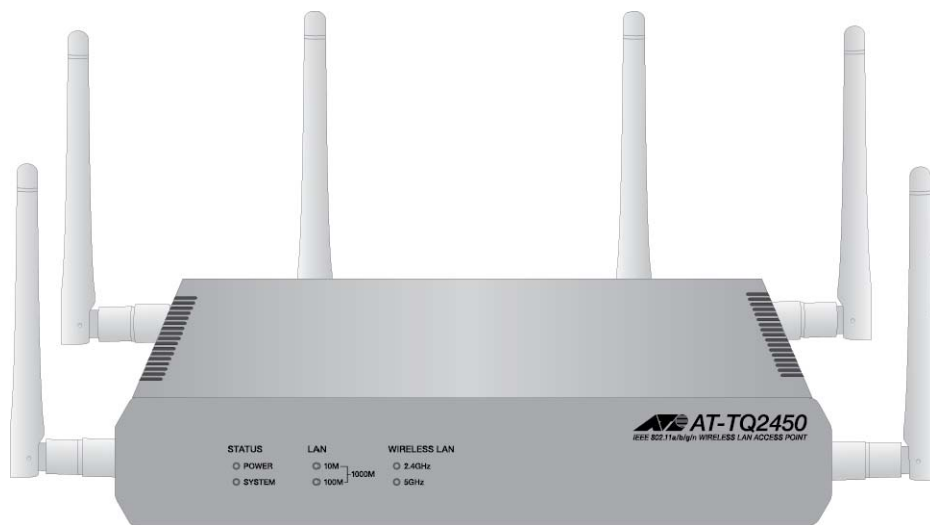


AT-TQ2450

Enterprise-class Wireless Access Point
with IEEE802.11a/b/g/n Dual Radio



2916

Installation Guide

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Electrical Safety and Emissions Standards

This product meets the following standards.

Federal Communications Commission Interference Statement

Declaration of Conformity

Manufacturer Name: Allied Telesis, Inc.

Declares that the product: **wireless access point**

Model Number: **AT-TQ2450**

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.

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.

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 20cm between the radiator & your body.

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

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


Note

For additional regulatory statements, refer to Appendix B, "Regulatory Statements" on page 63.

Safety and Electromagnetic Emissions Certificates

Standard Compliance	RoHs compliant European Union RoHS (Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.)
Electromagnetic Compatibility (EMC)	EN55022/24 FCC Part15B CISPR22 ICES-003
Medical (EMC)	ETSI EN 60601-1-2:2007
Radio Equipment	AS/NZS 4269 EN300328 EN391893 EN301489-1/-17 FCC Part 15C FCC Part 15E RSS-210
Safety	UL UL60950-1 2nd edition UL UL2043 CB IEC60950-1:2005+Am1:2009 LVD EN60950-1:2006+A11:2009+A1:2010+A12:2011 TUV-T mark EN60950-1:2006+A11:2009+A1:2010+A12:2011
Wi-Fi CERTIFIED™	Certification ID: WFA8879 WPA™ - Enterprise, Personal WPA2™ - Enterprise, Personal WMM®

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/software. After you have accessed this website, enter the model number in the **Search by Product Name** box and then click **Find** to view the current list of documents.

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Preface

This guide contains the hardware installation instructions for the AT-TQ2450 Wireless Access Point. This preface contains the following sections:

- “Safety Symbols Used in this Document” on page 14
- “Contacting Allied Telesis” on page 15

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.



Warning

Laser warnings inform you that an eye or skin hazard exists due to the presence of a Class 1 laser device.

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, to check support tickets, to learn about RMAs, and to 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 a Return Merchandise Authorization (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

Overview

This chapter describes the hardware components of the AT-TQ2450 Wireless Access Point. This chapter contains the following sections:

- ❑ “Features” on page 18
- ❑ “Front and Rear Panels” on page 19
- ❑ “2.4 and 5 GHz Antenna Connectors” on page 21
- ❑ “LAN Port” on page 22
- ❑ “LEDs” on page 24
- ❑ “Reset Button” on page 25

Features

The main features of the product are listed here:

- Independent 2.4 and 5 GHz radios
- IEEE 802.11a/b/g
- IEEE 802.11n 2x2 MIMO chains with antenna diversity
- Data rates of 300 Mbps for the 2.4 GHz radio and 300 Mbps for the 5 GHz radio
- Wireless Distribution System (WDS) bridges
- Access point clustering
- Rogue access point detection
- Multiple SSIDs
- One 10/100/1000Base-T Ethernet port with Auto-Negotiation, auto MDI/MDIX, and IEEE 802.3af Power over Ethernet (PoE)
- IEEE 802.3 (10Base-T), IEEE 802.3u (100Base-TX), and IEEE 802.3ab (1000Base-T) compliance on the Ethernet port
- MAC address filtering for wireless access security
- Broadcast and multicast rate limiting
- Virtual access points for multiple broadcast domains
- DHCP client
- RADIUS accounting with external RADIUS server
- Network Time Protocol (NTP) client
- Domain name server (DNS) client
- IEEE 802.1x authentication
- WPA-Personal and WPA-Enterprise with WPA, WPA2, TKIP, and CCMP (AES) authentication and encryption
- Static WEP encryption
- HTTP and HTTPS web browser management
- SNMPv1 and v2c management
- Quality of Service
- Event log
- Syslog client
- Table, wall, or ceiling installation

Front and Rear Panels

The front and rear panels of the unit are illustrated in Figure 1 and Figure 2.

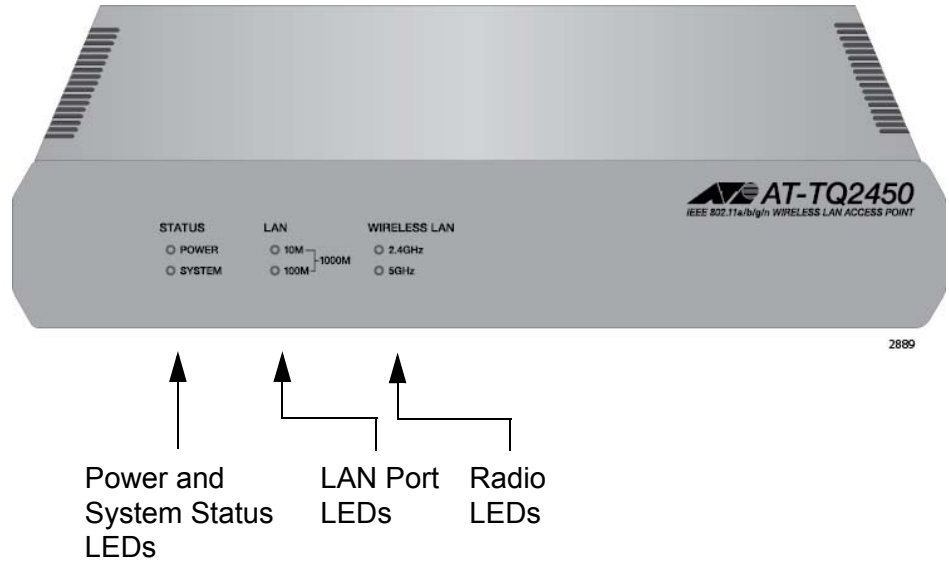


Figure 1. Front Panel

The LEDs are described in “LEDs” on page 24.

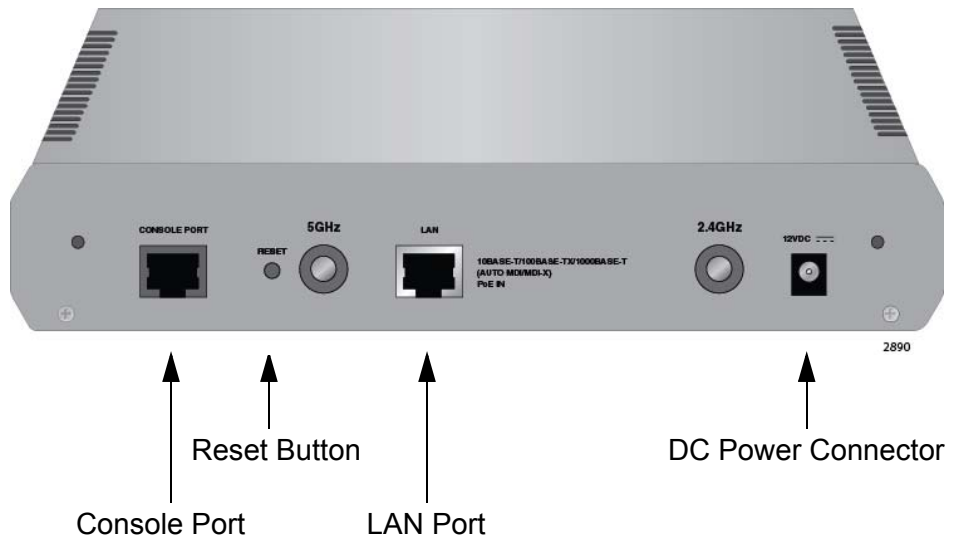


Figure 2. Rear Panel

The rear panel components are listed in Table 1 on page 20.

Table 1. Rear Panel Components

Field	Description
Console Port	The Console Port is for manufacturing purposes only.
Reset Button	The Reset button returns the parameter settings on the access point to their default settings. For information, refer to “Reset Button” on page 25.
LAN Port	The LAN port connects the access port to your wired network. It supports PoE. If you connect the port to an Ethernet switch that supports PoE, you do not have to use the AC/DC adapter to power the device. For information, refer to “LAN Port” on page 22
DC Power Connector	The DC Power Connector connects to the AC/DC power adapter included with the access point. You have to use the adapter if you do not connect the LAN port to an Ethernet switch that supports PoE.

LAN Port

The LAN port is used to connect the device to your Local Area Network (LAN), typically through an Ethernet switch.

Power over Ethernet

The AT-TQ2450 Access Point supports Power over Ethernet on the LAN port. The unit is a PoE class 3 powered device with a maximum power consumption of 11 watts. When the port is connected to an PoE Ethernet switch, the unit receives its power over the network cable that carries the network traffic. If you use the PoE feature, you do not need to use the AC/DC power adapter that comes with the access point.

Connector Type

The LAN port has an 8-pin RJ-45 connector. The port uses four pins at 10 or 100 Mbps and all eight pins at 1000 Mbps. The pin assignments are listed in “LAN Port” on page 59.

Speed

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

Note

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

Duplex Mode

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

Note

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

Maximum Distance

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

Cable Requirements

The cable requirements for the LAN port are listed in Table 2 on page 23.

Table 2. Twisted Pair Cable for the LAN Port

Cable Type	10Mbps		100Mbps		1000Mbps	
	Non-PoE	PoE	Non-PoE	PoE	Non-PoE	PoE
Standard TIA/EIA 568-B-compliant Category 3 shielded or unshielded cabling with 100 ohm impedance and a frequency of 16 MHz.	Yes	No	Yes	No	No	No
Standard TIA/EIA 568-A-compliant Category 5 shielded or unshielded cabling with 100 ohm impedance and a frequency of 100 MHz.	Yes	Yes	Yes	Yes	Yes	No
Standard TIA/EIA 568-B-compliant Enhanced Category 5 (Cat 5e) shielded or unshielded cabling with 100 ohm impedance and a frequency of 100 MHz.	Yes	Yes	Yes	Yes	Yes	Yes
Standard TIA/EIA 568-B-compliant Category 6 or 6a shielded cabling.	Yes	Yes	Yes	Yes	Yes	Yes

Automatic MDIX Detection

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

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

Port Pinouts

Refer to Table 11 on page 59 for the port pinouts of the LAN port when it is operating at 10 or 100 Mbps in the MDI configuration and Table 12 on page 59 for the MDI-X configuration. Refer to Table 13 on page 60 for the port pinouts when the port is operating at 1000 Mbps.

LEDs

The LEDs on the AT-TQ2450 Access Port are described in Table 3.

Table 3. LEDs on the AT-TQ2450 Access Point

LED	State	Description
Power	Solid Green	The unit is receiving DC power that is within the normal operating range.
	Off	The power supply is not receiving power from either the AC/DC power adapter or a PoE Ethernet switch.
System	Amber	The access point is loading its firmware.
	Off	The unit is operating normally.
10M and 100M	10M: On 100M: Off	The Ethernet port is operating at 10 Mbps.
	10M: Off 100M: On	The Ethernet port is operating at 100 Mbps.
	10M: On 100M: On	The Ethernet port is operating at 1000 Mbps.
Radio1	Green	The 2.4GHz radio and antennas are sending and receiving radio waves.
Radio2	Green	The 5GHz radio and antennas are sending and receiving radio waves.

Reset Button

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

You may disable the button using the management software. If the unit is installed in a non-secure area, you might want to disable the button to prevent unauthorized individuals from pressing it and potentially disrupting the operations of your wireless network.

The Reset button is recessed to prevent it from being accidentally pressed. To press the button, use a pointed object, such as the end of a straightened paperclip. Hold the button for five seconds and release. The access point resets and loads its default configuration in a process that takes one minute to complete. In its default configuration, the access point attempts to contact a DHCP server from its LAN port for its IP address configuration. If it receives a response, it configures its IP address according to the settings from the DHCP server. If it does not receive a response, it uses the default address 192.168.1.230 and subnet mask 255.255.255.0. For instructions on how to start a management session when the access point is at its default configuration, refer to “Starting the Initial Management Session on the Access Point” on page 51.

Chapter 2

Installing the Access Point

This chapter describes how to install the AT-TQ2450 Wireless Access Point. This chapter contains the following sections:

- ❑ “Reviewing Safety Precautions” on page 28
- ❑ “Unpacking the AT-TQ2450 Access Point” on page 30
- ❑ “Installing the Access Point on a Table” on page 33
- ❑ “Installing the Access Point on a Wall or Ceiling with the AT-BRKT-J26 Bracket” on page 37
- ❑ “Installing Anti-theft Devices” on page 50
- ❑ “Starting the Initial Management Session on the Access Point” on page 51
- ❑ “Setting the Country Setting” on page 55

Note


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

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

Reviewing Safety Precautions


Please review the following safety precautions before you begin to install the access point.

Note

The  indicates that a translation of the safety statement is available for viewing in the “Translated Safety Statements” document on our web site at <http://www.alliedtelesis.com/support>.




Warning

To prevent electric shock, do not remove the cover. No user-serviceable parts inside. This unit contains hazardous voltages and should only be opened by a trained and qualified technician. To avoid the possibility of electric shock, disconnect electric power to the product before connecting or disconnecting the LAN cables.  E1




Warning


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



Warning


Power cord is used as a disconnection device. To de-energize equipment, disconnect the power cord.  E3

Note

Pluggable Equipment. The socket outlet shall be installed near the equipment and shall be easily accessible.  E5



Caution

Air vents must not be blocked and must have free access to the room ambient air for cooling.  E6

**Warning**

Operating Temperature. This product is designed for a maximum ambient temperature of 40° degrees C with the AC/DC adapter and 50° degrees C with Power over Ethernet.

Note

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

Note

This product is not approved for use in a computer room as defined in the Standard for Protection of Electronic Computer/Data Processing Equipment, ANSI/NFPA 75.

Note

If you are not using PoE to power to the unit, use only the AC/DC adapter that ships with the product to ensure compatibility.

Unpacking the AT-TQ2450 Access Point

As you unpack the access point, check the shipping container for the components listed in Figure 4. If any item is missing or damaged, contact your Allied Telesis sales representative for assistance.



Figure 4. AT-TQ2450 Access Point Items

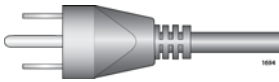
The access point may or may not come with an AC/DC power adapter, depending on how you ordered it. (You may have ordered it without the power adapter if you plan to use the PoE feature.) If you did order the access point with the power adapter, the shipping container should contain one power adapter, one tie wrap, and either one North American power cord, as shown in Figure 5 on page 31, or four regional power cords, as shown in Figure 6 on page 31.



One AC/DC power adapter



One tie wrap



One North American power cord

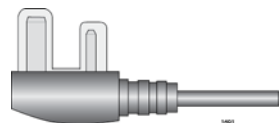
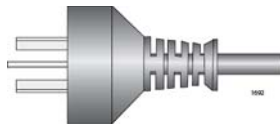
Figure 5. Power Adapter with One North American Power Cord



One AC/DC power adapter



One tie wrap



Four regional power cords
(North American, European,
Australian, and United Kingdom)

Figure 6. Power Adapter with Four Regional Power Cords

Do one of the following:

- ❑ To install the unit on a table, go to “Installing the Access Point on a Table” on page 33.
- ❑ To install the unit in a wall or ceiling, go to “Installing the Access Point on a Wall of Ceiling with the AT-BRKT-J26 Bracket” on page 37

Installing the Access Point on a Table

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

1. Place the access point upside down on a table.
2. Affix the four rubber feet included with the access point to the four corners of the bottom panel of the unit. Refer to Figure 7.

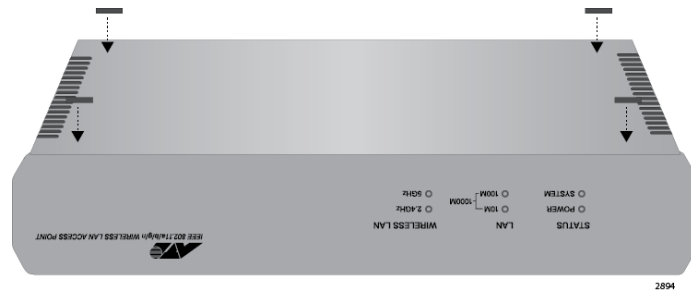


Figure 7. Installing the Rubber Feet

1. Turn the access point right side up on the table.
2. Install the three 2.4 GHz and three 5 GHz antennas to the corresponding connectors on the sides of the unit. The connectors are labelled. Refer to Figure 8.



Figure 8. Installing the Antenna



Caution

Do not attach the antennas when the access point is power on because you might damage the unit.

3. Attach a network cable to the LAN port. Refer to Figure 9 on page 34.



Figure 9. Attaching the Network Cable to the LAN Port

4. Connect the other end of the network cable to a port on an Ethernet switch.

If you are not using the PoE feature on the Ethernet port to power the unit, continue with this procedure to attach the AC/DC power adapter.

If you are using the PoE feature on the LAN Port to power the access point, the installation procedure is complete. Go to “Starting the Initial Management Session on the Access Point” on page 51.

5. Connect the power cord to the AC/DC adapter. Refer to Figure 10.

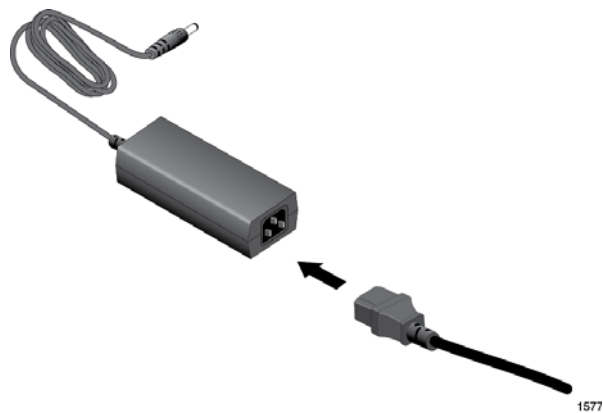


Figure 10. Connecting the Power Cord to the AC/DC Adapter

6. Connect the DC cable on the AC/DC adapter to the 12VDC connector on the access point. Refer to Figure 11 on page 35.

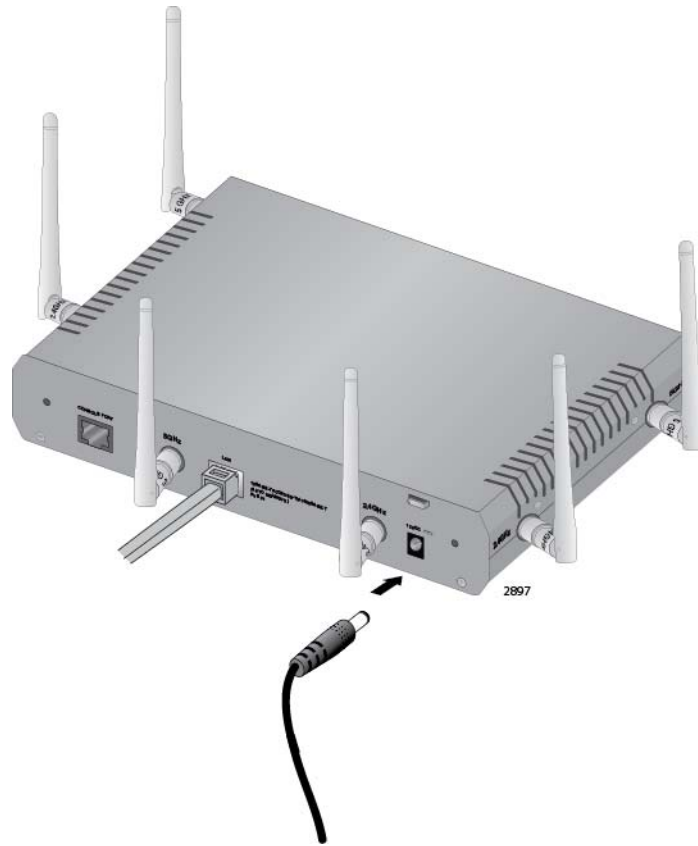


Figure 11. Attaching the DC Power Cable

7. Secure the DC cable to the anchor on the unit with the tie wrap that comes with the access point. Refer to Figure 12 on page 36.

Installing the Access Point on a Wall of Ceiling with the AT-BRKT-J26 Bracket

This section contains the procedure for installing the access point on a wall or ceiling with the optional AT-BRKT-J26 bracket.

The bracket consists of top and bottom panels. Refer to Figure 13. The bottom panel attaches to the wall or ceiling and the top panel secures the access point to the bottom panel.

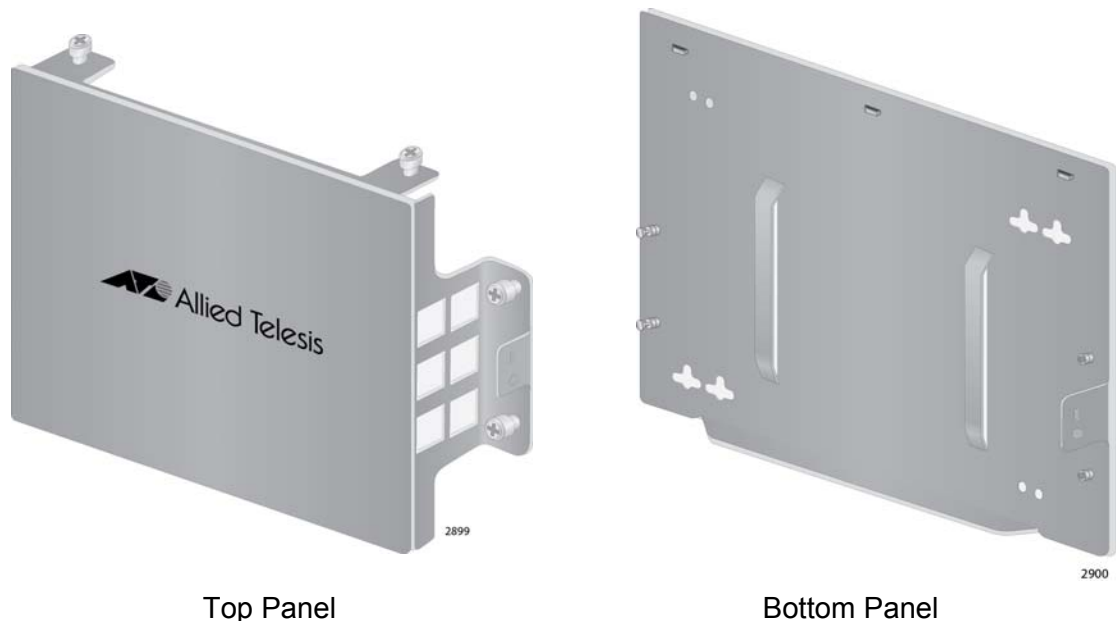


Figure 13. Top and Bottom Panels of the AT-BRKT-J26 Bracket

Guidelines

Please review the following guidelines before you begin to install the access point:

- If you are installing the access point on a wall, you may orient the unit such that the LED panel is facing to the left, right, or down. However, you may not install the unit with the LED panel facing up because that could impede heat dissipation from the unit, which could result in overheating.

When the access point is assembled on the bracket, the LED panel faces the metal flange on the bottom panel. Refer to Figure 14 on page 38. When installing the bottom panel on the selected wall location, you may orient it such that the flange is to the left, right, or down.

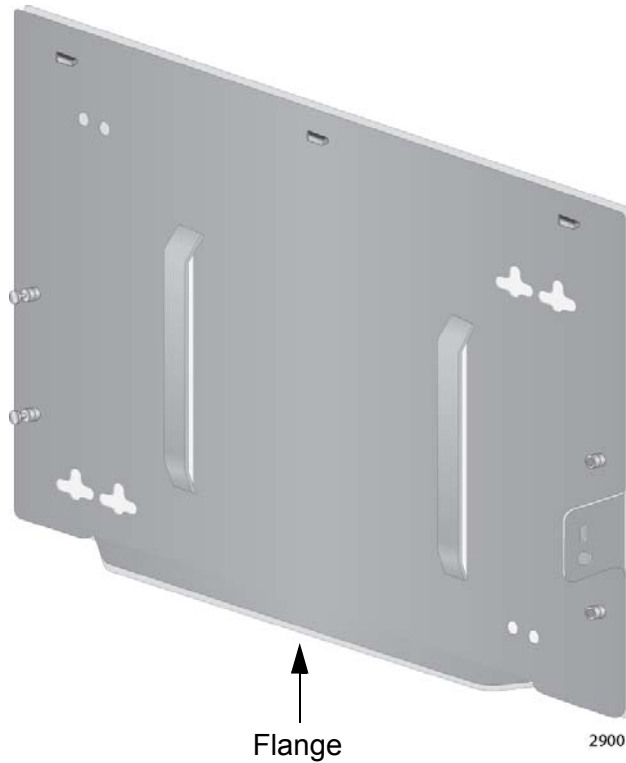


Figure 14. Flange on the Bottom Panel of the AT-BRKT-J26 Bracket

- ❑ You should verify that the wall or ceiling material is strong enough to support the weight of the bracket and access point.
- ❑ If you will not be using the PoE feature, there needs to be an AC power source near the place chosen for the access point.
- ❑ You have to provide the four screws and, if necessary, the wall anchors, that are used to secure the bottom panel to the wall or ceiling.
- ❑ The base panel has eight screw holes. Refer to Figure 15 on page 39. The holes are grouped in pairs. The unit should be secured to the wall or ceiling with a minimum of four screws. You may use either screw hole in a pair to secure the panel.

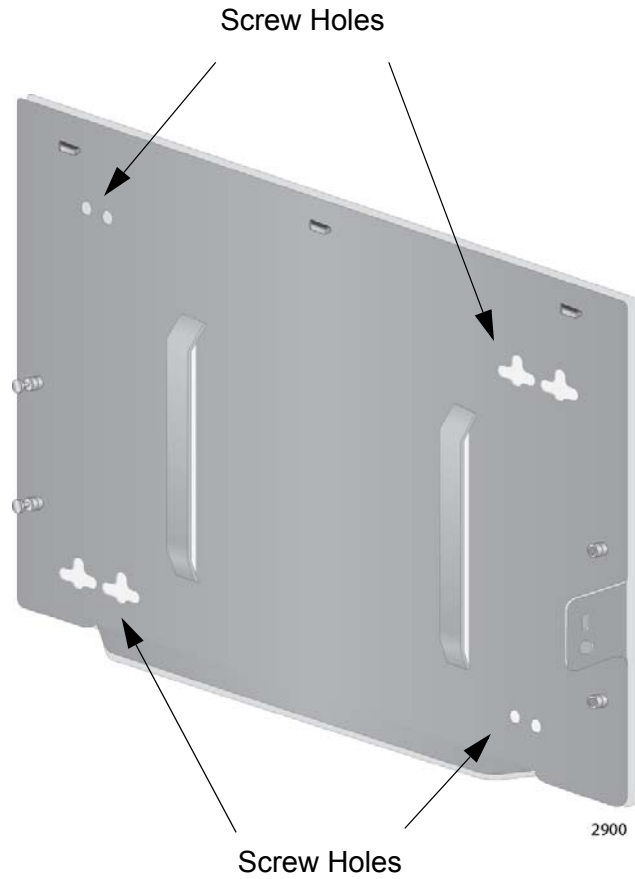


Figure 15. Screw Holes on the Bottom Panel of the AT-BRKT-J26 Bracket

- The holes have a diameter of 4.5 mm (0.2 in.). Refer to Figure 16.

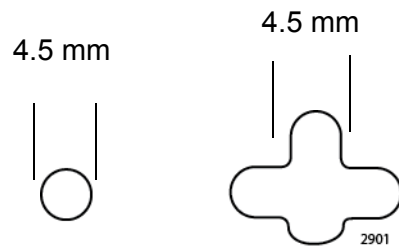


Figure 16. Hole Dimensions

- The MAC address of the access point is printed on a label on the base of the unit. You might want to write the address on a piece of paper and attach it to the top panel of the bracket after the installation so that you can easily identify the unit after it is mounted on the wall or ceiling.

Attaching the Bottom Panel to the Wall or Ceiling

To attach the bottom panel of the bracket to the wall or ceiling, perform the following procedure:

Note

Please review "Guidelines" on page 37 before performing this procedure.

Note

If you are using wall anchors, start with step 1. If you are not using wall anchors, start with step 4.

1. To install wall anchors, hold the bottom panel at the selected wall or ceiling location and with a pencil or pen mark the locations of the four screw holes that are to be used to secure the panel. Refer to Figure 17.



Figure 17. Marking the Locations of the Bottom Panel Holes on the Wall or Ceiling

2. If necessary, predrill the holes for the anchors.
3. Install the wall anchors.

4. Have someone hold the panel at the selected wall or ceiling location while you secure it to with four self-tapping screws (not provided with the access point). Refer to Figure 18.

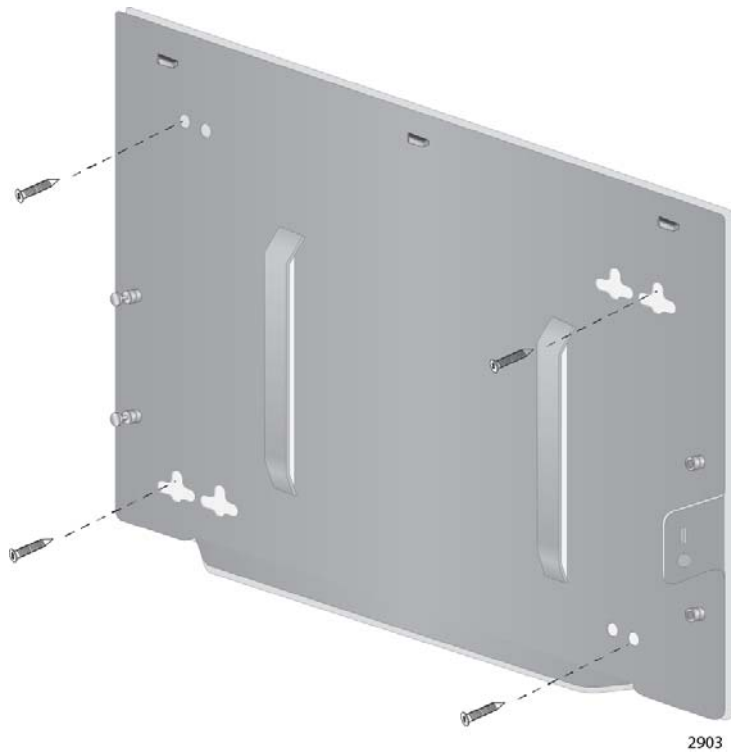


Figure 18. Attaching the Bottom Panel to the Wall or Ceiling

Attaching the Access Point to the Top Panel

The following procedure explains how to attach the access point to the top panel of the AT-BRKT-J26 Bracket.

Note

In the following instructions, the antennas are not installed until the access point is installed on the wall or ceiling. However, you may install the antennas at any point in the installation. In fact, if you are installing the access point in a corner, it may be necessary to install the antennas earlier, such as immediately after the unit is installed on the top panel, but before it is installed on the bottom panel on the wall or ceiling.

1. Place the AT-TQ2450 Access Point upside down on a table or desk, with the rear panel facing you. Refer to Figure 19 on page 42.

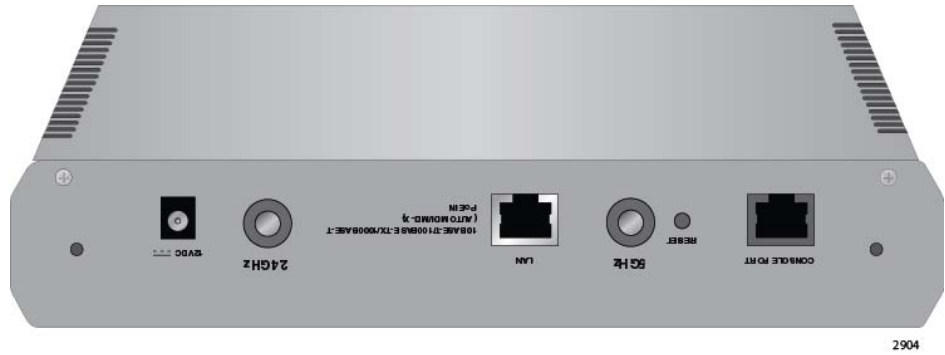


Figure 19. Rear Panel Upside Down

2. Locate the two screw holes on the rear panel. The holes are used to secure the top panel to the access point. Refer to Figure 20.

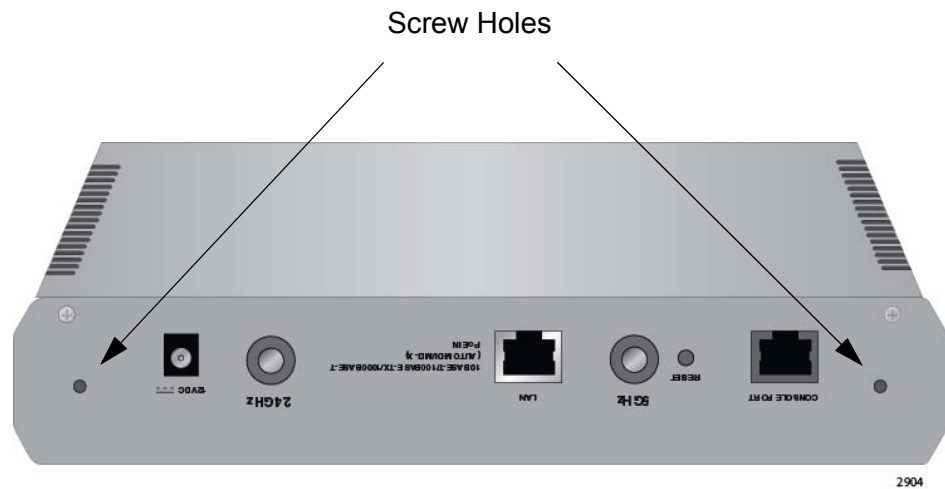


Figure 20. Screws Holes for Securing the Top Panel to the Access Point

3. Lower the top panel over the access point as shown in Figure 21 on page 43 and secure it by tightening the two retaining screws into the two corresponding holes on the rear panel of the access point.



Figure 21. Attaching the Top Panel to the Access Point

4. Place the top panel and access point over the bottom panel on the wall or ceiling such that the two anchor pins on the bottom panel fit into the holes on the top panel. Then slide the top panel to lock the pins into the holes. Refer to Figure 22 on page 44.

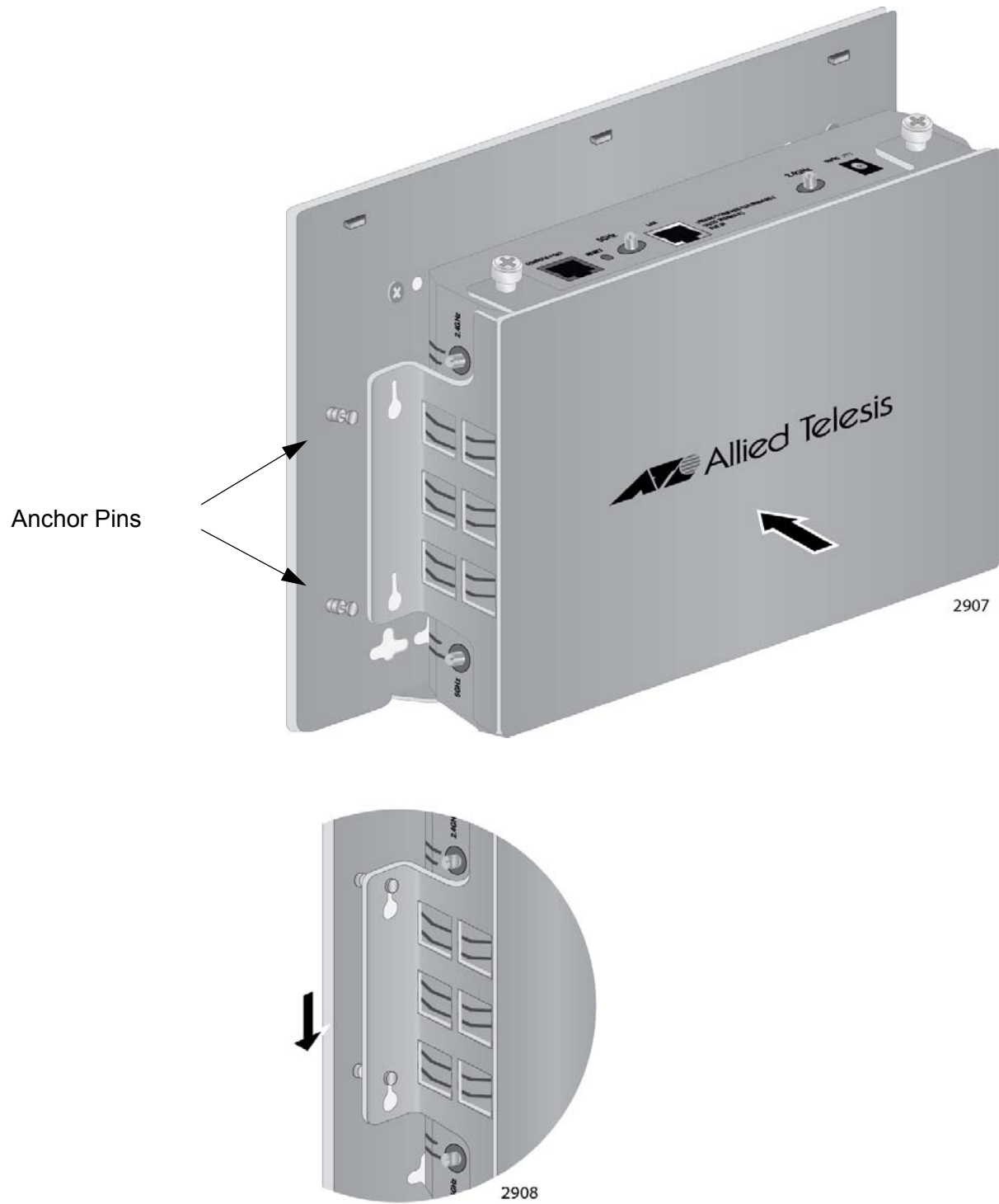


Figure 22. Attaching the Top Panel and Access Point to the Bottom Panel

5. Secure the top panel and access point to the bottom panel by tightening the two captive screws on the top panel. Refer to Figure 23.

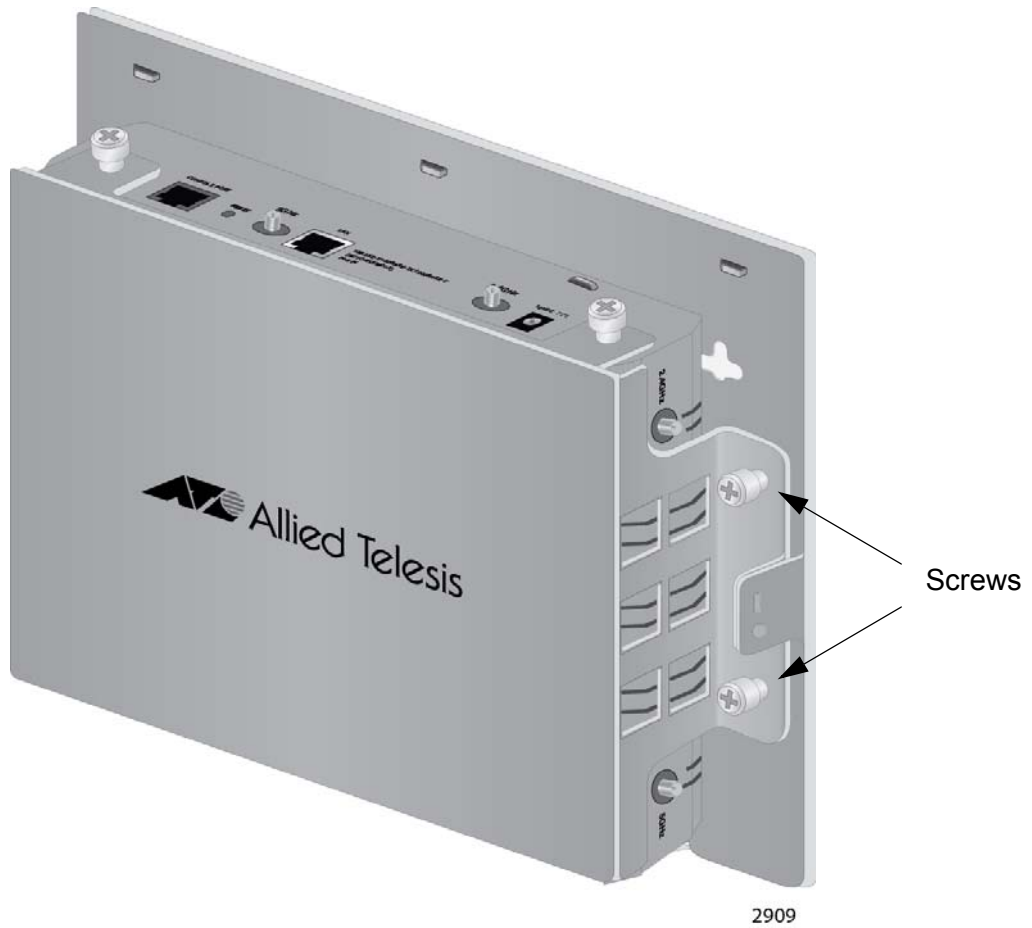


Figure 23. Tightening the Screws to Secure the Top Panel and Access Port to the Bottom Panel

6. Install the three 2.4 GHz and three 5 GHz antennas to the corresponding connectors on the sides of the unit. The connectors are labelled. Refer to Figure 24 on page 46.



Figure 24. Installing the Antennas



Caution

Do not attach the antennas when the access point is power on. Doing so might damage the unit.

7. Attach a network cable to the LAN port. Refer to Figure 25 on page 47.

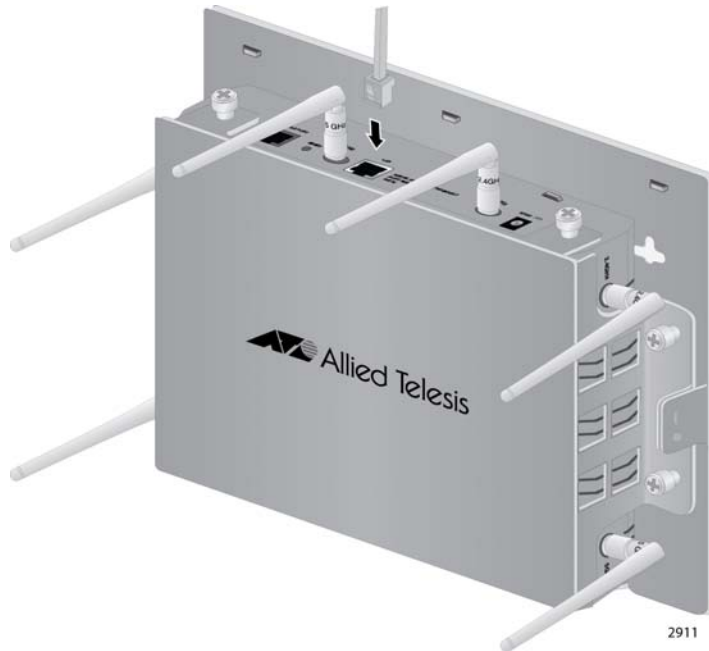


Figure 25. Attaching the LAN Cable

8. Connect the other end of the network cable to a port on an Ethernet switch.

If you are not using the PoE feature on the Ethernet port to power the unit, continue with this procedure to attach the AC/DC power adapter.

If you are using the PoE feature to power the access point, the installation procedure is complete. Go to “Starting the Initial Management Session on the Access Point” on page 51.

9. Connect the power cord to the AC/DC adapter. Refer to Figure 26.

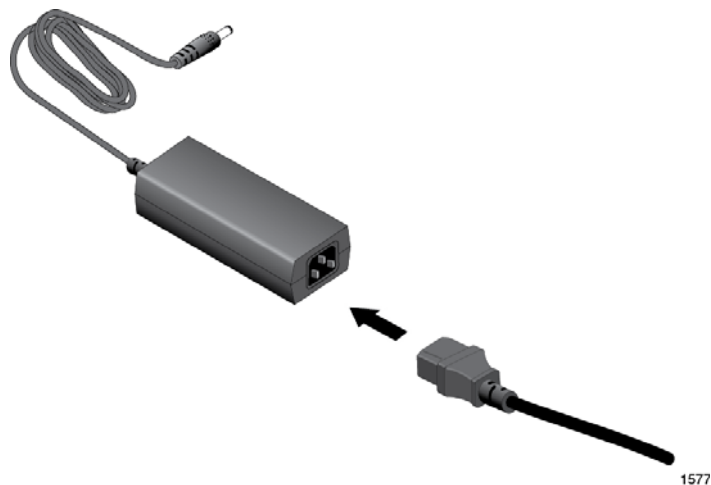


Figure 26. Connecting the Power Cord to the AC/DC Adapter

10. Connect the DC cable on the AC/DC adapter to the 12VDC connector on the access point. Refer to Figure 27.

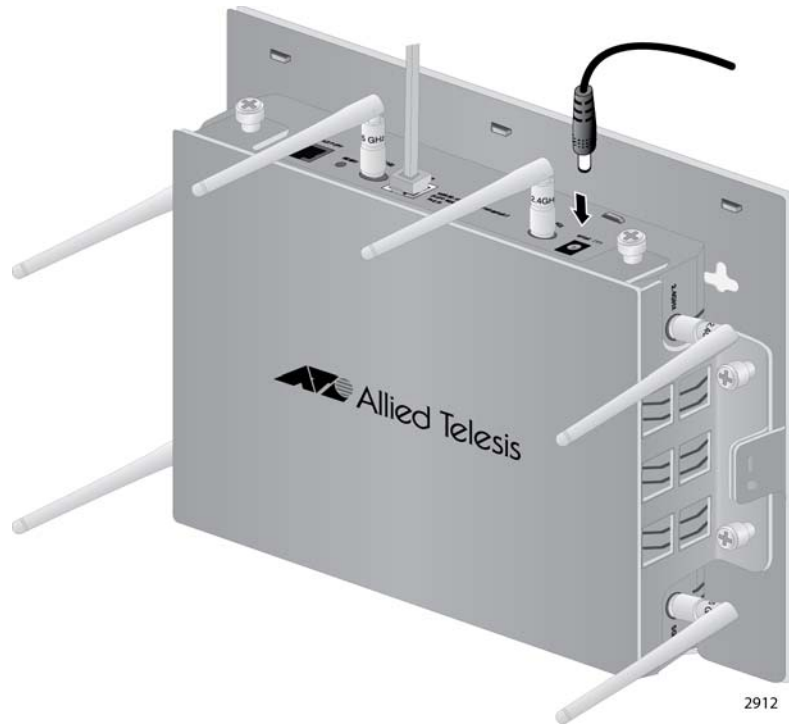


Figure 27. Attaching the DC Power Cable

11. Secure the DC cable to one of the anchors on the bottom panel with the tie wrap that comes with the access point. Refer to Figure 28 on page 49.

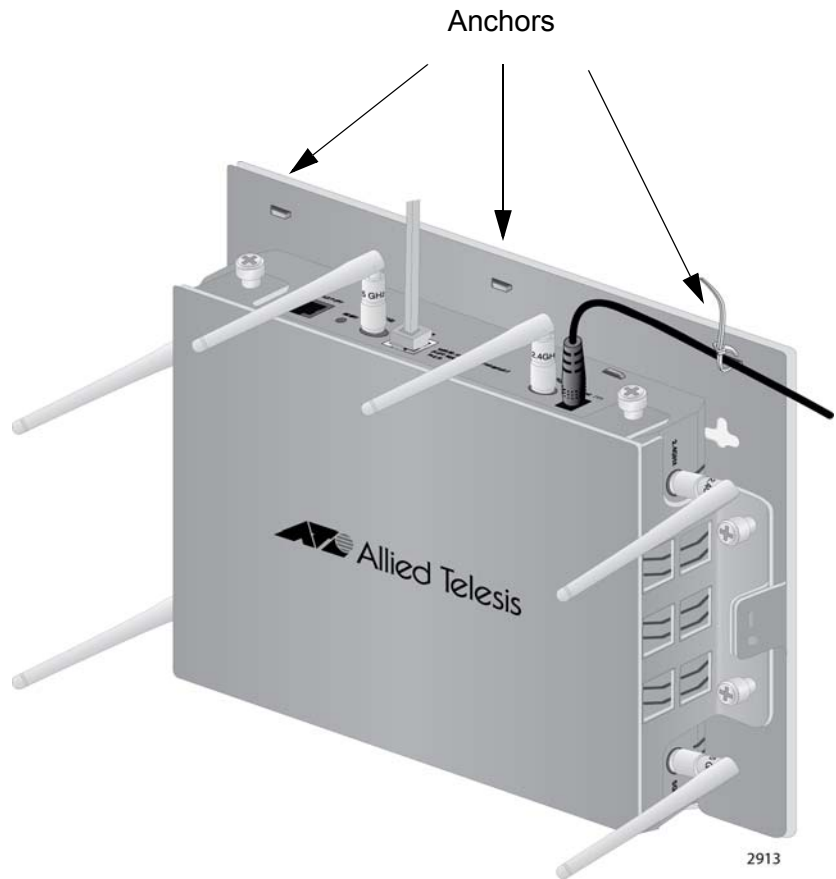


Figure 28. Securing the DC Power Cord to the AT-BRKT-J26 Bracket with the Tie Wrap

12. Connect the AC plug on the power cord to an appropriate AC power source. Refer to Table 8 on page 58 for the power specifications of the power adapter.

After installing the access point, go to “Starting the Initial Management Session on the Access Point” on page 51.

Installing Anti-theft Devices

The bracket has three holes for anti-theft devices. You may want to install one or more anti-theft devices if the access point is installed in a non-secure area. When an anti-theft device is installed on the bracket, the top panel and access point cannot be removed from the bottom panel. The holes are identified in Figure 29.

Note

Anti-theft devices are not available from Allied Telesis.

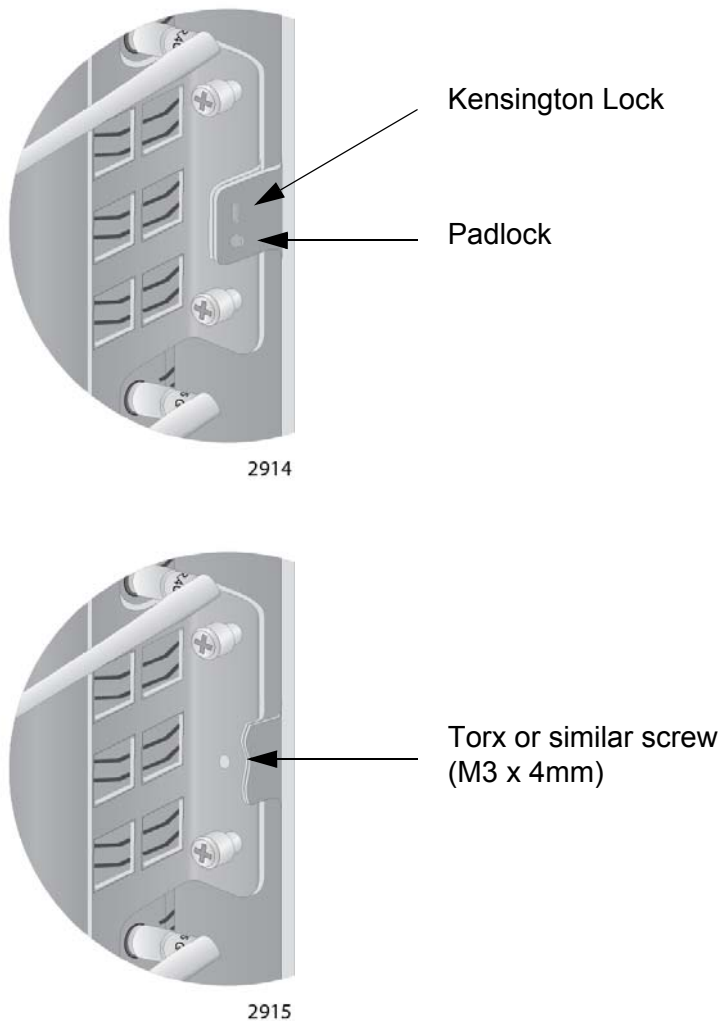


Figure 29. Holes for Anti-theft Devices on the AT-BRKT-J26 Bracket

Starting the Initial Management Session on the Access Point

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.

There are several ways to start the initial management session on the access point. One way is to establish a direct connection between your computer and the unit by connecting an Ethernet cable to the Ethernet port on the computer and the LAN port on the access point. This procedure requires changing the IP address on your computer to make it a member of the same subnet as the default IP address on the access point. You might perform this procedure if your network does not have a DHCP server and you want to configure the access point before connecting it to your network.

The initial management session may also be performed while the device is connected to your network. However, if your network does not have a DHCP server, you still have to change the IP address of your computer to match the subnet of the default address of the access point. Furthermore, if your network is divided into virtual LANs (VLANs), you have to be sure to connect the access port and your computer to ports on an Ethernet switch that are members of the same VLAN.

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

The instructions for starting the initial management session are found in the following sections:

- “Starting the Initial Management Session with a Direct Connection” on page 52
- “Starting the Initial Management Session without a DHCP Server” on page 53
- “Starting the Initial Management Session with a DHCP Server” on page 53

Note

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

Starting the Initial Management Session with a Direct Connection

To start the management session with a direct Ethernet connection between your computer and the access port, perform the following procedure:

Note

If the unit is using PoE for power and you did not order an AC/DC adapter with the unit, you cannot perform this procedure because it requires removing the network cable from the LAN port. Instead, perform one of the other procedures in this section to start the initial management session.

1. Connect one end of a network cable to the LAN port on the access point and the other end to the Ethernet network port on your computer. (This requires removing the network cable that you connected to the LAN port earlier in these instructions.)
2. Change the IP address on your computer to 192.168.1.*n*, where *n* is a number from 1 to 254, but not 230. Refer to the documentation that accompanies your computer for instructions on how to set the IP address.
3. Set the subnet mask on your computer to 255.255.255.0.
4. Power on the access point.
5. Start the web browser on your computer.
6. Enter the IP address 192.168.1.230 in the URL field of the browser.

You should now see the logon window, shown in Figure 30.



Figure 30. Logon Window

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

Starting the Initial Management Session without a DHCP Server

This procedure explains how to start the initial management session on the access port when the LAN port is connected to an Ethernet switch on a network that does not have a DHCP server. To start the management session, perform the following procedure:

1. If your network has VLANs, check to be sure that your computer and the access port are connected to ports on the Ethernet switch that are members of the same VLAN. This might require accessing the management software on the switch and listing the VLANs and their port assignments. For example, if the access port is connected to a port that is a member of the Sales VLAN, your computer must be connected to a port that is also a member of that VLAN. If your network is small and does not have VLANs or routers, you may connect your computer to any port on the Ethernet switch.
2. Change the IP address on your computer to 192.168.1.*n*, where *n* is a number from 1 to 254, but not 230. Refer to the documentation that accompanies your computer for instructions on how to set the IP address.
3. Set the subnet mask on your computer to 255.255.255.0.
4. Power on the access point.
5. Start the web browser on your computer.
6. Enter the IP address 192.168.1.230 in the URL field of the browser.

You should now see the logon window, shown in Figure 30 on page 52.
7. Enter “manager” for the username and “friend” for the password. The username and password are case-sensitive.

Starting the Initial Management Session with a DHCP Server

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

1. Power on the access point.
2. Start the web browser on your computer.
3. Enter the IP address of the access point in the URL field of the browser. This is the IP address assigned to the unit by the DHCP server. If you do not know the address, refer to the DHCP server.

You should now see the logon window, shown in Figure 30 on page 52.

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

Setting the Country Setting

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

To set the country setting, perform the following procedure:

1. Select Wireless Settings from the Manage menu.

The access point displays the Modify wireless settings window, shown in Figure 31.

Figure 31. Modify Wireless Settings Window

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

Note

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

The access point displays a confirmation prompt.

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

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

This procedure does not require clicking the Update button.

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

4. From the Maintenance menu, select Configuration.
5. Click the Reboot button in the To Reboot the Access Point section of the “Manage the Access Point’s Configuration” window.
6. When the access point displays a confirmation prompt, click OK to reboot the unit or Cancel to cancel the procedure.
7. To resume managing the unit, wait for it to complete initializing its management software and then start a new management session.

For more instructions on how to configure the features of the access point, refer to the *AT-TQ2450 Wireless Access Point User’s Guide*.

Appendix A

Technical Specifications

Physical Specifications

Table 4. AT-TQ2450 Physical Specifications

Dimensions (W x D x H)	228 mm x 160 mm x 44 mm (8.98 in. x 6.3 in. x 1.74 in.)
Weight (kilograms)	1 kg (2.2 lbs)

Table 5. AT-BRKT-J26 Physical Specifications

Dimensions (W x D x H)	270 mm x 206 mm x 52 mm (10.63 in. x 8.11 in. x 2.05 in.)
Weight (kilograms)	850 g (1.87 lbs)

Environmental Specifications

Table 6. Environmental Specifications

Operating Temperature of the Access Point When Using PoE	0° C to 50° C (32° F to 122° F)
Operating Temperature of the Access Point When Using the AC/DC Adapter	0° C to 40° C (32° F to 104° F)
Storage Temperature	-20° C to 60° C (-4° F to 140° F)
Operating Humidity	5% to 80% non-condensing
Storage Humidity	5% to 95% non-condensing

Power Specifications

Table 7. AT-TQ2450 Maximum Power Consumption

AT-TQ2450	11.0 W
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Table 8. Power Adapter Input

Input Range	100-240 AC @ 47-63 Hz
Input Connector	IEC320-C14 (3-Pole AC inlet)

Table 9. Power Adapter Output

Minimal Output	9 VDC
Nominal Output	12 VDC
Maximum Output	15 VDC
Maximum Current	1.5A @ 12 VDC
Output Connector	Coaxial Female Barrel Inner Diameter: 2.5 mm Outer Diameter: 5.5 mm

LAN Port

Table 10. LAN Port Specifications

Connector	RJ-45
Standards	IEEE 802.3 (10Base-T) IEEE 802.3u (100Base-TX) IEEE 802.3ab (1000Base-T)
PoE standard	IEEE 802.3af (class 3)

Figure 32 illustrates the pin layout of the LAN port.

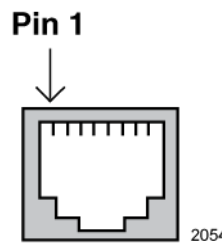


Figure 32. Pin Numbers for the RJ-45 Connector on the LAN Port

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

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

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

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

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

Pin	Signal
1	RX+
2	RX-
3	TX+

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

Pin	Signal
6	TX-

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

Table 13. 1000Base-T Connector Pinouts

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

Safety and Electromagnetic Emissions Certifications

Safety and Electromagnetic Emissions Certificates:

Table 14. Certificates

Standard Compliance	RoHs compliant European Union RoHS (Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.)
Electromagnetic Compatibility (EMC)	EN55022/24 FCC Part15B CISPR22 ICES-003
Medical (EMC)	ETSI EN 60601-1-2:2007
Radio Equipment	AS/NZS 4269 EN300328 EN391893 EN301489-1/-17 FCC Part 15C FCC Part 15E RSS-210
Safety	UL UL60950-1 2nd edition UL UL2043 CB IEC60950-1:2005+Am1:2009 LVD EN60950-1:2006+A11:2009+A1:2010+A12:2011 TUV-T mark EN60950-1:2006+A11:2009+A1:2010+A12:2011
Wi-Fi CERTIFIED™	Certification ID: WFA8879 WPA™ - Enterprise, Personal WPA2™ - Enterprise, Personal WMM®

Appendix B

Regulatory Statements

This appendix contains the following regulatory statements:

- “Federal Communication Commission Interference Statement” on page 64
- “Industry Canada Statement” on page 65
- “Europe - EU Declaration of Conformity” on page 67

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.

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.

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 20cm between the radiator & your body.

Industry Canada Statement

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la Classe A est conforme à la norme NMB-003 du Canada.

Caution:

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

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

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

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

Avertissement:

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

(i) les dispositifs fonctionnant dans la bande 5 150-5 250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;

(ii) le gain maximal d'antenne permis pour les dispositifs utilisant les bandes 5 250-5 350 MHz et 5 470-5 725 MHz doit se conformer à la limite de p.i.r.e.;

(iii) le gain maximal d'antenne permis (pour les dispositifs utilisant la bande 5 725-5 825 MHz) doit se conformer à la limite de p.i.r.e. spécifiée pour l'exploitation point à point et non point à point, selon le cas.

(iv) De plus, les utilisateurs devraient aussi être avisés que les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5 250-5 350 MHz et 5 650-5 850 MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.

Radiation Exposure Statement:

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

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

Europe - EU Declaration of Conformity

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

EN60950-1

Safety of Information Technology Equipment

EN50385

Generic standard to demonstrate the compliance of electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (0 Hz - 300 GHz).

EN 300 328

Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband Transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using spread spectrum modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive,

EN 301 893

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

EN 301 489-1

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

EN 301 489-17

Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for 2,4 GHz wideband transmission systems and 5 GHz high performance RLAN equipment

This device is a 5GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies.

In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 - 2483.5 MHz. For detailed information the end-user should contact the national spectrum authority in France.



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

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

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