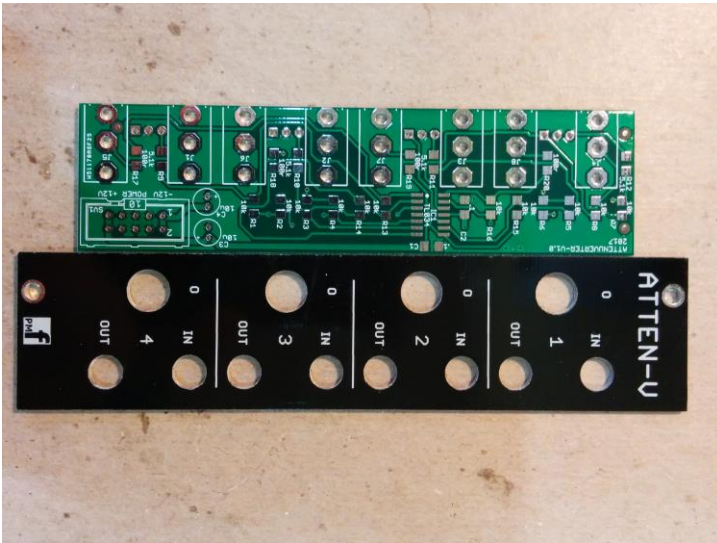


Attenuverter V1.0 – Assembly Guide

Thank you for purchasing this module! This is an easy build but with some surface mount parts including precision integrated circuits. Some of the pads are quite small and you will need a chisel tip or screwdriver tip soldering iron, fine solder and the skill to solder these tiny joints. If you have not soldered SMD before, we recommend watching some of the many YouTube guides. Our favorite: [EEVBlog](#).



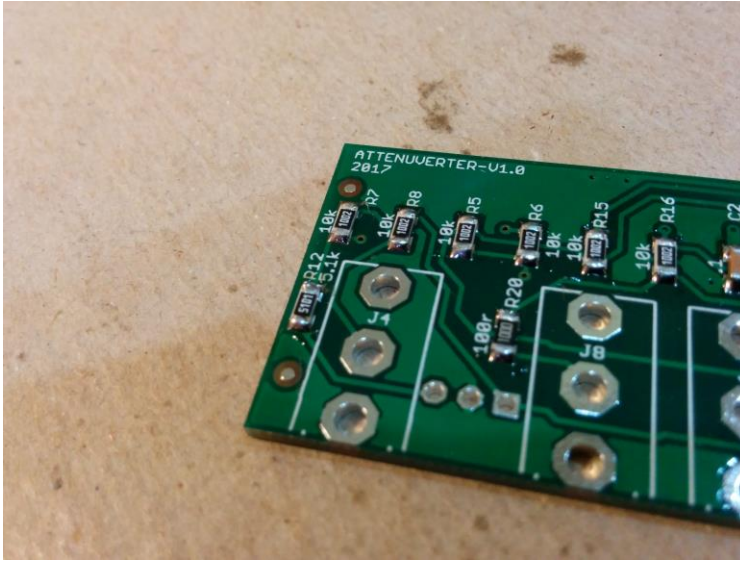
The module is designed and sized for **Euro rack** systems. You will need a 16-10 pin euro rack power ribbon connector with $-12/0/+12$ which is connected to a synth power supply.

Follow the parts lists, these instructions and the PCB silkscreen text to build the module.

Please ensure that you place the components on the correct side. There are components installed on **BOTH SIDES** of the board.

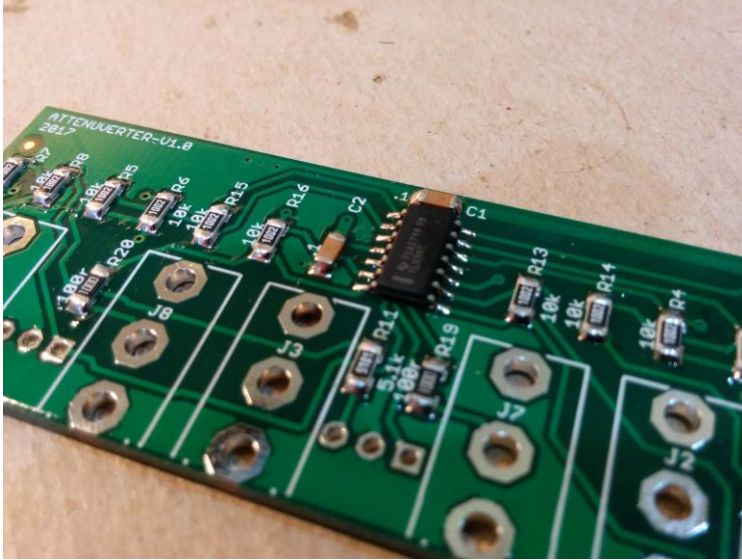
3. 1206 Size Resistors and ceramic capacitors

Install the 1206 resistors and 1206 capacitors on the TOP of the board by positioning on the footprint and heating the cap and tinned pad until the part is attached. When all 1206 parts have been attached. Solder the opposite pad of each part. Finally, reheat and add solder if necessary to finalize the first pad of each part.



4. IC

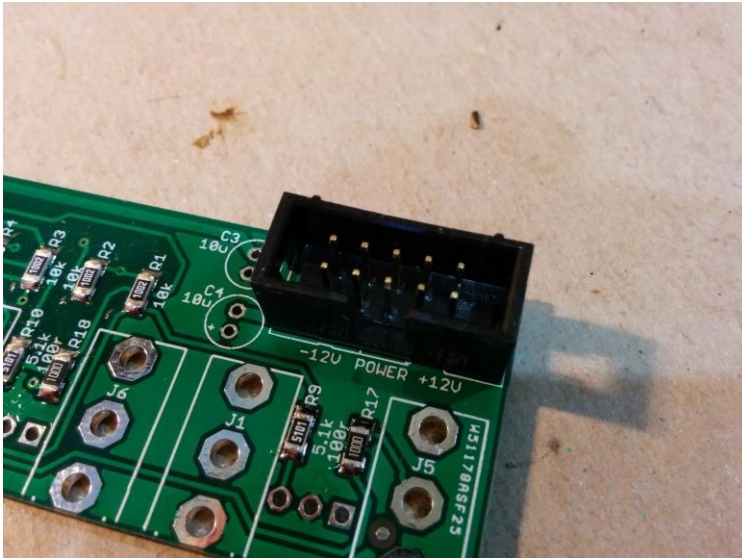
Install the IC with the correct orientation. Align the dot/line or other marker with the corresponding mark on the board. If you solder the ICs the wrong way round, they will explode and render the board useless when power is connected. Position on the footprint and heat the pin and tinned pad in one corner until the part is attached. Position and heat the pin and tinned pad in the opposite corner until the part is attached and aligned with all pins and pads. Solder the remaining pins and pads. Finally reheat and add solder if necessary to finalize the corner pads of each part. Check for and remove any bridges between pins.



5. Power socket

Install the 10 pin power socket on the TOP of the board. This must be installed with the correct orientation or the module will be damaged when the power is connected.

The cut-out in the socket should face the jacks, aligning the cut-out with the "10" marking on the board as shown in the photo. Solder on the underside.



6. Electrolytic capacitors

These are through hole components.

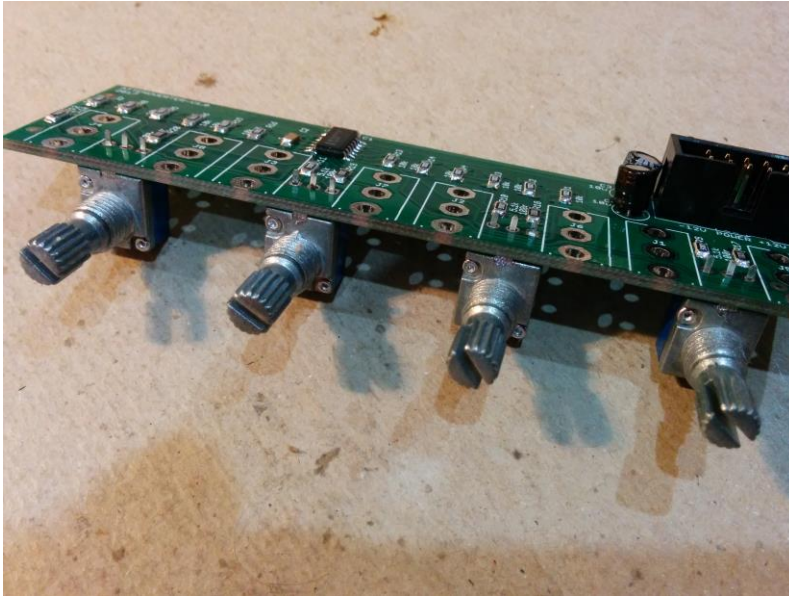
Install these on the TOP. Make sure you orient these capacitors correctly. The longer lead and/or the lead marked with a + needs to be inserted into the hole that has the "+" marking near it. Leads marked with "-" go in the board hole WITHOUT the "+". Solder and clip the leads.

7. Potentiometers

If the pots have positioning lugs on the front, cut these off with a sharp pair of flush cutting pliers. The front of the pot (where the shaft protrudes) needs to be flat.

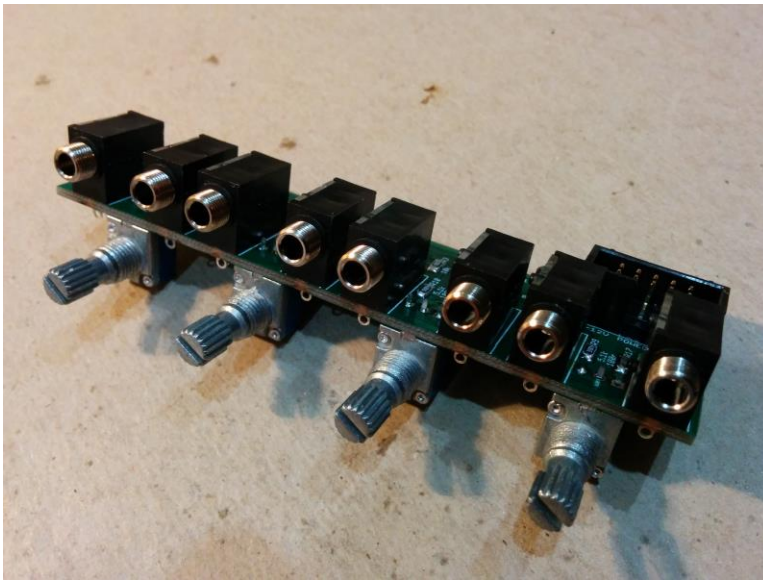
Install 4 pots (10K) on the **BOTTOM** of the board.

Carefully align the pots so they are flush with the edge of the board and perfectly upright and tight to the board surface. Solder one pin only. These will be finalized later. Please ensure they are on the **CORRECT SIDE OF THE BOARD**. See Photo.



8. 3.5mm Jack Sockets

These are installed on the top of the board. Tack one pin only with solder. These will be finalized later. Please ensure they are on the **CORRECT SIDE OF THE BOARD**. See Photo.



Final Assembly

1. Place the front panel over the board so that the 3.5mm jacks align with the holes in the panel.
2. Put nuts on the jacks and FULLY TIGHTEN all of them. Do not overtighten!



3. Now fully solder as many of the remaining pins on the jacks and pots that you can access without burning nearby components.
4. Now remove the panel and finish soldering the more difficult to reach pins.
5. Put washers on the pots and place the front panel over the PCB again so that the pots, switches and 3.5mm jacks align with the holes in the panel.
6. Put nuts on the pots and jacks and FULLY TIGHTEN all of them. Do not overtighten!

7. Calibration:
 - a. connect the power and run a fixed voltage of +5 to +10V into the first input.
 - b. Without changing the input voltage, monitor the voltage from the output jack with a multimeter.
 - c. Adjust the pot shaft until you read 0V on the multimeter.
 - d. Place the knob on the pot shaft so that the pointer points to 0 on the panel.
 - e. If you do not have a meter, you can put an audio signal into the input instead of a DC voltage and listen to the output and adjust the pot until the output can not be heard and then install the knob.
8. Repeat step 7 for the remaining 3 channels.

