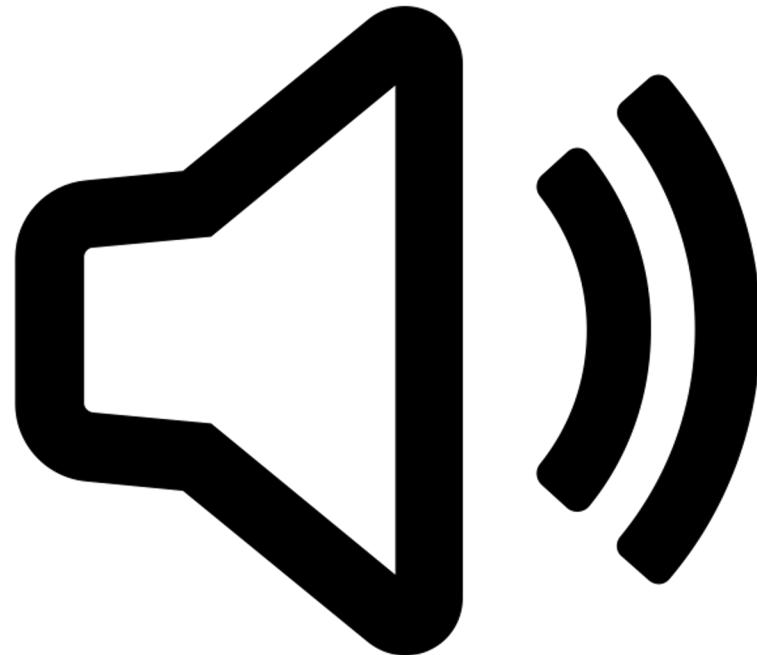


SONYC Assembly and Test

Pre-assembly

Test microphone function



Plug in mic to MCHStreamer and record snippet of audio on your machine. Play back to make sure recording is clear with no artifacts.

Flash SD cards

Flash SD Cards and check it boots with SONYC code.

- download and install the necessary packages (ansible, hellolan, git clone ht..., ...)
- download rasbpi os
- repeat for all SD cards
 - insert sd card
 - run python setup_sd.py --vars "uuid=\$(randomname get),app_name=sonyc"
 - the first time you will be asked for wifi credentials, and next time it'll be cached
 - record the uuid value printed out on masking tape
- Run ansible setup script
- go to overview.master1.sonycproject.com
- turn on "freshly provisioned" filter to
- check:
 - tun0_ip: is openvpn up and running?
 - wlan0_ip: is wifi working?
 - ap: is the wifi ssid correct
 - mic_connected:
 - lzeq: is spl working

Drill all Pi, Piwatcher, and LTE hat holes to fit 4-40 thru hole (use a 1/8" bit)

- Clean with compressed air

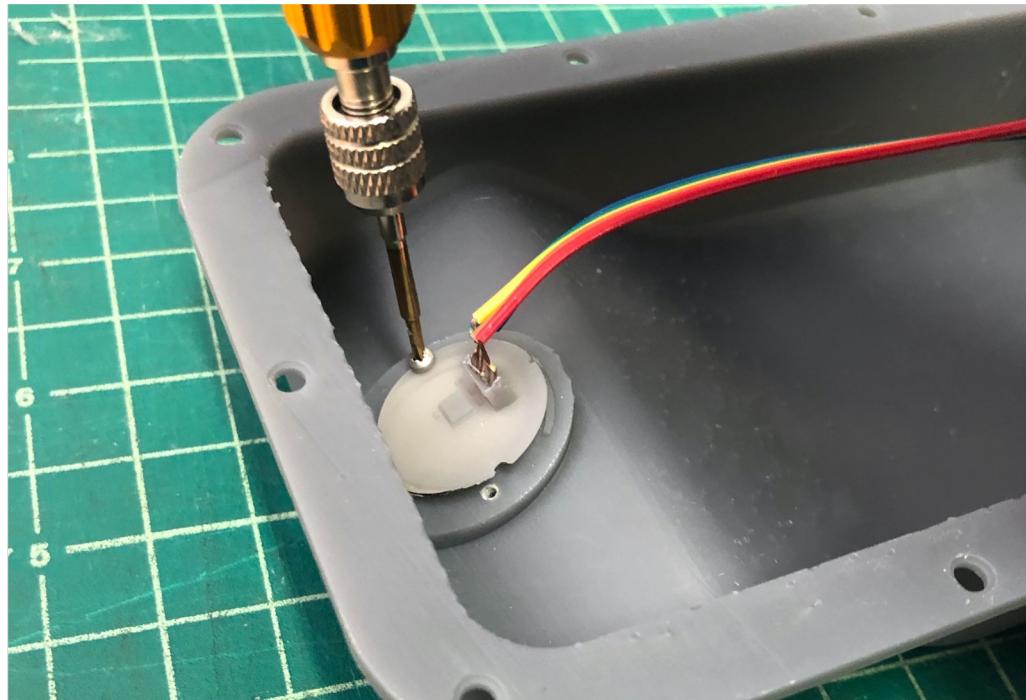


Assembly

Place water membrane over microphone hole. Use 2 pairs of tweezers and place carefully to avoid touching adhesive. Press around the edge to adhere

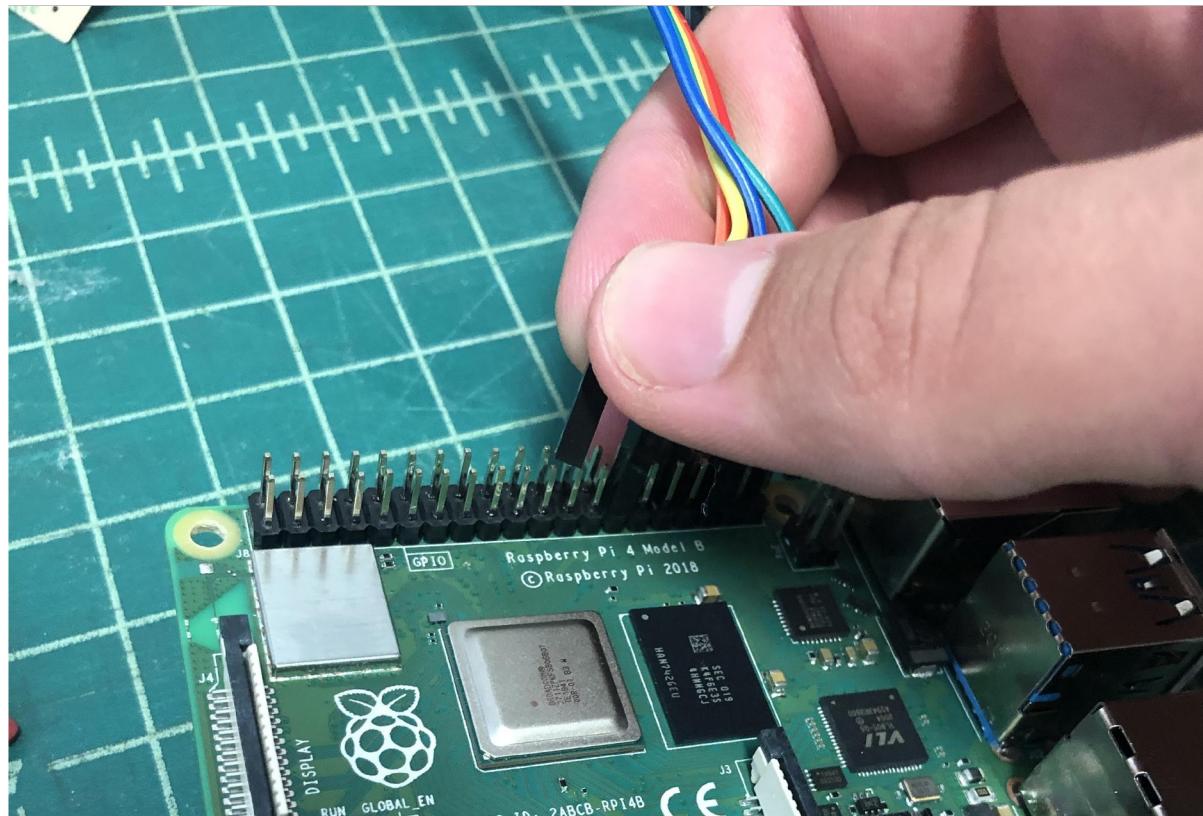


Screw in microphone PCBA



Plug microphone cable into raspberry pi

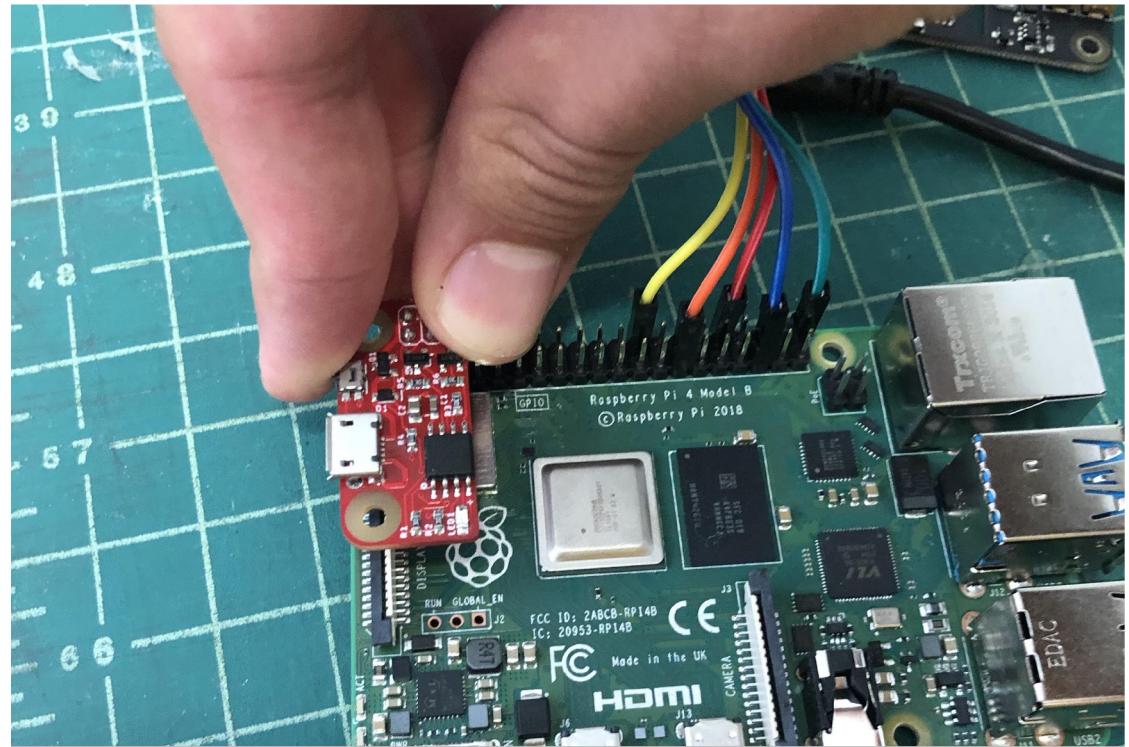
- Use jig to tell which pins to go into



Plug antennas and LTE chip into cell hat



Plug Piwatcher into the Pi
Place a 7/16" spacer between the Piwatcher and Pi to support

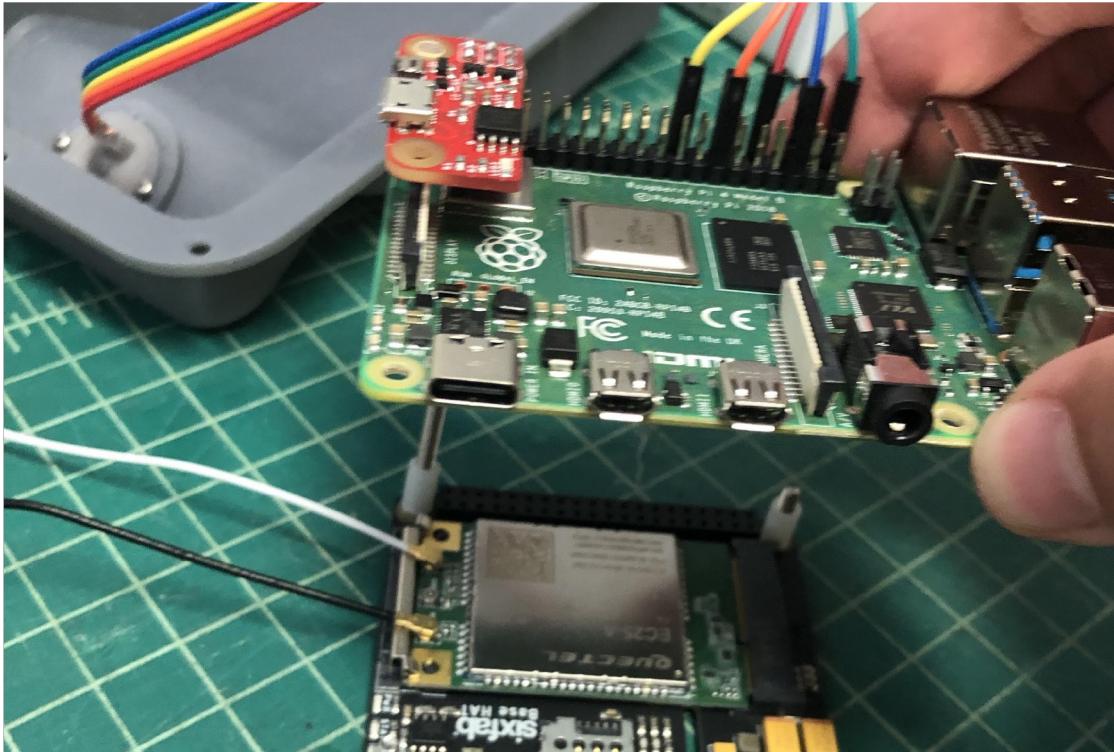


Place Cell Modem face up, with screws coming upwards through the holes. The long screw (1 1/8" long) goes on the bottom right corner (as shown).

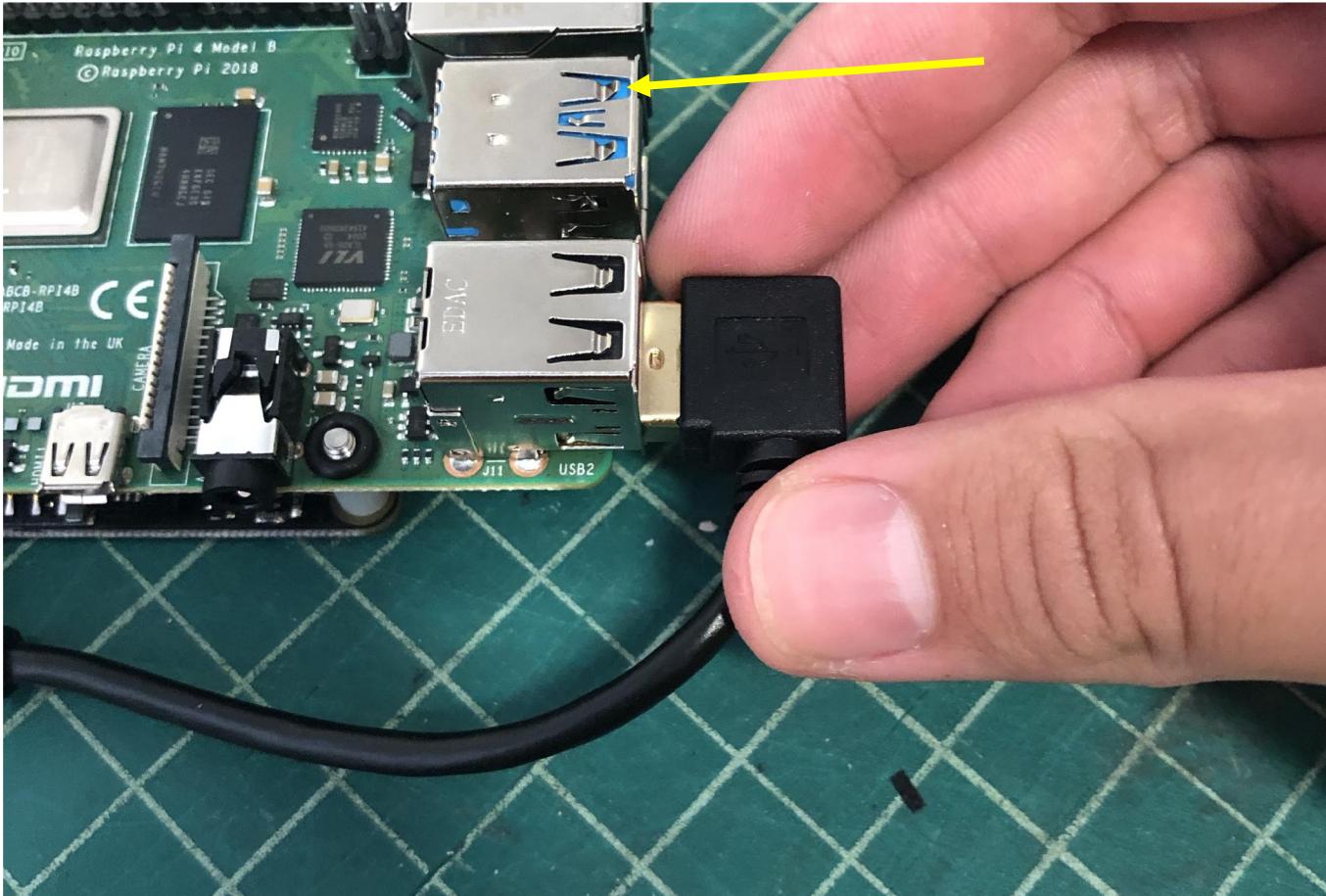
- Put 5/16" spacers on screws



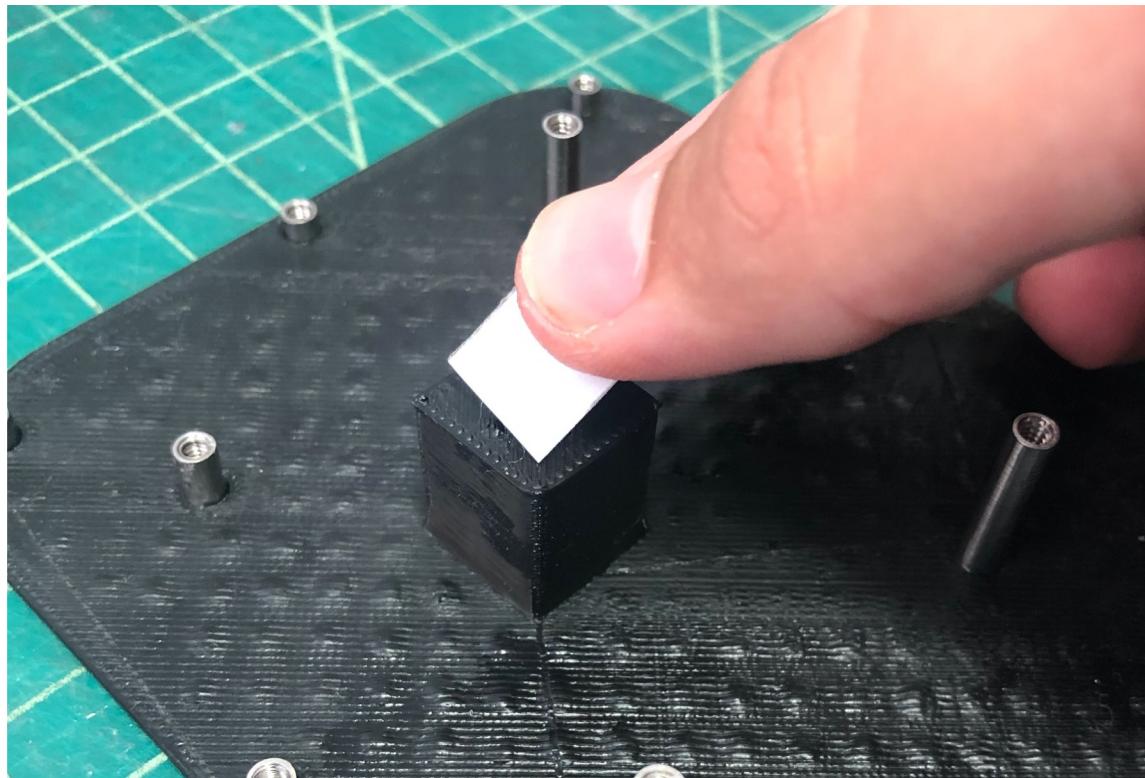
Put raspberry pi over screws on LTE hat (face up) and secure with o-rings
ensure Piwatcher spacer catches long screw



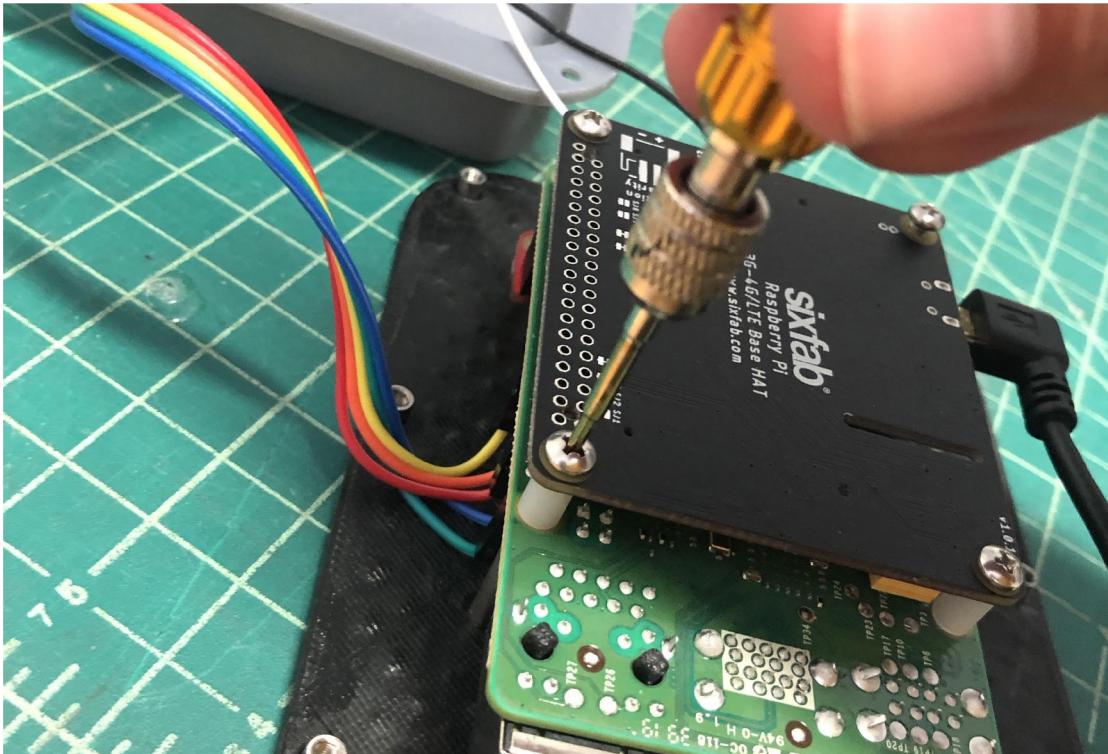
Connect LTE hat to Pi with right angle USB/Micro-usb cable. Plug it into the bottom right USB port (photo shows wrong one)



Apply heat transfer paste to heatsink block



Put back plate over PCB stack, flip, and screw PCBA
into PEMs on back plate
(all PCBs face “down” towards back plate)



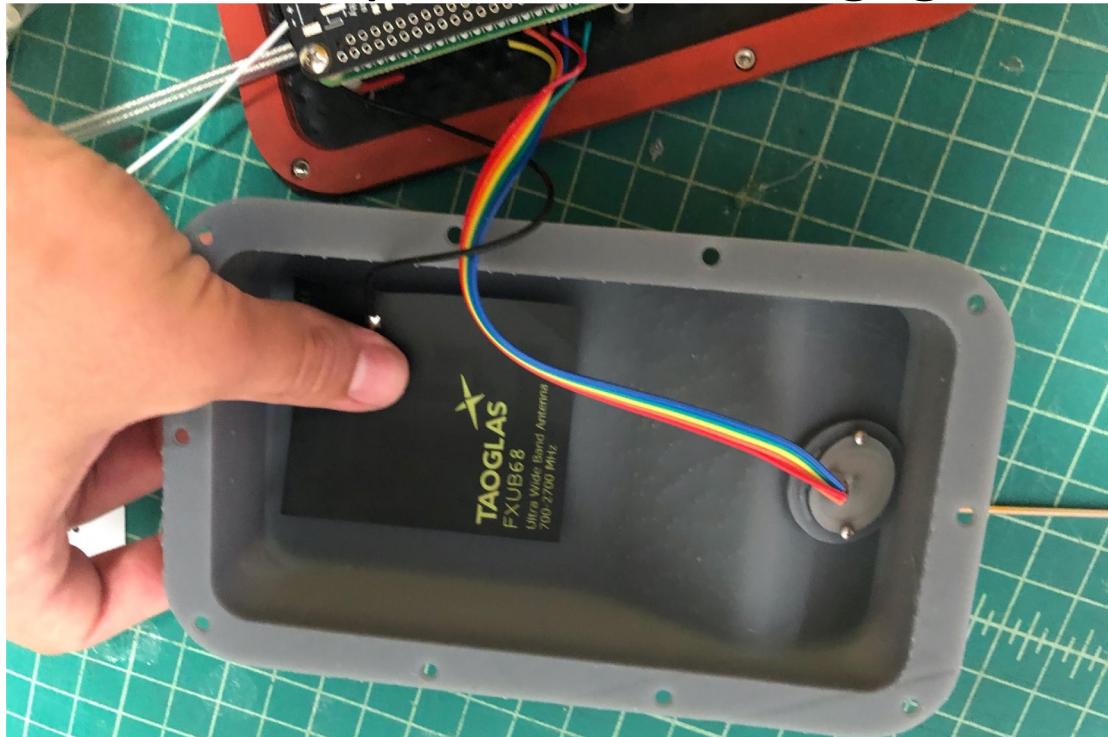
Place rubber gasket over back plate assembly



Adhere small gasket to front housing with double stick tape

Attach antennae to housing as shown below

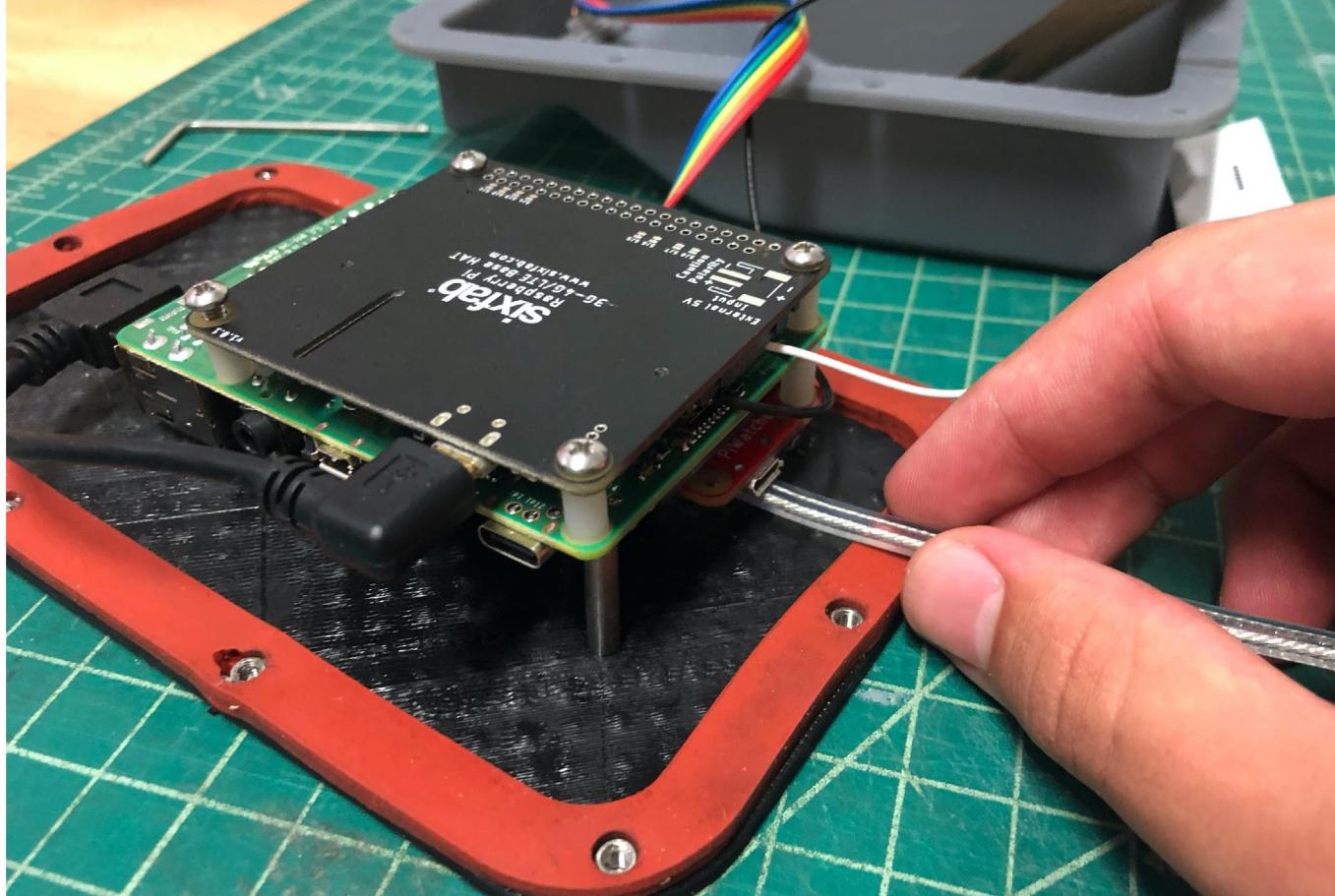
- Main antenna is square-ish, goes on the back face (black wire). Route under white diversity antenna wire and secure cable to housing
- Diversity antenna is long, goes on a side wall (can be bent to fit)



Twist mic cable wires, rout away from GPU and close to housing. Plug microphone cable into microphone PCBA



Plug power cable into Pi. Install a zip-tie with a bit of slack internal to the housing.



Electrical Inspection

Test Cell shield, RPi, PiWatcher, SD Card

Use Balena Dashboard for node bringup. Dashboard will confirm success/failure.

Close housing, keeping power cable between layers of silicone as shown. Screw to close with socket head screws, starting with the two on either side of the power cable.



Pack into box with USB power adaptor,
extension cord, and 2 large command strips.

Alternatively, would it be better if
we shipped units just wrapped in
bubble wrap? High volume when
you put each one in a box.