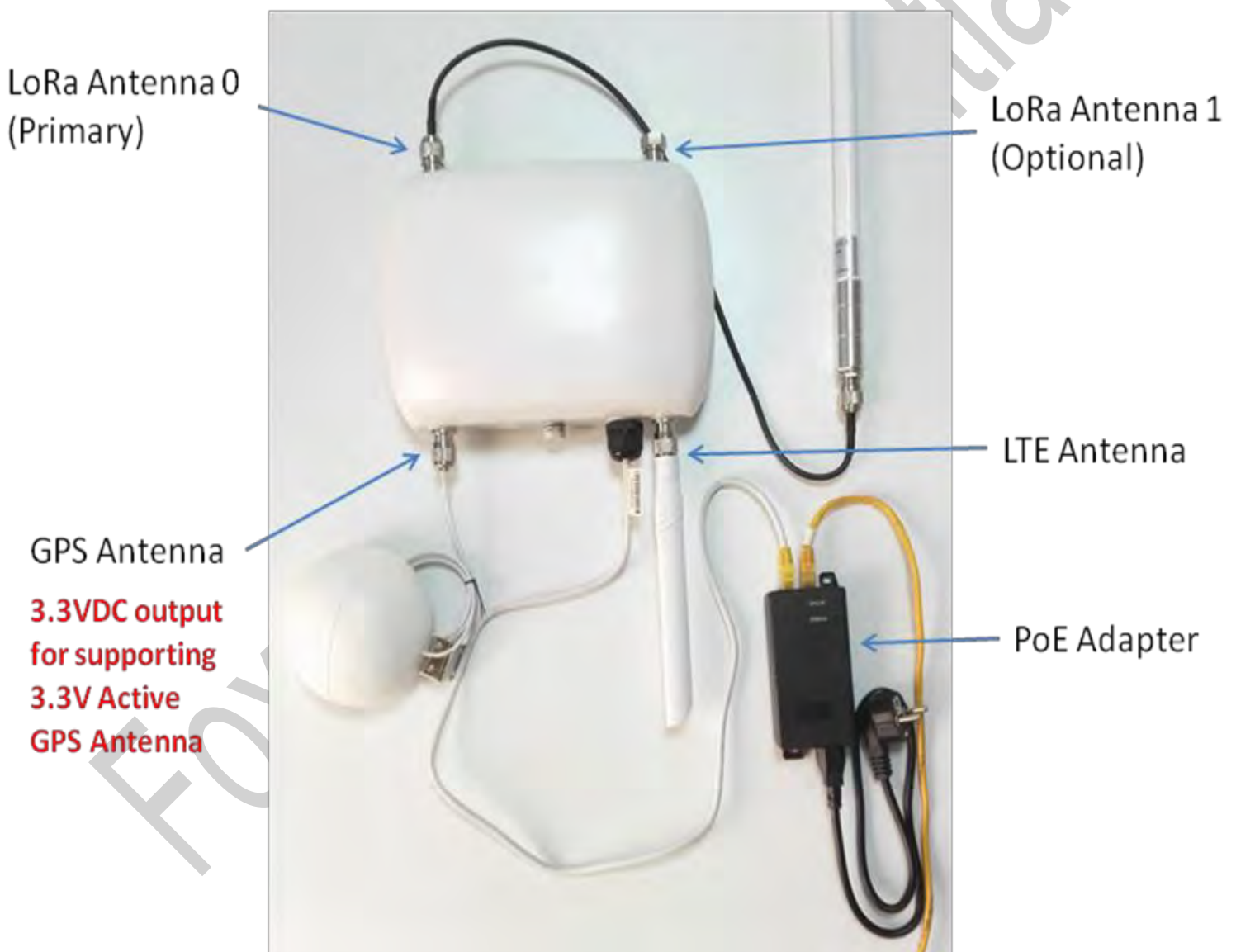


Outdoor IOT Gateway Installation Guide

WARNING:

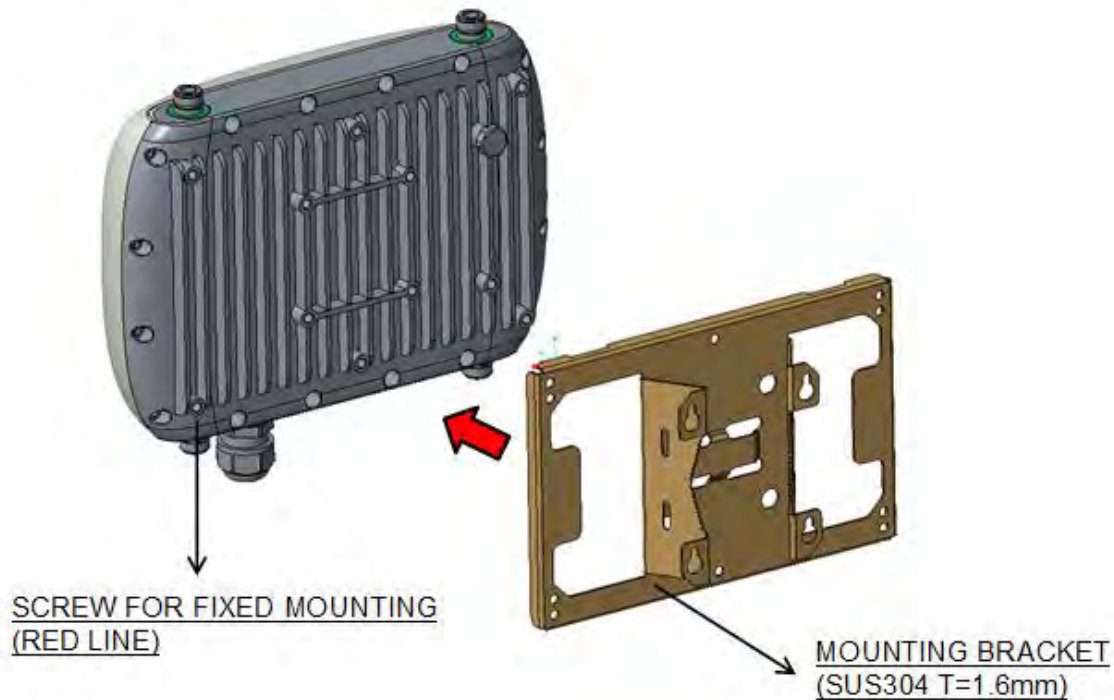
MUST not install or remove GPS, LoRa or LTE Antenna when DC power is applied to the Gateway. It may damage the device.

For un-connected N Type Antenna Port, MUST install a " N Type Connector Cap" to prevent water getting into the device.

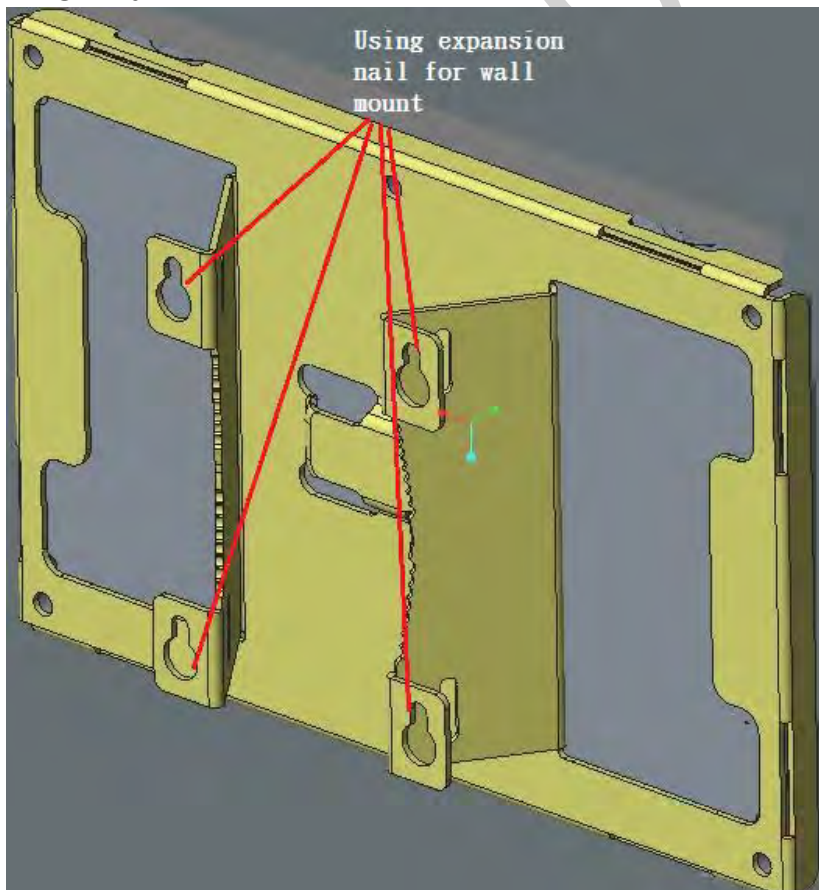


Our mounting bracket design will be able to fix in two different locations, which is antenna pole and wall. Mounting bracket is also be able to fix in two direction, Vertical and Horizontal as well.

Bracket fix in the gateway for first step



1. On Wall



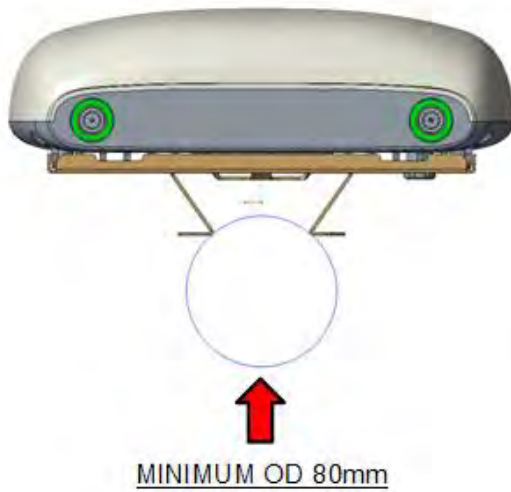
locking the expansion nail for bracket. (Maximum 40Kg.cm torque for M5 nuts.)

Technical drawing of a rectangular plate with the following dimensions and features:

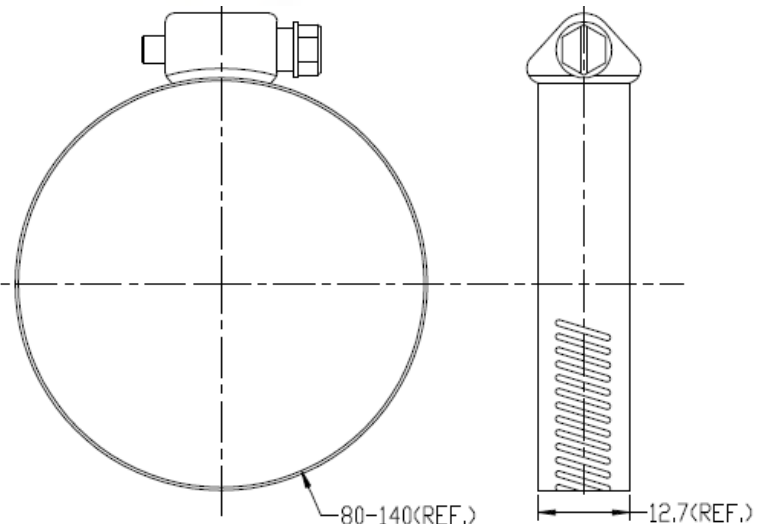
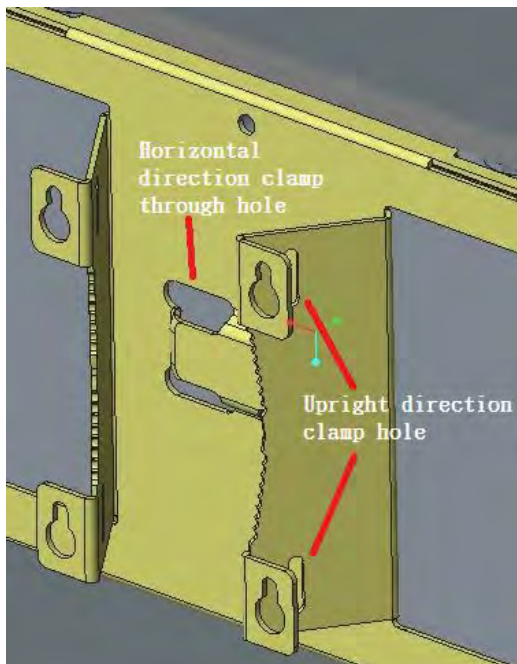
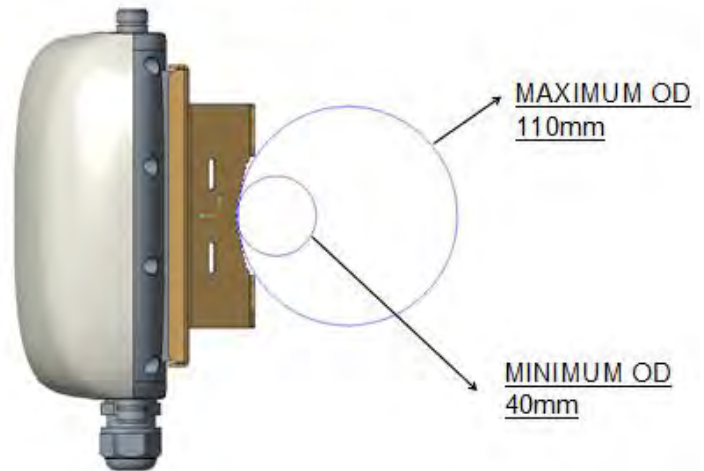
- Overall width: 224.00
- Overall height: 148.00
- Inner width: 211.00
- Inner height: 135.00
- Top edge hole diameter: $\varnothing 5.50$
- Bottom edge hole diameter: $\varnothing 5.00$
- Bottom edge hole diameter: $\varnothing 10.00$
- Central hole diameter: 28.7
- Central hole offset: 23.98
- Central hole offset: 53.70
- Central hole offset: 18.00
- Central hole offset: 8.00
- Central hole offset: 8.00
- Central hole offset: 24.00
- Central hole offset: 88.50
- Central hole offset: 65.00
- Central hole offset: 112.00
- Central hole offset: 70.00
- Central hole offset: 85.76

2. On a Pole

UPRIGHT POLE

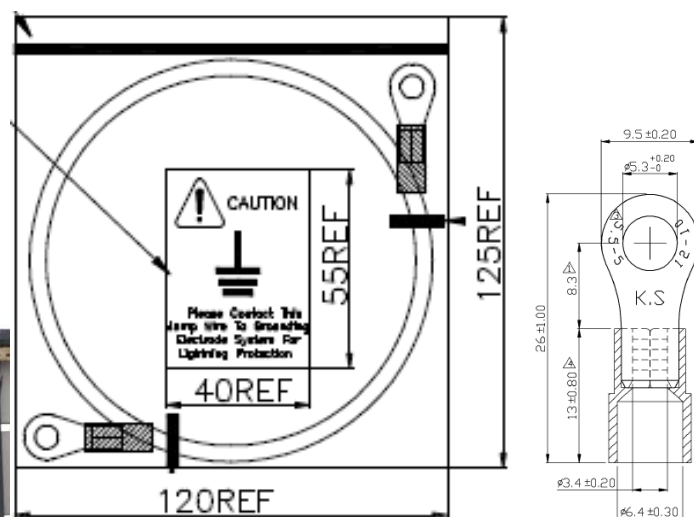


HORIZONTAL POLE



MATERIAL (SPEC.)										SCALE
SUS304										
Select	A	B	C	EPS	EPE	BAG	CTN	Label	USR	UNIT
Dia. 120-300	0.20	0.30	0.40	1.00	1.00	10.00	3.00	0.30		mm

(Maximum 55Kg.cm torque for hose clamp)



Grounding Cable

Due to IoT Gateway has been certified with IP67 that SI can install with no any waterproof protection. But We still recommend that insert 3M 2166 waterproofing tape on antenna port could enhance reliability and prevent intentionally destroy in field.

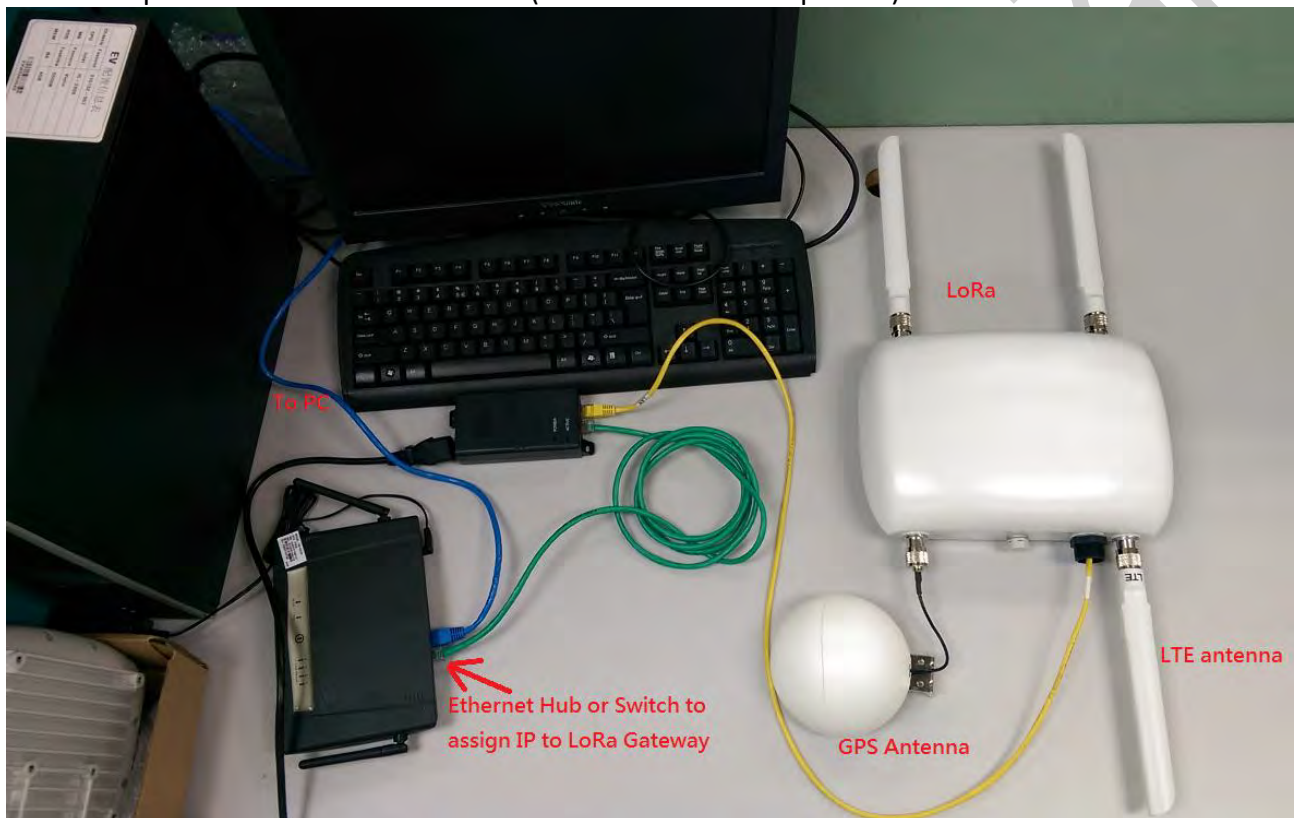


3. DHCP Setup

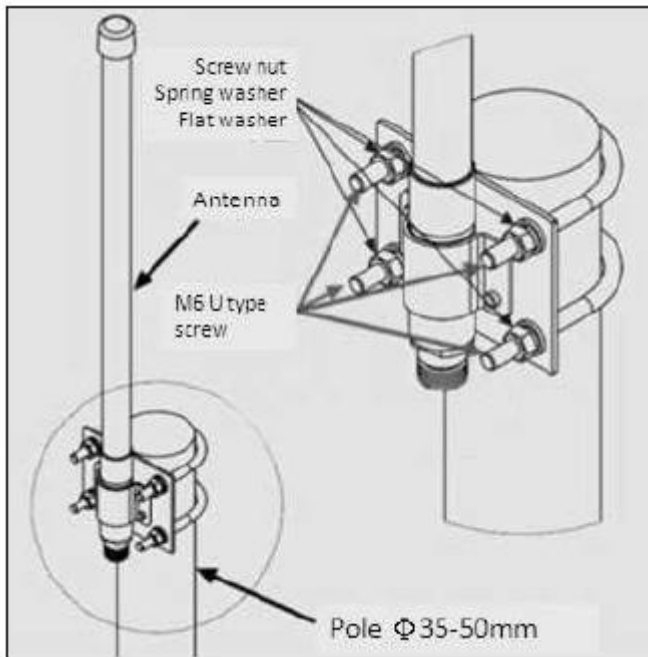
WARNING:

MUST not install or remove GPS, LoRa or LTE Antenna when DC power is applied to the Gateway. It may damage the device.

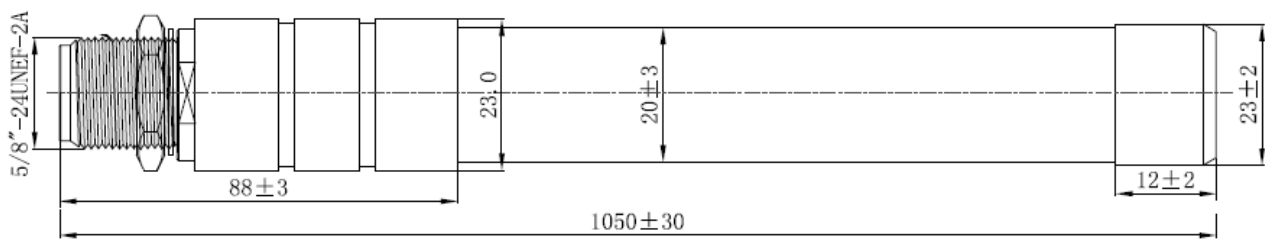
DHCP setup with 2 x 1dBi LoRa Antenna (LoRa Antenna 1 is Optional)



4. Setup with High Gain (8dBi) LoRa Antenna



8dBi Antenna



Antenna Mounting Accessory



Hardware Specification:

Item	Technical Information
WiFi	IEEE 802.11 b/g/n 2.4 GHz
GPS	1575.42 MHz
Ethernet	100/1000 Mbps
DC PWR	Max 60W, POE 802.3af compliant
Power Consumption	40W max
Antenna	2 N-type external LoRA antenna 1 N-type external LTE antenna 1 N-type external active GPS antenna
IP Code	IP67
UV Resistance	0.77 w/m2 @340nm
Operation Temperature & Humidity	-20~70 °C, 20% ~90%
Dimension	269 × 184 × 85 mm
Weight	2.4 kg MAX
Regulatory	FCC

LoRaWAN 1.0 (GW2.1)	Technical Information
Frequency Band Tx/Rx	902-928 MHz
Tx Power	26.85 dBm
Rx Sensitivity @ SF12	-138 dBm
Sectorization	Omni
ADR	Yes
Geo-localization	Yes, GPS, GLONASS, BeiDou
RF Channel Scanning	Yes
Higher grade SAW filter	Yes
LoRa Channels	8
Class A,B,C end-device	Yes
Data Rate	980 bps to 21900 bps
Improvement of coexistence with LTE	Yes
LTE modem	Available upon request
LTE modem Band	Available upon request

Software Specification:

Item	Technical Information
Backhaul Connection	Ethernet / LTE / WiFi
VPN	OpenVPN / Strongswan
LoRa GW Application	LoRa packet forward, uplink/downlink
FW upgrade	Remote Server side FW upgrade / Local GUI upgrade
Link Monitor	Healthy status report
Configuration Preserved in Flash	Backup & restore / dynamic & permanent setting / Reset to default
Web/GUI	Setup / Status report
ThingPark LRR integration	LoRa packet forwarding
LoRa location without GPS (MCG022E)	Use Differential Time of Arrival(DTOA) for location calculation
Triangulation LBS	Outdoor accuracy < 50M
Zero-touch provisioning	Yes
IPSec (3DES,AES,SHA)	Yes
P&P (Plug and Play)	Yes
Transmission features	L2
Management and manageability	Yes

Federal Communication Commission Interference Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution:

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
- RF Modules installed in this product must not be co-located or operating in conjunction with any other antenna or transmitters, except when installed in accordance with FCC multi-transmitter product guidelines.

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.