



OVERVIEW

For the most recent version of this document please visit

<https://thonk.co.uk/shop/vostok-sigma>

This document has hi-res images.

ZOOM IN for a closer look



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<http://www.thonk.co.uk/faq/>



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/1l77tF4>

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.

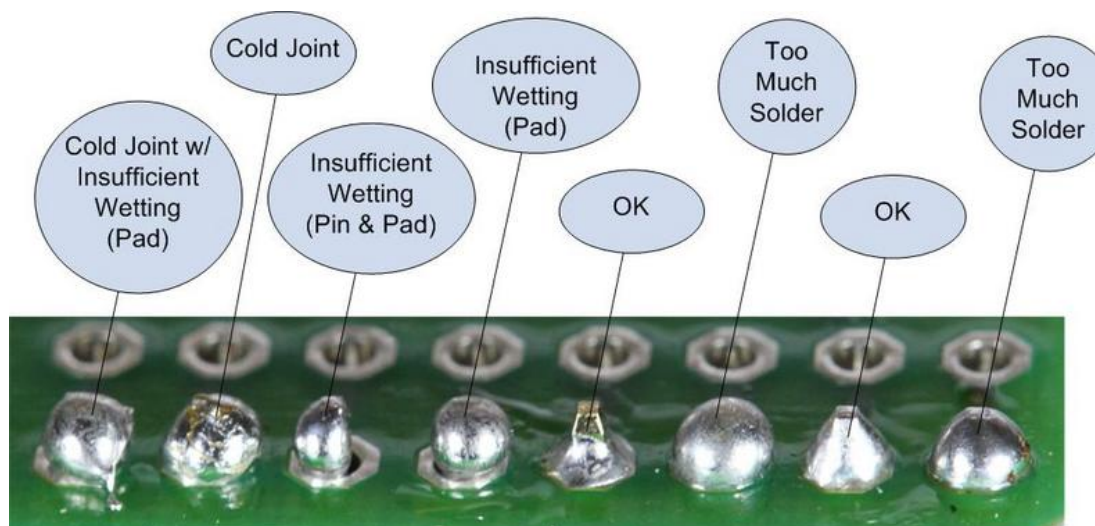
TOOLS REQUIRED

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/1jxqF3n> and is reproduced under an Attribution-Sharealike creative commons license - <http://creativecommons.org/licenses/by-sa/3.0/>



SIGMA BUILD INSTRUCTIONS

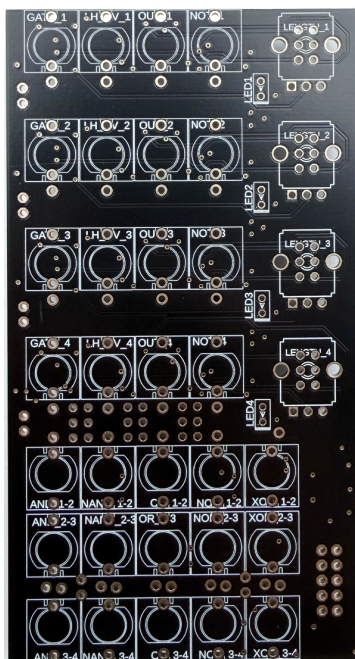
1.

PLEASE NOTE

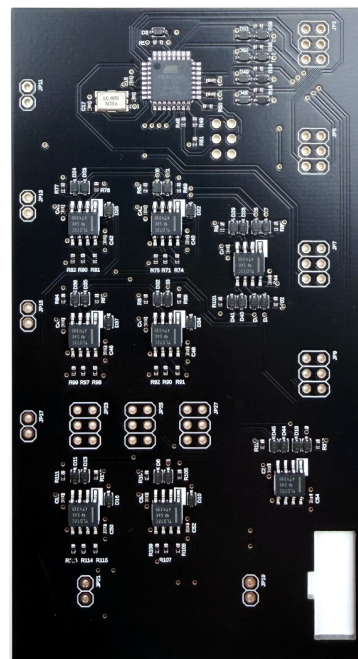
Follow these instructions carefully and take good care and attention while building your kit. The tightness of PCB layout and a larger than normal ground plane means you'll need to be **accurate with your solder iron placement and extra careful how you feed in your solder**. We recommend using solder 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 one board. If they are joined, then gently separate them by twisting the outer connecting strips with a pair of pliers.



Front PCB



Back PCB

3.

Take the Front PCB and locate the four orange LEDs placing them as shown. The LEDs sit on the Front PCB on the opposite side 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.

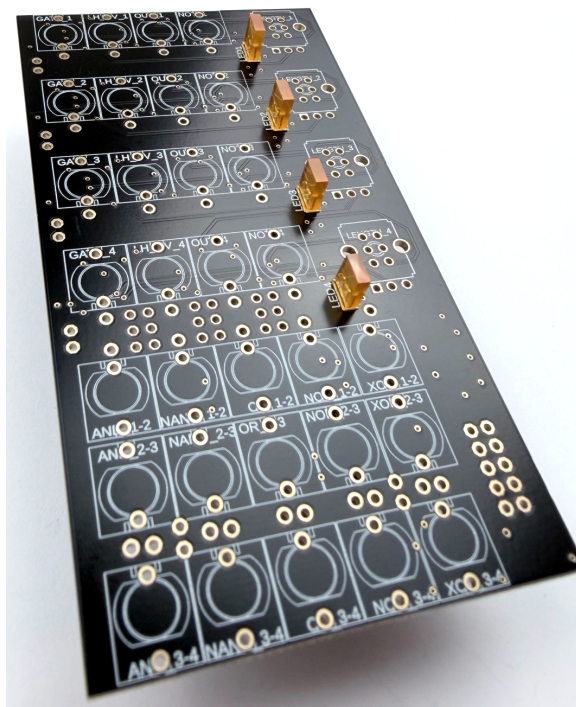
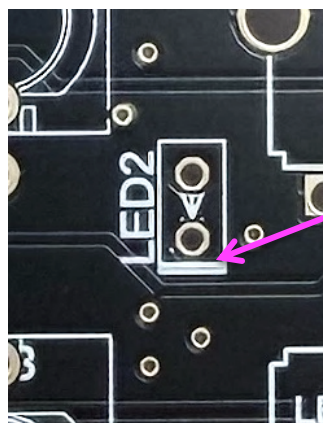
Note: Be very careful with your soldering iron placement as there are SMD parts placed close to the LED solder pads.

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.

Snip the legs of the LED's when they are soldered securely and flush to the PCB.



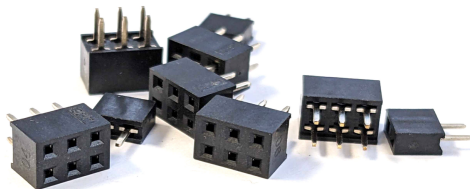
Short leg to white line





4.

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



5.

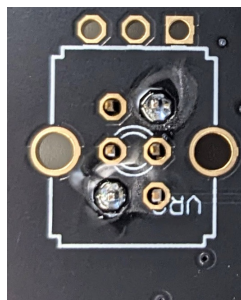
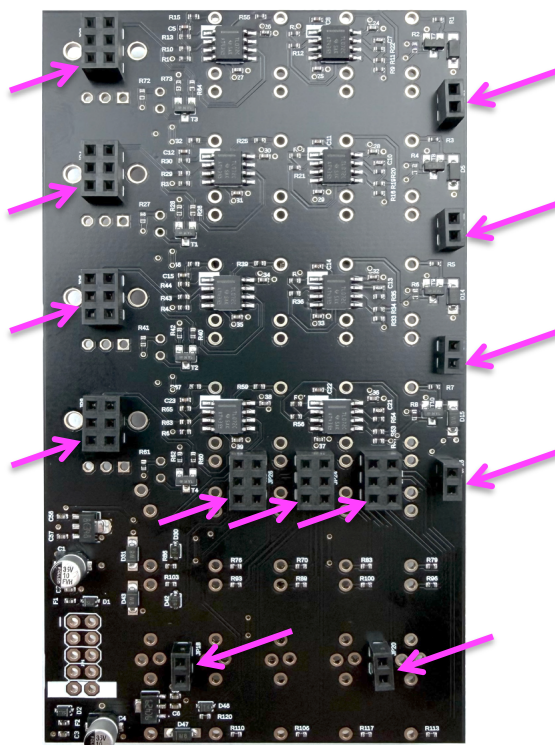
Place all 2x3 and 1x2 sockets as shown.

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.

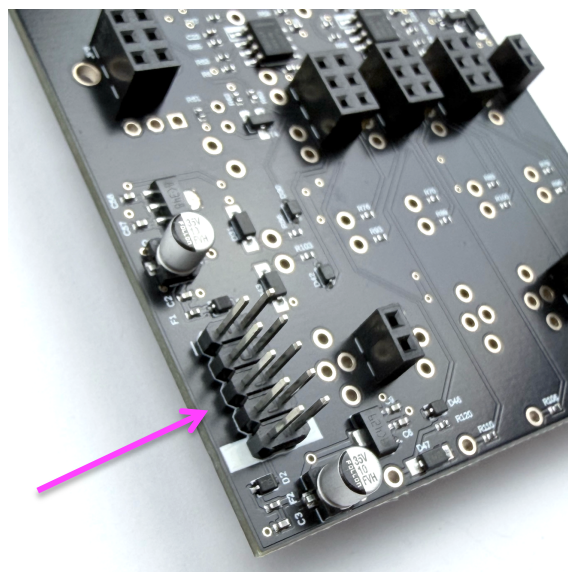




6.

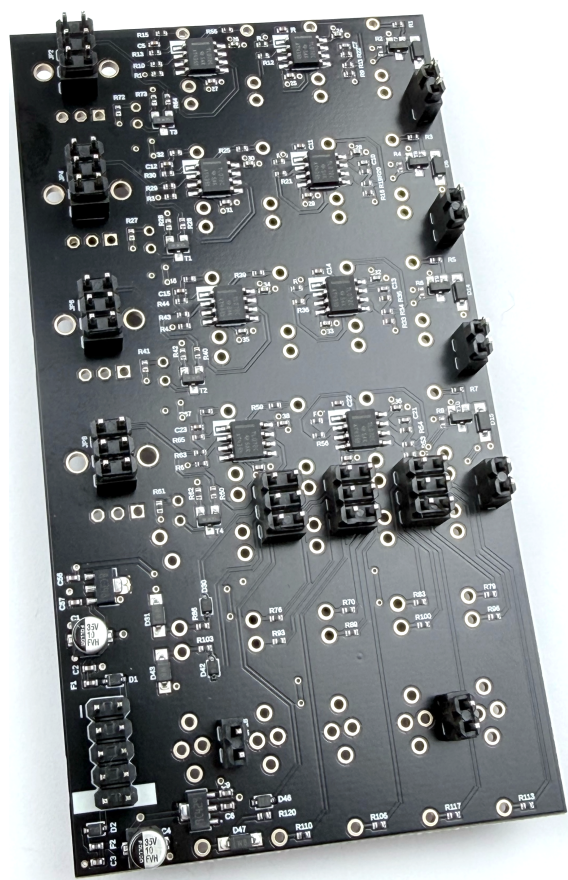
Now locate the 10 pin power header. This is placed on the same side of the PCB as the sockets.

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



7.

Now locate the small 2x3 and 1x2 pin headers and insert them all into the sockets as shown:



8.

Next take the Back PCB and place it 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.



9.

Next remove all the nuts from the jacks and then place but **don't solder yet,** the jacks and pots onto the PCB.

When placing the bottom group of 16 jacks pay attention to the offset position of the ground legs as circled in the picture on the right.

Check all 3 legs for each jack are inserted correctly and the pots are firmly in place before proceeding.





10.

Now place the front panel over the components and secure it in place by screwing all nuts onto the jacks and pots.

Tighten firmly but don't overtighten to avoid separating the panel and PCB assembly.



11.

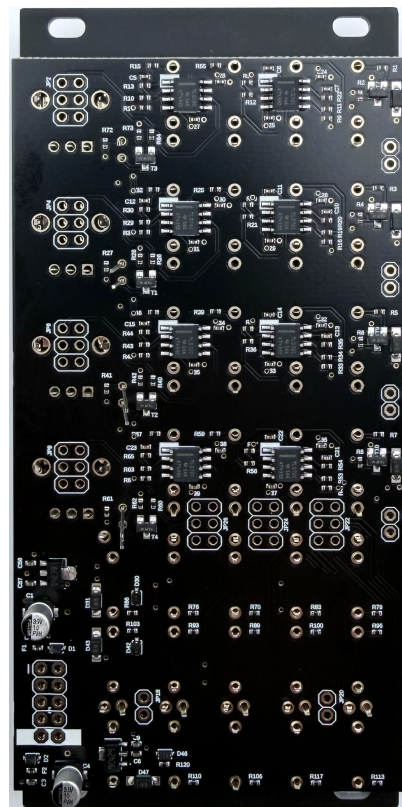
First solder just one point of each component.

On the pots only solder one of the three smaller legs/pads.

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.

Check all components are flush between the panel and PCB before proceeding.



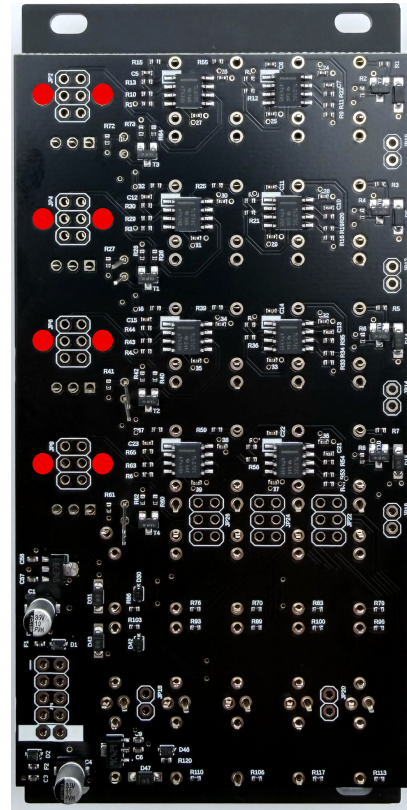
12.

Now it's time to solder all the remaining points for the 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).



13.

Now you can connect the PCBs again and place the knobs on to the pots.

Finally attach the power cable with red stripe facing the -12V.





14.

The build is done!

Follow the link below for more information on using your new Vostok Sigma.

www.thonk.co.uk/shop/vostok-sigma

