

AT-TQ5403

Wireless Access Point



Installation Guide

Copyright © 2018 Allied Telesis, Inc.

All rights reserved. No part of this publication may be reproduced without prior written permission from Allied Telesis, Inc.

Allied Telesis and the Allied Telesis logo are trademarks of Allied Telesis, Incorporated. All other product names, company names, logos or other designations mentioned herein are trademarks or registered trademarks of their respective owners.

Allied Telesis, Inc. reserves the right to make changes in specifications and other information contained in this document without prior written notice. The information provided herein is subject to change without notice. In no event shall Allied Telesis, Inc. be liable for any incidental, special, indirect, or consequential damages whatsoever, including but not limited to lost profits, arising out of or related to this manual or the information contained herein, even if Allied Telesis, Inc. has been advised of, known, or should have known, the possibility of such damages.

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 Tri-radio 2.4G/5G/5G wireless AP**

Model Number: **AT-TQ5403**

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.

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 & 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 51.

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 802.3at
- ITU-T G.993.1

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
- ARIB STD-T66
- ARIB STD-T71

Safety

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

Electro Magnetic Interference EMI

- FCC part15 Subpart B/ Class B
- EN55032 Class B
- CISPR 32
- VCCI Class B
- VCCI 32-1
- AS/NZS CISPR 32

Electro Magnetic Susceptibility - EN55024

- IEC 61000-3-2:2014
- IEC 61000-3-3:2013
- IEC 61000-4-2:2008
- IEC 61000-4-3: 2006+A1:2007+A2:2010
- IEC 61000-4-4:2012
- IEC 61000-4-5:2017
- IEC 61000-4-6:2013
- (IEC 61000-4-8:2009)
- IEC 61000-4-11:2017
- 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
(CISPR32:2015/COR1:2016)
- EN 55024:2010+A1:2015
- EN 301489-1 V2.1.1
- EN 301489-17 V3.1.1
- EN 300328 V2.1.1
- EN 301893 V2.1.1
- EN 62311: 2008
- EN 50385: 2017

RCM

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

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**.

Table of Contents

Electrical Safety and Emissions Standards	3
Preface	15
Safety Symbols Used in this Document	16
Contacting Allied Telesis	17
Chapter 1: Product Description	19
Overview	20
Features	22
Hardware Features	22
Management Access	23
LAN Port	23
Redundant Power Supply	25
LEDs	26
Cable Specifications	27
Chapter 2: AT-TQ5403 Access Point Installation	29
Review Safety Precautions	30
Unpack the AT-TQ5403 Access Point	32
AT-TQ5403 Access Point Installation Guidelines	33
Install the Access Point	34
Table Top Installation	34
Ceiling or Wall - Mounting Bracket Installation	35
Install Ethernet Cables and External DC Power Supply	39
External AC/DC Power Adapter Installation	41
Install Anti-theft Device	41
Ceiling or Wall - Attach Chassis to Mounting Bracket	43
Appendix A: Technical Specifications	45
Physical Specifications	45
Environmental Specifications	45
Power Specifications	46
AT-TQ5403 Input Power Specifications	46
External Power Supply Specifications	46
PoE Power Requirements	47
Cable Specifications	48
LAN Port Specifications and Pinouts	49
Port Specifications	49
Port Pinouts	49
Appendix B: Regulatory Statements	51
Federal Communication Commission Interference Statement	52
Europe - EU Declaration of Conformity	54
Operating Frequencies and Maximum Transmission Power Levels	54
Radiation Exposure Statement	54
Importer	54

List of Figures

Figure 1: AT-TQ5403 Model Top View	20
Figure 2: AT-TQ5403 Model Front Edge View	20
Figure 3: AT-TQ5403 Model Back Edge View	21
Figure 4: Acceptable Orientations on a Tabletop, Wall and Ceiling Installation	33
Figure 5: Attaching the Screws to the Access Point Chassis	36
Figure 6: Adjusting the Screws on the Access Point	36
Figure 7: The Access Point with Two Screws Attached	37
Figure 8: Marking/Pre-Drilling Holes the Mounting Bracket Key-Holes	38
Figure 9: Mount Bracket On Screws Using Key-Hole Slots.....	38
Figure 10: Pre-Drilling Holes on Mounting Bracket	39
Figure 11: Connecting the Ethernet Cables to LAN1 Port.....	39
Figure 12: Removing Dust Plug from LAN2 Port.....	40
Figure 13: Connecting the Ethernet Cables to LAN2 Port.....	40
Figure 14: Connecting the External AC/DC Power Adapter Cable.....	41
Figure 15: Kensington Lock Port Location.....	42
Figure 16: Align/Insert Access Point into Mounting Bracket.....	43
Figure 17: Seat Access Point onto Mounting Bracket	43
Figure 18: Securely Fasten Chassis to Mounting Bracket with Thumbscrew.....	44
Figure 19: Pin Layout for the RJ45 Connector on the LAN Port.....	49

List of Tables

Table 1. AT-TQ5403 Access Point Power Source	25
Table 2. AT-TQ5403 Access Points LEDs	26
Table 3. Shipping Box Components	32
Table 4. AT-TQ5403 Physical Specifications	45
Table 5. AT-TQ5403 Environmental Specifications	45
Table 6. AT-TQ5403 Input Power Specifications	46
Table 7. AT-TQ5403 External Power Supply Specifications	46
Table 8. AT-TQ5403 PoE+ Power Requirements	47
Table 9. LAN Port Twisted Pair Cable Requirements	48
Table 10. LAN Port Specifications	49
Table 11. MDI Pin Signals (10Base-T or 100Base-TX)	49
Table 12. MDI-X Pin Signals (10Base-T or 100Base-TX)	50
Table 13. Connector Pinouts (1000Base-T)	50

Preface

This guide contains the hardware installation instructions for the AT-TQ5403 Wireless Access Point. This preface contains the following sections:

- ❑ “Safety Symbols Used in this Document” on page 16
- ❑ “Contacting Allied Telesis” on page 17

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**.

Chapter 1

Product Description

This chapter describes the hardware components of the AT-TQ5403 wireless access point. This chapter contains the following sections:

- ❑ “Overview” on page 20
- ❑ “Features” on page 22
- ❑ “LAN Port” on page 23
- ❑ “Redundant Power Supply” on page 25
- ❑ “LEDs” on page 26
- ❑ “Cable Specifications” on page 27

Overview

The AT-TQ5403 model is a Tri-band access point designed to connect wireless devices to your local area network.

The access point is equipped with one PoE+ capable Ethernet port, a second Ethernet LAN port, a DC IN jack for an external power supply with a DC Power switch and a console port for manufacturing purposes only. This device can be mounted on a ceiling or wall or tabletop. A Kensington lock port is provided for physical security in your installation environment.

The top view of the AT-TQ5403 model is illustrated in Figure 1.



Figure 1. AT-TQ5403 Model Top View

The front edge view of the AT-TQ5403 model is illustrated in Figure 2.

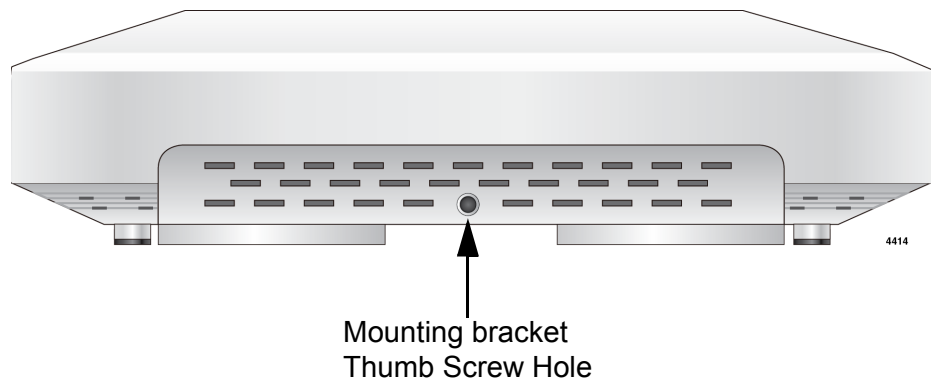


Figure 2. AT-TQ5403 Model Front Edge View

The back edge view of the AT-TQ5403 model is illustrated in Figure 3.

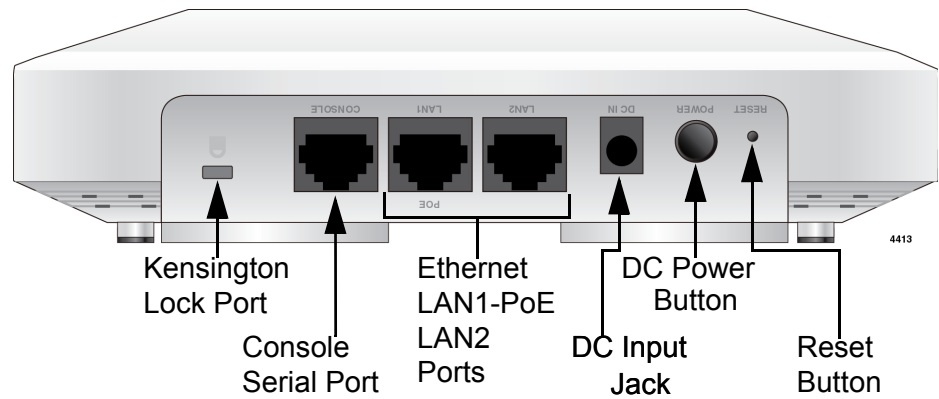


Figure 3. AT-TQ5403 Model Back Edge View

Note

The DC Power Button only controls power into the DC-IN jack. PoE power on LAN1 is not affected by this button.

Features

This section lists the main features of the AT-TQ5403 access point.

Hardware Features

The hardware features are as follows:

- ❑ Triple radio is supported. The supported frequency ranges may vary depending on the region's regulations. For example:
 - USA:
 - 2.4GHz (2412-2462 MHz)
 - 5GHz (5150-5250 MHz, 5725-5850 MHz)
 - Japan:
 - 2.4GHz (2400-2483.5 MHz)
 - 5GHz (5150-5250 MHz, 5250-5350 MHz, 5470-5725 MHz)
 - Europe:
 - 2.4GHz (2412-2472 MHz)
 - 5GHz (5150-5250 MHz, 5250-5350 MHz, 5470-5725 MHz)
 - AS/NZS:
 - 2.4GHz (2412-2472 MHz)
 - 5GHz (5150-5250 MHz, 5250-5350 MHz, 5470-5725 MHz, 5725-5850 MHz)
- ❑ LAN 1 Port - one fixed 10/100/1000Base-T RJ-45 port receiving Class 4 PD PoE+ power and transmitting/receiving Ethernet data.
- ❑ LAN 2 Port - one fixed 10/100/1000Base-T RJ-45 port.
- ❑ Each port auto-negotiates wire speed, duplex, and MDI / MDIX settings.
- ❑ IEEE 802.3 (10Base-T)
- ❑ IEEE 802.3u (100Base-TX)
- ❑ IEEE 802.3ab (1000Base-T) compliance on the Ethernet port
- ❑ IEEE 802.3at
- ❑ IEEE 802.3x
- ❑ IEEE 802.3z
- ❑ IEEE802.11a/b/g/n/ac (2x2 MIMO) support
- ❑ One RS232 RJ-45 port for software management console function.
- ❑ One DC Power Jack for external DC power supply.
- ❑ One DC Power ON/OFF switch for external DC power supply only.
- ❑ One Reset Button for Device Reset to Default functions.
- ❑ Five single color LED's:
 - LAN1
 - LAN2

2.4 GHz
5 GHz¹
5 GHz²

- ☐ One dual color LED (i.e. Power LED)
- ☐ Kensington lock port
- ☐ Ceiling, Wall, or table top installation

Management Access

Access to manage the software features of the access point are listed here:

- ☐ Standalone
- ☐ HTTPS

LAN Port

The AT-TQ5403 access point is equipped with two Ethernet ports - LAN1 and LAN2. The LAN1 port is capable of receiving PoE+ power (PD port) as the primary power or standing by as the backup power source for an external power supply unit.

Note

For more information, see “Redundant Power Supply” on page 25.

Both LAN1 and LAN2 ports are capable of transmitting and receiving Ethernet traffic and are typically connected to an Ethernet switch.

Power over Ethernet Plus (PoE+)

The AT-TQ5403 access point supports Power over Ethernet Plus (PoE+) on the LAN1 port. The access point is a PoE+ Class 4 powered device and its maximum power consumption is 25.5 watts. When the LAN1 port is connected to a PoE+ Ethernet power source and no external power supply is connected, the access point receives its power over the same LAN1 network cable that carries the network traffic.

Connector Type

Both LAN ports have an eight-pin RJ45 connector. The port uses four pins of the connector at 10/100 Mbps and all eight pins at 1000 Mbps. Refer to the tables in “Port Pinouts” on page 49 for the pin assignments.

Speed

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

Redundant Power Supply

The AT-TQ5403 access point offers a redundant power supply system. In addition to the power supply through the DC IN jack, the access point has one PoE+ capable LAN port (LAN1). The external power supply connected to the DC IN jack is the primary power source for the unit. If the power supply unit on the access point fails, power is supplied to the access point via the PoE+ port. Table 1 shows power source for the AT-TQ5403 access point under specific conditions.

Table 1. AT-TQ5403 Access Point Power Source

Case	Power Supply		Where the Access Point drains power
	DC IN jack	LAN1	
1	On	On	The access point is supplied power via the DC IN jack. The PoE+ (LAN1) port function is in standby mode.
2	On	-	The access point is supplied power via the DC IN jack. No redundancy is provided.
3	-	On	The access point is supplied power through the LAN1 port. No redundancy is provided.

LEDs

The LEDs on the access point top panel display the AT-TQ5403 status information. This LED display status information is given in Table 2.

Table 2. AT-TQ5403 Access Points LEDs

LED	State	Description
Power	GREEN	AT-TQ5403 is powered ON and operating normally.
	RED	• If during system boot up, RED solid on. • If a fault condition has been detected, RED solid on. • If FW upgrading, RED blinking.
	OFF	AT-TQ5403 is <i>not</i> receiving power.
LAN1	GREEN	A valid link is established on the port.
	BLINKING GREEN	Data is being transmitted and received.
	OFF	No link is established.
LAN2	GREEN	A valid link is established on the port.
	BLINKING GREEN	Data is being transmitted and received.
	OFF	No link is established.
2.4GHz Wi-Fi	GREEN	The 2.4GHz Wi-Fi interface is enabled.
	OFF	The 2.4GHz Wi-Fi interface is disabled.
5 GHz ¹ Wi-Fi	GREEN	The 5GHz Wi-Fi interface is enabled.
	OFF	The 5GHz Wi-Fi interface is disabled.
5 GHz ² Wi-Fi	GREEN	The 5GHz Wi-Fi interface is enabled.
	OFF	The 5GHz Wi-Fi interface is disabled.

Cable Specifications

The AT-TQ5403 access point is connected to your local area network with Ethernet cables from Ethernet ports LAN1 and LAN2. Refer to “Cable Specifications” on page 48 for the specifications of these cables.

Chapter 2

AT-TQ5403 Access Point Installation

This chapter describes how to install the AT-TQ5403 access point. It contains the following sections:

- ❑ “Review Safety Precautions” on page 30
- ❑ “Unpack the AT-TQ5403 Access Point” on page 32
- ❑ “AT-TQ5403 Access Point Installation Guidelines” on page 33
- ❑ “Install the Access Point” on page 34
 - “Table Top Installation” on page 34
 - “Ceiling or Wall - Mounting Bracket Installation” on page 35
 - “Install Ethernet Cables and External DC Power Supply” on page 39
 - “External AC/DC Power Adapter Installation” on page 41
 - “Install Anti-theft Device” on page 41
 - “Ceiling or Wall - Attach Chassis to Mounting Bracket” on page 43

Review 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**

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**



Warning

Operating Temperature. This product is designed for a maximum ambient temperature of 45 degrees C when powered by an external AC/DC power supply and a maximum ambient temperature of 50 degrees C when powered by a PoE power source. *see* **E117**

Note

The AT-TQ5403 must be supplied by:

1. A UL Listed external AC/DC power supply suitable for use at Tma 45 °C and a maximum operating altitude of 2000 m or higher, and whose output meets SELV and is rated 12VDC, 2.0A,

OR

2. By Power over Ethernet through an UL Listed ITE. Refer to Table 7, “AT-TQ5403 External Power Supply Specifications” on page 46.

Unpack the AT-TQ5403 Access Point

To unpack the AT-TQ5403 access point, perform the following procedure:

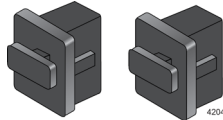
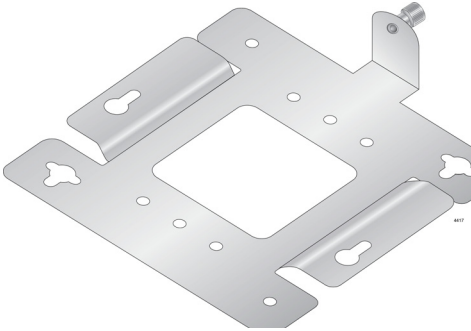
1. Remove all components from the shipping box.

Note

Store the packaging material in a safe location so that if you need to return the unit to Allied Telesis, you will have the original shipping material available.

2. Verify that all components listed in Table 3 are included in your shipping box.

Table 3. Shipping Box Components

Name	Component
AT-TQ5403 Access Point	
2 ea RJ-45 Dust Caps	
1 ea Mounting Bracket	
2 ea Screws for the Chassis (M5 x 8mm, Pan-head)	

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

AT-TQ5403 Access Point 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 4 on page 45 for the product weight.)
- ❑ Connect the Ethernet cable(s) and power cord to the access point before installing the access point on the ceiling or wall. These are physically difficult to install after the chassis is installed on the mounting bracket.
- ❑ Ensure the Ethernet cable(s) is long enough to connect to its destination point(s) before installing the access point. Once the installation is complete, it is physically difficult to change the cables.
- ❑ If the primary power for the access point is to be the external power supply (not provided with the AT-TQ5403 Access Point), ensure that an AC power outlet is within six feet of the planned installation site. (Refer to Table 6 on page 46 for the power supply AC power specifications.)
- ❑ Refer to Figure 4 for the acceptable orientations for the table top, wall and ceiling installations.

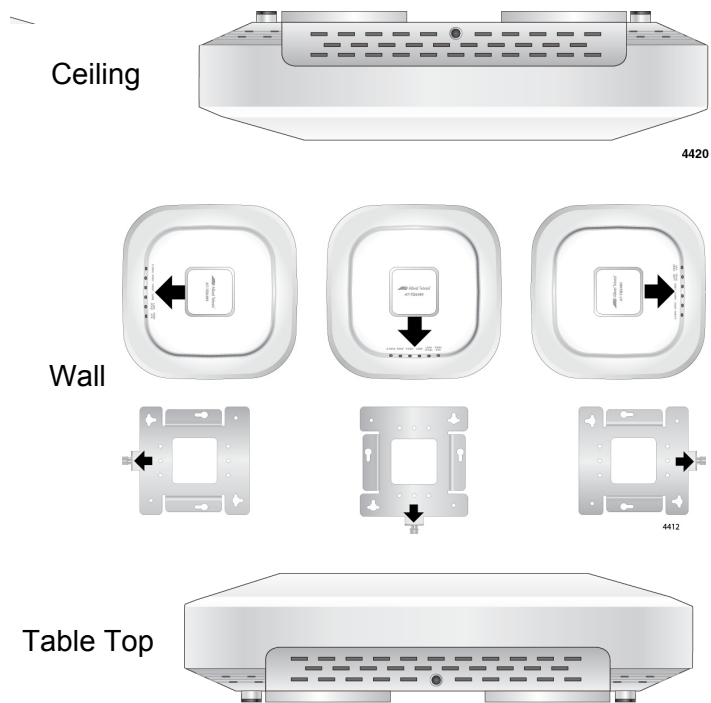


Figure 4. Acceptable Orientations on a Tabletop, Wall and Ceiling Installation

Install the Access Point

The AT-TQ5403 access point can be mounted on a table, wall, or hard-surface ceiling. Before beginning the installation, be sure to

- ❑ Read “Review Safety Precautions” on page 30, and
- ❑ Review “AT-TQ5403 Access Point Installation Guidelines” on page 33.
- ❑ Select a location to install the AT-TQ5403 access point where both the power and Ethernet cables will reach the power source and the partner Ethernet device(s).

This section contains the following topics:

- ❑ “Table Top Installation” on page 34
- ❑ “Ceiling or Wall - Mounting Bracket Installation” on page 35
- ❑ “External AC/DC Power Adapter Installation” on page 41
- ❑ “Ceiling or Wall - Attach Chassis to Mounting Bracket” on page 43
- ❑ “Install Anti-theft Device” on page 41

Table Top Installation

This section outlines the installation procedure to install the AT-TQ5403 Access Point on a table top.

Preparation for Table Top Installation

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

- ❑ AT-TQ5403 access point
- ❑ One or two Ethernet cables - See “Cable Specifications” on page 48
- ❑ 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)

Table Top Installation Procedure

Perform the following steps to install the AT-TQ5403 Access Point on a table top:

1. Go to “Install Ethernet Cables and External DC Power Supply” on page 39.
2. If you choose to install a security cable to the AT-TQ5403, go to “Install Anti-theft Device” on page 41.
3. The installation of your AT-TQ5403 Access Point on the table top surface is now complete.

Ceiling or Wall - Mounting Bracket Installation

This section explains how to install the access point on a ceiling or wall that consists of a hard surface. The following topics are included:

- ☐ “Preparation for Ceiling or Wall Installation”
- ☐ “Pre-Fitting Mounting Bracket on AT-TQ5403 Access Point” on page 36
- ☐ “Installing Mounting Bracket on Ceiling or Wall” on page 37
- ☐ “External AC/DC Power Adapter Installation” on page 41
- ☐ “Install Anti-theft Device” on page 41
- ☐ “Ceiling or Wall - Attach Chassis to Mounting Bracket” on page 43

Preparation for Ceiling or Wall Installation

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

- ☐ AT-TQ5403 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 Mounting Bracket on AT-TQ5403 Access Point

To pre-fit the 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 as shown in Figure 5.

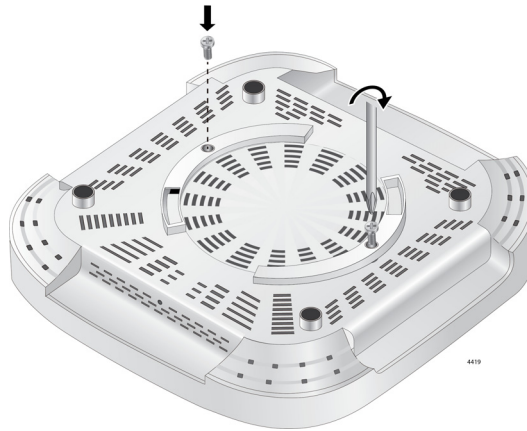


Figure 5. Attaching the Screws to the Access Point Chassis

2. Align and insert the two screws installed in Step 1 into the mounting bracket keyholes as shown in Figure 6.

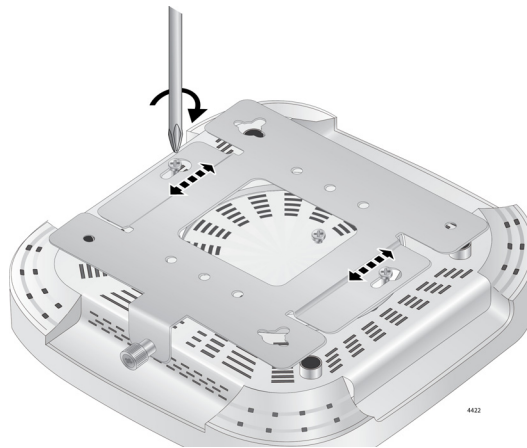


Figure 6. Adjusting the Screws on the Access Point

3. Tighten the screws so that they touch the mounting bracket plate and then loosen them by 1/4 turn.

Note

Adjust the access point chassis screws so they are loose enough to slide into the narrow end of the mounting bracket keyhole, but tight enough to hold the access point close without rattling against the mounting bracket.

4. Slide the mounting bracket forward and temporarily remove it from the access point so the bracket can be independently mounted on the ceiling or wall in the next steps. Refer to Figure 7.

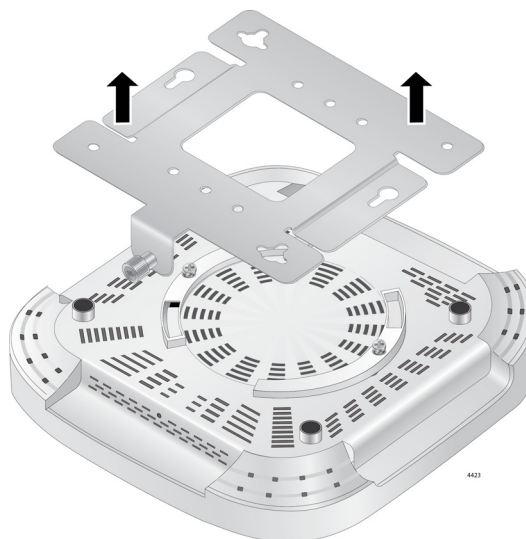


Figure 7. The Access Point with Two Screws Attached

Installing Mounting Bracket on Ceiling or Wall

1. Choose an allowable orientation of the access point from the examples shown in Figure 4 on page 33.

When installing the mounting bracket, ensure that its thumb screw is oriented in the same direction as the front of the access point chassis so that your intended orientation of the chassis is achieved after installation. Refer to the arrows in Figure 4 on page 33.

2. Using the mounting bracket as a template, mark the two key-hole slots with a pencil in the location and orientation where you want to install the access point. Refer to arrows in Figure 8.

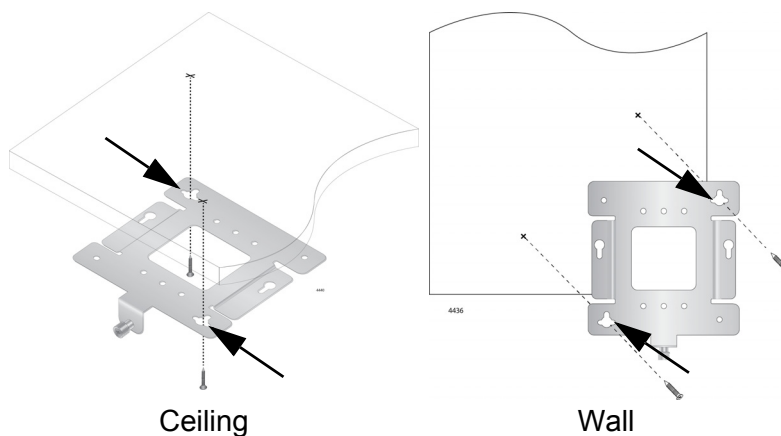


Figure 8. Marking/Pre-Drilling Holes the Mounting Bracket Key-Holes

3. Pre-drill the two marked locations for the keyhole slots on the hard-surface ceiling or wall and install two M4 screws and anchors (if required). Leave the screws loose so the bracket can slide under the screw head in Step 4

Note

For a wooden wall or ceiling, use M4, 25.0 mm flat-head wood screws and anchors (not provided).

4. Insert the openings of the bracket key-holes under the two screw heads and slide the bracket into narrow end of the key-hole slot opening. Refer to arrows in Figure 9. Tighten the screws snugly onto the bracket.

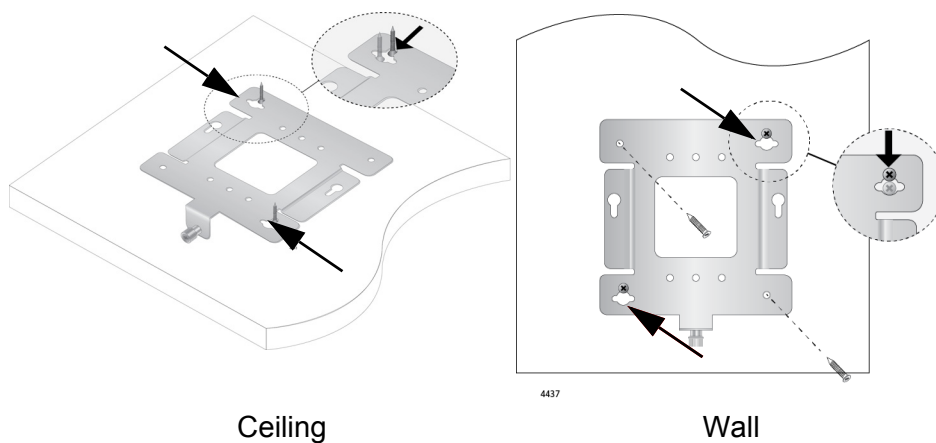


Figure 9. Mount Bracket On Screws Using Key-Hole Slots

- Secure the physical position of the mounting bracket by pre-drilling holes through the two existing open bracket mounting holes in the opposite corners from the key-hole slots. Refer to the arrows in Figure 10.

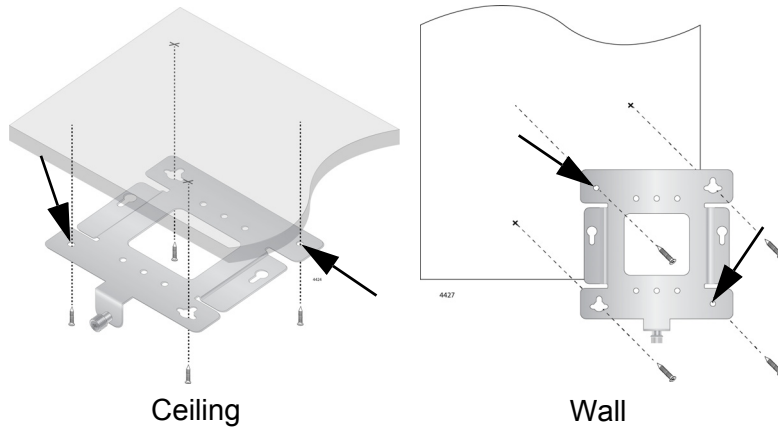


Figure 10. Pre-Drilling Holes on Mounting Bracket

- Install and tighten two M4 screws (not provided) in the holes prepared in Step 5. The physical position of the bracket is now stationary.
- Go to "Install Ethernet Cables and External DC Power Supply".

Install Ethernet Cables and External DC Power Supply

The Ethernet and power cables need to be connected before attaching the access point to the mounting bracket.

Note

Refer to "Cable Specifications" on page 27 when selecting Ethernet cables.

- Connect one Ethernet cable into the RJ-45 LAN1 port. Refer to Figure 11. This is the primary Ethernet port, which also capable of receiving PoE power.

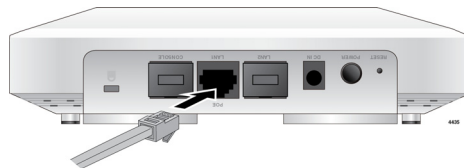


Figure 11. Connecting the Ethernet Cables to LAN1 Port

2. If you choose to have more than one Ethernet LAN connection:
 - a. Remove the dust plug on the LAN2 port. Refer to Figure 12.

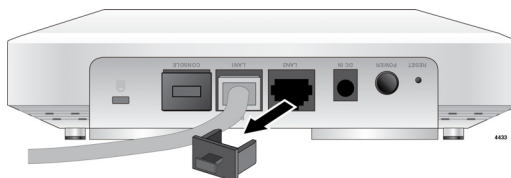


Figure 12. Removing Dust Plug from LAN2 Port

- b. Connect the second Ethernet cable into the RJ-45 LAN2 port. Refer to Figure 13

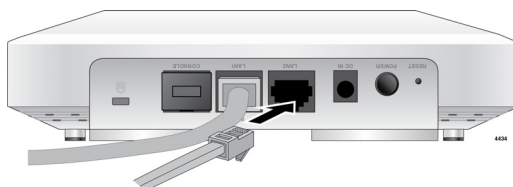


Figure 13. Connecting the Ethernet Cables to LAN2 Port

3. Connect the opposite ends of the Ethernet cable(s) to your network Ethernet device(s).

Note

If you plan to use PoE+ power as the primary or redundant power source, then the Ethernet device connected to the LAN1 port needs to be capable of providing PoE+ power.

Note

For the AT-TQ5403 PoE+ input power specifications, refer to “PoE Power Requirements” on page 47.

4. Depending on the primary power source for the AT-TQ5403 access point, perform one of the following steps:
 - a. If the access point is to be powered with the PoE+ feature only, then the PoE+ power source is already connected via the Ethernet cable connected to LAN1. Go to “Install Anti-theft Device” on page 41.
 - b. If the primary power for the access point is to be an external AC/DC power supply, proceed to “External AC/DC Power Adapter Installation”.

External AC/DC Power Adapter Installation

Allied Telesis recommends that you procure an AT-MWS0091 Power Adapter if you choose to use an external power supply. Perform the following procedure

1. Check the AC plug on the external power supply and verify that it is the correct plug for your region. If it is not, follow the instructions provided with the external power supply to install an optional AC plug that is compatible with your region.
2. Plug the Power Adapter DC plug into the DC-IN jack on the access point. Refer to Figure 14.

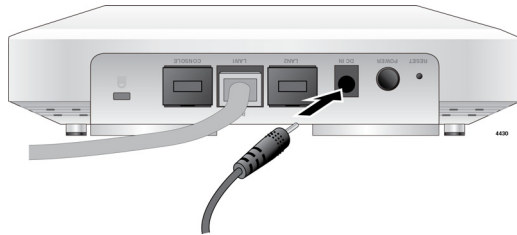


Figure 14. Connecting the External AC/DC Power Adapter Cable

3. Connect the external power supply AC plug to an appropriate AC power source.
4. On the AT-TQ5403 chassis, push the DC Power Button to the "IN" position to turn ON the power supply at the chassis.

Note

The DC Power Button only controls the ON/OFF power into the DC-IN jack. The PoE+ power provided on LAN1 is not affected by this button.

5. Go to the "Install Anti-theft Device" section.

Install Anti-theft Device

Installation of an anti-theft cable/lock is optional. If you elect to install a physical security device such as a Kensington lock, the AT-TQ5403 has a lock port that is compatible with it. The lock port can be used to physically secure the device when it is installed on a table, wall, or a ceiling.

Note

Anti-theft devices including a Kensington lock 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 15 for the Kensington lock port's location.

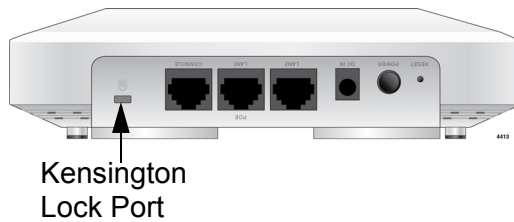


Figure 15. Kensington Lock Port Location

2. If you are installing your AT-TQ5403 on a table top surface, your unit is now ready for use.
3. If you are installing your AT-TQ5403 on the ceiling or wall installation, go to "Ceiling or Wall - Attach Chassis to Mounting Bracket" on page 43 section to complete this installation.

Ceiling or Wall - Attach Chassis to Mounting Bracket

Perform this procedure to complete the ceiling or wall installation by attaching the chassis to the mounting bracket.

1. Align and insert the two access point chassis screws into the keyhole slots of the mounting bracket. Refer to Figure 16.

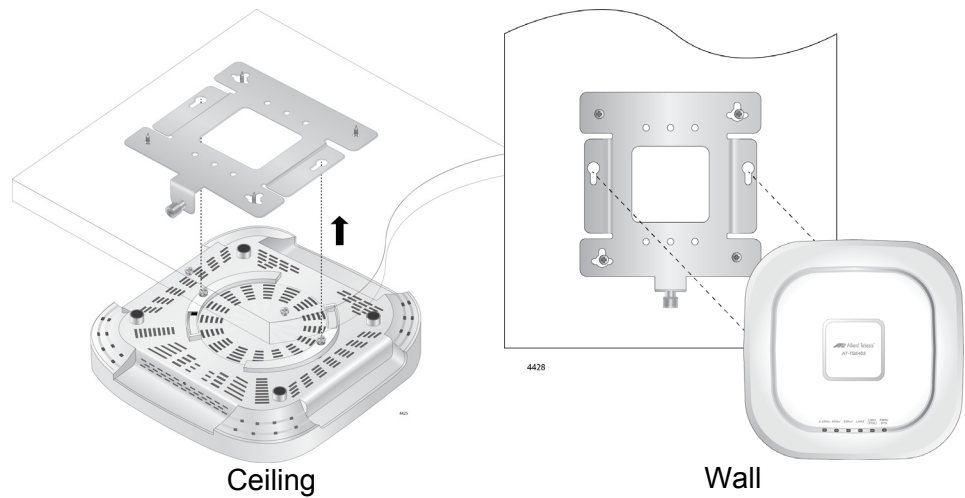


Figure 16. Align/Insert Access Point into Mounting Bracket

2. Slide the chassis forward until seated into the bracket keyhole slot and the bracket thumbscrew is aligned with the screw hole on the front of the chassis, as shown in Figure 17.

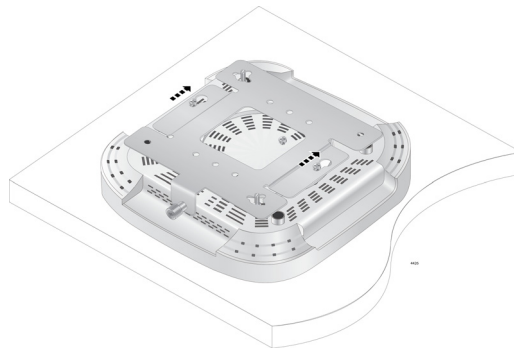


Figure 17. Seat Access Point onto Mounting Bracket

3. Tighten the bracket thumbscrew into the front of the chassis until it is securely fastened. Refer to Figure 18.

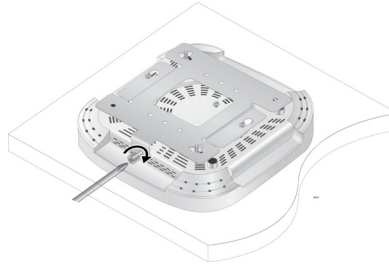


Figure 18. Securely Fasten Chassis to Mounting Bracket with Thumbscrew

4. The ceiling or wall installation is now complete and your AT-TQ5403 Access Point is ready for use.

Appendix A

Technical Specifications

This appendix contains the following sections:

- ❑ “Physical Specifications”
- ❑ “Environmental Specifications”
- ❑ “Power Specifications” on page 46
- ❑ “Cable Specifications” on page 48
- ❑ “LAN Port Specifications and Pinouts” on page 49

Physical Specifications

Table 4. AT-TQ5403 Physical Specifications

Parameter	Specification
Dimensions (W x D x H)	214.74 mm X 214.37 mm X 48 mm (8.45 in. x 8.44 in. x 1.890 in.)
Weight (AT-TQ5403 with mounting bracket)	.748 Kg (1.65 lbs)

Environmental Specifications

Table 5. AT-TQ5403 Environmental Specifications

Parameter	Specification
Operating Temperature when powered by AC power supply	0° C to 45° C (32° F to 113° F)
Operating Temperature 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	2000 m (6562 ft)

Power Specifications

AT-TQ5403 Input Power Specifications

The power specifications for the AT-TQ5403 are given in Table 6.

Table 6. AT-TQ5403 Input Power Specifications

Parameter	Specification
Rated Input Voltage	12 VDC
Maximum Input Current	.7 A
Average Input Current	.52 A

External Power Supply Specifications

The external power supply must be capable of powering the AT-TQ5403 by meeting the specifications given in Table 7.

Table 7. AT-TQ5403 External Power Supply Specifications

Parameter	Specification
Input Voltage Range	100~240 VAC
Input Frequency	50 - 60 Hz
Rated Output Voltage	+12 VDC
Rated Output Current	2 A
Temperature Range	0° C to 45° C (32° F to 113° F)
Operating Altitude	Minimum 2000 m (6562 ft)

Note

Allied Telesis recommends using the AT-MWS0091 external AC/DC power supply with the AT-TQ5403 access point. This power supply is a UL Listed power supply and is fully compatible with the above specifications while meeting the standards of a separated extra-low voltage (SELV).

Note

The AT-MWS0091 external power supply is not supplied or shipped with the AT-TQ5403 access point product.

PoE Power Requirements

The power requirements of the AT-TQ5403 LAN1 PoE+ port is given in Table 8.

Table 8. AT-TQ5403 PoE+ Power Requirements

Parameter	Specification
AT-TQ5403	25.5 watts
PoE Device Classification	Class 4 Powered Device

Cable Specifications

The AT-TQ5403 access point Ethernet cable requirements for the LAN ports are listed in Table 9.

Table 9. LAN Port Twisted Pair Cable Requirements

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

Note

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

LAN Port Specifications and Pinouts

Port Specifications The port specifications are shown in Table 10.

Table 10. LAN Port Specifications

Connector	Specification
Standards - LAN1 and LAN2	IEEE 802.3 (10Base-T) IEEE 802.3u (100Base-TX) IEEE 802.3ab (1000Base-T)
PoE standard - LAN1 only	IEEE 802.3at (class 4)

Port Pinouts The pin signal definitions for 10/100 Mbps and 1000 Mbps Ethernet traffic are given below.

Figure 19 illustrates the pin layout of the LAN ports.

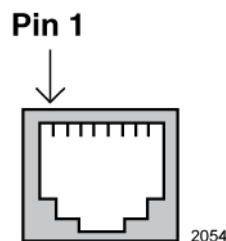


Figure 19. Pin Layout for the RJ45 Connector on the LAN Port

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

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

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

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

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

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

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

Table 13. 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” on page 52
- ❑ “Europe - EU Declaration of Conformity” on page 54

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.

For operation within 5.15 ~ 5.25GHz / 5.47 ~ 5.725GHz frequency range, it is restricted to indoor environment. 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 & your body.

Europe - EU Declaration of Conformity

Operating Frequencies and Maximum Transmission Power Levels

Hereby, Allied Telesis, Inc. declares that the radio equipment type [AT-TQ5403] is in compliance with Directive 2014/53/EU.

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

- 2412-2472 MHz:
19.23 dBm (Beamforming), 18.79dBm (Non-Beamforming)
- 5150-5250 MHz:
22.11 dBm (Beamforming), 22.13dBm (Non-Beamforming)
- 5250-5350 MHz:
22.06 dBm (Beamforming), 21.87dBm (Non-Beamforming)
- 5470-5725 MHz:
28.97 dBm (Beamforming), 28.70dBm (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			

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.
