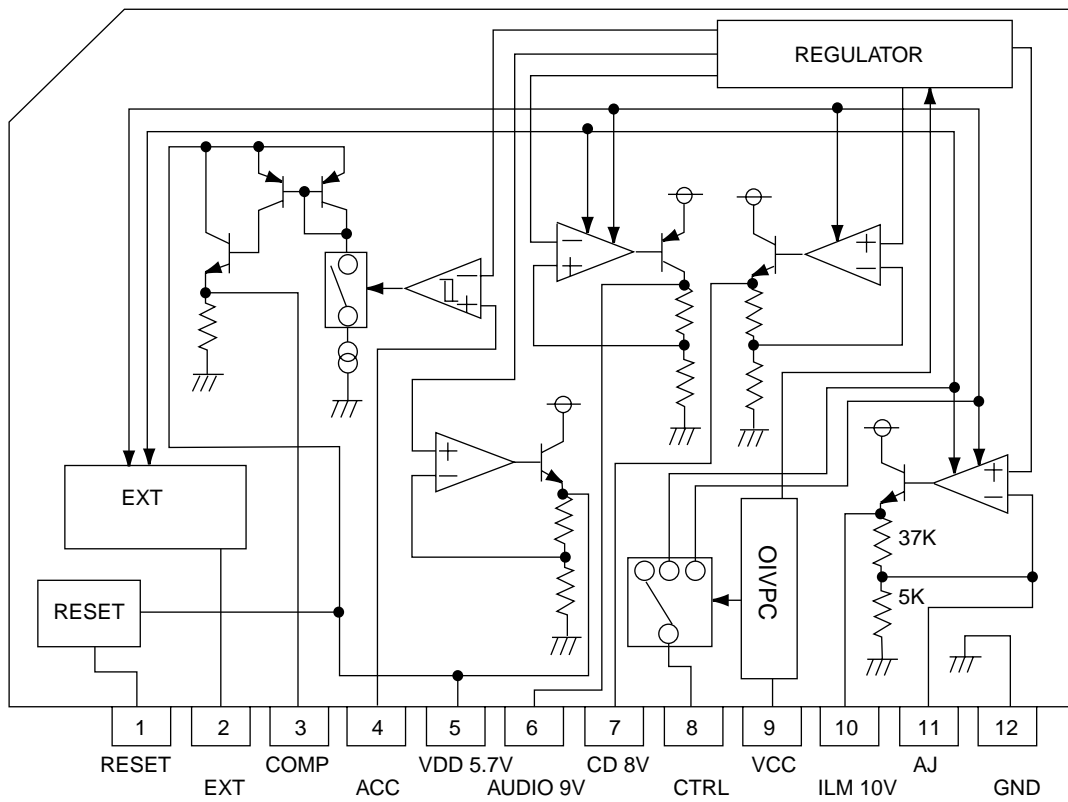
Pin NO.	Symbol	I/O	FUNCTION
46	GNDPLL	-	---
47	AMEQ	O	PLL error output for AM
48	FMEQ	O	PLL error output for FM
49	IC(VPP)	-	Setting to write for flash
50	RESET	I	System reset
51	SW1	I	CD mech switch
52	REMOCON	I	Remocon input
53	NC	-	Non connection
54	TEL_MUTE	O	TEL mute output
55	POWER	O	Power control
56	CDON	O	CD power control
57	MUTE	O	Mute control
58	STAGE 1	-	---
59	BUZZER	-	Non connection
60	STAGE 2	-	---
61~68	NC	-	Non connection
69	LM0	O	CD mech driver control
70	LM1	O	CD mech driver control
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	RDSSCK	I	Clock input for RDS
82	GND1	-	Connect to GND
83	MONO	O	Mono by force
84	SEEK/STOP	O	Switching SEEK & STOP
85	FM/AM	O	Band switch
86	AFCK	O	AFcheck output
87	RDSDATA	I	RDS data input
88	PLLMONITOR	-	Non connection
89~98	NC	-	Non connection
99	VDDPORT	-	Vdd
100	GNDPORT	-	Connect to GND

■ BA4905-V3 (IC961) : Regulator

1. Terminal layout



2. Block diagram



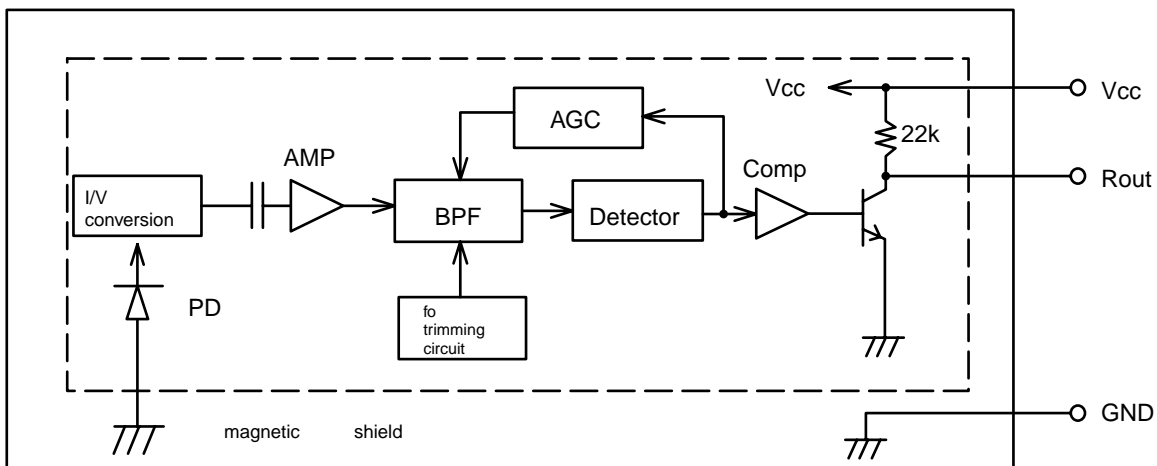
© Explanation of terminals

BA4905-V3

1	RESET	If VDD voltage becomes 4V or less, RESET output becomes low level.
2	EXT output	This outout voltage is approximately 0.5V lower than VCC, and max output current is 300mA.
2	COMP output	A voltage supply for ACC block this outout voltage is approximately 0.7V lower than VDD'S. The max output current is 100mA.
4	ACC	Control of the COMP output by inputting voltage.
5	VDD output	This output voltage is 5.7V, and max output current is 100mA. This voltage supply is for microcomputer. Whenever block up voltage supply is connected. the output keeps on running.
6	AUDIO output	This output voltage is 9.0V, and max output current is 500mA. This voltage supply for AUDIO.
7	CD output	This output voltage is 8.0V, and max output current is 1A. This voltage supply for CD.
8	CTRL	Output selector of CD, AUDIO,ILM and EXT.
9	VCC	To be connected with the BACK UP of car.
10	ILM output	This output voltage is 10V, and max output current is 500mA. Output voltage is adjustable.
11	AJ	Putting a resistance between ILM and AJ or between AJ and GND makes ILM output voltage adjustable.
12	GND	Ground.

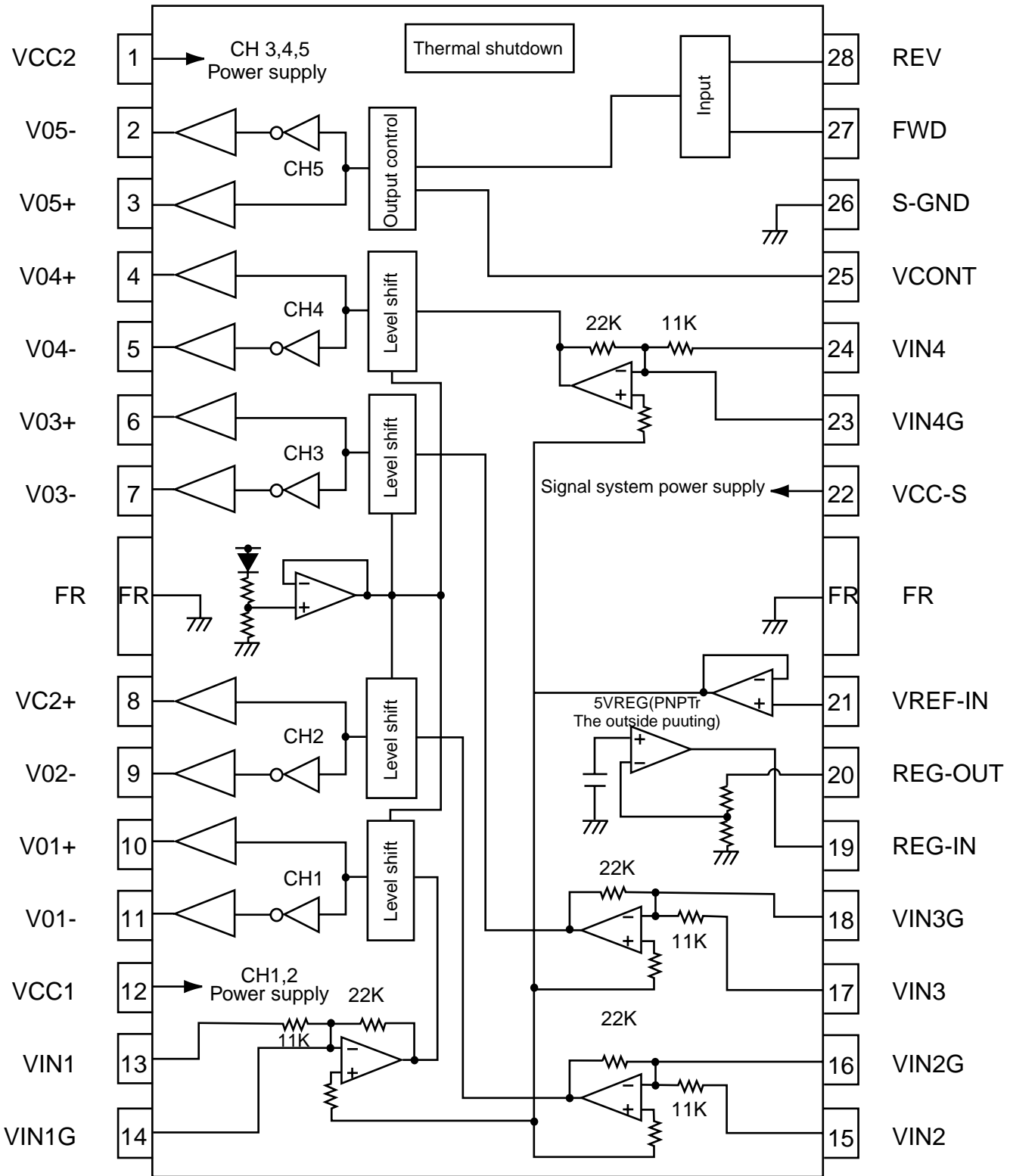
■ RPM6938-SV4(IC602) : Remote Censor

1. Block diagram



■ LA6567H-X(IC501) :CD DRIVE

1.Pin layout & blockdiagram



2. Pin function

LA6567H-X(2/2)

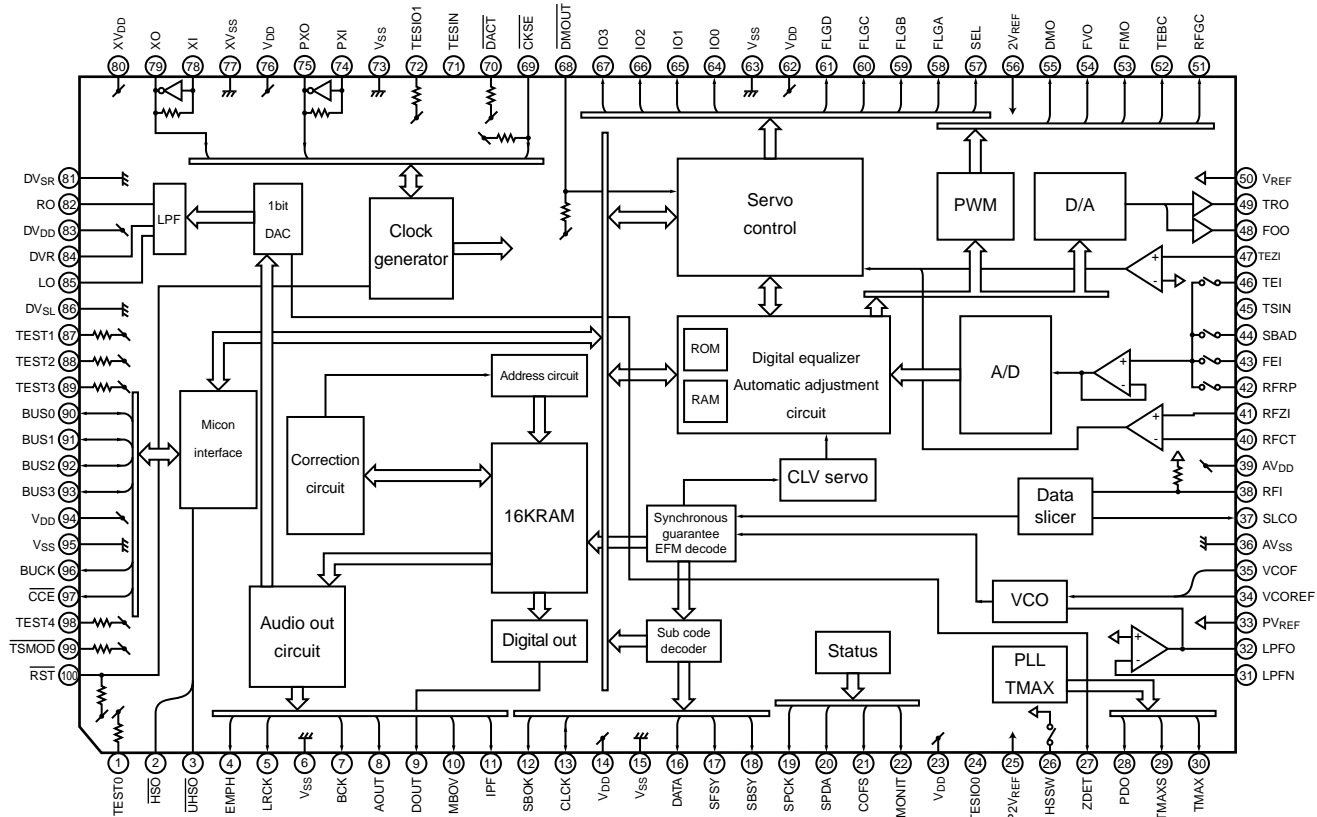
Pin no.	Symbol	Function
1	VCC2	CH3,4,5 Power supply(It is short with VCC1,VCC-S)
2	V05-	Loading output(-)
3	V05+	Loading terminal (+)
4	V04+	CH4 Output terminal(+)
5	V04-	CH4 Output terminal(-)
6	V03+	CH3 Output terminal(+)
7	V03-	CH3 Output terminal(-)
8	V02+	CH2 Output terminal(+)
9	V02-	CH2 Output terminal(-)
10	V01+	CH1 Output terminal(+)
11	V01-	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.

■ TC9462F(IC541) : DSP

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>UHSO</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>	UHSO	H \overline{S} O	PLAYBACK SPEED	H	H	Normal	H	L	2 times	L	H	4 times	L	L	--	--
UHSO	H \overline{S} O	PLAYBACK SPEED																	
H	H	Normal																	
H	L	2 times																	
L	H	4 times																	
L	L	--																	
3	UHSO	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	V \overline{S} S	--	Digital GND terminal.	--															
7	BCK	O	Bit clock output terminal. (1.4122MHz)	--															
8	AOUT	O	Audio data output terminal.	--															
9	DOOUT	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	V \overline{D} D	--	Digital power supply voltage terminal.	--															
15	V \overline{S} S	--	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	V \overline{D} D	--	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.	--															

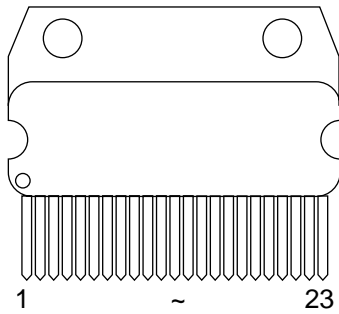
2.Pin Function

TC9462F(2/2)

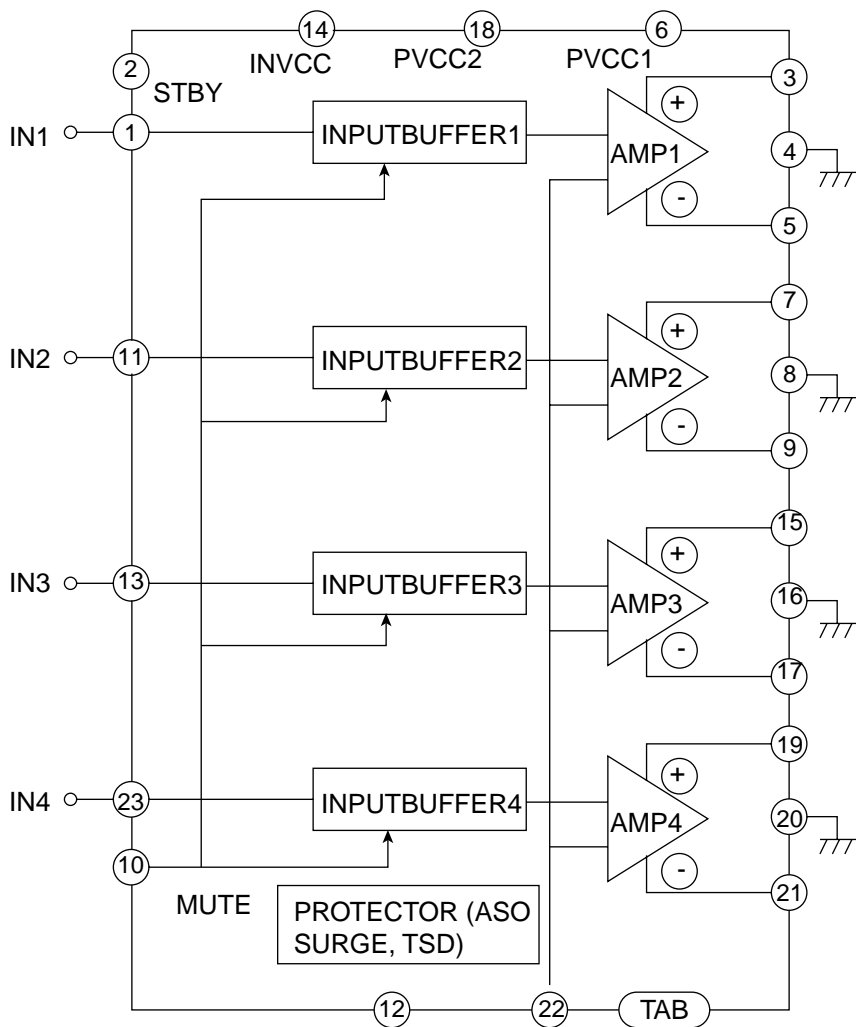
Pin No.	Symbol	I/O	Function
40	RFCT	I	RFRP signal center level input terminal
41	RFZI	I	RFRP zero cross input terminal
42	RFRP	I	RF ripple signal input terminal
43	FEI	I	Focus error signal input terminal
44	SBAD	I	Sub-beam adder signal input terminal
45	TSIN	I	Test input terminal Normally, keep at "vref" level
46	TEI	I	Tracking error signal input terminal. Take in at tracking servo ON.
47	TEZI	I	Tracking error zero cross input terminal
48	FOO	O	Focus servo equalizer output terminal
49	TRO	O	Tracking servo equalizer output terminal
50	VREF	-	Analog reference voltage supply terminal
51	RFGC	O	RF amplitude adjustment control signal output terminal
52	TEBC	O	Tracking balance control signal output terminal
53	FMO	O	Feed equalizer output terminal
54	FVO	O	Speed error signal or feed search equalizer output terminal
55	DMO	O	Disk equalizer output terminal (PWM carrier=88.2kHz for DSP, Synchronize to PXO)
56	2VREF	-	Analog double reference voltage supply terminal
57	SEL	O	APC circuit ON/OFF indication signal output terminal
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
69	CKSE	I	Normally, keep at open
70	DACT	I	DAC test mode terminal. Normally, keep at open
71	TESIN	I	Test input terminal, Normally, keep at "L" level
72	TESIO1	I	Test input/output terminal. Normally, keep at "L" level
73	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
90~93	BUS0~3	I/O	Micon interface data input/output terminal
94	VDD	-	Digital power supply voltage terminal
95	VSS	-	Digital GND terminal
96	BUCK	I	Micon interface clock input terminal
97	CCE	I	Command and data sending/receiving chip enable signal input terminal
98	TEST4	I	Test mode terminal. Normal, keep at open
99	TSMOD	I	Local test mode selection terminal
100	RST	I	Reset signal input terminal. Reset at "L" level

■ HA13158A (IC301) : Power amp

1. Pin layout

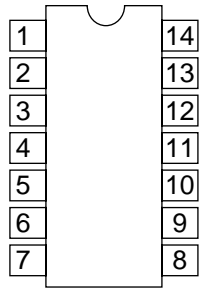


2. Block diagram



■ HD74HC126FP-X (IC801) : Buffer

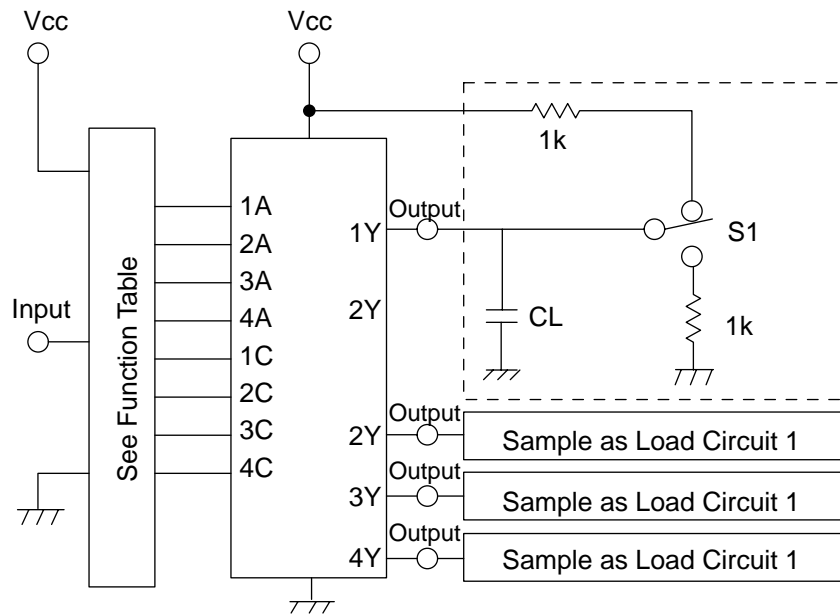
1. Terminal layout



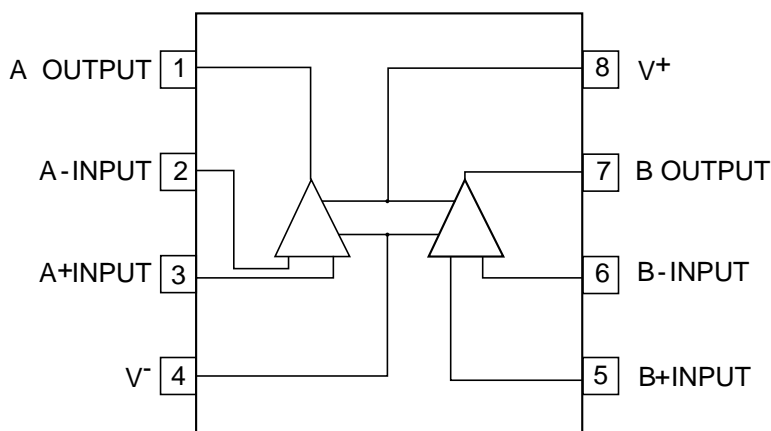
3. Pin function

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

2. Block diagram

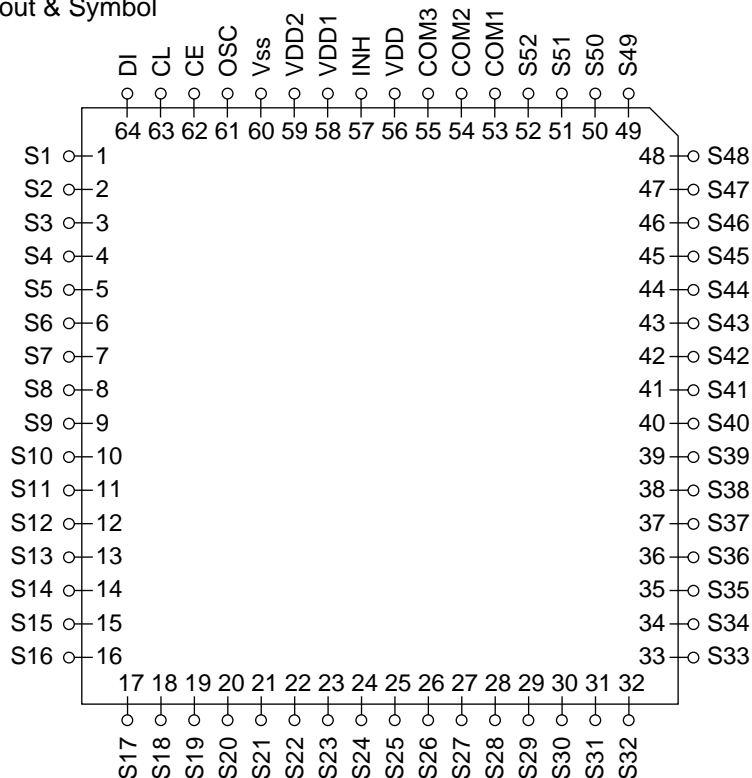


■ NJM4565M-WE (IC581) : Ope. amp



■ LC75823W (IC601) : LCD driver

1. Pin Layout & Symbol

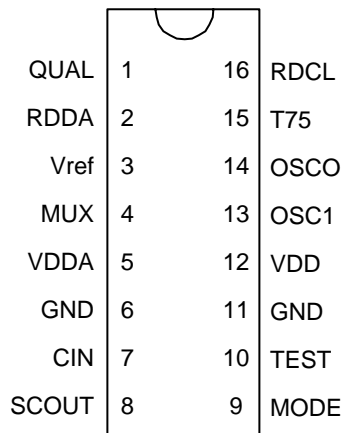


2. Pin Function

Pin No.	Symbol	I/O	Function
1 to 52	S1 to S52	O	Segment output pins used to display data transferred by serial data input.
53 to 55	COM1 to COM3	O	Common driver output pins. The frame frequency is given by : $t_0=(f_{osc}/384)Hz$.
56	VDD	--	Power supply connection. Provide a voltage of between 4.5 and 6.0V.
57	\overline{INH}	I	Display turning off input pin. $\overline{INT}="L"$ (Vss) ----- off (S1 to S52, COM1 to COM3="L" $\overline{INT}="H"$ (VDD)----- on Serial data can be transferred in display off mode.
58	VDDD1	I	Used for applying the LCD drive 2/3 bias voltage externally. Must be connected to VDD2 when a 1/2 bias drive scheme is used.
59	VDD2	I	Used for applying the LCD drive 1/3 bias voltage externally. Must be connected to VDD1 when a 1/2 bias drive scheme is used.
60	Vss	--	Power supply connection. Connect to GND.
61	OSC	I/O	Oscillator connection. An oscillator circuit is formed by connecting an external resistor and capacitor at this pin.
62	CE		Serial data interface connection CE : Chip enable
63	CL	I	to the controller. CL : Sync clock
64	DI		DI : Transfer data

■ SAA6579T-X (IC71) : RDS detector

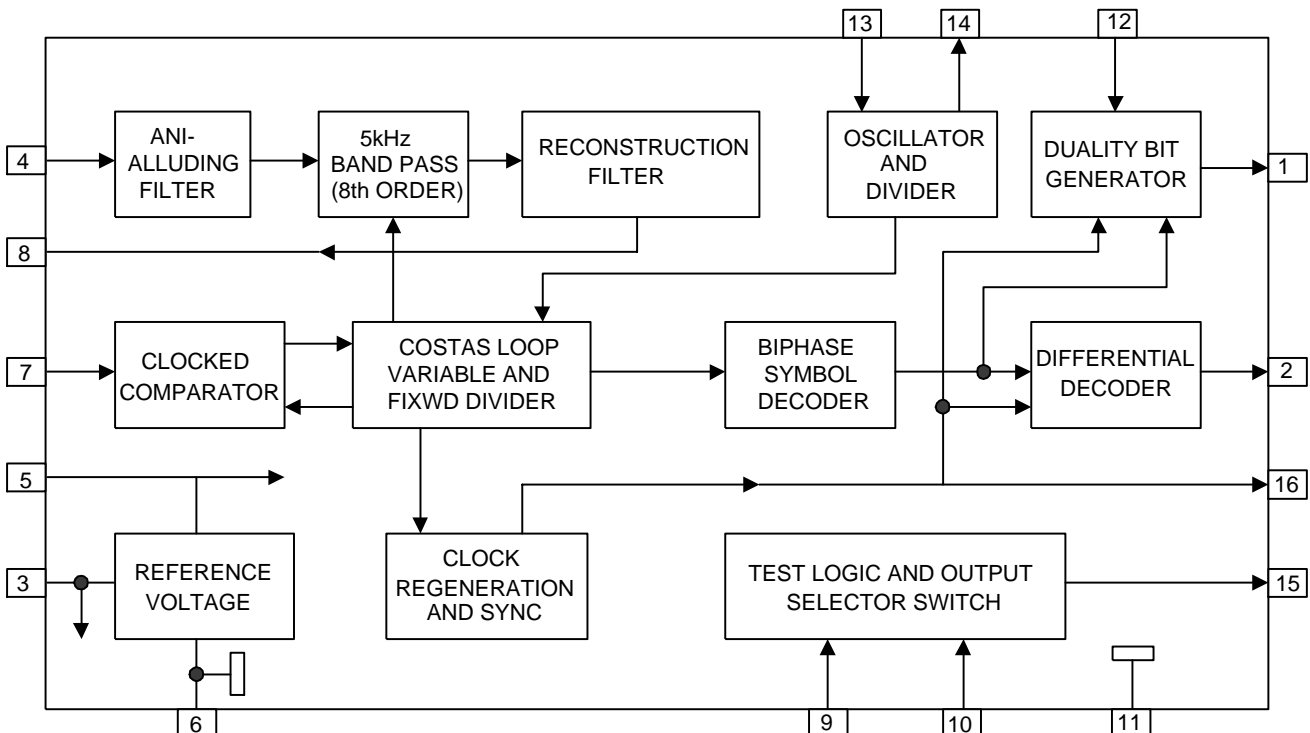
1.Terminal Layout



2.Pin Function

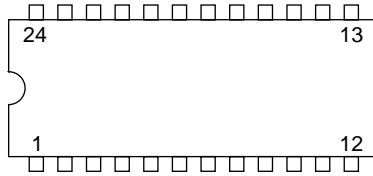
Pin No.	Symbol	I/O	Function
1	QUAL	-	Non connect
2	RDDA	O	RDS data output
3	Vref	O	Reference voltage output
4	MUX	I	Multiplex signal input
5	VDDA	-	+5V Supply voltage for analog
6	GND	-	Ground for analog part (0V)
7	CIN	I	Sub carrier output of reconstruction filter
8	SCOUT	O	Ground for digital part (0V)
9	MODE	-	Ground for digital part (0V)
10	TEST	-	Ground for digital part (0V)
11	GND	-	Ground for digital part (0V)
12	VDD	-	+5V supply voltage for digital part
13	OSC1	I	Oscillator input
14	OSC0	O	Oscillator output
15	T75	-	Non connect
16	RDCL	O	RDS clock output

3.Block Diagram

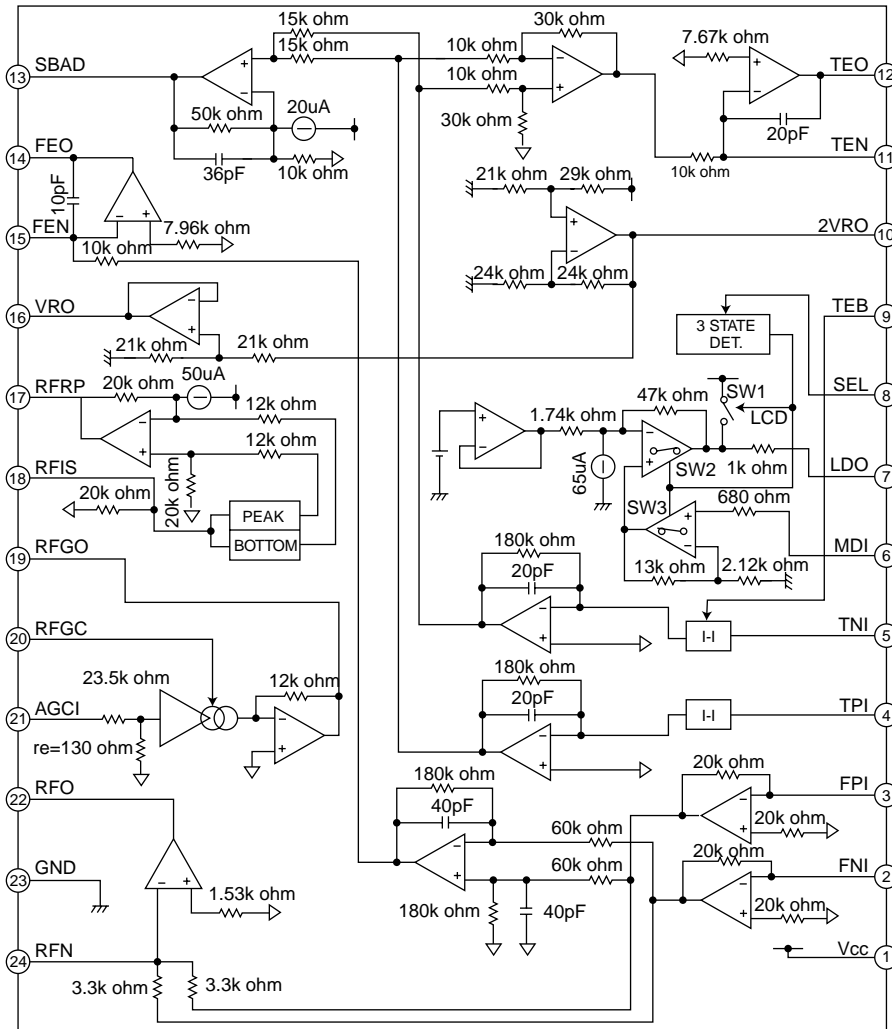


■ TA2109F-X (IC521) : RF amp.

1. Pin layout



2. Block diagram

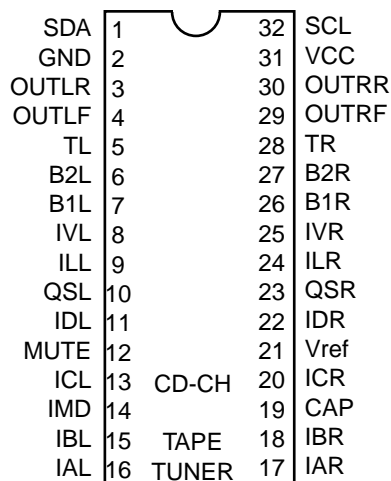


3. Pin function

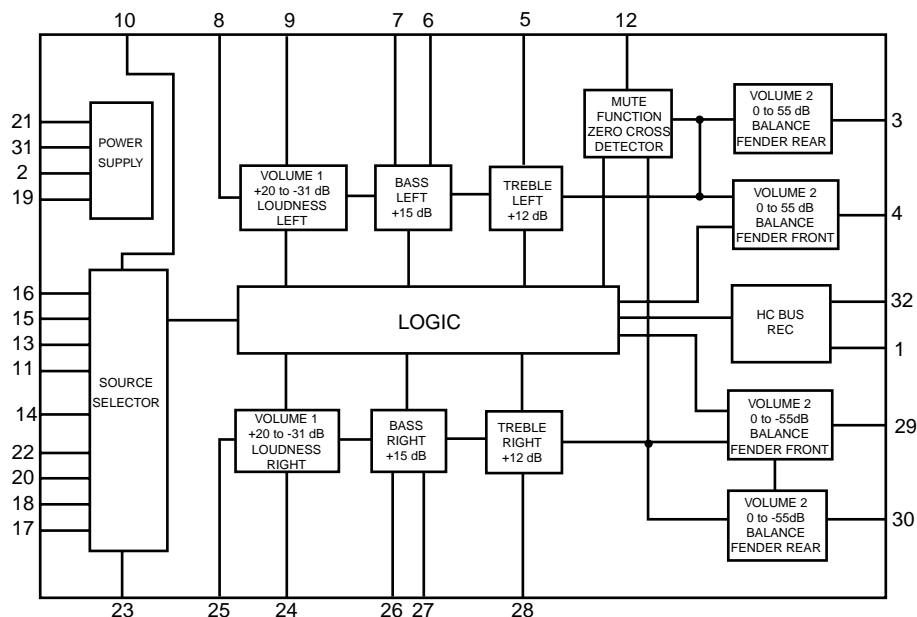
Pin No.	Symbol	I/O	Pin function	Pin No.	Symbol	I/O	Pin function
1	Vcc	-	Power supply input terminal	13	SBAD	O	Sub beam adder signal output terminal
2	FNI	I	Main beam I-V amp input terminal	14	FEO	O	Focus error signal output terminal
3	FPI	I	Main beam I-V amp input terminal	15	FEN	I	FE amp negative input terminal
4	TPI	I	Sub beam I-v input terminal	16	VRO	O	Reference voltage (VREF) output terminal
5	TNI	I	Sub beam I-V input terminal	17	RFRP	O	Track count signal output terminal
6	MDI	I	Monitor photo diode amp input terminal	18	RFIS	I	RFRP detect circuit input terminal
7	LDO	O	Laser diode amp output terminal	19	RFGO	O	RF gain signal output terminal
8	SEL	I	Laser diode control signal input terminal	20	RFGC	I	RF amplitude adj. control signal input terminal
9	TEB	I	T. error balance adj. signal input terminal	21	AGCI	I	RF signal amplitude adj. amp input terminal
10	2VRO	O	Reference voltage output terminal	22	RFO	O	RF signal output terminal
11	TEN	I	TE amp negative input terminal	23	GND	-	Ground terminal
12	TEO	O	TE error signal output terminal	24	RFN	I	RF amp negative input terminal

TEA6320T-X (IC161) : E.volume

1.Pin layout



2.Block diagram



3.Pin functions

Pin No.	Symbol	I/O	Functions	Pin No.	Symbol	I/O	Functions
1	SDA	I/O	Serial data input/output.	17	IAR	I	Input A right source.
2	GND	-	Ground.	18	IBR	I	Input B right source.
3	OUTLR	O	output left rear.	19	CAP	-	Electronic filtering for supply.
4	OUTLF	O	output left front.	20	ICR	I	Input C right source.
5	TL	I	Treble control capacitor left channel or input from an external equalizer.	21	Vref	-	Reference voltage (0.5Vcc)
6	B2L	-	Bass control capacitor left channel or output to an external equalizer.	22	IDR	-	Not used
7	B1L	-	Bass control capacitor left channel.	23	QSR	O	Output source selector right channel.
8	IVL	I	Input volume 1. left control part.	24	ILR	I	Input loudness right channel.
9	ILL	I	Input loudness. left control part.	25	IVR	I	Input volume 1. right control part.
10	QSL	O	Output source selector. left channel.	26	B1R	-	Bass control capacitor right channel
11	IDL	-	Not used	27	B2R	O	Bass control capacitor right channel or output to an external equalizer.
12	MUTE	-	Not used	28	TR	I	Treble control capacitor right channel or input from an external equalizer.
13	ICL	I	Input C left source.	29	OUTRF	O	Output right front.
14	IMO	-	Not used	30	OUTRR	O	Output right rear.
15	IBL	I	Input B left source.	31	Vcc	-	Supply voltage.
16	IAL	I	Input A left source.	32	SCL	I	Serial clock input.



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