

Service
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Service Manual



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TECHNICAL SPECIFICATION

AMPLIFIER

Output power 2 x 10 W RMS
 Signal-to-noise ratio ≥ 62 dBA (IEC)
 Frequency response 63 – 16000 Hz, ± 3 dB
 Impedance loudspeakers 8 Ω
 Impedance headphones 32 Ω – 1000 Ω

CD PLAYER

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

TUNER

FM wave range 87.5 – 108 MHz
 MW wave range
 526.5+0/-20 – 1606.5+50/-0 kHz

TAPE DECK

Frequency response
 Normal tape (type I) 125 – 8000 Hz (8 dB)
 Signal-to-noise ratio
 Normal tape (type I) 35 dBA
 Wo w and flutter $\leq 0.4\%$ DIN

SPEAKERS

Bass reflex system
 Dimensions (w x h x d) . 190 x 292 x 182 (mm)

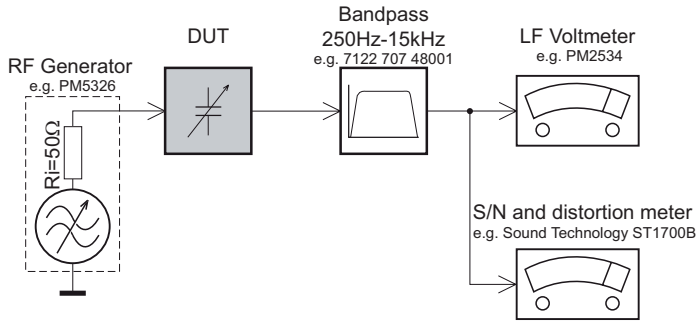
GENERAL INFORMATION

AC Power 220 – 230 V / 50 Hz
 Dimensions (w x h x d) .. 220 x 292 x 285 (mm)
 Weight (with/without speakers)
 approx. 4.9 / 2.3 kg

**Specifications and external appearance are
 subject to change without notice.**

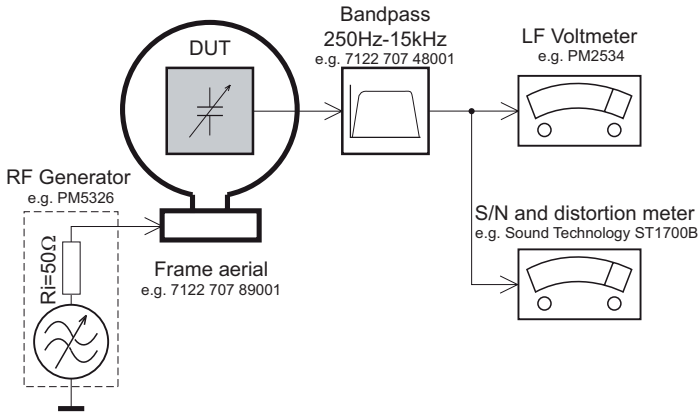
MEASUREMENT SETUP

Tuner FM



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

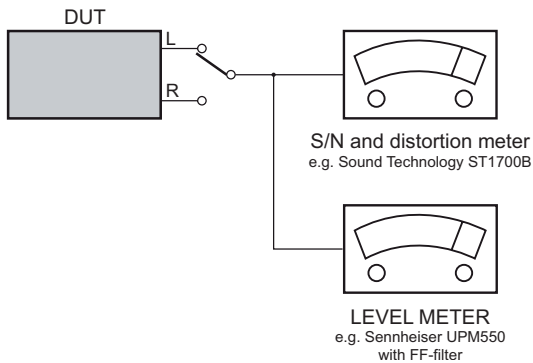
Tuner AM (MW,LW)



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).

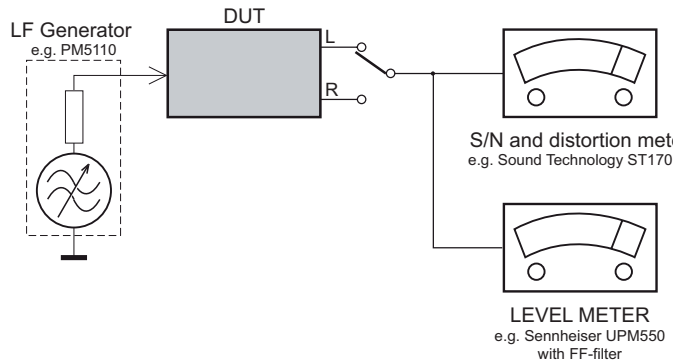
CD

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 .

**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".

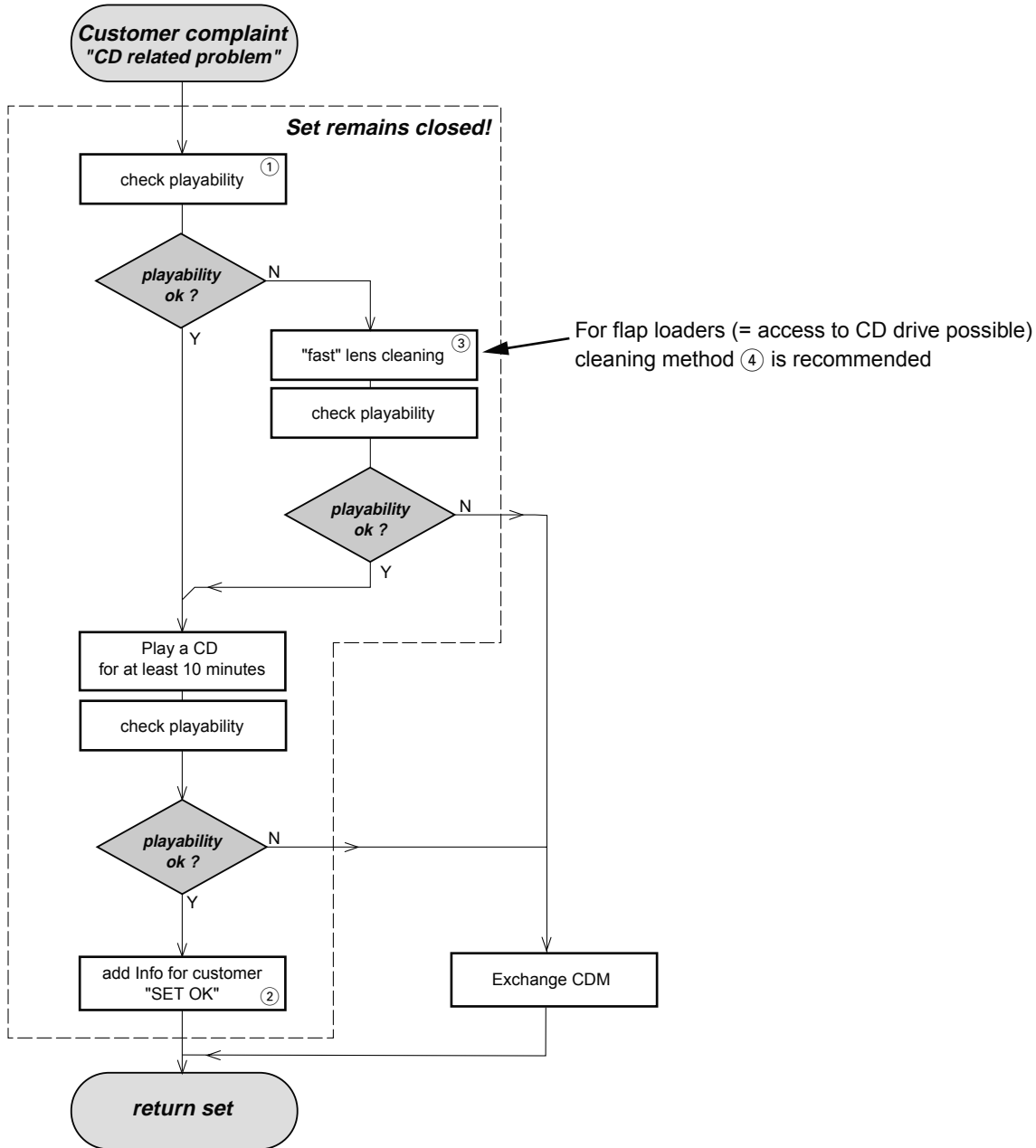
For additional questions please contact your local repair-helpdesk.

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

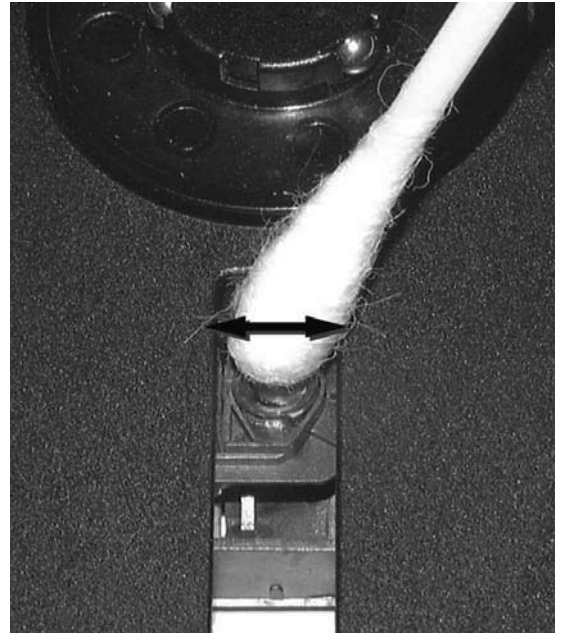
LIQUID LENS CLEANING

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.

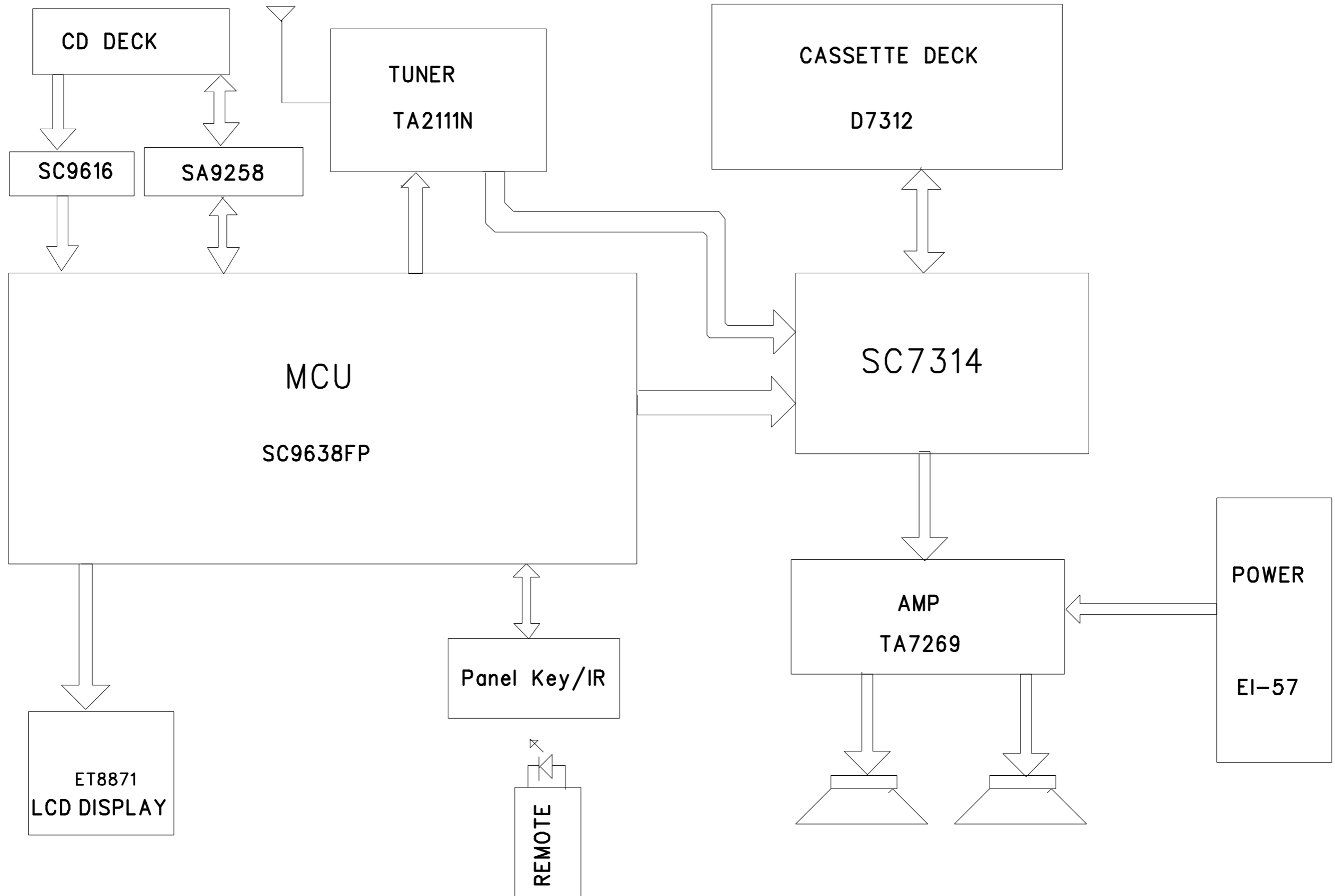
Because the material of the lens is synthetic and coated with a special anti-reflectivity layer, cleaning must be done with a non-aggressive cleaning fluid. It is advised to use "Cleaning Solvent"

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.

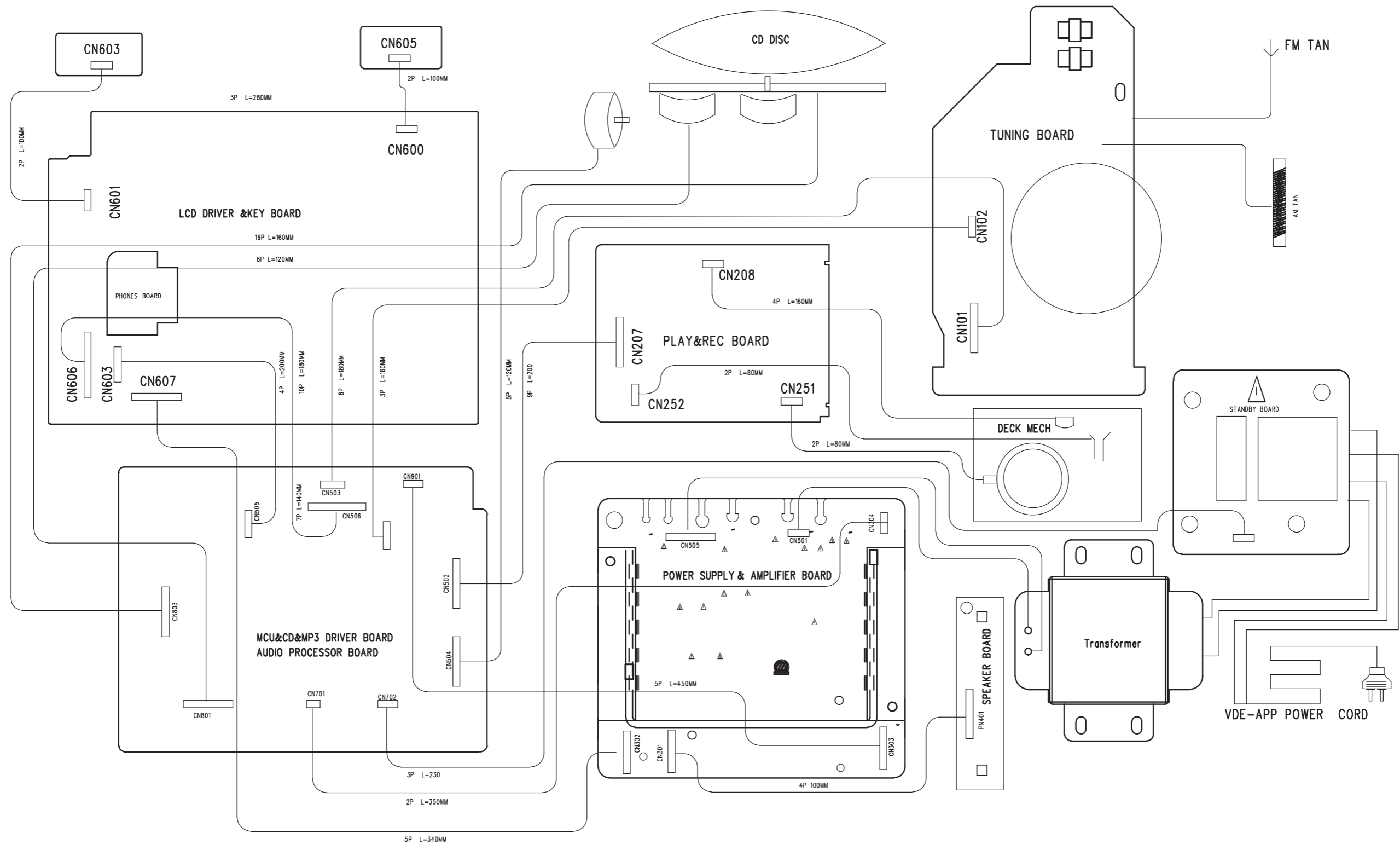
The direction of cleaning must be in the way as indicated in the picture below.



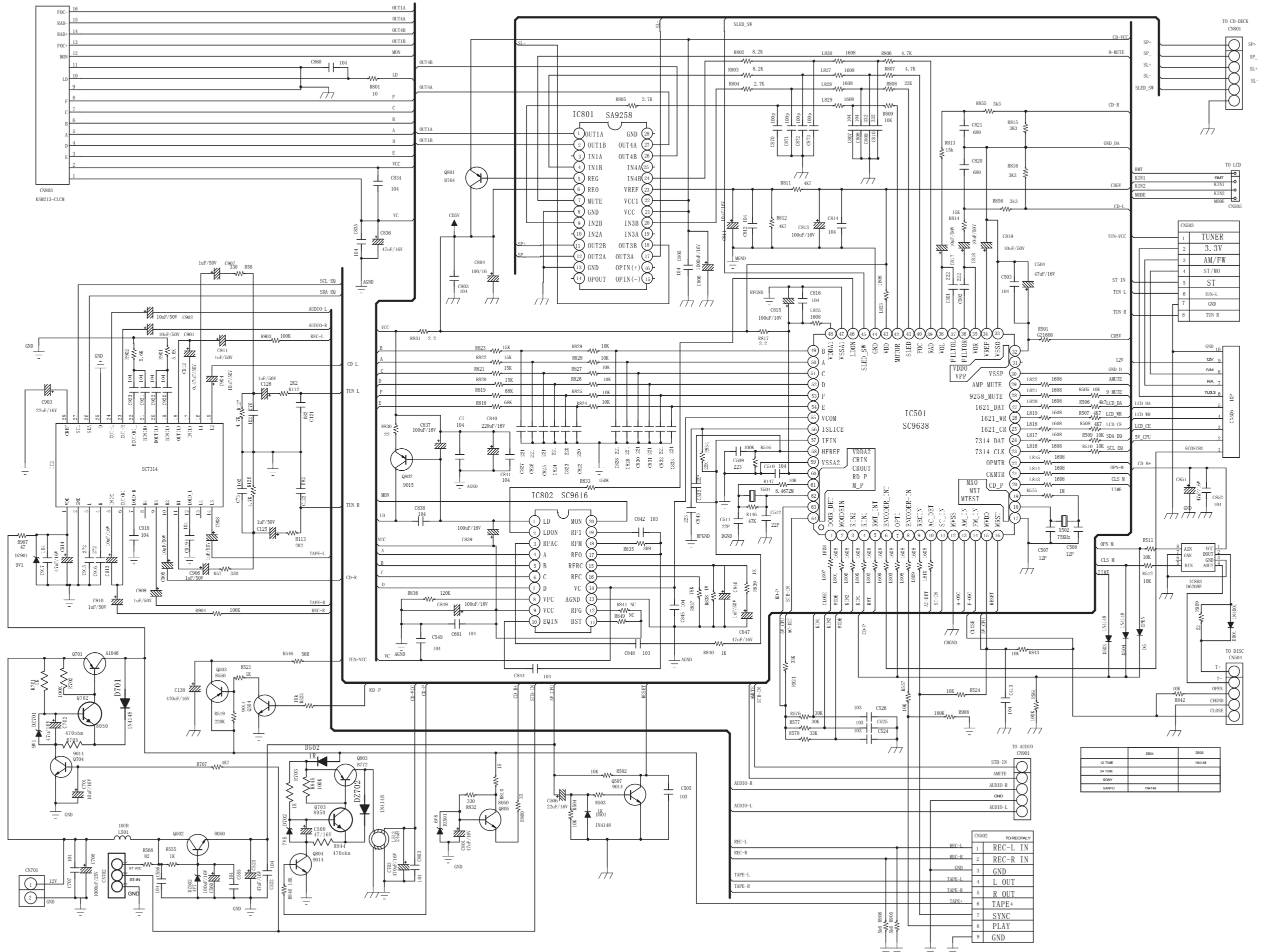
SET BLOCK DIAGRAM



SET WIRING DIAGRAM



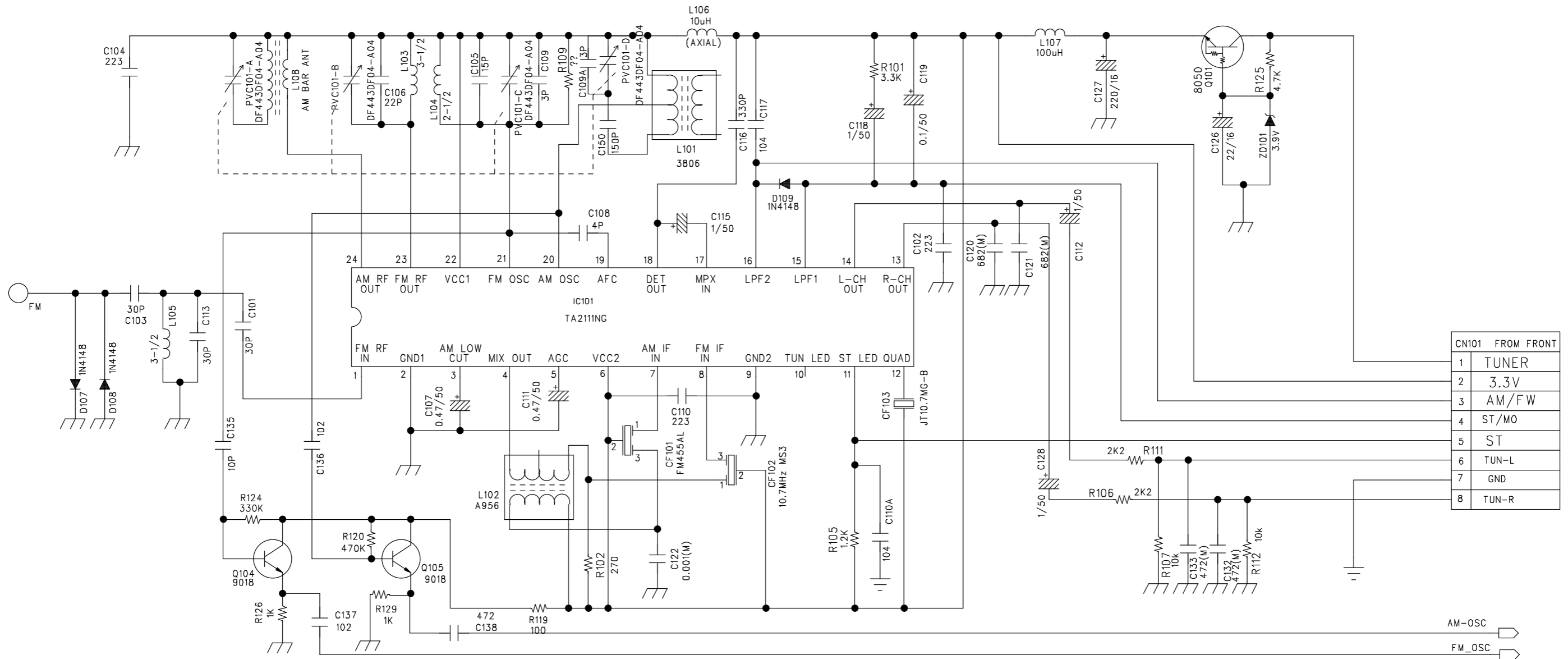
CIRCUIT DIAGRAM - CD BOARD



NO	VALUE	NO	VALUE
12	TIME	194	1M
24	TIME	194	1M
30V			
30V			

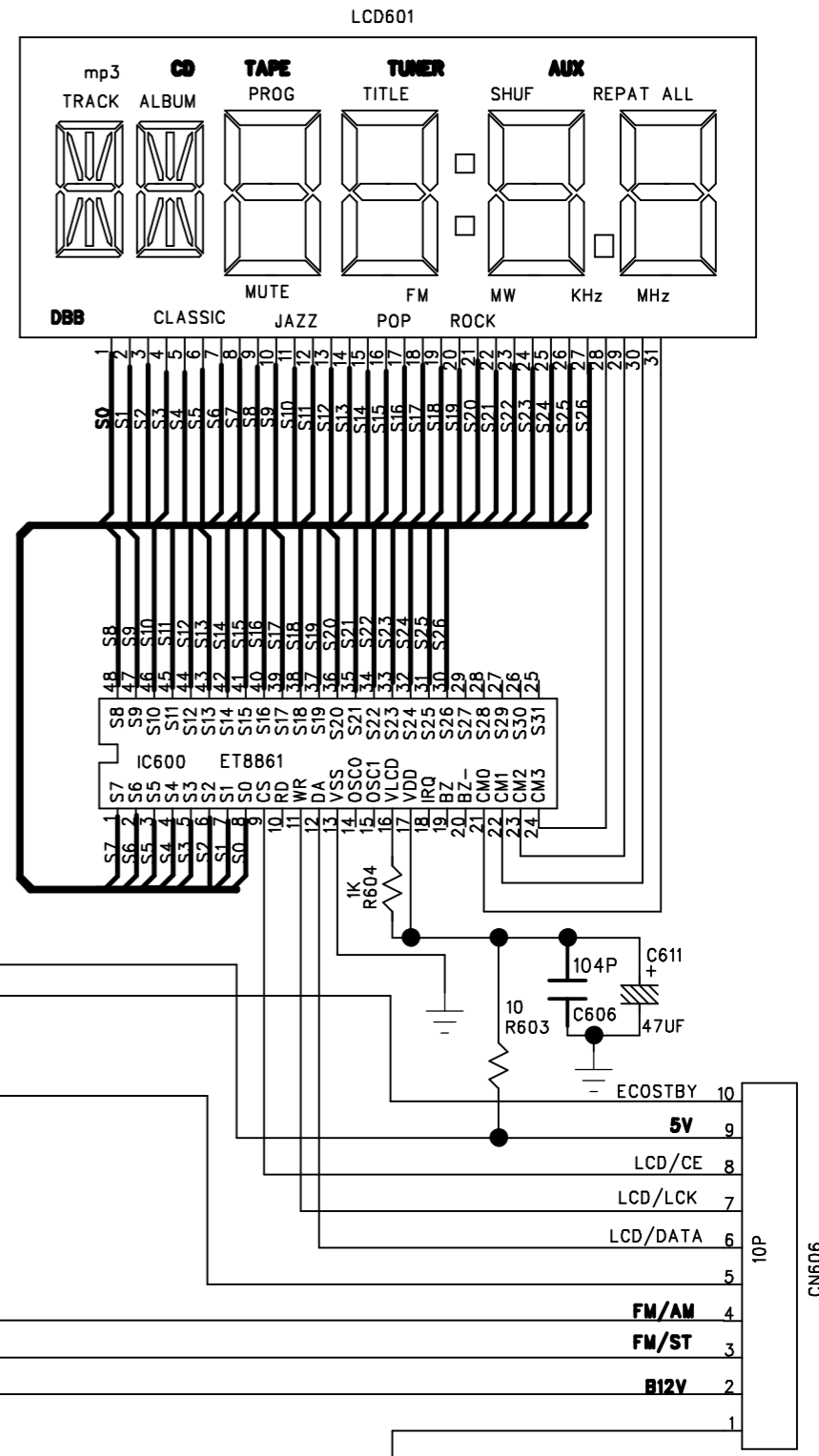
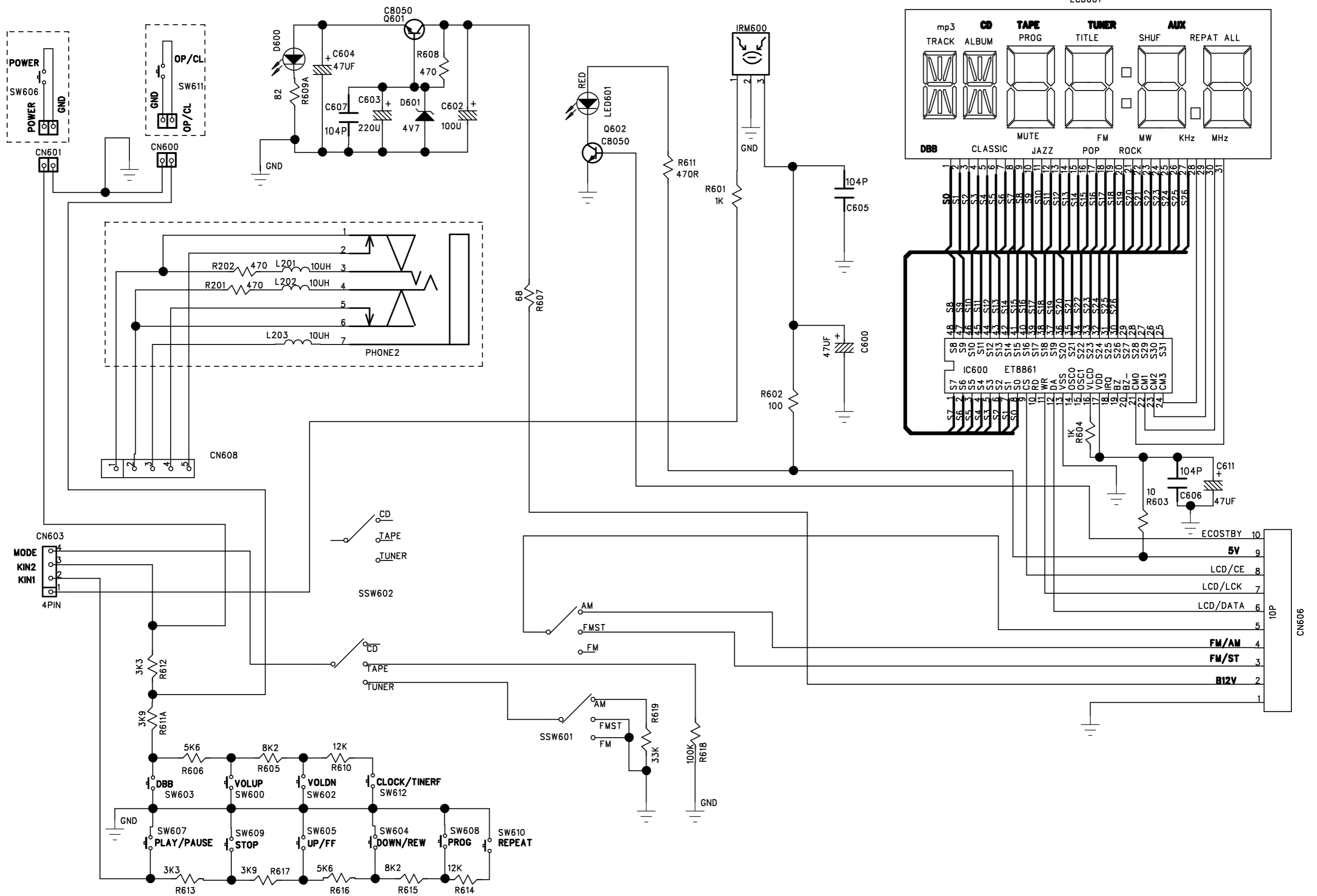
CN502	TO RECPY
1	REC-L IN
2	REC-R IN
3	GND
4	L OUT
5	R OUT
6	TAPE+
7	SYNC
8	PLAY
9	GND

CIRCUIT DIAGRAM - RADIO BOARD

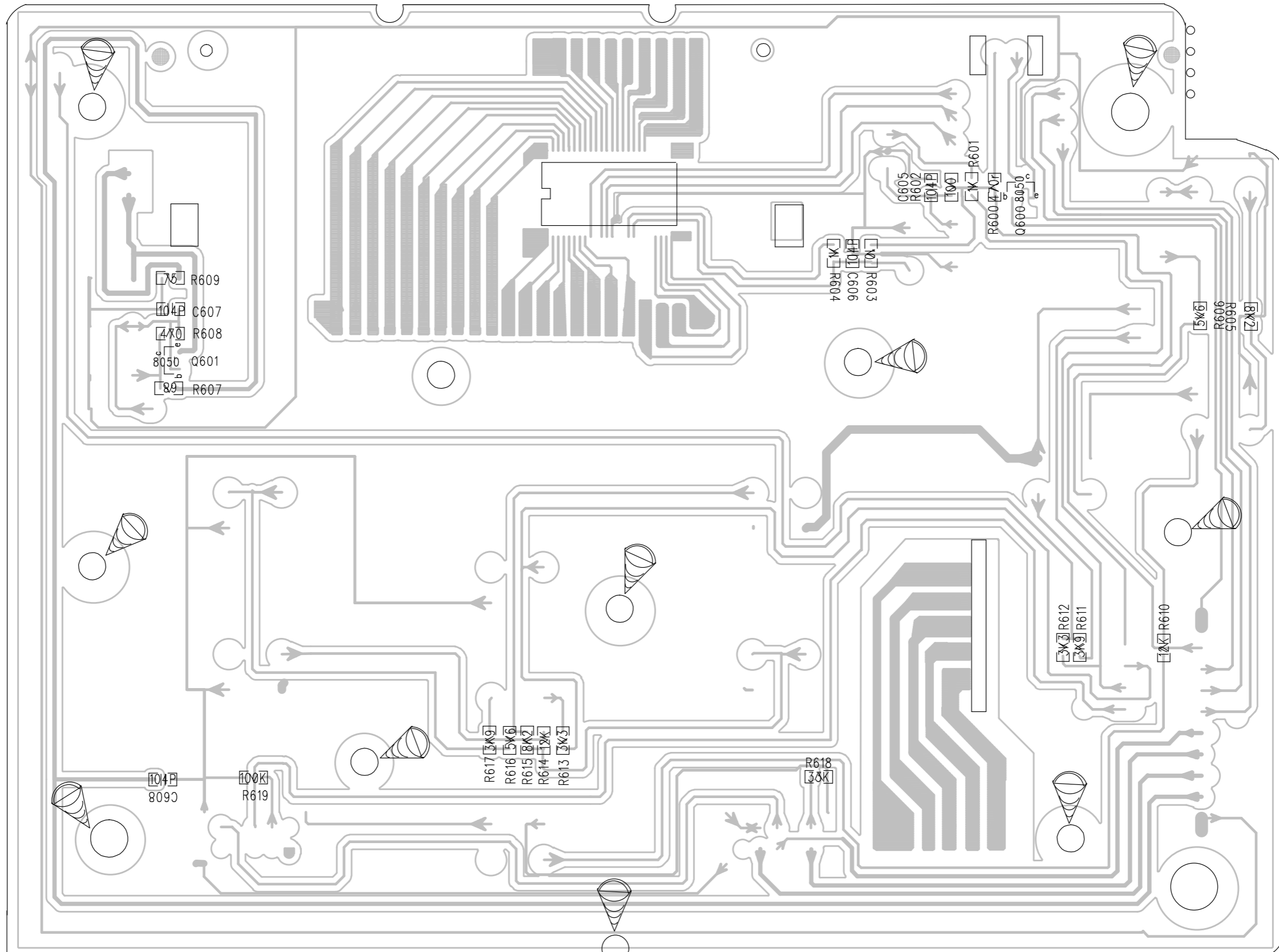


IC101: TA2111NG			
PIN	AM	FM	FMST
15P	--	H	L
16P	H	L	L

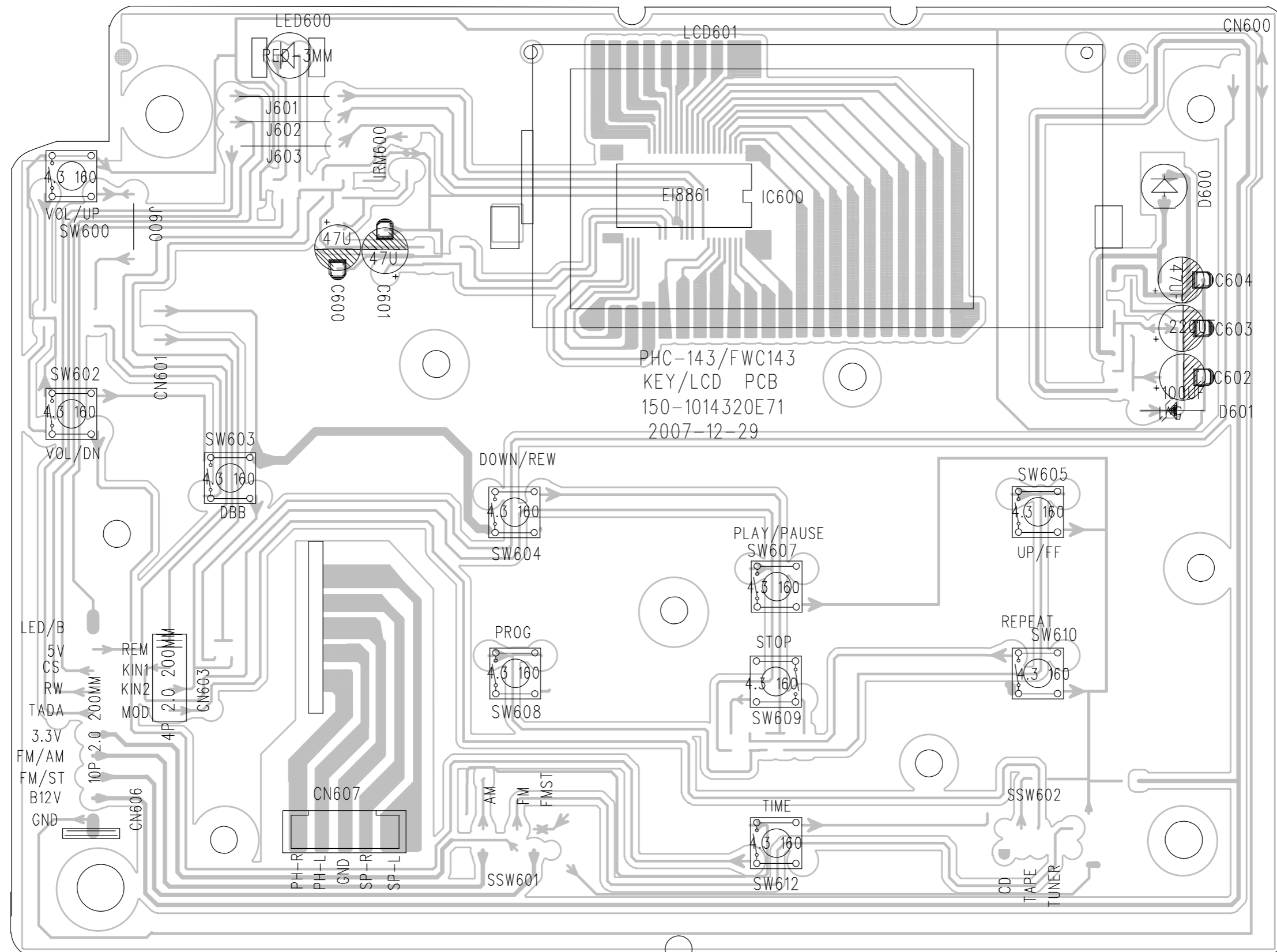
CIRCUIT DIAGRAM - CONTROL BOARD



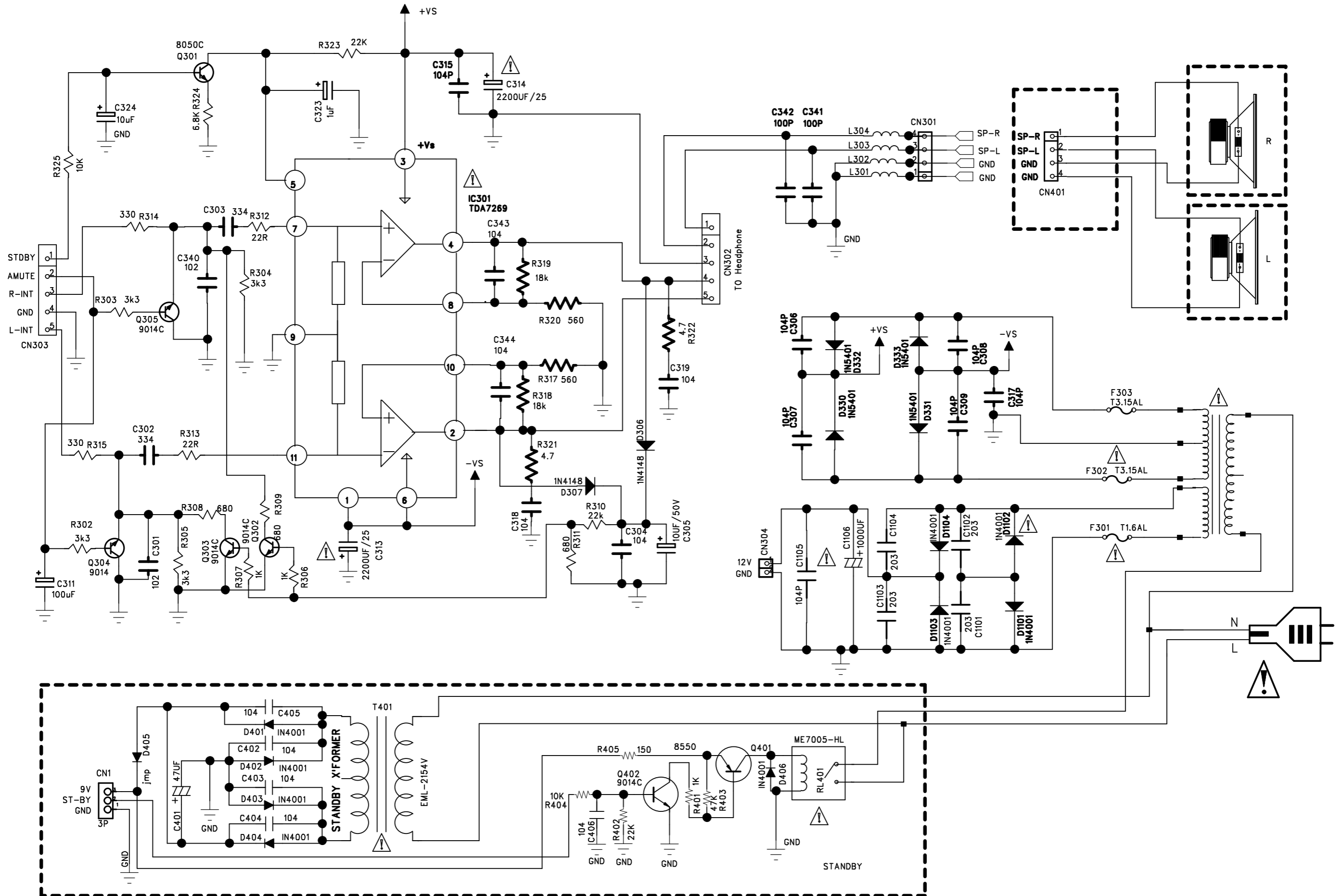
LAYOUT DIAGRAM - CONTROL BOARD
COPPER SIDE VIEW



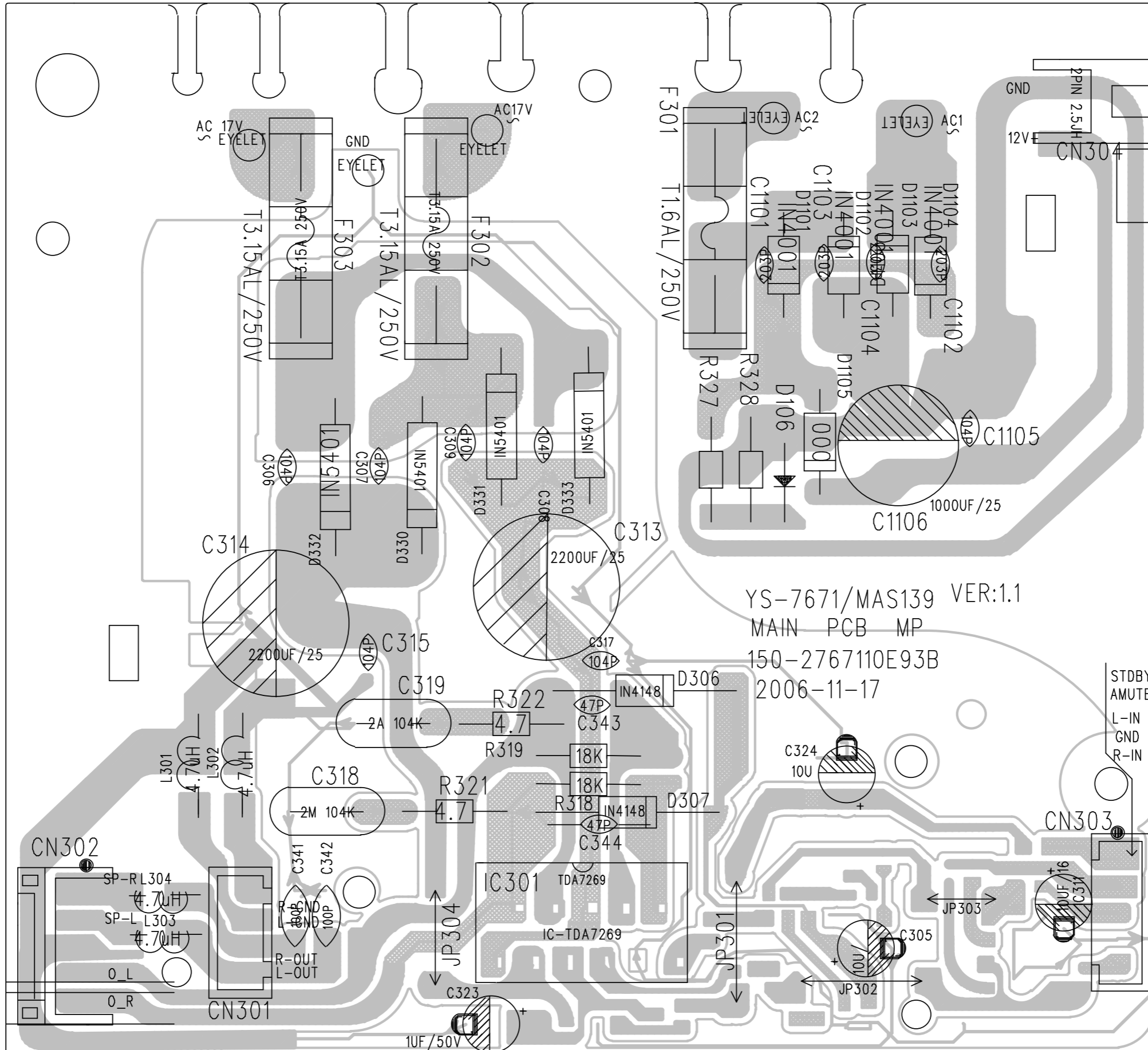
LAYOUT DIAGRAM - CONTROL BOARD
COMPONENT SIDE VIEW



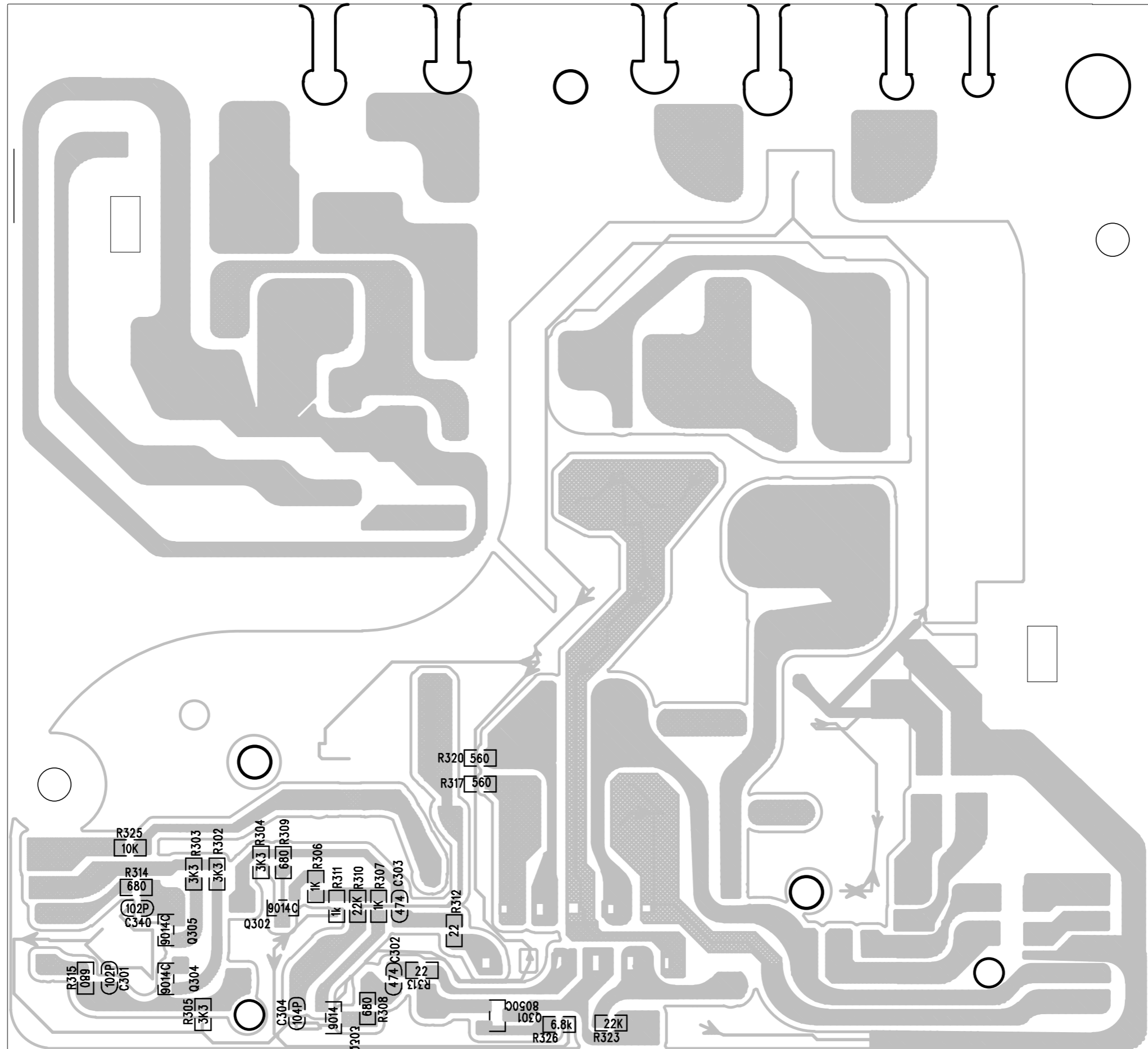
CIRCUIT DIAGRAM - POWER & AMP BOARD



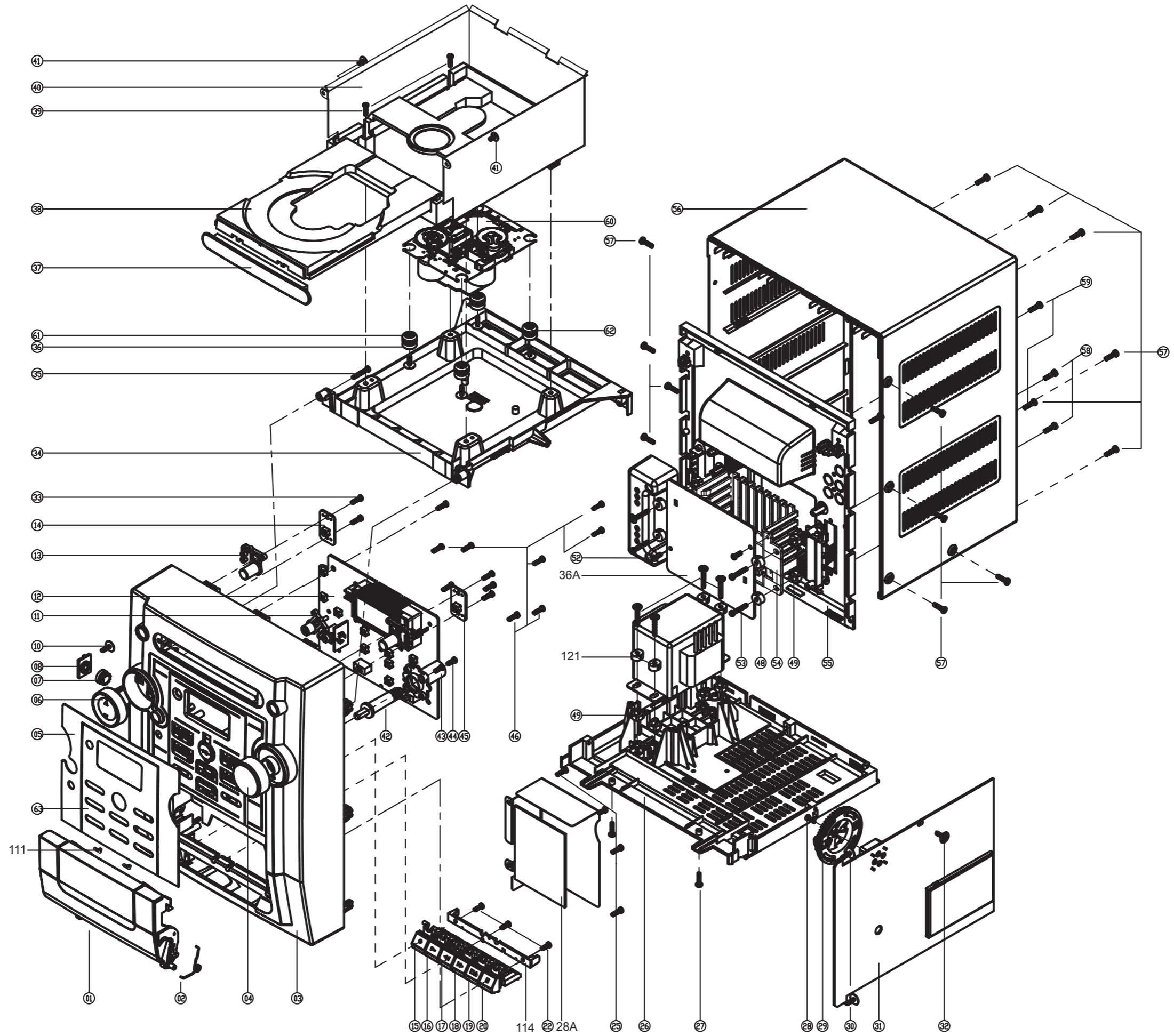
LAYOUT DIAGRAM - POWER & AMP BOARD
COMPONENT SIDE VIEW



LAYOUT DIAGRAM - POWER & AMP BOARD
COPPER SIDE VIEW



EXPLODED VIEW DIAGRAM



MECHANICAL PARTSLIST

01	996510010970	7671 CASS DOOR"G"SPRAY SILVER
02	996510003946	CASS DOOR SPRING BRACKET(0.4mm)
04	996510006414	7671 TUNING KNOB SPRAY SILVER
05	996510010616	FRONT LENS(1)"B" W/ADHESIVE GR
06	996510006413	7671 VOLUME KNOB SPRAY SILVER
07	994000004726	7831 GEAR (MODE:0.8)
08	994000004727	7831 GEAR STAND (MODE:0.8)
11	996510006419	DBB KNOB SPRAY RED:(FWM143/55)
13	996510006417	7671 POWER KNOB MOULD BLACK
15	996510006410	7671 REC KNOB MOULD BLACK
16	996510006409	7671 PLAY KNOB MOULD BLACK
17	996510006412	7671 REW KNOB MOULD BLACK
18	996510006411	7671 F.FWD KNOB MOULD BLACK
19	996510006408	7671 STOP KNOB MOULD BLACK
20	996510006416	7671 PAUSE KNOB MOULD BLACK
26	996510009065	REAR CAB MOULD BLACK
31	994000004725	TUNING GEAR
34	994000004718	CD BRACKET
37	996510010969	7671 CD DOOR E SPRAY BLACK F
38	996510006422	CD MECH SHIELD COVER T=0.3mm
42	994000004724	TUNING KNOB GEAR
55	996510010621	7671 BASE CAB MOULD BLACK
56	996510002240	7671 TOP CAB
60	996500038819	CD MECHANISM SANYO DA11VF
63	996510010968	FRONT LENS INSIDE(2)"C" W/ADHE
111	996510006415	FUNCTION SLIDE KNOB SPRAY RED
112	996510006418	7671 CD SILDE KNOB MOULD BLACK
113	996510003944	TUNING HOLDER
114	994000004719	CASS HOLDER
115	994000004702	7871 CASS DOOR BRACKET
116	994000004734	CASS DECK CS-21SC-820T
117	996510009058	FRONT CAB SPRAY METAL BLK
120	⚠ 996510002304	AC CORD VDE-APP L1650mm (only for -/12)
120	⚠ 996510002409	BS APP AC CORD SET W/BS (only for -/05)
121	⚠ 994000005123	TRANSFORMER VDE 120V/230V
125	996500038818	RECORD SPRING
36B	996510010974	PH-FWC143/12 AMP BOARD ASSY
28A	996510010973	CASSETTE BOARD ASSY

ACCESSORIES

A1	996510010624	COMPLETE SPEAKER BOX LEFT
A2	996510010625	COMPLETE SPEAKER BOX RIGHT
RC	996510013904	REMOTE CONTROL

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

ELECTRICAL PARTSLIST**CD BOARD ASSEMBLY**

D901	996510010978	DIODE 1N4001 50V/1A (EP) (TP)
IC801	994000004739	IC SA9258PH (4-CH MOTOR DVR)
IC802	994000004738	IC SA9616
IC803	994000004737	IC D6208 (MOTOR DRIVER) SOT8
L512	996510010976	BEAD24uHRI95-511977
Q701	994000004745	TR PNP KTB772
Q801	994000004744	TR PNP 2SB764-D
Q803	994000004064	POWER TR PNP KTA1046/P
R501	996510004745	COIL 100uH3x8CEC-101K708036NP
U2	996510010977	IC SC9638FP (111125)(SILAN)
U5	994000004741	IC SC7314S (4 CH INPUT AUDIO)
X501	994000003986	CRYSTAL 8,4672MHZ
X502	996510003949	CRYSTAL SF75KHZ-JU3810


RADIO BOARD ASSEMBLY

33C	996510009063	AM COIL 120:20T 4 LEADSH-COMB
33D	994000003966	FERRITE BAR D10XL60
33E	996510010971	PH139/PH339/YS7681 BAR HOLDER
CF101	996500038852	FILTER FM450AL (DOUBLE)
CF102	994000005186	FILTER 10.7MC (L10.7A)
CF103	994000005187	DISCRIMINATOR J10.7C
D1	996510010972	DIODE 1N4148 (EP) (TP)
IC101	994000003962	IC TA2111NG
L101	996500038855	AM OSC RED 10MM
L102	994000003964	AM IFT YEL 7MM A956
L103	996510002281	COIL 3T5 D4.8 #0.8 CW
L104	996510009064	COIL 2T5 D4.5 #0.8 CW <4583C>
L106	996510004744	COIL 10uH CW34-817566
L107	994000004773	INDUCTOR (R-TYPE) 100UH
PVC101	994000004775	PVC (DF443DF04-A04)
Q101	994000004009	TR NPN 8050C
Q104	994000004743	CHIP TR MMBT9018H
ZD101	996500038828	ZENER DIODE -5% 3V9

CONTROL BOARD ASSEMBLY

D600	994000004788	LED BLUE D5 (DL5NBCH-W)
IC600	994000003955	ET8861S LCD DRIVER 48P
IRM600	994000003956	SENSOR AT136B 36KHZ 5V
LCD601	994000004789	LCD SDT-M3797-TP-4
LED600	996510003955	LED RED D3mm (DR03R1DAJ-HB)
SSW601	994000004791	SLIDE SW (SSV-23-9700)
SW600	994000004792	TACT SW 6X6MM H4.3

ELECTRICAL PARTSLIST**POWER BOARD ASSEMBLY**

CF701	996510010981	C RESON R (CSA4.00MG)
D701	996510010980	IR LED WHITE DIA 5mm 5308IC-15
IC701	996510010979	IC SC73P1601M-C002 REMOTE CONT
Q401	996510003959	TR 8550D
Q402	994000003957	TR NPN 9014C
Q701	994000004009	TR NPN 8050C
RL401	996510002293	RELAY:DC5V (ME-7,005-HL)
T401	 996510003960	STDBY TRASFO VDE 230V

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