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## IBR600C Series Router Quick Start Guide

Oct 18, 2022 · Knowledge

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## IBR600C Series Router Quick Start Guide



### Introduction

This document provides a brief overview of the IBR600C Series Router for IoT networks, discusses what is 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 [Cradlepoint Support \(https://cradlepoint.com/support-services\)](https://cradlepoint.com/support-services).

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IBR600C IoT Router Models

## Before You Begin

Read the following before setting up the IBR600C IoT router.

### Location Considerations

The IBR600C IoT router is a semi-ruggedized LTE router for IoT connectivity and may be mounted in a variety of locations and configurations. Consider the following before mounting:

- 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 extreme weather conditions.
- Ensure plenty of airflow for ventilation.
- Keep the device out of reach and ensure restricted access. The IBR600C is designed to work in elevated ambient temperatures which may cause the surface of the device to become too hot to safely touch.
- For more information refer to the Safety, Regulatory, and Warranty Guide insert that came with your device.

Cradlepoint recommends that all IoT devices be installed by a professional. For assistance with installation or in locating a professional installer, contact [Cradlepoint Sales and Support \(https://cradlepoint.com/company/contact\\_us\)](https://cradlepoint.com/company/contact_us).

### SIM Card for Wireless Connectivity

A wireless broadband data plan must be added to your Cradlepoint IBR600C Series IoT Router for wireless broadband connectivity. Wireless broadband data plans are available from network operators such as Verizon, AT&T, Telstra, and Vodafone. The SIM card must be activated and provisioned by the network operator. Contact your network operator for details about selecting a data plan and about the process for provisioning your SIM. To configure the router for failover and failback functionality, refer to the article, [Effectively Utilizing 2-SIM Modems](#).

### Router Communication and Data Usage

The factory default configuration of the router is set to communicate with the Cradlepoint 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 \(https://customer.cradlepoint.com/s/article/router-communication-data-usage\)](https://customer.cradlepoint.com/s/article/router-communication-data-usage) for more information.

### Required Tools for Setup

- #0 Philips-head screwdriver (for SIM cover 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 instructions walk you through basic setup of the router. For more advanced setups, contact a professional installer.

### STEP 1: Check box for content.

The contents of the box vary depending upon the Cradlepoint IBR600C Series model purchased. The IBR600C includes Wi-Fi connectivity and the IBR650C does not. Refer to the follow to ensure you received all items included with your hardware:

**IBR600C****IBR650C**

- [1] Cradlepoint COR IBR600C IoT router
- [1] Cradlepoint COR IBR650C IoT router

**IBR600C**

- [2] LTE cellular antennas
- [2] Wi-Fi antennas
- [1] 4-Pin power supply
- [2] SIM door screws
- [1] Getting Started reference sheet
- [1] Safety, Regulatory, and Warranty guide

**IBR650C**

- [2] LTE cellular antennas
- [1] 4-Pin power supply
- [2] SIM door screws
- [1] Getting Started reference sheet
- [1] Safety, Regulatory, and Warranty guide

**Accessories**

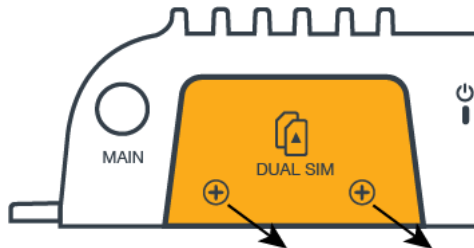
For enhanced function of the IBR600C Series IoT Router, you will need at least one activated 2FF-sized SIM card with active cellular data plan.

Optional accessories to enhance your router capabilities include, but are not limited to:

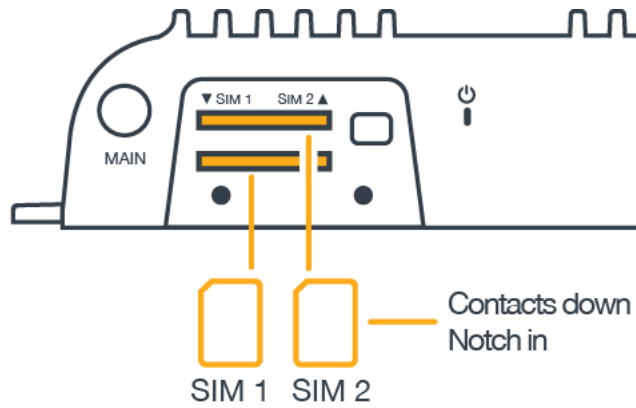
- [Additional Wi-Fi and Cellular Antennas \(https://cradlepoint.com/products/cradlepoint-certified-antennas-fixed/\)](https://cradlepoint.com/products/cradlepoint-certified-antennas-fixed/)
- [COR Extensibility Dock \(https://cradlepoint.com/product/accessories/cor-extensibility-dock-3/\)](https://cradlepoint.com/product/accessories/cor-extensibility-dock-3/)
- [COR Extensibility Cable \(https://cradlepoint.com/product/accessories/cor-extensibility-cable/\)](https://cradlepoint.com/product/accessories/cor-extensibility-cable/)
- [COR Power/GPIO Cable \(https://cradlepoint.com/products/accessories/cor-power-gpio-cable/\)](https://cradlepoint.com/products/accessories/cor-power-gpio-cable/)
- [9-Wire COR Power/GPIO Cable \(https://cradlepoint.com/product/accessories/9-wire-cor-power-gpio-cable/\)](https://cradlepoint.com/product/accessories/9-wire-cor-power-gpio-cable/)
- [Din Rail Mounting Bracket \(https://cradlepoint.com/product/accessories/din-rail-mounting-bracket/\)](https://cradlepoint.com/product/accessories/din-rail-mounting-bracket/)
- [COR Series Mag Mount Kit \(https://cradlepoint.com/product/accessories/cor-series-mag-mount-kit/\)](https://cradlepoint.com/product/accessories/cor-series-mag-mount-kit/)

**STEP 2: Remove the SIM door.**

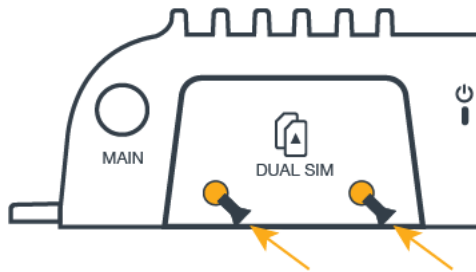
- Unscrew and remove the SIM cover from the router.

**STEP 3: Insert a SIM card into SIM slot(s).**

- Insert an activated 2FF SIM card into the SIM1 slot (contacts down, notch in). The SIM card will click into place.
- Optionally, insert an active SIM into the SIM2 slot with the same orientation.

**STEP 4: Reinstall the SIM door.**

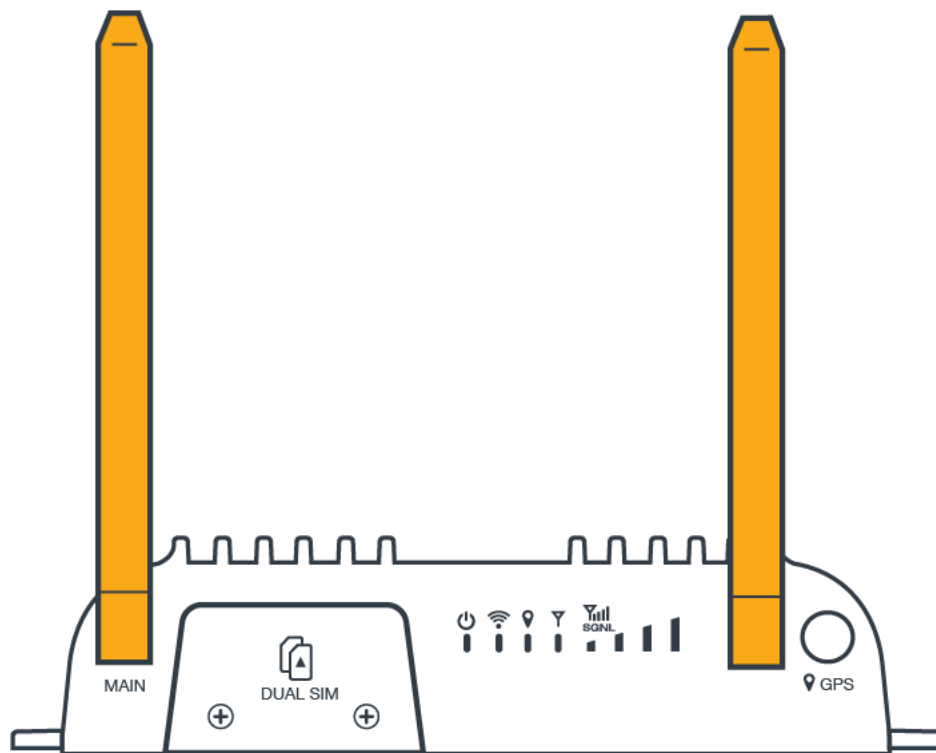
- Replace the SIM cover and secure with the SIM door screws.

**STEP 5: Attach the LTE cellular antennas.**

- Attach the LTE cellular (paddle) antennas to the ports marked MAIN and AUX.

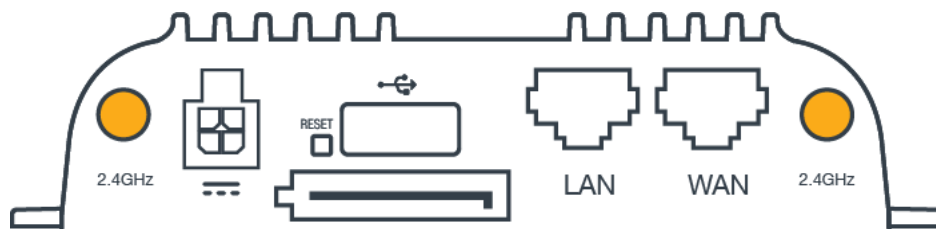


- Hold the antenna straight and twist the base to thread onto the connector.
- Tighten with fingers only (maximum torque not to exceed 4 in-lbs). Do not over-tighten.

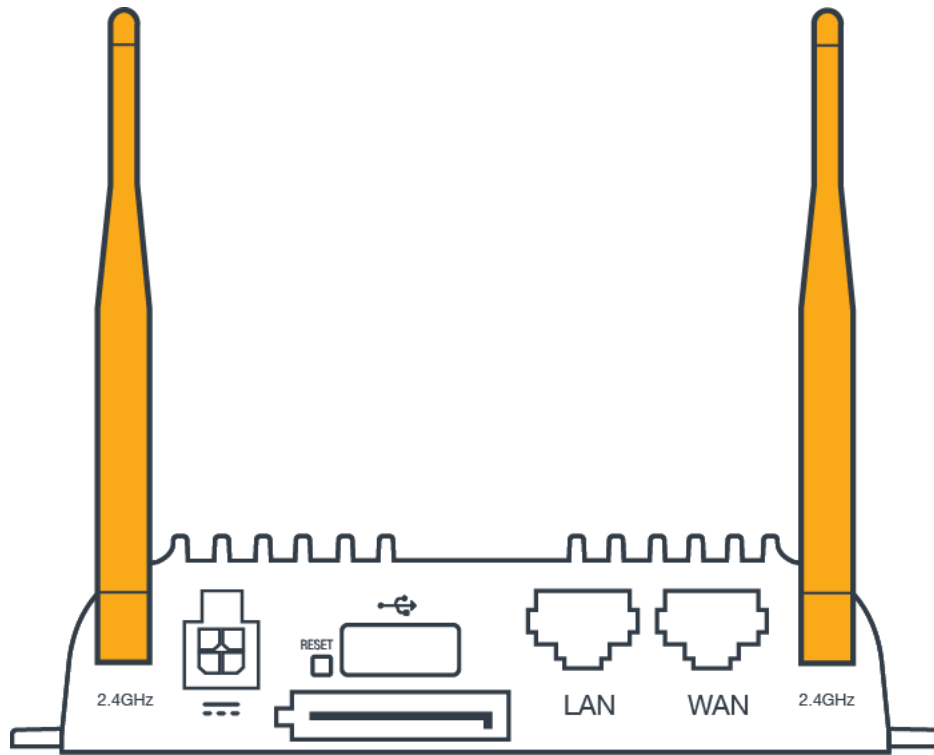


STEP 6: Attach the Wi-Fi antennas (IBR600C Models only).

- Attach the Wi-Fi (stick) antennas to the ports marked 2.4GHz.



- Hold the antenna straight and twist the base to thread onto the connector.
- Tighten with fingers only (maximum torque not to exceed 4 in-lbs). Do not over-tighten.



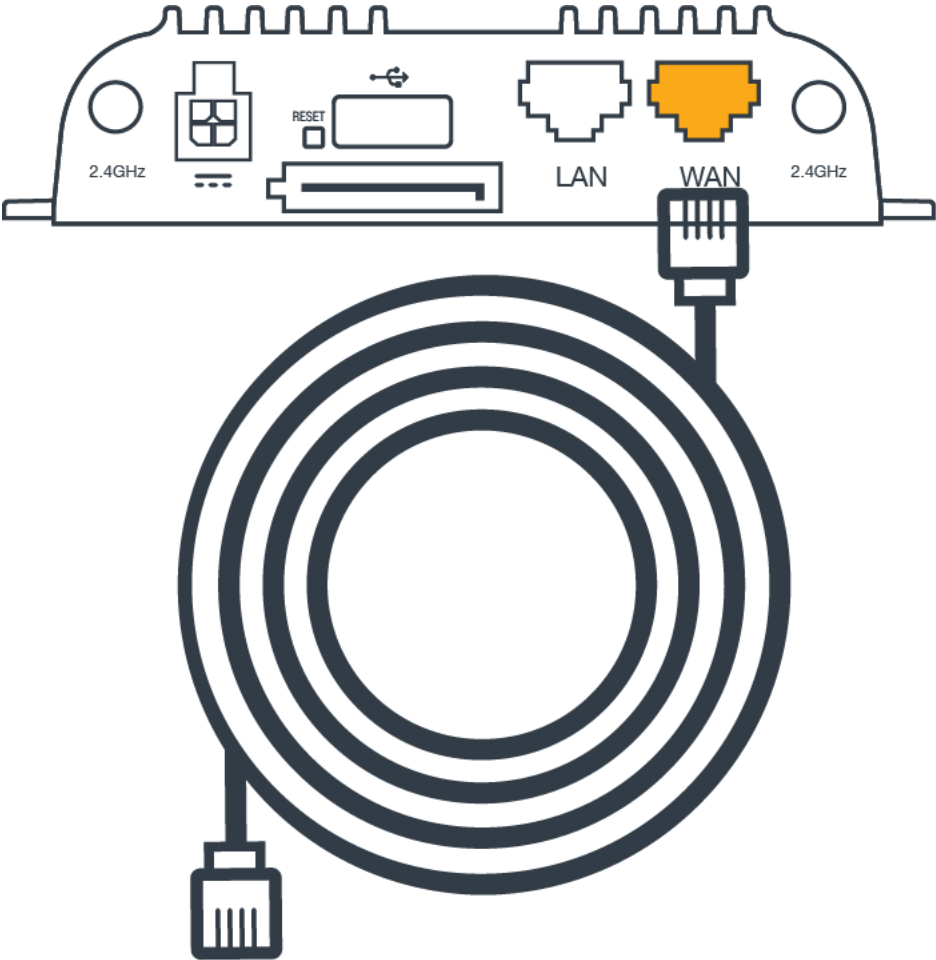
#### STEP 7: Mount the router.

The IBR600C Series router may be mounted in a number of ways and should be completed by a professional installer. Refer to the following for best practices:

- 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

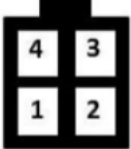
#### STEP 8 (Optional): Connect the Ethernet cable.

- If you are using a wired, Ethernet WAN connection, connect the Ethernet cable to the WAN port on the back of the IBR600. Connect the other end to your WAN source.
- If you are using a wireless WAN (using cellular connectivity), you will need to power up the router first and then access your NetCloud Manager account.

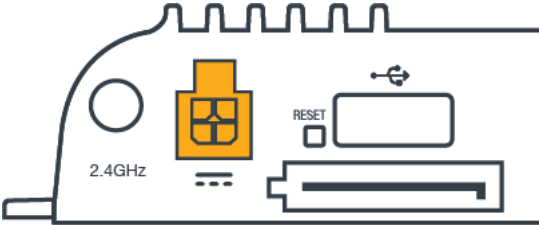


STEP 9: Power up the router.

The AC power source includes a 4-pin slot plugin to connect directly to the router. The purpose of this configuration is to allow for using a 4-wire/GPIO cable to hardwire power for DC connections or use GPIO. Refer to the following for pin configuration:

	PIN	Wire Color	Definition	Details
	1	Black	Ground	Ground
	2	Red	Power	9-33 VDC
	3	Orange	Input	3V Input High Threshold (36V tolerant)
	4	Blue	Output	General purpose I/O (GPIO)

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



2. Plug the adapter into an electrical socket.
3. Allow 1 minute for the router to run through its bootup sequence.

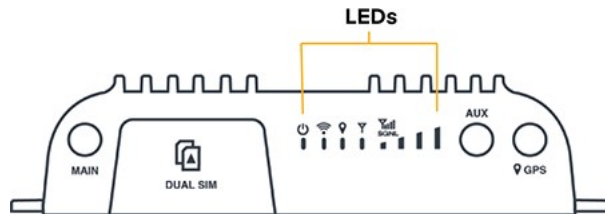
Refer to the [Understanding LEDs](#) section of the guide for more information about LED indicator status.










**STEP 10: Activate the router through NetCloud Manager.**








Activate your IBR600C Series IoT Router through NetCloud Manager (NCM). Your router is packaged with NetCloud services and requires that you log into your NetCloud account to activate. Refer to [Getting Started with NetCloud Manager \(https://customer.cradlepoint.com/s/article/Getting-Started-with-NetCloud-Manager\)](https://customer.cradlepoint.com/s/article/Getting-Started-with-NetCloud-Manager) for more information.

## Understanding LEDs

The IBR600C series routers use LED lights to communicate various status conditions. Use the chart below to verify the status of your router after the boot up cycle.



INDICATOR	BEHAVIOR	
	<b>POWER:</b> The Cradlepoint IBR600C series router must be powered using a 4-pin power source.	
		<ul style="list-style-type: none"> <li>• <b>No Light</b> = Not receiving power. Check the power switch and the power source connection.</li> </ul>
		<ul style="list-style-type: none"> <li>• <b>Blue</b> = Powered On</li> </ul>
	<b>WI-FI BROADCAST:</b> Indicates Wi-Fi activity (IBR600C only). ATTENTION: indicates router errors (IBR650C only).	
		<ul style="list-style-type: none"> <li>• <b>No Light</b> = Wi-Fi is not connected</li> </ul>
		<ul style="list-style-type: none"> <li>• <b>Green</b> = Wi-Fi is on and operating normally.</li> </ul>
		<ul style="list-style-type: none"> <li>• <b>Yellow</b> = Attention—Log into NCM / NCOS to troubleshoot.</li> <li>• Upon initial installation, the light will be yellow until the device is registered in NetCloud Manager (NCM).</li> <li>• On the IBR650 model, the WiFi labeling is replaced with an inverted exclamation and is only used for indicating router errors.</li> </ul>
	<b>MODEM:</b> Indicates the status of the LTE modem.	
		<ul style="list-style-type: none"> <li>• <b>No Light</b> = Modem not connected</li> </ul>
		<ul style="list-style-type: none"> <li>• <b>Solid Green</b> = Modem has established an active connection</li> </ul>

INDICATOR	BEHAVIOR	
		<ul style="list-style-type: none"> <li>• <b>Blinking Green</b> = Modem is connecting.</li> </ul>
		<ul style="list-style-type: none"> <li>• <b>Solid Yellow</b> = Modem is not active.</li> </ul>
		<ul style="list-style-type: none"> <li>• <b>Blinking Yellow</b> = Data connection error. No modem connection possible.</li> </ul>
		<ul style="list-style-type: none"> <li>• <b>Blinking Red</b> = Modem is in the process of resetting. <ul style="list-style-type: none"> <li>◦ Blinking Red with Signal Strength LEDs = SIM door is not installed, modem is off</li> </ul> </li> </ul>
	<b>SIGNAL STRENGTH:</b> Blue LED bars indicate the active modem's signal strength.	
		<ul style="list-style-type: none"> <li>• <b>4 Solid Bars</b> = Strongest Signal.</li> </ul>
		<ul style="list-style-type: none"> <li>• <b>1 Blinking Bar</b> = Weakest Signal.</li> </ul>
<b>OTHER</b>	Additional LED Indications:	
		<ul style="list-style-type: none"> <li>• Several LEDs blink when the factory reset button is detected.</li> <li>• Two modem LEDs blink red in unison for 10 seconds when there is an error during NCOS upgrade.</li> </ul>

## 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](https://customer.cradlepoint.com/s/article/NCOS-No-Internet-or-Connection-Issues) (<https://customer.cradlepoint.com/s/article/NCOS-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.

## Resources

[IBR600C Series Router Webpage](https://cradlepoint.com/product/endpoints/ibr600c-series/) (<https://cradlepoint.com/product/endpoints/ibr600c-series/>)

[IBR600C Series Router Data Sheet](https://cradlepoint.com/datasheet/ibr600c-series-router/) (<https://cradlepoint.com/datasheet/ibr600c-series-router/>)

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## IBR600C IoT Router Models

This document applies to the following IBR600C models:

CRADLEPOINT IBR600C-150M-B-EU: MODEL S5A806A

CRADLEPOINT IBR650C-150M-B-EU: MODEL S5A807A

CRADLEPOINT IBR600C-150M-C-AP: MODEL S5A811A

CRADLEPOINT IBR650C-150M-C-AP: MODEL S5A812A

CRADLEPOINT IBR600C-150M-D-NA: MODEL S5A902A

CRADLEPOINT IBR650C-150M-D-NA: MODEL S5A907A

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