

RAK7267 WisGate Soho Pro User Manual

Product Description

The RAK7267 WisGate Soho Pro is an innovative 8-channel LoRaWAN gateway designed for outdoor deployments. It supports Wi-Fi and cellular connectivity, with a specifically tailored enclosure that allows the LoRa, LTE, Wi-Fi, and GPS antennas inside the enclosure.

This gateway uses an IP67-rated Unify Enclosure, a weatherproof and flame-retardant enclosure made of UV-stabilized ABS plastic that protects internal components from dust and water.

In addition, RAK7267 operates under WisGateOS 2, which is built on the latest OpenWrt kernel. The OS Web UI features a new design and supports multiple extension installations, enabling remote management using WisDM for personalized gateway customization.

Product Features

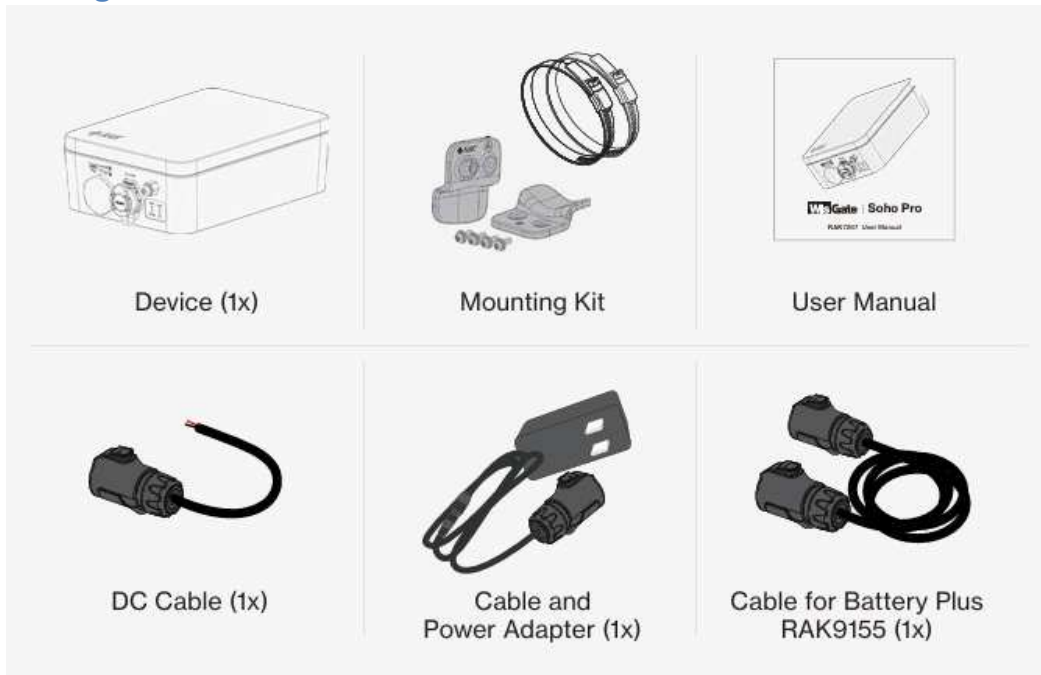
Hardware

- IP67 Unify enclosure
- LoRa Concentrator for up to **8 channels**
- Backhaul: Wi-Fi and LTE
- Supports 9 ~ 36 VDC power supply and RAK Solar Battery Kit
- Internal antennas for LoRa, LTE, Wi-Fi, and GPS

Software

- WisGateOS2
- WisGateOS2 Extensions – OpenVPN, Wireguard VPN, and others
- Remote management with WisDM Fleet Management
- Built-in Network Server (LoRaWAN support V1.0.3)
- LoRaWAN Stack support with Semtech SX1303
- LoRa Frame filtering (node whitelisting in Packet Forwarder mode)
- MQTT v3.1 bridging with TLS encryption
- Buffering of LoRa frames in Packet Forwarder mode in case of NS outage (no data loss)
- Listen Before Talk
- Fine timestamping

Package Inclusion



The packing list shows the cables for all power options supported by the gateway. This may not exactly match the cable options out of the box, depending on the bundle you purchased.

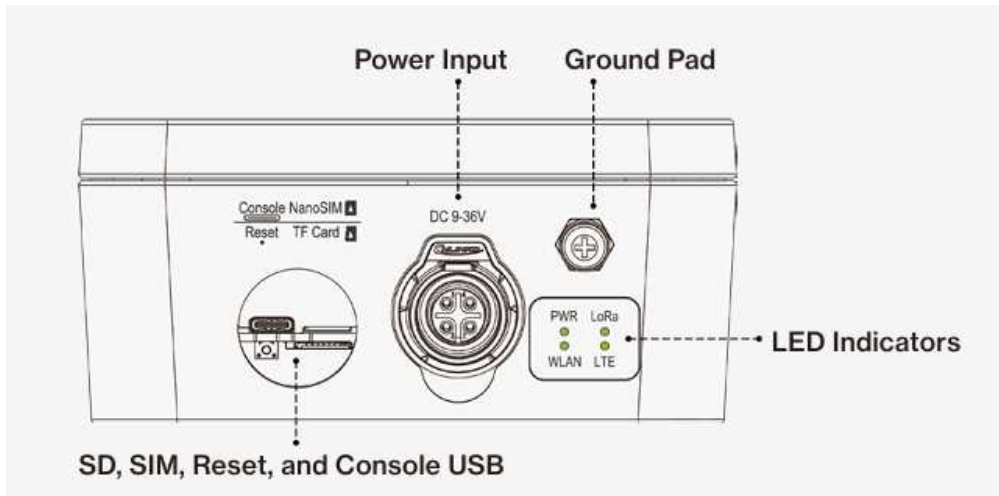
Main Specifications

FEATURE	SPECIFICATIONS
Computing	MT7628, DDR2 RAM 128 MB
LoRa Feature	SX1303 On Board 8 Channels RX Sensitivity: - 139 dBm (Min) TX Power: 27 dBm (Max) Listen Before Talk
Frequency	EU868 / IN865 / RU864 / US915 / AU915 / KR920 / AS923-1-2-3-4
Cellular Feature	Supports Quectel EG915U-EU / EG915U-LA / EG915Q-NA (IoT / M2M -LTE Cat 1 module)

	EG915U-EU for EMEA / Brazil / Australia / New Zealand Region LTE FDD: B1 / B3 / B5 / B7 / B8 / B20 / B28 GSM: B2 / B3 / B5 / B8 EG915U-LA for Latin America Region LTE FDD: B2 / B3 / B4 / B5 / B7 / B8 / B28 / B66 GSM: B2 / B3 / B5 / B8 EG915Q-NA for North America Region LTE FDD: B2 / B4 / B5 / B12 / B13 / B66 / B71
Wi-Fi Feature	Frequency: 2.4 GHz (802.11 b / g / n) 2x2 MIMO RX Sensitivity: - 95 dBm (Min) TX Power: 20 dBm (Max) Operation channels: 2.4 GHz, 1-13
Power Supply	9~36 VDC Compatible with RAK Solar Battery Kit
Antenna	LoRa / LTE / Wi-Fi / GPS: Internal antenna LoRa Frequency Range: 863 MHz~928 MHz Peak Gain: 2.5 dBi VSWR: ≤ 1.5 Efficiency: >85% Polarization: Vertical LTE Frequency Range: 700 MHz~960 MHz / 1710 MHz~21700 MHz Peak Gain: 3 dBi

	VSWR: ≤ 3 Efficiency: >60% Polarization: Vertical Wi-Fi Frequency Range: 2400 MHz~2500 MHz Peak Gain: 2 dBi VSWR: ≤ 2.5 Efficiency: >75% Polarization: Vertical GPS Frequency Range: 1575 MHz~1602 MHz Peak Gain: 28 dBi VSWR:<2 Polarization: RHCP
Ingress Protection	IP67
Dimension	180 mm x 130 mm x 60 mm
Enclosure Material	UV stabilized ABS
Operating Temperature	- 30° C ~ + 55° C
Storage Temperature	- 40° C ~ + 85° C
Operating Humidity	0~95%RH non-condensing
Storage Humidity	0~95 %RH non-condensing
Installation Method	Pole mounting (other options available per request)

Interfaces



⚠ IMPORTANT

The SD card inserted in the SD card slot must not be removed, as it may affect the device's performance due to the storage of various logs and data on it.

Reset Key

The functions of the Reset key are as follows:

Short press: Restart the gateway.

Long press (5s and above): Restore factory settings.

LEDs Status

LEDs	STATUS	DESCRIPTION
PWR	On	Device power on
	Off	Device power off
LoRa	On	LoRa is working
	Off	LoRa is not working
	Flash	Indicate that LoRa Packet Transmitting and Receiving

WLAN	AP Mode	
	On	WLAN is working
	Off	Wi-Fi disable
	Flash	Data Transmitting and Receiving
	STA Mode	
	Slow Flash	(1Hz) – Connection Disconnected
	On	Connection Successful
	Flash	Data Transmitting and Receiving
LTE	Slow Flash 1 (1800 ms Dark / 200 ms Bright)	Unregistered network (Network searching)
	Slow Flash 2 (200 ms Dark / 1800 ms Bright)	Idle status (Online)
	Quick Flash (125 ms Bright / 125 ms Dark)	Data Transmitting and Receiving

Installation

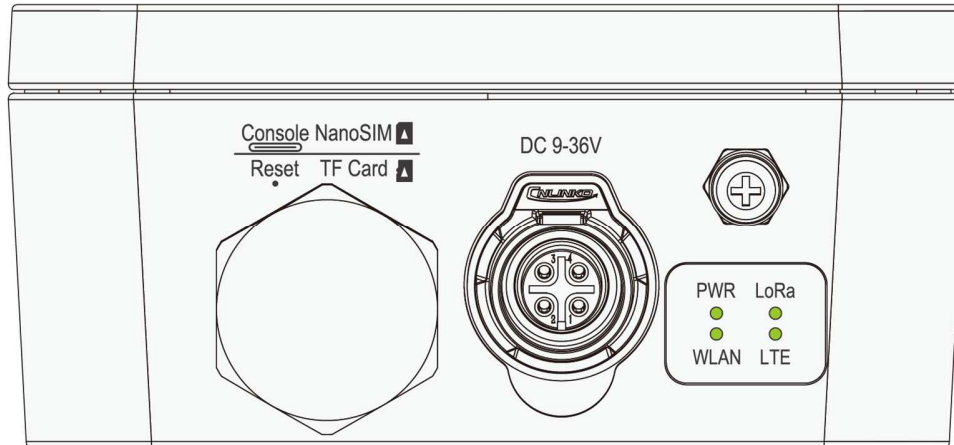
Insert SIM Card

Execute the steps below if your gateway uses a cellular network connection. Otherwise, skip this section.

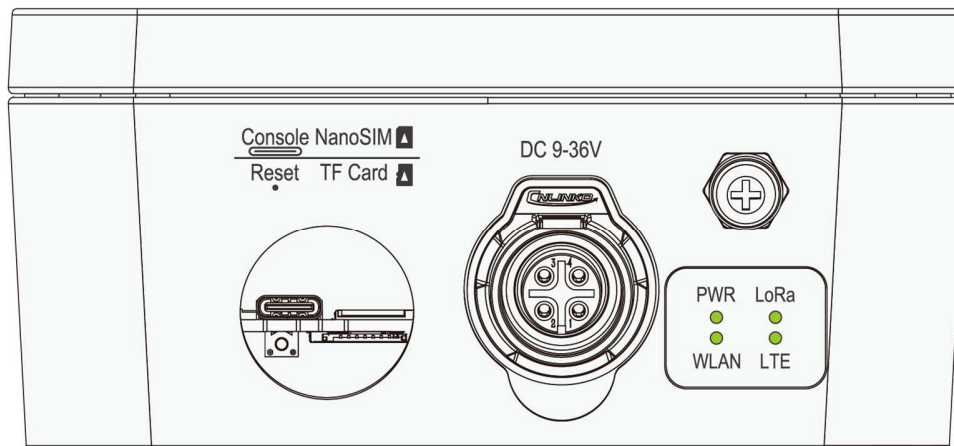
IMPORTANT

The SIM card slot is not hot-swappable. Make sure the gateway is switched off before inserting or ejecting the SIM card.

1. Unscrew the cap of the NanoSIM interface on the gateway enclosure to expose the SIM card slot.



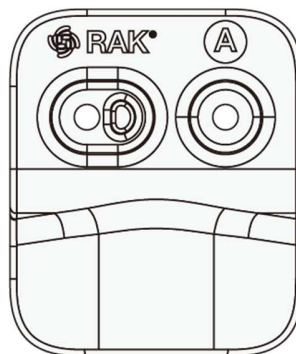
2. Push gently the SIM card into the card slot according to the placement method marked on the interface.

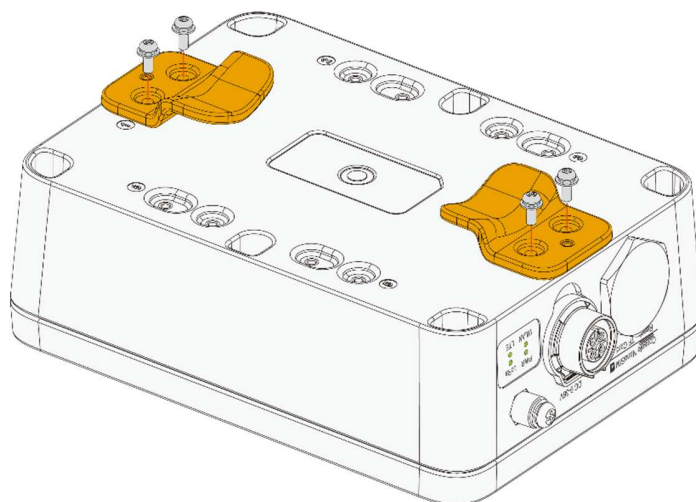


3. Once inserted, screw back the metal cap. Make sure it is tightly screwed.

Mounting

1. Fix the pole mounts marked with the letter A on the gateway Unify Enclosure using four pieces of M3 x 8 mm head screw with a washer.

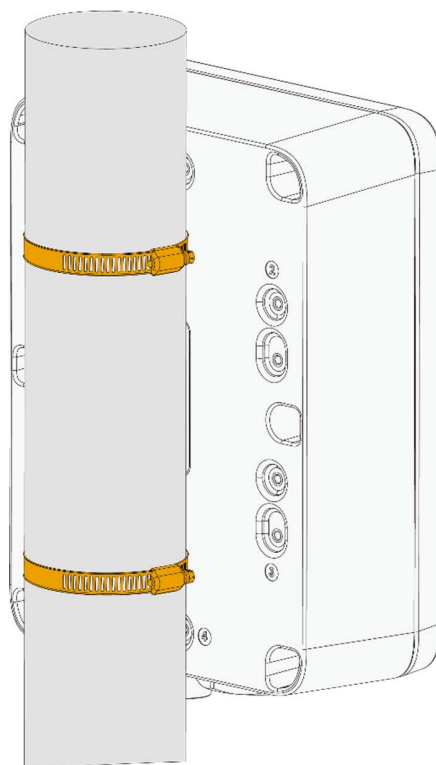




2. After fixing the mounts on the enclosure, place the Unify Enclosure onto the pole by using the two steel strips (60-85 mm).

NOTE

The steel strips **ONLY** support 60-85 mm diameter of the pole.



Lightning Protection

⚠ WARNING

Lightning strikes can generate powerful electrical surges that may harm sensitive electronic devices. It is essential to take appropriate precautions to minimize the risk of damage. The warranty provided does not cover damages resulting from lightning strikes or other acts of nature.

Gateway Grounding

To ensure optimal performance and prevent equipment damage, it is strongly advised to use a 10 AWG or better grounding wire to connect the screw terminal on the bottom side of the gateway casing to the grounding rail (bar).

Power on the Gateway

The gateway supports multiple power supply options. Make sure to connect the gateway to the appropriate power source based on the power cables included in the bundle you purchased.

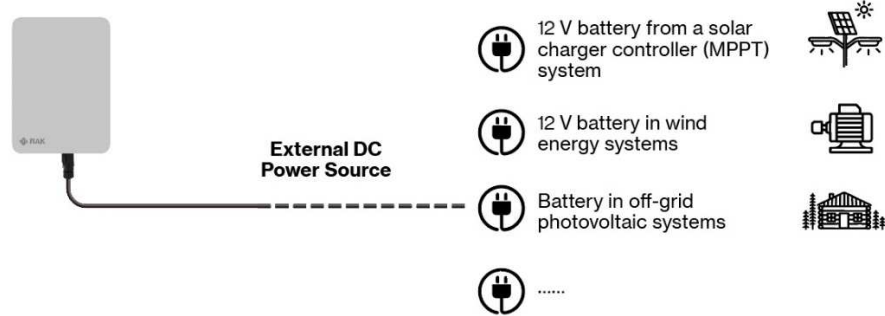
Cable and Power Adapter

For indoor deployment, it is recommended to use the cable and power adapter to turn on the gateway.



DC Cable

The gateway can be powered on using an external DC power supply. However, it is imperative to use the DC cable to connect to the external source, ranging from 9 VDC to 36 VDC.



RAK Battery Plus

For outdoor deployment scenarios, it is highly recommended to use RAK9155 Battery Plus as the gateway's power supply. There is a dedicated cable for the Battery Plus.



NOTE

The RAK9155 Battery Plus is not included in the bundle and must be purchased separately.

To make a purchase, refer to the store link or scan the QR code:

<https://store.rakwireless.com/products/rak-battery-plus-rak9155?variant=42309251563718>



Access the Gateway

For RAK7267, you need to access the gateway through Wi-Fi AP mode, which means you can find an SSID, named **RAK7267_XXXX** on your PC's Wi-Fi network list. XXXX is the last two bytes of the gateway's MAC address.

1. Using your preferred Web browser, access the gateway on the IP address: 192.168.230.1.

2. On your first login, create a password for security purposes. The set password must comply with the following rules:
 - At least 12 characters long
 - Has at least one special character (!"#\$%&'()*+,-./:;<=>?@[^_`{|}~)
 - Has at least one number
 - Has at least one standard Latin letter (used in the English alphabet)
3. On the next log in, you need to use the set password for access. The default login username is root.

Access the Internet

Cellular Network

RAK7267 supports cellular connection. Make sure you have inserted a SIM card before using the cellular network.

1. Access the gateway's Web UI. Navigate to **Network > WAN > Cellular**.
2. Expand the Cellular block and click on **Settings**. Make sure the **Interface** is enabled.

For other ways to access the internet, check the following link or scan the QR code:

<https://docs.rakwireless.com/Product-Categories/WisGate/RAK7267/Quickstart/#access-the-internet>



Certification Information



Correct Disposal of this product. This marking indicates that this product should not be disposed of with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmentally safe recycling.

CE

CE

Operating frequency range:

Technology		Frequency band [MHz]	Maximum RF output power (dBm)
LoRa		863-865, 865-868, 868-868.6, 868.7-869.2, 869.7-870	14
		869.4-869.65	27
WLAN 802.11 b/g/n		2400-2483.5	20
GSM 900		880-915(TX), 925-960(RX)	33
GSM 1800		1710-1785(TX), 1805-1880(RX)	30
LTE	Band 1	1920-1980(TX), 2110-2170(RX)	23
	Band 3	1710-1785(TX), 1805-1880(RX)	23
	Band 7	2500-2570(TX), 2620-2690(RX)	23
	Band 8	880-915(TX), 925-960(RX)	23
	Band 20	832-862(TX), 791-821(RX)	23
	Band 28	703-733(TX), 758-788(RX)	23

SIMPLIFIED EU DECLARATION OF CONFORMITY

Hereby, Shenzhen RAKwireless Technology Co.,Ltd. declares that the radio equipment type RAK7267 is in compliance with Directive 2014/53/EU. The full text

of the EU declaration of conformity is available at the following internet address:

FCC:

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.

FCC Caution:

Changes or modifications not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment.

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.

FCC RF 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 a minimum distance of 30cm between the radiator and any part of your body.

ISED:

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 30cm between the radiator and any part of your body.

Pour se conformer aux exigences de conformité CNR 102 RF exposition, une distance de séparation d'au moins 30 cm doit être maintenue entre l'antenne de cet appareil et toutes les personnes.