TQ1402 and TQm1402

802.11ac Wave 2 Wireless Access Points with 2.4GHz and 5GHz Radios

Installation Guide

613-002709 Rev. H

Electrical Safety and Emissions Standards

This product meets the following standards:

Federal Communications Commission Interference Statement

Declaration of Conformity

Manufacturer Name: **Allied Telesis**
Declares that the product: **802.11ac wave2 2x2 2.4G/5G wireless AP**
Model Number: **TQ1402 and TQm1402**

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

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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

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

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. The device is restricted to indoor use only.

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 20 cm between the radiator and 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 59.

Safety and Electromagnetic Emissions

Standard Compliance

- RoHs compliant
- European Union RoHS (Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.)

Wire Communication

- IEEE 802.1
- IEEE 802.3
- IEEE 802.3u
- IEEE 802.3x
- IEEE 802.3af

Wireless Communication

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

Safety

- ❒ CB/UL
  - UL/IEC 60950-1: 2005+A1:2009+A2:2013 and EN60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013
  - UL/IEC 62368-1:2014 and EN62368-1:2014
  - UL 60950-1, 2nd Edition, 2014-10-14/CSA C22.2 NO. 60950-1-07, 2nd Edition, 2014-10
  - IEC 62368-1;2014 AND EN63268-1:2014
  - UL 62368-1, 2nd Edition, 2014-12-01
  - CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12-01
- ❒ TUV
  - EN60950-1+EN62368-1 (Co-license)
- ❒ AEL
  - Class I, US FDA/CDRH
  - EN(IEC) 60825-1:1994+a11,
  - EN(IEC) 60825-2:1994
  - EN(IEC) 60950: 1992+A1+A2+A3

Electromagnetic Interference (EMI)

- FCC part15 Subpart B/ Class B
- EN55032 Class B
- CISPR 32
- VCCI Class B

- VCCI-CISPR 32:2016
- AS/NZS CISPR 32

Electromagnetic Susceptibility (EMS) - EN55024 and EN55035

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

FCC

- 47 CFR Part15, subpart C
- 47 CFR Part15, subpart E

CE

- RED Directive 2014/53/EU
- European Council Directive 2014/30/EU
- EN55032:2015+AC:2016
- EN 55024:2010+A1:2015
- EN 301489-1 V2.1.1
- EN 301489-17 V3.1.1
- EN 300328 V2.1.1
- EN 301893 V2.1.1
- EN 62311: 2008/ 50385: 2017
- EN55035:2017

RCM

- CISPR 32:2015/COR1:2016
- AS/NZS CISPR 32: 2015
- AS/NZS 4268: 2017

Japan

- ARIB STD-T66
- ARIB STD-T71

Thailand NBTC

Singapore IMDA TS SRD

Figure 1. Singapore IMDA Logo

Korea KC

Vietnam MIC

India WPC

Malaysia SIRIM

Hong Kong OFCA

Taiwan NCC&BSMI

Translated Safety Statements

Important: 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**.

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

Table of Contents

List of Figures

List of Tables

Preface

This guide contains the hardware installation instructions for the TQ1402 and TQm1402 Wireless Access Points. This preface contains the following sections:

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 Services & Support section of the Allied Telesis web site at **www.alliedtelesis.com/support**. You can find links for the following services on this page:

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

To contact a sales representative or find Allied Telesis office locations, go to **www.alliedtelesis.com/contact**.

Chapter 1

Product Description

The sections in this chapter describe the hardware components of the 802.11ac Wave 2 TQ1402 and TQm1402 Wireless Access Points:

Features

Basic hardware features include:

- One 2.4GHz radio
- One 5GHz radio
- Internal omni-directional antennas
- One 10/100/1000Mbps Ethernet LAN port with RJ-45 connector
- PoE Class 3 powered device (PoE input on the LAN port)
- One Reset button for restoring the default settings
- One On/Off button for the AC/DC adapter connector
- LEDs for 2.4GHz and 5GHz radios, LAN port, and power
- Kensington lock port
- Ceiling, wall, or table installation
- One Console RS232 RJ-45 port for factory use only

Basic radio features include:

- IEEE802.11a/b/g/n/ac (Wave 2)
- Channel blankets (TQ1402 only)
- Multi-channel, single channel, or hybrid operation (TQ1402 only)
- Automatic channel selection
- Band steering
- WiFi multimedia (WMM) for prioritizing traffic

Basic LAN port features include:

- 10Mbps (IEEE 802.3), 100Mbps ((EEE 802.3u), or 1000Mbps (IEEE 802.3ab)
- Power over Ethernet (IEEE 802.3af)
- Flow control (IEEE 802.3x)
- VLAN tagging (IEEE 802.1Q)
- Auto-Negotiation for speed and duplex mode
- Auto-MDI/MDIX

Basic software features include:

- On-board web browser management interface
- Virtual access points
- Network Time Protocol (NTP) client

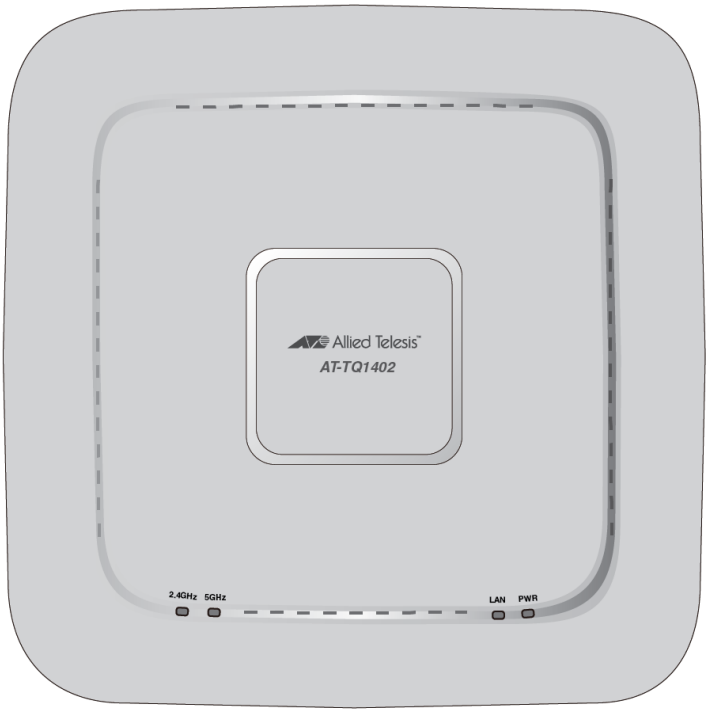
- ❒ Dynamic Host Control Protocol (DHCP) client
- ❒ Static WEP, WPA Personal, and WPA Enterprise security
- ❒ Static WEP encryption: 64/128 bit (IEEE 802.11a/b/g only)
- ❒ WPA and WPA2 encryption: CCMP (AES) and TKIP
- ❒ WPA3 encryption: CCMP
- ❒ Quality of Service (QoS) ingress and egress queues
- ❒ Fast roaming
- ❒ Captive portals
- ❒ Client filtering by MAC addresses
- ❒ Wireless Distribution System (WDS) bridges
- ❒ System log
- ❒ Syslog client
- ❒ SNMPv1 and v2c

Note
For a complete list of software features, refer to the TQ1402 *Series Management Software User's Guide* or the product data sheets.

Hardware Components

The top view of the TQ1402 Wireless Access Point is shown in Figure 1.

Back Edge



Front Edge

Figure 1. Top View of the TQ1402 Wireless Access Point

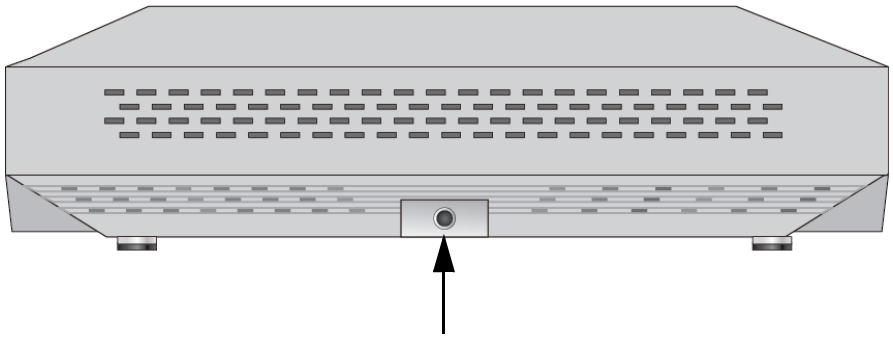
The top view of the TQm1402 Wireless Access Point is illustrated in Figure 2 on page 23.

Back Edge

Front Edge

Figure 2. Top View of the TQm1402 Wireless Access Point

The front edge view is illustrated in Figure 3.



Mounting Bracket
Thumbscrew Hole

Figure 3. Front Edge View

The back edge view is illustrated in Figure 4.

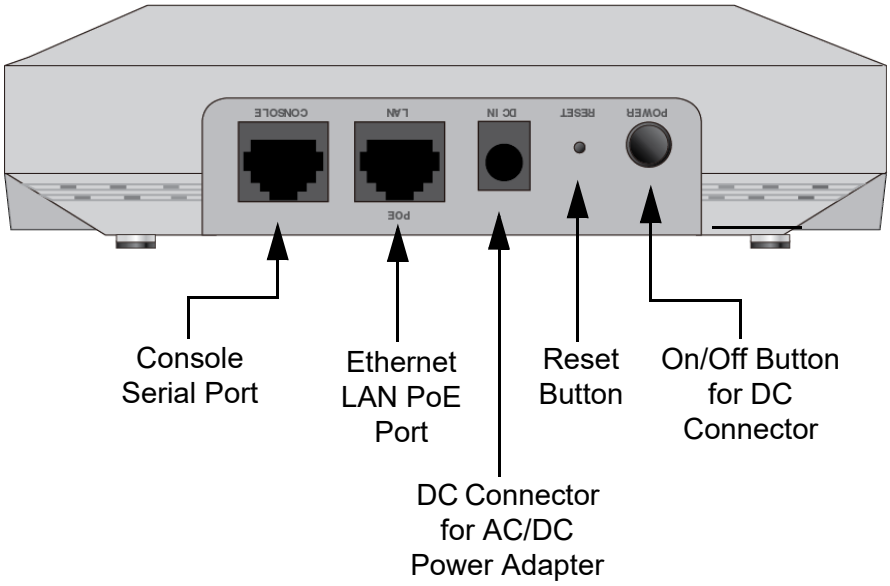


Figure 4. Back Edge View

Note
The On/Off button controls the DC connector for the AC/DC power adapter. It does not control PoE on the LAN port.

Note
The Console Serial port is for manufacturing purposes only.

Management Tools

The access points support the following management tools.

Web Browser

The access point has a web browser management interface for configuring the device from your management workstation. The web browser interface allows you to manage one unit at a time and supports both non-secure HTTP and secure HTTPS management sessions. The default is HTTP.

Vista Manager EX and AWC Plug-in

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

Note
The channel blanket feature in the AT-TQ5403 Access Point requires Vista Manager EX and the AWC plug-in.

SNMPv1 and v2c

You can use SNMPv1 or SNMPvs2 to view the parameter settings of the devices. The MIB is available from the Allied Telesis web site. For instructions on how to configure the unit for SNMP, refer to Allied Telesis *TQ5403 Series Management Software User's Guide*.

Note
The access points do not support SNMPv3 or the AT-UWC Wireless LAN Controller.

LAN Port

The TQ1402 and TQm1402 Wireless Access Points have one 10/100/1000Mbps Ethernet LAN port. The port is used to connect the wireless access point to your wired network so that wireless clients can access the network devices. The port can also be used to power the device with Power over Ethernet (PoE). PoE makes it possible for the access point to receive its electrical power over the same cable that carries the network traffic.

Power over Ethernet (PoE)

You can power the wireless access points with either PoE on the LAN port or an optional AC/DC power adapter. The wireless access point is a PoE Class 3 powered device with a maximum power consumption of 12.95 watts. To power the device with PoE, you connect the LAN port to a PoE source device, such as an Ethernet switch or router. When the LAN port is connected to a PoE source device, the network cable carries both network traffic and PoE.

You can power the device with both PoE and an AC/DC power adapter, for redundant power. The wireless access point uses the power adapter as its primary power source and PoE as redundant power.

Connector Type

The LAN port has an eight-pin RJ45 connector for 10/100/1000 Mbps communication. Refer to the tables in “Port Pinouts” on page 56 for the pin assignments.

Speed

The LAN port can operate at 10/100/1000Mbps. 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 10/100Mbps, and full-duplex mode at 1000Mbps. 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 10/100/1000Mbps twisted-pair port is IEEE 802.3ab-compliant and features automatic MDIX detection when operating at 10/100 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.

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

Cable Requirements

The minimum cable requirements for the port are listed here.

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

Maximum Distance

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

Port Pinouts

One port without a shielded RJ45 connector is available for 10/100/1000 base copper communication and PD of PoE on the rear panel. That connector is compliant with IEC603-7and IEEE 802.3af requirements. One RJ45 connector is available for RS-232 communication on the rear panel. Refer to Table 11 on page 57 for the port pinout.

DC Connector and On/Off Button for an AC/DC Power Adapter

There are two ways to power the wireless access point. You can power it with a PoE source device on the LAN port or with an AC/DC power adapter. You can also power it with both methods for power redundancy. A wireless access point that has both power sources uses the AC/DC power adapter as its primary power source and PoE as redundant power. For technical specifications, refer to “Power Specifications” on page 54. The AT-MWS0091 Power Adapter, shown in Figure 5., from Allied Telesis is approved for this product.

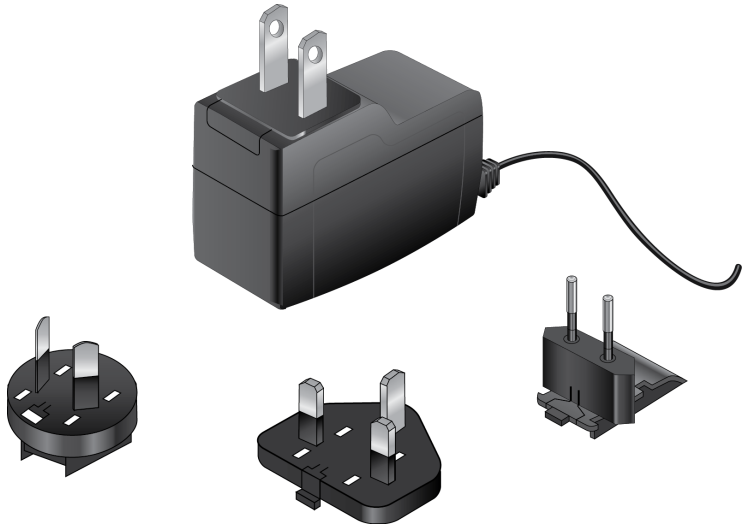


Figure 5. AT-MWS0091 Power Adapter

On/Off Button

The On/Off button on the back panel controls the DC connector for the external AC/DC power adapter. You can use the button to turn on or off the power on the DC connector from the AC/DC adapter. Here are the button settings:

- In - The DC connector is On, permitting power from the AC/DC power adapter.
- Out - The DC connector is Off, blocking power from the AC/DC power adapter.

LEDs

The LEDs on the top panel display status information. They are defined in Table 1.

Table 1. LED Status Information

LED	State	Description
Power (PWR)	Green	The access point is powered ON and operating normally.
	Amber	The device is booting up or it has encountered a fault condition.
	Blinking Amber	The access point is upgrading its firmware.
	Off	The access point is *not* receiving power.
LAN (PoE)	Green	The port has established a link to a network device.
	Blinking Green	The port is transmitting and receiving data.
	Off	The port has not established a link to a network device.
2.4GHz Wi-Fi	Green	The 2.4GHz radio is enabled.
	Off	The 2.4GHz radio is disabled.
5GHz Wi-Fi	Green	The 5GHz radio is enabled.
	Off	The 5GHz radios is disabled.

Reset Button

The wireless access point has a Reset button on the rear panel for restoring the default settings to all its parameter settings. You might reset the access point if you want to discard its current configuration or if you forgot the manager password and so cannot manage the device.

To reset the device, press the button for five seconds and release.

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

Chapter 2

Installing the Wireless Access Point

This chapter contains the installation procedures for the TQ1402 and TQm1402 Wireless Access Points. The procedures are detailed in the following sections:

Note
The non-US models of this product have a country code setting that must be set during the first management session of the units. The setting ensures that the units operate 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.

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

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

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**

Note
All Countries: Install product in accordance with local and National Electrical Codes. ☞ **E8**

Warning
Only trained and qualified personnel are allowed to install or to replace this equipment. ☞ **E14**

Warning
To reduce the risk of electric shock, the PoE ports on this product must not connect to cabling that is routed outside the building where this device is located. ☞ **E40**

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

Warning
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
The TQ1402 Series must be supplied by:

1. A UL Listed external AC/DC power supply suitable for use at Tma 45 ^{o}C, a maximum operating altitude of 3000 m or higher, and whose output meets separated extra-low voltage (SELV), limited power sources (LPS) and is rated 12 VDC, 2.0 A,

OR

2. By Power over Ethernet through an UL Listed ITE. Refer to Table 6, “External Power Supply Specifications” on page 54.

Unpacking the Shipping Box

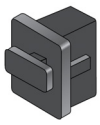
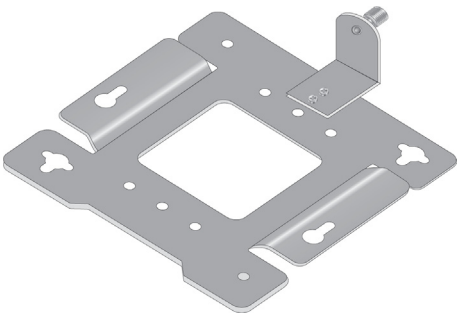
To unpack the wireless access point from the shipping box, perform the following procedure:

1. Remove all components from the shipping box.

> **Note**
> Store the packaging material in a safe location. Please use the original shipping material if you need to return the device to Allied Telesis.

2. Verify the contents of the shipping box listed in Table 2. If any item is missing or damaged, contact your Allied Telesis sales representative for assistance.

Table 2. Shipping Box Components

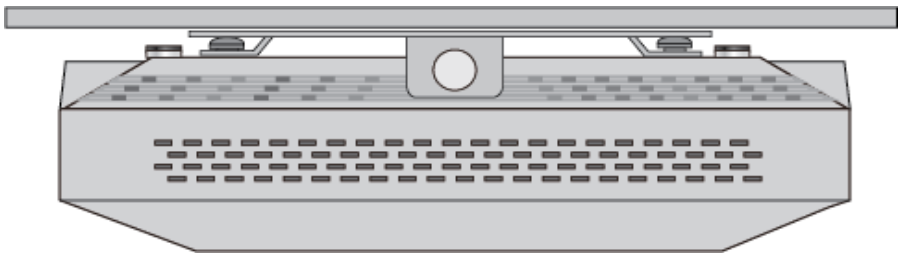
Name	Component
TQ1402 or TQm1402 Wireless Access Point	
One RJ-45 Dust Cap (for Console port)	
One Mounting Bracket	
Two M5 x 8mm, Pan-head Screws	

Reviewing Installation Guidelines

Review the following guidelines before installing the access point:

- The ceiling or wall mounting surface must be of proper material to accommodate the screws and strong enough to support the weight of the access point and cables. (Refer to Table 3 on page 53 for the product weight.)
- Connect the Ethernet cable and power cord to the access point before installing the access point on the ceiling or wall. Depending on the installation location, connecting or removing cables may be difficult after the device is installed.
- Ensure the Ethernet cable is long enough to connect to its destination port before installing the access point. Once the installation is complete, it is physically difficult to change the cables.
- If the wireless access point will be powered by an AC/DC adapter., verify that an AC power outlet is within six feet of the planned installation site. (Refer to Table 5 on page 54 for the power supply AC power specifications.)
- Refer to Figure 6 on page 36 for the acceptable orientations for ceiling, wall, or table installation.

Ceiling Installation



Wall Installation

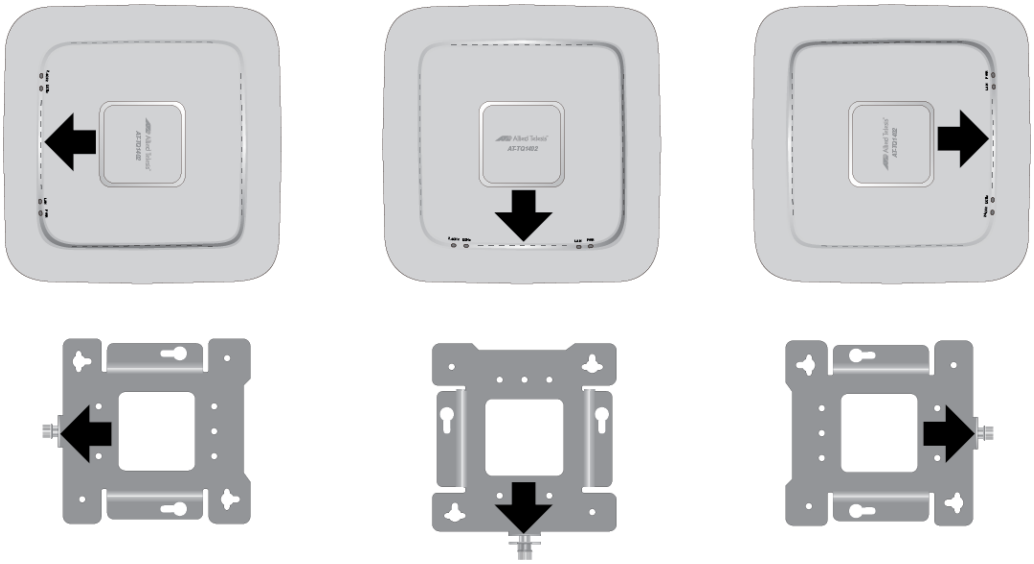


Table Installation

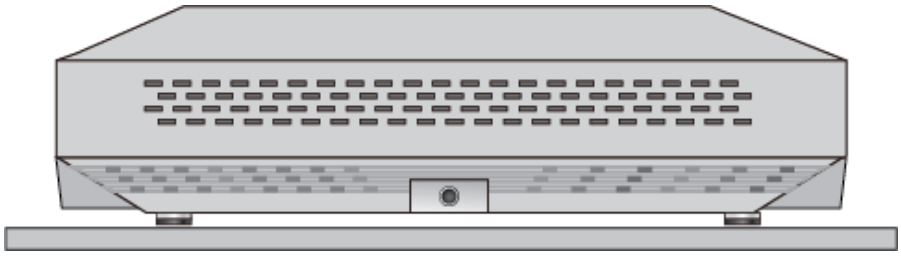


Figure 6. Device Orientations on a Table, Wall, or Ceiling

Installing the Access Point on a Table

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

- ❒ TQ1402 or TQm1402 Wireless Access Point
- ❒ One Ethernet cable - See “Cable Specifications” on page 56
- ❒ External AC/DC power supply (Optional if using PoE. Required if not using PoE+ or for redundant power. Allied Telesis recommends the AT-MWS0091 AC/DC Power Adapter.)
- ❒ Kensington Lock (optional and not provided)

Note
Please see “Reviewing Safety Precautions” on page 32 and “Reviewing Installation Guidelines” on page 35 before installing the product.

Perform the following steps to install the wireless access point on a table:

1. Place the wireless access point at the selected location on the table.
2. Connect an Ethernet cable to the LAN port. Refer to “Connecting an Ethernet Cable to the LAN Port” on page 46.
3. To connect an AC/DC power adapter to the device, go to “Connecting the AC/DC Power Adapter” on page 47.
4. To install a security cable, go to “Installing an Anti-theft Device” on page 50.
5. To start managing the device, go to “Starting the First Management Session” on page 51.

Overview to Installing the Access Point on a Wall or Ceiling

Here are the procedures for installing the wireless access point on a wall or ceiling:

- ❒ “Pre-Fitting the Mounting Bracket on the Access Point” on page 39
- ❒ “Installing the Mounting Bracket on a Wall or Ceiling” on page 42
- ❒ “Connecting an Ethernet Cable to the LAN Port” on page 46
- ❒ “Connecting the AC/DC Power Adapter” on page 47
- ❒ “Attaching the Access Point to the Mounting Bracket” on page 48
- ❒ “Installing an Anti-theft Device” on page 50
- ❒ “Starting the First Management Session” on page 51

Note
Please see “Reviewing Safety Precautions” on page 32 and “Reviewing Installation Guidelines” on page 35 before installing the product.

Note
Depending on the installation location, it may be easier to connect the network cables and optional power adapter to the wireless access point before installing it on the wall or ceiling.

You need these items to install the access point on a ceiling or wall:

- ❒ TQ1402 or TQm1402 Access Point
- ❒ Two screws to attach to the access point to mounting bracket
- ❒ Mounting bracket
- ❒ Four (4) M4, 25.0 mm flat-head wood screws and optional anchors (not provided) for fastening the mounting bracket
- ❒ Phillips head screwdriver (not provided)
- ❒ Pencil (not provided)
- ❒ External AC/DC power supply (optional and not provided - Allied Telesis recommends the AT-MWS0091 AC/DC Power Adapter)
- ❒ Kensington Lock (optional and not provided)

Note
The four Phillips head M4 screws/anchors, the Phillips head screwdriver, pencil, external AC/DC power supply and Kensington Lock are *not* included in the shipping box.

Pre-Fitting the Mounting Bracket on the Access Point

To pre-fit the access point on the mounting bracket, perform the following procedure:

1. Install the two screws (provided) in the bottom side of the access point chassis. Leave the screws loose enough so that you can slide the bracket under the screw heads. Refer to Figure 7.

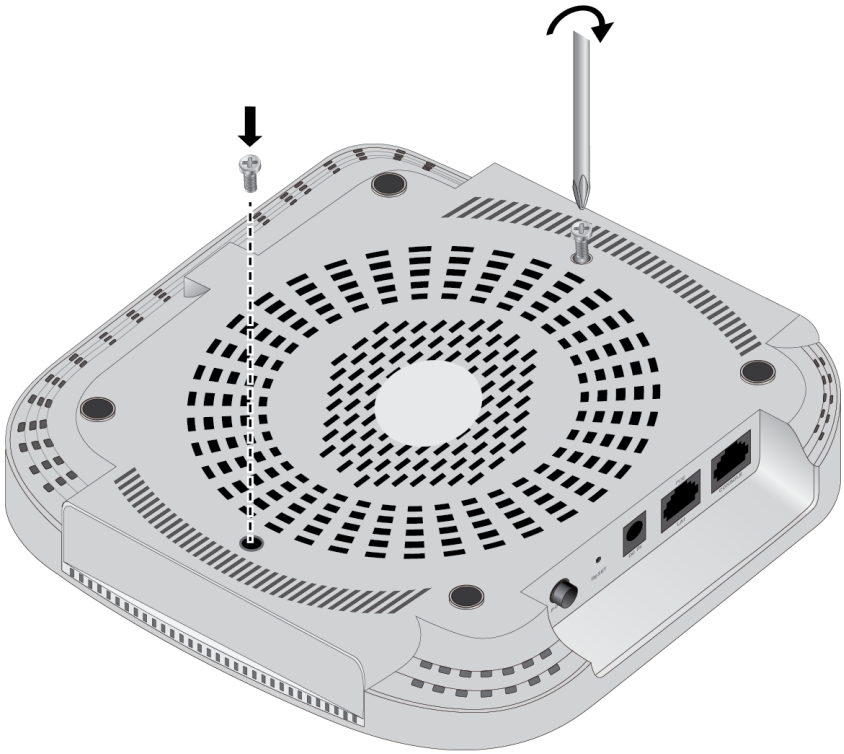


Figure 7. Attaching the Bracket Screws to Wireless Access Point

2. Install the mounting bracket on the wireless access point by sliding the keyholes under the screws. Refer to Figure 8 on page 40.

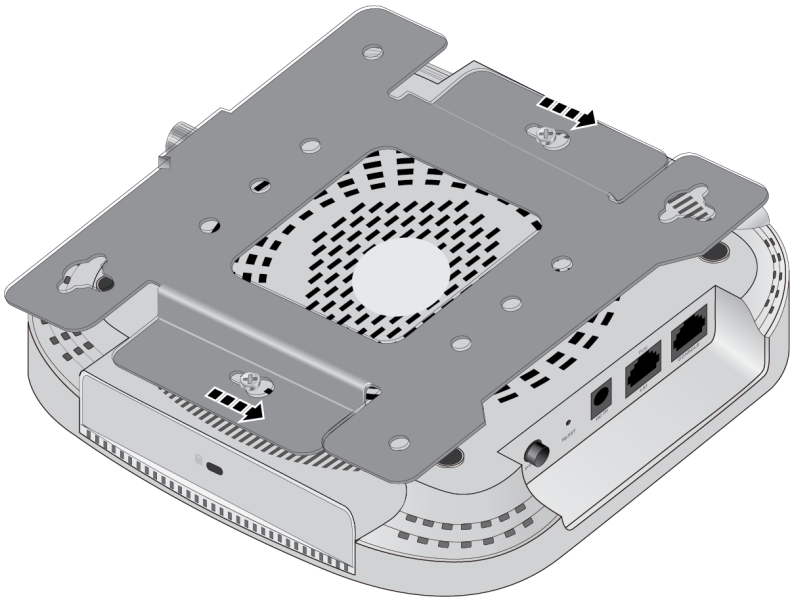


Figure 8. Attaching the Mounting Bracket on the Access Point

3. Tighten the screws so that they touch the mounting bracket and then loosen them by approximately 1/4 turn. Refer to Figure 9 on page 40.

Note
Adjust the screws so they are loose enough for you to remove the bracket, but tight enough to prevent the access point from rattling against the mounting bracket.

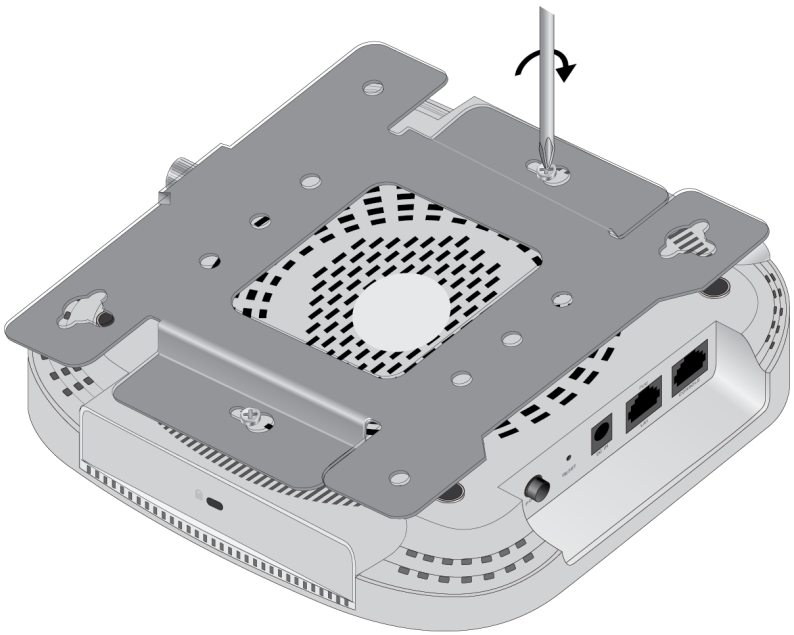


Figure 9. Adjusting the Screws on the Access Point

4. Slide the mounting bracket forward and temporarily remove it from the wireless access point. Refer to Figure 10.

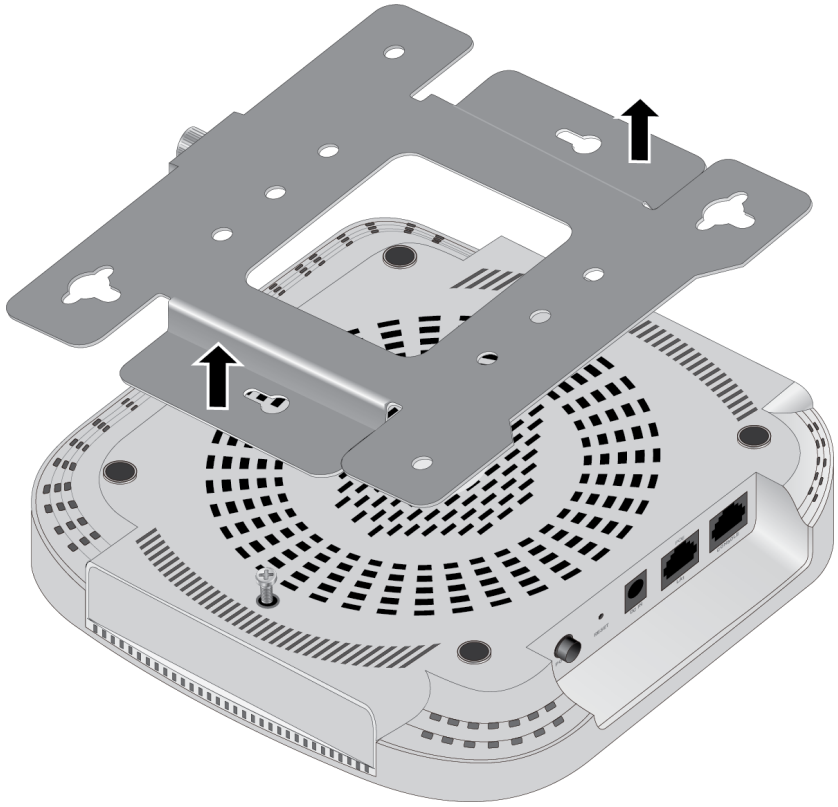


Figure 10. Removing the Mounting Bracket from the Access Point

5. Go to “Installing the Mounting Bracket on a Wall or Ceiling” on page 42.

Installing the Mounting Bracket on a Wall or Ceiling

To install the mounting bracket on a wall or ceiling, perform the following procedure:

1. Choose the location and orientation for the access point on the wall or ceiling. Refer to Figure 6 on page 36.
2. Position the mounting bracket at the selected location and orientation for the access point. Consider the following guidelines.
   - ❒ The thumbscrew on the mounting bracket is where the front panel of the access point will be.
   - ❒ The ports and connectors are on the back panel, away from the thumbscrew.
3. With a pencil, mark the wall or ceiling with the two key-hole slots of the bracket. Refer t Figure 11.

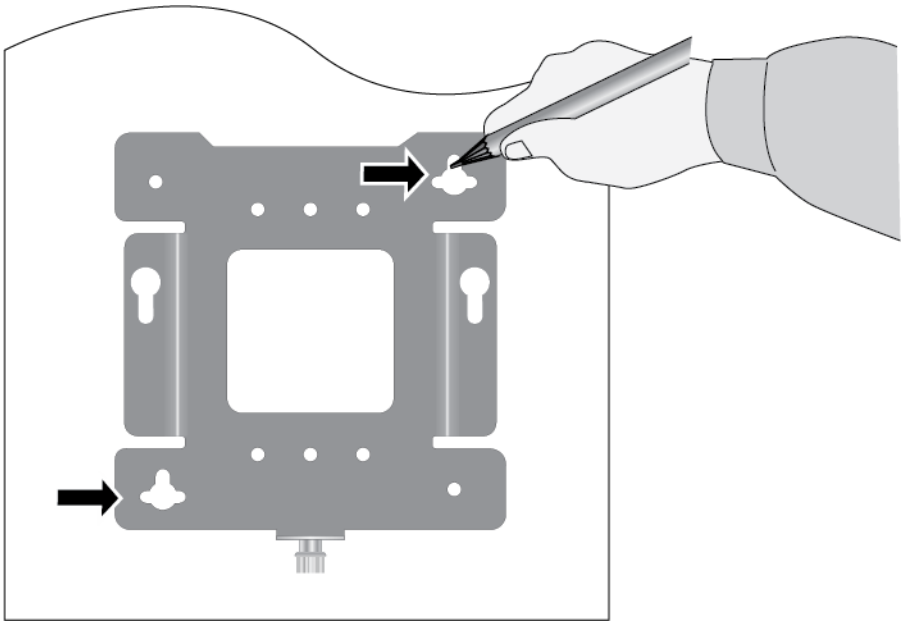


Figure 11. Mark and Pre-Drill Holes for Key-Hole Slots

4. Pre-drill the two marked locations for the keyhole slots on the hard-surface ceiling or wall.
5. Install two M4 screws and anchors (if required). Leave the screws loose enough so that the bracket can slide under the screw heads. Refer to Figure 12 on page 43.

Note
For a wooden wall or ceiling, use M4, 25.0 mm flat-head wood screws and anchors if required. The screws and anchors are not provided.

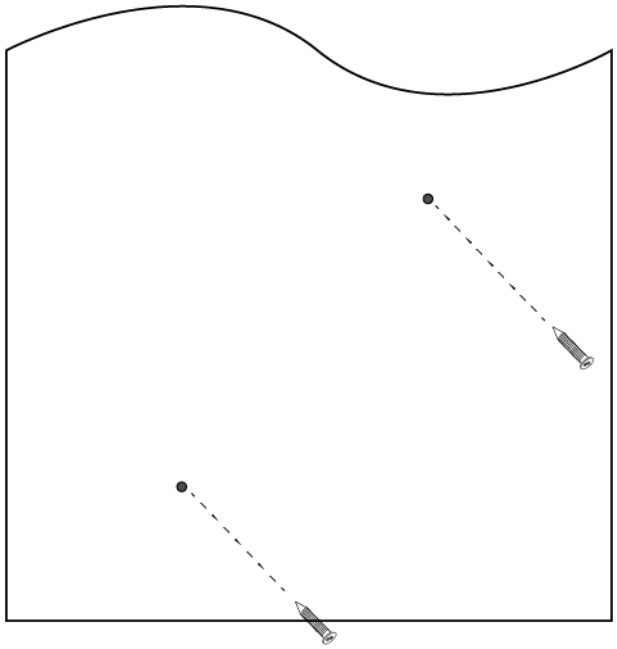


Figure 12. Installing Two Screws

6. Install the mounting bracket on the screws by inserting the openings of the bracket key-hole slots under the two screw heads and sliding the bracket into narrow end of the key-hole slots. Refer to Figure 13 on page 44.

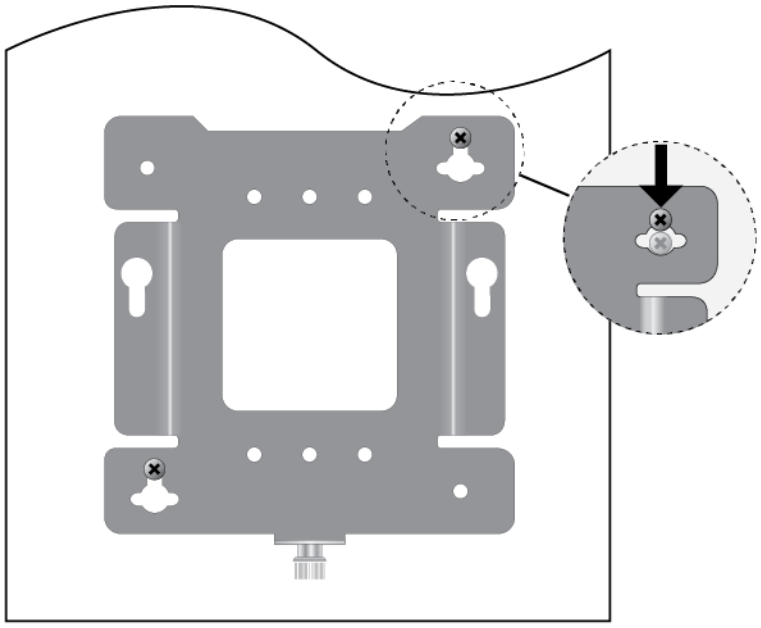


Figure 13. Installing the Mount Bracket On the Screws

7. Tighten the screws snugly onto the bracket.
8. To secure the mounting bracket, pre-drill holes through the two bracket mounting holes opposite the key-hole slots. Refer to Figure 14.

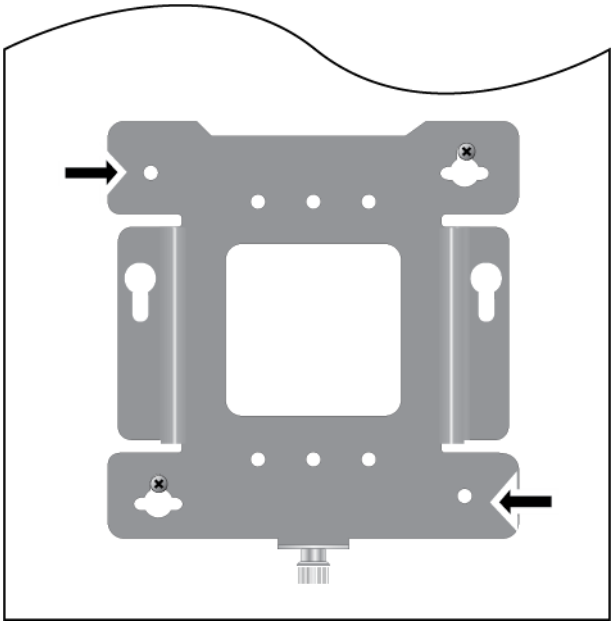


Figure 14. Pre-Drill Holes for Mounting Bracket

9. Install and tighten two M4 screws (not provided) in the holes prepared in Step 8. Refer to Figure 15. The bracket installation is now complete.

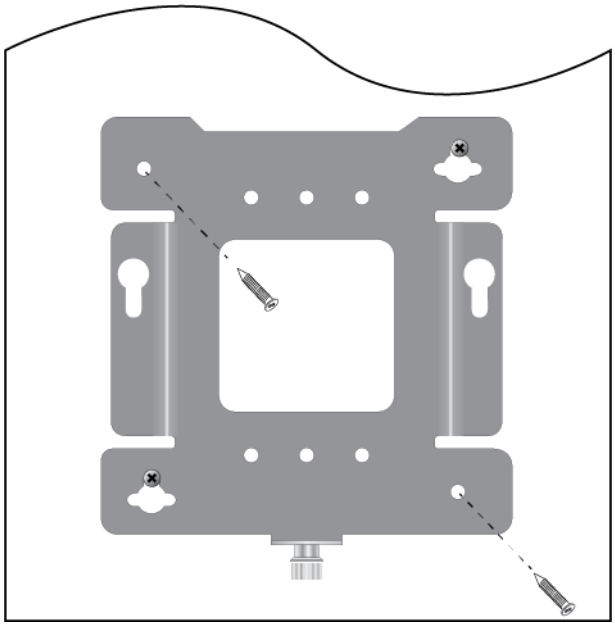


Figure 15. Securing the Mount Bracket

10. Go to “Connecting an Ethernet Cable to the LAN Port” on page 46.

Connecting an Ethernet Cable to the LAN Port

Here are the instructions for connecting an Ethernet cable to the LAN port. For information on cable specifications, refer to “Cable Specifications” on page 56. If you are installing the wireless access point on the ceiling or wall, you might find it easier to connect the cable before placing the unit on the mounting bracket.

To connect the network cable, perform the following procedure:

1. Connect the Ethernet cable into the RJ-45 LAN port. Refer to Figure 16.

   If the other end of the Ethernet cable is already connected to a PoE source device, the access point immediately begins to power on and initialize its management software.

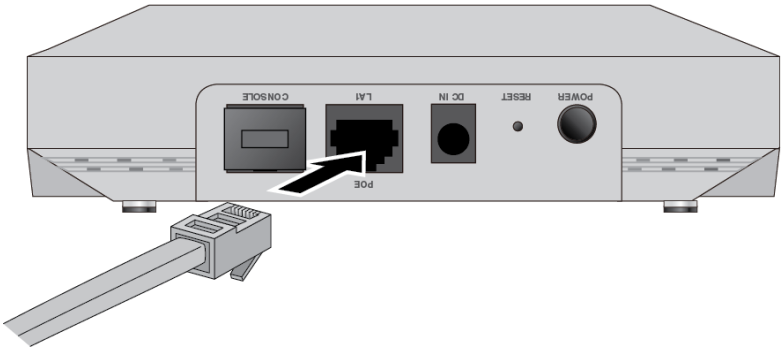


Figure 16. Connecting the Ethernet Cable to the LAN Port

2. Connect the opposite end of the Ethernet cable to an network Ethernet device, such as an Ethernet switch or router.

   Note
   To power the wireless access point with PoE, connect the LAN port to a PoE source device. For power specifications, refer to “PoE Power Requirements” on page 55.

3. Do one of the following:

   a. If the access point will be powered with PoE only, then the PoE power source is already connected via the Ethernet cable connected to LAN. Go to “Attaching the Access Point to the Mounting Bracket” on page 48.

   b. If access point will have an external AC/DC power supply, go to ”Connecting the AC/DC Power Adapter”.

Connecting the AC/DC Power Adapter

The wireless access point can be power with PoE on the LAN port or an AC/DC power adapter, or both. A wireless access point that is powered by both methods uses the AC/DC adapter as its primary power and PoE as redundant power. For an AC/DC power adapter, Allied Telesis recommends the AT-MWS0091 Power Adapter.

If you purchased a power adapter for the wireless access point, perform the following procedure. Otherwise, go to “Attaching the Access Point to the Mounting Bracket” on page 48.

Perform the following procedure to install an AC/DC power adapter:

1. If the AC/DC power adapter has replaceable AC plugs, like the AT-MWS0091 Power Adapter shown in Figure 5 on page 28, verify that the current plug on the adapter is the correct plug for your region. If it is not, install the correct AC plug by following the instructions provided with the power adapter.

2. Plug the DC cable from the power adapter into the DC connector on the access point. Refer to Figure 17.

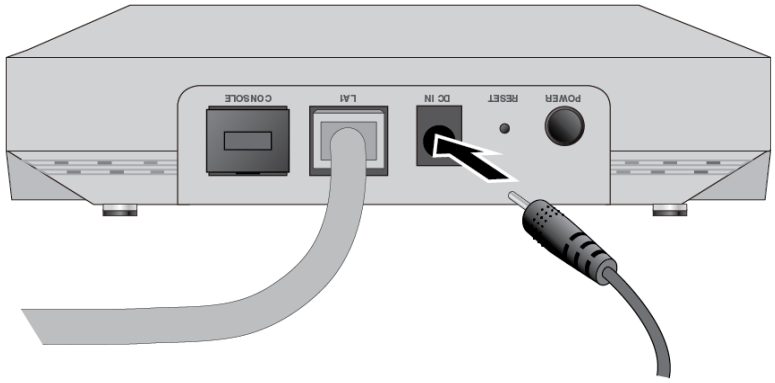


Figure 17. Connecting an AC/DC Power Adapter to the DC Connector

3. Connect the power adapter into an appropriate AC power source.

4. Push the DC On/Off button to the “IN” position to turn on the DC connector.

Note
The DC Power Button controls only the DC connector. It does not control PoE on the LAN port.

5. Go to the “Attaching the Access Point to the Mounting Bracket” on page 48 section.

Attaching the Access Point to the Mounting Bracket

To attach the wireless access point on the mounting bracket on the wall or ceiling, perform the following procedure:

1. Align the bottom of the access point over the bracket so that the two screws on the bottom of the device fit into the bracket keyholes. Refer to Figure 18. (These are the two access point chassis screws installed in “Pre-Fitting the Mounting Bracket on the Access Point” on page 39.)

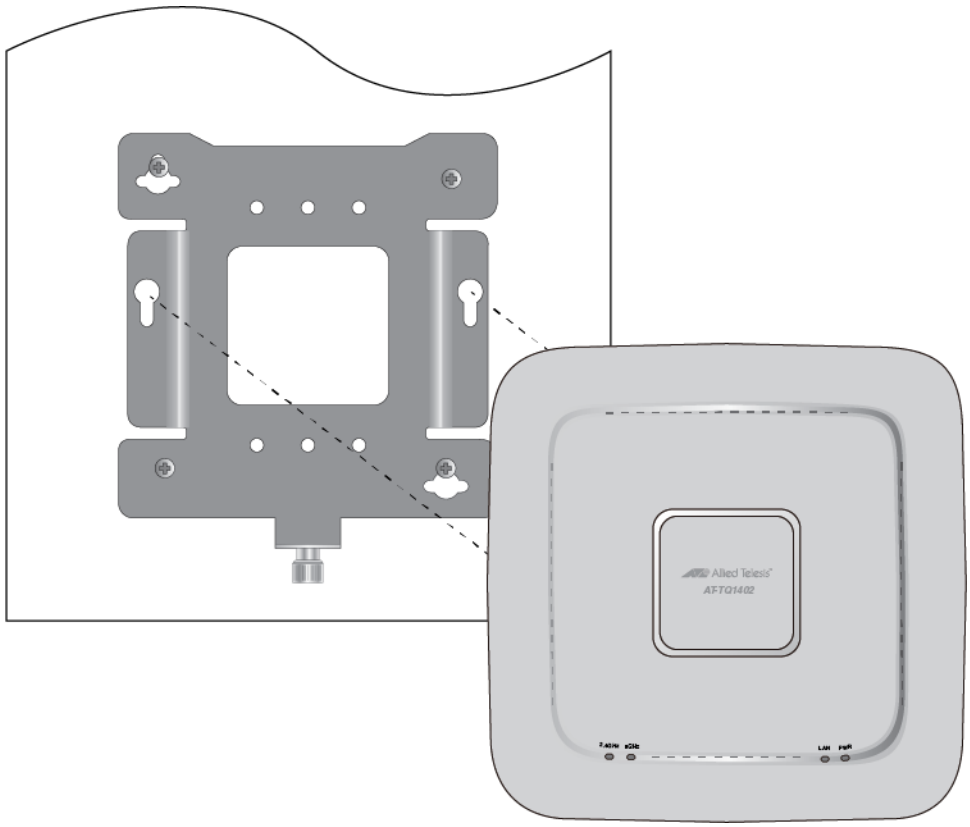


Figure 18. Installing the Access Point on the Mounting Bracket

2. Slide the access point forward until its screws are seated in the bracket keyhole slots and the bracket thumbscrew is aligned with the screw hole on the front panel. Refer to Figure 19 on page 49.

Figure 19. Seating the Access Point on the Mounting Bracket

3. Tighten the thumbscrew to secure the access point to the mounting bracket. Refer to Figure 20.

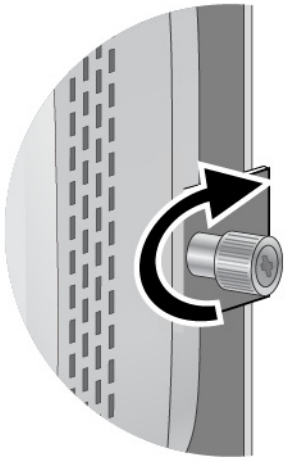


Figure 20. Tightening the Mounting Bracket Thumbscrew

4. Go to “Installing an Anti-theft Device” on page 50 or “Starting the First Management Session” on page 51.

Installing an Anti-theft Device

Installation of an anti-theft cable/lock is optional. The access point has a lock port that is compatible with a Kensington lock. The lock port can be used to physically secure the device to a table, wall, or a ceiling.

Note
Anti-theft devices are not available from Allied Telesis.

1. Follow the instructions provided with the vendor's anti-theft device packaging for the installation. Refer to Figure 21 for the Kensington lock port location.

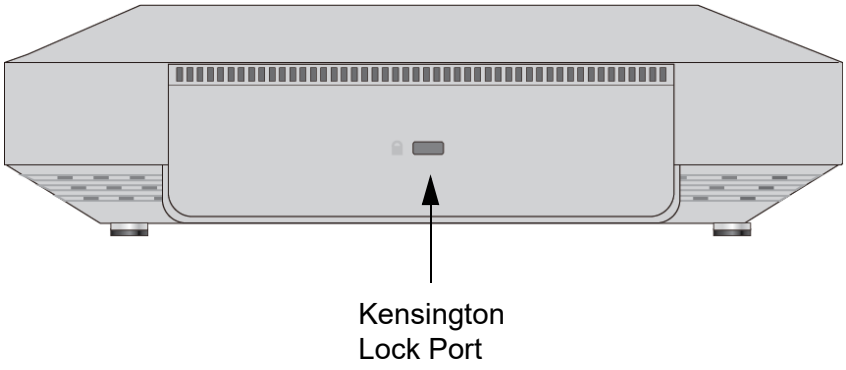


Figure 21. Kensington Lock Port Location

2. If you are installing the wireless access point on a wall or ceiling and have not installed it on the mounting bracket yet, go to "Attaching the Access Point to the Mounting Bracket" on page 48 section.

Starting the First Management Session

This section contains an abbreviated version of the procedure to start the initial management session. For complete instructions, refer to the TQ1402 Series *Wireless Access Point Series User's Guide*.

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.

To start the first management session, perform the following procedure:

1. Start the web browser on your management workstation.
2. Enter the IP address of the wireless access point in the URL field of the web browser. The address is one of the following:
   - ❒ If your network does not have a DHCP server, enter the default address 192.168.1.230.
   - ❒ If your network has a DHCP server, enter the IP address the DHCP server assigned to the access point.

   The wireless access point displays the logon prompt. Refer to Figure 22.

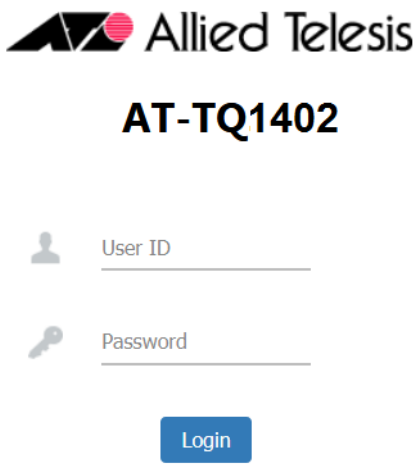


Figure 22. Logon Prompt

3. Enter "manager" for the username and "friend" for the password. The username and password are case-sensitive.

Appendix A

Technical Specifications

This appendix contains the following sections:

Physical Specifications

Table 3. Physical Specifications

Parameter	Specification
Dimensions (W x D x H)	164 mm x 165 mm x 43 mm (6.42 in. x 6.50 in. x 1.69 in.)
Weight without mounting bracket) Weight with mounting bracket Mounting bracket	430 g (0.95 lb) 580 g (1.28 lb) 150 g (0.33 lb)

Environmental Specifications

Table 4. Environmental Specifications

Parameter	Specification
Operating Temperature Range when powered by AC/DC power adapter	0° C to 45° C (32° F to 113° F)
Operating Temperature Range when powered by PoE power source	0° C to 50° C (32° F to 122° F)
Storage Temperature	- 25° C to 70° C (-13° F to 158° F)
Operating Humidity	0% to 90% non-condensing
Storage Humidity	0% to 95% non-condensing
Maximum Operating Altitude	3000 m (9843 ft)

Power Specifications

Input Power Specifications

The power specifications for the TQ1402 Series Access Point are given in Table 5.

Table 5. Input Power Specifications

Parameter	Specification
Rated Input Voltage	12 VDC
Maximum Input Current	0.7 A
Average Input Current	0.52 A

AC/DC Power Adapter Specifications

The specifications for an AC/DC power adapter for the TQ1402 and TQm1402 Wireless Access Points are given in Table 6.

Table 6. External Power Supply Specifications

Parameter	Specification
Input Voltage Range	90 to 264 V
Input Frequency	47 to 63 Hz
Rated Output Voltage	12 VDC ±5%
Rated Output Current	2 A
Temperature Range	0° C to 45° C (32° F to 113° F)
Maximum Operating Altitude	3000 m (9843 ft)

Note
If you decide to use an AC/DC adapter with the wireless access points, Allied Telesis recommends the AT-MWS0091 (WA-24Q12R) AC/DC power supply. This device is a UL Listed power supply and is fully compatible with the above specifications while meeting the standards of a SELV.

Note
The AT-MWS0091 (WA-24Q12R) power adapter is sold separately.

PoE Power Requirements

The TQ1402 Series Access Point power requirements for the LAN PoE port are given in Table 7.

Table 7. PoE Power Requirements

Parameter	Specification
TQ1402 and TQm1402	12.95 watts
PoE Device Classification	Class 3 Powered Device

LAN Port Specifications and Pinouts

Port Specifications

The TQ1402 Series Access Point port specifications are shown in Table 8.

Table 8. LAN Port Specifications

Connector	Specification
Standards - LAN	IEC603-7 (10/100/1000 Base T)
PoE standard - LAN	IEEE 802.3af (class 3)

Cable Specifications

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

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

Note
The maximum operating distance of these cables is 100 meters (328 feet).

Port Pinouts

The pin signal definitions for 10/100/1000 Mbps Ethernet traffic are as follows.

Figure 23 illustrates the pin layout of the LAN ports.

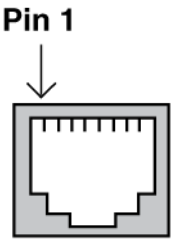


Figure 23. Pin Layout for RJ45 Connector on LAN Port

Table 9 on page 56 lists the pin signals when the port is operating in the MDI configuration at 10/100 Mbps.

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

Pin	Signal
1	TX+

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

Pin	Signal
2	TX-
3	RX+
6	RX-

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

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

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

Table 11 lists the pin signals when the LAN port is operating at 1000 Mbps.

Table 11. Connector Pinouts (1000Base-T)

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-

Appendix B
Regulatory Statements

This appendix contains the following regulatory statements:

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. This device is restricted to indoor use only.

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 20 cm between the radiator and your body.

Europe - EU Declaration of Conformity

Hereby, Allied Telesis declares that the radio equipment type [TQ1402 and TQm1402] is in compliance with Directive 2014/53/EU.

Operating Frequencies and Maximum Transmission Power Levels

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

- 2412-2472 MHz:
  19.78 dBm (Non-Beamforming)
- 5150-5250 MHz:
  22.11 dBm (Beamforming), 22.04 dBm (Non-Beamforming)
- 5250-5350 MHz:
  22.22 dBm (Beamforming), 22.17 dBm (Non-Beamforming)
- 5470-5725 MHz:
  27.31 dBm (Beamforming), 25.29 dBm (Non-Beamforming)

Note
Operations in the 5.15 - 5.35 GHz band are restricted to indoor usage only.

Radiation Exposure Statement

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

AT	BE	BG	CH	CY	CZ	DE	DK	EE
EL	ES	FI	FR	HR	HU	IE	IS	IT
LI	LT	LU	LV	MT	NL	NO	PL	PT
RO	SE	SI	SK	TR	UK(NI)			

Importer

Allied Telesis International BV

Incheonweg 7, 1437 EK Rozenburg

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

UK - UKCA Declaration of Conformity

Hereby, Allied Telesis declares that the radio equipment type [AT-TQ1402 ; AT-TQm1402] is in compliance with The Radio Equipment Regulations 2017

Operating Frequencies and Maximum Transmission Power Levels

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

- 2412-2472 MHz:
  19.78 dBm (Non-Beamforming)

- 5150-5250 MHz:
  22.11 dBm (Beamforming), 22.04 dBm (Non-Beamforming)

- 5250-5350 MHz:
  22.22 dBm (Beamforming), 22.17 dBm (Non-Beamforming)

- 5470-5725 MHz:
  27.31 dBm (Beamforming), 25.29 dBm (Non-Beamforming)

Note
Operations in the 5.15 - 5.35 GHz band are restricted to indoor usage only.

Radiation Exposure Statement

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

Importer

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

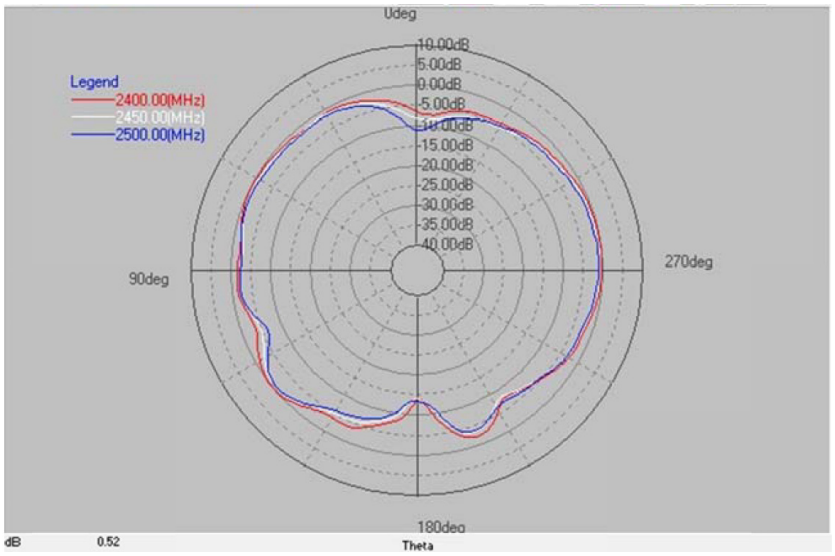
Note
Contact Allied Telesis for the UK conformity statement. To contact Allied Telesis, visit our web site at **www.alliedtelesis.com/contact.**

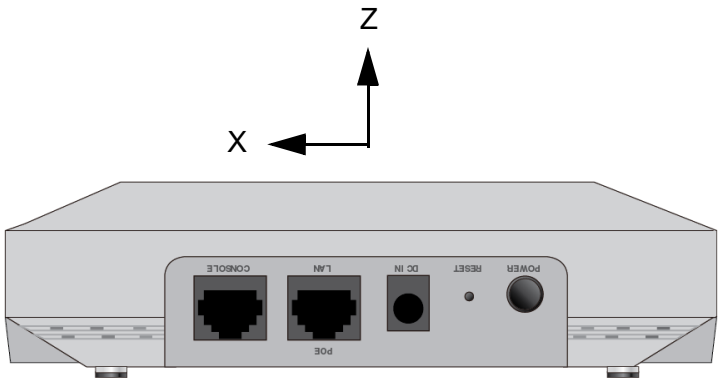
Appendix C
Radiation Patterns

This appendix contains the following sections:

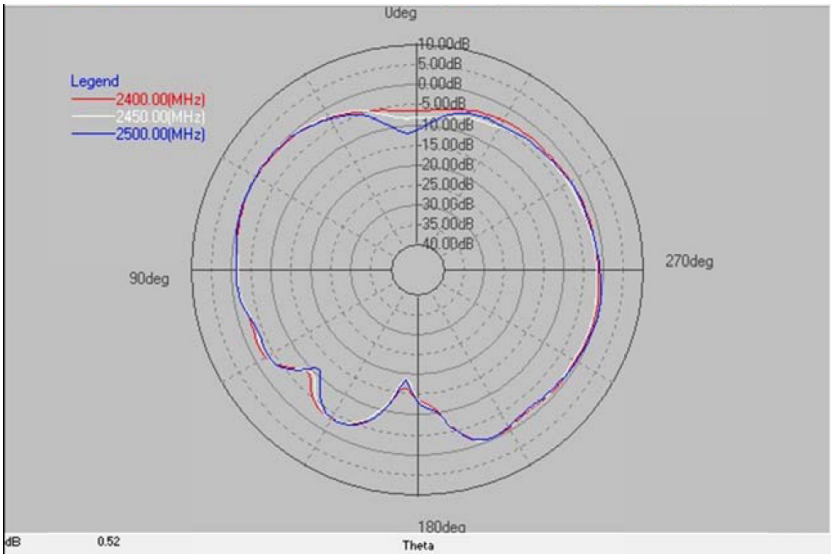
2.4GHz Antenna 1

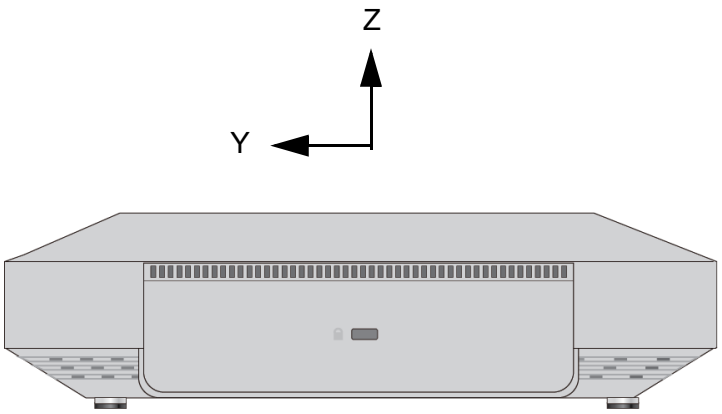
X-Z Plane (E-total)



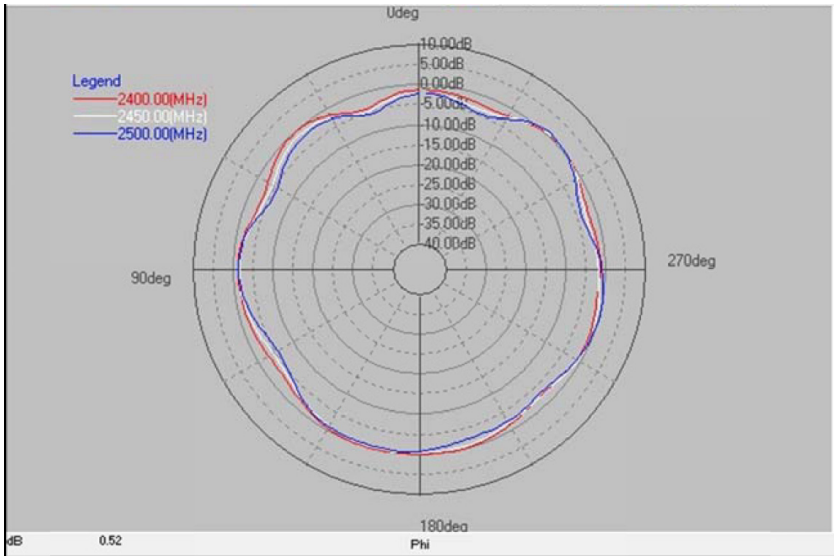


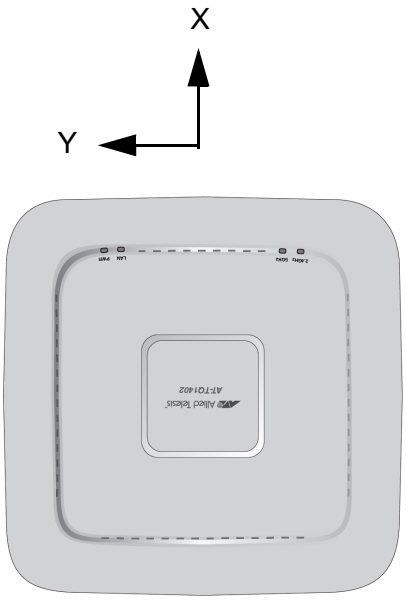
Y-Z Plane (E-total)





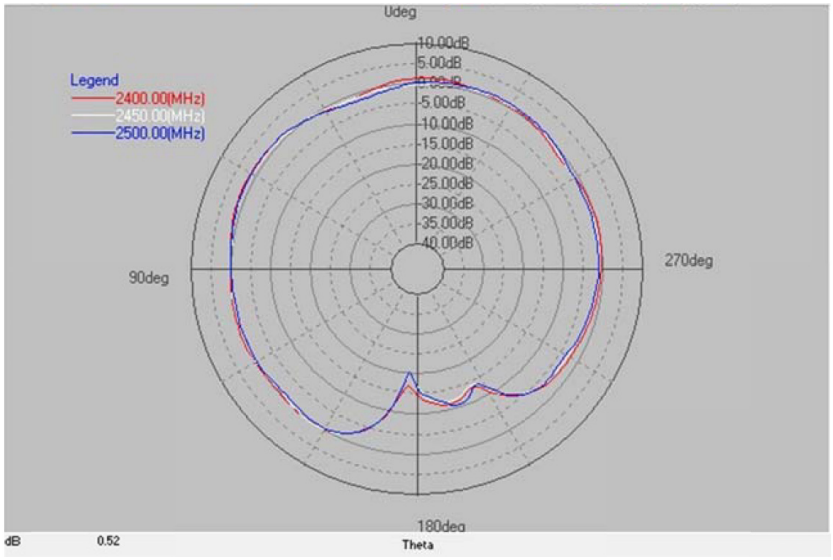
X-Y Plane (E-total)

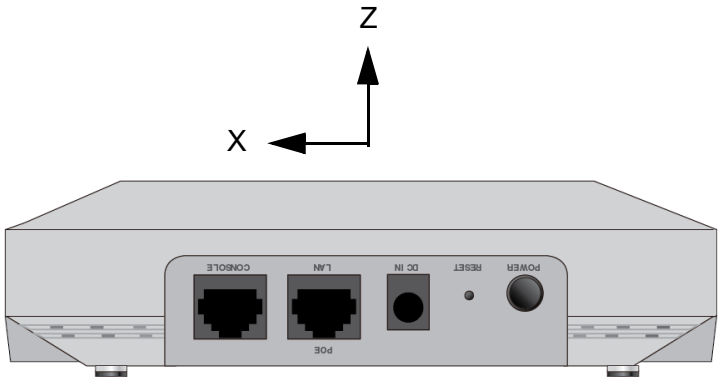




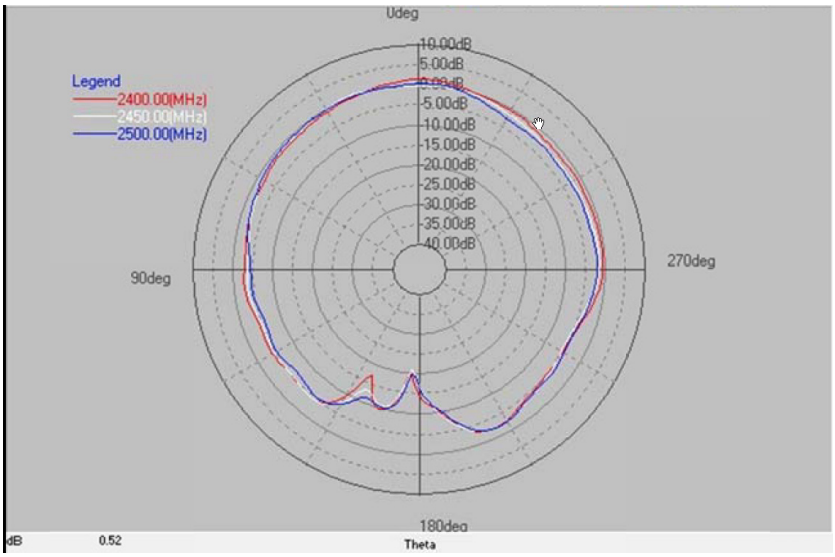
2.4GHz Antenna 2

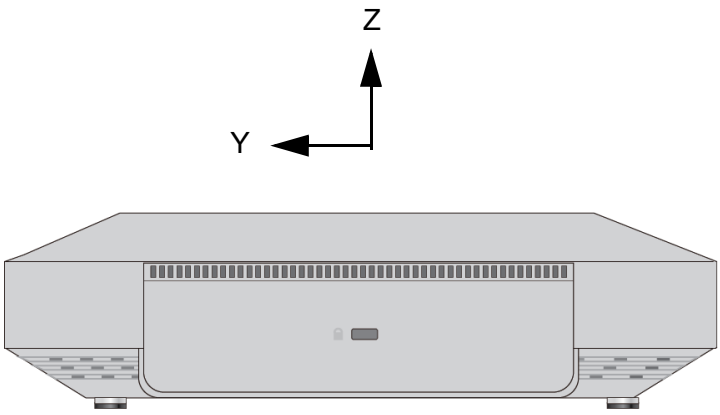
X-Z Plane (E-total)



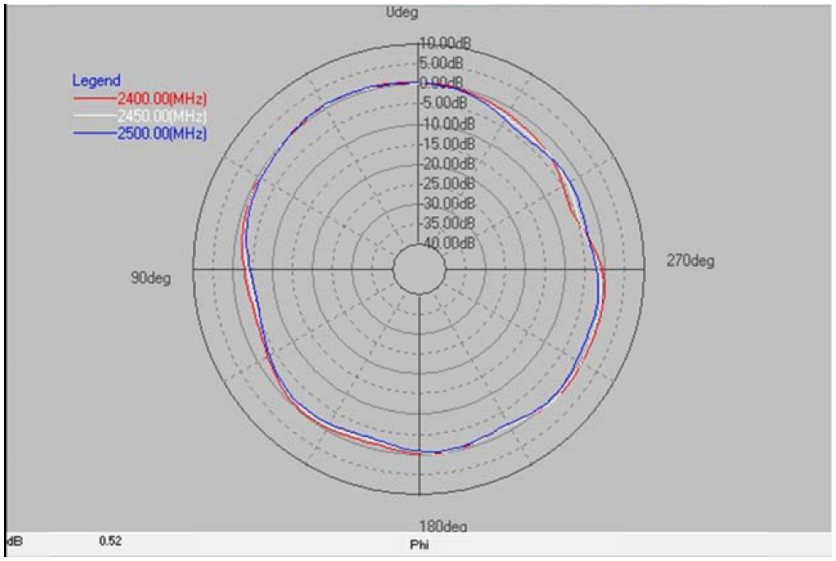


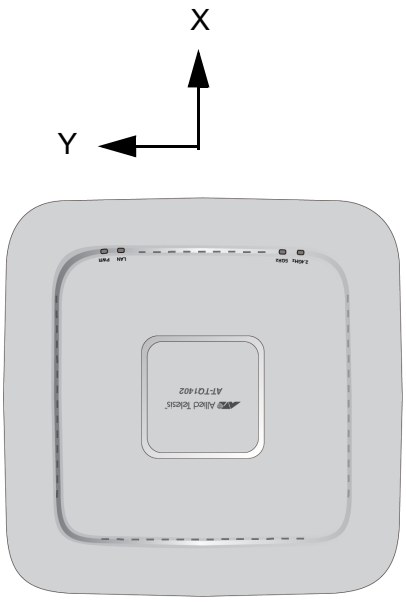
Y-Z Plane (E-total)





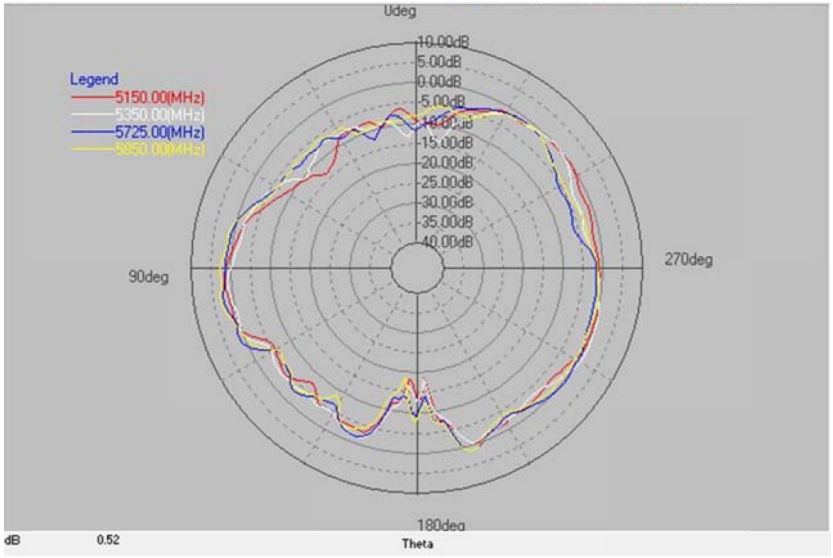
X-Y Plane (E-total)

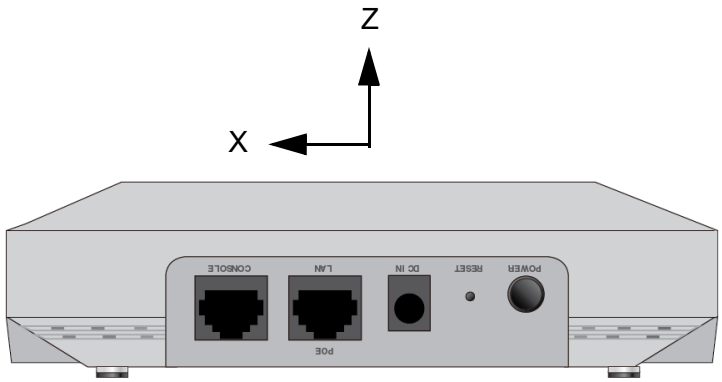




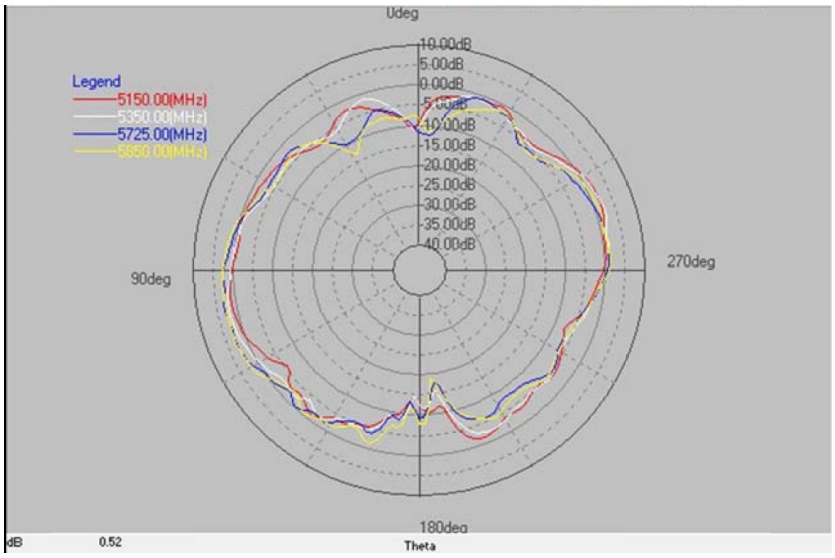
5GHz Antenna 1

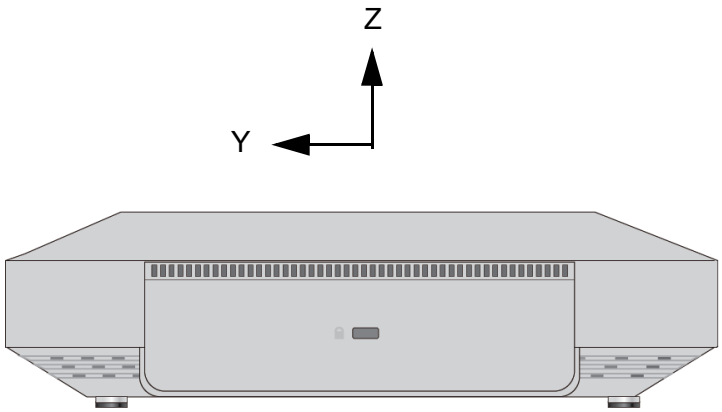
X-Z Plane (E-total)



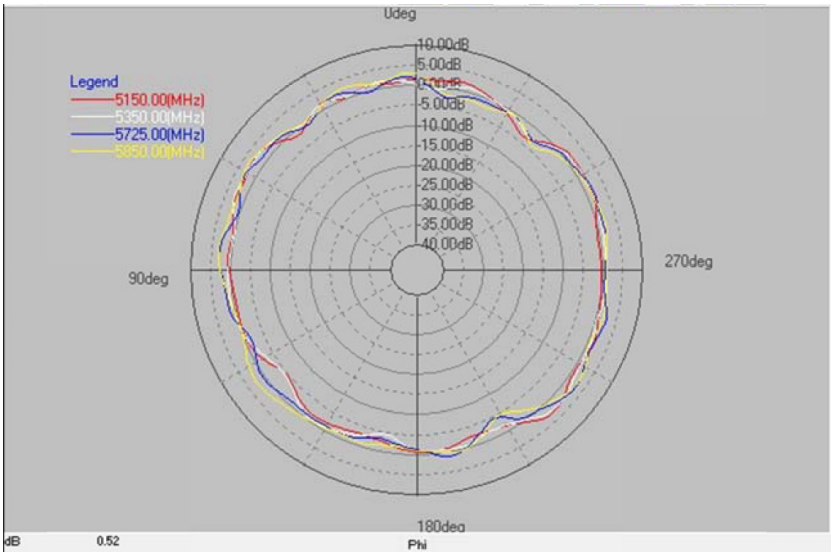


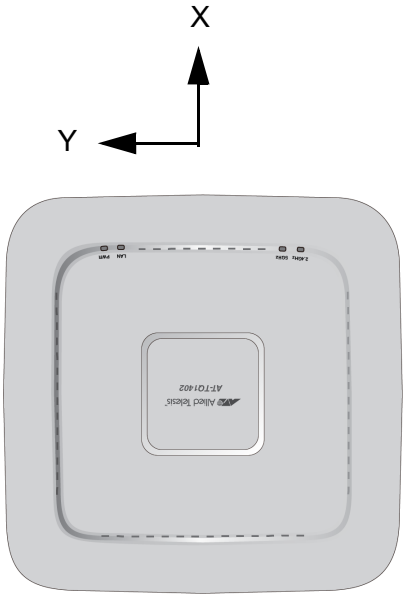
Y-Z Plane (E-total)





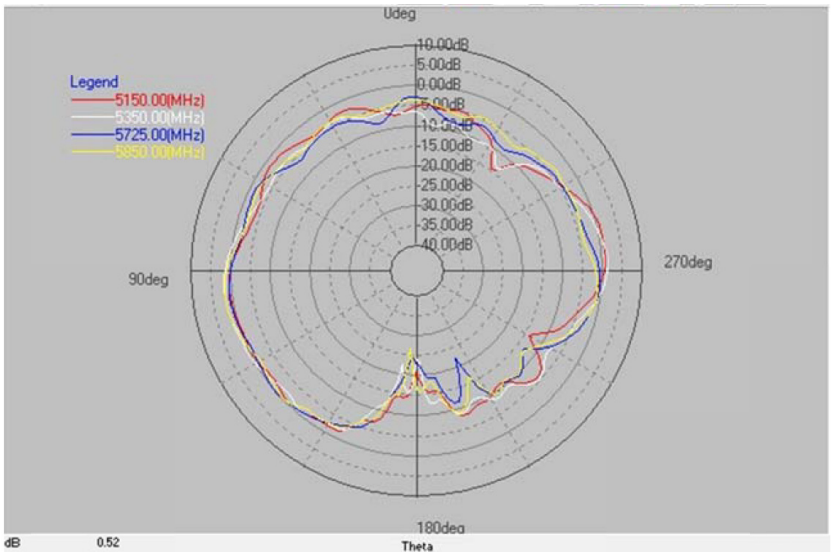
X-Y Plane (E-total)

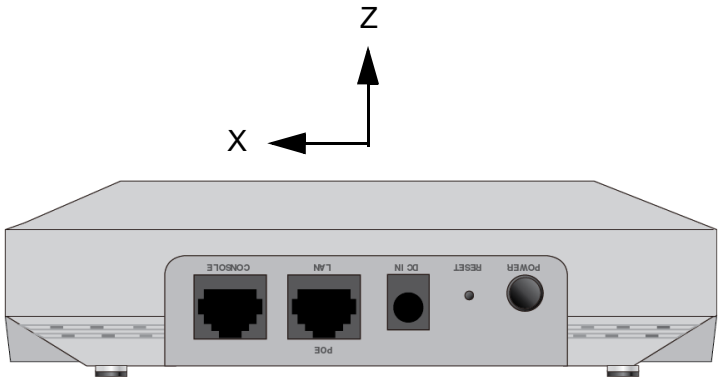




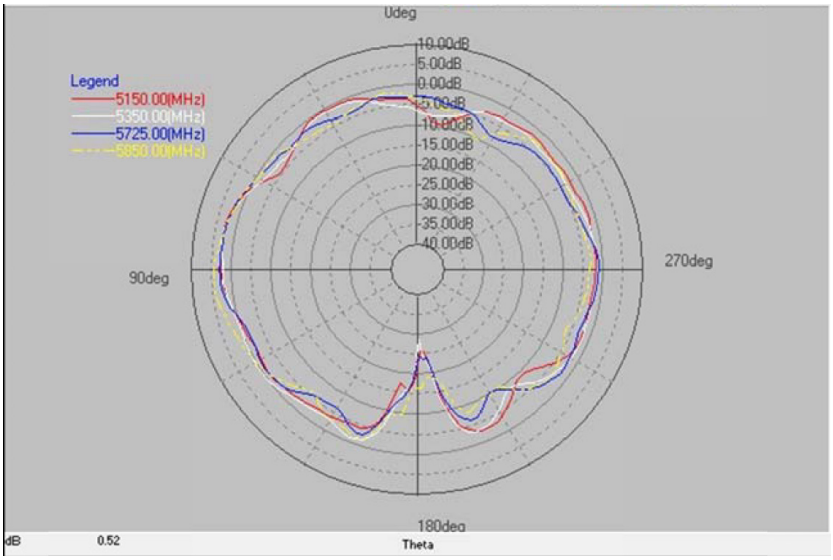
5GHz Antenna 2

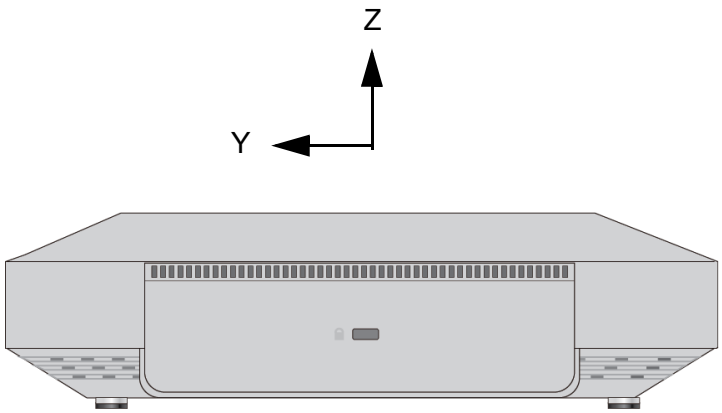
X-Z Plane (E-total)





Y-Z Plane (E-total)





X-Y Plane (E-total)