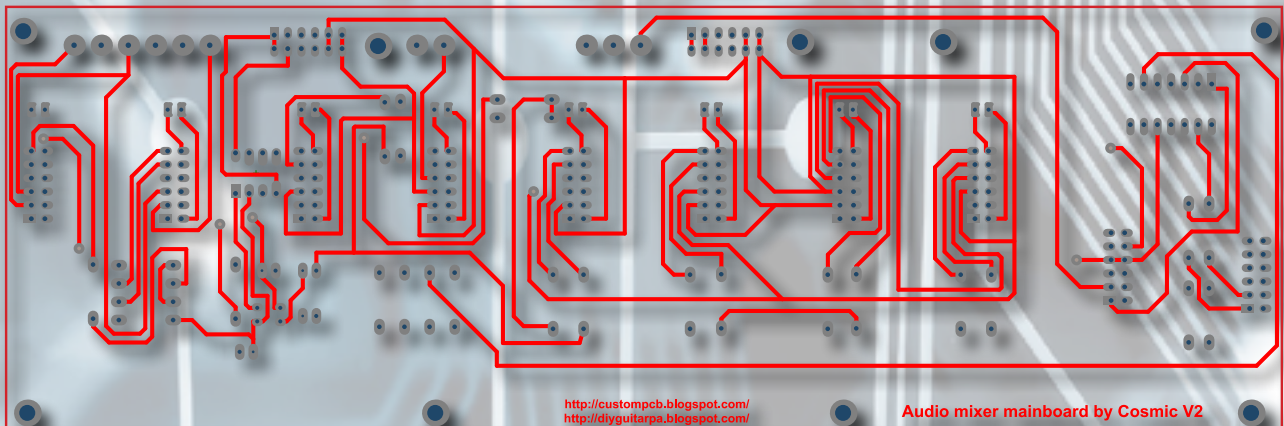
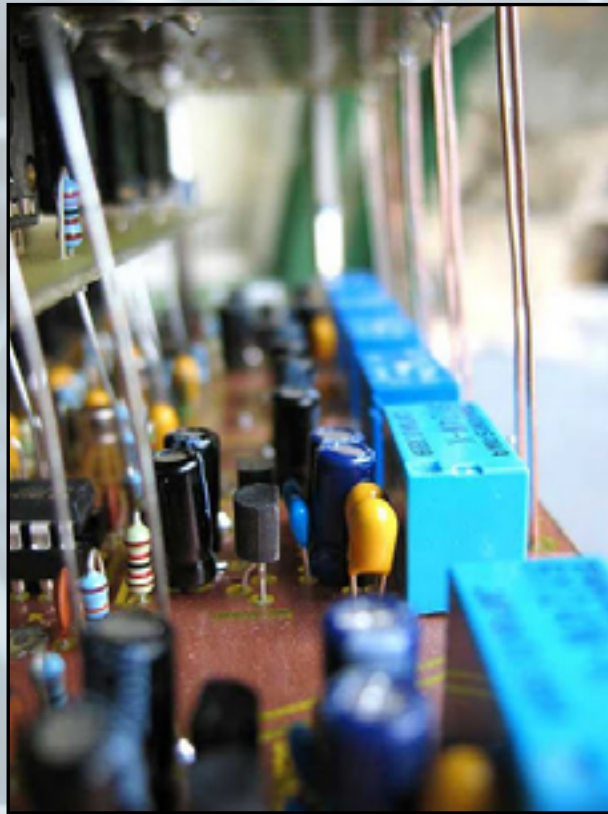


Modular Audio Mixer for 4...8 channels



<http://custompcb.blogspot.com/>
<http://diyguitarpa.blogspot.com/>

Audio mixer mainboard by Cosmic V2

Schematics and Bill of Materials for modular audio mixer project

This project is similar than my "Preamplifier-project", but the **preamplifiers must be connected to the mainboard of mixer**. The preamplifiers in this project works like modules of audio mixer. Look at schematics and PCB design how to create mixer with several preamplifiers can be connected to the mixer's board. In this project 4 and 8 channel mixer mainboard available. Read details, updates, advices on the page of schematics and notes. PCB-s and more notes, pictures, advices about this project are available on the author's blog and websites:

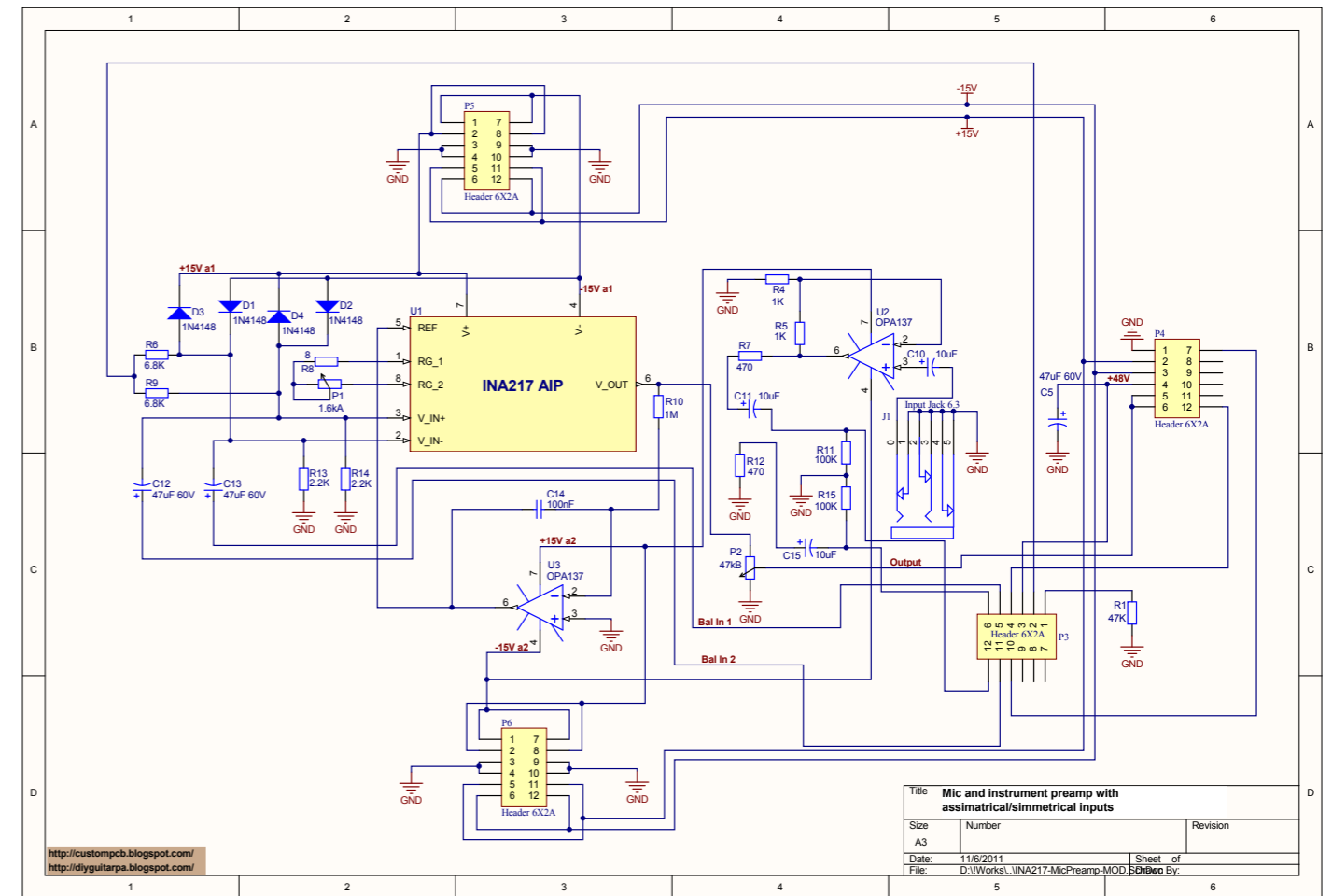
English blog and PCB order: <http://custompcb.blogspot.com/>
Hungarian blog and PCB order: <http://diyguitarpa.blogspot.com/>
The Youtube Channel • **Picasa gallery** • Email: gitarfogas@gmail.com

- Schematics and Bill of Materials for modular audio mixer project 2**
- Schematic and BOM of cheap microphone preamp 3
- Stereo jFET guitar (instrument, effect) preamp 4
- Stereo dual OpAmp instrument or audio preamplifier. 5
- Stereo circuit with 2 single OpAmp, instrument and audio preamplifier. 6
- Stereo low noise 2 single OpAmp instrument preamplifier. 7
- Schematic and BOM of power supply 8
- Schematic and BOM of power filter module 9
- Printed Circuit Boards for instrument preamps project 10**
- Top and bottom PCBs and overlay of stereo jFET preamp 11
- Top and bottom PCBs and overlay of INA217 microphone preamp. 12
- Top and bottom PCBs and overlay of simple dual OpAmp preamp 14
- Two single OpAmp - stereo universal preamp 15
- Two single OpAmp - stereo low noise universal preamp 16
- Top and bottom PCBs and overlay of power filters (ver.3) 17
- Top and bottom PCBs and overlay of power filters (ver.2) 18
- Top and bottom PCBs and overlay of power filters (ver.1) 19
- The PCB of power supply. 20
- Switch module for preamps 22
- Variable line output board 23
- Volume adjustment board 24

- Mainboards for 4 and 8 channels modular audio mixer 25**
- Schematic, BOM and PCB for 4 channel mixer mainboard 26
- Schematic, BOM and PCB for 8 channel mixer mainboard 28

- Images and Picasa galleries about the prototype of preamps 30**
- The selectable prototype of jFET and OpAmp projects 31
- Audio mixer with jFET and OpAmp preamps. 32
- Microphone preamp with INA217 33

Schematics and Bill of materials for modular mixer Schematic and BOM of cheap microphone preamp



The Picasa album about prototype testing

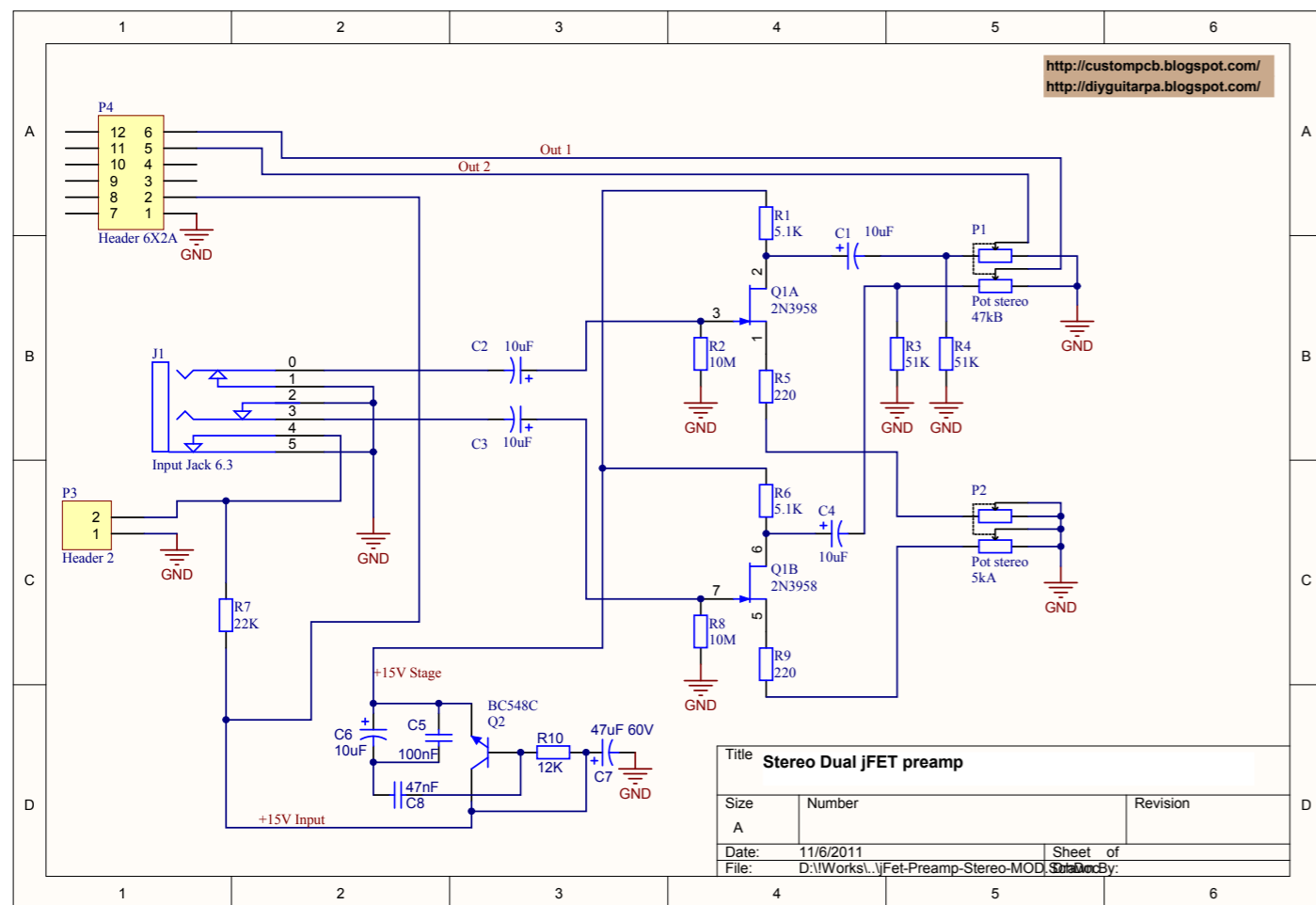
| Bill of Materials | | Preamp-INA217 Module.PrjPcb | | 11/10/2011 16:31:13 | |
|-------------------|-----------------------|-----------------------------|-----------|----------------------------------|---|
| Comment | Footprint | Value | Quantity | Description | Model:Footprint |
| OPA137 | 006E | OPA137 | 2 | FET-Input Operational Amplifiers | DIP; 8 Leads; Row Spacing 7.62 mm; Pitch 2.54 mm |
| Res2 | AXIAL-0.4 | 100K | 2 | Resistor | Axial Device, Thru-Hole; 2 Leads; 0.4 in Pin Spacing |
| Res2 | AXIAL-0.4 | 1K | 2 | Resistor | Axial Device, Thru-Hole; 2 Leads; 0.4 in Pin Spacing |
| Res2 | AXIAL-0.4 | 1M | 1 | Resistor | Resistor; 2 Leads |
| Res2 | AXIAL-0.4 | 2.2K | 2 | Resistor | Resistor; 2 Leads |
| Res2 | AXIAL-0.4 | 470 | 2 | Resistor | Axial Device, Thru-Hole; 2 Leads; 0.4 in Pin Spacing |
| Res2 | AXIAL-0.4 | 47K | 1 | Resistor | Resistor; 2 Leads |
| Res2 | AXIAL-0.4 | 6.8K | 2 | Resistor | Resistor; 2 Leads |
| Res2 | AXIAL-0.4 | 8 | 1 | Resistor | Resistor; 2 Leads |
| Cap Pol1 | Cap, Tantal, 1mil | 10uF | 3 | Polarized Capacitor (Radial) | 2 (C10, C11, C15) |
| INA217AIP | DIP-8 | INA217 AIP | 1 | Instrument Amp | DIP, 8-Pin, Row Spacing 7.62 mm, Pitch 2.54 mm |
| 1N4148 | DO-35 | 1N4148 | 4 | High Conductance Fast Diode | Diode, Axial; Body 3.8 x 1.9 mm (LxDia. max), Lead Dia. 0.53 mm (max) |
| Cap Pol1 | Eco 12 mm, 2 mil pins | 47uF 60V | 3 | Polarized Capacitor (Radial) | 2 (C5, C12, C13) |
| Header 6X2A | HDR2X6_CEN | | 4 | Header, 6-Pin, Dual row | Connector; Header; 6x2 Position |
| Input Jack 6.3 | Jack input 6.3 | | 1 | | 6 (J1) |
| Pot Mono | Pot Mono MetalCase | 1.6kA | 1 | Resistor | 3 pin mono metal case pot, 2 mil |
| Pot Mono | Pot Mono MetalCase | 47kB | 1 | Resistor | 3 pin mono metal case pot, 2 mil |
| Cap | RAD-0.3 | 100nF | 1 | Capacitor | Capacitor; 2 Leads |
| | | | 34 | | |

Notes

This circuit made for **mono microphone inputs** only. The input is mono, 6.3 mm jack inserted directly to the board with **unbalanced/balanced converter**, and 3 inputs header for symmetrical phones with XLR output. Switch module required to select between two inputs (unbalanced jack or balanced XLR). The amplifier of this circuit is INA217. This instrument amp is very cheap, and noiseless. Volume and gain potentiometers included. This circuit must be soldered to the mainboard of audio mixer via 2x6 pin male "L" header.

Schematics and Bill of materials for modular mixer

Stereo jFET guitar (instrument, effect) preamp



[The Picasa album about jFET amplifier](#)

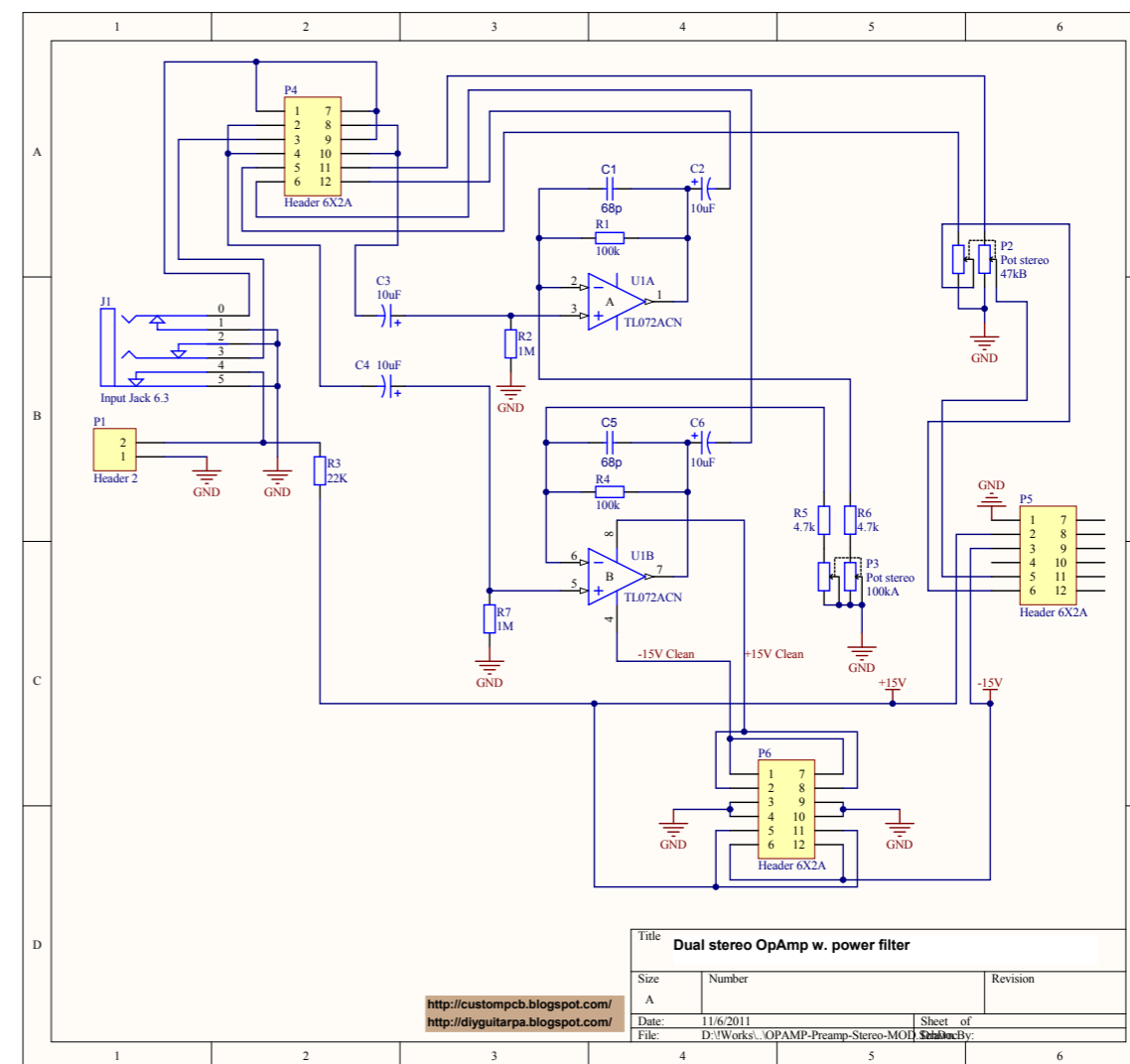
| Bill of Materials | | Preamp-jFET Module.PrjPcb | | 11/10/2011 16:46:17 | | | |
|-------------------|----------------------|---------------------------|----------|---------------------------------------|--|------|--------------------|
| Comment | Footprint | Value | Quantity | Description | Model:Footprint | Pins | Designator |
| BC548C | 29-04 | | 1 | Amplifier Transistor NPN Silicon | TO, Flat leads; 3 In-Line, Axial Leads; Body Dia. 4.8mm; Leads 0.48 x 0.5 mm (max) | 3 | Q2 |
| Res:2 | AXIAL-0.4 | 10M | 2 | Resistor | Axial Device, Thru-Hole; 2 Leads; 0.4 in Pin Spacing | 2 | R2, R8 |
| Res:2 | AXIAL-0.4 | 12K | 1 | Resistor | Resistor; 2 Leads | 2 | R10 |
| Res:2 | AXIAL-0.4 | 220 | 2 | Resistor | Axial Device, Thru-Hole; 2 Leads; 0.4 in Pin Spacing | 2 | R5, R9 |
| Res:2 | AXIAL-0.4 | 22K | 1 | Resistor | Axial Device, Thru-Hole; 2 Leads; 0.4 in Pin Spacing | 2 | R7 |
| Res:2 | AXIAL-0.4 | 5.1K | 2 | Resistor | Axial Device, Thru-Hole; 2 Leads; 0.4 in Pin Spacing | 2 | R1, R6 |
| Res:2 | AXIAL-0.4 | 51K | 2 | Resistor | Axial Device, Thru-Hole; 2 Leads; 0.4 in Pin Spacing | 2 | R3, R4 |
| Cap Pol:1 | Cap, Tantal, 1mil | 10uF | 5 | Polarized Capacitor (Radial) | | 2 | C1, C2, C3, C4, C6 |
| Cap Pol:1 | Elco 6mm, 1 mil pins | 47uF 60V | 1 | Polarized Capacitor (Radial) | | 2 | C7 |
| Header 2 | HDR1X2 | | 1 | Header, 2-Pin | Connector; Header; 2 Position | 2 | P3 |
| Header 6X2A | HDR2X6_CEN | | 1 | Header, 6-Pin, Dual row | Connector; Header; 6x2 Position | 12 | P4 |
| Input Jack 6.3 | Jack input 6.3 | | 1 | | | 6 | J1 |
| Pot stereo | Pots Plastic Stereo | 47kB | 1 | Resistor | | 6 | P1 |
| Pot stereo | Pots Plastic Stereo | 5kA | 1 | Resistor | | 6 | P2 |
| Cap | RAD-0.3 | 100nF | 1 | Capacitor | Capacitor; 2 Leads | 2 | C5 |
| Cap | RAD-0.3 | 47nF | 1 | Capacitor | Capacitor; 2 Leads | 2 | C8 |
| 2N3958 | TO-71 | | 1 | N-Channel Dual JFET (General Purpose) | Can; 7 Leads (1 Absent); Pin Circle Dia. 2.54 mm; Lead Dia. 0.48 mm (max) | 6 | Q1 |
| | | | 25 | | | | |

Notes

This very simple, small, cheap and **noiseless preamp** made for musical instruments with **stereo** (or mono) input. The main part of this circuit is 2N3958 dual jFET. Ideal for **stereo or mono guitar effects**, keyboards, or to connect another device with stereo outputs like audio mixers. Stereo jack, gain and volume adjustable resistors are inserted to the PCB. Very cheap and very good quality for **guitars**. The possible gain is not too high of this circuit, but enough for guitars and guitar effects with very warm sound.

Schematics and Bill of materials for modular mixer

Stereo dual OpAmp instrument or audio preamplifier



[The Picasa album about OpAmp amplifier](#)

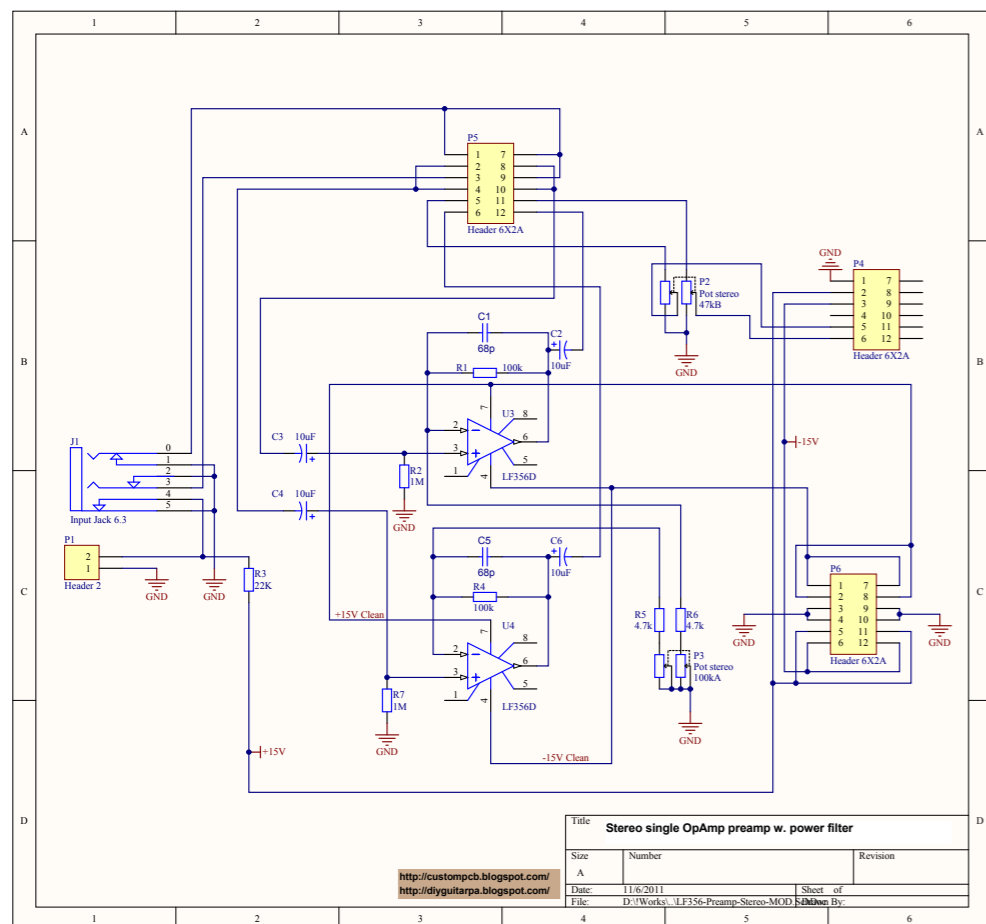
| Bill of Materials | | Preamp-dual OpAmp Module.PrjPcb | | 11/10/2011 17:02:26 | | | |
|-------------------|---------------------|---------------------------------|----------|---|--|------|----------------|
| Comment | Footprint | Value | Quantity | Description | Model:Footprint | Pins | Designator |
| Res:2 | AXIAL-0.4 | 100k | 2 | Resistor | Axial Device, Thru-Hole; 2 Leads; 0.4 in Pin Spacing | 2 | R1, R4 |
| Res:2 | AXIAL-0.4 | 1M | 2 | Resistor | Axial Device, Thru-Hole; 2 Leads; 0.4 in Pin Spacing | 2 | R2, R7 |
| Res:2 | AXIAL-0.4 | 22K | 1 | Resistor | Axial Device, Thru-Hole; 2 Leads; 0.4 in Pin Spacing | 2 | R3 |
| Res:2 | AXIAL-0.4 | 4.7k | 2 | Resistor | Axial Device, Thru-Hole; 2 Leads; 0.4 in Pin Spacing | 2 | R5, R6 |
| Cap Pol:1 | Cap, Tantal, 1mil | 10uF | 4 | Polarized Capacitor (Radial) | | 2 | C2, C3, C4, C6 |
| TL072ACN | dip-8 | | 1 | Low-Noise JFET Dual Operational Amplifier | DIP; 8 Leads; Row Spacing 7.62 mm; Pitch 2.54 mm | 8 | U1 |
| Header 2 | HDR1X2 | | 1 | Header, 2-Pin | Connector; Header; 2 Position | 2 | P1 |
| Header 6X2A | HDR2X6_CEN | | 1 | Header, 6-Pin, Dual row | Connector; Header; 6x2 Position | 12 | P4, P5, P6 |
| Input Jack 6.3 | Jack input 6.3 | | 1 | | | 6 | J1 |
| Pot stereo | Pots Plastic Stereo | 100kA | 1 | Resistor | | 6 | P3 |
| Pot stereo | Pots Plastic Stereo | 47kB | 1 | Resistor | | 6 | P2 |
| Cap | RAD-0.3 | 68p | 2 | Capacitor | Capacitor; 2 Leads | 2 | C1, C5 |
| | | | 21 | | | | |

Notes

This is another really simple, good quality and cheap preamplifier with **stereo jack** input for guitar effects or keyboards. The possible **gain is much higher than jFET** circuit, and the sound is better for keyboards or mixers than the guitars or guitar effects. The dual OpAmp must be compatible with TL072. Gain and volume pots has inserted to the PCB board.

Schematics and Bill of materials for modular mixer

Stereo circuit with 2 single OpAmp, instrument and audio preamplifier



Notes

This circuit looks like the previous version of TL072 compatible OpAmp pre-amplifier, but for this, **two single OpAmp device required**, instead of one dual. The reason of this solution is the better quality, **if you want to use really noiseless single LF or LT serial integrated circuits instead of relative noisy one dual TL072.**

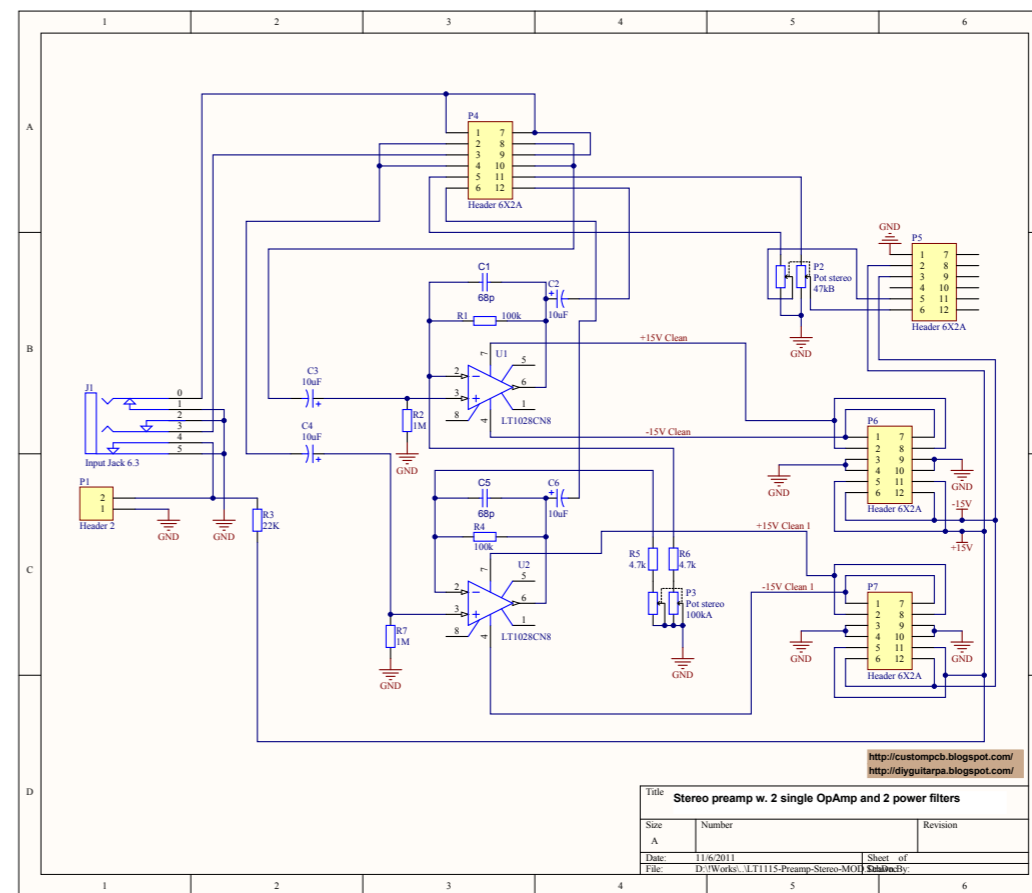
This solution is really cheap, against the noise one power-filter circuit included (for both OpAmps). Stereo jack input, stereo/mono and bypass switch, gain and volume potentiometers inserted to the board.

Because the circuit noise, distortion (and the gain) depending on the included single OpAmp, the solution recommended for all non-guitar instrument, and audio amplifiers for home hi-fi solutions.

| Bill of Materials | | | | OpAmp Module.PrjPcb | 11/10/2011 | 17:06:34 |
|-------------------|---------------------|-------|-----------|---|--|------------------|
| Comment | Footprint | Value | Quantity | Description | Model:Footprint | Pins Designator |
| Res2 | AXIAL-0.4 | 100k | 2 | Resistor | Axial Device, Thru-Hole; 2 Leads; 0.4 in Pin Spacing | 2 R1, R4 |
| Res2 | AXIAL-0.4 | 1M | 2 | Resistor | Axial Device, Thru-Hole; 2 Leads; 0.4 in Pin Spacing | 2 R2, R7 |
| Res2 | AXIAL-0.4 | 22K | 1 | Resistor | Axial Device, Thru-Hole; 2 Leads; 0.4 in Pin Spacing | 2 R3 |
| Res2 | AXIAL-0.4 | 4.7k | 2 | Resistor | Axial Device, Thru-Hole; 2 Leads; 0.4 in Pin Spacing | 2 R5, R6 |
| Cap Pol1 | Cap, Tantal, 1mil | 10uF | 4 | Polarized Capacitor (Radial) | | 2 C2, C3, C4, C6 |
| LF356D | dip-8 | | 2 | Wide-Bandwidth Single J-FET Operational Amplifier | DIP; 8 Leads; Row Spacing 7.62 mm; Pitch 2.54 mm | 8 U3, U4 |
| Header 2 | HDR1X2 | | 1 | Header, 2-Pin | Connector; Header; 2 Position | 2 P1 |
| Header 6X2A | HDR2X6_CEN | | 3 | Header, 6-Pin, Dual row | Connector; Header; 6x2 Position | 12 P4, P5, P6 |
| Input Jack 6.3 | Jack input 6.3 | | 1 | | | 6 J1 |
| Pot stereo | Pots Plastic Stereo | 100kA | 1 | Resistor | | 6 P3 |
| Pot stereo | Pots Plastic Stereo | 47kB | 1 | Resistor | | 6 P2 |
| Cap | RAD-0.3 | 68p | 2 | Capacitor | Capacitor; 2 Leads | 2 C1, C5 |
| | | | 22 | | | |

Schematics and Bill of materials for modular mixer

Stereo low noise 2 single OpAmp instrument preamplifier



Notes

This is the last version of OpAmp preamplifiers. This have best quality. This is the reason why two single OpAmp included instead of one dual. **LT1115** or **LT1028** recommended for best result, maybe one of LF or NE serial OpAmps.

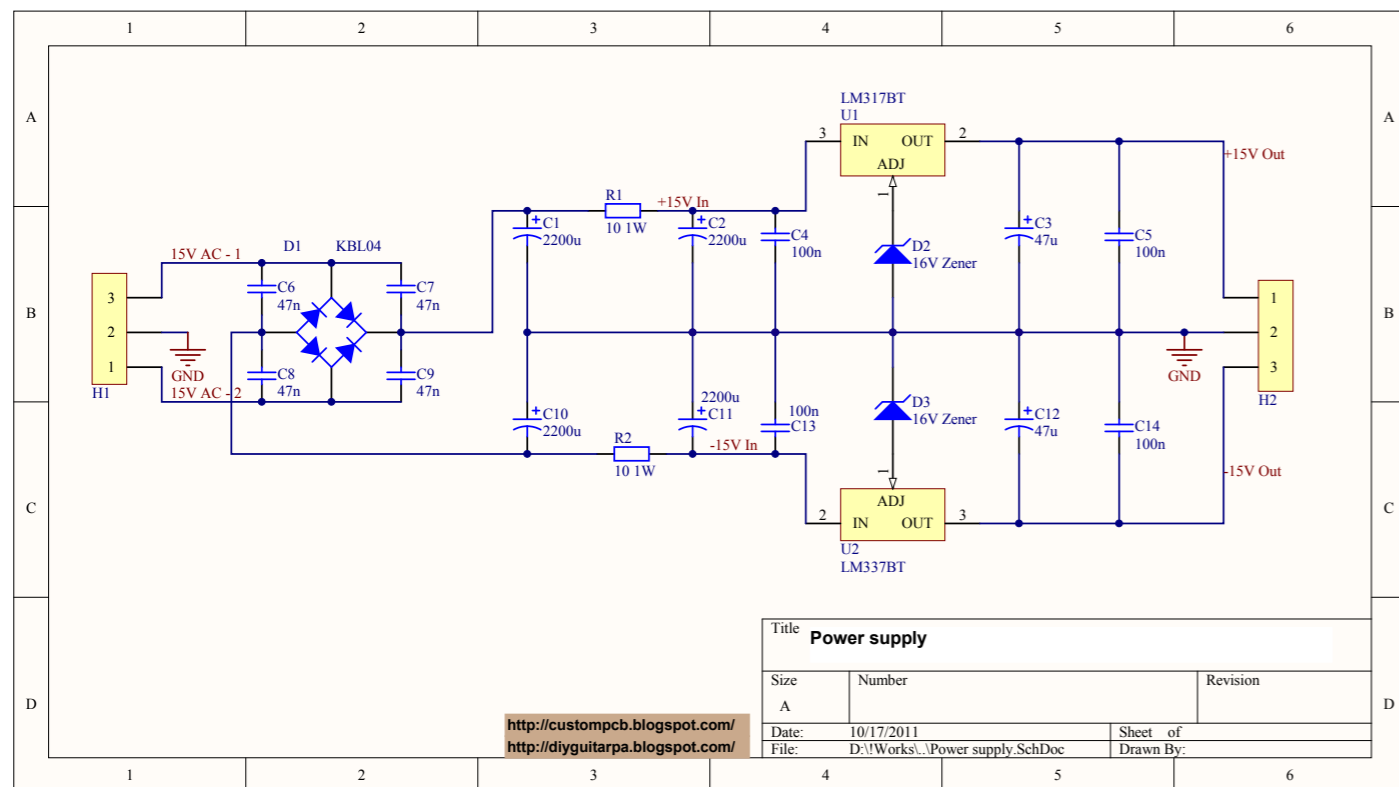
The difference between this and the previous version of board, here we have two power filter, one filter for one OpAmp for the best result of really low noise and distortion. The circuit recommended for **home hi-fi and instruments, included instrument effects.**

Gain and volume potentiometers, bypass and stereo/mono switches included to the board with stereo jack input.

| Bill of Materials | | | | OpAmp Module.PrjPcb | 11/10/2011 | 17:12:23 |
|-------------------|---------------------|-------|-----------|--|--|-------------------|
| Comment | Footprint | Value | Quantity | Description | Model:Footprint | Pins Designator |
| Res2 | AXIAL-0.4 | 100k | 2 | Resistor | Axial Device, Thru-Hole; 2 Leads; 0.4 in Pin Spacing | 2 R1, R4 |
| Res2 | AXIAL-0.4 | 1M | 2 | Resistor | Axial Device, Thru-Hole; 2 Leads; 0.4 in Pin Spacing | 2 R2, R7 |
| Res2 | AXIAL-0.4 | 22K | 1 | Resistor | Axial Device, Thru-Hole; 2 Leads; 0.4 in Pin Spacing | 2 R3 |
| Res2 | AXIAL-0.4 | 4.7k | 2 | Resistor | Axial Device, Thru-Hole; 2 Leads; 0.4 in Pin Spacing | 2 R5, R6 |
| Cap Pol1 | Cap, Tantal, 1mil | 10uF | 4 | Polarized Capacitor (Radial) | | 2 C2, C3, C4, C6 |
| LT1028CN8 | dip-8 | | 2 | Ultra Low Noise Precision High-Speed Operational Amplifier | DIP; 8 Leads; Row Spacing 7.62 mm; Pitch 2.54 mm | 8 U1, U2 |
| Header 2 | HDR1X2 | | 1 | Header, 2-Pin | Connector; Header; 2 Position | 2 P1 |
| Header 6X2A | HDR2X6_CEN | | 4 | Header, 6-Pin, Dual row | Connector; Header; 6x2 Position | 12 P4, P5, P6, P7 |
| Input Jack 6.3 | Jack input 6.3 | | 1 | | | 6 J1 |
| Pot stereo | Pots Plastic Stereo | 100kA | 1 | Resistor | | 6 P3 |
| Pot stereo | Pots Plastic Stereo | 47kB | 1 | Resistor | | 6 P2 |
| Cap | RAD-0.3 | 68p | 2 | Capacitor | Capacitor; 2 Leads | 2 C1, C5 |
| | | | 23 | | | |

Schematics and Bill of materials for modular mixer

Schematic and BOM of power supply



| | | |
|---------------------------|------------------------------|-----------|
| Title Power supply | | |
| Size | Number | Revision |
| A | | |
| Date: | 10/17/2011 | Sheet of |
| File: | D:\Works\Power supply.SchDoc | Drawn By: |

<http://custompcb.blogspot.com/>
<http://diyguitarpa.blogspot.com/>

Notes

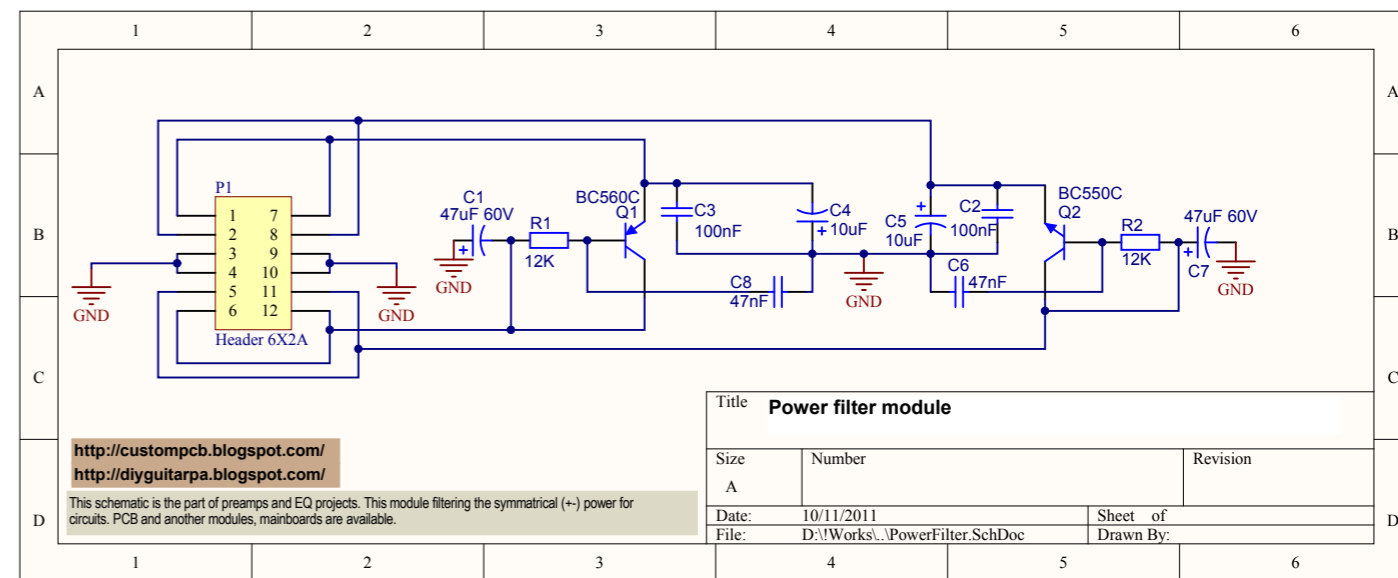
This is the power supply. Very simple and good quality low power circuit. Two adjustable regulators can be fixed to the heatsink. The adjustable regulator with Zener diode have cleaner output than simple 7815 and 7915 regulators.

Bill of Materials

| PowerSupply.PrjPcb | | 11/10/2011 | | 17:24:05 | | | |
|--------------------|-----------------------------|------------|-----------|--|---|------|------------------|
| Comment | Footprint | Value | Quantity | Description | Model:Footprint | Pins | Designator |
| LM317BT | 221A-04 | | 1 | 3-Terminal Adjustable Positive Voltage Regulator | TO, Thru-Hole, Vertical, Heatsink Mounted; 3 In-Line Leads; Pitch 2.54 mm | 3 | U1 |
| LM337BT | 221A-04 | | 1 | 3-Terminal Adjustable Negative Voltage Regulator | TO, Thru-Hole, Vertical, Heatsink Mounted; 3 In-Line Leads; Pitch 2.54 mm | 3 | U2 |
| Res2 | AXIAL-0.4 | 10 1W | 2 | Resistor | Axial Device, Thru-Hole; 2 Leads; 0.4 in Pin Spacing | 2 | R1, R2 |
| KBL04 | Bridge hor. | | 1 | Full Wave Diode Bridge | | 4 | D1 |
| 16V Zener | DIODE-0.7 | | 2 | Zener Diode | Diode, Thru-Hole; 2 Leads; 0.7 in Pin Spacing | 2 | D2, D3 |
| Cap Pol1 | Elco 12 mm, 2 mil pins | 47u | 2 | Polarized Capacitor (Radial) | | 2 | C3, C12 |
| Cap Pol1 | ELCO 22 MM 4 MIL | 2200u | 4 | Polarized Capacitor (Radial) | | 2 | C1, C2, C10, C11 |
| Connector | panel connector 3 input big | | 2 | 3 pin, 3 mil connector | | 3 | H1, H2 |
| Cap | RAD-0.3 | 100n | 4 | Capacitor | Radial Cap, Thru-Hole; 2 Leads; 0.3 in Pin Spacing | 2 | C4, C5, C13, C14 |
| Cap | RAD-0.3 | 47n | 4 | Capacitor | Radial Cap, Thru-Hole; 2 Leads; 0.3 in Pin Spacing | 2 | C6, C7, C8, C9 |
| | | | 23 | | | | |

Schematics and Bill of materials for modular mixer

Schematic and BOM of power filter module



| | | |
|----------------------------------|-----------------------------|-----------|
| Title Power filter module | | |
| Size | Number | Revision |
| A | | |
| Date: | 10/11/2011 | Sheet of |
| File: | D:\Works\PowerFilter.SchDoc | Drawn By: |

Bill of Materials

| Power Filter.PrjPcb | | 11/10/2011 | | 17:20:43 | | | |
|---------------------|----------------------|------------|-----------|------------------------------|--|------|------------|
| Comment | Footprint | Value | Quantity | Description | Model:Footprint | Pins | Designator |
| BC550C | 29-04 | BC550C | 1 | Transistor NPN Silicon | TO, Flat Index; 3 In-Line, Axial Leads; Body Dia. 4.8mm; Leads 0.48 x 0.5 mm (max) | 3 | Q2 |
| BC560C | 29-04 | BC560C | 1 | Transistor PNP Silicon | TO, Flat Index; 3 In-Line, Axial Leads; Body Dia. 4.8mm; Leads 0.48 x 0.5 mm (max) | 3 | Q1 |
| Res2 | AXIAL-0.4 | 12K | 2 | Resistor | Resistor; 2 Leads | 2 | R1, R2 |
| Cap Pol1 | Cap, Tantal, 1mil | 10uF | 2 | Polarized Capacitor (Radial) | | 2 | C4, C5 |
| Cap | CAP, WIMA, 2MIL | 100nF | 2 | Capacitor | | 2 | C2, C3 |
| Cap | CAP, WIMA, 2MIL | 47nF | 2 | Capacitor | | 2 | C6, C8 |
| Cap Pol1 | Elco 6mm, 1 mil pins | 47uF 60V | 2 | Polarized Capacitor (Radial) | | 2 | C1, C7 |
| Header 6X2A | HDR2X6_CEN | | 1 | Header, 6-Pin, Dual row | Connector; Header; 6x2 Position | 12 | P1 |
| | | | 13 | | | | |

Notes

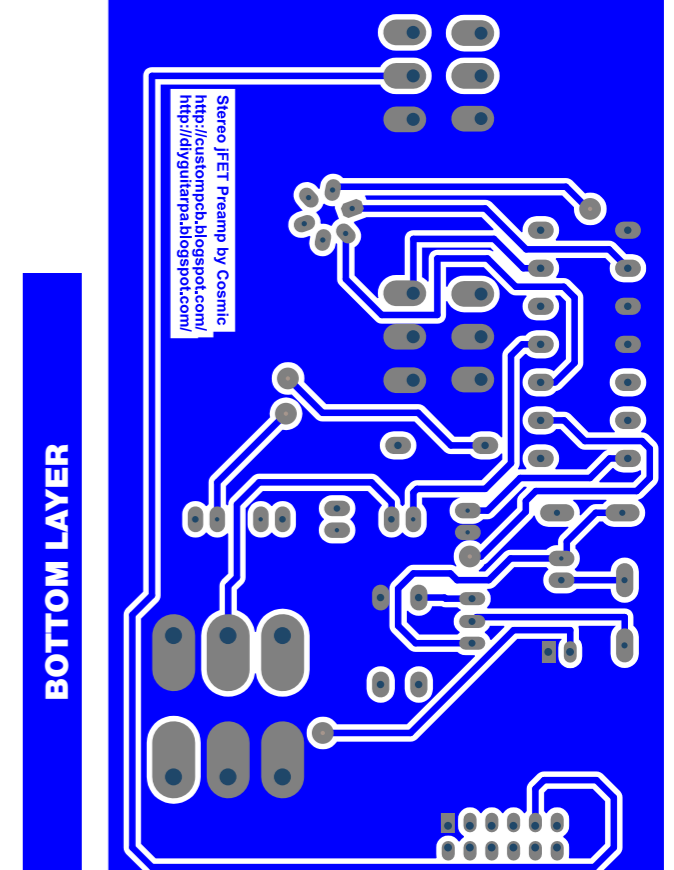
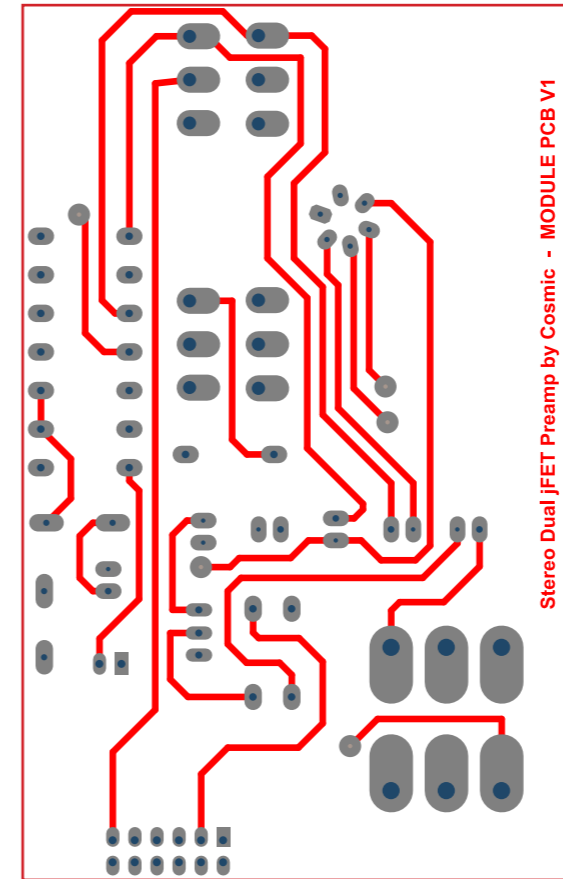
This module required for the preamplifier boards is the **power filter** circuit. I like to use this simple circuit to filter the problems of power. These circuits have to be connected to the 12 pins headers on the preamp PCB. **If you think this is not important, you can wire pin 8 to pin 11 and pin 7 to pin 12 to ignore these circuits and boards.**

We have four versions of power filter PCB. No difference between schematics, only the PCB size is the difference.

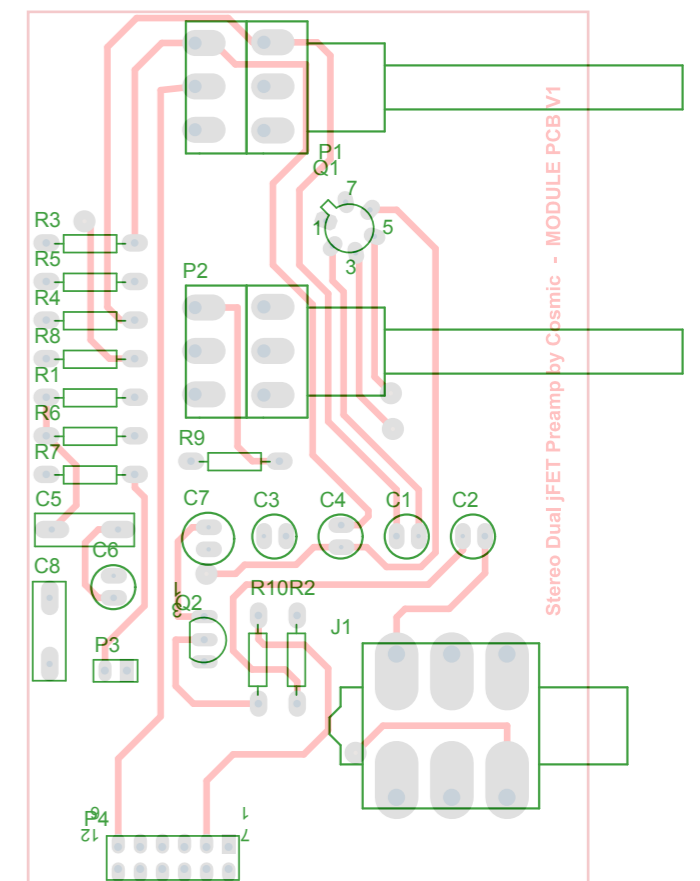
Printed Circuit Boards for instrument preamps project

PCB for the modular audio mixer

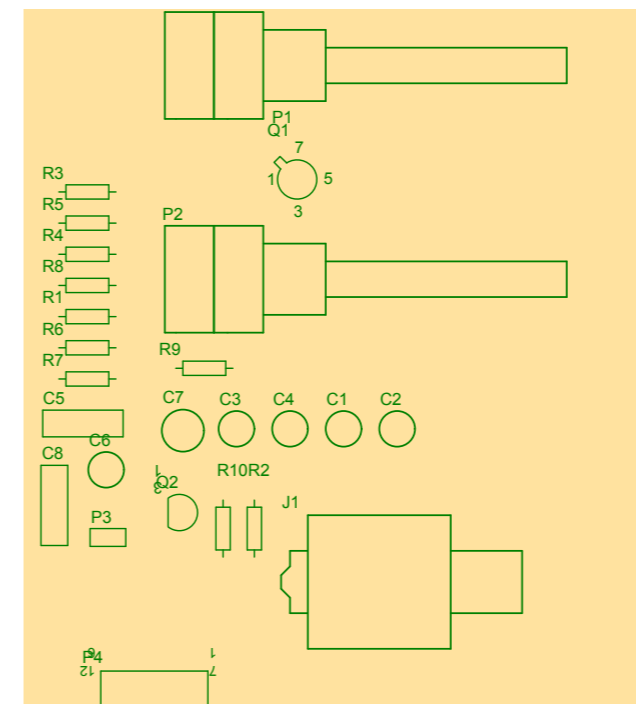
Top and bottom PCBs and overlay of stereo jFET preamp



TOP OVERLAY ON TOP LAYER

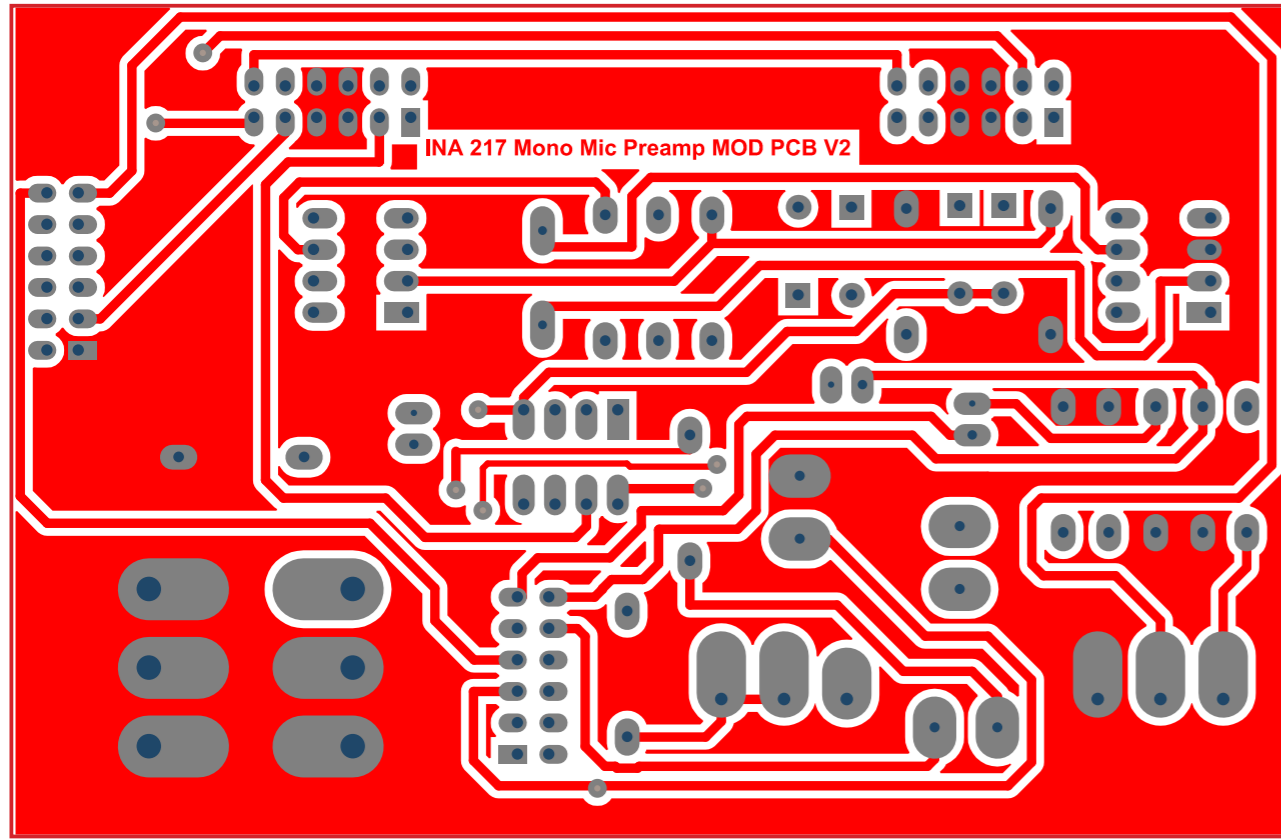


PCB TOP OVERLAY

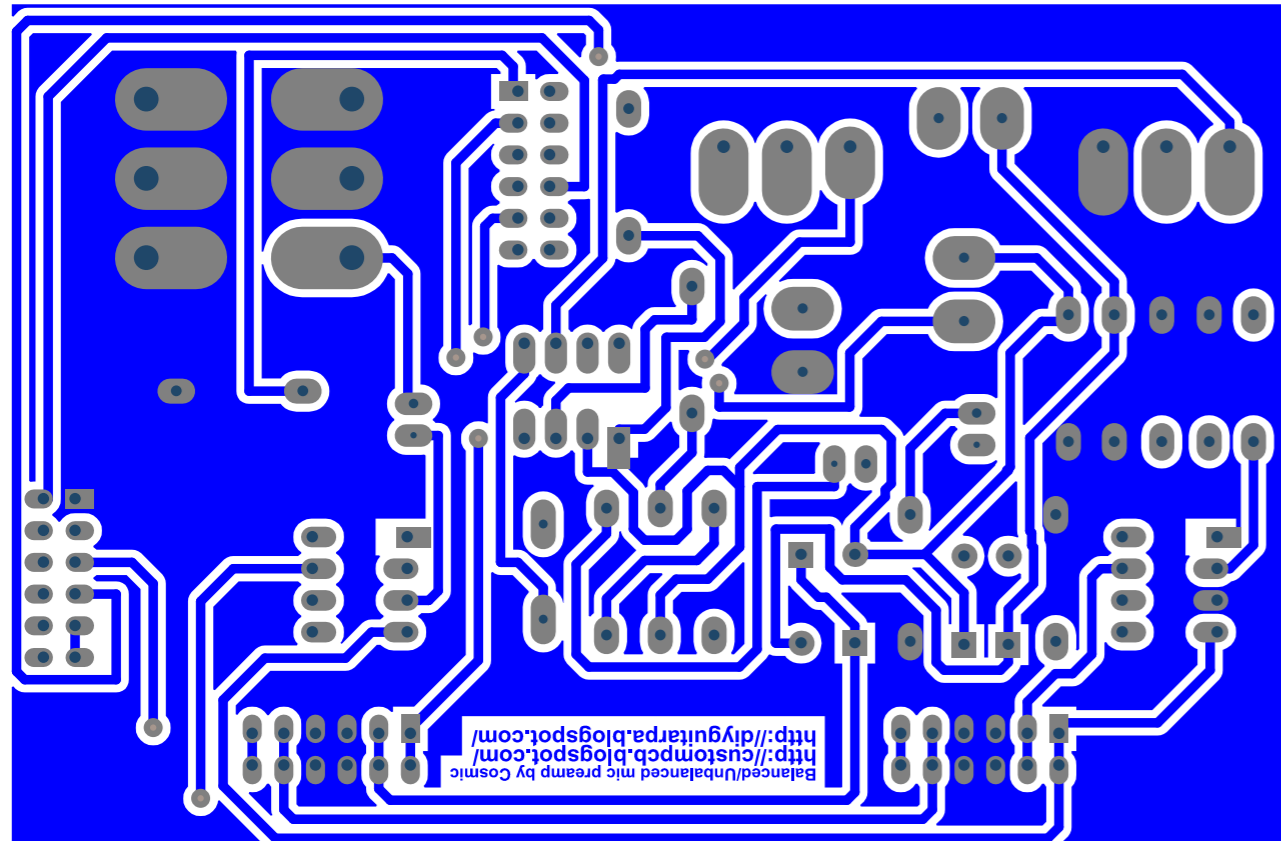


PCB for the modular audio mixer

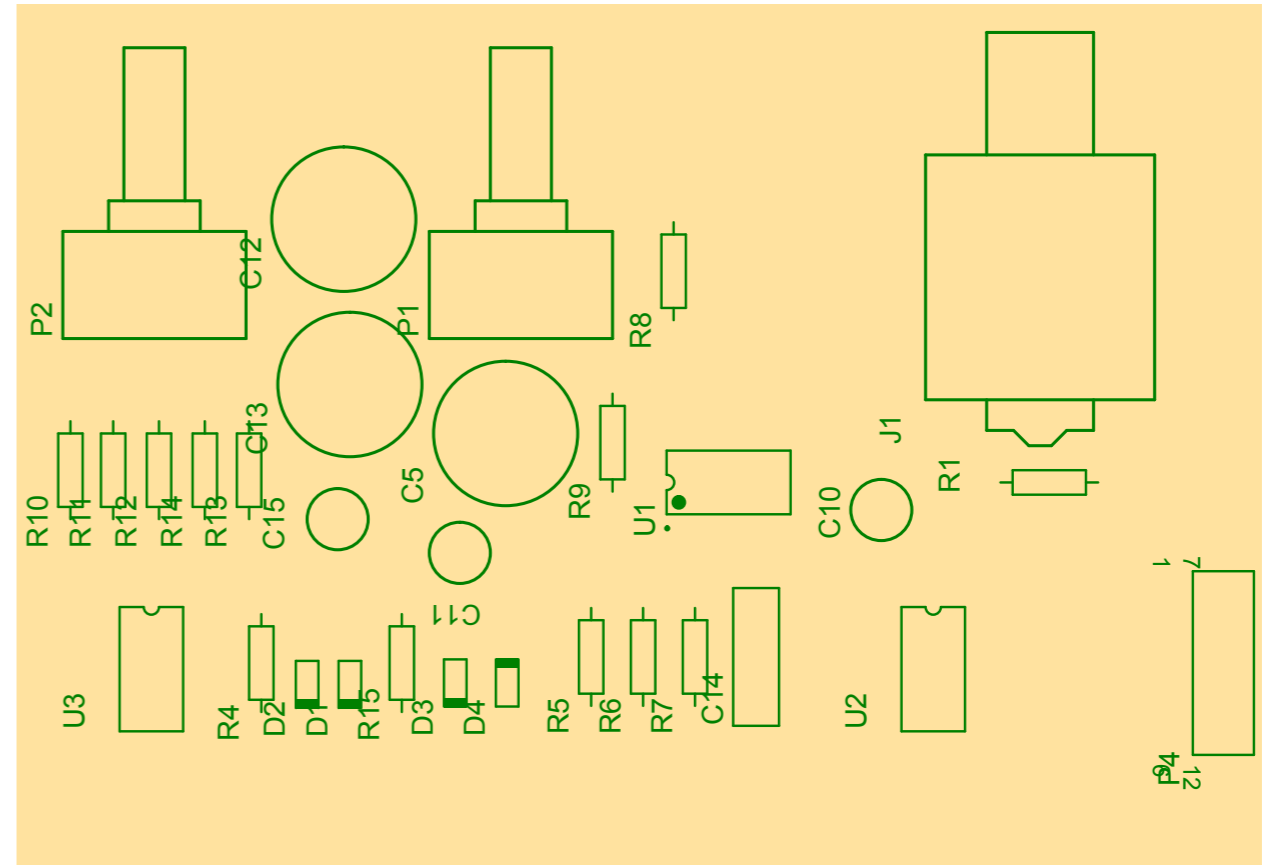
Top and bottom PCBs and overlay of INA217 microphone preamp



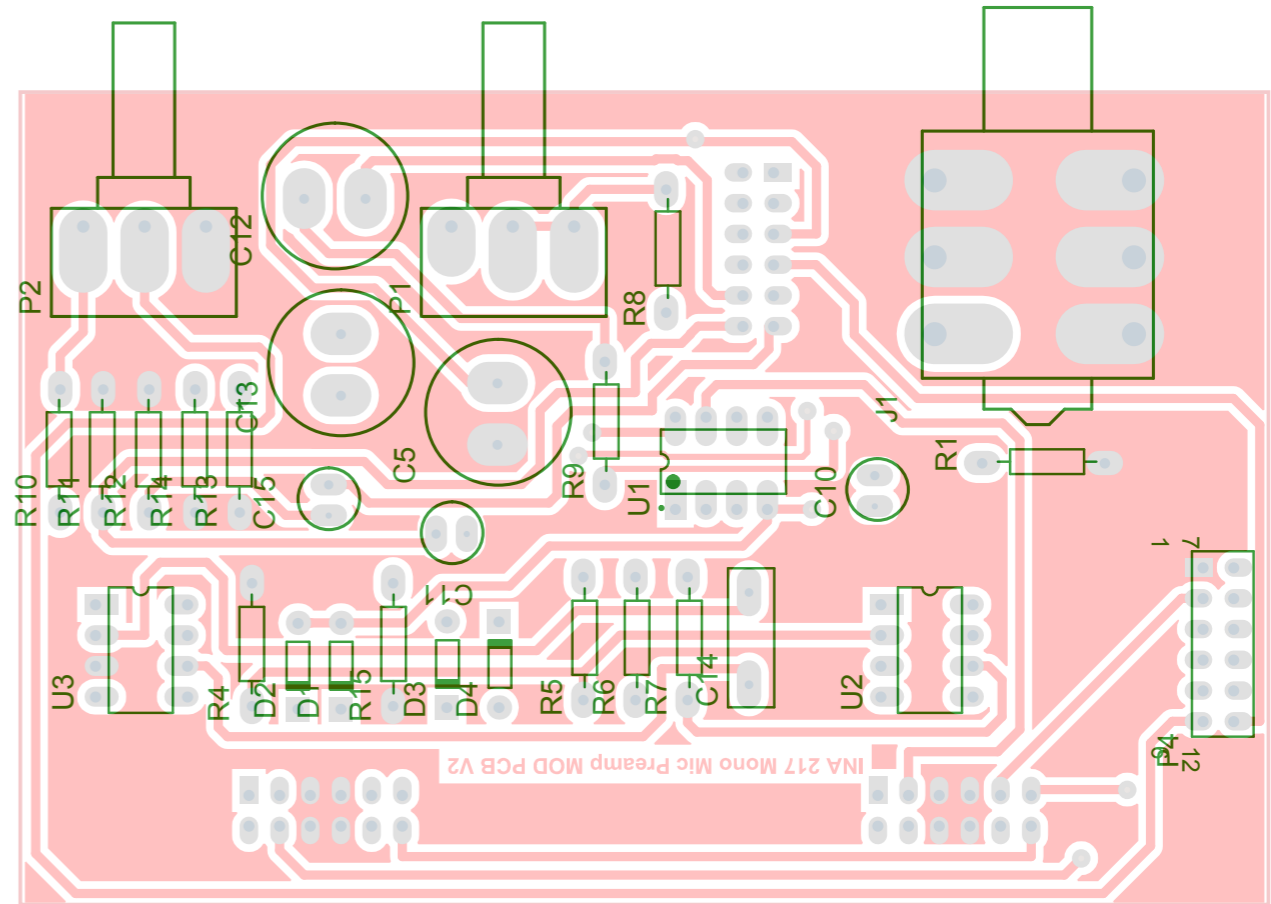
TOP LAYER



BOTTOM LAYER



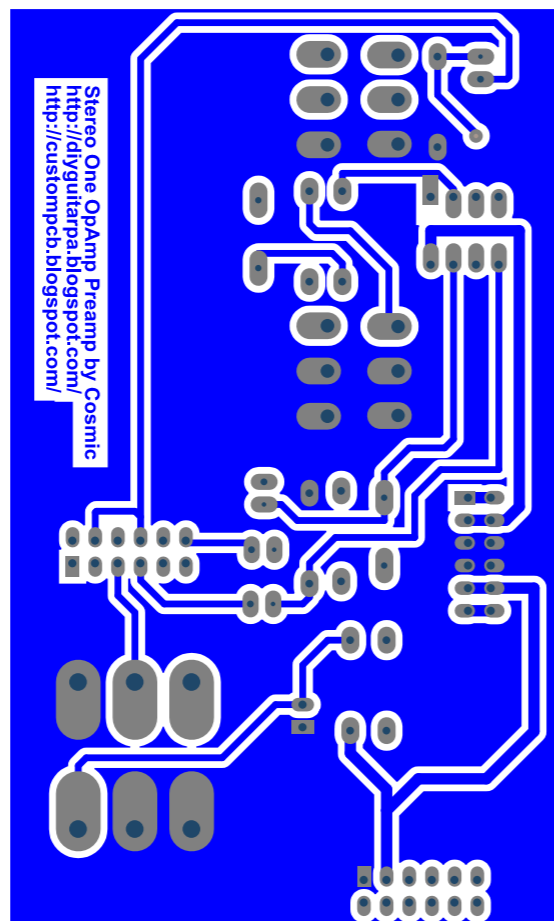
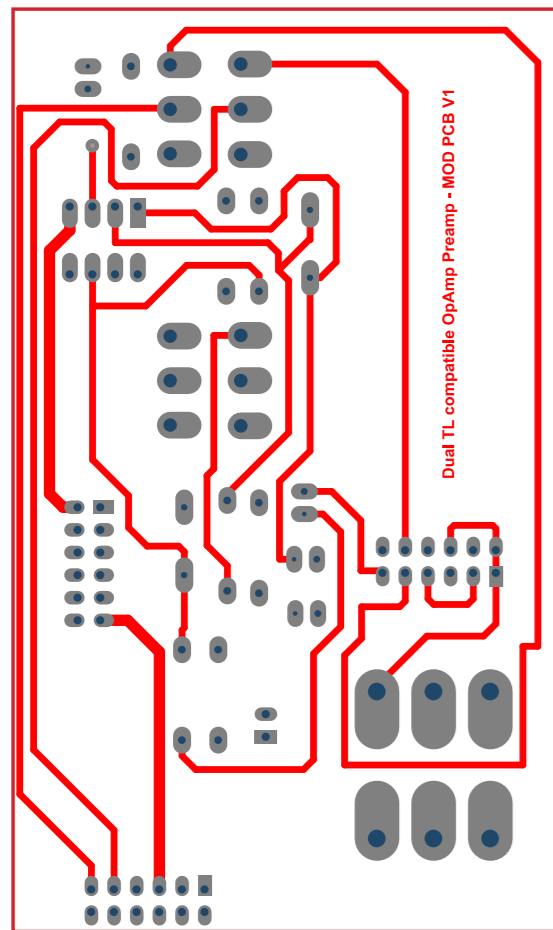
PCB TOP OVERLAY



TOP OVERLAY ON TOP LAYER

PCB for the modular audio mixer

Top and bottom PCBs and overlay of simple dual OpAmp preamp

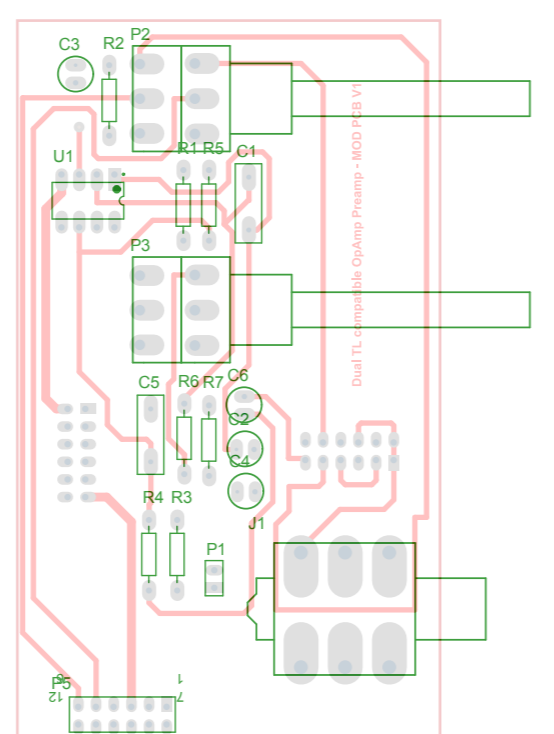
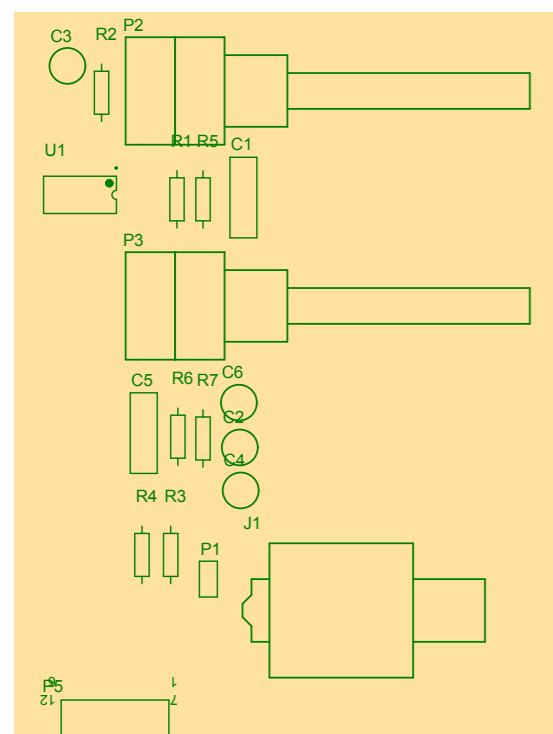


TOP LAYER

BOTTOM LAYER

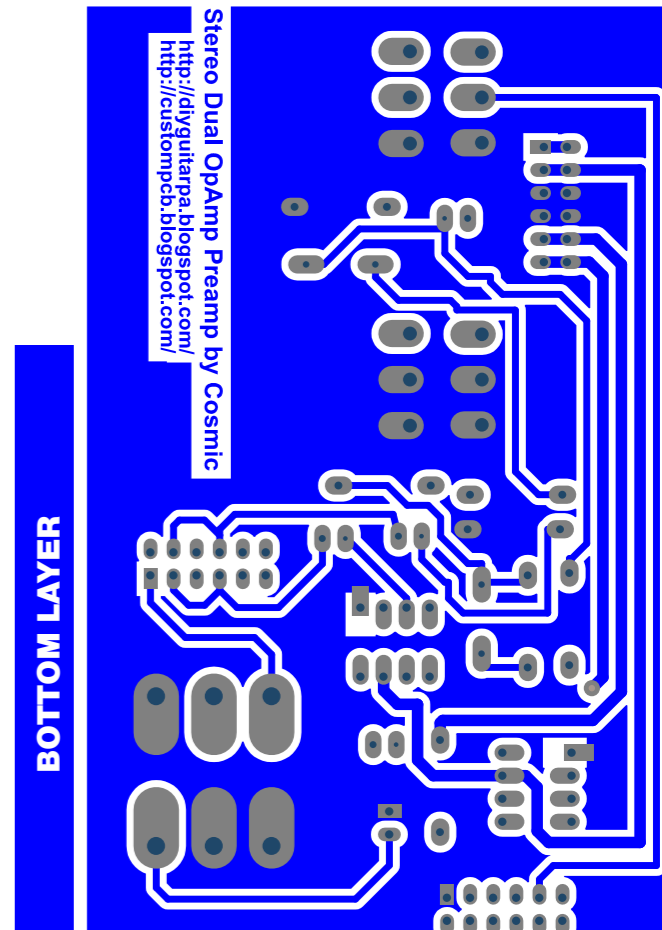
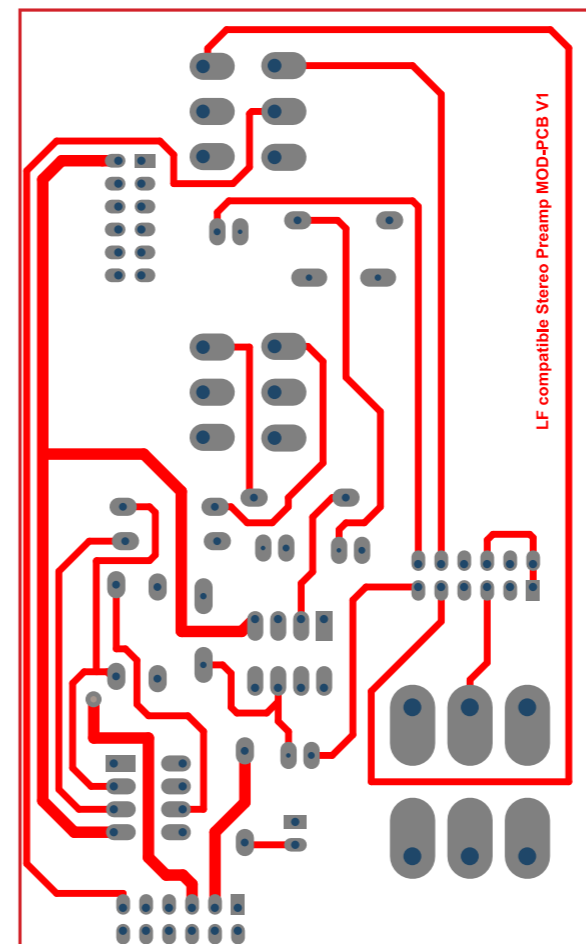
PCB OVERLAY

OVERLAY ON TOP LAYER



PCB for the modular audio mixer

Two single OpAmp - stereo universal preamp

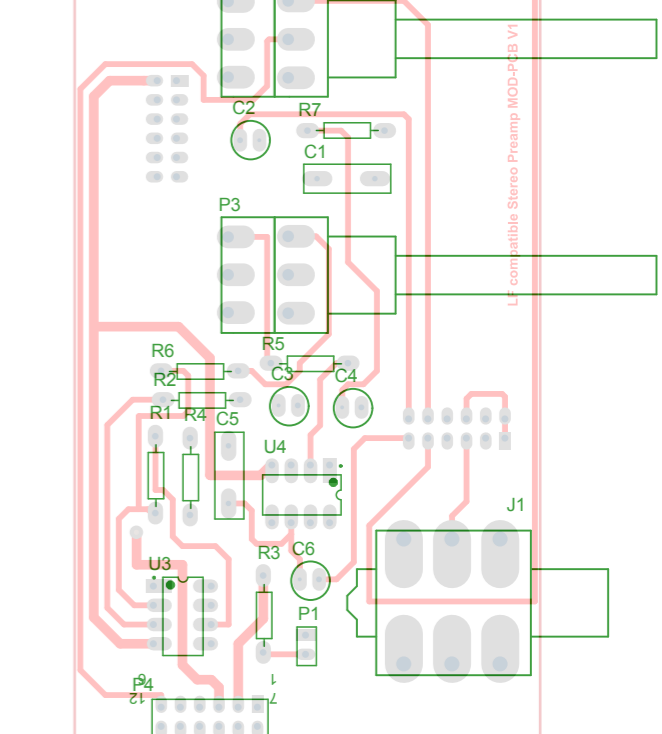
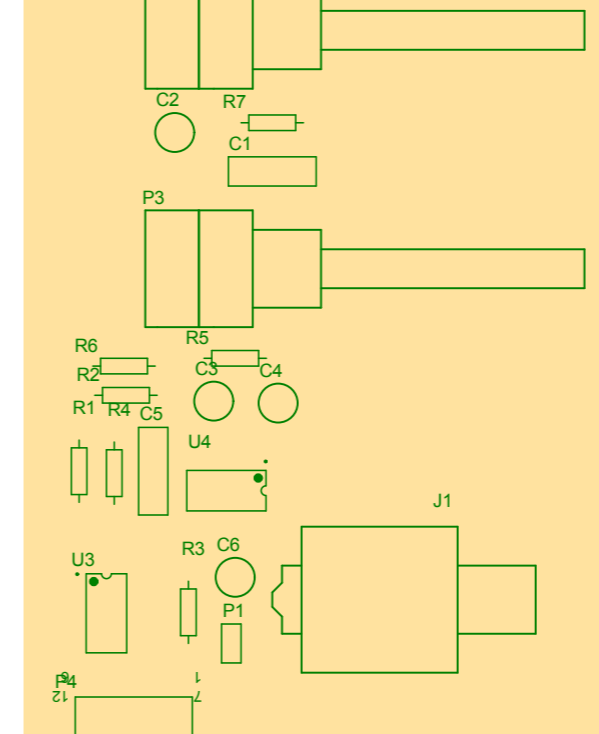


TOP LAYER

BOTTOM LAYER

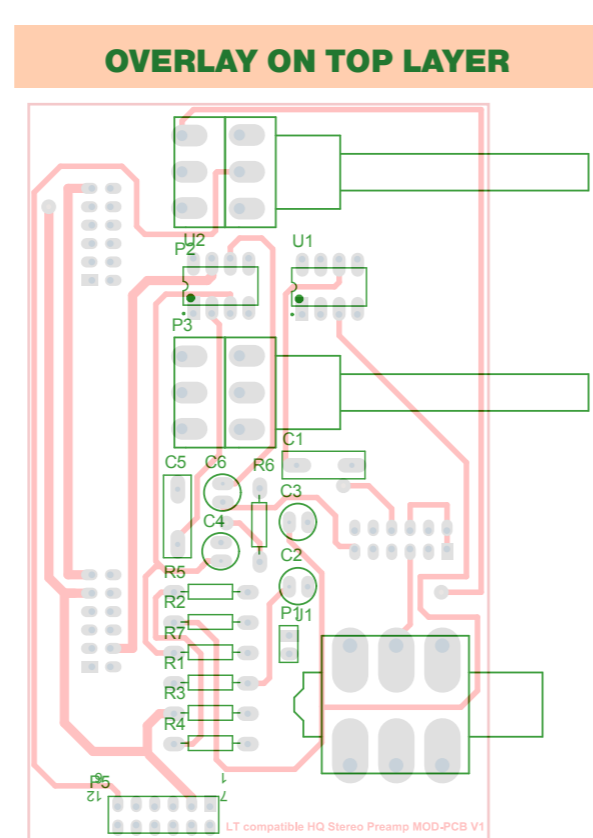
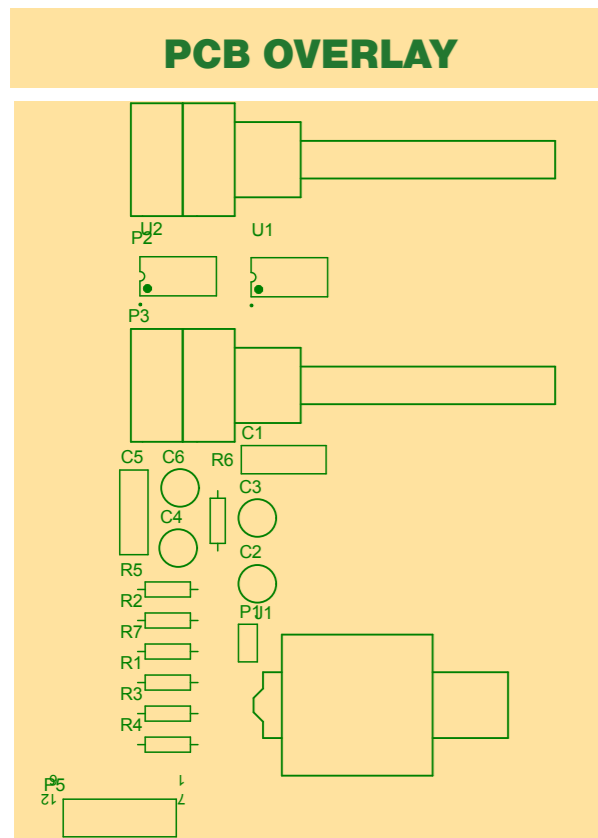
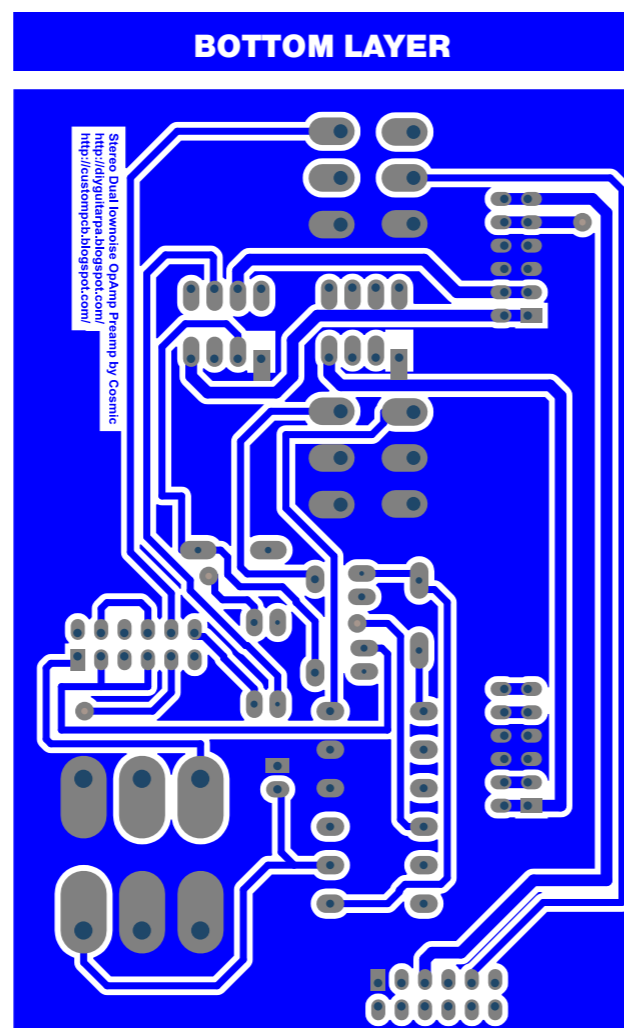
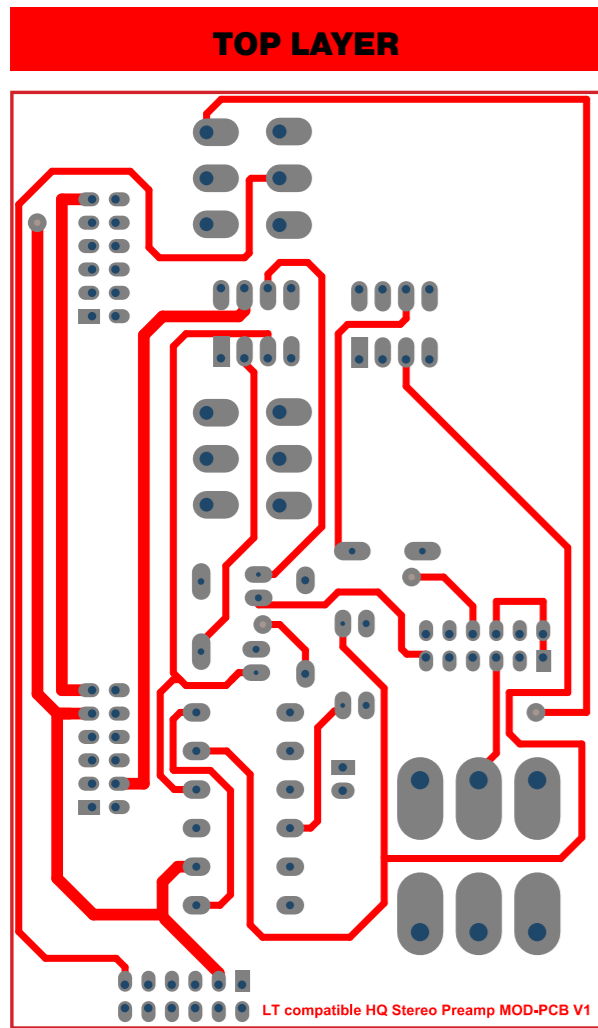
PCB OVERLAY

OVERLAY ON TOP LAYER



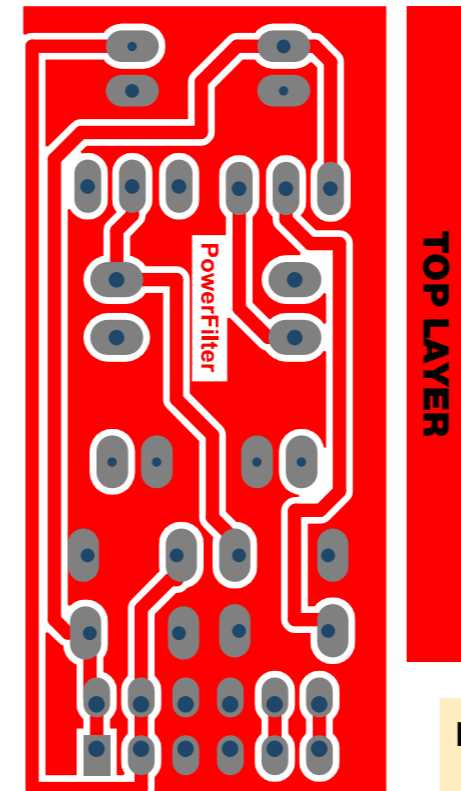
PCB for the modular audio mixer

Two single OpAmp - stereo low noise universal preamp

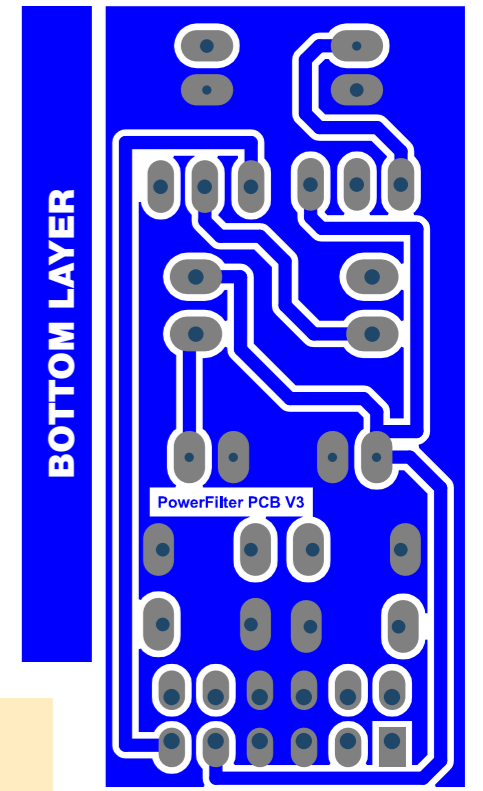


PCB for the modular audio mixer

Top and bottom PCBs and overlay of power filters (ver.3)



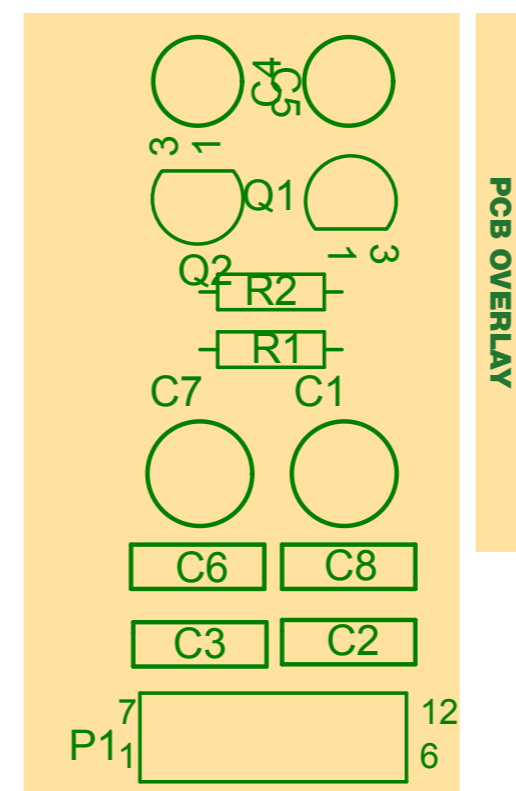
TOP LAYER



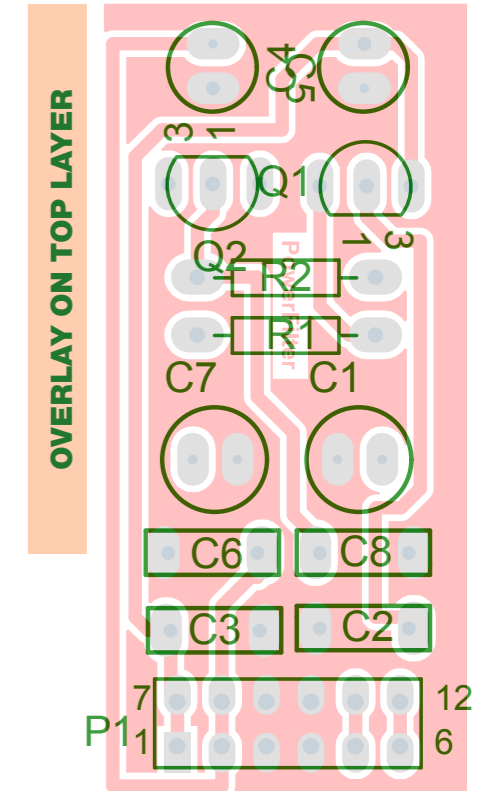
BOTTOM LAYER

Notes

We have 3 versions of power filter PCB. No difference between schematics, the one of them is landscape, the another 2 is portrait.

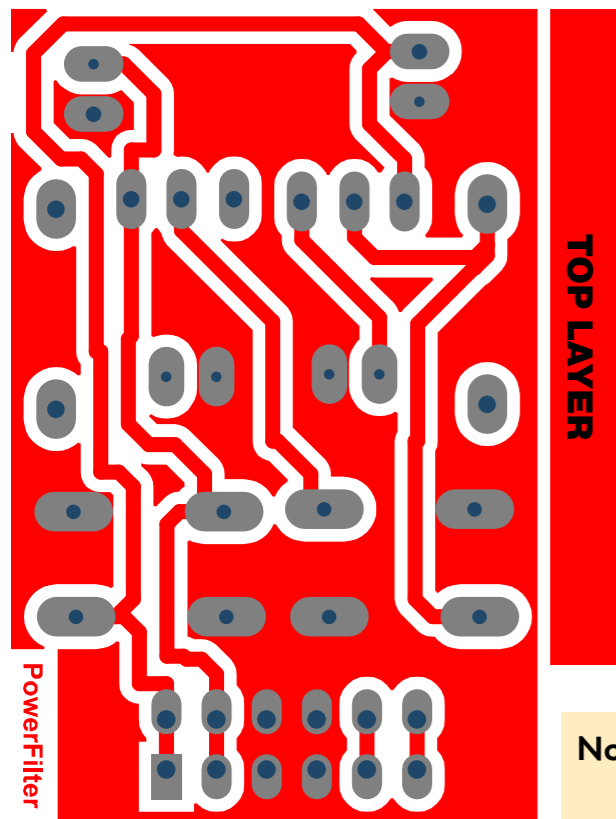


PCB OVERLAY

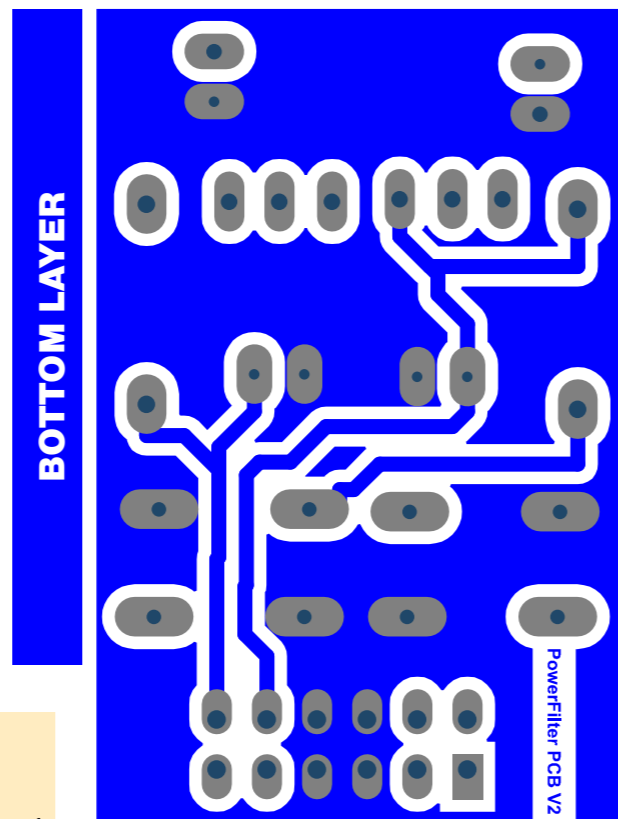


PCB for the modular audio mixer

Top and bottom PCBs and overlay of power filters (ver.2)



TOP LAYER

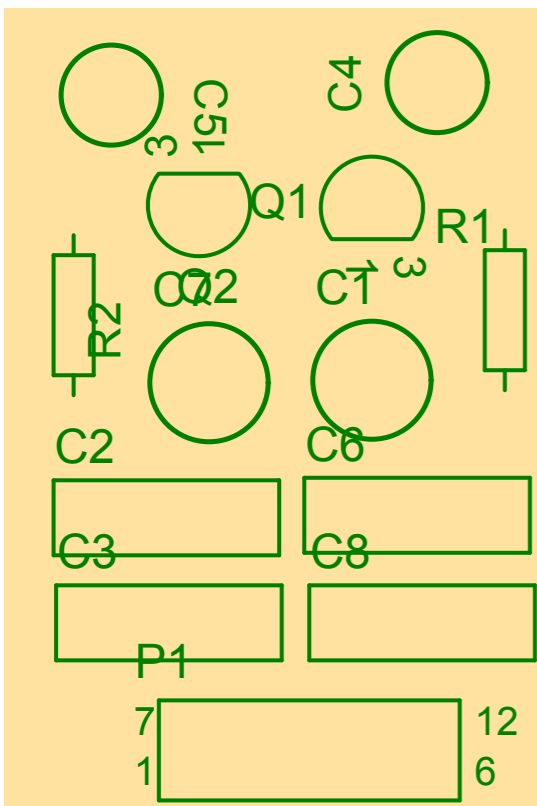


BOTTOM LAYER

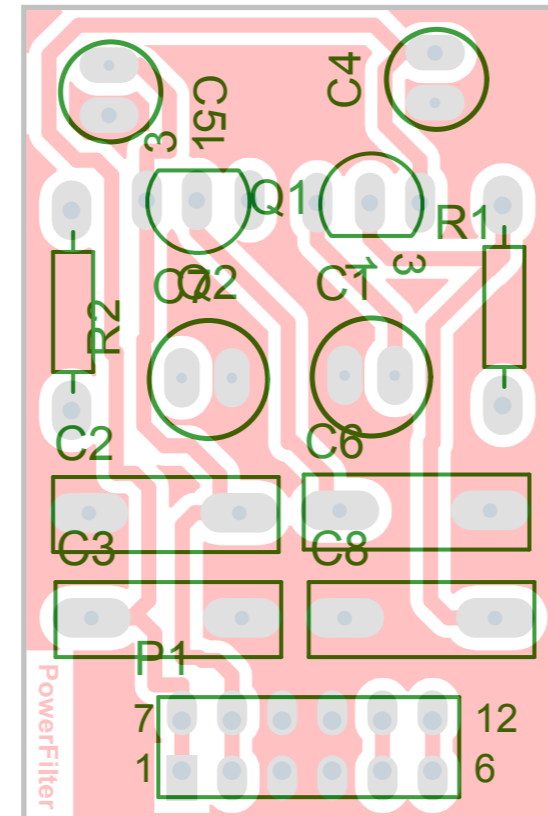
Notes

We have 3 versions of power filter PCB. No difference between schematics, the one of them is landscape, the another 2 is portrait.

PCB OVERLAY

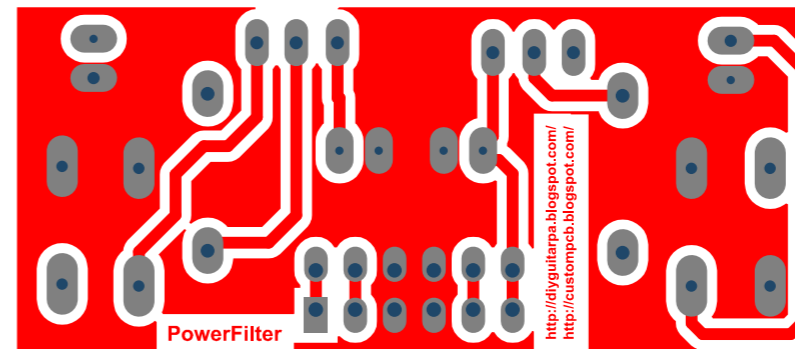


OVERLAY ON TOP LAYER

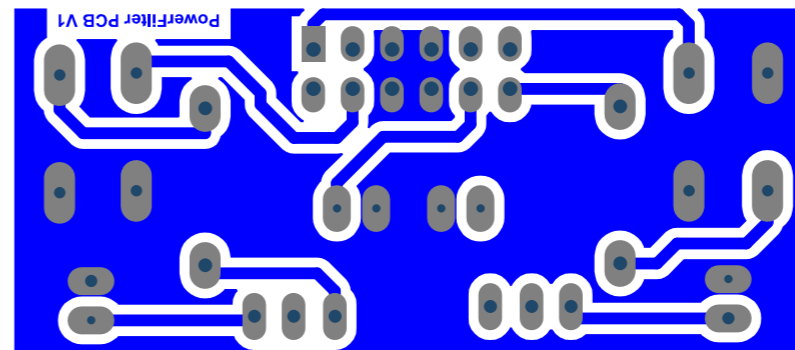


PCB for the modular audio mixer

Top and bottom PCBs and overlay of power filters (ver.1)



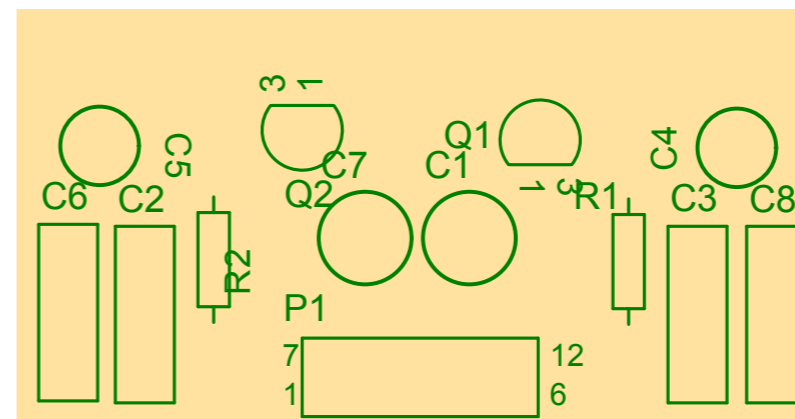
TOP LAYER



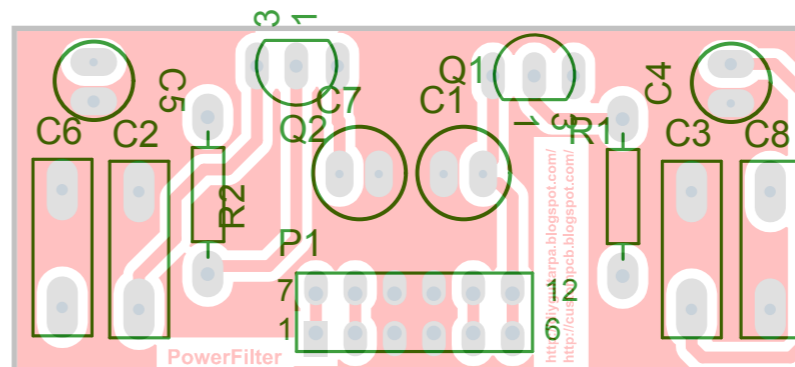
BOTTOM LAYER

Notes

We have 3 versions of power filter PCB. No difference between schematics, the one of them is landscape, the another 2 is portrait.



PCB OVERLAY

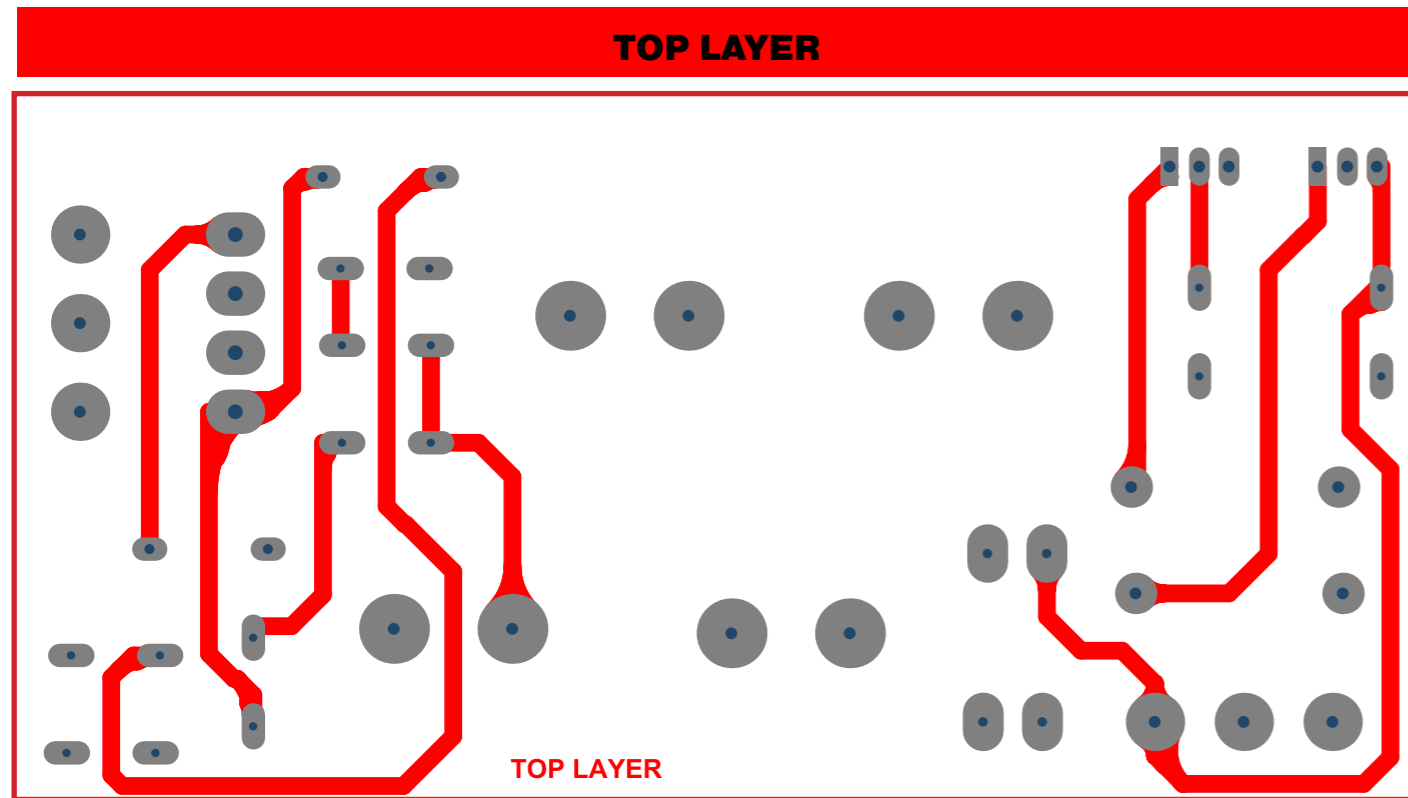


OVERLAY ON TOP LAYER

PCB for the modular audio mixer

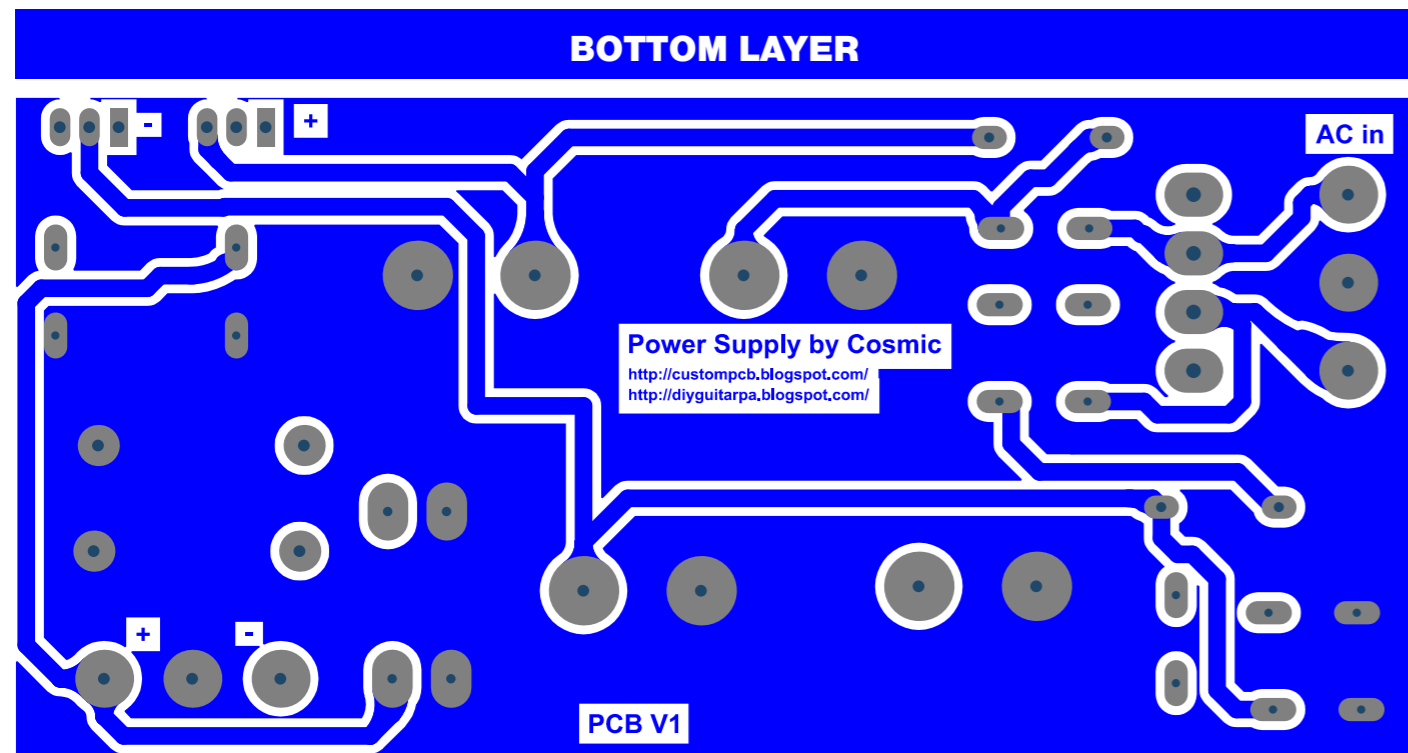
The PCB of power supply

TOP LAYER



TOP LAYER

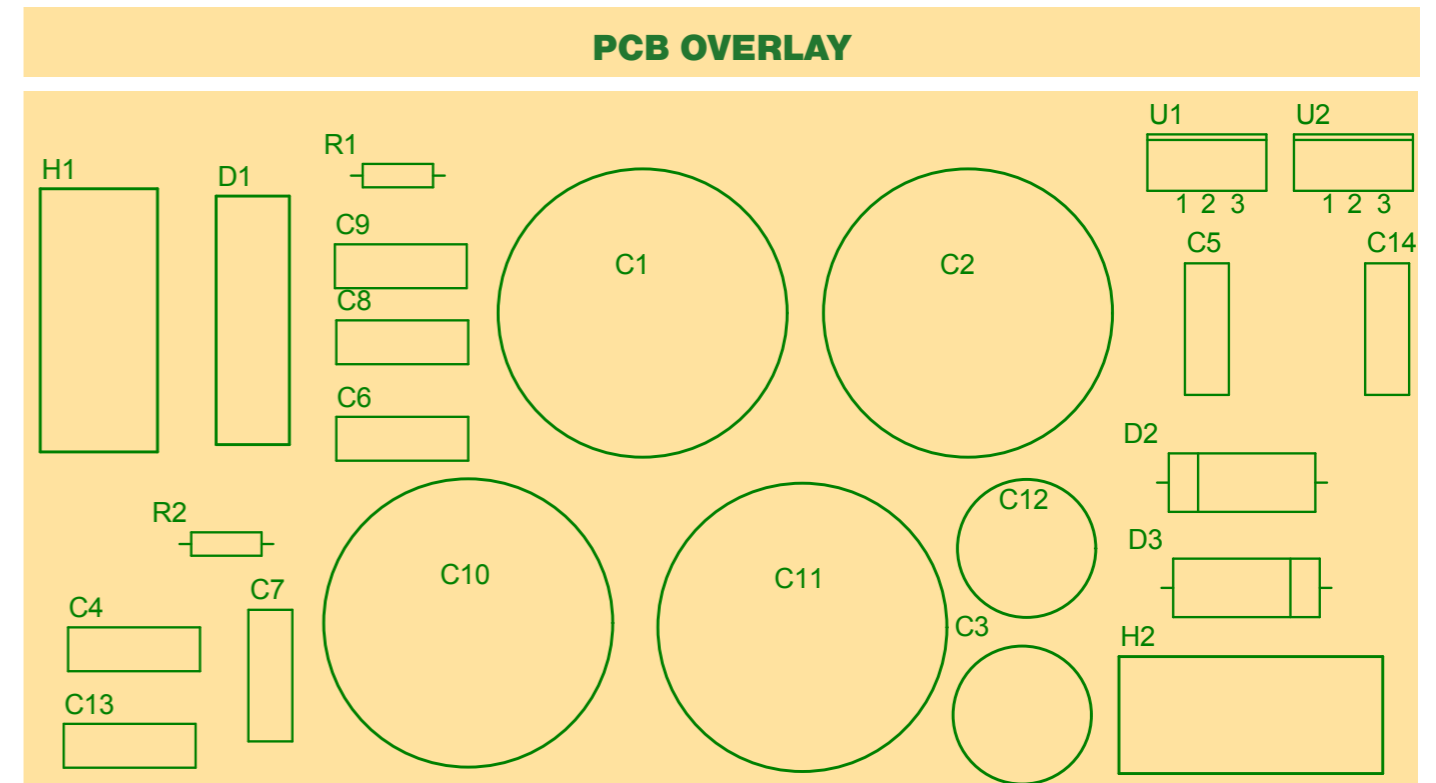
BOTTOM LAYER



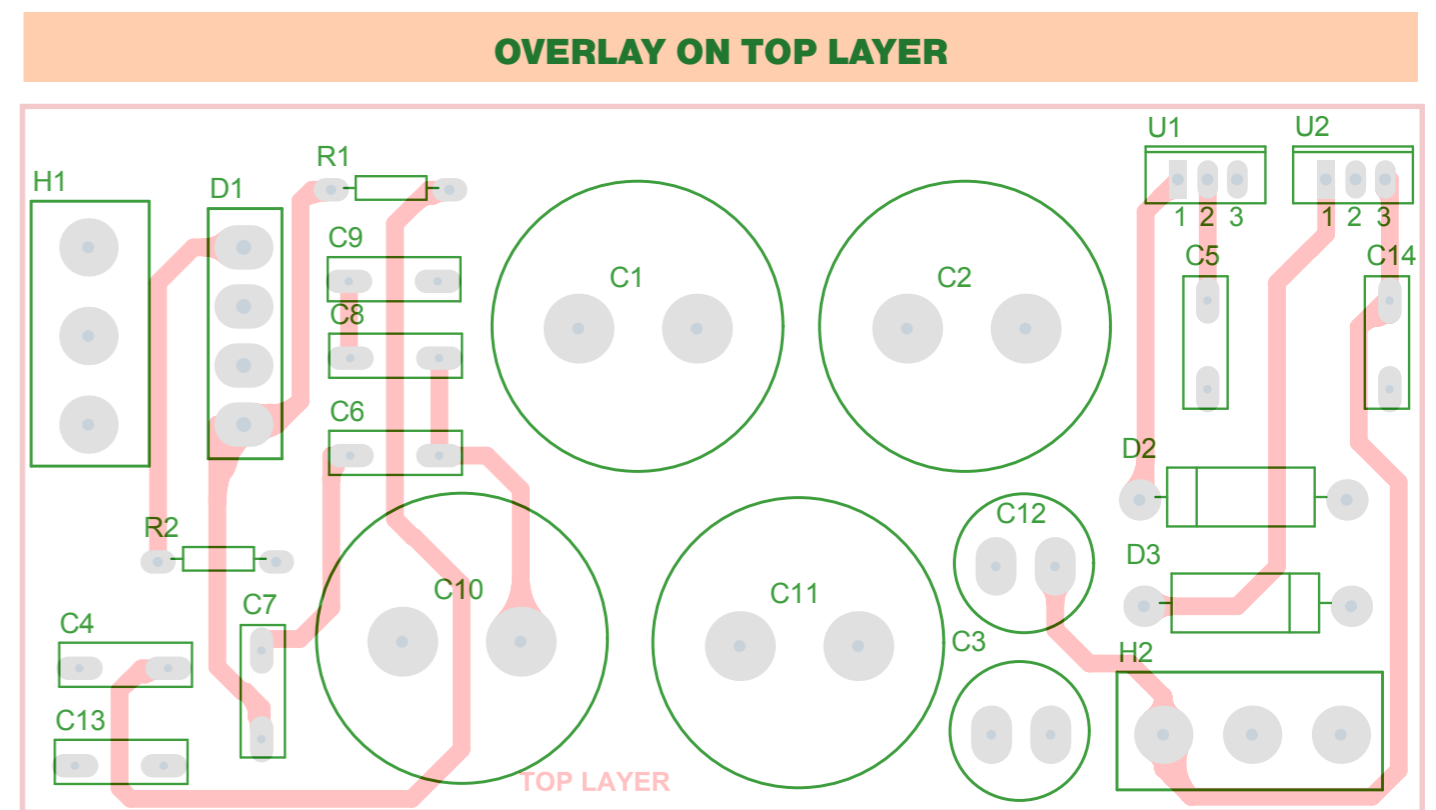
PCB V1

Power Supply by Cosmic
<http://custompcb.blogspot.com/>
<http://diyguitarpa.blogspot.com/>

PCB OVERLAY



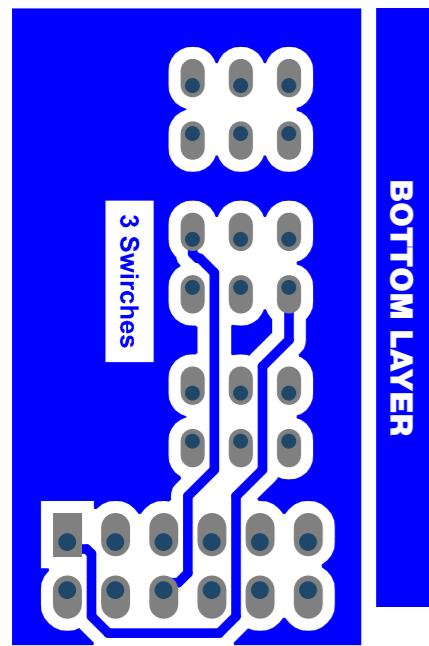
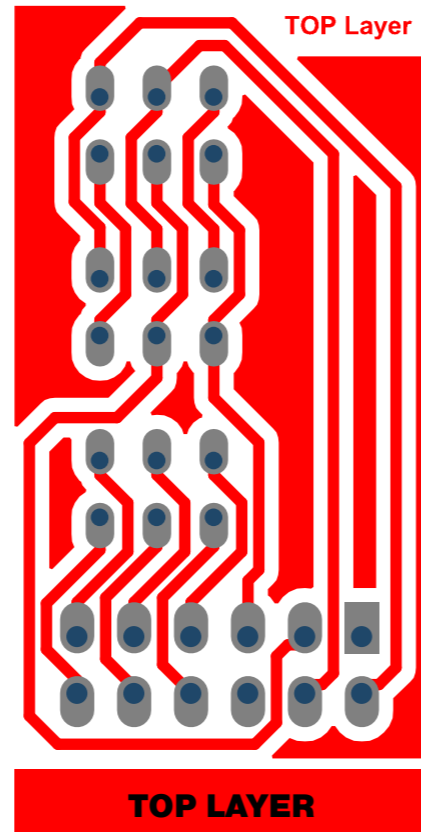
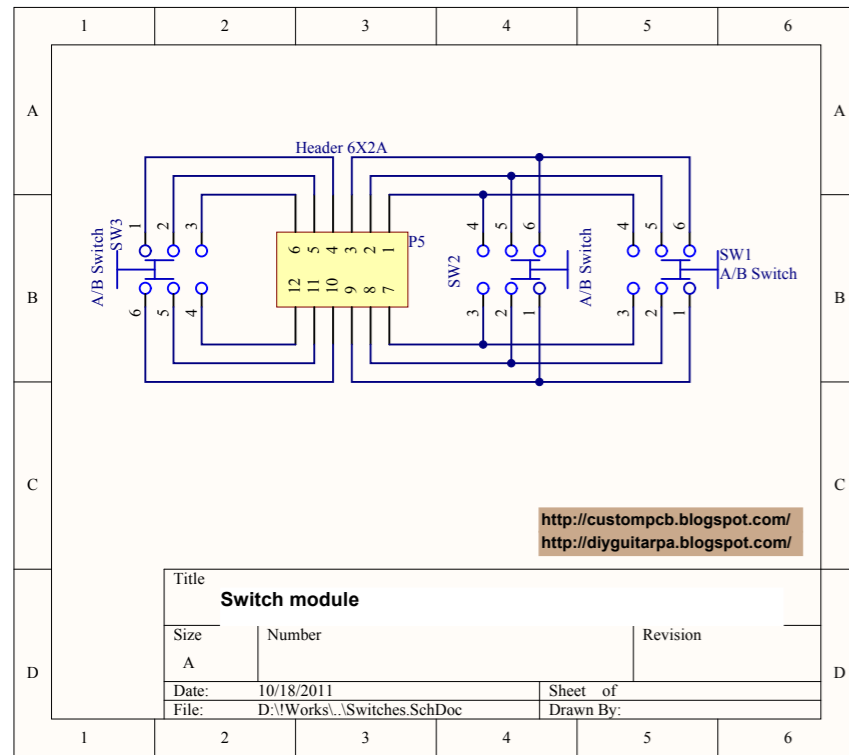
OVERLAY ON TOP LAYER



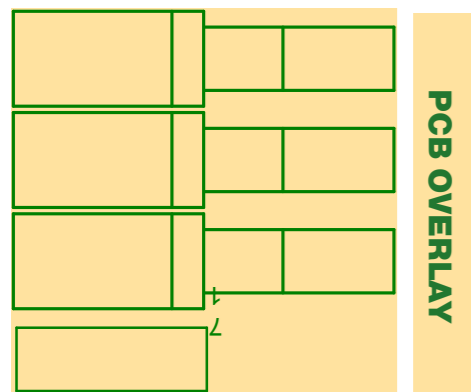
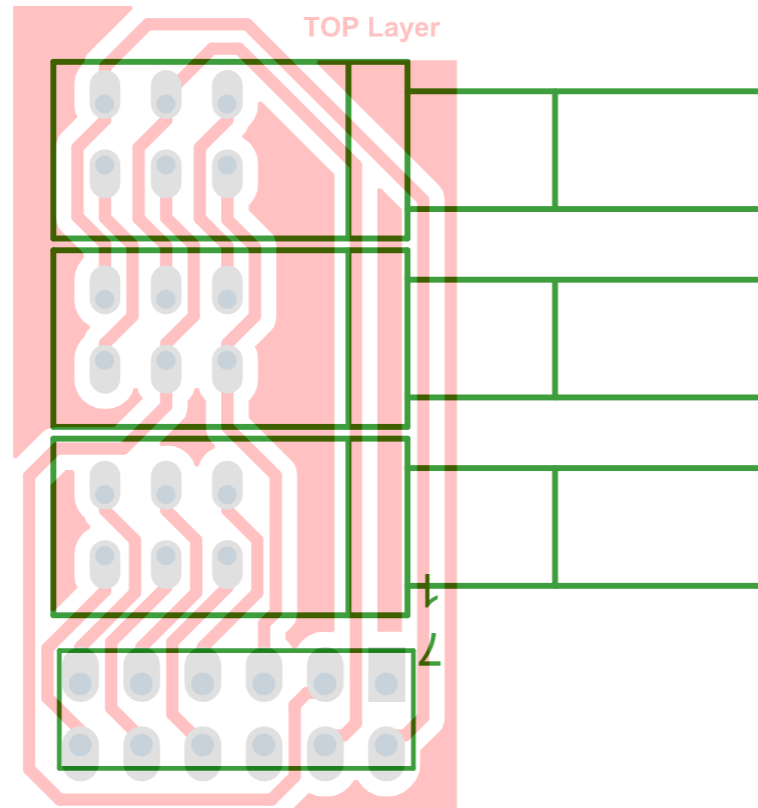
TOP LAYER

PCB for the modular audio mixer

Switch module for preamps

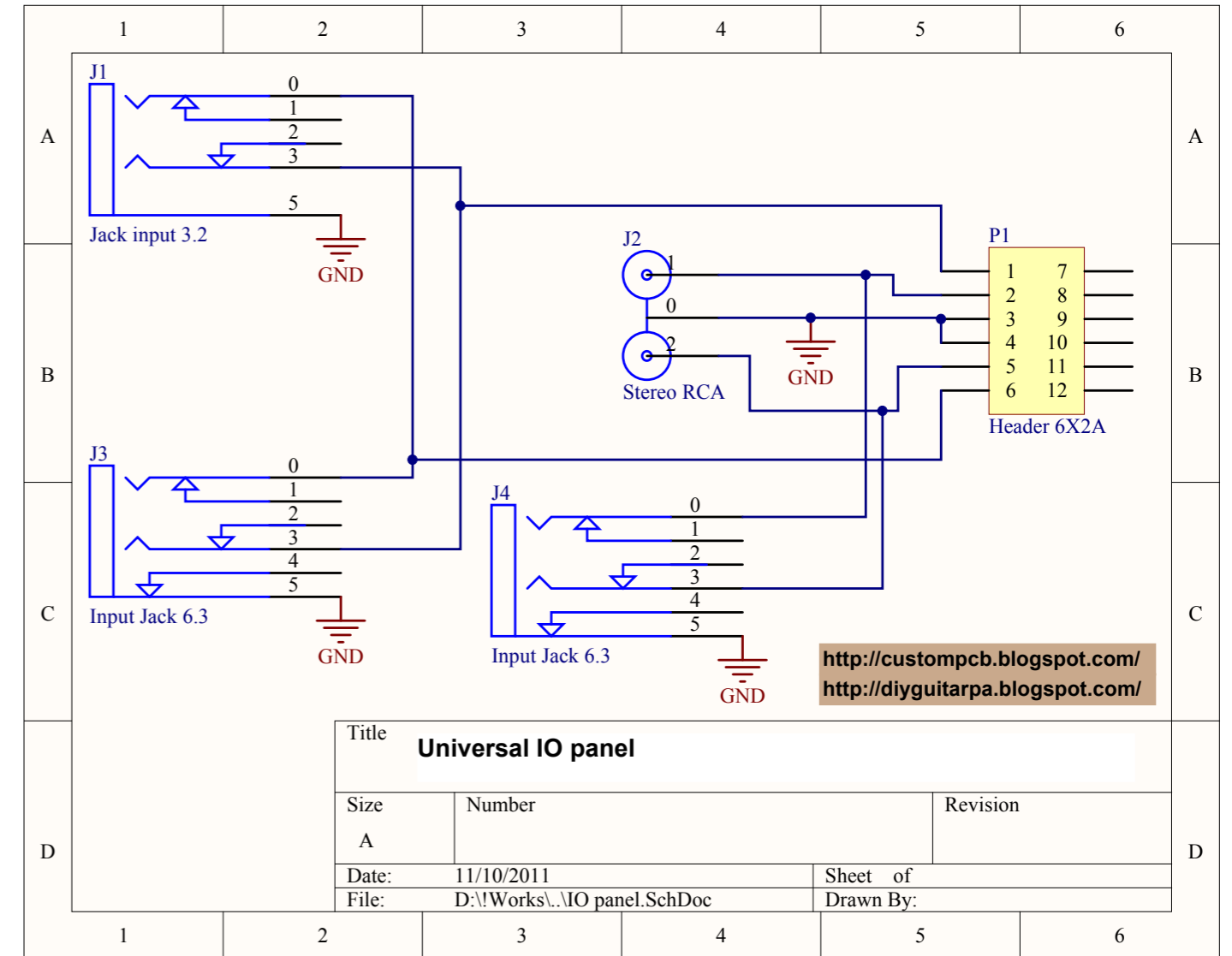


OVERLAY ON TOP LAYER

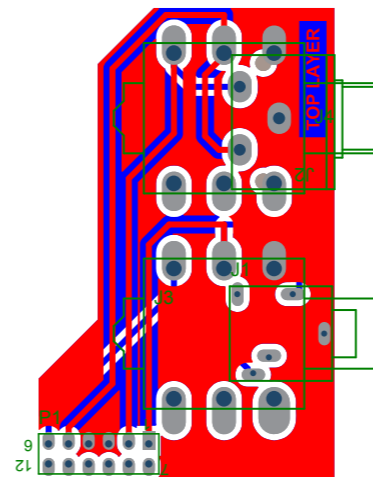


PCB for the modular audio mixer

Variable line output board



| Bill of Materials | | | | Mixer line outputs.PrjPcb | 11/10/2011 | 17:18:23 | | |
|-------------------|------------------|---------|-------|---------------------------|-------------------------|---------------------------------|------|------------|
| Comment | Footprint | mn Name | Error | Quantity | Description | Model:Footprint | Pins | Designator |
| Header 6X2A | HDR2X6_CEN | | | 1 | Header, 6-Pin, Dual row | Connector; Header; 6x2 Position | 12 | P1 |
| Jack input 3.2 | JACK INPUT 3.2 | | | 1 | | | 5 | J1 |
| Input Jack 6.3 | Jack input 6.3 | | | 2 | | | 6 | J3, J4 |
| Stereo RCA | Stereo RCA input | | | 1 | | | 3 | J2 |
| | | | | 5 | | | | |



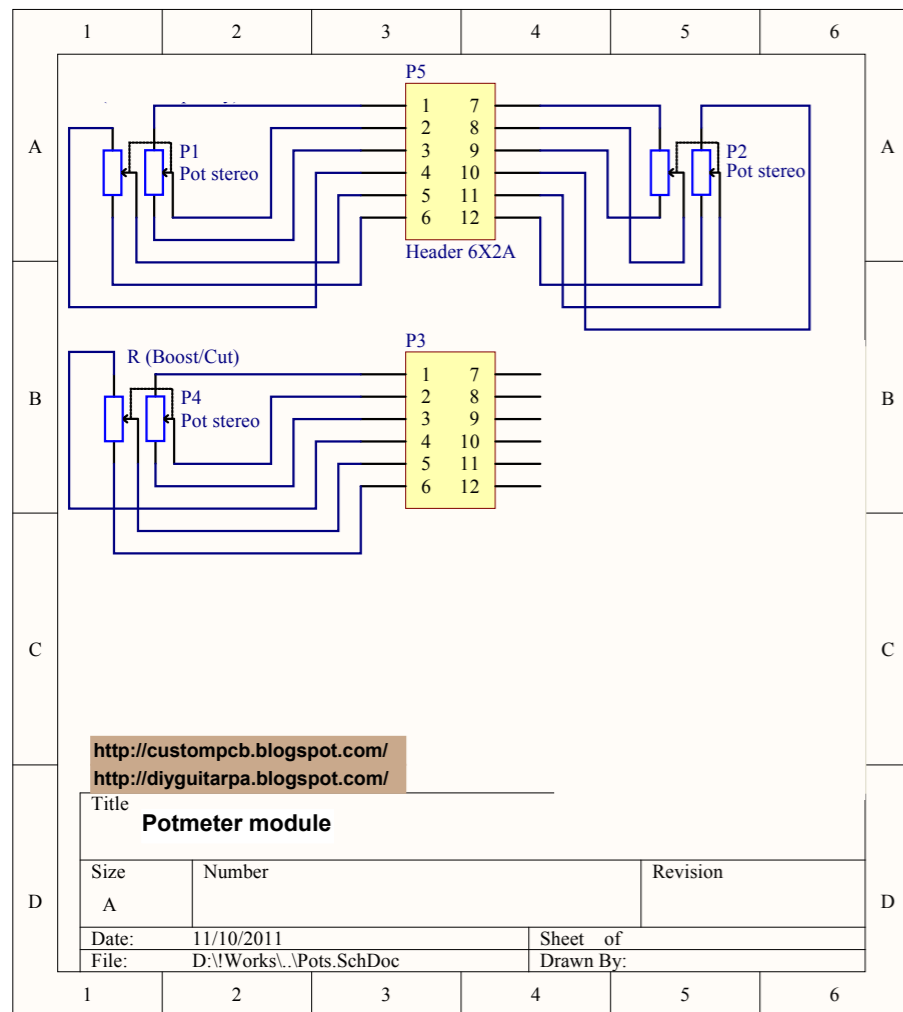
Notes

This is the PCB for line level mixer outputs. Have to be connected to the **last connector** of mixer mainboard. With this board, you have two line outputs wit variations:

- 2 pcs 6.3mm jack
- 1 pcs 6.3mm jack and 1 pcs 3.2mm jack
- 1 pcs 6.3mm jack and 1 pcs stereo RCA
- 1 pcs 3.2mm jack and 1 pcs stereo RCA

PCB for the modular audio mixer

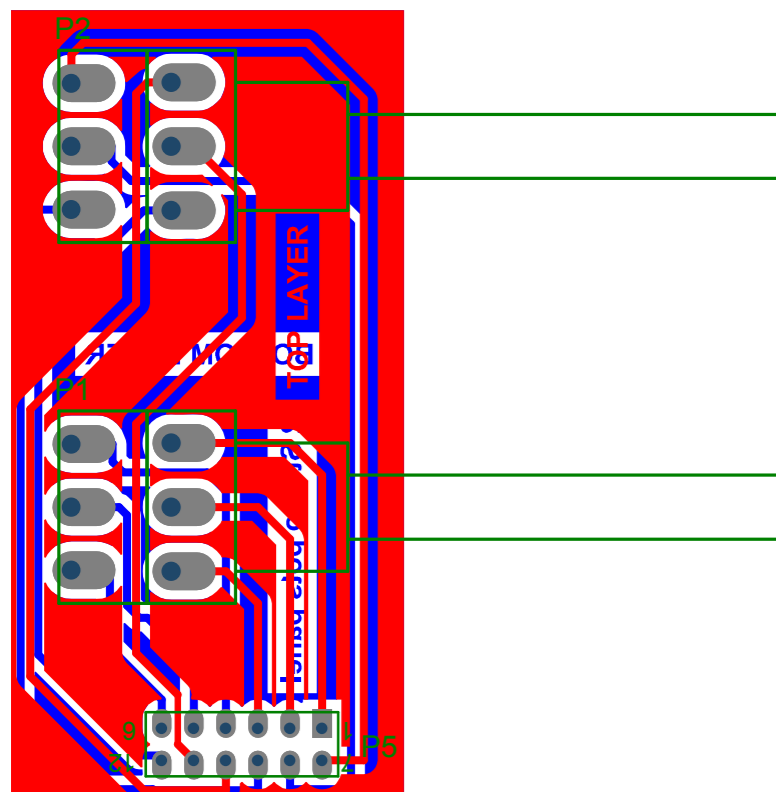
Volume adjustment board



Notes

Board for volume potentiometers, have to be connected to one before the last connector of mixer mainboard. With this solution you can choose:

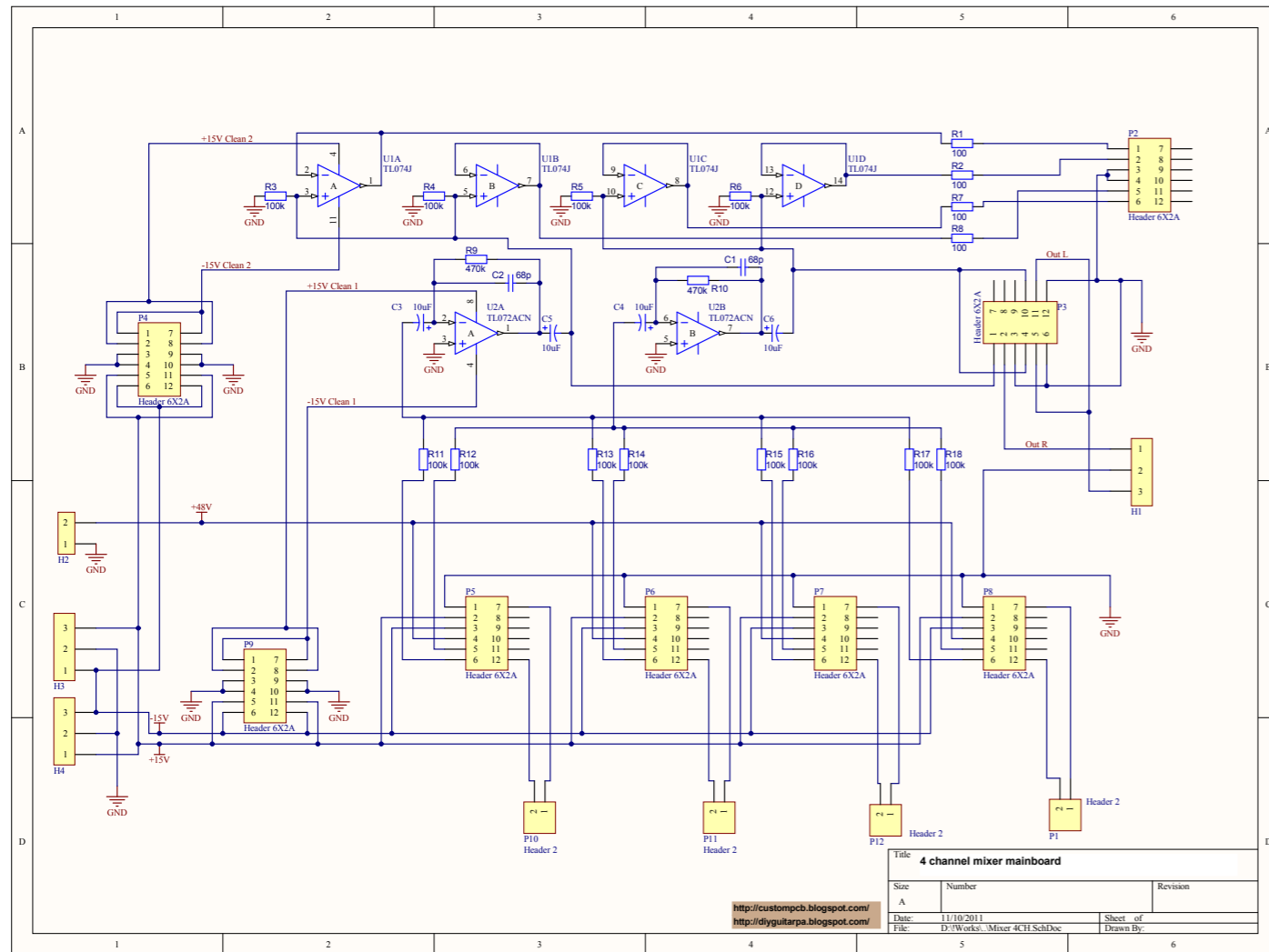
- Use two mono (single) potentiometers
- Use one stereo potentiometer for the volume adjustment of left and right channels.



Mainboards for 4 and 8 channels modular audio mixer

Mainboards of modular audio mixer

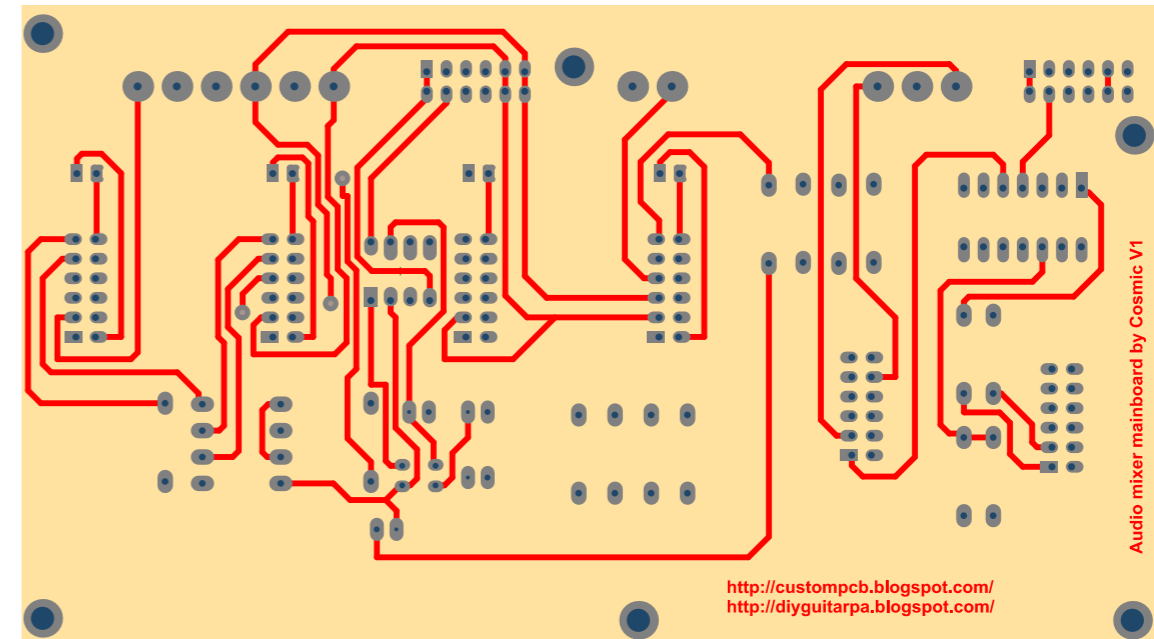
Schematic, BOM and PCB for 4 channel mixer mainboard



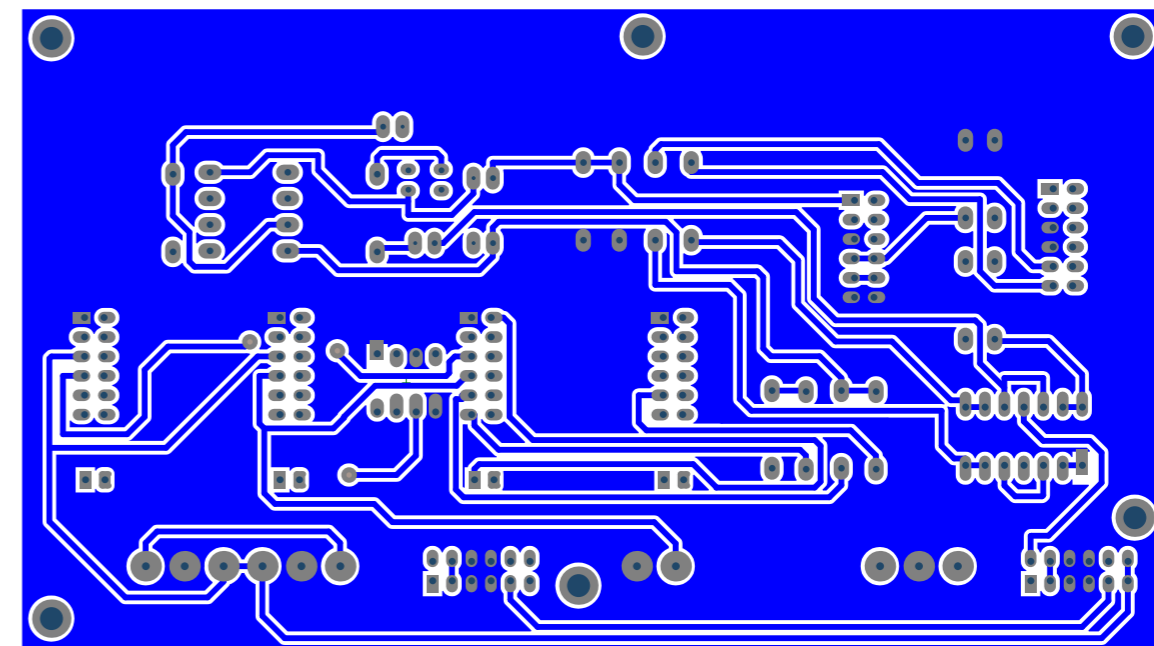
| Bill of Materials | | | 4CH mixer mainboard.PrjPcb | | 11/10/2011 | | 17:26:27 | |
|-------------------|-------------------------------|-------|----------------------------|--|---|------|--|--|
| Comment | Footprint | Value | Quantity | Description | Model:Footprint | Pins | Designator | |
| Res2 | AXIAL-0.4 | 100 | 4 | Resistor | Resistor; 2 Leads | 2 | R1, R2, R7, R8 | |
| Res2 | AXIAL-0.4 | 100k | 12 | Resistor | Resistor; 2 Leads | 2 | R3, R4, R5, R6, R11, R12, R13, R14, R15, R16, R17, R18 | |
| Res2 | AXIAL-0.4 | 470k | 2 | Resistor | Resistor; 2 Leads | 2 | R9, R10 | |
| Cap | CAP, Ceramic, 1MIL | 68p | 2 | Capacitor | | 2 | C1, C2 | |
| Cap Pol1 | Cap, Tantal, 1mil | 10uF | 4 | Polarized Capacitor (Radial) | | 2 | C3, C4, C5, C6 | |
| TL072ACN | dip-8 | | 1 | Low-Noise JFET Dual Operational Amplifier | DIP; 8 Leads; Row Spacing 7.62 mm; Pitch 2.54 mm | 8 | U2 | |
| Header 2 | HDR1X2 | | 4 | Header, 2-Pin | Connector; Header; 2 Position | 2 | P1, P10, P11, P12 | |
| Header 6X2A | HDR2X6_CEN | | 8 | Header, 6-Pin, Dual row | Connector; Header; 6x2 Position | 12 | P2, P3, P4, P5, P6, P7, P8, P9 | |
| TL074J | J014 | | 1 | Low-Noise JFET-Input Operational Amplifier | DIP; 14 Leads; Row Spacing 7.62 mm; Pitch 2.54 mm | 14 | U1 | |
| Connector | Panel Connector 2 input Small | | 1 | | | 2 | H2 | |
| Connector | Panel Connector 3 input Small | | 3 | | | 3 | H1, H3, H4 | |
| | | | 42 | | | | | |

Notes

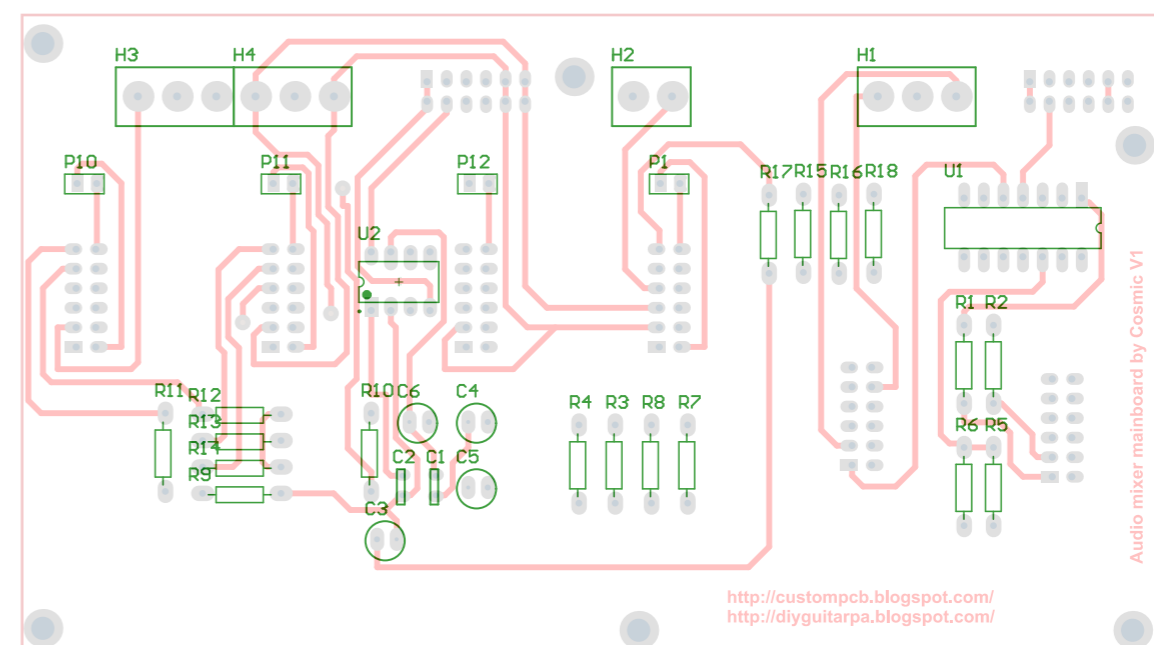
You can find two different mainboard in this project. The difference is the number of maximum input channels only. The smallest board have 4 input channels and two 12 pins header for outputs: one for line output, one for volume adjustment. The bigger PCB have maximum 8 input channels, and two output connectors for volume and line outputs. To the input channels have to be connected modular preamplifiers. All preamplifiers compatible with all input connectors. The last input connector of these boards have to be connected the line output board, and before this board have to be connected the potentiometers for volume adjustment.



TOP LAYER



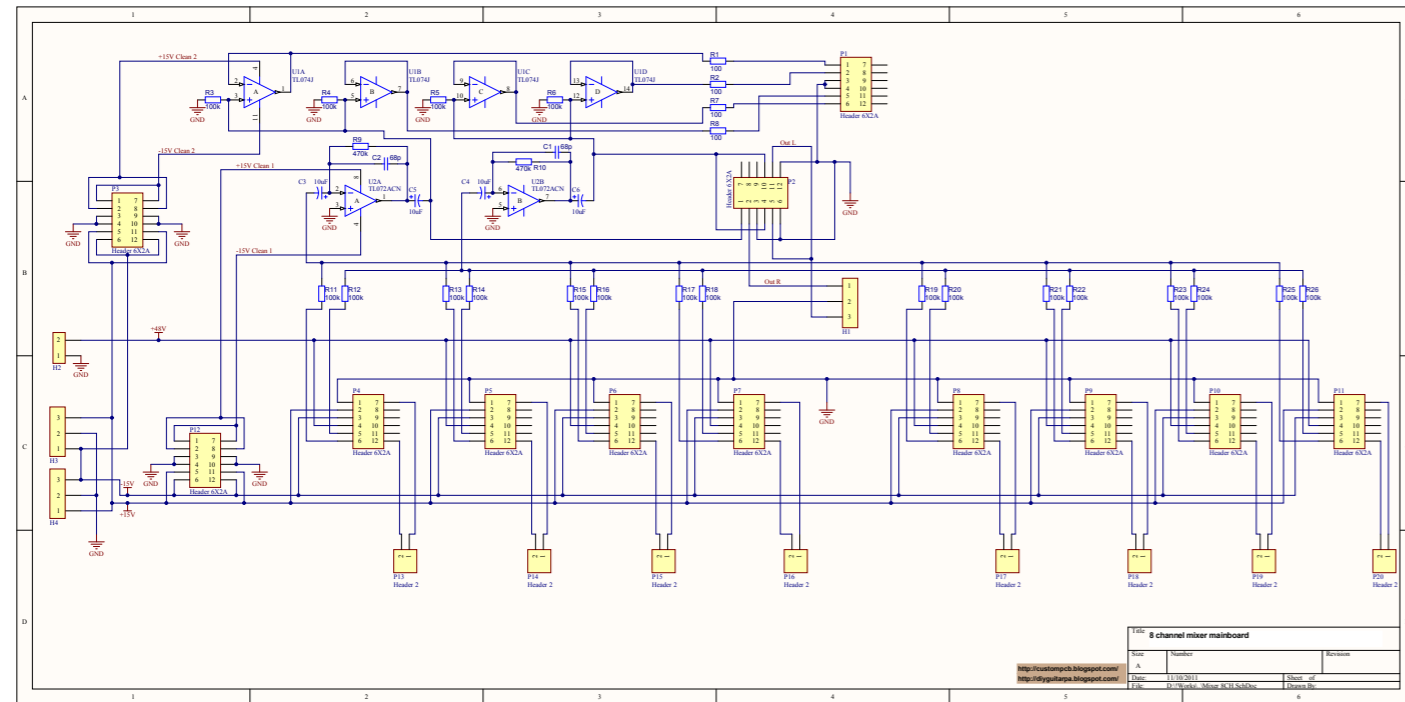
BOTTOM LAYER



OVERLAY ON TOP LAYER

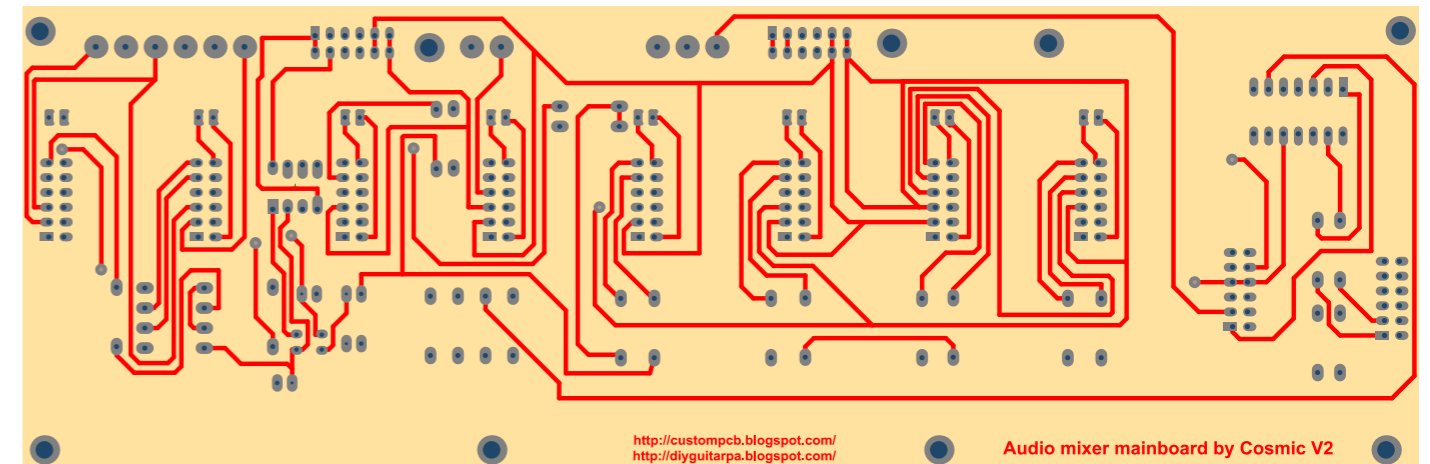
Mainboards of modular audio mixer

Schematic, BOM and PCB for 8 channel mixer mainboard



| Bill of Materials | | | | 8CH mixer mainboard.PrjPcb | 11/10/2011 | 17:27:59 | |
|-------------------|-------------------------------|-------|-----------|--|---|----------|---|
| Comment | Footprint | Value | Quantity | Description | Model:Footprint | Pins | Designator |
| Header 2 | 2 pin connector 100mil | | 8 | Header, 2-Pin | | 2 | P13, P14, P15, P16, P17, P18, P19, P20 |
| Res2 | AXIAL-0.4 | 100 | 4 | Resistor | Resistor; 2 Leads | 2 | R1, R2, R7, R8 |
| Res2 | AXIAL-0.4 | 100k | 20 | Resistor | Resistor; 2 Leads | 2 | |
| Res2 | AXIAL-0.4 | 470k | 2 | Resistor | Resistor; 2 Leads | 2 | R9, R10 |
| Cap | CAP, Ceramic, 1MIL | 68p | 2 | Capacitor | | 2 | C1, C2 |
| Cap Pol1 | Cap, Tantal, 1mil | 10uF | 4 | Polarized Capacitor (Radial) | | 2 | C3, C4, C5, C6 |
| TLO72ACN | dip-8 | | 1 | Low-Noise J-FET Dual Operational Amplifier | DIP; 8 Leads; Row Spacing 7.62 mm; Pitch 2.54 mm | 8 | U2 |
| Header 6X2A | HDR2X6_CEN | | 12 | Header, 6-Pin, Dual row | Connector; Header; 6x2 Position | 12 | P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11, P12 |
| TLO74J | J014 | | 1 | Low-Noise JFET-Input Operational Amplifier | DIP; 14 Leads; Row Spacing 7.62 mm; Pitch 2.54 mm | 14 | U1 |
| Connector | Panel Connector 2 input Small | | 1 | | | 2 | H2 |
| Connector | Panel Connector 3 input Small | | 3 | | | 3 | H1, H3, H4 |
| | | | 58 | | | | |

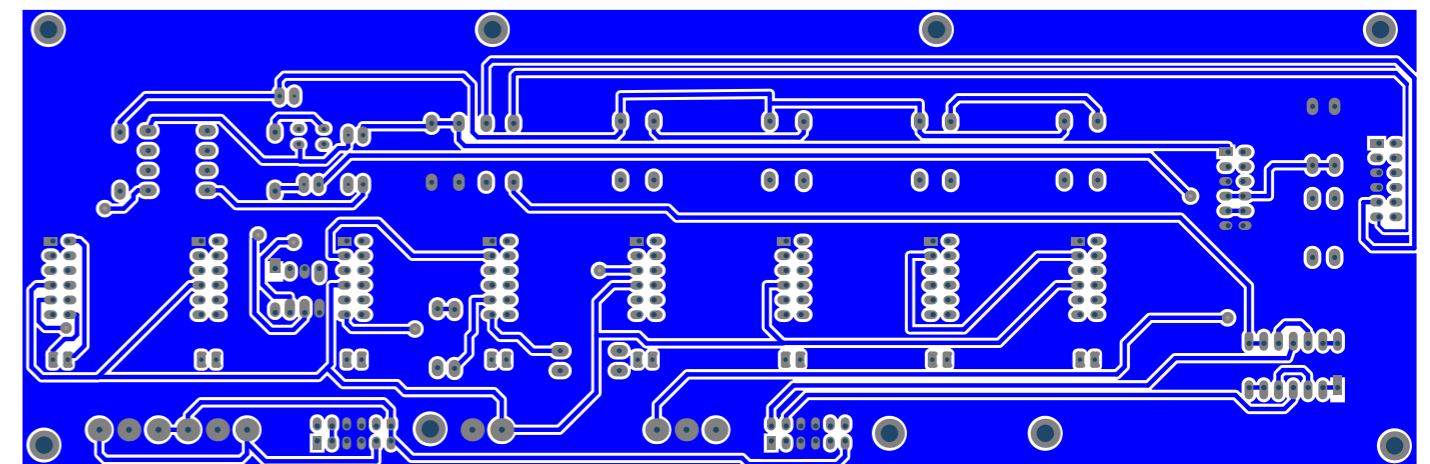
TOP LAYER



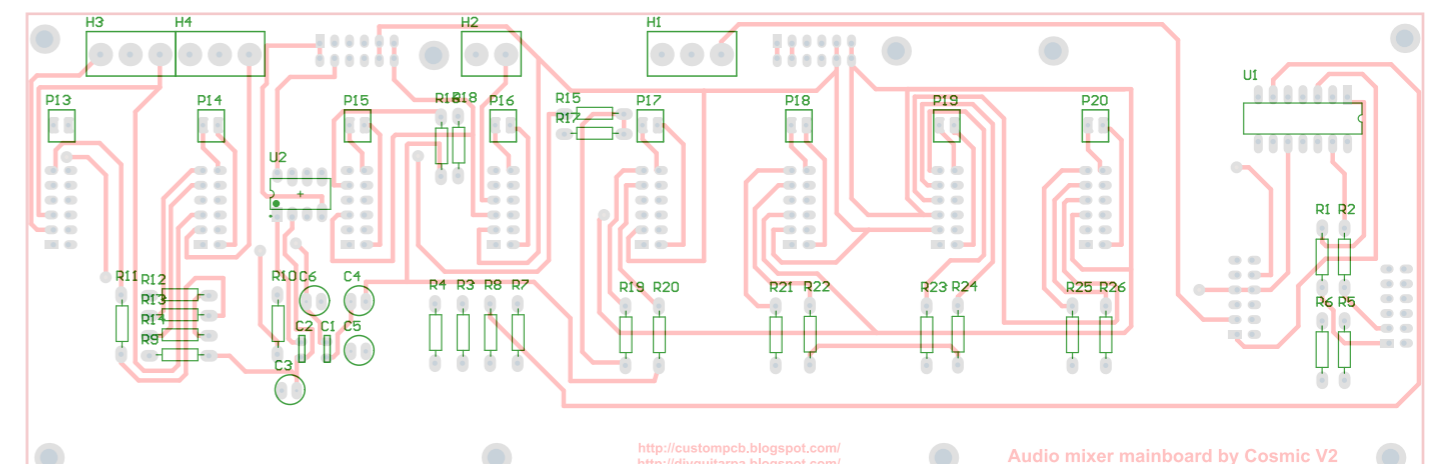
<http://custompcb.blogspot.com/>
<http://diyguitarpa.blogspot.com/>

Audio mixer mainboard by Cosmic V2

BOTTOM LAYER



OVERLAY ON TOP LAYER



<http://custompcb.blogspot.com/>
<http://diyguitarpa.blogspot.com/>

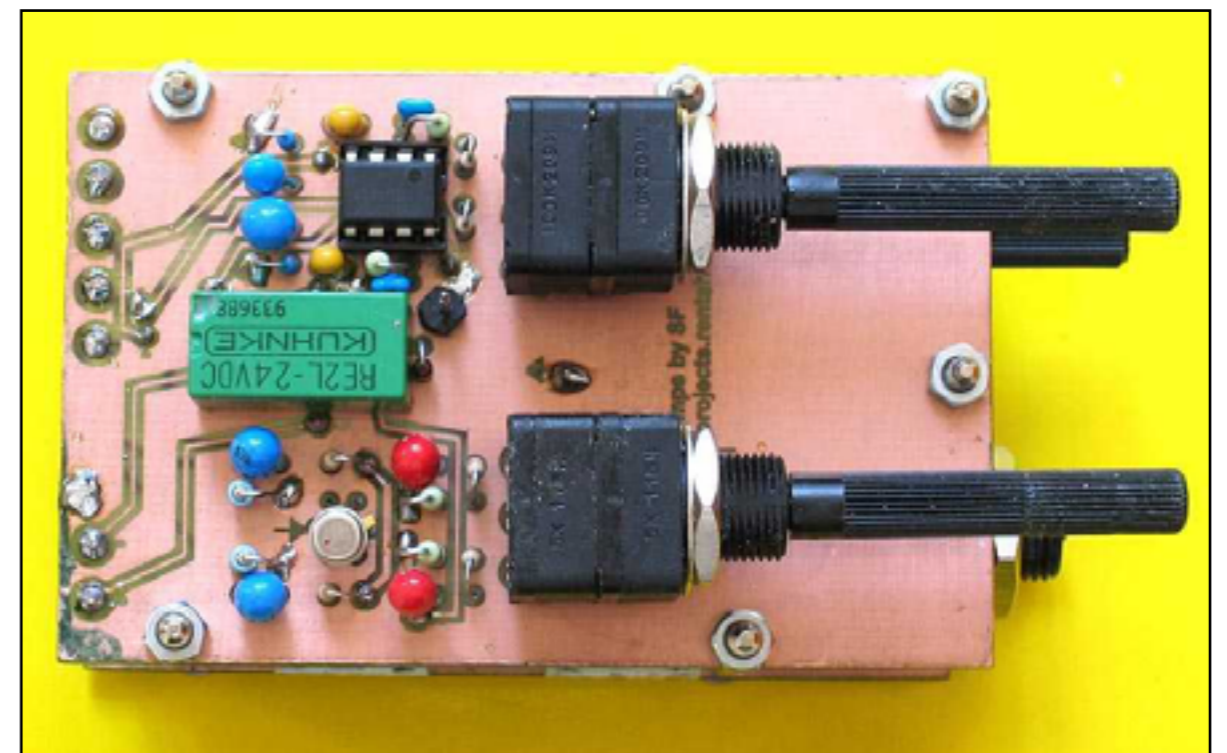
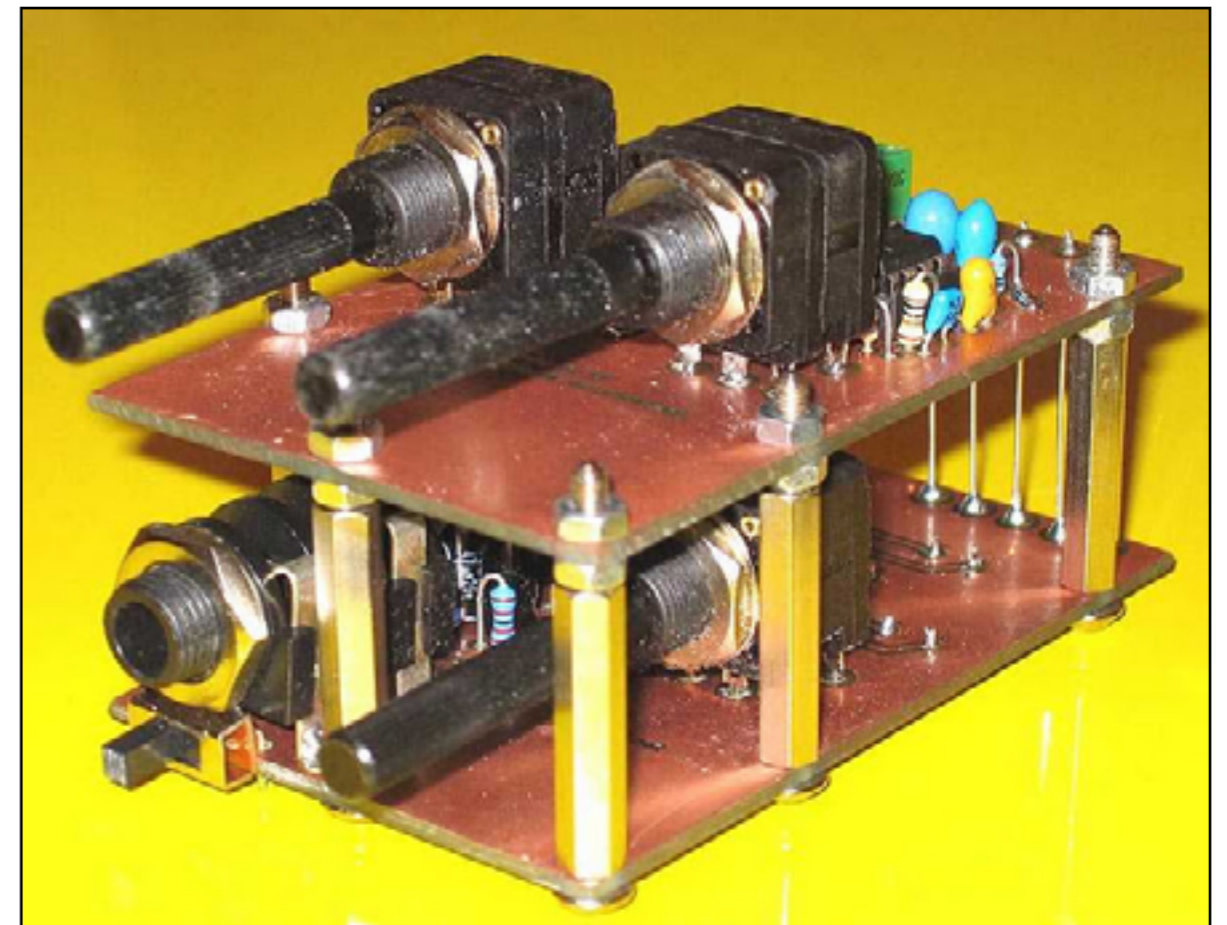
Audio mixer mainboard by Cosmic V2

Images and Picasa galleries about the prototype of preamps

Images about the prototypes of this preamp project

The selectable prototype of jFET and OpAmp projects

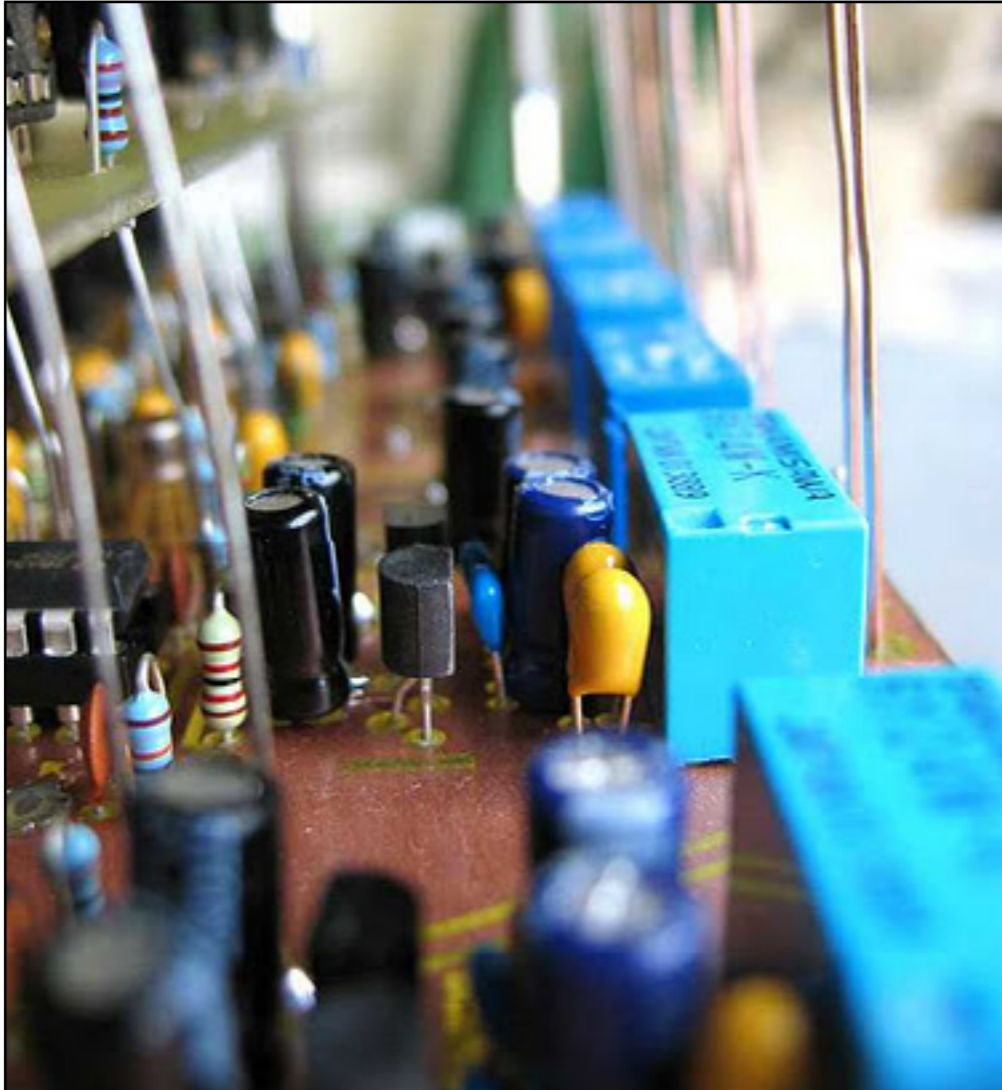
[The Picasa gallery about this circuit](#)



Images about the prototypes of this preamp project

Audio mixer with jFET and OpAmp preamps

[The Picasa gallery about this circuit](#)

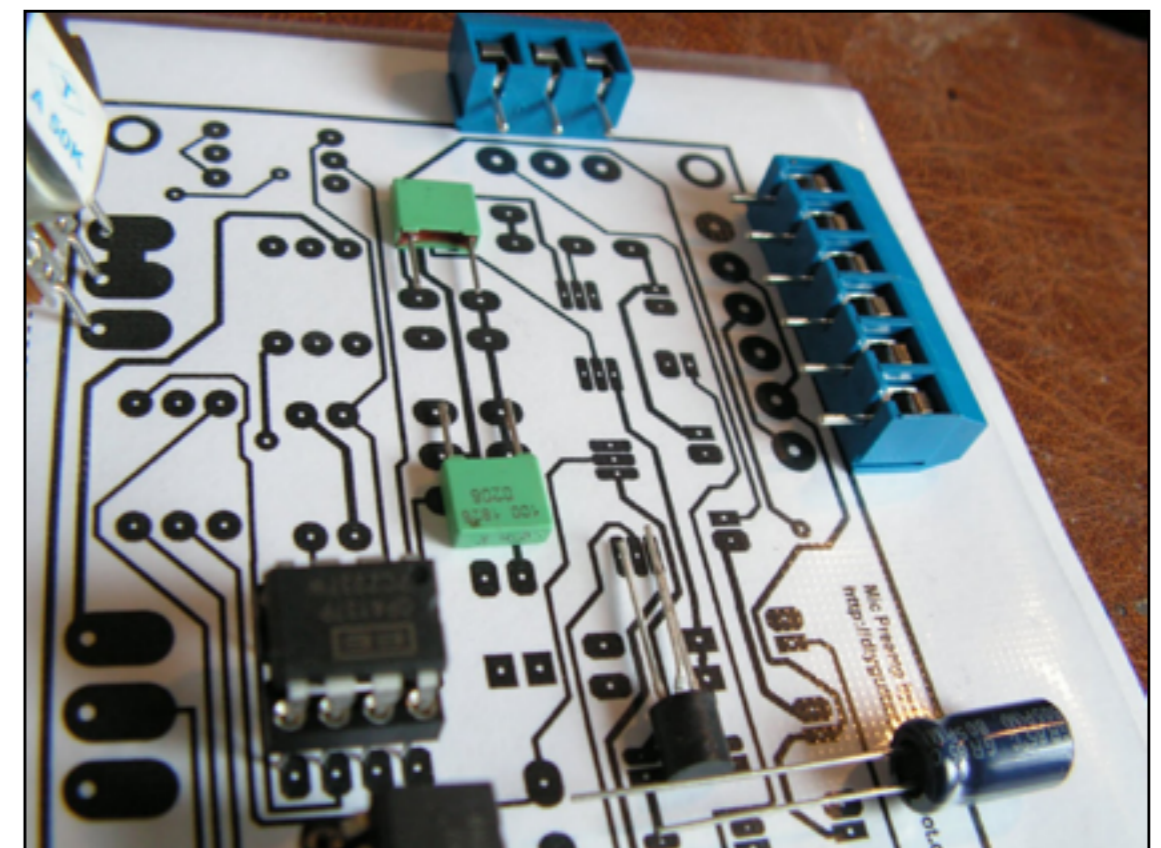
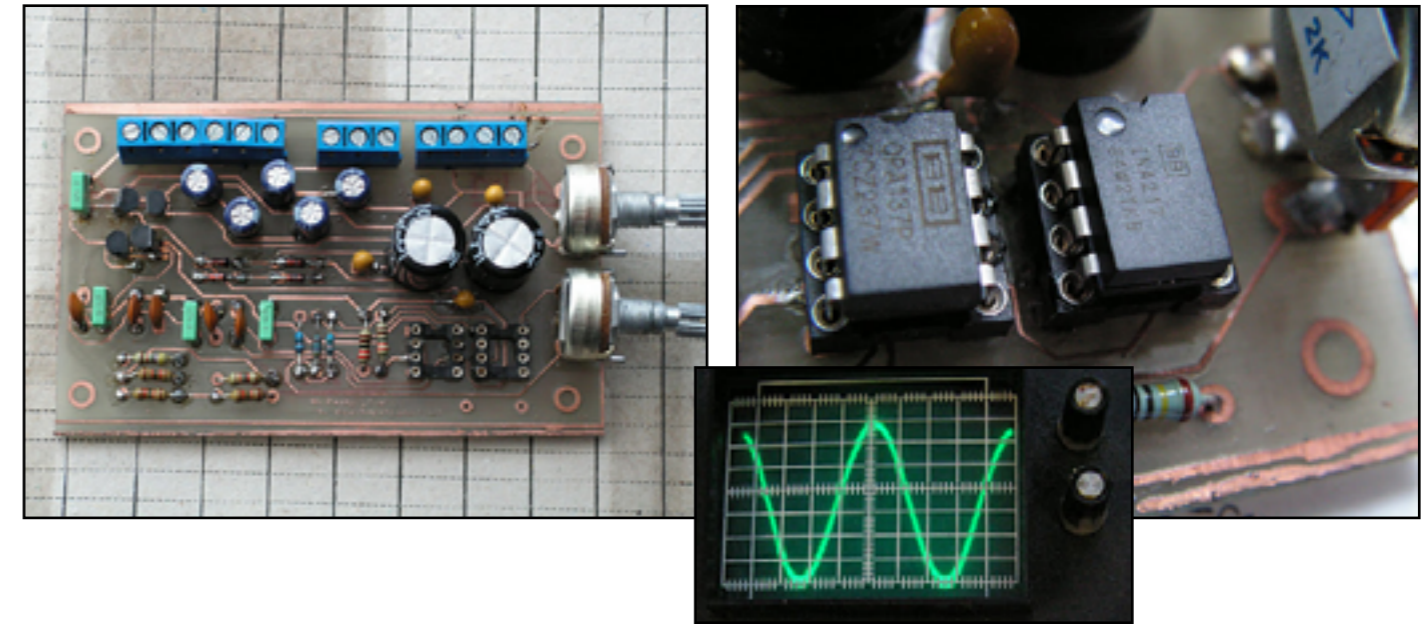


Images about the prototypes of this preamp project

Microphone preamp with INA217

The Picasa galleries about this circuit:

- [Planning and collecting parts](#)
- [Images about the prototype](#)
- [Testing the INA217 board](#)



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Hungarian blog and PCB order: <http://diygitarpa.blogspot.com/>
[The Youtube Channel](#) • [Picasa gallery](#) • Email: gitarfogas@gmail.com