



Enterprise LoRa Indoor Gateway

Indoor Series

Enterprise LoRa Indoor Gateway

The Enterprise LoRa indoor gateway is designed with Semtech version 1.5 technology, and to meet the needs of IoT services. This Enterprise LoRa indoor gateway provides users the services as an aggregator of LoRa sensors to the internet for different applications.

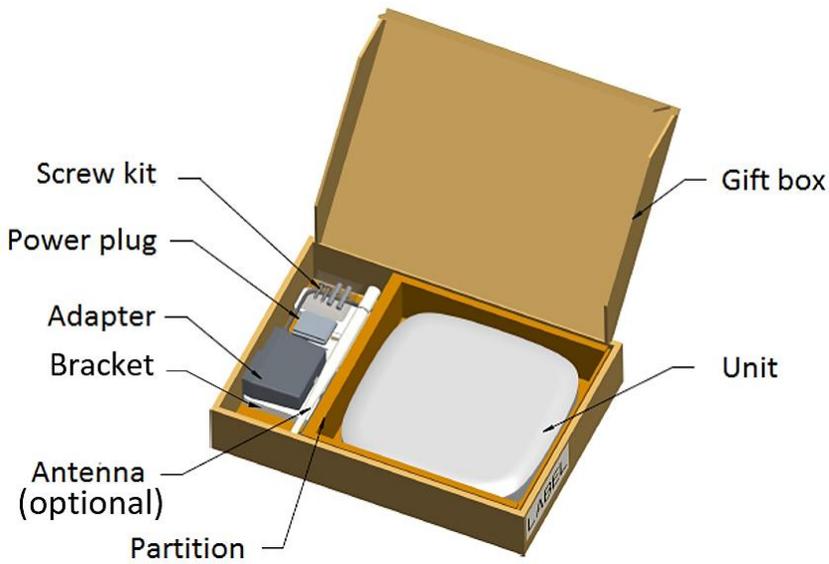
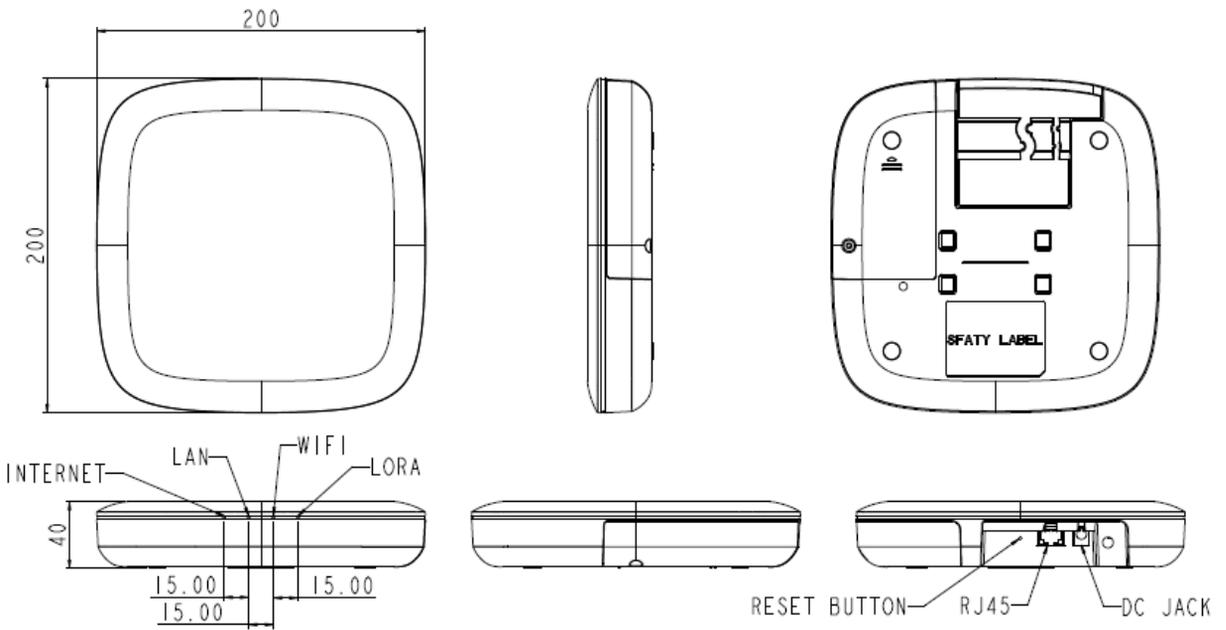


Product Overview

This Enterprise LoRa Indoor gateway uses LoRaWAN technology from Semtech and is complied with specification defined by LoRa Alliance. This gateway is designed with one internal or external LoRa antenna, depends on each model's configuration. The 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 and an USB 2.0 ports (for 2G/3G/4G USB dongle) are available as WAN port connections.

The covered USB port provides flexibility for adding an on the shelf USB 2G/3G/4G dongle to save certification cost and time.

Figure 1. Gateway External Ports



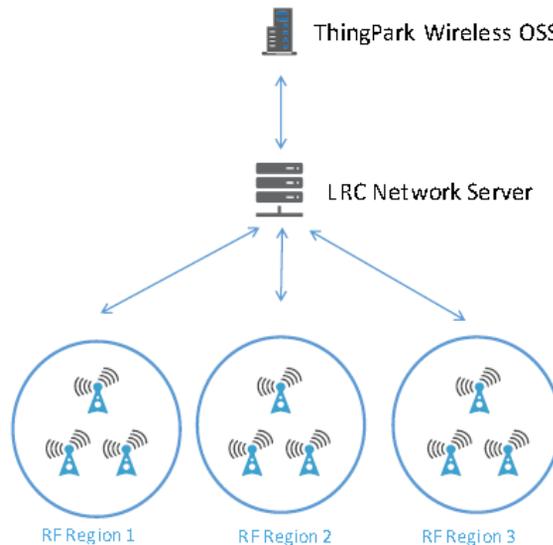
Accessory List:

- A: Gateway Unit *1
- B: Screw Kit*1
- C: Power Plug *1
- D: Adaptor*1
- E: Wall Mount Bracket*1
- F: External LoRa Antenna (optional)

LoRa Network Solution

This outdoor LoRa gateway receives data from end-devices, then relay it to a backend server and routed to a application server for information processing.

Figure 2. LoRa Network



Deployment

This Indoor gateway supports also provide the optional wall mounting support due to the 3 nuts on its bottom. For this function, 3 pieces of machine screws shall be used, and the recommended spec is M3X6mm or others appropriate. The security screw of the Dongle Cap provide maximum protection to the USB Dongle from “ theft “.

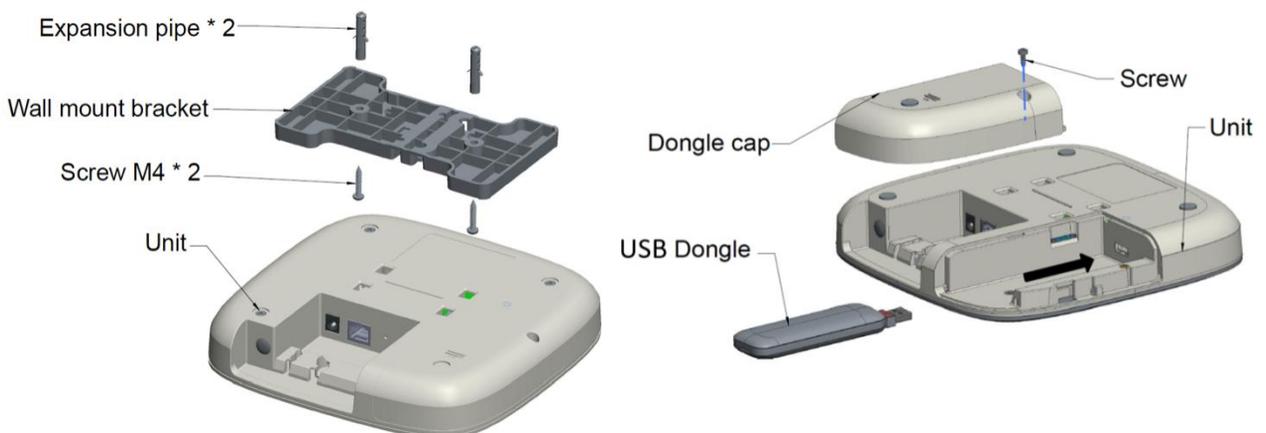


Figure 3. A Typical Wall Mount Deployment

Hardware Specifications

Item	Technical Information
Processor	Cortex A8
Storage/Memory	8GB eMMC/ 4Gb DDR3
WiFi	IEEE 802.11 b/g/n 2.4 GHz
Ethernet	10/100/1000 Mbps/ RJ45
Interface	USB 2.0 for 2G/3G/4G USB Dongle
DC PWR	DC 12V / 2.065A & PoE (802.3 AT compliant)
Power Consumption	25W
Antenna	Internal/ external type
Operation Temperature & Humidity	-10~50 °C, 10%~90%
Storage Temperature & Humidity	-40~70°C, 5%~90%
Dimension	200 x 200 x 49.5 mm
Weight	280g
Regulatory	CE/TELEC/ FCC/ SRRC, NCC TBD

Hardware Specifications

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	Frequency Band Tx/Rx	863 – 870 MHz	GEE810E-
	Tx Power (EIRP) dBm	863-869@14 ,869.525@26.5	868U
China	Frequency Band Tx/Rx	470 – 510 MHz	GEE800C-
	Tx Power (EIRP) dBm	16.98	470U
Japan	Frequency Band Tx/Rx	922 – 923 MHz	GEE810J-
	Tx Power (EIRP) dBm	13	920U
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

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

LoRa Antenna Type	External/ Internal
EU 868 model	Internal/ External (TBC)
USA 915 model	Internal
China 470 model	External
Japan 920 model	Internal
APAC 920 model	Internal

Hardware Specifications

LTE Modem	Technical Information
LTE modem	Huawei E3372 USB Stick supported
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	<ul style="list-style-type: none"> Fully utilize the ISM band and complied with LoRa Alliance channel plan.
High Output TX Power	<ul style="list-style-type: none"> Support up to +27 dBm high power output channel in ISM band
Class A, B & C End-Devices Supports	<ul style="list-style-type: none"> Support Class A and C end-devices defined in LoRa Alliance specification Class B pending
RF Channel Scanning	<ul style="list-style-type: none"> Support detection of RF channel noise before RF transmission
Improvement of Coexistence with LTE	<ul style="list-style-type: none"> Reduce interference to LTE band 20 & 8
VPN	<ul style="list-style-type: none"> IPSec (StrongSwan) / OpenVPN (optional)
Link Monitor	<ul style="list-style-type: none"> Configurable connection monitoring Auto-reconnect Fail-over detection
Zero-Touch Provisioning	<ul style="list-style-type: none"> SCEP registration (optional)
Flexible Upgradability	<ul style="list-style-type: none"> Dual partitions Remote and local upgrade Full/ partial/ patch upgrade
Security	<ul style="list-style-type: none"> Firewall (iptables) Encrypted key/ certificate Signed FW image Symmetric (AES)/ Asymmetric (ECC) key cryptographic
Time Synchronization	<ul style="list-style-type: none"> NTPD (5 servers at most) Quick adjust to last know time
Listen Before Talk	<ul style="list-style-type: none"> Japan, S. Korea

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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