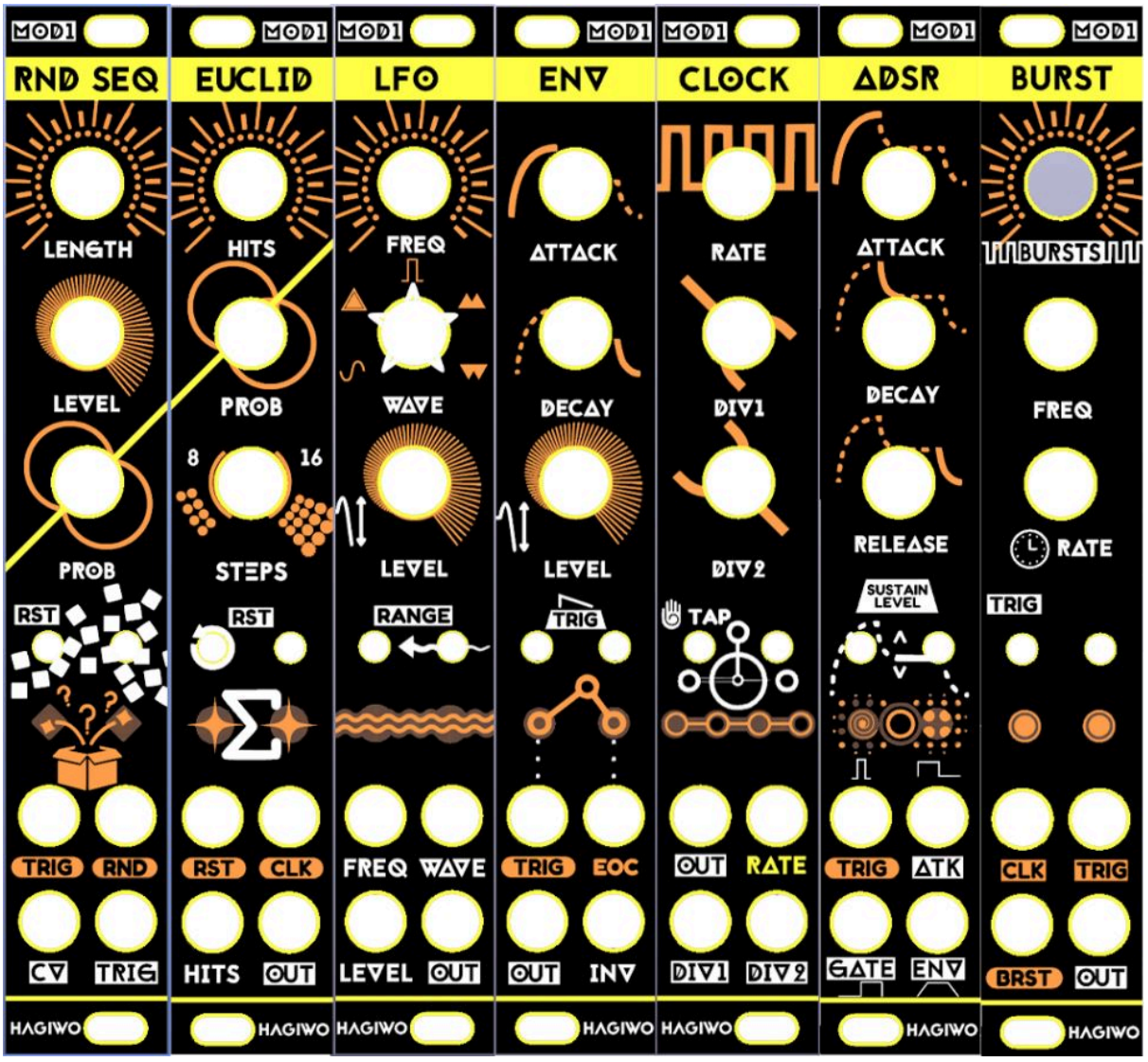
MOD1 DIY Eurorack Module - Assembly & Soldering Guide



Overview

The MOD1 module is a general-purpose CV/Gate Eurorack synthesizer module created by Japanese DIY enthusiast and YouTuber, HAGIWO, complemented with several panel designs (Modulove). This Arduino Nano-based module empowers musicians and synth enthusiasts to implement a variety of digital functions through easy programming, even assisted by generative AI like ChatGPT.

Why MOD1?

- **DIY Digital Fun:** The digital domain allows endless creativity and flexibility. MOD1 simplifies digital DIY for everyone, especially with AI-assisted coding.
- **Affordable Modular:** Modular synths are traditionally costly. MOD1 breaks this barrier, offering a cost-effective, customizable DIY alternative.

Module Features

- **Power:** +12V only
- **Dimensions:** 4HP width, 28mm depth
- **Inputs/Outputs:** 4 flexible IO ports (0~5V)
- **Controls:** 3 potentiometers, 1 push button, PWM adjustable brightness LED
- **Protection:** Circuit includes protection to prevent damage to itself and other modules

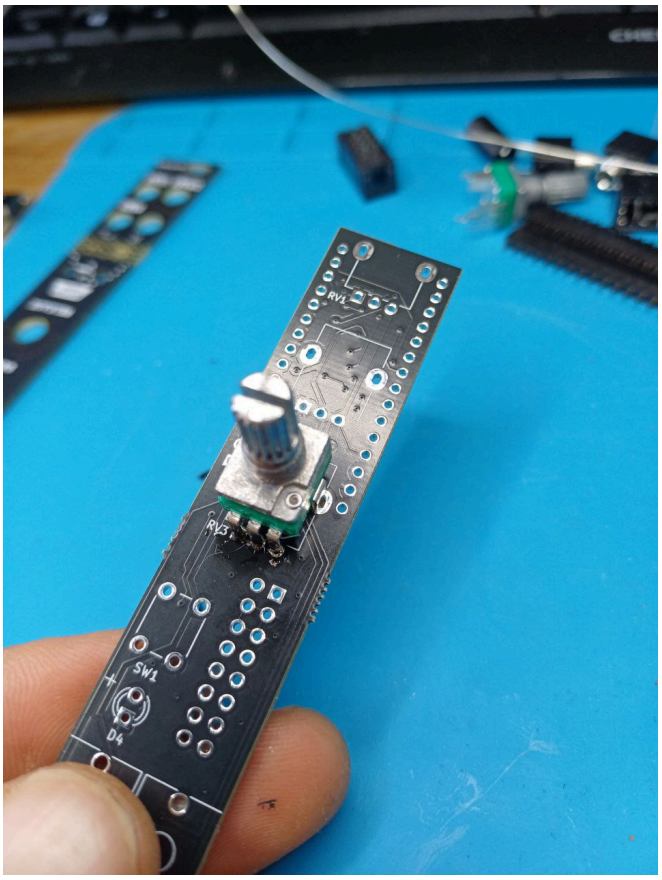
Soldering Instructions

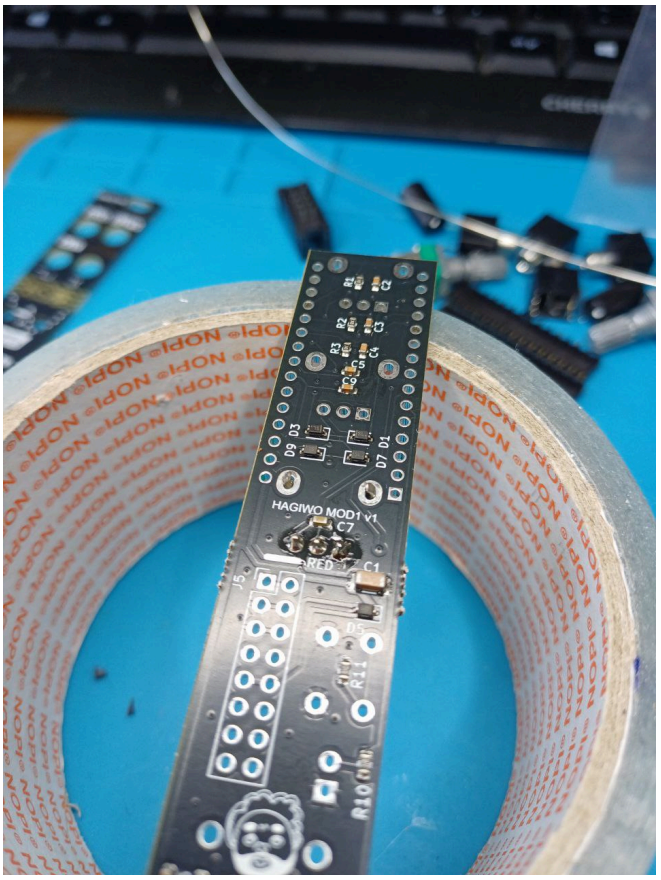
Follow these detailed steps carefully to assemble your MOD1 module correctly. Take your time, verify each step, and ensure everything is aligned properly before fully soldering.

Tools Needed:

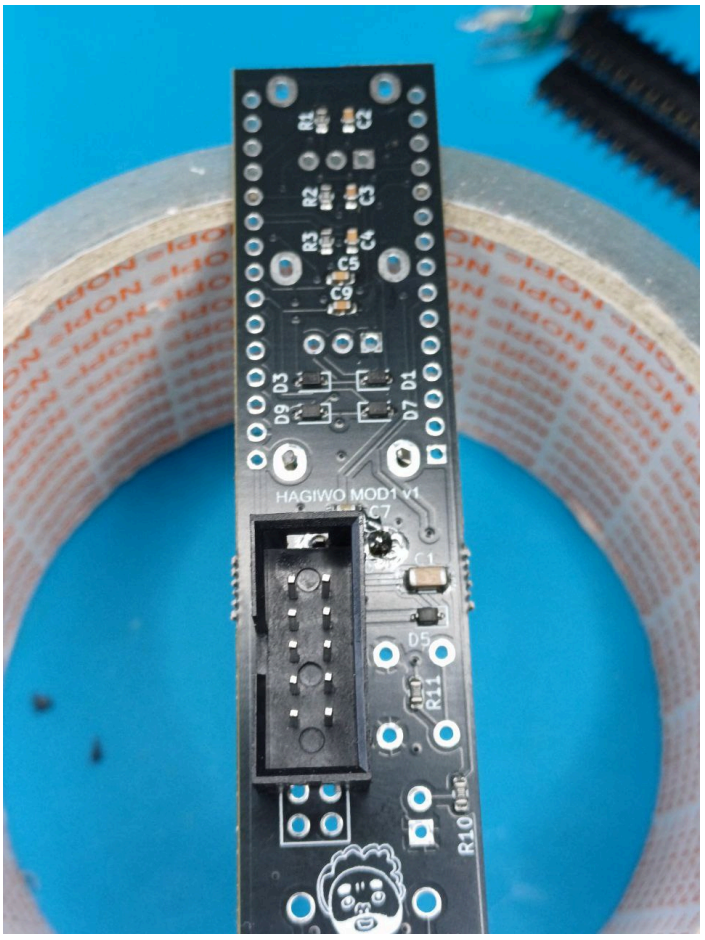
- Soldering iron
- Solder wire
- Wire cutters
- Multimeter (optional, recommended for testing)

Step-by-Step Assembly

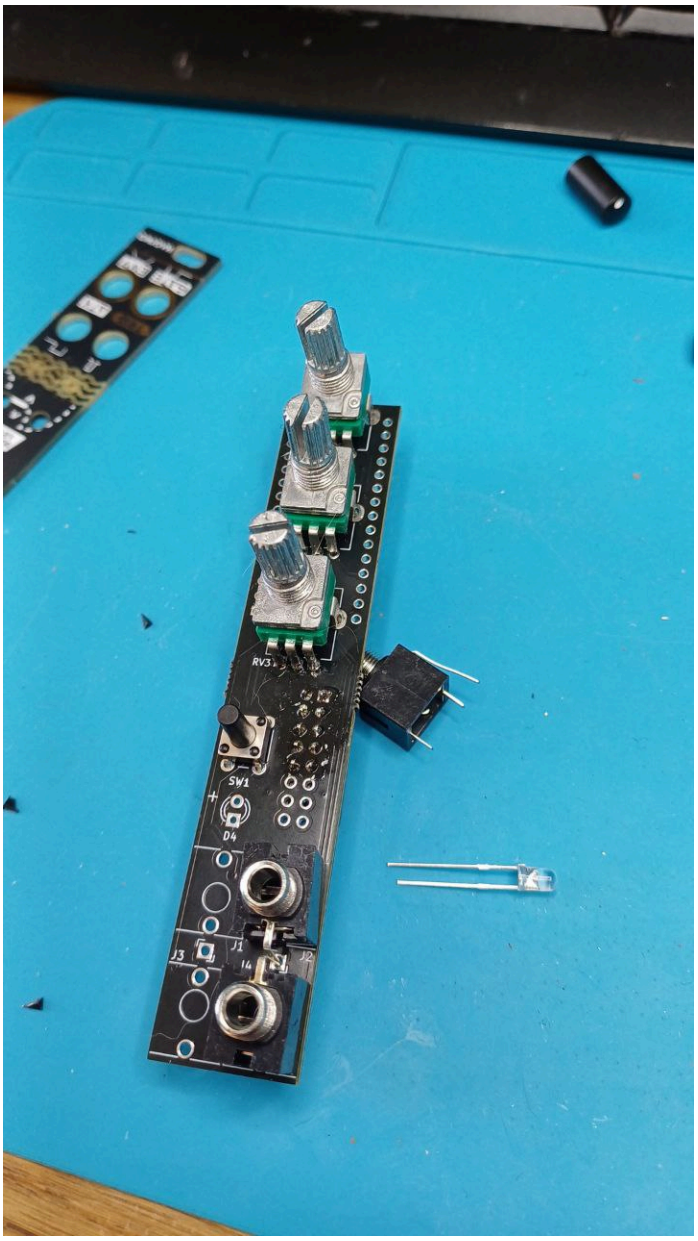


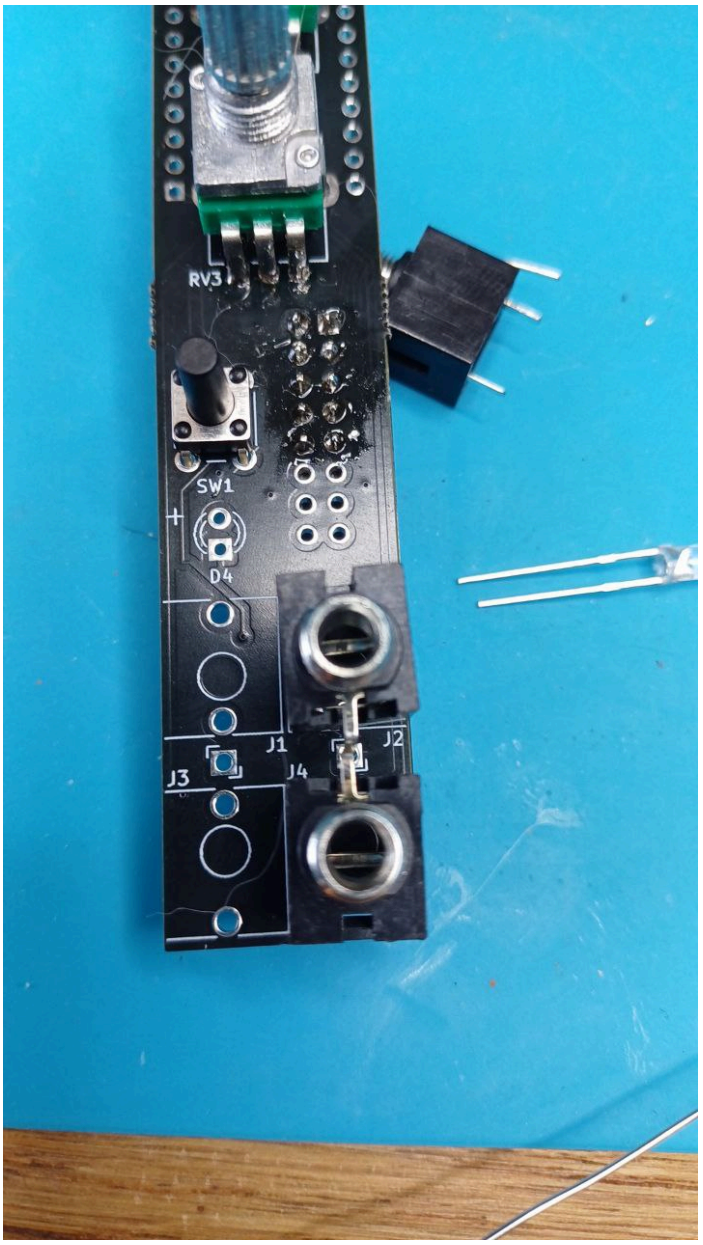


1. **Potentiometer Placement**
    - Place the bottom potentiometer on the PCB.
    - Solder its 3 pins securely.



2. **Modify Power Connector**
    - Slightly trim the marked side of the power connector as shown in the reference image to ensure a flush fit.
    - Check alignment; the notch should face left and sit flat.

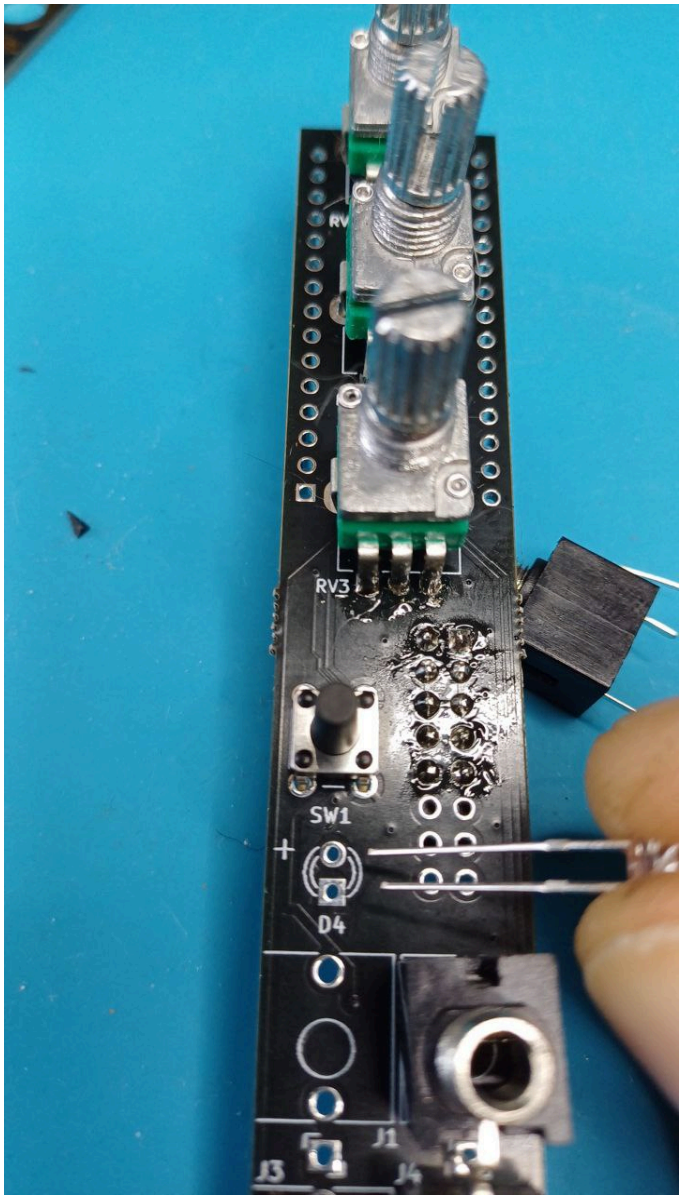


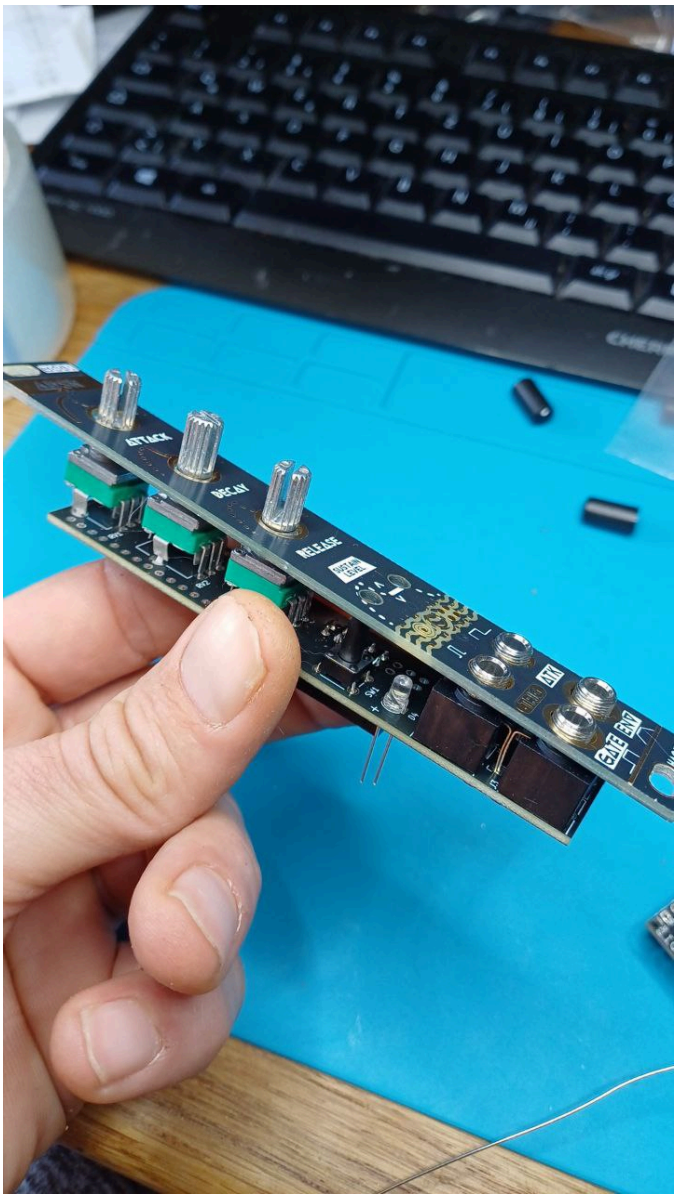


3. **Place Remaining Components**
    - Position all other components (jacks, button, LED, remaining potentiometers) on the PCB but **do not solder yet**.

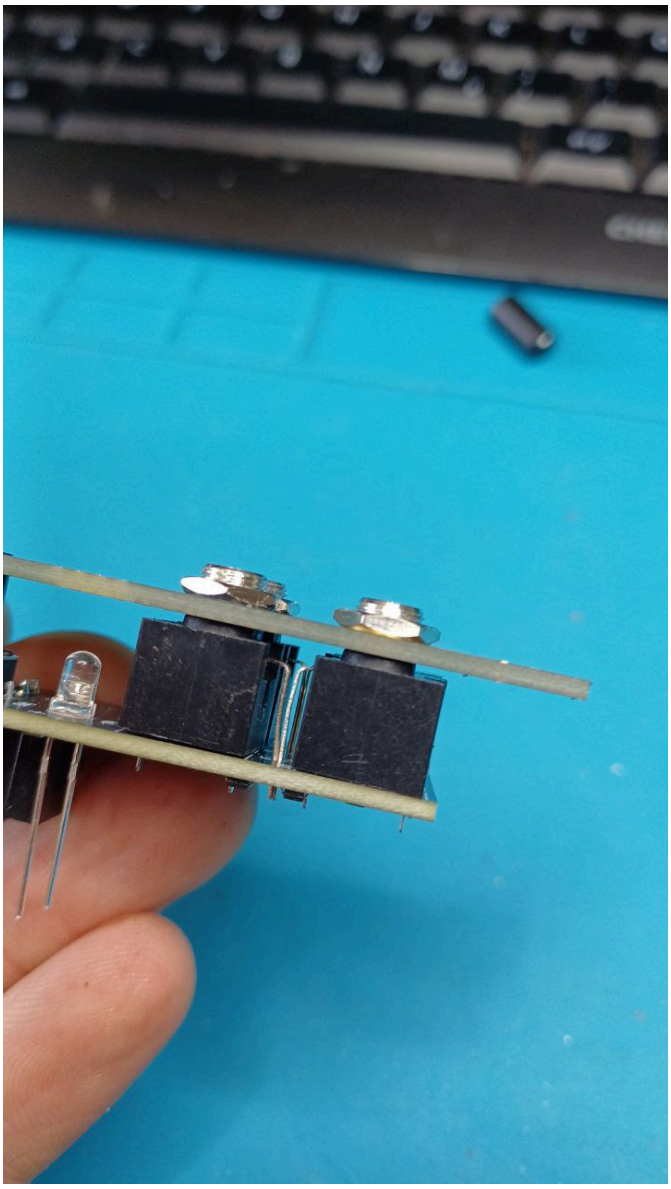
4. **Jack Orientation**
    - Note: the bottom jacks share a ground pin between them.

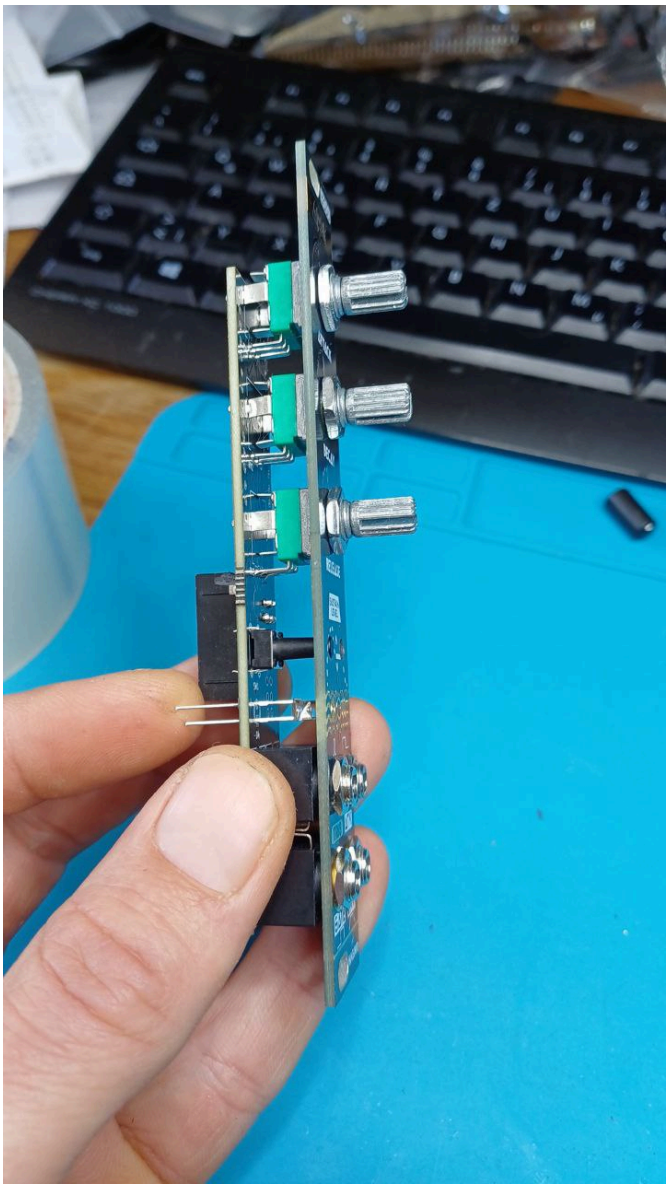
5. **LED Orientation**
    - Ensure the LED’s longer leg aligns with the '+' marking on the PCB.



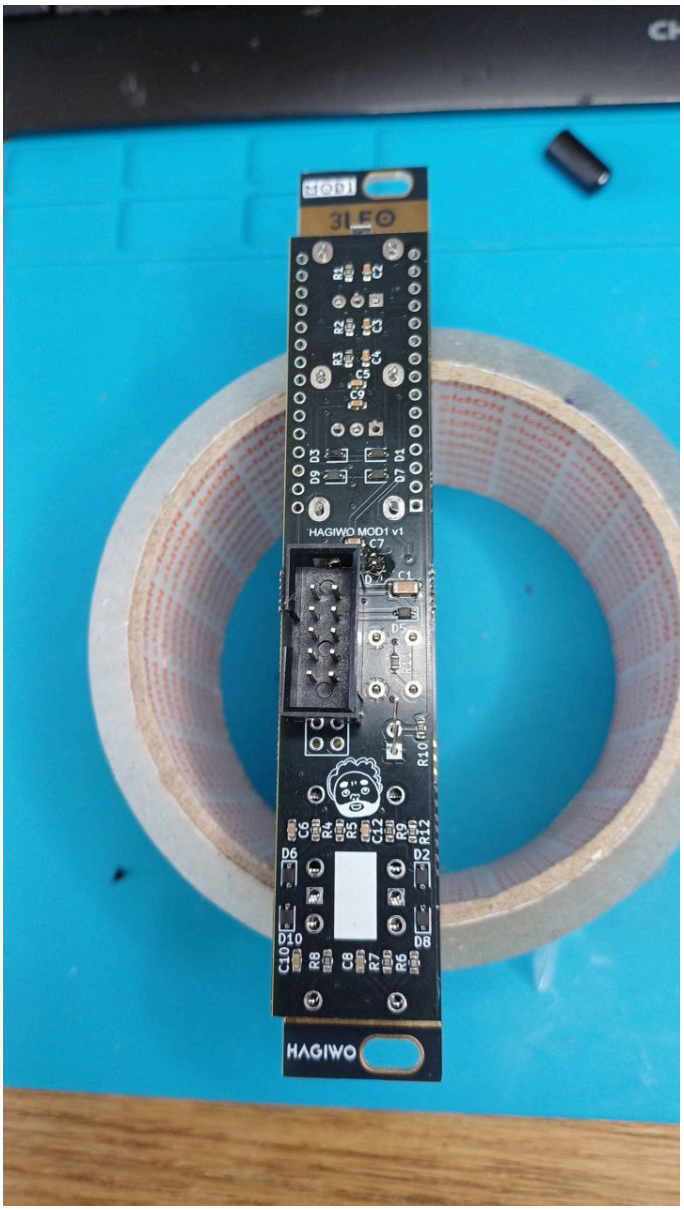


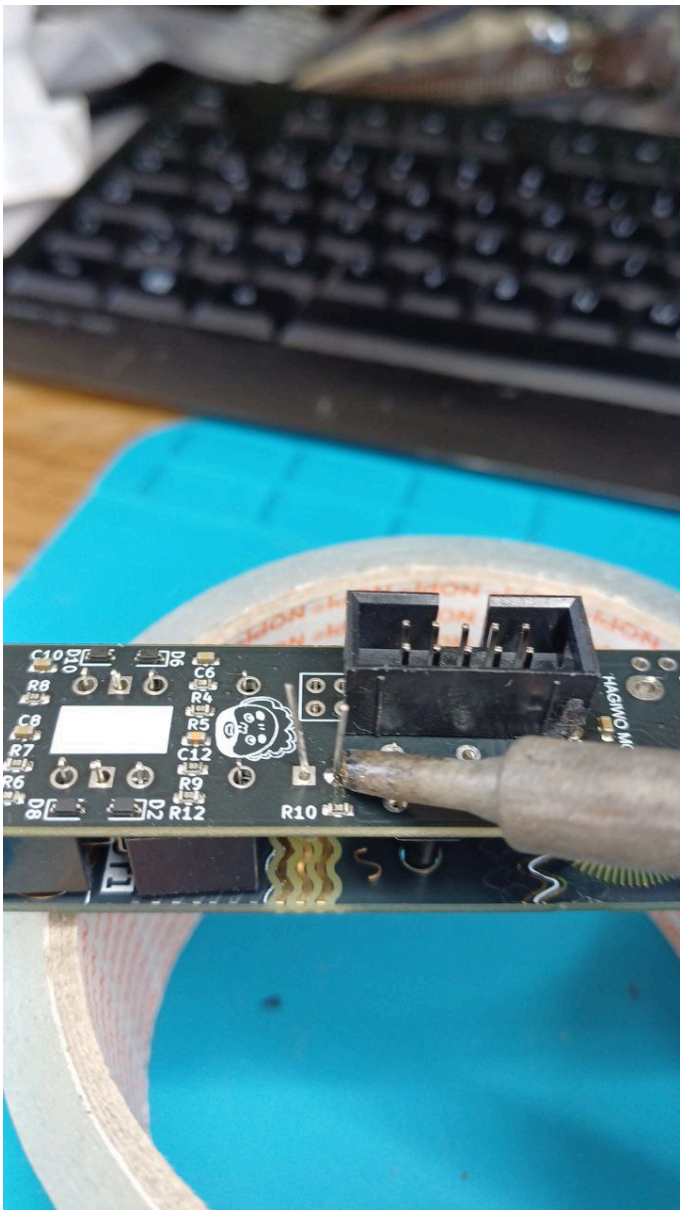
6. **Front Panel Fitting**
    - Carefully attach the front panel over components.
    - Verify all components sit flush against the panel.



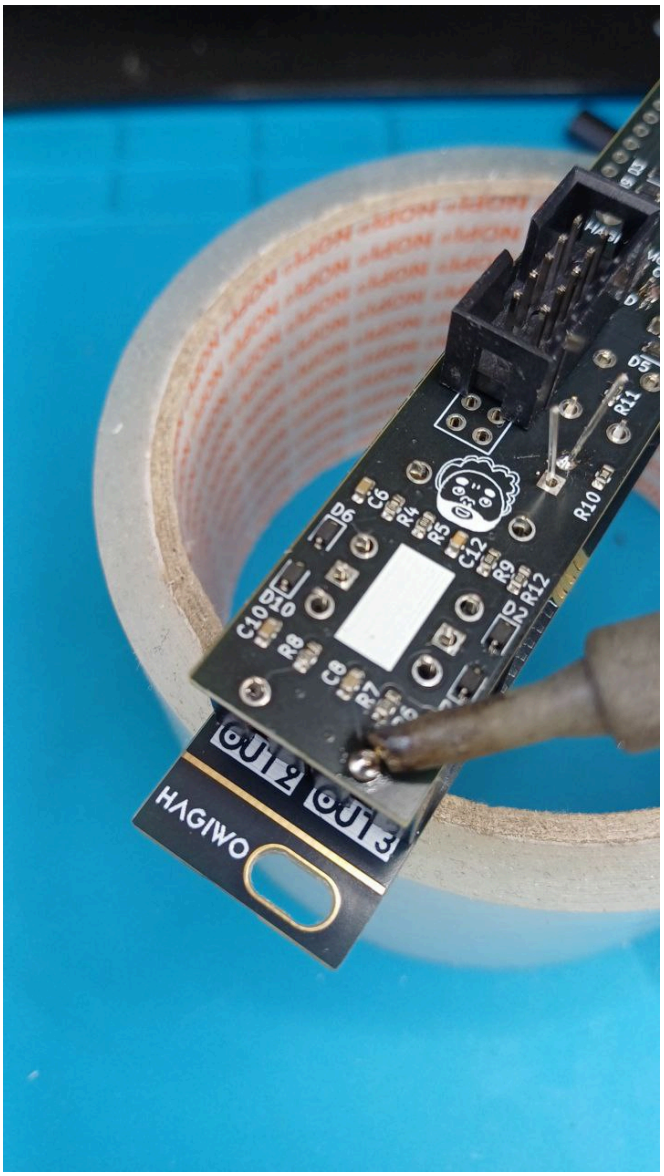


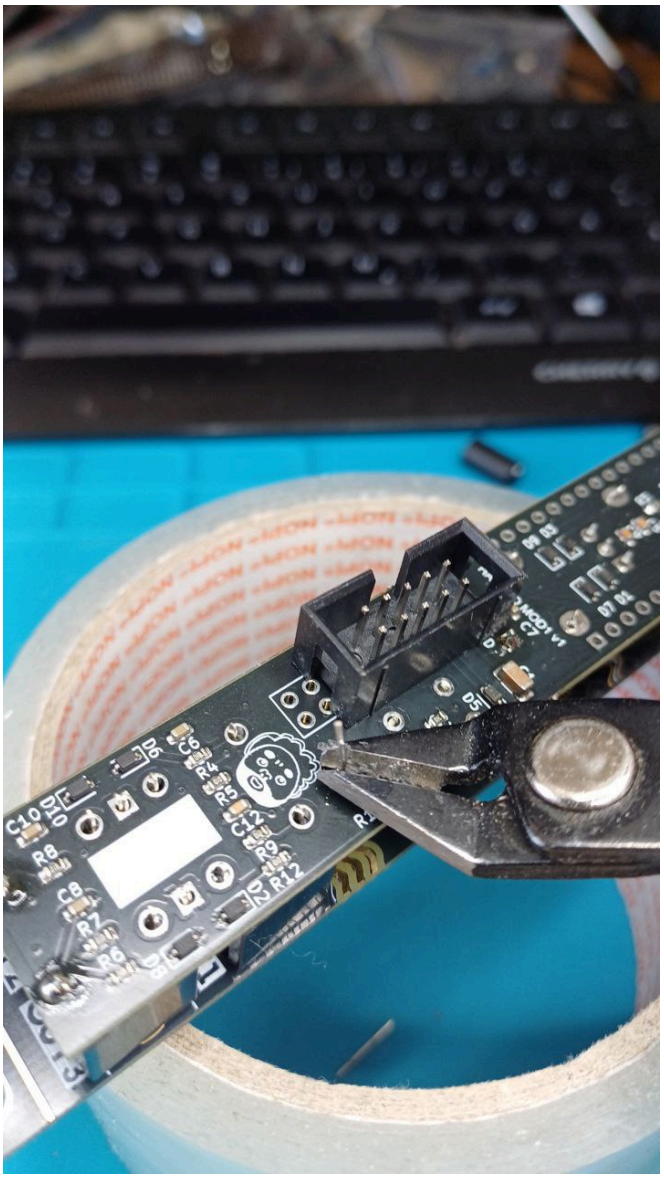
7. **Begin Soldering Components**
    - Start by soldering just **one pin** of the LED.
    - Confirm proper orientation and flush fit before proceeding.





8. **Jack Soldering**
    - Solder **one pin** on each of the bottom jacks first.
    - Double-check alignment.

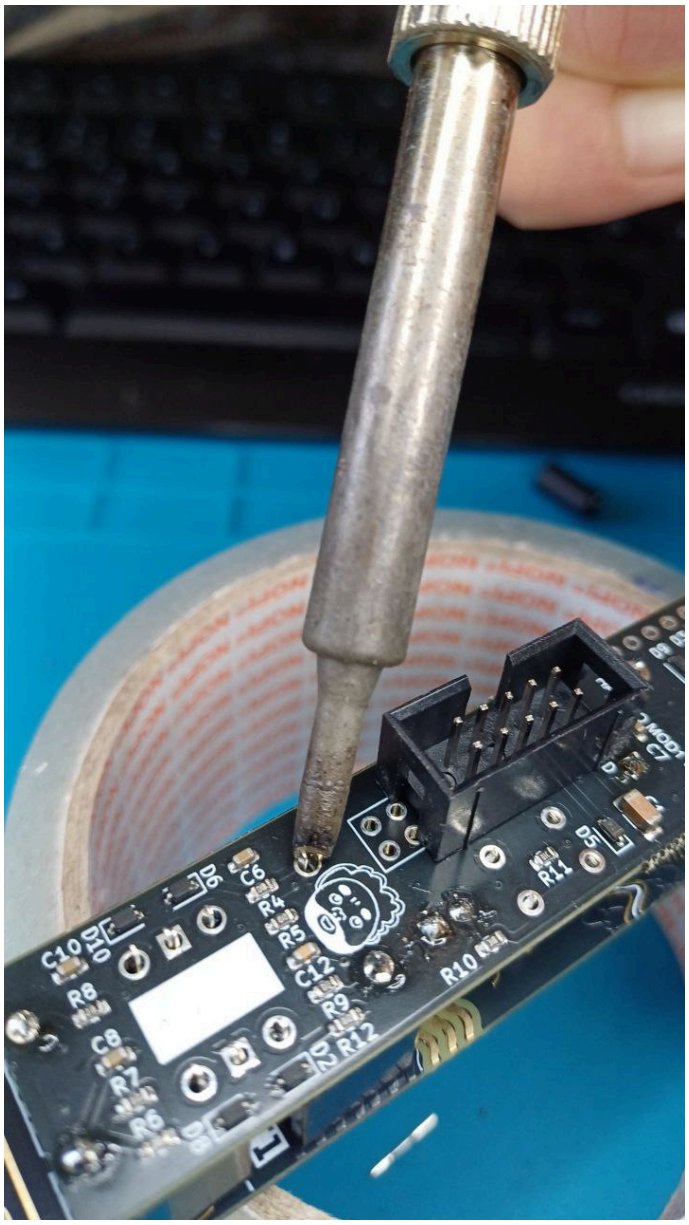


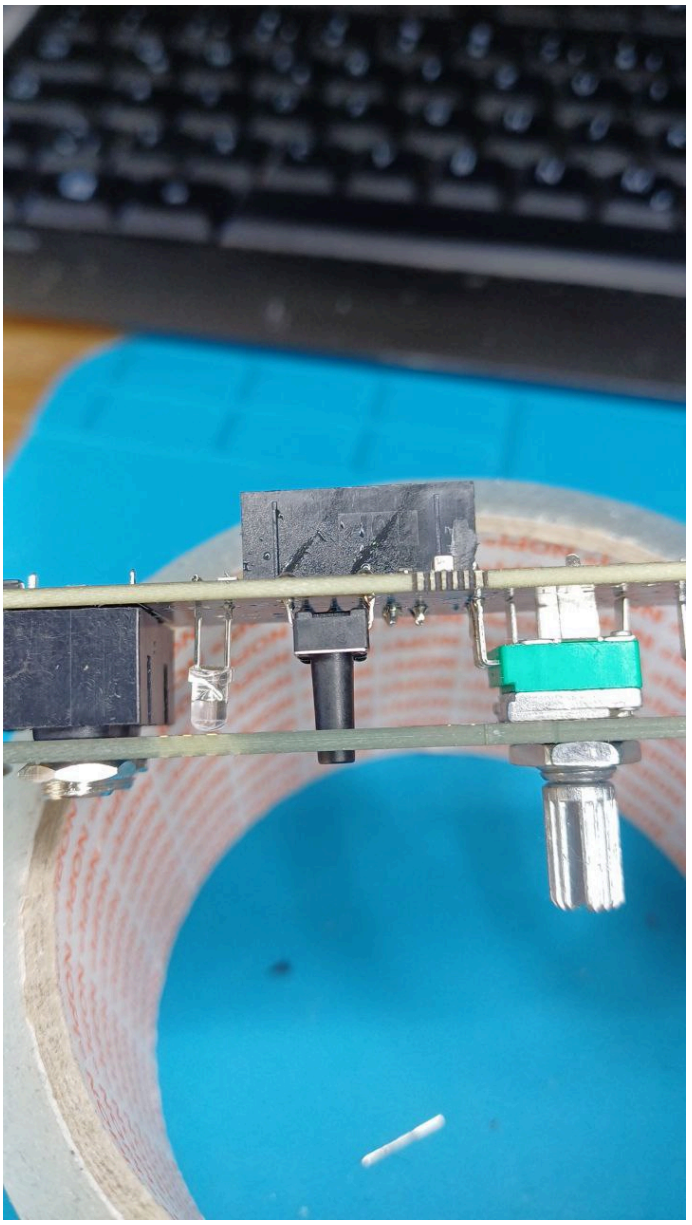


9. **Trim LED Legs**
    - Use wire cutters to trim off excess LED legs.

10. **Finalize Jack Soldering**

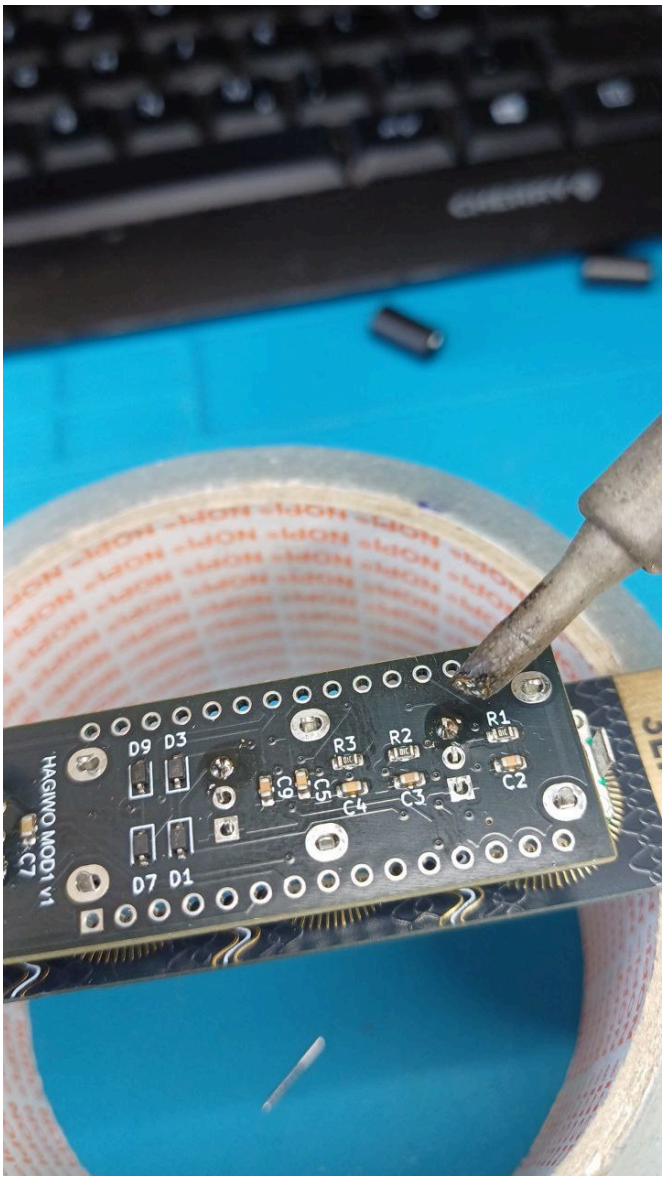
- Solder the remaining upper pins on both jacks, verifying proper fit again.

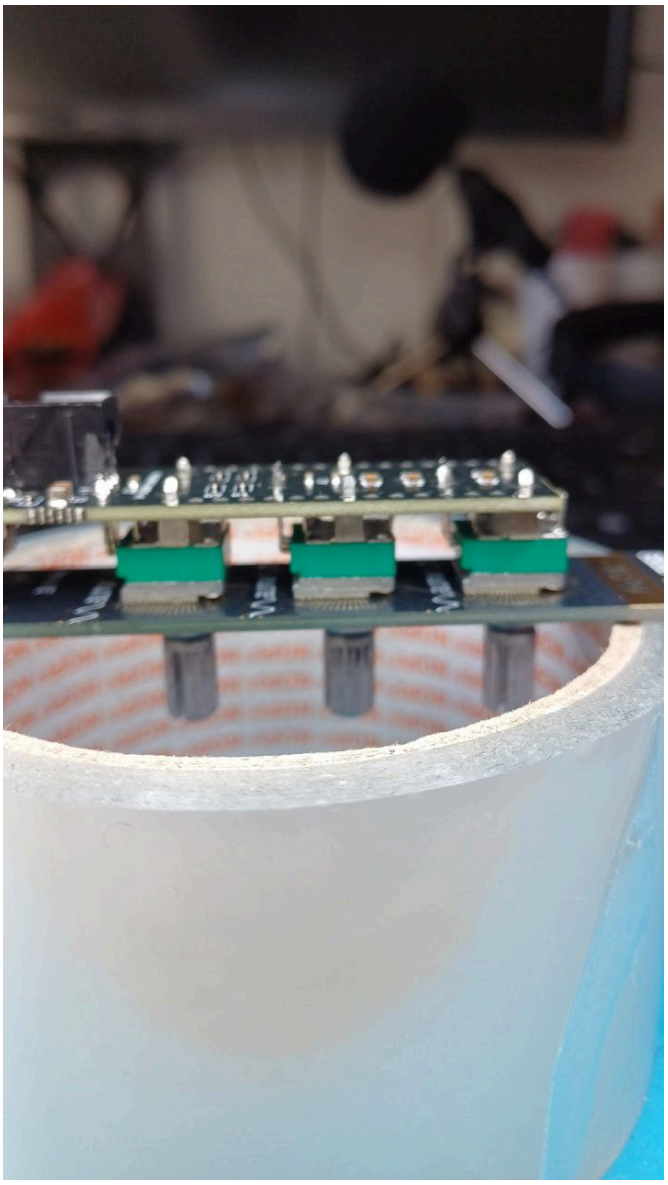




11. **Button Position**

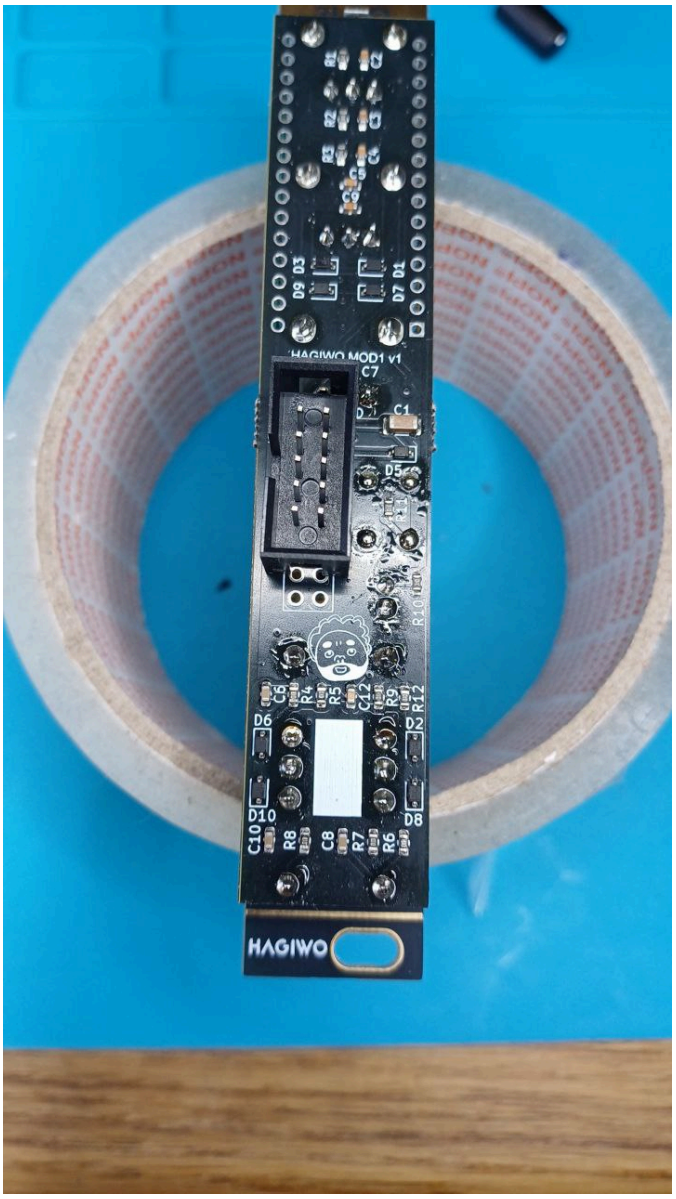
- Allow slight spacing for the button to protrude sufficiently through the panel before soldering.

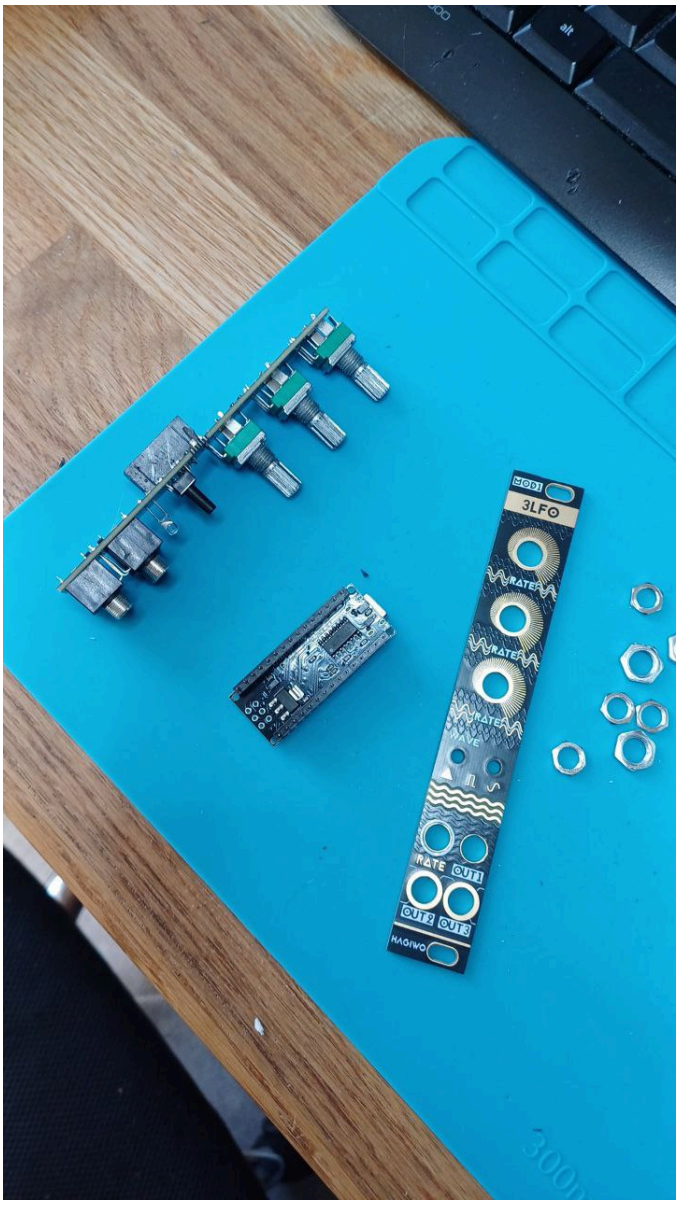




12. **Solder Potentiometers**
- Secure each potentiometer by soldering just one pin initially.
- Reconfirm proper alignment and flush fit.

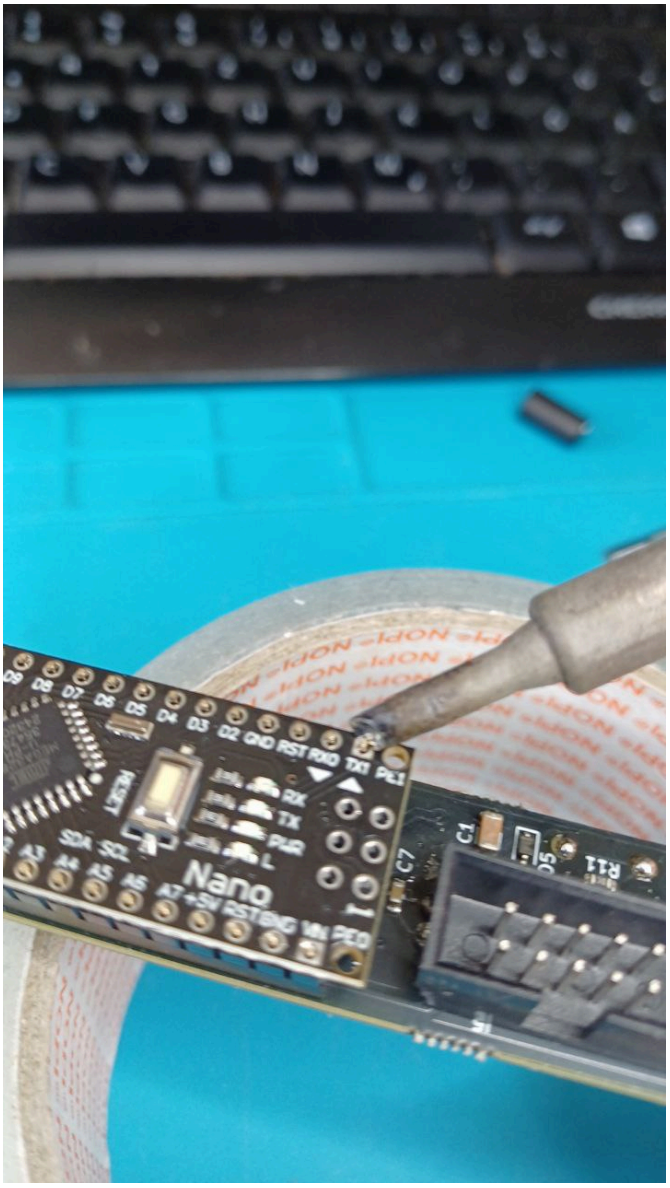
13. **Complete All Pins**
- Once confirmed, solder all remaining pins securely.

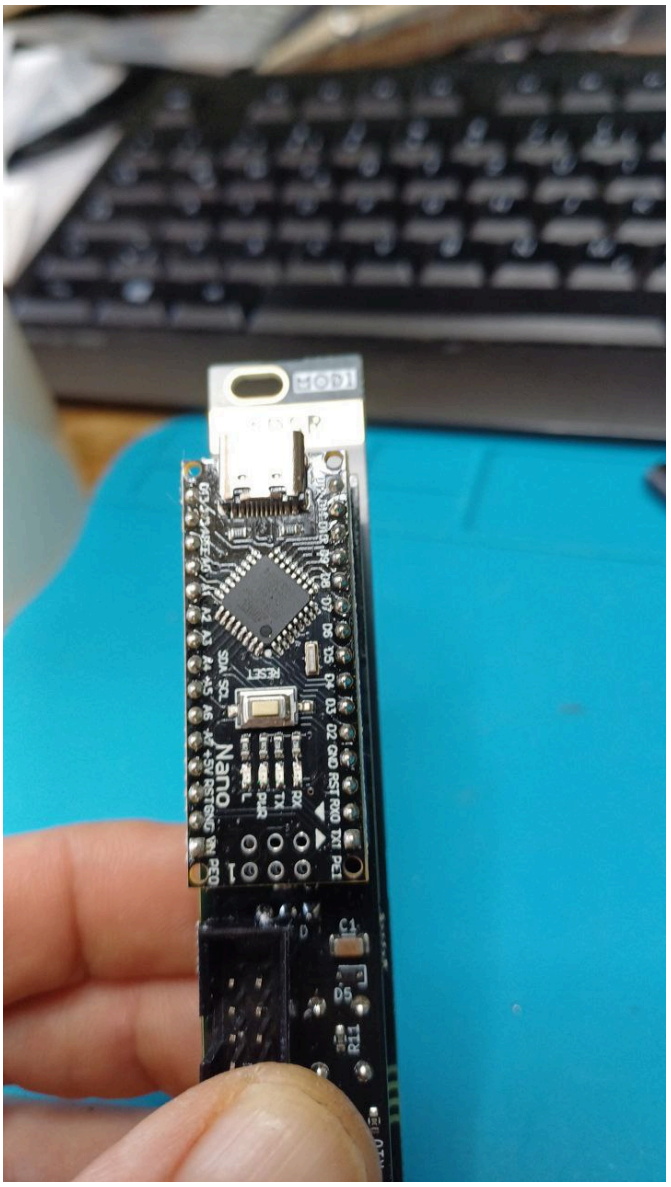




14. **Visual Check**
- Inspect all solder joints carefully to ensure proper connections.

15. **Arduino Nano Installation**
- Disassemble the panel carefully to install the Arduino Nano.
- Orient Nano with USB connector facing upward.
- Solder **one pin first**, confirm flat seating, then solder remaining pins.
- Turn module over, solder **one pin on the opposite side**, check again, then solder remaining pins.





16. **Reassemble Module**
- Reassemble the module fully, ensuring all parts align perfectly.

17. **Final Firmware Upload**
- Upload your chosen firmware using the Modulove uploader: [Firmware Uploader]
- Confirm proper operation: LED should illuminate if the module outputs signals (e.g., LFO firmware).

Congratulations!

You've successfully assembled your MOD1 Eurorack module! Enjoy exploring the infinite possibilities of digital modular synthesis.