inmarsat

ST2100 SATELLITE

IIOT MODEM

ST2100 SATELLITE IIOT MODEM

A PLUG-N-PLAY ACCESSORY TO UPGRADE INDUSTRIAL INTERNET OF THINGS GATEWAYS WITH GLOBAL MESSAGING VIA SATELLITE

ORBCOMM's ST2100 modem is designed for system integrators and operates over the Inmarsat satellite network to provide a simple AT command interface to enable event-driven data capture and control for remote assets operating in harsh environments. Its small footprint and low power consumption provides industrial-grade connectivity globally, even where no cellular or wireless networks exist today.

AT commands over an RS232 interface provide the ability to send and receive messages from your edge gateway. Additionally, the built-in GNSS receiver shares a single antenna with the Inmarsat signal to provide location and a precise time reference for embedded applications. A choice of antenna variants allows you to address a wide range of application needs.

Typical applications include remote monitoring, industrial automation, fleet management, telemetry and SCADA.

ABOUT ISATDATA PRO

Inmarsat's IsatData Pro (IDP) service enables asset management and digital transformation in remote locations around the world, as a primary link for machine-to-machine communication or as a mission critical backup to wireless networks on the ground. Highly reliable operation on Inmarsat's L-band geostationary satellites combines with fully-acknowledged data delivery for truly robust machine communications.

ACTIONABLE DATA

The IDP service is ideally suited to business requirements that can be captured as event-driven, sending the minimum amount of data necessary to make a decision and improving business operations. For example, using only 15 bytes you can send accurate location, speed, heading, or date and time of the event. But you can also use larger messages for files or remote configuration.
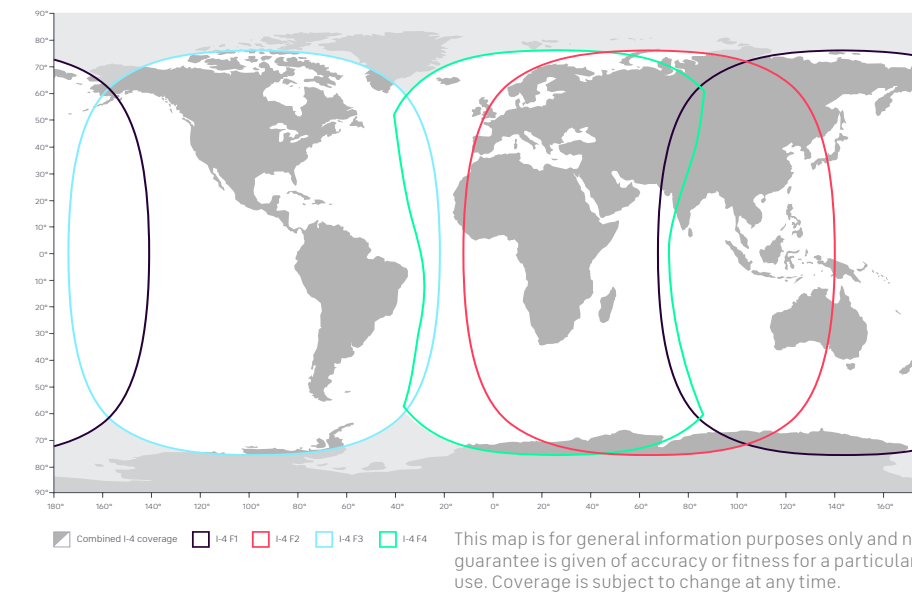
Inmarsat can help you optimise your data needs to fit your project budget and achieve a rapid return on your IIoT investment.

KEY FEATURES AND BENEFITS

1. **Highly reliable bi-directional messaging worldwide**
2. **Flexible message sizes from bytes to kilobytes**
3. **Low latency event-driven communications**
4. **Built in GNSS location/time**
5. **Ultra-low power comsumption**
6. **Wide-range DC power supply**
7. **Small footprint, rugged all-weather device for microcontrollers**

INMARSAT GLOBAL L-BAND NETWORK

This map is for general information purposes only and no guarantee is given of accuracy or fitness for a particular use. Coverage is subject to change at any time.

Combined L4 coverage ☐ I-4F1 ☐ I-4F2 ☐ I-4F3 ☐ I-4F4

SPECIFICATIONS

MECHANICAL

Integrated satellite modem and antenna with GNSS	Dimensions: 125 x 85 x 36mm; Mass: 245g

ENVIRONMENTAL

Operating temperature (°C)	-40C to +85C
Dust & water ingress	IP67

ELECTRICAL

Supply voltage	9 to 32 VDC (150V load dump/surge protection)
Input current (typical @ 12 VDC)	Low power sleep: 120 mA Idle (charger off): 13.5 mA Satellite receive: 75 mA GNSS acquisition: 35 mA Satellite transmit burst: 570 mA
Serial Interface	RS-232
Digital input/output:	Event notification, 1 PPS output, reset in/out

REGULATORY COMPLIANCE

Inmarsat, IC, FCC 47 CRF Part 25, RoHS

VIBRATION AND SHOCK

MIL-STD-810G sections 514.6, 514.6C-1, 516.6

SAE J1455 section 4.9.4.2

INTEGRATED MULTI-GNSS (GPS / GLONASS / BEIDOU)

Acquisition TTFF	Cold 30s, Hot 1s
Accuracy	2.5M CEP HORIZONTAL
Sensitivity	-148 dBm (Cold Start) / -166 dBm (Tracking)

SATELLITE COMMUNICATIONS

Receive (Rx)	1525.0 to 1559.0 MHz
Transmit (Tx)	1626.5 to 1660.5 MHz
EIRP (maximum)	7 dBW
Elevation angle	0 to 90 degrees

DEVELOPER RESOURCES

- AT Command documentation
- Software simulator for modem and network
- Open source reference code for AT command interface (Python)
- Hardware specification documentation including integration guidelines
- Secure REST Messaging API
- Core modem message documentation for standard remote operations
- Open source reference library for Messaging API (Node.js)
- Inmarsat Solution Engineering consultancy professional services

DEVELOPER KITS

Developer Kits are available for prototyping and proof of concept.

TYPE APPROVAL

ST2100 is fully Type Approved for commercial operation on Inmarsat's network.

FOR MORE INFORMATION

Visit the Inmarsat Developer website

developer.inmarsat.com