

Service Service Service



Service Manual

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**CLASS 1
LASER PRODUCT**

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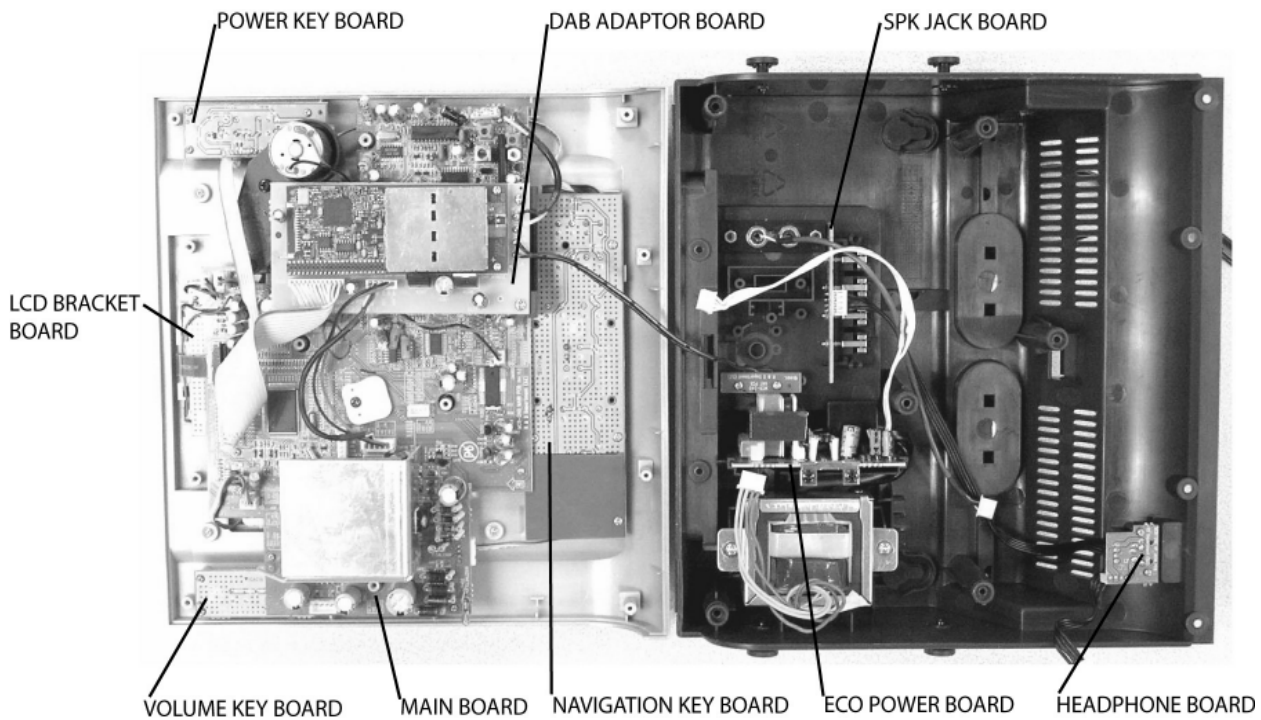
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Version 1.1



PHILIPS

LOCATION OF PCBS



VERSION VARIATIONS:

[illegible]

SPECIFICATIONS

GENERAL:

Mains voltage	: 230V $\pm$ 10%
Mains frequency	: 50Hz
Clock accuracy	: < 4 seconds per day
Dimension centre unit	: 250 x 245 x 96 (mm)
Power consumption	
Active	: 15W
Standby	: < 6W (DEMO mode off)
ECO Power Standby	: < 1W

TUNER:

FM

Tuning range	: 87.5-108MHz
Grid	: 50kHz
IF frequency	: 10.7MHz $\pm$ 20kHz
Aerial input	: T type antenna
Sensitivity at 26dB S/N	: < 22dBf
Selectivity at 300kHz bandwidth	: > 15dB
Image rejection	: > 20dB
Distortion at RF=1mV, dev. 75kHz	: < 3%
-3dB Limiting point	: < 18dB
Crosstalk at RF=1mV, dev. 40kHz	: > 18dB

COMPACT DISC:

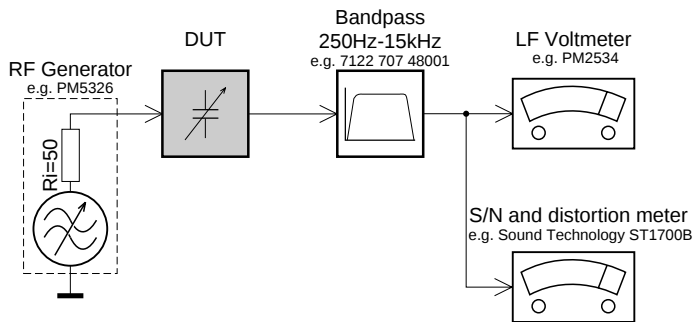
Frequency response within $\pm$ 3dB	: 80Hz - 12kHz
Output level (in Vrms)	: 500mV, $Z_{out} = 100\Omega$
Signal/Noise ratio (A-weighted)	: > 57dBA
Crosstalk at 1kHz	: > 26dB
Channel difference at 1kHz	: 2dB
Emphasis	: 15/50 μ S (switched automatically by CD10)
THD Noise(1kHz)	: < 1.5%
THD Noise(10kHz)	: < 3%
MP3-CD Bit Rate	: 8-320 kbps
WMA-CD Bit Rate	: 64-192 kbps
Sampling Rate	: 8, 11.025, 12, 16, 22.05, 24, 32, 44.1, 48, 96 kHz
Format	: ISO9660, Joliet

AMPLIFIER:

Output power	
L & R	: 2 x 4.8W (4 Ω , 1kHz, 10% THD)
Frequency response within -3dB	: 60Hz-16kHz
Digital Sound Control (DSC)	: Jazz / Rock / Pop / Classic
Dynamic Bass Boost (DBB)	: ON / OFF
Input sensitivity	
Aux in (at 1kHz)	: 500mV $\pm$ 2dB
Output sensitivity	
Headphone output at 32 k Ω	: 15mW $\pm$ 2dB (Max. vol.)

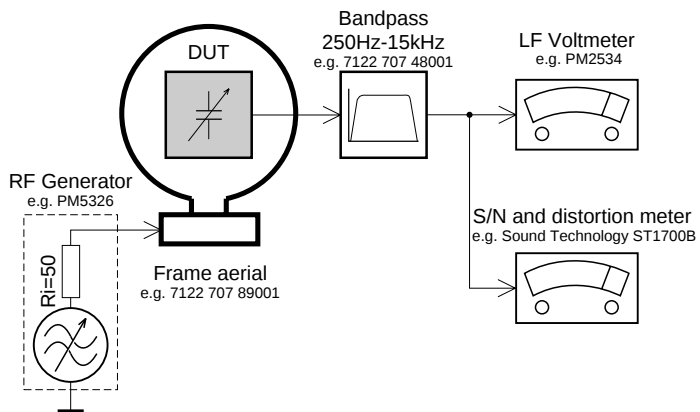
MEASUREMENT SETUP

Tuner FM



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

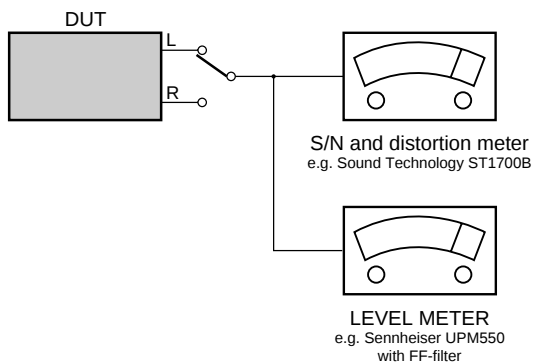
Tuner AM (MW,LW)



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

Service Tools:

Universal Torx driver holder	4822 395 91019
Torx bit T10 150mm	4822 395 50456
Torx driver set T6 - T20	4822 395 50145
Torx driver T10 extended	4822 395 50423

Cassette:

SBC419 Test cassette CrO2	4822 397 30069
SBC420 Test cassette Fe	4822 397 30071
MTT150 Dolby level 200nWb/M	4822 397 30271

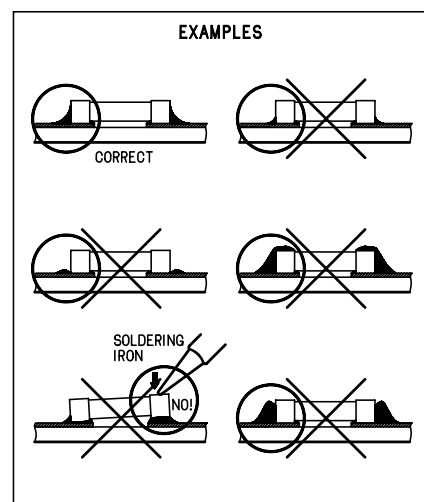
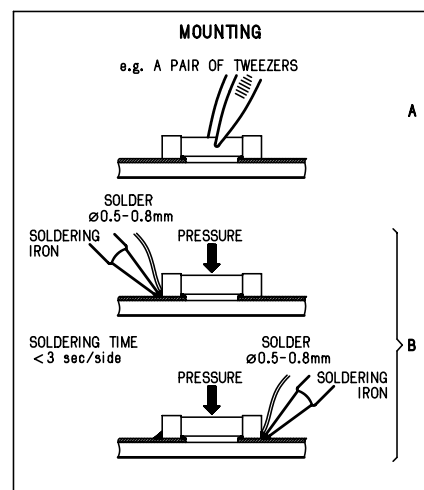
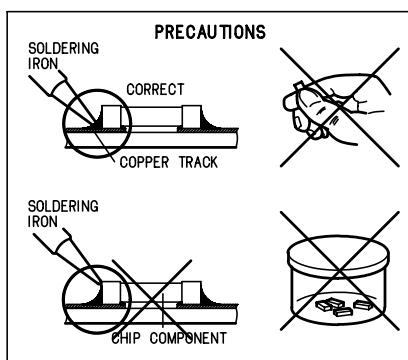
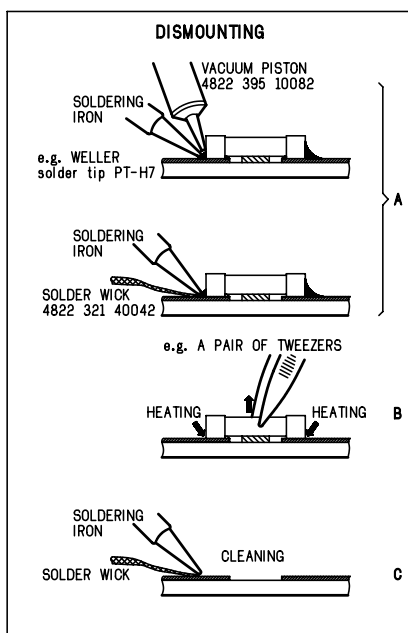
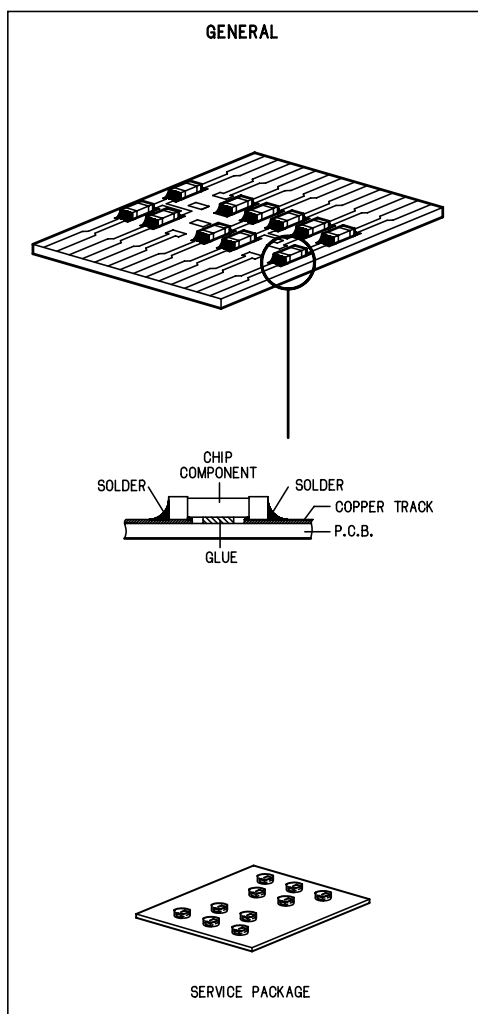
Compact Disc:

SBC426/426A Test disc 5 + 5A	4822 397 30096
SBC442 Audio Burn-in Test disc 1kHz	4822 397 30155
SBC429 Audio Signals disc	4822 397 30184
Dolby Pro-logic Test Disc	4822 395 10216

ESD Equipment:

Anti-static table mat - large 1200x650x1.25mm ...	4822 466 10953
Anti-static table mat - small 600x650x1.25mm	4822 466 10958
Anti-static wristband	4822 395 10223
Connector box (1M Ω)	4822 320 11307
Extension cable (to connect wristband to conn. box)	4822 320 11305
Connecting cable (to connect table mat to conn. box)	4822 320 11306
Earth cable (to connect product to mat or box)	4822 320 11308
Complete kit ESD3 (combining all above products)	4822 320 10671
Wristband tester	4822 344 13999

HANDLING CHIP COMPONENTS



**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**WAARSCHUWING**

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).

Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.

Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.

Houd componenten en hulpmiddelen ook op hetzelfde potentiaal.

**ATTENTION**

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).

Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.

Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.

Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

**WARNUNG**

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).

Unvorsichtige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren.

Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.

Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

**AVVERTIMENTO**

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).

La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.

Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.

Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.



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 .



Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

De Veiligheidsonderdelen zijn aangeduid met het symbool .



Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

Les composants de sécurité sont marqués .



Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

Sicherheitsbauteile sind durch das Symbol  markiert.



Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

Componenti di sicurezza sono marcati con .



After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5mA.

**Warning !**

Invisible laser radiation when open.
Avoid direct exposure to beam.

**Varning !**

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

**Varoitus !**

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

**Advarse !**

Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.



"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

INFORMATION ABOUT LEAD-FREE SOLDERING

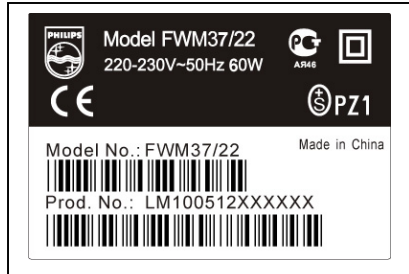
Philips CE is producing lead-free sets from 1.1.2005 onwards.

IDENTIFICATION:

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



Example S/N:



Bottom line of typeplate gives a 14-digit S/N. Digit 5&6 is the year, digit 7&8 is the week number, so in this case 2005 wk12

So from **0501** onwards = from 1 Jan 2005 onwards

Important note: In fact also products of year 2004 must be treated in this way as long as you avoid mixing solder-alloys (lead-ed/ lead-free). So best to always use SAC305 and the higher temperatures belong to this.

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free solder alloy Philips SAC305 with order code 0622 149 00106. If lead-free solder-paste is required, please contact the manufacturer of your solder-equipment. In general use of solder-paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free solder alloy. The solder tool must be able
 - To reach at least a solder-temperature of 400°C,
 - To stabilize the adjusted temperature at the solder-tip
 - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C – 380°C is reached and stabilized at the solder joint. Heating-time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips switch off un-used equipment, or reduce heat.
- Mix of lead-free solder alloy / parts with lead-ed solder alloy / parts is possible but PHILIPS recommends strongly to avoid mixed solder alloy types (lead-ed and lead-free).
If one cannot avoid or does not know whether product is lead-free, clean carefully the solder-joint from old solder alloy and re-solder with new solder alloy (SAC305).
- Use only original spare-parts listed in the Service-Manuals. Not listed standard-material (commodities) has to be purchased at external companies.
- Special information for BGA-ICs:
 - always use the 12nc-recognizable soldering temperature profile of the specific BGA (for de-soldering always use the lead-free temperature profile, in case of doubt)
 - lead free BGA-ICs will be delivered in so-called 'dry-packaging' (sealed pack including a silica gel pack) to protect the IC against moisture. After opening, dependent of MSL-level seen on indicator-label in the bag, the BGA-IC possibly still has to be baked dry. (MSL=Moisture Sensitivity Level). This will be communicated via AYS-website.
 Do not re-use BGAs at all.
- For sets produced before 1.1.2005 (except products of 2004), containing lead-ed solder-alloy and components, all needed spare-parts will be available till the end of the service-period. For repair of such sets nothing changes.
- 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

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

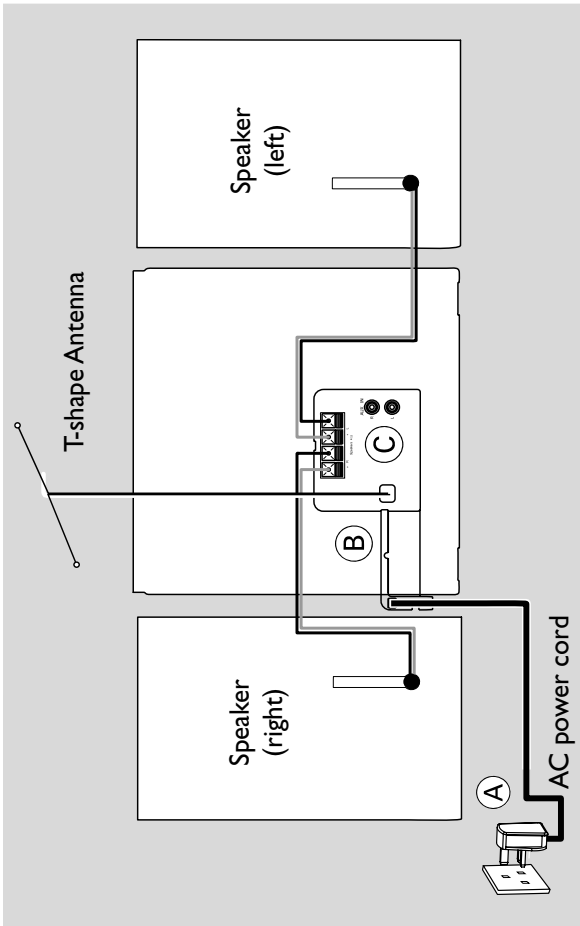
For additional questions please contact your local repair-helpdesk.

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.

Preparations



Rear connections

The type plate is located at the rear of the system.
For users in the U.K.: please follow the instructions.

(A) Power

Before connecting the AC power cord to the wall outlet, ensure that all other connections have been made.

Warning!

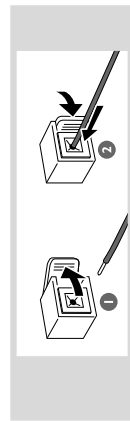
- For optimal performance, use only the original power cable.
- Never make or change any connections with the power switched on.

To avoid overheating of the system, a safety circuit has been built in. Therefore, your system may switch to Standby mode automatically under extreme conditions. If this happens, let the system cool down before reusing it (not available for all versions).

(B) Speakers Connection

Front Speakers

Connect the speaker wires to the Speaker terminals, right speaker to "R" and left speaker to "L", colored (marked) wire to "+" and black (unmarked) wire to "-".



Fully insert the stripped portion of the speaker wire into the terminal as shown.

Notes:

- For optimal sound performance, use the supplied speakers.
- Do not connect more than one speaker to any one pair of +/- speaker terminals.
- Do not connect speakers with an impedance lower than the speakers supplied. Please refer to the SPECIFICATIONS section of this manual.

Preparations

(C) Optional connection

The optional equipment and connecting cords are not supplied. Refer to the operating instructions of the connected equipment for details.

Connecting other equipment to your system

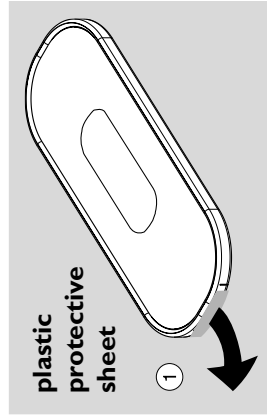
Connect the audio left and right OUT terminals of a TV, VCR, Laser Disc player, DVD player or CD Recorder to the **AUX** terminals.

Note:

- If you are connecting equipment with a mono output (a single audio out terminal), connect it to the AUX left terminal. Alternatively, you can use a "single to double" cinch cable (the output sound still remain mono).

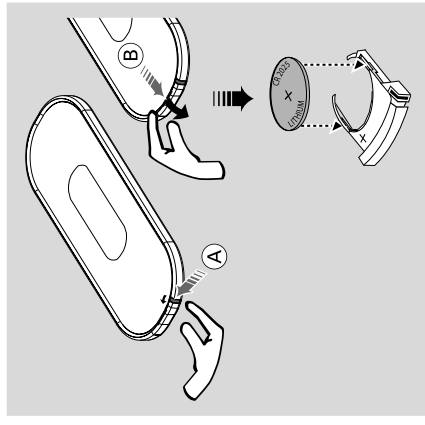
Before using the remote control

- Pull out the plastic protective sheet.
- Select the source you wish to control by pressing one of the source select keys on the remote control (for example CD, TUNER).
- Then select the desired function (for example ► II, ◀◀, ▶▶).



Replacing battery (lithium CR2025) into the remote control

- Pull out the knob (A) slightly to the left.
- Pull out the battery compartment (B).
- Replace a new battery and fully insert the battery compartment back to the original position.



CAUTION!

Batteries contain chemical substances, so they should be disposed of properly.

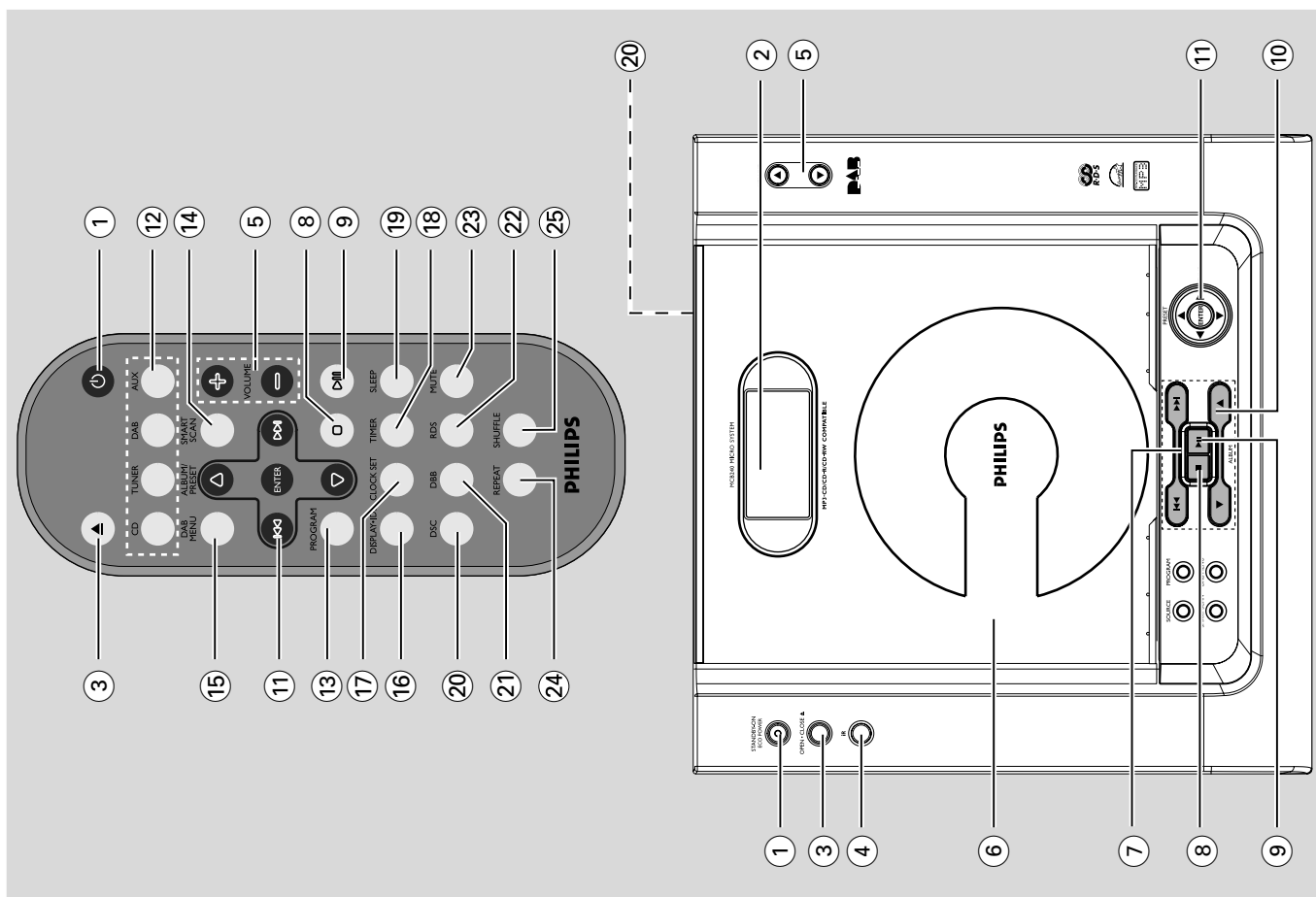
PREPARATIONS AND CONTROLS

Controls

Controls on the system and remote control

- ① **STANDBY-ON/ECO POWER**
 - switches the system on or to Eco Power standby/normal standby with clock display.
- ② **Display screen**
 - shows the status of the system.
- ③ **OPEN • CLOSE**
 - opens/closes the CD door.
- ④ **IR**
 - remote sensor
- ⑤ **VOLUME (▲▼) (+/-)**
 - adjusts the volume level.
 - adjusts the hours and minutes for the clock/timer function.
- ⑥ **CD Door**
- ⑦ **◀▶/▶▶**
 - for CD/MP3-CD fast searches back and forward within a track/disc (press and hold).
 - skips to the beginning of a current/previous/subsequent track.
- ⑧ **■**
 - stops disc playback or erases a disc program.
- ⑨ **▶ II**
 - starts or interrupts playback.
- ⑩ **ALBUM ▼/▲**
 - for TUNER selects a preset radio station.
 - for MP3-CD skips to the beginning of a current/previous/subsequent album.
- ⑪ **Navigation controls**
PRESET▲ / ▼ALBUM/PRESET for TUNER
 - selects a preset radio station (up, down).
 - for MP3-CD (**on the remote only**)
 - skips to the beginning of a current/previous/subsequent album.

- TUNE ◀ / ▶ (◀◀/▶▶)**
 - for DAB scrolls an option list.
 - for TUNER tunes to radio stations (down/up).
 - for CD/MP3-CD (**on the remote only**)
 - fast searches back and forward within a track/disc (press and hold).
 - skips to the beginning of a current/previous/subsequent track.
- ENTER** press to select an option (DAB only)
- ⑫ **SOURCE**
 - selects the respective sound source for CD/DAB/FM/AUX.
- ⑬ **PROGRAM**
 - for CD/MP3-CD programs tracks and reviews the program.
 - for TUNER/DAB programs radio stations.
 - for CLOCK (on the set only) selects 12- or 24-hour clock display.
- ⑭ **SMART SCAN**
 - autoscans for DAB frequencies.
- ⑮ **DAB MENU**
 - enables access to advanced setup options.
- ⑯ **DISPLAY•ID3**
 - for CD/MP3-CD displays disc information during playback.
 - for DAB to view DAB service information.
- ⑰ **CLOCK SET**
 - sets the clock function.
- ⑱ **TIMER**
 - activates/deactivates or sets the timer function.
- ⑲ **SLEEP**
 - activates/deactivates or selects the sleeper time.
- ⑳ **DSC (Digital Sound Control)**
 - selects sound characteristics: POP/JAZZ/ROCK/CLASSIC.



Controls

- ②1 **DBB (Dynamic Bass Boost)**
 - enhances the bass.
- ②2 **RDS**
 - for tuner; displays RDS information.
- ②3 **MUTE**
 - interrupts and resumes sound reproduction.
- ⏮ **REPEAT**
 - repeats a track/album/disc program/entire disc.
- ∞ **SHUFFLE**
 - plays disc tracks in random order.
- ②6 
 - connects headphones.

Notes for remote control:

- First select the source you wish to control by pressing one of the source select keys on the remote control (for example CD, TUNER).
- Then select the desired function (for example ► II, ◀◀, ▶▶).

Troubleshooting

WARNING

Under no circumstances should you try to repair the system yourself, as this will invalidate the warranty. Do not open the system as there is a risk of electric shock.

If a fault occurs, first check the points listed below before taking the system for repair. If you are unable to remedy a problem by following these hints, consult your dealer or Philips for help.

Problème	Solution
“NO DISC” is displayed.	Insert a disc. Check if the disc is inserted upside down. Wait until the moisture condensation at the lens has cleared. Replace or clean the disc, see “Maintenance”. Use a finalised CD-RW or correct format disc. If the signal is too weak, adjust the antenna or connect an external antenna for better reception. Increase the distance between the Micro HiFi System and your TV or VCR. Hang up one end of the T-shape antenna and keep the other end at horizontal angle to it. Remove and reconnect the AC power plug and switch on the system again. Adjust the volume. Disconnect the headphones. Check that the speakers are connected correctly. Check if the stripped speaker wire is clamped. Check the speaker connections and location.
Radio reception is poor.	Select the source (CD or TUNER, for example) before pressing the function button (▶#◀◀◀, ▶▶▶). Reduce the distance between the remote control and the system. Insert the battery with its polarities (+/- signs) aligned as indicated. Replace the battery. Point the remote control directly toward IR sensor on the front of the system. Set the clock correctly. Press TIMER to switch on the timer. Power has been interrupted or the power cord has been disconnected. Reset the clock/timer.
The system does not react when buttons are pressed.	
Sound cannot be heard or is of poor quality.	
The left and right sound outputs are reversed.	
The remote control does not function properly.	
The timer is not working.	
The Clock/Timer setting is erased.	

Important notes for users in the U.K.

Mains plug

This apparatus is fitted with an approved 13 Amp plug. To change a fuse in this type of plug proceed as follows:

- 1 Remove fuse cover and fuse.
- 2 Fix new fuse which should be a BS1362 5 Amp, A.S.T.A. or BSI approved type.
- 3 Refit the fuse cover.

If the fitted plug is not suitable for your socket outlets, it should be cut off and an appropriate plug fitted in its place.

If the mains plug contains a fuse, this should have a value of 5 Amp. If a plug without a fuse is used, the fuse at the distribution board should not be greater than 5 Amp.

Note: The severed plug must be disposed of to avoid a possible shock hazard should it be inserted into a 13 Amp socket elsewhere.

How to connect a plug

The wires in the mains lead are coloured with the following code: blue = neutral (N), brown = live (L).

As these colours may not correspond with the colour markings identifying the terminals in your plug, proceed as follows:

- Connect the blue wire to the terminal marked N or coloured black.
- Connect the brown wire to the terminal marked L or coloured red.
- Do not connect either wire to the earth terminal in the plug, marked E (or ⏏) or coloured green (or green and yellow).

Before replacing the plug cover, make certain that the cord grip is clamped over the sheath of the lead - not simply over the two wires.

Copyright in the U.K.

Recording and playback of material may require consent. See Copyright Act 1956 and The Performer's Protection Acts 1958 to 1972.

CAUTION

Use of controls or adjustments or performance of procedures other than herein may result in hazardous radiation exposure or other unsafe operation.

DISMANTLING INSTRUCTIONS

Dismantling of the Rear Portion

- 1) Remove 11 screws A and B as indicated to remove the Rear Cabinet.
- 2) Remove 2 screws C as indicated to loosen the Speaker Wire Holder.
- 3) Remove 2 screws D as indicated to loosen the Speaker Board .
- 4) Remove 2 screws E as indicated to loosen the AUX IN jack.

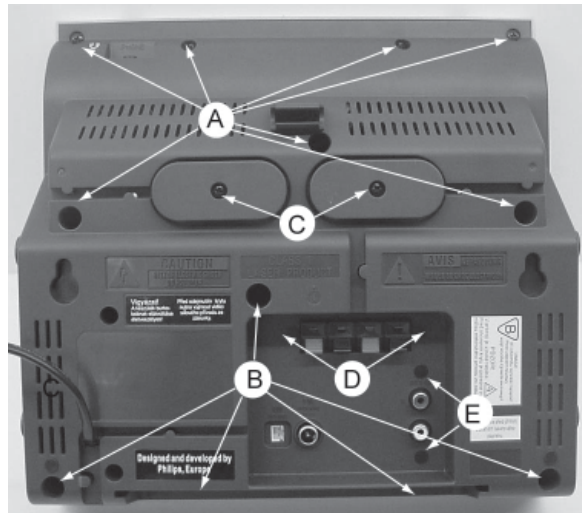


Figure 1

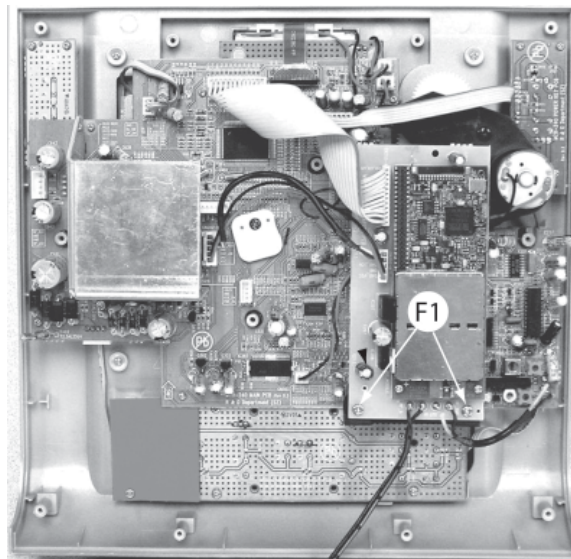


Figure 2

Dismantling of the Front Boards and CD Door

- 1) Loosen 2 screws F1 to remove the DAB Adaptor Board.
- 2) Loosen 3 screws G to remove the CD Mechanism Holder Bracket and loosen 5 screws F2 and F3 as indicated to remove the Main Board.
- 3) Remove 3 screws H as indicated to loosen the Gear Motor Module.
- 4) Loosen 4 screws I (see Figure 4) to remove the Key_C Board.
- 5) Loosen 2 screws J (see Figure 4) to remove the Display Board.

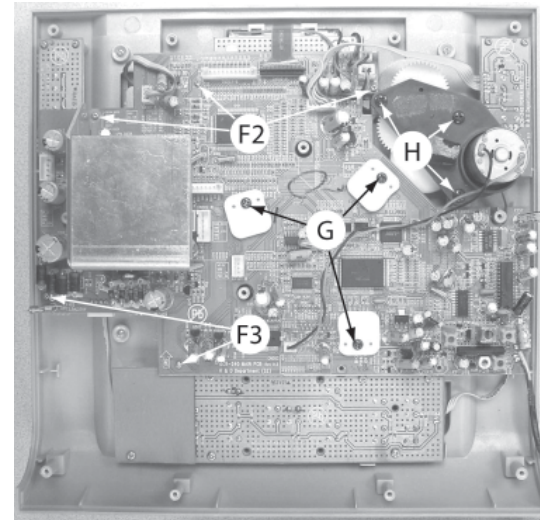


Figure 3

- 6) Loosen 4 screws K (see Figure 3) to remove the Power Key Board.
- 7) Loosen 8 screws L (see Figure 3) to remove the Volume Board.
- 8) Loosen 8 screws M (see Figure 3) to remove the Door Eject Lever Bracket Right/Left, then remove CD door.

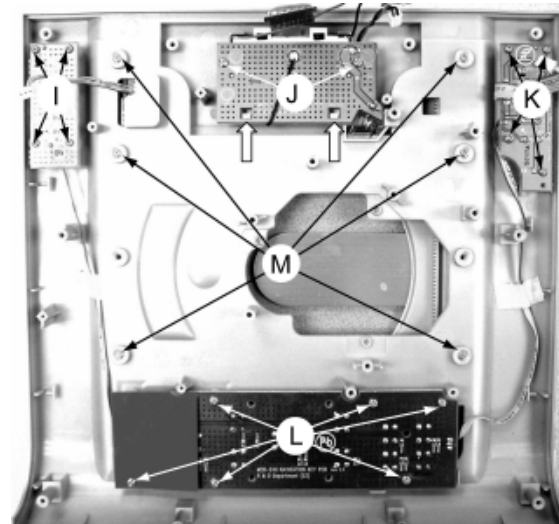


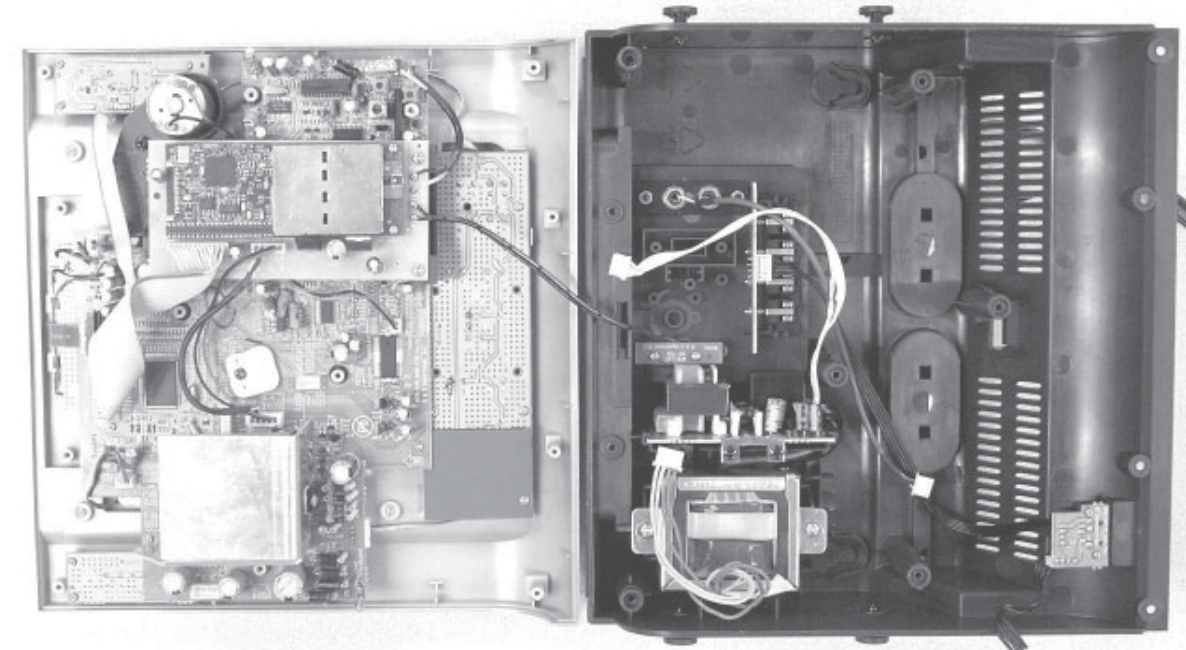
Figure 4

DISMANTLING INSTRUCTIONS

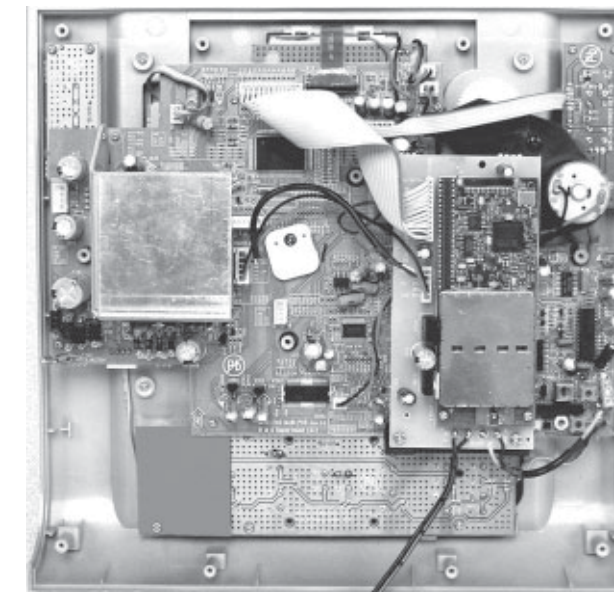
Repair Hints & Service Positions

Note: The flex cables are very fragile, care should be taken not to damage them during repair. After repair, be very sure that the flex cables are inserted properly into the flex sockets before encasing, otherwise faults may occur.

Service position A



Service position B



SERVICE TEST PROGRAM*(I) MCU All Reset*

- STEP 1: After plug in power, within 5 sec, on the front panel press "PRESET DOWN" key first (do not release).
- STEP 2: Then press "SMART SCAN" key on the panel (two keys are pressed). The system data now is reset.

After the MCU data reset, all the setting will be reset to default and the all FM memory will be reset to 87.5MHz.

Note: It is for factory reset before packing.

(II) MCU Software Version

- STEP 1: After plug in power, within 5 sec, on the front panel press "PRESET DOWN" key first (do not release).
- STEP 2: Then press "DAB MENU" key on the panel (two keys are pressed). The model number and software version now can be shown on the display. (e.g. "MCB240" for 3 sec then goto version no. "XXX")

(III) Display Segment Test

- STEP 1: After plug in power, within 5 sec, on the front panel press "PRESET DOWN" key first (do not release).
- STEP 2: Then press "PROGRAM" key on the panel (two keys are pressed). All the LCD display segment will be turned on.

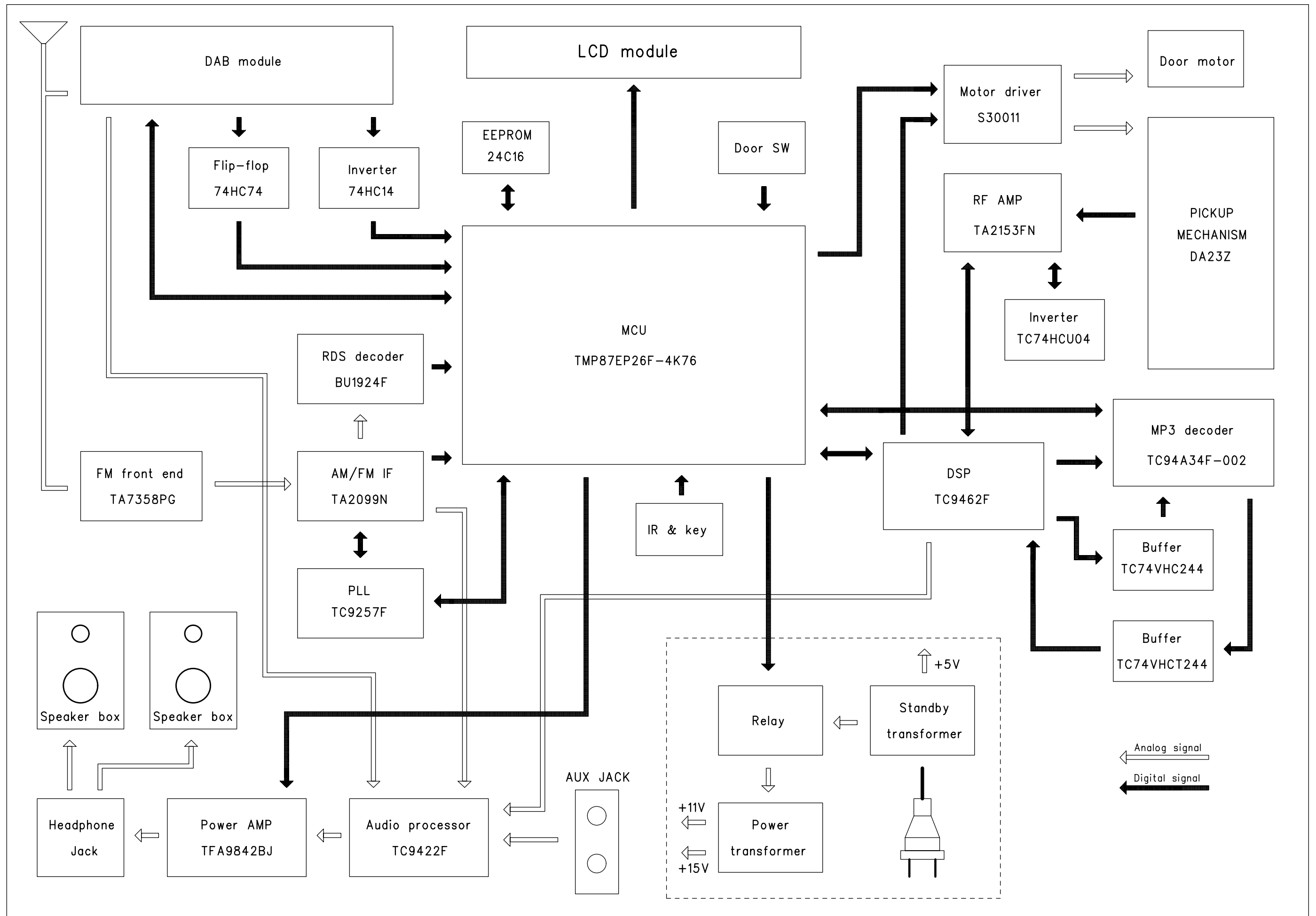
(IV) Tuner Alignment Set Test

- STEP 1: After plug in power, within 5 sec, on the front panel press "PRESET DOWN" key first (do not release).
- STEP 2: Then press "SOURCE" key on the panel (two keys are pressed). All the LCD display segment will be turned on.

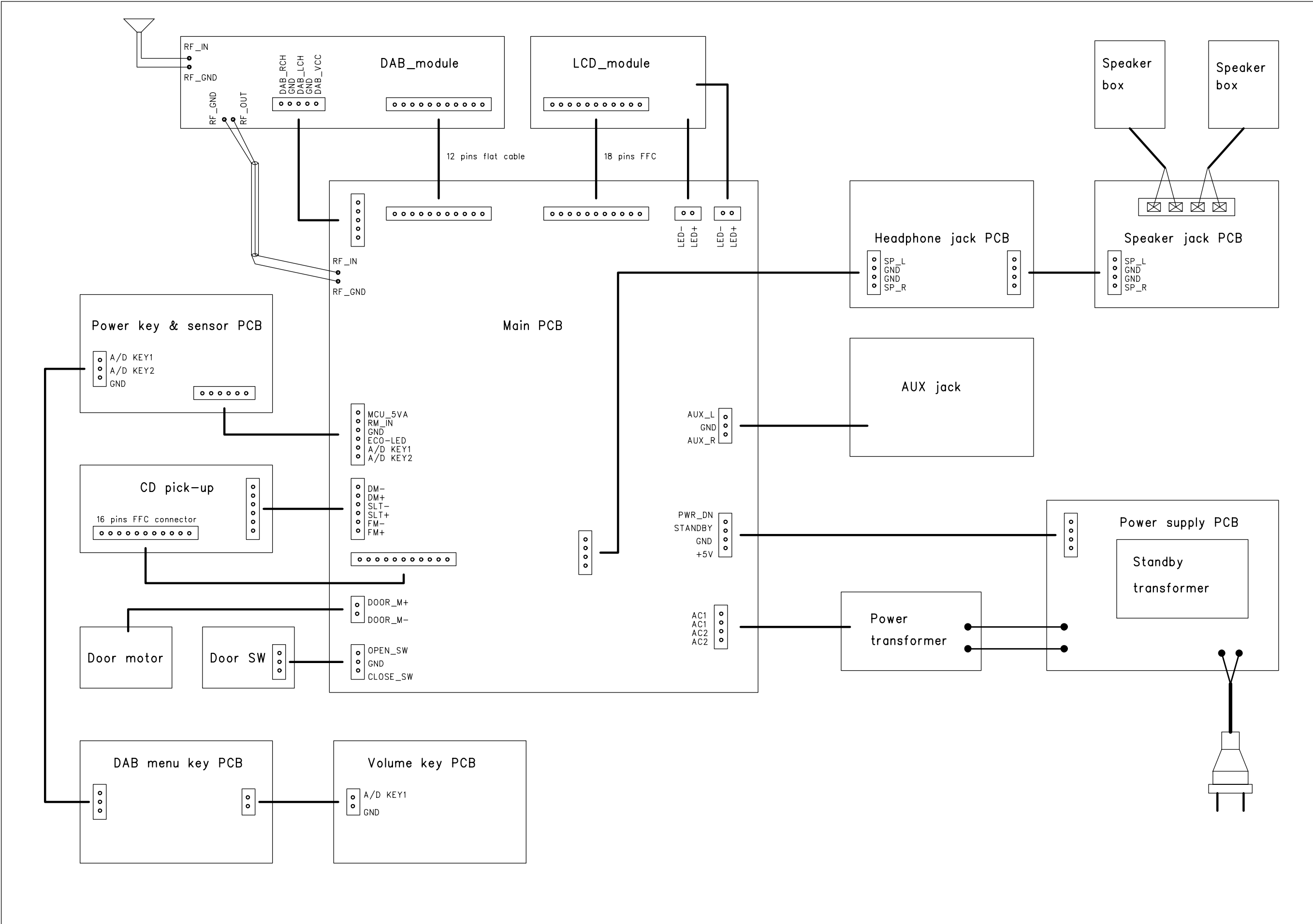
After the MCU data reset, the tuner memory will be preset to P1 FM87.5MHz, P2 FM90.1MHz, P3 98.1MHz, P4 106.1MHz, P5 108.0MHz and the remain will be set to 87.5MHz.

Note: It is for factory tuner alignment.

SET BLOCK DIAGRAM

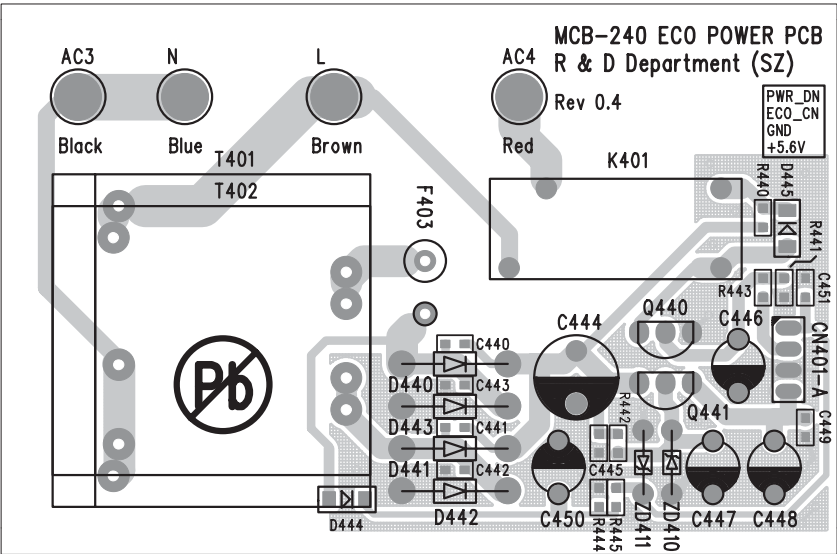


SET WIRING DIAGRAM

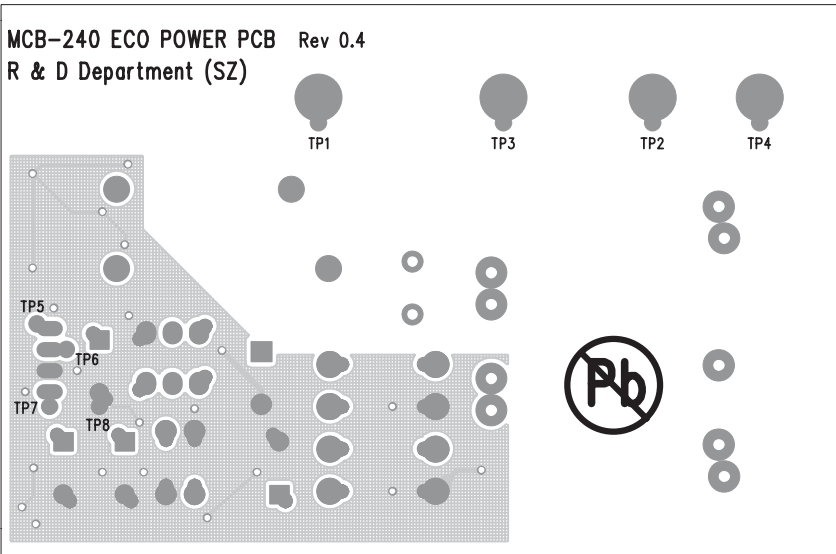




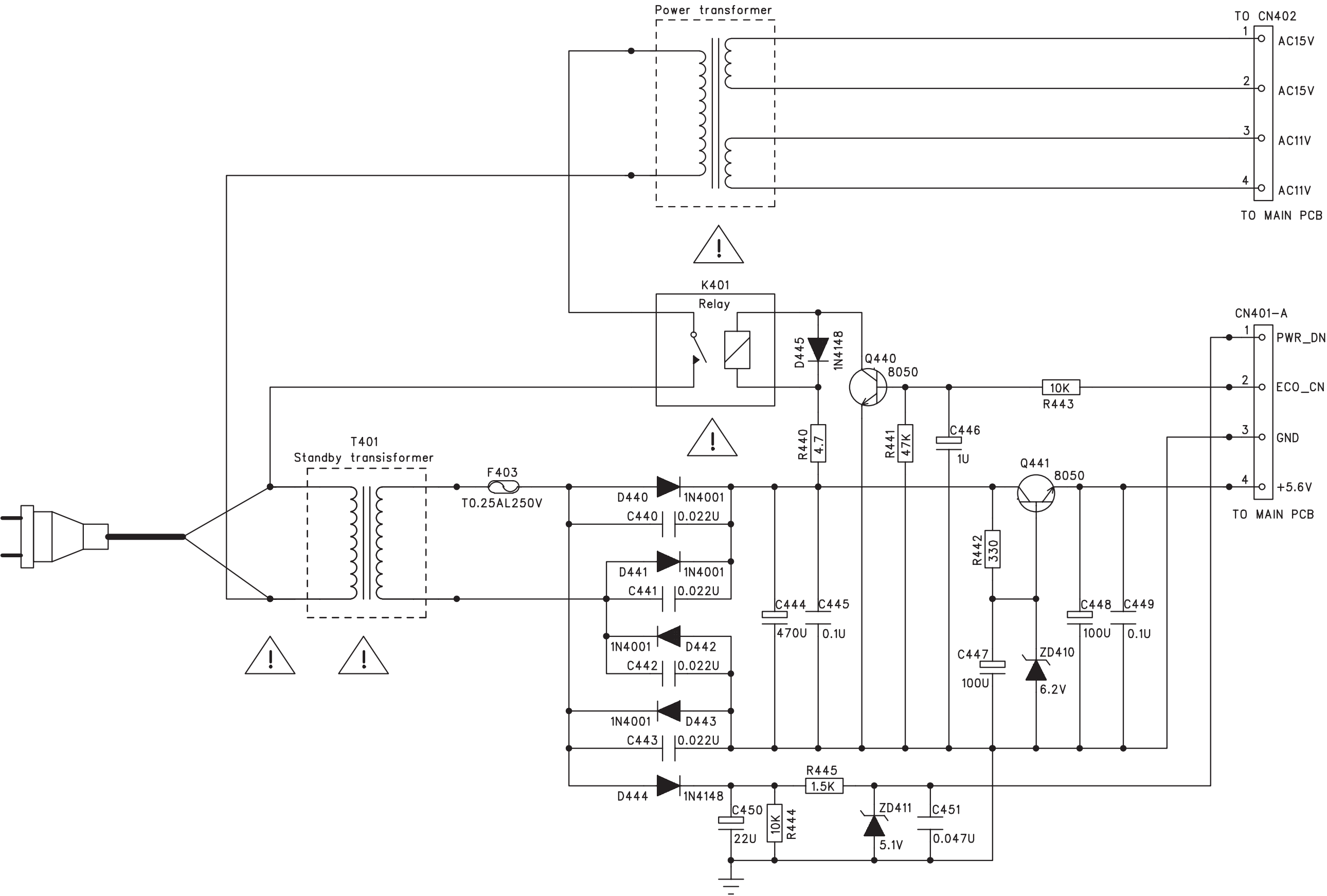
Printed Circuit Board - Side A



Printed Circuit Board - Side A



CIRCUIT DIAGRAM



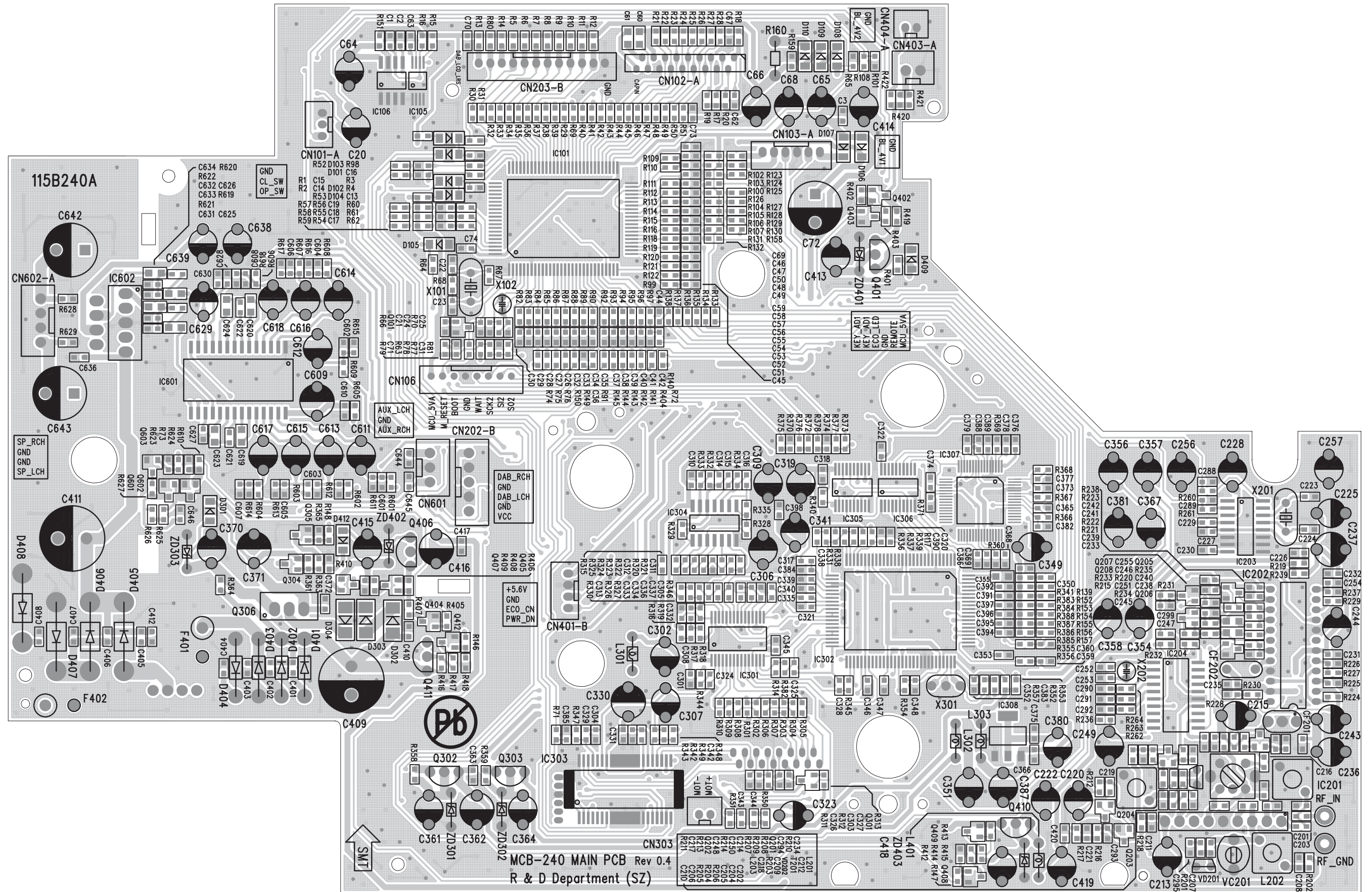
MAIN BOARD

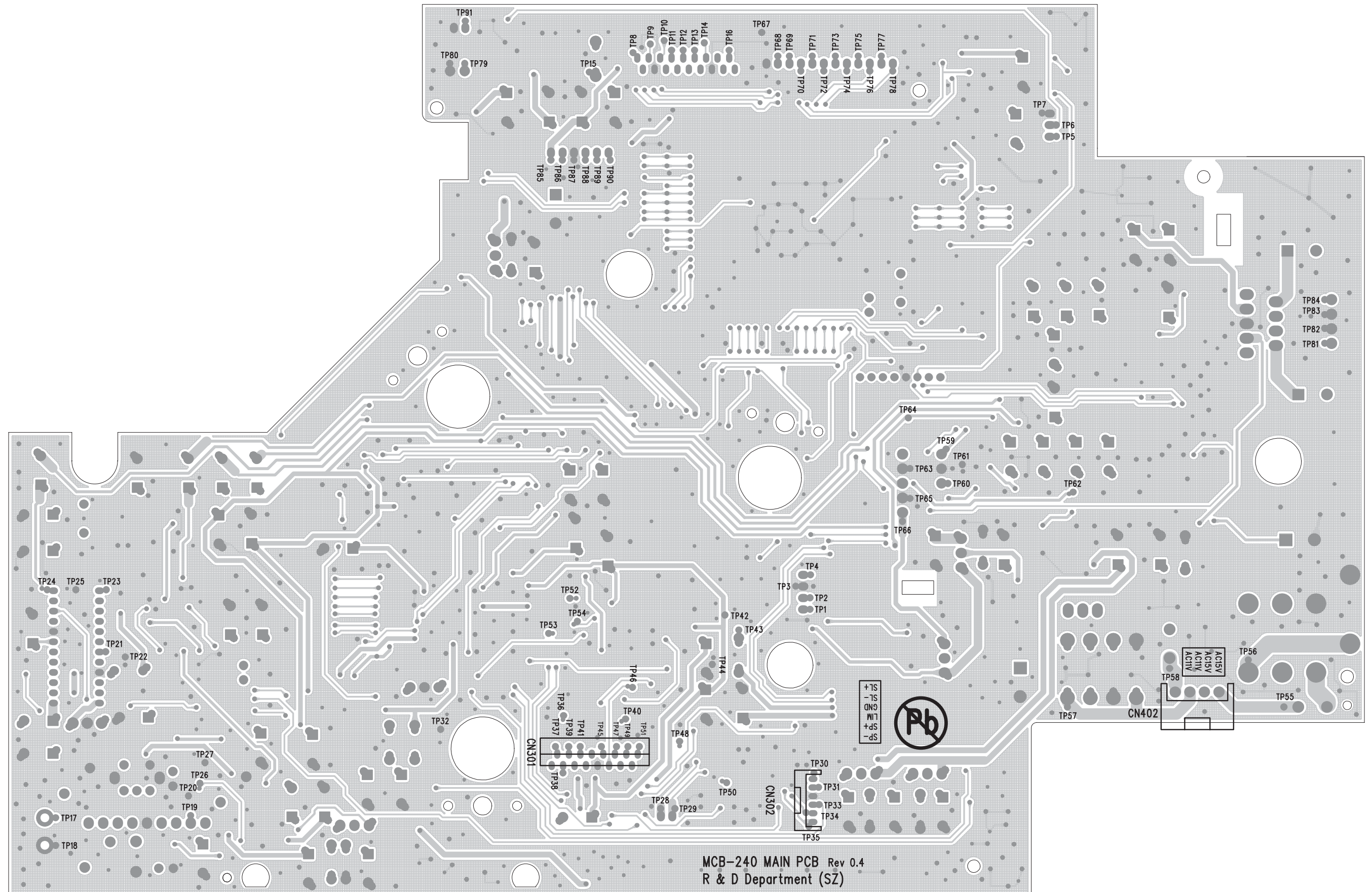
**The board is not intended to be repaired on component level.
Circuit Diagram and Printed Circuit Board drawings
are published for orientation only.**

In case of defects please replace the entire board.

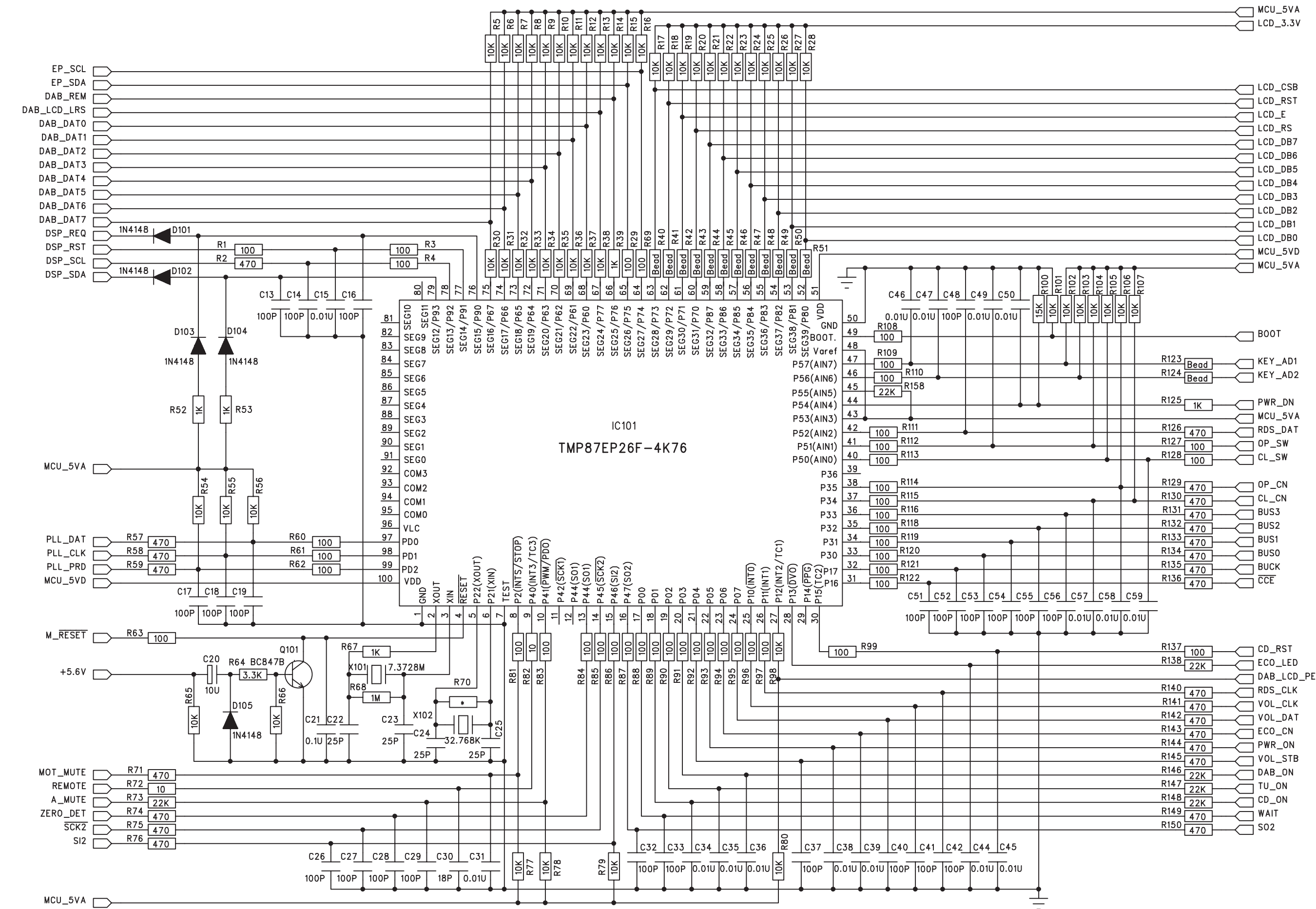
The board can be ordered with codenumber "9940 000 02999" for /22/25.

LAYOUT DIAGRAM - MAIN BOARD TOP SIDE

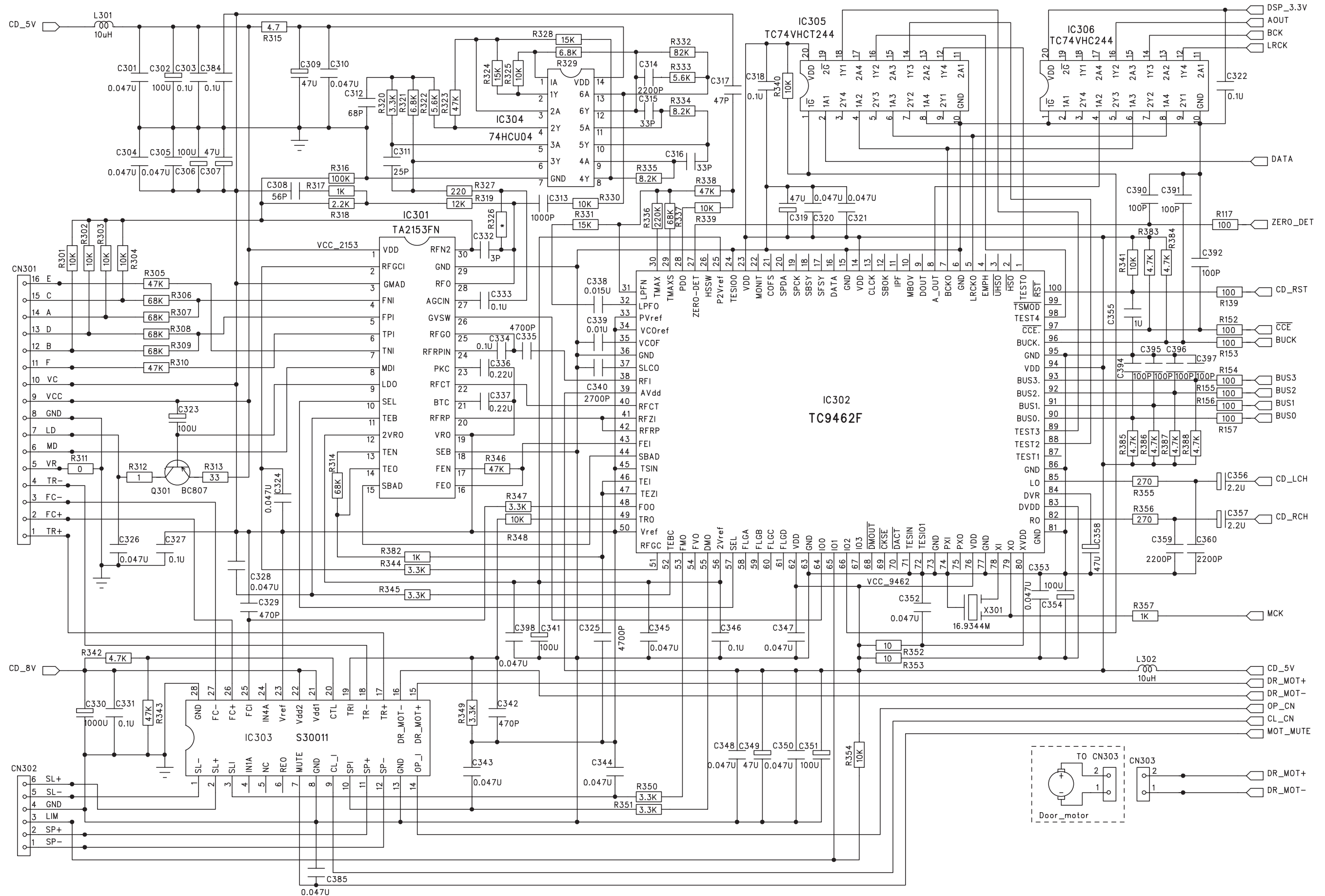


**LAYOUT DIAGRAM - MAIN BOARD
BOTTOM SIDE**

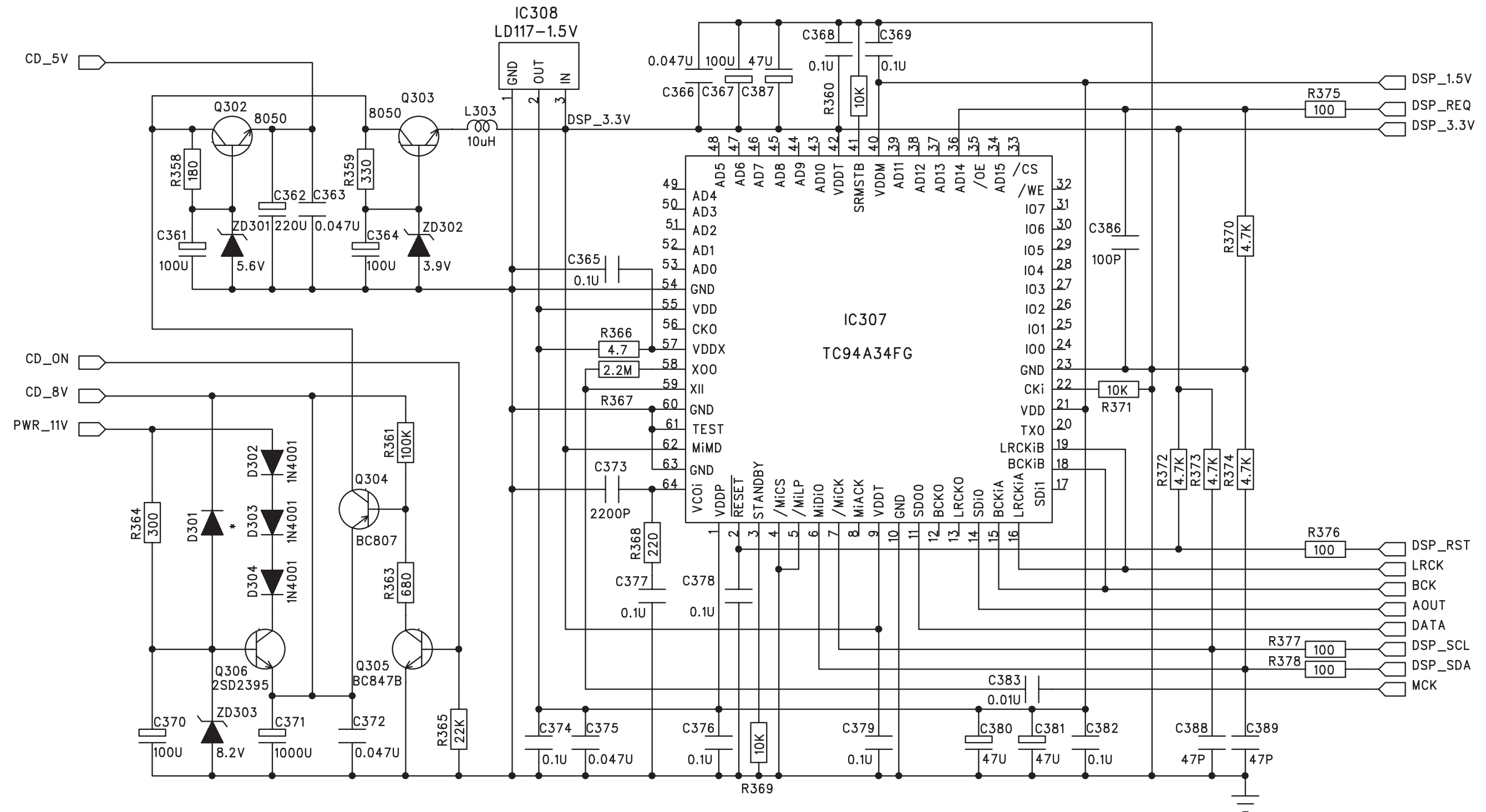
CIRCUIT DIAGRAM - MAIN BOARD
PART 1



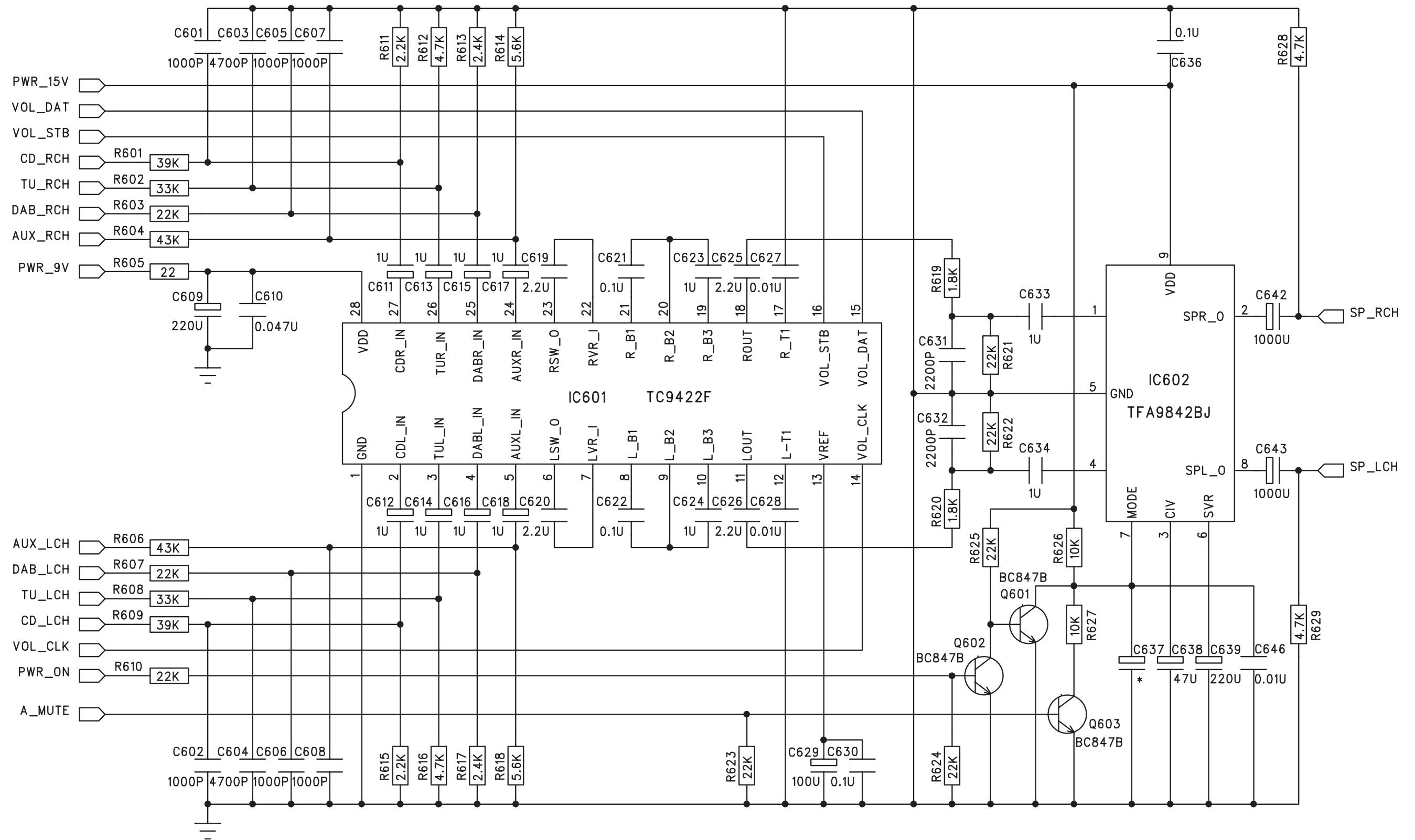
CIRCUIT DIAGRAM - MAIN BOARD PART 2



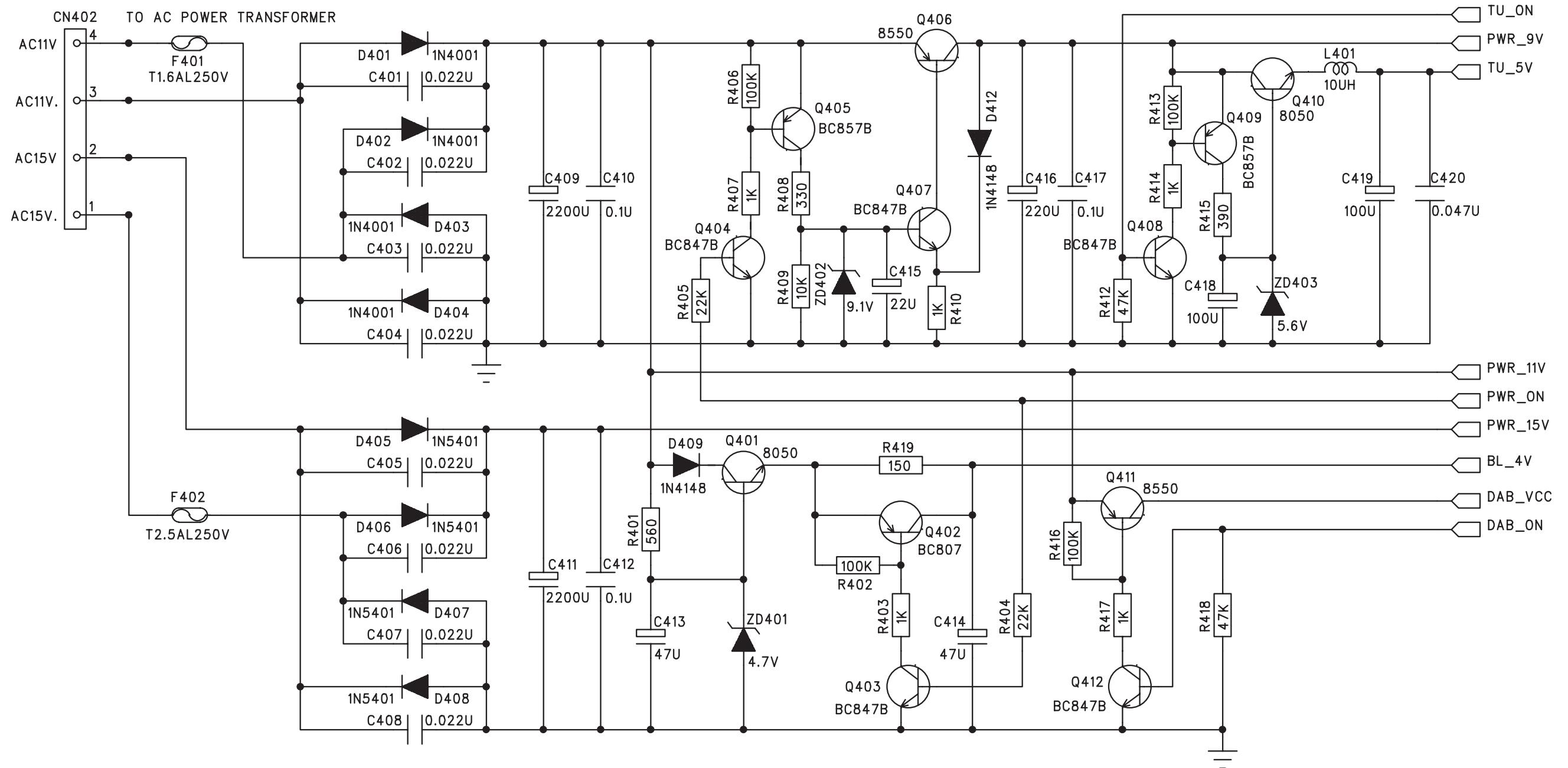
CIRCUIT DIAGRAM - MAIN BOARD PART 3



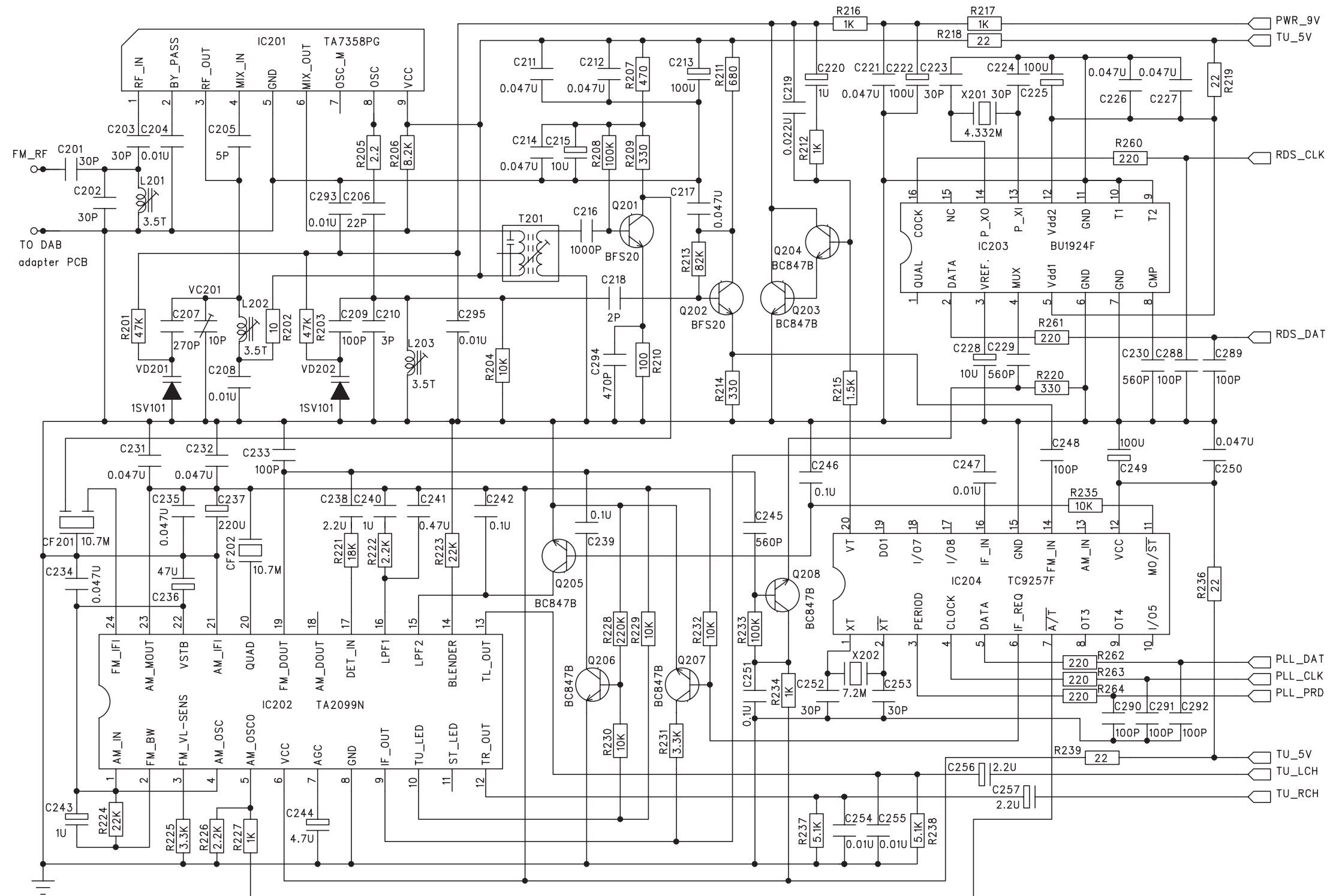
CIRCUIT DIAGRAM - MAIN BOARD PART 4



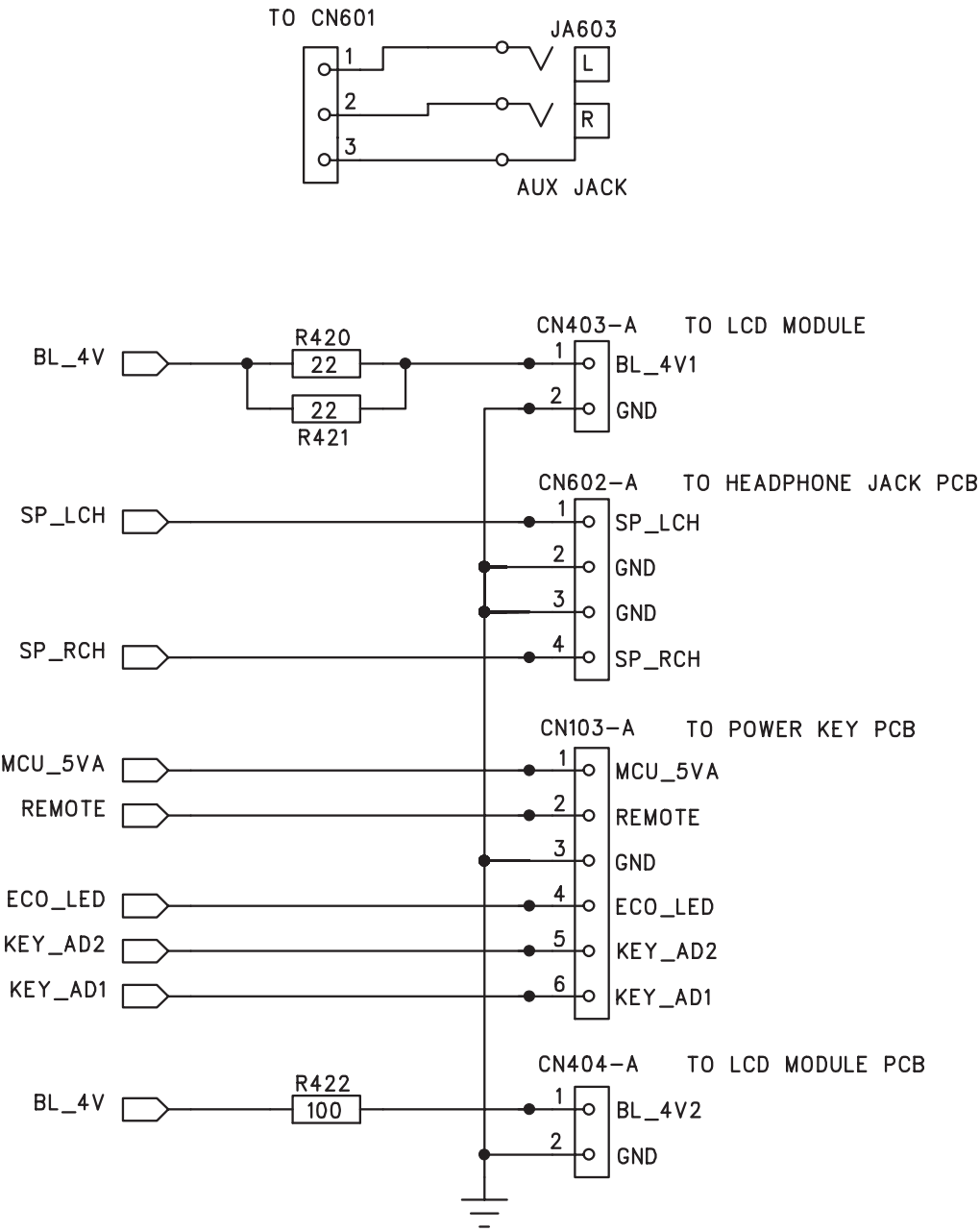
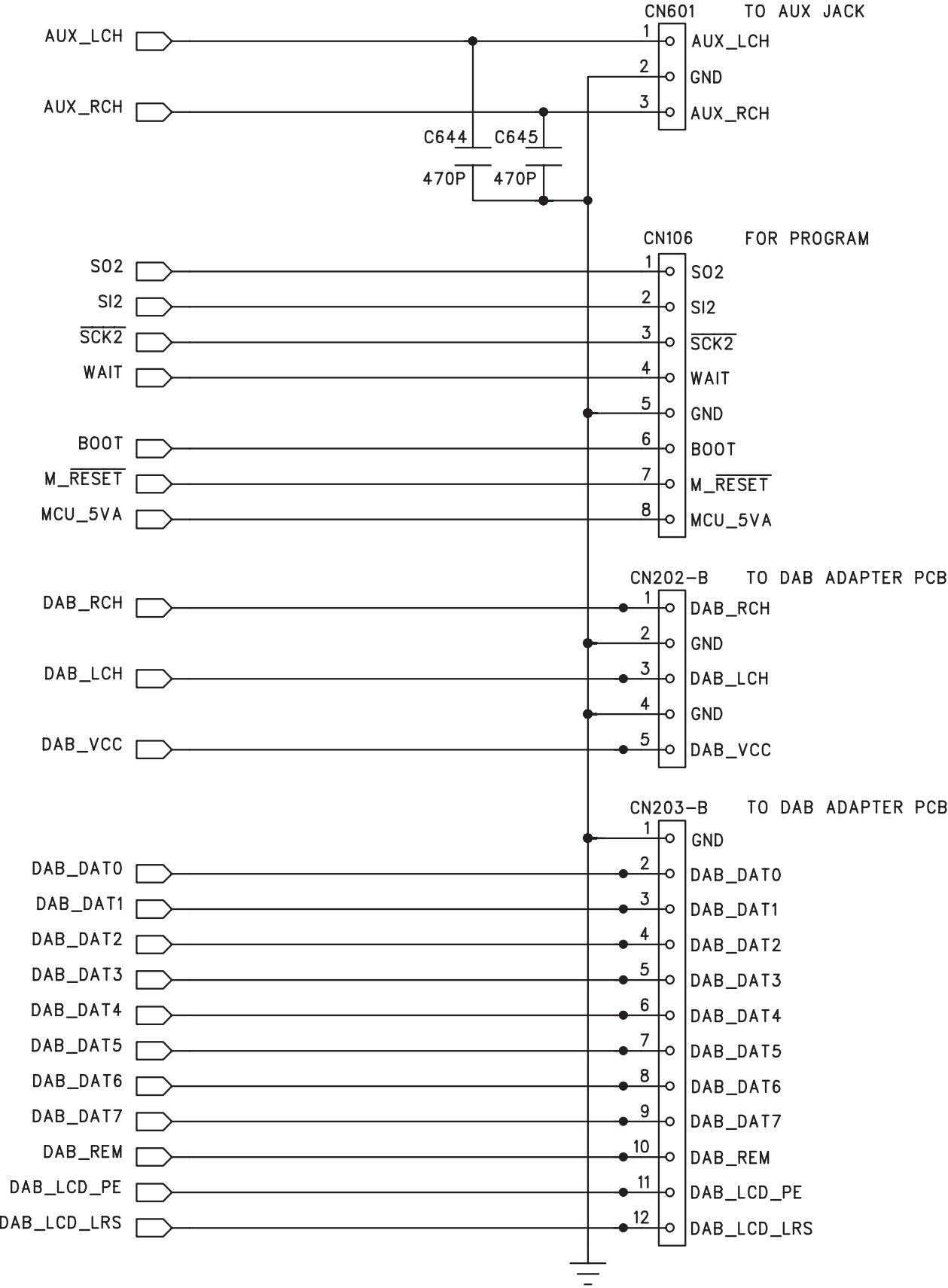
CIRCUIT DIAGRAM - MAIN BOARD PART 5



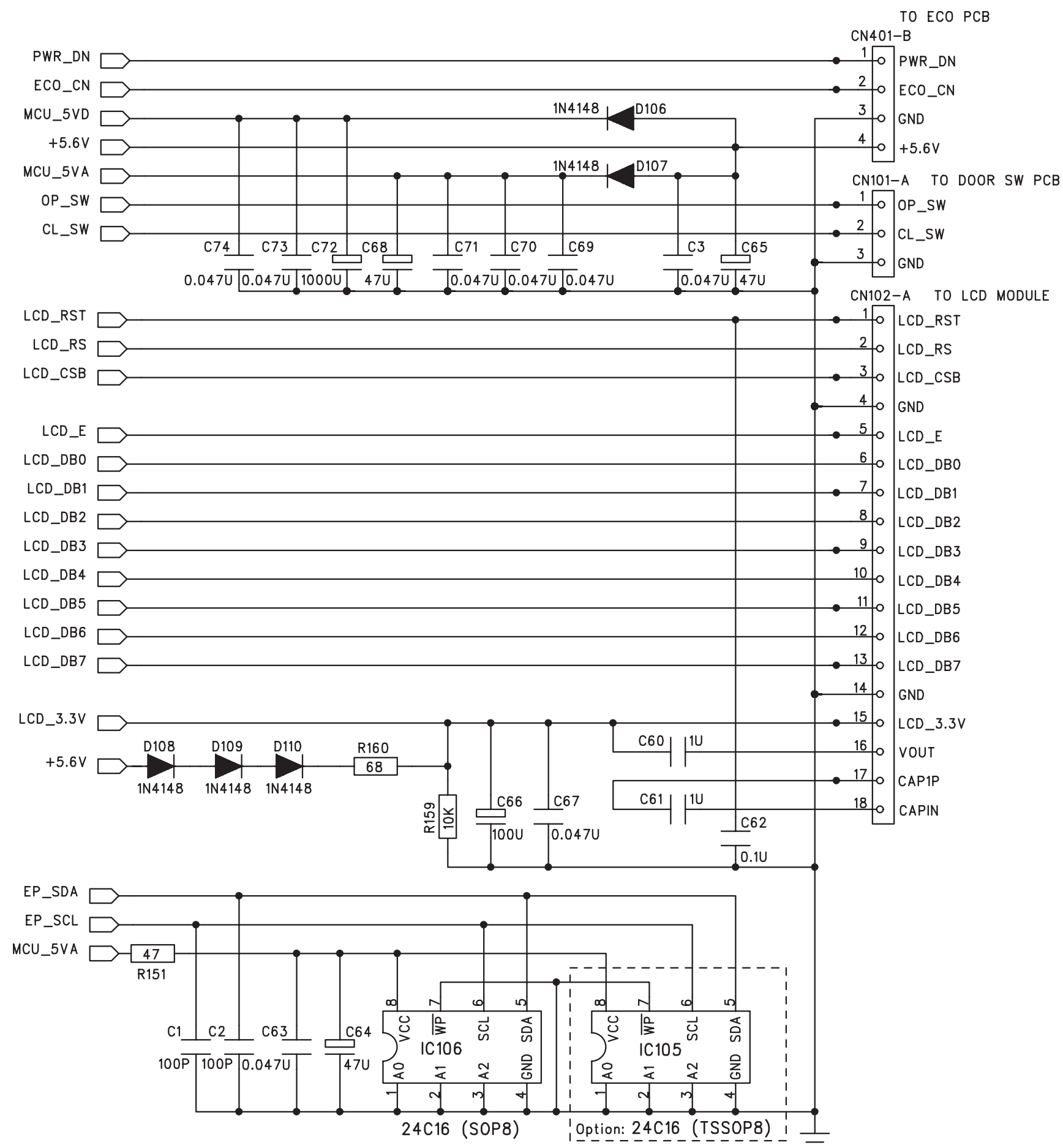
CIRCUIT DIAGRAM - MAIN BOARD PART 6



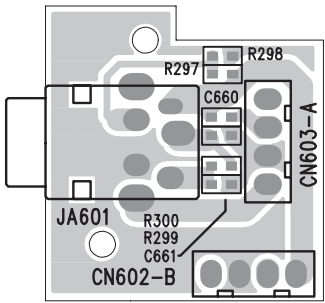
CIRCUIT DIAGRAM - MAIN BOARD
PART 7



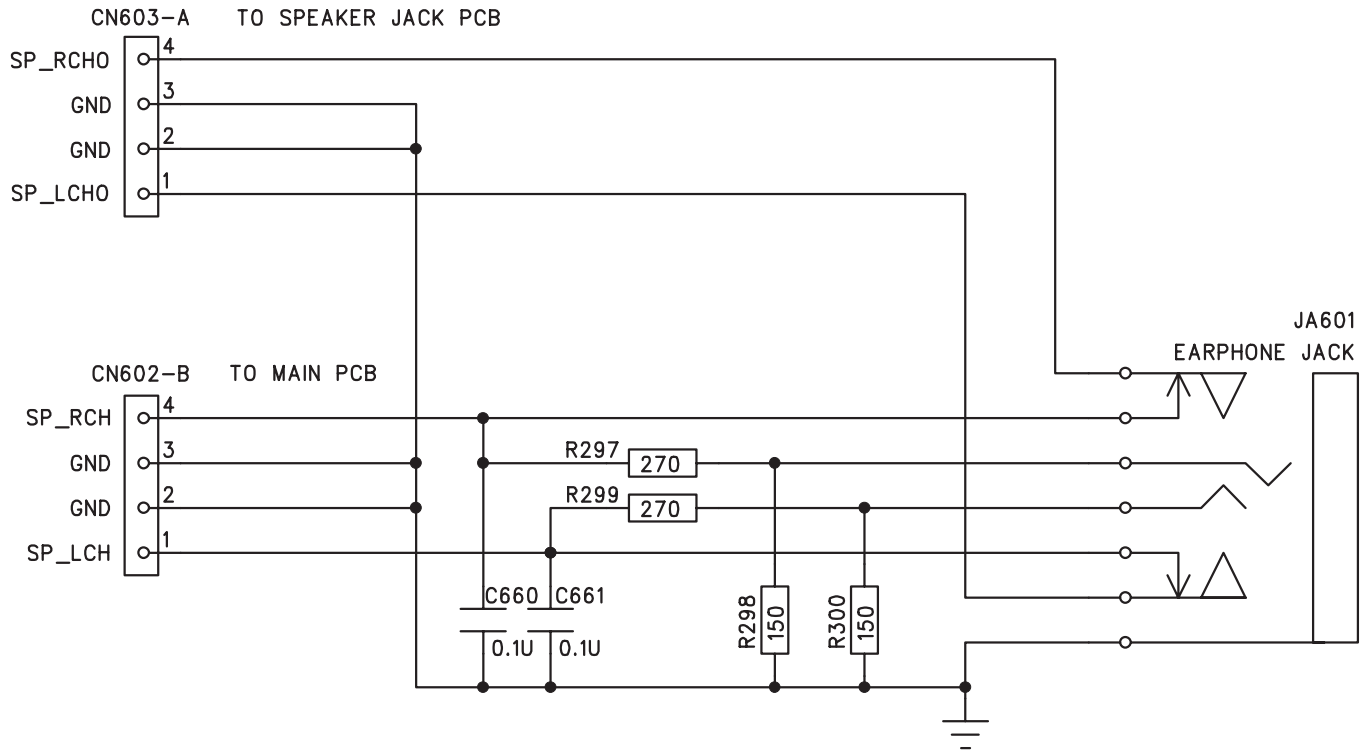
CIRCUIT DIAGRAM - MAIN BOARD PART 8



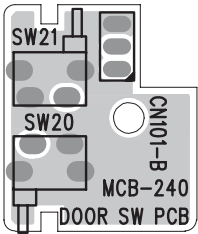
LAYOUT DIAGRAM - HEADPHONE BOARD



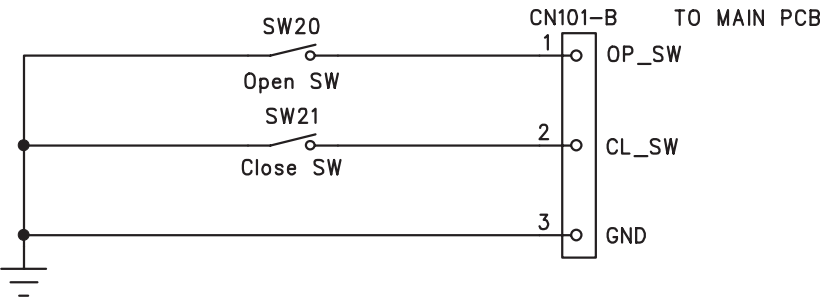
CIRCUIT DIAGRAM - HEADPHONE BOARD



LAYOUT DIAGRAM - DOOR SWITCH BOARD



CIRCUIT DIAGRAM - DOOR SWITCH BOARD



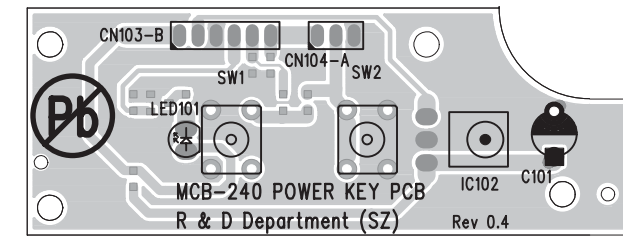
DAB ADAPTOR BOARD

The board is not intended to be repaired on component level.
Circuit Diagram and Printed Circuit Board drawings
are published for orientation only.

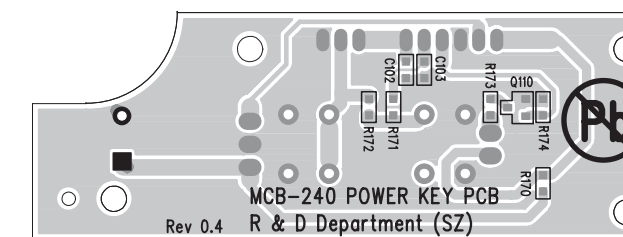
In case of defects please replace the entire board.

The board can be ordered with codenumber "9940 000 03001" for /22,
"9940 000 03064" for /25.

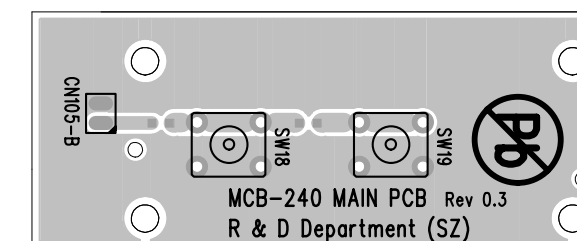
LAYOUT DIAGRAM - POWER KEY BOARD TOP SIDE



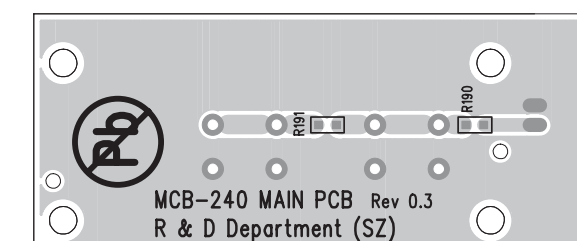
LAYOUT DIAGRAM - POWER KEY BOARD BOTTOM SIDE



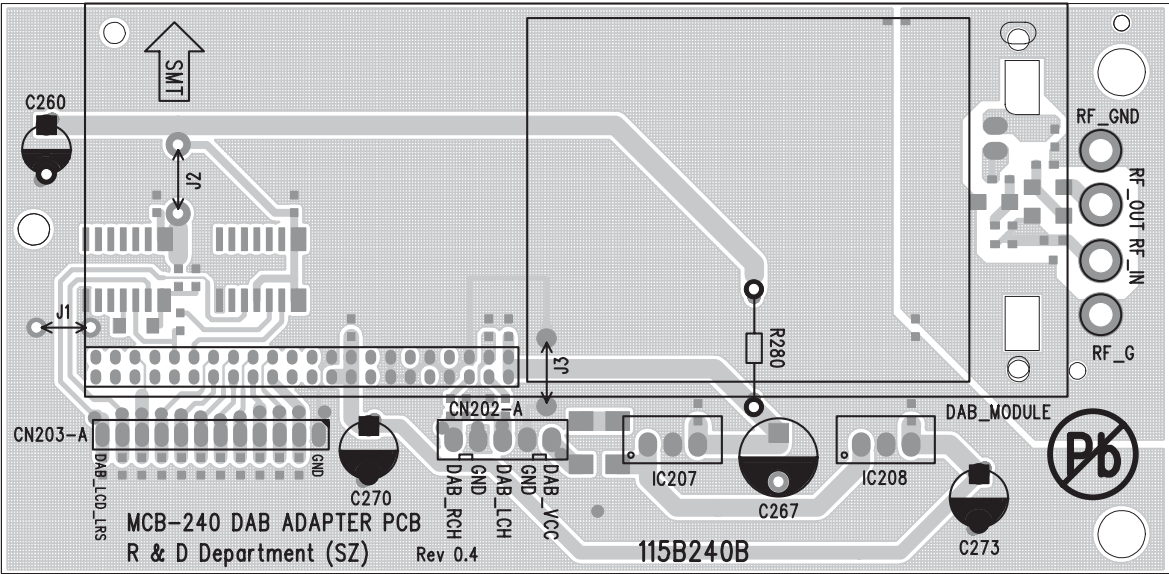
LAYOUT DIAGRAM - VOLUME BOARD TOP SIDE



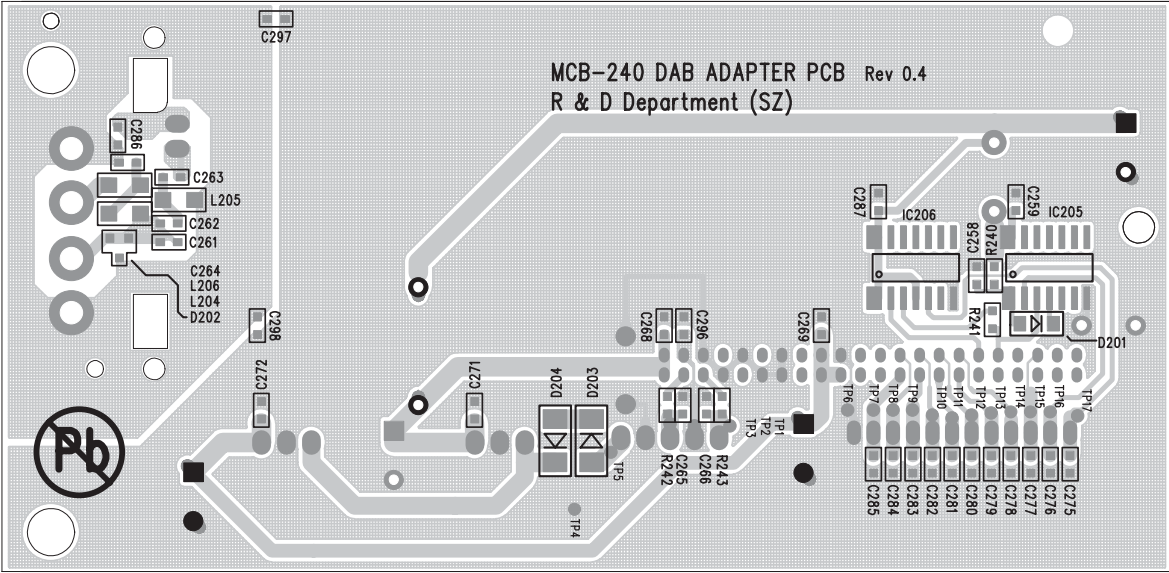
LAYOUT DIAGRAM - VOLUME BOARD BOTTOM SIDE



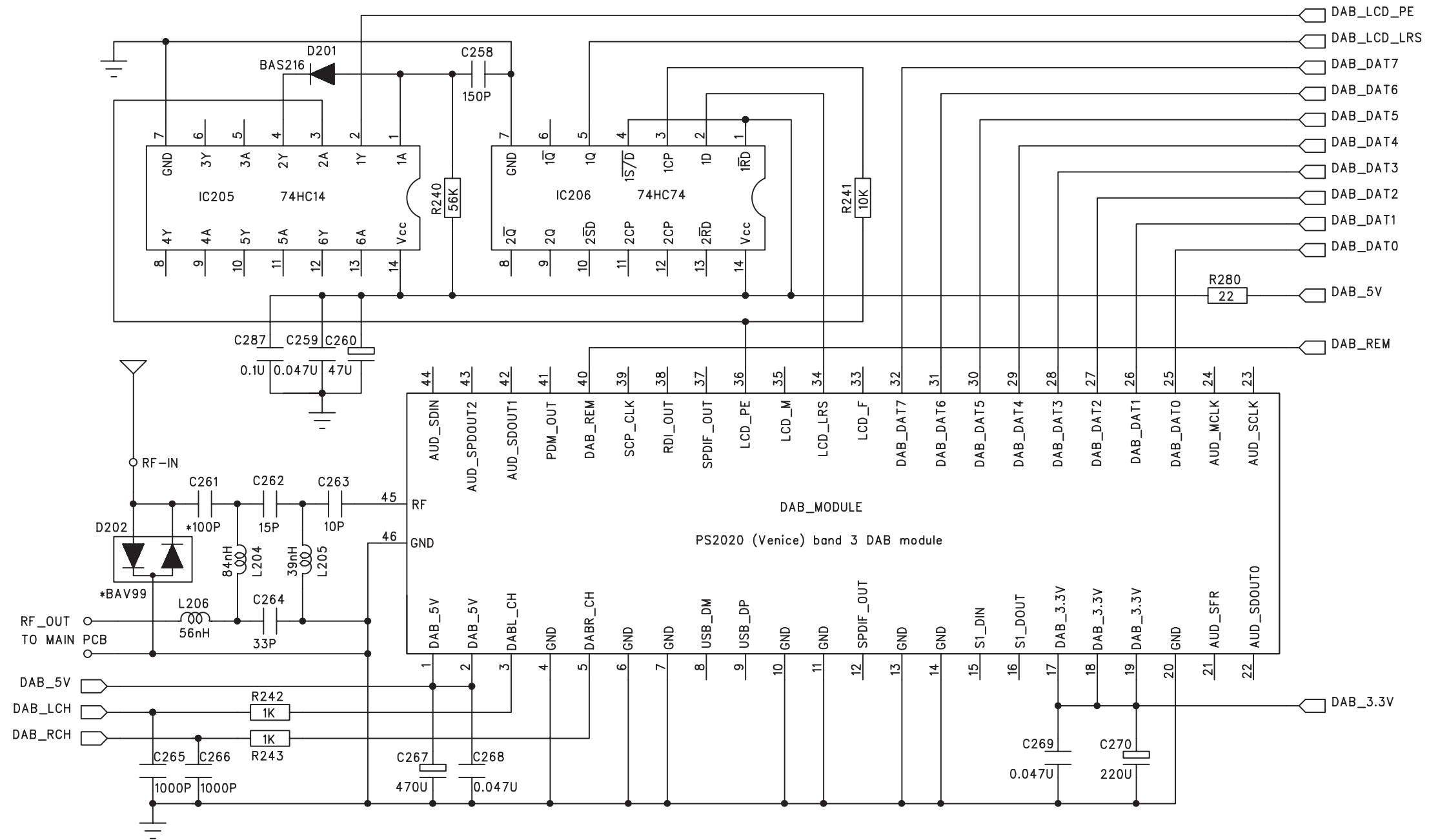
LAYOUT DIAGRAM - DAB ADAPTOR BOARD
TOP SIDE



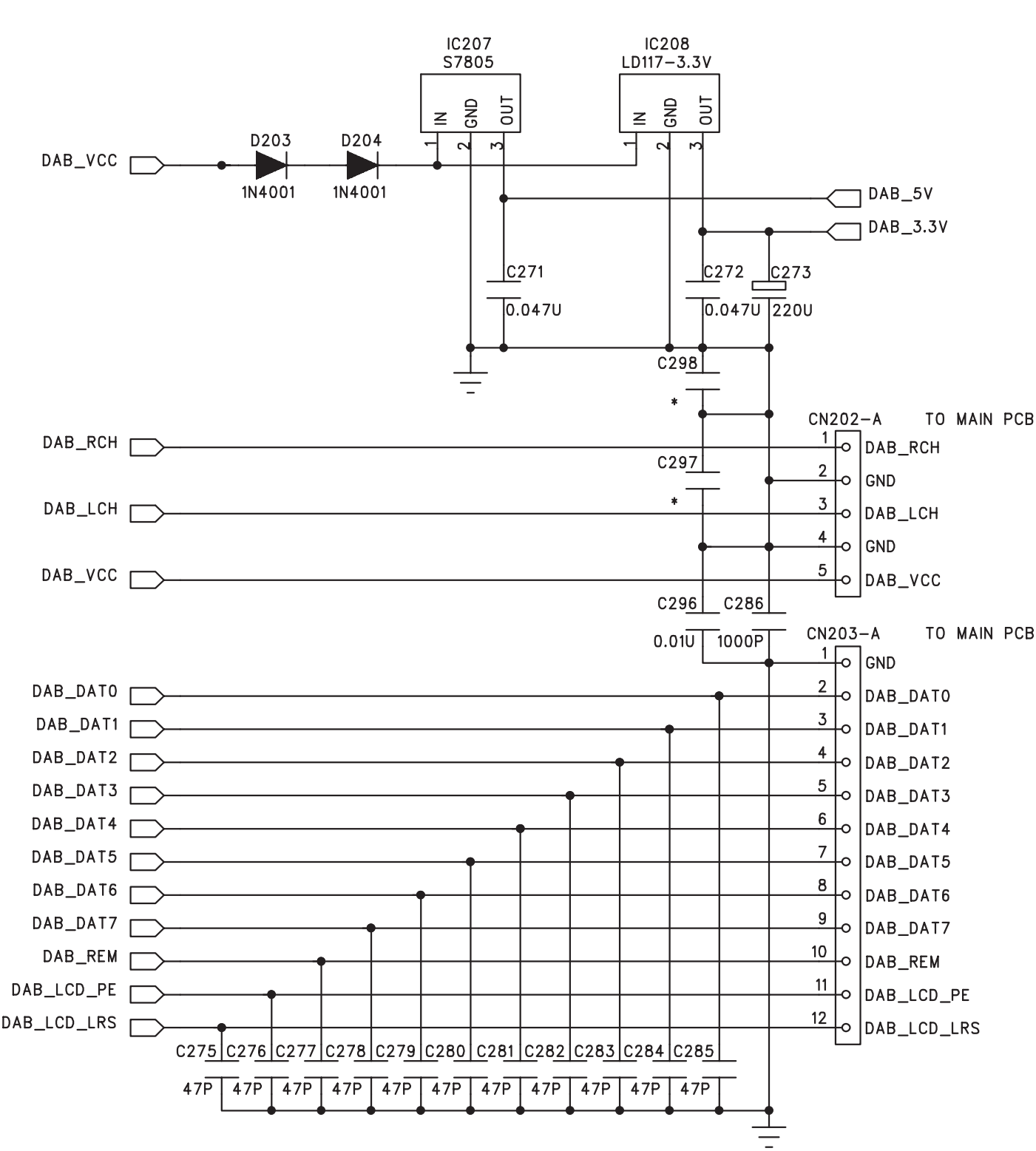
LAYOUT DIAGRAM - DAB ADAPTOR BOARD
BOTTOM SIDE



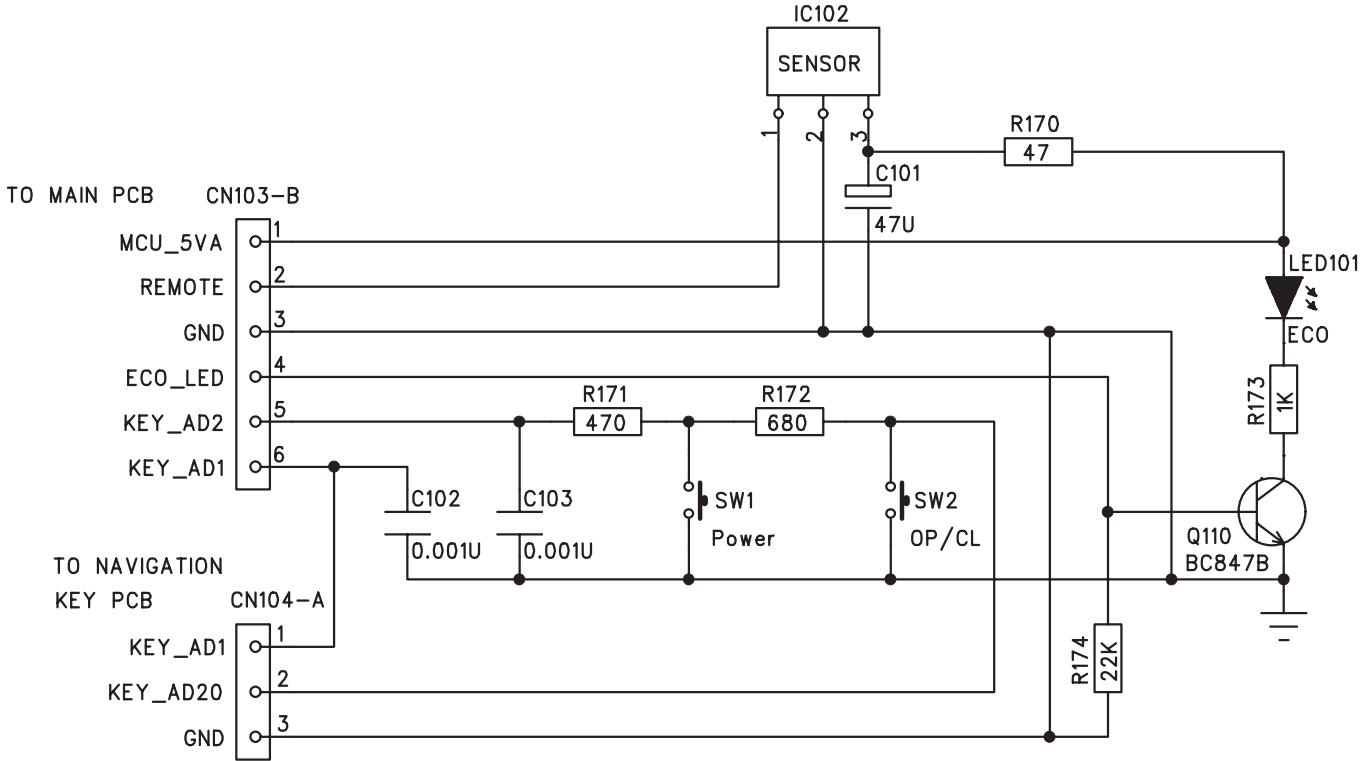
CIRCUIT DIAGRAM - DAB ADAPTOR BOARD PART 1



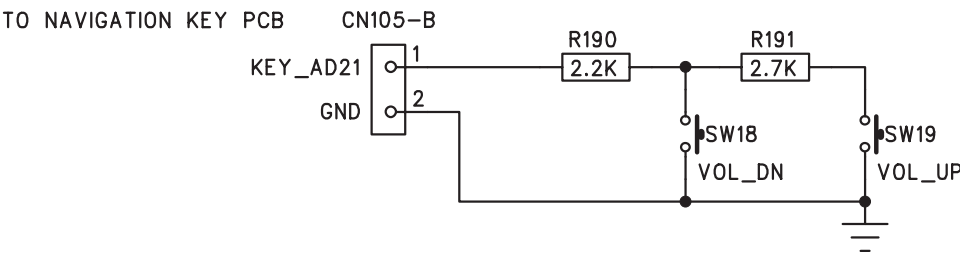
CIRCUIT DIAGRAM - DAB ADAPTOR BOARD
PART 2



CIRCUIT DIAGRAM - POWER KEY BOARD



CIRCUIT DIAGRAM - VOLUME KEY BOARD



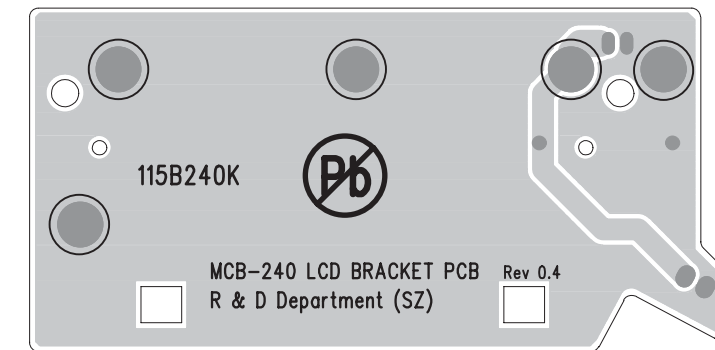
LCD BRACKET BOARD

The board is not intended to be repaired on component level.
Circuit Diagram and Printed Circuit Board drawings
are published for orientation only.

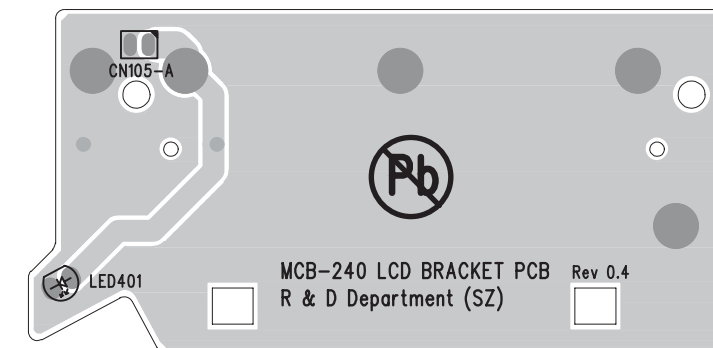
In case of defects please replace the entire board.

The board can be ordered with codenumber "9940 000 03007".

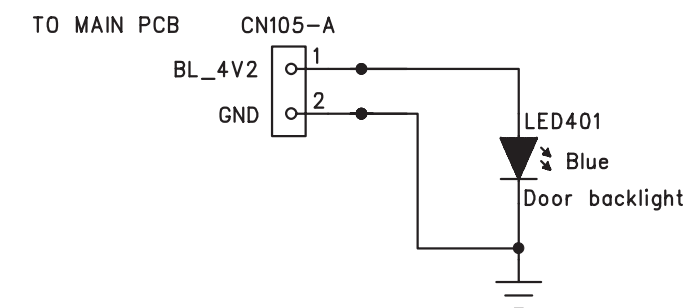
LAYOUT DIAGRAM - LCD BRACKET BOARD TOP SIDE



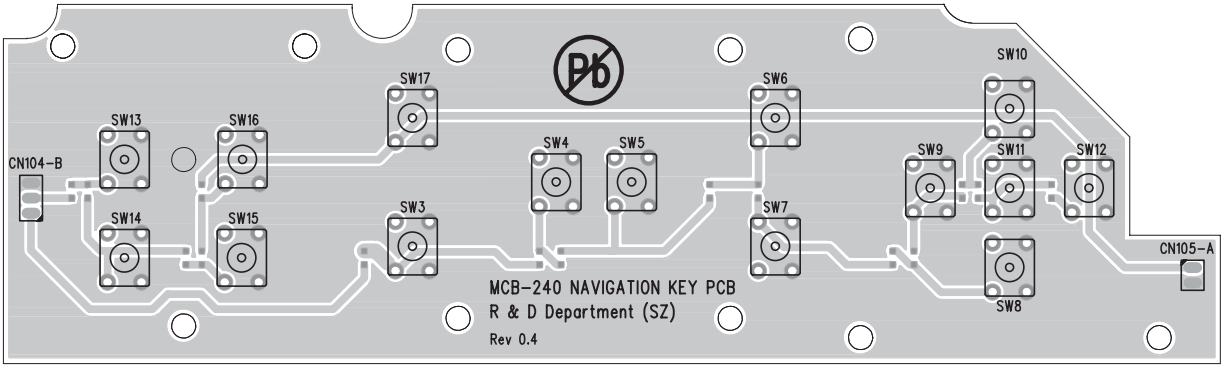
LAYOUT DIAGRAM - LCD BRACKET BOARD BOTTOM SIDE



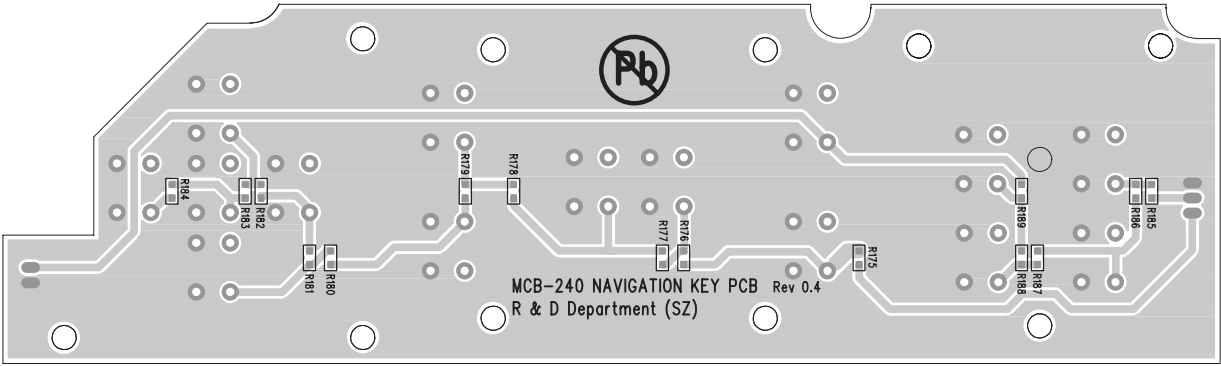
CIRCUIT DIAGRAM - LCD BRACKET BOARD



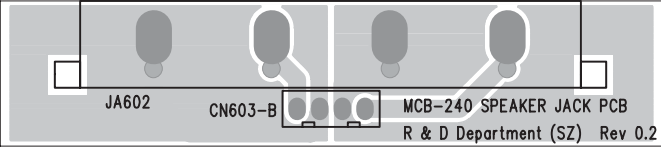
LAYOUT DIAGRAM - NAVIGATION KEY BOARD
TOP SIDE



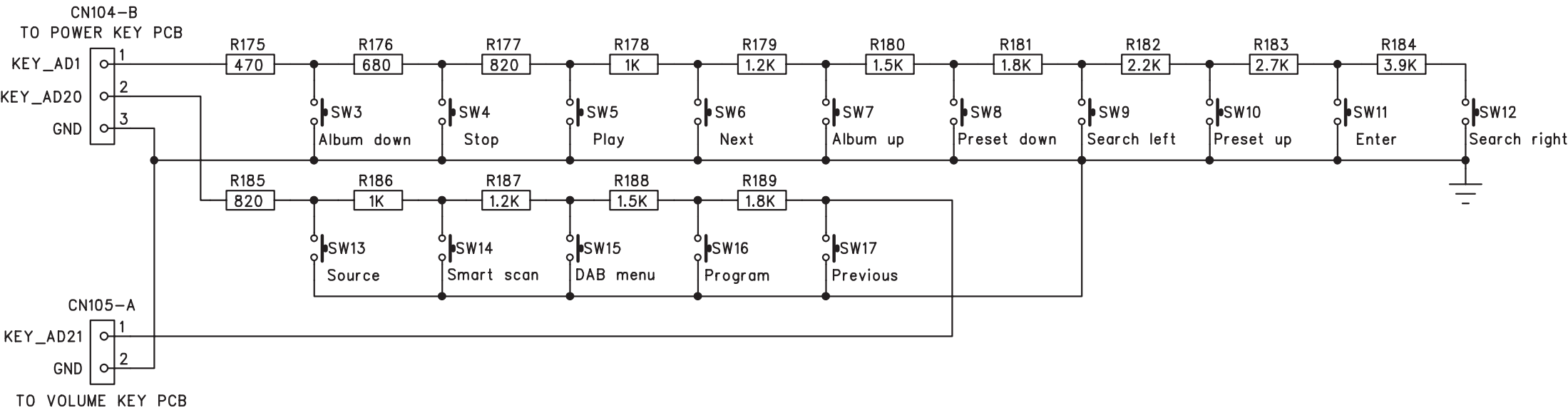
LAYOUT DIAGRAM - NAVIGATION KEY BOARD
BOTTOM SIDE



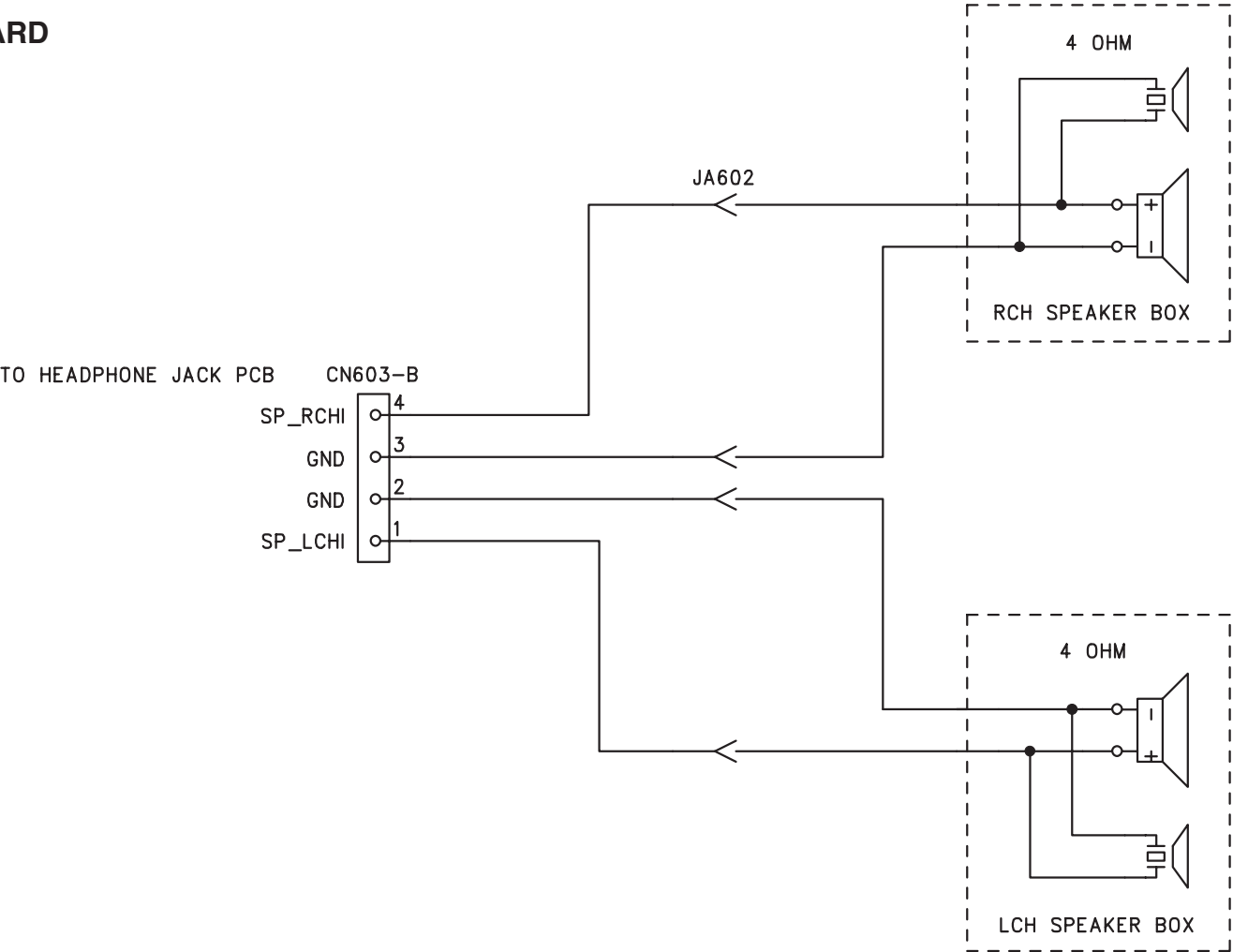
LAYOUT DIAGRAM - SPEAKER JACK BOARD
TOP SIDE



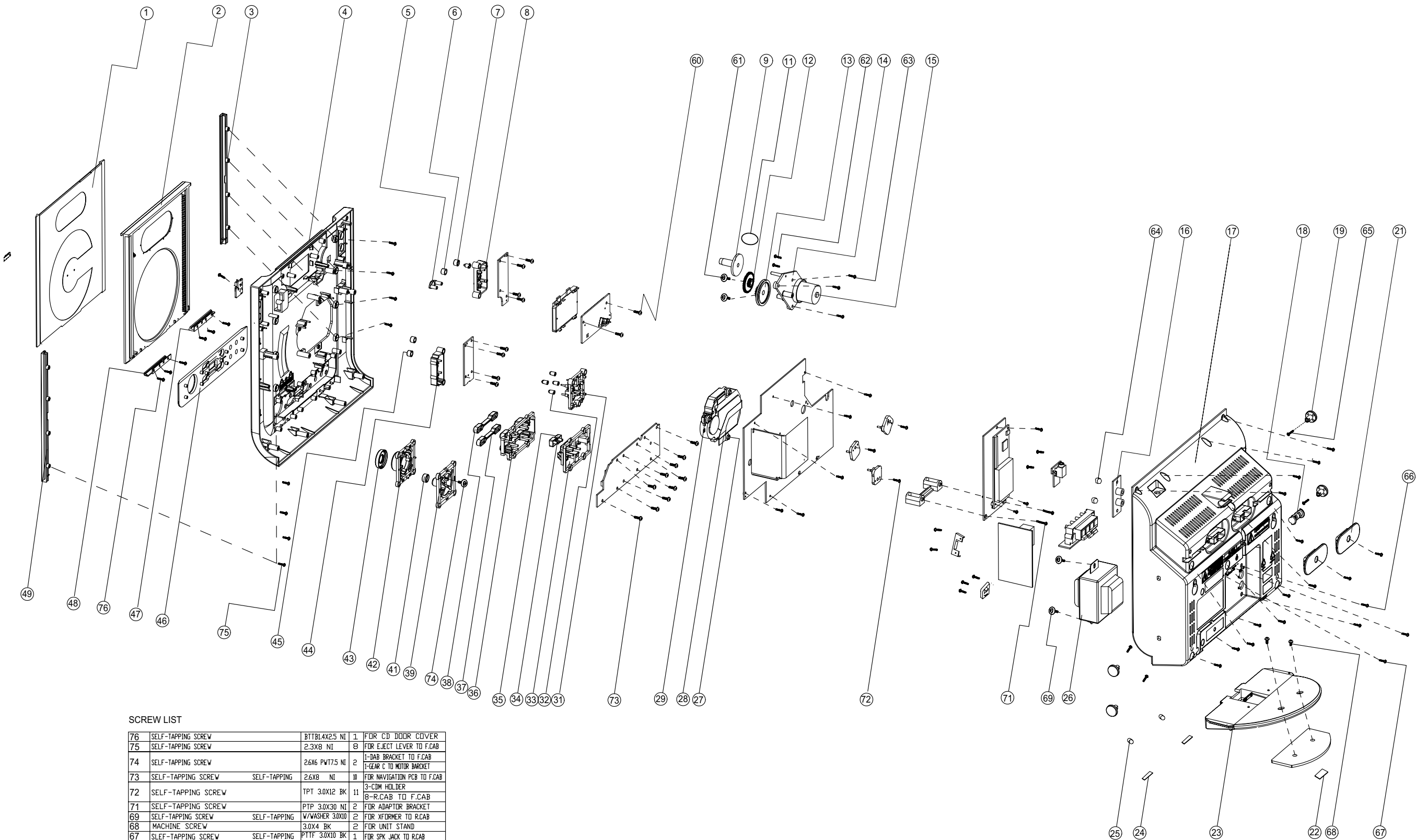
CIRCUIT DIAGRAM - NAVIGATION KEY BOARD



CIRCUIT DIAGRAM - SPEAKER JACK BOARD



SET EXPLODED VIEW



SCREW LIST

76	SELF-TAPPING SCREW	BTTB14X2.5 NI	1	FOR CD DOOR COVER
75	SELF-TAPPING SCREW	2.3X8 NI	8	FOR EJECT LEVER TO F.CAB
74	SELF-TAPPING SCREW	2.6X6 PW17.5 NI	2	1-DAB BRACKET TO F.CAB
73	SELF-TAPPING SCREW	SELF-TAPPING 2.6X8 NI	10	1-GEAR C TO MOTOR BRACKET
72	SELF-TAPPING SCREW	TPT 3.0X12 BK	11	FOR NAVIGATION PCB TO F.CAB
71	SELF-TAPPING SCREW	PTP 3.0X30 NI	2	3-CDM HOLDER
69	SELF-TAPPING SCREW	SELF-TAPPING W/WASHER 3.0X10	2	8-R.CAB TO F.CAB
68	MACHINE SCREW	3.0X4 BK	2	FOR ADAPTOR BRACKET
67	SELF-TAPPING SCREW	SELF-TAPPING PTFE 3.0X10 BK	1	FOR XFORMER TO R.CAB
66	MACHINE SCREW	3.0X8 BK	2	FOR UNIT STAND
65	SELF-TAPPING SCREW	SELF-TAPPING 2.6X10AB	4	FOR SPK JACK TO RCAB
64	NUT	ID3 OD5.5 T2.3	2	FOR AUX JACK TO RCAB
63	SELF-TAPPING SCREW	3.0X8 BK	15	FOR MOUNTION BRACKET TO RCAB
62	MACHINE SCREW	3.0X4	2	3-MOTOR BRACK TO F.CAB
61	SELF-TAPPING SCREW	SELF-TAPPING 2.6X4 PW16.5	1	2-HOOK TO R.CAB
60	SELF-TAPPING SCREW	SELF-TAPPING 2.6X6 NI	5	4-F.CAB TO R.CAB
				3-AC CORD COVER
				2-XFORMER PCB TO RCAB
				1-DAB PCB TO MOTOR BRACKET
				FOR MOTOR BRACKET TO MOTOR
				FOR GEAR B
				2-LCD PCB TO F.CAB
				2-FM PCB TO R.CAB
				1-DOOR PCB TO F.CAB
NO	PART NAME	MATERIAL	SPECIFICATION	UNIT
				REMARKS

MECHANICAL & ACCESSORIES PARTS

01	9940 000 03021	CD DOOR LENS	△ 9940 000 01451	POWER CORD 6FEET /22
02	9940 000 03056	CD DOOR CARRIER	△ 9940 000 03058	AC POWER CORD BS /25
03	9940 000 03052	CD DOOR EJECT LEVER LEFT	9940 000 03063	REMOTE CONTROL
04	9940 000 03017	FRONT CABINET	9940 000 03066	ANTENNA WIRE /22
05	9940 000 03022	SENSOR LENS	9940 000 03008	ANTENNA WIRE /25
06	9940 000 03032	CAP-OPEN KEY	9940 000 03274	SPEAKER BOX (LEFT+RIGHT)
07	9940 000 03031	CAP-POWER KEY		
08	9940 000 03047	BRACKET -POWER KEY		
09	9940 000 03037	GEAR WHEEL-A		
11	9940 000 03016	RUBBER RING ID36		
12	9940 000 03038	GEAR WHEEL-B		
13	9940 000 03039	GEAR-C-DRIVER PULLEY		
14	9940 000 03054	BRACKET-MOTOR MOUNTING		
17	9940 000 03018	REAR CABINET	Note: Only these parts mentioned in the list are normal normal service parts.	
18	9940 000 03041	STUB-ANTENNA SLOT		
19	9940 000 03051	BKT-SPEAKER BOX MOUNTING		
21	9940 000 03019	SPEAKER WIRE HOLDER		
22	9940 000 03014	RUBBER FOOT L25XW11.5XH1.5		
23	9940 000 03055	UNIT STAND		
24	9940 000 03013	RUBBER FOOT L24.5XW6XH1.5		
25	9940 000 03015	RUBBER PAD DIA6MMX1.5		
27	9965 000 16216	CD DAMPER YELLOW 30DEG		
28	9940 000 03057	CD MECHANISM DA23ZPH		
29	9965 000 16217	CD DAMPER WHITE 40DEG		
31	9940 000 03046	BRACKET-FUNCTION KEY		
32	9940 000 03025	CAP-FUNCTION KEY		
33	9940 000 03042	BRACKET-PLAY/STOP		
34	9940 000 03026	CAP-PLAY KEY		
35	9940 000 03027	CAP-STOP KEY		
36	9940 000 03043	BRACKET-SEARCH /ALBUM		
37	9940 000 03029	CAP-ALBUM KEY		
38	9940 000 03028	CAP-SEARCH KEY		
39	9940 000 03045	BRACKET-ENTER KEY		
41	9940 000 03024	CAP-ENTER KEY		
42	9940 000 03044	BRACKET-DAB CLUSTER		
43	9940 000 03023	CAP-DAB CLUSTER CHROME		
44	9940 000 03048	BRACKET-VOLUME KEY		
45	9940 000 03033	CAP-VOLUME KEY		
46	9940 000 03034	CONTROL PANEL		
47	9940 000 03035	CD DOOR COVER LEFT		
48	9940 000 03036	CD DOOR COVER RIGHT		
49	9940 000 03053	CD DOOR EJECT LEVER RIGHT		

ELECTRICAL PARTS - MISCELLANEOUS

IC102	9940 000 03276	INFRARED RECEIVER
JA602	9940 000 03275	SPEAKER JACK
LED101	9940 000 03277	LED INDICATOR 3MM RED
SW1	9965 000 13779	TACT SWITCH
SW2	9965 000 13779	TACT SWITCH
SW3	9965 000 13779	TACT SWITCH
SW4	9965 000 13779	TACT SWITCH
SW5	9965 000 13779	TACT SWITCH
SW6	9965 000 13779	TACT SWITCH
SW7	9965 000 13779	TACT SWITCH
SW8	9965 000 13779	TACT SWITCH
SW9	9965 000 13779	TACT SWITCH
SW10	9965 000 13779	TACT SWITCH
SW11	9965 000 13779	TACT SWITCH
SW12	9965 000 13779	TACT SWITCH
SW13	9965 000 13779	TACT SWITCH
SW14	9965 000 13779	TACT SWITCH
SW15	9965 000 13779	TACT SWITCH
SW16	9965 000 13779	TACT SWITCH
SW17	9965 000 13779	TACT SWITCH
SW18	9965 000 13779	TACT SWITCH
SW19	9965 000 13779	TACT SWITCH
15	△ 9940 000 03061	DC MOTOR KR370H-17205-42
16	9940 000 03059	AUX JACK
26	△ 9940 000 03062	TRASFO. EI-57 (230V 50HZ)
	9940 000 02999	MAIN PCB ASSY
	9940 000 03002	ECO POWER PCB ASSY
	9940 000 03003	NAVIGATION KEY PCB ASSY
	9940 000 03007	LCD BRACKET PCB ASSY
	9940 000 03064	DAB ADAPTOR PCB ASSY /22
	9940 000 03001	DAB ADAPTOR PCB ASSY /25

Note: Only these parts mentioned in the list are normal normal service parts.

ELECTRICAL PARTS LIST - DAB ADAPTOR BOARD

DAB MODULE	9965 000 38175	DAB MODULE FS2023 /22
DAB MODULE	9965 000 38176	DAB MODULE FS2020 /25
D203	9965 000 38177	DIODE PRLL4001
D204	9965 000 38177	DIODE PRLL4001
IC205	5322 209 11548	IC 74HC14D
IC206	9965 000 38179	IC 74HC74D
IC207	9940 000 01435	IC S7805P
IC208	9940 000 05724	IC LD1117AL-3.3V-D
L204	9965 000 38182	IND. 84NH K% 1.6X1.8MM
L205	9965 000 38180	IND. 39NH K% 1.6X1.8MM
L206	9965 000 38181	IND. 56NH K% 1.6X1.8MM
	9965 000 38178	44P HEADER 1LUAFS-44S2

Note: Only these parts mentioned in the list are normal service parts.

REVISION LIST

1.0 Manual 3141 785 30510

Initial Service Manual released.

1.1 Manual 3141 785 30511

In this version, Page 11-2 Electrical Parts List of DAB Adaptor Board Ass'y added.