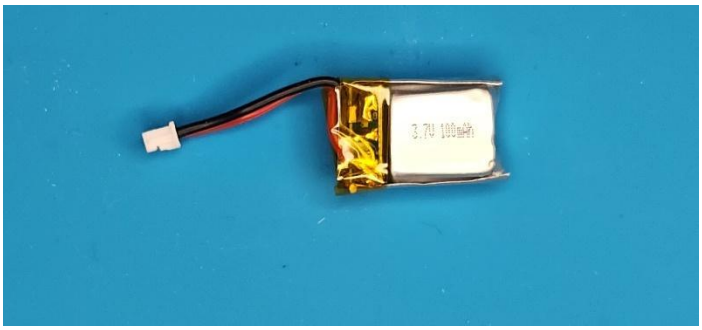
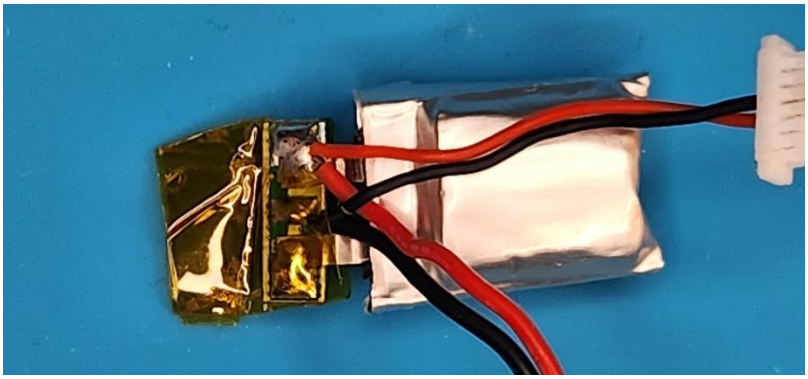
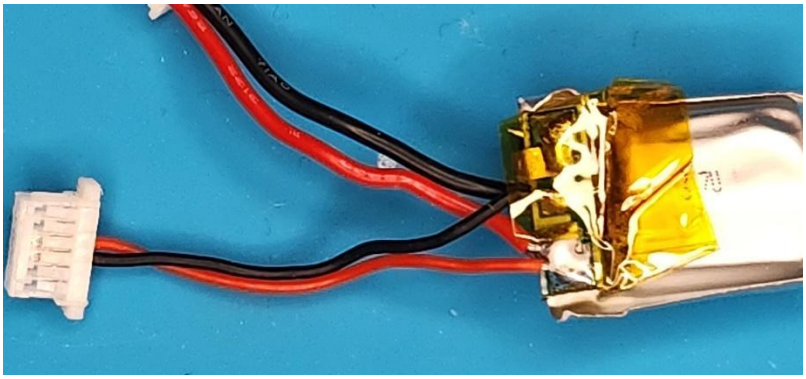
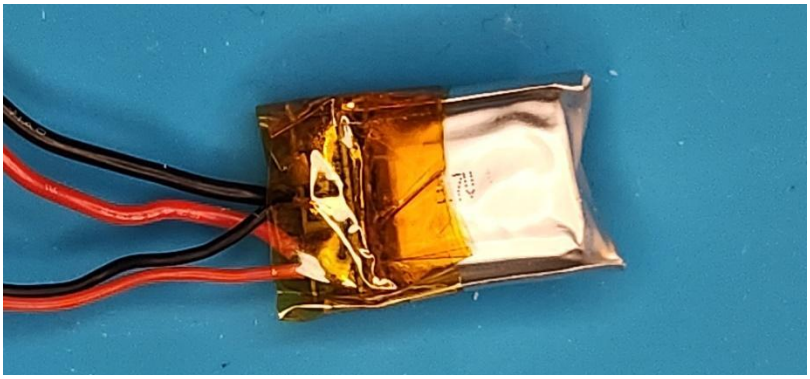
Phoenix UAS mRID Standalone Module How-To

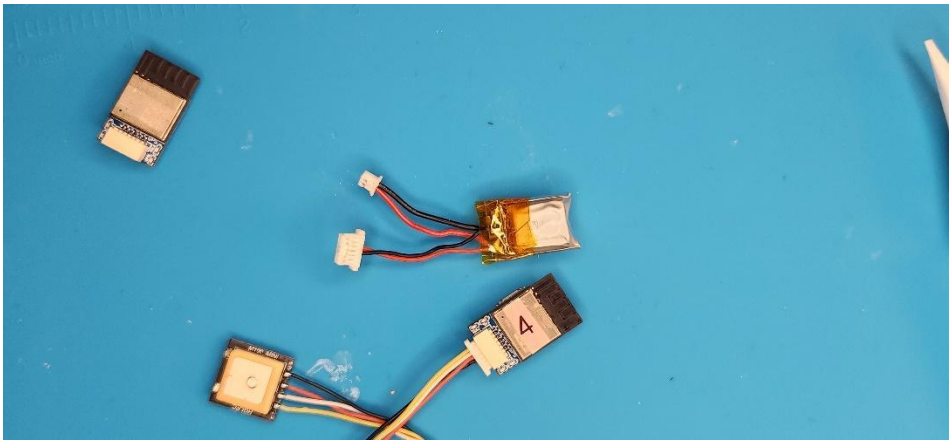
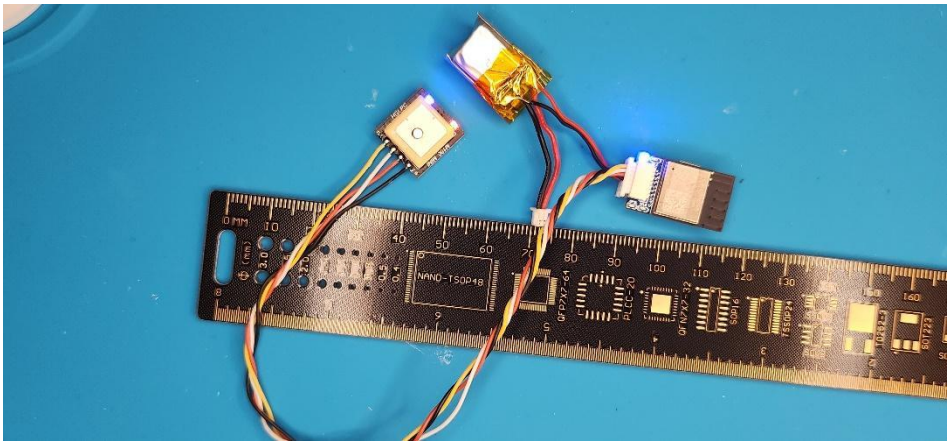
*** This is a DIY instruction and requires soldering to a LiPo safety circuit and is meant as a guide for those who comfortable with soldering and have experience with LiPo's. Do not perform this on a fully charged battery! ***

*** Proceed at your own risk. ***

The Phoenix UAS mRID is a small and light weight Remote Identification Module designed and built specifically for small FPV drones and other RC aircraft. It is intended to be powered from the aircraft 5v regulator; however, its power requirements allow for its use when powered from a 1s LiPo.

- Materials List:
  - mRID module
  - 6P SH1.0 connector
  - 2 SH1.0 cables
  - 1S LiPo with charge/discharge protection circuit built in
    - Amazon.com: 3.7V 100mAh 20C Lipo Battery for WLtoys V272,Cheerson CX-10 Mini Quadcopter Estes Proto X, Syncro X, Hubsan Q4 Nano Quadcopter 4 Pack with USB Charger : Toys & Games (or similar)
  - Kapton tape or shrink wrap
- Equipment
  - Soldering iron
  - Wire cutters
  - Solder
  - Flux
- How-To:
  - Prepare the battery by unwrapping the Kapton tape around the terminals and battery protection circuit:
  - 
  - Fold out the battery protection circuit, taking care not the damage the battery terminals or shorting the battery.
  - Cut the SH1.0 positive (RED) and negative (Black) wires to length
  - Strip about an eight of an inch of insulation off each wire and Tin with solder

- Solder the positive and negative SH1.0 wires to the LiPo's existing charging wire terminals.
- 
- Wrap the battery protection circuit with kapton tape
- Fold the battery circuit back up to the battery
- 
- Wrap the battery circuit and battery with Kapton tape.
- 
- Verify you have the polarity of the SH1.0 connector correct prior to connecting to the mRID.

- 
- Connect a GPS unit to the mRID
- Connect the LiPo's SH1.0 6P connector to the mRID.
    - The Blue power light should come on and the GPS should indicate it is powered.
    - Place outside or in a window to allow the GPS to get a position lock.
    - On a 100mAh LiPo testing has shown the mRID will run for over 30 minutes.
- 
- You can use double-sided tape to fix the mRID, GPS, and battery to a suitable base (I used an SD card reader for proof of concept) to finish the module to easily move from UAS to UAS.

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