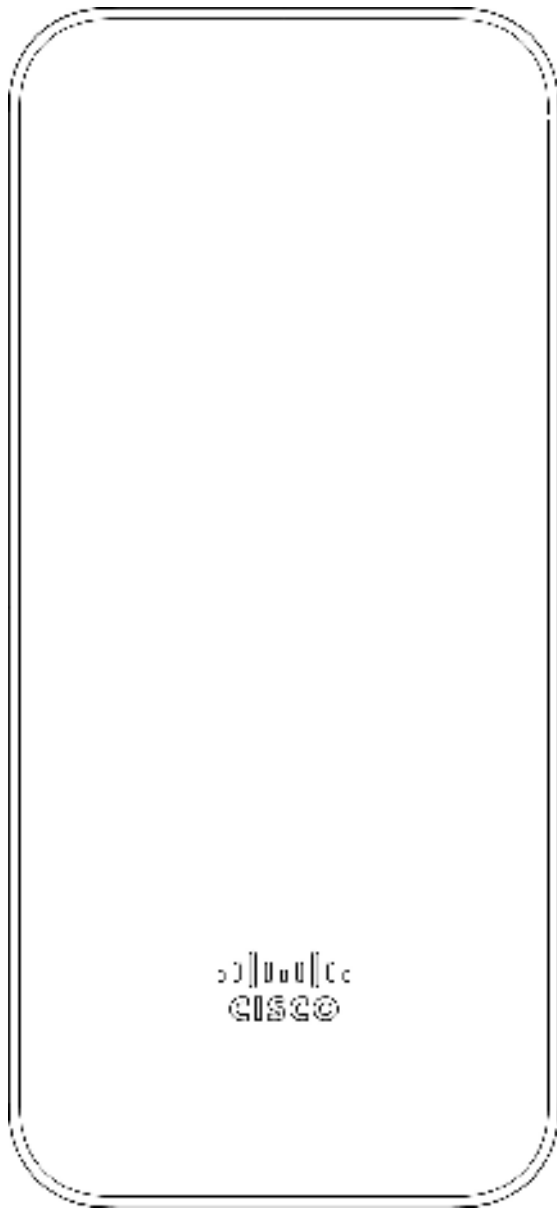# MR78-HW/GR62-HW Installation Guide

The Cisco Meraki MR78-HW/GR62-HW is a dual-band enterprise class 802.11ax cloud-managed access point.
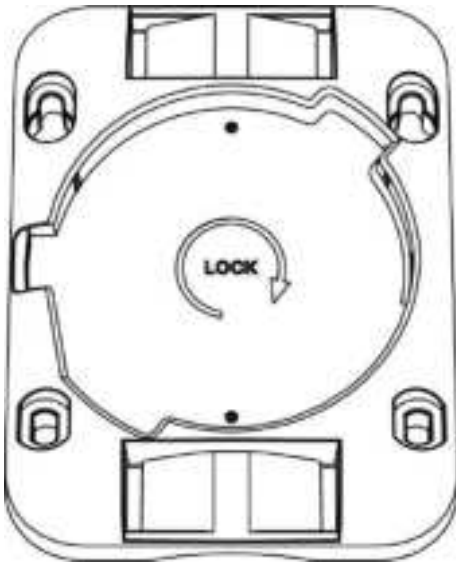
Package Contents
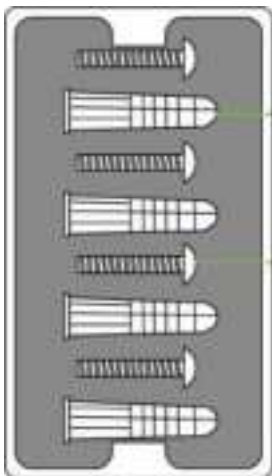
The MR78-HW/GR62-HW package contains the following:

- MR78-HW/GR62-HW Cloud-Managed Access Point

- Mount cradle including built-in level tool
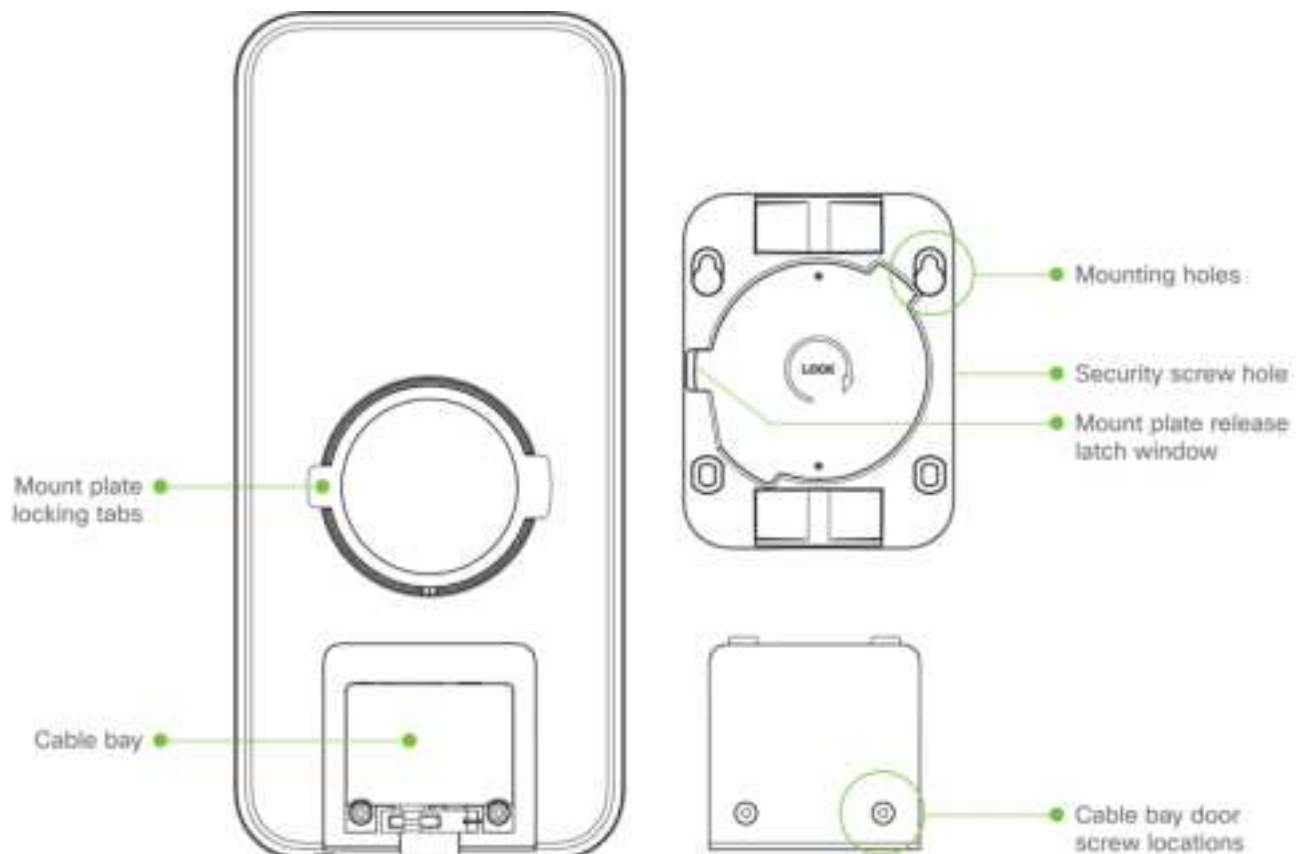
- Mount Kit
  - Wall screws and wall screw anchors

Wall screw anchors for masonry (brick, concrete)

Phillips head wall mounting screws

- Grounding cable
- RJ45 Cable
- Meraki GO/GA-PWR-12W-US/UK/AU/EU
- UMEC & MA-PWR-30WAC

Understanding the MR78-HW/GR62-HW

Your Meraki MR78-HW/GR62-HW has the following features:

LED indicator

The mount cradle has the following features:

Security Features

The MR78-HW/GR62-HW allows for physically securing the access point after installation:

1. Security screw – The accessory kit includes screws that can be used to secure the access point to the mount cradle. Engaging the security screw prevents accidental dislodging and theft.

Ethernet Ports

The MR78-HW/GR62-HW features a Gigabit Ethernet RJ45 port that accepts 802.3at and 802.3af power (labeled "Eth0, PoE"). This port should be used for uplink to your WAN connection.

Power Source Options

The MR78-HW/GR62-HW access point can be powered using either the Meraki AC Adapter, PoE Injector (both sold separately), or a third-party PoE switch. The MR78-HW/GR62-HW operates at full power with 802.3af PoE.

Factory Reset Button

If the button is pressed and held for at least five seconds and then released, the MR78-HW/GR62-HW will reboot and be restored to its original factory settings by deleting all configuration information stored on the unit.

LED Indicators and Run Dark Mode

Your MR78-HW/GR62-HW is equipped with a multi-color LED light on the front of the unit to convey information about system functionality and performance:

- Orange - AP is booting (permanent Orange suggests hardware issue)
- Rainbow - AP is initializing/scanning
- Blinking Blue - AP is upgrading
- Green - AP in Gateway mode with no clients
- Blue - AP in Gateway mode with clients
- Blinking Orange - AP can't find uplink

> **NOTE:** Blinking Green LED indicates that the device is in site survey mode. Please see the Conducting Site Surveys with MR Access Points for more details.

The MR78-HW/GR62-HW may be operated in "Run Dark" mode for additional security and to reduce the visibility of the access point. In this mode, the LED will not be illuminated. This mode may be enabled through Meraki dashboard.

Pre-Install Preparation

You should complete the following steps before going on-site to perform an installation.

Configure Your Network in Dashboard

The following is a brief overview only of the steps required to add an MR78-HW/GR62-HW to your network. For detailed instructions about creating, configuring and managing Meraki wireless networks, refer to the online documentation (documentation.meraki.com).

1. Login to http://dashboard.meraki.com. If this is your first time, create a new account.
2. Find the network to which you plan to add your APs or create a new network.
3. Add your APs to your network. You will need your Meraki order number (found on your invoice) or the serial number of each AP, which looks like Qxxx-xxxx-xxxx, and is found on the bottom of the unit. You will also need your Enterprise license key, which you should have received via email.
4. Go to the map / floor plan view and place each AP on the map by clicking and dragging it to the location where you plan to mount it.

Check and Upgrade Firmware

To ensure your MR78-HW/GR62-HW performs optimally immediately following installation, it is recommended that you facilitate a firmware upgrade prior to mounting your MR78-HW/GR62-HW.

1. Attach your MR78-HW/GR62-HW to power and a wired Internet connection. See the "Power the MR78-HW/GR62-HW" section for details.
2. The MR78-HW/GR62-HW will turn on and the LED will glow solid orange. If the unit does not require a firmware upgrade, the LED will turn either green (no clients associated) or blue (clients associated) within thirty seconds.

* If the unit requires an upgrade, the LED will begin blinking orange until the upgrade is complete, at which point the LED will turn solid green or blue. You should allow at least a few minutes for the firmware upgrade to complete, depending on the speed of your internet connection.

Check and Configure Firewall Settings

If a firewall is in place, it must allow outgoing connections on particular ports to particular IP addresses. The most current list of outbound ports and IP addresses for your particular organization can be found here.

Assigning IP Addresses to MR78-HW/GR62-HWs

All gateway MR78-HW/GR62-HWs (MR78-HW/GR62-HWs with Ethernet connections to the LAN) must be assigned routable IP addresses. These IP addresses can be dynamically assigned via DHCP or statically assigned.

Dynamic Assignment

When using DHCP, the DHCP server should be configured to assign a static IP address for each MAC address belonging to a Meraki AP. Other features of the wireless network, such as 802.1X authentication, may rely on the property that the APs have static IP addresses.

Static Assignment

Static IPs are assigned using the local web server on each AP. The following procedure describes how to set the static IP:

1. Using a client machine (e.g., a laptop), connect to the AP wirelessly (by associating to any SSID broadcast by the AP) or over a wired connection.

2. If using a wired connection, connect the client machine to the MR78-HW/GR62-HW either through a PoE switch or a PoE Injector. If using a PoE switch, plug an Ethernet cable into the MR78-HW/GR62-HW's Ethernet jack, and the other end into a PoE switch. Then connect the client machine over Ethernet cable to the PoE switch. If using a PoE Injector, connect the MR78-HW/GR62-HW to the "PoE" port of the Injector, and the client machine to the "LAN" port.

3. Using a web browser on the client machine, access the AP's built-in web server by browsing to http://my.meraki.com. Alternatively, browse to http://10.128.128.128.

4. Click on the "Uplink Configuration" tab. Log in. The default login is the serial number (e.g. Qxxx-xxxxxxxx), with no password (e.g., Q2DD-551C-ZYW3).

5. Configure the static IP address, net mask, gateway IP address and DNS servers that this AP will use on its wired connection.

6. If necessary, reconnect the AP to the LAN.

Static IP via DHCP Reservations

Instead of associating to each Meraki AP individually to configure static IP addresses, an administrator can assign static IP addresses on the upstream DHCP server. Through "DHCP reservations," IP addresses are "reserved" for the MAC addresses of the Meraki APs. Please consult the documentation for the DHCP server to configure DHCP reservations.
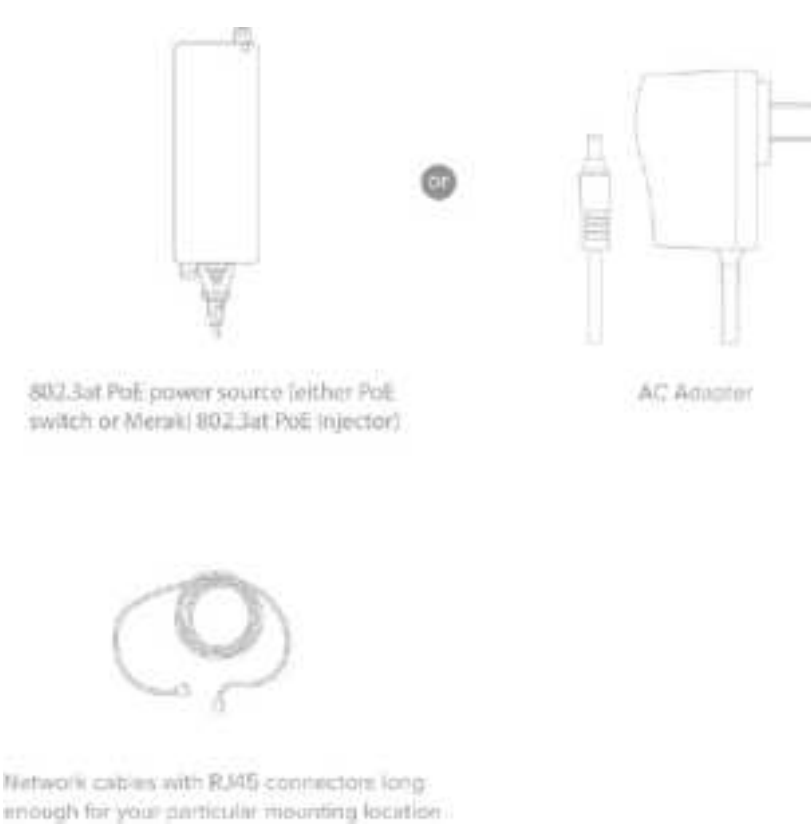

Collect Tools

You will need the following tools to perform an installation:

T8 Torx
screwdriver

Phillips
screwdriver

Hammer

Drill with 1/4"
(6.3mm) bits

Collect Additional Hardware for Installation

You will need the following hardware to perform an installation:

or

802.3at PoE power source (either PoE
switch or Meraki 802.3at PoE injector)

AC Adapter

Network cables with RJ45 connectors long
enough for your particular mounting location

Installation Instructions

Choose Your Mounting Location

A good mounting location is important to getting the best performance out of your MR78-HW/GR62-HW access point. Keep the following in mind:

1. The device should have unobstructed line of sight to most coverage areas. For example, if installing in an office filled with workspaces divided by mid-height cubicle walls, installing on the ceiling or high on a wall would be ideal.

2. Power over Ethernet supports a maximum cable length of 300 ft (100 m).

3. If being used in a mesh deployment, the MR78-HW/GR62-HW should have line of sight to at least two other Meraki devices. A Cisco Partner can help ensure that your AP placement is ideal.

Install the MR78-HW/GR62-HW

For most mounting scenarios, the MR78-HW/GR62-HW mount cradle provides a quick, simple, and flexible means of mounting your device. The installation should be done in two steps. First, install the mount cradle to your selected location. Then, attach the MR78-HW/GR62-HW to the mount cradle.

Attach the Mount Cradle

The MR78-HW/GR62-HW mount cradle can be used to install your access point on a wall, solid ceiling, or pole.

Wall or Solid Ceiling Mount Using Mount Cradle

Using included wall anchors and screws, attach the mount cradle to your mounting wall or ceiling. It is recommended that the MR78-HW/GR62-HW be mounted to a wall or solid ceiling using the mount cradle for physical security reasons.

Pole Mount Using Mount Cradle

Use mounting straps (not included) to secure the mount cradle to a pole. Thread the mounting straps through the mounting strap slots to secure the mount plate in a horizontal or vertical orientation. Vertical orientation is recommended for optimal RF coverage.

Connect Access Point to Ethernet and/or AC Adapter

Using a phillips head screwdriver, remove the screws that secure the Ethernet cover. Ensure that the Ethernet cable (and power cable, if applicable) is properly secured in the black cable gland. Secuire the Ethernet cover with the phillips head screwdriver.

Mount the MR78-HW/GR62-HW

Connect the Ground Cable

Connect the grounding cable using a Philips schrew and connect the cable to ground
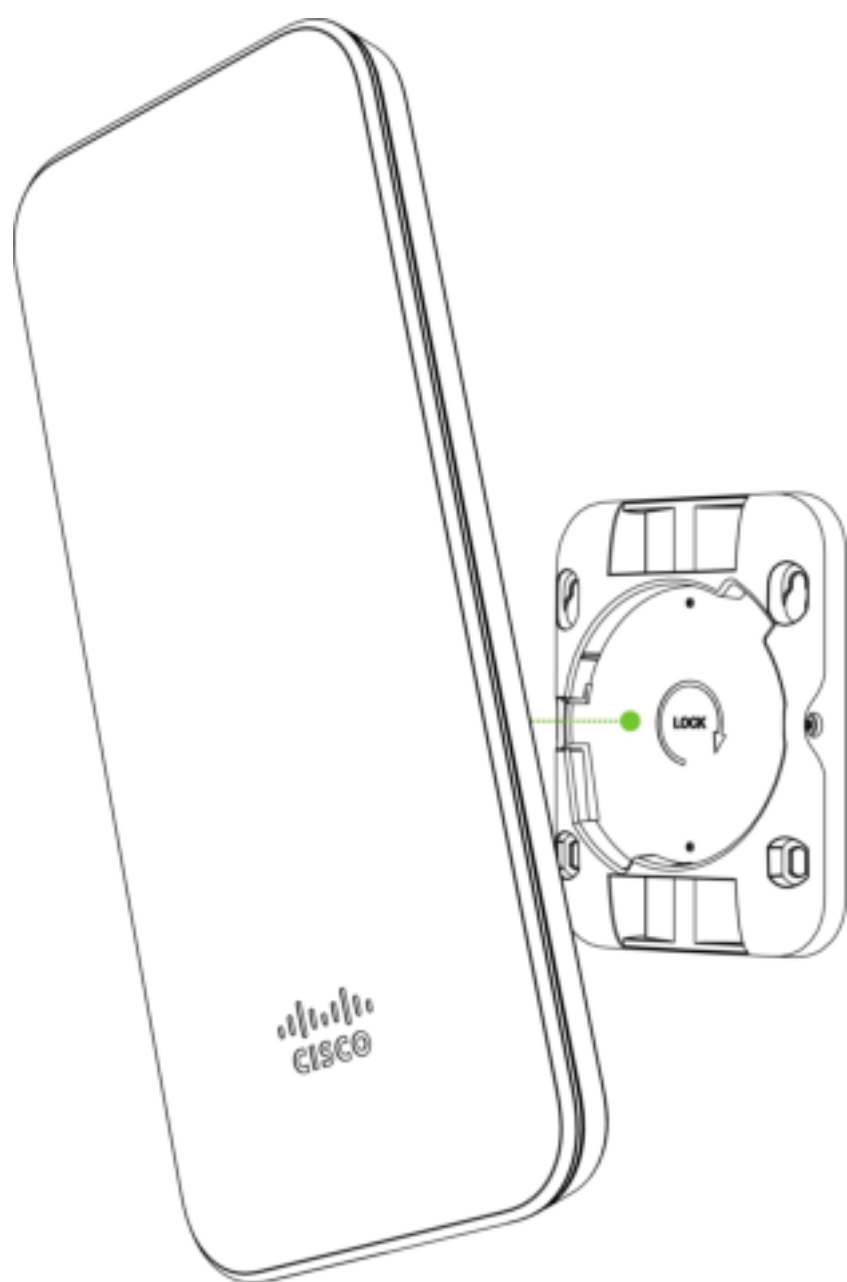
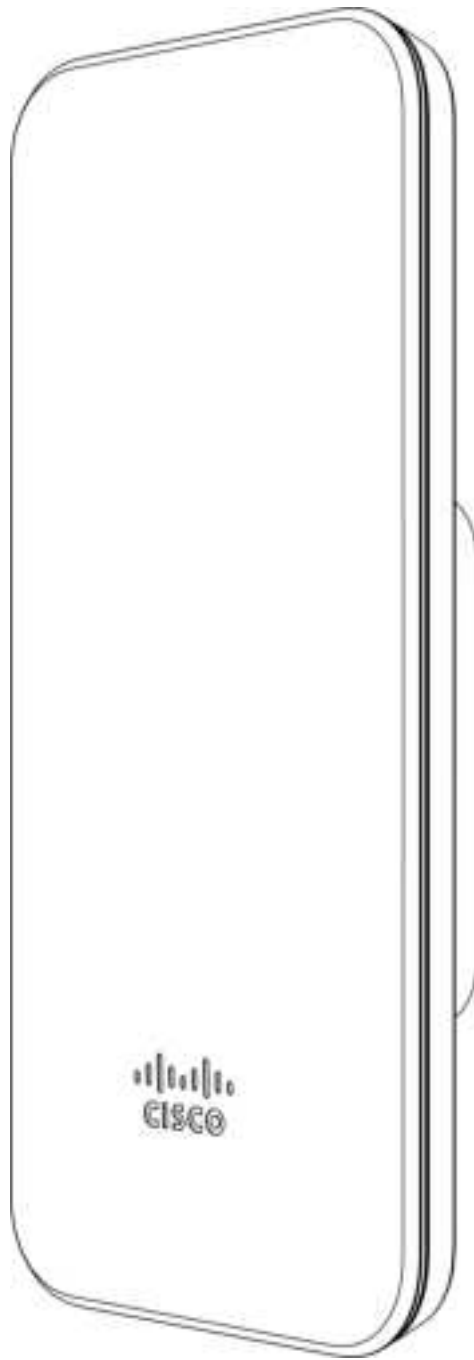# Attach the MR78-HW/GR62-HW to the Mount Cradle

(This section applies to wall and/or solid ceiling where you have already installed the mount cradle.)

The MR78-HW/GR62-HW attaches to the mount cradle with two tabs on the cradle that insert into the MR78-HW/GR62-HW, and is secured to the cradle using one screw.

To attach the MR78-HW/GR62-HW to the mount cradle properly, line up the top edge of the AP with the top tab of the mount cradle. Since the cradle is already mounted to the wall, guide the MR78-HW/GR62-HW towards the top tab and insert the top tab into the MR78-HW/GR62-HW's slot.

Then, adjust the MR78-HW/GR62-HW to guide the MR78-HW/GR62-HW's bottom slot into the cradle's bottom tab until it clicks into place. Once in place, the MR78-HW/GR62-HW should be secured to the cradle by using one of the included screws in the cradle's bottom tab.

To release the MR78-HW/GR62-HW from the mount cradle, first remove the security screw that secures the MR78-HW/GR62-HW to the cradle's bottom tab. While holding the MR78-HW/GR62-HW with one hand, press the cradle's bottom tab upwards, releasing the MR78-HW/GR62-HW from the bottom of the cradle. Then remove the MR78-HW/GR62-HW from the cradle's top tab.

Secure the MR78-HW/GR62-HW

Depending on your mounting environment, you may want to secure the MR78-HW/GR62-HW to its mount location. If the MR78-HW/GR62-HW has been installed using the mount cradle, it should be secured via security screw included with mount cradle.

Security Screw

Install the security screw in the lower mount cradle tab.

# Verify Device Functionality and Test Network Coverage

1. Check LEDs

    a. The Power LED should be solid green (or blue, if clients are connected). If it is flashing blue, the firmware is automatically upgrading and the LED should turn green when the upgrade is completed (normally within a few minutes). See the "LED Indicators" section for more details. .

    b. Note: Your MR78-HW/GR62-HW must have an active route to the Internet to check and upgrade its firmware.

2. Verify access point connectivity

    a. Use any 802.11 client device to connect to the MR78-HW/GR62-HW and verify proper connectivity using the client's web browser.

3. Check network coverage

4. Confirm that you have good signal strength throughout your coverage area. You can use the signal strength meter on a laptop, smart phone, or other wireless device.

IP67 Rating

The MR78-HW/GR62-HW is IP67 rated if Dow Corning DC 4 (or equivalent) is applied as shown below:

This device is IP67 rated if applying Dow Corning DC 4 (or equivalent) in an area approximately 7mm wide around the perimeter of the Ethernet cable prior to securing the cover.

46mm

7mm
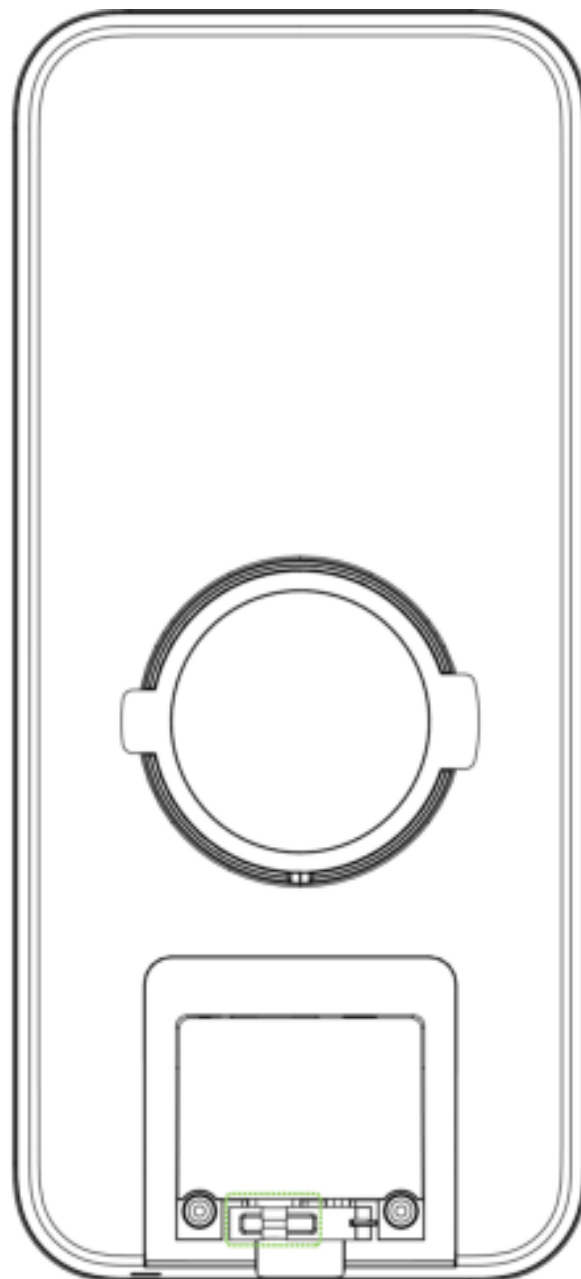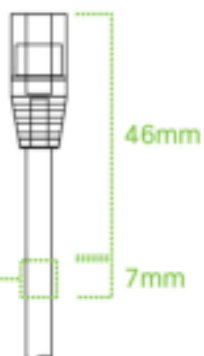
Troubleshooting

Reference the MR Product Page for additional information and troubleshooting tips.

Regulatory Information

FCC Compliance Statement

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

(1) This de-vice   may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution

Any changes or modifications not expressly approved by Meraki could void the user's authority to operate this equipment. This Transmitter must not be co-located or operation in conjunction with any other antenna or transmitter.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

IEEE 802.11b/g/n/ax 2.4 GHz DTS spectrum operation of this product in the USA is firmware-limited to channels 1 through 11.

If the device is going to be operated in the 5.15 - 5.25 frequency range, then it is restricted to indoor environment only.

This device meets all other requirements specified in Part 15E, Section 15.407 of the FCC Rules.

Industry Canada Statement

This device complies with RSS -247 of the Industry Canada Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ce dispositif est conforme à la norme CNR-247 d'Industrie Canada applicable aux appareils radio exempts de licence.

Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage

susceptible de provoquer un fonctionnement indésirable.

Industry Canada Caution

(i)   the device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;

 (i)   les dispositifs fonctionnant dans la bande 5 150-5 250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;

Industry Canada Radiation Exposure Statement

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

Déclaration d'exposition aux radiations

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non con trôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

For additional information on the certification status for the product, please visit Meraki.com/compliance.

For additional information on Meraki hardware and for other installation guides, please refer to documentation.mera

CE&UK

This equipment complies with CE/UK radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

The frequency and the maximum transmitted power in CE/UK are listed below:

2412-2472MHz: 19.98 dBm
2402-2480MHz (LE): 9.51 dBm
5180-5240MHz: 22.95 dBm
5260-5320MHz: 22.96 dBm
5500-5700: 29.09 dBm
5745-5825MHz: 29.13 dBm

For CE

The device is restricted to indoor use only when operating in the 5150 to 5350 MHz frequency range.

	AT	BE	BG	HR	CY	CZ	DK	NO	CH
	EE	FI	FR	DE	EL	HU	IE	IS	
	IT	LV	LT	LU	MT	NL	PL	LI	
	PT	RO	SK	SI	ES	SE	UK(NI)	TR	

For UK

	UK

Hereby, [Cisco Systems, Inc.] declares that the radio equipment type [MR78-HW/GR62-HW] is in compliance with Directive 2014/53/EU and Radio Equipment Regulations 2017. The full text of the CE/UK declaration of conformity is available at the following internet address:
https://meraki.cisco.com/compliance

NCC Compliance Statement

取得審驗證明之低功率射頻器材,非經核准,公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻器材之使用不得影響飛航安全及干擾合法通信;經發現有干擾現象時,應立即停用,並改善至無干擾時方得繼續使用。前述合法通信,指依電信管理法規定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。應避免影響附近雷達系統之操作。