

Service
Service
Service



Service Manual

CONTENTS

Technical specification 1-2

Service measurement setup..... 1-3

Service aids 1-4

Instructions on CD playability 2-1.. 2-2

Disassembly diagram..... 3-1

Block diagram..... 4-1

Wiring diagram 4-2

Main board

 Circuit diagram 5-1

 Layout diagram..... 5-2.. 5-3

Key board

 Circuit diagram 6-1

 Layout diagram..... 6-2.. 6-3

Exploded view diagram 7-1

Mechanical parts list..... 7-2

Electrical parts list..... 8-1.. 8-2

Revision list..... 9-1



© Copyright 2010 Philips Consumer Electronics B.V. Eindhoven, The Netherlands
All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise without the prior permission of Philips.

Published by LX 1016 Service Audio Subject to modification

3141 785 32741

Version 1.1



PHILIPS



TECHNICAL SPECIFICATION

AMPLIFIER

Total output power 25 W (12.5 W per channel)
 Signal-to-noise ratio ≥ 62 dBA (IEC)
 Frequency response 63 – 16000 Hz, ± 3 dB

CD PLAYER

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

TUNER

FM wave range 87.5 – 108 MHz
 MW wave range 531 – 1602 kHz

SPEAKERS

1-way Bass Reflex System
 Impedance 8 Ω
 Speaker diameter 4"
 Dimensions (w x h x d) 14.6x23.6x18.5 (cm)

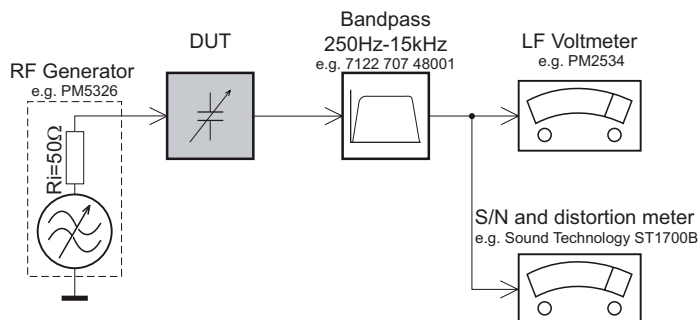
GENERAL

AC Power 110 – 127 / 220 – 240 V;
 50/60 Hz Switchable
 Dimensions (w x h x d) 14.6x23.6x23.9 (cm)
 Weight (with/without speakers)
 5.9 / 2.5 kg

Specifications and external appearance are subject to change without notice.

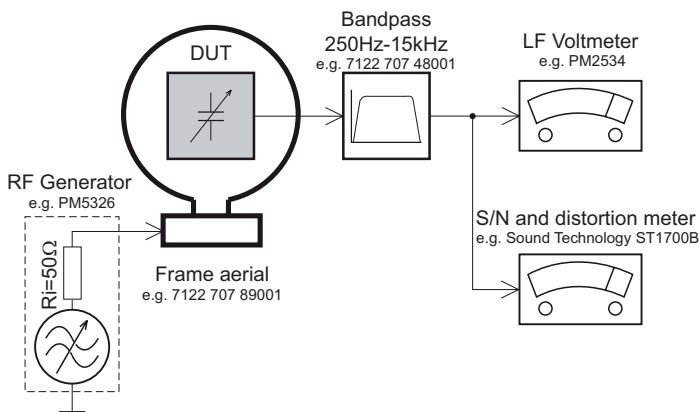
MEASUREMENT SETUP

Tuner FM



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

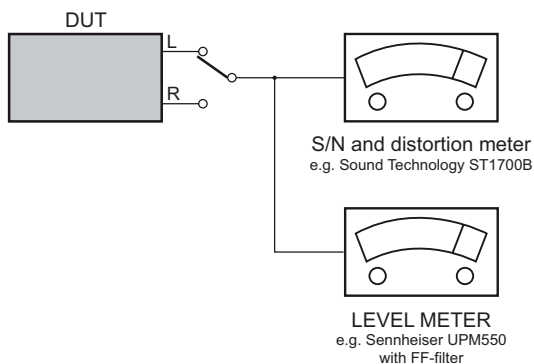
Tuner AM (MW,LW)



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).

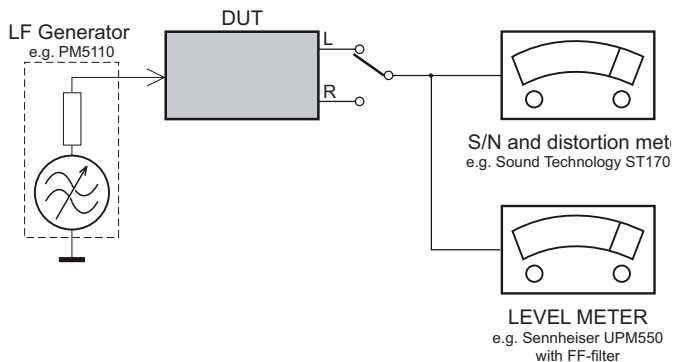
CD

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".

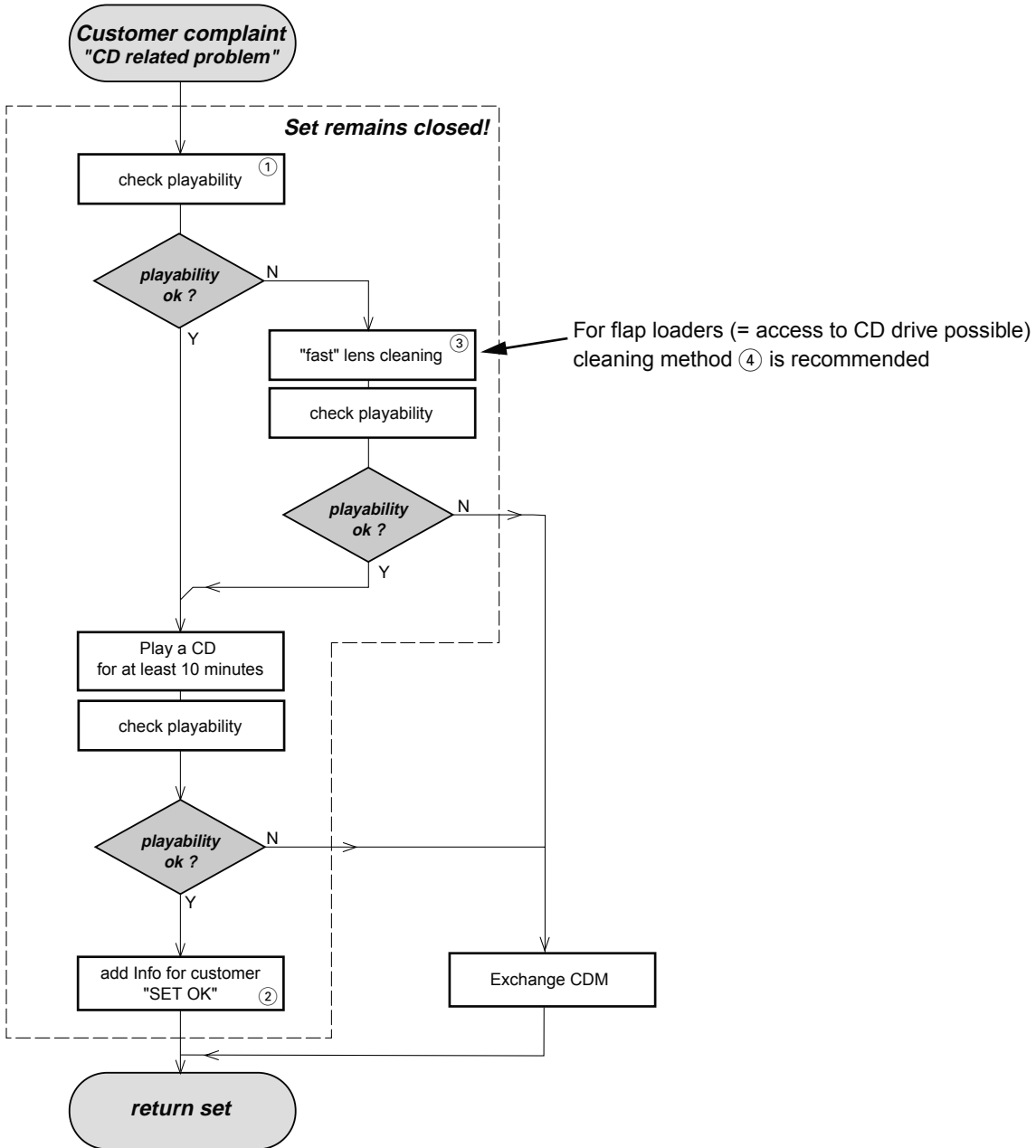
For additional questions please contact your local repair-helpdesk.

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

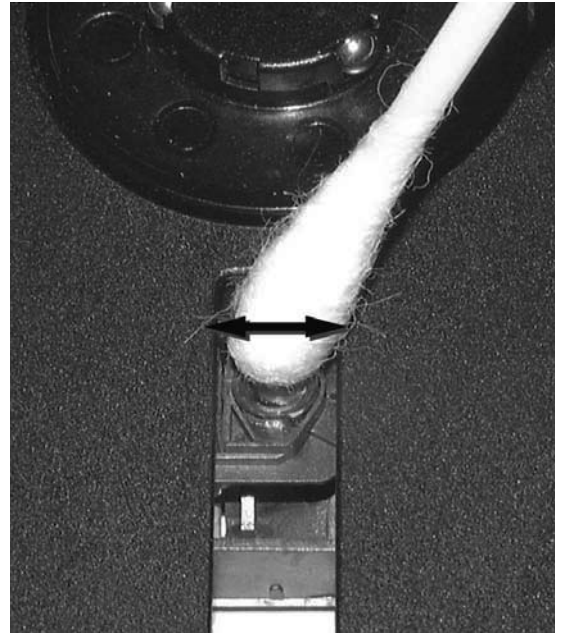
LIQUID LENS CLEANING

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.

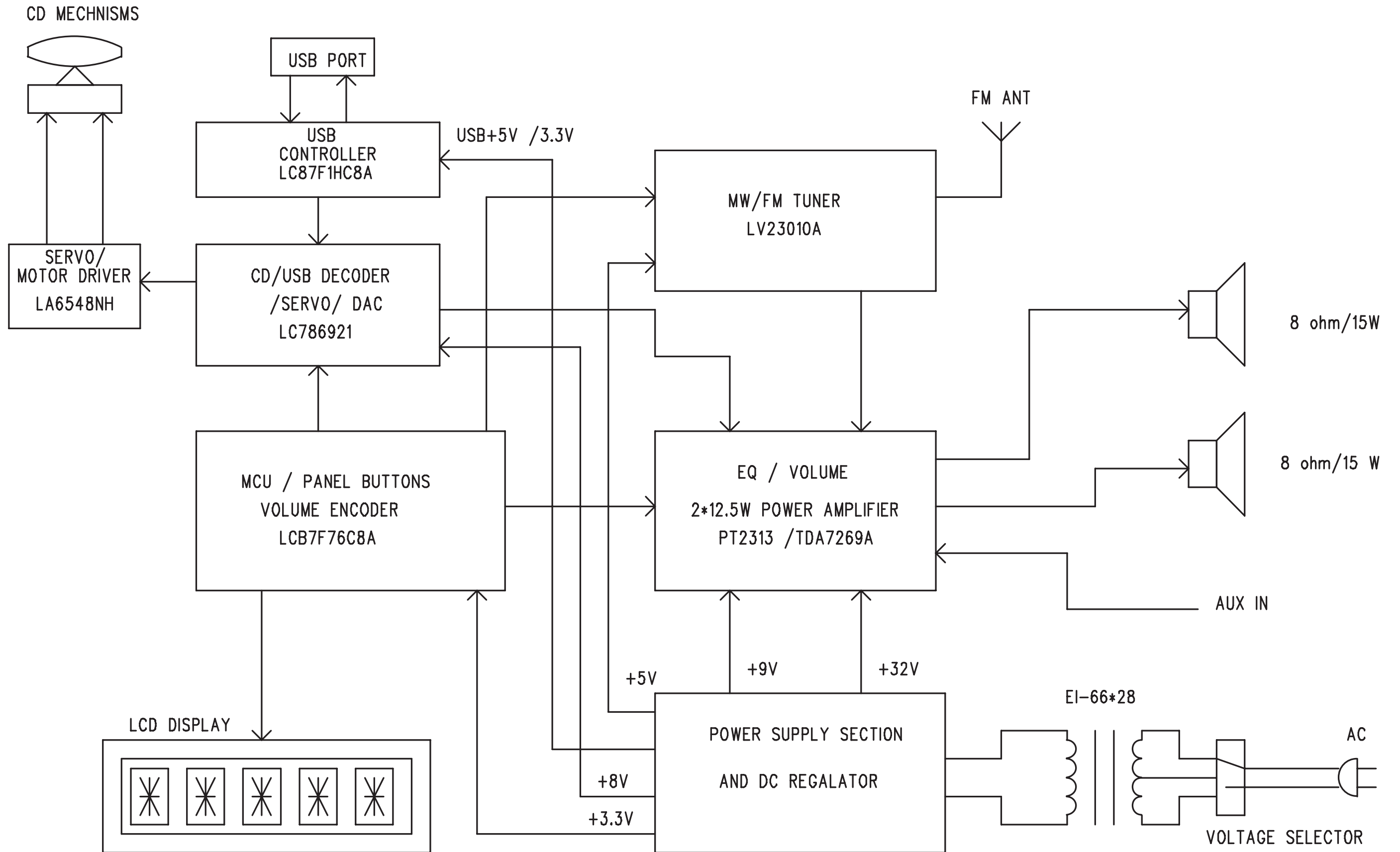
Because the material of the lens is synthetic and coated with a special anti-reflectivity layer, cleaning must be done with a non-aggressive cleaning fluid. It is advised to use "Cleaning Solvent"

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.

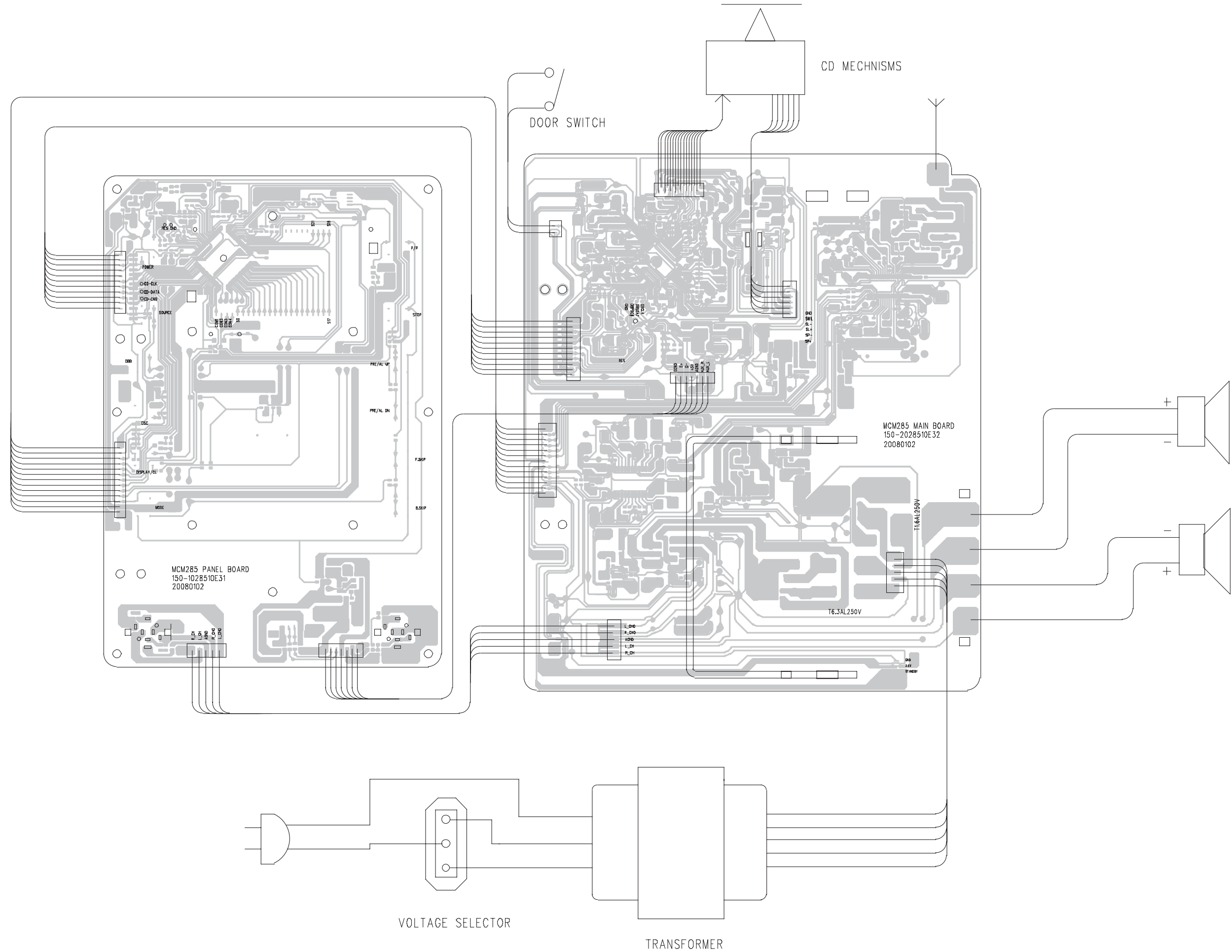
The direction of cleaning must be in the way as indicated in the picture below.



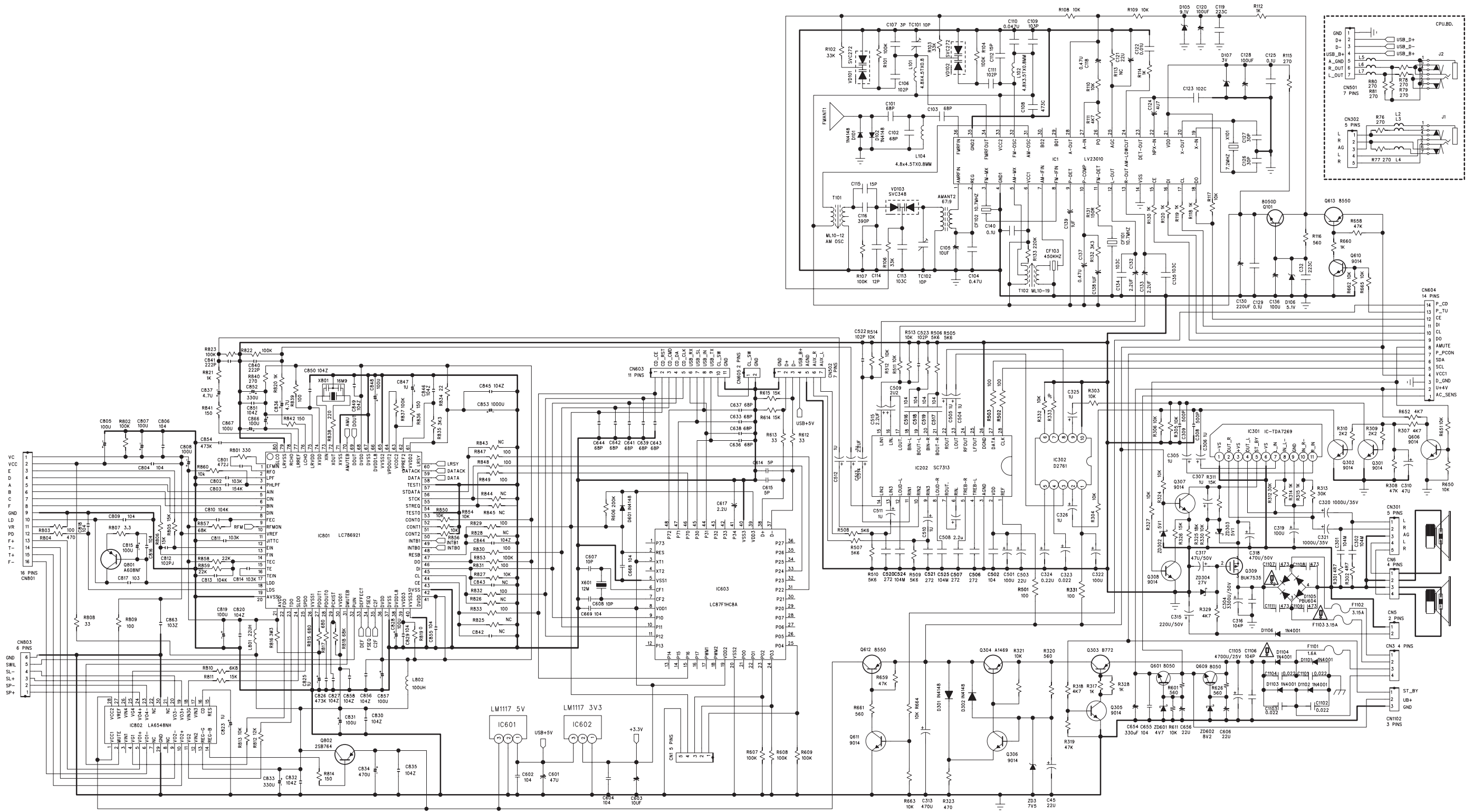
SET BLOCK DIAGRAM



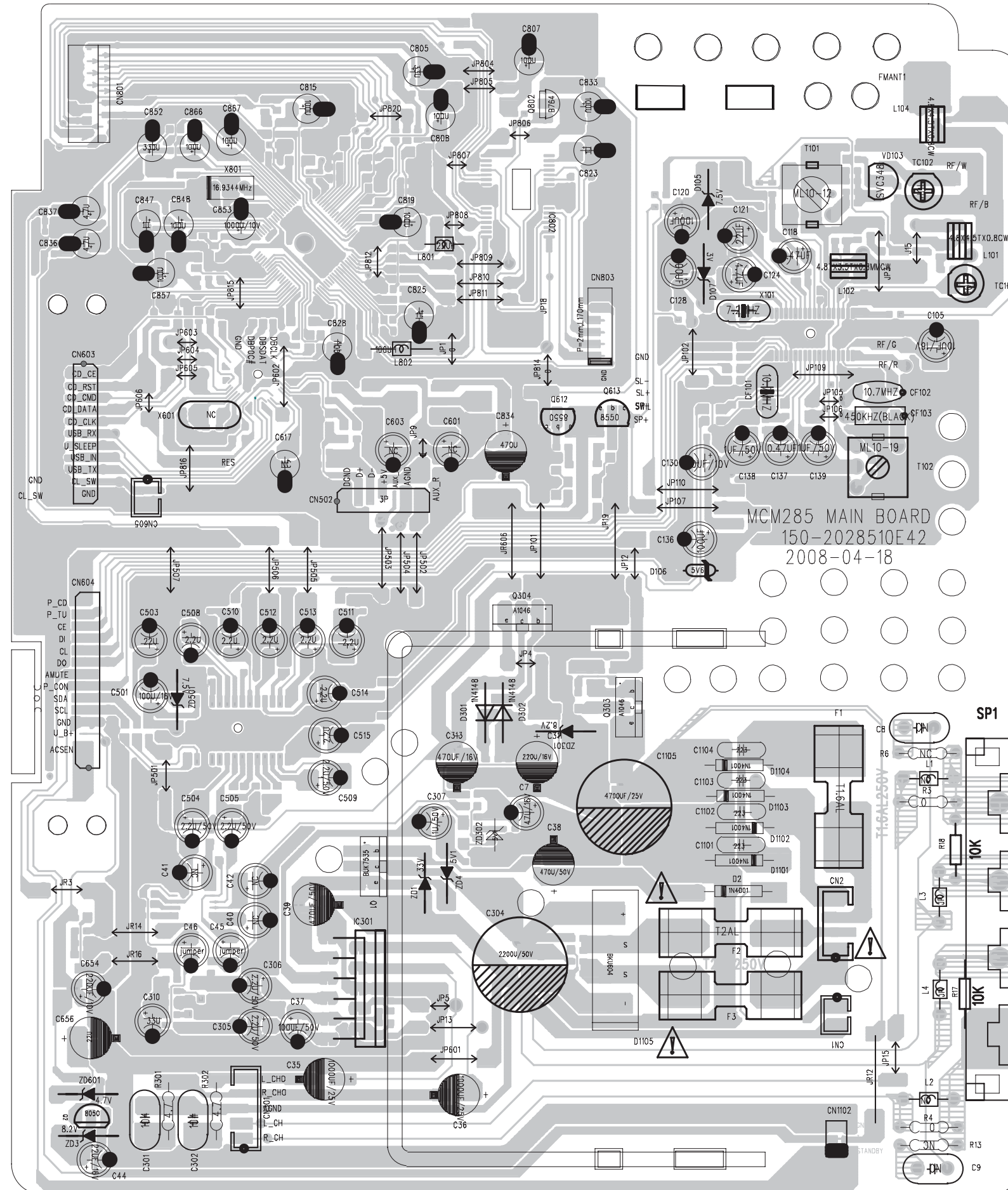
SET WIRING DIAGRAM



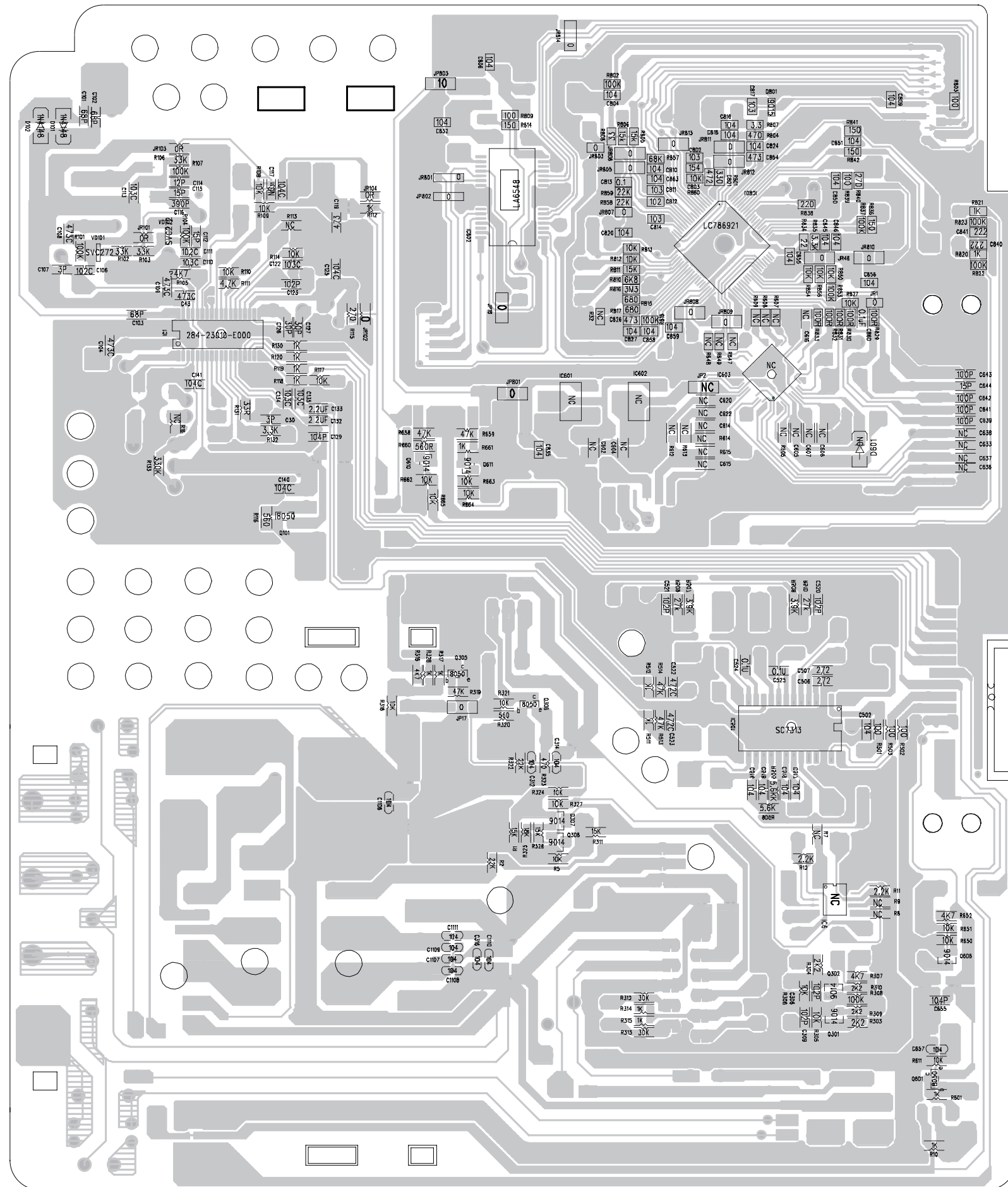
CIRCUIT DIAGRAM - MAIN BOARD



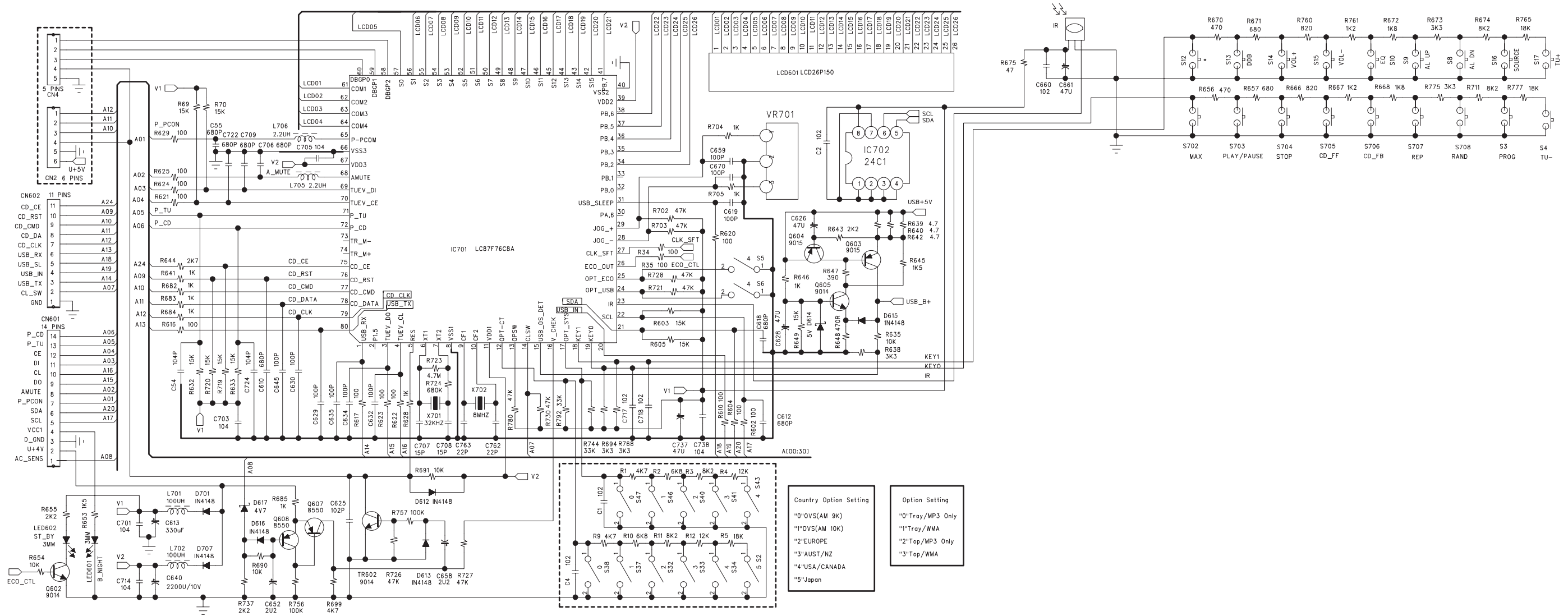
LAYOUT DIAGARM - MAIN BOARD COMPONENT SIDE VIEW



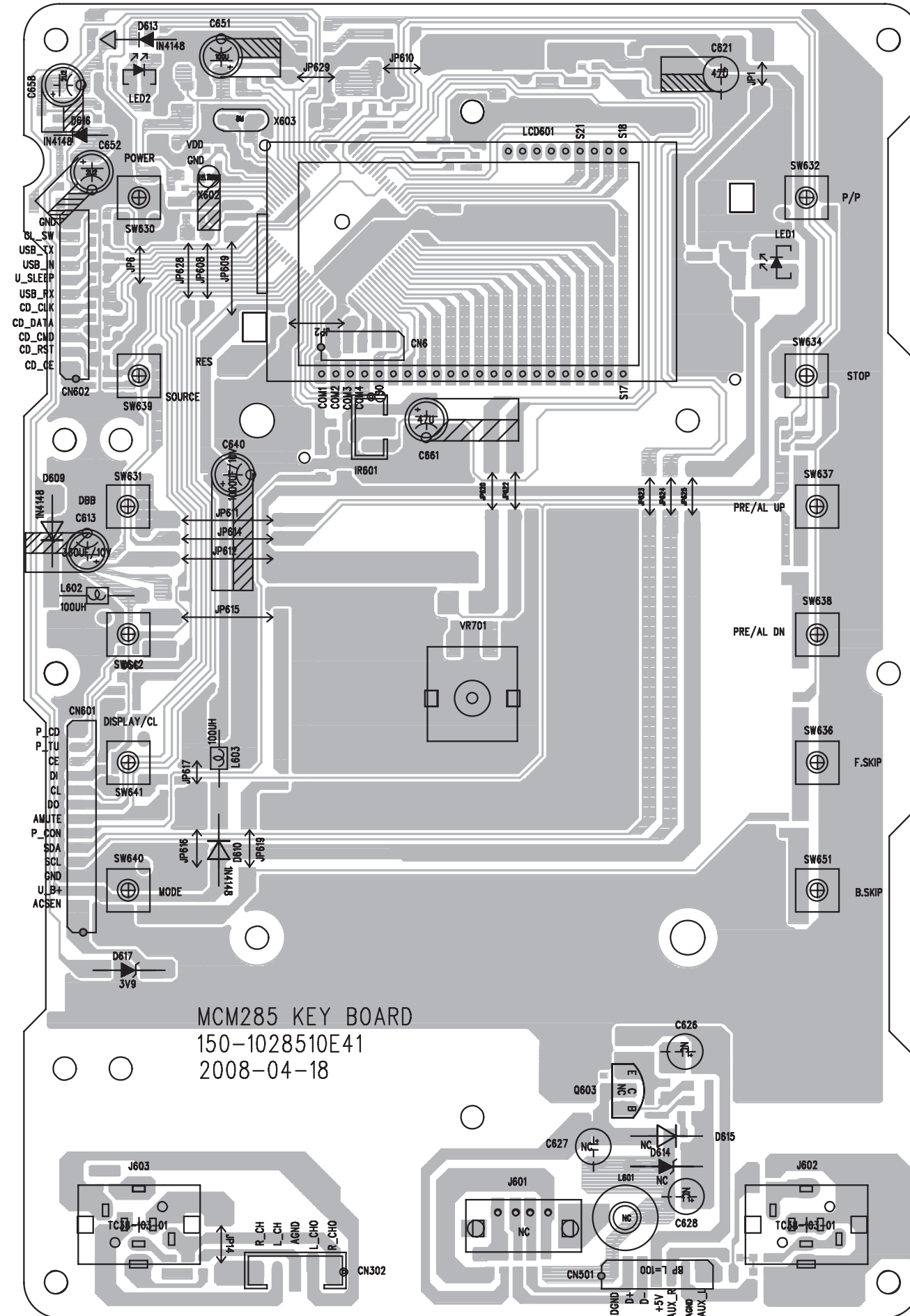
LAYOUT DIAGARM - MAIN BOARD COPPER SIDE VIEW



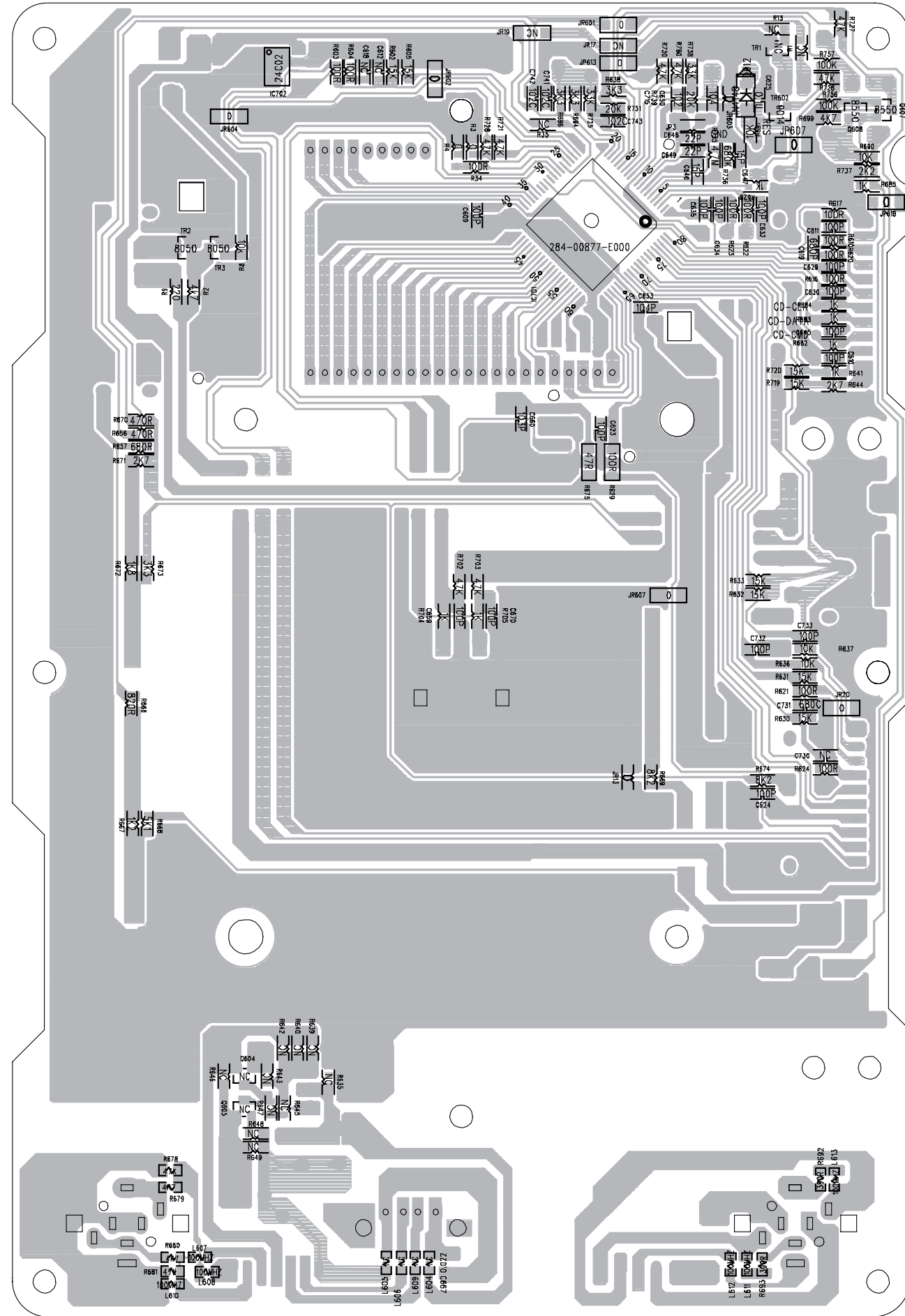
CIRCUIT DIAGRAM - KEY BOARD



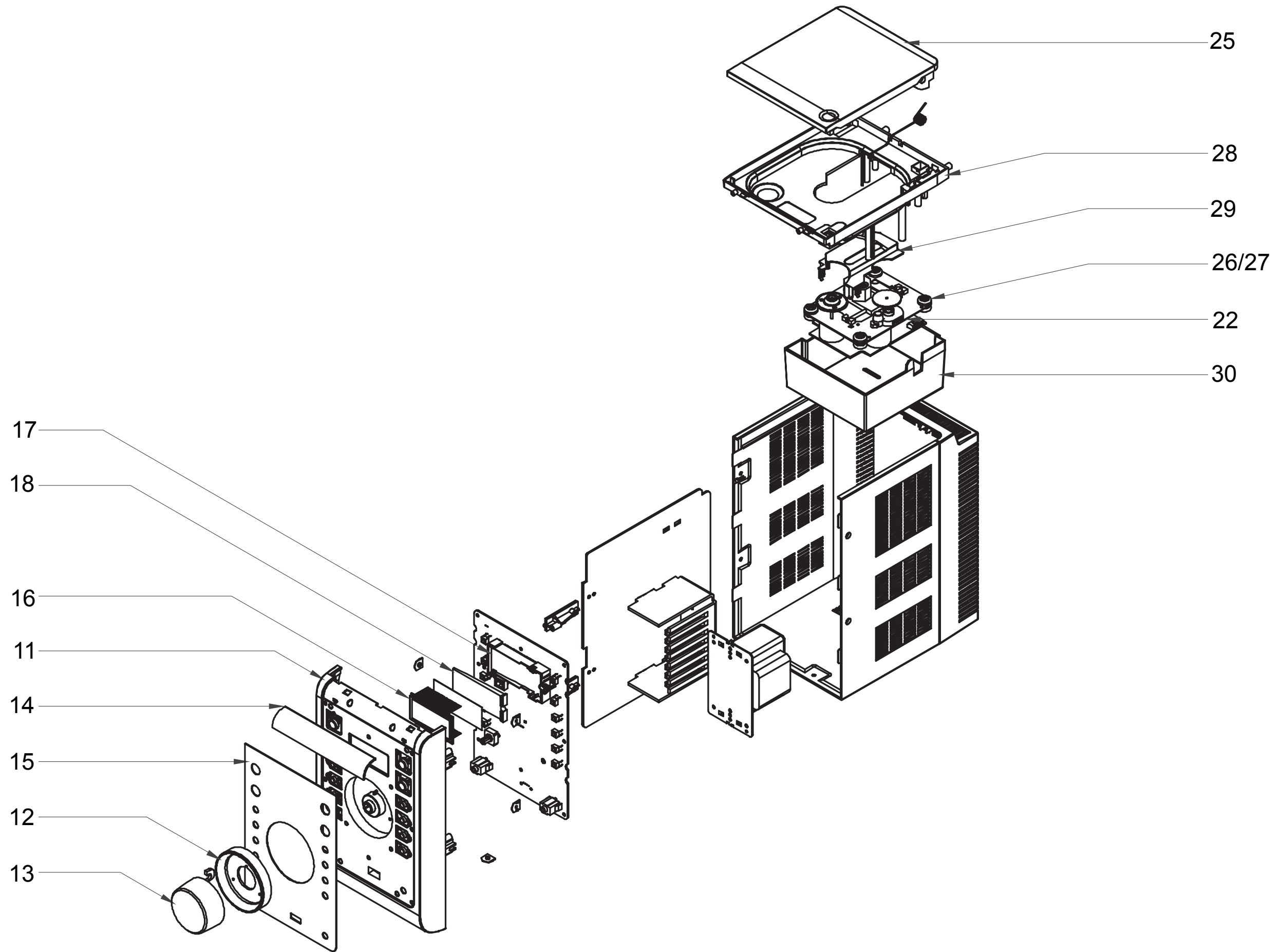
LAYOUT DIAGARM - KEY BOARD COMPONENT SIDE VIEW





LAYOUT DIAGARM - KEY BOARD
COPPER SIDE VIEW






EXPLODED VIEW DIAGRAM



MECHANICAL PARTSLIST

11	996510015914	MAIN FRONT CABINET
12	996510015915	VOLUME RING
13	996510015916	VOLUME KNOB
14	996510015917	FRONT BEDECK
15	996510015918	FRONT PC LENS
16	996510015937	LCD DISPLAY
17	996510015938	LCD BRACKET
18	996510006424	7671 LCD REFLECTOR
19	996510015919	RUBBER FOOT D11x3H
22	996510010491	CD MECHANISM SANYO DA11B3VF
23	996510015920	DOOR LOCK DL-328 (WITH LOCK)
24	996510015921	CD STAND GREY(SANYO MECH)
25	996510015922	CD DOOR D THOMSON SPRAY SILVER
26	996510015923	CD UBBE CUSHION ED (CIBA)
27	996510015924	CD UBBE CUSHION BLUE (CIBA)
28	996510015925	SANYO CD CLAMPER PLASTIC D68m
29	996510015926	PH-MCM285 CD DUST COVER
30	996510015927	7261N CD PICK UP DUSTCOVER
31	994000004726	7831 GEAR (MODE:0.8)
32	994000004727	7831 GEAR STAND (MODE:0.8)
B	 996510017868	TRANSF UL EML662272MT(for -/55/77)
B	 996510018718	TRANSFORMER (for -/79)



ACCESSORIES

ACC	 996510015929	AC CORD LINE -/77
ACC	 996510007654	AC CORD LINE -/55
ACC	 996510004651	AC CORD LINE -/79
RC	996510015928	REMOTE SET MCS SE
A	996510017867	SINGLE SPEAKER BOX L/R

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

ELECTRICAL PARTSLIST

MAIN BOARD ASSEMBLY

ANT	996510015906	AM COIL 67:9T 4 LEADS H-COMB
BAR	994000003966	FERRITE BAR D10XL60
C1105	996510017866	E CAP 25V+-20% 4700u
CF101	996500038854	DISCRIMINATOR JT10.7MG-B
CF102	996510015911	F, LT10.7MS3 CAIQIN (RED)
CF103	996500038852	FILTER FM450AL (DOUBLE)
CN801	996510004750	16P FFC CONN. GFN102-16S-TS
CN803	996510015910	SOCKET 6P PH=2mm
D101	996510013423	CHIP TAPE DIODEIN4148 SMT1206
D102	996510013423	CHIP TAPE DIODEIN4148 SMT1206
D106	996510006431	ZENER DIODE+-5% 5V6 (TP)
D107	996500038827	ZENER DIODE -5% 3V
D1101	996510015594	DIODE 1N4001 50V/1A (EP)
D1102	996510015594	DIODE 1N4001 50V/1A (EP)
D1103	996510015594	DIODE 1N4001 50V/1A (EP)
D1104	996510015594	DIODE 1N4001 50V/1A (EP)
D1105	996510017864	BRIDGE RECTIFIER KBL406 4A(EP)
D2	996510015594	DIODE 1N4001 50V/1A (EP)
D301	996510010972	DIODE 1N4148 (EP) (TP)
D302	996510010972	DIODE 1N4148 (EP) (TP)
D609	996510010972	DIODE 1N4148 (EP) (TP)
D610	996510010972	DIODE 1N4148 (EP) (TP)
D612	996510013423	CHIP TAPE DIODEIN4148 SMT1206
D613	996510010972	DIODE 1N4148 (EP) (TP)
D616	996510010972	DIODE 1N4148 (EP) (TP)
D617	996500038828	ZENER DIODE -5% 3V9
D801	996510010980	IR LED WHITE DIA 5mm 5308IC-15
F1	 994000004782	FUSE 50T D5X20 1.6A 250V(S.B.)
F2	 996500038821	FUSE 2A 250V (VDE)(FAST BLOW)
IC1	996510015912	IC LV23010V SSOP36
IC301	994000004778	IC TDA7269A-14W
IC501	996510015913	IC 7313 (SOP)(ANGUS)
IC801	996510002298	IC LC78692W (CD DSP) SQFP80
IC802	996500038842	IC LA6548NH (4 CH DRIVER)
Q1	996510002289	NFET BUK7535-55A
Q101	996510017865	CHIP TR PNP 8050D (SMD) (EP)
Q2	996510017876	TR NPN 8050D (TP)
Q301	994000003972	CHIP TR MMBT9014C
Q302	994000003972	CHIP TR MMBT9014C
Q303	994000004064	POWER TR PNP KTA1046/P
Q304	994000004064	POWER TR PNP KTA1046/P
Q305	994000004004	CHIP TR NPN 8050C
Q306	994000004004	CHIP TR NPN 8050C
Q307	994000003972	CHIP TR MMBT9014C
Q308	994000003972	CHIP TR MMBT9014C
Q601	994000004004	CHIP TR NPN 8050C
Q606	994000003972	CHIP TR MMBT9014C
Q607	994000004005	CHIP TR PNP 8550D
Q608	994000004005	CHIP TR PNP 8550D
Q610	994000003972	CHIP TR MMBT9014C

ELECTRICAL PARTSLIST**MAIN BOARD ASSEMBLY**

Q611	994000003972	CHIP TR MMBT9014C
Q612	996510003952	TR 8550D
Q613	996510003952	TR 8550D
Q801	994000003973	CHIP TR MMBT9015C
Q801	994000004004	CHIP TR NPN 8050C
Q802	996500038840	TR PNP 2SB764E-SSH-AE(TP)
SP1	994000004779	SPEAKER TERMINAL 4P MSP-124V
T101	996510015907	AM IFT YEL 10mm A49
T102	996510015908	AM OSC RED 10mm 2928
X101	996510015909	CRYSTAL JF7.200-134 (HC49U)
X801	996510002297	C RESON'R QZTT16.93MX 3PINS
ZD601	994000004748	ZENER DIODE+-5% 4V7

KEY BOARD ASSEMBLY

IC701	996510035701	IC LC877696B-5AS5
IC702	996510013449	IC FT24C02 (EEPROM) (SOP8)(EP)
IR601	996510002274	SENSOR AT136BV3 (36KHz) (3.3V)
J602	996510002273	ST PHONES JACK 3.5mm TC38
J603	996510002273	ST PHONES JACK 3.5mm TC38
LED1	996510015903	LED BLUE LA304B1PC-1A-02
SW630	994000004792	TACT SW 6X6MM H4.3
SW631	994000004792	TACT SW 6X6MM H4.3
SW632	994000004792	TACT SW 6X6MM H4.3
SW634	994000004792	TACT SW 6X6MM H4.3
SW636	994000004792	TACT SW 6X6MM H4.3
SW637	994000004792	TACT SW 6X6MM H4.3
SW638	994000004792	TACT SW 6X6MM H4.3
SW639	994000004792	TACT SW 6X6MM H4.3
SW640	994000004792	TACT SW 6X6MM H4.3
SW641	994000004792	TACT SW 6X6MM H4.3
SW642	994000004792	TACT SW 6X6MM H4.3
SW651	994000004792	TACT SW 6X6MM H4.3
VR701	996510002278	ENCODER EC121102X2D-HA1-034
X602	996510015904	CRYSTAL SF-32.768-JU38106 10P
X603	996500038823	CRYSTAL 8MHz(HC-49US)

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

REVISION LIST

Version 1.0 (3141 785 32740)

* Initial Release

Version 1.1 (3141 785 32741)

* P8-2 is revised.Changed IC701.(4/19/2010)