

# ST 9100

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

A next generation dual-mode satellite and cellular terminal, ST 9100 is fully customisable, environmentally sealed, and designed for operation in the world's most remote areas. ST 9100 is ideal for remote monitoring and controlling of both fixed and mobile assets. From oil & gas, utilities, mining, and smart agriculture to transportation, water management, and maritime sectors, this versatile terminal ensures the best GSM/GPRS coverage and can easily handle tracking and M2M applications. ST 9100 is an ideal IoT asset tracking device whether on land or at sea.

### Easy integration

A highly customisable modular terminal that easily integrates with a wide range of interfaces over Traksat's unique platform that caters to industry-specific requirements.

### Feature-rich

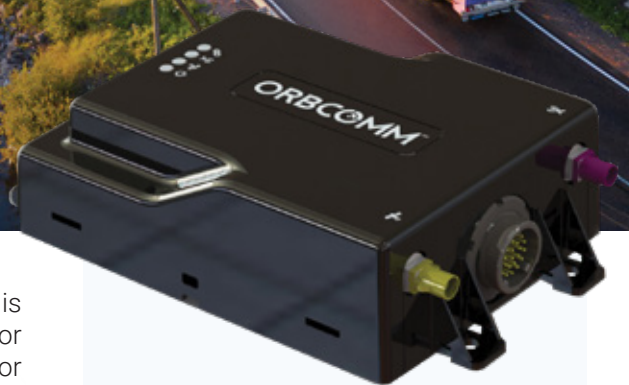
Multiple I/Os that include analog and digital, 3-axis accelerometer, and bluetooth connectivity as well as customisable terminal apps.

### Airtime savings

Significant cost savings with Traksat's international SIM card service in over 160 countries by easily switching from one provider network to another and sending only important updates over the air.

### Continuous operation

Guaranteed continuous operations with a back-up battery that enables 1-minute cellular reporting for more than 48 hours & 60-minute satellite reporting in case of any power interruption.



**Dual-mode satellite & cellular connectivity**

**Highly customisable modular terminal**

**Rugged and resilient for harsh environments**

**Easy compatibility with wide range of interfaces**

**Supports market-specific apps**



### 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, PTCRB, Inmarsat type approval, ACMA, ICASA, Anatel, ITF, IEC 60945
- Pending: FFA

### 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 heavyduty 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