

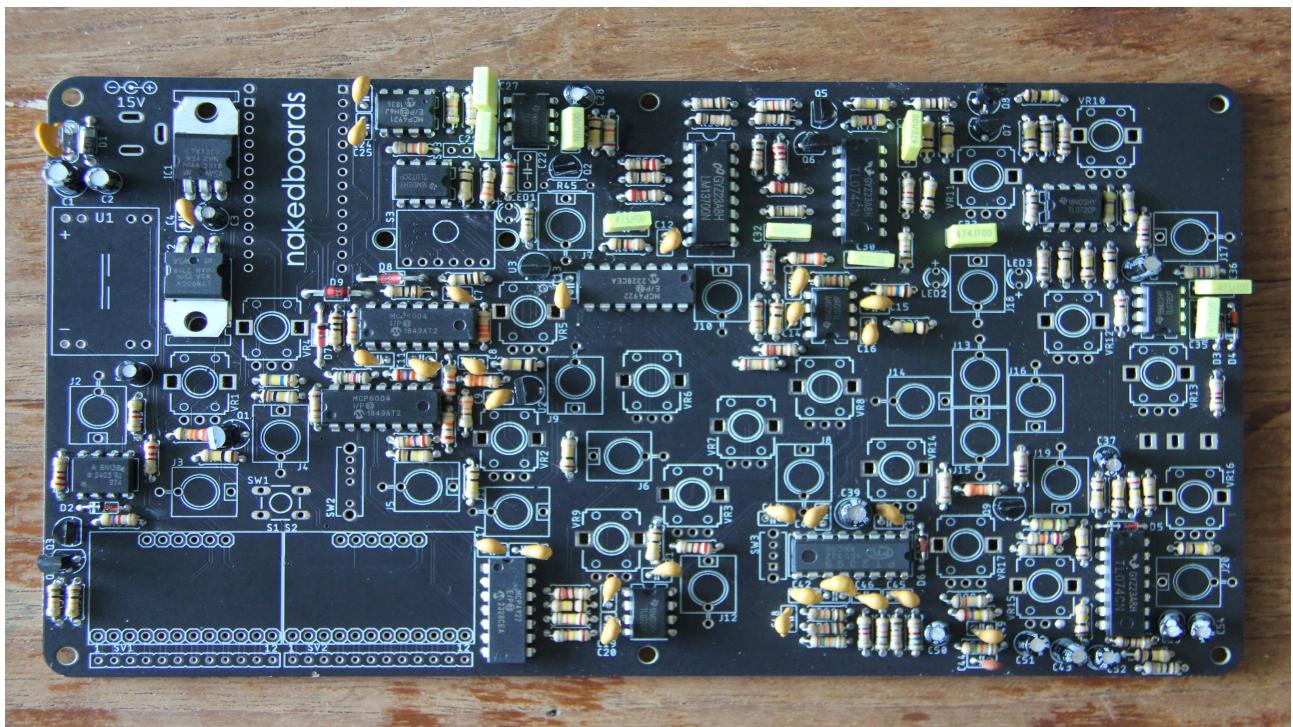
DIY Archean Synthesizer Assembly and Soldering Tutorial

This guide walks you through the assembly and soldering process for the DIY Archean synthesizer by Nakedboards. Follow these steps carefully to ensure a successful build.

1. Solder Low-Profile Components First

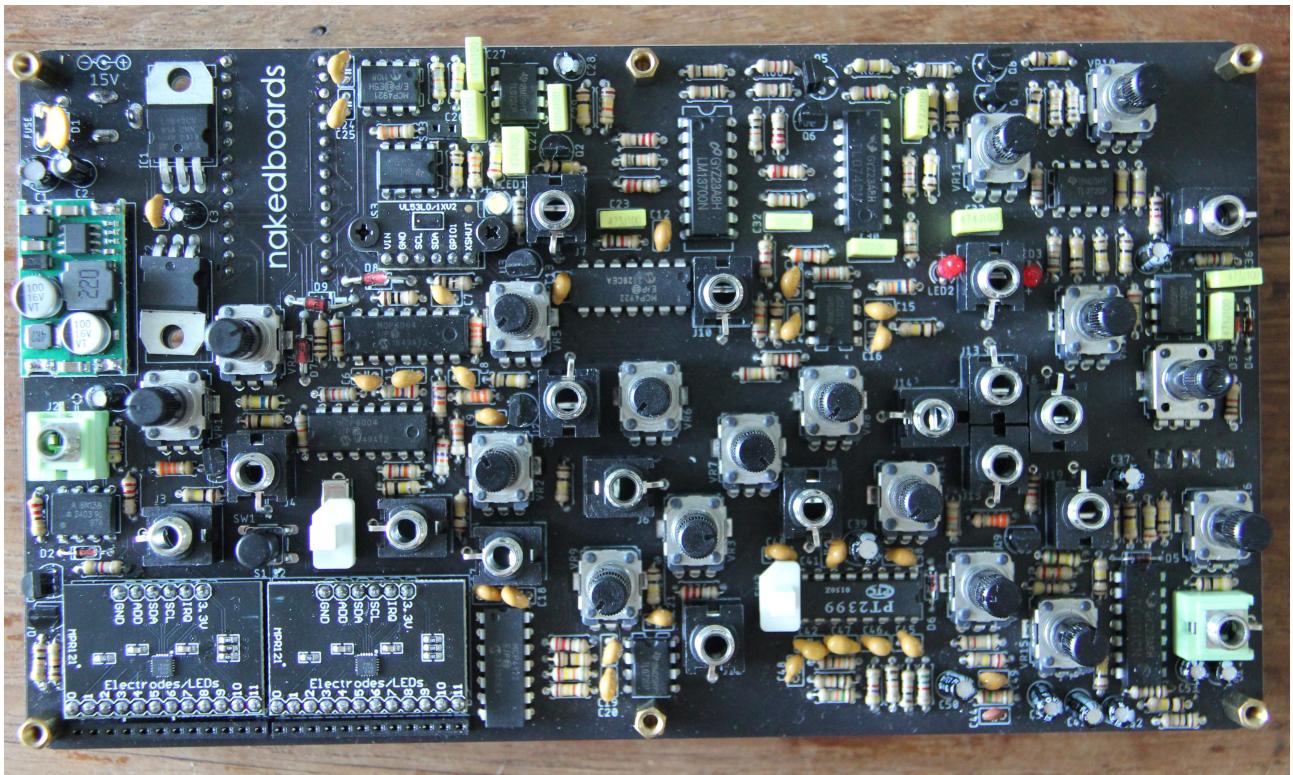
Start with the lowest components to make soldering easier:

- Solder all resistors first.
- Next, solder all capacitors.
- Then, solder all integrated circuits (ICs).
- Finally, solder all transistors and voltage regulators.



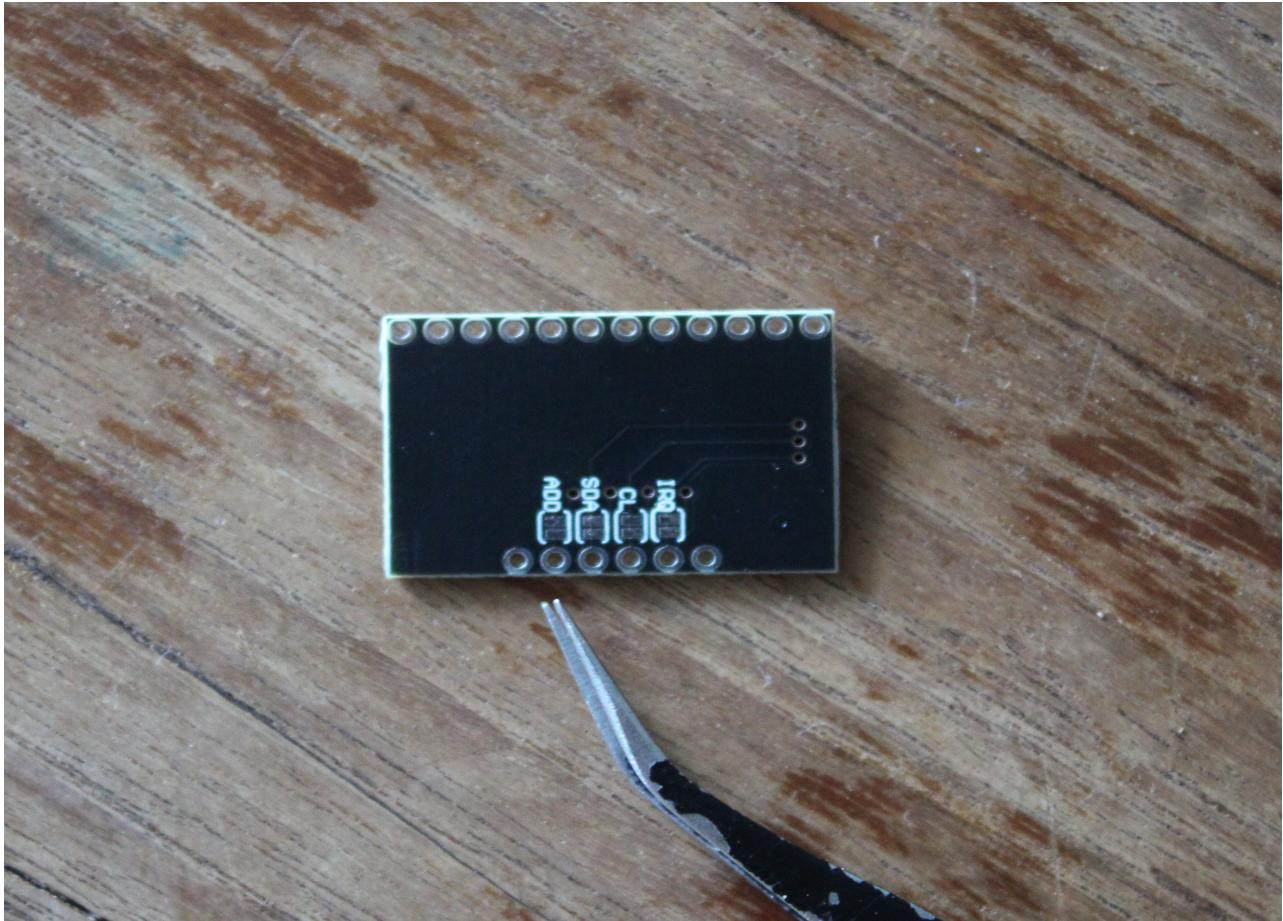
2. Solder Potentiometers and Connectors

After the low-profile components are in place, move on to soldering the potentiometers, connectors, slide switches and button.



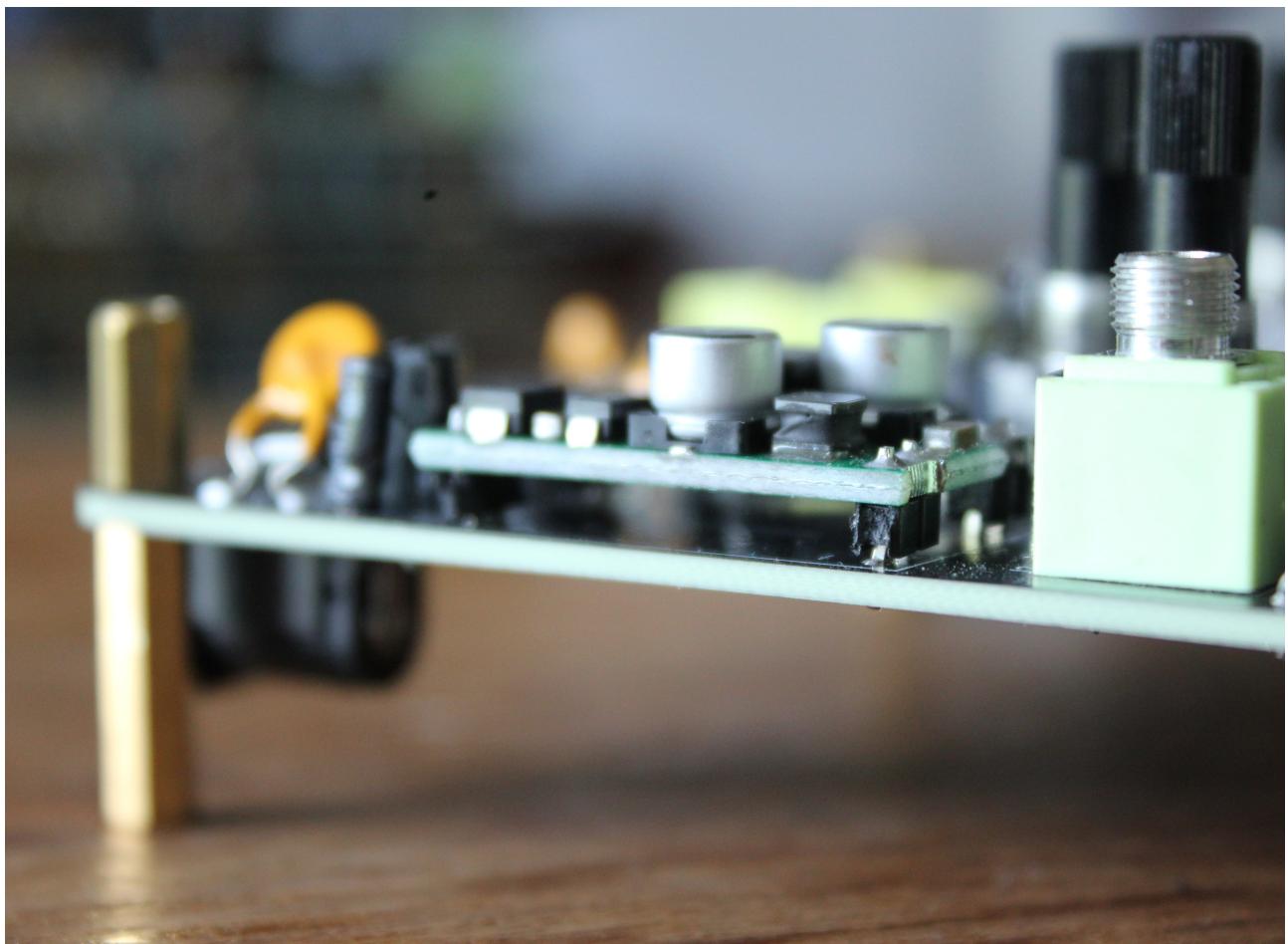
3. Configure MPR121 Sensor Addresses

To assign different addresses to the MPR121 sensors. For the right sensor, cut the ADD jumper on the board. The address will be set by applying a voltage to the address pin.



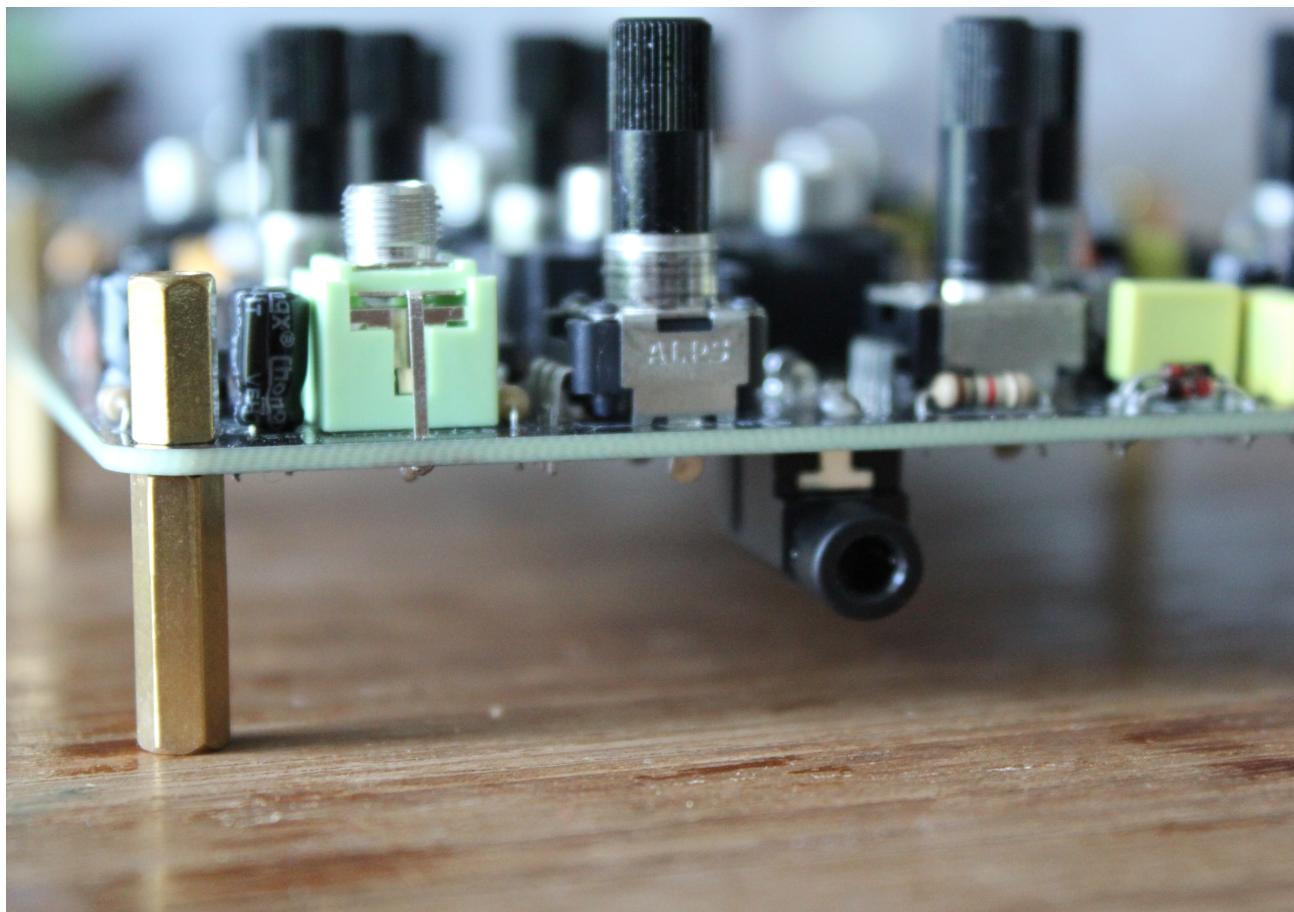
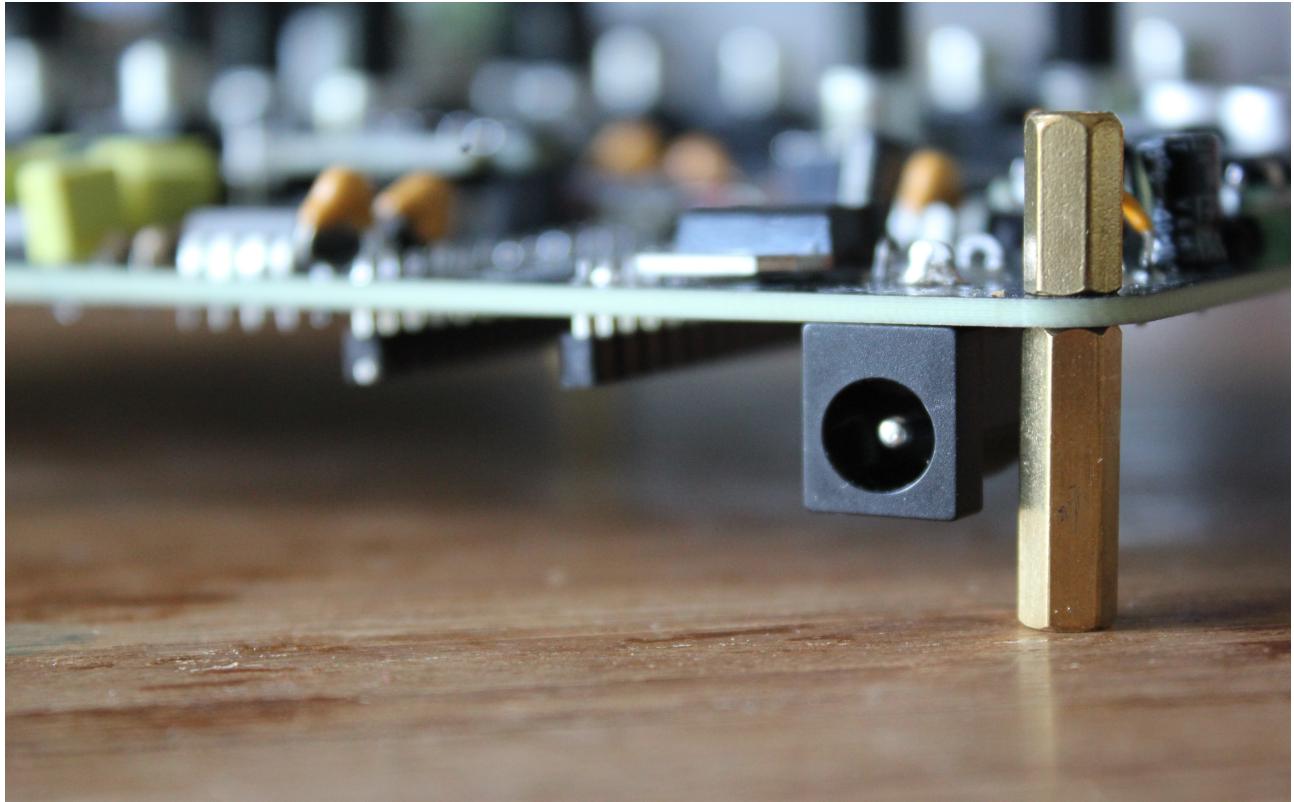
4. Install the Negative Voltage Converter

Use pin headers to install the negative voltage converter. If necessary, carefully bend the pins to ensure a proper fit.



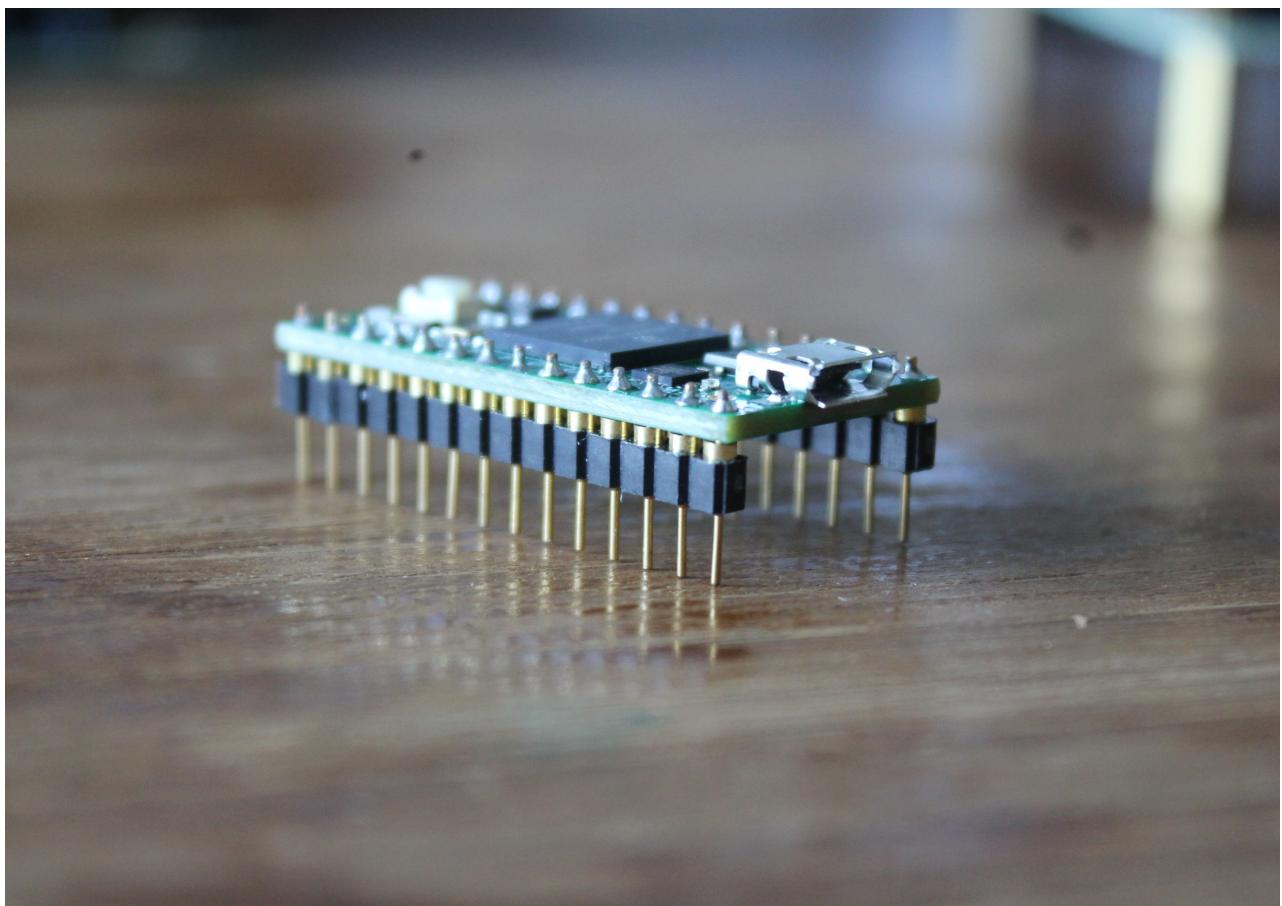
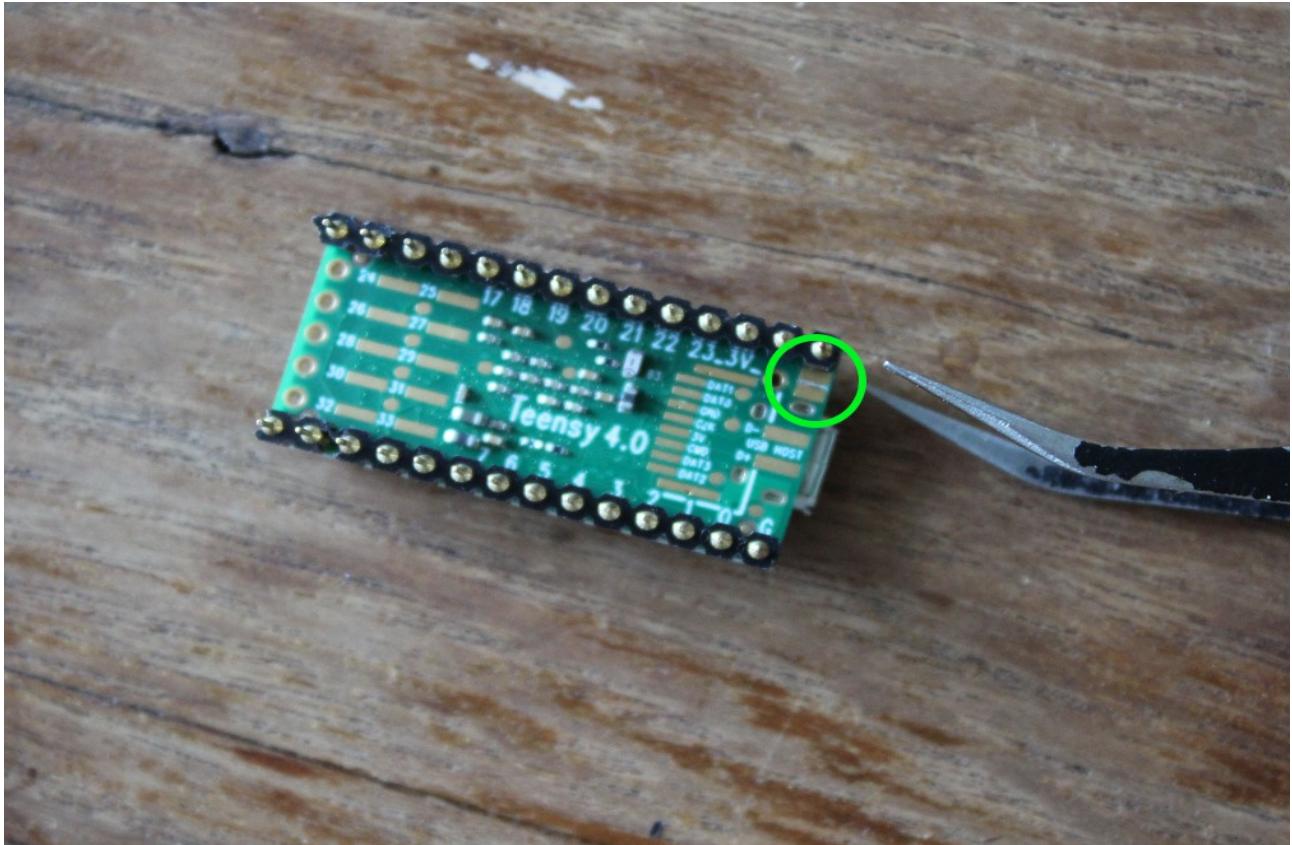
5. Note the Bottom-Side Connectors

Be aware that the power connector, Teensy connector, and Eurorack audio output connectors are mounted on the bottom side of the PCB.



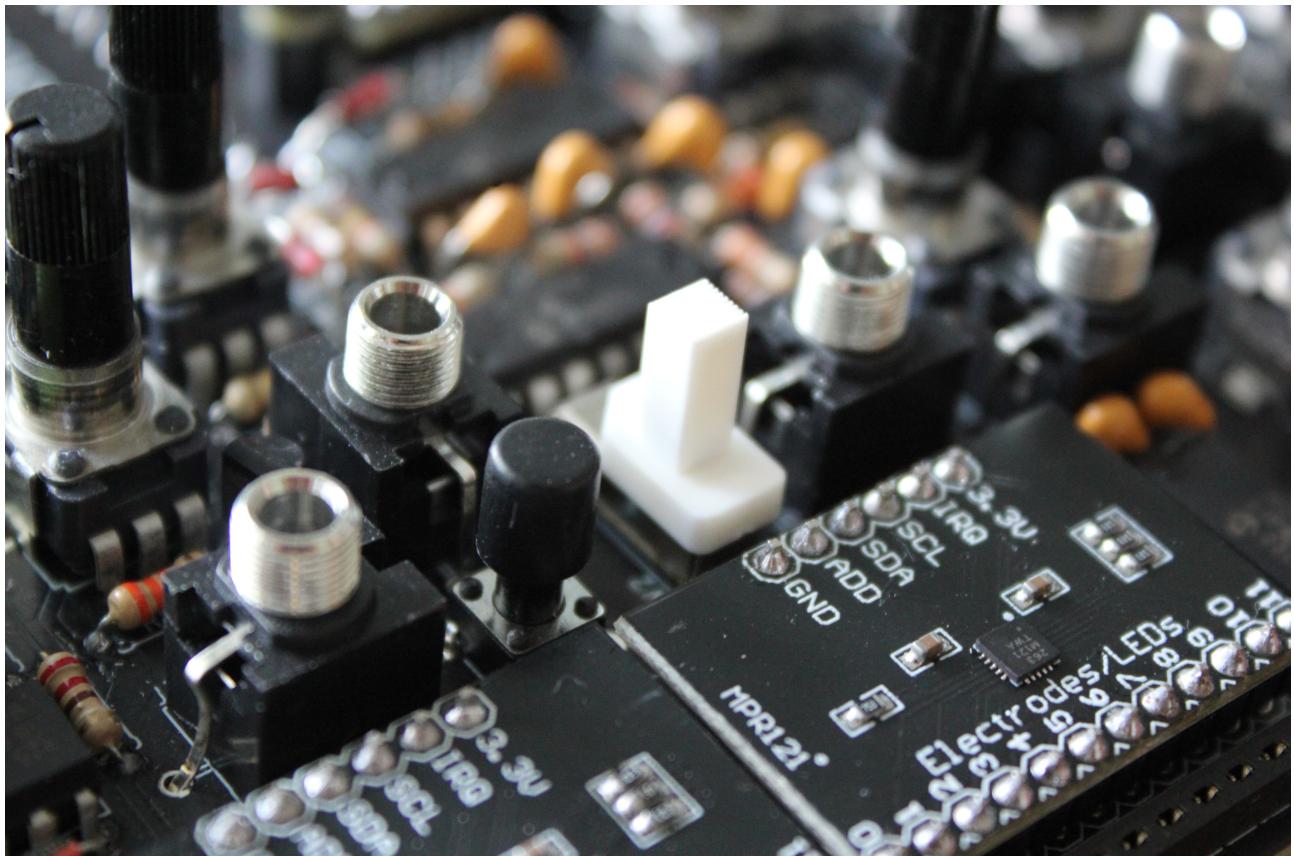
6. Prepare the Teensy

Before installing the Teensy - cut the jumper on the board to prevent power from the synthesizer from reaching the Teensy's USB port.



7. Install Caps

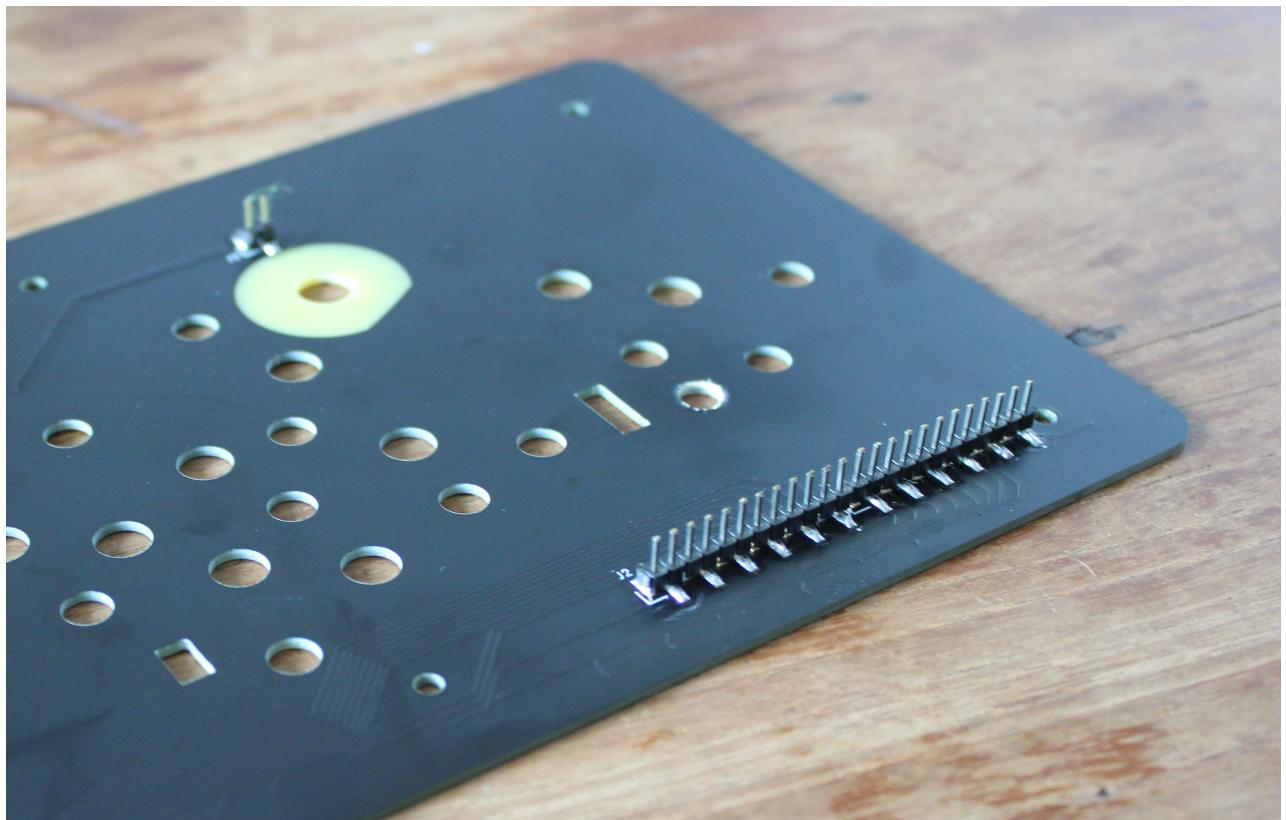
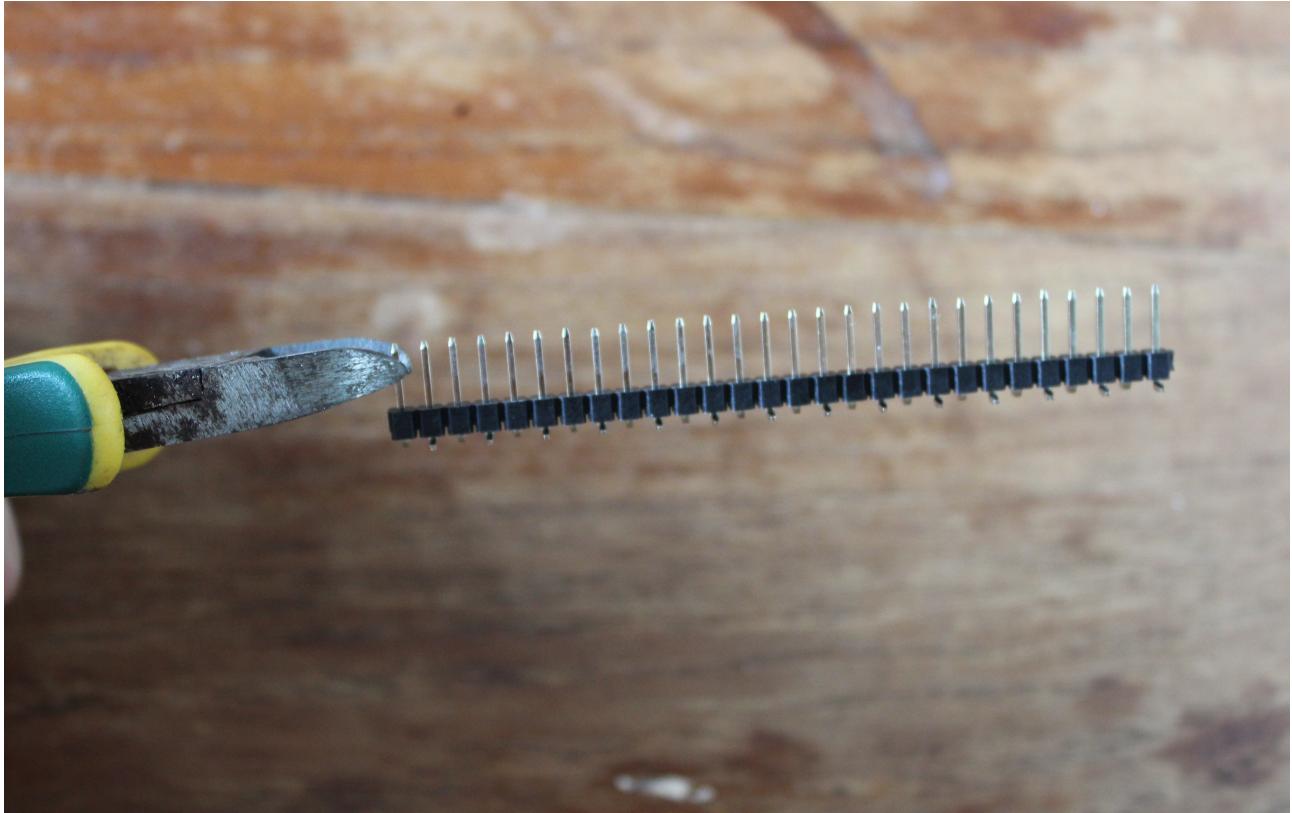
Use a small amount of glue to secure the caps onto the push buttons and slide switches.



8. Solder Pin Headers to the Front Panel

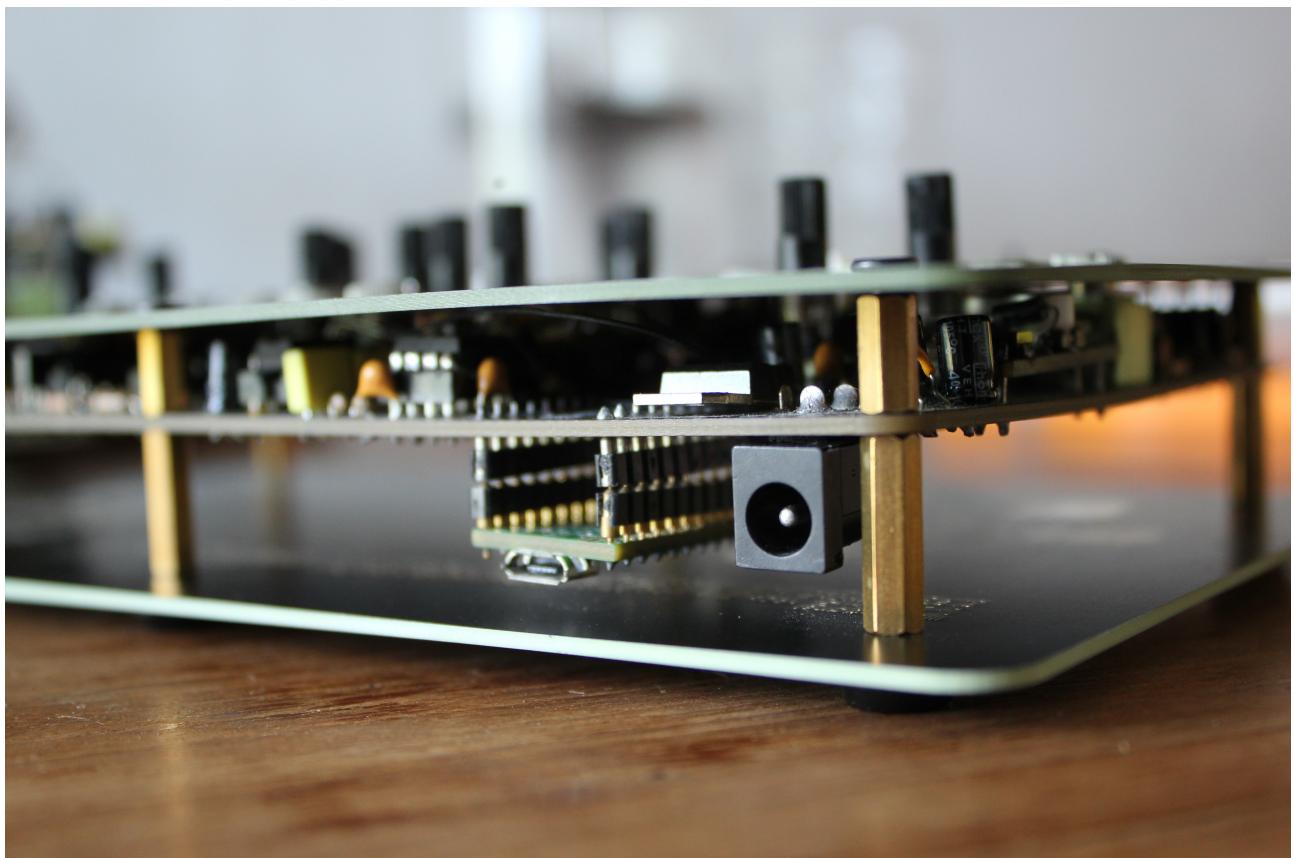
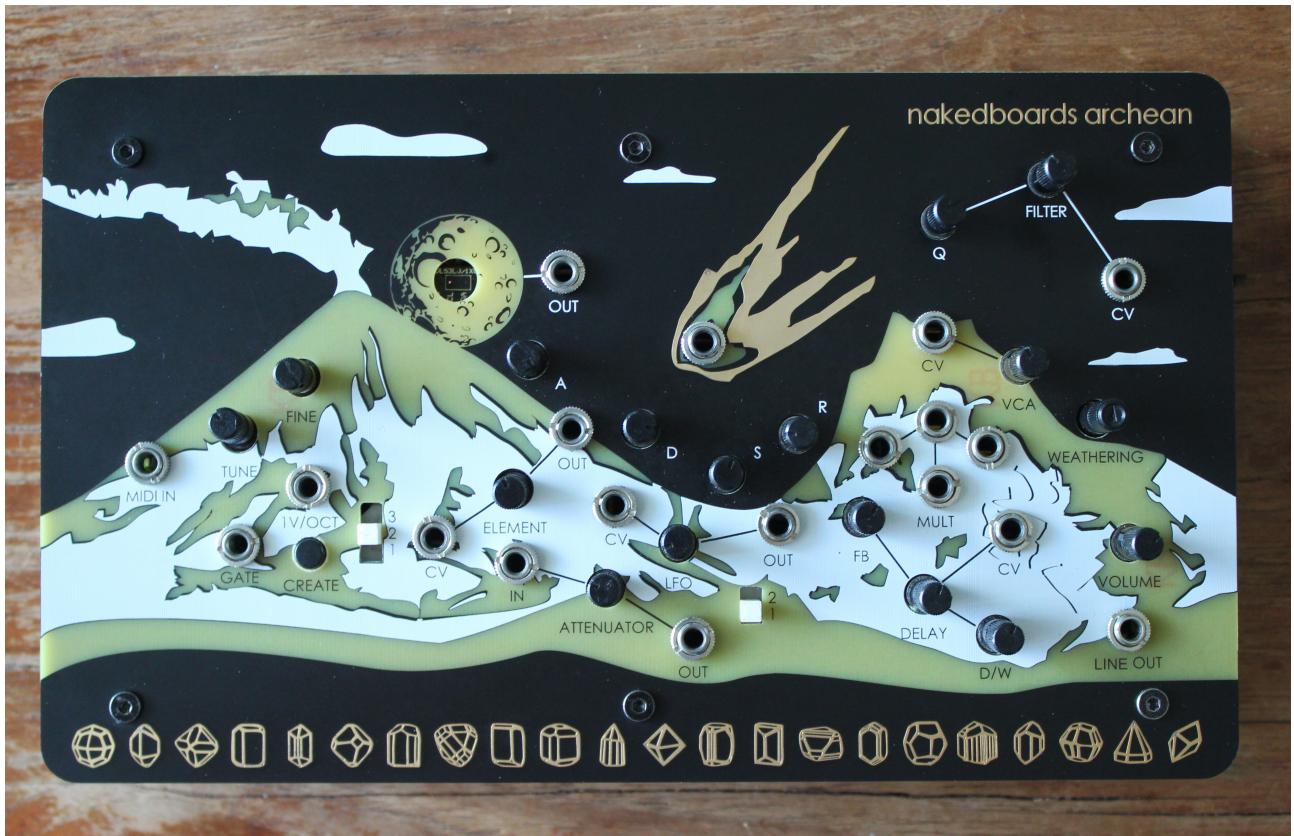
- Trim the pin headers by approximately 2 mm (non-strictly) using side cutters to ensure they fit into the connectors.

- Solder the trimmed pin headers to the front panel to connect the touch-sensitive keyboard and the pad for the touchable noise generator.



8. Assemble the Panels

Install the front panel and bottom panel. Secure them using the provided screws and rubber feet.



10. Install Firmware Using Arduino IDE

- Install Teensyduino by following the instructions at https://www.pjrc.com/teensy/td_download.html.

- Download the firmware code from <https://github.com/nakedboards/archean>
- Open the project in the Arduino IDE.
- In the Tools menu, select:
 - Board: Teensy 4.0
 - USB Type: MIDI
 - Select the appropriate Teensy port.
- Upload the code to the Teensy.