CET Electric Technology

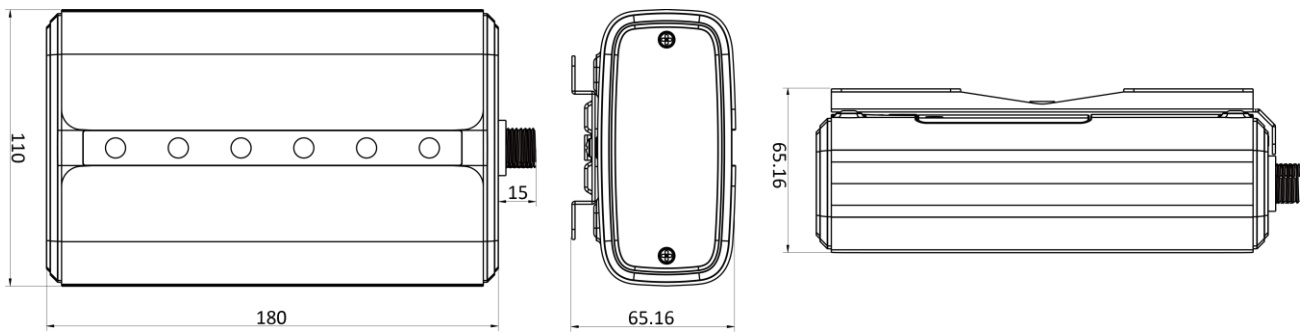# LoRaWAN Indoor Gateway

Introduction

- Economical LoRaWAN Indoor Gateway with Built-In LNS (LoRaWAN Network Server) for simple integration with LoRaWAN Application Server such as CET's PecStar iEMS.
- Support more than 500 LoRaWAN end nodes (simple messages) or 100xPMC-350-C LoRaWAN (with multiple complex messages).
- Support multiple back-haul connectivity with Ethernet and Wi-Fi for LAN applications or optional 4G for WAN applications.
- Perfect for Private Network deployment in electrical substations without Line of Sight or with extremely poor RF connectivity from an Outdoor Gateway because of the completely enclosed and windowless environment with thick concrete walls and metal doors.

Features

- Quad-core industrial processor with 512MB of RAM and 8GB of Flash Memory
- Equipped with the SX1302 LoRa Core that is specifically designed for Gateway applications to handle a higher amount of traffic with lower power consumption
- 8 half/full-duplex channels
- IP65 enclosure and industrial design for partially outdoor applications like eaves
- Desktop, wall or optional pole mounting
- Easy and centralized management of remote devices
- Multiple back-haul connectivity options with Ethernet, Wi-Fi and Cellular (4G/3G)
- Support multiple VPN options such as IPsec, OpenVPN, L2TP, PPTP and DMVPN
- Compatible with mainstream LoRaWAN Network Servers like TheThingsNetwork (TTN), ChirpStack, etc.
- Built-in Network Server supporting MQTT/HTTP/HTTPS API for easy and quick deployment

Dimensions

Specifications

Hardware System	
CPU	Quad-core 1.5 GHz, 64-bit ARM Cortex-A53
Memory	512 MB DDR4 RAM
Flash	8 GB eMMC
LoRaWAN	
Antenna	2xInternal Antennas (Optional: 1x50 Ω N-Female External Connector)
Channel	8 (Half/Full-duplex)
Frequency Band	US915/AU915/KR920/AS923/AS923-2, IN865/EU868/RU864 or CN470
Sensitivity	-140dBm Sensitivity @292bps
Output Power	27dBm Max.
Protocol	V1.0 Class A/Class C and V1.0.2 Class A/Class C
Ethernet Interface (Standard)	
Port	1xRJ45 (PoE PD support)
Physical Layer	10/100/1000 Base-T (IEEE 802.3)
Data Rate	10/100/1000 Mbps (Auto-Sensing)
Interface	Auto MDI/MDIX
Mode	Full or Half Duplex (Auto-Sensing)
Wi-Fi Interface (Standard)	
Antenna	Internal Antenna
Standards	IEEE 802.11 b/g/n, 2.4GHz
Mode	AP or Client mode
Security	WPA/WPA2/WEP authentication, TKIP/AES encryption
Tx Power	802.11b: 18 dBm +/-2.0 dBm (11 Mbps) 802.11g: 15 dBm +/-2.0 dBm (6 Mbps) 802.11g: 15 dBm +/-2.0 dBm (54 Mbps) 802.11n@2.4 GHz: 14 dBm +/-2.0 dBm (MCS0_HT20) 802.11n@2.4 GHz: 14 dBm +/-2.0 dBm (MCS7_HT20) 802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40) 802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS7_HT40)

Cellular Interface (Optional)

Antenna	Internal Antenna
SIM Slot	1 (mini SIM-2FF)
Bands	L04EU: B1/B3/B7/B8/B20/B28A/B38/B40/B41 (EMEA/APAC) L04AF: B2/B4/B5/B12/B13/B14/B66/B71 (North America) L04AU: B1/B2/B3/B4/B5/B7/B8/B28/B40 (Latin America/Australia/NZ)

Others

Reset Button	1xRST
Console Port	1xUSB Type-C
LED Indicators	1xPOWER, 1xSTATUS, 1xLoRa, 1xWi-Fi, 1xLTE, 1xETH
Built-in	Watchdog, RTC, Timer

Software

Network Protocols	PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, MQTT, etc.
VPN Tunnel	OpenVPN/IPsec/PPTP/L2TP/GRE/DMVPN
Firewall	ACL/DMZ/Port Mapping/MAC Binding/URL Filter
Management	Web, CLI, SMS, On-demand dial up, DeviceHub
Reliability	WAN Failover

Power Supply and Consumption

Power Input	1. DC Jack Connector for 9-24 VDC power supply 2. 1x802.3af PoE input
Power Consumption	Typical 2.9W, Max. 4.2W

Physical Characteristics

Ingress Protection	IP65
Dimensions	180x110x56.5 mm (7.09x4.33x2.22 in)
Mounting	Desktop, Wall or Pole Mounting

Environmental

Operating Temperature	-40°C to +70°C (-40°F to +158°F) Reduced Cellular Performance Above 60°C
Storage Temperature	-40°C to +85°C (-40°F to +185°F)
Ethernet Isolation	1.5 kV RMS
Relative Humidity	0% to 95% (non-condensing) at 25°C/77°F

Ordering Information

Model	LoRa ISM Bands	Cellular	External Antenna
ND65-915M-EA	KR920, AS923, AU915, US915	No	Yes
ND65-L04EU-915M-EA		APAC & EMEA	Yes

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