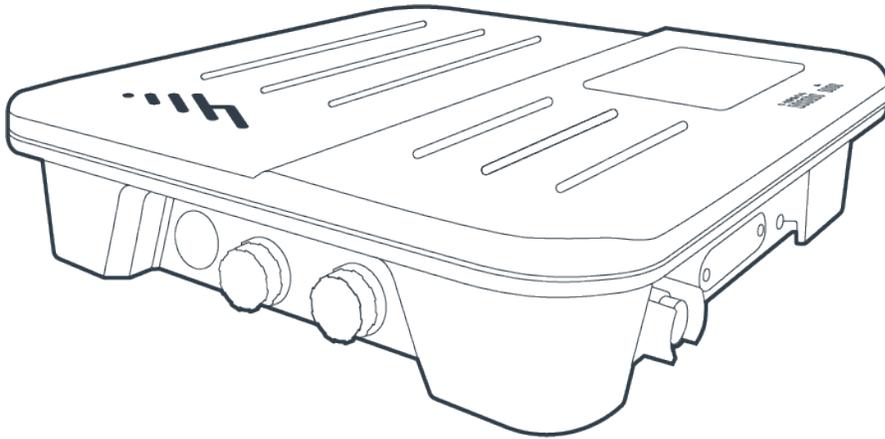


W4005 Outdoor 5G Millimeter Wave Adapter Professional Installation Guide



Introduction

This document provides a brief overview of the W4005 outdoor 5G Millimeter Wave adapter, discusses what's inside the box, and provides basic set up and install instructions.

Disclaimer

Cradlepoint, Inc. (“Cradlepoint”) does not warrant that the hardware will work properly in all environments or applications, and makes no warranty or representation, either implied or expressed, with respect to the quality, performance, merchantability, or fitness for a particular purpose of the W4005 outdoor 5G Millimeter Wave adapter even when installed in accordance with this Professional Installation Guide.

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

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 W4005 outdoor 5G Millimeter Wave adapter. 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 document is a reference guide and is intended only to provide best practices.

Installer Responsibility

Cradlepoint hereby disclaims any liability for failure of the installer to install the hardware properly and for any other acts and omissions of the installer. By using this Professional Installation Guide, you agree to indemnify and hold Cradlepoint harmless from and against any and all, liabilities, losses, damages, costs and expenses (including without limitation attorneys' fees and costs) incurred by Cradlepoint arising out of or in connection with any installation work that is done other than in accordance with the instructions in this Professional Installation Guide.

Limitation of Liability

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, IN NO EVENT WILL CRADLEPOINT BE LIABLE TO YOU OR TO ANYONE CLAIMING THROUGH OR UNDER YOU FOR ANY LOST PROFITS, EQUIPMENT DOWNTIME, OR LOSS OF DATA OR BUSINESS OPPORTUNITY, OR FOR ANY INDIRECT, SPECIAL, EXEMPLARY, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, HOWEVER CAUSED AND UNDER ANY THEORY OF LIABILITY, ARISING IN ANY WAY IN CONNECTION WITH YOUR INSTALLATION ACTIVITIES, EVEN IF CRADLEPOINT HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. SOME JURISDICTIONS (SUCH AS THE STATE OF NEW JERSEY) DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU. THE FOREGOING LIMITATIONS WILL APPLY EVEN IF THE ABOVE STATED REMEDY FAILS OF ITS ESSENTIAL PURPOSE.

Professional Installer Network

Email our Professional Installer Network for assistance in locating a professional installer in your service area at installernetwork@cradlepoint.com.

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W4005 Outdoor 5G Millimeter Wave Adapter Models

This guide applies to the following products:

CRADLEPOINT W4005-5GB MODEL: S5A107A

Before You Begin

Read the following before setting up your W4005 outdoor 5G Millimeter Wave adapter.

Location Considerations

The W4005 outdoor 5G Millimeter Wave adapter is purpose-built for exterior mounting and should be installed by a professional. The following includes considerations when identifying a location for mounting.

- This endpoint must be installed at a location where the radiating antennas can be kept 72cm (for USA installations) in the normal operating condition to meet Radio Frequency (RF) Exposure requirements. Refer to the Regulatory Requirements section of this document for more information.
- Ensure that the mounting surface clear of any obstructions or objects that may interfere with the antennas, signal reception, or cables.
- Position the endpoint for optimal signal reception.
- Ensure plenty of airflow for ventilation.
- For the W4005 to maintain its rating against hurricane force winds (up to 137mph sustained); the following must be met when pole mounted
 - The pole on which the W4005 is to be mounted must be metal, hollow, and between 3-10 inches in diameter
 - From the base of the pole to where the W4005 is mounted can be no higher than 10 feet.
- Refer to the Regulatory Requirements section of this document or the Safety, Regulatory, and Warranty Guide insert that came with your endpoint for more information.

IMPORTANT: The W4005 outdoor 5G Millimeter Wave adapter requires increased separation distances in relation to other networking hardware. Therefore, Cradlepoint recommends that all 5G adapters be installed by a professional. For assistance with installation or in locating a professional installer, contact Cradlepoint [Sales and Support](#).

Ethernet Cable Considerations

Cradlepoint recommends shielded twisted-pair (S/FTP) Ethernet cabling and connectors (Cat6a/Cat7a) for optimal wired network performance.

SIM Card Setup for Wireless Connectivity

A wireless broadband data plan must be added to your Cradlepoint W4005 for wireless broadband connectivity. Network providers must provision a SIM to provide wireless broadband data plans compatible for use with the Cradlepoint W4005 outdoor 5G Millimeter Wave adapter endpoints. Contact your network provider for further details.

Setup

The following instructions are intended for network hardware installers. Read through the following to set up your W4005 outdoor 5G Millimeter Wave adapter or use the Verify mobile installation app.

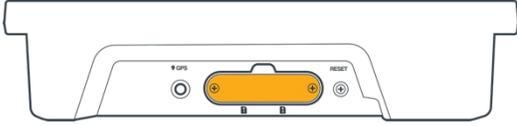
STEP 1: Check box contents.

The W4005 Outdoor 5G Branch adapter and required accessories are shipped in two boxes.

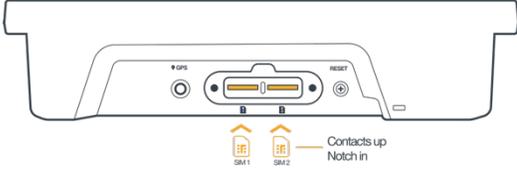
- Box 1 - Hardware Only:
 - [1] W4005 Branch Outdoor 5G adapter hardware
- Box 2 - Accessories Kit:
 - [1] 90 W PoE Injector
 - [4] Outdoor Sub 6 GHz 5G/LTE antennas
 - [1] Outdoor mounting assembly
 - [1] Outdoor mounting plate
 - [3] Pole mount clamps
 - [4] Plate to assembly mounting screws
 - [4] Plate to assembly mounting washers
 - [4] Plate to W4005 mounting screws
 - [1] Safety, Regulatory, and Warranty guide
 - [1] Quick Start reference sheet

STEP 2: Insert an Activated 2FF-Sized SIM.

1. Unscrew and detach the modem door of the W4005.



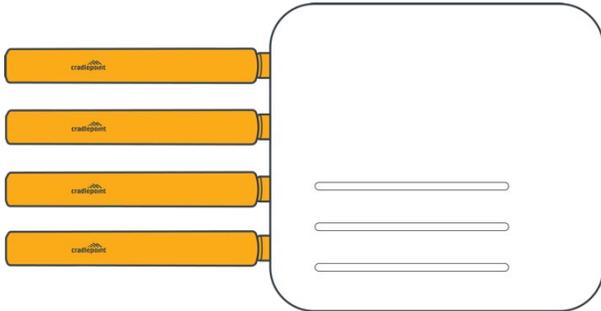
2. Insert the SIM into the slot marked SIM1 with metal contacts up and notch in. It will click into place.
 - To remove, depress again.



3. Use the SIM2 slot for secondary/backup.
4. Replace the modem cover and secure with the modem door screws.

STEP 3: Attach antennas.

Attach the 4 outdoor, Sub 6 GHz 5G/LTE antennas (included) to the N-Type connectors marked MAIN0 and DIV0/1/2.



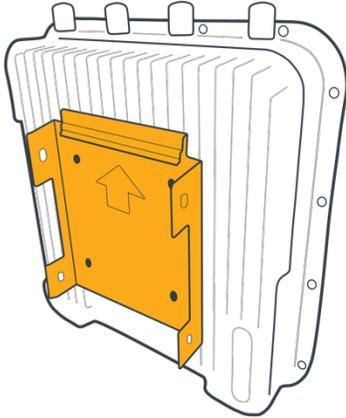
NOTE: Do not connect any antennas to the RP-SMA WiFi connections. If antennas must be connected, use only Cradlepoint 170628-000 2.7dBi dipole antenna, or another dipole antenna with lower gain.

STEP 4: Mount the adapter.

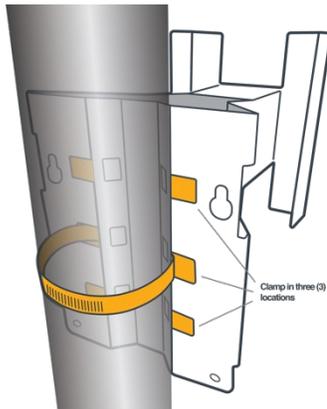
REMINDER: This endpoint must be installed at a location where the radiating antennas can be kept 72cm (for USA installations) in the normal operating condition to meet Radio Frequency (RF) Exposure requirements. Refer to the Regulatory Requirements section of this document for more information.

Exterior mounting conditions and locations may vary. For basic mounting best practices, refer to the following:

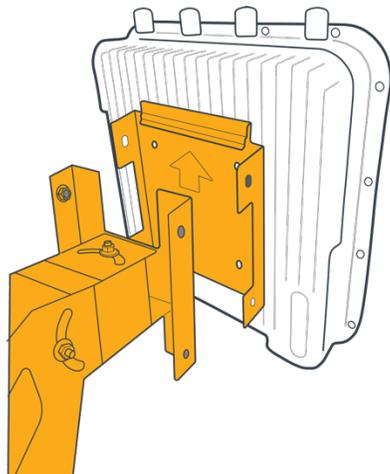
1. Attach the mounting plate to the W4005 using four 50mm long, 6.33mm diameter screws.
 - NOTE: Do not use power tools on the adapter or mounting plate. Use hand-held screw drivers to attach screws only.



2. Attach the mounting hardware to a mounting pole or other desired surface.



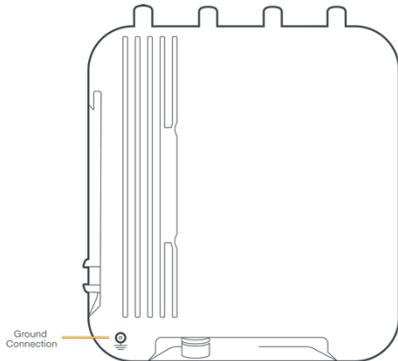
3. Attach the W4005 adapter with the attached mounting plate to the mounting hardware.



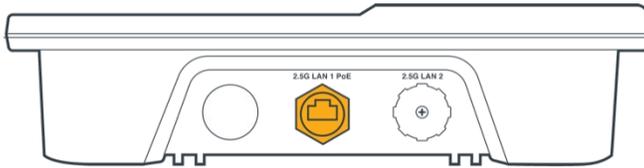
4. Adjust the tension of the permanently installed mounting hardware bolts to point the endpoint in the desired direction.
 - Ensure there is sufficient room for the LTE antennas to be added
5. Tighten the mounting hardware bolts to lock the W4005 into place.

STEP 5: Connect to a power source.

1. Connect the grounding wire to the ground using the installed 8mm long, 8.5mm diameter screw.



2. Connect an Ethernet cable to the PoE 2.5G LAN1 port and plug the other end into the included 802.11bt (60W) PoE-injector, or an 802.11bt enabled port on an attached router or switch (not included).



3. Ensure the PoE injector, router, or switch port is powered. The power LEDs will begin to light up.
 - NOTE: Be sure to include proper lightning protection for outdoor installations (not included).

STEP 6: Activate the adapter through NetCloud Manager.

Activate your W4005 outdoor 5G Millimeter Wave adapter through NetCloud Manager (NCM). Your endpoint is packaged with NetCloud services and activation requires that you log into your NetCloud account. Refer to [Getting Started with NetCloud Manager](#) for more information.

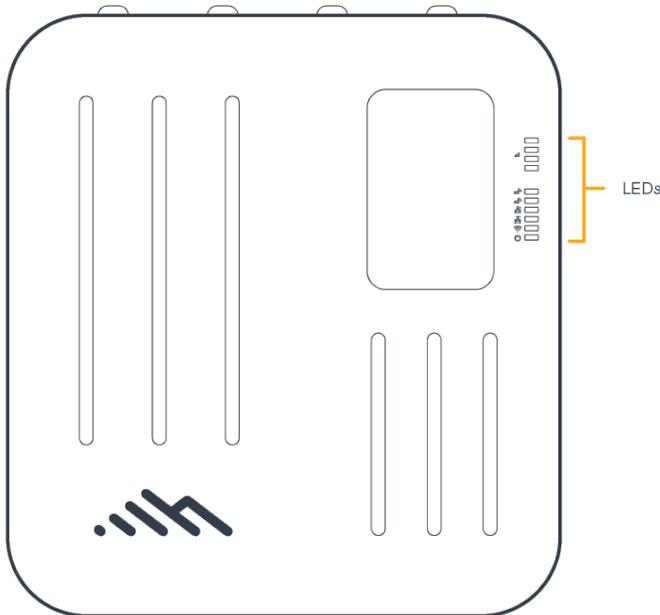
STEP 7 (Optional): Connect additional interfaces.

- Connect a endpoint to the adapter Wi-Fi for troubleshooting or setup
 - NOTE: It is not required nor recommended to install Wi-Fi antennas on the 4 external Wi-Fi antenna ports.
- Connect an Ethernet cable to the PoE 2.5G LAN2 port.
- Connect a Console cable to the Console port.
- Connect a lock to the lock slot.
- Ensure all unused ports have the ingress protection covers installed.

STEP 8: Connect to NetCloud.

Activate your adapter through NetCloud Manager (NCM). Your endpoint is packaged with NetCloud services, and activation requires that you log into your NetCloud account. Refer to [Getting Started with NetCloud Manager](#) for more information.

Understanding LEDs



Refer to the following for information about the LED indicators on the Cradlepoint W4005 outdoor 5G Millimeter Wave adapter.

INDICATOR	BEHAVIOR	
Power 	The Cradlepoint W4005 must be powered using an approved 802.11bt PoE power source.	
		Green = Powered ON
		Yellow = Attention.
		No Light = Not receiving power. Check the power switch and the power source connection.
Wi-Fi Status 	Blue LED bars indicate the Wi-Fi status.	
		Solid Blue = Wi-Fi on and operating normally

		Blinking Blue = Wi-Fi is on, but not connected to a WAN source
Ethernet LAN Status 	Indicates wired LAN connection information.	
		Off = Not connected
		Blinking = Data passing
4G LTE Modem Status 	LED indicates the LTE modem status.	
		Green = Modem has established an active WAN connection
		Blinking Green = connecting
		Yellow = modem not active
		Blinking Yellow = Data connection error. Log into NetCloud Manager to see alerts and troubleshoot issue.
		Blinking Red = modem is resetting
5G Modem Status 	LED indicates the modem 5G status.	
		No light = No 5G connection
		Green = 5G Sub-6 GHz connected
		Blinking Green = 5G Sub-6 GHz connection error. Log into NetCloud Manager to see alerts and troubleshoot issue.
		Blue = 5G mmWave connected
		Blinking Blue = 5G mmWave connection error. Log into NetCloud Manager to see alerts and troubleshoot issue.
Signal Strength 	Blue LED bars indicate the active modem's signal strength.	

		4 Solid Bars = Strongest signal.
		1 Blinking Bar = Weakest signal. (A blinking bar indicates half of a bar.)
OTHER	Other LED Indicators	
	The Cradlepoint Logo will light up white when connected to a NetCloud Account.	

Troubleshooting

If the adapter takes longer than 5 minutes to connect to the Internet, you may need to log into the local UI of the endpoint to make configuration changes or start the troubleshooting process. You must be physically co-located with the endpoint in order to do this. Refer to [How to Troubleshoot Connection Issues](#) for more information.

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

Troubleshooting

[Customer Support](#)
[Customer Community](#)

Help and Support

[Contact Us](#)
[Cradlepoint Customer Connect Community](#)
[Cradlepoint Support Services](#)

Resources

[W4005 Webpage](#)
[W4005 Data Sheet](#)

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