

Service
Service
Service



Service Manual



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**CLASS 1
LASER PRODUCT**

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Published by LX 1042 Service Audio Subject to modification

3141 785 34892

Version 1.2



PHILIPS

TECHNICAL SPECIFICATION

Amplifier

Total output power 2 x 10 W RMS

Frequency response 80 Hz - 16 kHz, ± 3 dB

Signal to noise ratio > 60 dB

MP3 link input 0.5 V RMS 20 k Ω

Disc

Laser type Semiconductor

Disc diameter 12 cm /8 cm

Support disc CD-DA, CD-R, CD-RW, MP3-CD, WMA-CD

Audio DAC 24 Bits / 44.1 kHz

Total harmonic distortion < 1.5%

Frequency response 60 Hz -16 kHz (44.1 kHz)

Signal to noise ratio > 55 dBA

Tuner

Tuning range FM: 87.5 - 108 MHz

Tuning grid 50 KHz

Number of presets 20

Speakers

Speaker impedance 2 x 10 W, 6 Ω

General information

AC power 100-240V~, 50/60HZ

Operation Power 15 W

Consumption

Standby Power Consumption 1 W

Eco Power Standby Power 0.8 W

Consumption

USB Direct Version 2.0/1.1

Dimensions 565 x 245 x

- Main Unit (W x H x D) 104 mm

Weight

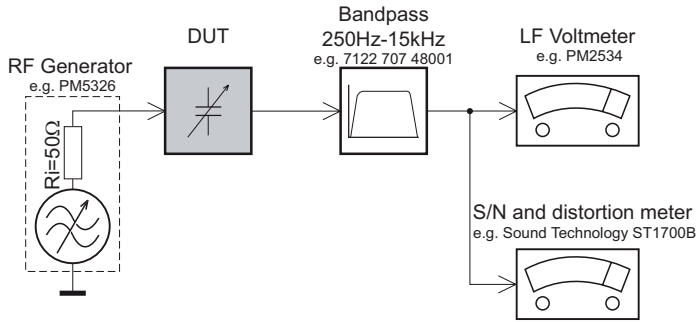
- Main Unit 2.7 kg

VERSION VARIATION

Type /Versions: Board in used: Service policy	MCM233								
	/12				/55	/78		/79	/98
LCD BOARD	C				C	C		M/C	
KEY BOARD	C				C	C		C	
POWER KEY BOARD	C				C	C		C	
OPEN/CLOSE BOARD	C				C	C		C	
REMOTE INCEPT BOARD	C				C	C		C	
RADIO BOARD	C				C	C		C	
MAIN BOARD	C				C	M/C		M/C	
USB BOARD	C				C	C		C	
Type /Versions: Features Feature difference	MCM233								
	/12				/55	/78		/79	/98
RDS & DAB	√				√				
VOLTAGE SELECTOR									
ECO STANDBY - DARK	√							√	
* TIPS : C -- Component Lever Repair. M -- Module Lever Repair √ -- Used									

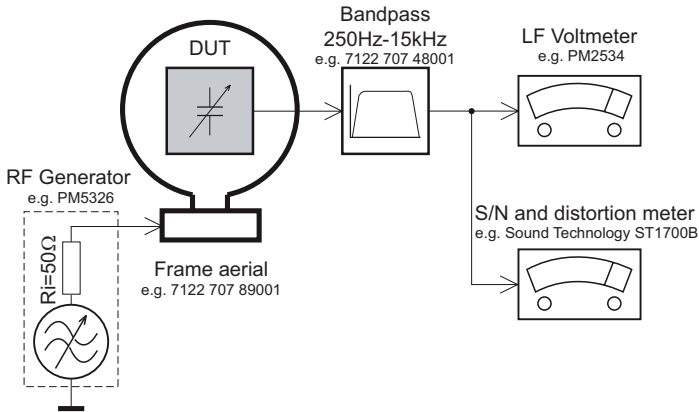
MEASUREMENT SETUP

Tuner FM



Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilotone (19kHz, 38kHz).

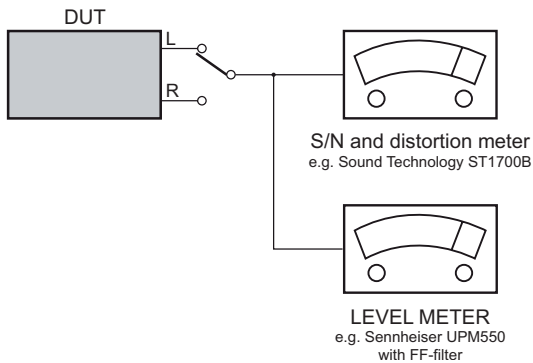
Tuner AM (MW,LW)



To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday's cage. Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

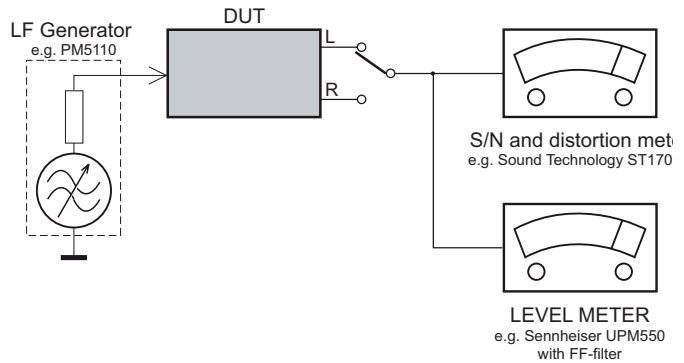
CD

Use Audio Signal Disc SBC429 4822 397 30184 (replaces test disc 3)



Recorder

Use Universal Test Cassette Cr02 SBC419 4822 397 30069 or Universal Test Cassette Fe SBC420 4822 397 30071



SERVICE AIDS

GB WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.

When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

ESD



GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used

Safety components are marked by the symbol Δ .

**CLASS 1
LASER PRODUCT**

INFORMATION ABOUT LEAD-FREE SOLDERING

Philips CE is producing lead-free sets from 1.1.2005 onwards.

IDENTIFICATION:

Regardless of special logo (not always indicated) one must treat all sets from 1 Jan 2005 onwards, according next rules:



- On our website www.atyourservice.ce.Philips.com you find more information to:
 - * BGA-de-/soldering (+ baking instructions)
 - * Heating-profiles of BGAs and other ICs used in Philips-sets
 - * Lead free

You will find this and more technical information within the "magazine", chapter "workshop news".

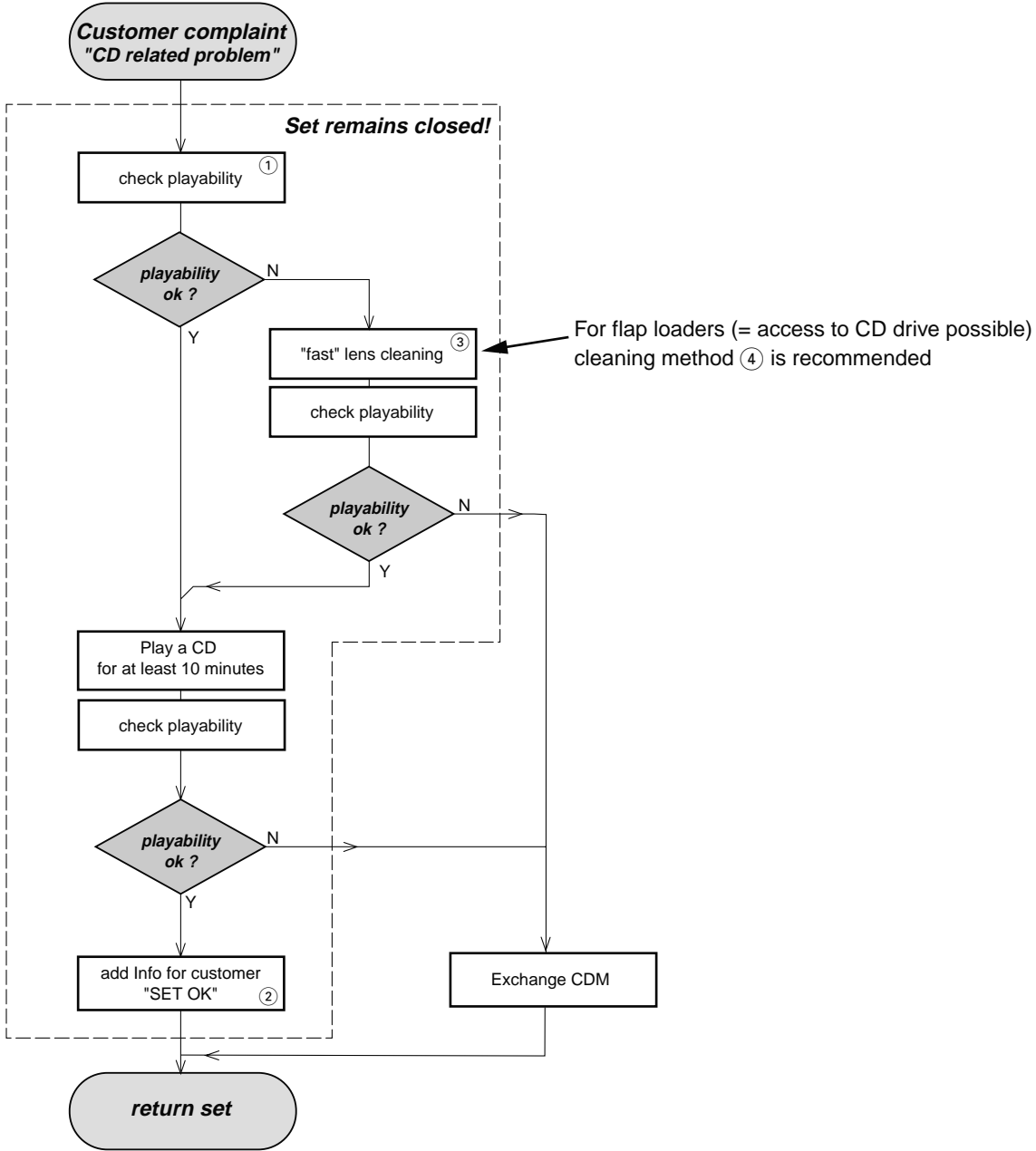
For additional questions please contact your local repair-helpdesk.

SERVICE INSTRUCTION

Safety regulations require that after a repair, the set must be returned in its original condition. Pay in particular attention to the following points:

- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the AC Power lead for external damage.
- Check the strain relief of the AC Power cord for proper function.
- Check the electrical DC resistance between the AC Power Plug and the secondary side (only for sets which have a AC Power isolated power supply):
 1. Unplug the AC Power cord and connect a wire between the two pins of the AC Power plug.
 2. Set the AC Power switch to the "on" position (keep the AC Power cord unplugged!).
 3. Measure the resistance value between the pins of the AC Power plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be larger than 4.5 Mohm (For U.S. it should be between 4.2 Mohm and 12 Mohm).
 4. Switch "off" the set, and remove the wire between the two pins of the AC Power plug.
- Check the cabinet for defects, to avoid touching of any inner parts by the customer.

INSTRUCTIONS ON CD PLAYABILITY



① - ④ For description - see following pages

INSTRUCTIONS ON CD PLAYABILITY

①

PLAYABILITY CHECK

For sets which are compatible with **CD-RW** discs
 use CD-RW Printed Audio Disc7104 099 96611
 TR 3 (Fingerprint)
 TR 8 (600µ Black dot) **maximum at 01:00**

- playback of these two tracks without audible disturbance
 playing time for: Fingerprint ≥ 10 seconds
 Black dot from 00:50 to 01:10
- jump forward/backward (search) within a reasonable time

For all other sets
 use CD-DA SBC 444A4822 397 30245
 TR 14 (600µ Black dot) **maximum at 01:15**
 TR 19 (Fingerprint)
 TR 10 (1000µ wedge)

- playback of all these tracks without audible disturbance
 playing time for: 1000µ wedge ≥ 10 seconds
 Fingerprint ≥ 10 seconds
 Black dot from 01:05 to 01:25
- jump forward/backward (search) within a reasonable time

②

CUSTOMER INFORMATION

It is proposed to add an addendum sheet to the set which informs the customer that the set has been checked carefully - but no fault was found.

The problem was obviously caused by a scratched, dirty or copy-protected CD. In case problems remain, the customer is requested to contact the workshop directly.

The lens cleaning (method ③) should be mentioned in the addendum sheet.

The final wording in national language as well as the printing is under responsibility of the Regional Service Organizations.

④

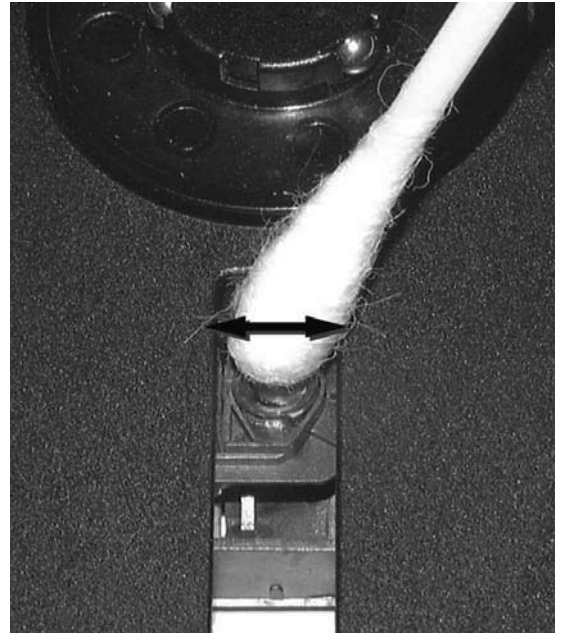
LIQUID LENS CLEANING

Before touching the lens it is advised to clean the surface of the lens by blowing clean air over it. This to avoid that little particles make scratches on the lens.

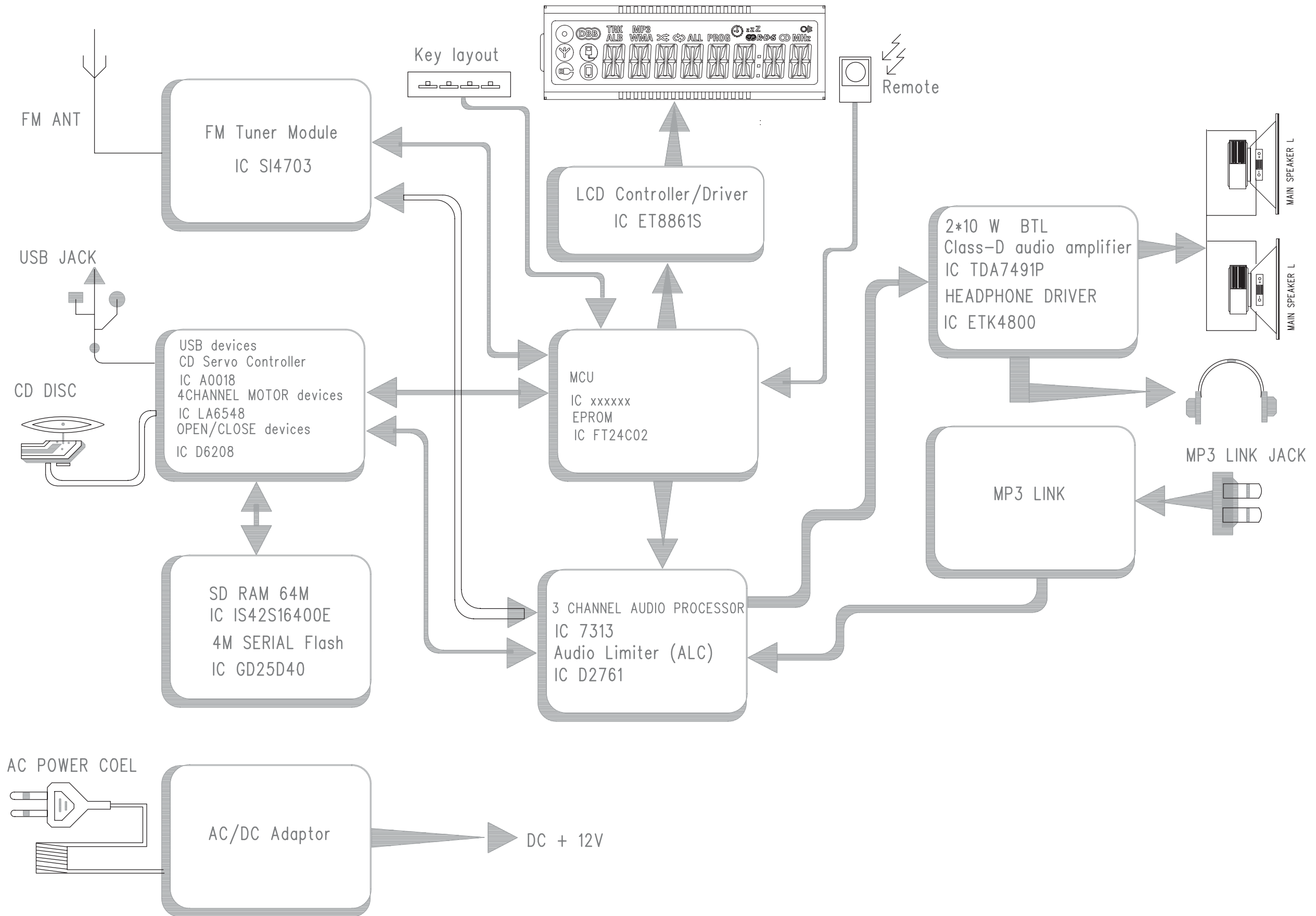
Because the material of the lens is synthetic and coated with a special anti-reflectivity layer, cleaning must be done with a non-aggressive cleaning fluid. It is advised to use "Cleaning Solvent

The actuator is a very precise mechanical component and may not be damaged in order to guarantee its full function. Clean the lens gently (don't press too hard) with a soft and clean cotton bud moistened with the special lens cleaner.

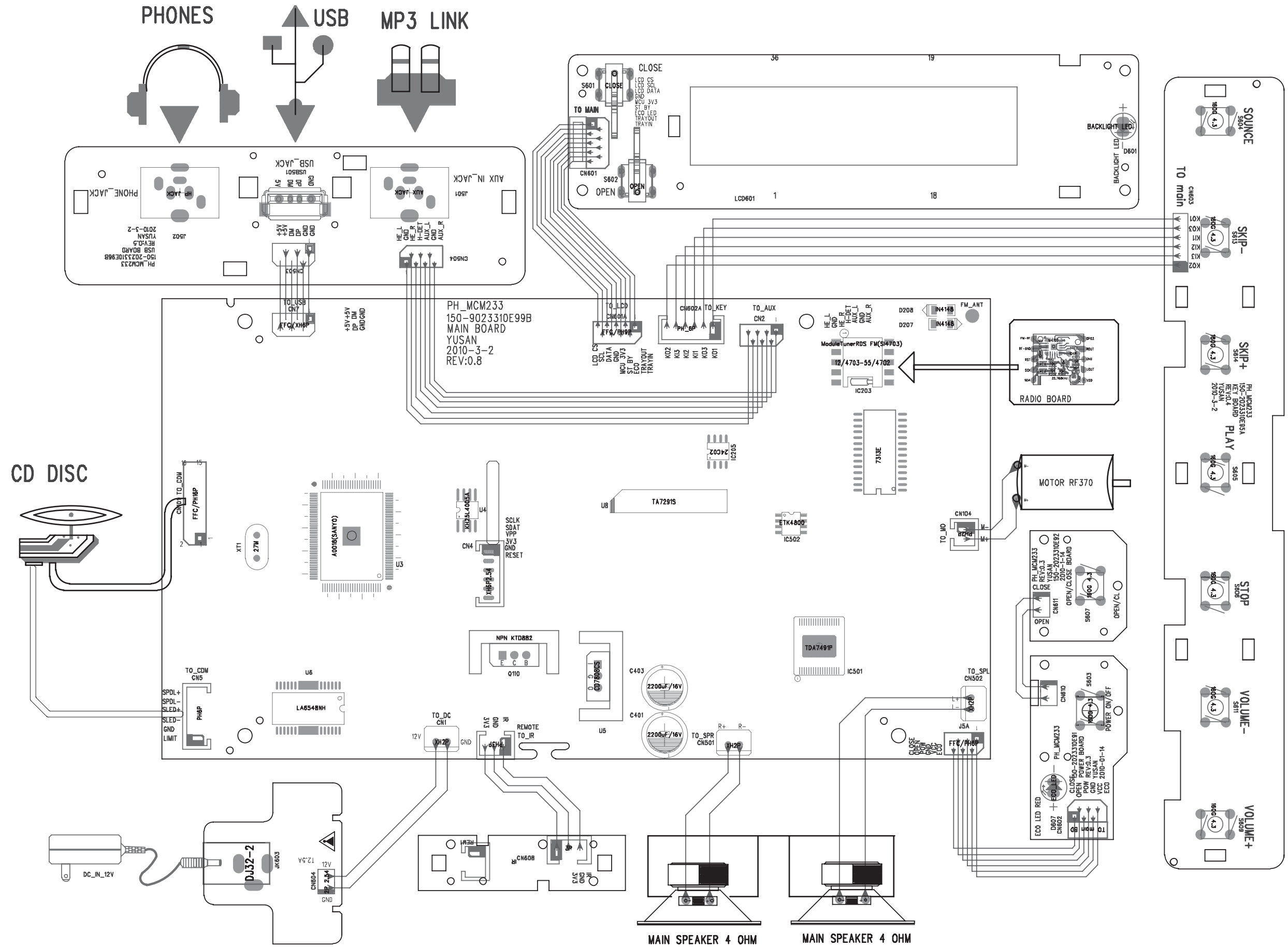
The direction of cleaning must be in the way as indicated in the picture below.



SET BLOCK DIAGRAM

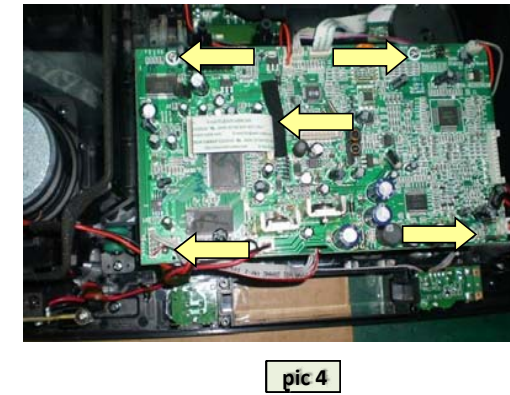
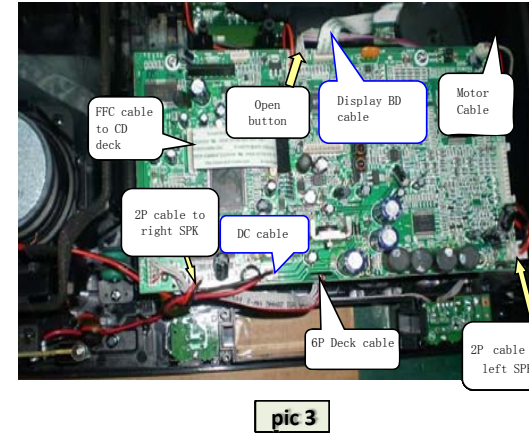
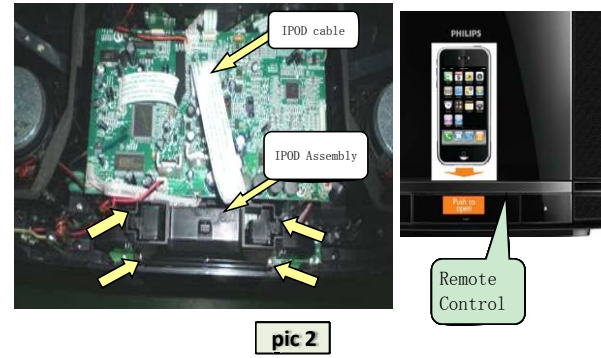
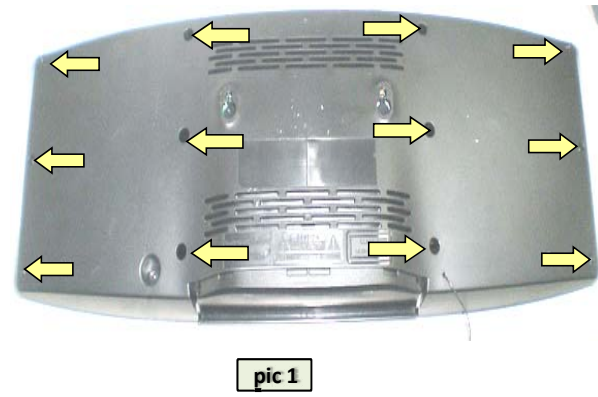


SET WIRING DIAGRAM

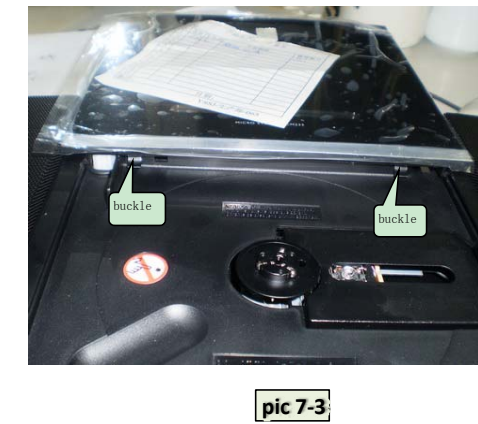
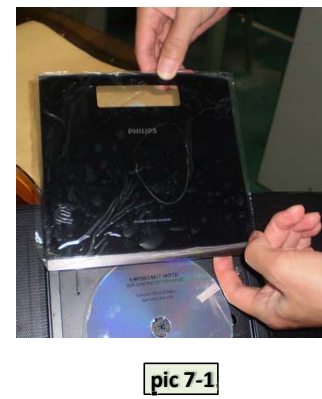
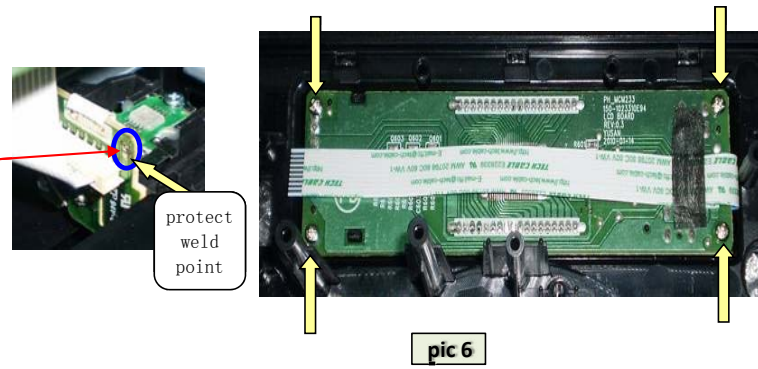
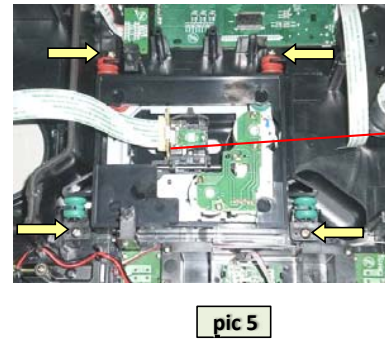


Set disassembly diagram

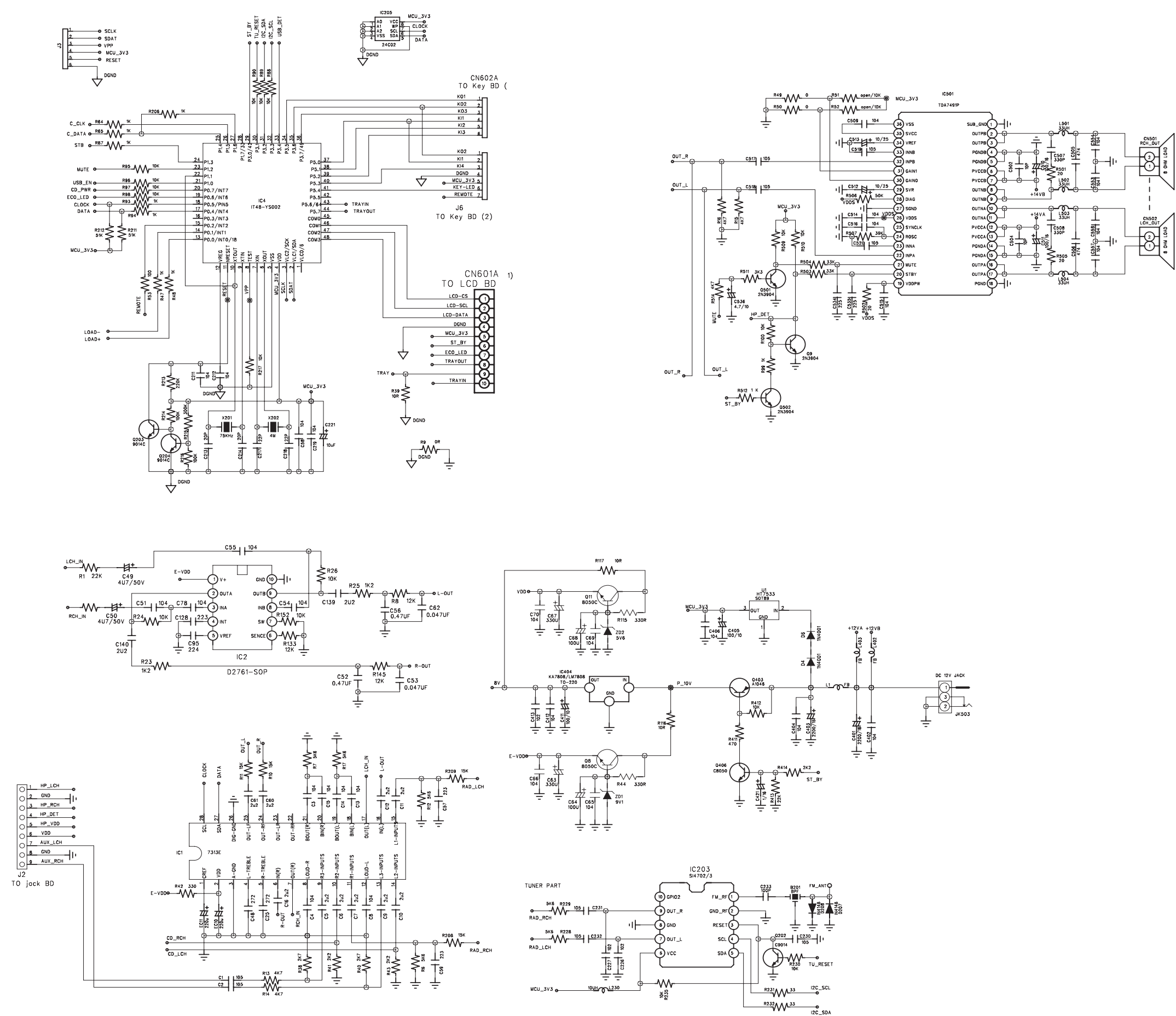
- 1) Remove the 12pcs screws(BT3x12) on the side cabinet to discharge the rear cabinet and place it well;
 - 2) Remove the FFC cable on IPOD BD from Main BD, 1st get remote control lens out, then remove the 4pcs screws (PA 2.3x8) which fix IPOD BD to discharge IPOD BD;
 - 3) Remove all cables on Main BD;
- PS: Get your hand to the Main BD as close as possible when you unplug the cables to avoid destroying cables;
- 4) Remove the 4pcs screws(PT 3x8) on Main BD, rip off the black paper from FCC cable on CD deck, discharge Main BD and place it well;



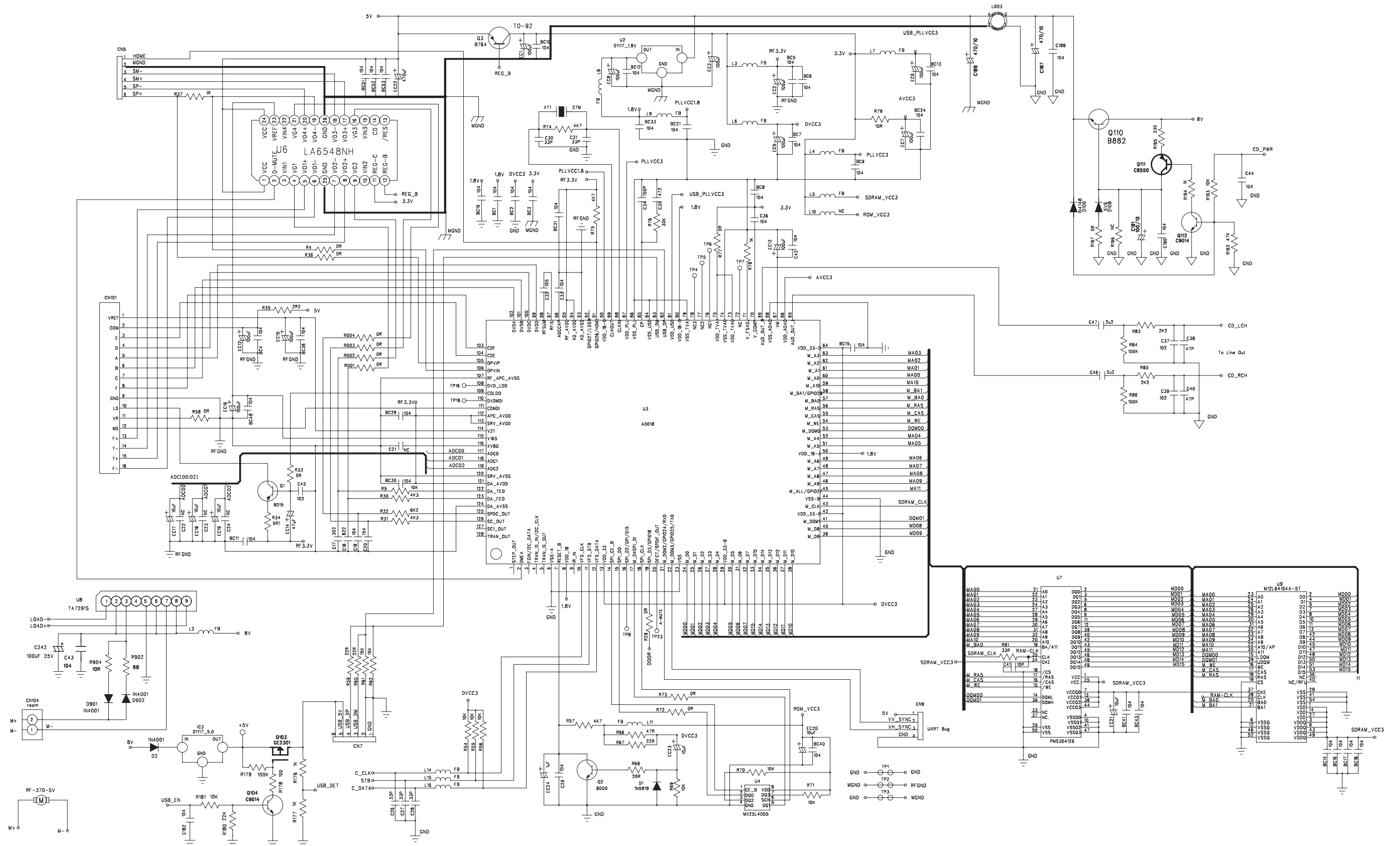
- 5) Remove the 4pcs screws(PT3x8) on CD deck, please add some soldering on the weld protect point and keep it in a ant-static bag;
- 6) Remove the 4pcs screws(PA 2.3x8) on Display BD, discharge Display BD and paste protect film on it and place it well;
- 7) Draw the CD door with your right hand, press one buckle with your left hand(pic 7-1), then press the other buckle(pic 7-2), discharge CD door and place it well;



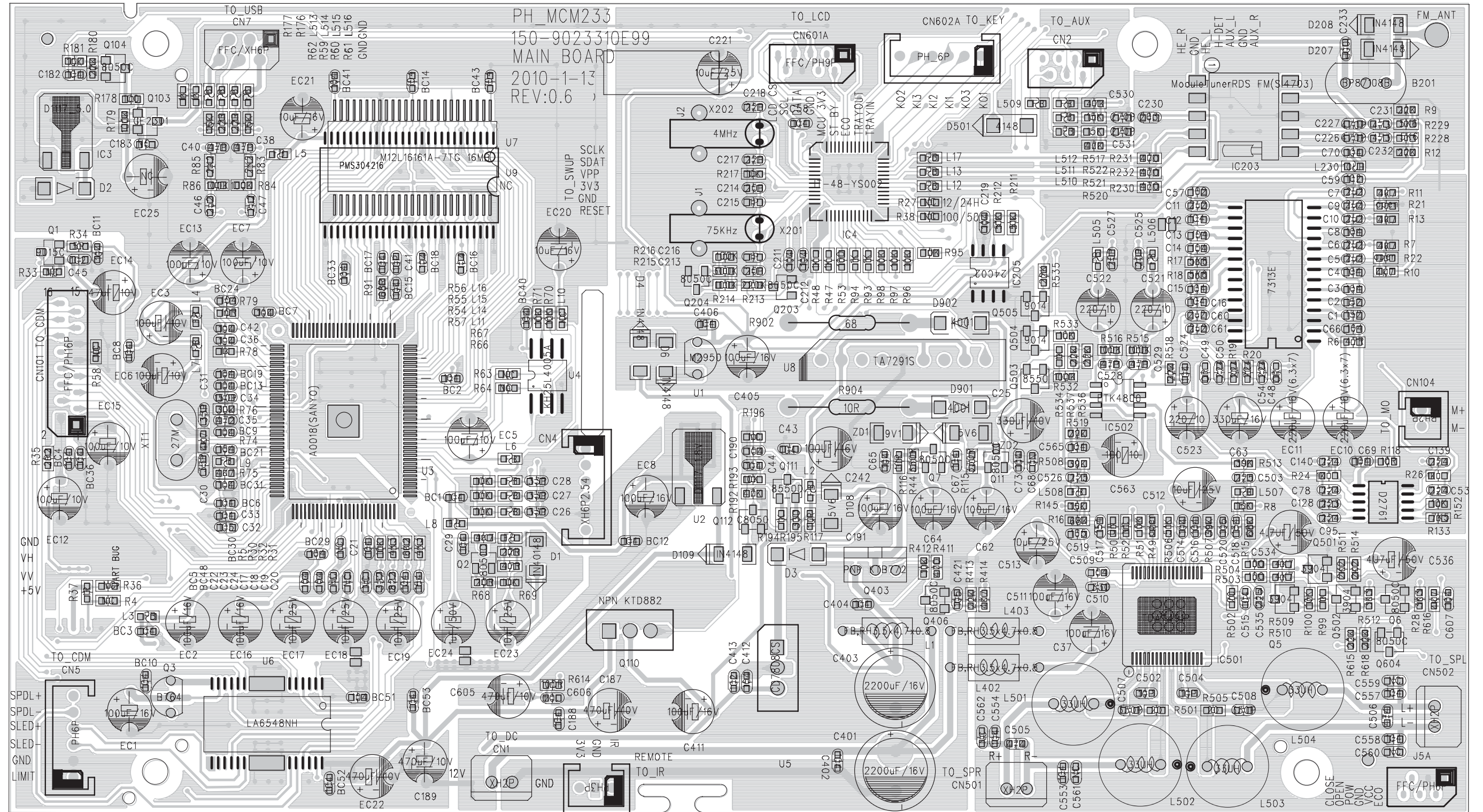
**CIRCUIT DIAGRAM - MAIN BOARD
PART 1**



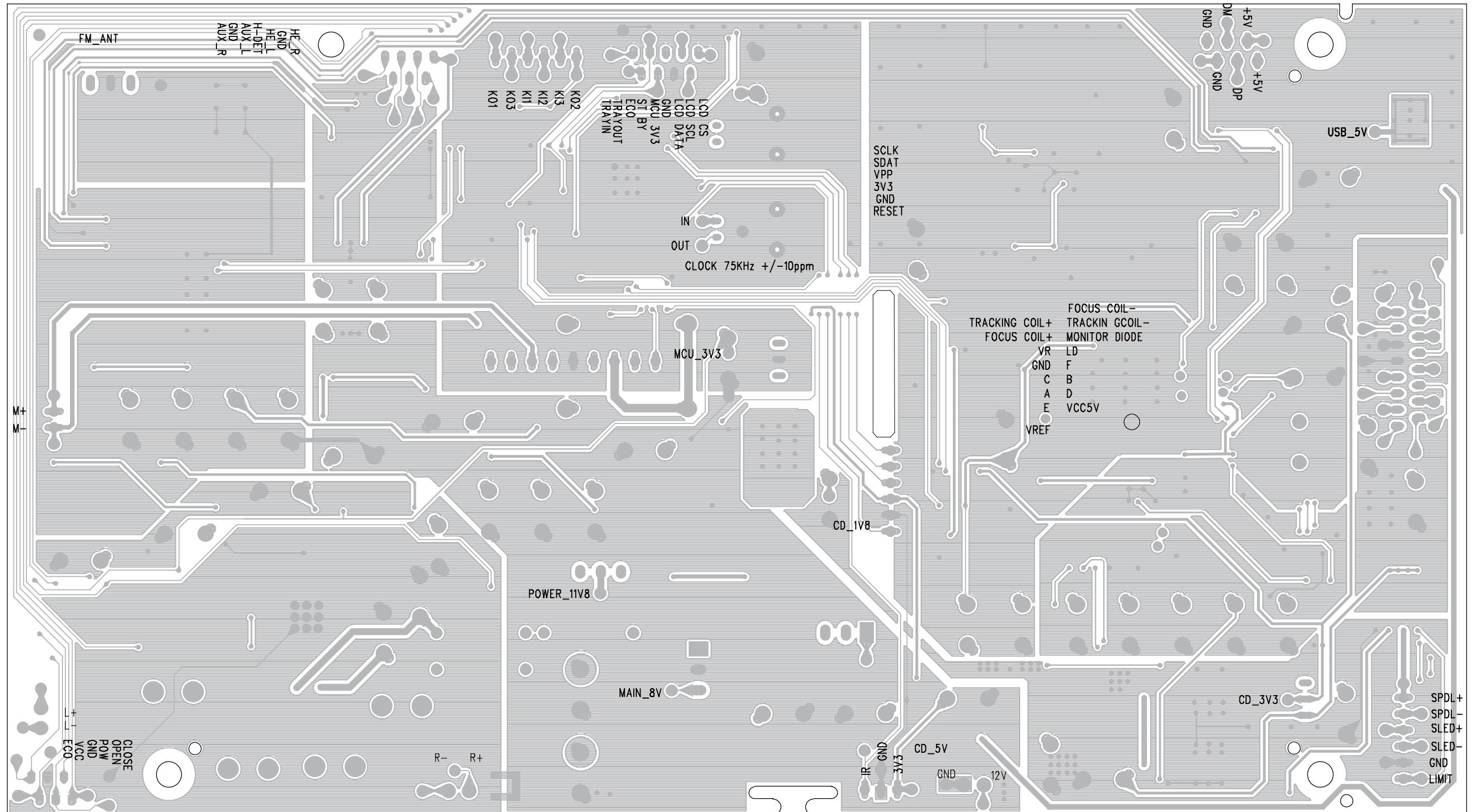
CIRCUIT DIAGRAM - MAIN BOARD PART 2



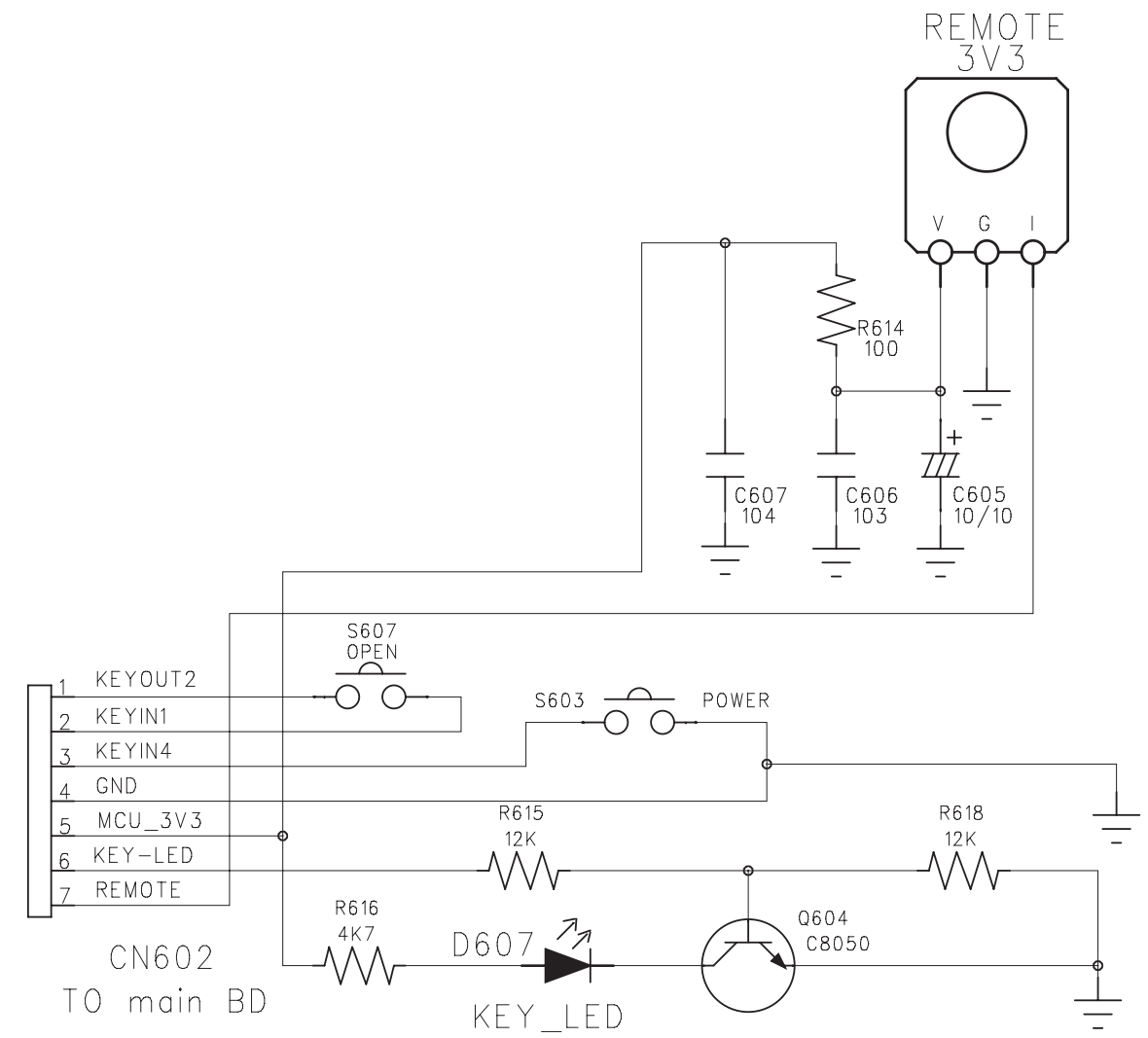
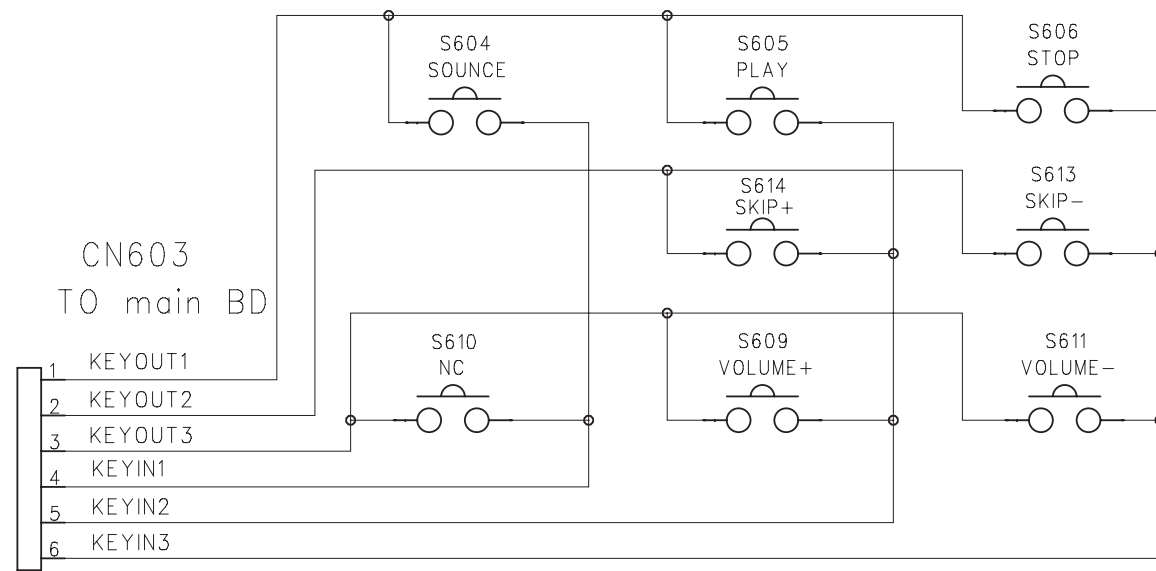
LAYOUT DIAGARM - MAIN BOARD COMPONENT SIDE VIEW



LAYOUT DIAGARM - MAIN BOARD
COPPER SIDE VIEW

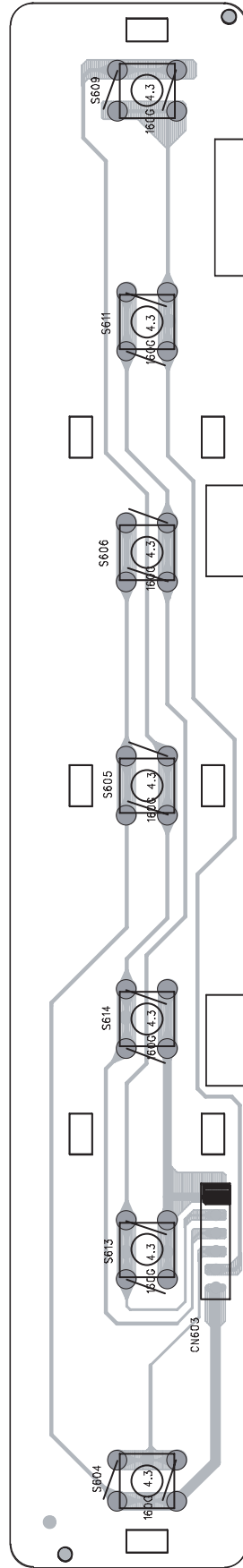


CIRCUIT DIAGRAM - KEY BOARD

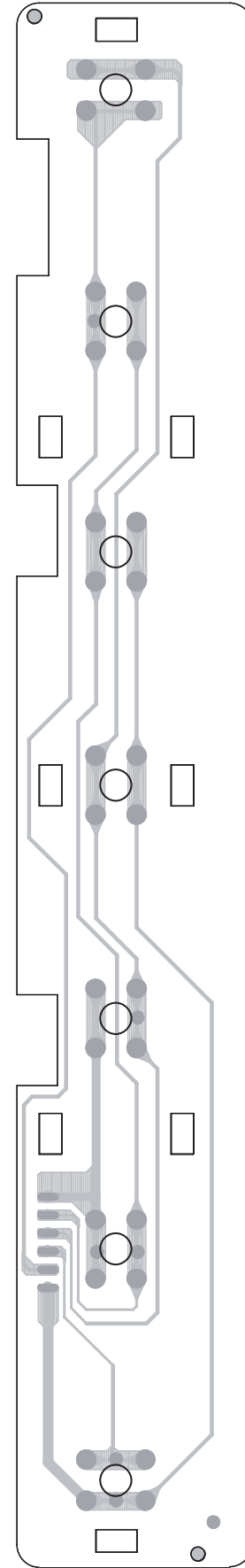


LAYOUT DIAGARM - KEY BOARD

5 - 2

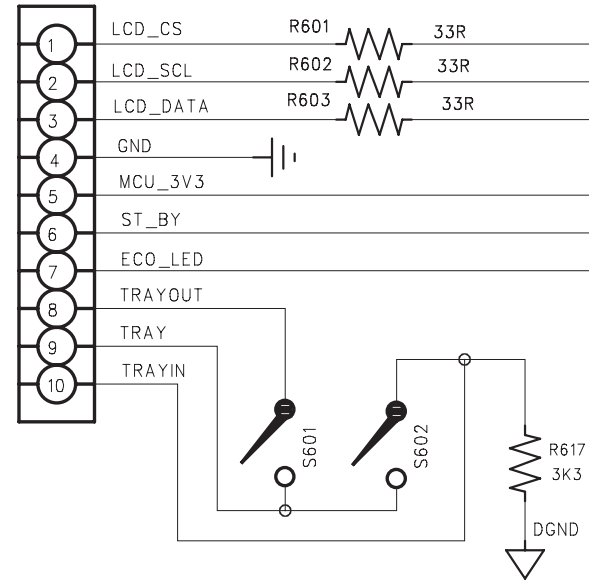


5 - 2

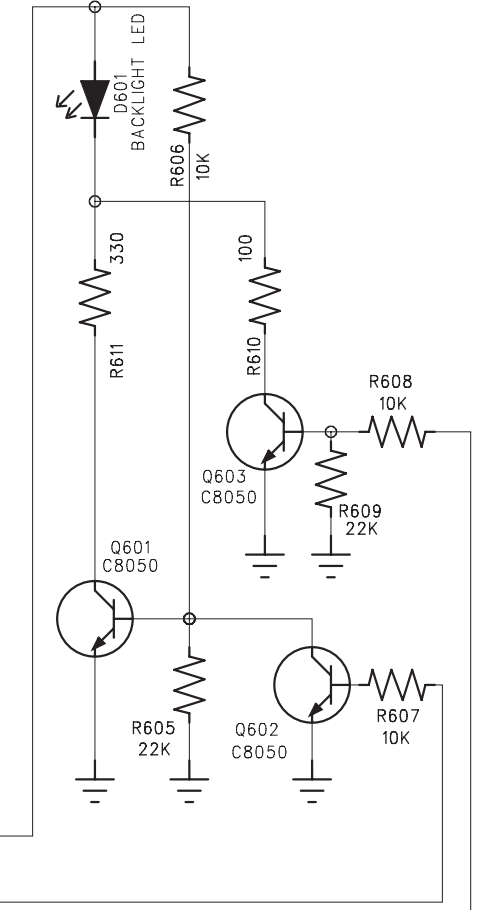
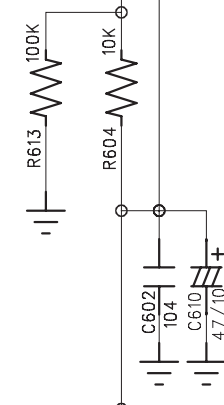
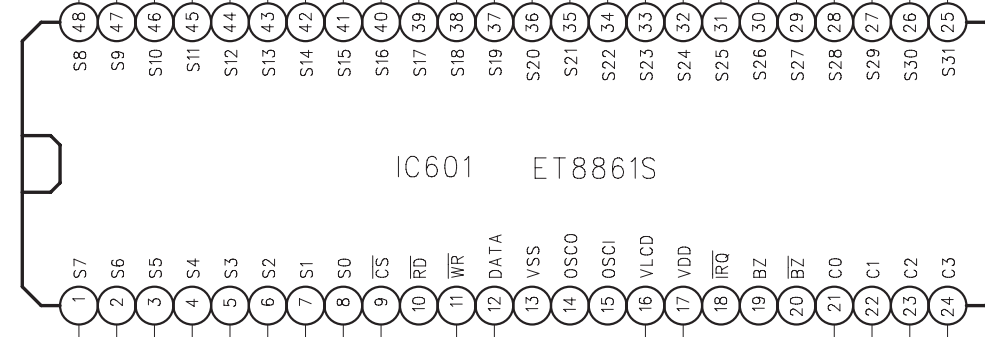
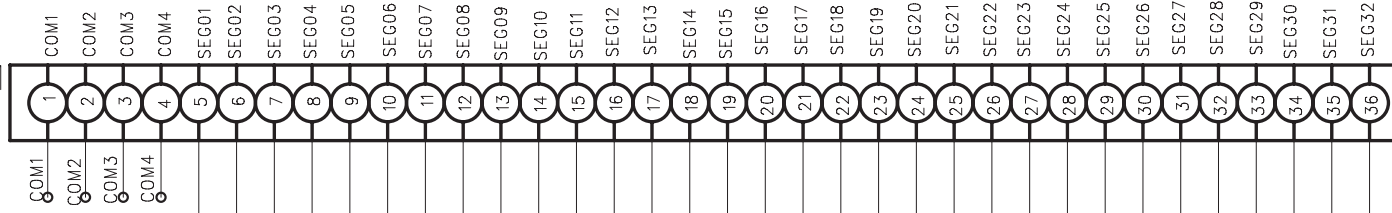


CIRCUIT DIAGARM - LCD BOARD

CN601
TO MAIN BD

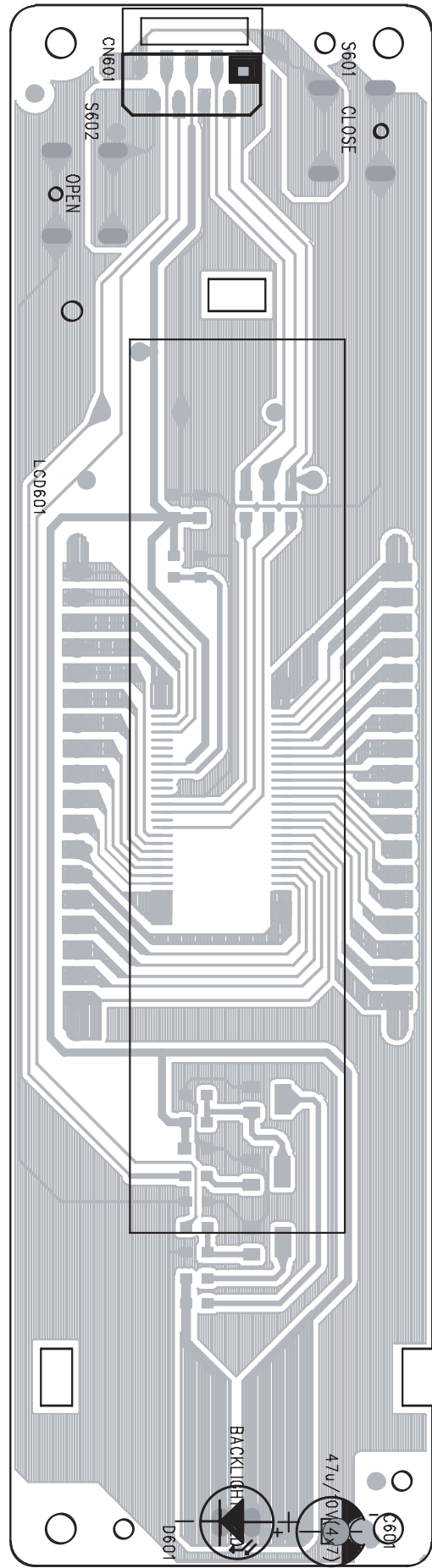


LCD601
LCD

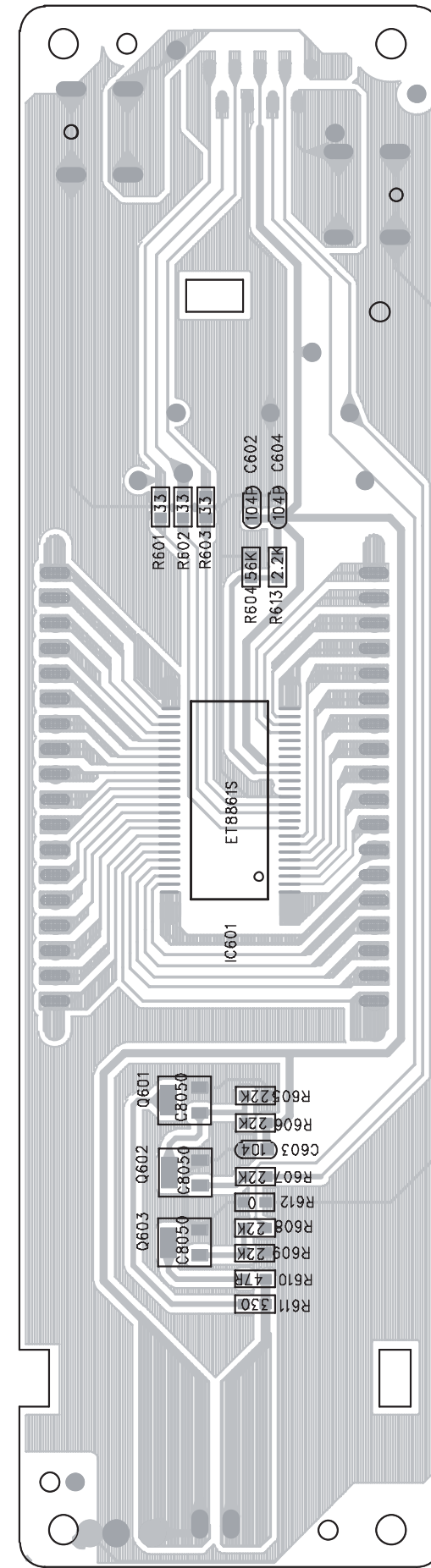


LAYOUT DIAGRAM - LCD BOARD

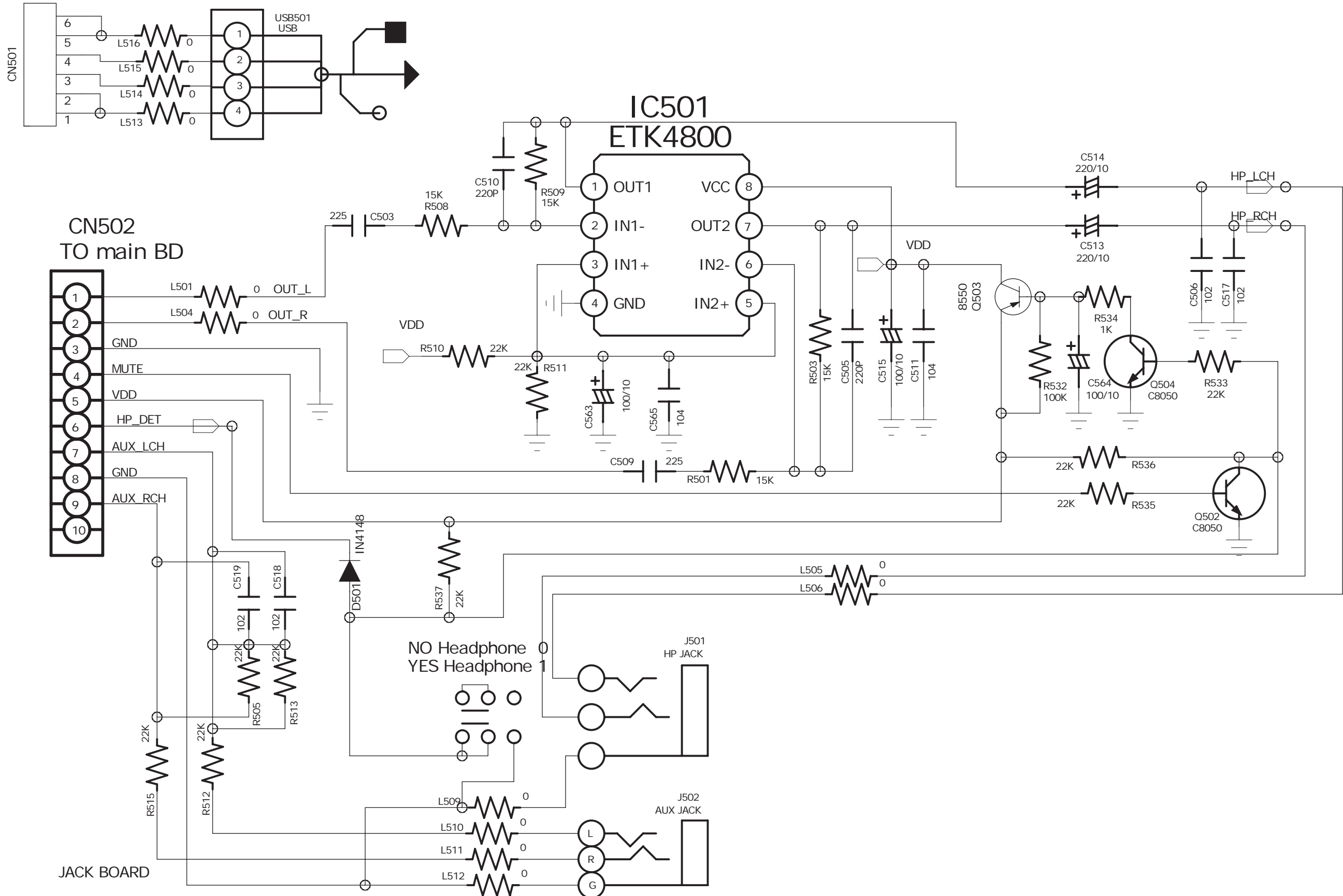
6 - 2



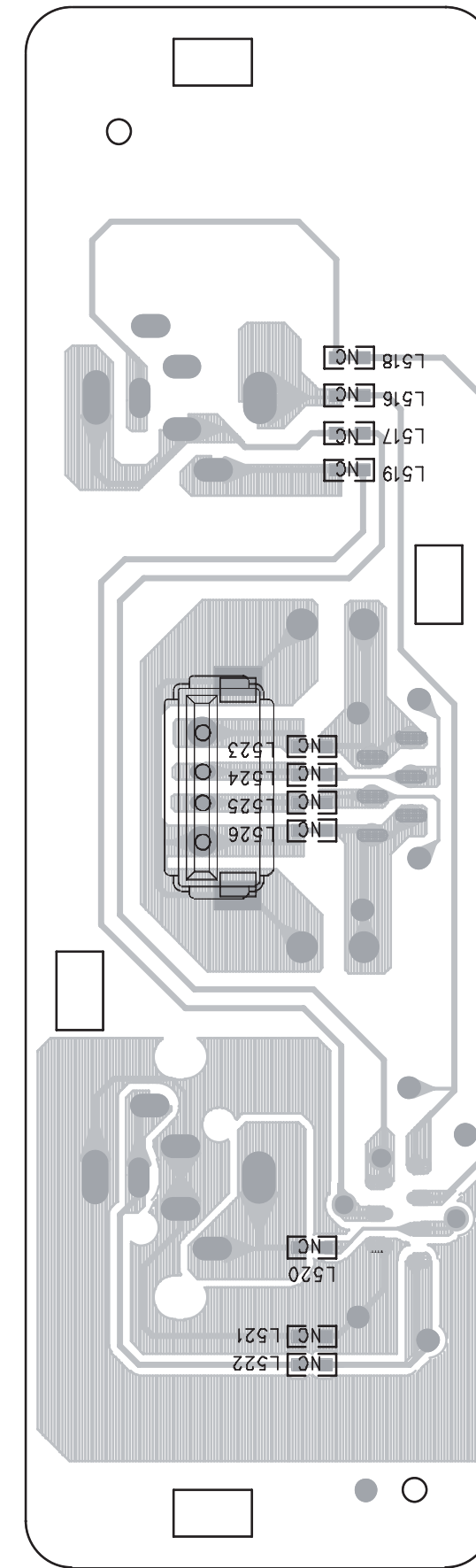
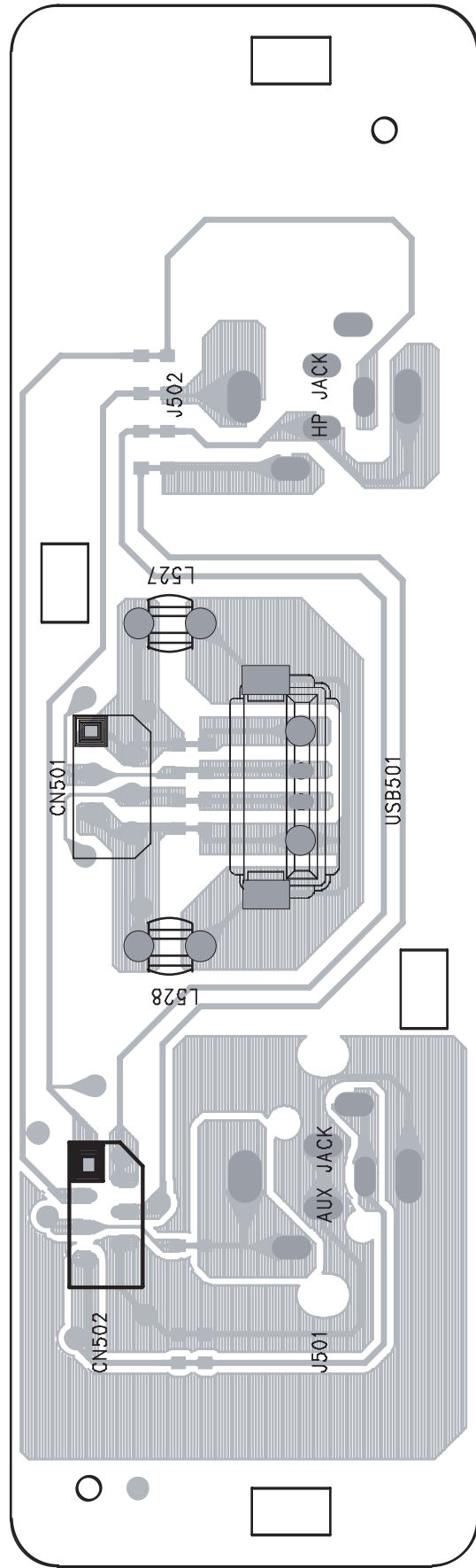
6 - 2



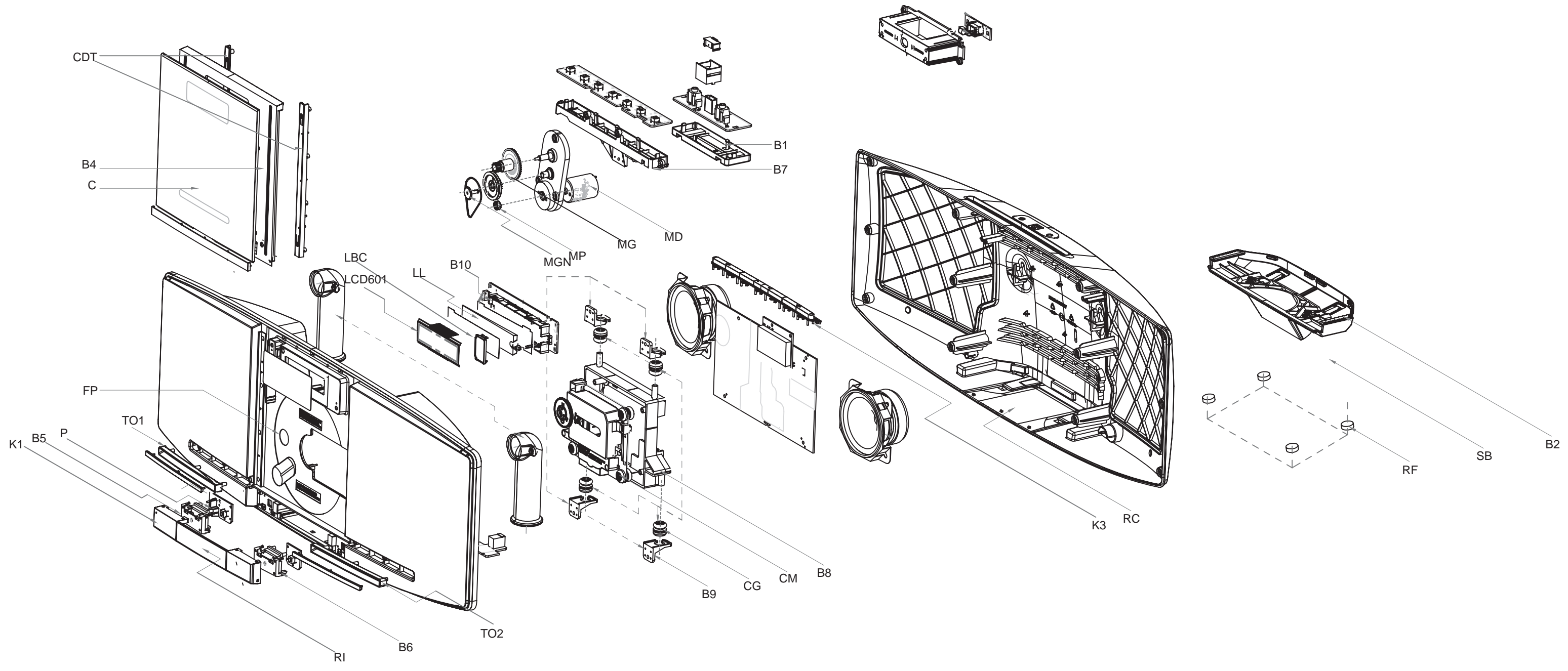
CIRCUIT DIAGARM - HEADPHONE BOARD



LAYOUT DIAGARM - HEADPHONE BOARD



EXPLODED VIEW DIAGRAM



REVISION LIST

Version 1.0 (3141 785 34890)

* Initial Release

Version 1.1 (3141 785 34891)

* Add /55

Version 1.2 (3141 785 34892)

* Add /78

Version 1.3 (3141 785 34893)

* Add /98