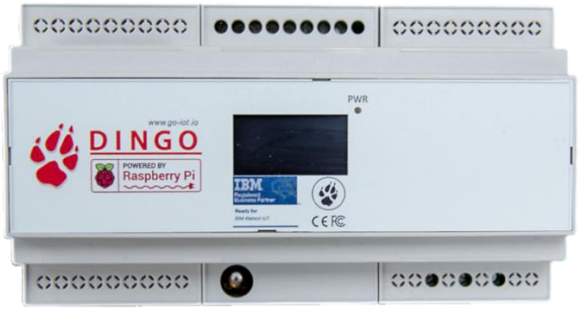
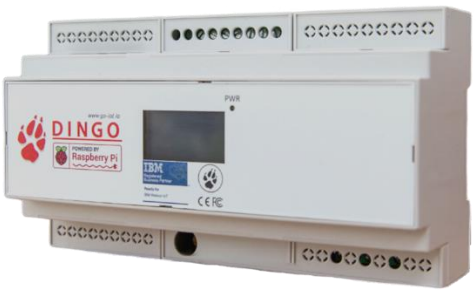
DINGO GATEWAY

DINGO LoRaWAN® BACnet® Advanced Gateway / Server

DATASHEET BRIEF





Description

DINGO LoRaWAN® to BACnet® Advanced Gateway / Server provides a powerful, easy to configure solution for transforming every LoRaWAN device into virtual BACnet device using the new generation of long-range and low-power wireless communication devices based on the LoRaWAN® standard, plus supporting trend-logging and edge-gateway to the Cloud.

Allowing up to 200 LoRaWAN® end nodes at distances in excess of 5km in open areas the DINGO LoRaWAN® Gateway represents a quantum leap in data logging technology.

Secure end-to-end encryption and robust transmission technology ensure the highest level of data integrity.

The powerful DINGO Stack software enables easy configuration without the need for lengthy and complex on-site engineer time. Easy integration with other BACnet/IP devices on the network from any vendor.

The DINGO Stack LoRaWAN® Server also features an advanced data rate (ADR) control algorithm which constantly monitors each end node link and adapts data-rate and power level to both preserve battery life and mitigate interference.

The DINGO has two Ethernet Ports as standard for backhaul to a network or cloud server. Optional WiFi and 4G/LTE expansion plug-in boards are available.

Many LoRaWAN® devices are already supported in the DINGO Stack library. Others can be added easily. All device parameters like battery-status and signal-strength can optionally be mapped to BACnet® objects for local or remote logging / surveillance.

Key Benefits

- Powerful DINGO Stack software running on quad-core ARM processor.
- Full BACnet/IP® and BACnet/WS® standard support.
- Fast and cost-effective deployment.
- Modern LoRaWAN® 1.0.2 and 1.0.3 technology.
- Ability to work in hostile RF environments such as close to cellular mobile phones, WiFi routers, Bluetooth devices and high RF noise environments.
- Up to 200 LoRaWAN® devices at distances in excess of 5km (open areas) without the need for repeaters.
- Global License-free ISM Frequency Bands.
- Secure end-to-end encryption and robust transmission technology.
- Advanced data rate algorithm extends end-node battery life and mitigates interference.
- Modular hardware with many expansion options including Analog IO, Digital IO and 4G/LTE plug-ins.
- Co-reside with Modbus/RTU, MBUS, Wireless MBUS, Thread and more, using DINGO hardware plug-ins. All mapped to virtual BACnet devices or objects.
- Co-reside with 1Wire, Modbus/IP and short distance Modbus/RTU. All Mapped to BACnet/IP.

Application examples

- BMS Building / Campus Management Systems.
- Smart Agriculture
- Large scale / metropolitan data logging and control.
- Office / Workplace Environmental Monitoring.
- Environment Monitoring (flooding etc.).
- Street Lighting control
- Car Parking Systems
- Traffic Monitoring & Management
- Waste Management

Technical Specification

Go-IoT Item ID:	**DINGO-LORAWAN-GW_SVR-01**
PROCESSOR	Quad Core ARM Cortex-A72 1.5GHz 1Gbyte LPDDR4 RAM 8Gbyte eMMC Flash (16 & 32 Gbyte options available) Real Time Clock with Battery back-up
DISPLAY	1 x POWER LED 16 x LED (Only Fitted with INPUT/OUTPUT Option) 128x64 pixel OLED LCD
INPUTS	8 x Opto-Isolated (I/O Option)
OUTPUTS	2 x Relays (240VAC 1A max switching) (I/O Option)
COMMUNICATIONS INTERFACES	1 x RJ45 10/100BaseT Ethernet 1 x RJ45 10BaseT Ethernet
LoRaWAN®	V1.0.2 and V1.0.3
Transmit Power	Up to 27dBm
Receiver Sensitivity	Down to -141dBm @ SF12, BW 125KHz
Global Frequency Bands	EU868,US915,EU433,CN470,IN865,AU915,KR920,AS920&AS923
Channels	Simultaneous receive 8 LoRa® channels
Data Rates	SF7 – SF12 / 125kHz + 250/500kHz and FSK 50kbps
Adaptive Data Rate	Proprietary Go-IoT Algorithm (LoRaWAN® V1.0.3 Section 5.2)
LoRaWAN® End Node Class	Supports Class A and C
Devices	~200
Range	>5km Open areas (direct line of sight) ~2km Urban
External Antenna	SMA Female Connector. ¼ Wave Rubber Dipole, External 2 Metre Blade or ½ Wave Magnetic Mount Antennas available on request.
DINGO Stack	Multi-thread, superfast data processing engine
Services	Auto Configuration, Alarm & Event, File Access, BACnet® Object Access, Remote Device Management, LoRaWAN® Gateway, LoRaWAN® Network Server
BACnet® Objects	>2000 (Base & #100 Object license included)
POWER SUPPLY	Internal 90-264V AC or External 10-24V 1.5A DC (Options available)
OPERATING CONDITIONS	
Working Temperature	-20 to +45°C (note below)
Storage temperature	-25 to +75°C
Humidity	Max. 80%
IP Level	IP20 (Others available on request)
Installation	DIN Rail or Screw using pop-out lugs
Dimensions & Weight	158mm x 90mm x 58mm (L x H x D) 150g
Country/Region of Manufacture:	EU
Authorised Distributor	www.innovelec.co.uk +44 1442 573035

Note: The DINGO must be mounted on a vertical surface with adequate airflow.