# AT-TQ4400e

Outdoor Wireless Access Point
with IEEE802.11a/b/g/n/ac Dual Radio

# Installation Guide

# 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: **Wireless access point with PoE+ powered device function**
Model Number: **AT-TQ4400e**

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. ᔕ 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. ᔕ 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 32cm 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 regulatory statements, refer to Appendix B, "Regulatory Statements" on page 49.

# 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

## Electromagnetic Compatibility (EMC)

- EN 301 489-1
- EN 301 489-17
- EN 55022
- EN 55024
- EN 61000-3-2
- EN 61000-3-3
- EN 61000-4-2
- EN 61000-4-3
- EN 61000-4-4
- EN 61000-4-5
- EN 61000-4-6
- EN 61000-4-8
- EN 61000-4-11
- AS/NZS CISPR 22
- 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
- RSS247
- 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

# 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**.

# Contents

# Preface

This guide contains the hardware installation instructions for the AT-TQ4400e Outdoor Wireless Access Point. This preface contains the following sections:

❐ "Safety Symbols Used in this Document" on page 10

❐ "Contacting Allied Telesis" on page 11

# 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.

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

## 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**.

Preface

# Chapter 1
# Product Description

This chapter describes the hardware components of the AT-TQ4400e Wireless Access Point. This chapter contains the following sections:

# Overview

The AT-TQ4400e Access Point is an enterprise-class wireless access point designed to expand wireless networks to outdoor venues, such as ski and beach resorts, sports arenas, 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.

The top panel components of the AT-TQ4400e Access Point are illustrated in Figure 1.
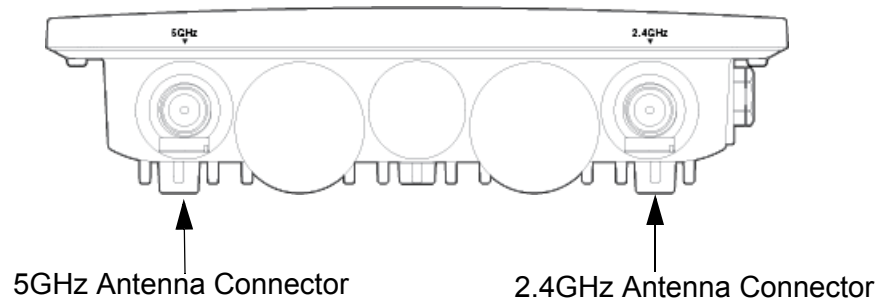


Figure 1. AT-TQ4400e Access Point Antenna Panel Top

The bottom panel components of the AT-TQ4400e Access Point are illustrated in Figure 2.
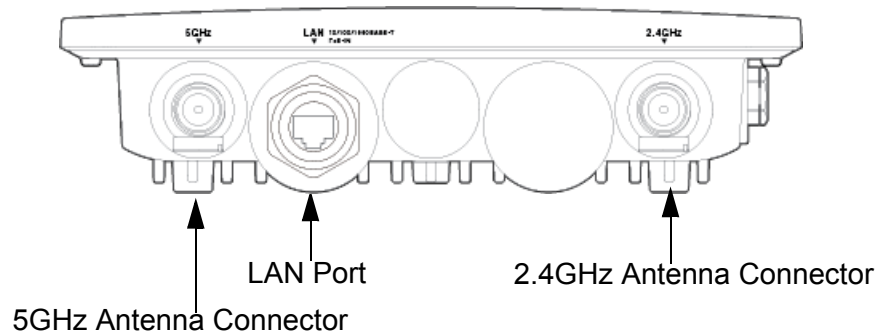


Figure 2. AT-TQ4400e Access Point Antenna Panel Bottom

Figure 3 on page 15 shows the side view of the AT-TQ4400e Access Point.
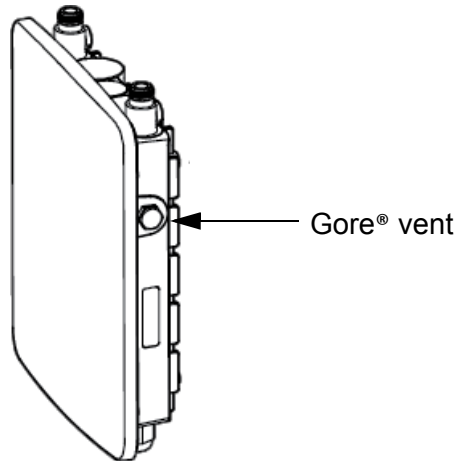
Figure 3. AT-TQ4400e Access Point Side Panel

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 1 Port (PoE Input) | The LAN port connects the access point to your wired network. It supports PoE+. The PoE+ capable LAN port is the only way to supply power to this access point. You must connect this LAN port to a PoE switch. |
| 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:

- ❒ Dual radio: 2.4 GHz and 5 GHz
- ❒ 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
- ❒ Access point clustering
- ❒ Rogue access point 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
- ❒ Virtual access points for multiple broadcast domains
- ❒ 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
- ❒ Tx Power Control (TPC)
- ❒ Outdoor installation on a wall or pole
- ❒ Antenna connectors with surge protection
- ❒ N-type female antenna connectors for replacing antennas

❒   Metallic chassis with plastic cover to repel ultraviolet (UV) radiation from the sun

# LAN Port

The AT-TQ4400e wireless 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-TQ4400e 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 16 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.

**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 45.

**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 8 on page 45 for the port pinouts of the LAN port when it is operating at 10 or 100 Mbps in the MDI configuration and Table 9 on page 46 for the MDI-X configuration. Refer to Table 10 on page 46 for the port pinouts when the port is operating at 1000 Mbps.

# Cable Specifications

To connect the AT-TQ4400e wireless 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 2.

Table 2.   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-TQ4400e Wireless Access Point. This chapter contains the following sections:

❒ "Reviewing Safety Precautions" on page 22

❒ "Unpacking the AT-TQ4400e Access Point" on page 24

❒ "Attaching the Ground Cable to the Access Point" on page 26

❒ "Connecting the Access Point with the Ethernet Cable" on page 28

❒ "Installing the Access Point on a Wall" on page 30

❒ "Installing the Access Point on a Pole" on page 34

❒ "Attaching the Antennas to the Access Point" on page 37

❒ "Starting the Initial Management Session on the Access Point" on page 38

❒ "Setting the Country Setting" on page 41

**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**

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

**Warning**
Operating Temperature. This product is designed for a maximum ambient temperature of 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**

**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**

**Warning**

This equipment shall be installed in a Restricted Access location. ☞ **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**

# Unpacking the AT-TQ4400e Access Point

To unpack the AT-TQ4400e 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 3 are included in your shipping boxes.

Table 3. Components in the Shipping Boxes
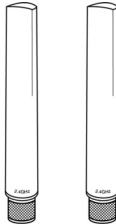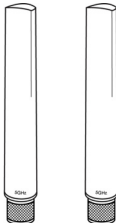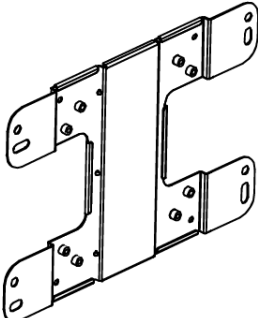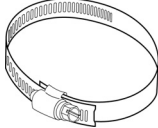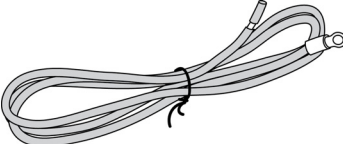
| Name | Component |
|------|-----------|
| 2 x 5GHz Antenna |  |
| 2 x 2.4GHz Antenna |  |
| Mounting Base |  |

Table 3. Components in the Shipping Boxes (Continued)

| Name | Component |
|---|---|
| Pole-mount bracket | |
| O-ring clamp | |
| Ground cable | |
| 2 x Antenna connector cap | |
| 4 x Screw for the mounting base | |
| 4 x Screw for the pole-mount bracket | |
| 1 x Screw for the ground cable | |

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-TQ4400e Access Point

□ Ground cable

□ One screw for the ground cable

□ Phillips-head screwdriver

**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 as shown in Figure 4 on page 27.
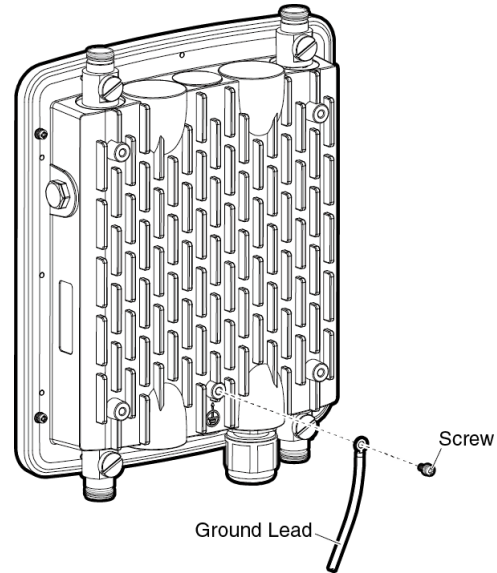
Figure 4. Aligning the Access Point with Ground Cable

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 sealing nut at the LAN port on the access point and remove the clamping claw and sealing insert. See Figure 5.
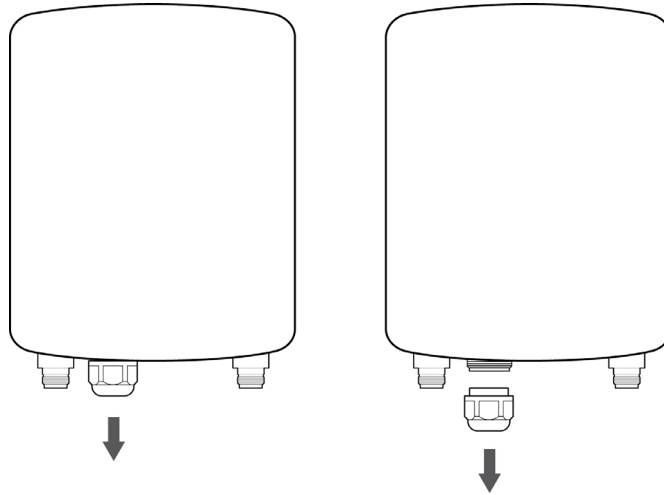


Figure 5. Removing the Sealing Nut, Clamping Claw, and Sealing Insert

2. Remove the rubber nail from the sealing insert. See Figure 6.
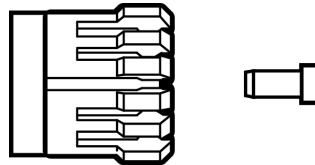


Figure 6. Removing the Rubber Nail from the Sealing Insert

3. Pass the LAN cable through the sealing nut, and attach the sealing insert and clamping claw to the cable as shown in Figure 7 on page 29.
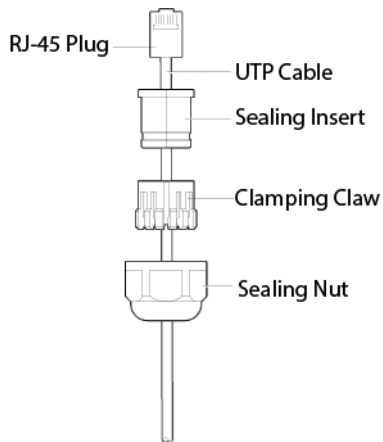
Figure 7. Applying the Sealing Parts to the LAN Cable

4.  Connect the RJ-45 plug into the LAN port and screw the sealing nut to the access point as shown in Figure 8.
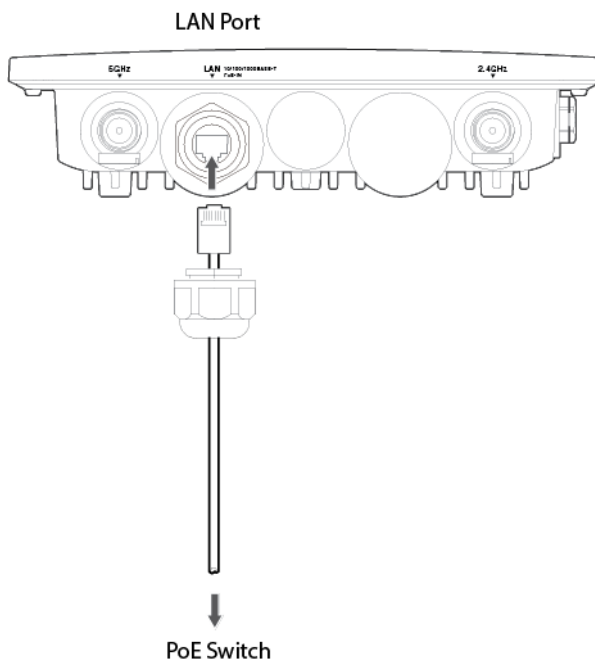


Figure 8. Connecting the LAN Cable and Attaching the Sealing Nut

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

# Installing the Access Point on a Wall

The AT-TQ4400e access point can be mounted on a concrete or regular wall. To install the access point, perform one of the following procedures:

❐ "Installing the Access Point on a Concrete Wall" on page 30

❐ "Installing the Access Point on a Regular Wall" on page 32

**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 if connecting the Ethernet cable will be difficult after the access point is installed.

❐ Attach the antennas to the access point before installing it on a wall or pole if attaching the antennas will be difficult after the access point is installed.

❐ If you are *not* installing the access point on a concrete wall, provide four tapping screws. They are *not* included in the shipping box.

**What to Prepare for Wall Installation**   You need the following items to install the access point on a wall:

❐ AT-TQ4400e 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 fro the wall, drill, Phillip-head screwdriver, and pencil are *not* included in the shipping box.

**Installing the Access Point on a Concrete Wall**   To install the access point on the wall, perform the following procedure:

1. Review "Guidelines" on page 30.

2. Using the mounting base as a template, mark four holes with a pencil. See Figure 9 on page 31 for hole dimensions.

Figure 9. Base Plate Hole Dimensions

3. Pre-drill the marked locations on the concrete wall.

4. Attach the mounting base to the access point with the screws using a Phillips-head screwdriver, as shown in Figure 10.

> **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 26.

Figure 10. Attaching the Mounting Base to the Access Point

5. Install the four sets of bolts and wall anchors into the holes you made in Step 3.

6. Attach the nuts and washers to the bolts in the concrete wall to install the access point. See Figure 11.
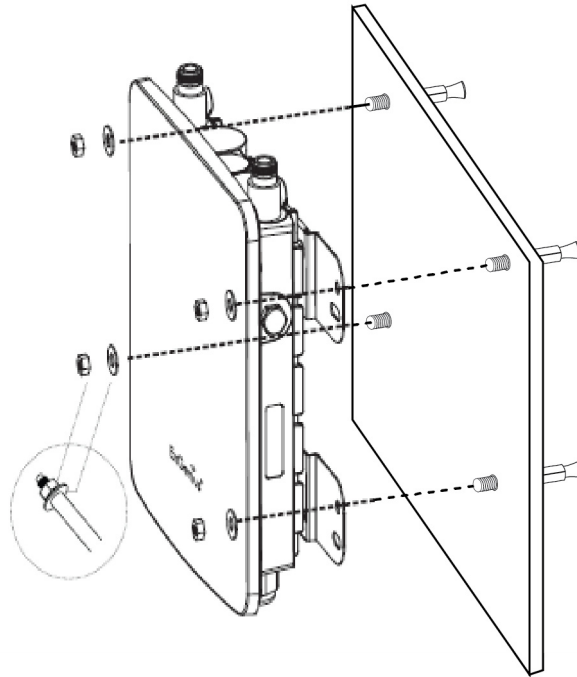


Figure 11. Installing to the Wall Using Bolts

7. Proceed to "Attaching the Antennas to the Access Point" on page 37.

**Installing the Access Point on a Regular Wall**

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

1. Using the mounting base as a template, mark four holes with a pencil. See Figure 9 on page 31 for hole dimensions.

2. Pre-drill the marked locations on the wall.

3. Attach the mounting base to the access point with the screws using a Phillips-head screwdriver, as shown in Figure 10 on page 31.

**Note**
Attach the ground cable to the access point before attaching the mounting base to the access point. See "Attaching the Ground Cable to the Access Point" on page 26.

4.  Drive the tapping screws into the holes made in Step 2 to install the access point. See Figure 12 on page 33.
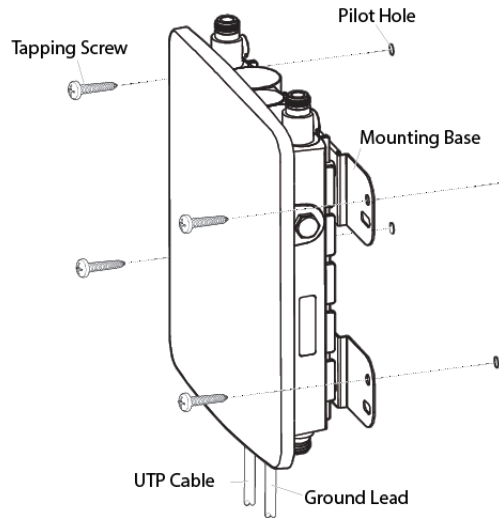
Figure 12. Installing to the Wall Using Tapping Screws

5.  Proceed to "Attaching the Antennas to the Access Point" on page 37.

# Installing the Access Point on a Pole

The AT-TQ4400e access point can be mounted on a vertical pole or horizontal pole as shown in Figure 13.
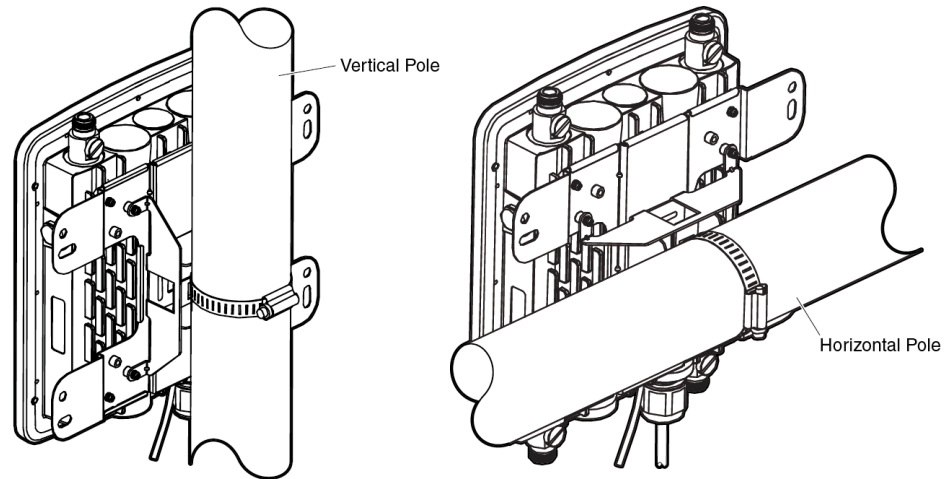


Figure 13. Pole Installation of the Access Point

**What to Prepare for Pole Installation**

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

- ❒ AT-TQ4400e Access Point
- ❒ Mounting base
- ❒ Four screws for the mounting base
- ❒ Pole-mounting bracket
- ❒ Four screws for the pole-mounting bracket
- ❒ O-ring clamp
- ❒ Phillips-head screwdriver
- ❒ Flat-head screwdriver

**Note**
Phillip-head and flat-head screwdrivers are *not* included in the shipping box.

**Installing the Access Point on a Pole**

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

1. Review "Guidelines" on page 30.

2. Attach the mounting base to the access point with the screws using a Phillips-head screwdriver. See Figure 10 on page 31.

> **Note**
> Attach the ground cable to the access point before attaching the mounting base to the access point. See "Attaching the Ground Cable to the Access Point" on page 26.

3.  Orient the pole-mount bracket for installing to either a vertical pole or a horizontal pole. See Figure 14.



Installing to a Vertical Pole

Installing to a Horizontal Pole
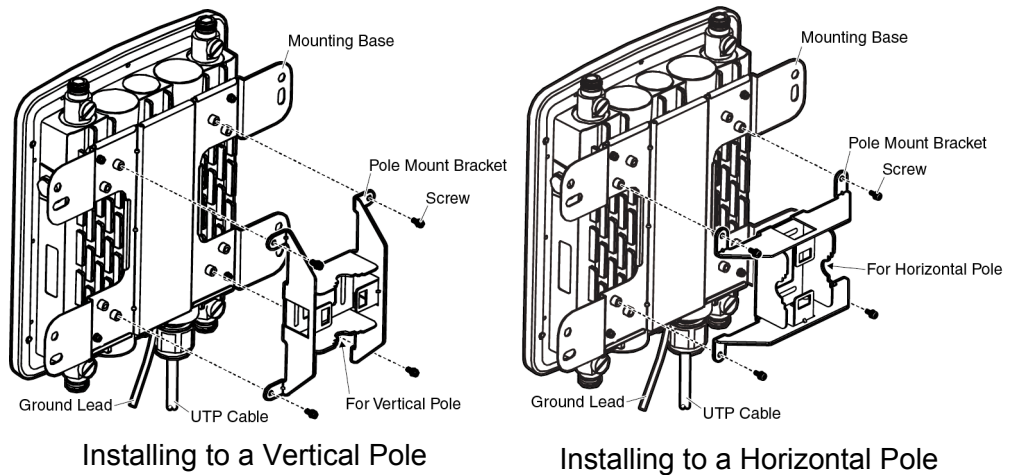
Figure 14. Attaching the Pole-Mount Bracket to the Mounting Base

4.  Drive the screws to attach the pole-mount bracket to the mounting base using a Phillips-head screwdriver.

5.  Attach the O-ring clamp to the pole-mount bracket. See Figure 15.



Installing to a Vertical Pole

Installing to a Horizontal Pole
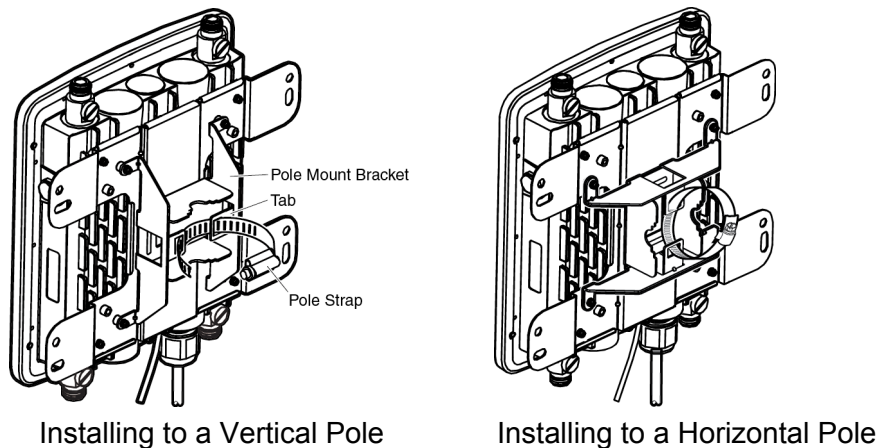
Figure 15. Attaching the O-Ring Clamp to the Pole-Mount Bracket

6.  Install the unit to the pole and tighten the O-ring clamp using the flat-head screwdriver.

7. Proceed to "Attaching the Antennas to the Access Point" on page 37.

## Attaching the Antennas to the Access Point

To attach the antennas to the access point, perform the following procedure:

1. Screw a 5GHz antenna into the 5GHz antenna connector on the top panel of the access point. See Figure 16.
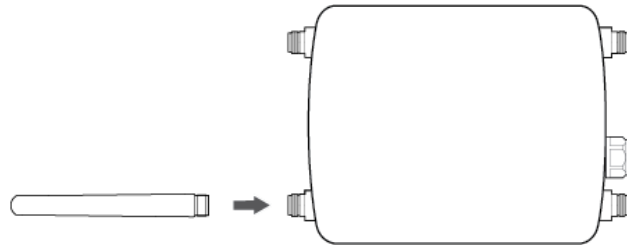


Figure 16. Installing Antennas to the Access Point

2. Repeat Step 1 for the second 5GHz antenna to screw into the 5GHz antenna connector on the bottom panel of the access point.

3. Screw a 2.4GHz antenna into the 2.4GHz antenna connector on the top panel of the access point. See Figure 16.

4. Repeat Step 3 for the second 2.4GHz antenna to screw into the 2.4GHz antenna connector on the bottom panel of the access point.

# Starting the Initial Management Session on the Access Point

When you connect the access point to the PoE switch 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 access point uses the IP address the server assigns to it. If there is no DHCP server, it uses the default IP address 192.168.1.230.

If your network does not have a DHCP server, you must change the IP address of your management PC to match the subnet of the default address of the access point. If your network is divided into virtual LANs (VLANs), be sure to connect the access point and your management PC to ports on a PoE switch that are members of the same VLAN.

If your network has a DHCP server, use the IP address the server assigns it to start the management session.

To start the initial management session, perform one of the following:

❐ "Starting the Initial Management Session without a DHCP Server" on page 38

❐ "Starting the Initial Management Session with a DHCP Server" on page 39

> **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.

## Starting the Initial Management Session without a DHCP Server

This procedure explains how to start the initial management session on the access point when the LAN port is connected to a PoE switch on a network that does not have a DHCP server.

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.  Change the IP address on your management PC to 192.168.1.*n.*

    The *n* is any number from 1 to 254, except 230. Refer to the documentation that accompanies your PC for instructions on how to set the IP address.

3.  Set the subnet mask on your management PC to 255.255.255.0.

4.  Start the web browser on your management PC.

5.  Enter the IP address 192.168.1.230 in the URL field of the browser.

    The logon window appears as shown in Figure 17.

.



Figure 17. Logon Window

6.  Enter "manager" for the username and "friend" for the password.

    The username and password are case-sensitive.

**Starting the Initial Management Session with a DHCP Server**

This procedure explains how to start the initial management session on the access point when the LAN port is connected to a network that has a DHCP server. This procedure assumes that you have already configured the DHCP server to assign the access point all the necessary configuration information (for example, IP address and default gateway) for your network.

To start the management session, perform the following procedure:

1.  Connect the access point to a PoE switch.

2.  Start the web browser on your management PC.

3.  Enter the IP address of the access point in the URL field of the browser.

    ---
    **Note**
    Use the IP address assigned to the access point by the DHCP server. If you do not know the address, refer to the DHCP server.
    ---

The logon window appears as shown in Figure 17 on page 39.

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 Wireless Settings from the Manage menu.

   The access point displays the Modify wireless settings window, shown in Figure 18.



Figure 18. Modify Wireless Settings Window

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 both radios on the access point.

   This procedure does not require clicking the Update button.

   You must now reboot the access point. The new country setting is not active until the unit is rebooted. To reboot the unit, either power off and on the unit or continue with these steps:

4. From the Maintenance menu, select Configuration.

5. Click the Reboot button in the To Reboot the Access Point section of the "Manage the Access Point's Configuration" window.

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.

   For more instructions on how to configure the features of the access point, refer to the *AT-TQ Wireless Access Point Series User's Guide*.

# Appendix A

# Technical Specifications

This appendix contains the following sections:

❒ "Physical Specifications"

❒ "Environmental Specifications"

❒ "Power Specifications" on page 44

❒ "LAN Port" on page 45

❒ "Safety and Electromagnetic Emissions Certifications" on page 47

## Physical Specifications

Table 4.  AT-TQ4400e Physical Specifications

| | |
|---|---|
| Dimensions (W x D x H) | 218 mm x 250 mm x 55.5 mm (8.6 in. x 9.8 in. x 2.2 in.) |
| Weight | 2 kg (4.4 lb.) |

## Environmental Specifications

Table 5.  Environmental Specifications

| | |
|---|---|
| Operating Temperature of the Access Point | -40° C to 65° C (32° F to 104° F) |
| Storage Temperature | -40° C to 70° C (-4° F to 140° F) |
| Operating Humidity | 0% to 95% non-condensing |
| Storage Humidity | 0% to 95% non-condensing |
| Altitude of operation | Up to 2000m |

# Power Specifications

Table 6.   AT-TQ4400e Maximum Power Consumption

| AT-TQ4400e | 19.4 watts |
|------------|------------|

## LAN Port

Table 7.   LAN Port Specifications

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

Figure 19 illustrates the pin layout of the LAN port.
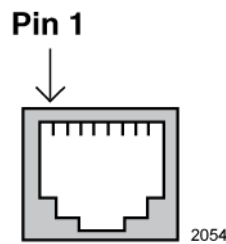


Figure 19. Pin Layout for the RJ45 Connector on the LAN Port

Table 8 lists the pin signals when the port is operating in the MDI configuration at 10 or 100 Mbps.

Table 8.   MDI Pin Signals (10Base-T or 100Base-TX)

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

Table 9 lists the pin signals for the MDI-X configuration at 10 or 100 Mbps.

Table 9.   MDI-X Pin Signals (10Base-T or 100Base-TX)

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

Table 10 lists the pin signals when the LAN port is operating at 1000 Mbps.

Table 10. 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 11.   Safety and Electromagnetic Emissions Certificates

| | |
|---|---|
| Standard Compliance | RoHs compliant<br>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<br>FCC/IC<br>RCM<br>Wi-Fi CERTIFIED |
| Electromagnetic Compatibility (EMC) | EN 301 489-1<br>EN 301 489-17<br>EN 55022<br>EN 55024<br>EN 61000-3-2<br>EN 61000-3-3<br>EN 61000-4-2<br>EN 61000-4-3<br>EN 61000-4-4<br>EN 61000-4-5<br>EN 61000-4-6<br>EN 61000-4-8<br>EN 61000-4-11<br>AS/NZS CISPR 22<br>FCC 47 CFR Part 15, Subpart B<br>ICES-003 |
| Radio Equipment | EN 300 328<br>EN 301 893<br>AS/NZS 4268<br>FCC 47 CFR Part 15, Subpart C<br>FCC 47 CFR Part 15, Subpart E<br>RSS247<br>RSS-Gen<br>RSS-102<br>FCC: OET Bulletin No. 65 Supplement C<br>EN 50385 |

Table 11.   Safety and Electromagnetic Emissions Certificates (Continued)

| Safety | EN 60950-1<br>IEC 60950-1<br>TUV-T<br>UL 60950-1<br>UL 60950-22<br>CAN/CSA C22.2 No. 60950-1-07<br>CAN/CSA-C22.2 No. 60950-22-07<br>IEC 60950-22<br>IEC 60529 |
|---|---|

# Appendix B
# Regulatory Statements

This appendix contains the following regulatory statements:

❐ "Federal Communication Commission Interference Statement" on page 50

❐ "Industry Canada Statement" on page 52

❐ "Europe - EU Declaration of Conformity" on page 55

# Federal Communication Commission Interference Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

❑ Reorient or relocate the receiving antenna.

❑ Increase the separation between the equipment and receiver.

❑ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

❑ Consult the dealer or an experienced radio/TV technician for help.

⚠️ **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

⚠️ **Caution**
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 transmission in the band from 5600MHz to 5650MHz is disabled by the software installed on the device. You cannot change this setting. This device meets all the other requirements specified in the 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 32cm between the radiator & your body.

**Country Code Selection (WiFi Devices)**

**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.

# Industry Canada Statement

This device complies with RSS-247 of the Industry Canada Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ce dispositif est conforme à la norme CNR-247 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

**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 5 150-5 250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;

(ii) le gain maximal d'antenne permis pour les dispositifs utilisant les bandes 5 250-5 350 MHz et 5 470-5 725 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 5 725-5 825 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 5 250-5 350 MHz et 5 650-5 850 MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.

**Radiation Exposure Statement:**

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 32cm between the radiator & your body.

**Déclaration d'exposition aux radiations:**

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 32cm de distance entre la source de rayonnement et votre corps.

**Professional Installation Instruction:**

1. 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.

2. Installation location

The product shall be installed at a location where the radiating antenna can be kept 32cm from nearby person in normal operation condition to meet regulatory RF exposure requirement.

3. External antenna

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

4. Installation procedure

Please refer to user's manual for the detail.

5. Warning

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

**Instructions d'installation professionnelle:**

1. Installation

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 reglages ne doivent pas etre modifies par l'utilisateur final.

2. Emplacement d'installation

En usage normal, afin de respecter les exigences reglementaires concernant l'exposition aux radiofrequences, ce produit doit etre installe de facon a respecter une distance de 32 cm entre l'antenne emettrice et les personnes.

3. Antenn externe.

Utiliser uniiquement les antennes approuvees par le fabricant. L'utilisation d'autres antennes peut conduire a un niveau de rayonnement essentiel ou non essentiel depassant les niveaux limites definis par FCC/IC, ce qui est interdit.

4. Procedure d'installation

Consulter le manuel d'utilisation.

5. Avertissement

Choisir avec soin la position d'installation et s'assurer que la puissance de sortie ne depasse pas les limites en vigueur. La violation de cette regle peut conduire a de serieuses penalites federales.

# Europe - EU Declaration of Conformity

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

**Europe – EU Declaration of Conformity**

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

❒ EN 60950-1

Safety of Information Technology Equipment

❒ EN 50385

 Product standard to demonstrate the compliance of radio base stations and fixed terminal stations for wireless telecommunication systems with the basic restrictions or the reference levels related to human exposure to radio frequency electromagnetic fields (110MHz - 40 GHz) - General public

❒ EN 300 328

Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2.4GHz ISM band andusing wide band modulation techniques; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive

❒ EN 301 893

Broadband Radio Access Networks (BRAN); 5GHz high performance RLAN; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive

❒ EN 301 489-1

Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements

❒ EN 301 489-17

Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment; Part 17: Specific conditions for Broadband Data Transmission Systems

**C€0560①**

Table 12.  Declaration of Conformity

| Country | Declaration Statement |
|---|---|
| Česky [Czech] | Allied Telesis tímto prohlašuje, že tento wireless access point je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES. |
| Dansk [Danish] | Undertegnede Allied Telesis erklærer herved, at følgende udstyr wireless access point overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF. |
| Deutsch [German] | Hiermit erklärt Allied Telesis, dass sich das Gerät wireless access point in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet. |
| Eesti [Estonian] | Käesolevaga kinnitab Allied Telesis seadme wireless access point vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele. |
| English | Hereby, Allied Telesis, declares that this wireless access point is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. |
| Español [Spanish] | Por medio de la presente Allied Telesis declara que el wireless access point cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE. |
| Ελληνική [Greek] | ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Allied Telesis ΔΗΛΩΝΕΙ ΟΤΙ wireless access point ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ. |
| Français [French] | Par la présente Allied Telesis déclare que l'appareil wireless access point est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE. |
| Italiano [Italian] | Con la presente Allied Telesis dichiara che questo wireless access point è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE. |

Table 12.  (Continued)Declaration of Conformity

| Country | Declaration Statement |
|---------|----------------------|
| Latviski [Latvian] | Ar šo Allied Telesis deklarē, ka wireless access point atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem. |
| Lietuvių [Lithuanian] | Šiuo Allied Telesis deklaruoja, kad šis wireless access point atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas. |
| Nederlands [Dutch] | Hierbij verklaart Allied Telesis dat het toestel wireless access point in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG. |
| Malti [Maltese] | Hawnhekk, Allied Telesis, jiddikjara li dan wireless access point jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC. |
| Magyar [Hungarian] | Alulírott, Allied Telesis nyilatkozom, hogy a wireless access point megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak. |
| Polski [Polish] | Niniejszym Allied Telesis oświadcza, że wireless access point jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC. |
| Português [Portuguese] | Allied Telesis declara que este wireless access point está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE. |
| Slovensko [Slovenian] | Allied Telesis izjavlja, da je ta wireless access point v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES. |
| Slovensky [Slovak] | Allied Telesis týmto vyhlasuje, že wireless access point spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES. |
| Suomi [Finnish] | Allied Telesis vakuuttaa täten että wireless access point tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen. |

Table 12.  (Continued)Declaration of Conformity

| Country | Declaration Statement |
|---------|----------------------|
| Svenska [Swedish] | Härmed intygar Allied Telesis att denna wireless access point står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG. |