Modular Audio Mixer for 4...8 channels
This project is similar to my “Preamplifier-project”, but the preamplifiers must be connected to the mainboard of mixer. The preamplifiers in this project work 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:

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Schematics and Bill of Materials for modular audio mixer project

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3 - Modular audio mixer for 4 and 8 channel inputs
Schematics and Bill of materials for modular mixer
Schematic and BOM of cheap microphone preamp

The Picasa album about prototype testing

Bill of Materials

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 unbalanced/balanced converter. 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 2x0 pin male “L” header.
Schematics and Bill of materials for modular mixer
Stereo jFET guitar (instrument, effect) preamp

Bill of Materials

<table>
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<tr>
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<th>Quantity</th>
<th>Price</th>
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<td>C6</td>
<td>10uF</td>
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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 devices 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

Bill of Materials

<table>
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<tr>
<td>C6</td>
<td>10uF</td>
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</table>

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 preamplifier, 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

<table>
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<tr>
<th>Order#</th>
<th>Footprint</th>
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<td>1007</td>
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<td>Resistor Axial Device, Thru-Hole; 2 Leads; 0.4 in Pin Spacing</td>
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</table>

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

<table>
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</tbody>
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Document last modified and saved: 11 November 2011 10:29 AM
Schematics and Bill of materials for modular mixer
Schematic and BOM of power supply

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 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.

Bill of Materials

<table>
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<tr>
<th>Comment</th>
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</table>

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 INA217 microphone preamp
PCB for the modular audio mixer
Top and bottom PCBs and overlay of simple dual OpAmp preamp
PCB for the modular audio mixer
Two single OpAmp - stereo low noise universal preamp

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 for the modular audio mixer
Top and bottom PCBs and overlay of power filters (ver.2)

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 for the modular audio mixer
Top and bottom PCBs and overlay of power filters (ver.1)

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 for the modular audio mixer

The PCB of power supply
PCB for the modular audio mixer
Switch module for preamps

http://custompcb.blogspot.com/
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Switch module

PCB for the modular audio mixer
Variable line output board

Title: Universal IO panel

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

Bill of Materials

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<td>$0.00</td>
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</tr>
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</table>

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 with 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
Module audio mixer for 4 and 8 channel inputs

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.

Potmeter module

Title

<table>
<thead>
<tr>
<th>Title</th>
<th>Number</th>
<th>Revision</th>
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</thead>
<tbody>
<tr>
<td>Potmeter module</td>
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</tbody>
</table>

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

This schematic is the part of parametric EQ projects. These projects are clones of UREI 545 and 546 EQ-s. The value of adjustable resistors are depending on the function of EQ module. This module required the mainboard made for UREI 545 or 546 clones.

Resistor values for UREI 546 clone:
- Low cut and high cut: 55k stereo (P4)
- Bandwidth (Q): 10k mono (P2)
- Frequency: 55k stereo (P1)
- Boost/Cut: 10k mono (P4)

Resistor values for UREI 545 clone:
- Low cut and high cut: 50k stereo (P4)
- Bandwidth (Q): 10k mono (P2)
- Frequency: 10k stereo (P1)
- Boost/Cut: 10k mono (P4)

For both:
- Output module gain: 5k mono (P4)

Mainboards for 4 and 8 channels
modular audio mixer
You can find two different mainboards 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.

Notes
Mainboards of modular audio mixer
Schematic, BOM and PCB for 8 channel mixer mainboard
Images and Picasa galleries about the prototype of preamps
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