SatLink 3 Logger/Transmitter SL3-1

Overview

Sutron's SatLink 3 is data logger with a built-in satellite transmitter that is especially designed for hydrometry, meteorology and environment monitoring.

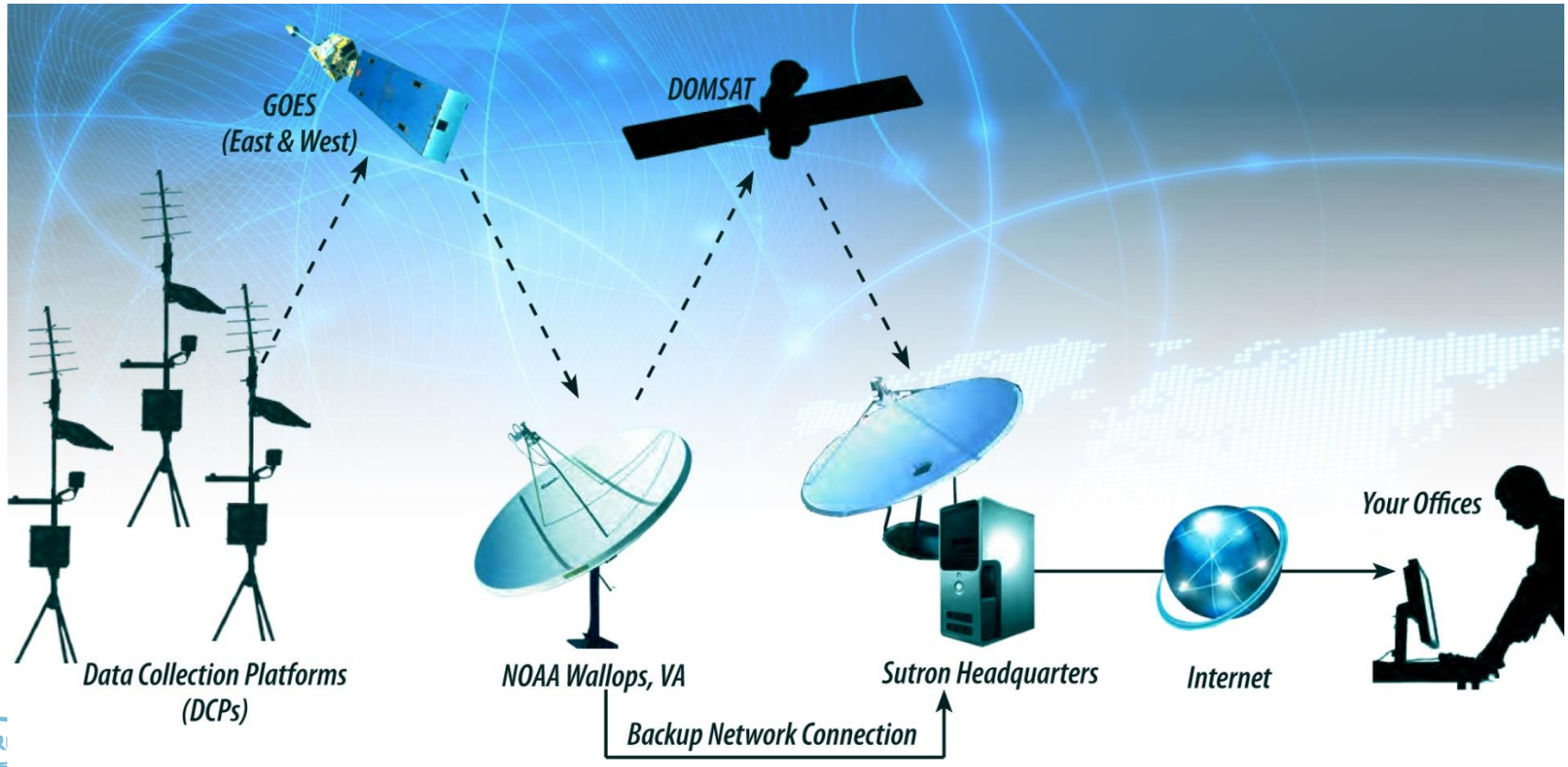
Typical Stations

Measurements

- Connect a wide range of sensors
- Measure each sensor independently
- Perform special calculations
- Record data into non-volatile memory

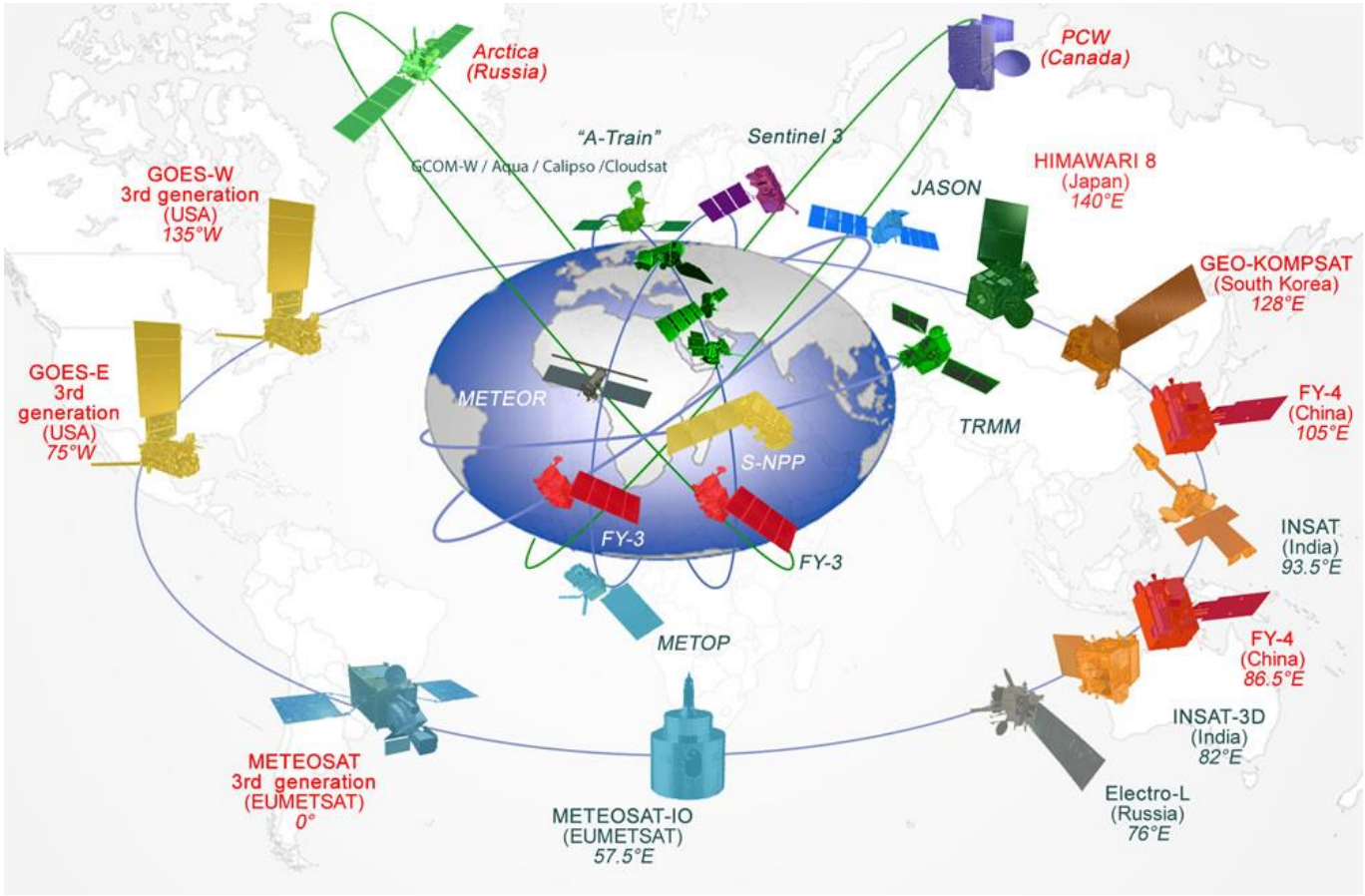
Transmit data via Satellite

- Transmit data via Geostationary satellites (GOES DCS in Western Hemisphere)



Transmit data via Satellite

- Also, will operate with Eumetsat/Meteosat, Insat, …



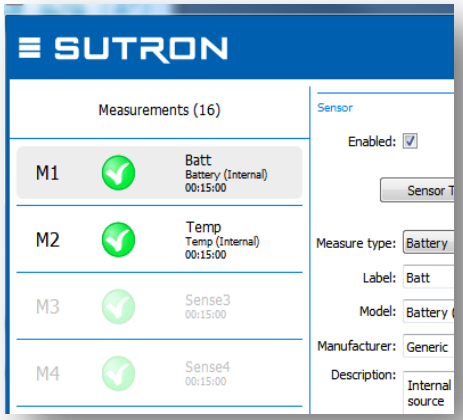
Newest in a long line of Transmitters

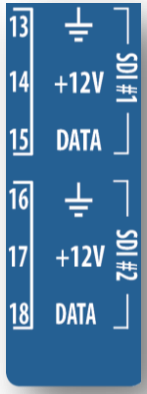
Date	Model	Number
1980	8004	
1988	9000	
1990	8200	
1996	8210	7000
2001	SL1	1000
2004	SL2	15000
2010	SL2V2	5000
2016	SL3	

SatLink3 Improvements

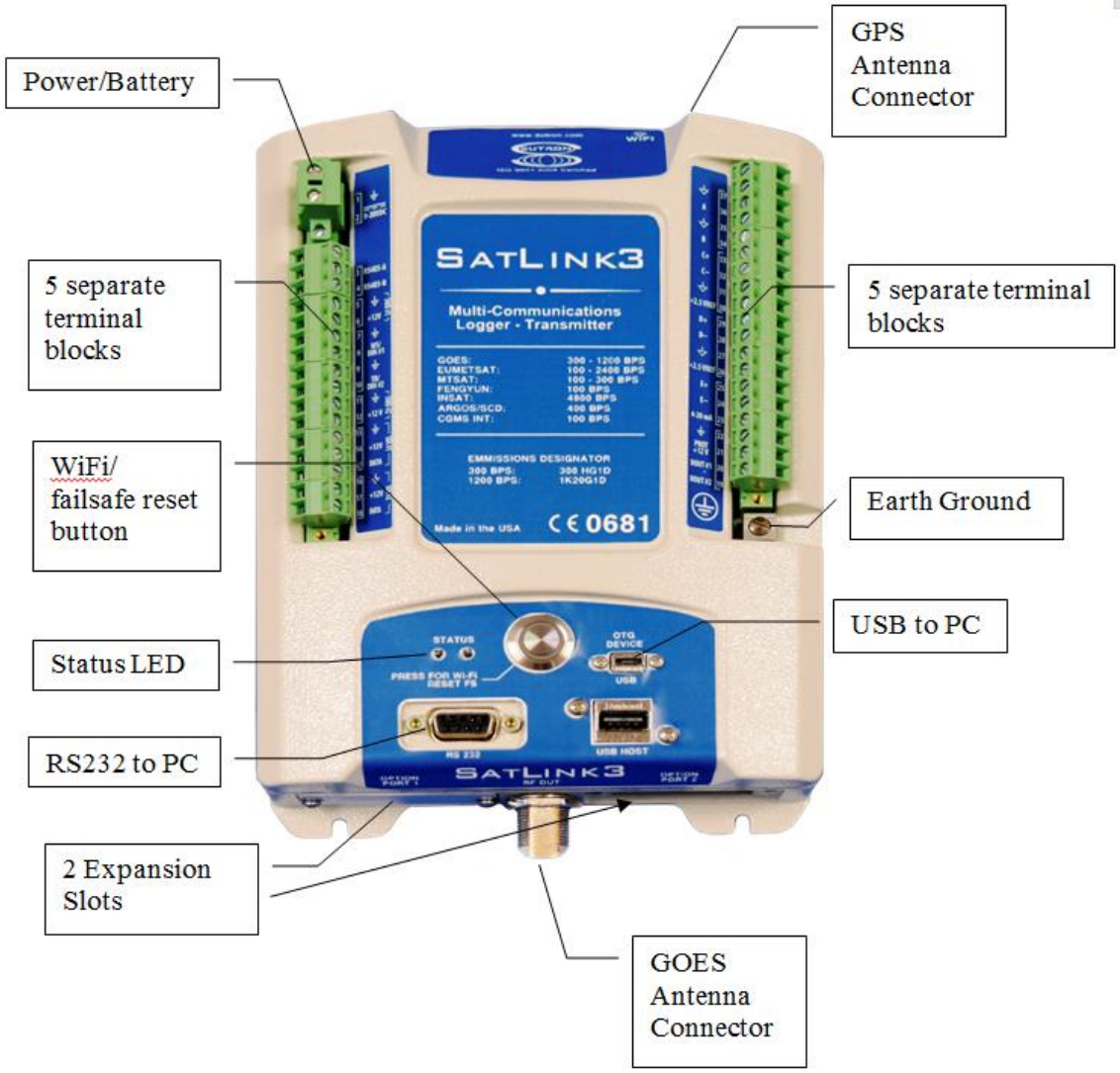
SatLink3 does everything an SL2 did with the following enhancements:

- Wi-Fi for operation with wireless devices
- Expanded measurements from 16 to 32
- Expanded SDI capacity with 2 independent SDI-12 inputs
- Optional cell/Iridium modems for redundant 2-way communications
- Expanded log from 120,000 to 1,000,000 readings
- Improved analog accuracy & additional analog channels





SatLink3

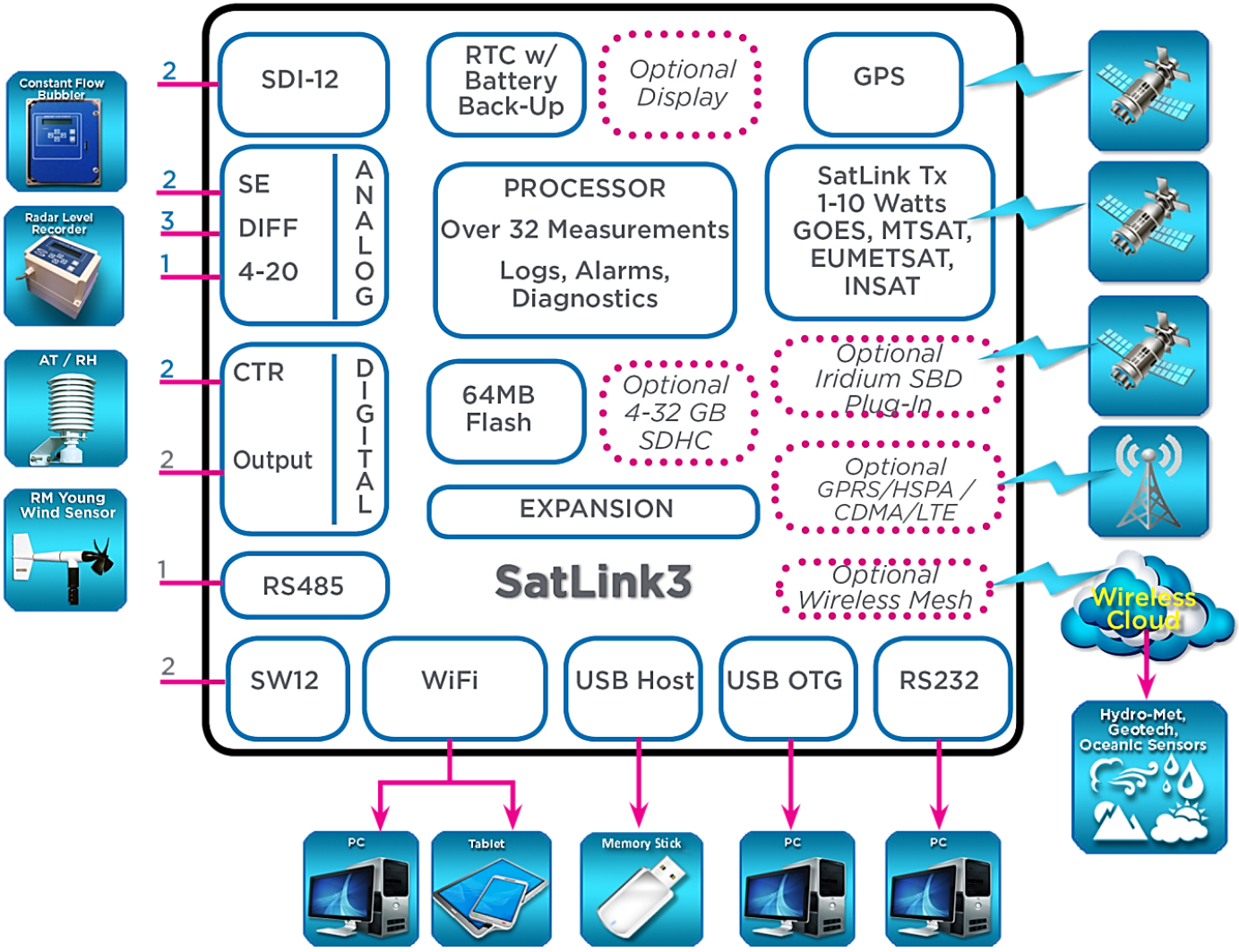

Power/Battery
GPS Antenna Connector
5 separate terminal blocks
5 separate terminal blocks
WiFi/ failsafe reset button
Earth Ground
Status LED
USB to PC
RS232 to PC
2 Expansion Slots
GOES Antenna Connector
SATLINK3
Multi-Communications Logger - Transmitter
Made in the USA
CE 0681

SatLink3 Features Built-in

- Removable Terminal Strips
- Separate Power connector
- 2 Independent SDI-12 ports
- 2 Single Ended Analog
- 3 Differential Analog
  - High accuracy for strain gauges, thermocouples, RTDs etc.
- 1 4-20ma Analog
- 2 Frequency, Counter, Level Inputs (1 works with RMYoung wind monitor)
- 2 Digital Output
- RS485
- 2 SW 12

- Built-in Wi-Fi Access point
- Optional Display
- Satellite TX 1-10 watts
- Optional Iridium
- Optional Cell modem
- USB Host for memory stick
- USB OTG for PC
- RS232 – for legacy systems or PC

SatLink 3 Block Diagram

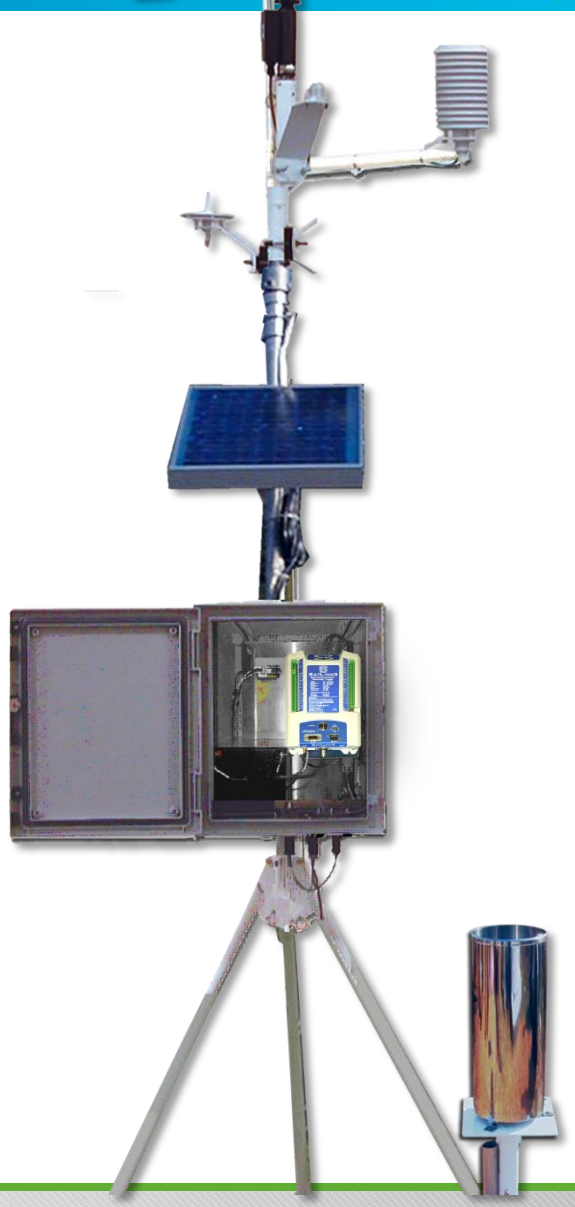


Optional Communications

- Iridium Satellite SBD – coming July 2016
- Cellular communications: LTE (4G) – coming July 2016

How It Works

- Automatically synchronizes internal clock to GPS to maintain time accurate to 100mS.
- Measures sensors based on the user entered schedule.
- Applies slope, offset, or special calculation as needed.
- Stores the data in non-volatile flash memory.
- Transmits data at the user entered scheduled time or based on alarms.
- Maintains status and diagnostic information on measurements, transmissions.



SatLink Status LED Lights

Description	Left/Top LED	Right/Bottom LED	Button
Unit is operating properly	Green blink every 5 seconds		
Unit has a Setup or operating error		Red blink every 4 seconds	
WiFi turned on but no active connection			Blue blink every 4 sec or fast flashing blue
Active WiFi Connection			Solid Blue
Transmitting		Solid Blue	
Power Fail Imminent		Red flash 9Hz	
Unit is in Test mode	Green blink every second	Red blink every second	

LinkComm v3 – “Common Communicator”

LinkComm can connect to SatLink3 via WiFi, RS232, or USB

- Setup the station
- View live reading
- View/download logged readings
- View diagnostics/status
- Calibrate sensors

Works with ipad, iphone, Android, Windows XP, 7, 8, 10

Getting Started: Install LinkComm

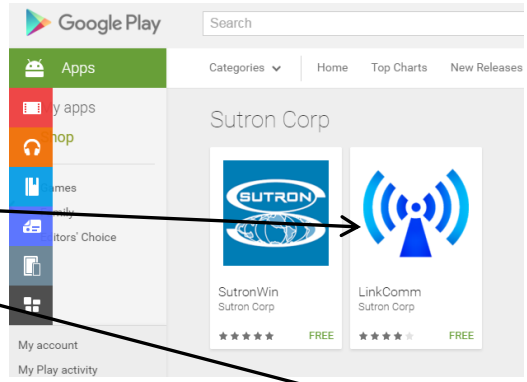
- Android: Download/install from GooglePlay
- IOS: Download/install from iTunes
- Windows: Download/install from Sutron

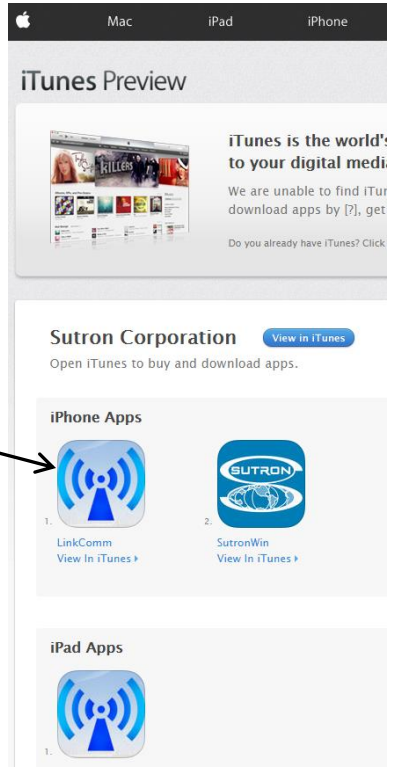
https://www.sutron.com/linkcomm-beta-software/

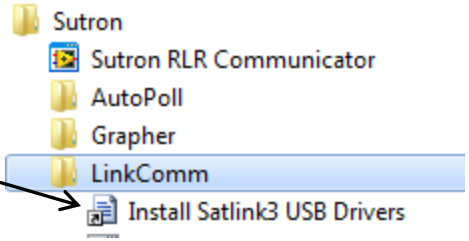
Or

http://www.sutron.com/product/linkcomm/

- If your PC is running windows 7, you will need to install the USB drivers after installing LinkComm. Note: this is not needed for Windows 8 and beyond.

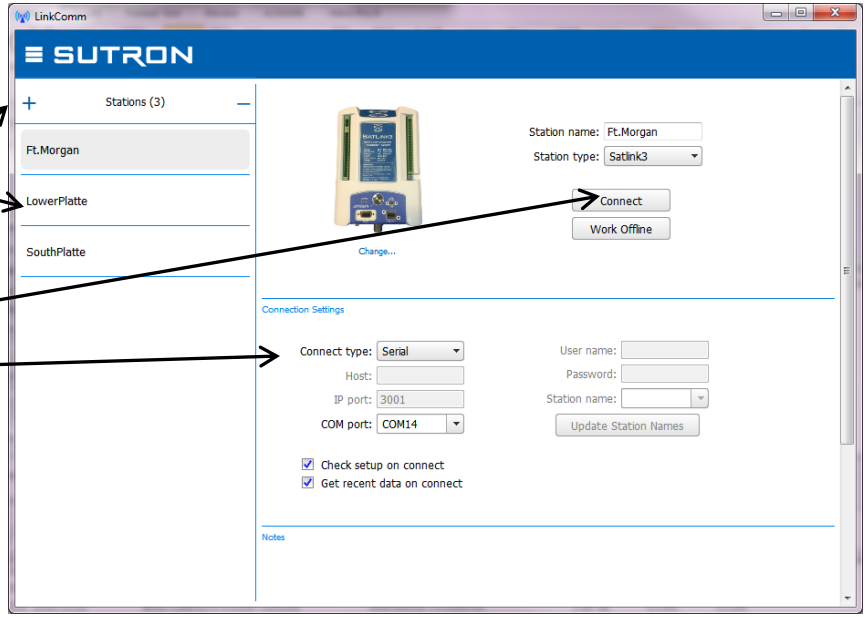






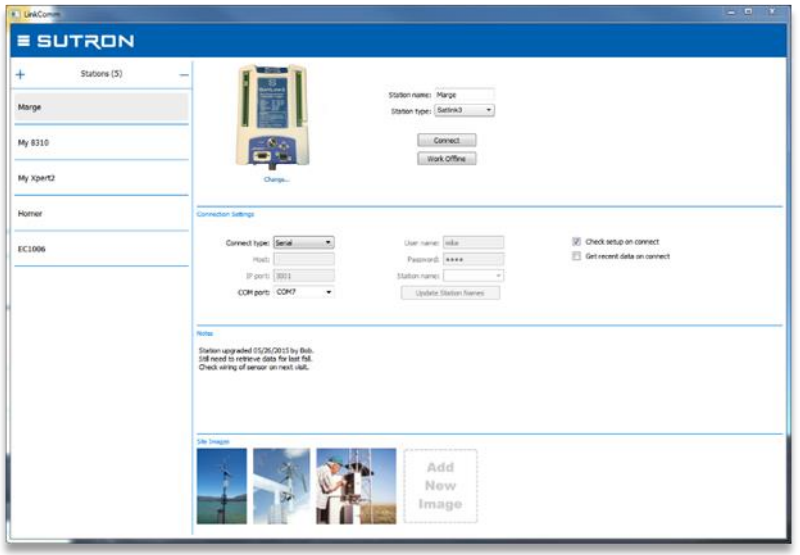
Getting Started: Connect to Station

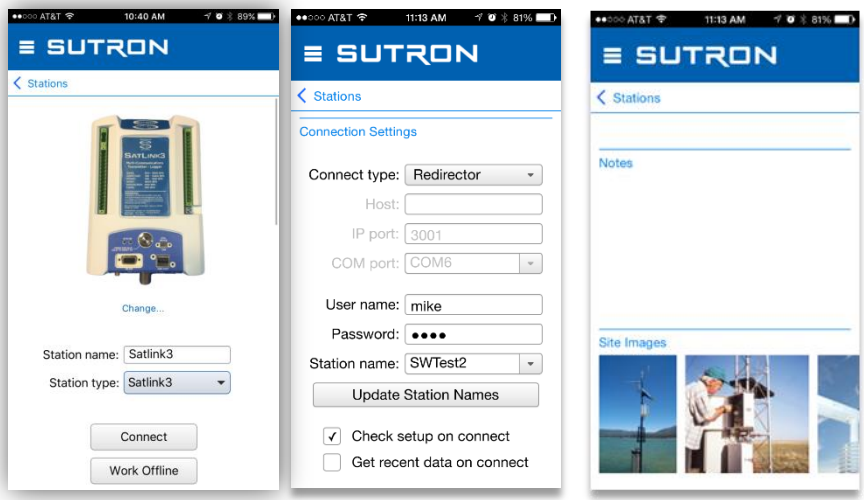
- If you are using WiFi, use your device settings to select the Satlink3 WiFi.
  - The access point name will be Satlink3_stationname_xxxx otherwise, connect your USB cable to Satlink3
  - Note: RS232 will work but it is much slower than USB.
- Run LinkComm
- Select desired station on left or press + to create a new station.
  - If creating a new station, enter the station name, and station type
- Select/Confirm Connect type and press Connect.



LinkComm v3 – Station Management

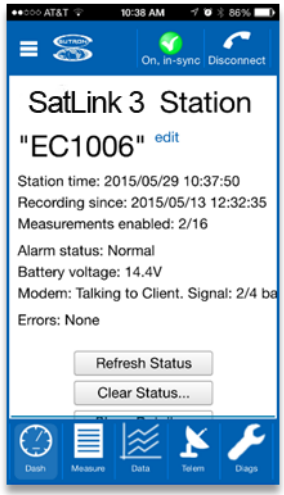
- First screen you see
- Remembers station definitions
  - Automatic saves
- Station type
  - Satlink3, Xlink
  - Future: SL2, 9210, Xpert, 8310
- Connection Settings
  - USB, RS232
  - Station WiFi
- Enhanced setup data
  - Site notes
  - Site pictures
  - use device camera to capture pictures of the site

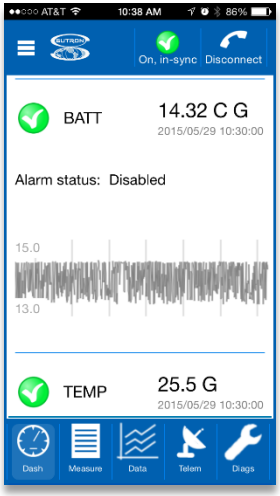




LinkComm v3 – Dashboard Tab

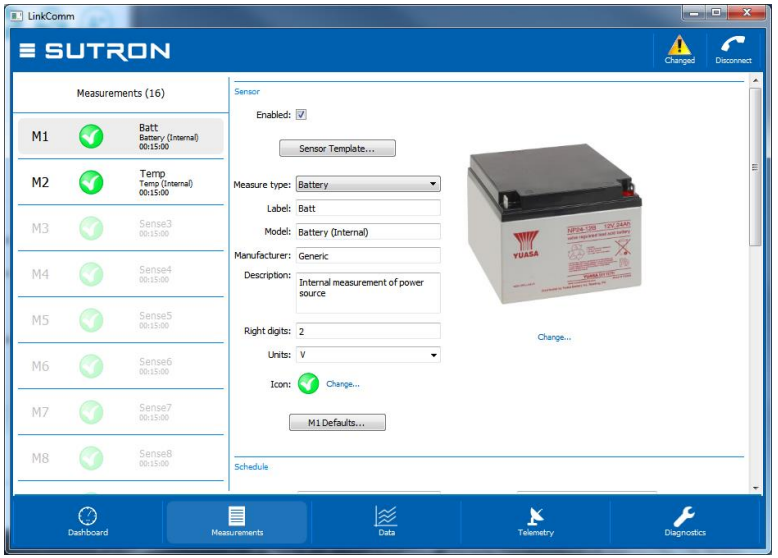
- First screen after “Connect”
- View station’s current state
  - Current status
  - Current measurement values
  - Graphs of recent values (1 week)
- Sync button in header
  - Setup in sync and recording ON
  - Setup has changed
  - Recording is OFF
- Connect button in header
- Buttons to “Refresh Status”, “Clear Data”, and “Show Details”

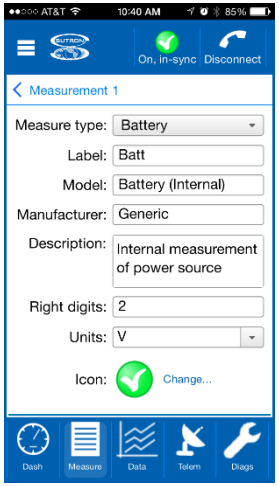


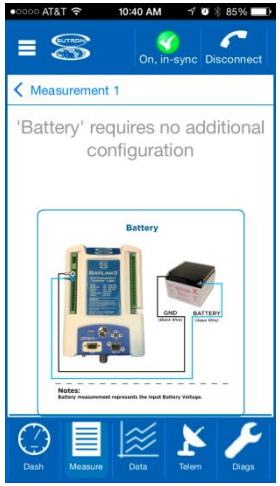


LinkComm v3 – Measurements Tab

- Define configuration and meta data for each measurement
- Select measurement in left pane
- Sensor templates
  - Default configuration
  - Sensor image
  - Wiring diagram
- View last reading/force measurement
- Custom sensor image
- Custom wiring diagram

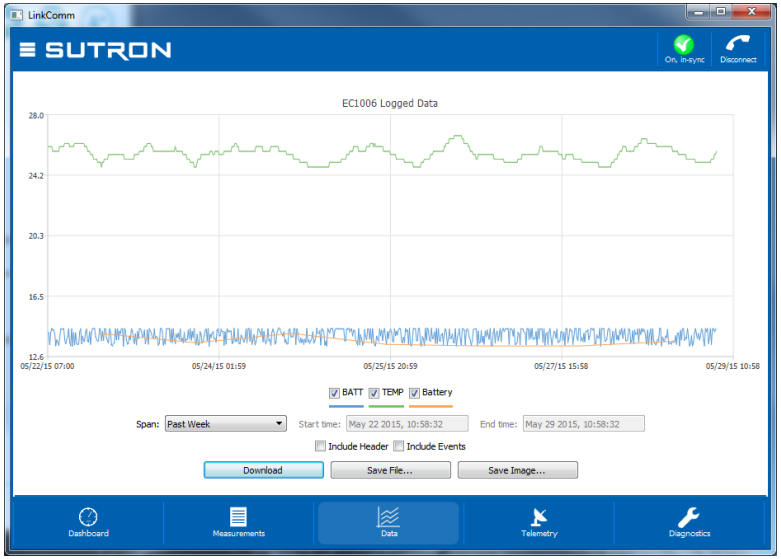


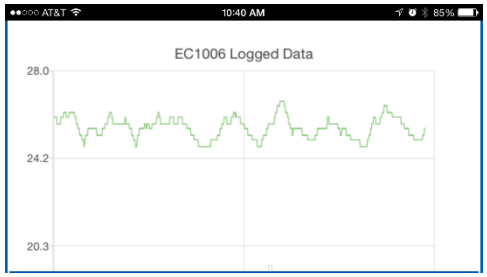


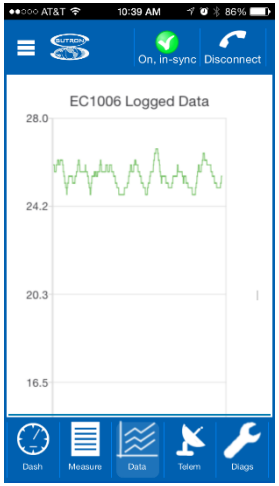


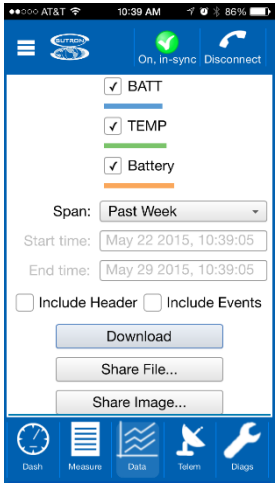
LinkComm v3 – Data Tab

- Zoom-in by click-and drag
- Zoom-out by double-tap/click
- Check to show/hide data sets
- Right-click (or touch) graph for menu options to
  - Select/deselect all series
  - Show points
- Shows recent data by default
- Save/Share File…
- Save/Share Image…









LinkComm v3 – Telemetry Tab

- Telemetry Setup

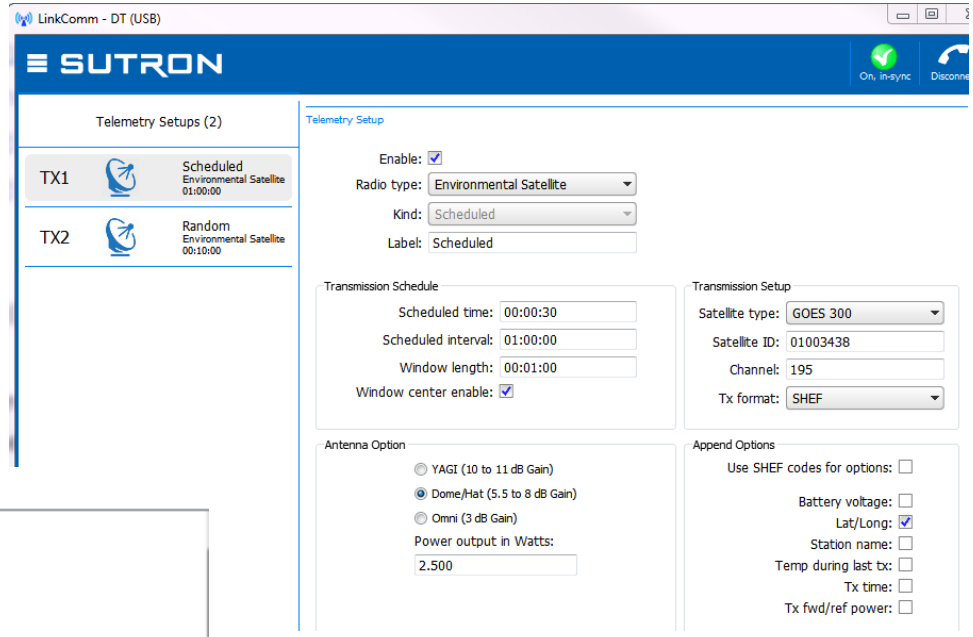
  Schedule – time, interval

  Setup – type, ID, Channel, Format

  Antenna – yagi, dome, omni

  Append options

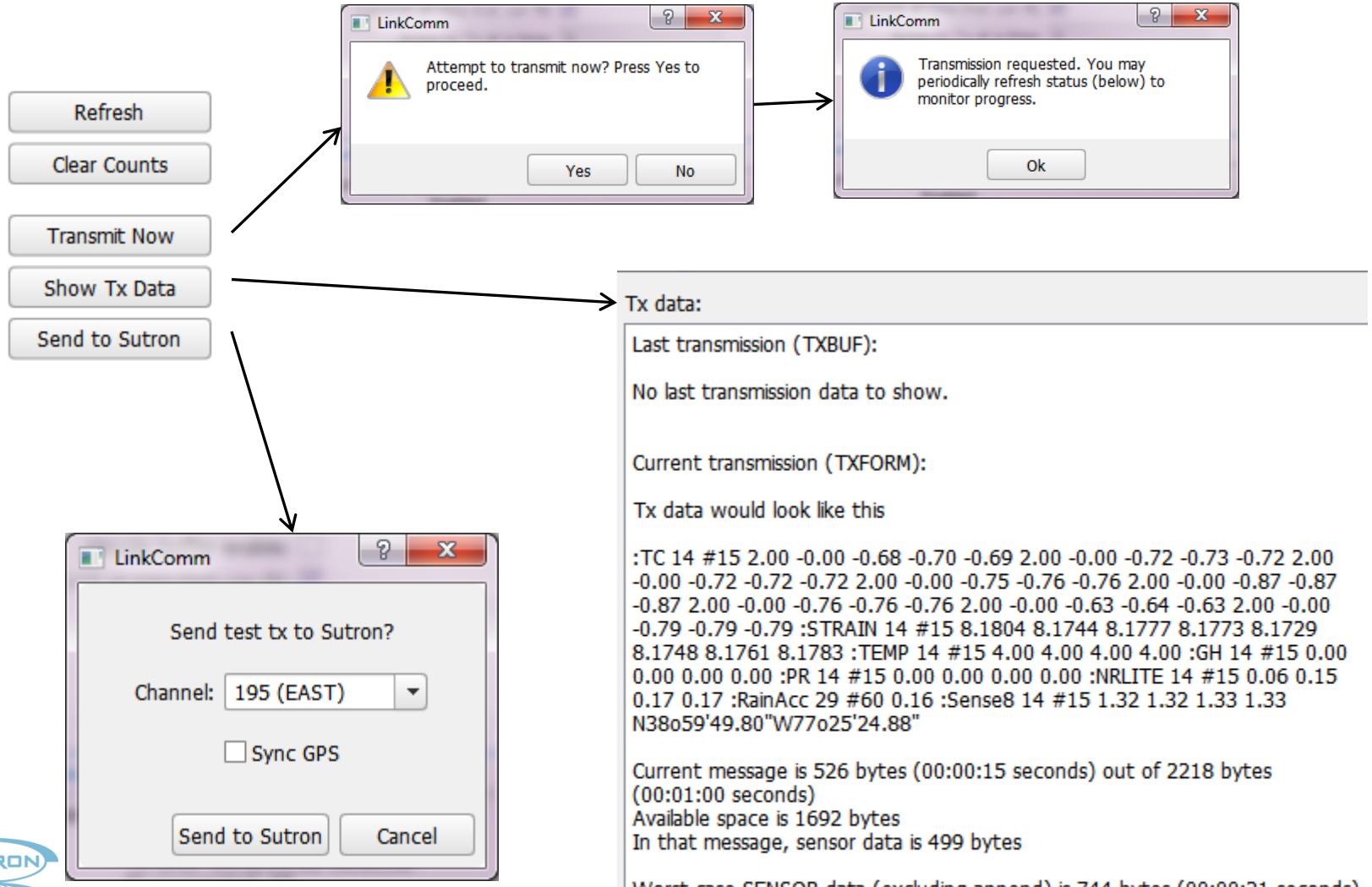
- Telemetry status



Telemetry Status

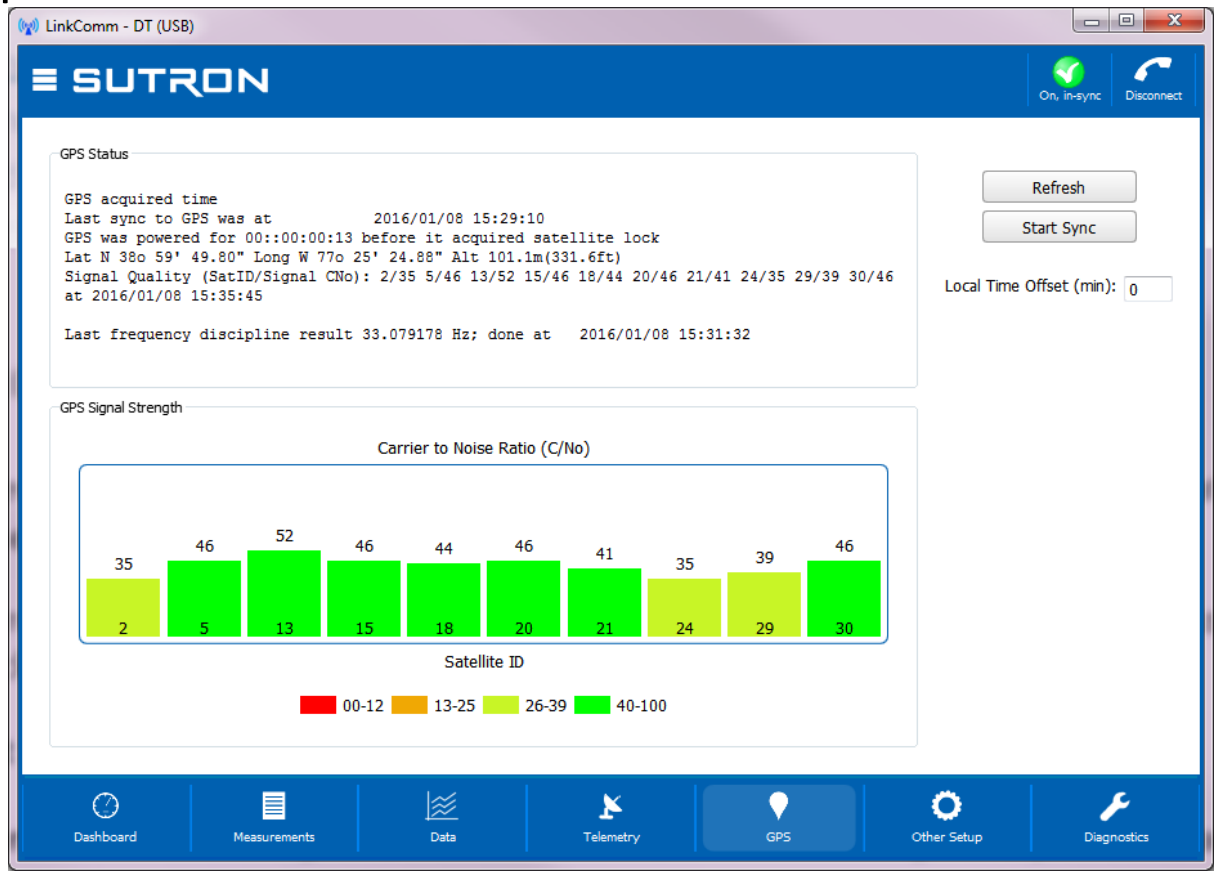
```
Scheduled Tx:
        Enabled
        Tx time: 2016/01/08 16:00:30
        Tx succeeded: 72
        Tx failed: 0
Last Tx: succeeded
        Battery before/during/at end of tx: 13.17/13.04/13.08V
        Forward/reflected power: 2.0/0.0W
        Amp temp before/after: 25.7/27.8C
Random Tx:
        Enabled
        Tx time: 2016/01/08 15:25:33
        Tx succeeded: 377
        Tx failed: 0
Last Tx: succeeded
        Battery before/during/at end of tx: 13.17/13.04/13.09V
        Forward/reflected power: 2.1/0.0W
```

LinkComm v3 – Telemetry Tab Controls

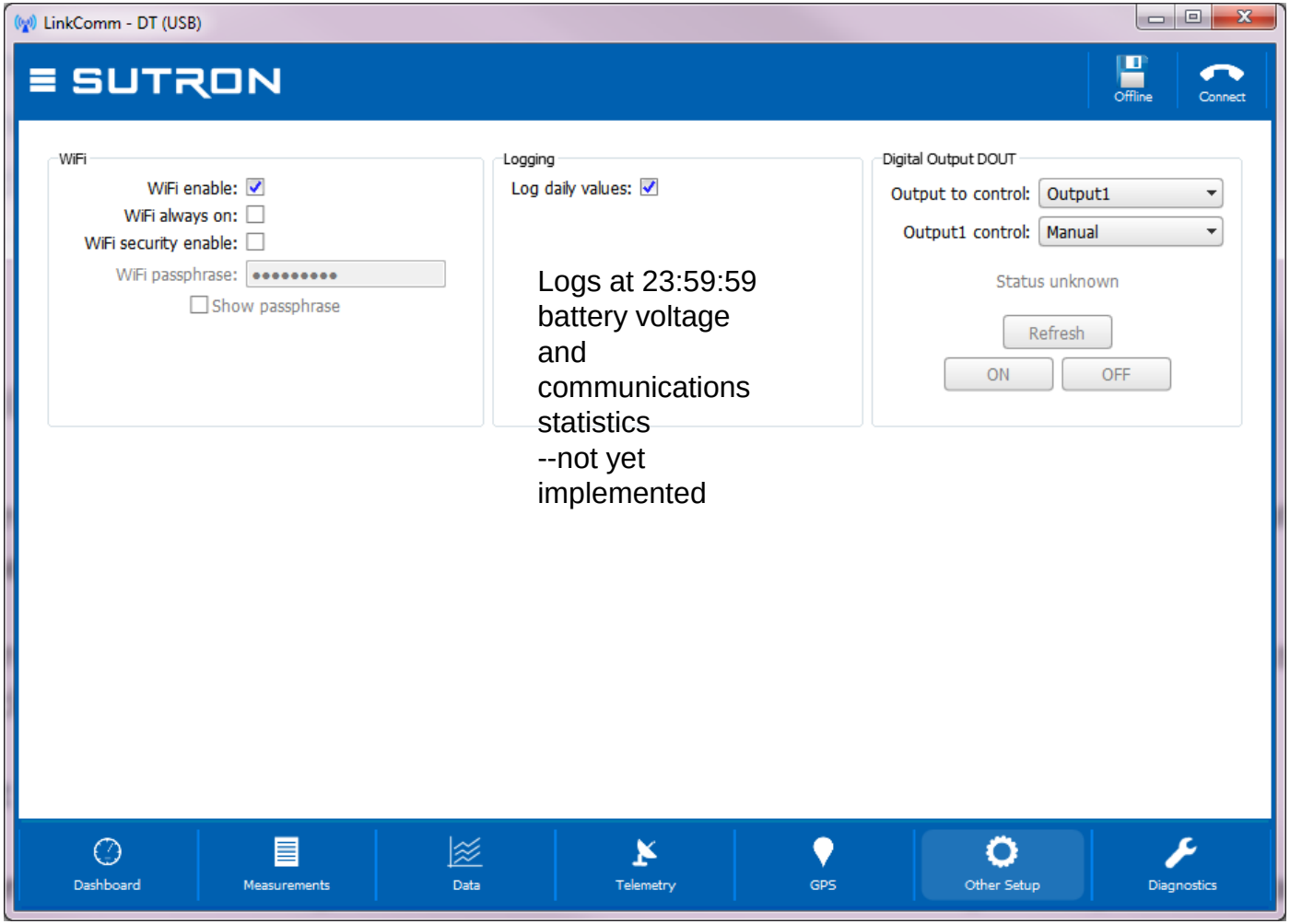


LinkComm v3 – GPS tab

- GPS Status and Signal Strength Graph
- Start Sync Control
- Local time offset

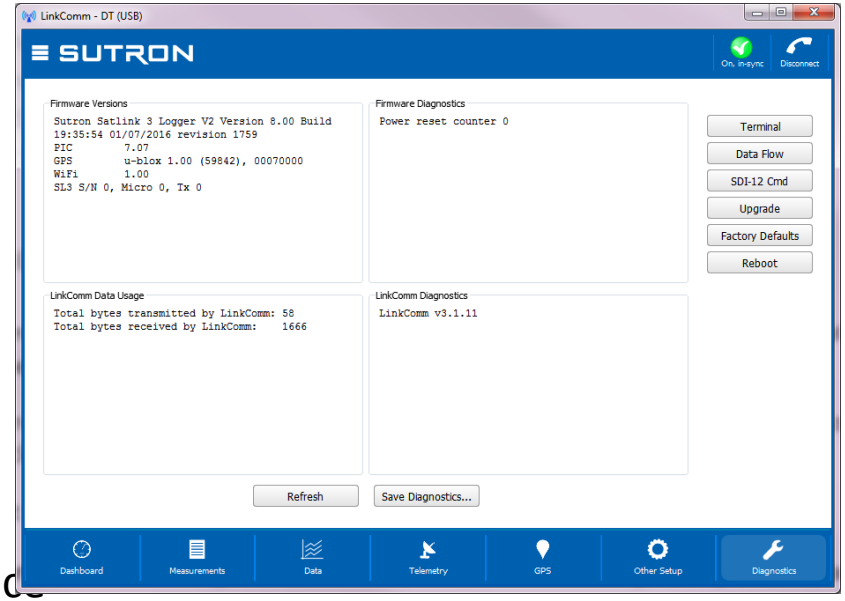


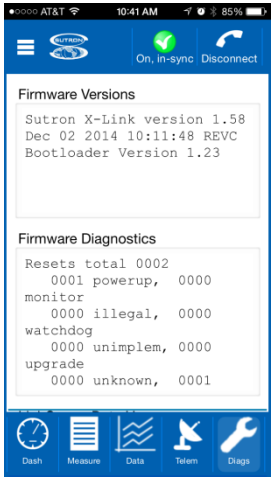
LinkComm v3 – Other Setup



LinkComm v3 – Diagnostics Tab

- Firmware Versions
- Firmware Diagnostics
  - Recent asserts and exceptions
- LinkComm data usage
- LinkComm version
- Options to
  - Save file to share with customer service
  - Terminal dialog (send commands)
  - Data Flow dialog (view data in hex)
  - SDI-12 dialog to send SDI-12 commands to sensors attached to station
  - Set Clock, Factory Defaults, Reboot





Working Disconnected vs. Connected

- Working disconnected from SatLink allows you to create or modify a complete setup in your office and then transfer the new setup to the SatLink on the next site visit
- This also works as a training tool to help you understand SatLink setups
- Working connected allows you to change setup, take measurements, troubleshoot and see data.

Accessories: NEMA with 2 line display

Sutron Knows GOES!

- ISO 9001 Certified
- Designed by Sutron
- Manufactured by Sutron
- Supported by Sutron
- 3-year warranty