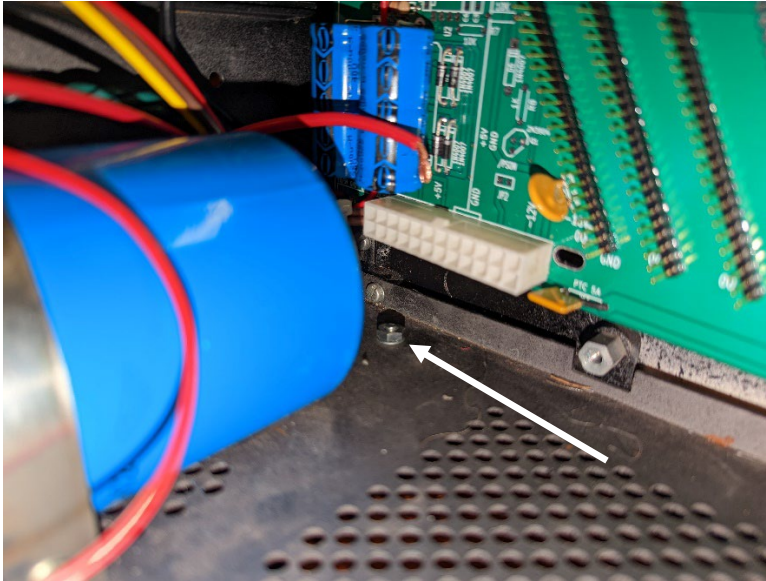


## New Backplane Fitment into Heath H8 Enclosure

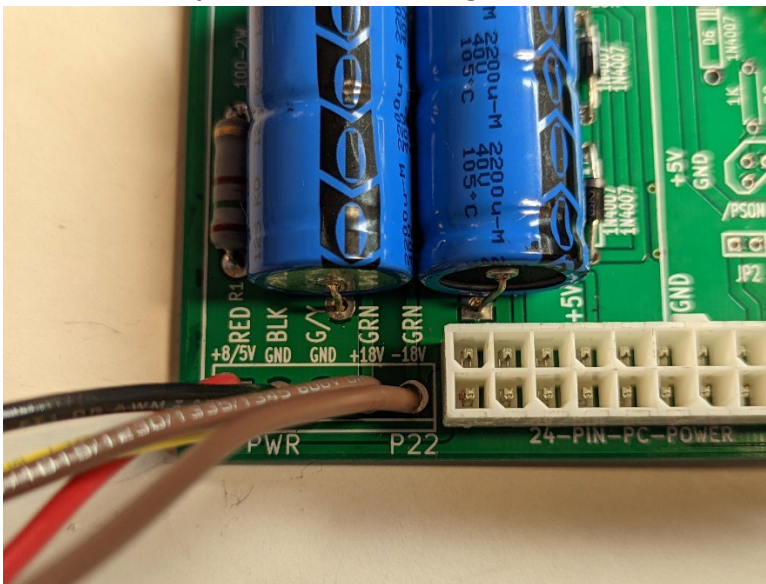
TAS 9/10/22

- 1) Screw/nut holding right rear rubber foot to the case bottom interferes with power supply screw terminal block P22



The backplane fits snug against the bottom of the H8 case. Interference between the foot mounting screw and P22 forced the board about 1/16" out of alignment. Possible solutions:

- a. Relocate mounting foot (drill new hole)
  - b. Replace screw-attached mounting foot with adhesive backed foot
  - c. Eliminate P22 and use other power supply connection methods
- 2) Some 2200uf capacitors could make tight clearance for wire entry to terminal block P22



If you elect to use terminal block P22, consider the clearance available between the 2200uf filter

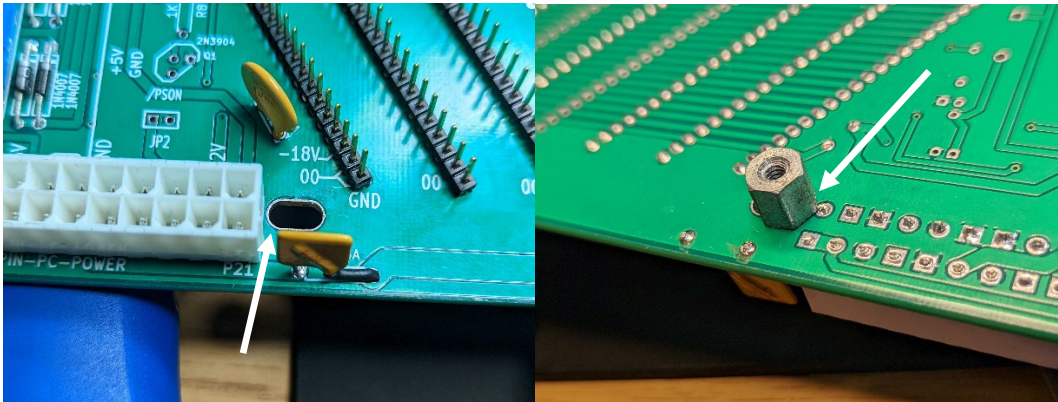
capacitors and the wire entry to P22 when selecting capacitors for the board. *(In this photo, P22 has been removed and pigtails are shown soldered directly to the board.)* The capacitors shown in this picture (Vishay 40v 105C MAL212517222E3) fit the board lead spacing fine, but would leave very little room for wire entry to terminal block P22. Norberto's BOM specifies a Jameco 35v 85C capacitor that is about 0.25" shorter than the Vishays (body length about 1.25") which would leave much more room for cable entry. Possible solutions:

- a. Use a capacitor with body length not exceeding 1.25"
- b. Eliminate P22 and use another power connection method

3) **Screws for terminal block P22 are not (easily) accessible once backplane is installed**

*This is personal preference.* I found it awkward to use P22 because the access to the terminal screws was too tight to permit any adjustment to cabling without removing the backplane. You can see in the photos that I elected to eliminate P22 and use pigtails soldered directly to the backplane with other disconnecting means to permit cable adjustment without removing the backplane.

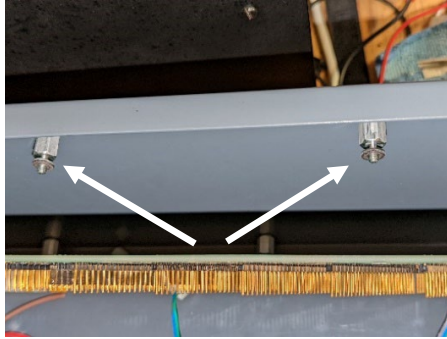
4) **Slotted mounting hole at bottom of board near ATX power supply connector may produce mechanical interference or electrical contact with Heath case standoffs.**



Heath used 3/8" hex standoffs for the backplane. You can see from the second photo that there is a possibility for contact with the pins of P21 if the board is pulled all the way forward in the mounting slots when mounting. This is only an issue if you are planning to use P21 and an ATX-style power supply attachment to the backplane. Possible solutions:

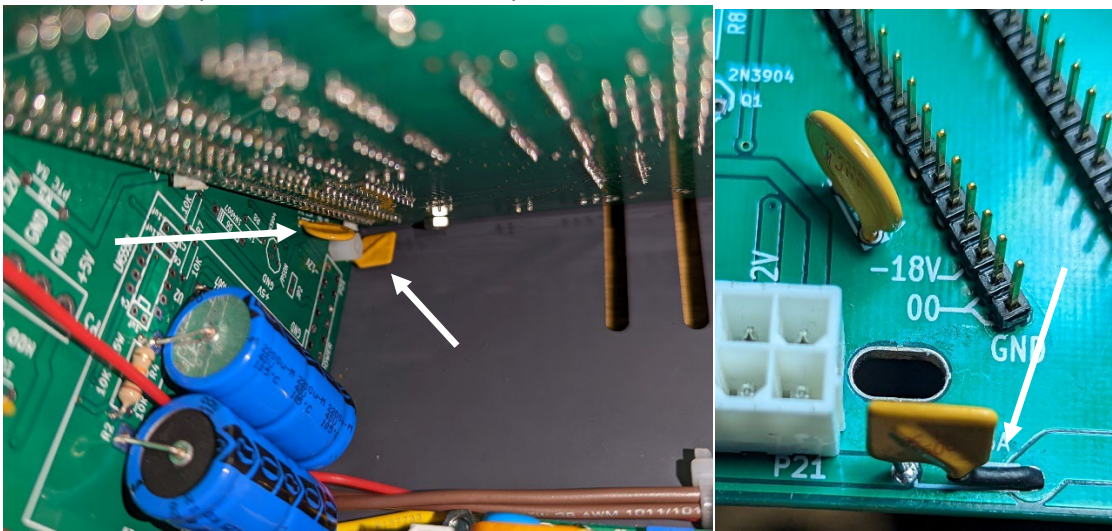
- a. Don't mount P21 unless you plan to use an ATX supply. If you do mount P21, crop the leads near the standoff slot as close to the board as possible.
- b. Use a fiber washer between the hex standoff and the backplane (you'll probably need to temporarily glue the fiber washer to the female standoff while you attach the backplane)

- c. If you're considering using the replacement case design, you can more easily fit fiber washers to the male ends of the standoffs as shown here:



5) **PTC fuses at W2 and W3 must be carefully positioned when soldered into place to avoid interference with a board installed at new expansion slot P16**

The new backplane has an additional slot (P16 "Expansion Card") at the rear. The fuses at W2 and W3 must be carefully positioned to stay out of the way of a card that may be mounted there. W2 can simply be positioned towards the rear of the case, but the leads for W3 will need to be formed to position W3 out of the way:



**GENERAL OBSERVATIONS**

- 6) **Keep in mind that PTC fuses are S-L-O-W acting.** A 5A PTC fuse took ten minutes to open when fed with a constant 5A current from a bench power supply. You may want to consider including something in the primary or secondary of your power supply circuit that would respond more quickly to substantial overload.
- 7) **TURN UP THE HEAT!** Soldering to the power supply or ground planes of this extra-thick circuit board requires bunches of heat.

- 8) If you are installing this backplane with a power supply that provides the equivalent of the original backplane voltages (~8.5v, 24VAC or +/-~18v), the BOM can be shortened to just a few components as the 555 timer and the standby power circuits are not used. The minimum component set to directly replace a Heath or Trionyx backplane would be:
- 20 x 25-pin male headers, .318" mating pin height
  - 2 x 2200uf axial lead capacitors
  - 1 x 150 ohm 2 watt bleeder resistor
  - 1 x 10K ohm ½ watt bleeder resistor
  - 2 x 5A PTC fuses
  - 2 x 1.1A PTC fuses
  - 4 x 1N4007 diodes
  - 2 x 25-pin dual-row male headers
  - 50 x 0.1" jumper (or larger shunt blocks)
- 9) Note that the screw terminal connector listed in the BOM has a 3.50mm pitch, but this board requires a 5.08mm (0.2") spacing. If you elect to use P22, you will need something like:

TE Connectivity/AMP 282856-5  
Digikey A98358-ND  
Mouser 571-282856-5



- 10) There are connectors on the backplane that are labeled for "HDD Power", "12v FAN", and "5v FAN". The voltages on those connectors will only be 5v and 12v if you are using an ATX style power supply (or other source that directly delivers 5v and +/-12v to the bus). They carry whatever is on bus pins 48/49 and 47. Plugging in a drive or fan to those connectors with the original H8 power supply will likely result in .... Toast.