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.

Wireless Performance	
Capacity	4.8 Gigabits
Routing Performance	
Firewall throughput	2,700 Mbps
VPN throughput	
AES128/SHA256	244 Mbps
AES256/SHA256	326 Mbps

Key Features

Wireless

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 throughout. 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 and 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 built-in application list, with simplified administration.

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.

1 AP clustering and AWC available in a future firmware release

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.
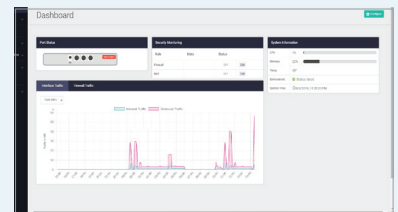
▶ Multiple clustered[1] wireless APs can be managed without using a wireless controller, as settings are simply synchronized from the TQ6702 GEN2-R to up to 10 additional APs.
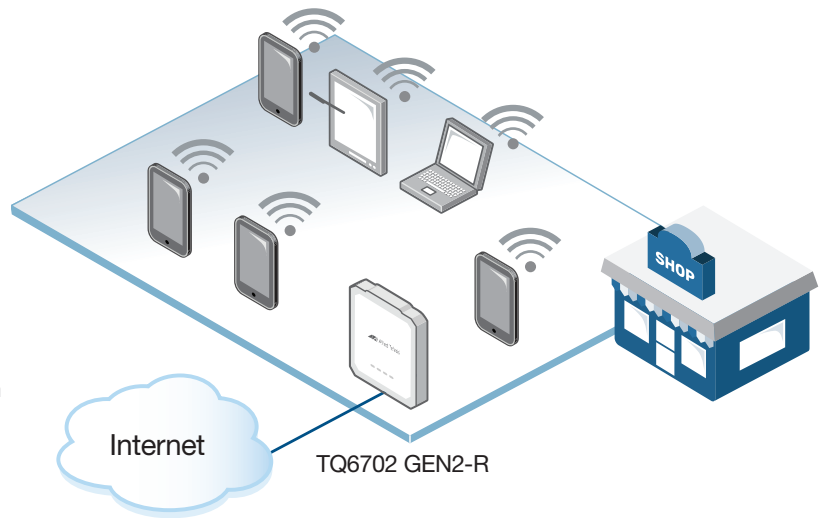
Centralized management
▶ TQ6702 GEN2-R units at multiple locations can be centrally managed using the Autonomous Wave Control (AWC[1]) wireless controller built-in to Vista Manager™.
▶ AWC[1] regularly analyses the Wi-Fi network, automatically optimizing wireless settings to reduce interference and minimize 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[1] 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 TQ6702 GEN2-R provides a single-unit network ideal for small businesses, or enterprises with multiple locations such as retails 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.

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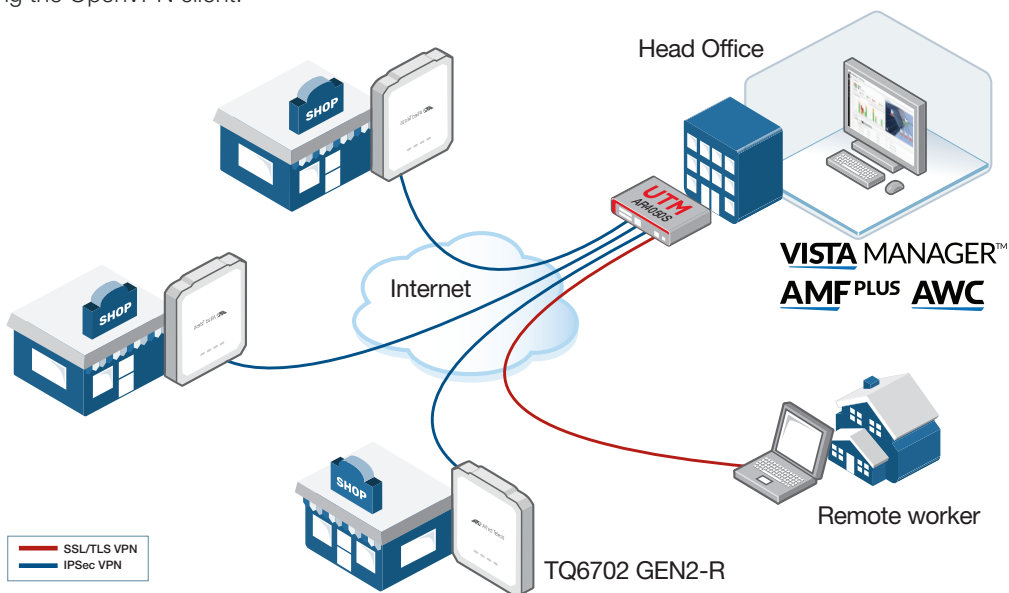

Internet

TQ6702 GEN2-R

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[1] automatically optimizes wireless performance, so all locations enjoy the best possible user experience.

Head Office

Internet

VISTA MANAGER™
AMF PLUS   AWC

Remote worker

SSL/TLS VPN
IPSec VPN

TQ6702 GEN2-R

[1] AWC available in a future firmware release

TQ6702 GEN2-R | Wi-Fi 6 (802.11ax) Wireless AP Router

Physical Specifications

PRODUCT	WIDTH X DEPTH X HEIGHT		WEIGHT	100M/1G/2.5G/5G (RJ-45) COPPER PORTS
TQ6702 GEN2-R	200 x 240 x 45 mm (7.88 x 9.45 x 1.78 in)	4 x 4 (2.4GHz) + 8 x 8 (5GHz)	1.2 kg (2.64 lb)	2 (PoE-in port)

Power Characteristics

PRODUCT	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

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

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
  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)
▶ Encryption
  WEP: 64/128 bit (IEEE 802.11a/b/g only)
  WPA/WPA2: CCMP (AES), TKIP
  WPA3: CCMP (AES/CNSA)
▶ MAC address filtering (Up to 1024 MAC address)
▶ SSID hiding/ignoring
▶ Client isolation
▶ Neighbor AP detection
▶ 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

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)
▶ SRRC (For China)
Safety[2]
▶ 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
▶ 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:
  TQ6702 GEN2-R: 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
Modulation Technique
▶ 802.11a/g/n/ac: OFDM
▶ 802.11 ax: OFDMA
▶ 802.11b: DSSS, CCK, DQPSK, DBPSK

[2] 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

▶ 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)[3]
▶ 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 4x4:4ss 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
▶ DPI rule sharing
▶ Application Layer Gateway (ALG) for FTP, SIP and TFTP
▶ Bandwidth limiting control
▶ 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 authentication on LAN ports

VPN Tunneling
▶ Diffie-Hellman key exchange
▶ Secure encryption algorithms: AES/AES-GCM and 3DES

[3] Using 256 Quadrature Amplitude Modulation

TQ6702 GEN2-R | Wi-Fi 6 (802.11ax) Wireless AP Router

- ▶ 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 and 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)

Tunneling & encryption	
IPsec site-to-site VPN tunnels	30 (Recommended)
Encrypted VPN	IPsec, SHA-1, SHA-256, SHA-512, IKEv2
Encryption	AES/AES-GCM (128, 192, 256 bit encryption)
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

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)

Wireless Security & Authentication	
Authentication and Accounting	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)
Encryption	WPA/WPA2: CCMP (AES), TKIP WPA3: CCMP (AES/CNSA)
Other	MAC address filtering (Up to 1024 MAC address), SSID hiding/ignoring, Client isolation, Neighbor AP detection, Kensington lock, AMF-Security

Management	
Address	DHCP(Server, Client, Relay), DHCPv6(Server, Client), Dynamic DNS
User interface	Scriptable industry-standard CLI, Web-based GUI
Network Management	AMF Plus member, AWC[4] 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)

[4] AWC available in a future firmware release

NETWORK SMARTER

TQ6702 GEN2-R | Wi-Fi 6 (802.11ax) Wireless AP Router

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