

# ST150M Modem Module and Developer Kit

## Next Generation Developer Solution



The ST150M satellite modem module can be quickly and effectively integrated into technology to develop unlimited applications for a range of markets. The modem leverages industry leading BLE5, Nordic C, and comprehensive unified APIs, empowering rapid development and customization of firmware for more advanced smart data applications and enabling AI at the edge.

An ST150 Dev Kit provides an ST150M module on a dev board with satellite and GPS patch antennas, all mounted on an Arduino Shield, to develop and test technology designs before committing them to hardware. The ST150M Development Kit comes with a pre-installed module and 60 days of pre-authorized satellite usage time. Additionally, partners who opt for the Development Kit receive one-year access to Globalstar GitHub for source code.

All customer-designed ST150M end products require Globalstar Network Certification. We recommend you contact our Globalstar Product Certification Team as early as possible in your development cycle. Please contact your Regional Sales Manager to begin the process.

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## Automate Processes at the Edge

The onboard processing capacity of Realm Edge devices make it possible to fully automate remote processes to save money, increase productivity, improve margins and enhance safety. The module contains 24 configurable Input/Outputs (I/Os) that interface with sensors and actuators. This combination of custom software and powerful hardware can not only detect change but take immediate and high-value action in response, such as –

### Preventing Pipeline or Process Equipment Failure

If a sensor detects a problematic rise or fall in pressure, Edge devices can trigger local audible and visible alerts, open or close valves and remotely shut down pumps as needed.

### Avoiding Toxic Releases

When sensors detect dangerously high water in a tailing or wastewater pond, edge devices can turn on a pump to lower the level, trigger alarms and trigger more complex actions.

### Managing Irrigation Remotely

If soil moisture sensors in irrigation equipment detect low moisture, edge devices can turn on irrigation pumps and save the need for a visit to the site.

### Stopping Catastrophic Engine Breakdowns

When sensors monitoring key engine factors detect a dangerous change, such as a sudden drop in oil pressure, edge devices can trigger alarms and, after a pause for human interaction, switch off the engine.

The same software developed for the Edge device can automatically dispatch smart messages over the Globalstar Satellite Network to alert managers to the issues and supply data to management systems. Eight of the devices' 24 I/Os can be configured as analog, which allows them to measure and report changes per connected analog sensor.

## Key Features

- Globalstar ST150M
- Globalstar's Application Enablement Platform
- Globalstar satellite ASIC transmitter
- High performance Nordic 52840 SoC
- GPS and 3 axis accelerometer
- Integrated voltage regulation
- 2.4 GHz Chip Antenna for Bluetooth®
- Shield for GPS, Satellite Antennas
- USB interface for DC input
- USB client interface
- u.fl connectors: GPS, ASIC
- Current shunt
- Line DC input
- NFC connector
- Analog Adjust potentiometer
- User LEDs and buttons
- Mobile App available for iOS and Android
- Arduino Uno Rev3 form factor

## Satellite Payload

- Four standard message types can send up to 144 bytes of data
- Modular message types with up to 144 bytes of data
- Configurable message priority
- Configurable message retry profiles
- Prioritized message queue
- Interval or time-of-day messaging

## Technical Specifications

### Dimensions

- Dev Board 5" (L) x 2.57" (W) x 0.45" (H)  
(127 mm x 65 mm x 11 mm)
- Antenna Shield 2.8" (L) x 2.57" (W) x 0.83" (H)  
(71 mm x 65 mm x 21 mm)

### Operating Temperature

- -40 °F to 185 °F (-40 °C to 85 °C)

### Satellite Technology

- Operates over the Globalstar Satellite Network

## Edge Application Platform

Leveraging industry leading BLE, Nordic C, and comprehensive unified APIs, the Globalstar Application Enablement Platform provides an extensive library of application software and sophisticated libraries for sensors, updates, configuration, and data. It empowers rapid development and customization of firmware for more advanced smart data applications.

The Edge Application Platform easily integrates with IIoT (Industrial Internet of Things) Platforms and proprietary enterprise applications via APIs enabling AI at the edge.

- **Subscriber Management** – Provisioning, connectivity, and configuration
- **Device Management** – Single interface, device inventory, and common APIs
- **Health Monitoring** – Pro-active device health monitoring, and superior support
- **Application Enablement Platform** – Leverage industry leading BLE, Nordic C, and comprehensive unified APIs
- **Applications** – Extensive library of application software
- **Common Architecture** – Simplified design with common hardware and software architecture
- **BLE** – Sophisticated libraries for sensors, updates, configuration, and data



Dev Board



Antenna Shield

For more information on how Globalstar's advanced product technologies can become an integral part of your wireless solution, please visit us online at [www.globalstar.com](http://www.globalstar.com).