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
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

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

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

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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
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
  • ≥ 3.7 Meter Dish

• DigiRIT HRIT Receive System
  • Re_broadcast 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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