

# JVC

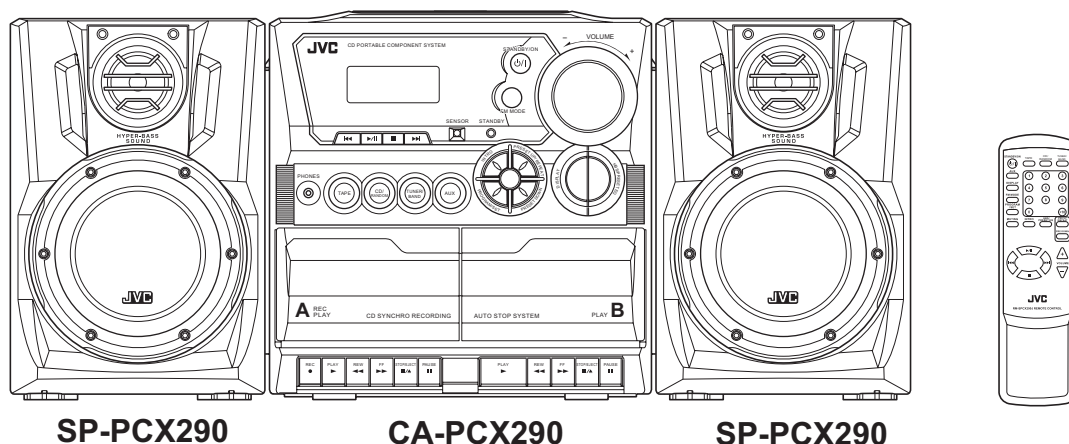
## SERVICE MANUAL

### CD PORTABLE COMPONENT SYSTEM

## PC-X290

### SERVICE POLICY

No service part is available for this model.  
Exchange only.



**COMPACT**  
**disc**  
**DIGITAL AUDIO**

#### Area suffix

J ----- U.S.A.  
C ----- Canada

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## SPECIFICATION

Amplifier	Output Power	5 W per channel, min. RMS, driven into 3.2 $\Omega$ at 1 kHz with no more than 10% total harmonic distortion.
	Audio input sensitivity/Impedance (at 1 kHz)	AUX:1 000 mV/47 k $\Omega$
	Speakers/Impedance	3.2 $\Omega$ - 8 $\Omega$
Tuner	FM tuning range	87.5 MHz - 108.0 MHz
	AM tuning range	530 kHz - 1 710 kHz
CD player	CD Capacity	1 CD
	Dynamic range	60 dB
	Signal-to-noise ratio	75 dB
Cassette deck	Frequency response Normal (type I)	50 Hz - 10 000 Hz
	Wow and flutter:	0.15% (WRMS)
General	Power requirements	AC 120 V , 60 Hz
		DC 12 V ("R20(SUM-1)/D(13D)" batteries (8))
	Power consumption	20 W (at operation)
		3 W (on standby)
Dimensions (approx.)	270 mm $\times$ 274 mm $\times$ 298 mm (W/H/D) (10 11/16 in. $\times$ 10 3/4 in. $\times$ 11 3/4 in.)	
Mass (approx.)	4.1 kg (9.1 lbs)	
Speaker	Type	2-way bass-reflex type
	Speaker units	Woofer: 10 cm (4 in.) cone $\times$ 1
		Tweeter: 5 cm (2 in.) cone $\times$ 1
	Power handling capacity	5 W
	Impedance	3.2 $\Omega$
	Frequency range	50 Hz - 18 000 Hz
	Dimensions (approx.)	180 mm $\times$ 270 mm $\times$ 228 mm (W/H/D) (7 1/8 in. $\times$ 10 3/4 in. $\times$ 9 in.)
Mass (approx.)	1.7 kg (3.8 lbs) each	

Designs and specifications are subject to change without notice.

**SECTION 1  
PRECAUTION**

This service manual does not describe PRECAUTION.

**SECTION 2  
SPECIFIC SERVICE INSTRUCTIONS**

This service manual does not describe SPECIFIC SERVICE INSTRUCTIONS.

**SECTION 3  
DISASSEMBLY**

This service manual does not describe DISASSEMBLY.

**SECTION 4  
ADJUSTMENT**

This service manual does not describe ADJUSTMENT.

**SECTION 5  
TROUBLESHOOTING**

This service manual does not describe TROUBLESHOOTING.



**JVC**

VICTOR COMPANY OF JAPAN, LIMITED

AV & MULTIMEDIA COMPANY AUDIO/VIDEO SYSTEMS CATEGORY 10-1,1chome,Ohwatari-machi,Maebashi-city,371-8543,Japan

(No.MB201)



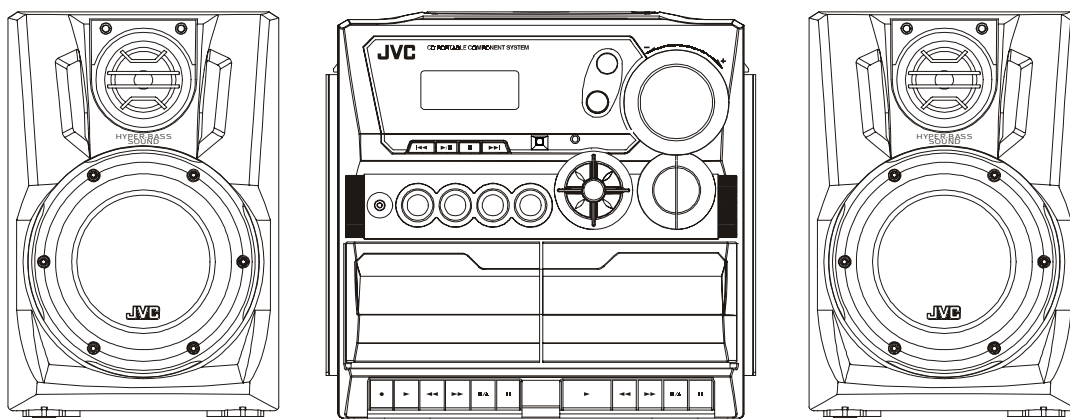
Printed in Japan  
WPC

# JVC

## SERVICE MANUAL

### CD PORTABLE COMPONENT SYSTEM

#### PC-X290



COMPACT  
disc  
DIGITAL AUDIO

#### Areas Suffix

J.....USA  
C.....Canada

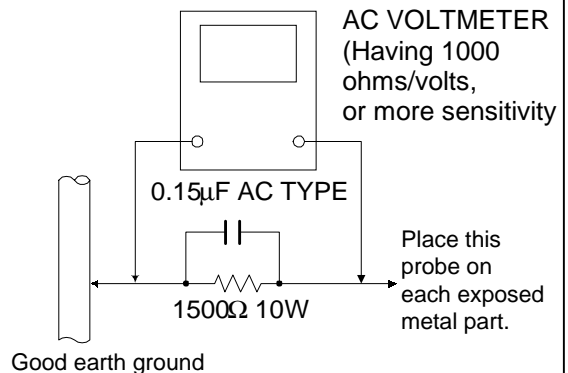
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### Safety Precautions

1. This design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting there from.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, the Parts List of Service manual. Electrical components having such features are identified by shading on the schematics and by ( $\triangle$ ) on the parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubing, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage current check (Electrical Shock hazard testing)  
After re-assembling the product, always perform an isolation check on the exposed metal Parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.  
Do not use a line isolation transformer during this check.

- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly and exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.)
- Alternate check method  
Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500 $\Omega$  10W resistor paralleled by a 0.15 $\mu$ F AC-type capacitor between an exposed metal part and a known good earth ground. Measure the AC voltage across the resistor with the AC voltmeter.  
Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. voltage measured Any must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).

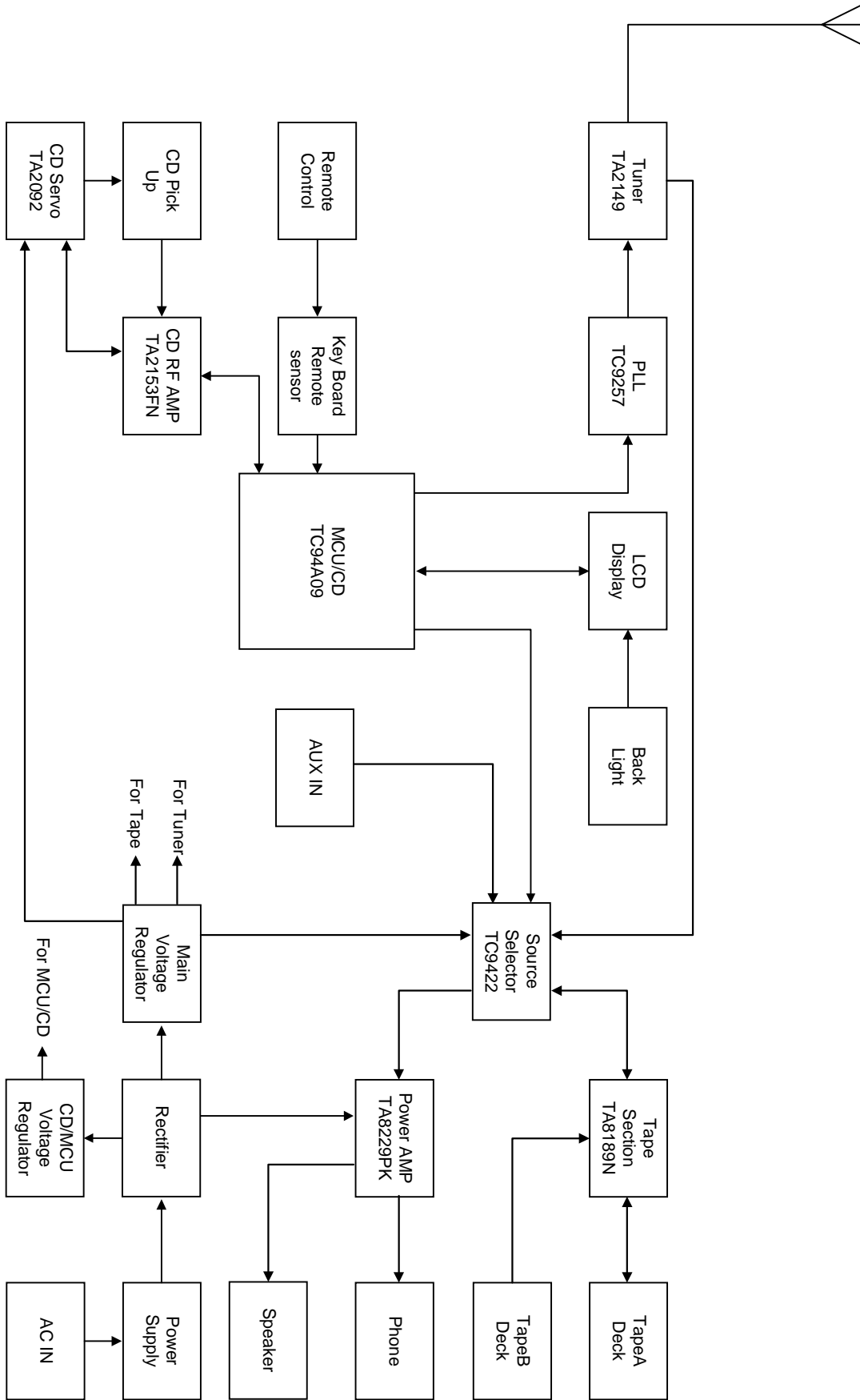


### Warning

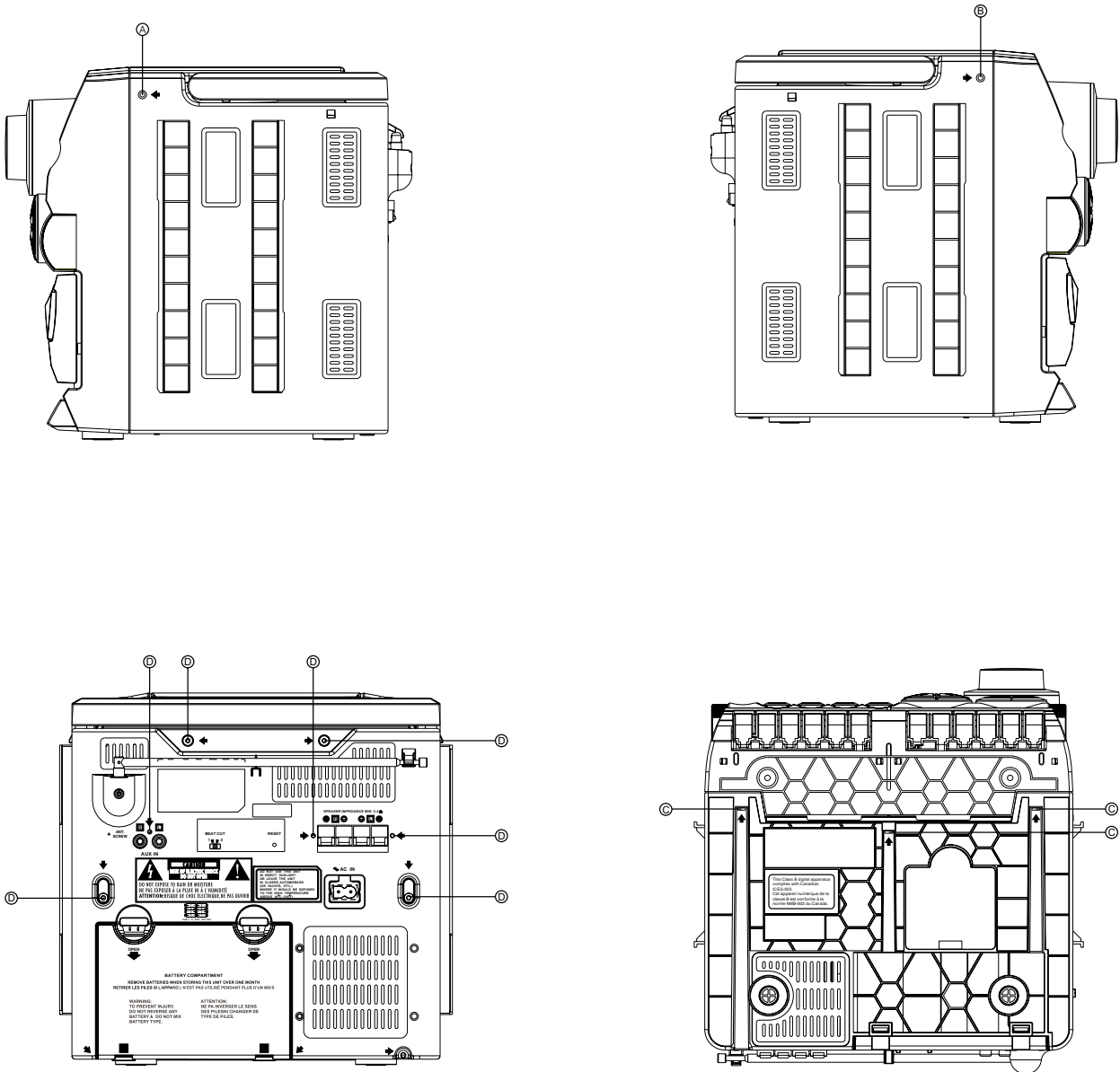
1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

**CAUTION** Burrs formed during molding may be left over on some parts of the chassis. Therefore, pay attention to such burrs in the case of performing repair of this system.

# BLOCK DIAGRAM



## DISASSEMBLY INSTRUCTIONS



**Removing Left and Right and Top side and back side  
Remove all screws on left and right and back side**



## TROUBLESHOOTING

Circuit	Symptom	Cause and Remedy
General	No sound	<ul style="list-style-type: none"> <li>• Speakers are not connected: Check the speaker connection.</li> <li>• Wrong function is selected: Set switch to the proper position.</li> <li>• Defective volume control: Set the volume control to a proper sound level.</li> <li>• Defective earphone jack: Replace the earphone jack.</li> <li>• Defect in IC404 Check voltages. Replace if necessary.</li> <li>• Defect in IC401 Check voltages. Replace if necessary.</li> </ul>
MW	No sound, weak sound (Low sensitivity)	<ul style="list-style-type: none"> <li>• Improper location of unit: Rotate or reposition the unit.</li> <li>• Defect in IF T101: Check resistance, voltage, and current. Replace as needed.</li> <li>• Defect AM antenna coil L103 or oscilloscope coil L104: Replace if necessary.</li> <li>• Intermediate Frequency tuning faulty: Readjust (see "Alignment and Adjustment").</li> <li>• RF tracking faulty: Readjust (see "Alignment and Adjustment").</li> <li>• Defective IC101: Check voltages. Replace if necessary.</li> <li>• Defective IC102: Check voltages. Replace if necessary.</li> <li>• Poor contact in antenna circuit: Check resistance and resolder.</li> </ul>
FM	No sound, weak sound (Low sensitivity)	<ul style="list-style-type: none"> <li>• FM antenna not connected: Connect the built-in or external antenna.</li> <li>• Defective band selector switch: Replace or repair the switch.</li> <li>• Defective IC101: Check voltages. Replace if necessary.</li> <li>• Defective IC102: Check voltages. Replace if necessary.</li> <li>• Intermediate Frequency tuning faulty: Readjust (see "Alignment and Adjustment").</li> <li>• Poor contact in FM antenna circuit: Resolder or repair as required.</li> </ul>
Tape	No sound/recording, unsteady tape sound, weak sound	<ul style="list-style-type: none"> <li>• Dirty capstan or head: Clean the capstan or head with alcohol.</li> <li>• Irregular cassette tape winding: Replace tape.</li> <li>• Defective IC201: Check voltage. Replace if necessary.</li> <li>• Defective L203: Check voltages. Replace if necessary.</li> <li>• Cassette erasure prevention tabs broken out: Replace tape or cover tab openings with adhesive tape.</li> </ul>
CD	Cannot read the table of content. no sound	<ul style="list-style-type: none"> <li>• Disc is inserted upside down: Insert disc correctly.</li> <li>• Disc is dirty: Wipe clean with a soft cloth.</li> <li>• Disc is scratched: Use a new disc.</li> <li>• Disc is seriously warped: Use a new disc.</li> </ul>

Circuit	Symptom	Cause and Remedy
CD	Cannot read the table of content. no sound	<ul style="list-style-type: none"> <li>• A non-standard disc has been inserted: Use only a brand name disc.</li> <li>• Moisture has formed inside the CD deck: Wait about 20 to 30 minutes.</li> <li>• Defective Q407: Check voltages. Replace if necessary.</li> <li>• Defective IC301: Check voltages. Replace if necessary.</li> <li>• Defective IC302: Check voltages. Replace if necessary.</li> <li>• Defective IC303: Check voltages. Replace if necessary.</li> <li>• Defect in the CD pickup mechanism: Replace as required.</li> </ul>

## Main Adjustments

### ■ Measuring instructions required for adjustment

1. AM Signal generator
2. FM Signal generator
3. Intermediate Frequency sweep generator
4. FM stereo signal generator
5. Low-frequency oscillator (oscillation frequency 50 Hz-20 kHz, 0dB output with 600 ohm impedance)
6. Attenuator (600 ohm impedance)
7. Electronic voltmeter
8. Distortion meter
9. Torque gauge (cassette for CTG-N)
10. Wow & flutter meter
11. Frequency counter meter

#### ◇ Test tape

##### ● Playback tape

MTT-111NS (tape speed, wow flutter)

MTT-112BN (reference level)

MTT-257C (playback frequency)

MTT-113CN

##### ● Recording tape

MTT-501

##### ● Power supply voltage

AC110V-120V 60Hz

### ■ Measuring instruments

#### ● Radio section

- ◇ FM 1 kHz, 22.5 kHz deviation
- ◇ FM STEREO: 1 kHz, 67.5 kHz deviation  
pilot signal 7.5 kHz.
- ◇ AM: 1 kHz, 30% modulation
- ◇ Reference output:  
Speaker output: 0dB (2 V)/3.2 ohm  
H. Phone output: - 10 dB (0.245V)/32 ohm

#### ● Amplifier section

- ◇ Reference output:  
Speaker output 0 dB (2 V)/ 3.2 ohm  
H. Phone output – 10 dB (0.245V)/32 ohm

#### ● CD section

- ◇ Test disc: SONY Yeds 7 Type 3  
PHILIPS SBC-444A  
A-BEX: TCD-731R  
TCD-712R  
TCD-785

■ **Cassette Amplifier Section**

Item	Measuring Condition	Check and adjustment procedure	Standard value	Adjusting part
Head azimuth adjustment	<ul style="list-style-type: none"> <li>• Test tape: MTT113CN (8 kHz)</li> <li>• Signal output terminal: PHONES (with 32 ohm load)</li> </ul>	<ol style="list-style-type: none"> <li>1. Play back the test MTT113CN (8 kHz).</li> <li>2. Adjust the head azimuth adjusting screw so that the phase difference between the R and L channels is minimized at an output level that is within <math>\pm 2</math> dB of the maximum output level. After this adjustment, lock the head azimuth adjusting screw with screw sealant to cover more than a half of the screw head.</li> <li>3. When the head azimuth is maladjusted, correct it with the head azimuth adjusting screw.</li> </ol>	<ul style="list-style-type: none"> <li>• Output level:</li> <li>• Within <math>\pm 2</math> dB of maximum output level</li> <li>• Phase difference L and R channels: Minimum</li> </ul>	Head azimuth adjusting screw (To be used only after head replacement) See Fig 3-1
PB frequency response check	<ul style="list-style-type: none"> <li>• Test tape: MTT257C</li> <li>• Signal output terminal: PHONES (with 32 ohm load)</li> </ul>	Play back the test tape MTT257C while confirming that deviation between the 1 kHz signal and 8 kHz signal should be 0 (+3--6) dB.	Deviation between 1 kHz and 8 kHz: 0 (+3--6) dB	
Bias frequency check	<ul style="list-style-type: none"> <li>• Tape: Normal</li> <li>• Signal output terminal: Cassette REC./PLAY HEAD</li> </ul>	Set the TUNER or CD function and with TAPE to record. check to see if the frequency at the measuring point R201 or R202 is 82 kHz $\pm 1$ kHz. if not adjust L203 until the frequency counter indicates 82 kHz $\pm 1$ kHz.		L203, R201/R202 See Fig 3-2
REC and PB frequency response adjustment	<ul style="list-style-type: none"> <li>• Test tape: MTT-501</li> <li>• Signal input FM22.5 DEV 60dB<math>\mu</math> with Emphasis</li> <li>• signal output terminal: PHONES (with 32 ohm load)</li> </ul>	At TUNER, set the BAND to the FM position, and record the reference 1 kHz signal and 8 kHz signal alternately repeatedly. While playing back the recorded signal differ from that of the 1 kHz signal by within 0 (+3--6) dB.	Level difference between REC and PB: Within 0 (+3--6) dB.	

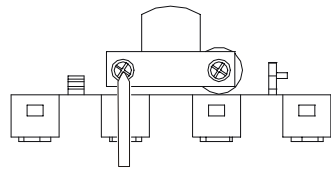
## ■ Tuner Section

Item	Measuring Condition	Check and adjustment procedure	Standard value	Adjusting part
AM IF adjustment	Signal input: Loop ANTENNA Signal output: IC101 PIN (16)	1.Set the intermediate frequency sweep generator to AM 450 kHz. 2.Adjust the T101 for maximum and center output		<ul style="list-style-type: none"> <li>• T101</li> </ul> See Fig 3-2
AM tracking adjustment	Signal input: Loop antenna PHONES (with 32 ohm Load)	1.Set the TUNER at 530 KHz adjust L104 until the test pin of R107 voltage at $1.5\text{ V} \pm 0.05\text{V}$ . 2.Set the TUNER at 1710 KHz, Check the pin of R107 Voltage at $7.5\text{V} \pm 0.5\text{V}$ . 3.Set the TUNER and S/G at 610KHz, adjust L103 for maximum output. 4.Set the TUNER and S/G at 1400KHz, adjust TC102 for maximum output. 5.Repeat the above steps 3 and 4.		<ul style="list-style-type: none"> <li>• L104</li> <li>• L103</li> <li>• TC102</li> </ul> See Fig 3-2
FM tracking adjustment	Signal input: Antenna Signal output: IC101 PIN (16)	1.Set the TUNER at 87.5MHz adjust L102 until the test pin of R105 voltage at $2.3\text{ V} \pm 0.05\text{V}$ . 2.Set the TUNER at 108MHz, Check the pin of R105 Voltage at $7.5\text{V} \pm 1\text{V}$ . 3.Set the TUNER and S/G at 90.1MHz, adjust L101 for maximum output. 4.Set the TUNER and S/G at 106.1MHz, adjust TC101 for maximum output. 5.Repeat the above steps 3 and 4.		<ul style="list-style-type: none"> <li>• L102</li> <li>• L101</li> <li>• TC101</li> </ul> See Fig 3-2

# PC-X290

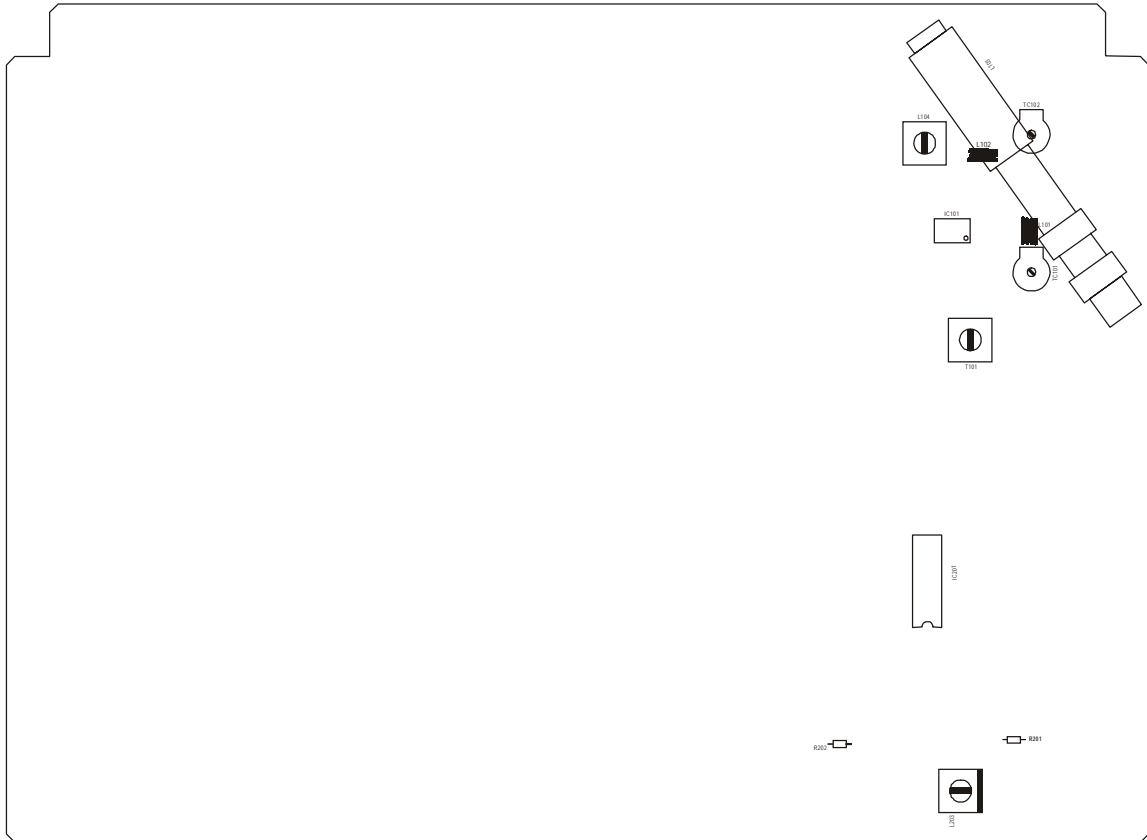
Location of adjusting parts

- Cassette mechanism section



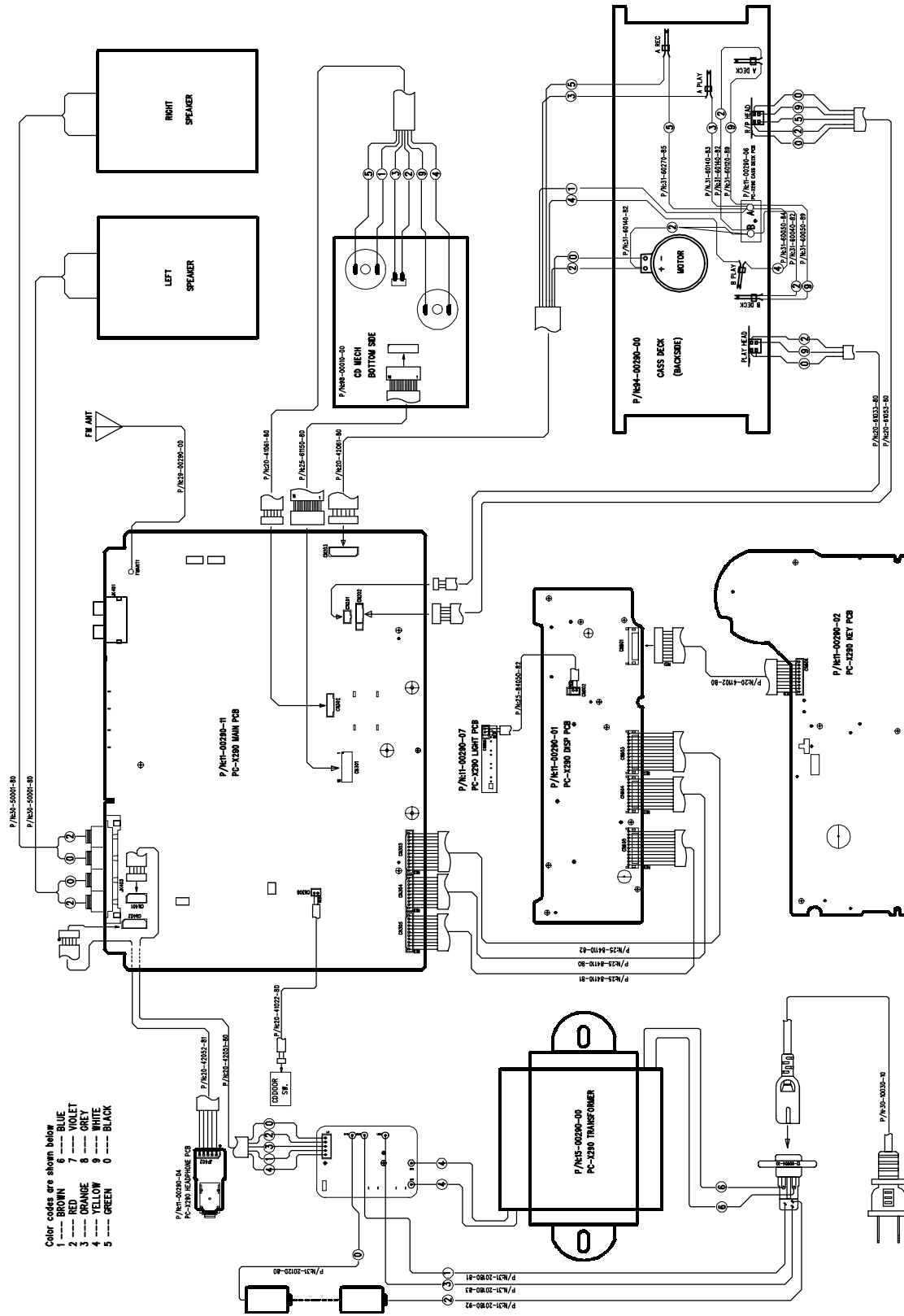
**Figure 3-1 Head Output Signal**

- Main board assembly



**Figure 3-2**

# WIRING CONNECTIONS



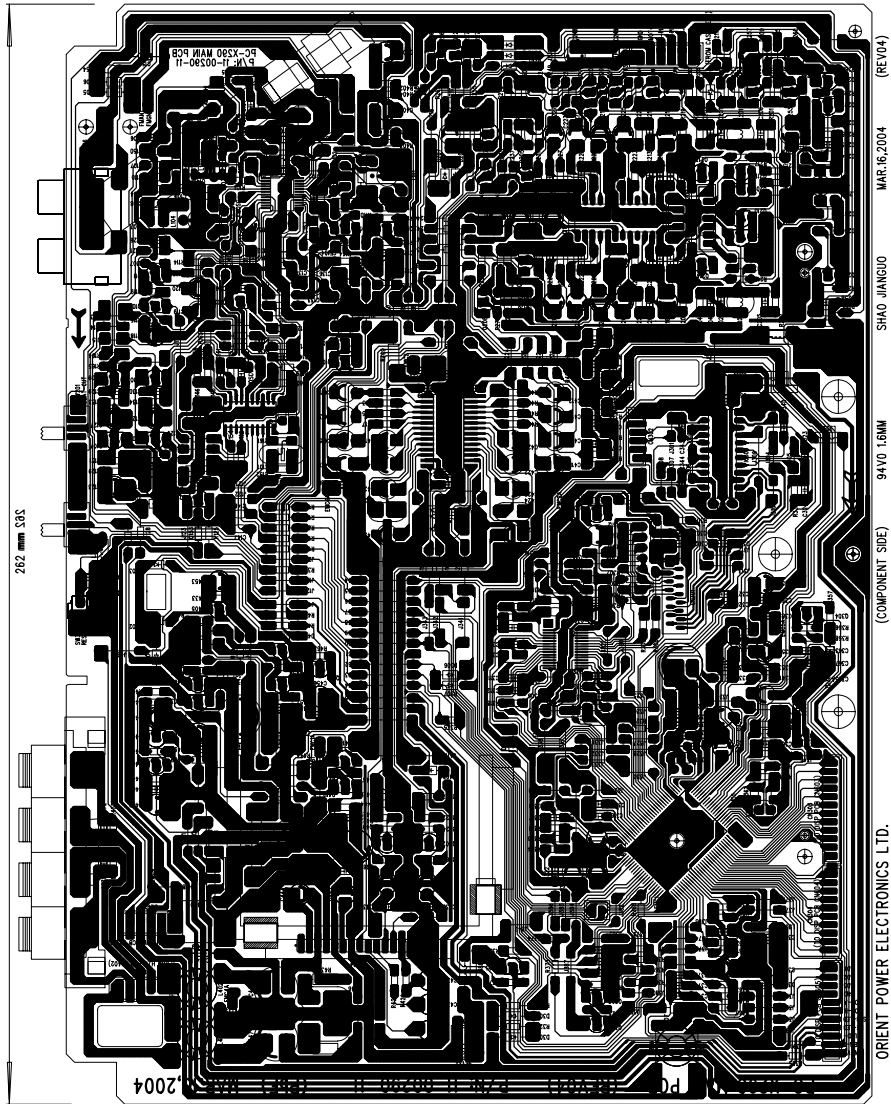


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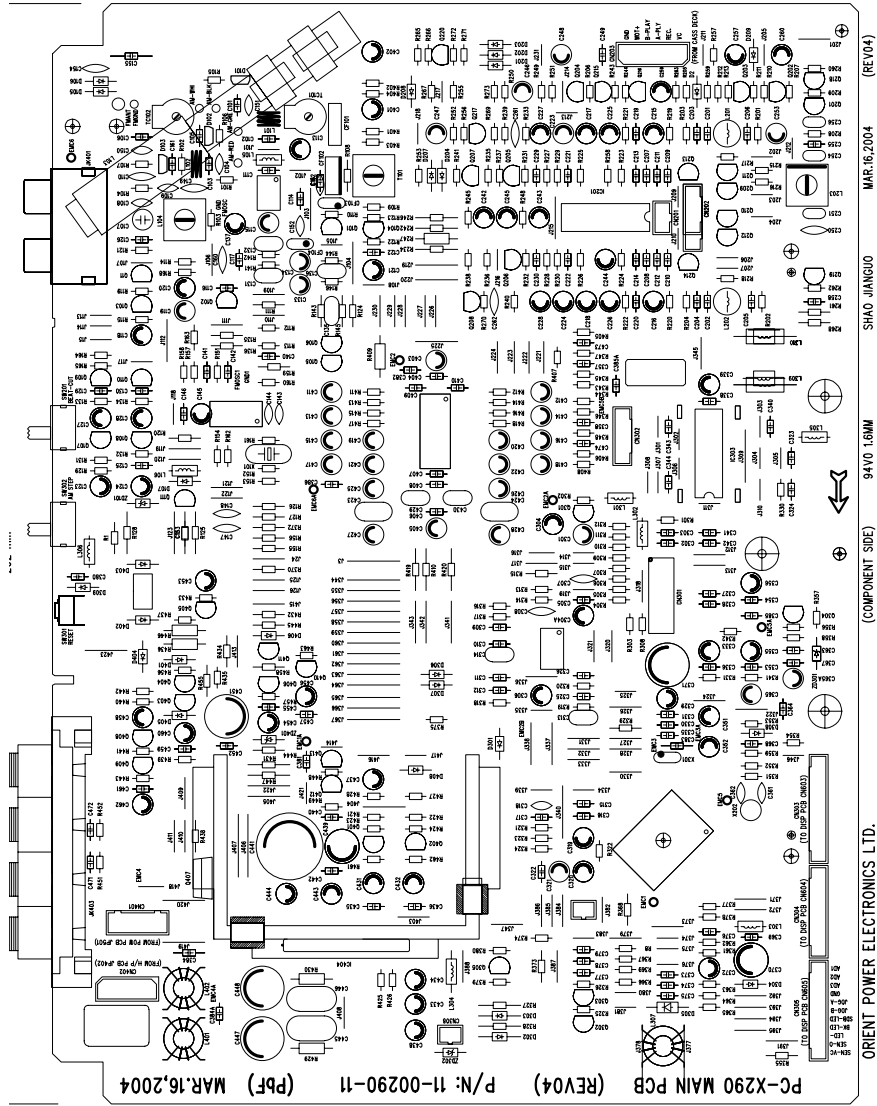
# Printed circuit boards

■ Main board



Top view

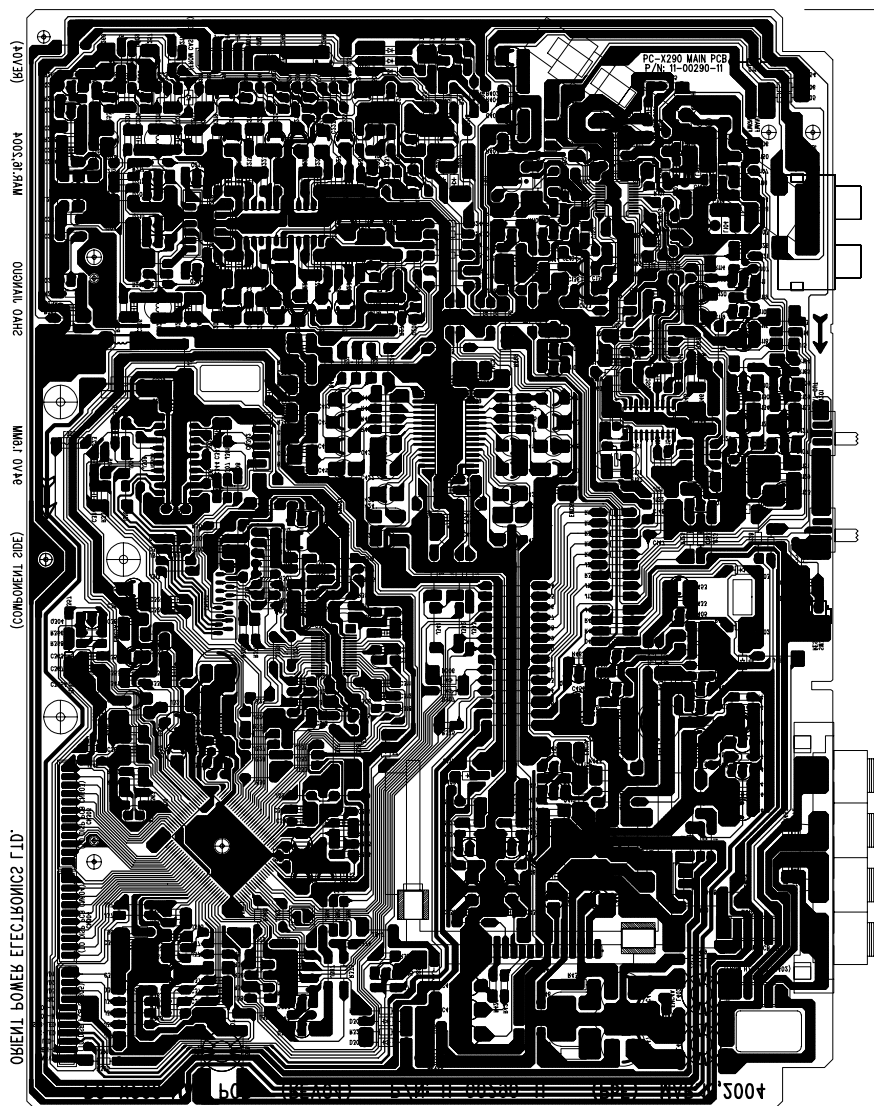
■ Main board



Top view



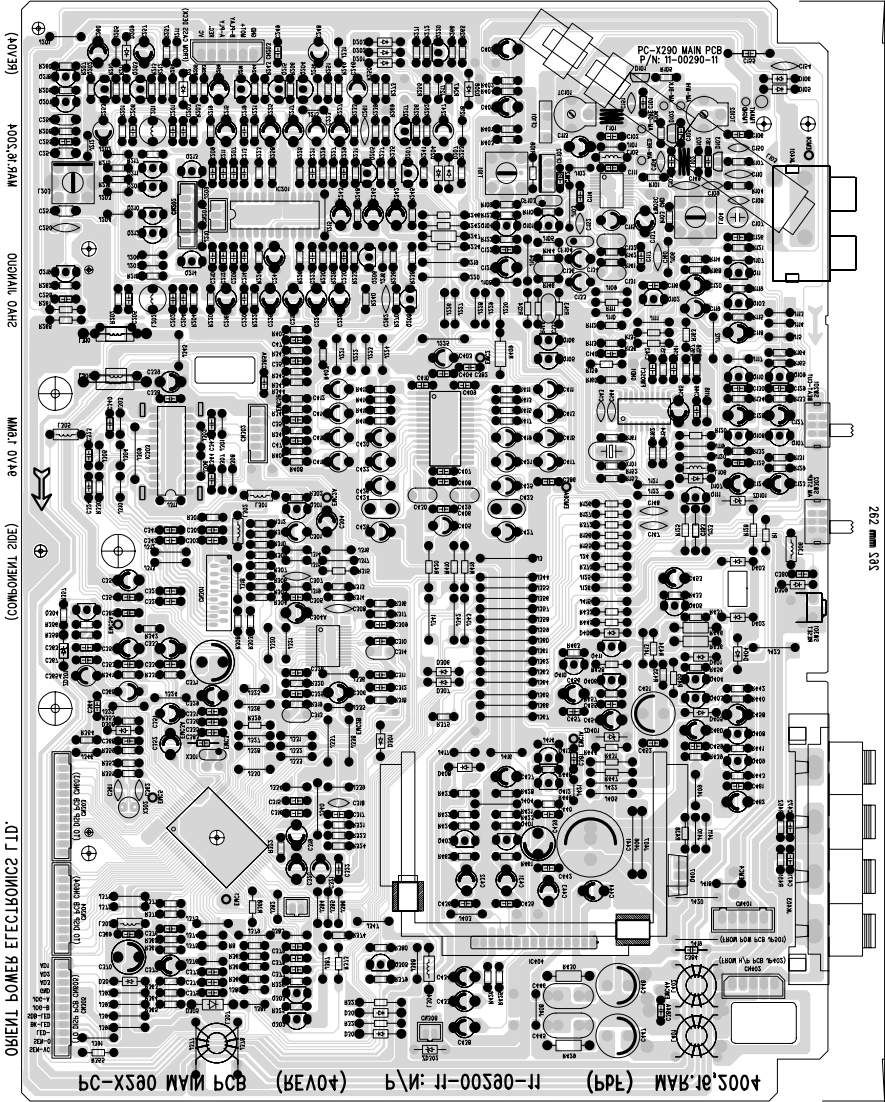
■ Main board



Bottom view

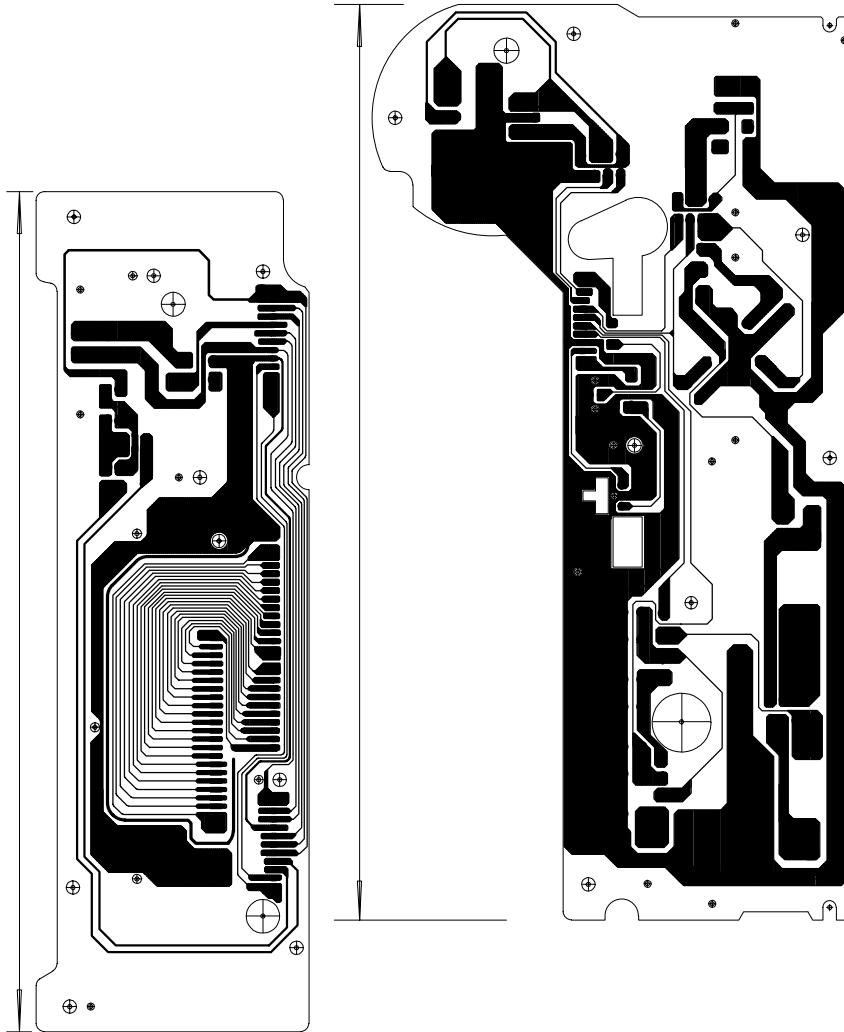


■ Main board



Bottom view

■ Display&Key board

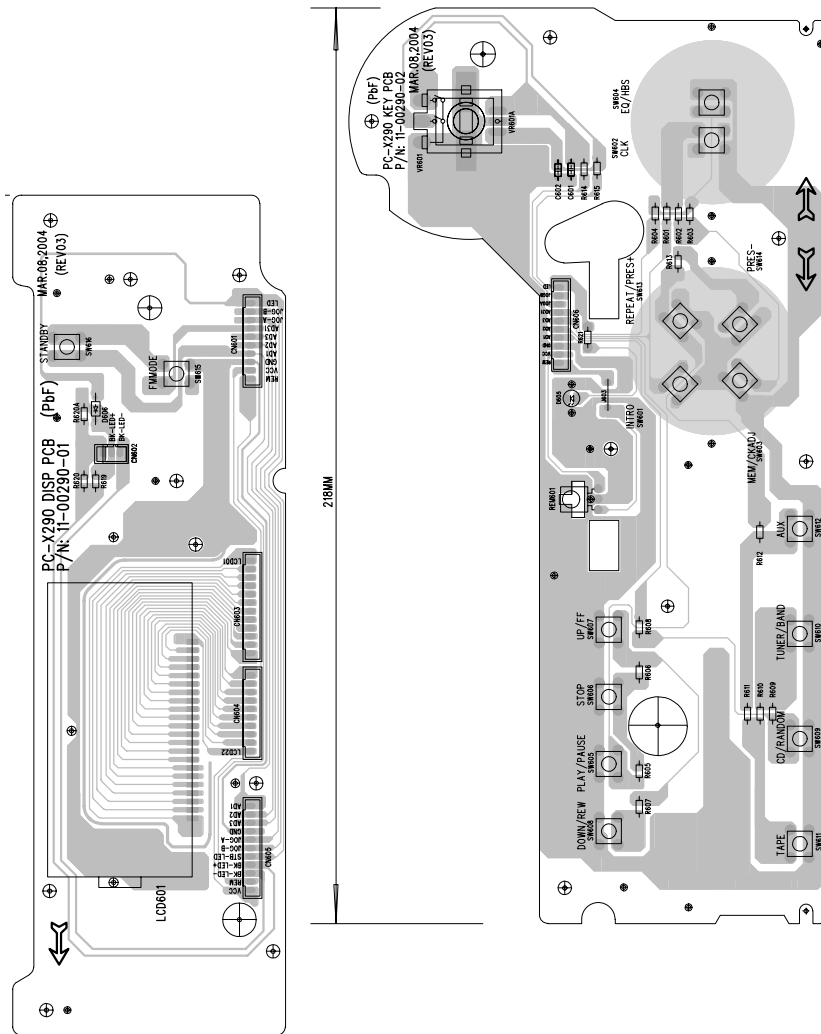


Top View



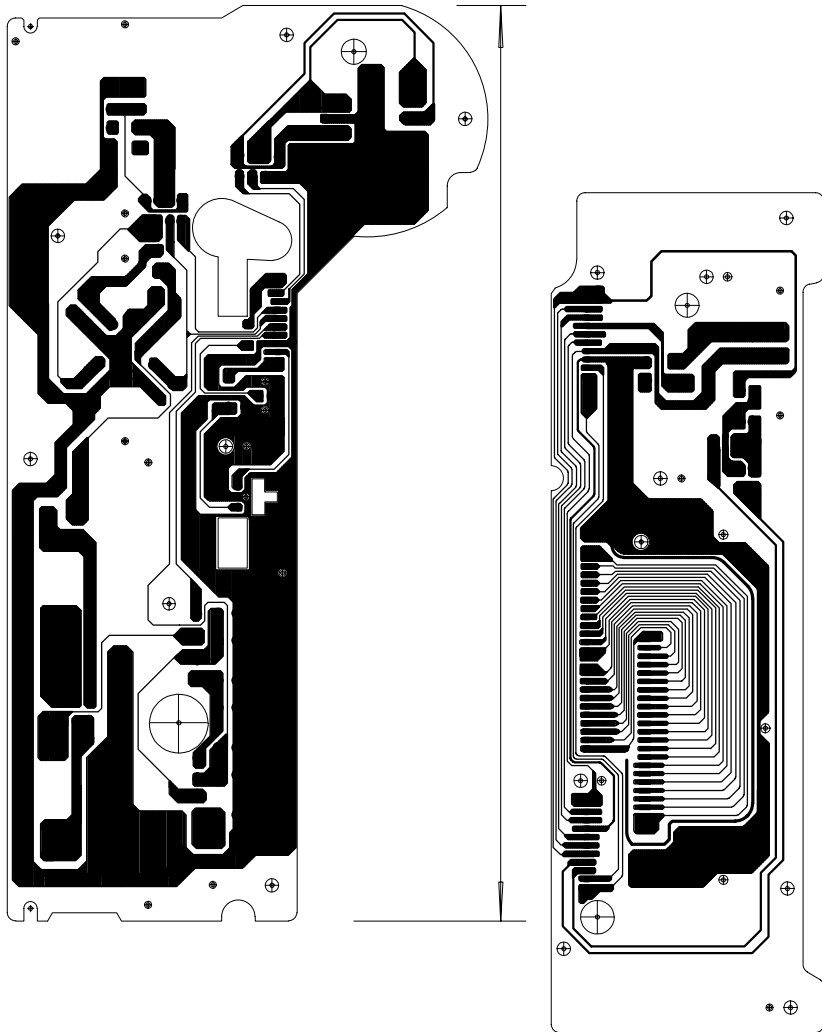


■ Display & Key Board



Top View

■ Display & Key board

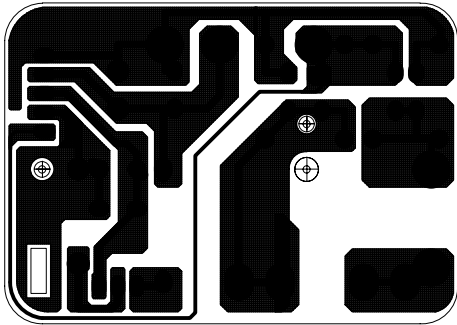


Bottom View

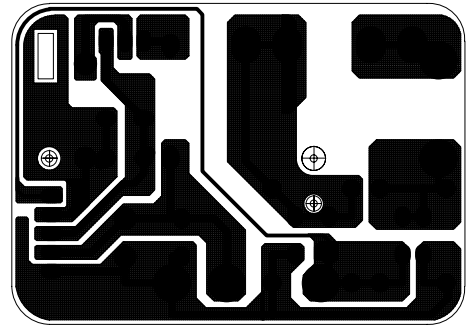




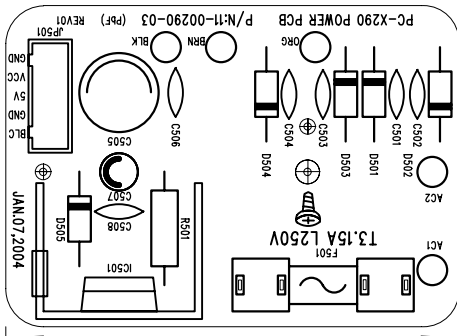
■ Power board



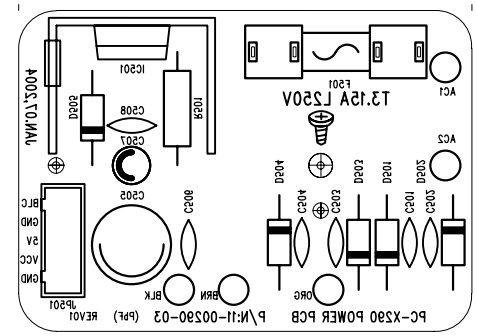
Top View



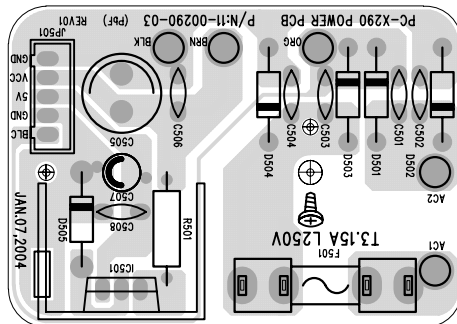
Bottom View



Top View



Bottom View

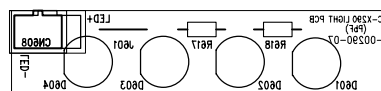
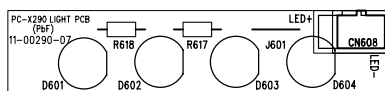


■ Light Board



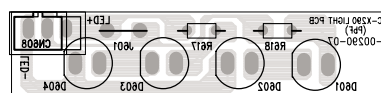
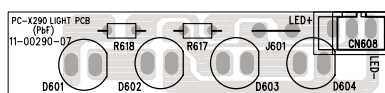
Top View

Bottom View



Top View

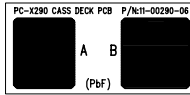
Bottom View



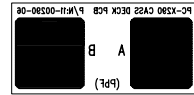
Top View

Bottom View

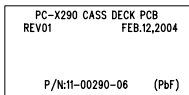
■ Cass Deck board



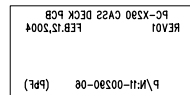
Top View



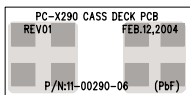
Bottom View



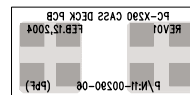
Top View



Bottom View

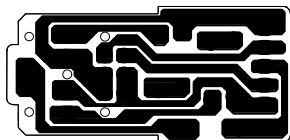


Top View

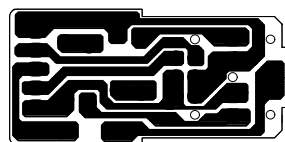


Bottom View

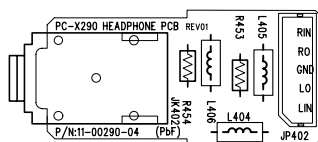
■ HeadPhone Board



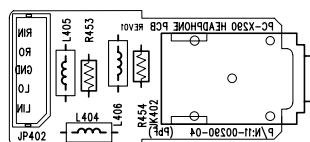
Top View



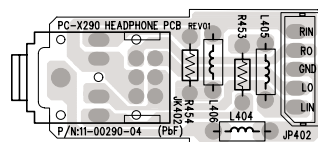
Bottom View



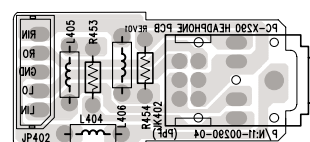
Top View



Bottom View



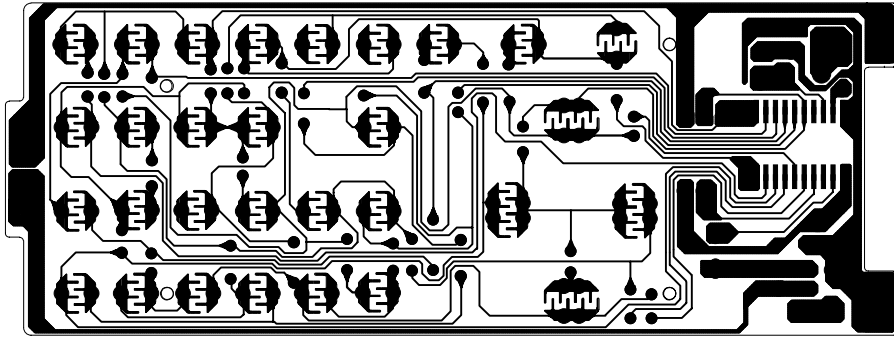
Top View



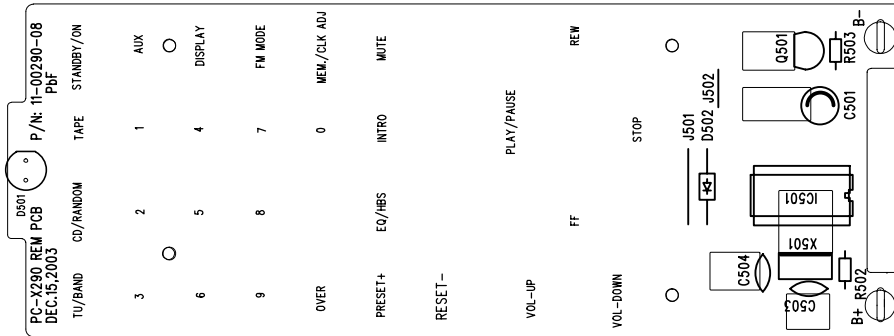
Bottom View



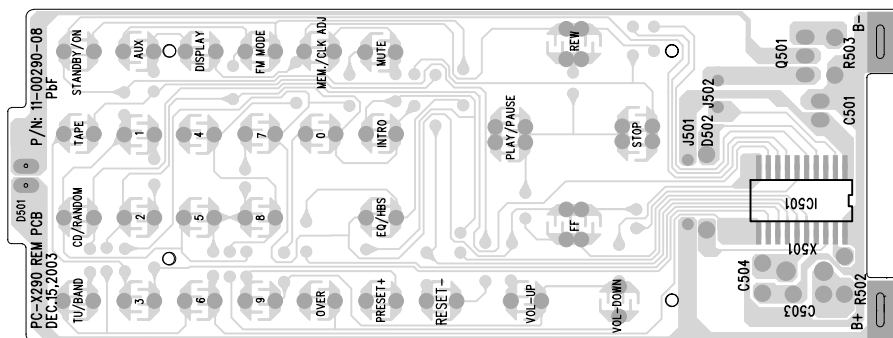
■ Remote board



Top View

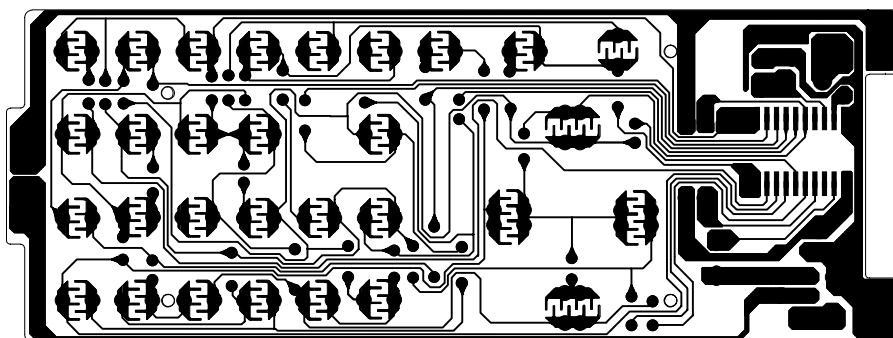


Top View

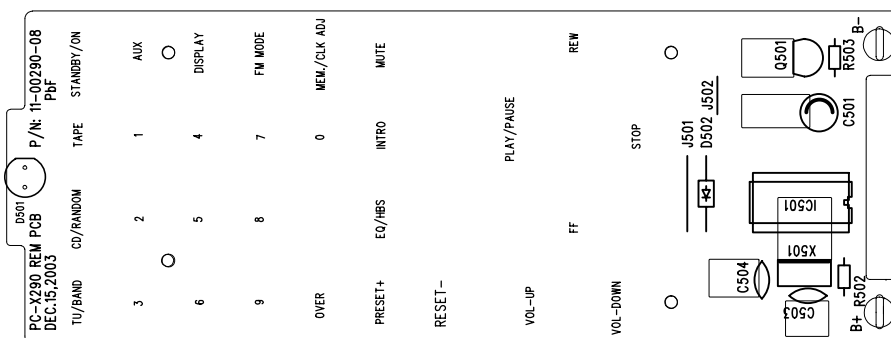


Top View

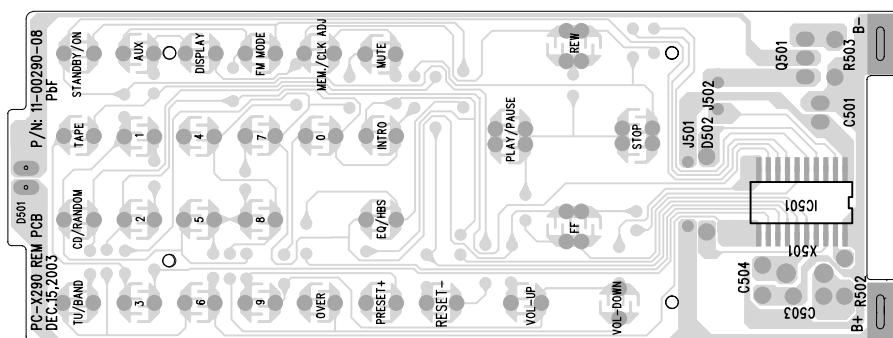
■ Remote Board



Bottom View



Bottom View



Bottom View

# JVC

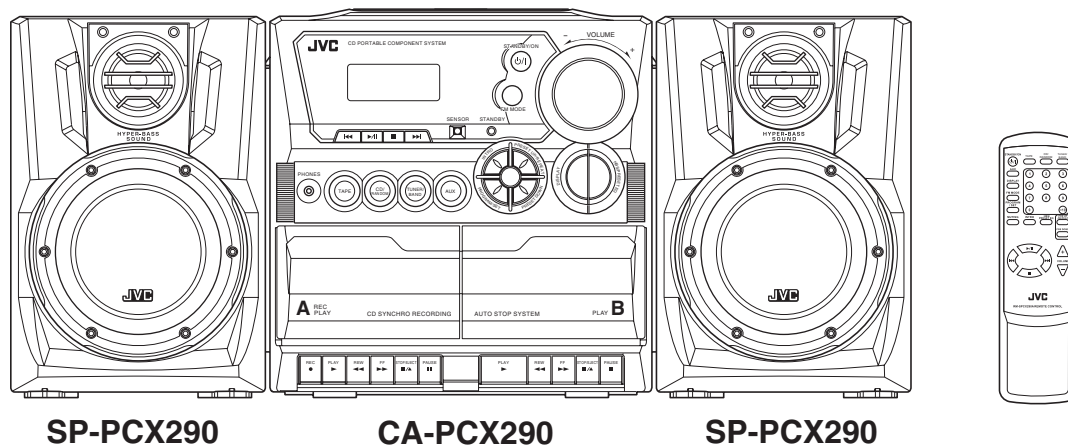
## SERVICE MANUAL

### CD PORTABLE COMPONENT SYSTEM

## PC-X290

#### SERVICE POLICY

No service part is available for this model.  
Exchange only.



SP-PCX290

CA-PCX290

SP-PCX290



#### Area suffix

B ..... U.K.

### TABLE OF CONTENTS

1	PRECAUTION.....	1-3
2	SPECIFIC SERVICE INSTRUCTIONS.....	1-3
3	DISASSEMBLY.....	1-4
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## SPECIFICATION

Amplifier section-CA-PCX290	Output Power	5 W + 5 W at 3.2 $\Omega$ (10% THD)
	Audio input sensitivity/Impedance (at 1 kHz)	AUX: 1 000 mV/47 k $\Omega$
	Speakers/Impedance	3.2 $\Omega$ - 8 $\Omega$
Tuner	FM tuning range	87.5 MHz - 108.0 MHz
	AM tuning range	522 kHz - 1 629 kHz
CD player	CD Capacity	1 CD
	Dynamic range	60 dB
	Signal-to-noise ratio	75 dB
Cassette deck	Frequency response	Normal (type I): 50 Hz - 10 000 Hz
	Wow and flutter	0.15% (WRMS)
General	Power requirements	AC 230 V , 50 Hz
		DC 12 V ["R20(SUM-1)/D(13D)" batteries (8)]
	Power consumption	20 W (at operation)
		3 W (on standby)
	Dimensions (approx.)	270 mm $\times$ 274 mm $\times$ 298 mm (W/H/D)
	Mass (approx.)	4.1 kg
Speaker section-SP-PCX290	Type	2-way bass-reflex type
	Speaker units	Woofer: 10 cm cone x1
		Tweeter: 5 cm cone x1
	Power handling capacity	5 W
	Impedance	3.2 $\Omega$
	Frequency range	50 Hz - 18 000 Hz
	Dimensions (approx.)	180 mm $\times$ 270 mm $\times$ 228 mm (W/H/D)
	Mass (approx.)	1.7 kg each

Design and specifications subject to change without notice.

**SECTION 1  
PRECAUTION**

This service manual does not describe PRECAUTION.

**SECTION 2  
SPECIFIC SERVICE INSTRUCTIONS**

This service manual does not describe SPECIFIC SERVICE INSTRUCTIONS.

## SECTION 3 DISASSEMBLY

### 3.1 Main body

#### 3.1.1 Removing the front cabinet section and rear cabinet section (See Fig.1 to 6)

- (1) Remove the five screws **A** and the five screws **B** on the back of the body.
- (2) Remove the screw **D** on each side of the body.
- (3) Move the rear cabinet backward, and disconnect the antenna wire from the antenna terminal on the inside of the rear cabinet.
- (4) Disconnect the wire from connector **CN401** on the main board on the front cabinet section.

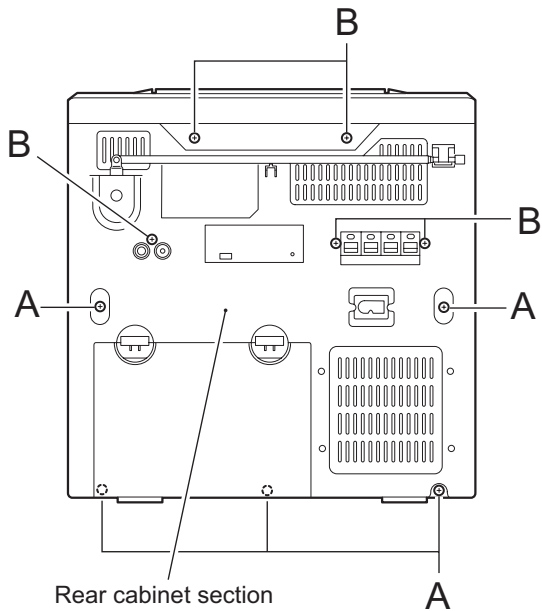


Fig.1

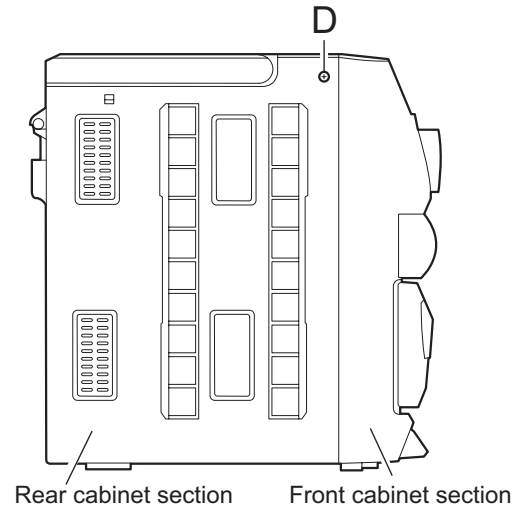


Fig.3

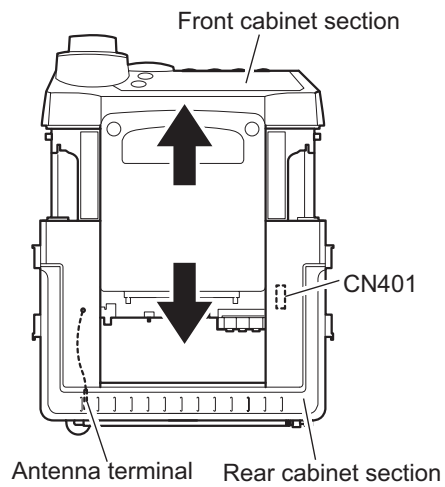


Fig.4

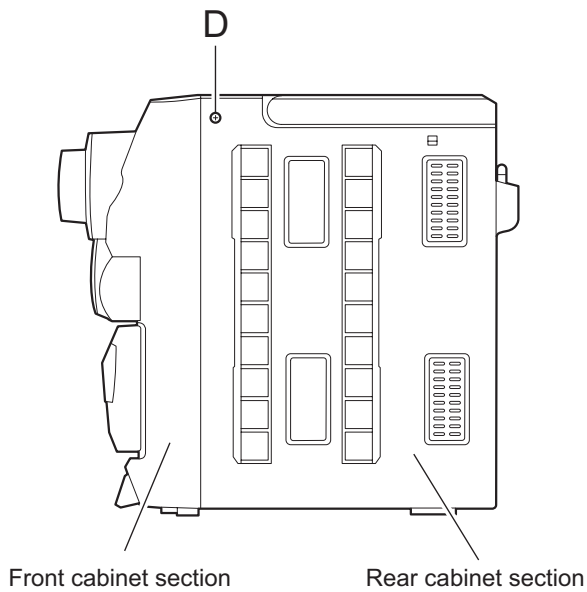


Fig.2

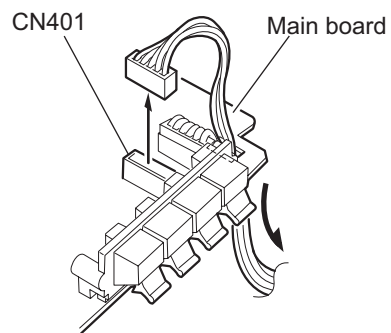


Fig.5

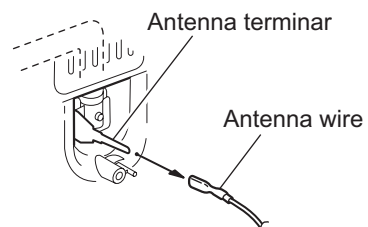


Fig.6

### 3.2 Front cabinet section

- Prior to performing the following procedure, remove the front cabinet section and rear cabinet section.

#### 3.2.1 Removing the CD assembly section (See Fig.7 to 11)

- (1) Disconnect the wires from connector [CN201](#), [CN202](#) and [CN203](#) on the main board.
- (2) Disconnect the wire from connector [CN402](#) on the main board.
- (3) Remove the two screws **E** and the two screws **F** attaching the CD assembly section.
- (4) Remove the five screws **G** attaching the LED board on the front side of the CD assembly section.
- (5) Move the CD assembly section from the front cabinet section backward. Disconnect the card wire from connector [CN601](#) on the LED board.

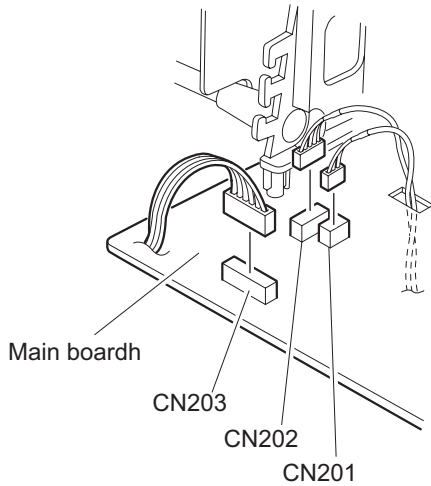


Fig.7

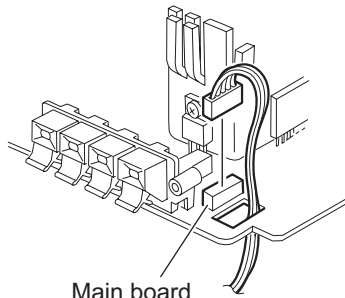


Fig.8

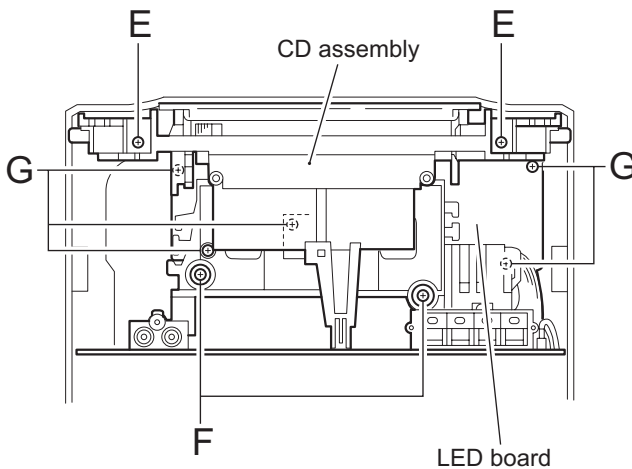


Fig.9

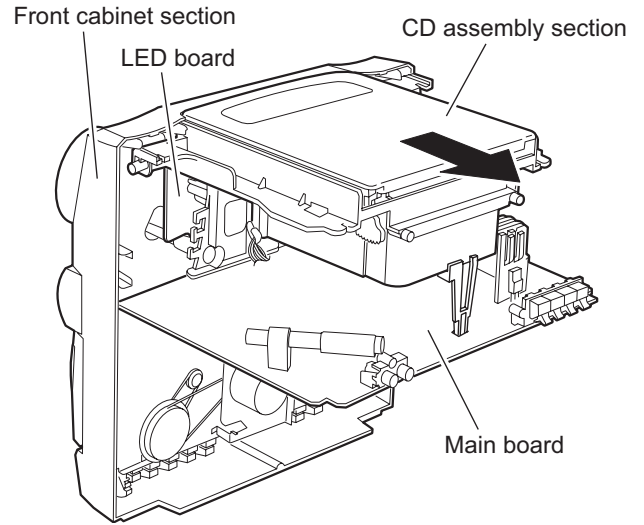


Fig.10

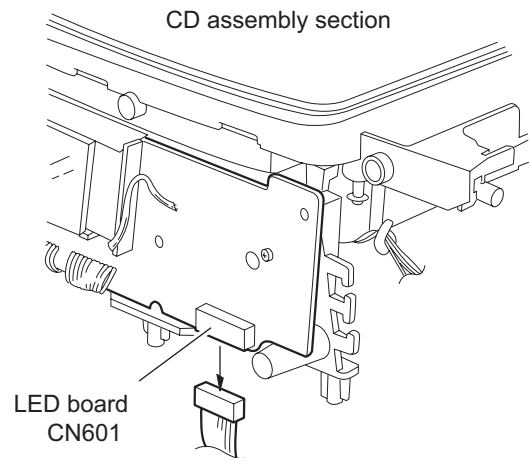


Fig.11

### 3.2.2 Removing the LED board / main board (See Fig.2 to 16)

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

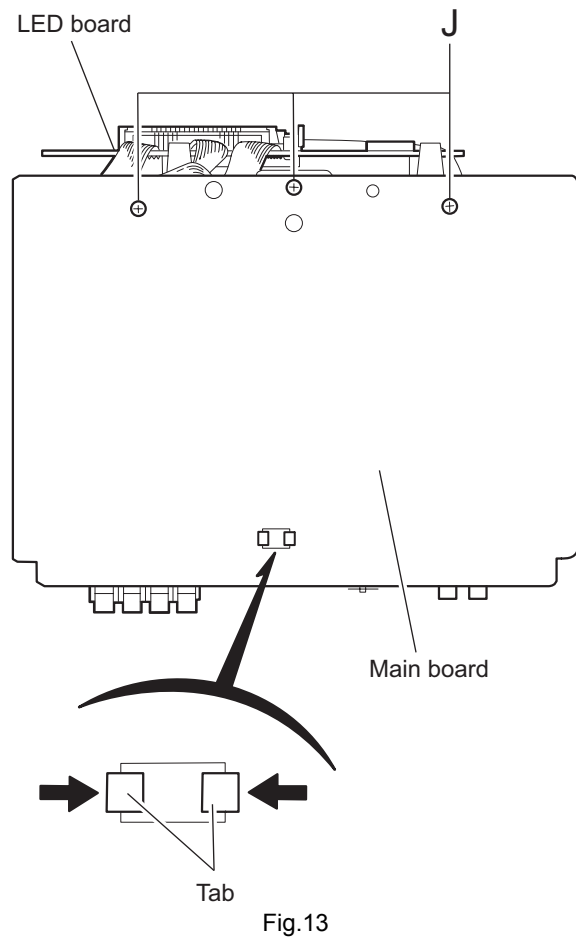
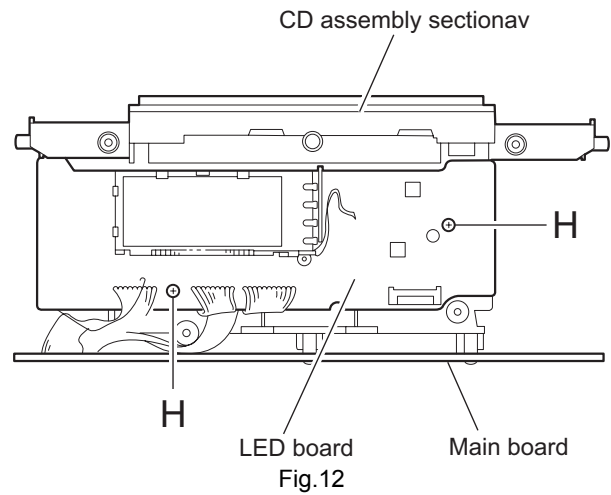
#### Caution:

Make sure to solder the short-circuit point on the CD servo board before disconnecting the card wire from connector [CN301](#) on the main board and from the CD servo board. If you don't observe this instruction, the pickup may be damaged.

- (1) Remove the two screws **H** attaching the LED board.
- (2) Remove the three screws **J** attaching the main board.
- (3) Push each tab of the main board inward and remove the main board.
- (4) Move the main board and the LED board as shown in Fig.14, and solder the short-circuit point on the CD servo board inside the CD assembly section.
- (5) Disconnect the card wire from connector [CN301](#) on the main board.
- (6) Disconnect the wire from the door switch at the bottom of the CD assembly section.

#### Caution:

When reassembling the main board, make sure to unsolder the short-circuit point after connecting the card wire to connector [CN 301](#) and the CD servo board.





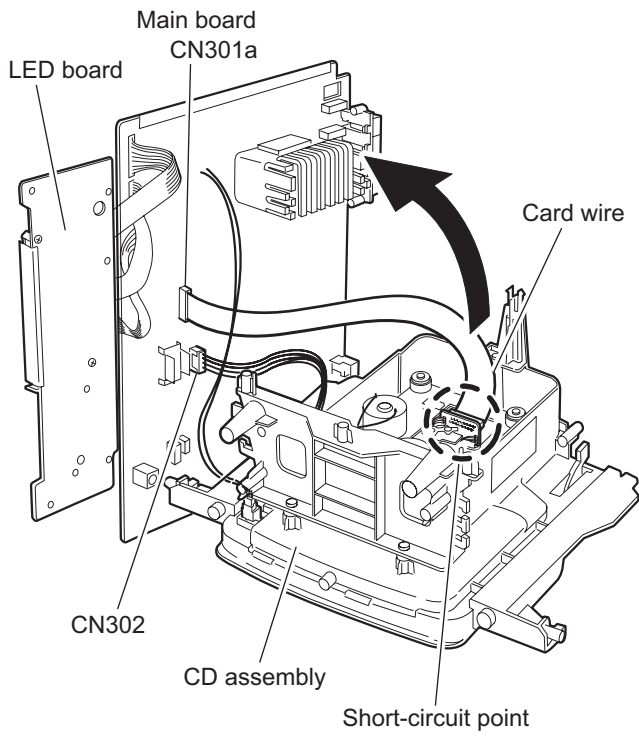


Fig.14

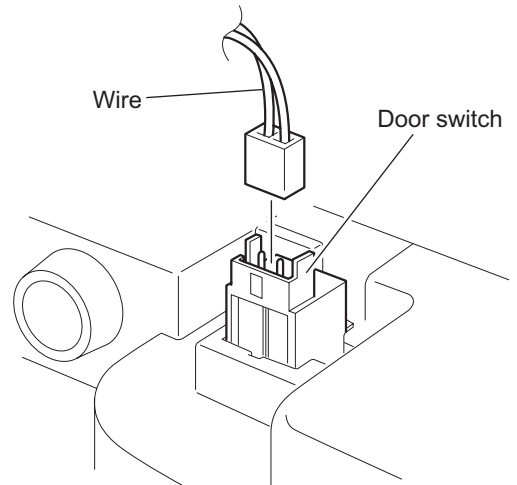
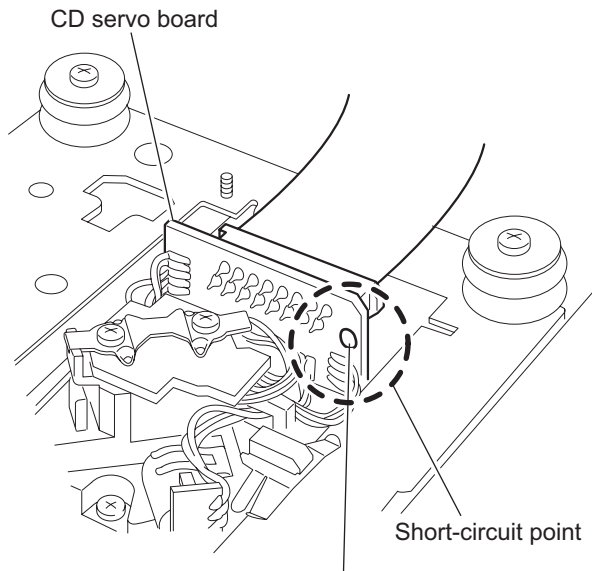


Fig.16



Unsolder  
Fig.15

### 3.2.3 Removing the CD mechanism assembly (See Fig.17)

- Prior to performing the following procedure, remove the LED board/main board.
  - (1) Disconnect the wire from the wire clamp.
  - (2) Remove the four screws **K** attaching the CD mechanism assembly.

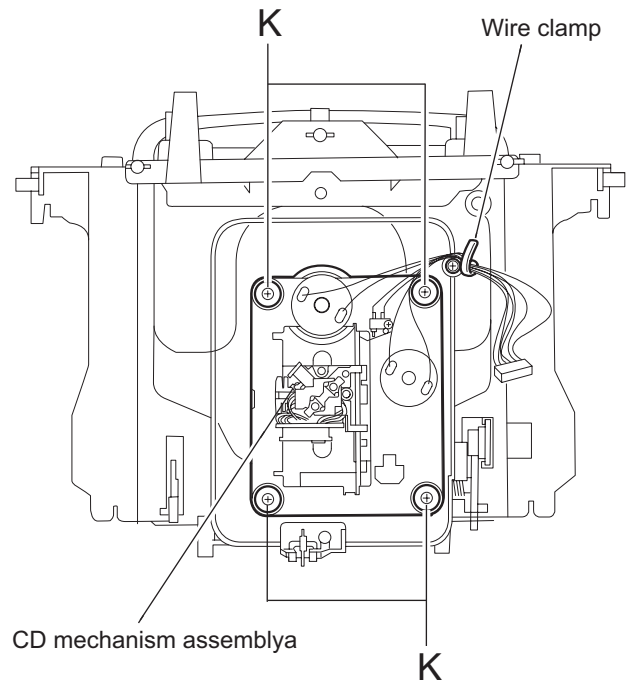
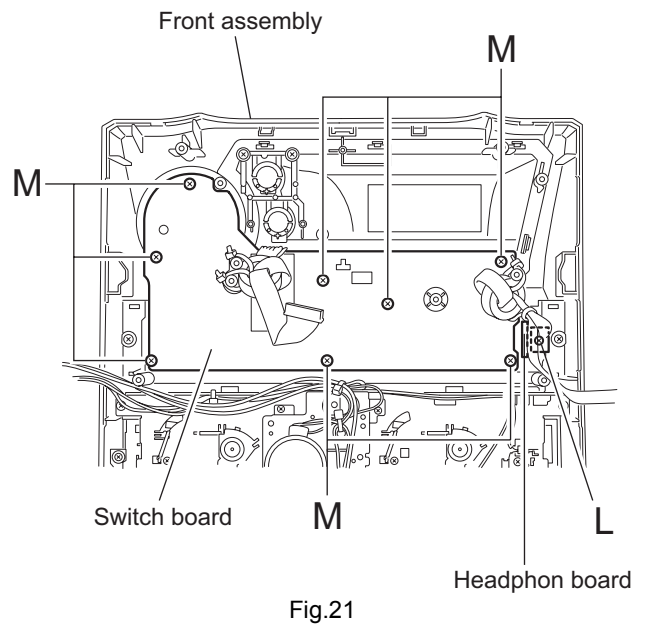
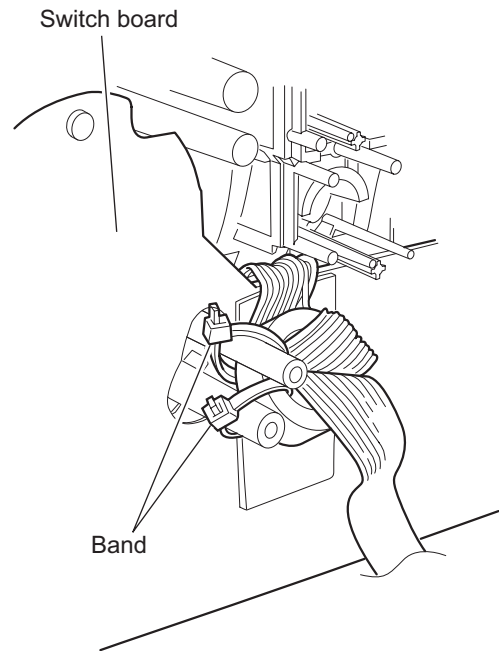
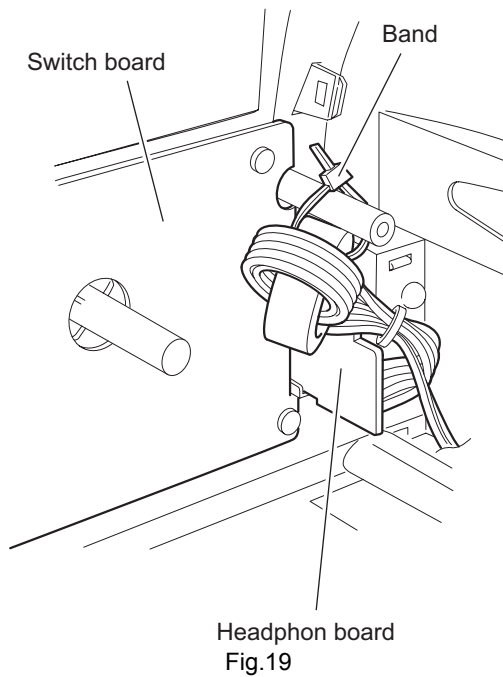
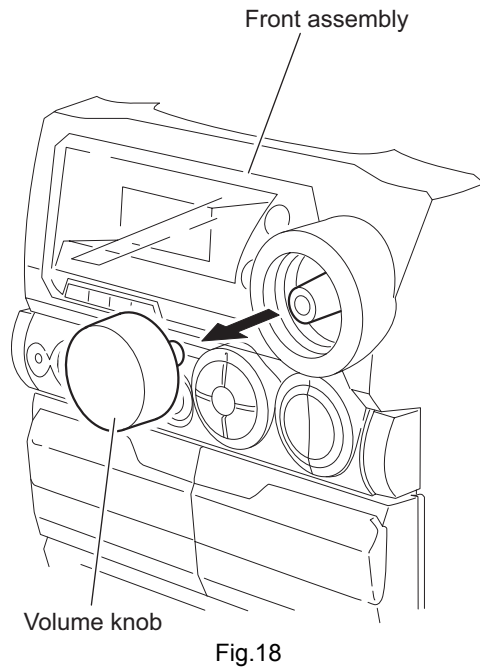


Fig.17

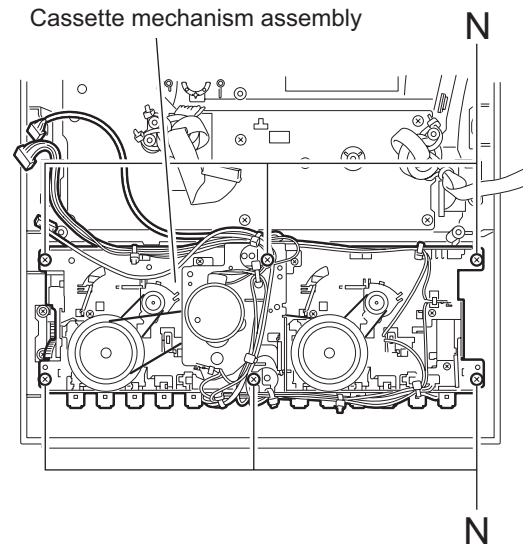
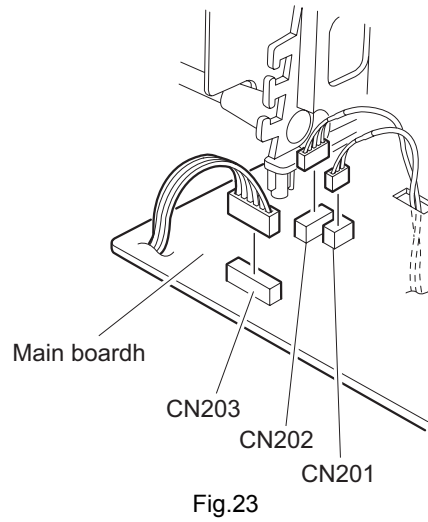
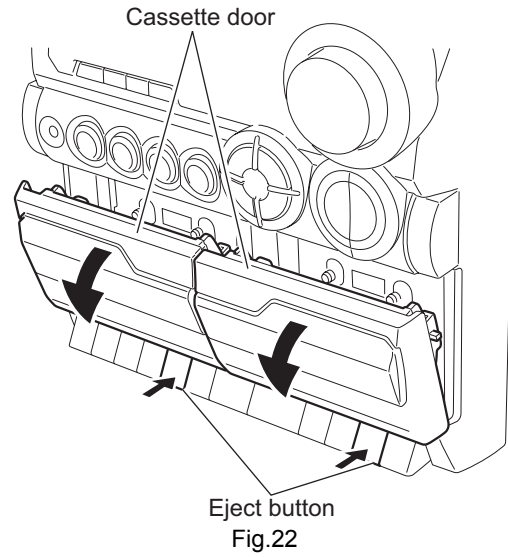
### 3.2.4 Removing the headphone board/ switch board (See Fig.18 to 21)

- Prior to performing the following procedure, remove the CD assembly section.
  - (1) Pull out the volume knob on the front side.
  - (2) Remove the screw **L** attaching the bracket board on the headphone board.
  - (3) Pull out the headphone board backward.
  - (4) Release the three bands setting the wire to the boss of the front cabinet.
  - (5) Remove the eight screws **M** attaching the switch board.



### 3.2.5 Removing the cassette mechanism assembly (See Fig.22 to24)

- (1) Push the two eject button on the front side to open the cassette door.
- (2) Disconnect the wire from connector [CN201](#), [CN202](#) and [CN203](#) on the main board.
- (3) Remove the six screws **N** attaching the cassette mechanism assembly.



### 3.3 Rear cabinet section

- Prior to performing the following procedure, remove the front cabinet section and rear cabinet section.

#### 3.3.1 Removing the fuse board / A/C jack / power transformer assembly (See Fig.25 to 27)

- Prior to performing the following procedure, remove the front cabinet section and rear cabinet section.
  - (1) Unsolder the two wires on the battery spring.
  - (2) Remove the screw **P** attaching the fuse board.
  - (3) Remove the two screws **Q** attaching the A/C jack.
  - (4) Remove the four screws **R** attaching the power transformer assembly.
  - (5) Release the four bands setting the wire to the boss of the rear cabinet.
  - (6) Remove the two screws **T** attaching the bracket.

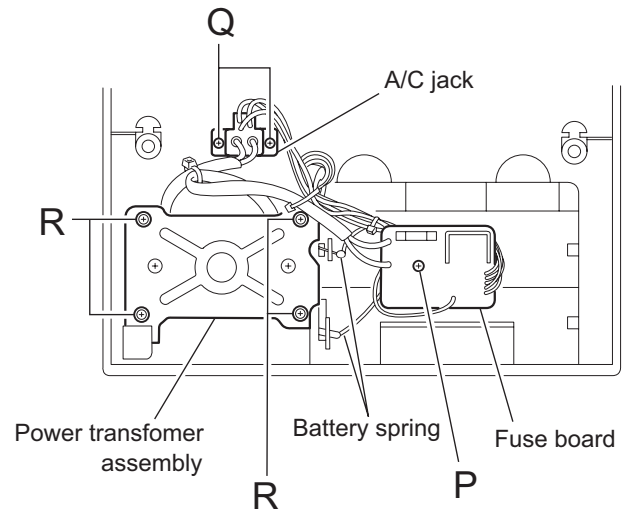


Fig.25

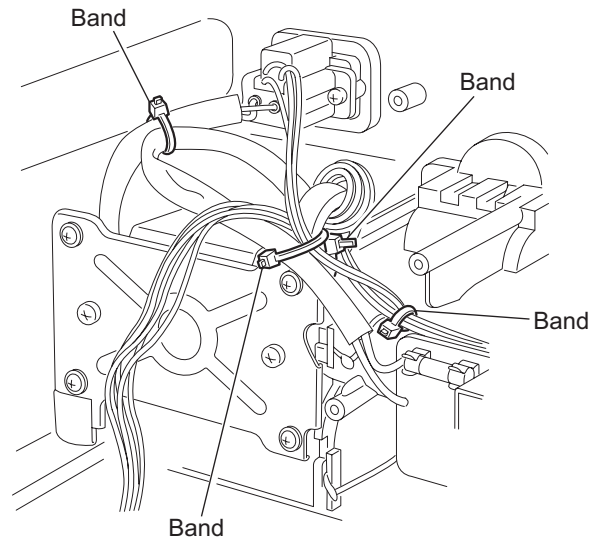


Fig.26

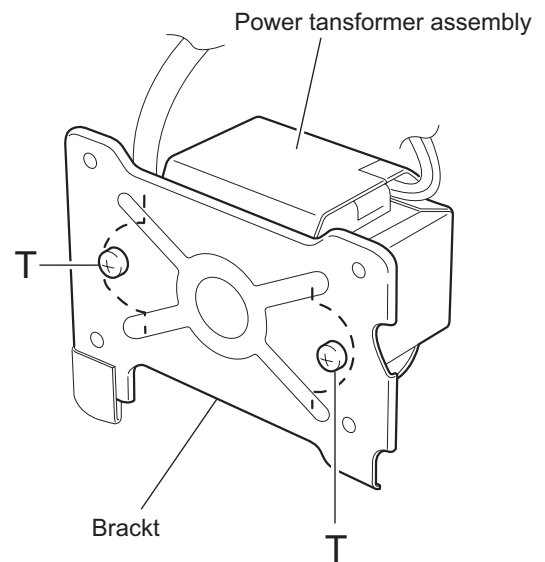


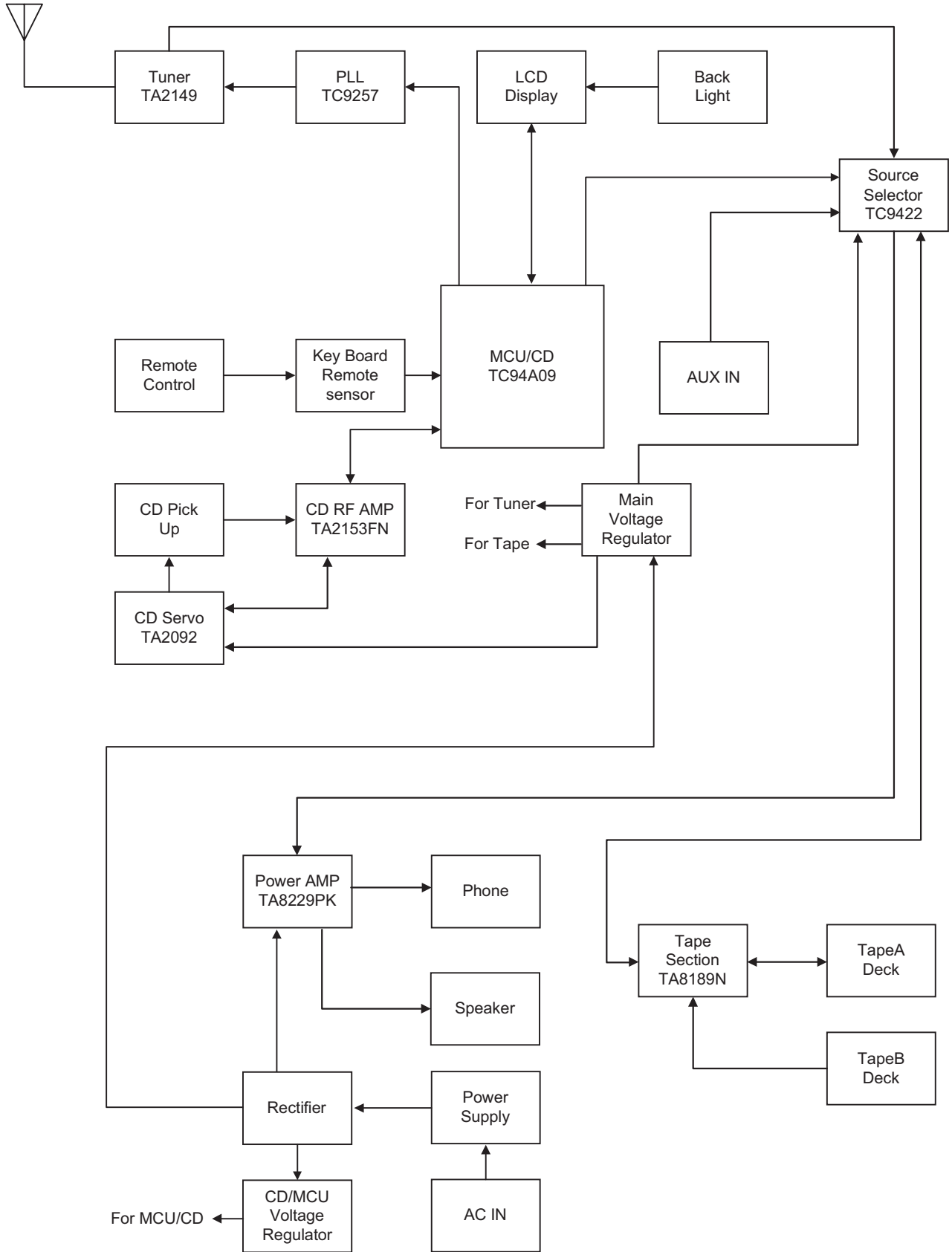
Fig.27

## **SECTION 4 ADJUSTMENT**

This service manual does not describe ADJUSTMENT.

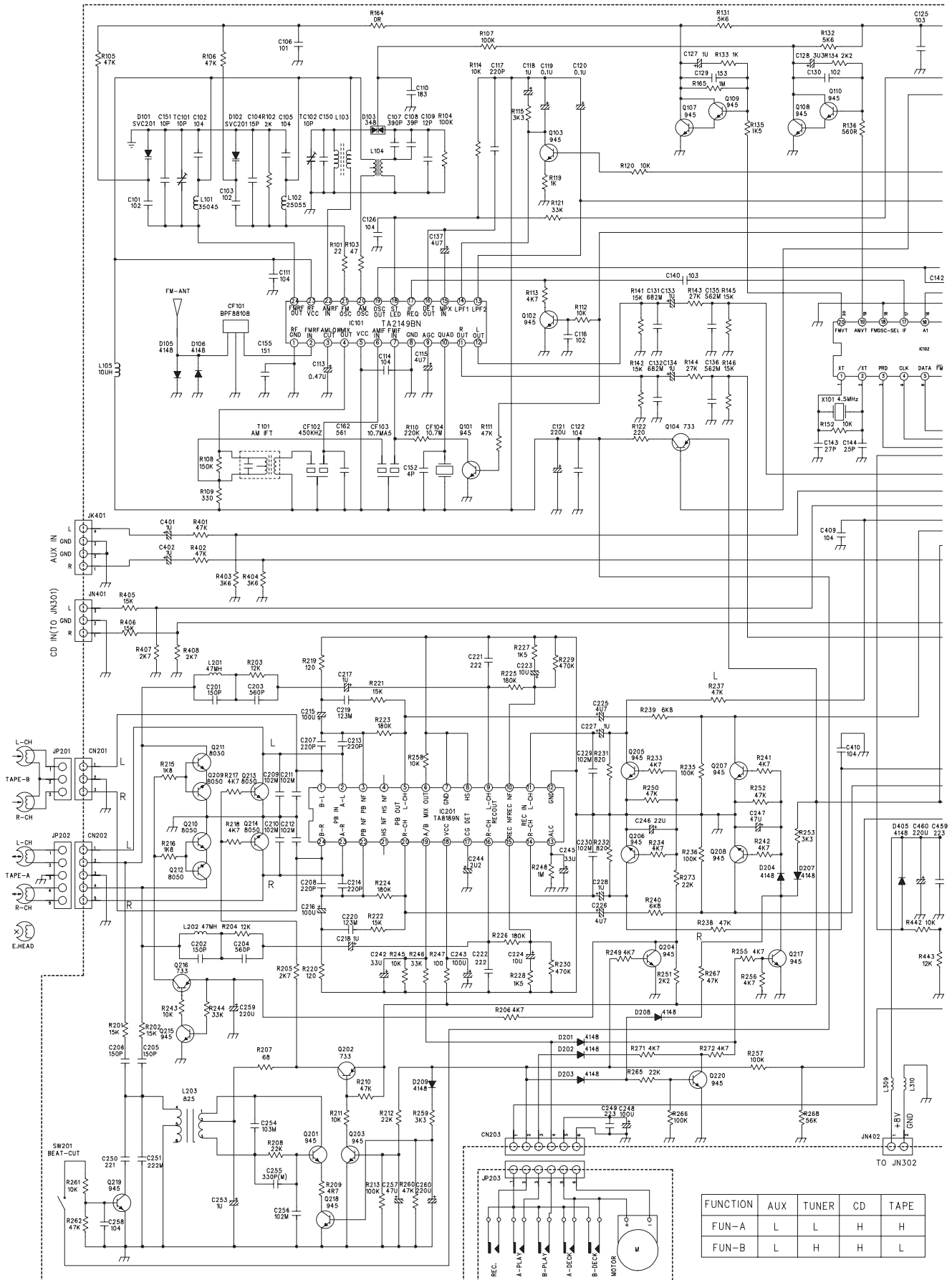
# SECTION 5 TROUBLESHOOTING

## 5.1 Block diagram

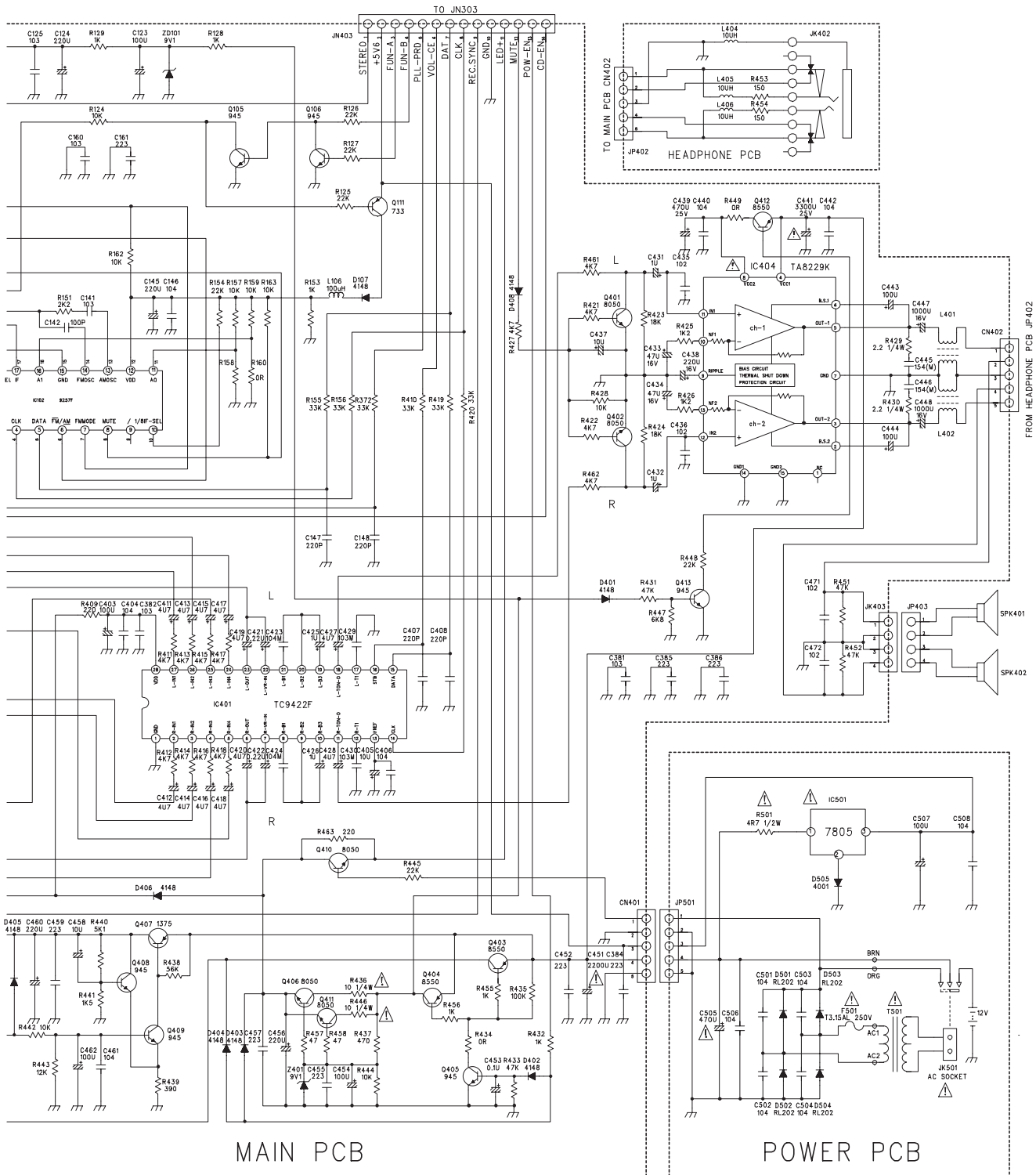


## 5.2 Standard schematic diagrams

### 5.2.1 Main section







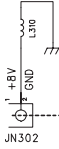
MAIN PCB

POWER PCB

WARNING

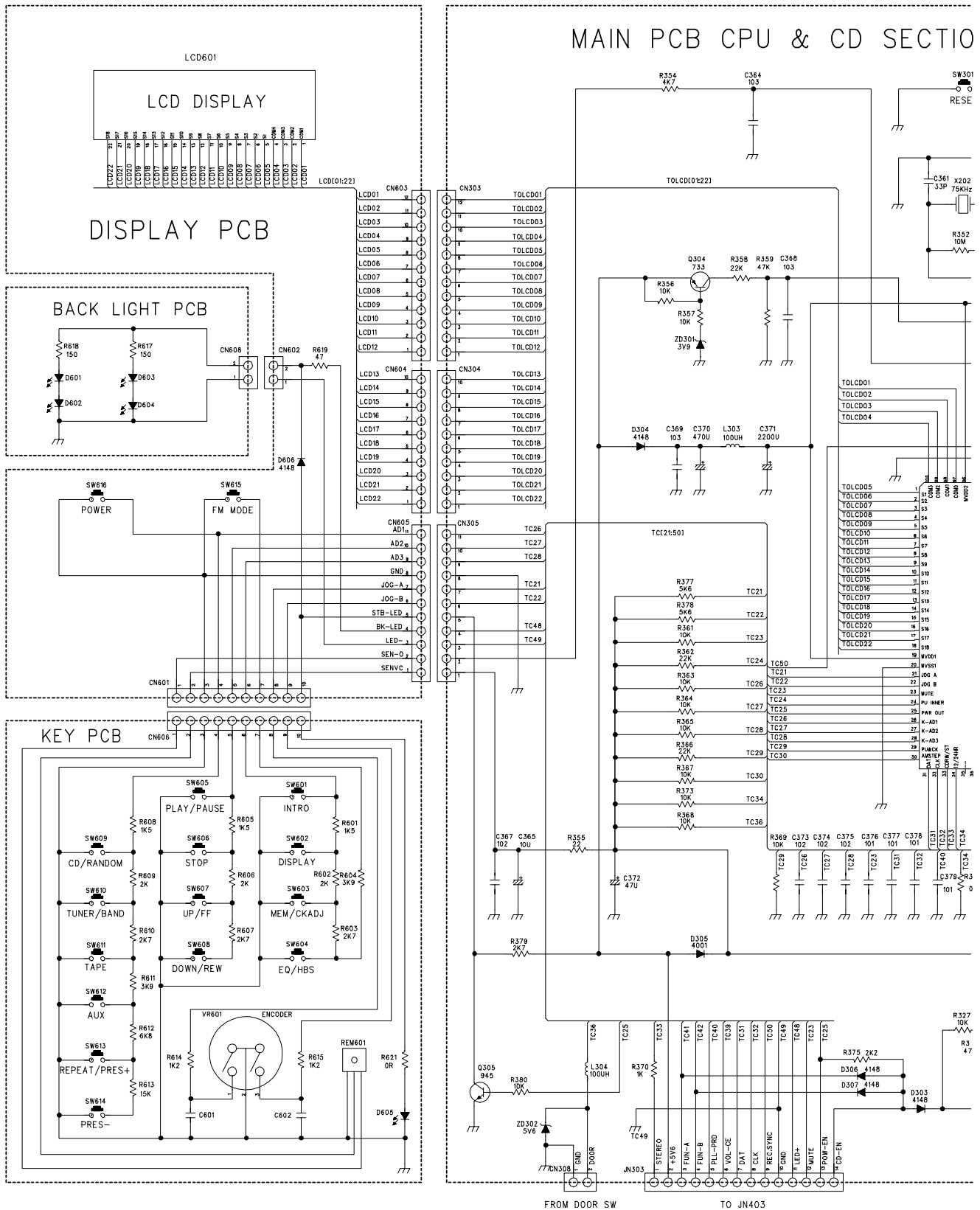
AFTER COMPLETING THE SERVICING OF THIS PRODUCT AND BEFORE RETURNING IT TO YOUR CUSTOMER MEASURE THE RESISTANCE BETWEEN BOTH PRONGS OF THE AC PLUG AND ALL EXPOSED METAL PARTS TO BE SURE IT EXCEEDS 2.2 MEGA OHMS (POWER SWITCH IF ANY SHORT BE IN ITS ON POSITION). IF THE RESISTANCE MEASURED IS LESS THAN 2.2 MEGA OHMS, THE UNIT SHOULD NOT BE RETURNED TO THE CUSTOMER UNTIL THE CAUSE FOR THE REDUCED POWER LINE TO EXPOSED METAL PARTS RESISTANCE HAS BEEN CORRECTED AND THE UNIT PASSED THE ABOVE TEST.

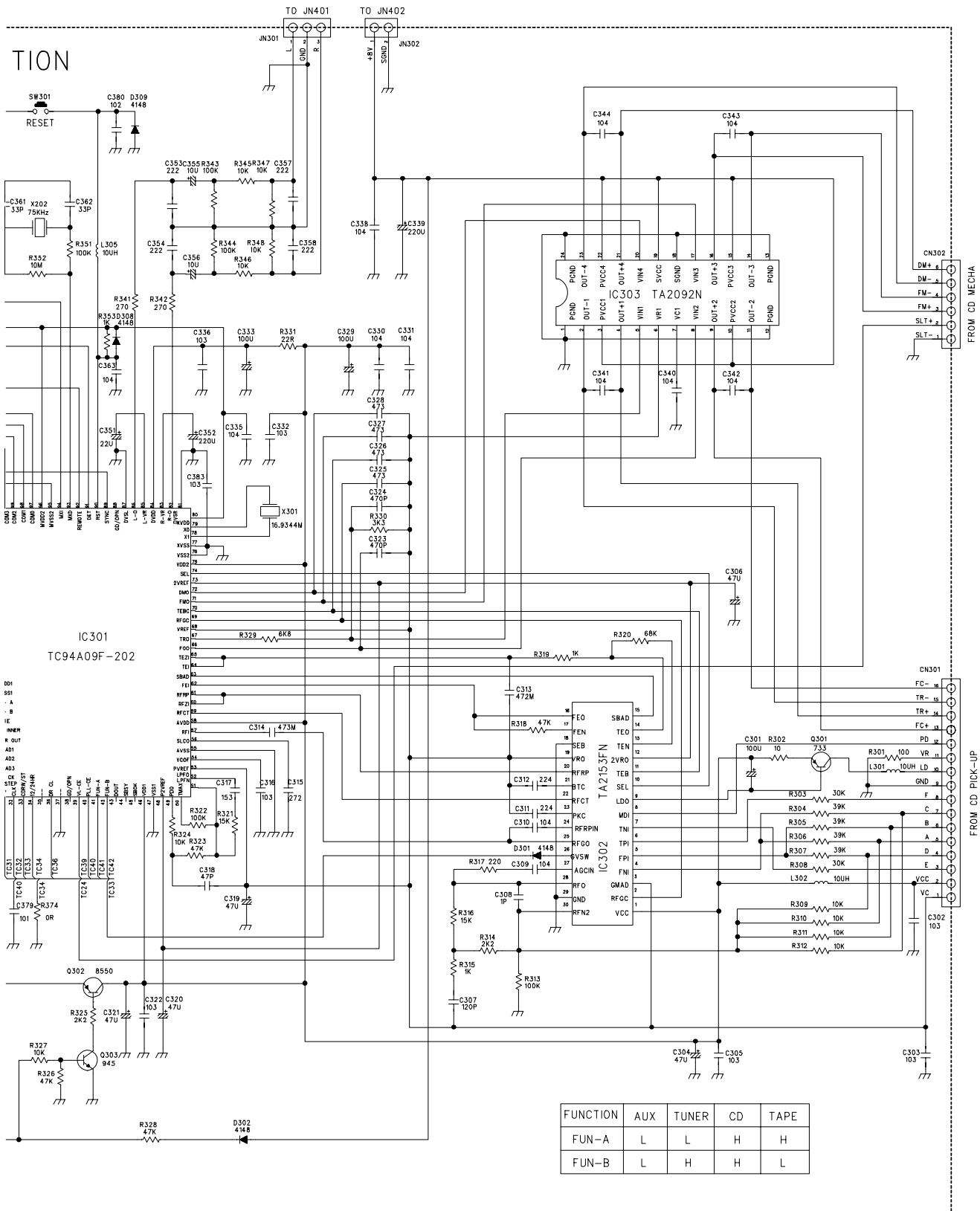
⚠ THIS MARK INDICATES THAT THE ADJACENT COMPONENT IS CONSIDERED CRITICAL WHEN REPLACING TO THE RISK OF FIRE AND ELECTRICAL SHOCK ASSOCIATED WITH THIS PRODUCT. WITH RESPECT ANY OF THESE COMPONENTS, USE ONLY PARTS SUPPLIED BY MANUFACTURERS WHOSE PART NUMBERS ARE INDICATED ON THE PARTS LIST ATTACHED.



APE
H
L

### 5.3 Main CPU and CD servo section







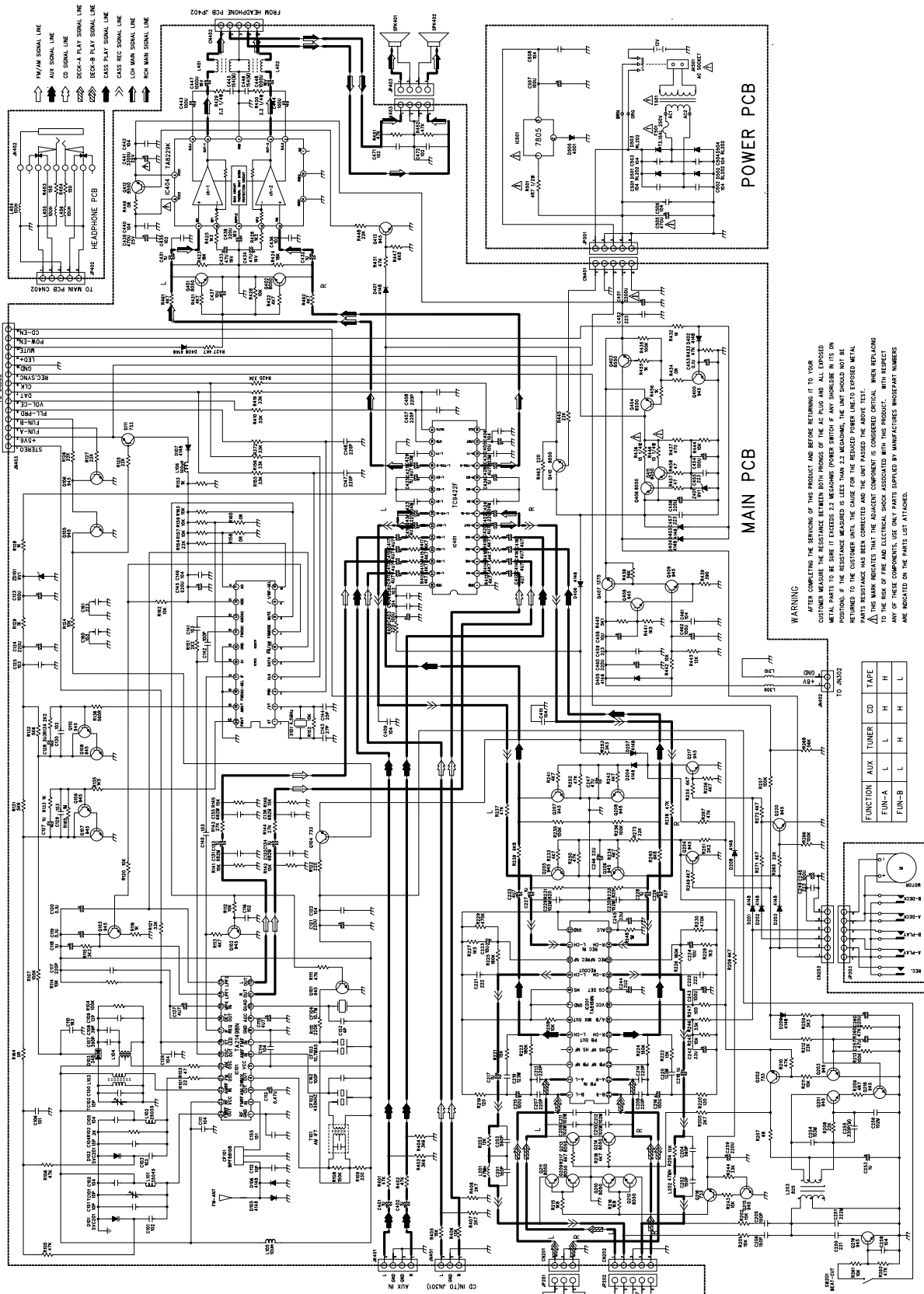
**JVC**

Victor Company of Japan, Limited  
AV & MULTIMEDIA COMPANY AUDIO/VIDEO SYSTEMS CATEGORY 10-1,1chome,Ohwatari-machi,Maebashi-city,371-8543,Japan

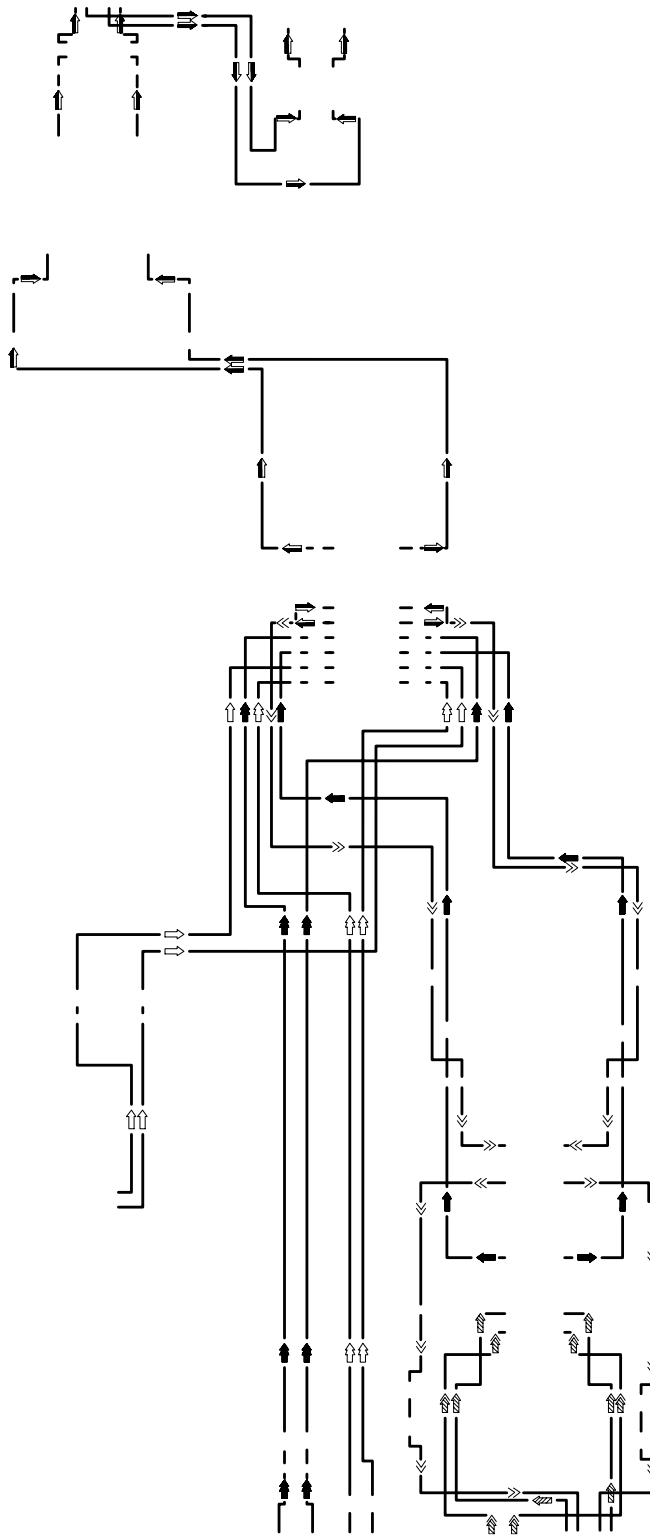
(No.MB200)

# Schematic diagrams

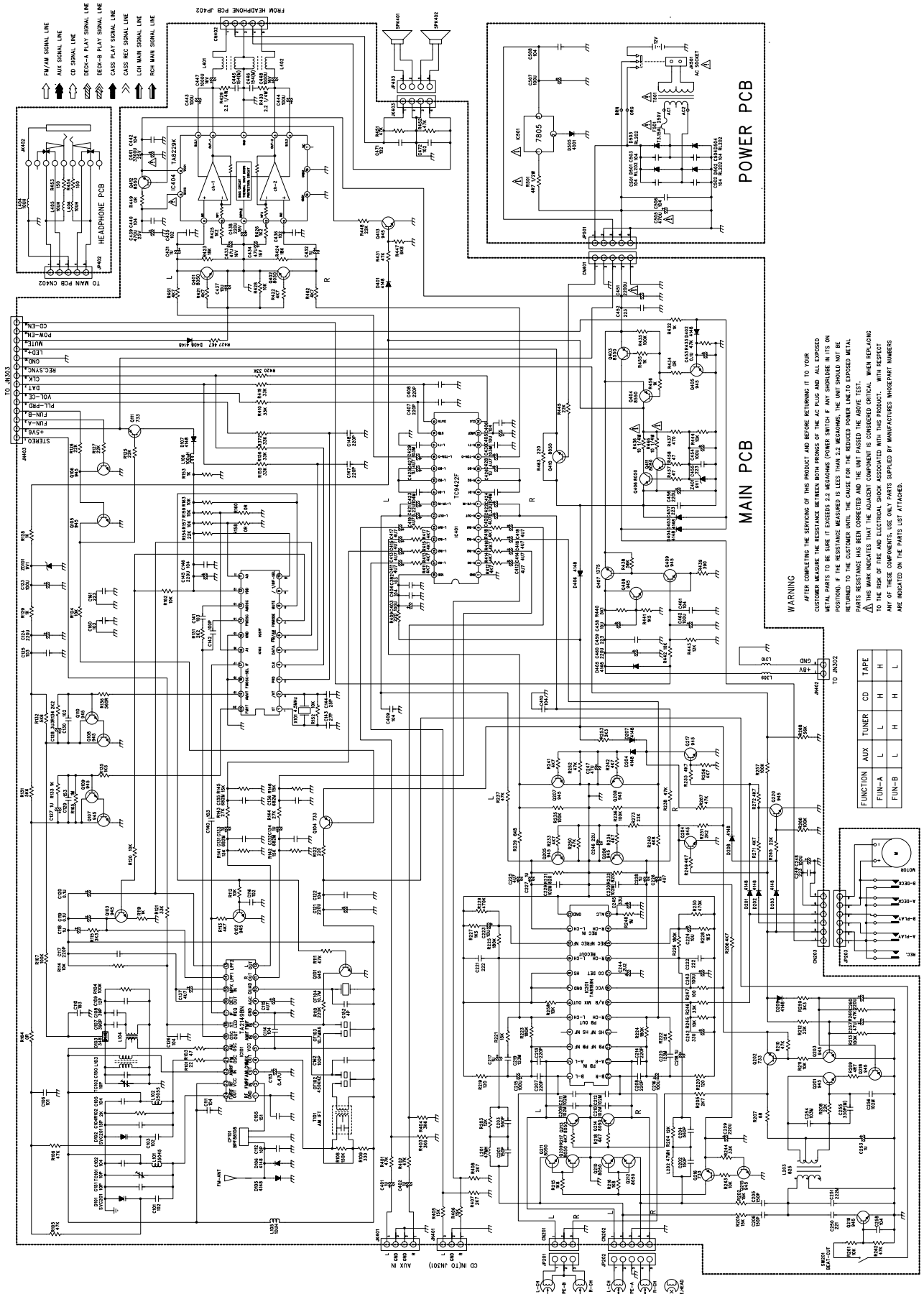
## ■ Main circuit



■ Main circuit



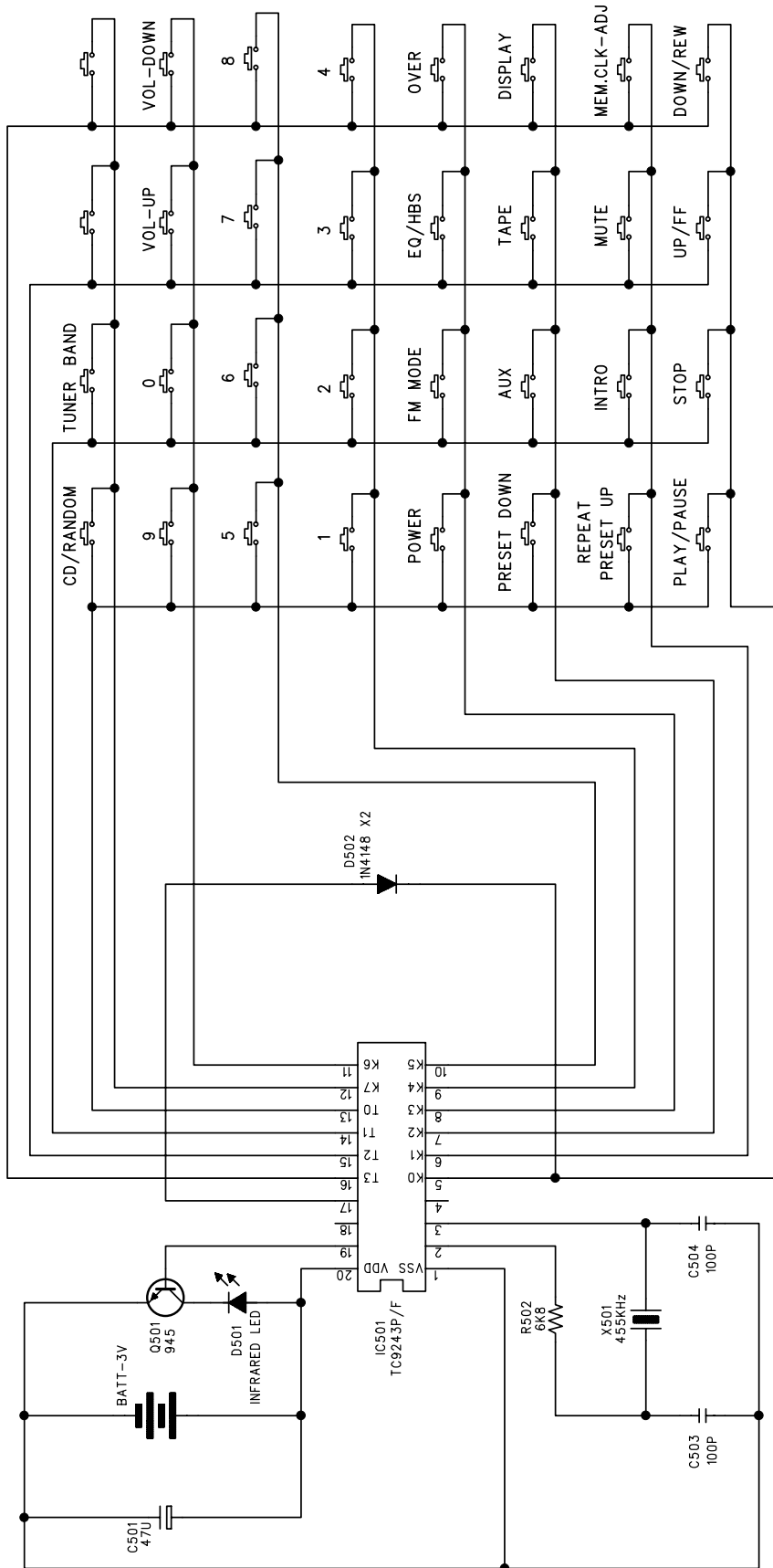
■ Main circuit



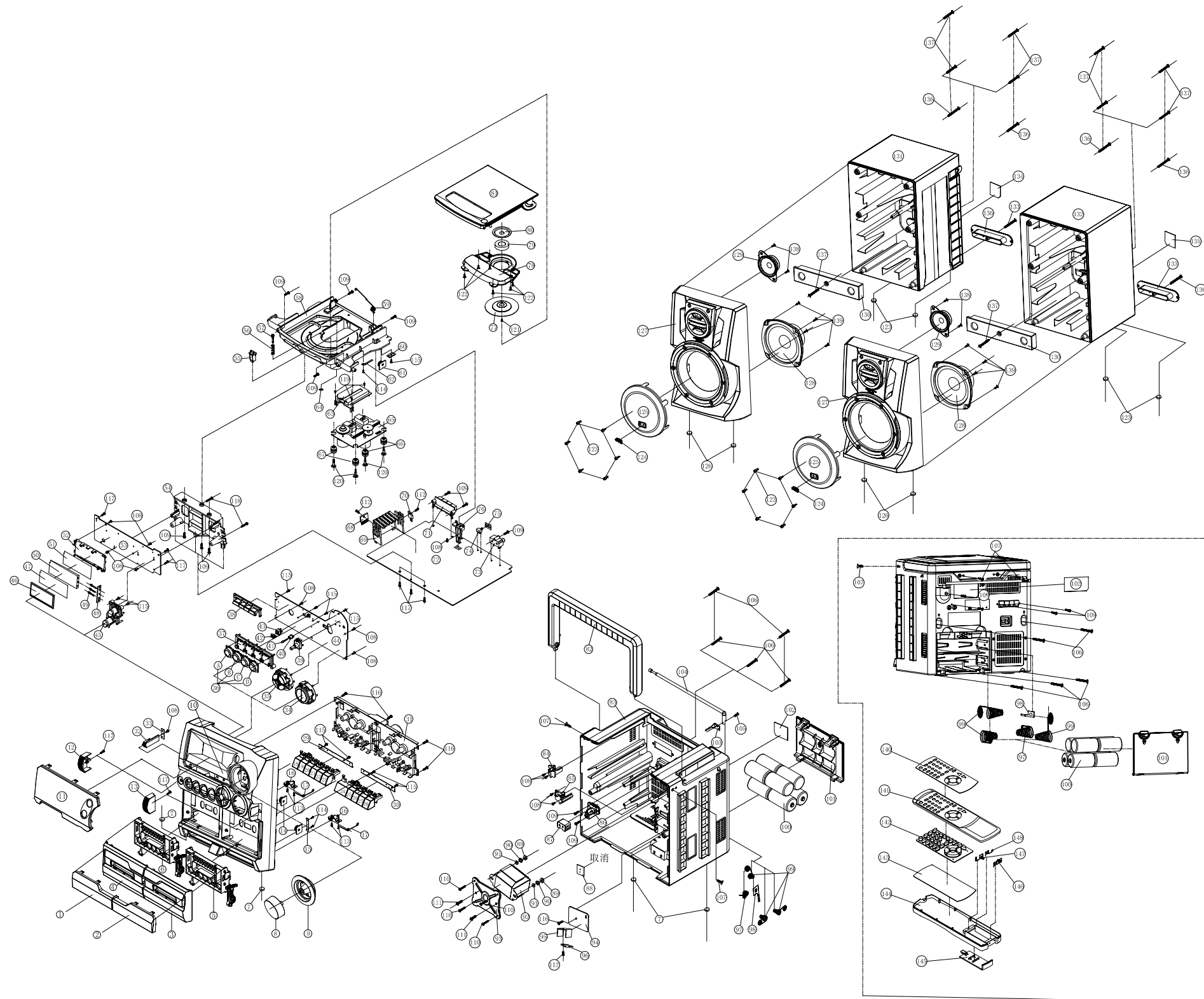




■ Remote circuit



■ Exploded view of general assembly



**Exploded View Parts List**

| Enclosure components parts list

Parts Number	Parts name	QTY	Remarks	Ref. No.	Suffix	△
43-00290-02	LE030401 X290 Cass Door	1	Lens ( L ) PMMA	1		
43-00290-03	LE030401 X290 Cass Door	1	Lens ( R ) PMMA	2		
66-00290-02	LE030401 X290 Cass Door ( R )	1	ABS	3		
66-00290-01	LE030401 X290 Cass Door ( L )	1	ABS	4		
48-00290-02	LE030401 X290 Cass Door	1	BKT. R (ABS)	5		
48-00290-01	LE030401 X290 Cass Door	1	BKT. L (ABS)	6		
81-03310-80	LE030401 Rubber Foot	4	φ12 x 3.2mm (3M) W/T	7		
51-00290-00	LE030401 X290 Volume Button	1	ABS	8		
49-00290-02	LE030401 X290 Volume Ring	1	Mirror ABS	9		
60-00290-02	LE030401 X290 Front Cabinet ( J )	1	Hips (94V2)	10		
43-00290-09	LE030401 X290 Display Lens	1	PMMA	11		
49-00290-00	LE030401 X290 Tooth Ornament	1	Cover ( L ) ABS	12		
49-00290-01	LE030401 X290 Tooth Ornament	1	Cover ( R ) ABS	13		
63-00303-80	LE030401 EP303 Damper Gear	2	Cass Door BKT.2	14		
11-00290-13	PC-X290 Gear PCB Plate	1	Component Side	15		
39-00290-06	LE030401 X290 Cass Door	2	BKT. Metal Plate	16		
36-00290-00	LE030401 X290 Cass Door	2	Spring φ1.0mm	17		
53-00290-00	LE030401 X290 Cass Deck Key	1	A-Record (ABS)	18		
53-00290-01	LE030401 X290 Cass Deck Key	1	A-Play (ABS)	19		
53-00290-02	LE030401 X290 Cass Deck Key	1	A-REW (ABS)	20		
53-00290-03	LE030401 X290 Cass Deck Key	1	A-F.F. (ABS)	21		
53-00290-04	LE030401 X290 Cass Deck Key	1	A-Stop/Eject (ABS)	22		
53-00290-05	LE030401 X290 Cass Deck Key	1	A-Pause (ABS)	23		
53-00290-06	LE030401 X290 Cass Deck Key	1	B-Play (ABS)	24		
53-00290-07	LE030401 X290 Cass Deck Key	1	B-REW (ABS)	25		
53-00290-08	LE030401 X290 Cass Deck Key	1	B-F.F. (ABS)	26		
53-00290-09	LE030401 X290 Cass Deck Key	1	B-Stop/Eject (ABS)	27		
53-00290-10	LE030401 X290 Cass Deck Key	1	B-Pause (ABS)	28		
39-00290-01	LE030401 X290 Cass Key	1	BKT. Plate ( L )	29		
39-00290-02	LE030401 X290 Cass Key	1	BKT. Plate ( R )	30		
94-00290-00	Lead Free X290 Cass Deck	1	CS-21SW-290	31		
11-00290-04	PC-X290 Headphone PCB	1	94VO 1.6mm	32		
11-00290-10	PC-X290 Phone PCB Plate	1	Component Side	33		
52-00290-03	LE030401 X290 Knob (Circle 2X)	1	HBS-EQ-Display (ABS)	34		
52-00290-02	LE030401 X290 Function Knob	1	Intro/Prog./Preset (ABS)	35		
43-00290-08	LE030401 X290 Function Button	1	Tape (PMMA)	36A		
43-00290-05	LE030401 X290 Function Button	1	CD (PMMA)	36B		
43-00290-06	LE030401 X290 Function Button	1	Tuner (PMMA)	36C		
43-00290-07	LE030401 X290 Function Button	1	AUX (PMMA)	36D		
48-00290-09	LE030401 X290 Button BKT	1	Tape/CD/Tuner/Aux (ABS)	37		
52-00290-00	LE030401 X290 Function Button	1	CD (ABS)	38		
18-92040-88	Lead Free Encoder Vol.	1	EC16-12P	39		
48-00290-05	LE030401 X290 LED Lamp	1	BKT. (ABS)	40		
02-30022-82	Lead Free LED	1	φ3mm ELT-3142D (Elstar)	41		
02-67138-80	Lead Free Sensor	1	RPM138-V4 Rohm	42		
48-00290-04	LE030401 X290 Remote Sensor	1	BKT. (ABS)	43		
11-00290-02	PC-X290 Key PCB	1	94HB 1.6mm	44		
52-00290-01	LE030401 X290 Power & FM Knob	1	Power & FM (ABS)	45		
91-00290-00	Lead Free PC-X290 LCD display	1		46		
43-00290-10	LE030401 X290 LCD	1	Filter	47		
11-00290-07	PC-X290 Light PCB	1	94HB 1.6mm	48		
02-30005-84	Lead Free LED Q3 Amber	4	BT-302 YEK-31-589E	49		
43-00290-04	LE030401 X290 Display	1	Light Guide (PMMA)	50		
43-00290-01	LE030401 X290 LCD	1	Reflector Paper	51		
48-00290-03	LE030401 X290 LCD BKT.	1	ABS	52		
11-00290-01	PC-X290 Display PCB	1	94HB 1.6mm	53		
48-00290-06	LE030401 X290 Main CD Tray	1	BKT. (ABS)	54		
16-10101-81	Lead Free CD Door SW	1	DLS-02-1	55		
36-00003-80	LE030401 EM3 CD Eject	1	Spring φ0.4mm	56		
55-00141-80	LE030401 NSX1 Push Rod	1	NSX01-50	57		
48-00290-10	LE030401 X290 CD Tray ( J )	1	Hips (94V2)	58		

## PC-X290

| Enclosure components parts list

Parts Number	Parts name	QTY	Remarks	Ref. No.	Suffix	△
36-00290-02	LE030401 X290 CD Door	1	New Spring	59		
11-00290-17	PC-X290 CD Gear PCB	1	94HB 1.6mm	60		
63-00303-81	LE030401 E303 Damper Gear	1	B30B (1x CD Door)	61		
78-00612-00	Terminal 212A	1		62		
48-07930-80	LE030401 PU Cover	1	TCP-110P (Thomson CD)	63		
35-00003-80	LE030401 E Ring M3	1	1x Push Rod	64		
98-00010-80	LE030401 CD Pick Up	1	TCP11TK2PX (Thomson)	65		
81-02750-80	LE030401 CD Damper	2	3140-114-1389-2	66		
81-02750-81	LE030401 CD Damper	2	3140-114-1390-2	67		
03-08229-80	Lead Free IC TA8229K	1	Toshiba	68		
39-00290-05	LE030401 X290 Heat Sink	1	T=3.0mm	69		
01-01375-80	Lead Free TR. 2SB1375	1		70		
12-00006-80	Lead Free Spk. Terminal	1	WP-4112AE (050)	71		
11-00290-11	PC-X290 Main PCB	1	94VO 1.6mm	72		
12-00214-80	Lead Free RCA Jack	1	RCA-214 2 Chanel	73		
16-10202-801	Lead Free Slide Switch	1	2P2T SK22D06G4	74		
42-00290-06	LE030401 X290 Beat Switch	1	PC Plate	75		
48-00290-11	LE030401 X290 Main PCB/CD Tray	1	BKT. (ABS)	76		
55-09010-80	LE030401 Plastic Cover	1	W/O Felt	77		
43-00290-00	LE030401 X290 CD Door Lens	1	PMMA	78		
97-09019-80	LE030401 OP192 Magnet	1	20495830	79		
39-04200-80	LE030401 UMS4200 Metal Cover	1		80		
66-00290-00	LE030401 X290 CD Door	1	ABS	81		
57-00290-00	LE030401 X290 Handle	1	ABS	82		
61-00290-03	LE030401 X290 Rear Cabinet ( J )	1	Hips (94V2)	83		
48-00290-07	LE030401 X290 handle Lock	1	BKT. L (ABS)	84		
48-00290-08	LE030401 X290 handle Lock	1	BKT. R (ABS)	85		
12-00004-33	LE030401 AC Power Socket	1	PSP27 (UL)	86		
12-00004-33	LE030401 AC Power Socket	1	PSP27 (UL)	87		
35-40008-80	LE030401 M4 Nut	2		89		
35-30009-80	LE030401 Spring Washer	2	M4 (φ4 x φ7 x 1mm)	90		
35-00008-80	LE030401 Metal Washer	2	φ9 x φ4 x 0.8mm	91		
15-00290-00	LE030401 X'Former	1	T06821A 120V (UL)	92		
39-00290-03	LE030401 X290 X'Former	1	Metal Plate	93		
11-00290-03	PC-X290 Power PCB	1	94VO 1.6mm	94		
39-09025-84	LE030401 OP251 Heat Sink	1	JiangSu	95		
03-07805-08	IC L7805CV	1	Array	96		
74-00290-05	LE030401 X290 Battery Spring ( - )	1		97		
74-00290-04	LE030401 X290 Battery Spring ( + )	1		98		
74-00150-81	LE030401 X150 Battery Spring (+,-)	3		99		
	Battery	8		100		
58-00290-00	LE030401 X290 Battery Door	1	ABS	101		
87-00290-04	LE030401 X290 Rating Label ( J )	1		102		
39-00290-00	LE030401 X290 Ant Contact Plate	1	T=0.5mm	103		
23-00290-00	LE030401 X290 Rod Antenna	1	NC-9601-593	104		
40-03008-11	Screw M3 x 8	1	BH/MS	105		
40-13021-01	Screw M3 x 21	5	BH/ST	106		
40-13010-02	Screw M3 x 10	2	KH/ST	107		
40-12608-11	Screw φ 2.6 x 8	15	BH/ST	108		
40-13010-01	Screw φ 3 x 10	12	BH/ST	109		
40-13012-03	Screw φ 3 x 12	4	WH/ST	110		
40-04010-03B	Screw M3 x 8	2	WH/MX "Ni"	111		
40-13008-41	Screw φ 3 x 8	3	BH/ST Zn	112		
40-12608-01	Screw M2.6 x 8	4	BH/MS Zn	113		
40-12608-03	Screw φ 2.6 x 8	3	WH/ST Zn	114		
40-12606-01	Screw φ 2.6 x 6	11	BH/ST Zn	115		
40-13008-11	Screw φ 3 x 8	7	BH/ST Zn	116		
40-12610-01	Screw φ 2.6 x 10	10	BH/ST Zn	117		
40-13012-01	Screw φ 3 x 12	2	BH/ST Zn	118		
40-02005-90	Screw φ 2 x 5	3	"Tap" 10462020	119		
40-52610-03	Screw φ2.6 x 10	4	CD Damper WH (φ11.5)	120		
40-02045-90	Screw φ 2 x 4.5	1	1052855	121		

## | Enclosure components parts list

Parts Number	Parts name	QTY	Remarks	Ref. No.	Suffix	△
40-12606-22B	Screw $\phi$ 2.6 x 6	6	KH/ST H=5 "Ni"	122		
49-00290-04	LE030401 X290 Sound Box	12	Ornament Cap (ABS)	123		
55-00290-00	LE030401 X290 Sound Box	2	Badge (Hips)	124		
41-00290-00	LE030401 X290 Speaker Grill	2		125		
81-03310-80	LE030401 Rubber Foot	8	$\phi$ 12 x 3.2mm (W/T)	126		
60-00290-01	LE030401 X290 Sound Box	2	Front Cabinet (Hips)	127		
14-04003-80	Lead Free Speaker 4" 3.2ohm 5W	2	YD103-20B	128		
14-02504-80	Lead Free Speaker 2.5" 4ohm 5W	2	YD50-03G	129		
82-00290-00	LE030401 X290 Sound Speaker	2	Wood Plate	130		
61-00290-01	LE030401 X290 Sound Box	1	Rear Cabinet ( L ) Hips	131		
61-00290-02	LE030401 X290 Sound Box	1	Rear Cabinet ( R ) Hips	132		
49-00290-03	LE030401 X290 Sound Box	2	Wire Playwood	133		
42-00290-02	LE030401 X290 (J/C) Sound Box	1	PC Plate ( L )	134		
42-00290-03	LE030401 X290 (J/C) Sound Box	1	PC Plate ( R )	135		
40-13026-01	Screw $\phi$ 3 x 26	6	BH/ST	136		
40-13018-01	Screw $\phi$ 3 x 18	10	BH/ST	137		
40-13008-13	Screw $\phi$ 3 x 8	4	WH/ST	138		
40-13010-03	Screw $\phi$ 3 x 10	8	WH/ST	139		
42-05000-11	LE030401 X290 (J/C) Remote	1	PC Inlay 30Keys	140		
60-01282-08	LE030401 X290 Remote	1	Top Cabinet (ABS)	141		
81-05000-03	LE030401 X290 Remote	1	Rubber Pad (30Keys)	142		
11-00290-08	PC-X290 Remote PCB	1	94HB 1.6mm	143		
61-01282-04	LE030401 X290 Remote	1	Bottom Cabinet (ABS)	144		
58-01282-04	LE030401 X290 Remote	1	Battery Door (ABS)	145		
36-05000-82	LE030401 RC-BM5 Spring	1	Contact ( + , - )	146		
36-05000-09	LE030401 X290 Remote	1	Spring ( - )	147		
36-05000-08	LE030401 X290 Remote	1	Spring ( + )	148		

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Electrical parts list

Electrical parts list (Main board)

Parts Number	Parts name	QTY	Remarks	Ref. No.	Suffix	△
31-60120-89	#26UL-1007	1	Lead Free Wire 3/120/3 White	A-Deck SW to Deck PCB A		
31-60140-82	#26UL-1007	1	Lead Free Wire 3/140/3 Red	A-Deck SW to Deck PCB B		
31-60140-83	#26UL-1007	1	Lead Free Wire 3/140/3 Orange	A-Play SW to Deck PCB A		
31-60150-95	#26UL-1007	1	Lead Free Wire 3/150/3 Green	A-Rec SW. to Deck PCB A		
37-00001-80	Eyelet	1	Lead Free $\phi 1.5 \times 3$ mm	AM-Black		
37-00001-80	Eyelet	1	Lead Free $\phi 1.5 \times 3$ mm	AM-Green		
37-00001-80	Eyelet	1	Lead Free $\phi 1.5 \times 3$ mm	AM-Red		
37-00001-80	Eyelet	1	Lead Free $\phi 1.5 \times 3$ mm	AM-White		
31-60050-89	#26UL-1007	1	Lead Free Wire 3/50/3 White	B-Deck SW to Deck PCB A		
31-60040-82	#26UL-1007	1	Lead Free Wire 3/40/3 Red	B-Deck SW to Deck PCB B		
31-60050-84	#26UL-1007	1	Lead Free Wire 3/50/3 Yellow	B-Play SW to Deck PCB A		
05-70102-05T	C Capacitor	1	Lead Free 0.001 $\mu$ F 50V $\pm 5\%$ T.T.	C101		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1 $\mu$ F +80-20% 52mm T.T.	C102		
05-70102-05D	C Capacitor	1	Lead Free 0.001 $\mu$ F 50V $\pm 5\%$ L=5mm	C103		
05-70150-06B	C Capacitor	1	Lead Free 15pF 50V $\pm 5\%$ NPO L=4mm	C104		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1 $\mu$ F +80-20% 52mm T.T.	C105		
05-70101-05T	C Capacitor	1	Lead Free 100pF 50V $\pm 5\%$ T.T.	C106		
05-79391-05	Poly Capacitor	1	Lead Free 390pF 50V $\pm 5\%$	C107		
05-70120-06B	C Capacitor	1	Lead Free 12pF 50V $\pm 5\%$ NPO L=4mm	C109		
05-70183-10D	C Capacitor	1	Lead Free 0.018 $\mu$ F 50V $\pm 5\%$ L=5mm	C110		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1 $\mu$ F +80-20% 52mm T.T.	C111		
06-75474-20	E Capacitor	1	Lead Free 0.47 $\mu$ F 50V $\pm 20\%$ (5x11) T.T.	C113		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1 $\mu$ F +80-20% 52mm T.T.	C114		
06-75475-20	E Capacitor	1	Lead Free 4.7 $\mu$ F 50V $\pm 20\%$ (5x11) T.T.	C115		
05-77102-10	Axial C Capacitor	1	Lead Free 1000pF $\pm 10\%$ 52mm T.T.	C116		
05-70221-10T	C Capacitor	1	Lead Free 220pF 50V $\pm 10\%$ T.T.	C117		
06-75105-20	E Capacitor	1	Lead Free 1 $\mu$ F 50V $\pm 20\%$ (5x11) T.T.	C118		
06-75104-20	E Capacitor	1	Lead Free 0.1 $\mu$ F 50V $\pm 20\%$ (5x11) T.T.	C119		
06-75104-20	E Capacitor	1	Lead Free 0.1 $\mu$ F 50V $\pm 20\%$ (5x11) T.T.	C120		
06-71227-20	E Capacitor	1	Lead Free 220 $\mu$ F 16V $\pm 20\%$ (6.3x11) T.T.	C121		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1 $\mu$ F +80-20% 52mm T.T.	C122		
06-71107-20	E Capacitor	1	Lead Free 100 $\mu$ F 16V $\pm 20\%$ (5x11) T.T.	C123		
06-71227-20	E Capacitor	1	Lead Free 220 $\mu$ F 16V $\pm 20\%$ (6.3x11) T.T.	C124		
05-77103-20	Axial C Capacitor	1	Lead Free 0.01 $\mu$ F $\pm 20\%$ 52mm T.T.	C125		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1 $\mu$ F +80-20% 52mm T.T.	C126		
06-75105-20	E Capacitor	1	Lead Free 1 $\mu$ F 50V $\pm 20\%$ (5x11) T.T.	C127		
06-75335-20	E Capacitor	1	Lead Free 3.3 $\mu$ F 50V $\pm 20\%$ (5x11) T.T.	C128		
05-77153-20	Axial C Capacitor	1	Lead Free 0.015 $\mu$ F $\pm 20\%$ 52mm T.T.	C129		
05-77102-10	Axial C Capacitor	1	Lead Free 1000pF $\pm 10\%$ 52mm T.T.	C130		
05-77682-10	Axial C Capacitor	1	Lead Free 0.0068 $\mu$ F $\pm 10\%$ 52mm T.T.	C131		
05-77682-10	Axial C Capacitor	1	Lead Free 0.0068 $\mu$ F $\pm 10\%$ 52mm T.T.	C132		
06-75105-20	E Capacitor	1	Lead Free 1 $\mu$ F 50V $\pm 20\%$ (5x11) T.T.	C133		
06-75105-20	E Capacitor	1	Lead Free 1 $\mu$ F 50V $\pm 20\%$ (5x11) T.T.	C134		
05-72682-10T	Mylar Capacitor	1	Lead Free 0.0068 $\mu$ F 50V $\pm 10\%$ T.T.	C135		
05-72682-10T	Mylar Capacitor	1	Lead Free 0.0068 $\mu$ F 50V $\pm 10\%$ T.T.	C136		
06-75475-20	E Capacitor	1	Lead Free 4.7 $\mu$ F 50V $\pm 20\%$ (5x11) T.T.	C137		
05-77103-20	Axial C Capacitor	1	Lead Free 0.01 $\mu$ F $\pm 20\%$ 52mm T.T.	C140		
05-77103-20	Axial C Capacitor	1	Lead Free 0.01 $\mu$ F $\pm 20\%$ 52mm T.T.	C141		
05-70101-05T	C Capacitor	1	Lead Free 100pF 50V $\pm 5\%$ T.T.	C142		
05-70270-06B	C Capacitor	1	Lead Free 27pF 50V $\pm 5\%$ NPO L=4mm	C143		
05-70250-06B	C Capacitor	1	Lead Free 25pF 50V $\pm 5\%$ NPO L=4mm	C144		
06-71227-20	E Capacitor	1	Lead Free 220 $\mu$ F 16V $\pm 20\%$ (6.3x11) T.T.	C145		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1 $\mu$ F +80-20% 52mm T.T.	C146		
05-70221-10T	C Capacitor	1	Lead Free 220pF 50V $\pm 10\%$ T.T.	C147		
05-70221-10T	C Capacitor	1	Lead Free 220pF 50V $\pm 10\%$ T.T.	C148		
05-70100-06B	C Capacitor	1	Lead Free 10pF 50V $\pm 5\%$ NPO L=4mm	C151		
05-70040-06B	C Capacitor	1	Lead Free 4pF 50V $\pm 5\%$ NPO L=4mm	C152		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1 $\mu$ F +80-20% 52mm T.T.	C153		
05-70102-05T	C Capacitor	1	Lead Free 0.001 $\mu$ F 50V $\pm 5\%$ T.T.	C154		
05-77151-05	Axial C Capacitor	1	Lead Free 150pF $\pm 5\%$ 52mm T.T.	C155		
05-77103-20	Axial C Capacitor	1	Lead Free 0.01 $\mu$ F $\pm 20\%$ 52mm T.T.	C160		
05-77103-20	Axial C Capacitor	1	Lead Free 0.01 $\mu$ F $\pm 20\%$ 52mm T.T.	C161		
05-77101-05	Axial C Capacitor	1	Lead Free 100pF $\pm 5\%$ 52mm T.T.	C162		
05-77151-05	Axial C Capacitor	1	Lead Free 150pF $\pm 5\%$ 52mm T.T.	C201		
05-77151-05	Axial C Capacitor	1	Lead Free 150pF $\pm 5\%$ 52mm T.T.	C202		
05-77561-05	Axial C Capacitor	1	Lead Free 560pF $\pm 5\%$ 52mm T.T.	C203		
05-77561-05	Axial C Capacitor	1	Lead Free 560pF $\pm 5\%$ 52mm T.T.	C204		
05-77151-05	Axial C Capacitor	1	Lead Free 150pF $\pm 5\%$ 52mm T.T.	C205		
05-77151-05	Axial C Capacitor	1	Lead Free 150pF $\pm 5\%$ 52mm T.T.	C206		
05-77221-05	Axial C Capacitor	1	Lead Free 220pF $\pm 5\%$ 52mm T.T.	C207		
05-77221-05	Axial C Capacitor	1	Lead Free 220pF $\pm 5\%$ 52mm T.T.	C208		

## j Electrical parts list (Main board)

Parts Number	Parts name	QTY	Remarks	Ref. No.	Suffix	△
05-77102-10	Axial C Capacitor	1	Lead Free 1000pF ±10% 52mm T.T.	C209		
05-77102-10	Axial C Capacitor	1	Lead Free 1000pF ±10% 52mm T.T.	C210		
05-77102-10	Axial C Capacitor	1	Lead Free 1000pF ±10% 52mm T.T.	C211		
05-77102-10	Axial C Capacitor	1	Lead Free 1000pF ±10% 52mm T.T.	C212		
05-77221-05	Axial C Capacitor	1	Lead Free 220pF ±5% 52mm T.T.	C213		
05-77221-05	Axial C Capacitor	1	Lead Free 220pF ±5% 52mm T.T.	C214		
06-71107-20	E Capacitor	1	Lead Free 100µF 16V ±20% (5x11) T.T.	C215		
06-71107-20	E Capacitor	1	Lead Free 100µF 16V ±20% (5x11) T.T.	C216		
06-75105-20	E Capacitor	1	Lead Free 1µF 50V ±20% (5x11) T.T.	C217		
06-75105-20	E Capacitor	1	Lead Free 1µF 50V ±20% (5x11) T.T.	C218		
05-77123-20	Axial C Capacitor	1	Lead Free 0.012µF ±20% 52mm T.T.	C219		
05-77123-20	Axial C Capacitor	1	Lead Free 0.012µF ±20% 52mm T.T.	C220		
05-77222-10	Axial C Capacitor	1	Lead Free 2200pF ±10% 52mm T.T.	C221		
05-77222-10	Axial C Capacitor	1	Lead Free 2200pF ±10% 52mm T.T.	C222		
06-75106-20	E Capacitor	1	Lead Free 10µF 50V ±20% (5x11) T.T.	C223		
06-75106-20	E Capacitor	1	Lead Free 10µF 50V ±20% (5x11) T.T.	C224		
06-75475-20	E Capacitor	1	Lead Free 4.7µF 50V ±20% (5x11) T.T.	C225		
06-75475-20	E Capacitor	1	Lead Free 4.7µF 50V ±20% (5x11) T.T.	C226		
06-75105-20	E Capacitor	1	Lead Free 1µF 50V ±20% (5x11) T.T.	C227		
06-75105-20	E Capacitor	1	Lead Free 1µF 50V ±20% (5x11) T.T.	C228		
05-77102-10	Axial C Capacitor	1	Lead Free 1000pF ±10% 52mm T.T.	C229		
05-77102-10	Axial C Capacitor	1	Lead Free 1000pF ±10% 52mm T.T.	C230		
06-71336-20T	E Capacitor	1	Lead Free 33µF 16V ±20% T.T.	C242		
06-71107-20	E Capacitor	1	Lead Free 100µF 16V ±20% (5x11) T.T.	C243		
06-75225-20	E Capacitor	1	Lead Free 2.2µF 50V ±20% (5x11) T.T.	C244		
06-71336-20T	E Capacitor	1	Lead Free 33µF 16V ±20% T.T.	C245		
06-71226-20T	E Capacitor	1	Lead Free 22µF 16V ±20% T.T.	C246		
06-71476-20	E Capacitor	1	Lead Free 47µF 16V ±20% (5x11) T.T.	C247		
06-72107-20	E Capacitor	1	Lead Free 100µF 25V ±20% (6.3x11) T.T.	C248		
05-77223-82	Axial C Capacitor	1	Lead Free 0.022µF +80-20% 52mm T.T.	C249		
05-70221-10T	C Capacitor	1	Lead Free 220pF 50V ±10% T.T.	C250		
05-72222-10T	Mylar Capacitor	1	Lead Free 0.0022µF 50V ±10% T.T.	C251		
06-75105-20	E Capacitor	1	Lead Free 1µF 50V ±20% (5x11) T.T.	C253		
05-72103-10T	Mylar Capacitor	1	Lead Free 0.01µF 50V ±10% T.T.	C254		
05-77331-05	Axial C Capacitor	1	Lead Free 330pF ±5% 52mm T.T.	C255		
05-72102-10T	Mylar Capacitor	1	Lead Free 0.001µF 50V ±10% T.T.	C256		
06-71476-20	E Capacitor	1	Lead Free 47µF 16V ±20% (5x11) T.T.	C257		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1µF +80-20% 52mm T.T.	C258		
06-70227-20	E Capacitor	1	Lead Free 220µF 10V ±20% (5x11) T.T.	C259		
06-72227-20T	E Capacitor	1	Lead Free 220µF 25V ±20% T.T.	C260		
06-71107-20	E Capacitor	1	Lead Free 100µF 16V ±20% (5x11) T.T.	C301		
05-77103-20	Axial C Capacitor	1	Lead Free 0.01µF ±20% 52mm T.T.	C302		
05-77103-20	Axial C Capacitor	1	Lead Free 0.01µF ±20% 52mm T.T.	C303		
06-71476-20	E Capacitor	1	Lead Free 47µF 16V ±20% (5x11) T.T.	C304		
05-77103-20	Axial C Capacitor	1	Lead Free 0.01µF ±20% 52mm T.T.	C305		
06-71476-20	E Capacitor	1	Lead Free 47µF 16V ±20% (5x11) T.T.	C306		
05-70121-05T	C Capacitor	1	Lead Free 120pF 50V ±5% T.T.	C307		
05-70010-05T	C Capacitor	1	Lead Free 1pF 50V ±5% T.T.	C308		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1µF +80-20% 52mm T.T.	C309		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1µF +80-20% 52mm T.T.	C310		
05-77224-20	Axial C Capacitor	1	Lead Free 0.22µF ±20% 52mm T.T.	C311		
05-77224-20	Axial C Capacitor	1	Lead Free 0.22µF ±20% 52mm T.T.	C312		
05-72472-10T	Mylar Capacitor	1	Lead Free 0.0047µF 50V ±10% T.T.	C313		
05-77473-20	Axial C Capacitor	1	Lead Free 0.047µF ±20% 52mm T.T.	C314		
05-77272-10	Axial C Capacitor	1	Lead Free 2700pF ±10% 52mm T.T.	C315		
05-77103-20	Axial C Capacitor	1	Lead Free 0.01µF ±20% 52mm T.T.	C316		
05-77153-20	Axial C Capacitor	1	Lead Free 0.015µF ±20% 52mm T.T.	C317		
05-70470-06B	C Capacitor	1	Lead Free 47pF 50V ±5% NPO L=4mm	C318		
06-71476-20	E Capacitor	1	Lead Free 47µF 16V ±20% (5x11) T.T.	C319		
06-71476-20	E Capacitor	1	Lead Free 47µF 16V ±20% (5x11) T.T.	C320		
06-71476-20	E Capacitor	1	Lead Free 47µF 16V ±20% (5x11) T.T.	C321		
05-77103-20	Axial C Capacitor	1	Lead Free 0.01µF ±20% 52mm T.T.	C322		
05-77471-05	Axial C Capacitor	1	Lead Free 470pF ±5% 52mm T.T.	C323		
05-77471-05	Axial C Capacitor	1	Lead Free 470pF ±5% 52mm T.T.	C324		
05-77473-20	Axial C Capacitor	1	Lead Free 0.047µF ±20% 52mm T.T.	C325		
05-77473-20	Axial C Capacitor	1	Lead Free 0.047µF ±20% 52mm T.T.	C326		
05-77473-20	Axial C Capacitor	1	Lead Free 0.047µF ±20% 52mm T.T.	C327		
05-77473-20	Axial C Capacitor	1	Lead Free 0.047µF ±20% 52mm T.T.	C328		
06-71107-20	E Capacitor	1	Lead Free 100µF 16V ±20% (5x11) T.T.	C329		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1µF +80-20% 52mm T.T.	C330		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1µF +80-20% 52mm T.T.	C331		
06-71107-20	E Capacitor	1	Lead Free 100µF 16V ±20% (5x11) T.T.	C333		

## PC-X290

## Electrical parts list (Main board)

Parts Number	Parts name	QTY	Remarks	Ref. No.	Suffix	△
05-77104-82	Axial C Capacitor	1	Lead Free 0.1μF +80-20% 52mm T.T.	C335		
05-77103-20	Axial C Capacitor	1	Lead Free 0.01μF ±20% 52mm T.T.	C336		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1μF +80-20% 52mm T.T.	C338		
06-71227-20	E Capacitor	1	Lead Free 220μF 16V ±20% (6.3x11) T.T.	C339		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1μF +80-20% 52mm T.T.	C340		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1μF +80-20% 52mm T.T.	C341		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1μF +80-20% 52mm T.T.	C342		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1μF +80-20% 52mm T.T.	C343		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1μF +80-20% 52mm T.T.	C344		
06-71226-20T	E Capacitor	1	Lead Free 22μF 16V ±20% T.T.	C351		
06-71227-20	E Capacitor	1	Lead Free 220μF 16V ±20% (6.3x11) T.T.	C352		
05-77222-10	Axial C Capacitor	1	Lead Free 2200pF ±10% 52mm T.T.	C353		
05-77222-10	Axial C Capacitor	1	Lead Free 2200pF ±10% 52mm T.T.	C354		
06-75106-20	E Capacitor	1	Lead Free 10μF 50V ±20% (5x11) T.T.	C355		
06-75106-20	E Capacitor	1	Lead Free 10μF 50V ±20% (5x11) T.T.	C356		
05-77222-10	Axial C Capacitor	1	Lead Free 2200pF ±10% 52mm T.T.	C357		
05-77222-10	Axial C Capacitor	1	Lead Free 2200pF ±10% 52mm T.T.	C358		
05-70300-06B	C Capacitor	1	Lead Free 30pF 50V ±5% NPO L=4mm	C361		
05-70300-06B	C Capacitor	1	Lead Free 30pF 50V ±5% NPO L=4mm	C362		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1μF +80-20% 52mm T.T.	C363		
05-77103-20	Axial C Capacitor	1	Lead Free 0.01μF ±20% 52mm T.T.	C364		
06-75106-20	E Capacitor	1	Lead Free 10μF 50V ±20% (5x11) T.T.	C365		
05-77102-10	Axial C Capacitor	1	Lead Free 1000pF ±10% 52mm T.T.	C367		
05-77103-20	Axial C Capacitor	1	Lead Free 0.01μF ±20% 52mm T.T.	C368		
05-77103-20	Axial C Capacitor	1	Lead Free 0.01μF ±20% 52mm T.T.	C369		
06-70477-20	E Capacitor	1	Lead Free 470μF 10V ±20% (6.3x11) T.T.	C370		
06-70228-20B	E Capacitor	1	Lead Free 2200μF 10V ±20% (10x20) T.T.	C371		
06-71476-20	E Capacitor	1	Lead Free 47μF 16V ±20% (5x11) T.T.	C372		
05-77102-10	Axial C Capacitor	1	Lead Free 1000pF ±10% 52mm T.T.	C373		
05-77102-10	Axial C Capacitor	1	Lead Free 1000pF ±10% 52mm T.T.	C374		
05-77102-10	Axial C Capacitor	1	Lead Free 1000pF ±10% 52mm T.T.	C375		
05-77101-05	Axial C Capacitor	1	Lead Free 100pF ±5% 52mm T.T.	C376		
05-77101-05	Axial C Capacitor	1	Lead Free 100pF ±5% 52mm T.T.	C377		
05-77101-05	Axial C Capacitor	1	Lead Free 100pF ±5% 52mm T.T.	C378		
05-77101-05	Axial C Capacitor	1	Lead Free 100pF ±5% 52mm T.T.	C379		
06-75105-20	E Capacitor	1	Lead Free 1μF 50V ±20% (5x11) T.T.	C401		
06-75105-20	E Capacitor	1	Lead Free 1μF 50V ±20% (5x11) T.T.	C402		
06-71107-20	E Capacitor	1	Lead Free 100μF 16V ±20% (5x11) T.T.	C403		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1μF +80-20% 52mm T.T.	C404		
06-75106-20	E Capacitor	1	Lead Free 10μF 50V ±20% (5x11) T.T.	C405		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1μF +80-20% 52mm T.T.	C406		
05-77221-05	Axial C Capacitor	1	Lead Free 220pF ±5% 52mm T.T.	C407		
05-77221-05	Axial C Capacitor	1	Lead Free 220pF ±5% 52mm T.T.	C408		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1μF +80-20% 52mm T.T.	C409		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1μF +80-20% 52mm T.T.	C410		
06-75475-20	E Capacitor	1	Lead Free 4.7μF 50V ±20% (5x11) T.T.	C411		
06-75475-20	E Capacitor	1	Lead Free 4.7μF 50V ±20% (5x11) T.T.	C412		
06-75475-20	E Capacitor	1	Lead Free 4.7μF 50V ±20% (5x11) T.T.	C413		
06-75475-20	E Capacitor	1	Lead Free 4.7μF 50V ±20% (5x11) T.T.	C414		
06-75475-20	E Capacitor	1	Lead Free 4.7μF 50V ±20% (5x11) T.T.	C415		
06-75475-20	E Capacitor	1	Lead Free 4.7μF 50V ±20% (5x11) T.T.	C416		
06-75475-20	E Capacitor	1	Lead Free 4.7μF 50V ±20% (5x11) T.T.	C417		
06-75475-20	E Capacitor	1	Lead Free 4.7μF 50V ±20% (5x11) T.T.	C418		
06-75475-20	E Capacitor	1	Lead Free 4.7μF 50V ±20% (5x11) T.T.	C419		
06-75475-20	E Capacitor	1	Lead Free 4.7μF 50V ±20% (5x11) T.T.	C420		
06-75224-20	E Capacitor	1	Lead Free 0.22μF 50V ±20% (5x11) T.T.	C421		
06-75224-20	E Capacitor	1	Lead Free 0.22μF 50V ±20% (5x11) T.T.	C422		
05-72104-10T	Mylar Capacitor	1	Lead Free 0.1μF 50V ±10% T.T.	C423		
05-72104-10T	Mylar Capacitor	1	Lead Free 0.1μF 50V ±10% T.T.	C424		
06-75105-20	E Capacitor	1	Lead Free 1μF 50V ±20% (5x11) T.T.	C425		
06-75105-20	E Capacitor	1	Lead Free 1μF 50V ±20% (5x11) T.T.	C426		
06-75475-20	E Capacitor	1	Lead Free 4.7μF 50V ±20% (5x11) T.T.	C427		
06-75475-20	E Capacitor	1	Lead Free 4.7μF 50V ±20% (5x11) T.T.	C428		
05-72103-10T	Mylar Capacitor	1	Lead Free 0.01μF 50V ±10% T.T.	C429		
05-72103-10T	Mylar Capacitor	1	Lead Free 0.01μF 50V ±10% T.T.	C430		
06-75105-20	E Capacitor	1	Lead Free 1μF 50V ±20% (5x11) T.T.	C431		
06-75105-20	E Capacitor	1	Lead Free 1μF 50V ±20% (5x11) T.T.	C432		
06-71476-20	E Capacitor	1	Lead Free 47μF 16V ±20% (5x11) T.T.	C433		
06-71476-20	E Capacitor	1	Lead Free 47μF 16V ±20% (5x11) T.T.	C434		
05-77102-10	Axial C Capacitor	1	Lead Free 1000pF ±10% 52mm T.T.	C435		
05-77102-10	Axial C Capacitor	1	Lead Free 1000pF ±10% 52mm T.T.	C436		
06-75106-20	E Capacitor	1	Lead Free 10μF 50V ±20% (5x11) T.T.	C437		



## Electrical parts list (Main board)

Parts Number	Parts name	QTY	Remarks	Ref. No.	Suffix	△
06-71227-20	E Capacitor	1	Lead Free 220µF 16V ±20% (6.3x11) T.T.	C438		
06-72477-20T	E Capacitor	1	Lead Free 470µF 25V ±20% (8x16) T.T.	C439		△
05-77104-82	Axial C Capacitor	1	Lead Free 0.1µF +80-20% 52mm T.T.	C440		
06-72338-20B	E Capacitor	1	Lead Free 3300µF 25V ±20% L=4mm	C441		△
05-77104-82	Axial C Capacitor	1	Lead Free 0.1µF +80-20% 52mm T.T.	C442		
06-71107-20	E Capacitor	1	Lead Free 100µF 16V ±20% (5x11) T.T.	C443		
06-71107-20	E Capacitor	1	Lead Free 100µF 16V ±20% (5x11) T.T.	C444		
05-72154-10T	Mylar Capacitor	1	Lead Free 0.15µF 50V ±10% T.T.	C445		
05-72154-10T	Mylar Capacitor	1	Lead Free 0.15µF 50V ±10% T.T.	C446		
06-71108-20	E Capacitor	1	Lead Free 1000µF 16V ±20% (10x16) T.T.	C447		
06-71108-20	E Capacitor	1	Lead Free 1000µF 16V ±20% (10x16) T.T.	C448		
06-72228-20B	E Capacitor	1	Lead Free 2200µF 25V ±20% L=4mm	C451		△
05-77223-82	Axial C Capacitor	1	Lead Free 0.022µF +80-20% 52mm T.T.	C452		
06-75104-20	E Capacitor	1	Lead Free 0.1µF 50V ±20% (5x11) T.T.	C453		
06-71107-20	E Capacitor	1	Lead Free 100µF 16V ±20% (5x11) T.T.	C454		
05-77223-82	Axial C Capacitor	1	Lead Free 0.022µF +80-20% 52mm T.T.	C455		
06-71227-20	E Capacitor	1	Lead Free 220µF 16V ±20% (6.3x11) T.T.	C456		
05-77223-82	Axial C Capacitor	1	Lead Free 0.022µF +80-20% 52mm T.T.	C457		
06-75106-20	E Capacitor	1	Lead Free 10µF 50V ±20% (5x11) T.T.	C458		
05-77223-82	Axial C Capacitor	1	Lead Free 0.022µF +80-20% 52mm T.T.	C459		
06-71227-20	E Capacitor	1	Lead Free 220µF 16V ±20% (6.3x11) T.T.	C460		
05-77104-82	Axial C Capacitor	1	Lead Free 0.1µF +80-20% 52mm T.T.	C461		
06-71107-20	E Capacitor	1	Lead Free 100µF 16V ±20% (5x11) T.T.	C462		
05-77102-10	Axial C Capacitor	1	Lead Free 1000pF ±10% 52mm T.T.	C471		
05-77102-10	Axial C Capacitor	1	Lead Free 1000pF ±10% 52mm T.T.	C472		
16-10101-81	CD Door SW.	1	Lead Free DLS-02-1	CD Door SW		
20-41061-80	6 Pin Hou'G	1	Lead Free UL1571#30 P=2 L=150mm	CD Mech to CN302		
25-61150-80	FFC 16P Cable	1	Lead Free UL20798 P=1 L=150mm	CD Pick-up to CN301		
09-80001-80	FM BP Filter	1	Lead Free BPF-10833KF (TC)	CF101		
09-50450-80	CER. Filter	1	Lead Free SFU450B 450kHz	CF102		
09-50107-80	CER. Filter	1	Lead Free LT10.7MS3 (Red)	CF103		
09-50107-87	CER. DIS	1	Lead Free JT10.7MG82	CF104		
20-11030-80J	3Pin Header	1	Lead Free P=2mm B3BPH Authentic JST	CN201		
20-11050-80	5Pin Header	1	Lead Free P=2mm B5BPH JST	CN202		
20-12060-80	6Pin Header	1	Lead Free P=2.5mm Molex	CN203		
20-80160-82	FFC Socket	1	Lead Free 16 Pin P=1mm	CN301		
20-11060-80	6Pin Header	1	Lead Free P=2mm B6BPH JST	CN302		
25-84110-82	Rainbow Cable	1	Lead Free #28UL 12 Pin 4/110/4	CN303 to CN603		
25-84110-80	Rainbow Cable	1	Lead Free #28UL 10 Pin 4/110/4	CN304 to CN604		
25-84110-81	Rainbow Cable	1	Lead Free #28UL 11 Pin 4/110/4	CN305 to CN605		
20-12050-80J	5Pin Header	1	Lead Free P=2.5mm JST	CN401		
20-12050-80	5Pin Header	1	Lead Free P=2.5mm Molex	CN402		
SVC201	Tuning Diode	1	Lead Free 02-00201-81 SPA "SANYO"	D101		
SVC201	Tuning Diode	1	Lead Free 02-00201-81 SPA "SANYO"	D102		
SVC348T	Tuning Diode	1	Lead Free 02-00348-81 "SANYO"	D103		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D105		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D106		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D107		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D201		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D202		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D203		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D204		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D207		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D208		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D209		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D301		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D302		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D303		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D304		
W-IN4001-A	Diode	1	Lead Free 02-04001-81 T.T	D305		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D306		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D307		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D401		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D402		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D403		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D404		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D405		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D406		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D408		
20-41022-80	2 Pin Hou'G	1	Lead Free UL2651#28 P=2 L=260mm	Door SW to CN302		
37-00001-80	Eyelet	1	Lead Free φ1.5 x 3 mm	FM Ant		
29-00290-00	FM Ant Wire	1	Lead Free L=250mm	FM Ant to FM Rod Ant		

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Electrical parts list (Main board)

Parts Number	Parts name	QTY	Remarks	Ref. No.	Suffix	△
32-65080-80	#26UL-1365	1	Lead Free 2Pin 80mm Black	FM Osc/Gnd to FM Osc1/Gnd		
78-00612-00	Terminal	1	212A	For CD Mech Wire		
28-03028-01	PVC Tube	1	"UL" IDφ3mm L=28mm	For CD Mech Wire		
08-04344-11	Ferrite Cord	1	T12.7 x 6.35 x 7.9 Techwell Magnet	For FM Ant Wire		
39-00013-80	Heat Sink	1	LE030401 CDT13	For IC303		
81-10001-80	Sponge	2	LE030401 10 x 10 x10 mm	For L102		
21-10080-80	AM Ant Bar	1	Lead Free φ10 x 80 mm	For L103		
54-00299-80	Bar Holder	2	LE030401 MHD-38	For L103		
TA2149BFN	IC	1	Lead Free 03-02149-81 Toshiba	IC101		
TC9257F	IC	1	Lead Free 03-09257-81 Toshiba	IC102		
TA8189N	IC	1	Lead Free 03-08189-80 Toshiba	IC201		
TC94A09F	IC	1	Lead Free 03-09409-00 Toshiba	IC301		
TA2153FN	IC	1	Lead Free 03-02153-80 Toshiba	IC302		
2092N	IC	1	Lead Free 03-02092-80 Toshiba	IC303		
TC9422F	IC	1	Lead Free 03-09422-80 Toshiba	IC401		
TA8229K	IC	1	Lead Free 03-08229-80 Toshiba	IC404		△
07-75001-05F	RMC SMD	1	Lead Free 1206 0 1/8W JP TP	J101A		
12-00214-80	RCA Jack	1	Lead Free RCA-214 2 Chanel	JK401		
12-00006-80	SPK. Terminal	1	Lead Free WP-4112AE (050)	JK403		
20-61033-80	3 Pin Hou'G	1	Lead Free DW-UL2547#30 Gray L=370mm	JP201 to CN201		
20-61053-80	5 Pin Hou'G	1	Lead Free 5DW UL2851#32 L=440mm	JP202 to CN202		
20-42061-80	6 Pin Hou'G	1	Lead Free UL1007#26 P=2.5 L=240/420mm	JP203 to CN203		
09-35045-80	FM Coil	1	Lead Free 4.5 x 3.5 x0.8 (Wing Lee)	L101		
09-25055-80	FM Coil	1	Lead Free φ5.5mm x 2.5T 0.8 CCW	L102		
09-06224-80	AM Coil	1	Lead Free 62:24 N/B=60 R=90 G=100	L103		
08-01014-82	10mm IFT	1	Lead Free Red 1A1014N	L104		
09-70101-82T	Inductor	1	Lead Free 10μH-823465 52mm T.T.	L105		
09-70102-85	Axial Inductor	1	Lead Free 100μH-823477 52mm	L106		
09-40474-80	Choke Coil	1	Lead Free 47MH D=6 x 8mm T.T.	L201		
09-40474-80	Choke Coil	1	Lead Free 47MH D=6 x 8mm T.T.	L202		
08-02072-80	RES. BIAC OSC	1	Lead Free 1A2072N	L203		
09-70101-82T	Inductor	1	Lead Free 10μH-823465 52mm T.T.	L301		
09-70101-82T	Inductor	1	Lead Free 10μH-823465 52mm T.T.	L302		
09-70102-85	Axial Inductor	1	Lead Free 100μH-823477 52mm	L303		
09-70101-82T	Inductor	1	Lead Free 10μH-823465 52mm T.T.	L305		
09-01000-81	Toroid Coil	1	Lead Free R195-875560NP	L307		
08-04200-80	Ferrite Bead	1	Lead Free RH03505 AS-W4B	L309		
08-04200-80	Ferrite Bead	1	Lead Free RH03505 AS-W4B	L310		
09-01000-81	Toroid Coil	1	Lead Free R195-875560NP	L401		
09-01000-81	Toroid Coil	1	Lead Free R195-875560NP	L402		
31-60140-82	#26UL-1007	1	Lead Free Wire 3/140/3 Red	Motor to Deck PCB B		
11-00290-11	PC-X290	1	Main PCB 94VO 1.6mm	PCB		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q101		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q102		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q103		
2SA733PNP	Transistor	1	Lead Free 01-00733-80 T.T.	Q104		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q105		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q106		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q107		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q108		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q109		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q110		
2SA733PNP	Transistor	1	Lead Free 01-00733-80 T.T.	Q111		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q201		
2SA733PNP	Transistor	1	Lead Free 01-00733-80 T.T.	Q202		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q203		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q204		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q205		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q206		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q207		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q208		
8050D	Transistor	1	Lead Free 01-08050-81 T.T.	Q209		
8050D	Transistor	1	Lead Free 01-08050-81 T.T.	Q210		
8050D	Transistor	1	Lead Free 01-08050-81 T.T.	Q211		
8050D	Transistor	1	Lead Free 01-08050-81 T.T.	Q212		
8050D	Transistor	1	Lead Free 01-08050-81 T.T.	Q213		
8050D	Transistor	1	Lead Free 01-08050-81 T.T.	Q214		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q215		
2SA733PNP	Transistor	1	Lead Free 01-00733-80 T.T.	Q216		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q217		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q218		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q219		

## Electrical parts list (Main board)

Parts Number	Parts name	QTY	Remarks	Ref. No.	Suffix	△
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q220		
2SA733PNP	Transistor	1	Lead Free 01-00733-80 T.T.	Q301		
8550D	Transistor	1	Lead Free 01-08550-81 T.T.	Q302		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q303		
2SA733PNP	Transistor	1	Lead Free 01-00733-80 T.T.	Q304		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q305		
8050D	Transistor	1	Lead Free 01-08050-81 T.T.	Q401		
8050D	Transistor	1	Lead Free 01-08050-81 T.T.	Q402		
8550D	Transistor	1	Lead Free 01-08550-81 T.T.	Q403		△
8550D	Transistor	1	Lead Free 01-08550-81 T.T.	Q404		△
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q405		
8050D	Transistor	1	Lead Free 01-08050-81 T.T.	Q406		△
2SB1375	Transistor	1	Lead Free 01-01375-80	Q407		△
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q408		
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q409		
8050D	Transistor	1	Lead Free 01-08050-81 T.T.	Q410		
8050D	Transistor	1	Lead Free 01-08050-81 T.T.	Q411		△
8550D	Transistor	1	Lead Free 01-08550-81 T.T.	Q412		△
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q413		
07-74220-50T	Carbon Resistor	1	Lead Free 22 1/8W ±5% 52mm T.T	R101		
07-74202-50T	Carbon Resistor	1	Lead Free 2K 1/8W ±5% 52mm T.T	R102		
07-74470-50T	Carbon Resistor	1	Lead Free 47 1/8W ±5% 52mm T.T	R103		
07-74104-50T	Carbon Resistor	1	Lead Free 100K 1/8W ±5% 52mm T.T	R104		
07-74473-50T	Carbon Resistor	1	Lead Free 47K 1/8W ±5% 52mm T.T	R105		
07-74473-50T	Carbon Resistor	1	Lead Free 47K 1/8W ±5% 52mm T.T	R106		
07-74104-50T	Carbon Resistor	1	Lead Free 100K 1/8W ±5% 52mm T.T	R107		
07-74154-50T	Carbon Resistor	1	Lead Free 150K 1/8W ±5% 52mm T.T	R108		
07-74331-50T	Carbon Resistor	1	Lead Free 330 1/8W ±5% 52mm T.T	R109		
07-74224-50T	Carbon Resistor	1	Lead Free 220K 1/8W ±5% 52mm T.T	R110		
07-74473-50T	Carbon Resistor	1	Lead Free 47K 1/8W ±5% 52mm T.T	R111		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R112		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R113		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R114		
07-74332-50T	Carbon Resistor	1	Lead Free 3.3K 1/8W ±5% 52mm T.T	R115		
07-74102-50T	Carbon Resistor	1	Lead Free 1K 1/8W ±5% 52mm T.T	R119		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R120		
07-74333-50T	Carbon Resistor	1	Lead Free 33K 1/8W ±5% 52mm T.T	R121		
07-74221-50T	Carbon Resistor	1	Lead Free 220 1/8W ±5% 52mm T.T	R122		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R124		
07-74223-50T	Carbon Resistor	1	Lead Free 22K 1/8W ±5% 52mm T.T	R125		
07-74223-50T	Carbon Resistor	1	Lead Free 22K 1/8W ±5% 52mm T.T	R126		
07-74223-50T	Carbon Resistor	1	Lead Free 22K 1/8W ±5% 52mm T.T	R127		
07-74102-50T	Carbon Resistor	1	Lead Free 1K 1/8W ±5% 52mm T.T	R128		
07-74102-50T	Carbon Resistor	1	Lead Free 1K 1/8W ±5% 52mm T.T	R129		
07-74562-50T	Carbon Resistor	1	Lead Free 5.6K 1/8W ±5% 52mm T.T	R131		
07-74562-50T	Carbon Resistor	1	Lead Free 5.6K 1/8W ±5% 52mm T.T	R132		
07-74102-50T	Carbon Resistor	1	Lead Free 1K 1/8W ±5% 52mm T.T	R133		
07-74222-50T	Carbon Resistor	1	Lead Free 2.2K 1/8W ±5% 52mm T.T	R134		
07-74152-50T	Carbon Resistor	1	Lead Free 1.5K 1/8W ±5% 52mm T.T	R135		
07-74561-50T	Carbon Resistor	1	Lead Free 560 1/8W ±5% 52mm T.T	R136		
07-74153-50T	Carbon Resistor	1	Lead Free 15K 1/8W ±5% 52mm T.T	R141		
07-74153-50T	Carbon Resistor	1	Lead Free 15K 1/8W ±5% 52mm T.T	R142		
07-74273-50T	Carbon Resistor	1	Lead Free 27K 1/8W ±5% 52mm T.T	R143		
07-74273-50T	Carbon Resistor	1	Lead Free 27K 1/8W ±5% 52mm T.T	R144		
07-74153-50T	Carbon Resistor	1	Lead Free 15K 1/8W ±5% 52mm T.T	R145		
07-74153-50T	Carbon Resistor	1	Lead Free 15K 1/8W ±5% 52mm T.T	R146		
07-74222-50T	Carbon Resistor	1	Lead Free 2.2K 1/8W ±5% 52mm T.T	R151		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R152		
07-74102-50T	Carbon Resistor	1	Lead Free 1K 1/8W ±5% 52mm T.T	R153		
07-74223-50T	Carbon Resistor	1	Lead Free 22K 1/8W ±5% 52mm T.T	R154		
07-74333-50T	Carbon Resistor	1	Lead Free 33K 1/8W ±5% 52mm T.T	R155		
07-74333-50T	Carbon Resistor	1	Lead Free 33K 1/8W ±5% 52mm T.T	R156		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R157		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R159		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R162		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R163		
07-74153-50T	Carbon Resistor	1	Lead Free 15K 1/8W ±5% 52mm T.T	R201		
07-74153-50T	Carbon Resistor	1	Lead Free 15K 1/8W ±5% 52mm T.T	R202		
07-74123-50T	Carbon Resistor	1	Lead Free 12K 1/8W ±5% 52mm T.T	R203		
07-74123-50T	Carbon Resistor	1	Lead Free 12K 1/8W ±5% 52mm T.T	R204		
07-74272-50T	Carbon Resistor	1	Lead Free 2.7K 1/8W ±5% 52mm T.T	R205		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R206		

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## Electrical parts list (Main board)

Parts Number	Parts name	QTY	Remarks	Ref. No.	Suffix	△
07-74680-50T	Carbon Resistor	1	Lead Free 68 1/8W ±5% 52mm T.T	R207		
07-74223-50T	Carbon Resistor	1	Lead Free 22K 1/8W ±5% 52mm T.T	R208		
07-74047-50T	Carbon Resistor	1	Lead Free 4.7 1/8W ±5% 52mm T.T	R209		
07-74473-50T	Carbon Resistor	1	Lead Free 47K 1/8W ±5% 52mm T.T	R210		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R211		
07-74223-50T	Carbon Resistor	1	Lead Free 22K 1/8W ±5% 52mm T.T	R212		
07-74104-50T	Carbon Resistor	1	Lead Free 100K 1/8W ±5% 52mm T.T	R213		
07-74182-50T	Carbon Resistor	1	Lead Free 1.8K 1/8W ±5% 52mm T.T	R215		
07-74182-50T	Carbon Resistor	1	Lead Free 1.8K 1/8W ±5% 52mm T.T	R216		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R217		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R218		
07-74121-50T	Carbon Resistor	1	Lead Free 120 1/8W ±5% 52mm T.T	R219		
07-74121-50T	Carbon Resistor	1	Lead Free 120 1/8W ±5% 52mm T.T	R220		
07-74153-50T	Carbon Resistor	1	Lead Free 15K 1/8W ±5% 52mm T.T	R221		
07-74153-50T	Carbon Resistor	1	Lead Free 15K 1/8W ±5% 52mm T.T	R222		
07-74184-50T	Carbon Resistor	1	Lead Free 180K 1/8W ±5% 52mm T.T	R223		
07-74184-50T	Carbon Resistor	1	Lead Free 180K 1/8W ±5% 52mm T.T	R224		
07-74184-50T	Carbon Resistor	1	Lead Free 180K 1/8W ±5% 52mm T.T	R225		
07-74184-50T	Carbon Resistor	1	Lead Free 180K 1/8W ±5% 52mm T.T	R226		
07-74152-50T	Carbon Resistor	1	Lead Free 1.5K 1/8W ±5% 52mm T.T	R227		
07-74152-50T	Carbon Resistor	1	Lead Free 1.5K 1/8W ±5% 52mm T.T	R228		
07-74474-50T	Carbon Resistor	1	Lead Free 470K 1/8W ±5% 52mm T.T	R229		
07-74474-50T	Carbon Resistor	1	Lead Free 470K 1/8W ±5% 52mm T.T	R230		
07-74821-50T	Carbon Resistor	1	Lead Free 820 1/8W ±5%	R231		
07-74821-50T	Carbon Resistor	1	Lead Free 820 1/8W ±5%	R232		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R233		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R234		
07-74104-50T	Carbon Resistor	1	Lead Free 100K 1/8W ±5% 52mm T.T	R235		
07-74104-50T	Carbon Resistor	1	Lead Free 100K 1/8W ±5% 52mm T.T	R236		
07-74473-50T	Carbon Resistor	1	Lead Free 47K 1/8W ±5% 52mm T.T	R237		
07-74473-50T	Carbon Resistor	1	Lead Free 47K 1/8W ±5% 52mm T.T	R238		
07-74682-50T	Carbon Resistor	1	Lead Free 6.8K 1/8W ±5% 52mm T.T	R239		
07-74682-50T	Carbon Resistor	1	Lead Free 6.8K 1/8W ±5% 52mm T.T	R240		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R241		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R242		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R243		
07-74333-50T	Carbon Resistor	1	Lead Free 33K 1/8W ±5% 52mm T.T	R244		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R245		
07-74333-50T	Carbon Resistor	1	Lead Free 33K 1/8W ±5% 52mm T.T	R246		
07-74101-00T	Carbon Resistor	1	Lead Free 100 1/4W ±5% 52mm T.T	R247		
07-74105-50T	Carbon Resistor	1	Lead Free 1M 1/8W ±5% 52mm T.T	R248		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R249		
07-74473-50T	Carbon Resistor	1	Lead Free 47K 1/8W ±5% 52mm T.T	R250		
07-74222-50T	Carbon Resistor	1	Lead Free 2.2K 1/8W ±5% 52mm T.T	R251		
07-74473-50T	Carbon Resistor	1	Lead Free 47K 1/8W ±5% 52mm T.T	R252		
07-74332-50T	Carbon Resistor	1	Lead Free 3.3K 1/8W ±5% 52mm T.T	R253		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R255		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R256		
07-74104-50T	Carbon Resistor	1	Lead Free 100K 1/8W ±5% 52mm T.T	R257		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R258		
07-74332-50T	Carbon Resistor	1	Lead Free 3.3K 1/8W ±5% 52mm T.T	R259		
07-74473-50T	Carbon Resistor	1	Lead Free 47K 1/8W ±5% 52mm T.T	R260		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R261		
07-74473-50T	Carbon Resistor	1	Lead Free 47K 1/8W ±5% 52mm T.T	R262		
07-74223-50T	Carbon Resistor	1	Lead Free 22K 1/8W ±5% 52mm T.T	R265		
07-74104-50T	Carbon Resistor	1	Lead Free 100K 1/8W ±5% 52mm T.T	R266		
07-74473-50T	Carbon Resistor	1	Lead Free 47K 1/8W ±5% 52mm T.T	R267		
07-74563-50T	Carbon Resistor	1	Lead Free 56K 1/8W ±5% 52mm T.T	R268		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R271		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R272		
07-74223-50T	Carbon Resistor	1	Lead Free 22K 1/8W ±5% 52mm T.T	R273		
07-74101-50T	Carbon Resistor	1	Lead Free 100 1/8W ±5% 52mm T.T	R301		
07-74100-50T	Carbon Resistor	1	Lead Free 10 1/8W ±5% 52mm T.T	R302		
07-74303-50T	Carbon Resistor	1	Lead Free 30K 1/8W ±5% 52mm T.T	R303		
07-74393-50T	Carbon Resistor	1	Lead Free 39K 1/8W ±5% 52mm T.T	R304		
07-74393-50T	Carbon Resistor	1	Lead Free 39K 1/8W ±5% 52mm T.T	R305		
07-74393-50T	Carbon Resistor	1	Lead Free 39K 1/8W ±5% 52mm T.T	R306		
07-74393-50T	Carbon Resistor	1	Lead Free 39K 1/8W ±5% 52mm T.T	R307		
07-74303-50T	Carbon Resistor	1	Lead Free 30K 1/8W ±5% 52mm T.T	R308		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R309		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R310		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R311		

## Electrical parts list (Main board)

Parts Number	Parts name	QTY	Remarks	Ref. No.	Suffix	△
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R312		
07-74104-50T	Carbon Resistor	1	Lead Free 100K 1/8W ±5% 52mm T.T	R313		
07-74222-50T	Carbon Resistor	1	Lead Free 2.2K 1/8W ±5% 52mm T.T	R314		
07-74102-50T	Carbon Resistor	1	Lead Free 1K 1/8W ±5% 52mm T.T	R315		
07-74153-50T	Carbon Resistor	1	Lead Free 15K 1/8W ±5% 52mm T.T	R316		
07-74221-50T	Carbon Resistor	1	Lead Free 220 1/8W ±5% 52mm T.T	R317		
07-74473-50T	Carbon Resistor	1	Lead Free 47K 1/8W ±5% 52mm T.T	R318		
07-74102-50T	Carbon Resistor	1	Lead Free 1K 1/8W ±5% 52mm T.T	R319		
07-74683-50T	Carbon Resistor	1	Lead Free 68K 1/8W ±5% 52mm T.T	R320		
07-74153-50T	Carbon Resistor	1	Lead Free 15K 1/8W ±5% 52mm T.T	R321		
07-74104-50T	Carbon Resistor	1	Lead Free 100K 1/8W ±5% 52mm T.T	R322		
07-74473-50T	Carbon Resistor	1	Lead Free 47K 1/8W ±5% 52mm T.T	R323		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R324		
07-74222-50T	Carbon Resistor	1	Lead Free 2.2K 1/8W ±5% 52mm T.T	R325		
07-74473-50T	Carbon Resistor	1	Lead Free 47K 1/8W ±5% 52mm T.T	R326		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R327		
07-74473-50T	Carbon Resistor	1	Lead Free 47K 1/8W ±5% 52mm T.T	R328		
07-74682-50T	Carbon Resistor	1	Lead Free 6.8K 1/8W ±5% 52mm T.T	R329		
07-74332-50T	Carbon Resistor	1	Lead Free 3.3K 1/8W ±5% 52mm T.T	R330		
07-74220-50T	Carbon Resistor	1	Lead Free 22 1/8W ±5% 52mm T.T	R331		
07-74271-50T	Carbon Resistor	1	Lead Free 270 1/8W ±5% 52mm T.T	R341		
07-74271-50T	Carbon Resistor	1	Lead Free 270 1/8W ±5% 52mm T.T	R342		
07-74104-50T	Carbon Resistor	1	Lead Free 100K 1/8W ±5% 52mm T.T	R343		
07-74104-50T	Carbon Resistor	1	Lead Free 100K 1/8W ±5% 52mm T.T	R344		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R345		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R346		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R347		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R348		
07-74104-50T	Carbon Resistor	1	Lead Free 100K 1/8W ±5% 52mm T.T	R351		
07-74106-50T	Carbon Resistor	1	Lead Free 10M 1/8W ±5% 52mm T.T	R352		
07-74102-50T	Carbon Resistor	1	Lead Free 1K 1/8W ±5% 52mm T.T	R353		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R354		
07-74220-50T	Carbon Resistor	1	Lead Free 22 1/8W ±5% 52mm T.T	R355		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R356		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R357		
07-74223-50T	Carbon Resistor	1	Lead Free 22K 1/8W ±5% 52mm T.T	R358		
07-74473-50T	Carbon Resistor	1	Lead Free 47K 1/8W ±5% 52mm T.T	R359		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R361		
07-74223-50T	Carbon Resistor	1	Lead Free 22K 1/8W ±5% 52mm T.T	R362		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R363		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R364		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R365		
07-74223-50T	Carbon Resistor	1	Lead Free 22K 1/8W ±5% 52mm T.T	R366		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R367		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R368		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R369		
07-74102-50T	Carbon Resistor	1	Lead Free 1K 1/8W ±5% 52mm T.T	R370		
07-74333-50T	Carbon Resistor	1	Lead Free 33K 1/8W ±5% 52mm T.T	R372		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R373		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R374		
07-74222-50T	Carbon Resistor	1	Lead Free 2.2K 1/8W ±5% 52mm T.T	R375		
07-74562-50T	Carbon Resistor	1	Lead Free 5.6K 1/8W ±5% 52mm T.T	R377		
07-74562-50T	Carbon Resistor	1	Lead Free 5.6K 1/8W ±5% 52mm T.T	R378		
07-74272-50T	Carbon Resistor	1	Lead Free 2.7K 1/8W ±5% 52mm T.T	R379		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R380		
07-74473-50T	Carbon Resistor	1	Lead Free 47K 1/8W ±5% 52mm T.T	R401		
07-74473-50T	Carbon Resistor	1	Lead Free 47K 1/8W ±5% 52mm T.T	R402		
07-74362-50T	Carbon Resistor	1	Lead Free 3.6K 1/8W ±5% 52mm T.T	R403		
07-74362-50T	Carbon Resistor	1	Lead Free 3.6K 1/8W ±5% 52mm T.T	R404		
07-74153-50T	Carbon Resistor	1	Lead Free 15K 1/8W ±5% 52mm T.T	R405		
07-74153-50T	Carbon Resistor	1	Lead Free 15K 1/8W ±5% 52mm T.T	R406		
07-74272-50T	Carbon Resistor	1	Lead Free 2.7K 1/8W ±5% 52mm T.T	R407		
07-74272-50T	Carbon Resistor	1	Lead Free 2.7K 1/8W ±5% 52mm T.T	R408		
07-74221-00T	Carbon Resistor	1	Lead Free 220 1/4W ±5% 52mm T.T	R409		
07-74333-50T	Carbon Resistor	1	Lead Free 33K 1/8W ±5% 52mm T.T	R410		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R411		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R412		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R413		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R414		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R415		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R416		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R417		

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Electrical parts list (Main board)

Parts Number	Parts name	QTY	Remarks	Ref. No.	Suffix	⚠
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R418		
07-74333-50T	Carbon Resistor	1	Lead Free 33K 1/8W ±5% 52mm T.T	R419		
07-74333-50T	Carbon Resistor	1	Lead Free 33K 1/8W ±5% 52mm T.T	R420		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R421		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R422		
07-74183-50T	Carbon Resistor	1	Lead Free 18K 1/8W ±5% 52mm T.T	R423		
07-74183-50T	Carbon Resistor	1	Lead Free 18K 1/8W ±5% 52mm T.T	R424		
07-74122-50T	Carbon Resistor	1	Lead Free 1.2K 1/8W ±5% 52mm T.T	R425		
07-74122-50T	Carbon Resistor	1	Lead Free 1.2K 1/8W ±5% 52mm T.T	R426		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R427		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R428		
07-74022-00T	Carbon Resistor	1	Lead Free 2.2 1/4W ±5% 52mm T.T	R429		
07-74022-00T	Carbon Resistor	1	Lead Free 2.2 1/4W ±5% 52mm T.T	R430		
07-74473-50T	Carbon Resistor	1	Lead Free 47K 1/8W ±5% 52mm T.T	R431		
07-74102-50T	Carbon Resistor	1	Lead Free 1K 1/8W ±5% 52mm T.T	R432		
07-74473-50T	Carbon Resistor	1	Lead Free 47K 1/8W ±5% 52mm T.T	R433		
07-74104-50T	Carbon Resistor	1	Lead Free 100K 1/8W ±5% 52mm T.T	R435		
07-74100-00T	Carbon Resistor	1	Lead Free 10 1/4W ±5% 52mm T.T	R436		
07-74221-50T	Carbon Resistor	1	Lead Free 220 1/8W ±5% 52mm T.T	R436		
07-74471-50T	Carbon Resistor	1	Lead Free 470 1/8W ±5% 52mm T.T	R437		
07-74563-50T	Carbon Resistor	1	Lead Free 56K 1/8W ±5% 52mm T.T	R438		
07-74391-50T	Carbon Resistor	1	Lead Free 390 1/8W ±5% 52mm T.T	R439		
07-74512-50T	Carbon Resistor	1	Lead Free 5.1K 1/8W ±5% 52mm T.T	R440		
07-74152-50T	Carbon Resistor	1	Lead Free 1.5K 1/8W ±5% 52mm T.T	R441		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R442		
07-74123-50T	Carbon Resistor	1	Lead Free 12K 1/8W ±5% 52mm T.T	R443		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R444		
07-74103-50T	Carbon Resistor	1	Lead Free 10K 1/8W ±5% 52mm T.T	R445		
07-74100-00T	Carbon Resistor	1	Lead Free 10 1/4W ±5% 52mm T.T	R446		
07-74682-50T	Carbon Resistor	1	Lead Free 6.8K 1/8W ±5% 52mm T.T	R447		
07-74223-50T	Carbon Resistor	1	Lead Free 22K 1/8W ±5% 52mm T.T	R448		
07-74473-50T	Carbon Resistor	1	Lead Free 47K 1/8W ±5% 52mm T.T	R451		
07-74473-50T	Carbon Resistor	1	Lead Free 47K 1/8W ±5% 52mm T.T	R452		
07-74102-50T	Carbon Resistor	1	Lead Free 1K 1/8W ±5% 52mm T.T	R455		
07-74102-50T	Carbon Resistor	1	Lead Free 1K 1/8W ±5% 52mm T.T	R456		
07-74470-50T	Carbon Resistor	1	Lead Free 47 1/8W ±5% 52mm T.T	R457		
07-74470-50T	Carbon Resistor	1	Lead Free 47 1/8W ±5% 52mm T.T	R458		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R461		
07-74472-50T	Carbon Resistor	1	Lead Free 4.7K 1/8W ±5% 52mm T.T	R462		
16-10202-801	Slide Switch	1	Lead Free 2P2T SK22D06G4	SW201		
16-10101-82	Tact Switch	1	Lead Free 1P1T TSC063803-150	SW301		
08-00332-84	10mm IFT	1	Lead Free Yellow 810017	T101		
05-08100-80	Trimmer Capacitor	1	Lead Free 10pF 3P	TC101		
05-08100-80	Trimmer Capacitor	1	Lead Free 10pF 3P	TC102		
04-04500-80B	Crystal	1	Lead Free HC49V 4.500MHz L=4mm	X101		
04-00075-81	Crystal	1	Lead Free 75kHz 12P5 AT-308 ±10PPM	X202		
09-51693-80	CER. Resonator	1	Lead Free 16.9344MHz	X301		
9.1V 0.5W	Zener Diode	1	Lead Free 02-50091-81 52mm T.T.	ZD101		
3.9V 0.5W	Zener Diode	1	Lead Free 02-50039-81 52mm T.T.	ZD301		
9.1V 0.5W	Zener Diode	1	Lead Free 02-50091-81 52mm T.T.	ZD401		⚠
84-00003-80	Cable Tie	11	4" "UL"			
94-00290-00	Cass Deck	1	Lead Free CS-21SW-290			
98-00010-80	CD Pick Up	1	LE030401 TCP11TK2PX "Thomson"			

## | Electrical parts list (Power board)

Parts Number	Parts name	QTY	Remarks	Ref. No.	Suffix	△
31-20180-81	#22UL-1007	1	Lead Free Wire 3/180/3 Brown	AC Socket to Power PCB "BR		
31-20180-83	#22UL-1007	1	Lead Free Wire 3/180/3 Orange	AC Socket to Power PCB "OR		
37-00020-80	Eyelet	5	Lead Free D=2 x 4mm	AC1, AC2, ORG, BRN, BLK		
31-20120-80	#22UL-1007	1	Lead Free Wire 3/120/3 Black	Batt.- to Power PCB		
31-20180-92	#22UL-1007	1	Lead Free Wire 3/180/3 Red	Batt.+ to AC Socket		
05-70104-10T	C Capacitor	1	Lead Free 0.1μF 50V ±10% T.T.	C501		
05-70104-10T	C Capacitor	1	Lead Free 0.1μF 50V ±10% T.T.	C502		
05-70104-10T	C Capacitor	1	Lead Free 0.1μF 50V ±10% T.T.	C503		
05-70104-10T	C Capacitor	1	Lead Free 0.1μF 50V ±10% T.T.	C504		
06-72447-20	E Capacitor	1	Lead Free 470μF 25V ±20% (10x12.5) T.T.	C505		△
05-70104-10T	C Capacitor	1	Lead Free 0.1μF 50V ±10% T.T.	C506		
06-71107-20	E Capacitor	1	Lead Free 100μF 16V ±20% (5x11) T.T.	C507		△
05-70104-10T	C Capacitor	1	Lead Free 0.1μF 50V ±10% T.T.	C508		
RL202	Diode Rectifier	1	Lead Free 02-00202-80T T.T.	D501		△
RL202	Diode Rectifier	1	Lead Free 02-00202-80T T.T.	D502		△
RL202	Diode Rectifier	1	Lead Free 02-00202-80T T.T.	D503		△
RL202	Diode Rectifier	1	Lead Free 02-00202-80T T.T.	D504		△
W-IN4001-A	Diode	1	Lead Free 02-04001-81 T.T.	D505		△
33-57312-80	Fuse	1	Lead Free T3.15L 250V UL/VDE/CCEE	F501		△
39-10001-81	Fuse Holder	1	LE030401 C2680	For F501		
39-09025-84	Heat Sink	1	LE030401 OP251 (JiangSu)	For IC501		
08-04344-50	Ferrite Core	1	T25 x 15 x 10	For JP402 Wire		
08-04344-50	Ferrite Core	1	T25 x 15 x 10	For JP501 Wire		
28-32010-00	Fibre Tube	1	φ2mm L=10mm	For R501		
L7805CV	IC	1	03-07805-08 Array	IC501		△
12-21315-00	φ3.5mm JK	1	Lead Free W/2P2T CK x 3.5-02J5P2K	JK402		
12-00004-33	AC Power Socket	1	LE030401 PSP27 (UL)	JK501		
20-42052-81	5Pin Hou'G	1	Lead Free CBL UL1007#22 P=2.5 L=460	JP402 to CN402		
20-42051-80	5Pin Hou'G	1	Lead Free UL1007#22 P=2.5 L=460mm	JP501 to CN401		
09-70101-82T	Inductor	1	Lead Free 10μH-823465 52mm T.T.	L404		
09-70101-82T	Inductor	1	Lead Free 10μH-823465 52mm T.T.	L405		
09-70101-82T	Inductor	1	Lead Free 10μH-823465 52mm T.T.	L406		
11-00290-03	PC-X290	1	Power PCB W/04/06 94VO 1.6mm	PCB		
07-74151-50T	Carbon Resistor	1	Lead Free 150 1/8W ±5% 52mm T.T.	R453		
07-74151-50T	Carbon Resistor	1	Lead Free 150 1/8W ±5% 52mm T.T.	R454		
07-74047-10T	Carbon Resistor	1	Lead Free 4.7 1/2W ±5% 52mm T.T.	R501		△
15-00290-00	PC-X290 X'Former	1	LE030401 T06821A 120V (UL)	T501		△
28-07130-01	PVC Tube	1	"UL" IDφ=7.3mm L=130mm			
28-07170-01	PVC Tube	1	"UL" IDφ=7.3mm L=170mm			
84-00003-80	Cable Tie	1	LE030401 4" UL			
84-00005-80	Cable Tie	1	LE030401 6.5" UL			

## | Electrical parts list (Remote board)

Parts Number	Parts name	QTY	Remarks	Ref. No.	Suffix	△
2SC945-P	Transistor	1	Lead Free 01-00945-80 T.T.	Q501		
Infrared	LED	1	Lead Free 02-00102-80 EL-1L2	D501		
1N4148	Diode	1	Lead Free 02-04148-81 52mm T.T.	D502		
PT2243S	IC	1	Lead Free 03-02243-80 (PTC)	IC501		
05-70101-10T	C Capacitor	1	Lead Free 100pF 50V ±10% T.T.	C503		
05-70101-10T	C Capacitor	1	Lead Free 100pF 50V ±10% T.T.	C504		
06-71476-20	E Capacitor	1	Lead Free 47μF 16V ±20% (5x11) T.T.	C501		
07-74682-50T	Carbon Resistor	1	Lead Free 6.8K 1/8W ±5% 52mm T.T.	R502		
09-50455-80	Cer. Resonator	1	Lead Free 2TB455	X501		
11-00290-08	PC-X290 Remote	1	94HB 1.6mm	PCB		

PC-X290

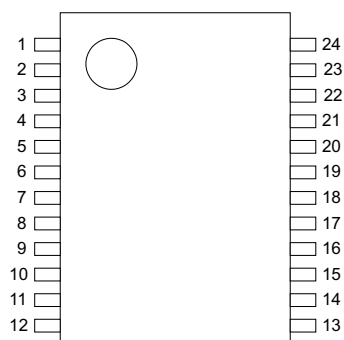
Electrical parts list (Display & Key board)

Parts Number	Parts name	QTY	Remarks	Ref. No.	Suffix	△
20-21100-80	10Pin Header	1	Lead Free wire P=2mm R-Angle JST	CN601		
20-41102-80	10Pin Hou'G	1	Lead Free Cable UL2651#28 P=2 220/4	CN606 to CN601		
25-84050-82	Rainbow Cable	1	Lead Free #28UL 2P 4/50/4	CN608 to CN602		
BT-302	Led	1	Lead Free 02-30005-84 YEK-31-589E	D601		
BT-302	Led	1	Lead Free 02-30005-84 YEK-31-589E	D602		
BT-302	Led	1	Lead Free 02-30005-84 YEK-31-589E	D603		
BT-302	Led	1	Lead Free 02-30005-84 YEK-31-589E	D604		
ELT-3142D	Led	1	Lead Free 02-30022-82 φ3mm (Elstar)	D605		
08-04344-50	Ferrite Core	1	T25 x 15 x 10	For CN601 Wire		
91-00290-00	LCD Display	1	Lead Free PC-X290 LCD Display	LCD601		
11-00290-01	PC-X290	1	Display PCB 94HB 1.6mm	PCB		
11-00290-02	PC-X290	1	Key PCB W/07/10/13/17 94HB 1.6mm	PCB		
07-74152-50T	Carbon Resistor	1	Lead Free 1.5K 1/8W ±5% 52mm T.T.	R601		
07-74202-50T	Carbon Resistor	1	Lead Free 2K 1/8W ±5% 52mm T.T.	R602		
07-74272-50T	Carbon Resistor	1	Lead Free 2.7K 1/8W ±5% 52mm T.T.	R603		
07-74392-50T	Carbon Resistor	1	Lead Free 3.9K 1/8W ±5% 52mm T.T.	R604		
07-74152-50T	Carbon Resistor	1	Lead Free 1.5K 1/8W ±5% 52mm T.T.	R605		
07-74202-50T	Carbon Resistor	1	Lead Free 2K 1/8W ±5% 52mm T.T.	R606		
07-74272-50T	Carbon Resistor	1	Lead Free 2.7K 1/8W ±5% 52mm T.T.	R607		
07-74152-50T	Carbon Resistor	1	Lead Free 1.5K 1/8W ±5% 52mm T.T.	R608		
07-74202-50T	Carbon Resistor	1	Lead Free 2K 1/8W ±5% 52mm T.T.	R609		
07-74272-50T	Carbon Resistor	1	Lead Free 2.7K 1/8W ±5% 52mm T.T.	R610		
07-74392-50T	Carbon Resistor	1	Lead Free 3.9K 1/8W ±5% 52mm T.T.	R611		
07-74682-50T	Carbon Resistor	1	Lead Free 6.8K 1/8W ±5% 52mm T.T.	R612		
07-74153-50T	Carbon Resistor	1	Lead Free 15K 1/8W ±5% 52mm T.T.	R613		
07-74122-50T	Carbon Resistor	1	Lead Free 1.2K 1/8W ±5% 52mm T.T.	R614		
07-74122-50T	Carbon Resistor	1	Lead Free 1.2K 1/8W ±5% 52mm T.T.	R615		
07-74151-50T	Carbon Resistor	1	Lead Free 150 1/8W ±5% 52mm T.T.	R617		
07-74151-50T	Carbon Resistor	1	Lead Free 150 1/8W ±5% 52mm T.T.	R618		
07-74470-50T	Carbon Resistor	1	Lead Free 47 1/8W ±5% 52mm T.T.	R619		
RPM7138-V4	Sensor	1	Lead Free 02-67138-80 Rohm	REM601		
16-10101-80	Tact SW	1	Lead Free EVQJAE 05R H=5mm	SW601		
16-10101-80	Tact SW	1	Lead Free EVQJAE 05R H=5mm	SW602		
16-10101-80	Tact SW	1	Lead Free EVQJAE 05R H=5mm	SW603		
16-10101-80	Tact SW	1	Lead Free EVQJAE 05R H=5mm	SW604		
16-10101-80	Tact SW	1	Lead Free EVQJAE 05R H=5mm	SW605		
16-10101-80	Tact SW	1	Lead Free EVQJAE 05R H=5mm	SW606		
16-10101-80	Tact SW	1	Lead Free EVQJAE 05R H=5mm	SW607		
16-10101-80	Tact SW	1	Lead Free EVQJAE 05R H=5mm	SW608		
16-10101-80	Tact SW	1	Lead Free EVQJAE 05R H=5mm	SW609		
16-10101-80	Tact SW	1	Lead Free EVQJAE 05R H=5mm	SW610		
16-10101-80	Tact SW	1	Lead Free EVQJAE 05R H=5mm	SW611		
16-10101-80	Tact SW	1	Lead Free EVQJAE 05R H=5mm	SW612		
16-10101-80	Tact SW	1	Lead Free EVQJAE 05R H=5mm	SW613		
16-10101-80	Tact SW	1	Lead Free EVQJAE 05R H=5mm	SW614		
16-10101-80	Tact SW	1	Lead Free EVQJAE 05R H=5mm	SW615		
16-10101-80	Tact SW	1	Lead Free EVQJAE 05R H=5mm	SW616		
18-92040-86	Encoder	1	Lead Free Vol. EC162102 FIB-HA1-24	VR601		
84-00005-80	Cable Tie	1	LE030401 6.5" UL			

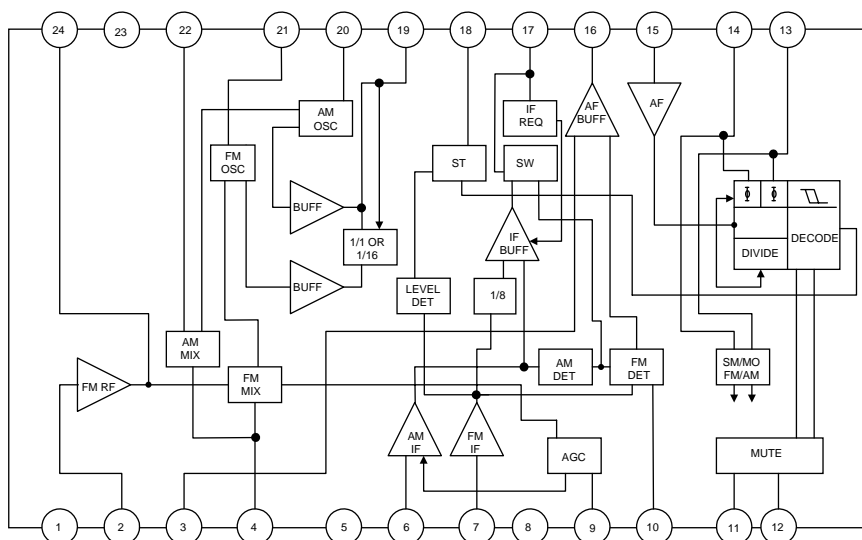


■ TA2149(IC101):3V AM/FM Chip Tuner IC(for Digital Tuning System)

1.Terminal layout



2.Block diagram



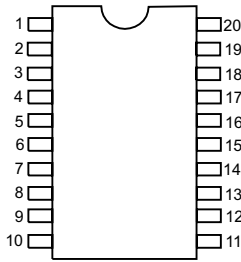
3.Pin function

Pin No.	Symbol	I/O	Function
1	RF Gnd	-	Gnd for FM RF Stage
2	FM Rfin	I	FM in
3	AM Low Cut	I	AM Low cut
4	Mix Out	O	Mix out
5	Vcc	-	Vcc for AM, FM IF , MPX
6	AM IF IN	I	AM IF in
7	FM IF IN	I	FM IF in
8	GND	-	Gnd for AM, FM if , MPX
9	AGC	O	AGC
10	QUAD	O	FM detector
11	R-OUT	O	Right out
12	L-OUT	O	Left out
13	LPF2	I	LPF terminal for phase detector
14	LPF1	I	LPF terminal for synchronous detector
15	MPX IN	I	MPX in
16	DET OUT	O	Det out
17	IF REQ	O	IF REQ
18	ST LED	O	ST Led
19	OSC OUT	O	OSC out
20	AM OSC	I	AM OSC
21	FM OSC	I	FM OSC
22	AM Rfin	I	AM Rfin
23	RF Vcc	-	Vcc for FM RF Stage
24	FM Rfout	O	FM Rfout

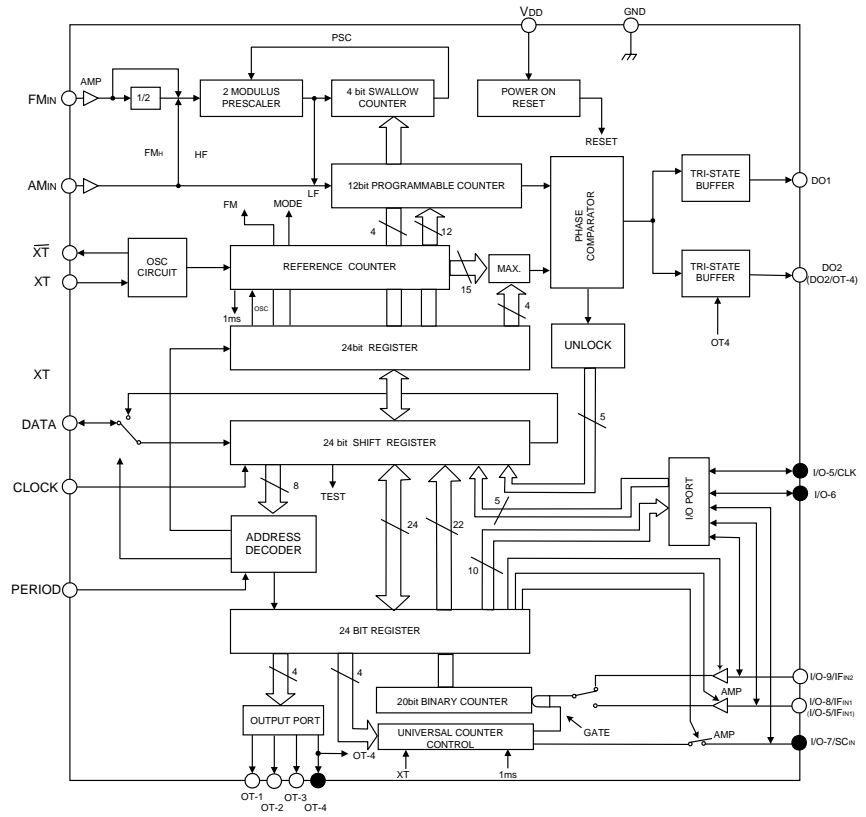
# PCX290

## TC9257F(IC102):PLL for DTS

### 1. Terminal layout



### 2. Block diagram

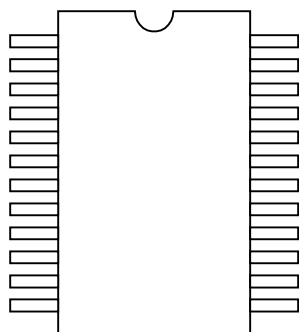


### 3. Pin function

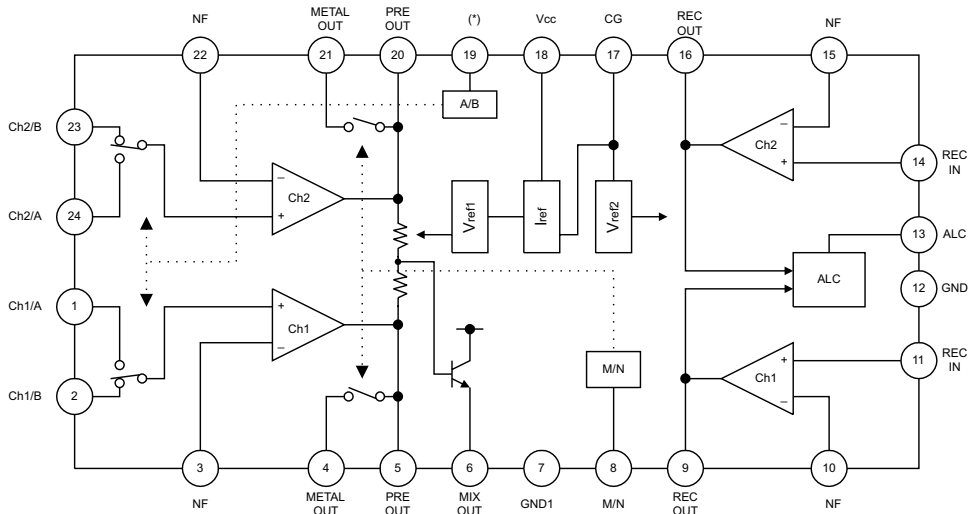
Pin No.	Symbol	I/O	Function
1	XT	-	Crystal oscillator pins
2	$\overline{\text{XT}}$	-	Crystal oscillator pins
3	PERIOD	I	Period signal input
4	CLOCK	I	Clock signal input
5	DATA	I/O	Serial data input/output
6	OT-1	O	General-purpose output ports
7	OT-2	O	General-purpose output ports
8	OT-3	O	General-purpose output ports
9	OT-4	O	General-purpose output ports
10	I/O-5/CLK	I/O	General-purpose I/O ports
11	I/O-6	I/O	General-purpose I/O ports
12	V <sub>DD</sub>	-	Power supply pins
13	AM <sub>IN</sub>	I	Programmable counter input
14	FM <sub>IN</sub>	I	Programmable counter input
15	GND	-	Power supply pins
16	I/O-9/IF <sub>IN2</sub>	I/O	General-purpose I/O Ports/
17	I/O-8/IF <sub>IN1</sub>	I/O	General-purpose counter frequency measurement input
18	I/O-7/SC <sub>IN</sub>	I/O	General-purpose I/O ports/ General-purpose counter cycle measurement input
19	DO1	O	Phase comparator output
20	DO2	O	Phase comparator output

■ IC201(TA8189N):Quad pre amplifier designed for use in record/play back amplifier

1.Terminal layout



2.Block diagram



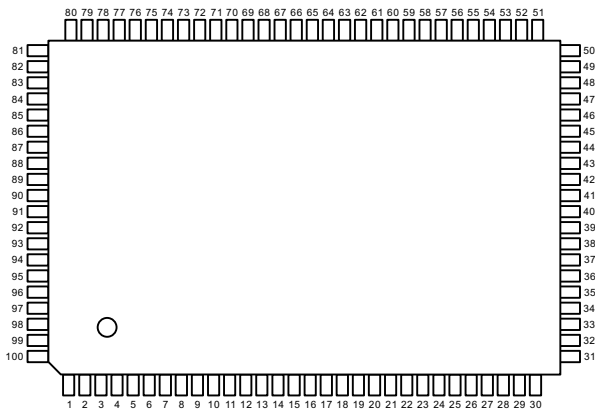
3.Pin function

Pin No.	Symbol	I/O	Function
1	ch1/A	I	Tape play back input(Play)
2	ch1/B	I	Tape play back input(Play/REC)
3	NF	-	Tape Play back NF
4	Metal Out	O	Metal EQ Switch
5	PRE Out	O	Play back Amp output
6	MIX Out	O	Mixing output
7	GND	-	Gnd
8	M/N	-	Change over switch for metal mode
9	REC Out	O	Recording Amp output
10	NF	-	Recording Amp NF
11	REC IN	I	Recording Amp input
12	GND	-	Gnd
13	ALC T.C	-	Automatic level Control (ALC) time
14	REC IN	I	Recording Amp input
15	NF	-	Recording Amp NF
16	REC Out	O	Recording Amp output
17	CG	-	NF Charge up circuit switching
18	Vcc	-	Power supply
19	(*)	I	Play back Amp input selector
20	PRE Out	O	Play back Amp Output
21	Metal out	-	Metal EQ Switch
22	NF	-	Tape play back NF
23	Ch2/B	I	Tape play back input (Play/REC)
24	Ch2/A	I	Tape play back input (play)

# PCX290

## ■ TC94A09F(IC301):

### 1. Terminal layout

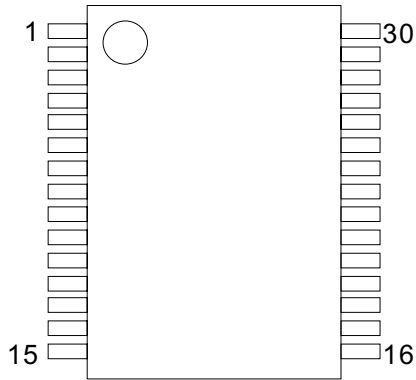


### 3. Pin function

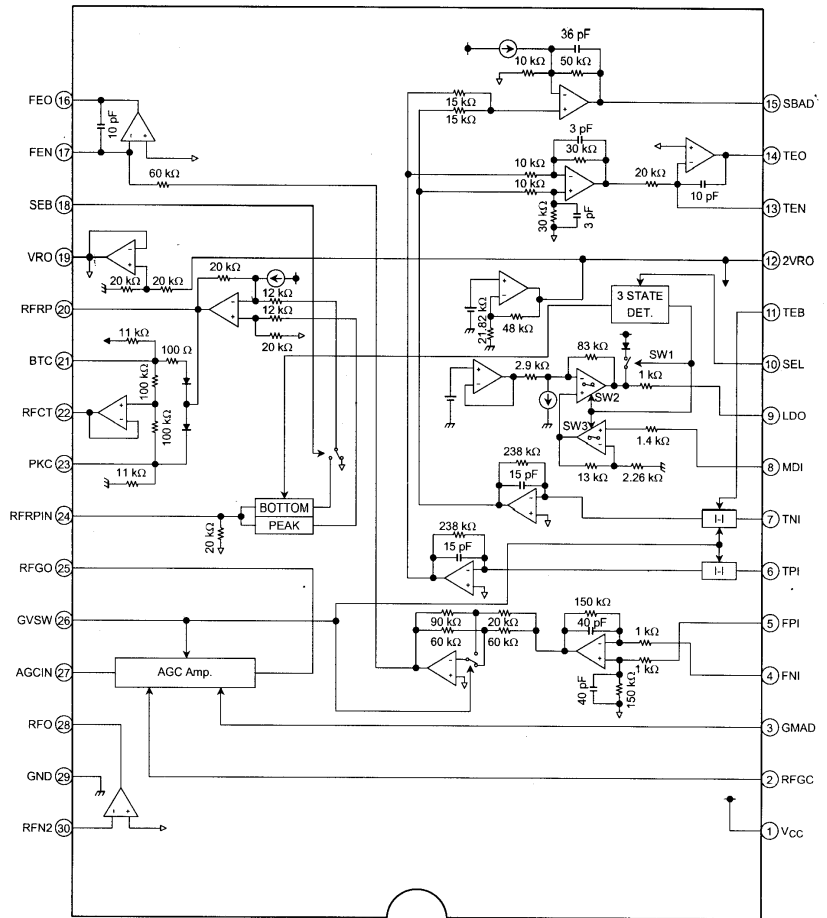
Pin No.	Symbol	Assignment	I/O	Function
1	S1/OT5	S1	O	LCD=SEG1
2	S2/OT6	S2	O	LCD=SEG2
3	S3/OT7	S3	O	LCD=SEG3
4	S4/OT8	S4	O	LCD=SEG4
5	S5/OT9	S5	O	LCD=SEG5
6	S6/OT10	S6	O	LCD=SEG6
7	S7/OT11	S7	O	LCD=SEG7
8	S8/OT12	S8	O	LCD=SEG8
9	S9/OT13	S9	O	LCD=SEG9
10	S10/OT14	S10	O	LCD=SEG10
11	S11/OT15	S11	O	LCD=SEG11
12	S12/OT16	S12	O	LCD=SEG12
13	S13/OT17	S13	O	LCD=SEG13
14	S14/OT18	S14	O	LCD=SEG14
15	S15/P8-0	S15	O	LCD=SEG15
16	S16/P8-1	S16	O	LCD=SEG16
17	S17/P8-2	S17	O	LCD=SEG17
18	S18/P8-3	S18	O	LCD=SEG18
19	MVDD1	5V	-	Controller Power
20	MVSS1	GND	-	Controller Power
21	P1-0	JOG A	I/O	
22	P1-1	JOG B	I/O	
23	P1-2	Mute	O	Mute control
24	P1-3	PU Inner SW	I	Pickup Inner Limit Switch
25	P3-0	Power Out	O	System Power Control
26	P3-1/ADin1	Key AD Input1	A/D in	AD Key input
27	P3-2/ADin2	Key AD Input2	A/D in	AD Key input
28	P3-3/ADin3	Key AD Input3	A/D in	AD Key input
29	P4-0/AD in4	PUH Select	I	Pickup mechanism selection
30	P4-1	AM STEP	I	AM Step
31	P4-2	DATA	I/O	(PLL IC :TC9257 Control line, E-Vol IC:TC9422 Control line)
32	P4-3	CLOCK	I/O	
33	P2-0	CD-RW/ST	I/O	CD,CD-RW gain control output (CD-RW control is enable only for voltage type pick-up TUNER:Stereo detect input
34	P2-1	12/24HR	O	12/24Hour select
35	-	-	-	
36	P2-3	Door CL	I	
37	-	-	-	
38	GND	GND or NC	O	
39	VL-CE/OT19	E-Vol CE	O	Electronic Volume Chip Enable
40	PLL-CE/OT20	PLL CE	O	PLL Chip Enable
41	FUN-A/OT21	-	O	
42	FUN-B/OT22	-	O	
43	DOUT	-	O	CD Control
44	SBSY	-	O	
45	SBOK	-	O	
46	VDD1	5V	-	CDP Power
47	VSS1	GND	-	
48	P2VREF	VREF	-	CD Control Port
49	PDO	-	O	
50	TMAX	-	O	

Pin No.	Symbol	Assignment	I/O	Function
51	LPFN	-	I	
52	LPFO	-	O	
53	PVREF	VREF	-	
54	VCOF	-	O	
55	AVSS	GND	-	
56	SLCO	-	O	
57	RFI	-	I	
58	AVDD	VDD	-	CD Control Port
59	RFCT	-	-	
60	RFZI	-	I	
61	RFRP	-	I	
62	FEI	-	I	
63	SBAD	-	I	
64	TEI	-	I	
65	TEZI	-	I	
66	FOO	-	O	
67	TRO	-	O	
68	VREF	-	-	
69	RFGC	-	O	
70	TEBC	-	O	
71	FMO	-	O	
72	DMO	-	O	
73	2VREF	-	-	
74	SEL	-	O	
75	VDD2	5V	-	CDP Power
76	VSS2	GND	-	
77	XVSS	GND	-	16.9MHz Crystal Power
78	XI	XI	I	16.9MHz Crystal Connection
79	XO	XO	O	
80	XVDD	5V	-	16.9MHz Crystal Power
81	DVSR	-	-	
82	R-O	-	O	
83	DVRR	-	-	
84	DVDD	-	-	
85	L-VR	-	-	
86	L-O	-	O	
87	DVSL	-	-	
88	-	-	-	
89	SYNC	Sync REC	I	Sync recording
90	RST	RESET	I	Reset Input
91	HOID	Power det	I	Power detect
92	REMOTE	Remote control	I	Remote control input
93	MXO	MXO	O	75KHz Crystal
94	MXI	MXI	I	Connection
95	MVSS2	GND	-	Controller Power
96	MVDD2	5V	-	
97	COM0/OT1	COM0	O	LCD=COM0
98	COM1/OT2	COM1	O	LCD=COM1
99	COM2/OT3	COM2	O	LCD=COM2
100	COM3/OT4	COM3	O	LCD=COM3

1. Terminal layout



2. Block diagram



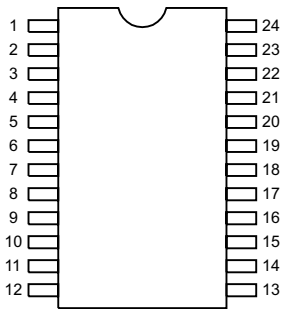
3. Pin function

Pin No.	Symbol	I/O	Function
1	VCC	-	Power supply input terminal.
2	RFGC	I	RF amplitude adjustment control signal input terminal.
3	GMAD	I	Open loop gain adjustment terminal for AGC AMP.
4	FNI	I	Main beam I-V amp input terminal.
5	FPI	I	Main beam I-V amp input terminal.
6	TPI	I	Sub beam I-V amp input terminal.
7	TNI	I	Sub beam I-V amp input terminal.
8	MDI	I	Monitor photo diode amp input terminal.
9	LDO	O	Laser diode amp input terminal.
10	SEL	I	Laser diode control signal input terminal and APC Circuit ON/OFF control
11	TEB	I	Tracking error balance adjustment signal input terminal.
12	2VRO	O	Reference voltage (2VRO) output terminal.
13	TEN	I	TE amp negative input terminal.
14	TEO	O	TE error signal output terminal.
15	SBAD	O	Sub beam adder signal output terminal.
16	FEO	O	Focus error signal output terminal.
17	FEN	I	FE amp negative
18	SEB	I	RFRP output circuit switching terminal.
19	VRO	O	Reference signal (VRO) output terminal.
20	RFRP	O	Track count signal output terminal.
21	BTC	I	Time constant adjustment terminal for bottom detection.
22	RECT	O	RFRP signal center lever output terminal.
23	PKC	I	Time constant adjustment terminal for peak detection.
24	RFRPIN	I	Input terminal for track count signal output amp.
25	RFGO	O	Output terminal for RF signal amplitude adjustment amp.
26	GVSW	I	Amp(AGC,FE,TE) gain switching terminal.
27	AGCIN	I	Input terminal for RF signal amplitude adjustment amp.
28	RFO	O	Output terminal RF signal amp.
29	GND	-	Ground terminal.
30	RFN2	I	Input terminal for RF signal amp.

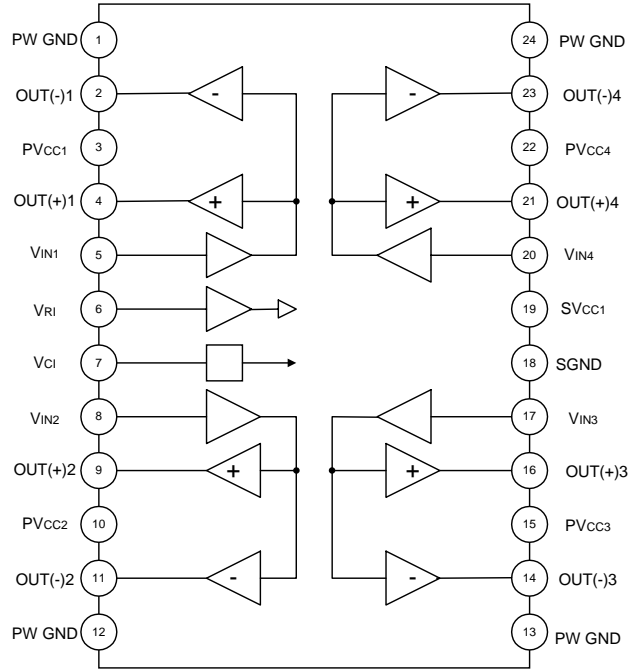
# PCX290

## ■ TA2092(IC303):Power Driver IC for CD Player

### 1.Terminal layout



### 2.Block diagram

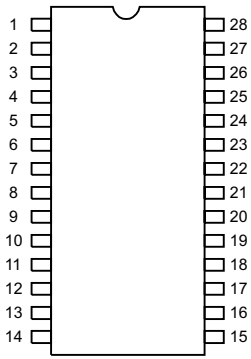


### 3.Pin function

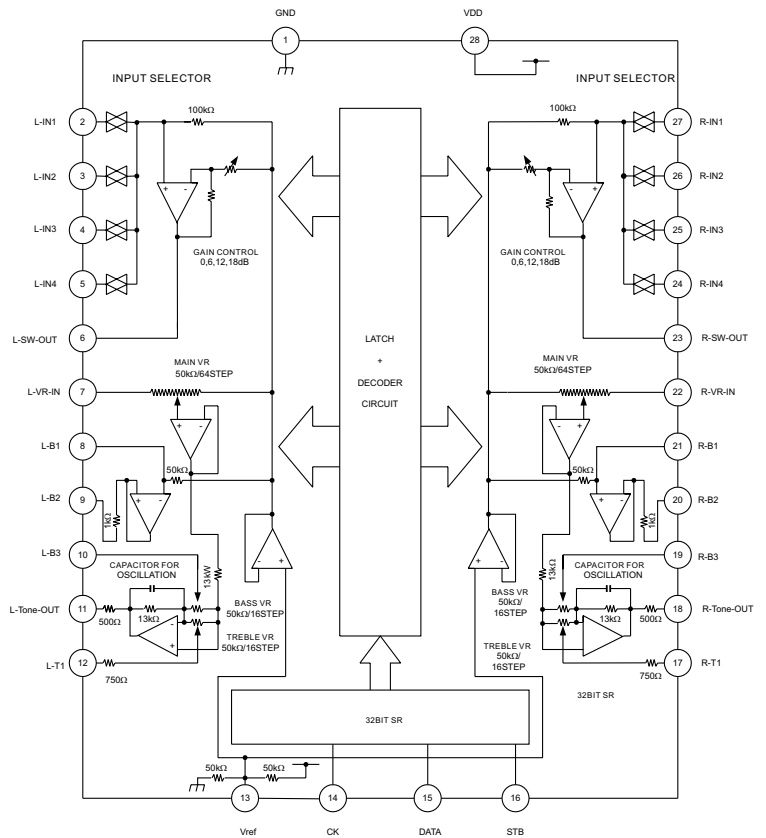
Pin No.	Symbol	I/O	Function
1	PW GND	-	Power GND
2	OUT (-) 1	O	Inverted output for CH1
3	PV <sub>CC1</sub>	O	Supply terminal of output stage for CH1
4	OUT (+) 1	I	Non-inverted output for CH1
5	V <sub>IN1</sub>	I	Input for CH1
6	V <sub>R1</sub>	I	Input reference voltage
7	V <sub>C1</sub>	O	Output reference voltage
8	V <sub>IN2</sub>	I	Input for CH2
9	OUT (+) 2	O	Non-inverted output for CH2
10	PV <sub>CC2</sub>	O	Supply terminal of output stage for CH2
11	OUT (-) 2	O	Inverted output for CH2
12	PW GND	-	Power GND
13	PW GND	-	Power GND
14	OUT (-) 3	O	Inverted output for CH3
15	PV <sub>CC3</sub>	O	Supply terminal of output stage for CH3
16	OUT (+) 3	O	Non-inverted output for CH3
17	V <sub>IN3</sub>	I	Input for CH3
18	S GND	-	Supply terminal of small signal GND
19	S V <sub>CC</sub>	-	Small signal GND
20	V <sub>IN4</sub>	I	Input for CH4
21	OUT (+) 4	O	Non-inverted output for CH4
22	PV <sub>CC4</sub>	O	Supply terminal of output stage for CH4
23	OUT (-) 4	O	Inverted output for CH4
24	PW GND	-	Power GND

■ TC9422F(IC401):System Electronic Volume

1. Terminal layout



2. Block diagram



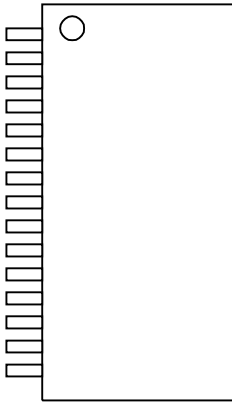
3. Pin function

Pin No.	Symbol	I/O	Function
1	GND	-	Ground pin
2	L-IN1	I	Audio signal input pins
3	L-IN2	I	Audio signal input pins
4	L-IN3	I	Audio signal input pins
5	L-IN4	I	Audio signal input pins
6	L-SW-OUT	I	Audio signal input pins
7	L-VR-IN	I	Main volume input pins
8	L-B1	-	Tone control tap pin 1 for bus
9	L-B2	-	Tone control tap Pin 2 for bus
10	L-B3	-	Tone control tap pin 3 for bus
11	L-Tone-OUT	O	Tone control output pins
12	L-T1	-	Tone control tap pin for treble
13	Vref	I	Reference voltage input pin
14	CK	I	Clock input pin
15	DATA	I	Data input pin
16	STB	I	Strobe input pin
17	R-T1	-	Tone control tap pin for treble
18	R-Tone-OUT	O	Tone control output pins
19	R-B3	-	Tone control tap pin 3 for bus
20	R-B2	-	Tone control tap Pin 2 for bus
21	R-B1	-	Tone control tap pin 1 for bus
22	R-VR-IN	I	Main volume input pins
23	R-SW-OUT	I	Audio signal input pins
24	R-IN4	I	Audio signal input pins
25	R-IN3	I	Audio signal input pins
26	R-IN2	I	Audio signal input pins
27	R-IN1	I	Audio signal input pins
28	V <sub>DD</sub>	-	Power supply voltage pin

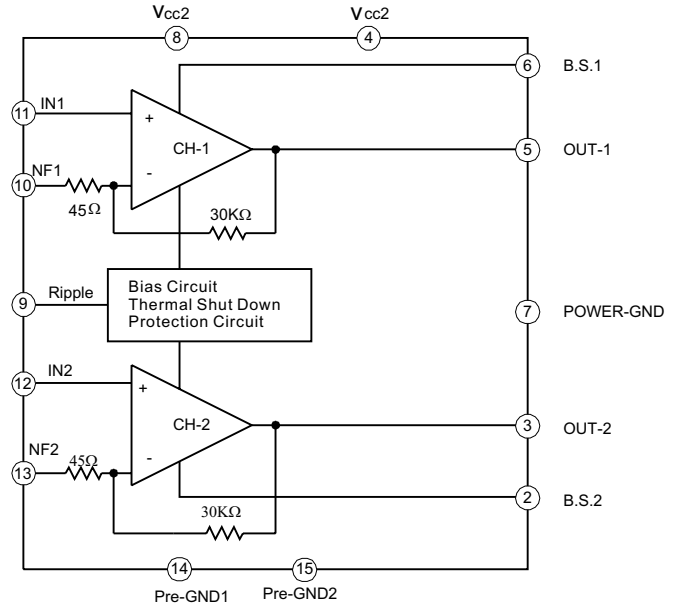
# PCX290

## ■ TA8229K(IC404):Audio power IC with built-in two channels developed

### 1.Terminal layout



### 2.Block diagram



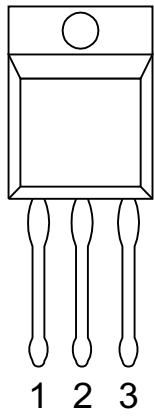
### 3.Pin function

Pin No.	Symbol	I/O	Function
1			
2	B.S.2	-	Connect a E.C. to Vcc
3	OUT2	O	2 CH Out-Put
4	VCC2	-	Power supply
5	OUT1	O	1 CH Out-Put
6	B.S.1	-	Connect a E.C. to Vcc
7	Power-GND	-	Power Gnd
8	Vcc2	-	Power Supply
9	Ripple	-	Connect a E.C. to Vcc
10	NF1	I	1 CH negative fead back input
11	IN1	I	1 CH Signal input
12	IN2	I	2 CH Signal input
13	NF2	I	2 CH negative fead back input
14	Pre-GND1	-	Pre-Gnd 1
15	Pre-GND2	-	Pre-Gnd 2

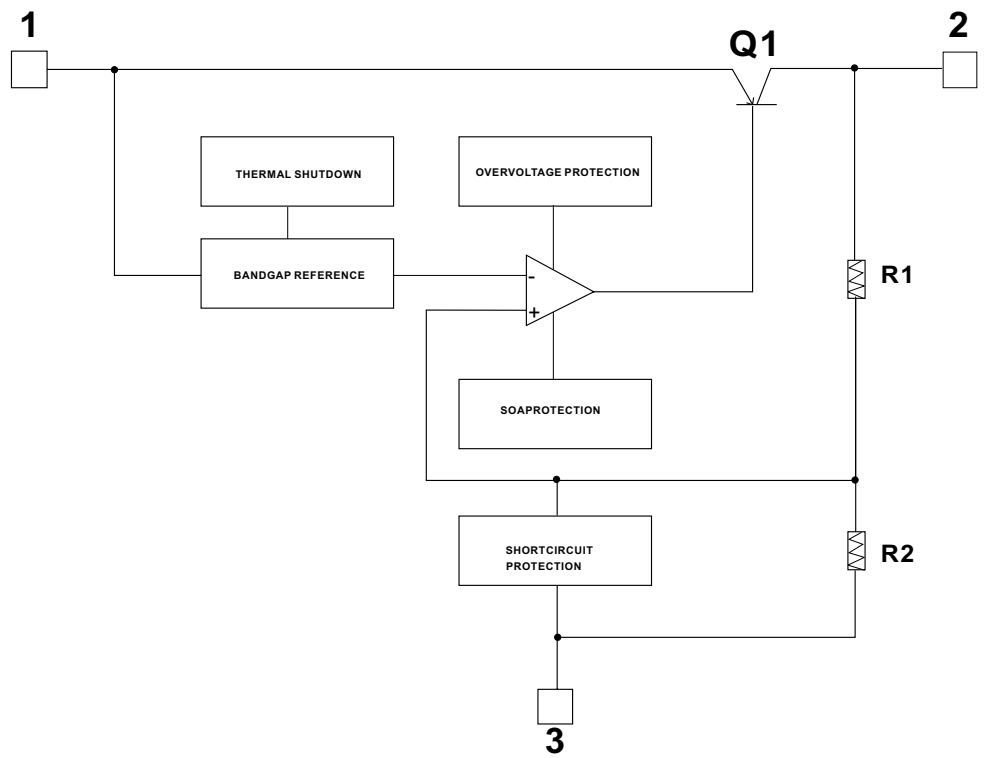


■ NJM7805CV(IC501):VOLTAGE REGULATOR

1.Terminal layout



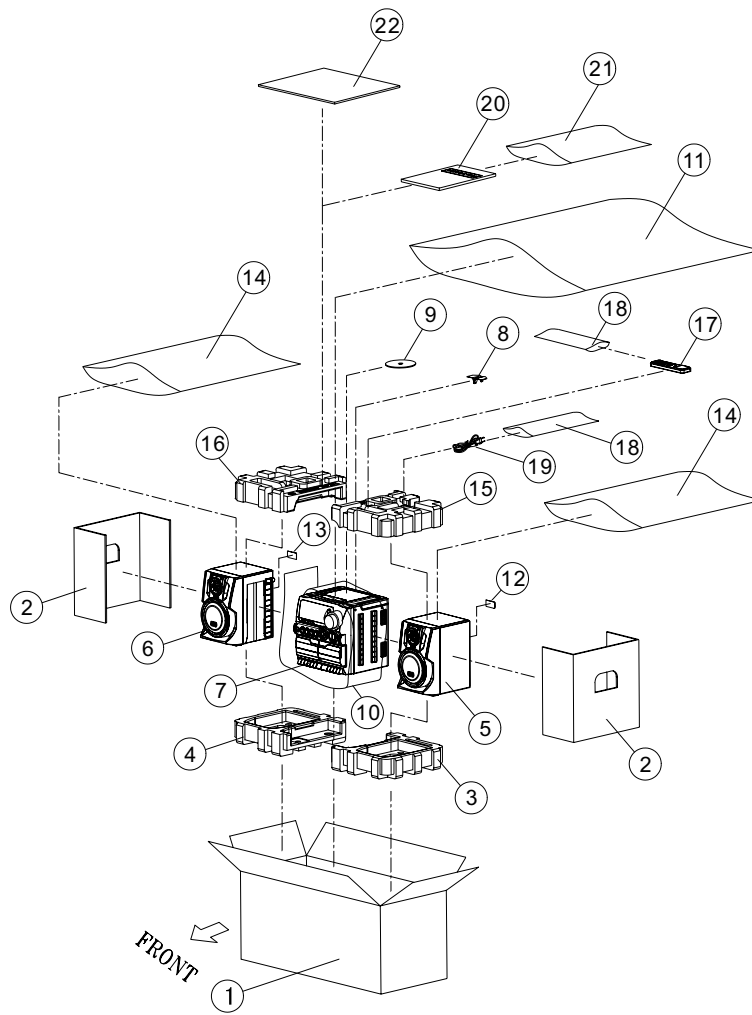
2.Block diagram



3.Pin function

Pin No.	Symbol	I/O	Function
1	Input	I	Power supply Input
2	Output	O	+12V output
3	Ground	-	GND

## ■ Illustration of Packing and Parts List



Parts Number	Parts Name	QTY	Remarks	Item	Suffix	⚠
83-00290-04	LE030401 PC-X290	1	Gift Box (J/C)	1		
89-00290-00	LE030401 PC-X290	2	Carton Sheet (683 x 343)	2		
86-00290-02	LE030401 PC-X290	1	Polyfoam Bottom ( R )	3		
86-00290-03	LE030401 PC-X290	1	Polyfoam Bottom ( L )	4		
U-SP-JVC	Speaker Box ( R )	1		5		
U-SP-JVC	Speaker Box ( L )	1		6		
	Main Unit	1		7		
89-09023-80	LE030401 PC-X290	1	CD Protect Board E/F/P	8		
81-01000-80	LE030401 PC-X290	1	Turn Table Cushion $\phi 116 \times \phi 17 \times 2\text{mm}$	9		
81-00707-81	LE030401 EP707	1	Sheet Sponge Protection	10		
85-92224-82	LE030401 PC-X290	1	Polybag 22" x 24" x 0.04 (PO)	11		
42-00290-03	LE030401 PC-X290	1	Sound Box PC Plate ( R )	12		
42-00290-02	LE030401 PC-X290	1	Sound Box PC Plate ( L )	13		
85-91821-84	LE030401 PC-X290	2	Polybag 18" x 21" W/W&H (PE)	14		
86-00290-00	LE030401 PC-X290	1	Polyfoam Top ( R )	15		
86-00290-01	LE030401 PC-X290	1	Polyfoam Top ( L )	16		
U-RE-JVC	Remote Main Unit	1		17		
85-00025-81A	LE030401 PC-X290	2	Polybag 3.5" x 10" (PO)	18		
30-10030-10	LE030401 PC-X290	1	AC Cord Set 1.5m LP-5	19		
88-00290-02	LE030401 PC-X290	1	I/B (EN/SP) LVT1189-002A	20	J	
88-00290-03		1	I/B (EN/FR) LVT1189-003A		C	
85-91014-82	LE030401 PC-X290	1	Polybag 10" x 14" (PO)	21		
89-00290-01	LE030401 PC-X290	1	Carton Sheet (420 x 343)	22		

**Parts list for version deviation**

**Packing Parts**

⚠	Items	Parts No.	Parts Name	Description	PCX290	
					J	C
	1	88-00290-02	LE030401 PCX290	I/B (EN/SP) LVT1189-002A	x	
		88-00290-03		I/B(EN/FR) LVT1189-003A		x