

Service
Service
Service



Service Manual



TABLE OF CONTENTS

PCBs location & Version Variations.....1-1
 Technical specification1-2
 Service measurement setup.....1-3
 Service aids1-4

Instructions on CD playability2-1 to 2-2

Connections and controls.....3-1...3-2
 Software version check4-1
 Block diagram.....5-1
 Wiring diagram6-1

LCD & Key Board
 circuit diagram7-1...7-2
 layout diagram7-3

Rectifier (Power) Board & USB Jack Board
 Rectifier Board circuit & layout diagram8-1
 USB Jack Board circuit & layout diagram8-2

Main Board
 circuit diagram9-1...9-5
 layout diagram9-6...9-7

Servo (DVD MPEG) Board
 circuit diagram10-1...10-8
 layout diagram10-9

Exploded view diagram11-1
 Mechanical partslist11-2

Electrical partslist.....12-1...12-3
 Revision list.....13-1

© Copyright 2008 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.



SPECIFICATIONS

AMPLIFIER

Output power 2 x 15 W RMS
 Signal-to-noise ratio ≥ 60 dBA
 Frequency response 63 – 16000 Hz, ± 3 dB
 Input sensitivity AUX 0.5 V (max. 2 V)
 Impedance loudspeakers 4 Ω
 Impedance headphones 32 Ω -1000 Ω

DVD PLAYER

Laser Type Semiconductor
 Disc Diameter 12cm / 8cm
 Video Decoding MPEG-2 / MPEG-1
 Video DAC 10 Bits
 Signal System PAL / NTSC
 Video Format 4:3 / 16:9
 Video S/N 56 dB (minimum)
 Composite Video Output 1.0Vp-p, 75 Ω
 S-Video Output Y - 1.0Vp-p, 75 Ω
 C - 0.286Vp-p, 75 Ω
 Audio DAC 24 Bits / 96 kHz
 Frequency Response 4 Hz - 20 kHz (44.1kHz)
 4 Hz - 22 kHz (48kHz)
 4 Hz - 44 kHz (96kHz)
 Digital Output
 SPDIF (Sony Philips digital interface) Coaxial
 Number of programmable tracks 16
 Signal-to-noise ratio ≥ 65 dBA
 Channel separation ≥ 40 dB (1 kHz)
 Total harmonic distortion $< 0.1\%$ (1 kHz)

TUNER

FM wave range 87.5 – 108 MHz
 MW wave range 531 – 1602 kHz
 Sensitivity at 75 Ω
 – mono, 26 dB signal-to-noise ratio 2.8 μ V
 – stereo, 46 dB signal-to-noise ratio 61.4 μ V
 Selectivity ≥ 28 dB
 Total harmonic distortion $\leq 5\%$
 Frequency response 63 – 5500 Hz (-6 dB)
 Signal-to-noise-ratio ≥ 50 dBA

USB PLAYER

USB V2.0/ V1.1
 support MP3/WMA/JPEG files
 Number of albums/ folders maximum 99
 Number of tracks/titles maximum 500

TAPE DECK

Frequency response
 Normal tape (type I) 80 – 12500 Hz (8 dB)
 Signal-to-noise ratio
 Normal tape (type I) 50 dBA
 Wow and flutter $\leq 0.4\%$ DIN

SPEAKERS

2-way bass reflex system

GENERAL INFORMATION

AC Power 220 – 240 V / 50 Hz
 Standby power consumption ≤ 7 W
 Eco power Standby < 1 W

Dimensions

Main Unit(w x h x d) 152 x 228 x 237(mm)
 Speakers (w x h x d)
 140 x 228 x 212 (mm)

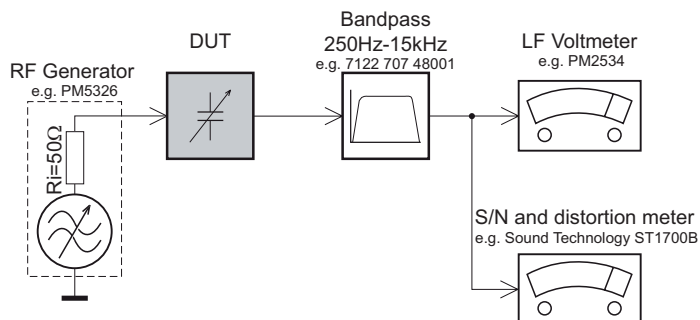
Weight

With Packing 7.7 kg
 Main Unit 3.34 kg
 Speaker box 2.85 kg

Specifications and external appearance are subject to change without notice.

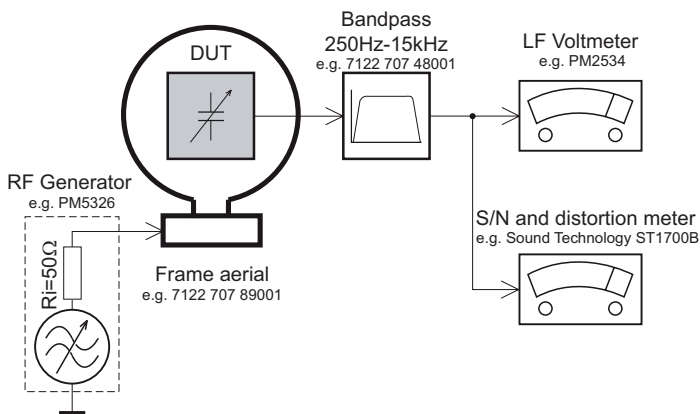
MEASUREMENT SETUP

Tuner FM



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

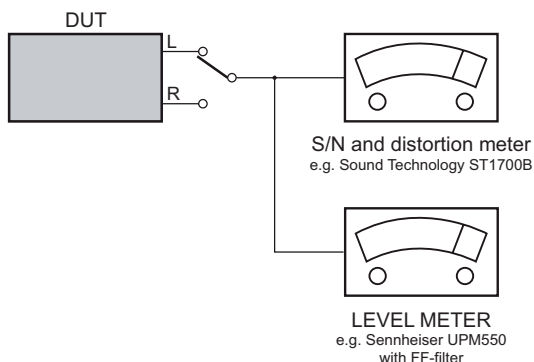
Tuner AM (MW,LW)



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).

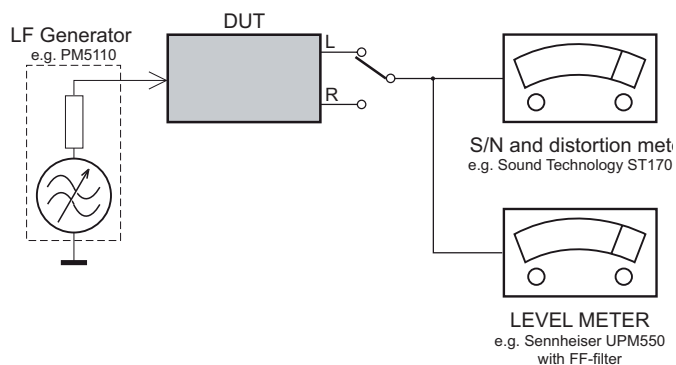
CD

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".

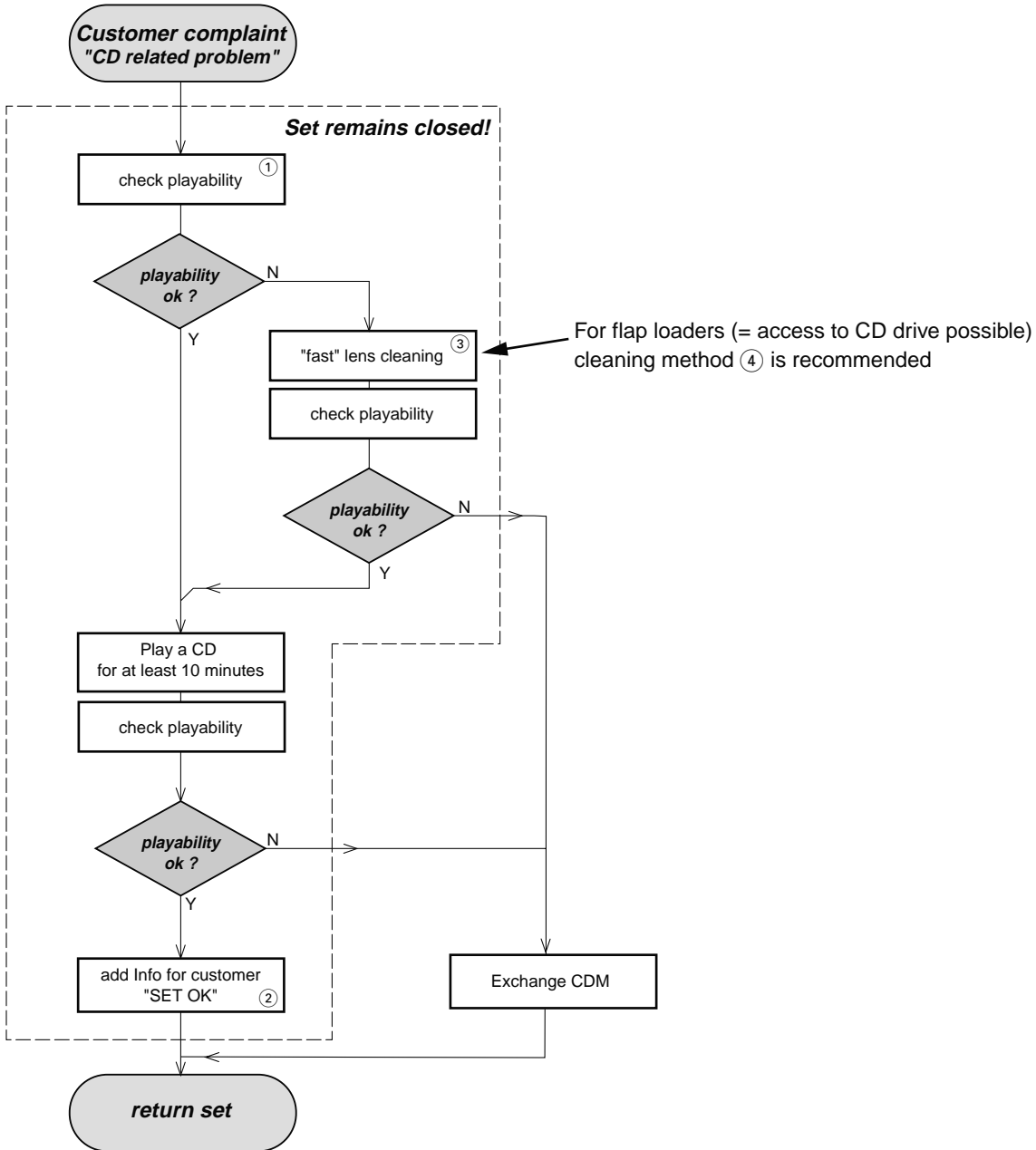
For additional questions please contact your local repair-helpdesk.

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

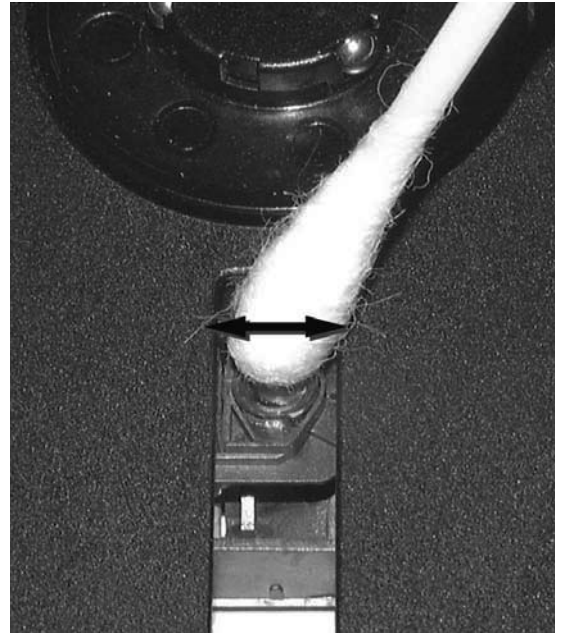
LIQUID LENS CLEANING

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.

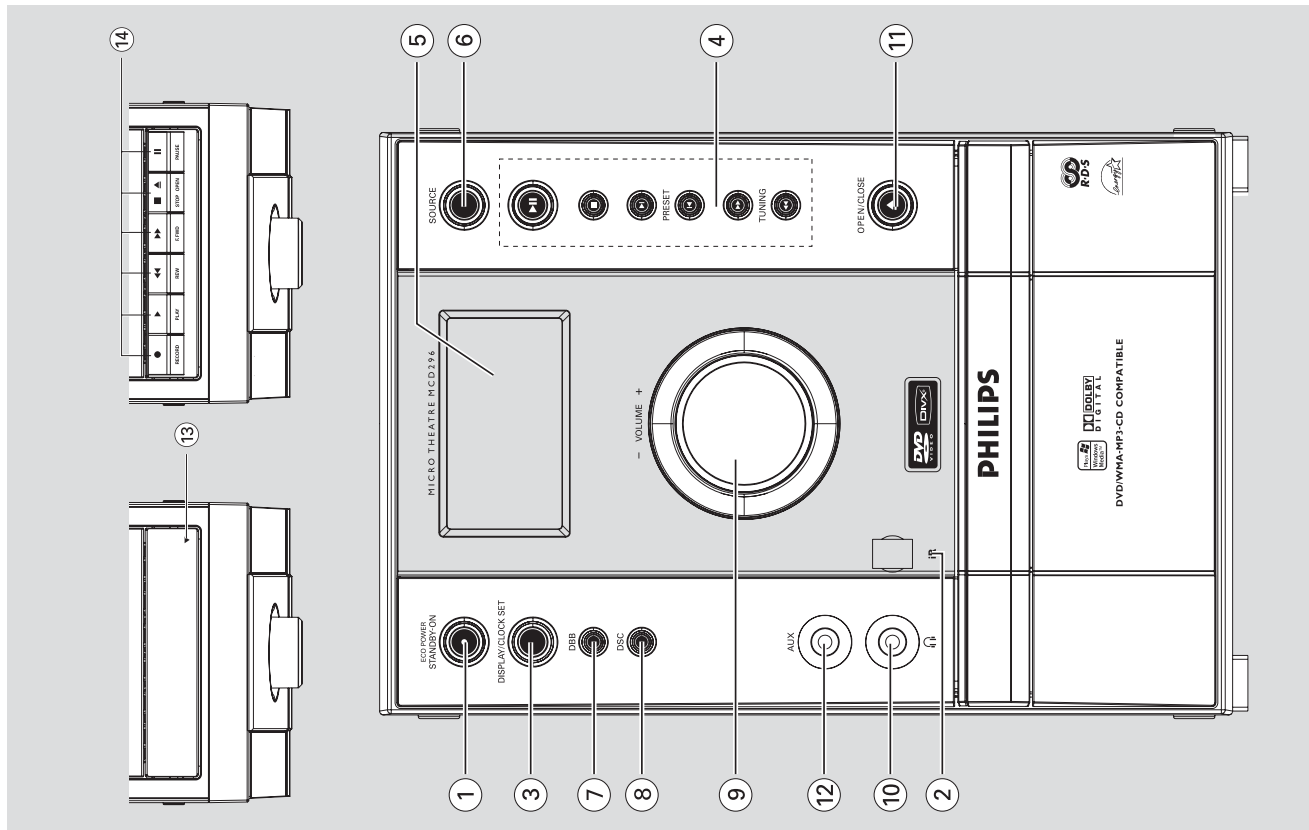
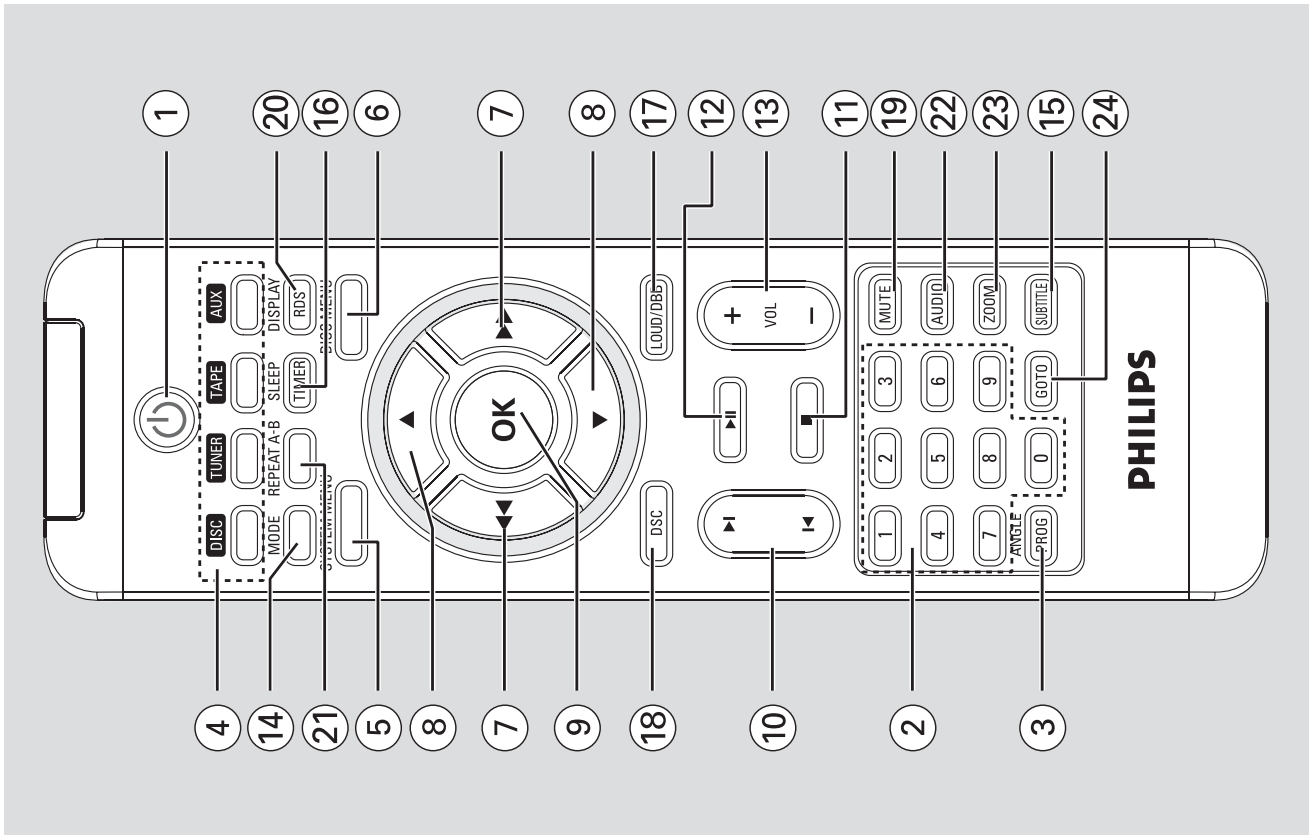
Because the material of the lens is synthetic and coated with a special anti-reflectivity layer, cleaning must be done with a non-aggressive cleaning fluid. It is advised to use "Cleaning Solvent

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.



CONNECTION AND CONTROLS



Controls

- ⑥ **DISC MENU** (disc mode only)
 - DVD/VCD: enters or exits the disc contents menu.
 - VCD2.0: switches the playback control mode on or off.
- ⑦ **◀◀/▶▶**
 - Tuner
 - press to tune to a lower/higher radio frequency gradually.
 - press and hold, then release the key to start automatic search for a radio frequency downward/upward.
 - Disc
 - (not for MP3 CD) searches backward/forward in a disc at different speeds.
 - In DISC mode, to select a movement direction in the disc menu or system menu bar.
- ⑧ **▲▼**
 - In DISC mode, to select a movement direction in the disc menu or system menu bar.
- ⑨ **OK**
 - to exit or confirm the selection.
- ⑩ **◀/▶**
 - Disc: skips to the previous/next chapter/title/track.
 - Tuner: selects a preset radio station.
- ⑪ **■**
 - In DISC mode, to stop playback or clear a program.
- ⑫ **▶▶**
 - In DISC mode, to start or interrupt playback.
- ⑬ **VOL +/-**
 - adjusts the volume upward/downward.
 - adjusts the hours and minutes in clock/timer setting mode.
 - switches the set timer ON or OFF.
- ⑭ **MODE**
 - to select various repeat modes or the shuffle play mode for a disc.
- ⑮ **SUBTITLE**
 - selects a subtitle language.
- ⑯ **SLEEP/TIMER**
 - Standby mode
 - sets a time for switching on the system automatically.
 - Playback mode
 - sets the sleep timer function (auto-off).
- ⑰ **LOUD/DBB**
 - enables or disables automatic loudness adjustment.
 - *— enables or disables bass enhancement.
- ⑱ **DSC**
 - selects different types of preset sound equalizer settings (CLASSIC, JAZZ, POP or ROCK).
- ⑲ **MUTE**
 - to interrupt or resume sound reproduction.
- ⑳ **DISPLAY/IRDS**
 - for disc
 - selects a disc information display mode.
 - for tuner
 - selects RDS information.
- ㉑ **REPEAT A-B**
 - for VCD/CD: to repeat a specific section within the same track
 - for DVD: to repeat a specific section in a disc.
- ㉒ **AUDIO**
 - for VCD
 - sets Stereo, Mono-Left or Mono-Right sound mode.
 - for DVD
 - selects an audio language.
- ㉓ **ZOOM**
 - DVD/VCD/Picture CD: enlarges or reduces a picture or active image on the TV screen.
- ㉔ **GOTO**
 - In DISC mode, to fast search in a disc by entering a time, title, chapter or track.

Notes for remote control:
 - First, select the source you wish to control by pressing one of the source select keys on the remote control (DISC or TUNER, for example).
 - Then select the desired function (▶▶, ◀◀, ▶, ◀ for example).

Controls

- ⑨ **VOLUME +/-**
 - adjusts the volume upward/downward.
 - adjusts the hours and minutes in clock/timer setting mode.
 - in timer setting mode, switches the set timer ON or OFF.
- ⑩ **☎**
 - to connect a headphone.
- ⑪ **OPEN•CLOSE ▲**
 - to open or close the disc door.
- ⑫ **AUX jack**
 - to connect an auxiliary device.
- ⑬ **Flapdoor (▲)**
 - to access tape keys.
- ⑭ **Tape Deck Operation**
 - RECORD ●** ... starts recording.
 - PLAY ▶** starts playback.
 - REW/FFWD ◀◀ / ▶▶** fast rewinds/winds the tape.
 - STOP•OPEN ■ ▲** stops tape playback/recording; opens the tape compartment.
 - PAUSE ||** interrupts recording or playback.
- ① **⏻**
 - to switch to the system to standby mode.
- ② **Numeric Keypad (0-9)**
 - inputs a track/title/chapter number of the disc.
- ③ **PROG/ANGLE**
 - DVD/VCD/CD/MP3-CD: enters the program menu.
 - Picture CD: during playback to select a slide show mode.
 - Tuner: programs preset radio stations.
 - DVD: selects a DVD camera angle.
- ④ **SOURCE**
 - to select the respective sound source : DISC, TUNER, TAPE or AUX.
- ⑤ **SYSTEM MENU** (disc mode only)
 - to enter or exit the system menu bar.
- ① **Controls on the system**
 - ① **ECO POWER/STANDBY-ON ⏻**
 - switches the system on or to Eco power/normal standby mode.
 - ② **IR sensor**
 - infrared sensor for remote control.
 - ③ **DISPLAY/CLOCK SET**
 - Standby mode
 - sets the system clock.
 - Playback mode
 - displays the system clock.
 - During disc playback
 - selects a disc information display mode.
 - ④ **Mode Selection**
 - In DISC mode, to stop playback or clear a program.
 - ▶▶ In DISC mode, to start or interrupt playback.
 - PRESET ◀/▶ Disc: skips to the previous/next chapter/title/track.
 - Tuner: selects a preset radio station.
 - ⑤ **TUNING ◀◀/▶▶**
 - Tuner
 - press to tune to a lower/higher radio frequency gradually.
 - press and hold, then release the key to start automatic search for a radio frequency downward/upward.
 - Disc
 - searches fast backward/forward in a disc.
 - ⑥ **Display screen**
 - to view the current status of the system.
 - ⑦ **SOURCE**
 - to select the respective sound source : DISC, TUNER, TAPE or AUX.
 - ⑧ **DBB**
 - enables or disables bass enhancement.
 - ⑨ **DSC**
 - selects different types of preset sound equalizer settings (CLASSIC, JAZZ, POP or ROCK).

* = Press and hold the button for more than three seconds.

* = Press and hold the button for more than three seconds.

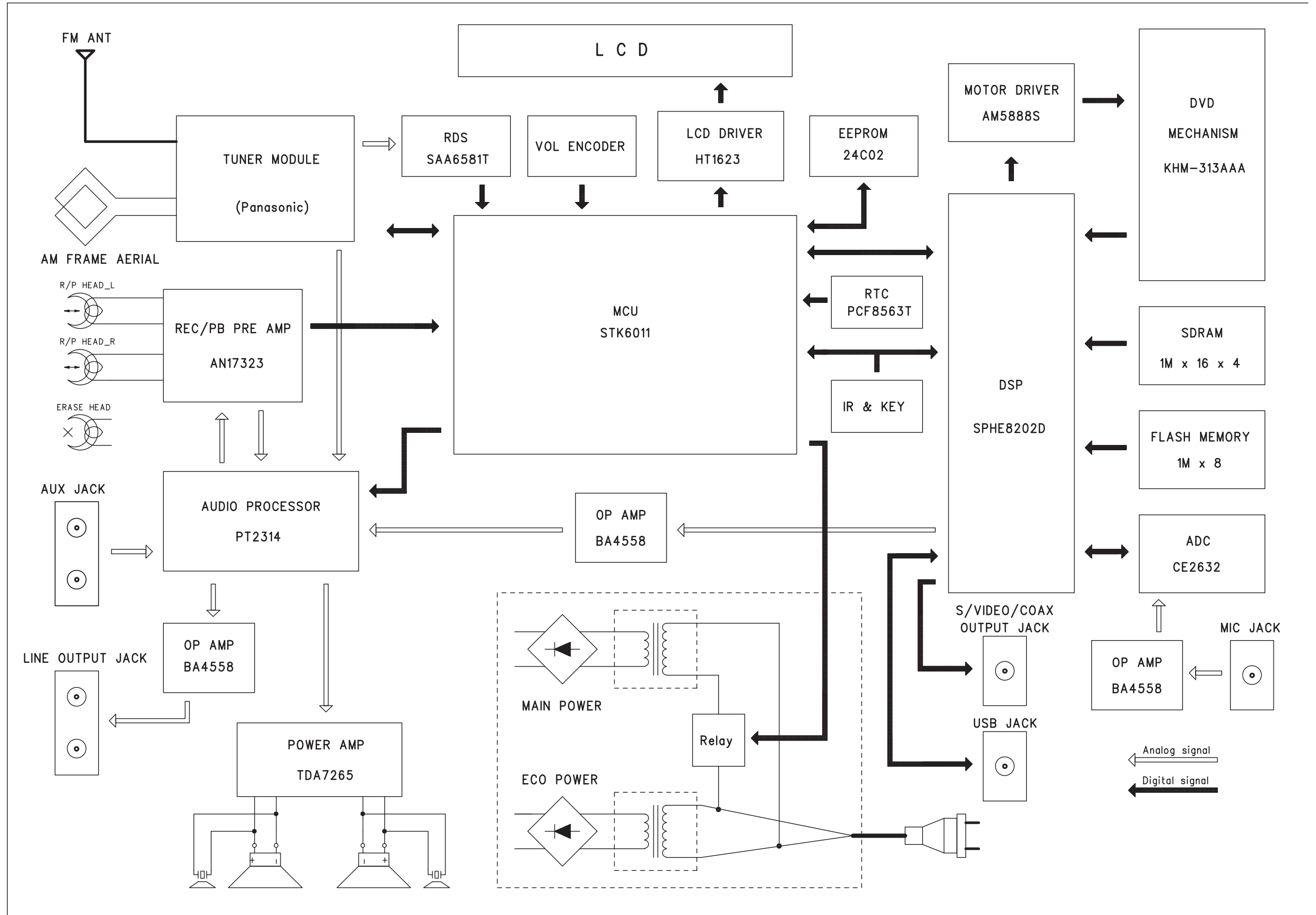
SOFTWARE VERSION CHECKING AND REGION CODE RESET**How to set region code:**

- 1) Press "SYSTEM MENU" on Remote Control ---->select "DEFAULT" and then select "RESTORE" .
It can reset the region code.
- 2) To change the region code ----> open CD door at CD mode and press "5168" on RC ----> select "REGION" and select region code.

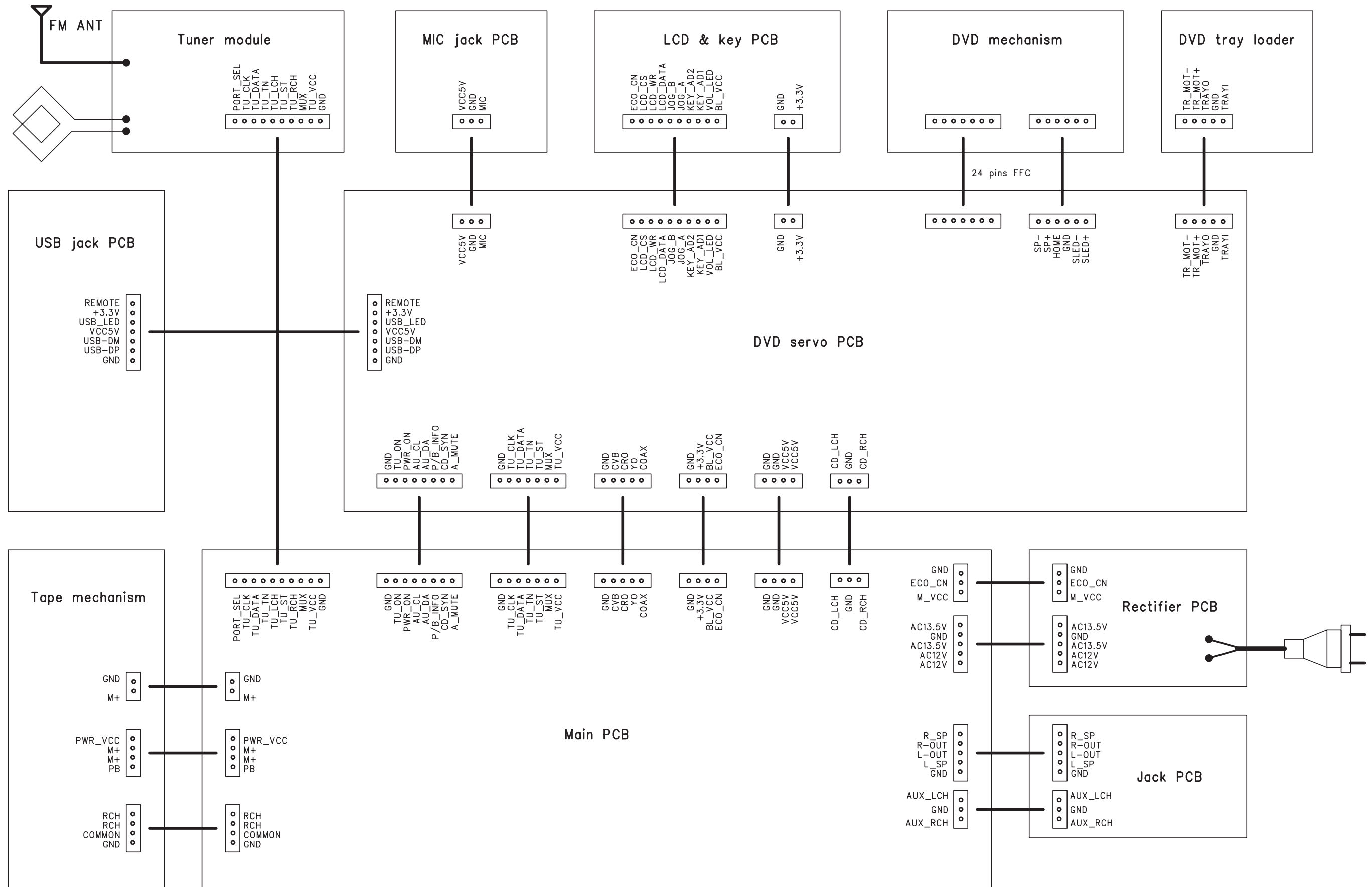
Software checking:

- 1) MCU version : at standby mode, press and hold "DBB" & "PLAY" buttons at the same time.
Servo version : CD mode, open CD door and press "5168" on Remote Control.

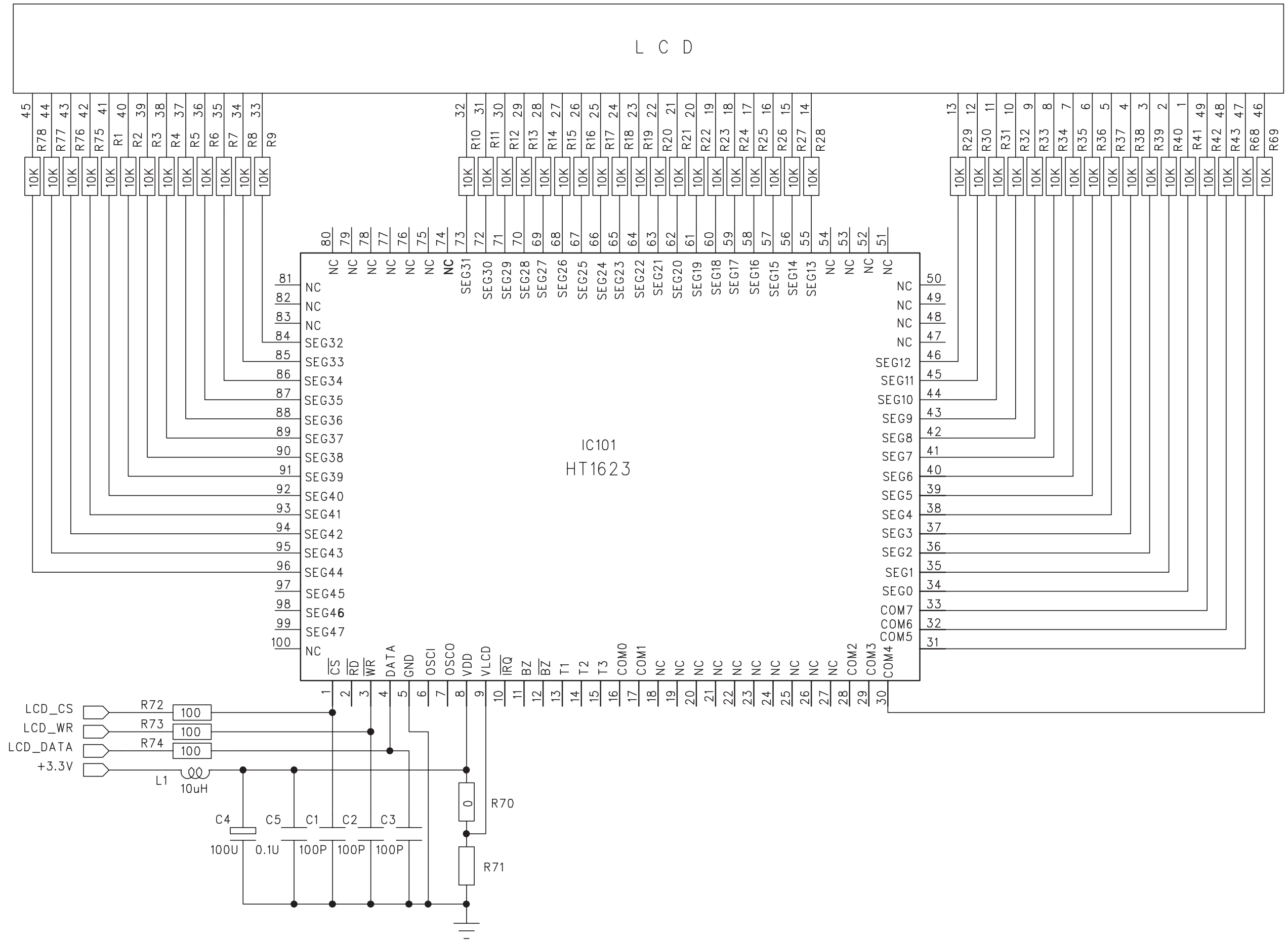
SET BLOCK DIAGRAM



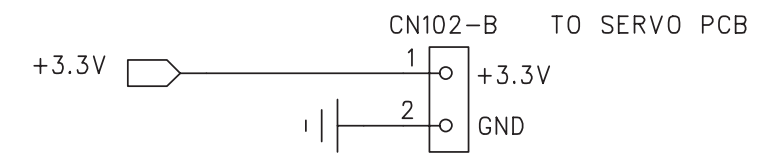
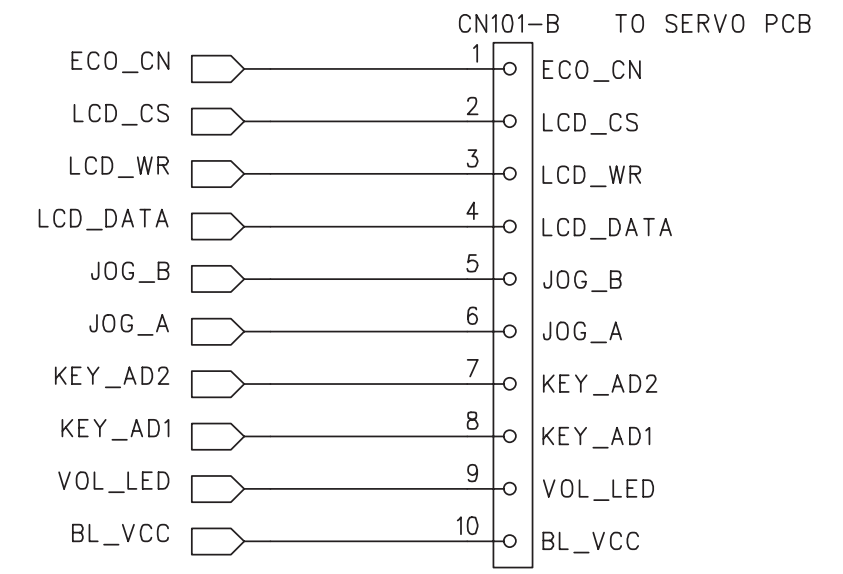
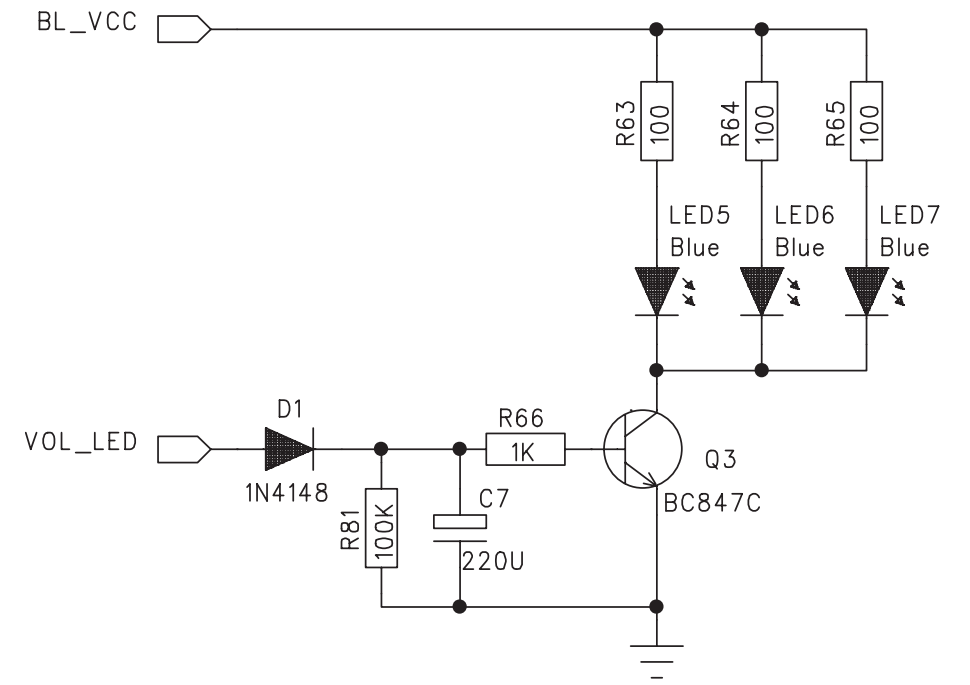
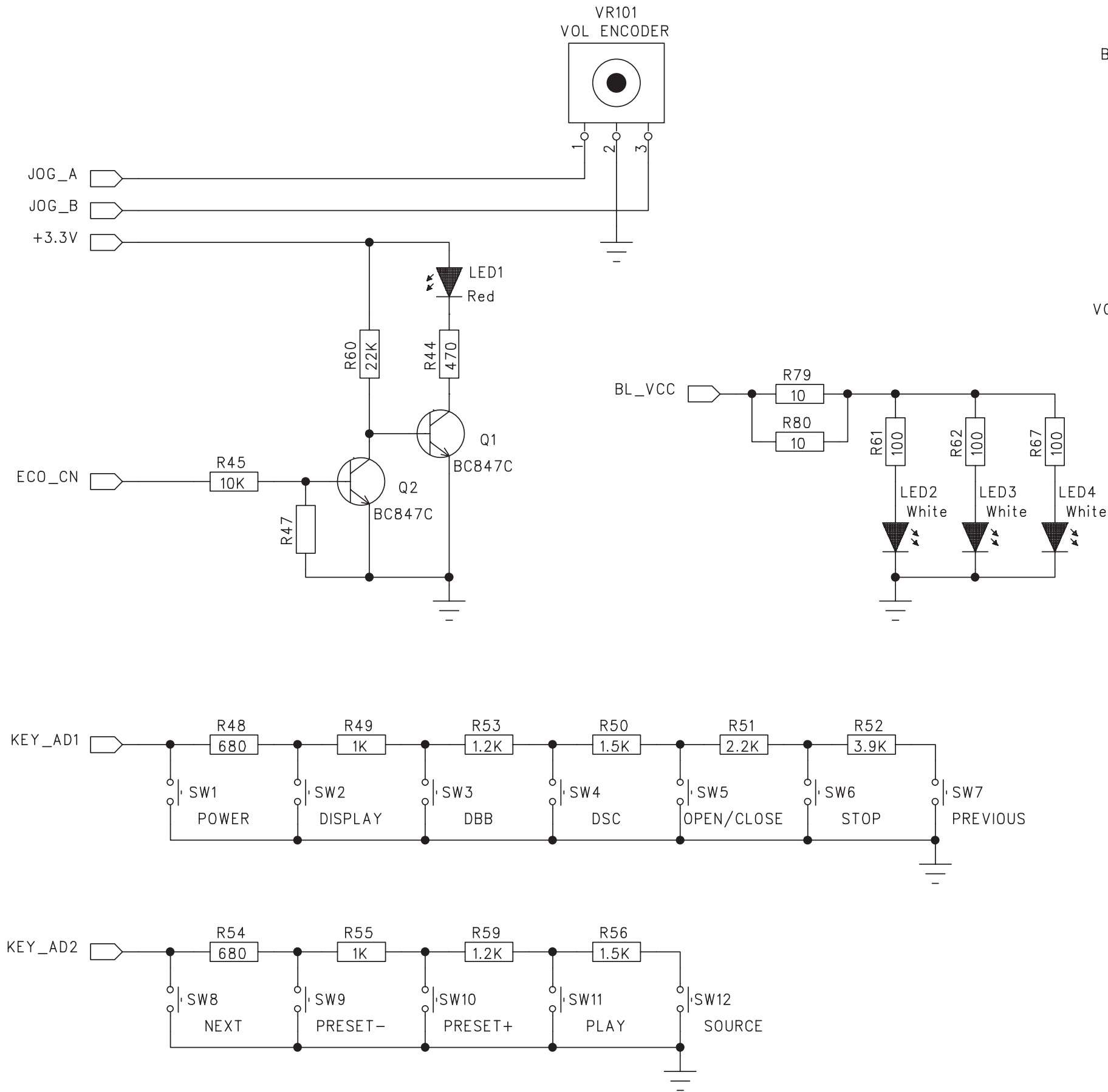
SET WIRING DIAGRAM



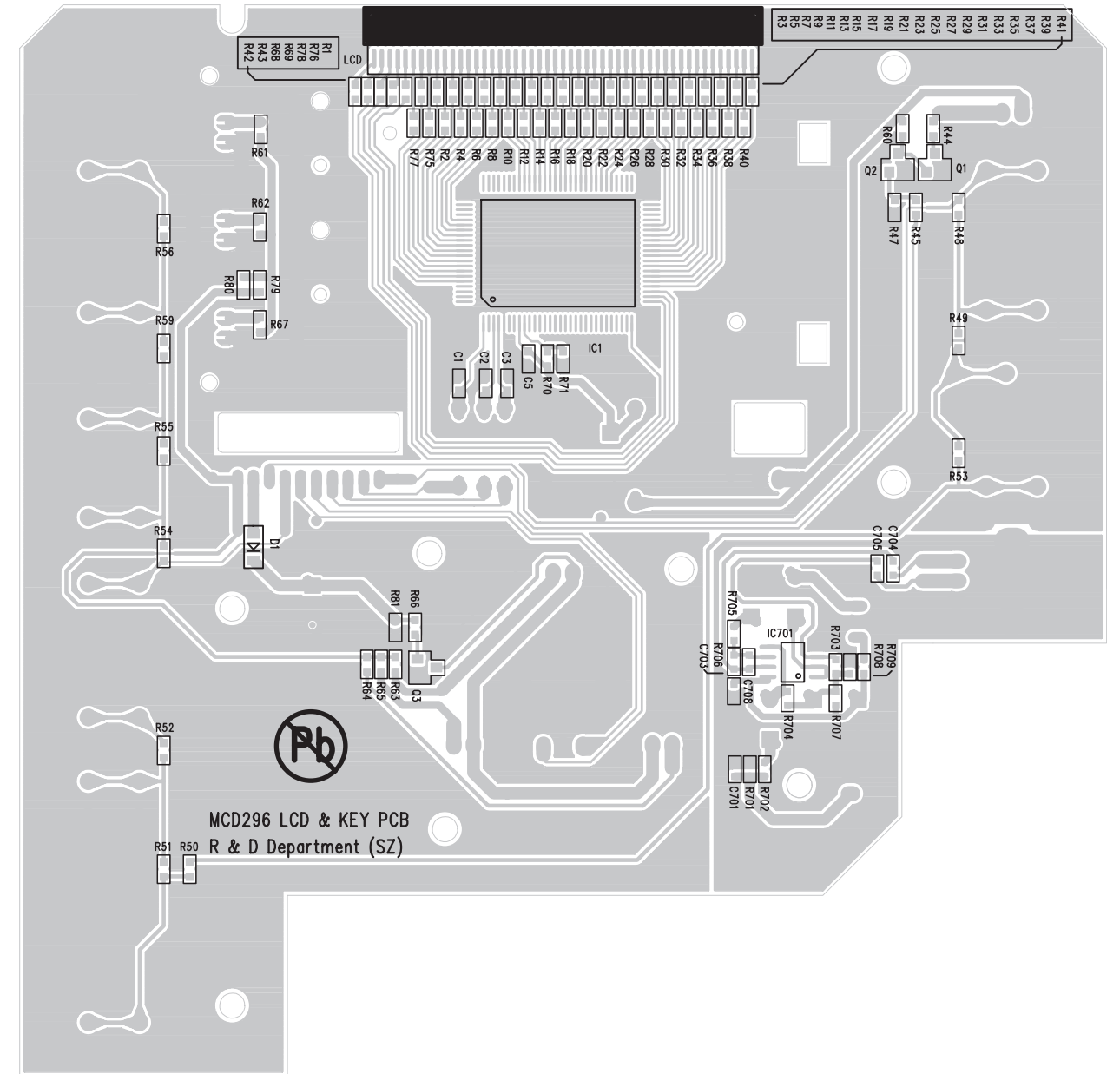
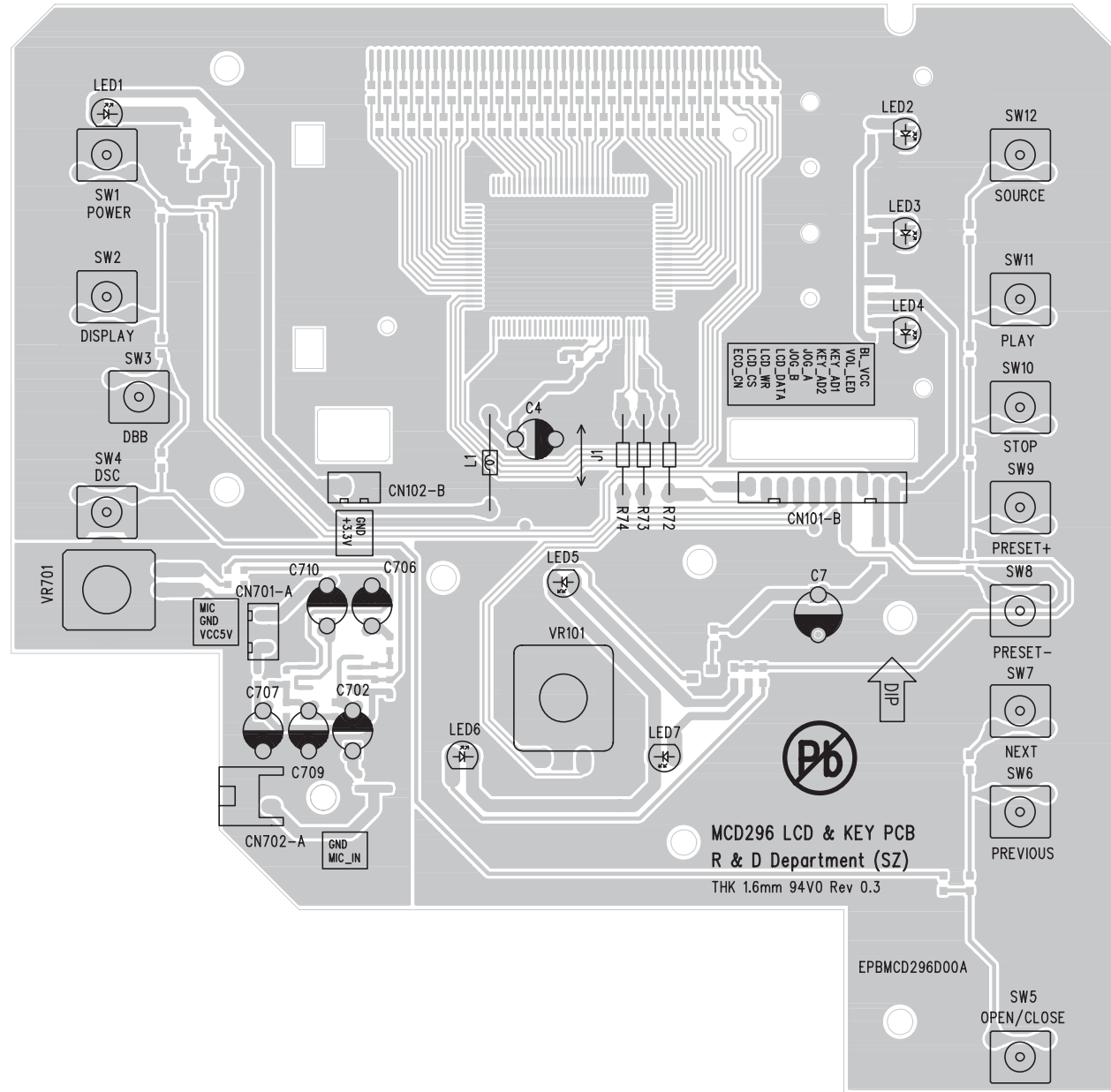
CIRCUIT DIAGRAM - LCD & KEY BOARD Part 1



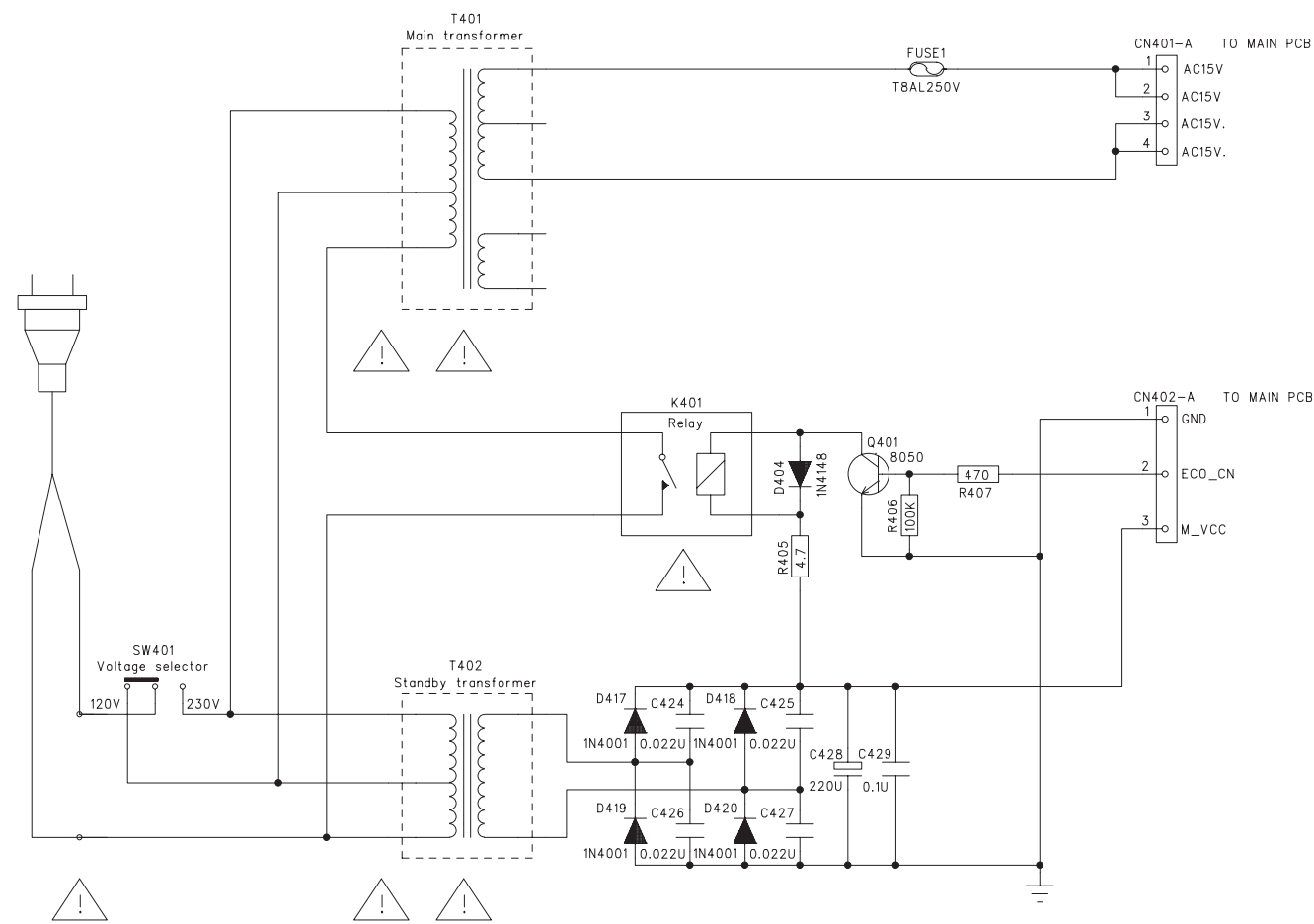
CIRCUIT DIAGRAM - LCD & KEY BOARD
Part 2



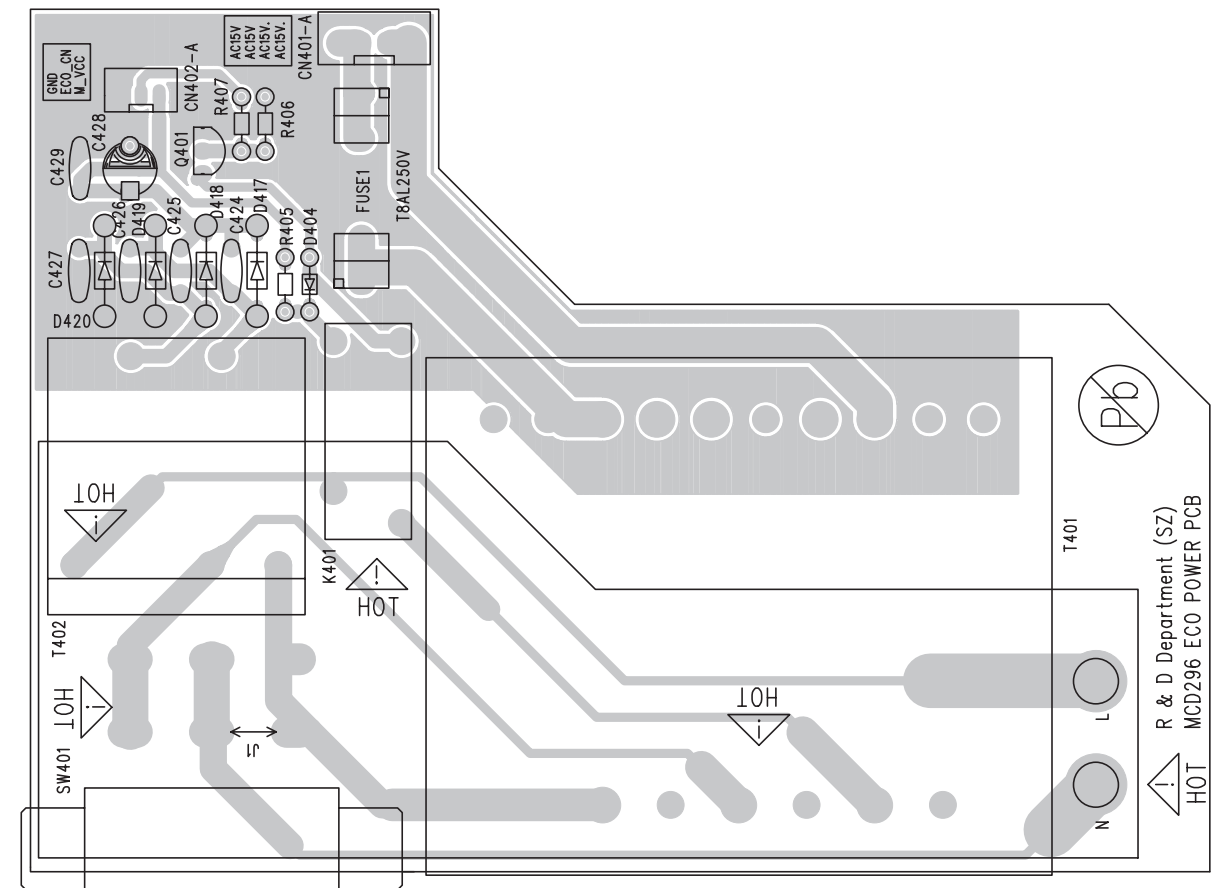
LAYOUT DIAGRAM - LCD & KEY BOARD



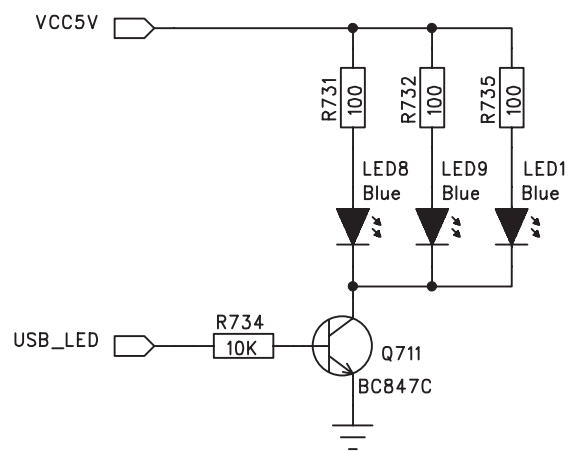
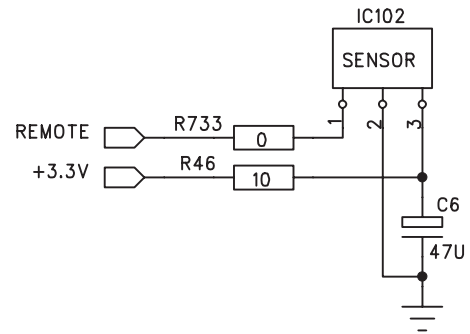
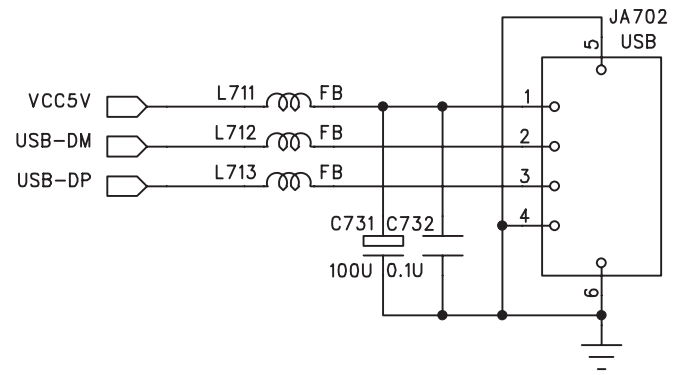
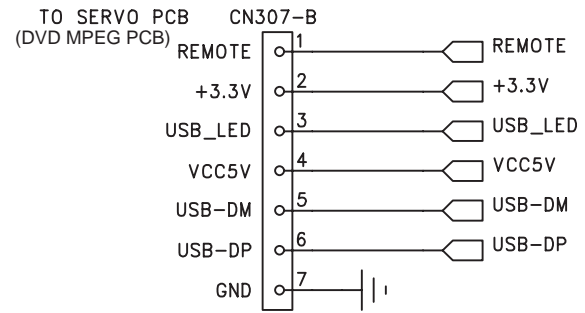
CIRCUIT DIAGARM - RECTIFIER BOARD



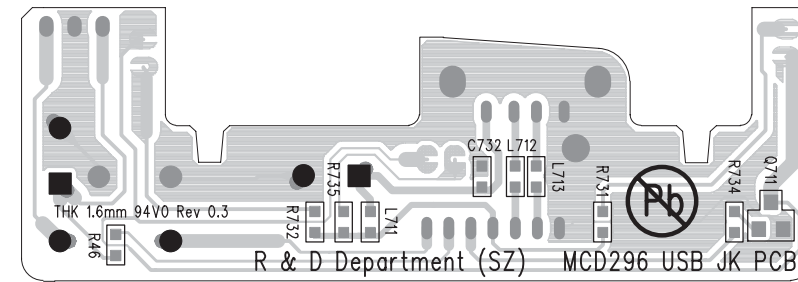
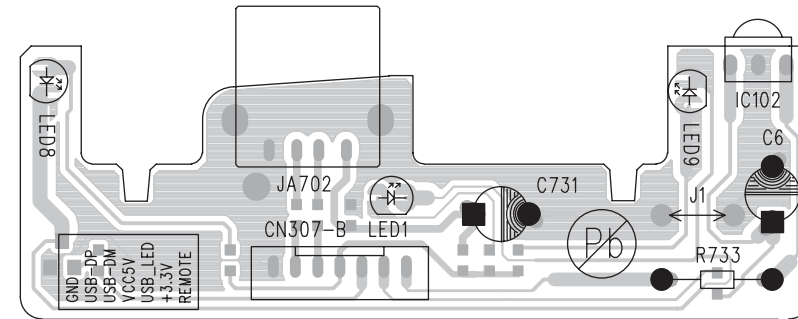
LAYOUT DIAGARM - RECTIFIER BOARD



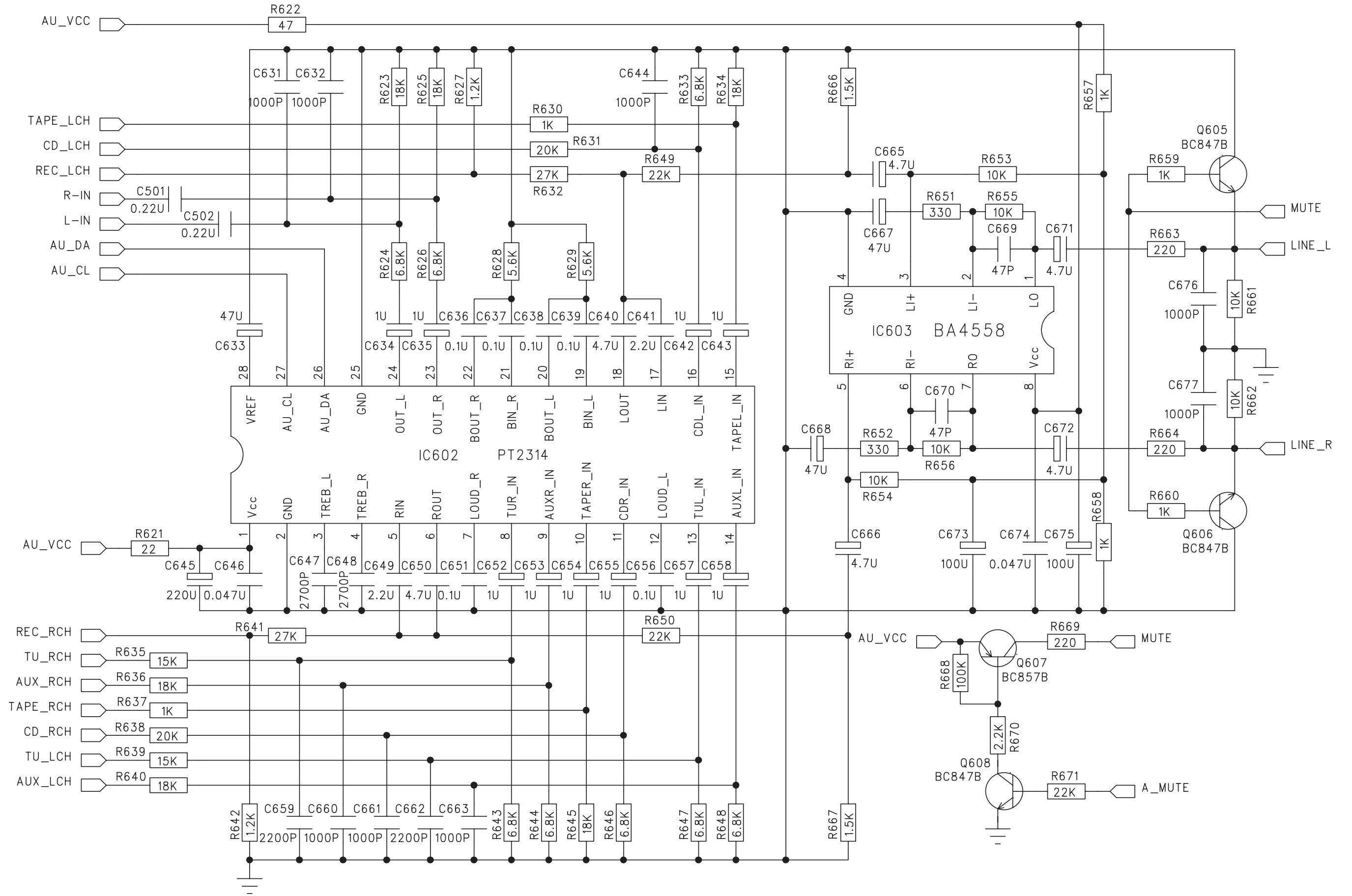
CIRCUIT DIAGARM - USB JACK BOARD



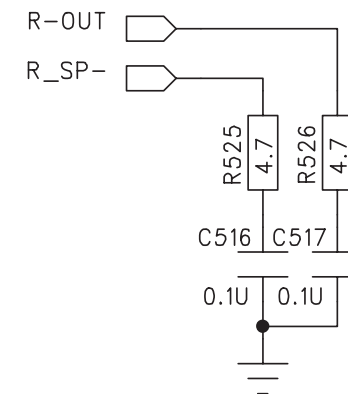
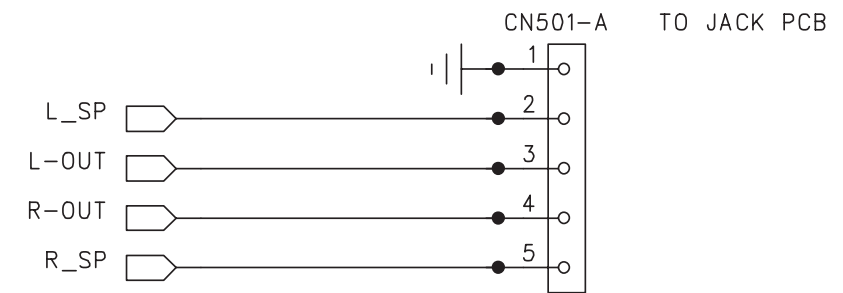
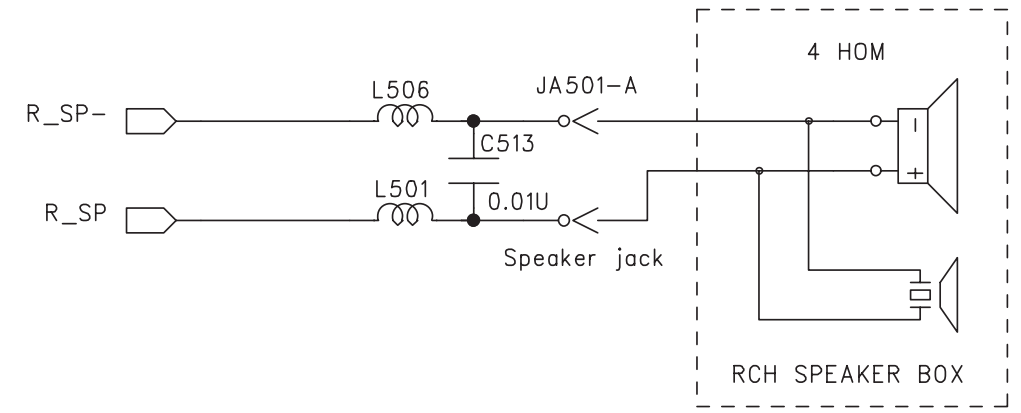
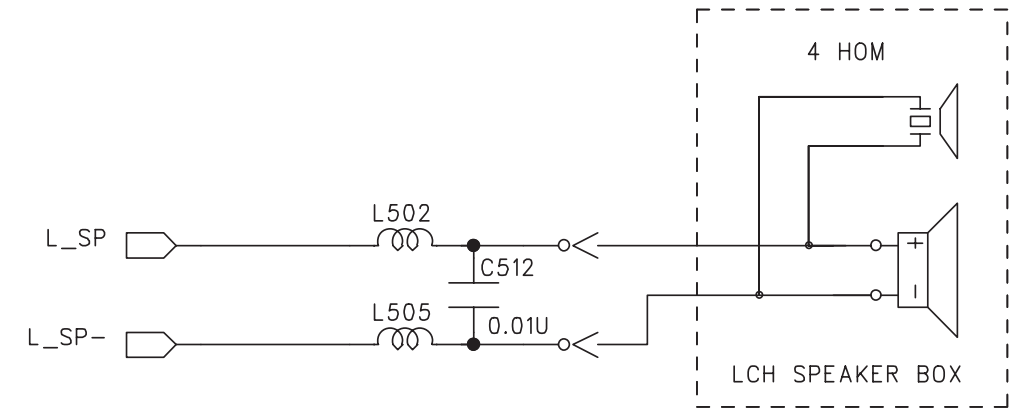
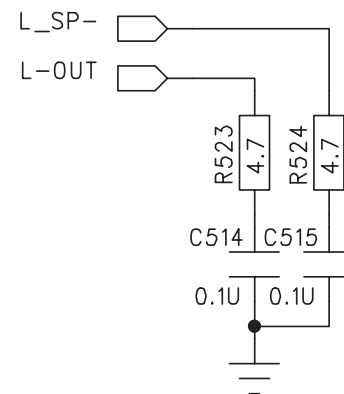
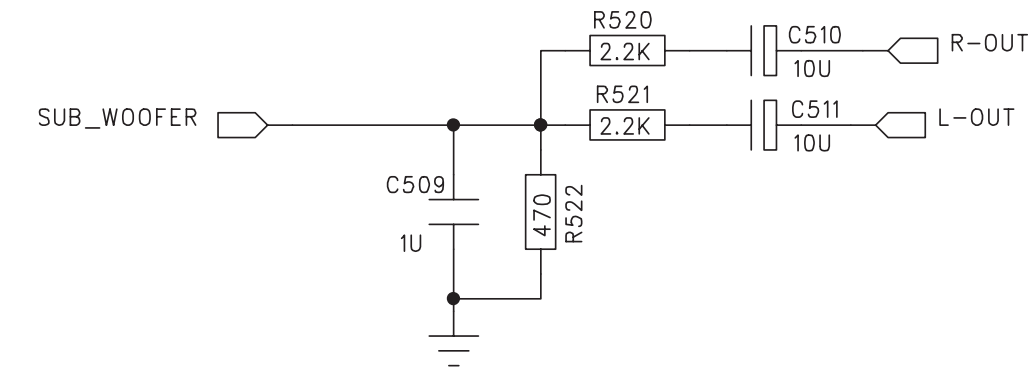
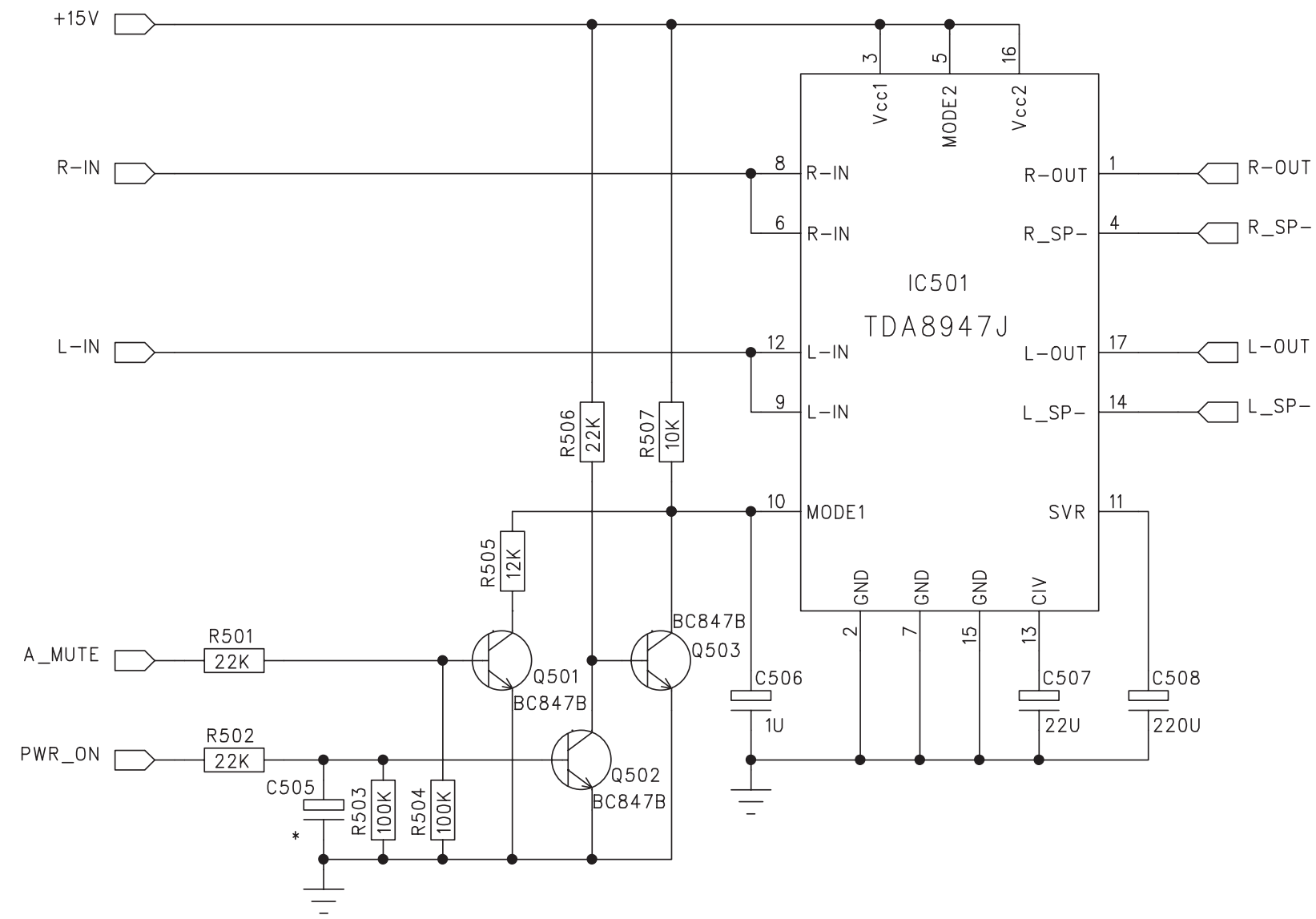
LAYOUT DIAGARM - USB JACK BOARD



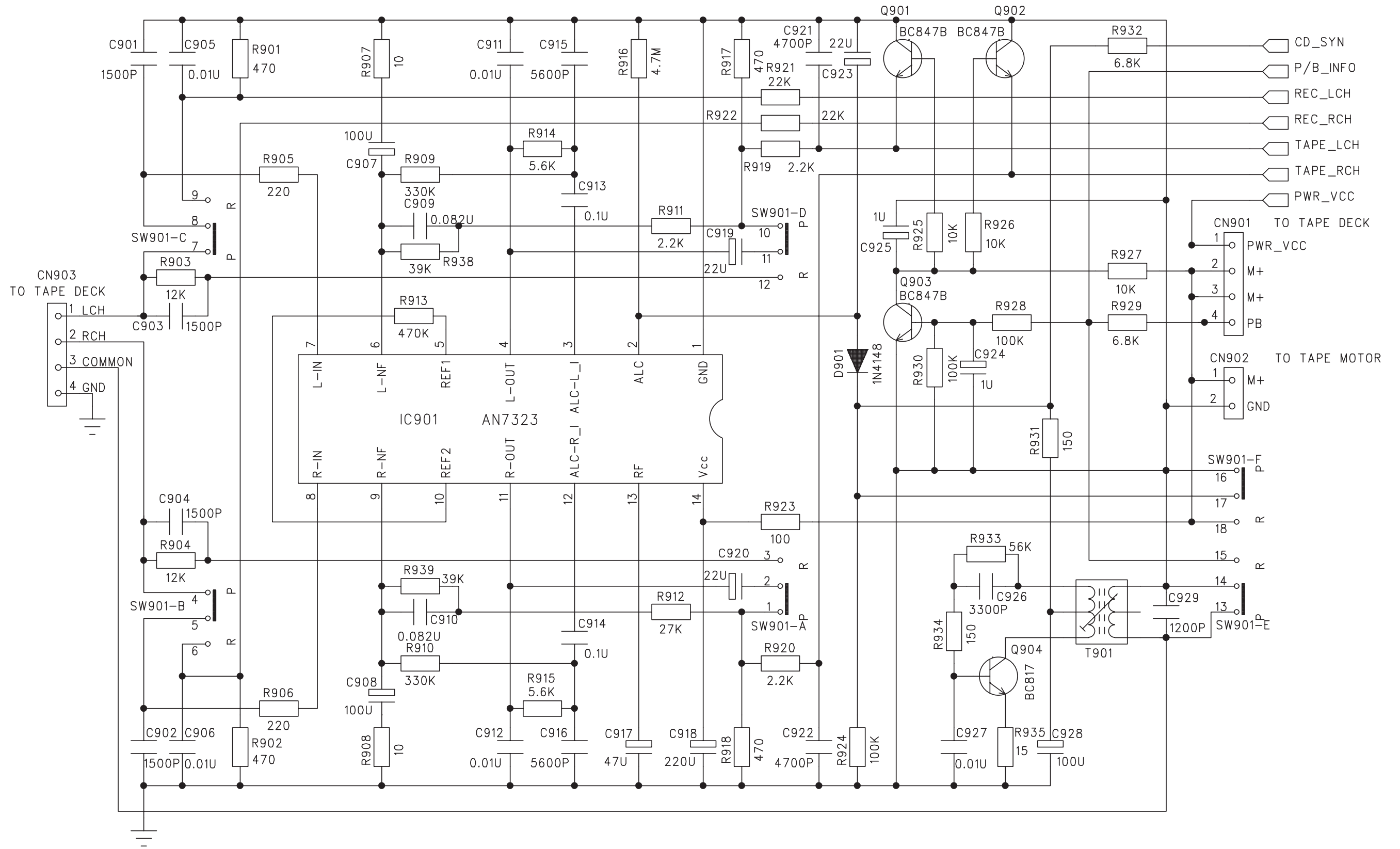
CIRCUIT DIAGRAM - MAIN BOARD



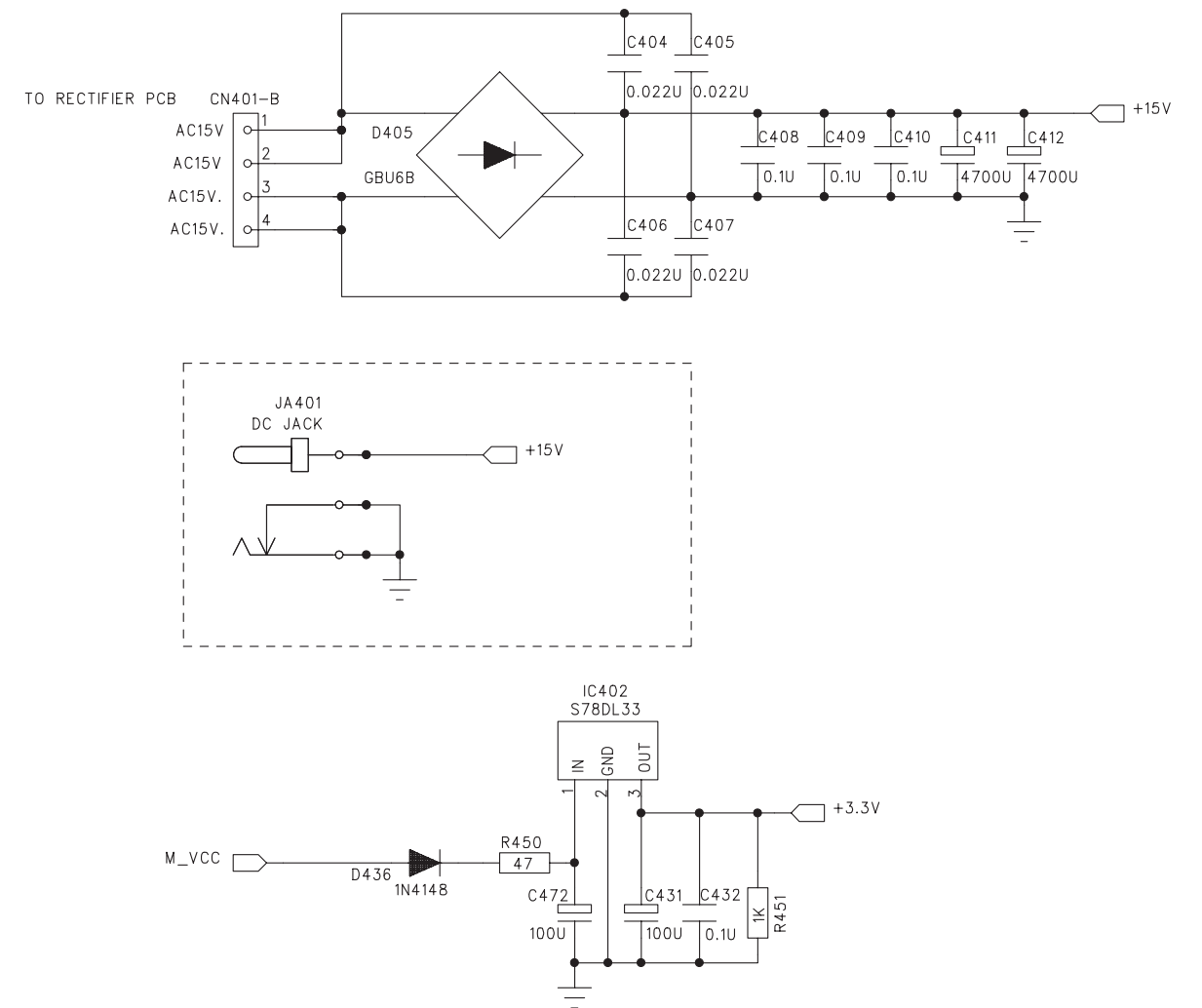
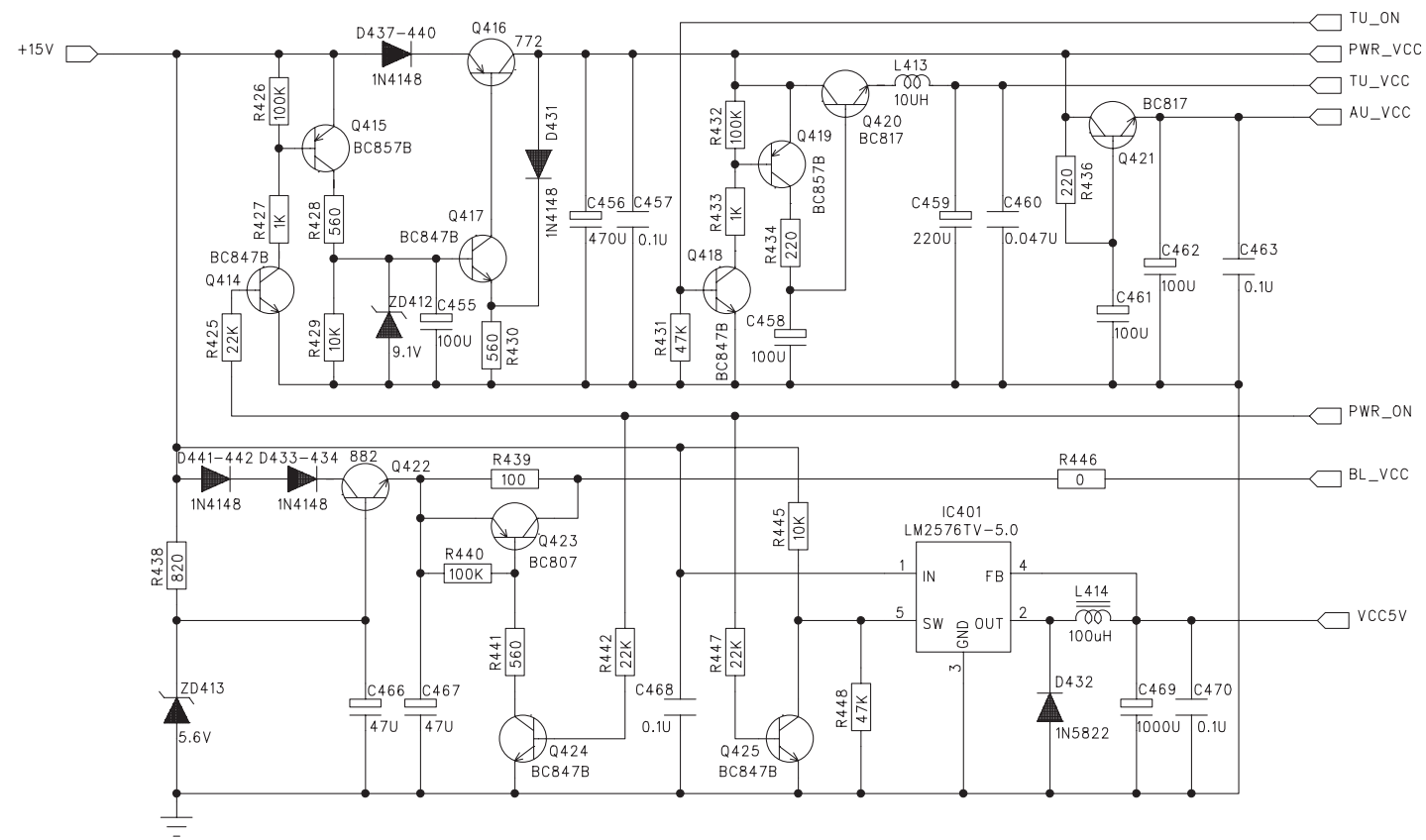
CIRCUIT DIAGRAM - MAIN BOARD



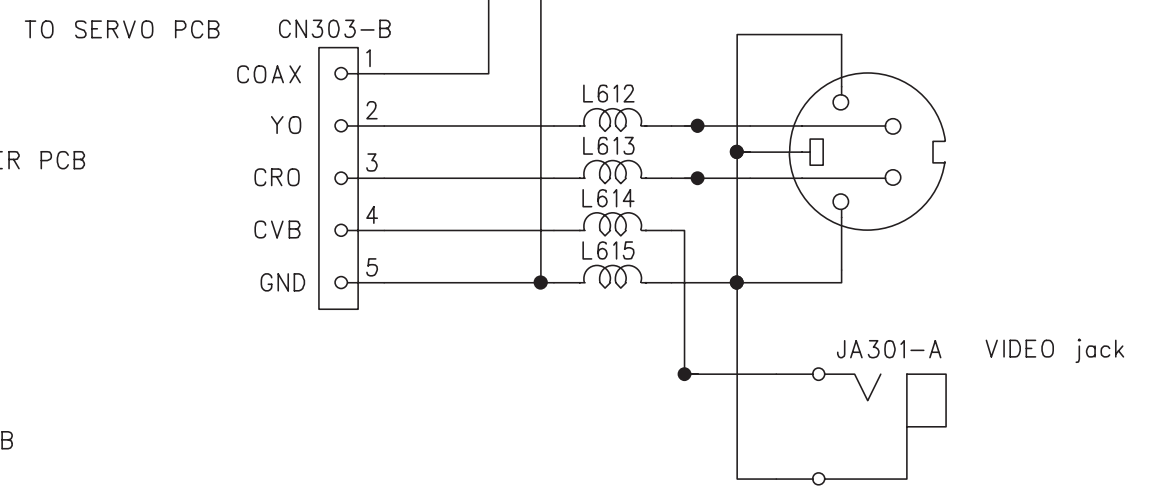
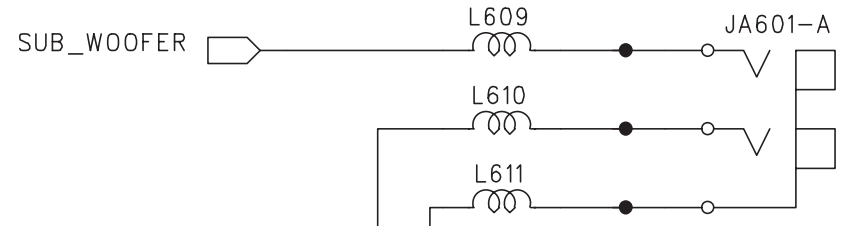
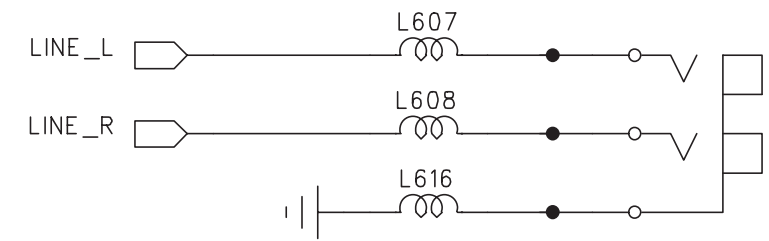
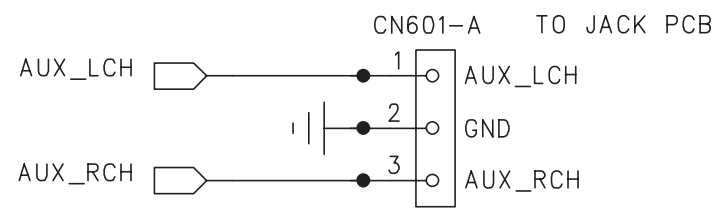
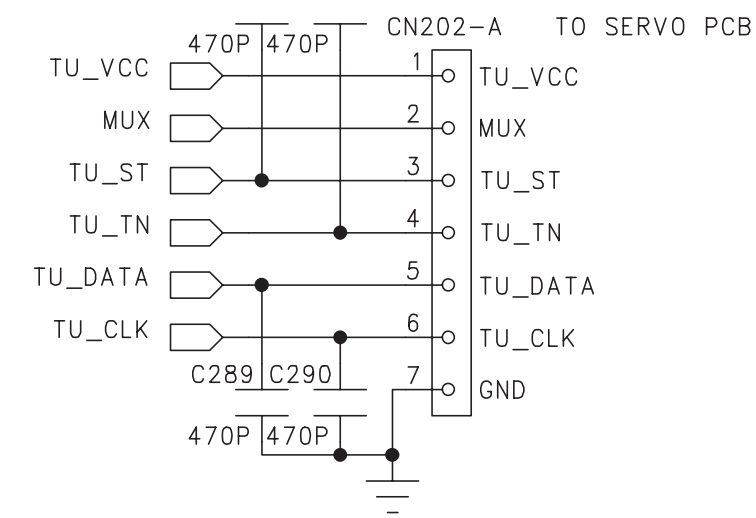
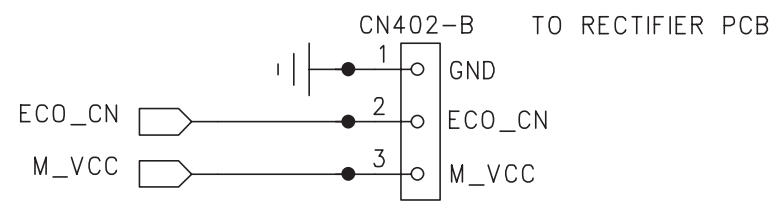
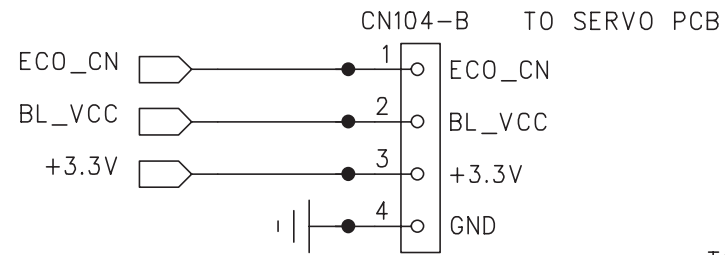
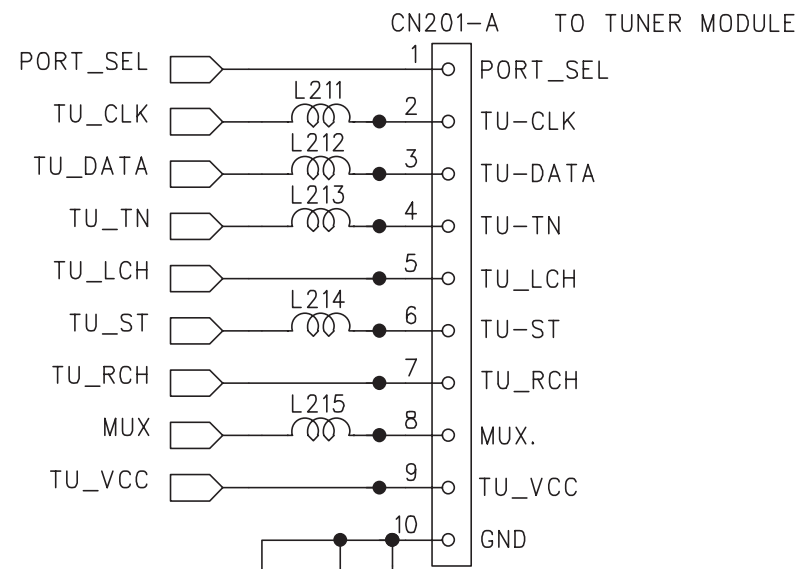
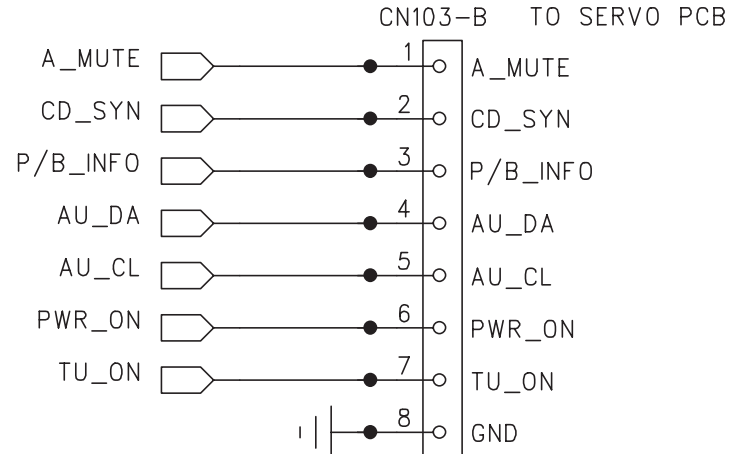
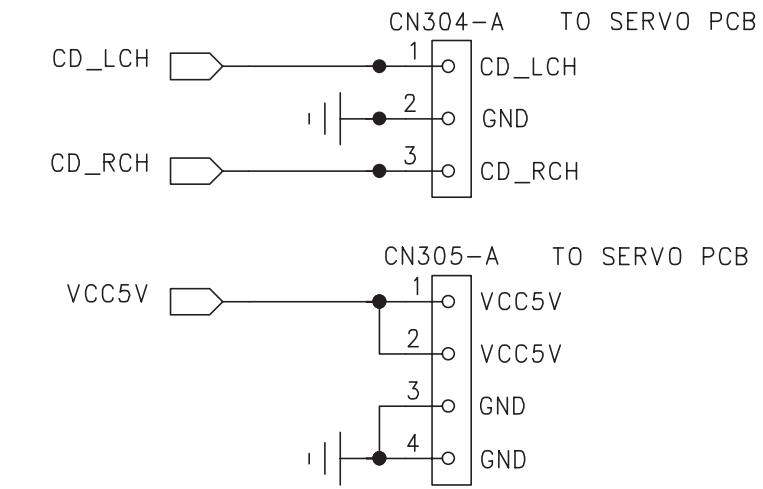
CIRCUIT DIAGRAM - MAIN BOARD



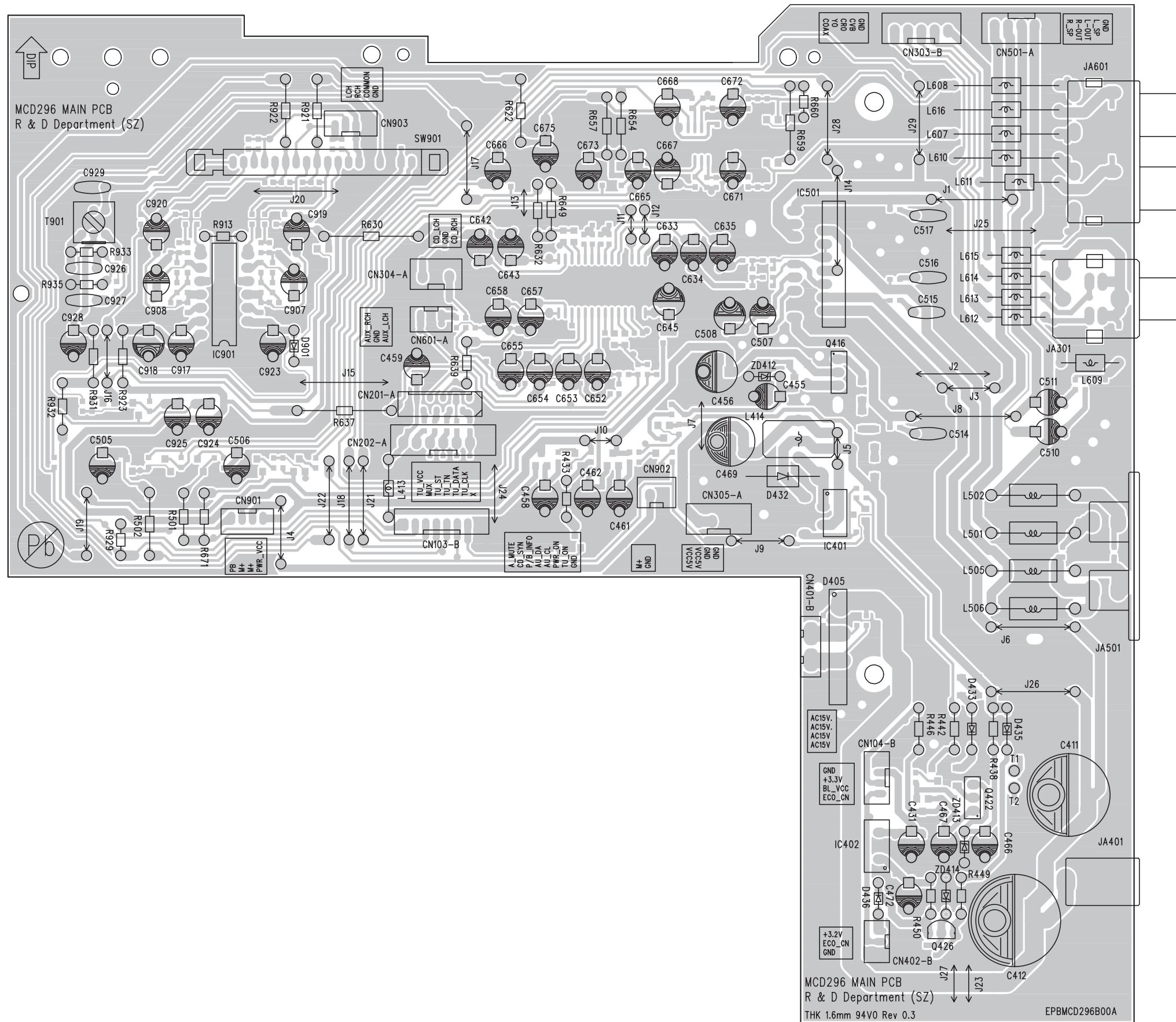
CIRCUIT DIAGRAM - MAIN BOARD



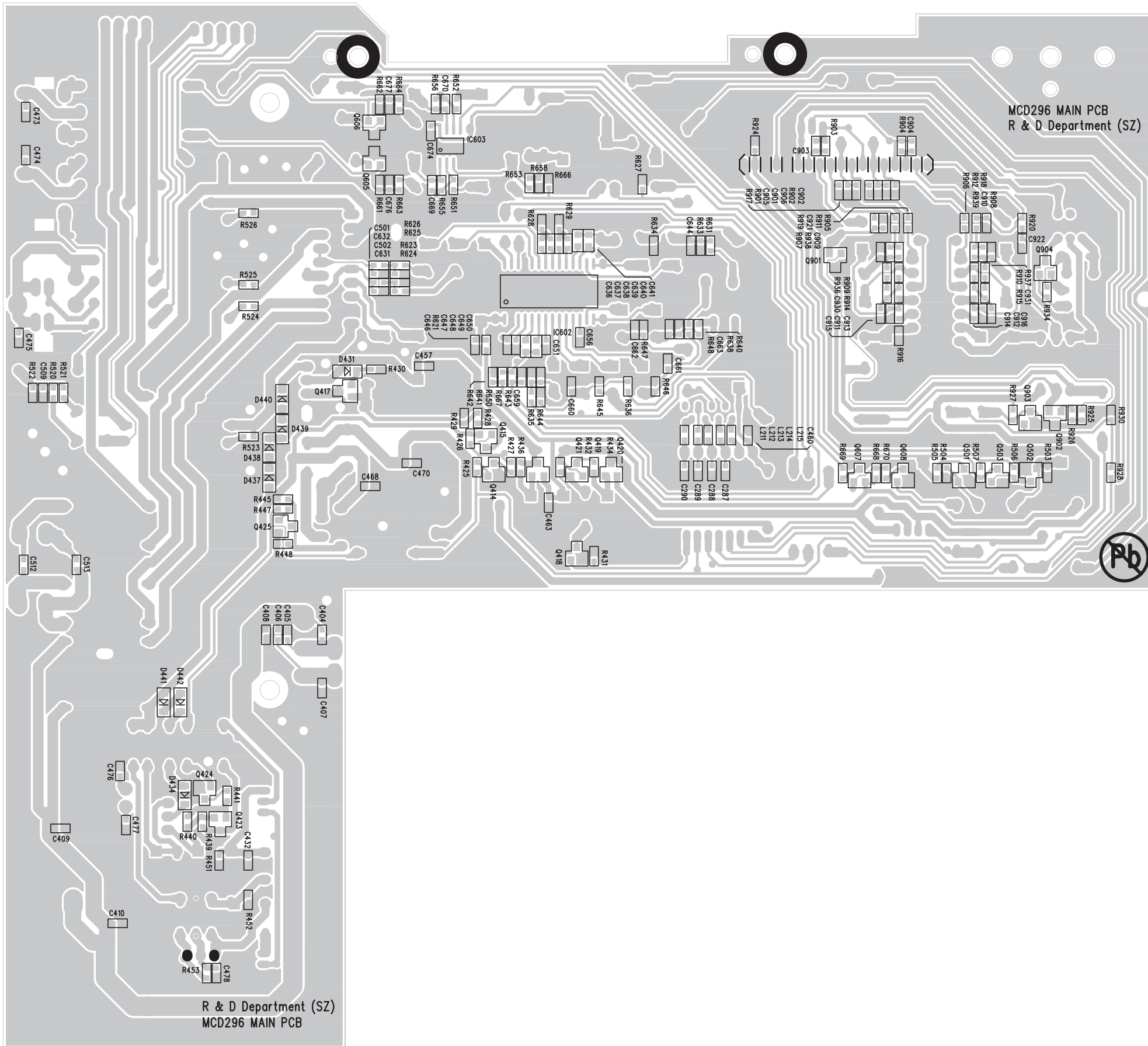
CIRCUIT DIAGRAM - MAIN BOARD



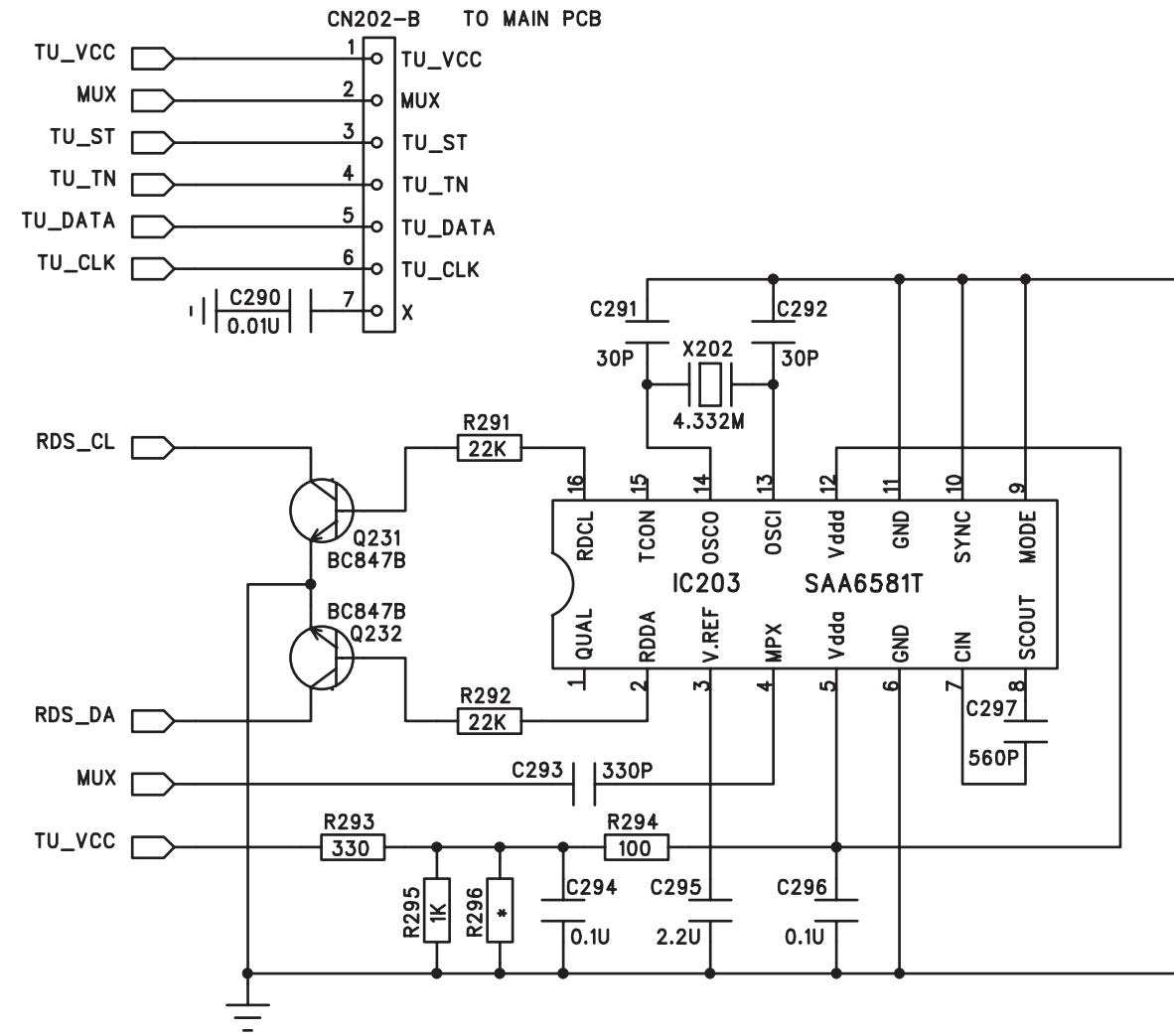
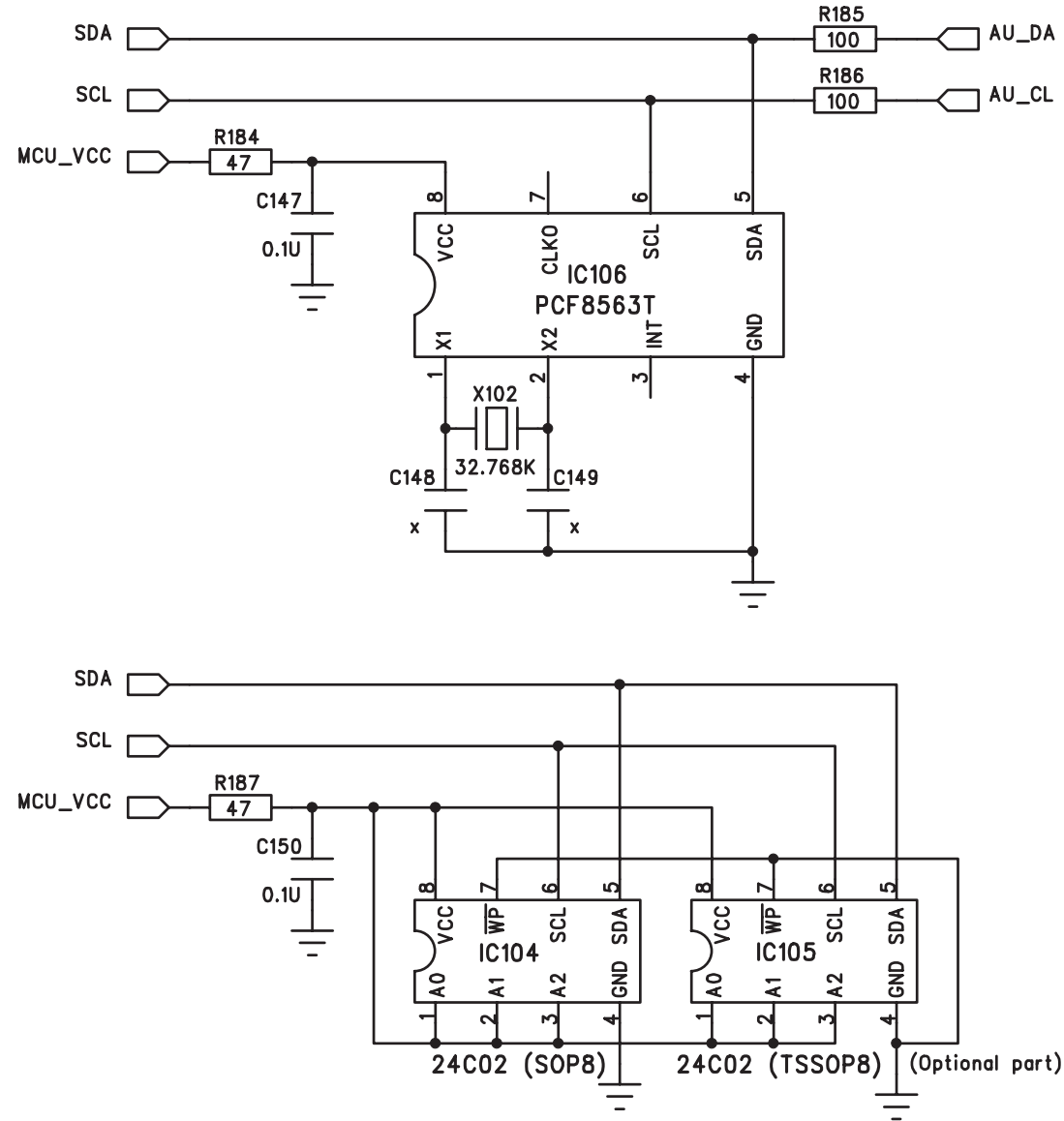
LAYOUT DIAGRAM - MAIN BOARD



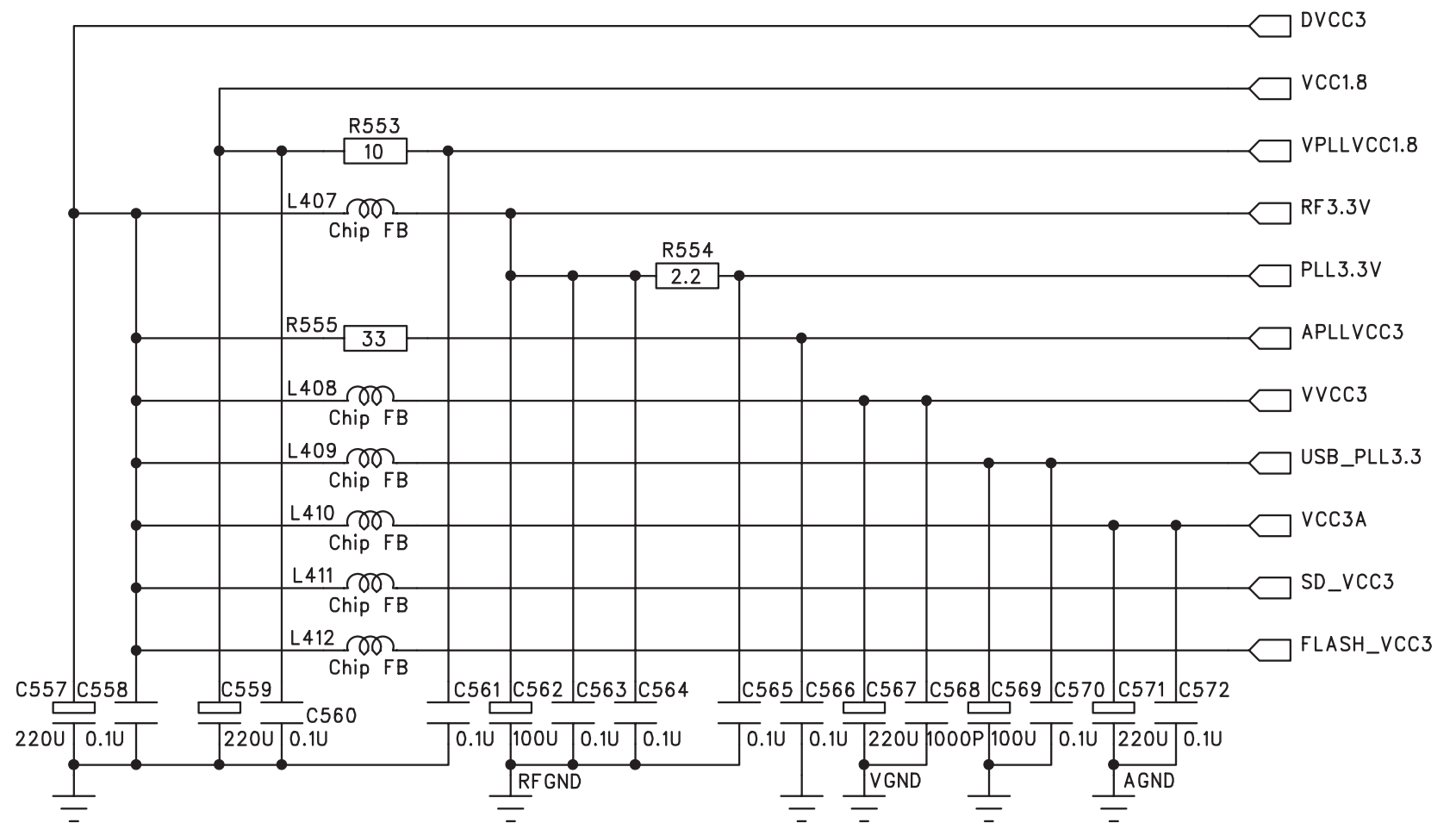
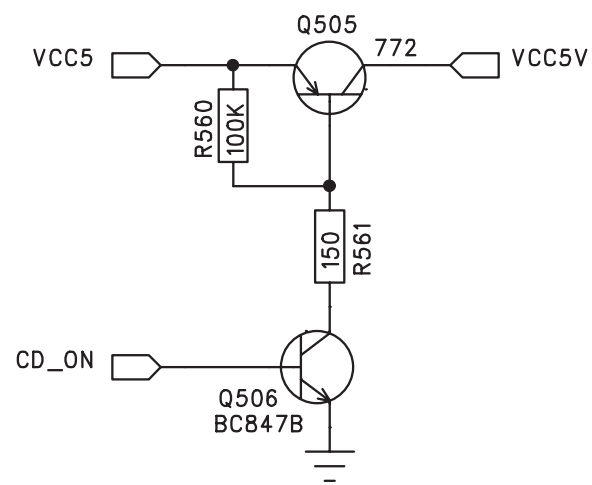
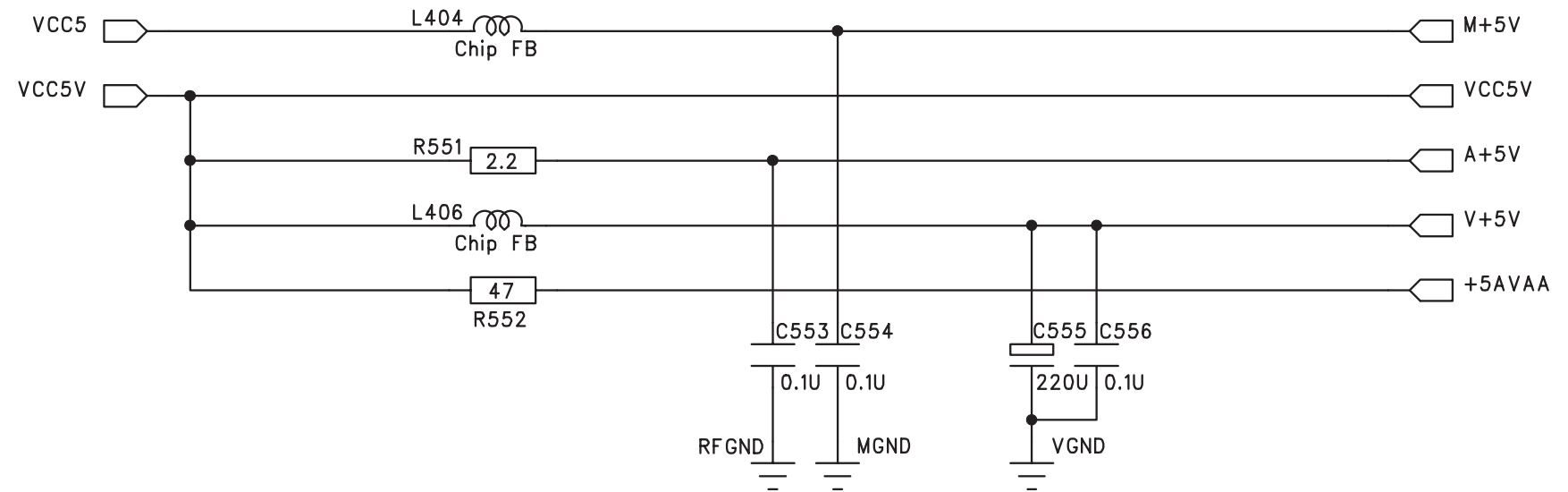
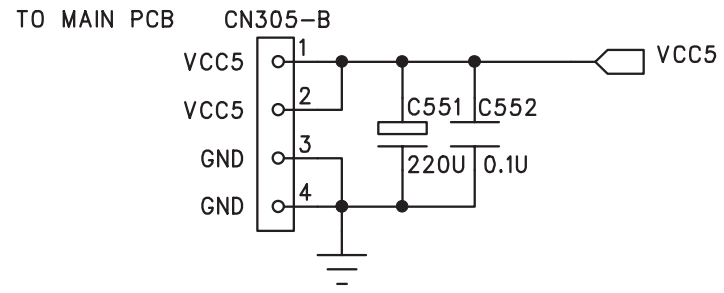
LAYOUT DIAGRAM - MAIN BOARD



CIRCUIT DIAGRAM - DVD MPEG BOARD
 MPEG is not repaired, diagram for reference only.

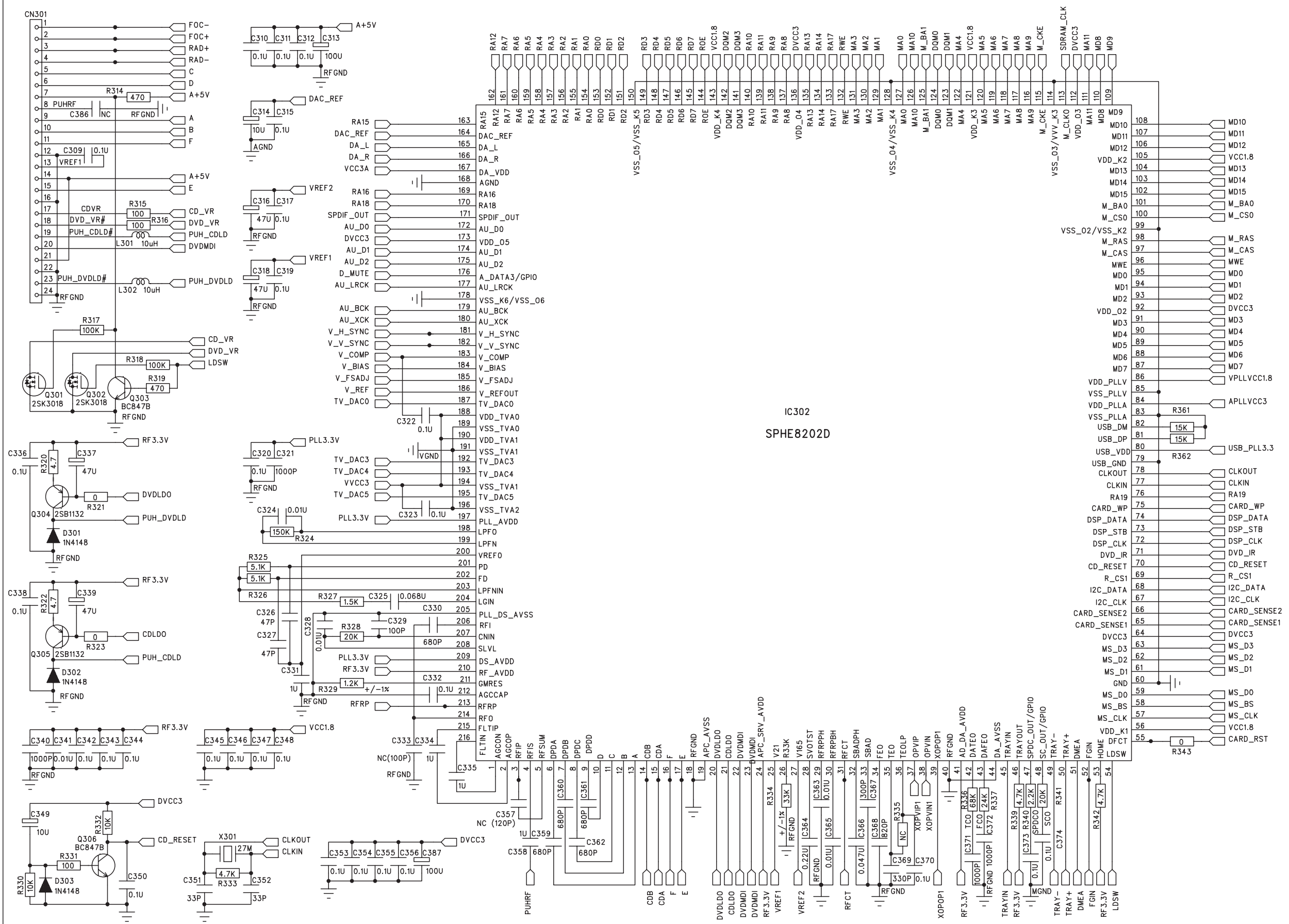


CIRCUIT DIAGRAM - DVD MPEG BOARD
MPEG is not repaired, diagram for reference only.



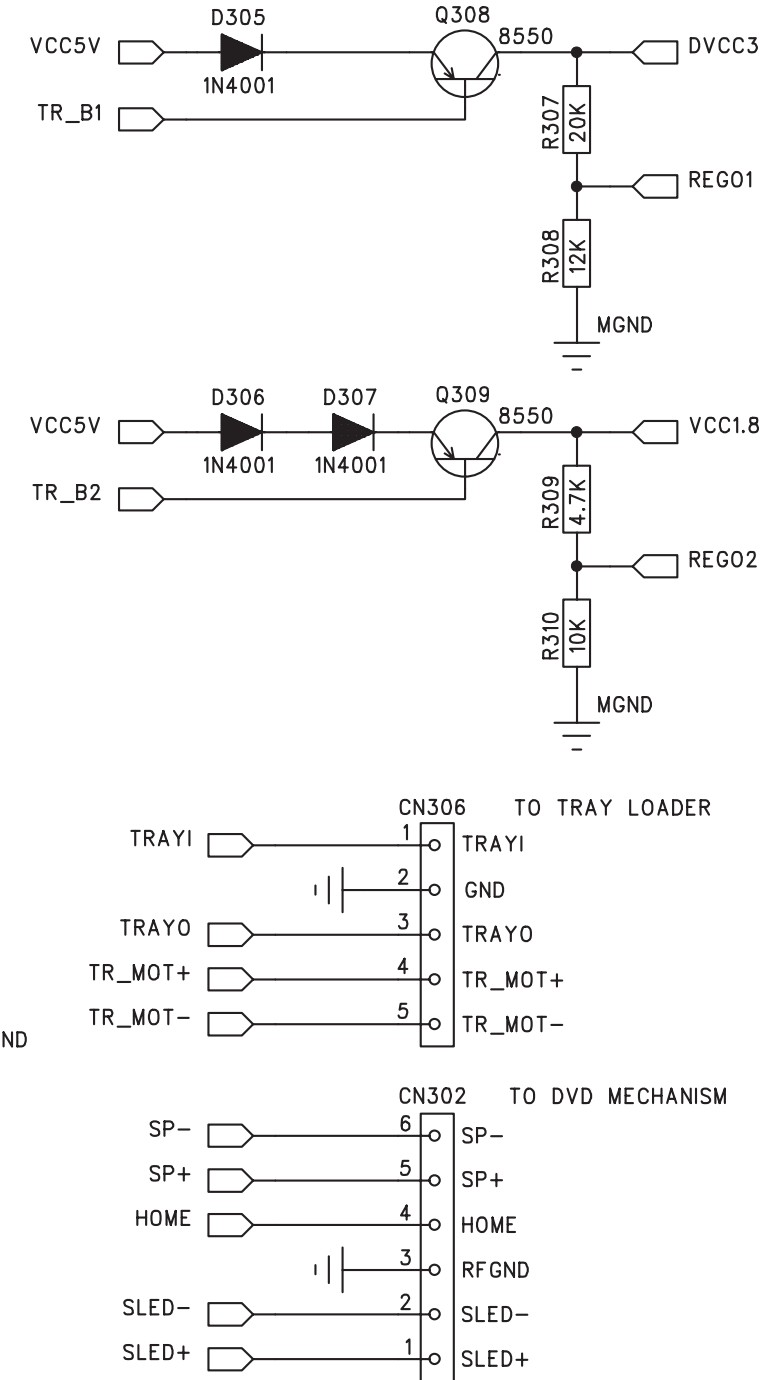
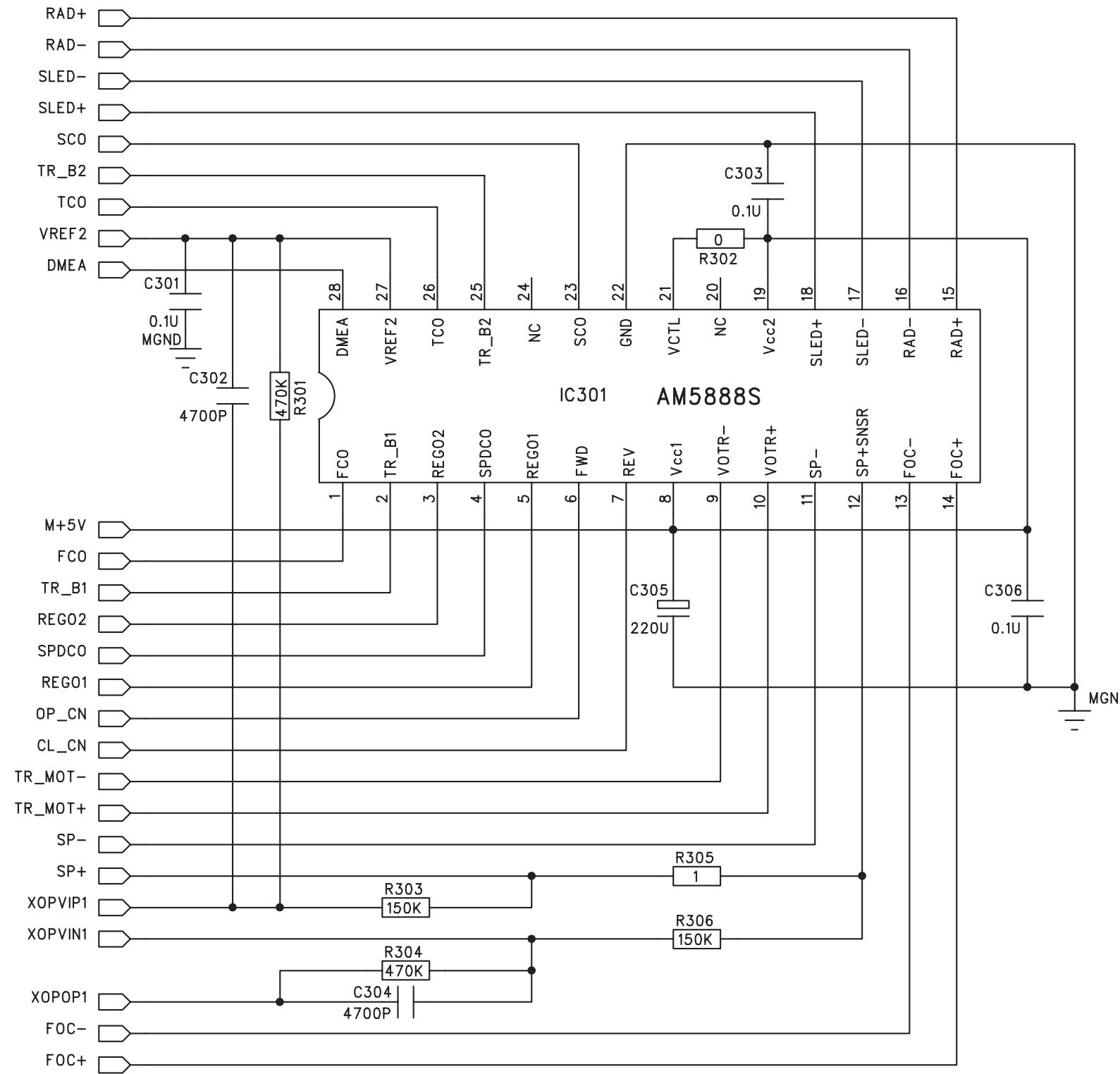
CIRCUIT DIAGRAM - DVD MPEG BOARD

MPEG is not repaired, diagram for reference only.

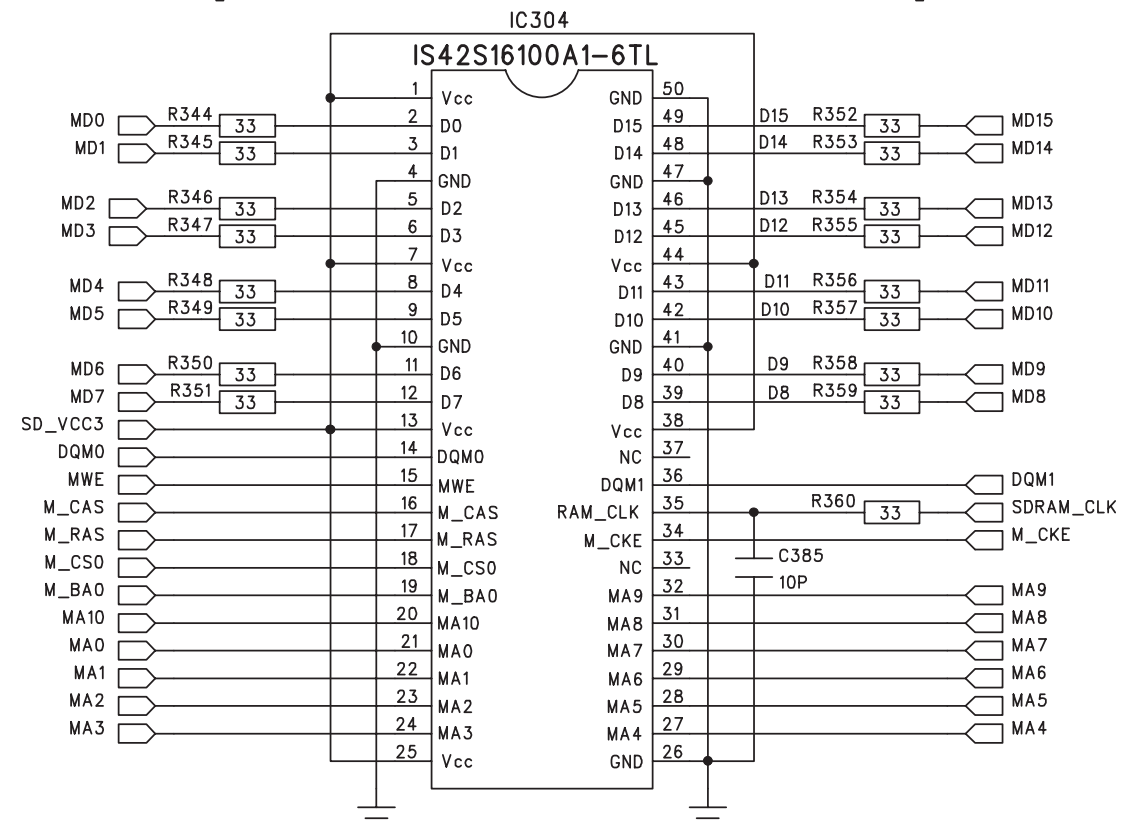
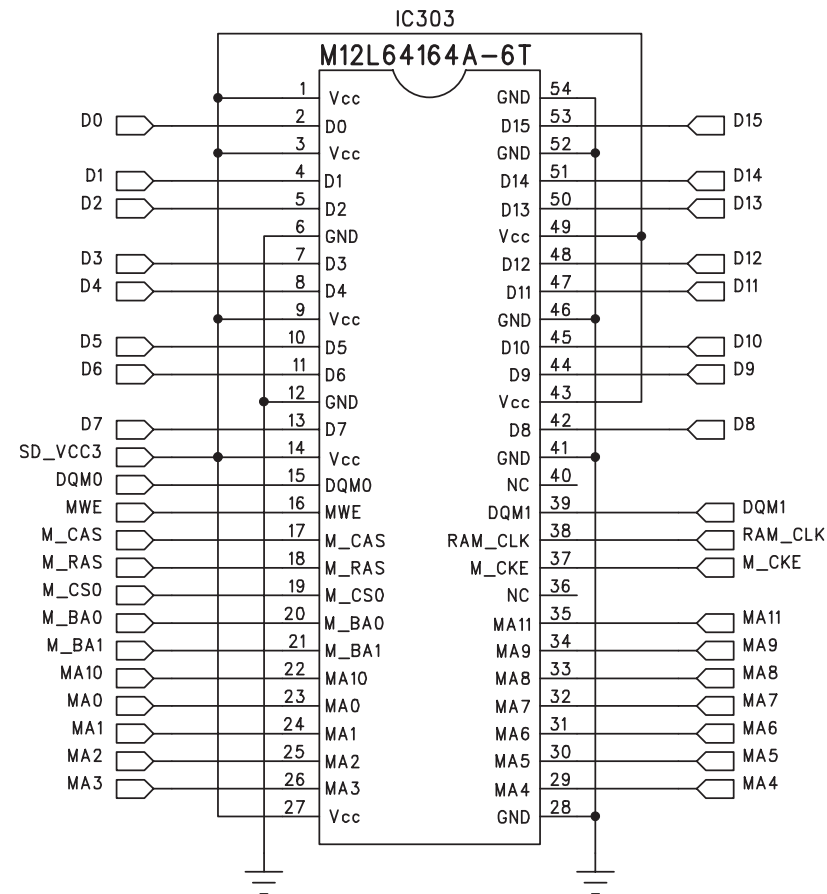
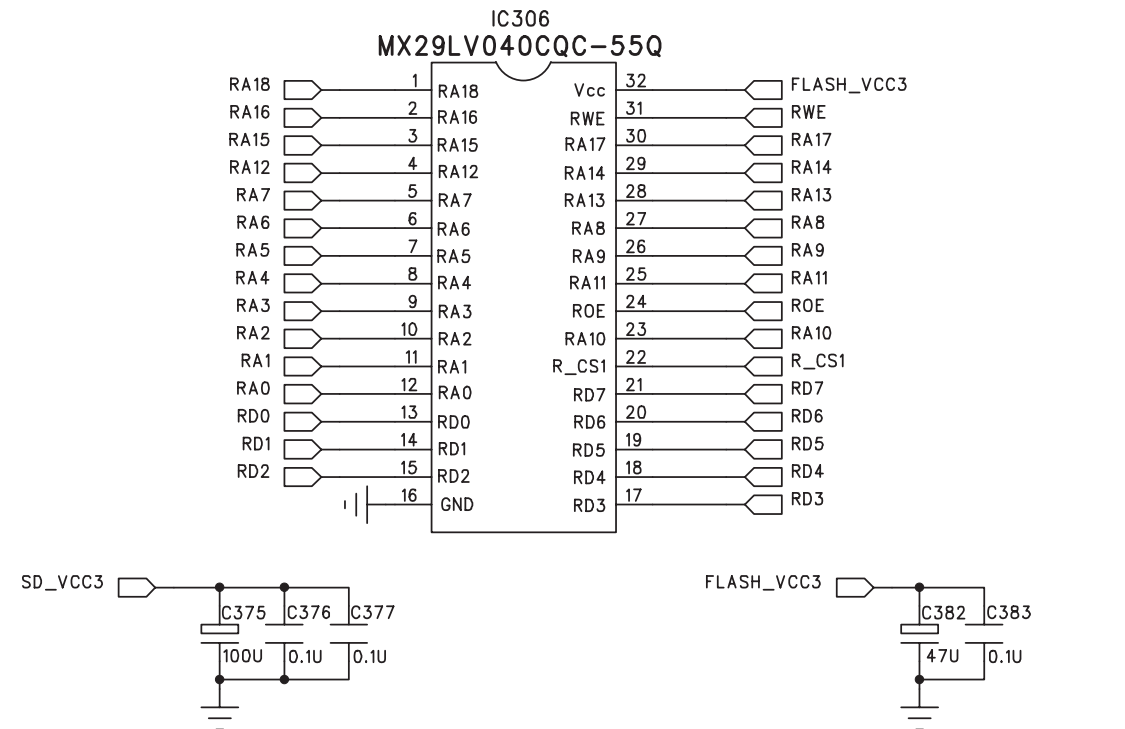
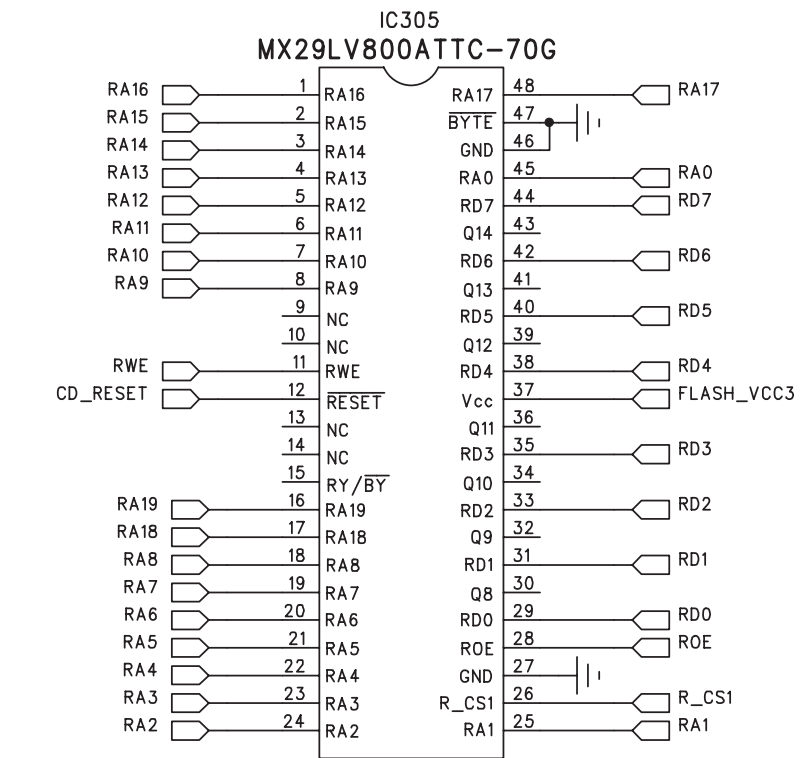


CIRCUIT DIAGRAM - DVD MPEG BOARD

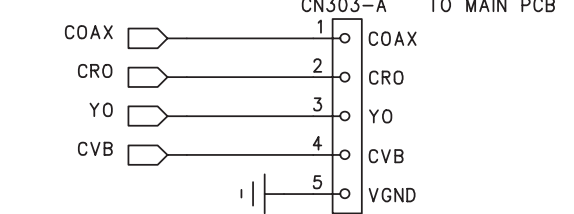
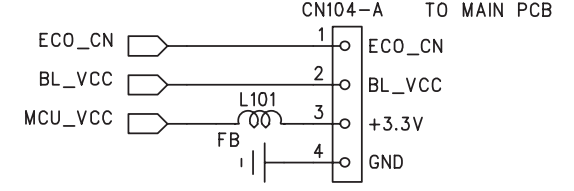
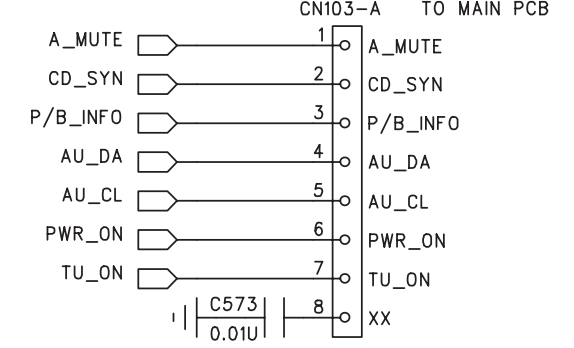
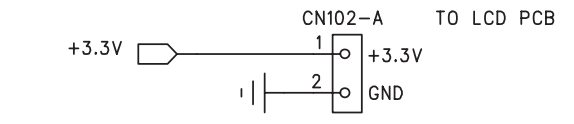
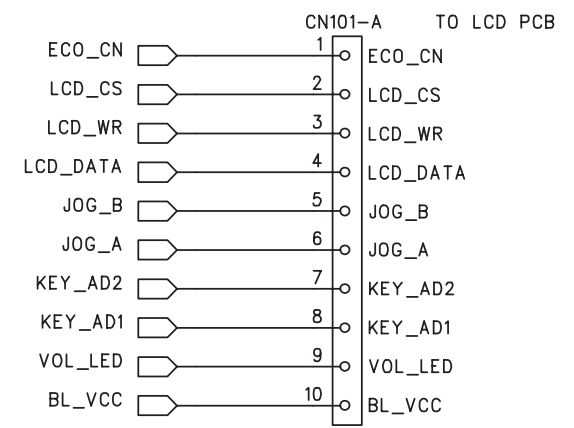
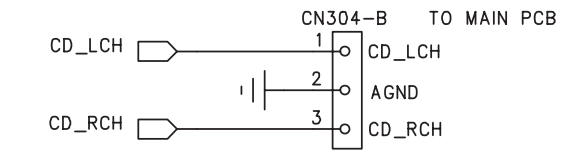
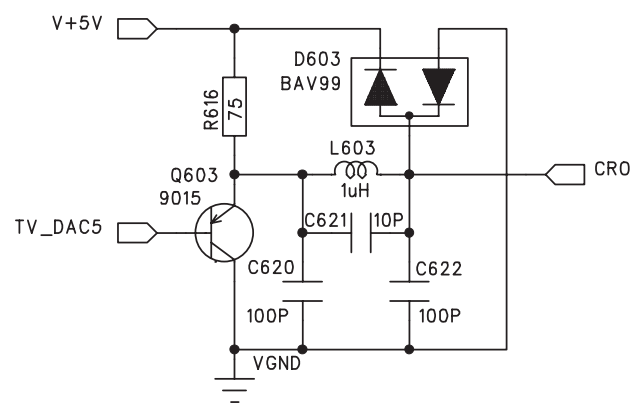
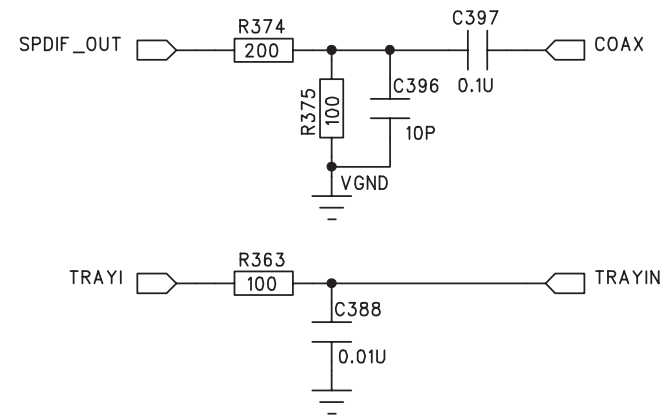
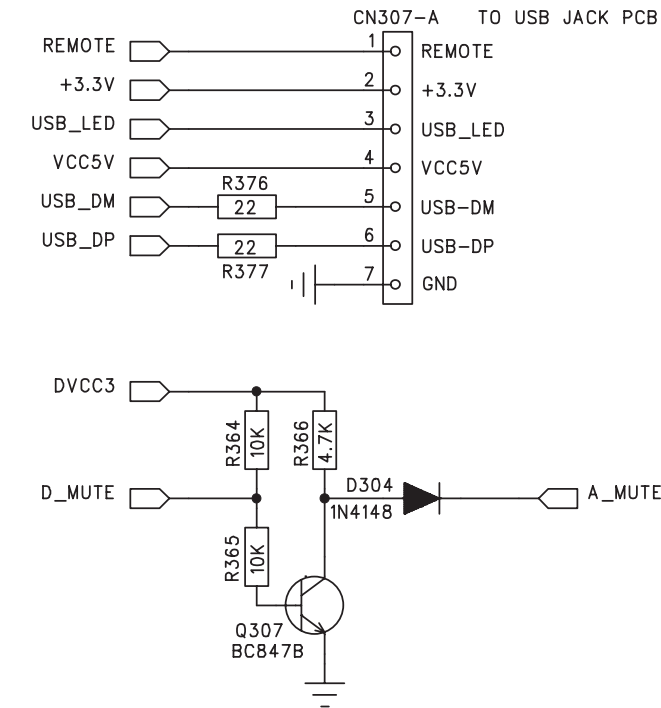
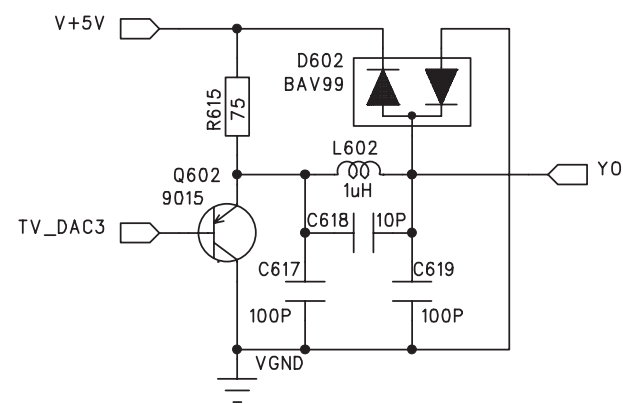
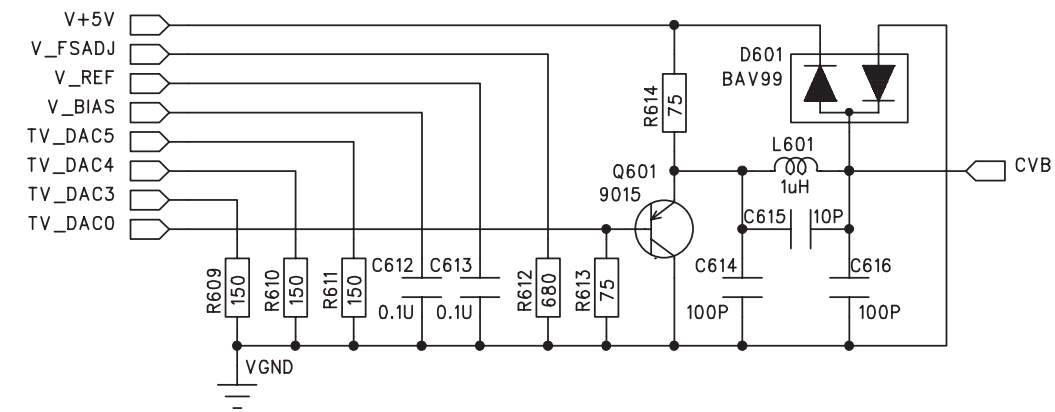
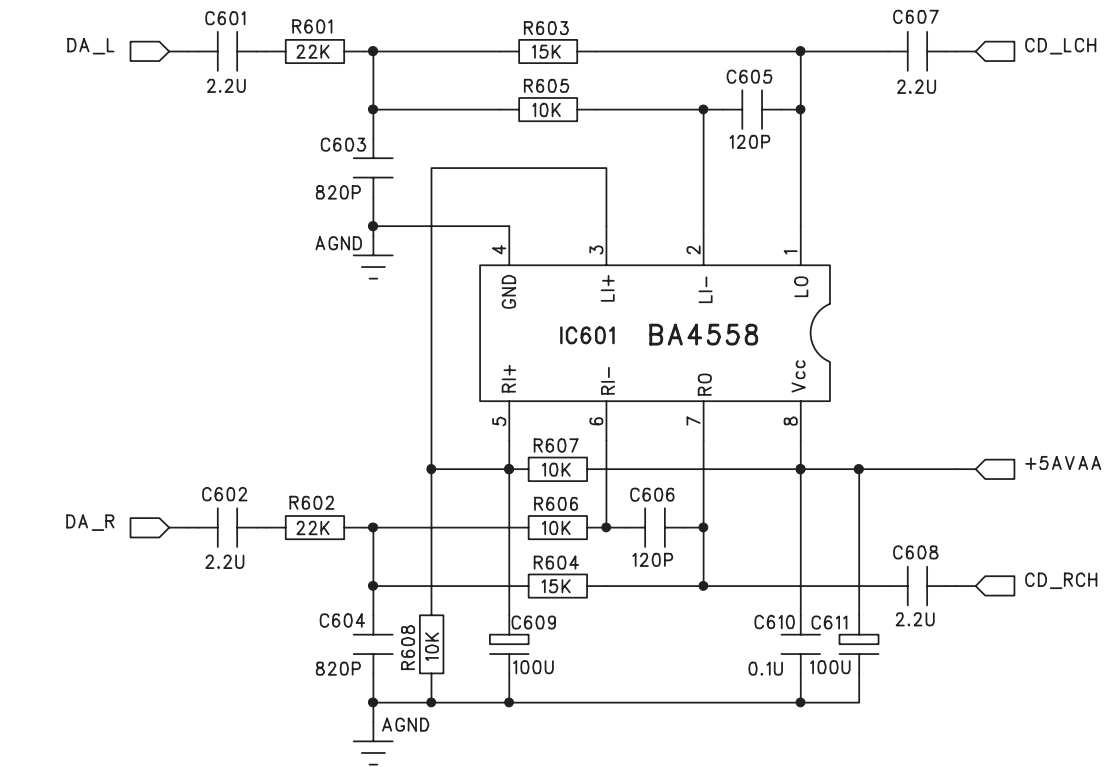
MPEG is not repaired, diagram for reference only.



CIRCUIT DIAGRAM - DVD MPEG BOARD
MPEG is not repaired, diagram for reference only.

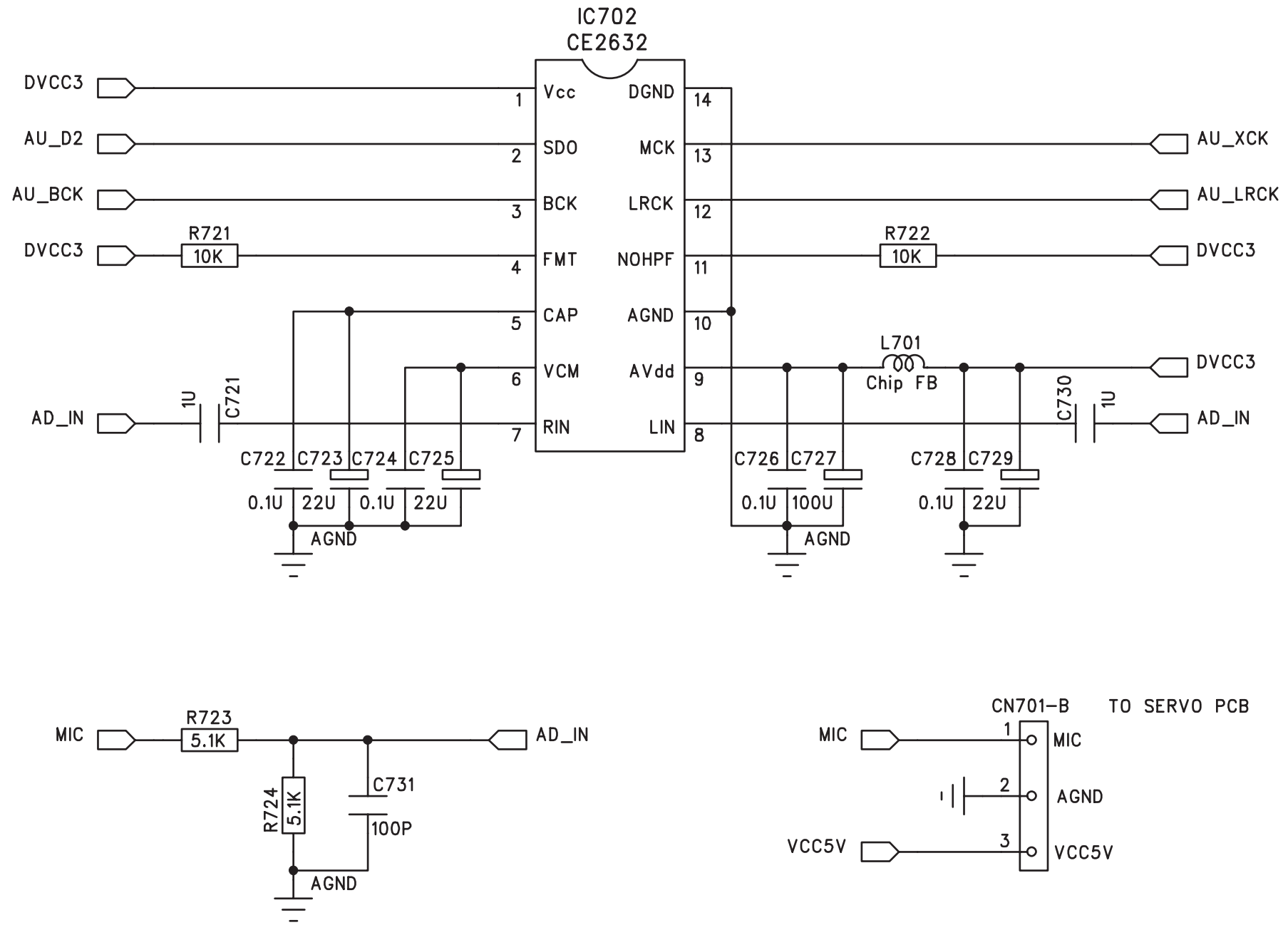


CIRCUIT DIAGRAM - DVD MPEG BOARD
 MPEG is not repaired, diagram for reference only.



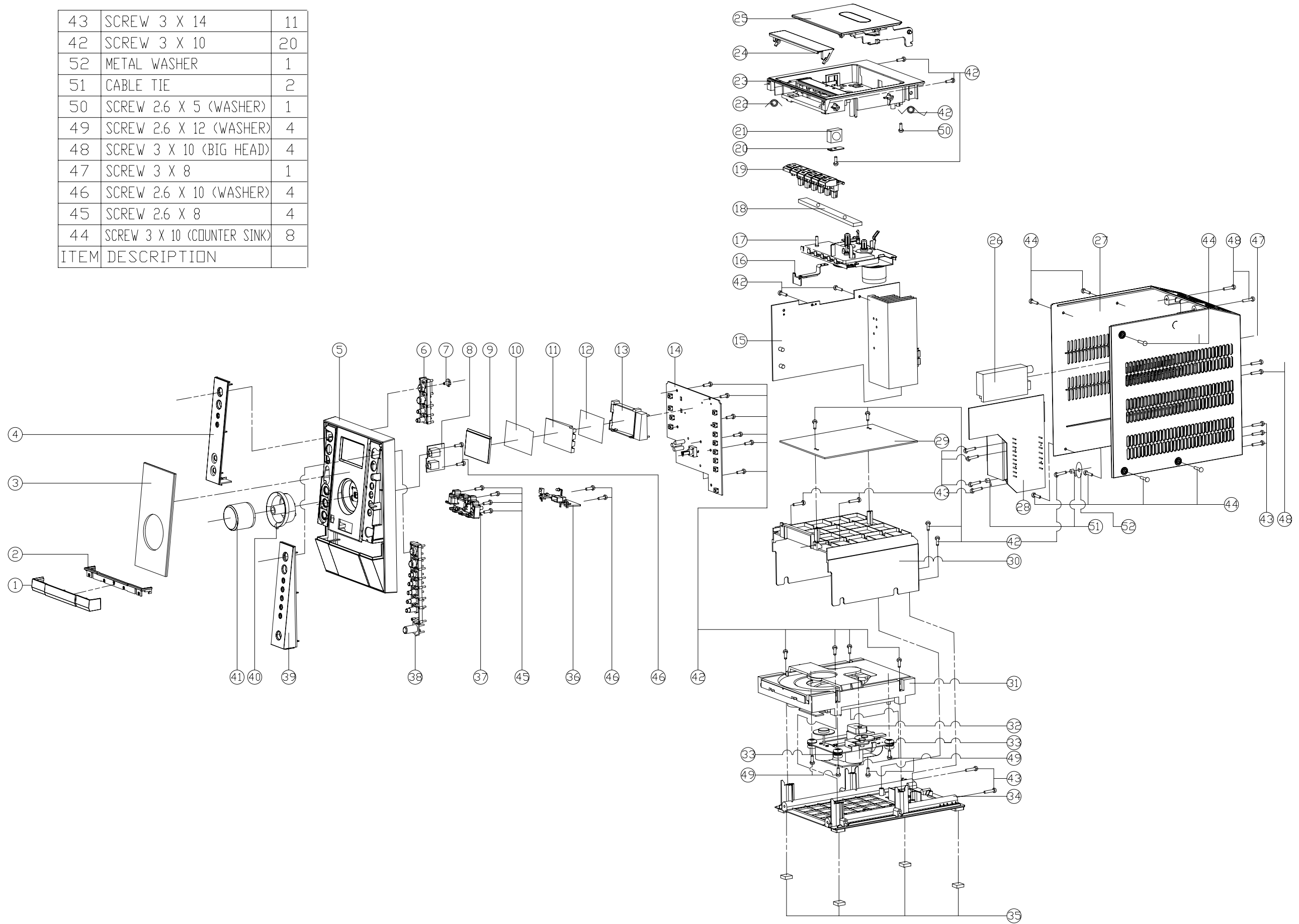
CIRCUIT DIAGRAM - DVD MPEG BOARD

MPEG is not repaired, diagram for reference only.



EXPLODED VIEW DIAGRAM

43	SCREW 3 X 14	11
42	SCREW 3 X 10	20
52	METAL WASHER	1
51	CABLE TIE	2
50	SCREW 2.6 X 5 (WASHER)	1
49	SCREW 2.6 X 12 (WASHER)	4
48	SCREW 3 X 10 (BIG HEAD)	4
47	SCREW 3 X 8	1
46	SCREW 2.6 X 10 (WASHER)	4
45	SCREW 2.6 X 8	4
44	SCREW 3 X 10 (COUNTER SINK)	8
ITEM	DESCRIPTION	



MECHANICAL & ACCESSORIES PARTS LIST

1	996510010791	CD LOADER COVER	A	994000003268	ANTENNA WIRE 1000MM
2	996510001086	CHROME RING	B	996510001099	AM LOOP FRAME ASSY
3	996510010793	DISPLAY LENS	C	996510001447	CASS KEY-BRACKET
4	996510010794	LEFT FRONT PANEL	D	△ 996510001447	VDE AC CORD 1.72M
5	996510010792	FRONT CABINET	E	996510001453	FFC CABLE 24P
6	996510010787	CONTROL KEY SET - LEFT	F	996510001456	RCA WIRE 1500MM BLACK WIRE
7	996510001448	STANDBY BOTTON LIGHT GUIDE	G	996510010781	FFC CABLE 10P L=330MM
17	996510001449	CASS DECK MECHANISM	H	996510010782	WOODEN SPEAKER BOX (L+R)
22	996510001429	CASS KEY DOOR SPRING PLATE	I	996510010783	REMOTE CONTROL /12
23	996510010788	TOP CABINET	I	996510013992	REMOTE CONTROL /58
24	996510010789	CASSETTE KEY DOOR	J	996510010754	SERVO BOARD ASS'Y (MPEG PCBA
25	996510010790	CASS DOOR			
26	996510010780	TUNER MODULE KST-MT004MS1-6A			
27	996510010784	REAR CABINET /12			
27	996510001432	REAR CABINET /58			
31	996510001452	DVD TRAY LOADER WXD-8213			
32	996510010779	DVD MECHANISM SONY KHM-313AAD			
33	996510001430	CD DAMPER			
34	996510010785	BOTTOM CABINET			
38	996510010786	CONTROL KEY SET - RIGHT			
39	996510010795	RIGHT FRONT PANEL			
40	996510001438	VOLUME KNOB RING			
41	996510001082	VOLUME KNOB			
42	996510001428	CASS.DOOR SPRING			
19A	996510001443	CASS KEY -REC			
19B	996510001440	CASS-KEY-PLAY			
19C	996510001442	CASS KEY-FB			
19D	996510001441	CASS KEY-FF			
19E	996510001444	CASS KEY-STOP			
19F	996510001439	CASS KEY-PAUSE			
21A	994000001409	CD DOOR GEAR HOLDER			
21B	996510000931	CD DOOR GEAR			

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

**ELECTRICAL PARTS LIST -
SERVO (DVD MPEG) BOARD
(ONLY FOR REFERENCE)**

MAIN BOARD

D305	996510010756	RECTIFIER DIODE SM4001S SM-2	C411	996510010768	E.CAP 4700UF 25V16X25MM M% 85C
D306	996510010756	RECTIFIER DIODE SM4001S SM-2	C412	996510010768	E.CAP 4700UF 25V16X25MM M% 85C
D307	996510010756	RECTIFIER DIODE SM4001S SM-2	D405	994000003223	DIODE BRIDGE RECTIFIER GBU6B
D601	996510010757	SWITCHING DIODE BAV99L	D432	996510010770	RECTIFIER DIODE 1N5822
D602	996510010757	SWITCHING DIODE BAV99L	IC401	996510001412	IC LM2576TV-5.0 TO-220V
D603	996510010757	SWITCHING DIODE BAV99L	IC402	996510001415	TRANSISTOR S78DL33-AT
IC103	996510010759	IC TK6011P93 PROGRAMMED MCD	IC501	994000003203	POWER AMPLIFIER IC TDA8947J
IC104	996510010763	IC AT24C02BN-SH-T	IC602	996510010771	IC 7314(ANGUS)
IC106	996510010764	IC PCF8563T SO8	IC603	996510001055	IC BA4558 SOP8
IC203	994000003215	RDS IC SAA6581T	IC901	996510001411	I.C.D7312/D7312CP
IC301	996510010762	IC AM5888S HSOP28	JA301	996510001410	RCA JACK 8.3MM (RCA-124-012
IC302	996510010761	IC MPEG SPHE8281D	JA501	996510000380	PUSH TERMINAL JACK PST-418
IC303	996510010760	IC SDRAM 64M M12L64164A-7TG	JA601	996510001409	RCA JACK
IC305	996510010758	IC N29LV800 PROGRAMMED MCD	L414	996510010773	FERRITE 100uH/1KHz/1V +/-20%
IC307	996510010763	IC AT24C02BN-SH-T	L501	994000003205	AIR COIL 30T
IC601	996510001055	IC BA4558 SOP8	L502	994000003205	AIR COIL 30T
Q301	996510010766	TRANSISTOR (MOSFET) 2SK3018	L505	994000003205	AIR COIL 30T
Q302	996510010766	TRANSISTOR (MOSFET) 2SK3018	L506	994000003205	AIR COIL 30T
Q304	996510010765	TRANSISTOR 2SB1132R	L607	996510010772	FERRITE TYPE 11UH P% D4.5MM
Q305	996510010765	TRANSISTOR 2SB1132R	L608	996510010772	FERRITE TYPE 11UH P% D4.5MM
Q308	994000003206	TRANSISTOR 8550D	L609	996510010772	FERRITE TYPE 11UH P% D4.5MM
Q309	994000003206	TRANSISTOR 8550D	L616	996510010772	FERRITE TYPE 11UH P% D4.5MM
Q505	996510001414	TRANSISTOR KTB772	Q416	996510001414	TRANSISTOR KTB772
Q601	996510010767	TRANSISTOR 9015B TAPE FORM	Q422	996510001413	TRANSISTOR 2SD882Q
Q602	996510010767	TRANSISTOR 9015B TAPE FORM	SW901	994000002397	REC SWITCH 6P2T
Q603	996510010767	TRANSISTOR 9015B TAPE FORM	T901	996510001408	AM OSC BLACK
X101	996510005000	CRYSTAL 12MHZ 49S 20PF +/-20PPM	ZD412	996500039258	ZENER DIODE 9V1 1/2W
X102	994000003208	CRYSTAL 32.768KHZ 12.5PF -10P	ZD413	996510010769	ZENER DIODE 8V2 1/2W (TC8V2)
X202	994000003209	CRYSTAL 4.332MHZ HC-49/S			
X301	996510010755	CRYSTAL 27MHZ 20PF +/-20PPM			

JACK BOARD

RECTIFIER BOARD

FUSE Δ	996510001417	FUSE 8A 250V 5.2X20MM	JA502	994000001456	STEREO HEADPHONE JACK
K401 Δ	994000001448	9V DC RELAY 10A ME-7-009-HL	JA602	996510001073	EARPHONE CKX3.5-19S (3PIN)
Q401	996510005008	TRANSISTOR SS8050D TO-92	L503	996510010772	FERRITE TYPE 11UH P% D4.5MM
T401 Δ	996510001419	TRANSFORMER MAIN EI-66	L504	996510010772	FERRITE TYPE 11UH P% D4.5MM
T402 Δ	996510001418	TRANSFORMER STANDBY	L605	996510010772	FERRITE TYPE 11UH P% D4.5MM
			L606	996510010772	FERRITE TYPE 11UH P% D4.5MM

USB JACK BOARD

IC102	996510010778	INFRARED REC STRANGLE TYPE	Note:	Only these parts mentioned in the list are normal service parts.
JA702	996510001071	USB JACK 4P ANGLE TYPE		
LED1	996510001422	LED INDICATOR BLUE		
LED8	996510001422	LED INDICATOR BLUE		
LED9	996510001422	LED INDICATOR BLUE		

**ELECTRICAL PARTS LIST -
LCD & KEY BOARD**

D1	996510010774	DIODE 1N4148 FDLL4148
IC1	996510001424	IC SL4808DQ QFP100
L1	996510000387	CHOKE COIL 10UH K% 2.8X7MM
LCD	996510010775	LCD DISPLAY GS-34296+HSC-B/R
LED1	996510000394	LED INDICATOR RED4.3X2.98MM
LED2	996510001423	LED INDICATOR 3mm WHITE
LED3	996510001423	LED INDICATOR 3mm WHITE
LED4	996510001423	LED INDICATOR 3mm WHITE
LED5	996510001422	LED INDICATOR BLUE
LED6	996510001422	LED INDICATOR BLUE
LED7	996510001422	LED INDICATOR BLUE
Q1	996510010777	TRANSISTOR BC847C FREE
Q2	996510010777	TRANSISTOR BC847C FREE
Q3	996510010776	TRANSISTOR BC817-25 SOT23
SW1	996500039269	TACT SWITCH
SW10	996500039269	TACT SWITCH
SW11	996500039269	TACT SWITCH
SW12	996500039269	TACT SWITCH
SW2	996500039269	TACT SWITCH
SW3	996500039269	TACT SWITCH
SW4	996500039269	TACT SWITCH
SW5	996500039269	TACT SWITCH
SW6	996500039269	TACT SWITCH
SW7	996500039269	TACT SWITCH
SW8	996500039269	TACT SWITCH
SW9	996500039269	TACT SWITCH
VR101	996510001059	ENCODER EC121102X2B-HA1-082

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

REVISION LIST

1.0 Manual 3141 785 32360

Initial Service Manual released.

1.1 Manual 3141 785 32361

In this version, the version /58 added.

1) Page 11-2 Mechanical & Accessories Parts List is updated.

2) Page 4-1 Software Version Checking and Region Code Reset added.