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# RAK7268V2/RAK7268CV2 WisGate Edge Lite 2 Datasheet

## Overview

### Description

The **RAK7268V2 / RAK7268CV2 WisGate Edge Lite 2** is part of the **RAK Edge Series**, offering flexible connectivity options to meet the needs of a wide range of IoT applications. Designed for **indoor use**, this gateway simplifies deployment with built-in Ethernet connectivity and onboard **2.4 GHz WiFi** for easy configuration through the default WiFi AP mode. The **RAK7268CV2** version additionally supports LTE uplink communication, offering optional cellular backhaul for remote deployments or environments requiring LTE connectivity.

The gateway operates on [WisGateOS 2](#), a powerful platform that ensures enhanced security, robust functionality, and flexibility for customizations via extensions. Furthermore, the **RAK7268V2 / RAK7268CV2** integrates seamlessly with [WisDM](#), enabling fleet management and remote monitoring of multiple devices, making it an ideal choice for managing large networks of gateways.

Designed for versatile indoor deployments, this gateway supports flexible power input options—including PoE, 12 V<sub>DC</sub>, and 9–24 V<sub>DC</sub>—as well as multiple LTE configurations with either built-in antennas or external antennas.

### Product Variants Overview

Gateway Model	Configuration Type	LTE Module	Power Input
RAK7268CV2	LTE (Internal Antennas)	Built-in LTE Cat 4 module	12 V <sub>DC</sub>
RAK7268CV2	LTE (External Antennas)	Built-in LTE Cat 4 module	12 V <sub>DC</sub>
RAK7268CV2	LTE (Internal Antennas)	Built-in LTE Cat 4 module	9–24 V <sub>DC</sub>
RAK7268V2	Non-LTE	Not included	12 V <sub>DC</sub>
RAK7268V2	Non-LTE	Not included	9–24 V <sub>DC</sub>



## Features

### Hardware

- 8 LoRa channels
- Supports 2.4 GHz WiFi AP for easy configuration
- 100M Base-T Ethernet with PoE (Power over Ethernet)
- RP-SMA LoRa antenna connector
- Multi-backhaul options with Ethernet, WiFi, and Cellular (only in RAK7268CV2)
- SD card for log backup and LoRa frame buffering (in case of backhaul failover)
- Optional LTE Cat 4 network (only in RAK7268CV2)
- Breathing light for visual monitoring the gateway's status

### Software

- [WisGateOS 2](#)  for enhanced security and functionality
- Extension add-ons for customized gateway functionality:
  - [Compatible with WisGateOS 2 version 2.2.x or later](#) 
  - [Compatible with WisGateOS 2 versions 2.0.x and 2.1.x](#) 
- [WisDM](#)  for remote management and monitoring
- Built-in Network Server
- Basic Station and Packet Forwarder modes
- LoRa Frame Filtering (node whitelisting in Packet Forwarder mode)
- MQTT v3.1 Bridging with TLS encryption (compatible with ChirpStack LNS)
- LoRa frame buffering in Packet Forwarder mode in case of NS outage, ensuring no data loss

#### NOTE

A 9~24 V<sub>DC</sub> power input version of RAK7268V2 or RAK7268CV2 WisGate Edge Lite 2 is available upon request. For more information or to make a purchase, kindly contact [inquiry@rakwireless.com](mailto:inquiry@rakwireless.com) .

## Specifications

### Overview

### Block Diagram

The block diagram of RAK7268V2/RAK7268CV2 shows the internal architecture of the hardware.

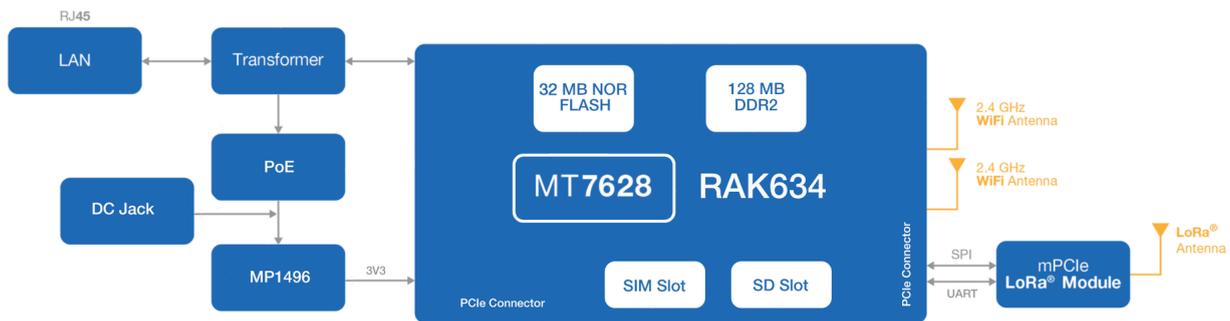


Figure 1: RAK7268V2 Block Diagram

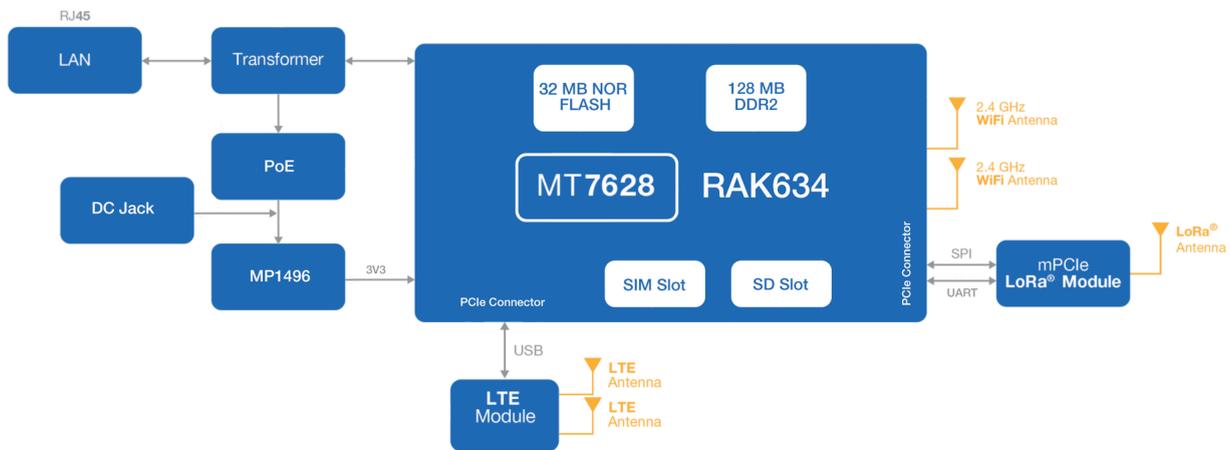


Figure 2: RAK7268CV2 Block Diagram

#### NOTE

- The internal block diagram applies to all models of the RAK7268V2 / RAK7268CV2 series, including both LTE and non-LTE versions.
- The only variant-level difference is the **DC input range**, which is either **12 V fixed** or **9–24 V wide range**, depending on the model.
- For LTE versions, the antenna type (internal or external) does not affect the internal layout—both use the same dual-antenna LTE module .



## Main Specifications

Feature	Specifications
Computing	MT7628, 128 MB DDR2 RAM
LoRa Feature	SX1302 Mini PCIe card
	8 Channels
	Frequency: EU868/IN865/RU864/US915/AU915/KR920/AS923-1/2/3/4/EU433/CN470
	LoRa Radio: Refer to the <a href="#">LoRa Radio Specifications</a> section for detailed information.
WiFi Feature	Frequency: 2.4 GHz (802.11b/g/n)
	Channels: 1-13 (2.4 GHz)
	WiFi Radio: Refer to the <a href="#">WiFi Radio Specifications</a> section for detailed information.
Cellular (Optional)	<b>Nano SIM Card:</b> 12 mm x 9 mm x 0.67 mm Supports Quectel EG95-E/EG95-NA/EC25-J/EC25-AU/EC25-E (IoT/M2M -optimized LTE Cat 4 Module) LTE Radio: Refer to the <a href="#">LTE Radio Specifications</a> section for detailed information.
Power Supply	PoE (IEEE 802.3 af), 36-57 V <sub>DC</sub> — supported by all models
	12 V <sub>DC</sub> - 1 A – available on selected models
	9-24 V <sub>DC</sub> – available on selected models
	Power consumption: 3 W (typical)



Feature	Specifications
Antenna	LoRa: External antenna / RP-SMA connector
	WiFi: Internal antenna
	LTE: Internal antenna or External antenna / RP-SMA connector (depending on version)
Ingress Protection	IP30
Enclosure Material	Plastic (PC+ABS)
Weight	0.3 kg
Dimensions	166 mm x 127.5 mm x 36 mm Gateway only (no antenna, no bracket)
Operating Conditions	Operating Temperature: -10° C to + 55° C Storage Temperature: -40° C to + 85° C
	Operating Humidity: 0-95% RH non-condensing Storage Humidity: 0-95% RH non-condensing
Installation Method	Desktop mounting Wall mounting (via included bracket) Rail mounting (via included bracket)

## Hardware

This section provides an overview of the hardware specifications for the RAK7268V2 / RAK7268CV2 gateway, including its interfaces, core functions, and key board parameters.

## Interfaces

The RAK7268V2/RAK7268CV2 gateway provides several hardware interfaces, enabling various connectivity options and functionalities. The following diagrams illustrate the gateway interfaces for each configuration:

- 12 V Power Supply



Figure 3: RAK7268V2/RAK7268CV2 12 V power interfaces

- 12 V Power Supply, With External LTE Antennas



Figure 4: RAK7268CV2 power and antenna interfaces

- 9-24 V Power Supply



**Figure 5:** RAK7268V2/RAK7268CV2 9-24 V power interfaces



## Interface Description

Interfaces	Description	Function
DC 12 V / DC 9-24 V	Power Input	Provides power supply for the gateway.
ETH (PoE)	RJ45 (10/100 Mbps)	10/100 Mbps Ethernet interface for wired network connectivity. <b>PoE (Power over Ethernet)</b> allows the gateway to receive both power and data through a single Ethernet cable.
Console	Type-C USB	Used for debugging.
Reset	Reset Key	<b>Short press:</b> Reboot the gateway. <b>Long press</b> (5 sec and above): Restore factory settings.
NanoSIM	NanoSIM Card Slot	Slot for a NanoSIM card, enabling cellular connectivity. Available on all models; functional only with LTE-enabled versions.
TF Card	SD Card Slot	A 16 GB SD card is pre-installed in the gateway for data logging, system configurations, and other use cases that require local storage.  <b>⚠ WARNING</b> <b>Do not</b> eject the SD card located in the SD card slot during installation, as it stores logs and data essential for the device's performance.



Interfaces	Description	Function
<b>LEDs</b>	Status Indicator LEDs	PWR LED LoRa LED WLAN LED LTE LED Breathing LED LTE LED (only in RAK7268CV2)
<b>LoRa</b>	LoRa Antenna Connector	RP-SMA connector for external LoRa antenna, enabling LoRaWAN communication.
<b>MAIN / AUX</b>	LTE Antenna Connectors	Available only on models that support external LTE antennas. These versions include two RP-SMA connectors (MAIN and AUX) for connecting external LTE antennas.



## LED Indicators Details

LED	Status	Description
PWR	On	Gateway is powered on
	Off	Gateway is powered off
LoRa	On	LoRa module active
	Off	LoRa module inactive
	Flashing	Indicates LoRa packet transmission/reception
WLAN	<b>AP Mode</b>	
	On	AP is up
	Off	AP is down
	Flashing	Data transmitting or receiving
	<b>STA Mode</b>	
	Slow Flash (1 Hz)	Disconnected from WiFi network
	On	Connected to WiFi network
	Flashing	Data transmitting or receiving



LED	Status	Description
LTE (functional only in RAK7268CV2)	Slow Flash 1 (1800 ms bright / 200 ms dark)	Searching for network (unregistered)
	Slow Flash 2 (200 ms bright / 1800 ms dark)	Idle (registered to network)
	Quick Flash (125 ms bright / 125 ms dark)	Data transmitting or receiving
Breathing LED	Red (fast blinking)	Abnormal (e.g., no internet)
	Blue (slow blinking)	Normal operation
	<p>The breathing light can be programmed for different statuses. For detailed instructions on how to program the breathing light, refer to the appropriate installation guide based on your firmware version:</p> <ul style="list-style-type: none"><li>• <a href="#">Compatible with WisGateOS 2 version 2.2.x or later</a> </li><li>• <a href="#">Compatible with WisGateOS 2 versions 2.0.x and 2.1.x</a> </li></ul>	
ETH	On	Linkup
	Off	Linkdown
	Flashing	Data transmitting and receiving



## RF Specifications

### LoRa Radio Specifications

Feature	Specifications
Operating Frequency	EU868/IN865/RU864/US915/AU915/KR920/AS923-1/2/3/4/EU433/CN470
Transmit Power	27 dBm (Max)
Receiver Sensitivity	-139 dBm (Min)



## WiFi Radio Specifications

Parameter	Specifications
Wireless Standard	IEEE 802.11b/g/n
Frequency	ISM band: 2.412-2.472 GHz
Channels	45670
Transmit Power (The max power maybe different depending on local regulations): per chain	<b>802.11b</b> 19 dBm @1 Mbps 19 dBm @11 Mbps
	<b>802.11g</b> 18 dBm @6 Mbps 16 dBm @54 Mbps
	<b>802.11n (2.4 GHz)</b> 18 dBm @MCS0 (HT20) 16 dBm @MCS7 (HT20) 17 dBm @MCS0 (HT40) 15 dBm @MCS7 (HT40)



Parameter	Specifications
Receiver Sensitivity (Typical)	<b>802.11b</b> -95 dBm @1 Mbps -88 dBm @11 Mbps
	<b>802.11g</b> -90 dBm @6 Mbps -75 dBm @54 Mbps
	<b>802.11n (2.4 GHz)</b> -89 dBm @MCS0 (HT20) -72 dBm @MCS7 (HT20) -86 dBm @MCS0 (HT40) -68 dBm @MCS7 (HT40)



## LTE Radio Specifications (Optional, Available with RAK7268CV2)

Module / Region	Supported Bands
EG95-E (EMEA Region)	LTE FDD: B1/B3/B7/B8/B20/B28A
	WCDMA: B1/B8
	GSM/EDGE: B3/B8
EG95-NA (North America)	LTE FDD: B2/B4/B5/B12/B13
	WCDMA: B2/B4/B5
EC25-J (Japan)	LTE FDD: B1/B3/B8/B18/B19/B26
	WCDMA: B1/B6/B8/B19
	LTE TDD: B41
EC25-AU (LATAM / AU / NZ)	LTE FDD: B1/B2/B3/B4/B5/B7/B8/B28
	WCDMA: B1/B2/B5/B8
	LTE TDD: B40
	GSM: B2/B3/B5/B8
EC25-E (Korea/India)	LTE FDD: B1/B3/B5/B7/B8/B20
	WCDMA: B1/B5/B8
	LTE TDD: B38/B40/B41
	GSM: B3/B8
Other PCIE LTE modules	Optional support for global bands (custom module)



## Software

The RAK7268V2/RAK7268CV2 gateway runs on WisGateOS 2, a robust software platform designed for efficient network management and integration. Below are the key software features and capabilities:

For more detailed information on software configurations and usage, refer to the [WisGateOS 2 User Guide](#)  .



Category	Feature	Description
LoRaWAN and Network Management	LoRaWAN Packet Forwarding	Supports Packet Forwarder and Basic Station configurations
	Built-in Server	Local LoRaWAN Network Server (LNS) integrated into the gateway for network management
	Frequency Band Setup	Configurable with different LoRaWAN frequency bands based on deployment region
	TX Power Setup	Adjustable transmit power for optimal network performance
	Automatic Data Recovery	Ensures reliable data transmission even during network disruptions
	Server Address and Port Setup	Custom configuration for LoRaWAN Network Server communication
	Supports LoRaWAN Class A and C	Fully compatible with LoRaWAN devices operating in Class A and C
	Uplink Backup	Enables automatic switchover to a backup uplink (e.g., LTE or WiFi) when the primary uplink fails. Requires Multi-WAN configuration.
	Location Setup	Manual or automatic setup of gateway location (e.g., GPS coordinates)



Category	Feature	Description
<b>Connectivity and Network Services</b>	WiFi Client/AP Mode	Connect to existing network or act as an access point
	DHCP Server/Client	Dynamic IP address allocation for both server and client roles
	NAT and Router Module	Enables router functionality with Network Address Translation
	WireGuard / OpenVPN	Secure communication tunnel for remote access and management
	LTE APN Setup	Configures Access Point Name for LTE connectivity
<b>Monitoring and Security</b>	Statistics and Data Logger	Tracks performance metrics and logs operational data
	Firewall	Provides basic firewall functions for traffic control and security
	SSH2	Secure Shell access for remote troubleshooting and management
	Ping Watchdog	Monitors connectivity and triggers recovery if the connection fails



Category	Feature	Description
User Interface and Management	Web UI	Web-based interface for configuration and monitoring
	WisDM	Cloud platform for remote management and monitoring
	Gateway OTA management	Over-the-air firmware management for seamless updates
	MQTT Bridge	Integration with IoT platforms using MQTT protocol
	Firmware Updates	Over-the-air updates for easy firmware upgrades
	NTP	Synchronizes the gateway system time for accurate timestamp recording

## Firmware

The firmware is built on **OpenWrt**, providing a flexible and secure foundation for the gateway. It features an intuitive **web UI** for straightforward configuration and management, as well as **SSH2** support for remote management. **WisGateOS 2** also supports the installation of various extensions, including **OpenVPN**, **WireGuard**, and custom logo configurations.

For more details on available extensions, refer to the [WisGateOS 2 Extensions Guide](#) .

Model	Source
RAK7268V2/RAK7268CV2 WisGate Edge Lite 2	<a href="#">Download</a> 

## Certification



## FCC Caution

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

### NOTE

This equipment has been tested and found to comply with the limits for a Class B digital device, according 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 according to 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:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and the receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

## FCC 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 20 cm between the radiator and your body.



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