

GATEWAY OUTDOOR

USER GUIDE

PRODUCT DESCRIPTION

The Memolub Connect Series Outdoor gateway is featuring industrial-grade components, it ensures a high level of reliability. It supports up to 16 LoRa channels and offers multi-backhaul options with Ethernet, Wi-Fi, and cellular connectivity. Additionally, it provides a dedicated port for various power options, including solar panels and batteries. Its redesigned enclosure accommodates LTE, Wi-Fi, and GPS antennas internally for enhanced aesthetics and functionality. The gateway runs on a secure and flexible operating system based on the latest OpenWrt kernel. It supports extension modules for enhanced customization, and offers centralized remote management and configuration via WisDM, making it ideal for deploying and operating large-scale gateway networks.

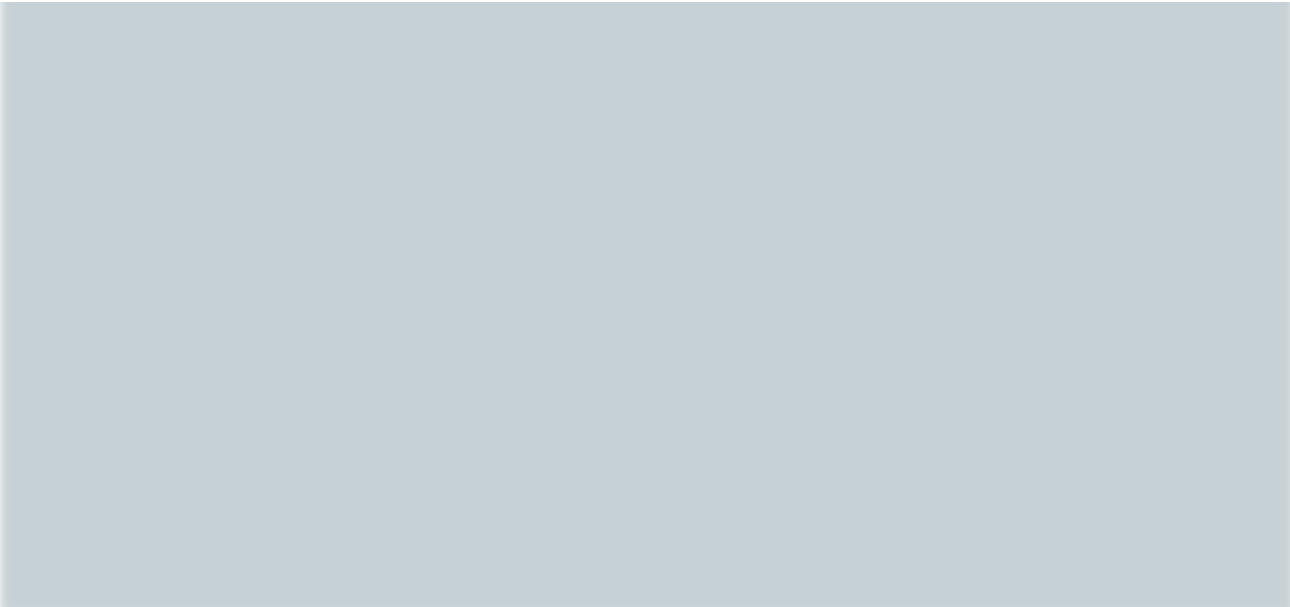
WARNING: This product is intended to be powered by 12 VDC through a designated power port. The use of solar chargers is not recommended, as they may supply overvoltage, potentially damaging the device. We strongly discourage the use of such chargers with this product, and any damage incurred as a result will void the warranty.

PRODUCT FEATURES

Hardware

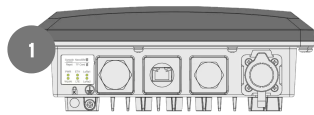
- IP67/NEMA-6 industrial-grade enclosure with cable glands
- PoE (802.3af) + Surge Protection
- Dual LoRa Concentrators for up to 16-channel options
- Backhaul: Wi-Fi, Ethernet, and LTE (optional, available with RAK7289CV2)
- GPS
- Supports 12 VDC or solar power supply with electricity monitoring (Solar Kit optional)
- Internal antennas for Wi-Fi, GPS, and LTE, external antenna for LoRa
- Dying gasp

Software

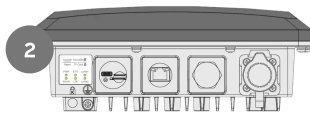
- OS for configuring and managing the gateway.
 - Extensions to add support for features such as OpenVPN, WireGuard VPN, and more.
 - Remote management with WisDM Fleet Management
 - Built-in Network Server (full LoRaWAN support v1.0.3)
 - Full LoRaWAN Stack support with Semtech SX1303
 - LoRa Frame filtering (node whitelisting in Packet Forwarder mode)
 - MQTT v3.1 bridging with TLS encryption
 - Fine timestamping
 - Buffering of LoRa frames in Packet
 - Forwarder mode in case of NS outage (no data loss)
 - Listen Before Talk (optional)
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INSTALLATION GUIDELINES

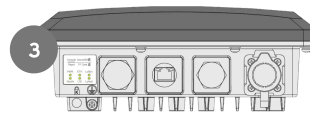
SIM Card Installation



Start by unscrewing the cap of the NanoSIM interface on the gateway enclosure to expose the SIM card slot.

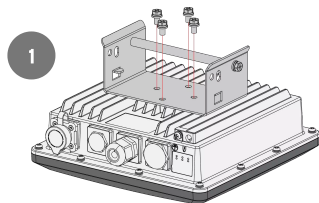


Push the SIM card into the card slot according to the placement method marked on the interface.

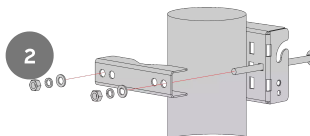


Once completed, screw back the metal cap. Make sure it is tightly screwed.

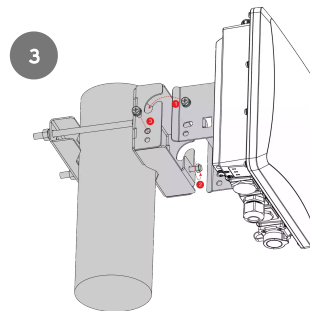
Mounting



Fix the bracket included in the mounting kit on the bottom of the enclosure with four M6*12 screws.



Position the pole clamps together around the pole, then tighten them with bolts, washers, and nuts.

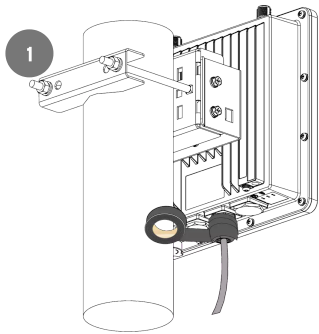


Mount the enclosure and secure it to the bracket.

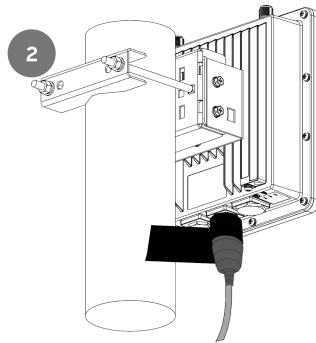


Weather protection

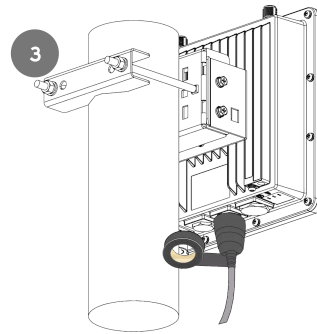
To better protect the Ethernet cable gland and the antenna connector from the weather, you need to cover them with PVC tape.



1
Clean the surface area of the connector that will be wrapped. Wrap a layer of PVC tape with a 50% overlap according to the rotation direction of the connector. Continue wrapping the PVC tape to about 10 mm below the end of the connector.



2
Cut off about 50 cm waterproof tape. Stretch it to double the length. Wrap three layers around the connector with a 50% overlap. Hold the tape in place with your hand for a few seconds.



3
Wrap three additional layers with PVC tape with natural uncoiling force and a 50% overlap. Ensure to cover the head and the tail of the connector.

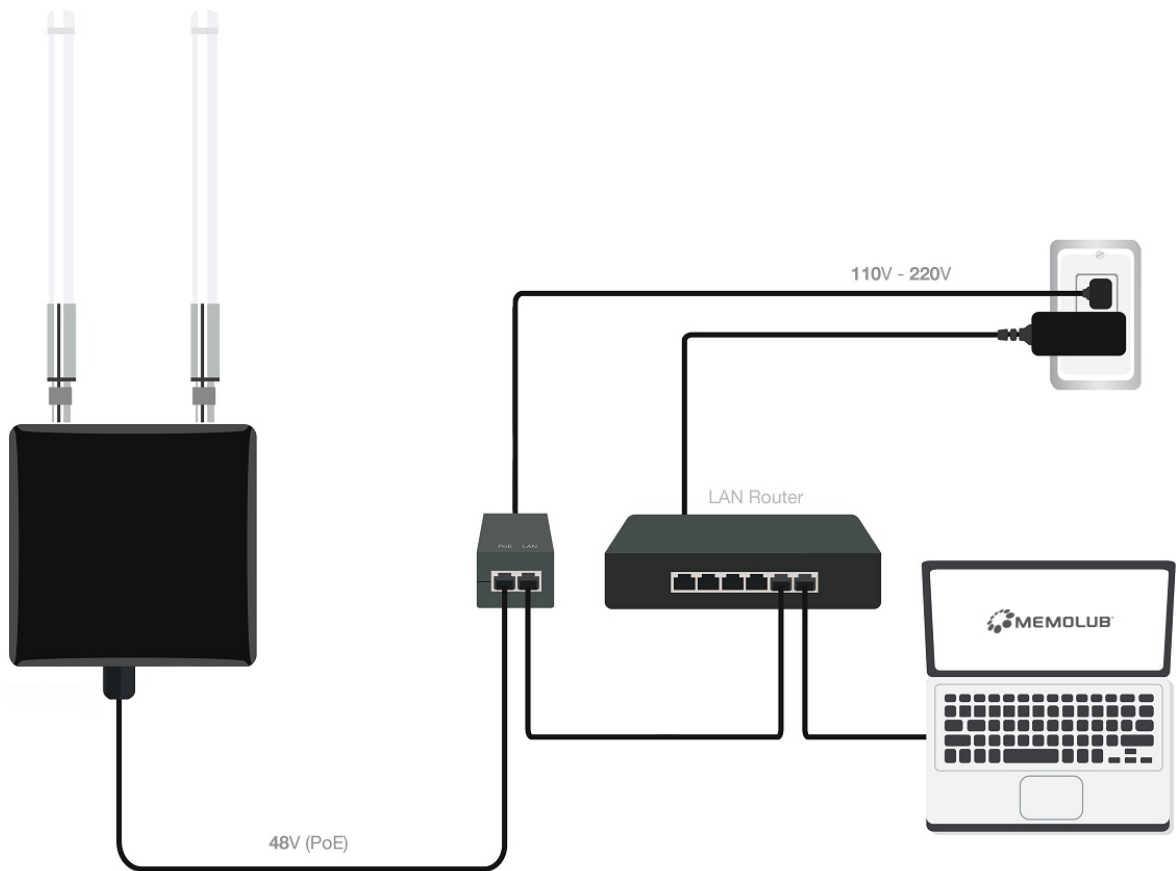
Connect the PoE Adapter

If you choose to power the gateway via PoE or access the gateway and internet via the ETH port, you need to refer to this section. Otherwise, skip it.

Connect one end of the Ethernet cable (Cat5e or better) to the ETH(PoE) port on the gateway and the other end to the PoE port of the PoE injector.

Connecting through ethernet

To access the Internet through the ETH (PoE) port, make sure you have completed the steps defined in the "Connect the PoE Adapter section".



Lightning Protection

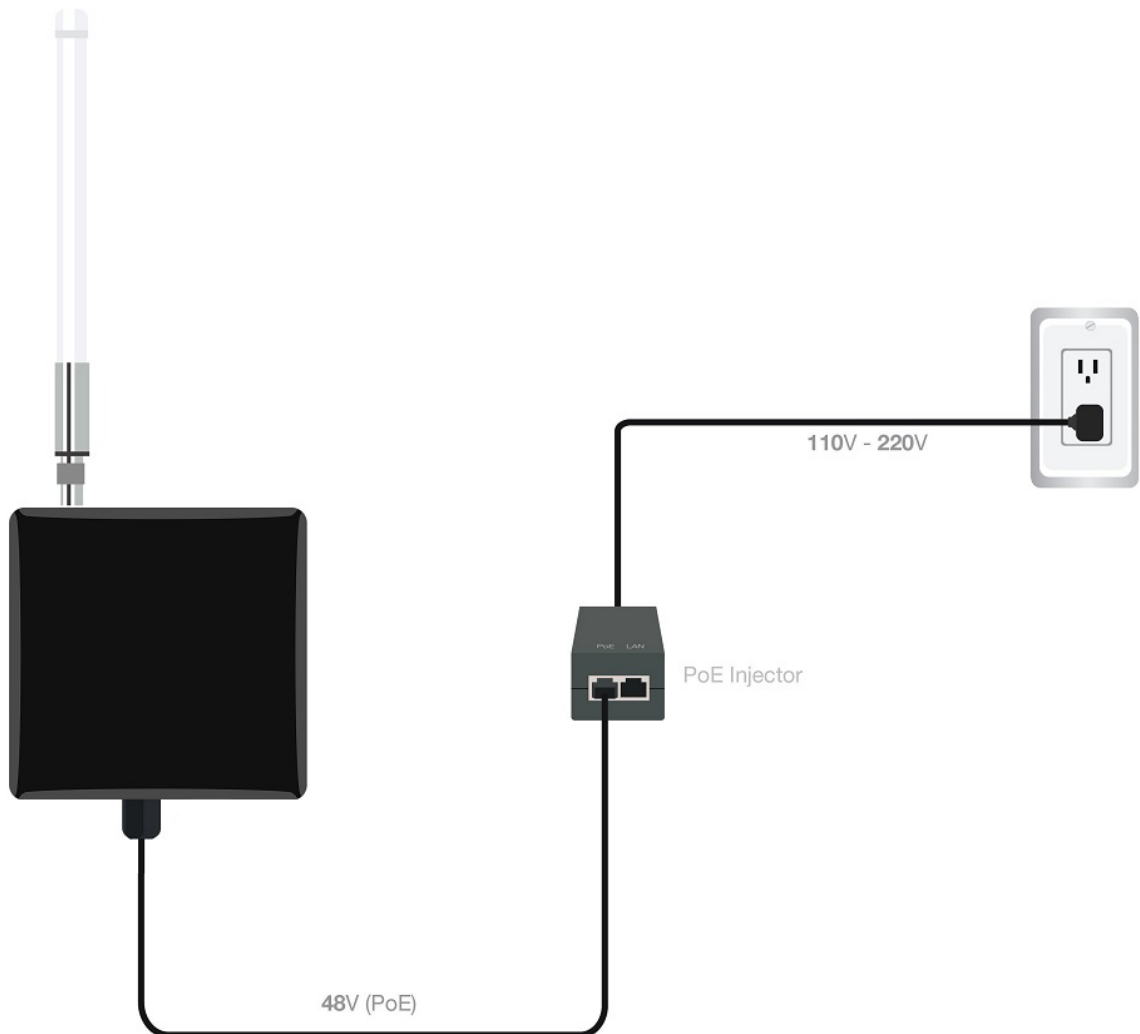
This section covers the installation of the lightning surge protection system when deploying the RAK7289V2/RAK2789CV2 gateway, both outdoors and indoors. Such a protection system must be taken into consideration to ensure a fully functional gateway without interruptions or damage from lightning.

Do not power the device if any antenna port has been left open.

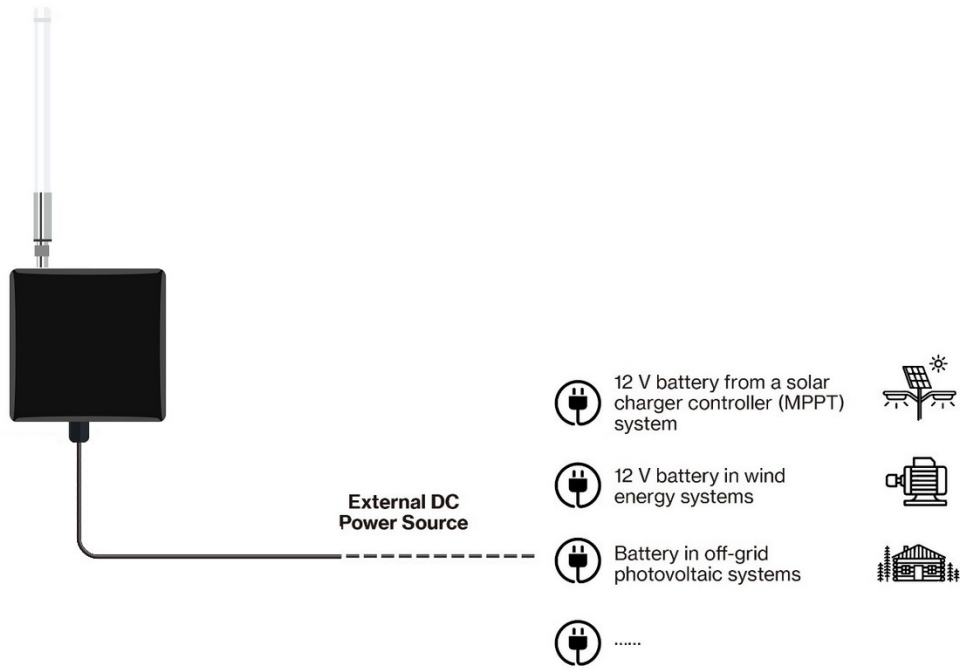
The gateway supports multiple power supply options. Connect the gateway to the appropriate power source based on your needs.

Power Cord + PoE Adapter: The gateway is powered via PoE, make sure you have completed the steps defined in the Connect the PoE Adapter section.

1. Connect one end of the power cord to the PoE adapter.
2. Connect the other end of power cord to a power outlet, your gateway can be powered on.



DC Cable: The gateway is powered by an external DC power supply. You need to use the DC cable to connect an external power supply. The external power supply voltage range: 12 V_{DC}.



FAQ

How do I power the gateway safely?

The gateway should be powered using a 12V DC power supply or through PoE (Power over Ethernet, 802.3af). Do not use solar chargers directly. They can supply unstable voltages and may damage the device.

Can I use this gateway in off-grid or remote environments?

Yes. The gateway is compatible with the RAK Battery Plus, making it suitable for solar-powered or off-grid setups.

How do I manage the gateway remotely?

You can manage it using WisDM, RAK's cloud-based device management platform. It allows you to monitor, configure, and update your gateways remotely. Create a WisDM account, add your gateway by serial number, and start managing devices across your network. Ensure your gateway has internet access for cloud syncing.

Does the gateway support firmware updates over the air (FUOTA)?

Yes. WisGateOS 2 combined with WisDM enables **remote firmware updates**, configuration changes, and device monitoring.