



Wi-SUN Communication Gateway User's Manual

NJ-gw-01

Xiamen Net-Join IoT Technology Co., Ltd.

<https://light.net-join.com/>

1. Product Overview

The NJ-gw-01 series Wi-SUN communication gateway is an industrial-grade, globally adaptable edge gateway designed for multi-network access. It is optimized for scenarios such as smart cities, smart lighting, smart energy, and smart water conservancy. The gateway provides multiple uplink connectivity options, including 4G, Ethernet, Wi-Fi, and Bluetooth, and features built-in GPS/BeiDou dual-mode positioning. Equipped with versatile hardware interfaces and high-level industrial protection, the device supports massive terminal connections, data acquisition, protocol conversion, remote management, and edge computing, ensuring reliable 24/7 operation in harsh outdoor environments.



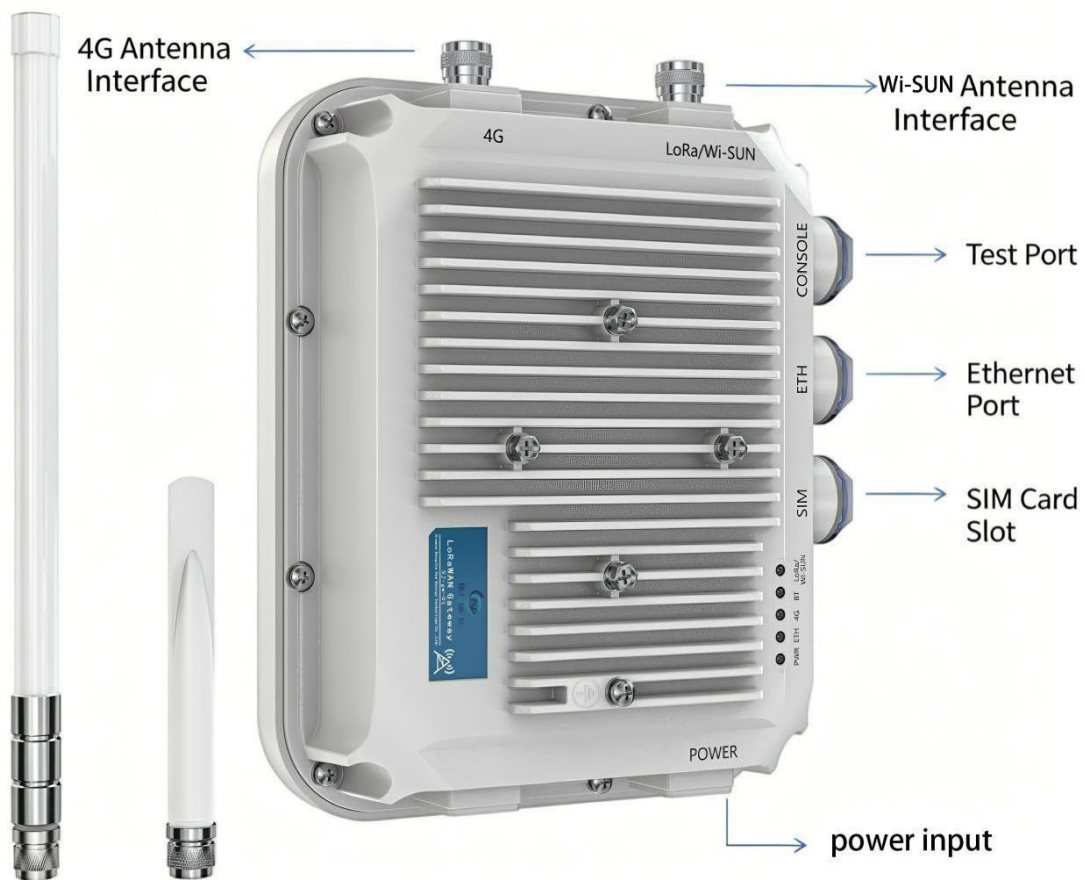
2. Key Features & Highlights

1. Native support for standard Wi-SUN protocols with high-capacity concurrent node access.
2. Multiple uplink networking options: 4G Cat 1, Ethernet, Wi-Fi, and Bluetooth.
3. Standard GPS/BeiDou dual-mode positioning for faster and more stable location tracking.
4. Versatile interfaces (from top to bottom): Debugging port, RJ45 Ethernet port, and SIM card slot.
5. Industrial-grade protection featuring wide temperature and voltage tolerances, lightning/surge protection, and an IP65 rating.
6. Support for local Web configuration, remote OTA upgrades, and integration with MQTT/HTTP cloud platforms.

3. Hardware Description

3.1 Hardware Interface Description (From Top to Bottom)

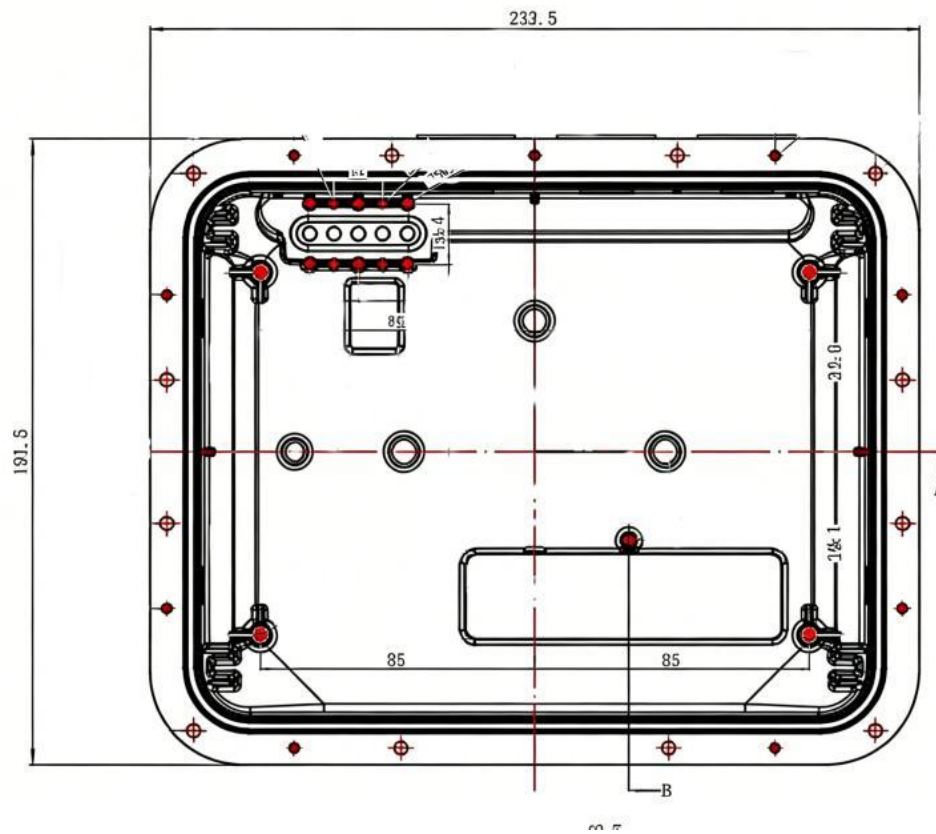
- Debug Port: USB interface for debugging.
- Ethernet Port: RJ45 10/100M adaptive Ethernet port.
- SIM Card Slot: Supports standard SIM cards for 4G full network and regional network operators.
- Antenna Interfaces: Dedicated RF ports supporting Wi-SUN wireless communication, 4G, and Wi-Fi.



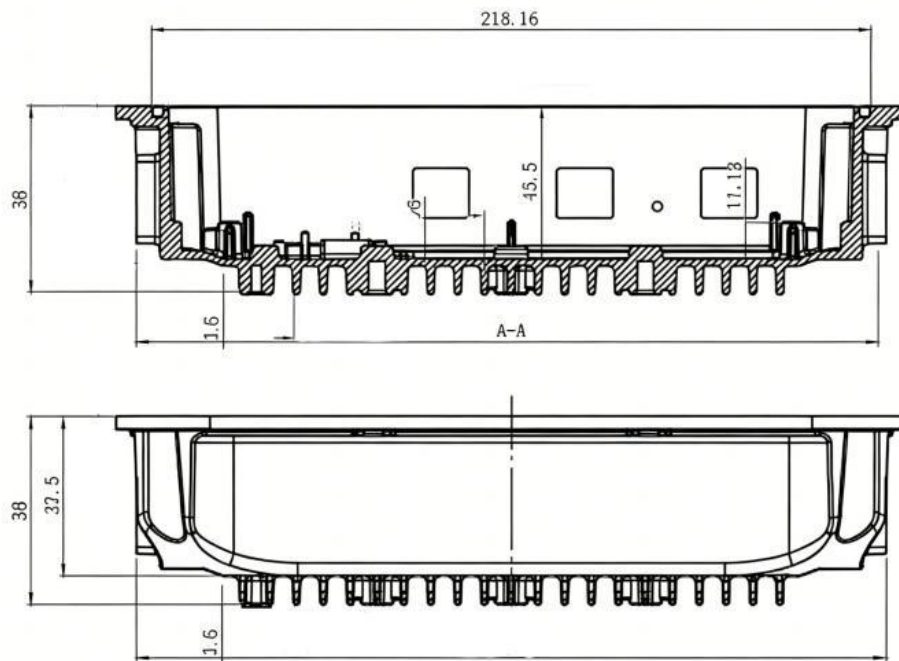
3.2 Product Dimensions (Unit: mm)

Product dimensions (L×W×H) : 233.5mm×191.8mm×38mm

Product Weight: 1.5kg



Gateway Top View



Gateway Side View

3.3 Product Rendering



Front View

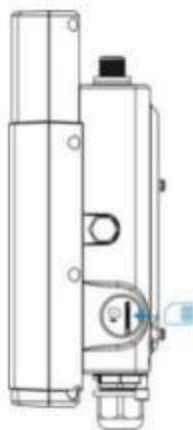


Rear View

4. Hardware Installation

4.1 SIM Card Installation

1. Insert the SIM card into the slot following the indicated direction until it clicks into place. To remove, press the SIM card inward to eject it.
2. Screw the SIM card slot waterproof plug onto the interface, then secure and tighten it using a wrench.



4.2 Gateway Installation

The NJ-gw-01 communication gateway supports both wall-mount and pole-mount installation methods. Before mounting, ensure that all accessories (such as the SIM card, network cables, and antennas) are properly installed and the software configuration is complete.

Note: Do not power on the device or connect it to other equipment during installation.

4.3 Outdoor Installation Guidelines

1. The installation position of the gateway must maintain a clearance angle of at least 20 degrees from the building edge and a minimum distance of 50 cm from the building wall.
2. The Wi-SUN antenna should be positioned lower than the highest point of the building.
3. During installation, the antenna must be kept vertical to the ground to ensure optimal performance.
4. Comprehensive lightning protection measures (such as surge protectors/lightning arresters) must be implemented for the gateway, power supply equipment, and antennas. Both the antenna and its feeder line must be properly grounded.
5. The RF feeder connectors on the antenna must be thoroughly waterproofed. Water ingress over time will increase contact resistance at the connector, resulting in higher signal line loss and degraded antenna performance.
6. When using cellular networks, select an installation location with optimal cellular signal strength.

5. Technical Specifications

5.1 Basic Specifications

Parameter	Specifications
product name	Wi-SUN Communication Gateway
model	NJ-gw-01AM / NJ-gw-01EU

protocol standard	Wi-SUN、 4G
Input voltage	DC 12V/24V
Operating power	<4.5W
4G Operating Frequency Band	Europe/Asia (excluding Japan) B1/B3/B5/B7/B8/B20/B28/B38/40/41 North America (United States/Canada/Mexico): B2/4/5/7/12/13/17/18/19/25/26/38/41/66/71
Data Protocol	UDP/TCP/MQTT
Regions	NJ-gw-01AM: North America and South America; NJ-gw-01EU: Europe, Asia, Africa
transmitting power	19–22 dBm (adjustable)
receiving sensitivity	≤ -110 dBm @ 50 kbps
Node Connection Capability	Max 200 + Wi-SUN terminus
Product Weight	Approximately 1.5 kg

5.2 Uplink Network

Network Method	specifications
4G	LTE Cat.1, Global Multi-Band
Ethernet	10/100 Mbps RJ45, Auto Flip
Wi-Fi	802.11b/g/n 2.4G
Bluetooth	BLE 5.0 , for local debugging/distribution network

5.3 Positioning Module

Parameter	Specifications
Location Type	GPS + Beidou Dual Mode (Standard)
Positioning accuracy	Horizontal positioning <5 m (open environment)
Cold startup time	≤ 30s
Hot Start Time	≤3s

5.4 LED status

Status	Wi- SUN LED	Description
Power ON	Steady ON	Device powered on, Wi-SUN module supply normal
Searching	Slow blinking	Device is searching / joining Wi-SUN network
Online	Fast blinking	Device has joined the Wi-SUN network and is online



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