

Orbit Station

IoT Node with Flexible Communications and I/O

Flexible Communications Node

- LTE Cat M1 (eMTC), LTE Cat NB1 (NB-IoT) & LoRaWAN®
- SD Card logging for high-resolution data
- CANbus and/or RS485 with protocol support
- Quad 24-bit Analog Inputs with Differential Capabilities
- Quad Digital Inputs with 1 kHz Pulse Counting
- Solar, plug-pack, or single-use battery power
- Multi-constellation GNSS (optional)
- Fully reconfigurable via remote communications

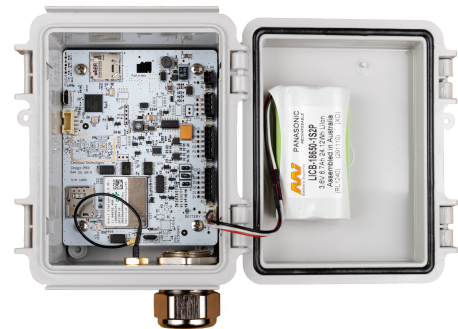
Product Description

Definium's Orbit Station with LoRaWAN, LTE Cat M1 (eMTC), and LTE Cat NB1 (NB-IoT) is a data logger with real-time data export capabilities. The unit's flexible inputs can be configured to monitor sensors, energy/water/gas meters, rain gauges, industrial motors, vehicle engines, float switches, and more.

Based on Definium's Internet of Things sensor platform and backed by established telecommunications infrastructure, each sensor has a solar-rechargeable battery with high durability to support multiple reports per day.

Full support for CAN and RS485 physical layers is included and support for any protocol can be implemented through a project with us (RS485 Modbus and CAN mirroring supported via firmware).

Calibrated analog inputs allow for micro volt precise measurements with configuration options for threshold alarming and periodic reports.



Close-contact digital inputs allow for pulse counting of four individual signals at up to 1kHz simultaneously. The digital inputs can also function in an alarm on input configuration so you can be alerted of an event within seconds.

The cellular radio has support for LTE Cat M1 (eMTC) and LTE Cat NB1 (NB-IoT), allowing you to stop worrying and start monitoring vital information. Example code for a suitable HTTP REST endpoint for the device is available and support for custom endpoints is available via a project with Definium.

The optional multi-constellation GNSS ensures you won't lose track of your device and that all messages are timestamped with GNSS-synchronised time.

Definium Technologies designs and manufactures its devices in-house in Launceston, Tasmania. Definium produces a broad range of gateways and sensors to use in any IoT network.

Product Selector

Model	Telco	Sensors	Radios	Interfaces	Features	Enclosure
	Telstra Singtel	RS485 CANbus Analog Inputs Digital Inputs	LTE Cat M1/NB1 LoRa® / LoRaWAN™ Multi-constellation GNSS	USB Serial Console LTE Cat M1 & NB1 Downlink Config Bluetooth	Periodic Reporting Transition-based Alarm	IP65 Polycarbonate IP66+ Polycarbonate
DT1096-C	○ ○	● ● 4 4	● ○ ●	● ● ●	● ●	○ ○
DT1096-L	○ ○	● ● 4 4	● ○ ●	● ● ●	● ●	○ ○

Ensure you order the correct product for your LoRaWAN region. ● = Included. ○ = Differs with product variants.

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Features

CAN	CAN port with 12 VDC power supply Custom protocol support CANopen support pending Includes bus termination resistor with jumper
RS485	RS485 port with 12 VDC power supply Modbus RS485 support DNP3 support pending
Analog	Analog inputs with selectable voltage 0 - 12v Input Range 4x Single Ended or 2x Differential
Digital	Digital inputs with pulse counting Up to 1kHz input frequency Configurable alarms for transitions
LTE Cat M1 & NB-IoT Support	Orderable custom SIM chips Supports custom APN Fully encrypted data communications Customisable data format and destination
GNSS (Outback)	Concurrent multi-constellation GNSS (3) GPS, Galileo, GLONASS, and BeiDou support GPS time synchronisation Accuracy < 10 metres

Electrical Data

Power Source	Solar panel or DC plug-pack
Input Limit	0 V minimum, 24 V maximum
Energy (charging)	7 Watt minimum
Battery	Lithium ion rechargeable battery 3.6 V 6.5 Ah Replaceable, protected
Consumption	Up to 226 mA (transmitting) Below 100 uA (sleeping) Lasts 3+ days without solar (varies with report frequency)

Enclosure

IP65 Clam-Shell	140 × 120 × 80 mm, 500 g
Enclosures may vary slightly, contact us for latest info	

Environmental data, quality & reliability

Operating range	-20°C to 60°C
RoHS compliant (lead-free)	

Security

Secure internal storage of keys	
Radio noise-based random number generator	

Certifications and approvals

AS/NZS 60950.1:2011, AS/NZS 4268:2012	
Other certifications TBA	

Support products

DT1046	Nexus 8 LoRaWAN Gateway with CAN, LTE, PoE
Data platform via partners	

Product Notes

Communications	We can implement any communications protocol you require as part of a project or volume order.
Power	Single-use non-rechargeable battery option can be added if required as part of a project or volume order.

Further Information

For contact information, see www.definium.net/contact.

For more product details and ordering information, see the [product data sheet](#).

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