

# TQ6702 GEN2-R

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

The Allied Telesis TQ6702 GEN2-R combines a high-performance Wi-Fi 6 access point and a secure VPN router in an innovative all-in-one connectivity solution.

### Overview

The TQ6702 GEN2-R provides high-speed Wi-Fi 6 connectivity for wireless devices, and a secure Internet connection from the built-in VPN router. The single-unit design enables a simplified yet comprehensive network solution for a small business, or for enterprises with multiple locations, such as retail stores, cafes, and more.

Traditionally, multiple devices such as an AP, switch, and router are required to build a network for small office locations, or small businesses. The new TQ6702 GEN2-R ensures easy single-unit configuration and management for reduced installation and running costs.

For powerful wireless connectivity, one 4×4 2.4GHz and one 8×8 5GHz Wi-Fi 6 (802.11ax) radio deliver a raw capacity of 4.8 Gigabits. 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 deployment options for the TQ6702 GEN2-R include desktop use, and wall or ceiling mounting. Power can be supplied by Power over Ethernet (using an optional PoE injector) or by an AC power adapter.

## KEY FEATURES

### Wi-Fi 6

IEEE 802.11ax Wi-Fi 6 delivers performance four times faster than 802.11ac devices, and efficiently manages bandwidth for a superior user experience.

Features such as OFDMA and bidirectional MU-MIMO increase AP intelligence in managing multiple user connections at once to maximize throughput. Support for increased client numbers, and optimization for high-bandwidth and real-time applications, make the TQ6702 GEN2-R ideal as a single device 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 TQ6702 GEN2-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 TQ6702 GEN2-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.

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### 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 Device 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.



| Wireless Performance       |              |
|----------------------------|--------------|
| <b>Capacity</b>            | 4.8 Gigabits |
| Routing Performance        |              |
| <b>Firewall throughput</b> | 2,700 Mbps   |
| <b>VPN throughput</b>      |              |
| <b>AES128/SHA256</b>       | 244 Mbps     |
| <b>AES256/SHA256</b>       | 326 Mbps     |

## Centralized management

For smaller networks, the Device GUI includes a wireless controller which enables the TQ6702 GEN2-R to manage itself and up to 50 other APs, for an all-in-one Wi-Fi monitoring and management solution.

For larger networks, multiple APs can be centrally managed using the Autonomous Wave Control (AWC) wireless controller built-in to Vista Manager.

Enjoy seamless visibility of APs alongside switches, firewalls, third-party, and endpoint devices.

AWC regularly analyses the Wi-Fi network, automatically optimizing wireless settings to reduce interference and minimize coverage gaps—all with no user intervention.

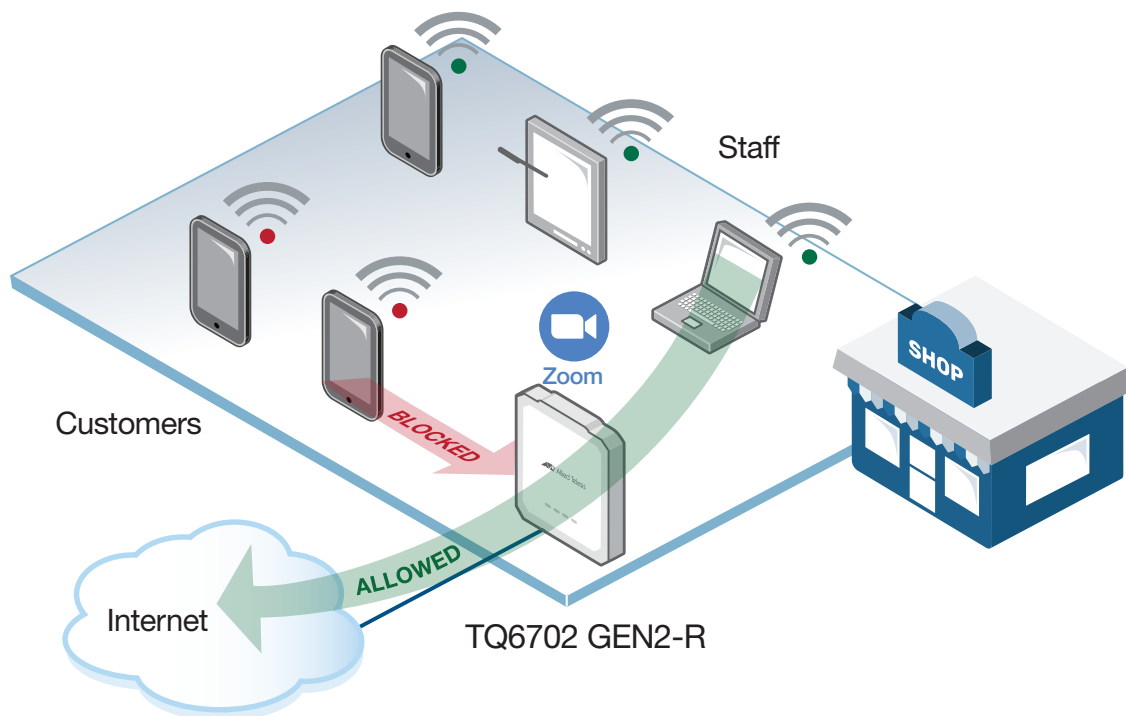
All units are automatically backed-up using Autonomous Management Framework Plus (AMF

Plus), and can be restored with plug-and-play simplicity.

Vista Manager, AMF Plus, and AWC provide visual and automated management that greatly reduces the time and cost of managing multiple APs in larger deployments.

## KEY SOLUTIONS

### A Single-unit Network



The TQ6702 GEN2-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.

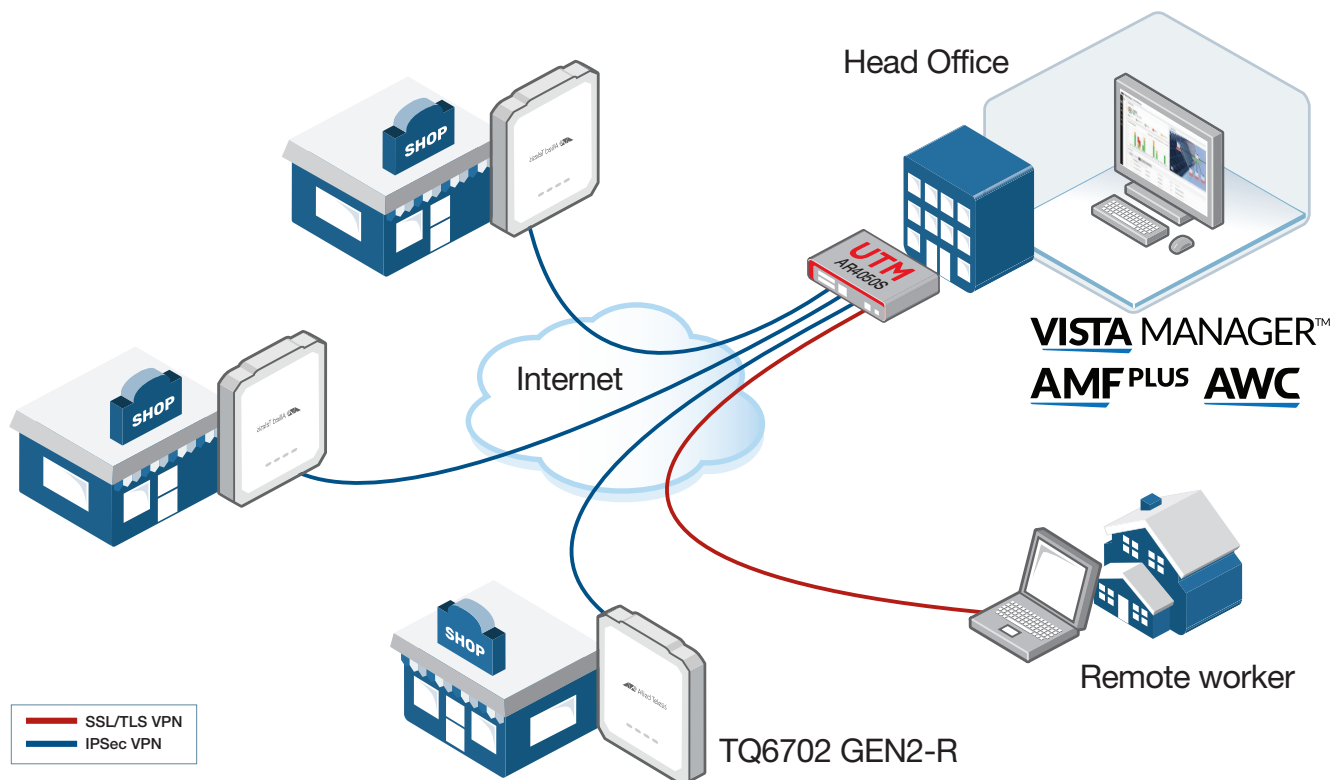
The application-aware firewall enables full control over who uses applications to

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.

## KEY SOLUTIONS

# Centralized Management



Businesses with multiple locations can enjoy centralized and automated management of the TQ6702 GEN2-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 back-up, provisioning and upgrade of any device, and AWC automatically optimizes wireless performance, so all locations enjoy the best possible user experience.

# SPECIFICATIONS

## Physical Specifications

|               | Width            | Depth            | Height          |                               | Weight           | 10M/100M/1G/2.5G/5G (RJ-45) copper ports |
|---------------|------------------|------------------|-----------------|-------------------------------|------------------|------------------------------------------|
| TQ6702-GEN2-R | 200 mm (7.88 in) | 240 mm (9.45 in) | 45 mm (1.78 in) | 4 x 4 (2.4GHz) + 8 x 8 (5GHz) | 1.2 kg (2.64 lb) | 2 (PoE-in port)                          |

## Power Characteristics

|               | Power Supply | Average Power Consumption | Maximum Power Consumption | Max Heat Dissipation |
|---------------|--------------|---------------------------|---------------------------|----------------------|
| TQ6702-GEN2-R | 100~240VAC   | 19W                       | 24W                       | 81.84 BTHu           |
|               | PoE          | 17W                       | 22.03W                    | 75.12 BTHu           |

- 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: 4.38 dBi

Omni-directional

- Frequency band: 5 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)

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)<sup>2</sup>
- 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

<sup>2</sup> The TQ6702 GEN2-R is the same product as the TQ6702 GEN2 with router functionality added. The compliance standards were obtained with the TQ6702 GEN2.

<sup>3</sup> Using 256 Quadrature Amplitude Modulation

## Wireless Features

### Wi-Fi

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

- Kensington lock
- AMF-Sec application proxy provides communication with an AMF-Sec server to enable LAN threat detection, with automated end-point isolation to protect the network
- Simple Certificate Enrollment Protocol (SCEP) supports secure management

## Compliance

Certificate

- Wi-Fi certified
- CE
- RCM
- IC
- FCC
- IMDA (For Singapore)
- WPC (For India)
- OFCA (For Hong Kong)
- NBTC (For Thailand)
- MIC (For Vietnam)
- SIRIM (For Malaysia)
- BSMI/MCC (For Taiwan)

Safety<sup>1</sup>

- EN 62368-1
- UL 62368-1
- UL 2043

ElectroMagnetic Compatibility

- EN 301 489-1
- EN 301 489-17
- 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

## Operational Modes

- Standalone (supports up to 500 clients per radio)
- Centrally managed by Vista Manager EX Virtual (VST-VRT) (up to 3,000 APs)
- Centrally managed by Vista Manager EX Network Appliance (VST-APL) (up to 500 APs)
- Centrally managed by the embedded wireless controller (up to 50 APs)

## 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 3072 MAC address)
- MAC address filtering per VAP
- SSID hiding/ignoring
- Client isolation
- Allow, block, and record client connections
- Neighbor AP detection

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

Authentication

- Strong password security and encryption
- Two-factor authentication using a code, certificates, or a one time password (OTP) via email for maximum security
- Local RADIUS server for up to 100 users
- TACACS+ authentication and authorization
- 802.1x and MAC authentication on LAN ports
- Dynamic VLAN assignment when using MAC authentication

VPN Tunneling

- Diffie-Hellman key exchange
- Secure encryption algorithms: AES/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
- VPN pass-through
- Redundant VPN gateway
- SSL/TLS VPN for secure remote 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)                       | 1GB                                                                                                                                                                                                                                                                                                                                                    |
| 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 apprience)                                                                                                                                                                                                                                                                                                           |
| VLANs                                | 802.1Q tagging                                                                                                                                                                                                                                                                                                                                         |
| Discovery                            | LLDP, LLDP-MED                                                                                                                                                                                                                                                                                                                                         |
| Traffic control                      | 8 priority queues, DiffServ, HTB scheduling, RED curves                                                                                                                                                                                                                                                                                                |
| Tunneling and 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                                | 2 Radios (2.4GHz, 5GHz)                                                                                                                                                                                                                                                                                                                                |
| Bandwidth                            | 20/40 (2.4GHz), 20/40/80/80+80MHz (5GHz)                                                                                                                                                                                                                                                                                                               |
| Spatial Stream                       | 2.4GHz: 4 Stream MU-MIMO, 5GHz: 8 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 and 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 3072 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.

|                | 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-TQ6702 GEN2-R-xx | Enterprise-Class Wi-Fi 6 Wireless AP Router with 2 wireless radios (4x4 2.4GHz and 8x8 5GHz), an embedded antenna, and 2 multi-gigabit Ethernet ports |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|

Where xx = 03 Regulatory Domain: Canada  
02 Regulatory Domain: Taiwan  
01 Regulatory Domain: United States Reserved  
00 Regulatory Domain: Other countries'

# Related Products

|                  |                                                 |
|------------------|-------------------------------------------------|
| 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