

TQ5403e

Enterprise-Class Outdoor Wireless Access Point
with IEEE802.11a/b/g/n/ac Tri-Radio



Installation Guide

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Electrical Safety and Emissions Standards

This product complies with the standards described in the following sections:

- “Federal Communications Commission Interference Statement” on page 3
- “European Union Restriction of the Use of Certain Hazardous Substances (RoHS) in Electrical and Electronic Equipment” on page 4
- “Safety and Electromagnetic Emissions” on page 4
- “Translated Safety Statements” on page 8

Federal Communications Commission Interference Statement

Declaration of Conformity

Manufacturer Name: **Allied Telesis, Inc.**

Declares that the product: **Enterprise-class Outdoor Wireless Access Point**

Model Number: **AT-TQ5403e**

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.

**Caution**

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. ⚡ E80

**Avertissement**

Avertissement de la FCC: Les changements ou modifications non expressément approuvés par la partie responsable de la conformité pourraient annuler l'autorité de l'utilisateur à utiliser cet équipement. ⚡ E80

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

The band from 5600-5650MHz will be disabled by the software during the manufacturing and cannot be changed by the end user. This device meets all the other requirements specified in Part 15E, Section 15.407 of the FCC Rules.

Radiation Exposure Statement:

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

European Union Restriction of the Use of Certain Hazardous Substances (RoHS) in Electrical and Electronic Equipment

This Allied Telesis RoHS-compliant product conforms to the European Union Restriction of the Use of Certain Hazardous Substances (RoHS) in Electrical and Electronic Equipment. Allied Telesis ensures RoHS conformance by requiring supplier Declarations of Conformity, monitoring incoming materials, and maintaining manufacturing process controls.

Note

For additional statements, refer to Appendix A, "Technical Specifications and Statements" on page 71.

Safety and Electromagnetic Emissions

Standard Compliance

- RoHS compliant
- European Union RoHS (Directive 2011/65/EU 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.)

Wire Communications

- IEEE 802.1
- IEEE 802.3
- IEEE 802.3u
- IEEE 802.3x
- IEEE 802.3at
- ITU-T G.993.1

Wireless Communications

- IEEE 802.11 DSSS
- IEEE 802.11a OFDM
- IEEE 802.11b DSSS/FHSS
- IEEE 802.11g OFDM
- IEEE 802.11n OFDM
- IEEE 802.11ac OFDM

Safety

- CB/UL
 - UL/IEC 60950-1: 2005+A1:2009+A2:2013 and EN60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013
 - UL/IEC 62368-1:2014 and EN62368-1:2014
 - UL 60950-1, 2nd Edition, 2014-10-14/CSA C22.1 NO. 60950-1-07, 2nd Edition, 2014-10
- TUV
 - EN60950-1+EN62368-1
- AEL
 - Class I, US FDA/CDRH
 - EN(IEC) 60825-1:1994+a11,
 - EN(IEC) 60825-2:1994
 - EN(IEC) 60950: 1992+A1+A2+A3

Electromagnetic Interference (EMI)

- FCC Part 15 Subpart B/ Class B
- EN55032 Class B
- CISPR 32
- VCCI Class B
- VCCI-CISPR 32.2016
- AS/NZS CISPR 32

Electromagnetic Susceptibility - EN55024

- IEC 61000-3-2:2014
- IEC 61000-3-3:2013
- IEC 61000-4-2:2008
- IEC 61000-4-3:2006+A1:2007+A2:2010
- IEC 61000-4-4:2012
- IEC 61000-4-5:2017
- IEC 61000-4-6:2013
- (IEC 61000-4-8:2009)
- IEC 61000-4-11:2014/AMD:2017
- IEC 61000-3-2:2014
- IEC 61000-3-3:2013

FCC/IC

- 47 CFR Part 15, Subpart C
- 47 CFR Part 15, Subpart E
- ICES-003
- RSS-247
- RSS-Gen

CE

- RED Directive 2014/53/EU
- European Council Directive 2014/30/EU
- EN55032:2015+AC:2016
(CISPR32:2015/COR1:2016)
- EN 55024:2010+A1:2015
- EN 301489-1 V2.1.1
- EN 301489-17 V3.1.1
- EN 300328 V2.1.1
- EN 301893 V2.1.1
- EN 62311: 2008
- EN 50385: 2017
- EN 55035:2017

RCM

- AS/NZS CISPR 32: 2015
- AS/NZS 4268: 2017

Japan

- ARIB STD-T66
- ARIB STD-T71

Thailand NBTC

Singapore IMDA TS SRD



Figure 1. Singapore IMDA Logo

Korea KC

Vietnam MIC

India WPC

Malaysia SIRIM

Hong Kong OFCA

Taiwan NCC&BSMI

Translated Safety Statements

Important: Safety statements that have the  symbol are translated into multiple languages in the *Translated Safety Statements* document at www.alliedtelesis.com/library.


Remarque: Les consignes de sécurité portant le symbole  sont traduites dans plusieurs langues dans le document *Translated Safety Statements*, disponible à l'adresse www.alliedtelesis.com/library.

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Preface

This guide contains the hardware installation instructions for the TQ5403e Enterprise-Class Outdoor Wireless Access Point. This preface contains the following sections:

- “Safety Symbols Used in this Document” on page 16
- “Professional Installation Instructions” on page 17
- “Contacting Allied Telesis” on page 18

Safety Symbols Used in this Document

This document uses the following conventions.

Note

Notes provide additional information.



Caution

Cautions inform you that performing or omitting a specific action may result in equipment damage or loss of data.



Attention

Les mises en garde vous informent que l'exécution ou l'omission d'une action spécifique peut endommager l'équipement ou entraîner une perte de données.



Warning

Warnings inform you that performing or omitting a specific action may result in bodily injury.



Advertissement

Les avertissements vous informent que l'exécution ou l'omission d'une action spécifique peut entraîner des blessures corporelles.

Professional Installation Instructions

You must comply with the following cautions:

Installation personnel

This product is designed for specific applications and needs to be installed by a qualified individual who has RF and related rule knowledge. The general user shall not attempt to install the product or modify the settings.

Installation location

The product shall be installed at a location where the radiating antenna can be kept 20cm from nearby persons in normal operation conditions to meet regulatory RF exposure requirements.

Contacting Allied Telesis

If you need assistance with this product, you may contact Allied Telesis technical support by going to the Services & Support section of the Allied Telesis web site at www.alliedtelesis.com/support. You can find links for the following resources on this page:

- ❑ Helpdesk (Support Portal) - Log onto Allied Telesis interactive support center to search for answers to your questions in our knowledge database, check support tickets, learn about Return Merchandise Authorizations (RMAs), and contact Allied Telesis technical experts.
- ❑ Software Downloads - Download the latest software releases for your product.
- ❑ Licensing - Register and obtain your License key to activate your product.
- ❑ Product Documents - View the most recent installation guides, user guides, software release notes, white papers and data sheets for your product.
- ❑ Warranty - View a list of products to see if Allied Telesis warranty applies to the product you purchased and register your warranty.
- ❑ Allied Telesis Helpdesk - Contact a support representative.

For sales or corporate contact information, go to www.alliedtelesis.com/contact and select your region.

Chapter 1

Product Description

This chapter describes the hardware components of the TQ5403e access point. This chapter contains the following sections:

- ❑ “Features” on page 20
- ❑ “TQ5403 Models” on page 22
- ❑ “Hardware Components” on page 23
- ❑ “Management Tools” on page 25
- ❑ “LAN Port” on page 26
- ❑ “LEDs” on page 28
- ❑ “Reset Button” on page 30
- ❑ “Cable Specifications” on page 31

Features

The TQ5403e Wireless Access Point is a tri-radio, Enterprise-class wireless access point, with a single 2.4GHz radio and dual 5GHz radios. Its weather resistant enclosure make it suitable for indoor or outdoor environments, such as ski and beach resorts, sports arenas, or college and corporate campuses. The access point has a PoE+ LAN port for connecting the device to your wired network and for powering the unit from a PoE+ power source device.

Basic hardware features include:

- One 2.4GHz radio
- Dual 5GHz radios
- Two 2.4GHz and four 5GHz external antennas
- One 10/100/1000Mbps Ethernet LAN port
- Power over Ethernet+ (PoE+) on the LAN port
- One Reset button for restoring the default settings
- LEDs for LAN, WLAN, and power
- Pole or wall installation
- External antenna surge protectors
- N-type female antenna connectors for replacing antennas
- Aluminum chassis to repel ultraviolet (UV) radiation and withstand high temperature (IP67 protection rating)

Basic features of the 2.4G and 5GHz radios include:

- IEEE 802.311a/b/g/n/ac (Wave 2)
- Channel blankets
- Multi-channel, single channel, and hybrid operation
- Automatic channel selection
- Band steering
- WiFi multimedia (WMM) for prioritizing traffic

Basic features of the Ethernet LAN port include:

- 10Mbps (IEEE 802.3), 100Mbps (IEEE 802.3u), and 1000Mbps (IEEE 802.3ab)
- PoE+ (IEEE 802.3at)
- Flow control (IEEE 802.3x)
- VLAN tagging (IEEE 802.1Q)
- Auto-Negotiation for speed and duplex mode

- Auto MDI-MDIX

Basic software features include:

- On-board web browser management interface
- Virtual access points
- Network Time Protocol (NTP)
- Dynamic Host Control Protocol (DHCP) client
- Static WEP, WPA Personal, and WPA Enterprise security
- Static WEP encryption: 64/128 bit (IEEE 802.11a/b/g only)
- WPA and WPA2 encryption: CCMP (AES) and TKIP
- WPA3 encryption (requires v6.0.1 or later)
- Quality of Service (QoS) ingress and egress queues
- Fast roaming
- Captive portals
- Client filtering by MAC addresses
- Wireless Distribution System (WDS) bridges
- System log
- Syslog client
- SNMPv1 and v2c

Note

For a complete list of software features, refer to the *TQ5403 Series Management Software User's Guide* or the product data sheet.

TQ5403 Models

The TQ5403 Wireless Access Point Series has the following three models:

- ❑ TQ5403
- ❑ TQm5403
- ❑ TQ5403e

Table 1 lists their main differences.

Table 1. Differences Between the TQ5403 Wireless Access Points

Model	Indoor / Outdoor	Antennas	LAN Ports ^a	Power	Channel Blankets	Maximum Number of Wireless Clients
TQ5403	Indoor	Internal	2	PoE+ or AC/DC adapter	Yes	200 clients per radio in standalone mode 500 clients per Channel Blanket
TQm5403	Indoor	Internal	2	PoE+ or AC/DC adapter	No	127 clients per radio in standalone mode
TQ5403e	Indoor or outdoor	External	1	PoE+ only	Yes	200 clients per radio in standalone mode 500 clients per Channel Blanket

a. The LAN ports are 10/100/1000Mbps.

Note

All three models have one 2.4GHz and two 5GHz radios. The maximum client numbers in the table are per radio or per channel blanket.

The Channel Blankets feature, also referred to as single-channel mode, allows neighboring wireless access points to use the same channels to more efficiently handle roaming wireless clients. The feature requires Vista Manager EX and the Autonomous Wireless Controller (AWC) plug-in.

For installation instructions for the TQ5403 and TQm5403 Wireless Access Point, refer to the *TQ5403 and TQm5403 Wireless Access Points Installation Guide*.

Hardware Components

The front panel components of the access point are illustrated in Figure 1.

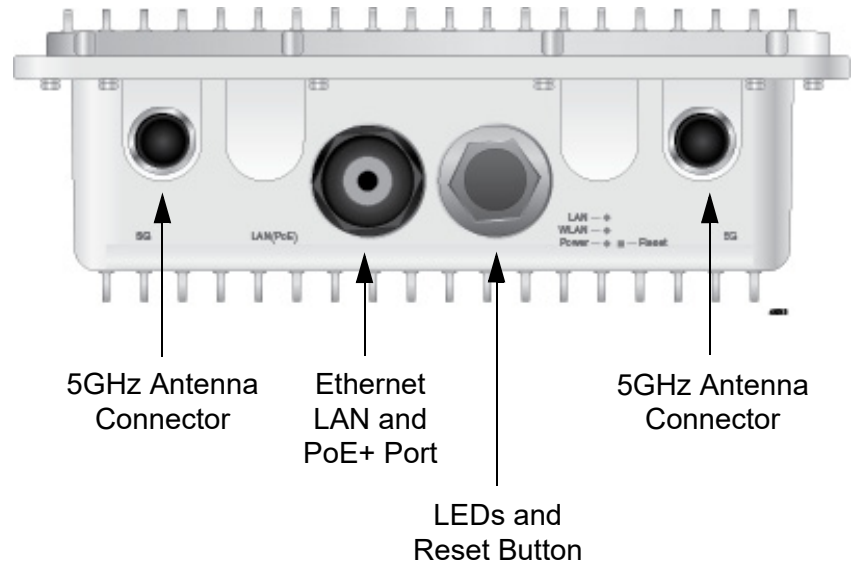


Figure 1. Front Panel of the TQ5403e Access Point Antenna

The back panel components are illustrated in Figure 2.

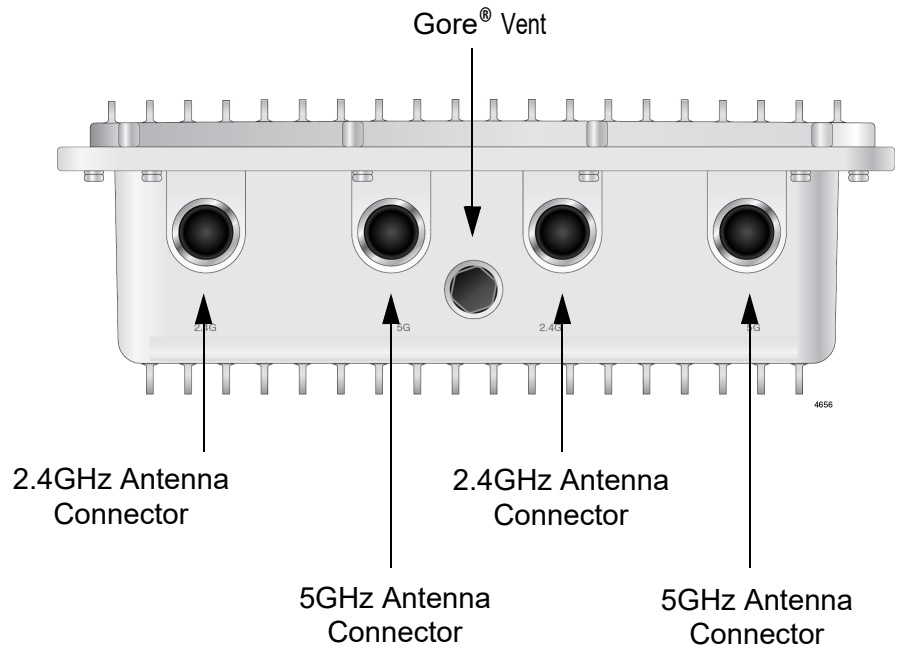


Figure 2. TQ5403e Access Point Antenna Back Panel

The components are listed in Table 2.

Table 2. Components of the Access Point

Component	Description
Four 5 GHz Antenna Connectors	N-type female connectors for the 5 GHz antennas
Two 2.4 GHz Antenna Connectors	N-type female connectors for the 2.4 GHz antennas
LAN Port (PoE+ Input)	The LAN port is a standard 10/100/1000Mbps Ethernet port. The port is used to connect the access point to your local area network and to provide power to the device from a PoE+ source device. The access point has to be powered by a PoE+ source device. Refer to “LAN Port” on page 26.
Three LEDs	<p>The access point has the following LEDs:</p> <ul style="list-style-type: none"> ❑ LAN - Displays status information about the Ethernet LAN port. ❑ WLAN - Displays status information about the radios. ❑ Power - Displays status information about PoE+. <p>Refer to “LEDs” on page 28.</p>
Reset Button	The reset button returns the access point to its default settings. Refer to “Reset Button” on page 30.
Gore® vent	The vent equalizes housing pressures, protects against dirt, dust, humidity and water, and reduces condensation.

Note

Do not remove the Gore® vent plug from the access point.

Management Tools

The access point supports the following management tools.

Web Browser

The access point has a web browser management interface for configuring the device from your management workstation. The web browser interface allows you to manage one unit at a time and supports both non-secure HTTP and secure HTTPS management sessions. The default is HTTP. The product has been tested with Microsoft Internet Explorer version 11 or later, Microsoft Edge, and Chrome.

Vista Manager EX and AWC Plug-in

The access point supports Vista Manager and the Autonomous Wave Control (AWC) plug-in. Configuring and monitoring large numbers of devices is simplified with AWC because you can add multiple devices to management groups and manage them as one unit. The application can also monitor the operations of the access points and automatically adjust operating properties to optimize the performance of your wireless network.

Note

The Channel Blanket feature requires Vista Manager EX and the AWC plug-in.

SNMPv1 and v2c

You can use SNMPv1 or SNMPv2 to view the parameter settings of the device. The MIB is available from the Allied Telesis web site. For instructions on how to configure the unit for SNMP, refer to Allied Telesis *TQ5403 Series Management Software User's Guide*.

Note

The access point does not support SNMPv3 or the AT-UWC Wireless LAN Controller.

LAN Port

The TQ5403e access point has one Ethernet LAN port on the front panel. The port has two functions. The first is to connect the wireless clients to your wired Local Area Network (LAN). The second is to receive power for the product from a PoE+ source device. The access point does not have an internal power supply and it does not support an external power adapter. It has to be powered from a PoE+ source device on this port. Refer to Figure 3.

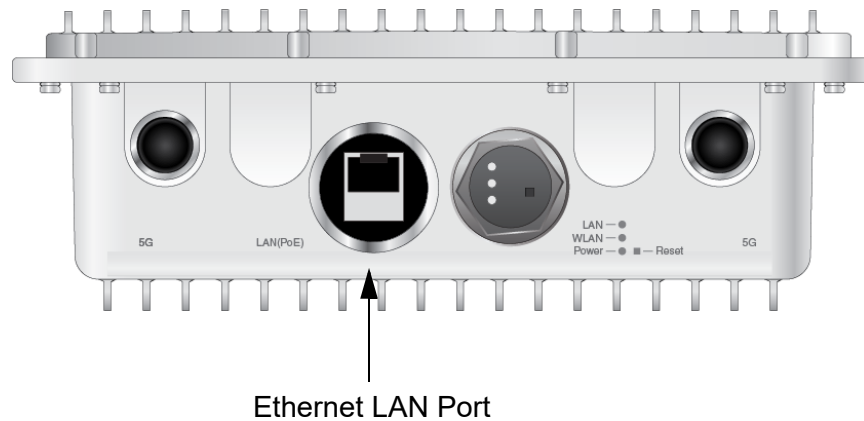


Figure 3. Ethernet LAN Port

Power over Ethernet (PoE)

The TQ5403e access point supports Power over Ethernet Plus (PoE+) on the LAN port. As such, the access point receives its power from a PoE+ source device over the network cable that also carries the network traffic. The product is a PoE+ class 4 powered device with a maximum power consumption of 15.8 watts. The device does not have an internal power supply and it does not support an external AC/DC power adapter. It has to be powered by a PoE+ source device on its LAN port.

Note

The PoE+ source device that supplies power to this device, such as a switch, must be a UL listed Information Technology Equipment (ITE).

Connector Type

The LAN port has an eight-pin RJ45 connector. The port uses four pins at 10 or 100 Mbps and all eight pins at 1000 Mbps. The pin assignments are listed in “LAN Port” on page 73.

Speed

The LAN port can operate at 10, 100, or 1000 Mbps. The speed is set automatically with Auto-Negotiation. You cannot disable Auto-Negotiation on the port.

Note

The LAN port should be connected to a network device that also adjusts its speed with Auto-Negotiation. If the network device does not support Auto-Negotiation, the LAN port operates at 10 Mbps, which may reduce network performance.

Duplex Mode

The LAN port can operate in either half- or full-duplex mode at 10 or 100 Mbps, and full-duplex mode at 1000 Mbps. The port is IEEE 802.3u-compliant and uses Auto-Negotiation to set the duplex mode. You cannot disable Auto-Negotiation on the port.

Note

The LAN port should be connected to a network device that also sets its duplex mode with Auto-Negotiation. If the network device does not support Auto-Negotiation, the LAN port operates at half-duplex mode. This may result in a duplex mode mismatch if the network device is operating at full duplex.

Automatic MDIX Detection

The 10/100/1000 Mbps twisted-pair port is IEEE 802.3ab compliant and features automatic MDIX detection when operating at 10 or 100 Mbps. (Automatic MDIX detection does not apply to 1000 Mbps.) This feature automatically configures the port to MDI or MDI-X depending on the wiring configuration of the port on the Ethernet switch.

You may not disable automatic MDIX detection. For automatic MDIX detection to work properly, it must also be present on the Ethernet switch. The LAN port defaults to MDIX if it is connected to a network device that does not support automatic MDIX detection.

Cable Requirements

The minimum cable requirements for the ports are listed here.

- ❑ 10 Mbps or 100 Mbps: Standard TIA/EIA 568-B-compliant Category 3 shielded or unshielded cabling.
- ❑ 1000 Mbps: Standard TIA/EIA 568-A-compliant Category 5 or TIA/EIA 568-B-compliant Enhanced Category 5 (Cat 5e) shielded or unshielded cabling.

Maximum Distance

The LAN ports have a maximum operating distance of 100 meters (328 feet).

Port Pinouts

Refer to Table 12 on page 73 for the port pinouts of the LAN port when it is operating at 10 or 100 Mbps in the MDI configuration and Table 13 on page 74 for the MDI-X configuration. Refer to Table 14 on page 74 for the port pinouts when the port is operating at 1000 Mbps.

LEDs

The access point has three LEDs under the transparent cap on the front panel. Refer to Figure 4.

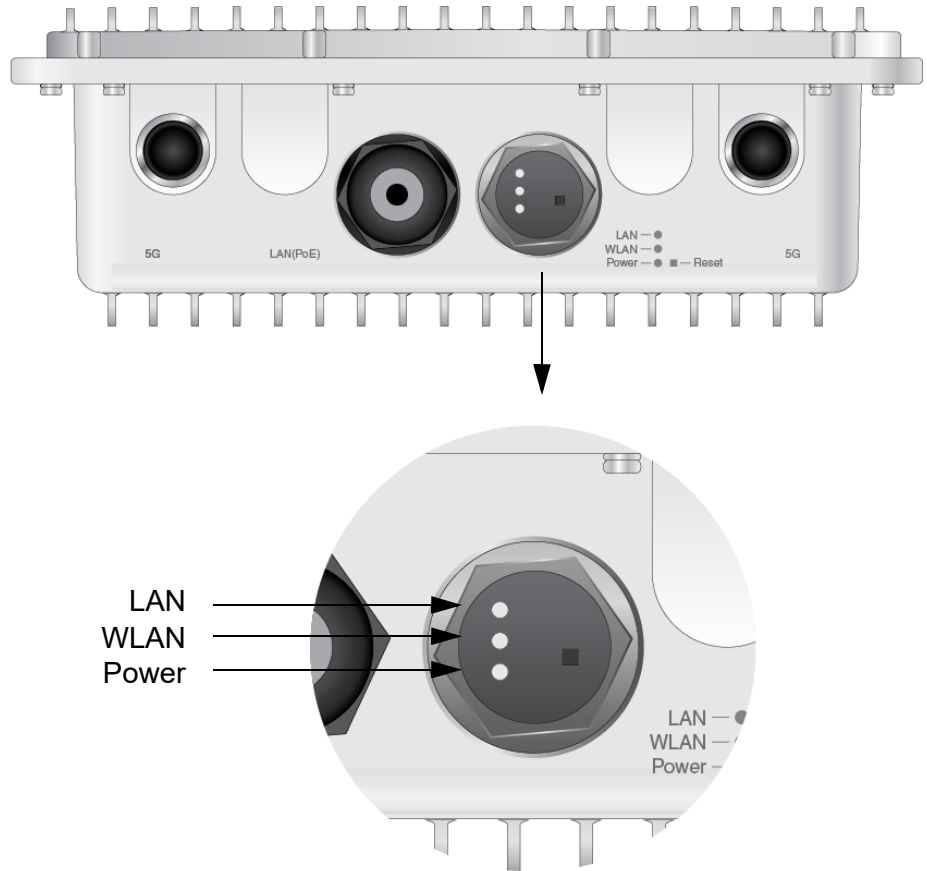


Figure 4. LEDs

The LEDs are described in Table 1.

Table 3. LEDs

LED	State	Description
LAN	Solid Green	The LAN port is receiving power from a PoE+ source device and is operating normally.
	Blinking Green	The LAN port is receiving power from a PoE+ source device and is transmitting/receiving network traffic.
	Off	The access point is powered off because the LAN port is not receiving power from a PoE+ source device.

Table 3. LEDs (Continued)

LED	State	Description
WLAN	Solid Green	One or more radios (i.e., Radio1, Radio2, or Radio3) are enabled.
	Off	All radios are disabled or the access point is powered off.
Power	Solid Green	The power from the PoE+ source device is within the normal operating range.
	Blinking Green	The access point is booting up or upgrading its firmware.
	Off	The access point is not receiving power from a PoE+ source device on the Ethernet LAN port, or the power is either too high or too low.

Reset Button

The access point has a reset button under the transparent cap on the front panel. Refer to Figure 5.

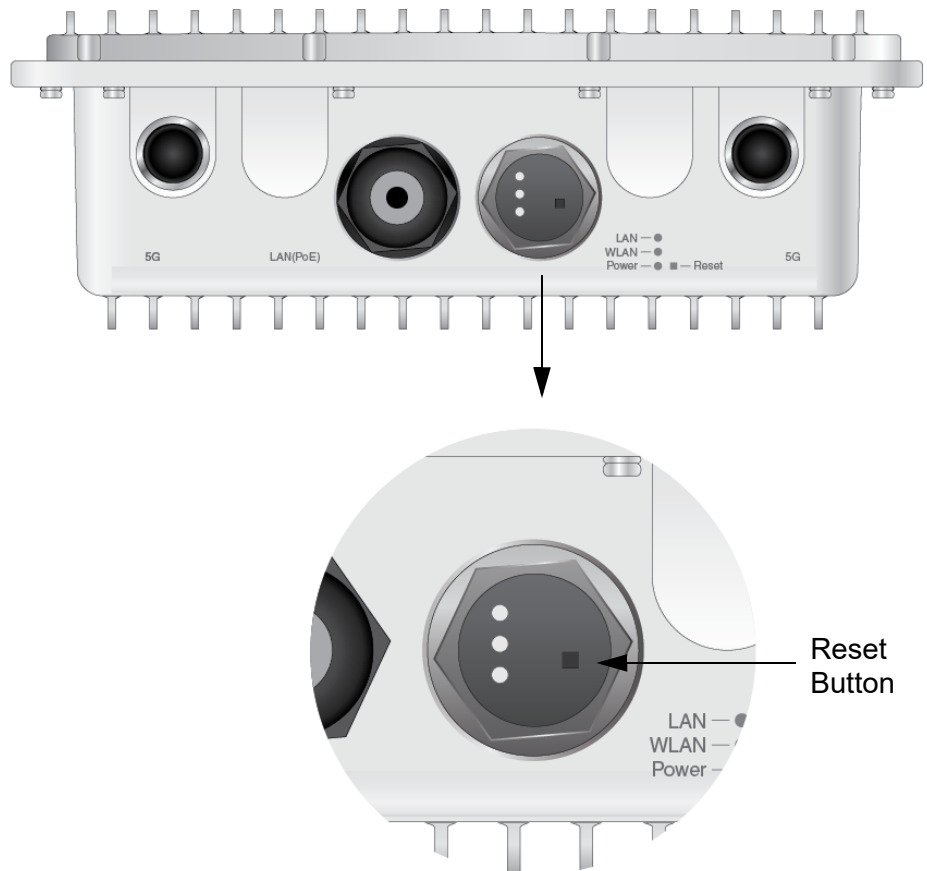


Figure 5. Reset Button

You can use the reset button to return the parameter settings of the device to their default values. You might reset the access point if you want to discard its current configuration or because you forgot the password to the manager account and so cannot manage the device.

To reset the device, remove the transparent cap on the front panel and press the black button for five seconds and release.

You can enable or disable the reset button with the management software. The default setting is disabled. If the access point is installed in a public area, you probably should leave it disabled to protect the device from being reset by unauthorized individuals.

Cable Specifications

This section has the cable requirements for the Ethernet LAN port.

Cable Requirements

The minimum cable requirements for the LAN port are listed here.

- ❑ 10 or 100Mbps - Standard TIA/EIA 568-B-compliant Category 3 unshielded cabling.
- ❑ 1Gbps - Standard TIA/EIA 568-A-compliant Category 5 or TIA/EIA 568-B-compliant Enhanced Category 5 (Cat 5e) unshielded cabling.

Maximum Distance

The LAN port has a maximum operating distance of 100 meters (328 feet).

Chapter 2

Installing the Access Point

This chapter contains the following installation procedures for the TQ5403e access point:

- ❑ “Reviewing Safety Precautions” on page 34
- ❑ “Unpacking the Access Point” on page 37
- ❑ “Attaching the Ground Cable to the Access Point” on page 40
- ❑ “Connecting an Ethernet Cable to the Access Point” on page 43
- ❑ “Attaching the Antennas to the Access Point” on page 48
- ❑ “Installing the Access Point on a Wall” on page 51
- ❑ “Installing the Access Point on a Pole” on page 56
- ❑ “Pole Installation Using the U-Bolts and Pole-Mount Bracket” on page 59
- ❑ “Pole Installation Using the Pole Straps and Mounting Base” on page 62
- ❑ “Starting the First Management Session on the Access Point” on page 67
- ❑ “Setting the Country Setting” on page 69

Note

The non-US model of this product has a country code setting that must be set during the initial management session of the unit. The setting ensures that the unit operates in compliance with the laws and regulations of your country or region.

For the US model, the country code is preset and cannot be changed. Per FCC regulations, the country code setting for all WiFi products marketed in the US must be fixed to US operational channels only.

Reviewing Safety Precautions

Please review the following safety precautions before beginning the installation procedures.

Note

The  indicates that a translation of the safety statement is available in a PDF document titled *Translated Safety Statements* on the Allied Telesis website at www.alliedtelesis.com/support.



Warning

To prevent electric shock, do not remove the cover. No user-serviceable parts inside. This unit contains hazardous voltages and should only be opened by a trained and qualified technician. To avoid the possibility of electric shock, disconnect electric power to the product before connecting or disconnecting the LAN cables.

 E1




Advertissement

Pour éviter tout risque d'électrocution, ne pas enlever le capot. L'appareil ne contient aucun composant réparable par l'utilisateur. Il est exposé à des tensions dangereuses et ne doit être ouvert que par un technicien compétent et qualifié. Pour éviter tout risque d'électrocution, débrancher l'alimentation électrique du produit avant de connecter ou de déconnecter les câbles de réseau local.

 E1




Warning

Do not work on equipment or cables during periods of lightning activity.  E2



Advertissement

Ne pas travailler sur cet équipement ni sur ses câbles en présence de foudre.  E2



Warning

Operating Temperature. This product is designed for a maximum ambient temperature of 65°C  E50

**Advertissement**

Température de fonctionnement. Ce produit est conçu pour une température ambiante maximale de 65 °C. ⌘ E50

**Caution**

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. ⌘ E80

**Attention**

Avertissement de la FCC: tout changement ou modification non expressément approuvé par la partie responsable de la conformité pourrait annuler l'autorité de l'utilisateur à utiliser cet appareil.
⌘ E80

Note

All Countries: Install product in accordance with local and National Electrical Codes. ⌘ E8

Note

You should verify that your PoE network adheres to the standards of a separated extra-low voltage (SELV) circuit before using the PoE feature on the wireless access point.

**Warning**

Only trained and qualified personnel are allowed to install or to replace this equipment. ⌘ E14

**Advertissement**

Seul le personnel qualifié et compétent est autorisé à installer ou à remplacer cet équipement. ⌘ E14

**Warning**

This equipment shall be installed in a Restricted Access location.
⌘ E45



Advertissement

Cet équipement doit être installé dans un endroit à accès restreint.
⌘ E45



Warning

Hot Surface, Do Not Touch! - The finned surface on the back of the chassis is a heat sink and can become dangerously hot when the unit is operating. ⌘ E114



Advertissement

Surface chaude, ne pas toucher! - La surface à ailettes à l'arrière du châssis est un dissipateur de chaleur et peut devenir dangereusement chaude lorsque l'unité est en marche. ⌘ E114

Unpacking the Access Point

To unpack the access point, perform the following procedure:

1. Remove all components from the shipping boxes.

Note

Store the packaging material in a safe location. You must use the original shipping material if you need to return the unit to Allied Telesis.

2. Verify that all components listed in Table 4 are included in your shipping boxes.

Table 4. Components in the Shipping Boxes

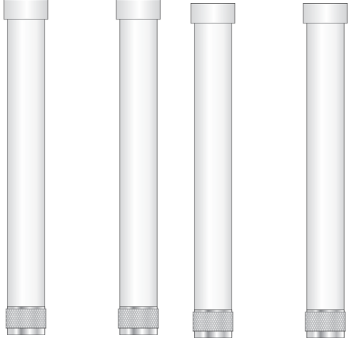
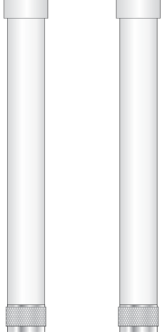
Name	Component
Four 5GHz Antennas	
Two 2.4GHz Antennas	

Table 4. Components in the Shipping Boxes (Continued)

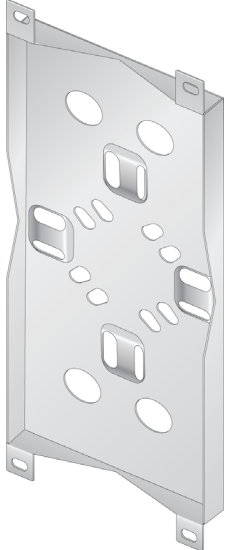

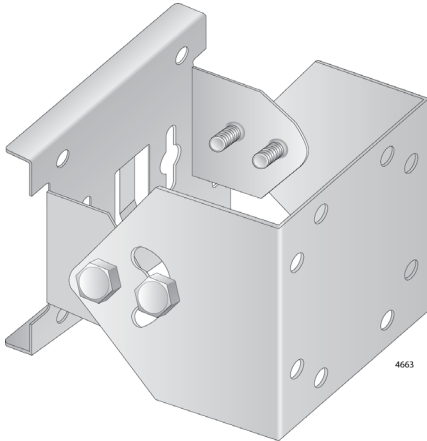



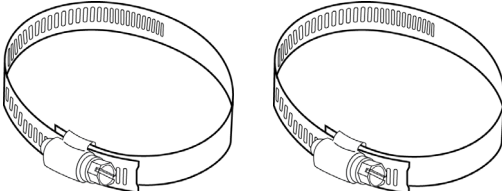
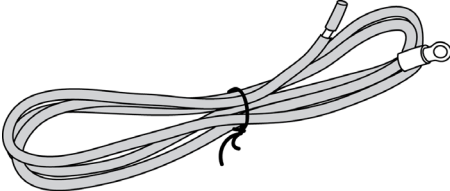

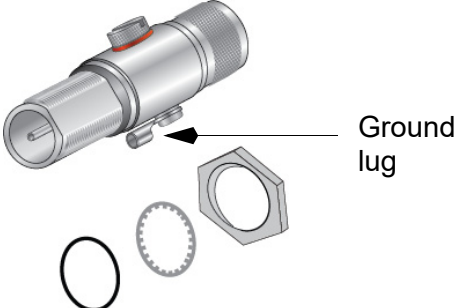
Name	Component
One Mounting Base	
Four Sets of Screws, Washers, and Spring Washers for attaching the mounting base to the access point	
One Pole-mount Bracket	
Four Sets of Hex-head Bolts, Washers, and Spring Washers for Attaching the Access Point to the Pole-mount Bracket	

Table 4. Components in the Shipping Boxes (Continued)

Name	Component
Two U-Bolts	
Four Nuts for the U-Bolts	
Two Pole Straps	
One 8AWG Ground Cable	
One Screw with Washer and Spring Washer for the Ground Cable	
Six External Surge Protectors with Nuts and Metal and Rubber Washers <hr/> Note The ground lug on the surge protector is <i>not</i> used. <hr/>	

- If any item is missing or damaged, contact your Allied Telesis sales representative for assistance.

Attaching the Ground Cable to the Access Point

The ground cable protects the device from damage from lightning strikes or electrostatic discharge (ESD).

Guidelines

Review the following guidelines before attaching the ground cable to the access point:

- Attach the ground cable to the access point before installing the mounting base.
- Connect the ground cable directly to the earth ground.
- Keep the ground cable as short as possible; remove any extra cable.
- Do not sharply bend, loop, or coil the ground cable.
- Connect the surge protector ground cable and the equipment ground to a single common ground. The equipment ground includes power ground and telecommunications ground.
- The recommended earth ground impedance is less than 1.0 ohm.
- Measure the ground impedance at the point where the surge protector ground cable, not at the ground rod.
- If you provide your own ground cable, use a 10 AWG or larger stranded wire as the ground cable.

What to Prepare for Attaching the Ground Cable

You need the following items to attach the ground cable to the access point:

- TQ5403e Access Point
- Ground cable
- One screw for the ground cable
- Phillips-head screwdriver

Note

A Phillip-head screwdriver is *not* included with the product.

Attaching the Ground Cable to the Access Point

To attach the ground cable to the access point, perform the following procedure:

1. Place the access point upside-down on a table or desk.
2. Select a ground post on the access point for the ground wire.

The access point has two ground posts on the bottom panel. You can use either post. Refer to Figure 6 on page 41.

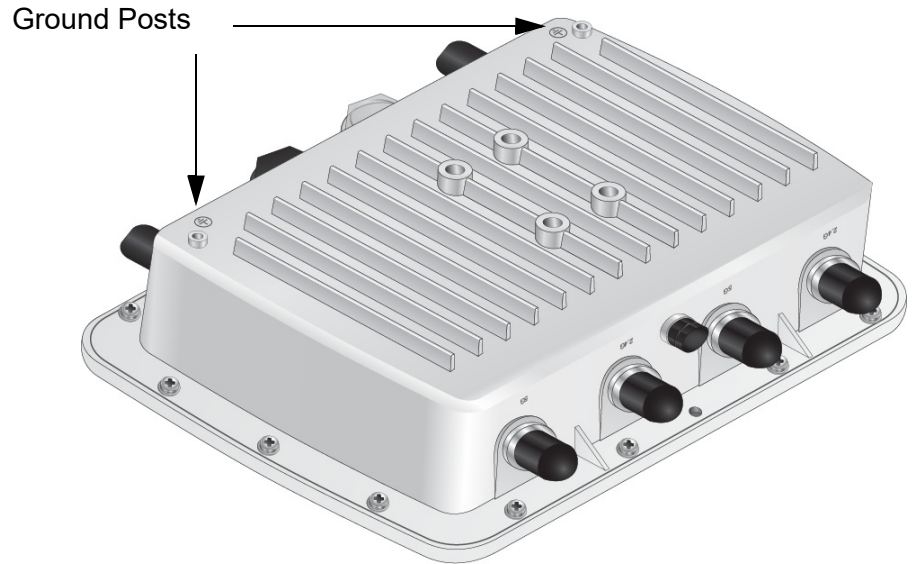


Figure 6. Ground Posts

3. Insert the screw through the ground lug on the ground wire and secure the wire to the selected ground post on the access point, using a Phillips-head screwdriver. Refer to Figure 7.

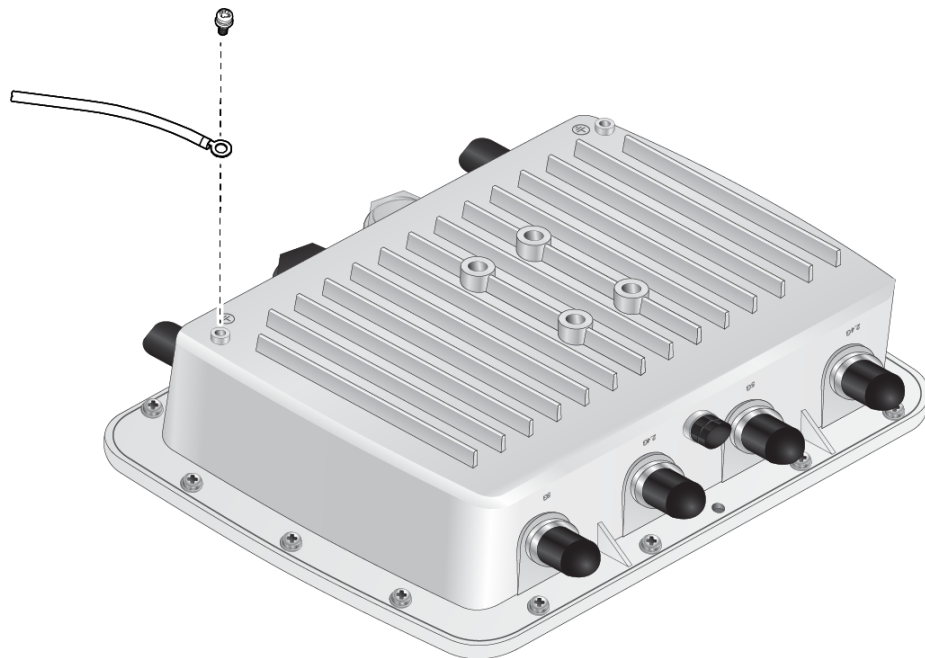


Figure 7. Connecting the Ground Wire to the Access Point

Note

The ground wire should be 20AWG or larger and the screw should be 3.5mm or larger.

4. Attach the other end of the ground wire to a circuit breaker, ground rod, or earth ground.

Note

Keep the ground cable as short as possible; remove any extra cable.

Connecting an Ethernet Cable to the Access Point

To connect an Ethernet cable to the access point, perform the following procedure:

1. Place the access point right-side up on a table or desk.
2. Unscrew the cap on the LAN port and remove it from the access point. See Figure 8.



Figure 8. Removing the Cap from the LAN Port

3. Disassemble the sealing nut, clamping claw, and sealing insert. Refer to Figure 9.

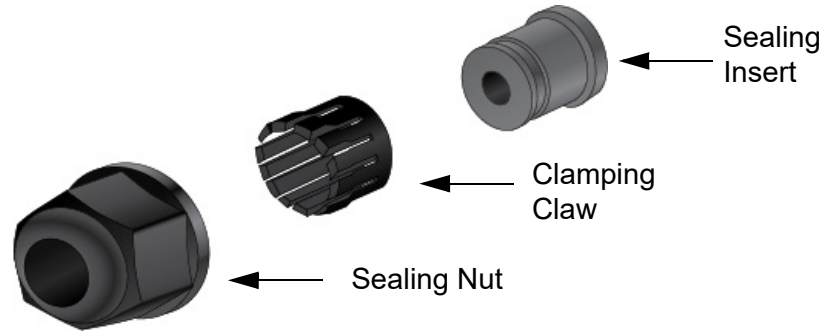


Figure 9. Sealing Nut, Clamping Claw, and Sealing Insert

4. Slide the Ethernet LAN cable through the sealing nut and clamping claw. See Figure 10. The fingers on the clamping claw need to be pointing towards the sealing nut.

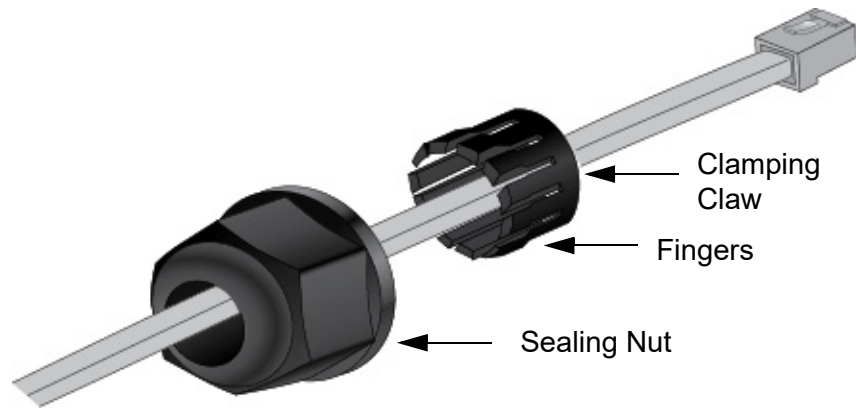


Figure 10. Sliding the Ethernet LAN Cable Through the Sealing Nut and Clamping Claw

5. Open the sealing insert and slip it onto the Ethernet wire. The end with the groove needs to be towards the clamping claw. Refer to Figure 11.

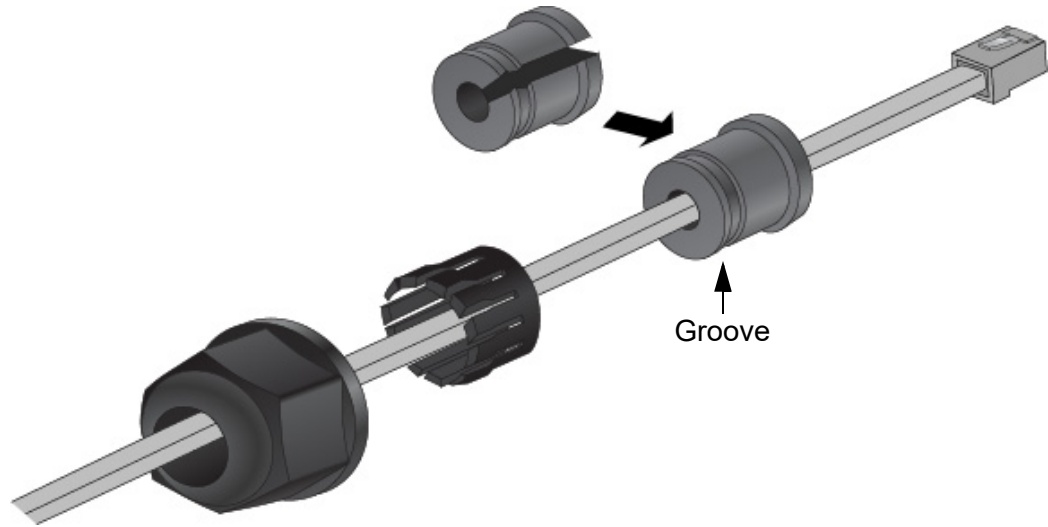


Figure 11. Installing the Sealing Insert

6. Slide the sealing insert into the clawing clamp. Refer to Figure 12.

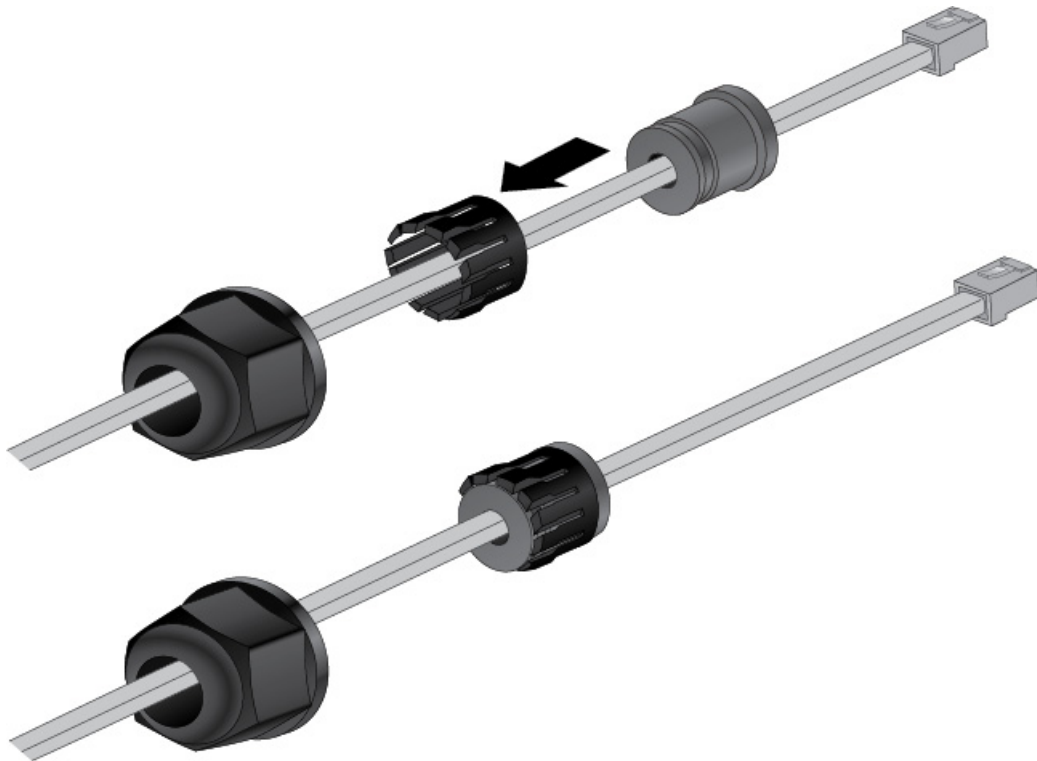


Figure 12. Inserting the Sealing Insert in the Clawing Clamp

7. Connect the RJ-45 connector on the Ethernet cable into the Ethernet LAN port inside the sealing assembly. Refer to Figure 13 on page 46.

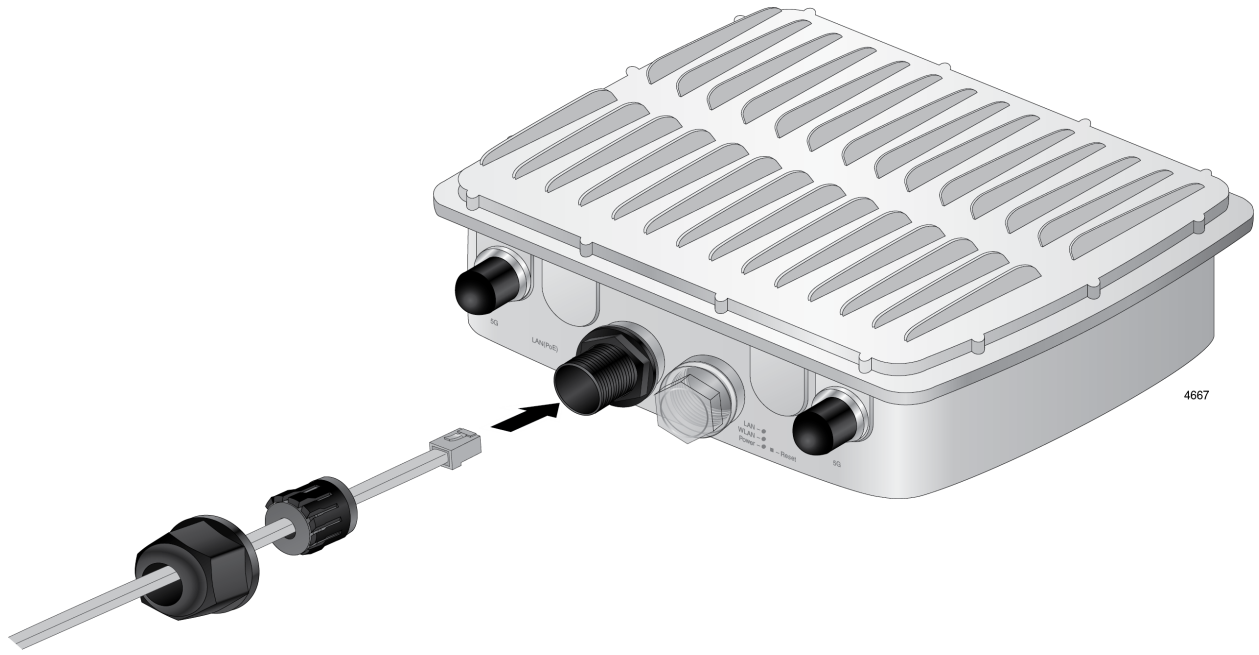


Figure 13. Connecting the LAN Cable to the Ethernet LAN Port

8. Tighten the sealing nut on the access point. Refer to Figure 14.



Figure 14. Tightening the Sealing Nut

Note

The next step powers on the access point by attaching the Ethernet cable to a port on a PoE+ source device. Allied Telesis recommends not performing the step until you have completed all of the installation procedures.

9. Connect the other end of the Ethernet cable to a port on a PoE+ source device, such as a PoE+ switch.

Attaching the Antennas to the Access Point

To install the antennas, perform the following procedure:

Note

You must install 5GHz antennas to 5GHz antenna connectors and 2.4GHz antennas to 2.4GHz antenna connectors.

1. Remove the blind caps covering the antenna connectors.
2. Screw a surge protector to an antenna connector. See Figure 15.

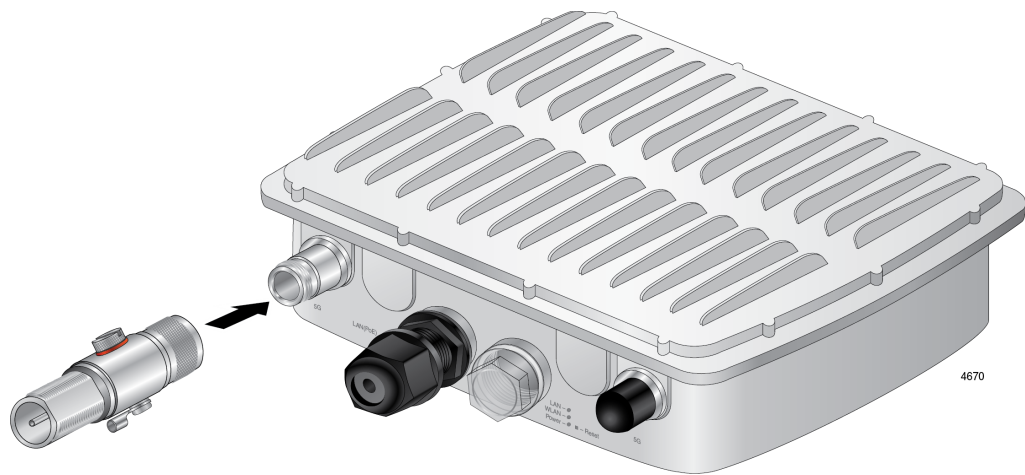


Figure 15. Attaching a Surge Protector to an Antenna Connector

3. Screw the nut onto the surge protector. Refer to Figure 16.

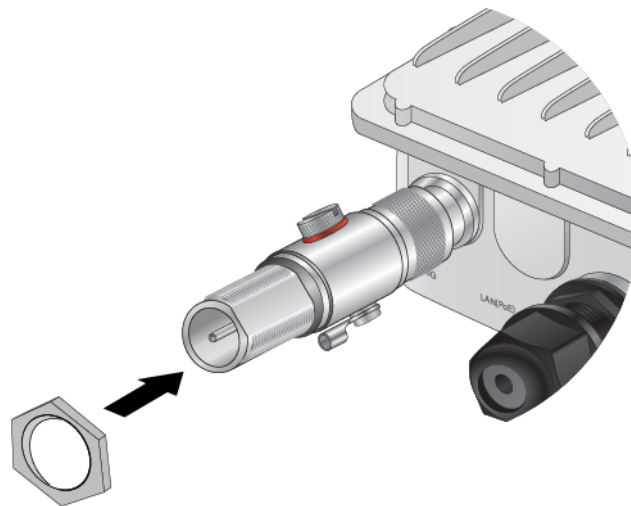


Figure 16. Screwing the Nut onto the Surge Protector

4. Install the metal and rubber washers, in that order, on the surge protector.

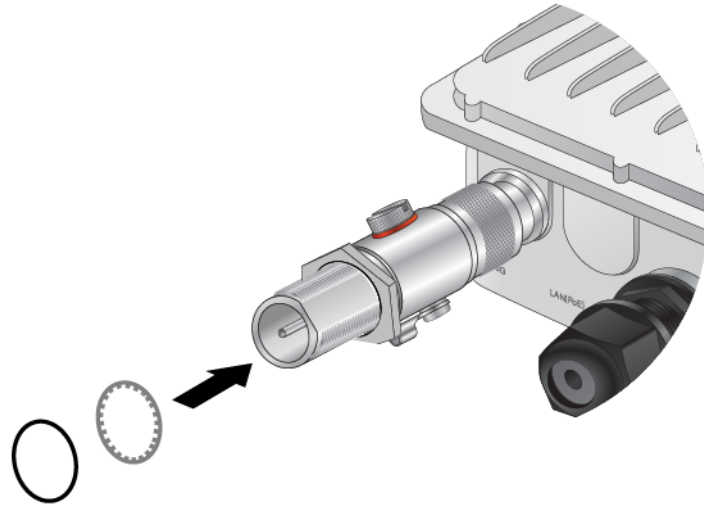


Figure 17. Installing the Metal and Rubber Washers on the Surge Protector

5. Screw an antenna onto the surge protector. Refer to Figure 18.

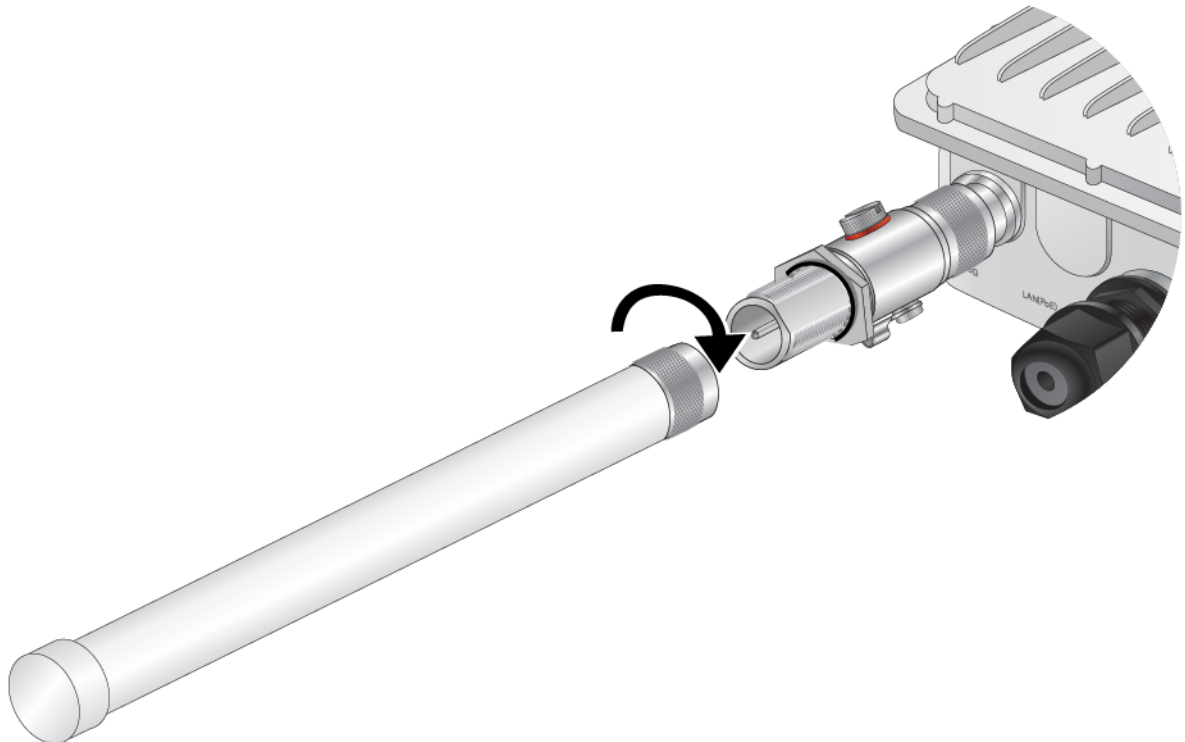


Figure 18. Installing an Antenna on a Surge Protector

6. Tighten the nut against the antenna to secure the antenna. Refer to Figure 19.

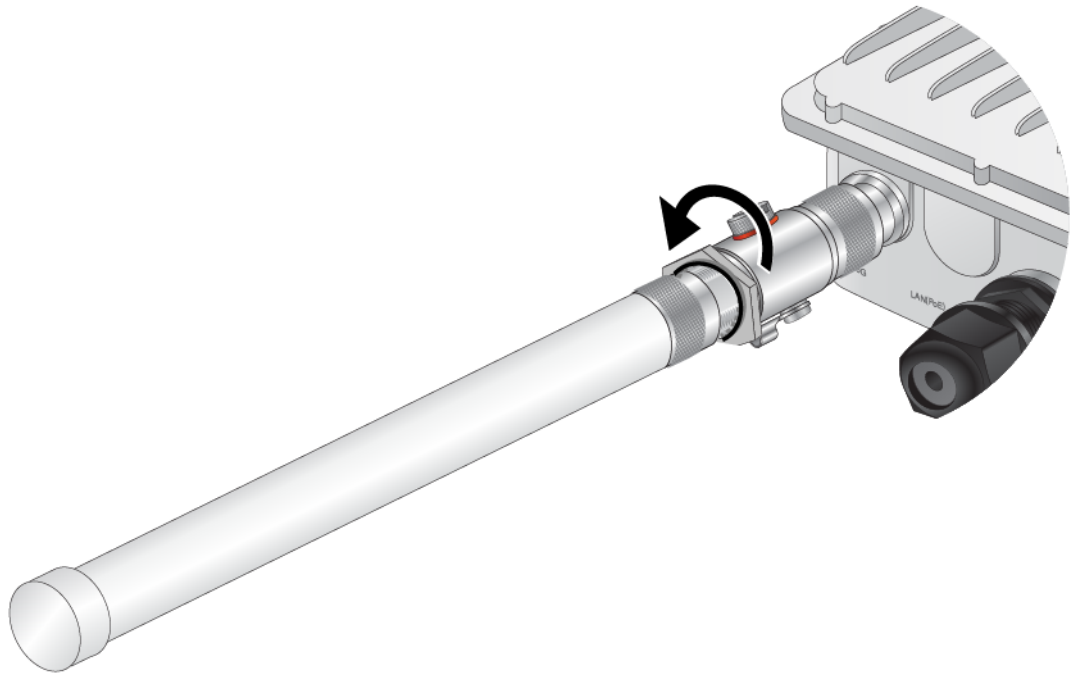


Figure 19. Tightening the Nut to Secure the Antenna

7. Repeat this procedure to install the remaining antennas. See Figure 20.

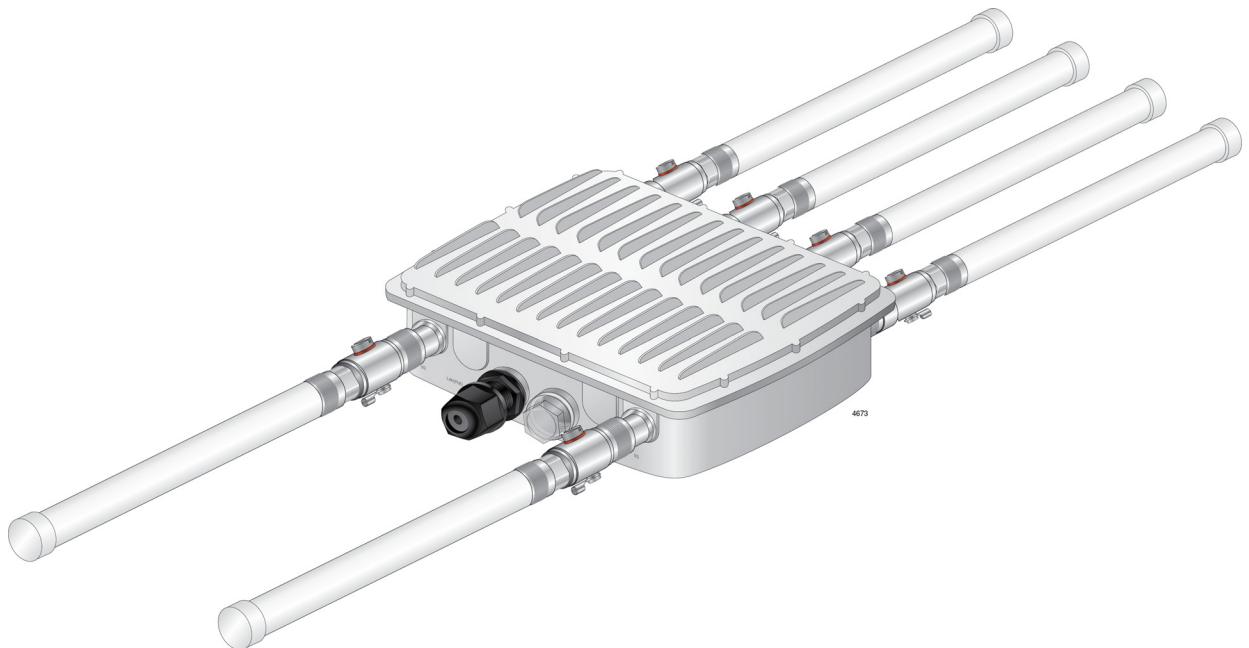


Figure 20. Installing the Antennas to the Access Point

Installing the Access Point on a Wall

This section contains the procedures for installing the TQ5403e access point on a wall.

Guidelines Review the following guidelines before installing the access point on a wall:

- ❑ Attach the ground cable to the access point before attaching the mounting base.
- ❑ Connect the Ethernet cable to the access point before installing the access point on a wall or pole because connecting the Ethernet cable is difficult after the access point is installed.
- ❑ Attach the antennas to the access point before installing it on a wall or pole because attaching the antennas is difficult after the access point is installed.
- ❑ The access point must be installed with the front panel down as shown in Figure 21.

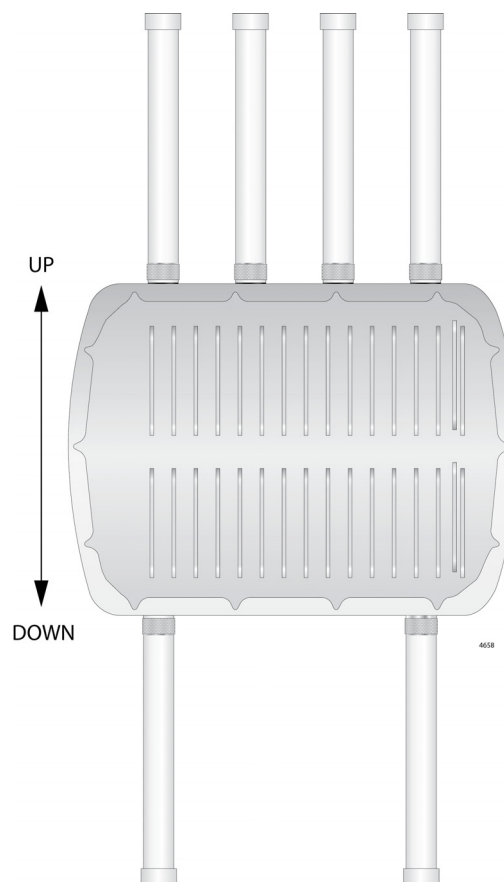


Figure 21. Orientation of the Access Point on a Wall

- ❑ The mounting base can be installed in a vertical or horizontal position. See Figure 22.

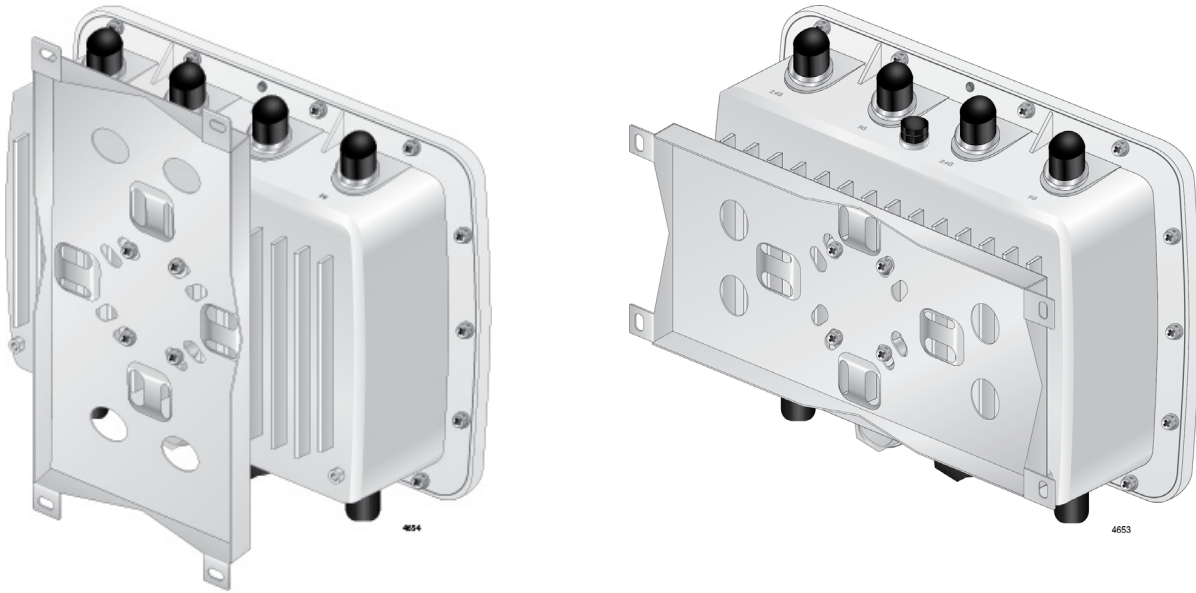


Figure 22. Two Orientations of the Mounting Base

What to Prepare for Wall Installation

You need the following items to install the access point on a wall:

- ❑ TQ5403e Access Point
- ❑ Mounting base
- ❑ Four screws for the mounting base
- ❑ Screws for the wall, one of the following:
 - Four sets of the bolt, nut, washer, and wall anchor for a concrete wall
 - Four tapping screws for a regular wall
- ❑ Drill
- ❑ Phillips-head screwdriver
- ❑ Pencil

Note

Screws for the wall, drill, Phillip-head screwdriver, and pencil are *not* included with the product.

Installing the Access Point on a Wall

To install the access point on the wall, perform the following procedure:

1. Review “Guidelines” on page 51.

2. Hold the mounting base on the wall at the desired location for the access point and mark the four mounting base holes with a pencil. See Figure 23.

Note

The mounting base can be in a vertical or horizontal position. see Figure 22 on page 52.

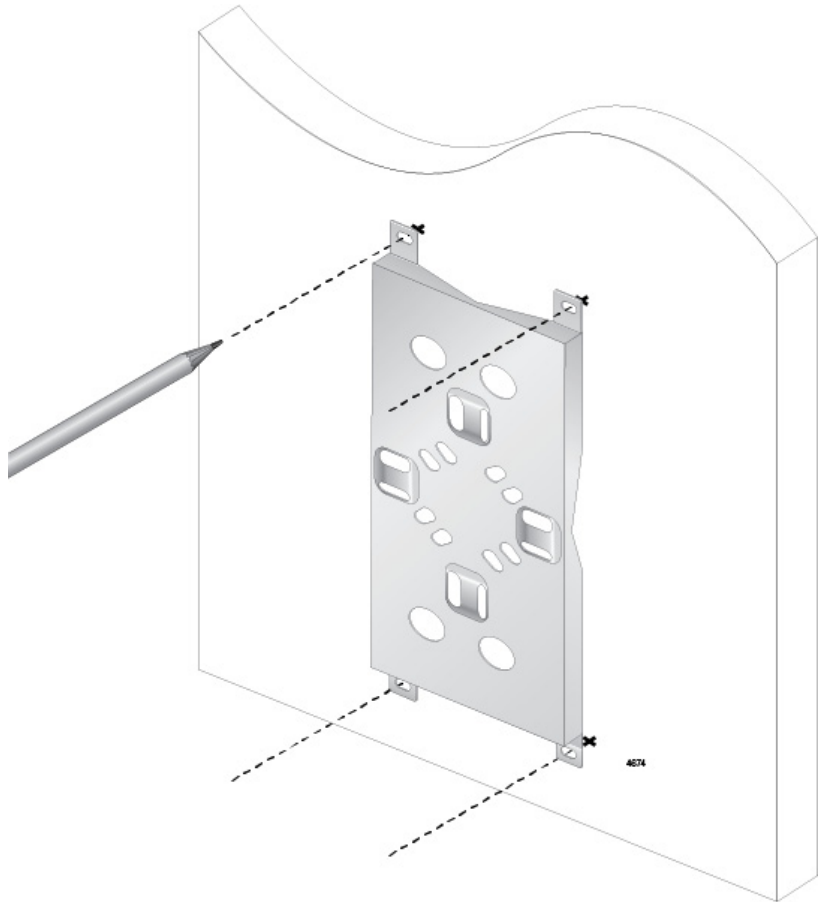


Figure 23. Marking the Mounting Base Holes on the Wall

3. Pre-drill the marked locations on the wall.
4. Install the provided wall anchors in the holes.
5. Place the access point upside-down on a table or desk.
6. Attach the mounting base to the bottom of the access point with the provided screws, spring washers, and washers, using a Phillips-head screwdriver. See Figure 24 on page 54.

Note

Attach the ground cable to the access point before attaching the mounting base. See “Attaching the Ground Cable to the Access Point” on page 40.

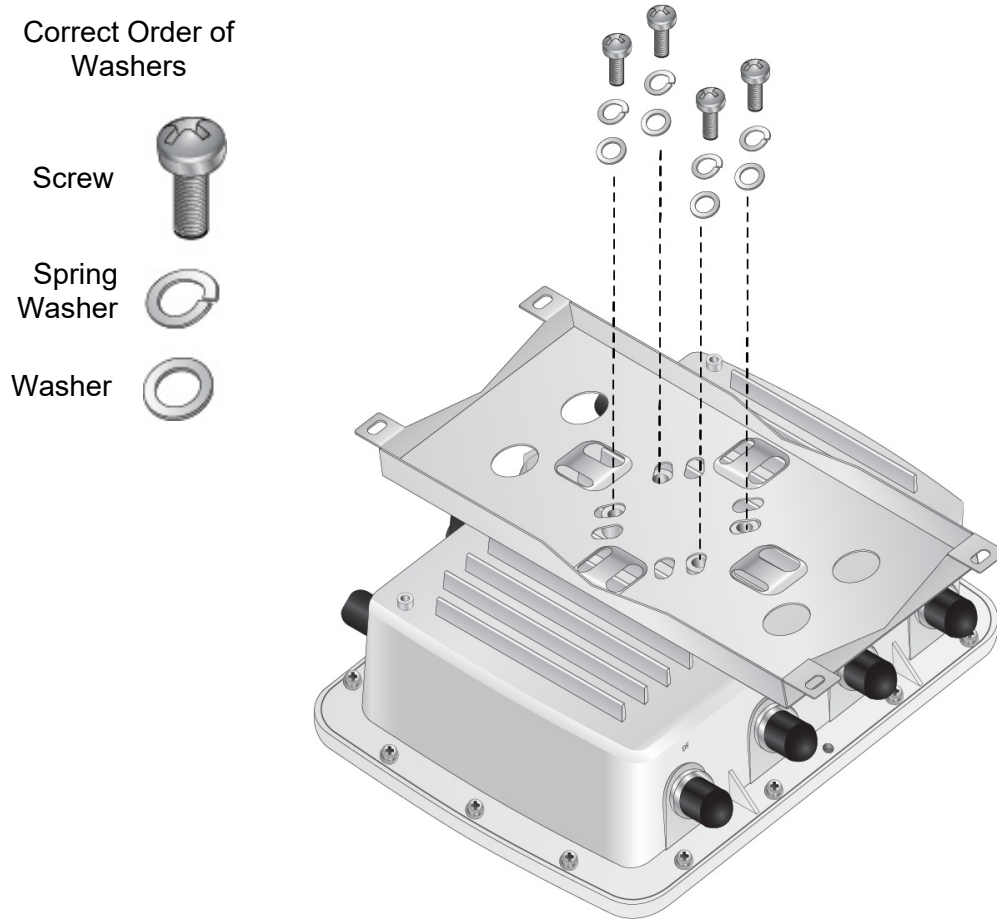


Figure 24. Attaching the Mounting Base to the Access Point

7. Attach the access point to the wall with the provided screws, using a Phillips-head screwdriver. See Figure 25 on page 55.

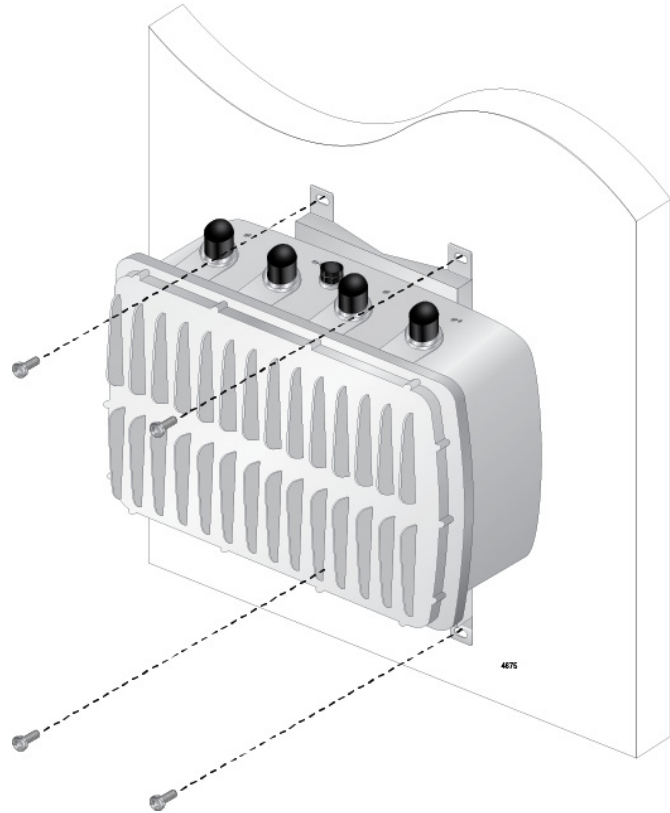


Figure 25. Attaching the Access Point to the Wall

Installing the Access Point on a Pole

The TQ5403e access point can be mounted on a pole using either the U-bolts and pole-mount bracket or the pole straps and mounting base. See Figure 26.

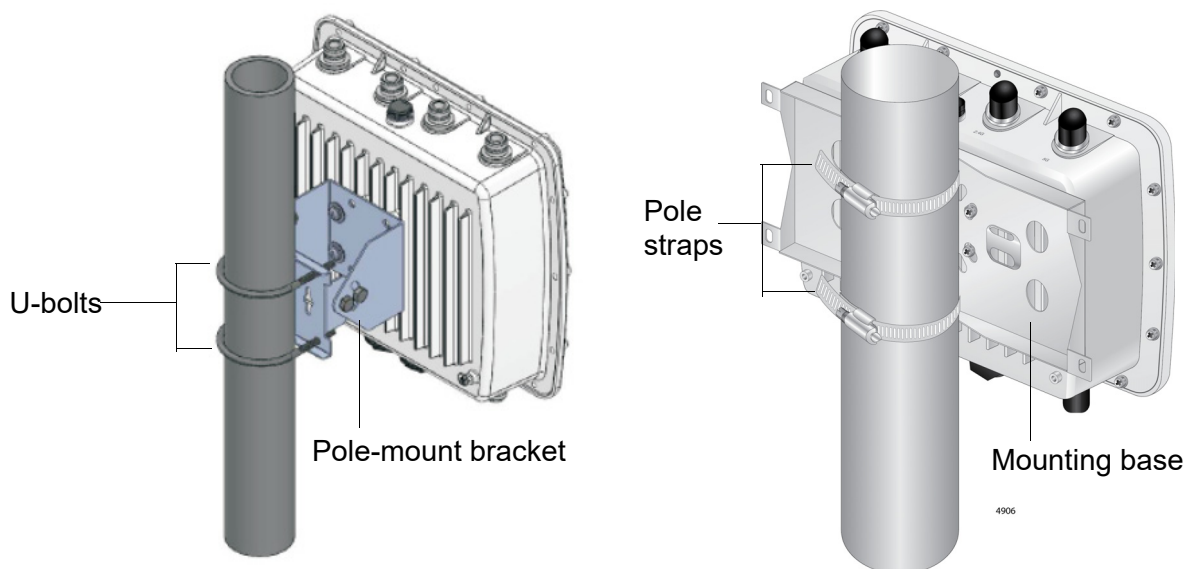


Figure 26. Two Methods of Pole Installations

Perform one of the following instructions to install the access point on a pole:

- “Pole Installation Using the U-Bolts and Pole-Mount Bracket” on page 59
- “Pole Installation Using the Pole Straps and Mounting Base” on page 62

Two Methods to Install the Access Point on a Pole

You can install the access point on a pole using either:

- U-bolts and pole-mount bracket
- Pole straps and mounting base

The size of the pole that you are installing the access point on determines which method of the pole installation you need. Table 5 on page 57 shows the pole diameter that the U-bolts and pole straps can hold.

Table 5. Pole Sizes and Angles

Method	Pole Diameter Range	Angle Adjustable
U-bolts with Pole-mount Bracket	Φ35mm to 55mm	Yes
Pole Straps with Mounting Base	Φ80mm to 100mm	No

Another difference of two methods is whether the angle of the access point is adjustable. With the U-bolts and pole-mount bracket, you can adjust the angle of the access point upwards or downwards. With the pole straps and mounting base, you *cannot* change the angle of the access point.

Vertical Pole and Horizontal Pole

You can install the access point on a pole that stands vertically or runs horizontally as long as the access point's front panel faces down. See Figure 27.

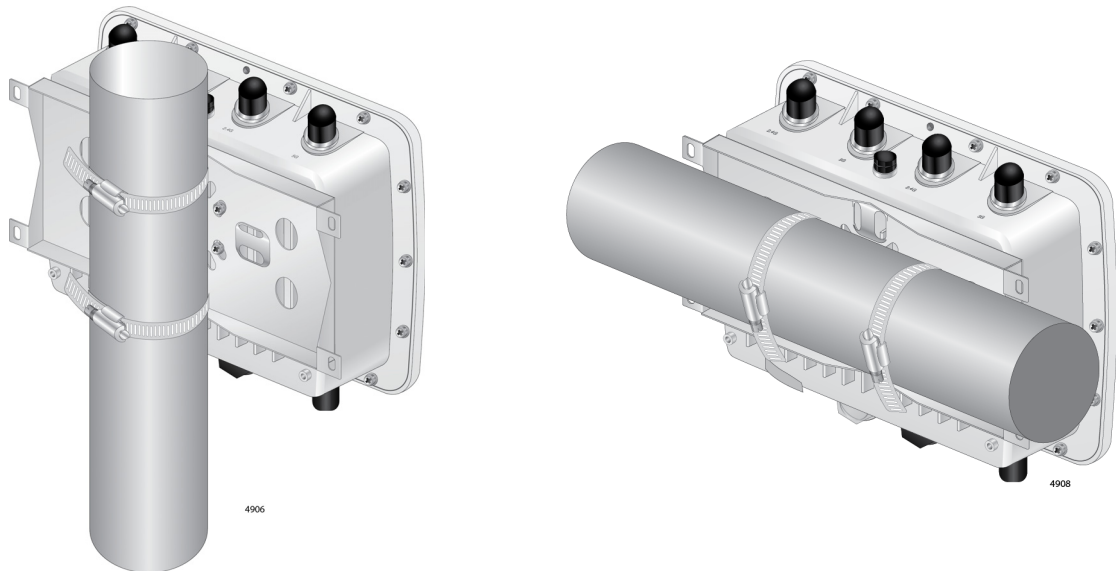


Figure 27. Pole Orientations for the Access Point

Note

Figure 27 show the pole orientations using the pole straps and mounting base as examples. You can also install the access point on a vertical or horizontal pole using the U-bolts and pole-mount bracket.

Guidelines for Pole Installation

Review the following guidelines before installing the access point on a pole:

- ❑ The U-bolts can hold the pole whose diameter is from 35mm to 55mm.
- ❑ The pole straps can hold the pole whose diameter is from 80mm to 100mm.
- ❑ The pole-mount bracket has two hex-head bolts that allow you to adjust the angle of the access point upwards or downwards.
- ❑ The access point must be installed with the front panel down, as shown in Figure 26 on page 56.
- ❑ The access point can be installed on a pole that stands vertically or runs horizontally using either the U-bolts and pole-mount bracket or the pole straps and mounting base. See Figure 27 on page 57.

Pole Installation Using the U-Bolts and Pole-Mount Bracket

To use the pole mount bracket to install the access point, the pole diameter must be from 35mm to 55mm.

Note

For pole installation using the pole straps, see “Pole Installation Using the Pole Straps and Mounting Base” on page 62.

What to Prepare for Pole Installation Using the U-Bolts and Pole-Mount Bracket

You need the following items to install the access point on a pole using the U-bolts and pole mount bracket:

- TQ5403e access point
- Pole mount bracket
- Four sets of screws, spring washers, and washers for the pole mount bracket
- Two U-bolts
- Phillips-head screwdriver

Note

A Phillip-head screwdriver is *not* included with the product.

Installing the Access Point on a Pole Using the U-Bolts and Pole-Mount Bracket

To install the access point on a pole using the U-bolts and pole mount bracket, perform the following procedure:

1. Review “Guidelines for Pole Installation” on page 58.
2. Attach the pole mount brackets to the pole with the two U-bolts. See Figure 28 on page 60.

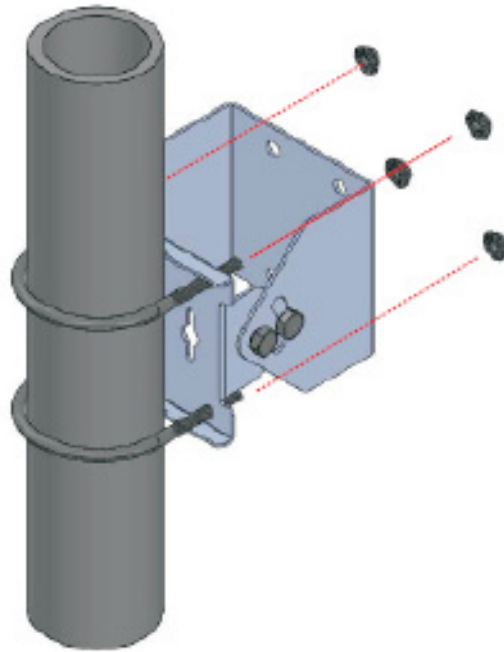


Figure 28. Attaching the Pole-Mount Bracket to the Pole

3. Attach the access point to the pole-mount bracket with the screws using a Phillips-head screwdriver. See Figure 29 on page 61.

Note

Figure 28 shows how to attach the pole mount bracket to a vertical pole as an example. You can also install the bracket to a horizontal pole.

Note

Attach the ground cable to the access point before attaching the mounting base to the access point. Refer to “Attaching the Ground Cable to the Access Point” on page 40.

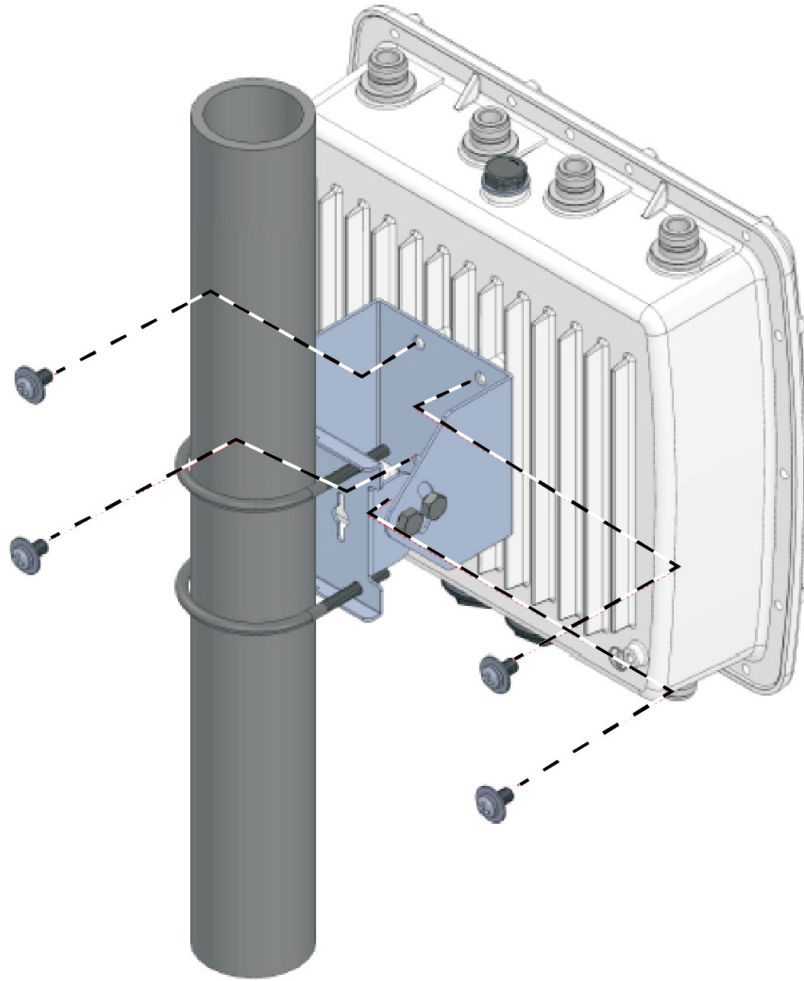


Figure 29. Attaching the Access Point to the Pole-Mount Brackets

Adjusting the Position Upwards or Downwards

To adjust the angle of the access point upwards or downwards, perform the following procedure:

1. Loosen the two bolts located on the sides of the pole mount brackets using an adjustable wrench or a 10mm socket and ratchet.
2. Adjust the angle of the access point upward or downward.
3. Tighten the bolts.

Pole Installation Using the Pole Straps and Mounting Base

To use the pole straps and mounting base to install the access point, the pole diameter must be from 80mm to 100mm.

Note

For the pole installation using the U-bolts and pole-mount bracket, see “Pole Installation Using the U-Bolts and Pole-Mount Bracket” on page 59.

What to Prepare for Pole Installation Using the Pole Straps and Mounting Base

You need the following items to install the access point on a pole using the pole straps and mounting base:

- TQ5403e access point
- Mounting base
- Two Pole straps
- Four sets of screws, spring washers, and washers for the mounting base
- Phillips-head screwdriver

Note

A Phillip-head screwdriver is *not* included with the product.

Installing the Access Point on a Pole Using the Pole Straps and Mounting Base

To install the access point on a pole using the pole straps and mounting base, perform the following procedure:

1. Review “Guidelines for Pole Installation” on page 58.
2. Attach the mounting base to the bottom of the access point with the provided screws, spring washers, and washers, using a Phillips-head screwdriver. See Figure 24 on page 54.

Note

Attach the ground cable to the access point before attaching the mounting base. See “Attaching the Ground Cable to the Access Point” on page 40.

3. Thread one pole strap through the holes marked 1 to attach to the mounting base. Repeat to thread the other pole strap. See Figure 30.

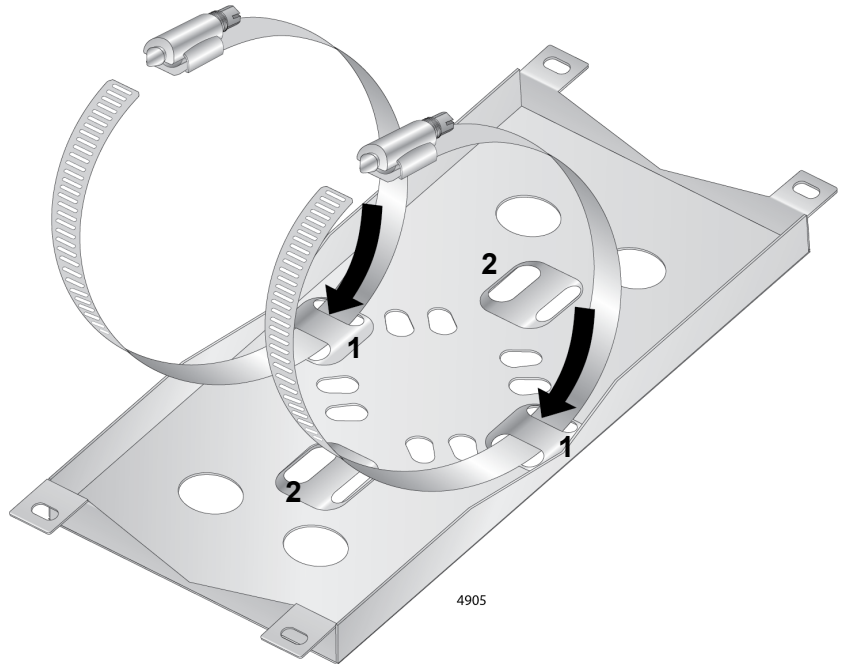


Figure 30. Threading the Pole Straps

Note

Figure 30 shows how to install the access point to a vertical pole. To install the access point on a horizontal pole, use the holes marked 2 to attach the pole straps to the mounting base.

4. Wrap the pole straps around the pole as shown in Figure 31.

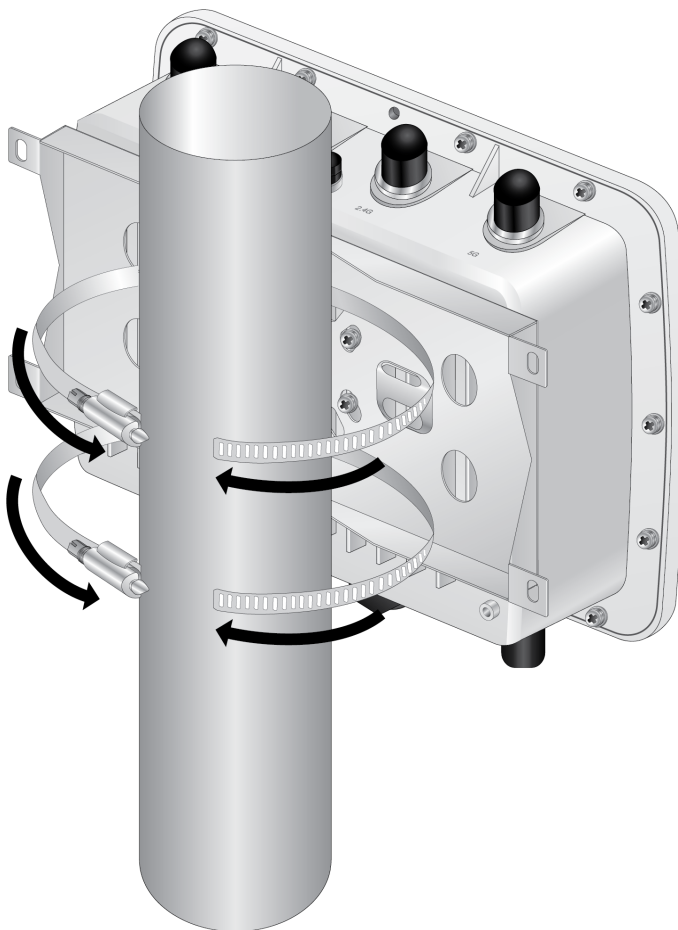


Figure 31. Wrapping the Pole Straps Around the Pole

5. Insert the ends of the pole straps beneath the strap screws. Refer to Figure 32.

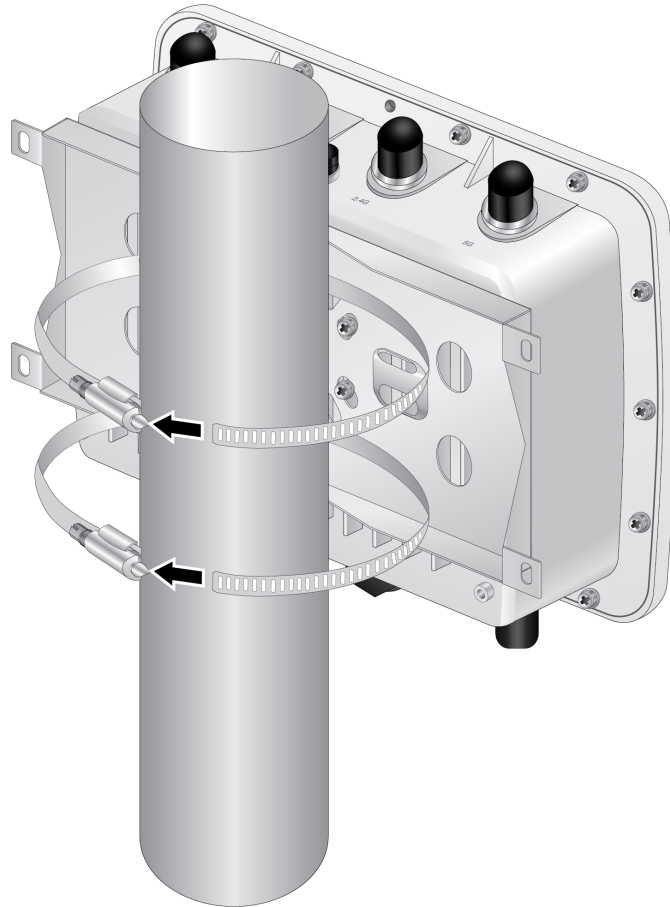


Figure 32. Inserting the Strap Ends into the Screws

6. Tighten the screws with a Phillips-head screwdriver to secure the access point to the pole. See Figure 33.

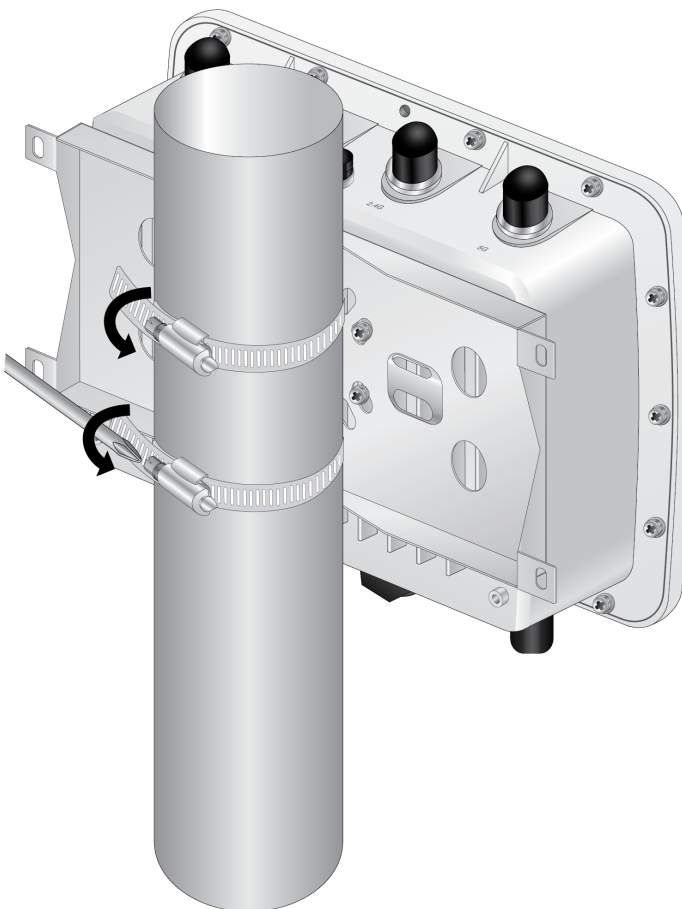


Figure 33. Tightening the Straps

Starting the First Management Session on the Access Point

The wireless access point firmware includes a DHCP client. The default setting for the client is enabled. When you power on the access point, it queries the subnet on the LAN port for a DHCP server. If a DHCP server responds to its query, the unit uses the IP address the server assigns to it. If there is no DHCP server, the access point uses the default IP address 192.168.1.230.

Note

The first management session of the access point has to be conducted through the LAN port because the default setting for the radios is off.

To start the management session, perform the following procedure:

1. Connect the access point to a PoE switch.

If your network has VLANs, the access point must be connected to a port on the PoE switch that belongs to the same VLAN as the port where your management PC is connected.

You may need to access the management software on the PoE switch to list the VLANs and their port assignments. For example, if the access point is connected to a port that is a member of the Sales VLAN, your management PC must be connected to a port that is also a member of that VLAN. If your network is small and does not have VLANs or routers, you may connect your management PC to any port on the PoE switch.

2. Start the web browser on your management PC.
3. Perform the one of the following steps:
 - If your network does not have a DHCP server, change the IP address on your management PC to 192.168.1.*n*. The *n* is any number from 1 to 254, except 230. Then, enter the default address 192.168.1.230 in the URL field of the web browser.
 - If your network has a DHCP server, enter the IP address that the DHCP server assigned to the access point.

The login page appears. See Figure 34 on page 68.

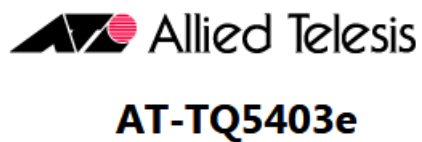
A login window form with a white background. It contains two input fields: the first is labeled 'User ID' with a person icon to its left, and the second is labeled 'Password' with a key icon to its left. Below the input fields is a blue rectangular button with the text 'Login' in white.

Figure 34. Login Window

4. Enter “manager” for the username and “friend” for the password.
The username and password are case-sensitive.

Setting the Country Setting

You should set the country setting during the initial management session of the access point to ensure that the device operates in compliance with the codes and regulations of your region or country.

Note

The non-US model of this product has a country code setting that must be set during the initial management session of the unit. The setting ensures that the unit operates in compliance with the laws and regulations of your country or region.

For the US model, the country code is preset and cannot be changed. Per FCC regulations, the country code setting for all WiFi products marketed in the US must be fixed to US operational channels only.

To set the country setting, perform the following procedure:

1. Select Settings > Radio from the menu on the left,

The access point displays the Basic Settings for Radio 1. See Figure 35.

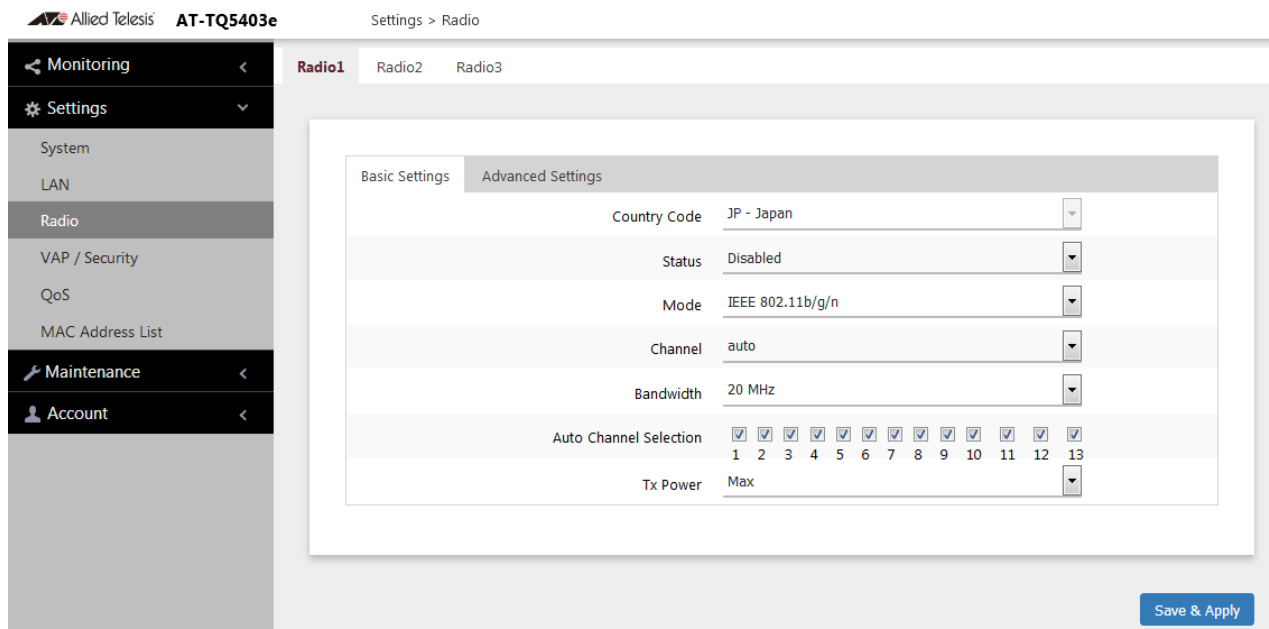


Figure 35. Basic Settings for Radio1

2. Select the Country pull-down menu and select your country or region.

Note

If the Country pull-down menu is deactivated and cannot be changed, the country parameter was set when the unit was manufactured. If the setting is not correct for your country or region, contact your Allied Telesis sales representative for assistance.

The access point displays a confirmation prompt.

3. Click OK to change the country setting or Cancel to cancel the procedure.

If you click OK, the access point changes the country setting and disables all radios on the access point.

Note

This procedure does not require clicking the Save & Apply button.

Allied Telesis recommends rebooting the access point after changing the country settings. To reboot the unit, either power off on the unit or continue with these steps:

4. From the Maintenance menu, select Reboot.
5. Click the Reboot button.
6. When the access point displays a confirmation prompt, click OK to reboot the unit or Cancel to cancel the procedure.
7. To resume managing the unit, wait for it to complete initializing its management software and then start a new management session.

Note

For instructions on how to configure the features of the access point, see a User Guides for this access point.

Appendix A

Technical Specifications and Statements

This appendix contains the following sections:

- “Physical Specifications”
- “Power Specifications”
- “Environmental Specifications” on page 72
- “Antenna Specifications” on page 72
- “LAN Port” on page 73
- “Safety and Electromagnetic Emissions Certifications” on page 75
- “Operation Frequency Information” on page 76
- “IC Statements” on page 77
- “Europe - EU Declaration of Conformity” on page 79
- “UK - UKCA Declaration of Conformity” on page 80

Physical Specifications

Table 6. TQ5403e Physical Specifications

Dimensions (W x D x H)	257 mm x 227 mm x 90 mm (10.1 in. x 8.9 in. x 3.5 in.)
Weight of the device with antennas	4.0 kg (8.8 lb.)

Power Specifications

Table 7. TQ5403e Maximum Power Consumption

AT-TQ5403e	15.8 watts
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Environmental Specifications

Table 8. Environmental Specifications

Operating Temperature of the Access Point	-40° C to 65° C (-40° F to 149° F)
Storage Temperature	-40° C to 80° C (-40° F to 176° F)
Operating Humidity	5% to 95% non-condensing
Storage Humidity	5% to 95% non-condensing
Altitude of operation	Up to 3,000m (9,9843 ft)

Antenna Specifications

This radio transmitter [3336D-TQ5403E] 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 [3336D-TQ5403E] 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. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué pour tout type figurant sur la liste, sont strictement interdits pour l'exploitation de l'émetteur.

Table 9. Antenna Specifications

Antenna type	Dipole
Antenna Connector	N-type

Table 10. Frequency and Gain

Frequency (MHz)	2400 ~ 2483.5	5150~5250	5250~5350	5470~5725	5725~5850
Gain (dBi)	5.2	6.91	6.72	6.34	7.08

LAN Port

Table 11. LAN Port Specifications

Connector	RJ45
Standards	IEEE 802.3 (10Base-T) IEEE 802.3u (100Base-TX) IEEE 802.3ab (1000Base-T)
PoE standard	IEEE 802.3at (class 4)

Figure 36 illustrates the pin layout of the LAN port.

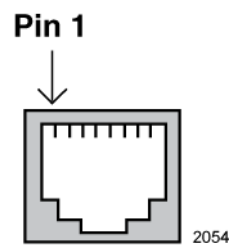


Figure 36. Pin Layout for the RJ45 Connector on the LAN Port

Table 12 lists the pin signals when the port is operating in the MDI configuration at 10 or 100 Mbps.

Table 12. MDI Pin Signals (10Base-T or 100Base-TX)

Pin	Signal
1	TX+
2	TX-
3	RX+
6	RX-

Table 13 lists the pin signals for the MDI-X configuration at 10 or 100 Mbps.

Table 13. MDI-X Pin Signals (10Base-T or 100Base-TX)

Pin	Signal
1	RX+
2	RX-
3	TX+
6	TX-

Table 14 lists the pin signals when the LAN port is operating at 1000 Mbps.

Table 14. 1000Base-T Connector Pinouts

Pin	Pair	Signal
1	1	TX and RX
2	1	TX and RX-
3	2	TX and RX+
4	3	TX and RX+
5	3	TX and RX-
6	2	TX and RX-
7	4	TX and RX+
8	4	TX and RX-

Safety and Electromagnetic Emissions Certifications

Table 15. Safety and Electromagnetic Emissions Certificates

Standard Compliance	RoHs compliant European Union RoHS (Directive 2011/65/EU 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.)
Certificates	CE FCC/IC RCM Wi-Fi CERTIFIED
Emissions (EMI)	FCC part15 Subpart B Class B CISPR32 Class B AS/NZS CISPR 32 RED EN55032 Class B RCM VCCI Class B
Immunity (EMS)	RED EN55024 EN61000-3-2 EN61000-3-3
Safety	UL 62368-1 2nd Edition IEC 62368-1 2nd Edition CE EN 62368-1 2nd Edition

Operation Frequency Information

Table 16. Operation Frequency

	2.4GHz		5150~5250GHz		5250~5350GHz		5470~5725GHz		5725~5850GHz	
	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor
CE	√	√	√	N/A	√	N/A	√	√	N/A	N/A
FCC	√	√	√	√	√	√	√	√	√	√
TELEC	√	√	√	N/A	√	N/A	√	√	N/A	N/A
RCM	√	√	√	N/A	√	N/A	√	√	√	√
IC	√	√	√	N/A	√	√	√	√	√	√

√: usable band
 N/A: disabled band

IC Statements

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference.
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) L'appareil ne doit pas produire de brouillage;
- (2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

IC Radiation Exposure Statement

This equipment complies with IC RSS-102 radiation exposure limit set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

Déclaration d'exposition à la radiation

Cet équipement respecte les limites d'exposition aux rayonnements IC définies pour un environnement non contrôlé. Cet équipement doit être installé et mis en marche à une distance minimale de 20cm qui sépare l'élément rayonnant de votre corps.

L'émetteur ne doit ni être utilisé avec une autre antenne ou un autre émetteur ni se trouver à leur proximité.

Caution

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

(ii) the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall comply with the e.i.r.p. limit; and

(iii) the maximum antenna gain permitted for devices in the band 5725-5825 MHz shall comply with the e.i.r.p. limits specified for point-to-point and non point-to-point operation as appropriate.

(iv) Users should also be advised that high-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

Avertissement

Le guide d'utilisation des dispositifs pour réseaux locaux doit inclure des instructions précises sur les restrictions susmentionnées, notamment:

(i) 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;

(ii) le gain maximal d'antenne permis pour les dispositifs utilisant les bandes 5250-5350 MHz et 5470-5725 MHz doit se conformer à la limite de p.i.r.e.;

(iii) le gain maximal d'antenne permis (pour les dispositifs utilisant la bande 5725-5825 MHz) doit se conformer à la limite de p.i.r.e. spécifiée pour l'exploitation point à point et non point à point, selon le cas.

(iv) De plus, les utilisateurs devraient aussi être avisés que les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5250-5350 MHz et 5650-5850MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.

Professional Installation Instruction

Installation personnel

This product is designed for specific application and needs to be installed by a qualified personnel who has RF and related rule knowledge. The general user shall not attempt to install or change the setting.

Instructions d'installation professionnelle:

Installation personnelle

Ce produit est destiné à un usage spécifique et doit être installé par un personnel qualifié maîtrisant les radiofréquences et les règles s'y rapportant. L'installation et les réglages ne doivent pas être modifiés par l'utilisateur final.

Europe - EU Declaration of Conformity

Hereby, Allied Telesis declares that the radio equipment type [AT-TQ5403e] is in compliance with Directive 2014/53/EU.

Operating Frequencies and Maximum Transmission Power Levels

The operating frequencies and maximum transmission power levels for wireless devices operated in the EU are listed below:

- 2412-2472 MHz:
19.16 dBm (Beamforming), 19.07 dBm (Non-Beamforming)
- 5180-5240 MHz:
22.32 dBm (Beamforming), 22.43 dBm (Non-Beamforming)
- 5260-5320 MHz:
22.75 dBm (Beamforming), 22.52 dBm (Non-Beamforming)
- 5500-5700 MHz:
29.05 dBm (Beamforming), 29.12 dBm (Non-Beamforming)

Radiation Exposure Statement

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



Importer

Allied Telesis International BV Incheonweg 7, 1437 EK Rozenburg

Note

Contact Allied Telesis for the UK conformity statement. To contact AlliedTelesis, visit our web site at www.alliedtelesis.com/contact.

UK - UKCA Declaration of Conformity

Hereby, Allied Telesis declares that the radio equipment type [AT-TQ5403e] is in compliance with The Radio Equipment Regulations 2017

Operating Frequencies and Maximum Transmission Power Levels

The operating frequencies and maximum transmission power levels for wireless devices operated in the UKCA are listed below:

- 2412-2472 MHz:
19.16 dBm (Beamforming), 19.07 dBm (Non-Beamforming)
- 5180-5240 MHz:
22.32 dBm (Beamforming), 22.43 dBm (Non-Beamforming)
- 5260-5320 MHz:
22.75 dBm (Beamforming), 22.52 dBm (Non-Beamforming)
- 5500-5700 MHz:
29.05 dBm (Beamforming), 29.12 dBm (Non-Beamforming)

Radiation Exposure Statement

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



Importer

Allied Telesis International BV 11 Pine Court, Kembrey Park Swindon Wiltshire SN2 8AD, United Kingdom

Note

Contact Allied Telesis for the UK conformity statement. To contact AlliedTelesis, visit our web site at www.alliedtelesis.com/contact.

Appendix B

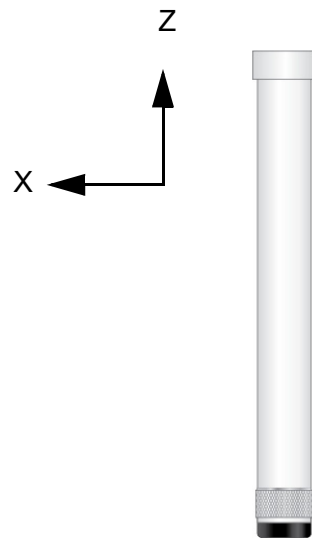
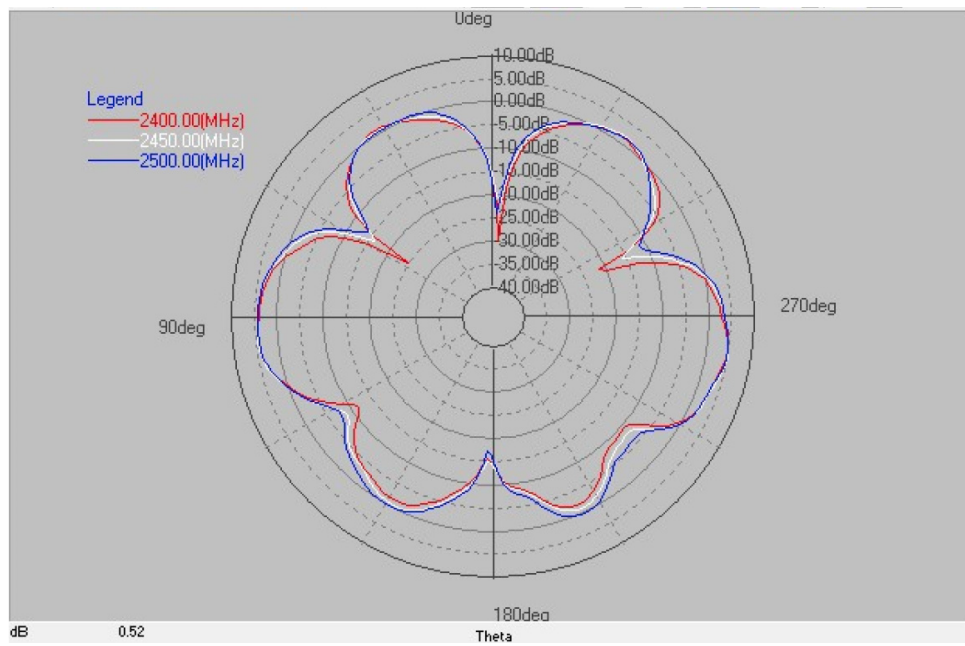
Radiation Patterns

This appendix contains the following sections:

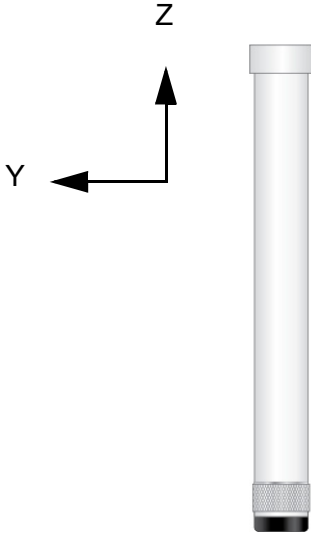
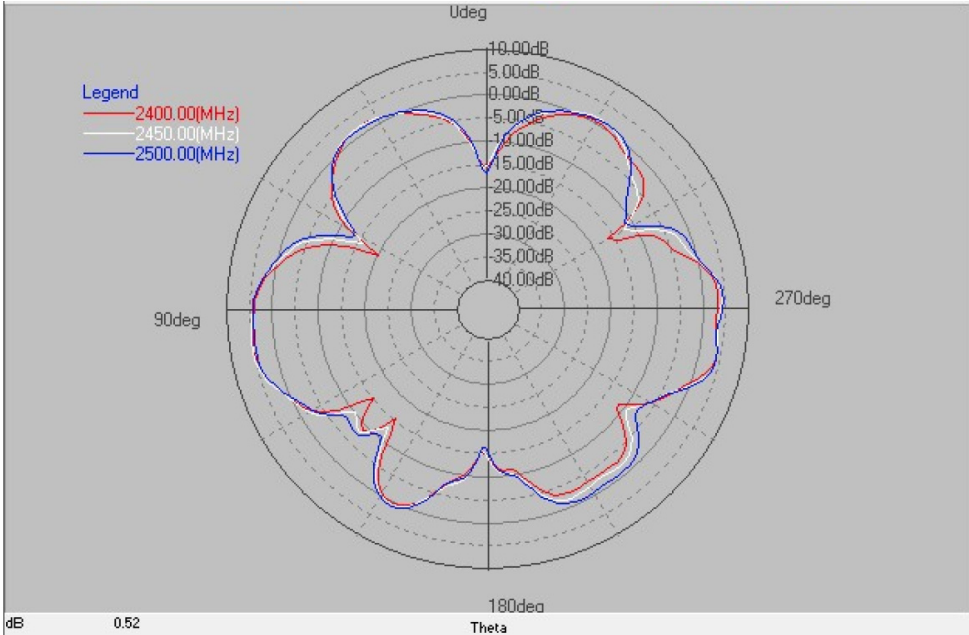
- “2.4GHz Antennas” on page 82
- “5GHz Antennas” on page 85

2.4GHz Antennas

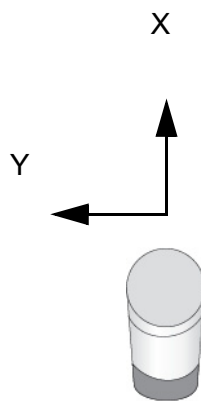
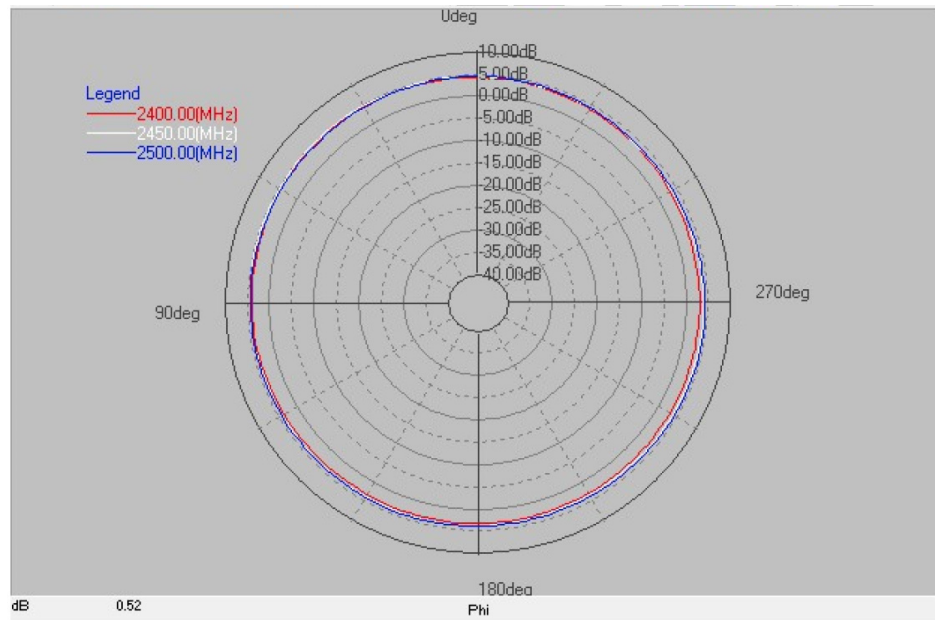
X - Z Plane (E-total)



Y - Z Plane (E-total)

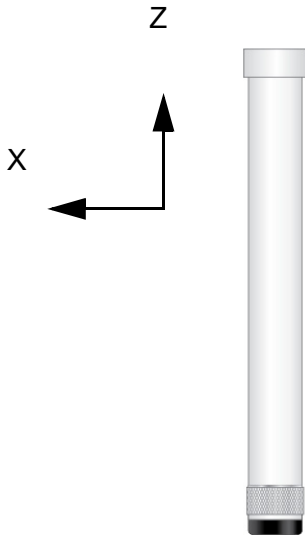
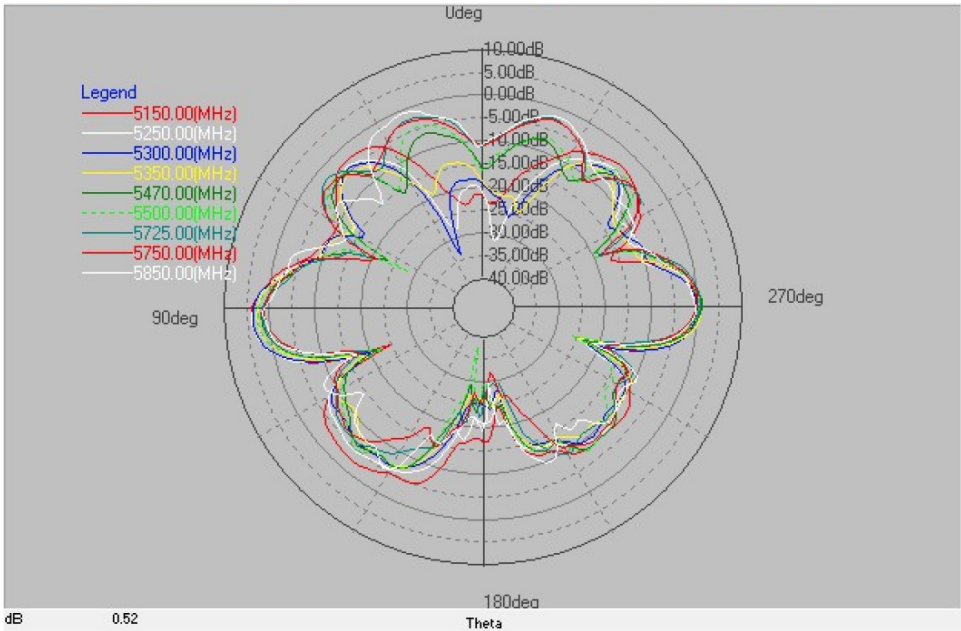


X - Y Plane (E-total)

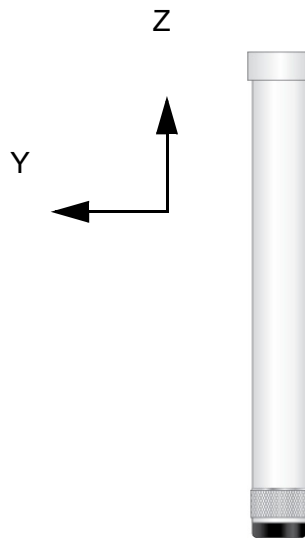
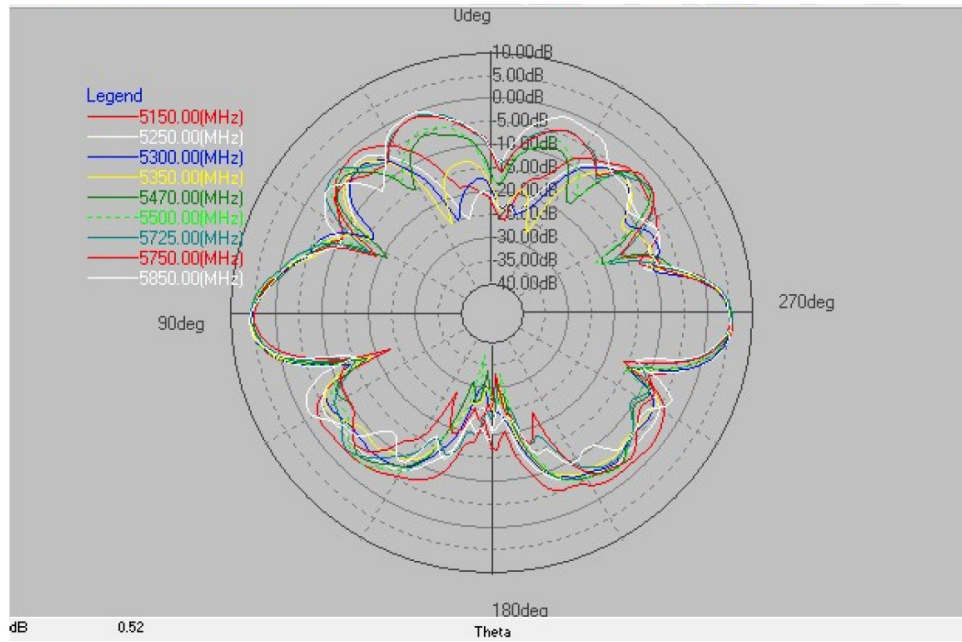


5GHz Antennas

X - Z Plane (E-total)



Y - Z Plane (E-total)



X - Y Plane (E-total)

