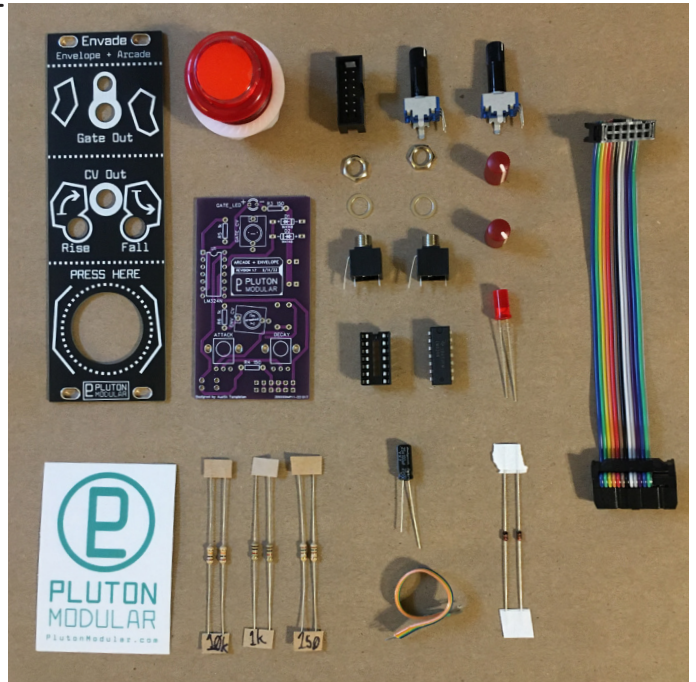


ENVade R1.7 BUILD GUIDE

Packing List

CHECK YOUR COMPONENTS BEFORE PROCEEDING!

COMPONENT	COUNT
Resistor: 150Ω 1/4W	2
Resistor: 1kΩ 1/4W	2
Resistor: 10kΩ 1/4W	2
Capacitor: 100uF 25V	1
14 Pin IC Socket	1
LM324N	1
2x8 IDC Header	1
Red Flat-Topped LED	1
1N4148 Diode	2
Dark Red Knob	2
THONKICONN	2
THONKICONN Hex Nut	2
THONKICONN Washer	2
Tall Trimmer Pot. A50K	2
Adafruit 24MM Red Arcade Button	1
ENVade PCB	1
ENVade Panel	1



Instructions

Step One - Top components

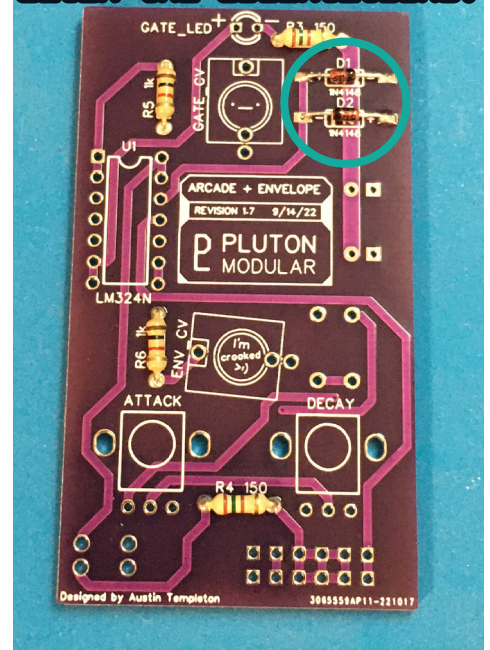
Solder the resistors and diodes on the top side of the board, being mindful of the diodes' orientation.

It may be helpful to pre-bend the legs.

Negative leg on striped side



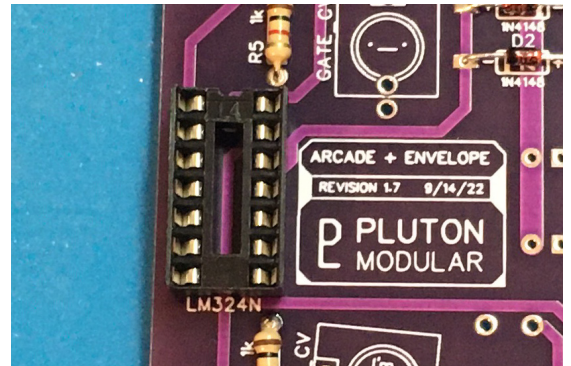
Watch the orientations!



Step Two - IC Socket

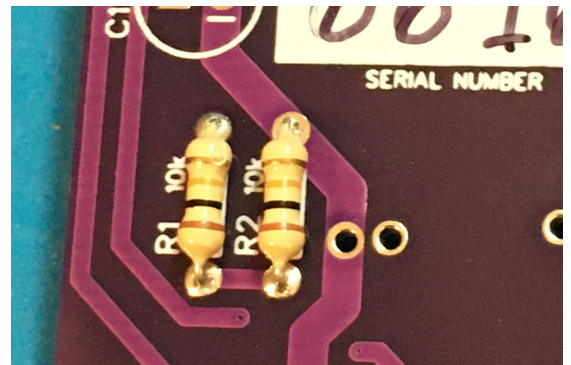
Solder the IC socket into the area marked LM324N.

Mind the alignment of the notch!



Step Three - Bottom resistors

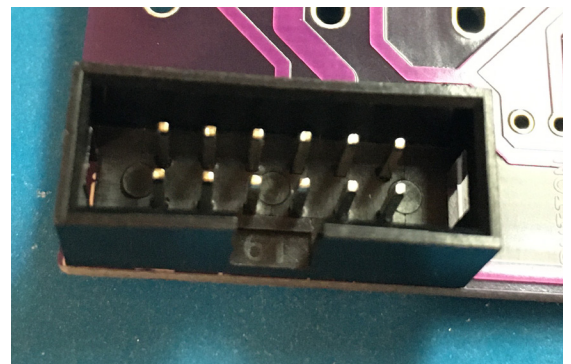
Solder the 2 remaining resistors on the bottom of the board.



Step Four - Power Connector

Solder the power connector onto the bottom of the board in the marked area.

Be sure to orient it correctly or you could fry your synth!



Step Five - Capacitor

Solder the capacitor into the footprint marked C1.

*Be sure to orient it correctly!
The shorter lead on the capacitor goes in the hole marked "-"*



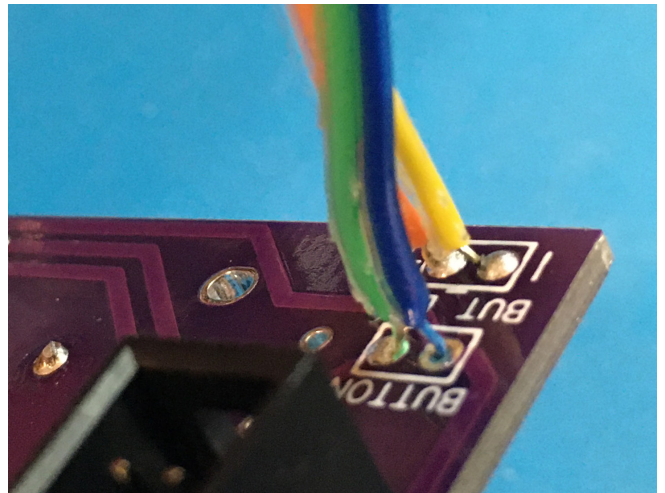
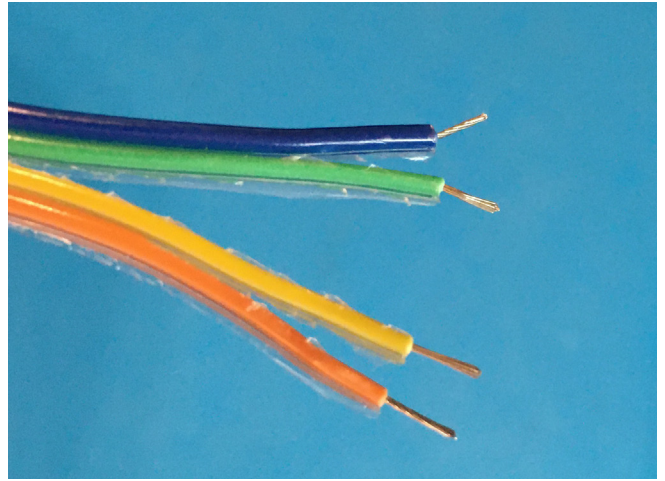
Note about C2

C2 is an optional space intended to allow advanced users to increase the max envelope length further. It is left empty by default, as the range is already broad enough for most uses.

Step Six - Prep the cable

Slightly separate and twist the ends of the 4-conductor ribbon cable to prepare it, then pre-solder ONLY ONE side to the PCB.

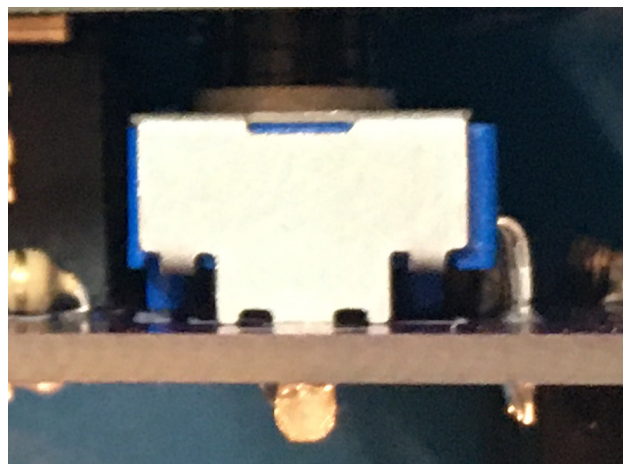
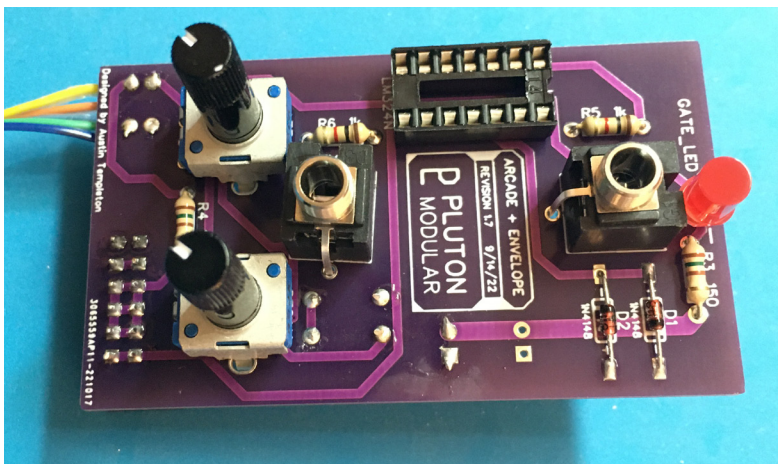
Be sure to note which colors go to the BUT_LED + and -, because getting these backwards will cause the button to not light up!



Step Seven - Loose Fit Front-panel components

Put the knobs, Thonkiconns, and LED into the PCB without soldering them.

The knobs may need to be pushed down with a bit of force to be sure they're inserted vertically! Be sure the 2 large support legs are pressed in all the way, and that they sit parallel with the PCB.

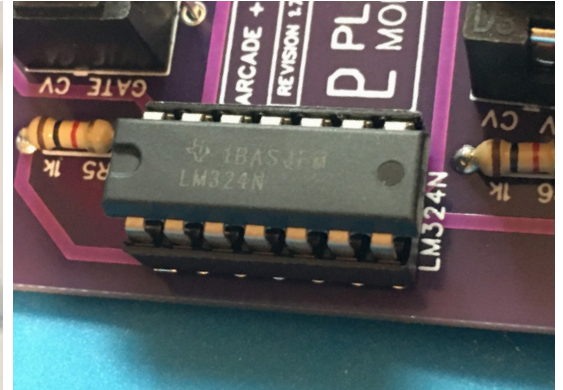
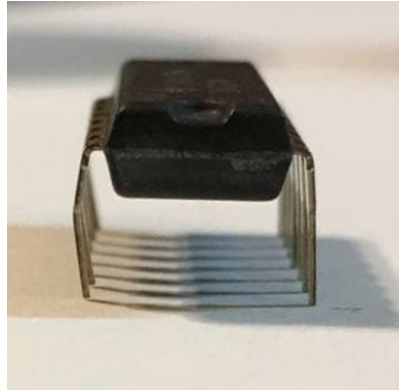


Step Eight - Socket the IC

The IC can now be inserted into the socket.

(While best practice dictates that ICs should be installed last, the panel is in the way at the end, and it would require you to un- and re-install the panel an additional time, risking damage to it.)

You will likely need to straighten the legs against a hard surface to make them parallel.



Step Eight and a half - Sign it!

Use a sharpie or paint pen to put your name and the current date on the blanks on the back of your panel!

(This is an optional step, but I strongly recommend it. It helps people know the history of their module when purchased secondhand)

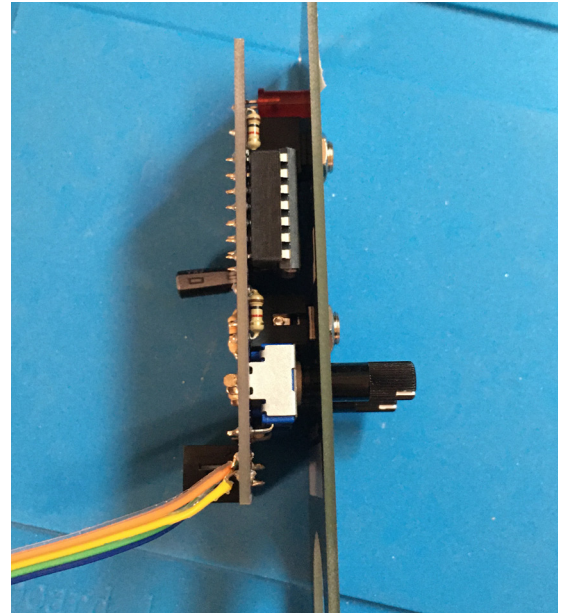
This is probably the last chance you'll have without disassembling the module!



Step Nine - Fit the Panel

Press the panel onto the PCB, then tighten the nuts.

The potentiometers should have even clearance around them in the panel holes. Make sure you position them correctly before tightening.



Step Ten - Solder the panel components

After verifying everything is placed correctly, solder the potentiometers, Thonkiconns, and LED in place. Before doing this you should make certain the LED is flush to the panel, and that the components are sitting flat against the PCB.

I like to use a piece of masking tape over the top of the LED to hold it flush while soldering.

Step Eleven - Add the button

Holding the button centered with one hand, screw the nylon nut on firmly from the back.

It is recommended to leave the protective cover on the button until it's installed in your rack.

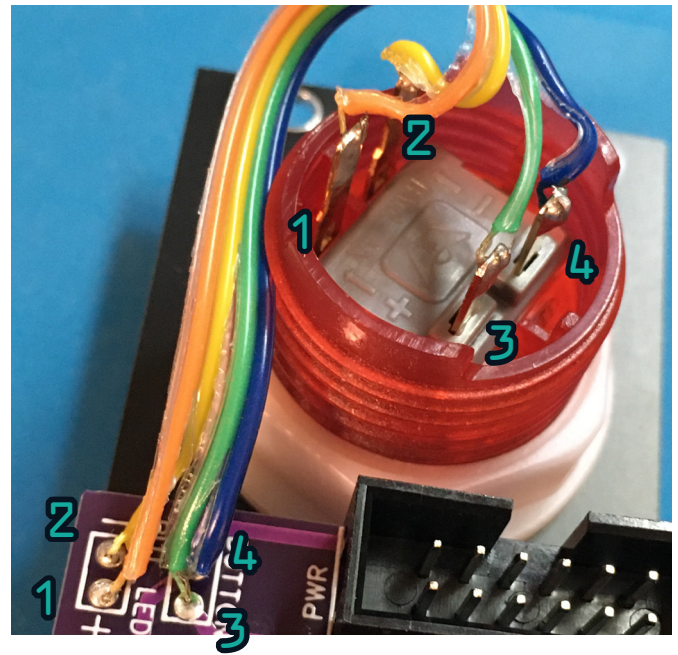
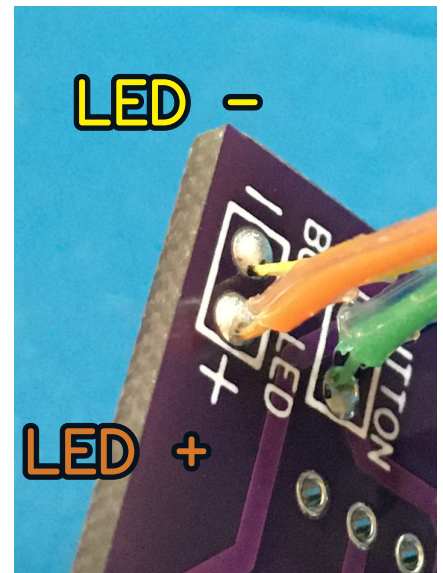
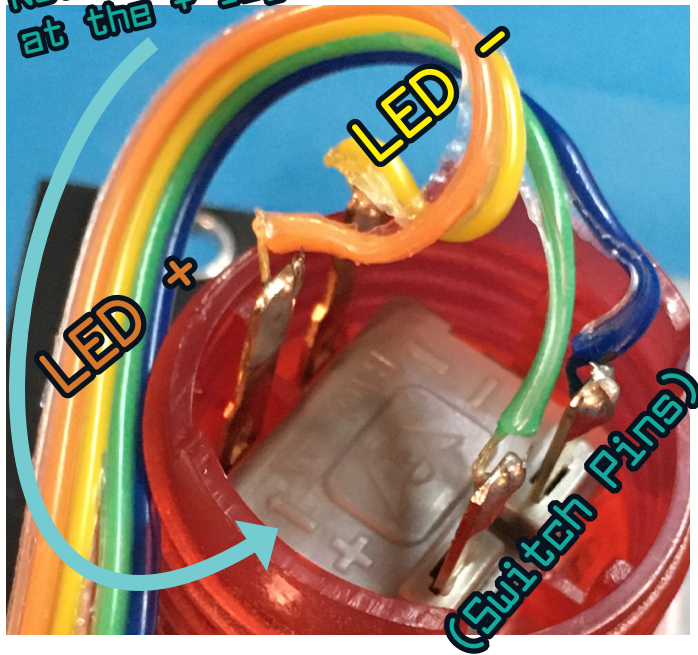


Step Twelve - Connect the button!

Solder the ribbon cable to the PCB and Button, making sure the BUTT_LED + and - go to the + and - marked on the button.

It is important to have the button installed while soldering the wires to it!

Note the arrow pointing at the + leg!!



Step Thirteen - CHECK CHECK CHECK

Check for shorts between all the power pins! the only same-column pins shorted together should be the ground pins.

Unfortunately, we cannot take responsibility for anything that goes wrong relating to a DIY module. This includes things like shorting out your system and frying your modules, so PLEASE be very meticulous when it comes to checking the pins here!

Step Fourteen - Final steps

If all went well, assembly should be complete! Add the knob caps and test the module.

Make absolutely certain there are no shorts before plugging the module into your rack! If the rack doesn't seem to power on with the module connected, power it off IMMEDIATELY, and check for shorts again.



Need help? Issues? Tips?

Contact us at PlutonModular.com