

Service
Service
Service



Service Manual



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3141 785 33050

Version 1.0



PHILIPS

TECHNICAL SPECIFICATION

AMPLIFIER

1 KHz
 (Low channel - both channels driven)
 20 W per channel (8 Ω)
 10 KHz
 (High channel - both channels driven)
 20 W per channel (8 Ω)
 Total output power 80 W
 Signal-to-noise ratio \geq 62 dBA (IEC)
 Frequency response 63 – 16000 Hz, \pm 3 dB

CD PLAYER

Frequency range 63 – 16000 Hz
 Signal-to-noise ratio 65 dBA

TUNER

FM wave range 87.5 – 108 MHz
 MW (AM) wave range 530 – 1700 kHz

SPEAKERS

2-way Bass Reflex System
 Impedance 8 Ω
 Woofer 1x100 mm
 Tweeter 1x50 mm
 Dimensions (w x h x d).....207 x 310 x 186 (mm)
 Weight 2.6 kg (each)

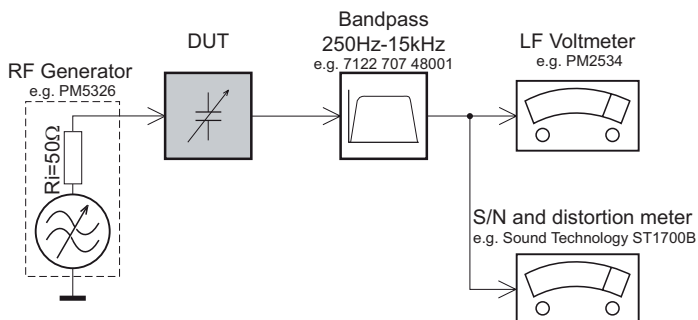
GENERAL

AC Power 110 – 127 / 220 – 240 V;
 50/60 Hz Switchable
 Power consumption
 Active 50 W
 Set dimensions (w x h x d)
 220 x 292 x 285 (mm)
 Weight (main unit) 3.83 kg
 Gross weight (including packaging) 10.4 kg

Specifications and external appearance are subject to change without notice.

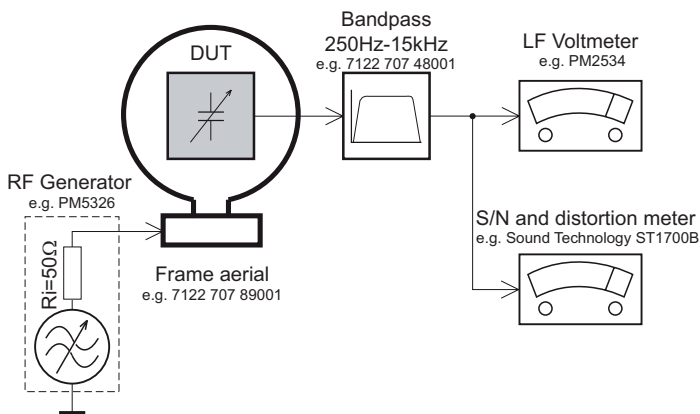
MEASUREMENT SETUP

Tuner FM



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

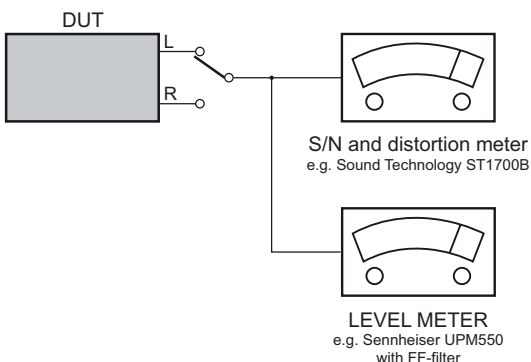
Tuner AM (MW,LW)



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).

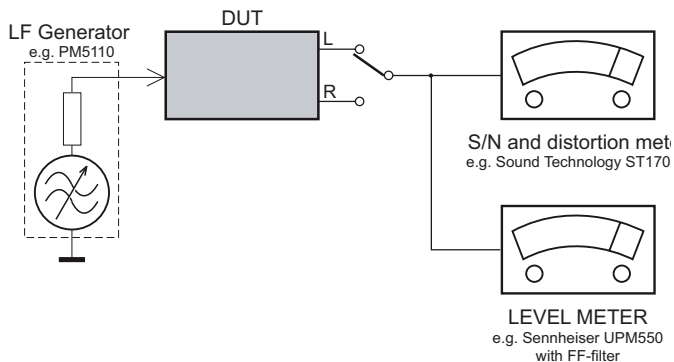
CD

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".

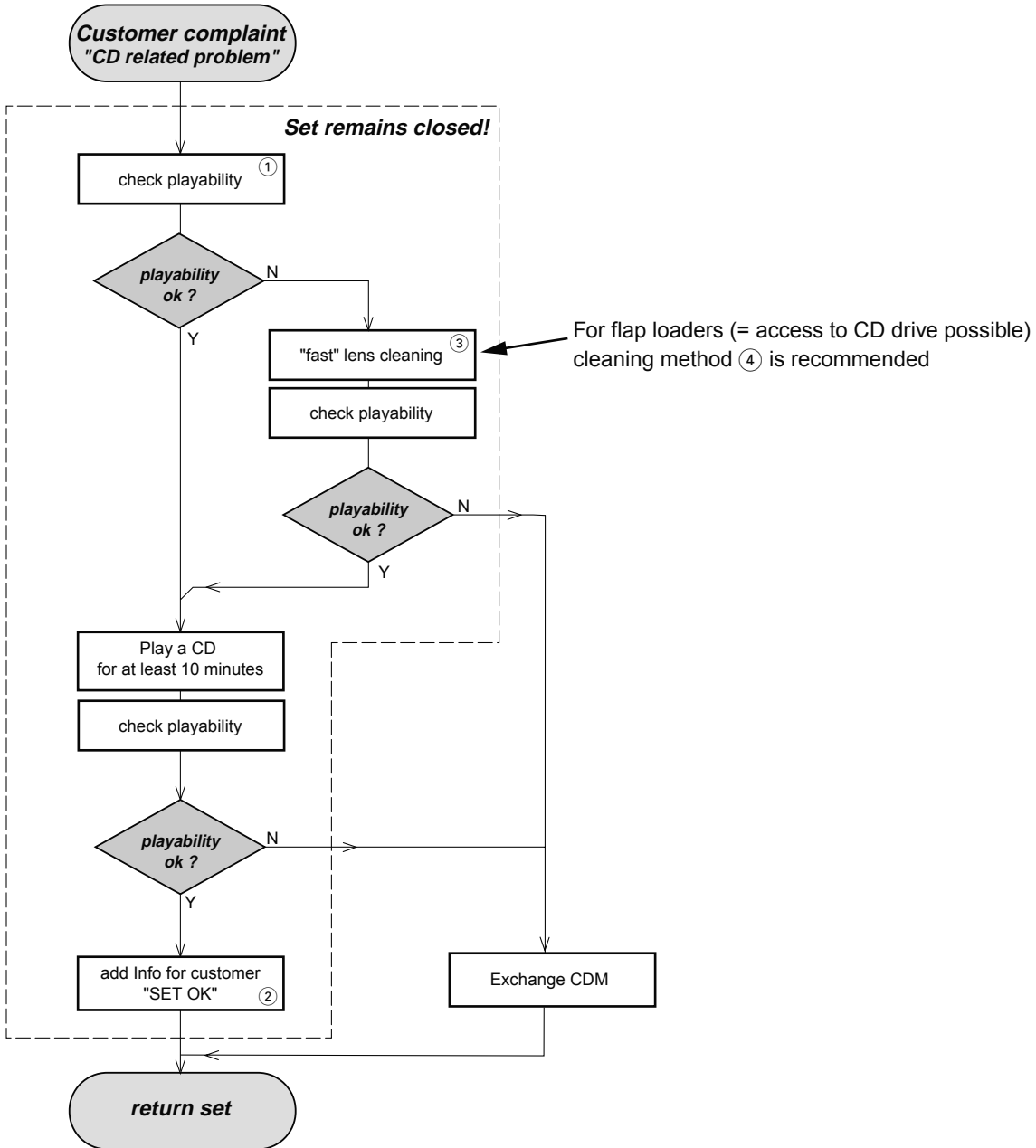
For additional questions please contact your local repair-helpdesk.

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

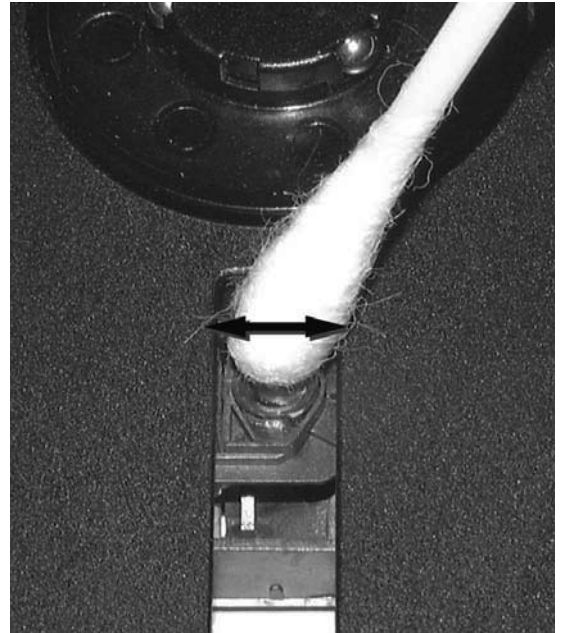
LIQUID LENS CLEANING

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.

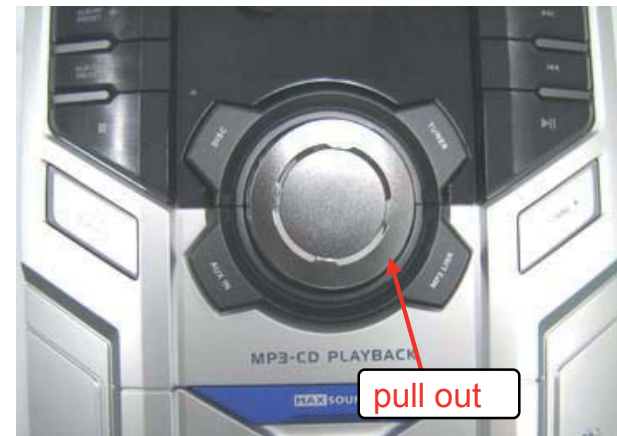
The direction of cleaning must be in the way as indicated in the picture below.



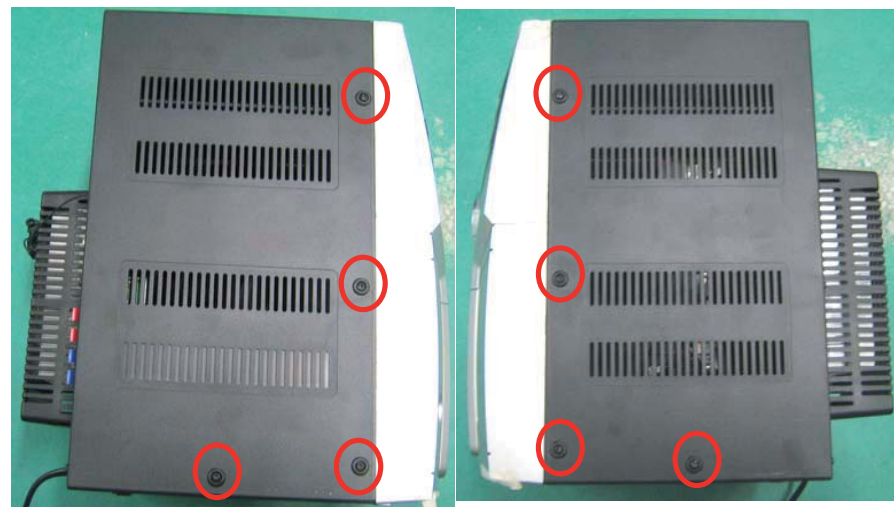
SET DISASSEMBLY DIAGRAM

- 1) a. Plug in the 220V AC power cord , set the menu to "CD" function, and press "DISC" button , Press "OPEN/CLOSE" to open CD door.
- b. Pull out CD door
- c. Press "OPEN/CLOSE" button to close the CD tray, power off the mainset and unplug the AC power cord.

- 2) Pull the volumn buttom out.



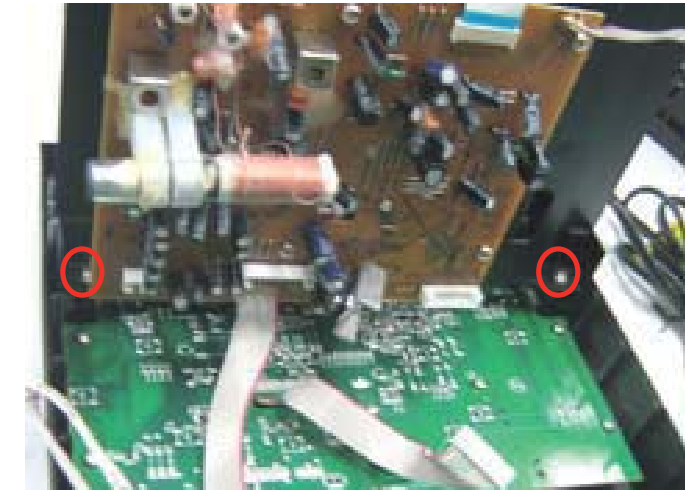
- 3) Loosen 6 screws PT3×12 and 2 screws PM3x8



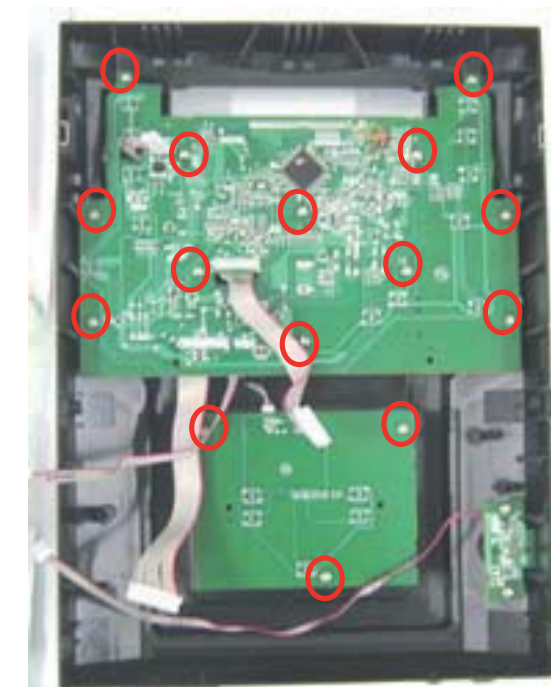
- 4) Loosen 6 screws PT3×12 .



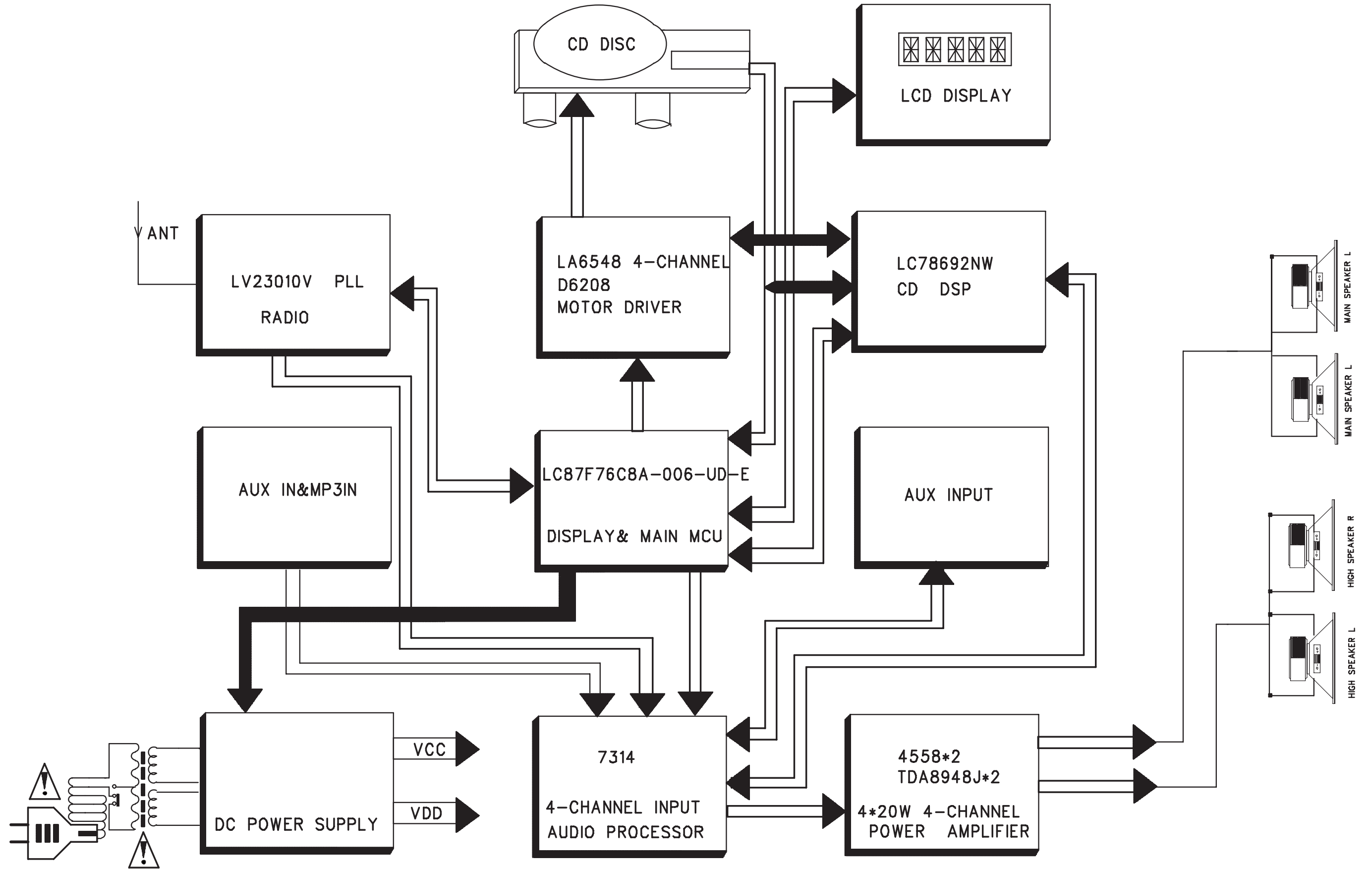
- 5) Loosen 2 screws PA3X18 to remove CD tray.



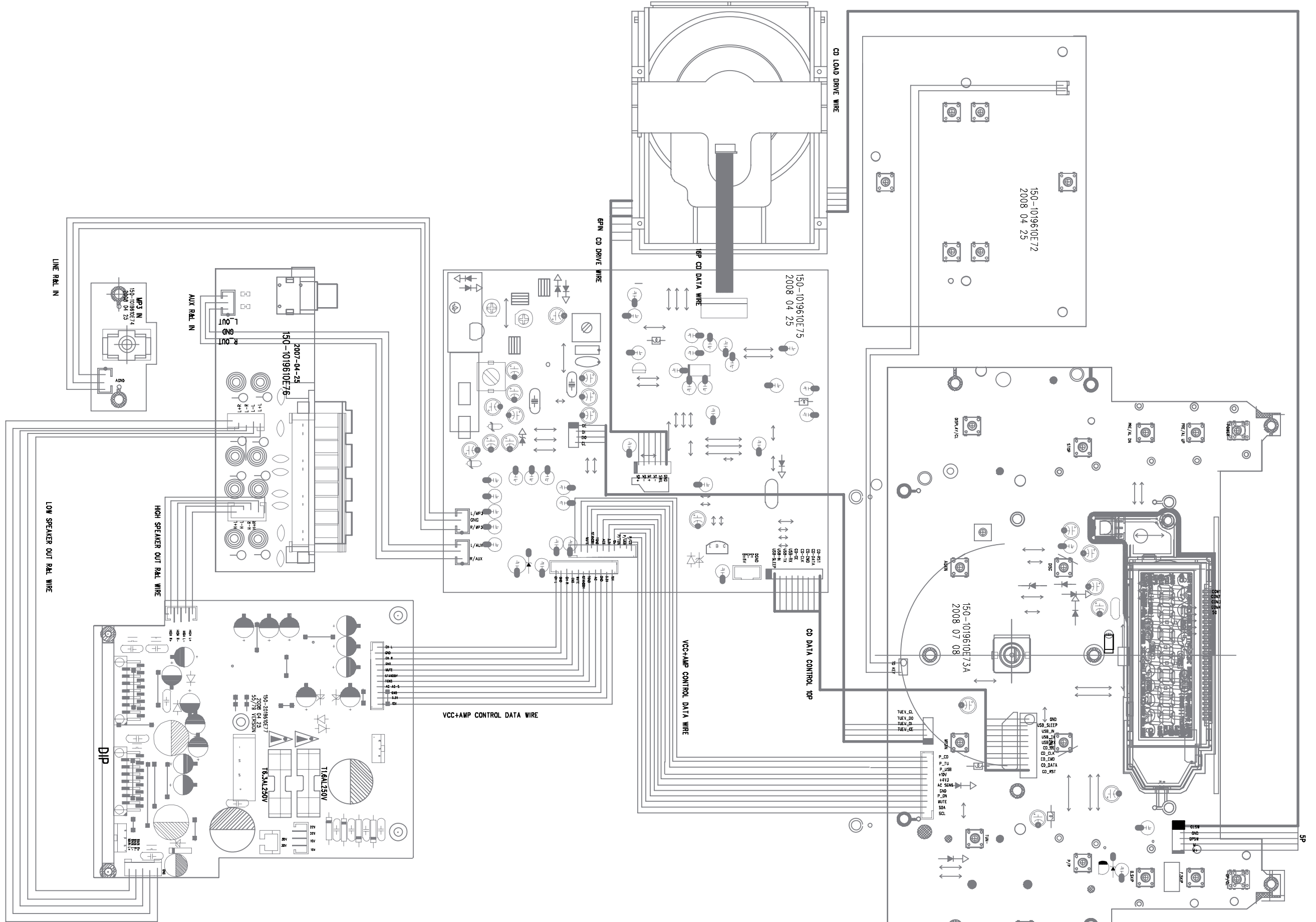
- 6) Loosen 13 screws T3×10 and 2 screws PT3x5 to remove CD board.



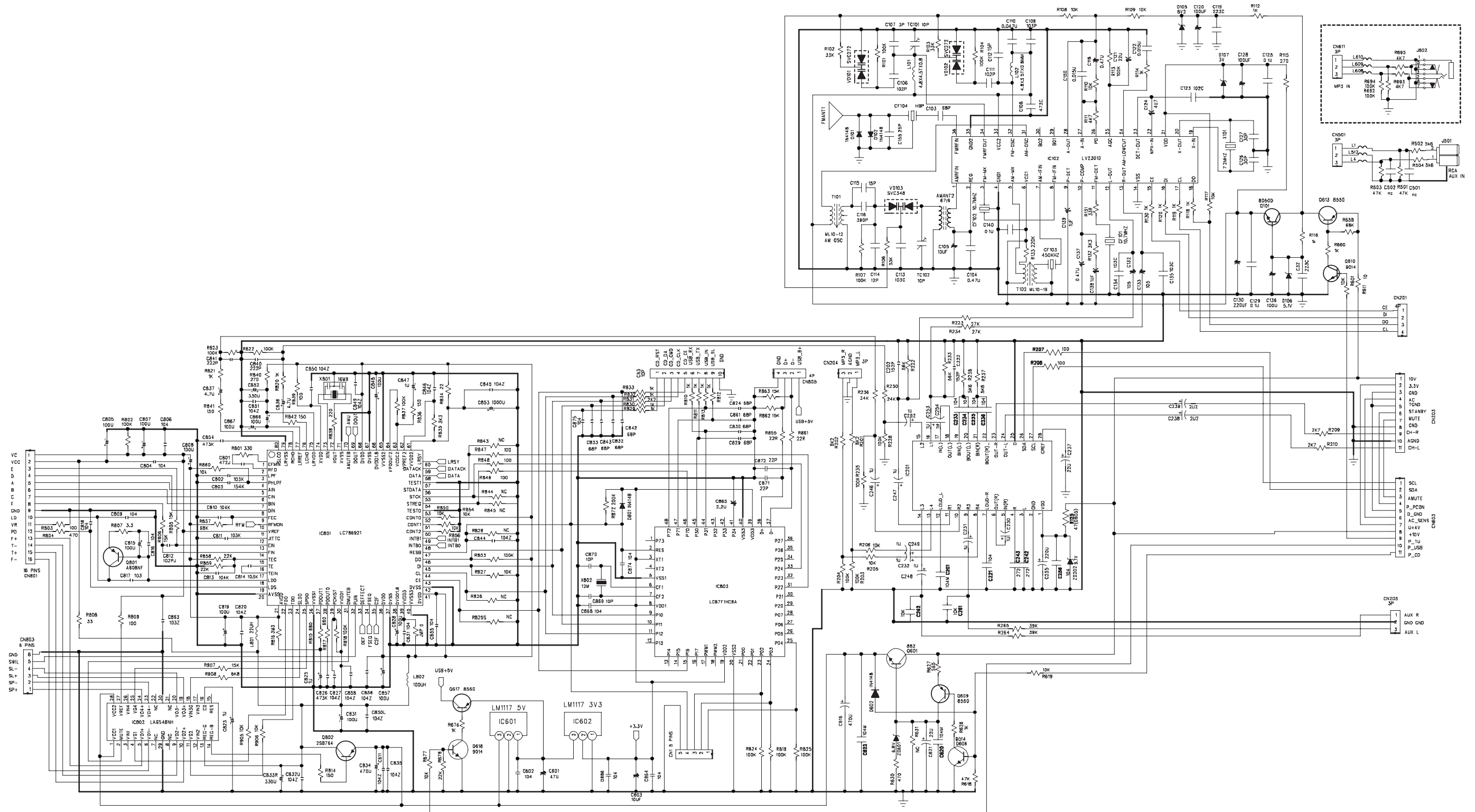
SET BLOCK DIAGRAM



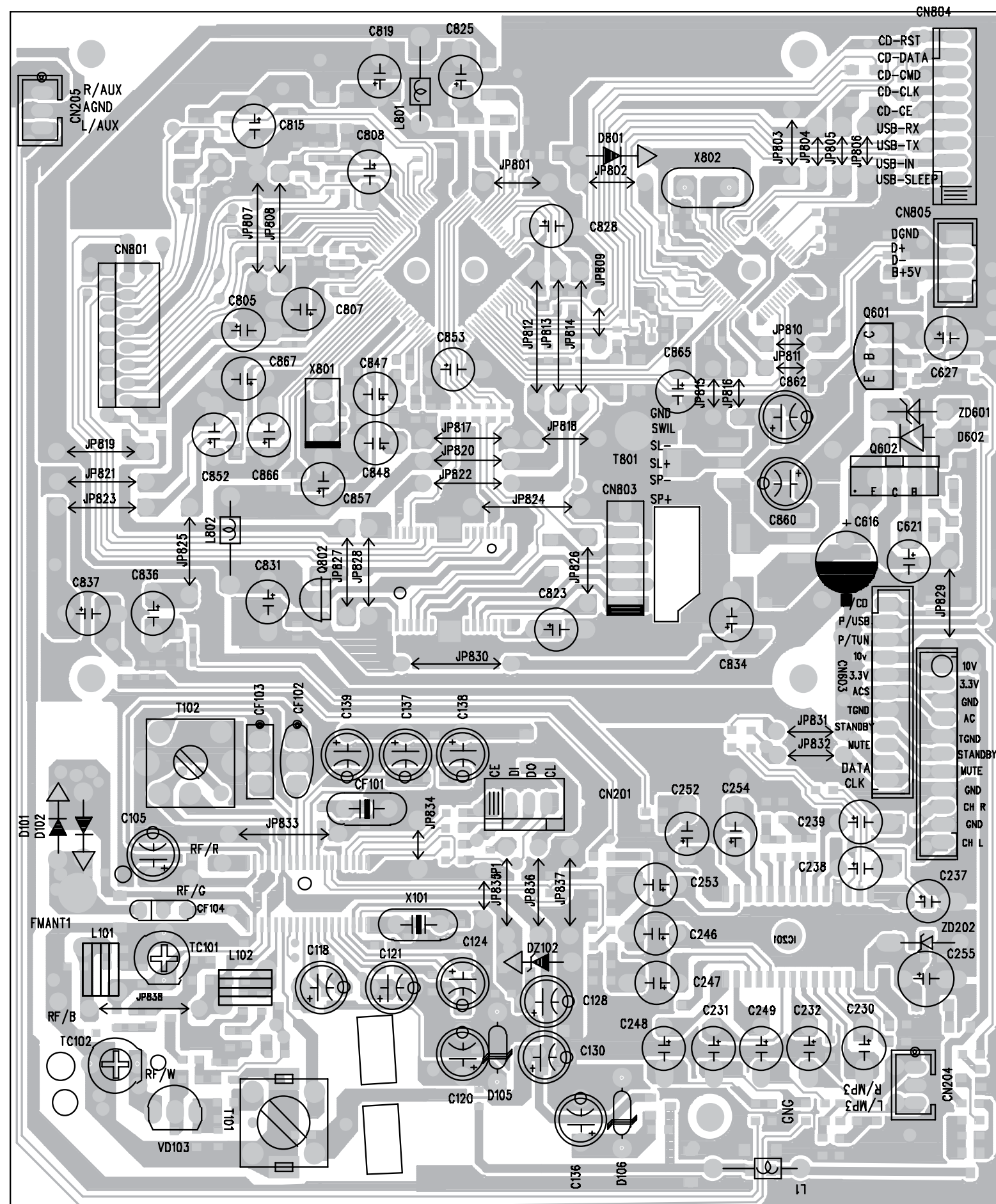
SET WIRING DIAGRAM



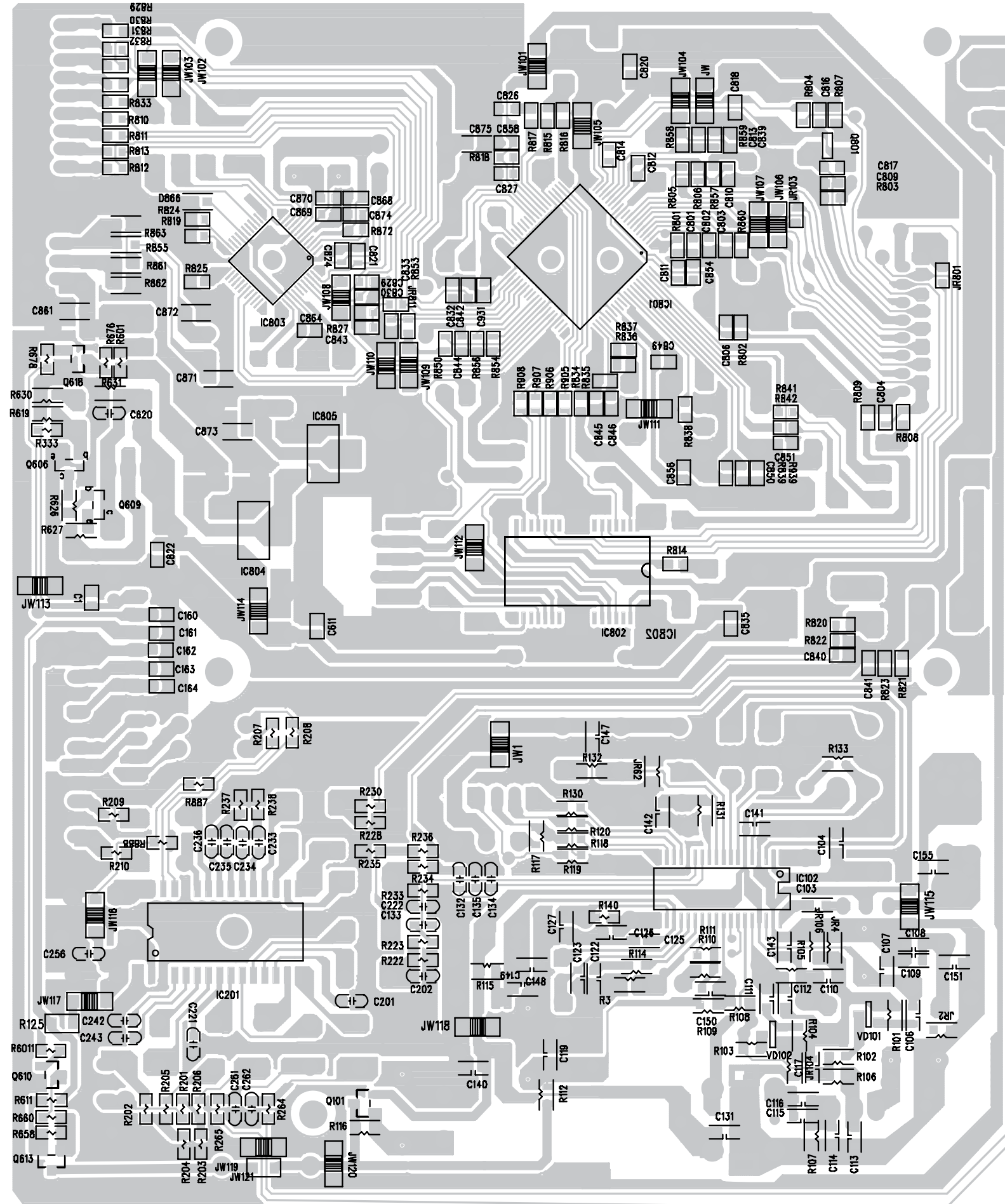
CIRCUIT DIAGRAM - CD BOARD



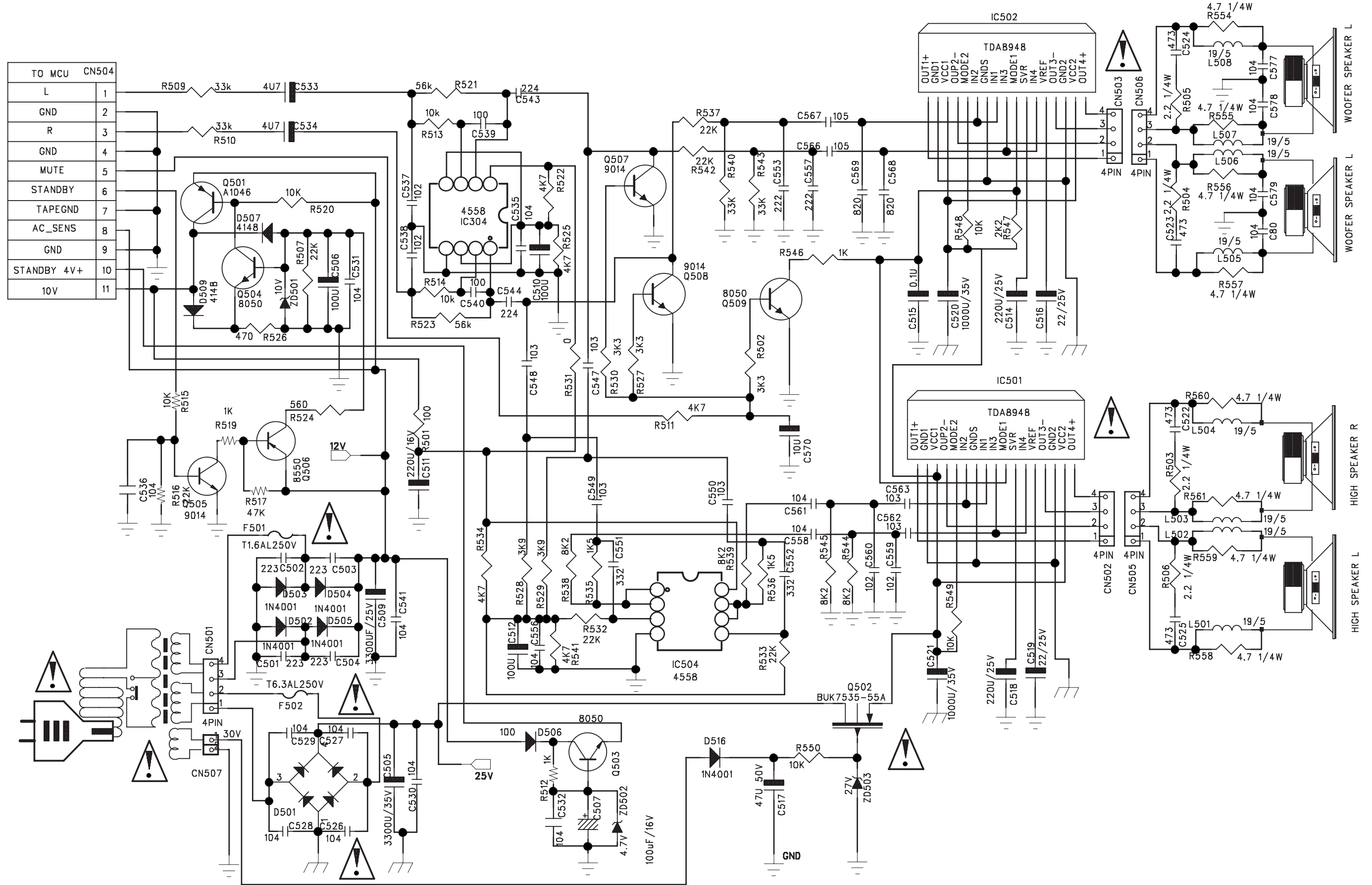
LAYOUT DIAGARM - CD BOARD COMPONENT SIDE VIEW



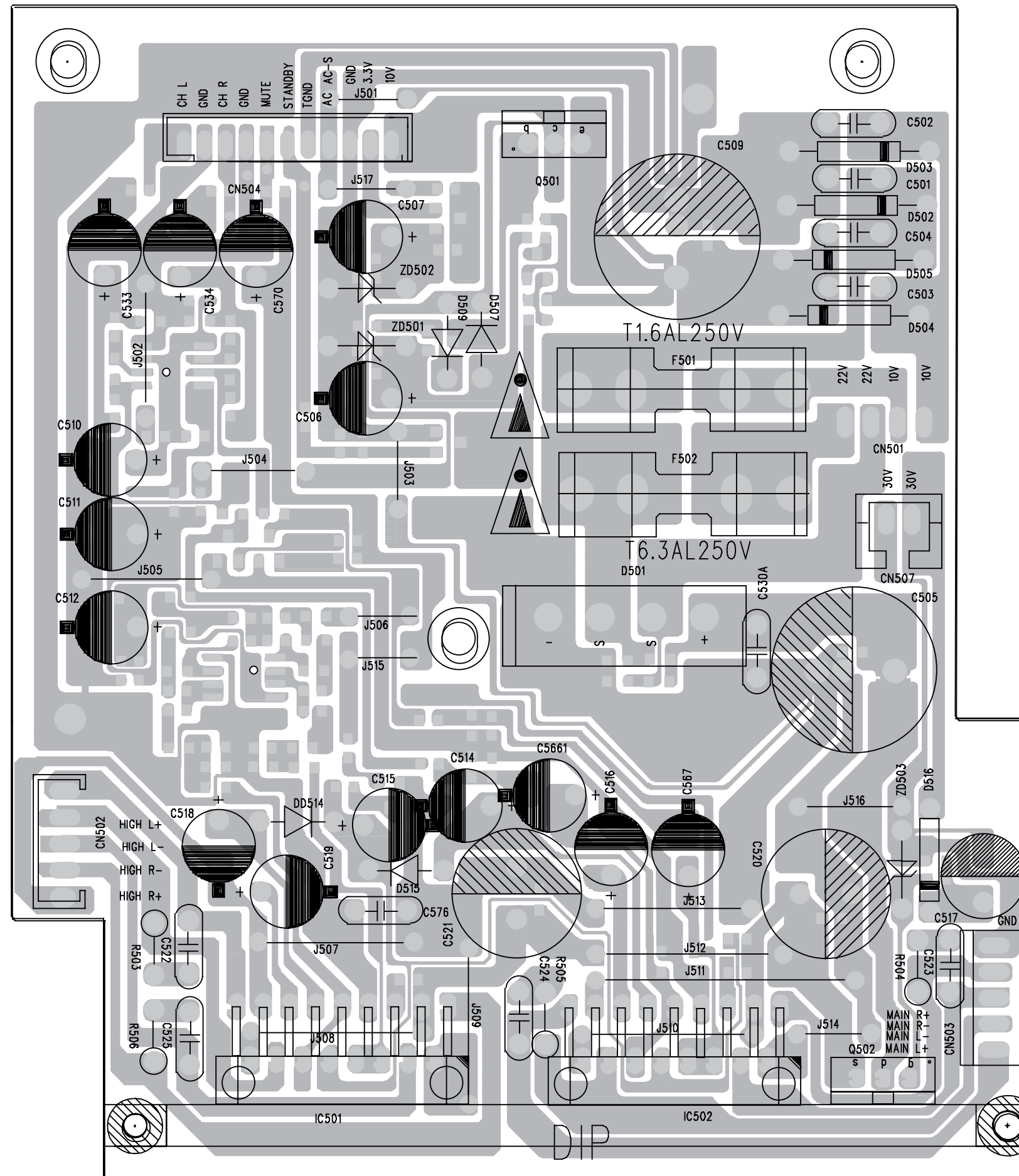
LAYOUT DIAGRAM - CD BOARD COPPER SIDE VIEW



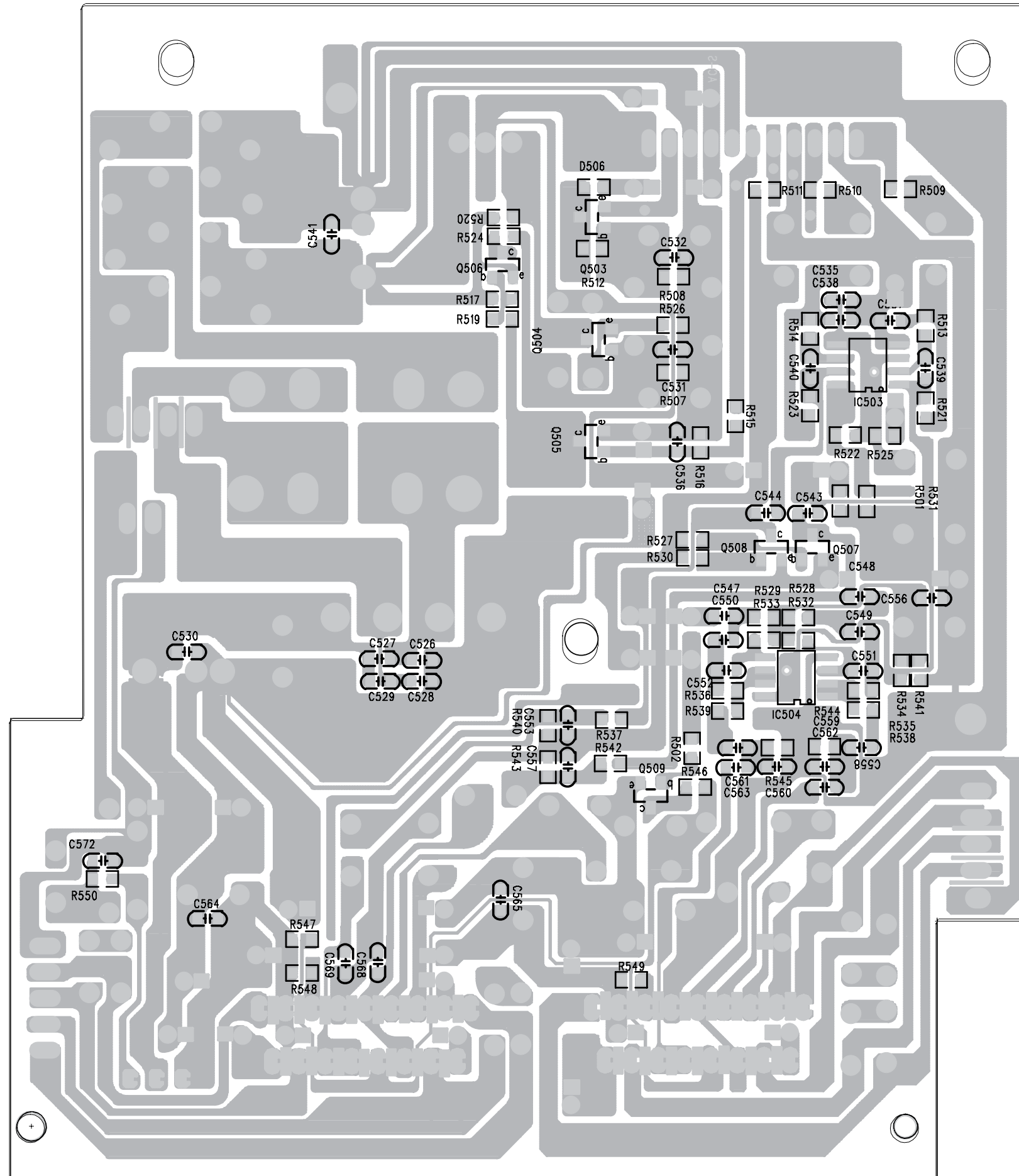
CIRCUIT DIAGRAM - AMP BOARD



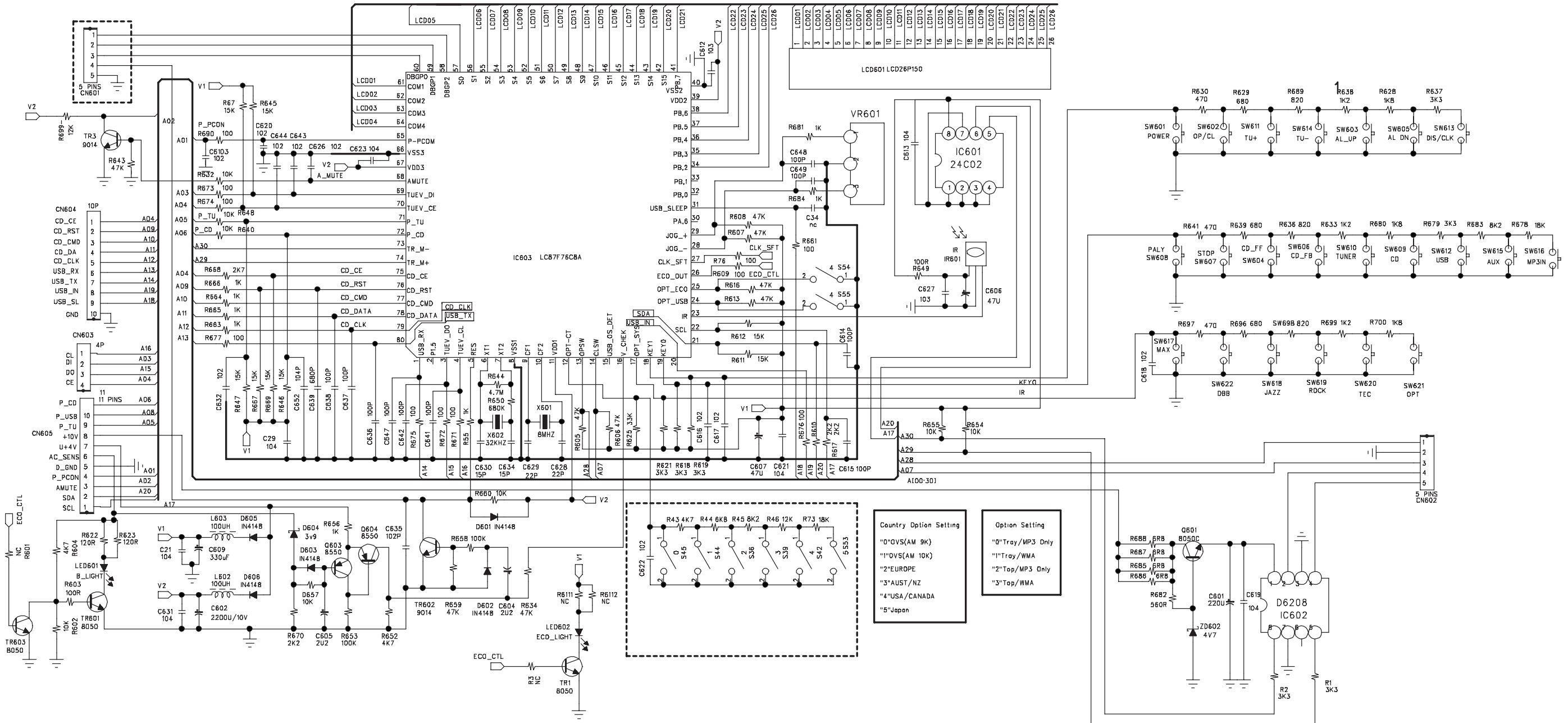
LAYOUT DIAGARM - AMP BOARD COMPONENT SIDE VIEW



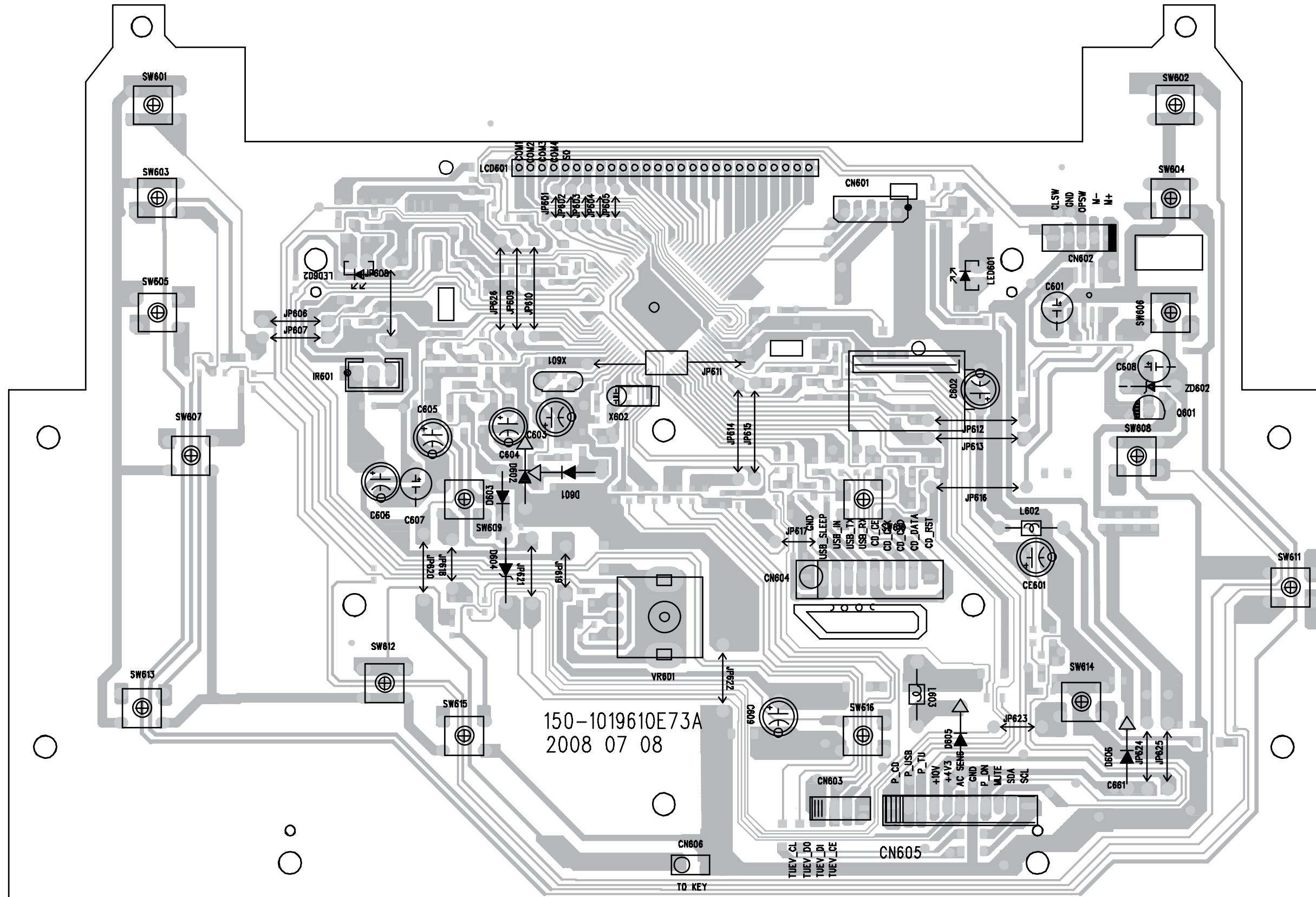
LAYOUT DIAGARM - AMP BOARD
COPPER SIDE VIEW



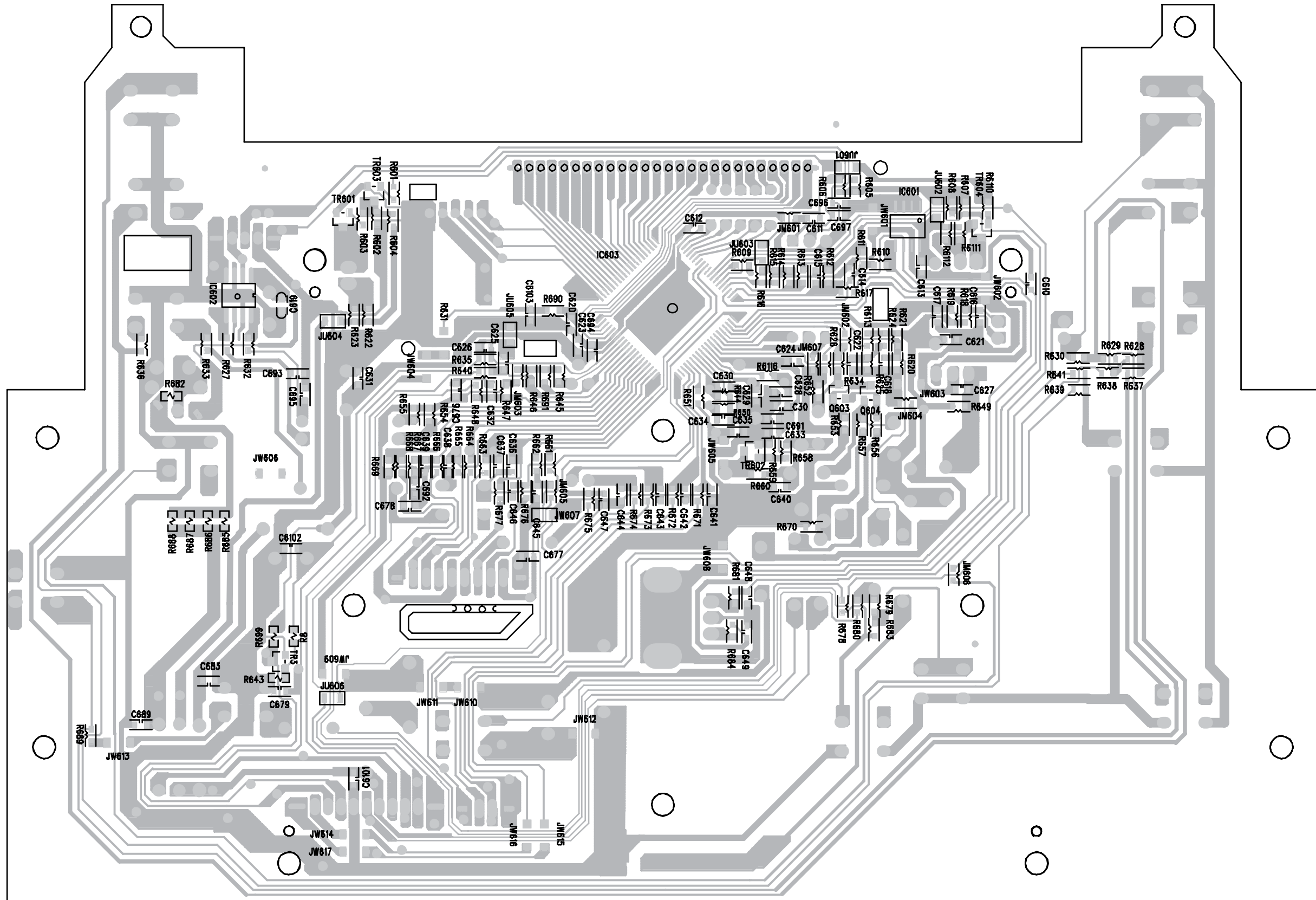
CIRCUIT DIAGRAM - MCU BOARD



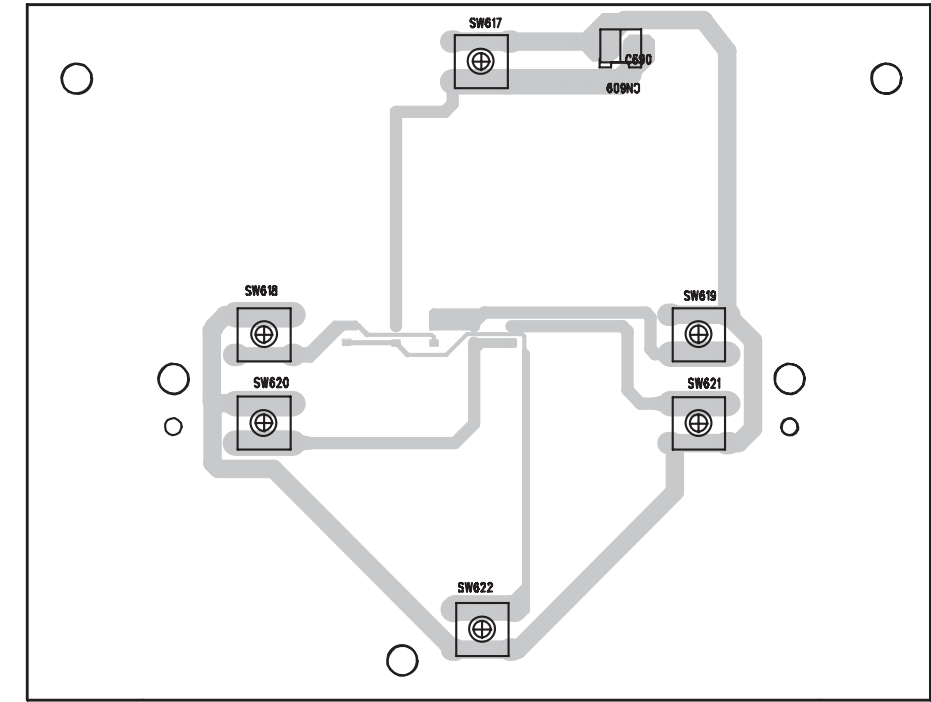
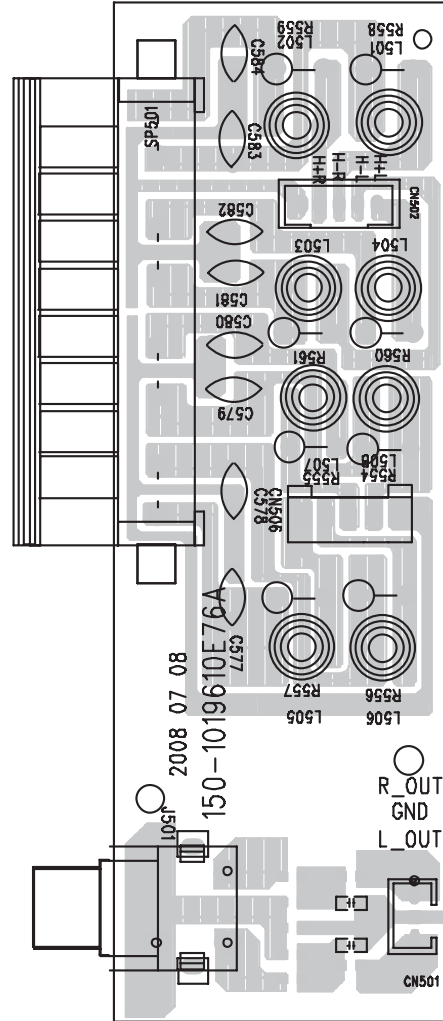
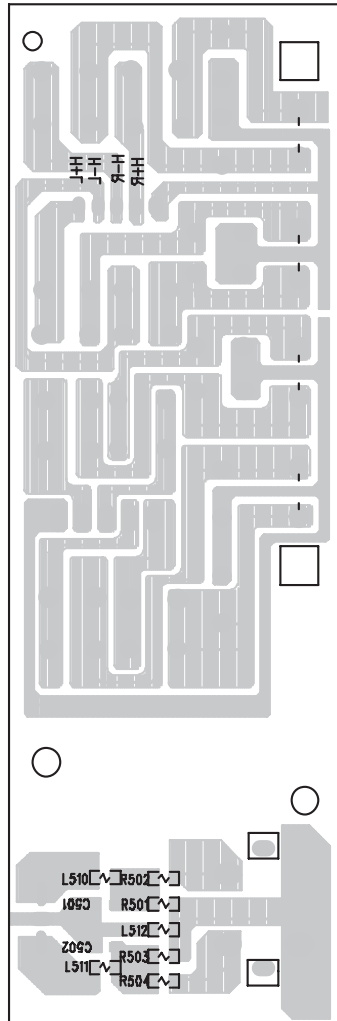
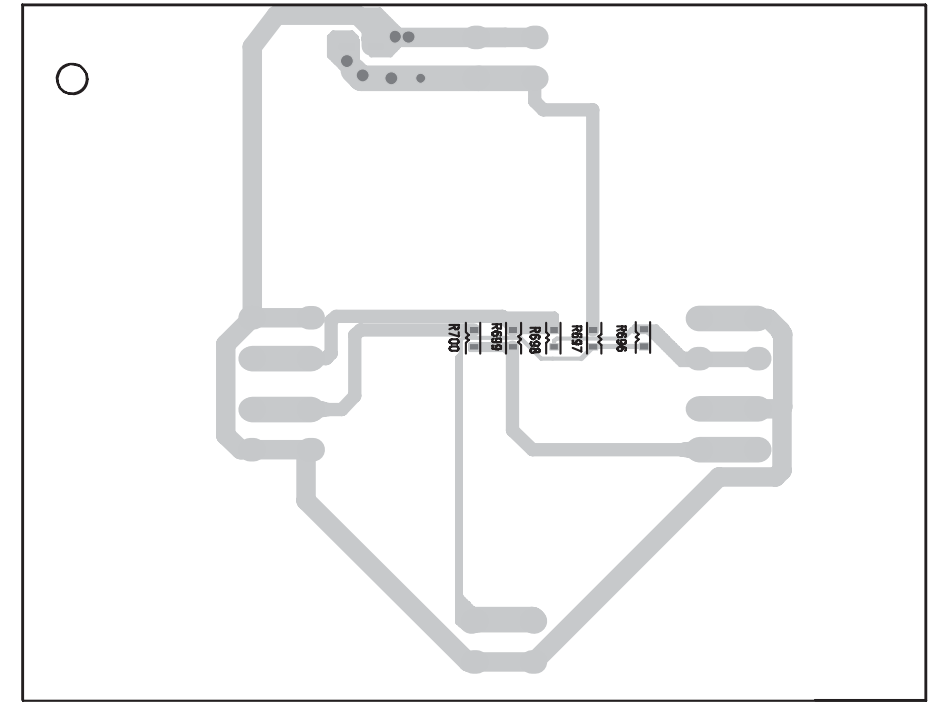
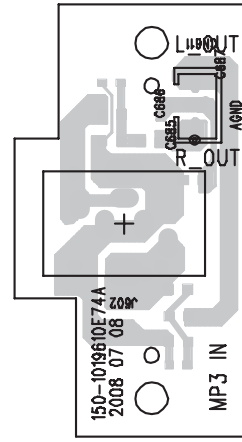
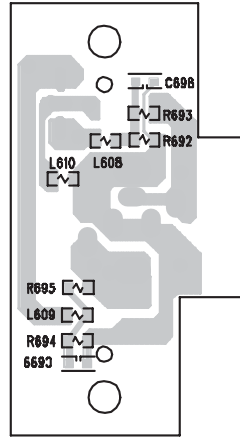
LAYOUT DIAGARM - MCU BOARD
COMPONENT SIDE VIEW



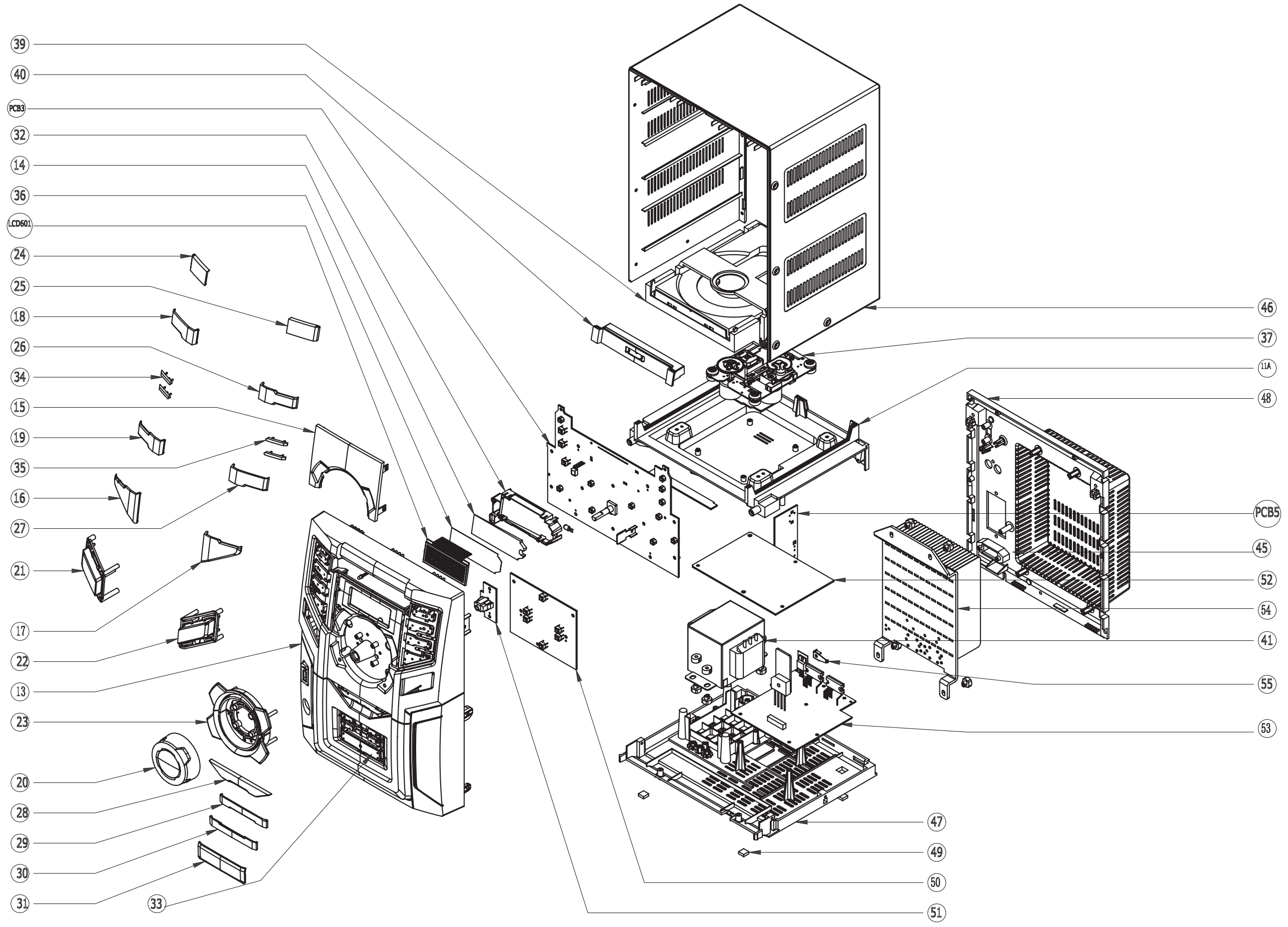
LAYOUT DIAGARM - MCU BOARD COPPER SIDE VIEW






LAYOUT DIAGRAM - KEY BOARD





EXPLODED VIEW DIAGRAM



MECHANICAL PARTSLIST

13	996510018214	FRONT CABINET
14	996510018215	LIGHT SLICE
15	996510018216	DISPLAY LENS
16	996510018217	STOP BUTTON
17	996510018218	PLAY BUTTON
18	996510018219	PRESET+ BUTTON
19	996510018220	PRESET- BUTTON
20	996510018221	VOLUME BUTTON
21	996510018222	BAND BUTTON
22	996510018223	TUNING BUTTON
23	996510018224	CLUSTER BUTTON
24	996510018225	POWER BUTTON
25	996510018226	OPEN/CLOSE BUTTON
26	996510018227	F.FWD BUTTON
27	996510018228	REW BUTTON
28	996510018229	MAX SOUND BUTTON
29	996510018230	JAZZ/ROCK BUTTON
30	996510018231	TEC/OPT BUTTON
31	996510018232	DBB BUTTON
32	996510019389	LCD BRACKET
33	996510018233	DECKING BAR
34	996510018234	LEFT MIDDLE STRAP
35	996510018235	RIGHT MIDDLE STRAP
36	996510018236	WHITE BACKLIGHT PAPER
37	996500038819	CD MECHANISM SANYO DA11VF
38	996510006434	16P(FLEX FT C)CONNECTL150P1A
39	996500038820	CD LOADER WXD-8210 (COMPLETED)
40	996510018237	CD DOOR
41	 996510018238	TRANS. UL EML662286MT
42	996510007662	UL-APP 110V 3A PLUG CONVERTOR
45	994000004736	SLIDE SWITCH (SSV-12-8700S)
46	996510002240	7671 TOP CAB
47	996510002305	BASE CABINET
48	996510018239	B-CABINET
49	996510002262	RUBBER FOOT
F501	 994000004782	FUSE 50T D5X20 1.6A 250V(S.B.)
F502	 996510002287	FUSE T6.3A 250V 5x20

ACCESSORIES

11	996510018212	SINGLE SPEAKER BOX L/R
12	996510018213	REMOTE CONTROL
43	 996510010129	AC CORD BAXI L=1650mm (10A) EP -/55
43	 996510004702	APP AC CORD SET W/K-1004 -/77
44	996510003947	FM ANT L1500

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

ELECTRICAL PARTSLIST**CD BOARD ASSEMBLY**

50	996510015906	AM COIL 67:9T 4 LEADS H-COMB
51	994000003966	FERRITE BAR D10XL60
CF101	994000005187	DISCRIMINATOR J10.7C
CF102	996510015911	F, LT10.7MS3 CAIQIN (RED)
CF103	996500038852	FILTER FM450AL (DOUBLE)
CF104	996500038844	FM BPF (BP87108B)
IC102	996510015912	IC LV23010V SSOP36
IC201	996510013420	IC 7314 (SOP 28P)(ANGUS)(EP)
IC801	996510002298	IC LC78692W (CD DSP) SQFP80
IC802	996500038842	IC LA6548NH (4 CH DRIVER)
Q101	994000004004	CHIP TR NPN 8050C
Q602	996510010554	TR NPN KTD882 (TO-126) (EP)
Q606	994000004004	CHIP TR NPN 8050C
Q609	994000004005	CHIP TR PNP 8550D
Q610	994000004004	CHIP TR NPN 8050C
Q613	994000004005	CHIP TR PNP 8550D
Q801	994000003973	CHIP TR MMBT9015C
Q802	996500038840	TR PNP 2SB764E-SSH-AE(TP)
T101	996510015908	AM OSC RED 10mm 2928
T102	996510015907	AM IFT YEL 10mm A49
X101	996510018248	CRYSTAL 7.2MHz (HC49U)
X801	996510002297	C RESON'R QZTT16.93MX 3PINS

MCU BOARD ASSEMBLY

IC601	996510013449	IC FT24C02 (EEPROM) (SOP8)(EP)
IC602	994000004737	IC D6208 (MOTOR DRIVER) SOT8
IC603	996510015905	IC LC87F76C8A-006-UD-E QFP
IR601	996510018243	SENSOR:SIR7310 3.3V 36KHZ
Q601	994000004009	TR NPN 8050C
Q603	994000004005	CHIP TR PNP 8550D
Q604	994000004005	CHIP TR PNP 8550D
SW601	994000004792	TACT SW 6X6MM H4.3
SW602	994000004792	TACT SW 6X6MM H4.3
SW603	994000004792	TACT SW 6X6MM H4.3
SW604	994000004792	TACT SW 6X6MM H4.3
SW605	994000004792	TACT SW 6X6MM H4.3
SW606	994000004792	TACT SW 6X6MM H4.3
SW607	994000004792	TACT SW 6X6MM H4.3
SW608	994000004792	TACT SW 6X6MM H4.3
SW609	994000004792	TACT SW 6X6MM H4.3
SW610	994000004792	TACT SW 6X6MM H4.3
SW611	994000004792	TACT SW 6X6MM H4.3
LCD601	996510018274	LCD SDH-DA1780-TN-2
LED601	996510002275	LED WHITE D5mm (DL5NWCH)
TR3	994000004004	CHIP TR NPN 8050C
TR601	994000004004	CHIP TR NPN 8050C
TR602	994000003972	CHIP TR MMBT9014C
VR601	996510018244	ENCODER:EC121102X2B-HA1-137
X601	996500038823	CRYSTAL 8MHz(HC-49US)
X602	996500038822	CRYSTAL JF32.768kHz JU2x6

ELECTRICAL PARTSLIST**AMP BOARD ASSEMBLY**

IC501	996510009066	IC TDA8948J (DBS17P)(PHILIPS)
IC502	996510009066	IC TDA8948J (DBS17P)(PHILIPS)
IC503	996510002294	IC D4558 (SOP8)
IC504	996510002294	IC D4558 (SOP8)
Q501	994000004064	POWER TR PNP KTA1046/P
Q502	996510002289	NFET BUK7535-55A
Q503	994000004004	CHIP TR NPN 8050C
Q504	994000004004	CHIP TR NPN 8050C
Q505	994000003972	CHIP TR MMBT9014C
Q506	994000004005	CHIP TR PNP 8550D
Q507	994000003972	CHIP TR MMBT9014C
Q508	994000003972	CHIP TR MMBT9014C
Q509	994000004004	CHIP TR NPN 8050C

KEY BOARD ASSEMBLY

SW617	994000004792	TACT SW 6X6MM H4.3
SW618	994000004792	TACT SW 6X6MM H4.3
SW619	994000004792	TACT SW 6X6MM H4.3
SW620	994000004792	TACT SW 6X6MM H4.3
SW621	994000004792	TACT SW 6X6MM H4.3
SW622	994000004792	TACT SW 6X6MM H4.3

LINE IN BOARD ASSEMBLY

J602	996510002273	ST PHONES JACK 3.5mm TC38
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AMP EXPORT BOARD ASSEMBLY

J501	996510006430	AUX RCA JACK (RCA-207)(RED/WHT
SP501	996510002296	SPEAKER TERMINAL 8POSITION

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