

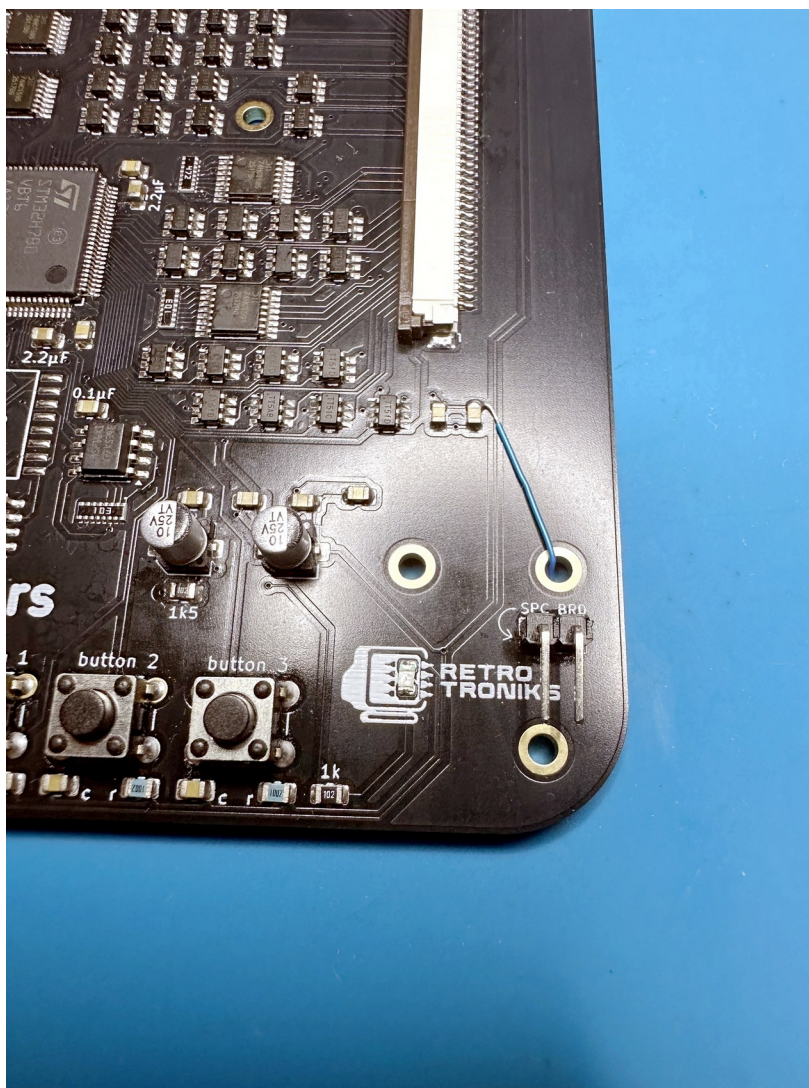
Vetus Add On Board Power Header Installation

Bodge wire and SPC BRD header preparation

When this procedure is required

Only perform this procedure when preparing Vetus for an add-on board, or when replacing a missing or damaged add-on-board power wire. Newer Vetus packages already include the bodge wire and header connection. If your board already matches the completed installation shown below, skip this modification.

Keep the board disconnected from USB and all other power throughout the work. This procedure requires fine soldering near surface-mount parts. If you are not comfortable making small PCB repairs, have a qualified technician perform the modification.



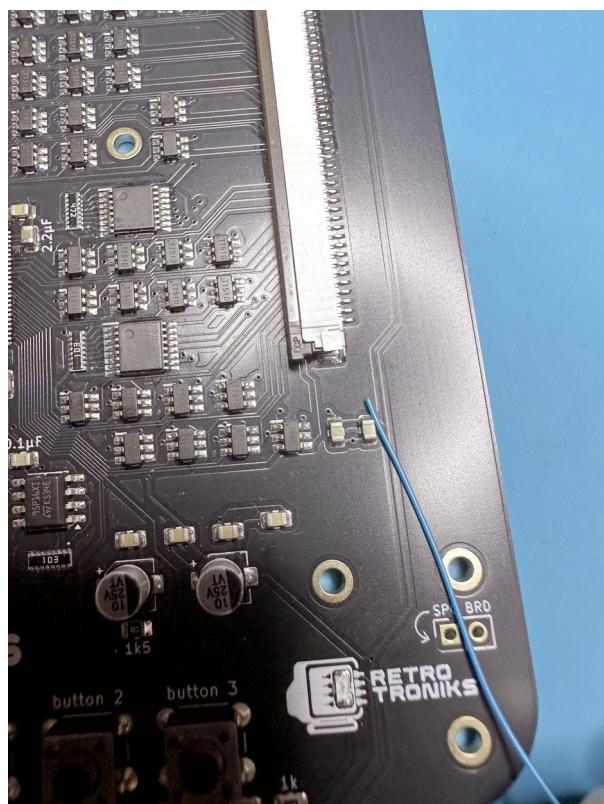
Completed installation. Compare your board with this image before starting.

Tools and materials

- Approximately 30 AWG insulated wire
- Two-pin 90-degree male header
- Fine-tip temperature-controlled soldering iron
- Electronics solder and flux
- Flush cutters, tweezers, and a magnifier
- Isopropyl alcohol and a lint-free swab or brush
- Multimeter for the final short-circuit check
- ESD-safe work surface and handling precautions

Connection points

The bodge wire carries 5V from the upper pad of the small capacitor beside the wire location to the square-pad pin of the SPC BRD header. The other SPC BRD pin is ground. Board orientation matters: from the bottom, the 5V pin is the left pin shown later; from the component side, it is the pin indicated by the printed arrow.



Use thin insulated wire. The connection point is the upper pad of the adjacent capacitor.

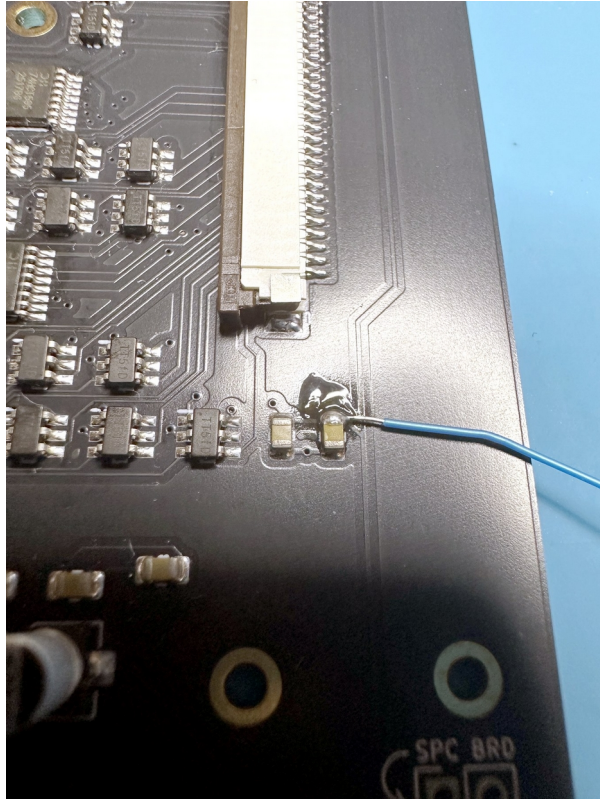


Apply flux and place the stripped end on the upper 5V capacitor pad.

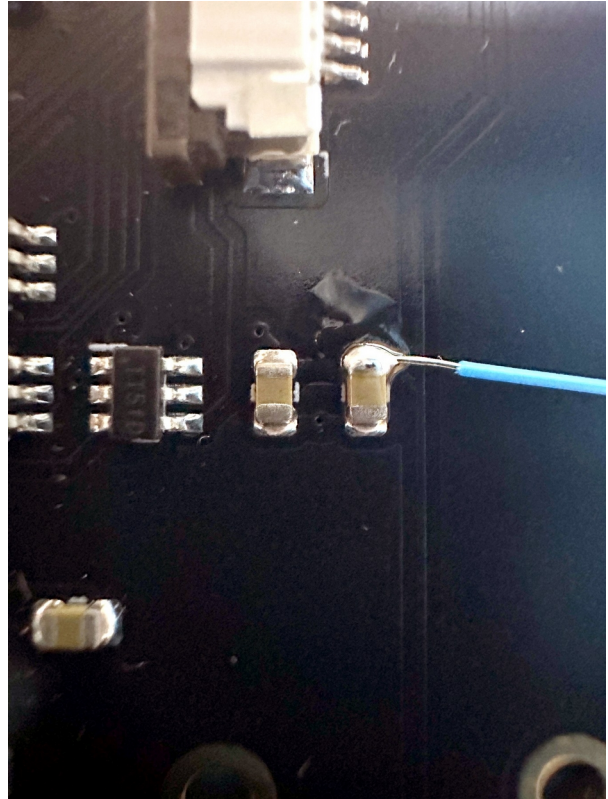
Step 1 Attach the wire to the 5V pad

Tin only the exposed end of the wire. Apply a small amount of flux to the upper pad of the capacitor, place the wire on the pad, and tack it in place.

- Use a tiny amount of fresh solder instead of relying entirely on the solder already on the pad.
- Heat the joint only long enough for the solder to flow. Avoid shifting or overheating the capacitor.
- Do not bridge the upper 5V pad to the lower capacitor pad or nearby components.
- Let the joint cool, then check it gently without pulling on the capacitor.



Wire tacked to the upper 5V pad with a small amount of fresh solder.

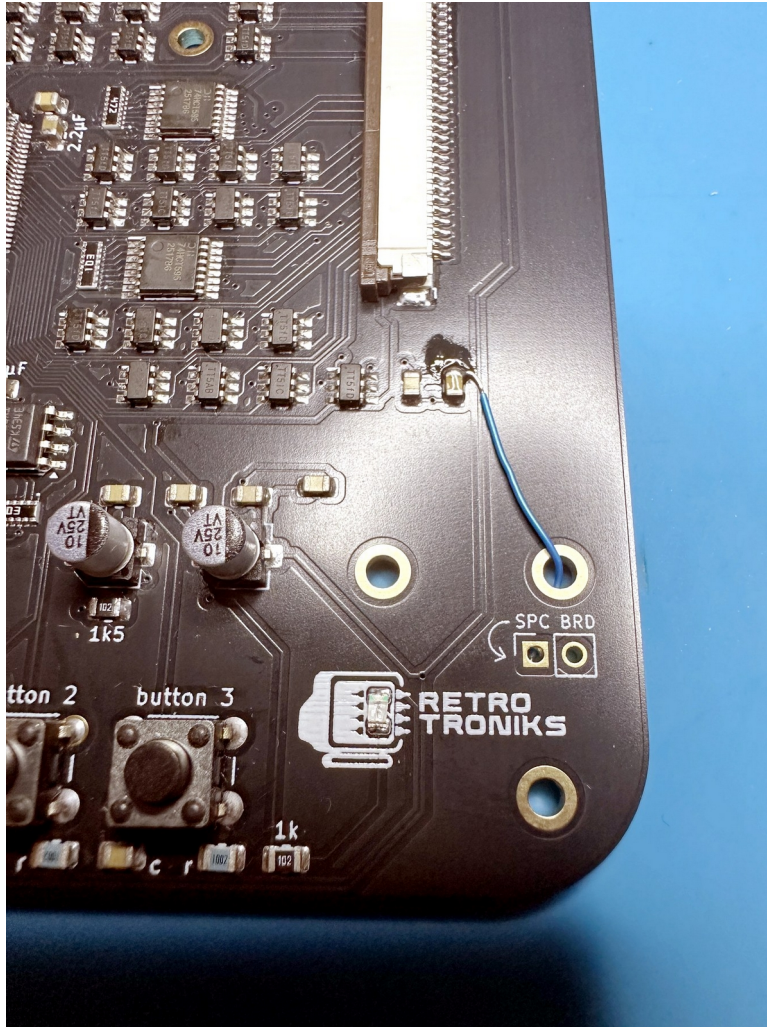


Close view of the completed capacitor-pad joint.

Step 2 Route the insulated wire

Route the wire through the nearby mounting hole as shown. Approximately 30 AWG wire is recommended because it leaves room for the standoff.

- Use insulated wire even though the mounting hole does not have a power plane.
- Keep the wire close to the board without placing tension on the capacitor joint.
- Avoid sharp bends, damaged insulation, and contact with exposed pads or component leads.



Recommended route through the mounting hole.

Install the right angle header

Fit a two-pin 90-degree male header in the SPC BRD footprint. Point the header outward as shown. A straight header is not recommended because it can leave too little clearance beneath the add-on board.



Recommended 90-degree header orientation.

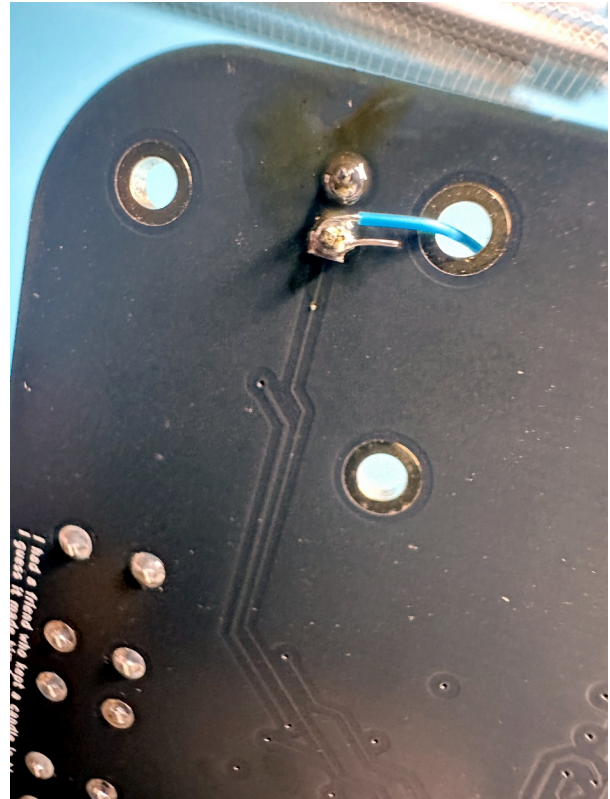
Step 3 Connect the wire to the header

Turn the board over. Strip only enough wire to make the connection, then wrap the exposed conductor around the header pin with the square pad.

- From the bottom of the board, this is the left pin in the photograph.
- From the component side, it is the pin identified by the printed PCB arrow.
- Keep all strands on the intended pin and away from the ground pin.



Wrap the wire around the square-pad 5V pin before soldering.



Completed underside joints: 5V with the wire and the separate ground pin.

Hold the header straight and fully seated while soldering. Solder the wire and square-pad pin together, then solder the other pin to ground. Use enough solder to wet each pad and pin, but keep the two joints electrically separate.

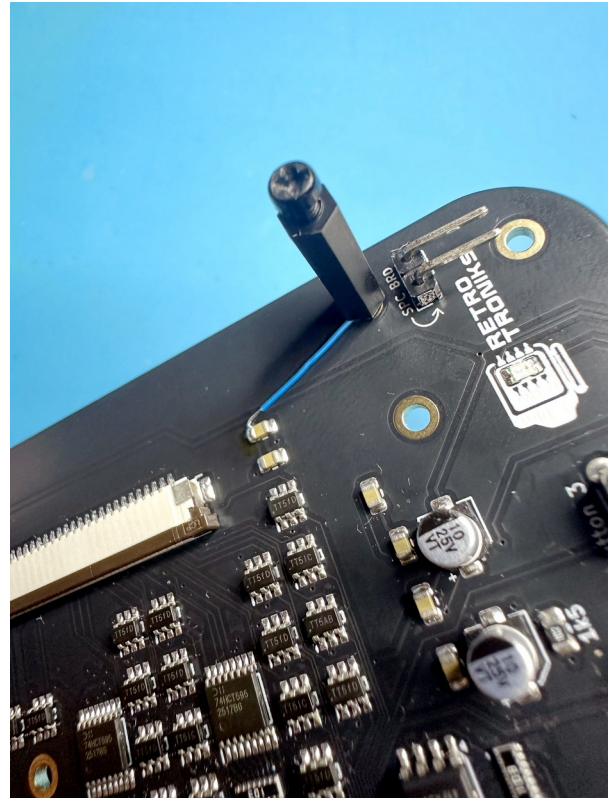
Step 4 Check the standoff clearance

Insert the standoff through the mounting hole beside the wire before final assembly. It should pass through easily.

- The wire may rest against the side of the hole, but the standoff must not pinch or sharply crush the insulation.
- Do not force the standoff. Reposition the wire or use a smaller suitable insulated gauge if necessary.



Underside view showing the standoff beside the wire.



Component-side view confirming that the standoff fits normally.

Step 5 Trim clean and inspect

Use flush cutters to clip the protruding ends of both header pins close to the solder joints. Do not cut into the joints.

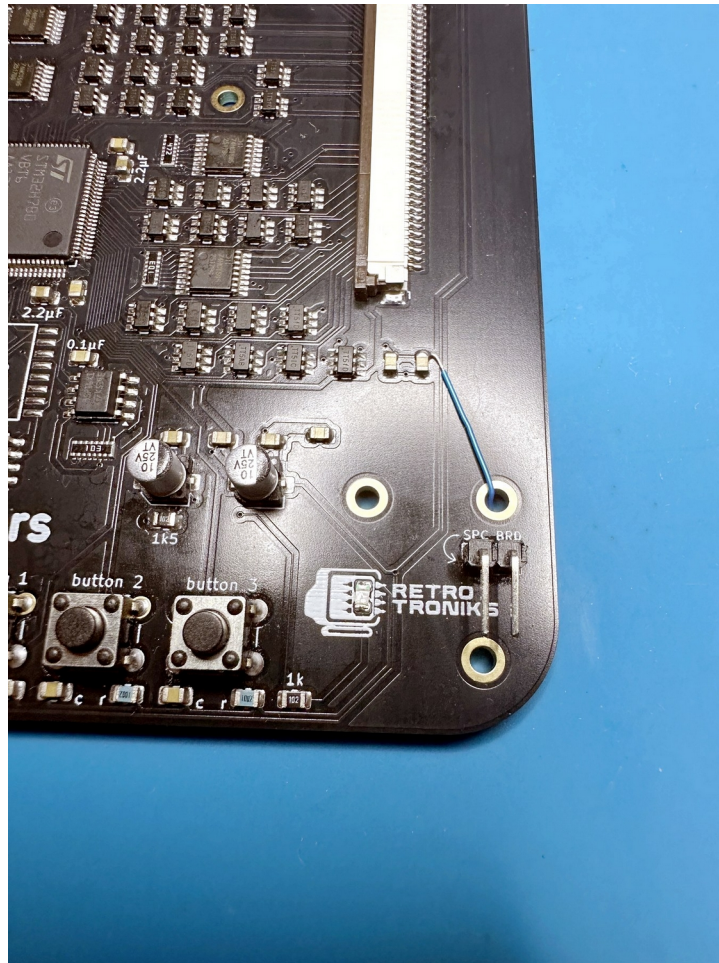
- Clean flux residue from both sides of the board with isopropyl alcohol.
- Allow the board to dry completely. Do not connect power while alcohol or moisture remains.
- Inspect for solder bridges, loose strands, damaged insulation, a crooked header, or a wire under tension.
- With power disconnected, use a multimeter to confirm that there is no steady short between the 5V and ground header pins.



Trimmed pins and cleaned underside. Wait until the board is completely dry before power-up.

Final result

The completed board should have the insulated wire attached to the upper 5V capacitor pad, routed through the mounting hole, and soldered to the square-pad SPC BRD pin. The other header pin is ground. The 90-degree header should be straight, and the standoff should still fit without forcing.



Final component-side installation ready for an add-on board.