

Service
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Service Manual



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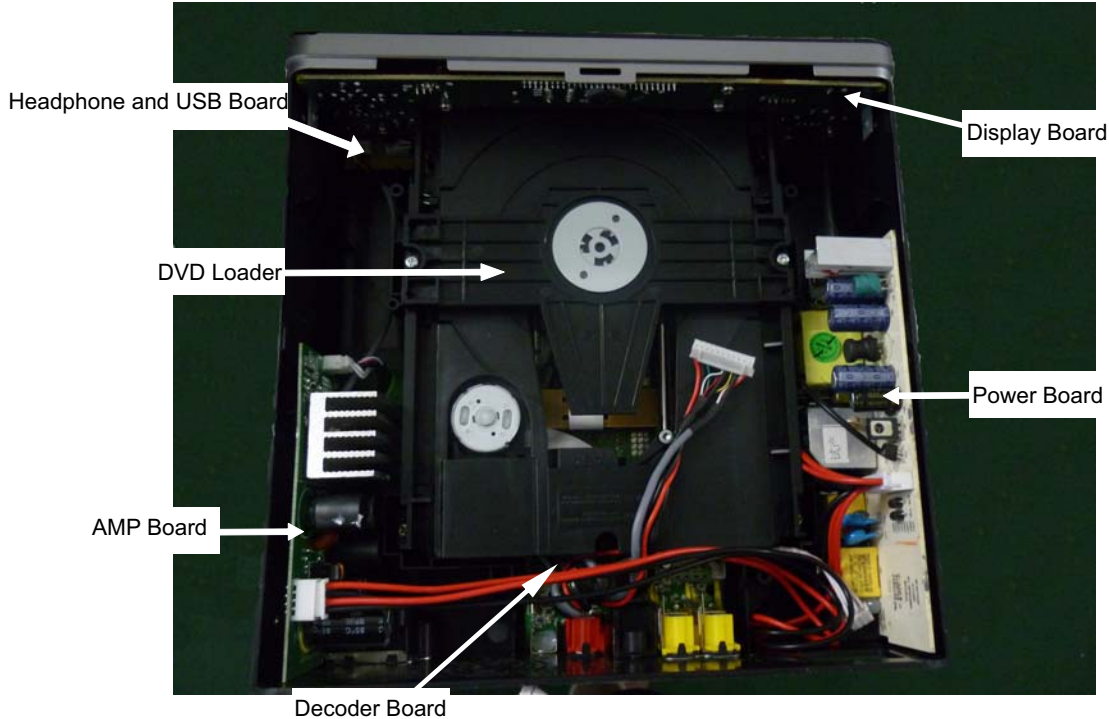
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Technical Specification and Connection Facilities

1. Technical Specification and Connection Facilities

1.1 PCB Locations



1.2 General

Power supply	: 100-240V, 50Hz~60Hz
Power consumption	: 45W
Standby power consumption	: < 1 W

1.3 Radio

Tuning Frequency Rang	: 87.5MHz - 108MHz
Tuning Grid	: 50KHz
Signal to Noise Ratio	: >55dB
Search Selectivity	: >28dB
Distortion	: <2%
Frequency Response	: 63Hz~12.5KHz±3dB

1.4 Amplifier

Rated Output Power	: 2X30W RMS
Frequency Response	: 40Hz-20000Hz,±3dB
Signal to Noise Ratio	: >65dB
Aux Input	: 1V RMS 20k ohm

1.5 Connectivity

Audio Input/Output	
Output voltage	: 1Vpp ±0.1Vpp
Input impedance	: >10KΩ
Video In/Output	
Output voltage	: 1Vpp ± 0.1V
Output impedance	: 75Ω
S/N on output	: ≥55dB

CVBS

Amplitude Output	: 1Vpp±10%
White Bar	: 714mV±10%
Sync.Amplitude	: 286mV±10%
S/N Luminance	: ≥60dB
DC Level	: ≤1V

COAXIAL Digital In

LPCM	: according IEC 60958-3
MPEG1,MPEG2,AC3	: according IEC 61937
DTS	: according IEC 61937+
Output signal amplitude	: 0.5Vpp±20%
Input impedance	: 75Ω±20%
DC Output Voltage	: < 0.05V

Video Supporting Format

Signal system	: PAL/NTSC
HDMI output	: 480p,576p,720p,1080i, 1080p,1080p24
Video output	: 480/576i,480/576p, 720p,1080i

USB

Compatibility	: USB2.0
Type of connector	: Series A Connector
Class support	: UMS(USB Mass Storage Class)
File System	: FAT12,FAT16,FAT32

Sampling Frequency

MP3	: 22kHz, 44.1kHz, 48kHz
WMA	: 44.1kHz, 48kHz

Constant bit rate

MP3	: 32 - 320 kbps
WMA	: 44 kbps - 192 kbps

Technical Specifications and Connection Facilities

1.5 Dimension and Weight

Main Unit (WxHxD)	: 223X88X242mm
Net Weight	: 1.8kg
Speaker Box (WxHxD)	: 140x220x220mm
Net Weight	: 3.9kg

1.6 Playability

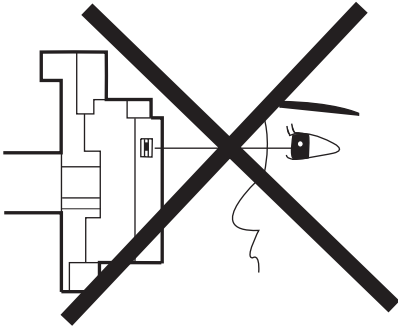
Video Playback		
1.	Playback Media: CD-R/CD-RW, DVD+R/+RW, DVD-R/-RW, DVD-Video, Video CD/SVCD, DVD+R DL, DVD-R DL,USB flash drive	x
2.	Compression Formats: MPEG2, MPEG1, DivX 3.11, DivX 4.x, DivX 5.x, DivX 6.0, MPEG4	x
Audio Playback		
1.	Playback Media: Audio CD, CD-R/RW, DVD+R DL, DVD+R/+RW, DVD-R/-RW, MP3- CD,MP3-DVD,USB flash drive, WMA-CD	x
2.	Compression Format: Dolby Digital, MP3, MPEG2 Multichannel, PCM, WMA	x
3.	MPEG1 bit rates: 64-384 kbps and VBR	x
Still Picture Playback		
1.	Playback Media: CD-R/RW, DVD+R DL, DVD+R/+RW, DVD- R/-RW, Picture CD, USB Digital Camera(PTP),USB flash drive	x
2.	Picture Compression Format: JPEG, JPEG digital camera photos	x
3.	Picture enhancement: Slideshow with MP3 playback, Create albums, Rotate, Slideshow with music playback, Zoom	x

VERSION VARIATION

Type /Versions:	DCD322												
Board in used:	Service policy	/12											
DISPLAY BOARD	C												
HEDAPHONE BOARD	C												
IPOD BOARD	C												
AMP BOARD	C												
OUTPUT BOARD	C												
DVD DECODER BOARD	M												
POWER BOARD	M												
Type /Versions:	DCD322												
Features	Feature difference	/12											
RDS		√											
VOLTAGE SELECTOR													
ECO STANDBY		√											
DTS		√											
* TIPS : C -- Component Lever Repair. M -- Module Lever Repair √ -- Used													

Laser Beam Safety Precautions

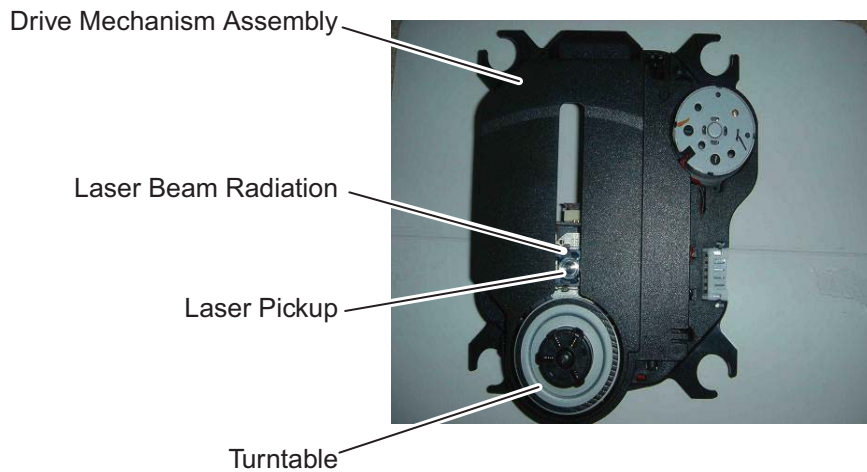
This Blu-Ray player uses a pickup that emits a laser beam.



Do not look directly at the laser beam coming from the pickup or allow it to strike against your skin.

The laser beam is emitted from the location shown in the figure. When checking the laser diode, be sure to keep your eyes at least 30 cm away from the pickup lens when the diode is turned on. Do not look directly at the laser beam.

CAUTION: Use of controls and adjustments, or doing procedures other than those specified herein, may result in hazardous radiation exposure.



CAUTION-CLASS 2M LASER
RADIATION WHEN OPEN
DO NOT STARE INTO THE BEAM
OR VIEW DIRECTLY WITH
OPTICAL INSTRUMENTS



Location: Inside Top of Blu-Ray mechanism.

Important Safety Precautions

Important

Read and understand all instructions before you use your home theater. If damage is caused by failure to follow instructions, the warranty does not apply.

Safety

Risk of electric shock or fire!

- Never expose the product and accessories to rain or water. Never place liquid containers, such as vases, near the product. If liquids are spilled on or into the product, disconnect it from the power outlet immediately. Contact Philips Consumer Care to have the product checked before use.
- Never place the product and accessories near naked flames or other heat sources, including direct sunlight.
- Never insert objects into the ventilation slots or other openings on the product.
- Where the mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
- Disconnect the product from the power outlet before lightning storms.
- When you disconnect the power cord, always pull the plug, never the cable.

Risk of short circuit or fire!

- Before you connect the product to the power outlet, ensure that the power voltage matches the value printed on the back or bottom of the product. Never connect the product to the power outlet if the voltage is different.

Risk of injury or damage to the home theater!

- For wall-mountable products, use only the supplied wall mount bracket. Secure the wall mount to a wall that can support the combined weight of the product and the wall mount. Koninklijke Philips Electronics N.V. bears no responsibility for improper wall mounting that results in accident, injury or damage.

- For speakers with stands, use only the supplied stands. Secure the stands to the speakers tightly. Place the assembled stands on flat, level surfaces that can support the combined weight of the speaker and stand.
- Never place the product or any objects on power cords or on other electrical equipment.
- If the product is transported in temperatures below 5°C, unpack the product and wait until its temperature matches room temperature before connecting it to the power outlet.
- Visible and invisible laser radiation when open. Avoid exposure to beam.
- Do not touch the disc optical lens inside the disc compartment.

Risk of overheating!

- Never install this product in a confined space. Always leave a space of at least four inches around the product for ventilation. Ensure curtains or other objects never cover the ventilation slots on the product.

Risk of contamination!

- Do not mix batteries (old and new or carbon and alkaline, etc.).
- Remove batteries if they are exhausted or if the remote control is not to be used for a long time.
- Batteries contain chemical substances, they should be disposed of properly.

Product care

- Do not insert any objects other than discs into the disc compartment.
- Do not insert warped or cracked discs into the disc compartment.
- Remove discs from the disc compartment if you are not using the product for an extended period of time.
- Only use microfiber cloth to clean the product.

Important Safety Precautions

Disposal of your old product and batteries



Your product is designed and manufactured with high quality materials and components, which can be recycled and reused.



When this crossed-out wheeled bin symbol is attached to a product it means that the product is covered by the European Directive 2002/96/EC. Please inform yourself about the local separate collection system for electrical and electronic products.

Please act according to your local rules and do not dispose of your old products with your normal household waste.

Correct disposal of your old product helps to prevent potential negative consequences for the environment and human health.



Your product contains batteries covered by the European Directive 2006/66/EC, which cannot be disposed with normal household waste.

Please inform yourself about the local rules on separate collection of batteries because correct disposal helps to prevent negative consequences for the environmental and human health.

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts, and wires have been returned to their original positions. Afterwards, do the following tests and confirm the specified values to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1: Ratings for selected area

AC Line Voltage	Clearance Distance (d), (d')
110V~220V	≥ 3.2 mm (0.126 inches)

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

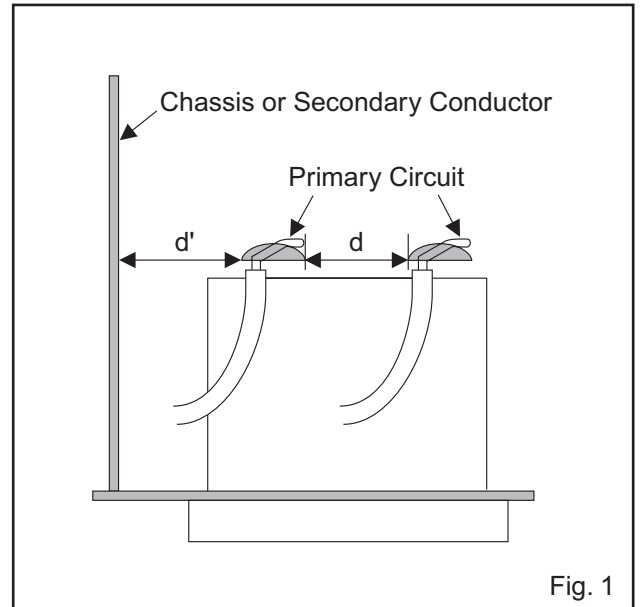


Fig. 1

2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) is lower than or equal to the specified value in the table below.

Measuring Method (Power ON):

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across the terminals of load Z. See Fig. 2 and the following table.

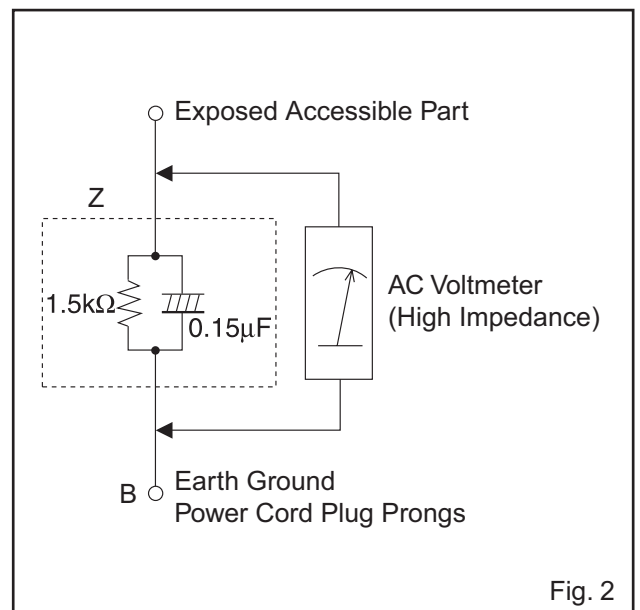


Fig. 2

Table 2: Leakage current ratings for selected areas

AC Line Voltage	Load Z	Leakage Current (i)	Earth Ground (B) to:
110V~220V	0.15 μ F CAP. & 1.5 k Ω RES. Connected in parallel	$i \leq 0.5$ mA Peak	Exposed accessible parts

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

Safety Information, General Notes & Lead Free Requirements

1 Safety Instructions

1.1 General Safety

- Safety regulations require that during a repair:
- Connect the unit to the mains via an isolation transformer.
 - Replace safety components, indicated by the symbol ▲, only by components identical to the original ones. Any other component substitution (other than original type) may increase risk of fire or electrical shock hazard.

Safety regulations require that after a repair, you must return the unit in its original condition. Pay, in particular, attention to the following points:

- Route the wires/cables correctly, and fix them with the mounted cable clamps.
- Check the insulation of the mains lead for external damage.
- Check the electrical DC resistance between the mains plug and the secondary side:
 1. Unplug the mains cord, and connect a wire between the two pins of the mains plug.
 2. Set the mains switch to the 'on' position (keep the mains cord unplugged!).
 3. Measure the resistance value between the mains plug and the front panel, controls, and chassis bottom.
 4. Repair or correct unit when the resistance measurement is less than 1 MΩ.
 5. Verify this, before you return the unit to the customer/user (ref. UL-standard no. 1492).
 6. Switch the unit 'off', and remove the wire between the two pins of the mains plug.

1.2 Laser Safety

This unit employs a laser. Only qualified service personnel may remove the cover, or attempt to service this device (due to possible eye injury).

Laser Device Unit

Type	:AlGaln(BD) :AlGalnP(DVD) :AlGalnP(CD)
Wavelength	: 650 nm (DVD) : 780 nm (VCD/CD) : 405nm(BD)
Output Power	: 20 mW (DVD+RW writing) : 0.8 mW (DVD reading) : 0.3 mW (VCD/CD reading)
Beam divergence	: 60 degree

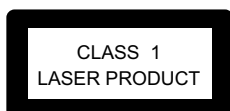


Figure 2-1

Note: Use of controls or adjustments or performance of procedure other than those specified herein, may result in hazardous radiation exposure. Avoid direct exposure to beam.

2 Warnings

2.1 General

- All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD, ▲). Careless handling during repair can reduce life drastically. Make sure that, during repair, you are at the same potential as the mass of the set by a wristband with resistance. Keep components and tools at this same potential. Available ESD protection equipment:
 - Complete kit ESD3 (small tablemat, wristband, connection box, extension cable and earth cable) 4822 310 10671.
 - Wristband tester 4822 344 13999.
- Be careful during measurements in the live voltage section. The primary side of the power supply, including the heatsink, carries live mains voltage when you connect the player to the mains (even when the player is 'off!'). It is possible to touch copper tracks and/or components in this unshielded primary area, when you service the player. Service personnel must take precautions to prevent touching this area or components in this area. A 'lightning stroke' and a stripe-marked printing on the printed wiring board, indicate the primary side of the power supply.
- Never replace modules, or components, while the unit is 'on'.

2.2 Laser

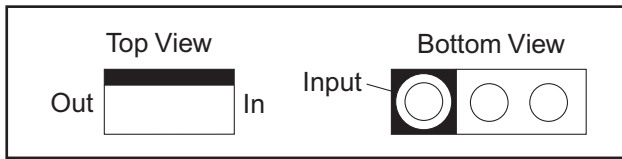
- The use of optical instruments with this product, will increase eye hazard.
- Only qualified service personnel may remove the cover or attempt to service this device, due to possible eye injury.
- Repair handling should take place as much as possible with a disc loaded inside the player.
- Text below is placed inside the unit, on the laser cover shield:

CAUTION VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
 ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING
 ADVARSEL SYNLIG OCH OSYNLIG LASERSTRÅLING NÄR DEKSEL ÅPNES UNNGÅ EKSPONERING FÖR STRÅLEN
 VARNING SYNLIG OCH OSYNLIG LASERSTRÅLING NÄR DENNA DEL ÄR ÖPPNAD BETRÄKTA EJ STRÅLEN
 VARO! AVATTAESSA OLET ALTIJAIN NÄKYVÄLLE JA NÄKYMÄTTÖMÄLLE LASER SÄTEILYLLE. ÄLÄ KATSO SÄTEESSEEN
 VORSICHT SICHTBARE UND UNSICHTBARE LASERSTRÄHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN
 DANGER VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID DIRECT EXPOSURE TO BEAM
 ATTENTION RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE EXPOSITION DANGEREUSE AU FAISCEAU

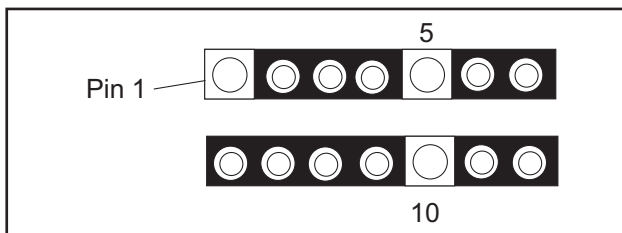
Figure 2-2

Circuit Board Indications

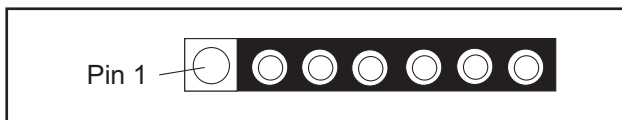
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



2. For other ICs, pin 1 and every fifth pin are indicated as shown.

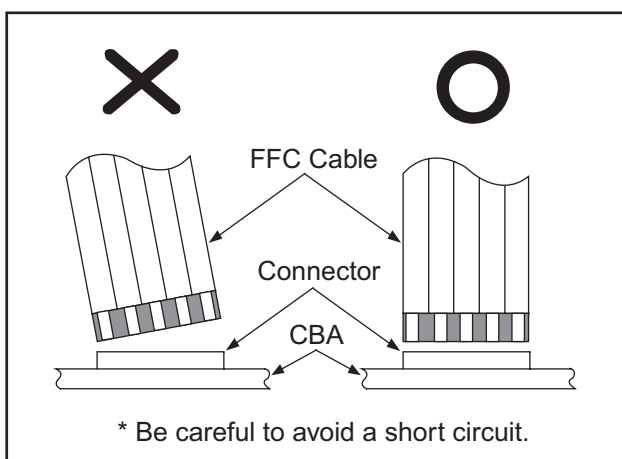


3. The 1st pin of every male connector is indicated as shown.



Instructions for Connectors

1. When you connect or disconnect the FFC (Flexible Foil Connector) cable, be sure to first disconnect the AC cord.
2. FFC (Flexible Foil Connector) cable should be inserted parallel into the connector, not at an angle.



Pb (Lead) Free Solder

When soldering, be sure to use the Pb free solder.

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 to the next rule:

Serial Number gives a 14-digit. Digit 5&6 shows the YEAR, and digit 7&8 shows the WEEK.

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 (lead/ 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.

Standard Notes for Servicing, Lead Free Requirements & Handling Flat Pack IC

- **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".

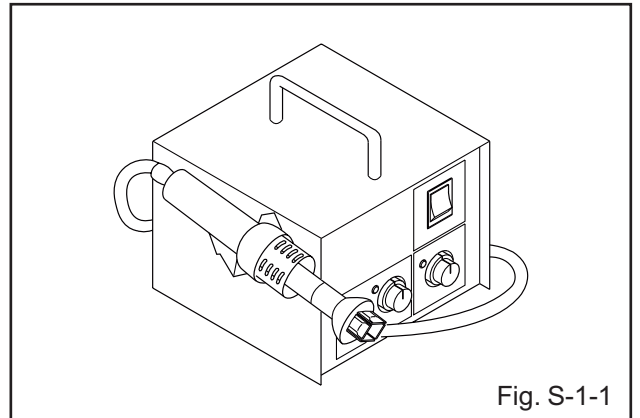
For additional questions please contact your local repair-helpdesk.

How to Remove / Install Flat Pack-IC

1. Removal

With Hot-Air Flat Pack-IC Desoldering Machine:

1. Prepare the hot-air flat pack-IC desoldering machine, then apply hot air to the Flat Pack-IC (about 5 to 6 seconds). (Fig. S-1-1)



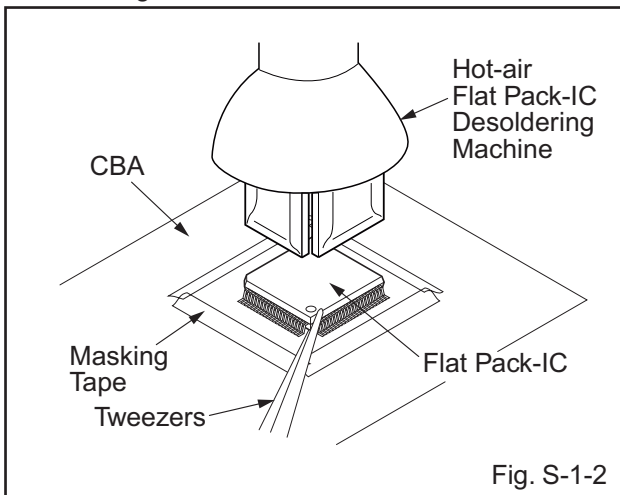
2. Remove the flat pack-IC with tweezers while applying the hot air.
3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

CAUTION:

1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape around the flat pack-IC to protect other parts from damage. (Fig. S-1-2)

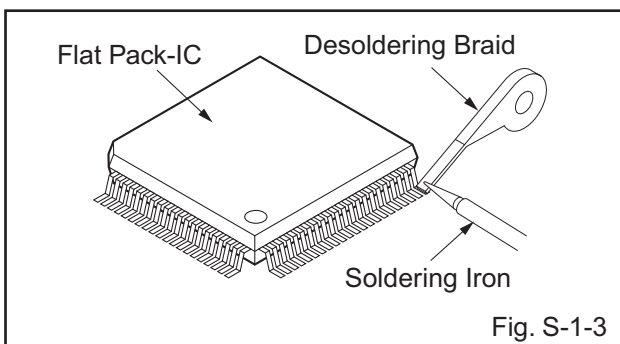
Standard Notes for Servicing, Lead Free Requirements & Handling Flat Pack IC

- The flat pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or the solder lands under the IC when removing it.

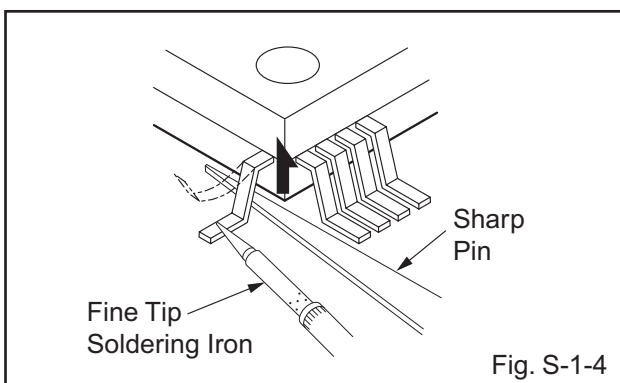


With Soldering Iron:

- Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)



- Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. S-1-4)



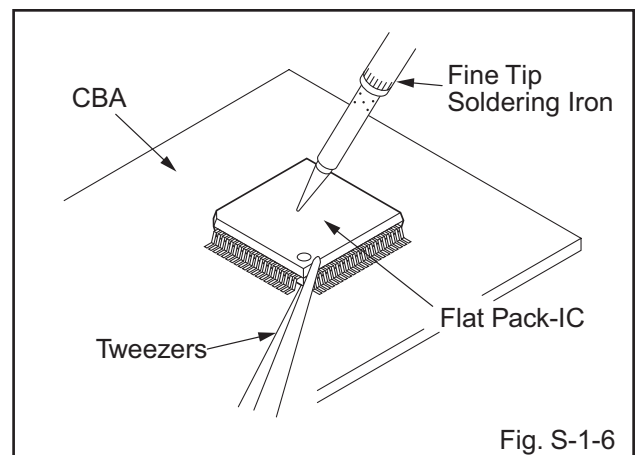
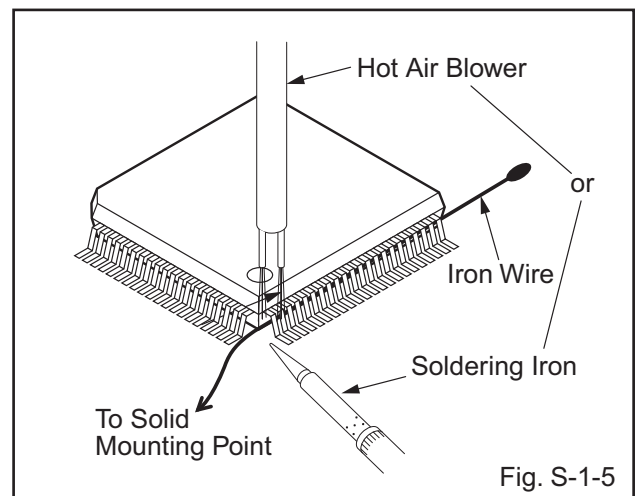
- Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)

- Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

With Iron Wire:

- Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)
- Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
- While heating the pins using a fine tip soldering iron or hot air blower, pull up the wire as the solder melts so as to lift the IC leads from the CBA contact pads as shown in Fig. S-1-5.
- Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
- Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

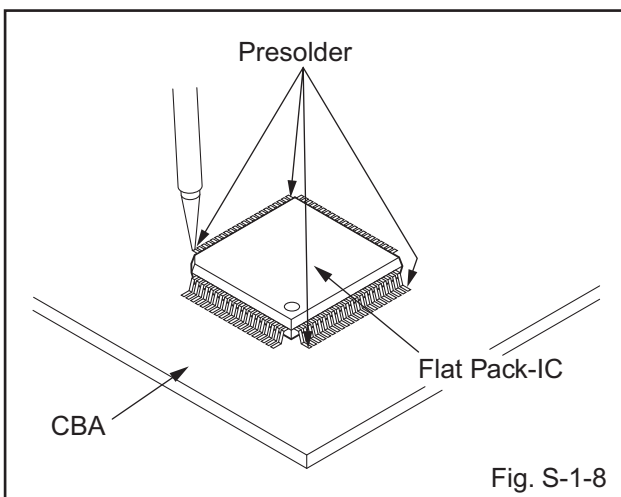
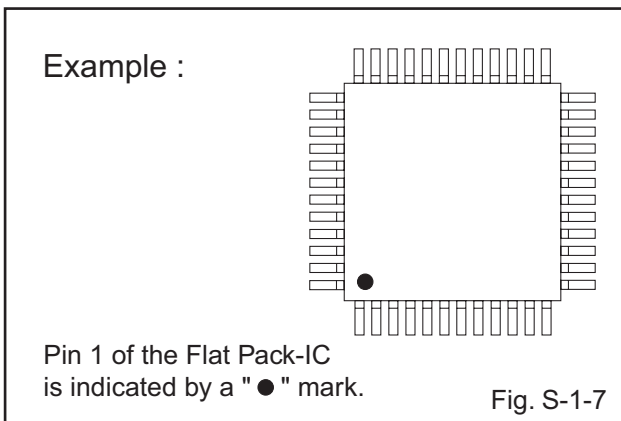
Note: When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the CBA, handle it gently because it may be damaged if force is applied.



Standard Notes for Servicing, Lead Free Requirements & Handling Flat Pack IC

2. Installation

1. Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the CBA so you can install a replacement flat pack-IC more easily.
2. The "●" mark on the flat pack-IC indicates pin 1. (See Fig. S-1-7.) Be sure this mark matches the 1 on the PCB when positioning for installation. Then presolder the four corners of the flat pack-IC. (See Fig. S-1-8.)
3. Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.



Instructions for Handling Semi-conductors

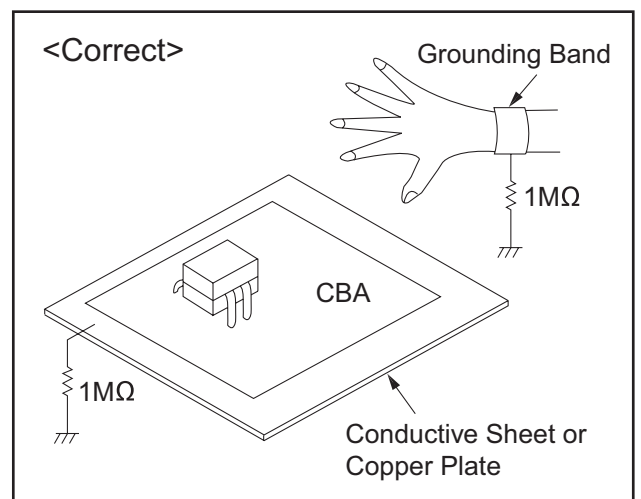
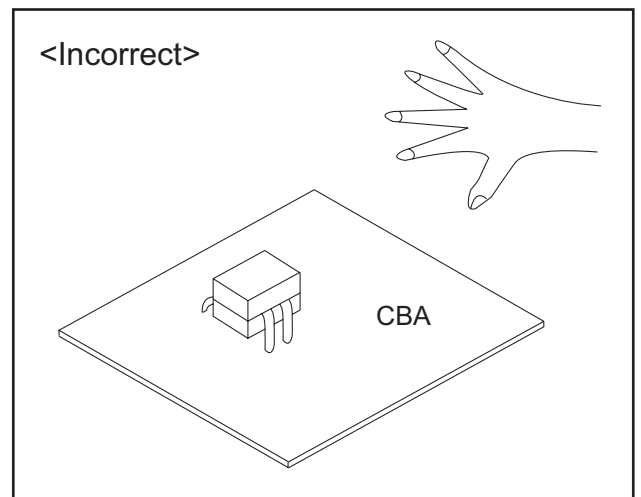
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

1. Ground for Human Body

Be sure to wear a grounding band (1 M Ω) that is properly grounded to remove any static electricity that may be charged on the body.

2. Ground for Workbench

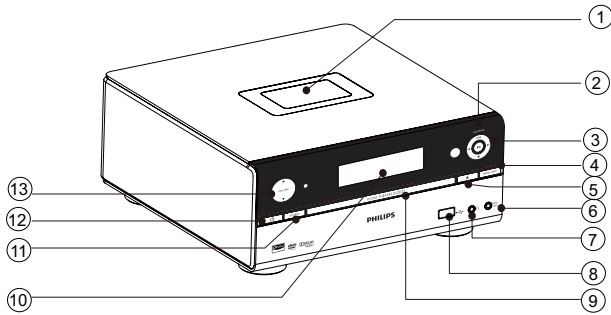
Be sure to place a conductive sheet or copper plate with proper grounding (1 M Ω) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing.



Direction of Use

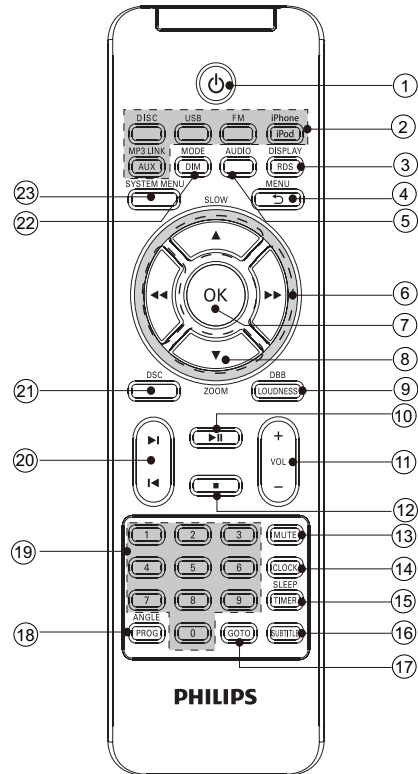
*The following excerpt of the DFU/QSG serves as an introduction to the set. The Complete Direction for Use can be download in different languages from the internet site of Philips Customer care Center : www.support.philips.com

Overview of the main unit



- ① Dock for iPod/iPhone
- ② DBB/LOUDNESS
 - Turn on or off dynamic bass enhancement.
 - Turn on or off automatic loudness control.
- ③ ⏮ ⏭
 - Skip to the previous/next track, title, or chapter.
 - Select a preset radio station.
 - ▶▶
 - Start or pause play.
 - ■
 - Stop play or erase a program.
- ④ MODE/DIM
 - Select repeat/shuffle play modes.
 - Select a brightness level for the display screen.
- ⑤ ▲
 - Open or close the disc compartment.
- ⑥ MP3-LINK
 - Jack for an external audio device.
- ⑦ 🎧
 - Headphone socket.
- ⑧ 🔌
 - USB socket.
- ⑨ Disc compartment
- ⑩ Display panel
 - Display current status.
- ⑪ SOURCE
 - Select a source.
- ⑫ ⏻
 - Turn on the apparatus or switch to the standby mode.
- ⑬ ▲ VOLUME ▼
 - Adjust volume.
 - Adjust time.

Remote control



- ① ⏻
 - Turn on the apparatus or switch to the standby mode.
- ② Source selection keys
 - Select a source.
- ③ DISPLAY/RDS
 - Display play information on a connected TV.
 - For selected FM radio stations: display RDS information.
 - Synchronize clock with RDS.
- ④ MENU/↶
 - For video discs: access or exit the disc menu.
 - For video discs with playback control(PBC): turn on/off PBC.
 - Access or exit the menu of iPhone/iPod.
 - Return to the previous menu.

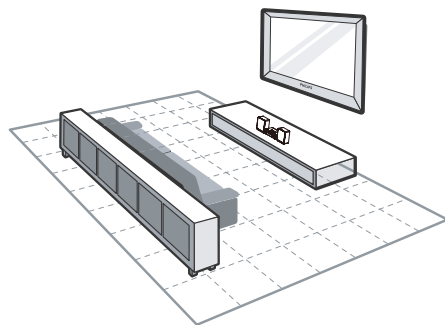
Direction of Use

Remote control

- ⑤ AUDIO
 - For VCD, select stereo, mono-left or mono-right channel.
 - For DVD/DivX video, select an audio language.
- ⑥ ◀▶▶▶
 - Search in a track or disc.
 - For menus, navigate left/right.
 - Tune to a radio station.
 - Rotate a picture.
- ⑦ OK
 - Confirm a selection.
- ⑧ ▲SLOW/ ▼ZOOM
 - For menus: navigate up/down.
 - Invert a picture.
 - (▲SLOW) For video discs: select a slow play mode.
 - (▼ZOOM) For video: zoom in/out.
- ⑨ DBB/LOUDNESS
 - Turn on or off automatic loudness control.
 - Turn on or off dynamic bass enhancement.
- ⑩ ▶▶
 - Start or pause play.
- ⑪ VOL +/-
 - Adjust volume.
 - Adjust time.
- ⑫ ■
 - Stop play.
 - Erase a program.
- ⑬ MUTE
 - Mute or restore volume.
- ⑭ CLOCK
 - Set the clock.
 - View the clock.
- ⑮ SLEEP/TIMER
 - Set the sleep timer.
 - Set the alarm timer.
- ⑯ SUBTITLE
 - Select a subtitle language.
- ⑰ GOTO
 - During disc play, specify a position to start play.
- ⑱ ANGLE/PROG
 - Select a DVD camera angle.
 - Program tracks.
 - Program titles/chapters for DVD play.
 - Program radio stations.
- ⑲ Numeric keypad
 - Select a title/chapter/track directly.
- ⑳ ◀▶▶▶
 - Skip to the previous/next track.
 - Skip to the previous/next title or chapter.
 - Select a preset radio station.
- ㉑ DSC
 - Select a preset sound setting.
- ㉒ MODE/DIM
 - Select repeat/shuffle play modes.
 - Select a brightness level for the display screen.
- ㉓ SYSTEM MENU
 - Access or exit the system setup menu.

3 Connect

Place the unit



- 1 Place the unit near to the TV.
- 2 Place the left and right speakers at equal distance from the TV and at an angle of approximately 45 degrees from the listening position.

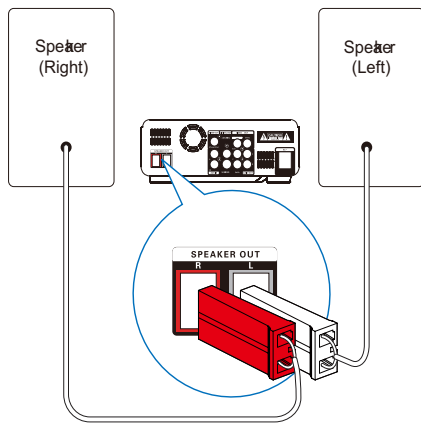
 Note

- To avoid magnetic interference or unwanted noise, never place this apparatus and speakers too close to any radiation devices.
- Place this unit on top of a table or mount it on the wall.
- Never place this unit in an enclosed cabinet.
- Install this unit near the AC outlet where the AC power plug can be easily reached.

Connect speakers

 Note

- For optimal sound, use the supplied speakers only.
- Connect only speakers with impedance that is the same or higher than the supplied speakers. Refer to the Specifications section of this manual.



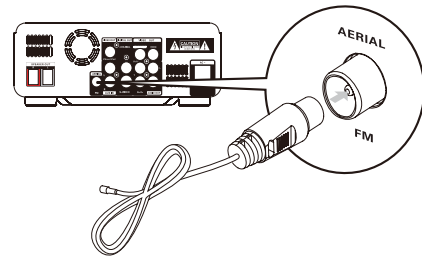
- 1 Insert the speaker plugs to SPEAKER OUT (L and R) sockets.
 - The plug of right speaker to R
 - The plug of left speaker to L

Connect FM antenna

 Tip

- For optimal reception, fully extend and adjust the position of the antenna.
- For better FM stereo reception, connect an outdoor FM antenna to the FM AERIAL jack.
- The unit does not support MW radio reception.

- 1 Connect the supplied FM wire antenna to the FM AERIAL socket on the unit.

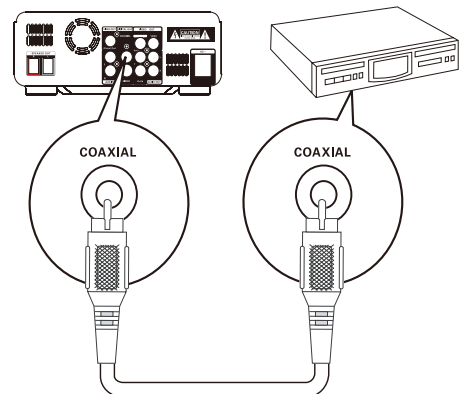


Connect audio cables

To hear audio from other audio devices as well as the accompanied speakers, select a preferred audio connection:

- Option 1: Connect through a coaxial cable
- Option 2: Connect through analog audio cables

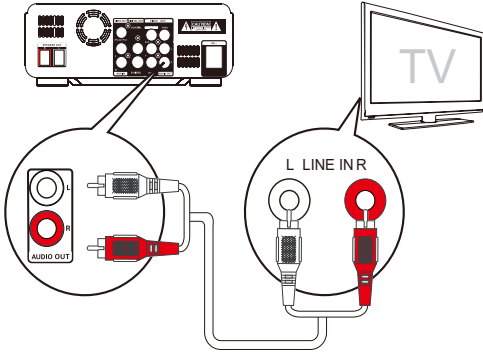
Option 1: Connect through a coaxial cable



You can enjoy multi-channel surround sound from this apparatus when it is connected to a digital audio device.

- 1 Connect a coaxial cable (not supplied) to
 - the COAXIAL socket on this product.
 - the COAXIAL/DIGITAL input socket on the device.

Option 2: Connect through analog audio cables



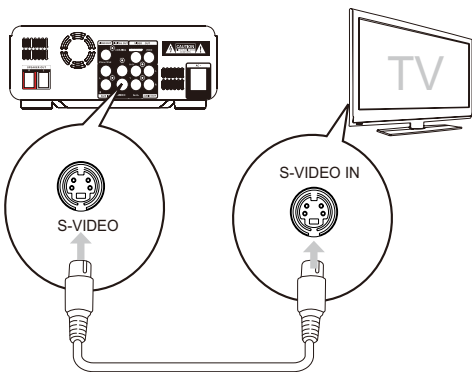
- 1 Connect an audio cable (red/white ends) to:
 - the AUDIO OUT (L and R) sockets on this unit.
 - the audio input sockets on the audio device.

Connect video cables

You can select the best video connection that your TV supports.

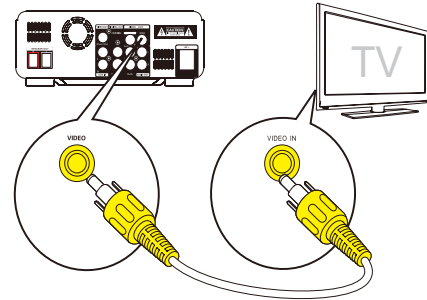
- Option 1: Connect through an S-Video cable (for a standard TV).
- Option 2: Connect through a composite video (CVBS) cable (for a standard TV).
- Option 3: Connect through component video cables (for a standard TV or Progressive Scan TV).
- Option 4: Connect through the iPhone/iPod socket (for a standard TV).

Option 1: Connect through an S-Video cable



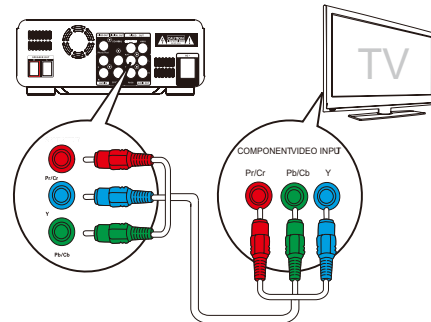
- 1 Connect an S-video cable (not supplied) to:
 - the S-Video socket on this unit.
 - the S-Video socket on the TV.

Option 2: Connect through a composite video cable



- 1 Connect the composite video cable (supplied) to:
 - the VIDEO socket on this unit.
 - the video input socket on the TV.

Option 3: Connect through component video cables



Note

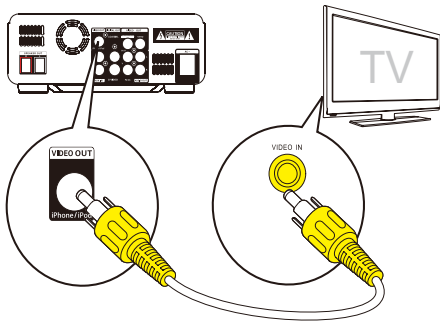
- The progressive scan video quality is only available when a progressive scan TV is connected.
- If your TV does not support progressive scan, you cannot view the picture.
- For how to activate progressive scan on your TV, refer to the TV user manual.

Connect a progressive scan TV through component video for higher quality video.

- 1 Connect component video cables (red/blue/green - not supplied) to:
 - the COMPONENT (Pr/Cr Pb/Cb Y) sockets on this unit.
 - the component input sockets on the TV.

Option 4: Connect through the iPhone/iPod socket

You can view video files that are stored on your iPhone/iPod on your TV.



- 1 Connect a composite video cable to:
 - the iPhone/iPod socket on this unit.
 - the video input socket on the TV.

Note

- To play audio only through the speakers of this apparatus, mute the TV and other connected audio devices.
- See "Play iPhone/iPod" for how to control the play.
- See the user manual of your TV for how to select the correct viewing channel.

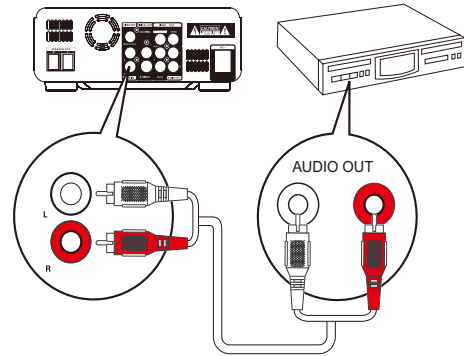
Connect an external audio device (optional)

You can also listen to an external audio device through this unit.

- Option 1: Connect through the AUX IN sockets
- Option 2: Connect through the MP3-LINK socket

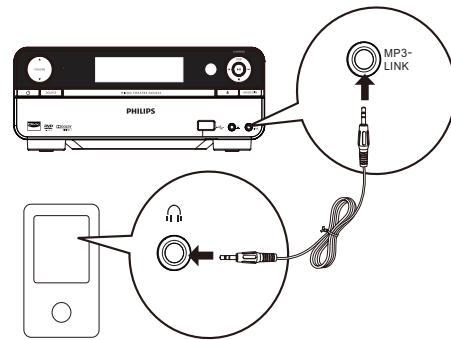
Option 1: Connect through the AUX IN sockets

- 1 Connect audio cables (red/white) to:
 - the AUX IN (L and R) sockets on this unit.
 - the audio output sockets on the external audio device.

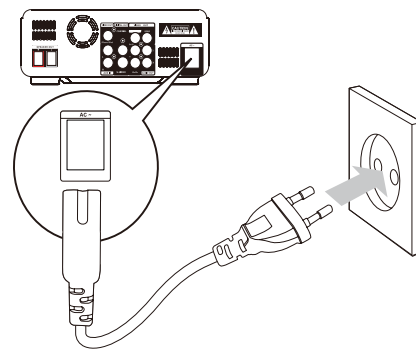


Option 2: Connect through the MP3-LINK socket

- 1 Connect an MP3 link cable to:
 - the MP3-LINK socket on this unit.
 - the headphone socket on the external audio device.



Connect power



Caution

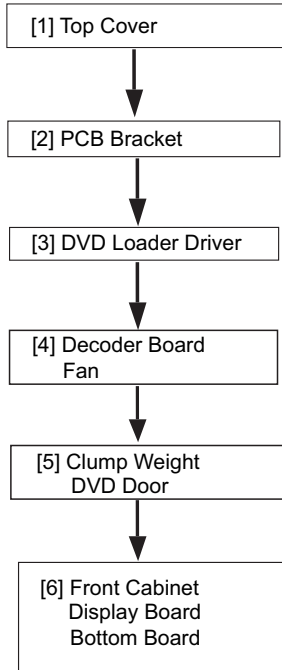
- Risk of product damage! Ensure that the power supply voltage corresponds to the voltage printed on the back or the underside of the unit.
- Before connecting the AC power cord, ensure you have completed all other connections.

- 1 Connect the AC power cord to
 - the AC ~ socket on this apparatus.
 - the wall power socket.

Cabinet Disassembly Instructions

1. Disassembly Flowchart

This flowchart indicates the disassembly steps to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route, and dress the cables as they were originally.



Note:

- (1) Identification (location) No. of parts in the figures
- (2) Name of the part
- (3) Figure Number for reference
- (4) Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.

0x = Screw, CNxx/Jxx/CONxx = Connector
 D3.5X12BA is specification of screw.

* = Unhook, Unlock, Release, Unplug, or Desolder
 e.g. 7(01) = seven Screws

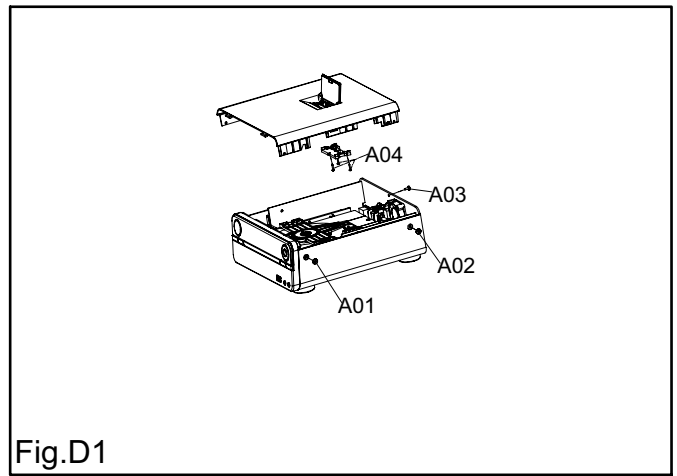


Fig.D1

2. Disassembly Method

ID/ Loc. No.	Part	Removal		
		Fig. No.	Remove/*Unhook/ Unlock/Release/ Unplug/Desolder	Note
[1]	Top Cover	D1	2(A01) D3x8KM 2(A02) D3x6KB 1(A03) D3x10FA 3(A04) D2x8BT	
[2]	PCB Bracket	D2	1(A05) D3x10FT	
[3]	DVD Loader Driver	D3	4(A06) D3x10PWA	
[4]	Decoder Board Fan	D4	5(A05) D3x10FA 4(A07) D3x15FM	
[5]	Clump Weight DVD Door	D5	4(A08) D3x6PWTT 3(A04) D2x8BT	
[6]	Front Cabinet Display Board Bottom Board	D6	4(A04) D2x8BT 5(A09) D3x8PA	

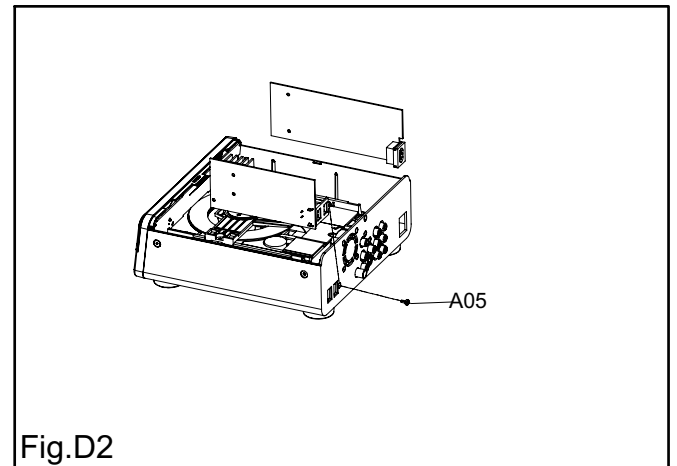
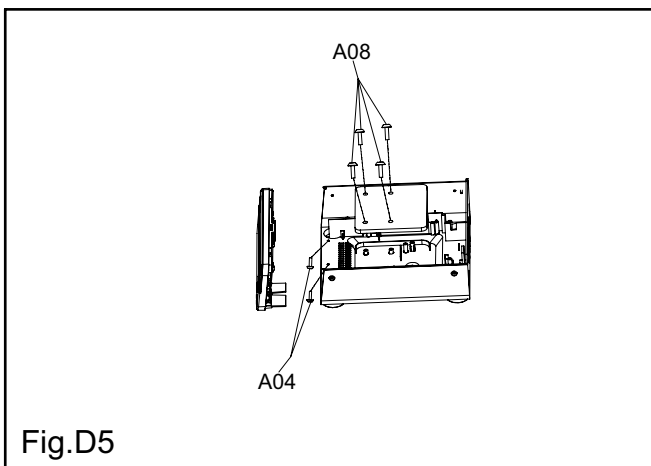
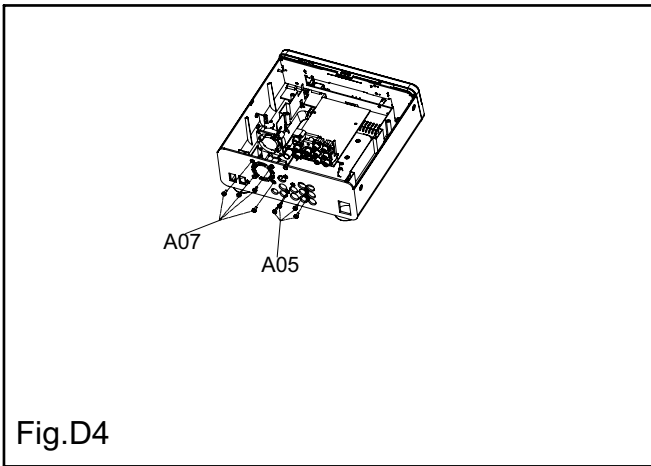
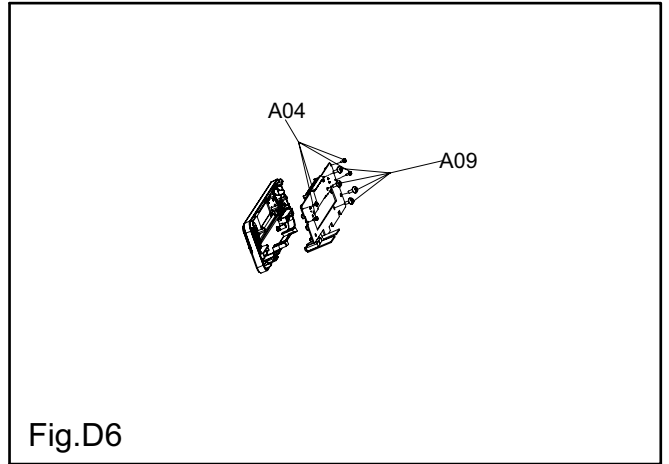
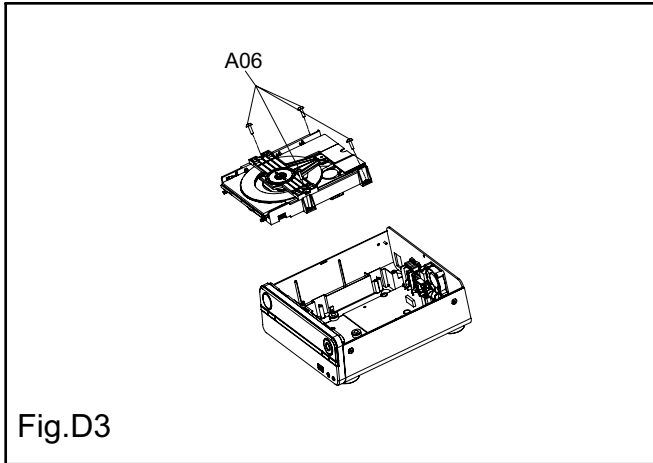


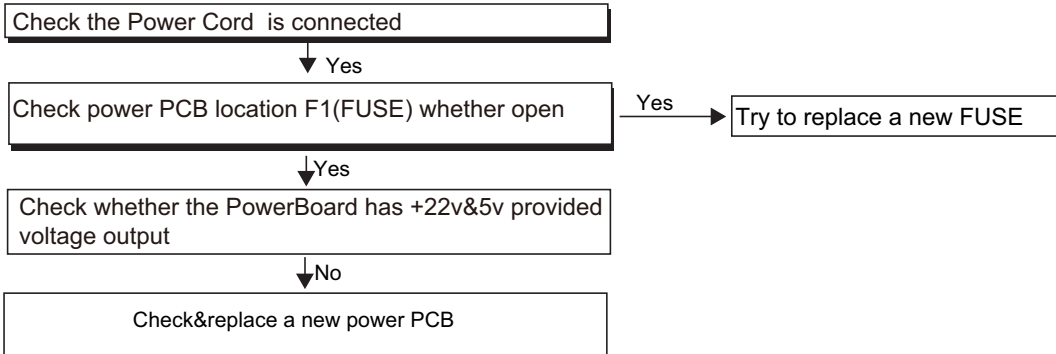
Fig.D2

Cabinet Disassembly Instructions

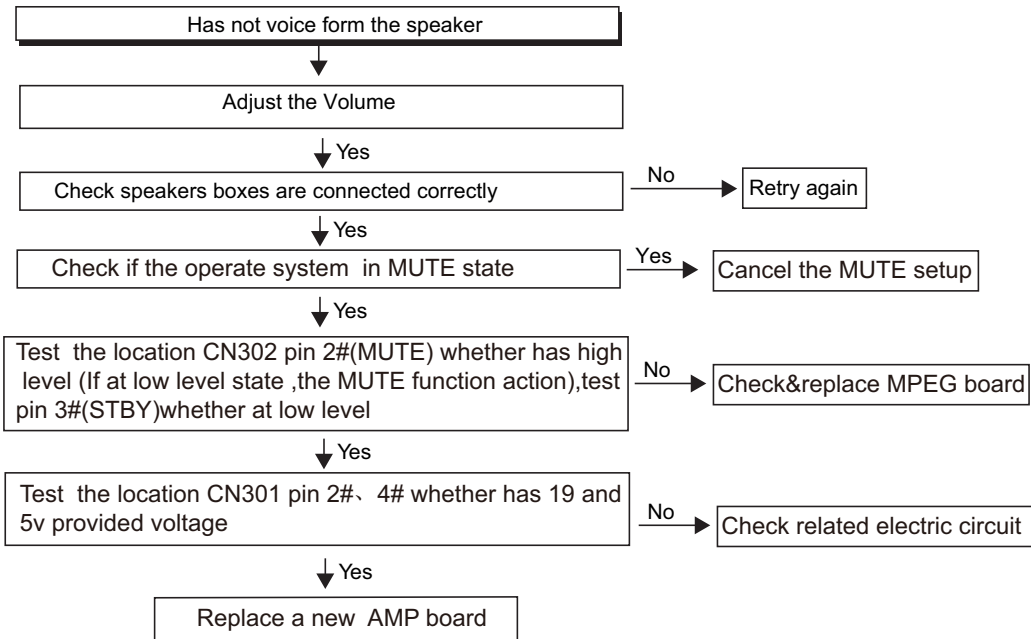


Troubleshooting

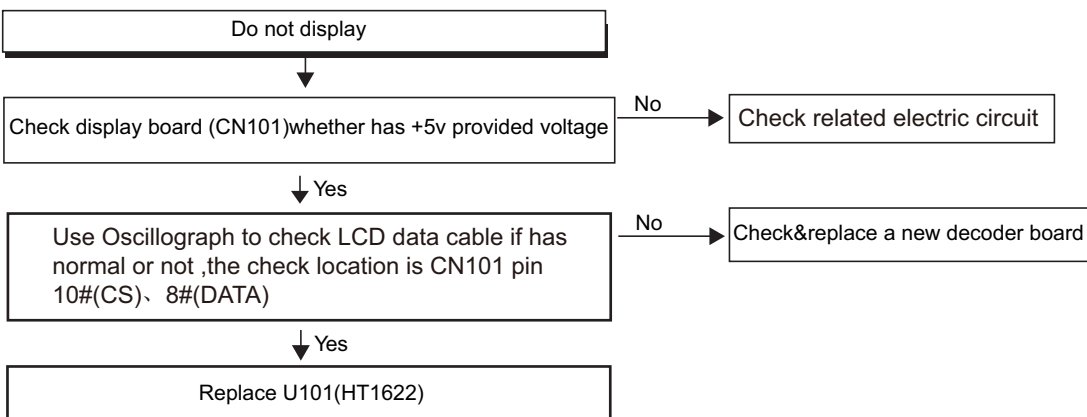
FLOW CHART NO.1



FLOW CHART NO.2

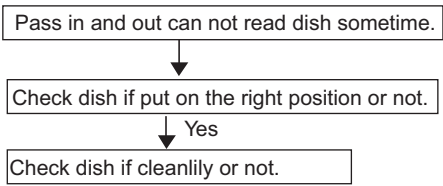


FLOW CHART NO.3

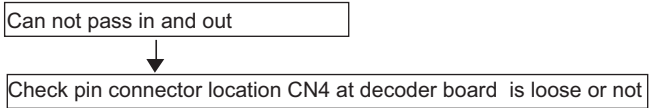


Troubleshooting

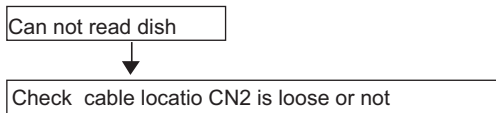
FLOW CHART NO.4



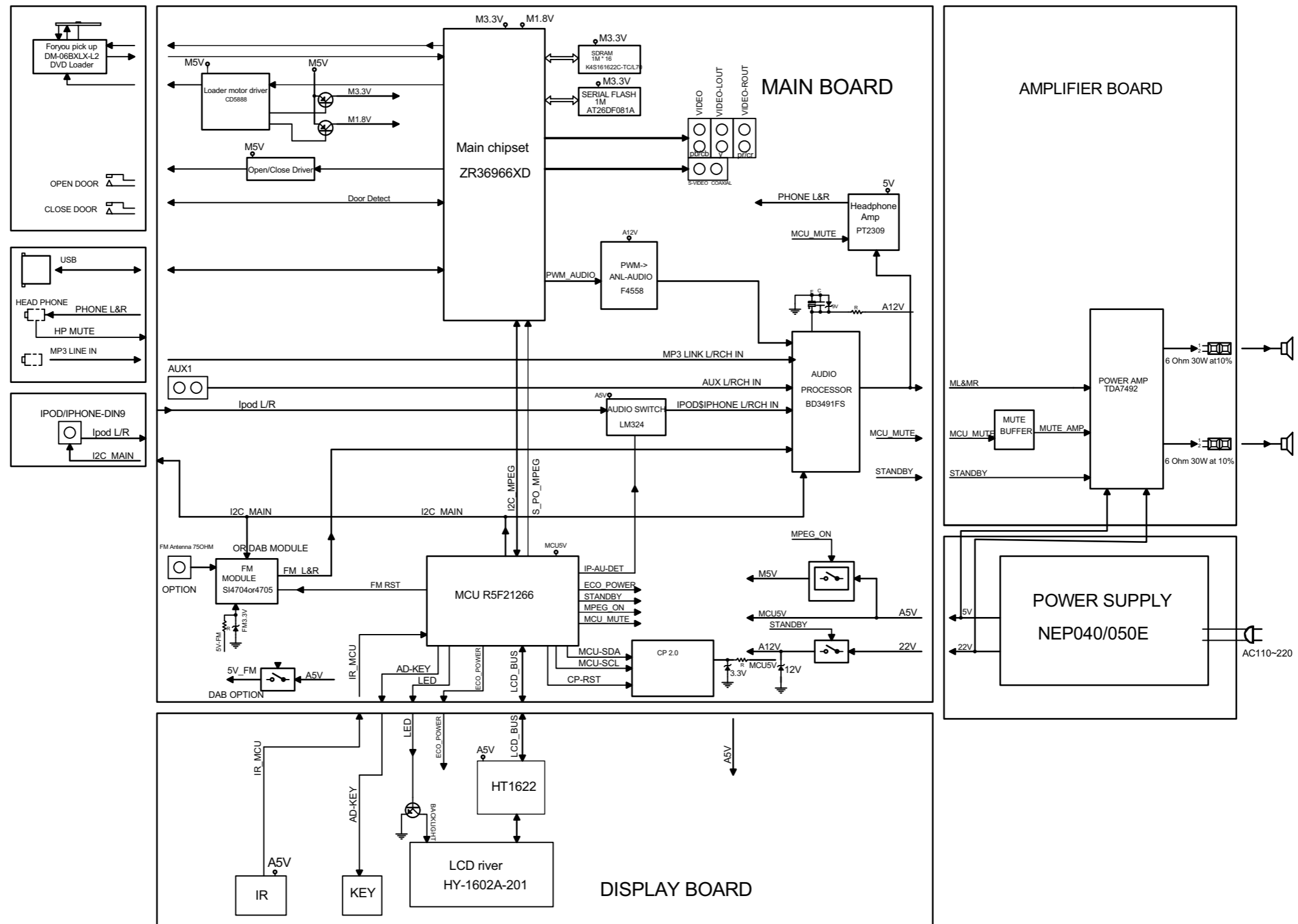
FLOW CHART NO.5



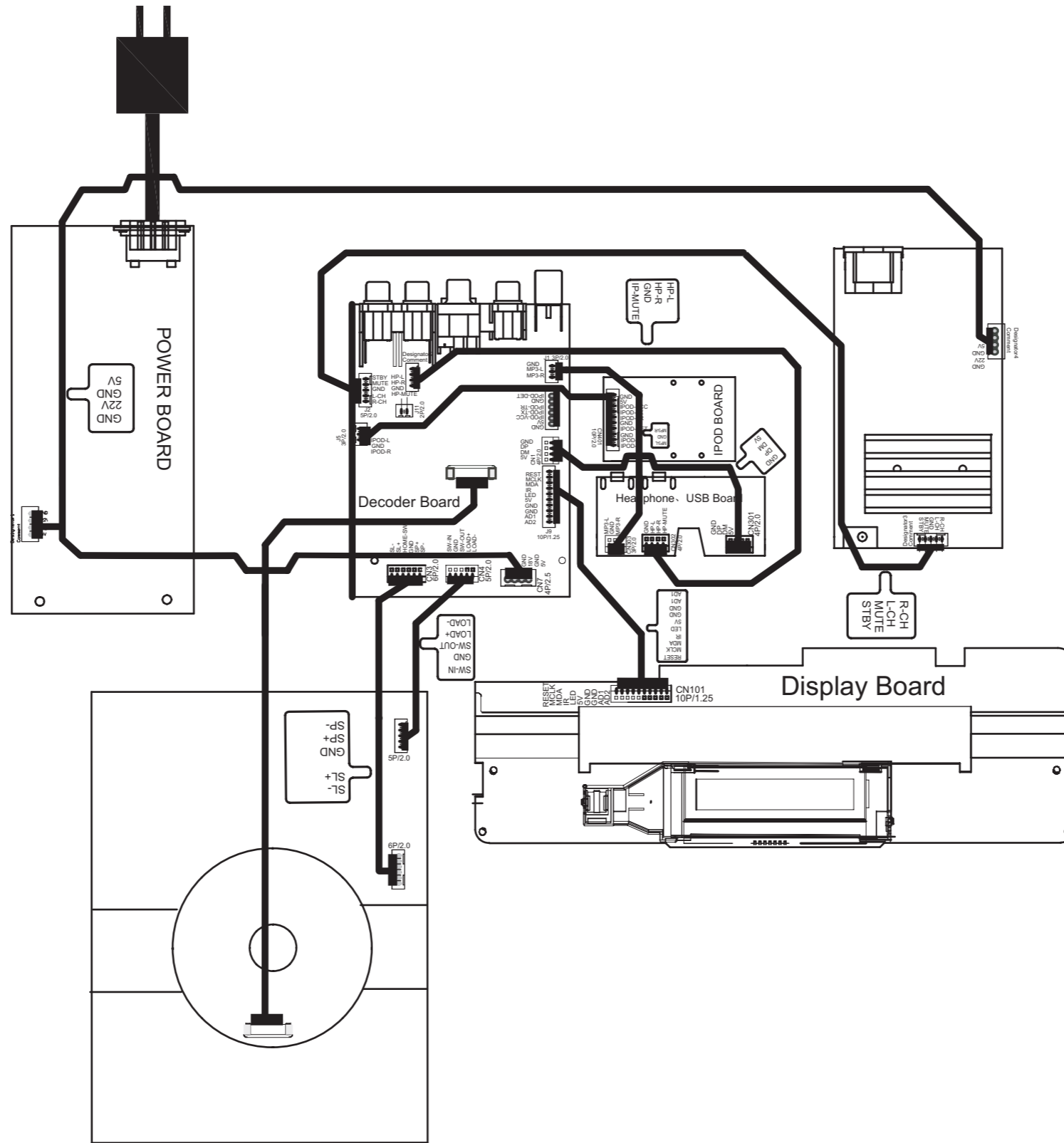
FLOW CHART NO.6



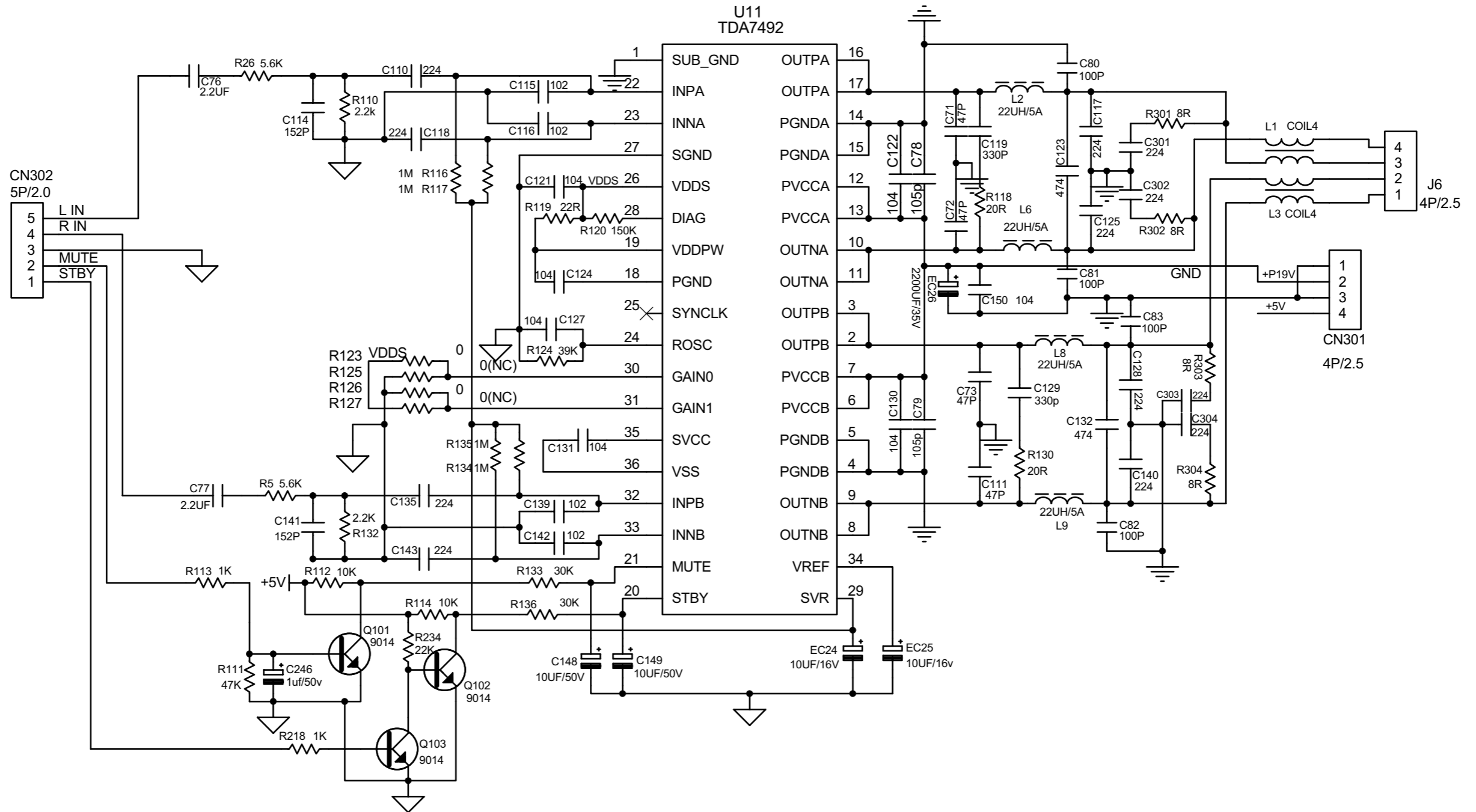
Block Diagram



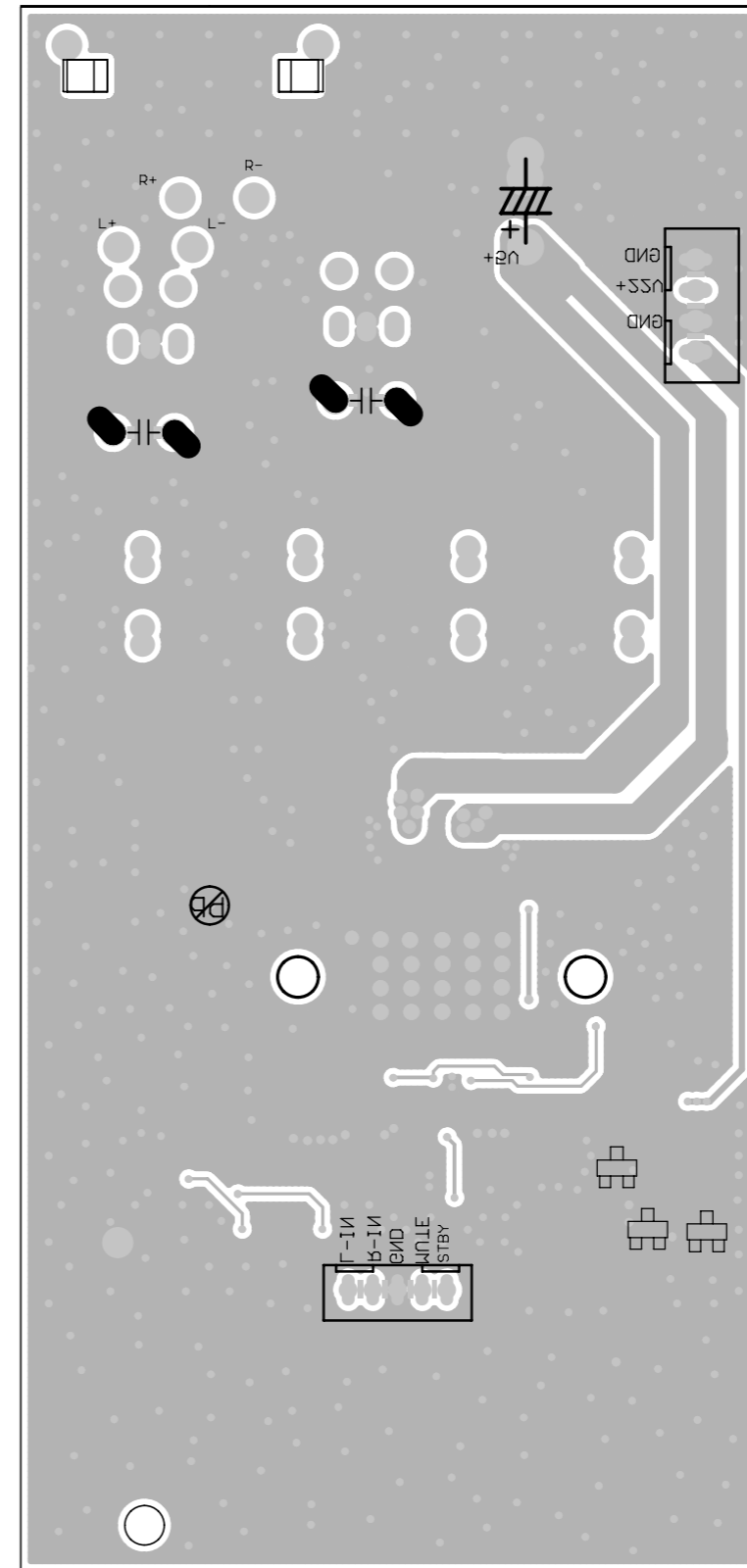
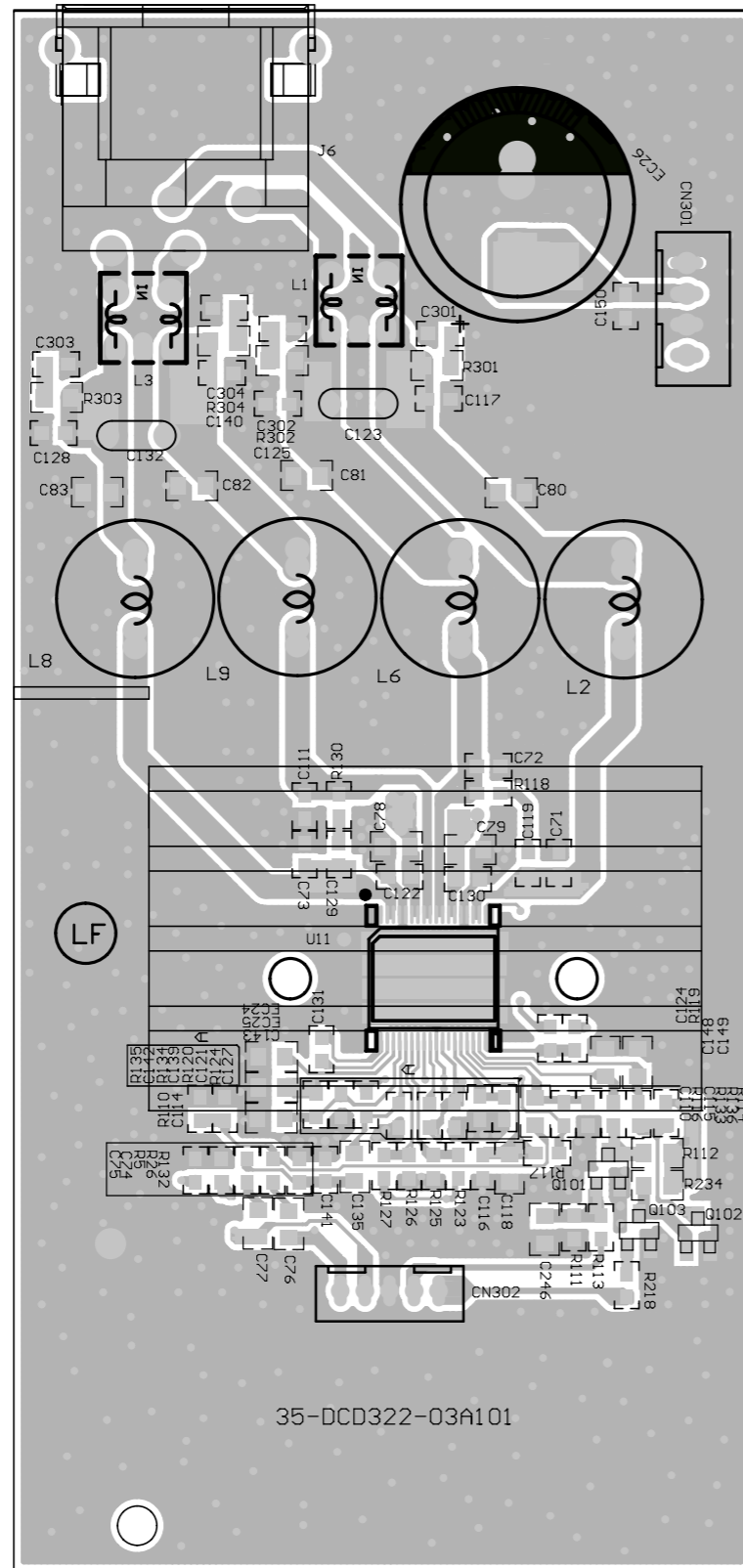
Wiring Diagram



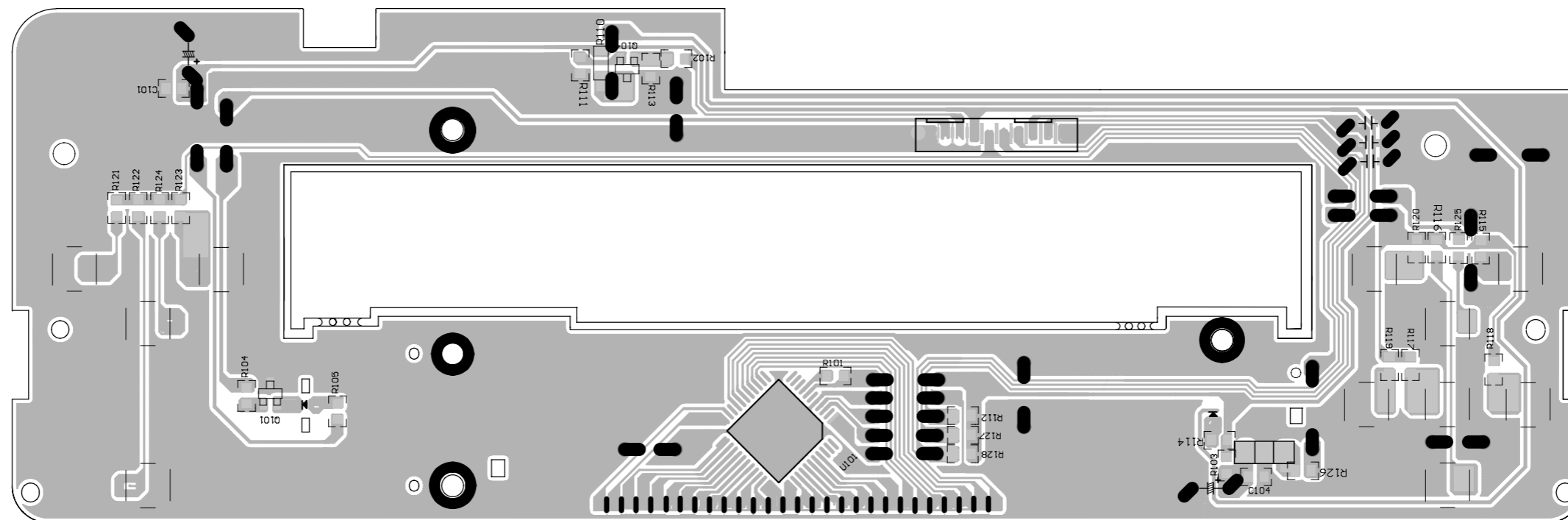
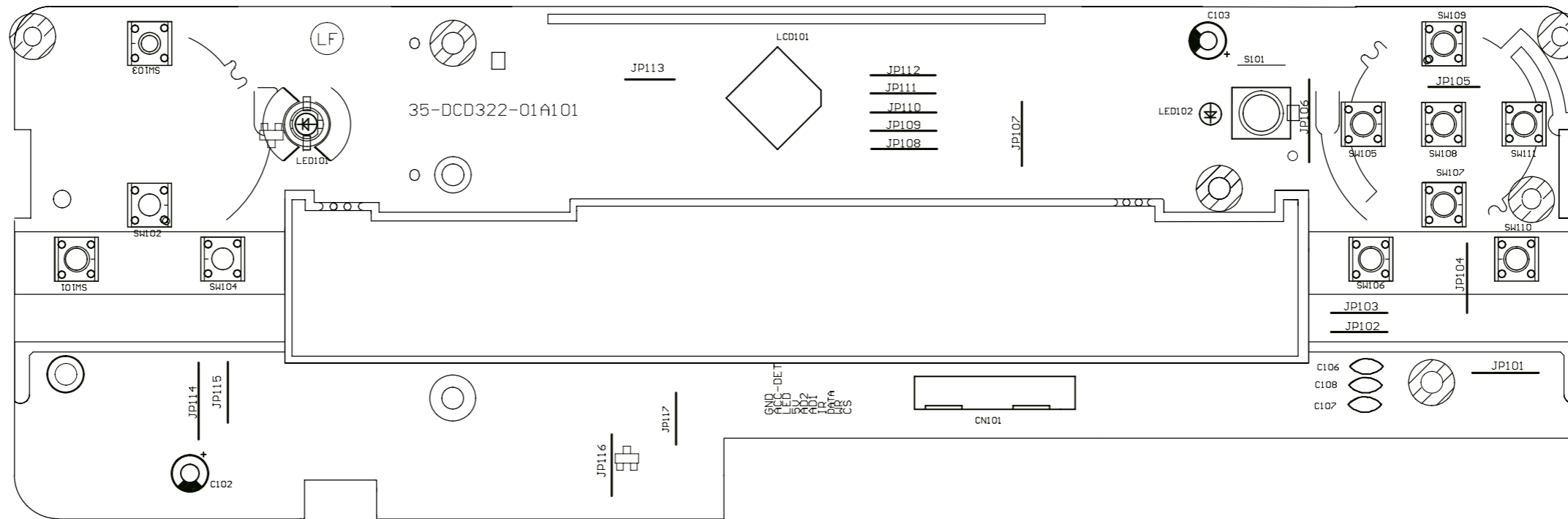
AMP Board -- Circuit Diagram



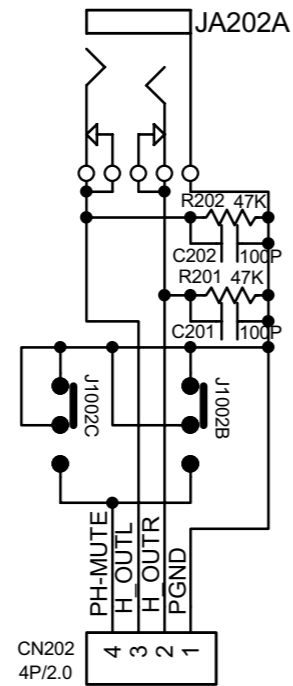
AMP Board -- Layout Diagram



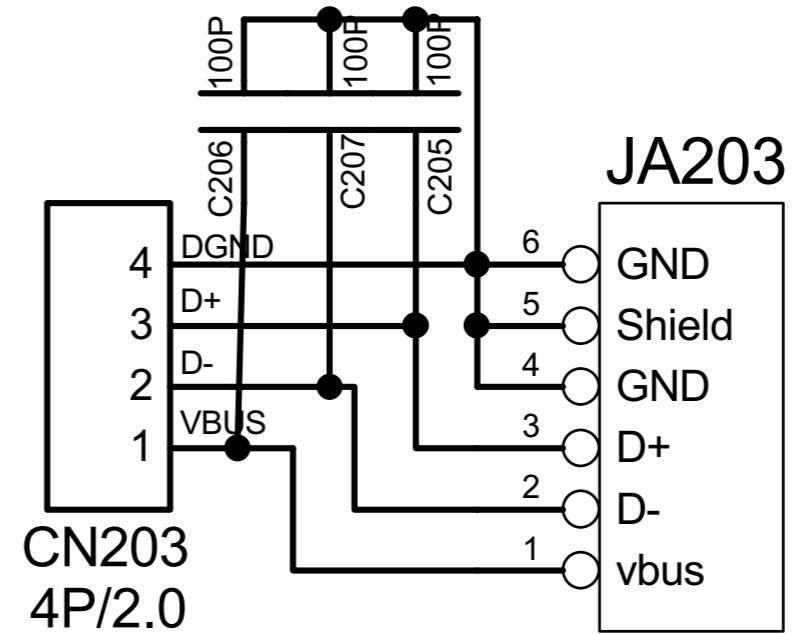
Display Board -- Layout Diagram



Headphone Board

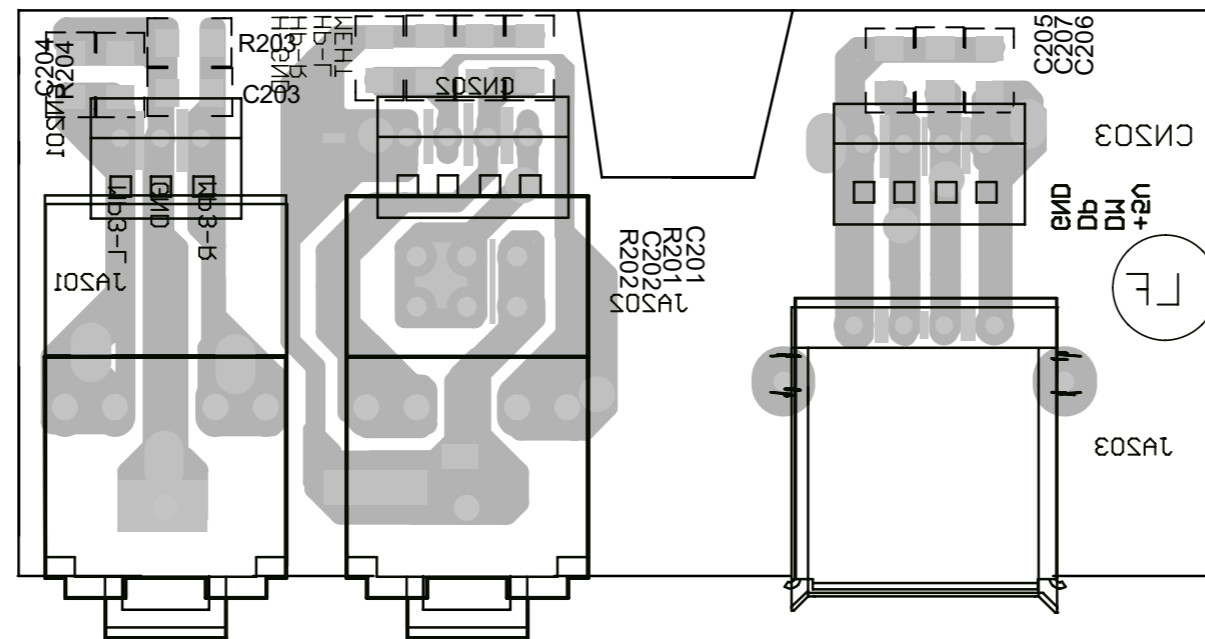


USB Board

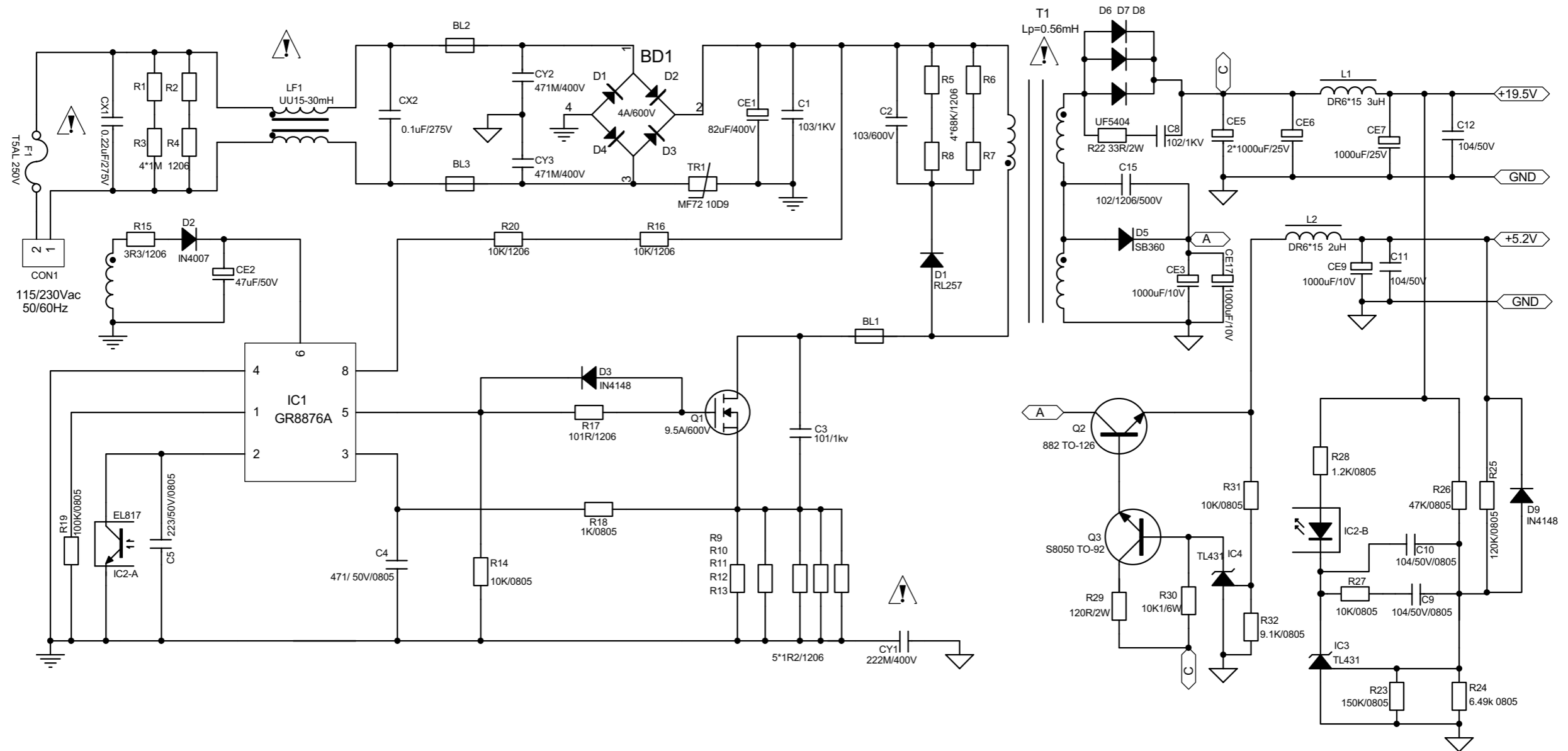


Headphone Board

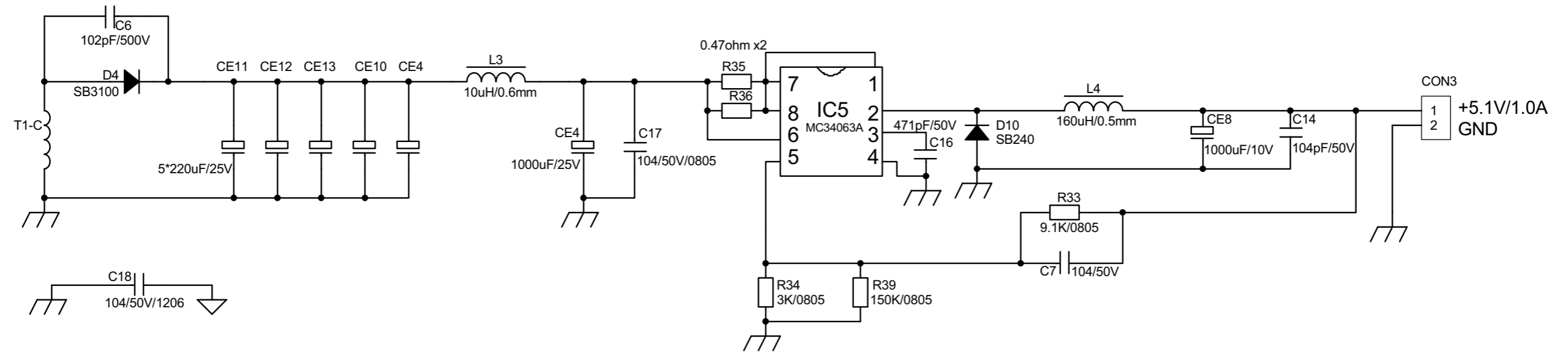
USB Board



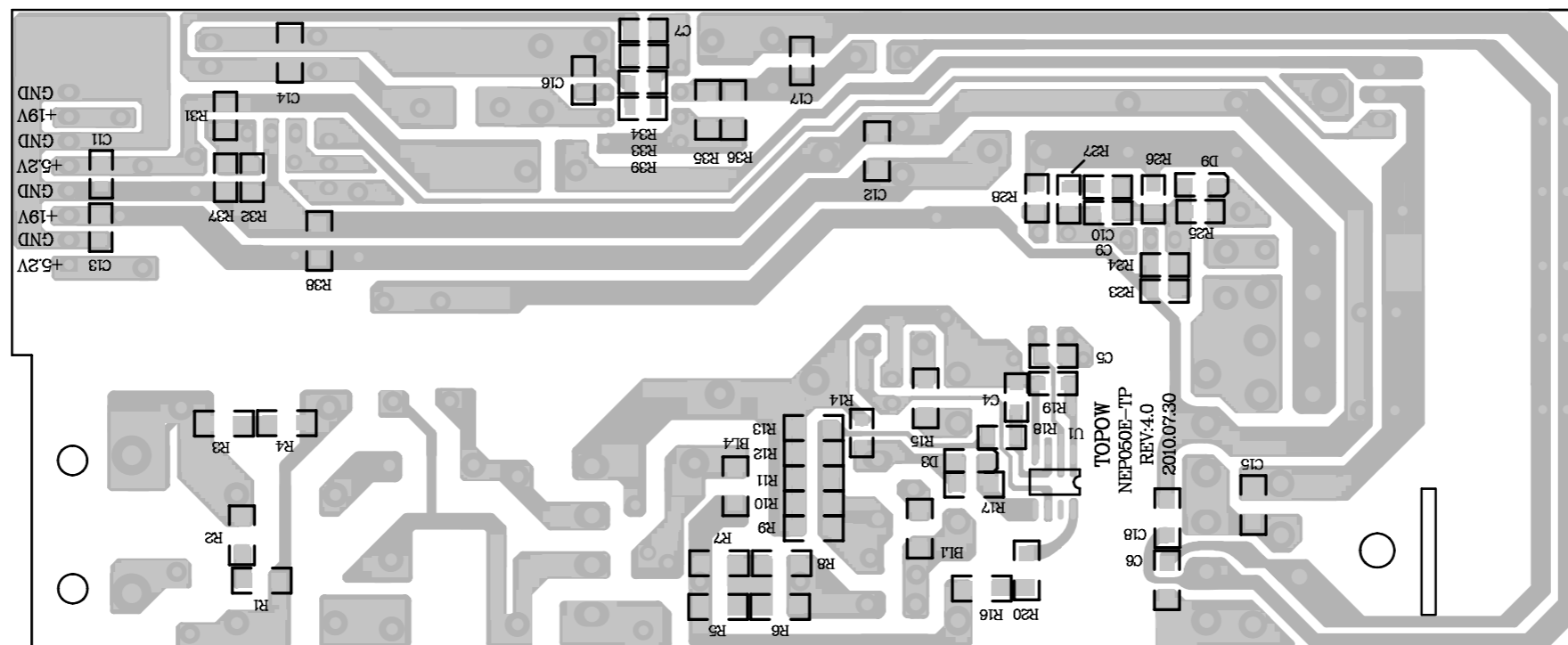
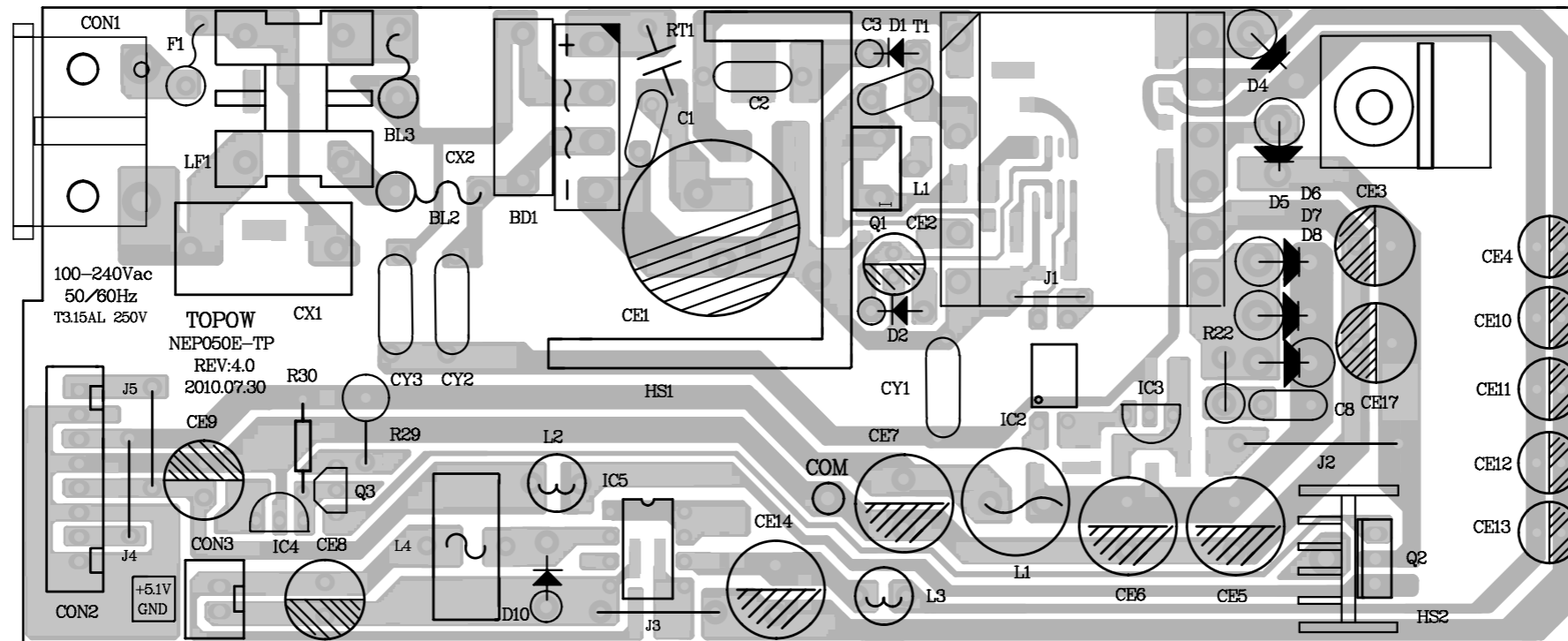
Power Board -- Circuit Diagram 1



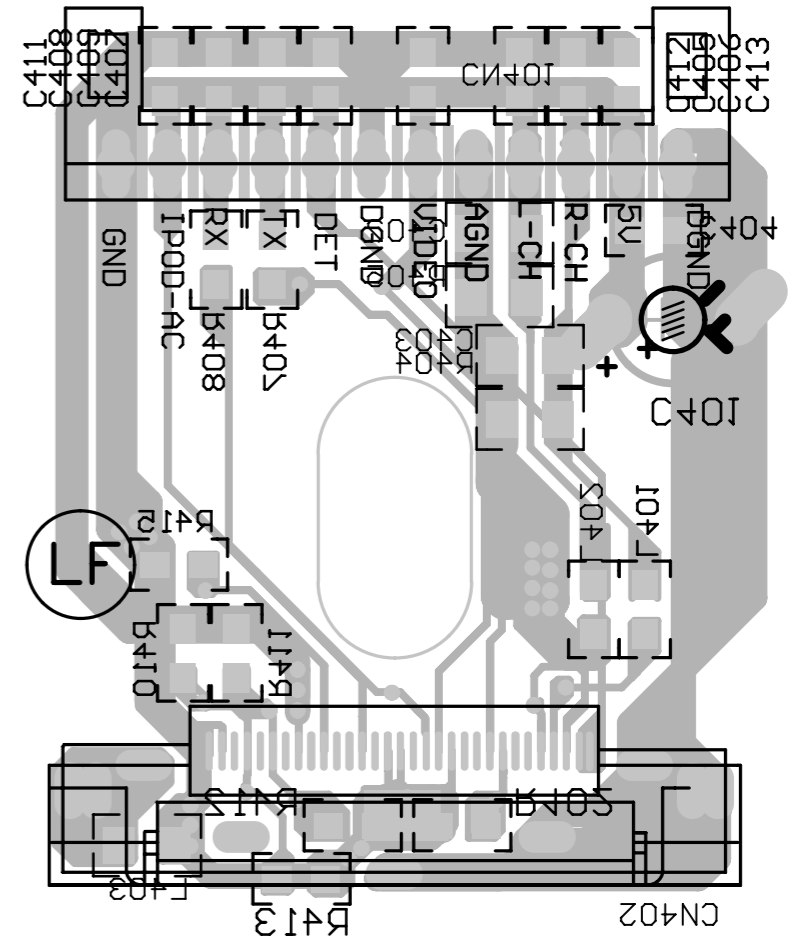
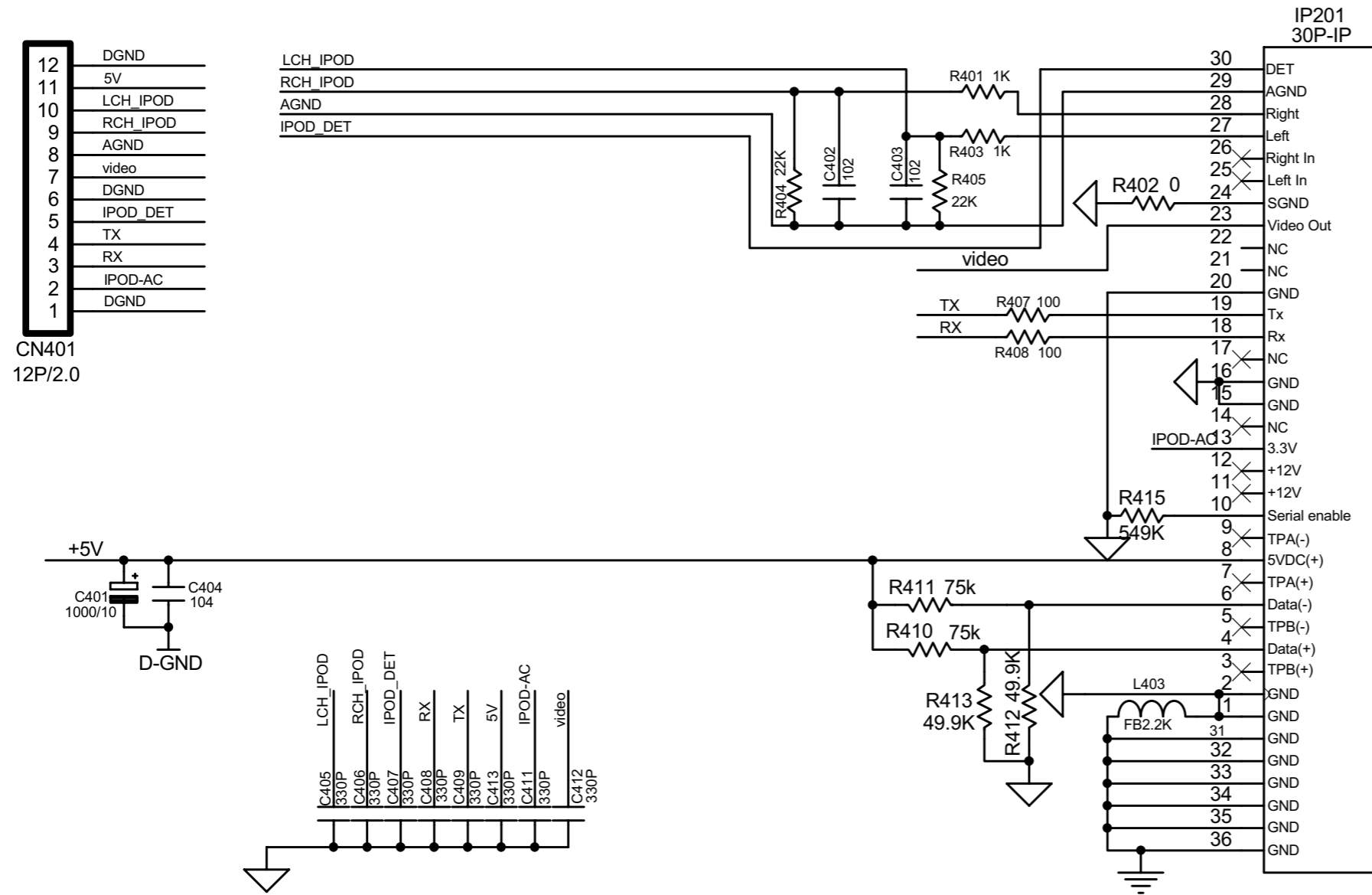
Power Board -- Circuit Diagram 2



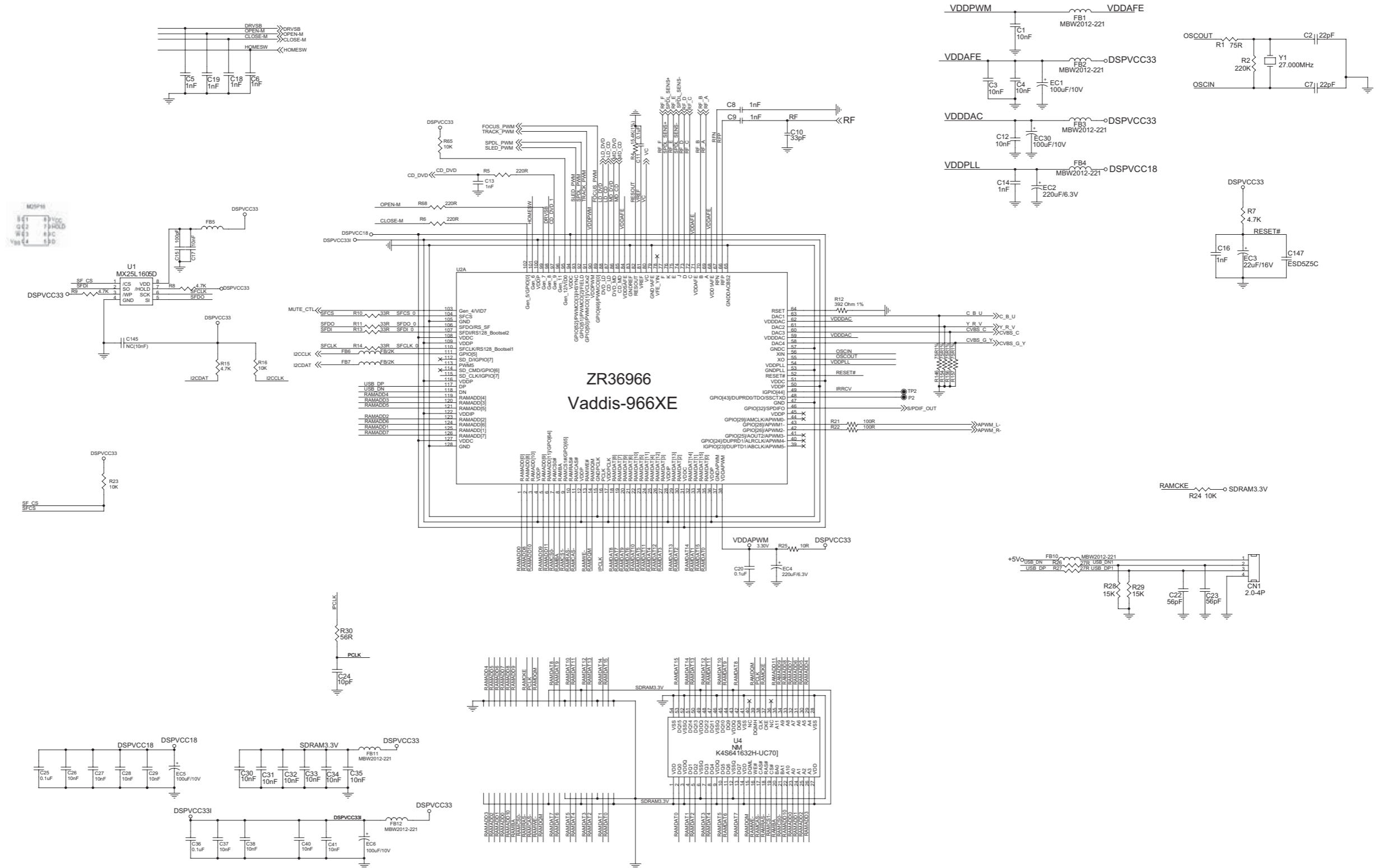
Power Board -- Layout Diagram



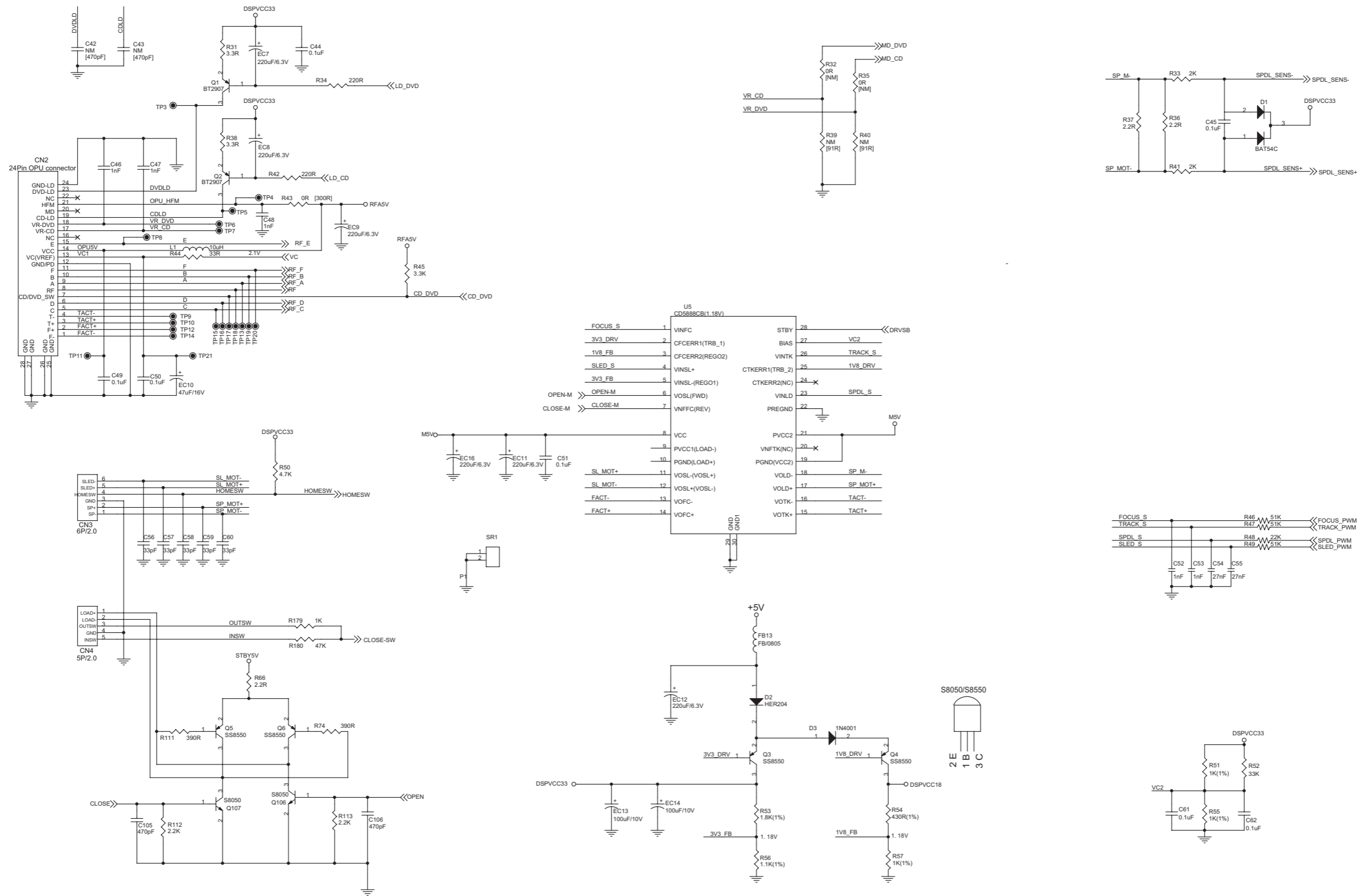
IPOD Board -- Circuit and Layout Diagram



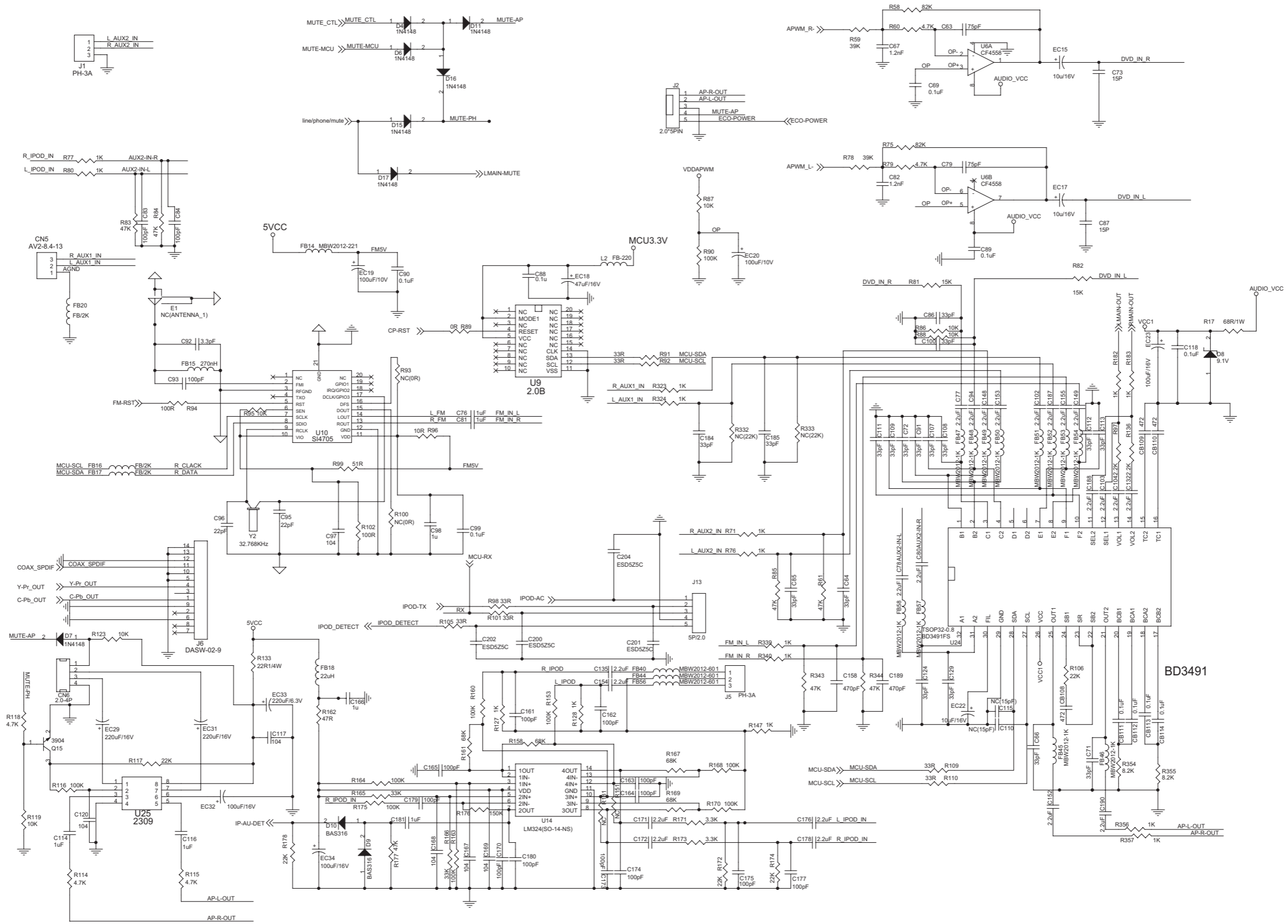
Decoder Board -- Circuit Diagram 1



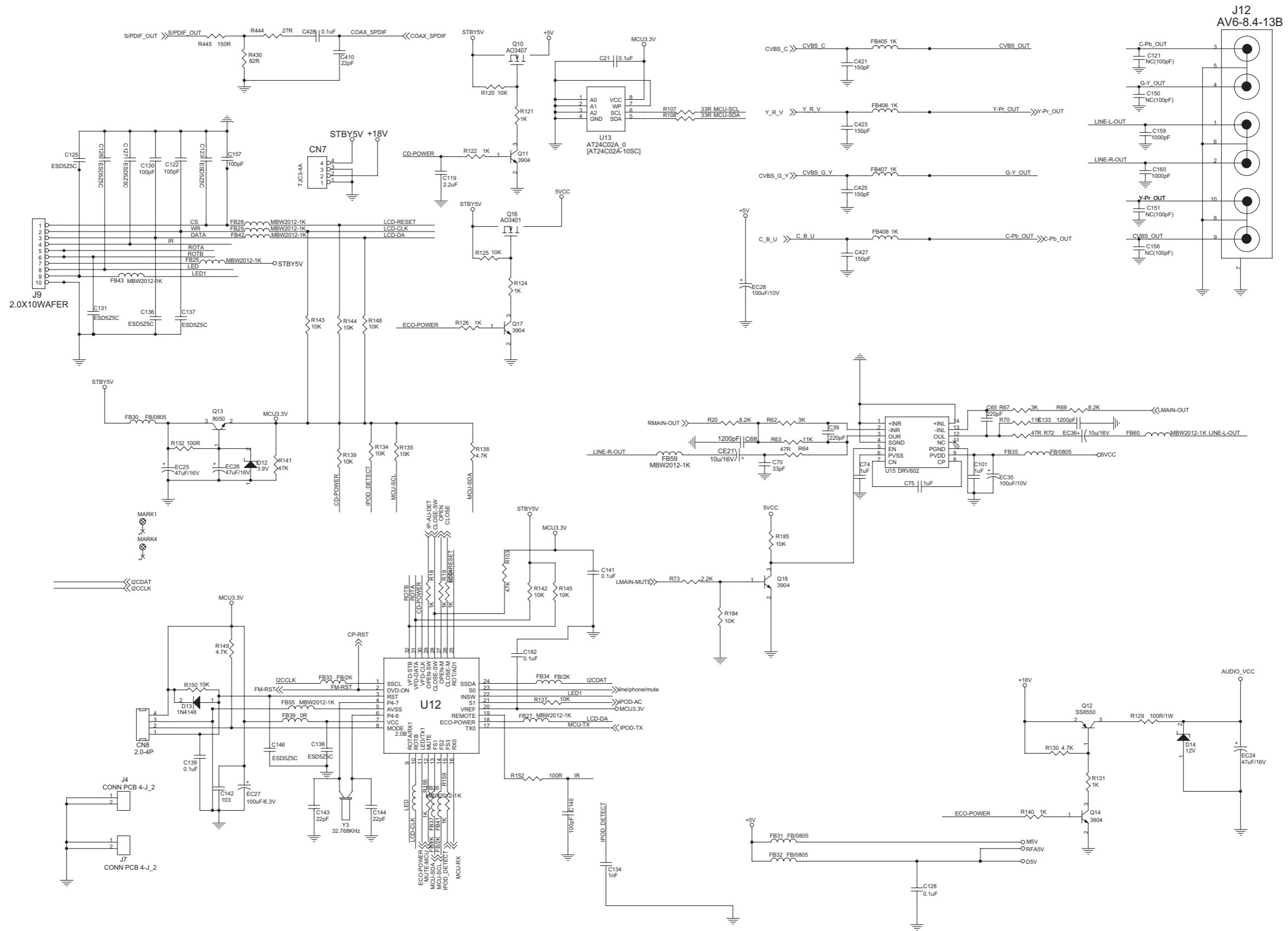
Decoder Board -- Circuit Diagram 2



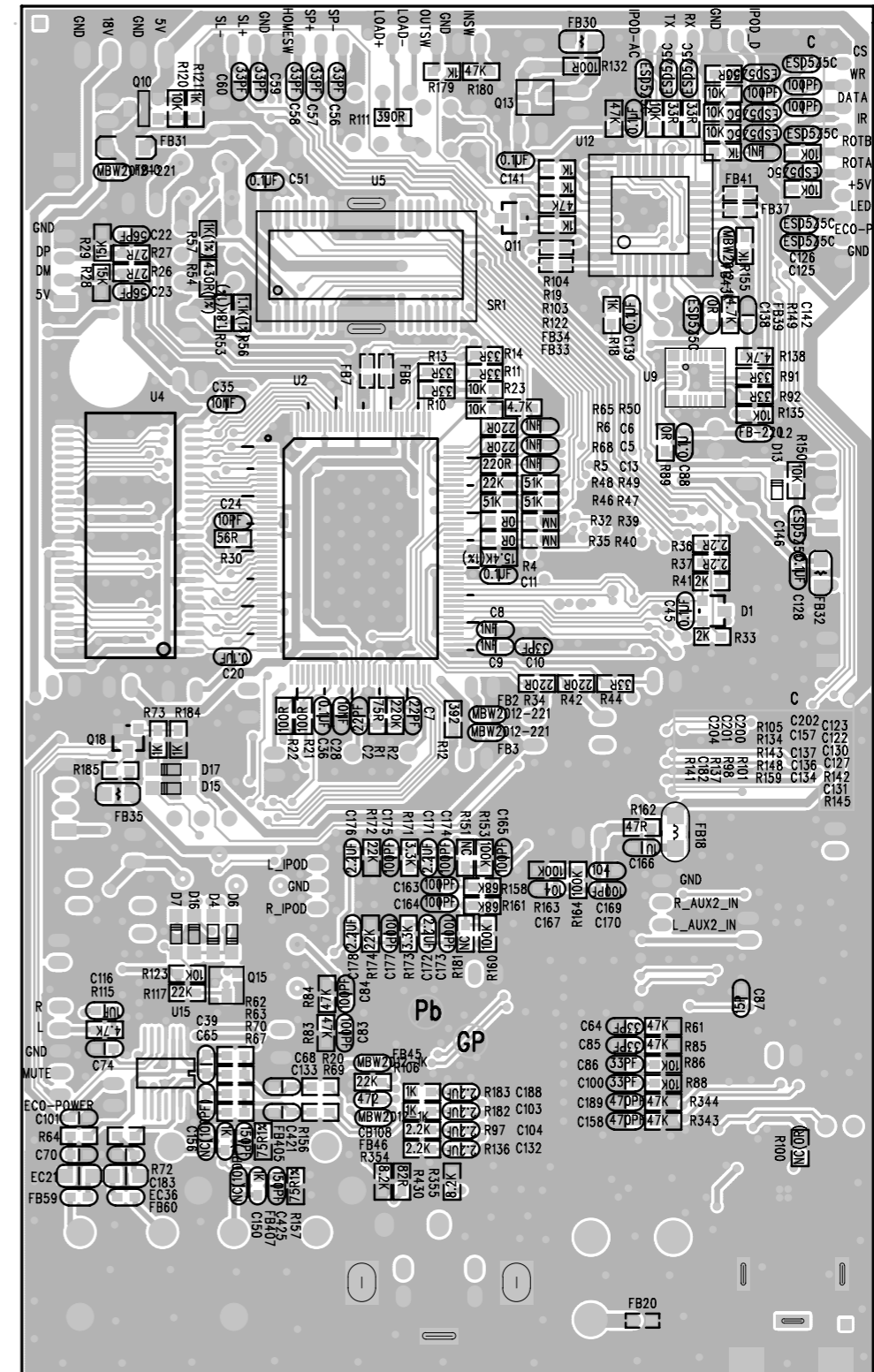
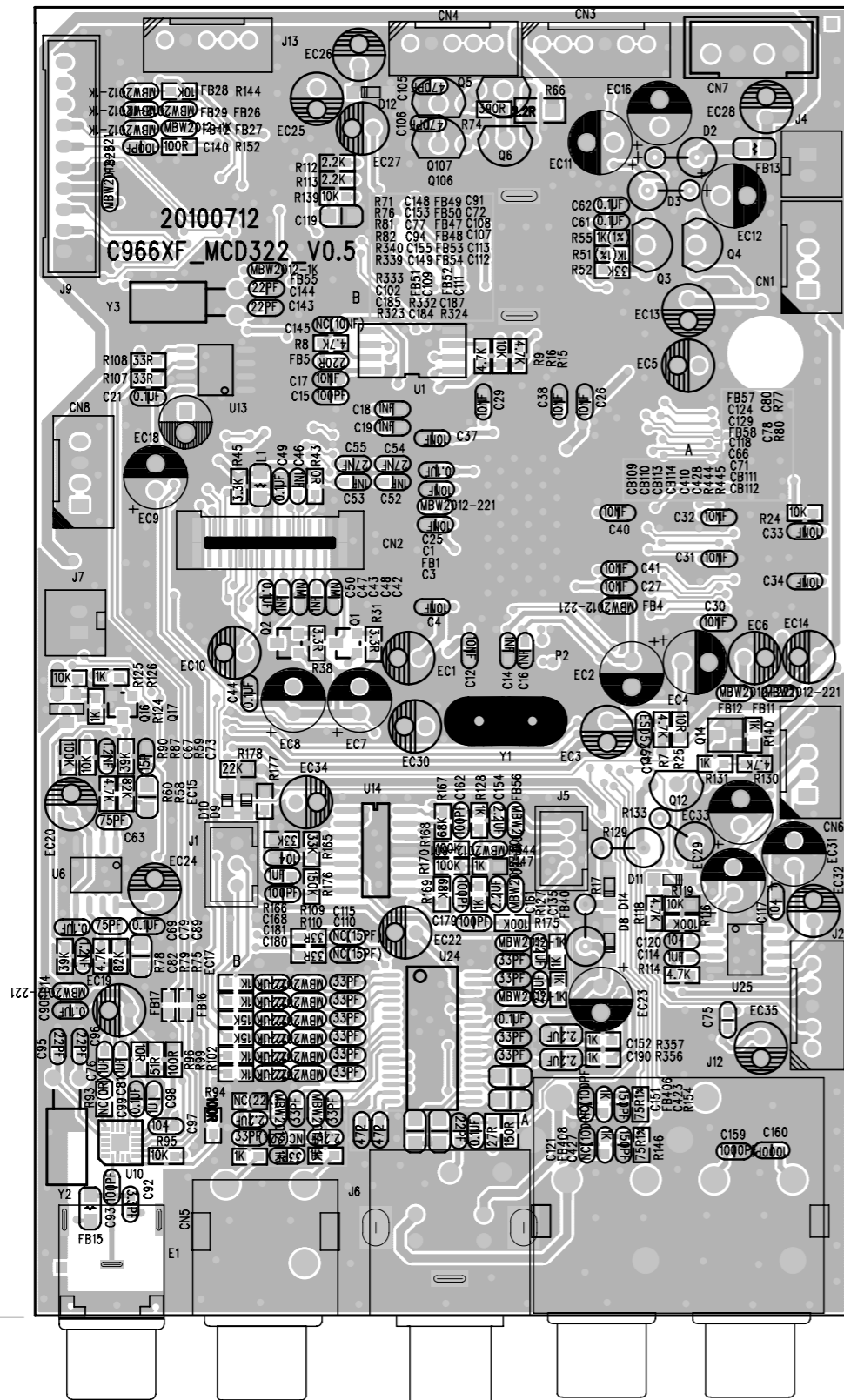
Decoder Board -- Circuit Diagram 3



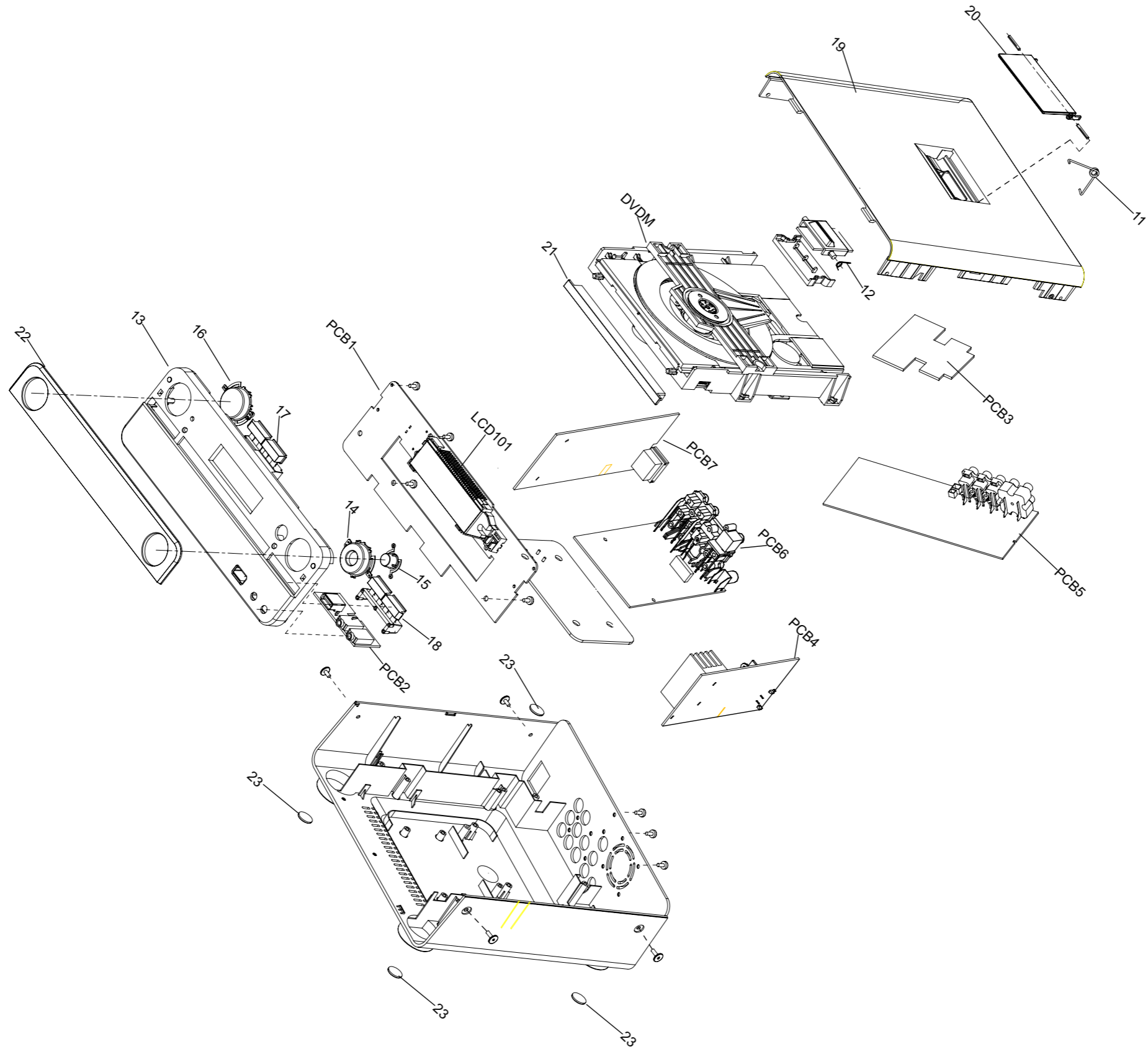
Decoder Board -- Circuit Diagram 4



Decoder Board -- Layout Diagram



Exploded View



Revision List

Revision List

Version 1.0
* Initial Release