



TEKBOX
DIGITAL SOLUTIONS

TBSL1-LO LoRa WAN Telemetry Unit

LoRa WAN Based Remote Telemetry Unit

The TBSL1-LO allows you to connect any SDI-12 compatible sensor to a LoRa WAN network. This brings truly open connectivity to all those users of SDI-12 sensors.

The TBSL1

The TBSL1 is a general purpose SDI-12 to LoraWAN Bridge which allows SDI-12 sensors to be added to a LoRaWAN network.

The unit is built around an alloy enclosure, with waterproof connectors used to connect to the sensors. A breather vent prevents moisture from building up inside the case.

Power comes from an on board Lithium ion battery which is charged using an external 12V solar cell (2W or 5W).

The TBSL1 includes a DC to DC converter which generates a stable 12V power supply for the SDI-12 sensors.

In addition to the SDI-12 input, the TBSL1 carries an analogue voltage input and a pulse counter input (for connection to flow meters or rain gauges). It has 16MB of on board storage.

Users can set alarms based on the value of any of the sensors.

The LoRaWAN module can be switched for a 4G modem board to allow the unit to work as a cellular telemetry unit.



Tekbox TBSL1/TBS12 Console

Any LoraWAN device must be programmed with a number of parameters. Tekbox provides the TBSL1/TBS12 GUI (graphical User Interface) for this purpose. Unlike some units which are locked to a particular provider or network, the TBSL1 can be configured to work on any LoRaWAN network.

After connecting the TBSL1 to a PC via a USB adaptor, users can set all of the LoraWAN parameters.

The TBSL1 supports both OTA (over the air) and ABP (activation by personalisation) and the use of acknowledged and unacknowledged packets. Users can choose from any of the 8 sub-bands on the AU915 channel plan and the units can also be programmed for the AS923 channel plan.

A direct command mode allows users to send commands to the LoraWAN modem, checking network registration and sending test messages.

Similarly the GUI allows users to send commands direct to the attached SDI-12 sensor for configuration, address changing and making test measurements.

Specifications

Power Supply	3.6V 3AH Lithium ion battery and 12V 2W 5W solar cell
Transmission range	5 to 15 km depending on terrain and antenna height
Operating Temperature range	-40 to + 85 °C
LoraWAN Compatibility	Class A, ABP & OTA, multiple frequency plans (US, Australia, Europe etc.), User configurable device settings
SDI-12	V1.3; up to 20 addresses / measurements, 12V DC supply
Analogue	1 off 0-2.5V or 4-20mA
Pulse	1 off Pulse input (closed contact to ground)

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Telemetry Over Internet Protocols