



Mental Noise

USB Power Out

Power your USB devices from your rack

Description	3
Build Guide	4
USB-C	5
Connectors placement	5
PCB placement	5
Flux	6
Soldering	6
USB-A	7
Placement	7
Power bus connector	7
Shorten the LED	8
Solder the LED and the resistor	8
Shorten the LED again	9
Solder the LED	9
Final assembly	10
Strip and tin the wire	10
Solder the wire	10
Clean the module	11
Congratulations!	12

Description

A tiny and simple 2 HP module to power any USB device using the power of your Eurorack:

- 2x USB-A (power only, no data)
- 3x USB-C (power only, no data)

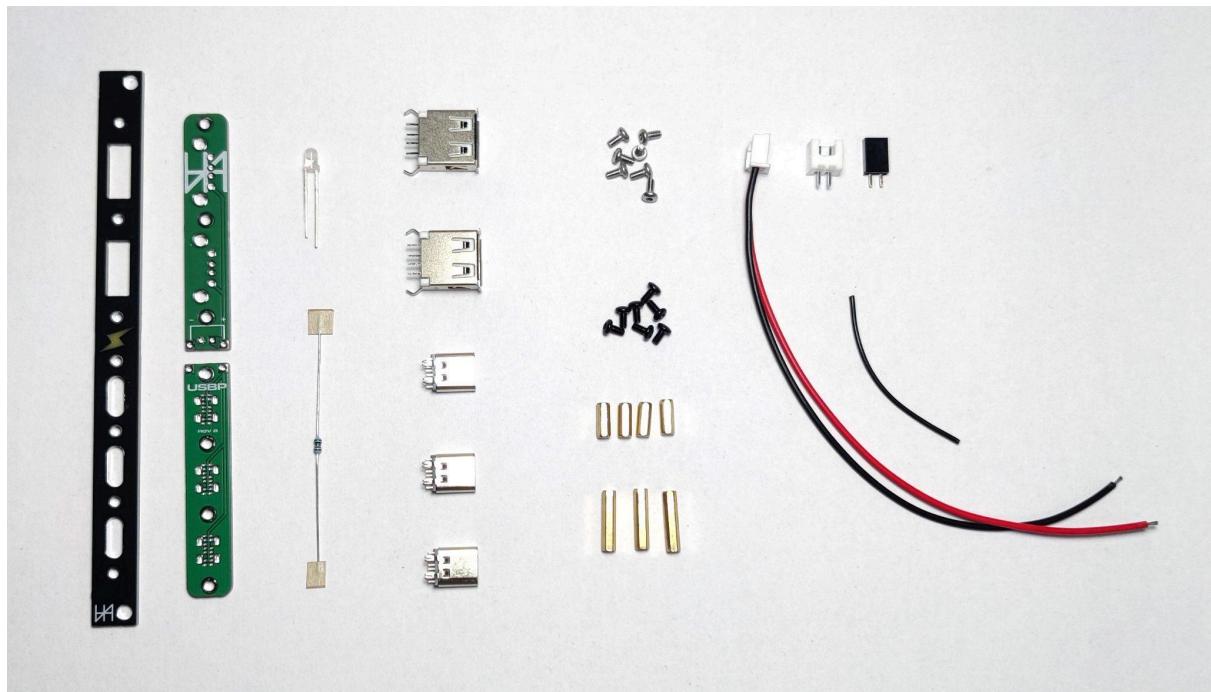
The module can be connected to the power bus via a 2 pins connector (included) or a 16 pins adapter (in option).

The module in itself doesn't provide any over-current protection so it's your responsibility to make sure you don't draw more current than what your power bus / power supply allow.



Build Guide

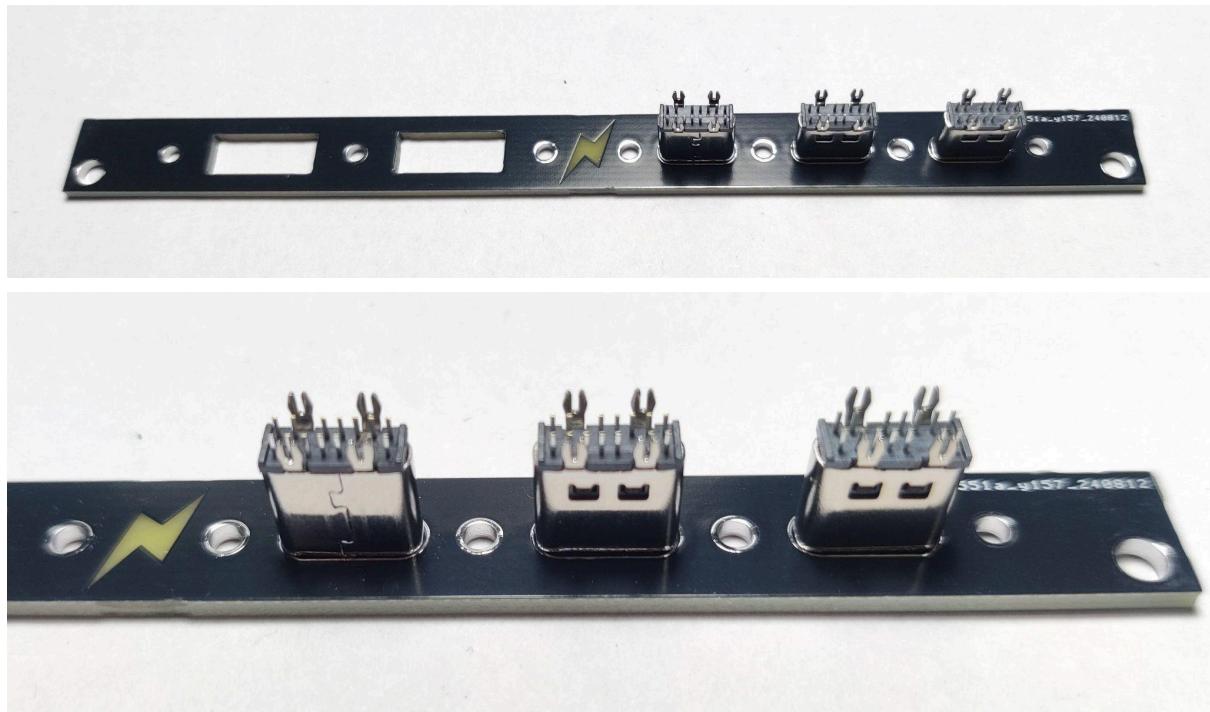
These are all the parts you'll need, let's get started!



USB-C

Connectors placement

Take the panel and insert the USB-C connectors in their cutout



PCB placement

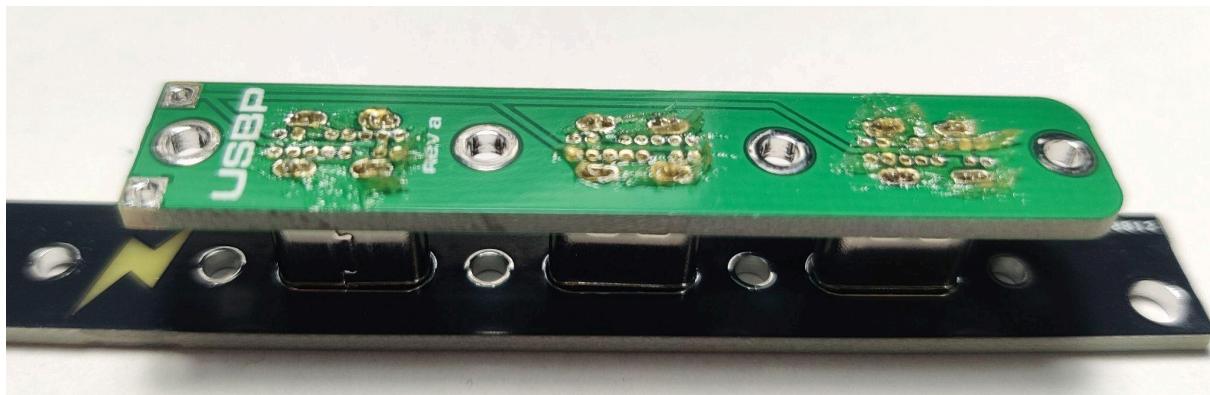
Place the right PCB on the connectors making sure the marking “USBP” is visible on the top



Flux

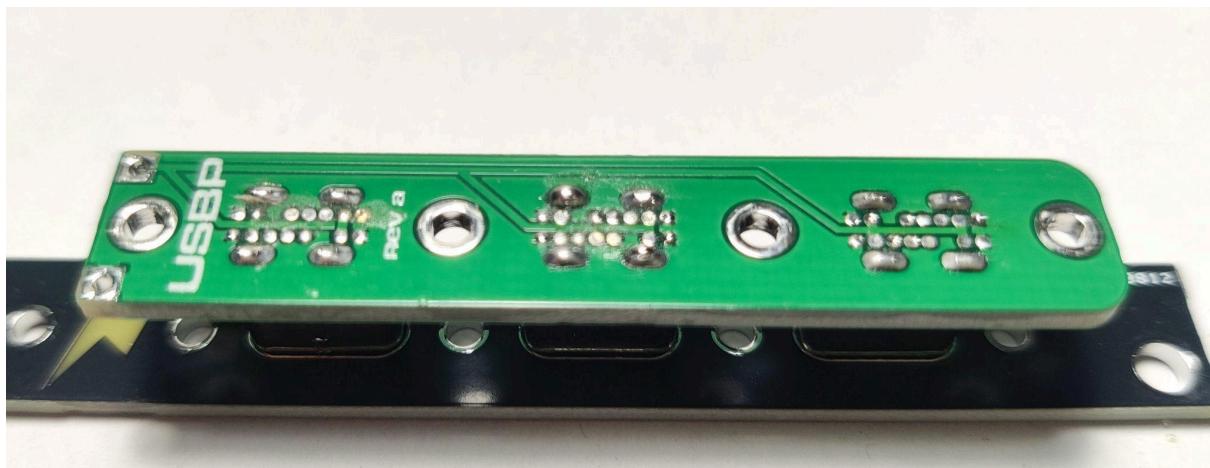
The USB-C connectors have small legs closed to each other so they are a bit hard to solder correctly.

However, if you add a lot of flux, solder will flow in the solder pads and it will make soldering super easy.



Soldering

Make a big blob of solder on your solder iron tip and pass over all the solder pads. Repeat the operation until all the solder pads are correctly covered in solder.

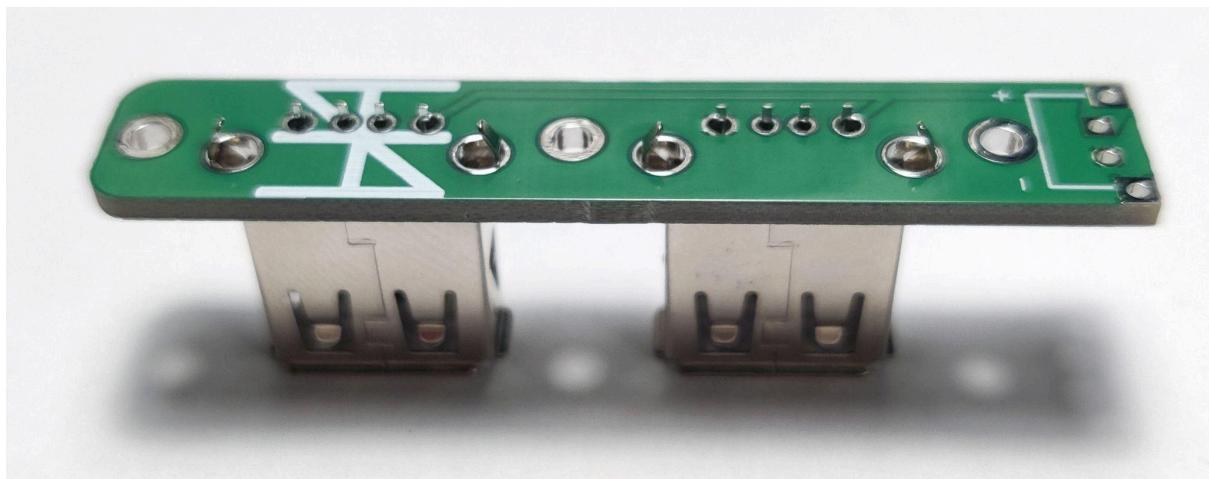


USB-A

Well done on the USB-C part, that was the hardest, now let's solder the USB-A connectors.

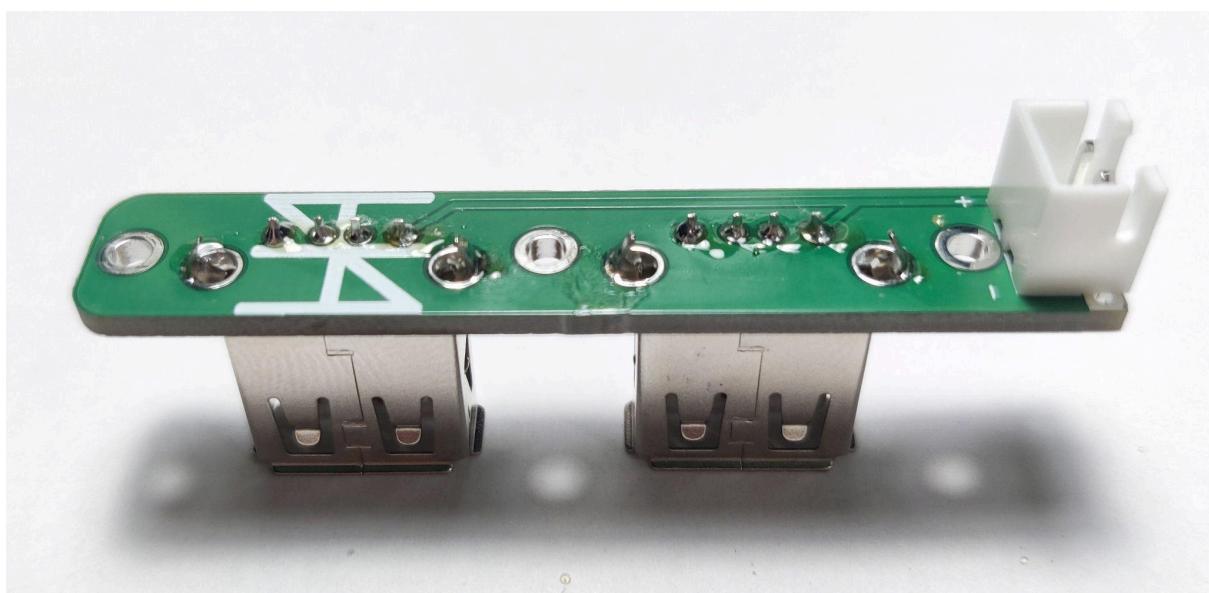
Placement

Place the right PCB on the USB-A connectors, making sure the logo is visible on the top.
Solder both connectors.



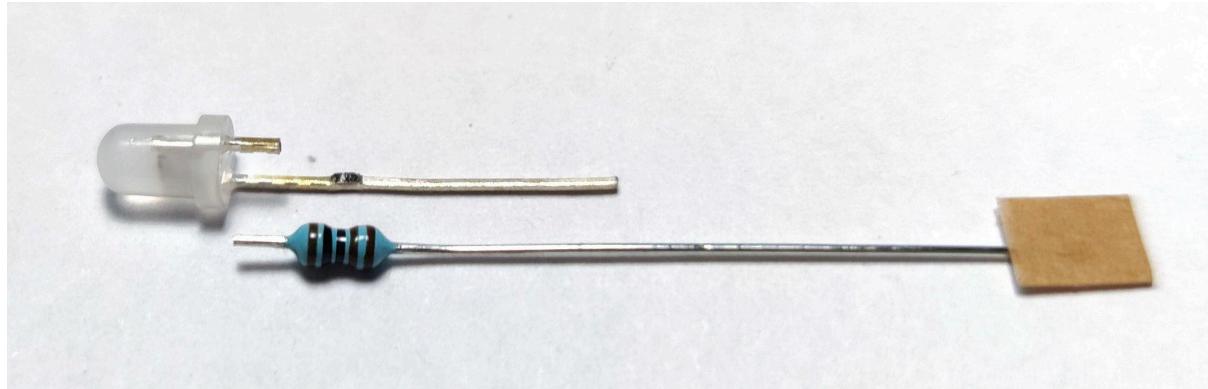
Power bus connector

Once both connectors are soldered, place the power bus connector, making sure it's in the right orientation, like on the picture.



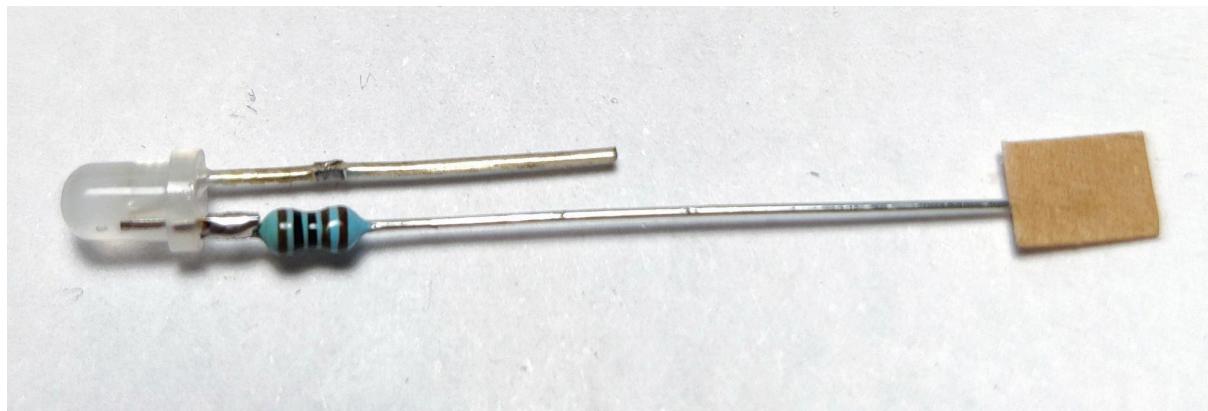
Shorten the LED

We don't have a lot of space to place the LED so we'll have to be creative here. Cut the positive leg (the longer one) as short as possible while still letting some material to solder on. Do the same for the resistor (which leg you cut does not matter).



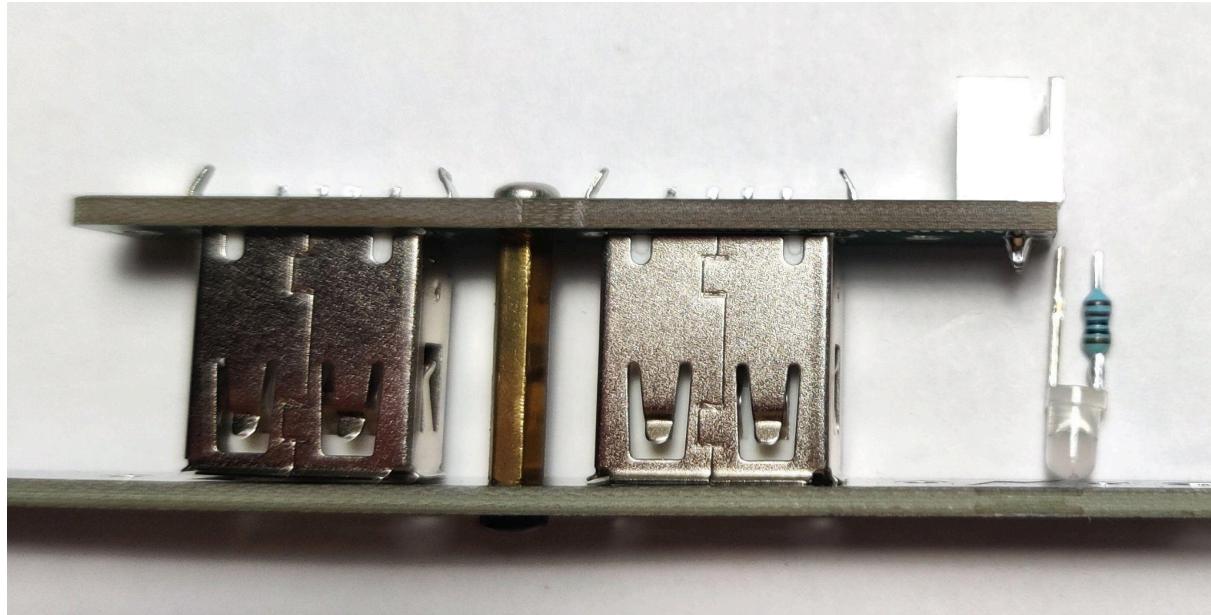
Solder the LED and the resistor

Solder the parts you just cut.



Shorten the LED again

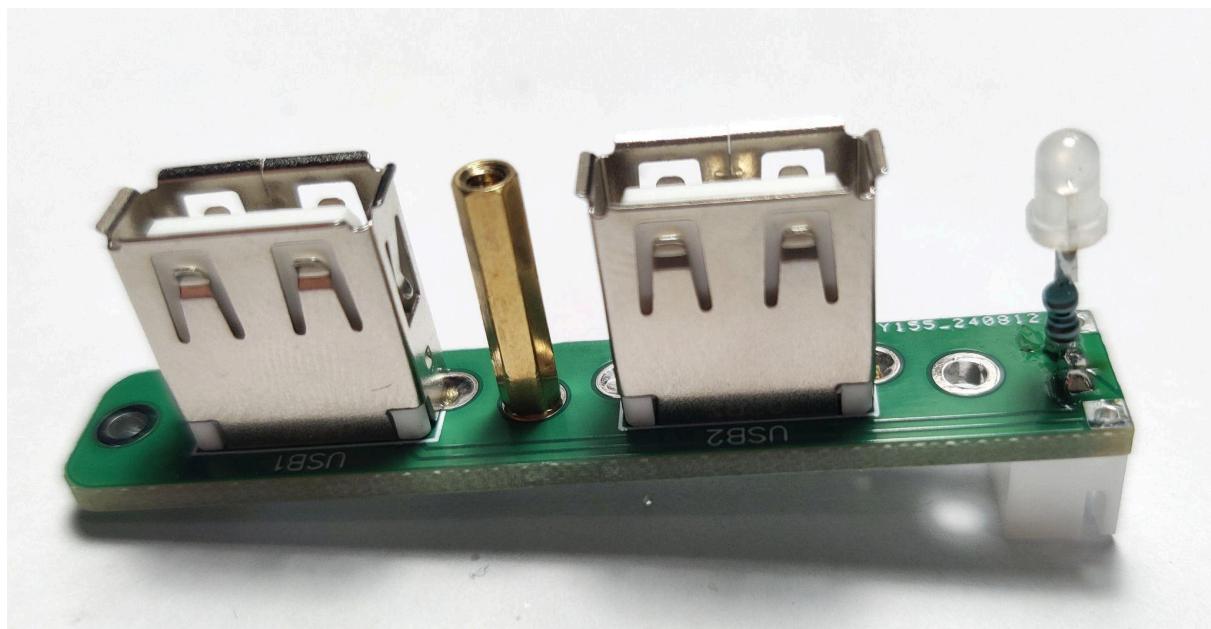
Assemble the panel and PCB with the USB-A connectors and cur both legs of the LED so that it fits right inside the module



Solder the LED

Solder the PCB on the soldering points of the power bus connector.

Make sure to solder the resistor on the positive side of the connector (+/- symbols are visible on the other side of the PCB).



Final assembly

Now that both PCBs are completed, let's connect them and finalize the whole assembly. At this point, you screw all parts together (not like on the pictures where just some standoff are screwed).

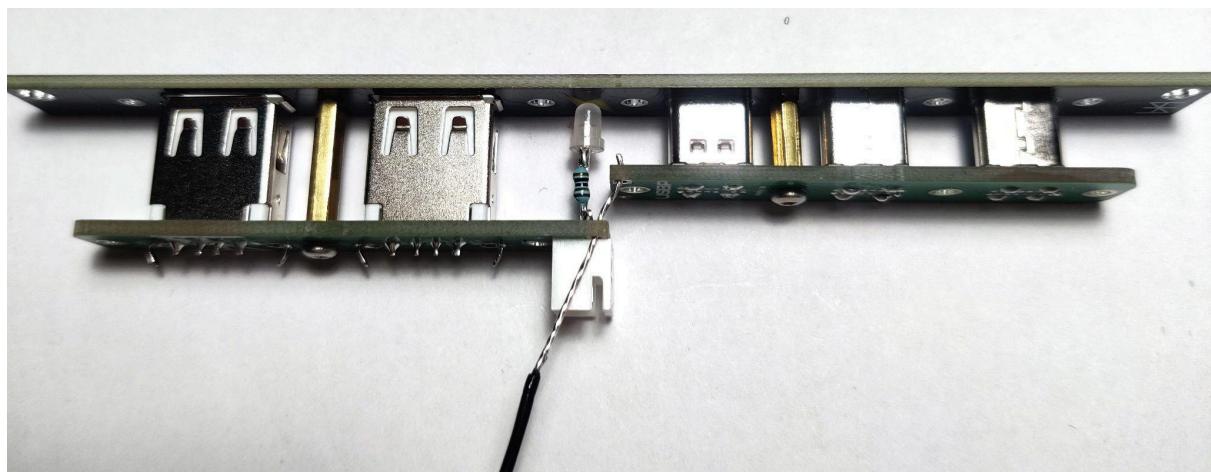
Strip and tin the wire

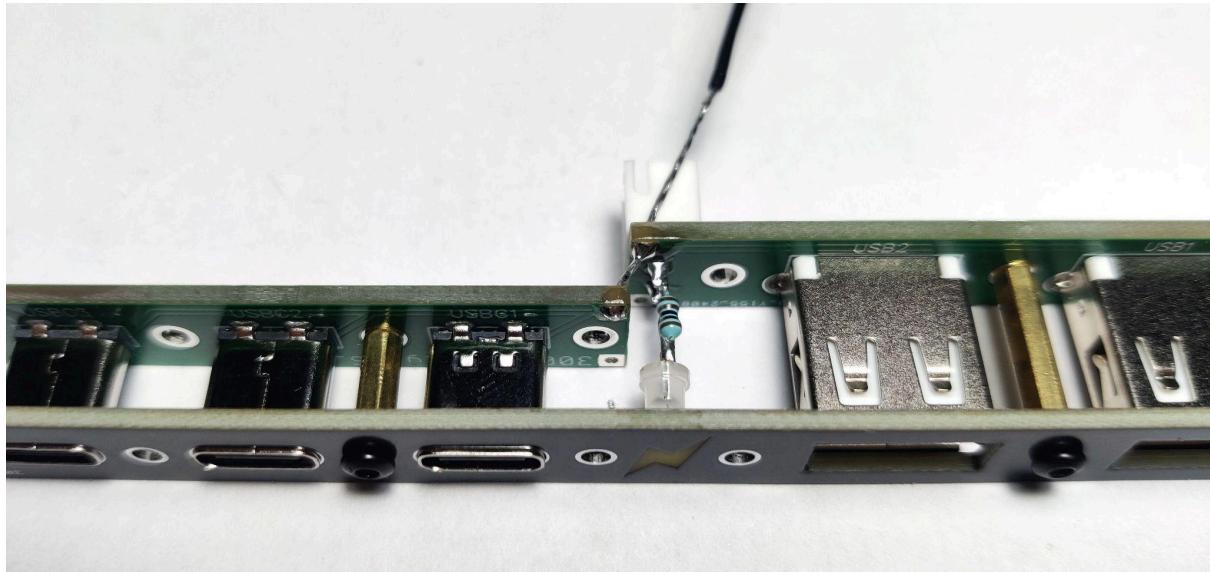
Strip half of the small piece of wire, twist the strands of the wire and tin (solder) the exposed part.



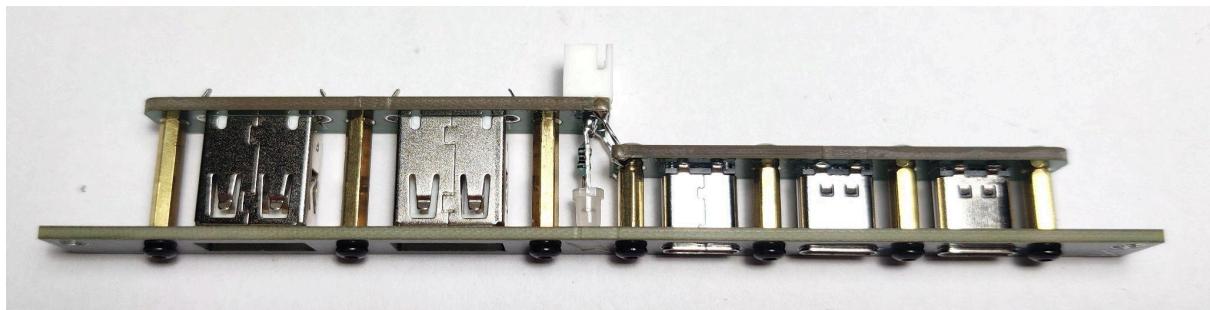
Solder the wire

Pass the wire in one hole of each PCB like on the picture and solder by the bottom of the PCBs (side facing the panel).





Repeat the operation on the other side.



Clean the module

To remove the flux residues left when soldering, it's important to clean the module.

Dip the whole module in 99% isopropyl alcohol and brush it with a tooth brush (don't re-use it for anything else after that, and certainly not for your teeth!).

Dry them with paper towels and an hair dryer at mid position (not too hot).

Make sure it's dry before plugging it in your rack.

Congratulations!

You got yourself a very useful USB power out module! Well done :)

