

Service
Service
Service



Service Manual

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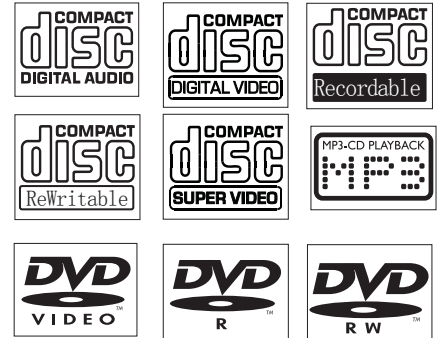
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Published by LX 0936 Service Audio Subject to modification

3141 785 34411

Version 1.1



PHILIPS

TECHNICAL SPECIFICATION

SYSTEM

Power supply	220-240V / 50Hz
Power consumption (1/8 rated output power)	Active: <15 W Standby: <2.5 W
Power output	2 x 10W
USB Direct	Version 2.0

REMOTE

Distance	6m
Angle	$\pm 30^\circ$

DVD

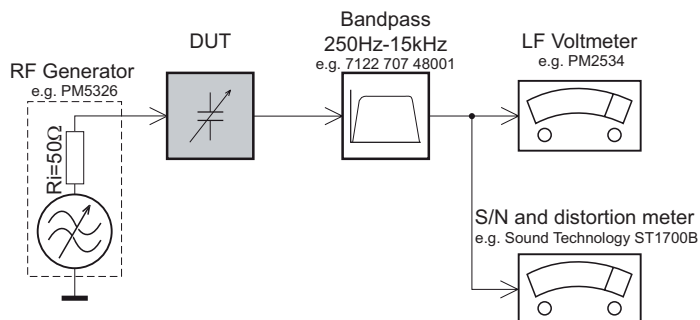
Frequency response	100Hz-16kHz (± 3 dB)
Video output	1 VP-P
Horizontal definition	>500 (TV)
Dimensions (d x w x h)	249 mm x 247 mm x 54 mm
Weight	1.32 kg

Speakers

System	1-way system
Impedance	8ohm
Dimensions (d x w x h)	144 mm x 124 mm x 181 mm
Weight	1.13 kg (each)

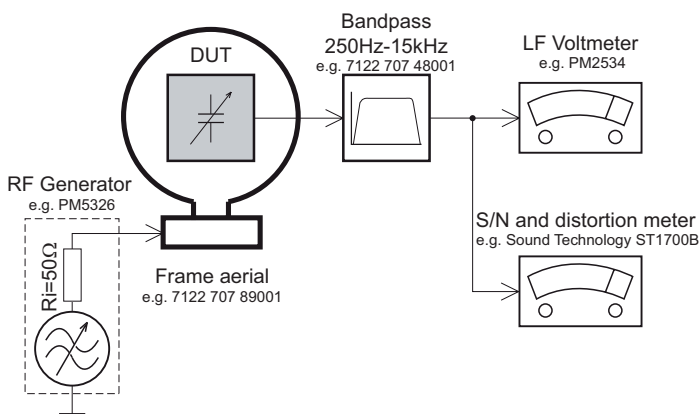
MEASUREMENT SETUP

Tuner FM



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

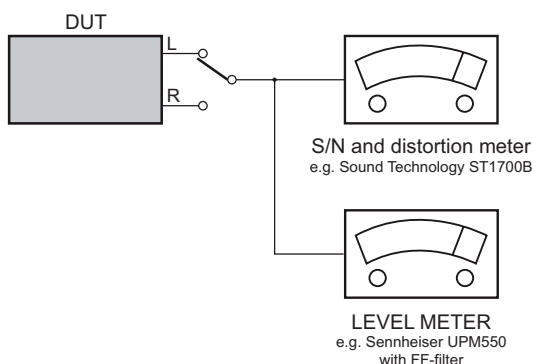
Tuner AM (MW,LW)



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).

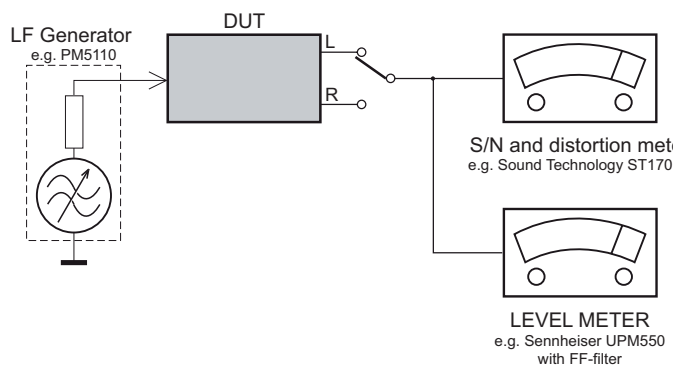
CD

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".

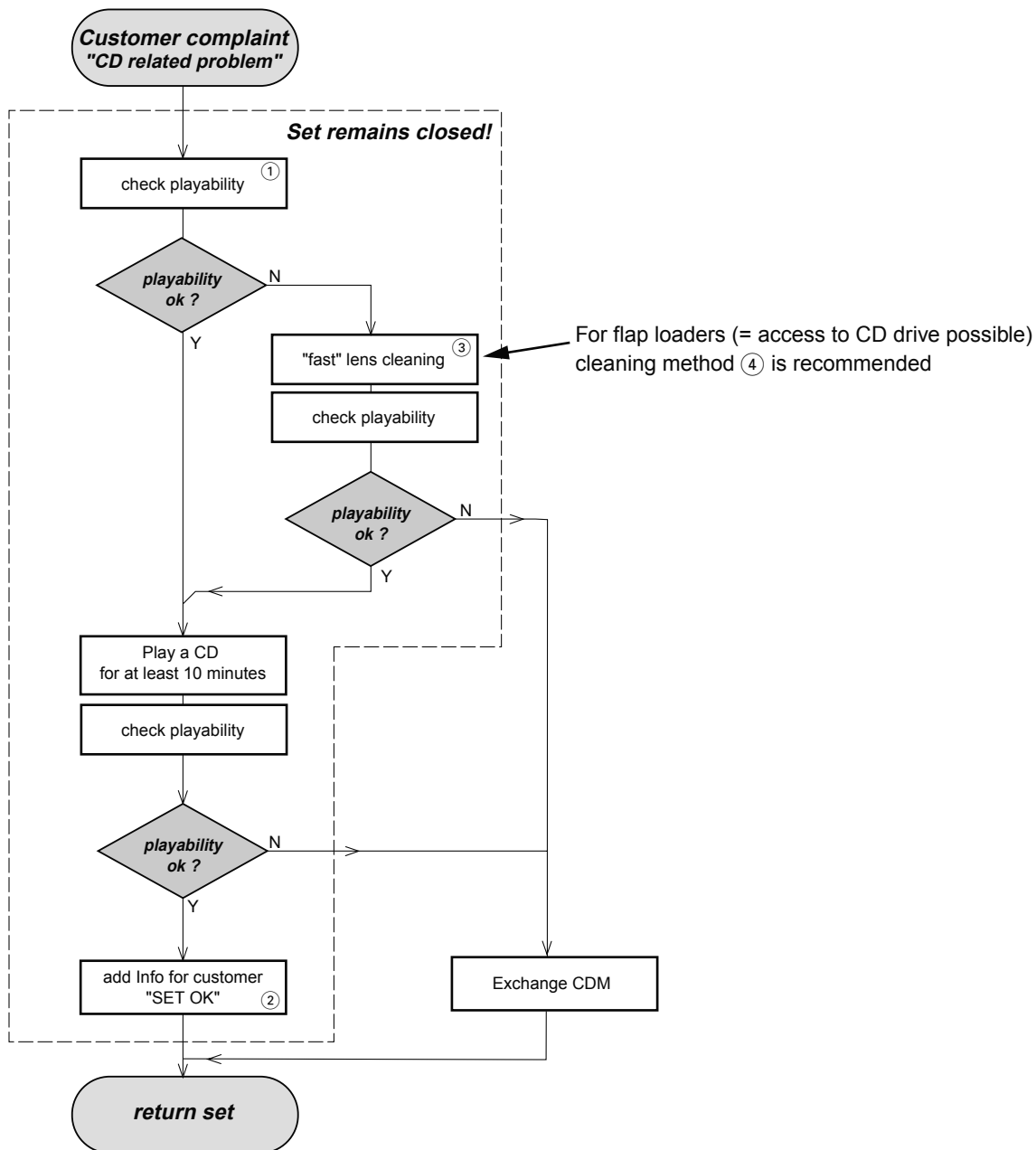
For additional questions please contact your local repair-helpdesk.

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



For flap loaders (= access to CD drive possible) cleaning method ④ is recommended

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

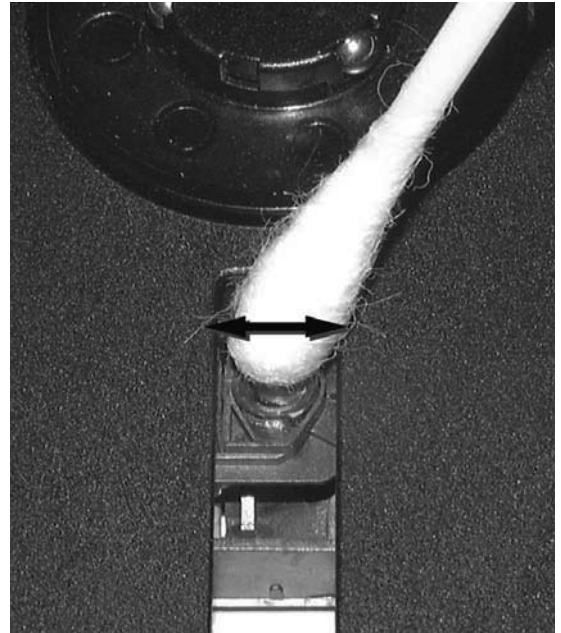
LIQUID LENS CLEANING

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.

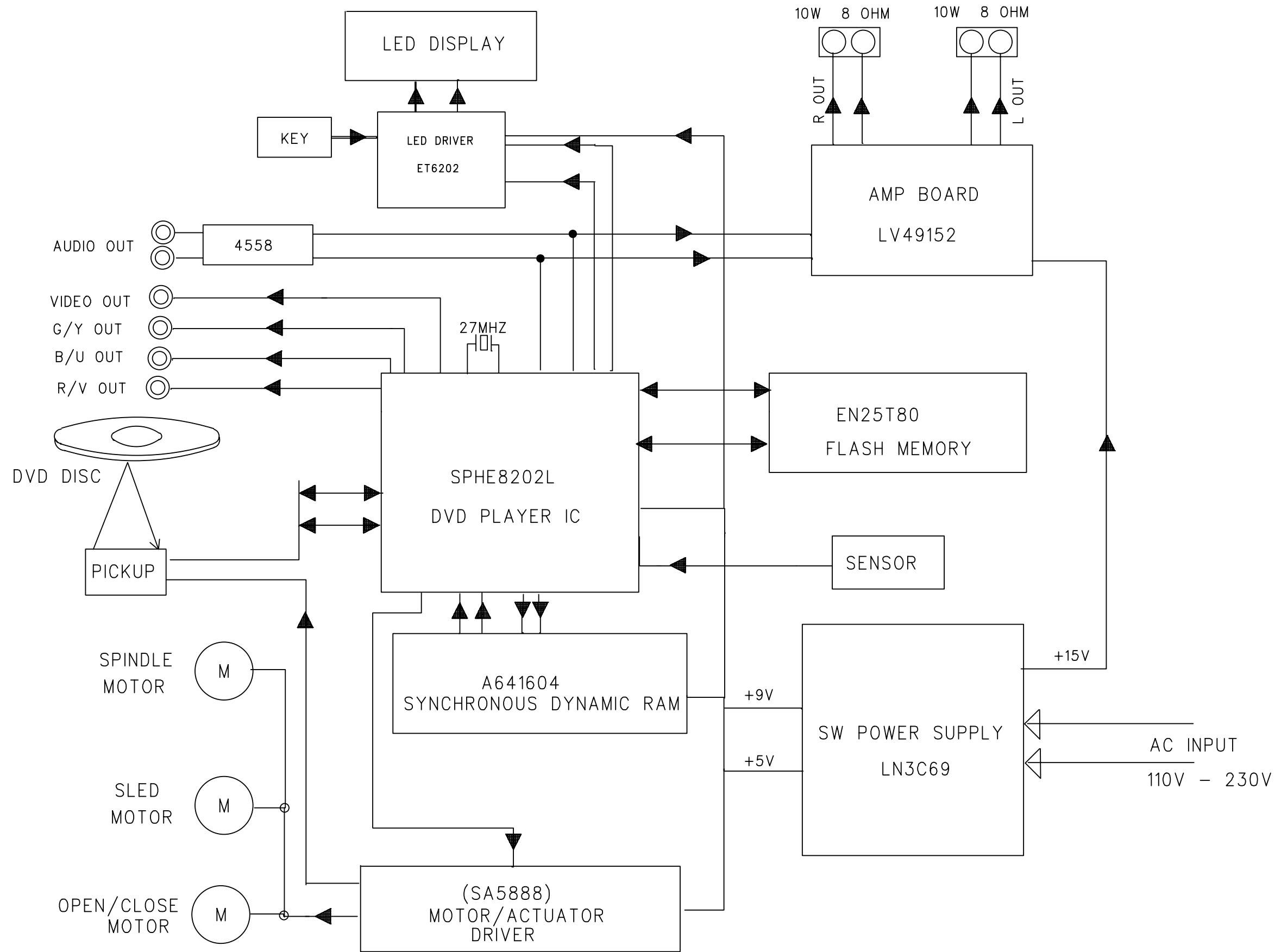
Because the material of the lens is synthetic and coated with a special anti-reflectivity layer, cleaning must be done with a non-aggressive cleaning fluid. It is advised to use "Cleaning Solvent

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.

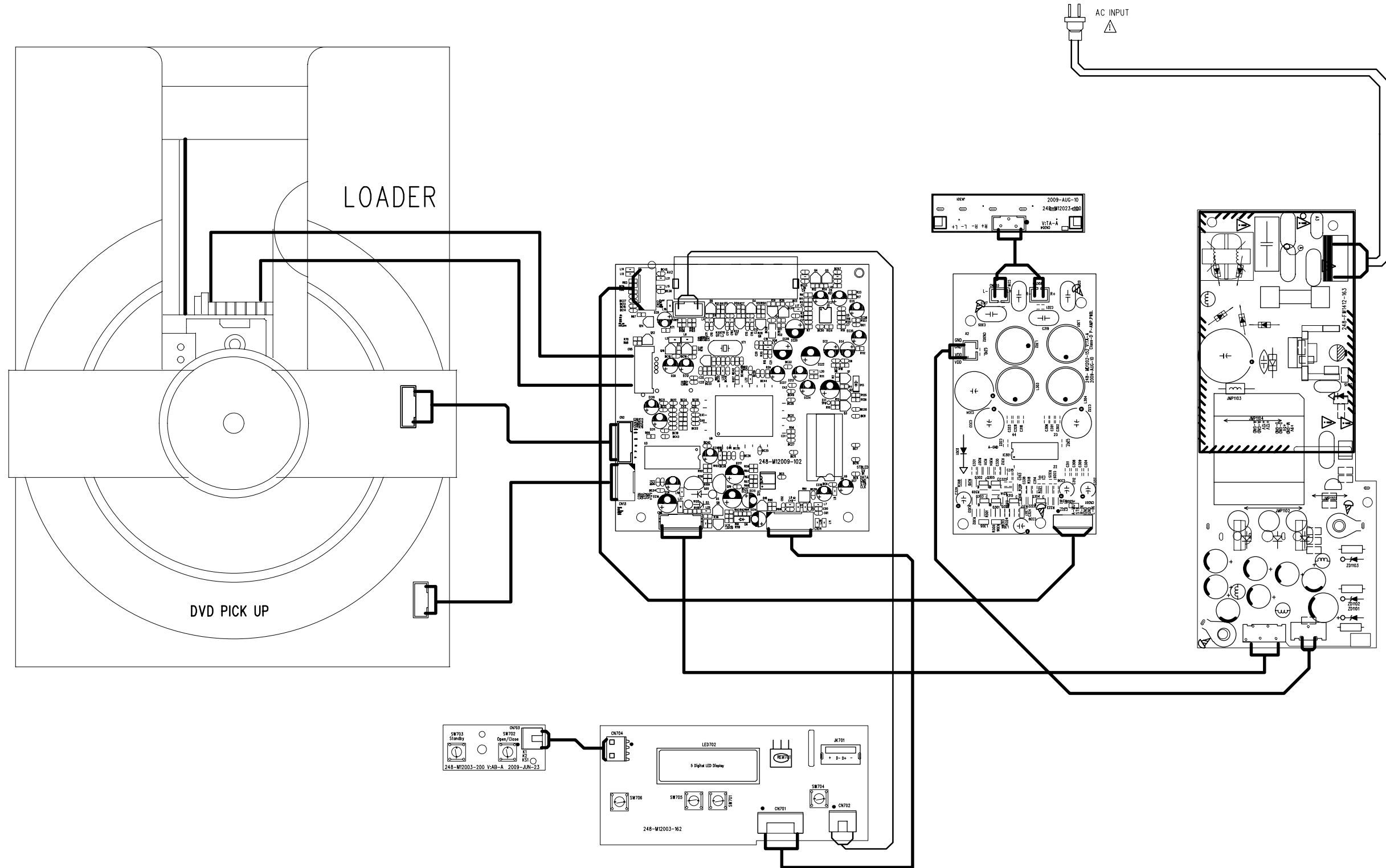
The direction of cleaning must be in the way as indicated in the picture below.



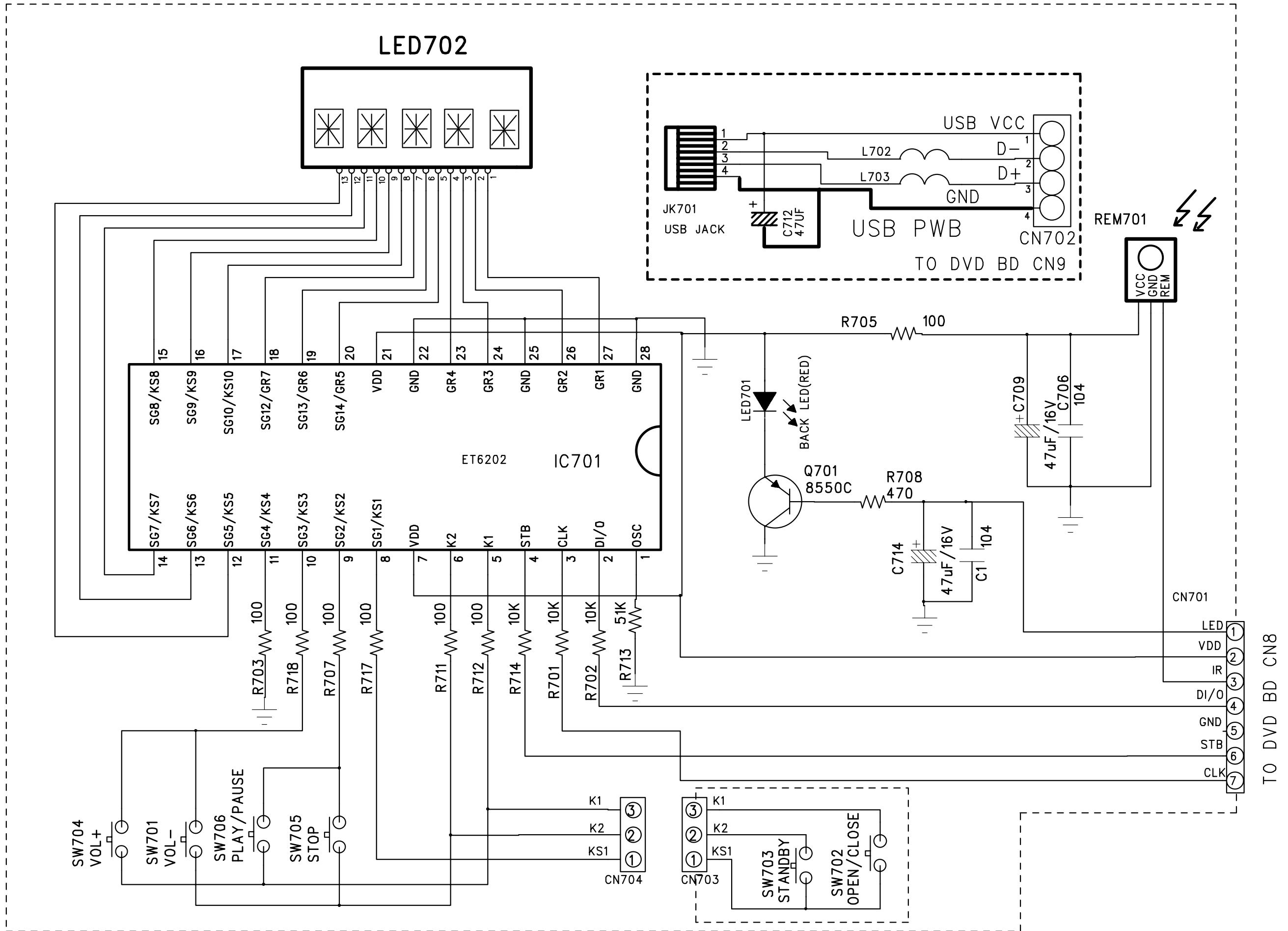
SET BLOCK DIAGRAM



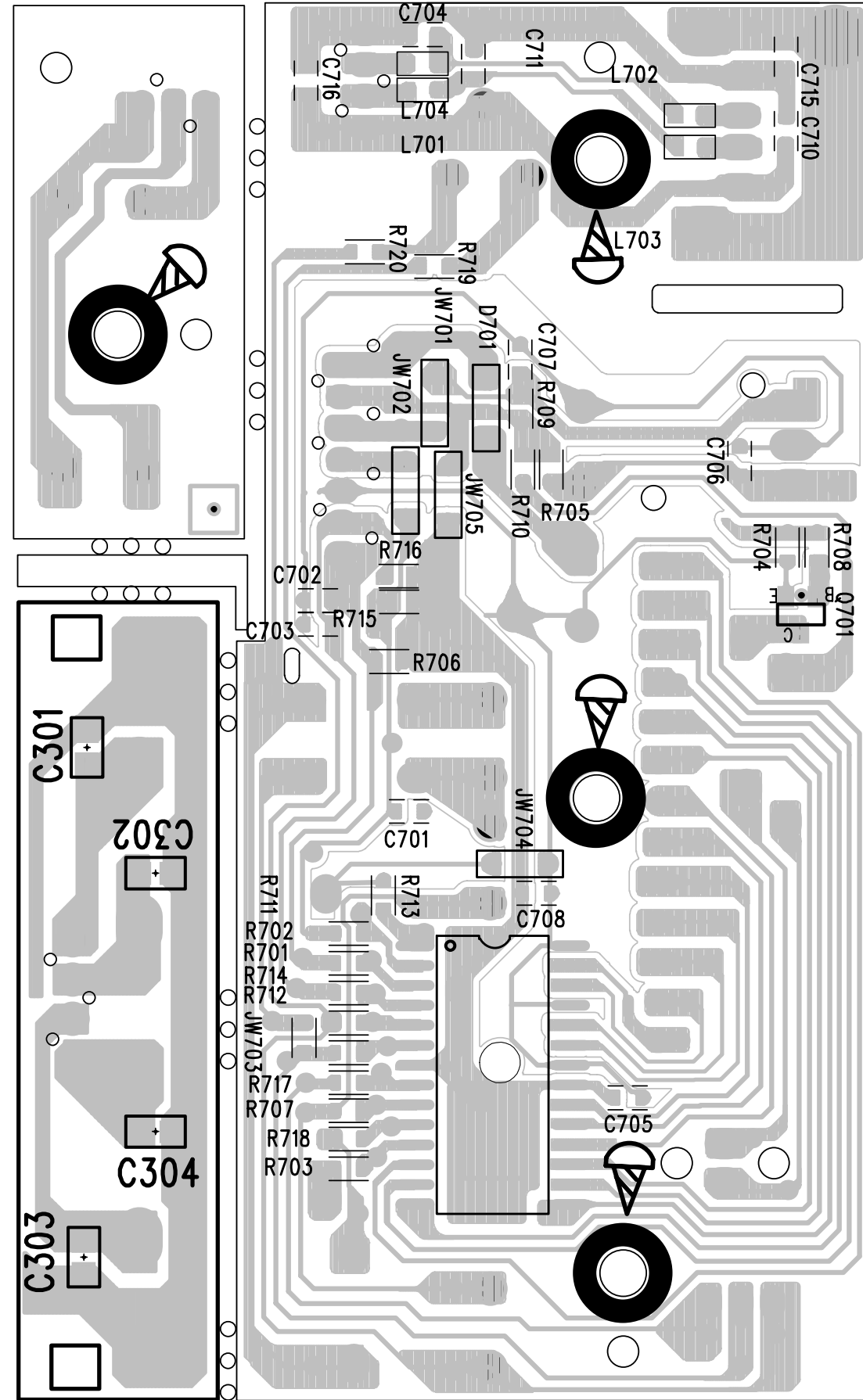
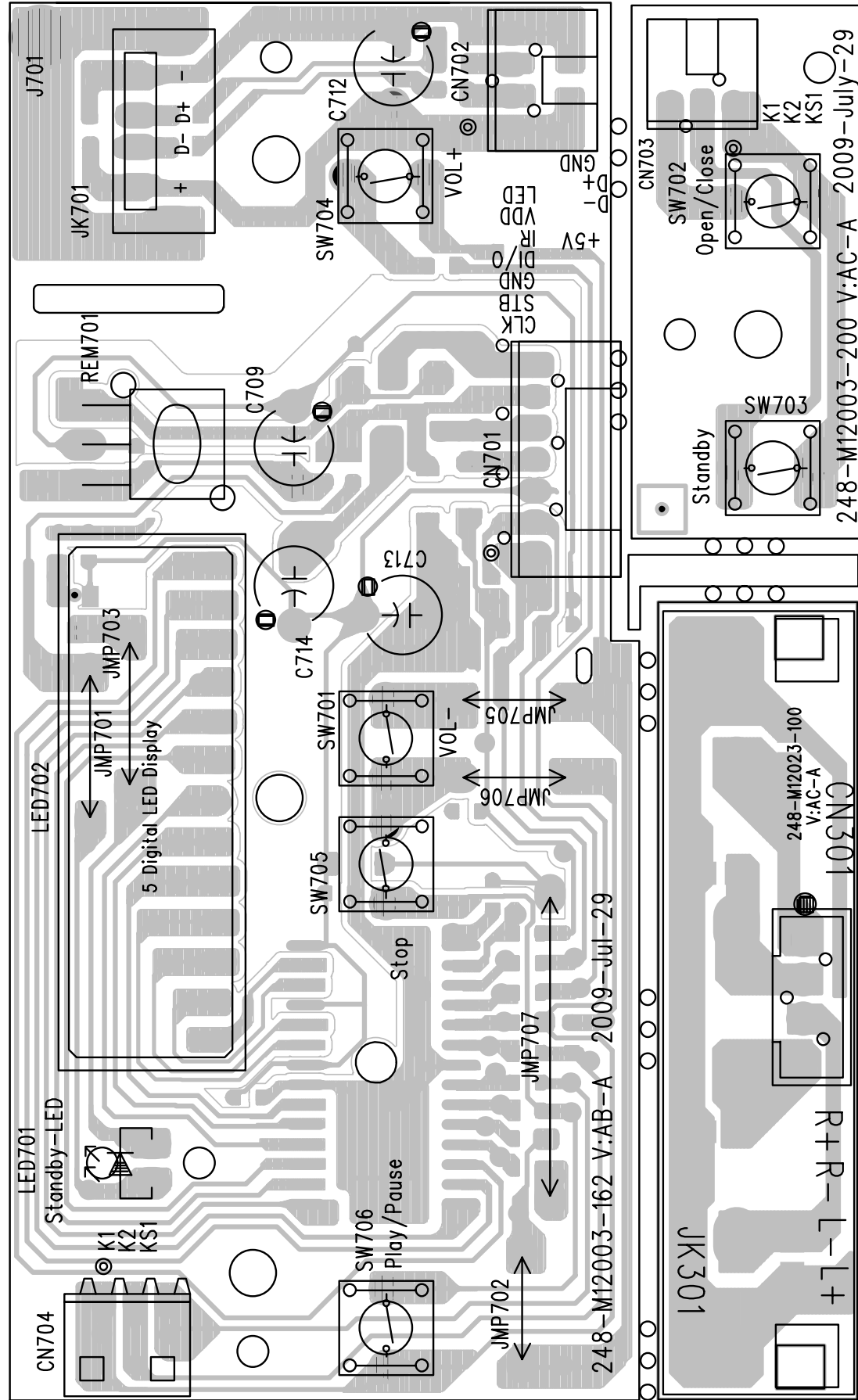
SET WIRING DIAGRAM



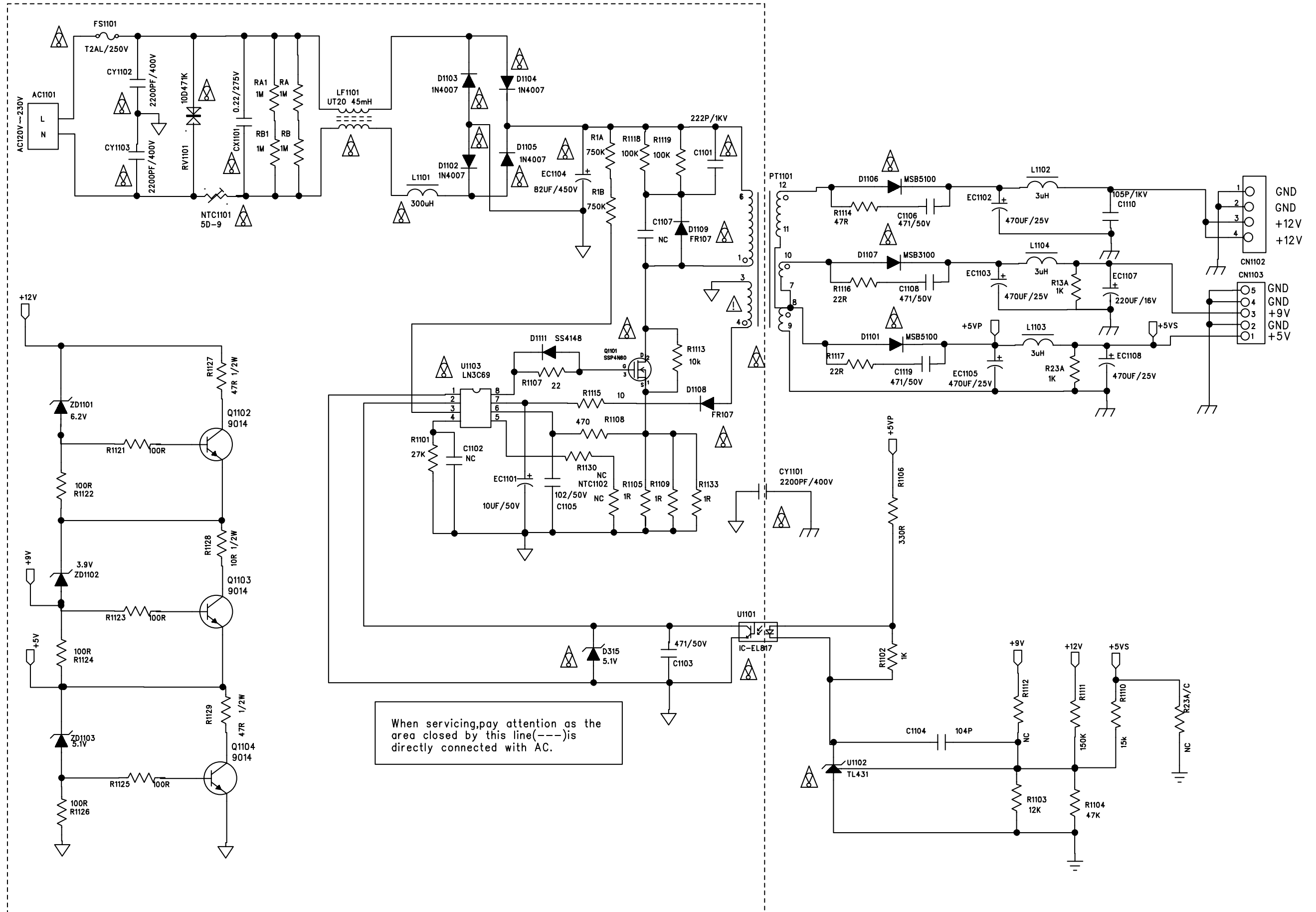
CIRCUIT DIAGRAM - DISPLAY & KEY BOARD



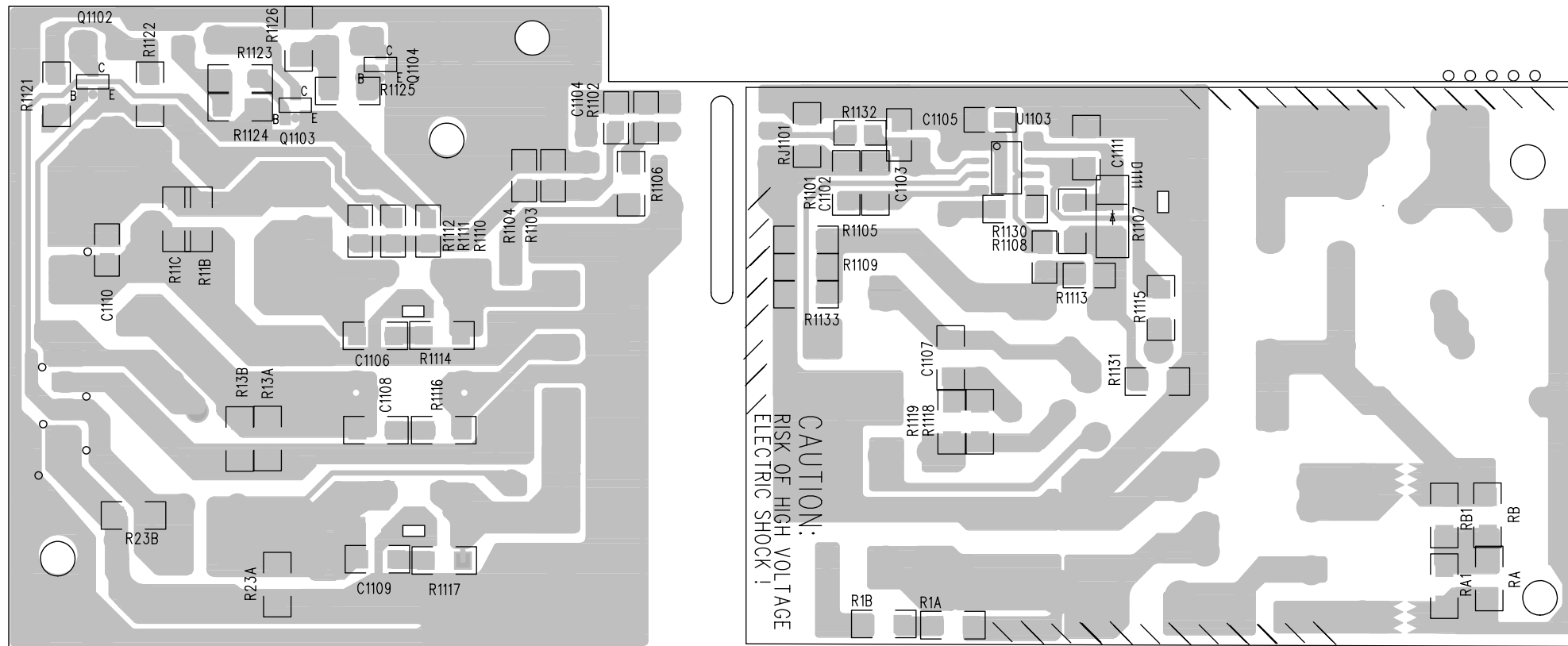
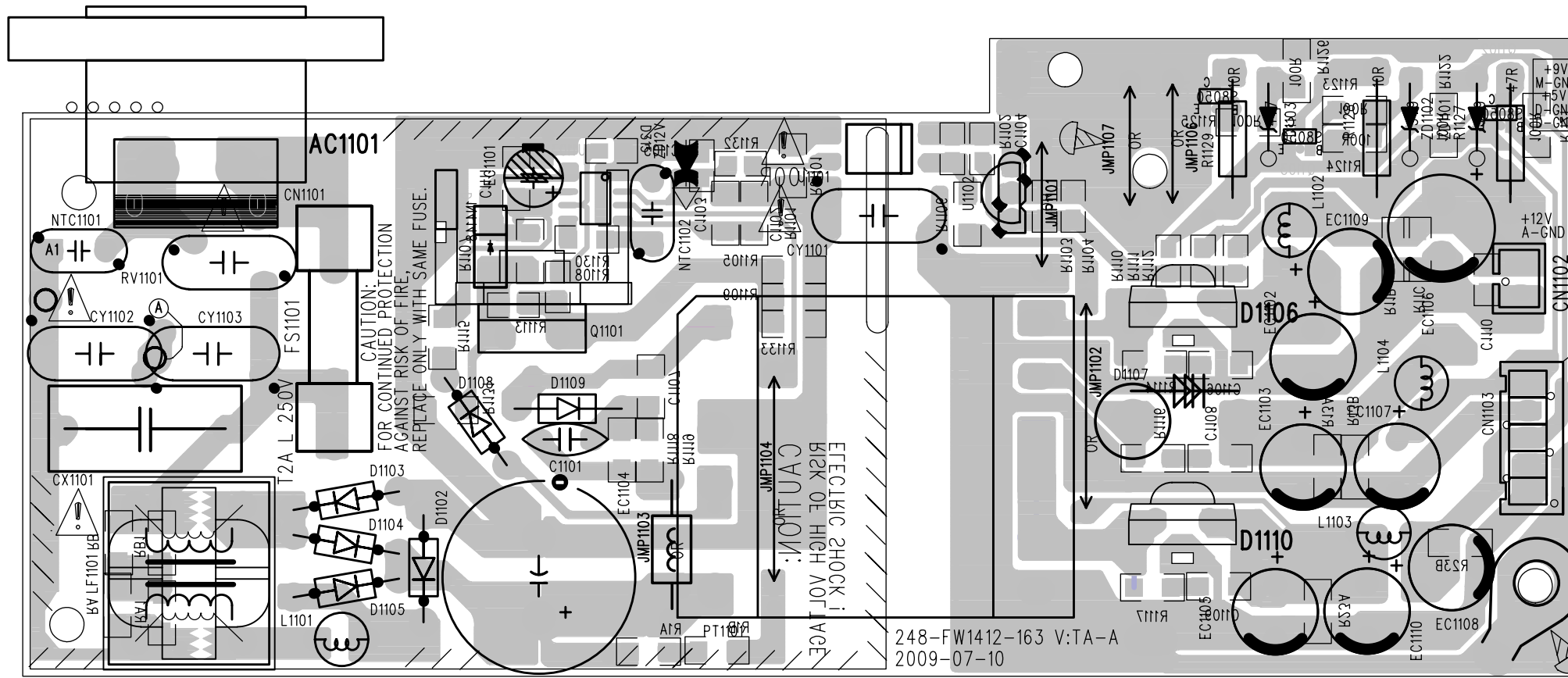
LAYOUT DIAGARM - DISPLAY & Key BOARD



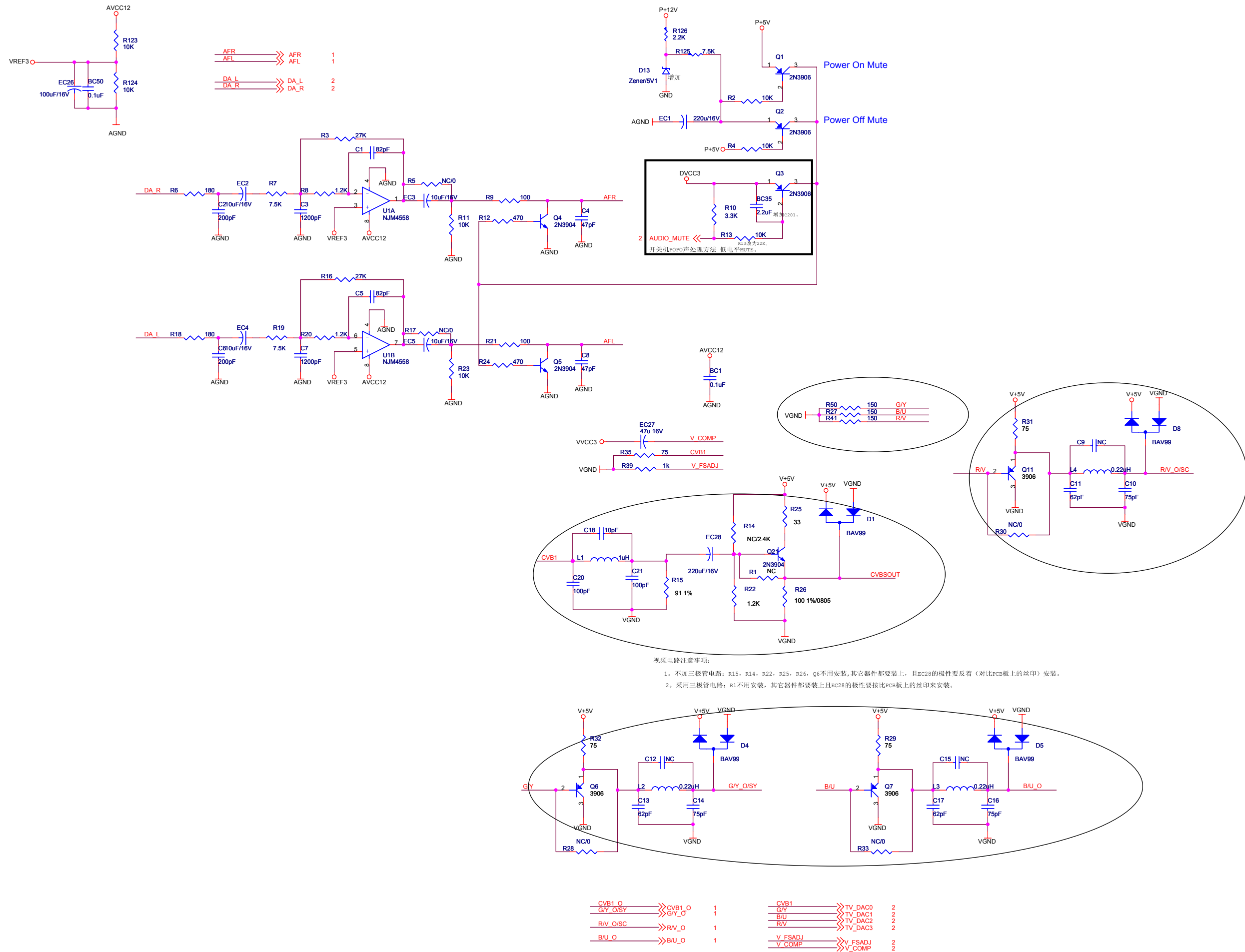
CIRCUIT DIAGRAM - RECTIFIER BOARD



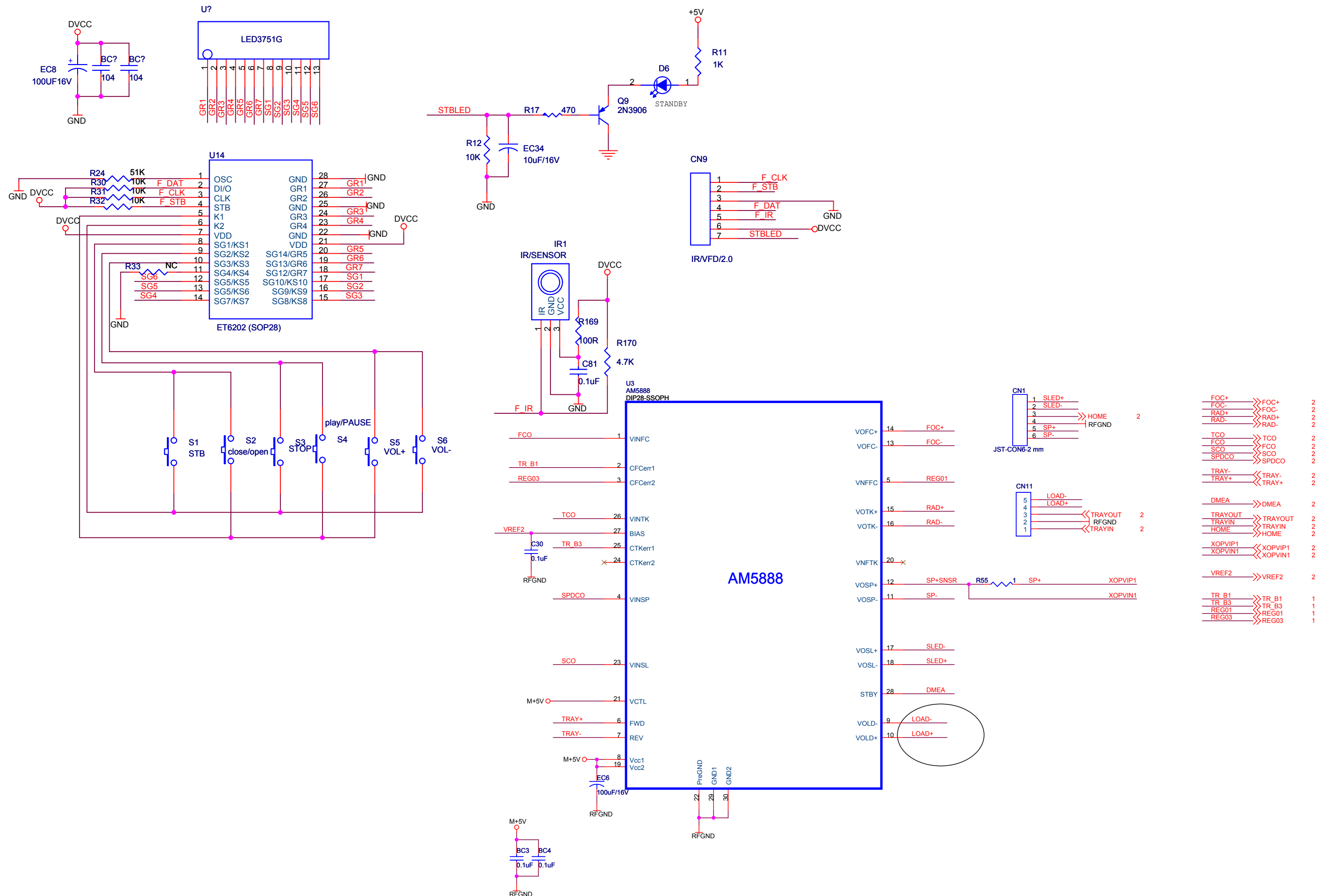
LAYOUT DIAGARM - RECTIFIER BOARD



CIRCUIT DIAGRAM - DVD BOARD
PART 1

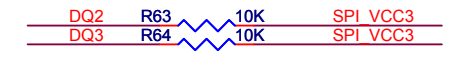
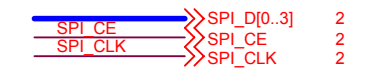
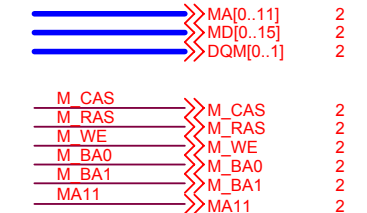
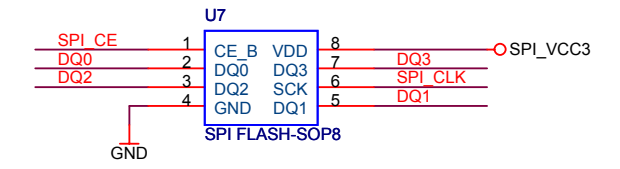
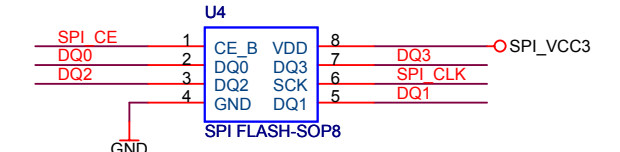
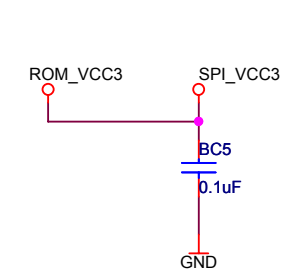
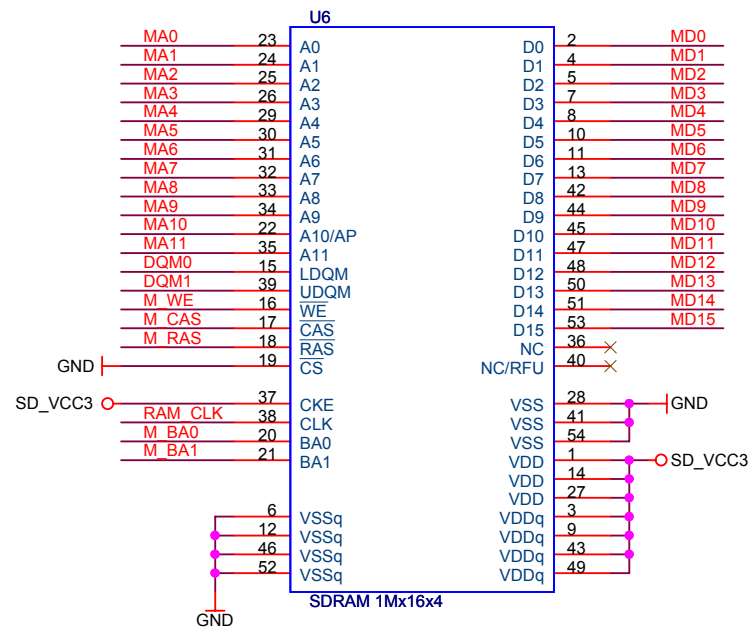
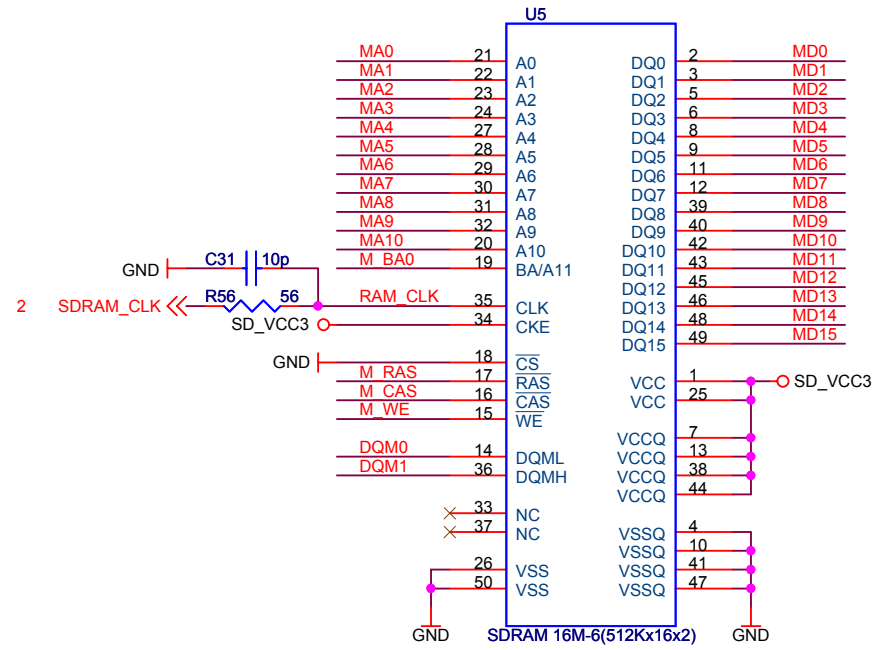


CIRCUIT DIAGRAM - DVD BOARD PART 2

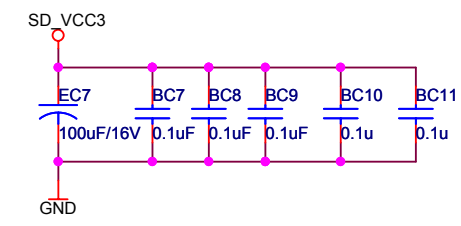
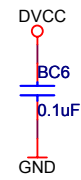


CIRCUIT DIAGRAM - DVD BOARD
PART 3

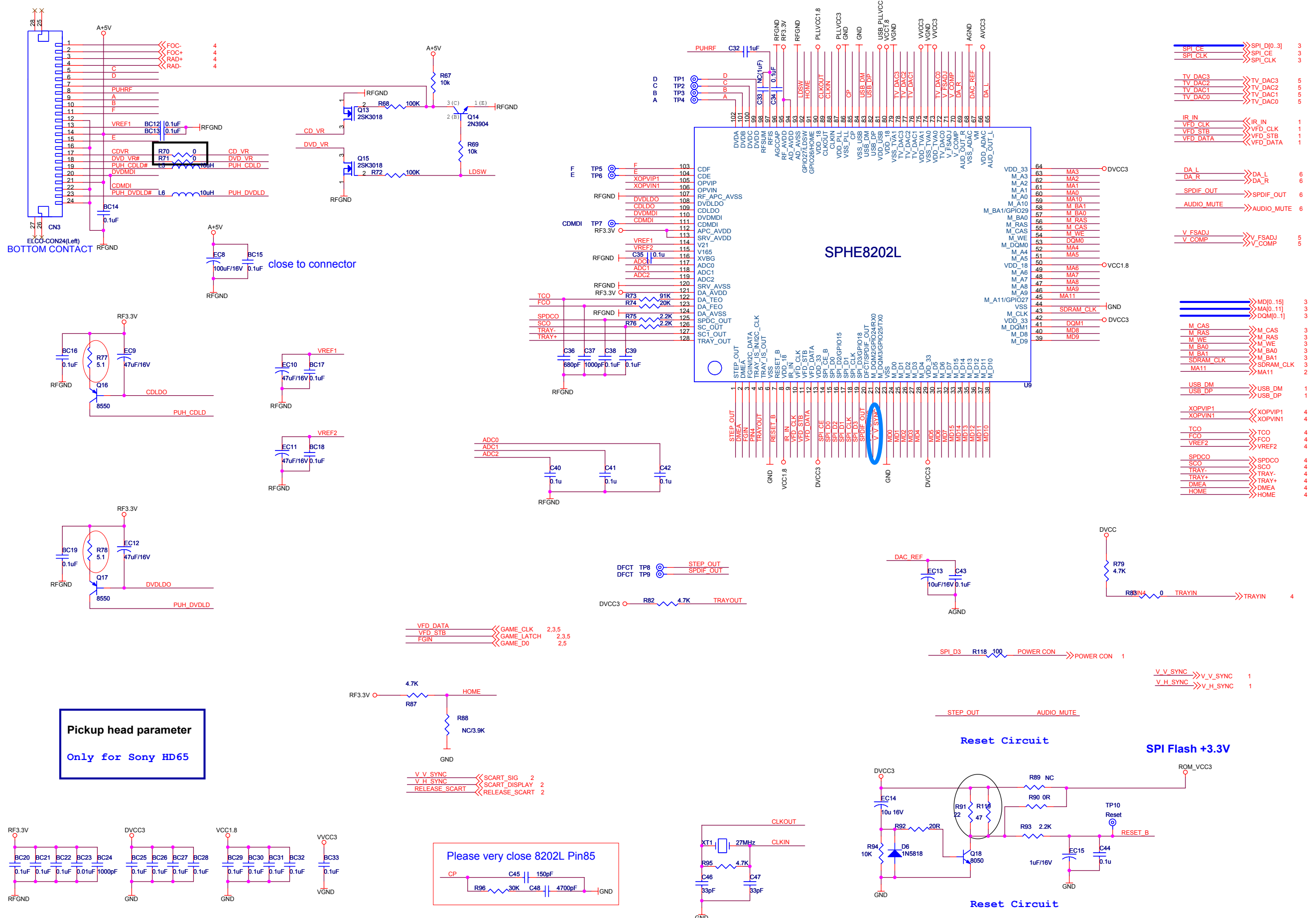
Option



For SPI Flash Option

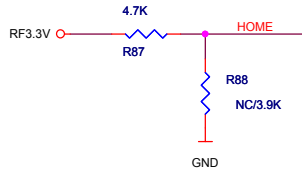


CIRCUIT DIAGRAM - DVD BOARD PART 4

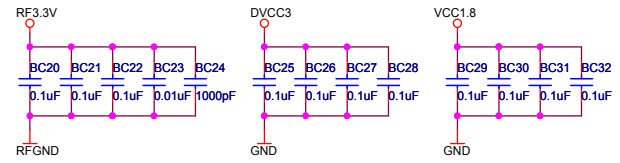


Pickup head parameter
Only for Sony HD65

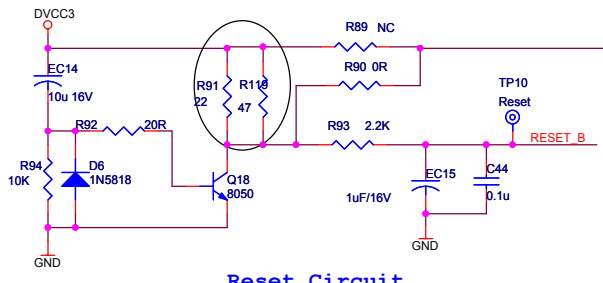
VFD_DATA <<> GAME_CLK 2,3,5
VFD_STB <<> GAME_LATCH 2,3,5
FGIN <<> GAME_D0 2,5



V_V_SYNC <<> SCART_SIG 2
V_H_SYNC <<> SCART_DISPLAY 2
RELEASE_SCART <<> RELEASE_SCART 2



Reset Circuit

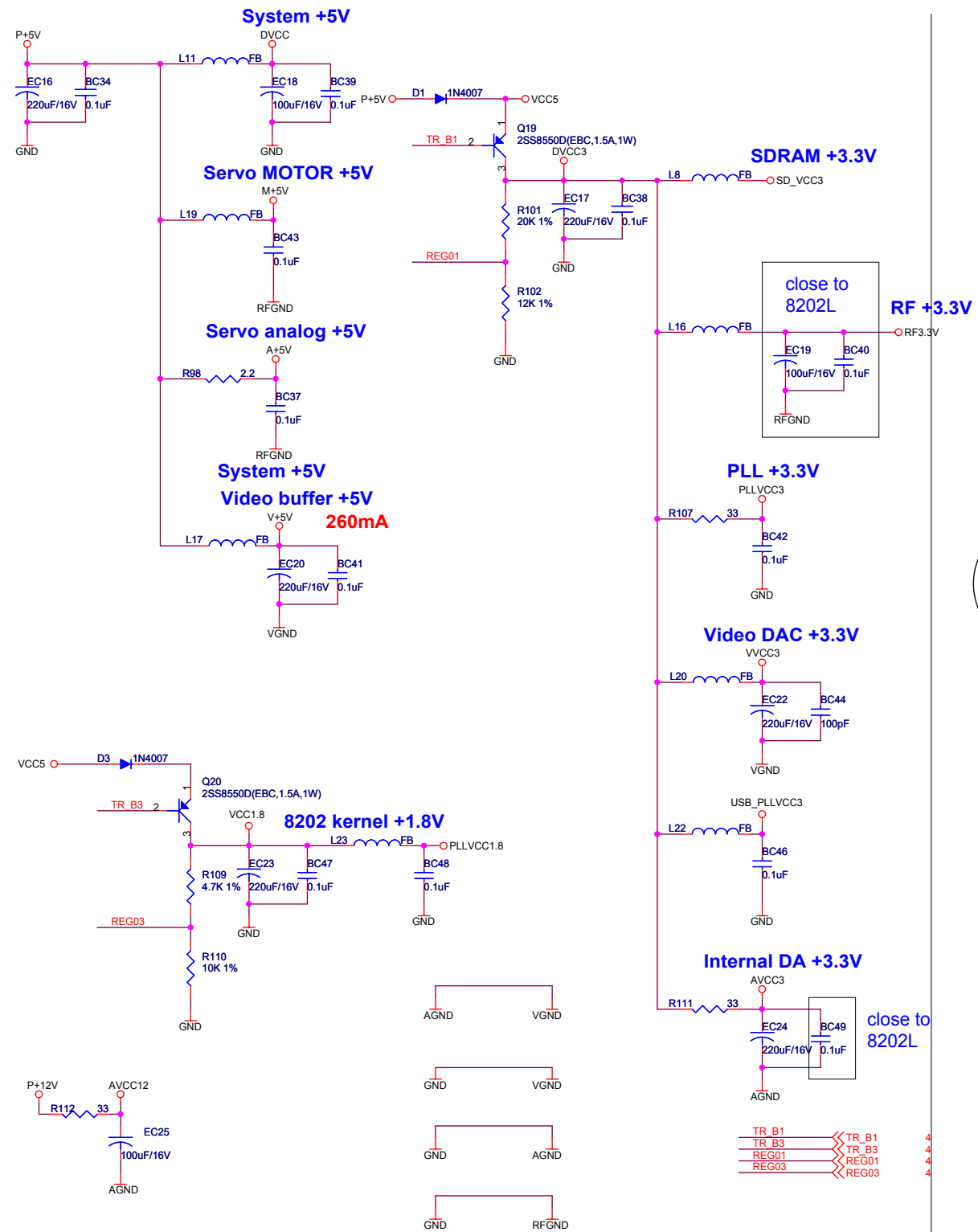


SPI Flash +3.3V

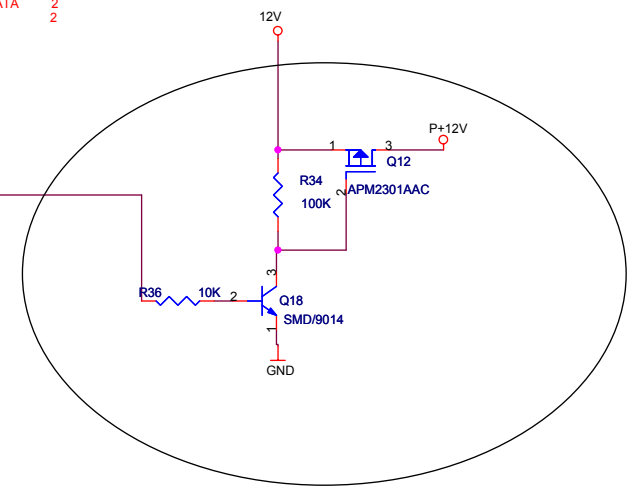
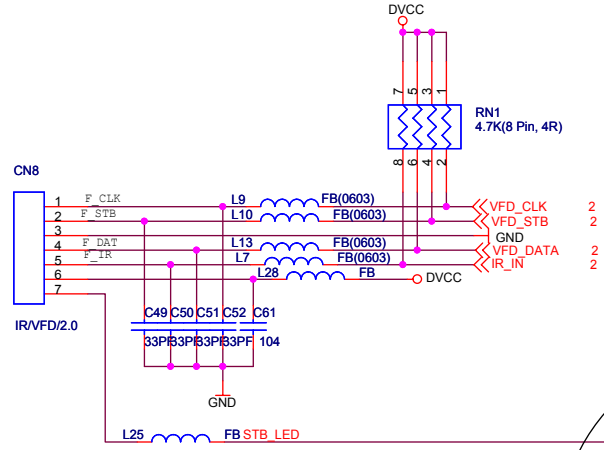
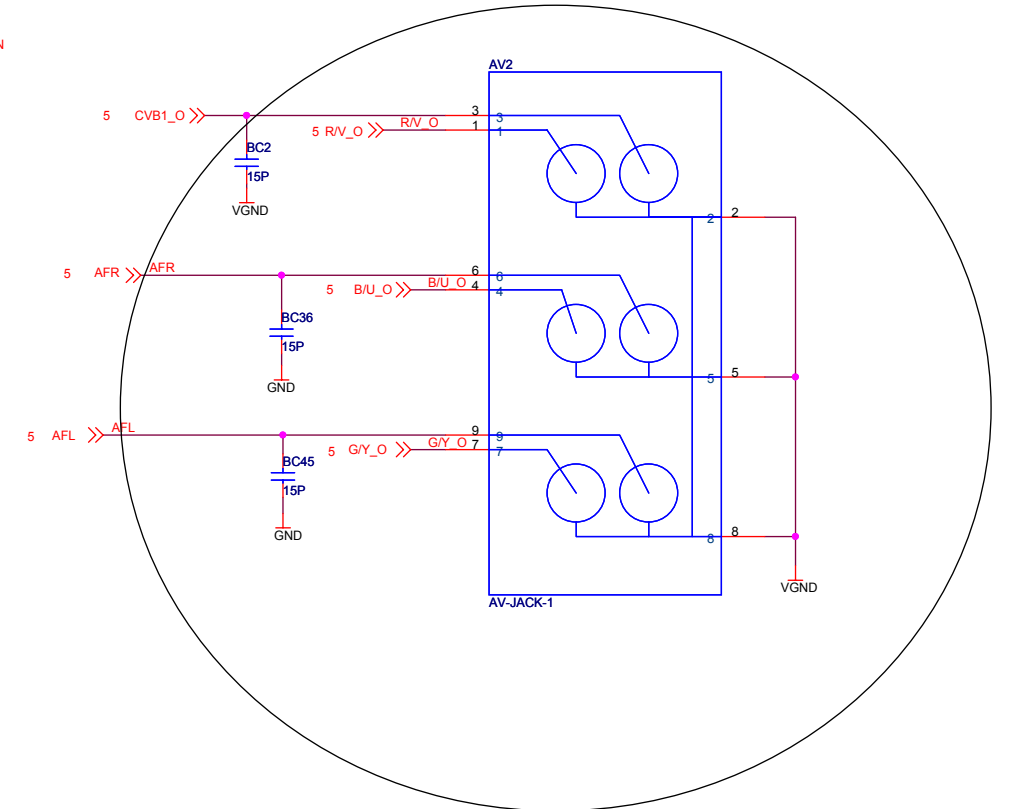
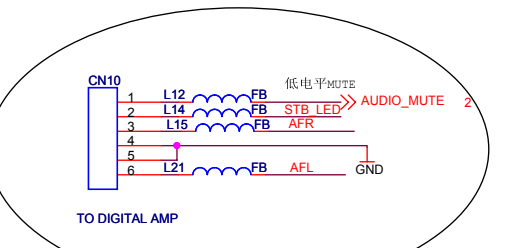
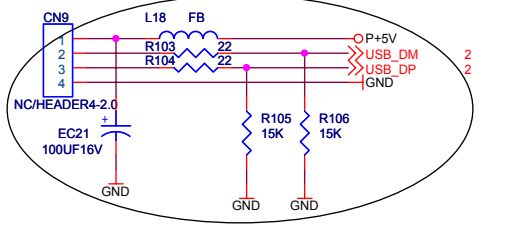
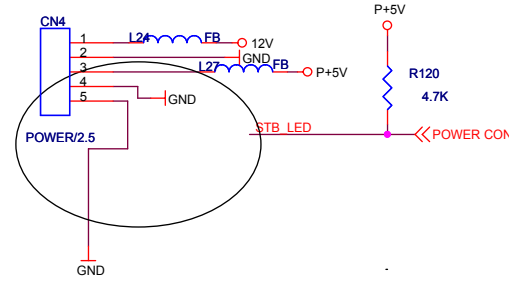


- SPI_D[0..3] <<> SPI_D[0..3] 3
- SPI_CE <<> SPI_CE 3
- SPI_CLK <<> SPI_CLK 3
- TV_DAC3 <<> TV_DAC3 5
- TV_DAC2 <<> TV_DAC2 5
- TV_DAC1 <<> TV_DAC1 5
- TV_DAC0 <<> TV_DAC0 5
- IR_IN <<> IR_IN 1
- VFD_CLK <<> VFD_CLK 1
- VFD_STB <<> VFD_STB 1
- VFD_DATA <<> VFD_DATA 1
- DA_L <<> DA_L 6
- DA_R <<> DA_R 6
- SPDIF_OUT <<> SPDIF_OUT 6
- AUDIO_MUTE <<> AUDIO_MUTE 6
- V_FSADJ <<> V_FSADJ 5
- V_COMP <<> V_COMP 5
- MD[0..15] <<> MD[0..15] 3
- MA[0..11] <<> MA[0..11] 3
- MDM[0..1] <<> DQM[0..1] 3
- M_CAS <<> M_CAS 3
- M_RAS <<> M_RAS 3
- M_WE <<> M_WE 3
- M_BA0 <<> M_BA0 3
- M_BA1 <<> M_BA1 3
- SDRAM_CLK <<> SDRAM_CLK 3
- MA11 <<> MA11 2
- USB_DM <<> USB_DM 1
- USB_DP <<> USB_DP 1
- XOPVIP1 <<> XOPVIP1 4
- XOPVIN1 <<> XOPVIN1 4
- TCO <<> TCO 4
- FCO <<> FCO 4
- VREF2 <<> VREF2 4
- SPDCO <<> SPDCO 4
- SCO <<> SCO 4
- TRAY- <<> TRAY- 4
- TRAY+ <<> TRAY+ 4
- DIMEA <<> DIMEA 4
- HOME <<> HOME 4
- V_V_SYNC <<> V_V_SYNC 1
- V_H_SYNC <<> V_H_SYNC 1

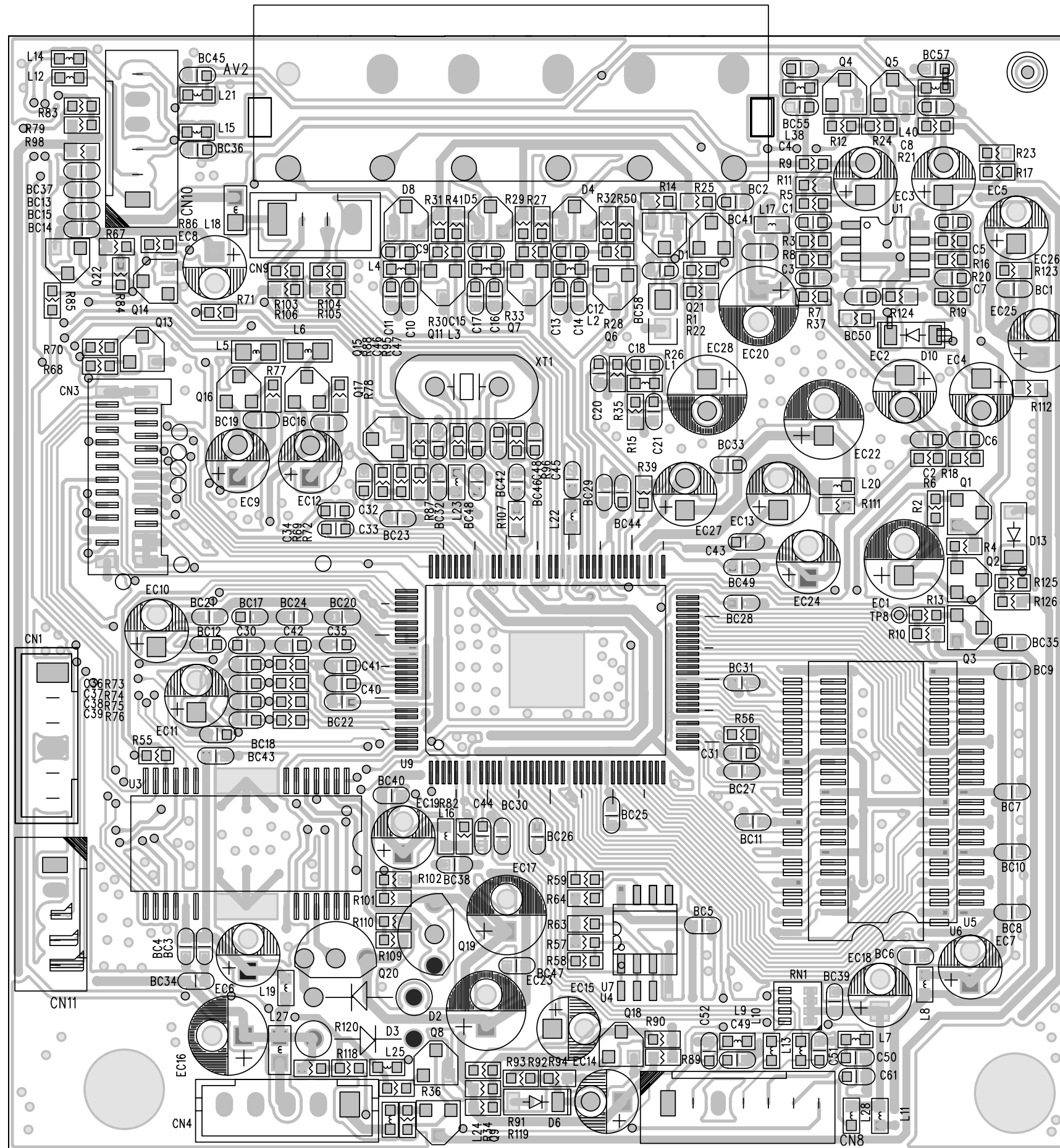
CIRCUIT DIAGRAM - DVD BOARD
PART 5



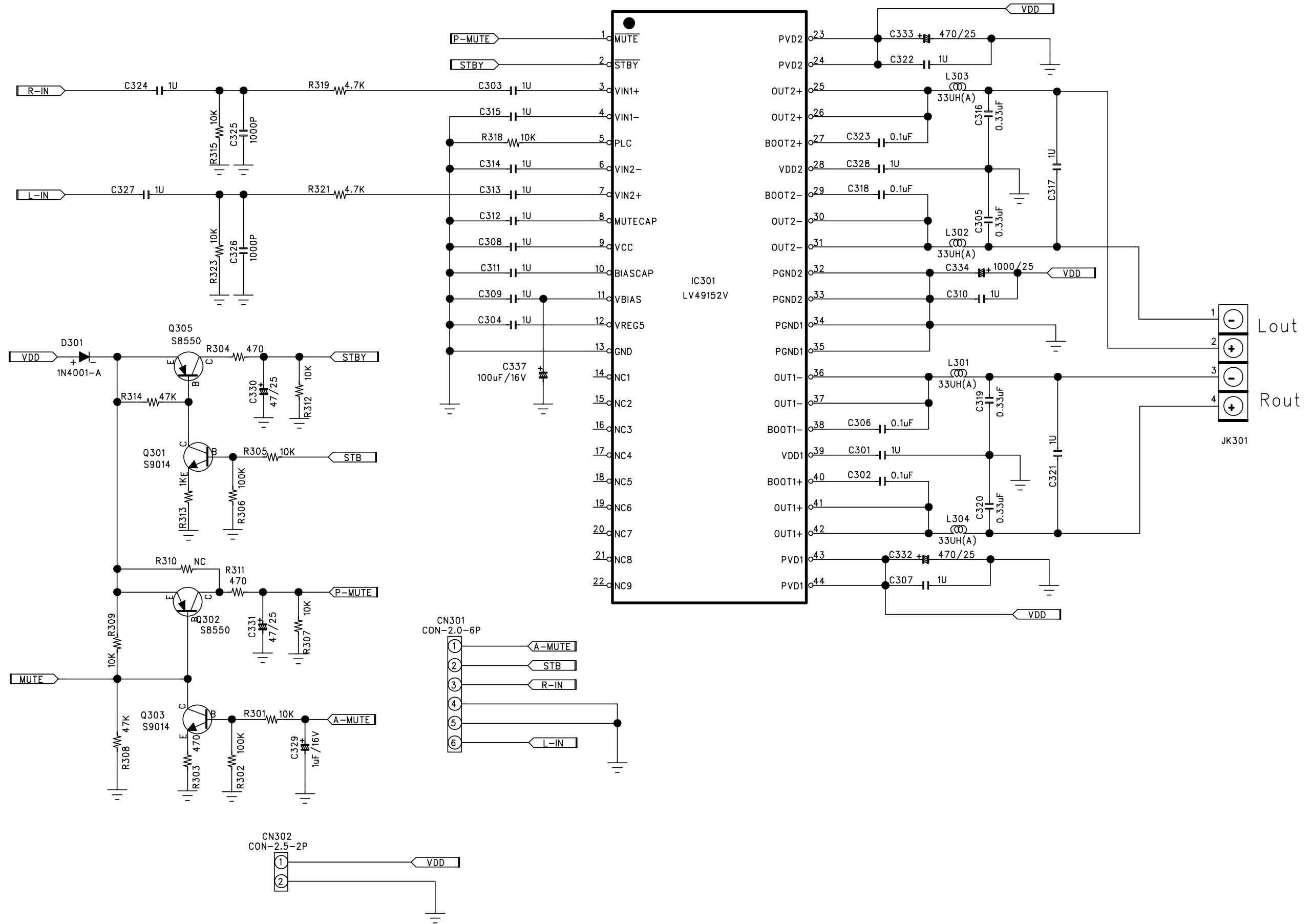
Power Bead > 2A, RAC@100 MHz = 70 ohm, RDC(max)= 0.4 ohm



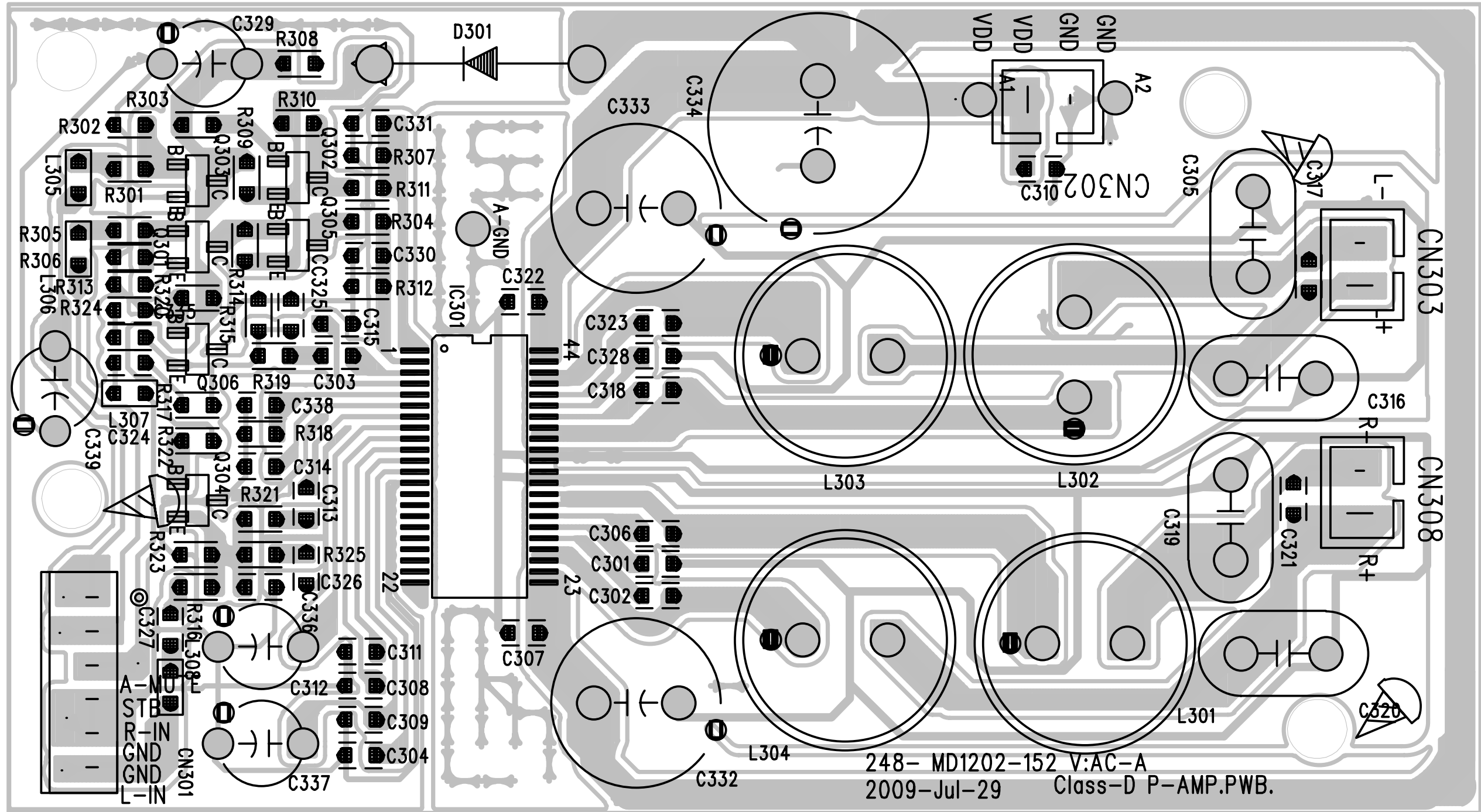
LAYOUT DIAGRAM - DVD BOARD



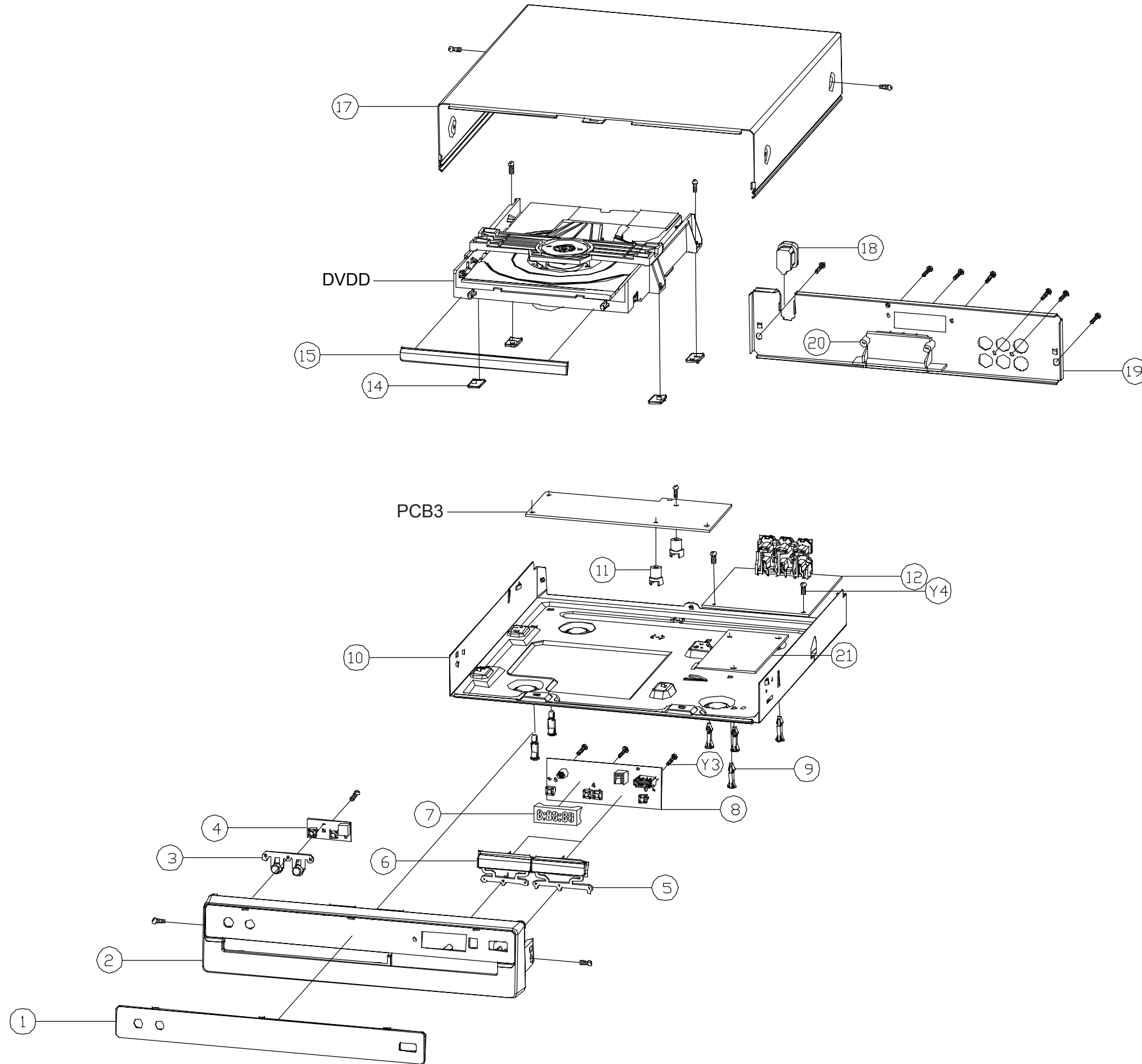
CIRCUIT DIAGRAM - AMP BOARD



LAYOUT DIAGRAM - AMP BOARD



EXPLODED VIEW DIAGRAM



MECHANICAL PARTSLIST

1	996510029445	Display lens
10	996510029448	BOTTOM CABINET
13	996510029434	Led Bracket
14	996510029439	CD Door
17	996510029444	TOP CABINET
19	996510029441	BACK CABINET
2	996510029447	Front cabinet
24	996510029461	SKIP KNOB
3	996510029432	Power knob
32	996510029437	GIFT BOX (only for-/93)
34	996510030151	Power Cord set (Black) SAA (only for-/98)
34	996510029449	Power Cord set (Black)(only for-/93)
34	996510030604	Power Cord set (Black)(only for-/96)
6	996510029456	PLAY KNOB
DVDD	996510018098	DVD Deck
PCB4	996510029457	P.C.B. MCD120 CD BD.
PCB1	996510029459	P.C.B. MCD120 DISPLAY BD.
PCB2	996510029436	P.C.B. MCD120 KEY BD.
PCB3	996510029433	P.C.B. MCD120 AMP BD.
PCB5	996510029435	P.C.B. MCD120 RECTIFIER BD.

ACCESSORIES

33	996510029458	REMOTE CONTROL 32KEYS PHILIPS SINGLE SPEAKER BOX L/R VIDEO CABLE WIRE
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Note: Only these parts mentioned in the list are normal service parts.

ELECTRICAL PARTSLIST**AMP BOARD ASSEMBLY**

Q301	996510008797	SMT TRANSISTOR 9014C
Q302	996510018096	SMT TRANSISTOR 8550B/C(SOT23)
Q303	996510008797	SMT TRANSISTOR 9014C
Q305	996510018096	SMT TRANSISTOR 8550B/C(SOT23)

DISPLAY BOARD ASSEMBLY

IC701	996510029462	SMT IC.ET6202 28P
JK701	996510029442	USB CONNECTOR USB-A-02
LED702	996510029452	LED DISPLAY LED375G-A1 5 DIGIT
SW701	994000002786	TACT SWITCH 2P
SW704	994000002786	TACT SWITCH 2P
SW705	994000002786	TACT SWITCH 2P
SW706	994000002786	TACT SWITCH 2P

RECTIFIER BOARD ASSEMBLY

FS1101	▲ 996510014576	GLASS TUBE FUSE 2A 250V 5T
JMP1103	996510029455	FERRITE BEAD 3.5X9-237-T
PT1101	▲ 996510029443	POWER TF.ERL28
Q1101	996510029451	MOSFET SSP4N60B 3P
U1101	996510029463	I.C. EL817(DIP-4)
U1102	996510029446	I.C. TL431A(TO-92)
U1103	996510029453	SMT IC.LN3C69 8P

SPEAK JACK BOARD ASSEMBLY

JK301	996510029438	SPEAKER TERMINAL WP-18E
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KEY BOARD ASSEMBLY

JK701	996510029442	USB CONNECTOR USB-A-02
SW702	994000002786	TACT SWITCH 2P
SW703	994000002786	TACT SWITCH 2P

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