

# Hardware Errata

This page documents some issues with the hardware.

## Rev 3

- Footprint for RTC backup battery (BT301) is backwards
  - The + terminal of the battery connects to the GND node, and vice versa.
  - Resolution: Populate battery in reverse
- RTC charger should be powered by system +3V3 rail
  - It's powered by the SoC's own 3V3 rail now, which toggles off during reboot
  - Use instead the system +3V3 rail
- Incorrect power-on reset behavior
  - ~~There is no reset pulse generated on boot-up (by an external reset generator... which we don't have. lol) which causes spurious boot failures~~
    - ~~So, we should add a supervisor for the reset line~~
    - ~~Generate a power on reset pulse of ~1 sec with the +5V rail~~
  - ~~We may need to shorten the reset delay on the +3V3 voltage supervisor line~~
    - ~~Alternatively — directly use the +3V3 input to switch it~~
  - This was caused by the RTC charger coming off the +3V3 SoM rail. Using the system +3V3 rail resolves this
- Pulse shaper stuff
  - Adjusting it sucks as TP501 is on the *analog* side of the filter, rather than the nice, pristine digital from U507
    - Fix: Add another test point at the output
    - Alternatively, we can probably work around this in software (with a special calibration UI?)
  - Possibly expand the adjustment headroom
- Front panel connection
  - The pinout of the connector is mirrored (left to right) with respect to the front panel when assembled
  - We can probably leave this (using a longer flex to compensate) or fix it on either the front panel or controller board revision (probably the controller board)
- Rear case fan (M501) connector sucks
  - The location is awful (it will be right underneath the analog board)
  - Relocate it elsewhere - but where?
    - Where VBUS LED is chilling
    - In the back by the expansion connector
      - We'd need to relocate some of the expansion IO stuff, like the termination and so forth
- Power supply section sucks to assemble
  - Is there anything we can do to make this less awful

- Also, add an easier way to power the board off DC
    - Spring/screw terminal near power supply area
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