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2NV-RACK

ASSEMBLY GUIDE

REV: 1:00



QUICK ASSEMBLY GUIDE

5 STEPS TO MIC PRE & EQ HEAVEN!

- 1. Solder parts on PCBs**
- 2. Wire sockets**
- 3. Place PCBs in metal work**
- 4. Initial test**
- 5. Attach face plates & knobs**

Ready for 2NV units!

Frequently Asked Questions (FAQ)

Q. *Is there a schematic that would be useful?*

A. Schematics for the build can be found here: [Schematics](#)
PCB designations reference this.

Q. *How can I power the unit?*

A. As standard, there is an internal power-supply in the 2NV-Rack. Simply connect a 24VAC power brick, and that's it. Alternatively you can power it via the +24V or -24V rail of your 51X lunchbox.

Q. *How do I set up the unit to use +24V of my 51X lunchbox?*

A. Refer to page 7

Q. *How do I set up the unit to use -24V of my 51X lunchbox?*

A. Refer to page 7

Q. *Who can build this?*

A. You!

As long as you have patience and are thorough in your work, anyone can build these units. There's lots of support and information and it is tried and tested. There is very little off board wiring too.

1. Solder parts on PCBs

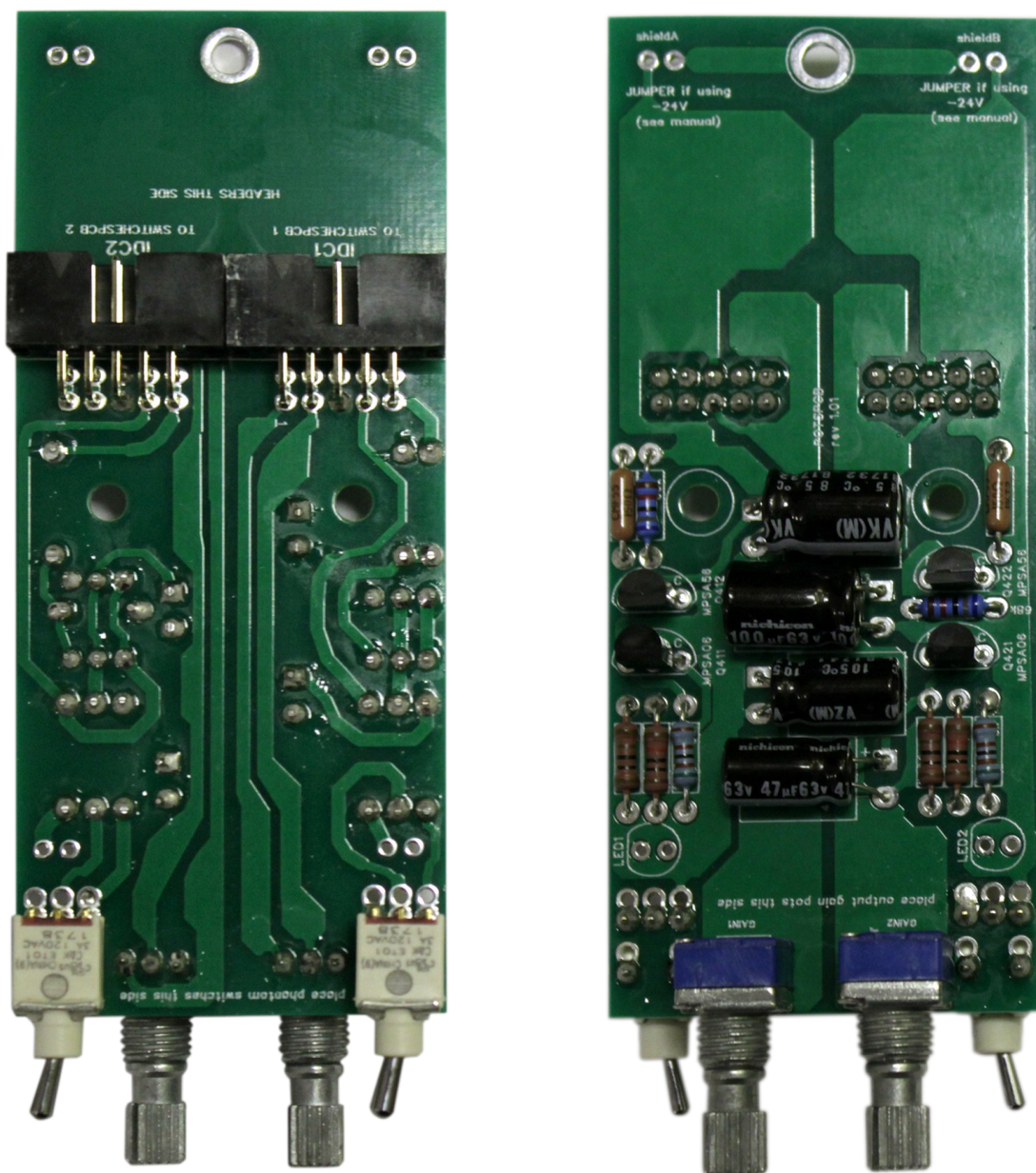
Insert all parts on to the PCB as marked on the silkscreen.

Silkscreens can be downloaded here: [silkscreens](#)

GENERAL TIPS:

- Start with smaller parts (resistors etc.) and work up to the larger parts (caps etc.)
- Leave the LEDs until the end, to align with the front panel

The Pots PCB will end up looking like this:

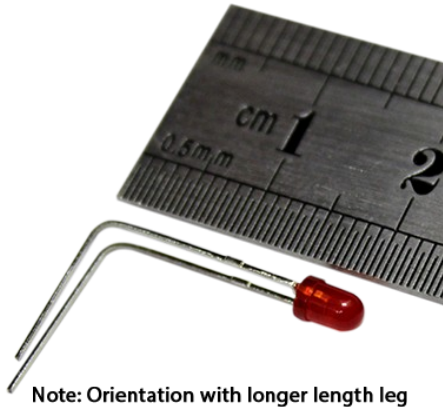


Pots:



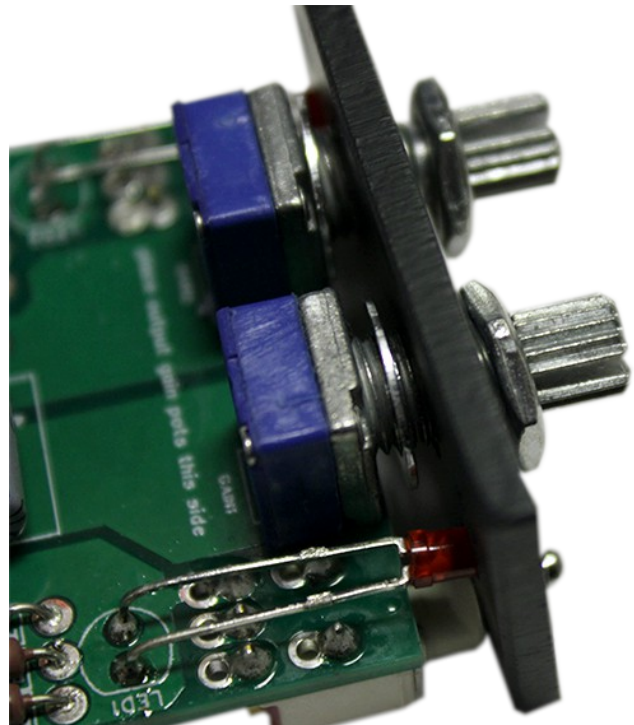
For the pots, you can break off the tabs with side cutters.

For the LEDs:

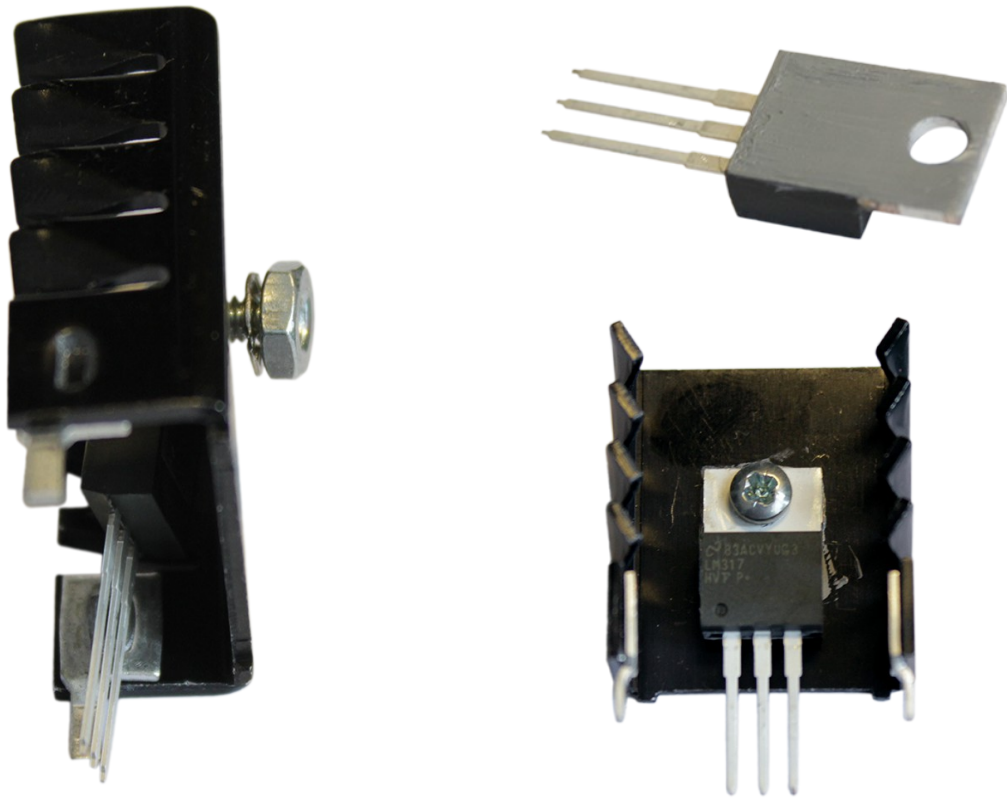


Note: Orientation with longer length leg

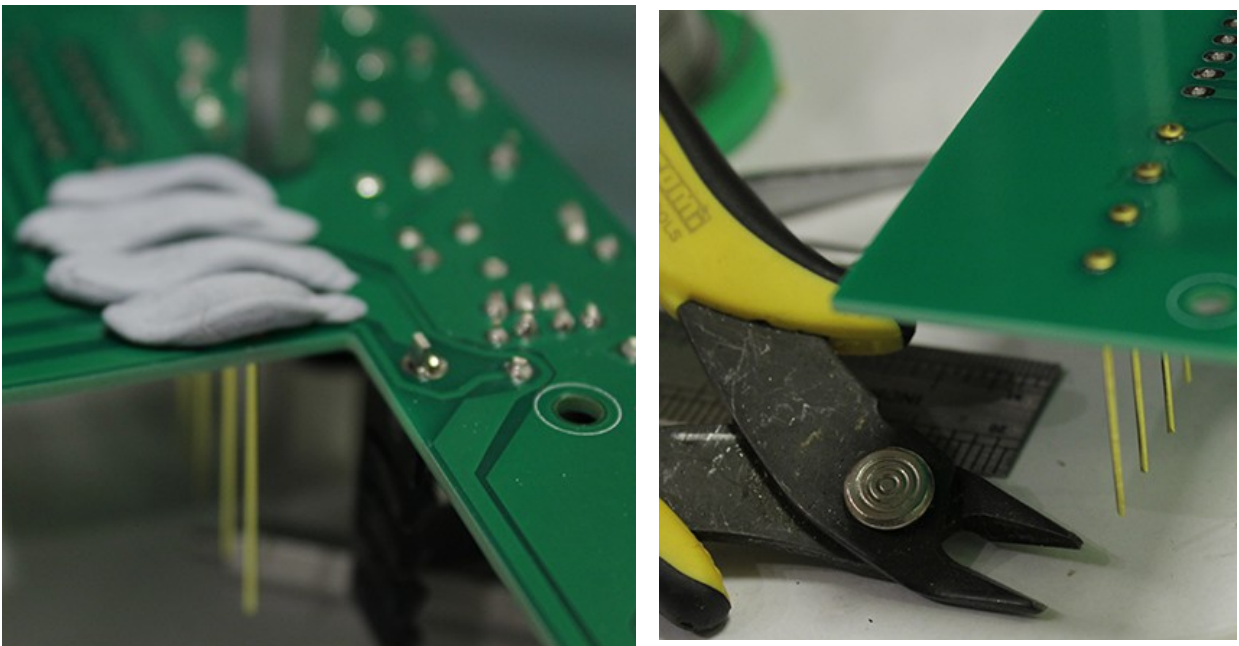
Note the shorter leg is the cathode and must go in the hole with the “flat” side of the PCB silkscreen.



For the heatsinks, you can put a little thermal paste to help with heat, but not necessary. However, if you have some left over CPU thermal paste, it helps. Be sure to tighten thoroughly to help with heat transfer. You will use a lockwasher to help with a secure bond.



For the PCB pins, you can use blue tack to hold them in place whilst soldering.



Later on we can cut to length by aligning with the MAIN PCB, to see where to cut.

Powering options:

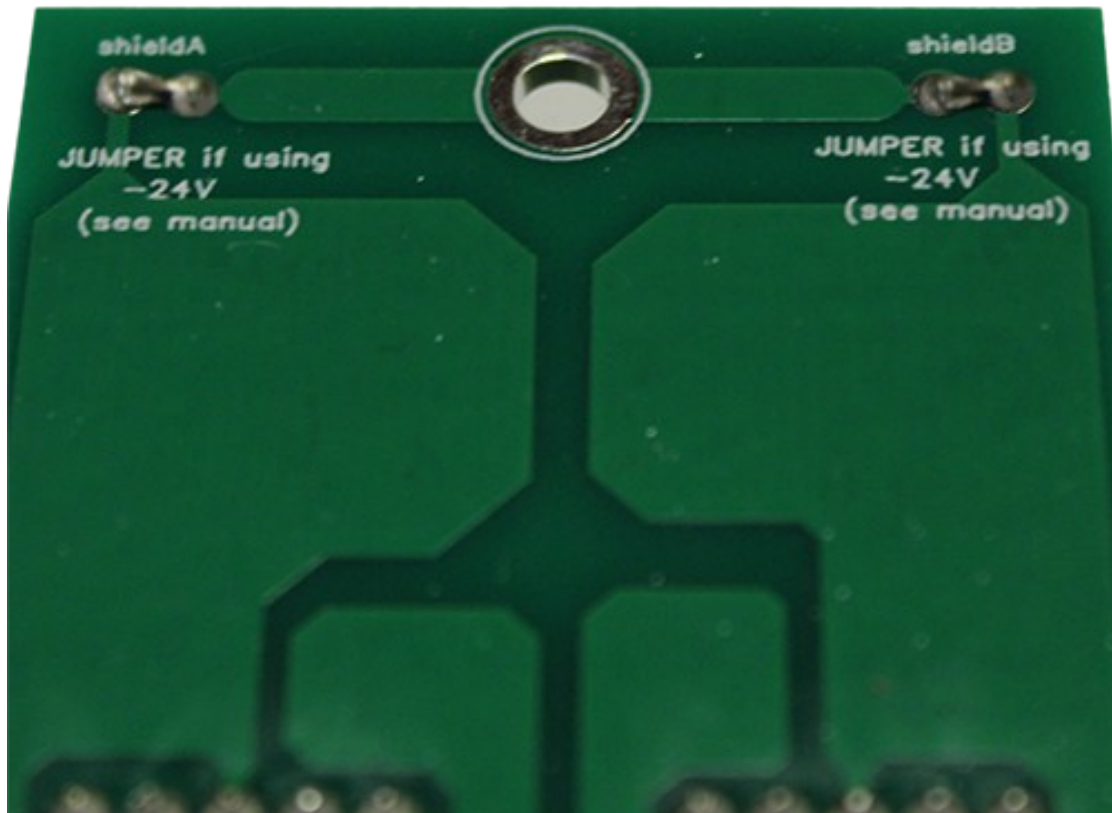
There are 3 powering options possible with the 2NV units.

- Internal +24V PSU of 2NV-Rack
- +24V rail of your 51X lunchbox
- -24V rail of your 51X lunchbox

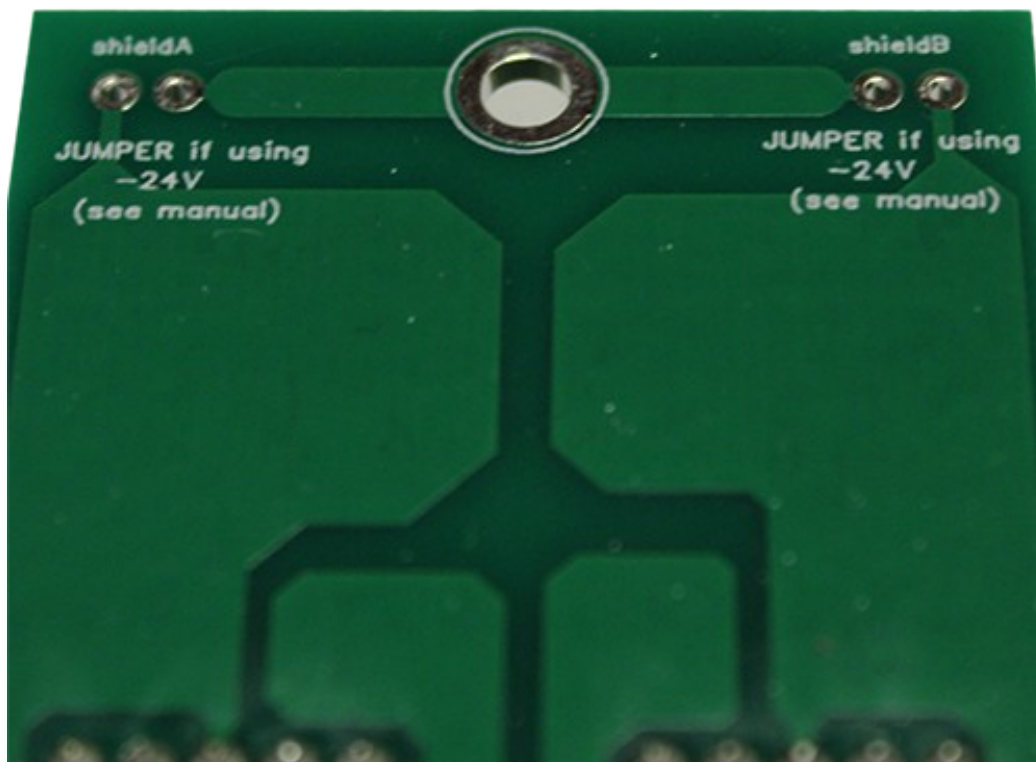
There is a switch on the 2NV-rack which will switch between internal PSU and the 51X rail.

Note: If you WILL be using the negative 24V rail of your 51X lunchbox, you will have to decide whether you want to configure the DI to work with the internal PSU of +24V, or the -24V of the 51X. (note: no damage will be done, it just will only work with one option. Micpre/EQ etc will still work as normal of course.)

If using the -24V rail option, you will need the two jumpers (using resistor leg cutoffs) on the Pots PCB as shown below:



If using the +24V rail option, or no 51X rail at all, you will leave them open as shown below:



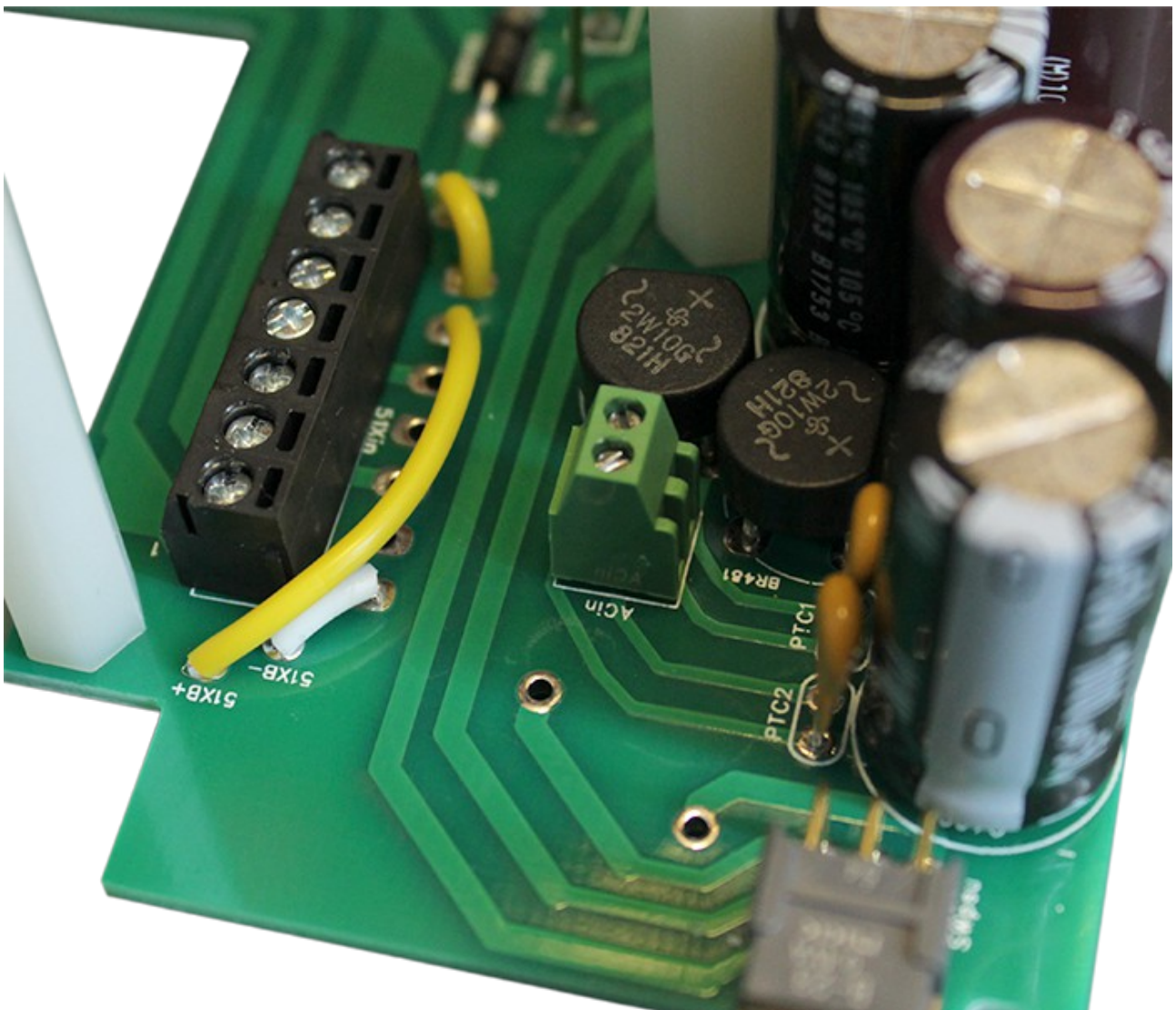
You will need to connect the incoming 51X rails to the corresponding points on the PSU PCB.

If using the +24V rail of your 51X lunchbox, you will connect as follows:

- 51XB+ will be +24V
- 51XB- will be 0V
- 51X48V will be 48V
- 51X0V will be 0V/shield

If using the -24V rail of your 51X lunchbox, you will connect as follows:

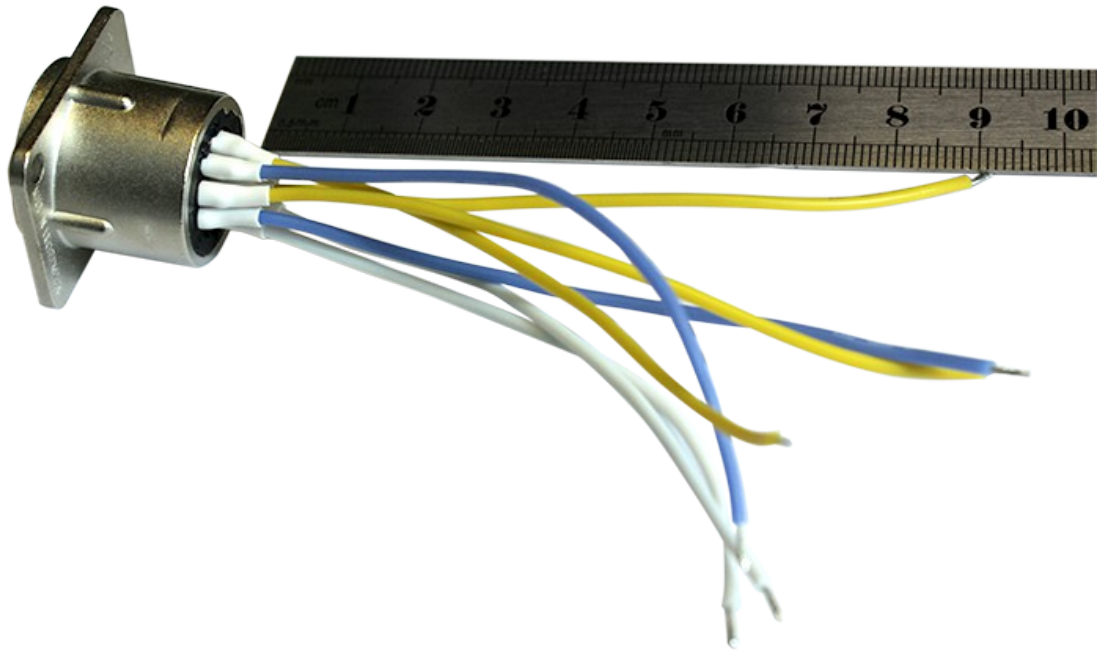
- 51XB+ will be 0V
- 51XB- will be -24V
- 51X48V will be 48V
- 51X0V will be 0V/shield



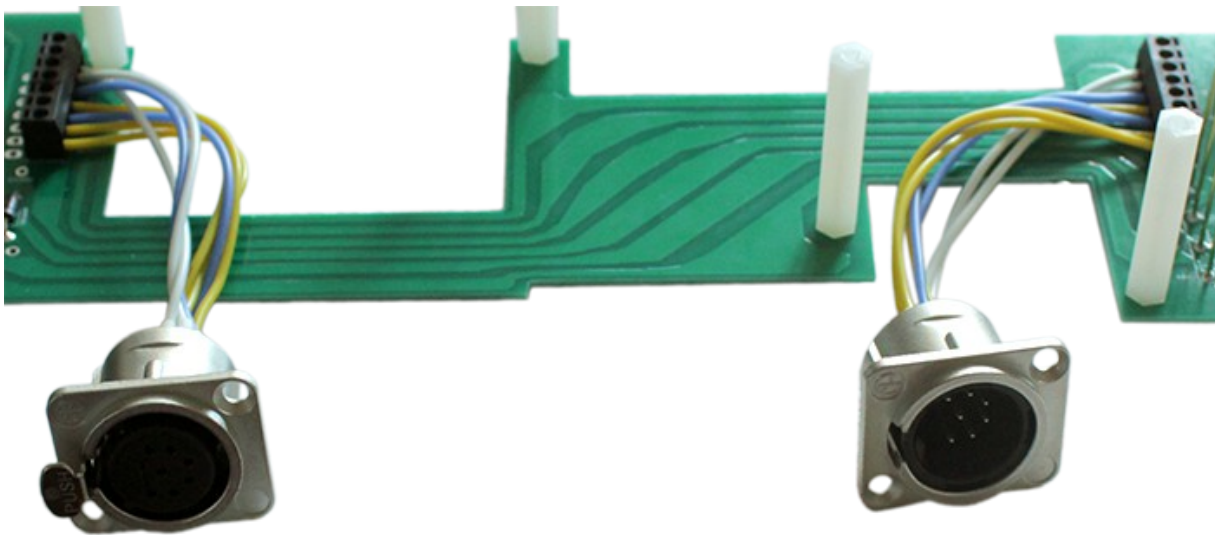
2. Wire sockets

51X XLRs:

For both pots you will need around 9.5cm length wire for each pot:



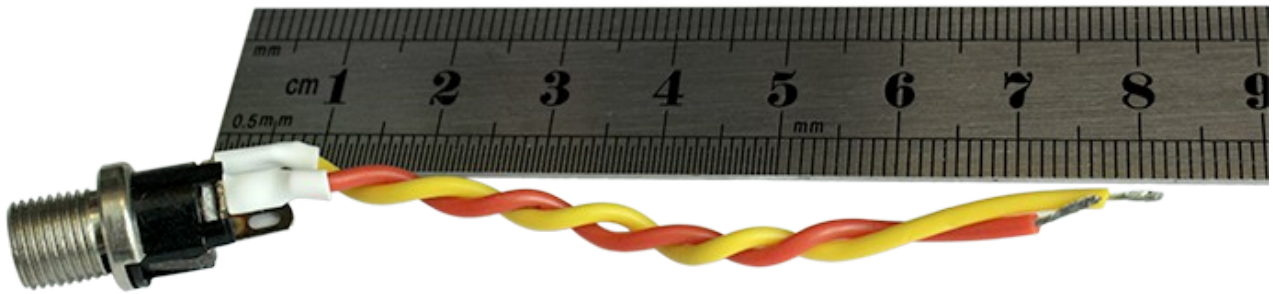
NOTE: The terminal blocks are optional, and not really needed, as there is no real need to remove the 51X sockets. You will normally just remove the whole PSU PCB if you need to work on the PCB at any time.



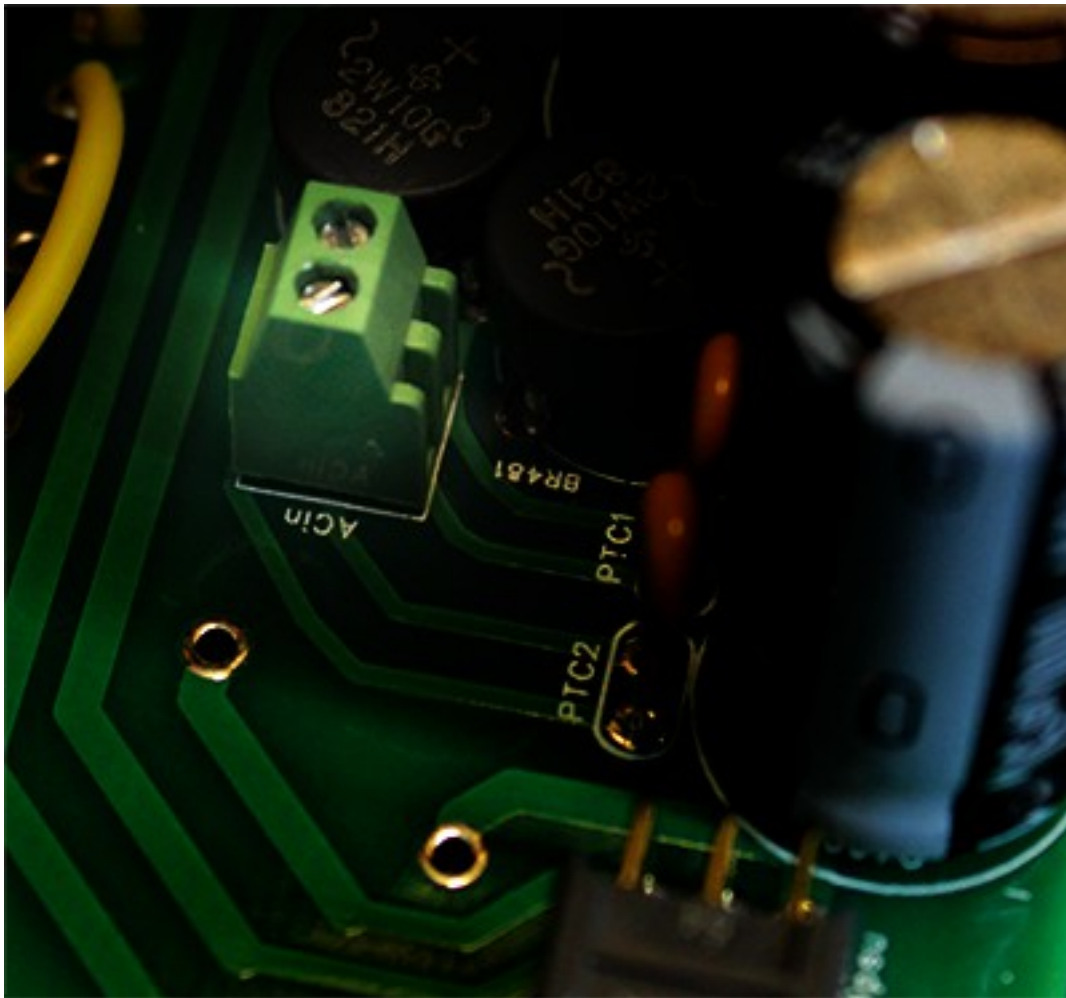
Also note: The 51X power-supply XLR input will normally be male to accept a female power cable XLR, but this will depend on how you wired your 51X power supply cable.

2.1mm AC socket:

As it's an AC input, orientation here doesn't matter.



You will connect to the ACin of the PSU PCB.



2. Place PCBs in metal work

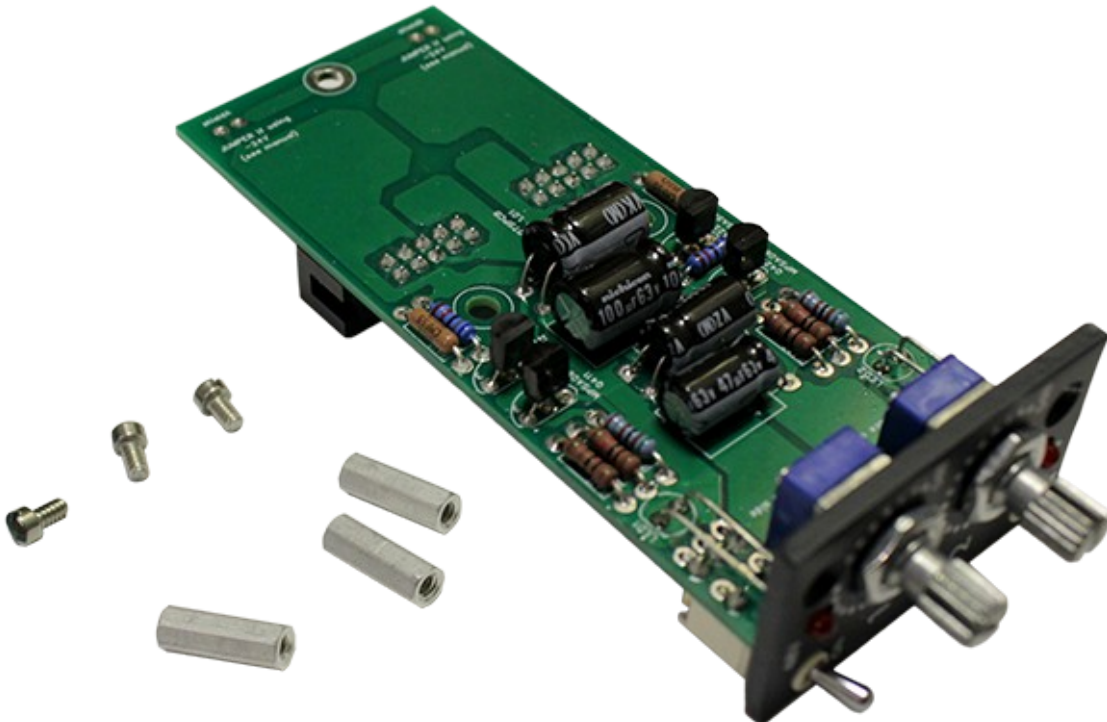
The side panels:

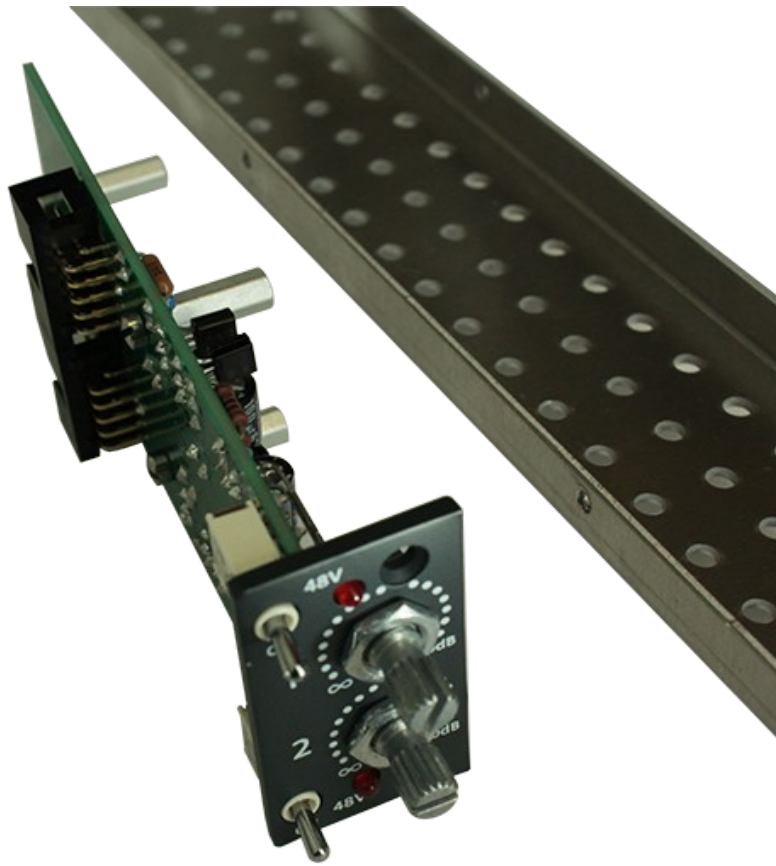
Fit the ears as follows:



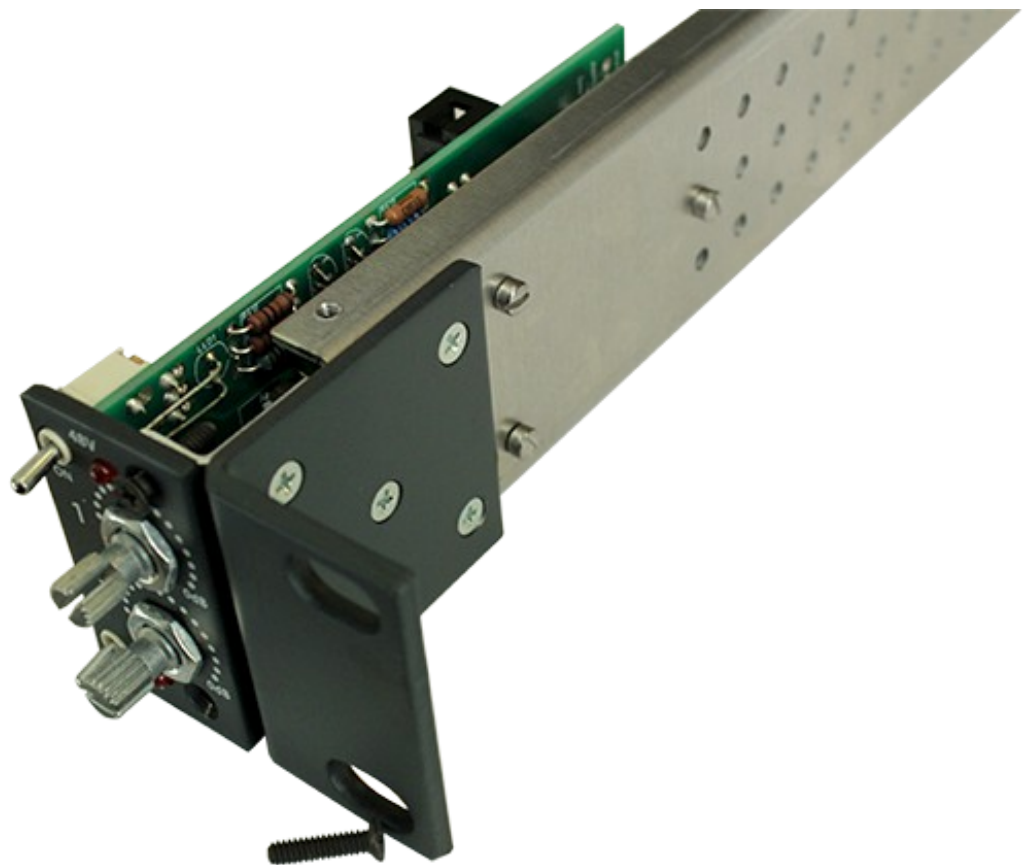
Standoffs:

For the Pots PCB, you will fit the standoffs like this:

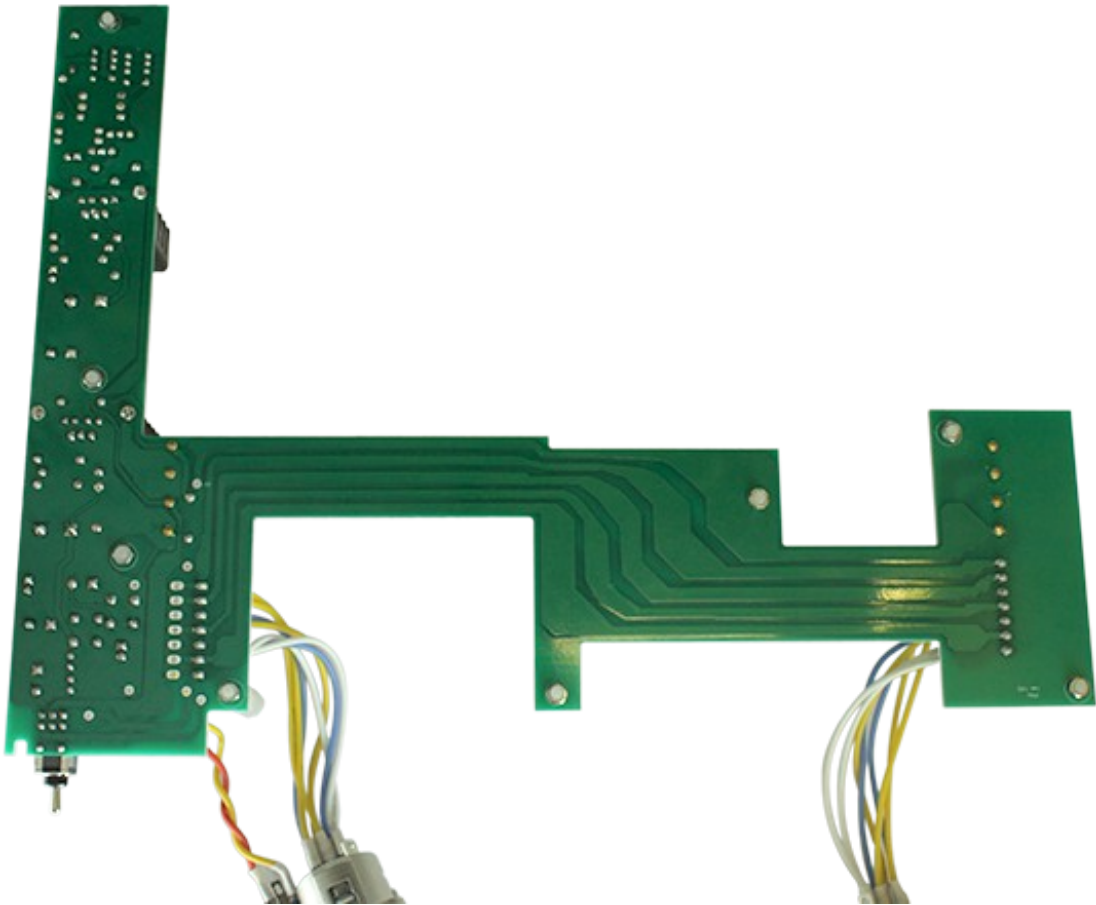
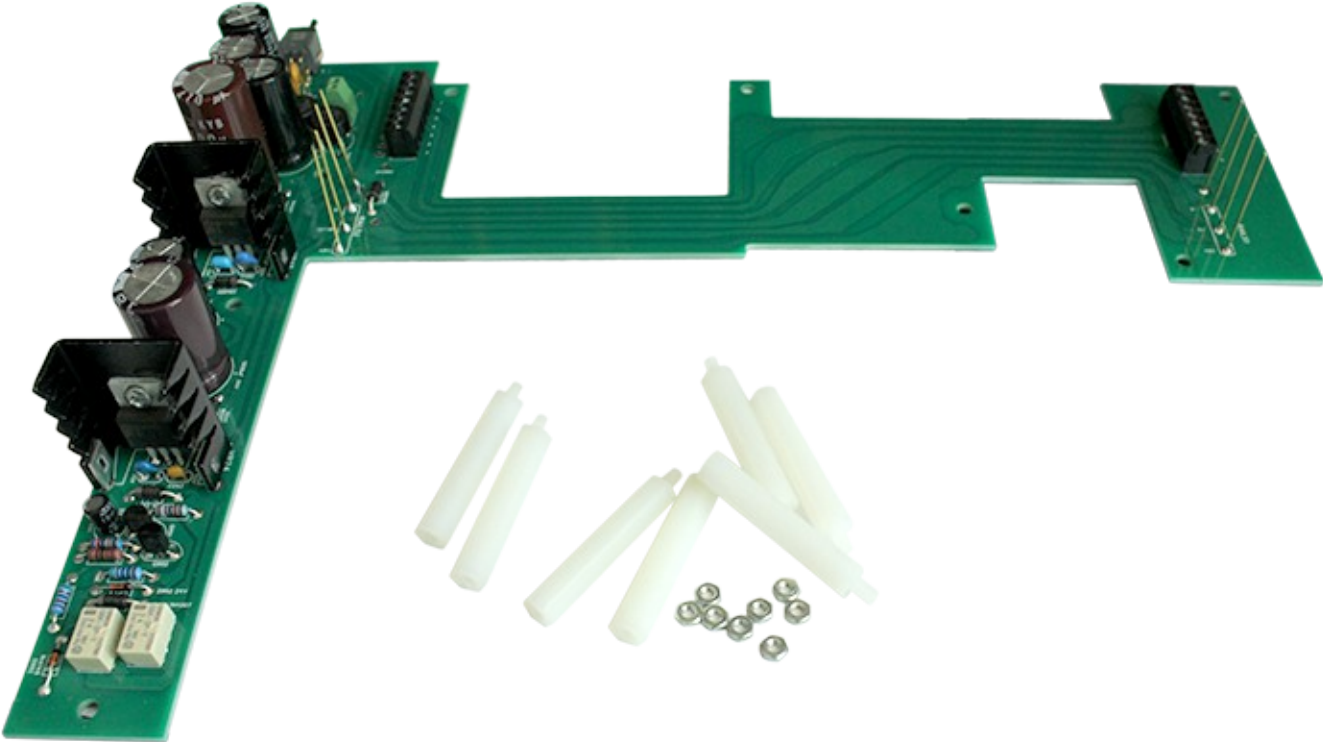




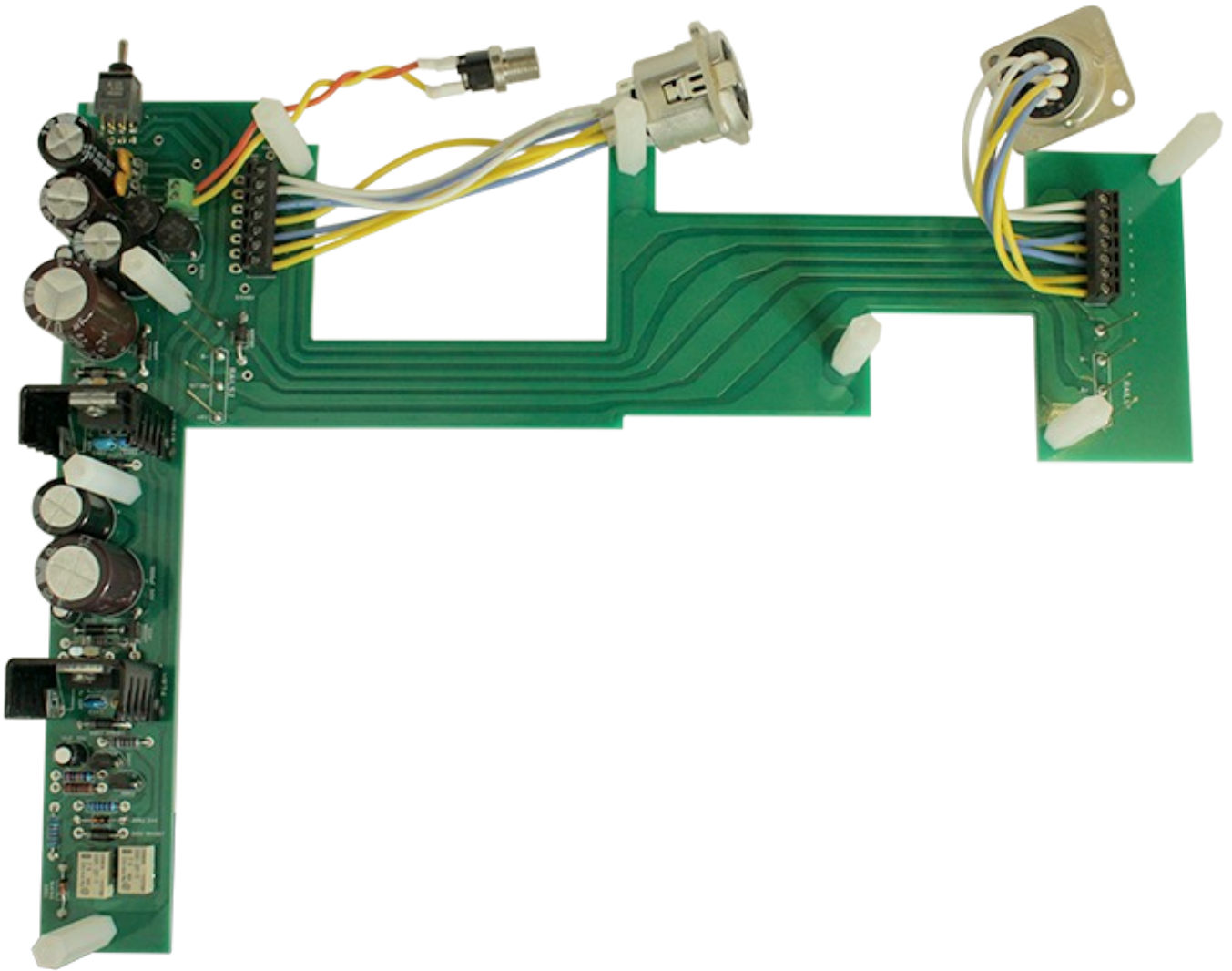
You will attach the Pots PCB to the side panel using the 3 fillister head screws and the pots panel using the 2 black phillips screws.



For the PSU PCB, you will fit the standoffs like this:



The PSU will look like the following:

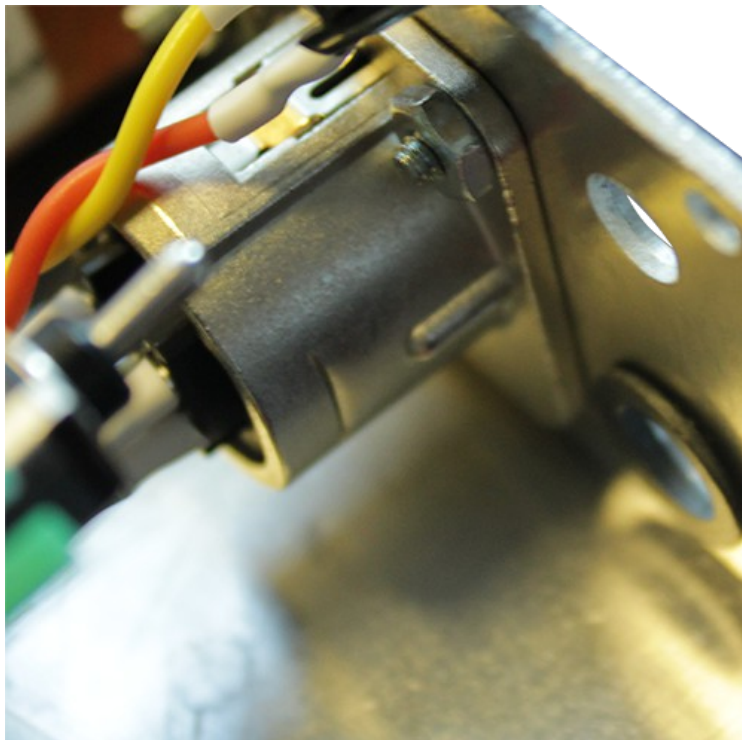


For the 24VAC input:

You do not want the metal casing of the AC socket to touch the metalwork so you will add a shoulder washer inside and insulating washer outside. You can confirm with a multimeter that the “ground” pin of the AC socket does not show continuity to the metal work of the 2NV-rack.



Using the round head screws & nuts, you will attach the 51X XLRs.



4. Initial testing

At this point, it's probably worth testing before going to the effort to put on the front panels, knobs etc.

Pre-turn on checks:

i) Check that none of the rails are shorted together

Using continuity/resistance test on your multimeter, confirm that none of the rails are showing as a short to each other.

ii) Check that grounds go where they should

Using continuity/resistance test on your multimeter, confirm that the metal work shorts to 0V.

We are now ready to turn on the unit.

Plug in the 24VAC transformer and test the rails. You should read 0V, 24V and 48V.

Test in 51X mode to make sure that the correct voltages are getting to the B-, B- and 48V pins.

And also test in internal PSU mode to make sure you read the correct voltages at those same pins in this mode.

5. Attach front panel and knobs

Now it's time to fit the front panel and knobs, ready for fitting the 2NV mic pre units.

