Required Material:

1. **Power Button –** I used one with an LED light in the switch, but a non lit version will also work (note my wiring diagram reflects the LED version)
   a. **LED:** [LINK](#)
   b. **Non LED:** [LINK](#)

2. **USBC Power Inlet –** [LINK](#)
3. **USB-C Male 2 Wire Connection -** [LINK](#)
4. **M2 x 6 Screws**
5. **M3 x 8 Screws**
6. **2000 MaH Battery -** [LINK](#)
7. **Acrylic Rods 1/8 inch-** [LINK](#)
8. **M2.5 * 4 * 4 Heat Inserts (6)**
9. **M3* 4* 4.2 Heat Insert (7)**
10. **Heat Shrink Tubing (Various sizes)**
11. **Optional: JST Connections: I wire the switch to a JST, instead of directly to the battery. This allows for quicker battery changes. My wiring diagram shows this.**
12. **Tools and Other: Soldering Iron, Solder, Wires**
13. **Sand Paper 800 Grit**
14. **Hot Glue & Hot Glue Gun**

Note: This Model does not support USB-C data Transfers. The USB-C pass-through on this device is for power only. To update, you will need to remove the cover and use a USB-C Data Cable.

Step 1: Wire the Switch

Note: For this model, trimming down the wires is necessary. Take a look at step 5 below to see what the final internal assembly looks like. This will give you an idea of where to trip the switch and the JST wires.

Switch Wiring Diagram:

I wired the switch so the light is on when the power is on and plugged in and off when the power is off. I also use JST on both sides, which allows for easy and rapid battery changes.
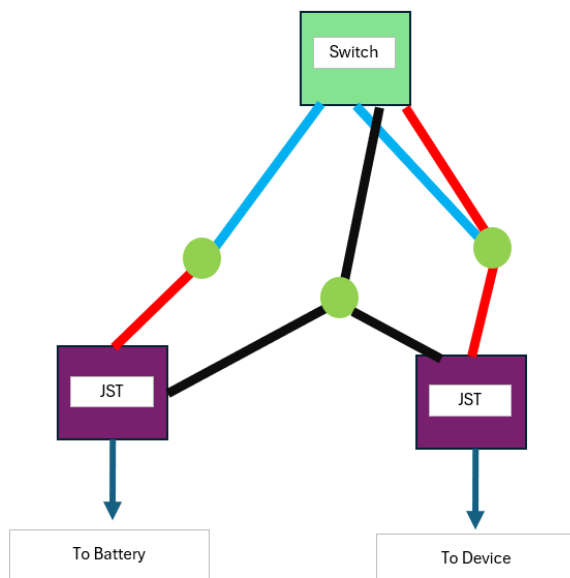
Step 2: Heat Inserts

Install the M2.5 Heat Inserts into the Front (top) Battry Board and Battery Mount points in the bottom of the housing.
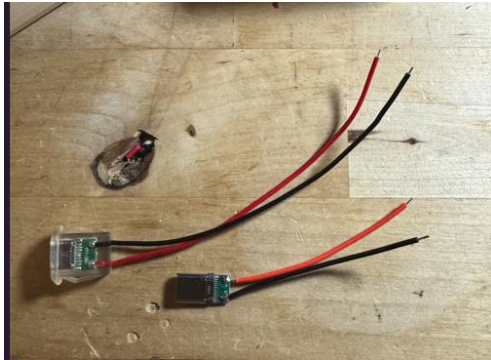
Next install the 6ea M3 Heat Inserts into the main body.

Step 3: Install the battery into the tray
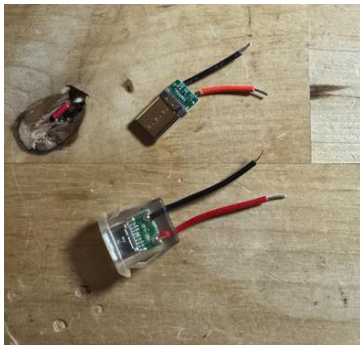
Step 4: Wire the power source

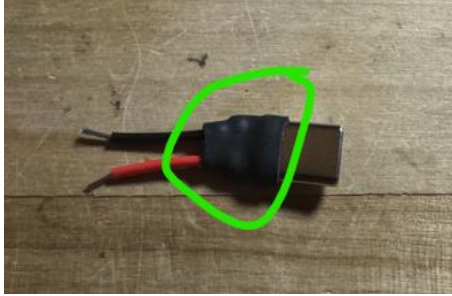Cut both the USBC Power Inlet and USB-C Male 2 Wire Connection down to a shorter size.

Before trim:

After trim:

This is an optional step, but I prefer to install some heat shrink around the male USB component. This will protect the wires and reduce the risk of a short.

Next, solder the 2 components together.

Step 5: Install Internal

Next install the battery tray using 4 M2.5 screws to secure the board.

Next install the 3 SMA antenna, power switch & USB-c assembly.

Notes and tips: I use a small flat-head screwdriver to tighten the power switch nut. It's too tight to get a wrench in there, and the screwdriver seems to get it tight enough.

If assembling the S model, the LoRa antenna will go onto the power board; the screenshot below notes the location of the antenna.

Ensure that your wires do not cover the board's 3 status lights. You should be able to tuck the wires under the top mount posts using a small screwdriver.

Step 6: Final Assembly

Install the gasket onto the main housing, then place the top on. Insert the rod into one of the light holes and gently push until it just touches the board. Mark the cut point. It should be around 11.5 mm. I mark the cut spot with blue tape.
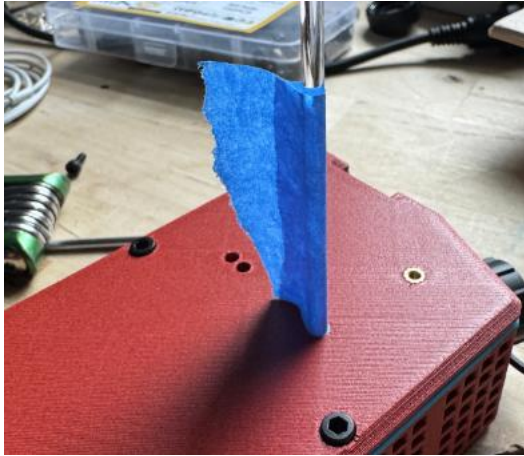
At this point, I cut the rod and made 3 matching smaller rods. I used a hacksaw to cut about ½ inch halfway through the rod, then I brake it.

Next, sand the rough edges using 800 grit sandpaper until each end of the rod is smooth. Insert the rods into the holes and press until flush with the top. If they don't fit perfectly, remove them and continue sanding.

Final product should look like this.

To finish the light rods, remove the top (keep the rods in place) flip it and hot glue the back side of the rods in place.

Note: I like to put heat shrink around the rods, but this is not necessary; I just think it looks cleaner.

Finally, install the top and the front cover. This completes the build.