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

12V 4.5aH Battery Pack
- Absorbed Glass Mat Construction

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
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°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 site 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
Aiming

- The integrated UB6 antenna has a gain of 6dBi with a 3dB beamwidth of 78 degrees
- Use dishpointer.com for elevation, azimuth, and direction
- The Stainless Steel Mounting Bracket can be adjusted for 5° - 85° elevation
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
Points of Contact

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