

Vult Wolv Build Guide



Thank you very much for supporting the Vult project.

Wolv is a wave folder/shaper based on the original design by Ian Fritz. Wolv is a 100% analog module capable of producing very interesting timbres out of basic waveforms. It is a unique wave folder/shaper but it is lesser known than other modules in the same category.

Assembling this module is not complicated. But even if you are an experienced builder, we recommend you to read and follow this guide.

The build is divided in two sections:

- Assembling the main board
- Assembling the control board

This guide is accompanied by an Interactive BOM (wolv.html). This web page will help you locate the positions of all the components in the main board. The traditional BOM includes the list of all necessary components and, when possible, the link to buy them.

I hope you enjoy the module, and if you like it, share the Vult love with friends and enemies.

Leonardo Laguna Ruiz

Disclaimer

By purchasing a DIY kit or PCBs you are aware that you are responsible for the outcome of your build. Before starting, verify that none of the parts have been damaged during the transport.

If your build fails, we can provide a limited support and repair service.

We want you to succeed. For that reason we tried to make this guide as detailed as possible.

Assembling the main board

For the main board, we provide an Interactive BOM that will help you place all the components. The interactive BOM can be found in the zip file containing all the build information (wolv.html).

WolvCore

Rev:
2022-02-08 20:59:47

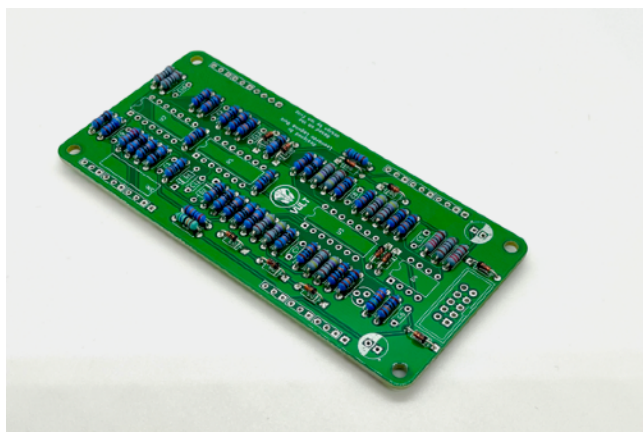
#	Source	Placed	References	Value	Quantity
1	<input type="checkbox"/>	<input type="checkbox"/>	R1, R5, R6, R7, R9, R10, R11, R12, R13, R14, R16, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R41, R48	100k-T	28
2	<input type="checkbox"/>	<input type="checkbox"/>	R17, R18, R19, R20, R21, R22, R23, R24	4.7k-T	8
3	<input type="checkbox"/>	<input type="checkbox"/>	R44, R45, R47	1k-T	3
4	<input type="checkbox"/>	<input type="checkbox"/>	R42, R43	22k-T	2
5	<input type="checkbox"/>	<input type="checkbox"/>	R2	560k-T	1
6	<input type="checkbox"/>	<input type="checkbox"/>	R3	270k-T	1
7	<input type="checkbox"/>	<input type="checkbox"/>	R4	220k-T	1
8	<input type="checkbox"/>	<input type="checkbox"/>	R8	100-T	1
9	<input type="checkbox"/>	<input type="checkbox"/>	R15	15k-T	1
10	<input type="checkbox"/>	<input type="checkbox"/>	R40	47k-T	1
11	<input type="checkbox"/>	<input type="checkbox"/>	R46	3.3M-T	1
12	<input type="checkbox"/>	<input type="checkbox"/>	D3, D4, D5, D6, D7, D8, D9, D10, D11, D12, D13	1N4148	11
13	<input type="checkbox"/>	<input type="checkbox"/>	D1, D2	1N52308-TR	2
14	<input type="checkbox"/>	<input type="checkbox"/>	U1, U2, U3	TL074	3
15	<input type="checkbox"/>	<input type="checkbox"/>	U4	TL072	1
16	<input type="checkbox"/>	<input type="checkbox"/>	C5, C6, C7, C8, C9, C10, C11, C12	100nF-T	8
17	<input type="checkbox"/>	<input type="checkbox"/>	C1, C2	33pF-T	2
18	<input type="checkbox"/>	<input type="checkbox"/>	C3, C4	42uF-T	2

The specific steps may vary depending on the option you purchased. Please read the whole build guide and identify the steps that do or do not apply to your case.

RESISTORS AND DIODES

Start by placing all the resistors and diodes. As mentioned before, use the Interactive BOM to locate the place for each component.

There are two types of diodes in this module. Make sure of not mixing them up. The diodes are polarised make sure of aligning the marking in the silkscreen with the mark in the diode.



INTEGRATED CIRCUITS

The integrated circuits have a mark indicating the direction. Make sure the marking corresponds to the mark in the silkscreen.

We recommend you to use sockets in order to simplify the maintenance in case any of ICs breaks.

CAPACITORS

The ceramic capacitors are not polarised so they can be mounted on any direction.

The electrolytic capacitors do have polarity. Make sure that the stripe marking the negative pin matches the marking in the silkscreen.

POWER CONNECTOR

We strongly recommend using a shrouded header for the power. If you do so, you need to mount it in the correct direction. The silkscreen shows which the correct direction is. If this is mounted backwards the module will not work.

CONNECTORS

To finalise the main board you need to solder the board connectors. These are mounted on the back of the board.

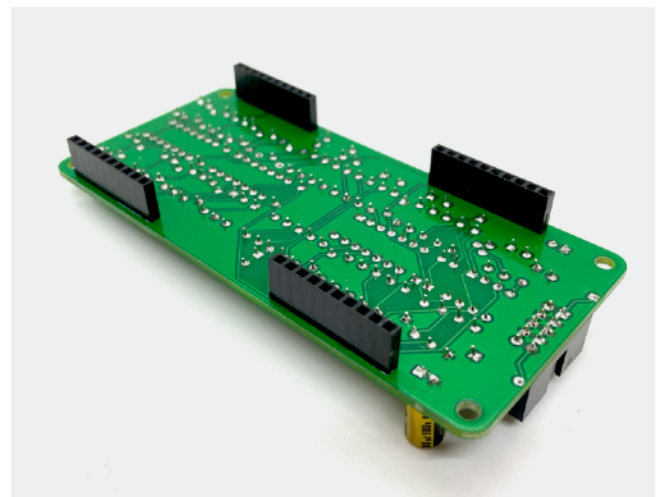
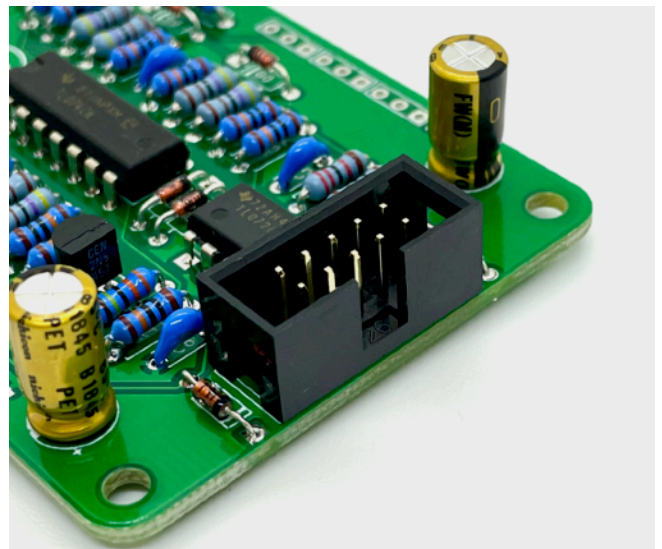
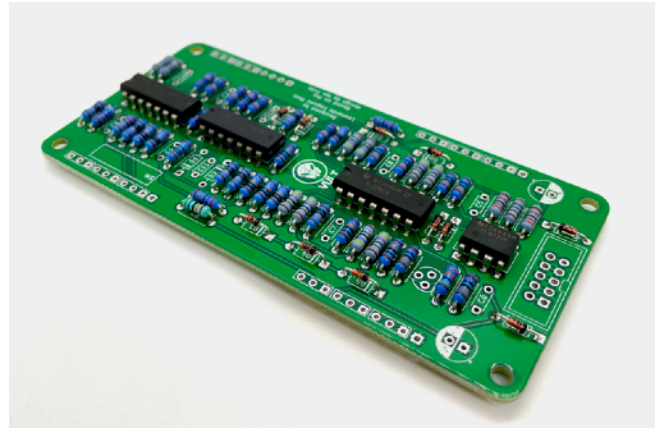
Make sure they are aligned so the control board can fit without issues.

CLEANUP AND CHECKING

At this point you can clean the flux residuals on the board (if necessary).

Check if there are any visible solder point that could cause a short circuit. Check as well that there are no solder points needing a bit more tin.

Using a multimeter, check the $\pm 12V$ points in the connector just to make sure that are no short-circuits. In my case, when measuring the rails, my multimeter displays a resistance over 1 M ohm.



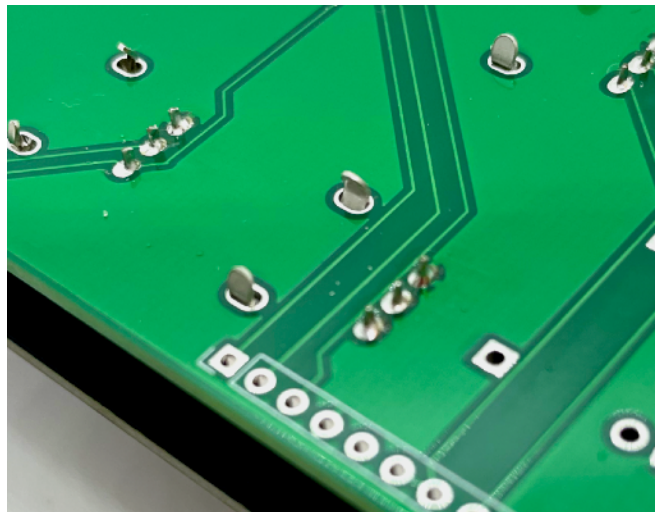
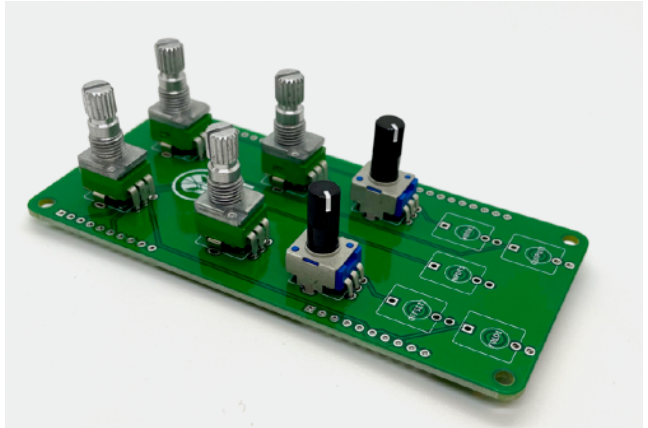
Assembling the control board

POTENTIOMETERS

Start by placing the potentiometers as shown in the picture. Before soldering them, make sure that they are properly placed. When pressing them, push them from the body, not from the shaft because you could break the plastic knobs.

NOTE: do not solder the side terminals of the potentiometers yet. Just solder the main three terminals. This will make easier to fix any mistakes once you mount the panel.

Before doing the final assembly and once the panel is in place solder the side terminals of the potentiometers.

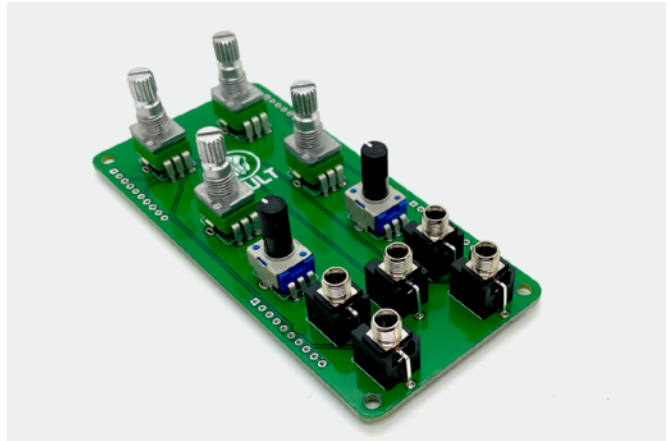


Place the panel in order to test if the potentiometers fit. Make sure they are aligned and they turn without obstructions.



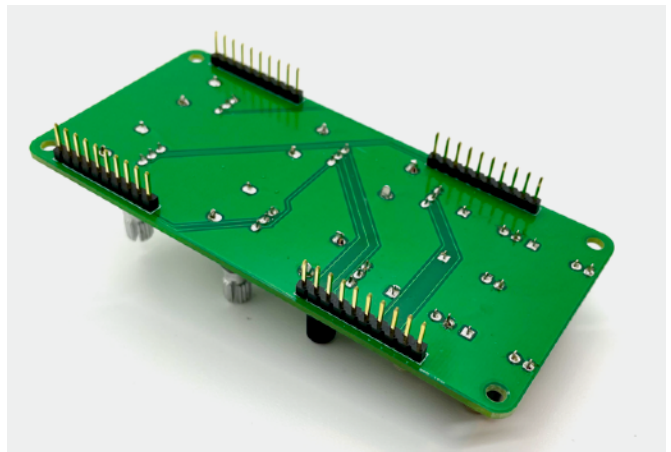
JACKS

Place the jacks and make sure they are mounted correctly. Before soldering them place again the panel to make sure they all go through the panel. Then solder the terminals.



PIN STRIPS

The pin strips are soldered in the back of the board. You can start soldering one pin, then make sure the pins are correctly aligned. Once you have verified that they are in place, solder the rest.



FINAL ASSEMBLY AND CHECKS

Before powering up the module, perform a visual inspections in order to verify that there are no short-circuits in the pins.

You can now screw all the nuts of the jacks and potentiometers and place the knobs.

At this point, your module should be ready to use. Take all the necessary precautions when powering your module for the first time.

Enjoy your module and let us know how the build went!