

Outdoor LoRa Gateway Installation Quick Guide

This is a quick reference guide for ufiSpace Outdoor LoRa Gateway installation. This gateway is designed for outdoor wall or pole mount installations.



1 Contents of delivery

2 Preparing the Installation

- Connectors and Interfaces

3 Installation

- Wall Mount
- Pole Mount
- Install Surge Protection Cable
- Install 8 dBi Antenna

4 Optional Accessories Recommended

5 Cabling

6 Network Access

7 Model List

8 Appendix A

- Declarations of Conformity and Regulatory Information

This Outdoor LoRa Gateway is designed with Semtech Technology to provide low power and wide area (LPWA) unlicensed band wireless connection. This gateway supports connectivity for wide range of Internet of Things (IOT) applications.

1 Contents of Delivery

Items

- 1 x Outdoor LoRa Gateway with water protection cap on N-Type connector ports
- Metal Caps: V2.1 HW (3 for LTE version, 2 for non-LTE version); V1.5 HW (1 for LTE version, 0 for non-LTE version)

- 1 x Outdoor LoRa Gateway User Manual and Installation Quick Guide

- 1 x LTE 0 dBi antenna (only for model with LTE function)

- 1 x Antenna extension cable (for 3, 5, 6, 7, 8 or 9 dBi LoRa antenna, cable length $60.96 \pm 3\text{cm}$)

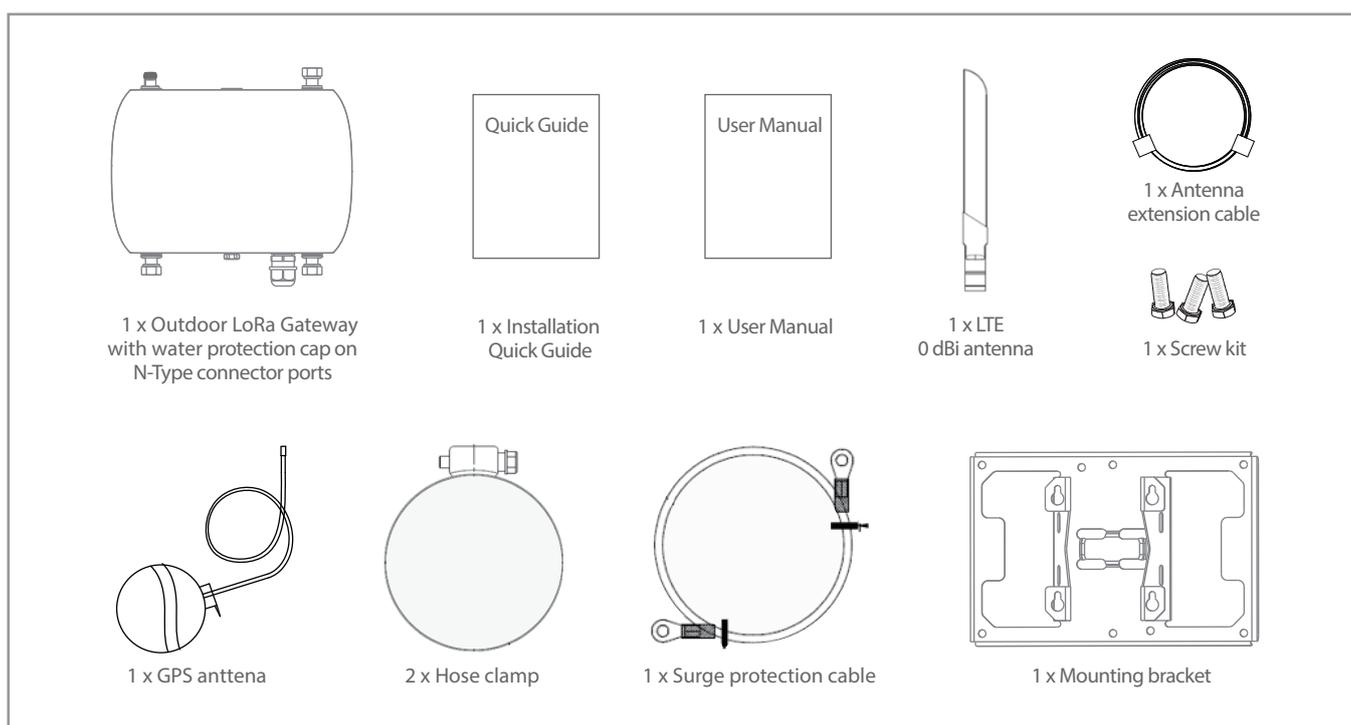
- 1 x Screw kit

- 2 x Hose clamp

- 1 x Surge protection cable

- 1 x Mounting bracket

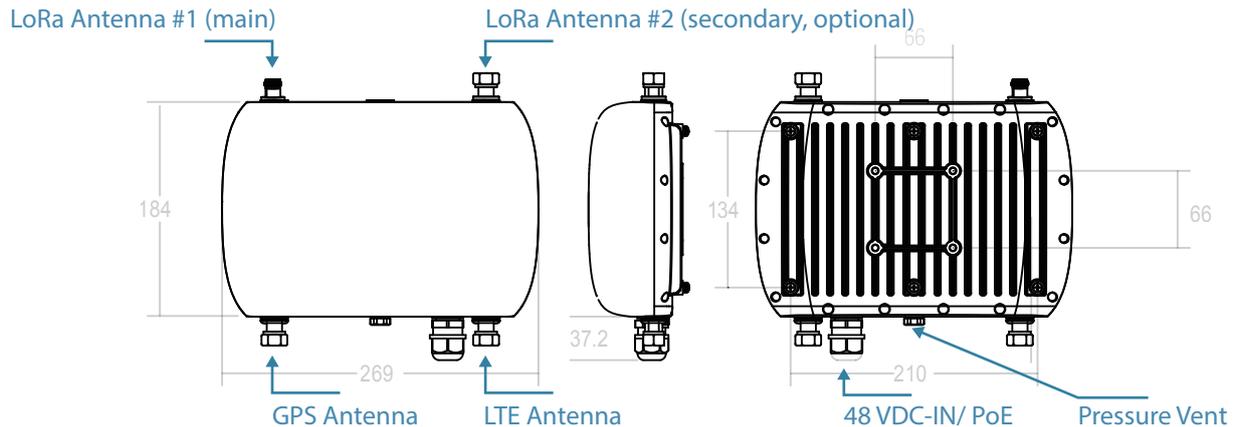
- 1 x GPS antenna (for v2.1 HW only, cable length $120 \pm 5\text{cm}$)



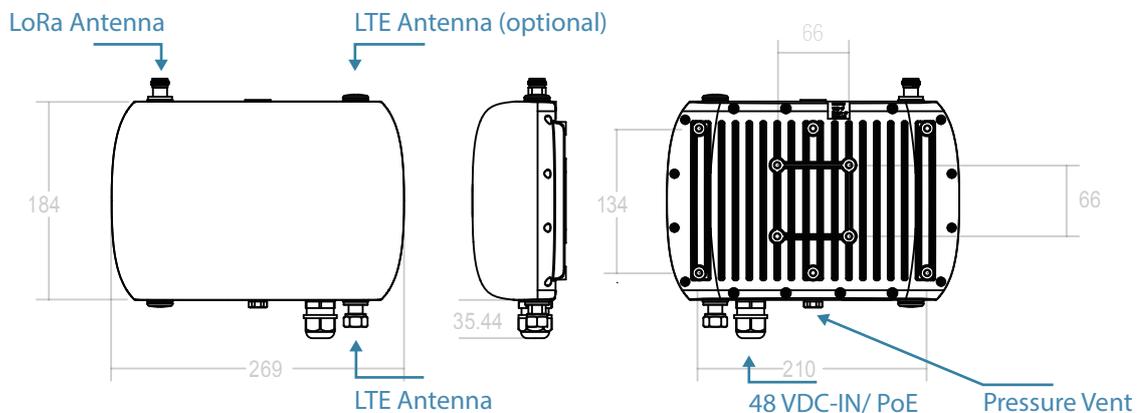
2 Preparing the Installation

Connectors and Interfaces

V2.1 Gateway



V1.5 Gateway



Caution

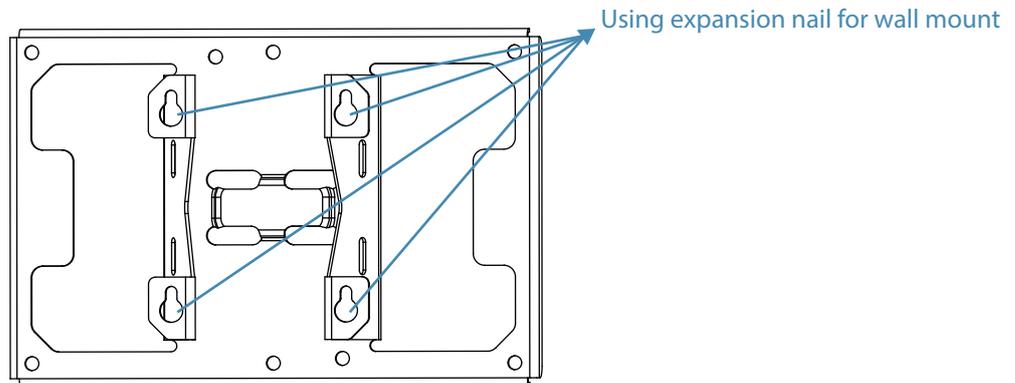
Must make sure all antennas are installed properly before apply PoE power to the gateway. For un-connected N-Type Antenna Port, MUST install a " N-Type Water Protection Cap" to prevent water leaking into the device. " N-Type Water Protection Caps" are supplied with the gateway. MUST not install or remove GPS, LoRa or LTE Antenna when DC power is applied to the Gateway. It may damage the device.

Surge Protection Cable must be properly connected to gateway housing and earth ground.

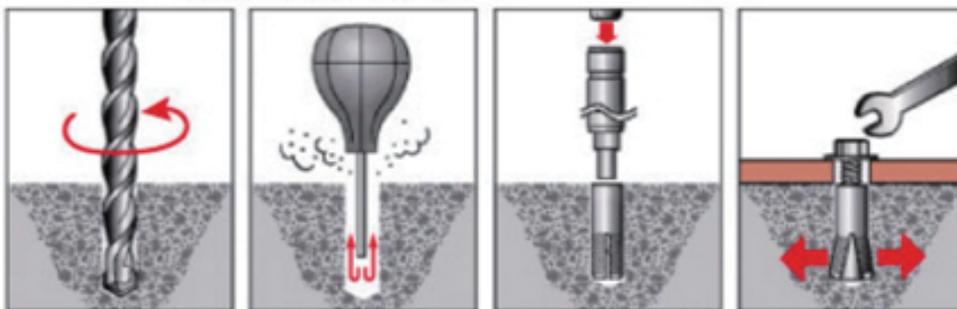
3 Installation

Wall Mount Our mounting bracket is designed for both wall and pole mount.

Mounting bracket to walls

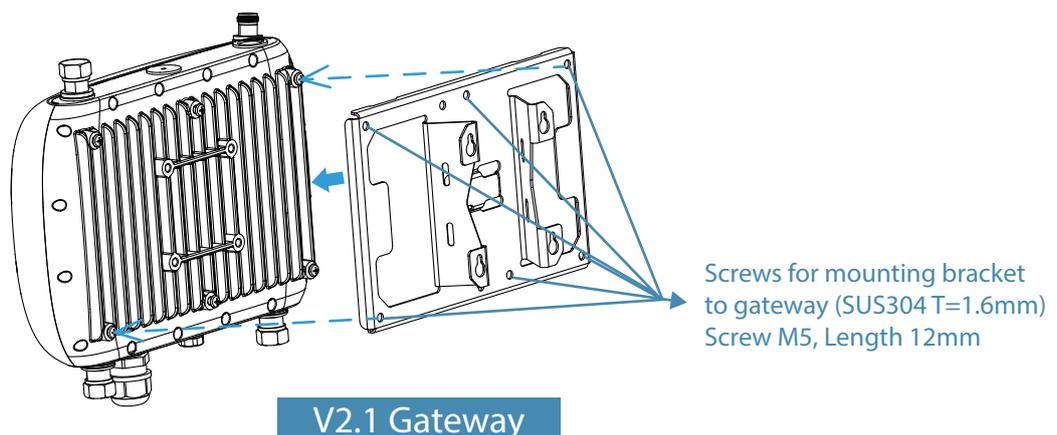


Install Expansion Nail for Mounting Bracket



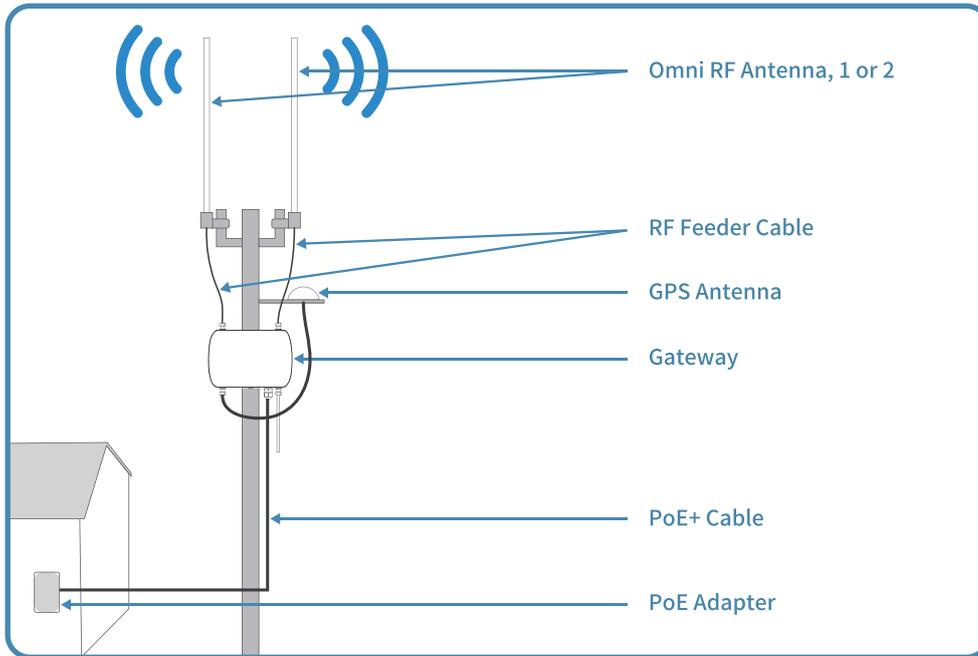
- 1 Drill 4 holes on the designated wall.
- 2 Locking the expansion nail for bracket. (Maximum 40Kg.cm torque for M5 nuts)
- 3 After locking eache nut, reverse 3~4 turns on wall.
- 4 Secure the bracket onto the wall with 6 screws and must sure it is level.

Install the Outdoor Gateway housing to the bracket with 6 screws

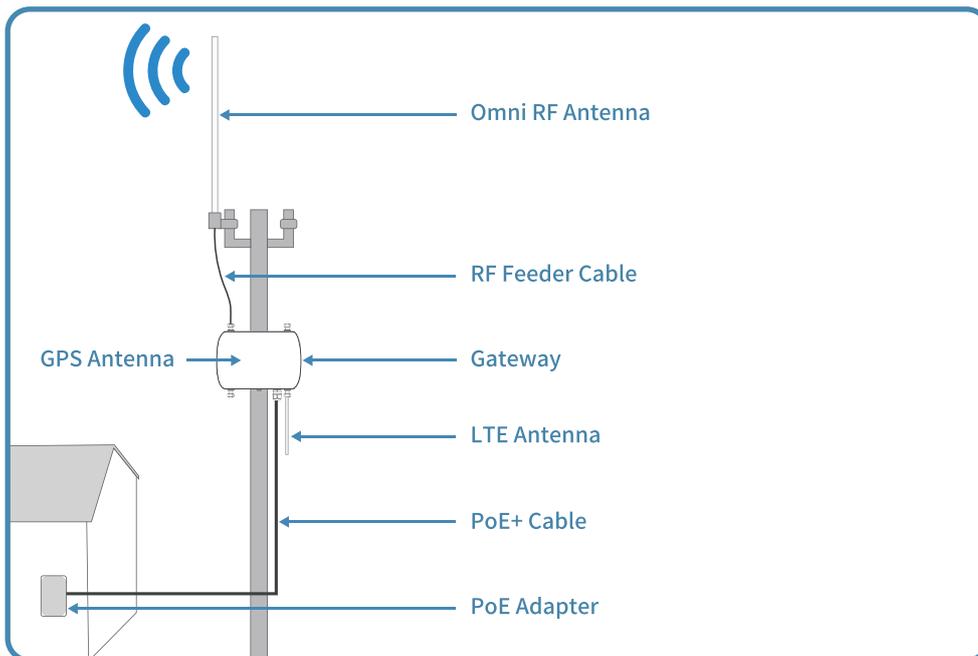


Pole Mount

V2.1 Gateway

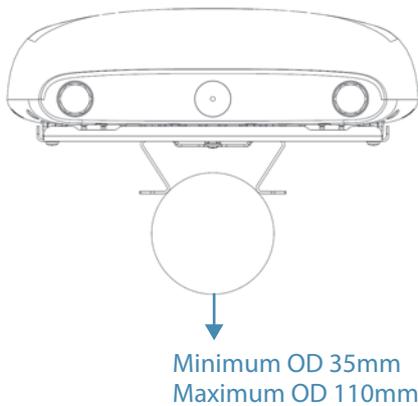


V1.5 Gateway

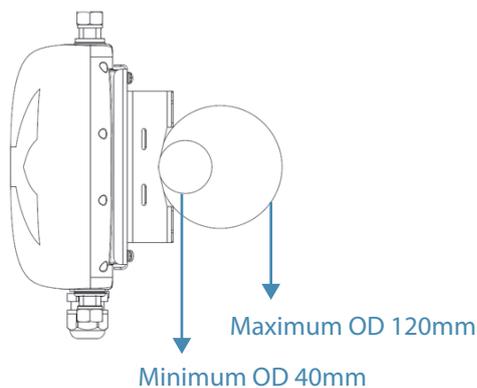


Vertical and Horizontal Mount

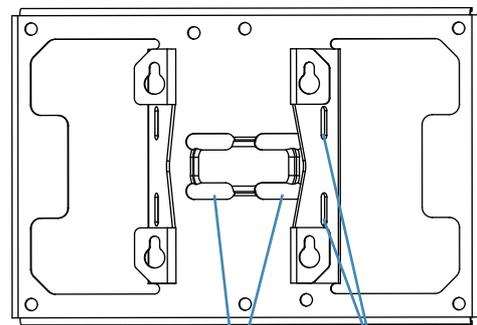
Upright pole



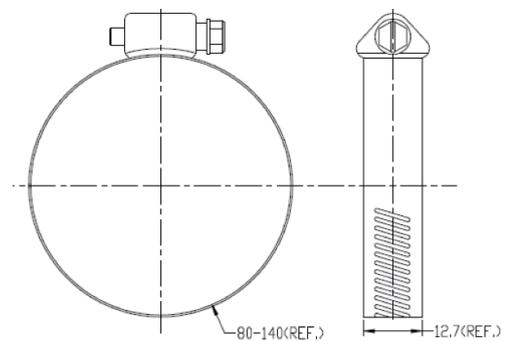
Horizontal pole



Install Hose Clamp



Upright direction clamp hole
Horizontal direction clamp through hole



MATERIAL (SPEC.)										SCALE	
SUS304											
Select										UNIT	
Min. Qty	A	B	C	EPS	EPE	BAIS	CTN	Label	USR	M/M	
100-300	0.20	0.30	0.40	1.00	1.00	10.00	3.00	0.30			

Maximum 55Kg.cm torque for hose clamp

Connecting Earth Ground to Unit

Warning

The equipment has a separate protective earthing terminal on the chassis that must be permanently connected to earth ground to adequately ground the chassis and protect the operator from electrical hazards.

Caution

Before equipment installation begins, ensure that a service personnel has attached an appropriate grounding lug to the grounding cable that you supply.

Power installation must be performed with qualified electrician and followed with National Electrical Code, ANSI/NFPA 70 and Canadian Electrical Code, Part I, CSA C22.1.

To connect earth ground to Unit

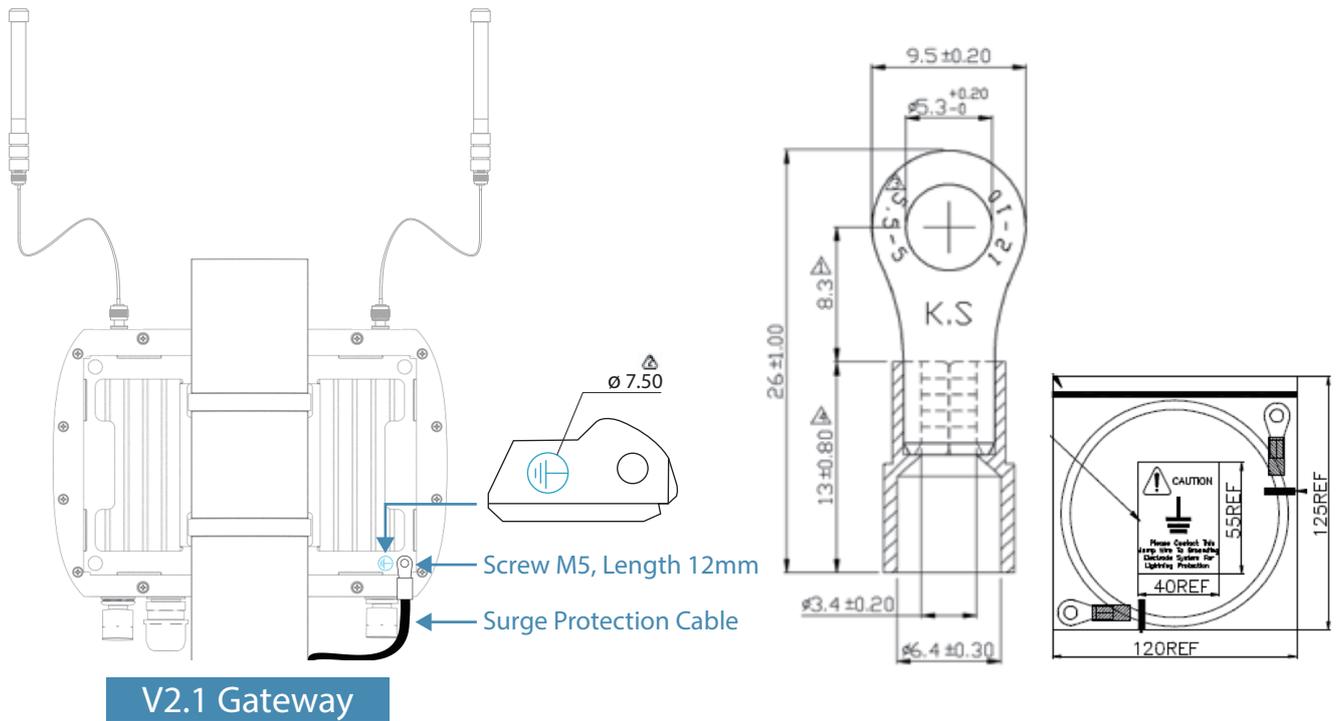
- 1 Connect one end of the grounding cable to a proper earth ground.
- 2 Place the grounding lug attached to the grounding cable over the protective earthing terminal.
- 3 Secure the grounding lug to the protective earthing terminal with the washers and screws.
- 4 Dress the grounding cable and ensure that it does not touch or block access to other components.

Warning

- At first before powered on, connect the frame of the unit to earth.
- For earthing wire, green-and-yellow insulation is required and the cross-sectional area of the conductor must be more than 10 AWG.

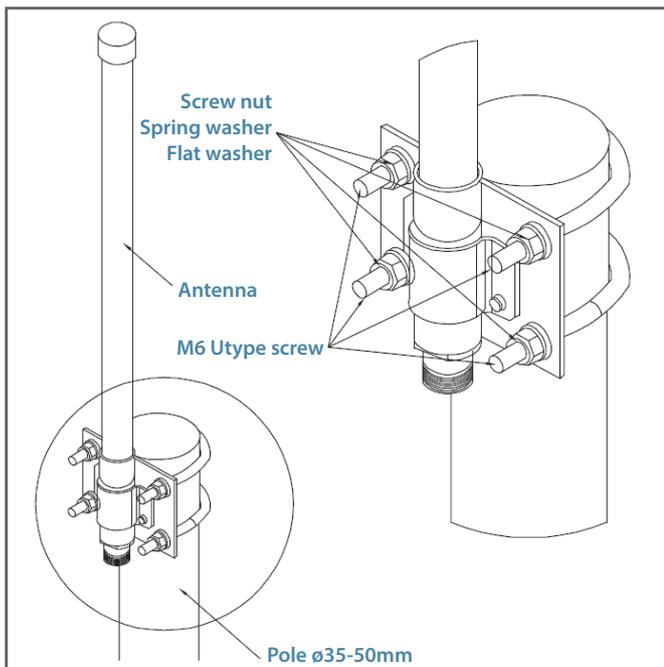
The product shall be installed by a qualified service person and the installation shall conform to all local codes.

Install Surge Protection Cable

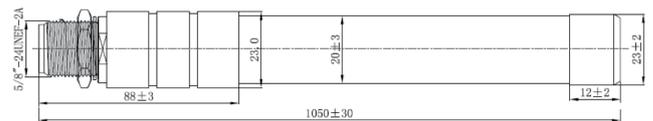


Surge Protection Cable must be properly connected to gateway housing and earth ground.

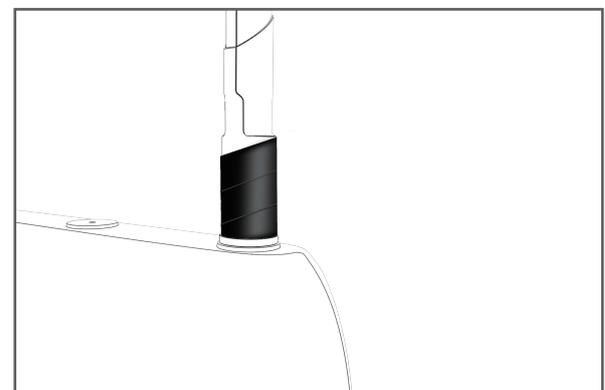
Install the LoRa Antenna



LoRa Antenna

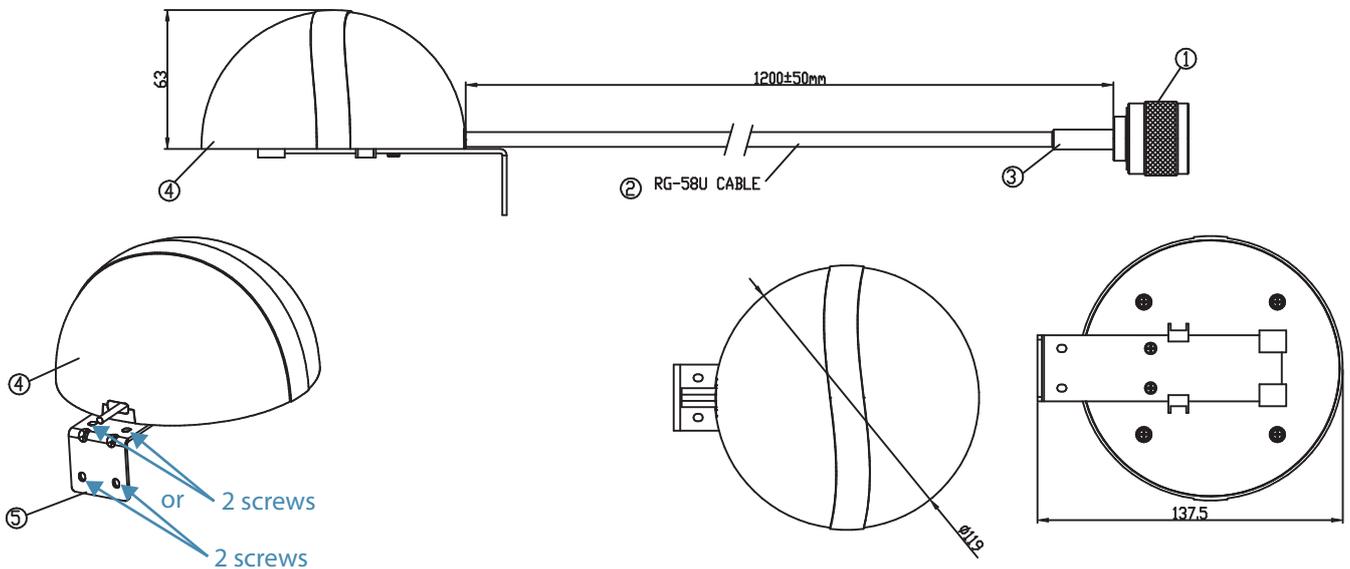


Antenna port water leakage enhancement



Recommend to apply 3M (2166) waterproofing tape on antenna port to enhance water leakage protection.

Install GPS Antenna



4 Optional Accessories Recommended

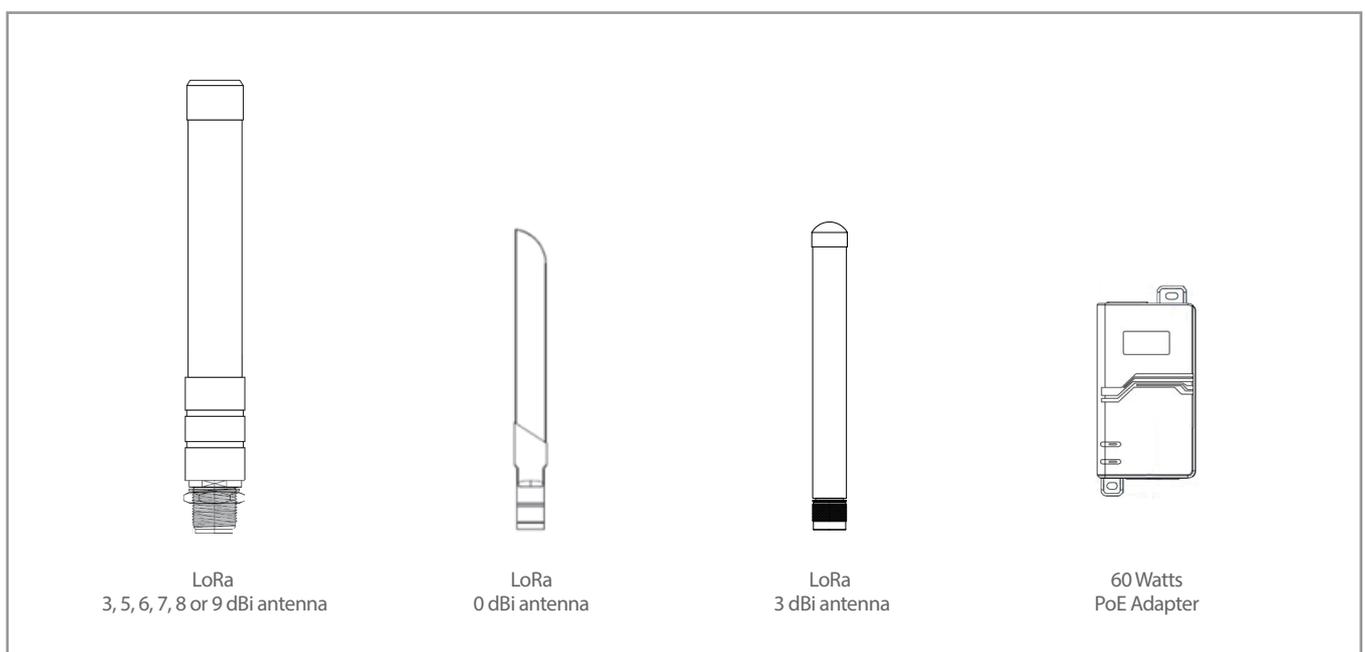
Items

LoRa 3, 5, 6, 7, 8 or 9 dBi antenna

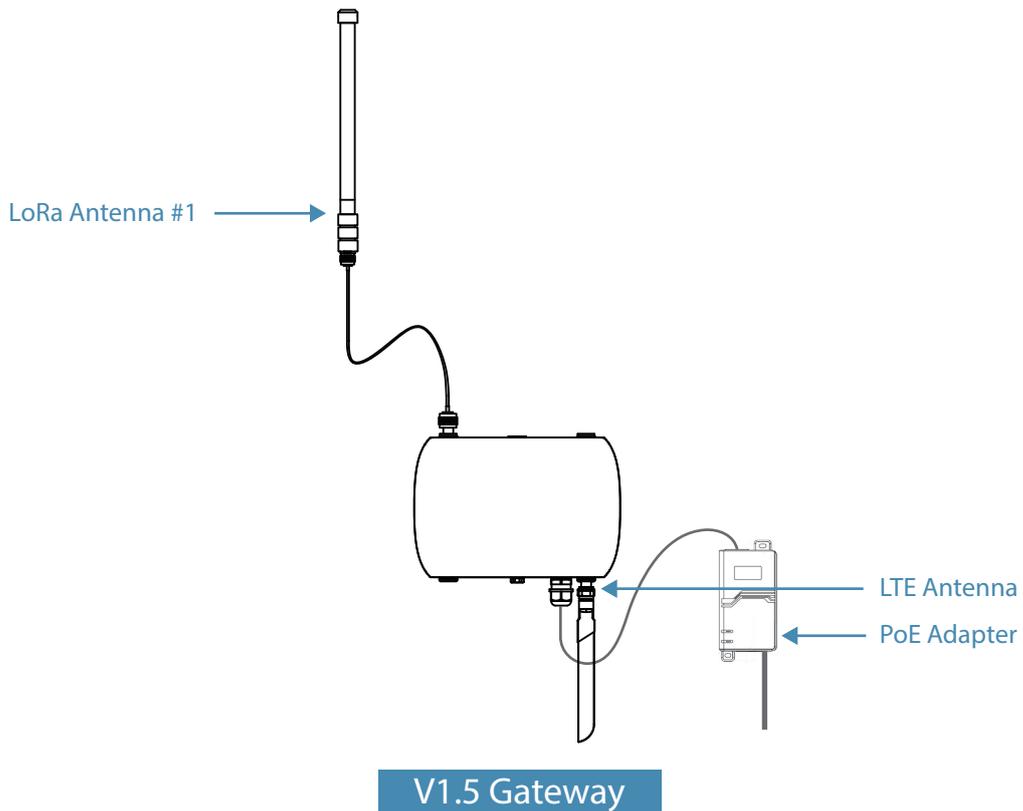
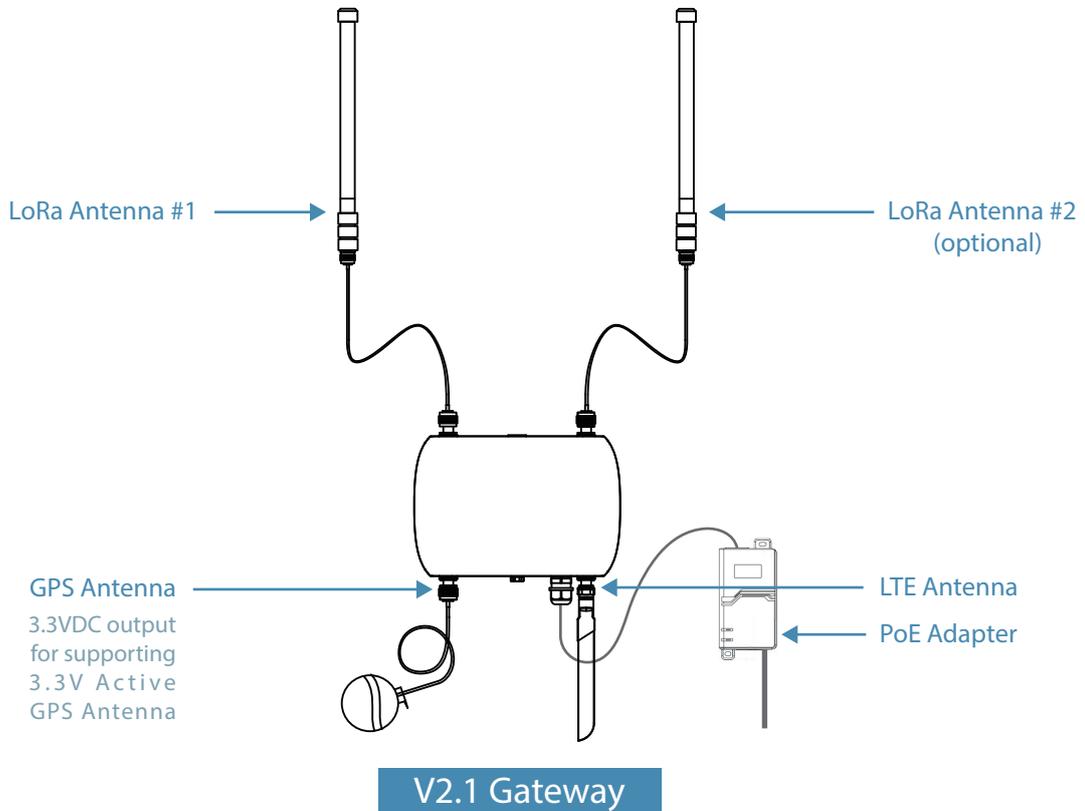
LoRa 0 dBi antenna (optional, for direct connecting to Gateway N-Type connector application, without antenna extension cable)

LoRa 3 dBi antenna (optional, for direct connecting to Gateway N-Type connector application, without antenna extension cable)

PoE Adapter (60 Watts)



5 Cabling



Caution

Must make sure all antennas are installed properly before apply PoE power to the gateway. For un-connected N-Type Antenna Port, MUST install a " N-Type Water Protection Cap" to prevent water leaking into the device. " N-Type Water Protection Caps" are supplied with the gateway. MUST not install or remove GPS, LoRa or LTE Antenna when DC power is applied to the Gateway. It may damage the device.

Surge Protection Cable must be properly connected to gateway housing and earth ground.

6 Network Access

The backhaul network configuration on Outdoor LoRa Gateway supports several connection types which can be selected as primary and secondary WAN. When device power up, it tries to bring up primary WAN interface. If primary WAN is not available, the device will try to bring up the secondary WAN interface. Device still continue to try to monitor the availability of the primary WAN interface. Once primary interface is ready, device will switch to primary WAN immediately and shutdown secondary WAN.

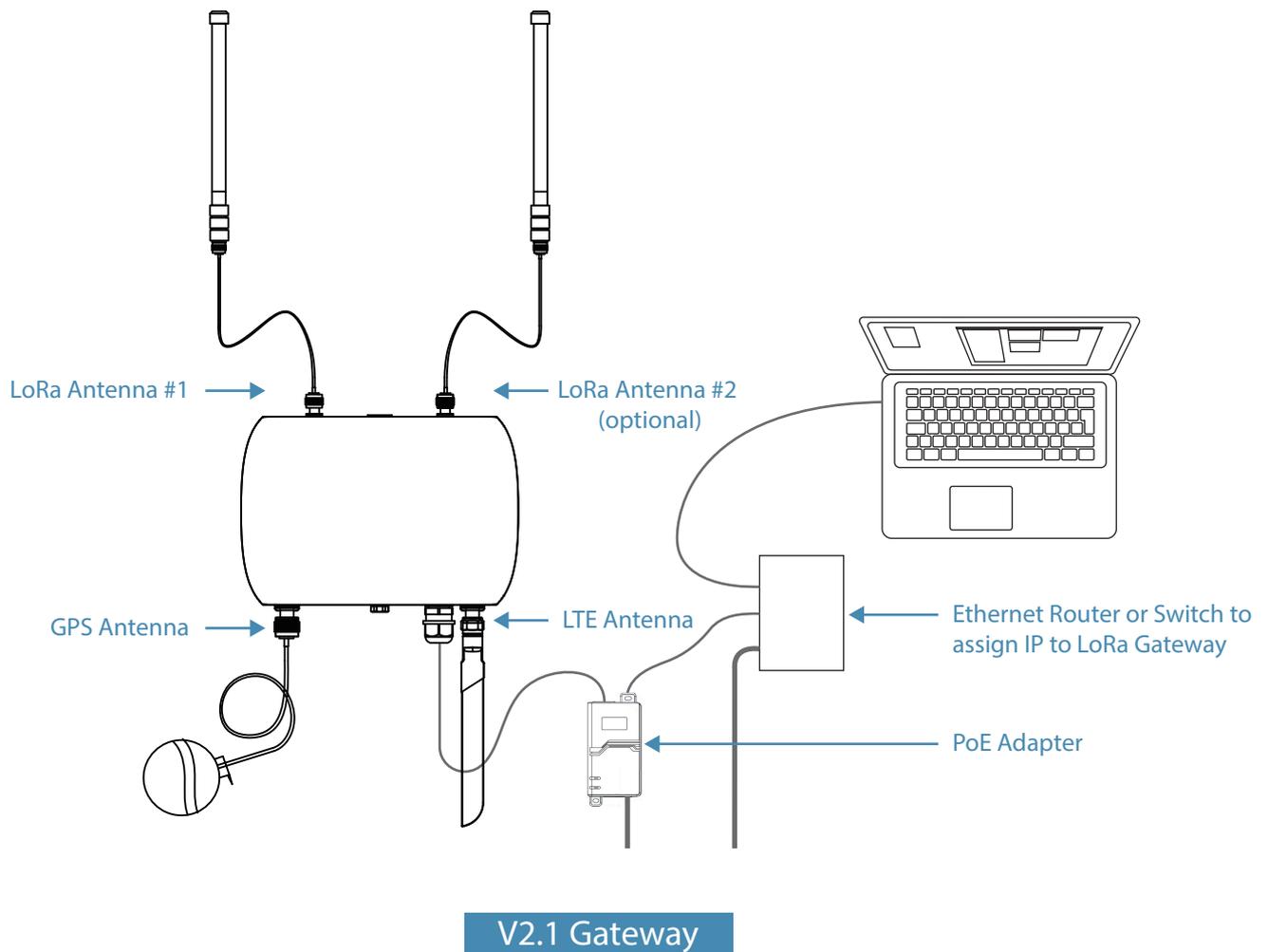
Use Default Configuration

The primary WAN is configured as Ethernet with DHCP client through the PoE connectivity. On the device with LTE support, LTE is configured as secondary WAN. In the installation environment, there is no extra configuration is needed if a DHCP server is available through Ethernet connection. For making device to have sufficient interface parameters, following information has to be supplied by DHCP server:

- [Device IP]
- [Device Netmask]
- [Default Gateway]
- [DNS server]

Changing Configuration

If default configuration does not fit the usage in installation environment, please use setup showed in following photo to change configuration. You will need a Router that have DHCP server to offer IP to Outdoor LoRa Gateway, or use a switch/ hub and running a DHCP server on PC for the same purpose. After device acquired IP, you need to use PC to access device. As for the detail of changing configuration, please refer to User Manual.



WAN Page

This page describes the backhaul configuration. There are three kinds of backhaul which are Ethernet over PoE, WiFi client mode and LTE (if both LTE module and SIM card are installed) and can be selected and configured through their own settings.

The screenshot displays the WAN Settings page in a web browser. The browser's address bar shows the URL 192.168.87.228. On the left side, there is a navigation menu with the following items: STATUS, WAN, NTP, Management, and LRR Log. The main content area is titled "WAN Settings" and is divided into several sections:

- Primary WAN Type:** Radio buttons for Ethernet, WiFi, and LTE. Ethernet is selected.
- Secondary WAN Type:** Radio buttons for Ethernet, WiFi, LTE, and None. None is selected.
- Ethernet Settings:**
 - Ethernet IP Type:** Radio buttons for Static and DHCP. DHCP is selected.
- WiFi Client Settings:**
 - WiFi IP Type:** Radio buttons for Static and DHCP. DHCP is selected.
 - WiFi Security Type:** Radio buttons for Open, WPA2-PSK, and WPA/WPA2-PSK. Open is selected.
 - WiFi SSID:** Text input field containing "FOX_C_AP".
 - WiFi WPA Passphrase:** Password input field with a "Show password(8-63 characters or 64 hex digits)" checkbox.
- LTE Settings:**
 - LTE Power:** Radio buttons for Enable and Disable. Enable is selected.
 - LTE APN:** Text input field containing "any".
 - LTE Username:** Text input field containing "any".
 - LTE Password:** Password input field containing "...".

An "Apply" button is located at the bottom right of the settings area.

7 Model List

Base Unit Ordering Information

Model #	Description
T77I868.00	• EU: Outdoor LoRa V2.1 Gateway, 863 - 870 MHz with LTE
T77I868.01	• EU: Outdoor LoRa V2.1 Gateway, 863 - 870 MHz without LTE
GML820U-915U	• USA: Outdoor LoRa V2.1 Gateway, 902 - 928 MHz with LTE
GME820K-920U	• S. KOREA: Outdoor LoRa V2.1 Gateway, 920.9 - 923.3 MHz without LTE
GML820P-923U	• Asia Pacific: Outdoor LoRa V2.1 APAC/ AS923 Gateway, 915 - 928 MHz with LTE
GML810E-868U	• EU: Outdoor LoRa V1.5 Gateway, 863 - 870 MHz with LTE, (SW: PKGV3-20170418-FULLSDK1003)
GME810E-868U	• EU: Outdoor LoRa V1.5 Gateway, 863 - 870 MHz without LTE, (SW: PKGV3-20170418-FULLSDK1003)
T77I778.01	• Japan: Outdoor LoRa V1.5 Gateway, 922.0 - 923.4 MHz with LTE
GME810V-920U	• Vietnam: Outdoor LoRa V1.5 Gateway, 920 - 925 MHz without LTE
T77I776.01	• Taiwan: Outdoor LoRa V1.0 Gateway, 922.4 - 925 MHz with LTE
GME800C-470	• China: Outdoor LoRa V1.0 Gateway, 470 - 480 MHz without LTE

If you need further assistance for purchasing the PoE adapter, please contact ufiSpace for more information.

Connecting Earth Ground to Unit

Warning

The equipment has a separate protective earthing terminal on the chassis that must be permanently connected to earth ground to adequately ground the chassis and protect the operator from electrical hazards.

Caution

Before equipment installation begins, ensure that a service personnel has attached an appropriate grounding lug to the grounding cable that you supply.

Power installation must be performed with qualified electrician and followed with National Electrical Code, ANSI/NFPA 70 and Canadian Electrical Code, Part I, CSA C22.1.

To connect earth ground to Unit

- 1 Connect one end of the grounding cable to a proper earth ground.
- 2 Place the grounding lug attached to the grounding cable over the protective earthing terminal.
- 3 Secure the grounding lug to the protective earthing terminal with the washers and screws.
- 4 Dress the grounding cable and ensure that it does not touch or block access to other components.

Warning

- At first before powered on, connect the frame of the unit to earth.
- For earthing wire, green-and-yellow insulation is required and the cross-sectional area of the conductor must be more than 10 AWG.

The product shall be installed by a qualified service person and the installation shall conform to all local codes.

8 Appendix A

Declarations of Conformity and Regulatory Information

FCC (GML820U-915U)

Safety Information

Follow the guidelines in this section to ensure proper operation and safe use of the ufiSpace LoRa V2.1 Outdoor Gateway.

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.

**WARNING :**

HOT SURFACE DO NOT TOUCH !!

Before touching it, special attention or protection is necessary.

WARNING :

This equipment is intended to be used in a Restricted Access Location, with access limited to SERVICE PERSONAL and USERS authorized to be in that location.