

Meraki MR58

Hardware Setup Guide

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System Overview

The Meraki MR58 enables you to create large, high-speed wireless networks quickly, easily and cost-effectively.

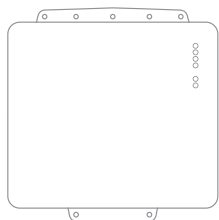
Meraki MR58

An MR58 system consists of four basic components: the access point, the mounting system, the Power over Ethernet system, and the antennas. The following section describes each component in more detail.

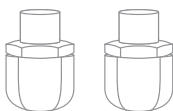
MR58 Access Point

The MR58 Access Point is the core of the system. It contains three 802.11n radios integrated into a ruggedized, weatherproof enclosure.

This MR58 package contains the following:



MR58 access point



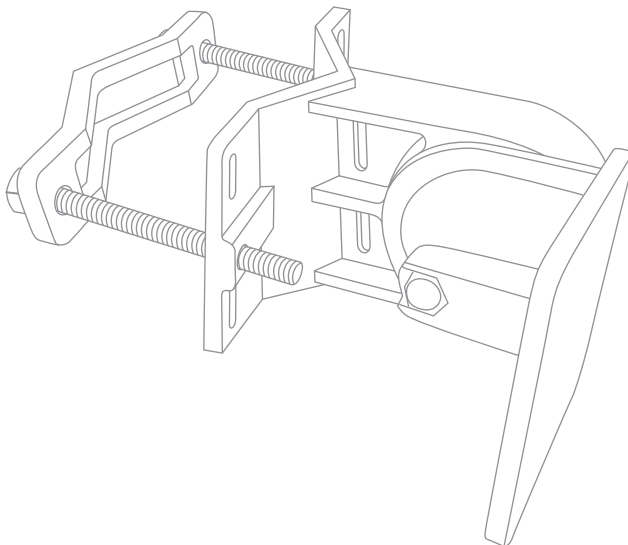
2 Cable glands



Grounding strap

Mounting System

The MR58 mounting system (included) allows you to attach the MR58 to walls, ceilings and poles.



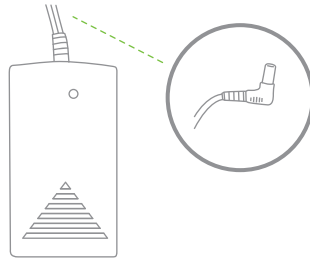
Power System - Power over Ethernet (PoE)

The Meraki MR58 accepts Power over Ethernet (802.3af); the Meraki PoE 802.3af injector is sold separately. Instructions contained in this setup guide assume your MR58 will be powered by the Meraki PoE 802.3af injector.

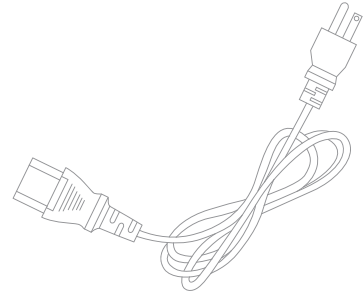
The power system contains the following:



PoE injector



AC/DC Power converter with barrel plug



Country-specific AC power cable

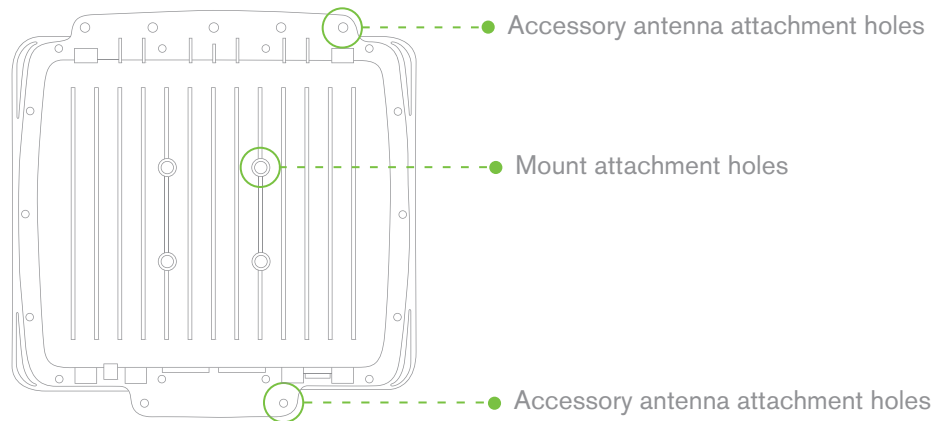
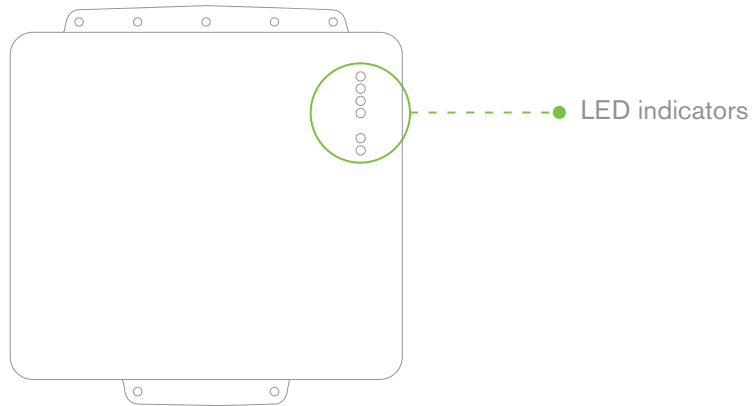
Antennas

The Meraki MR58 has three 802.11n radios. Each radio has two external antenna connectors; both connectors for a particular radio should be attached to the same type of antenna.

Meraki offers a number of different antennas for use with the MR58. Alternately, you may purchase 3rd party antennas for use with the MR58. Make sure they have N-type connectors and support the proper frequency band (2.4 or 5GHz).




Understanding the MR58

Your Meraki MR58 has the following features:

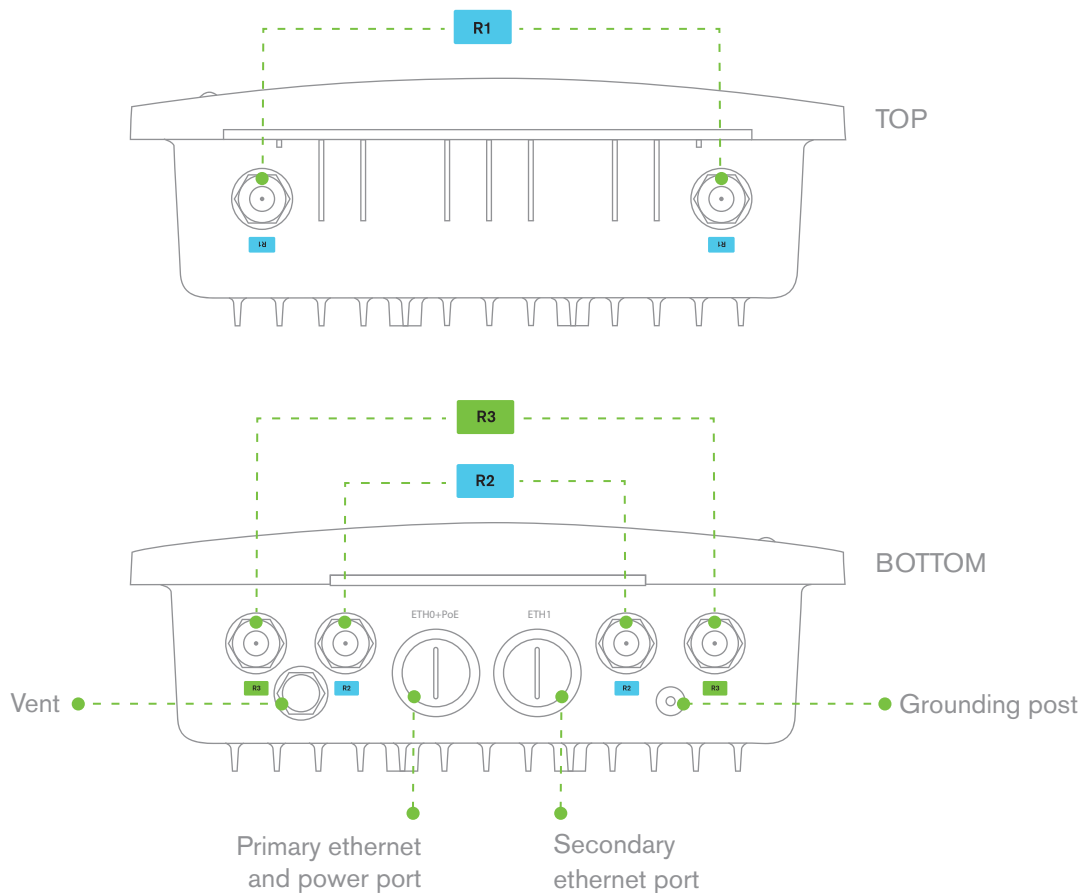


Understanding the LED Indicators

Your MR58 is equipped with a series of LED lights on the front of the unit to convey information about system functionality and performance.

-  **Signal Strength**
 - One Light:** Fair
 - Four Lights:** Strongest
 - Moving Lights:** Searching for signal
 - Flashing Lights:** Error state. May indicate bad gateway or other routing fault
-  **Ethernet**
 - Off:** No active network connection on either ethernet port
 - On:** An active network connection is connected to either Eth0 or Eth1
 - Flashing:** Error state. May indicate bad gateway or other routing fault
-  **Radio Power**
 - Off:** MR58 is off
 - On – ORANGE:** MR58 is booting or trying to find a path to the internet
 - On – GREEN:** MR58 is fully operational and connected to the network
 - Flashing – ORANGE:** Firmware is upgrading
 - Flashing – GREEN:** Error state. May indicate bad gateway or other routing fault

Understanding the Ports



R1 and **R2** are 5GHz radios for mesh or client communication. Each radio has two external N-type connectors. **R3** is a 2.4GHz radio primarily used for client communication. However, it can also communicate with Meraki 2.4Ghz access points. This radio has two external N-type connectors.

Vent

The vent allows pressure and humidity equalization between the interior and the environment. This prevents internal condensation and maintains a water proof seal.

Grounding Post

Provides an attachment point on the Access Point for the grounding strap (included). This post is threaded to accept a M4 x 0.7mm bolt

Pre-Site Preparation

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

Collect Tools

You will need the following tools to perform your installation:

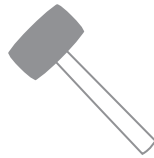
Required



Straight-slot screwdriver



9/16" (13mm) wrenches



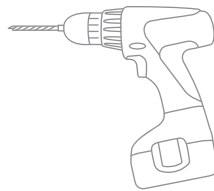
Rubber mallet



Phillips screwdriver

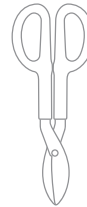


Adjustable wrench

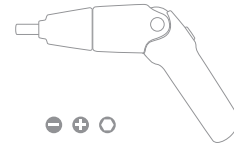


Drill with appropriate bits for mounting wall anchors (if mounting to a wall)

Recommended



Tin snips (if mounting with hose clamps)



Power screwdriver with 5/16" (8 mm) nut driver, Phillips & flat heads

Collect Additional Hardware for Installation

Required

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

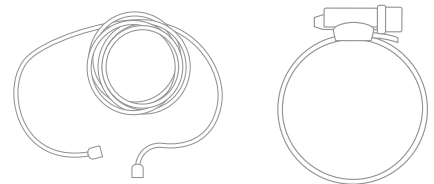
Connection to the internet (if you are setting up your MR58 as a gateway to the internet)

Appropriately sized metal straps (if mounting to a pole larger than 3.0" in diameter)

Specialized mounting hardware if mounting to surface other than wood, stucco or stone

Recommended

Laptop with wireless to verify setup



Configure Your Network in Dashboard

We recommend that you add your MR58 to a network in Dashboard before mounting it in the field.

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 nodes.
 3. Add your nodes to your network. You will need your Meraki order number (found on your invoice) or the serial number of each node, which looks like Q2xx-xxxx-xxxx, and is found on the bottom of the unit.
 4. Finally, go to the map view and place each node on the map by clicking and dragging it to the location where you plan to mount it. You can always modify the location later.
- * If you do choose to add the node to Dashboard after the installation, make sure to write down the serial number and MAC address of the unit before installing.

On-Site Instructions

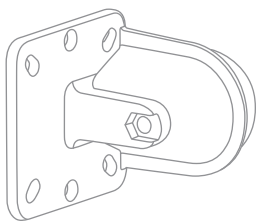
Find a Good Mounting Location

A good mounting location is important to getting the best performance out of your MR58 Access Point. Keep the following in mind:

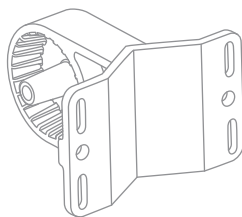
1. The Power over Ethernet System supports a maximum cable length of 100m. The Power over Ethernet Adapter and Injector are not rated for outdoor use, and must be installed indoors or in a weatherproof outdoor-rated enclosure.
2. The Meraki MR58 should have line of sight to as many other Meraki devices as possible. If being installed as a repeater, special care should be taken to optimize the view in the direction of the closest known gateway.
3. The antennas should be as unobstructed as possible. Make sure that there is clearance around the MR58 for installation of all of your chosen antennas.

Mount the MR58

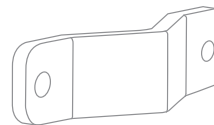
Your mounting system contains the following:



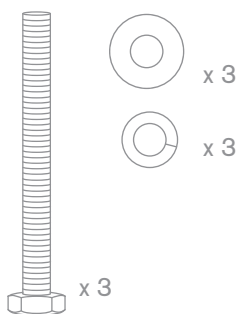
Articulating bracket



Mount base



Pole mount V-bar



M8 x 110
screws and washers



M8 nut

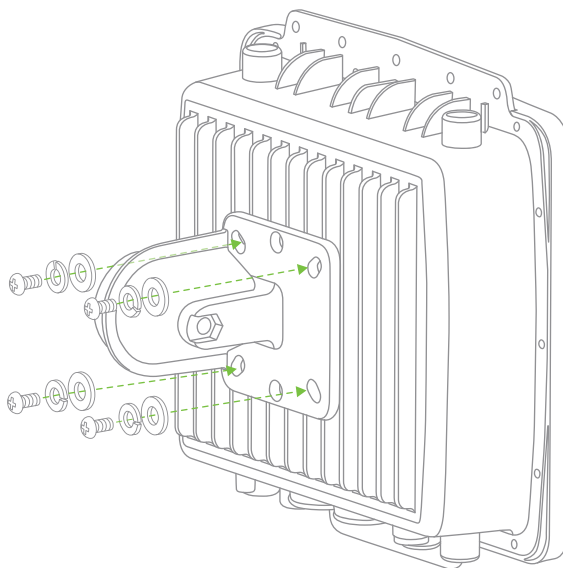


M5 x 12
screws and washers



Wood screws and anchors

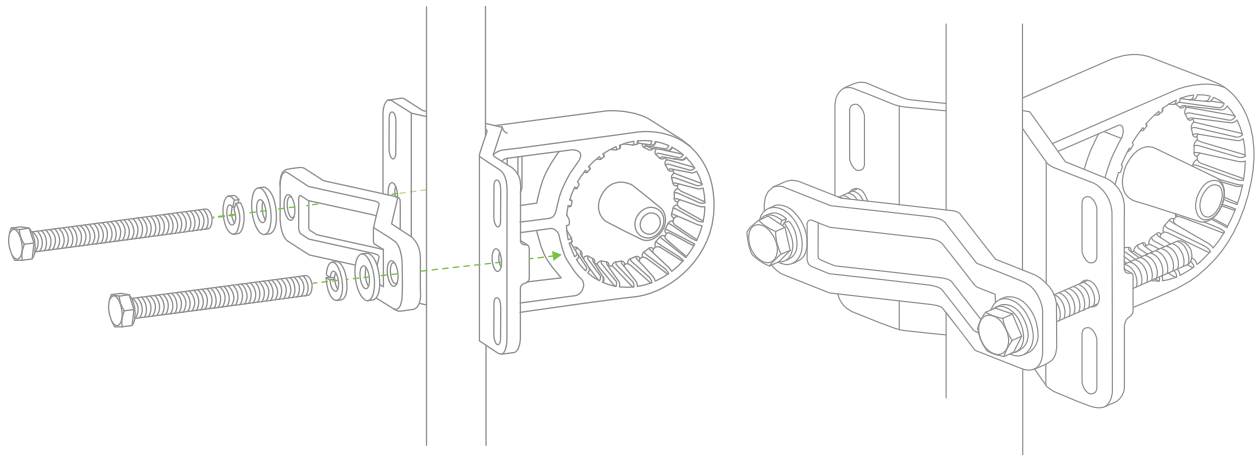
1. Attach the articulating bracket to back of the MR58 using M5 screws and washers.



2. Attach mount base to mounting structure (pole, wall or ceiling). Before tightening fasteners, make sure that the MR58 will be pointing in the correct direction after mounting.

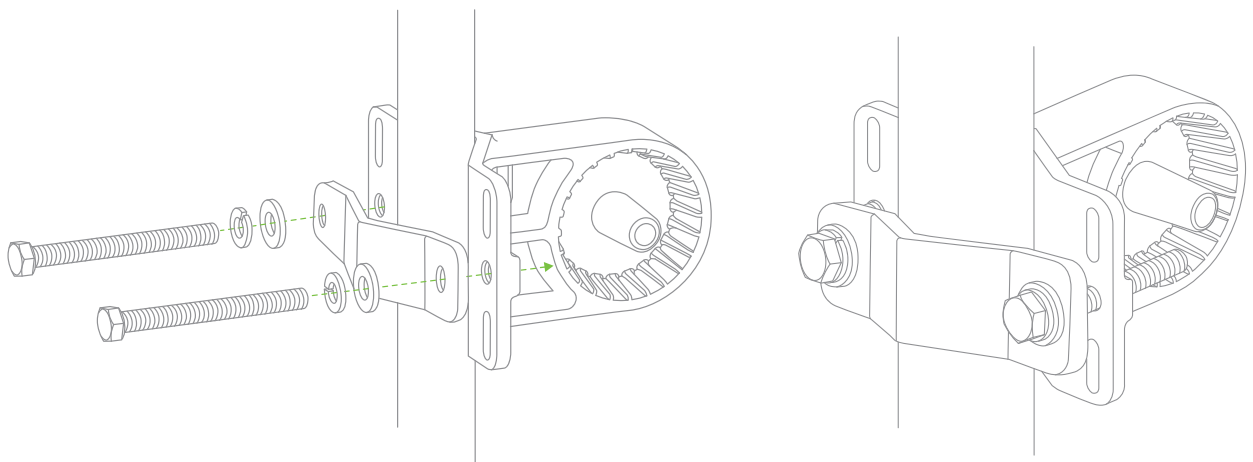
Mounting for poles less than 1.5" (35mm)

Attach mount base and V-bar to pole as shown using M8 bolts and washer.



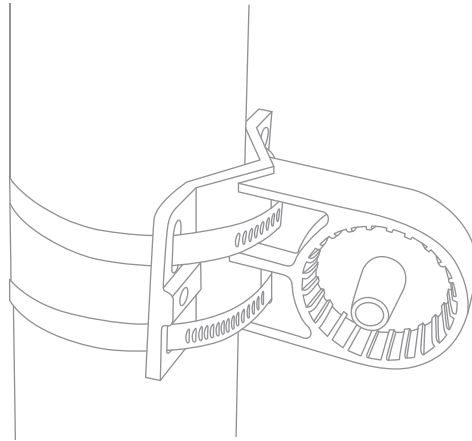
Mounting for poles less than 3" (80mm) and larger than 1.5" (35mm)

Attach mount base and V-bar to pole as shown using M8 bolts and washers.



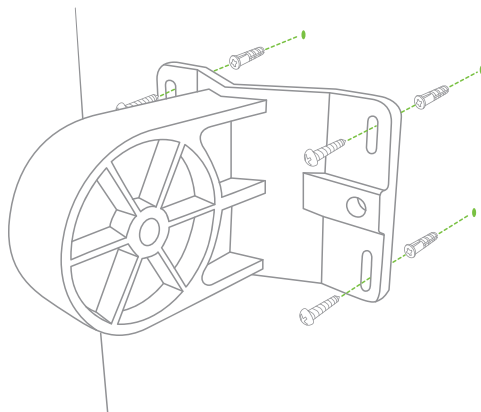
Mounting for poles larger than 3" (80mm)

Attach mount base to pole using appropriately-sized metal straps (not included).



Mounting on walls

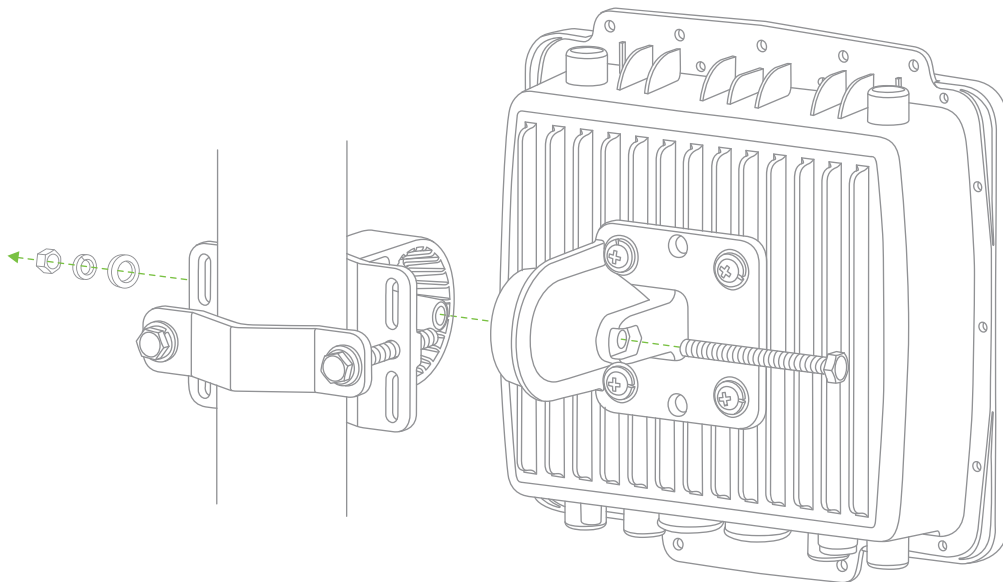
Using appropriate wall anchors and screws for the surface you are mounting to (if mounting to wood, stucco or stone, use anchors and screws included with mount), attach the mount base to your mounting wall.





Remaining mounting steps are illustrated assuming the MR58 is mounted to a pole between 1.5 - 3" in diameter; however, instructions are the same regardless of what the access point is mounted to.

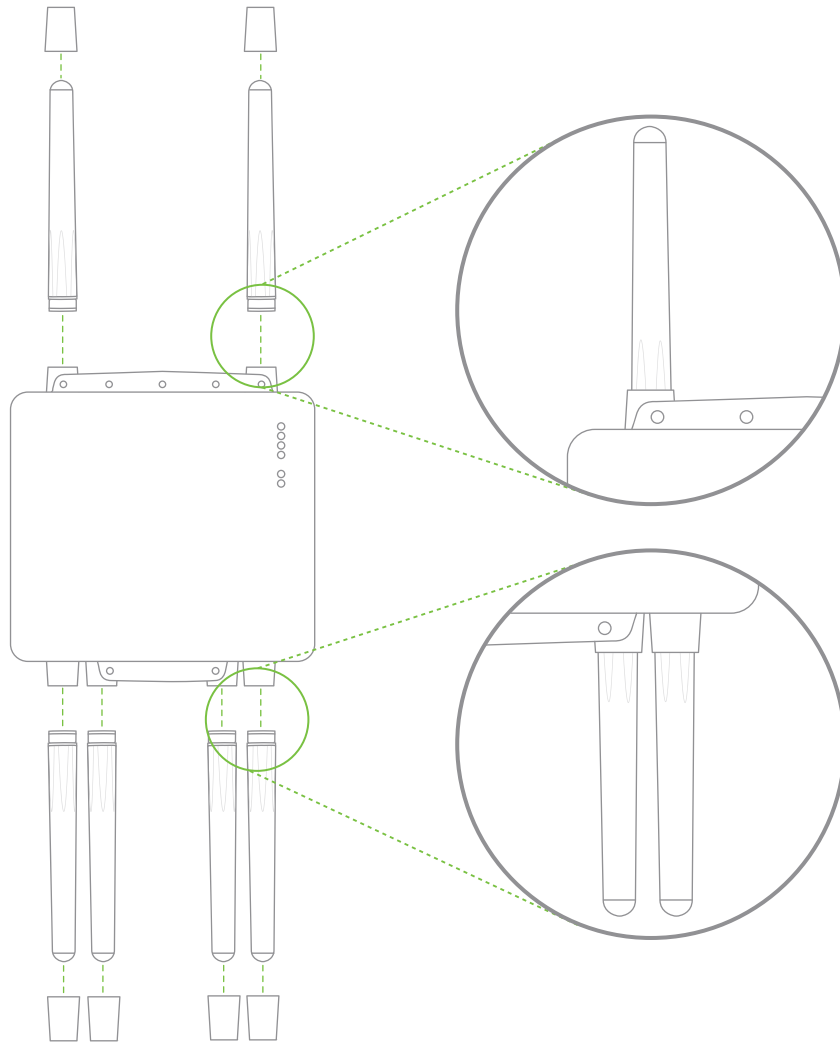
3. **Attach the articulating bracket to the mount base using a M8x110 bolt, nut and washers. Do not over-tighten the central bolt because the articulating bracket and mount base are hard to separate after they are firmly assembled together.**



Omni antennas perform best in a mesh network when oriented vertically.

Attach Antennas

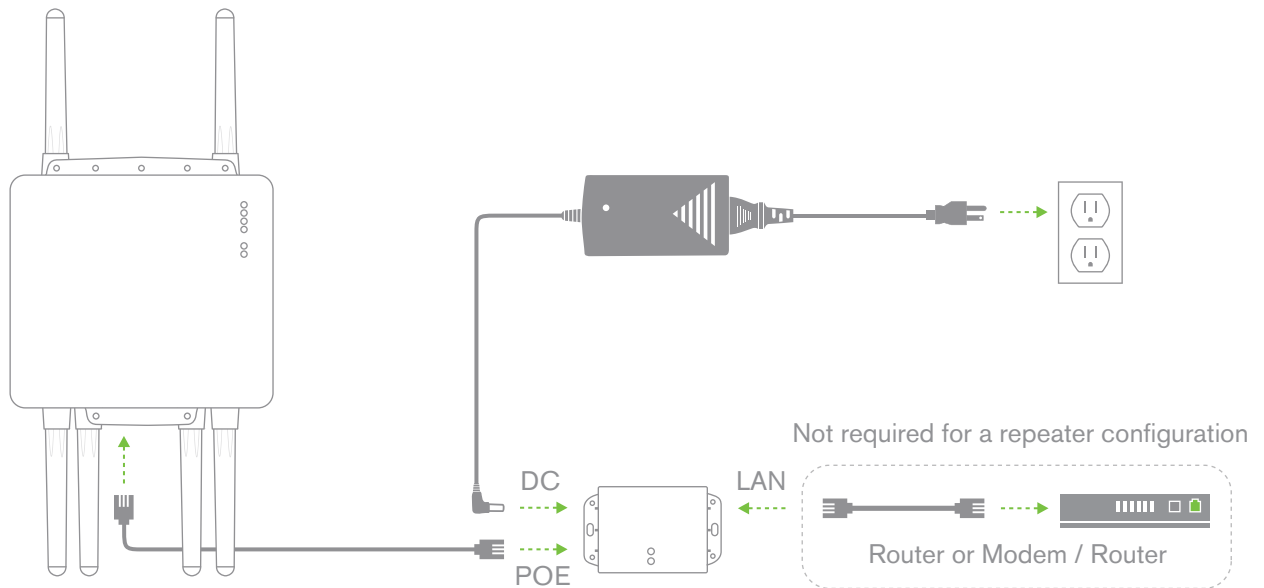
Remove protective plastic covers from all six N-type RF connectors. Attach appropriate antennas (and protective boots if included).



Power the MR58

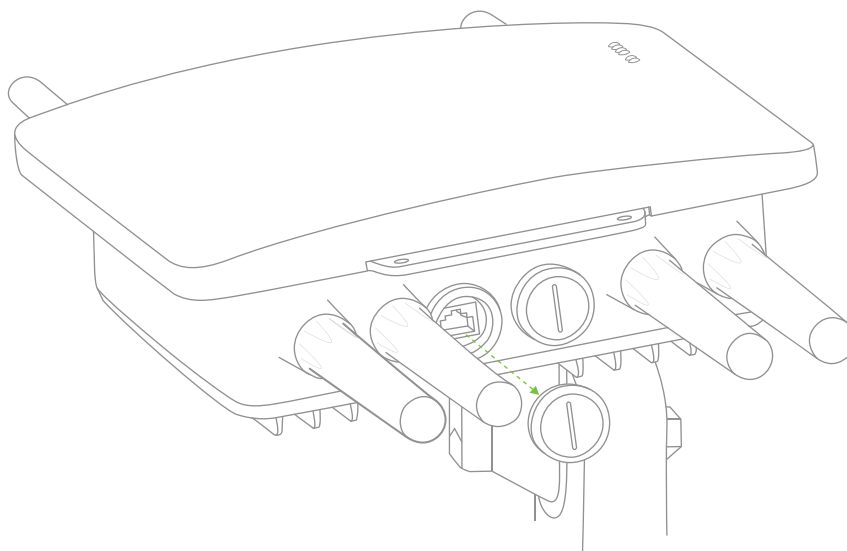
Assemble the Power Adapter and PoE Injector.

1. Plug the Meraki AC/DC adapter into wall power in a weather protected location.
The AC/DC adapter is NOT weather resistant and must be protected from moisture.
2. Plug the barrel plug of the AC/DC adapter into the Power over Ethernet Injector.
3. Plug an Ethernet cable into the “Out” port of the PoE injector.

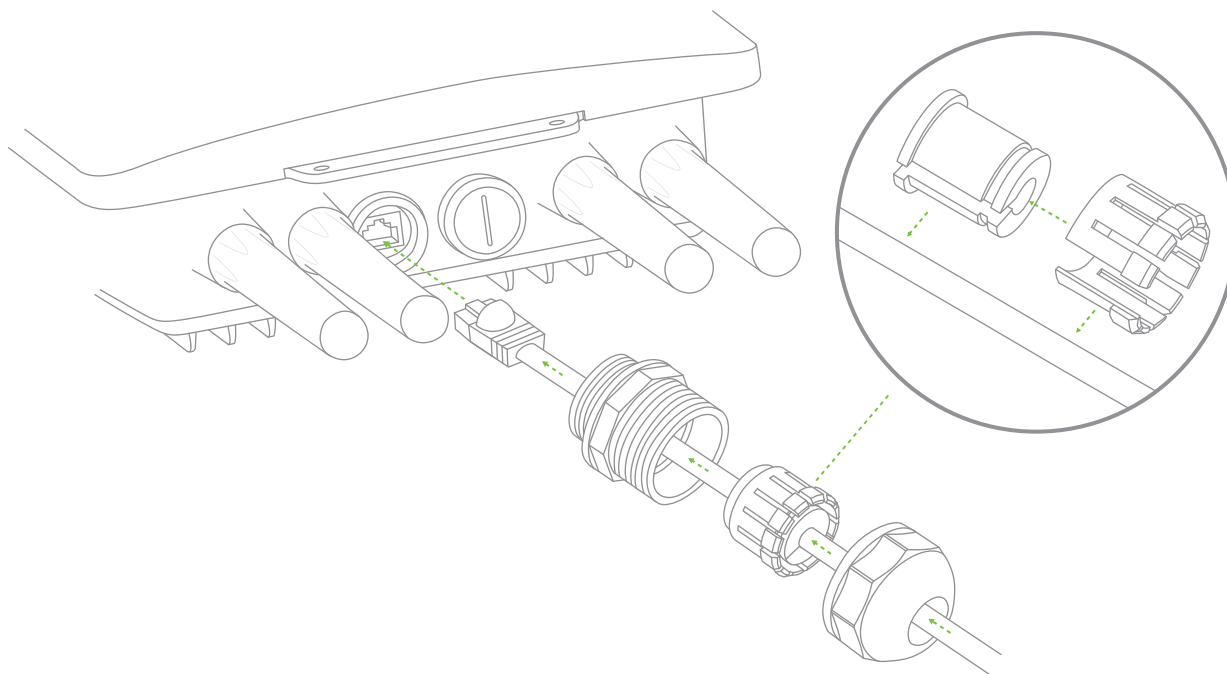


Attach Power over Ethernet to MR58

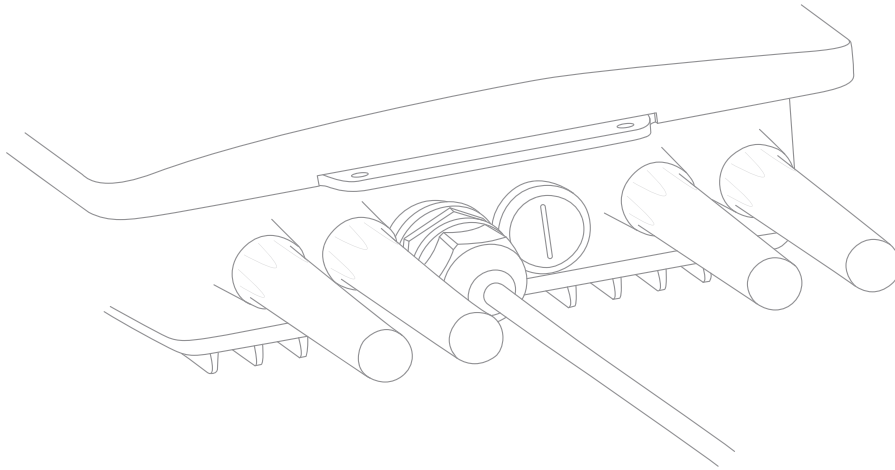
1. Remove the dust cover from the PoE+Eth0 port of the MR58. Unscrew it with a coin or flathead screwdriver.



2. Route the Ethernet cable from the PoE Injector "Out" port to the MR58.
3. Install a Cable Gland on the MR58 end of the cable.



4. Plug the Ethernet cable into the PoE+Eth0 port of the Meraki MR58.
 - a. Connect the cable to the port on the MR58.
 - b. Screw the gland body into the threaded hole of the port. Use an adjustable wrench to make sure the gland body is fully seated in the hole.
 - c. Insert the split ring gasket into the gland body.
 - d. Screw the cap tightly onto the gland. You may need a wrench to fully tighten the cap, but take care not to damage the cable in the process.



Optional: Make the MR58 a gateway

1. Connect an active internet connection to the “In” port of the PoE injector.

Aim Antennas

If you are using directional antennas, aim them appropriately to ensure optimal performance for your specific network topography.

Test Your Network

Confirm that you have good signal strength throughout your coverage area. You can use the signal strength meter on a laptop.

Troubleshooting

See the Meraki knowledge base at <http://meraki.com/help/kb> for additional information and troubleshooting tips.

FCC and Other Disclosures

US – Federal Communication Commission Interference Statement

This device complies with Part 15 of the FCC 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.

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 try 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 that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by Meraki, Inc. could void the user's authority to operate this equipment.

EU – EN 55 022 Declaration of Conformance

This equipment is shielded against the generation of radio interference in accordance with the application of Council Directive 89/336/EEC, Article 4a. Conformity is declared by the application of EN 55 022 Class B (CISPR 22).

For more information,

visit meraki.com/oursolution/hardware/MR58/meraki_MR58_reg.pdf

