JVC

SERVICE MANUAL

CASSETTE RECEIVER

KS-FX470









Area Suffix

J ---- Northern America

Contents

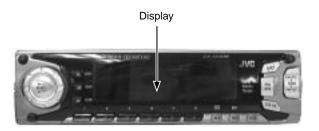
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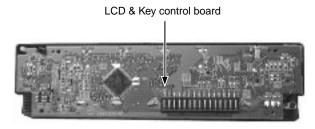
Safety precaution

↑ 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 preforming repair of this system.

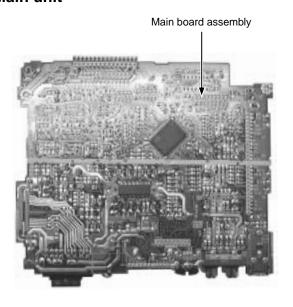
Location of main parts

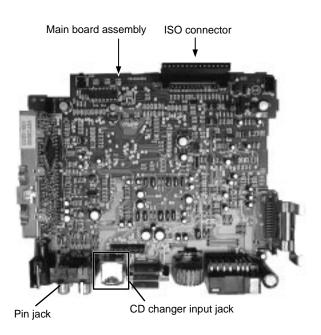
■Control unit



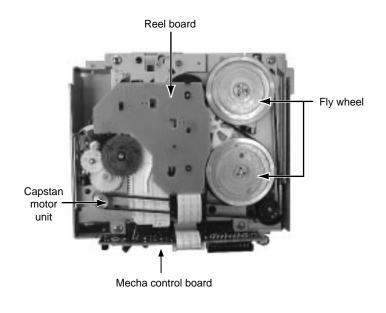


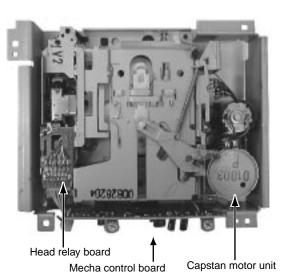
■ Main unit





■ Cassette mechanism



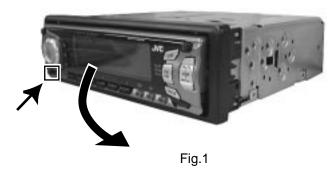


Disassembly method

■Removing the front panel unit

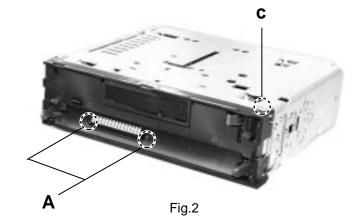
(See Fig.1)

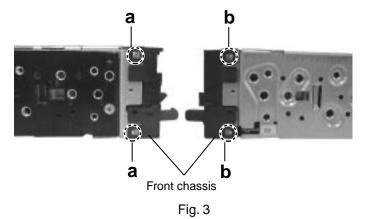
1. Press the release switch and remove the front panel unit in the direction of the arrow.



■ Removing the front chassis (See Fig.2~3)

- 1. Remove the two screws **A** attaching the front chassis.
- Insert a screwdriver to the two joints a on the side of the front chassis, two joints b on the right side and one joint c from upside, then detach the front chassis toward the front side.





■ Removing the heat sink (See Fig.4)

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

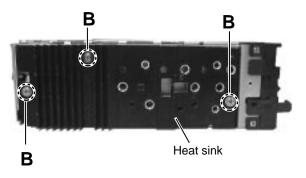


Fig. 4

■ Removing the bottom cover (See Fig.5)

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

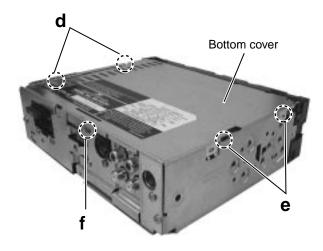


Fig. 5

■ Removing the rear panel (See Fig.6)

- 1. Remoe the front chassis.
- 2. Remove the heat sink.
- 3. Remove the bottom cover.
- 4. Remove the six screws **B** attaching the rear panel and one screw **C** attaching the pine jack on the back of the body.

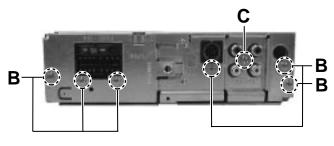


Fig. 6

Removing the main amplifier board assembly (See Fig.7)

- 1. Remove the front chassis.
- 2. Remove the bottom cover.
- 3. Remove the rear panel.
- 4. Remove the two screws **D** attaching the main amplifier board assembly on the top cover.
- Disconnect connector CP701 on the main amplifier board assembly from the cassette mechanism assembly.

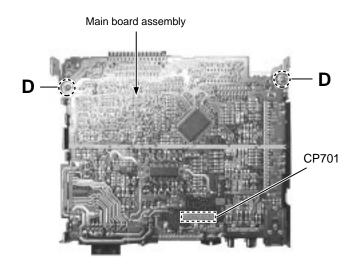
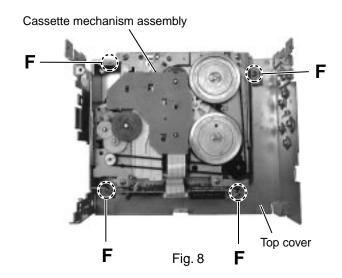


Fig. 7

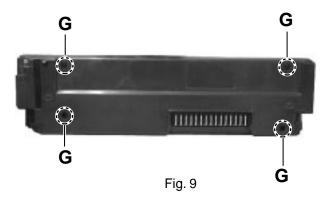
■ Removing the Cassette mechanism assembly (See Fig.8)

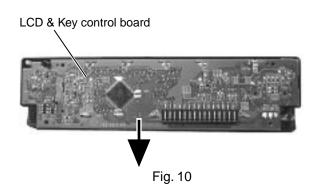
- 1. Remove the front chassis.
- 2. Remove the bottom cover.
- 3. Remove the main amplifier board assembly.
- 4. Remove the fore screws **F** attaching the cassette mechanism assembly from the top cover.



Removing the control switch board (See Fig.9 and 10)

- 1. Remove the front panel unit from the main body.
- 2. Remove the four screws **G** attaching the rear cover on the back of the front panel unit.
- 3. Remove the control switch board from the front panel unit.





<Removal of the cassette mechanism>

■ Removing the head amplifier board. (See Fig.1 and 2)

- 1. For the 6pin wire extending from connector CN402 on the head amplifier board, disconnect it from the head relay board.
- 2. Disconnect the card wire from connector CN403 on the head amplifier board.
- Remove the screw A attaching the head amplifier board.
- 4. Move the tab **a** as shown in Fig.2 and remove the head amplifier board while moving it in the direction of the arrow.

■ Removing the cassette mechanism assembly (See Fig.1 to 3)

- 1. Disconnect the 6pin wire from connector CN402 and the card wire from CN403 on the head amplifier board (Refer to Fig.1 and 2).
- 2. Remove the four screws **B** on the bottom of the cassette mechanism.

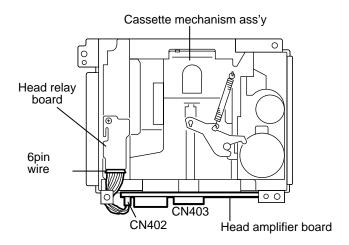
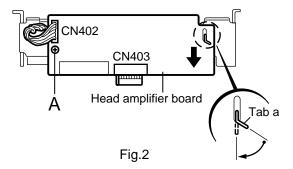


Fig.1



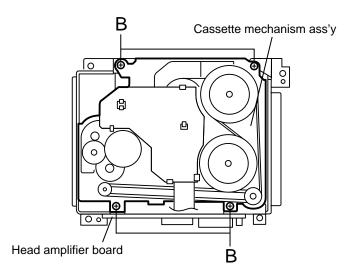


Fig.3

■ Removing the head relay board

(See Fig.4)

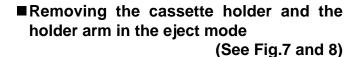
- 1. Unsolder the soldering ${\bf b}$ on the head relay board.
- 2. Remove the screw **C** attaching the head relay board.
- 3. Remove the head relay board in the direction of the arrow while releasing the two joints **c**.

■ Removing the load arm (See Fig.5)

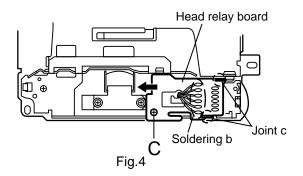
- Remove the E washer attaching the load arm using a pincette or something like that and remove the spring d.
- 2. Move the part of the load arm marked % upwards to release it from the axis of rotation. Then rotate the load arm in the direction of the arrow to remove it from the cach.

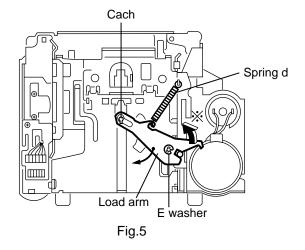


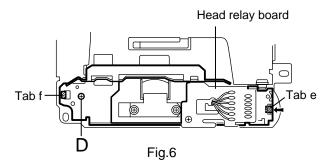
- Prior to performing the following procedure, remove the head relay board.
- 1. Remove the screw **D** attaching the sub chassis.
- 2. Push the tab **e** in the direction of the arrow to detach the one side of the sub chassis. Then release the sub chassis from the tab **f**.



- Prior to performing the following procedure, remove the head relay board, the load arm and the sub chassis.
- 1. Remove the screw **E** attaching the reinforce bracket.
- 2. Remove the reinforce bracket.
- 3. Push the tab g fixing the cassette holder in the direction of the arrow and open the cassette holder and the holder arm upward until they stop at an angle of 45 degrees. Move the two joints h to the side and remove the cassette holder and the holder arm from the shaft.







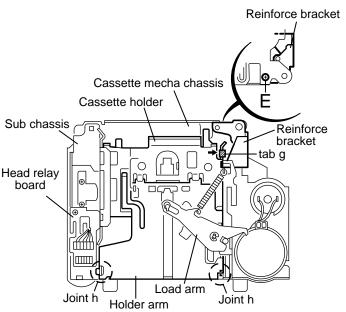


Fig.7

■ Removing the play head (See Fig.9)

- Prior to performing the following procedure, remove the head relay board and the sub chassis.
- 1. Remove the two screws **F** attaching the play head (The spring under the play head comes off at the same time).

■ Removing the pinch roller ass'y (See Fig.9)

- Prior to performing the following procedure, remove the head relay board and the sub chassis.
- 1. Push each tab **i** in the direction of the arrow and pull out the pinch rollers on both sides.

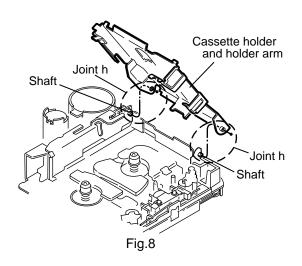
■ Removing the reel disc board (See Fig.10)

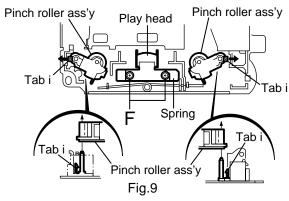
- 1. Unsolder the soldering **j** on the reel disc board.
- 2. Push the seven tabs **k** on the bottom of the cassette mechanism assembly in the direction of the arrow.

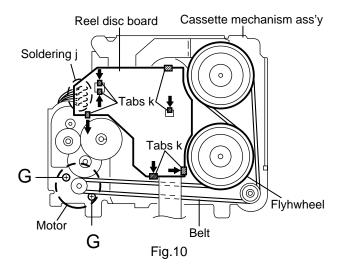
■ Removing the motor and the sub motor (See Fig.10 and 11)

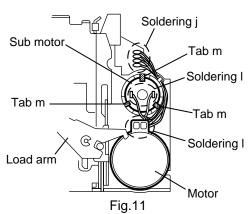
- Unsolder the two soldering I of the motor and the sub motor.
- 2. Release the sub motor from the three tabs **m**. Push the sub motor upward and pull out it.
- Remove the belt on the bottom of the cassette mechanism assembly and remove the two screws G attaching the motor.

ATTENTION: The motors can be detached before removing the load arm.









■Removing the flywheel

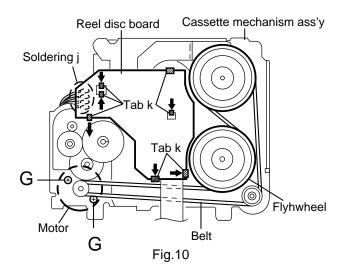
(See Fig.10 and 12)

- Prior to performing the following procedure, remove the head relay board, the load arm, the sub chassis, the cassette holder, the holder arm and the reel disc board.
- 2. Remove the belt on the bottom of the cassette mechanism ass'y.
- Remove the slit washer attaching the flywheel on the upper side of the cassette mechanism ass'y and pull out the flywheel downward. Then remove another flywheel in the same way.

ATTENTION: When reassembling, make sure to use a new slit washer.

■Removing the reel disc ass'y(I) (See Fig.12 to 14)

- Prior to performing the following procedure, remove the head relay board, the load arm, the sub chassis, the cassette holder and the holder arm.
- Disengage the part n inside of the reel driver which engages with the shaft, using a pincette or something like that. Then remove the reel driver from the shaft.
- 2. Remove the reel driver spring and the reel table.



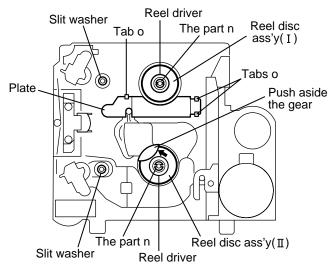
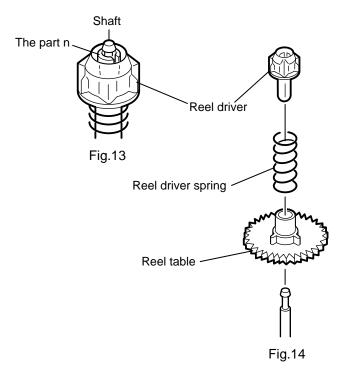


Fig.12



■Removing the reel disc ass'y(Ⅱ) (See Fig.12 to 15)

ATTENTION: Prior to performing the following procedure, remove the reel disc (I).

- 1. Release the plate from the three tabs \boldsymbol{o} .
- 2. Push aside the gear over the reel table using a pincette or something like that.
- 3. Remove the reel disc ass'y (\mathbb{I}) as with the reel disc ass'y (\mathbb{I}).

ATTENTION: Do not break the front panel tab fitted to the metal cover.

Push aside the gear and reattach the reel disc Ass'y(I).

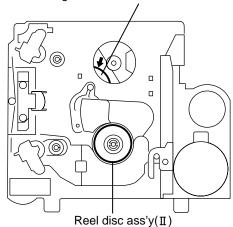


Fig.15

Adjustment method

■Test instruments required for adjustment

- 1. Digital oscilloscope(100MHz)
- 2. Frequency Counter meter
- 3. Electric voltmeter
- 4. Wow & flutter meter
- 5. Test Tapes

	For TAPA CURL confirmation
VT724	(without Padd type)For DOLBY level measurement
VT739 Fo	r playback frequency measurement
VT712 For wov	w flutter & tape speed measurement
VT703	For head azimuth measurement
6. Torque gauge	Cassette type for CTG-N
	(mechanism adjustment)

■ Measuring conditions(Amplifier section)

Power supply voltage	DC14.4V (10.5 - 16V)
Load impedance	4Ω (2Speakers connection)
Line out	20k Ω

■Standard volume position

Balance and Bass, Treble volume . Fader : Center(Indication"0")
Loudness, Dolby NR, Sound, Cruise: Off
Volume position is about 2V at speaker output with following conditions. Playback the test tape VT721.

AM mode 1000kHz/62dB,INT/400Hz,30%

modulation signal on receiving.

FM mono mode 97.5MHz/66dB,INT/400Hz,22.5kHz

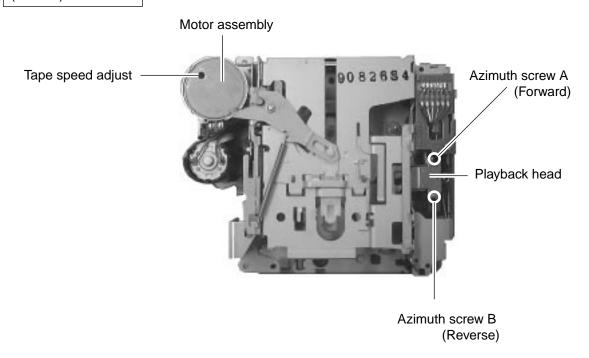
deviation pilot off mono

FM stereo mode 1kHz,67.5kHz dev. pilot7.5kHz dev.

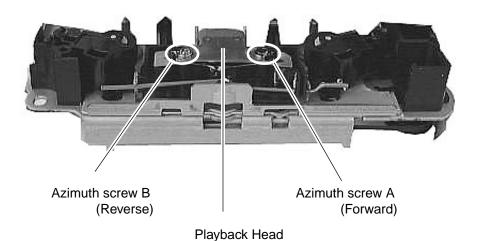
Output level $0dB(1\mu V,50 \Omega / open terminal)$

■ Arrangement of adjusting & test points

Cassette mechanism (Surface)



Head section view



■Information for using a car audio service jig

- 1. We're advancing efforts to make our extension cords common for all car audio products. Please use this type of extension cord as follows.
- 2. As a U-shape type top cover is employed, this type of extension cord is needed to check operation of the mechanism assembly after disassembly.
- 3. Extension cord: EXTKSRT002-18P (18 pin extension cord) For connection between mechanism assembly and main board assembly.
 - Check for mechanism driving section such as motor ,etc..

■Disassembly method

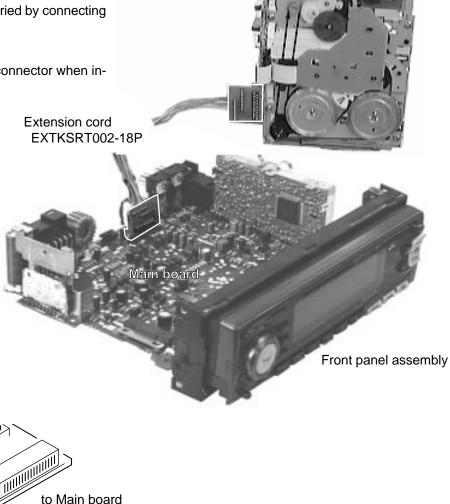
- 1. Remove the bottom cover.
- 2. Remove the front panel assembly.
- 3. Remove the top cover.
- 4. Install the front panel.

to Cassette mechanism

Confirm that current is being carried by connecting an extension cord jig.

Note

Available to connect to the CP701 connector when installing the front panel.



Cassette mechanism

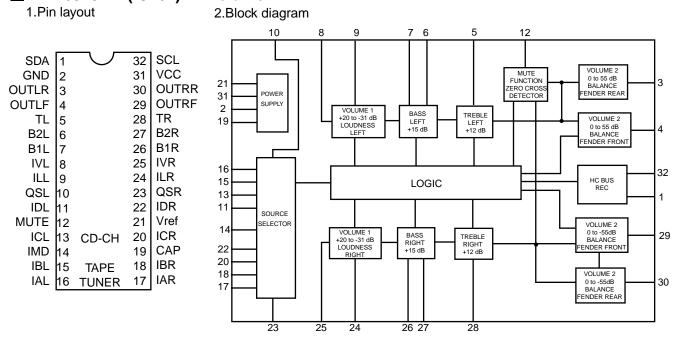
EXTKSRT002-18P

■Mechanism adjustment section

Item	Adjusting & Confirmation Methods	Adjust	Std. Value
1. Tape running adjustment	 a) At Forward playmode, using mirror tape, make adjustment with Azimuth screw A and Azimuth screw B, without curl of 4 parts of head tape guide. b) At Reverse play mode, using mirror tape, make adjustment with Azimuth screw A and Azimuth screw B, without tape curl of 4 parts of head guide. c) At Forward / Reverse play mode, make confirmation of no tape curl of 4 parts of head tape guide. 		Azimuth screw A Azimuth screw B
2. Azimuth adjustment confirmation	a) At forward play mode, make adjustment of peak of Lch / Rch output with Azimuth screw A. * For Oscilloscope litharge corrugation, set 45° as standard. b) At Reverse play mode, make adjustment of peak of Lch / Rch output with Azimuth screw B. * For Oscilloscope litharge corrugation, set 45° as standard. c) With AC volt meter confirm the difference of output for 4ch between Lch / Rch at forward play mode and Lch / Rch Reverse play mode being within 3.0dB. d) After operation, make confirmation of Lch / Rch azimuth output being within 1.0dB from adjustment value. HEAD Tape guide	0° Pha	se 45°
	Tape curl NG HEAD TAPE		
2.Tape Speed and Wow & Flutter	1.Check to see if the reading of the frequency counter & W ow flutter meter is within 2940-3090 Hz(FWD/REV), and less than 0.35% (JIS RMS). 2.In case of out of specification, adjust the motor with a built-in volume resistor .	Built-in volume resistor	Tape Speed 2940-3090Hz Wow&Flutter Less than 0.35% (JIS RMS)
3.Playback Frequency response	 1.Play the test tape (VT724 : 1kHz) back and set the volume position at 2V . 2.Play the test tape (VT739)back and confirm 0±3dB at1kHz/10kHz and -4+2dB at 1kHz/63Hz. 3.When 10kHz is out of specification, it will be necessary to read adjust the azimuth. 		Speaker out 1kHz/10kHz : 0dB±3dB, 63Hz/1kHz : -4dB+2dB,

Description of major ICs

■ TEA6320T-X (IC161) : E.volume

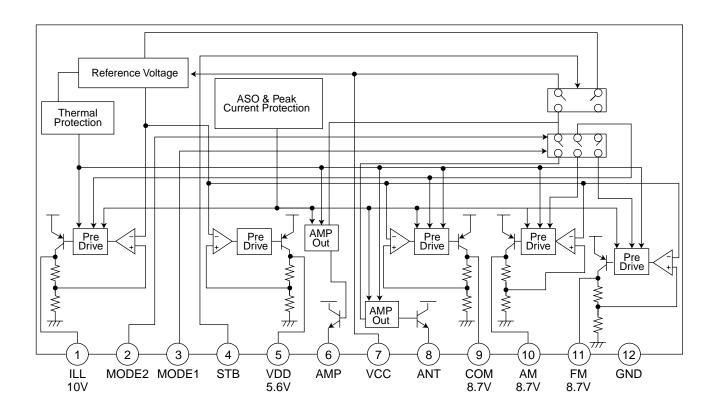


3.Pin functions

Pin No.	Symbol	I/O	Functions		Symbol	I/O	Functions
1	SDA	I/O	Serial data input/output.	17	IAR	Ι	Input A right source.
2	GND	•	Ground.	18	IBR	-	Input B right source.
3	OUTLR	0	output left rear.	19	CAP	ı	Electronic filtering for supply.
4	OUTLF	0	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	ı	Not used
7	B1L	1	Bass control capacitor left channel.		QSR	0	Output source selector right channel.
8	IVL	Ι	Input volume 1. left control part.		ILR	_	Input loudness right channel.
9	ILL	I	Input loudness. left control part.		IVR	_	Input volume 1. right control part.
10	QSL	0	Output source selector. left channel.		B1R	1	Bass control capacitor right channel
11	IDL	-	Not used	27	B2R	0	Bass control capacitor right channel or output to an external equalizer.
12	MUTE	1	Not used		TR	_	Treble control capacitor right channel or input from an external equalizer.
13	ICL	_	Input C left source.		OUTRF	0	Output right front.
14	IMO	-	Not used		OUTRR	0	Output right rear.
15	IBL	ı	Input B left source.	31	Vcc	-	Supply voltage.
16	IAL	I	Input A left source.		SCL	_	Serial clock input.

■ AN80T05LF (IC901) : Regulator

1.Terminal layout & Block diagram

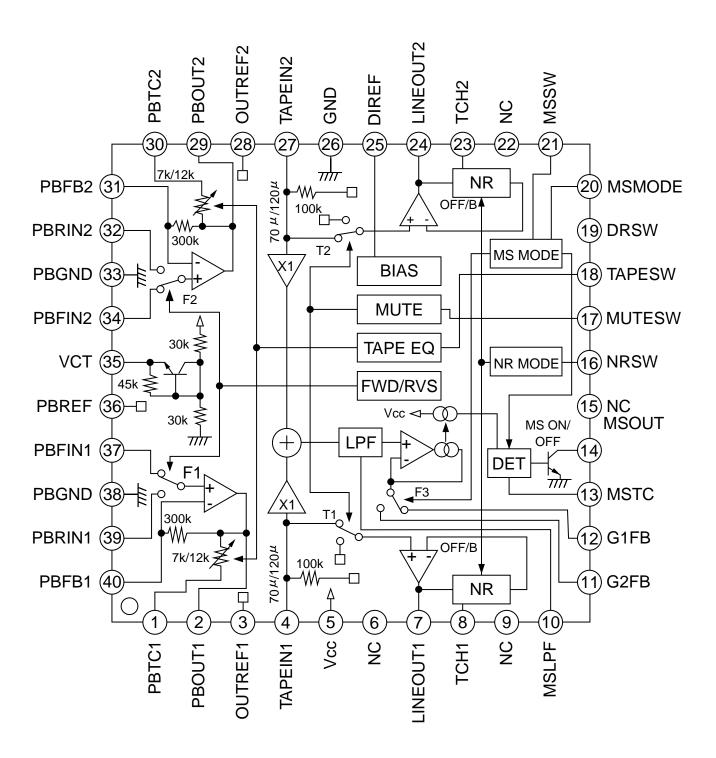


2.Pin function

Pin No.	Symbol	Function
1	ILL	10V power supply for illumination.
2	MODE2	When 5V is input, becomes AM. and the antenna output is turned on.
3	MODE1	When 5V is input, becomes AM. and the output of FM is switched.
4	STB	When 5V is input, outputs to ILL,COM,and AMP. It is 0V usually.
5	VDD	5.6V power supply.
6	AMP	Power supply supply to remote amplifier
7	VCC	Back up. connects with ACC with it.
8	ANT	Power supply supply to auto antenna.
9	COM	8.7V power supply.
10	AM	The power supply of 8.7V to AM.
11	FM	The power supply of 8.7V to FM.
12	GND	Ground

■ CXA2560Q (IC401) :Dolby b Type Noise Reduction System with Playback Equalizer Amplifier

1.Block diagram

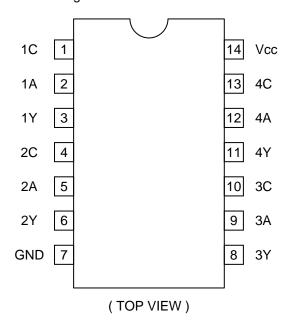


CXA2560Q

			CAA290UV			
Pin NO.	Symbol	I/O	Function			
1	PBTC1		Playback equalizer amplifier capacitance.			
2	PBOUT1	0	Playback equalizer amplifier output.			
3	OUTREF1	0	Output reference.(VCC/2 output)			
4	TAPEIN1	I	TAPE input.			
5	Vcc		Power supply.			
6	NC		Non connection.			
7	LINEOUT1	0	Line output.			
8	TCH1		Time constant for the HLS.			
9	NC		Non connection.			
10	MSLPF		Cut-off frequency adjustment of the music sensor LPF.			
11	G2FB		Music signal interval detection level setting.			
12	G1FB		Music signal interval detection level setting.			
13	MSTC		Time constant for detecting the music signal interval.			
14	MSOUT	0	Music sensor output.			
15	NC		Non connection.			
16	NRSW	ı	Dolby NR control. Low(open):NR OFF High:NR ON			
17	MUTESW	ı	Mute function control. Low(open):MuteOFF High:Mute ON.			
18	TAPESW	ı	Playback equalizer amplifier control. Low(open):70µs High:120µs.			
19	DRSW	ı	Head select control. Low(open):FORWARD High:REVERSE.			
20	MSMODE	ı	Music sensor mode control. Low(open):G1 High:G2.			
21	MSSW	ı	Music sensor control. Low(open):MS ON High:MS OFF.			
22	NC		Non connection.			
23	TCH2		Time constant for the HLS.			
24	LINEOUT2	0	Line output.			
25	DIREF		Resistance for setting the reference current.			
26	GND		Ground.			
27	TAPEIN2	I	TAPE input.			
28	OUTREF2	0	Output reference.(VCC/2 output)			
29	PBOUT2	0	Playback equalizer amplifier output.			
30	PBTC2		Playback equalizer amplifier capacitance.			
31	PBFB2	I	Playback equalizer amplifier feedback.			
32	PBRIN2	I	Playback equaalizer amplifier input.			
33	PBGND		Playback equaalizer amplifier ground.			
34	PBFIN2	I	Playback equaalizer amplifier input.			
35	VCT	0	Center.			
36	PBREF	0	Playback equaalizer amplifier reference.			
37	PBFIN1	I	Playback equaalizer amplifier input.			
38	PBGND		Playback equaalizer amplifier ground.			
39	PBRIN1	ı	Playback equaalizer amplifier input.			
40	PBFB1	ı	Playback equaalizer amplifier feedback.			

■ HD74HC126P (IC801) : Changer control

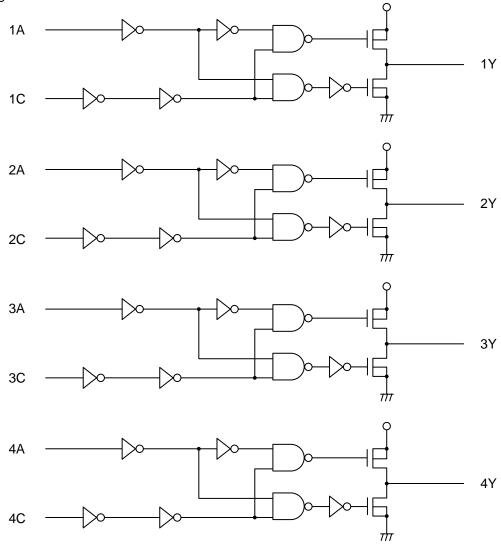
1.Pin arrangement



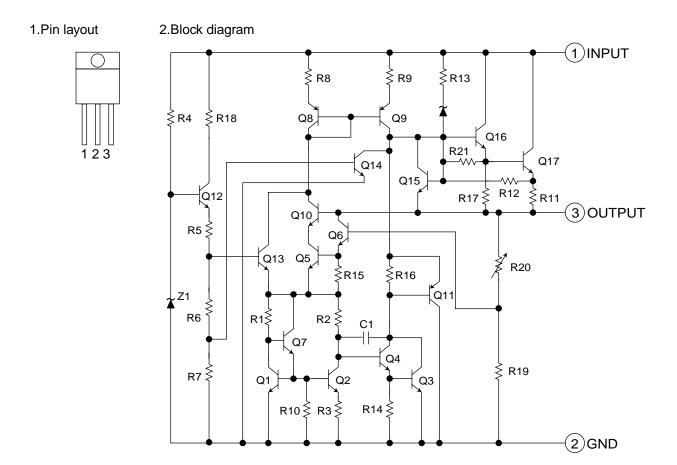
2. Pin function

Inp	out	Output
С	А	Υ
L	х	Z
Н	L	L
Н	Н	Н

3. Block diagram

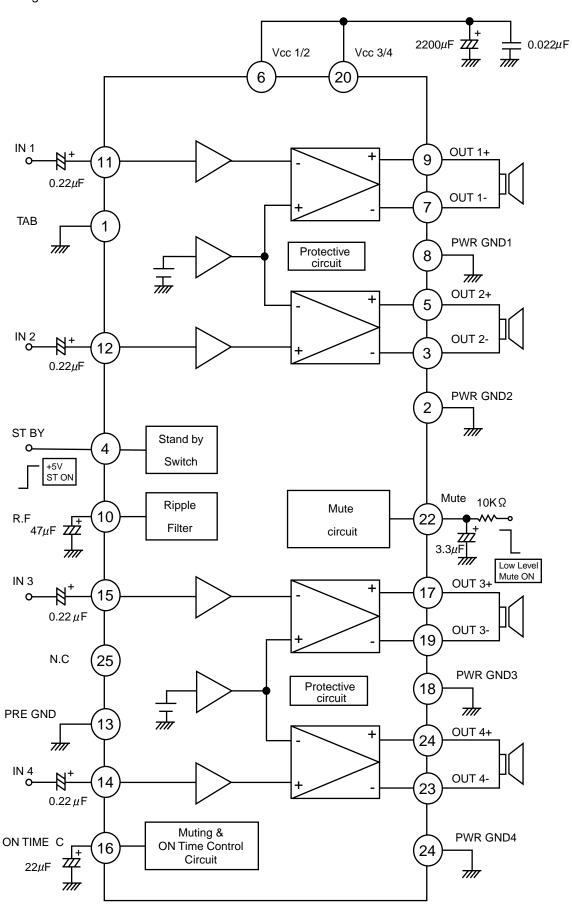


■ KIA7810PI (IC902) : Regulator



■ LA4743B(IC301):Power AMP

1.Block diagram



2.Terminal layout



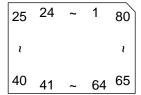
3.Pin function

LA4743B

Pin No.	Symbol	Function			
1	TAB	Header of IC			
2	GND	Power GND			
3	OUTRR-	Outpur(-) 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			

■ LC72366-9987 (IC701): SYSTEM CPU

1. Pin layout



2. Pin function

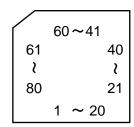
Pin No.	Symbol	I/O	Function					
1	XIN	1	Crystal oscillator input port					
2	GND	-	Connect to GND					
3	J-BUS SI	Т	Data input for J-BUS information					
4	J-BUS SO	0	Data output for J-BUS information					
5	J-BUS SCK	0	Clock output for J-BUS information					
6	J-BUS I/O	0	Switching signal output for J-BUS information I/O, H:Out L:In					
7	NC	-	None connection					
8	LCD SO	0	Data output for LCD driver					
9	LCD SCK	0	Information clock output for LCD driver data					
10	LCD CE	0	Chip enable output for LCD driver					
11	DIMMER IN	-	None connection					
12	EVOL SO	0	Data output for electrical volume					
13	EVOL SCK	0	Clock output for electrical volume information					
14	NC	-	Non connection					
15	TUNER ILLUM	-	Non connection					
16	TAPE ILLUM	-	Non connection					
17	CD ILLUM	-	Non connection					
18	DEMERIT	-	Non connection					
19	NC	-	Non connection					
20	OPEN	-	Non connection					
21	NC	-	Non connection					
22	NC	-	Non connection					
23	NC	-	Non connection					
24	NC	-	Non connection					
25	KS1	-	Non connection					
26	KS0	0	Diode matrix output port for initial establishing					
27	K3	ı	Diode matrix output port for initial establishing					
28	K2	ı	Diode matrix output port for initial establishing					
29	K1	-	Non connection					
30	K0	- 1	Diode matrix output port for initial establishing					
31	Vdd	-	5V power supply port (+B)					
32	TEST	1	Turn on all light indicator of LCD, L: All light a LED indicator					
33	FF/REW MODE	0	FF/REW mode select signal output					
34	SEEK/STOP	0	H:Auto seek, L: Stop Use both as IF count REQ and Seek/Stop					
35	MONO	0	Forced monaural output port, H:Turn on Forced monaural					
36	RADIO/TAPE	-	Non connection					
37	BEEP LEVEL	-	Non connection					
38	PWR-CNT	0	"H" : Turn on power					
39	ACC	-	Non connection					
40	KICK	-	Non connection					

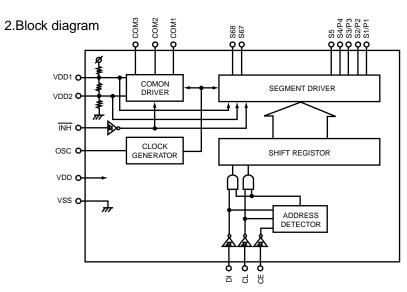
LC72366-9987(2/2)

			LC72366-9987(2/2)	
Pin No.	Port Name	I/O	Function	
41	MOTOR	0	Main motor output, H:Transport L: Stop	
42	SUBMO+	0	Sub-motor output(+), Loading direction to transport output	
43	SUBMO-	0	Sub-motor output(-), Eject direction to transport output	
44	BEEP	-	Non connection	
45	TAPE IN	ı	Switch for detecting to input cassette, L: Cassette in	
46	STANDBY	ı	Switch for detecting standby position	
47	REEL	ı	Switch for detecting tape end position	
48	MODE	ı	Detecting mode position input	
49	F/R	ı	Switch for detecting forward/reverse , H:FWD L:REV	
50	MS	ı	MS input port,	
51	SD/ST	ı	Station detector, Stereo signal input, H:SD	
52	DETACH	0	Front panel detect	
53	ENC1	ı	Connect to encoder 1	
54	ENC2	I	Connect to encoder 2	
55	J-BUS INT	ı	Cut in signal detecting port from J-Bus information	
56	REMOCON	-	Non connection	
57	FM/AM	0	FM/AM mode switching signal port, H:FM L:AM	
58	DOLBY	-	Non connection	
59	NC	-	Non connection	
60	MUTE	0	Mute output port, L:Mute	
61	MEM DET	ı	Back-up power supply detecting port, H:input L:no input	
62	LEVELMETER	ı	Pressure voice level voltage input for level meter.	
63	S.METER	ı	S meter voltage input	
64	KEY2	I	Key 2 input port	
65	KEY1	I	Key 1 input port	
66	KEY0	I	Key 0 input port	
67	ACCDET	I	Hold port for Acc detecting, L: Hold mode	
68	SENSE	I	Voltage sensor port	
69	AM IF COUNT	-	Non connection	
70	FM IF COUNT	ı	FM frequency detecting	
71	NC	-	Non connection	
72	NC	-	Non connection	
73	Vdd	-	5V power supply (+B)	
74	AM OSC	I	Non connection	
75	FM OSC	I	FM limited signal input	
76	VSS	-	Ground port for power supply	
77	NC	-	Non connection	
78	E0	0	Error signal output port for PLL	
79	TEST1	-	Test port for LSI, To connect ground	
80	XOUT	0	4.5MHz crystal oscillator output	

■ LC75873NW(IC601):LCD Driver

1.Pin layout



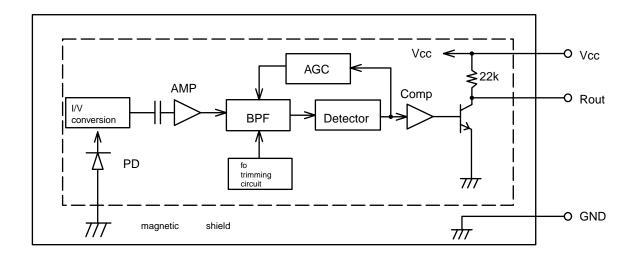


3.Pin function

Pin No.	Pin name	I/O	Description
79,80 1,2,3 to 66	S1/P1 TO S4/P4 S5 to S68	0	Segment outouts for displaying the display data transferred by serial data input. The S1/P1 to S4/P4 pins can be used as general-purpose output ports under serial data control.
67 78 69	COM1 COM2 COM3	0	Common driver outputs. The frame frequency f0 is given by : f0 = (FOSC/384)Hz.
74	OSC	I/O	Oscillator connection An oscillator circuit is formed by connecting an external resistor and capacitor to this pin.
76 77 78	CE CL DI	 	Serial data transfer inputs. Connected to the controller. CE:Chip enable CL:Synchronization clock DI:Transfer data
75	ĪNH	I	Display off control input INH= "L"(VSS) Display forced off S1/P1 to S4/P4 = "L" (These pins are forcibly set to the segment output port function and held at the low level.) S5 to S68 = "L" COM1 to COM3"L" INH = "H"(HDD) Display on However, serial data transfer is possible when the display is forced off by this pin.
71	VDD1		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.
72	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.
70	VDD	-	Power supply connection. Provide a voltage of between 3.0 and 6.0V.
73	VSS	-	Power supply connection. Connect to ground.

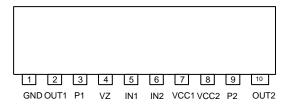
■ RPM6938-SV4(IC602) : Remote Censor

1.Block diagram



■ LB1641 (IC402) : DC motor driver

1. Pin layout



2. Pin function

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



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