

Alpha Space IoT Gateway User Manual

1 Product Overview

Alpha Space Gateway which is developed by SENSORO and features excellent indoor signal coverage and strong hardware protection is designed and built for indoor IoT scenarios that require low power-consumption, long range and low throughput, hence capable of handling the data communication of a large-scale sensor network. As the core infrastructure of the SENSORO LPWAN, its powerful data processing capability is designed to support and connect thousands of nodes into the network and provide a data path from the nodes all the way to the cloud. This IoT gateway supports multiple communication modes to servers (4G, Ethernet, Wi-Fi) for flexibility to adapt to various scenes; multi-network hot backup is also available to improve reliability and stability in data communication.

2 Features

- Ultra long-range wireless signal coverage
- Multi-channel parallel data processing capability to support thousands of sensor nodes
- Dynamic network optimization designed for high communication stability and performance
- Multi network backup options to ensure stability in data communication
- Multi built-in sensors for remote monitoring of gateway status
- High grade full metal material, overall thermal design, 0°C ~ +55°C wide-range operating temperature
- Exception monitoring & self-recovery function
- Remote system upgrade, reset, factory recovery and configuration
- Tri-layer encryption to ensure data security

3 Technical Specifications

Dimensions	141mm x 249mm x 27mm
LED	RGB LED indicating system status
Power Input	Power over Ethernet (PoE+) (802.3at)
Power Consumption	< 24W

- network, in the order of Ethernet, Cellular and Wi-Fi. And the gateway will automatically choose the current available network without manual configurations and settings.
- The IoT gateway support the SELF DIAGNOSTICS. The status LED will blink yellow when the gateway powers on and will keep yellow when the gateway works.

4 Test Guide

4.1 Network Access

After gateway is powered on, it will be automatically connected to the internet. Within 2-5 minutes, the available network will be automatically selected and the gateway will connect to the cloud through the chosen network. At this time, the status of this gateway will be updated in the cloud.

4.2 Communication with sensors

When the gateway goes into normal state, just place the sensor near the gateway and its data and status will be updated in the cloud in a short time.

4.3 Communication Range

- To achieve the optimal communication performance, the gateway should be deployed in indoor environment without occlusions and radio interference.
- To test the communication range, just place the sensor device at different distances and view the upload statistics results in the cloud.

5 Installation Guide

5.1 Wall Mounted Installation

- Open package box and take out the 4 antennas and connect them to the corresponding ports on the gateway.
- Plug in the gateway to power it, using either an Ethernet PoE cable or DC power cable.

6 Trouble Shooting

Problems	Possible Reasons	Solutions
The LED keeps showing red after the gateway powers on	The network connection is unavailable or not stable	Please check your internet connection
The gateway works properly, however the sensor data can not be uploaded to the cloud	The LPWAN antenna cable is not connected correctly.	Please check the LPWAN antenna cable connection.

7 Notes

- The antennas should be connected to the gateway corresponding with the ports one by one, otherwise this can result in a major malfunction.
- The gateway should be installed high enough without much interference caused by metal materials.
- The complexity of the indoor environment has a great impact on the signal strength and communication quality.
- The gateway is designed without industrial waterproof and dustproof capability and is only for indoor use, so choose an appropriate installation environment.

8 Compliance 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.

Note: 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 or more 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.

Warning: changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

-- [RF Exposure Compliance](#)

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

Supplier's Declaration of Conformity

47 CFR § 2.1077 Compliance Information

Unique Identifier: Trade Name: SENSORO, Model No.: GW-1209

Responsible Party – U.S. Contact Information

US Headquarters

Seattle, United States

E-mail: seattle@sensoro.com

Phone: +1 (425) 802-4936

Address: 500 YALE AVENUE NORTH SEATTLE WA 98109

Beijing Headquarters

Customer Service Tel: 400-686-3180

Working Hours: Monday to Friday 10:00 am to 7:00 pm

E-mail: beijing@sensoro.com

Developers' QQ group: 385 456 618

Address: T1-B-2807, Wangjing SOHO, Chaoyang District, Beijing, China

Customer Service

Tell : +86 010-8416 1077

Email : seattle@sensoro.com

FCC Compliance 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.