



ST 8100

Solar-powered, fully programmable terminal for satellite-cellular IoT applications.

The ST 8100 dual-mode satellite-cellular terminal supports cost-effective IoT solutions that track and monitor mobile and fixed assets in industries such as maritime, transportation, oil & gas, agriculture, water management and more. It's ideal for applications without external power, such as tracking small vessels or monitoring fixed assets in remote locations, thanks to its solar-powered battery.

Optimized asset tracking

With dual-mode connectivity, the ST 8100 enables least-cost routing—using cellular when available and satellite via ORBCOMM's OGx or IDP networks when needed.

Easy to install

Simplify solution implementation with the ST 8100's small form factor, cableless installation and out-of-the-box support for ORBCOMM's suite of wireless sensors. Plus, it can power wired sensors with a 12V output and integrate with mobile apps for fishing reports, text messaging and email.

Customizable

The ST 8100 can run ORBCOMM's off-the-shelf terminal applications—or support custom applications that run directly on the device.

Solar powered

Satellite and cellular connectivity

Programmable

Wireless or wired sensor support

Rugged

Specifications

Satellite communication

- Satellite service: IsatData Pro or OGx (two-way, global)
- Typical latency: <15 seconds, 100 bytes
- Elevation angle: +5° to +90°
- Frequencies:
 - ▶ *IsatData Pro*: Rx 1525.0 to 1559.0 MHz; Tx 1626.5 to 1660.5 MHz
 - ▶ *OGx*: Rx 1525.0 to 1559.0 MHz; Tx 1626.5 to 1660.5 MHz
 - ▶ *EIRP*: <6.5 dBW

Cellular communication

- LTE Cat M1/NB2 (B1, B2, B3, B4, B5, B8, B12, B13, B18, B19, B20, B25, B26, B28, B66, B85), 2G 4-band

Dimensions

- 285 x 93 x 35 mm

Memory

- Lua code: PSRAM 8MB, NVM: 16MB

Certifications

- CE, FCC/IC, FFA, PTCRB, Inmarsat type approval, IEC 60945, CID2, HERO
- Pending: RCM, ICASA, Anatel, IFT, Japan, FFA

Other interfaces

Bluetooth v5.0 low energy module

Solar power and battery

- Solar panel 0.5W (nominal)
- Lithium-ion battery 1,100 mAh
- Discharge temperature range: -30°C to +70°C
- Charge temperature range:
 - ▶ *No connector*: -20°C to +50°C
 - ▶ *With connector*: -30°C to +70°C

External interfaces (variants with connector only)

- 2 configurable inputs/outputs: Analog/digital/input/output
- 2 analog voltage inputs (0-17V)
- 2 analog current inputs (4-20mA)
- Serial: 1 RS-232; 1 RS-485/J1708; 1-Wire
- Power:
 - ▶ *Advanced*: 2 outputs (24V; 100mA, total)
 - ▶ *Advanced-CID2*: 2 outputs (24V; 30mA, each)

GPS/Glonass/Beidou/Galileo

- Acquisition time:
 - ▶ *Hot*: 1 second
 - ▶ *Cold*: 29/30/34/45 seconds
- Accuracy: 2.5 m CEP-horizontal
- Sensitivity:
 - ▶ *Acquisition*: -148 dBm
 - ▶ *Tracking*: -166 dBm
- Security: signal jamming detection

Accelerometer

- 3-axis accelerometer

Environmental

- Operating temperature:
 - ▶ *Transceiver and antenna*: -30°C to +70°C
- Dust and water ingress:
 - ▶ *IP67/IPX9K*
- 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

Order codes

- ST8100-110C-H – with connector
- ST8100-0100-H – no connector
- ST8100-010C-H – no connector, CID2 compliant
- ST101692-001 – ST 8100 Development Kit

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.

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Visit our website www.ORBCOMM.com

ORBCOMM is a global leader in industrial IoT, delivering visibility, intelligence and efficiency to the world's most critical operations. With 30 years of innovation and more than 2.4 million connected devices, we transform data into actionable insights, driving greater efficiency, safety, resilience and sustainability. Serving customers that include the world's largest shipping lines, over-the-road trucking fleets, cold-chain transportation fleets and a global network of IoT solution provider partners, ORBCOMM is where IoT powers asset intelligence.