

Service
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Service Manual



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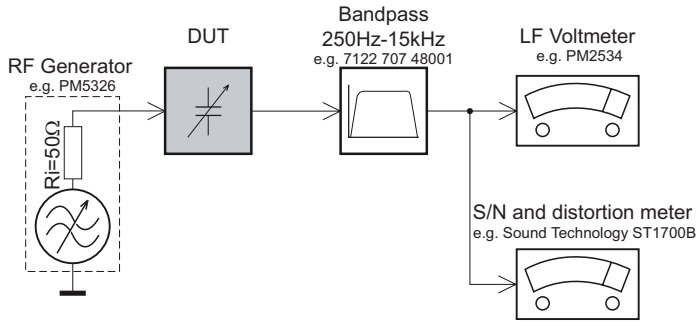


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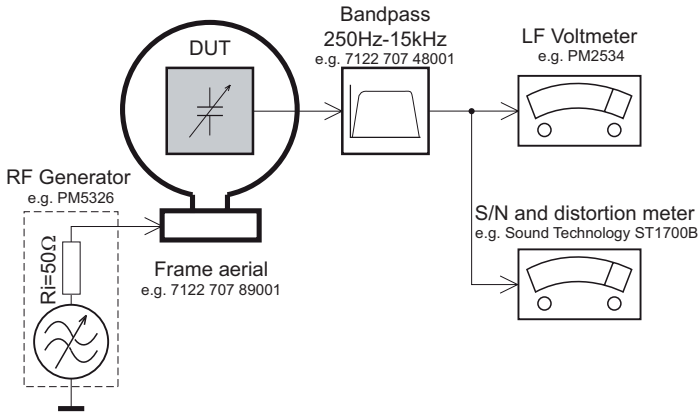
MEASUREMENT SETUP

Tuner FM



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

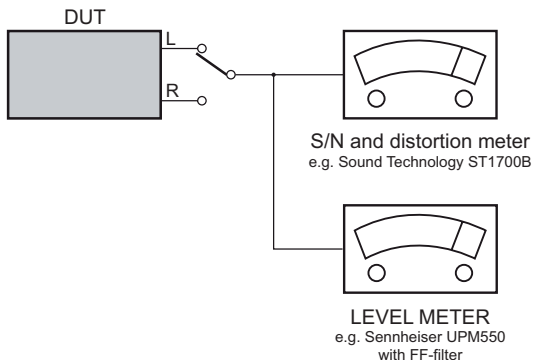
Tuner AM (MW,LW)



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).

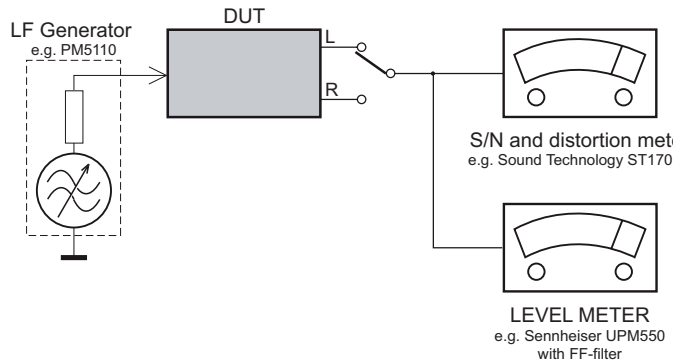
CD

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".

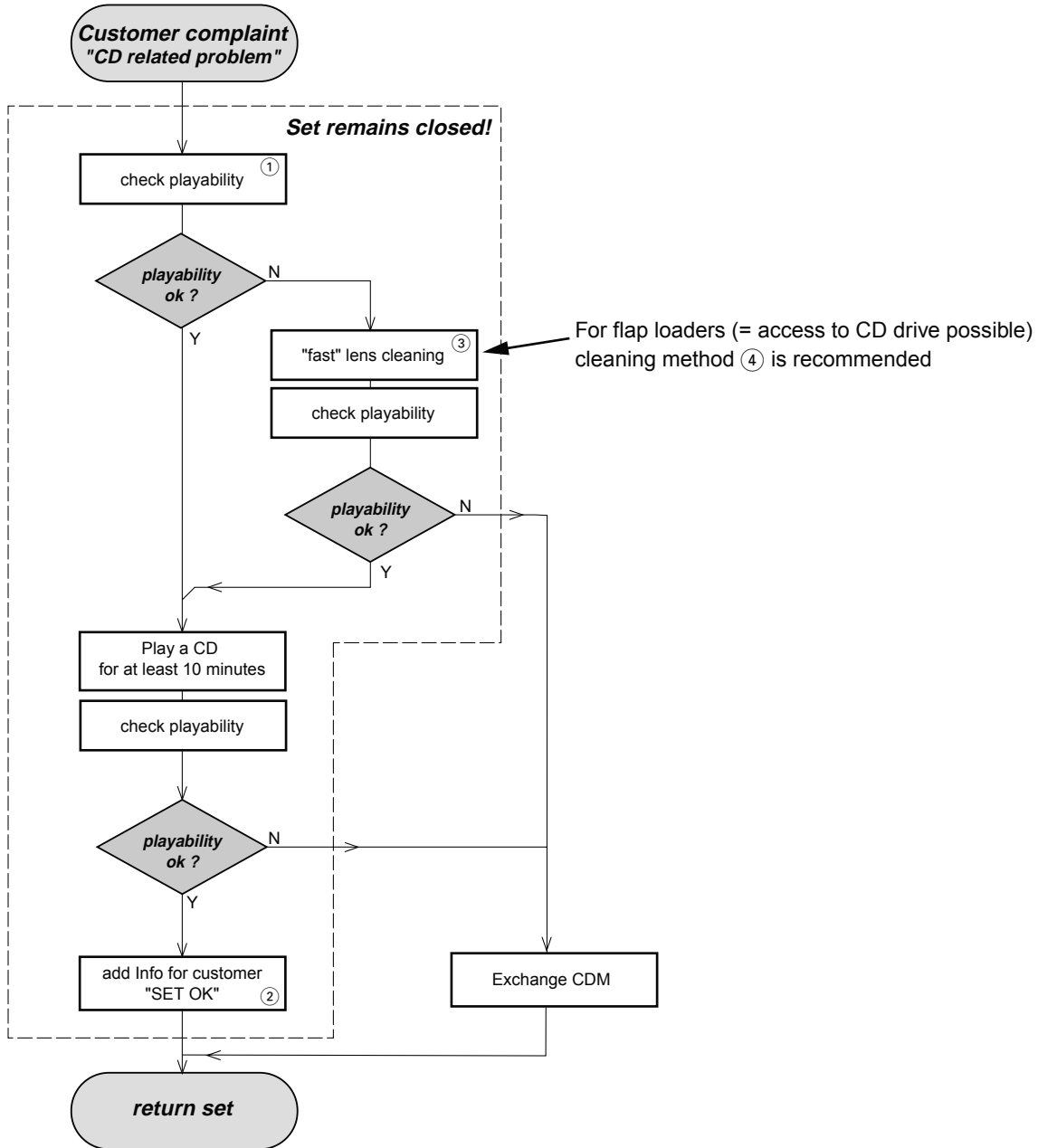
For additional questions please contact your local repair-helpdesk.

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

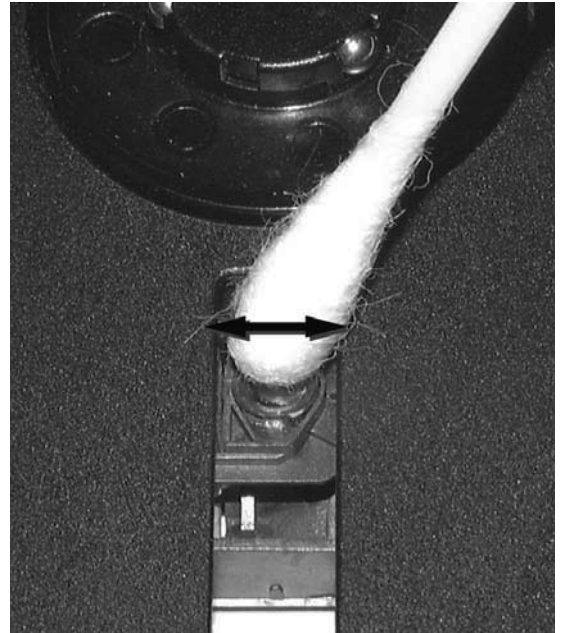
LIQUID LENS CLEANING

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.

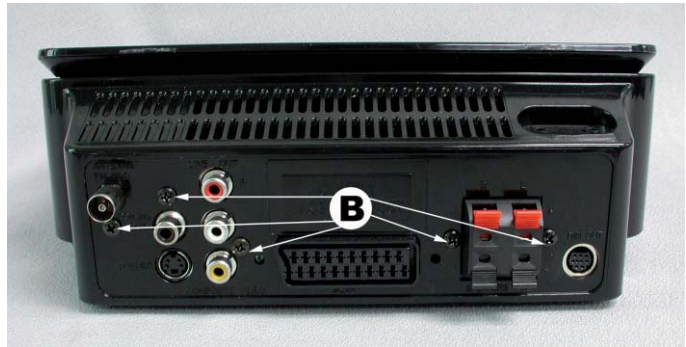
The direction of cleaning must be in the way as indicated in the picture below.



DISASSEMBLY DIAGRAM

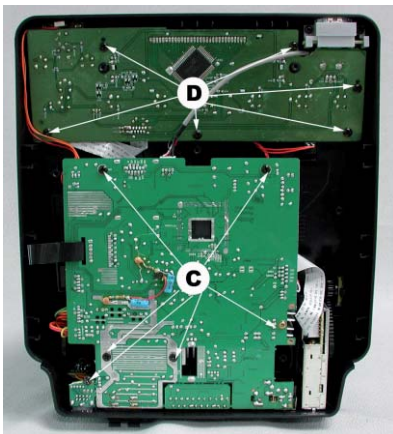
Dismantling of the Bottom Cabinet

- 1) Remove 7 screws A as indicated to loosen the Bottom Cabinet.
- 2) Remove 5 screws B before dismantling of the PCB Board "C"

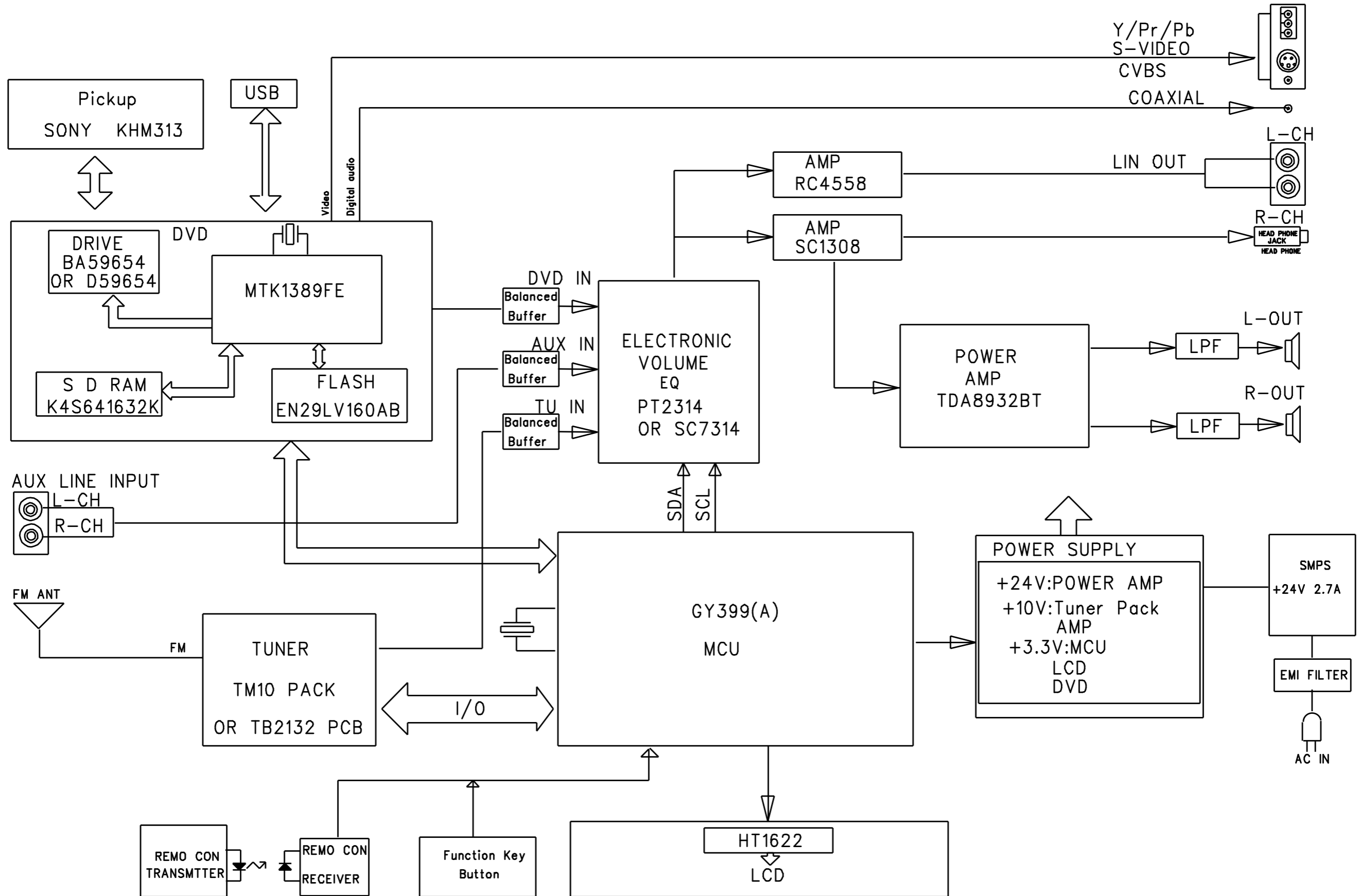


Dismantling of the PCB Board

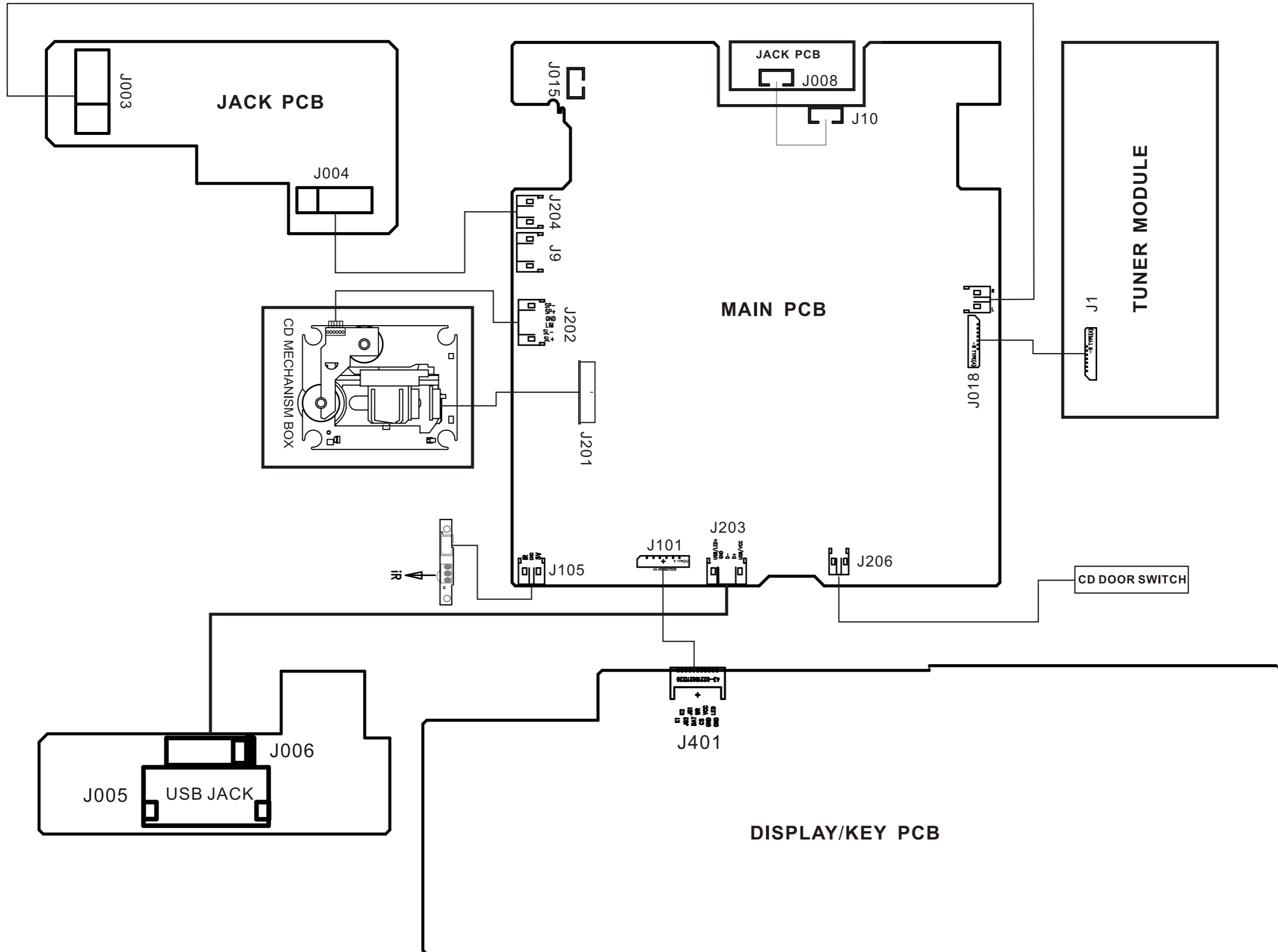
- 3) Remove 12 screws C&D as indicated to loosen the Main&Display Board.



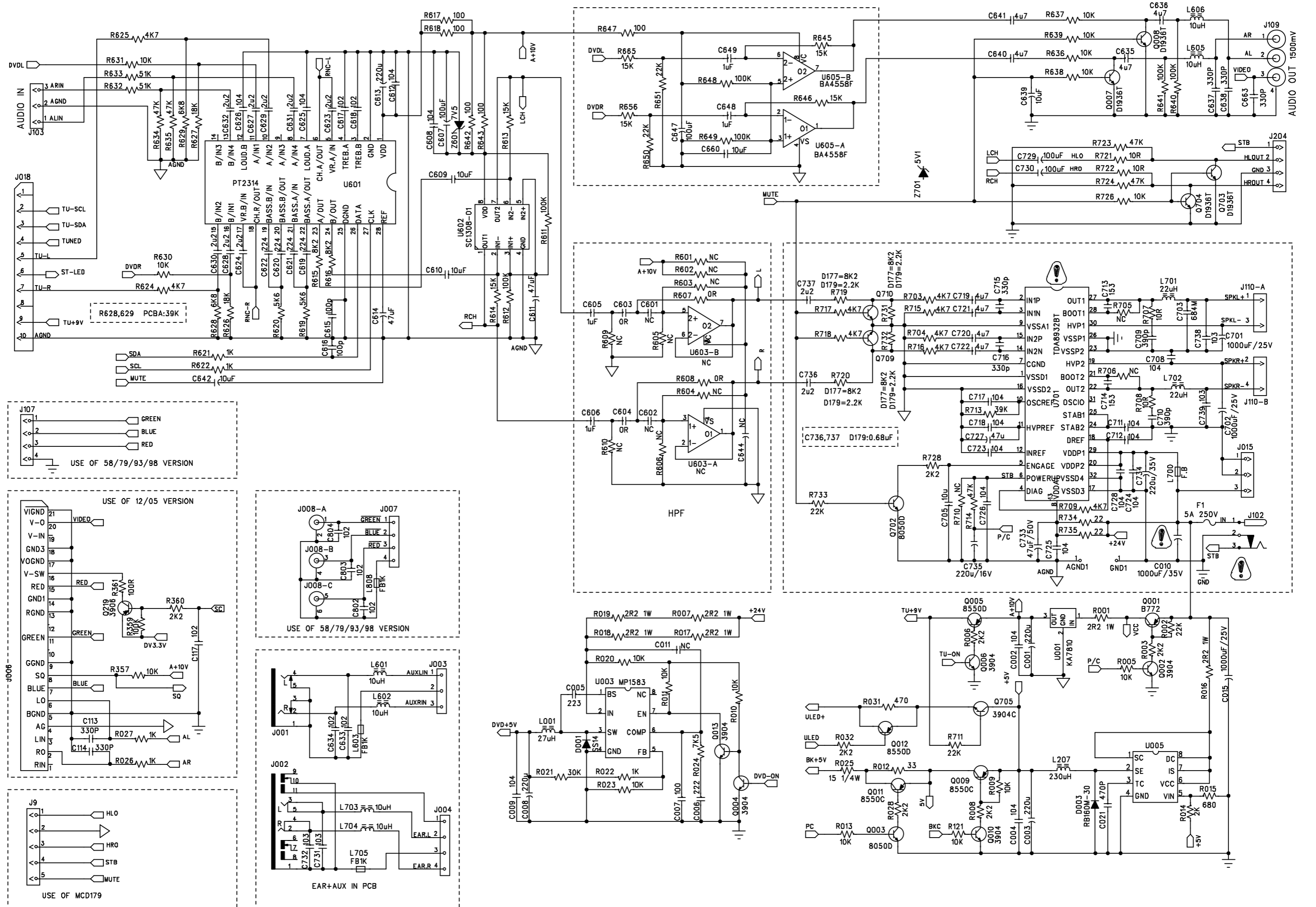
SET BLOCK DIAGRAM



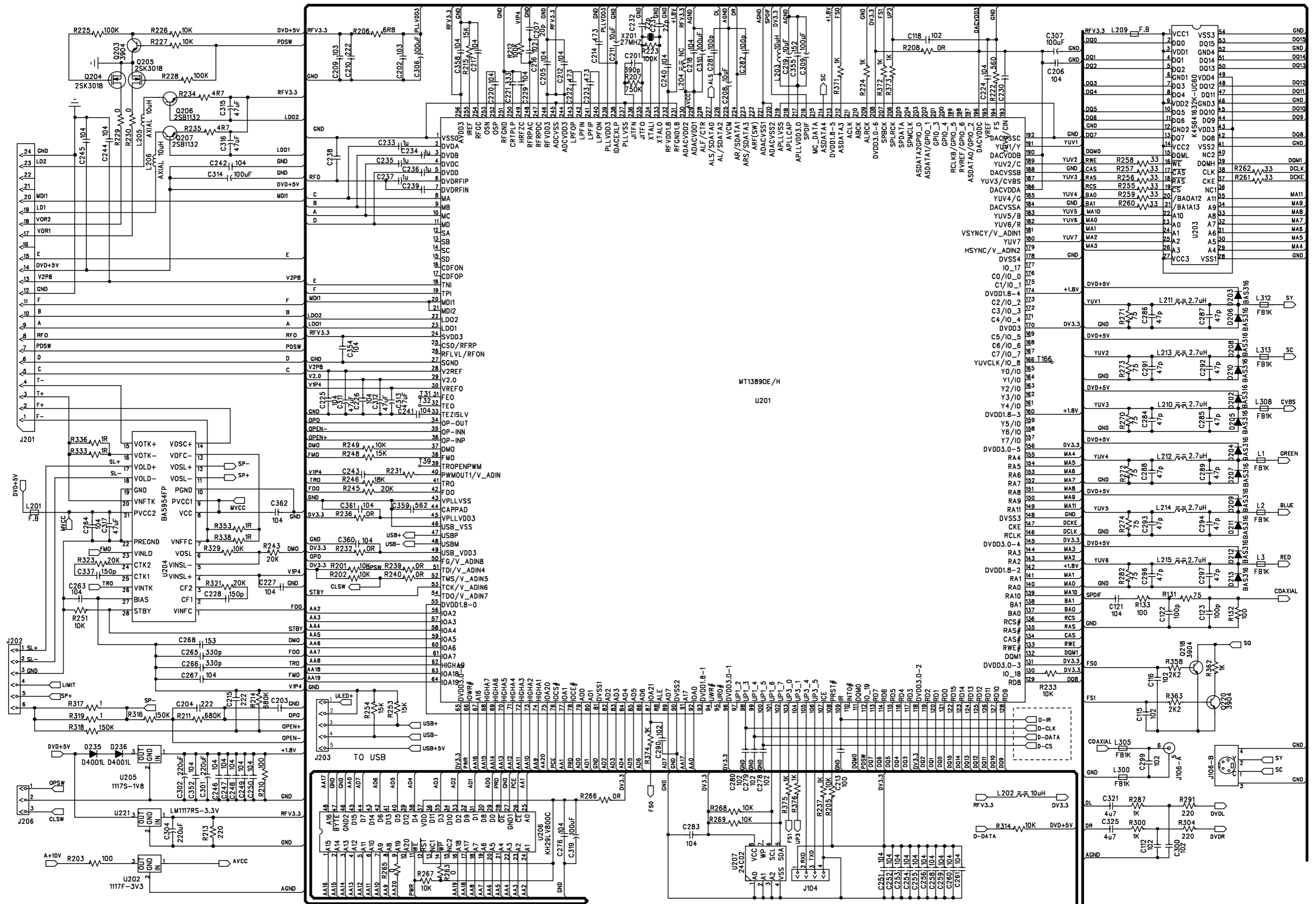
SET WIRING DIAGRAM



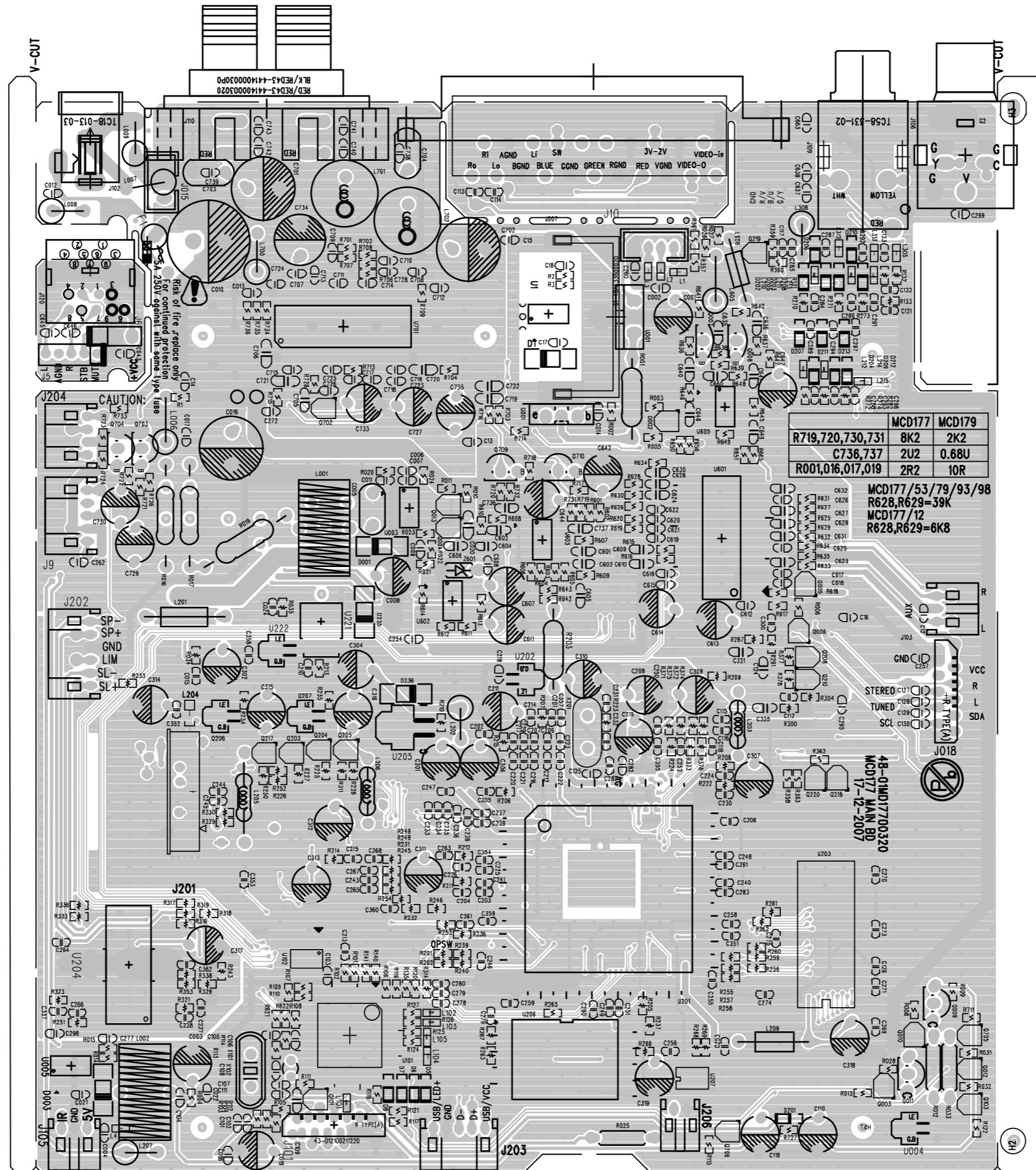
CIRCUIT DIAGRAM - MAIN BOARD AV-OUT PART



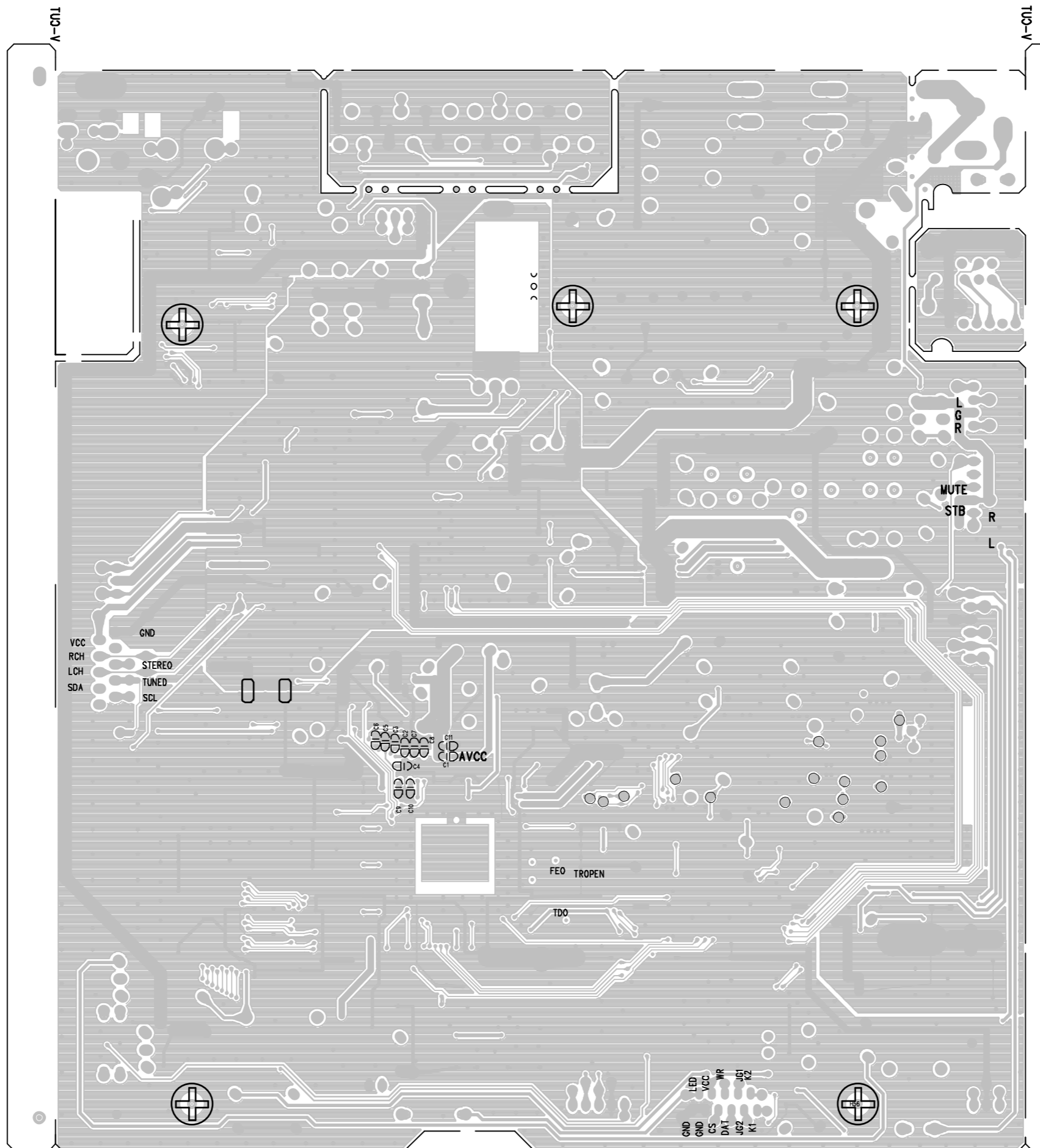
CIRCUIT DIAGRAM - MAIN BOARD DVD PART



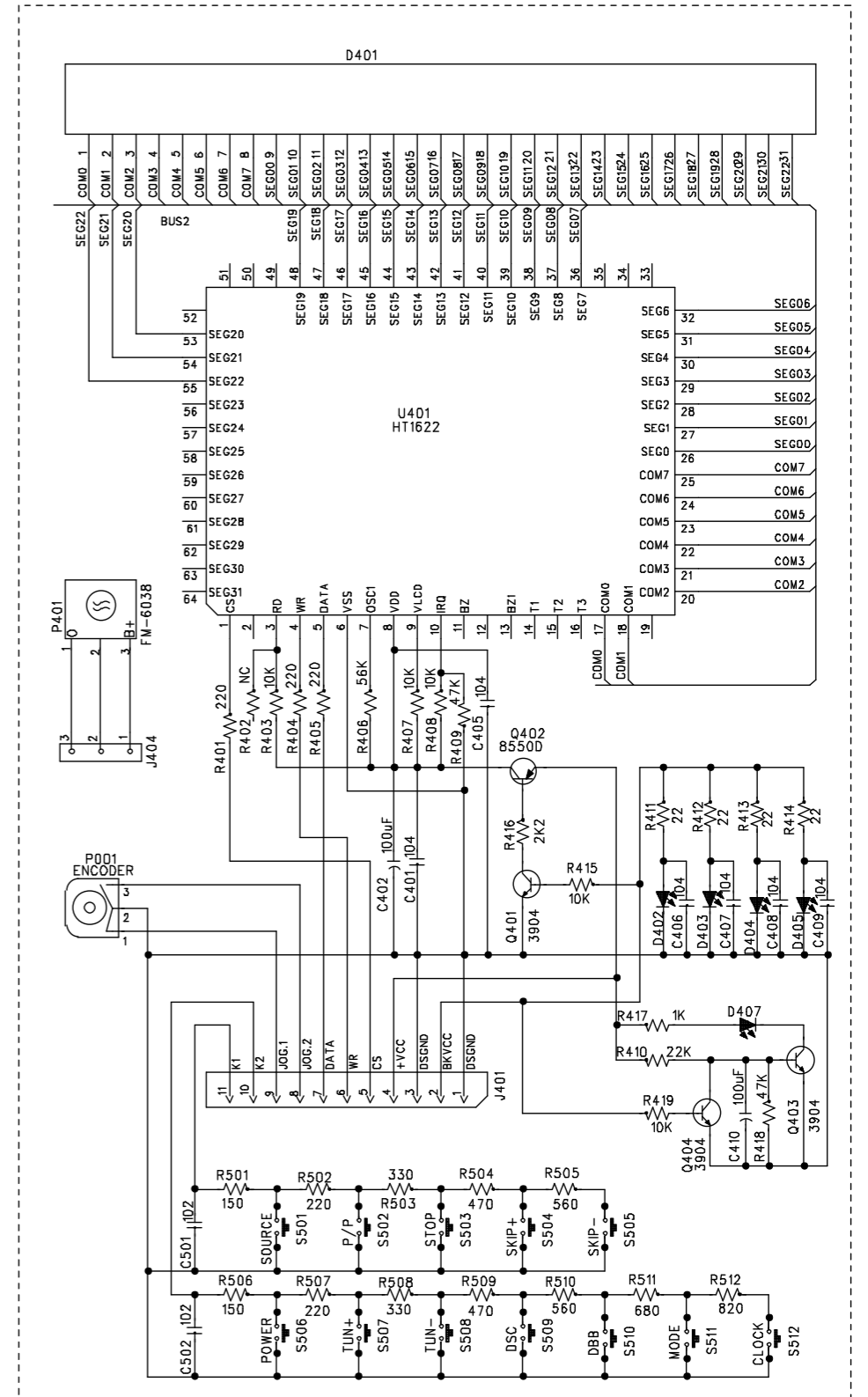
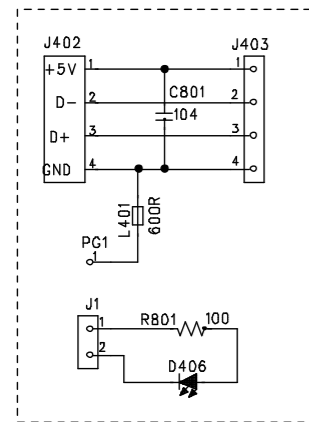
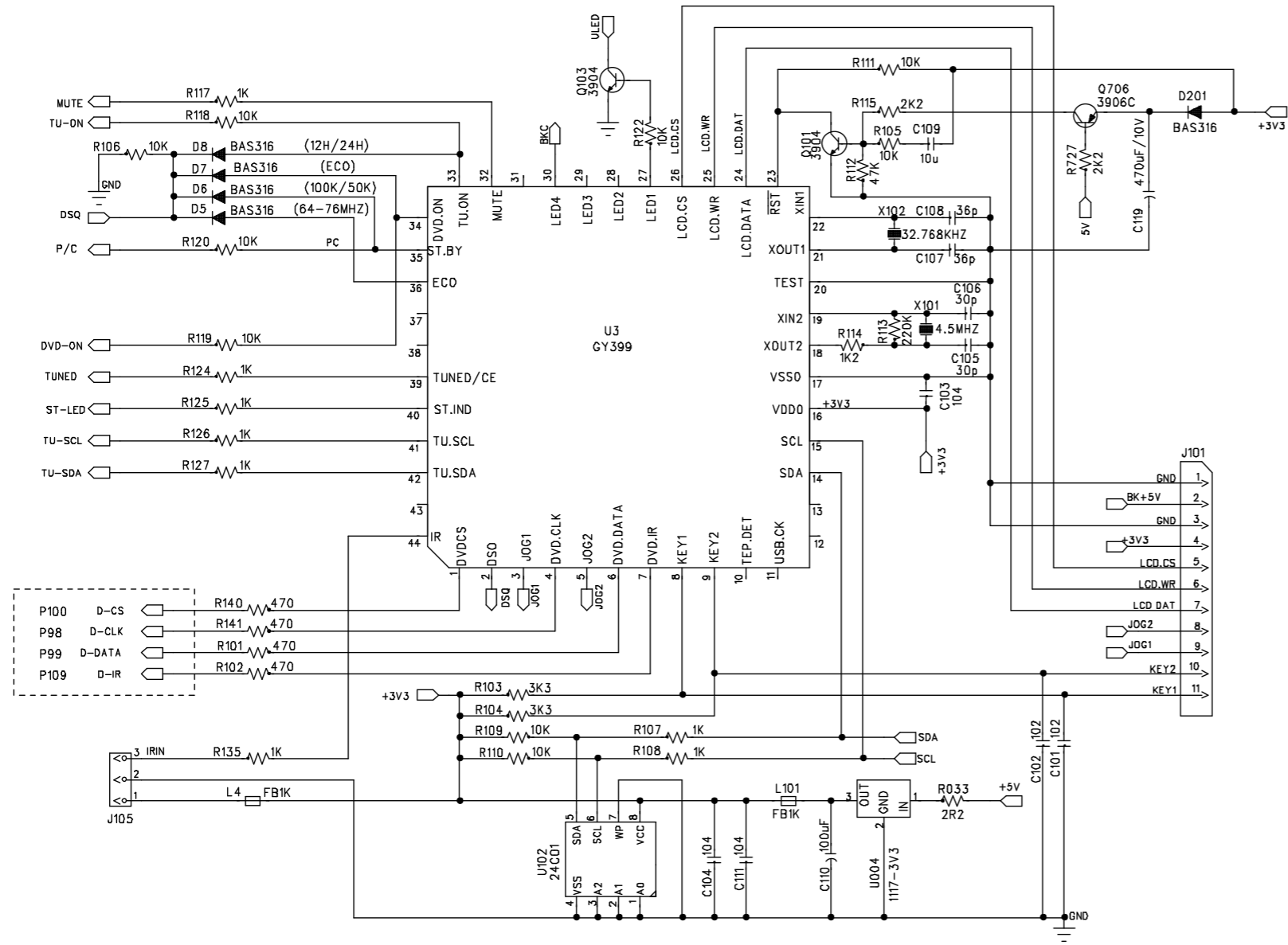
LAYOUT DIAGRAM - MAIN BOARD COMPONENT SIDE VIEW



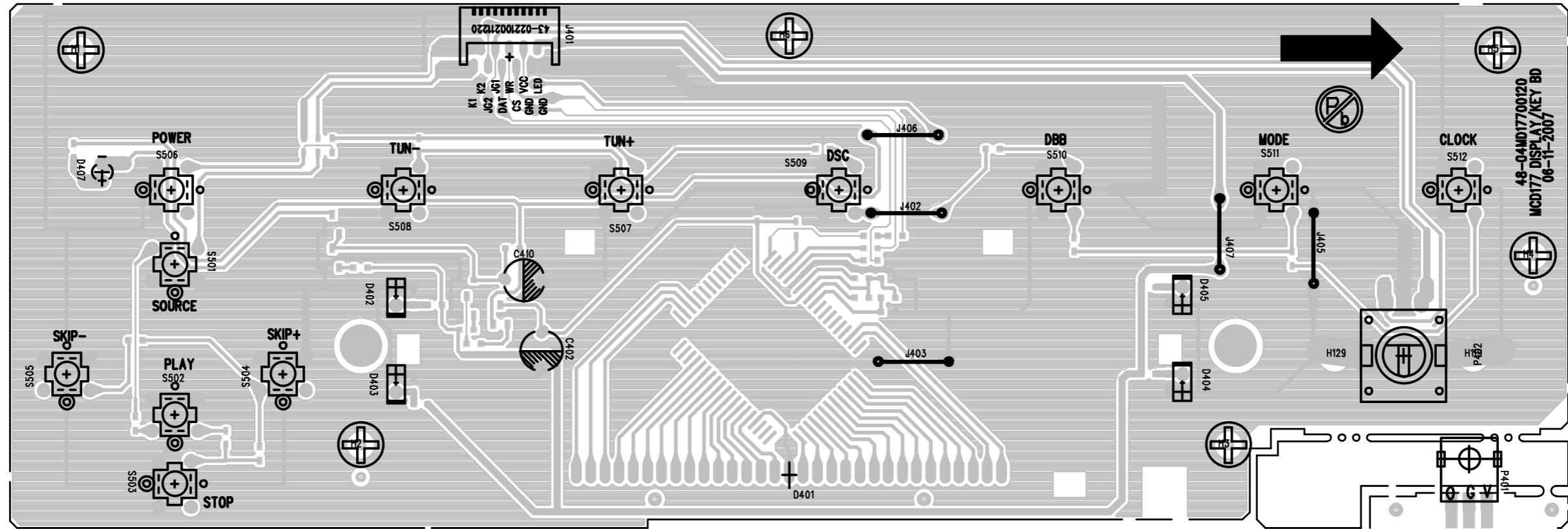
LAYOUT DIAGARM - MAIN BOARD
COPPER SIDE VIEW



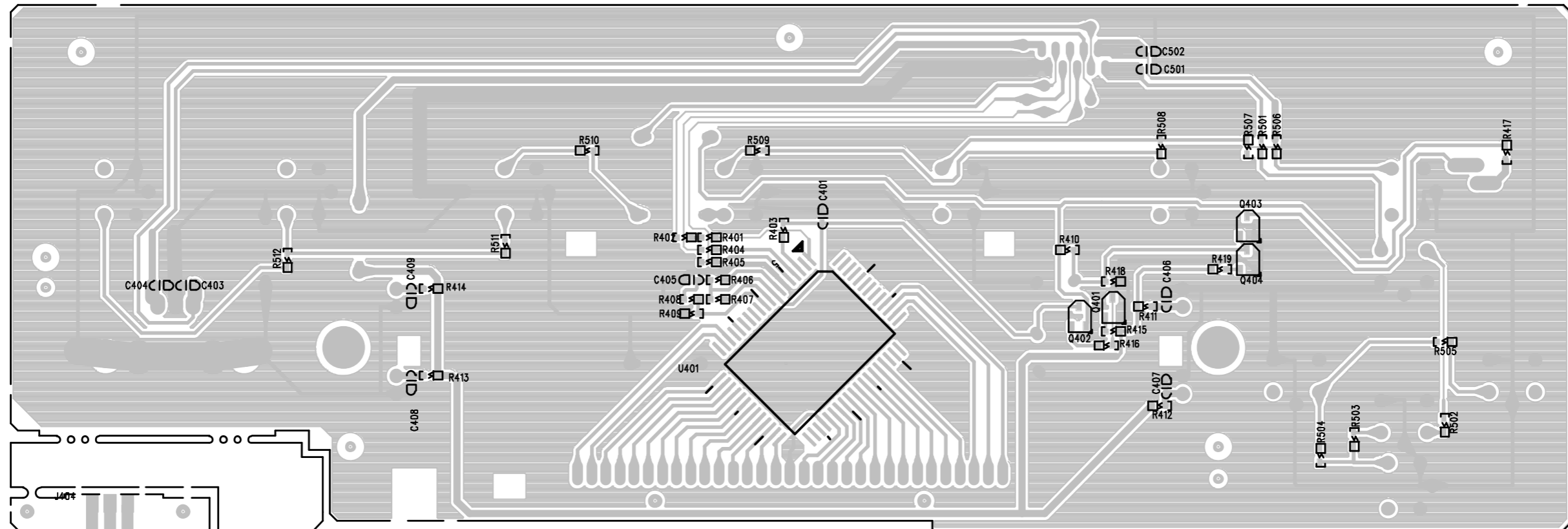
CIRCUIT DIAGRAM - DISPLAY BOARD



LAYOUT DIAGARM - DISPLAY BOARD

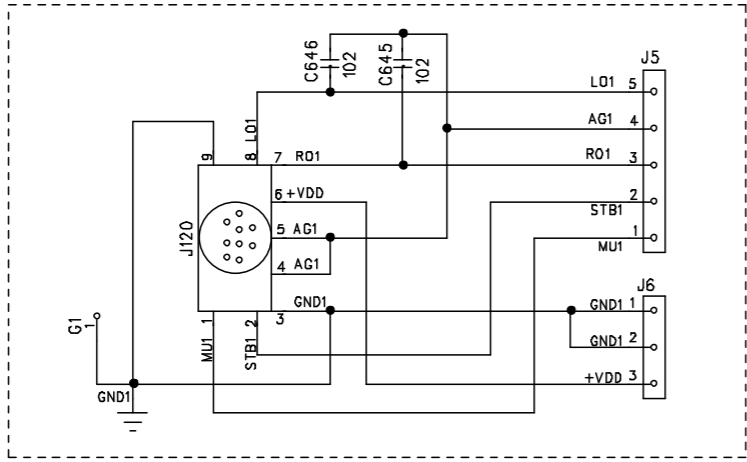
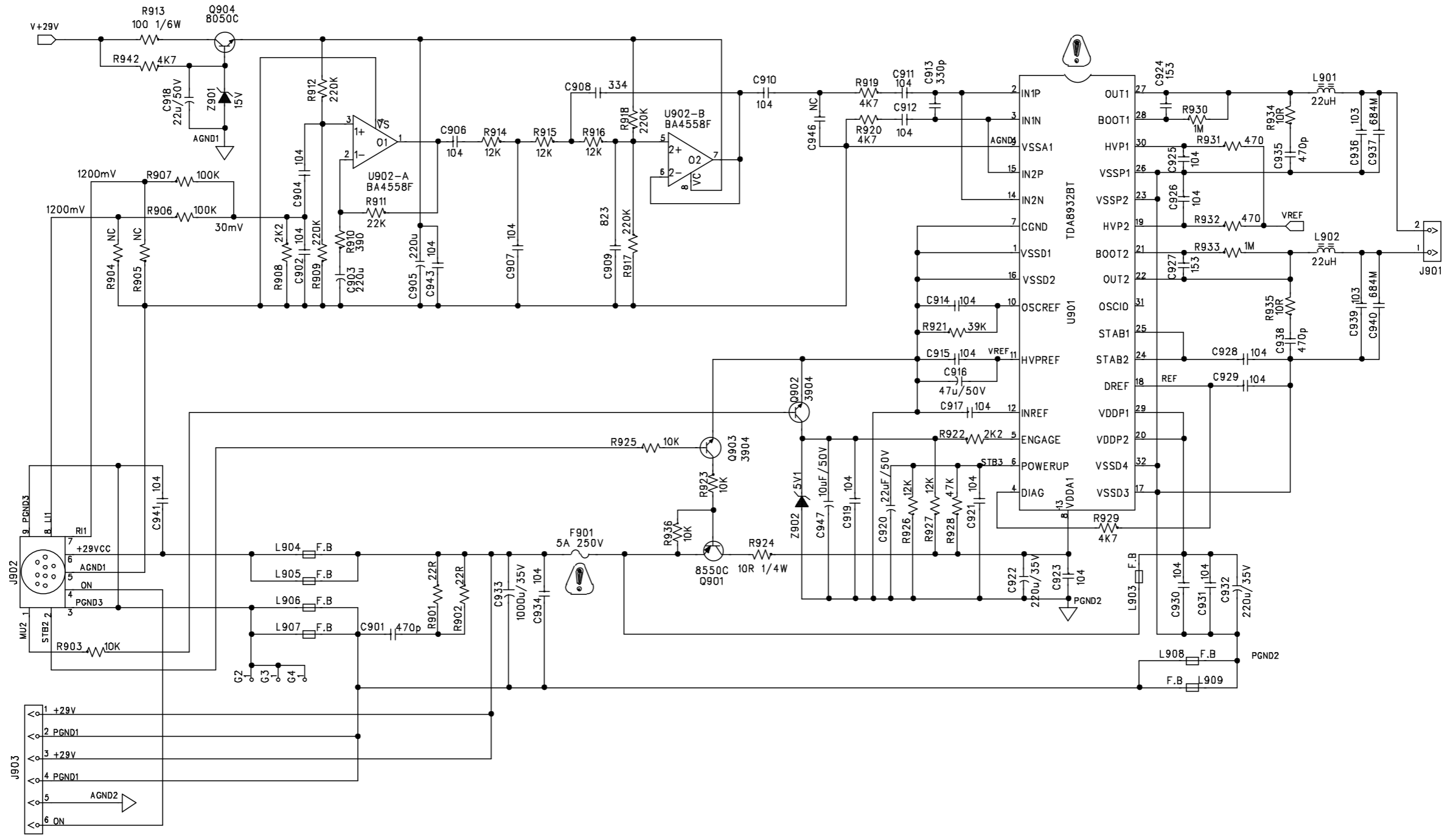


48-04MD17700120
MCD177 DISPLAY /KEY BD
06-11-2007

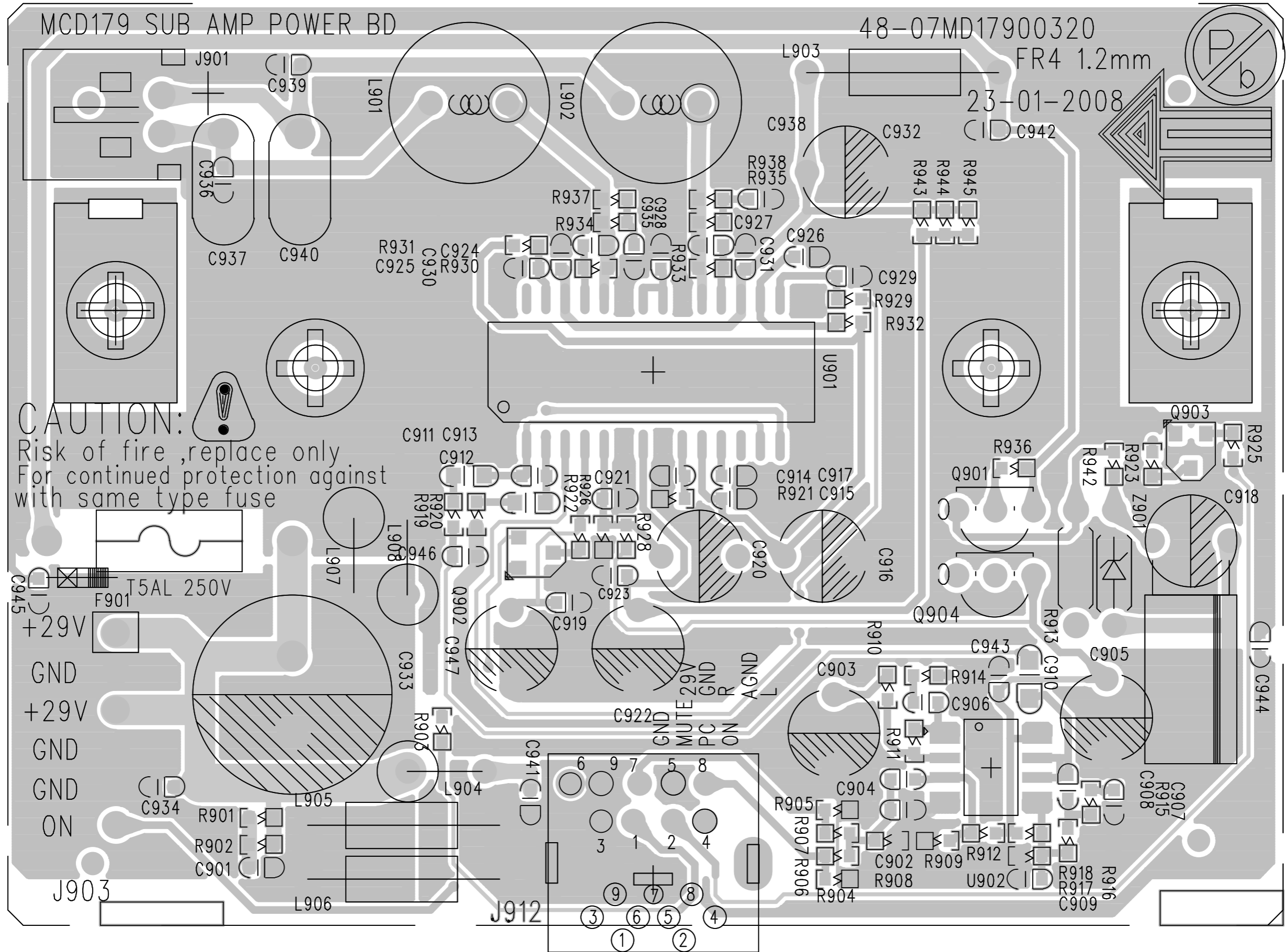


CIRCUIT DIAGRAM - AMP BOARD in subwoofer box

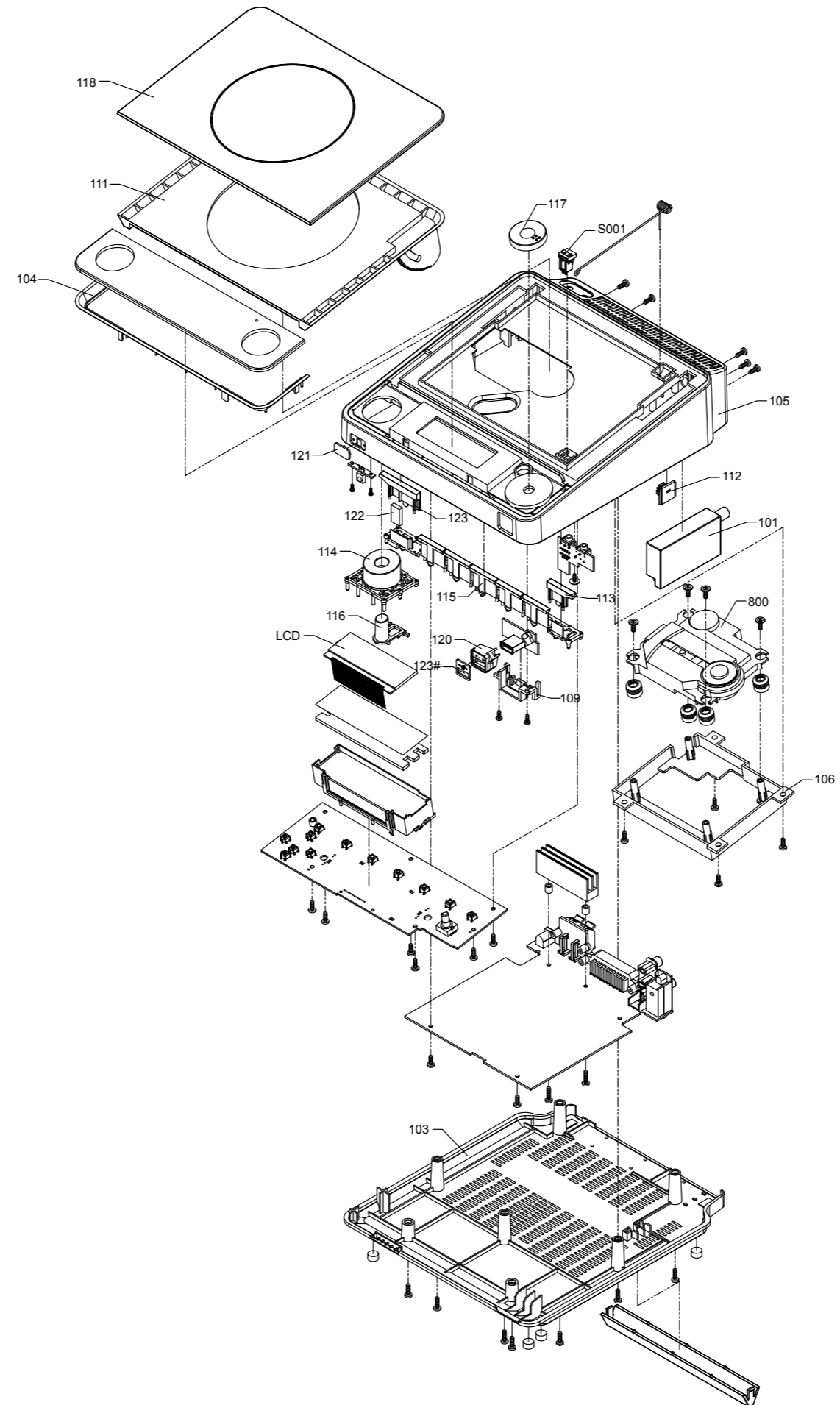
AMP is not repaired, diagram for reference only.



LAYOUT DIAGRAM - AMP BOARD in subwoofer box
AMP is not repaired, diagram for reference only.



EXPLODED VIEW DIAGRAM



MECHANICAL PARTSLIST

101	996510012051	TUNER PCB ASSY(-/12)
101	996510012777	TUNER PCB ASSY(-/58)
103	996510019958	BOTTOM CABINET
104	996510012057	TOP CAB FRONT
105	996510019965	HOUSING
106	996510012096	DVD HOLDER
109	996510012059	USB BRACKET
111	996510012061	CD DOOR
112	996510008685	DAMPER GEAR ASSY (70kgf/cm)
113	996510012062	TWO KEYS
114	996510012063	HOLDER UNDER KEYS
115	996510012100	CLUSTER KEYS
116	996510012064	PLAY KEY
117	996510012065	VOLUME KNOB
118	996510012098	CD DOOR LENS
120	996510012066	USB LENS
121	996510012067	IR LENS
122	996510012069	ECO POWER LIGHTGUIDE LENS
123	996510012097	STANDBY KEY
123#	996510012775	USB LOGO PANEL
136	996510012072	CD DOOR SPRING
800	996510012090	DVD MECHANISM (SONY)
J001	996510012092	24P FFC 0.5mm L=140mm
J002	996510012093	11P FFC 1mm L=100mm
J006	996510012055	10P FFC.1.25mm L=180mm
S001	994000002354	CD DOOR SWITCH DLS-02-W-1

ACCESSORIES


J006	994000001381	FM ANT (BLACK) 1M
J007	996510012773	9P MINI DIN CABLE L=1.5M
J008	996510012094	RCA PLUG CORD 3P L=1.5M
P001	996510028866	REMOTE CONTROL
SPK	996510012772	SINGLE SPEAKER BOX L / R
2	996510012776	SUBWOOFER BOX ASSY

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

ELECTRICAL PARTSLIST**MAIN BOARD ASSEMBLY**

D001	996500042437	CH-DIODE SS14 SMA/DO-214AC
D003	996500042437	CH-DIODE SS14 SMA/DO-214AC
D201	996510000323	SMD DIODE BAS316
D202	996510000323	SMD DIODE BAS316
D203	996510000323	SMD DIODE BAS316
D204	996510000323	SMD DIODE BAS316
D205	996510000323	SMD DIODE BAS316
D206	996510000323	SMD DIODE BAS316
D207	996510000323	SMD DIODE BAS316
D208	996510000323	SMD DIODE BAS316
D209	996510000323	SMD DIODE BAS316
D210	996510000323	SMD DIODE BAS316
D211	996510000323	SMD DIODE BAS316
D212	996510000323	SMD DIODE BAS316
D213	996510000323	SMD DIODE BAS316
D235	996510002112	REC. DIODE DL4001-T 1A 50V
D236	996510002112	REC. DIODE DL4001-T 1A 50V
D7	996510000323	SMD DIODE BAS316
Z601	996510012073	ZENER DIODE +-5% 7.5V 1/2W
Q001	994000004145	TRANSISTORS B772Y (160-320)
Q002	996510012765	SMD TRANSISTORS MMBT3904CT1
Q003	996510008369	TRANSISTORS MMBT8050D (SOT23)
Q004	996510012765	SMD TRANSISTORS MMBT3904CT1
Q005	996510009308	TRANSISTORS MMBT8550D
Q006	996510012765	SMD TRANSISTORS MMBT3904CT1
Q007	994000004337	TRANSISTORS 2SD1936T-AC
Q008	994000004337	TRANSISTORS 2SD1936T-AC
Q009	996500038610	TRANSISTORS 2W 8550C
Q010	996510012765	SMD TRANSISTORS MMBT3904CT1
Q011	996500038610	TRANSISTORS 2W 8550C
Q012	996510009308	TRANSISTORS MMBT8550D
Q013	996510012765	SMD TRANSISTORS MMBT3904CT1
Q101	996510012765	SMD TRANSISTORS MMBT3904CT1
Q103	996510012765	SMD TRANSISTORS MMBT3904CT1
Q203	996510012765	SMD TRANSISTORS MMBT3904CT1
Q204	996510009477	SMD TRANSISTORS 2SK3018
Q205	996510009477	SMD TRANSISTORS 2SK3018
Q206	996510009476	SMD TRANSISTORS 2SB1132-Q-T100
Q207	996510009476	SMD TRANSISTORS 2SB1132-Q-T100
Q208	996510012765	SMD TRANSISTORS MMBT3904CT1
Q210	996510012765	SMD TRANSISTORS MMBT3904CT1
Q218	996510012765	SMD TRANSISTORS MMBT3904CT1
Q219	994000003937	SMD TRANSISTORS PMBT3906
Q220	996510012765	SMD TRANSISTORS MMBT3904CT1
Q702	996510008369	TRANSISTORS MMBT8050D (SOT23)
Q703	994000004337	TRANSISTORS 2SD1936T-AC
Q704	994000004337	TRANSISTORS 2SD1936T-AC
Q705	996510012765	SMD TRANSISTORS MMBT3904CT1
U001	996500038611	IC KA7810E
U003	996510009443	IC (MPS) MP1583 (SOP-8)

ELECTRICAL PARTSLIST**MAIN BOARD ASSEMBLY**

U004	996510012078	IC LM1117F-3.3V SOT-89
U005	996510012080	IC MC34063A SOP8
U101	996510019966	IC GY399R LQFP44-1010
U102	996510012074	RESET IC AT24C01B
U201	996510009444	IC MT1389FE/USB CMTK TQFP-256
U202	996510012078	IC LM1117F-3.3V SOT-89
U203	996510012077	IC (SAMSUNG) K4S641632K-UC60
U204	996510009478	IC DA5954FP
U205	996510009335	IC LM1117S-1.8V SOT-223
U206	996510009479	IC EN29LV160AB-70TCP-NEED PROG
U207	994000004541	IC M24C02-WMN6
U221	996510012079	LDO IC UTC1117B33
U601	996510012081	IC SC7314
U602	996510008325	IC (LIBERAL) SC1308-01
U605	994000000249	IC (ROHM) BA4558F SOP8
U701	996510012038	IC TDA8932BT
X101	994000004616	CRYSTAL 4.500MHZ
X102	996510012083	CRYSTAL 32.768KHZ
X201	996510009448	CRYSTAL27MHzHC49/US30PF+-20PPM
F001	 996510002426	CERAMIC FUSE 3.9x10.5mmW
J007	996510012084	SCART JACK
J106	996510012085	S.V/RCA JACK
J109	996510012086	RCA JACK 3P
J110	994000003661	SPK JACK PT-22V11
P401	996510012082	IR SENSOR BRM-4050-8

ELECTRICAL PARTSLIST**DISPLAY/KEY BOARD ASSEMBLY**

D401	996510012043	LCD DISPLAY
D402	996500042438	LED LAMP 2x5x7mm (WHITE)
D403	996500042438	LED LAMP 2x5x7mm (WHITE)
D404	996500042438	LED LAMP 2x5x7mm (WHITE)
D405	996500042438	LED LAMP 2x5x7mm (WHITE)
D407	994000001234	LED LAMP 3MM (RED)
P402	996510012044	ROTARY ENCODER
Q401	996510012765	SMD TRANSISTORS MMBT3904CT1
Q402	996510009308	TRANSISTORS MMBT8550D
Q403	996510012765	SMD TRANSISTORS MMBT3904CT1
Q404	996510012765	SMD TRANSISTORS MMBT3904CT1
S501	994000004157	TACT SWITCH 6X6MM H=5MM
S502	994000004157	TACT SWITCH 6X6MM H=5MM
S503	994000004157	TACT SWITCH 6X6MM H=5MM
S504	994000004157	TACT SWITCH 6X6MM H=5MM
S505	994000004157	TACT SWITCH 6X6MM H=5MM
S506	994000004157	TACT SWITCH 6X6MM H=5MM
S507	994000004157	TACT SWITCH 6X6MM H=5MM
S508	994000004157	TACT SWITCH 6X6MM H=5MM
S509	994000004157	TACT SWITCH 6X6MM H=5MM
S510	994000004157	TACT SWITCH 6X6MM H=5MM
S511	994000004157	TACT SWITCH 6X6MM H=5MM
S512	994000004157	TACT SWITCH 6X6MM H=5MM
U401	996510002124	IC (HOLTEK) HT1622

JACK BOARD ASSEMBLY

D002	996510000438	LED LAMP
J001	996510012048	PHONE JACK D3.6mm
J002	994000004369	PHONE JACK TC38-063-05-0
J005	996510009321	USB SOCKET 4P

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