ERICSSON ENTERPRISE WIRELESS DOCUMENTATION PORTAL

R2100 Series 5G Ruggedized Router Quick Start Guide

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1 | Introduction

This document provides a brief overview of the R2100 Series 5G Ruggedized Router, discusses what is inside the box, and provides basic setup and install instructions.

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 refer to our Contact Us page.

1.1 | 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 router. Due to the unique nature of each installation, potential for RF exposure, and enhanced separation requirements, customers must have a professional install their 5G hardware. This article is a reference guide and is intended only to provide best practices.

Refer to the Cradlepoint Product Disclaimer and Limitation of Liability section for further information.

2 | R2100 Series 5G Ruggedized Router models

This document applies to all of the following products:

R2100 Series	Model number:
R2105 (with Wi-Fi)	S5A237A
R2155 (no Wi-Fi)	S5A237A

Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados.

Para maiores informações, consulte o site da ANATEL: https://www.gov.br/anatel.

The following accessories are separately available:

Accessory	Description	Part Number
Vehicle Mounting Foam	For use in semi-permanent locations to avoid damage upon removal, and helps maintain a seal when installed on uneven or ridged vehicle surfaces.	170905-000
Vehicle Mounting Extension Bolt	Enables vehicle installation on thicker surfaces.	170906-000

For details about installation with the accessories, see the R2100 Series 5G Ruggedized Router and Optional Accessory Quick Start Guide.

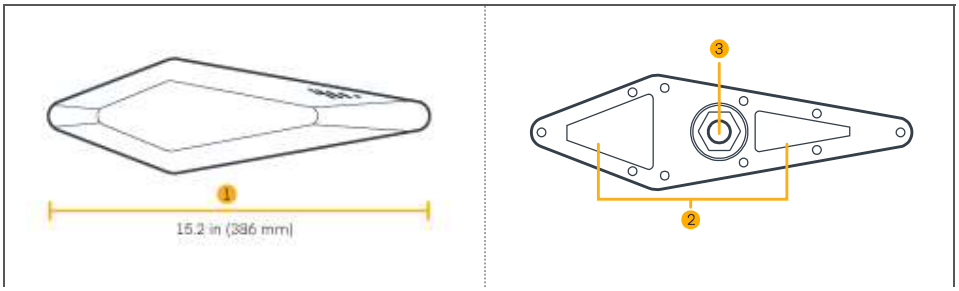
2.1 | Four SSIDs Per Wi-Fi Radio Maximum

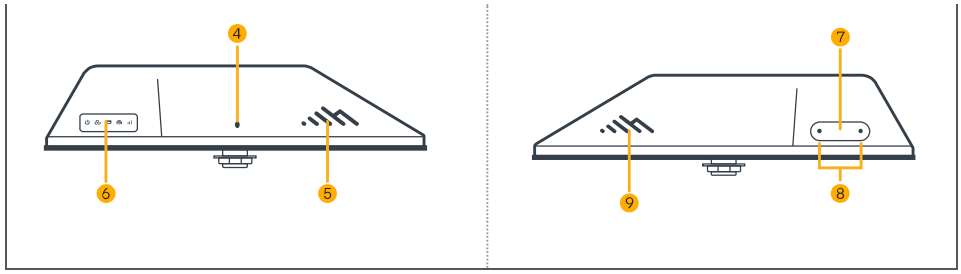
With the release of NCOS 7.26.60, this device now supports a maximum of 4 SSID's per Wi-Fi radio when the device has an Additional SSIDs license.

3 | Before you begin

Read the following before setting up the router.

3.1 | External device components





1. Overall length
2. Thermal pads
3. Cable inlet
4. Touch sensor
5. Recessed logo
6. LEDs
7. SIM door
8. SIM door screws
9. Recessed logo

3.2 | Location considerations

The following includes best practice considerations for identifying a mounting location:

- Ensure the router is positioned to receive optimal signal. A location on the trunk/boot or roof of the vehicle is recommended.

  Note

  Cradlepoint recommends selecting a flat section on the exterior of the vehicle to ensure the best adhesion and prevent leaks.

- Avoid installing the device in enclosed spaces.
- Ensure that the heat sink pads are in full contact with the metal of the vehicle exterior to help dissipate heat. Extreme heat or cold can reduce the router's performance.
- Mount in locations compliant with the Safety, Regulatory, and Warranty guide, included in the product shipping box.

3.3 | SIM card for wireless connectivity

A wireless broadband data plan must be added to the router for wireless broadband connectivity. Network providers must provision a SIM card to provide wireless broadband data plans compatible for use with the router. Contact your network provider for further details.

3.4 | 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.

3.5 | Required tools for setup

- Security Torx size T8H (for SIM door cover)
- Drill with 22mm (or 15/16") hole saw drill bit
- Open ended adjustable torque wrench
- Open ended adjustable box wrench
- Cellophane tape (for holding the mounting template in place)
- Gloves, and eye protection
- Metal file (for deburring drilled hole)
- Cleaning solvent suitable for mounting surface

4 | Setup

Read through the following to set up the router or use the Verify installation app.

4.1 | STEP 1: Check box contents

The following should be included in the box:

- R2100 Series 5G Ruggedized Router
- [1] Power cable
- [1] Ethernet Cable
- [1] Mounting template
- [1] Small accessories kit which includes:
  - [1] Hex nut
  - [1] Tooth lock washer
  - [1] Flat washer
- [1] Safety, Regulatory, and Warranty Guide

4.1.1 | Accessories

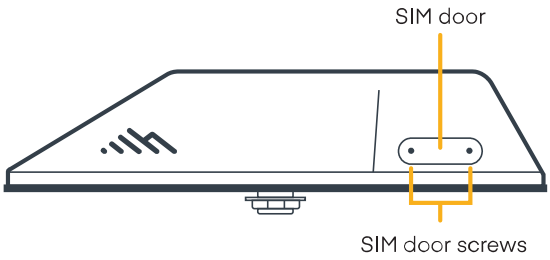
To enable cellular connectivity, at least one activated 4FF-sized SIM card with an active cellular data plan is needed.

4.1.2 | Screws and Replacement Parts for Ericsson Cradlepoint Router Products

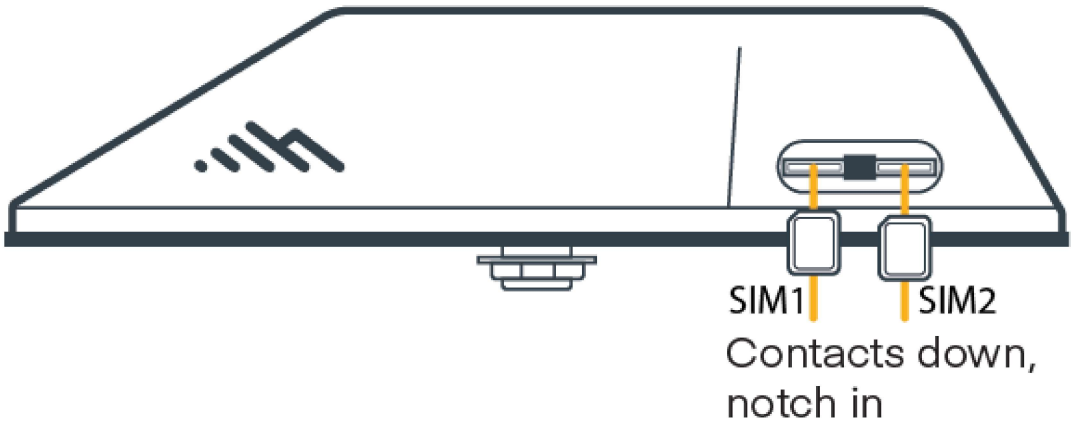
The screws and small parts included with Ericsson Cradlepoint products are designed with unique geometry and other features,that are typically not available from local or general-purpose suppliers. Mounting fasteners (if included) are not typically unique and can usually be replaced easily, provided the replacements match the original specifications. If you need additional screws or other small parts to replace those originally included with your product, contact Ericsson Enterprise Wireless Solutions Support.

4.2 | STEP 2: Install SIM (if not pre-installed)

1. Loosen the two Torx security screws until the captive screws and SIM door can be removed.



2. Install at least one SIM card, with contacts down, and notch facing toward the router.

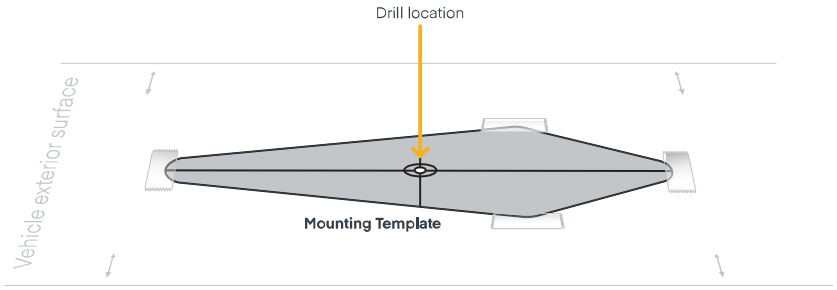


3. Replace door and secure the Torx screws.

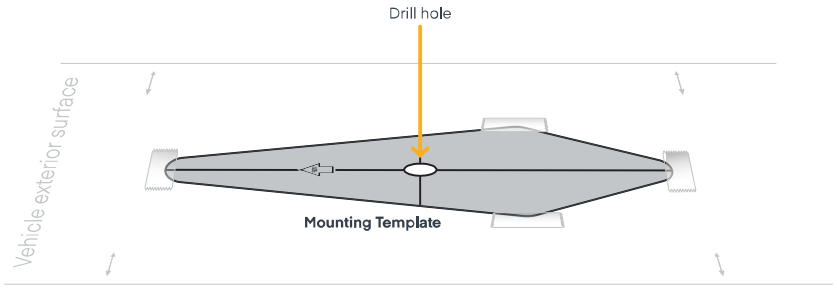
4.3 | STEP 3: Mount the router

The router must be mounted on a relatively flat exterior vehicle surface. Very mildly curved surfaces can be accomodated, if the curve allows the entire adhesive surface of the router to engage, and produces no gaps between the gasket and mount surface.

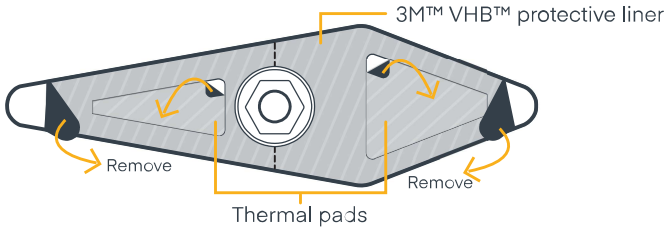
1. Place the mounting template on the chosen spot on the exterior of the vehicle.
2. Align mounting template in desired location on vehicle making sure device footprint and hole placement are in desired locations with no obstructions (above or below).
3. Tape or otherwise temporarily secure the mounting template to the roof panel.



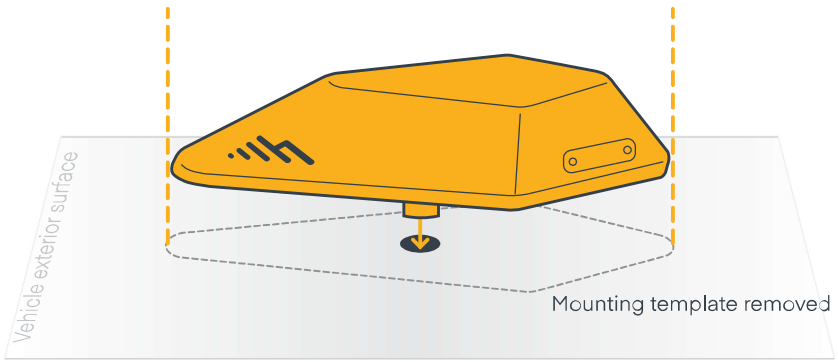
4. Drill the cable routing hole using a “hole saw” bit, 22mm or 15/16” diameter hole saw sizes are recommended. When finished, remove the mounting template.



5. Remove both pieces of the adhesive protective liner from the contact surface of the router, and from the two thermal pads.



6. Route the cables and cable inlet through the drilled hole, and then place the device in the footprint determined by the mounting template. Do not press the router down yet; let the router rest on the gasket as you determine final placement.



Important

For maximum adhesion, the bonding surfaces must be clean and dry, and free from obstructions that could prevent the two surfaces from sealing together.

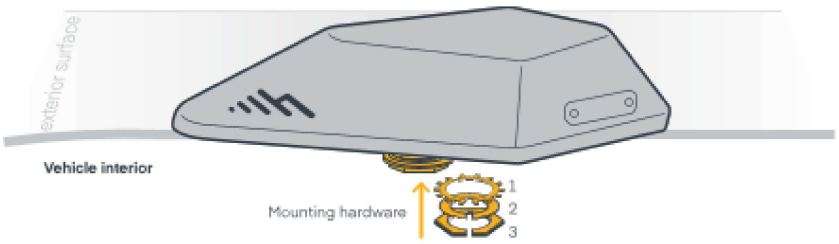
7. Make sure device is properly aligned, and then press down firmly and hold the top of the device so that the collar gasket compresses, and the adhesive adheres to the vehicle exterior.

Important

The router contact surface must be as fully engaged with the surface of the vehicle as possible, and the gasket must be compressed, to avoid water seepage. Cradlepoint recommends a 24-hour waiting period at room temperature to achieve 90% bond strength of the adhesive. Colder temperatures may require longer curing times. Bond strength is dependent upon the amount of adhesive-to-surface contact developed. Firm application pressure develops better adhesive contact and helps improve bond strength. Generally, this means that the tape should experience at least 15 psi (100 kPa) in roll down or platen pressure.

8. Install fasteners from the interior of vehicle:

    1. Star lock washer
    2. Flash washer
    3. Hex nut

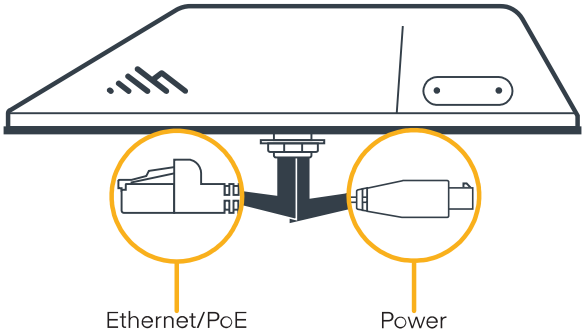


Note

Further text about how tight to make the fasteners to ensure good adhesion to come.

4.4 | STEP 4: Connect power

Connect power depending on the chosen installation:



- If using PoE, thread the PoE cable to the PoE source.
- If using a power adapter, thread the power cable to reach the power source.

4.4.1 | Power socket pinouts

When creating a custom cable, you can find the proper pinouts below.

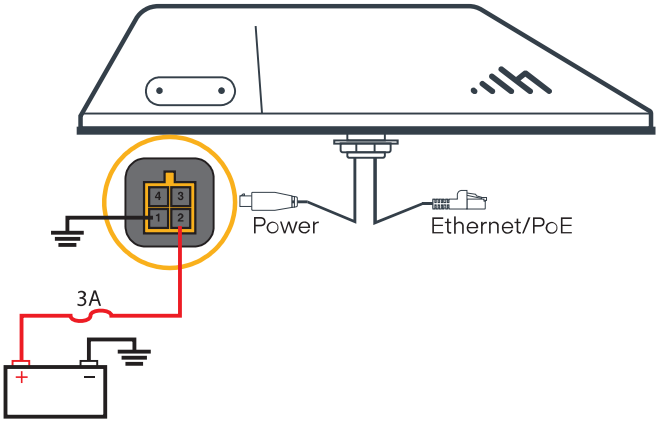
Notice

The diagram is shown as looking at the socket on the cable descending from the router, or the back of the connector on the custom cable.

Diagram	Pin	Wire Color	Function
	1	Black	Ground
	2	Red	Power (12VDC)
	3	Orange	Ignition Sense
	4	Blue	N/C

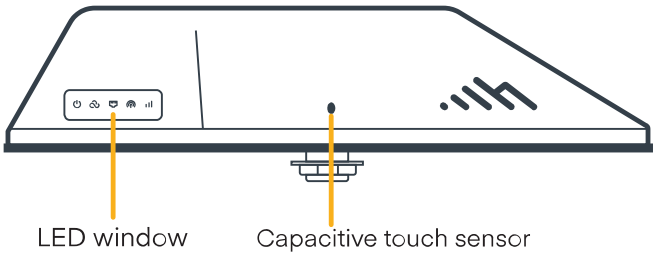
Important

Power must be provided using a fused 3A circuit. In North America, the fuse must be UL listed. Do not directly connect the router to a vehicle battery.



4.5 | STEP 5: Power up the router

The router powers up automatically once power is supplied to the unit from the source.

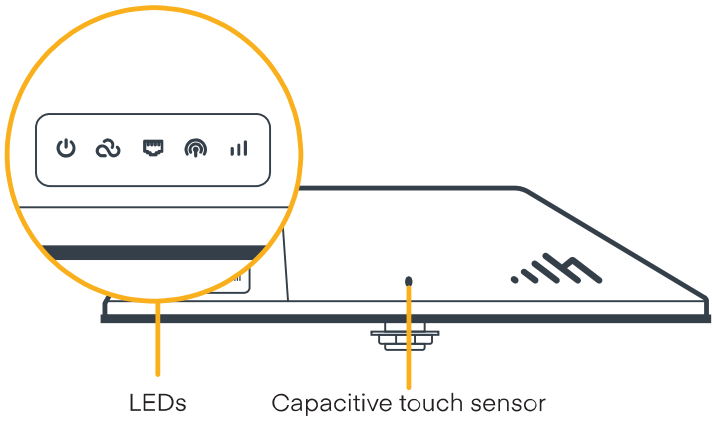


Tap the touch sensitive button to verify the power LED lights up (all LEDs will go dark a few moments after touching the panel).

4.6 | STEP 6: Activate the router in NetCloud Manager

Activate the router through NetCloud Manager. Device activation requires that you log into your NetCloud Manager account. Refer to Getting Started with NetCloud Manager for more information.

5 | Understanding LEDs



The router uses LED lights to communicate various status conditions. Use the tables below to verify the status of the router after touching the sensor.

Note

NOTE: All LEDs default to an unlit state a few moments after touching the sensor.

Indicator	Behavior
	POWER: Detects that the unit has power.
	No Light = Not receiving power. Check the power source connection.
	Solid White = Powered on.

Indicator	Behavior
	NCM STATE: Detects that the unit has power.
	No Light = Unable to connect to NetCloud Manager.

Indicator	Behavior
	Solid White = Connected to NetCloud Manager.

Indicator	Behavior
	ETHERNET CONNECTION: Indicates if the RJ-45 connection has shaken loose.
	No Light = Not connected.
	Solid White = Connected.

Indicator	Behavior
	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

Indicator	Behavior
	Flashing Yellow = Modem is in the process of resetting
	Solid Red = Carrier reject
	Flashing Red = No SIM or SIM door open

Indicator	Behavior
	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 heath is fair
	Solid Red = Cellular Health is poor

6 | Troubleshooting

If the device takes longer than five minutes to connect to the Internet, log into the local UI of the device to make configuration changes or to start the troubleshooting process. You must be

physically co-located with the device to do this. Refer to No Internet or Connection Issues for more information.

Once the device connects to the Internet, it should then connect to your NetCloud Manager account and start its configuration download.

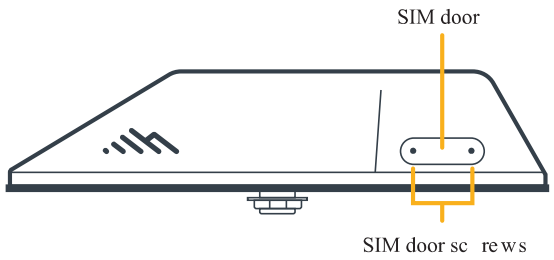
6.1 | Using the Reset Button to Return to Factory Settings

Important

You will need the initial password shown on the Ethernet cable tag to get back into the router after a factory reset.

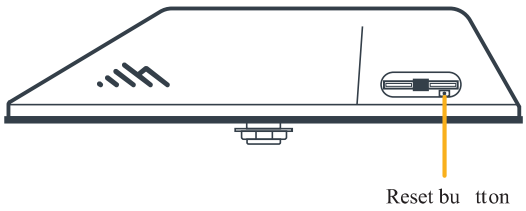
To reset the unit, do the following:

1. With the router powered on, remove the SIM door.



   Modem connection is lost when this door is removed.

2. Use a narrow tool to press and hold the reset button for at least 10 seconds.



   The modem and Wi-Fi LEDs will blink twice to notify you of the reset. The unit will go offline for approximately for approximately two minutes as it reboots. During the reboot, the Embedded Modem State ( ) light will flash yellow. Perform the next step during the reboot.

3. Replace the SIM door and secure it with the SIM door screws.

7 | Terms of Service

Terms of Service &License Agreement

Privacy Policy

GDPR Privacy Policy

8 | Help and Support

Ericsson Enterprise Wireless Customer Portal

Ericsson Enterprise Wireless Support Services

9 | Cradlepoint Product Disclaimer and Limitation of Liability

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Professional Installer Network

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10 | Safety and Regulatory Warnings

This product is intended to be supplied by a UL Listed Power Supply rated 12 Vdc, minimum 3A.