
ERICSSON ENTERPRISE WIRELESS
DOCUMENTATION PORTAL

R980 Ruggedized Router Quick Start Guide

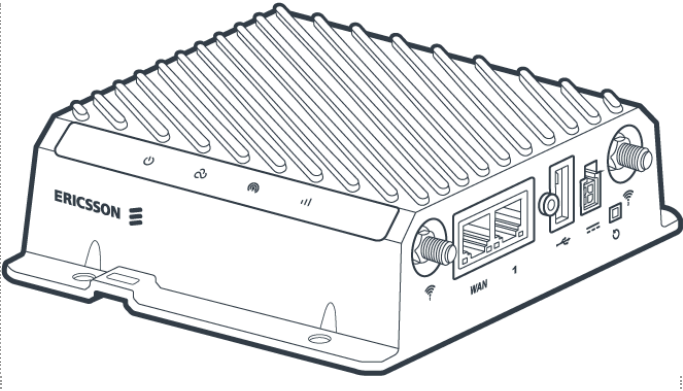
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1 | Quick Start Guide

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.



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

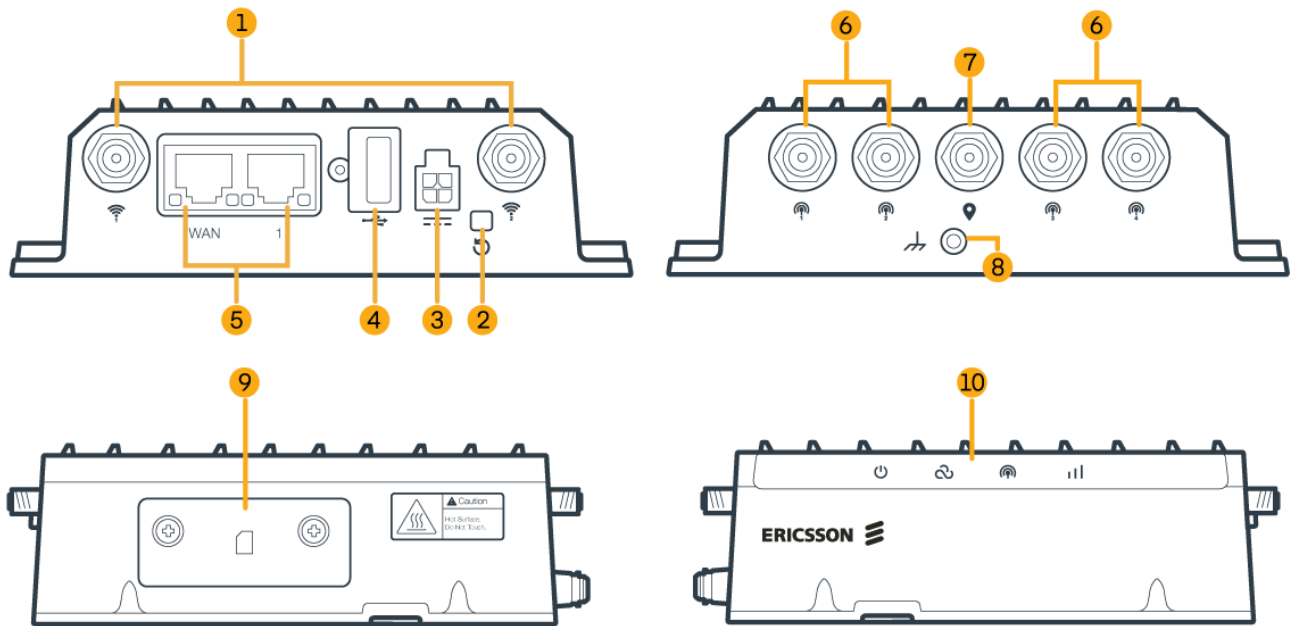
This article is intended for professional networking hardware installers. It provides basic knowledge and should be used only as a reference guide for installing the Ericsson Cradlepoint R980 series ruggedized 5G router. Due to the unique nature of each installation, potential for RF exposure, and enhanced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

2 | 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

3 | 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) |

4 | Before You Begin

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

4.1 | 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.

Important

Ericsson Cradlepoint recommends the R980 router is set up at a minimum separation distance 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, contact [Sales and Support](#).

4.2 | 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 failback functionality, see [NCOS: Effectively utilizing 2-SIM modems](#).

4.3 | Best Practice: Choosing SIMs for Adverse Environments

As a best practice, Cradlepoint recommends the use of ruggedized SIMs in environmentally adverse deployments in which the router will experience excessive shock and vibration. Different SIM card providers have varying degrees of consistency in meeting industry specifications. The use of ruggedized SIMs helps mitigate against future SIM issues caused by such environments.

4.4 | 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, see [Router Communication/Data Usage](#) for more information.

4.5 | 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 Phillips-head screwdriver for SIM cover screws
- #2 Phillips-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 and wall anchors (M3)
 - Zip ties

5 | Quick Setup Instructions

1. Check Box Contents to ensure all items are present:

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Model	Orders include
R980-5GD	• [1] R980 Series Ruggedized Router • [1] 3-meter (2x2) Power and GPIO cable • [1] Small accessories kit ◦ [4] M4 screws, nuts, and washers • [1] Mounting template • [1] Getting Started card • [1] Safety, Warranty, and Regulatory guide

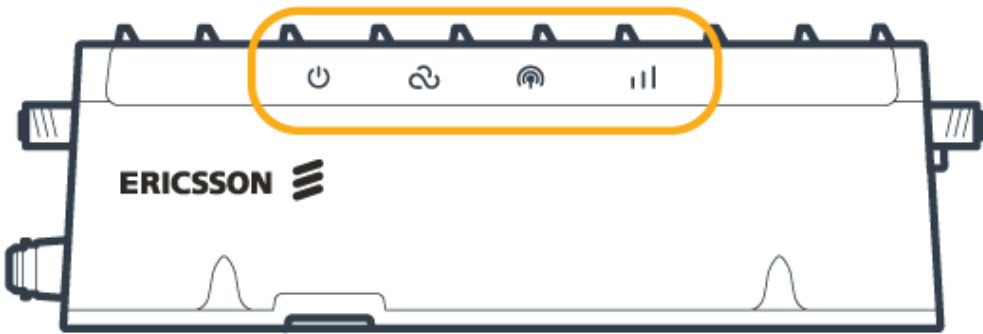
2. Install SIMs by removing the SIM door and inserting a SIM in SIM slot 1, and optionally another in SIM slot 2. Replace the SIM door when finished.
3. Attach antennas (not included). Antennas must be purchased separately or through a third-party vendor. See the [Antenna web page](#) for more information and options.

Attach All Antennas

All cellular and Wi-Fi antenna ports must be occupied with a proper specification antenna element that matches the operational capabilities of the radio. Leaving antenna ports open or capped with terminators is not a supported configuration for operation.

4. Mount the router. Follow the [Location Considerations](#) listed earlier. An optional DIN Rail Mounting Bracket is available for order (part number 170904-000.)
5. Optionally, connect an Ethernet cable to the WAN port, and connect the other end to a WAN source.
6. Ground the R980 by attaching the external ground connector to a suitable earth ground or the vehicle chassis according to your installation environment. Follow all local requirements for ground wire specifications.
7. Power up the router via the 2x2 Power and GPIO cable, wired appropriately. For details and diagram, see the [R980 Series Ruggedized Router Installation Guide](#).
8. Activate the router through NetCloud Manager. Your router is packaged with NetCloud services and requires that you log into your NetCloud account to activate. If you are using a wireless WAN (using cellular connectivity, without an Ethernet cable), power up the router first, access your NetCloud Manager account, and then complete the setup. Vehicle installations may require you to start the vehicle before power is supplied.

6 | 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 source connection. - Solid White = Powered on.
	NETCLOUD MANAGER STATE: Detects whether the device is able to connect to NetCloud Manager. - 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.

Status Indicator	Behavior
	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 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.

7 | 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.

8 | Help and Support

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

9 | Terms of Service

[Terms of Service](#)

[Privacy Policy](#)

[GDPR Privacy Policy](#)

10 | Product Disclaimer and Limitation of Liability

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以下是此設備在台灣搭配使用的天線：

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For WWAN							
Ant. Set	RF Chain No.	Brand	Model	Antenna Net Gain (dBi)	Frequency Range	Antenna Type	Connector Type
1	Chain 0	TAOGLAS	MA1504_AK J01	-2.70	617~698 MHz	Monopole	SMA
				-2.00	698~824 MHz		
				-0.10	824~960 MHz		
				1.50	1427~1518 MHz		
				2.70	1710~1880 MHz		
				2.50	1850~1990 MHz		
				3.30	1920~2170 MHz		
				4.50	2300~2690 MHz		

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				1.30	3300~5000 MHz		
				2.30	5150~5925 MHz		
Chain 1	TAOGLAS	MA1504_AK_001	-4.00	617~698 MHz	Monopole	SMA	
			-1.60	698~824 MHz			
			1.20	824~960 MHz			
			2.10	1427~1518 MHz			
			2.40	1710~1880 MHz			
			2.90	1850~1990 MHz			
			1.60	1920~2170 MHz			
			1.50	2300~2690 MHz			
			1.00	3300~5000 MHz			

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			2.00	5150~5925 MHz		
Chain 2	TAOGLAS	MA1504_AK_001	-3.80	617~698 MHz	Monopole	SMA
			-3.50	698~824 MHz		
			-0.60	824~960 MHz		
			2.30	1427~1518 MHz		
			2.30	1710~1880 MHz		
			1.70	1850~1990 MHz		
			2.70	1920~2170 MHz		
			4.10	2300~2690 MHz		
			1.60	3300~5000 MHz		
			2.30	5150~5925 MHz		

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2	Chain 3	TAOGLAS	MA1504_AK_001	-3.60	617-698 MHz	Monopole	SMA
				-2.30	698-824 MHz		
				1.80	824-960 MHz		
				1.10	1427-1518 MHz		
				2.60	1710-1880 MHz		
				2.90	1850-1990 MHz		
				2.10	1920-2170 MHz		
				1.80	2300-2690 MHz		
				-0.20	3300-5000 MHz		
				2.40	5150-5925 MHz		
	Chain 0 Chain 1	CRADLEPOINT, INC.	170801-000	1.42	619-790 MHz	Monopole	SMA

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	Chain 2				0.88	1445-1515 MHz		
	Chain 3							
					2.69	1710-2700 MHz		
					4.13	3400-3700 MHz		
					4.29	5150-5925 MHz		

For GPS

Ant. Set	RF Chain No.	Brand	Model	Antenna Net Gain (dBi)	Frequency Range	Antenna Type	Connector Type
1	GPS	TAOGLAS	AA.162	30	1562-1612 MHz	Dipole	SMA

For WLAN

Ant. Set	RF Chain No.	Brand	Model	Antenna Net Gain (dBi)	Frequency Range	Antenna Type	Connector Type
1	Chain 0	CRADLEPOINT, INC.	CP01	5.74	2.4~2.4835	Monopole	R-SMA
	Chain 1			4.40	5.15~5.25		

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2	Chain 0 Chain 1	CRADLEPOINT, INC.	170836-000	4.63	5.25~5.35	Dipole	R-SMA
				5.60	5.47~5.725		
				5.19	5.725~5.85		
				2.47	2.4~2.4835		
				2.18	5.15~5.25		
				2.19	5.25~5.35		
				2.14	5.47~5.725		
3	Chain 0 (MIMO 1)	TAOGLAS	MA530.A.CG.003	2.47	5.725~5.85	Monopole	R-SMA
				2.60	2.4~2.4835		
				0.00	5.15~5.85		
				1.80	2.4~2.4835		
	Chain 1 (MIMO 2)			0.50	5.15~5.85		

1. 應避免影響附近雷達系統之操作。
2. 高增益指向性天線只得應用於固定式點對點系統。

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