SatLink3 Logger/Transmitter
with Optional Cellular & IRIDIUM Communications

Introducing the World's First Wi-Fi Multi-Communications Logging Transmitter

Sutron's SatLink3 provides a cost-effective way to measure, log, calculate and transmit data from remote locations around the world. The unit monitors 32 independent measurements of most hydrological, meteorological, environmental or related sensors. SL3 has built-in support for all meteorological satellites including GOES, EUMETSAT, INSAT and MTSAT for operation anywhere. Most often used directly connected to sensors and transmitting data on a user-set schedule, the Satlink3 has options for cellular and Iridium communications. Satlink3 builds upon Sutron's 35 years' experience providing reliable satellite communications. Satlink3 does everything an SL2 did with the following enhancements:

New on the SL3

▸ Support for Python scripting with up to 8 individually configured scripts.

▸ Expanded measurements from 16 to 32

▸ Improved analog accuracy & additional analog channels

▸ Two independent SDI-12 added inputs expand SL3's benefits. (a) If an SDI sensor or SDI wires are damaged or knocked offline, the other SDI sensor will continue to operate. (b) Two independent SDI ports also increase flexibility of SDI sensor scheduling.

▸ Optional cell/Iridium modems for redundant 2-way communications

▸ Modbus Master/Slave over RS232/RS485

▸ Wi-Fi for operation with wireless devices, including smart phones, tablets and PCs

▸ Expanded log from 120,000 to 1,000,000 readings

▸ Improved GUI program that runs on Android, iPhone, PC or MAC devices

▸ Expanded Operating Temperature Range (-40° C to +70° C)

Whether used in a simple 2-input station or a complicated station with multiple inputs & communication modes, SL3 is the perfect DCP solution.

SatLink3 has a 3-Year Warranty!

Features/Benefits

▸ Application specific behaviors and extended connectivity beyond standard sensor configurations and data formats with Python scripting.

▸ Support for all Geostationary Environmental Satellites including GOES, EUMETSAT, INSAT, MTSAT & CGMS.

▸ Compact multi-communication logger with built-in SDI-12, Analog, Digital, RS485 & 4-20mA measurement circuitry with lightning protection

▸ 2 Switched Power Outputs w/overload protection & 2 Digital Outputs for pulse or on/off control of attached devices

▸ Optional Iridium and call modem cards for two-way communication and alarms

▸ Allows for support of rapidly changing communications standards preventing hardware obsolesce.

▸ Equation processing & multiple level averaging

▸ Built-in Wi-Fi simplifies set up using smart phone/tablet/PC or connect directly to a PC USB port

▸ Use with LinkComm interface for intuitive programming (Android, iPhone, PC, MAC)

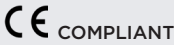▸ Optional data hosting with Hydromet Cloud, for data collection, retrieval, and viewing via the web

Measurements Interface

Dashboard

Supported Satellite Communications

▸ **GOES**	300, 1200bps
▸ **INSAT**	4800 bps
▸ **EUMETSAT**	100, 1200 bps
▸ **MTSAT**	100, 300 BPS
▸ **CGMS**	100 BPS

SatLink3 in Enclosure with Display

SATLINK3 SPECIFICATIONS @ 25°C
Specifications subject to change without notice

GENERAL INFORMATION	
Size	6.06 in. x 9.24 in. x 2 in.
Weight	3.1 lbs (1.42kg)
IP rating	IP63
Operating Temperature	-40° C to +70° C
POWER REQUIREMENTS	
Voltage	9-20 VDC
Quiescent	< 2 mA typ @12.5 VDC
SDI-12	
Independent channels	2
Compliance	V1.3 logger
Power	500mA max
ANALOG - SINGLE ENDED	
Number of inputs	2
Range*	0-5V
Accuracy @ 25°C	0.004% typ
Resolution	0.298 μV
ANALOG - DIFFERENTIAL	
Number of Inputs	3
Range*	± 39mV, ± 312mV, ± 2.5V
Accuracy @ 25°C	0.004% typ
Resolution	0.298 μV @ ± 2.5V scale
ANALOG - 4-20ma	
Number of inputs	1
Range	0-22mA
Accuracy @ 25°C	0.02%
Load	Internal 200Ω
DIGITAL - Inputs/Outputs	
Number of inputs	2, 0-15 V, optional low level input
Input type	Status, counter, frequency
Max input frequency	10KHz, optional debouncing, internal pull
Number of outputs	2
Output types	On/off/pulse Open collector w/100 ohm limiting resistor. 100mA, 15V max
OTHER I/Os & CONNECTIONS	
Precision analog reference	2.5V 10.0 mA
Switch 12V	1.0 A (2 available)
Protected 12V	1.0 A
RS485	
GPS INPUT	SMA-F
RS232	DB9
USB (OTG)	USB MICRO AB
USB Host	Type A
microSD	Internal, Expandable Up to 32 GB
RF POWER OUTPUT and TX FREQUENCY	
RF output power	1.25-14 Watts depending on settings
RF transmit frequency	401.63 MHz to 402.85 MHz (depending on satellite type and channel assignment)

NOTE: In humid/hostile environments we RECOMMEND installing SatLink in a NEMA 4 enclosure. Sutron also recommends adding a lightning protection module such as the Sutron 8111-1113-1 for remote systems.

Nominal. Guaranteed Analog Input Range Over Temperature Is 0-4.98 V, ± 2.49 V, ± 311 mV, ± 38.9 mV.

CE COMPLIANT

Display Panel Opens to Access Wiring & SL3 Logger/
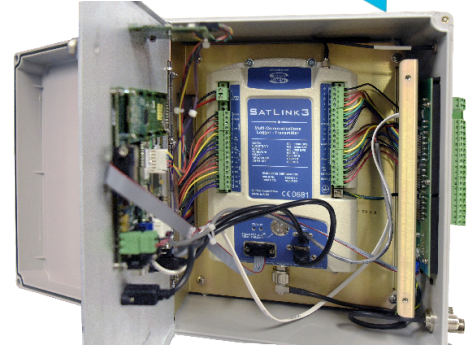
[Sutron SatLink3 Options, Accessories, and Ordering information in the SatLink3 ordering guide.](#)

Iridium Modem (IRIDIUM-MOD-1)

Overview

The ability to connect to the SatLink3 using various communications, such as Iridium, offers the unique ability to transmit and receive data from multiple sources all through a single transceiver – ensuring transmission redundancy and security.

IRIDIUM Card

Features and Benefits of SatLink3 with Iridium Communications

Ability to Increase Frequency of Transmissions for Event-Monitoring

- o Use GOES for scheduled transmissions then switch to IRIDIUM under alarm conditions
- o If alarms are triggered, SL3 collects & transmits more data more often

Adds 2-Way Communication to Remote Stations Anywhere in the World

- o Remote User Access - Users have the ability to change the setup or configuration remotely
- o Improves Data Availability - Provides the ability to "ask" SL3 for data that maybe missing to complete data records without gaps.
- o Reduces Maintenance Costs - Reduction of a single field visit alone can cover the annual Iridium service cost for most stations

Data Back-Up Using Redundant Transmissions & Communications

- o Transmit via GOES and Iridium
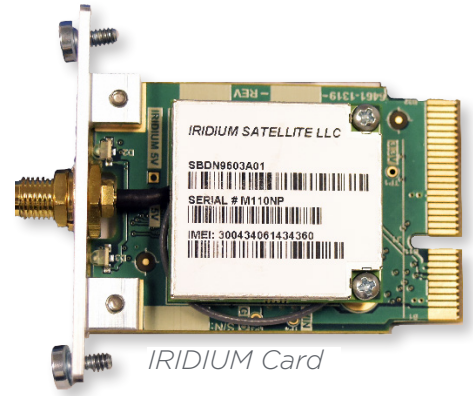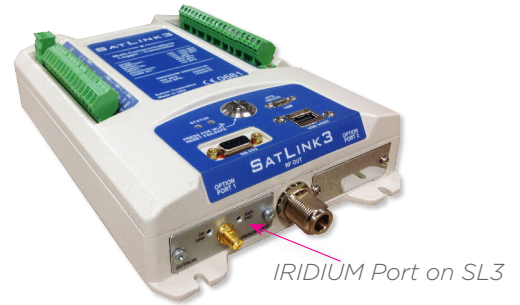
IRIDIUM Port on SL3

Overview of Telemetry via Iridium

- ▸ Ideal for sending small amounts of data
- ▸ Periodic transmissions at user set times with data in user selectable format
- ▸ Diagnostics to track amount of data being sent & performance of telemetry
- ▸ Stations with Iridium are ALERT compatible via Hydromet Cloud
- ▸ Supports remote data collection, maintenance or control of 2 on/off devices
- ▸ Optional authentication of incoming messages to ensure trusted source

SPECIFICATIONS

IRIDIUM MODULE SPECIFICATIONS	
GENERAL	
Operating Temperature	-40° to +70° C
Dimensions LxWxH	2.7" x 2.15" x .8" (6.9cm x 5.5cm x 2.1cm)
Weight	.075 lbs (34 g)
DC POWER	
OPTIONAL IRIDIUM BOARD ONLY	
Current	<10 uA
Listening Current	< 21mA
Transmitting	< 35 mA (30 sec Avg)
IRIDIUM COMMUNICATION	
Frequency Range	1616 to 1626.5 MHz
TX Format	SBD, Short Burst Data
Input/Output Impedance	50 ohms
Max. RF transmit power	1.6 W
Coverage	Global

Dual-Band Verizon LTE Cellular Modem (Cellular-MOD-1)
Global HSPA Cellular Modem (Cellular-MOD-5)

Overview
The ability to connect to the SatLink3 using various communications, such as cellular, through a single logging transceiver – ensuring transmission redundancy and security.

Cellular Card

Features and Benefits of SatLink3 with Cellular Communications
Ability to Increase Frequency of Transmissions for Event-Monitoring

  o Use GOES most of the time then switch to Cellular under alarm conditions

  o If alarms are triggered, SL3 collects & transmits more data more often

Adds 2-Way Communication to Remote Stations Anywhere in the World

  o Remote User Access - Users have the ability to change the setup or configuration remotely

  o Improves Data Availability - Provides the ability to "ask" SL3 for data that maybe missing to complete data records without gaps.

  o Reduces Maintenance Costs - Reduction of a single field visit alone can cover the annual Iridium service cost for most stations

Data Back-Up Using Redundant Transmissions & Communications

  o Transmit via GOES and Cellular

Cellular Card

Overview of Telemetry via Cell
▸ TCP/IP connections
▸ Ability to facilitate scheduled transmissions over cell
▸ Ability to facilitate alarm transmissions over cell SMS messages
▸ Ability to power down between transmissions
▸ Ability to periodically power up to check for incoming SMS messages
▸ Status LED to indicate idle, standby & connectivity
▸ Internal SIM holder
▸ Web hosting available via Hydromet Cloud

Cellular Card Installation

SPECIFICATIONS

CELLULAR MODULE SPECIFICATIONS	
GENERAL	
Operating Temperature	-40° to +70°C
Dimensions LxWxH	2.7" x 2.15" x .8" (6.9cm x 5.5cm x 2.1cm)
Weight	0.07 lbs (32 g)
DC POWER	
OPTIONAL CELLULAR BOARD ONLY	
Electrical	Current specified at 12.5 VDC (supplied by the host SatLink3)
Standby Current	100 uA Standby
Listening on	16 mA (avg over 343 sec)
CELLULAR COMMUNICATION	
Mechanical	Inserts in Option Port 1 or Option Port 2 in SatLink3
Verizon LTE Bands	B13 (700 MHz), B4 (1700 MHz)
HSPA Bands	B1, B2, B4, B5, B6, B8
Output Power	Class 3 (0.25w, 23 dBm) @ LTE
SMS	Both send and receive
Output Impedance	50 ohm
SIM card	Micro SIM 3FF

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