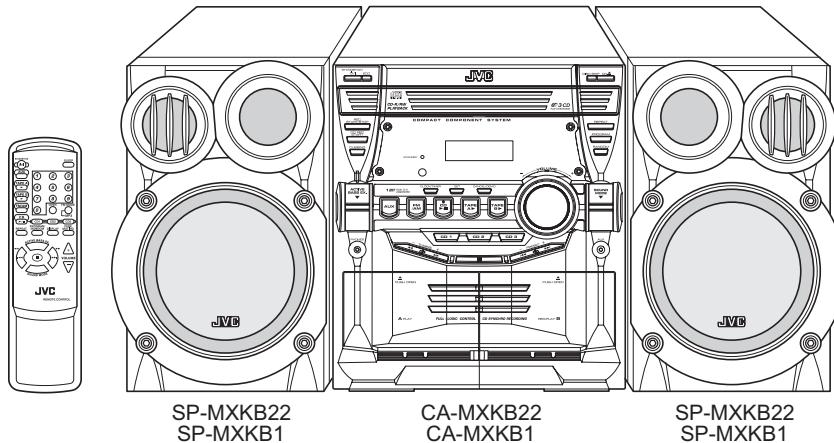


# JVC

## SERVICE MANUAL

### COMPACT COMPONENT SYSTEM

# MX-KB22, MX-KB1



**COMPACT**  
**disc**

MX-KB22
Area suffix
EV ----- Eastern Europe

MX-KB1
Area suffix
B ----- U.K.
E ----- Continental Europe
EN ----- Northern Europe
EV ----- Eastern Europe

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## SPECIFICATION

Amplifier	Output Power	30 W per channel, min. RMS, driven into 6 Ω at 1kHz, with no more than 10% total harmonic distortion (IEC268-3) 28 W per channel, min. RMS, driven into 6 Ω at 1kHz, with no more than 0.9 % total harmonic distortion (DIN)
	Input Sensitivity/Impedance (1 kHz)	AUX IN:500 mV/51 kΩ
	Speaker terminals	6 - 16 Ω
	Phones	32 Ω - 1 kΩ
Cassette Deck Section	Frequency Response	20 mW/ch output into 32 Ω
	Type I (NORMAL)	63 Hz - 12 500 Hz
	Wow And Flutter	0.15 % (WRMS)
CD Player	CD Capacity	3 CDs
	Dynamic Range	85 dB
	Signal-To-Noise Ratio	85 dB
	Wow And Flutter	Unmeasurable
Tuner	Tuning Range	FM Tuner 87.50 MHz - 108.00 MHz
		AM Tuner (MW) 522 kHz - 1 629 kHz
Unit	Dimensions	276 mm × 315 mm × 456 mm (W/H/D)
	Mass	Approx. 8 kg
Power Specifications	Power Requirements	AC 230 V , 50 Hz
	Power Consumption	83 W (power on mode) 13 W (in Standby mode) Approx. 2 W (in ECO mode)

Design and specifications are subject to change without notice.

# SECTION 1

## PRECAUTION

### 1.1 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 manufacturers warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
- (3) Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by ( $\Delta$ ) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
- (4) The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after reassembling.

#### (5) Leakage shock hazard testing

After reassembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock. Do not use a line isolation transformer during this check.

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

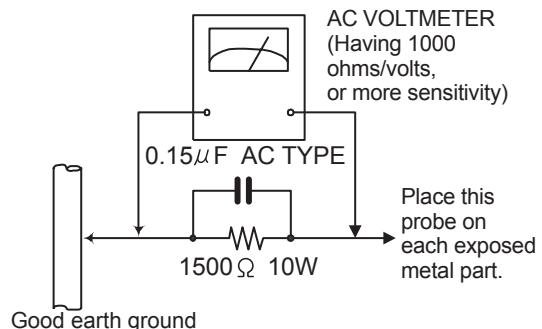
#### • Alternate check method

Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 $\Omega$  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.).



### 1.2 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.

### 1.3 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.**

### 1.4 Critical parts for safety

In regard with component parts appearing on the silk-screen printed side (parts side) of the PWB diagrams, the parts that are printed over with black such as the resistor (—), diode (■) and ICP (●) or identified by the " $\Delta$ " mark nearby are critical for safety. When replacing them, be sure to use the parts of the same type and rating as specified by the manufacturer. (This regulation dose not Except the J and C version)

## **1.5 Safety Precautions (U.K only)**

- (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.
- (2) Any unauthorised design alterations or additions will void the manufacturer's guarantee; furthermore the manufacturer cannot accept responsibility for personal injury or property damage resulting therefrom.
- (3) Essential safety critical components are identified by (  $\Delta$  ) on the Parts List and by shading on the schematics, and must never be replaced by parts other than those listed in the manual. Please note however that many electrical and mechanical parts in the product have special safety related characteristics. These characteristics are often not evident from visual inspection. Parts other than specified by the manufacturer may not have the same safety characteristics as the recommended replacement parts shown in the Parts List of the Service Manual and may create shock, fire, or other hazards.
- (4) The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.

### **1.5.1 Warning**

- (1) Service should be performed by qualified personnel only.
- (2) This equipment has been designed and manufactured to meet international safety standards.
- (3) It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
- (4) Repairs must be made in accordance with the relevant safety standards.
- (5) It is essential that safety critical components are replaced by approved parts.
- (6) 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.

## 1.6 Preventing static electricity

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

### 1.6.1 Grounding to prevent damage by static electricity

Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as laser products.

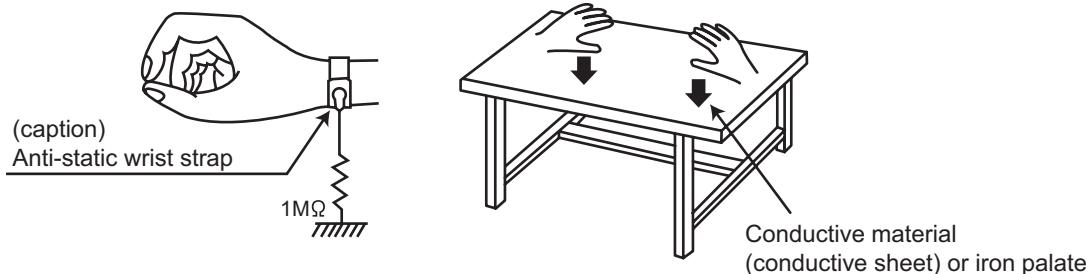
Be careful to use proper grounding in the area where repairs are being performed.

#### (1) Ground the workbench

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

#### (2) Ground yourself

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



#### (3) Handling the optical pickup

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

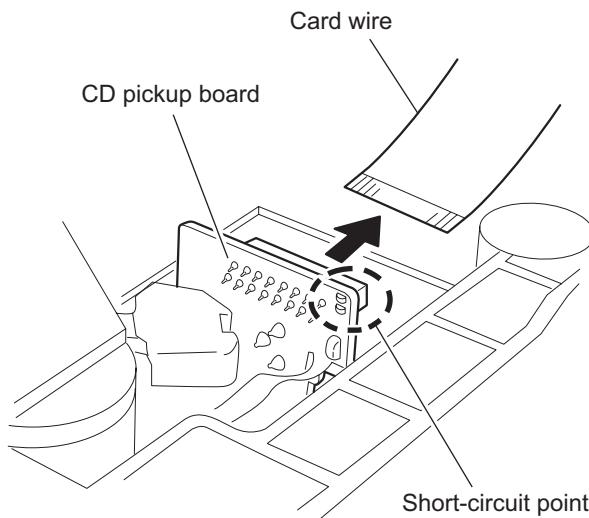
## 1.7 Handling the traverse unit (optical pickup)

- Do not subject the traverse unit (optical pickup) to strong shocks, as it is a sensitive, complex unit.
- Cut off the shorted part of the flexible cable using nippers, etc. after replacing the optical pickup. For specific details, refer to the replacement procedure in the text. Remove the anti-static pin when replacing the traverse unit. Be careful not to take too long a time when attaching it to the connector.
- Handle the flexible cable carefully as it may break when subjected to strong force.
- It is not possible to adjust the semi-fixed resistor that adjusts the laser power. Do not turn it.

## 1.8 Attention when traverse unit is decomposed

\*Please refer to "Disassembly method" in the text for the pickup unit.

- Apply solder to the short land sections before the flexible wire is disconnected from the connecto on the servo board. (If the flexible wire is disconnected without applying solder, the pickup may be destroyed by static electricity.)
- In the assembly, be sure to remove solder from the short land sections after connecting the flexible wire.



## 1.9 Important for laser products

### 1.CLASS 1 LASER PRODUCT

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

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

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

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

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



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

**CAUTION** : Visible and invisible laser radiation when open and interlock failed or defeated.

AVOID DIRECT EXPOSURE TO BEAM.

**ADVARSEL** : Synlig og usynlig laserstråling når maskinen er åben eller interlocken fejler. Undgå direkte eksponering til stråling.

**VARNING** : Synlig och osynlig laserstråling när den öppnas och spärren är urkopplad. Betrakta ej strålen.

**VARO** : Avattaessa ja suojalukitus ohitettuna tai viallisena olet alttiina näkyvälle ja näkymättömälle lasersäteilylle. Vältä säteen kohdistumista suoraan itseesi.

## REPRODUCTION AND POSITION OF LABELS

### WARNING LABEL

<b>CAUTION</b> : Visible and Invisible laser radiation when open and interlock failed or defeated. AVOID DIRECT EXPOSURE TO BEAM. (e)	<b>ADVARSEL</b> : Synlig og usynlig laserstråling når maskinen er åben eller interlocken fejler. Undgå direkte eksponering til stråling. (d)	<b>VARNING</b> : Synlig och osynlig laserstråling när den öppnas och spärren är urkopplad. Betrakta ej strålen. (s)	<b>VARO</b> : Avattaessa ja suojalukitus ohitettuna tai viallisena olet alttiina näkyvälle ja näkymättömälle lasersäteilylle. Vältä säteen kohdistumista suoraan itseesi. (f)
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CLASS 1  
LASER PRODUCT

<b>CAUTION</b> : Visible and Invisible laser radiation when open and interlock failed or defeated. AVOID DIRECT EXPOSURE TO BEAM. (e)	<b>VARIO</b> : Avattaessa ja suojalukitus ohitettuna tai viallisena olet alttiina näkyvälle ja näkymättömälle lasersäteilylle. Vältä säteen kohdistumista suoraan itseesi. (f)
<b>VARNING</b> : Synlig och osynlig laserstråling när den öppnas och spärren är urkopplad. Betrakta ej strålen. (s)	<b>ADVARSEL</b> : Synlig og usynlig laserstråling når maskinen er åben eller interlocken fejler. Undgå direkte eksponering til stråling. (d)

## **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 top cover / side cover (R) and (L) (See Fig.1 to 6)

- (1) From the back of the body, remove the two screws **A** attaching the top cover.
- (2) From both sides of the body, remove the four screws **B** attaching the top cover and the side cover (R) and (L). Move the top cover in the direction of the arrow to release from the front panel at the two joints **a**.
- (3) Remove the six screws **D** on the back of the body and the two screws **E** on the side of the body. Move the side cover (R) and (L) backward to release the four joints **b** on the bottom of the side covers.

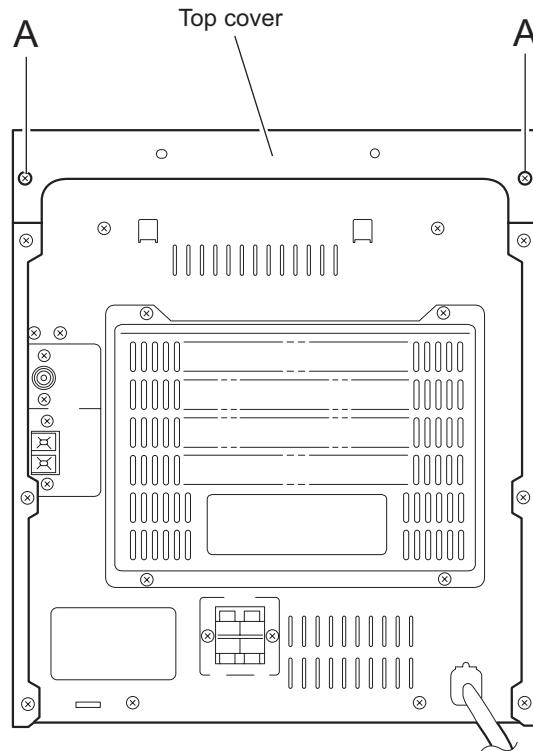


Fig.1

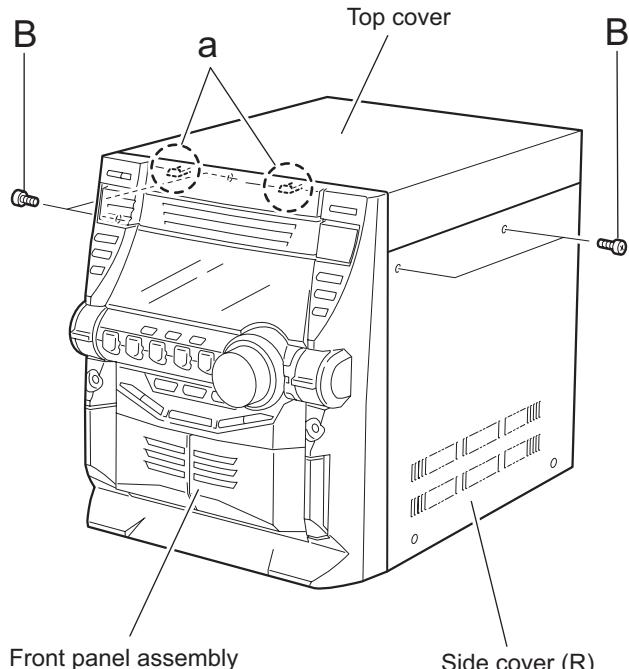
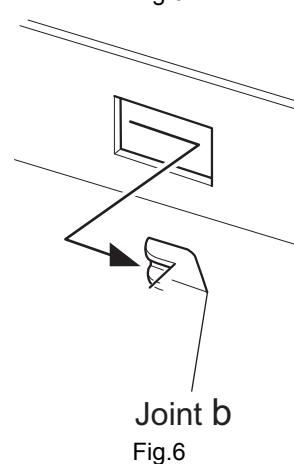
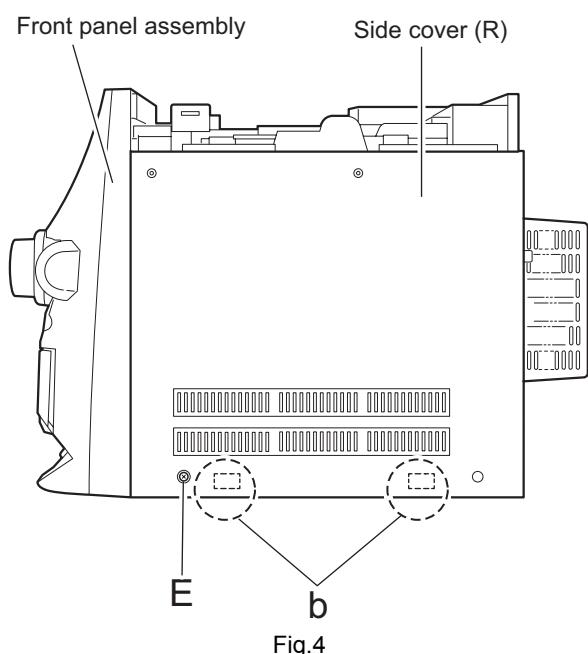
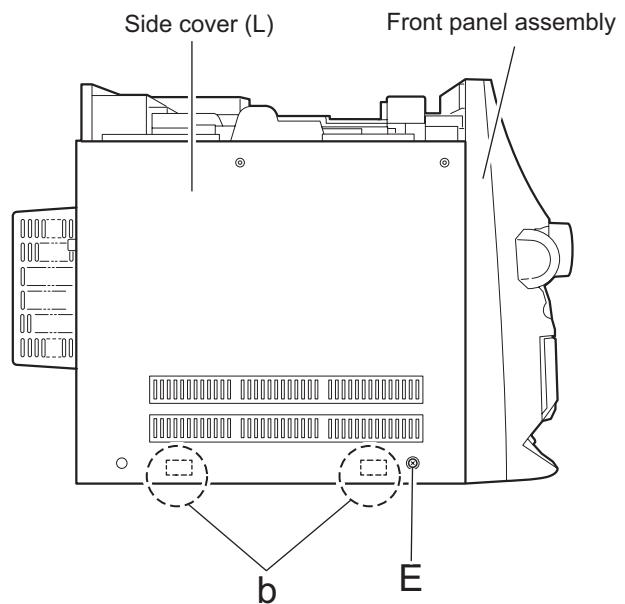
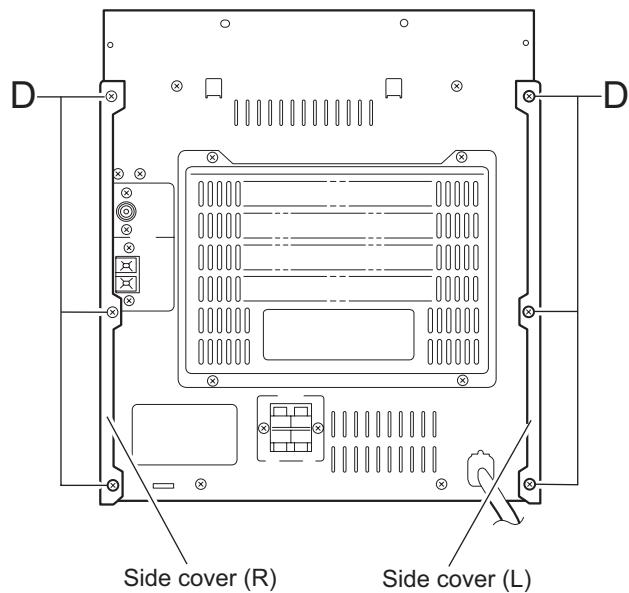


Fig.2



### 3.1.2 Removing the CD fitting (See Fig.7 to 9)

- Prior to performing the following procedure, remove the top cover / side cover (R) and (L).

#### Caution:

For preventing from damage, make sure to remove the CD fitting before detaching the CD changer mechanism unit.

- (1) Push STANDBY / ON key to turn power on.
- (2) Push CD TRAY EJECT key.
- (3) Move the CD fitting in the direction of the arrow to release from the CD tray at two joints **d**.
- (4) Push STANDBY / ON key to close the tray.

### 3.1.3 Removing the CD fitting (See Fig.8 to 10)

- < How to eject the CD tray without turning power on >
- Prior to performing the following procedure, remove the top cover / side cover(R) and (L).
  - (1) Turn over the CD changer mechanism unit and turn the loading pulley gear at **e** in the inner part of the notch of the main board to move the CD tray forward.
  - (2) Move the CD fitting in the direction of the arrow to release from the CD tray at two joint **d**.
  - (3) Manually push and close the CD tray.

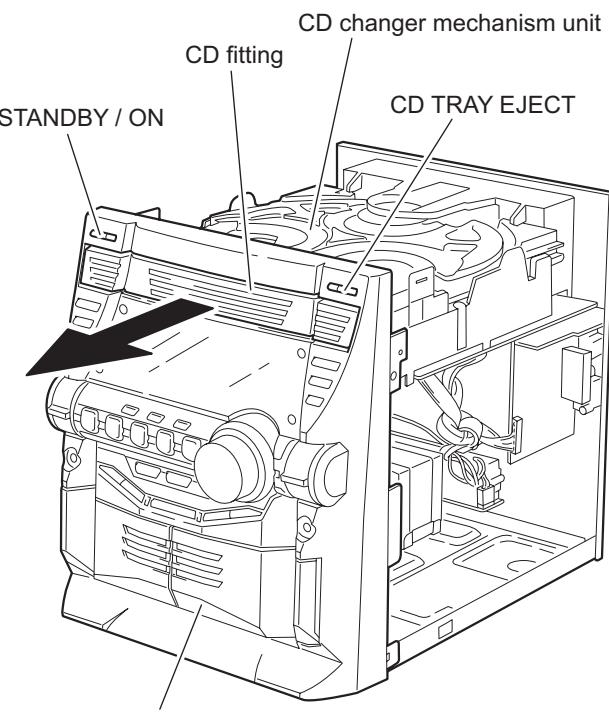


Fig.7

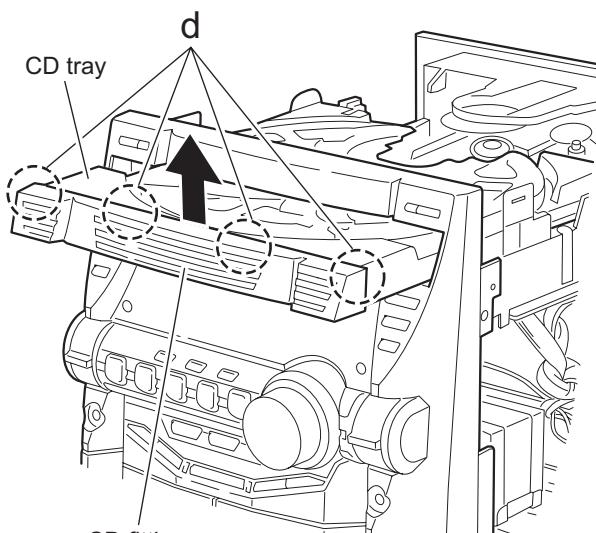


Fig.8

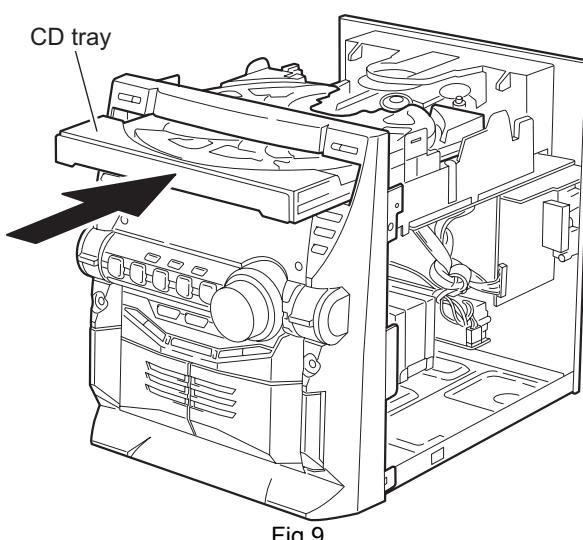


Fig.9

#### CD changer mechanism

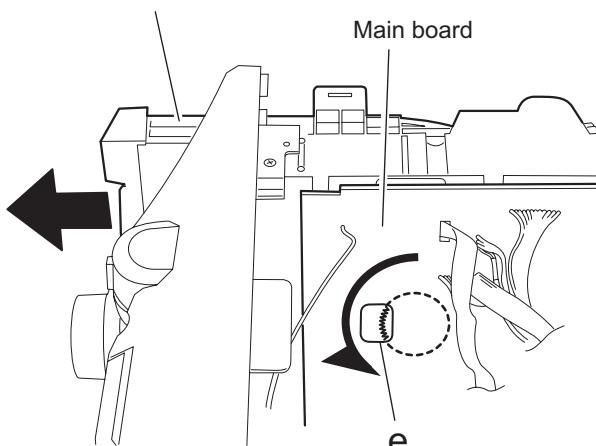


Fig.10

### 3.1.4 Removing the CD changer mechanism unit

(See Fig.11 to 16)

- Prior to performing the following procedure, remove the top cover / side cover (R) and (L), and the CD fitting.
- (1) Disconnect the wire from connector [CN601](#) on the turner board on the right side of the body.
- (2) Disconnect the wire from connector [CN504](#) on the AUX board on the inner side of the front panel.
- (3) Disconnect the wire from connector [CN801](#), [CN802](#) and [CN803](#) on the power board.
- (4) Disconnect the wire from connector [CN100](#), [CN101](#) and [CN207](#) on the main board at the bottom of the CD changer mechanism unit, and disconnect the card wire from connector [CN103](#). If necessary, release the band attaching the wires.
- (5) From the side of the body, remove the two screws **F** attaching the CD changer mechanism unit.
- (6) From the back of the body, remove the two screws **G** attaching the CD changer mechanism unit.
- (7) Move the CD changer mechanism unit in the direction of the arrow while pulling the rear panel backward, and remove the CD changer mechanism unit.

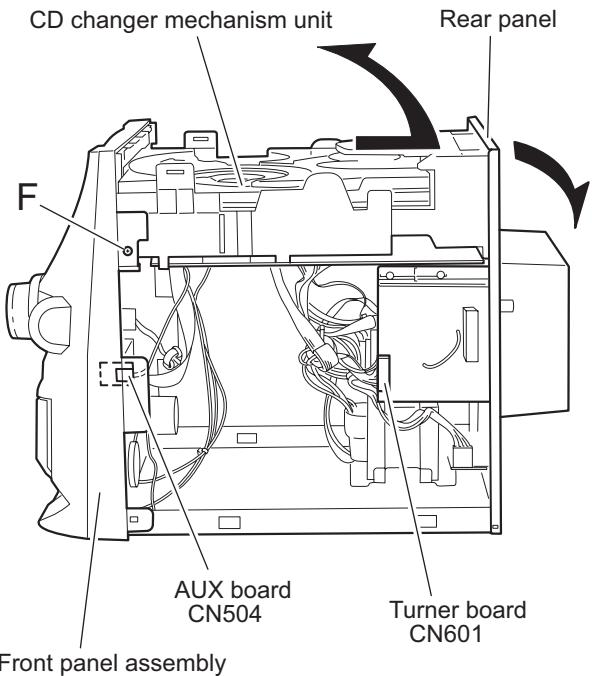


Fig.11

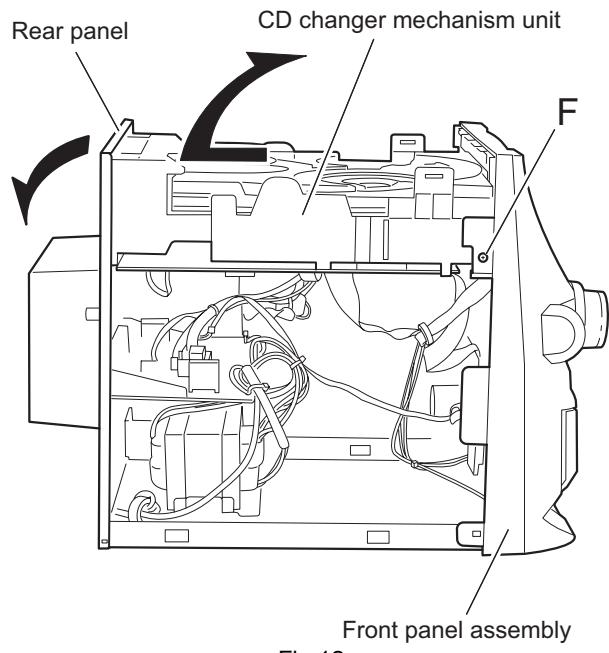
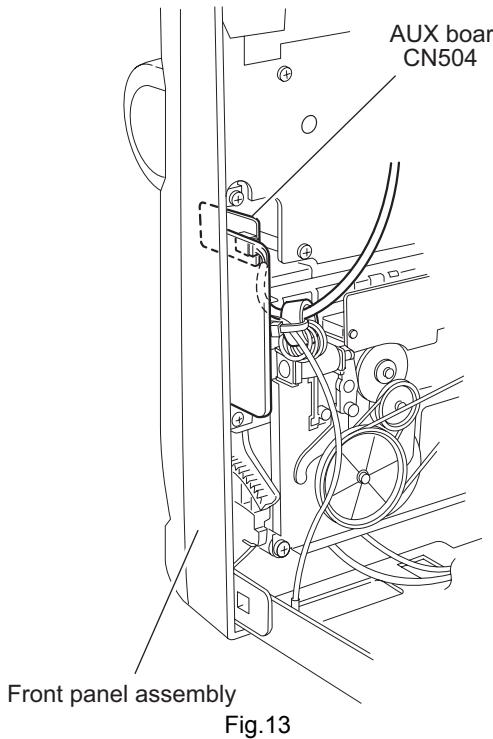
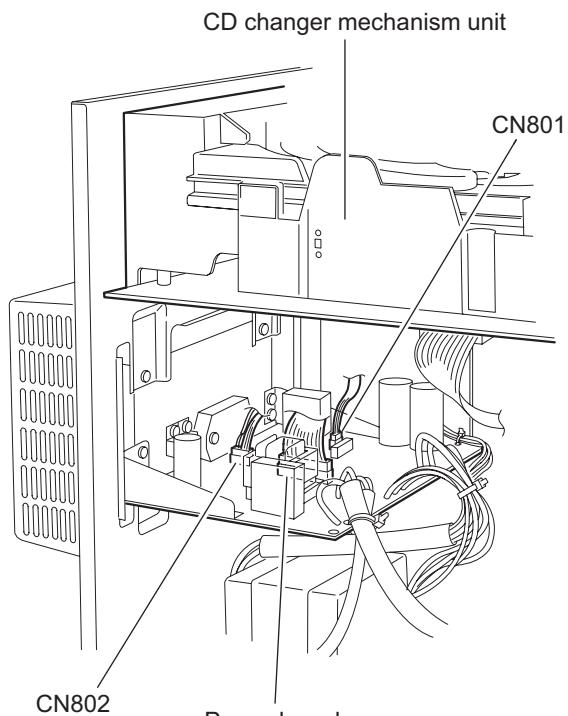


Fig.12



Front panel assembly

Fig.13



Power board  
CN803

Fig.14

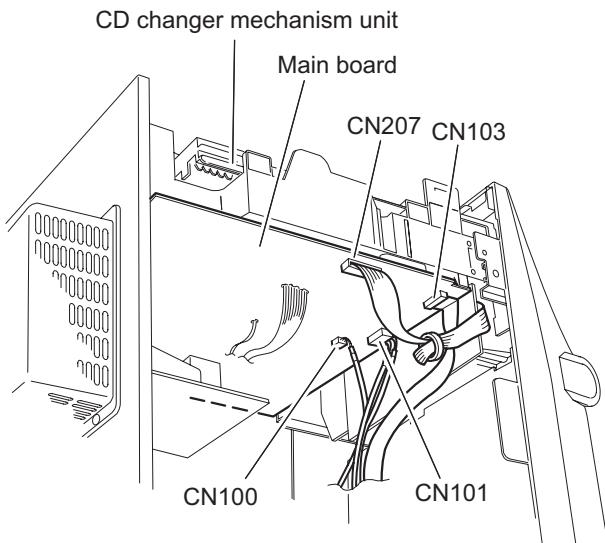


Fig.15

Rear panel

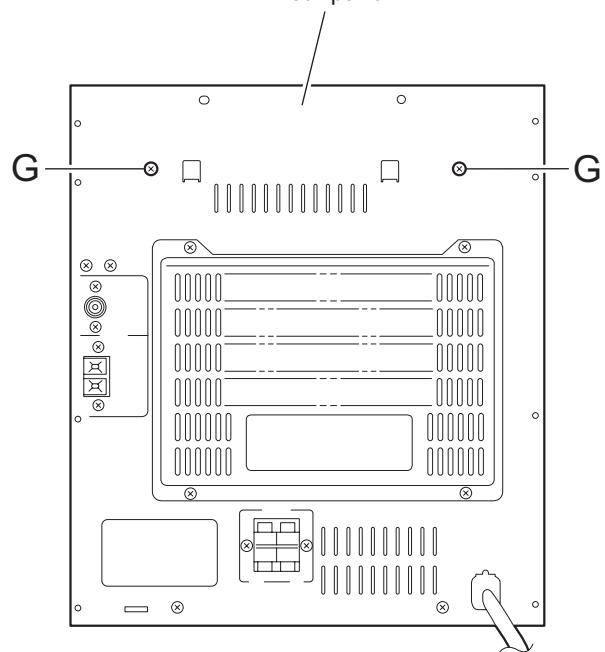


Fig.16

### 3.1.5 Removing the tuner board

(See Fig.17, 18)

- Prior to performing the following procedure, remove the top cover / side cover (R) and (L).
- (1) Disconnect the wire from connector [CN601](#) on the tuner board.
- (2) From the back of the body, remove the two screws **H**, the two screws **J** and the two screws **K** attaching the tuner board respectively.
- (3) Remove the two screws **L** attaching the tuner board holder.

**Caution:**

You can remove the tuner board without removing the CD changer mechanism unit and the rear panel.

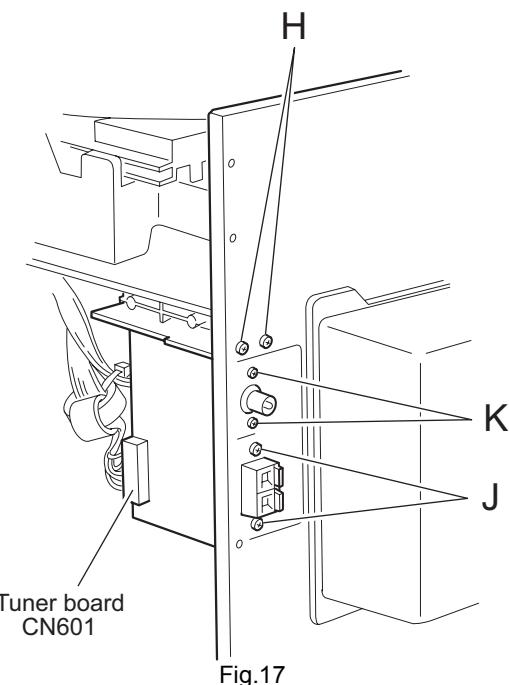


Fig.17

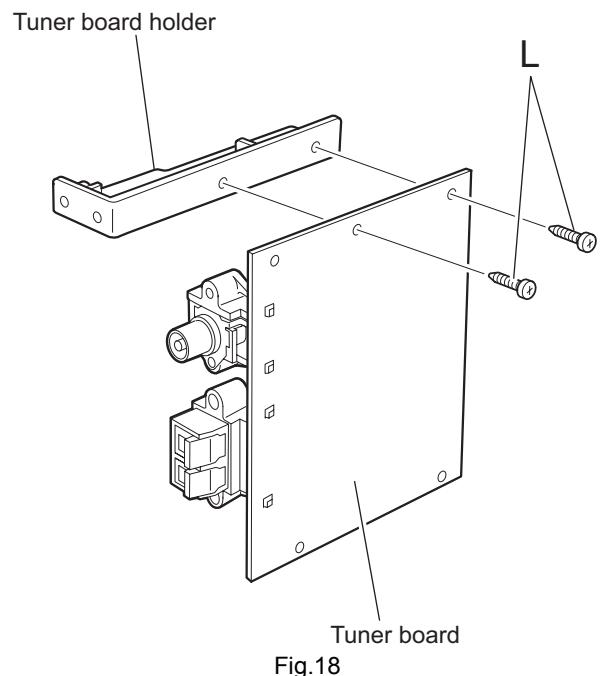


Fig.18

### 3.1.6 Removing the speaker terminal board

(See Fig.19, 20)

- Prior to performing the following procedure, remove the top cover / side cover (R) and (L).
- (1) Disconnect the wire from connector [CN901](#) on the speaker terminal board.
- (2) From the back of the body, remove the two screws **M** attaching the speaker terminal board.

#### Reference:

You can remove the speaker terminal board without detaching the CD changer mechanism unit and the rear panel.

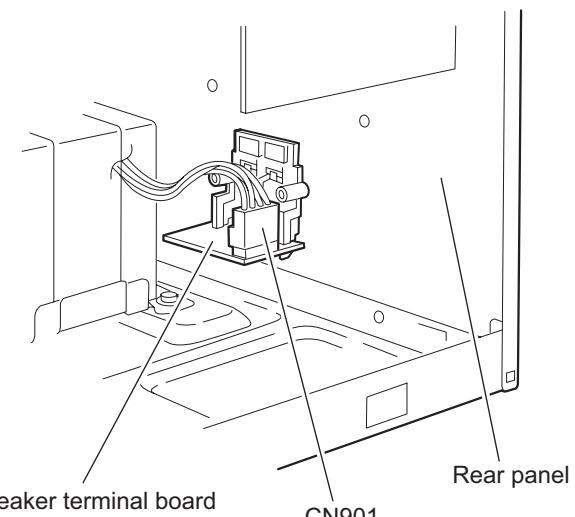


Fig.19

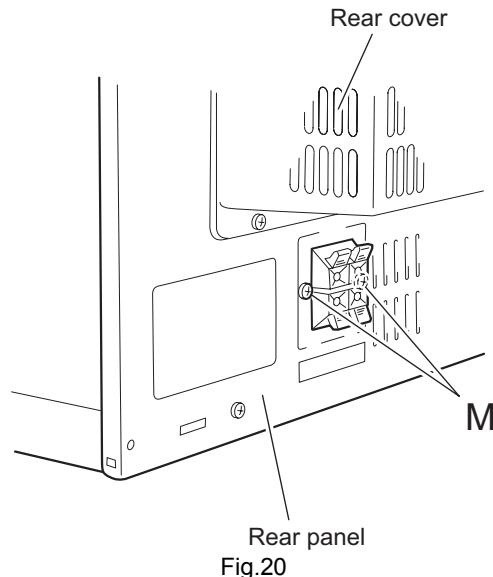


Fig.20

### 3.1.7 Removing the front panel assembly

(See Fig.21 to 24)

- Prior to performing the following procedure, remove the top cover / side cover (R) and (L), the CD fitting / CD changer mechanism unit.
- (1) Disconnect the wire from connector [CN861](#) on the power board.
- (2) Disconnect the earth wire from the base chassis on the bottom of the right side of the body.
- (3) From the bottom of the body, remove the two screws **N** attaching the front panel assembly.
- (4) Release the two joints **f** on the side of the body and the joint **g** on the bottom using a screwdriver, and remove the front panel assembly forward.

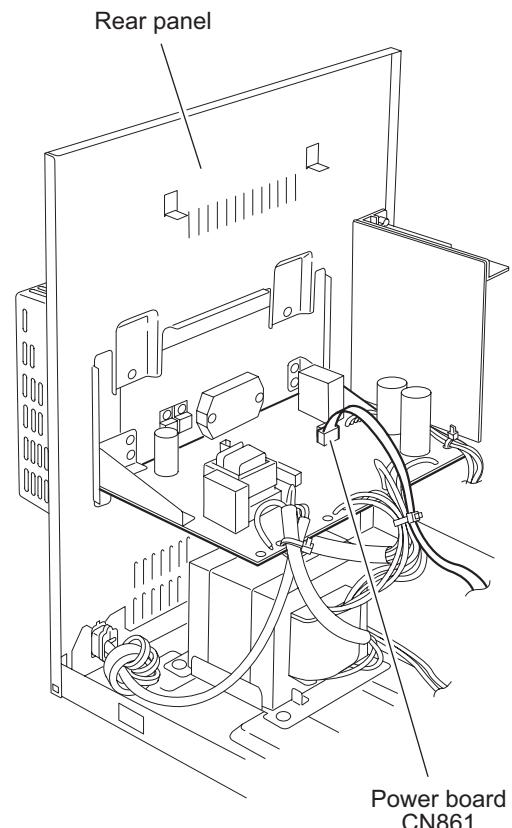


Fig.21

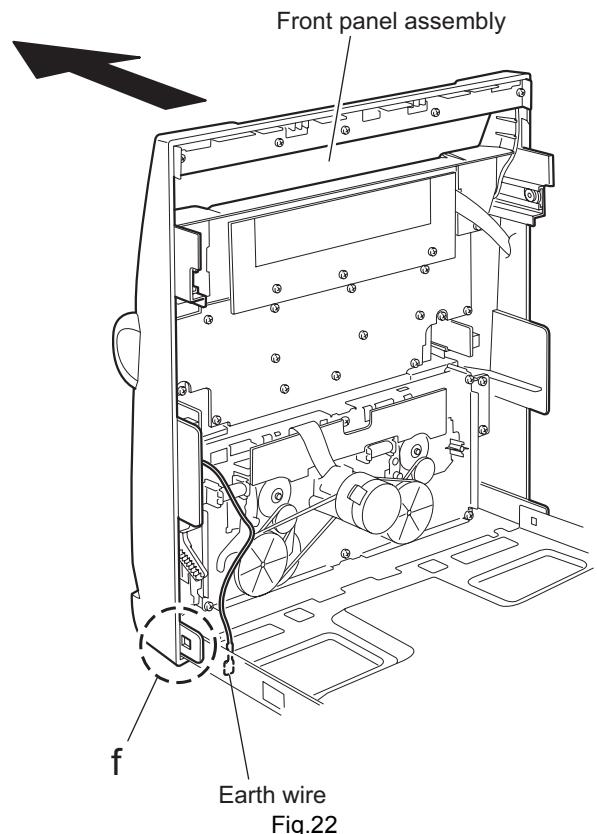


Fig.22

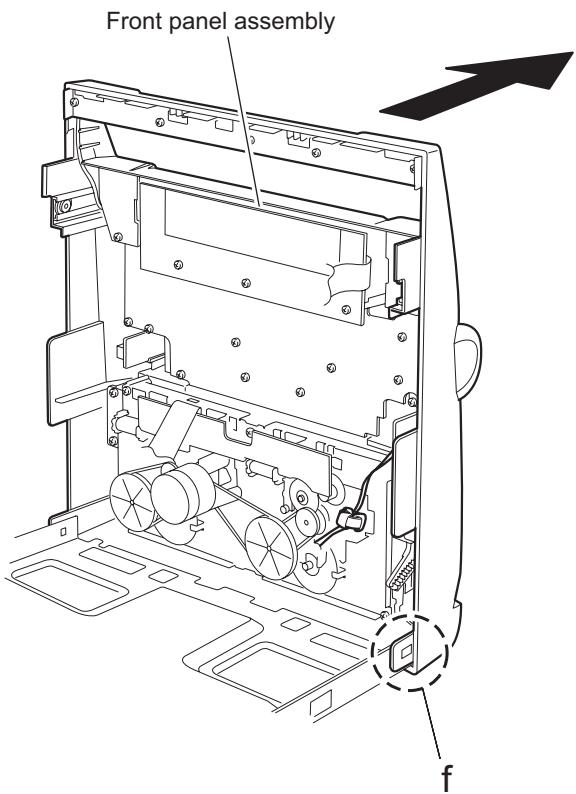


Fig.23

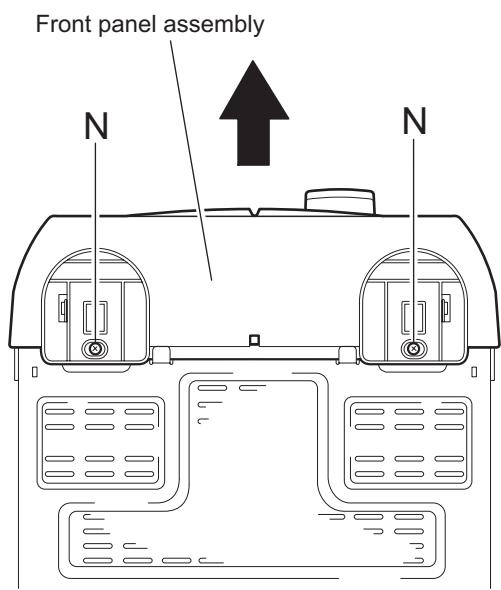
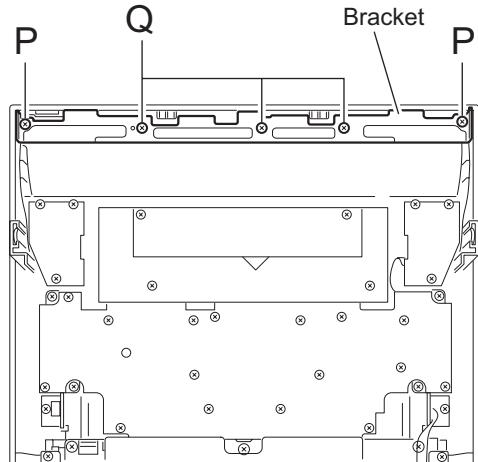


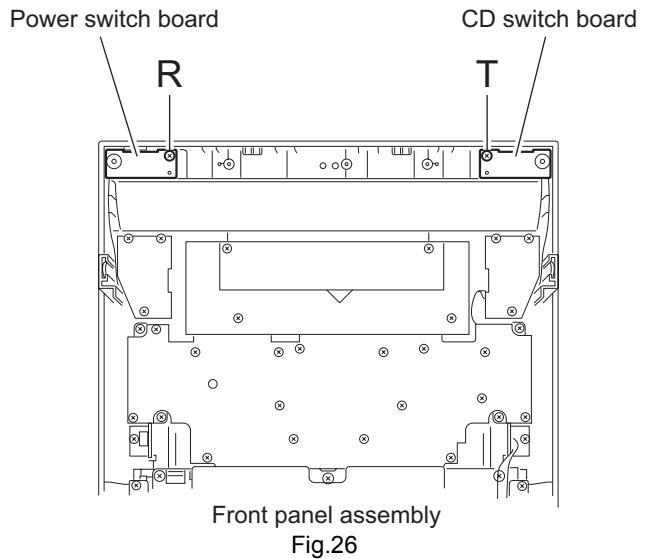
Fig.24

### 3.1.8 Removing the POWER switch board / CD switch board (See Fig.25, 26)

- Prior to performing the following procedure, remove the front panel assembly.
- (1) Remove the two screws **P** and the three screws **Q** attaching the bracket.
- (2) Remove the screws **R** attaching the POWER switch board.
- (3) Remove the screw **T** attaching the CD switch board.



Front panel assembly  
Fig.25



Front panel assembly  
Fig.26

### 3.1.9 Removing the REC select switch board / PROGRAM select switch board (See Fig.27)

- Prior to performing the following procedure, remove the front panel assembly.
- (1) Remove the three screws **U** attaching the REC select switch board.
- (2) Remove the three screws **Y** attaching the CD switch board.

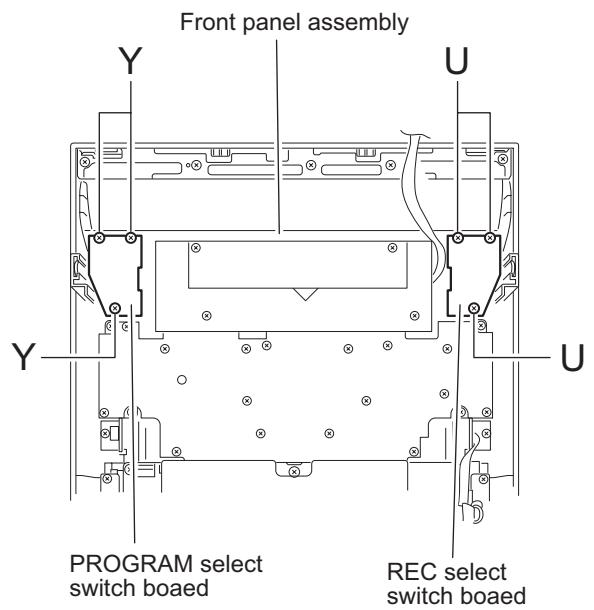


Fig.27

### 3.1.10 Removing the LCD board / STANDBY board

(See Fig.28, 29)

- Prior to performing the following procedure, remove the front panel assembly.
  - (1) Remove the four screws **A'** attaching the LCD board and disconnect the wire from connector CN505.
  - (2) Remove the two screws **B'** attaching the STANDBY board.

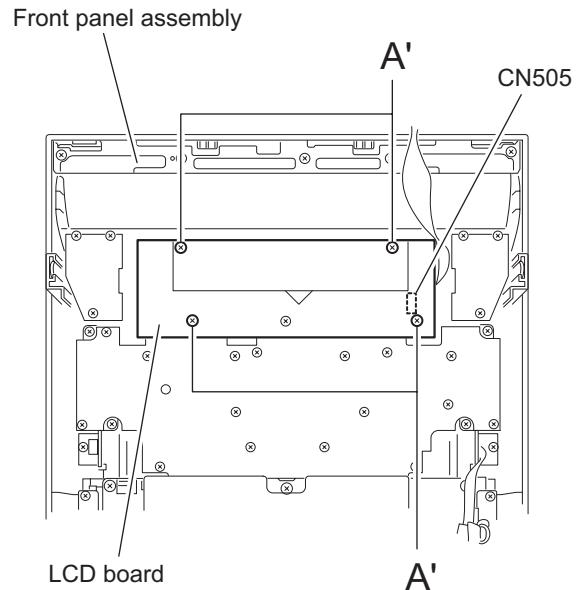


Fig.28

Front panel assembly

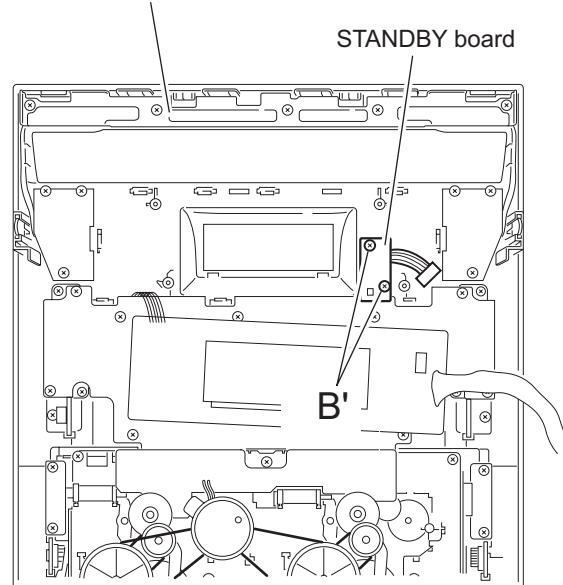


Fig.29

### 3.1.11 Removing the system board / headphone board / AUX board

(See Fig.30 to 34)

- Prior to performing the following procedure, remove the front panel assembly.
- (1) Pull out the volume knob on the front side of the front panel assembly. Release the three tabs of the knob holder and pull out the knob holder.
- (2) Remove the nut and the washer from the volume shaft.
- (3) From the back of the front panel assembly, remove the seventeen screws **D'** attaching the system board.
- (4) Remove the screw **E'** attaching the headphone board fitting plate and pull out the headphone board.
- (5) Remove the screw **F'** attaching the AUX board fitting plate and pull out the AUX board.

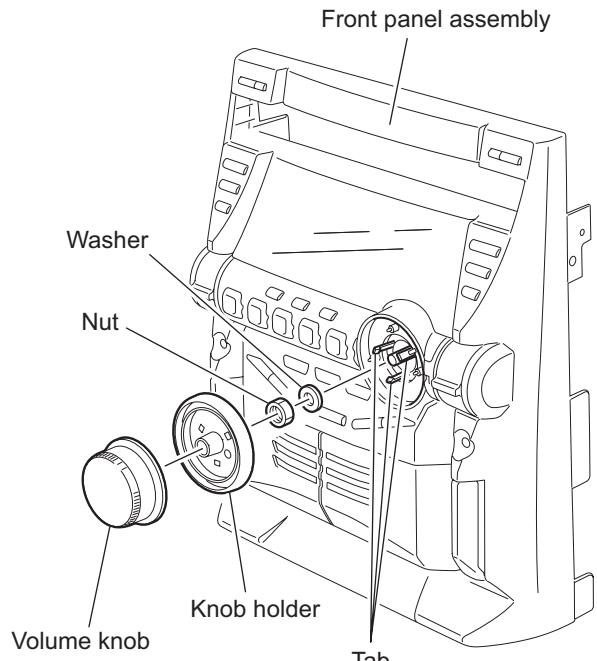


Fig.30

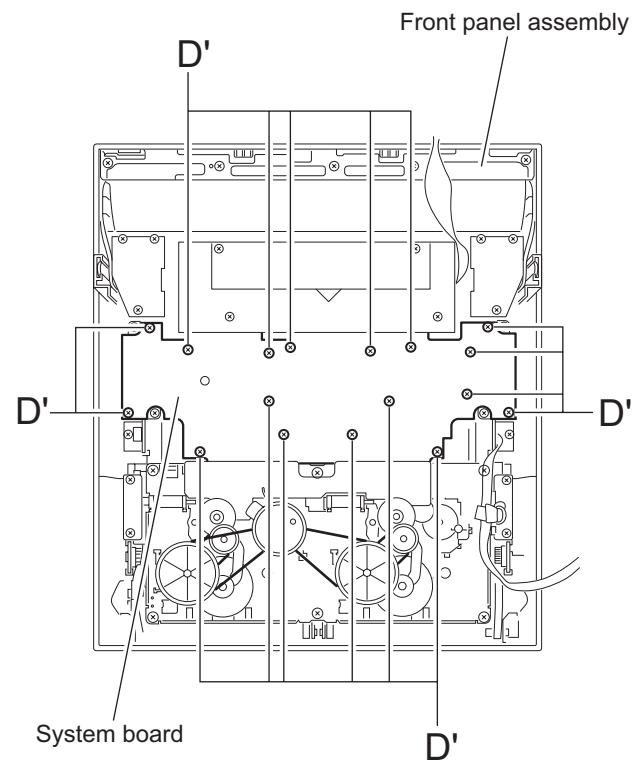
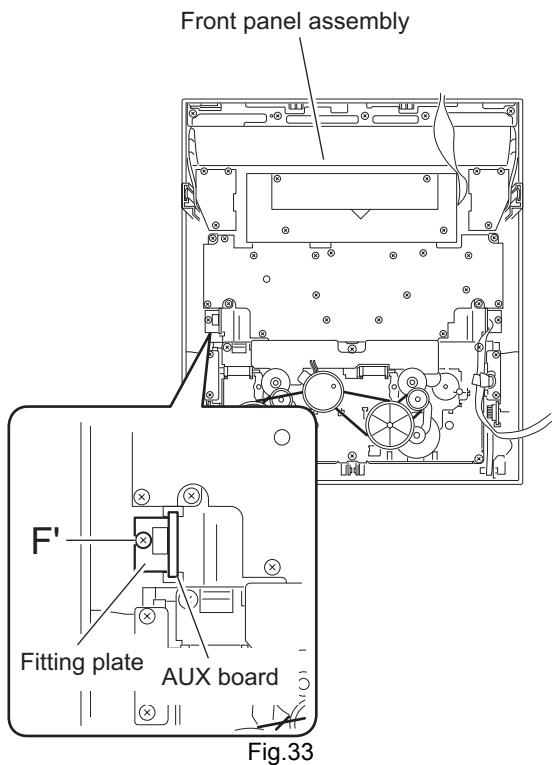
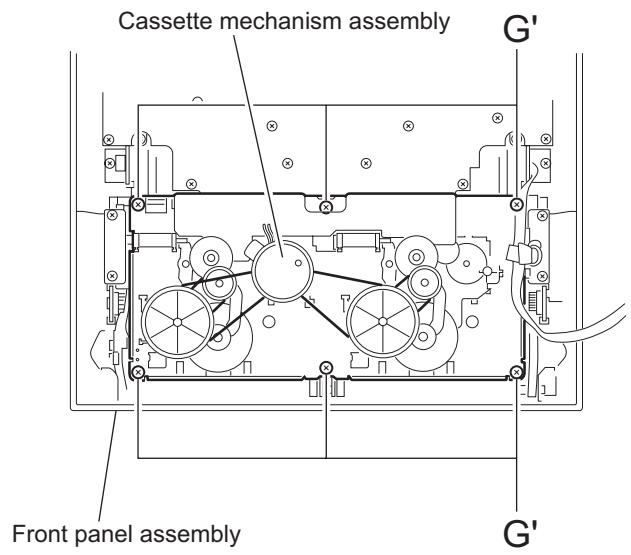
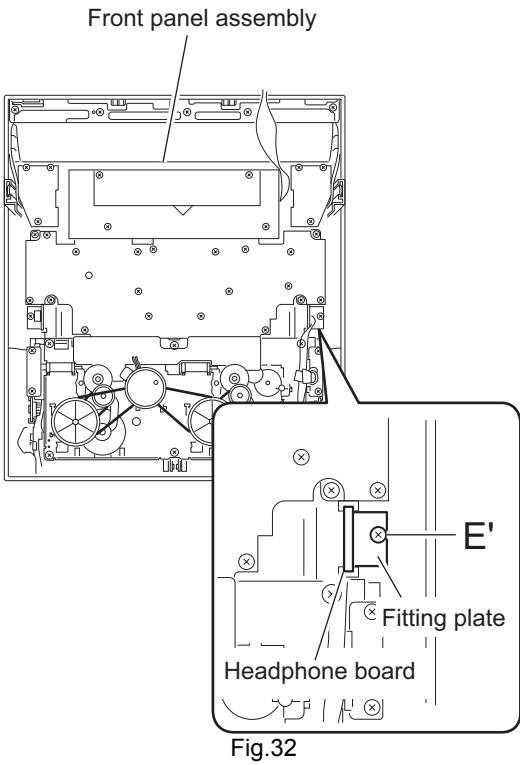


Fig.31



### 3.1.12 Removing the cassette mechanism assembly

(See Fig.35)

- Prior to performing the following procedure, remove the front panel assembly.
- (1) Remove the six screws **G'** attaching the cassette mechanism assembly.

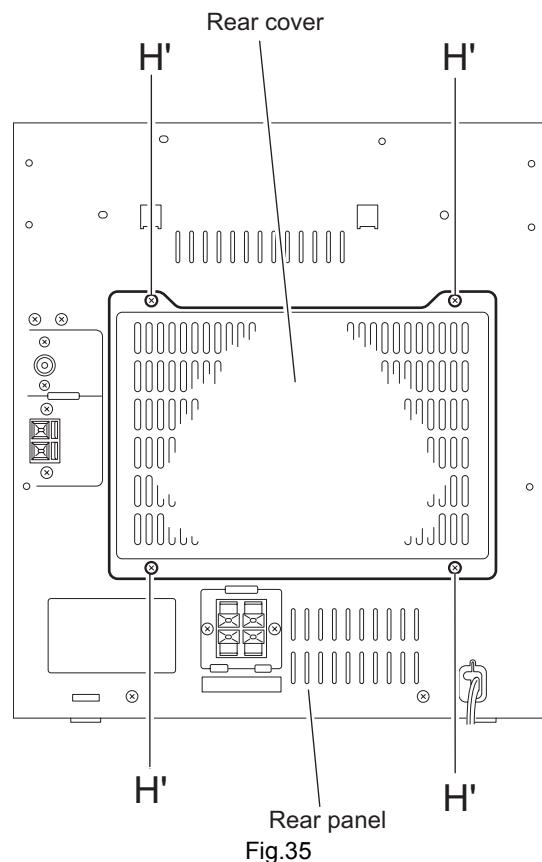


Fig.35

### 3.1.13 Removing the rear cover / rear panel

(See Fig.36 to 38)

- Prior to performing the following procedure, remove the top cover / side cover (R) and (L), the CD fitting / CD changer mechanism unit.

- From the back of the body, remove the four screws **H'** attaching the rear cover.
- From the back of the body, remove the two screws **J'** attaching the rear panel.
- Release the two joints **h** on the bottom of the right and left sides of the rear panel, and remove the rear panel. The rear panel comes off with the power board and the heat sink.

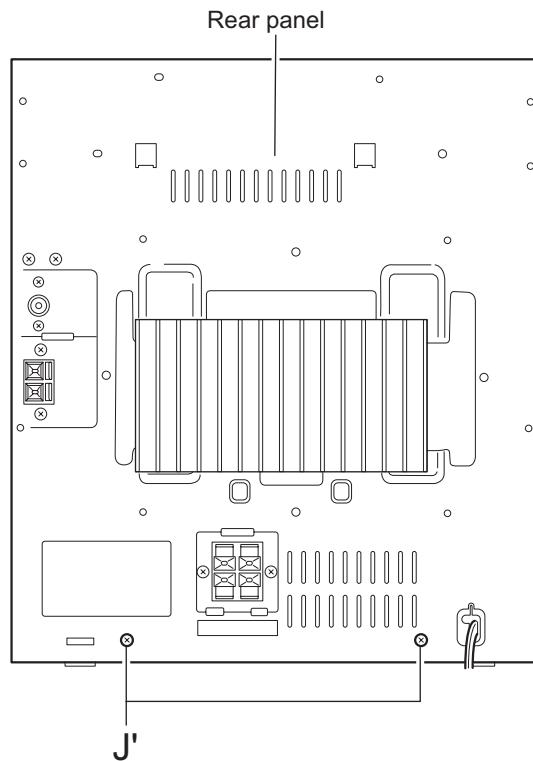


Fig.36

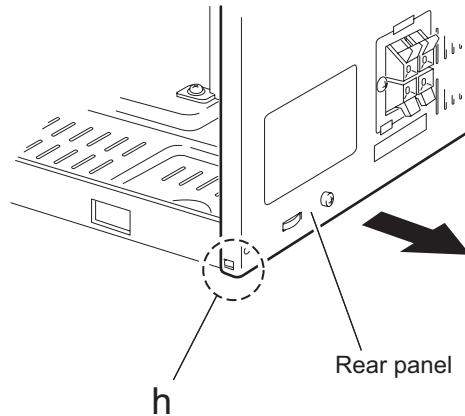


Fig.37

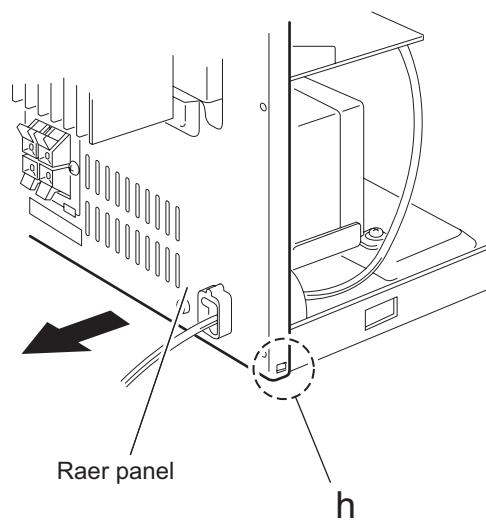


Fig.38

### 3.1.14 Removing the heat sink / power board

(See Fig.39 to 42)

- Prior to performing the following procedure, remove the top cover / side cover (R) and (L), the CD fitting / CD changer mechanism unit, the rear cover / rear panel.

- From the inner side of the rear panel, remove the four screws **K'** attaching the heat sink. Move the heat sink in the direction of the arrow along the notch of rear panel and remove it with the heat sink and the power board forward.
- Remove the four screws **M'** and the four screws **N'** attaching the board bracket (R) and (L).
- Remove the two screws **P'** and the two screws **Q'** attaching the power board.
- If necessary, unsolder the power cord and the wire extending from the power transformer assembly.

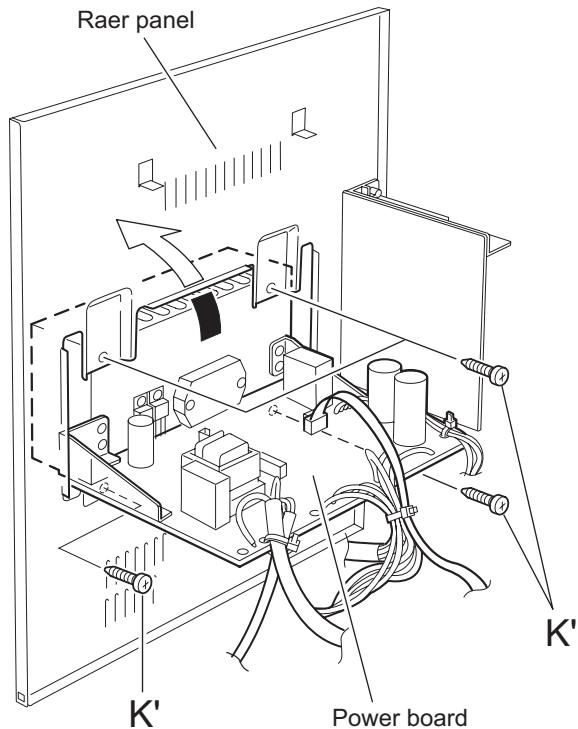


Fig.39

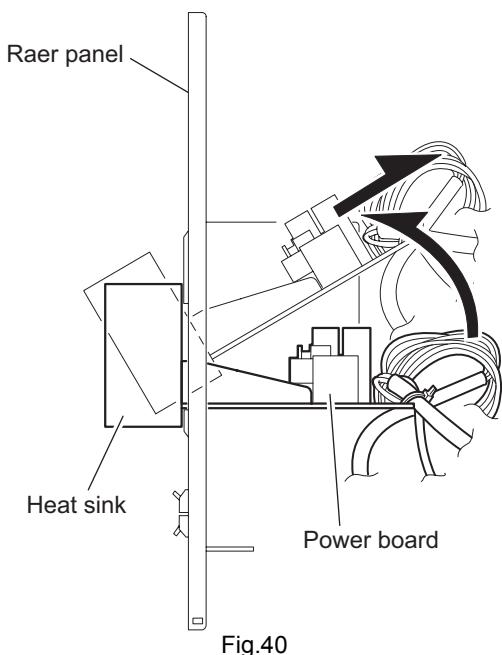


Fig.40

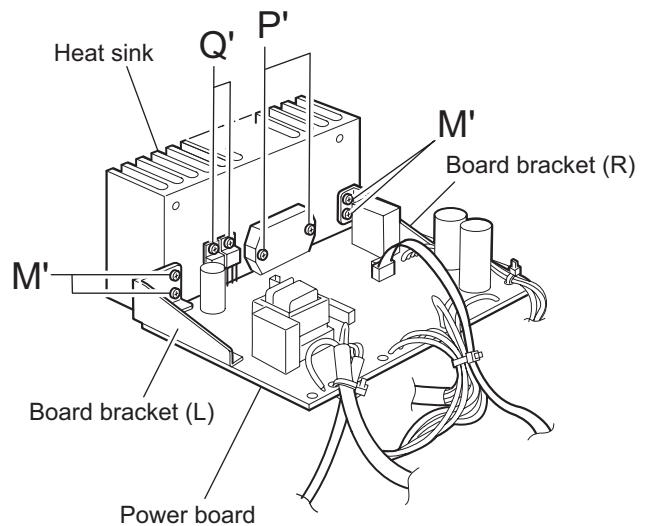


Fig.41

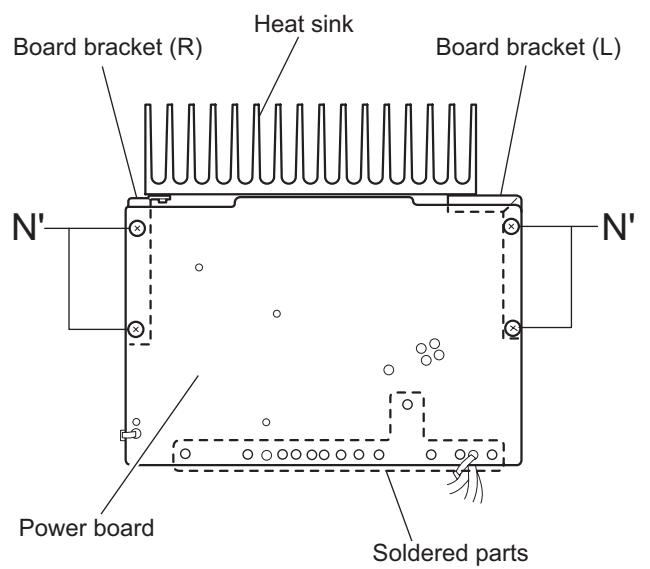


Fig.42

### 3.1.15 Removing the power transformer assembly

(See Fig.43)

- Prior to performing the following procedure, remove the top cover / side cover (R) and (L), the CD fitting / CD changer mechanism unit and the rear cover / rear panel.

(1) Move the cord stopper in the direction of the arrow and disconnect the power cord.

(2) Remove the four screws R' attaching the power transformer assembly.

If necessary, unsolder each wire.

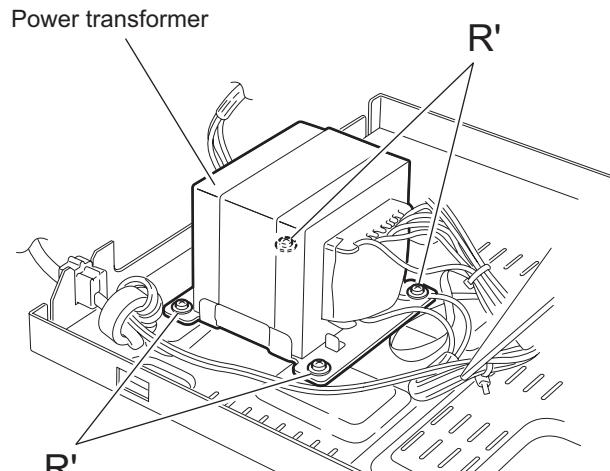


Fig.43

### 3.1.16 Removing the main board

(See Fig.44 to 46)

- Prior to performing the following procedure, remove the top cover / side cover (R) and (L), the CD fitting / CD changer mechanism unit.

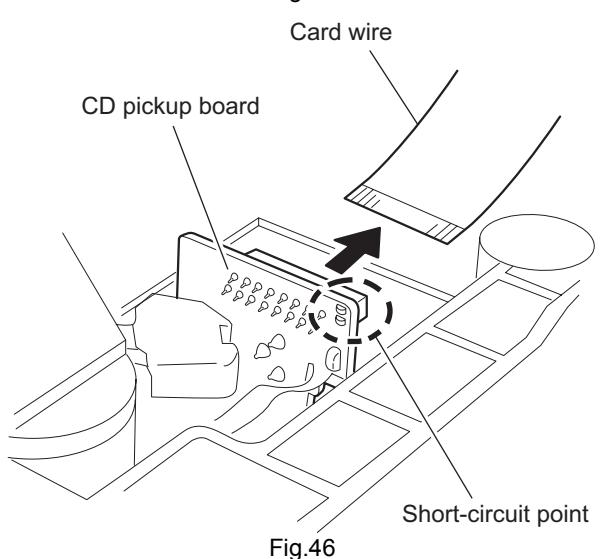
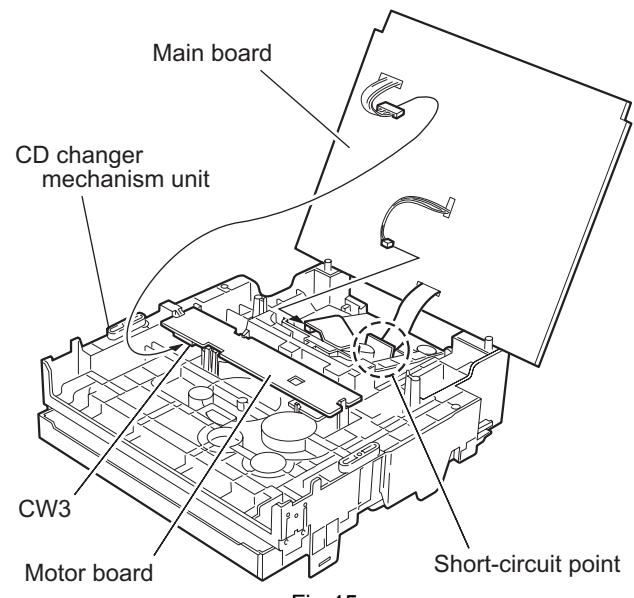
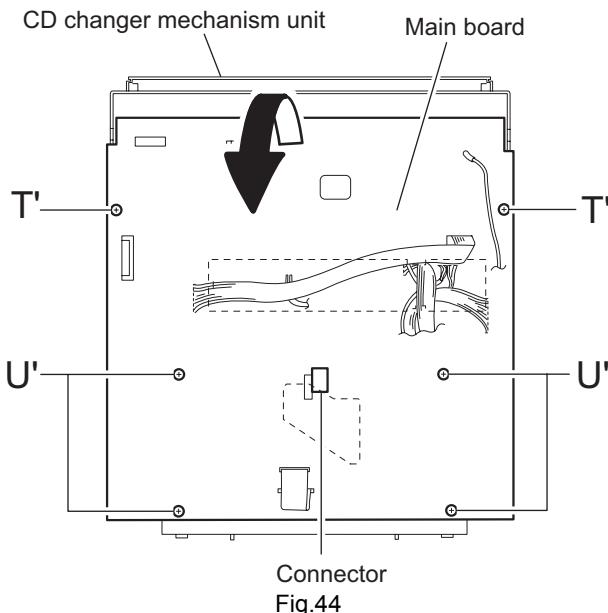
#### Caution:

Before disconnecting the card wire from the CD pickup board and connector [CN401](#) on the main board, make sure to solder the short-circuit point on the CD pickup board. If you do not follow this instruction, the pick up may be damaged.

- (1) From the bottom of the CD changer mechanism unit, remove the two screws **T'** and the four screws **U'** attaching the main board.
- (2) Disconnect the wire from connector on the main board.
- (3) Move the main board in the direction of the arrow as shown in Fig.45, disconnect the wire from connector on the motor board in the inner part of the main board.
- (4) Move the main board turning in the direction of the arrow as shown in Fig.45.
- (5) Solder the short-circuit point on the CD pickup board and disconnect the wire from the CD pickup board.

#### Caution:

When reattaching the main board, make sure to connect the card wire to connector [CN401](#) on the main board and to the CD pickup board before unsoldering the short-circuit point.



### 3.2 Speaker

#### 3.2.1 Removing the front cabinet (See Fig.1 to 3)

##### Caution:

When performing the following procedure, apply the cloth to the product for preventing it from damage.

(1) Put the screwdriver into the two notch a at the bottom of the speaker, and remove the front panel assembly while pulling out the six bosses on the inner side of the front panel assembly forward.

##### Caution:

The six bosses are attached with bond. Apply the cloth to the product for protect from damage, and pull out each boss carefully.

(2) Disconnect the two wires of the main speaker terminal from the back of the front panel assembly.

(3) Disconnect the two wires of the sub speaker terminal from the back of the front panel assembly.

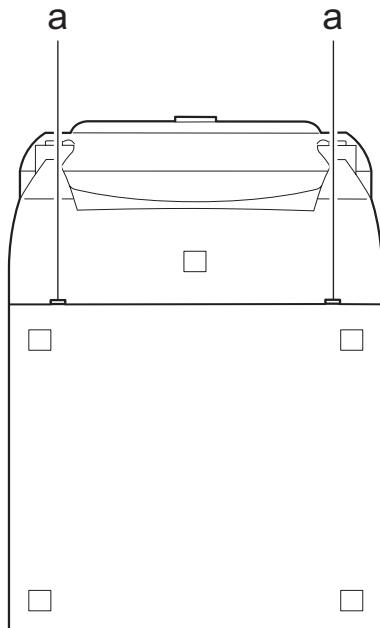


Fig.1

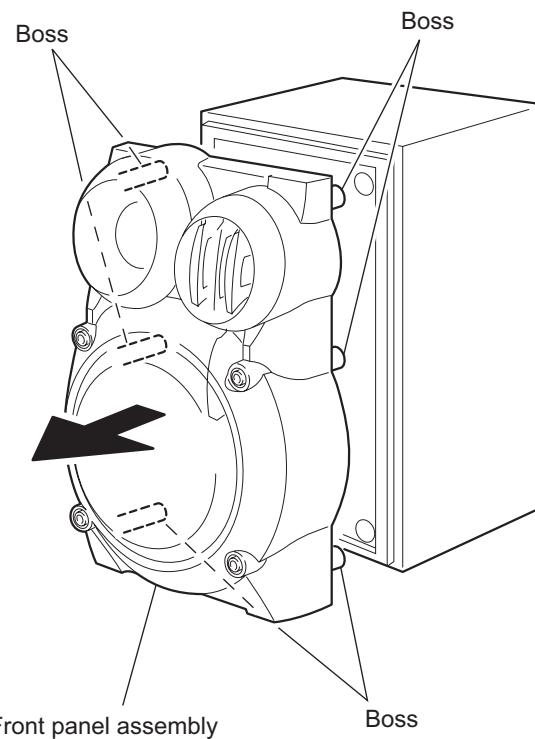
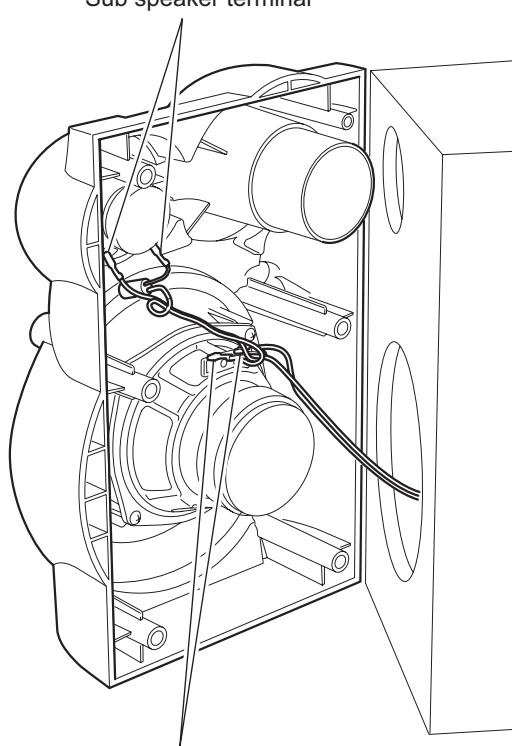


Fig.2

Front panel assembly

Boss



Main speaker terminal

Fig.3

### 3.2.2 Removing the main speaker / sub speaker

(See Fig.4)

- Prior to performing the following procedure, remove the front cabinet.
- (1) Remove the four screws **A** attaching the main speaker.
- (2) Remove the two screws **B** attaching the sub speaker.

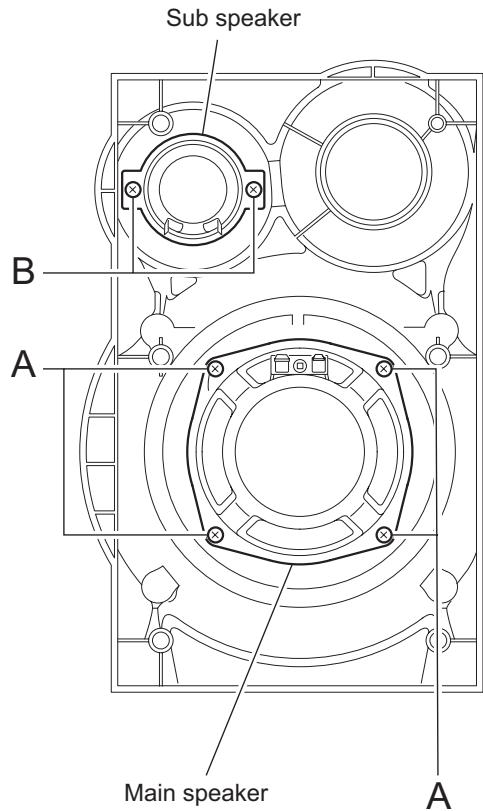


Fig.4

## **SECTION 4 ADJUSTMENT**

### **4.1 Measurement Instruments 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 50Hz-20kHz, 0dB output with 600 Ω impedance)
- (6) Attenuator (600 Ω impedance)
- (7) Electronic voltmeter
- (8) Distortion meter
- (9) Wow & Flutter meter
- (10) Frequency counter meter
- (11) Test tape
  - VT712 : for Tape speed and wow flutter
  - VT724 : for reference level
  - VT703L : for head azimuth adjustment
  - Blank tape for recording

### **4.2 Measurement conditions**

#### **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 :Headphone output (0.15V) 32 Ω  
Speaker output 1W (2.5V) 6 Ω

#### **Cassette amp section : 1 kHz**

Reference output :Headphone output (0.15V) 32 Ω  
Speaker output 1 W (2.5V) 6 Ω  
Standard mode of function knob:Press TAPE knob of select TAPE mode

#### **CD section**

CD test disc : CTS-1000

#### 4.3 Cassette amp section

Item	Measuring condition	Check and adjustment procedure	Standard value	Adjusting part
Head azimuth adjustment	Test tape : VT703L Signal output terminal : SPK out (with 6 ohm load)	1. Playback the test tape VT703L. 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 (20dB 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. 3. When the head azimuth is maladjusting correct it with the head azimuth adjusting screw.	Output level : Within (2 dB of Maximum output level. *Phase difference R and L channels : Minimum	Head azimuth adjusting screw (To be use only after head replacement)
Tape speed and wow/flutter check and adjustment	Test tap : VT712 Signal output terminal : SPK out (with 6 ohm load)	1. Playback the test tape VT712 by the end portion. 2. Connect a frequency counter and check that it reads between 2940 and 3090 Hz. If not, adjust the frequency with the motor semifixied resistor. 3. Check that the wow/flutter is within 0.35% (unweightded).	2940 to 3090 Hz within 0.35% (unweighted)	Tape speed Motor semifixied resistor Check only
Bias frequency chek	Test tape : B Signal output terminal : Cassette REC/Play head	Set the Tuner or CD function and with TAPE to record check to see if the frequency at the measuring point REC-IF is 85 kHz if not adjust T100 until the frequency counter indicates 85 kHz+1kHz-1kHz.	Level difference for 1 kHz signal : within (0+3dB-6dB)	
Rec anf PB frequency response adjustment	Test tape : Brank tape Signal input : CD 1 kHz -20 dBs Signal output terminal : SPK out (with 6 ohm load)	Record the reference CD 1 kHz signal and 10 kHz signal alternately repeatedly. While playing back the recorded signal of the 1 kHz signal doffer from that of the 10 kHz signal by within (0+3dB-6dB).	Level difference for 1 kHz signal : within (0+3dB-6dB)	

#### 4.4 Tuner section (B/EV version)

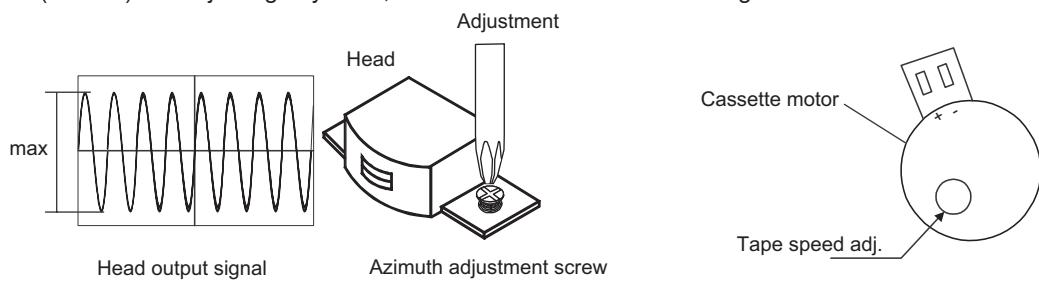
Item	Measuring condition	Check and adjustment procedure	Standard value	Adjusting part
AM IF adjustment	Signal input : Loop antenna Signal output : IC602 pin 16	1. Set the intermediate frequency sweep generator to AM 450 kHz. 2. Adjust IFT601 for maximum and center output		IFT601
AM tracking adjustment	Signal input : Loop antenna signal output : H.phone out (with 32 ohm load)	1. Set the TUNER at 522 kHz adjust IFT605 until the test point TP4 voltage at 1.3V+-1V. 2. Set the TUNER at 1629 kHz, check the test point TP4 voltage at 7.0 to 8.0 V. 3. Set the TUNER and S/G at 600 kHz, adjust ITT606 for maximum output. 4. Set the TUNER and S/G at 1500 kHz, adjust the VC606 for maximum output. 5. Repeat the avobe step 3 and 4.		IFT605 IFT606 VC606
FM tracking	Signal input : Analog antenna FM ANT Fm GND signal output : H.phone out (with 32 ohm load)	1. Set the TUNER at 87.5MHz adjust L604 until the point TP5 voltage at 1.5V+-0.1V. 2. Set the TUNER at 108MHz, check the point TP5 voltage at 7.2-8.0V. 3. Set the TUNER and S/G at 90.1MHz, adjust L605 for amximum output. 4. Set the TUNER and S/G at 106.1MHz, adjust the VC604 for maximum output.		L604 L605 VC604

#### 4.5 Tuner section (E/EN version)

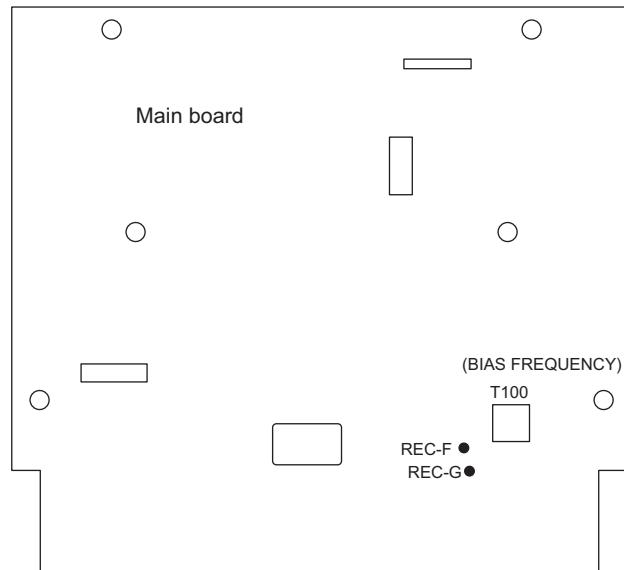
Item	Measuring condition	Check and adjustment procedure	Standard value	Adjusting part
AM IF adjustment	Signal input : Loop antenna Signal output : IC602 pin 18	1. Set the intermediate frequency sweep generator to AM 450 kHz. 2. Adjust IFT603 for maximum and center output		IFT603
AM tracking adjustment	Signal input : Loop antenna signal output : H.phone out (with 32 ohm load)	1. Set the TUNER at 522 kHz adjust IFT602 until the test point TP13 voltage at 1.3V+/-1V. 2. Set the TUNER at 1629 kHz, check the test point TP13 voltage at 7.0 to 8.0 V. 3. Set the TUNER and S/G at 603 kHz, adjust IFT604 for maximum output. 4. Set the TUNER and S/G at 1404 kHz, adjust the VC601 for maximum output. 5. Repeat the above step 3 and 4.		IFT602 IFT604 VC601
FM tracking	Signal input : Analog antenna FM ANT Fm GND signal output : H.phone out (with 32 ohm load)	FM IF : 1. Set the TUNER at FM mode 2. Adjust IFT606 to make the test point (TP4) swave symmetry. FM VT : Check test point TP14 to make sure the voltage 1.5-8.5V.		

#### 4.6 Location of adjusting parts

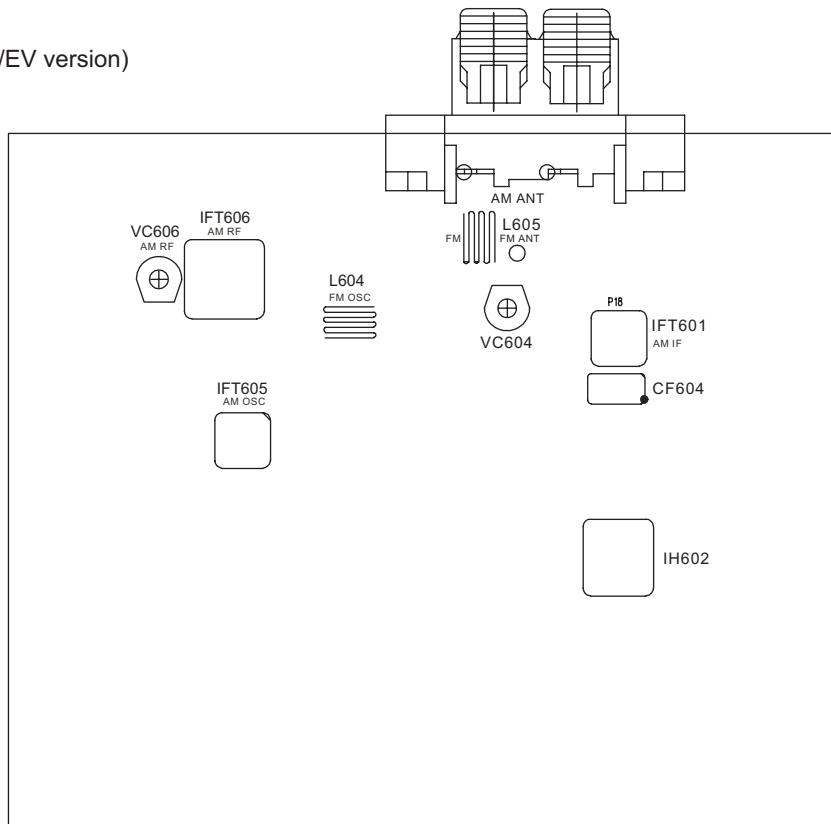
Cassette mechanism section  
(caution) For adjusting any head, be sure to use a screw driver degaussed.



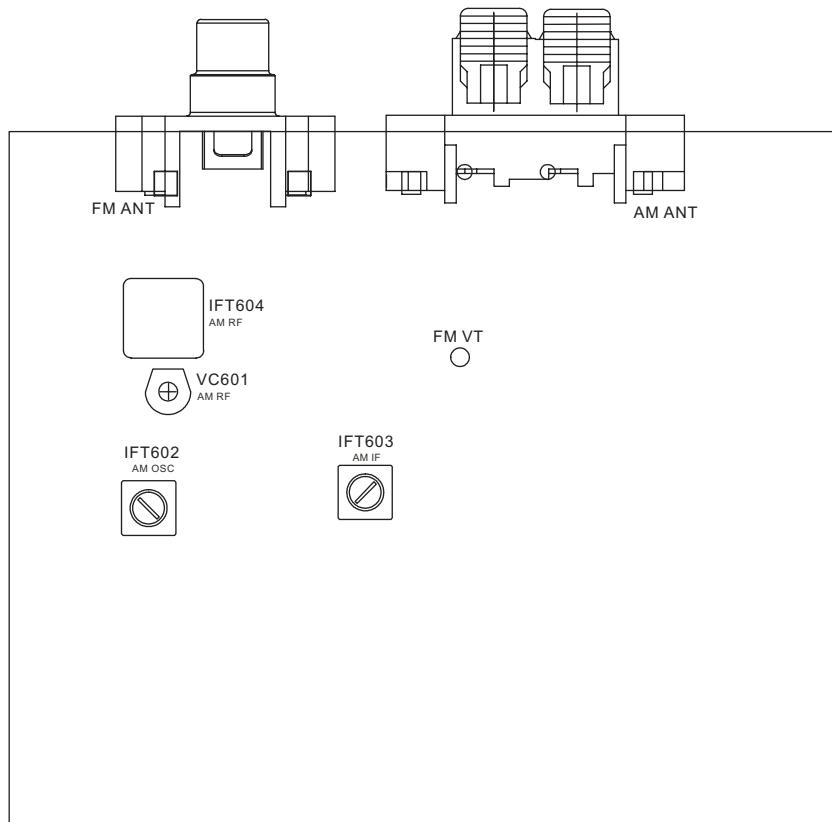
Main board



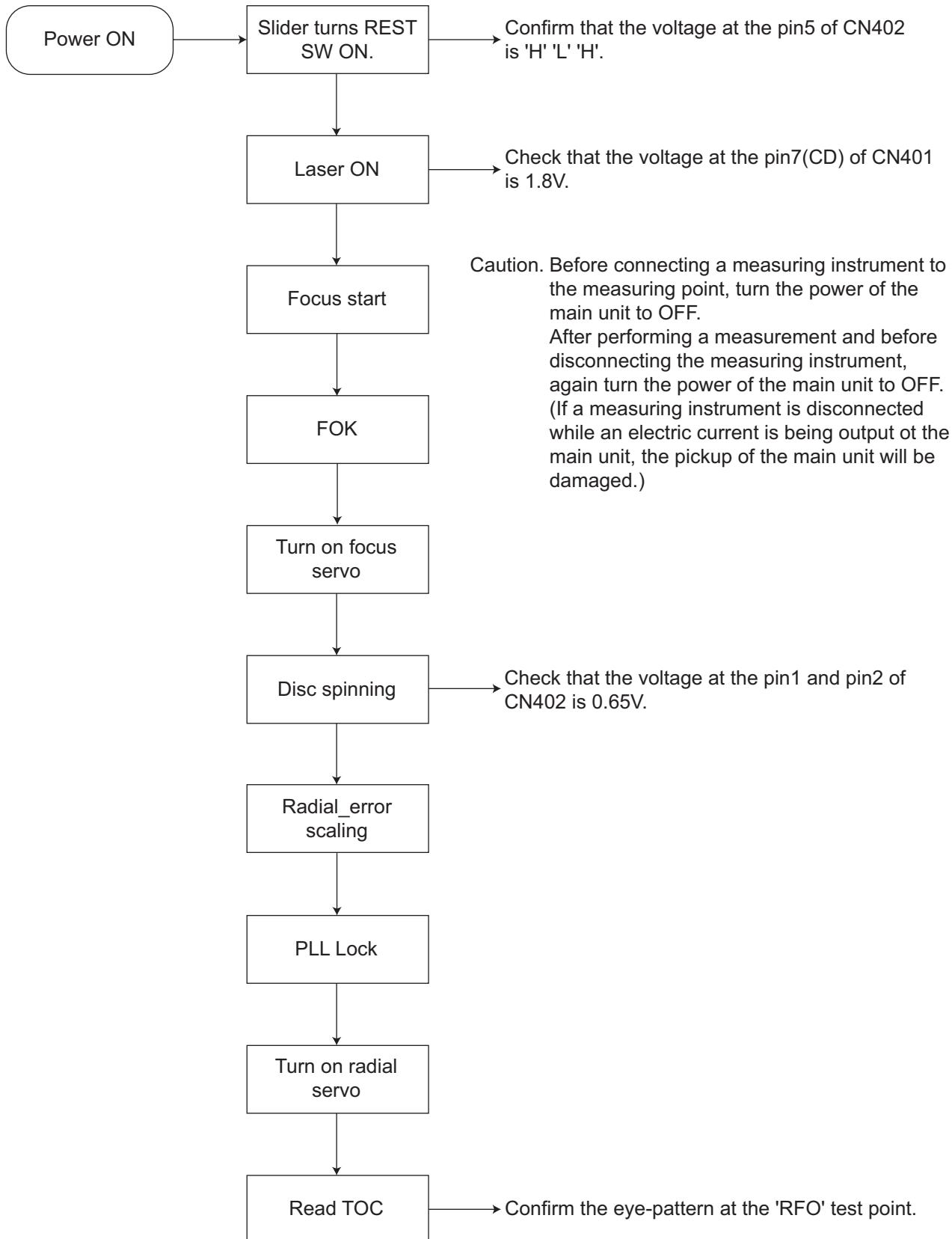
Tuner section (B/EV version)



Tuner section (E/EN version)



#### 4.7 Flow of functional operation until TOC read



## **SECTION 5**

## **TROUBLESHOOTING**

This service manual does not describe TROUBLESHOOTING.



Victor Company of Japan, Limited

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

(No.MB306)



Printed in Japan  
WPC

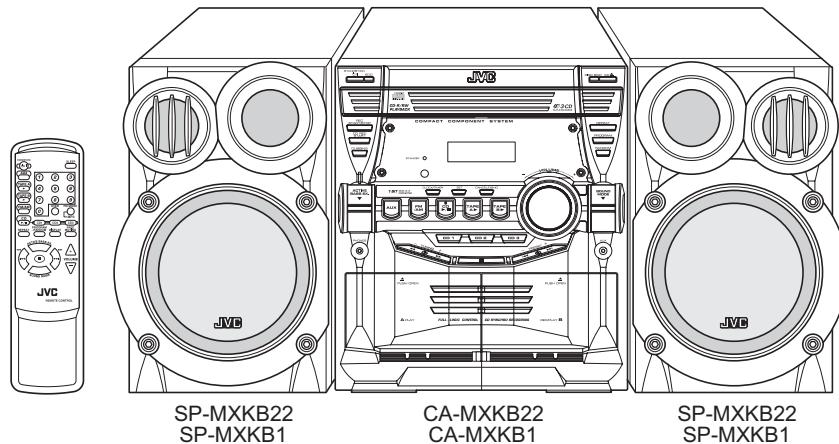
# JVC

## SCHEMATIC DIAGRAMS

### COMPACT COMPONENT SYSTEM

### MX-KB22, MX-KB1

CD-ROM No.SML200408



**COMPACT**  
**DISC**  
DIGITAL AUDIO

MX-KB22	
Area suffix	
EV	----- Eastern Europe

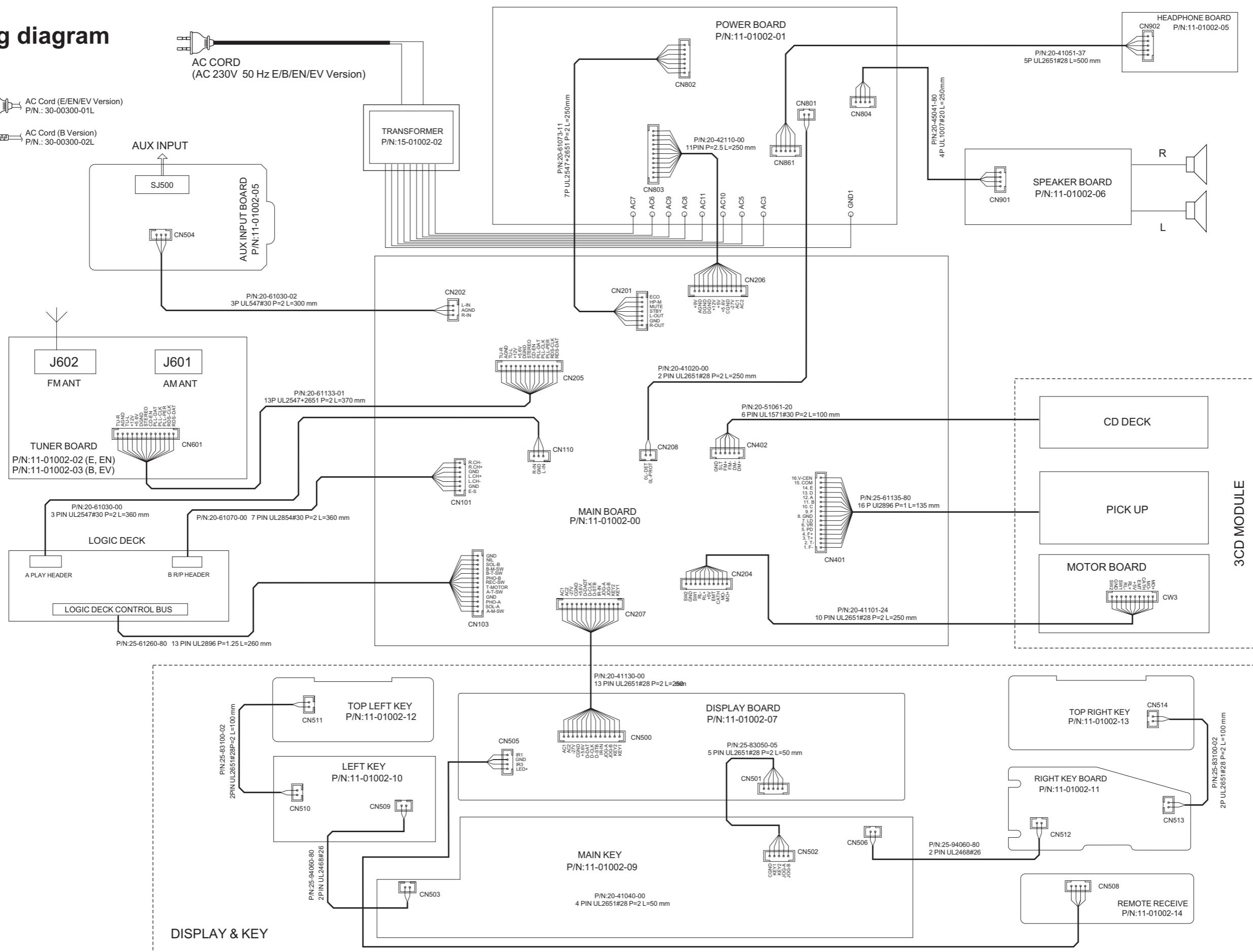
MX-KB1	
Area suffix	
B	----- U.K.
E	----- Continental Europe
EN	----- Northern Europe
EV	----- Eastern Europe

#### Contents

Wiring diagram	-----	2-1
Block diagrams	-----	2-2
Standard schematic diagrams	-----	2-4
Printed circuit boards	-----	2-16 to 19

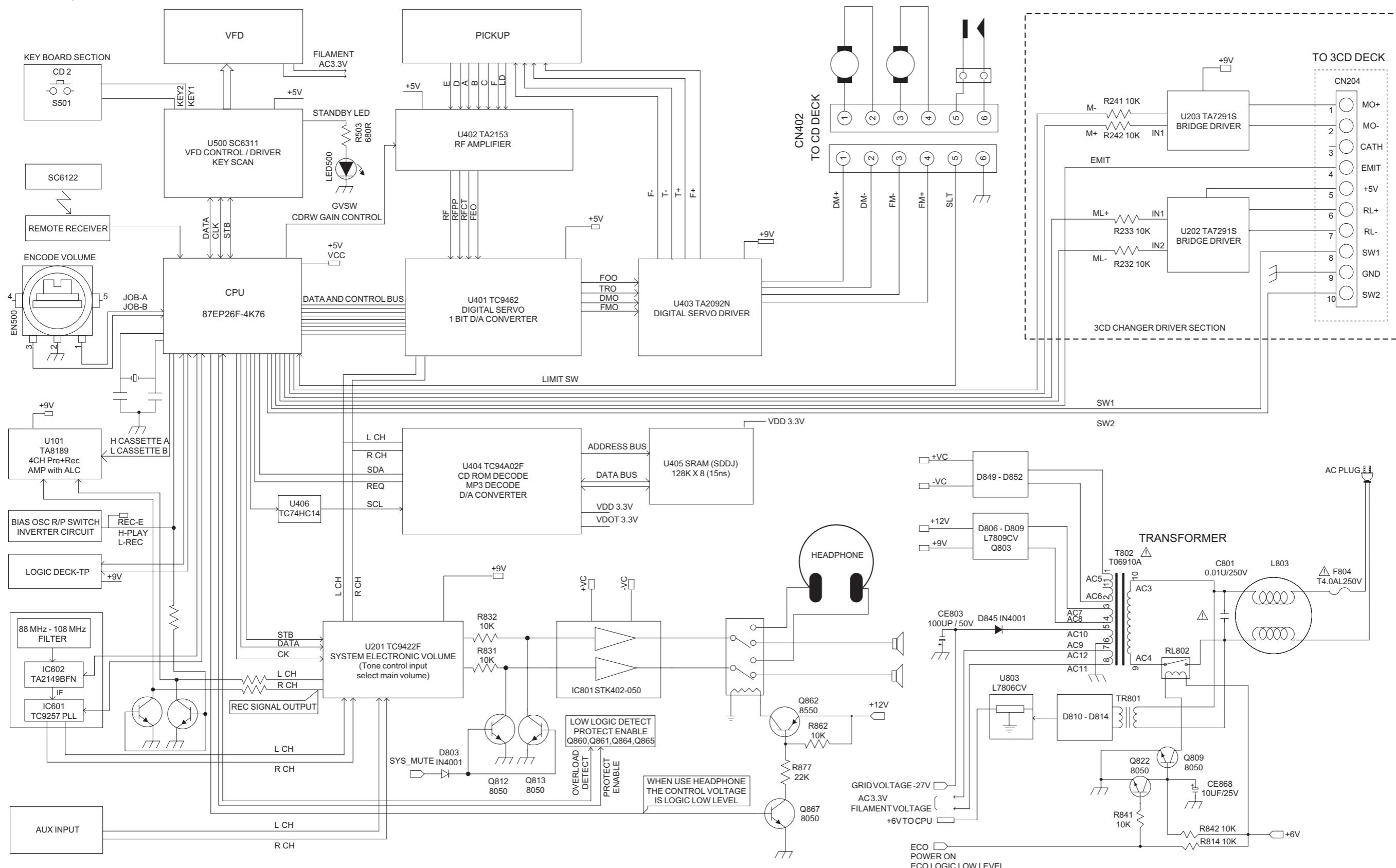
In regard with component parts appearing on the silk-screen printed side (parts side) of the PWB diagrams, the parts that are printed over with black such as the resistor (■), diode (■) and ICP (●) or identified by the "Δ" mark nearby are critical for safety.

# Wiring diagram



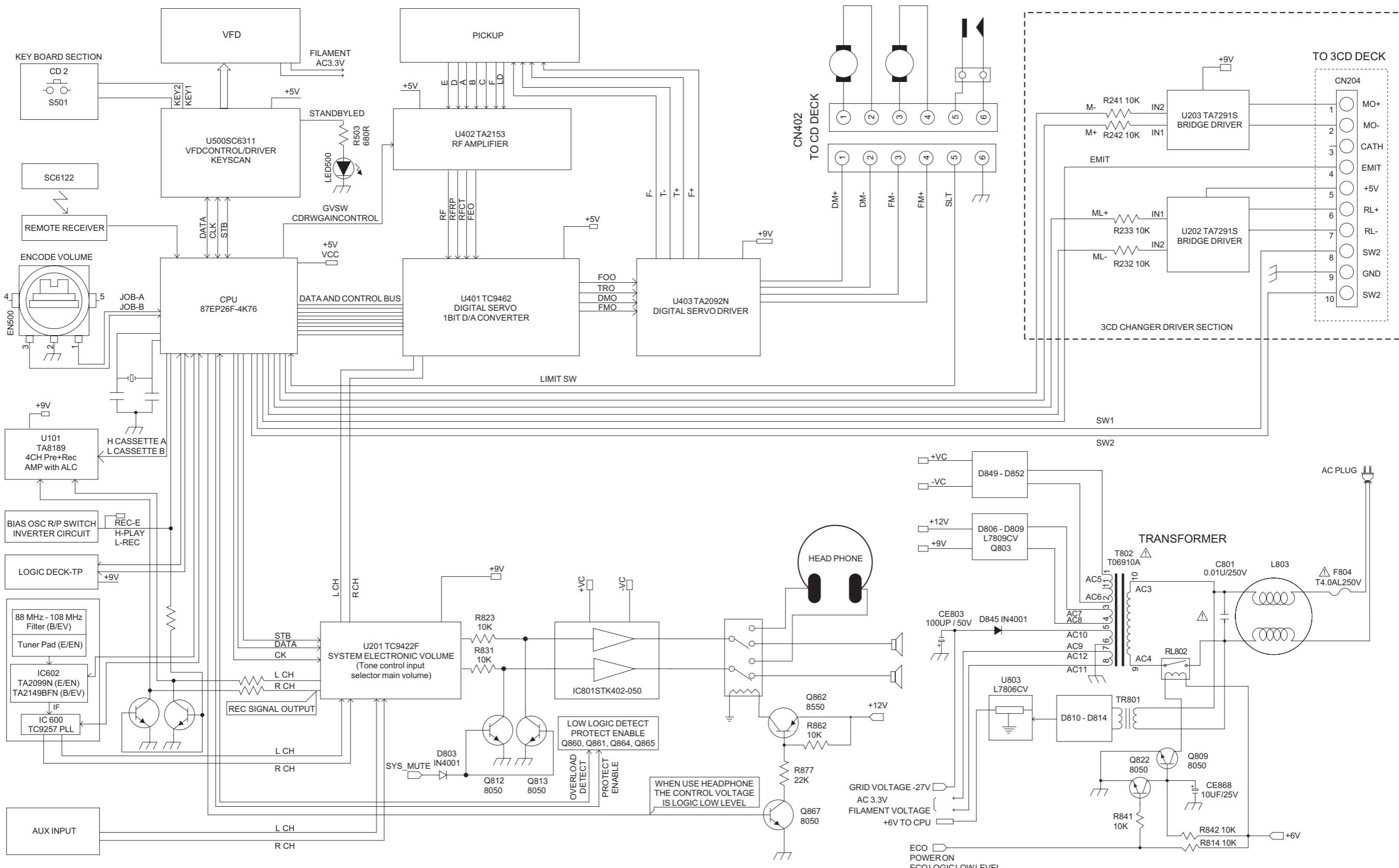
# Block diagrams

for MX-KB22



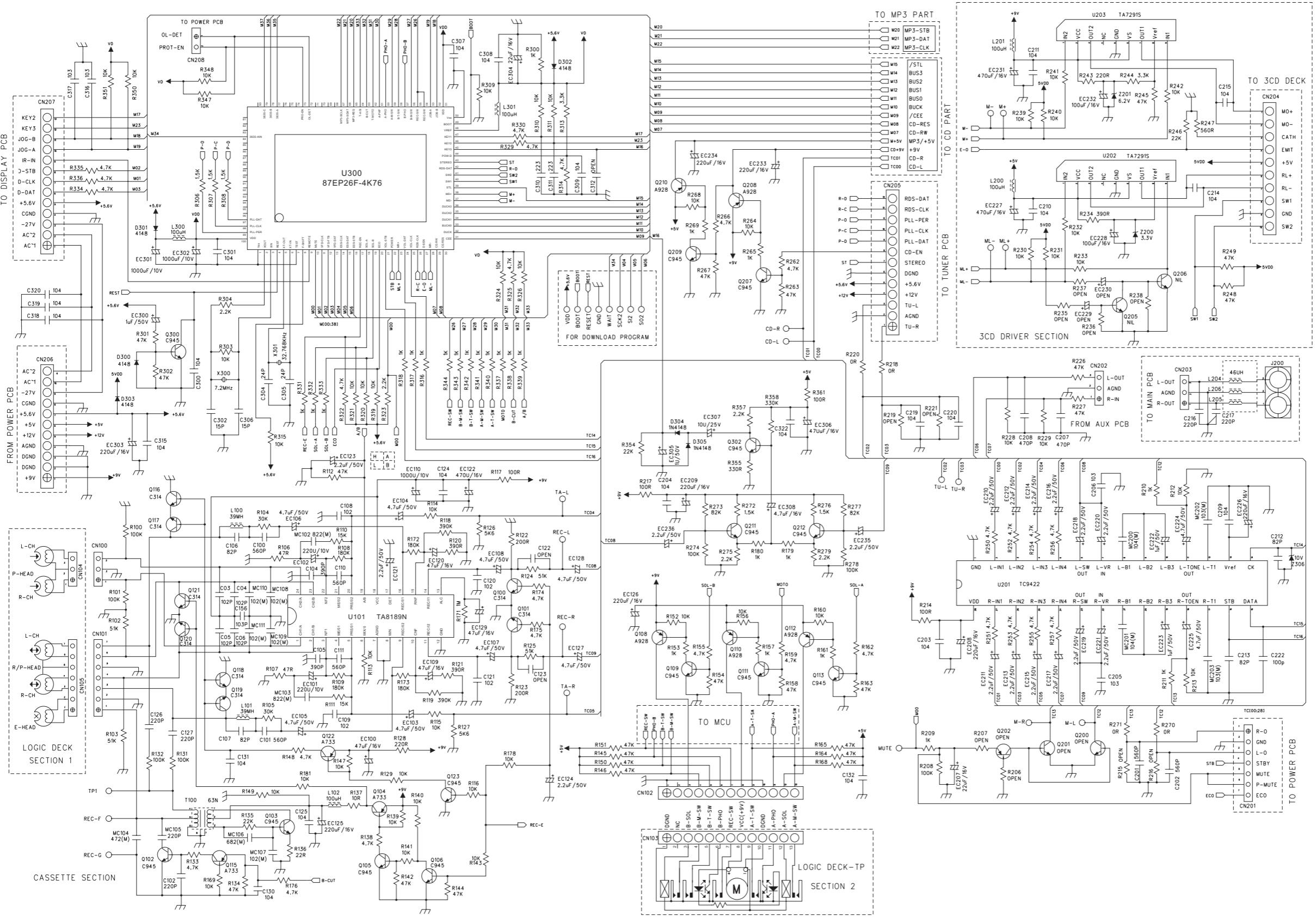
## Block diagram

for MX-KB1

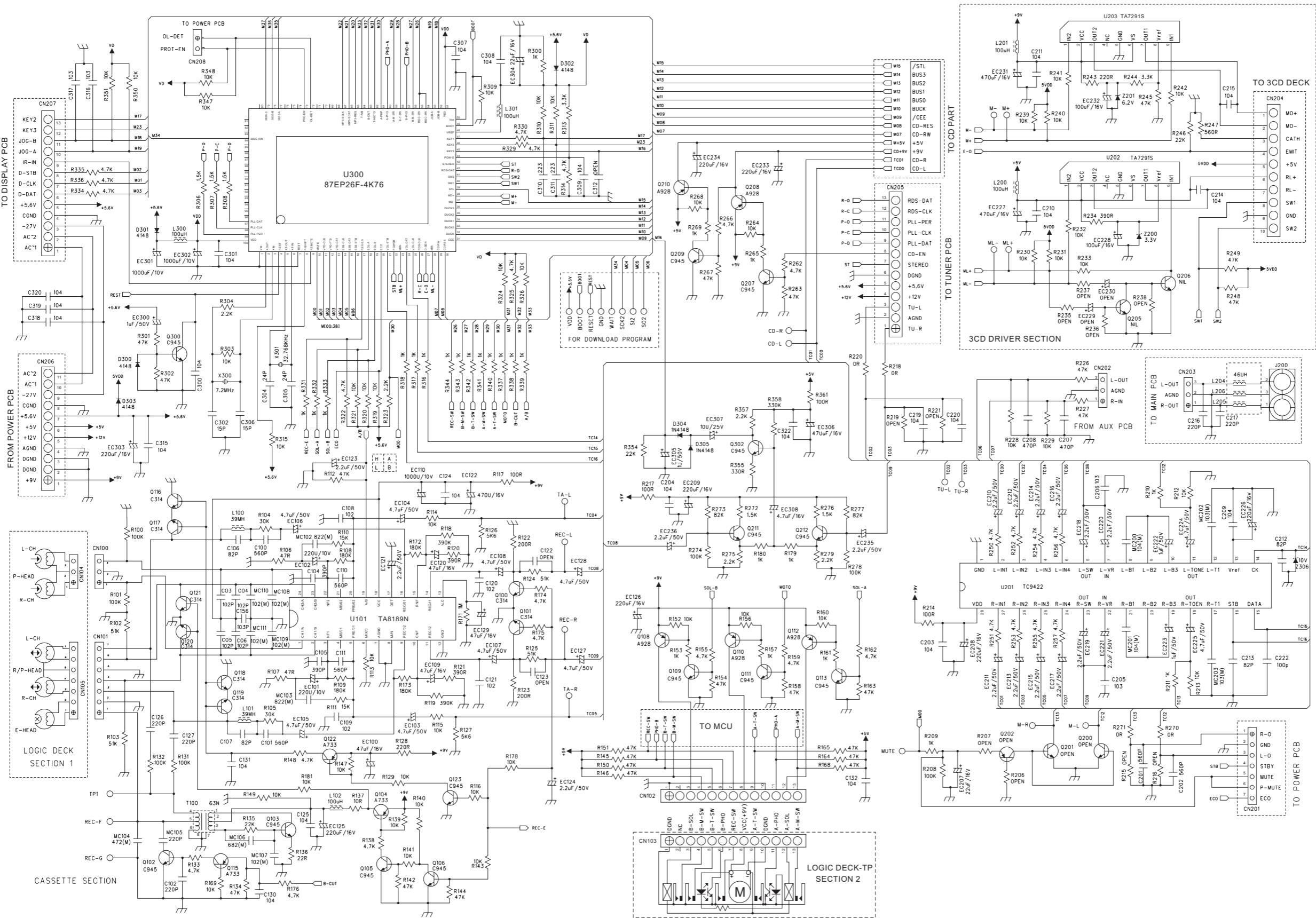


# Standard schematic diagrams

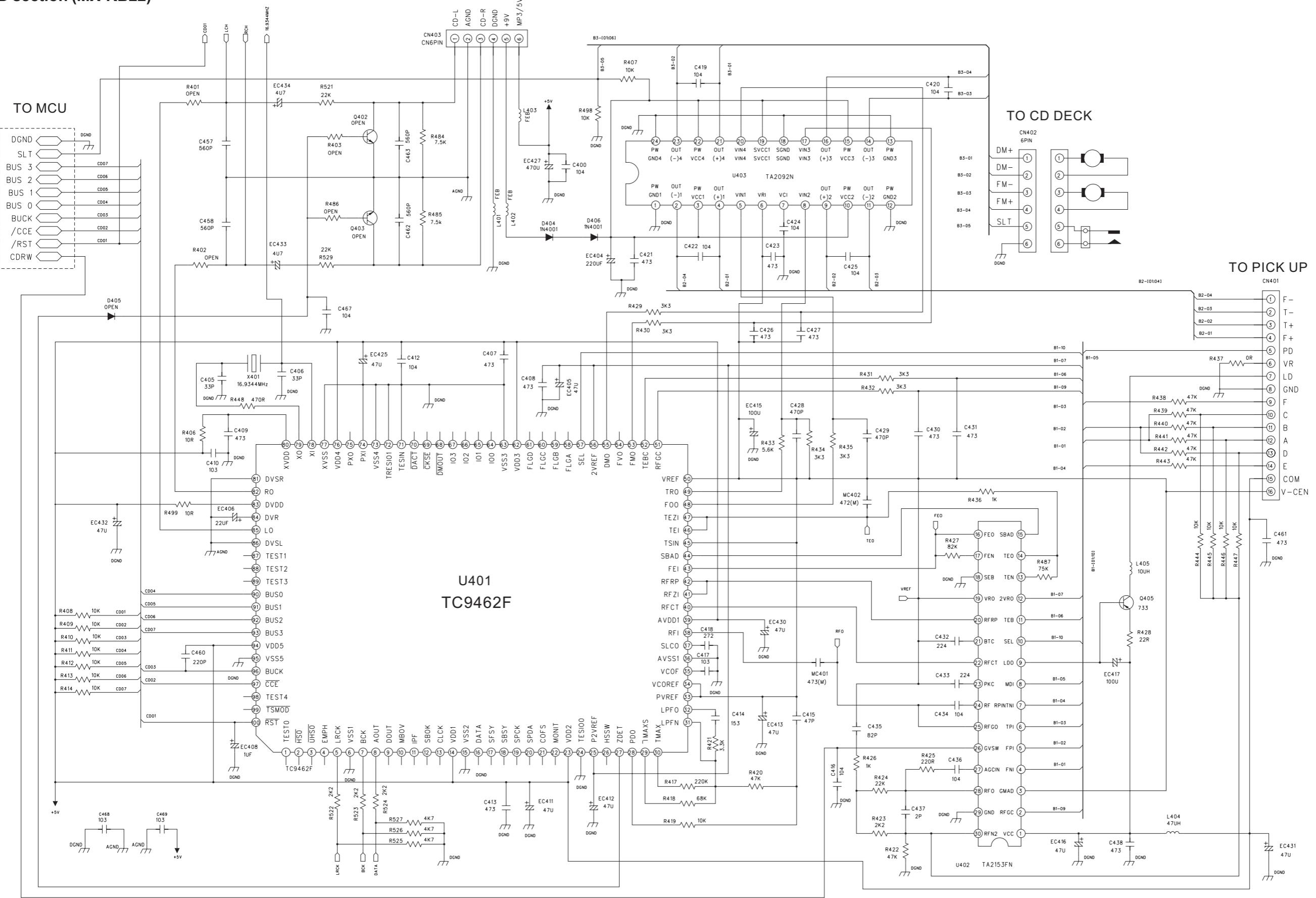
## ■ Main section (MX-KB22)



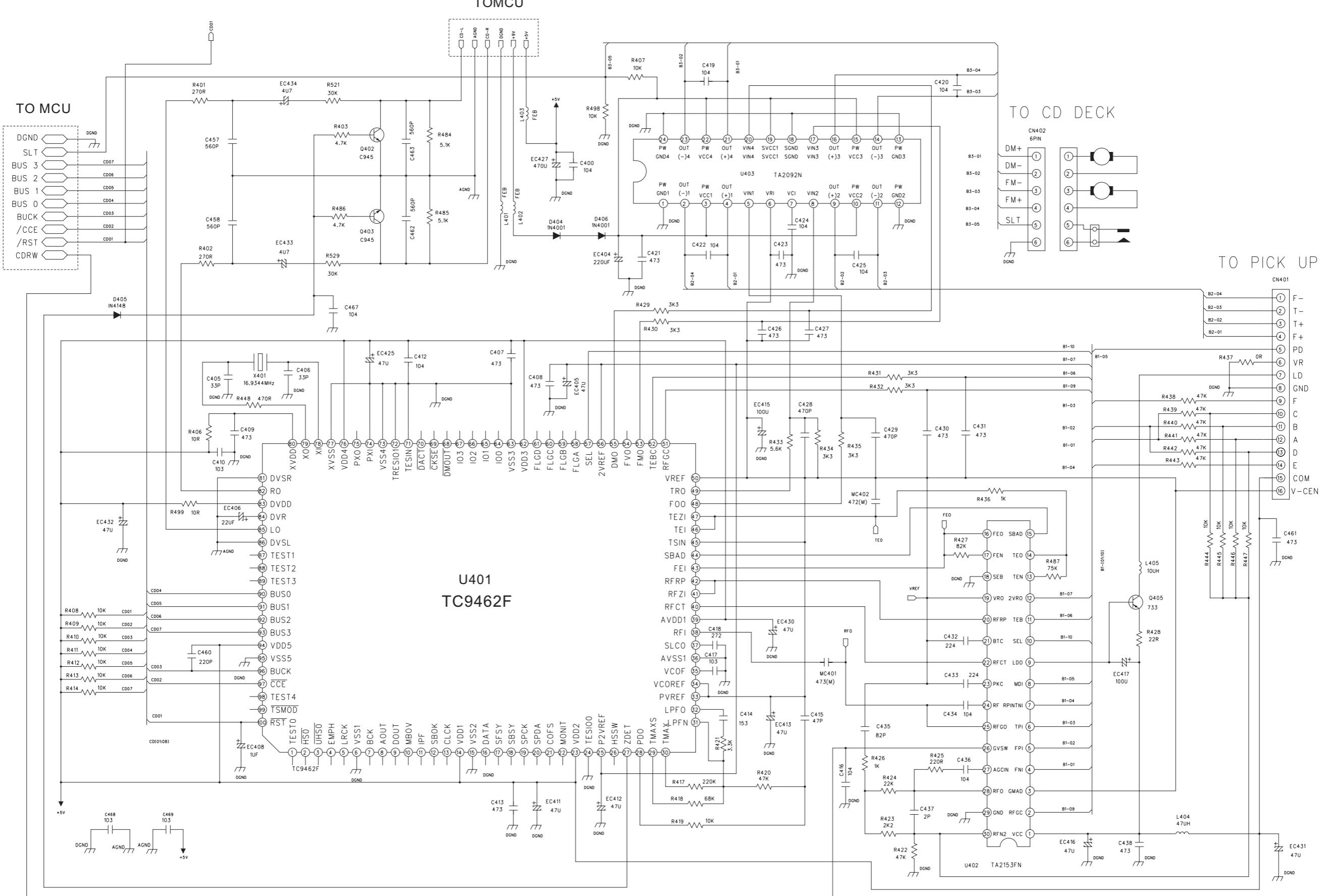
## ■ Main section (MX-KB1)



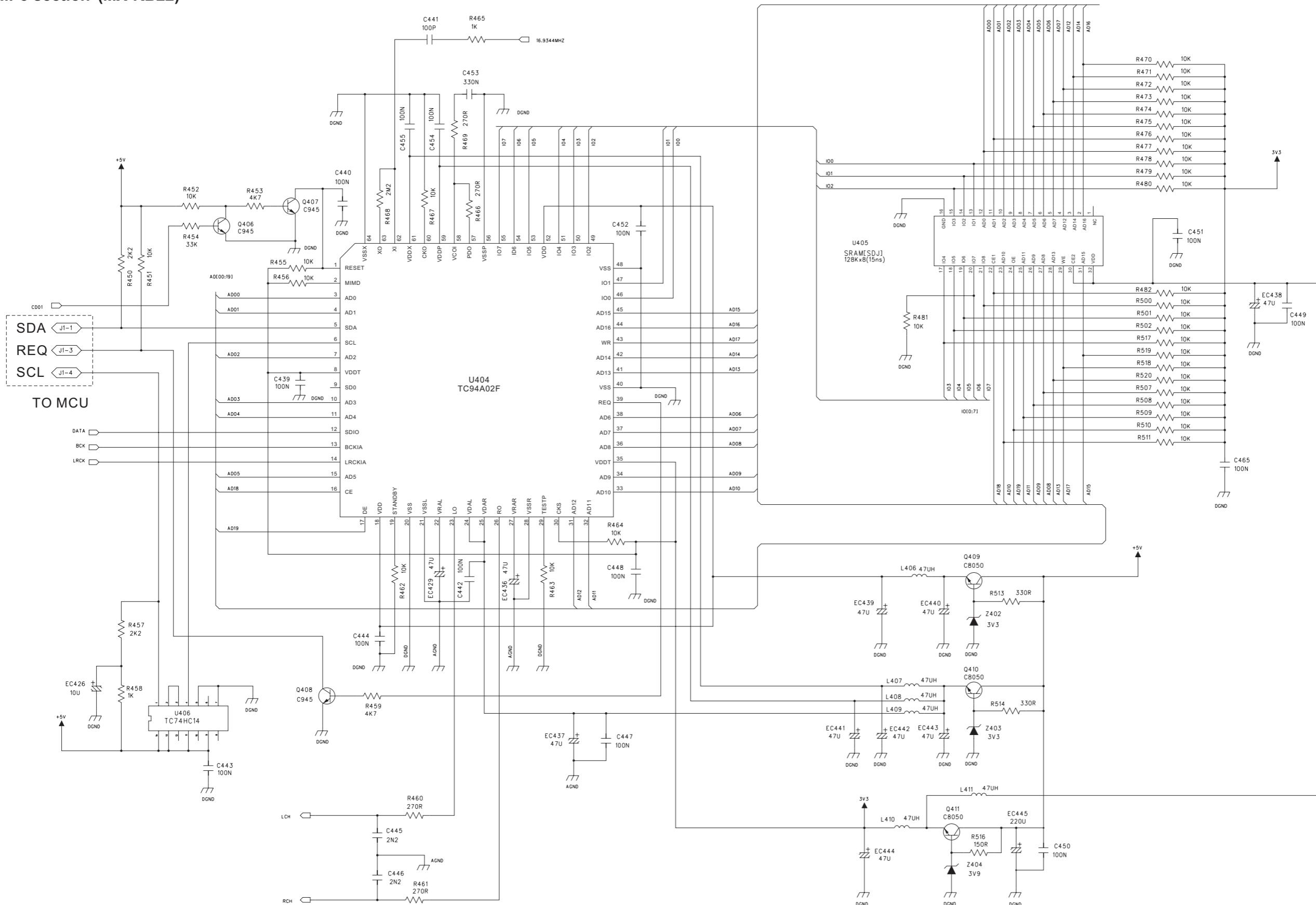
## ■ CD section (MX-KB22)



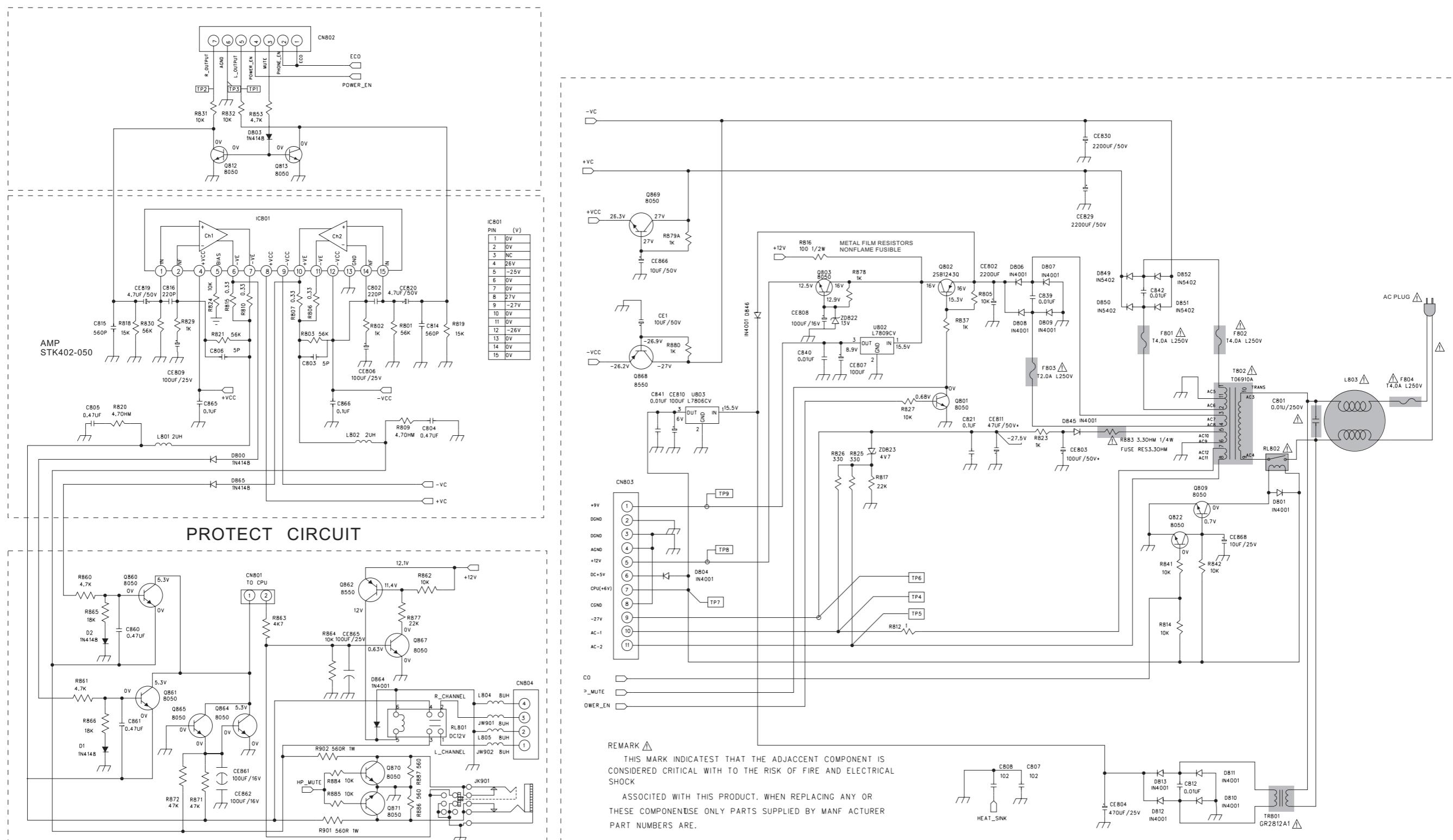
## ■ CD section (MX-KB1)



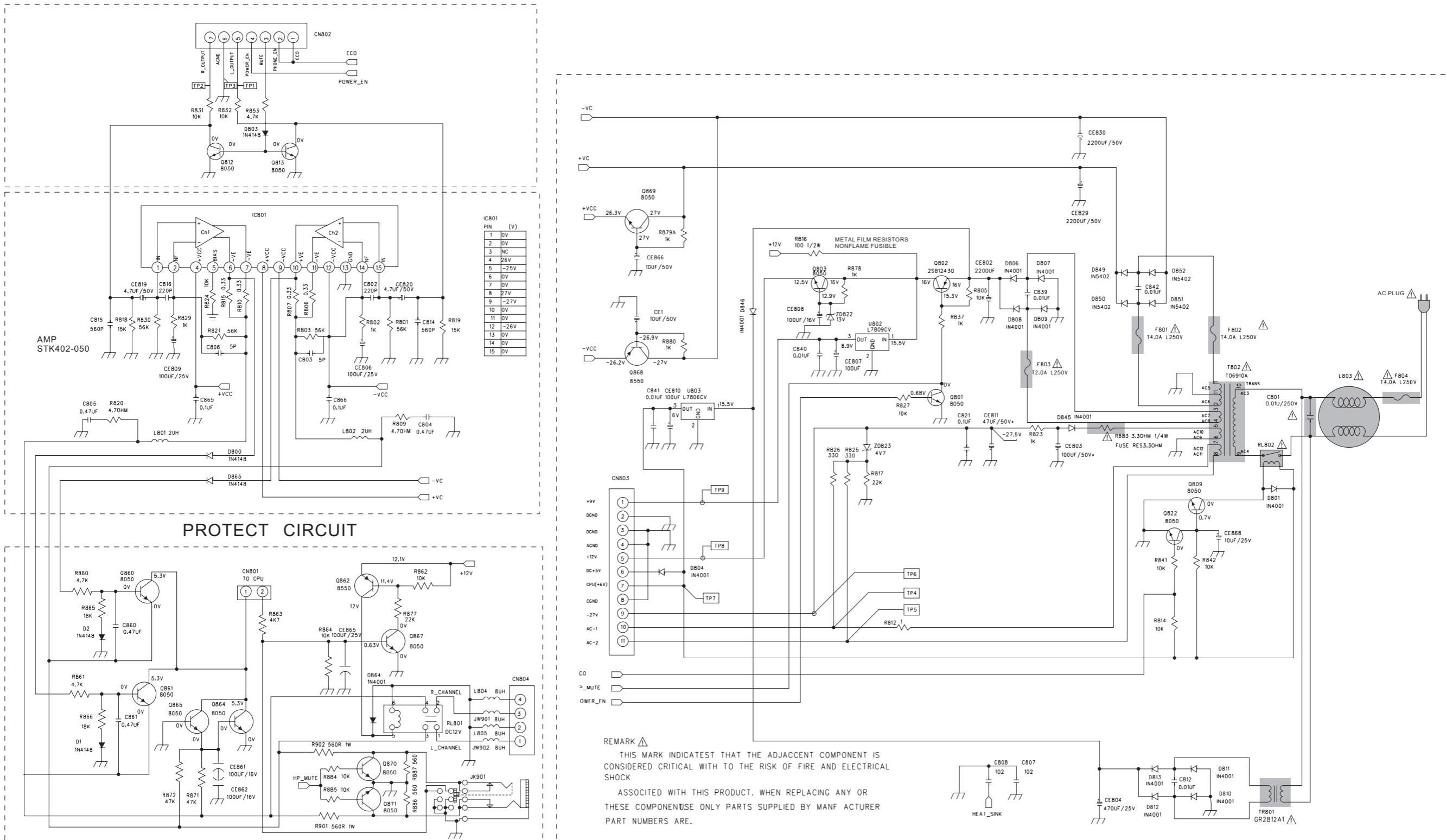
## ■ MP3 section (MX-KB22)



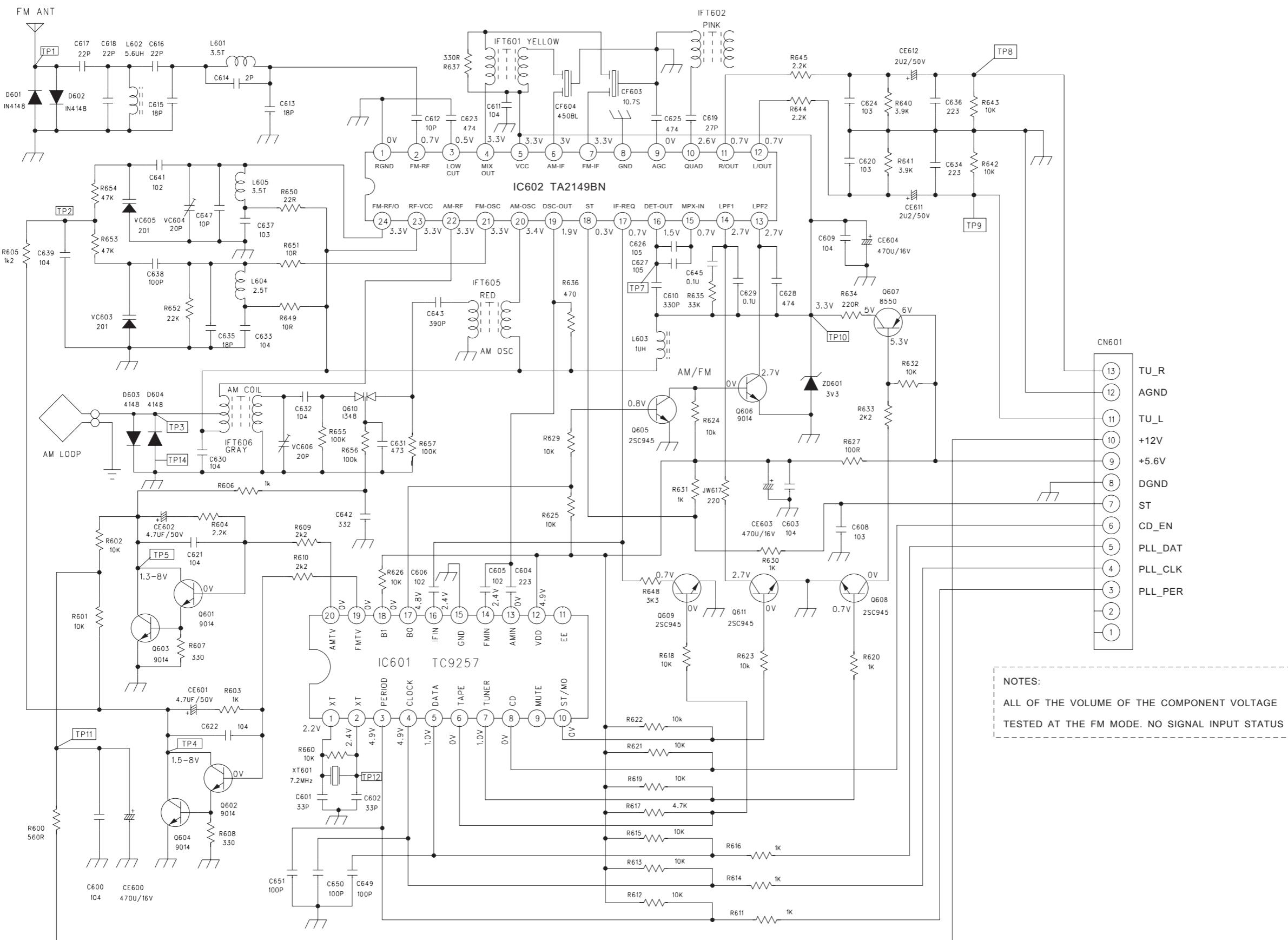
## ■ Power section (MX-KB22)



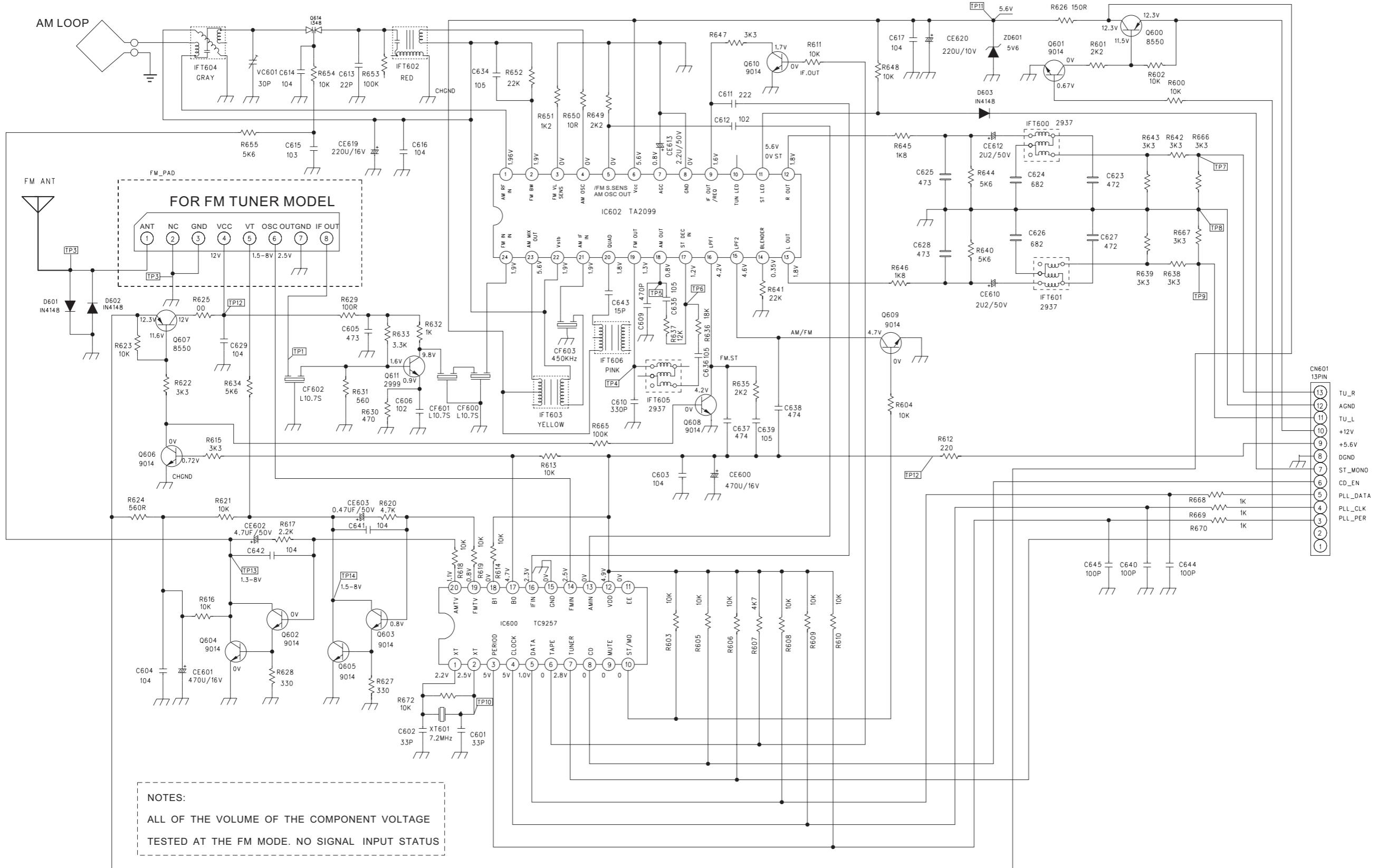
## ■ Power section (MX-KB1)



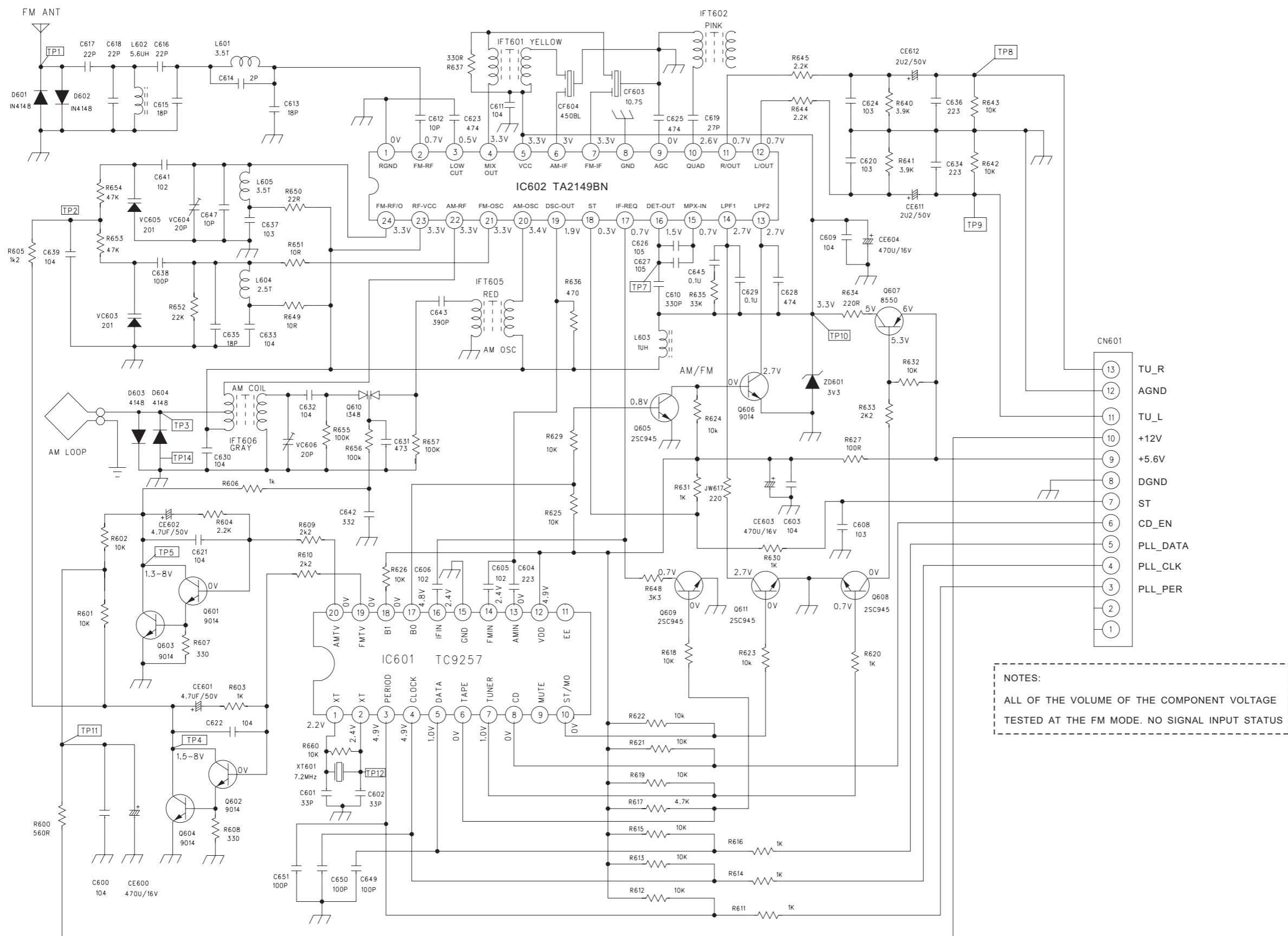
## ■ Tuner section (MX-KB22)



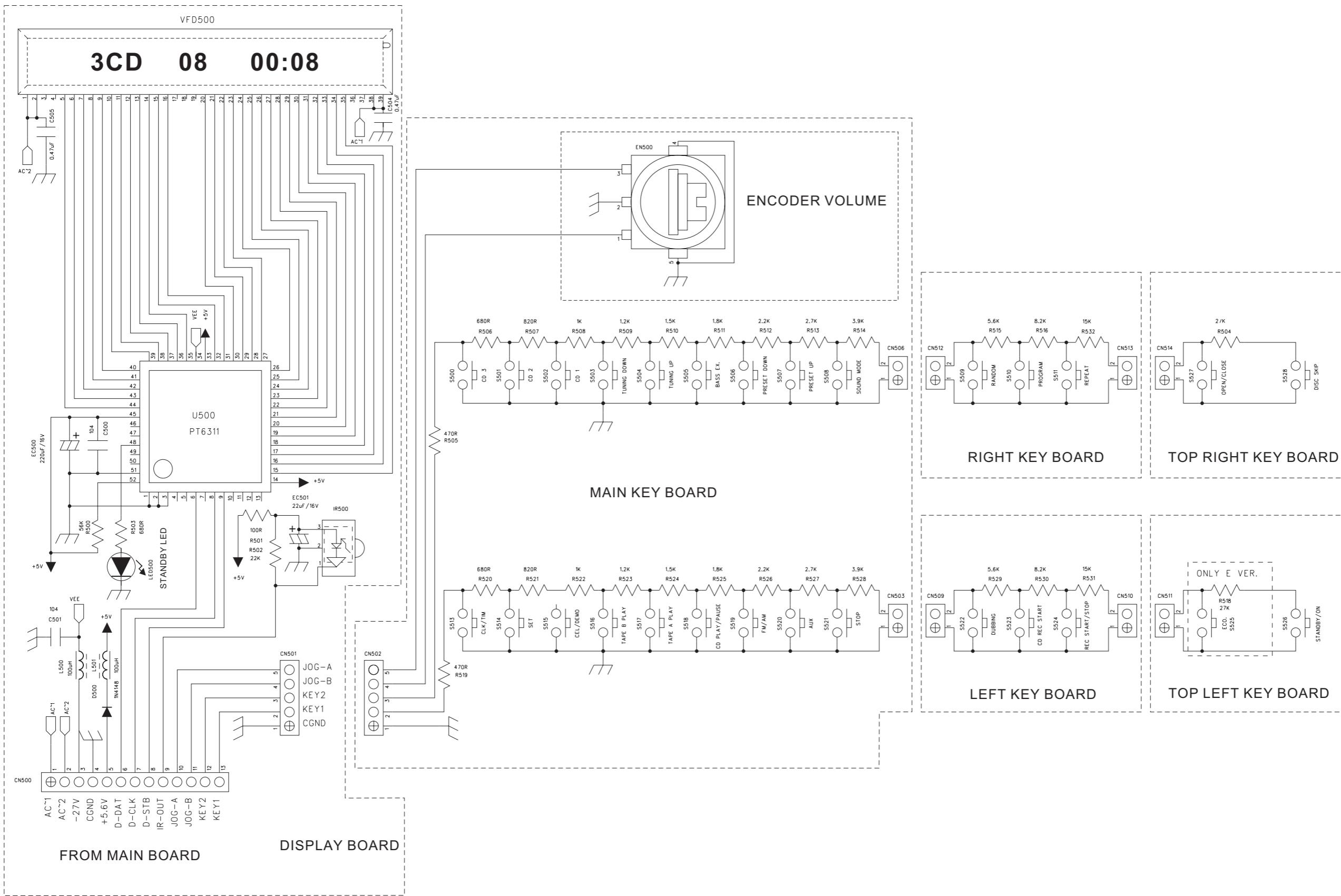
## ■ Tuner section (only MX-KB1 E/EN)



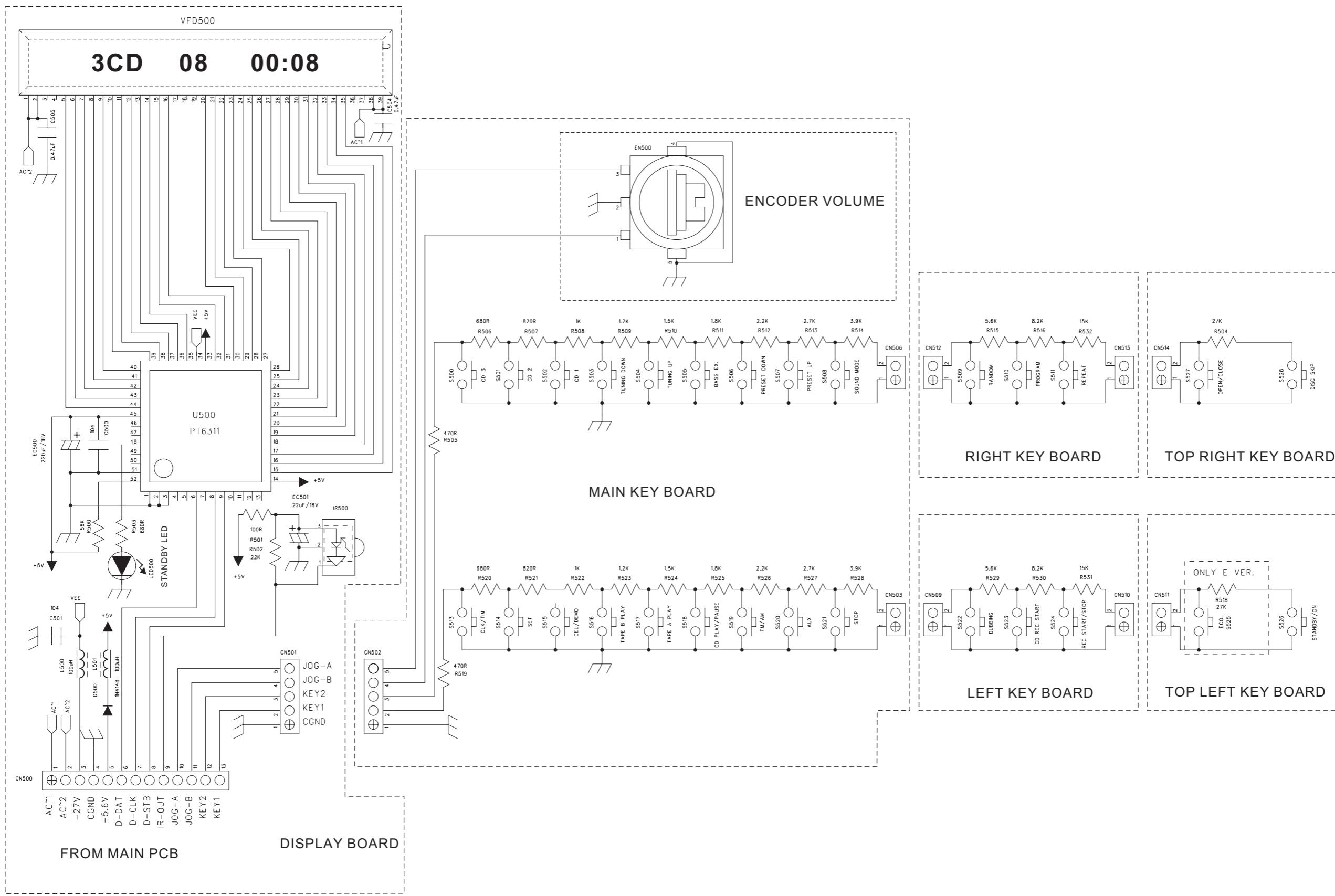
## ■ Tuner section (only MX-KB1 B/EV)



## ■ Display & Key section (MX-KB22)



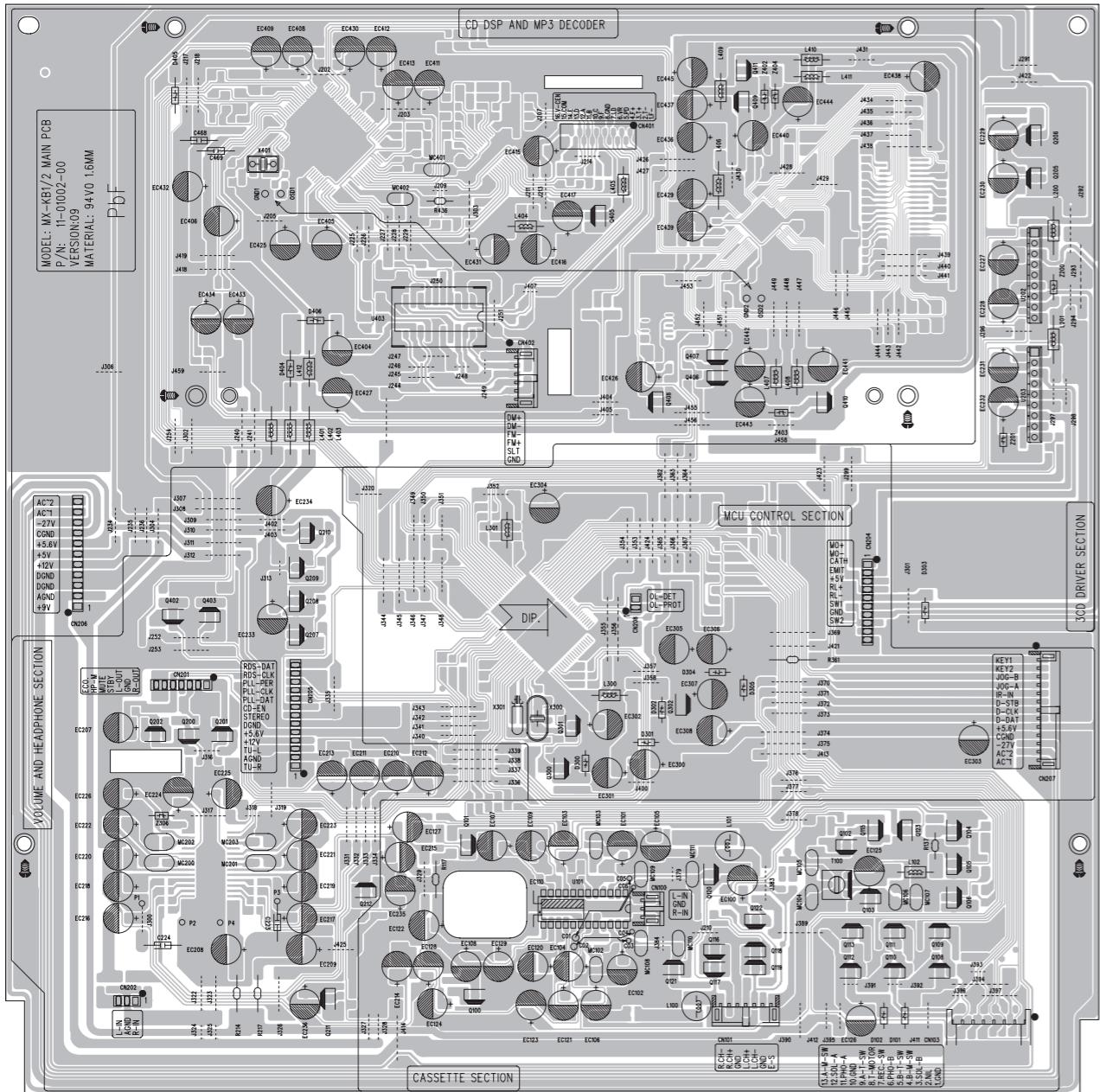
## ■ Display & key section (for MX-KB1)



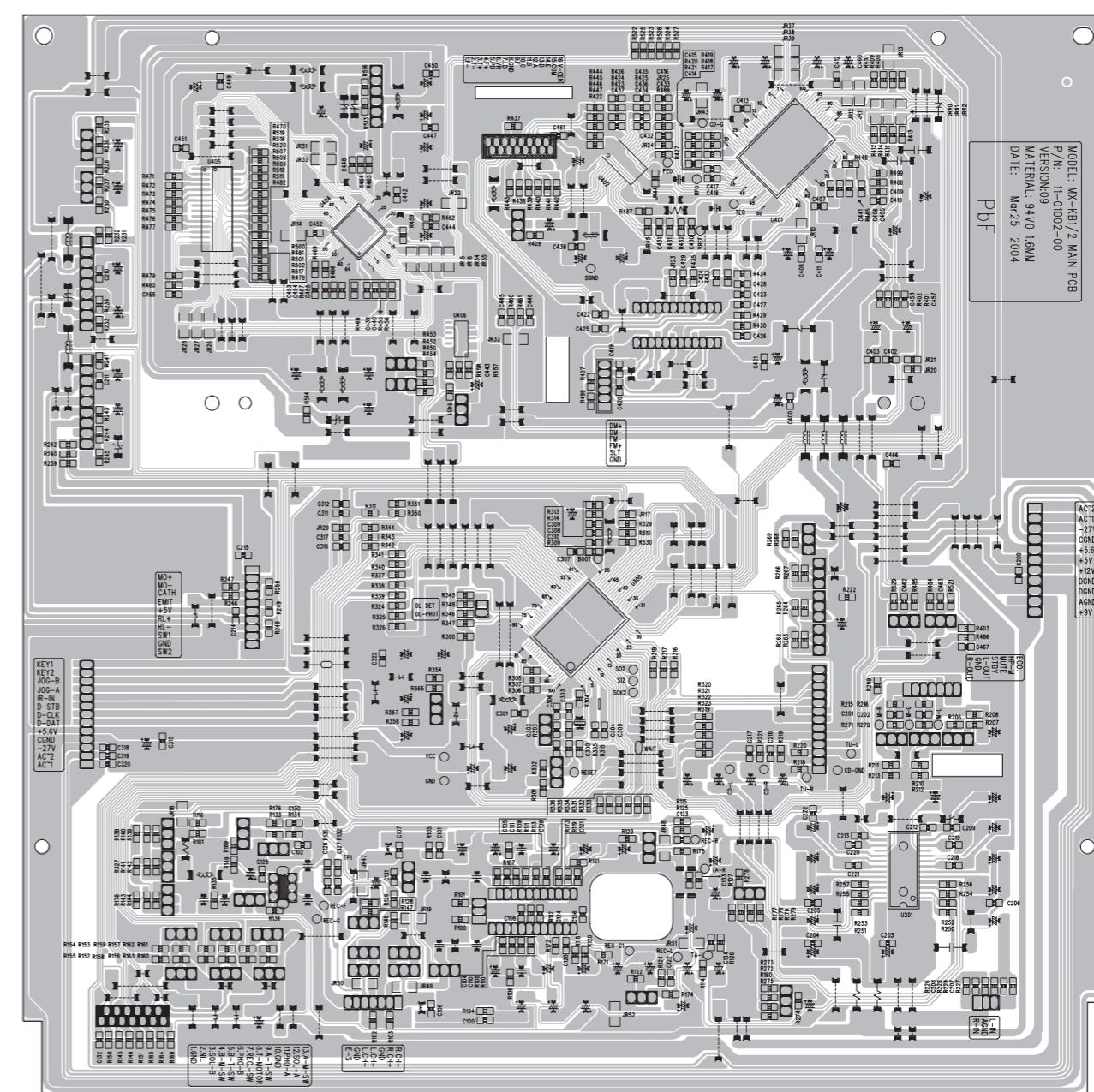
# Printed circuit boards

## ■ Main board

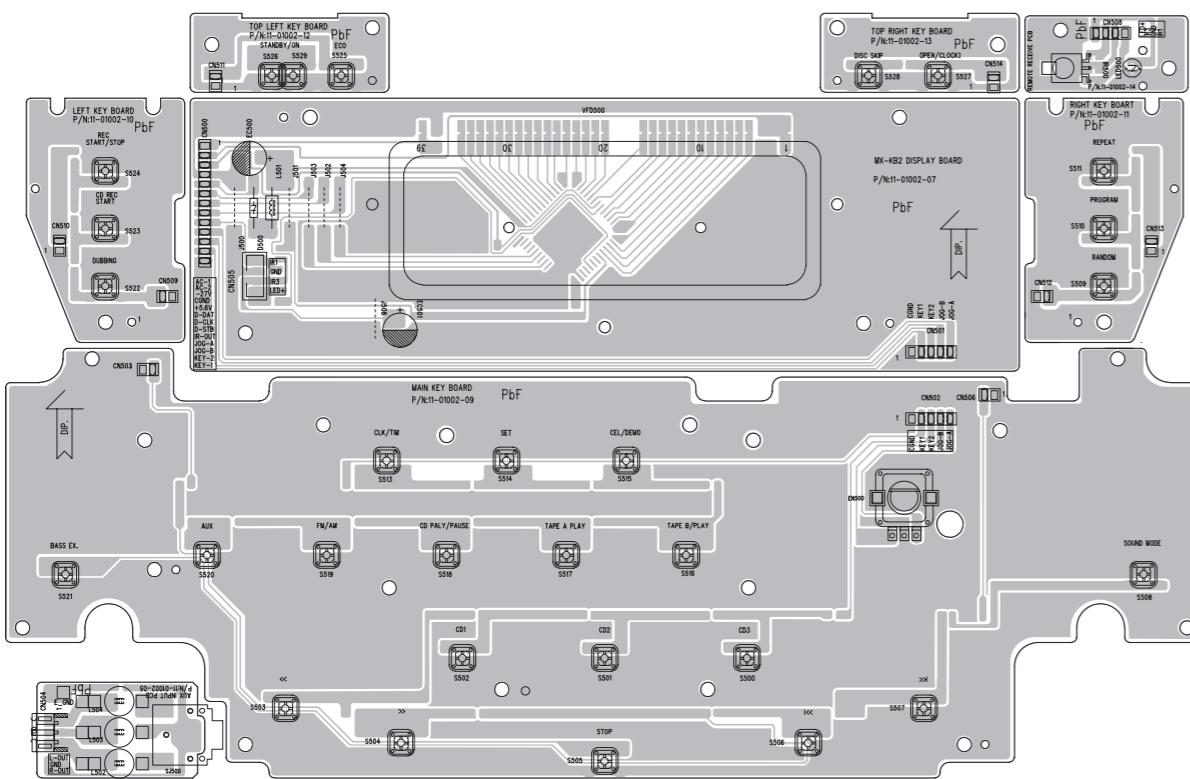
(forward side)



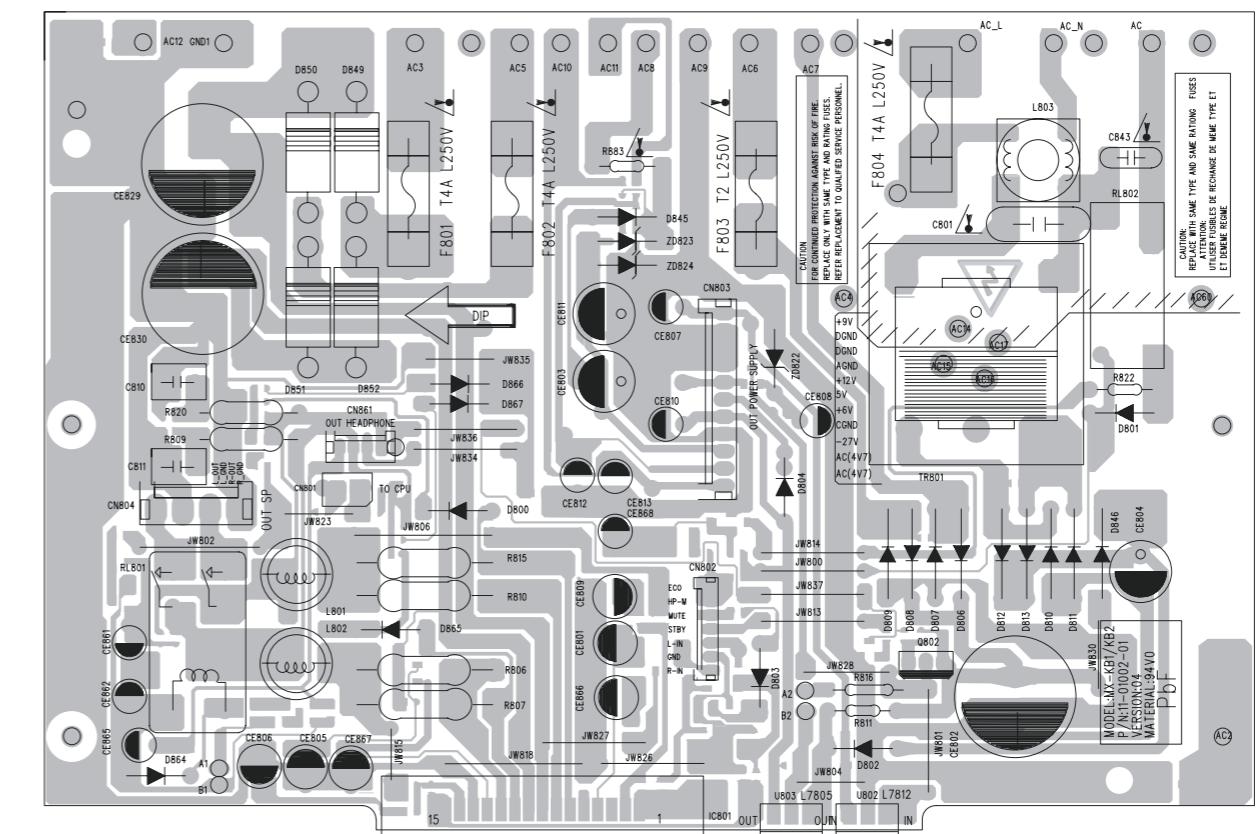
(reverse side)



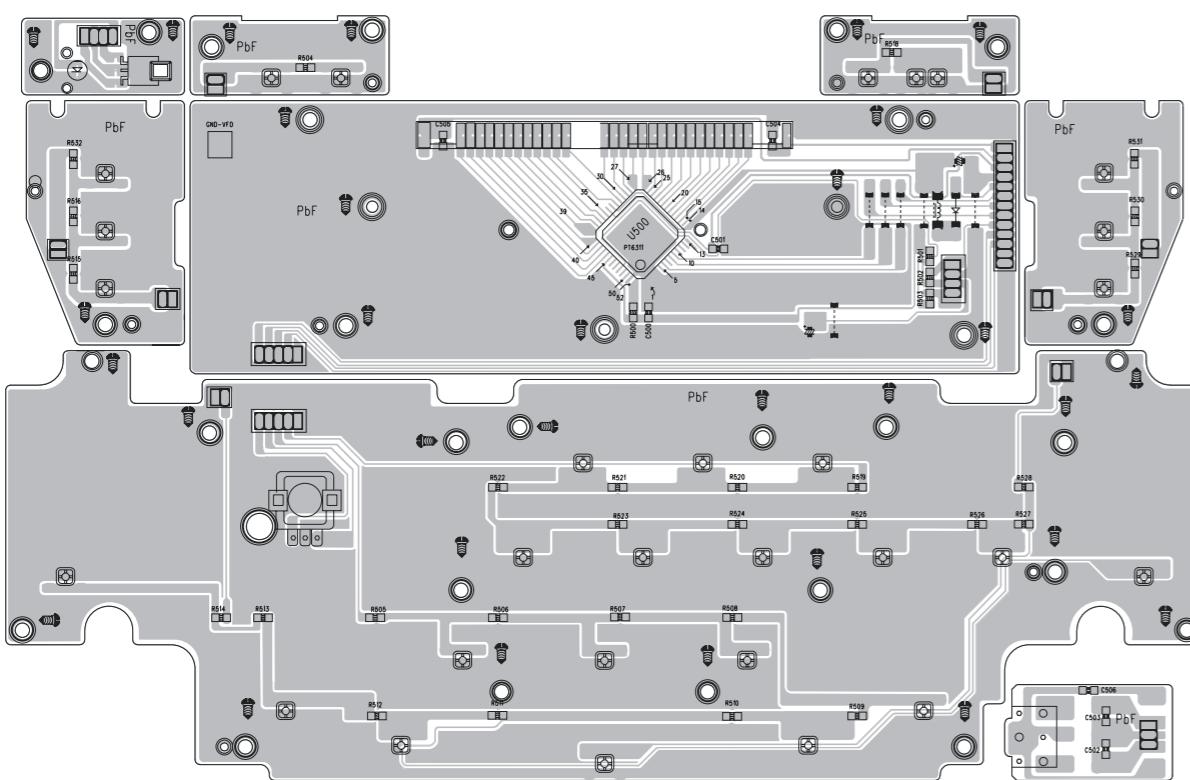
## ■ Display board (forward side)



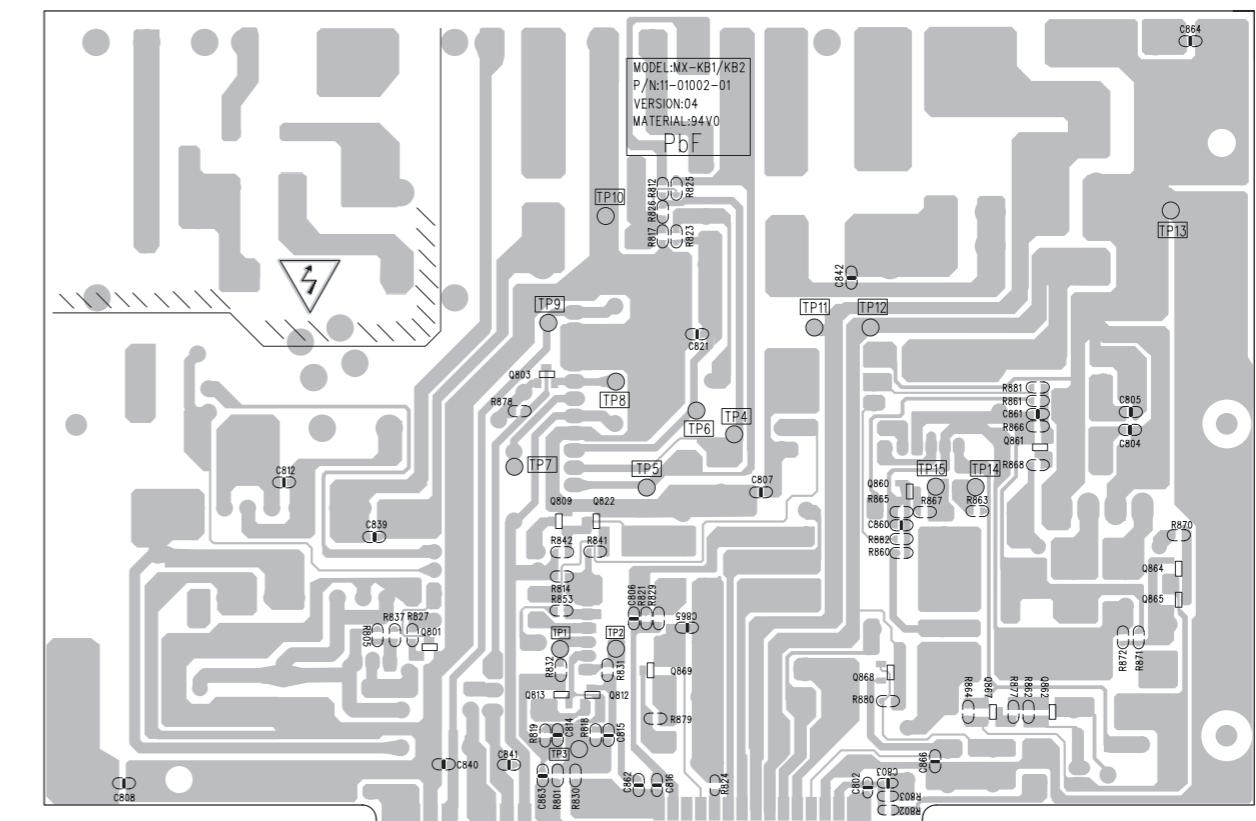
## ■ Power board (forward side)



(reverse side)

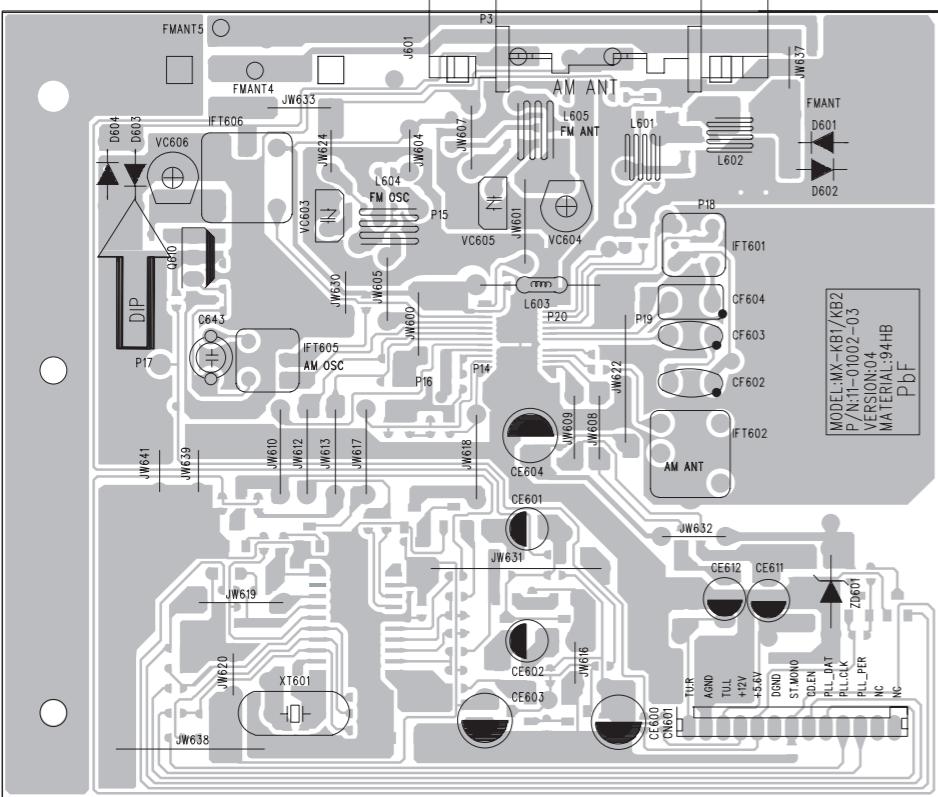


(reverse side)

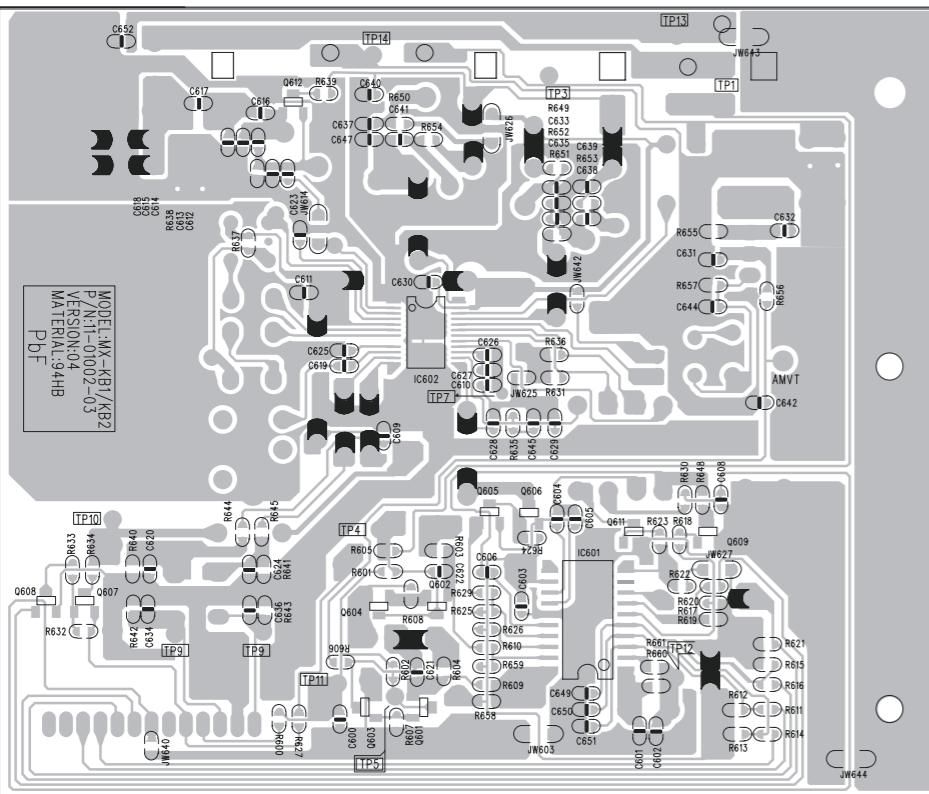


■ Tuner board for B/EV version

(forward side)

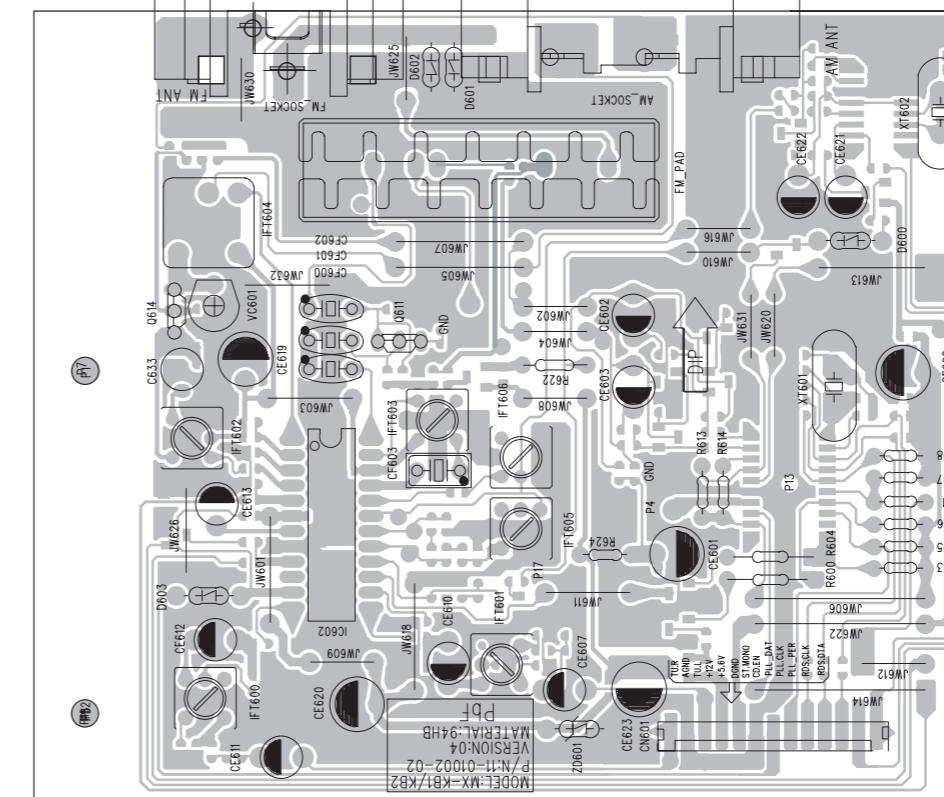


(reverse side)

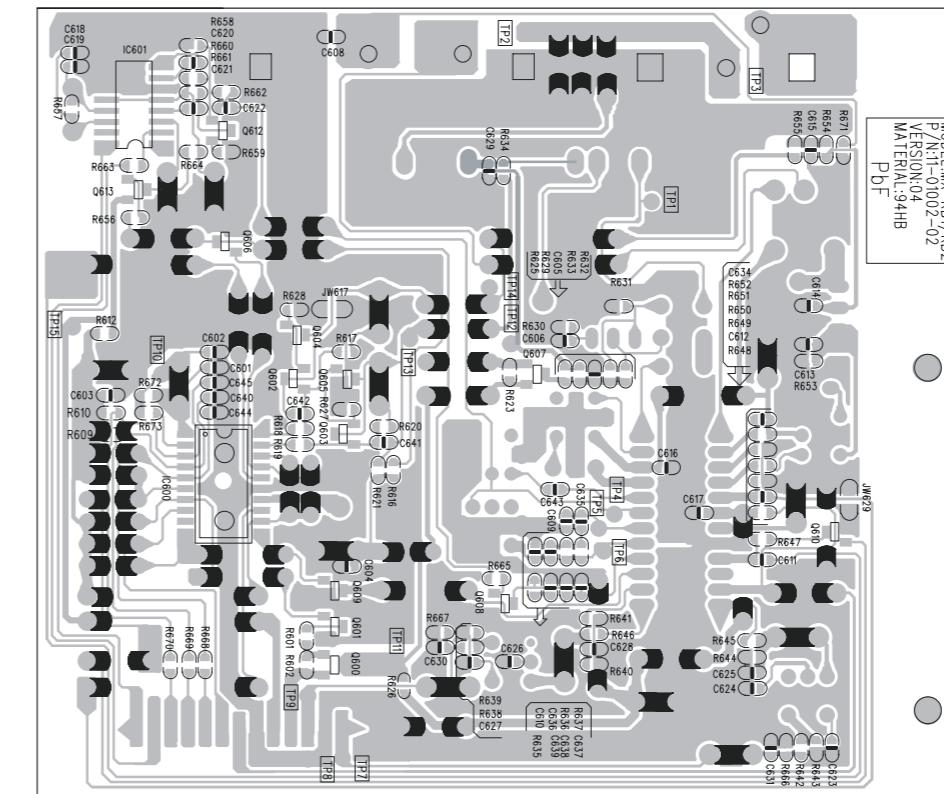


■ Tuner board for E/EN version

(forward side)

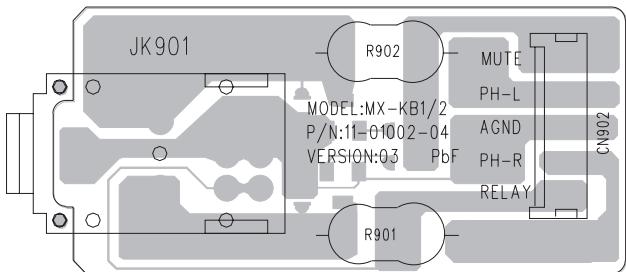


(reverse side)

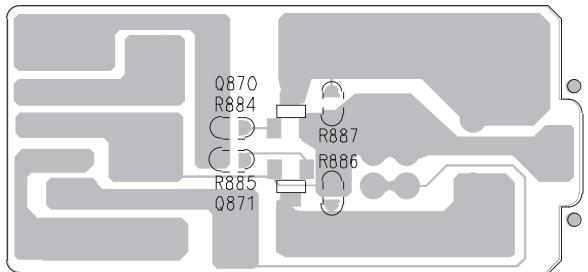


## ■ Headphone board

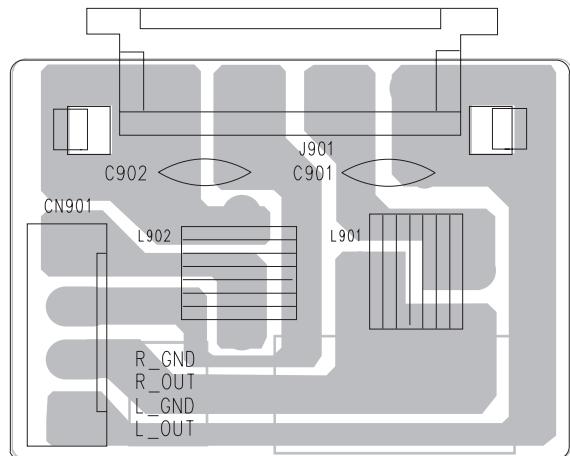
(forward side)



(reverse side)



## ■ Speaker jack board



# JVC

Victor Company of Japan, Limited

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

(No.MB306SCH)

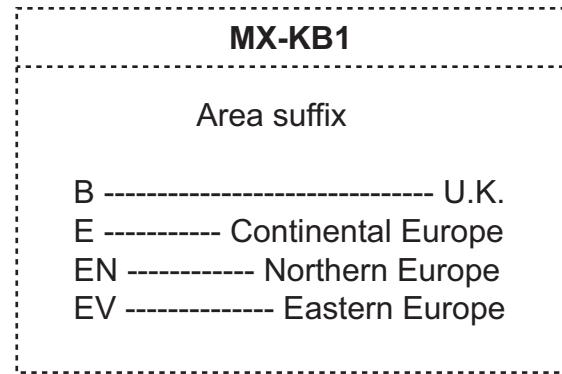
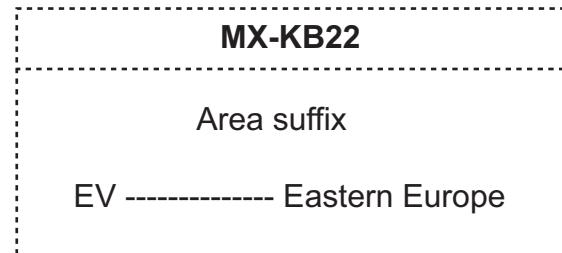


Printed in Japan  
WPC

# PARTS LIST

[ MX-KB22 ]  
[ MX-KB1 ]

\* All printed circuit boards and its assemblies are not available as service parts.

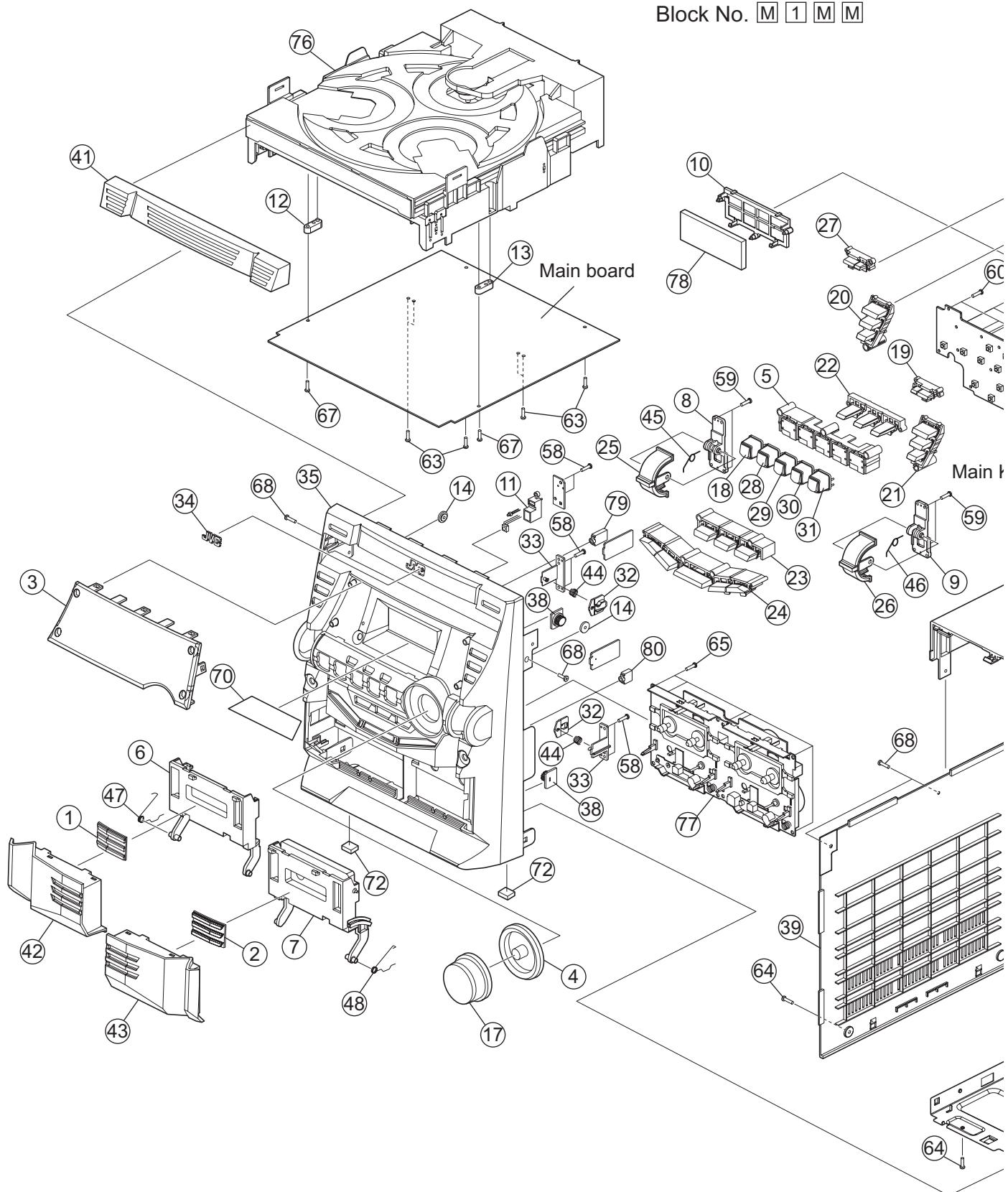


## - Contents -

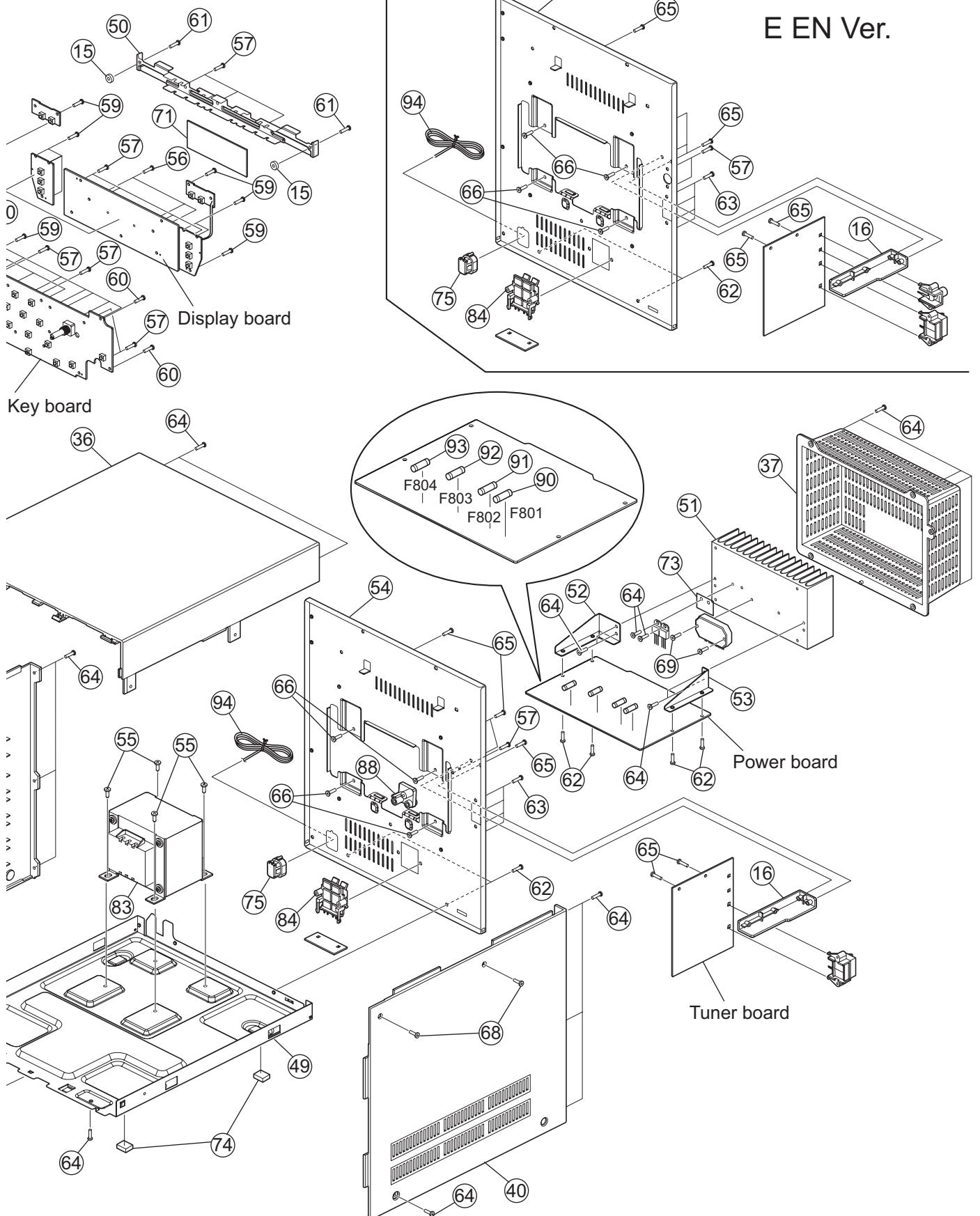
Exploded view of general assembly and parts list (Block No.M1) .....	3- 2
Electrical parts list (Block No.01~05) .....	3- 6
Packing materials and accessories parts list (Block No.M3,M4) .....	3-12

# Exploded view of general assembly and parts list

Block No. M 1 M M



E EN Ver.























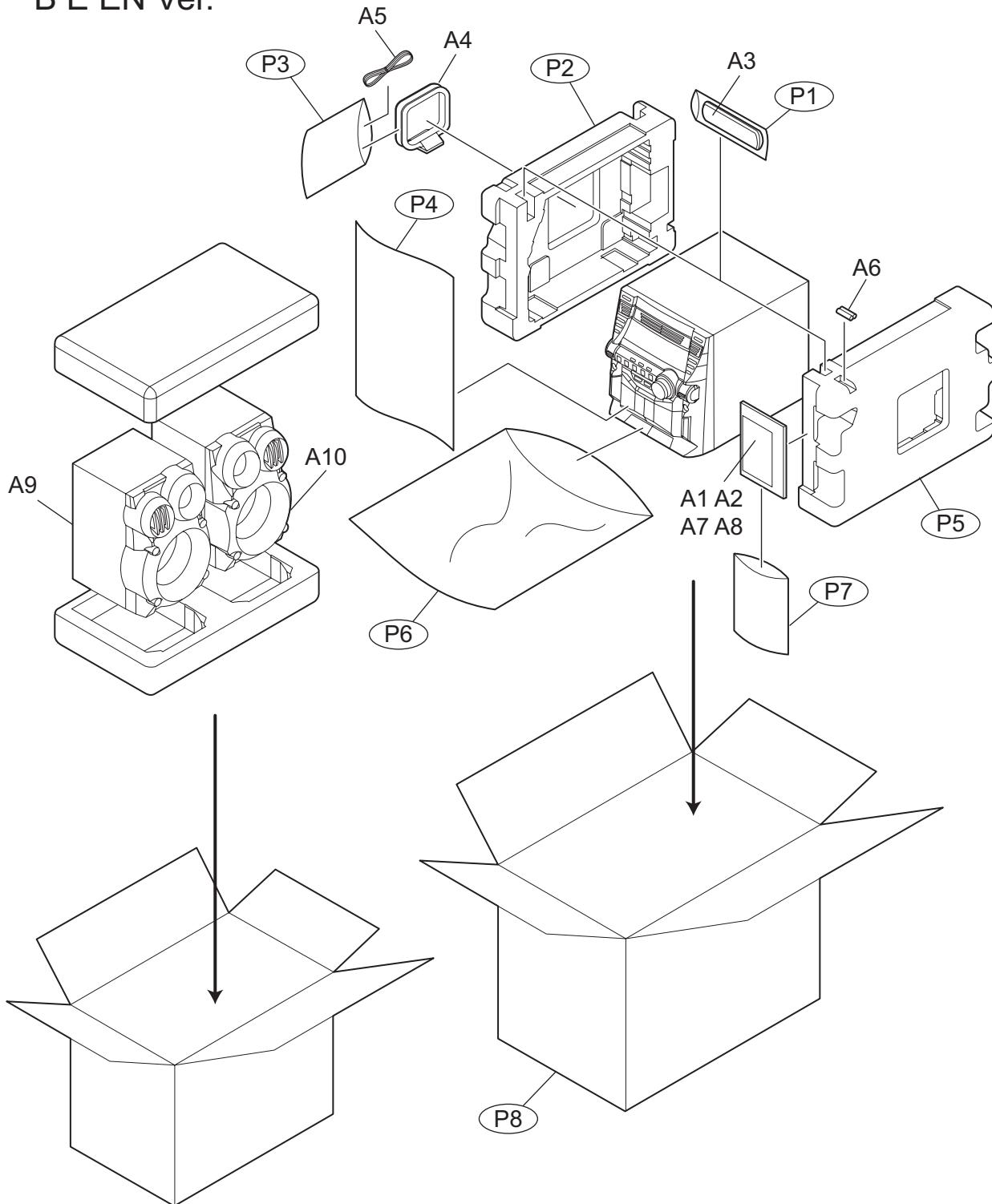


**<MEMO>**

# Packing materials and accessories parts list

Block No. M 3 M M

B E EN Ver.



## Packing and Accessories (B E EN ver.)

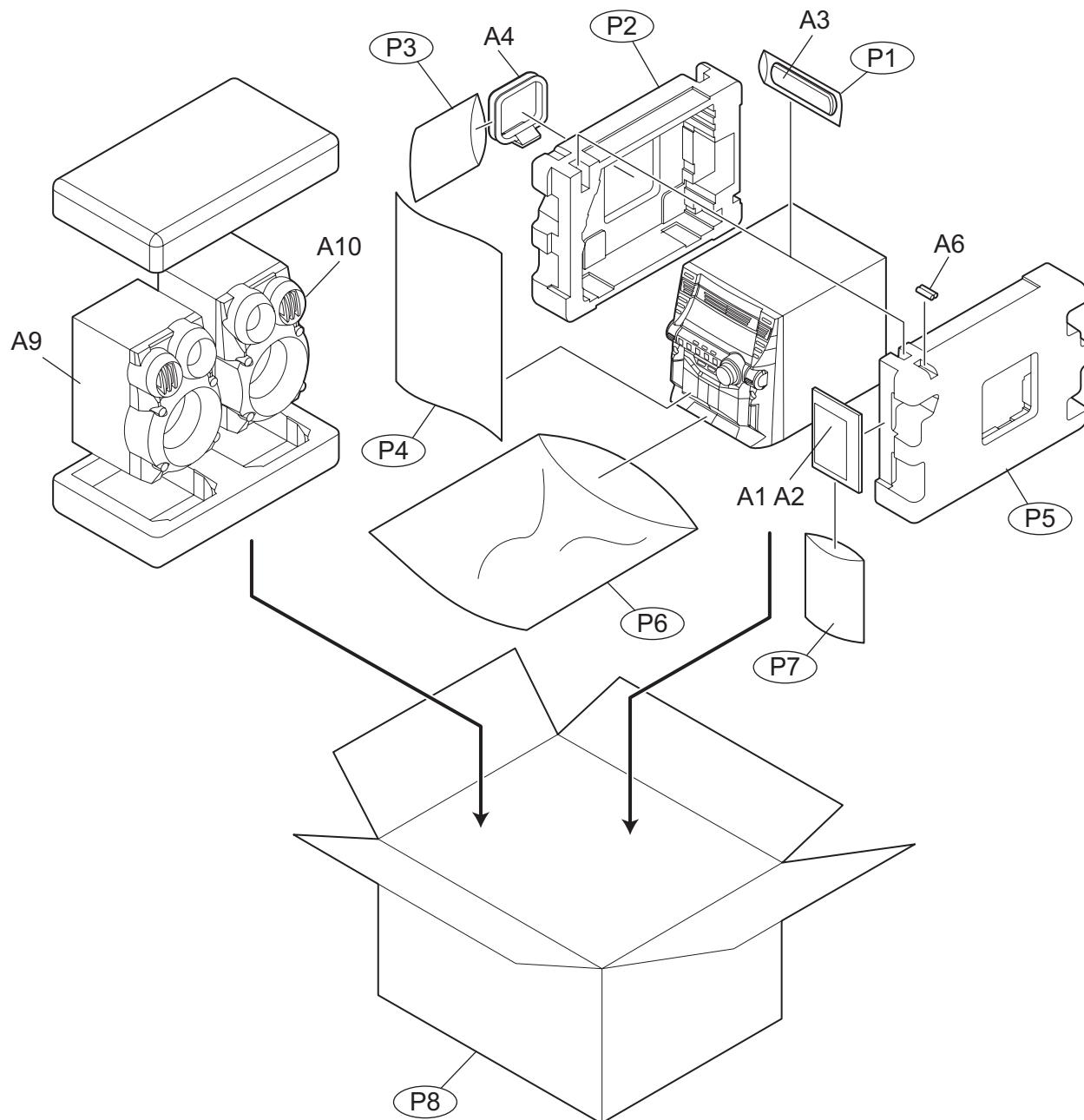
Block No. [M][3][M][M]

△	Symbol No.	Part No.	Part Name	Description	Local
A 1		OW88-01002-04	INST BOOK	LVT1251-003A ENG	B
A 1		OW88-01002-00	INST BOOK	LVT1251-004A GER FRE DUT	E
A 1		OW88-01002-06	INST BOOK	LVT1251-005A GER FRE SPA ITA SWE FIN DAN EN	
A 2		OW88-01001-19	WARRANTY CARD	BT-54023-1	
A 3		OWRM-SMXKB1A	REMOTE UNIT		
A 4		OW23-04910-81	AM ANT LOOP		
A 5		OW29-21400-80	FM ANT		E,EN
A 6	-----		BATTERY	(x2)	
A 7		OW88-00031-80	SAFETY INST	E43486-340B	B
A 8		OW88-30000-83	USER CARD	VNA3000-204	B
A 9		MXKB1E-SPBOX-L	SPEAKER BOX L	OW00-01001-12	
A 10		MXKB1E-SPBOX-R	SPEAKER BOX R	OW00-01001-12	
P 1		OW85-00025-81A	POLY BAG		
P 2		OW86-01001-00	POLYFOAM	LEFT	
P 3		OW85-90710-84	POLY BAG		
P 4		OW81-01001-04	SHEET SPONGE		
P 5		OW86-01001-01	POLYFOAM	RIGHT	
P 6		OW85-92434-40	POLY BAG		
P 7		OW85-91014-82	POLY BAG		
P 8		OW89-01001-20	CARTON BOX		

# Packing materials and accessories parts list

Block No. M 4 M M

EV Ver.



## Packing and Accessories (EV ver.)

Block No. [M][4][M][M]

△	Symbol No.	Part No.	Part Name	Description	Local
A 1		OW88-01002-07	INST BOOK	LVT1251-006A CZE POL HUN RUS	
A 2		OW88-01001-18	WARRANTY CARD	BT-54023-1	KB1
A 2		OW88-01002-12	WARRANTY CARD	BT-54023-1	KB22
A 3		OWRM-SMXKB1A	REMOTE UNIT		KB1
A 3		OWRM-SMXKB2A	REMOTE UNIT		KB22
A 4		OW23-04910-81	AM ANT LOOP		
A 6	-----	BATTERY	(x2)		
A 9		MXKB1EV-SPBOX-L	SPEAKER BOX L	OW00-01001-11	KB1
A 9		MXKB22EVSPBOX-L	SPEAKER BOX L	OW00-01002-05	KB22
A 10		MXKB1EV-SPBOX-R	SPEAKER BOX R	OW00-01001-11	KB1
A 10		MXKB22EVSPBOX-R	SPEAKER BOX R	OW00-01002-05	KB22
P 1		OW85-00025-81A	POLY BAG		
P 2		OW86-01001-00	POLYFOAM	LEFT	
P 3		OW85-90710-84	POLY BAG		
P 4		OW81-01001-04	SHEET SPONGE		
P 5		OW86-01001-01	POLYFOAM	RIGHT	
P 6		OW85-92434-40	POLY BAG		
P 7		OW85-91014-82	POLY BAG		
P 8		OW89-01002-05	CARTON BOX		KB1
P 8		OW89-01002-10	CARTON BOX		KB22