

TQ7403-R

Wi-Fi 6E (802.11ax) Wireless AP Router

The Allied Telesis TQ7403-R combines a ultra high-performance Wi-Fi 6E access point and a secure VPN router in an innovative all-in-one connectivity solution.



Wi-Fi 6E
CERTIFIED

Overview

The TQ7403-R provides high-speed tri-band Wi-Fi 6E connectivity for wireless devices, and a secure Internet connection from the built-in VPN router. The single-unit design ensures easy configuration and management reducing costs for small businesses, or enterprises with multiple locations, such as retail stores, cafes, and more.

For powerful wireless connectivity, 2.4GHz, 5GHz, and 6GHz radios deliver a raw capacity of 2.4 Gigabits. The 6Hz band uses an internal antenna for increased efficiency and throughput, while the 2.4GHz and 5GHz bands use an external antenna, which is removable and can be replaced with an optional extension cable and patch antenna to extend wireless range, expanding deployment options and usage scenarios.

Multi-User Multiple Input and Multiple Output (MU-MIMO) allows multiple clients to send and receive data at the same time, substantially increasing throughput for a superior wireless user experience.

Secure WAN routing ensures reliable connectivity to the Internet, head-office, and other branch locations. Critical data is protected with a zone-based firewall, and remote access to cloud based or head-office based business applications is assured using secure IPsec VPNs.

Flexible installation options include desktop use, and wall or ceiling mounting. Power can be supplied by Power over Ethernet, or by an optional AC power adapter.

Wireless Performance	
Capacity	2.4 Gigabits
Routing Performance	
Firewall throughput	1,124 Mbps
VPN throughput	
AES128/SHA256	199 Mbps
AES256/SHA256	136 Mbps

Key Features

Wireless

Wi-Fi 6E

- ▶ IEEE 802.11ax Wi-Fi 6E connectivity delivers fast performance and efficient bandwidth distribution in crowded wireless environments. Use of the 6GHz band (up to 1200 MHz) allows more devices to connect and provides stable high throughput.
- ▶ Features such as OFDMA and bidirectional MU-MIMO that increase the intelligence of the AP in managing multiple client connections at once, providing better throughput, connectivity and overall performance. With support for increased numbers of clients, and optimization for high-bandwidth and real-time applications like streaming video, the TQ7403-R is ideal as a single unit deployed in small branch locations.

Captive Portal

- ▶ Manage customer and staff Wi-Fi access with captive portal, by taking new users to a login page to authenticate before gaining access to any online resources and applications.
- ▶ Login options include direct online access, external authentication, or redirection to third party services—for example, social media sites like Facebook or Twitter.

Virtual APs with Multiple SSIDs

- ▶ The TQ7403-R supports Virtual AP (VAP) functionality, with the assignment of different SSIDs and security policies for each VAP on the physical device.
- ▶ VAPs allow logical wireless network separation and improved throughput by enabling communication by application or users, such as separate customer or staff access.

QR codes simplify connectivity

- ▶ Generate a QR code on the AP that can be scanned by smartphones and other wireless devices to enable quick and easy connection to the Wi-Fi network, eliminating the need to enter SSIDs and passwords.

Routing

Application aware firewall

- ▶ A zone-based firewall provides secure Internet connectivity, protecting users online access and preventing business information leaks.
- ▶ Deep Packet Inspection (DPI) enables application aware control and prioritization of traffic using the free built-in application list, or the subscription-based list which is regularly updated.
- ▶ The high-performance DPI engine, along with multiple threat detection and protection capabilities, provide single-pass low-latency inspection of all network traffic, while blocking intrusion attempts and malware.

DPI rule sharing

- ▶ DPI sharing is another way for the TQ7403-R to become application-aware, learning application categorization information from the central firewall, for even more comprehensive awareness of the various applications on the network.

Virtual Private Networking (VPN)

- ▶ IPsec site-to-site VPNs connect the local branch to head-office and other locations for consistent access to company resources, and enable construction of secure inter-company networks using inexpensive Internet services.
- ▶ SSL/TLS remote worker VPNs allow easy access to digital resources when away from the office or store, using the OpenVPN client.

Software Defined WAN (SD-WAN)

- ▶ SD-WAN enables users to measure the quality of their inter-branch VPN links and send real-time and other applications over the most suitable connection. Users can also load-balance an application over multiple WAN links and prioritize the delivery of business-critical applications.

Flexible Management

Graphical User Interface (GUI)

- ▶ The GUI provides easy visual stand-alone management of wireless and routing functionality.
- ▶ Monitoring Wi-Fi and firewall performance allows proactive management that optimizes operation for a secure business environment with reliable online access.

Centralized management

- ▶ TQ7403-R units at multiple locations can be centrally managed using the Autonomous Wave Control (AWC) wireless controller built-in to Vista Manager™.
- ▶ AWC regularly analyses the Wi-Fi network, automatically optimizing wireless settings to reduce interference and minimize coverage gaps—all with no user intervention.
- ▶ All units are automatically backed-up using Autonomous Management Framework™ Plus (AMF Plus), and simplified visual management on the Vista Manager network map.
- ▶ Vista Manager, AMF Plus, and AWC provide visual and automated management that greatly reduces the time and cost of managing many units at multiple locations.

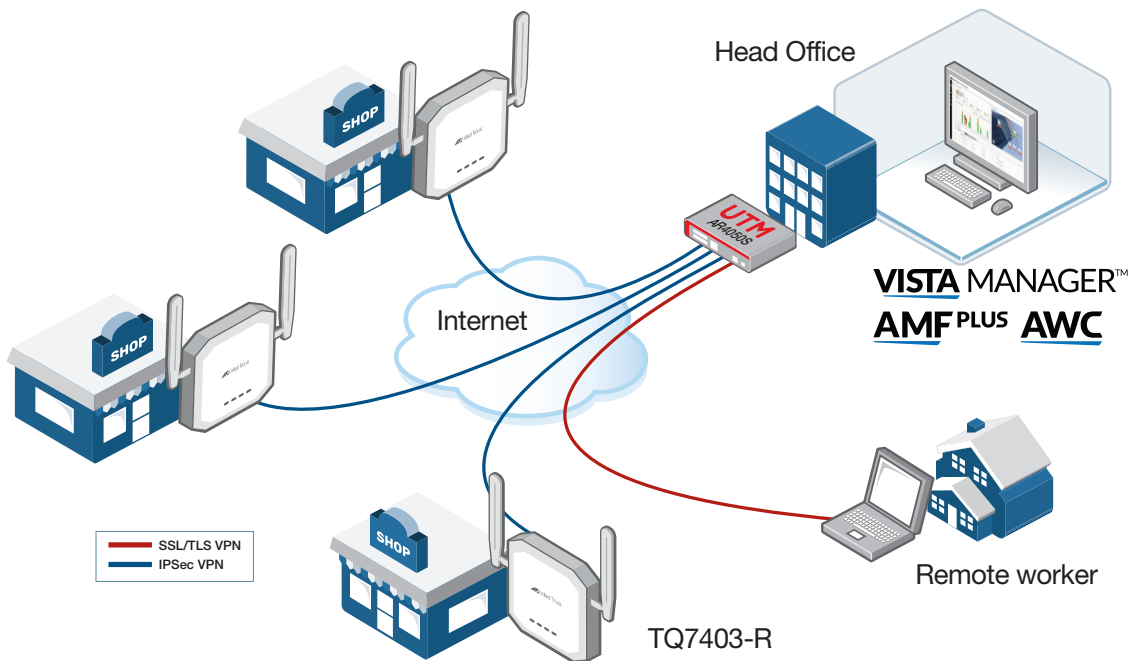
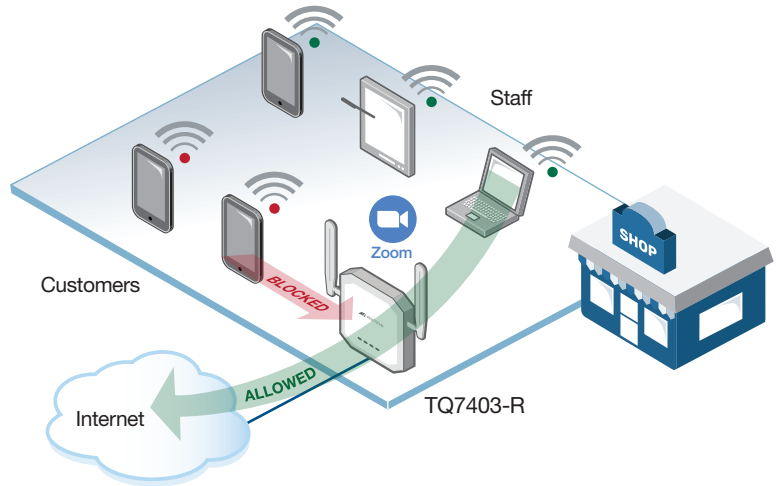
Key solutions

A single-unit network

The TQ7403-R provides a single-unit network ideal for small businesses, or enterprises with multiple locations such as retail stores. Instead of a router, switch and wireless AP, only one device provides seamless wireless access, and secure connectivity to the Internet, and/or head-office and other business locations.

The application-aware firewall enables full control over who uses applications to enforce security acceptable use policies. For example, Zoom conference calls may be allowed for staff only.

Simple yet comprehensive visual management and monitoring using the Device GUI ensures reduced time, effort, and cost to install and run the network.



Centralized management

Businesses with multiple locations can enjoy centralized and automated management of the TQ7403-R units installed at each branch. Roll-out of new locations is as easy as connecting the new single-unit branch network back to the head-office.

IPSec site-to-site VPNs ensure secure access between business locations, while SSL/TLS remote worker VPNs

provide easy access to digital resources when away from the office, using the OpenVPN client.

Vista Manager enables full visual monitoring of all locations for proactive management. AMF Plus automates backup, provisioning and upgrade of any device, and AWC automatically optimizes wireless performance, so all locations enjoy the best possible user experience.

Physical Specifications

PRODUCT	WIDTH X DEPTH X HEIGHT		WEIGHT	10M/100M/1G/2.5G/5G (RJ-45) COPPER PORTS
TQ7403-R	200 x 210 x 45 mm (7.87 x 8.23 x 1.78 in) With protrusion antenna: 290 x 210 x 160 mm (11.427 x 8.23 x 6.30 in)	2 x 2 (2.4GHz) + 2 x 2 (5GHz) + 2 x 2 (6GHz)	1.2 kg (2.64 lb)	2 (PoE-in port)

Power Characteristics

PRODUCT	POWER SUPPLY	AVERAGE POWER CONSUMPTION	MAXIMUM POWER CONSUMPTION	MAX HEAT DISSIPATION
TQ7403-R	100-240VAC	14W	18W	61.48 BTHu
	PoE	15W	19.4W	66.15 BTHu

Wireless Features

Wi-Fi

- ▶ OFDMA
- ▶ Bi-directional Multi-user MIMO
- ▶ Airtime fairness
- ▶ Automatic channel selection
- ▶ Automatic control of transmission power
- ▶ Band Steering
- ▶ Fast roaming
- ▶ RF load balancing
- ▶ Wireless Distribution System (WDS)
- ▶ Zero Wait DFS

Operational Modes

- ▶ Standalone (supports up to 500 clients per radio)
- ▶ Centrally managed by Vista Manager EX (up to 3,000 units)
- ▶ Centrally managed by Vista Manager Network Appliance (up to 500 units)
- ▶ Centrally managed by Vista Manager mini (up to 305 units)

Security

- ▶ Authentication and Accounting
 - Open System Authentication
 - Enhanced Open Authentication
 - IEEE 802.1X Authentication and Accounting
 - IEEE 802.1X RADIUS support
 - Shared Key Authentication
 - WPA (Enterprise, Personal)
 - WPA2 (Enterprise, Personal)
 - WPA3 (Enterprise, Personal)
 - Captive Portal (External RADIUS, Click-Through)
 - Wi-Fi Alliance certified Passpoint® enables auto-detection and connection of client devices
- ▶ Encryption
 - WEP: 64/128 bit (IEEE 802.11a/b/g only)
 - WPA/WPA2: CCMP (AES), TKIP
 - WPA3: CCMP/GCMP (AES/CNSA)
- ▶ MAC address filtering (Up to 1024 MAC address)
- ▶ SSID hiding/ignoring
- ▶ Client isolation
- ▶ Allow, block, and record client connections
- ▶ Neighbor AP detection
- ▶ Kensington lock

Compliance

- Certificate
 - ▶ Wi-Fi certified
 - ▶ CE
 - ▶ RCM
 - ▶ FCC
 - ▶ IMDA (For Singapore)¹

- ▶ OFCA (For Hong Kong)¹
- ▶ NBTC (For Thailand)¹
- ▶ SIRIM (For Malaysia)¹
- Safety
 - ▶ EN 62368-1
 - ▶ UL 62368-1
 - ▶ UL 2043
- ElectroMagnetic Compatibility
 - ▶ EN 301 489-1
 - ▶ EN 301 489-17
 - ▶ EN 303 687
 - ▶ EN 55024
 - ▶ EN 55032, Class B
 - ▶ EN 55035
 - ▶ EN 60601-1-2
 - ▶ EN 61000-3-2, Class A
 - ▶ EN 61000-3-3
 - ▶ EN 61000-4-2
 - ▶ EN 61000-4-3
 - ▶ EN 61000-4-4
 - ▶ EN 61000-4-5
 - ▶ EN 61000-4-6
 - ▶ EN 61000-4-8
 - ▶ EN 61000-4-11
 - ▶ VCCI Class B
- Radio equipment
 - ▶ AS/NZS 4268
 - ▶ EN 300 328
 - ▶ EN 301 893
 - ▶ FCC 47 CFR Part 15, Subpart C
 - ▶ FCC 47 CFR Part 15, Subpart E5

Embedded Antennas

- Omni-directional
 - ▶ Frequency band: 2.4 GHz
 - ▶ Max. peak gain: 2.83 dBi
- Omni-directional
 - ▶ Frequency band: 5 GHz
 - ▶ Max. peak gain: 3.85 dBi
- Omni-directional
 - ▶ Frequency band: 6 GHz
 - ▶ Max. peak gain: 5.93 dBi

Radio Characteristics

- Supported frequencies:
 - ▶ 2.412 ~ 2.472 GHz
 - ▶ 5.150 ~ 5.250 GHz
 - ▶ 5.250 ~ 5.350 GHz
 - ▶ 5.500 ~ 5.720 GHz
 - ▶ 5.745 ~ 5.825 GHz (Not supported in EMEA)
 - ▶ 5.925 ~ 6.425 GHz
 - ▶ 6.425 ~ 7.125 GHz (US and Canada)

Modulation Technique

- ▶ 802.11a/g/n/ac: OFDM
- ▶ 802.11 ax: OFDMA
- ▶ 802.11b: DSSS, CCK, DQPSK, DBPSK
- ▶ 802.11ac: BPSK, QPSK, 16QAM, 64QAM, 256QAM
- ▶ 802.11a/g/n: BPSK, QPSK, 16QAM, 64QAM, 256QAM
- ▶ 802.11 ax: BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM

Data Rate

- ▶ IEEE802.11b 11/5.5/2./1Mbps
- ▶ IEEE802.11a/g 54/48/36/24/18/12/9/6Mbps
- ▶ IEEE802.11g/n 6.5-600Mbps (MCS0-31)
- ▶ IEEE802.11g/n 6.5-800Mbps (MCS0-31)²
- ▶ IEEE802.11a/ac 6.5-1733.3Mbps (MCS0-9)
- ▶ IEEE802.11a/ax 6.5-2401.9Mbps (MCS0-11)

Media Access

- ▶ CSMA/CA + Ack with RTS/CTS

Diversity

- ▶ Spatial diversity

Wireless standards

- IEEE 802.11 a/b/g/n/ac/ax 2x2:2ss MU-MIMO
- IEEE 802.11k Radio Resource Measurement of Wireless LANs
- IEEE 802.11v Basic Service Set Transition Management Frames
- IEEE 802.11r Fast Basic Service Set Transition
- IEEE 802.11e WMM for Quality of Service
- IEEE 802.11i WPA/WPA2/WPA3 802.1x for Security

Routing Features

Firewall

- ▶ Application aware DPI firewall uses the free built-in or subscription-based application lists
- ▶ DPI rule sharing
- ▶ Web categorization lets businesses manage the types of website their staff or visitors can access
- ▶ Application Layer Gateway (ALG) for FTP, SIP and TFTP
- ▶ Bandwidth limiting control
- ▶ Control network access and traffic regionally with GeoIP (Geographic IP)
- ▶ Static NAT (port forwarding), double NAT and subnet-based NAT
- ▶ Masquerading (outbound NAT)
- ▶ Enhanced NAT (static and dynamic)
- ▶ Security for IPv6 traffic

Diagnostic Tools

- ▶ Automatic link flap detection and port shutdown
- ▶ Ping polling for IPv4 and IPv6
- ▶ TraceRoute for IPv4 and IPv6

¹ The TQ7403-R is the same product as the TQ7403 with router functionality added. The compliance standards were obtained with the TQ7403

² Using 256 Quadrature Amplitude Modulation

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Authentication

- ▶ Strong password security and encryption
- ▶ Local RADIUS server for up to 100 users
- ▶ TACACS+ authentication and authorization
- ▶ 802.1x authentication on LAN ports
- ▶ Dynamic VLAN assignment when using MAC authentication

VPN Tunneling

- ▶ Diffie-Hellman key exchange
- ▶ Secure encryption algorithms: AES-128, AES-192, AES-256, and AES-GCM
- ▶ Secure authentication: SHA-1, SHA-256, SHA-512

- ▶ IKEv2 key management
- ▶ IPsec Dead Peer Detection (DPD)
- ▶ IPsec NAT traversal
- ▶ IPsec VPN for site-to-site connectivity
- ▶ Multipoint VPN for connecting a single VPN to multiple end points
- ▶ VPN pass-through
- ▶ Redundant VPN gateway
- ▶ SSL/TLSv1.3 for secure remote VPN access using OpenVPN
- ▶ IPv6 tunneling (DS Lite, LW4o6, MAP-E)
- ▶ SD-WAN performance measures and load balances multiple inter-branch VPN links

Ethernet standards

- IEEE 802.1AX-2008 Link Aggregation (static and dynamic)
- IEEE 802.3u 100BASE-TX
- IEEE 802.3ab 1000BASE-T
- IEEE 802.3bz 2.5GBASE-T ("multi-gigabit")
- IEEE 802.3x Flow Control
- IEEE 802.3at Power over Ethernet+
- IEEE 802.1Q VLAN Tagging

Specifications

Memory	
Memory (RAM)	2GB
Memory (Flash)	512MB
Networking	
Routing	Static, Policy Based Routing (PBR), SD-WAN
IP address management	Dynamic ENAT, Static NAT/ENAT, Subnet base NAT, DNS relay , ESP/PPTP/L2TP Pass-through
PPPoE	PPPoE (Multi-Session, Session key appliance)
VLANs	802.1Q tagging
Discovery	LLDP, LLDP-MED
Traffic control	8 priority queues, DiffServ, HTB scheduling, RED curves
Tunneling & encryption	
IPsec site-to-site VPN tunnels	30 (Recommended)
Encrypted VPN	IPsec, SHA-1, SHA-256, SHA-512, IKEv2
Encryption	AES-128, AES-192, AES-256, AES-GCM
Tunneling	DS (Dual Stack) Lite, Lightweight 4over6, and MAP-E support connecting IPv4 networks over an IPv6 Internet connection
VPN	IPSec site-to-site VPNs, Open VPN (SSL VPNs) for remote access
Point to point	GRE for IPv4 and IPv6, L2TPv3 Ethernet psuedo-wires
Wireless	
Radio	3 Radios (2.4GHz, 5GHz, and 6GHz)
Bandwidth	20/40 (2.4GHz), 20/40/80MHz (5GHz), 20/40/80/160MHz (6GHz)
Spatial Stream	2.4GHz, 5GHz, 6GHz: 2 Stream MU-MIMO
Wireless function	Airtime fairness, Band Steering, Fast roaming, Wireless Distribution System (WDS), Zero Wait DFS, Virtual Access Point (VAP), SSID hiding/ignoring, Client isolation, Passpoint (Hotspot 2.0)
Wireless Security & Authentication	
Authentication and Accounting	Open System Authentication, Enhanced Open Authentication, IEEE 802.1X Authentication and Accounting, IEEE 802.1X RADIUS support, Shared Key Authentication, WPA (Enterprise, Personal) , WPA2 (Enterprise, Personal) , WPA3 (Enterprise, Personal), Captive Portal (External RADIUS, External page redirect, Click-Through, Walled Garden), Passpoint®
Encryption	WPA/WPA2: CCMP (AES), Enhanced Open CCMP(AES), WPA3 Personal CCMP (AES), WPA3 Enterprise CCMP/GCMP (AES)
Other	MAC address filtering (Up to 1024 MAC address), SSID hiding/ignoring, Client isolation, Neighbor AP detection, Kensington lock, AMF-Security, allow / block / record client connections
Management	
IP Address Management	Static v4/v6, DHCP v4/v6 (server, relay, client), PPPoE, Dynamic DNS
User interface	Scriptable industry-standard CLI, Web-based GUI
Network Management	AMF Plus member, AWC management
Other	SNMPv1/v2c/v3, NTP client, Local RADIUS server, RADIUS client, ARP, Proxy ARP, Ping poling, Firmware upgrade, Backup/restore settings, Syslog notification, QR Code, Eco-friendly LED management

Environmental	
Operating temperature range	0°C to 50°C (32°F to 122°F)
Storage temperature range	-25°C to 70°C (-13°F to 158°F)
Operating relative humidity range	5% to 90% non-condensing
Storage relative humidity range	5% to 95% non-condensing
Operating altitude range	Up to 3,048 meters maximum (10,000 ft)

Security Licenses

The Application Control license enables use of the comprehensive subscription-based application list, which is regularly and automatically updated. This provides greater application management than using the free built-in application list.

NAME	DESCRIPTION	INCLUDES
AT-TQR-APP-1YR	UTM Application Control license for 1 year	▶ Application Control (Sandvine)
AT-TQR-APP-5YR	UTM Application Control license for 5 years	▶ Application Control (Sandvine)
AT-TQR-WEB-1YR	UTM Web Categorization license for 1 year	▶ Web Categorization (OpenText)
AT-TQR-WEB-5YR	UTM Web Categorization license for 5 years	▶ Web Categorization (OpenText)

Ordering Information

AT-TQ7403-R-xx

Enterprise-Class Wi-Fi 6E Wireless AP Router with 3 radios (2x2 2.4GHz and 2x2 5GHz and 2x2 6GHz), an embedded and external antenna, and 2 multi-gigabit Ethernet ports

Where xx =

- 05 Regulatory Domain: Other countries³
- 02 Regulatory Domain: Taiwan
- 01 Regulatory Domain: United States Reserved
- 00 Regulatory Domain: EMEA

³ Please check the Compliance section on page 2 to see which countries are certified to use these access points

Related Products

AT-TQ0301

Patch antenna for 2.4G/5G
One required per TQ7403-R

AT-TQ0064

Antenna extension cable of 10 m
At least two units required per TQ7403-R

AT-PWRADP-01

AC adapter

AT-6101GP-yy

Gigabit Ethernet PoE+ (802.3at) injector

AT-7101GHTm-yy

Multi-Gigabit Ethernet PoE++ (802.3bt) injector

AT-BRKT-CONV-AP1

Replacement bracket converter

Where yy =

- 10 for US power cord
- 30 for UK power cord
- 40 for Australian power cord
- 50 for European power cord