LINOVISION IOT-R32L

LINOVISION IOT-R32L Industrial 4G LTE Cat4 Cellular Router User Manual

Model: IOT-R32L

1. Introduction

The LINOVISION IOT-R32L is an industrial-grade 4G LTE Cat4 cellular router designed for reliable internet connectivity in remote and demanding environments. It features Wi-Fi capabilities, dual SIM card slots for network redundancy, and a Data Transfer Unit (DTU) gateway for RS485 devices and IoT sensors. This manual provides essential information for the setup, operation, and maintenance of your IOT-R32L router.

Image: LINOVISION IOT-R32L Industrial 4G LTE Cat4 Cellular Router with three cellular antennas connected.

2. Package Contents

Verify that all items listed below are present in your package:

- IOT-R32L Router
- 3 x Cellular Antennas
- Card Slot Adapter
- Power Adapter
- Network Cable
- Terminal Block
- DIN-rail Mounting Pack
- Screw Bag
- User Manual (this document)

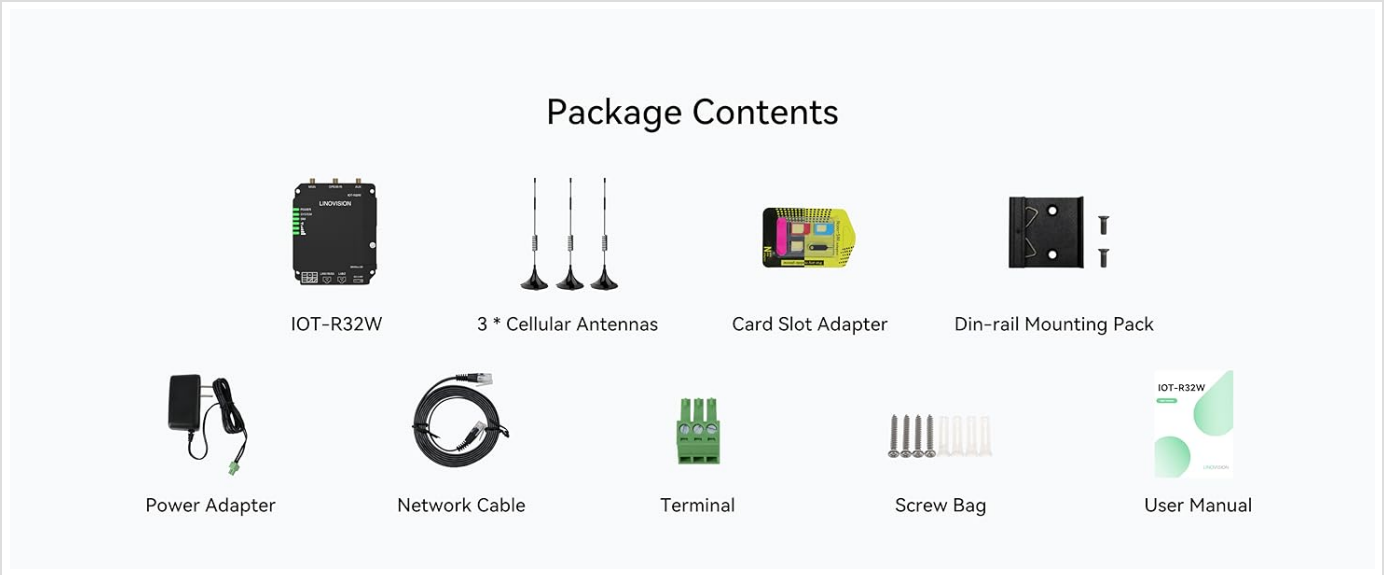


Image: Contents of the LINOVISION IOT-R32L router package, including the router, antennas, power adapter, cables, and mounting hardware.

3. Product Overview

3.1. Front and Back Panel Layout

Familiarize yourself with the ports and indicators on the router.

Panel View

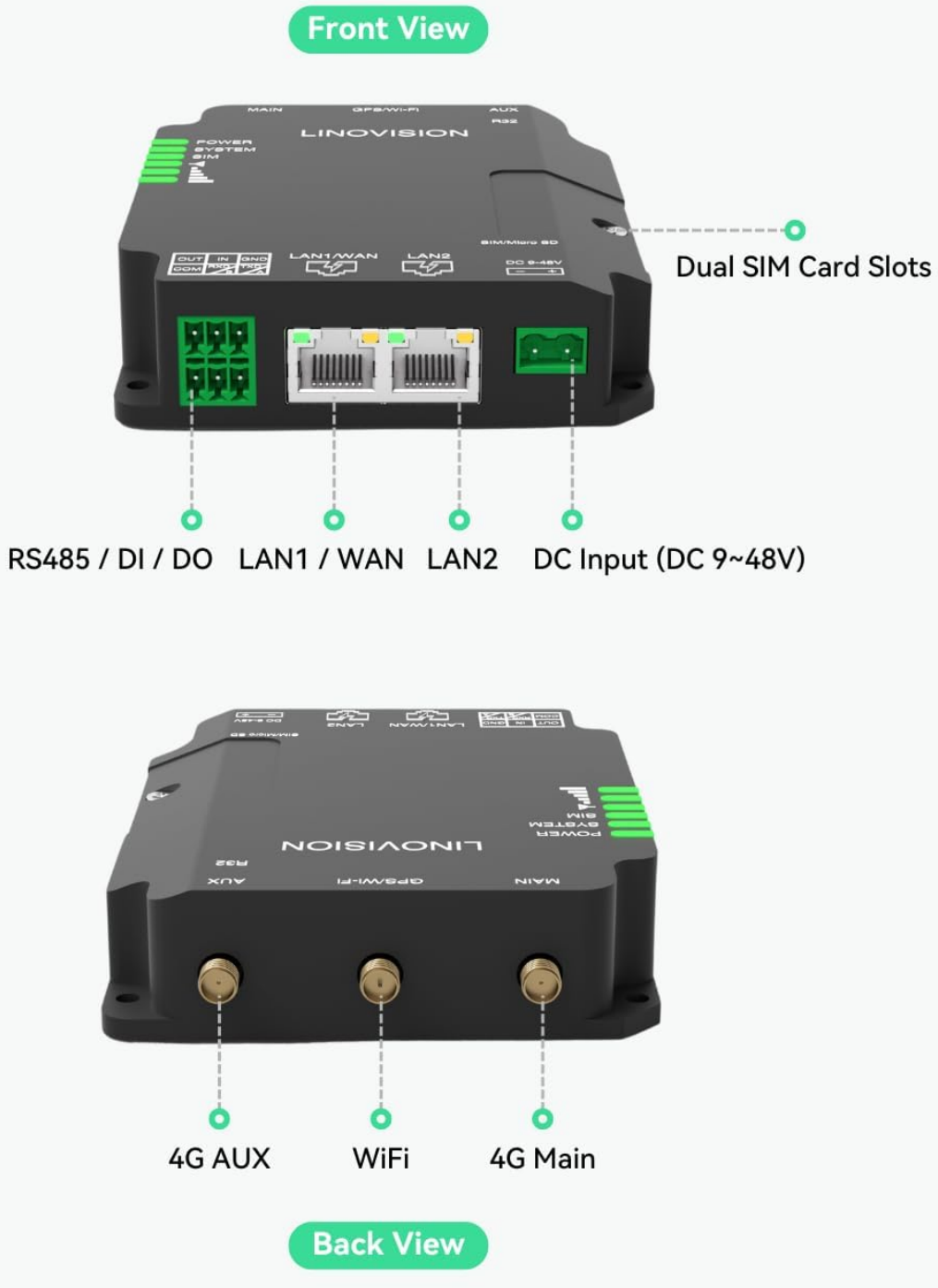


Image: Front panel of the IOT-R32L router, highlighting RS485/DI/DO terminal, LAN1/WAN, LAN2 Ethernet ports, DC Input, and Dual SIM Card Slots.

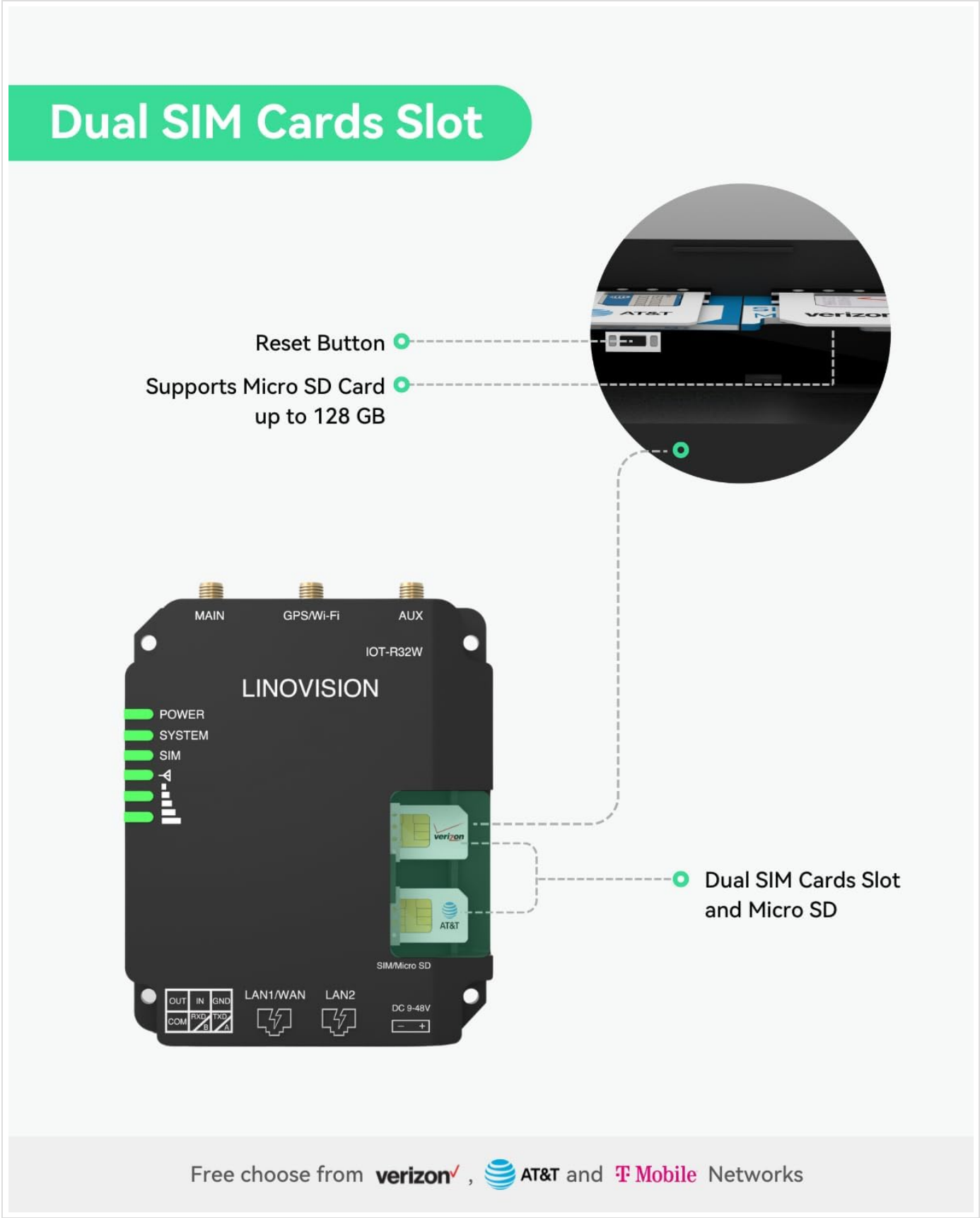


Image: Back panel of the IOT-R32L router, showing connectors for 4G AUX, Wi-Fi, and 4G Main antennas.

- **Front Panel:** Power, System, SIM status LEDs, Signal strength LEDs, RS485 / DI / DO terminal, LAN1/WAN port, LAN2 port, DC Input (9-48V), Dual SIM Card Slots.
- **Back Panel:** Antenna connectors for 4G AUX, Wi-Fi, and 4G Main.

3.2. SIM Card and Micro SD Slot Details

The router supports two SIM cards for cellular connectivity and a Micro SD card for storage.

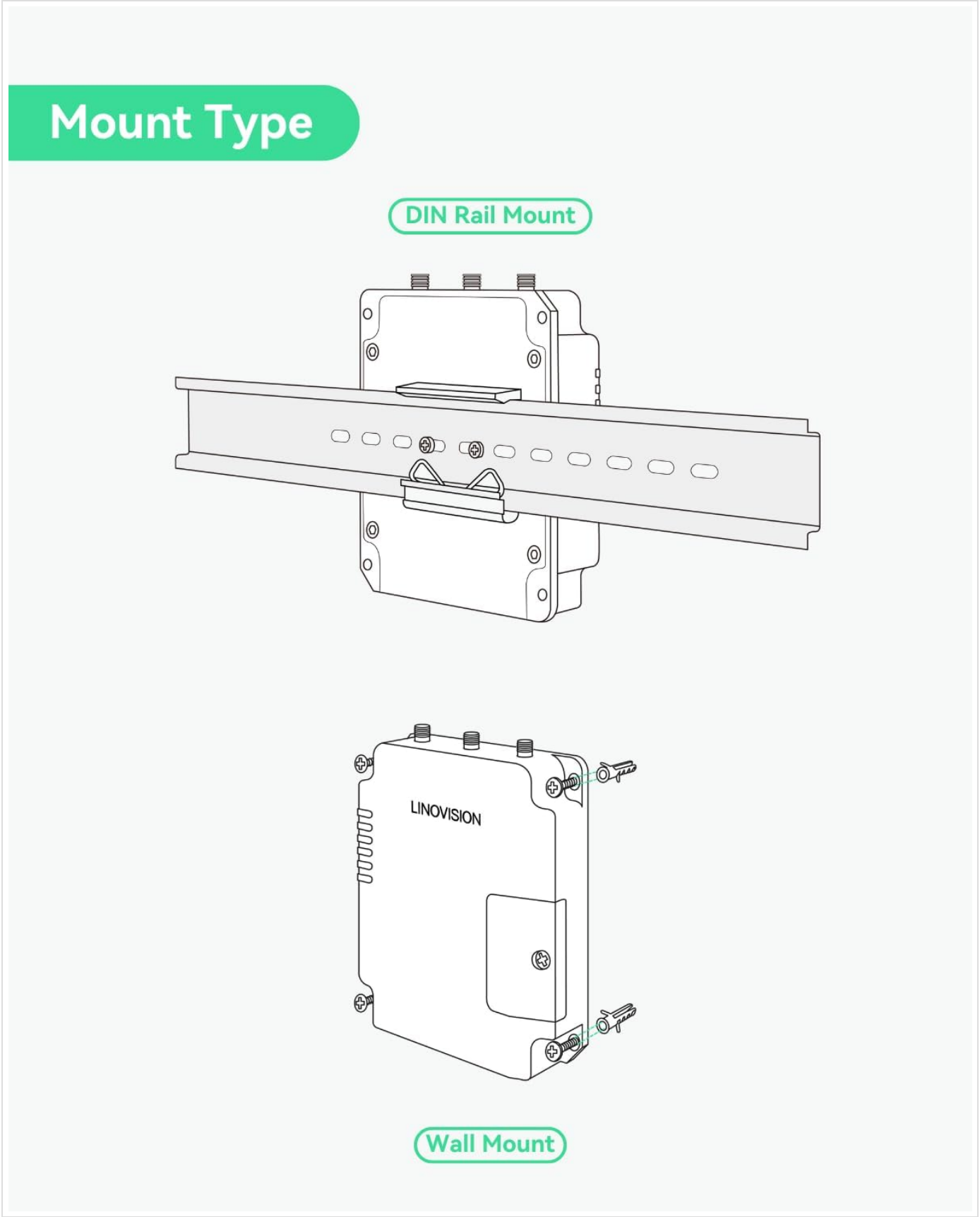


Image: Detailed view of the dual SIM card slots and Micro SD card slot, including the reset button, on the IOT-R32L router.

- **Dual SIM Card Slots:** Allows for two cellular network connections, providing redundancy. Slot 1 has higher priority.
- **Micro SD Card Slot:** Supports Micro SD cards up to 128 GB for data storage.
- **Reset Button:** Located near the SIM/Micro SD slots.

4. Setup and Installation

4.1. SIM Card Installation

1. Obtain 2FF Standard size SIM cards from your preferred cellular carrier (Verizon, AT&T, T-Mobile are supported).
2. Insert the SIM card(s) into the designated slots. Ensure proper orientation. Slot 1 has priority.
3. Note: Some SIM cards may require specific APN settings. Refer to section 4.4 for details.

Image: Illustration of SIM card sizes, confirming compatibility with 2FF Mini SIM cards for the IOT-R32L router.

4.2. Antenna Connection

Connect the three high-performance antennas to the corresponding connectors on the back panel: 4G AUX, Wi-Fi, and 4G Main.

4.3. Power Connection

Connect the power adapter to the DC Input port (9-48V) on the front panel and plug it into a power source.

4.4. Carrier APN Information

Correct APN settings are crucial for cellular connectivity. Configure these in the router's web interface:

- **AT&T APN:** broadband
- **Verizon APN:** vzwinternet (Confirmed compatible since July 2024)
- **T-Mobile APN:** fast.t-mobile.com

If you experience connectivity issues, confirm the correct APN settings with your carrier, especially if your SIM card has static IP provisioning or requires specific APNs.

4.5. Mounting Options

The IOT-R32L router supports both DIN Rail and Wall Mount installations.

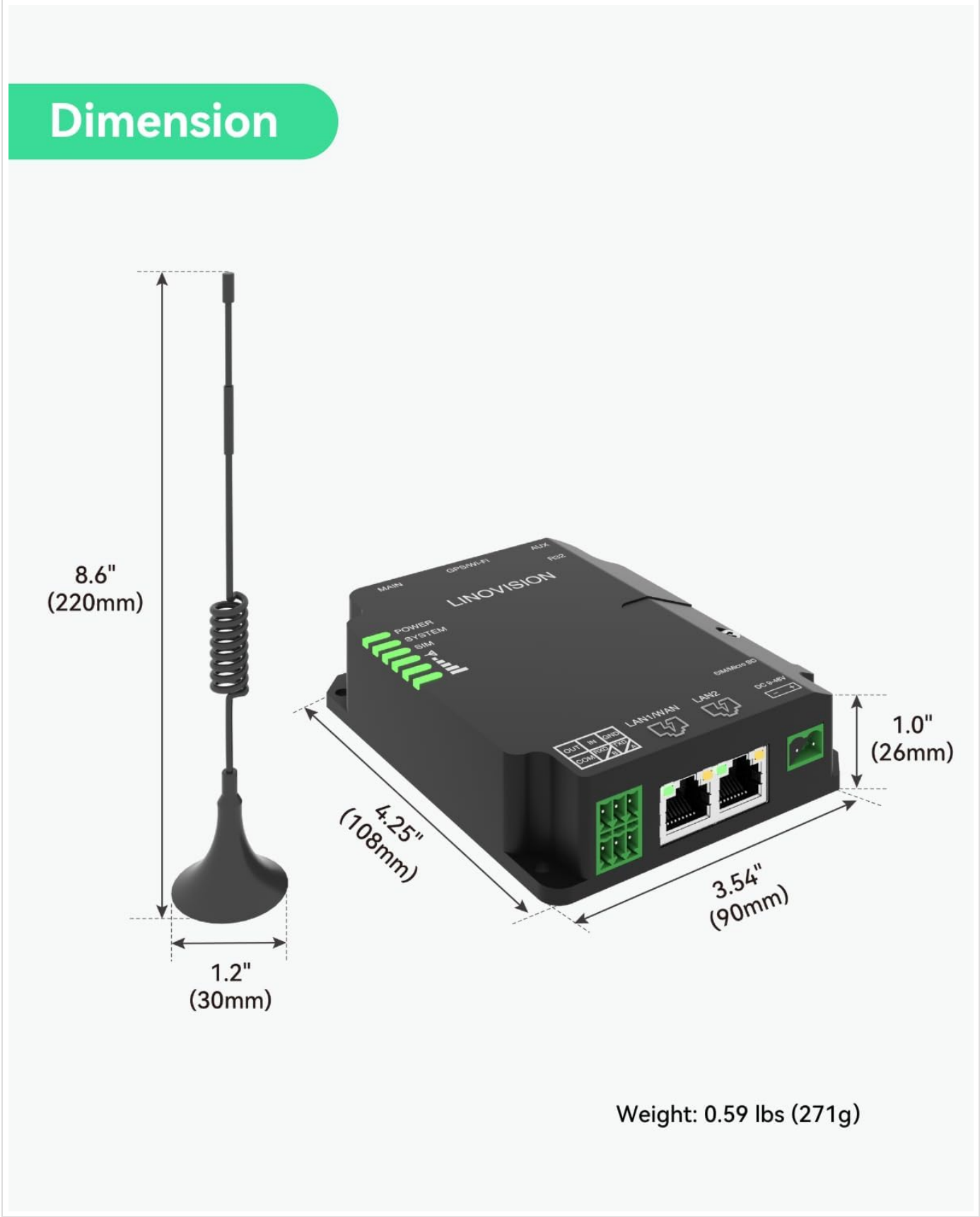


Image: Illustrations demonstrating how to install the IOT-R32L router using either a DIN Rail mount or a wall mount.

- **DIN Rail Mount:** Attach the provided DIN-rail mounting bracket to the router and secure it onto a standard DIN rail.
- **Wall Mount:** Use the screw bag and mounting holes on the router to secure it directly to a wall or flat surface.

5. Operation

5.1. Initial Access to Web Interface

1. Connect your computer to the router via an Ethernet cable to either LAN1/WAN or LAN2 port, or connect to the router's Wi-Fi network (SSID: SSID_XXXXXX, where XXXXXX is the last six digits of the router's MAC address).
2. Open a web browser and enter the default IP address:**192.168.1.1**
3. Log in using the default credentials:**Username: admin**, **Password: password**. It is highly recommended to change the default password immediately after the first login.

5.2. Checking Online Status

After configuring your SIM card and APN settings, navigate to the "Status > Cellular" page in the web interface. If connected correctly, the status will show "Connected" and display the IP address assigned to the router.

5.3. Wi-Fi Functionality

The router supports IEEE 802.11b/g/n Wi-Fi standards and can operate in both Access Point (AP) and Client modes. It provides a Wi-Fi hotspot from both cellular and wired network connections.

5.4. Automatic Failover

The IOT-R32L ensures highly reliable connectivity through automatic failover. It can seamlessly switch between local LAN, cellular, and Wi-Fi networks based on configurable priority settings, maintaining continuous internet access.

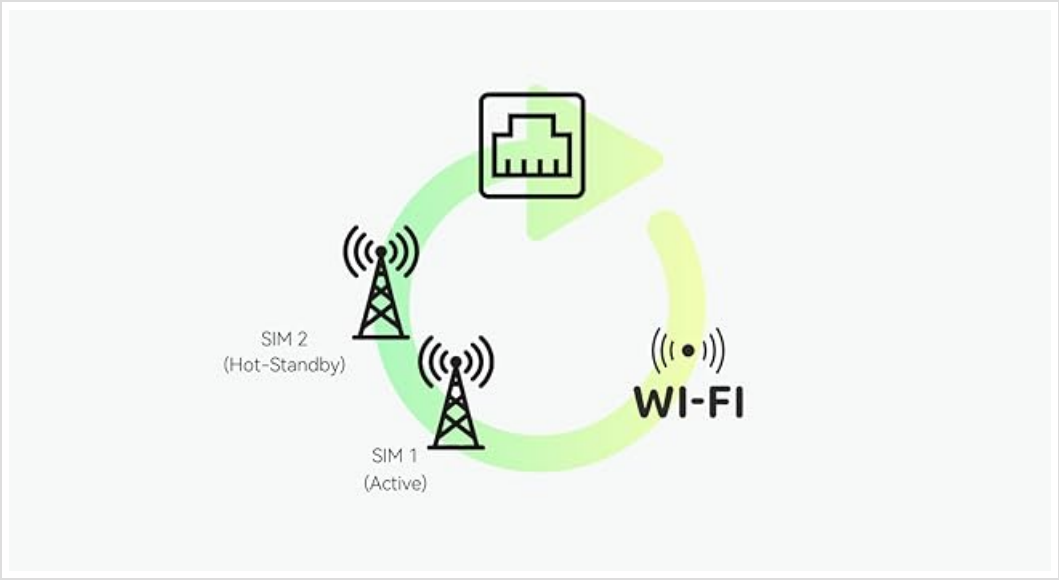


Image: Flowchart demonstrating the router's automatic failover capability, switching between active and standby SIM cards or Wi-Fi for continuous connectivity.

5.5. DTU for IoT Applications

The router functions as a Data Transfer Unit (DTU) for various RS485 devices, such as IoT sensors, PLC machines, and smart meters. It also offers additional Digital Input (DI) and Digital Output (DO) for remote control applications.

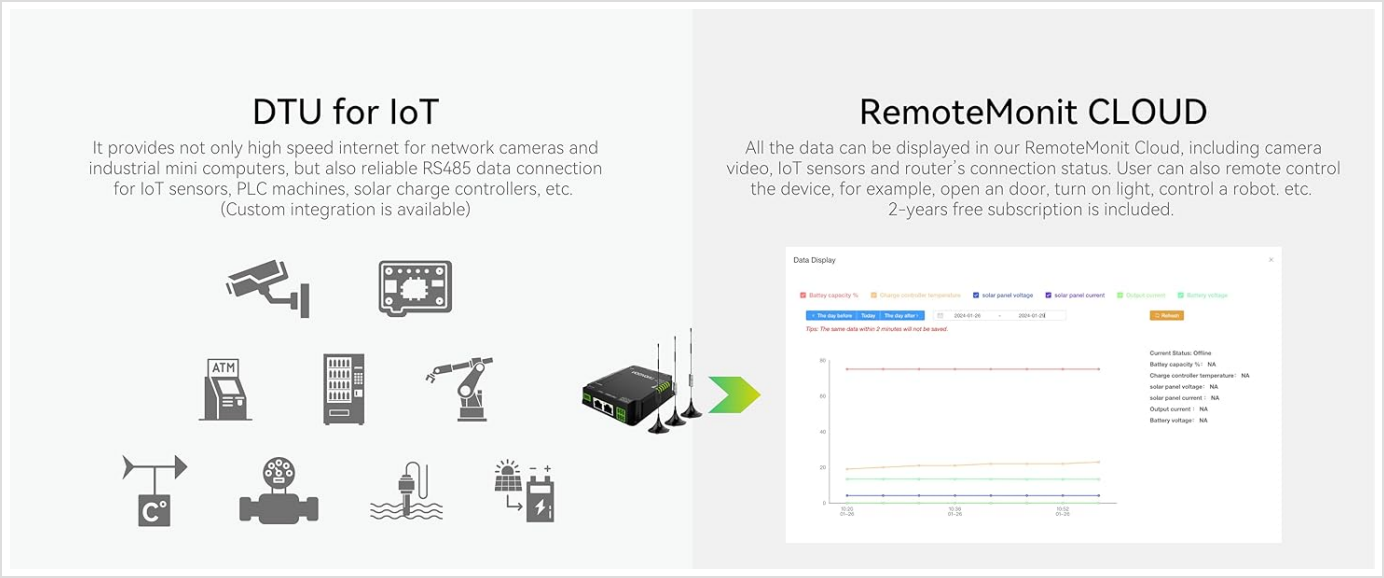


Image: Overview of the router's DTU capabilities for IoT devices and its integration with the RemoteMonit Cloud for data display and remote control.

5.6. RemoteMonit Cloud Integration

The IOT-R32L can be centrally managed and monitored via the LINOVISION RemoteMonit Cloud. This platform allows for direct display of IoT data, camera video, and router connection status. Users can also remotely control the device. A two-year free subscription to RemoteMonit Cloud is included. Custom integration is available via API, MQTT, and Embedded Python SDK.

6. Security Features

The router incorporates several security measures to protect your network and data:

- **Built-in Firewall:** Provides network protection against unauthorized access.
- **Access Authentication:** Supports AAA authentication (Radius, Tacacs+, LDAP, Local) for secure user access.
- **Multiple VPN Tunnels:** Supports various VPN protocols including DMVPN, IPsec, OpenVPN, PPTP, L2TP, and GRE for secure remote access and data privacy.

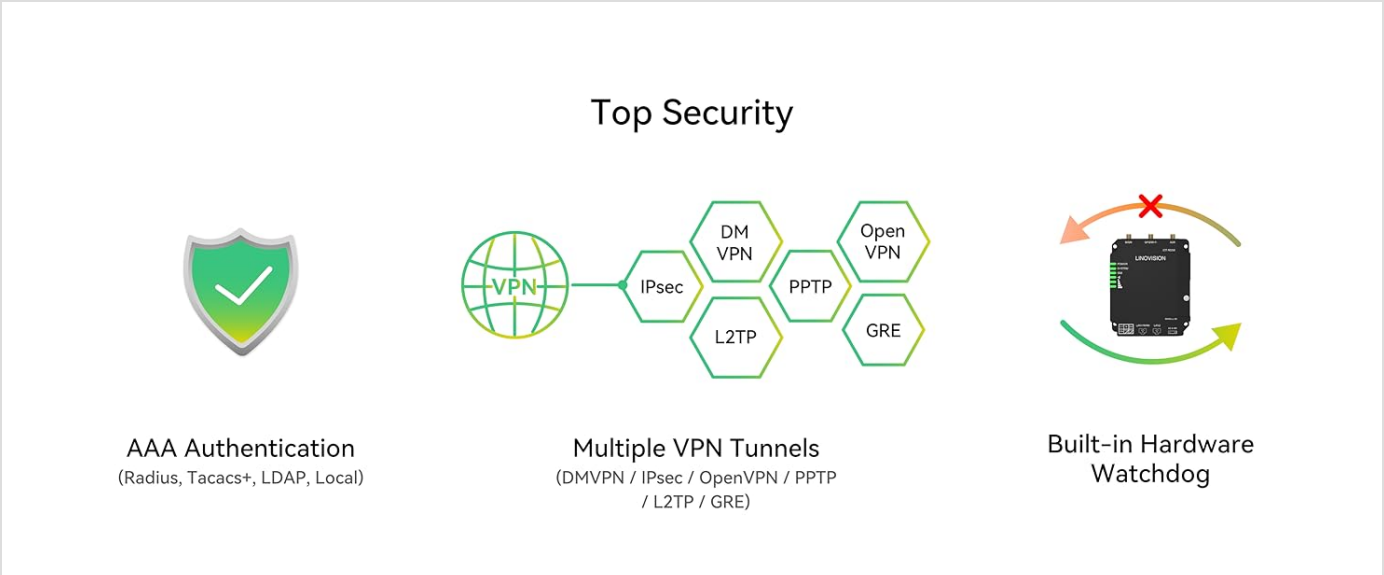


Image: Visual representation of the router's top security features, including AAA authentication, multiple VPN tunnels, and a built-in hardware watchdog.

7. Maintenance

7.1. Industrial Design for Harsh Environments

The IOT-R32L is built with an industrial design to ensure reliable operation in challenging conditions:

- **Enclosure:** Compact diecast aluminum enclosure.
- **Operating Temperature:** Wide range from -40℉ to +158℉ (-40℃ to +70℃).
- **Power Supply:** Broad voltage input (9V to 48V DC).
- **Ingress Protection:** IP30 rated.
- **Safety Standard:** EN62368-1 compliant.

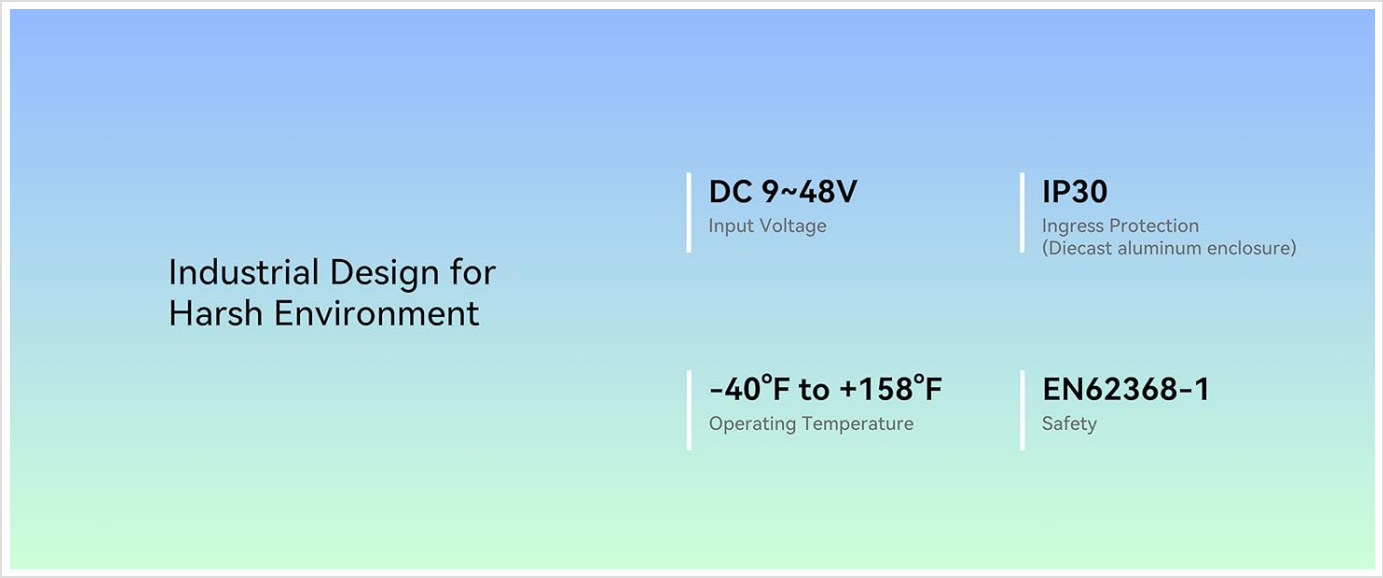


Image: Details on the industrial design of the IOT-R32L router, including input voltage, IP rating, operating temperature, and safety standards.

7.2. Built-in Hardware Watchdog

The router includes a built-in hardware watchdog that automatically reboots the device if it detects a system malfunction, ensuring continuous operation and minimizing downtime.

8. Troubleshooting

This section addresses common issues you might encounter. For more detailed troubleshooting, please refer to the full User Manual PDF available for download.

- **No Cellular Connectivity / "Registration Denied":**
  - Ensure SIM cards are correctly inserted and are the appropriate 2FF Standard size.
  - Verify that the APN settings in the router's web interface match those provided by your cellular carrier (refer to section 4.4).
  - Check the cellular signal strength indicators on the router. If signal is weak, consider relocating the router or using external antennas.
  - Confirm with your carrier that the SIM card is active and provisioned for use in a router (not locked to a phone or other device). Some carriers may restrict data usage or require specific plans for router devices.
  - If the IMEI is locked, contact your carrier for assistance in unlocking it or confirming compatibility.
- **No Internet Access via Wi-Fi/LAN:**
  - Ensure the router has active cellular or WAN connectivity.
  - Check network cable connections for LAN.
  - Verify Wi-Fi settings (SSID, password) on your connecting device.

- Confirm that your device is obtaining an IP address from the router (DHCP).

- **Router Unresponsive:**
  - Check the power connection and ensure the Power LED is on.
  - If the router is unresponsive, perform a hard reboot by disconnecting and reconnecting the power.
  - If issues persist, use the reset button to restore factory default settings (this will erase all configurations).

For further assistance, please refer to the official LINOVISION User Manual PDF:Download User Manual (PDF)

9. Specifications

Feature	Detail
Model Name	IOT-R32L
Product Dimensions	4.25 x 3.23 x 1.02 inches (108 x 82 x 26 mm)
Item Weight	1.32 pounds (0.6 kg)
Operating Temperature	-40℉ to +158℉ (-40℃ to +70℃)
Input Voltage	9V to 48V DC
Ingress Protection	IP30
Wireless Communication Standard	802.11b/g/n
Connectivity Technology	LTE, Wi-Fi
Special Feature	Remote Access
SIM Card Support	Dual SIM Slots (2FF Standard size)
Micro SD Support	Up to 128 GB

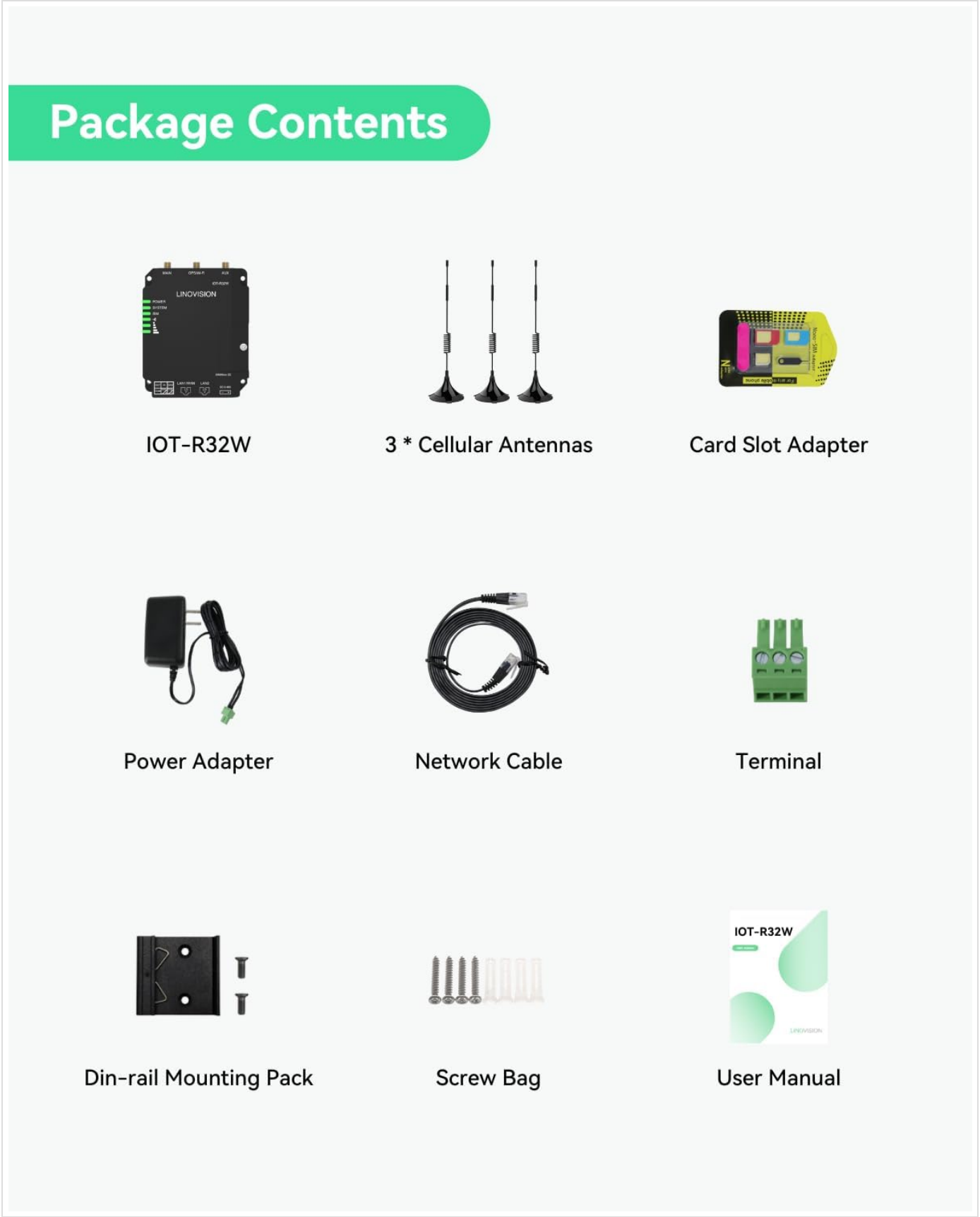


Image: Dimensional drawing of the IOT-R32L router and its antenna, showing measurements in inches and millimeters.

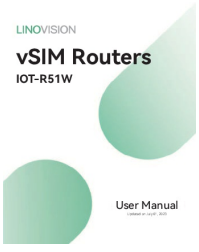
10. Warranty and Support

LINOVISION provides comprehensive support for its products.

- **Cloud Subscription:** A two-year free subscription to the LINOVISION RemoteMonit Cloud is included with your purchase.

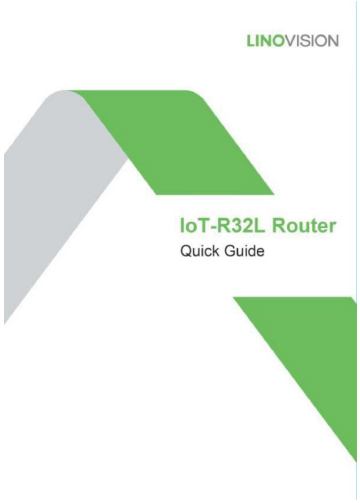
- **Technical Support:** LINOVISION offers 24/7 US local and global technical support. For assistance, please visit the official LINOVISION website or contact their support team directly.
- **Warranty:** For detailed warranty information, please refer to the official LINOVISION product warranty policy available on their website.

Related Documents - IOT-R32L

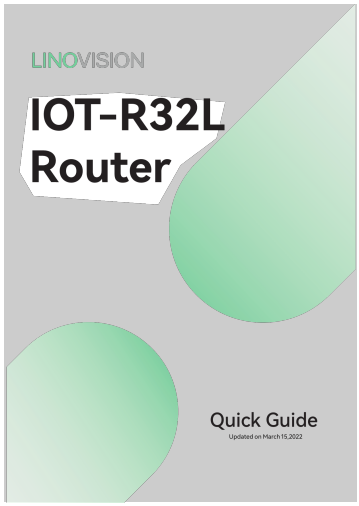
	Linovision IOT-R32W Industrial 4G LTE Cellular Router Specifications Detailed specifications for the Linovision IOT-R32W Industrial 4G LTE Cellular Router, including network connectivity, protocol support, industrial design, security features, hardware and software specifications, and package contents.
	Linovision IoT-R32L Industrial Cellular Router Quick Guide A concise guide to installing and configuring the Linovision IoT-R32L industrial cellular router, covering hardware overview, installation, login, and network setup.
	Linovision IOT-R32 Industrial Cellular Router Quick Start Guide This guide provides essential information for installing and configuring the Linovision IOT-R32 industrial cellular router, including hardware setup, PC configuration, and network connection methods (WAN and cellular).
	Linovision IOT-R32W User Manual User manual for the Linovision IOT-R32W industrial cellular router, covering installation, hardware introduction, and basic configuration steps for network connectivity.
	LINOVISION IOT-R51W vSIM Routers User Manual User manual for the LINOVISION IOT-R51W vSIM Router, covering installation, PC connection, web platform access, WiFi settings, use cases, and troubleshooting.

[Linovision IOT-R75W Quick Start Guide]
A quick start guide for the Linovision IOT-R75W industrial cellular router, detailing installation, hardware overview, and basic network configuration steps.

Documents - LINOVISION – IOT-R32L



[Linovision IoT-R32L Industrial Cellular Router Quick Guide]
A concise guide to installing and configuring the Linovision IoT-R32L industrial cellular router, covering hardware overview, installation, login, and network setup.
lang:en score:47 filesize: 1.2 M page_count: 14 document date: 2021-10-19



[pdf] User Manual Guide
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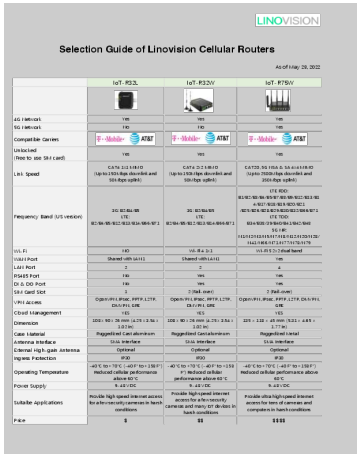
IoT-R32L Router Quick Guide Updated on March 15,2022 iVV V D d V V V V V D D Vs ;A V VV ; V A R D x1 x1 x1 x1 x1 x4 x1 x1 DIN Rail Kit Setscrews Quick Guide Stubby Cellular Antenna Optional ...
lang:af score:37 filesize: 3.4 M page_count: 14 document date: 2024-02-04



[Linovision Cellular Routers: A Selection Guide]
Compare the specifications of Linovision's IoT-R32L, IoT-R32W, and IoT-R75W cellular routers to find the best fit for your needs.
lang:en score:28 filesize: 149.46 K page_count: 1 document date: 2022-05-28

[Linovision IOT-R32W Industrial 4G LTE Cellular Router Specifications]
Detailed specifications for the Linovision IOT-R32W Industrial 4G LTE Cellular Router, including network connectivity, protocol support, industrial design, security features, hardware and software specifications, and package contents.
lang:en score:28 filesize: 3.6 M page_count: 5 document date: 2025-03-28

[pdf] Specifications Datasheet
DatasheetLINOVISION 4G LTE AT T Mobile SIM Linovision Global StoreIOT R32L Specification 0819global linovision cdn shop files IOT 0819 v 13812151993081929016 |||
IOT-R32L Industrial Celluar Router D at a S h e e t Industrial Router Lite Series**IOT-R32L** is a cost-effective industrial cellular router with embedded intelligent features that are designed for multifarious M2M/IoT applications. Global WCDMA and 4G LTE carrier supported make this drop-in connectivi...
lang:en score:22 filesize: 253.37 K page_count: 4 document date: 2021-08-19

[pdf] Datasheet
IOT R32L datasheet Linovision IndustriRaolu ter LiteS eries linovision UR32L Datasheet ApplicationExample is a cost effective industrial cellular router with embedded intelligent en |||
Industrial Router Lite Series R32L UR32L Datasheet R32L is a cost-effective industrial cellular router with embedded intelligent features that are designed for multifarious M2M/IoT applications. Global WCDMA and 4G LTE carrier supported make this drop-in connectivity a great help for operators in ...
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