



OVERVIEW

For the most recent version of this document please visit <https://thonk.co.uk/shop/vostok-atlas>

This document has hi-res images. **ZOOM IN** for a closer look



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DIY INSTRUCTIONS

This document gives detailed instructions that assume you have purchased a complete kit from www.thonk.co.uk. It also assumes no previous knowledge of electronics. To learn to solder try <https://youtu.be/lpkkfK937mU> and the **Adafruit guide to excellent soldering** – <http://bit.ly/1I77tF4>

Watch and understand that whole YouTube video! If you're not achieving the results shown in the video then you need to buy new tools or seek advice. You will not end up with a working module otherwise.

TOOLS REQUIRED

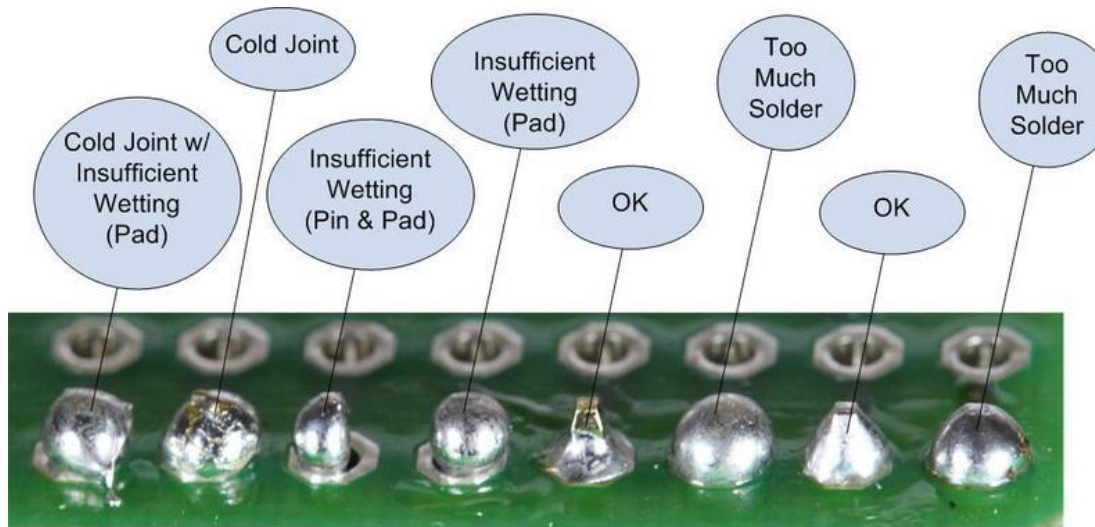
Soldering iron, masking tape, and diagonal cutters AKA snips AKA side-cutters. A Digital Multimeter is always helpful for checking for bad solder joints and continuity. Thonk sell a range of inexpensive tools here - <http://bit.ly/1jxqF3n>



SOLDER JOINTS

Your solder joints should look like those shown as 'OK' below, they should have that neat conical shape on **BOTH sides of the PCB**. If they don't look the same on both sides then stop! Work out why from the soldering guides linked and don't continue until you are getting those results.

This isn't just OCD talking, you are very likely to end up with a destroyed, damaged or defective unit if you're not hitting that standard.



This photo is from the **Adafruit guide to excellent soldering** - <http://bit.ly/1xqF3n> and is reproduced under an Attribution-Sharealike creative commons license - <http://creativecommons.org/licenses/by-sa/3.0/>



ATLAS BUILD INSTRUCTIONS

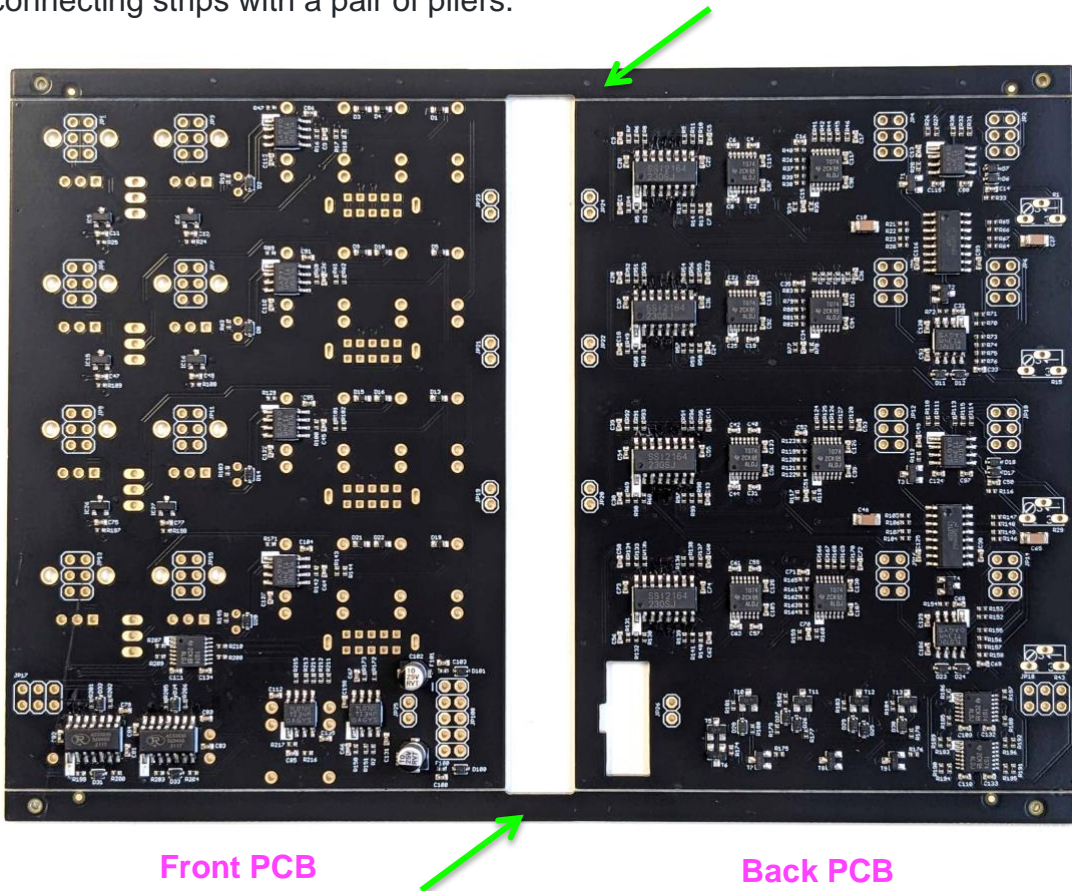
1.

PLEASE NOTE

Follow these instructions carefully and take good care and attention while building your kit. The tightness of PCB layout and a larger than normal ground plane means you'll need to be **accurate with your solder iron placement and extra careful how you feed in your solder.** We recommend using solder that you're familiar with and that will flow easily. If you create any solder bridges, they could potentially be very hard to remove.

2.

There are two PCBs in this build, but they may arrive joined together as shown. If they are joined, then gently separate them by twisting the outer connecting strips with a pair of pliers.



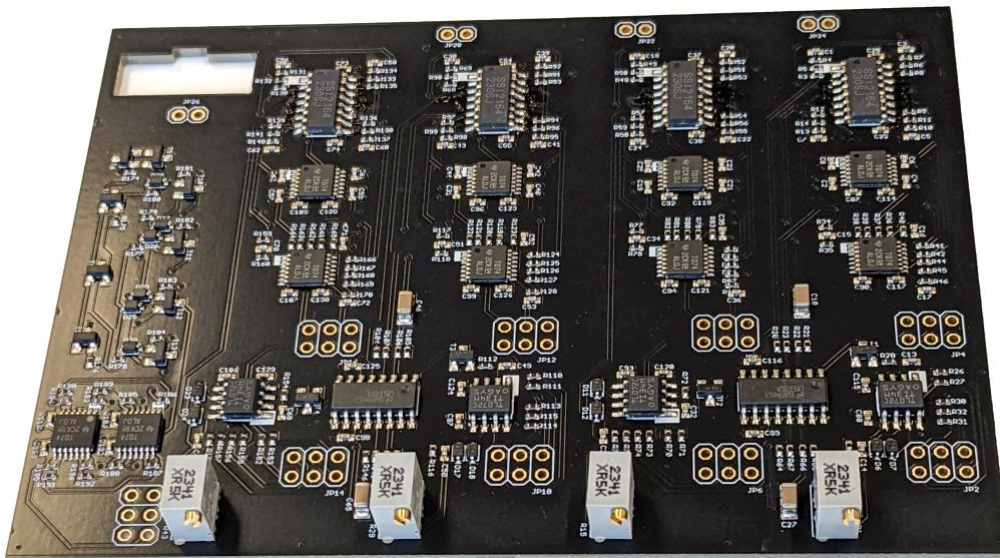
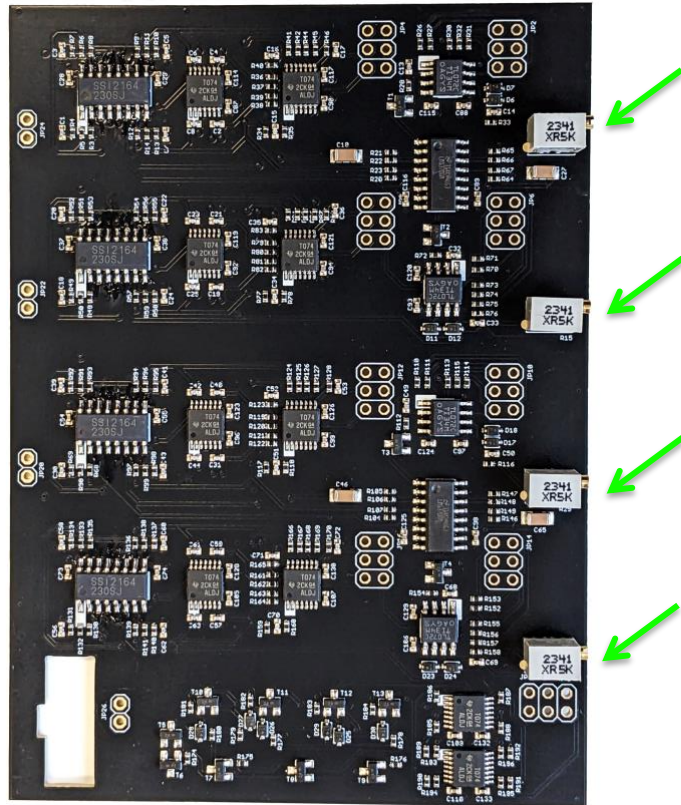


3.

We'll start on the back PCB (labelled above).

Locate the four grey trimmers and place them on the same side of the PCB as the pre-soldered components as shown.

Ensure the brass screw on each trimmer is facing towards the edge of the PCB. Solder one leg first and then make sure the trimmer body is sitting completely flat against the PCB, if it's not sitting completely flush then reflow the solder joint while pushing the body down at the same time.





4.

Put the back PCB aside and take the front PCB.

Locate the 4 x Orange LEDs and place them as shown. The LEDs sit on the opposite side of the PCB to the SMD pre-soldered parts.

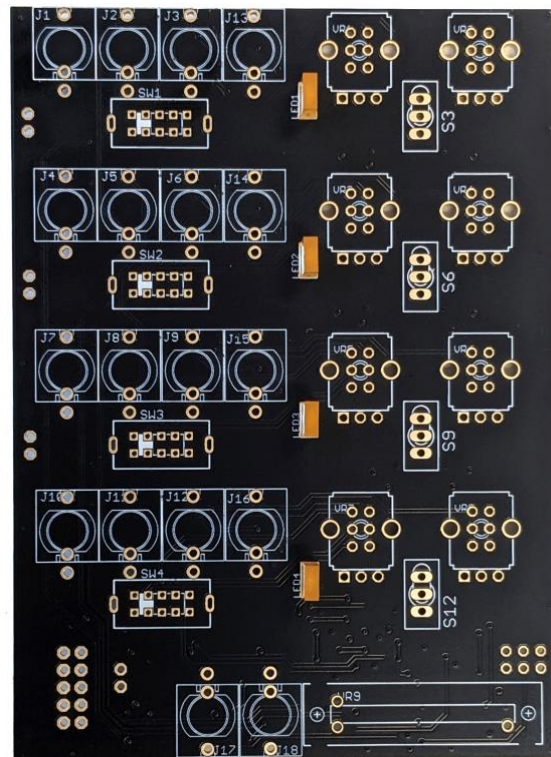
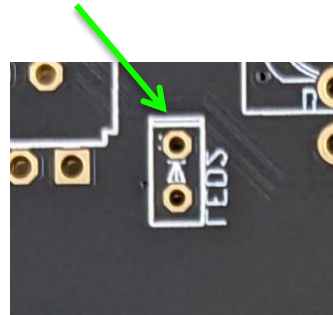
Note: orientation is vital! the short leg of the LED must go to the side with the white line on the PCB silkscreen.

Note: Be very careful with your soldering iron placement as there are SMD parts placed close to the LED solder pads.

The LEDs should sit completely flush to the PCB. Solder one leg first and check the LED body is flat against the PCB. If it's not sitting totally flush, then reflow the solder joint while pushing the LED body down against the PCB.

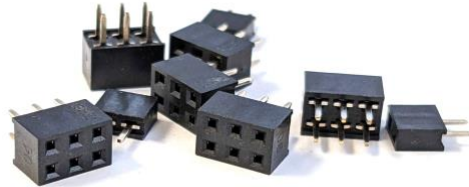


Short leg to side with white line



5.

Next locate the pin sockets in the small bag. These are placed on the front PCB on the same side as the SMD pre-soldered components. **Don't solder them yet!**



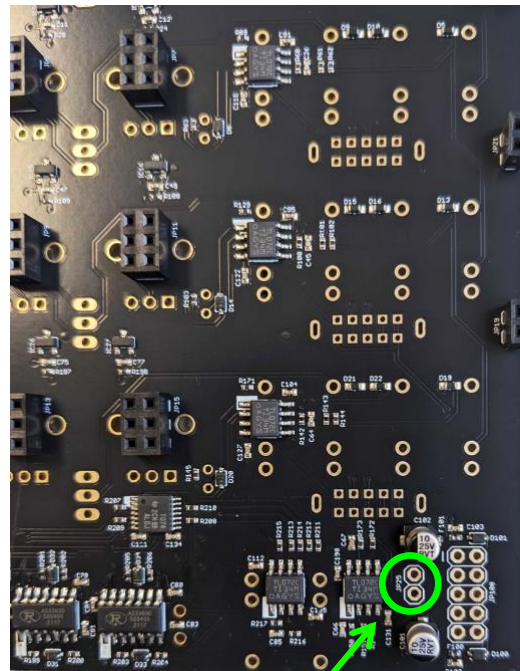
6.

Place all sockets except for the 2-pin socket at JP25 (circled).

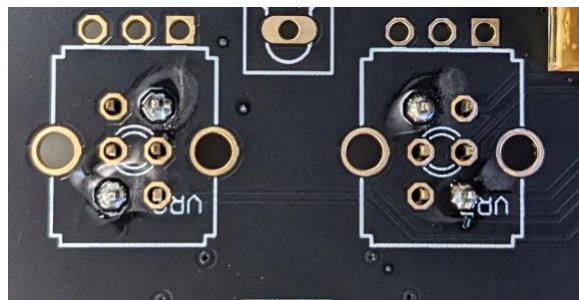
Hold something flat over the sockets and then flip the PCB over to solder.

Note: the sockets must sit completely flush to the PCB – for the 6 pin sockets, start by soldering 2 opposite corner pins as shown, then check if the header is totally flush, reflowing and adjusting if needed as with previous steps.

For the 2 pin sockets, solder just one pin first before making sure the part is flush and reflowing and adjusting if required. Then solder the remaining joints for all sockets.



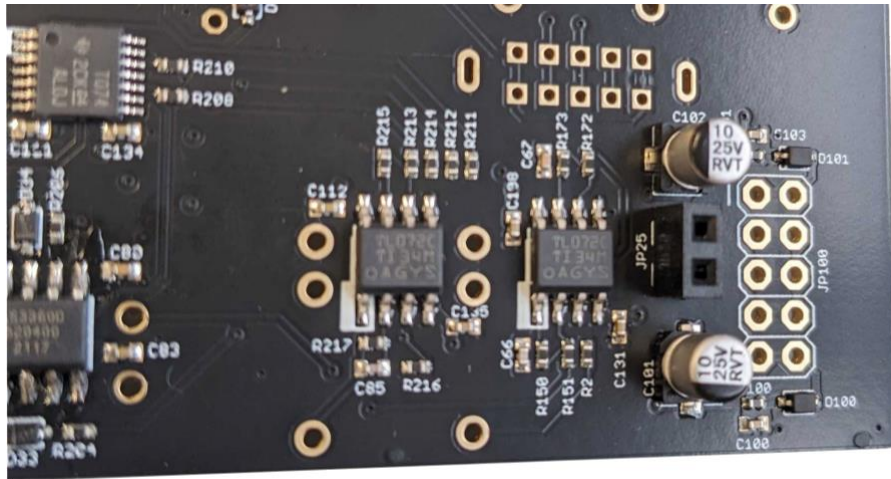
Leave this one until next step





7.

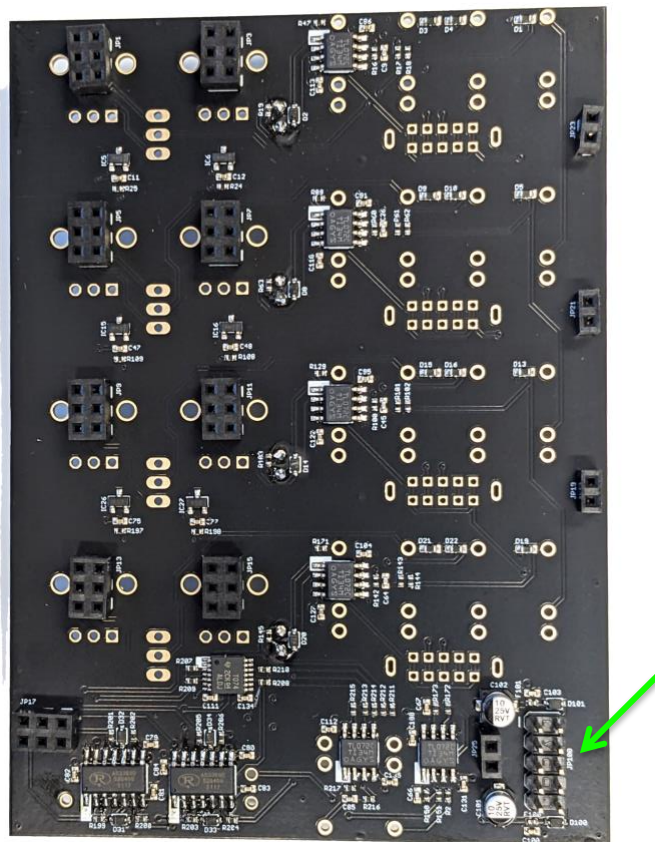
Now take the remaining 2 pin socket and place it at JP25 repeating the same soldering procedure from the previous step. It's easier to solder this socket separately as it sits some distance from the rest and in a tight spot between the two electro capacitors.



8.

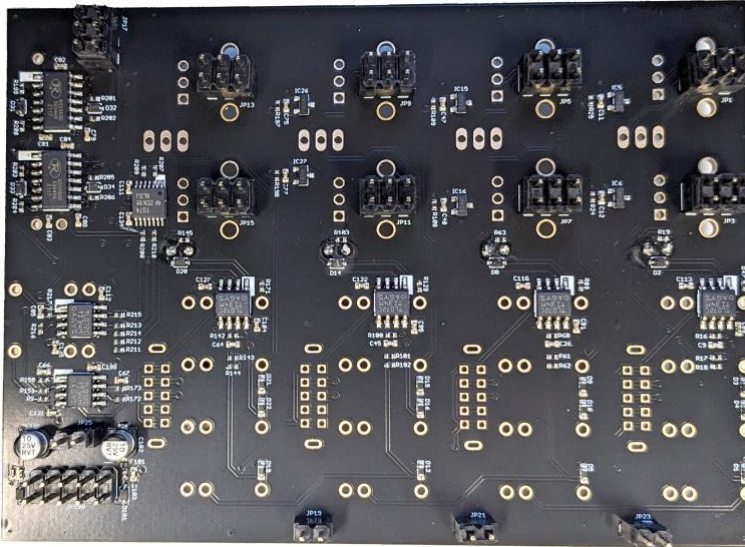
Now locate the 10 pin power header. This is placed on the same side of the PCB as the sockets - just next to the 2-pin socket that was soldered in the previous step.

Solder 2 edge pins on opposite corners first, and then check the header is flush before soldering the rest.



9.

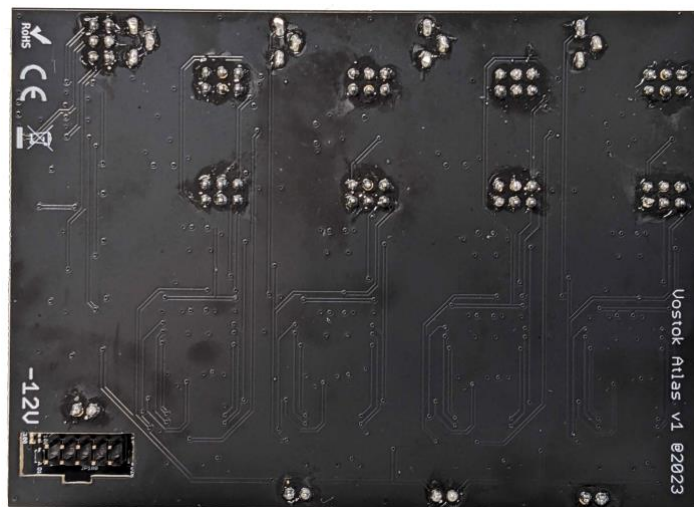
Now locate the small pin headers and insert them all into the sockets as shown:



10.

Next place the back PCB onto the pin headers to sandwich the PCBs together. You might need to wiggle the PCB slightly to ease the headers through their holes. Using pliers or a screwdriver can also be helpful to gently nudge the 2 pin headers to line up properly.

Once the headers are all aligned then go ahead and solder them onto the back PCB.

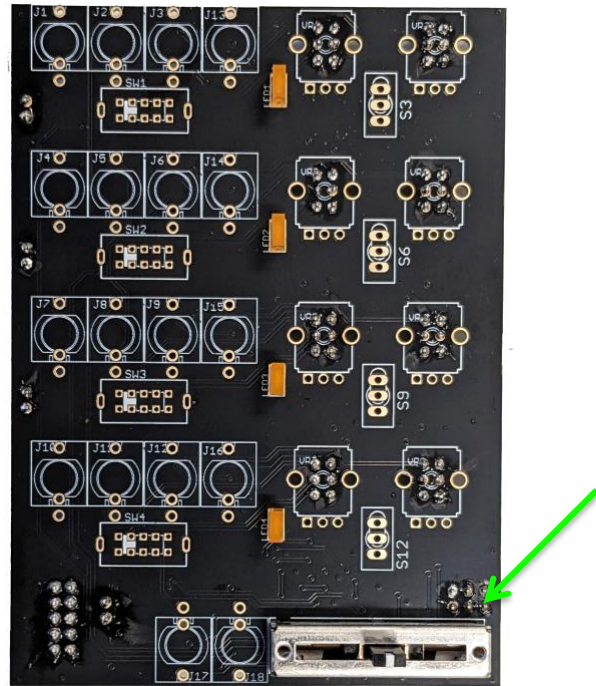


11.

Now it's time to move onto the remaining parts on the front PCB, so separate the PCBs from each other again and locate the fader pot.

Place the fader as shown and solder just one of the pins for now to keep it in place.

As with previous parts – make sure it's sitting fully flush with the PCB and aligned with the PCB silkscreen.

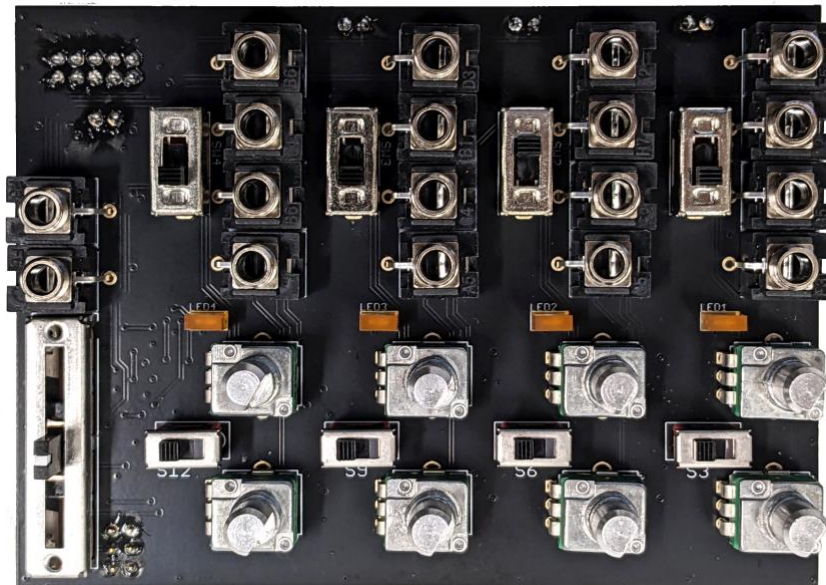


12.

Next remove all the nuts from the jacks. Now place but **don't solder yet**, the jacks, pots and switches onto the PCB. Orientation doesn't matter for either of the slide switch types, and all pots are B10K.

Then place the frontpanel over the components, and then secure it in place by screwing all nuts onto the jacks and black nuts onto the pots.

Don't solder yet!





13.

Check the fader pot is correctly aligned and can move over its full range without touching the panel edges. When the alignment is good you can solder the remaining fader pins.

Note: go slowly and carefully! Be precise with your soldering iron placement, some areas are quite tight with a lot of close and delicate SMD parts that need to be avoided.

14.

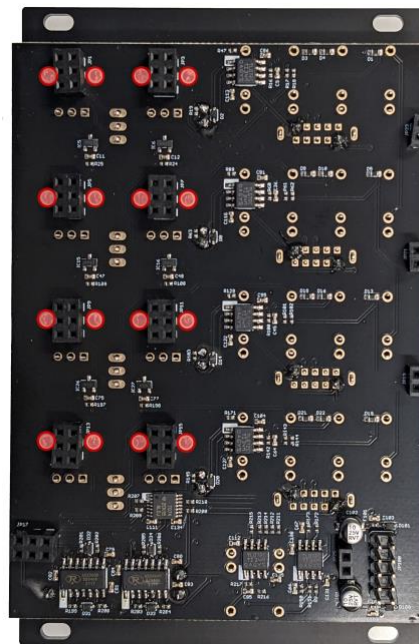
Next move on to the 4 larger slide switches. Start by soldering just one pin on each side, then check that the switch alignment looks good from the front, with the switches able to slide freely.

Now it's time to solder all the remaining solder joints for the switches, pots and jacks.

Again - be careful and accurate with your soldering iron placement, rotate the PCB around to give yourself the best angle.

Note: We advise to leave the 2 side legs of each of the pots unsoldered – these are circled in red in the image on the right.

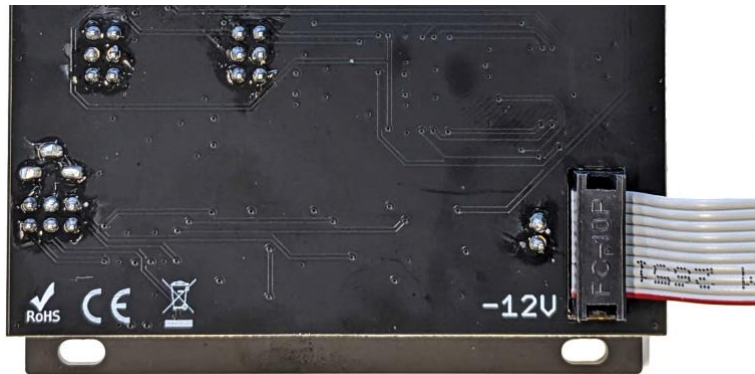
The reason for not soldering these is because there are pins under the pots, so it makes it easier to fix any problem in case of accidental shorting, (these 2 side legs only function as mechanical stability).





15.

Now you can connect both PCBs again and place the knobs on to the pots. Finally attach the power cable with red stripe facing the -12V. Build is done!



16. Calibration is optional and very simple. The trimmers are there to allow for each of the channels to be perfectly matched. To calibrate - put the resonance knob up to maximum (with nothing at the input so it to self-oscillates), move the frequency knob all the way down and check the output frequency with a tuner or any device that measures the frequency. Check the frequency and adjust the trimmer for 20hz. Repeat this for all 4 channels.

