

Installation Guide

This document provides a brief overview of the Ericsson Cradlepoint R980 series ruggedized 5G router, discusses what's inside the box, and provides basic setup and install instructions for the router.

If you find information in this guide that is incorrect, misleading, or incomplete, we would appreciate your comments and suggestions.

NOTE: The Verify app includes many of the same instructions with an alternate order. This document supports the Verify app instructions. Use the Navigation section below to locate the topics most applicable to troubleshooting your setup issues. For additional setup support, contact a professional installer or see the [Contact Us](#) page.

Intended Audience

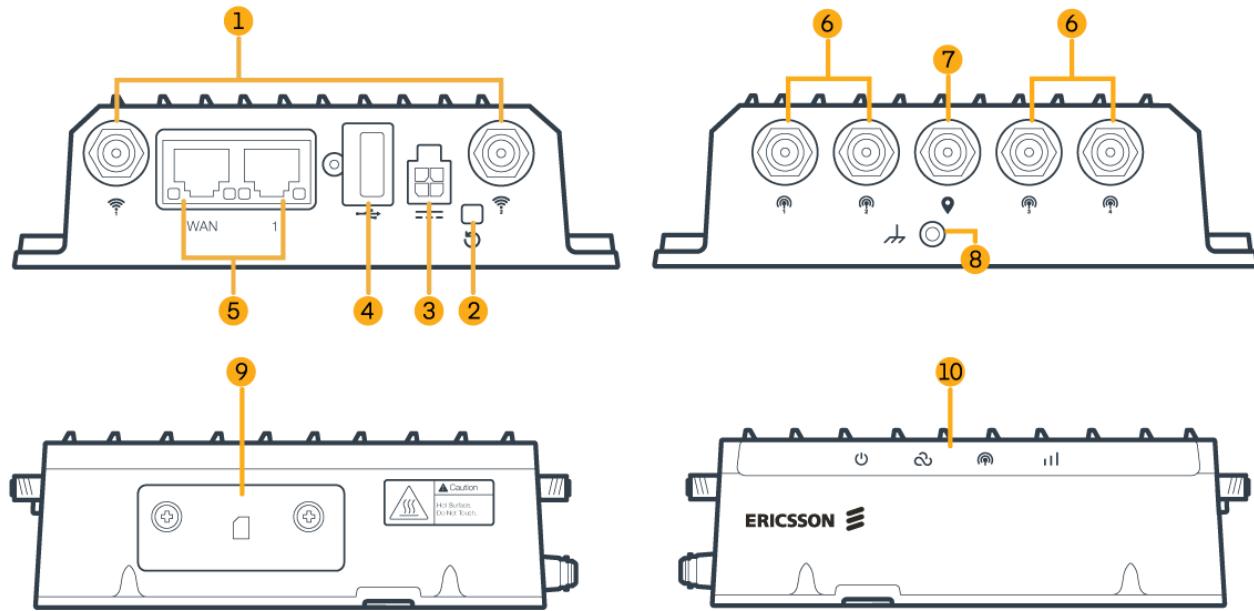
This article is intended for professional networking hardware installers. It provides basic knowledge and should be used only as a reference guide for installing the Ericsson Cradlepoint R980 series ruggedized 5G router. Due to the unique nature of each installation, potential for RF exposure, and enhanced separation requirements, customers must have a professional install their hardware. This document is a reference guide and is intended only to provide best practices.

Ericsson Cradlepoint R980 Models

This document applies to the following Ericsson Cradlepoint R980 series ruggedized 5G router models:

Ericsson Cradlepoint R980 ruggedized 5G router	Model
R980-5GD	S5A435A

External Device Components



1	Wi-Fi Antenna Connectors (Female RP-SMA)
2	Reset Button
3	DC Power Port
4	Locking USB 2.0 Port
5	Gigabit Ethernet (GbE) Ports
6	Cellular Antenna Connectors (Female SMA)
7	GNSS Antenna Connector
8	Ground Connector
9	SIM Door (SIM Slots behind)
10	LED Panel

Before You Begin

Read through the following before you set up your Ericsson Cradlepoint R980 series ruggedized 5G router.

Location Considerations

The R980 router is built for installation in a variety of environments. Ericsson recommends having a professional install the R980 router to ensure proper signal reception and usage. The following are best practices for determining the location for the installation:

- Ensure that the mounting surface is flat and clear of any obstructions or objects that may interfere with the antennas, signal reception, or cables.
- Position the device for optimal cellular and Wi-Fi signal reception.

- Avoid mounting in direct sunlight or in locations where it may be exposed to the weather. Ensure plenty of airflow for ventilation.
- Keep the device out of reach. It is required that the endpoint be installed behind a locked or gated enclosure to restrict unauthorized access. The R980 is designed to work in elevated ambient temperatures, which may cause the surface of the device to become too hot to safely touch.
- Mount in locations compliant with the Safety, Regulatory, and Warranty guide, included in the product shipping box.

For mobile installations, see the [Vehicle Installation Guide for Mobile Routers](#) for more information.

IMPORTANT: The R980 router requires increased separation distances between the Ericsson hardware and human beings. The recommended minimum separation distance is listed on the Safety, Regulatory, and Warranty guide included in the shipping box. For assistance with installation or in locating a professional installer, contact [Ericsson Sales and Support](#).

SIM Card for Wireless Connectivity

A wireless broadband data plan must be added to your Ericsson Cradlepoint R980 ruggedized 5G router for wireless broadband connectivity. The SIM must be provisioned by the carrier. Contact your carrier for details about selecting a data plan and about the process for provisioning your SIM. To configure the router for failover and fallback functionality, see [NCOS: Effectively utilizing 2-SIM modems](#).

Router Communication and Data Usage

The factory default configuration of the router is set to communicate with Ericsson and other resources at regular intervals to access the latest NetCloud OS and modem updates, clock synchronization (NTP), and NetCloud Manager. Such communication may result in data usage and applicable charges regardless of whether the router uses a wired or wireless Internet connect. To avoid such data usage and potential charges, refer to [Router Communication/Data Usage](#) for more information.

Required Tools for Setup

Ericsson recommends that a professional install the R980 in any environment. However, the following tools may be necessary for setup:

- #0 Philips-head screwdriver for SIM cover screws
- #2 Philips-head screwdriver for mounting screws
- Mounting tools – Depending on the location of installation, additional mounting tools may be necessary. These tools may include, but are not limited to:
 - Screwdrivers, drill, and drill bits
 - Additional screws, zip ties

Setup

The following steps provide general setup instructions.

Check Box Contents

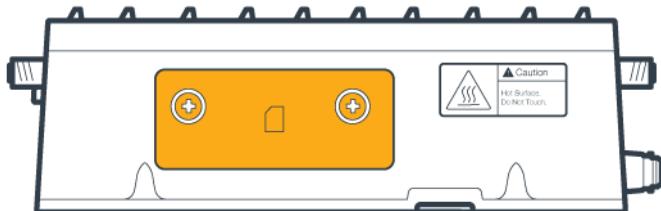
Prior to installation, open the box and ensure that all items are present. You should have received the following:

Model	Orders include
R980-5GD	<ul style="list-style-type: none"> [1] R980 Series Ruggedized Router [1] 3-meter (2x2) Power and GPIO cable [1] Small accessories kit <ul style="list-style-type: none"> [4] M4 screws, nuts, and washers [1] Mounting template [1] Getting Started card [1] Safety, Warranty, and Regulatory guide

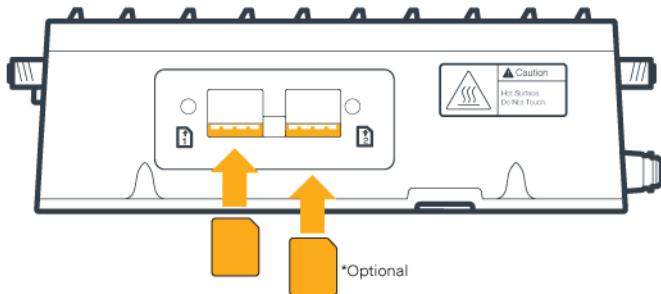
Install SIMs

Install at least one SIM by doing the following:

1. Unscrew and remove the SIM door from the router.



2. Insert an active 4FF-sized SIM into SIM slot 1 and (optionally) SIM slot 2. Orient the SIMs contacts down, notch end first. The SIMs click into place. Press a SIM again to remove it.



3. Reinstall the SIM door.

Attach Antennas



IMPORTANT

The Ericsson Cradlepoint R980 ruggedized 5G router does not include antennas. Antennas must be purchased separately or through a third-party vendor. See the [Antenna web page](#) for more information and options.

Only use remote or cabled-out (X-in-1) antennas. Paddle antennas are not recommended for optimal performance.

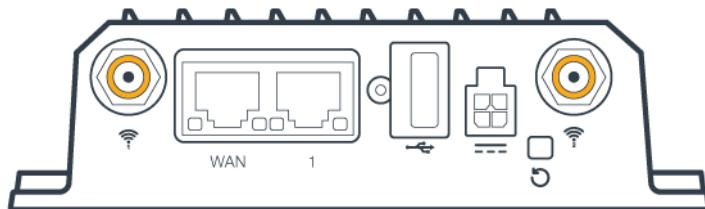
Attach Cellular Antennas

Attach Cellular Antennas on the indicated ports:



Attach Wi-Fi Antennas

Attach Wi-Fi Antennas on the indicated ports:



Mount the Router

The Ericsson Cradlepoint R980 ruggedized 5G router may be mounted in a number of ways and should be completed by a professional installer.

Refer to the following for best practices:

- Use the mounting template to help mark the desired mounting location on the ceiling, wall, kiosk, or vehicle using a pen or marker.
- Ensure the mounting location is away from RF-interfering materials and objects such as reflective surfaces, brick and concrete, microwaves, and so on.
- Pre-drill holes for the mounting screws.
- Use anchors and other screw-securing accessories to ensure the device is securely mounted in place.
- Refer to the Location Considerations section of this document.

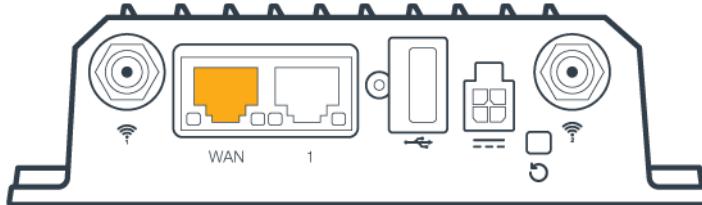
Additional Mounting Options

An optional DIN rail mounting bracket is available (ordered separately) for the R980 Series router. The DIN rail mounting bracket enables installation in either left or right orientation, and holds the router vertically. The mounting bracket not only enhances your mounting options, it also saves space inside of racks or cabinets.

Product	Part number	Compatibility
DIN Rail Mounting Bracket	170904-000	R920 Series Ruggedized Router R980 Series Ruggedized Router S700 Series Semi-Ruggedized Router S400 Ruggedized Router

(Optional) Connect Ethernet Cable

- If you are using a wired Ethernet WAN connection, connect the Ethernet cable to the WAN port on the R980. Connect the other end to your WAN source.



- If you are using a wireless WAN (using cellular connectivity), power up the router first, access your NetCloud Manager account, and then complete the setup.

Power Up the Router

The 4-pin GPIO cable socket is configured to allow for using a 4-wire/GPIO cable to hardwire power for DC connections, or for using GPIO. See the following for pin configuration:

	PIN	Wire Color	Definition	Details
	1	Black	Ground	Ground to the vehicle chassis
	2	Red	Power	VDC battery constant (see note below)
	3	Orange	Input	VDC ignition sensing accessory input (General purpose input when not installed in vehicle)
	4	Blue	Output	General purpose output

- Insert the 4-pin end of the power adapter into the 4-pin port on the router, ensuring appropriate alignment of pins as illustrated above.



NOTE

The diagram shows looking into the router socket. When making a custom cable, be sure to account for this.

- Connect the wires on the other end to the appropriate fuse or power source.



NOTE

A 3A fused circuit is required for vehicle installations. In North America, a UL listed fuse must be used.

- Allow one minute for the router to run through its bootup sequence.

Activate the Router Through NetCloud Manager

Activate your Ericsson Cradlepoint R980 series ruggedized 5G router through NetCloud Manager (NCM). Your router is packaged with NetCloud services and requires that you log into your NetCloud account to activate. See [Getting Started with NetCloud Manager](#) for more information.

Understanding LEDs



See the following table for information about LED indicators.

Status Indicator	Behavior	
	POWER: Detects that the unit has power.	
	No Light = Not receiving power. Check the power switch and the power source connection.	
	Solid White = Powered on.	
	NETCLOUD MANAGER STATE: Detects whether the device is able to connect to NCM	
	No Light = Unable to connect to Netcloud Manager.	
	Solid White = Connected to NetCloud Manager.	
	EMBEDDED MODEM STATE: Indicates information about the integrated modem.	
	No Light = Modem not detected	
	Solid Green = Modem has established an active connection	
	Flashing Green = Modem is connecting	
	Solid Yellow = Data connection error.	
	Flashing Yellow = Modem is in the process of resetting	
	Solid Red = Carrier reject	
	Flashing Red = No SIM or SIM Door Open	
	CELLULAR HEALTH: Indicates the health of the primary cellular modem's signal.	
	No Light = No cellular connection	
	Solid Green = Cellular health is excellent/good	
	Solid Yellow = Cellular health is fair	
	Solid Red = Cellular Health is poor	
NOTE: Cellular Health indicates the signal health for the connected modem, whether it is the embedded or modular modem. If both modems are active, then this LED shows the status of embedded modem.		

Troubleshooting

If the device takes longer than five minutes to connect to the Internet, you may need to log into the local UI of the device to make configuration changes or start the troubleshooting process. You must be physically co-located with the device to do this. If there is no Internet connection, see the following:

[No Internet or Connection Issues](#)

[NCOS: How to Configure WAN Interfaces](#)

Once the device connects to the Internet, ensure that desired functionality is working appropriately through NetCloud Manager.

Help and Support

- [Cradlepoint Customer Connect Community](#)
- [Cradlepoint Support Services](#)

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