

# TQ6702e GEN2

## Outdoor Wi-Fi 6 (802.11ax) Hybrid Wireless Access Point

Allied Telesis Enterprise-class TQ6702e GEN2 outdoor access point features Wi-Fi 6 technology, with 8 spatial streams delivering a raw capacity of 4.8 Gigabits.



### Overview

The TQ6702e GEN2 Wi-Fi 6 outdoor AP can be used in a wide variety of outdoor environments, with an operating temperature of -40°C to 65°C, and Ingress Protection (IP66/IP67 rating) ensuring dust and moisture are not a problem. One 4x4 2.4GHz and one 8x8 5GHz radio deliver a raw capacity of 4.8 Gigabits.

The TQ6702e GEN2 supports multi-channel, single-channel (Channel Blanket)<sup>1</sup> and hybrid operation (the simultaneous use of multi-channel and Channel Blanket<sup>1</sup>). This powerful solution combines maximum performance and seamless roaming to enable the most flexible wireless networks available, and the best possible user experience.

The power and efficiency of Wi-Fi 6, and Allied Telesis smart hybrid technologies, enable a wireless Multi-Dimensional Exchange (MDX). The innovative MDX wireless solution enables user device tracking in real-time as well as historically for security and auditing purposes - and also supports restoring the wireless network to a past operational configuration if required.

For flexible outdoor deployment, a wall/pole mounting kit is included, and power is supplied via Power over Ethernet (802.11bt, PoE++). Eight omnidirectional antennas provide excellent wireless performance, and coverage can be extended using patch antennas and extension cables (sold separately) to further increase usage scenarios.

<sup>1</sup> Supported in a future firmware release

## Key Features

### Flexible Management

- ▶ The TQ6702e GEN2 can be managed in standalone mode using an intuitive web-based interface.
- ▶ Autonomous Wave Control (AWC) provide centralized management, and regularly analyses the wireless network, automatically optimizing AP settings to reduce interference and minimize coverage gaps—all with no user intervention.
- ▶ AWC wireless management is available on our Vista Manager EX network management platform, and from Vista Manager mini running on a number of switch and firewall products.

### Channel Blanket Hybrid Operation<sup>1</sup>

- ▶ The TQ6702e GEN2 support operation in multi-channel, single-channel (Channel Blanket) and hybrid (multi-channel and Channel Blanket) modes, for the most flexible wireless solution available.
- ▶ Multi-channel operation provides maximum throughput for high-bandwidth clients, while Channel Blanket operation supports seamless roaming for dynamic environments like industrial manufacturing and warehouses, as all APs appear as a single virtual AP.
- ▶ Hybrid mode combines the best of both architectures, enabling an innovative wireless solution that maximizes performance for a superior user experience.

### AWC-SC (Smart Connect)<sup>1</sup>

- ▶ AWC-SC enables plug-and-play wireless network growth, as new APs only need a power connection, and will then automatically create resilient wireless uplink connections to other APs.
- ▶ AWC-SC supports dynamic environments with multi-path uplinks, and provides an ideal solution for one-time deployments like conferences

### Captive Portal

- ▶ Manage user access to outdoor public space Wi-Fi networks with captive portal. New users are taken to a login page to authenticate before gaining online access.
- ▶ Login options include direct online access, external authentication, or redirection to third party services—for example social media sites like Facebook or Twitter.

### QR codes simplify wireless 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.

### Wi-Fi 6

- ▶ In crowded wireless environments, efficient bandwidth distribution is important, and Wi-Fi 6 offers new 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, the TQ6702e GEN2 can easily manage user demand in outdoor public space environments.
- ▶ Wi-Fi 6 increases the power and flexibility of AWC-CB<sup>1</sup> and AWC-SC<sup>1</sup>. With AWC-CB<sup>1</sup>, a high-capacity single wireless blanket can connect all devices without any interference or capacity issues, for truly seamless roaming. With AWC-SC<sup>1</sup>, no additional data cables are required, and a fully resilient wireless topology can be deployed with plug-and-play simplicity.

### Virtual APs with Multiple SSIDs

- ▶ The TQ6702e GEN2 support Virtual AP (VAP) functionality, with the assignment of different SSIDs and security policies for each VAP on the device.
- ▶ VAPs can be mapped to VLANs for logical network separation and improved throughput. Enable communication by application, function or users.

### Fast Roaming

- ▶ Fast roaming 802.11k, 802.11v, and 802.11r optimize discovering and selecting the best available AP in a Wi-Fi network. It establishes rapid connectivity for users to seamlessly move between APs, as the APs exchange security keys, so the client device does not need to re-authenticate on the RADIUS server as they roam.

### Weather Resistant Enclosure

- ▶ The TQ6702e GEN2 is equipped with lightning arresters and surge protector supporting outdoor installation, and the metal enclosure and plastic cover repel ultraviolet (UV) radiation.
- ▶ These protective measures, the extended operating temperature (-40°C to 65°C), and venting for internal pressure equalization, ensure the TQ6702e GEN2 is ideal for any location including resorts, sports arenas, college and corporate campuses, and indoor industrial environments.
- ▶ Provide great wireless connectivity for all users, even if your business is located in snowy, rainy, or arid climates.

### Mounting and Antennas

- ▶ The TQ6702e GEN2 comes with wall/pole mounting kit, and an external antenna kit with four detachable antenna each for the 2.4GHz and 5GHz radios.
- ▶ Standard antenna connectors allow replacing the supplied omni-directional antennas with a different type to provide the best performance for specific deployments.

## Specifications

### Physical Specifications

PRODUCT	WIDTH X DEPTH X HEIGHT		WEIGHT	100M/1G/2.5G/5G (RJ-45) COPPER PORTS
TQ6702e GEN2	257 x 227 x 90 mm (10.12 x 8.94 x 3.54 in)	4 x 4 (2.4GHz) + 8 x 8 (5GHz)	4.4 kg*	1 (PoE-in port)

\*With default antennas and a surge protector, without cables and mount kit

### Power Characteristics

PRODUCT	POWER SUPPLY	AVERAGE POWER CONSUMPTION	MAXIMUM POWER CONSUMPTION	MAX HEAT DISSIPATION
TQ6702e GEN2	PoE*	15.00W	26.3W	100.00 KJ/h

\*IEEE 802.3bt (Class 5) required

#### Wireless

- ▶ Multi-channel, single-channel, or hybrid operation
- ▶ 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)
- ▶ Wi-Fi Multimedia (WMM) for traffic prioritization
- ▶ Deploy with no data cables using AWC-SC<sup>1</sup>
- ▶ Zero Wait DFS

#### Operational Modes

- ▶ Centrally managed in multi-channel mode by Vista Manager EX (up to 3,000 APs)
- ▶ Centrally managed in single-channel<sup>1</sup> or hybrid mode (multi-channel and single-channel) by Vista Manager EX
- ▶ Centrally managed in multi-channel mode by Vista Manager Network Appliance (VST-APL) (up to 500 APs)
- ▶ Centrally managed in single-channel<sup>1</sup> or hybrid mode (multi-channel and single-channel) by Vista Manager Network Appliance (VST-APL)
- ▶ Centrally managed in multi-channel mode by Vista Manager mini (up to 305 APs)
- ▶ Centrally managed in single-channel<sup>1</sup> or hybrid mode (multi-channel and single-channel) by Vista Manager mini
- ▶ Standalone (supports up to 500 clients per radio)

#### Management

- ▶ Graphical User Interface (HTTP/HTTPS)
- ▶ Simple Network Management Protocol (SNMPv1, v2c, v3)
- ▶ Firmware upgrade
- ▶ Backup/restore settings
- ▶ Syslog notification
- ▶ DHCP client
- ▶ NTP client

#### 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

#### Compliance

- Certificate
  - ▶ Wi-Fi certified
  - ▶ CE
  - ▶ RCM
  - ▶ IC
  - ▶ FCC
    - ▶ WPC (For India)<sup>1</sup>
    - ▶ OFCA (For Hong Kong)<sup>1</sup>
    - ▶ NBTC (For Thailand)
    - ▶ MIC (For Vietnam)<sup>1</sup>
    - ▶ SIRIM (For Malaysia)<sup>1</sup>
    - ▶ NCC (For Taiwan)
    - ▶ SRRC (For China)<sup>1</sup>
    - ▶ IDA (For Singapore)

#### Safety

- ▶ EN 62368-1
- ▶ UL 62368-1
- ▶ UL 2043
- ▶ UL 60950-22
- ▶ EN 60950-22
- ▶ CB 62368-1
- ▶ CB 90950-1
- ▶ IEC 60950-22

#### 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
- ▶ FCC Part 15 Subpart B Class B
- ▶ RCM AS/NZS CISPR 32

#### Outdoor Enclosure approvals

- ▶ IEC 60068-2-52 (Salt Mist test)
- ▶ IEC 60068-2-5 (Solar Radiation (Sunshine) test / Ultraviolet test)
- ▶ IEC 60068-2-5 (Sun Exposure test)
- ▶ IEC 60529 (IP66/IP67 test)

#### Radio equipment

- ▶ ARIB STD-T66
- ▶ ARIB STD-T71
- ▶ AS/NZS 4268
- ▶ EN 300 328
- ▶ EN 301 893
- ▶ FCC 47 CFR Part 15, Subpart C
- ▶ FCC 47 CFR Part 15, Subpart E

#### Environmental Specifications

- ▶ Operating temperature range:
  - 40°C to 65°C (-40°F to 149°F)
- ▶ Storage temperature range:
  - 40°C to 80°C (-40°F to 176°F)
- ▶ Operating relative humidity range:
  - 5% to 95% non-condensing
- ▶ Storage relative humidity range:
  - 5% to 95% non-condensing
- ▶ Operating altitude range:
  - Up to 3,048 meters maximum (10,000 ft)

#### Embedded Antennas

##### Omn-directional

- ▶ Frequency band: 2.4 GHz
- ▶ Max. peak gain: 2.92 dBi<sup>2</sup>

##### Omn-directional

- ▶ Frequency band: 5 GHz
- ▶ Max. peak gain: 6.22 dBi<sup>2</sup>

#### 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
  - ▶ 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

<sup>1</sup> Supported in a future firmware release

<sup>2</sup> Values listed for gain and data rate are maximums, and the actual values will vary depending on use.

# TQ6702e GEN2 | Outdoor Wi-Fi 6 (802.11ax) Hybrid Wireless Access Point

## 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>3</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

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

## Standards

### Ethernet

- IEEE 802.1AX-2008 Link Aggregation (static and dynamic)
- IEEE 802.3 10BASE-T
- 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 802.3bt Power over Ethernet++
- IEEE 802.1Q VLAN Tagging

### Wireless

- 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

## Wireless Management Licenses

Wireless management of the TQ6702e GEN2 is available from the Vista Manager EX network management platform, and from Vista Manager mini running on our SwitchBlade x908 GEN2, x950, x930, x550, x530 Series switches or AR4050S UTM firewall.

PLATFORM	LICENSE NAME	DESCRIPTION	MAX SUPPORTED APs
Vista Manager EX	AT-FL-VISTA-BASE-1/5YR	Vista Manager EX network monitoring and management software license	NA
Vista Manager EX (Windows)	AT-FL-VISTA-AWC10-1/5YR <sup>4</sup>	Vista Manager AWC plug-in license for managing up to 10 access points	3000
Vista Manager EX (Virtual (VRT))	AT-FL-VISTA-AWC10-1/5YR <sup>4</sup>	Vista Manager AWC plug-in license for managing up to 10 access points	500
Vista Manager EX (Network Appliance)	AT-FL-VISTA-AWC10-1/5YR <sup>4</sup>	Vista Manager AWC plug-in license for managing up to 10 access points	500
SwitchBlade x908 GEN2	AT-SW-AWC10-1/5YR <sup>5</sup>	Cumulative Autonomous Wave Controller (AWC) license for up to 10 access points	305
x950 Series	AT-SW-AWC10-1/5YR <sup>5</sup>	Cumulative Autonomous Wave Controller (AWC) license for up to 10 access points	185
x930 Series	AT-SW-AWC10-1/5YR <sup>5</sup>	Cumulative Autonomous Wave Controller (AWC) license for up to 10 access points	125
x550 Series	AT-SW-AWC10-1/5YR <sup>5</sup>	Cumulative Autonomous Wave Controller (AWC) license for up to 10 access points	45
x530 Series	AT-SW-AWC10-1/5YR <sup>5</sup>	Cumulative Autonomous Wave Controller (AWC) license for up to 10 access points	45
AR4050S UTM Firewall	AT-RT-AWC5-1/5YR <sup>5</sup>	Cumulative Autonomous Wave Controller (AWC) license for up to 5 access points	25

<sup>4</sup> The AWC plug-in requires an AWC license, and a Vista Manager EX base license to operate on Vista Manager EX

<sup>5</sup> 5 APs can be managed for free. Purchase one license per 10 additional APs on switches, or one license per 5 additional APs on the AR4050S Firewall

## Ordering Information

### AT-TQ6702e GEN2-xx

Outdoor Wi-Fi 6 hybrid AP with 2 radios (4x4 2.4GHZ and 8x8 5GHZ) and embedded antenna

Where xx =

- 03 Regulatory Domain: Canada
- 02 Regulatory Domain: Taiwan
- 01 Regulatory Domain: United States Reserved
- 00 Regulatory Domain: Other countries<sup>6</sup>

<sup>6</sup> 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

### AT-TQ0064

Antenna extension cable of 10m

### AT-7101GHTm-yy

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

Where yy = 10 for US power cord

30 for UK power cord

40 for Australian power cord

50 for European power cord