



ExtremeWireless™ AP360i/e Access Points

Installation Guide

9036628-02 Rev AA
January 2024



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Preface

This section describes the text conventions used in this document, where you can find additional information, and how you can provide feedback to us.

Text Conventions

Unless otherwise noted, information in this document applies to all supported environments for the products in question. Exceptions, like command keywords associated with a specific software version, are identified in the text.

When a feature, function, or operation pertains to a specific hardware product, the product name is used. When features, functions, and operations are the same across an entire product family, such as ExtremeSwitching switches or SLX routers, the product is referred to as *the switch* or *the router*.

Table 1: Notes and warnings




Icon	Notice type	Alerts you to...
	Tip	Helpful tips and notices for using the product.
	Note	Useful information or instructions.
	Important	Important features or instructions.

Table 1: Notes and warnings (continued)



Icon	Notice type	Alerts you to...
	Caution	Risk of personal injury, system damage, or loss of data.
	Warning	Risk of severe personal injury.

Table 2: Text

Convention	Description
screen displays	This typeface indicates command syntax, or represents information as it appears on the screen.
The words <i>enter</i> and <i>type</i>	When you see the word <i>enter</i> in this guide, you must type something, and then press the Return or Enter key. Do not press the Return or Enter key when an instruction simply says <i>type</i> .
Key names	Key names are written in boldface, for example Ctrl or Esc . If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: Press Ctrl+Alt+Del
<i>Words in italicized type</i>	Italics emphasize a point or denote new terms at the place where they are defined in the text. Italics are also used when referring to publication titles.
NEW!	New information. In a PDF, this is searchable text.

Table 3: Command syntax

Convention	Description
bold text	Bold text indicates command names, keywords, and command options.
<i>italic text</i>	Italic text indicates variable content.
[]	Syntax components displayed within square brackets are optional. Default responses to system prompts are enclosed in square brackets.
{ x y z }	A choice of required parameters is enclosed in curly brackets separated by vertical bars. You must select one of the options.
x y	A vertical bar separates mutually exclusive elements.

Table 3: Command syntax (continued)

Convention	Description
< >	Nonprinting characters, such as passwords, are enclosed in angle brackets.
...	Repeat the previous element, for example, <i>member [member . . .]</i> .
\	In command examples, the backslash indicates a “soft” line break. When a backslash separates two lines of a command input, enter the entire command at the prompt without the backslash.

Documentation and Training

Find Extreme Networks product information at the following locations:

[Current Product Documentation](#)

[Release Notes](#)

[Hardware/software compatibility matrices](#) for Campus and Edge products

[Supported transceivers and cables](#) for Data Center products

[Other resources](#), like white papers, data sheets, and case studies

Extreme Networks offers product training courses, both online and in person, as well as specialized certifications. For details, visit www.extremenetworks.com/education/.

Getting Help

If you require assistance, contact Extreme Networks using one of the following methods:

Extreme Portal

Search the GTAC (Global Technical Assistance Center) knowledge base; manage support cases and service contracts; download software; and obtain product licensing, training, and certifications.

The Hub

A forum for Extreme Networks customers to connect with one another, answer questions, and share ideas and feedback. This community is monitored by Extreme Networks employees, but is not intended to replace specific guidance from GTAC.

Call GTAC

For immediate support: (800) 998 2408 (toll-free in U.S. and Canada) or 1 (408) 579 2826. For the support phone number in your country, visit: www.extremenetworks.com/support/contact

Before contacting Extreme Networks for technical support, have the following information ready:

- Your Extreme Networks service contract number, or serial numbers for all involved Extreme Networks products
- A description of the failure

- A description of any actions already taken to resolve the problem
- A description of your network environment (such as layout, cable type, other relevant environmental information)
- Network load at the time of trouble (if known)
- The device history (for example, if you have returned the device before, or if this is a recurring problem)
- Any related RMA (Return Material Authorization) numbers

Subscribe to Service Notifications

You can subscribe to email notifications for product and software release announcements, Vulnerability Notices, and Service Notifications.

1. Go to www.extremenetworks.com/support/service-notification-form.
2. Complete the form (all fields are required).
3. Select the products for which you would like to receive notifications.



Note

You can modify your product selections or unsubscribe at any time.

4. Select **Submit**.

Providing Feedback

The Information Development team at Extreme Networks has made every effort to ensure the accuracy and completeness of this document. We are always striving to improve our documentation and help you work better, so we want to hear from you. We welcome all feedback, but we especially want to know about:

- Content errors, or confusing or conflicting information.
- Improvements that would help you find relevant information in the document.
- Broken links or usability issues.

If you would like to provide feedback, you can do so in three ways:

- In a web browser, select the feedback icon and complete the online feedback form.
- Access the feedback form at <https://www.extremenetworks.com/documentation-feedback/>.
- Email us at documentation@extremenetworks.com.

Provide the publication title, part number, and as much detail as possible, including the topic heading and page number if applicable, as well as your suggestions for improvement.



AP360i/e Overview

- [New in this Guide](#) on page 9
- [AP360i/e Features](#) on page 10
- [Power Source](#) on page 13
- [AP360i/e Power Tables](#) on page 13
- [LED Indicators](#) on page 14
- [Access Point Purchase Order Information](#) on page 15

The AP360i/e access points are outdoor model enterprise class 802.11ax access points. The “i” in AP360i indicates that the access point comes with internal antennas and the “e” in AP360e indicates that it comes with external antenna connectors. The access points feature a dual-band radio, one band-locked radio WiFi radio, one bluetooth radio, four WiFi internal or external antennas, and one Bluetooth Low Energy (BLE) antenna.



Note

The AP360i/e requires a minimum base firmware of WiNG 7.3.1.

In this document, the access point is addressed as AP360i/e wherever the procedure and general information is applicable to both access points.

New in this Guide

The following sections shows the recent documentation revisions for this guide. Use this information to locate the latest updates.

December 2023 Revisions

Table 4: New and revised information

Description	Section
Weatherproof antenna connections	Weatherproof Antenna Connections
	Drip Loop for Anenna Cables
Part number for Gland assembly	Cable Gland Adapter Assembly

April 2023 Revisions

Table 5: New and revised information

Description	Section
Support for the AIO-DQ15021-N antenna	AIO-DQ15021-N Antenna
	Install the AIO-DQ15021-N Antenna
Compliance updates for the AIO-DQ15021-N antenna.	Federal Communications Commission(FCC) Notice
	Industry Canada Notice
	Detachable Antenna Usage
The ART03 bracket replaces the ART02 bracket. It is an articulating mounting bracket with the following features: <ul style="list-style-type: none"> • Adjustable 7.5", 9", and 10.5" extension with 2-axis • +/-80 degree in 10 degree increments 	Access Point Mounting Options and Bracket Information
	Install the Access Point on a Wall With the MBO-ART03 Bracket
	Install the Access Point on a Pole with the MBO-ART03 and KT-147407-02 Brackets
	Install the Access Point on a Unistrut Structure Using the MBO-ART03 Bracket

AP360i/e Features

The AP360i/e access points have the following features:

- Radios:
 - Two 802.11ax radios (one 2x2 2.4GHz and 5GHz radio, and one 2x2 5GHz radio)
 - One IoT radio (2.4GHz)
- Console port: RJ45
- Two Ethernet ports:
 - 1x100/1000 Mbps auto-negotiation Ethernet port, RJ45
 - 1x10/100/1000 Mbps auto-negotiation Ethernet port, RJ45
- LEDs: Six. All LEDs will be on during reset
- One rest button
- Power: PoE 802.3af (for more information on power used at 802.3af and 802.3at modes, see [AP360i/e Power Tables](#))
- Antennas:
 - Four WiFi internal antennas on AP360i and four WiFi external antennas on AP360e
 - One BLE internal antenna on AP360i and one BLE external antenna port on AP360e
- Temperature: -40°C to +60°C (-40°F to +140°F) @ 6000 ft.
- Enclosure: Plastic

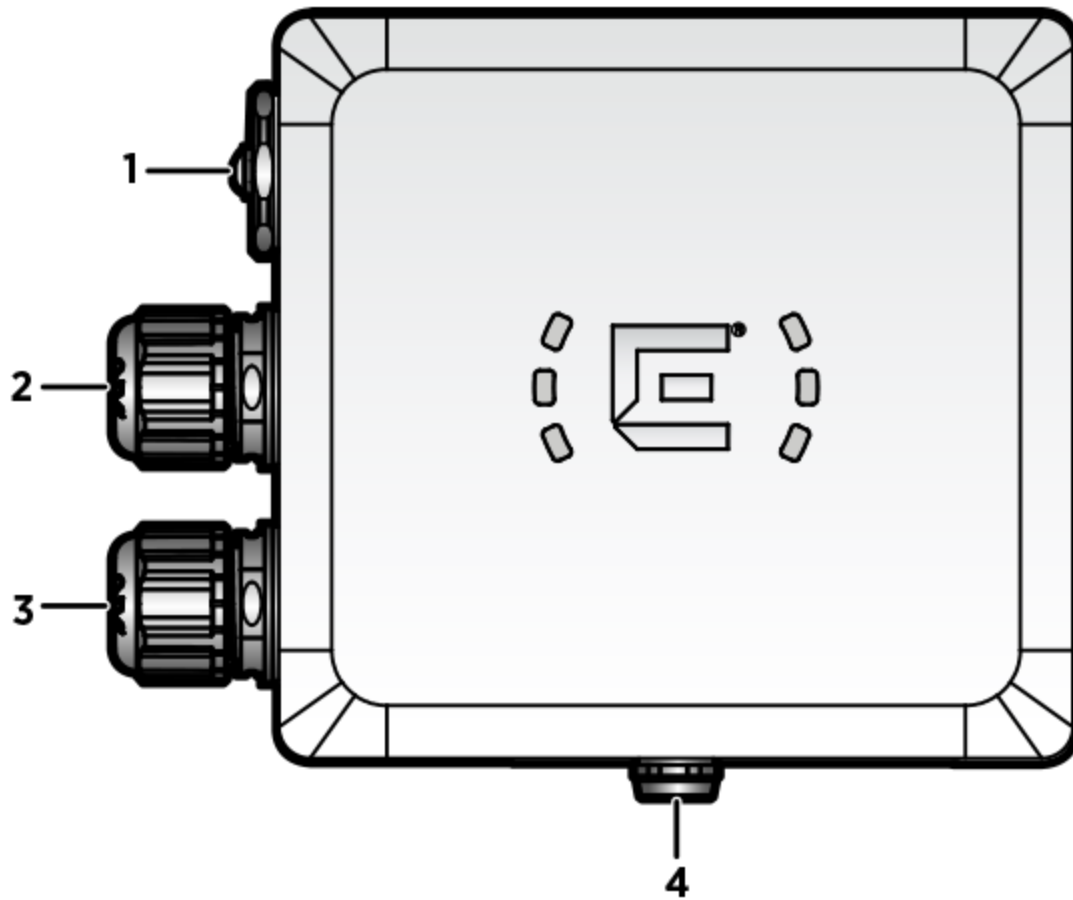


Figure 1: AP360i access point front view

Callout	Description
1	Console port and reset button cap
2	GE2
3	GE1-PoE
4	Vent

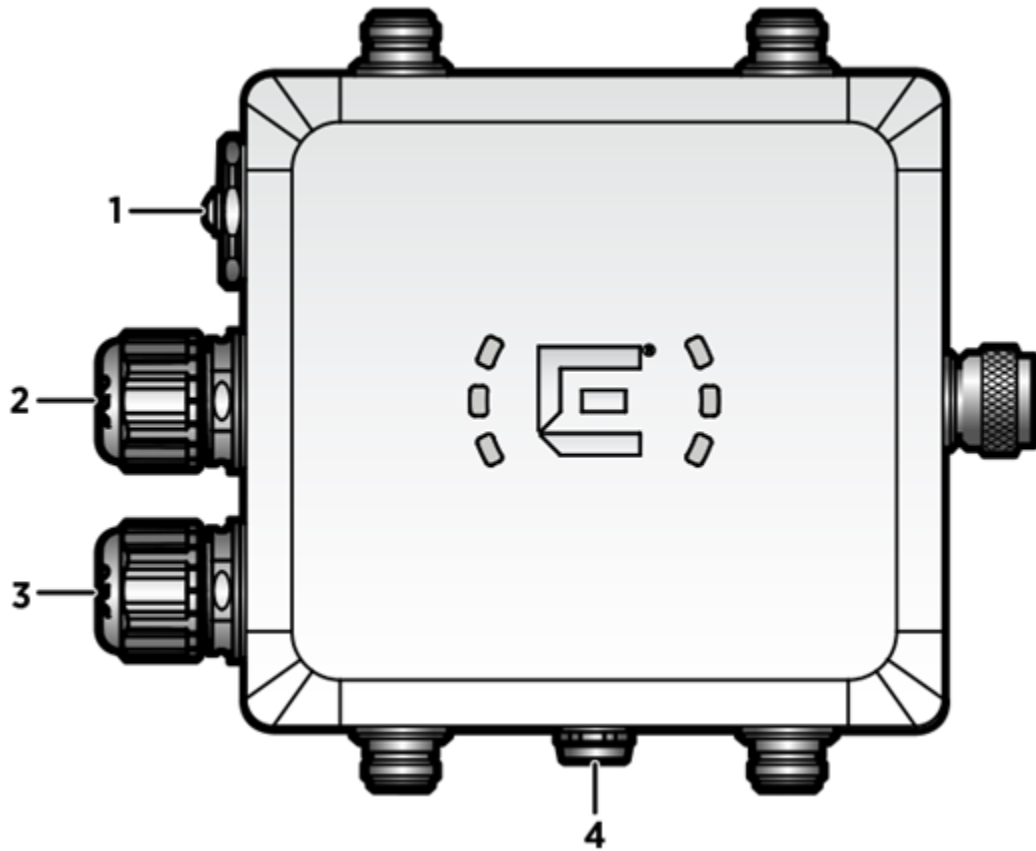


Figure 2: AP360e access point front view

Callout	Description
1	Console port and reset button cap
2	GE2
3	GE1-PoE
4	Vent



Note

The BLE antenna on the AP360e access point comes with a dust cap. Do not remove the dust cap until you need to install the antenna.

Power Source

The AP360i and AP360e access points have one Power over Ethernet (PoE) PD converter that supplies power.



Note

This product is intended to be supplied with a listed power adapter or a DC power source, suitable for use at 60°C, and whose output meets ESI or separated extra-low voltage (SELV) properties, with a rating of 54v DC (0.6A minimum). For further assistance with purchasing a power adapter, contact Extreme Networks Support.



Note

Power for this access point is supplied by PoE through an UL-listed Information Technology Equipment (ITE).

Power source	Description
PoE	Power is provided through the RJ45 Ethernet port of AP360i/e, compliant to be powered with 802.3at and 802.3bt to provide full functionality. For reduced functionality, use 802.3af.

AP360i/e Power Tables

Table 6: AP360i power table

AP360i	802.3af and 802.3at
Radio 0 (sensor)	2.4G:2x2 (23 dBm) 5G:2x2 (21 dBm)
Radio 0 (2.4G)	2x2 (23 dBm)
Radio 0 (5G-L)	2x2 (20 dBm)
Radio 1 (5G-F)	2x2 (21 dBm)
Radio 1 (5G-H)	2x2 (20 dBm)
BLE	On
GPS	On

Table 7: AP360e power table

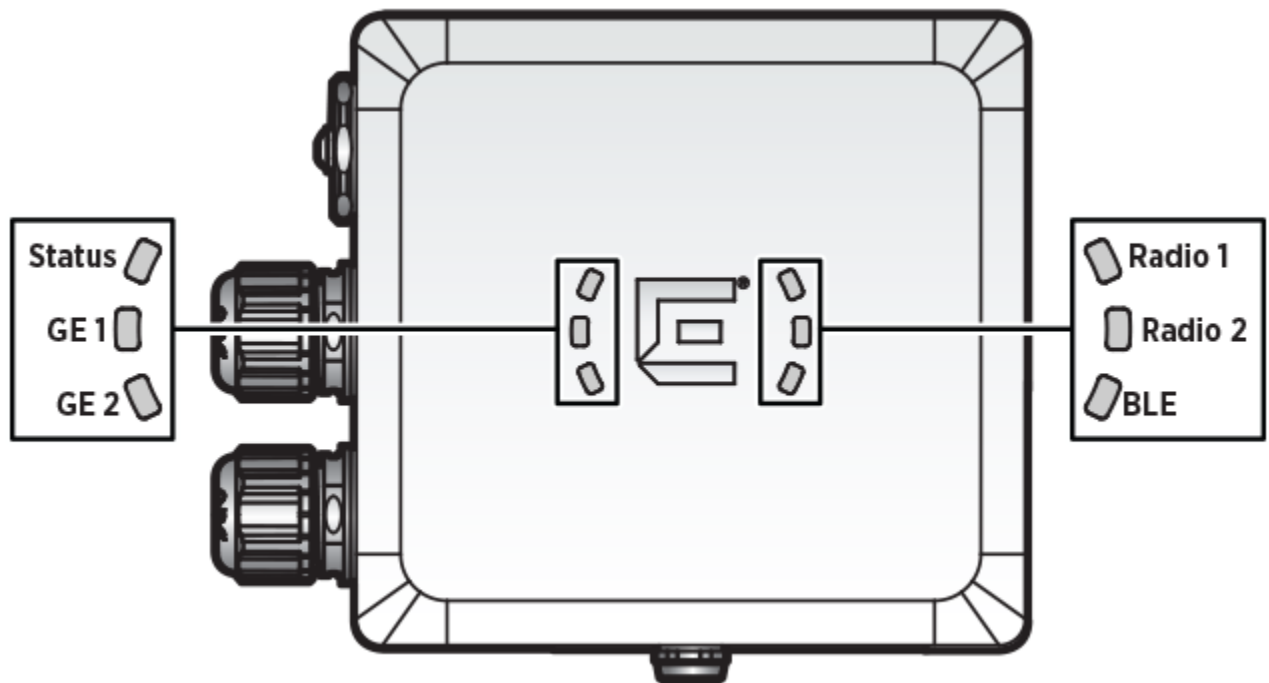
AP360e	802.3af and 802.3at
Radio 0 (sensor)	2.4G:2x2 (22 dBm) 5G:2x2 (19 dBm)
Radio 0 (2.4G)	2x2 (22 dBm)
Radio 0 (5G-L)	2x2 (18 dBm)
Radio 1 (5G-F)	2x2 (19 dBm)
Radio 1 (5G-H)	2x2 (18 dBm)

Table 7: AP360e power table (continued)

AP360e	802.3af and 802.3at
BLE	On
GPS	On

LED Indicators

There are six LEDs located on the front face of the access point but are not visibly marked.

**Figure 3: AP360i/e LED indicators****Note**

The LED icons and the status on AP360i and AP360e are the same.

Table 8: AP360i/e LED status indicators

LED icon	LED color	Description
Status	Amber	Non-operational status
	Green	Normal operational status
GE1	Amber	100 Mbps
	Green	1000 Mbps
GE2	Amber	100 Mbps
	Green	1000 Mbps

Table 8: AP360i/e LED status indicators (continued)

LED icon	LED color	Description
Radio 1	Amber	5G activity
	Green	2.4G activity
Radio 2	Amber	5G activity
IoT (BLE)	Blue	Indicates BLE is enabled

Access Point Purchase Order Information

The AP360i and AP360e access points must be ordered separately, the ordering details of which are presented in the following tables:

Table 9: AP360i purchase order information

Part number	Description
AP360i-FCC	Dual-radio 802.11ax, 2×2:2, dual 5G outdoor internal antenna access point. Domain: US and Puerto Rico
AP360i-CAN	Dual-radio 802.11ax 2×2:2, dual 5G outdoor internal antenna access point. Domain: Canada
AP360i-WR	Dual-radio 802.11ax 2×2:2, dual 5G outdoor internal antenna access point. Domain: EMEA and Rest of World

Table 10: AP360e purchase order information

Part number	Description
AP360e-FCC	Dual-radio 802.11ax 2×2:2, dual 5G outdoor external antenna access point. Domain: US and Puerto Rico
AP360e-CAN	Dual-radio 802.11ax 2×2:2, dual 5G outdoor external antenna access point. Domain: Canada
AP360e-WR	Dual-radio 802.11ax 2×2:2, dual 5G outdoor external antenna access point. Domain: EMEA and Rest of World



Install the Access Point

- [AP360i/e Box Contents](#) on page 17
- [Access Point Mounting Options and Bracket Information](#) on page 18
- [Position the Access Point before Installation](#) on page 20
- [Ground Connection](#) on page 20
- [Install the Access Point on a Wall or to a Flat Surface](#) on page 22
- [Install the Access Point on a Pole](#) on page 35
- [Install the Access Point on a Unistrut Structure Using the MBO-ART03 Bracket](#) on page 51
- [Install the AIO-DQ15021-N Antenna](#) on page 56
- [Weatherproof the Antenna Connections](#) on page 58
- [Drip Loop for Antenna Cables](#) on page 59

About This Task

The access point can be installed to a flat surface such as a wall or to a pole. Refer to the [purchase order information](#) to know more about selecting the right access point for your installation needs.

Before installing the access point:

Procedure

1. [Verify the box contents](#).
2. Visually inspect the access point, the bracket, and any other optional accessories you have ordered for physical damage.
If there is any damage, contact [Extreme Networks Support](#).
3. Read and review the [safety guidelines](#).
4. Review the [mounting options and the list of available brackets and accessories](#) for installation.
5. [Position the access point before installation](#).
6. Install the [ground connection](#).
7. Install the access point:
 - To install the access point on a wall or a flat surface, see [Install the Access Point on a Wall or to a Flat Surface](#).
 - To install the access point on a pole, see [Install the Access Point on a Pole](#).

8. [Configure the GE and console connections.](#)
9. Form a drip loop connection for the cables.

What to Do Next

To troubleshoot or uninstall the access point, remove the RJ45 cable before you remove the access point from the installation location.

AP360i/e Box Contents

When you purchase the AP360i or AP360e access point, ensure that the following items are available in the box:

- An AP360i/e Quick Reference
- One access point (AP360i or AP360e)
- One hardware bag containing:
 - One ground screw
 - One ring terminal
 - One star washer

Access Point Mounting Options and Bracket Information

The access points can be mounted on a wall or to a pole by purchasing separate mounting brackets, which are described in the following table:

Table 11: Mounting bracket usage

Mounting bracket and part number	Wall install	Pole install	Notes	
KT-147407-02 bracket	Yes	Yes	<p>The KT-147407-02 bracket has three parts:</p> <ul style="list-style-type: none"> • Flat part • 1-axis tilt part • Pole part <p>For attaching to a wall or a flat surface, use the bracket part that has two holes on the surface of the metal portion, also called the flat part. For attaching to a pole, if the 1-axis tilt is not required, attach the pole part of the bracket to the access point. If 1-axis tilt is required, attach the pole part of the bracket on top of the second wall part.</p>	
KT-150173-01 extension arm. It can be used with KT-147407-02 bracket parts, to provide an extension or a tilt	Yes. Use the KT-147407-02 flat wall mount part, if you need a bracket tilt during installation	Yes. Use the KT-147407-02 bracket pole part or use all three KT-147407-02 bracket parts	The KT-150173-01 extension arm can also be used by itself without the other KT-147407-02 bracket parts.	
MBO-ART03	Yes	Yes; with the KT 147407-02 bracket.	Yes	Adjustable 7.5", 9", and 10.5" extension with 2-axis +/-80 degree (in 10 degree increments) articulating mounting bracket. For wall installations, the wall must be strong enough to support the access point during inclement weather

Table 11: Mounting bracket usage (continued)

Mounting bracket and part number	Wall install	Pole install	Notes	
MBO-ART02 10 in. 2-axis articulating mounting bracket	Yes	Yes. Attach the MBO-ART02 articulating mounting bracket to the WS-MBO-POLE01 bracket	The wall must be strong enough to support the access point during inclement weather.	Note: The MBO-ART02 wall mount bracket is End of Sale (EOS) as of January, 2023. It is replaced by the MBO-ART03 bracket. For more information, see End of Sale and End Service Life .
WS-MBO-POLE01 bracket	No	Yes. The POLE01 bracket can only be used with the MBO-ART02 articulating mounting bracket	If the pole diameter is ≥ 1.0 in. (25.4 mm), use a small cable clamp. If the pole diameter is between 5.0 in. - 7.0 in. (127.0 mm - 178.0 mm), use a large cable clamp. For any other pole diameter, provide your own stainless steel cable clamp. The band must be 0.5 in. (12.7 mm) wide.	Note: The WS-MBO-POLE01 bracket is End of Sale (EOS) as of January, 2023. For more information, see End of Sale and End Service Life .
WS-MBV-VMM vehicle bracket (#32216)	Yes	No	The VMM vehicle bracket has four parts: <ul style="list-style-type: none"> • Flat plate with thumbscrews • Stiffener plate 1 • Stiffener plate 2 • Vehicle attach assembly plate 	



Note

All mounting brackets are sold separately.



Important

The AP360i/e access points use different mounting accessories than the AP460C, AP460S6C, and AP460S12C series access points.

Position the Access Point before Installation

When you install the access point, the vent must be on the side closest to the ground, and not above the plastic cover. You must provide a 3.0 in. (76.2 mm) drip loop on all cables. For more information, see [Drip Loop for Antenna Cables](#) on page 59.

**Note**

The BLE antenna on the AP360e access point comes with a dust cap. Do not remove the dust cap until you are ready to install the antenna.

Related Topics

[Ground Connection](#) on page 20

[Drip Loop for Antenna Cables](#) on page 59

Ground Connection

About This Task

The ground connection for the access point is located on the rear of the device. Attach a ground to earth cable to the grounding terminal.

Hardware requirements:

- One ground screw
- One ring terminal
- One star washer
- One ground wire

**Note**

The hardware is shipped with the access point box, but the ground wire must be provided by the installer.

Procedure

1. Strip the insulation off of one end of the ground screw wire.

**Tip**

The best practice is to use a 10 AWG electrical wire.

2. Attach the ground wire ring terminal to the access point using the M4 ground screw assembly with the star washer.

**Note**

The wire should be as close to the access point bottom as possible.

**Note**

The star washer must be in contact with both the ring terminal and the access point.

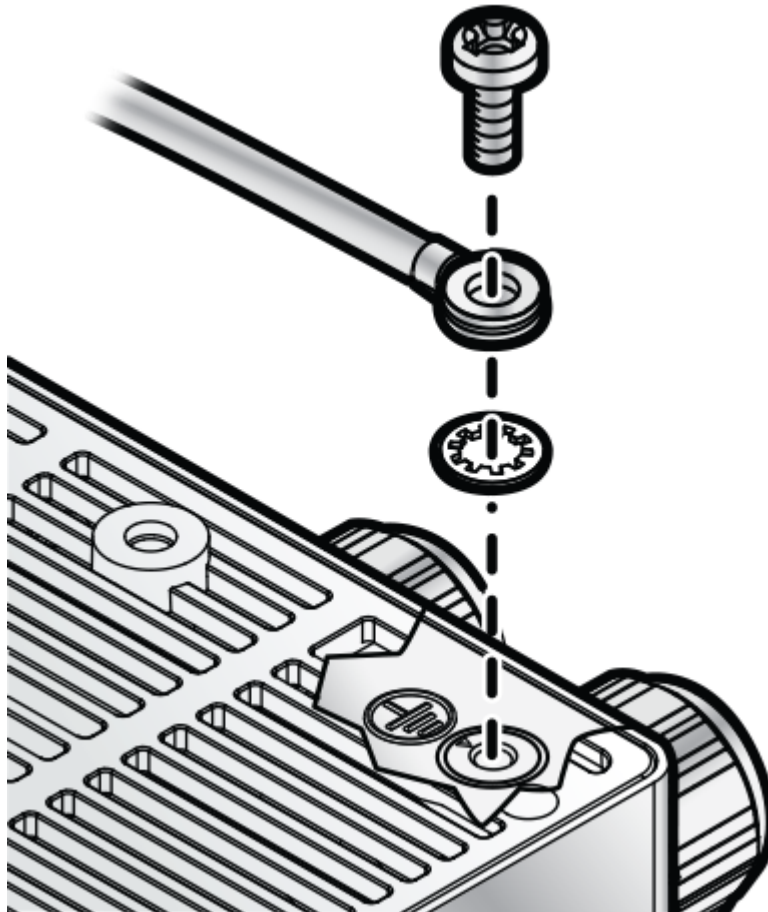


Figure 4: Ground wire connection

3. Tighten the screw to a torque of 10.0 in-lbs.

Related Topics

[AP360i/e Box Contents](#) on page 17

Install the Access Point on a Wall or to a Flat Surface

You can install the access point on a flat surface such as a wall using one of the following bracket options:

- [KT-147407-02 bracket](#)
- [KT-150173-01 extension arm](#)
- [MBO-ART02 10 in. 2-axis articulating mounting bracket](#)
- [WS-MBV-VMM vehicle bracket \(#32216\)](#)



Note

The wall install options are applicable to both internal and external antenna model outdoor access points.

Install the Access Point to a Flat Surface Using KT-147407-02 Flat Part and 1-Axis Tilt Part

Before You Begin

The KT-147407-02 bracket has three bracket parts:

- Flat part
- 1-axis tilt part
- Pole part

For a flat surface installation, you require the flat part and the 1-axis tilt part.

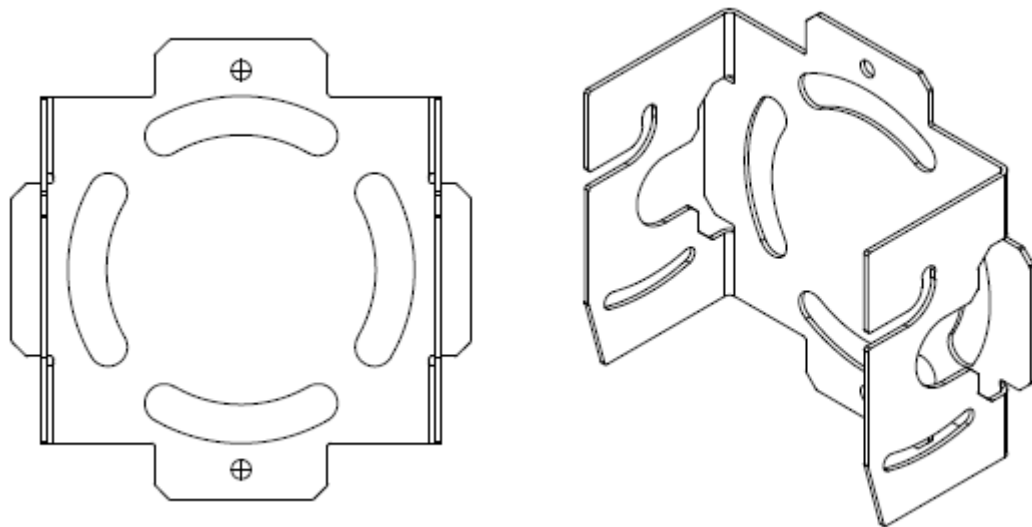


Figure 5: KT-147407-02 bracket flat part

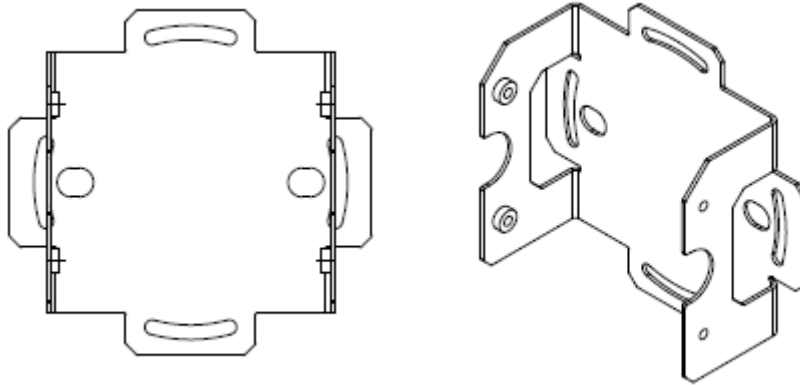


Figure 6: KT-147407-02 bracket 1-axis tilt part



Note

The flat part and the 1-axis tilt part can be used interchangeably with the access points. You can either attach the flat part or the 1-axis tilt part first, and the rest of the installation procedure will not be affected by it.

The following hardware is required:

- KT-147407-02 flat part
- KT-147407-02 1-axis tilt part
- Access point
- Ten M6 hex-head screws
 - Two M6 screws to attach the KT-147407-02 flat part to the access point
 - Four M6 screws to attach the KT-147407-02 1-axis tilt part to a flat surface
 - Four M6 screws to attach the KT-147407-02 flat part to the 1-axis tilt part

Procedure

1. Using two M6 hex-head screws, attach the KT-147407-02 flat part to the access point.
2. Using the 1-axis tilt part as a template, mark and drill four holes on a wall or a flat surface.
3. Using four M6 screws, attach the 1-axis tilt part to a wall or a flat surface.
4. Align the KT-147407-02 flat part bracket inside the 1-axis tilt part, and attach it using four M6 screws.

5. Tilt the access point to a desired angle and tighten the four M6 screws to a torque of 45 in-lbs.

The tilt bracket can be adjusted from +15 degrees to -15 degrees of tilt.

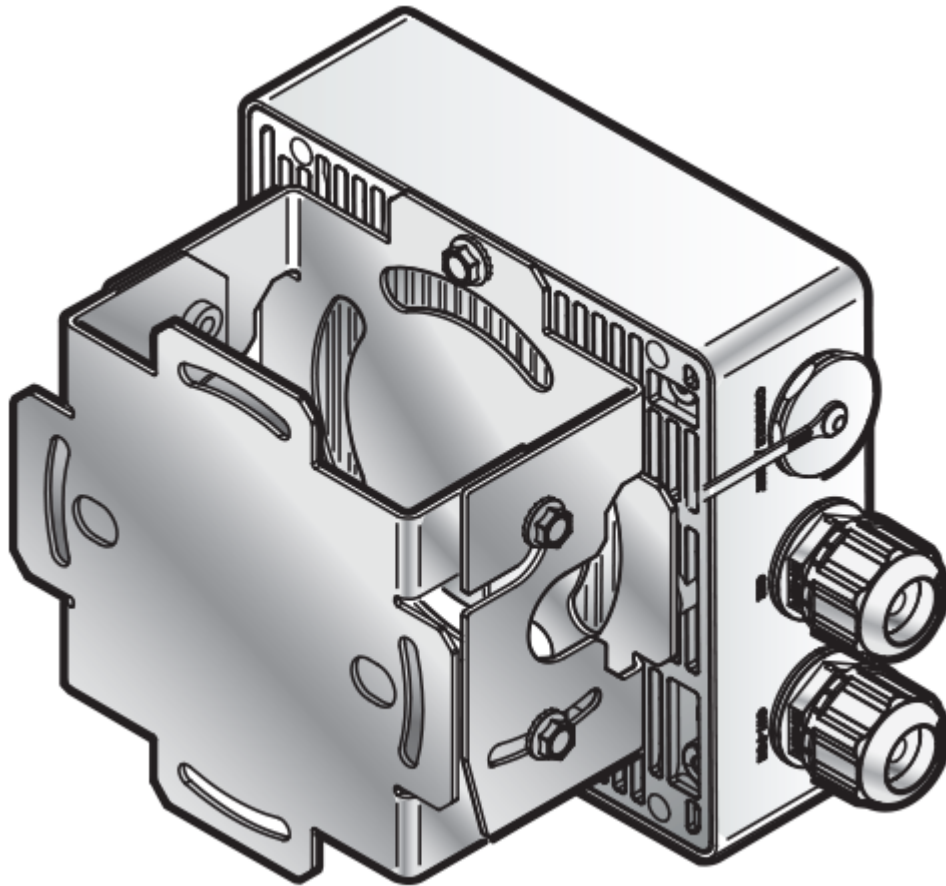


Figure 7: KT-147407-02 flat part and 1-axis tilt part attached to the back of the AP360i access point

Install the Access Point to a Flat Surface Using the KT-147407-02 Flat Part, 1-axis Tilt Part, and the KT- 150173-01 Extension Arm

Before You Begin

The KT-150173-01 extension arm is used to install the access point on a flat surface, away from any obstruction and to get a stronger antenna signal. For installations that require an extension arm, the access point can be attached to a flat surface using the KT-147407-02 bracket parts and the KT-150173-01 extension arm, or [can be installed by only using the KT-150173-01 extension arm](#).

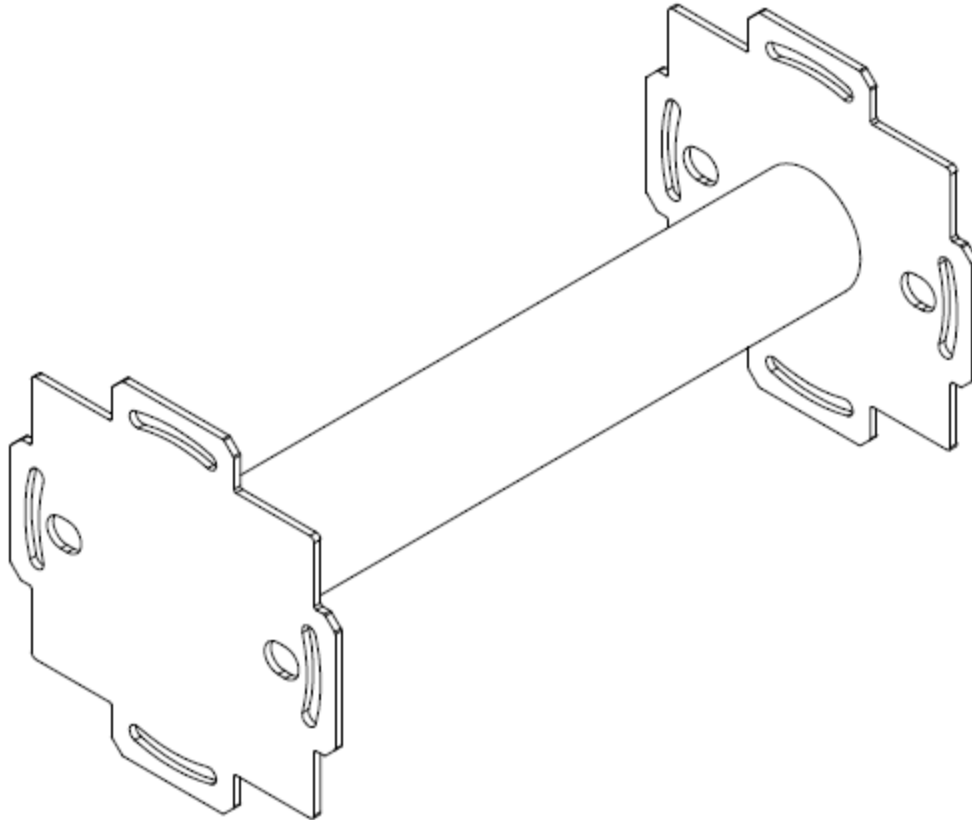


Figure 8: KT-150173-01 extension arm

The following hardware is required for installation:

- KT-147407-02 flat part
- KT-147407-02 1-axis tilt part
- KT-150173-01 extension arm
- Access point
- Ten M6 hex-head screws
 - Two M6 hex-head screws to attach the flat part to the access point
 - Four M6 hex-head screws to attach the 1-axis tilt part to the flat part
 - Four M6 hex-head screws to attach the KT-150173-01 extension arm to a flat surface
- Two hex-head M12 stainless-steel screws and nuts

Procedure

1. Using two M6 screws, attach the KT-147407-02 flat part to the access point.
2. Place the KT-147407-02 flat part inside the 1-axis tilt part, and attach it using four M6 screws.
3. Using the KT-150173-01 extension arm as a template, mark four hole centers on a flat surface.

The holes must be within the semi-circular cuts of the extension arm.

- Using two hex-head M12 stainless-steel screws and two M12 hex-head stainless-steel nuts, attach one end of the KT-150173-01 extension arm to the 1-axis tilt part. The screws and nuts are fastened through the two large circular holes on the KT-150173-01 extension arm.
- Using four M6 hex-head screws, attach the KT-150173-01 extension arm to a flat surface.



Tip

The best practice is to use screw-in anchors with the M6 screws on a wood surface, and concrete anchors on a concrete surface.

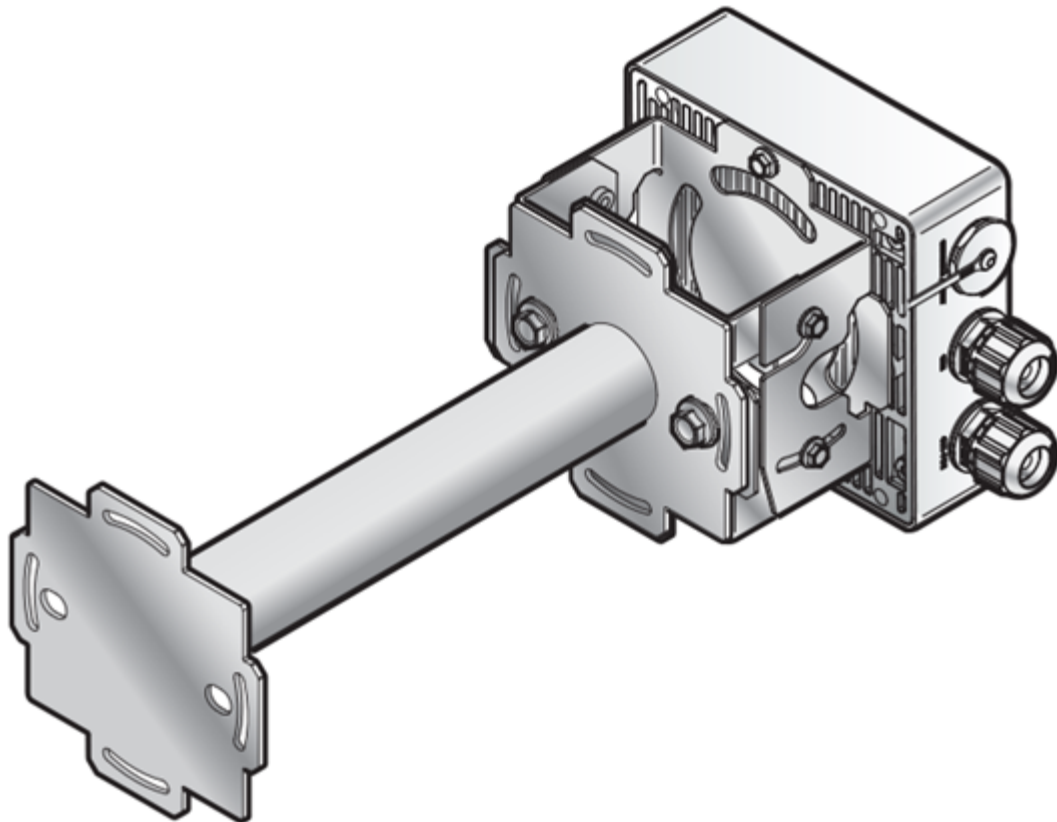


Figure 9: KT-147407-02 flat part, 1-axis tilt part, and the KT-150173-01 extension arm attached to the back of the AP360i access point

Install the Access Point On a Flat Surface Using the KT-150173-01 Extension Arm

Before You Begin

The KT-150173-01 extension arm is used to install the access point on a flat surface, away from any obstruction and to get a stronger antenna signal.

The following hardware is required:

- KT-150173-01 extension arm

- Eight M6 hex-head screws
 - Four M6 hex-head screws to attach one end of the extension arm to the access point
 - Four M6 hex-head screws to attach the other end of the extension arm to the wall
- Access point

Procedure

1. Using the KT-150173-01 extension arm as a template, mark and drill four hole centers on a flat surface.
The holes must be within the semi-circular cuts of the extension arm.
2. Using four M6 hex-head screws, attach one end of the KT-150173-01 extension arm to the access point.
3. Using four M6 hex-head screws, attach the other end of the KT-150173-01 extension arm to the wall.



Tip

The best practice is to use screw-in anchors with the M6 screws on a wood surface, and concrete anchors on a concrete surface.

Install the Access Point on a Wall With the MBO-ART03 Bracket

Before You Begin

Obtain the items in the following table.

Table 12: Hardware requirements for MBO-ART03 articulating mounting bracket wall installation

Quantity	Item
1	Access point
1	MBO-ART03 articulating mounting bracket
6	M6 hex-head screws Two M6 hex-head screws for attaching the bracket and the access point. Four M6 hex-head screws for attaching the bracket to the wall.
2	Long M6 hex screws and nuts to lock each axis.

You also need a torque wrench and tool that matches the nuts for the M6 hex screws.

About This Task

Install the access point to a wall so it is secure and your customers can easily access your wireless network.

Procedure

1. Mark and drill four holes on the wall.

It is recommended that you use one of the bracket ends as a template. You can remove the end from the bracket.

2. Adjust the arm length.

The arm is set to a 7.5-inch extension. To increase it to a 9-inch extension, you move 1 pivot and lock screw to the outside holes on 1 bracket. To increase the extension to 10.5-inches, move both pivot and lock scerw pairs to the outside holes on each bracket

3. Attach the bracket to the access point with the M6 hex-head screws.
4. Align the bracket mounting holes with the holes on the wall.
5. Attach the bracket to the wall with the M6 hex-head screws.
6. Insert the locking bolts into the bracket and arm locking hole.
7. Attach the nuts and torque to 45 inch-pounds.
8. Tighten the pivot screws and nuts to 60 inch-pounds.

Install the Access Point on a Flat Surface Using the MBO-ART02 Articulating Mounting Bracket

Before You Begin



Note

The MBO-ART02 wall mount bracket is End of Sale (EOS) as of January, 2023. It is replaced by the MBO-ART03 bracket.

For more information, see [End of Sale and End Service Life](#).

The following hardware is required:

- MBO-ART02 articulating mounting bracket
- Access point
- Two M6 hex-head screws is used for attaching the MBO-ART02 articulating mounting bracket to the access point
- Four M4 hex-head screws are used for attaching the MBO-ART02 articulating mounting bracket to the wall



Note

The MBO-ART02 bracket has +80 degrees to –80 degrees of articulation on each axis.

Procedure

1. Using the shorter end of the MBO-ART02 bracket end as a template, mark and drill four holes on the wall.

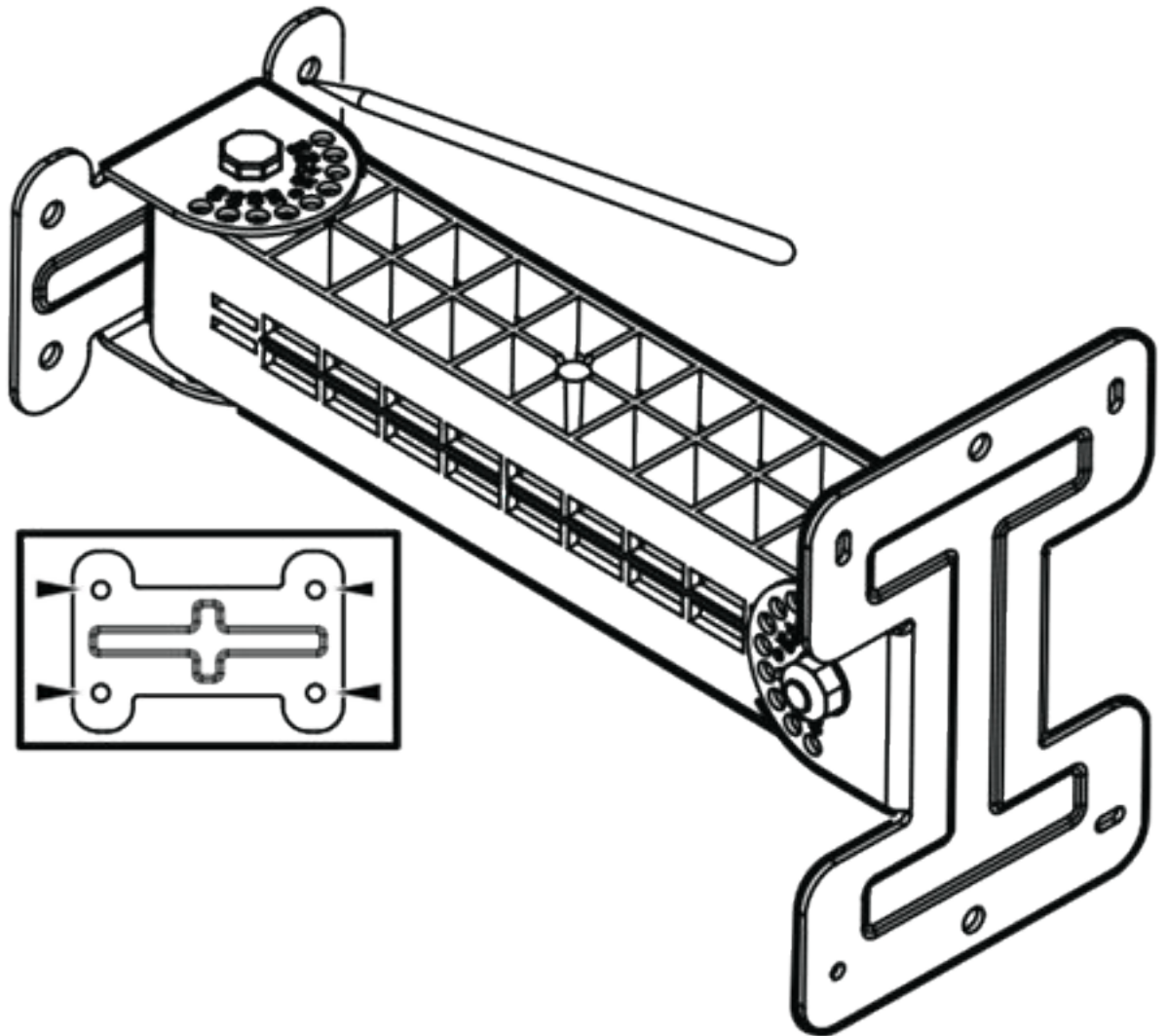


Figure 10: MBO-ART02 articulating mounting bracket template for wall attachment holes

2. Using two M6 hex-head screws, attach the MBO-ART02 articulating mounting bracket to the access point.

3. Align the MBO-ART02 articulating mounting bracket holes against the wall attachment holes and attach the bracket using four M4 hex-head screws.

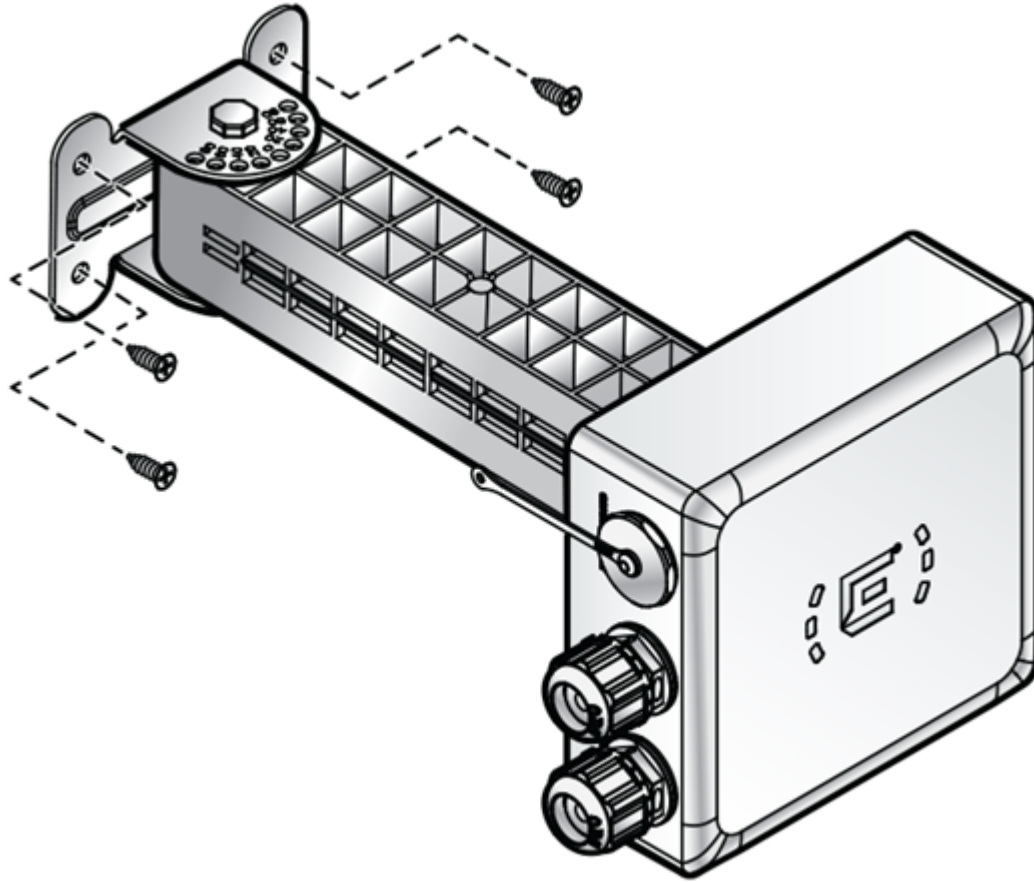


Figure 11: MBO-ART02 bracket being attached to a wall

Install the Access Point on a Hard Vehicle Surface Using the WS-MBV-VMM Vehicle Bracket (#32216)

About This Task

The WS-MBV-VMM vehicle bracket (#32216) is used to mount the access point on a wood or a metal vehicle surface. The vehicle bracket has four parts:

- Flat plate with thumbscrews, called the access point attach assembly plate
- Stiffener plate 1. It is used with the access point attach assembly plate

- Stiffener plate 2. It is used with the access point attach assembly plate
- Vehicle attach assembly plate with PEM® fasteners

Table 13: WS-MBV-VMM vehicle bracket (#32216) box contents

Item	Description
VMM vehicle attach assembly	Vehicle attach plate with PEM® fasteners
VMM access point attach assembly	Access point attach flat plate with stiffener 1 and stiffener 2
Phillips pan-head M4 (15 mm) screws	Four screws to attach the access point attach assembly plate to the access point
The installer must provide the following hardware:	
Access point	The access point that you are using for installation
Screws or bolts to attach the vehicle attach assembly plate	Four screws or bolts
Torque wrench or a screwdriver	Required to attach the screws or bolts, and assembly plates

Procedure

1. Using the vehicle assembly plate four long inner slots as a template, mark and drill the attachment holes on a flat surface.

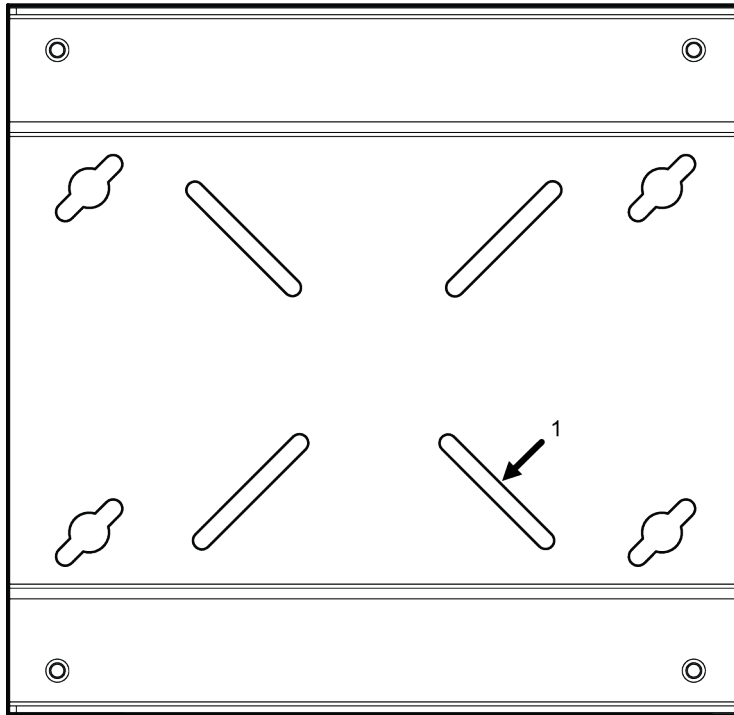


Figure 12: VMM vehicle attach assembly plate

Callout	Description
1	Inner slot on the VMM vehicle attach assembly plate

2. Attach the vehicle attach assembly plate using four screws or bolts.
The screws or bolts must be tightened to hold the bracket and the access point in all environmental conditions.

- Align the large holes on the stiffener plates with the large holes on the access point assembly plate, and attach the stiffener plates to the access point attach assembly plate.

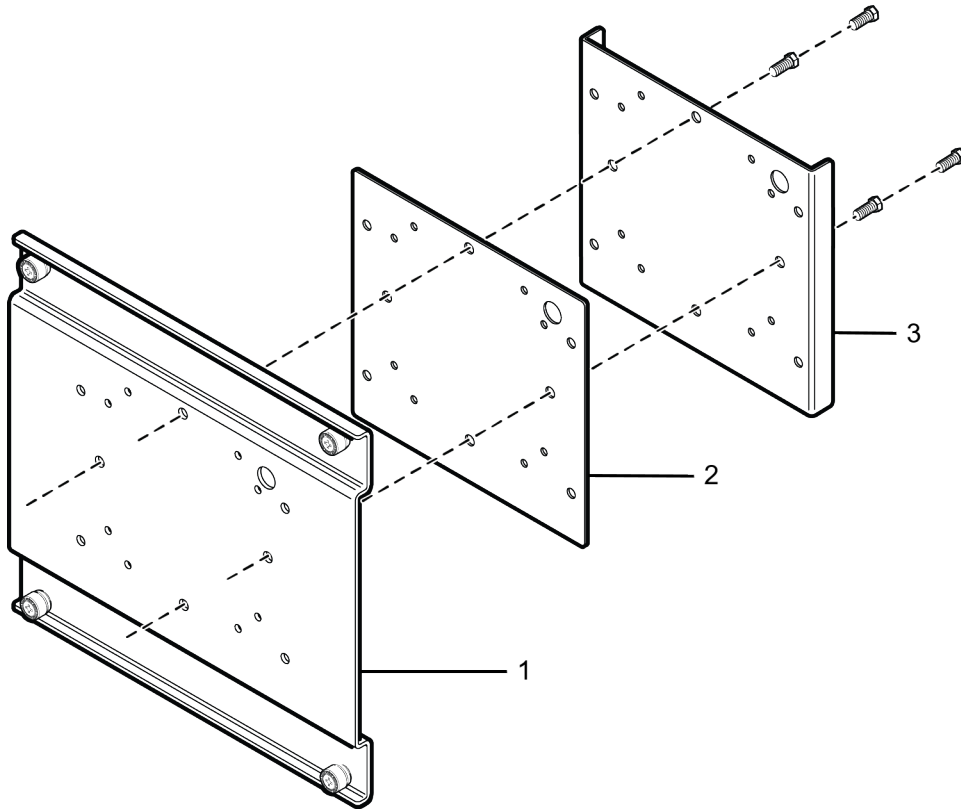


Figure 13: VMM access point attach assembly plate stiffener 1 and stiffener 2

Callout	Description
1	Access point attach assembly plate
2	Stiffener plate 1
3	Stiffener plate 2

4. Attach four M4 or M6 screws to stiffener plate 2, and align the threaded holes of the access point to the access point attach assembly plate.

The screw head goes inside the small bracket with the bent sides.



Note

The bracket comes with four M4 screws.

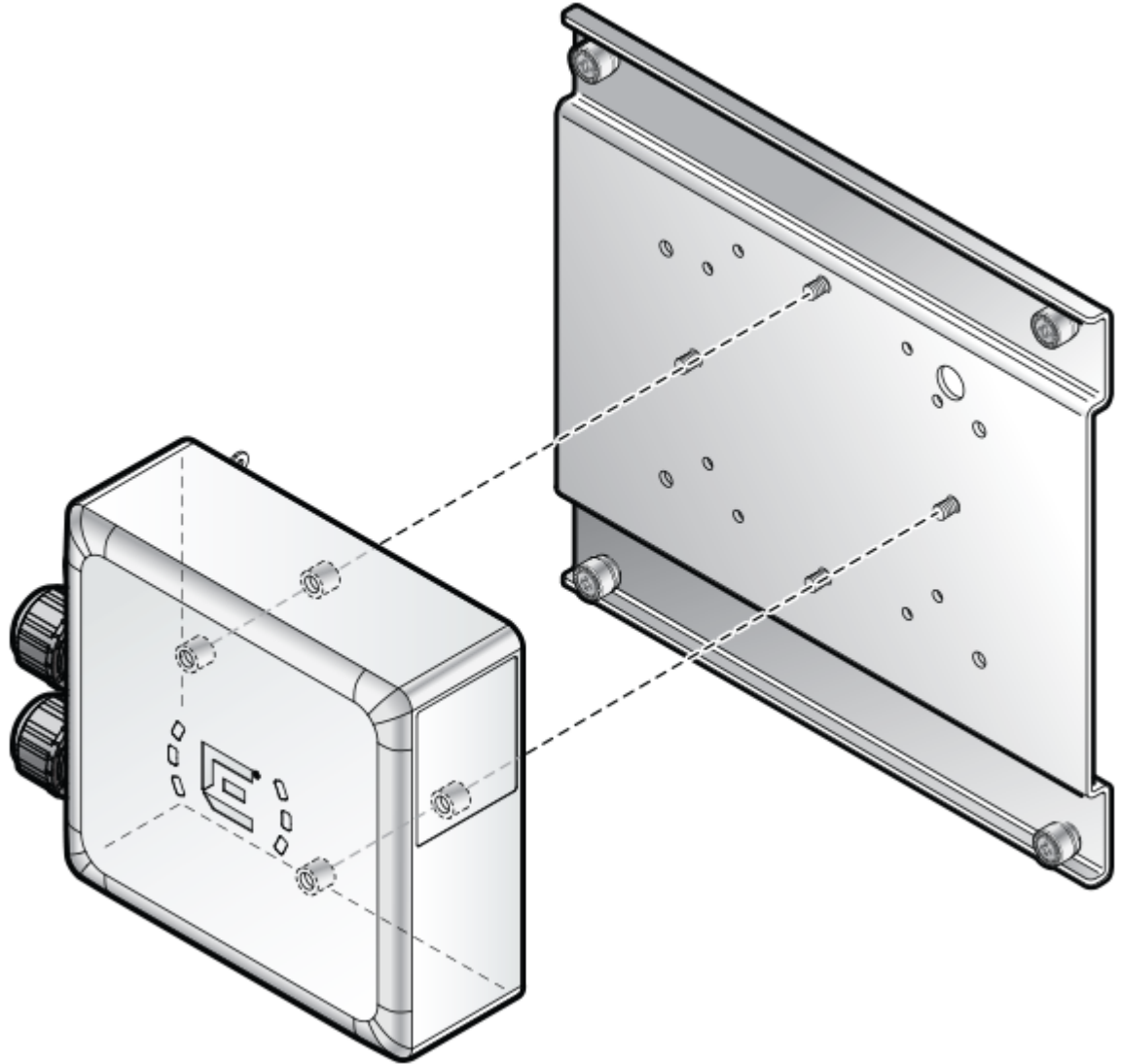


Figure 14: AP360i access point alignment with the access point attach assembly plate

5. Tighten the M4 screws to 10 in-lbs.

- Using four thumbscrews, attach the access point attach assembly plate to the vehicle attach assembly plate.

**Note**

The access point will not be centered and some of the attachment holes in the access point attach assembly plate will be visible.

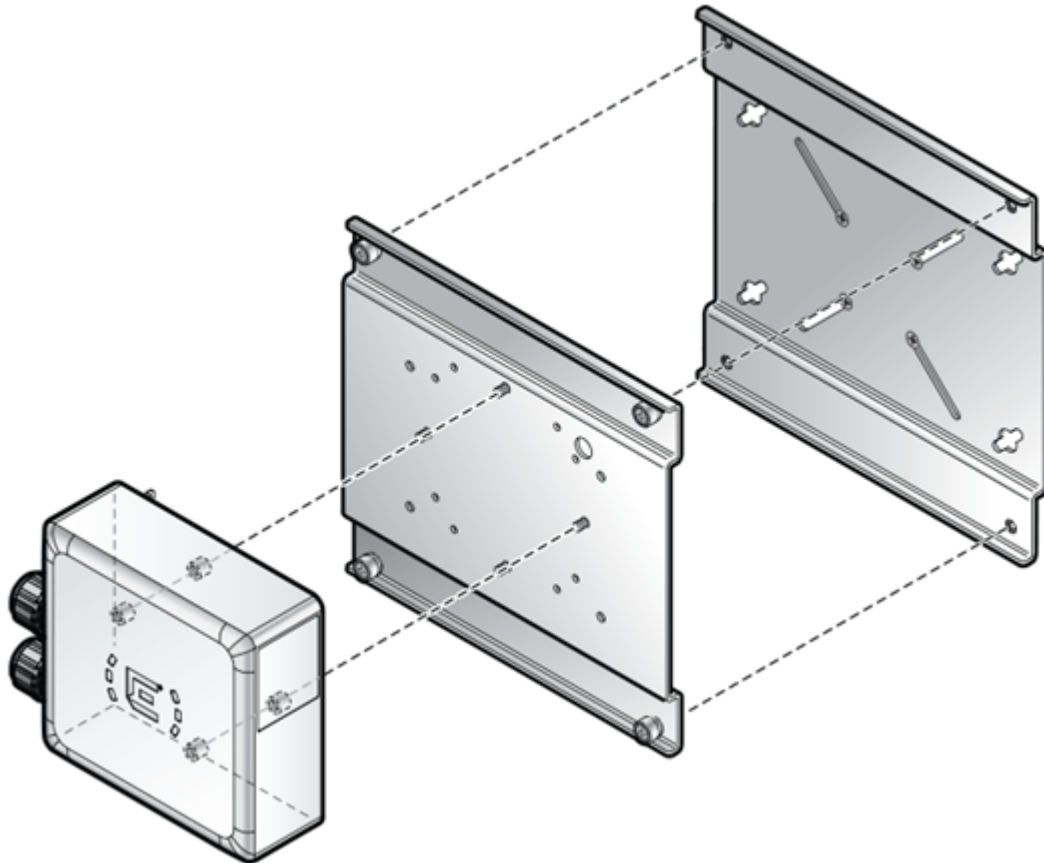


Figure 15: Access point alignment with the access point attach assembly plate and the vehicle attach assembly plate

Install the Access Point on a Pole

You can install the access point on a pole using the following mounting brackets:

- [KT-147407-02 bracket parts](#)
- [KT-147407-02 pole part](#)
- [KT-150173-01 extension arm with the KT-147407-02 pole part](#)
- [KT-150173-01 extension arm with KT-147407-02 bracket parts](#)
- [WS-MBO-POLE01 bracket with the MBO-ART02 articulating mounting bracket](#)

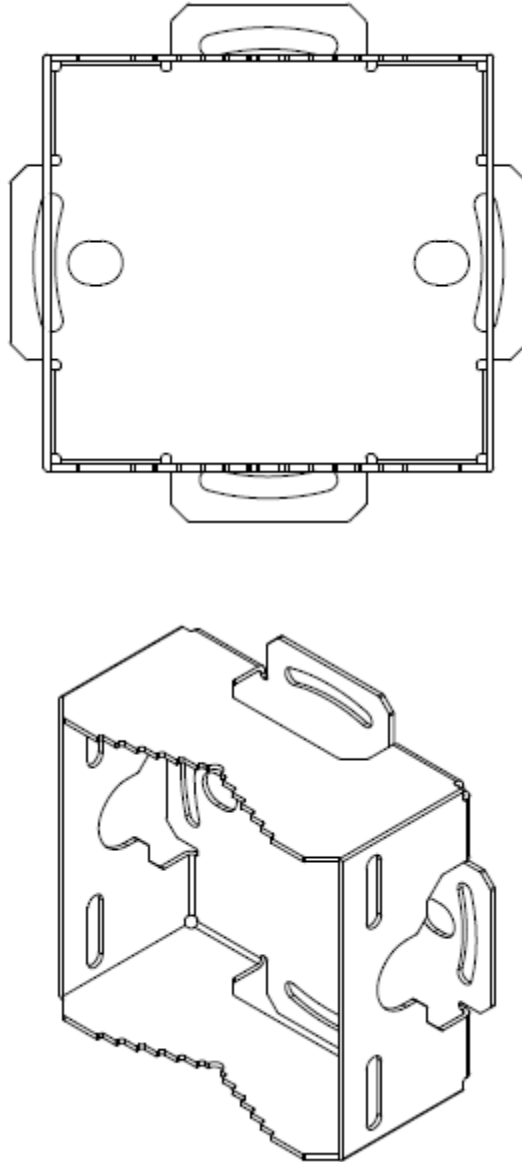


Figure 16: KT-147407-02 pole part



Note

The pole install options are applicable to both internal and external antenna model outdoor access points.

Attach the Access Point to a Pole Using All Three KT-147407-02 Bracket Parts

Before You Begin

The following hardware is required to mount the access point on to a pole:

- KT-147407-02 flat part
- KT-147407-02 1-axis tilt part

- KT-147407-02 pole part
- Access point
- Four M6 hex-head screws
- Two hex-head M12 stainless-steel screws and nuts
- Two 0.5 in. (12.7 mm) wide stainless-steel cable clamps

About This Task

To attach the access point to a pole:

Procedure

1. Attach the flat part and the 1-axis tilt part of the KT-147407-02 bracket to the access point.
For instructions on how to attach the bracket parts, see [Install the Access Point to a Flat Surface Using KT-147407-02 Flat Part and 1-Axis Tilt Part](#).
2. Attach the pole part to the 1-axis tilt part using two M12 bolts through the large bracket holes on the 1-axis tilt part and the pole part.

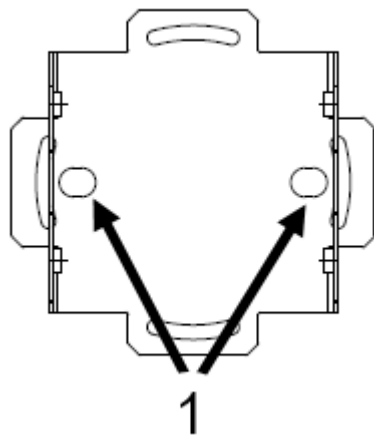


Figure 17: Large bracket holes on the 1-axis tilt part of KT-147407-02 bracket

Callout	Description
1	Large bracket holes used for attaching the M12 screws on the 1-axis tilt part of the KT-147407-02 bracket

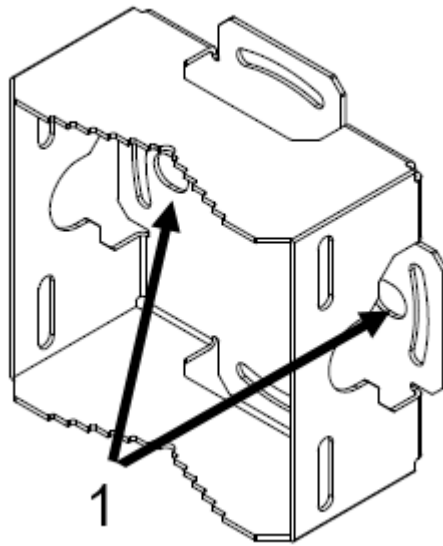


Figure 18: Large bracket holes on the pole part of the KT-147407-02 bracket

Callout	Description
1	Large bracket holes used for attaching the M12 screws on the pole part of the KT-147407-02 bracket

3. Fasten the M12 screws using two M12 hex nuts.

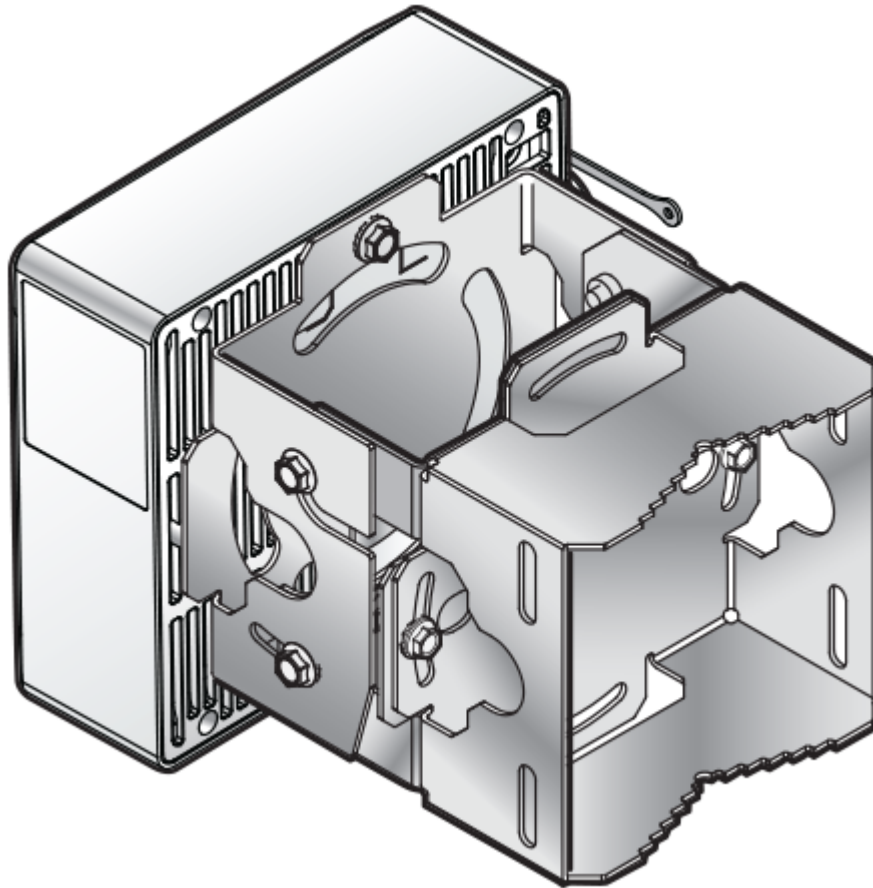


Figure 19: KT-147407-02 bracket parts attached to the back of the AP360i access point

4. Insert the 0.5 in. (12.7 mm) wide stainless-steel cable clamps through the long slots on the sides of pole bracket.

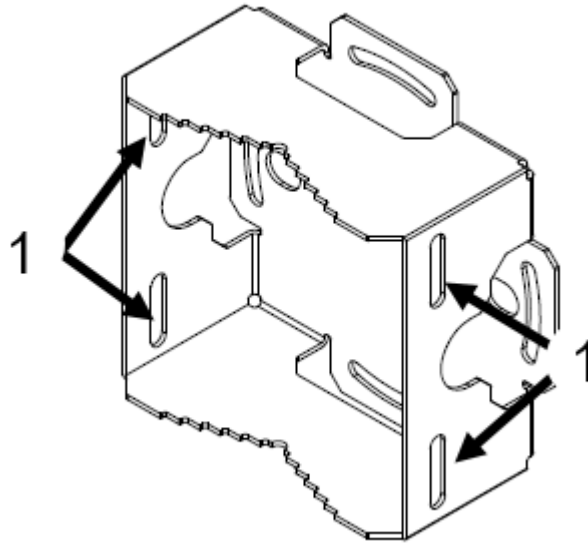


Figure 20: Long slots on the pole part of the KT-147407-02 bracket

Callout	Description
1	Long slots on the sides of the pole part of the KT-147407-02 bracket. These slots are used to insert the 0.5 in. (12.7 mm) wide stainless-steel cable clamps.

5. Position and insert the ends of the cable clamps around the pole.
6. Tighten the clamp screws to a torque of 11 in-lbs.

Attach the Access Point to a Pole Using the KT-147407-02 Pole Part

Before You Begin

If 1-axis tilt is not required, you can use the pole part of the KT-147407-02 bracket for pole installation.

The following hardware is required:

- KT-147407-02 pole part
- Two 0.5 in. (12.7 mm) wide stainless-steel cable clamps
- Access point
- Four M6 hex-head screws

Procedure

1. Attach the KT-147407-02 pole part to the access point using four M6 hex-head screws.

Use the semi-circular cuts on the pole part of the KT-147407-02 bracket to attach the screws.

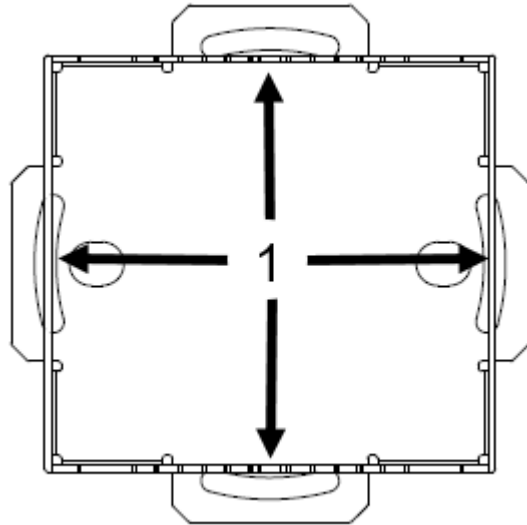


Figure 21: Semi-circular cuts on the pole part of the KT-147407-02 bracket

Callout	Description
1	Semi-circular cuts on the pole part of the KT-147407-02 bracket, used for attaching the M6 hex-head screws.

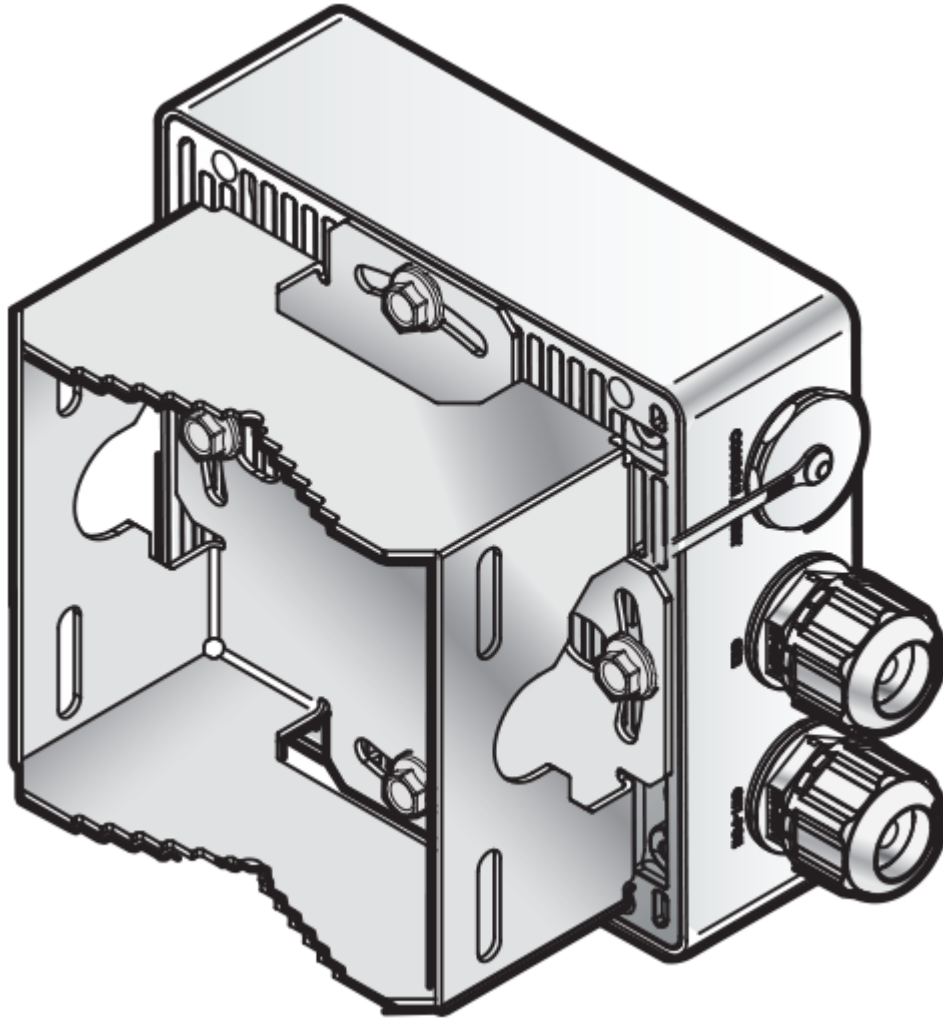


Figure 22: KT-147407-02 pole part attached to the back of the AP360i access point

2. Insert the 0.5 in. (12.7 mm) wide stainless-steel cable clamp through the long slots on the sides of KT-147407-02 pole part.
3. Position and insert the ends of the cable clamps around the pole.
4. Tighten the clamp screws to a torque of 11 in-lbs.

Attach the Access Point to a Pole Using KT-147407-02 Pole Part and the KT-150173-01 Extension Arm

Before You Begin

The access point can be mounted on a pole using the KT-147407-02 pole part and the KT-150173-01 extension arm.

The following hardware is required:

- KT-147407-02 pole part
- KT-150173-01 extension arm
- Four M6 hex-head screws
- Two M12 stainless-steel screws and nuts
- Two 0.5 in. (12.7 mm) wide stainless-steel cable clamps
- Access point

About This Task

To install the access point on a pole:

Procedure

1. Attach one end of the KT-150173-01 extension arm to the access point using two M6 hex-head screws.
2. Attach the KT-147407-02 pole part to the other end of the KT-150173-01 bracket using two hex-head M12 stainless-steel screws, and two hex-head M12 stainless-steel nuts.
3. [Attach the pole bracket to the pole.](#)

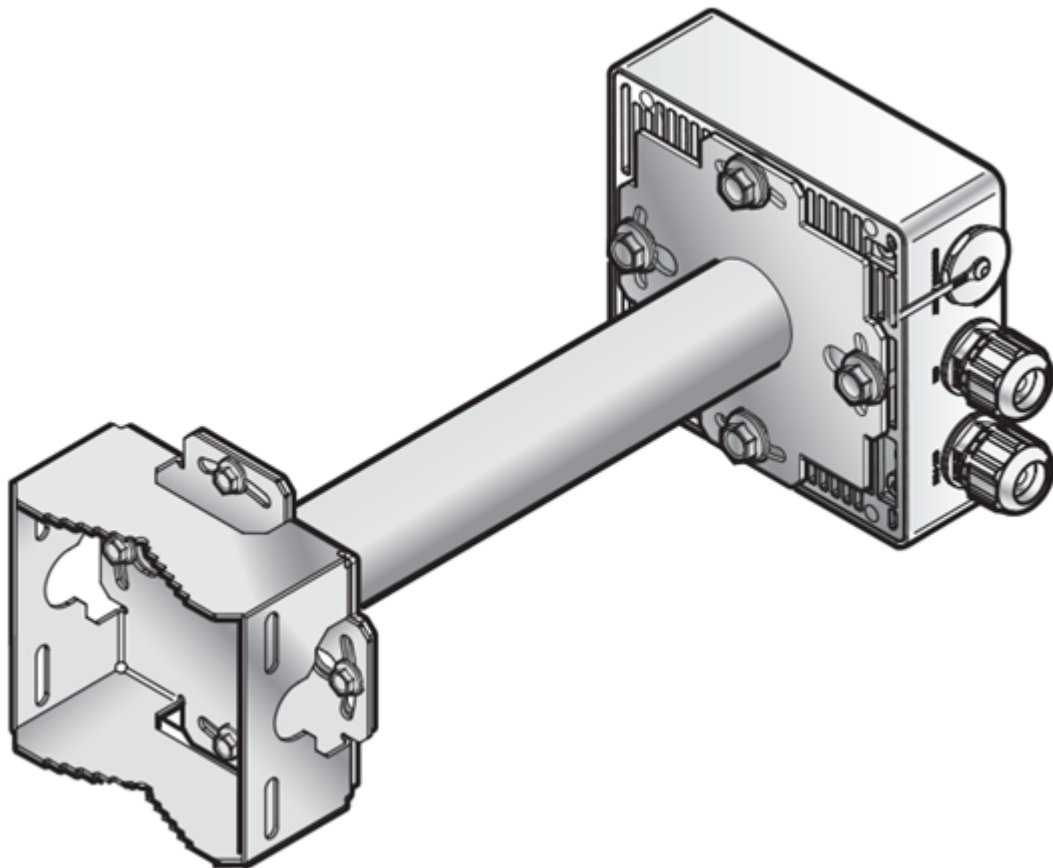


Figure 23: AP360i access point pole installation using KT-147407-02 pole part and the KT-150173-01 extension arm

Attach the Access Point to a Pole Using the KT-147407-02 Bracket Parts and the KT-150173-01 Extension Arm

Before You Begin

You can attach the access point to a pole using all the parts of the KT-147407-02 bracket and the KT-150173-01 extension arm.

The following hardware is required:

- KT-147407-02 flat part
- KT-147407-02 1-axis tilt part
- KT-147407-02 pole part
- KT-150173-01 extension arm
- Six M6 hex-head screws
- Four hex-head M12 stainless-steel screws and nuts
- Two 0.5 in. (12.7 mm) wide stainless-steel cable clamps
- Access point

About This Task

To install the access point on a pole:

Procedure

1. Attach the KT-147407-02 flat part to the access point.

For instructions on how to attach the bracket parts, see [Install the Access Point to a Flat Surface Using KT-147407-02 Flat Part and 1-Axis Tilt Part](#).

2. Align the circular holes on one end of the KT-150173-01 extension arm against the large holes on the 1-axis tilt part.

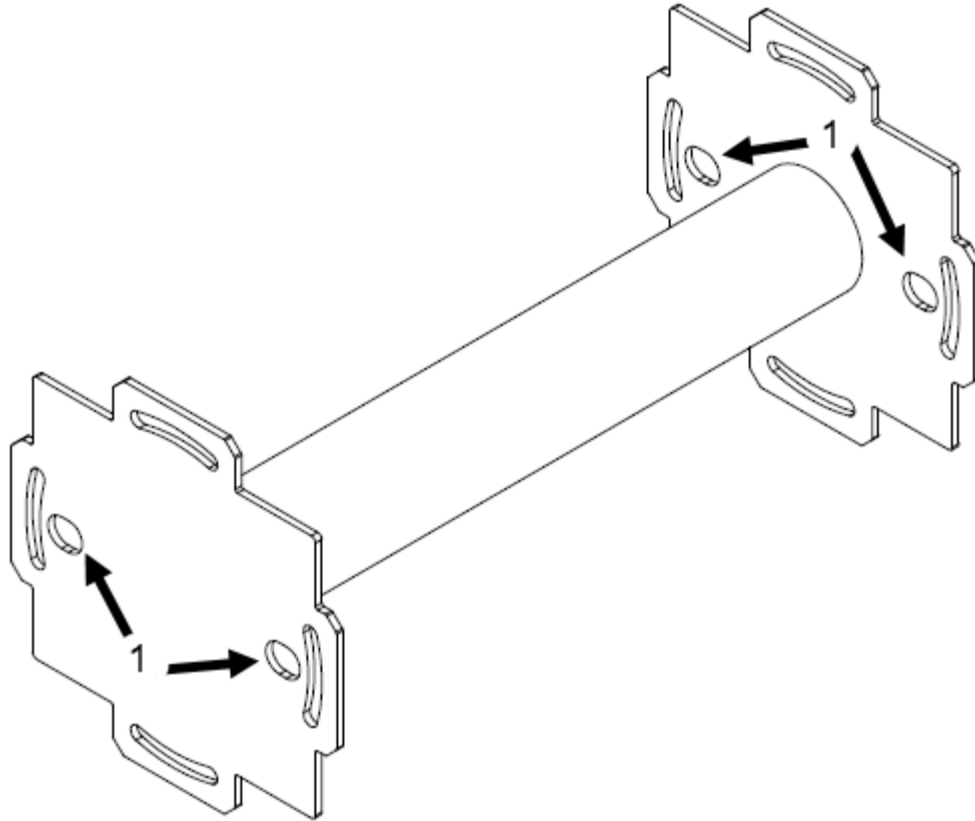


Figure 24: Circular holes on the KT-150173-01 extension arm

Callout	Description
1	Circular holes on the KT-150173-01 extension arm that is used to attach to the KT-147407-02 1-axis tilt part, to attach to the wall, and to KT-147407-02 pole part.

3. Attach the KT-150173-01 extension arm to the 1-axis tilt part by using two hex-head M12 stainless-steel screws and two hex-head M12 stainless-steel nuts.

4. Attach the KT-147407-02 pole part to the other end of the KT-150173-01 extension arm using two M12 screws and M12 hex-nuts.

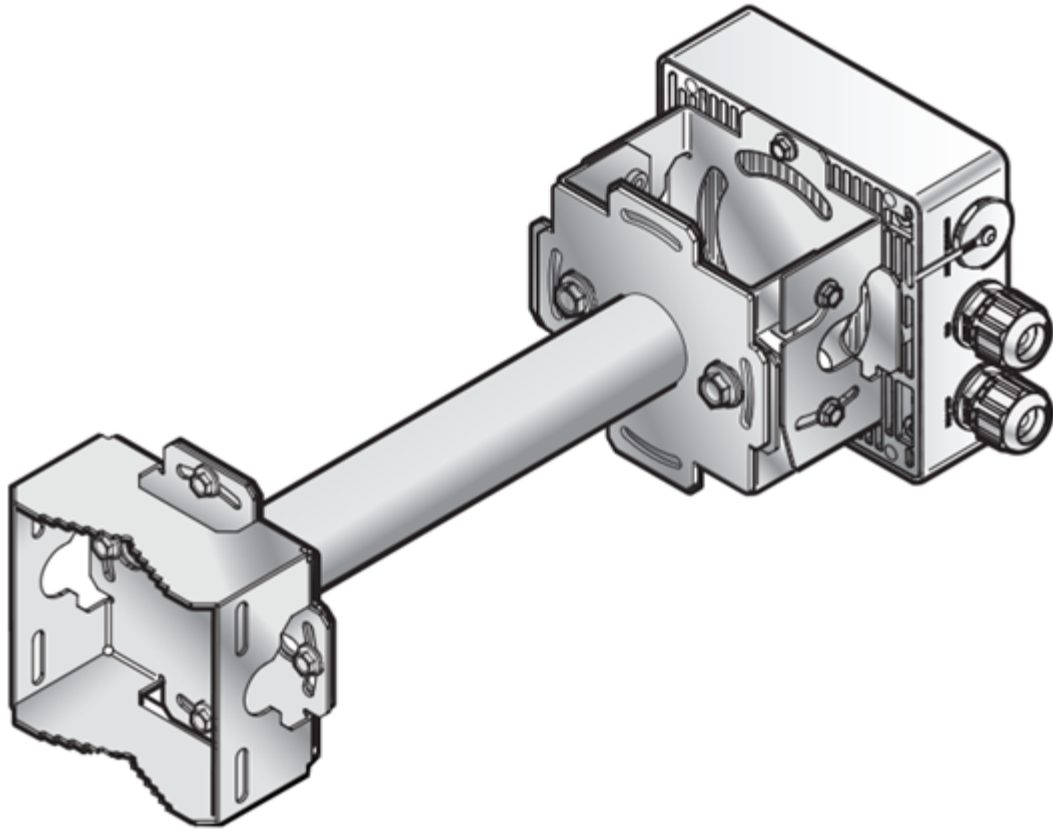


Figure 25: AP360i pole installation using all KT-147407-02 bracket parts and the KT-150173-01 extension arm

5. Insert the 0.5 in. (12.7 mm) wide stainless-steel cable clamps through the long slots on the sides of the KT-147407-02 pole part.
6. Position and insert the ends of the cable clamps around the pole.
7. Tighten the clamp screws to a torque of 11 in-lbs.

Install the Access Point on a Pole with the MBO-ART03 and KT-147407-02 Brackets

Before You Begin

The following hardware is required to install your access point to a pole with the MBO-ART03 and KT-147407-02 brackets.

Table 14: Hardware Requirements

Quantity	item
1	Access point.
1	KT-147407-02 bracket.
1	MBO-ART03 articulating mounting bracket.

Table 14: Hardware Requirements (continued)

Quantity	item
2	M6 hex-head screws to attach the MBO-ART03 to the access point.
2	M6 screws with nuts and washers to attach KT-147407-02 to the MBO-ART03.
2	Long M6 Hex hex screws and nuts for providing an angular lock for each axis.
2	Cable clamps with a band of 0.5 in. (12.7 mm). Cable clamps must be purchased seperately as they are not included.
1	Torque wrench with sockets.
1	Flat head screwdriver.

About This Task

You can install your access point to a pole if you do not want to drill into a concret wall. With a pole, the access point coverage area can be greater because a pole is often higher than a wall.

Procedure

1. Attach the KT-147407-02 to the MBO-ART03 with two M6 screws, nuts, and washers.
2. Attach both cable clamps to the KT-147407-02 bracket.
You open the cable clamp by inserting the head of the flathead screwdriver into the retaining screw and turning the screw counterclockwise. Then insert the nonclamp end into the KT-147407-02 through the holes.
3. Attach the two brackets to the pole.
4. Tighten the cable clamp screw around the pole by turning the screws clockwise with a flathead screwdriver.
5. Attach the access point to the MBO-ART03 with two M6 hex-head screws.
6. Adjust the two pivot points until you are satisfied.
7. Insert the locking bolts into the bracket and arm locking hole.
8. Attach the nuts and torque to 45 inch-pounds.
9. Tighten the pivot screws and nuts to 60 inch-pounds.
10. Attach the safety hanger strap as per the local code.
11. Adjust the LAN cable so the access point glands have a drip loop in each cable.

The LAN cable must be located on the lower side for AP460i/e, AP560i, AP560h, and

Attach the Access Point to a Pole Using WS-MBO-POLE01 Bracket and MBO-ART02 Articulating Mounting Bracket

Before You Begin



Note

The WS-MBO-POLE01 bracket is End of Sale (EOS) as of January, 2023.

The MBO-ART02 wall mount bracket is End of Sale (EOS) as of January, 2023. It is replaced by the MBO-ART03 bracket.

For more information, see [End of Sale and End Service Life](#).

The following hardware is required:

- WS-MBO-POLE01 bracket
- MBO-ART02 bracket
- Two M6 hex-head screws
- Four M3 screws, nuts, and washers to attach the WS-MBO-POLE01 bracket to the MBO-ART02 articulating mounting bracket
- Two cable clamps



Note

You need to provide your own stainless-steel cable clamps. The band must be 0.5 in. (12.7 mm) wide.

- Access point

Procedure

1. Attach the MBO-ART02 articulating mounting bracket to the access point using two M6 hex-head screws.

2. Attach the WS-MBO-POLE01 bracket to the MBO-ART02 articulating mounting bracket using four M3 screws, nuts, and washers.

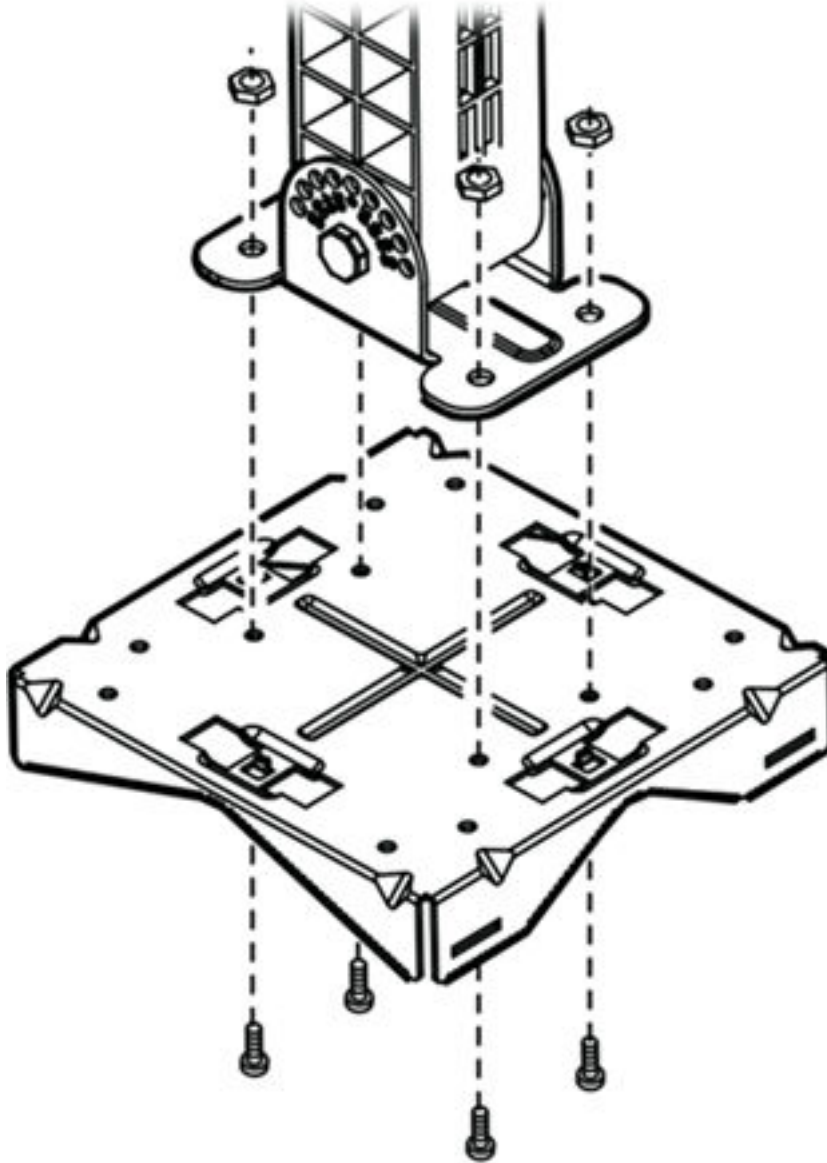


Figure 26: POLE01 bracket being attached to the ART02 articulating mounting bracket

3. Open the cable clamp by turning a flat-bladed screwdriver counterclockwise.
4. Insert the non-clamp end into the pole bracket through the holes.
5. Attach both the cable clamps to the WS-MBO-POLE01 bracket.
6. Place the metal band around the pole, and attach the WS-MBO-POLE01 bracket to the pole.

7. Tighten the cable clamp screw clockwise, tightening the band around the pole.

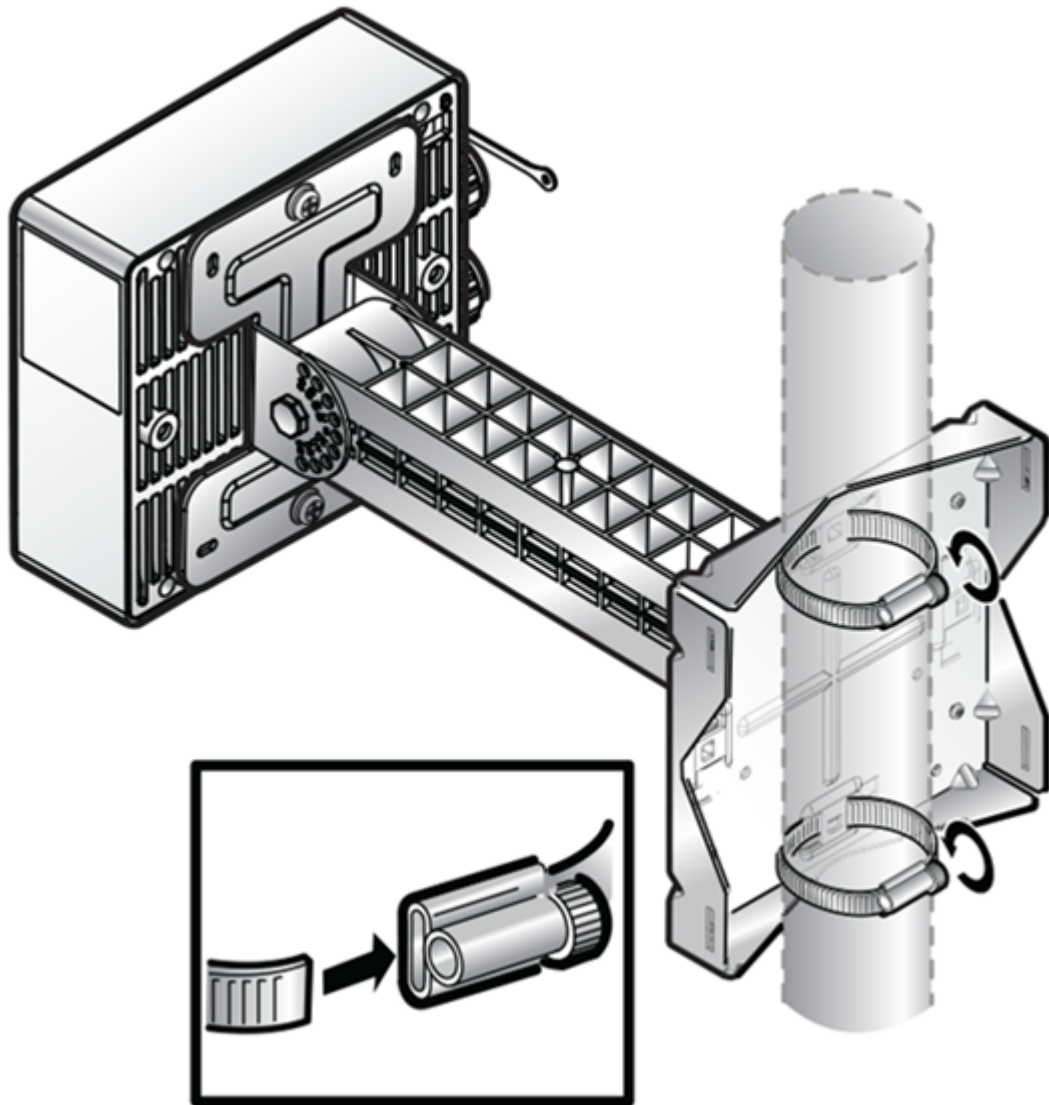


Figure 27: Tightening the cable clamp around the pole

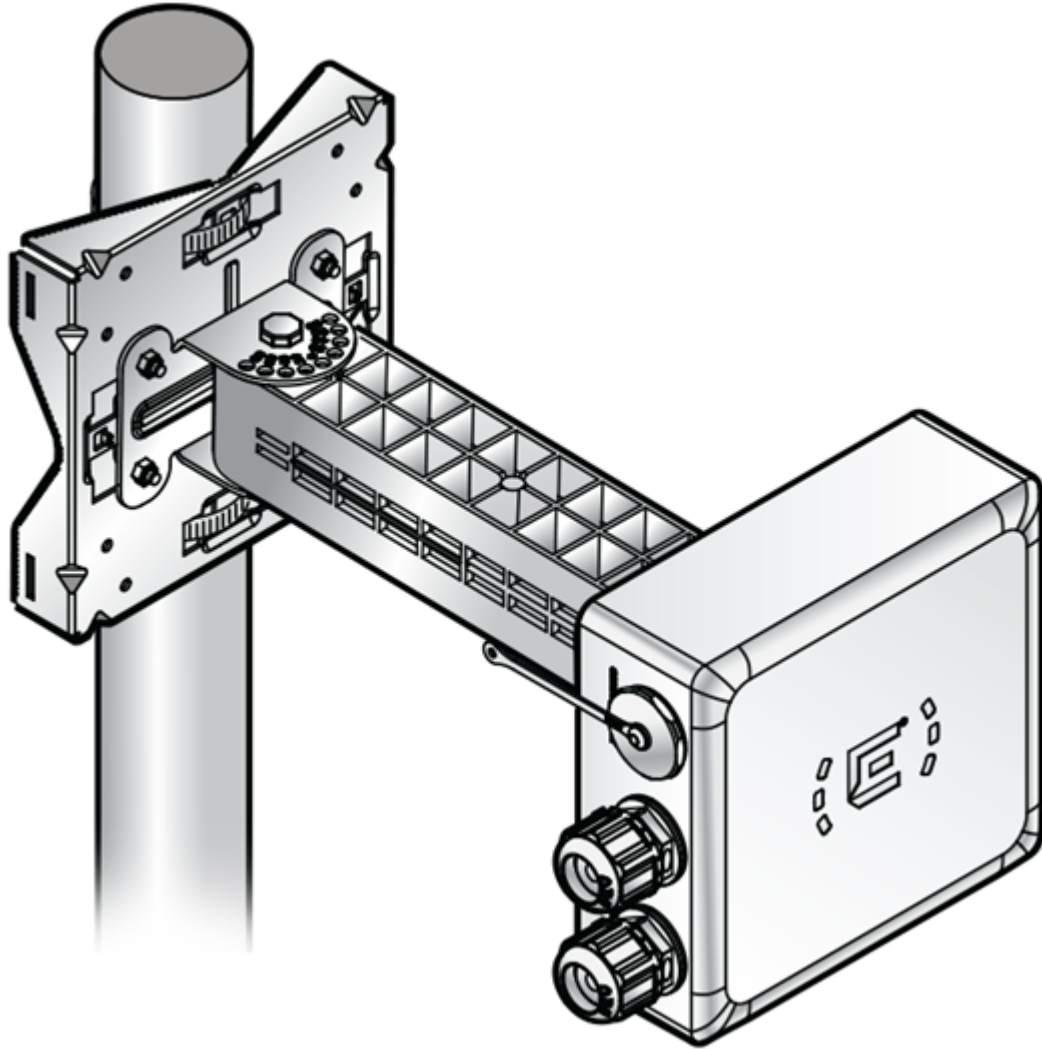


Figure 28: AP360i access point attached to a pole using MBO-ART02 articulating mounting bracket and POLE01 bracket

Install the Access Point on a Unistrut Structure Using the MBO-ART03 Bracket

Before You Begin

The following hardware is required to install the MBO-ART03 bracket on a Unistrut structure:

- One MBO-ART03 bracket

The MBO-ART03 bracket ships with the following hardware:

- Two long screws
- Four short screws

- Four nuts



Note

For Unistrut installations, discard two of the short screws and nuts. Provide two M12 stainless steel bolts, hex nuts, and split washers.

About This Task

The MBO-ART03 bracket has +/- 80-degree (in 10-degree increments) 2-axis tilt and variable 7 inches to 10 inches extension. The bracket comes installed with M6 pivot screws.

It can be used on a wall, unistrut bracket or pole.

On the MBO-ART03 bracket's flat surface, there are three large holes for interfacing with the Unistrut metal frame. There are two smaller holes for M6 bolts for mounting to the KT brackets or a wall also. Each metal bracket on either end of the ART03 bracket has two bent sections with two pivot holes and serrated lock positions.

The length on the bent sections can be adjusted, if desired. Move the pivot points to increase the MBO-ART03 bracket's extension lengths to 7.5 in. to 9.0 in., or 10.5 in.

To adjust the MBO-ART03 bracket's extension:

1. Remove the pivot screw and nut.
2. Move the MBO-ART03 bracket arm's center hole to the other pivot hole on the bracket.
3. Insert the pivot screw through the bracket and the arm.
4. Attach the pivot nut to the screw.

Use a crescent wrench or a 13 mm tool to tighten the pivot screws and nuts.

5. Torque the screws and nuts to finger tightness.

Adjust the MBO-ART03 bracket's angular position

1. The horizontal and vertical adjustments can be made in 10 degree increments.

The increments are marked on the MBO-ART03 bracket.



Note

The access point glands should point downward to prevent water entry.

2. Rotate the arm to the desired position.
3. When the lock screw hole lines up with the appropriate serrated screw hole, insert the long M6 screw and fasten with a hex nut.
4. Torque the lock screws and nuts to 45 inch-lbs.
5. Torque the pivot screws and nuts to 60 inch-lbs.

The left to right adjustment can be made to any angle, with the access point having at least 1 in. clearance from another object.

**Tip**

The best practice is to make the vertical adjustment before attaching the access point to the MBO-ART03 bracket.

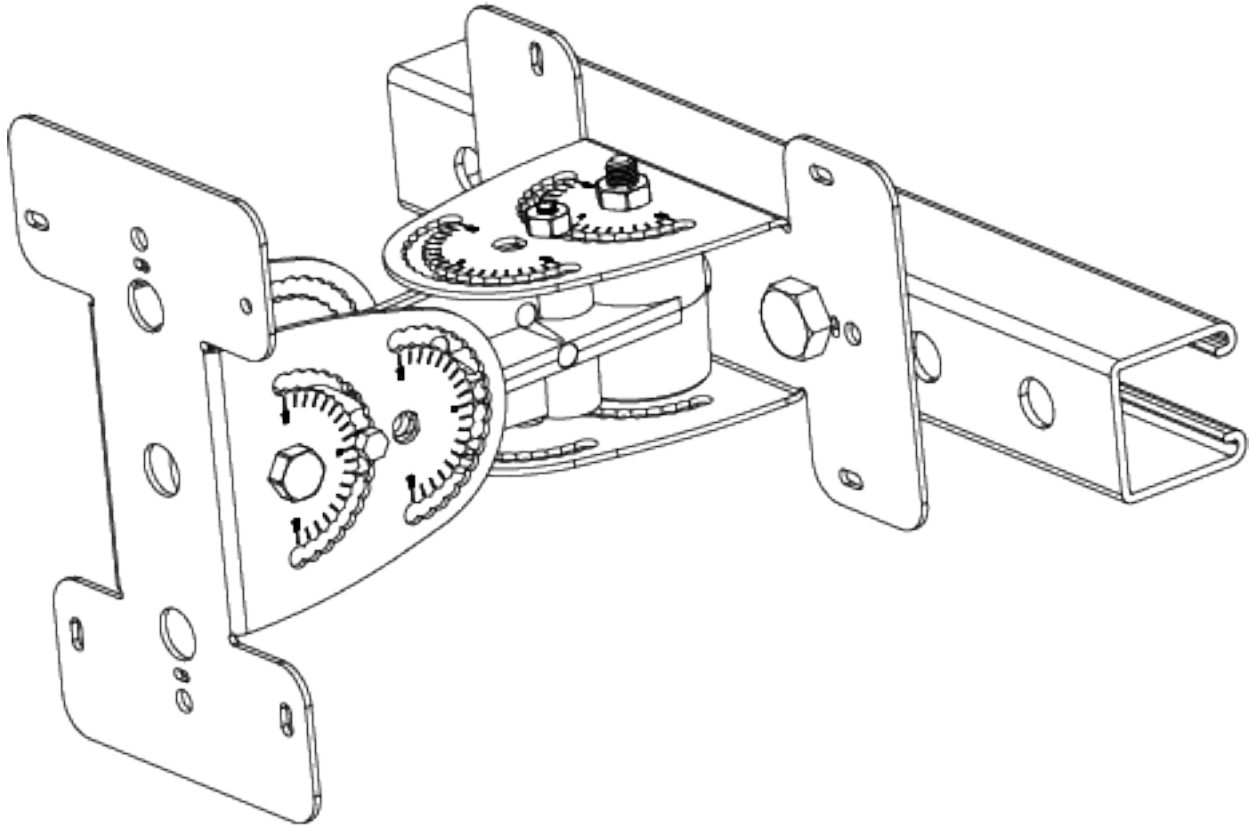


Figure 29: MBO-ART03 bracket angular adjustments

Procedure

1. Using the M12 bolts, split washers, and hex nuts, attach the MBO-ART03 bracket to the Unistrut structure.

The MBO-ART03 bracket's metal plate can be in a vertical or horizontal position.

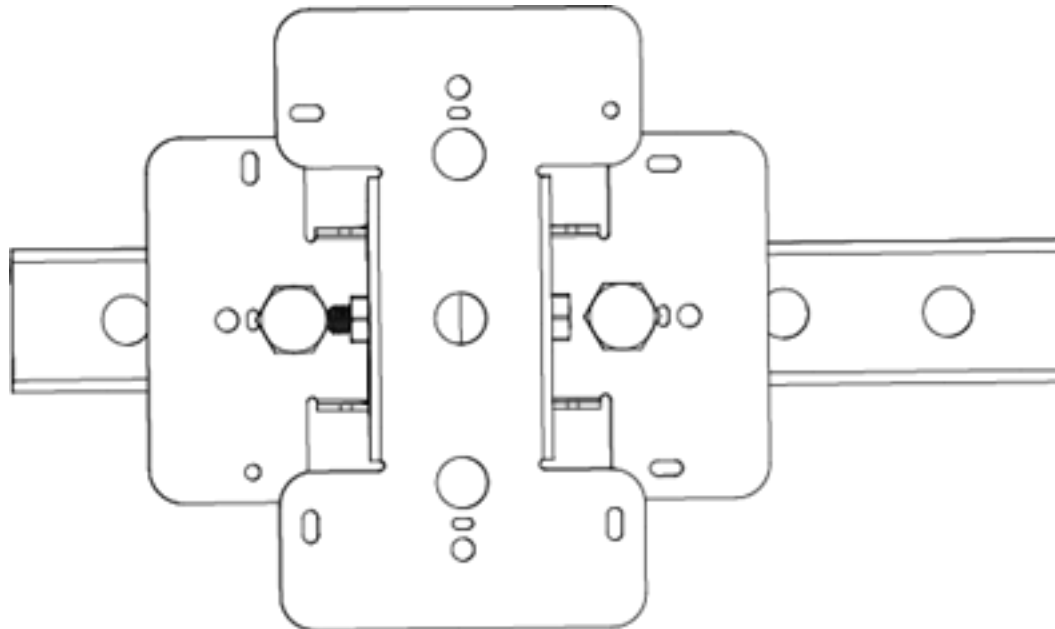


Figure 30: MBO-ART03 bracket attached to the Unistrut structure

2. Torque the bolts and nuts to 312 in-lbs.

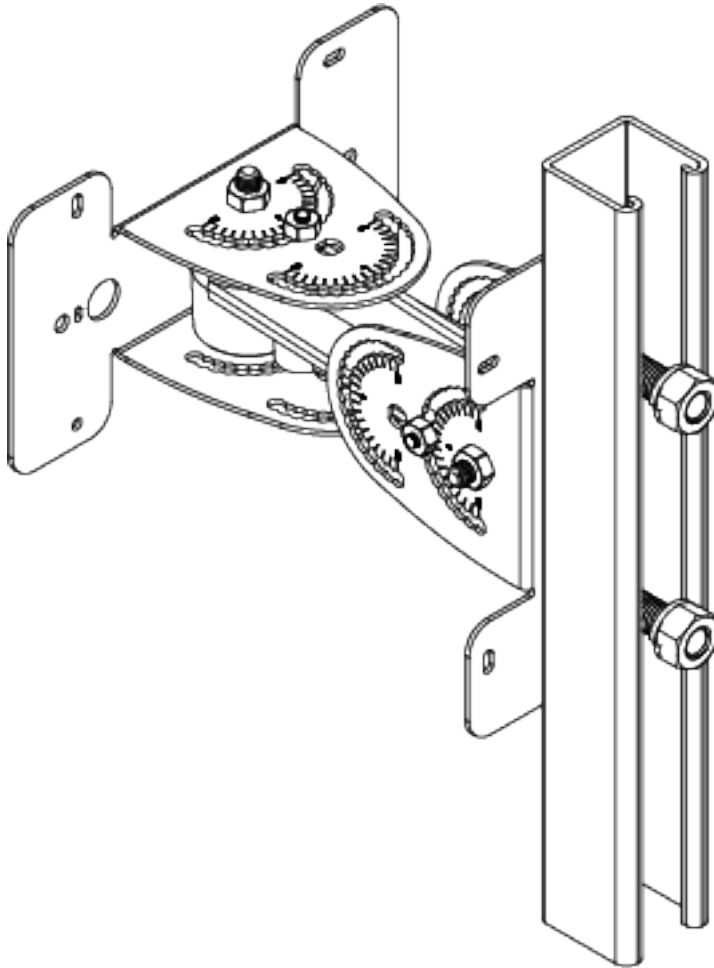


Figure 31: MBO-ART03 torque position on the Unistrut structure

3. Using the two short M6 screws, attach the access point with the glands facing the ground.
There are four holes on the access point and only two holes are used for attaching to the MBO-ART03 bracket.
4. Tighten the M6 screws to 45 in-lbs.
5. Attach the LAN cables to the access point.
6. To adjust the MBO-ART03 bracket's angular position, remove the long M6 degree locking screw and adjust the bracket axis to the desired angle.
7. Insert the degree adjustment locking screw and attach the locking nut until hand tight.
Repeat the angular position adjustment process on the other axis, if desired.
8. Tighten the long bolts to the following values:
 - M6 degree locking bolts at 50 in-lbs.
 - M8 pivot bolts at 90 in-lbs.

Install the AIO-DQ15021-N Antenna

Before You Begin

Install the AIO-DQ15021-N in accordance with all applicable local and national electrical code guidelines. Be familiar with the guidelines in your area before you install the antenna.

Read the [technical specifications](#) and [radiation patterns](#). They can determine the antenna's location.

Confirm that the mounting hardware shipped with the antenna as listed in the table below.



Note

The AIO-DQ15021-N antenna is only supported on the AP460e. It is supported on ExtremeCloud™ IQ Controller and it is intended for indoor stadiums and arenas for a campus mode deployment only. It is available in US and Canada only and only in 5G.

See *Wi-Fi 6 (802.11ax) Antennas Specifications Guide* for instructions on installing other supported antennas.

Table 15: Mounting hardware

Quantity	Item
2	Bracket, Flange
1	Bracket, Linkage
2	5/16 in. Flat Washer
2	5/16 in. Lock Washer
2	5/16 in. x 1-5/8 in Hex Head Bolt
2	5/16 in. Nut
2	Double Serrated Lock Washer
8	1/4 in. Flat Washer
8	1/4 in. Lock Washer
4	1/4 in. Nut
2	Clamp
4	Expansion Anchor
4	1/4 in. x 1-3/4 in. Hex Head Bolt

The AIO-DQ15021-N ships with an articulating mount for mast and wall installation. If you install on a wall, then use wall anchors or molly bolts so the antenna is secure.

**Caution**

Do not tighten or tamper with the cable entry glands on the antenna. This antenna is water proofed to IP67 specifications. Tampering with or tightening the cable entry glands damages the antenna water proofing and voids the warranty.

About This Task

Install an internal antenna if you need greater control over Wi-Fi coverage or if you need to customize your coverage area.

For best results, mount the antenna in the center of the coverage area. A line-of-sight path between the antenna and the active area works best. Avoid mounting next to a column or vertical support that creates a shadow zone and reduces coverage.

**Note**

Install the antenna before you connect the cable so the cable is not twisted or damaged.

Procedure

1. Attach the antenna mount to the exposed studs on the back of the antenna.
Use four 1/4 -20 hex nuts, four 1/4 -20 flat washers, and four 1/4 in.-20 lock washers.
2. Secure one side of the articulating arm to the antenna mount.
Use one bolt size 5/16 in. x 1-5/8 in. (5), one 5-16 in. split lock wash, and two 5/16 in. flat washers, and one 5/16 in. hex nut.
3. Mount the antenna on a wall:
 - a. Mark holes locations.
Use the other supplied antenna mount bracket as a template.
 - b. Install four wall expansion anchors.
 - c. Install the antenna mount bracket to the wall using four hex 1/4"-20 screws, four 1/4"-20 flat washers, and four 1/4-20 lock washers.
4. (Optional) Mount the antenna on a pole or mast:
 - a. Attach the two hose clamps to the antenna mount bracket.
You can encircle the pole with each clamp. Tighten the clamps securely.
5. Attach the pre-assembled antenna to the other bracket.
Use one washer external serrated, one bolt size 5/16 in. -1 5/8 in., one 5-16 in. split lock washer, two flat washer 5-16 in. and one hex nut 5-16 in.
Use the screw to attach the free end of the articulating arm to the mount and then secure it in place with a hex nut.
6. Adjust the antenna for azimuth and elevation.
 - a. Loosen the 1-5/8 in. bolt pivot screw.
 - b. Adjust the antenna for azimuth and elevation.

- c. Tighten the hardware securely.

Weatherproof the Antenna Connections

About This Task

The following guidelines apply to:

- AP360i/e
- AP460i/e

Extreme Networks recommends that all connections between the AP and antennas are weatherproofed using the following weatherproof kits (not supplied):

- Wireless Weatherproofing Kits:
 - 3M (WK-100)
 - Scotch (WK-101)

Each weatherproofing kit includes $\frac{3}{4}$ -inch vinyl tape, 2-inch mastic tape, and 2-inch wide vinyl tape.

Follow the guidelines to ensure proper installation:

- The weatherproofing tape must be wound tightly over the connectors.
- Ensure that no areas around the edges are exposed.



Note

Installation instructions are provided with each weatherproofing kit.

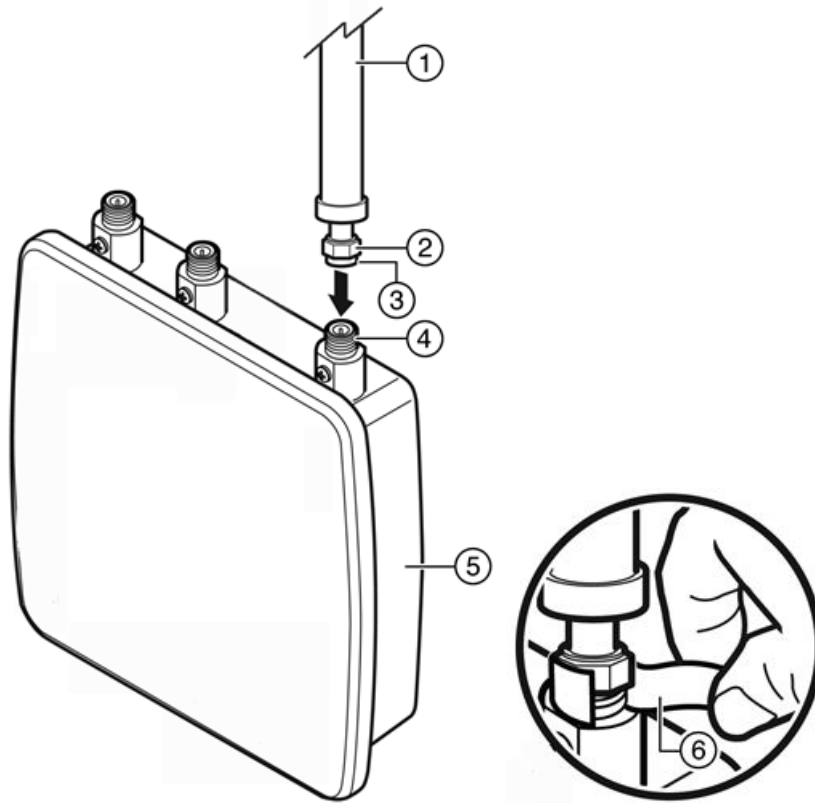


Figure 32: Weatherproofing the Antenna

1	Antenna	4	Type-N jack
2	Nut	5	AP
3	Standard polarity Type-N plug	6	Sealing tape (recommended, but not supplied)

Procedure

1. Secure the antenna in place by tightening the single nut.
2. Follow the manufacturer's instructions provided in the kit to seal the connection between the Type-N jack and the Type-N plug.

Drip Loop for Anenna Cables

When the cables have been connected to the AP and the connections have been weatherproofed, gather each cable below the AP, and form a drip loop as shown in the figure below.



Note

The drip loop prevents water from entering the AP by channeling water down and away from the connection points. Drip loops are required to ensure proper operation of the AP.



Figure 33: Drip Loop



Antenna Configuration for External Antenna Model Access Point

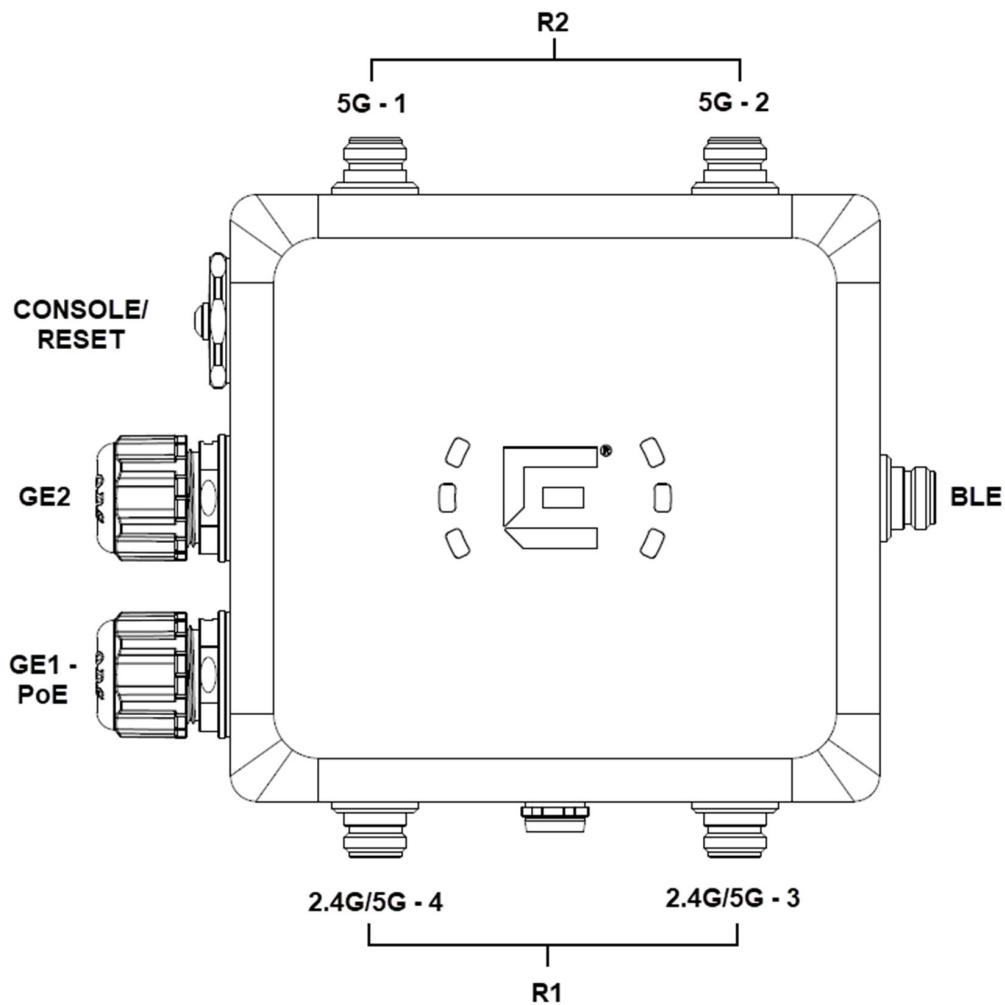


Figure 34: AP360e external antenna connector ports

Antenna socket radio mapping information

- Radio 1 (R1) – antennas 3 and 4

- Radio 2 (R2) – antennas 1 and 2

Table 16: AP360e antenna configuration

Software mode	Radio 1	Radio 2
Mode 1	2.4 GHz	5 GHz
Mode 2	2.4/5 GHz	5 GHz
Mode 3	5 GHz–low	5 GHz–high

- Mode1: Dual Band Dual Concurrent (DBDC)
- Mode2: Radio 1 unlocked for sensor operation and radio 2 locked at 5 GHz full band
- Mode 3: Dual 5 GHz, radio 1 locked at 5 GHz low band, and radio 2 locked at 5 GHz high band



Note

The BLE antenna port comes with a dust cap on it. Do not remove the dust cap until you are ready to install the antenna.



GE and Console Connections

[Console Cap Assembly](#) on page 63

[Cable Gland Adapter Assembly](#) on page 65

The access points have two GE (Ethernet) ports and a Console port. During administration and maintenance through the GE or Console port, the access points must still have a power connection through an Ethernet PoE cable.

For information about the location of the GE and Console ports, see [AP360i/e Features](#).

Console Cap Assembly

About This Task

The GE ports, console port, and vent on all outdoor access points must be torqued properly to ensure proper protection of access points against water intrusion. The access points come with a console port tie that must be torqued.

Procedure

1. Tighten the M25 console cap to a torque of 8.7 in-lbs.



Note

If a torque wrench is not available, tighten the console cap by hand. Use an open end wrench to tighten the cap between 1/8th to 1/4th turn.

2. Loop the console port cap tie to the back of the access point, and place it on top of the tether screw hole.

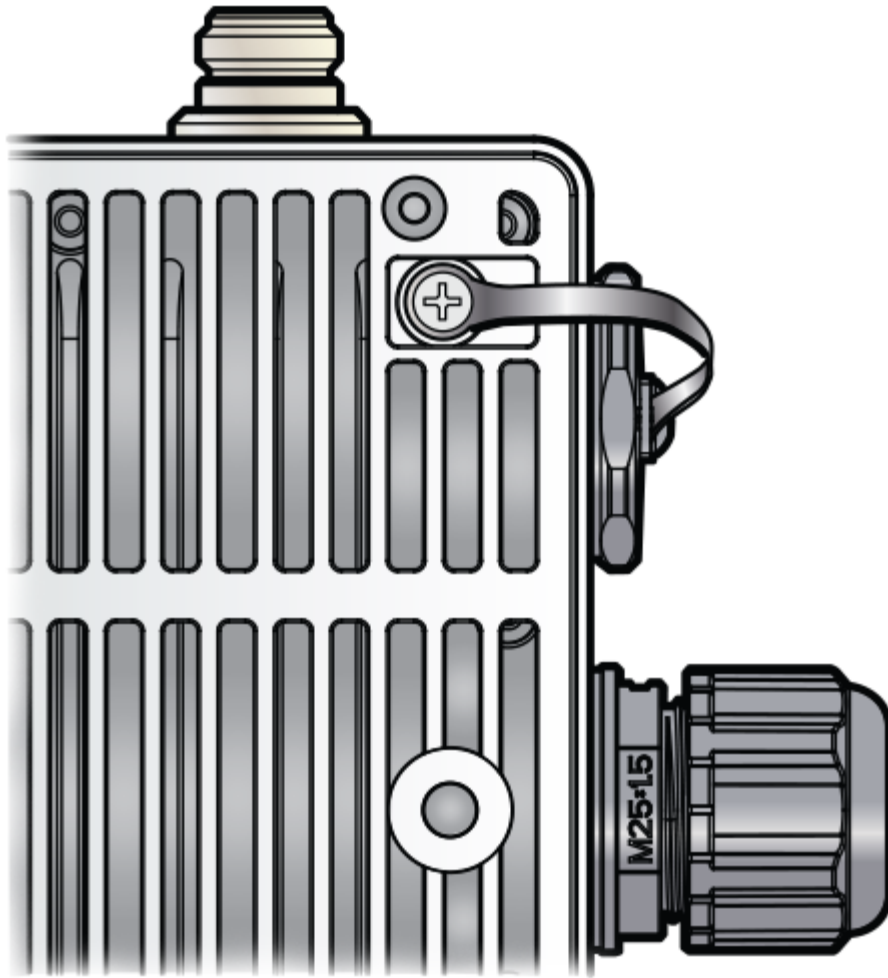


Figure 35: Console port cap tie installation

3. Add the Phillips head screw through the console port cap tie and tether screw hole.
4. Torque the screw to 6.0 lb-in.

Related Topics

[AP360i/e Features](#) on page 10

Cable Gland Adapter Assembly

Before You Begin

Before connecting the RJ45 cable, a waterproof cable gland adapter assembly must be installed onto the cable.



Important

You must have either a LAN cable or a plug in every cable gland. A cable gland cannot be left empty. Also the cable glands must be torqued properly to protect the access point from water intrusion.



Note

Use part number CG-MV25-DN to re-order the the gland assembly. You cannot order individual parts separately so discard the flat seal and main body (item #4 below). Keep the sealing nut, claw, and seal (items #1, 2, and 3 below).

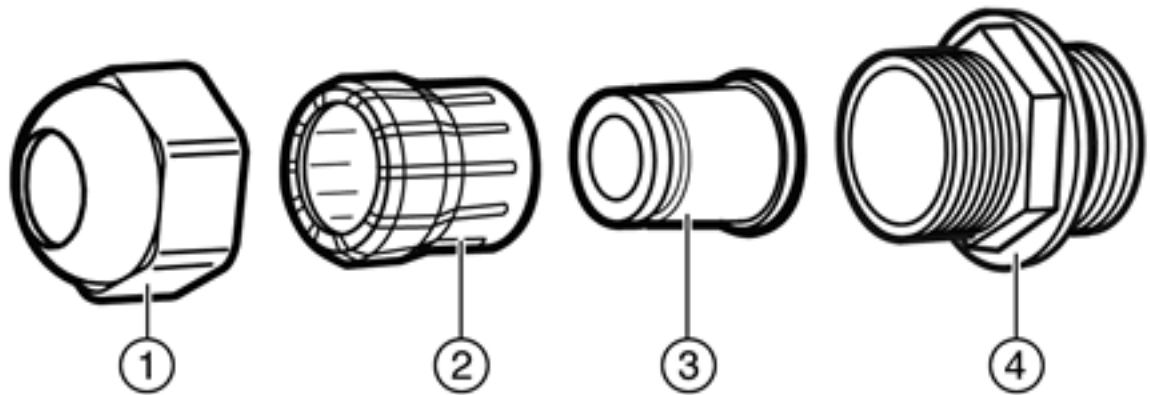


Figure 36: RJ45 cable gland adapter assembly

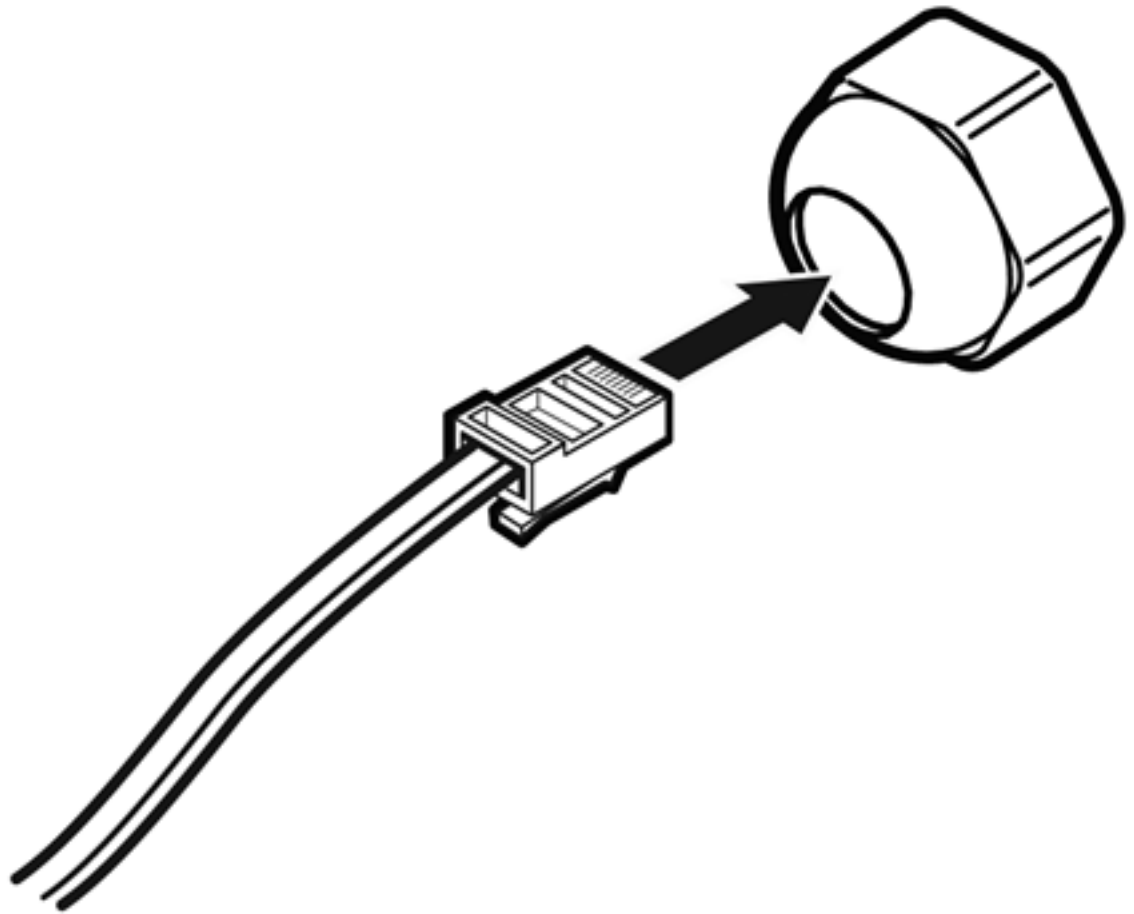
Callout	Description
1	Sealing nut
2	Claw
3	Seal
4	Flat seal and main body

About This Task

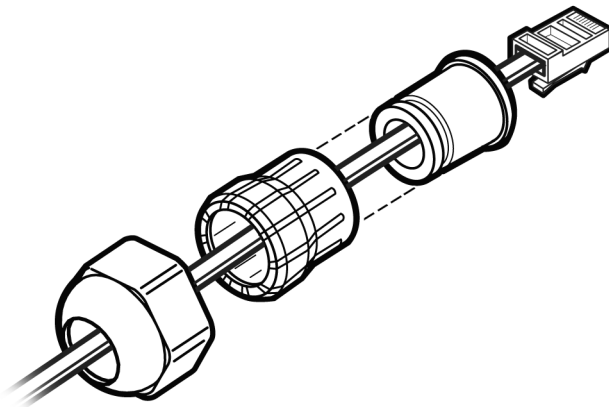
Install the cable gland adapter assembler onto the GE1 or GE2 port:

Procedure

1. Insert the RJ45 cable onto the sealing nut.



2. Slide the claw and seal onto the RJ45 cable.



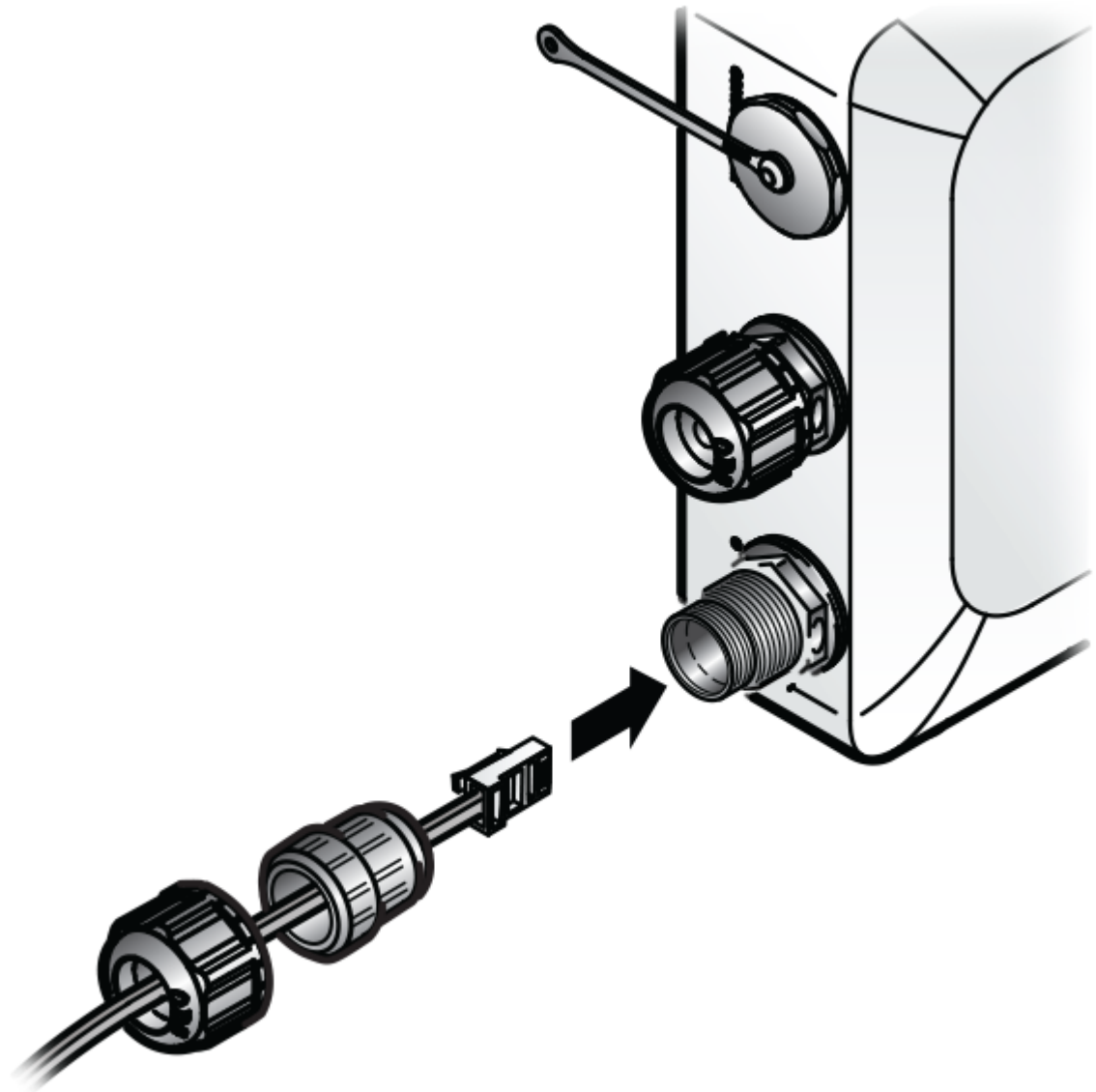
3. Attach the main body into the GE1 or GE2 port of the access point.

4. Plug the RJ45 cable into the port.

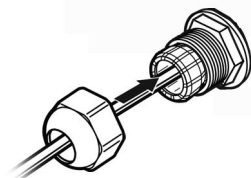
**Caution**

Do not run the network cable through the cable conduit connector used for connecting the power cables. You must connect the network cable and power cables through separate connectors.

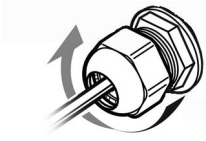
5. Slide the seal and the claw into the main body.



6. Secure the seal nut onto the main body.



7. Tighten the adapter assembly by hand to 5-in. lbs.

**Note**

There should still be some visible threads after you torque in the cap.



Access Points Specifications

Product Specifications

Item	Specification
Dimensions	7.4in. × 5.7in. × 1.9in. (190.0 mm × 145.0 mm × 50.0 mm)
Weight	2.2 lbs. (1.0 kg)
LEDs	Six
Housing	IP67 rated for outdoor use
Radios	2×2:2 5 GHz radio and 2×2:2 2.4 GHz radio
PoE	802.3af
Console port	RJ45

Table 17: Environmental specifications

Item	Description
Operating temperature	-40°C to +60°C (-40°F to +140°F)
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Humidity	10% to 95% (non-condensing)
Operating altitude	6000 ft.



AIO-DQ15021-N Antenna

[AIO-DQ15021-N Technical Specifications](#) on page 70

[AIO-DQ15021-N Radiation Patterns](#) on page 71

The AIO-DQ15021-N antenna is an indoor stadium antenna. The antenna is a 4-port dual-band directional antenna that operates within the 4900-5950 MHz frequency ranges. The four antenna leads are used on ports 1 through 4. The antenna has a N type connector.

It is designed to handle the greater capacity of 5G networks and is available as 5G only. When you order this antenna, use the part number AIO-DQ15021-N.



Note

The AIO-DQ15021-N antenna is only supported on the AP460e. It is supported on ExtremeCloud™ IQ Controller and it is intended for indoor stadiums and arenas for a campus mode deployment only. It is available in US and Canada only and only in 5G.

AIO-DQ15021-N Technical Specifications

The following tables provide the technical specifications of the AIO-DQ15021-N. Familiarize yourself with this information before you install the antenna.

Table 18: Order Information

Product SKU	Description	Disc. Cat
AIO-DQ15021-N	15 dBi Indoor/Outdoor Sector 21 Deg, 36 inch cable, N type	B

Table 19: AIO-DQ15021-N antenna technical specifications

Item	Description
Polarization	2 Ports Horizontal, 2 Ports Vertical
Voltage Standing Wave Ratio (VSWR)	<2.0:1 max across the bands
Front-to-back ratio	>25 dB
Port-to-Port Isolation	>30 dB

Table 19: AIO-DQ15021-N antenna technical specifications (continued)

Item	Description
Nominal impedance	50Ω
Radome material	ASA, White
Cable	Low temperature, plenum rated cable
Mounting method	(44-57 mm) Mast or concrete wall
Maximum input power (per port)	10 Watts

Table 20: AIO-DQ15021-N antenna electrical specifications

Item	Parameter
Frequency range	4900 MHz-5950 MHz
Typical gain	13.4 dBi
Peak gain	15.0
Azimuth Plane 3-dB Beam width V-Pol, typical	21°
Azimuth Plane 3-dB Beam width H-Pol, typical	21°
Elevation Plane 3-dB Beam width V-Pol, typical	18°
Elevation Plane 3-dB Beam width H-Pol, typical	20°
Connector	Pigtail: <ul style="list-style-type: none"> • 4X Type-N • 4X Type-N Fix: <ul style="list-style-type: none"> • 4X Type-N

Table 21: AIO-DQ15021-N antenna mechanical specifications

Dimensions	Weight	Operating temperature range	Storage temperature range
373.3 x 411.4 mm (14.7 x 16.2 inches)	Without HDMNTH: Approx. 1.58 Kg (3.48 lb) With HDMNTH: Approx. 2.28 Kg (5.03 lb)	-40°C to +70°C (-40°F - +158°F)	-40°C to +85°C (-40°F to +185°F)

AIO-DQ15021-N Radiation Patterns

The following diagrams show the radiation patterns for the AIO-DQ15021-N antenna. Use this information when you install the antenna.

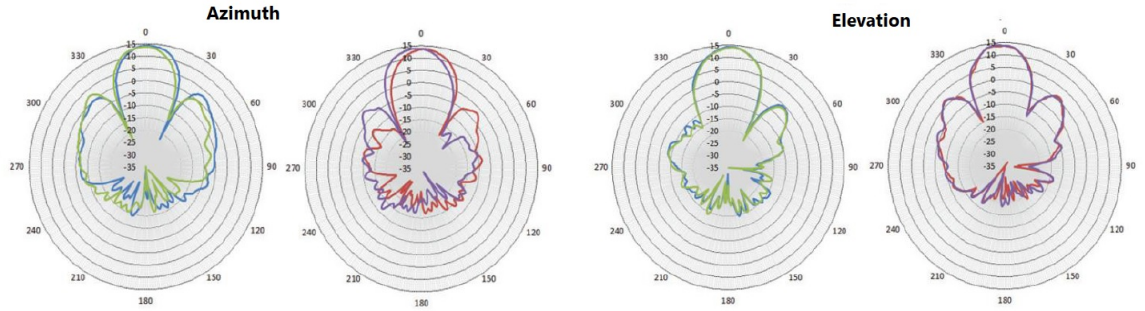


Figure 37: Radiation Patterns - 4.9GHz

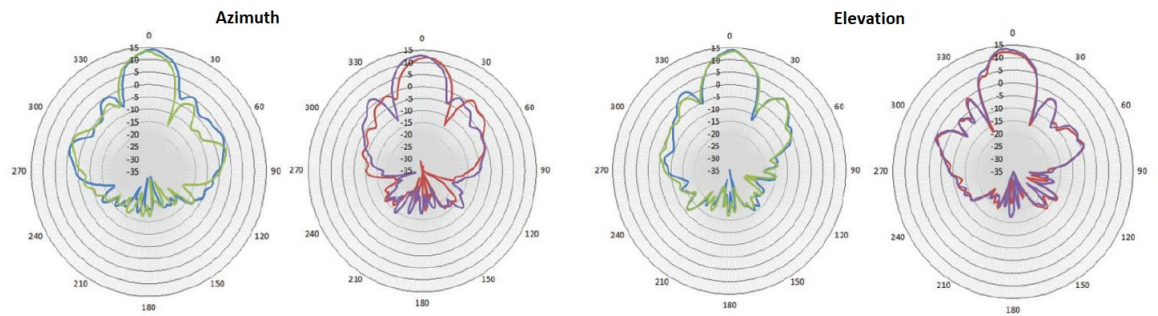


Figure 38: Radiation Patterns - 5.5GHz

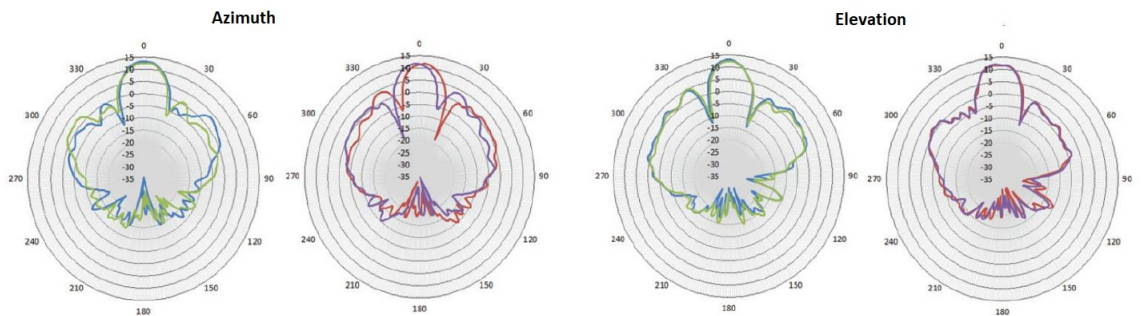


Figure 39: Radiation patterns - 5.95GHz



Regulatory and Compliance Information

[Professional Installation Instruction](#) on page 73

[Safety Guidelines](#) on page 74

[Federal Communications Commission \(FCC\) Notice](#) on page 75

[Industry Canada Notice](#) on page 75

[Detachable Antenna Usage](#) on page 76

[Australia Notice](#) on page 77

[Brazil Agência Nacional De Telecomunicações \(Anatel\) Statement](#) on page 78

[Hazardous Substances](#) on page 78

[Supplement to Product Instructions](#) on page 78

[NCC Statement](#) on page 79

[CE Information](#) on page 79

[European Waste Electrical and Electronic Equipment \(WEEE\) Notice](#) on page 80

[Declaration of Conformity in Languages of the European Community](#) on page 80

Learn about safety guidelines, compliance notices, and regulatory information pertaining to various countries in which the device can be used.

Professional Installation Instruction

Qualified personnel

This product is designed for specific application and must to be installed by a qualified personnel who has RF and related rule knowledge. The general user must not attempt to install or change the setting. Qualified persons are defined as persons who are authorized to commission protective grounding, label devices, systems, and circuits in accordance with established safety practices and standards. A qualified person understands the requirements and risks involved with installing outdoor electrical equipment in accordance with national codes.

External antenna

Use only the antennas which have been approved by the applicant. The non-approved antennas can produce unwanted spurious or excessive RF transmitting power which can lead to the violation of FCC/IC limit and is prohibited.

Installation procedure

Refer to the installation instructions for details.



Warning

Select the installation position and make sure that the final output power does not exceed the limit set forth in relevant rules. The violation of the rule could lead to serious federal penalty.

Instructions d'installation professionnelle

Personnel d'installation

Ce produit est conçu pour une application spécifique et doit être installé par un personnel qualifié qui possède des connaissances sur les RF et les règles associées. L'utilisateur général ne doit pas tenter d'installer ou de modifier le paramètre. Les personnes qualifiées sont définies comme des personnes autorisées à mettre en service une mise à la terre de protection, à étiqueter les dispositifs, les systèmes et les circuits conformément aux pratiques et normes de sécurité établies. Une personne qualifiée comprend les exigences et les risques liés à l'installation d'équipements électriques d'extérieur conformément aux codes nationaux.

Antenne externe

Utilisez uniquement les antennes approuvées par le demandeur. Les antennes non approuvées peuvent produire une puissance de transmission RF parasite ou excessive indésirable, ce qui peut entraîner la violation de la limite FCC / IC et est interdite.

Procédure d'installation

Reportez-vous aux instructions d'installation pour plus de détails.



Warning

Sélectionnez la position d'installation et assurez-vous que la puissance de sortie finale ne dépasse pas la limite indiquée dans les règles pertinentes. La violation de la règle pourrait entraîner de graves sanctions fédérales.

Safety Guidelines

The following safety guidelines are intended to protect your personal safety and prevent damage to the equipment.



Important

Only qualified personnel must perform installation procedures. Within the context of the safety notes in this documentation, qualified persons are defined as persons who are authorized to commission grounding, label devices, systems, and circuits in accordance with established safety practices and standards. A qualified person understands the requirements and risks involved with installing outdoor electrical equipment in accordance with national codes.

Federal Communications Commission (FCC) Notice

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 or TV technician for help.



Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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 transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.



Note

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 a minimum distance of 26 cm between the radiator and your body.

Industry Canada Notice

This device complies with Innovation, Science and Economic Development (ISED) Canada's licence-exempt RSSs. 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.

Le présent appareil est conforme aux CNR d'ISED applicables aux appareils radio exempts de licence. L'exploitation est autorisée 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.

**Caution**

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.

les dispositifs fonctionnant dans la bande 5150-5250 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.

**Warning****IC Radiation Exposure Statement:**

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 57 cm between the radiator and your body.

**Warning****Déclaration d'exposition aux radiations:**

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 57 cm de distance entre la source de rayonnement et votre corps.

Detachable Antenna Usage

This radio transmitter [4141B-AP360] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Le présent émetteur radio [4141B-AP360] a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal d'antenne. Les types d'antennes non inclus dans cette liste qui ont un gain supérieur au gain maximal

indiqué pour tout type listé sont strictement interdits pour une utilisation avec cet appareil.

Group	Brand	Model number	Antenna type	Antenna gain (dBi)		
				2.4 GHz	5 GHz	BLE or thread
1	Extreme	ML-2452-APA2-01	Omni	3.17	4.85	-
2	Extreme	ML-2452-APA2-02	Omni	3.17	4.85	-
3	Extreme	ML-2452-HPA5-036	Omni	3.9	5.7	-
4	Extreme	ML-2452-HPAG4A6-01	Omni	4	7.3	-
5	Extreme	ML-2452-PNA5-01R	Panel	4.5	5	-
6	Extreme	ML-2452-PTA4M4-036	Omni	5	6.6	-
7	Extreme	ML-2452-HPAG5A8-01	Omni	5	8	-
8	Extreme	WS-AO-DQ04360N	Omni	5.5	6	-
9	Extreme	AI-DQ04360S	Omni	5.5	6	-
10	Extreme	ML-2452-SEC6M4-036 / WS-AI-DQ05120	Panel	6.92	7.23	-
11	Extreme	WS-AI-DE07025	Panel	7.5	6.5	-
12	Extreme	ML-2452-PNA7-01R	Panel 1	7.8	10.7	7.8
13	Extreme	WS-AI-DE10055	Panel 2	10.5	7.5	-
14	Extreme	ML-2499-HPA8-01	Dipole	-	-	8

Australia Notice

AU co-location MPE Statement

This equipment complies with AU radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 24 cm between the radiator and your body.

Brazil Agência Nacional De Telecomunicações (Anatel) Statement

Details about certification from Brazil's local authority Agência Nacional De Telecomunicações (Anatel) for access point usage in Brazil.

Este produto está homologado pela Anatel, de acordo com os procedimentos regulamentados e atende aos requisitos técnicos aplicados.

Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados. Para maiores informações, consulte o site da Anatel – www.anatel.gov.br

Hazardous Substances

This product complies with the requirements of Directive 2011/65/EU and its amendments of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Supplement to Product Instructions

單元 Unit	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛Lead (Pb)	汞Mercury (Hg)	鎘Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr ⁺⁶)	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
金屬零件 (Metal Parts)	○	○	○	○	○	○
電路模組 (Circuit Modules)	—	○	○	○	○	○
電纜及電纜組件 (Cables & Cable Assemblies)	○	○	○	○	○	○
塑料和聚合物零件 (Plastic and Polymeric parts)	○	○	○	○	○	○
<p>備考1. “超出0.1 wt %”及“超出0.01 wt %”係指限用物質之百分比含量超出百分比含量基準值。 Note 1 : “Exceeding 0.1 wt %” and “exceeding 0.01 wt %” indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.</p> <p>備考2. “○”係指該項限用物質之百分比含量未超出百分比含量基準值。 Note 2 : “○” indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.</p> <p>備考3. “—”係指該項限用物質為排除項目。 Note 3 : The “—” indicates that the restricted substance corresponds to the exemption.</p>						

NCC Statement

低功率電波輻射性電機管理辦法第十二條 經型式認證合格之低功率射頻電機，非經許可，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。

第十四條低功率射頻電機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。前項合法通信，指依電信法規定作業之無線電通信。

低功率射頻電機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。

無線資訊傳輸設備避免影響附近雷達系統之操作。

「本器材須經專業工程人員安裝及設定，始得設置使用，且不得直接販售給一般消費者」。

CE Information

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



Warning

CE co-location MPE Statement:

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

Table 22: Selling Countries:

	AT	BE	BG	HR	CY	CZ	DK
	EE	FI	FR	DE	EL	HU	IE
	IT	LV	LT	LU	MT	NL	PL
	PT	RO	SK	SI	ES	SE	UK

All Operational Modes

2.4GHz: 802.11b, 802.11g, 802.11n (HT20), 802.11n (HT40), 802.11ax (HEW20), 802.11ax (HEW40), 802.15.4 (Thread), Bluetooth (LE)

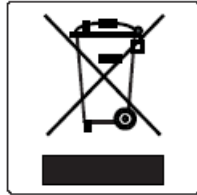
5GHz: 802.11a, 802.11n (HT20), 802.11n (HT40), 802.11ac (VHT20), 802.11ac (VHT40), 802.11ac (VHT80), 802.11ax (HEW20), 802.11ax (HEW40), 802.11ax (HEW80)

The frequency and the maximum transmitted power in EU are listed below:

- 2412-2472 MHz: 19.98 dBm
- 2402-2480 MHz (BR and EDR): 6 dBm
- 2402-2480 MHz (LE): 6.23 dBm
- 5180-5240 MHz: 22.98 dBm
- 5260-5320 MHz: 22.98 dBm

- 5500-5700 MHz: 29.98 dBm
- 2405-2480 MHz: 6.48 dBm

European Waste Electrical and Electronic Equipment (WEEE) Notice



In accordance with Directive 2012/19/EU of the European Parliament on waste electrical and electronic equipment (WEEE):

1. The symbol above indicates that separate collection of electrical and electronic equipment is required.
2. When this product has reached the end of its serviceable life, it cannot be disposed of as unsorted municipal waste. It must be collected and treated separately.
3. It has been determined by the European Parliament that there are potential negative effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment.
4. It is the user's responsibility to utilize the available collection system to ensure WEEE is properly treated.

For information about the available collection system, please contact Extreme Environmental Compliance at Green@extremenetworks.com.

Declaration of Conformity in Languages of the European Community

English	Hereby, Extreme Networks, declares that the radio equipment type (AP360i/e) is in compliance with Directive 2014/53/EU. For full text of the EU Declaration of Conformity, contact Extreme Regulatory Compliance at compliancerequest@extremenetworks.com
Finnish	Valmistaja Extreme Networks vakuuttaa täten että Radio LAN device (AP360i/e) tyyppinen laite on direktiivin 2014/53/EU oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen. EU-vaatimustenmukaisuusvaatimuksen täydellisestä tekstistä ota yhteyttä äärimmäisiin säädösten noudattamiseen osoitteessa compliancerequest@extremenetworks.com
Dutch	Hierbij verklaart Extreme Networks dat het toestel Radio LAN device (AP360i/e) in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 2014/53/EU. Neem voor de volledige tekst van de EU-conformiteitsverklaring u contact opnemen met extreme regelgeving op compliancerequest@extremenetworks.com

French	Par la présente Extreme Networks déclare que l'appareil Radio LAN device (AP360i/e) est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 2014/53/EU. Pour obtenir le texte intégral du processus de Déclaration de la conformité de l'UE, veuillez contacter la conformité réglementaire extrême à l'adresse suivante: compliancerequest@extremenetworks.com
Swedish	Härmed intygar Extreme Networks att radioutrustningstypen AP360i/e överensstämmer med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 2014/53/EU. För fullständig text av EU-försäkran om överensstämmelse, kontakta Extreme regelefterlevnad på compliancerequest@extremenetworks.com
Danish	Undertegnede Extreme Networks erklærer herved, at følgende udstyr Radio LAN device (AP360i/e) overholder de væsentlige krav og øvrige relevante krav i direktiv 2014/53/EU. For den fulde ordlyd af EU-overensstemmelseserklæringen bedes du kontakte Extreme Regulatory Compliance på compliancerequest@extremenetworks.com
German	Hiermit erkläre Extreme Networks die Übereinstimmung des "WLAN Wireless Controller bzw. Access Points" (AP360i/e) mit den grundlegenden Anforderungen und den anderen relevanten Festlegungen der Richtlinie 2014/53/EU. Für den vollständigen Wortlaut der EU-Konformitätserklärung wenden Sie sich bitte an extreme Regulatory Compliance unter compliancerequest@extremenetworks.com
Greek	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Extreme Networks ΔΗΛΩΝΕΙ ΟΤΙ Radio LAN device (AP360i/e) ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 2014/53/EU. Για το πλήρες κείμενο της δήλωσης συμμόρφωσης ΕΕ, παρακαλούμε επικοινωνήστε με την ακραία κανονιστική συμμόρφωση στο compliancerequest@extremenetworks.com
Icelandic	Extreme Networks lýsir her með yfir að thessi bunadur, Radio LAN device (AP360i/e), uppfyllir allar grunnkröfur, sem gerðar eru í R&TTE tilskipun ESB nr 2014/53/EU. Fyrir fullan texta í ESB yfirlýsingu um samræmi, vinsamlegast hafðu samband við Extreme Reglufylgni á compliancerequest@extremenetworks.com
Italian	Con la presente Extreme Networks dichiara che questo Radio LAN device (AP360i/e) è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 2014/53/EU. Per il testo integrale della Dichiarazione di conformità dell'UE, contattare Extreme Regulatory Compliance presso compliancerequest@extremenetworks.com

Spanish	Por medio de la presente Extreme Networks declara que el Radio LAN device (AP360i/e) cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 2014/53/EU. Para obtener el texto completo de la Declaración de conformidad de la UE, póngase en contacto con Extreme Regulatory Compliance en compliancerequest@extremenetworks.com
Portuguese	Extreme Networks declara que este Radio LAN device (AP360i/e) está conforme com os requisitos essenciais e outras disposições da Directiva 2014/53/EU. Para o texto integral da declaração de conformidade da UE, contacte a conformidade regulamentar extrema em compliancerequest@extremenetworks.com
Malti	Hawnhekk, Extreme Networks, jiddikjara li dan Radio LAN device (AP360i/e) jikkonforma mal-htigijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Direttiva 2014/53/EU. Għat-test sħiħ tad-dikjarazzjoni ta ' konformità tal-UE, jekk jogħġbok ikkuntattja lill-konformità regolatorja compliancerequest@extremenetworks.com



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