



AT-TQ2403

IEEE 802.11abgh, Dual Radio,
Enterprise Wireless Access Point

Installation Guide

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 **SAFETY NOTICE**

- ✓ Do not open service or change any component.
- ✓ Only qualified technicians are allowed to service the equipment.
- ✓ Observe safety precautions to avoid electric shock
- ✓ Check voltage before connecting to the power supply.
Connecting to the wrong voltage will damage the equipment.

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ELECTRICAL SAFETY AND EMISSIONS STANDARDS

This product meets the following standards.

U.S. Federal Communications Commission Interference Statement

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.

For operation within 5.15 ~ 5.25GHz frequency range, it is restricted to indoor environment.

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.

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.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

FCC

Caution: This equipment complies with Part 15E of the FCC Rules with radar detection function and DFS capability. Operation is subject to the following three conditions:

- (1) This device is intended to use indoor operations only.
- (2) This device will not permit operations on channels which overlap the 5600 - 5650 MHz band.
- (3) This device meets all the other requirements specified in Section 15.407 and no configuration controls are provided to change the frequency of operations outside the grant of certification for US operation.

Canadian Department of Communications

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.

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.

Caution: The device for the band 5150-5250 MHz is only for indoor usage to reduce potential for harmful interference to co-channel mobile satellite systems.

High power radars are allocated as primary users (meaning they have priority) of 5250-5350 MHz and 5650-5850 MHz and these radars could cause interference and/or damage to LE-LAN devices.

This device has been designed to operate with an antenna having a maximum gain of [x] dB. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

CE Marking Warning

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: 2006

Safety of Information Technology Equipment

EN 50385: 2002

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

EN 300 328 V1.7.1 (2006-10)

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

EN 301 893 V1.4.1: (2007-07)

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 V1.8.1 (2008-04)

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 V1.3.2 (2008-04)

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 , 5 GHz high performance RLAN equipment and 5,8GHz Broadband Data Transmitting Systems.

This device is a 2.4 GHz 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.

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Preface

Purpose of This Guide

This guide is intended for customers and/or network administrators who are responsible for installing and maintaining the AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point.

How This Guide is Organized

This guide contains instructions on how to install AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point. This preface contains the following sections?

- Chapter 1** **Overview**, describes the features, LEDs and ports on the equipment.
- Chapter 2** **Installation**, describes how to install and configure the equipment.
- Chapter 3** **Troubleshooting**, describes what you should do when the device does not operate correctly.

Document Conventions

This guide uses several conventions that you should become familiar with before you begin to install the product:



Note

A note provides additional information. Please go to the Allied Telesis website <http://www.alliedtelesis.com> for the translated safety statement in your language.



Warning

A warning indicates that performing or omitting a specific action may result in bodily injury.



Caution

A caution indicates that performing or omitting a specific action may result in equipment damage or loss of data.

Contacting Allied Telesis

This section provides Allied Telesis contact information for technical support as well as sales and corporate information.

Online Support

You can request technical support online by accessing the Allied Telesis Knowledge Base: <http://www.alliedtelesis.com/kb/>. You can use the Knowledge Base to submit questions to our technical support staff and review answers to previously asked questions.

Email and Telephone Support

For Technical Support via email or telephone, refer to the Support & Services section of the Allied Telesis web site: <http://www.alliedtelesis.com/support/>.

Warranty

For product registration and warranty conditions please visit Allied Telesis website: <http://www.alliedtelesis.com/support/warranty/>

Where to Find Web-based Guides

The installation and user guides for all Allied Telesis products are available in portable document format (PDF) on our web site at www.alliedtelesis.com. You can view the documents online or download them onto a local workstation or server.

Returning Products

Products for return or repair must first be assigned a return materials authorization (RMA) number. A product sent to Allied Telesis without an RMA number will be returned to the sender at the sender's expense.

To obtain an RMA number, contact Allied Telesis Technical Support through our web site: <http://www.alliedtelesis.com/support/>.

Sales or Corporate Information

You can contact Allied Telesis for sales or corporate information through our web site: <http://www.alliedtelesis.com/>. To find the contact information for your country, select Contact Us -> Worldwide Contacts.

Management Software Updates

New releases of management software for our managed products are available from either of the following Internet sites:

- Allied Telesis web site: <http://www.alliedtelesis.com/support/software/>
- Allied Telesis FTP server: <ftp://ftp.alliedtelesis.com/>
If you prefer to download new software from the Allied Telesis FTP server from your workstation's command prompt, you will need FTP client software and you must log in to the server. Enter "anonymous" for the user name and your email address for the password.

Tell Us What You Think

If you have any comments or suggestions on how we might improve this or other Allied Telesis documents, please contact us at <http://www.alliedtelesis.com>.

Chapter 1: Overview

The AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point is a wireless communications hub for devices on your network. It provides continuous, high-speed access between your wireless and Ethernet devices. You administer the AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point using the AT-TQ2403 web interface configuration menu.

Features

The features of the AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point include:

- High performance up to 108 Mbps data rate
- Security support via 802.11i (WPA2), WPA-PSK, TKIP, AES, IEEE 802.1x, and EAP/802.1
- Multiple BSSID and Virtual LAN (VLANs)
- Inhibit SSID broadcast and Ignore SSID scan
- MAC Access Control for wireless interface
- Load balancing
- 802.11e (WMM only)
- Wireless Distribution System (WDS) for Wireless Bridge Mode supported
- AP clustering
- Rogue AP detection
- Transmit power control/limiting
- IEEE 802.3af Power over Ethernet (PoE) capable
- Two independent radios for concurrent 2.4 GHz and 5 GHz operations
- Antenna diversity on both 2.4GHz and 5GHz
- One 10/100 Fast Ethernet port with auto-negotiation, and auto MDI/MDIX, back pressure, and flow control

Front and Back Panels

The LEDs on the front panel show the power and connection status while power, LAN and antenna connectors are on the back panel together with a reset button.

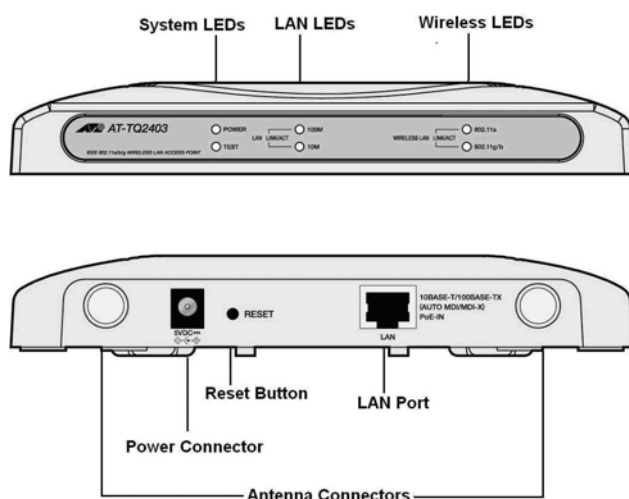


Figure 1: Front and Back panels

LEDs

The system LEDs on the AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point are described in Table 1.

Table 1: System LEDs

| LED | State | Description |
|-------|-------|--|
| POWER | Off | The access point is not receiving power. |
| | Green | The access point is receiving power. |
| TEST | Off | No system maintenance in progress. |
| | Amber | System startup or maintenance in progress. |

The LAN LEDs are described in Table 2.

Table 2: LAN LEDs

| LED | State | Description |
|----------------|----------|---|
| LNK/ACT (100M) | On | The access point is operating at 100 Mbps. |
| | Off | The access point is not operating at 100 Mbps. |
| LNK/ACT (10M) | Blinking | The access point is sending or receiving data at 100 Mbps |
| | On | The access point is operating at 10 Mbps. |
| | Off | The access point is not operating at 10 Mbps. |
| | Blinking | The access point is sending or receiving data at 10 Mbps |

The Wireless LEDs are described in Table 3.

Table 3: Wireless LEDs

| LED | State | Description |
|------------------|----------------|-------------------------------------|
| LNK/ACT (WLAN a) | Off | No link is detected. |
| | Green | An 802.11a WLAN link has been made. |
| | Blinking Green | Network activity is occurring. |
| LNK/ACT (WLAN g) | Off | No link is detected. |
| | Green | An 802.11g WLAN link has been made. |
| | Blinking Green | Network activity is occurring. |

Chapter 2: Installation

Reviewing Safety Precautions

Please review the following safety precautions before you begin to install the AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point.



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.



Warning

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



Warning

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

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



Warning

Operating Temperature. This product is designed for a maximum ambient temperature of 40° degrees C.

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



Caution

Do not install in direct sunlight, or a damp or dusty place.

Installation Guidelines

Allied Telesis recommends that you have an Allied Telesis-certified RF specialist conduct a site survey to determine the ideal locations for all your Allied Telesis wireless network devices. To conduct a proper site survey, you need to have proper equipment and training.

The following general practices should be followed in any installation:

- Locate access points centrally within areas requiring coverage.
- Overlap access point radio coverage areas to avoid shadow areas.
- Position the access point so that its LEDs are visible. The LEDs are useful for troubleshooting.
- Install wired LAN cabling within node limit and cable length limitations.
- Use an uninterruptible power supply (UPS) when AC power is not reliable.

Proper antenna placement can help improve range. For information about antenna options, contact your local Allied Telesis representative.

When determining ideal locations for the access points, be aware that you may see network performance degradation from microwave ovens, cordless telephones, and other access points. For more information, see the next sections.



Note: Microwave ovens, cordless telephones, and other access points do not affect network performance of the 802.11a radio.

Microwave Ovens

Microwave ovens operate in the same frequency band as 802.11g and 802.11b radios; therefore, if you use a microwave oven within range of your wireless network, you may notice network performance degradation. Both your microwave oven and your wireless network will continue to function, but you may want to consider relocating your microwave oven out of range of your access point and wireless clients.

Cordless Telephones

IEEE 802.11bg radio may experience interference from some cordless telephones. For optimal performance, consider operating cordless telephones out of range of your access points.

Other Access Points

Access points that are configured for the same frequency and that are in the same radio coverage area may interfere with each other and decrease throughput. You can reduce the chance of interference by configuring access points at least five channels apart, such as channels 1, 6, and 11.

Unpacking the Access Point

To unpack the AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point perform the following procedure:

1. Remove all components from the shipping package.



Note: Store the packing material in a safe location. You must use the original shipping material if you need to return the unit to Allied Telesis.

2. Place the access point on a secure, level surface.
3. Ensure that the following hardware components are included in your access point package. If any item is missing or damaged, contact your Allied Telesis sales representative for assistance.

Package Contents

- One AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point
- Two antennas
- One wall mount kit containing two wall anchors and two screws
- One AC adapter
- One RJ45 cable
- Four rubber feet
- One magnet kit containing four magnets and four screws
- One documentation CD with Kick Start utility
- This installation guide

Antennas Installation

To install the antennas, perform the following procedure:

1. Remove the antennas from their package.
2. Locate the antenna connectors in the back of the AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point, as shown in Figure 2.



Figure 2: Location of the Antenna Connectors

3. Screw antennas to antenna connectors, as shown in Figure 3.



Figure 3: Connecting Antennas

You can try repositioning antennas until you get the best signal strength.

Using the Access Point on a Desktop

You can place the AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point on a desktop or other flat surface.

To place the AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point on a desktop, perform the following procedure:

1. Turn the access point over so that the top is resting on a flat surface.
2. Attach the four rubber feet to the bottom of the access point as shown in Figure 4.



Figure 4: Attaching the Rubber feet

3. Turn the access point over and place it on a flat, secure surface such as a desk or table, leaving ample space around the unit for ventilation.

Mounting an Access Point on a wall

To mount the AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point on a wall, perform the following procedure:

1. Select a wall location and mark two holes locations for the anchors 98.425 mm (3.875 in.) apart.
2. At the two marked holes locations, pre-drill for the drywall anchors.
3. Install the anchors and drive the screws into the anchors leaving approximately 4.76 mm (.1875 in.) exposed.
4. Align the keyholes on the back with the screw heads, as shown in Figure 5.

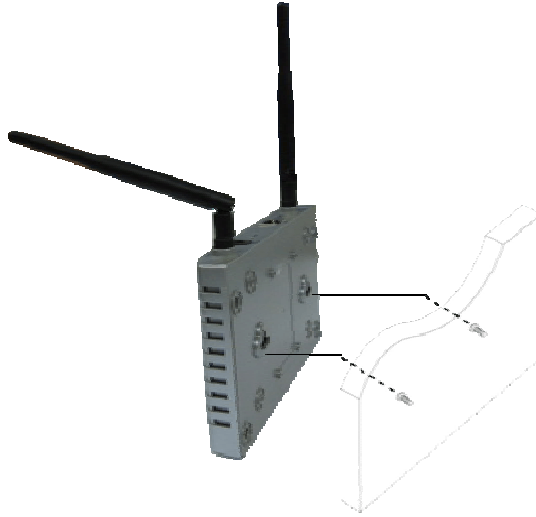


Figure 5: Aligning the Access Point for Mounting on the Wall

5. Place the keyhole slots on the bottom of the access point over the screw heads.
6. Slide the access point down onto the screw heads so that the access point is securely mounted on the wall.

You can install the access point either horizontally or vertically.

Mounting the Access Point on a Metal Surface

To mount the AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point on a metal surface, perform the following procedure:

1. Select a location for the access point.
2. Turn the access point over and place it on a secure surface.
3. Screw the four magnets into the back of the access point, as shown in Figure 6.



Figure 6: Attaching the Magnets

4. Mount the access point on a metal surface.



Note: Please be aware that a metal surface acts as a shield for radio signals. Therefore expect little or no coverage at all behind metal surface.

Connecting the Access Point to the LAN

To connect the AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point to the LAN, perform the following procedure:

1. Locate the RJ45 cable in the box.
2. Connect one end of the cable to the LAN.
3. Connect the other end of the cable to the LAN port on the back of the access point, as shown in Figure 7.



Figure 7: Attaching the LAN Cable

Powering On the Access Point

To power on the access point, perform the following procedure:



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



Warning: Power adapter is used as a disconnection device. To de-energize equipment, disconnect the power adapter.

1. Do one of the following:
 - a. Plug the power adapter on the back panel, as shown in Figure 8, and plug the power adapter into a wall outlet.



Figure 8: Connecting the Power Adapter

- b. Plug a LAN cable from a unit that supports PoE into the LAN port, as shown in Figure 9. No other power connection is required.



Figure 9: PoE Connection

2. Verify that the POWER LED is green. If the LED is off, refer to Chapter 3, "Troubleshooting" on page 43.

The access point is now powered on and ready for network operation.

Running Kick Start to Find Access Points on the Network

Kick Start is an easy-to-use utility for discovering and identifying new AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point. Kick Start scans the network looking for access points, displays ID details on those it finds, and provides access to the AT-TQ2403 configuration setting in Web Interface.



Note: Kick Start recognizes and configures only AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point. Kick Start does not find or configure non-AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point and will not find any other device.



Note: Kick Start finds only those access points that have IP addresses. IP addresses are dynamically assigned to access points if you have a DHCP server running on the network. If you deploy the access point on a network with no DHCP server, the default static IP address (**192.168.1.230**) is used.



Caution: Use caution with non-DHCP enabled networks: Do not deploy more than one new access point on a non-DHCP network because they will use the same default static IP addresses and conflict with each other.

To start the discovery process, perform the following procedure:

1. Do one of the following to create an Ethernet connection between the access point and your computer:
 - ☞ Connect one end of an Ethernet cable to the LAN port on the access point and the other end to the same hub where your PC is connected.
 - ☞ Connect one end of an Ethernet cable to the LAN port on the access point and the other end of the cable to the Ethernet port on your PC.
2. Insert the AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point CD into the CD-ROM drive on your computer. The Kick Start Welcome page is displayed, as shown in Figure 10.



Figure 10: Kick Start Welcome Page

3. Click Next to search for access points. Wait for the search to complete, or until Kick Start has found your new access points, as shown in Figure 11.



Figure 11: Kick Start Search Results Page



Note: The Kick Start utility only finds AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point.

- If Kick Start does not find the AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point you just installed, an informational window is displayed with troubleshooting information about your LAN and power connections.
4. Review the list of access points that Kick Start found, as shown in the example in Figure 12. The access points are listed with their locations, media access control (MAC) addresses, and IP addresses. If you are installing the first access point on a single-access-point network, only one entry is displayed on this page.
 5. Verify the MAC addresses against the hardware labels for each access point. This will be especially helpful later in providing or modifying the descriptive Location name for each access point.
 6. Click Next. The Administration dialog box opens, as shown in Figure 12.



Figure 12: Administration Dialog Box



Note: Kick Start provides a link to the AT-TQ2403 management software web pages via the IP address of the first access point of each model. The AT-TQ2403 management software is a centralized management tool that you can access through the IP address for any access point in a cluster. After your other access points are configured, you can also link to the AT-TQ2403 management software web pages using the Access Point IP address, for example <http://192.168.1.230/> if the default IP address has not been modified.

7. Click Administration. You are prompted for a user name and password, as shown in Figure 13.



Figure 13: Login Dialog Box

The default user name is "**manager**" and the default password is "**friend**"

8. Enter the user name and password and click OK. The Basic Settings page opens, as shown in Figure 14.

Basic Settings | Manage | Cluster | User Management | Security | Status | Services | Maintenance

Provide basic settings

1 Review Description of this Access Point ...

These fields show information specific to this access point.

IP Address: 192.168.1.230
MAC Address: 00:1A:EB:18:E0:00
Firmware Version: 2.1.1
Time since system-up: 01:30:33

2 Provide Network Settings ...

These settings apply to this access point. The same settings will apply to new access points joining the cluster.

Current Password
New Password
Confirm new password

Network Name (SSID) Radio Interface One
Radio Interface Two

3 Settings ...

Click "Update" to save the new settings.

? For a typical access point which is a member of a cluster, provide the minimal set of configuration information needed to set up the access point and start wireless networking as described in the numbered steps on this page.

Caution: If you do not have a DHCP server on the internal network and do not plan to use one, the first thing you must do after bringing up the access point is change the Connection Type from DHCP to Static IP.

To change the Connection Type, go to the [Ethernet \(Wired\) Settings](#) tab.

[More...](#)

Figure 14: Basic Settings Page

Refer to the AT-TQ2403 Management Software User's Guide for information about how to configure the basic settings.

Warranty Registration

After installing your access point, please visit <http://www.alliedtelesis.com/support/warranty/> to register your product and check warranty conditions.

Chapter 3: Troubleshooting

If the AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point is not operating correctly, do one of the following:

- Rechecking your physical connections. Make sure that power cable and Ethernet cables are inserted tightly and LED lights up correctly. If LED does not light up properly, try to swap Ethernet cables.
- Verify the client's wireless adapter is installed and working properly. On a Windows client, check your wireless connection from the Network Connections panels and make sure that its status is "Enabled". If the adapter is not listed, please check if the adapter is plug-in well and installed the driver. If the adapter is listed but can not enable the connection, please check the Properties panel to make sure no resource conflicts.
- If your client has a valid IP address, you can use "ping" to verify network connectivity. Run a command window from the client's PC's start menu and ping your AP's LAN IP address. If pinging your AP repeatedly timeout, you should try following:
 - ☞ Check both AT-TQ2403 and the wireless adapter use compatible 802.11 standards and the same SSID.
 - ☞ Check your AP's setting and compare it with your client's wireless parameters.
 - ☞ Reset your AP through the management software. See details in User's Guide. Or you can hold in the Reset button until the TEST led turns on to restore the factory default settings.

Appendix A: Technical Specifications

Physical Specifications

| | |
|-------------|---|
| Dimensions: | 176.34 mm x 103.62 mm x 23.20 mm (W x D x H) (6.94 in. x 4.07 in. x .91 in.) |
| Weight: | 250 g (8.81 oz.) |

Environmental Specifications

| | |
|---------------------------|--------------------------|
| Operating Temperature: | 0 to 40°C |
| Storage Temperature: | -20 to 60°C |
| Operating Humidity: | 10 to 80% non-condensing |
| Storage Humidity: | 10 to 95% non-condensing |
| Operating Altitude Range: | 3,000 m |

Power Specifications

| | |
|-----------------------|--|
| Input Supply Voltage: | Power over Ethernet or 5VDC / 2.8 A DC adapter |
| Power Consumption: | 5.75 W (max.) |

Safety and Electromagnetic Emissions Certifications

| | |
|-----------------------|---|
| EMI/RFI and Immunity: | FCC marked (Compliant with FCC Part 15 Class B; FCC Part 15B, 15C, and 15E Certified); CE Marked (compliant with EN 301 893; EN 300 328; EN 301 489 Transmitter EMC); Canada IC; C-Tick marked (Compliant with AS/NZS / CISPR 22 Class B) |
| Electrical Safety: | cUL Marked (compliant with UL60950-1, CSA C22.2 No.60950-1-03 CULUS); CE Marked (compliant with LVD Directives); TUV T-mark marked (compliant with EN60950-1) |

Appendix B: Radio Bands

Allied Telesis's AT-TQ2403 IEEE 802.11abgh, Dual Radio, Enterprise Wireless Access Point is capable of operating in the 2.4GHz (IEEE 802.11g/b) and in the 5GHz band (IEEE 802.11a/h) simultaneously.

Some of the advantages of the 802.11a/h option are:

- Higher performance. 802.11a can deliver data rates up to 54Mbps and there is enough room in the 5GHz spectrum to support up to 12 access points (depending on local regulations) operating in the same area without causing interference between access points. This equates to 648Mbps (12 X 54Mbps) total data rate performance. With 802.11g, you have only three non-overlapping channels for setting access point frequencies, which can limit capacity.
- Less RF interference: The growing use of 2.4GHz cordless phones and Bluetooth devices is crowding the radio spectrum within many facilities. This significantly decreases the performance of 802.11g wireless LANs. The use of 802.11a operating in the relatively un-crowded 5GHz band avoids this interference. -
- Ability to use the Wireless Distribution System (WDS) feature utilizing the 802.11a radio for bridging to another access point while servicing 802.11g customers without using user bandwidth for the bridging function.