DVD Micro theatre

MCD296

all versions

Service
Service
Service

Service Manual

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CLASS 1 LASER PRODUCT

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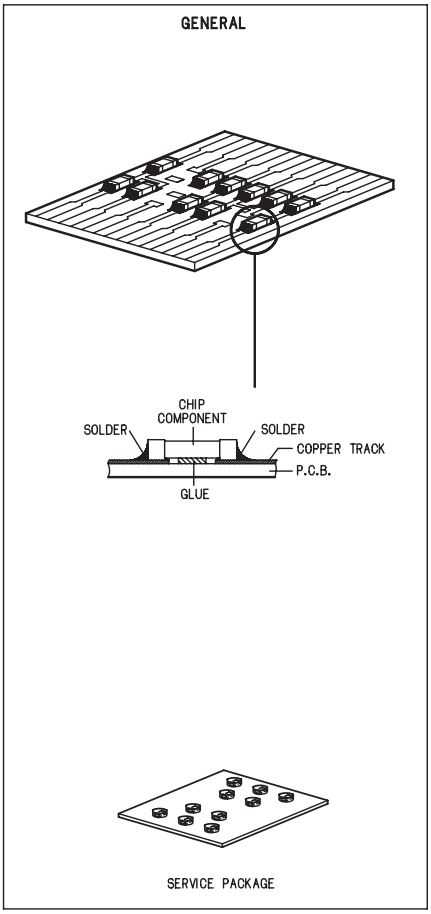
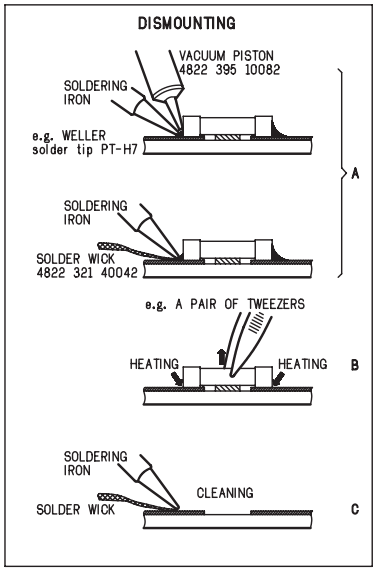
GB 3141 785 31601

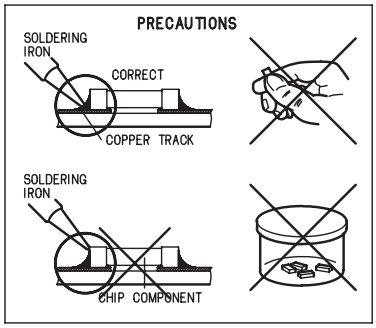
Version 1.1

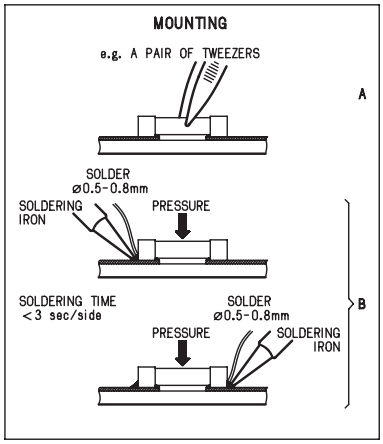
PHILIPS

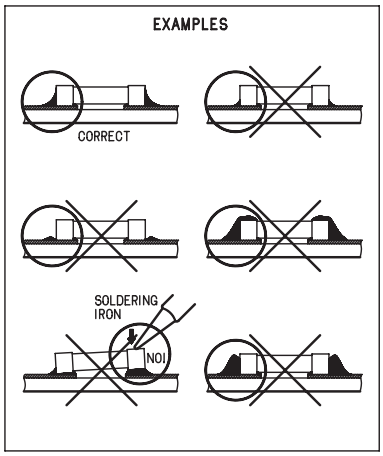
HANDLING CHIP COMPONENTS











(GB) WARNING
All ICs and many other semiconductors 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 wristband with resistance. Keep components and tools at this potential.

ESD

(NL) WAARSCHUWING
Alle IC´s en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen vermindern. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(F) ATTENTION
Tous les IC et beaucoup d´autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévite pourrait être considérablement écourtée par le fait qu´aucune précaution nést prise à leur manipulation.
Lors de réparations, s´assurer de bien être relié au même potentiel que la masse de l´appareil et enfileer le bracelet serti d´une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l´on utilise soient également à ce potentiel.

(D) WARNUNG
Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren.
Sorgen Sie dafür, daß Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(I) AVVERTIMENTO
Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione. Durante le riparationi occorre quindi essere collegato allo stesso potenziale che quello della massa delápparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

SAFETY

(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 ⚠

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.
De Veiligheidsonderdelen zijn aangeduid met het symbool ⚠

(F)
Les normes de sécurité exigent que l`appareil soit remis à l`état d`origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.
Les composants de sécurité sont marqués ⚠

(I)
Le norme di sicurezza estigono che l´apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambiago identici a quelli specificati.
Componenty di sicurezza sono marcati con ⚠

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Originalersatzteile zu verwenden.
Sicherheitsbauteile sind durch das Symbol ⚠ markiert.

CLASS 1 LASER PRODUCT

(GB) **DANGER**: Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.

(S) Varning !
Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

(DK) Advarsel !
Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

(FIN) Varoitus !
Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen !

(GB)
After servicing and before returning the set to customer perform a leakage current measurement test from all exposed metal parts to earth ground, to assure no shock hazard exists.
The leakage current must not exceed 0.5mA.

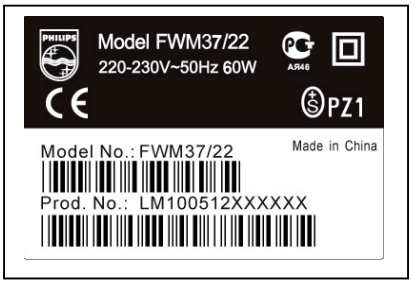
(F)
"Pour votre sécurite, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

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:

Example S/N:



Bottom line of typeplate gives a 14-digit S/N. Digit 5&6 is the year, digit 7&8 is the week number, so in this case 2005 wk12

So from 0501 onwards = from 1 Jan 2005 onwards

***Important note*: In fact also products of year 2004 must be treated in this way as long as you avoid mixing solder-alloys (leaded/ lead-free). So best to always use SAC305 and the higher temperatures belong to this.**

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free solder alloy Philips SAC305 with order code 0622 149 00106. If lead-free solder-paste is required, please contact the manufacturer of your solder-equipment. In general use of solder-paste within workshops should be avoided because paste is not easy to store and to handle.

- Use only adequate solder tools applicable for lead-free solder alloy. The solder tool must be able
  - To reach at least a solder-temperature of 400°C,
  - To stabilize the adjusted temperature at the solder-tip
  - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C – 380°C is reached and stabilized at the solder joint. Heating-time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips switch off un-used equipment, or reduce heat.
- Mix of lead-free solder alloy / parts with leaded solder alloy / parts is possible but PHILIPS recommends strongly to avoid mixed solder alloy types (leaded and lead-free).
  If one cannot avoid or does not know whether product is lead-free, clean carefully the solder-joint from old solder alloy and re-solder with new solder alloy (SAC305).
- Use only original spare-parts listed in the Service-Manuals. Not listed standard-material (commodities) has to be purchased at external companies.
- Special information for BGA-ICs:
  - always use the 12nc-recognizable soldering temperature profile of the specific BGA (for de-soldering always use the lead-free temperature profile, in case of doubt)
  - lead free BGA-ICs will be delivered in so-called 'dry-packaging' (sealed pack including a silica gel pack) to protect the IC against moisture. After opening, dependent of MSL-level seen on indicator-label in the bag, the BGA-IC possibly still has to be baked dry. (MSL=Moisture Sensitivity Level). This will be communicated via AYS-website.
  Do not re-use BGAs at all.

- For sets produced before 1.1.2005 (except products of 2004), containing leaded solder-alloy and components, all needed spare-parts will be available till the end of the service-period. For repair of such sets nothing changes.

- 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

  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.

TECHNICAL SPECIFICATIONS

AMPLIFIER

Output power ..... 2 x 15 W RMS
..... 700 W MPO
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 ?
Impedance headphones ..... 32 ? -1000 ?

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 ..... 1.0 Vp-p, 75 ?
S-Video Output ..... Y - 1.0 Vp-p, 75 ?
..... C - 0.286 Vp-p, 75 ?
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 ?
– mono, 26 dB signal-to-noise ratio ..... 2.8 µV
– stereo, 46 dB signal-to-noise ratio ..... 61.4 µV
Selectivity ..... ⩾28 dB
Total harmonic distortion ..... ⩽5%
Frequency response ..... 63 – 5500 Hz (-6 dB)
Signal-to-noise-ratio ..... ⩾50 dBA

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 ..... ⩽0.4% DIN

SPEAKERS

2-way bass reflex system
Dimensions (w x h x d) .....
..... 152 x 228 x 237 (mm)

GENERAL INFORMATION

AC Power ..... 220 – 240 V / 50 Hz
Dimensions (w x h x d) .. 148 x 235 x 258 (mm)
Weight(with/without speakers) ..... 6.0 / 3.3 kg
Standby power consumption ..... ⩽7W
Eco power Standby ..... < 1W

Specifications and external appearance are subject to change without notice.

SERVICE TOOLS

TORX T10 screwdriver with shaftlength 150mm.....4822 395 50423
TORX screwdriver set SBC 163.....4822 295 50145

Audio signal disc SBC 429.....4822 397 30184
Playability test disc SBC 444.....4822 397 30245
Test disc 5 (disc without errors) +
Test disc 5A (disc with dropout errors, black spots and fingerprints)
SBC 426/426A.....4822 397 30096
Burn in test disc (65 min. 1kHz signal at -30 dB level without “pause”).....4822 397 30155

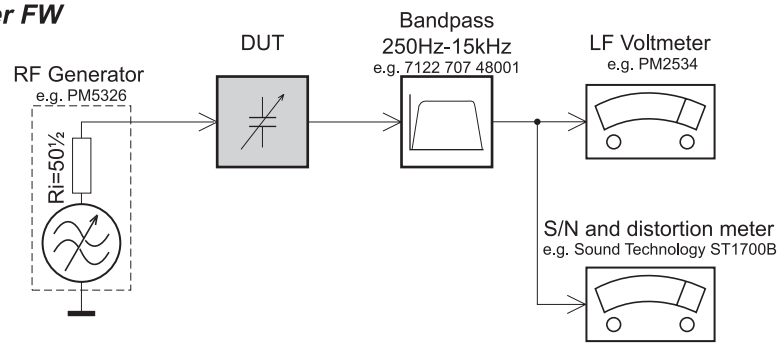
Universal test cassette Fe SBC 420.....4822 397 30071

AVAILABLE ESD PROTECTION EQUIPMENT

anti-static table mat	large 1200x650x1.25mm	4822 466 10953
	small 600x650x1.25mm	4822 466 10958
anti-static wristband		4822 395 10223
connection box (3 press stud connections, 1MΩ)		4822 320 11307
extendible cable (2m, 2MΩ, to connect wristband to connection box)		4822 320 11305
connecting cable (3m, 2MΩ, to connect table mat to connection box)		4822 320 11306
earth cable (1MΩ, to connect any product to mat or to connection box)		4822 320 11308
KIT ESD3 (combining all 6 prior products - small table mat)		4822 310 10671
wristband tester		4822 344 13999

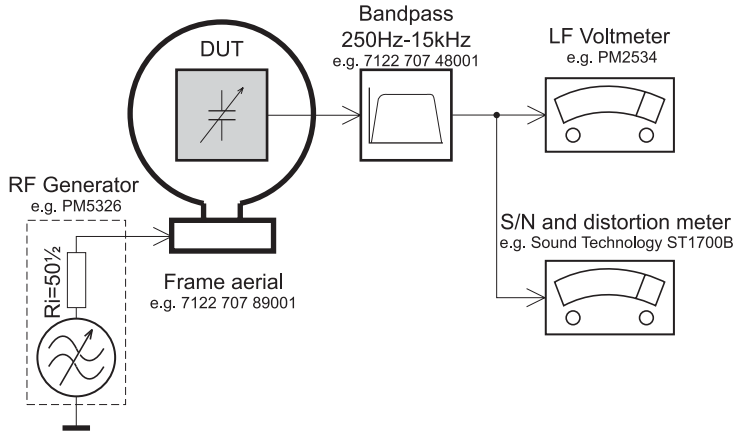
SERVICE MEASUREMENT

Tuner FW



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

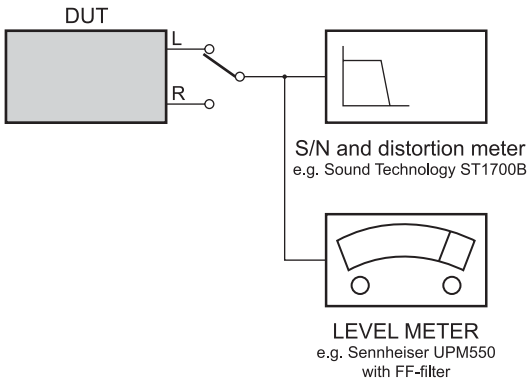
Tuner AM (MW,LW)



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 250kHz) to eliminate hum (50Hz, 100Hz).

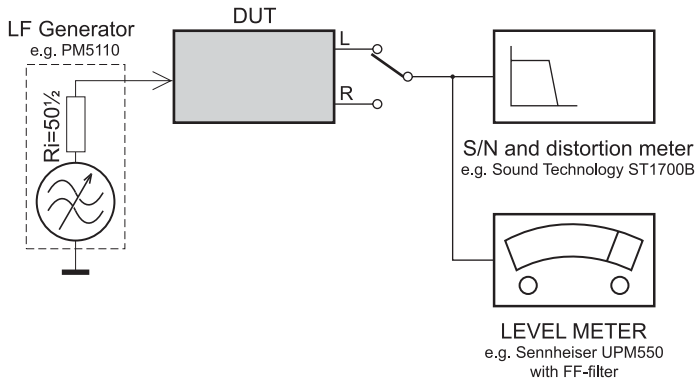
CD

Use Audio Signal Disc SBC429 4822 397 30184
(replaces test disc 3)

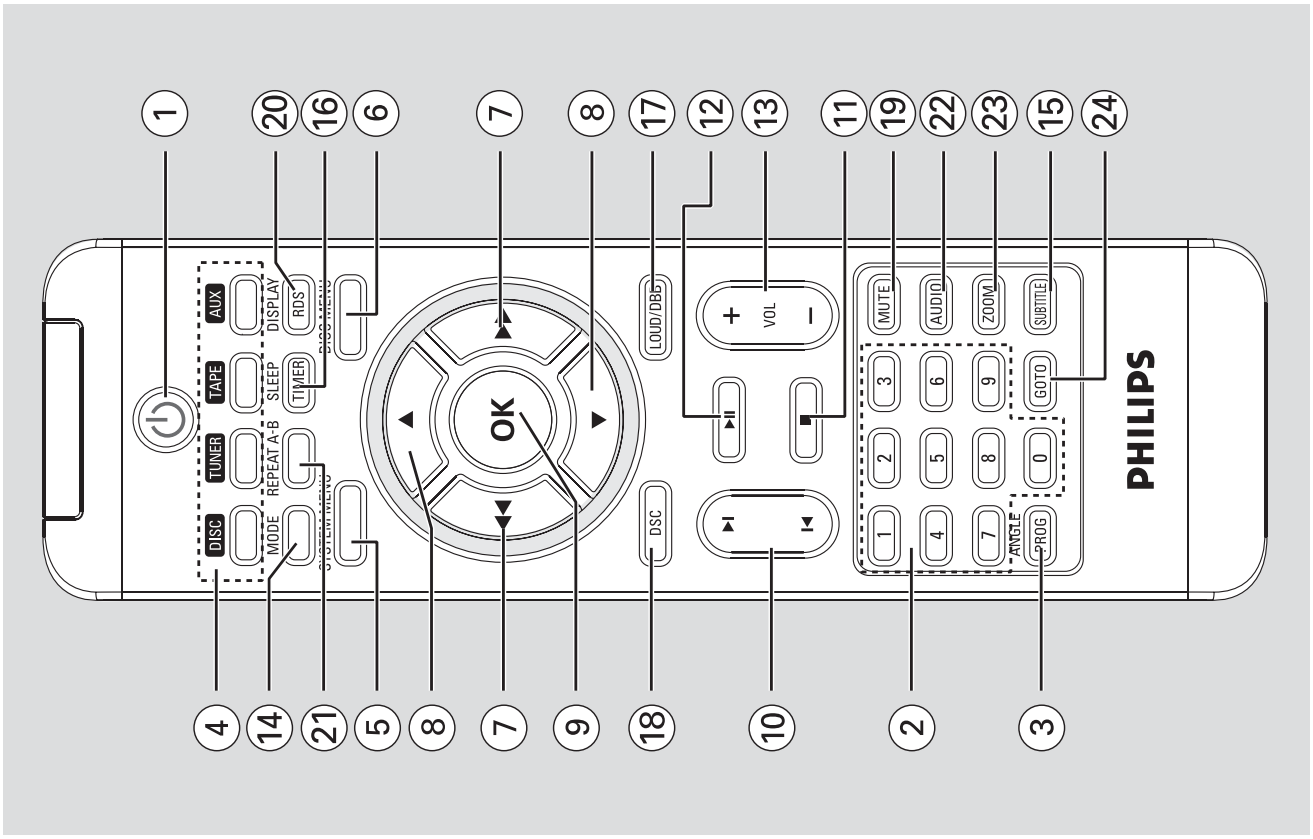


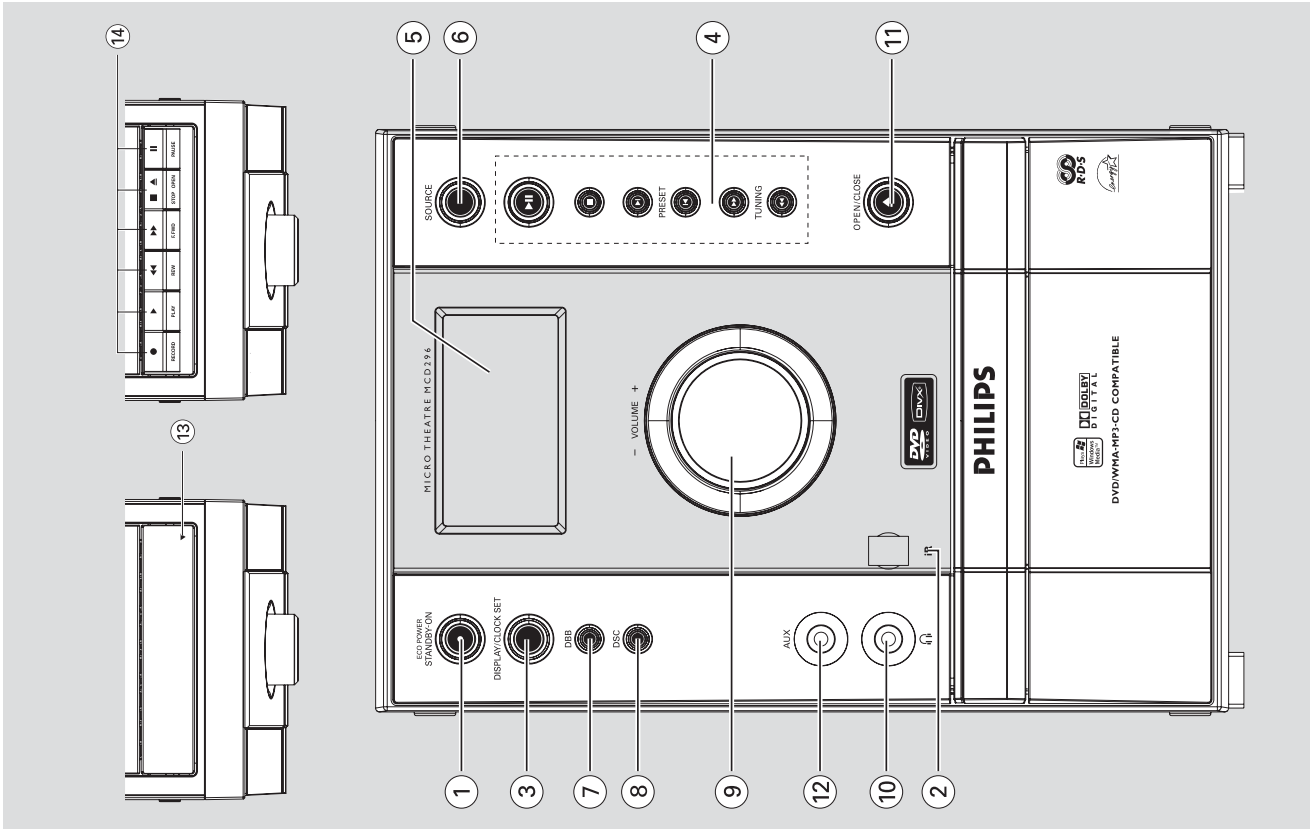
RECORDER

Use Universal Test Cassette Fe SBC420 4822 397 30071



CONNECTION AND CONTROLS





Controls

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.
▶II ..... In DISC mode, to start or interrupt playback.
PRESET I◀ / ▶I
..... Disc: skips to the previous/next chapter/title/rack.
..... Tuner: selects a preset radio station.
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.

⑤ **Display screen**
– to view the current status of the system.

⑥ **SOURCE**
– to select the respective sound source : DISC TUNER, TAPE or AUX.

⑦ **DBB**
– enables or disables bass enhancement.

⑧ **DSC**
– selects different types of preset sound equalizer settings (CLASSIC, JAZZ, POP or ROCK).

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/F.FWD ◀◀ / ▶▶
..... fast rewinds/winds the tape.
STOP•OPEN ■ ⏏
..... stops tape playback/recording; opens the tape compartment.
PAUSE II ..... interrupts recording or playback.

Controls on the remote control

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.

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 **I◀ / ▶I**
– 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 **▶II**
– 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/RDS**
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.

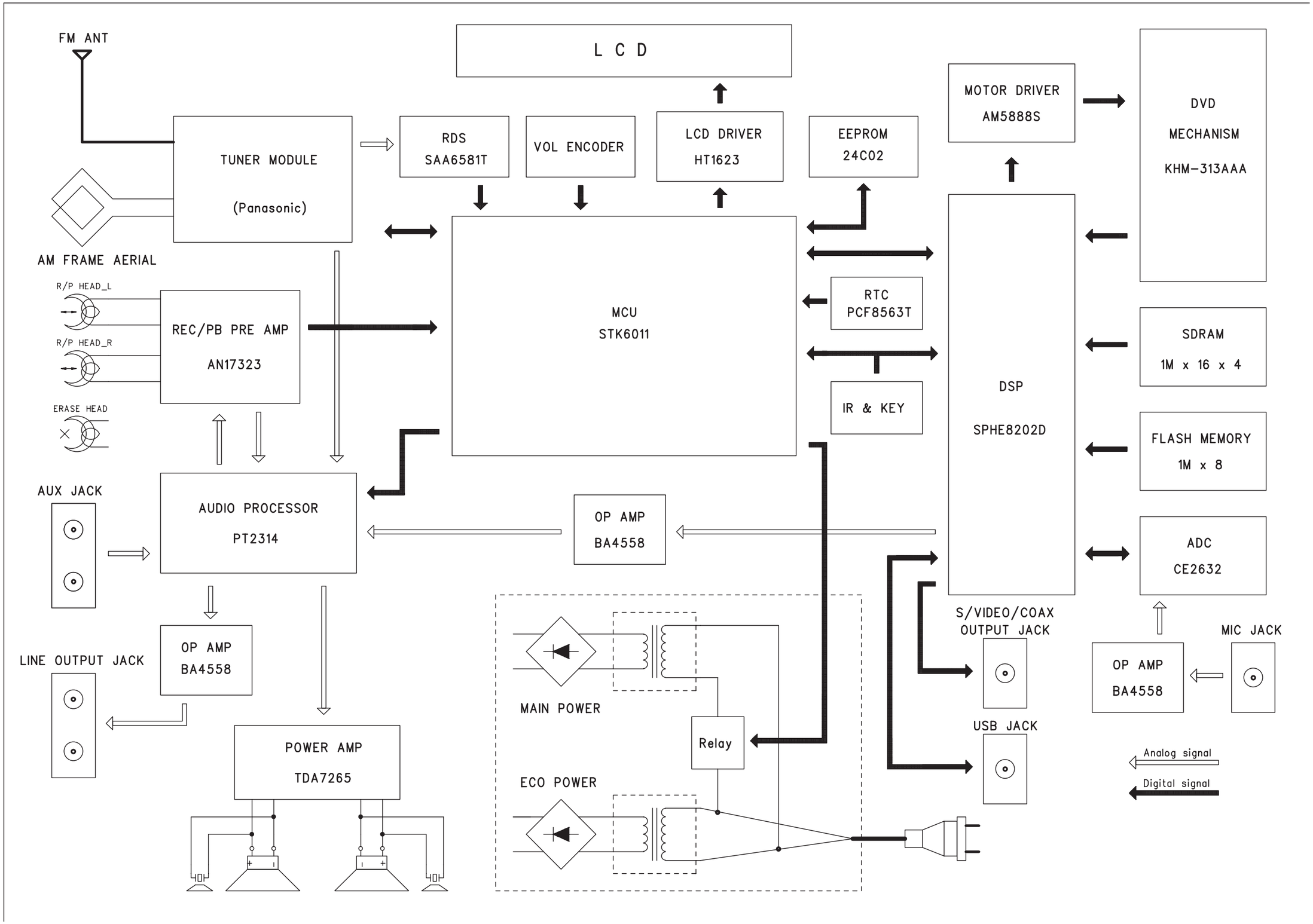
Notes for remote control:
– First, select the source you wish to control by pressing one of the source select keys on the remote control (DISC or TUNER, for example).
– Then select the desired function (▶II , I◀, ▶I for example).

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

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

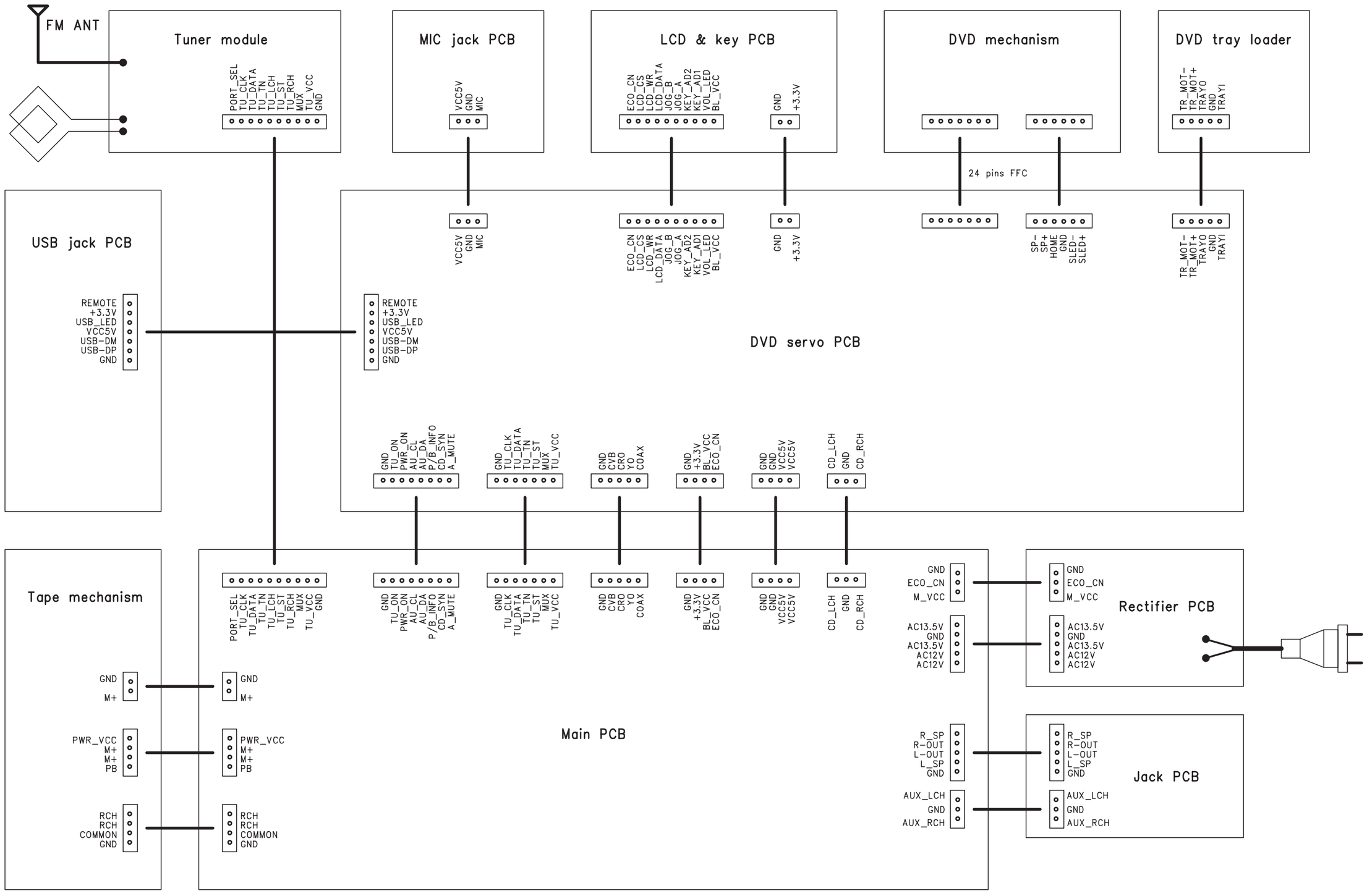
5 - 1

SET BLOCK DIAGRAM



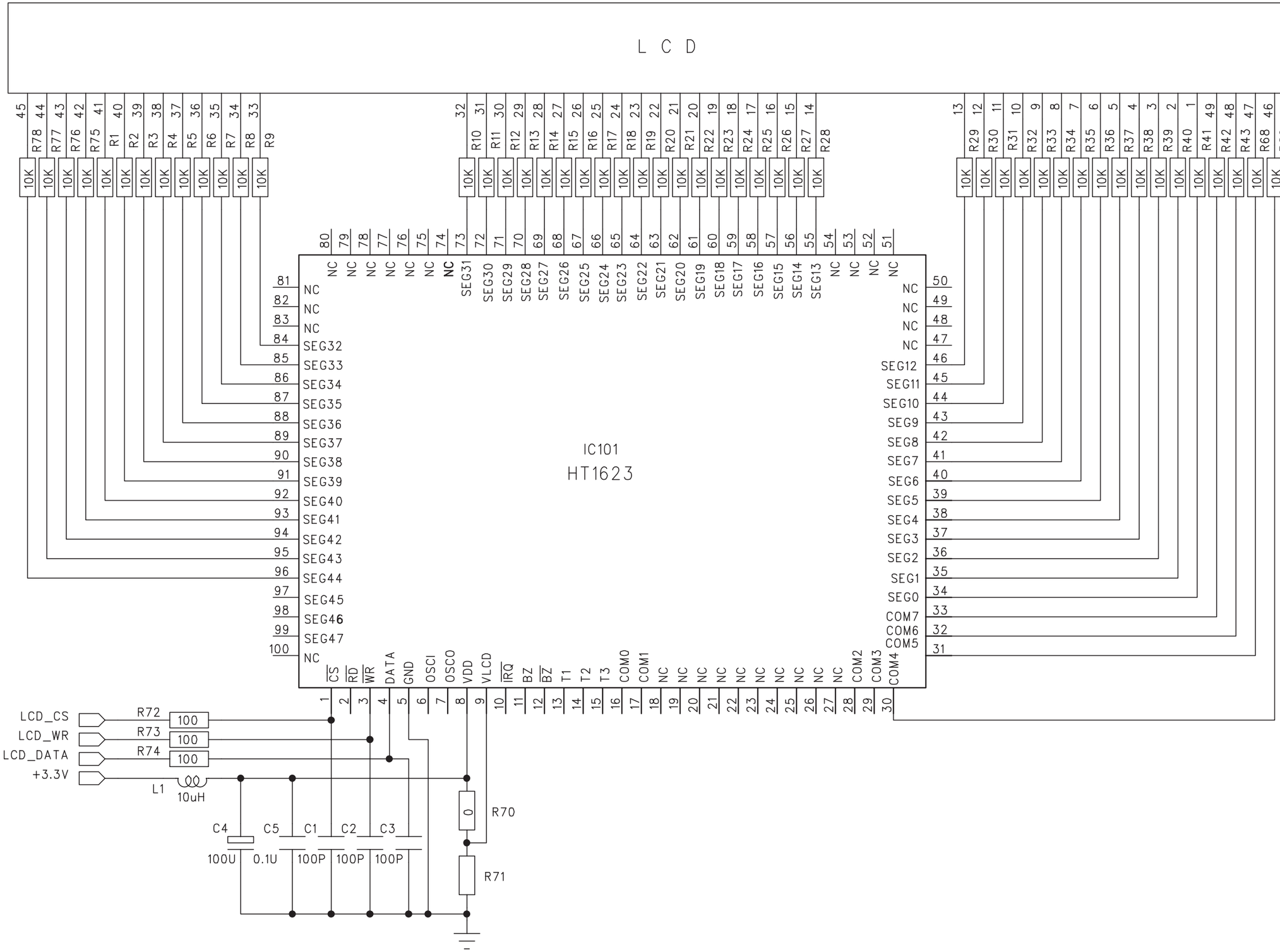
6 - 1

SET WIRING DIAGRAM



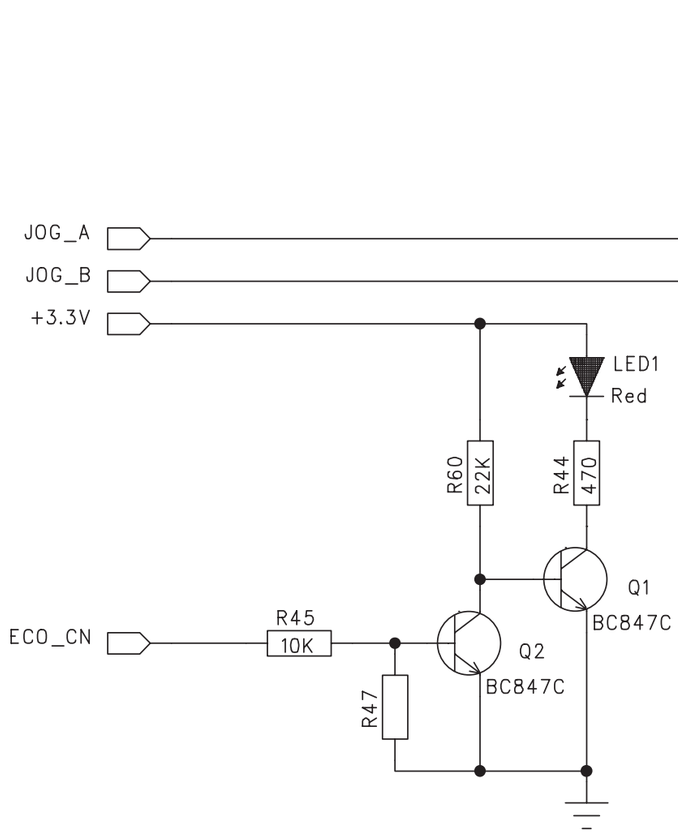
7 - 1

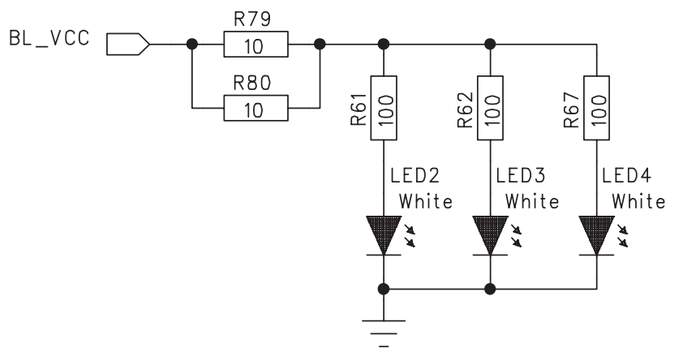
CIRCUIT DIAGRAM - LCD & KEY BOARD
Part 1

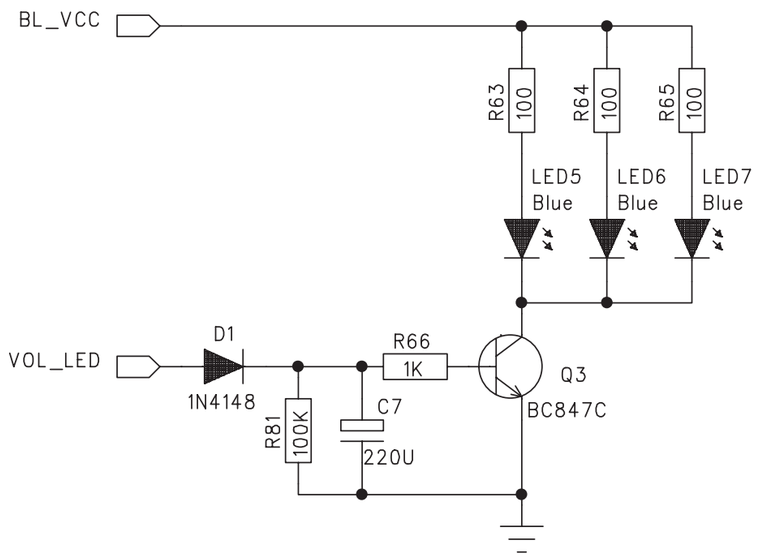


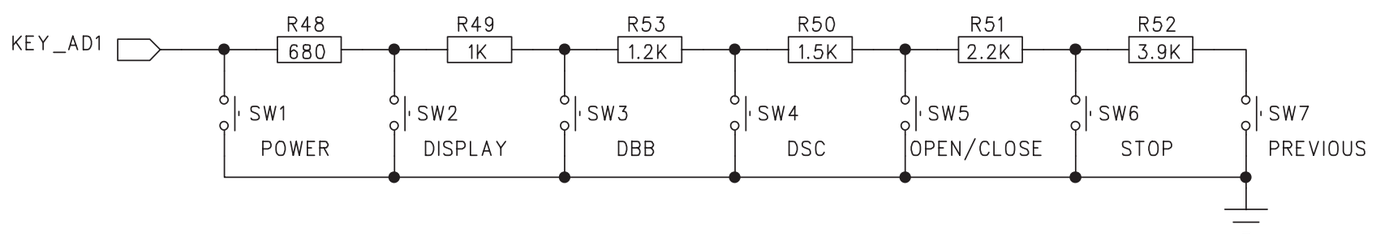
7 - 2

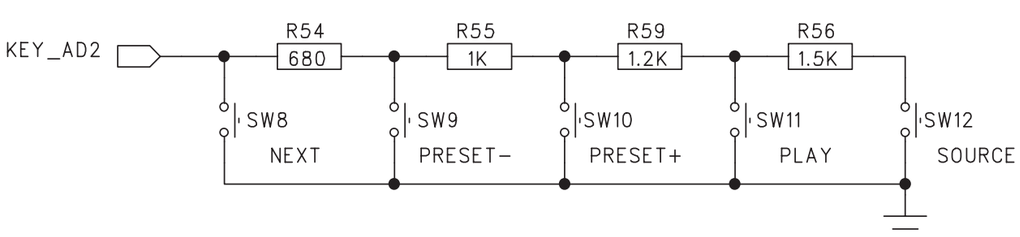
CIRCUIT DIAGRAM - LCD & KEY BOARD
Part 2

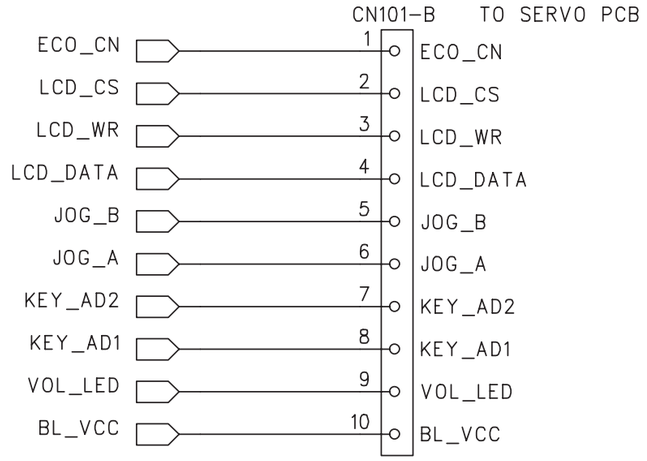


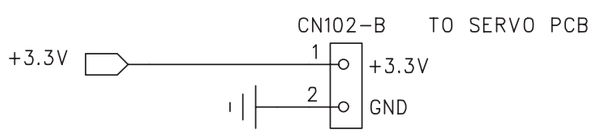




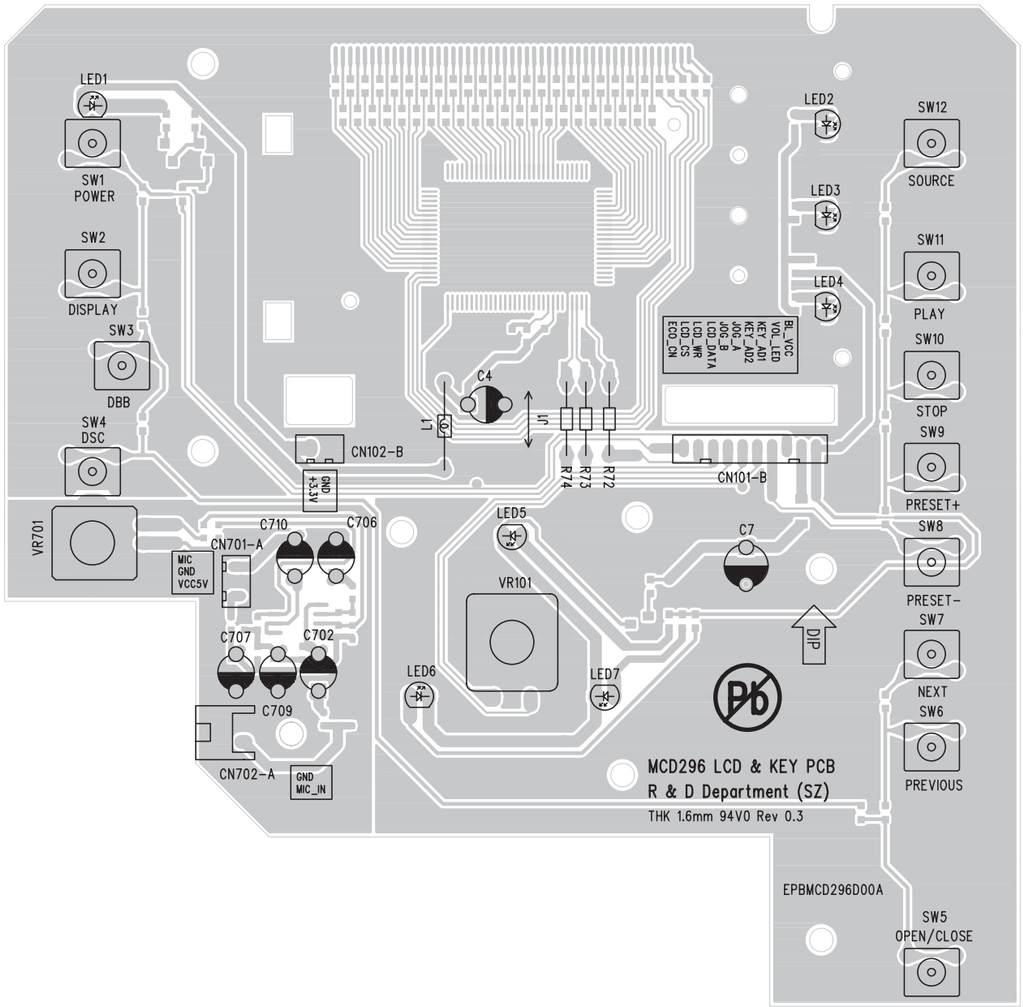




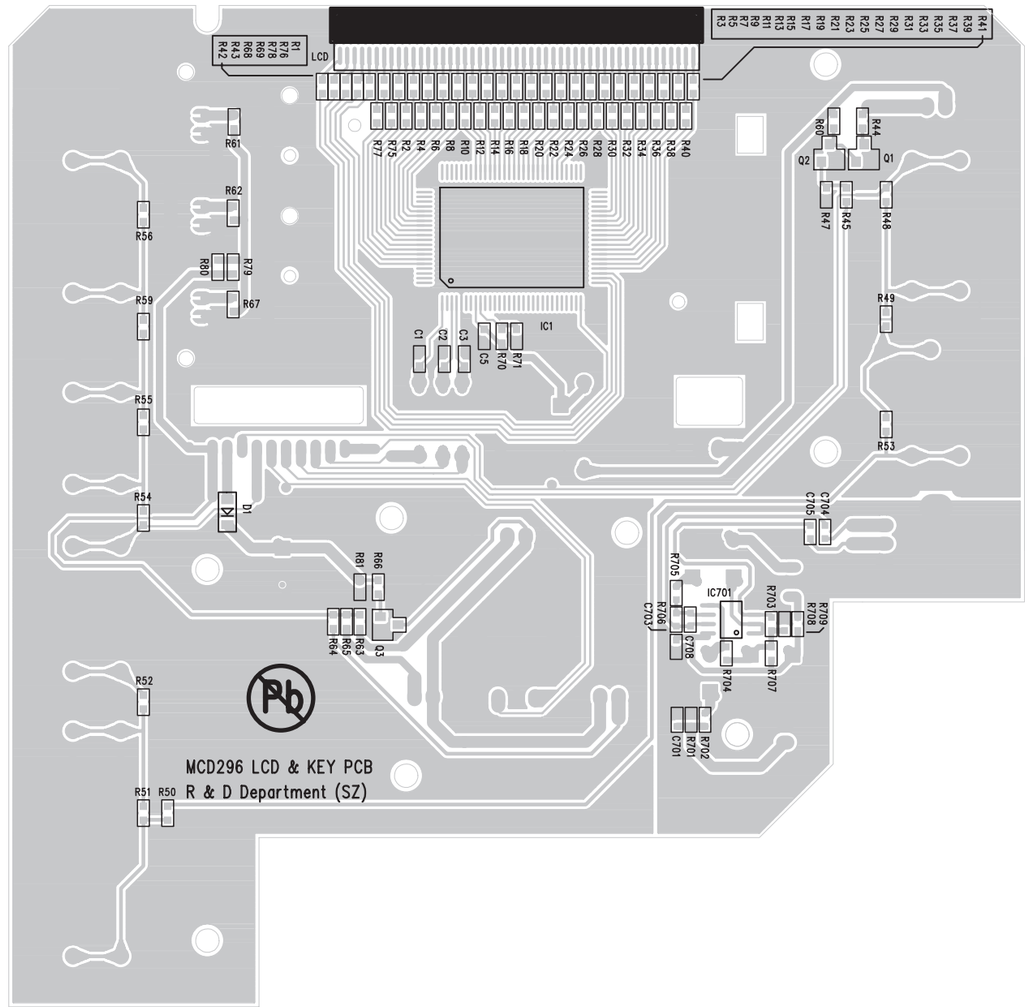




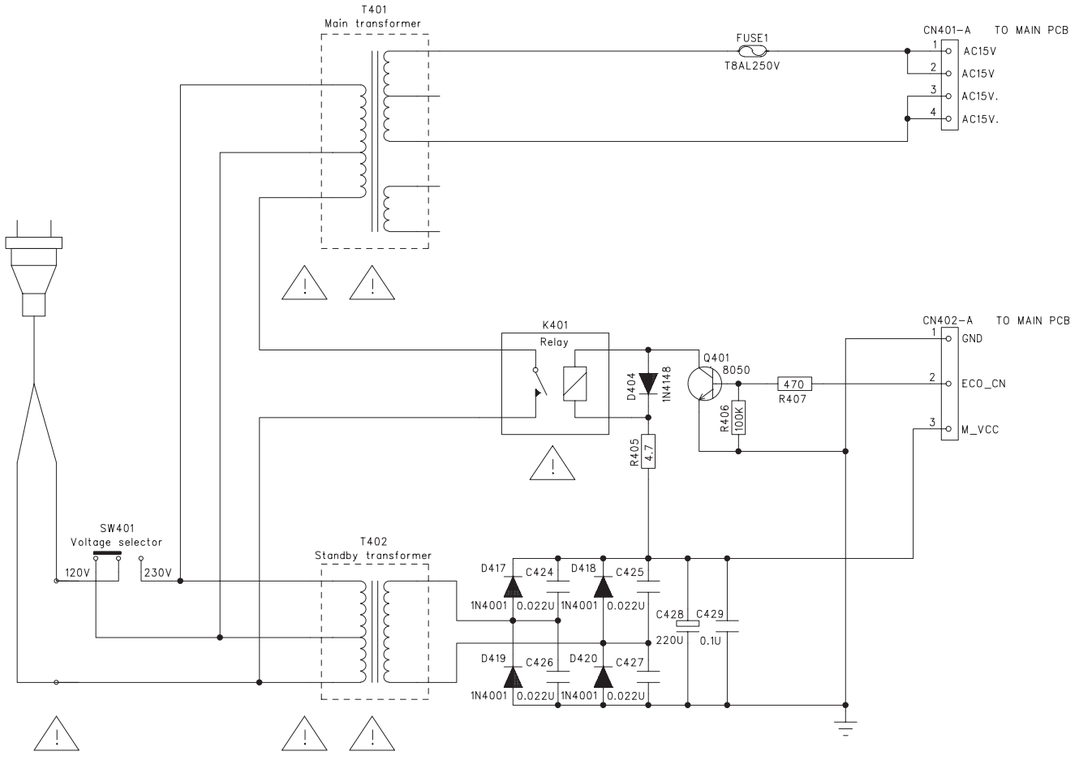
LAYOUT DIAGRAM - LCD & KEY BOARD



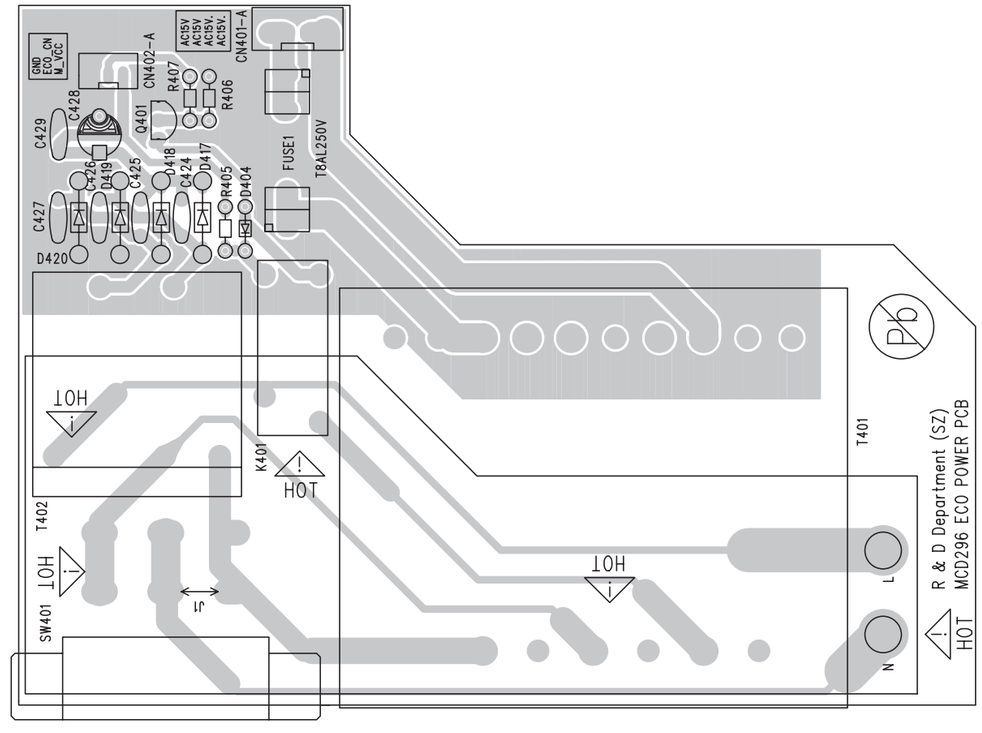
7 - 3



CIRCUIT DIAGARM - RECTIFIER BOARD

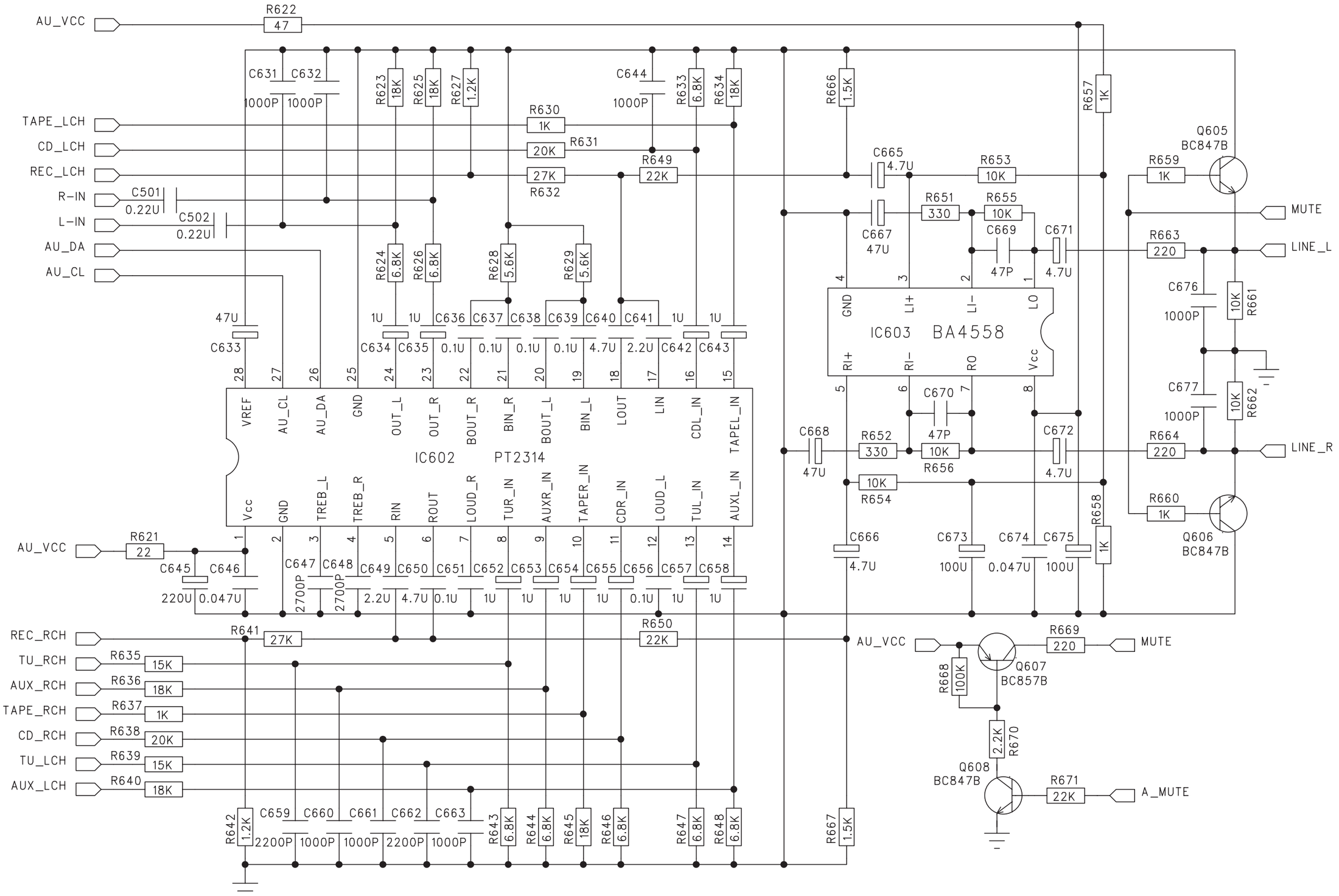


LAYOUT DIAGARM - RECTIFIER BOARD



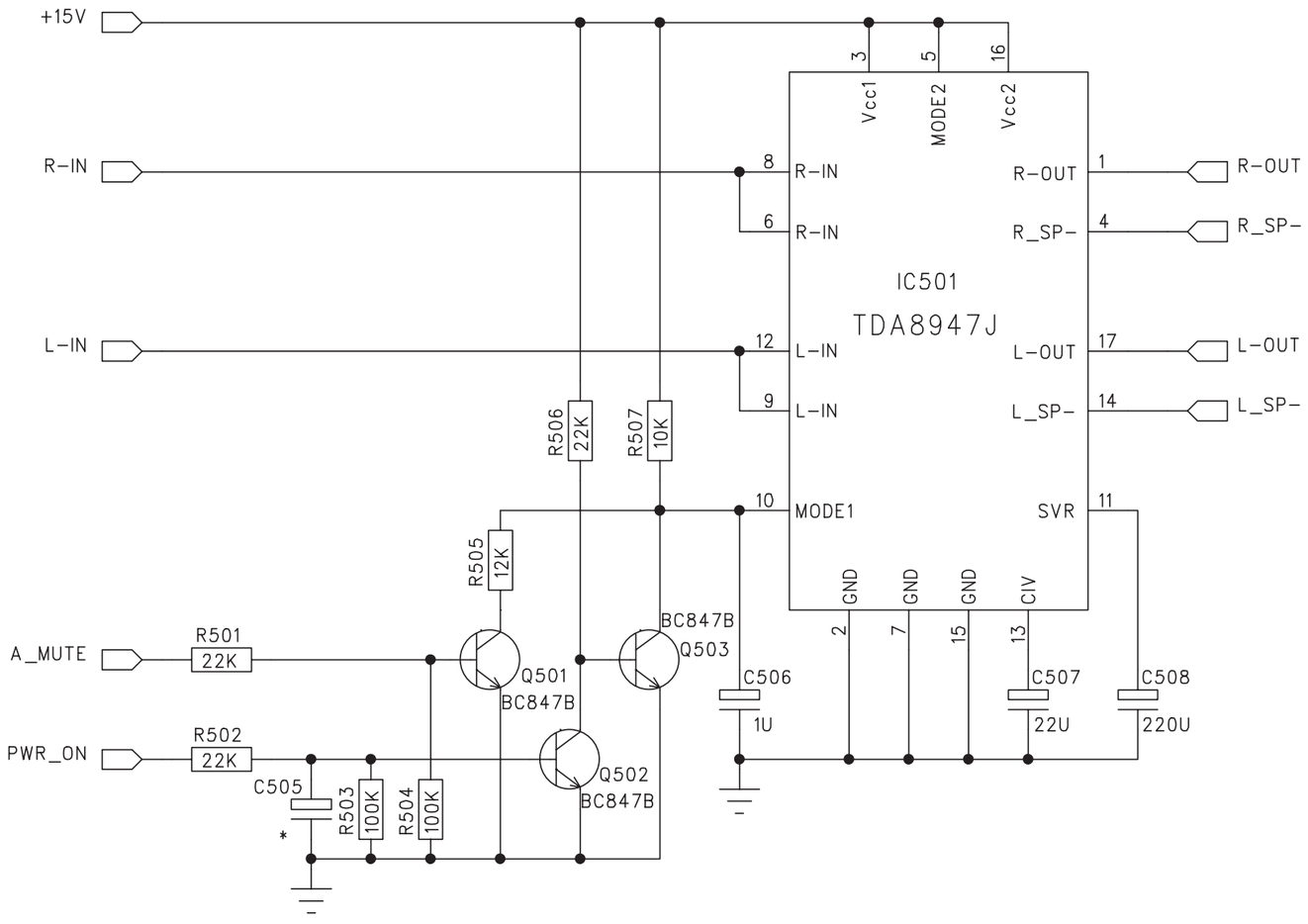
9 - 1

CIRCUIT DIAGRAM - MAIN BOARD



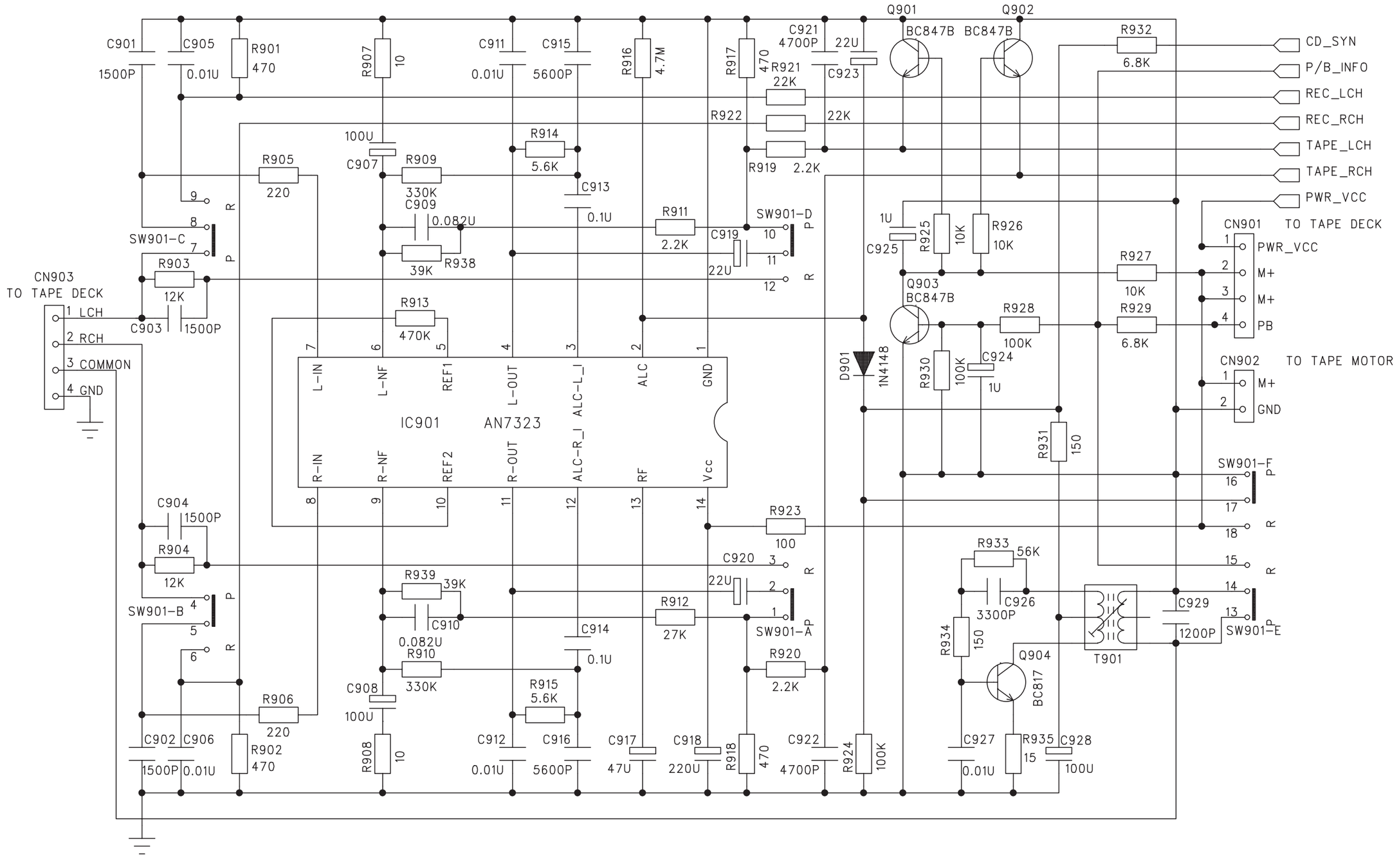
9 - 2

CIRCUIT DIAGRAM - MAIN BOARD



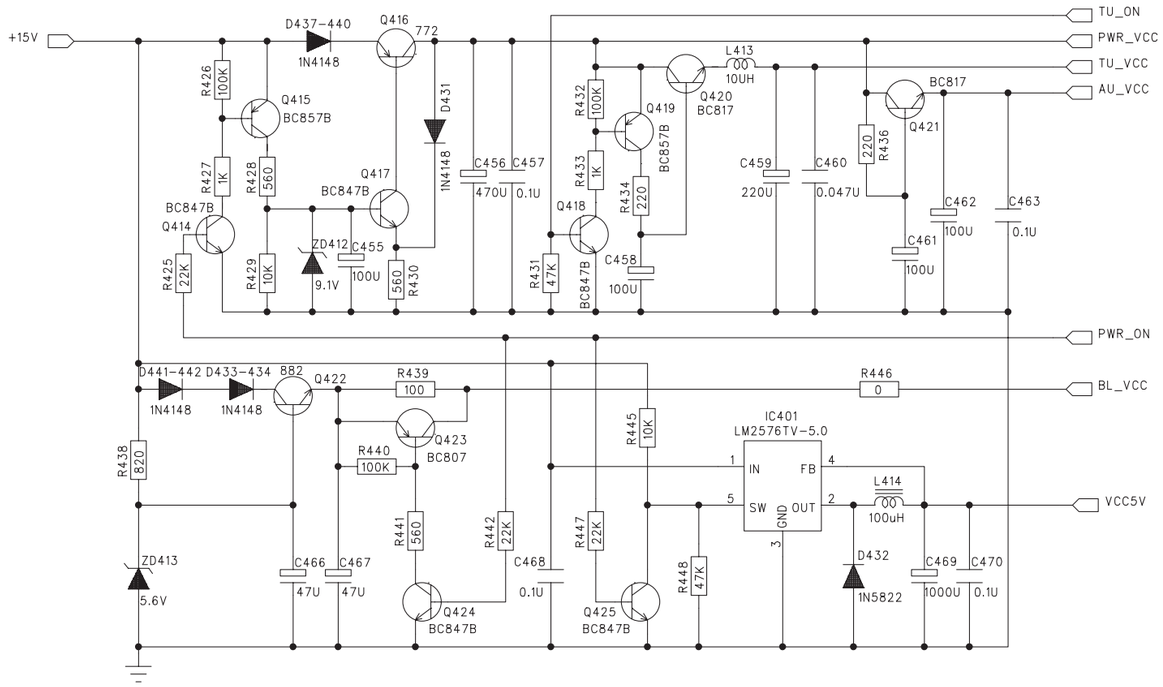
9 - 3

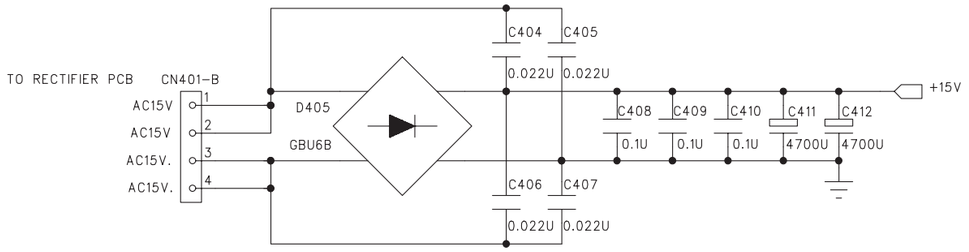
CIRCUIT DIAGRAM - MAIN BOARD

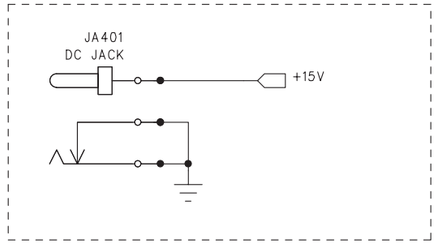


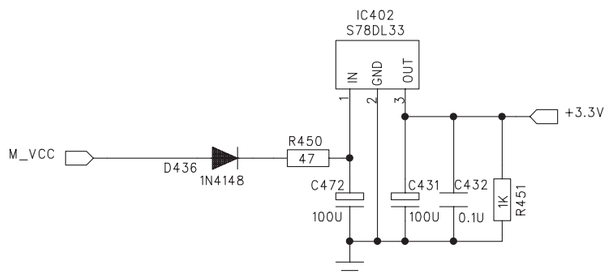
9 - 4

CIRCUIT DIAGRAM - MAIN BOARD



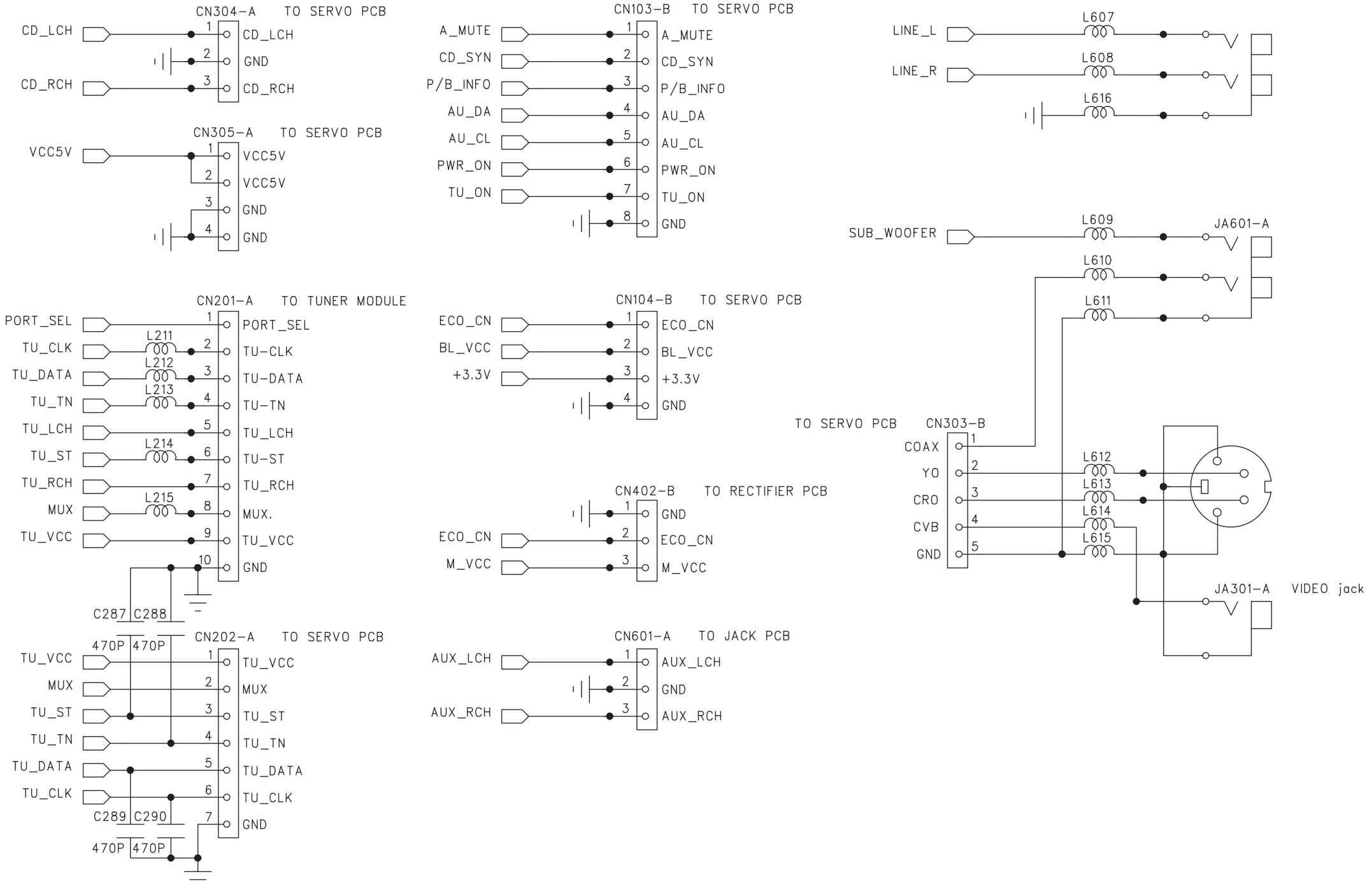






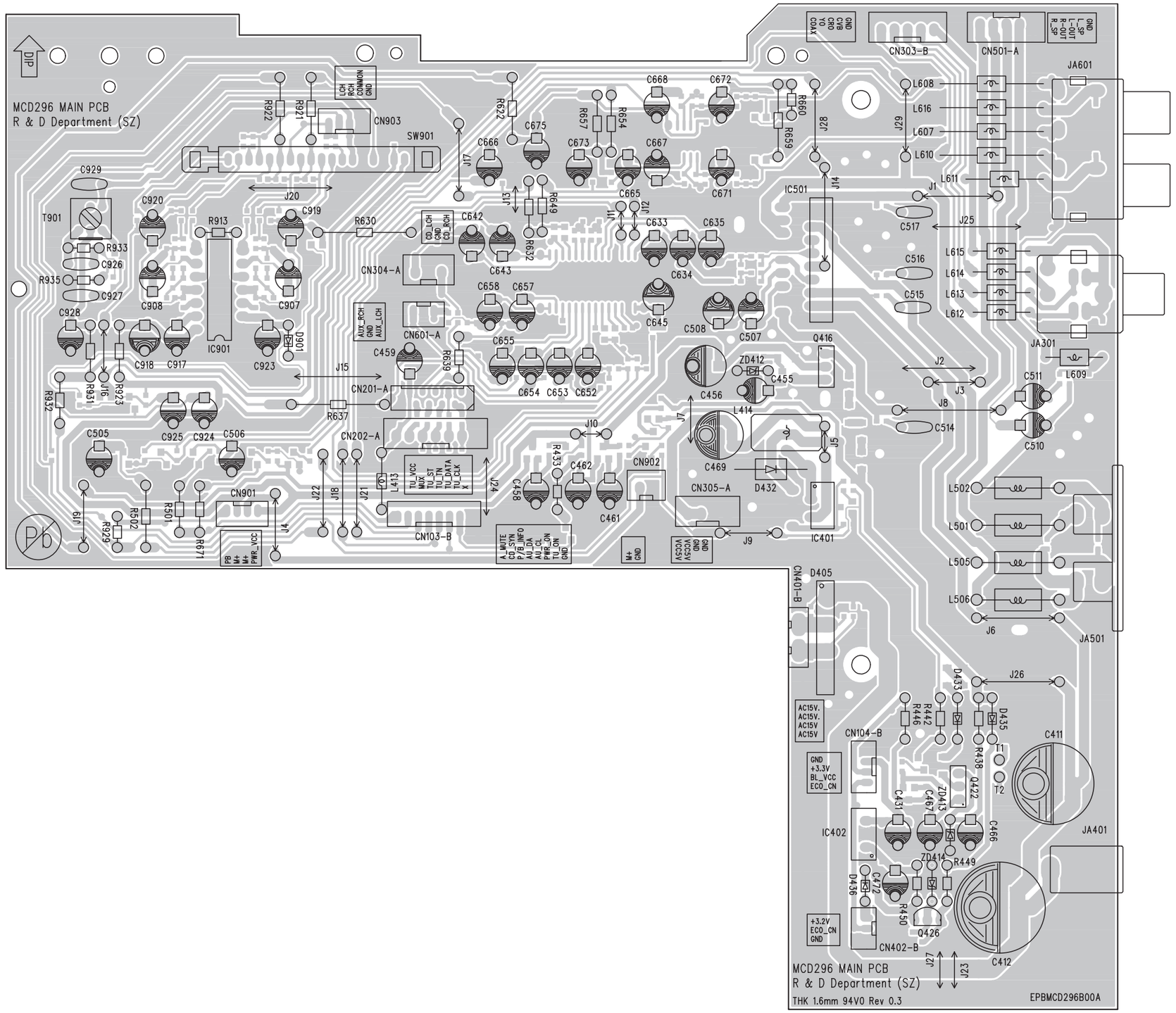
9-5

CIRCUIT DIAGRAM - MAIN BOARD



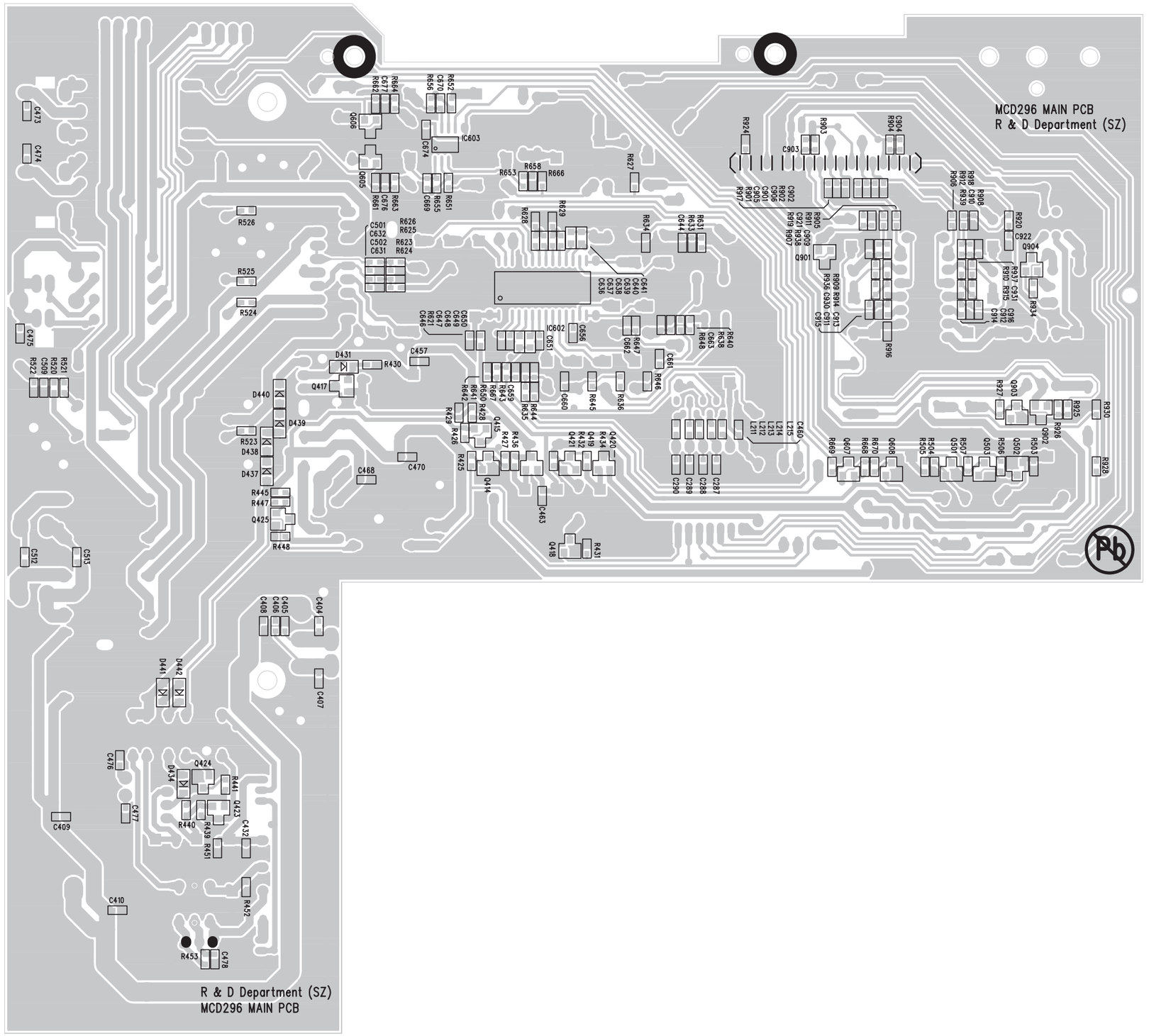
9 - 6

LAYOUT DIAGRAM - MAIN BOARD



9 - 7

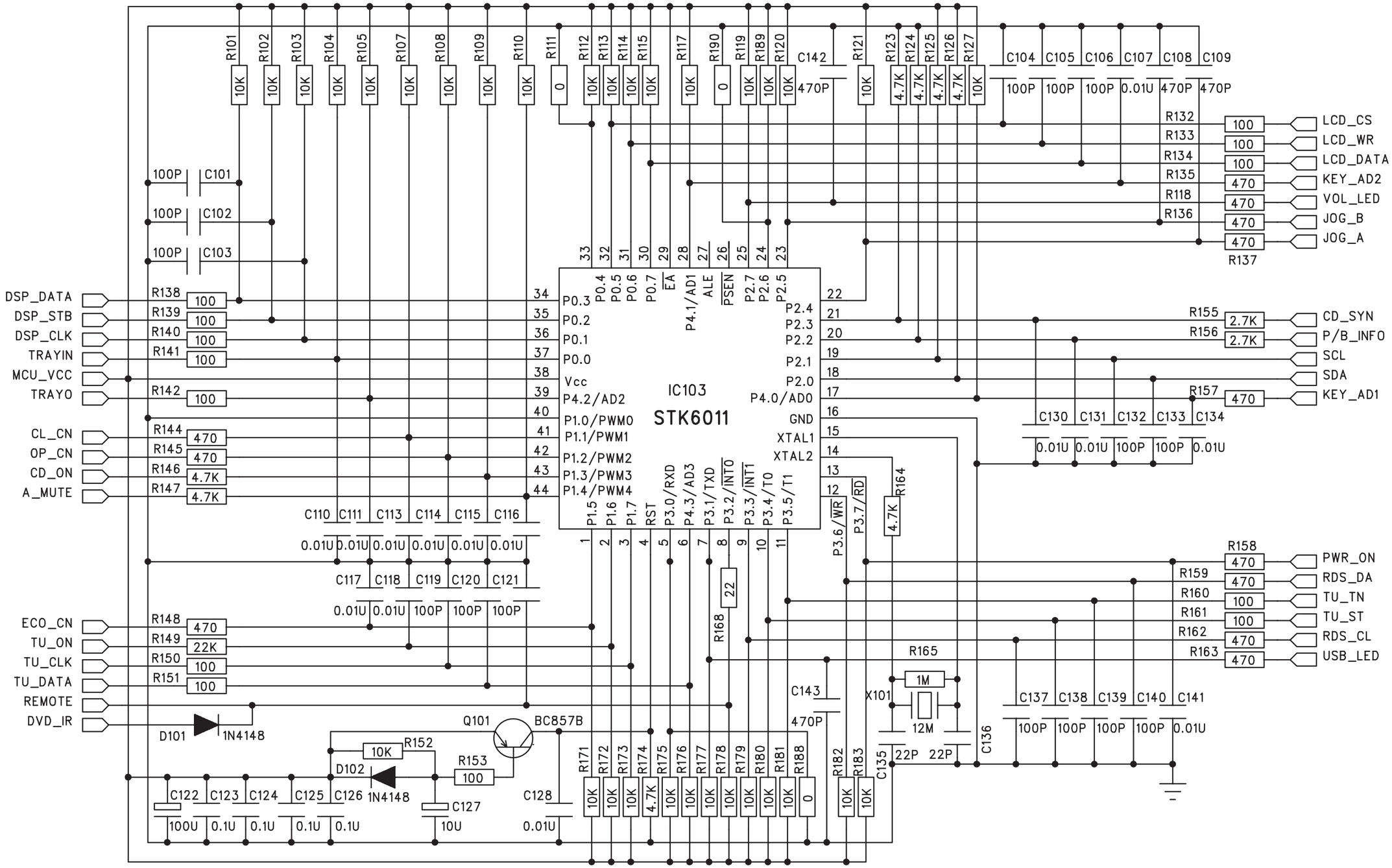
LAYOUT DIAGRAM - MAIN BOARD



10 - 1

CIRCUIT DIAGRAM - DVD MPEG BOARD

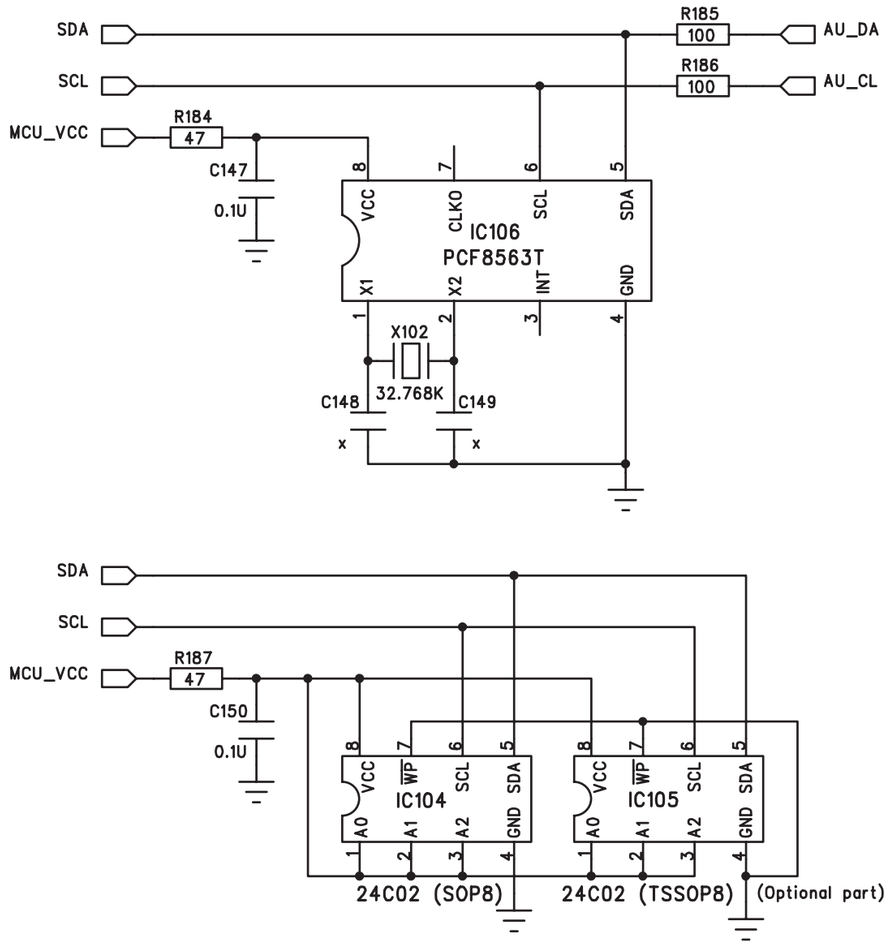
MPEG is not repaired,diagram for referrence only.

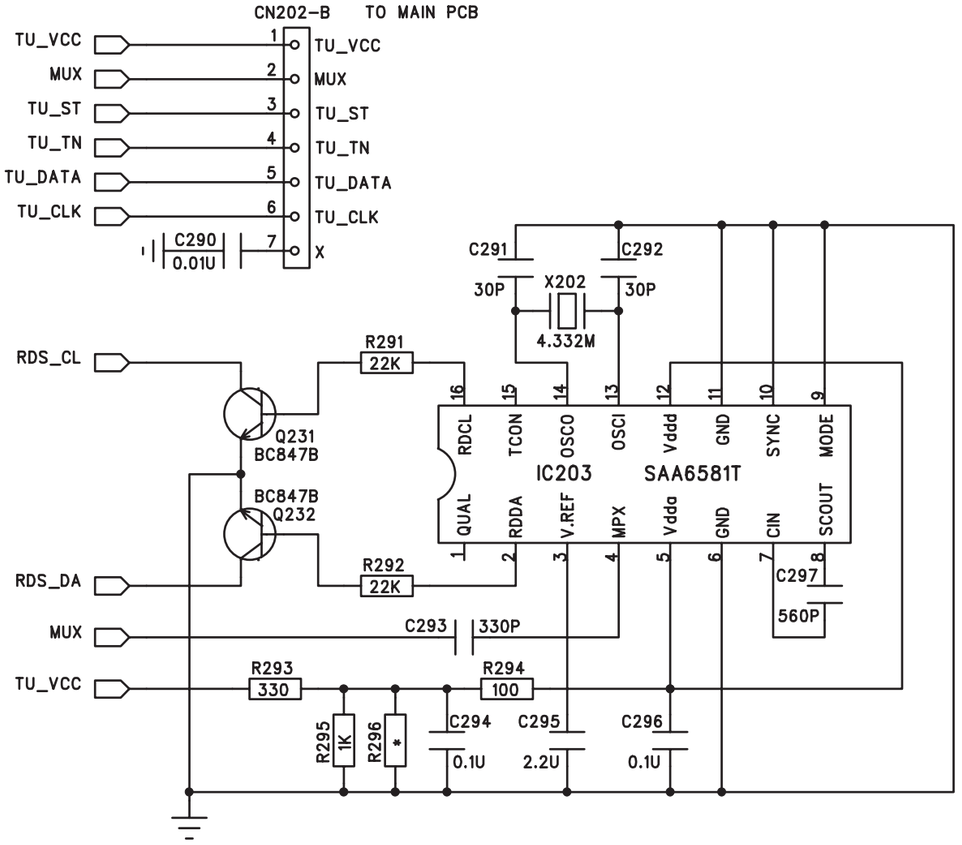


10 - 2

CIRCUIT DIAGRAM - DVD MPEG BOARD

MPEG is not repaired,diagram for referrence only.

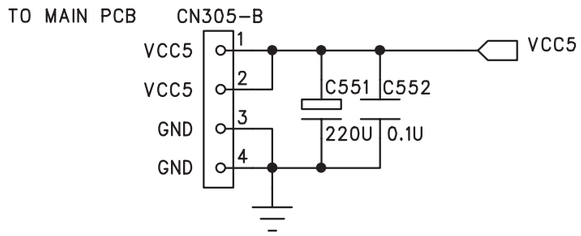


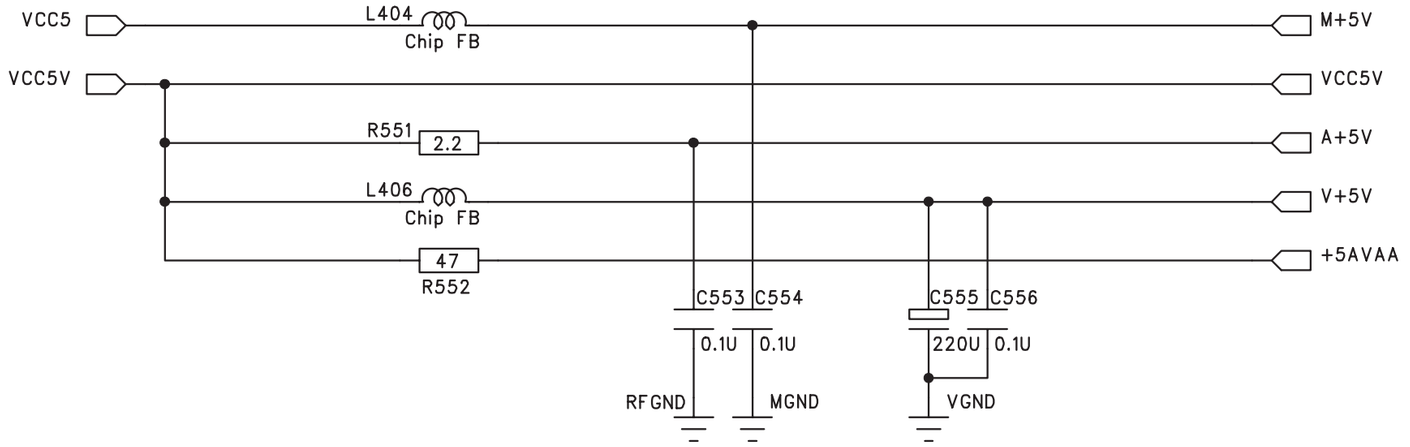


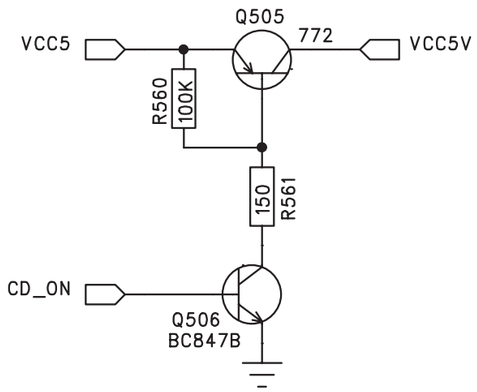
10 - 3

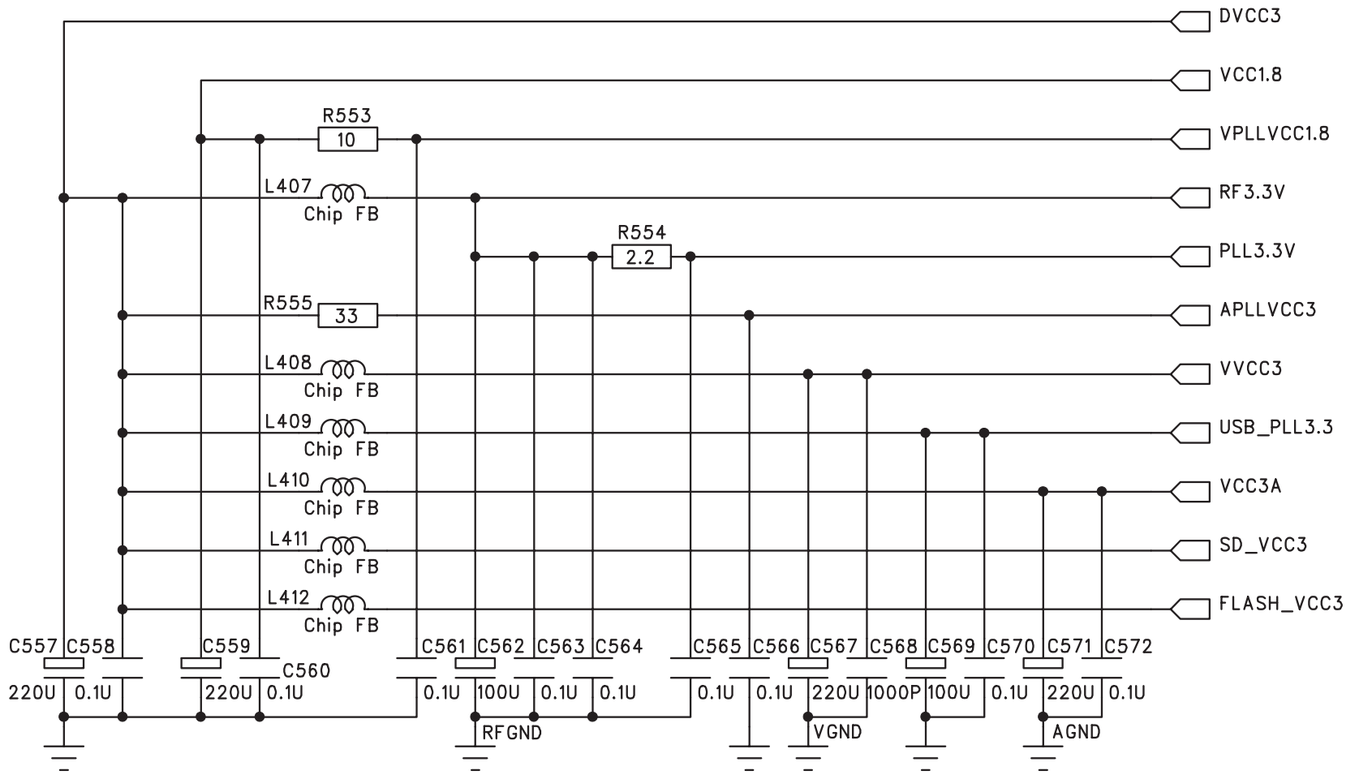
CIRCUIT DIAGRAM - DVD MPEG BOARD

MPEG is not repaired,diagram for referrence only.





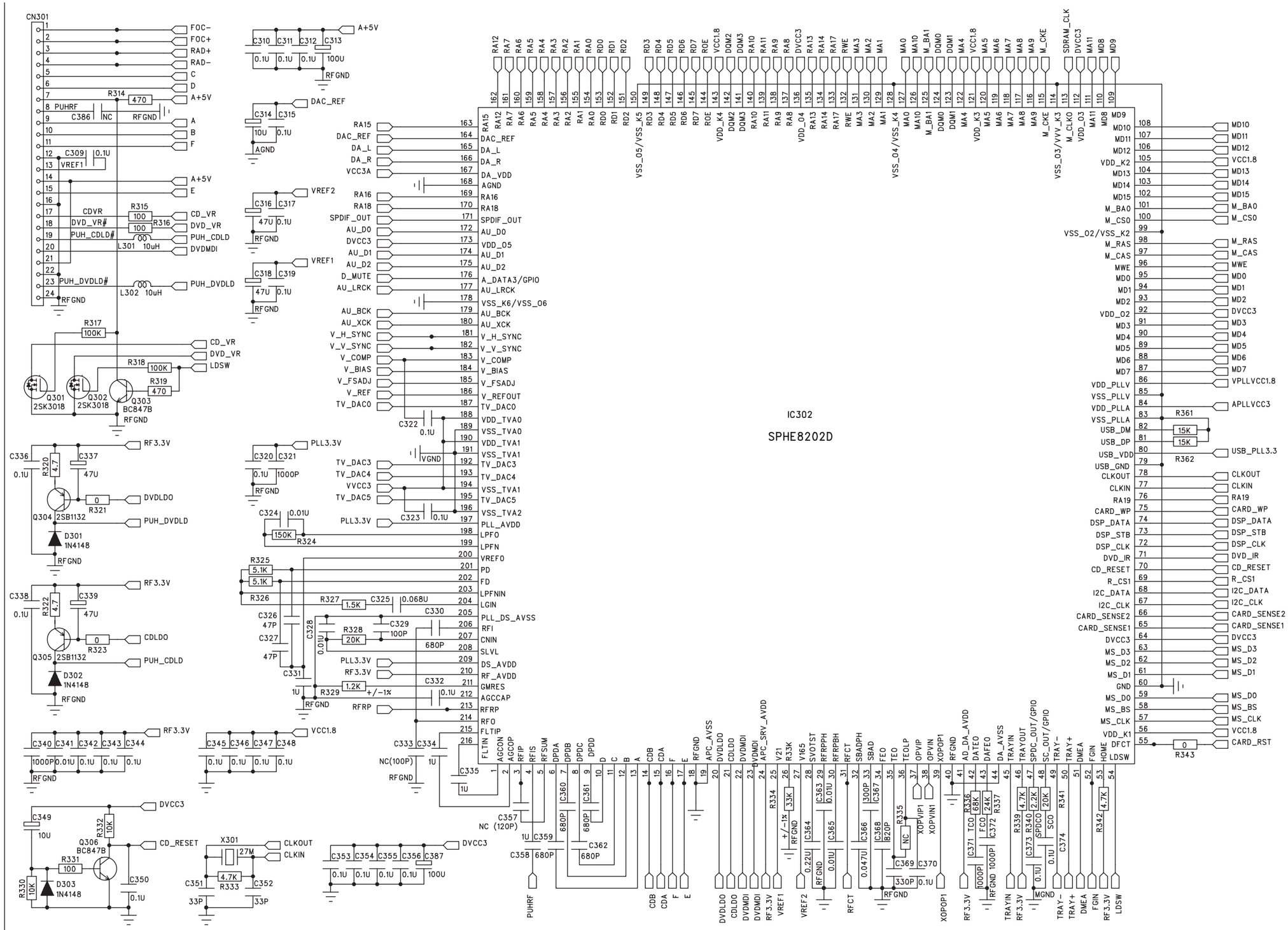




10 - 4

CIRCUIT DIAGRAM - DVD MPEG BOARD

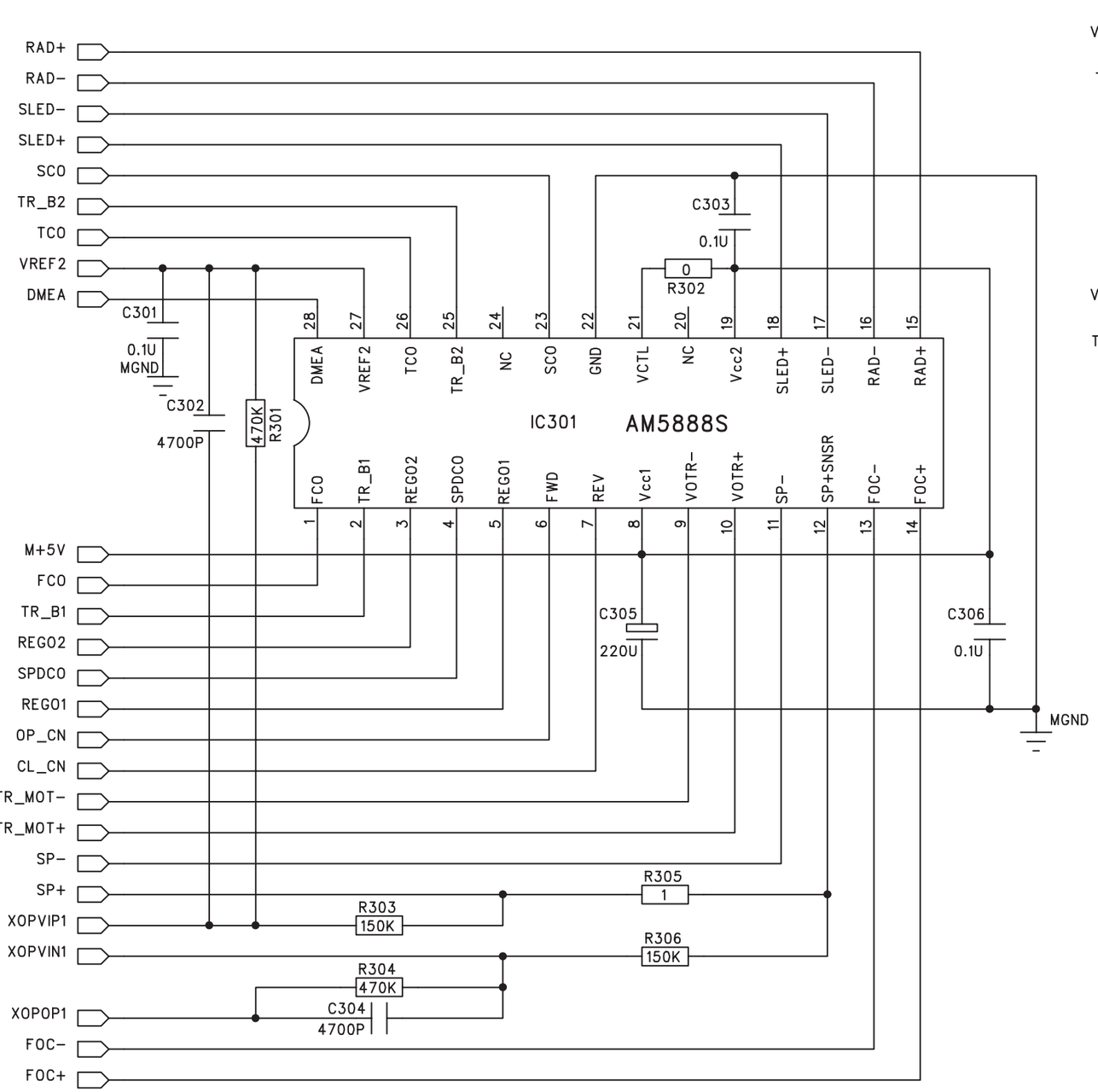
MPEG is not repaired,diagram for referrence only.



10 - 5

CIRCUIT DIAGRAM - DVD MPEG BOARD

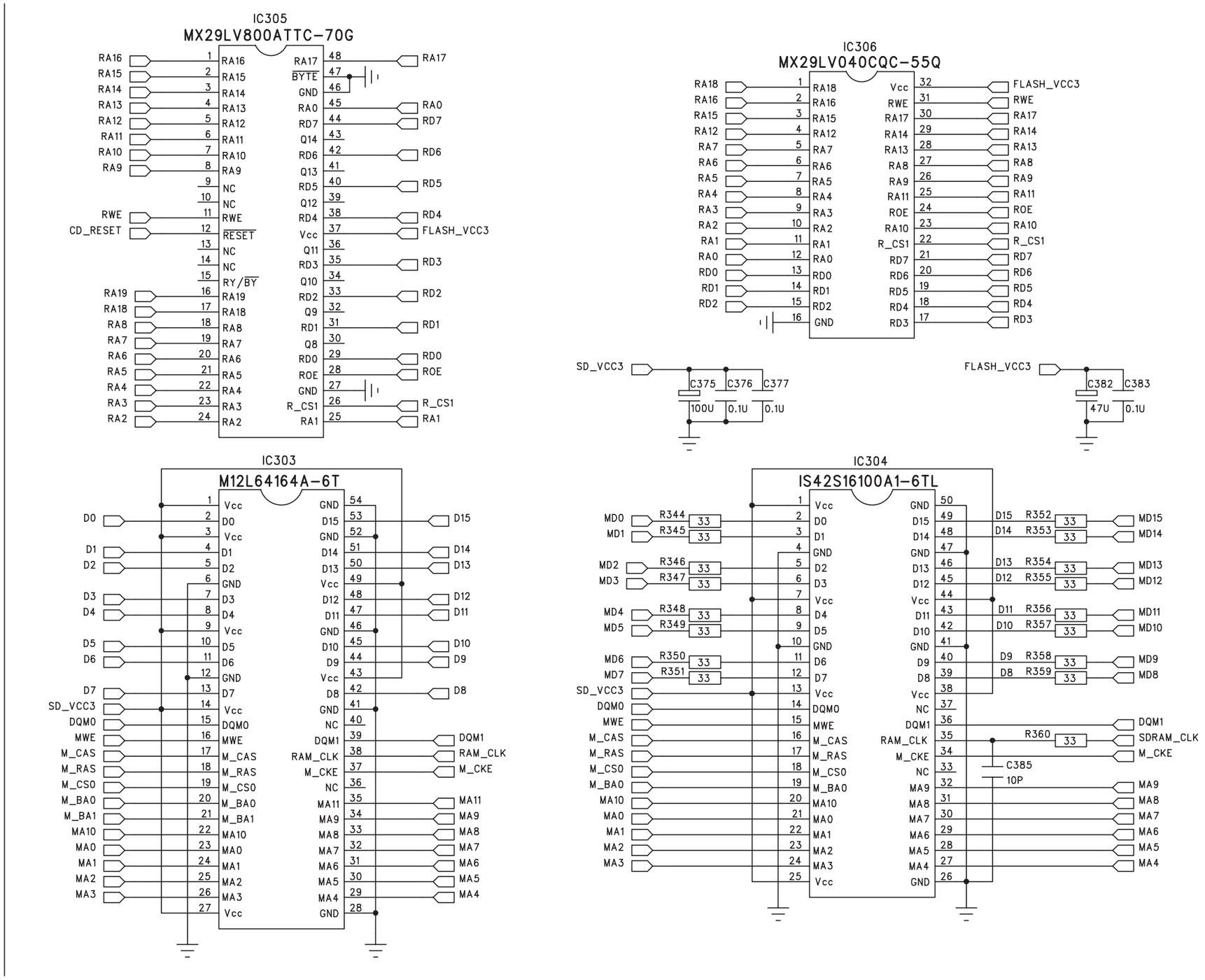
MPEG is not repaired,diagram for referrence only.



10 - 6

CIRCUIT DIAGRAM - DVD MPEG BOARD

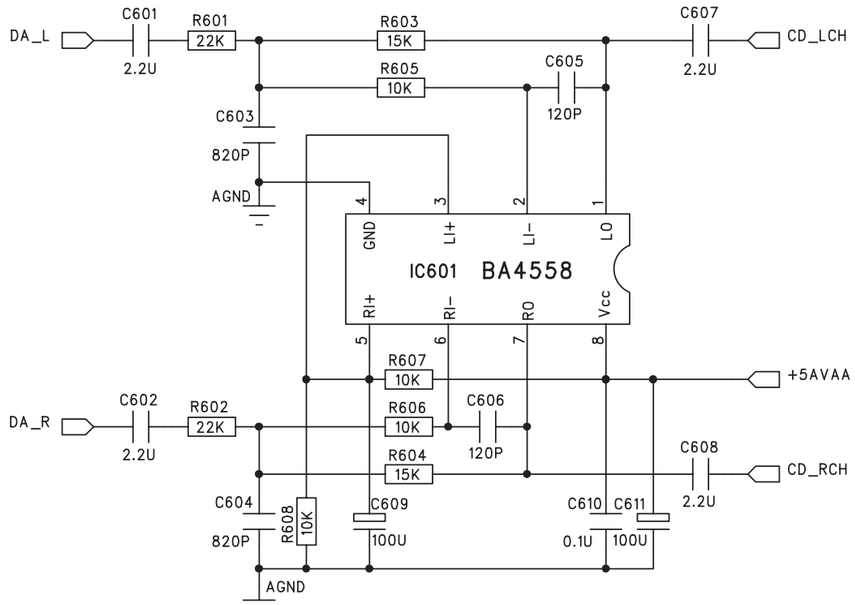
MPEG is not repaired,diagram for referrence only.

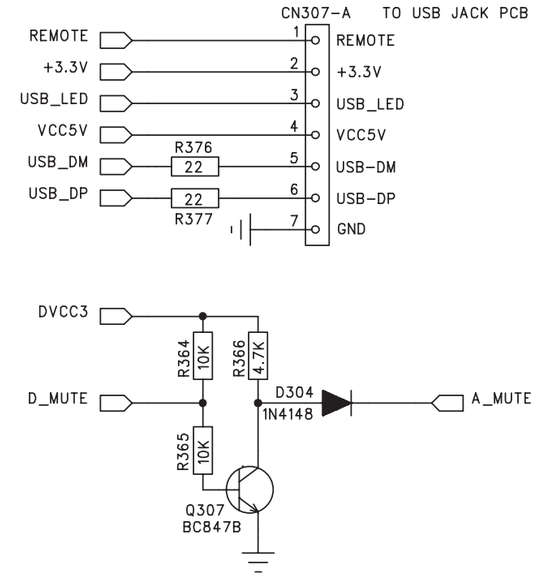


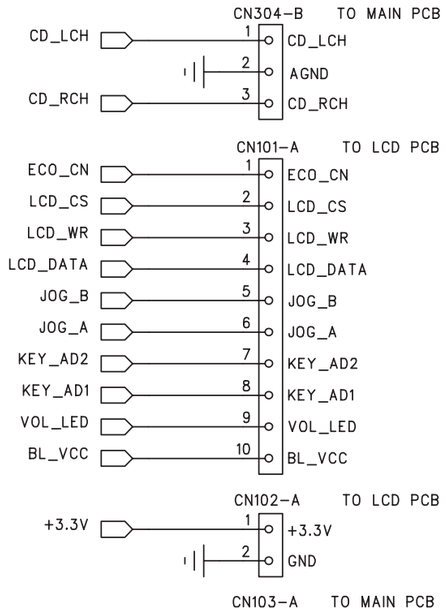
10 - 7

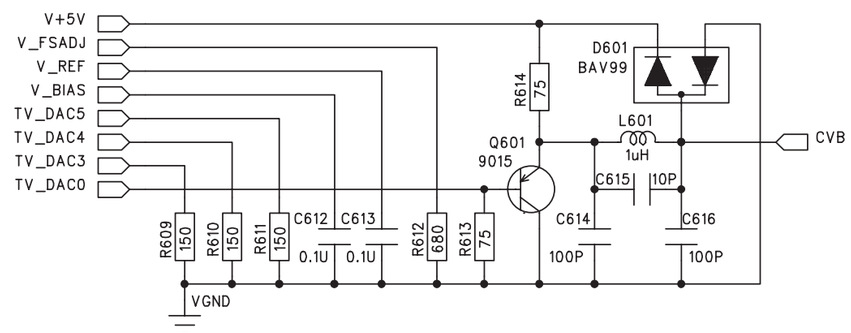
CIRCUIT DIAGRAM - DVD MPEG BOARD

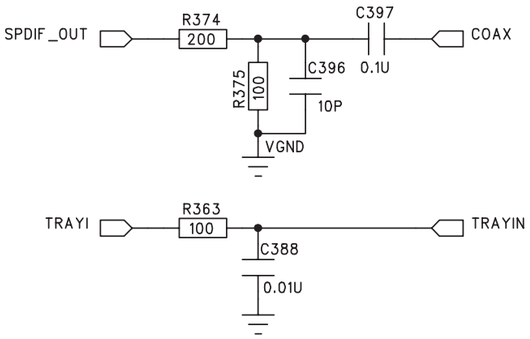
MPEG is not repaired,diagram for referrence only.

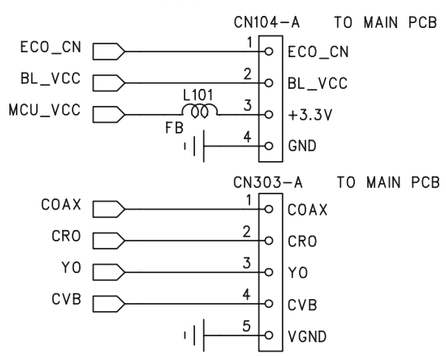


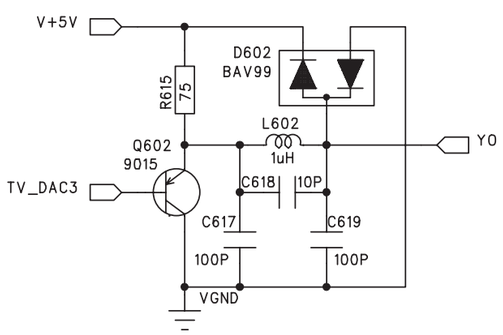


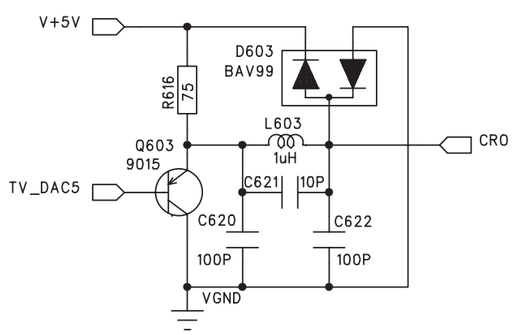








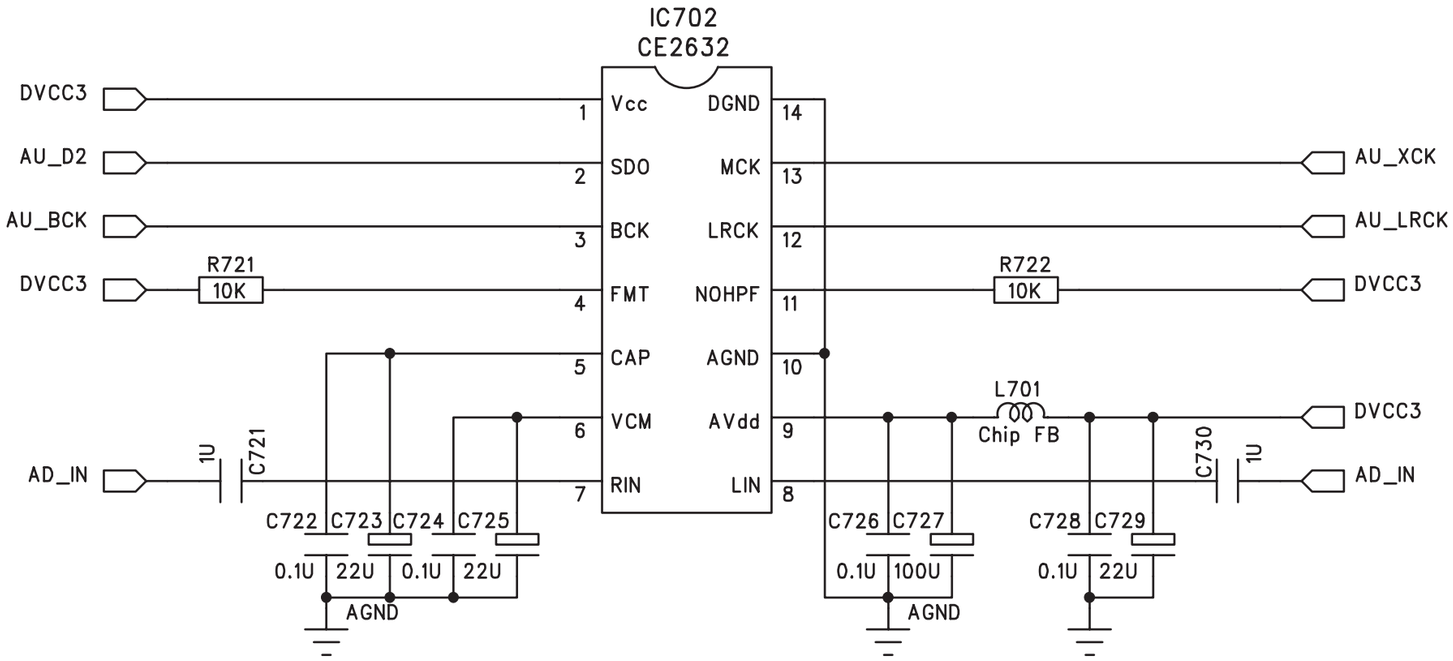


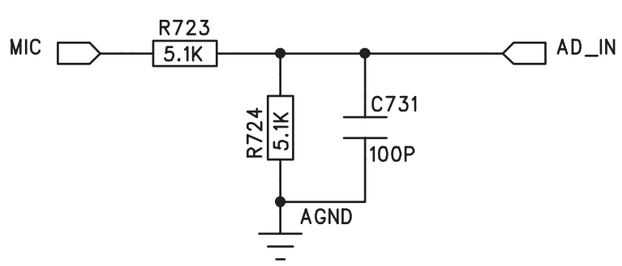


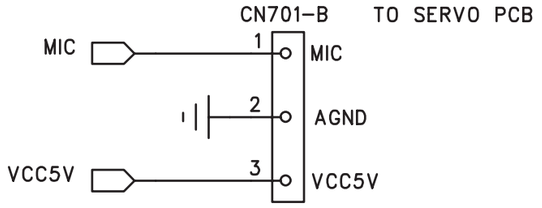
10 - 8

CIRCUIT DIAGRAM - DVD MPEG BOARD

MPEG is not repaired,diagram for referrence only.



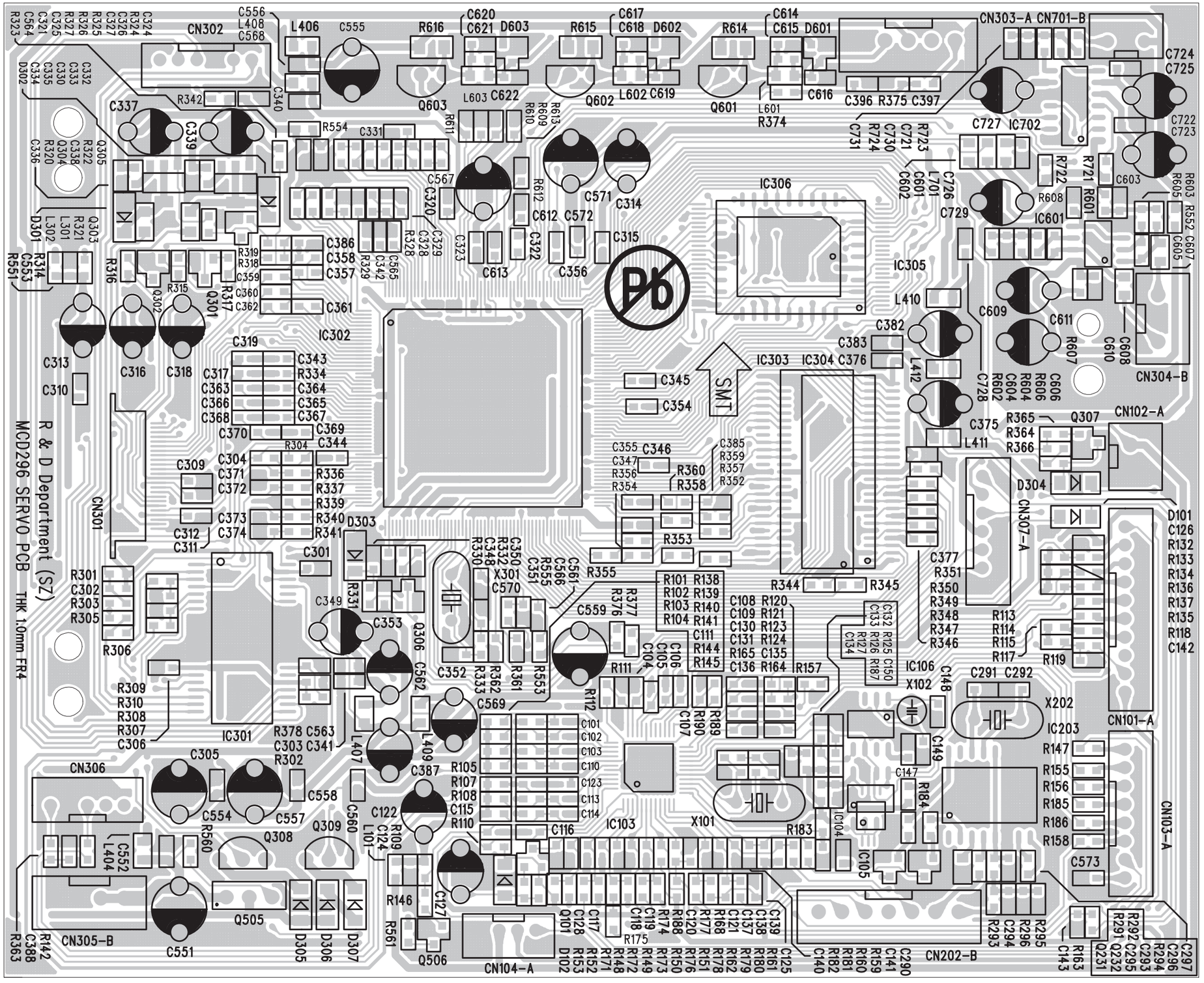




10 - 9

LAYOUT DIAGRAM - DVD MPEG BOARD

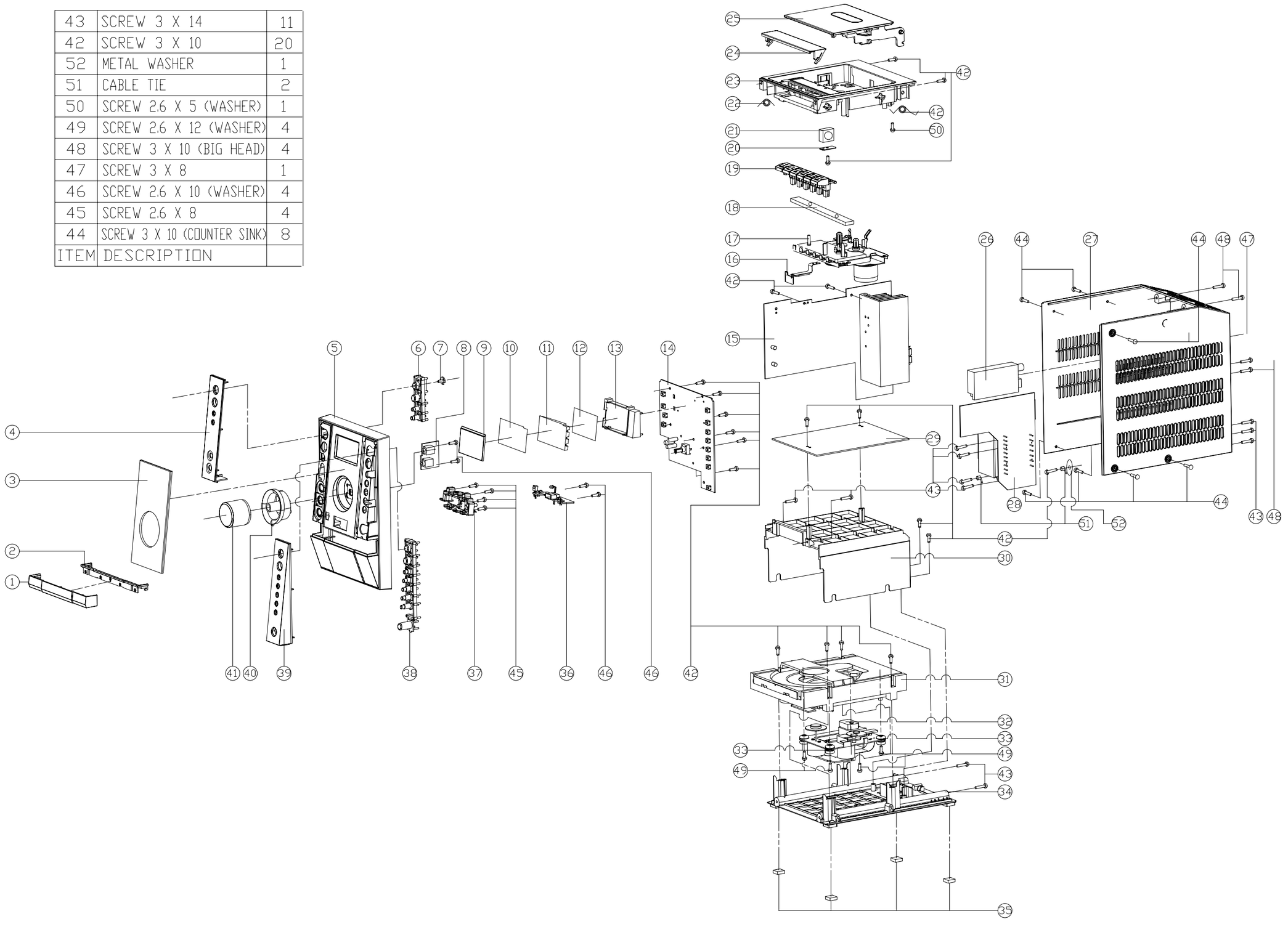
MPEG is not repaired,diagram for referrence only.



13 - 1

EXPLODED VIEW DIAGRAM

ITEM	DESCRIPTION	
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



MECHANICAL PARTSLIST

1	996510001085	CD LOADER COVER
3	996510001435	DISPLAY LENS
4	996510001436	LEFT FRONT PANEL
5	996510001431	FRONT CABINET
6	996510001434	CONTROL KEY SET - LEFT
7	996510001448	STANDBY BOTTON LIGHT GUIDE
16	996510001427	CASS.RECORD ARM
17	996510001449	CASS DECK MECHANISM
19	996510001441	CASS KEY - FF
19	996510001440	CASS KEY - PLAY
19	996510001439	CASS KEY - PAUSE
19	996510001442	CASS KEY - FB
19	996510001443	CASS KEY -REC
19	996510001444	CASS KEY - STOP
19	996510001447	CASS KEY - BRACKET
21	994000001409	CD DOOR GEAR HOLDER
21	996510000931	CD DOOR GEAR
22	996510001429	CASS KEY DOOR SPRING
23	996510001080	TOP CABINET
24	996510001445	CASSETTE KEY DOOR
25	996510001446	CASS DOOR
27	996510001432	REAR CABINET
31	996510001452	DVD TRAY LOADER WXD-8213
32	996510001451	DVD MECHANISM SONY
33	996510001430	CD DAMPER
34	996510001081	BOTTOM CABINET
35	996510001076	RUBBER FOOT 11.8X11.8X6MM
38	996510001433	CONTROL KEY SET - RIGHT
39	996510001437	RIGHT FRONT PANEL
40	996510001438	VOLUME KNOB RING
41	996510001082	VOLUME KNOB
42	996510001428	CASS.DOOR SPRING
	996510001450	VDE AC CORD 1.72M BK
	996510001090	TUNER MODULE ENG07821QF
	996510001406	SERVO PCB ASSEMBLY

ACCESSORIES

SPE	996510001455	WOODEN SPEAKER BOX (LEFT + RIGHT)
WIR	996510001456	RCA WIRE 1500MM BLACK WIRE
RC	996510001457	REMOTE CONTROL
ANT	994000003268	ANTENNA WIRE 1000MM
AML	996510001099	AM LOOP FRAME ASSY

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

ELECTRICAL PARTSLIST

LCD/USB JACK PCB ASSEMBLY

	996510001425	LCD MOUNTING BRACKET
	996510001426	LCD LIGHT GUIDE
IC101	996510001424	I.C.SL4808DQ QFP100
LCD	996510001421	LCD 49 PINS FOR MCD296
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 33B4SCA01
LED6	996510001422	LED INDICATOR BLUE 33B4SCA01
LED7	996510001422	LED INDICATOR BLUE 33B4SCA01
SW10	996500039269	TACT SWITCH
SW11	996500039269	TACT SWITCH
SW12	996500039269	TACT SWITCH
SW1	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
	996510001420	LCD/USB JACK PCB ASSEMBLY

JACK PCB ASSEMBLY

JA502	994000001456	STEREO HEADPHONE JACK
JA602	996510001073	EARPHONE CKX3.5-19S (3PIN)

LCD / USB JACK ASSEMBLY

IC102	996510001070	INFRARED RECEIVER SM3385B

RECTIFIER PCB ASSEMBLY

FUSE1	996510001417	FUSE 8A 250V 5.2X20MM
K401	994000001448	9V DC RELAY 10A ME-7-009-HL
Q401	996500039268	TRANSISTOR KTC-8050C
T401	996510001419	TRANSFORMER MAIN EI-66
T402	996510001418	TRANSFORMER STANDBY EI-28
	996510001416	RECTIFIER PCB ASSEMBLY

ELECTRICAL PARTSLIST

MAIN PCB ASSEMBLY

IC401	996510001412	IC LM2576TV-5.0 TO-220V
IC402	996510001415	TRANSISTOR S78DL33-AT TO-92
IC501	994000003203	POWER AMPLIFIER IC TDA8947J
IC602	996510001056	IC ET2314
IC603	996510001055	IC BA4558 SOP8
IC901	996510001411	I.C.D7312 / D7312CP (DIP)
JA301	996510001410	RCA JACK 8.3MM (RCA-124-012)
JA501	996510000380	PUSH TERMINAL JACK PST-418
JA601	996510001409	RCA JACK 8.3MM 4HOLES
Q416	996510001414	TRANSISTOR KTB772 (KEC) TAPE
Q422	996510001413	TRANSISTOR 2SD882Q
SW901	994000002397	REC SWITCH 6P2T
T901	996510001408	AM OSC BLACK 7MM
	996510001407	MAIN PCB ASSEMBLY
	996510001453	FFC CABLE 24P
	996510001454	FFC CABLE 24P
	996510001090	TUNER MODULE ENG07821QF

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