

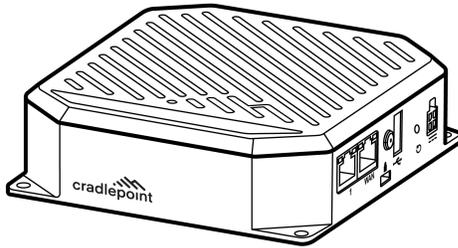
[Home \(/s/\)](#)[TECHNICAL SUPPORT \(/s/contactsupport\)](#)**Caption**[TRAINING \(/s/cpu\)](#)[FORUMS \(/s/forums\)](#)[DEVELOPERS \(/s/developers\)](#)

## S700 Series Semi-Ruggedized Router Quick Start Guide

🕒 Jun 27, 2023 · Knowledge

### Content

# S700 Series Semi-Ruggedized Router Quick Start Guide



## Introduction

This document provides a brief overview of the Cradlepoint S700 Series Semi-Ruggedized Router, discusses what's 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 [Cradlepoint Support \(https://cradlepoint.com/support/\)](https://cradlepoint.com/support/).

### Intended audience

This guide is intended for professional networking hardware installers. It provides basic knowledge and should be used only as a reference guide for installing the hardware. Due to the unique nature of each product, customers must have a professional install their hardware.

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## Navigation

[S700 Series Semi-Ruggedized Router models](#)

[External Device Components of the Cradlepoint S700 Series Semi-Ruggedized Router](#)

[Before You Begin](#)

[Location Considerations](#)

[SIM Card for Wireless Connectivity](#)

[Router Communication and Data Usage](#)

[Setup](#)

[STEP 1: Check Box Contents](#)

[STEP 2: Remove the SIM Door](#)

[STEP 3: Insert an Activated SIM Card](#)

[STEP 4: Reinstall the SIM Door](#)

[STEP 5: Attach the Antennas](#)

[STEP 6: Mount the Router](#)

[Additional Mounting Option: DIN Rail](#)

[STEP 7 \(Optional\): Connect an Ethernet Cable](#)

[STEP 8: Power Up the Router](#)

[Positioning Direct-Attach Antennas](#)

[Positioning for Optimal Antenna Performance](#)

[Positioning for Good Antenna Performance](#)

[Avoiding Poor Antenna Performance](#)

[Understanding LEDs/Troubleshooting](#)

[Additional Resources](#)

[Help and Support](#)

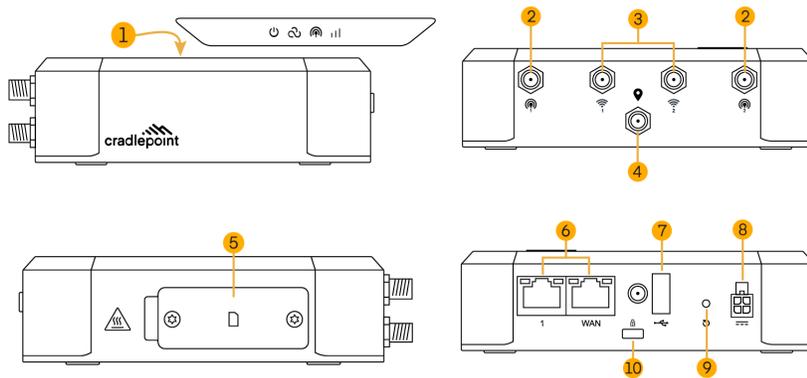
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## S700 Series Semi-Ruggedized Router models

S700 Series	Model
S700-C4D	S5A246A
S750-C4D†	S5A251A
S700-C4E	S5A245A

†This model does not include Wi-Fi capability.

## External Device Components of the Cradlepoint S700 Series Semi-Ruggedized Router



1	LED Panel
2	Cellular Antenna Connectors (Female SMA)
3	Wi-Fi Antenna Connectors (Female RP-SMA) (Not present on S750)
4	GNSS Antenna Connector (Female SMA)
5	SIM Door (SIM Slots behind)
6	Gigabit Ethernet (GbE) Ports

7	Locking USB 2.0 Port
8	DC Power Port
9	Reset Button
10	Kensington Lock Port

## Before You Begin

Read the following before setting up the router.

### Location Considerations

The S700 Series Router is built for installation in a variety of environments. Cradlepoint recommends having a professional install the router to ensure proper signal reception and usage.

To ensure the router operates efficiently, following are best practices for determining the installation location:

- Ensure the device is positioned to receive optimal cellular and (for the S700) Wi-Fi signal reception.
- Ensure that the mounting surface is flat.
- When using direct-attach antennas, avoid positioning the router near concrete walls, metal or reflective surfaces, or any other objects that may interfere with the antennas, RF reception, or cables.
- Do not install the device in direct sunlight or in locations where it may be exposed to the elements. Extreme heat or cold can and will impact the router's performance.
- Mount the device in a location compliant with the Safety, Regulatory, and Warranty Guide, included in the product shipping box.

### SIM Card for Wireless Connectivity

A wireless broadband data plan must be added to the router for wireless broadband connectivity. Wireless broadband data plans are available from network operators. 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 the SIM.

### Router Communication and Data Usage

The factory default configuration of the router is set to communicate with 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.

## Setup

The following instructions walk you through basic setup of the router.

### STEP 1: Check Box Contents

Prior to installing the S700 Series Router, open the box and ensure that all items are present based on your ordering choice:

Model	Standard orders include	Orders with Accessories also include
S700-C4D	<ul style="list-style-type: none"> <li>[1] Cradlepoint S700 Series Semi-Ruggedized Router</li> <li>[1] 2-meter, 2x2 Power and GPIO Cable</li> <li>[1] Getting Started Insert Card</li> <li>[1] Safety, Regulatory, and Warranty Guide</li> </ul>	<ul style="list-style-type: none"> <li>[1] AC Power Adapter (with regionally appropriate plugs)</li> <li>[2] Cellular Antennas</li> <li>[2] Wi-Fi Antennas (<b>not included for S750-C4D</b>)</li> <li>[1] Small Accessories Kit, including: <ul style="list-style-type: none"> <li>[4] Rubber Feet</li> <li>[4] Wall Mount Screws</li> <li>[4] Surface Mount Anchors</li> </ul> </li> </ul>
S750-C4D		
S700-C4E		

### STEP 2: Remove the SIM Door

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

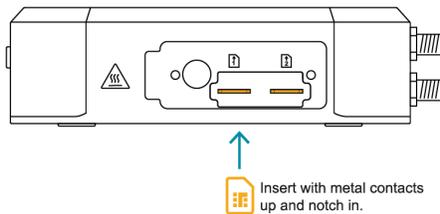
**NOTE:** A Torx driver, size T8, is required to remove screws.



### STEP 3: Insert an Activated SIM Card

Insert an activated 4FF-sized SIM card into the SIM1 slot. The SIM card clicks into place.

Optionally, insert an activated 4FF-sized SIM into the SIM2 slot with the same orientation.



### STEP 4: Reinstall the SIM Door

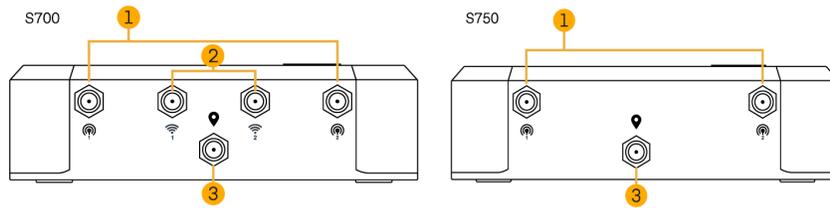
Replace the SIM door and secure it with the SIM door screws and a Torx driver.



### STEP 5: Attach the Antennas

When attaching (direct-attach) antennas or compatible coaxial cable antennas:

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



1	Attach cellular antennas to the Cellular Antenna Connectors (Female SMA).
2	<b>S700 only:</b> Attach Wi-Fi antennas to the Wi-Fi Antenna Connectors (Female RP-SMA).
3	Attach a GNSS antenna to the GNSS Antenna Connector (Female SMA - Not included.)

**NOTE:** See [Positioning the antennas](#) for detailed information on getting the best signal once your router is mounted in the chosen location.

### STEP 6: Mount the Router

The S700 Series router may be mounted in a number of ways and should be completed by a professional installer. See the [Location Considerations](#) section of this document for more information.

#### Additional Mounting Option: DIN Rail

An optional DIN rail mounting bracket is available (ordered separately) for the S700 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.

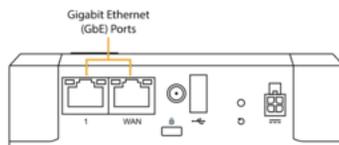
Product	Part number	Compatibility
DIN Rail Mounting Bracket	170904-000	R920 Series Ruggedized Router S700 Series Semi-Ruggedized Router

See the [DIN Rail Mounting Bracket Installation and Mounting Guide \(https://customer.cradlepoint.com/s/article/DIN-Rail-Mounting-Bracket-Installation-Guide\)](https://customer.cradlepoint.com/s/article/DIN-Rail-Mounting-Bracket-Installation-Guide) for more details.

### STEP 7 (Optional): Connect an Ethernet Cable.

Do one of the following:

- If you are using a wired Ethernet WAN connection, connect the Ethernet cable to the **WAN** port on the S700 Router. Connect the other end to your WAN source.
- If you are using a wired Ethernet LAN connection, connect an Ethernet cable to the port marked **1**. Connect the other end to your LAN.



### STEP 8: Power Up the Router

Connect power to the router. Do one of the following:

- Connect an AC power adapter by plugging the 4-pin connector into the router and then plugging the other end into an electrical outlet.
- Connect a power and GPIO cable to the router using the 4-pin connector and connect the other end to your chosen power source.  
The router's 4-pin GPIO cable socket is configured to allow for using the available 4-wire/GPIO cable to hardwire power for DC connections, or for using GPIO. Refer to the following for pin configuration when making a custom cable:

Socket	Pin	Wire Color	Definition	Details
	1	Black	Ground	Ground
	2	Red	Power	9-33 V DC
	3	Orange	Input	<ul style="list-style-type: none"> <li>General purpose input</li> <li>Protected to 33 V in</li> </ul>
	4	Blue	Output	<ul style="list-style-type: none"> <li>General purpose output</li> <li>33 V tolerant</li> </ul>

**NOTE:** The table diagram shows to view looking into the socket on the router. Be sure to take this into account when using the available GPIO cable or when building a custom cable.

The router will automatically power up when power is applied. Allow one minute for the router to run through the bootup sequence.

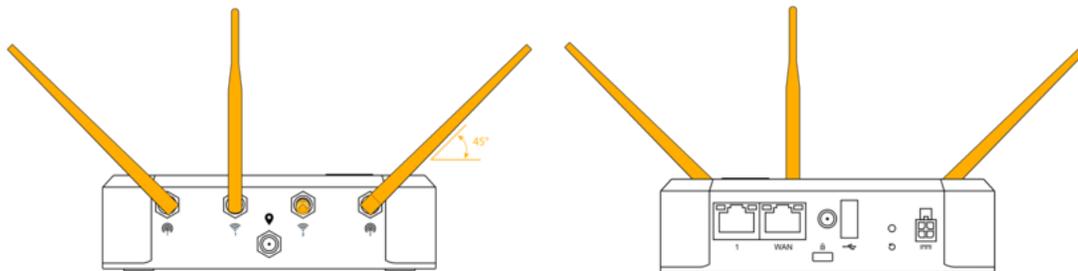
## Positioning Direct-attach Antennas

Proper direct-attach antenna positioning helps your Cradlepoint router send and receive the best cellular and Wi-Fi signals. See the following best practices and choose the best arrangement for which your installation has space.

### Positioning for Optimal Antenna Performance

This antenna position configuration consists of:

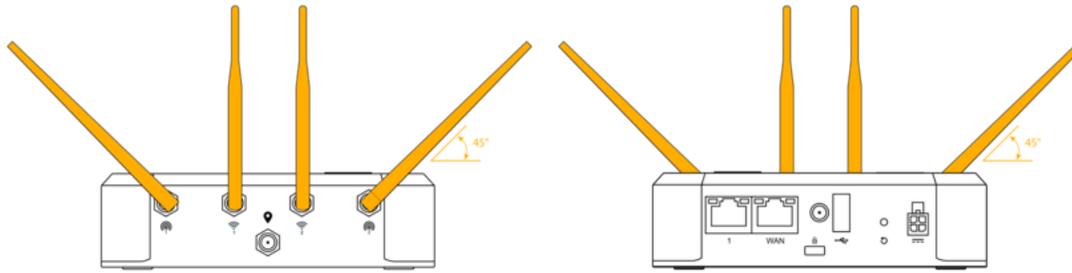
- Cellular antennas angled out 45° from upright.
- One Wi-Fi antenna straight upright, and one Wi-Fi antenna straight outward.



### Positioning for Good Antenna Performance

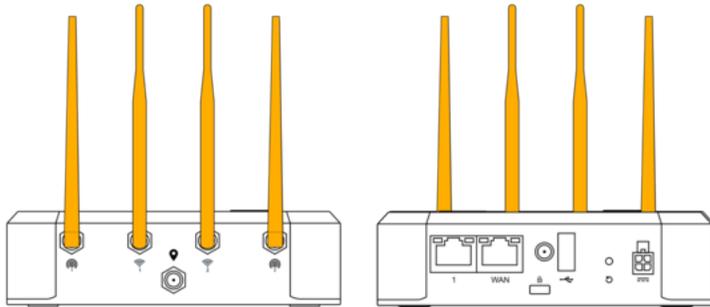
This antenna position configuration consists of:

- Cellular antennas angled out 45° from upright.
- Wi-Fi antennas straight upright.



Avoiding Poor Antenna Performance

This antenna position configuration consists of the cellular antennas and the Wi-Fi antennas all straight upright and parallel.



Understanding LEDs



Refer to the following table for information about LED indicators.

Status Indicator	Behavior
	<b>POWER:</b> Detects that the unit has power.
	<ul style="list-style-type: none"> <li><input checked="" type="radio"/> No Light = Not receiving power. Check the power source connection.</li> </ul>
	<ul style="list-style-type: none"> <li><input type="radio"/> Solid White = Powered on.</li> </ul>
	<b>NETCLOUD MANAGER STATE:</b> Detects whether the device is able to connect to NCM.
	<ul style="list-style-type: none"> <li><input checked="" type="radio"/> No Light = Unable to connect to Netcloud Manager</li> </ul>
	<ul style="list-style-type: none"> <li><input type="radio"/> Solid White = Connected to NetCloud Manager</li> </ul>

Status Indicator	Behavior
	<b>EMBEDDED MODEM STATE:</b> Indicates information about the integrated modem.
	 <b>No Light</b> = Modem not detected
	 <b>Solid Green</b> = Modem has established an active connection
	 <b>Flashing Green</b> = Modem is connecting
	 <b>Solid Yellow</b> = Data connection error
	 <b>Flashing Yellow</b> = Modem is in the process of resetting
	 <b>Solid Red</b> = Carrier reject
 <b>Flashing Red</b> = No SIM or SIM Door Open	
	<b>CELLULAR HEALTH:</b> Indicates the health of the cellular modem's signal.
	 <b>No Light</b> = No cellular connection
	 <b>Solid Green</b> = Cellular health is excellent/good
	 <b>Solid Yellow</b> = Cellular health is fair
 <b>Solid Red</b> = Cellular Health is poor	

## 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.

## Additional Resources

- [S700 Series Semi-Ruggedized Router Data Sheet](https://cradlepoint.com/datasheet/s700-series-semi-ruggedized-router/) (<https://cradlepoint.com/datasheet/s700-series-semi-ruggedized-router/>)
- [S700 Series Semi-Ruggedized Router Webpage](https://cradlepoint.com/product/endpoints/s700-series/) (<https://cradlepoint.com/product/endpoints/s700-series/>)
- [DIN Rail Mounting Bracket Installation and Mounting Guide](https://customer.cradlepoint.com/s/article/DIN-Rail-Mounting-Bracket-Installation-Guide) (<https://customer.cradlepoint.com/s/article/DIN-Rail-Mounting-Bracket-Installation-Guide>)

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