

# Senquip ORB-C1 Datasheet



Senquip manufactures rugged, programmable telemetry devices that connect to industrial sensors and systems and send the data measured to the Senquip Portal or a server of your choice.

**RUGGED:** The Senquip ORB is designed for harsh outdoor environments; up a pole, on a wall or attached to a vehicle.

**SENSING:** Built in sensors measure GNSS position and speed, temperature, pitch and roll, vibration, supply and battery voltage, and tamper. Interfaces are provided for RS232, RS485, MODBUS, CAN Bus, Bluetooth, 4-20mA, pulse, frequency, and voltage.

**NETWORK:** Data measured is transmitted via Wi-Fi or 2G/3G/4G/5G and can be delivered to the Senquip Portal or to your own server or SCADA system.

**POWER:** Power is supplied with replaceable AA batteries, solar, or with 10V to 75V DC. If a solar panel is used, an internal LiPo battery will keep the device powered during periods without sunlight.

**EDGE PROCESSING:** Users can write JavaScript to manipulate data, create combinational alerts, execute local control, or create customised payloads for sending to 3rd party servers.

# Technical Specification

**Power** External supply: 10VDC to 75VDC  
4 x AA Long-life lithium: battery calculator can be downloaded from the [Senquip website](#)  
Solar: typical 12V 10W, with regulator and backup battery internal to the Senquip ORB  
Internal rechargeable backup battery: 3.7V, 1800mAh LiPo  
Typical current draw (LiPo): 65uA (sleep), 40-70mA (measure), 100mA (Wi-Fi), 120mA (4G LTE)

**Configuration** Local via embedded webserver  
Remote via the Senquip Portal

**Edge Processing** Write and deploy JavaScript applications to manipulate data, create combinational alerts, execute local control, or create customised payloads for sending to 3rd party servers

**Internal Sensors** GPS: horizontal accuracy  $\pm 5m$  ( $< 2.5m$  CEP-50), speed  $\pm 1km/h$ . Time to first fix typically  $< 60$  sec  
Bluetooth version 4.2: receive and transmit BLE advertising messages  
Accelerometer: 3-axis,  $\pm 16G$ . Pitch and roll accuracy  $\pm 1^\circ$ , vibration  
Ambient temperature:  $-40$  to  $85^\circ C$ , accuracy  $\pm 1^\circ C$   
Supply, AA battery, and internal LiPo voltage monitoring  
Tamper detection through use of internal light sensor

**Multi Purpose Inputs/Output** Input 1: Analog + Digital (0-72V), pulse counting (up to 10kHz)  
Input 2: Analog + Digital (0-72V)  
Output 1: Open collector (500mA, 72V max)  
Alternate function, Input 3: Analog + Digital (0-72V)  
Source 1: 12V, 100mA max (battery backed), 4-20mA  
Alternate function, Input 4: Digital (0-12V)  
Source 2: 12V, 100mA max (battery backed), 4-20mA  
Alternate function, Input 5: Digital (0-12V)

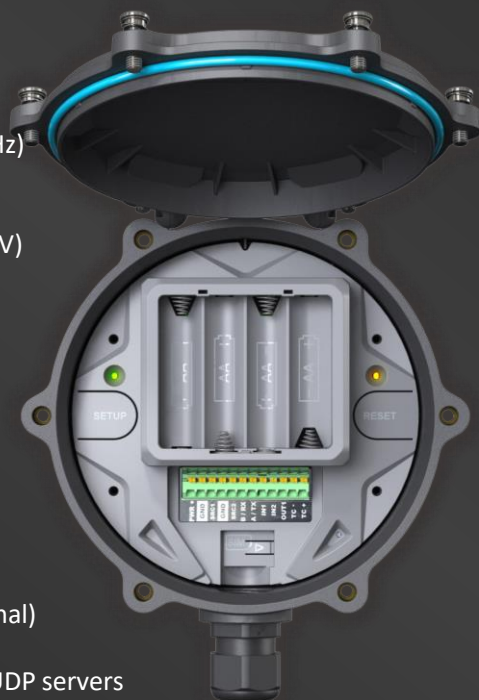
**Serial** RS232 (3-wire), RS485 (2-wire)  
Serial capture or MODBUS RTU Master  
CAN Bus: High Speed CAN FD (4Mbps), Line Faults to  $\pm 60V$

**Network** 4G LTE CAT-M1 (ORB-C1-G) / 4G LTE CAT-1 (ORB-C1-H)  
SIM card holder for Micro-SIM (internal soldered SIM optional)  
Wi-Fi (ORB-C1-W)  
Endpoint: Senquip Portal and 3rd party MQTT(S), HTTP(S), UDP servers  
Data format: JSON or script your own

**Mechanical** Dimensions: 153mm wide, 174mm height (including cable gland), 50mm depth  
Weight: 400g excluding AA batteries and mounting brackets  
Enclosure material: UV stabilised glass filled nylon  
Stainless lid screws, spring mounted and captive  
Ships with stainless pole and wall mounting brackets  
Terminal block wire size: 24 (min) to 16 (max) AWG

**Environmental** Operating temperature:  $-20^\circ C$  to  $80^\circ C$   
Water Ingress: IP67, IP68\*  
\*Contact Senquip for alternate gland

**Warranty** 1 year from date of purchase



Part Number	Network Features
ORB-C1-W	Wi-Fi
ORB-C1-G	Wi-Fi, 4G LTE CAT-M1, GNSS
ORB-C1-H	Wi-Fi, 4G LTE CAT-1, GNSS

