

Service
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Service Manual

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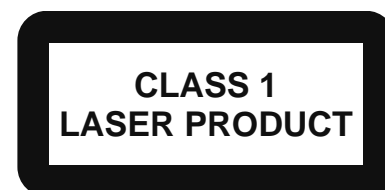
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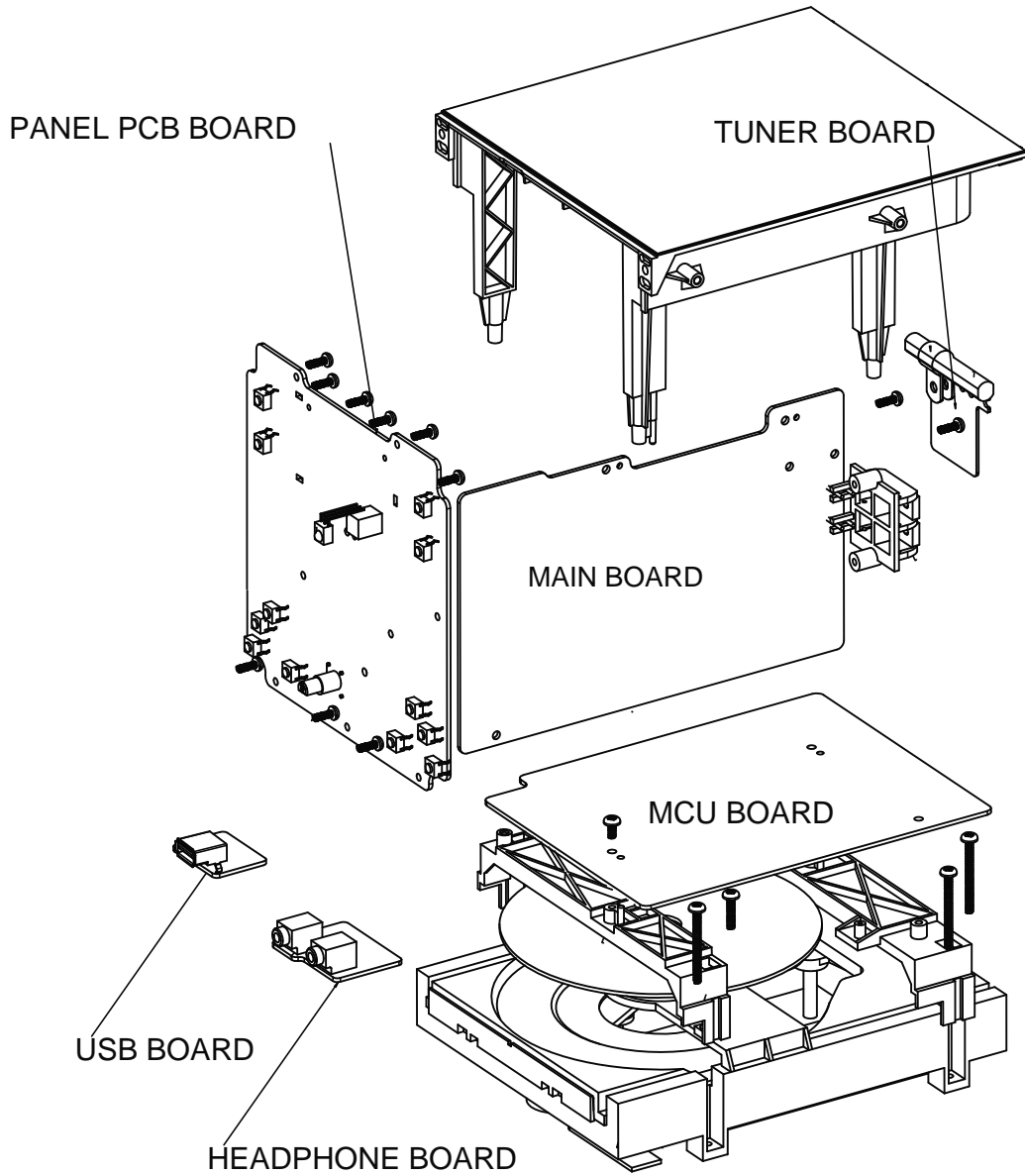


Version 1.0



PHILIPS

PCBS LOCATION



VERSION VARIATIONS

Board in used:	Type /Versions:	MCM206									
	Service policy	/12	/05	/37	/55	/58	/61				/98
MAIN BOARD	C/M										
MCU BOARD	C/M										
USB JACK BOARD	C										
PANEL PCB BOARD	C/M										
TUNER BOARD	M										
HEADPHONE BOARD	C										

* TIPS : C -- Component Lever Repair.
 M -- Module Lever Repair
 x -- Used

Specifications

Amplifier

Rated Output Power	2X5W RMS
Frequency Response	60 - 16kHz, ± 3 dB
Signal to Noise Ratio	>62dB

Disc

Laser Type	Semiconductor
Disc Diameter	12cm/8cm
Support Disc	CD-DA, CD-R, CD-RW, MP3-CD, WMA-CD
Audio DAC	24Bits / 44.1kHz
Total Harmonic Distortion	<1%
Frequency Response	60Hz -16kHz
S/N Ratio	>62dBA

Tuner

Tuning Range	FM: 87.5 - 108MHz; MW: 531 - 1602kHz
Tuning grid	50 kHz (FM); 9 kHz (MW)
Total Harmonic Distortion	<3%
Signal to Noise Ratio	>50 dB

Speakers

Speaker Impedance	4ohm
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General information-Specs

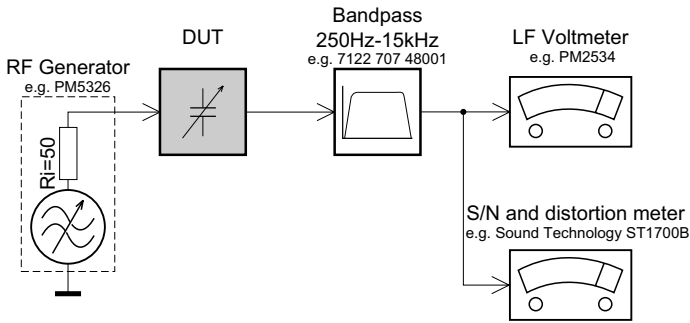
Switching mode power supply	Model: GFP181T-1512-I or GFP181DA-1512-I, Input: AC100-240V~, 50/60Hz, 0.35A Output: DC15V, 1.2A
Operation Power Consumption	26 W
Standby Power Consumption	<4 W
Eco Standby Power Consumption	<1 W
Dimensions	
- Main Unit (W x H x D)	152 x 232 x 222mm
- Speaker Box (W x H x D)	146 x 232 x 140mm
Weight	
- With Packing	5.20 kg
- Main Unit	1.64 kg
- Speaker Box	2.20 kg

Supported MP3 disc formats

- ISO9660, Joliet
- Maximum title number: 512 (depending on file name length)
- Maximum album number: 255
- Supported sampling frequencies: 32 kHz, 44.1kHz, 48 kHz
- Supported Bit-rates: 32~256 (kbps), variable bit rates

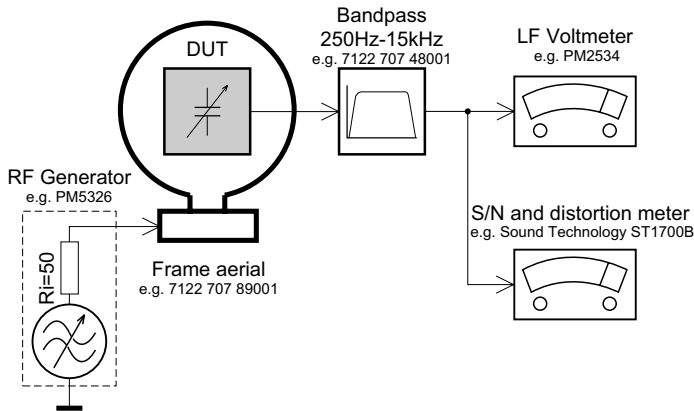
MEASUREMENT SETUP

Tuner FM



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

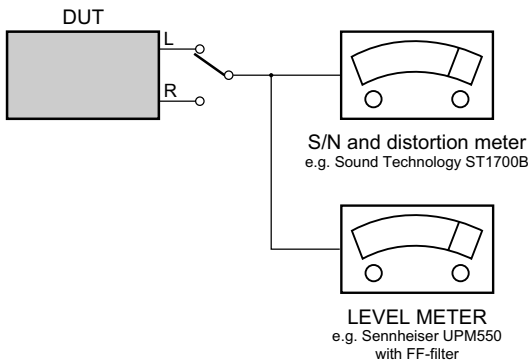
Tuner AM (MW,LW)



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)



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".

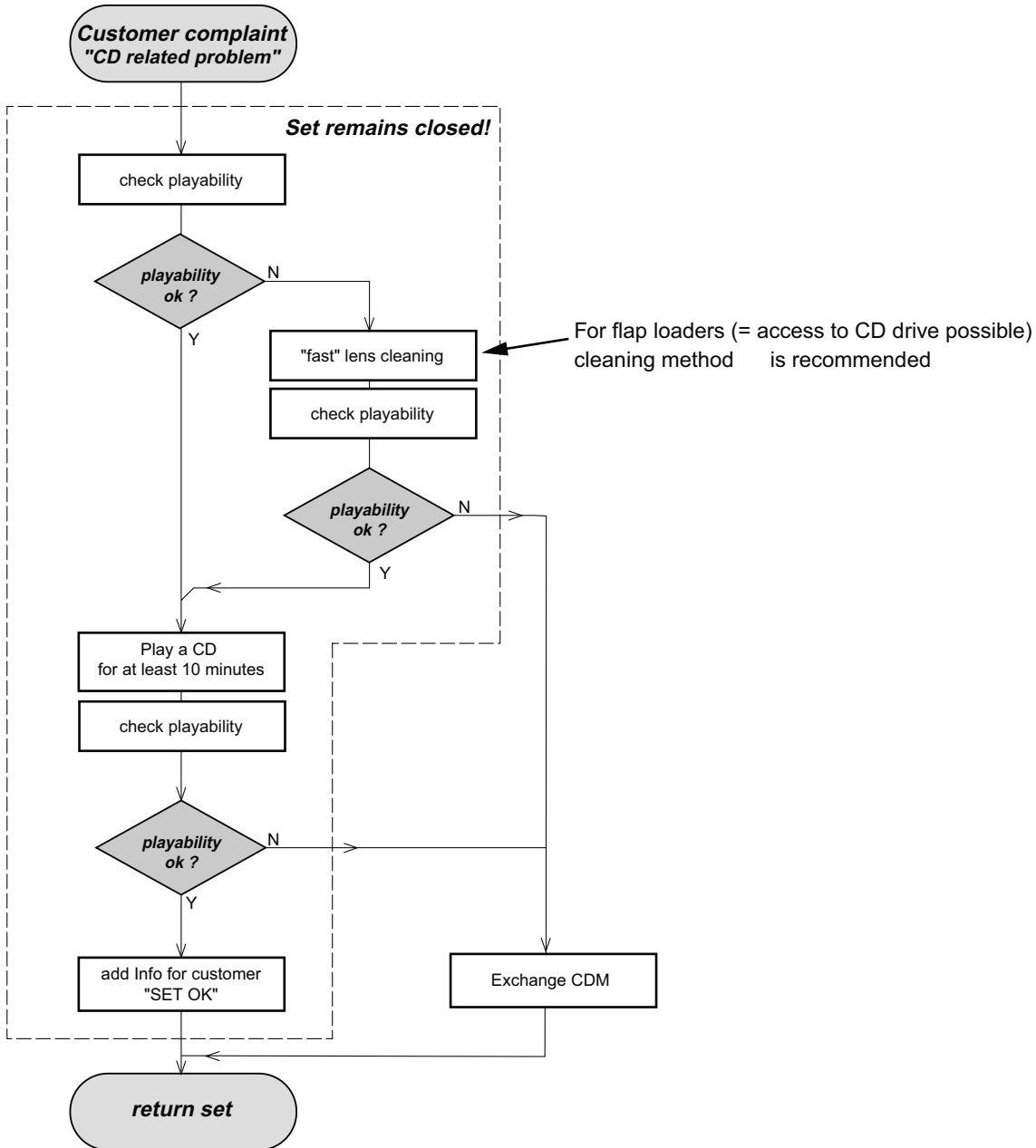
For additional questions please contact your local repair-helpdesk.

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



- For description - see following pages

INSTRUCTIONS ON CD PLAYABILITY

PLAYABILITY CHECK

For sets which are compatible with **CD-RW** discs
 use CD-RW Printed Audio Disc.....7104 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 444A.....4822 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

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) 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.

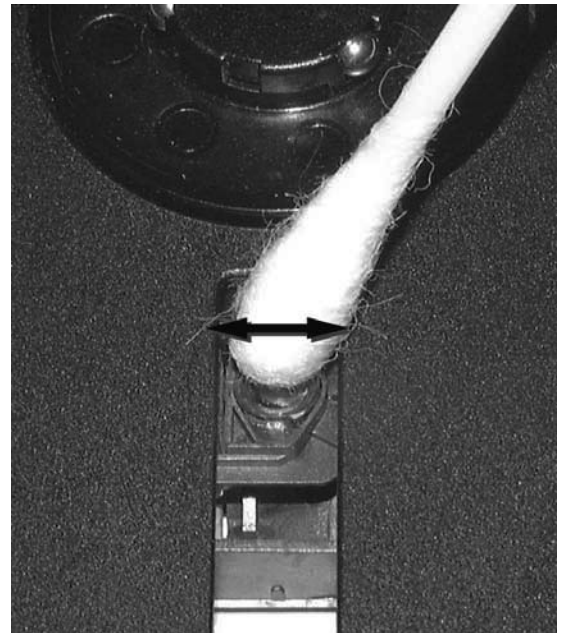
LIQUID LENS CLEANING

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.

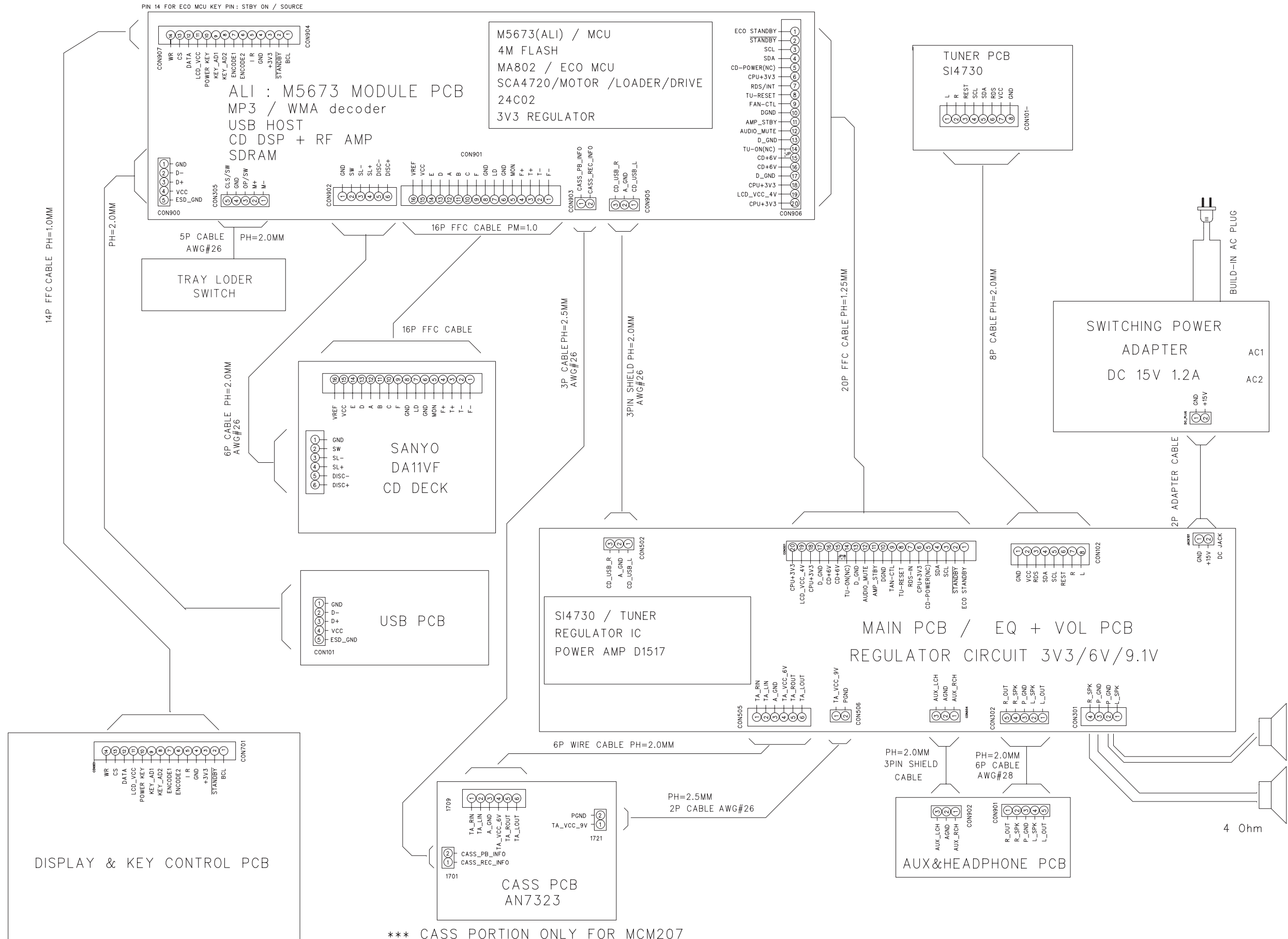


SERVICE TEST PROGRAM

How to read software version,

1. Plug A/C to power on and under NO DISC status, press and hold PLAY and DBB buttons for 5 seconds, LCD Display shows existing CD software version "CD - V029" and MCU software version "MCU - 013".

SET BLOCK & WIRING DIAGRAM



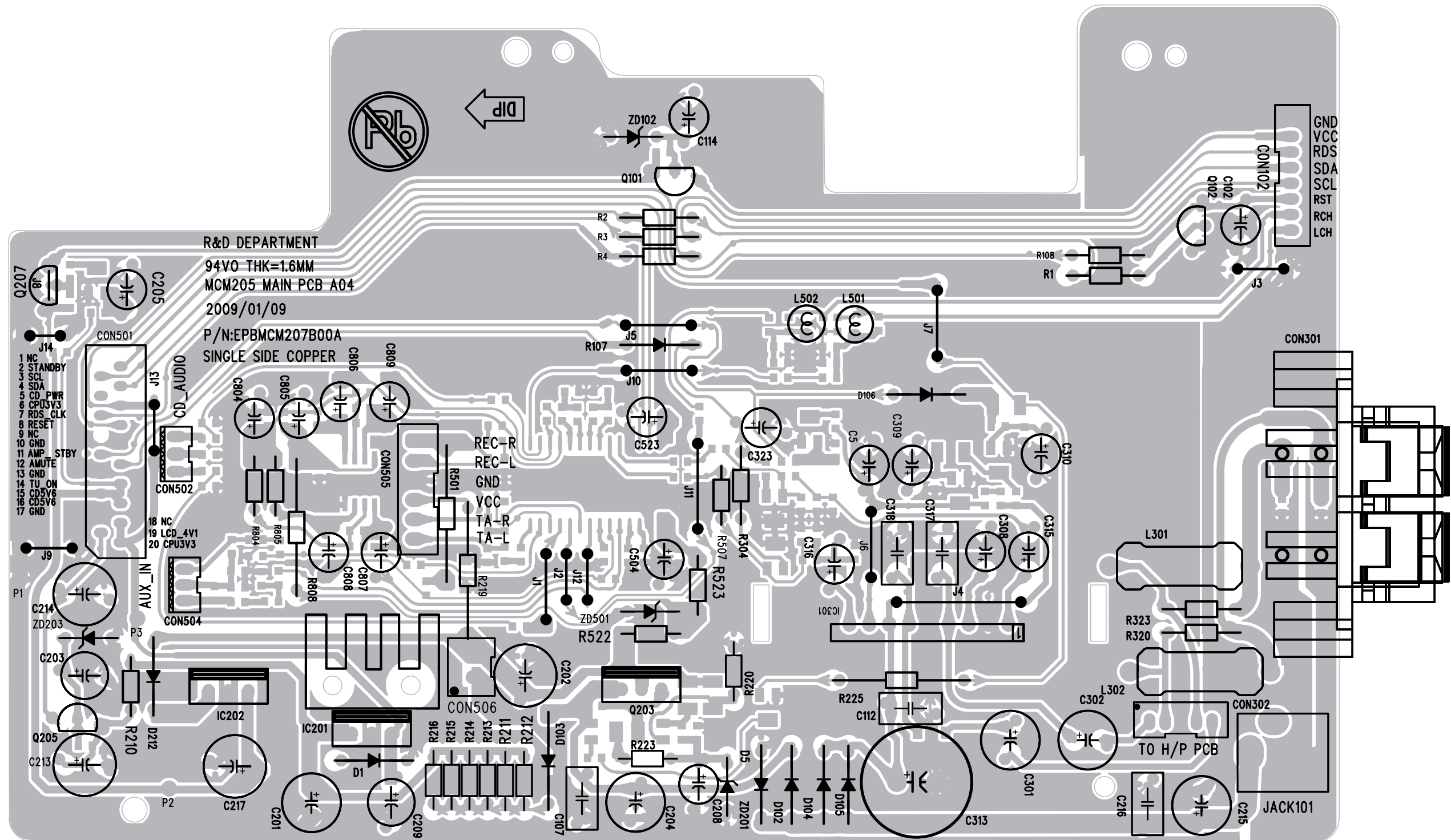
*** CASS PORTION ONLY FOR MCM207

MAIN & TUNER & HEAD- PHONE BOARD

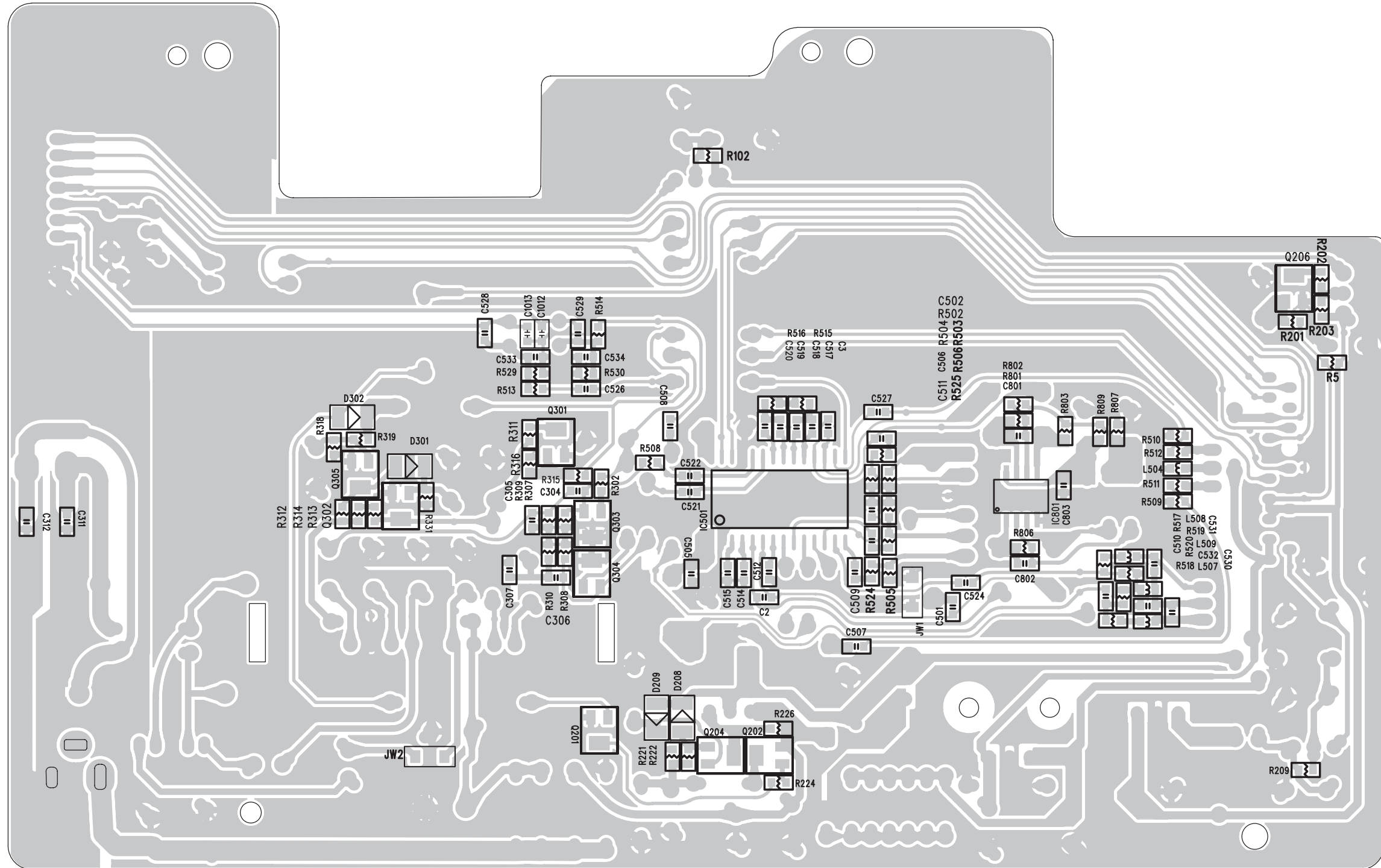
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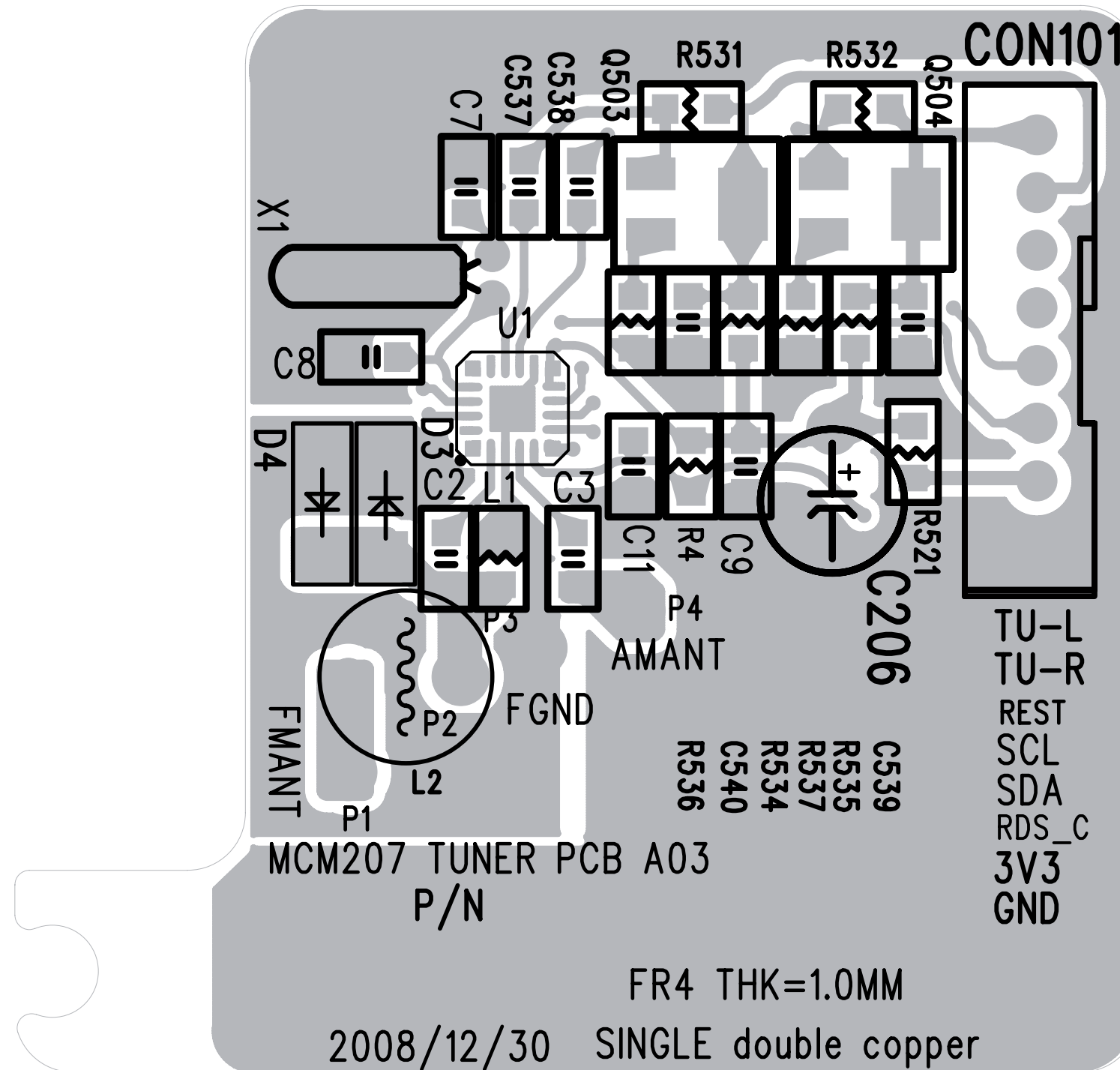
PCB LAYOUT - MAIN BOARD (TOP VIEW)



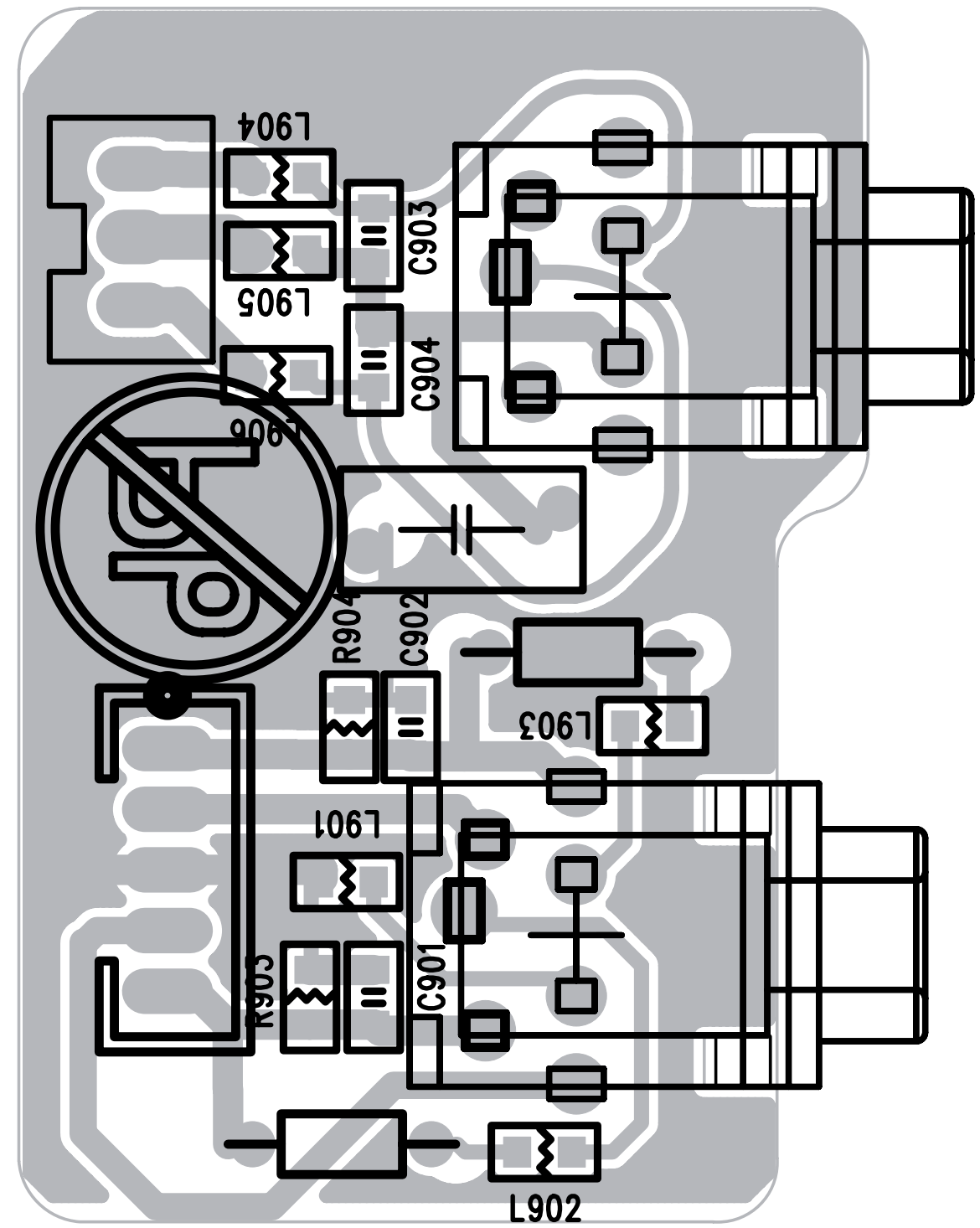
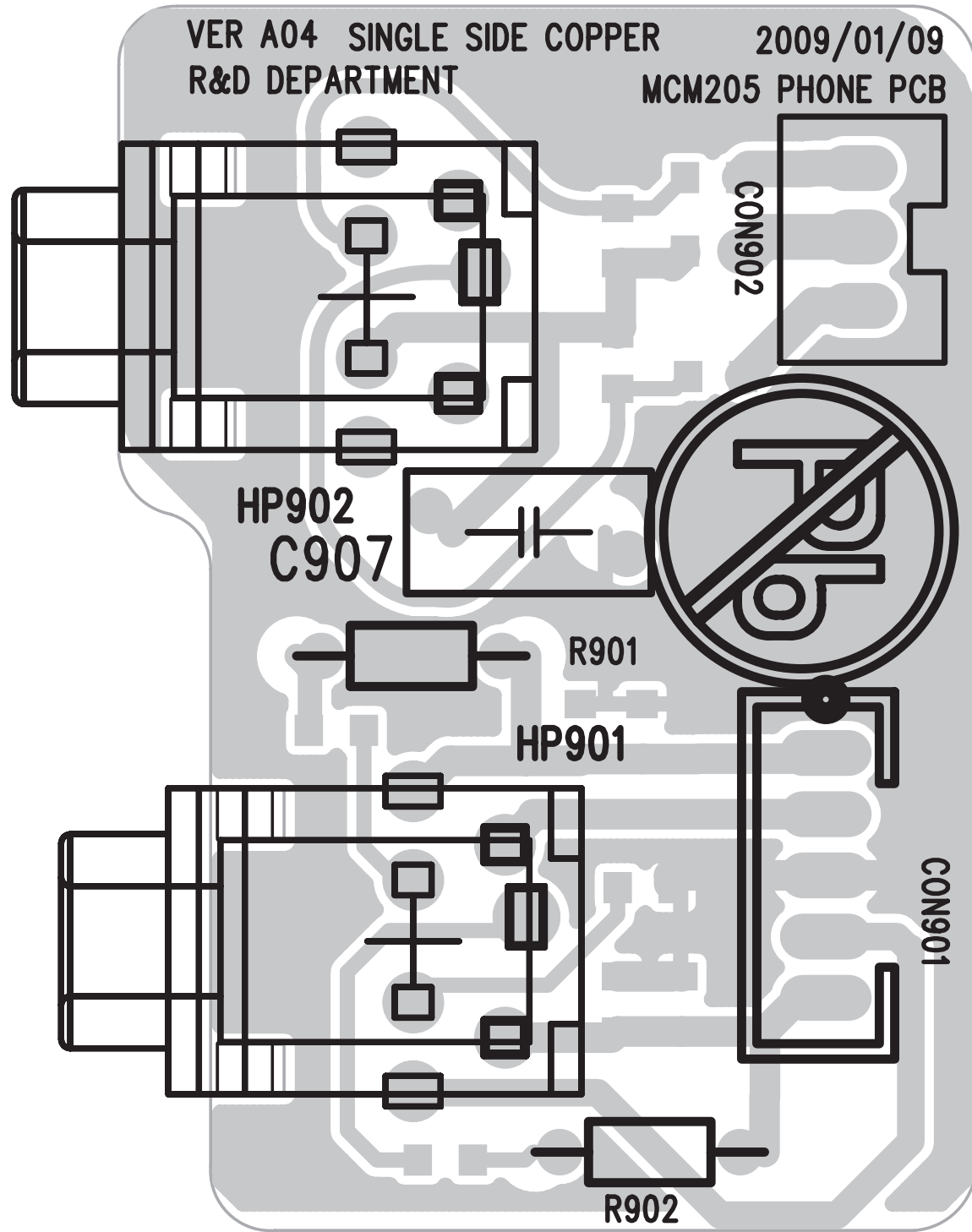
PCB LAYOUT - MAIN BOARD (BOTTOM VIEW)



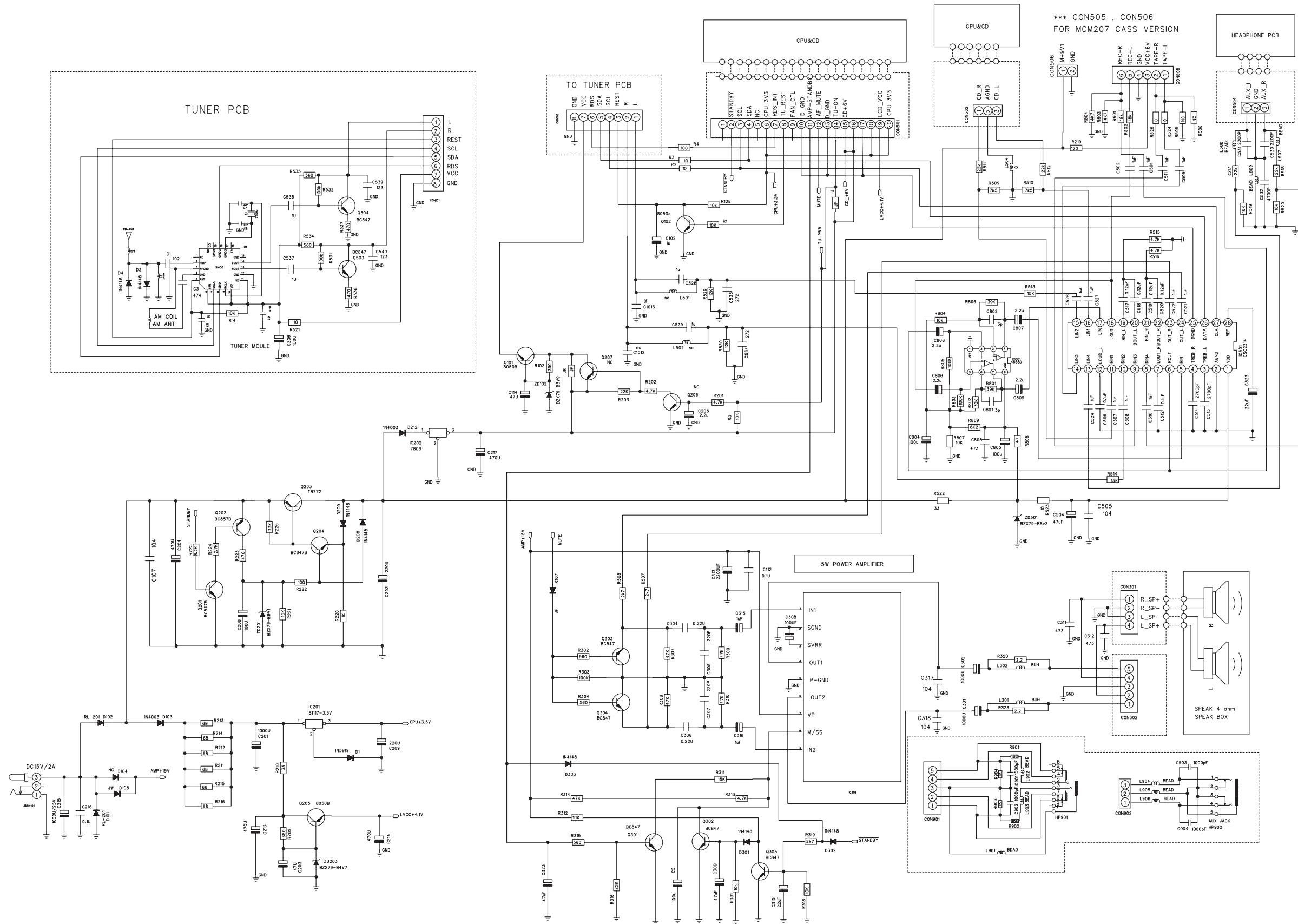
PCB LAYOUT - TUNER BOARD (ONLY FOR REFERENCE, MODULE SWAP)



LAYOUT DIAGRAM - HEADPHONE BOARD



CIRCUIT DIAGRAM - MAIN & TUNER & HP BOARD



*** CON505, CON506 FOR MCM207 CASS VERSION

HEADPHONE PCB

5W POWER AMPLIFIER

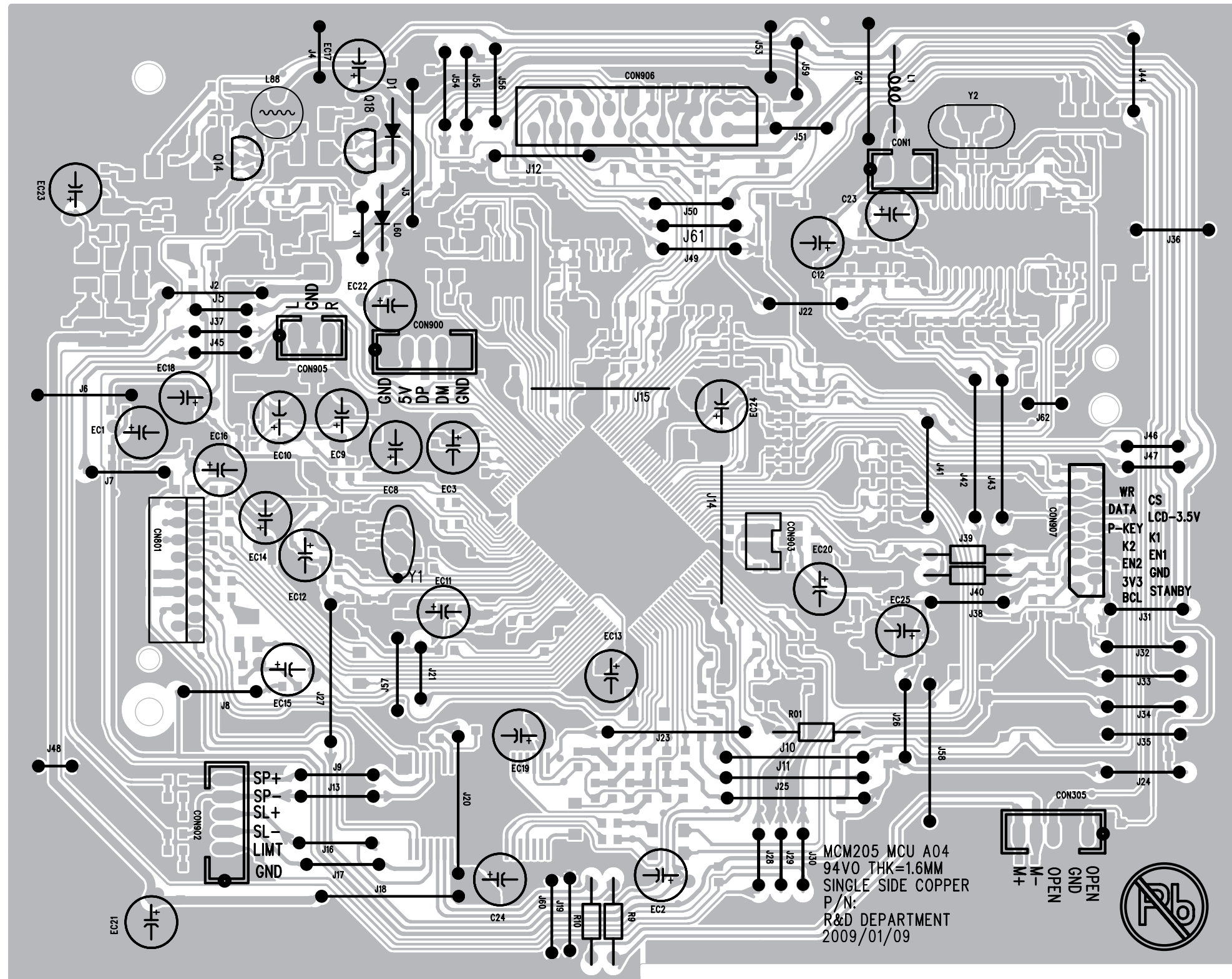
SPEAK 4 ohm SPEAK BOX

MCU & USB BOARD

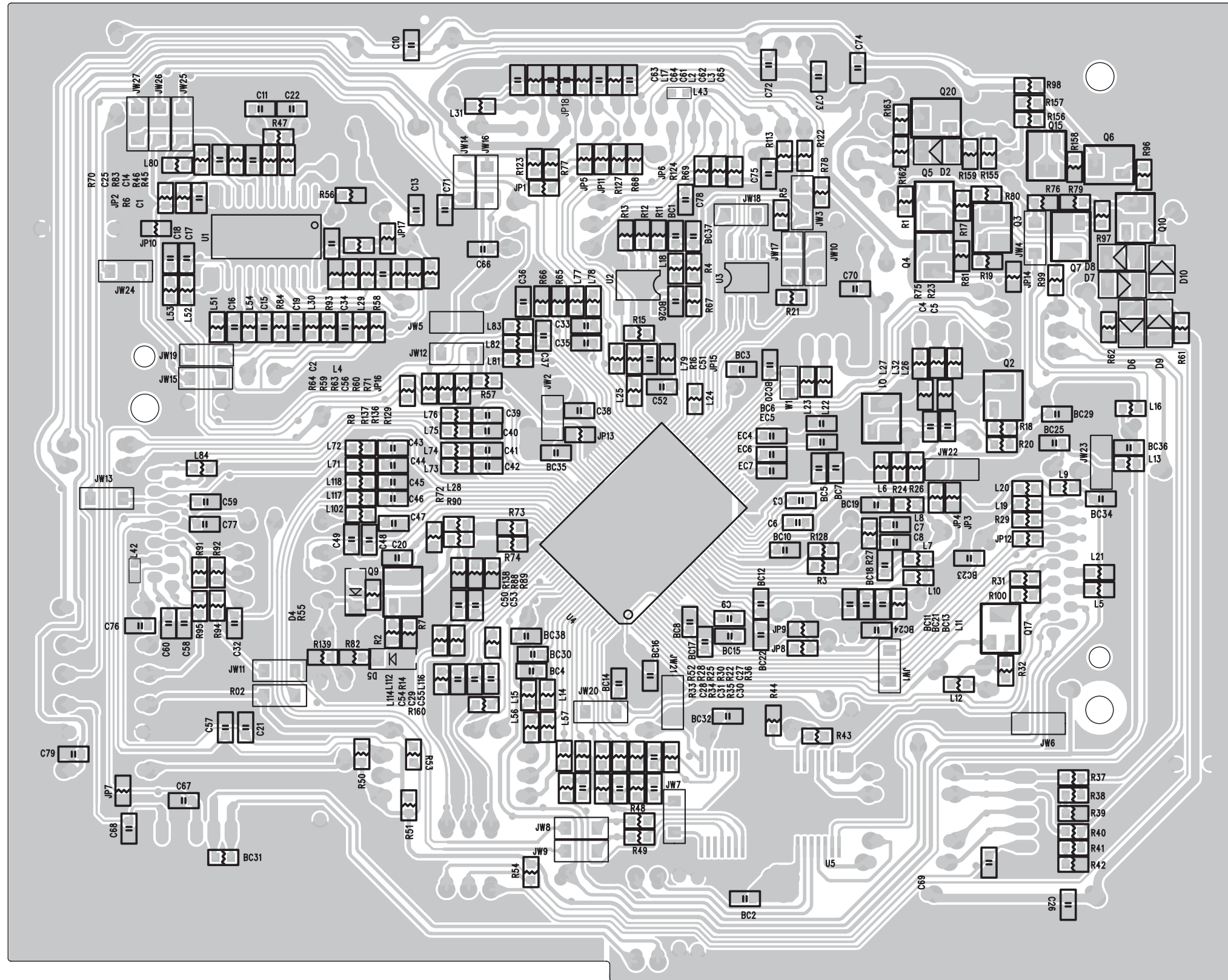
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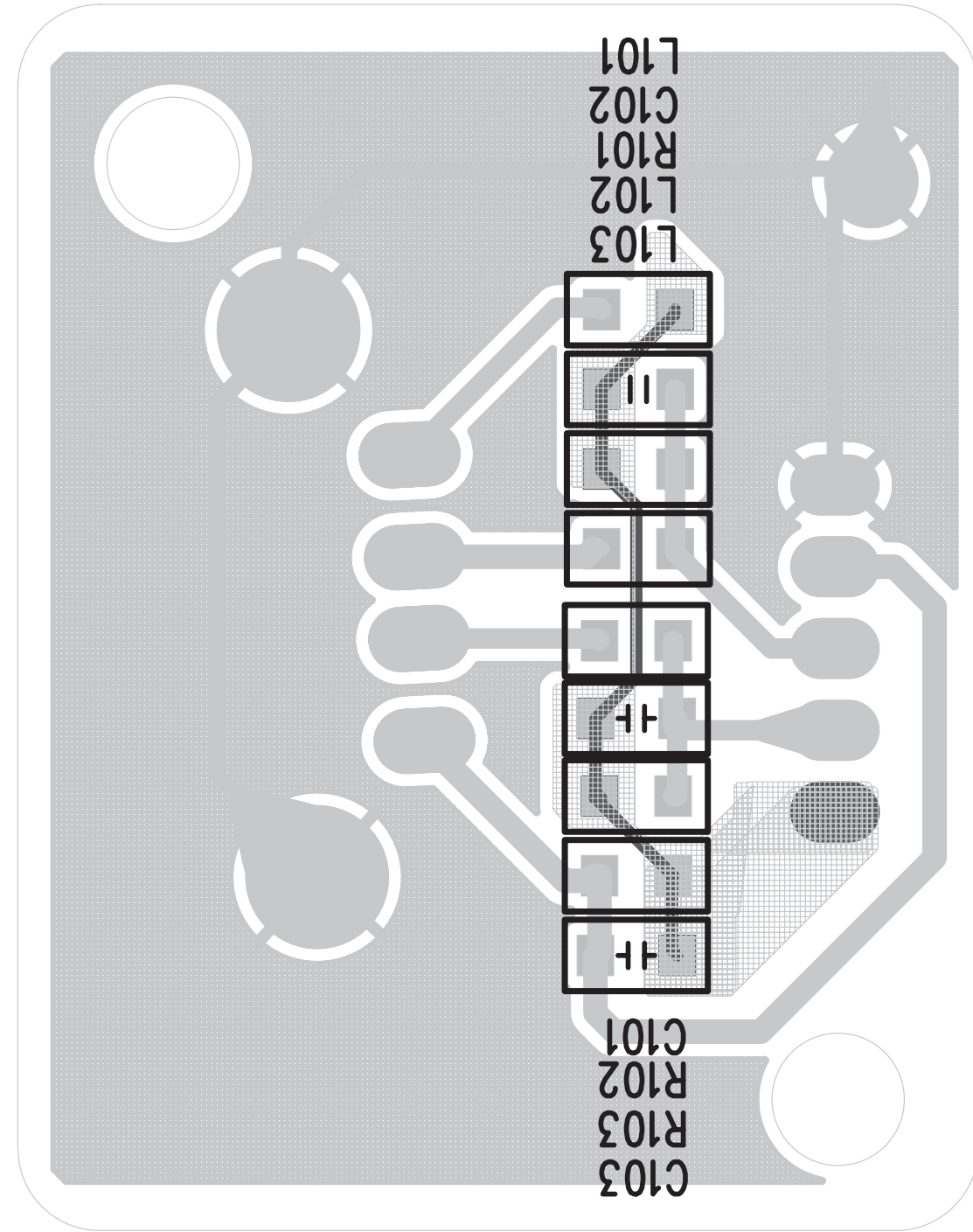
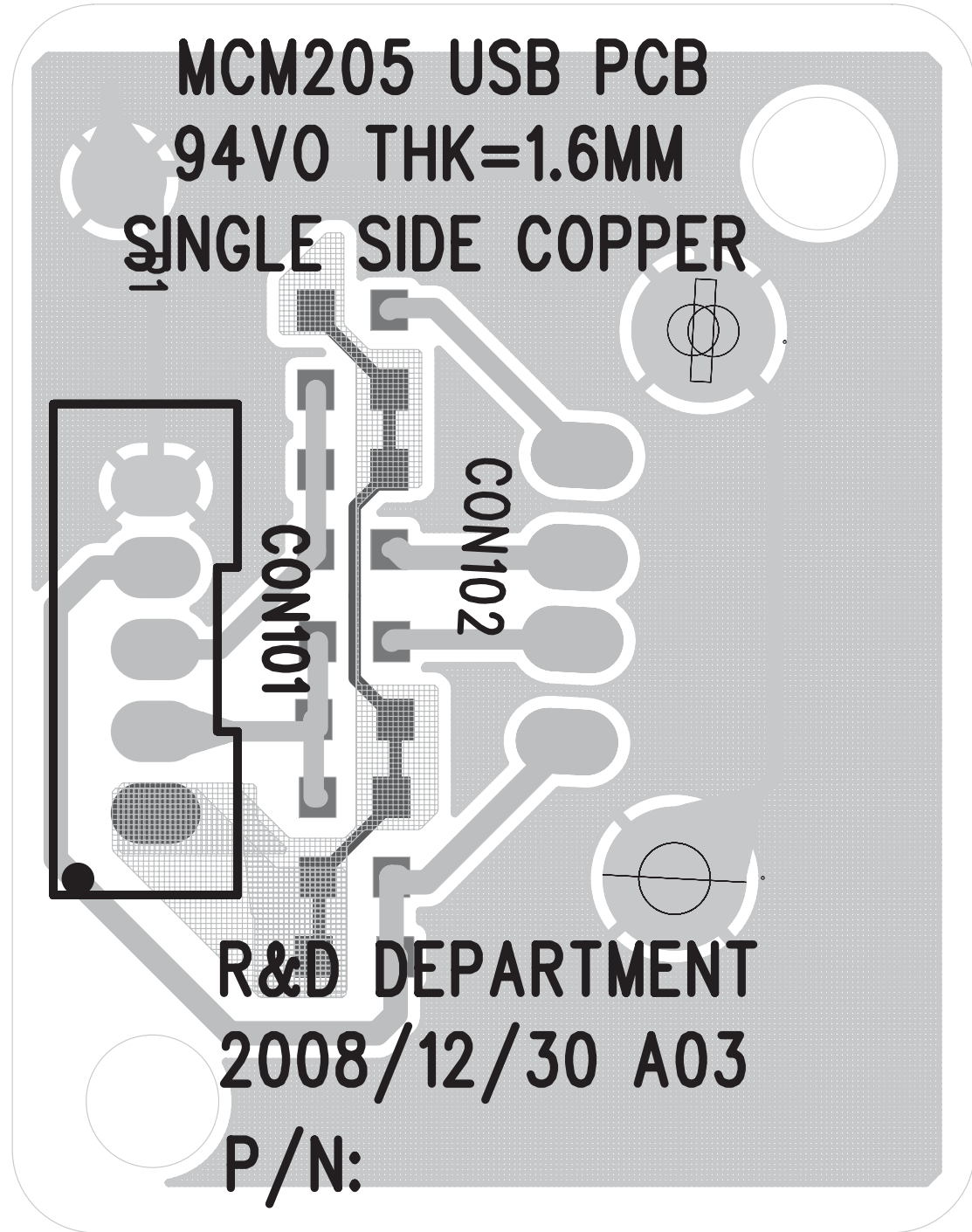
PCB LAYOUT - MCU BOARD (TOP VIEW)



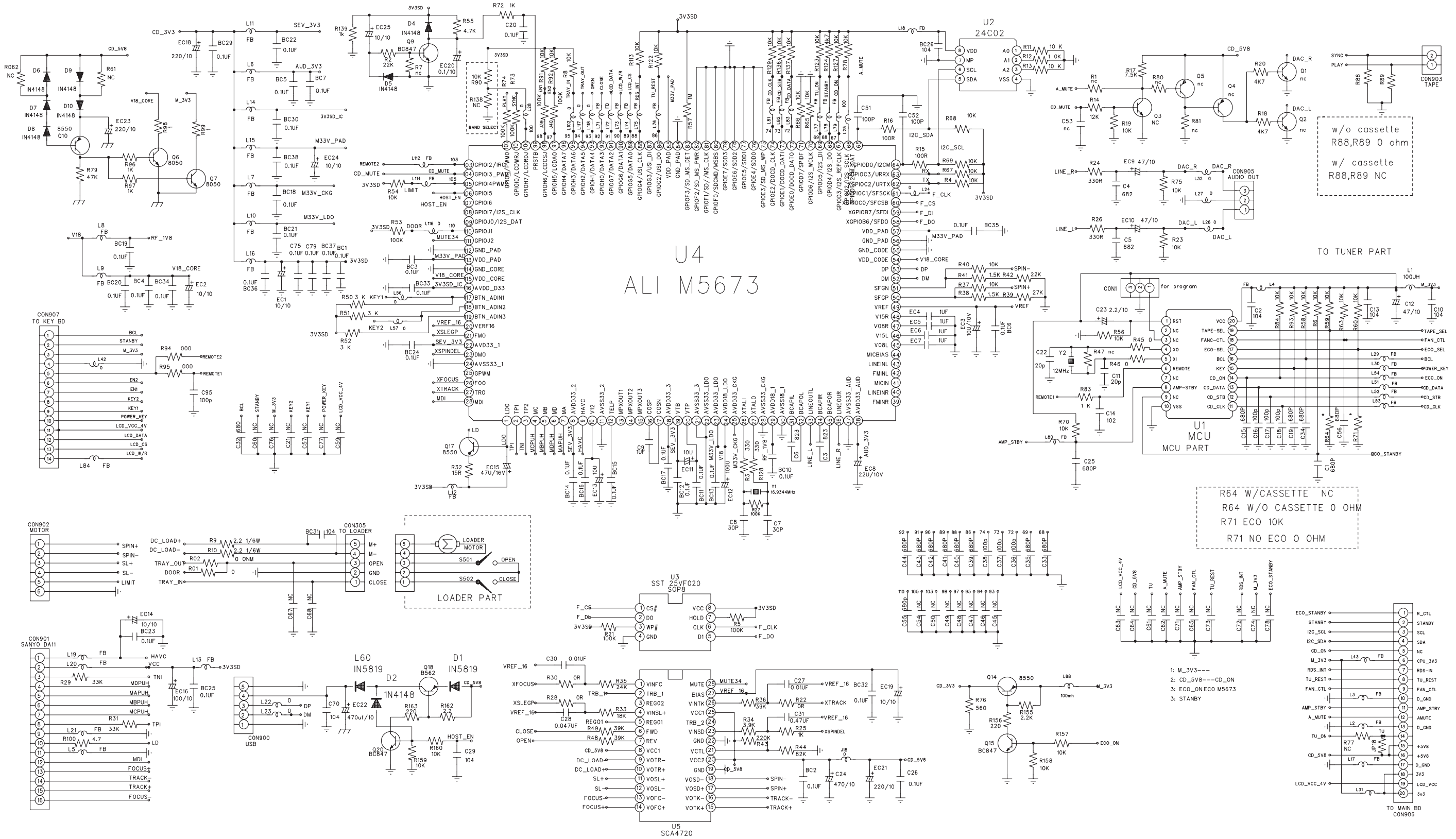
PCB LAYOUT - MCU BOARD (BOTTOM VIEW)



LAYOUT DIAGRAM - USB BOARD



CIRCUIT DIAGRAM - MCU & USB BOARD

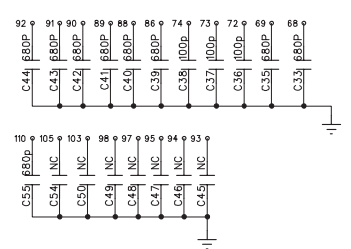
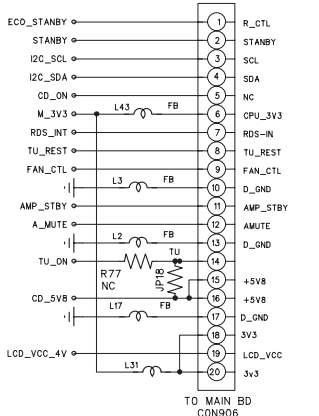


U4
ALI M5673

R64 W/CASSETTE NC
R64 W/O CASSETTE 0 OHM
R71 ECO 10K
R71 NO ECO 0 OHM

1: M_3V3---
2: CD_5V8---CD_ON
3: ECO_ON ECO M5673
3: STANBY

w/o cassette
R88,R89 0 ohm
w/ cassette
R88,R89 NC



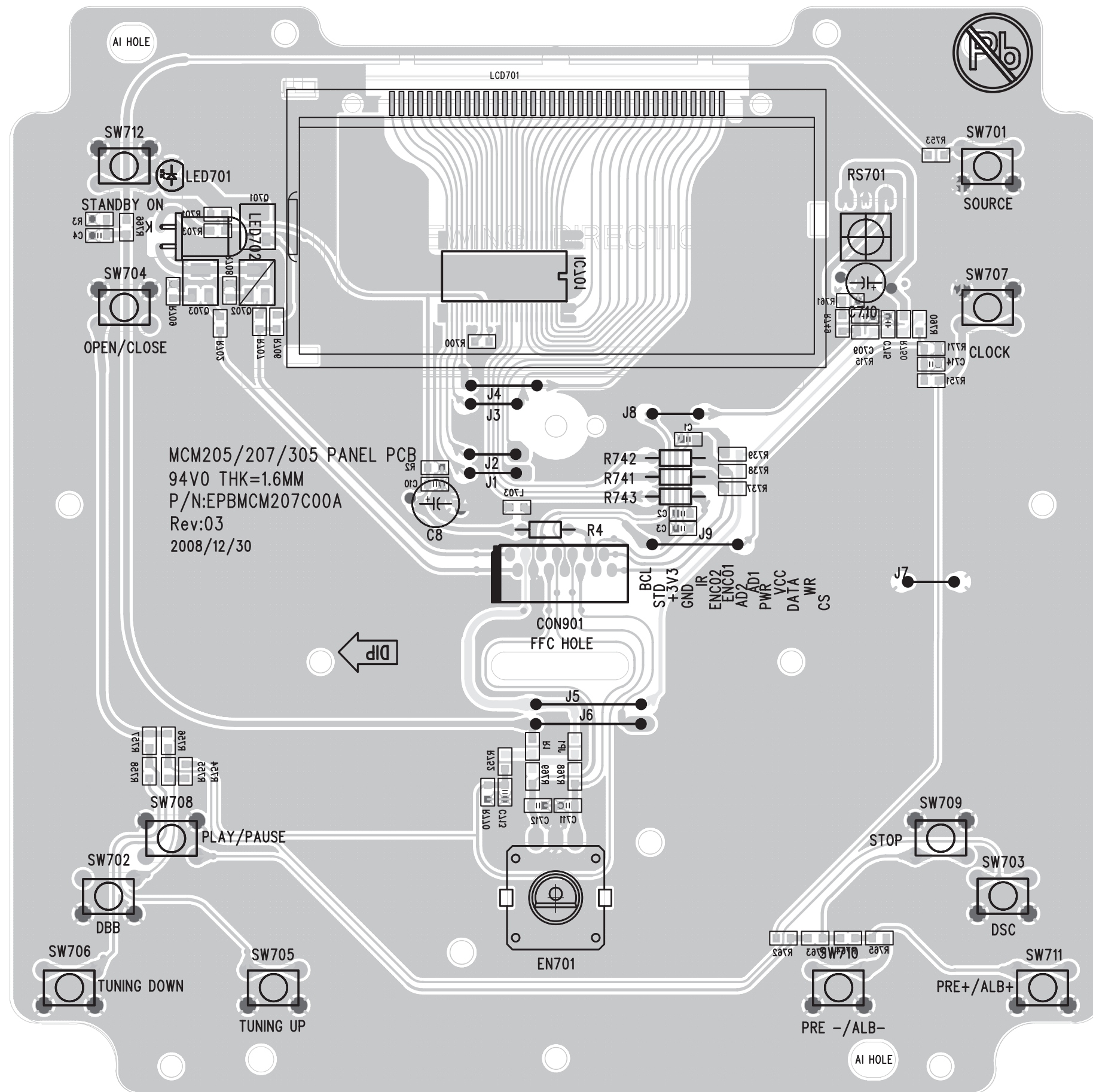
U5
SCA4720

PANEL PCB BOARD

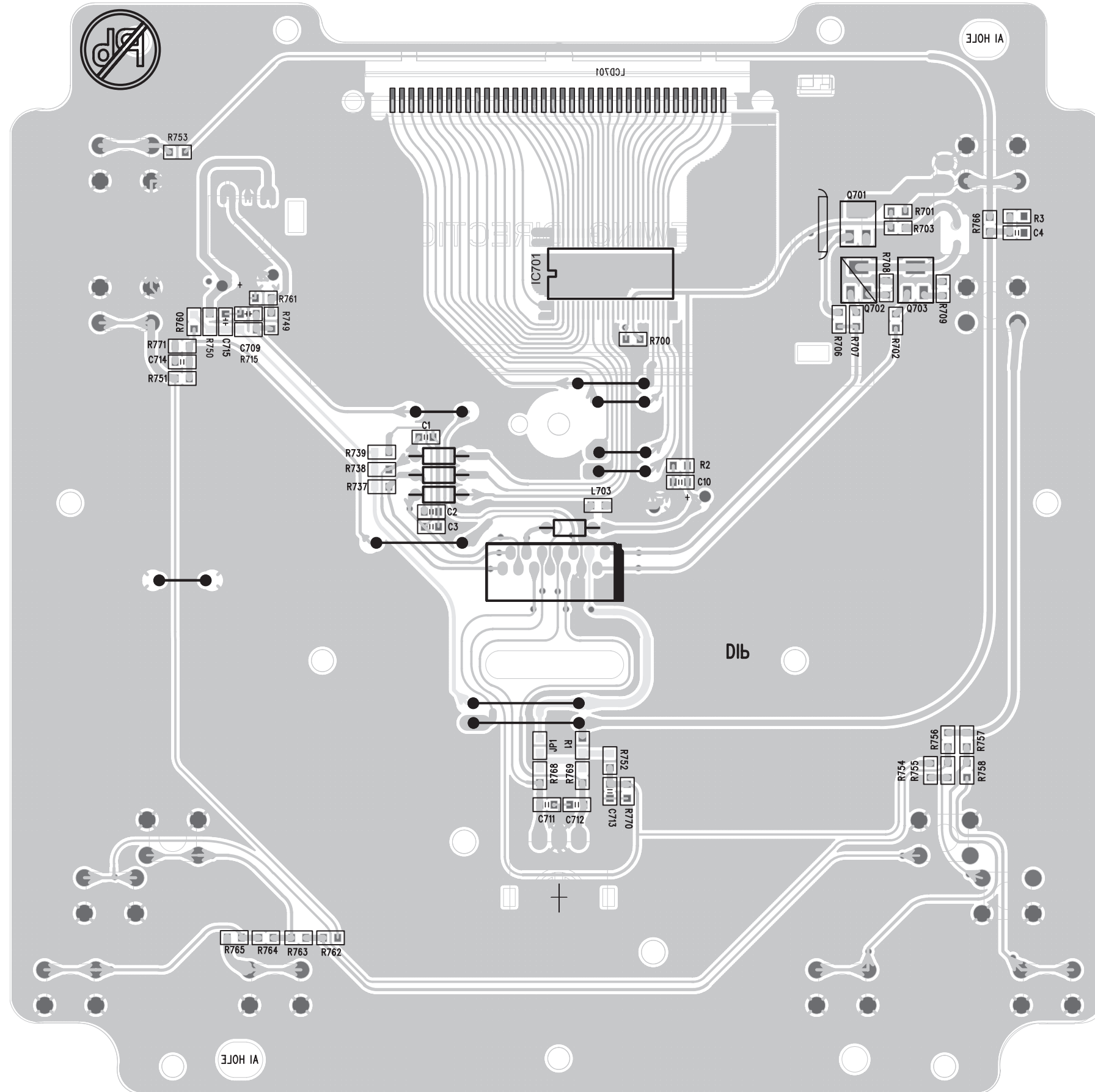
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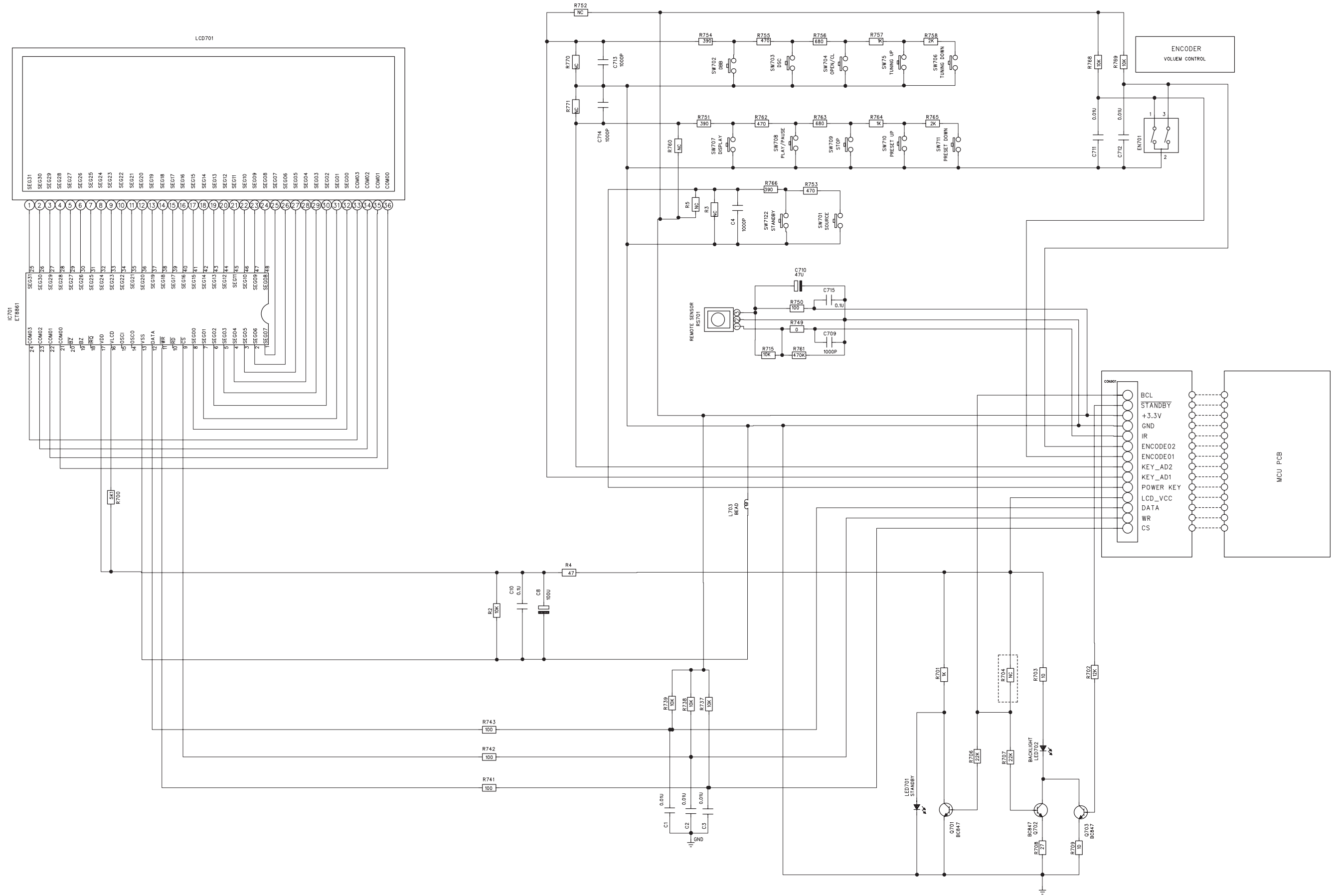
PCB LAYOUT - PANEL PCB BOARD (TOP VIEW)



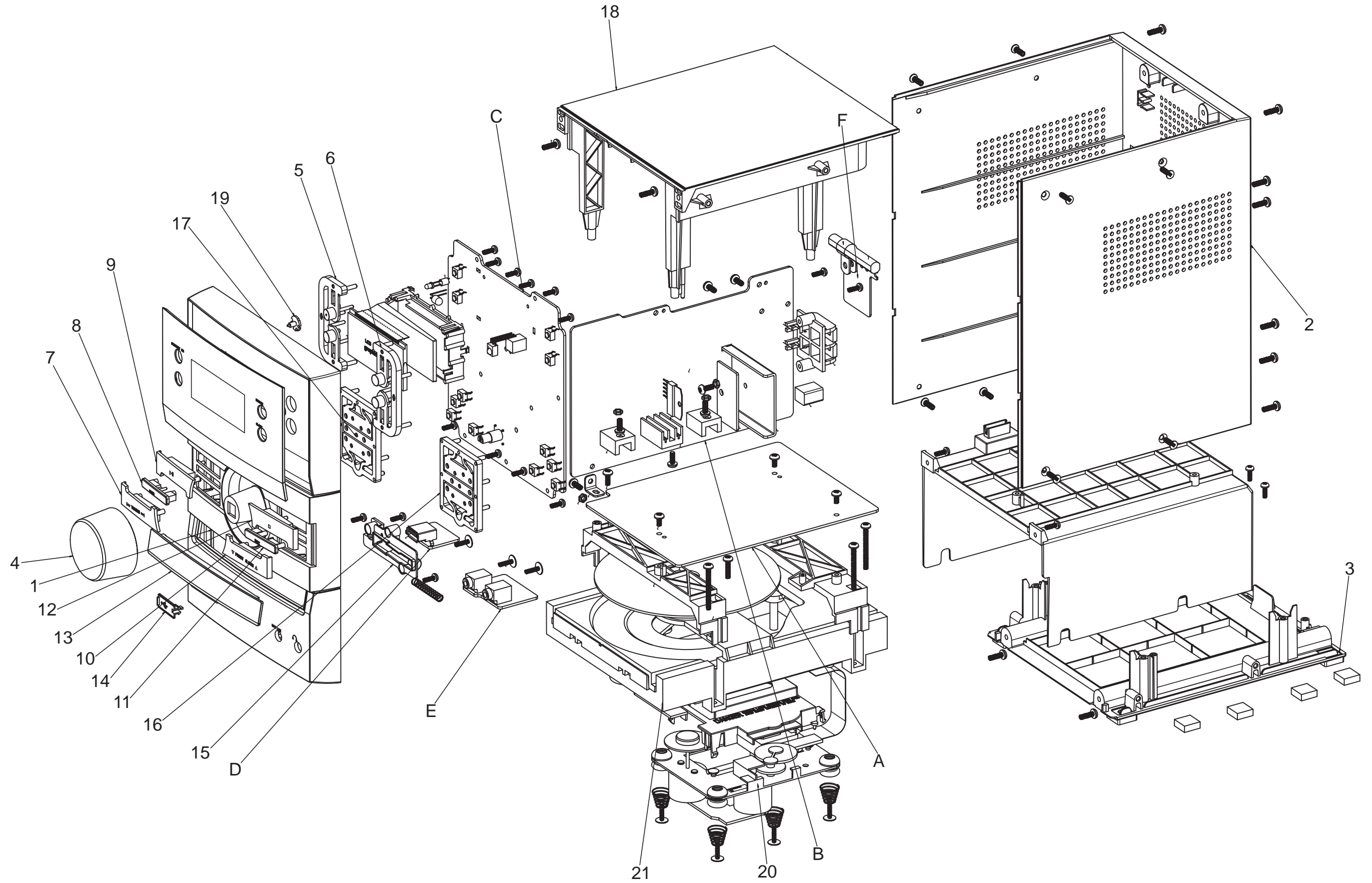
PCB LAYOUT - PANEL PCB BOARD (BOTTOM VIEW)



CIRCUIT DIAGRAM - PANEL PCB BOARD



SET MECHANICAL EXPLODED VIEW



REVISION LIST

1.0 Manual 3141 785 35350

Initial Service Manual released.