

AT-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 meets the following standards:

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. *or* 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.

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
- RCM
- Wi-Fi CERTIFIED

Electromagnetic Compatibility (EMC)

- EN 301 489-1
- EN 301 489-17
- EN 55032
- EN 55024
- EN 55035
- EN 61000-4-2
- EN 61000-4-3
- EN 61000-4-4
- EN 61000-4-5

- EN 61000-4-6
- EN 61000-4-8
- AS/NZS CISPR 32
- FCC 47 CFR Part 15, Subpart B
- ICES-003


Radio Equipment

- EN 300 328
- EN 301 893
- AS/NZS 4268
- FCC 47 CFR Part 15, Subpart C
- FCC 47 CFR Part 15, Subpart E
- RSS-247
- RSS-Gen
- RSS-102
- FCC: OET Bulletin No. 65 Supplement C
- EN 50385

Safety

- EN 60950-1
- IEC 60950-1
- TUV-T
- UL 60950-1
- UL 60950-22
- CAN/CSA C22.2 No. 60950-1-07
- CAN/CSA-C22.2 No. 60950-22-07
- IEC 60950-22
- IEC 60529
- EN 62368-1
- UL 62368-1
- IEC 62368-1

Translated Safety Statements

Important: 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.

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Preface

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

- “Safety Symbols Used in this Document” on page 10
- “Professional Installation Instructions” on page 11
- “Contacting Allied Telesis” on page 12

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 personal

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

Installation location

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

Contacting Allied Telesis

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

- ❑ 24/7 Online Support — Enter our interactive support center to search for answers to your product questions in our knowledge database, check support tickets, learn about Return Merchandise Authorizations (RMAs), and contact Allied Telesis technical experts.
- ❑ USA and EMEA phone support — Select the phone number that best fits your location and customer type.
- ❑ Hardware warranty information — Learn about Allied Telesis warranties and register your product online.
- ❑ Replacement Services — Submit an RMA request via our interactive support center.
- ❑ Documentation — View the most recent installation and user guides, software release notes, white papers, and data sheets for your products.
- ❑ Software Downloads — Download the latest software releases for your managed products.

For sales or corporate information, go to www.alliedtelesis.com/purchase.

Chapter 1

Product Description

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

- ❑ “Overview” on page 14
- ❑ “Features” on page 16
- ❑ “LEDs” on page 17
- ❑ “LAN Port” on page 18
- ❑ “Reset Button” on page 20
- ❑ “Cable Specifications” on page 21

Overview

The AT-TQ5403e access point is an enterprise-class outdoor wireless access point designed to expand wireless networks to outdoor venues, such as ski and beach resorts, sports arenas, or college and corporate campuses.

The access point comes with one PoE+ capable LAN port to connect to the network as well as the power supply.

This device can be mounted on a wall or pole.

The AT-TQ5403e access point is illustrated in Figure 1.



Figure 1. AT-TQ5403e Access Point

The front panel components of the AT-TQ5403e access point are illustrated in Figure 2.

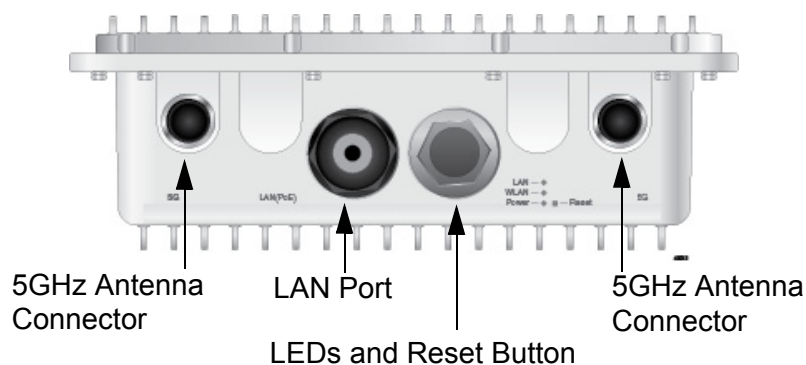


Figure 2. AT-TQ5403e Access Point Antenna Front Panel

The back panel components of the AT-TQ5403e access point are illustrated in Figure 3.

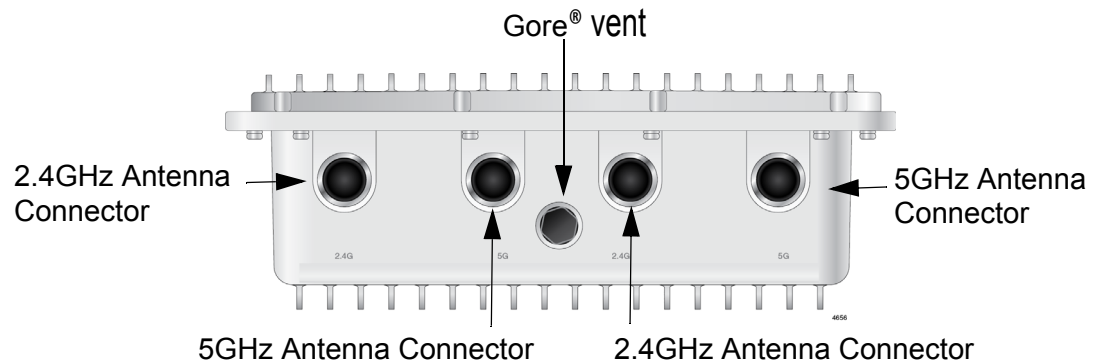


Figure 3. AT-TQ5403e Access Point Antenna Back Panel

The components are listed in Table 1.

Table 1. Components of the Access Point

Component	Description
5 GHz Antenna Connector	N-type female connector for the 5 GHz antenna
2.4 GHz Antenna Connector	N-type female connector for the 2.4 GHz antenna
LAN Port (PoE Input)	The LAN port connects the access point to your local area network. It supports PoE+. This PoE+ capable LAN port is the only way to supply power to this access point. You must connect this LAN port to a PoE-capable switch.
LEDs	Indicates the following status: <ul style="list-style-type: none"> <input type="checkbox"/> LAN <input type="checkbox"/> WLAN <input type="checkbox"/> Power
Reset Button	The reset button reboots the system. Remove the clear dust cover and press the button using your finger.
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.

Features

The main features of the product are listed here:

- Tri-radio: 2.4 GHz x 1 and 5 GHz x 2
- IEEE 802.11a/b/g/n/ac
- 2x2:2ss MIMO
- Maximum capacity 2.4 GHz: 300 Mbps
- Maximum capacity 5 GHz: 867 Mbps
- Wireless Distribution System (WDS) bridges
- Neighbor AP detection
- Multiple SSIDs
- One 10/100/1000Base-T Ethernet port with Auto-Negotiation, auto MDI/MDIX, and IEEE 802.3at Power over Ethernet (PoE+)
- IEEE 802.3 (10Base-T), IEEE 802.3u (100Base-TX), and IEEE 802.3ab (1000Base-T) compliance on the Ethernet port
- MAC address filtering for wireless access security
- Broadcast and multicast rate limiting
- DHCP client
- RADIUS accounting with external RADIUS server
- Network Time Protocol (NTP) client
- Domain name server (DNS) client
- IEEE 802.1x authentication
- WPA-Personal and WPA-Enterprise with WPA, WPA2, TKIP, and CCMP (AES) authentication and encryption
- Static WEP encryption
- HTTP and HTTPS web browser management
- SNMPv1 and v2c management
- Quality of Service
- Event log
- Syslog client
- Outdoor installation on a wall or pole
- External antenna surge protector
- N-type female antenna connectors for replacing antennas
- Aluminum chassis to repel ultraviolet (UV) radiation and withstand high temperature

LEDs

The LEDs on the AT-TQ5403e access point are described in Table 2.

Table 2. LEDs

LED	State	Description
LAN	Solid Green	A link is established and the port is operating normally.
	Blinking Green	Data is being transmitted/received.
	Off	A link is not established.
WLAN	Solid Green	One or more radio among Radio1, Radio2, and Radio3 is enabled.
	Off	Radio1, Radio2, and Radio3 are all disabled.
Power	Solid Green	The unit is receiving power that is within the normal operating range.
	Blinking Green	The access point is booting up or upgrading the firmware.
	Off	The power supply is not receiving power through the LAN port.

LAN Port

The AT-TQ5403e access point has one LAN port to connect to your Local Area Network (LAN), typically through an Ethernet switch.

Power over Ethernet (PoE)

The AT-TQ5403e access point supports Power over Ethernet Plus (PoE+) on the LAN port. The access point is a PoE+ class 4 powered device with a maximum power consumption of 25.5 watts. When the port is connected to a PoE+ Ethernet switch, the access point receives its power over the network cable that carries the network traffic. The LAN port is the only way to supply the power to the device.

Note

The PoE 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 49.

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.

Port Pinouts

Refer to Table 11 on page 49 for the port pinouts of the LAN port when it is operating at 10 or 100 Mbps in the MDI configuration and Table 12 on page 50 for the MDI-X configuration. Refer to Table 13 on page 50 for the port pinouts when the port is operating at 1000 Mbps.

Reset Button

The reset button on the front panel is used to return the parameter settings of the device to its default values. You might use the button if you want to discard the current configuration of the device or because you forgot the password to the manager account and cannot manage the device.

To reset the device, remove the clear cap on the front panel and press the black button for five seconds and release. The reset button is protected to prevent from being accidentally pressed.

By default, the reset button is disabled. To enable reset button, see a User Guide for this access point.

Cable Specifications

To connect the AT-TQ5403e Access Point to your LAN, you must provide cables. Here are cable requirements and options.

Cable Requirements

The cable requirements for the LAN port are listed in Table 3.

Table 3. Twisted Pair Cable for the LAN Port

Cable Type	10Mbps	100Mbps	1000Mbps
	PoE+	PoE+	PoE+
Standard TIA/EIA 568-A-compliant Category 5 shielded or unshielded cabling with 100 ohm impedance and 100 MHz frequency.	Yes	Yes	No
Standard TIA/EIA 568-B-compliant Enhanced Category 5 (Cat 5e) shielded or unshielded cabling with 100 ohm impedance and 100 MHz frequency.	Yes	Yes	Yes
Standard TIA/EIA 568-B-compliant Category 6 or 6a shielded cabling.	Yes	Yes	Yes

Maximum Distance

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

Chapter 2

Installing the Access Point

This chapter describes how to install the AT-TQ5403e access point. This chapter contains the following sections:

- ❑ “Reviewing Safety Precautions” on page 24
- ❑ “Unpacking the Access Point” on page 27
- ❑ “Attaching the Ground Cable to the Access Point” on page 30
- ❑ “Connecting the Access Point with the Ethernet Cable” on page 32
- ❑ “Attaching the Antennas to the Access Point” on page 34
- ❑ “Installing the Access Point on a Wall” on page 36
- ❑ “Installing the Access Point on a Pole” on page 40
- ❑ “Starting the Initial Management Session on the Access Point” on page 43
- ❑ “Setting the Country Setting” on page 45

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 you begin to install the access point.

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

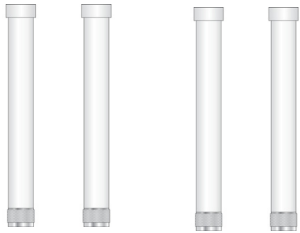

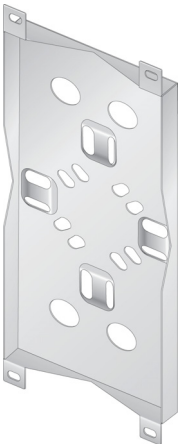

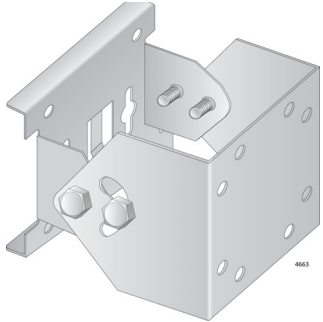



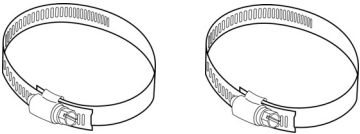
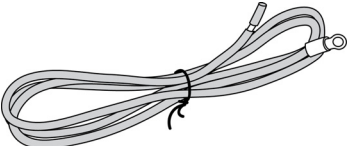

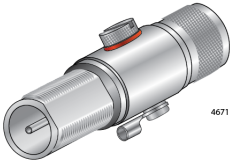
Name	Component
4 x 5GHz Antenna	
2 x 2.4GHz Antenna	
Mounting Base	

Table 4. Components in the Shipping Boxes (Continued)

Name	Component
4 Sets of a Screw, Washer, and Spring Washer to attach the mount base to the access point	
Pole-mount Bracket	
4 Sets of a Hex-head bolt, Washer, Spring Washer for the Pole-mount Brackets	
2 x U-Bold	
4 x Nut for U-Bold	
2 x Pole Strap	
Ground cable	
1 Set of Screw, Washer, Spring Washer for the Ground Cable	
6 x external surge protector	

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

Attaching the Ground Cable to the Access Point

To protect the device from lightning strikes and against electrostatic discharge (ESD), attach the ground cable to the access point.

Guidelines

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

- Before installing the mounting base to the access point, attach the ground cable to the access point.
- Connect the ground cable straight to the earth ground; cut off the extra length of the ground cable.
- Prevent the ground cable from being sharply bent, looped, or coiled.
- 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 a ground cable.

What to Prepare for Attaching the Ground Cable

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

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

Note

A Phillip-head screwdriver is *not* included in the shipping box.

Attaching the Ground Cable to the Access Point

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

1. Align the ground cable hole on the access point with the ring terminal of the ground cable. See Figure 4.

Note

You can select one of two ground cable holes located at the bottom corners on the back of the access point.

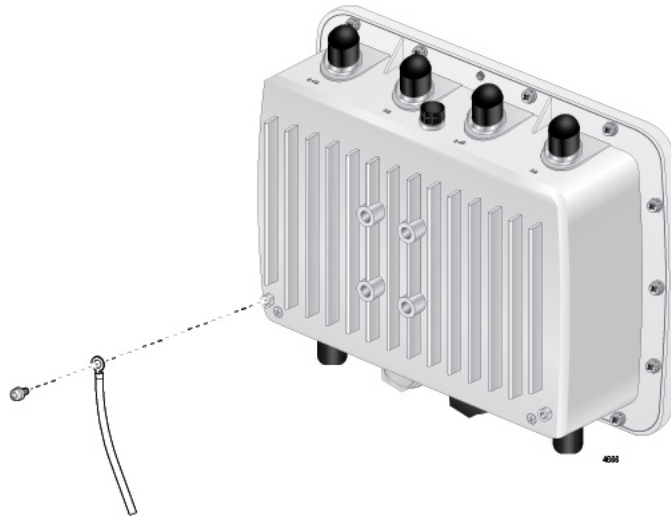


Figure 4. Aligning the Access Point with Ground Cable

Note

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

2. Drive the screw through the holes to attach the ground cable to the access point.
3. Cut off the extra length of the ground cable to make it connected straight to the ground point.
4. Attach the other terminal of the ground cable to a circuit breaker, ground rod, or earth ground.

Connecting the Access Point with the Ethernet Cable

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

1. Unscrew the cap at the LAN port to remove the cap from the access point. See Figure 5.

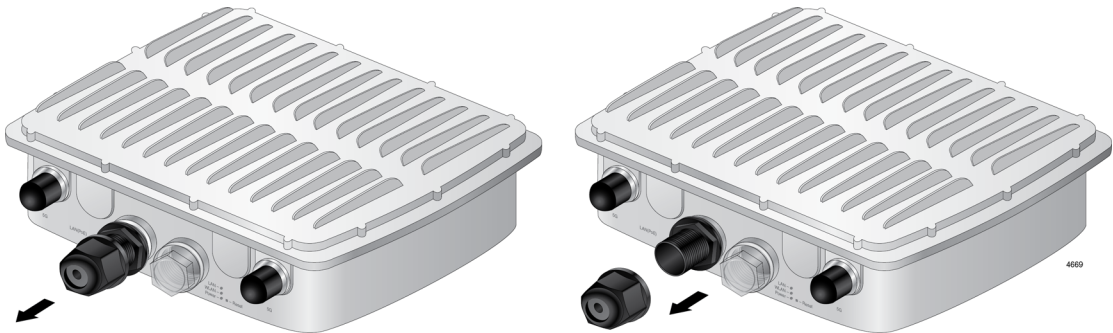


Figure 5. Removing the Cap from the LAN Port

2. Store the cap in a secured place.
3. Take the sealing nut apart.
4. Pass the LAN cable through the sealing nut, and attach the sealing insert and clamping claw to the cable. See Figure 6.

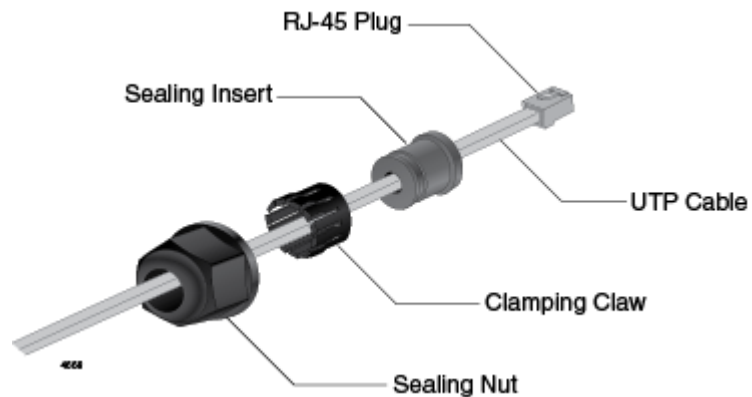


Figure 6. Applying the Sealing Parts to the LAN Cable

5. Connect the RJ-45 plug into the LAN port and screw the sealing nut to the access point. See Figure 7 on page 33.

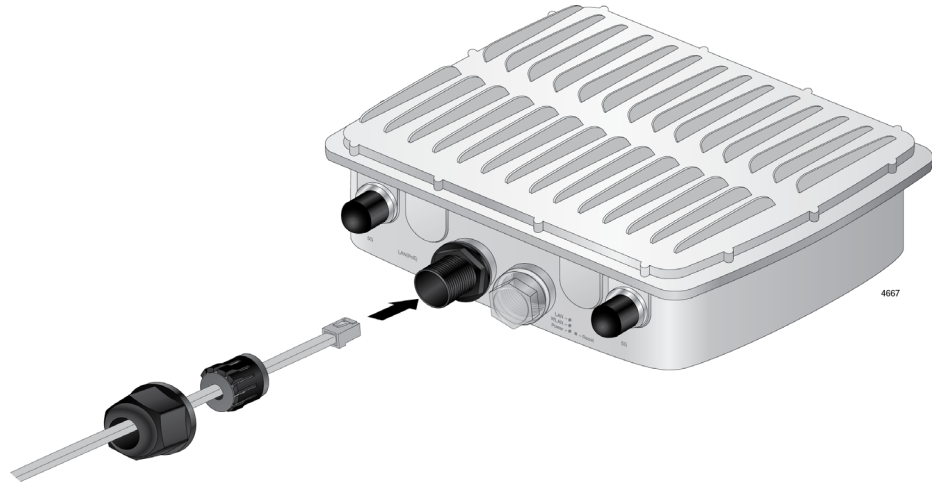


Figure 7. Connecting the LAN Cable and Attaching the Sealing Nut

6. Connect the other RJ-45 plug to the PoE switch.

Attaching the Antennas to the Access Point

To install the antennas, perform the following procedure:

1. Remove the blind caps covering the antenna connectors from the main unit.
2. Attach a surge protector to an antenna connector. See Figure 8.

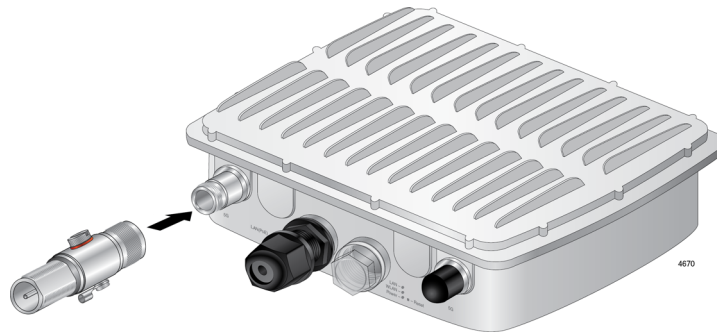


Figure 8. Attaching a Surge Protector to an Antenna Connector

3. Screw an antenna into the surge protector that you just attached to the access point. See Figure 9.

Note

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

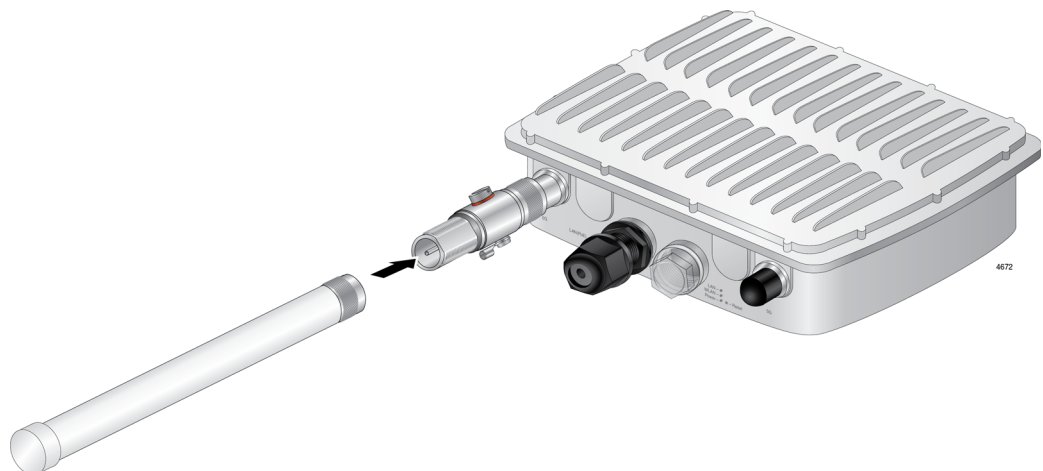


Figure 9. Installing an Antennas to the Surge Protector

4. Repeat Step 2 and Step 3 for the rest of the antennas. See Figure 10.

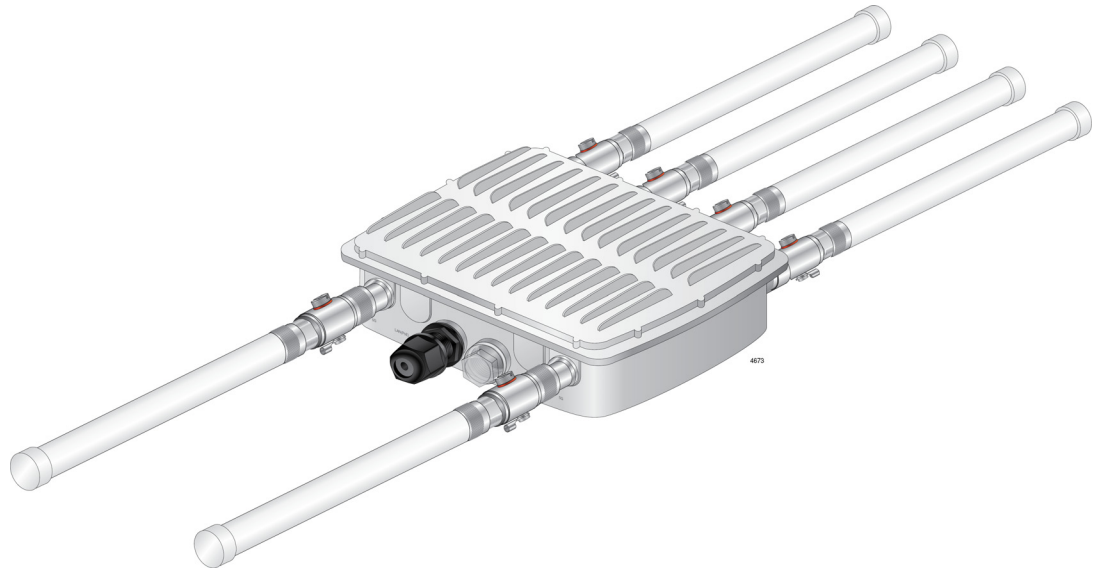


Figure 10. Installing the Antennas to the Access Point

Installing the Access Point on a Wall

The AT-TQ5403e access point can be mounted on a wall.

To install the access point, perform the following procedures:

Guidelines

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

- ❑ Attach the ground cable before attaching the mounting base to the access point.
- ❑ 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 the front panel down as shown in Figure 12.

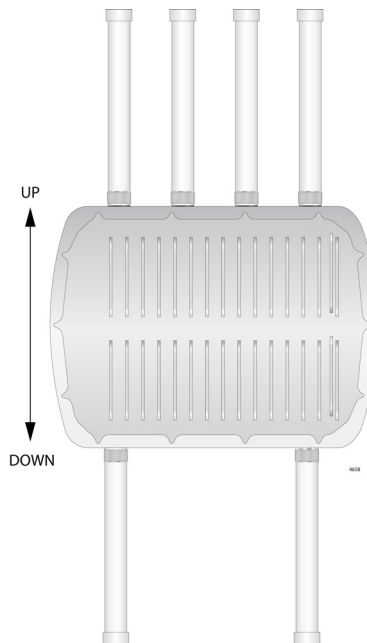


Figure 11. Orientation of the Access Point

- ❑ The mounting base can be in a vertical or horizontal position. See Figure 12 on page 37.

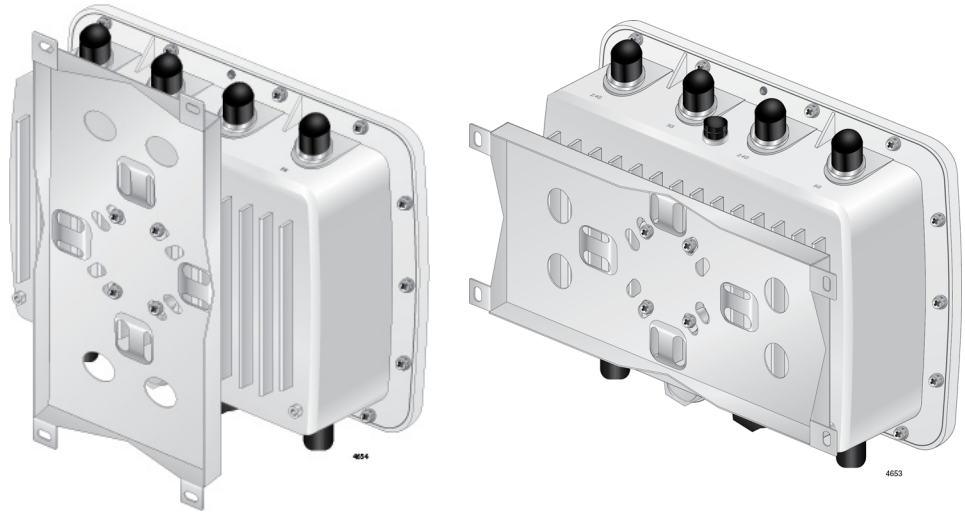


Figure 12. Two Orientations of the Mounting Base

What to Prepare for Wall Installation

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

- AT-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 in the shipping box.

Installing the Access Point on a Wall

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

1. Review “Guidelines” on page 36.
2. Orient the mounting base to the access point.

Note

The mounting base can be in a vertical or horizontal position. see Figure 12.

3. Using the mounting base as a template, mark four holes with a pencil. See Figure 13.

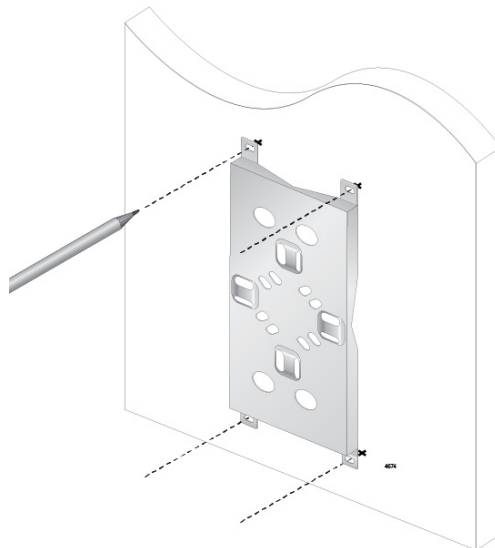


Figure 13. Mounting Base Hole Dimensions

4. Pre-drill the marked locations on the wall.
5. Attach the mounting base to the access point with the screws using a Phillips-head screwdriver. See Figure 14.

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 30.

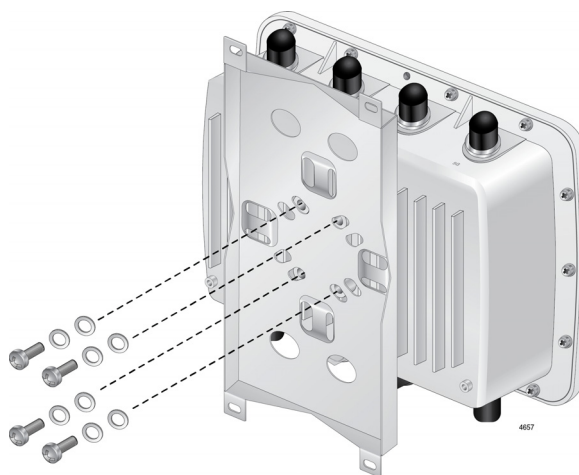


Figure 14. Attaching the Mounting Base to the Access Point

6. Install the four sets of bolts and wall anchors into the holes you made in Step 4.
7. Attach the nuts and washers to the bolts in the wall to install the access point unit. See Figure 15.

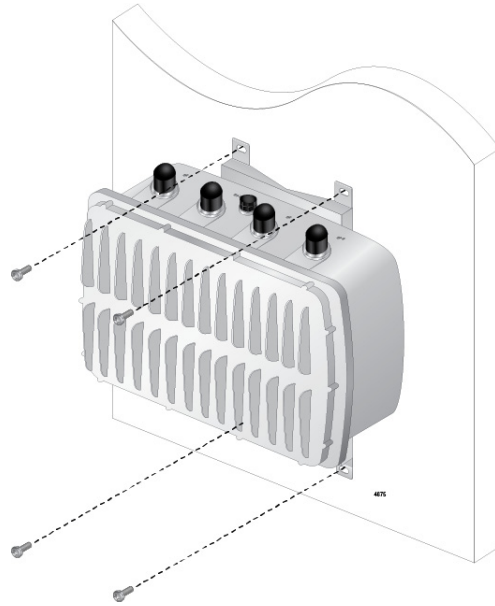


Figure 15. Installing to the Wall Using Bolts

Installing the Access Point on a Pole

The AT-TQ5403e access point can be mounted on a vertical pole or horizontal pole. see Figure 16.

Note

The pole mount bracket is angle-adjustable.

Guidelines for Pole Installation

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

- The pole mount bracket has two hex-head bolts that allow you to adjust the position of the access point upward or downward.
- The access point must be installed the front panel down as shown in Figure 16.

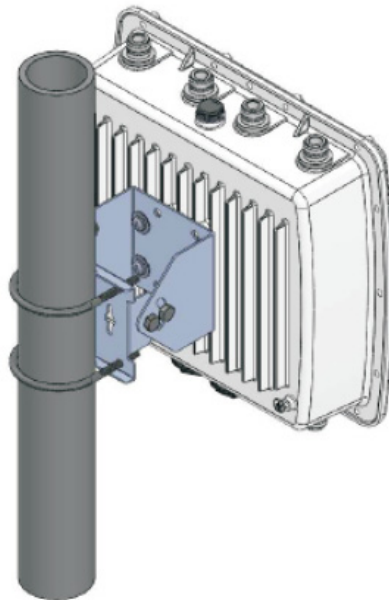


Figure 16. Pole Installation of the Access Point

What to Prepare for Pole Installation

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

- AT-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 in the shipping box.

- 10mm socket and ratchet or adjustable wrench (for adjusting the position of the access point)

Installing the Access Point on a Pole

To install the access point on a pole, perform the following procedure:

1. Review “Guidelines for Pole Installation” on page 40.
2. Attach the pole mount brackets to the pole with two U-bolts. See Figure 17.

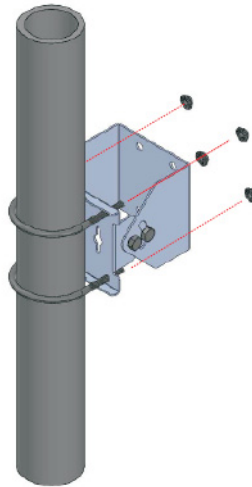


Figure 17. Attaching the Pole-Mount Brackets to the Pole

3. Attach the access point to the pole-mount bracket with the screws using a Phillips-head screwdriver. See Figure 18.

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 30.

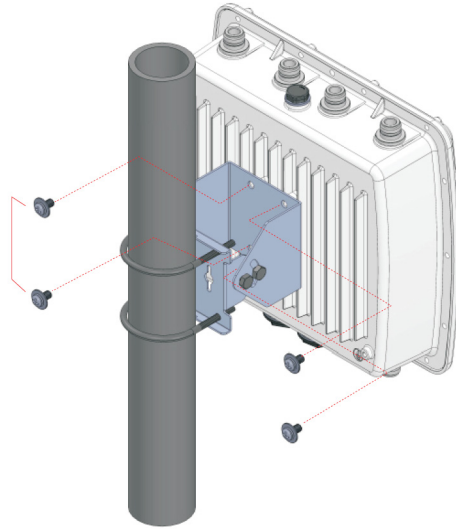


Figure 18. Attaching the Access Point to the Pole-Mount Brackets

Adjusting the Position Upward or Downward

If you want to position the access point upward or downward, do the following procedures:

1. Loosen 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.

Starting the Initial 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 for the first time, 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 initial 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 19 on page 44.

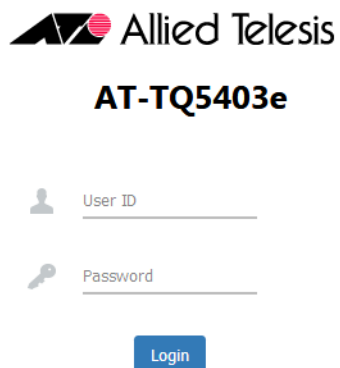


Figure 19. Login Window

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 20.

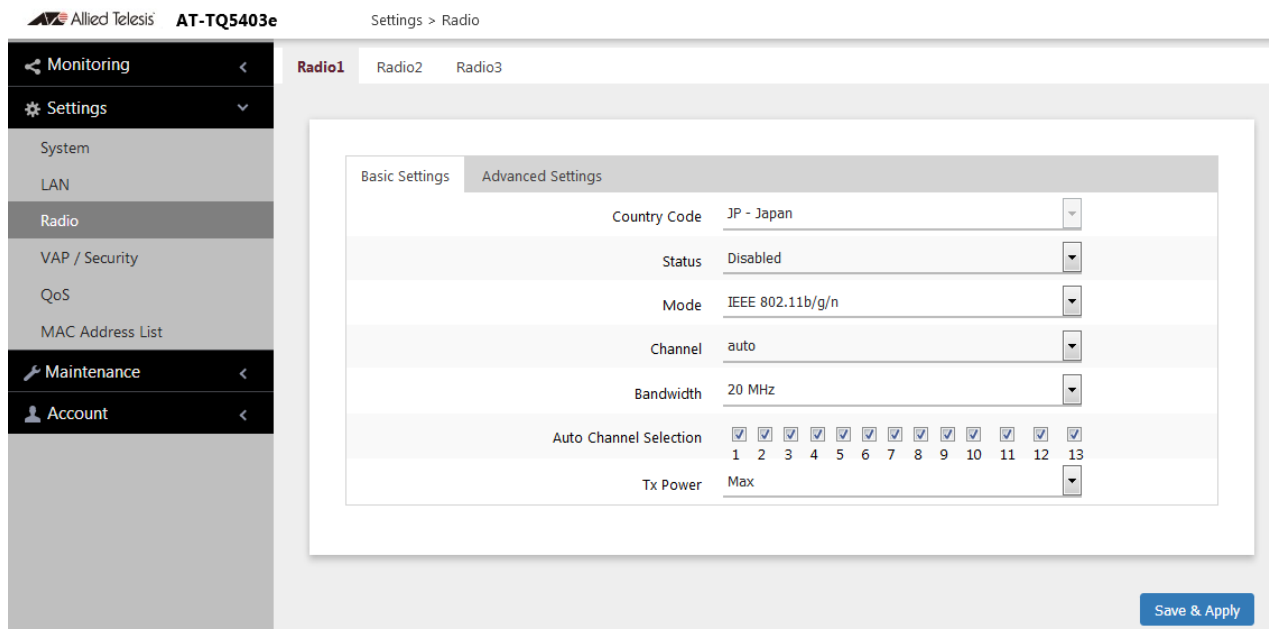


Figure 20. Basic Settings for Radio1

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 more 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 48
- “Antenna Specifications” on page 48
- “LAN Port” on page 49
- “Safety and Electromagnetic Emissions Certifications” on page 51
- “Operation Frequency Information” on page 52
- “IC Statements” on page 53
- “Europe - EU Declaration of Conformity” on page 55

Physical Specifications

Table 5. AT-TQ5403e Physical Specifications

Dimensions (W x D x H)	260 mm x 230 mm x 85 mm (8.6 in. x 9.8 in. x 2.2 in.)
Weight of the device	2.8 kg (6.2 lb.)
Weight of the device with antennas	4.0 kg (8.8 lb.)
Weight of the device with antennas and wall mount	4.4 kg (9.7 lb.)

Power Specifications

Table 6. AT-TQ5403e Maximum Power Consumption

AT-TQ5403e	15.8 watts
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Environmental Specifications

Table 7. 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 8. Antenna Specifications

Antenna type	Dipole
Antenna Connector	N-type

Table 9. 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 10. 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 21 illustrates the pin layout of the LAN port.

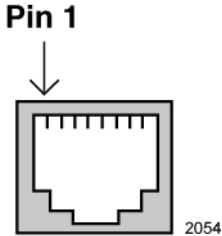


Figure 21. Pin Layout for the RJ45 Connector on the LAN Port

Table 11 lists the pin signals when the port is operating in the MDI configuration at 10 or 100 Mbps.

Table 11. MDI Pin Signals (10Base-T or 100Base-TX)

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

Table 12 lists the pin signals for the MDI-X configuration at 10 or 100 Mbps.

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

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

Table 13 lists the pin signals when the LAN port is operating at 1000 Mbps.

Table 13. 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 14. 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 15. 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 personal

This product is designed for specific application and needs to be installed by a qualified personal 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 destine a un usage specifique et doit etre installe par un personnel qualifie maitrisant les radiofrequences et les regles s'y rapportant. L'installation et les réglages ne doivent pas etre 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:

Non-Beamforming:

- 2412-2472 MHz: 19.07 dBm (80.81mW)
- 5180-5240 MHz: 22.43 dBm (174.82mW)
- 5260-5320 MHz: 22.52 dBm (178.79mW)
- 5500-5700 MHz: 29.12 dBm (817.50mW)

Beamforming:

- 2412-2472 MHz: 19.16 dBm (82.44mW)
- 5180-5240 MHz: 22.32 dBm (170.75mW)
- 5260-5320 MHz: 22.75 dBm (188.33mW)
- 5500-5700 MHz: 29.05 dBm (803.06mW)

