

Integrity 150

Transmit smart data from the edge

Globalstar 



Integrity 150 is a next-generation, solar-powered data transmitter and asset tracker that interfaces with industry-standard sensors over Bluetooth and delivers Smart Data from the edge. Users can quickly program AI-enabled applications and computing solutions using the Edge Application Platform to process location and sensor data at the edge for low-cost Smart Data transmission. In addition, it delivers zero-maintenance ownership with the longest-lasting battery (10+ years) and shelf life available. With its low-power design built for the world's most challenging environments, the Integrity 150 reliably delivers secure data and location reporting with unprecedented payload options.

Edge Application Platform

Quickly program AI applications for processing Smart Data. The low-code Edge Application Platform is the key to unlocking the unlimited capabilities of these rugged, reliable devices in the field and slashing hundreds of hours of development time for new products. The standards-

based architecture means that new features and platform upgrades can reliably access the same hardware interfaces, APIs, and applications as previous versions with no specialized coding.

The Platform provides access to the firmware and base applications that run the devices and an extensive and growing library of applications to interface with sensors measuring temperature, humidity, magnetic fields, angular position, motion, proximity, and other metrics. No more writing custom code to control every aspect of hardware operation. Also included are hardware interfaces allowing full driver/hardware abstraction and APIs that give your custom applications access to device capabilities. The GitHub application library invites developers to share new and updated apps with the Realm customer base.

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.

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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.

Benefits

Maintenance-free, solar powered device providing up to 10+ years of usable service

- Delivers reliable worldwide location reporting – providing security and improved efficiency
- Simple Application – requires no harnesses, external power or antennas
- User selectable speed and heading operation
- Industry standard BLE encryption plus Cloud-based Key management plus configurable BLE sensor security
- Magnetic tamper switch
- Wide range of reporting capabilities, including:
 - Fixed or interval GPS location reporting
 - Change of Location and Motion Alerts
 - Reduced messaging and theft recovery modes
 - Customizable Messages
 - Broad range of data transmission capabilities

Accessories

- Stainless Steel Mount (Part No. 1850-0410-01)
- Bluetooth Dongle (Part No. 1950-0105-01)

Realm Enablement Suite

- **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

Potential Applications

- **Transportation:** Monitor and track assets and fleet movements even in remote locations
- **Oil and Gas:** Aids in mobilization and deployment of high value assets in the field
- **Construction:** Determine if, when and where equipment is being used
- **Security:** Keep track of mobile assets such as rail cars, propane tanks and AgTech
- **Maritime:** Monitor and track high value assets, such as boats, barges and containers, at the dock and offshore
- **Other industry uses:** Mining, forestry, government, fisheries, and many more

Feature Set

STANDARD & CUSTOMIZABLE MESSAGING

- Wake, GPS locate, transmit location, resume sleep settings
- 4 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 profile
- Prioritized message queue
- Interval or Time-Of-Day messaging

BLE5

- Secure BLE Config service
- Industry standard encryption
- Cloud-based key management
- Configurable BLE sensor security

TAMPER DETECTION

- Magnet-based

INTEGRATED ACCELEROMETER

- Message on start and stop
- Engage interval override on motion for set time or while in motion

ALTERNATIVE REPORTING

- Supervisory reporting schedule triggered by alarm or motion
- Transmits GPS location on interval for programmed time or while alarm remains active

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CHANGE OF LOCATION

- Theft-alert reporting based on distance moved
- Reduced messaging mode
- REST APIs
- Secure cloud store-and-forward

GLOBALSTAR DATA CENTER

- REST APIs
- Secure cloud store-and-forward

Technical Specifications

DIMENSIONS

- 10.39" (L) x 3.38" (W) x 1" (H) (264 mm x 86.1 mm x 25.4 mm)

WEIGHT

- 14.2 oz/402 g
- With optional mounting bracket 32.02 oz. (908 g)

OPERATING TEMPERATURE

- -40° F to 185° F (-40° C to +85° C)

SATELLITE TECHNOLOGY

- Global LEO Satellite operation using the Globalstar Satellite Network. See Globalstar website for Coverage Map.

CERTIFICATIONS

- FCC, ISED, CE, UKCA
- PENDING: ANATEL

STANDARDS

- IP68/69K
- IEC 60945 (Maritime)
- MIL-STD-810G for:
 - Immersion
 - Dust
 - Water spray
 - Thermal Shock
 - Mechanical Shock
 - Rail Impact
 - Vibration (Rail, Truck)



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.