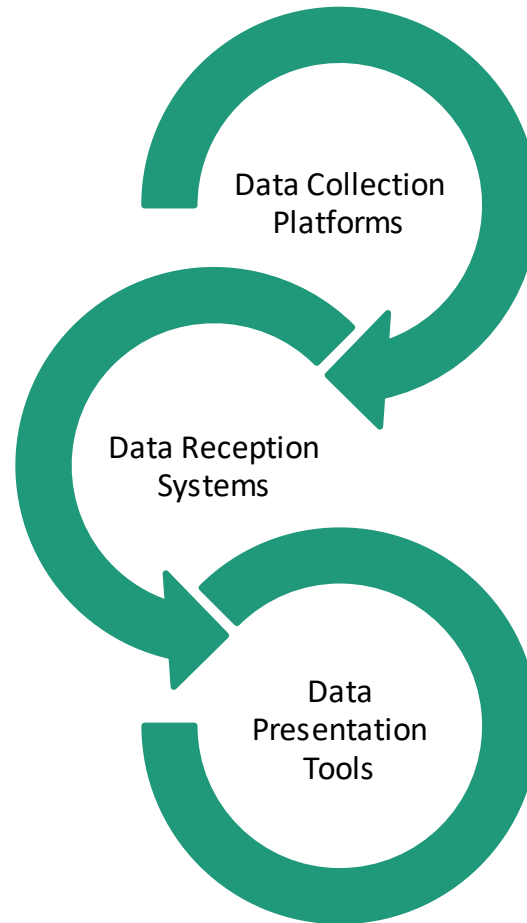


**MICROCOM**  
ENVIRONMENTAL



# Complete Data Solutions



# The XPress

- Fully integrated GOES DCS Data Collection Platform
  - GTX-2.0 Satellite Data Transmitter & Logger
  - UB6 Satellite Transmit Antenna
  - 5 Watt Solar Panel
  - GPS Antenna
  - Internal Battery Pack
  - Solar Regulator
- Lightweight
- IP66 Enclosure
- Mounting & Solar Panel options available
- Extremely cost-effective



- GPS Antenna**
- Ensure Accurate Transmission Time
  - Calibrate the Onboard 10MHz VCXO

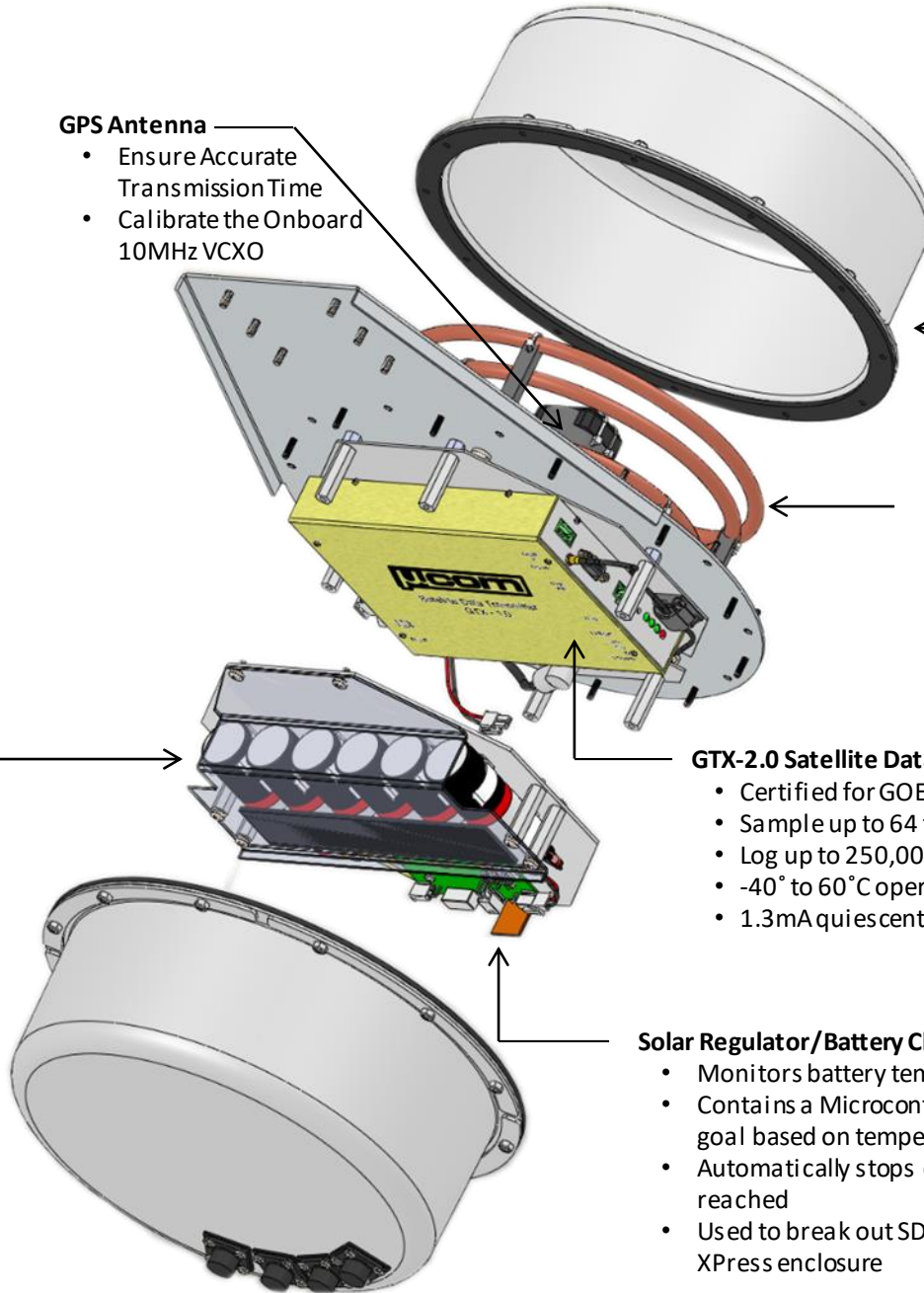
- UV Resistant ABS Plastic Shell**
- Neoprene Gasket Seal
  - IP66

- UB6 Transmit Antenna**
- 6 dB Gain
  - 3 dB Beam Width of 78°
  - Right hand circular polarized
  - Transmits Data at 402MHz

- GTX-2.0 Satellite Data Transmitter & Logger**
- Certified for GOES, EUMETSAT, INSAT, and Himawari
  - Sample up to 64 total sensors parameters
  - Log up to 250,000 entries
  - -40° to 60°C operating temperature
  - 1.3mA quiescent current

- Solar Regulator/Battery Charger**
- Monitors battery temperature
  - Contains a Microcontroller that calculates the charge goal based on temperature
  - Automatically stops charging when that goal is reached
  - Used to break out SDI-12 connection from GTX 2.0 to XPress enclosure

- 12V 4.5aH Battery Pack**
- Absorbed Glass Mat Construction



# Long-Term Deployment

- Quick & easy set-up
- Cost-effective & versatile mounting options for various applications
- Replaces the need for gage houses and enclosures





# Seasonal Deployment

- Monitor rivers impacted by snow melt in spring and early summer
- Change sensors and monitor drought and fire conditions in summer and fall



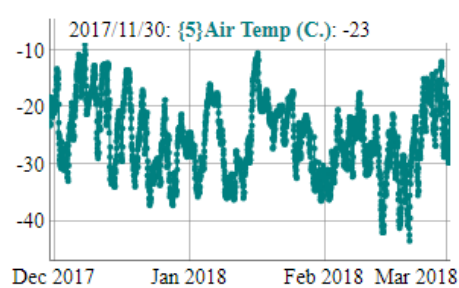
# Rapid Deployment

- Additional monitoring in anticipation of extreme weather and flooding
- Post-flooding & post-wildfire monitoring
- Temporary replacement for destroyed DCPs after extreme weather



# Extreme Applications

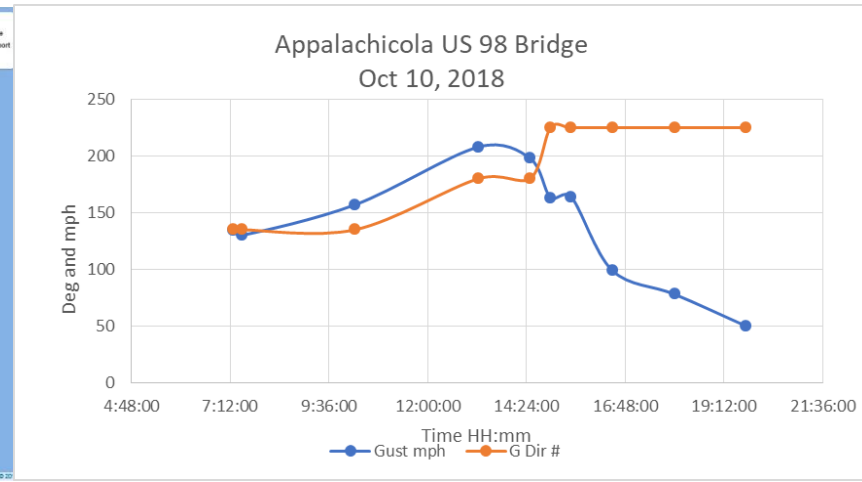
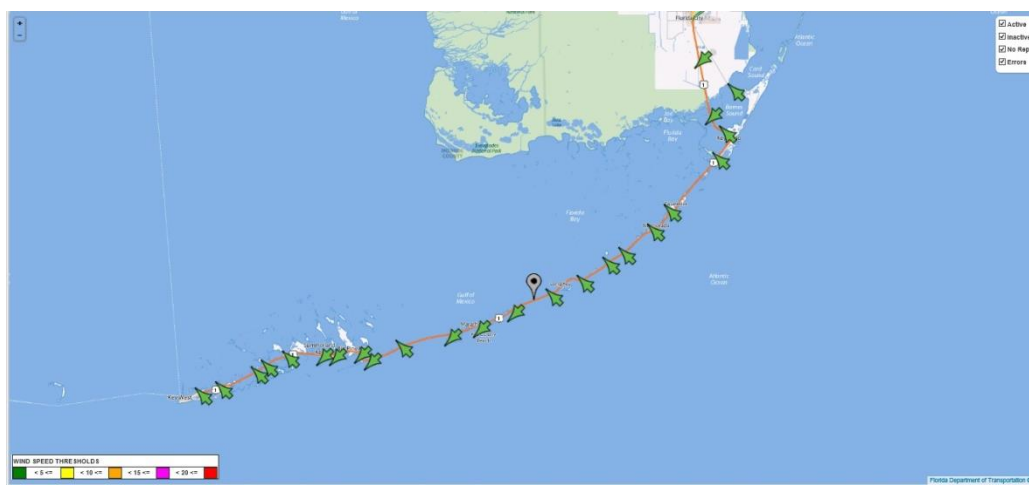
- 7 XPress units deployed in Yellowknife, Canada for the De Beers Mining Company to monitor lake water levels
- All 7 continue to operate in constant sub  $-20^{\circ}\text{C}$ , heavy snow, and limited sunlight during the winter months





# Extreme Applications

- Over 75 XPress units were deployed throughout Florida for the Florida Department of Transportation to monitor wind speed/direction and other sight specific parameters
- 26 units deployed throughout the Florida Keys during Hurricane Irma
  - Recorded wind gusts of up to 140 mph.
- 50 units deployed throughout the Florida Panhandle during Hurricane Michael
  - Recorded wind gusts of up to 208 mph



# Configuring the XPress

- The XPress has 4 external connectors
  - Solar Power, RS-232, & 2 SDI-12/Tipping Bucket connectors
- The XPress can be configured using the provided RS-232 cable and GTX Utility software
  - The GTX Utility is provided with all units and can be downloaded on the [GTX webpage](#)
  - Tutorials on using the GTX Utility can be found on [Microcom Environmental's YouTube Page](#)



# SDI-12 Interfaces

- The XPress utilizes SDI-12, but Microcom offers SDI-12 interfaces for all other common sensor data communications protocols
- All SDI-12 Interfaces can be packaged in NEMA IP66 enclosures
- Microcom also offers the XTend, an additional sensors breakout interface



# Mounting

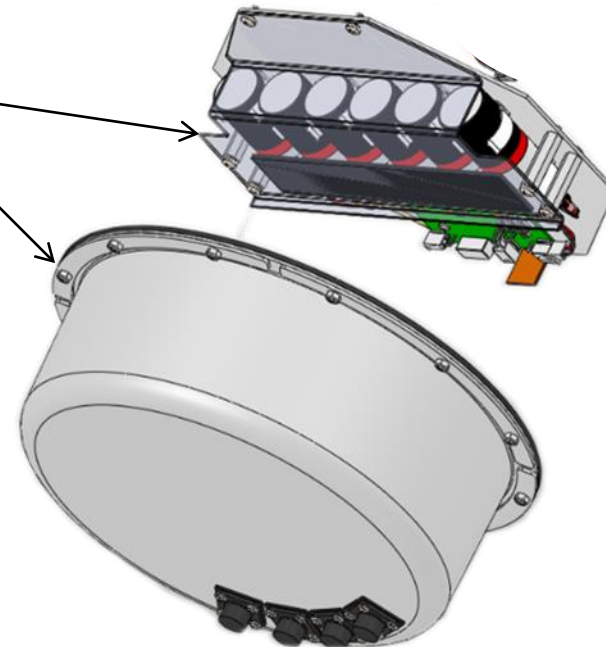
- Stainless Steel U bolt (1 – 3.5” diameter poles)
- Stainless Steel V bolt (1 – 3.5” diameter poles)
- Stainless Steel Band-it Clamps for larger poles and towers





# Maintenance

- The only routine maintenance needed is changing the battery packs.
- For the most part, this should be done every 5 years.
- To replace the batteries, remove:
  - 12 Nylon Locking Nuts
  - Bottom Cover
  - Connection Cables
  - Retention Plate
  - Neoprene Gasket
- It is important to replace the Neoprene Gasket Seal when changing the batteries



# Receive Systems

- DAMS-NT DigiTrak Direct Readout Ground System
  - Direct Reception from the GOES Satellite
  - Lowest latency
  - Most reliable
  - $\geq 3.7$  Meter Dish
  
- DigiRIT HRIT Receive System
  - Rebroadcast of all DCS messages
  - Roughly 20 – 25 second Latency
  - Low-cost
  - 1.5 Meter Dish



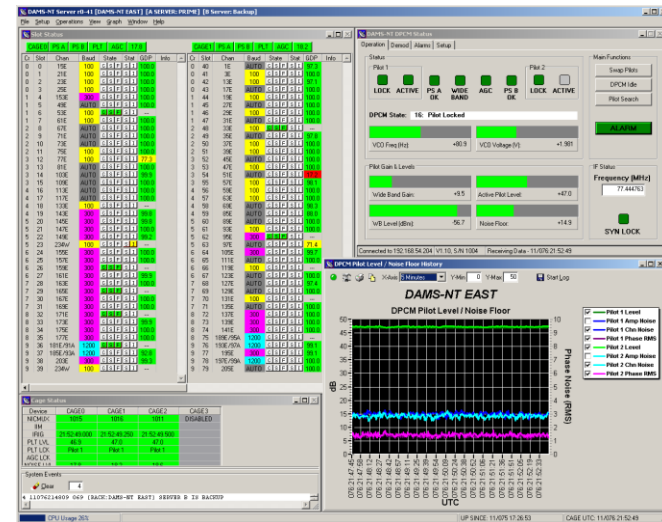
# DigiRIT HRIT Receive System

- Easy installation with 2 people
- Multiple mounting options for various settings
- Independent from DADDS & the internet for enhanced data reliability
- Does not require a dedicated computer
  - Transfers data via an Ethernet connection



# DigiRIT DAMS-NT Software

- DCS Data Service (DDS): Redundant Internet based protocol to receive DCS messages from major NOAA and USGS DRGS installations (WCDA, NSOF, EDDN).
- DAMS-NT HiQ: DCS message protocol that supports the Hi-Quality message statistics for better platform performance monitoring.
- SQL Database Option: Message parameters, signal quality statistics, and message data (raw and decoded) stored in user provided database.







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