



iMet-XQ to the iMet-XQ2

XQ

- Self-contained PTU sensor that is simple to use and deploy
- Ultra small footprint for deployment on any rotary wing UAV

| General | |
|------------------------------|-----------------------------------|
| Power | Rechargeable Battery |
| Battery Life / Charging Time | Approx. 120 / 70-80 minutes |
| Data Storage | 16 Mb Flash Memory (Up to 18 hrs) |
| Data Transfer | USB |
| Sampling Rate | 1 Hz |
| Size/Weight | 10 x 3 cm / 15 g |



Solid PTU sensor but had difficulty maintaining GPS connection in some environments. Suitable for short deployments on small UASs but not reliable enough. Small size was (unfortunately) the root of the problem.

XQ2

- Robust GPS connection required a larger footprint
- Faster time-response RH sensor added
- Up to three times longer battery life

| General | |
|------------------------------|--|
| Power | Rechargeable Battery |
| Battery Life / Charging Time | Approx. 300 / 180 minutes |
| Humidity Sensor | Innovative Sensor Technology model HYT-271 |
| Size/Weight | 13 x 6 x 2 cm / 60 g |

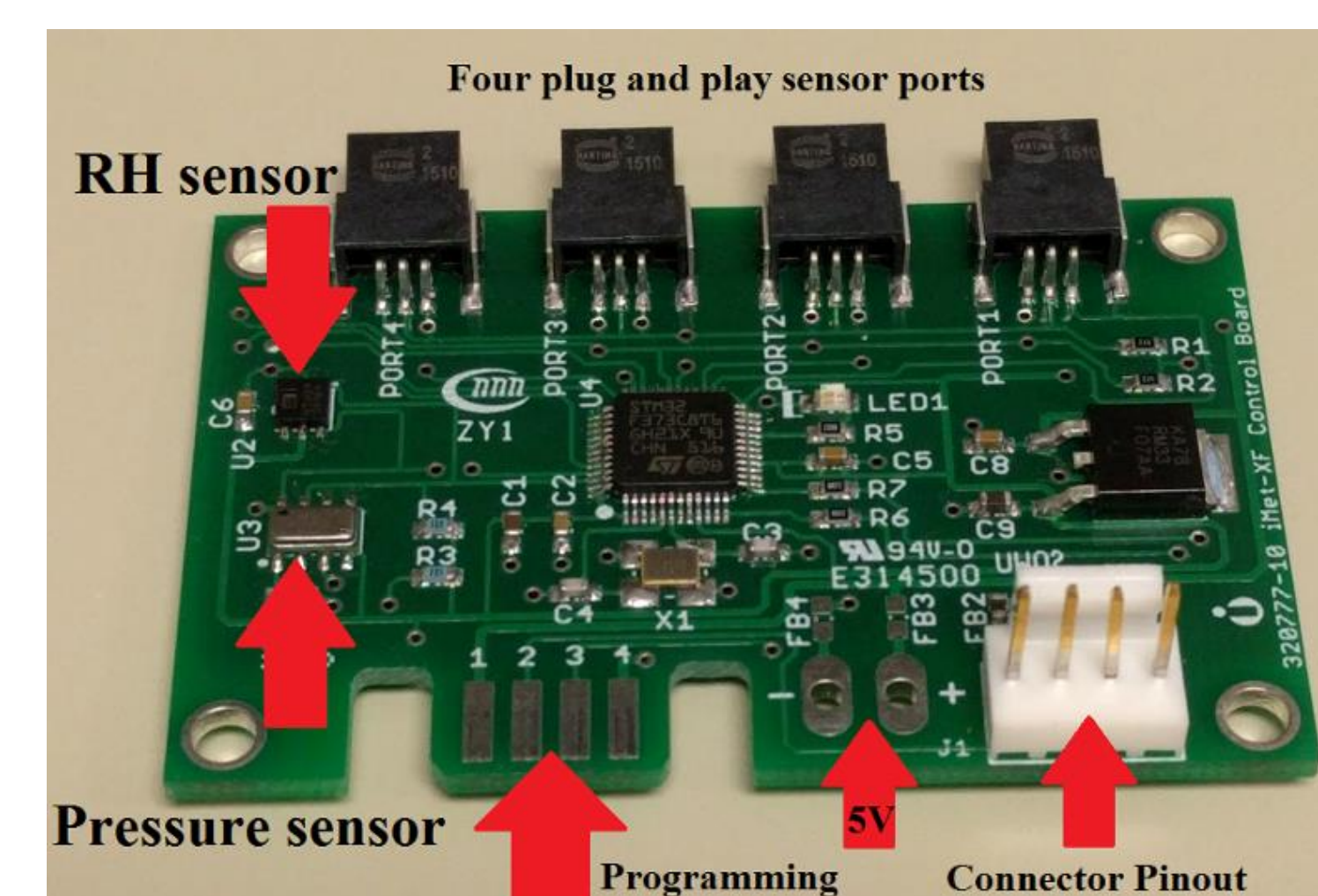


Maintains a reliable GPS connection due to larger ground plane. Improved RH time-response and extended battery life suitable for longer deployments including tethers and kites.

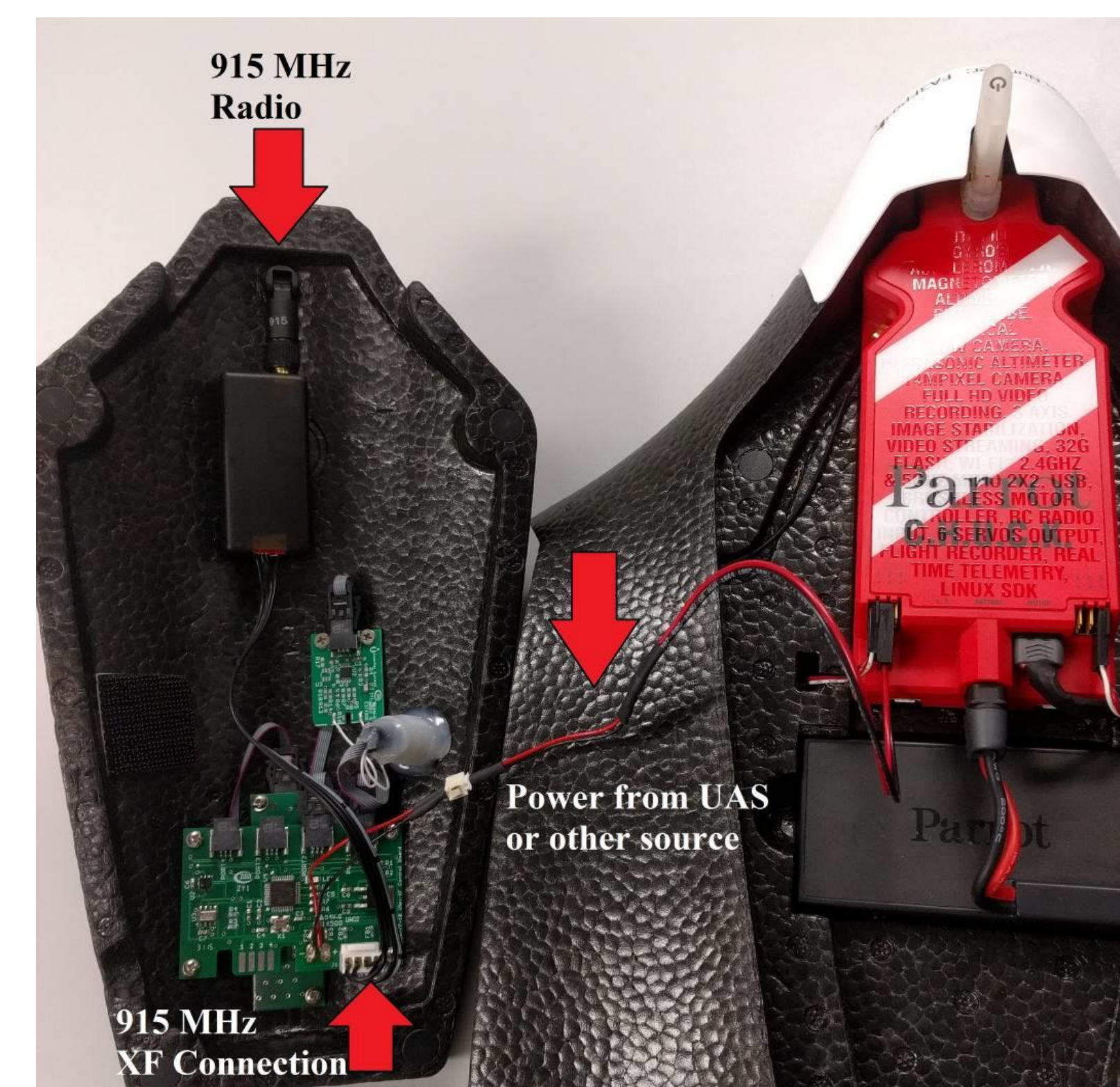
Both sensors communicate via an FTDI VCP at 1 Hz when they are powered and have their own data logger on-board. Accessory port connection available for real-time data with the 3DR Solo, but need to establish communications with other auto-pilots.

iMet-XF

- Customizable package for fixed-wing UAVs
- 4 ports for TU, IR, CO2, CH4, and GPS
- Can integrate data with UAS, store to datalogger or use 915 MHz transmitter for real-time



Parrot Disco Integration with Real-time Data



OU Coptersonde: Sensors integrated with Pixhawk



Operational Quad?

Transitioning from research and development to an operational UAV will require a new sensor package and data products. Ideally a standalone multi-sensor PTU product with GPS and real-time transmission.

- 2 AT sensors
- 2 RH sensors
- Real-time data Tx at 915 MHz?
- Range of several km?
- Integration with Auto-pilot?
- Solar shields for protection and ideal mounting on legs below propwash
- Serial and FTDI output for integration
- What about winds?

