Data Sheet

Enterprise LoRa Indoor Gateway

Indoor Series

All product specifications are subject to change without notice

Enterprise LoRa Indoor Gateway

The enterprise LoRa indoor gateway is designed with Semtech version 1.5 (China version is with 1.0) technology for indoor environment.

This enterprise gateway is the aggregator of data from LoRa sensors and forwards them to backend server via Ethernet/ PoE or 3G/ 4G USB dongle (optional) WAN ports. This gateway is packed with many HW and SW features that is a suitable solution for indoor office and factory IOT applications.

Product Overview

This Enterprise LoRa Indoor gateway uses LoRaWAN technology from Semtech and is complied with specification defined by LoRa Alliance. This gateway has one internal/ external LoRa antenna, and LoRa interface operates in sub-Giga hertz (915/920/868/433/470 MHz…) and with WiFi IEEE 802.11b/g/n/2.4GHz as Access Point function. One Ethernet/ PoE port as WAN connection. It also available with an internal USB 2.0 port for a 2G/3G/4G USB dongle as 2nd WAN port connection (must check with manufacture for the correct USB dongle model # for your region). 4 LEDS are also available to show WAN, LAN, WLAN & LPWAN connection status.

Figure 1. Gateway External Ports

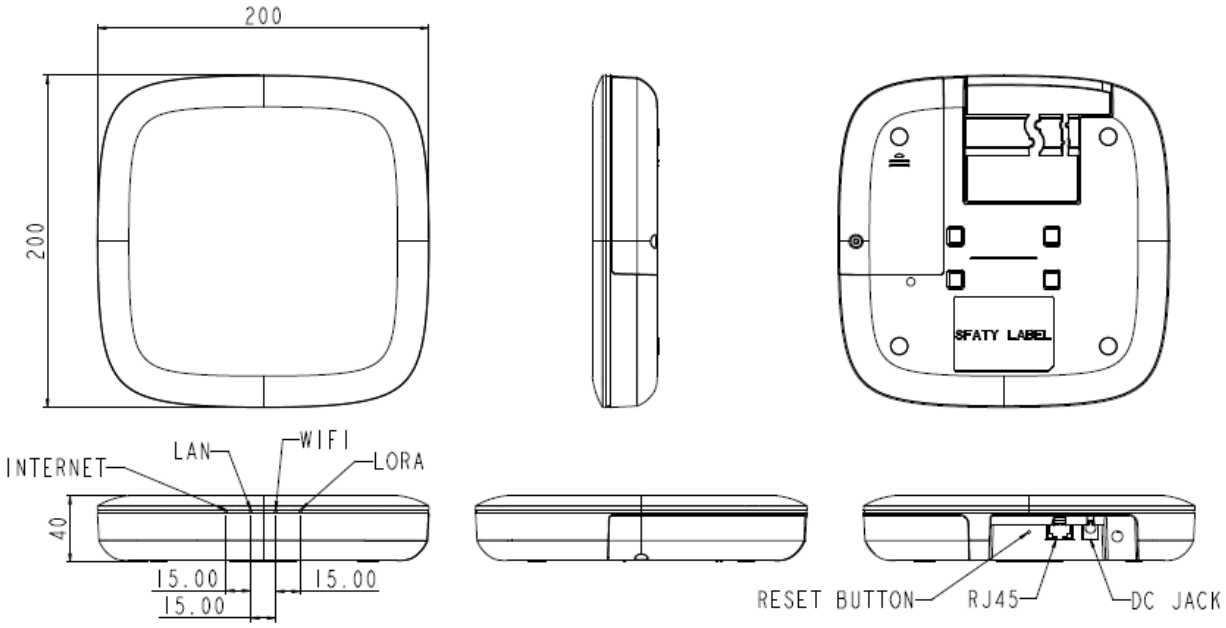
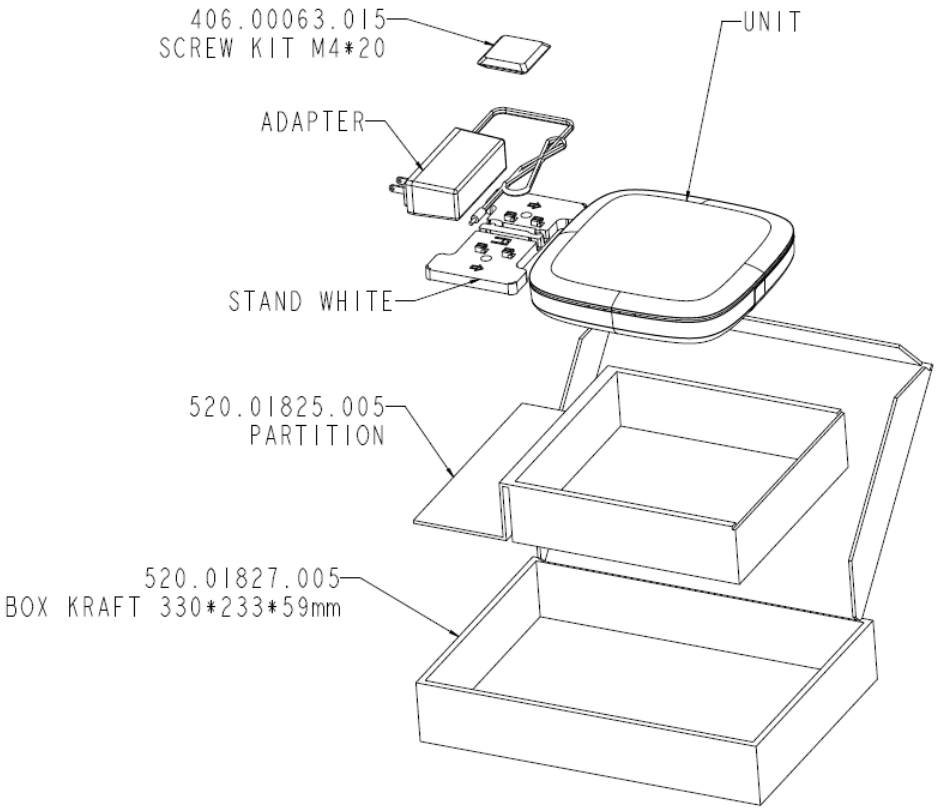


Figure 2. Gift Box Package with Accessories



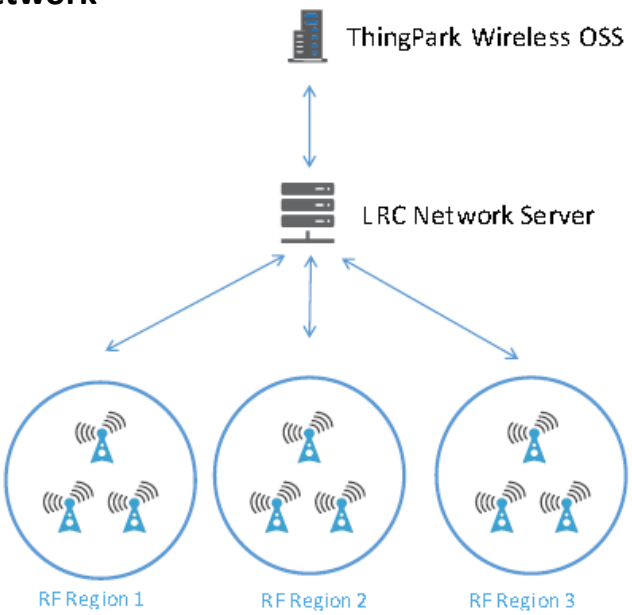
:cessory List:

Gateway Unit *1
Screw Kit*1
Adaptor*1
Wall Mount Bracket*1

LoRa Network Solution

This indoor LoRa gateway receives data from end-devices. Then, it relays these data to a backend server and routed to a application server for information processing.

Figure 3. LoRa Network



Deployment

This Indoor gateway supports wall/ ceiling mounting . 2 pieces of machine screws shall be used, and the recommended screw spec is M3X-6mm.

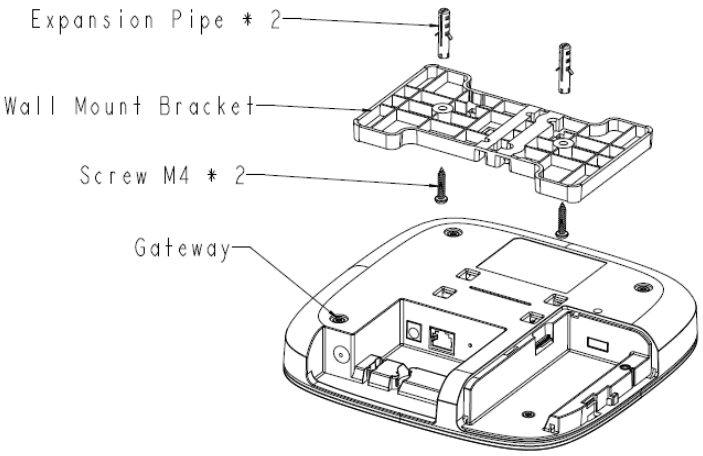


Figure 4. A Typical Wall or Ceiling Mount Deployment

Figure 5. USB Type LTE Dongle Installation

An internal USB port is available to install a USB type 3G/ 4G dongle as 2nd WAN port connection, in addition to POE port. Pls check with manufacture for the proper 3G/ 4G USB Dongle model # for your region.

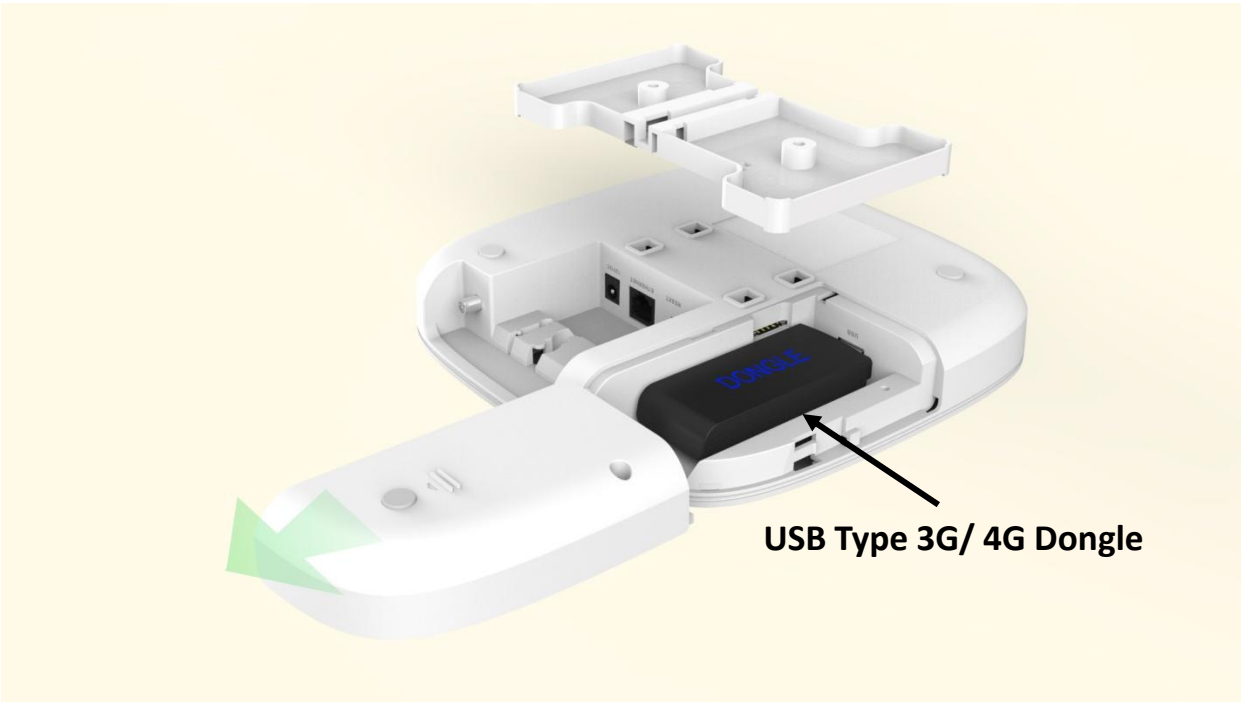


Figure 6. LoRa Antenna Configuration

Most of regions are certified with internal LoRa antenna design. EU sku is certified with internal (external antenna type is TBC) antenna type design. China sku only certified with external LoRa antenna.

With Internal LoRa Antenna

With External LoRa Antenna

Hardware Specifications

Item	Technical Information
Processor	Cortex A8
Storage/Memory	8GB eMMC/ 4Gb DDR3
WiFi	IEEE 802.11 b/g/n 2.4 GHz with internal type antenna
Ethernet	10/100/1000 Mbps/ RJ45 with POE
USB Interface	USB 2.0 for 2G/3G/4G dongle
DC PWR	DC 12V@ 2.065A & PoE (802.3 AT compliant) @ RJ45
Power Consumption	< 20W
LoRa Antenna	Most of Regions: Internal Type (920 MHz < 2 dBi, 868 MHz < 1.4 dBi) China: External Type (470 MHz < 2.5 dBi) EU Region: Internal Type (868 MHz < 1.4 dBi) or External (868 MHz < 5 dBi) Type
Operation Temperature &Humidity	-10~50 ℃, 10%~90%
Storage Temperature & Humidity	-40~70℃, 5%~90%
Dimension	200 x 200 x 49.5 mm
Weight	280g
Regulatory	CE/TELEC/ SRRC, (FCC/NCC TBD)

Hardware Specifications

LoRaWAN 1.0/ 1.5	Technical Information
Sectorization	NA
ADR	Yes
Geo-localization	NA
RF Channel Scanning	Yes
Higher grade SAW filter	Yes
LoRa Channels	8
Class A,B,C end-device	Yes
Data Rate (BW)	1172-21875 bit/sec
Improvement of coexistence with LTE	Yes

LTE Modem	Technical Information
LTE modem	Huawei E3372-607 USB Stick supported (also supports Huawei MS2131i-8 and E8372h-608)
LTE modem Band	FDD: 700/900/1800/2100/2600 MHz UMTS: 900/2100 MHz GSM:850/900/1800/1900 MHz
LTE modem Speed	LTE FDD : Cat4 DL:150Mbps/ UL:50Mbps @20M BW UMTS: DCHSPA+:42/5.76Mbps;21M/5.76Mbps; 14M/5.76M HSUPA:7.2M/5.76M 2G: EDGE packet data service of up to 236.8kbps

Software Specifications

Item	Technical Information
Features	**Benefits**
8 LoRa Channels	▪ Fully utilize the ISM band and complied with LoRa Alliance channel plan.
High Output TX Power	▪ Support up to +27 dBm high power output channel in ISM band
Class A, B & C End-Devices Supports	▪ Support Class A and C end-devices defined in LoRa Alliance specification ▪ Class B pending
RF Channel Scanning	▪ Support detection of RF channel noise before RF transmission
VPN	▪ IPSec (StrongSwan) / OpenVPN (optional)
Link Monitor	▪ Configurable connection monitoring ▪ Auto-reconnect ▪ Fail-over detection
Zero-Touch Provisioning	▪ SCEP registration (optional)
Flexible Upgradability	▪ Dual partitions ▪ Remote and local upgrade ▪ Full/ partial/ patch upgrade
Security	▪ Firewall (iptables) ▪ Encrypted key/ certificate ▪ Signed FW image ▪ Symmetric (AES)/ Asymmetric (ECC) key cryptographic
Time Synchronization	▪ NTPD (5 servers at most) ▪ Quick adjust to last know time
Listen Before Talk	▪ Japan , S. Korea

Model Numbers

Country Regulation	LoRaWAN 1.0 (GW1.5)	Technical Information	Model - Sub
US	Frequency Band Tx/ Rx	902 – 928 MHz	GEE810U-
	Tx Power (EIRP) dBm	923.3-927.5@30	915U
Europe (w. Internal LoRa Antenna)	Frequency Band Tx/ Rx	863 – 870 MHz	GEE810E-
	Tx Power (EIRP) dBm	863-869@14, 869.525@26.5	868U
Europe (w. External LoRa Antenna)	Frequency Band Tx/ Rx	863 – 870 MHz	GEE811E-
	Tx Power (EIRP) dBm	863-869@14, 869.525@26.5	868U
China (w. external LoRa Antenna)	Frequency Band Tx/ Rx	470 – 490 MHz	GEE800C-
	Tx Power (EIRP) dBm	16.98	470U
Japan	Frequency Band Tx/ Rx	922 – 923 MHz	GEE810J-
	Tx Power (EIRP) dBm	13	920U
S. Korea	Frequency Band Tx/ Rx	917 – 923.5 MHz	TBD
	Tx Power (EIRP) dBm	920-923@23	
Taiwan	Frequency Band Tx/ Rx	920 – 925 MHz	TBD
	Tx Power (EIRP) dBm	23	
Asia	Frequency Band Tx/ Rx	915 – 928 MHz	GEE810P-
	Tx Power (EIRP) dBm	23	923U

Warranty Coverage

The ufiSpace Enterprise Indoor Lora Gateway comes with a 1-year limited hardware warranty. The LoRa® name and associated logo are trademarks of Semtech Corporation or its subsidiaries.
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