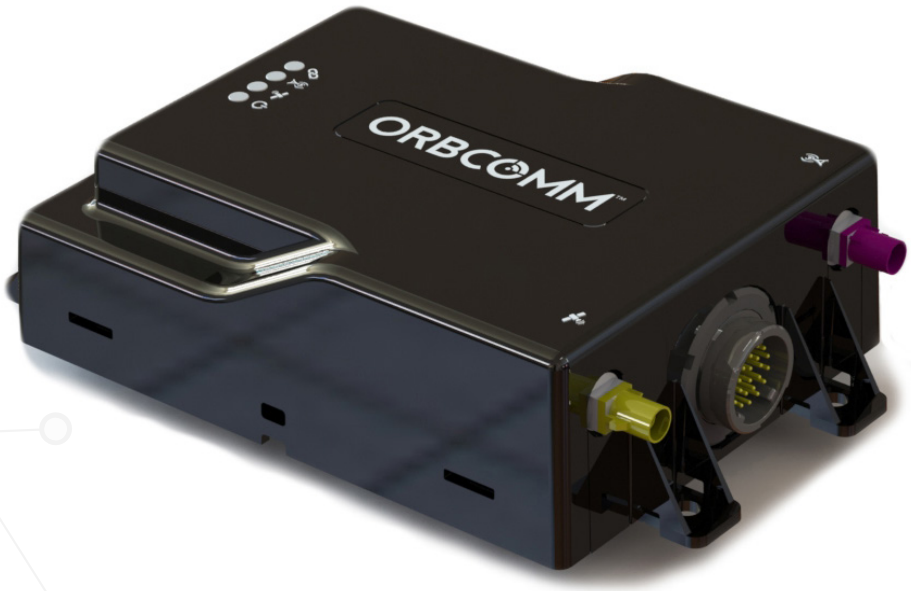
ST 9100

Next generation dual mode satellite-cellular terminal for diverse IoT applications.

Cost effectively track, monitor, and control remote assets with multi-network connectivity.



The ST 9100 is a flexible, robust, and programmable dual mode satellite-cellular terminal. It is ideal for remotely monitoring and controlling fixed and portable assets in industries as diverse as transportation, oil and gas, utilities, maritime and more. The versatile, environmentally sealed ST 9100 is ideal for rugged environments in the world's most remote areas.

Easy integration

The ST 9100 offers a flexible programming environment that supports the development of custom solutions, as well as support for ORBCOMM® configurable terminal apps. In fact, you can combine terminal apps with your own code to create a custom solution to speed time to market.

Feature-rich

Standard features include multiple I/Os, including analog/digital, 2 RS232, 1 RS-485/J1708, 1-Wire and 2 CANbus. 3-Axis accelerometer, Bluetooth connectivity and multiple SIMs are also supported.

Airtime savings

Use cellular or automatically switch between cellular and satellite connectivity for significant cost savings. In addition, the ST 9100 can be programmed to process data and send only important updates over the air, reducing connectivity costs.

Continuous operation

The ST 9100 features a backup battery that enables reporting for more than 48 hours with 1-minute cellular reporting or 60-minute satellite reporting when power is interrupted.

Development kit

The ST 9100 development kit includes all the hardware, software development tools, documentation, accessories and support that you need to write and test your IoT solution for quicker time to market.

Satellite-cellular connectivity

Feature-rich and versatile

Rugged

Flexible programming environment

Supports market-specific terminal apps

Comprehensive integration resources for quick deployment

Although we strive to ensure accuracy in all of our published specifications, actual field performance can vary depending on a variety of environmental, installation and usage factors, as well as third-party factors such as cellular providers. The specifications listed are approximations, and do not constitute binding statements or modify the terms and conditions of purchase or lease including, but not limited to, product operational limitations and warranties.All specifications are subject to change without notice. Please check www.orbcomm.com to ensure you have the latest version of these specifications.

Satellite Communications

- Satellite service: Two-way, Global, IsatData Pro
- From-mobile message: 6,400 bytes
- To-mobile message: 10,000 bytes
- Typical latency: <15 sec, 100 bytes
- Elevation angle: +20° to +90° (remote antenna); -15° to +90° (low elevation antenna)
- Frequency:
  - » *Rx: 1525.0 to 1559.0 MHz;*
  - » *Tx: 1626.5 to 1660.5 MHz*
- EIRP: <7.0 dBW

Cellular Communication

- Global: Cat 4 LTE (B1, B3, B5, B7, B8, B28), UMTS (850, 900, 1900, 2100), Quad-band GSM
- Americas: Cat 1 LTE (B2, B4, B5, B12), UMTS (850, 900, 1900, 2100), Quad-band GSM
- Saudi Arabia: Cat 1 LTE (B1, B3, B8, B20, B28), UMTS (2100)
- SIM: 3.3V/1.8V SIM

GPS/Glonass/Beidou/Galileo

- Acquisition time: hot: 1 second; cold: 26/30/34/26 seconds
- Accuracy: 2.0 m CEP-horizontal
- Sensitivity:
  - » *Acquisition: -148 dBm*
  - » *Tracking: -167 dBm*
- Security: signal jamming detection

Certification

- CE (R&TTE, RoHS 2), FCC/IC, FFA, PTCRB, Inmarsat type approval, ACMA, ICASA, Anatel, ITF, IEC 60945

Electrical

- Input voltage: 9 to 32V; load dump protection: +150V; SAE J1455 (Sec. 4.13)

Battery

- Lithium ion 2,000 mAh
- Discharge temperature range: -20°C to +75°C
- Battery backup: >48 hours operation with 1-minute cellular reporting or 60-minute satellite reporting

Dimensions

- 148 x 113 x 47 mm
- 181 x 113 x 47 mm including mounting feet

External Interfaces

- 4 configurable inputs/outputs: Analog/digital /input/output
- 2 dedicated outputs (sink-ground)
- 4 Digital/analog inputs (2x 4-20mA)
- Serial: 2 RS-232; 1 RS-485/J1708; 2 CAN bus; 1-Wire

Other Interfaces

- Bluetooth v5.0 low energy module
- Two embedded SIMs plus additional user accessible SIM

Environmental

- Operating temperature: transceiver and antenna: -40°C to +85°C; back-up battery: -20°C to +75°C;
- Dust and water ingress: transceiver: IP67; Satellite/GPS antenna: IP67;
- Vibration: SAE J1455 (Sec 4.9.4.2 fig 6-8); MIL-STD-810G
- Shock: MIL-STD-810G (Sec 516.6)

Programming

- Lua scripting engine with core services. SDK with GUI development tools available. Lua software application and firmware upgradable over the air (SOTA, FOTA).
- Geofencing: 128 Polygons
- Data Logger: 50,000 position reports;
- Optional, configurable terminal apps:
  - » ***AVL app*** *enables location tracking, status monitoring and driver behavior monitoring.*
  - » ***J1939 app*** *extracts engine data such as engine hours, fuel consumption from heavy-duty vehicles.*
  - » ***Garmin Dispatch app*** *enables text messaging, custom forms, stops, and HOS through a Garmin device.*
  - » ***Sensors app*** *extracts data from connected sensors or devices and generates reports, alarms and histograms.*
  - » ***Modbus app*** *interprets data from Modbus devices and allows data processing and alarms.*
  - » ***Vessel Monitoring System (VMS) app*** *provides location tracking, status monitoring and behavior monitoring.*

Accelerometer

- 3-axis accelerometer

Memory

- Lua Code: PSRAM 8MB, NVM 16MB

Order Codes

- **ST9100-C01** Terminal *
- **ST9100-D01** Americas Terminal *
- **ST9100-E01** Saudi Arabia Terminal *
- **ST901065-APA** IDP Remote Antenna
- **ST901066-APA** IDP Low Elevation Remote Antenna
- **ST101014-001** White Shroud
- **ST101062-002** Blunt cut cable, 5 meters
- **ST101096** Mating connector kit
- **ST101356-001** Dev Kit Americas
- **ST101356-002** Dev Kit Global
- **ST101356-003** Dev Kit Saudi

* *Cellular antenna included*

CALL: 1.800.ORBCOMM **EMAIL: SALES@ORBCOMM.COM** **VISIT: WWW.ORBCOMM.COM**

ORBCOMM is a global leader and innovator in the industrial Internet of Things, providing solutions that connect businesses to their assets to deliver increased visibility and operational efficiency. The company offers a broad set of asset monitoring and control solutions, including seamless satellite and cellular connectivity, unique hardware and powerful applications, all backed by end-to-end customer support, from installation to deployment to customer care. ORBCOMM has a diverse customer base including premier OEMs, solutions customers and channel partners spanning transportation, supply chain, warehousing and inventory, heavy equipment, maritime, natural resources, and government. For more information, visit www.orbcomm.com.

110222A