

# TQ6602

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

The Allied Telesis Enterprise-class TQ6602 Hybrid Wireless Access Point features Wi-Fi 6 technology with 4 spatial streams to deliver a raw capacity of 3.550 Gigabits.



### Overview

The innovative TQ6602 is the world's first Wi-Fi 6 AP to support multi-channel, single-channel (Channel Blanket) and hybrid operation (the simultaneous use of multi-channel and Channel Blanket). This powerful solution combines maximum performance and seamless roaming to enable the most flexible wireless networks available, and the best possible user experience.

The TQ6602 has one 2.4GHz and one 5GHz Wi-Fi6 (802.11ax) radio, and supports Multi-User Multiple Input and Multiple Output (MU-MIMO), allowing multiple clients to send and receive data at the same time, substantially increasing throughput. A comprehensive feature-set provides a superior solution for Enterprise businesses.

The TQ6602 in standalone mode can be managed using its intuitive web-based interface. For medium and larger installations, Autonomous Wave Control (AWC) provides 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.

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

## Key Features

### Channel Blanket Hybrid Operation

- ▶ The TQ6602 supports 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 warehouses and hospitals, 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.
- ▶ The high throughput of Wi-Fi 6 further increases the performance of hybrid networks in large environments with many clients.

### Bidirectional MU-MIMO

- ▶ The TQ6602 supports Wi-Fi6 (802.11ax) bidirectional MU-MIMO. Unlike conventional unidirectional MU-MIMO, this feature enables the AP to transmit and receive data simultaneously from multiple clients at once, to lower latency and improve throughput and performance for end-user wireless devices.

### Wi-Fi 6

- ▶ IEEE 802.11ax Wi-Fi 6 wireless connectivity delivers performance and throughput that is four times faster than 802.11ac devices. In crowded wireless environments, efficient bandwidth distribution is important. Bi-directional Multi-user MIMO technology simultaneously communicates with multiple clients at once, reducing contention and improving capacity and throughput.

### IEEE 802.11e Wireless Multimedia (WMM)

- ▶ Quality of Service (QoS) on the wireless network optimizes the performance of voice, video, and data applications, as each has different latency, bandwidth and performance requirements. QoS traffic prioritization ensures the timely delivery of these services.

### IEEE 802.11i (security)

- ▶ This feature set facilitates strong encryption, authentication and key management strategies, guaranteeing data and system security. In addition to Counter Mode with Cipher Block Chaining Message Authentication Code Protocol (CCMP), IEEE 802.1X key distribution via RADIUS controls access to the network.

### Virtual APs with Multiple SSIDs

- ▶ The TQ6602 supports Virtual AP (VAP) functionality, with the assignment of different SSIDs and security policies for each VAP on the physical 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.

### OFDMA

- ▶ Orthogonal Frequency-Division Multiple Access (OFDMA) improves Wi-Fi 6 network performance by establishing independently modulating sub-carriers within radio frequencies. This enables simultaneous access with reduced wait time for a larger number of devices.

### Captive Portal

- ▶ Manage user access to the Wi-Fi network with captive portal. New users are taken 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.

**Specifications**

**Physical Specifications**

| PRODUCT | WIDTH X DEPTH X HEIGHT                       | WEIGHT           | 100M/1G/2.5G/5G (RJ-45) COPPER PORTS |
|---------|--|------------------|--------------------------------------|
| TQ6602  | 205 x 225 x 51 mm<br>(8.07 x 8.86 x 2.01 in) | 1.6 kg (3.52 lb) | 1 (PoE-in port)                      |

**Power Characteristics**

| PRODUCT | POWER SUPPLY | POWER CONSUMPTION |         | MAX HEAT DISSIPATION |
|---------|--------------|-------------------|---------|----------------------|
|         |              | AVERAGE           | MAXIMUM |                      |
| TQ6602  | 100-240VAC   | 16W               | 20W     | 70 BTU/h             |
|         | POE          | 16W               | 21W     | 76 BTU/h             |

**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

**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<sup>6</sup>

**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, Authentication Page Redirection, Virtual IP Address, RADIUS Accounting, Walled Garden)<sup>2</sup>

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

**Compliance**

- ▶ Certificate
  - FCC
  - RCM
  - Wi-Fi certified
  - IMDA (For Singapore)<sup>3</sup>
  - NBTC (For Thailand)<sup>3</sup>
  - SIRIM (For Malaysia)<sup>3</sup>
  - OFCA (For Hong Kong)<sup>3</sup>
  - SRRC (For China)
  - BSMI/NCC (For Taiwan)<sup>5</sup>
  - WPC (For India)<sup>5</sup>
  - IC (For Canada)<sup>5</sup>
  - MIC (For Vietnam)<sup>5</sup>

**Safety**

- ▶ 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
- ▶ EN60601-1-2
- ▶ 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

**Environmental Specifications**

- ▶ Operating temperature range:
  - PoE: 0°C to 50°C (32°F to 122°F)
  - AC adapter: 0°C to 45°C (32°F to 113°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

**Embedded Antennas**

- ▶ Omni-directional
  - ▶ Frequency band: 2.4 GHz
  - ▶ Max. peak gain: 3.43 dBi
  - ▶ Supports Channel Blanket1

▶ Omni-directional

- ▶ Frequency band: 5GHz
- ▶ Max. peak gain: 4.75 dBi
- ▶ Supports Channel Blanket1

**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

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>4</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>1</sup> Supports 20 Channel Blankets total per TQ6602, with 10 VAPs each at 2.4GHz and 5GHz (W52). Supports 320 clients maximum per Channel Blanket

<sup>2</sup> Multi-channel operation only

<sup>3</sup> Certificated with firmware release 7.0.0-1.3 or later

<sup>4</sup> Using 256 Quadrature Amplitude Modulation

<sup>5</sup> Certificated with firmware release 7.0.1-2.3 or later

<sup>6</sup> In standalone mode, supports up to 320 clients per radio

**Wireless Management Licenses**

Wireless management of the TQ6602 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>7</sup>     | Vista Manager AWC plug-in license for managing up to 10 access points          | 3000              |
| Vista Manager EX (Windows)           | AT-FL-VISTA-CB10-1/5YR-2022 <sup>8</sup> | Vista Manager AWC-Channel Blanket license for managing up to 10 access points  | 3000              |
| Vista Manager EX (Virtual (VRT))     | AT-FL-VISTA-AWC10-1/5YR <sup>7</sup>     | Vista Manager AWC plug-in license for managing up to 10 access points          | 500               |
| Vista Manager EX (Virtual (VRT))     | AT-FL-VISTA-CB10-1/5YR-2022 <sup>8</sup> | Vista Manager AWC-Channel Blanket license for managing up to 10 access points  | 500               |
| Vista Manager EX (Network Appliance) | AT-FL-VISTA-AWC10-1/5YR <sup>7</sup>     | Vista Manager AWC plug-in license for managing up to 10 access points          | 500               |
| Vista Manager EX (Network Appliance) | AT-FL-VISTA-CB10-1/5YR-2022 <sup>8</sup> | Vista Manager AWC-Channel Blanket license for managing up to 10 access points  | 500               |
| SwitchBlade x908 GEN2                | AT-SW-AWC10-1/5YR <sup>9</sup>           | Cumulative Autonomous Wave Controller (AWC) license for up to 10 access points | 305               |
| SwitchBlade x908 GEN2                | AT-SW-CB10-1/5YR-2022 <sup>10</sup>      | Vista Manager AWC-Channel Blanket license for managing up to 10 access points  | 300               |
| x950 Series                          | AT-SW-AWC10-1/5YR <sup>9</sup>           | Cumulative Autonomous Wave Controller (AWC) license for up to 10 access points | 185               |
| x950 Series                          | AT-SW-CB10-1/5YR-2022 <sup>10</sup>      | Vista Manager AWC-Channel Blanket license for managing up to 10 access points  | 180               |
| x930 Series                          | AT-SW-AWC10-1/5YR <sup>9</sup>           | Cumulative Autonomous Wave Controller (AWC) license for up to 10 access points | 125               |
| x930 Series                          | AT-SW-CB10-1/5YR-2022 <sup>10</sup>      | Vista Manager AWC-Channel Blanket license for managing up to 10 access points  | 120               |
| x550 Series                          | AT-SW-AWC10-1/5YR <sup>9</sup>           | Cumulative Autonomous Wave Controller (AWC) license for up to 10 access points | 45                |
| x550 Series                          | AT-SW-CB10-1/5YR-2022 <sup>10</sup>      | Vista Manager AWC-Channel Blanket license for managing up to 10 access points  | 40                |
| x530 Series                          | AT-SW-AWC10-1/5YR <sup>9</sup>           | Cumulative Autonomous Wave Controller (AWC) license for up to 10 access points | 45                |
| x530 Series                          | AT-SW-CB10-1/5YR-2022 <sup>10</sup>      | Vista Manager AWC-Channel Blanket license for managing up to 10 access points  | 40                |
| AR4050S UTM Firewall                 | AT-RT-AWC5-1/5YR <sup>9</sup>            | Cumulative Autonomous Wave Controller (AWC) license for up to 5 access points  | 25                |
| AR4050S UTM Firewall                 | AT-RT-CB5-1/5YR-2022 <sup>10</sup>       | AWC Channel Blanket license for up to 5 access points                          | 5                 |

<sup>7</sup> The AWC plug-in requires an AWC license, and a Vista Manager EX base license to operate on Vista Manager EX  
<sup>8</sup> Channel Blanket requires an AWC-CB license, an AWC license, and a Vista Manager EX base licenses to operate on Vista Manager EX  
<sup>9</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  
<sup>10</sup> Channel Blanket is not available as a free service. Both an AWC-CB license and an AWC license are required for Channel Blanket to operate. Purchase one AWC-CB license per 10 APs on switches, or one license to manage 5 APs on the AR4050S Firewall.

**Standards**

**Ethernet**

- IEEE 802.1AX-2008 Link Aggregation (static)
- 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 802.3at Power over Ethernet+
- IEEE 802.1Q VLAN Tagging

**Wireless**

- IEEE 802.11 a/b/g/n/ac/ax 4x4:4ss MU-MIMO
- IEEE 802.11d Regulatory Domain
- 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

**Ordering Information**

**AT-TQ6602-xx**  
 Enterprise-Class Wi-Fi 6 Wireless Access Point with 2 radios and embedded antenna

Where xx =  
 01 Regulatory Domain: United States Reserved  
 00 Regulatory Domain: Other countries<sup>11, 12</sup>

<sup>11</sup> Please check the Compliance section on page 2 to see which countries are certified to use this access point.  
<sup>12</sup> To order this access point for use in Japan, please see the Japanese datasheet.

**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 for the TQ6602 AP
- Where yy = 10 for US power cord  
 30 for UK power cord  
 40 for Australian power cord  
 50 for European power cord