



WSMS-123 Installation Guide

IOT Macro Gateway

(Date: 8/24/2016)

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Revision History:

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Abbreviation:

Outline:

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Tables:

N/A

1 Application

This document is to describe the installation procedure and application of the IOT Macro Gateway.

Project Code : WSMS-123

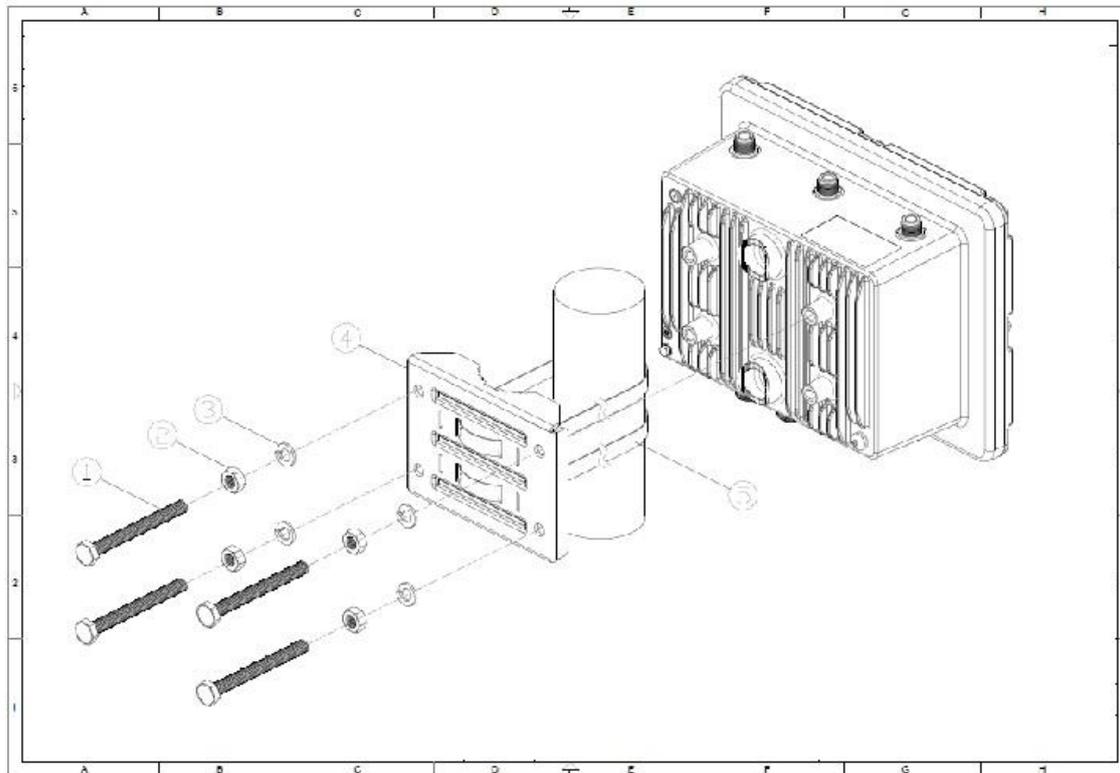
2 Product Overview

The IOT Macro Gateway is one of many gateways in our wireless IOT solution. Each IOT Macro Gateway can listen and receive LoRa packets on 64 channels concurrently. It can supports tens of thousands of our IOT nodes. Our nodes can be sensor nodes, meter nodes and trackers. They send packets to the IOT Macro Gateways covering the area, which in turn send the data to the cloud server where data can be analyze and used for billing purpose.

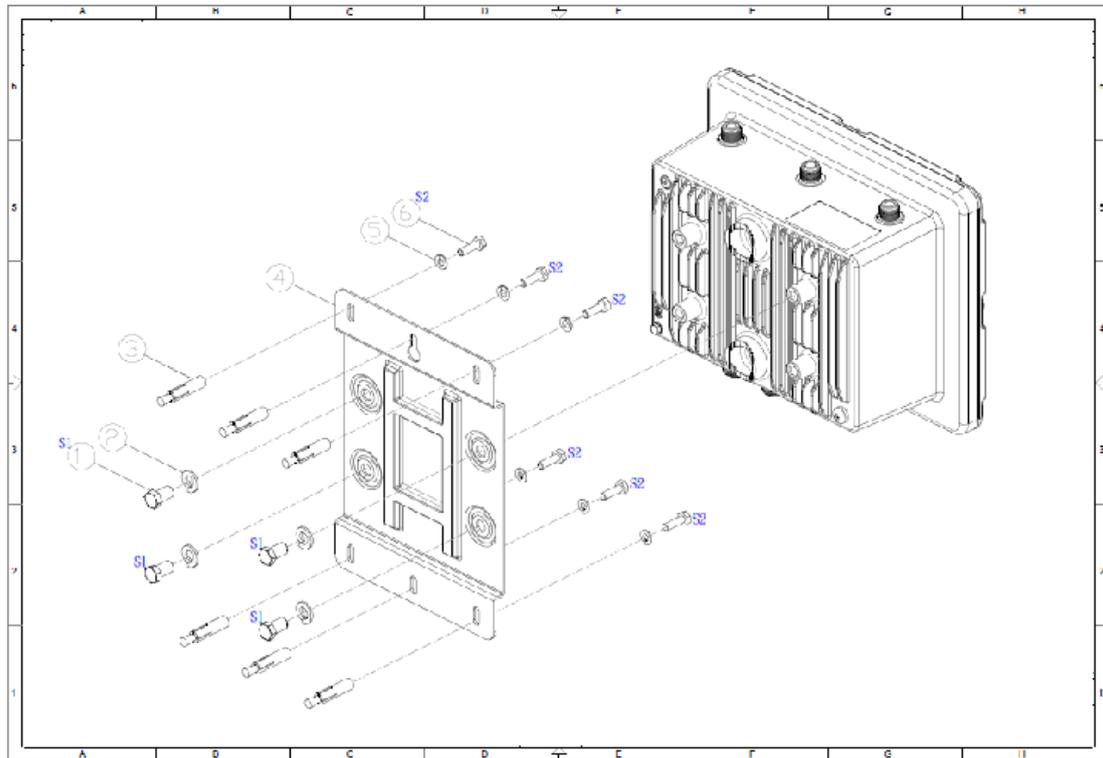


2.1 Enclosure Features

The IOT Macro Gateway is designed to be mounted on a mounting pole. It comes with mount kit as shown here:



The IOT Macro Gateway can also be mounted on a wall. It comes with mount kit as shown here:



2.2 Power-Over-Ethernet (PoE)

A CAT5 PoE interface is used to split the Data and Power carried by a CAT5 cable to the internal equipment. To supply the required current to the equipment, the PoE adapter should be used.

3 Installation

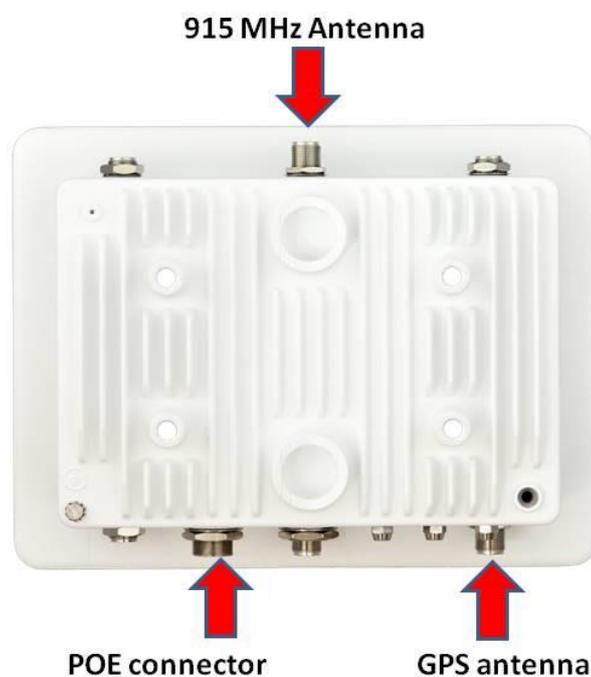
3.1 Professional Installation

The IOT Macro Gateway, and any associated accessories require professional installation; a) installation of the equipment must be controlled, b) installation must be performed by professionals, c) installation of the equipment requires special training.

3.2 Mounting

As described earlier, the IOT Macro Gateway comes with a mount kit for mounting on a pole. The antennas can be directly connected to the IOT Macro Gateway, or preferably be extended and mounted on the pole at a meter apart.

3.3 Cabling



Connections

Connect the 915MHz antenna cable to the middle connector on the top side as shown in the figure

Connect GPS antenna cable to bottom right antenna connector

Connect the Power (PoE) to the Gateway at the POE connector

3.4 LED Indicators

- None

4 Antenna Parameters

This device has been tested with the antenna listed below, and has a peak gain of 7.2 dBi. The required antenna impedance is 50 ohms.

Table 1 Typical Antenna

Manufacturer	Part Number	Gain	Type
Auden	O-UF-1602-OA	7.2dBi	Dipole

Additional equivalent antennas from other manufactures may be substituted and then marketed with this equipment. Equivalent antennas must be of the same type (e.g. Omni-Directional) and must be for 915 MHz band and have same out of band characteristics.

5 Appendix

FCC Statement

Federal Communication Commission Interference Statement

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.

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.

IMPORTANT NOTE:

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.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Country Code selection feature to be disabled for products marketed to the US/CANADA.

Professional installation instruction

Please be advised that due to the unique function supplied by this product, the device is intended for use with our interactive entertainment software and licensed third-party only. The product will be distributed through controlled distribution channel and installed by trained professional and will not be sold directly to the general public through retail store.

1. Installation personal

This product is designed for specific application and needs to be installed by a qualified personal who has RF and related rule knowledge. The general user shall not attempt to install or change the setting.

2. Installation location

The product shall be installed at a location where the radiating antenna can be kept 20cm from nearby person in normal operation condition to meet regulatory RF exposure requirement.

3. External antenna

Use only the antennas which have been approved by the applicant. The non-approved antenna(s) may produce unwanted spurious or excessive RF transmitting power which may lead to the violation of FCC limit and is prohibited.

4. Installation procedure

Please refer to user's manual for the detail.

5. Warning

Please carefully select the installation position and make sure that the final output power does not exceed the limit set force in relevant rules. The violation of the rule could lead to serious federal penalty.