

Service
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Service Manual



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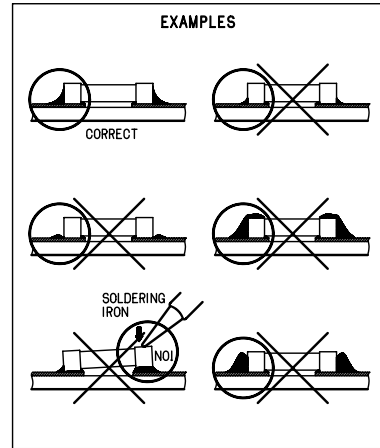
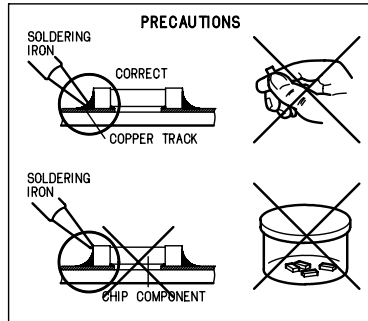
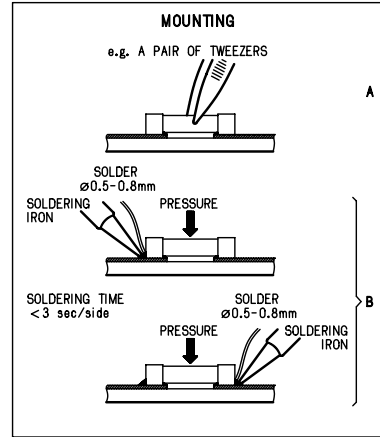
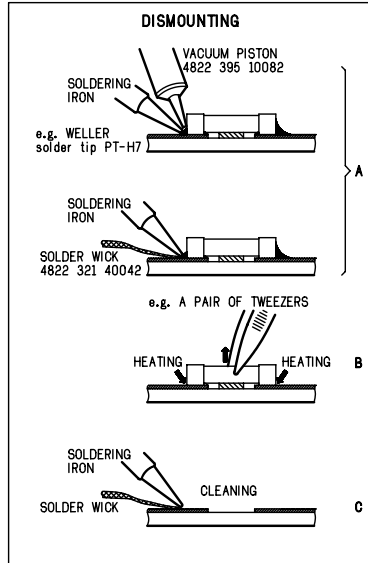
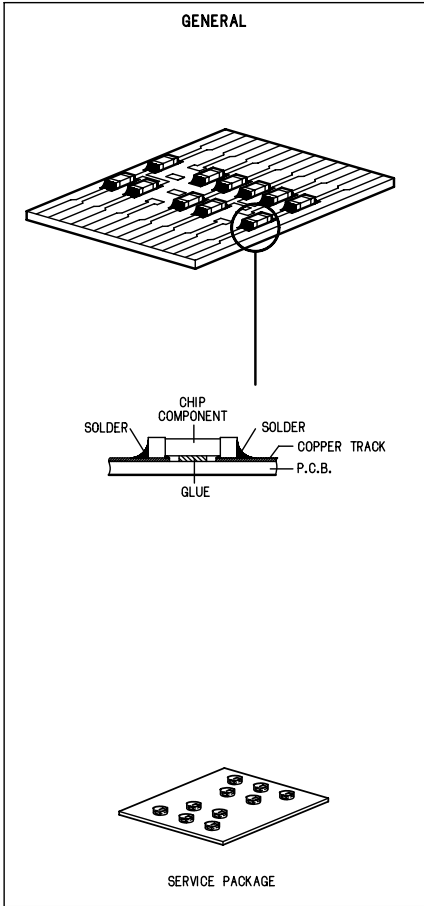
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Version 1.0



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 verminderen. 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 longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation. Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfileur le bracelet sertit 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). Unvorsichtige 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 ridotta in caso di non osservazione della più grande cautela alla loro manipolazione. Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza. Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(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

(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

SAFETY



(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.

(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

(I)

Le norme di sicurezza estigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati. Componenti di sicurezza sono marcati con



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

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

(DK) Advarsel! Usynlig laserstrålning ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for strålning.

(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 sécurité, 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

GENERAL

Mains voltage	-/93 : 220V
	-/98 : 120/230V
	-/12 : 230V
	-/37 : 120V
Mains frequency	-/93 : 50 Hz
	-/98 : 50/60 Hz
	-/12 : 50 Hz
	-/37 : 60 Hz
Battery	remote : 3 V (AAA x 2)
Power consumption	normal : < 85 W
	Standby : < 4 W

AMPLIFIER

Output power	: 2 x 75 W
Loaded impedance	: 2 x 8 ohm
Frequency response	: 100 Hz - 20 kHz (± 1 dB)
Dimension (W x H x D)	: 232 x 76 x 224 mm
Weight	: 3.3 Kg

DVD

Video System	: NTSC & PAL
Frequency response	: 100 Hz - 20 kHz (± 1 dB)
Dimension (W x H x D)	: 232 x 76 x 224 mm
Weight	: 1.9 Kg

TUNER - FM SECTION

Tuning range	: 87.5 - 108 MHz
IF frequency	: 10.7 MHz \pm 0.02 MHz
Sensitivity	: < 22 dBf at 26dB
Selectivity	300kHz : > 33 dB
IF Rejection	: > 60 dB
Image Rejection	: > 25 dB
Distortion	: < 3 %
Tuning Grid	: 100/50 KHz

TUNER - AM SECTION

Tuning range	: 531 - 1602 kHz
Tuning Grid	: 9/10K Hz
IF frequency	: 450 kHz \pm 1 kHz
Sensitivity	: \leq 3.25 mV/m at 26dB
Selectivity S9/300kHz	: > 12 dB
IF rejection	: > 24 dB
Distortion	: < 5%
Image rejection	: > 20 dB

DVD / MP3 / CD

Laser Type	: Semiconductor
Disc Diameter	: 12cm / 8cm
Video Decoding	: MPEG-2 / MPEG-1
Signal System	: PAL / NTSC
Video S/N	: 53 dB (min.)
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	: 20 Hz - 20 kHz
Channel Unbalance	: $< \pm 2$ dB
THD Noise	: 0.5%
No. of programmable tracks	: 20
Signal-to-noise ratio	: 70 dBA
Channel separation	: 40 dB (1 kHz) : 35 dB (16 kHz) : 30 dB (20 kHz)
Total harmonic distortion	: < 0.02% (1 kHz)

SERVICE TOOLS

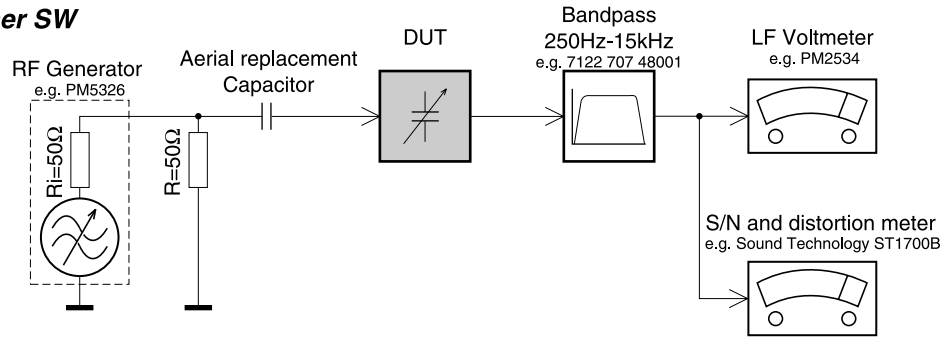
Audio signal disc SBC 429.....	4822 397 30184
Playability test disc SBC 444.....	4822 397 30245
Test disc 5 (disc without errors) +	
Test disc 5A (disc with dropout errors, black spots and fingerprints)	
SBC 426/426A.....	4822 397 30096
Burn in test disc (65 min. 1kHz signal at -30 dB level without "pause").....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

AVAILABLE ESD PROTECTION EQUIPMENT

anti-static table mat large 1200x650x1.25mm	4822 466 10953
small 600x650x1.25m	4822 466 10958
anti-static wristband	4822 395 10223
connection box (3 press stud connections, 1M Ω)	4822 320 11307
extendible cable (2m, 2M Ω , to connect wristband to connection box)	4822 320 11305
connecting cable (3m, 2M Ω , to connect table mat to connection box)	4822 320 11306
earth cable (1M Ω , 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

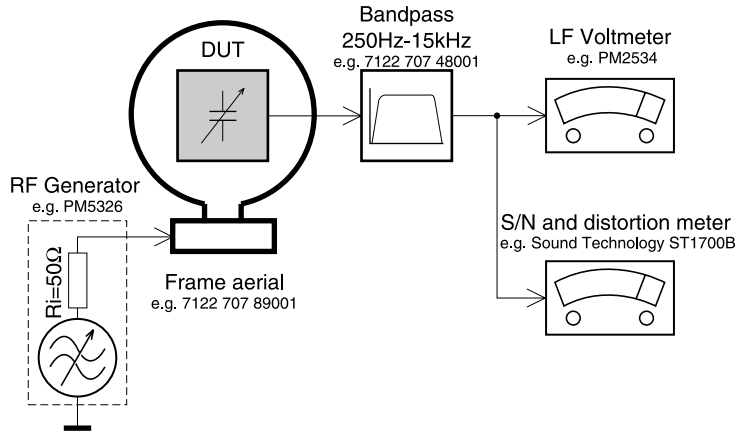
SERVICE MEASUREMENT

Tuner SW



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).

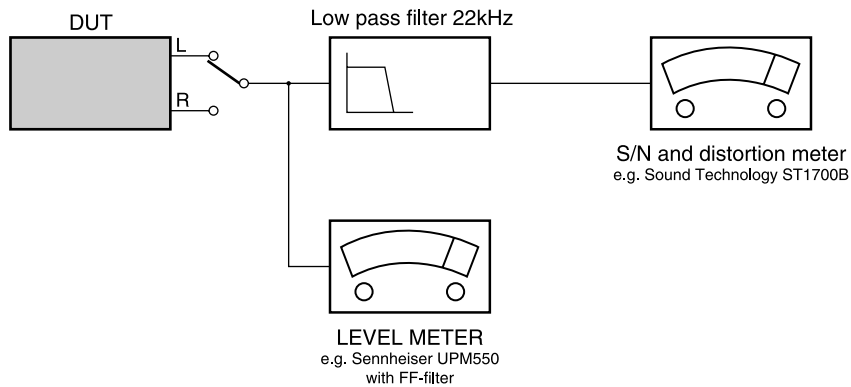
Tuner AM (MW,LW)



To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday's cage.

CD

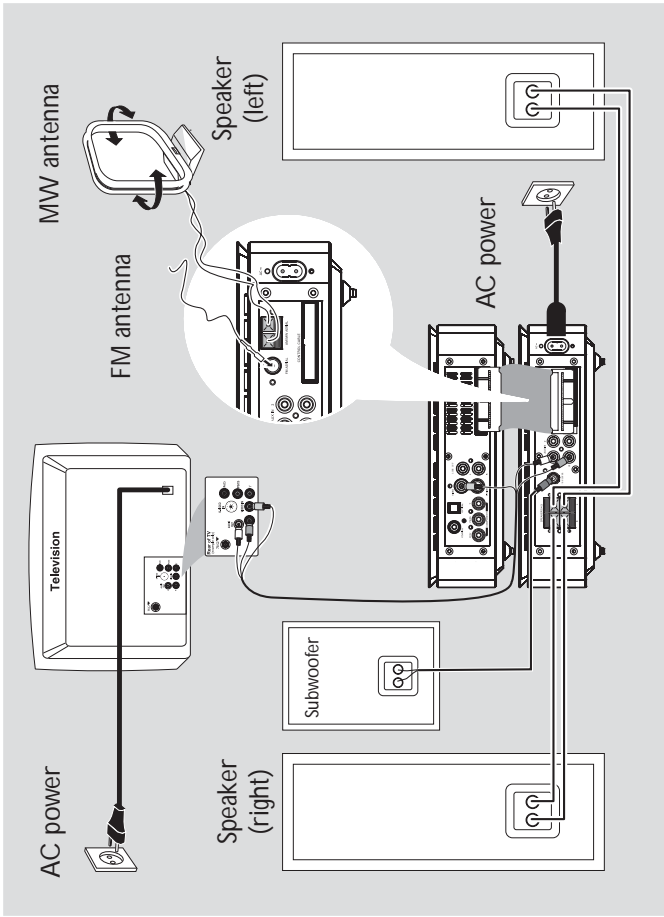
Use Audio Signal Disc SBC429 4822 397 30184 (replaces test disc 3)
 L.P.F. = 13th order filter 4822 395 30204



CONNECTION AND CONTROLS

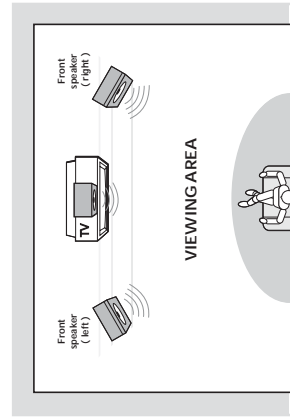
Connections

Connections



- IMPORTANT!**
- The type plate is located at the bottom of the system.
 - Before connecting the AC power cord to the wall outlet, ensure that all other connections have been made.
 - Never make or change any connections with the power switched on.

Step 1: Placing speakers

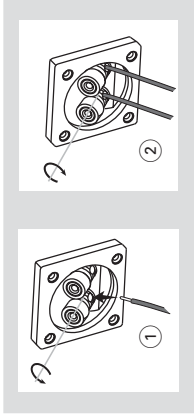


Place the front left and right speakers at equal distances from the TV set and at an angle of approximately 45 degrees from the listening position.

- Notes:**
- To avoid magnetic interference, do not position the front speakers too close to your TV set.
 - Allow adequate ventilation around the DVD System.

Step 2: Connecting speakers

Connect the speaker wires to the SPEAKERS terminals, right speaker to "R" and left speaker to "L" coloured (marked) wire to "+" and black (unmarked) wire to "-". Fully insert the stripped portion of the speaker wire into the terminal as shown.



- Connect the passive subwoofer to the SUBWOOFER terminal with the supplied subwoofer cable by matching the plug types.

Notes:

- Ensure that the speaker cables are correctly connected. Improper connections may damage the system due to short-circuit.
- For optimal sound performance, use the supplied speakers.
- Do not connect more than one speaker to any one pair of +/- speaker jacks.
- Do not connect speakers with an impedance lower than the speakers supplied. Please refer to the SPECIFICATIONS section of this manual.

Step 3: Connecting the control cable

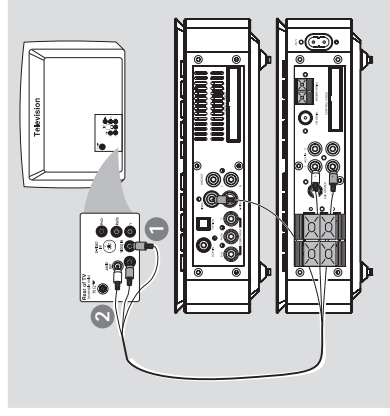
Connect the serial port marked "CONTROL CABLE" at the rear of the DVD player to the same port at the rear of the power amplifier with the supplied flat control cable.

Step 4: Connecting TV

IMPORTANT!

- You only need to make one video connection from the following options, depending on the capabilities of your TV.
- Connect the DVD system directly to the TV.

Using Composite Video jack



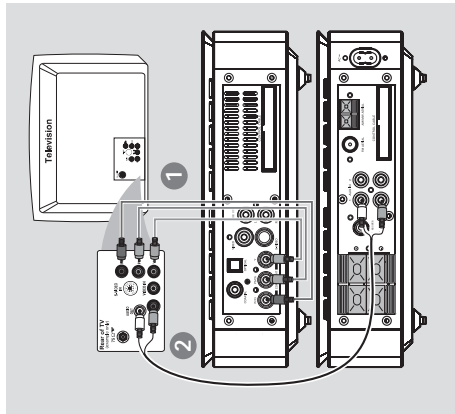
- Use the composite video connectors (yellow) of the supplied audio and composite video cables (2-in1) to connect the DVD system's **VIDEO OUT** jack to the video input jack (or labeled as A/V In, CVBS, Composite or Baseband) on the TV.
- To hear the TV channels through this DVD system, use the audio connectors (white/ red) of the supplied audio and composite video cables (2-in1) to connect **AUDIO IN** jacks to the corresponding **AUDIO OUT** jacks on the TV.

Connections

Using Component Video jacks (Y Pb Pr)

IMPORTANT!

- The progressive scan video quality is only possible when using Y Pb Pr, and a progressive scan TV is required.



- 1 Use component video cables (red/blue/green - not supplied) to connect the DVD system's Y Pb Pr jacks to the corresponding Component video input jacks (or labeled as Y Pb/Cb Pr/Cr or YUV) on the TV.
- 2 To hear the TV channels through this DVD system, use the audio cables (white/red) to connect AUDIO IN-TV jacks to the corresponding AUDIO OUT jacks on the TV.
- 3 If you are using a Progressive Scan TV (TV must indicate Progressive Scan or ProScan capability), to activate TV Progressive Scan, please refer to your TV user manual. For DVD system Progressive Scan function, see "Getting Started-Setting up Progressive Scan feature".

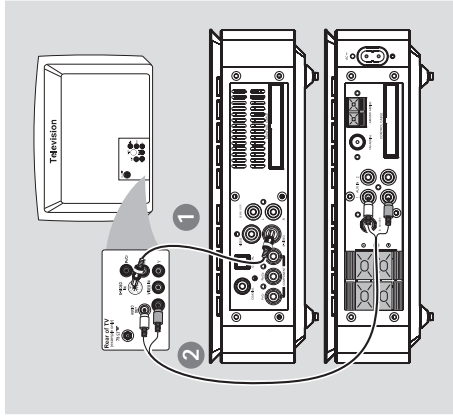
Note:

- If your TV does not support Progressive Scan, you will not be able to view the picture. Press **SYSTEM** on the remote to exit the system menu and then **DISC** to exit progressive scan.

Using S-Video jack

IMPORTANT!

- If S-Video is used for DVD playback connection, the system's VIDEO OUT setting will need to be changed accordingly.

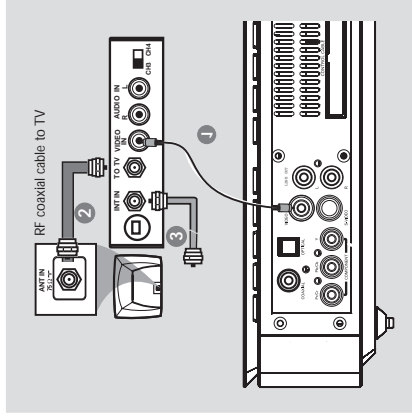


- 1 Use an S-Video cable (not supplied) to connect the DVD system's S-VIDEO jack to the S-Video input jack (or labeled as Y/C or S-VHS) on the TV.
- 2 To hear the TV channels through this DVD system, use the audio cables (white/red) to connect AUDIO IN-TV jacks to the corresponding AUDIO OUT jacks on the TV.

Using an accessory RF modulator

IMPORTANT!

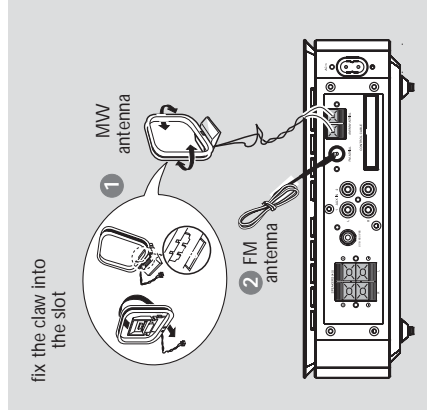
- If your TV only has a single Antenna In jack (labeled as 75 ohm or RF In), you will need an RF modulator in order to view DVD playback on the TV. See your electronics retailer or contact Philips for details on RF modulator availability and operations.



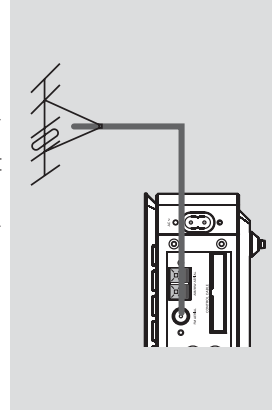
- 1 Use the composite video cable (yellow) to connect the DVD system's VIDEO OUT jack to the video input jack on the RF modulator.
- 2 Use an RF coaxial cable (not supplied) to connect ANTENNA OUT or TO TV jack on the RF modulator to the Antenna IN jack on the TV.
- 3 Connect the Antenna or Cable TV service signal to the ANTENNA IN or RF IN jack on the RF modulator. (It may have been connected to your TV previously. Disconnect it from the TV).

Connections

Step 5: Connecting FM/MW antennas



- 1 Connect the supplied MW loop antenna to the MW jack. Place the MW loop antenna on a shelf or attach to a stand or wall.
 - 2 Connect the supplied FM antenna to the FM (75 ohm) jack. Extend the FM antenna and fix its end to the wall.
- For better FM stereo reception, connect an external FM antenna (not supplied).



Note:

- Adjust the position of the antennas for optimal reception.
- Position the antennas as far as possible from your TV/VCR or other radiation source to prevent unwanted interference.

Step 6: Connecting the power cord

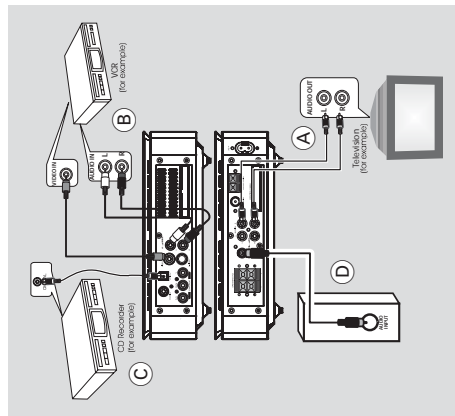
After everything is connected properly, plug in the AC power cord to the power outlet.

Never make or change any connection with the power switched on.

Additional: Connecting additional equipment

IMPORTANT!

- Some discs are copy-protected. You cannot record the disc through a VCR or digital recording device.
- When making connections, make sure the colour of cables matches the colour of jacks.
- Always refer to the owner's manual of the other equipment for complete connection and usage details.



Viewing and listening to the playback of other equipment (A)

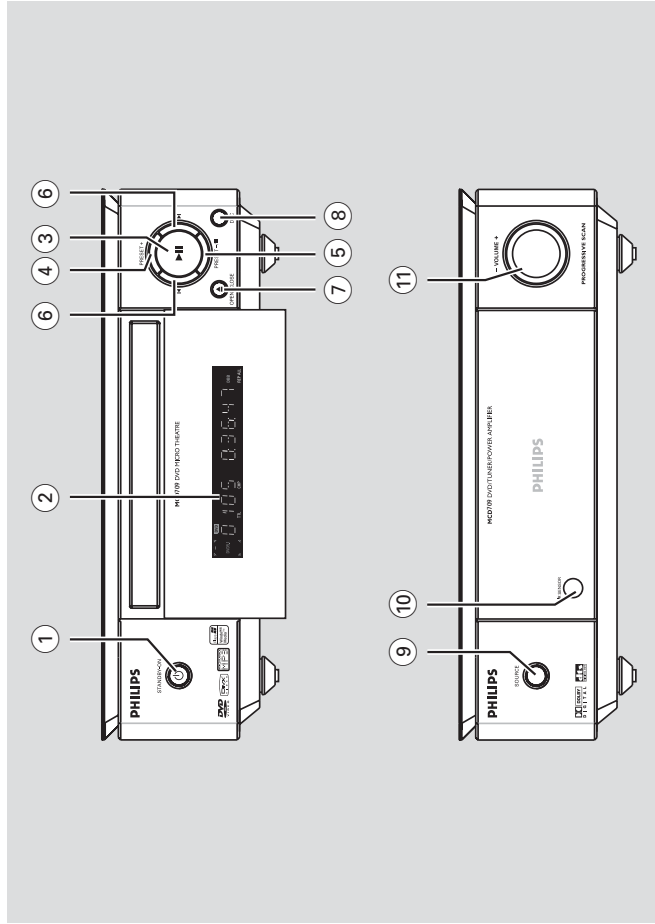
Connect the system's **AUX IN (R/L)** jacks to the **AUDIO OUT** jacks on the other audio/visual device (such as a TV, VCR, Laser Disc player or cassette deck). Before starting operation, press **SOURCE** on the front panel to select **AUX** or press **AUX** on the remote in order to activate the input source.

Using the VCR for recording DVDs (B)
Connect one of the system's **VIDEO** jacks to the corresponding **VIDEO IN** jack and **LINE OUT (R/L)** jacks to the **AUDIO IN** jacks on the VCR. This will allow you to make analogue stereo (two channel, right and left) recordings.

Recording (digital) (C)
Connect the system's **COAXIAL** or **OPTICAL** jack to the **DIGITAL IN** jack on a digital recording device (such as DTS-Digital Theatre compatible, with Dolby Digital decoder).

Before starting operation, set the **DIGITAL OUT** according to the audio connection. (See "DIGITAL OUT")

Connecting an active subwoofer (D)
Connect the DVD micro system's **SUBWOOFER** jack to the **AUDIO INPUT** jack on an active subwoofer (not supplied).



DVD player and power amplifier

- ① **STANDBY-ON** - switches the system on or to standby mode.
- ② **Display** - shows the current status of the DVD player.
- ③ **▶||◀** - starts or interrupts disc playback.
- ④ **PRESET +** - in tuner mode, selects a preset radio station forward.
- ⑤ **PRESET-■** - stops disc playback or erases a program. - in tuner mode, selects a preset radio station backward.
- ⑥ **▶|/◀** - skips to the previous/next chapter/title/track. Tuner:
- ⑦ **OPEN•CLOSE** - opens or closes the disc tray
- ⑧ **DSC** - selects different types of preset sound equalizer settings (FLAT, POPS, JAZZ, CLASSIC or ROCK).
- ⑨ **SOURCE** - selects the respective sound source: DVD/AUX1/AUX2/FM/MW. - switches the system on.
- ⑩ **IR SENSOR** - point the remote control towards this sensor.
- ⑪ **VOLUME +/-** - adjusts the volume upward/downward. - adjusts the hours and minutes in clock/timer setting mode. - switches the set timer ON or OFF.

CONNECTION AND CONTROLS

Functional Overview

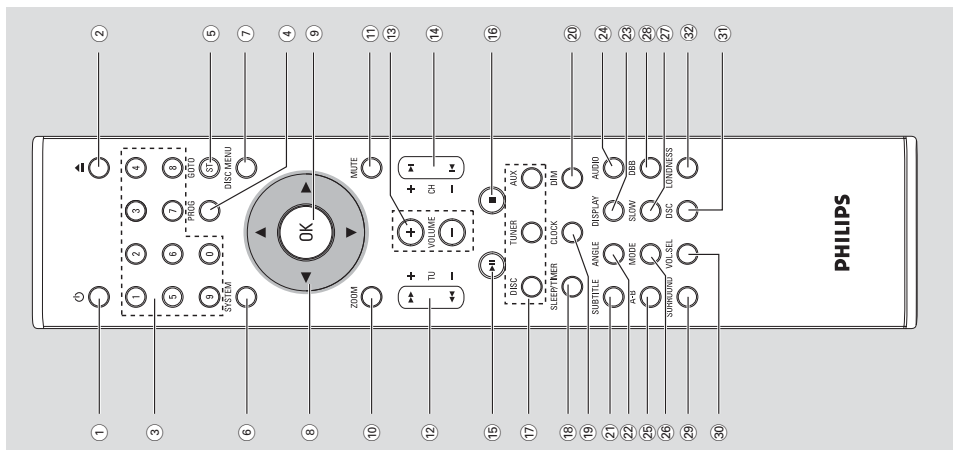
Functional Overview

- ④ **PROG**
DVD/VCD/CD: enters the program menu.
MP3/WMA-CD: adds/deletes a programmed track to/from the program list.
- Picture CD: **during playback**, to select a slide show mode.
- Tuner: programs preset radio stations.
- ⑤ **GOTO/ST**
Disc: fast searches in a disc by entering a time, title, chapter or track.
- FM: sets stereo or mono sound mode.
- ⑥ **SYSTEM (disc mode only)**
enters or exits the system menu.
- ⑦ **DISC MENU (disc mode only)**
DVD/VCD: enters or exits the disc contents menu.
VCD2.0: switches the playback control mode on or off.
- MP3/WMA: switches between Album and Filelist.
- ⑧ **▼ / ▲ / ► / ◀**
selects an item in a menu.
moves an enlarged picture up/down/left/right.
- ⑨ **OK**
confirms a selection.
- ⑩ **ZOOM**
DVD/VCD/Picture CD: enlarges or reduces a picture or active image on the TV screen.
- ⑪ **MUTE**
disables or enables sound output.

- ⑫ **TU +/- (◀◀ / ▶▶)**
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 backward/forward in a disc at different speeds.
- ⑬ **VOLUME +/-**
adjusts the volume upward/downward.
- adjusts the hours and minutes in clock/timer setting mode.
- switches the set timer ON or OFF.
- ⑭ **CH +/- (▶/◀)**
Disc: skips to the previous/next chapter/title/track.
- Tuner: selects a preset radio station.
- ⑮ **▶/⏸**
starts or interrupts disc playback.
- stops disc playback or erases a program.
- ⑰ **DISC/TUNER/AUX**
selects the respective sound source for DVD/AUX1/AUX2/FM/MW.
- For tuner (**TUNER**): press to switch between MW and FM
- exits P-SCAN (progressive scan) (Only for **DISC**)
- ⑱ **SLEEP/TIMER**
Standby mode
sets time for switching on the system automatically.
- Power-on mode
sets the sleep timer function (auto off).
- ⑲ **CLOCK**
Standby mode
sets the system clock.
- Playback mode
displays the system clock.
- ⑳ **DIM**
selects different levels of brightness for the display screen.
- ㉑ **SUBTITLE**
selects a subtitle language.
- ㉒ **ANGLE**
selects a DVD camera angle.
- ㉓ **DISPLAY**
displays information on TV screen during playback
- ㉔ **AUDIO**
for VCD/DivX
sets Stereo, Mono-Left or Mono-Right sound mode.
- for DVD
selects an audio language.
- ㉕ **A-B**
repeats playback of a specific section on a disc.
- ㉖ **MODE**
selects various repeat modes or the shuffle play mode for a disc.
- ㉗ **SLOW**
selects different slow playback modes for a DivX/VCD/SVCD/DVD.
- ㉘ **DBB**
enables or disables bass enhancement.
- ㉙ **SURROUND (unavailable for this version)**
selects 2.1 channel output (2.1CH) or 5.1 channel output (SUR5.1 or DVD5.1).
- ㉚ **VOL_SEL (unavailable for this version)**
adjusts volume level for individual speakers.
- ㉛ **DSC**
selects different types of preset sound equalizer settings (FLAT, POPS, JAZZ, CLASSIC or ROCK).
- ㉜ **LOUDNESS**
enables or disables automatic loudness adjustment.

Remote control

- ① **⏻**
switches the system on/ off.
- ② **⏹**
opens or closes the disc compartment
- ③ **Numeric Keypad (0-9)**
inputs a track/title/chapter number of the disc.
inputs the number of a preset radio station.



Troubleshooting

WARNING


Under no circumstances should you try to repair the system yourself, as this will invalidate the warranty. Do not open the system as there is a risk of electric shock.

If a fault occurs, first check the points listed below before taking the system for repair. If you are unable to remedy a problem by following these hints, consult your dealer or Philips for help.

Problem

No power.

Solution

Check if the AC power cord is properly connected.
Press STANDBY ON/OFF on the top of the DVD micro system or  on the remote to turn on the power.

No picture.

Check if the TV is switched on.
Check the video connection.
Press SOURCE on the top of the DVD player repeatedly to select "DVD" or press DISC on the remote.
Set your TV to the correct Video In channel. This channel is usually near channel 00. Or, you may have a button on the TV remote control that selects Auxiliary or AV IN channel. See your TV owner's manual for details. Or, change channels at the TV until you see DVD screen on the TV.
If the progressive scan feature is activated but the connected TV does not support progressive signals or the cables are not connected accordingly see page 50-51 for proper progressive scan setup or deactivate the progressive scan feature as below:
1) Turn off your TV progressive scan mode or turn on to interlaced mode.
2) Press SYSTEM on the remote to exit the system menu and then DISC to exit progressive scan.

Distorted or poor picture.

Sometimes a small amount of picture distortion may appear. This is not a malfunction.
Clean the disc.

Completely distorted picture or black/white picture.

TV has a colour system standard. If the disc's or DVD system's colour system is different than your TV's colour system, the picture may be distorted or colourless.

TROUBLESHOOTING

Troubleshooting

The aspect ratio is fixed on the DVD disc. Depending on the TV, it may not be possible to change the aspect ratio.



Adjust the volume.

Check that the speakers are connected correctly.

Replace the speaker cables.

Disconnect the headphones.

The system is in pause, slow motion or fast

forward/reverse mode; press PRESET/  (or  on the remote) to resume normal play mode.

Insert a readable disc with the playback side facing down.

Check the disc type, colour system and regional code. Check for any scratches or smudges on the disc.

Press SYSTEM MENU to turn off the setup menu screen.

Cancel the parental control rating function or change the rating level.

Moisture has condensed inside the system.

Remove the disc and leave the system turned on for about an hour.

Disconnect the power plug from the outlet and insert again.

Multi-language sound or subtitle is not recorded on the DVD.

Changing the language for the sound or subtitle is prohibited on the DVD.

The features may not be available on the disc.

Tune in to the correct frequency.

Connect the antennas.

Fully extend the FM wire antenna. Position for best reception and secure to a wall.

Connect an outdoor FM or MW antenna.

Adjust the direction and position for best reception.

Place the antenna farther away from any equipment that may be causing the noise.

Increase the distance between the system and

The aspect ratio of the screen cannot be changed even though you have set the TV shape.

No sound or distorted sound.

The micro DVD player does not start playback.

The DVD micro system does not respond when the buttons are pressed.

Cannot activate some features, such as Angles, Subtitles, or multi-language Audio.

Considerable noise in radio broadcasts.

Troubleshooting

The remote control does not function.

Select the correct source (DISC or TUNER, for example) before pressing the function button. Point the remote control at the remote sensor of the unit.
Reduce the distance to the player.
Remove any possible obstacles.
Replace the batteries with new ones.
Check that the batteries are loaded correctly.

The display is dark.

Press DIM again.

Low hum or buzz sound.

Place the DVD micro system as far away as possible from electrical devices that may be causing interference.

Low bass response.

Check all speakers for correct polarity.

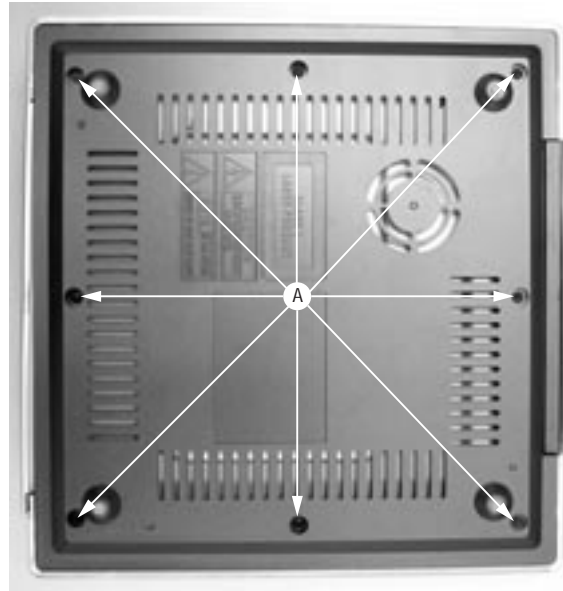
Unable to select Progressive Scan

Check that the output of the video signal is switched to 'Pr/Cr Pb/CbY'.

DISASSEMBLY DIAGRAM - DVD PART

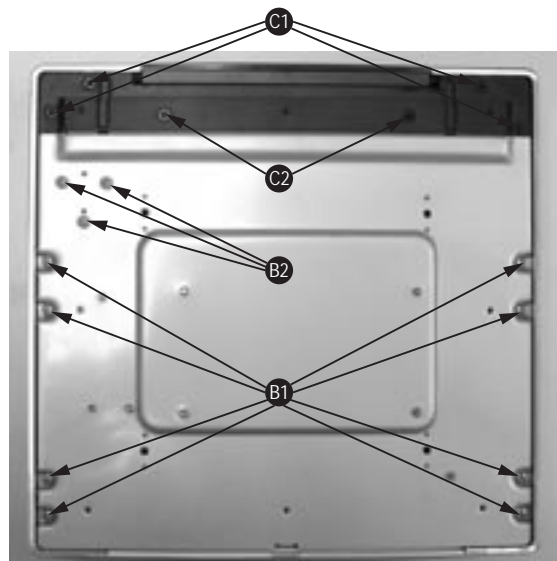
A.Remove Bottom Cover

A1.remove screws M2.5x4(8pcs)



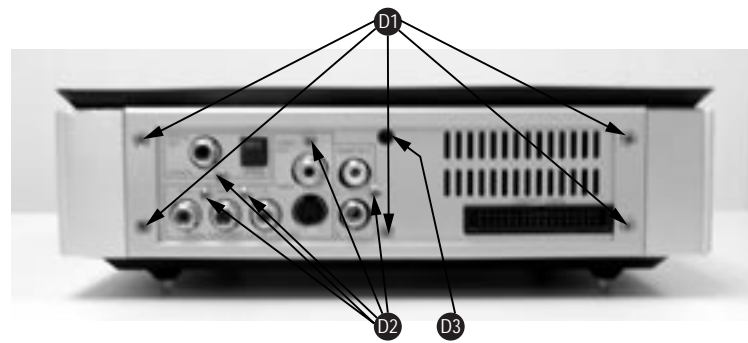
B*.remove screws M3x10(8pcs) and M3x8(3pcs)

C*.remove screws M3x8(4pcs) and T3x4(2pcs)

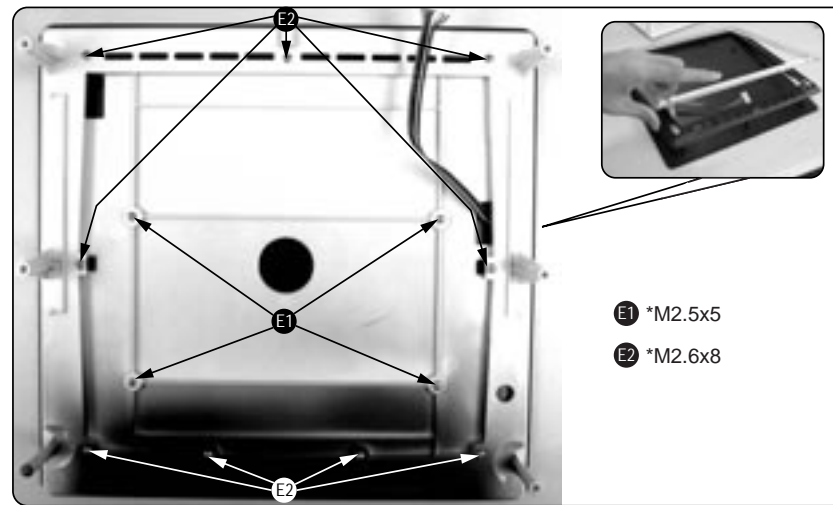


D.Remove Back Panel

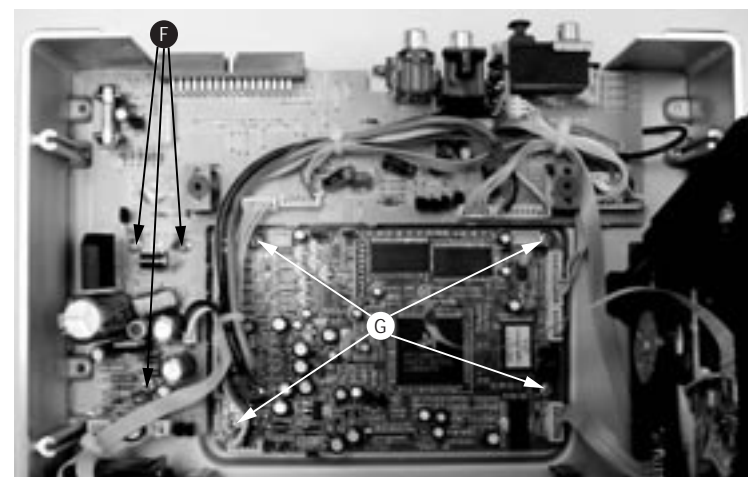
D*remove screws T3x4(5pcs)and M3x10(5pcs)and T3x8(1pc)



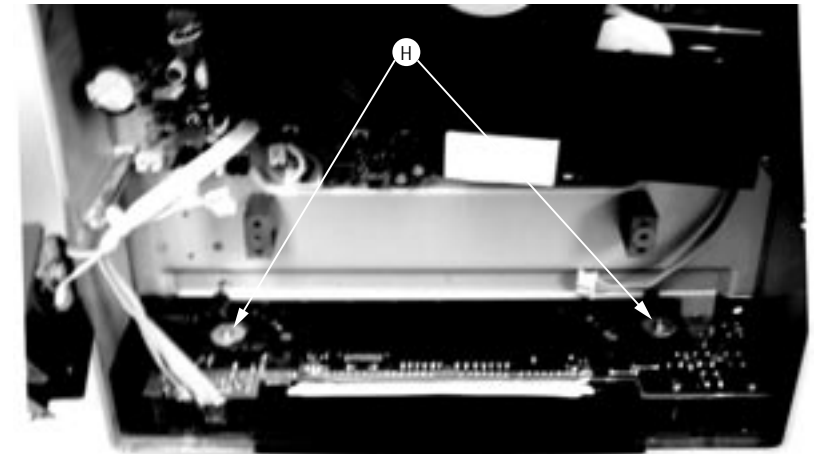
E. Remove Top Cover



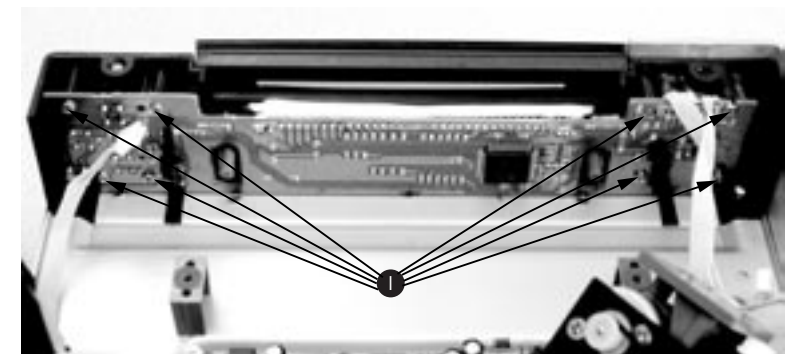
G. Remove DVD Rom and then remove DVD Decoder Card Assy



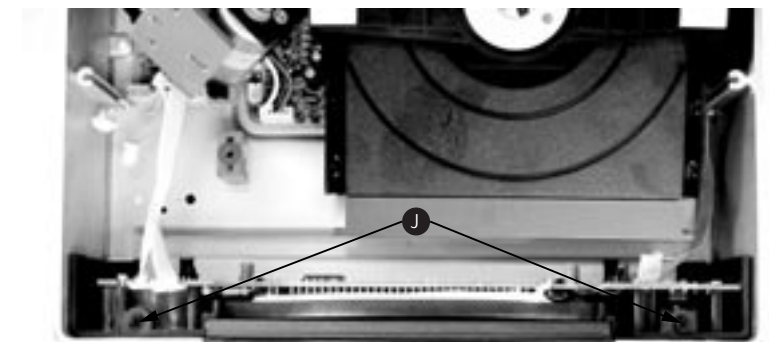
H.Remove Slid Plank



I.Remove VFD board assy



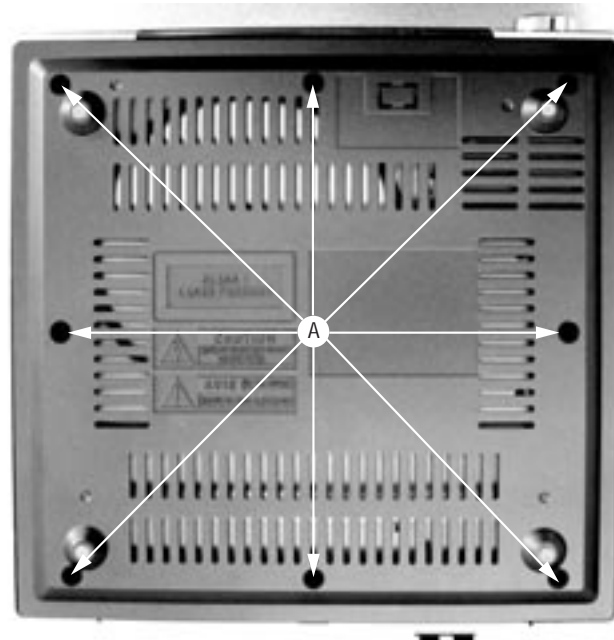
I.Remove Side metal Plate



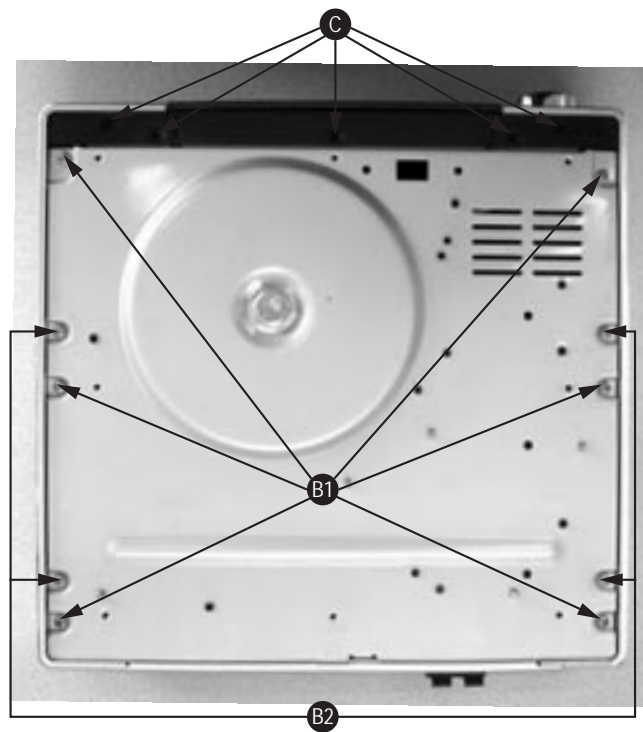
DISASSEMBLY DIAGRAM - AMP PART

A.Remove Bottom Cover

A1.remove screws M2.5x4(8pcs)

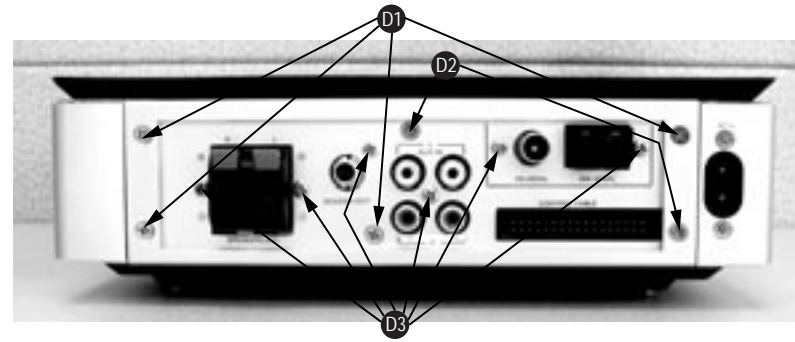


B*.remove screws M3x10(6pcs) and T3x10(4pcs)
C*.remove screws T3x4(5pcs)

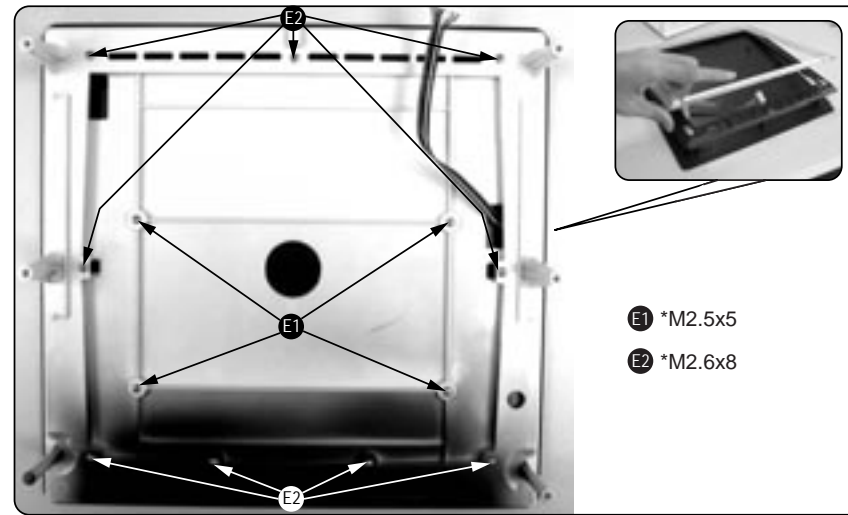


D.Remove Back Panel

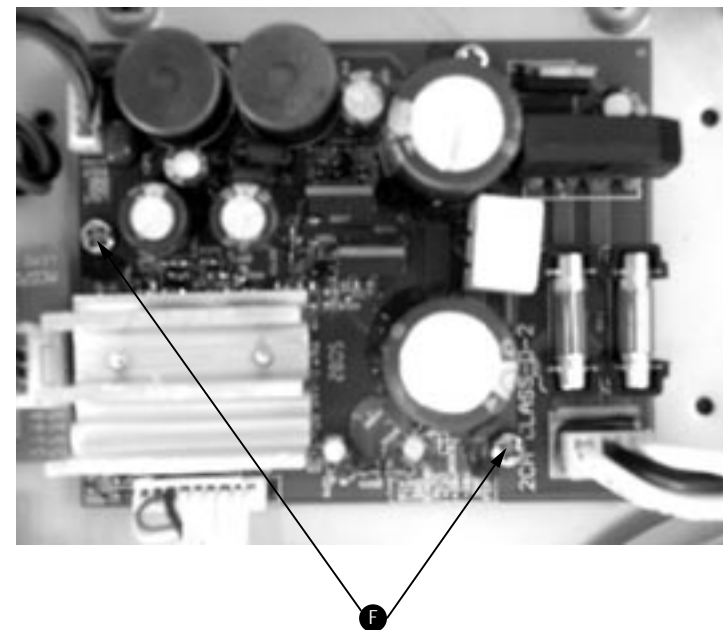
D*remove screws T3x4(4pcs)and T3x8(2pcs)and M3x10(6pcs)



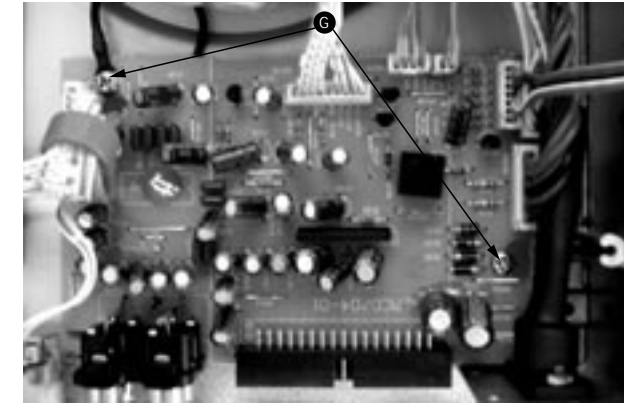
E. Remove Top Cover



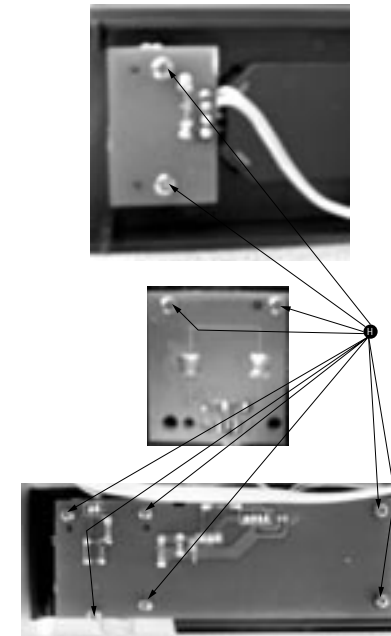
F. Remove AMP Board Assy



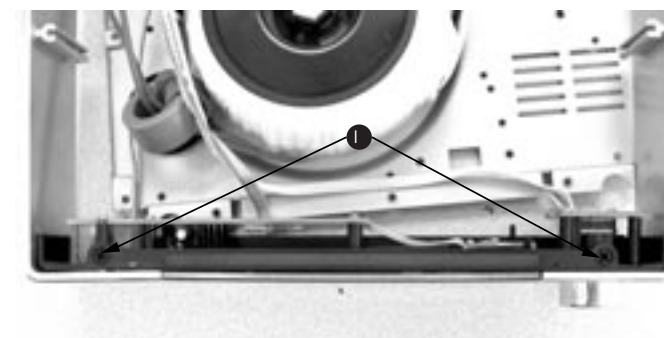
G.Remove ALC Volume board assy



H.Remove AMP Front board assy



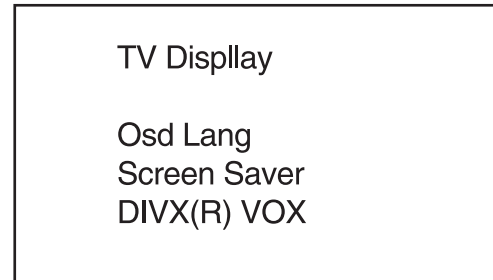
I.Remove Side metal Plate



SOFTWARE VERSION CHECK AND UPGRADING**A.MPEG SOFTWARE VERSION CHECK**

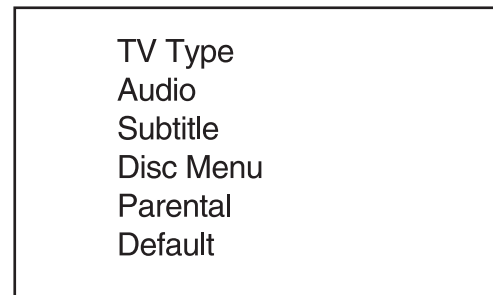
1.Press SYSTEM key (on the remote control) to open setup page,

TV Screen shows:



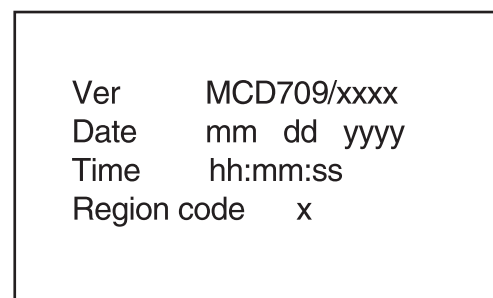
2.Press REMOVAL key (on the remote control) to the original setup page,

TV Screen shows:



3.Enter the password "811502" (on the remote control)

TV Screen shows:

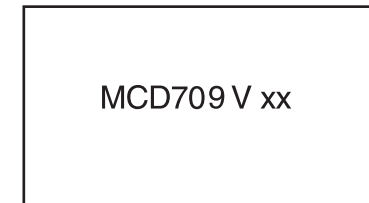


4.Press ▲ or ▼ button (on the remote control) to change region.
Press OK to confirm.

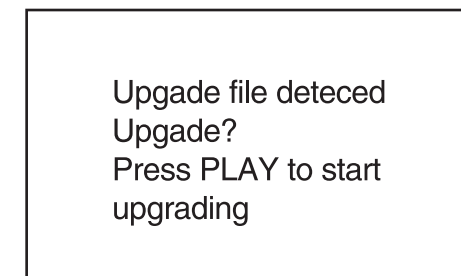
B.CPU VERSION CHECK

Keep PLAY/PAUSE and STOP buttons (on the set) depressed while pressing POWER on.

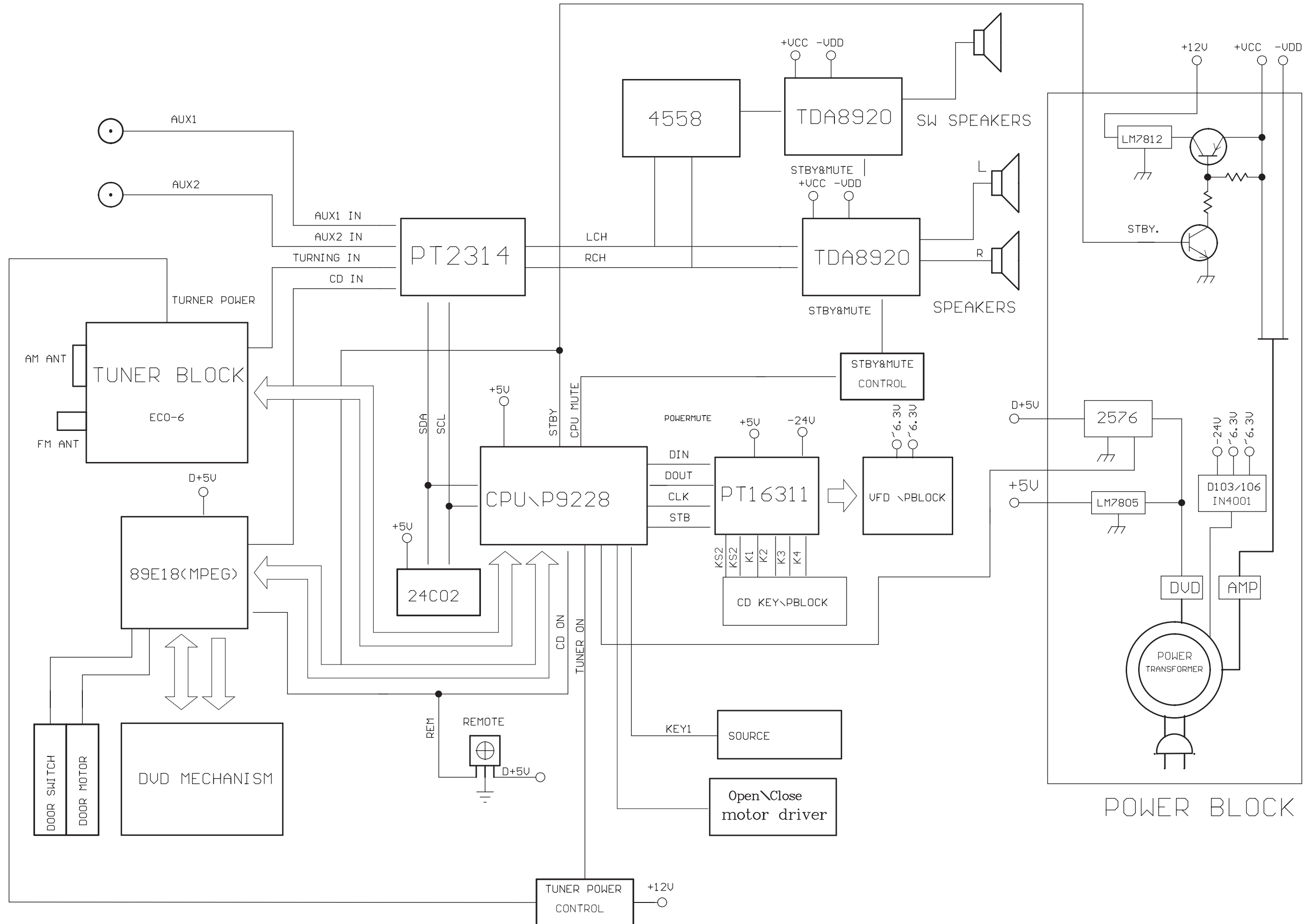
TV screen shows

**C. MPEG SOFTWARE UPGRADING**

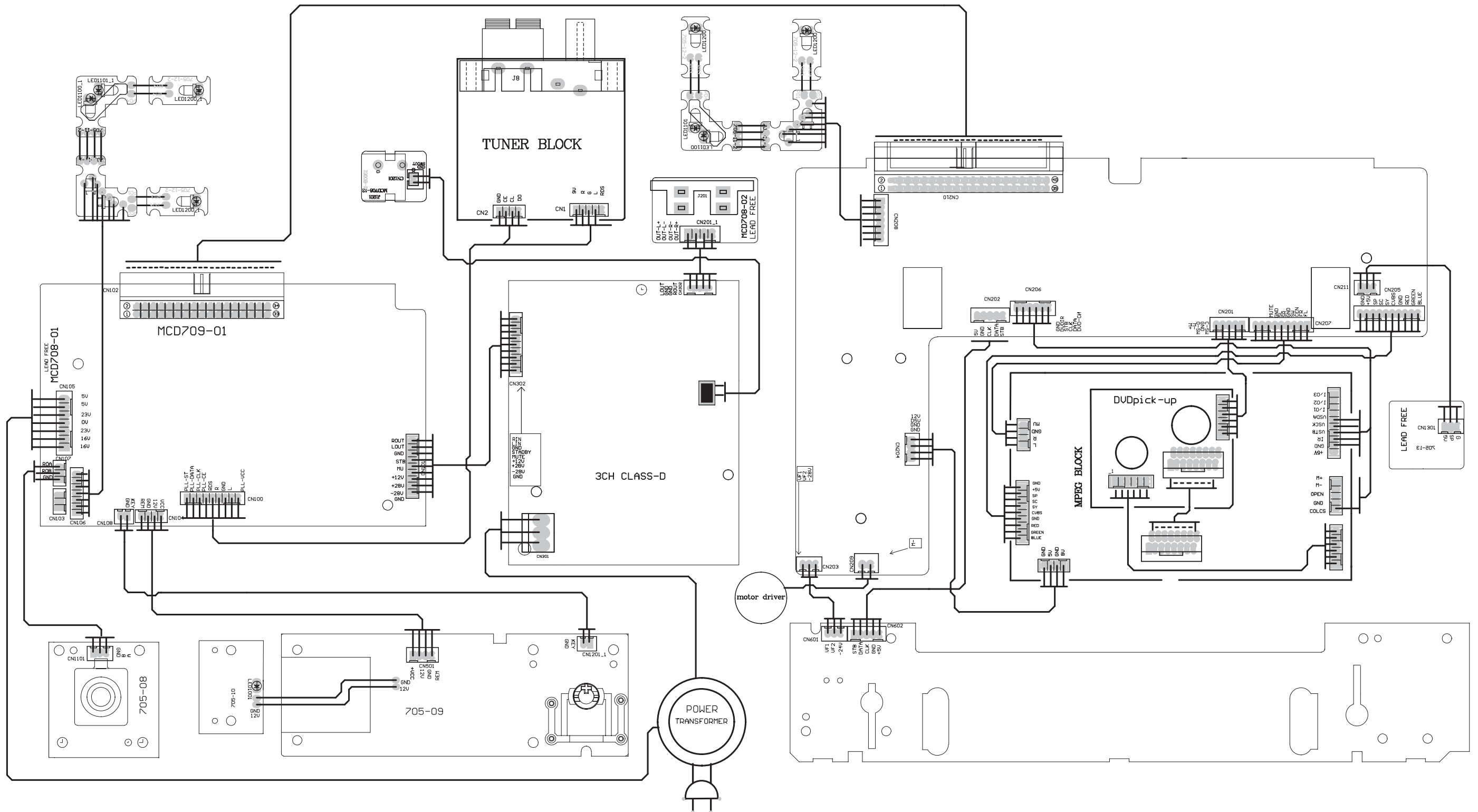
1. download the firmware from Philips support website
<http://www.philips.com/support>
2. Prepare a uploading CD
3. Put the CD in the CD tray
4. TV Screen shows



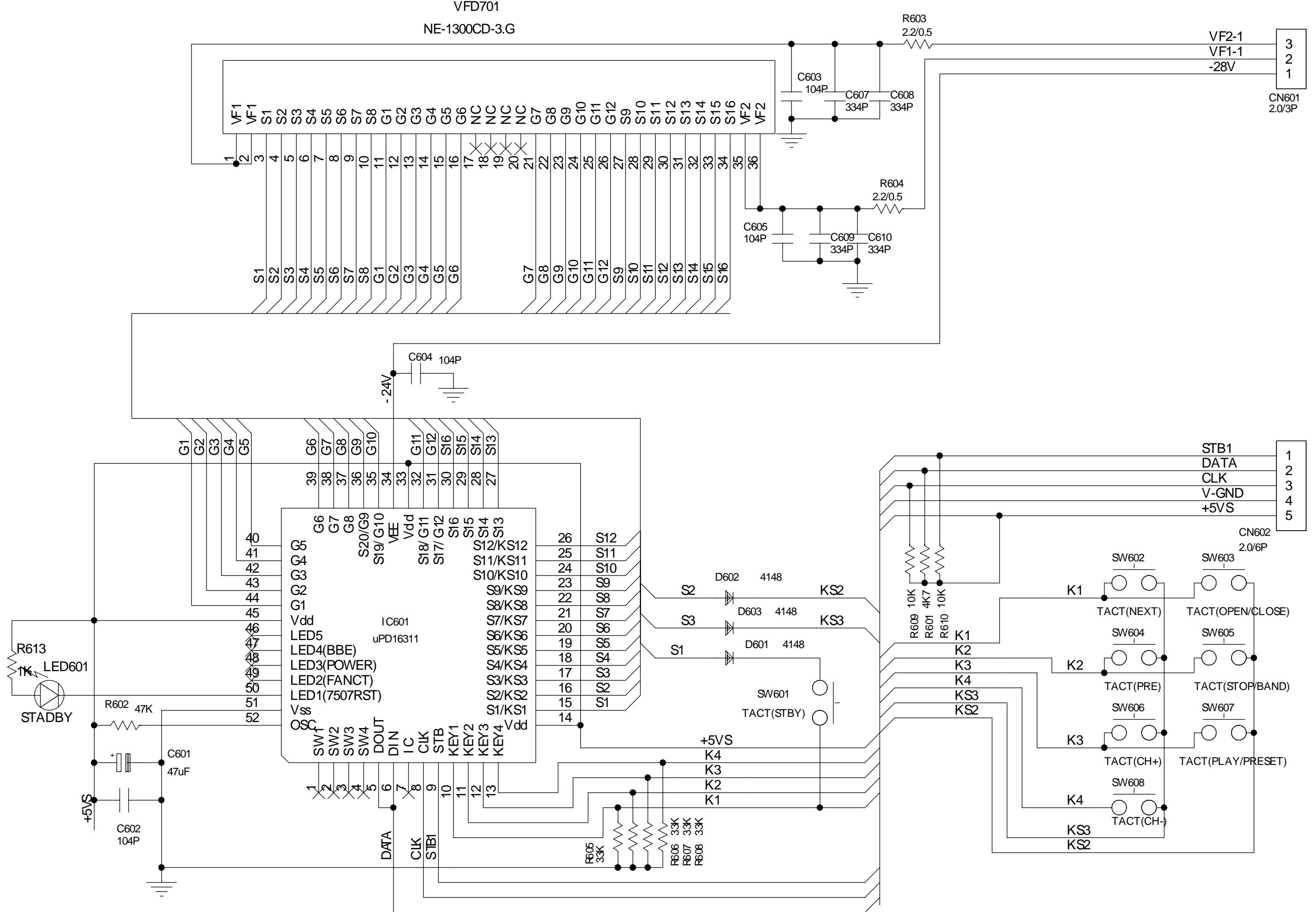
SET BLOCK DIAGRAM



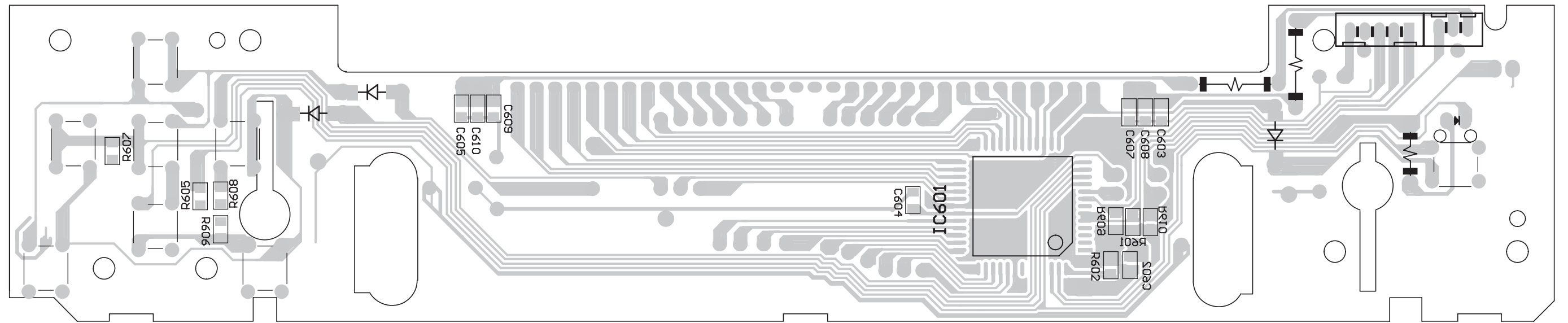
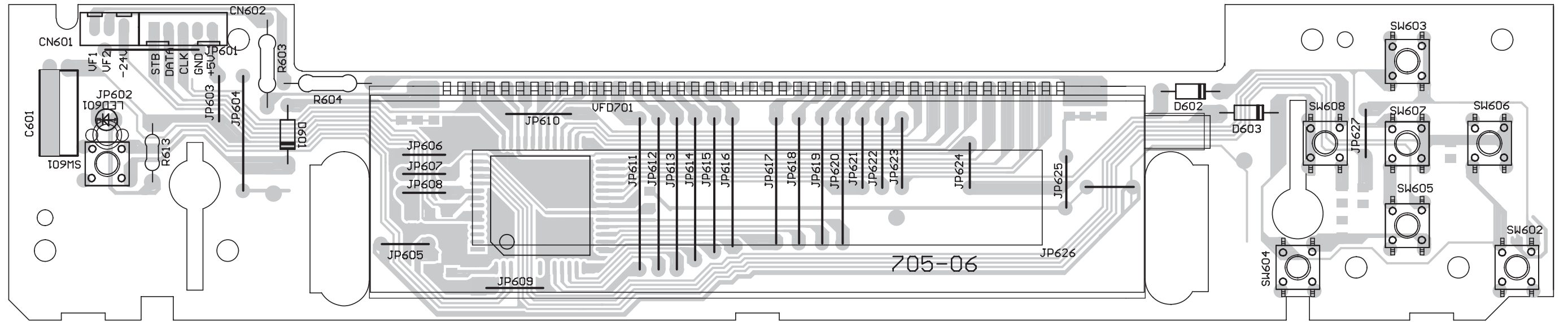
SET WRING DIAGRAM



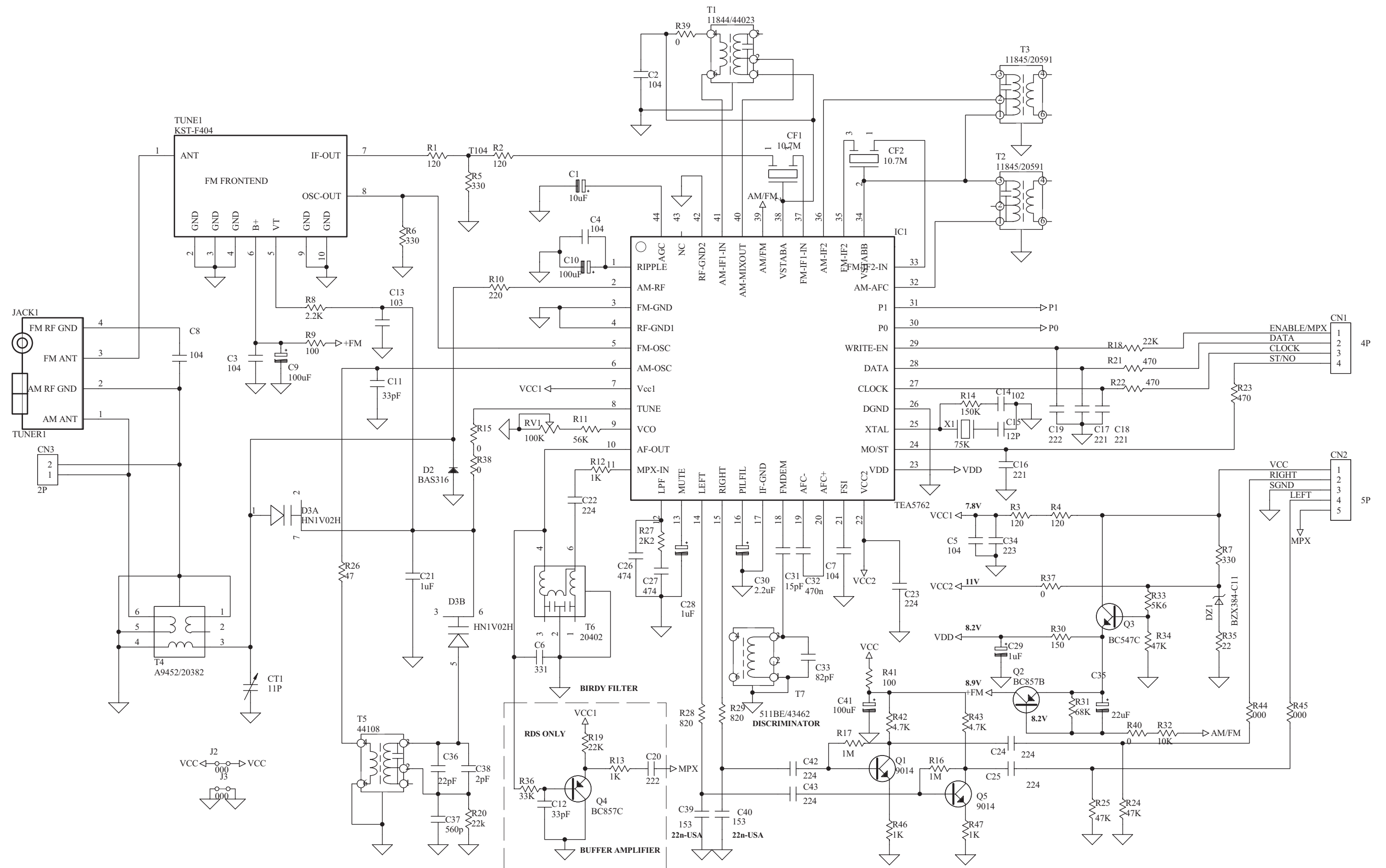
CIRCUIT DIAGRAM - VFD BOARD



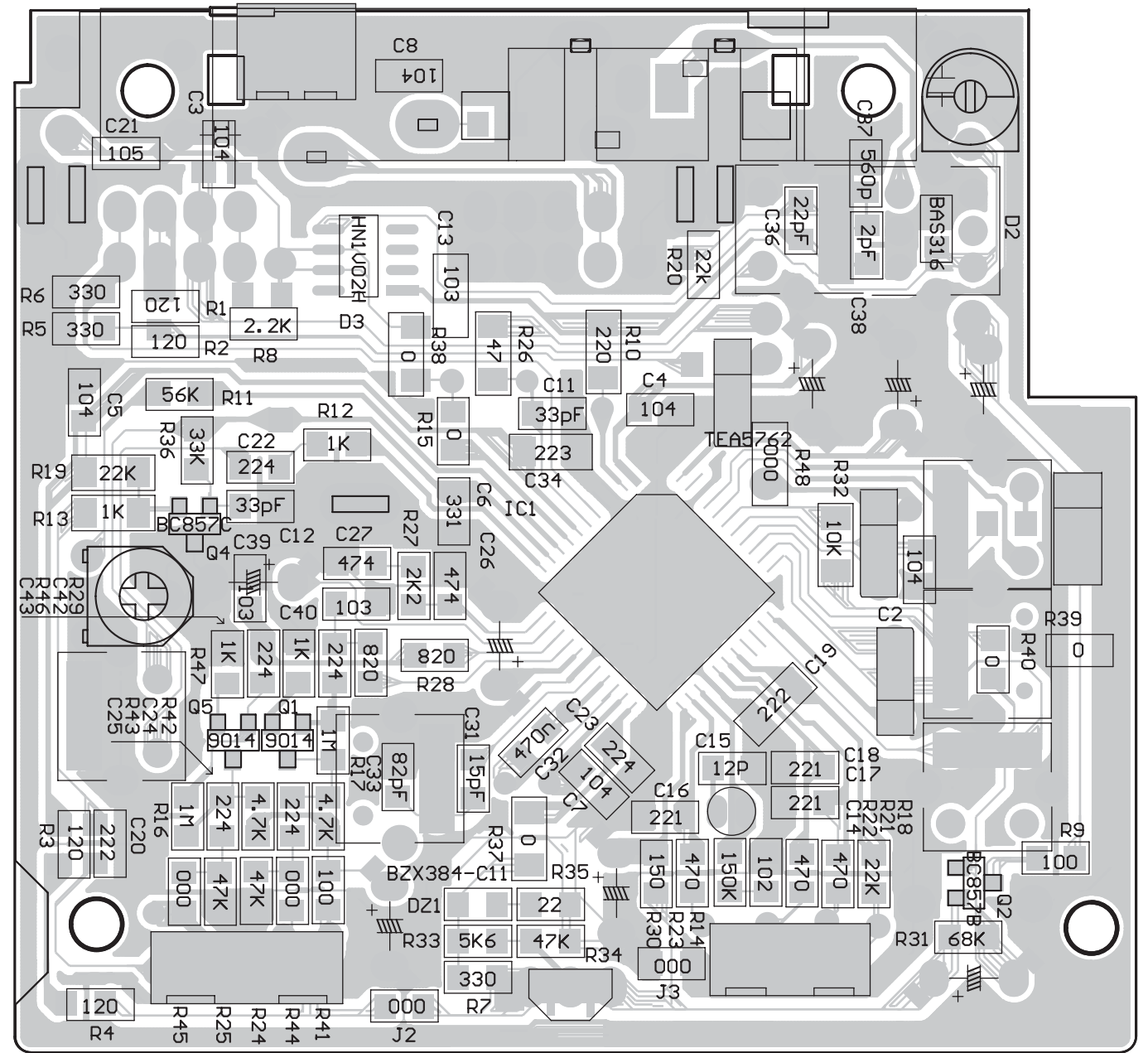
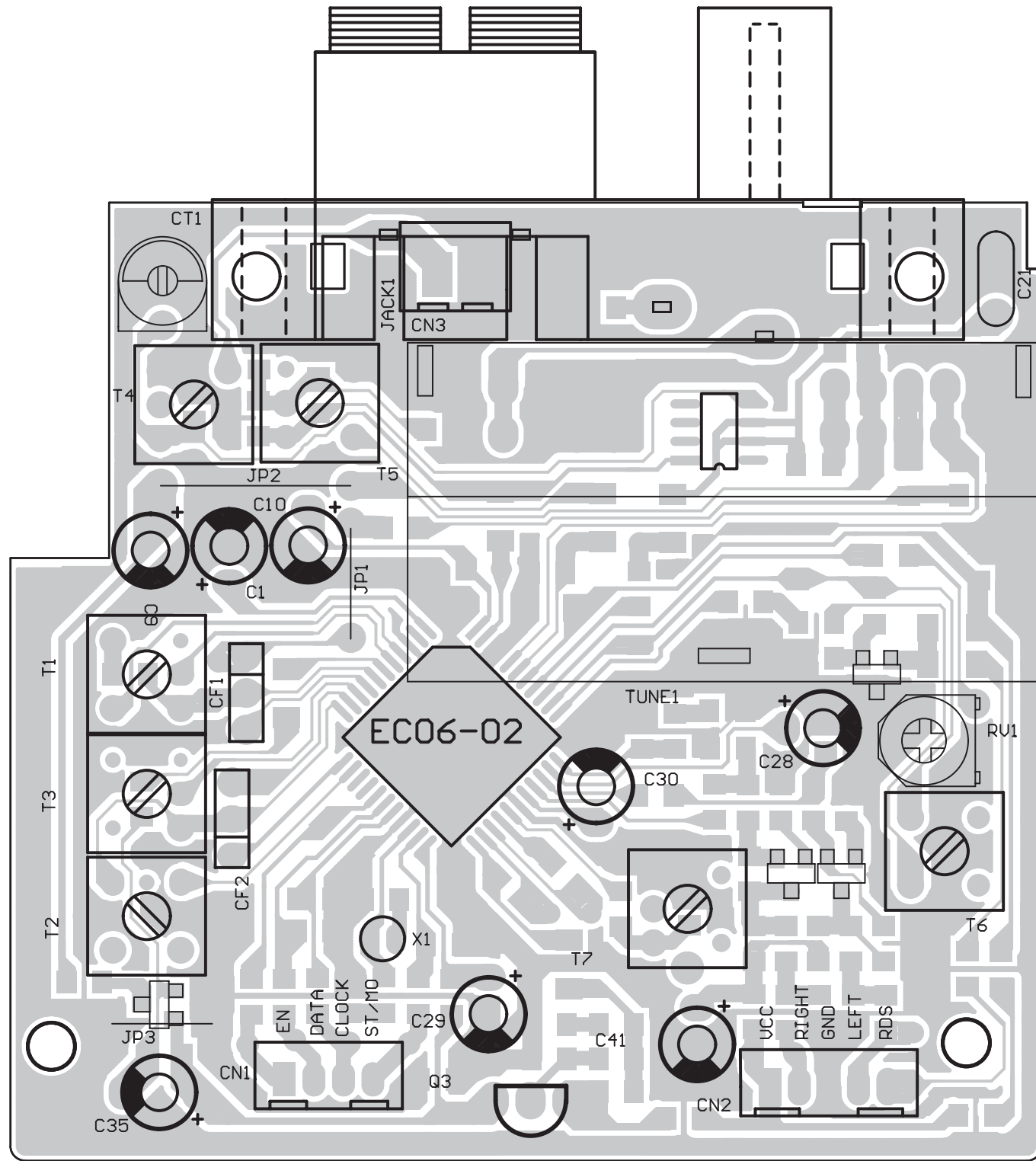
LAYOUT DIAGRAM - VFD BOARD



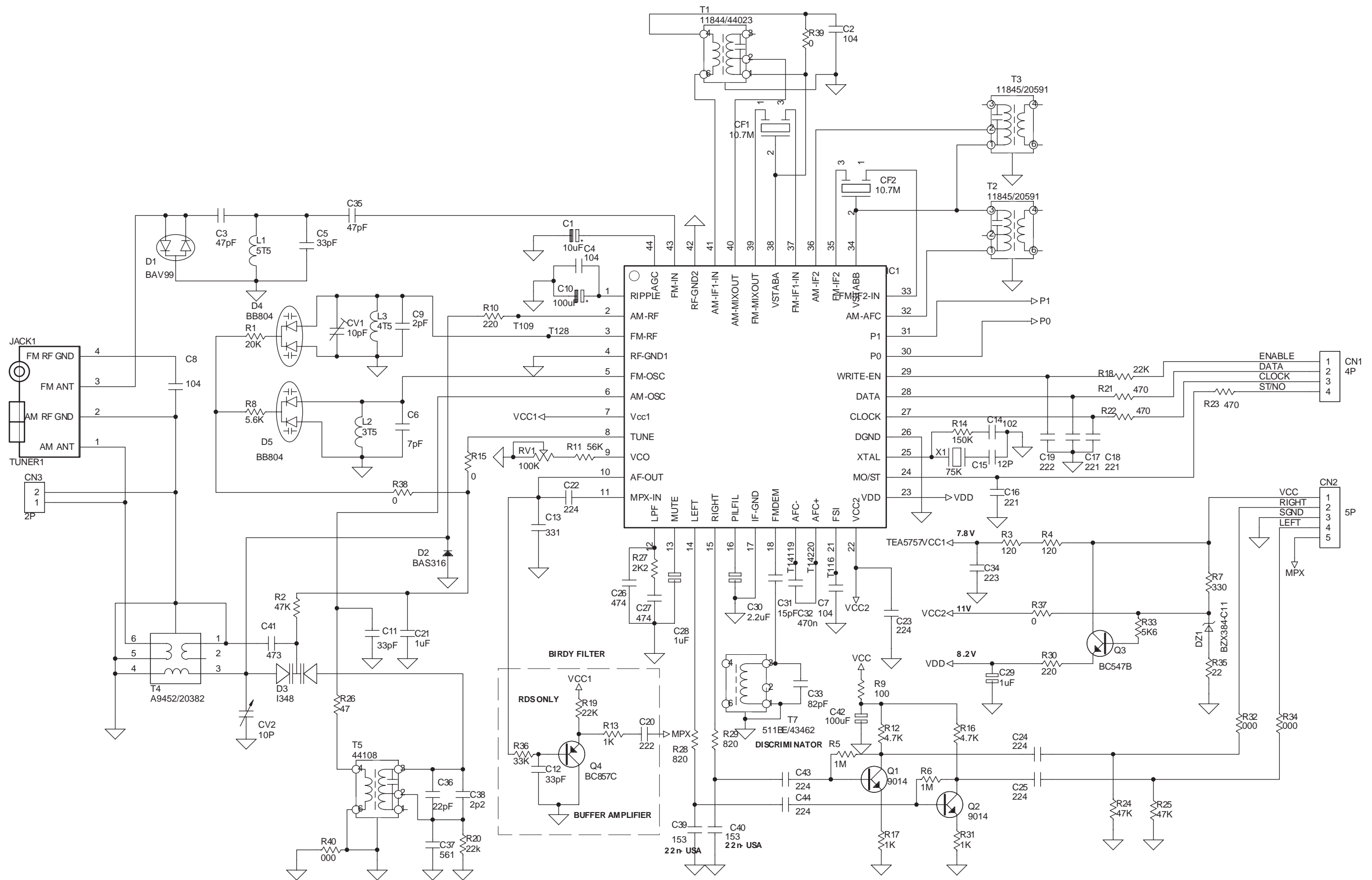
CIRCUIT DIAGRAM - ECO6- 02 TUNER BOARD (not for - / 37)



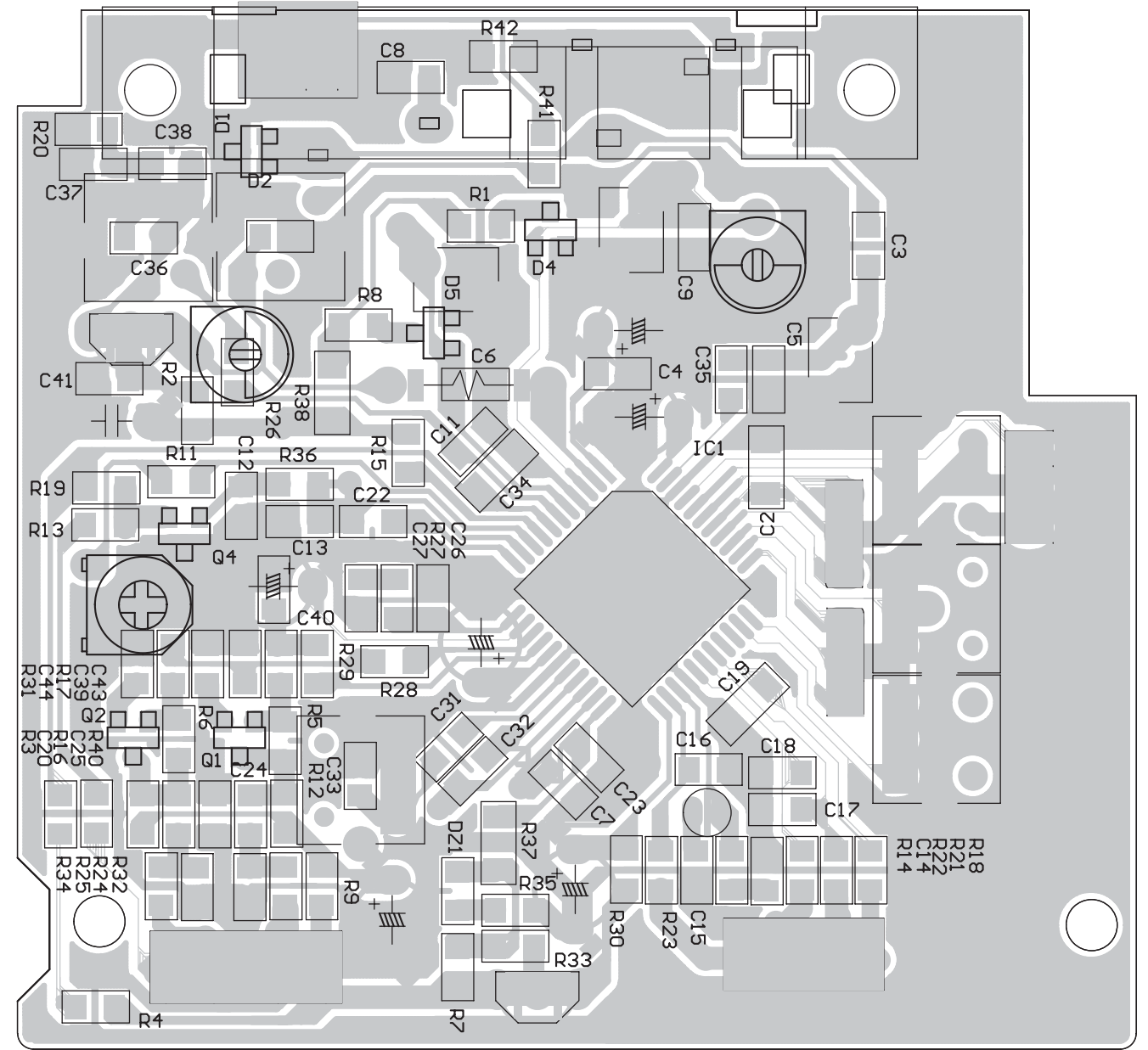
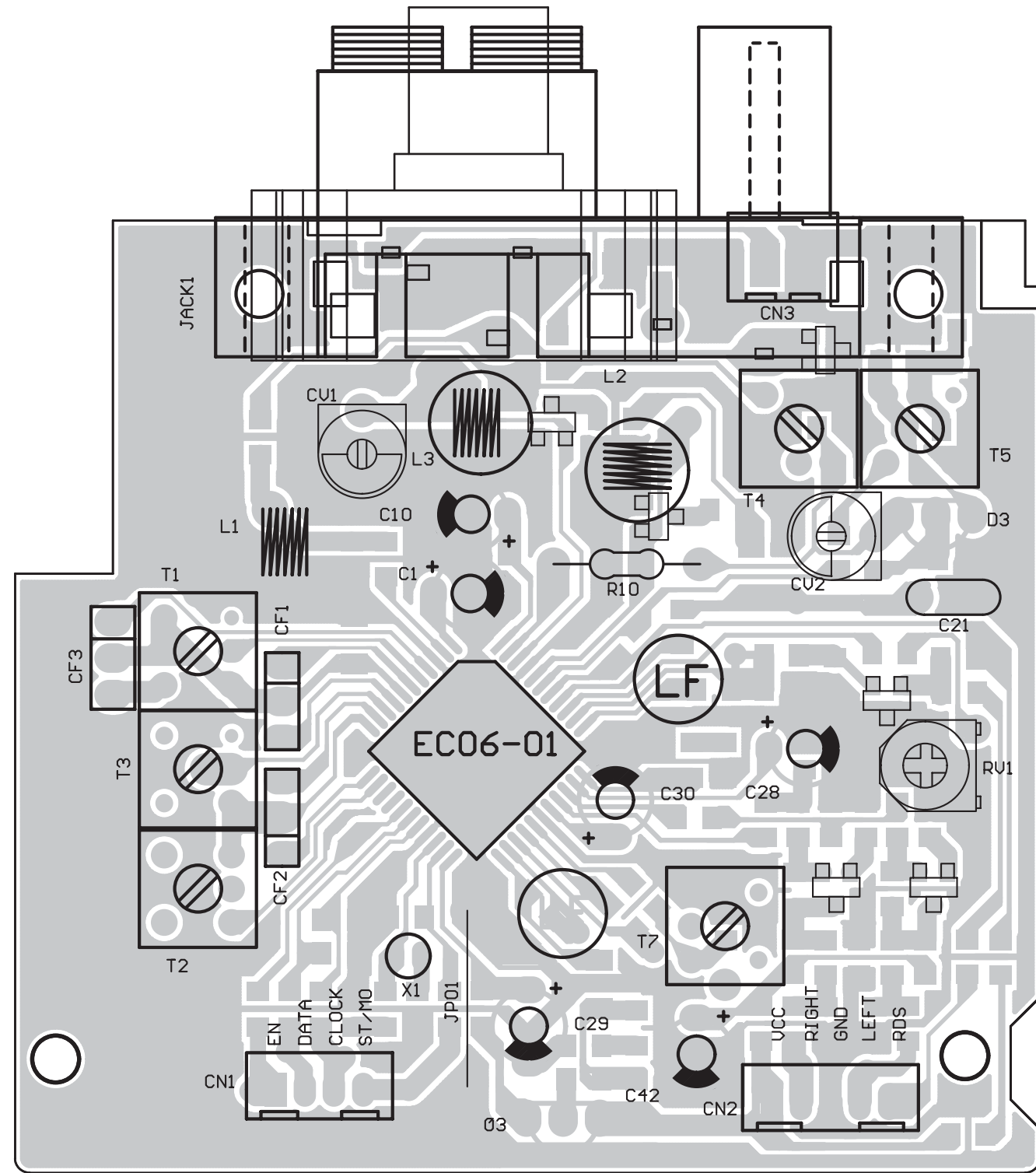
LAYOUT DIAGRAM - ECO6- 02 TUNER BOARD
(not for - / 37)



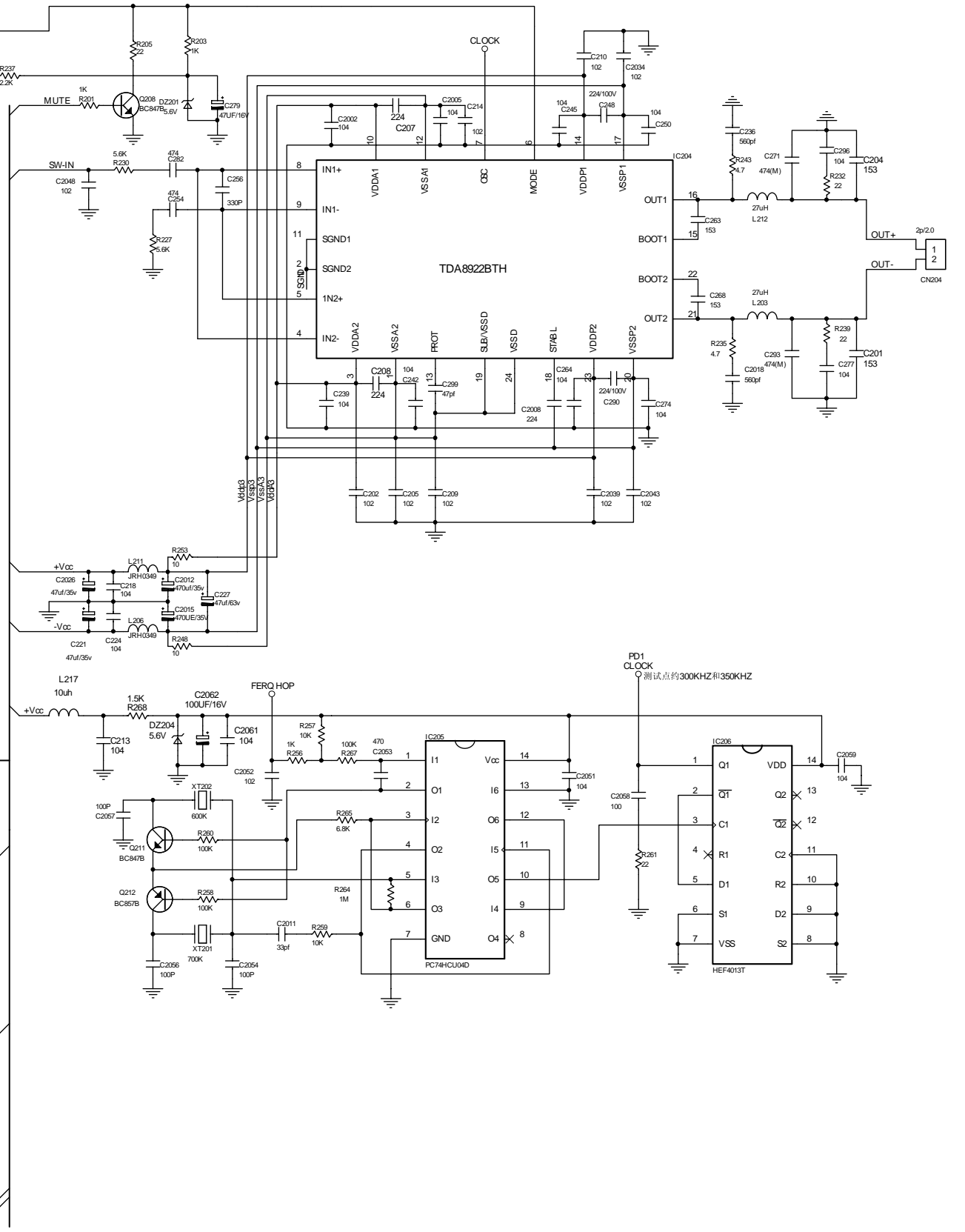
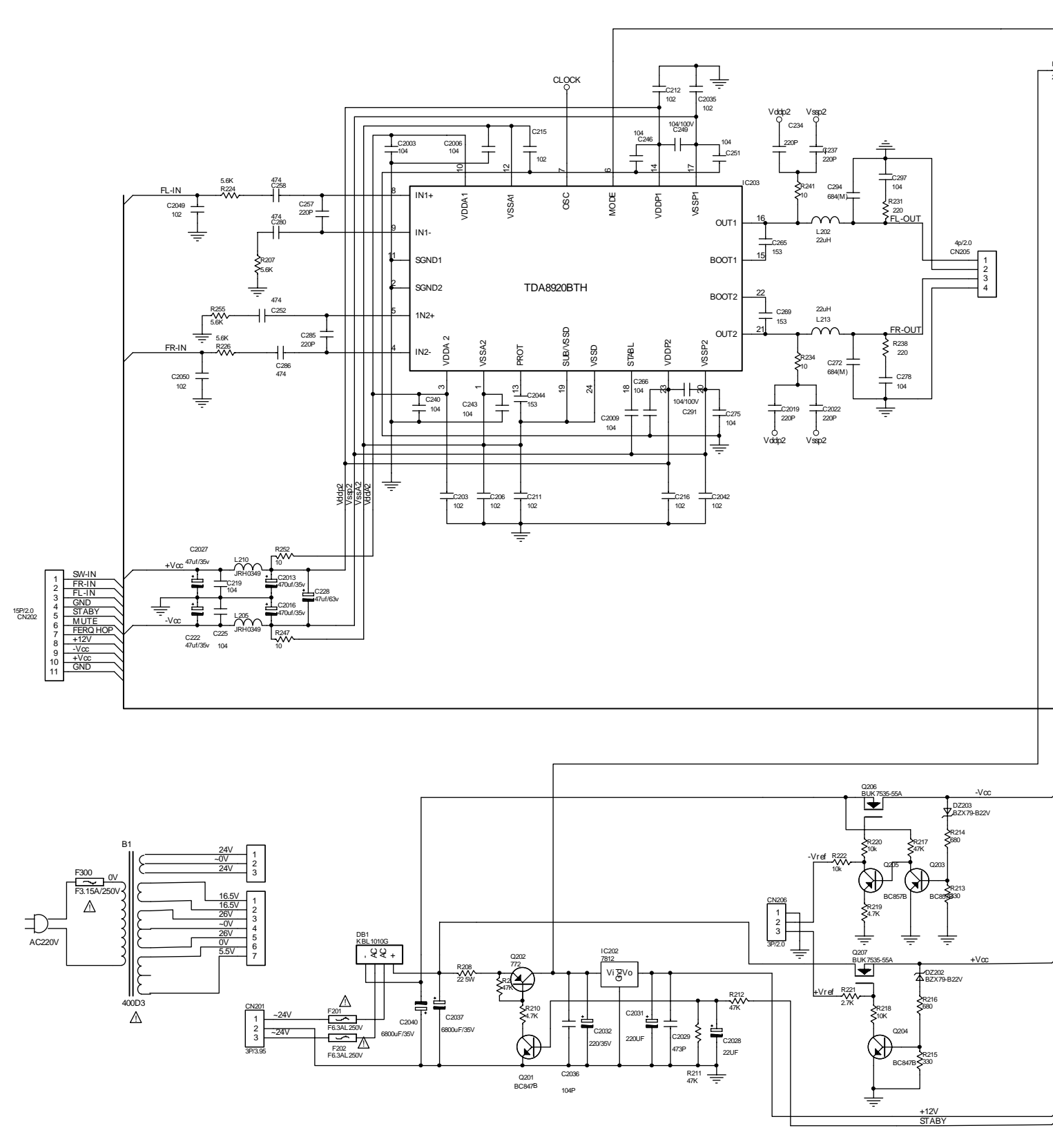
CIRCUIT DIAGRAM - ECO6- 01 TUNER BOARD (only for - / 37)



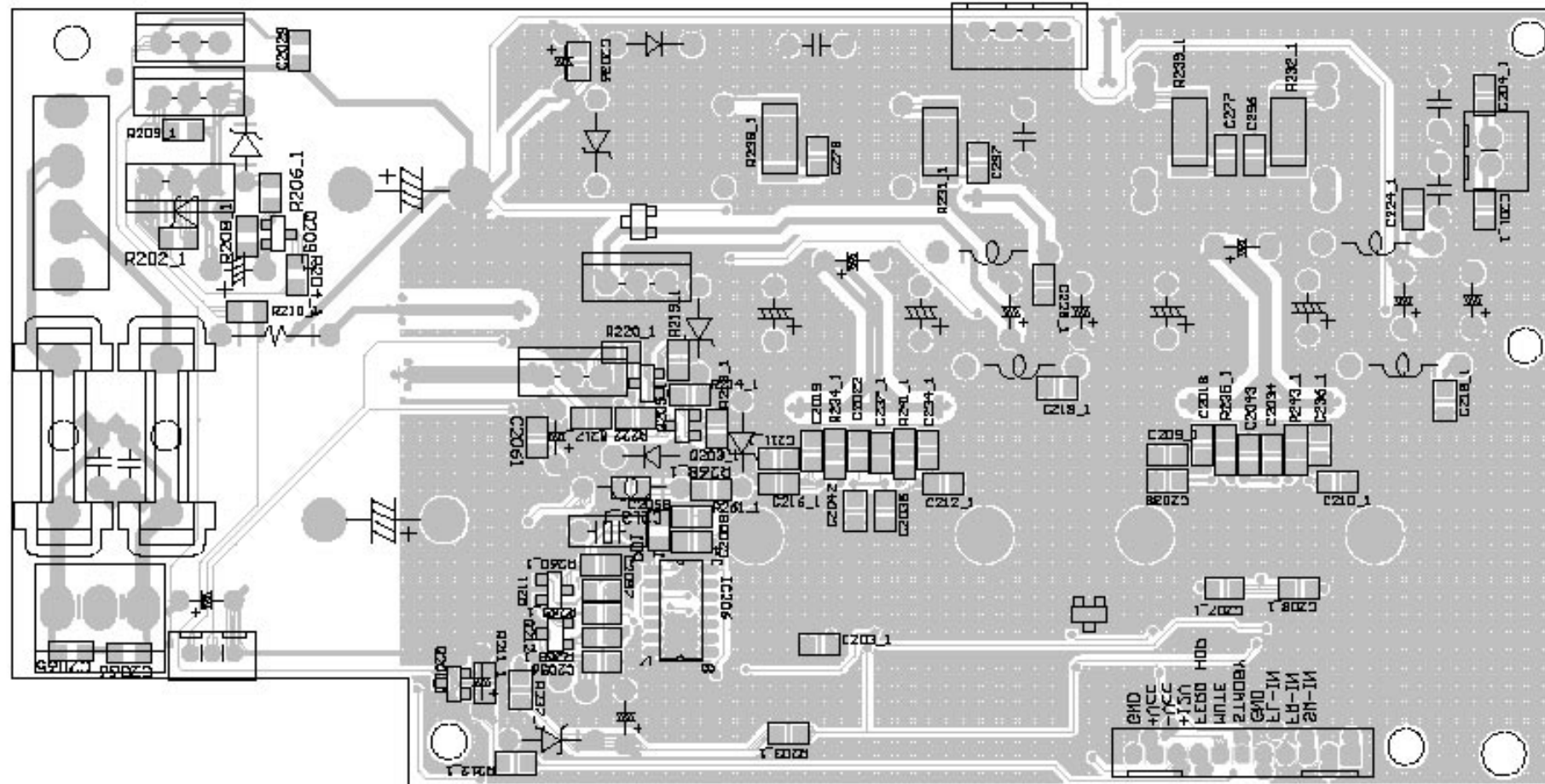
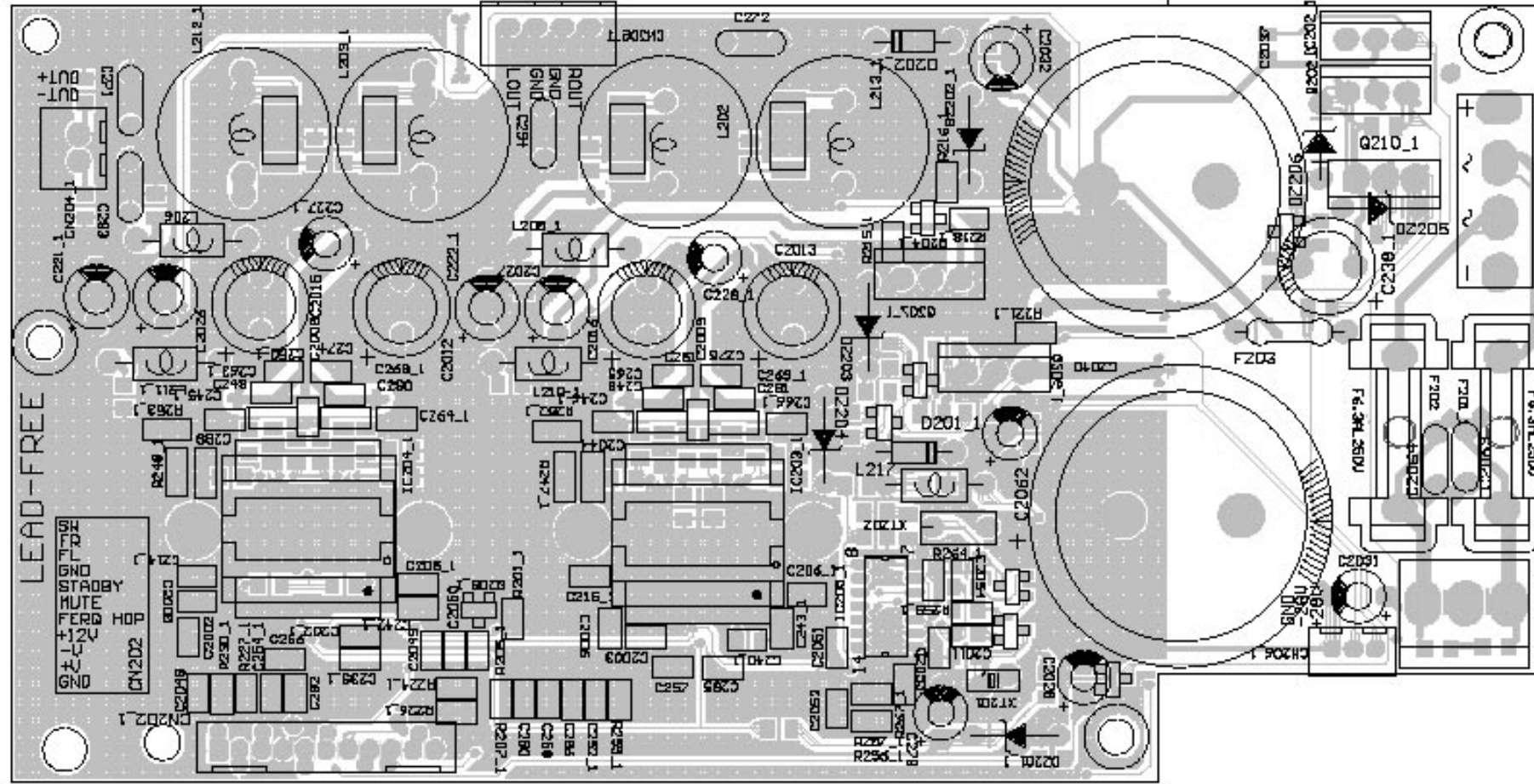
LAYOUT DIAGRAM - ECO6- 01 TUNER BOARD
(only for - / 37)



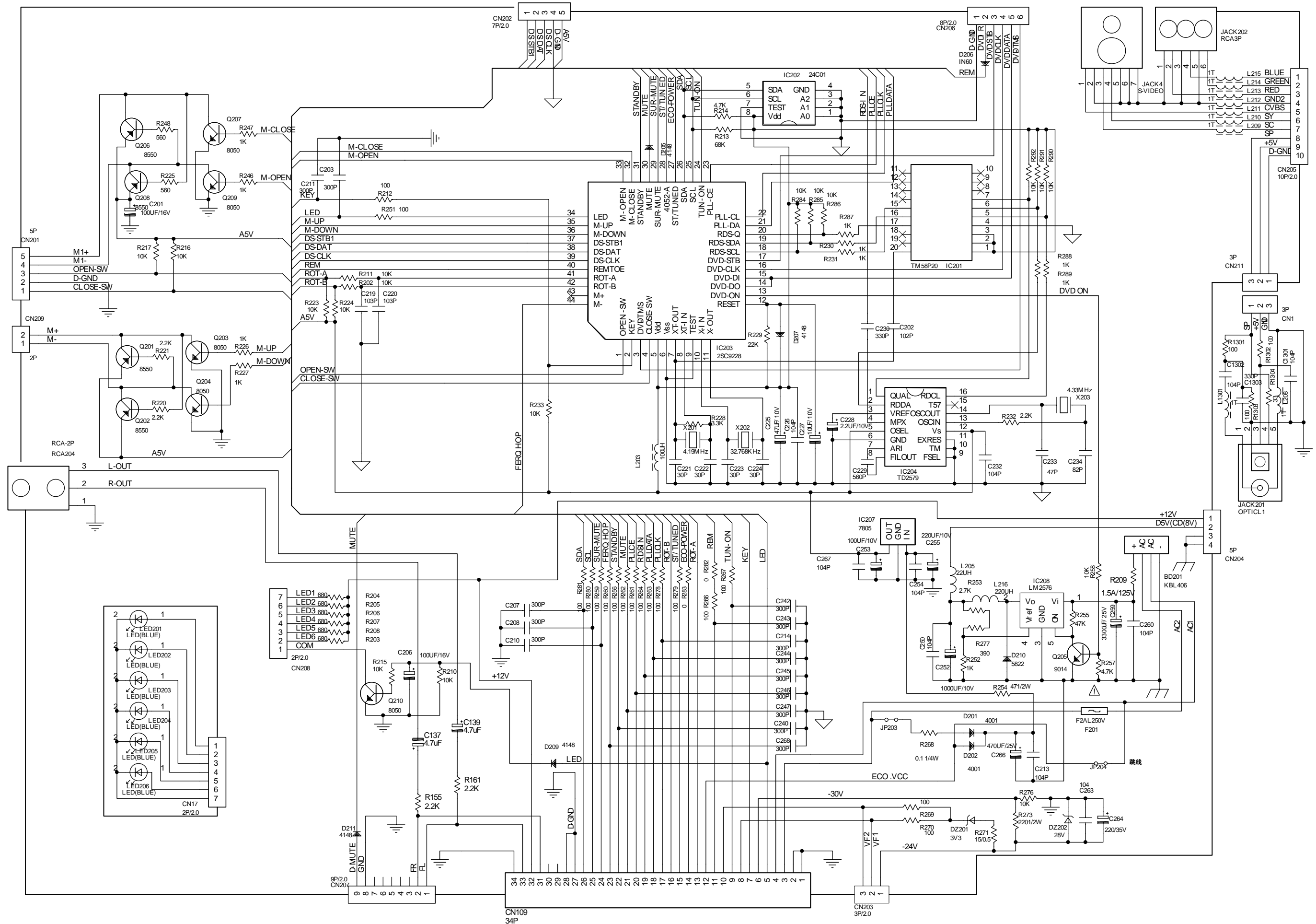
CIRCUIT DIAGRAM - AMP BOARD



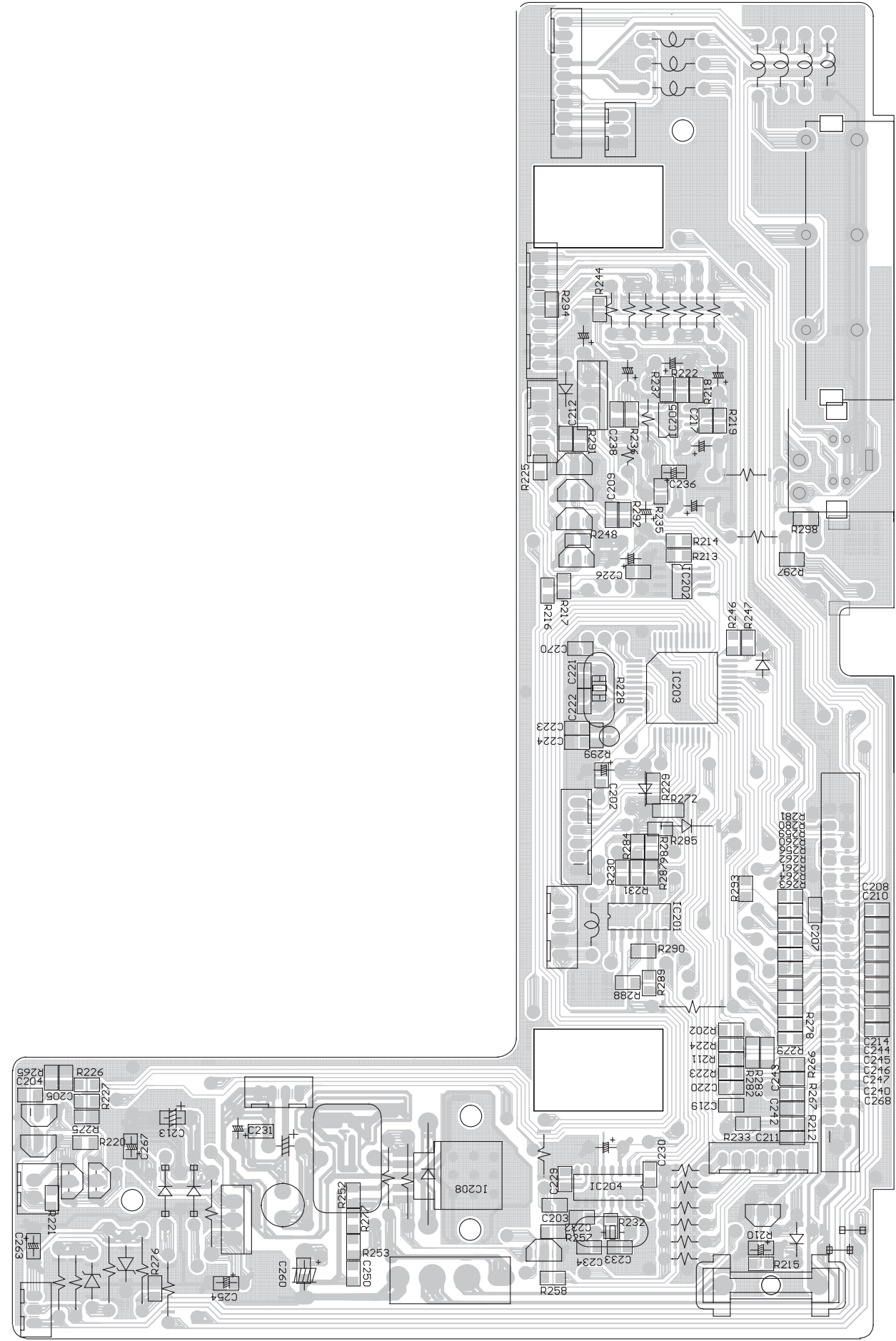
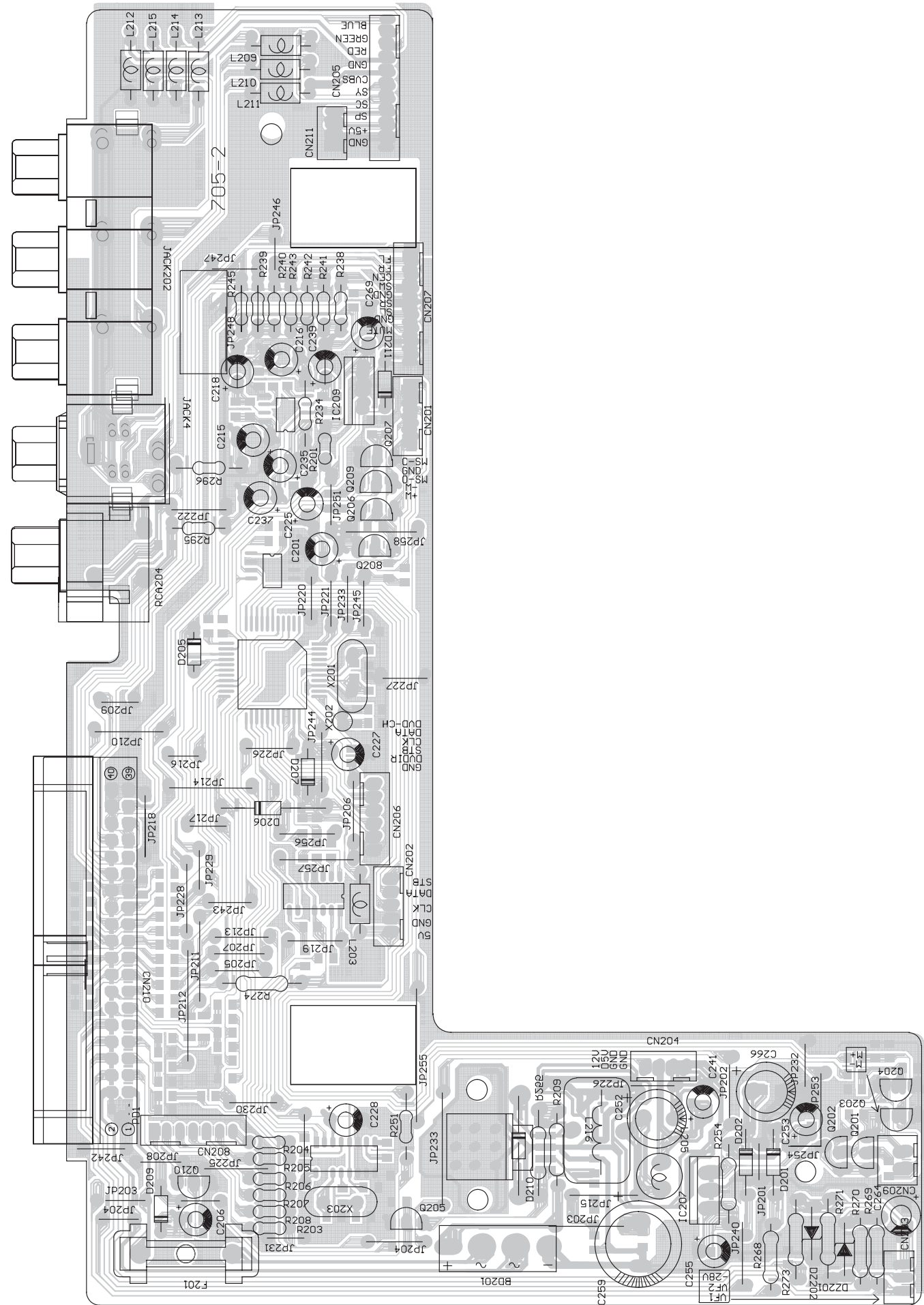
LAYOUT DIAGRAM - AMP BOARD



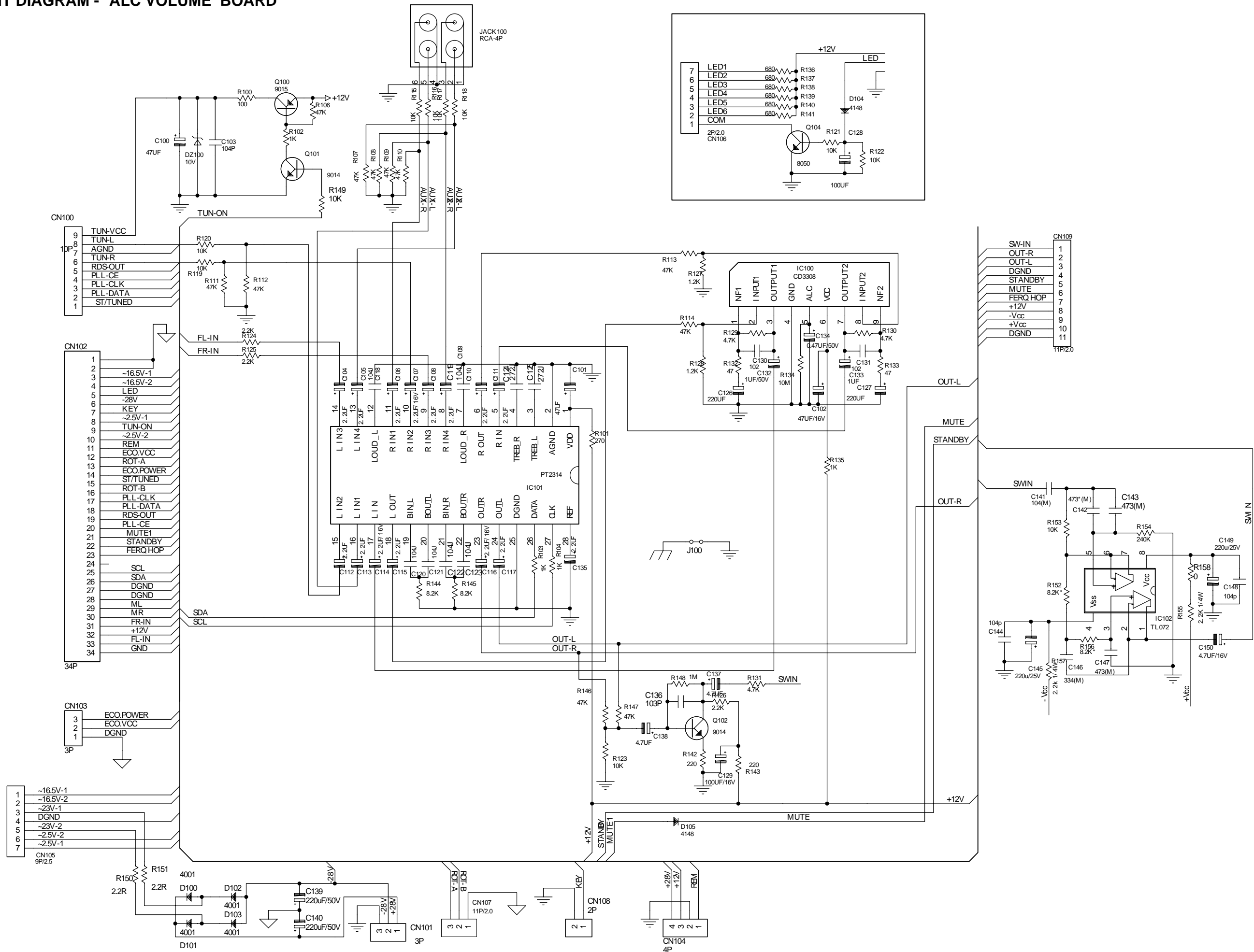
CIRCUIT DIAGRAM - CPU BOARD



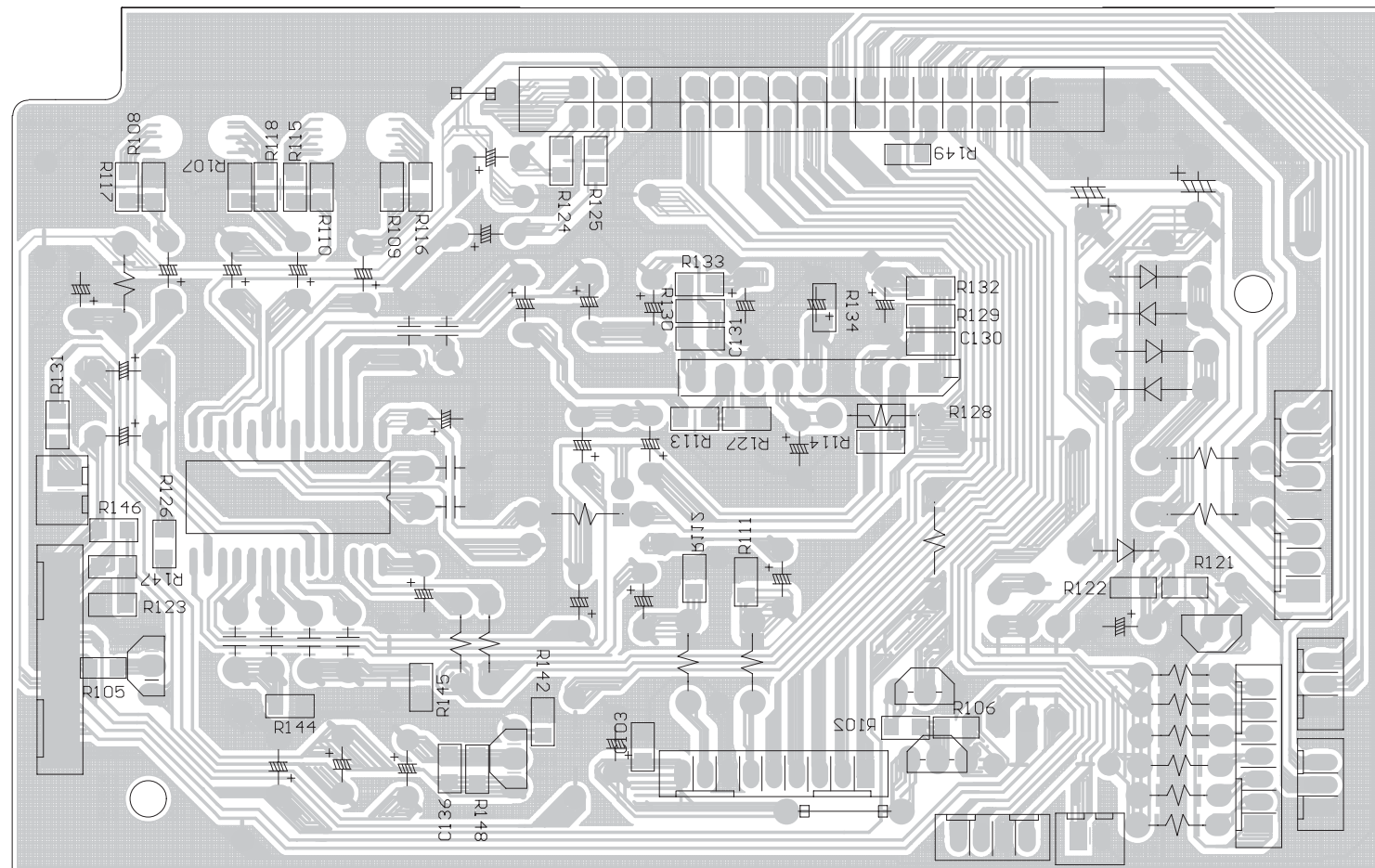
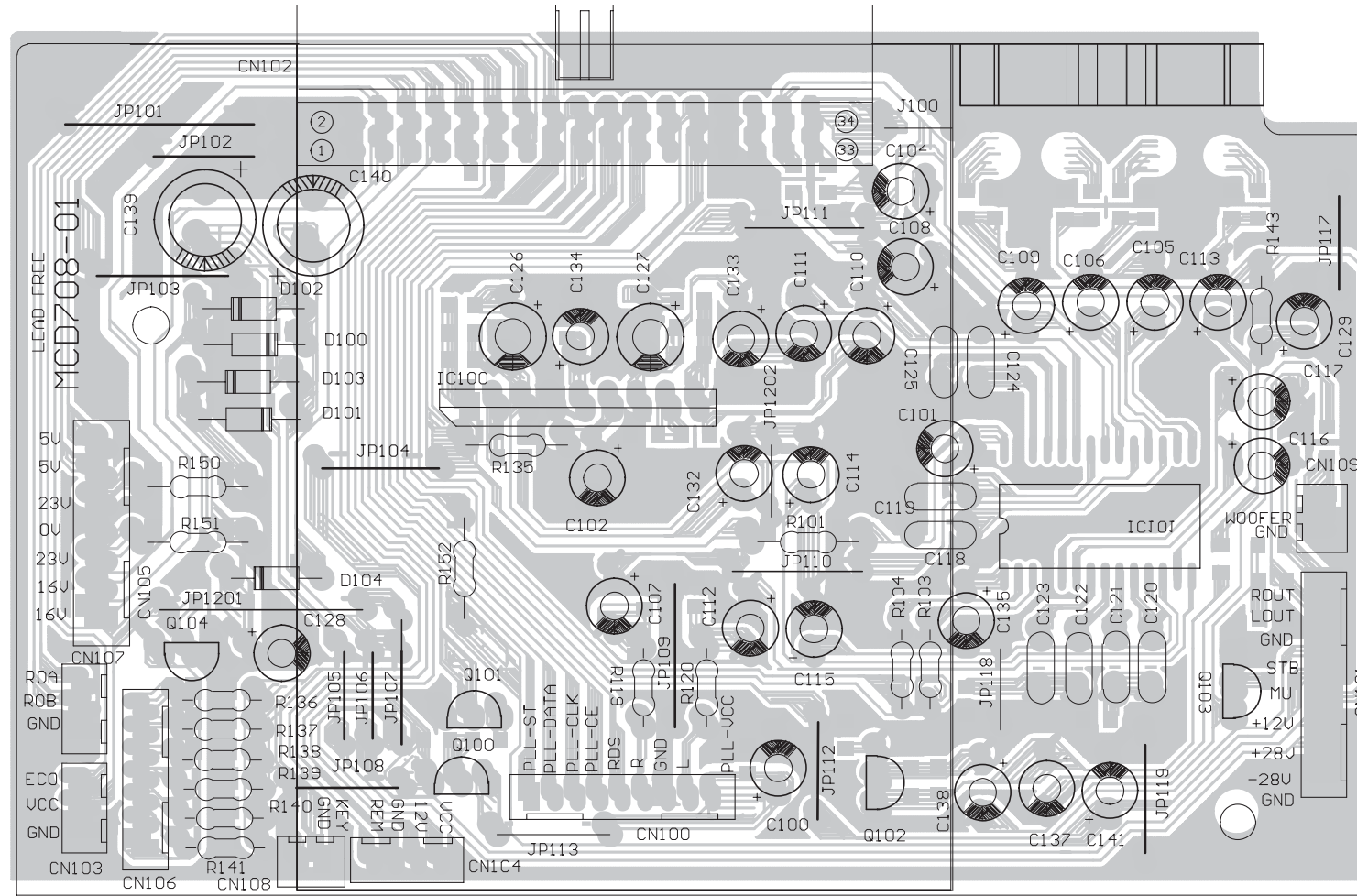
LAYOUT DIAGRAM - CPU BOARD



CIRCUIT DIAGRAM - ALC VOLUME BOARD



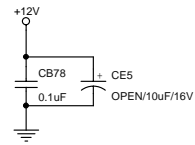
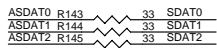
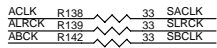
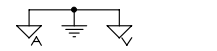
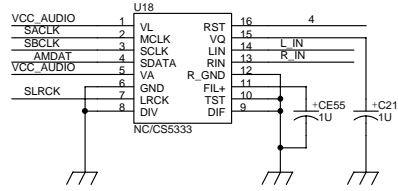
LAYOUT DIAGRAM - ALC VOLUME BOARD



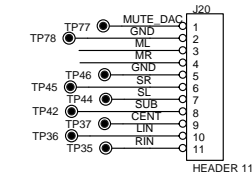
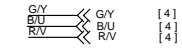
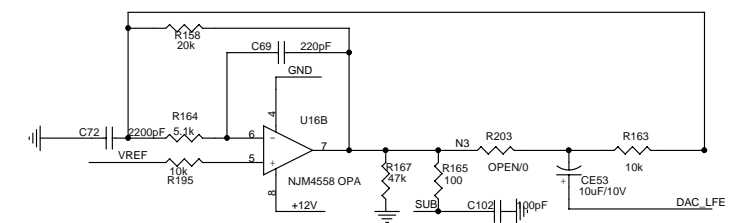
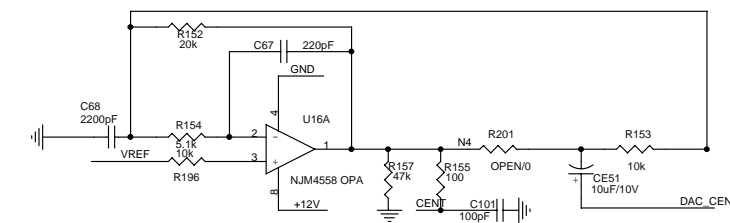
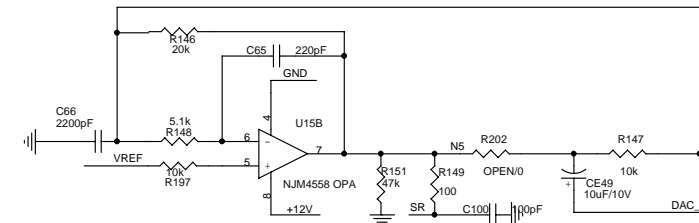
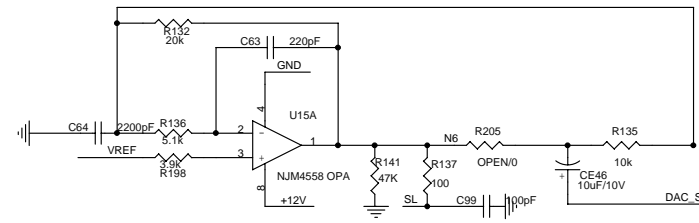
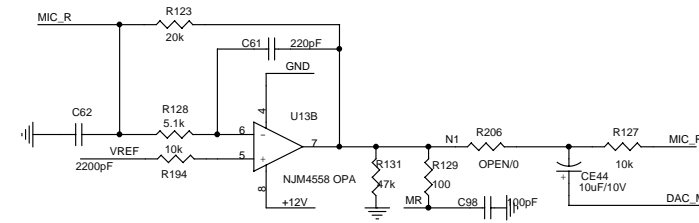
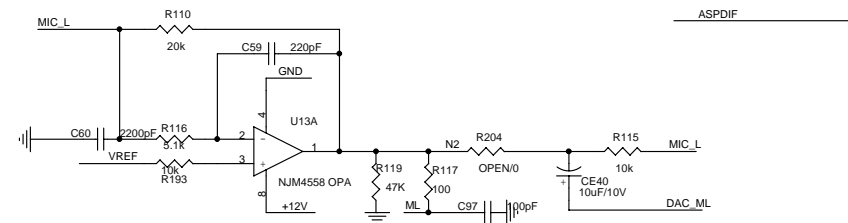
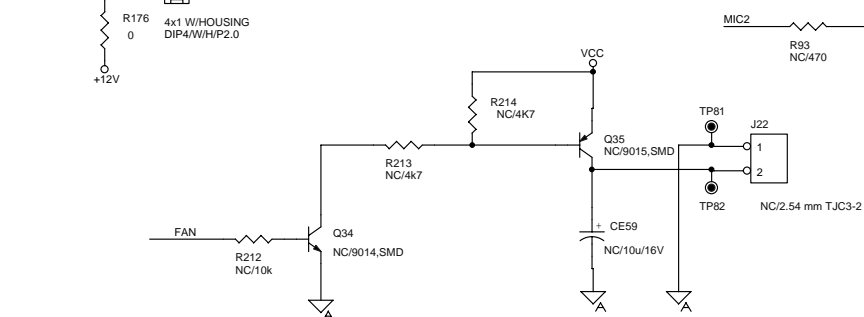
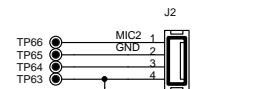
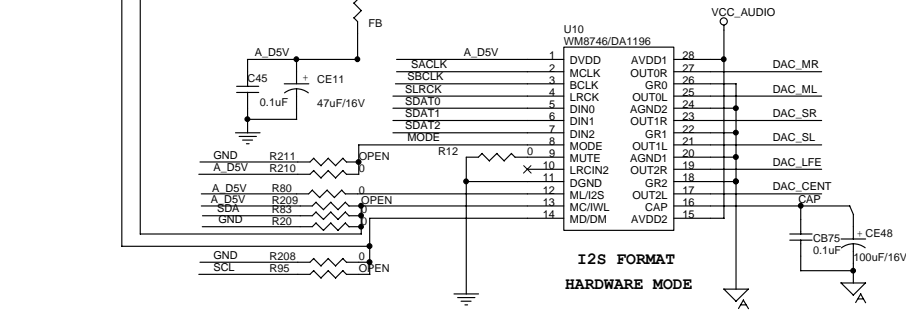
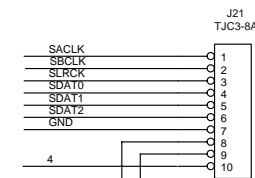
CIRCUIT DIAGRAM - DVD MPEG BOARD

MPEG board is not repaired, program for reference only.

- [1] +12V >> +12V
- [1] -12V >> -12V
- [1] +12V1 >> +12V1
- [1] DV33 >> DV33
- [1] VCC >> VCC
- [1] VCC_AUDIO >> VCC_AUDIO
- [1] GND >> GND
- [1,2,3,5] MIC1 >> MIC1
- [1] MIC_EN >> MIC_EN
- [1,2] ASPDIF >> ASPDIF
- [2] ASDAT[0..2] >> ASDAT[0..2]
- [2] ACLK >> ACLK
- [2] ABCK >> ABCK
- [2] ALRCK >> ALRCK
- [2] MUTE_DAC >> MUTE_DAC
- [2] RESET# >> RESET#
- [4] ML >> ML
- [4] MR >> MR
- [2] DEMP >> DEMP
- [2] AMDAT >> AMDAT
- [2] REST_CS >> REST_CS
- [2,3] SCL >> SCL
- [2,3] SDA >> SDA
- [2] VSCK >> VSCK
- [2] VSDA >> VSDA
- [2] FAN >> FAN

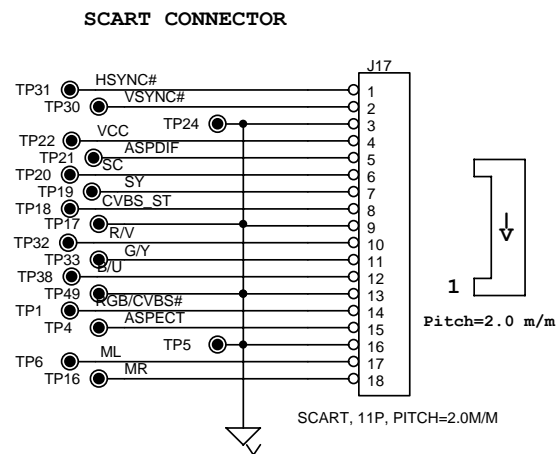
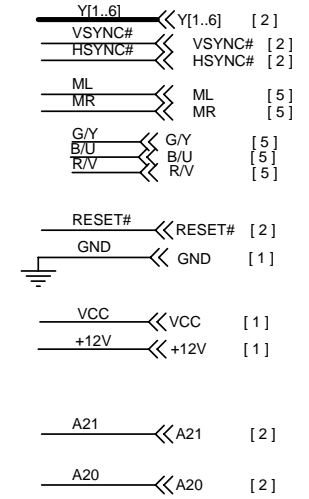
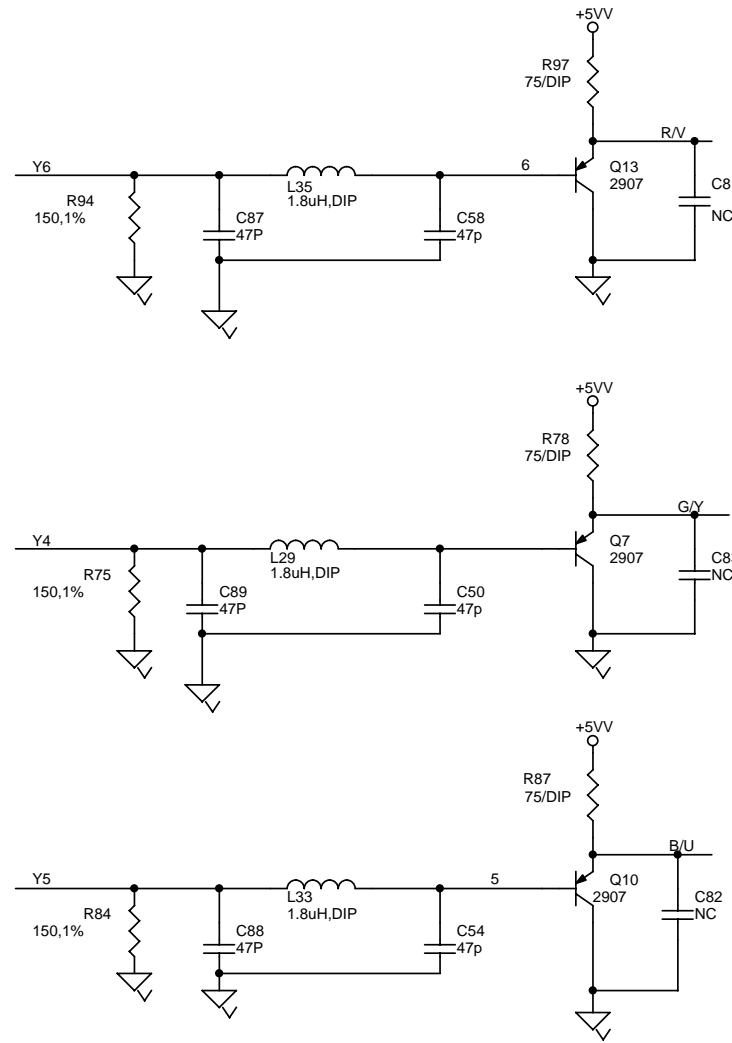
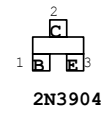
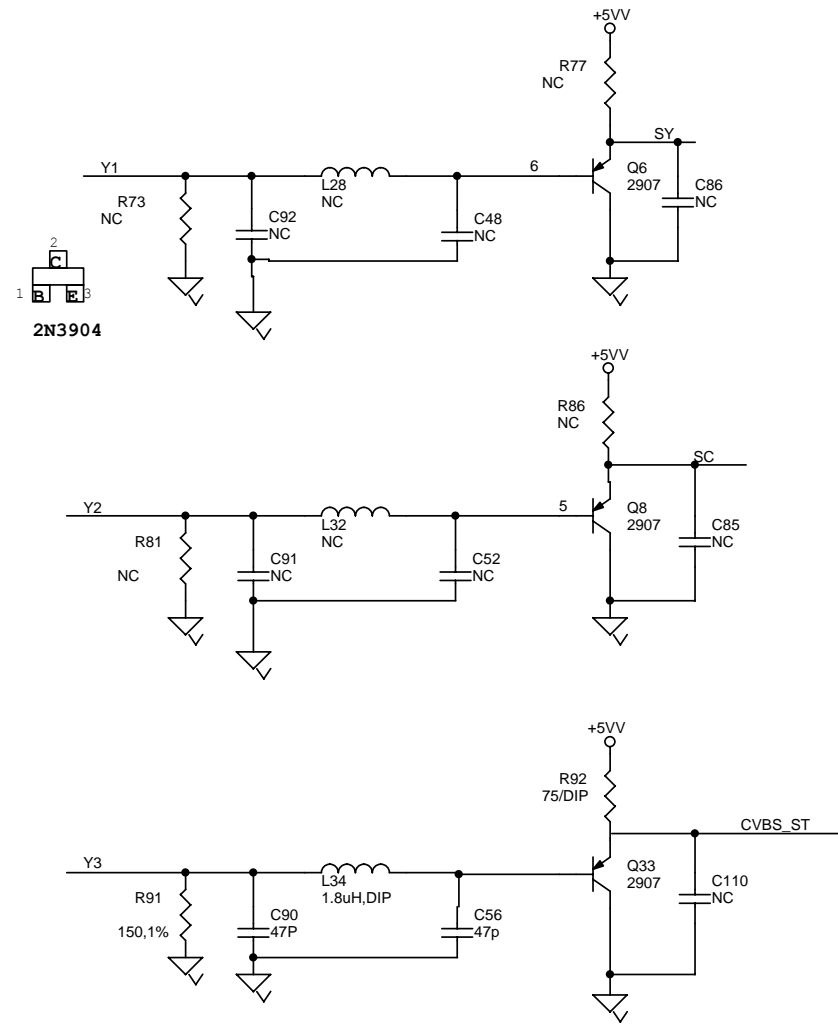


1:D/A ce2746(u24)
 R128,R210,R145,R142,R204,R205,R206,R207,R208,CE71,CE46(OPEN) R209=0,R129=10,R198=R199=33,CE40=100uF/10V
 2:D/A DA1196/M8746(U24)
 R209,R142,R198,R199,R129,R207,R208,CE71,CE46(OPEN),R128=10 R210=R145=R204=R205=R206=0,CE40=10uF/16V

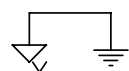
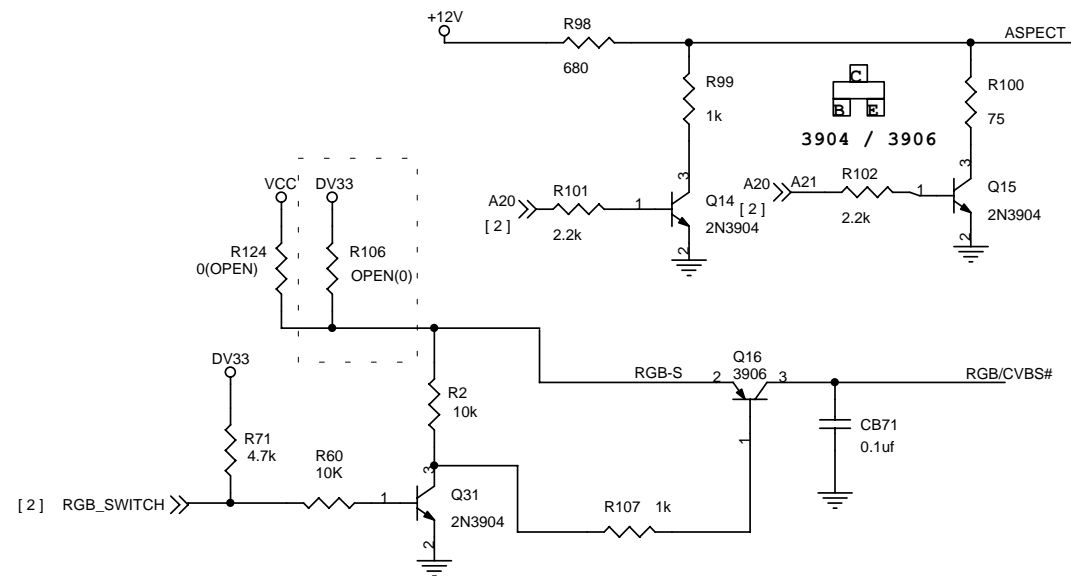


CIRCUIT DIAGRAM - DVD MPEG BOARD

MPEG board is not repaired, program for reference only.

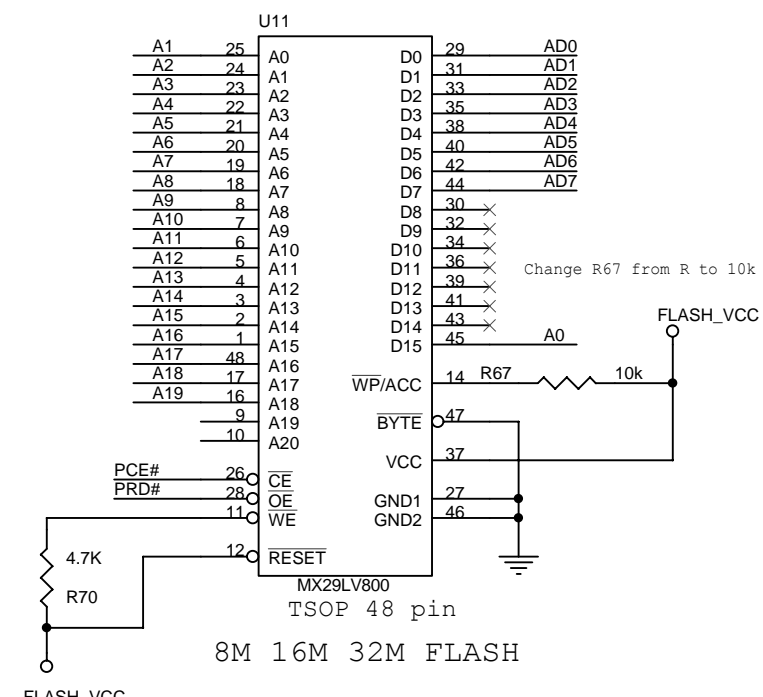
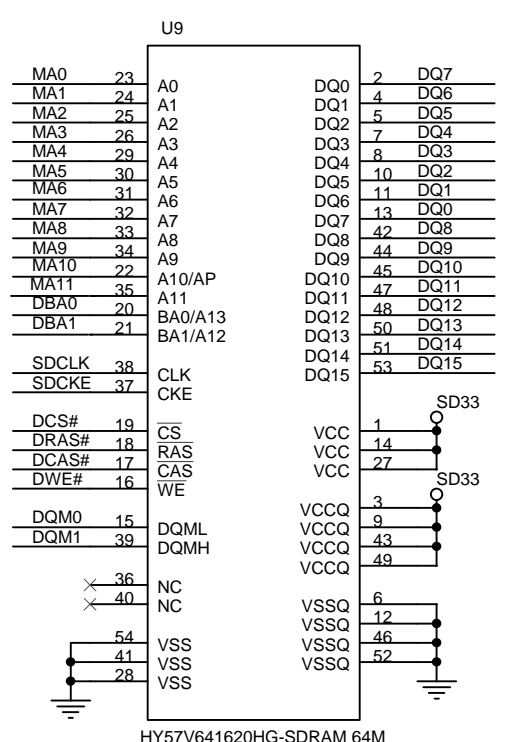
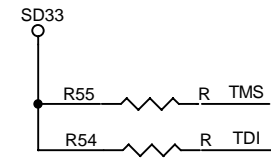
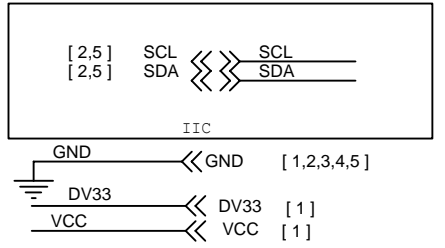
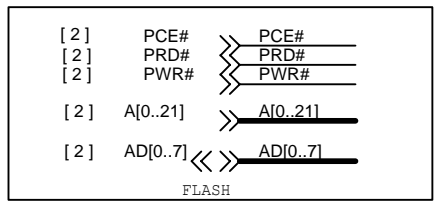
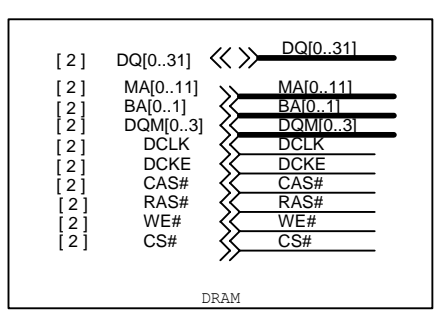
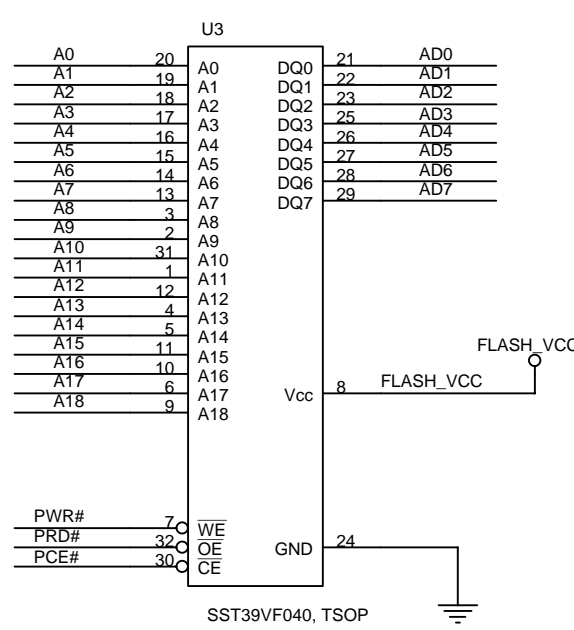
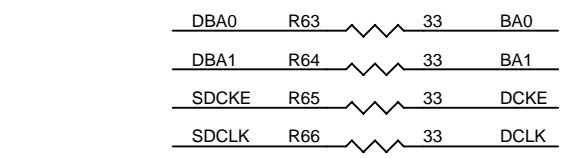
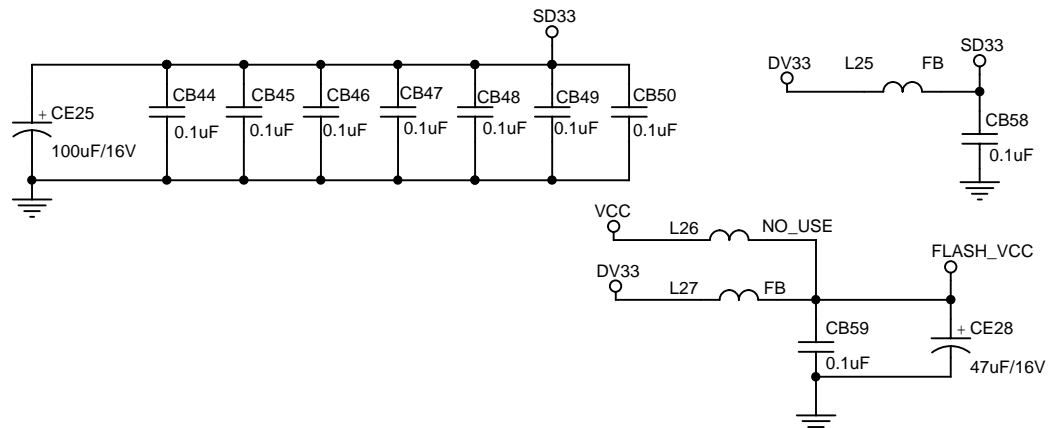
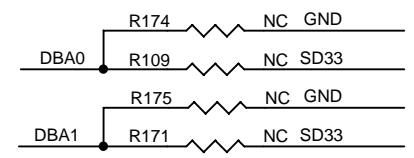
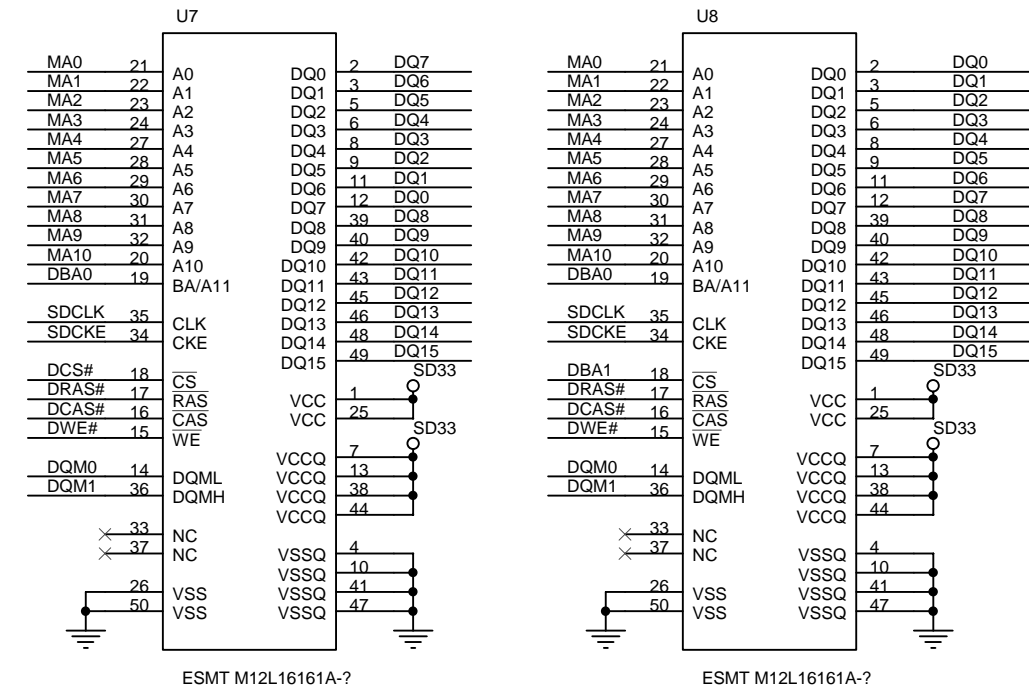


SCART CONTROL



CIRCUIT DIAGRAM - DVD MPEG BOARD

MPEG board is not repaired, program for reference only.



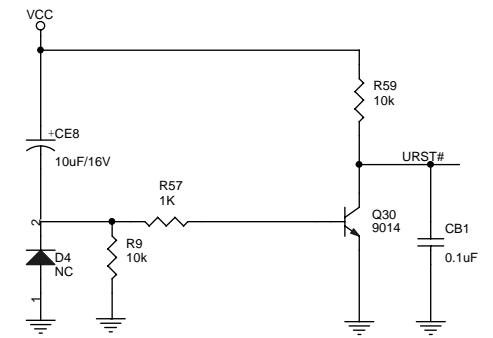
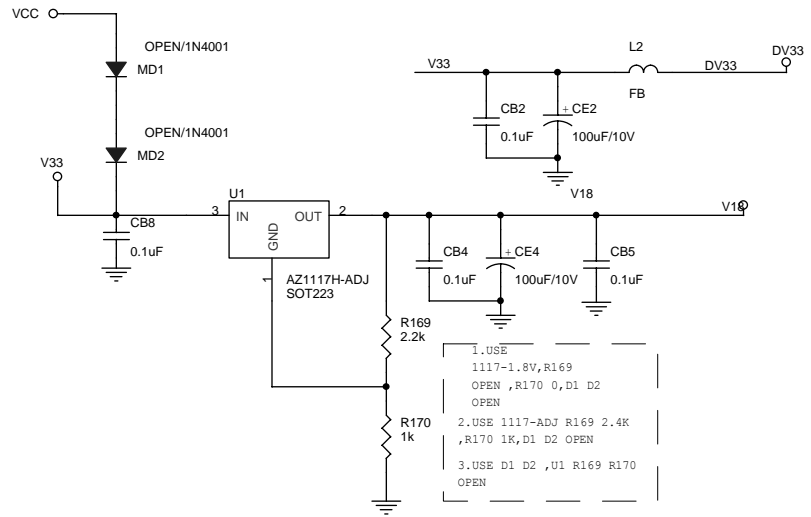
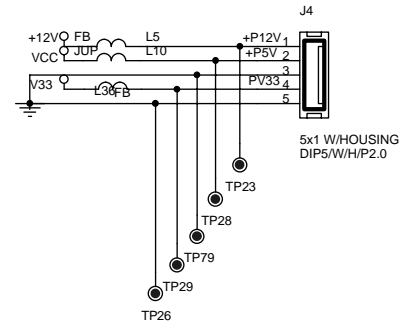
CIRCUIT DIAGRAM - DVD MPEG BOARD

MPEG board is not repaired, program for reference only.

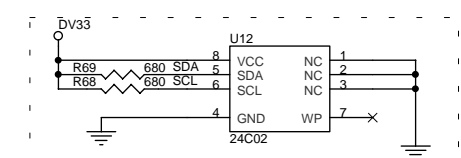
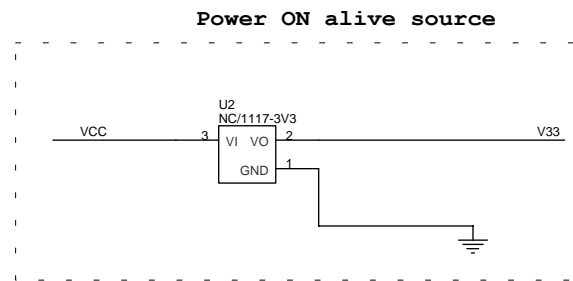
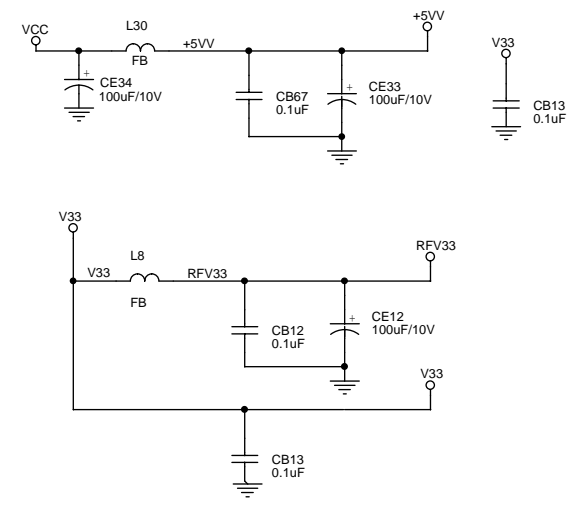
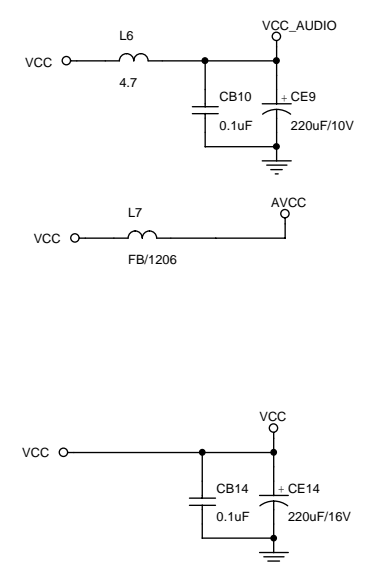
- | | |
|---|---|
| 1 | INDEX & POWER, RESET |
| 2 | RF, SERVO & MPEG - MT1389E |
| 3 | MEMORY - SDRAM, FLASH/EEPROM |
| 4 | VIDEO OUT |
| 5 | AUDIO DAC WMA8746&WMA8720 AND AUDIO OUT |

NAME	TYPE	DEVICE
VCC	Digital 5V	SUPPLY
DV33	Digital 3.3V	MT1389E
RFV33	Servo 3.3V	MT1389E
LDO_AV33	Laser Diode 3.3V	
AVCC	RF 5V	PICKUP HEADER
V18	Digital 1.8V	MT1389E
SD33	Digital 3.3V	SDRAM
+12V	Audio +12V	OP AMP.
-12V	Audio -12V	OP AMP.
AVDD	Audio 5V	Audio DAC
DVDD	Audio 5V	Audio DAC

Rev	History	P#	Date
V1	The original released.		2003.6.15
V2	Change CE11 from 10uF to 100uF Change C3 from C to 2200pF Change C2 from 0.1uF to C Change R10,r15 from 750k to 680k Change R17,R19 from 390k to 150k Add C14 2200pF Change R37 from 0 to R Change R38 from 0 to R Change C32 from 15nF to C Change PIN 47 from LIMIT to ADIN Add CE1 10uF Change R15 from 1.5k to 1.8k Remove 74H04 Change the LIMIT signal from PIN 46 to PIN136 Change R4,R5,R6,R8,R12 from 1k to R Change the TRINIROUT pullhigh power from 5V to 3V3 Add LC circuit Change R67 from R to 10k Add the low resistance output circuit Change spdif output port Add the Audio DAC power to reference filtering		2003.7.17

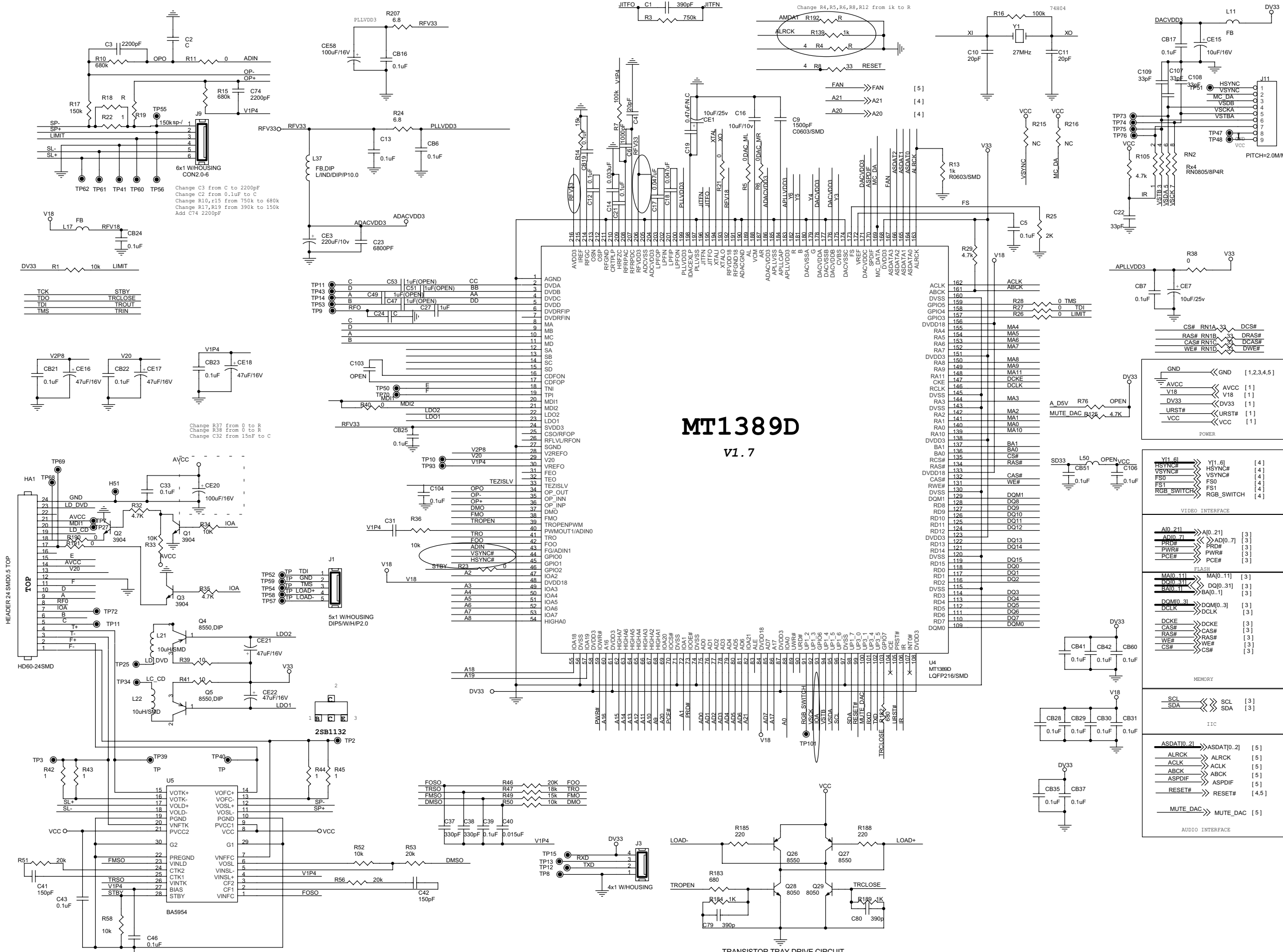


- URST# >>> URST# [2]
- V18 >>> V18 [2]
- RFVCC >>> RFVCC [2]
- LDO_AV33 >>> LDO_AV33 [2]
- DV33 >>> DV33 [2,3,4,5]
- VCC >>> VCC [2,3,4,5]
- AVCC >>> AVCC [2]
- VCC_AUDIO >>> VCC_AUDIO [5]
- +12V >>> +12V [4,5]
- 12V >>> -12V [4,5]
- +12V1 >>> +12V1 [5]
- GND >>> GND [2,3,4,5]
- POWER_STB >>> POWER_STB [2]
- MIC2 >>> MIC2 [5]
- MIC_EN >>> MIC_EN [2,5]



CIRCUIT DIAGRAM - DVD MPEG BOARD

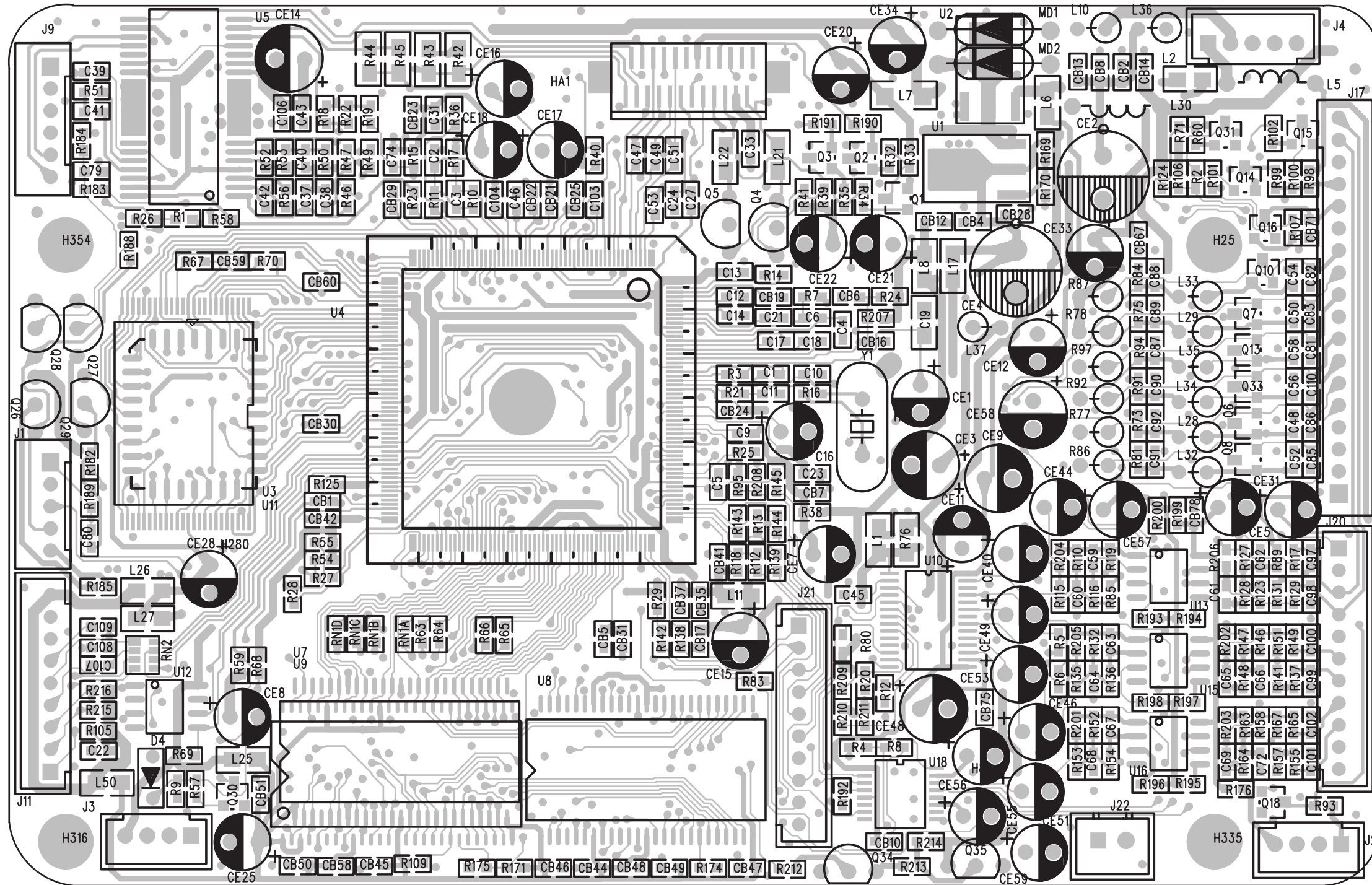
MPEG board is not repaired, program for reference only.



TRANSISTOR TRAY DRIVE CIRCUIT

LAYOUT DIAGRAM - DVD MPEG BOARD

MPEG board is not repaired, program for reference only.

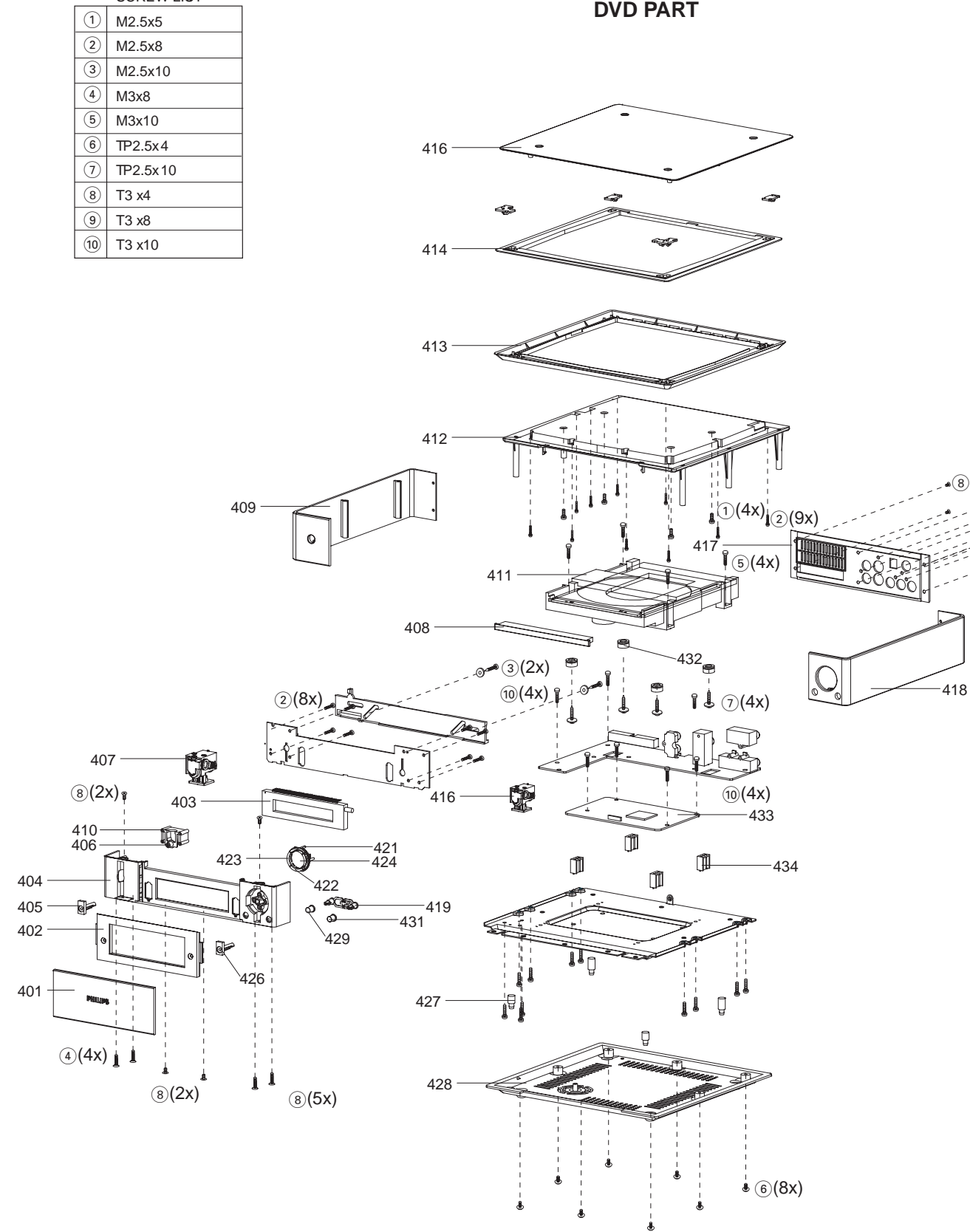


EXPLODED VIEW DIAGRAM

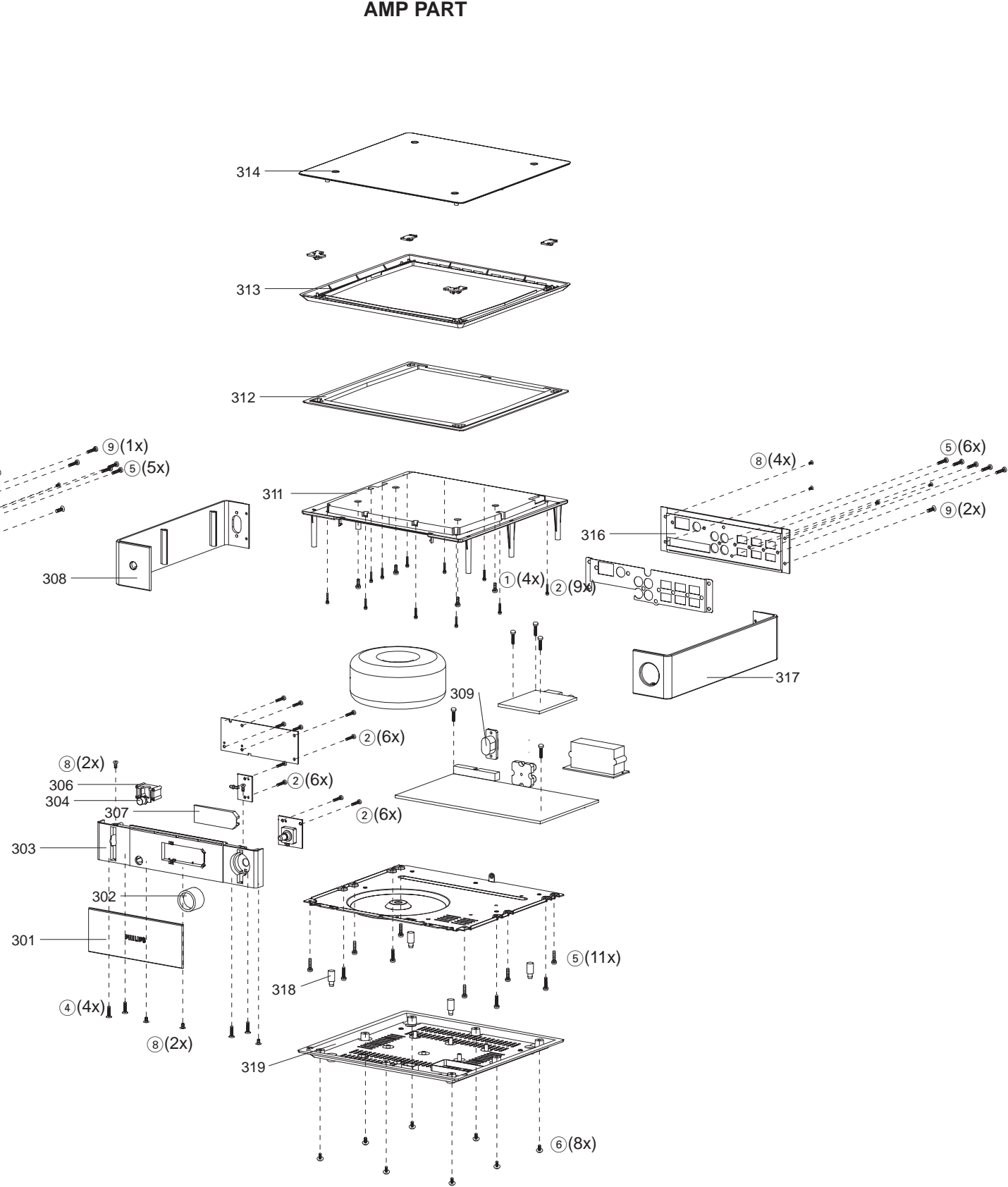
SCREW LIST

①	M2.5x5
②	M2.5x8
③	M2.5x10
④	M3x8
⑤	M3x10
⑥	TP2.5x4
⑦	TP2.5x10
⑧	T3 x4
⑨	T3 x8
⑩	T3 x10

DVD PART



AMP PART



MECHANICAL PARTSLIST - AMP PART**AMP PART**

301	994000003478	AMP LENS
302	994000003487	AMP VOLUME KNOB
303	994000003465	AMP CABINET FRONT -/98/93/12
303	994000005322	AMP CABINET FRONT -/37
304	994000003482	AMP SOURCE BUTTON
306	994000003492	AMP SOURCE BUTTON BRACKET
307	994000003481	LOGO LIGHT GUIDE
308	994000005153	AMP SIDE PLATE(LEFT) -/12
308	994000005154	AMP SIDE PLATE(LEFT) -/93/98
308	994000005318	AMP SIDE PLATE(LEFT) -/37
309	994000005165	AC SOCKET 1A/250V -/12/93/98
309	994000005316	AC SOCKET 2.5A/250V -/37
311	994000003467	TOP COVER 1 -/98/93/12
311	994000005319	TOP COVER 1 -/37
312	994000003477	TOP LIGHT LENS
313	994000003468	TOP COVER 2
314	994000003469	AMP TOP COVER -/12/93/98
314	994000005324	AMP TOP COVER -/37
316	994000004688	AMP CABINET BACK -/12/93/98
316	994000005325	AMP CABINET BACK -/37
317	994000005155	AMP SIDE PLATE(RIGHT)
318	994000003491	RUBBER FOOT B
319	994000003474	AMP BOTTOM HIPS

ACCESSORIES

994000003516	1P WIRE(26#)1.5m
994000003517	SINGLE JUMPER WIRE L=5.5m
994000002562	1300 ANTENNA HOLDER
994000003802	CONTROL CABLE 34P/2.5
994000003409	BRACKET ASS'Y PH-MCD705
994000004682	SPEAKER BOX ASS'Y
994000005168	REMOTE CONTROL ASS'Y -/12
994000005167	REMOTE CONTROL ASS'Y -/93
994000005315	REMOTE CONTROL ASS'Y -/98
994000005327	REMOTE CONTROL ASS'Y -/37
994000003585	VIDEO FEEDER CABLE 1.5m 3P
994000005169	SPEAKER CORDS 3m
994000005171	SPEAKER CORDS 3m W/RCA JACK

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

MECHANICAL PARTSLIST - DVD PART**DVD PART**

401	994000003479	DVD LENS
402	994000003495	DVD DOOR BRACKET
403	994000003413	VFD DISPLAY
404	994000004691	DVD CABINET FRONT -/12/93/98
404	994000005323	DVD CABINET FRONT -/37
405	994000005163	DVD DOOR POST-L
406	994000003488	DVD STANDBY BUTTON
407	994000002491	WORM PREFORMING NE-1300
408	994000003476	DVD DOOR
409	994000005156	DVD SIDE PLATE(LEFT) -/12/37
409	994000005157	DVD SIDE PLATE(LEFT) -/93/98
410	994000003496	DVD STANDBY BUTTON BRACKET
4	994000003461	DVD MECHANISM KENWOOD 510A
412	994000003467	TOP COVER 1 -/98/93/12
412	994000005319	TOP COVER 1 -/37
413	994000003468	TOP COVER 2
414	994000003477	TOP LIGHT LENS
416	994000003471	DVD TOP COVER -/93/12/98
416	994000005321	DVD TOP COVER -/37
417	994000005161	DVD CABINET BACK -/12
417	994000005159	DVD CABINET BACK -/93/98
417	994000005329	DVD CABINET BACK -/37
418	994000005158	DVD SIDE PLATE(RIGHT)
419	994000003494	DVD SKIP BUTTON BRACKET
421	994000003493	DVD CONTROL BUTTON BRACKET
422	994000003484	DVD CONTROL BUTTON-1
423	994000003485	DVD CONTROL BUTTON-2
424	994000003486	DVD CONTROL BUTTON CENTRE
426	994000005164	DVD DOOR POST-R
427	994000003489	RUBBER FOOT
428	994000003475	DVD CABINET BOTTOM HIPS
429	994000003483	DVD DCS BUTTON
431	994000005162	OPEN/CLOSE
432	994000003185	DVD MECHANISM SHOCKPROOF WASHER
433	994000004686	DVD DECODER CARD 89E18(2.0CH)
411	994000003816	DVD MECHANISM BRACKET RT656K

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

ELECTRICAL PARTSLIST - AMP PART**- MISCELLANEOUS -**

F201	△	994000003433	FUSE F6,3AL250V(50F)
F202	△	994000003433	FUSE F6,3AL250V(50F)
F203	△	994000003412	FUSE F1,5A/125V
J1201		994000004673	SINGLE RCA SOCKET
J1501		994000003511	SCART 21PINS SOCKET -/12
JACK1		994000003435	ANT.LEADING-OUT TERMINAL
JAK100		994000002528	4 PINS RCA SOCKET
		994000002535	CODER ED-1612-00-F15
REL501		994000003509	RELAY 10A 240VAC/30VDC -/12
S1		994000002542	IR SENSOR BLACK
SW901		994000003432	LIGHT TOUCH SWITCH
		994000005314	POWER CHANGE-OVER SWITCH -/98
X1		994000003452	CRYSTAL 75KHz ±20PPm
T501	△	994000004677	TRANSFORMER ECO EI-228-12 -/12/37
	△	994000004678	TRANSFORMER 230V/50H -/12
	△	994000004674	TRANSFORMER 220V/50H -/93
	△	994000004675	TRANSFORMER 120/230V -/98
	△	994000004679	TRANSFORMER 120V/60Hz -/37
	△	994000003508	AC LINE CORD 1,8m -/12
	△	994000005166	AC LINE CORD 1,8m -/93/98
	△	994000004681	AC LINE CORD 1,8M UL -/37
		994000005135	VOLUME PCB ASS'Y MCD709
		994000005152	ECO6-02 TUNER BOARD ASSY -/12/98/93
		994000005317	ECO6-01 TUNER PCB ASS'Y -/37
		994000005133	AMP PCB ASS'Y MCD709

- DIODES -

LED1001		994000003436	WHITE LED DIODE
LED1100		994000003437	LED DIODE(BLUE)
LED1101		994000003437	LED DIODE(BLUE)
LED1103		994000003437	LED DIODE(BLUE)
LED1104		994000003437	LED DIODE(BLUE)
LED1200		994000003437	LED DIODE(BLUE)
LED1201		994000003437	LED DIODE(BLUE)
D1		994000003764	DIODE BAV99(SOT23) -/98/37
D2		994000003759	CHIP DIODE BAS316 -/98/37
D3		994000003796	DIODE HN1V02H SOP8 -/12/93
D3		994000003762	VARIODE DIODE I348 L13 -/98/37
D4		994000003763	VARIODE DIODE BB804 -/98/37
D5		994000003763	VARIODE DIODE BB804 -/98/37
DB1		994000003418	THYRISTOR RS1010G(10A)
DZ1		994000003761	DIODE BZX384-C11 11V
DZ201		994000003417	ZENER DIODE 5,6V
DZ202		994000003408	ZENER DIODE 27V
DZ203		994000003408	ZENER DIODE 27V
DZ204		994000003417	ZENER DIODE 5,6V
DZ205		994000004671	ZENER DIODE 18V-52
DZ206		994000004672	ZENER DIODE 15V
DZ901		994000002516	ZENER DIODE 5,1V 1/2W-52

ELECTRICAL PARTSLIST - AMP PART**- COILS & FILTERS -**



T1	994000005141	I.F.T. COIL BROWN 6298
T2	994000005139	I.F.T. COIL BROWN 6298
T3	994000005139	I.F.T. COIL BROWN 6298
T4	994000005142	I.F.T. COIL BROWN 6299
T5	994000005138	I.F.T. COIL BROWN 6296
T7	994000005137	I.F.T. COIL BROWN 6295
CF1	994000003153	FM CER.FILTER 10.7MHz -/98/37
CF1	994000005143	AM FILTER 10,73MHz -/93/12
CF2	994000003153	FM CER.FILTER 10.7MHz -/98/37
CF2	994000005143	AM FILTER 10,73MHz -/93/12
CF4	994000005143	AM FILTER 10,73MHz -/93/12
XT201	994000003453	CER. FILTER CRB 700KHz
XT202	994000003454	CER. FILTER CRB 600KHz

- IC & TRANSISTORS -

IC1	994000003797	IC TEA5762 -/93/12
IC1	994000003421	IC TEA5757H -/98/37
IC101	994000005136	I.C.PT2314 PRINCETON
IC102	994000004669	IC TL072 (NE4558)
IC202	994000005067	IC 7812
IC203	994000003422	CHIP IC TDA8920
IC204	994000003422	CHIP IC TDA8920
IC205	994000003424	CHIP IC 74HCU04D
IC206	994000003425	IC HEF4013T CHIP
Q1	994000003156	CHIP TRANSISTOR 9014
Q100	994000003441	TRANSISTOR 9015C-5
Q101	994000002545	TRANSISTOR 9014C-5
Q102	994000002545	TRANSISTOR 9014C-5
Q104	994000002518	TRANSISTOR 8050C-5
Q105	994000002545	TRANSISTOR 9014C-5
Q106	994000002518	TRANSISTOR 8050C-5
Q1501	994000003156	CHIP TRANSISTOR 9014 -/12
Q1502	994000005172	CHIP RESISTOR 8550C -/12
Q2	994000005144	CHIP TRANSISTOR BC857B -/93/12
Q203	994000005144	CHIP TRANSISTOR BC857B -/98/37
Q205	994000005144	CHIP TRANSISTOR BC857B -/98/37
Q212	994000005144	CHIP TRANSISTOR BC857B -/98/37
Q201	994000003444	CHIP TRANSISTOR BC847C
Q202	994000002517	TRANSISTOR 2SB772A
Q204	994000003444	CHIP TRANSISTOR BC847C
Q208	994000003444	CHIP TRANSISTOR BC847C
Q209	994000003444	CHIP TRANSISTOR BC847C
Q210	994000003443	MOSFET BUK7535-55A
Q211	994000003444	CHIP TRANSISTOR BC847C
Q3	994000005145	TRANSISTOR BC547C-5 -/93/12
Q3	994000003438	TRANSISTOR BC547B-5 -/98/37
Q4	994000003442	CHIP TRANSISTOR BC857C
Q5	994000003156	CHIP TRANSISTOR 9014

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

ELECTRICAL PARTSLIST - DVD PART**- MISCELLANEOUS -**

F201		994000002529	FUSE F2AL250V
F209		994000003412	FUSE F1,5A/125V
J104		994000002527	4PINS SPEAKER SOCKET
JACK202		994000002553	RCA SOCKET 3P
JACK4		994000002554	RCA SOCKET
JACK1301		994000002556	OPTICAL & COAXIAL TERMINAL
CN210		994000003415	PIN CONNECOTR 34PINS
VFD701		994000003413	VFD DISPLAY
RCA204		994000003414	RCA SOCKET 2P
SW601		994000002543	LIGHT TOUCH SWITCH
SW602		994000002543	LIGHT TOUCH SWITCH
SW603		994000002543	LIGHT TOUCH SWITCH
SW604		994000002543	LIGHT TOUCH SWITCH
SW605		994000002543	LIGHT TOUCH SWITCH
SW606		994000002543	LIGHT TOUCH SWITCH
SW607		994000002543	LIGHT TOUCH SWITCH
SW608		994000002543	LIGHT TOUCH SWITCH
X201		994000003152	CER. FILTER FREQ. 4,19MHz
X202		994000002551	CRYSTAL FREQ.32,768KHz
X203		994000005149	CRYSTAL 4,332MHz -/12/37
		994000005146	CPU PCB ASS'Y -/12/37
		994000005151	DISPLAY PCB ASS'Y -/12
		994000003499	FFC CABLE 24P

- DIODES -

LED601		994000002537	LED LAMP(BLUE)
LED1100		994000003437	LED DIODE(BLUE)
LED1101		994000003437	LED DIODE(BLUE)
LED1103		994000003437	LED DIODE(BLUE)
LED1100		994000003437	LED DIODE(BLUE)
LED1101		994000003437	LED DIODE(BLUE)
LED1103		994000003437	LED DIODE(BLUE)
BD201		994000002521	THYRISTOR RS406(4A)
D210		994000002544	RECTIFIER DIODE 5822
DZ201		994000003407	ZENER DIODE 3,3V
DZ202		994000003408	ZENER DIODE 27V

- IC & TRANSISTORS -

IC201		994000003512	IC AC6811(RDS)CHIP -/12/37
IC202		994000002547	IC AT24C02-PC27(2,7V)
IC203		996510011038	MCU PARTS ASSY (only for -/93)
IC204		994000005147	IC PT2579-SN SMALL -/12/37
IC207		994000002548	IC LM7805/LM340T5 7805
IC208		994000002546	IC YD2576-ADJ
IC209		994000005148	IC CHMC 78L05 -/12/37
IC601		994000002539	IC PT6311/SC16311/CD16311
Q201		994000002519	TRANSISTOR 8550C-5
Q202		994000002519	TRANSISTOR 8550C-5

ELECTRICAL PARTSLIST - DVD PART

- IC & TRANSISTORS -

Q203	994000002518	TRANSISTOR 8050C-5
Q204	994000002518	TRANSISTOR 8050C-5
Q205	994000002545	TRANSISTOR 9014C-5
Q206	994000002519	TRANSISTOR 8550C-5
Q207	994000002518	TRANSISTOR 8050C-5
Q208	994000002519	TRANSISTOR 8550C-5
Q209	994000002518	TRANSISTOR 8050C-5
Q210	994000002518	TRANSISTOR 8050C-5
Q211	994000003439	CHIP TRANSISTOR BC817-25
Q212	994000003439	CHIP TRANSISTOR BC817-25

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