TQm5403

Enterprise Class 802.11ac Wave 2 Wireless Access Points

The Allied Telesis TQm5403 Wireless Access Point features IEEE 802.11ac Wave 2 technology with two spatial streams to deliver a raw capacity of 2.133 Gigabits.

Overview

The Allied Telesis TQm5403 is a three-radio wireless LAN access point that supports IEEE802.11ac Wave 2, and is ideal for small to medium enterprise networks, providing a high-value and easily deployed wireless solution.

The TQm5403 has a single 2.4GHz radio and dual 5GHz IEEE 802.11ac radios, 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. Combined with a comprehensive feature-set, the APs provide superior wireless connectivity.

The TQm5403 can operate in standalone mode, using its intuitive web-based user interface. For medium scale installations it can be managed by Allied Telesis Autonomous Wave Control (AWC). With AWC, the wireless network is regularly analyzed, and APs are dynamically updated to reduce interference, minimize coverage gaps, and optimize performance—all with no user intervention. The Allied Telesis network management platform, Vista Manager EX, has an AWC wireless management plugin that supports up to 100 APs.

Flexible deployment options enable easy installation, with the TQm5403 able to be used on the desktop or mounted on a wall or ceiling. Power may be supplied by Power over Ethernet, for the simplicity of having the Ethernet network connect and power the APs, or by an optional AC power adapter.

Key Features

IEEE 802.11ac Wave 2

- IEEE 802.11ac Wave 2 wireless connectivity delivers Gigabit performance and throughput. In crowded wireless environments, efficient bandwidth distribution is important; IEEE 802.11ac Wave 2 achieves efficiency and robustness, using Multi-user MIMO technology.
- Unlike traditional Single-user MIMO networks where devices are served sequentially, Multi-user MIMO simultaneously communicates to multiple clients at once, reducing contention and improving capacity and throughput by up to three times.
- Multi-user MIMO uses beamforming, where the AP focuses wireless signal towards connected devices, rather than simply radiating the signal evenly. This improves range and speed for each user, and reduces interference for the best possible connection.

Tri-radio, with Band Steering

- The TQm5403 contains three IEEE 802.11 2ss radios to enable concurrent Wi-Fi communications: one at 2.4GHz band, and two at 5GHz band. This alleviates network congestion and isolates any legacy client devices affecting performance.
- Band steering prompts newly connecting devices to use a band with little current congestion to distribute wireless traffic, provide maximum throughput, and the best user experience.

Virtual APs with Multiple SSIDs

- The TQm5403 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.

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 ensues 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.

Link Aggregation

- The TQm5403 features two 10/100/1000T Ethernet ports. These can be combined into a single virtual connection using static link aggregation, to double the bandwidth from the AP to the wired network.

Captive Portal

- Manage user access to the Wi-Fi network with captive portal. New users are taken to a login page ensuring they must authenticate before gaining access to the wireless network, and any online resources and applications.

Dynamic VLANs

- Dynamic VLANs simplify management by enabling users to be separated on different VLANs according to rules defined in a centralized user database. When a user connects, their credentials are checked and the VLAN assigned automatically to the AP. An external RADIUS server is supported and a secondary RADIUS server can also be specified for redundancy.

Graphical User Interface

- The web-based user interface is user friendly and intuitive, minimizing training needs, and allowing easy management and monitoring of a single AP. AWC enables management of multiple APs, and automatic wireless network optimization.

Airtime Fairness

- Airtime Fairness equally assigns airtime to each connected client, to ensure fair and predictable sharing of bandwidth. This feature prevents any client from monopolizing the bandwidth when transferring a large amount of data, and ensures consistent performance for all users.

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Key Features

Fast Roaming

- Fast Roaming with 802.11k, 802.11v, and 802.11r optimizes the process of discovering and selecting the best available AP in a Wi-Fi network, and establishes rapid connectivity for users to seamlessly move between APs.
- Users will experience a consistent wireless connection as the APs exchange security keys, so the client device does not need to re-authenticate on the RADIUS server as they roam.

Specifications

Physical Specifications

PRODUCT	WIDTH X DEPTH X HEIGHT	WEIGHT	10/100/1000T (RJ-45) COPPER PORTS
TQm5403	215 x 215 x 48 mm (8.46 x 8.46 x 1.89 in)	700 g (24.69 oz)	2 (1 PoE-in port)

Power Characteristics

PRODUCT	POWER SUPPLY	POWER CONSUMPTION		MAX HEAT DISSIPATION
		AVERAGE	MAXIMUM	
TQm5403	100-240VAC	10W	20W	67 BTU/h
	POE	10W	19W	64 BTU/h

Wireless

- Multi-channel operation
- 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 100 APs)[1]
- Standalone

Management

- Graphical User Interface (HTTP/HTTPS)
- Simple Network Management Protocol (SNMPv1, v2c)
- 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)
  - Captive Portal (External RADIUS, Click-Through)
- Encryption
  - WEP: 64/128 bit (IEEE 802.11a/b/g only)
  - WPA/WPA2: CCMP (AES), TKIP
- MAC address filtering (Up to 1024 MAC address)
- SSID hiding/ignoring
- Client isolation
- Neighbor AP detection

Compliance

Certificates

- FCC
- CE
- RCM
- Wi-Fi certified (ID:WFA75927)
- IMDA (For Singapore)
- KC (For South Korea)
- MIC (For Vietnam)
- NBTC (For Thailand)
- BSMI/NCC (For Taiwan)
- OFCA (For Hong Kong)
- SIRIM (For Malaysia)
- WPC (For India)
- IC (For Canada)

Safety

- EN 60950-1
- EN 62368-1
- UL 60950-1
- UL 62368-1

ElectroMagnetic Compatibility

- AS/NZS 2772.2
- EN 301 489-1
- EN 301 489-17
- EN 55024
- EN 55032, Class B
- 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
- FCC 47 CFR Part 15, Subpart B
- 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 E[2]
- FCC part 2

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:
  90% non-condensing
- Storage relative humidity range:
  95% non-condensing

Embedded Antennas

Omni-directional

- Frequency band: 2.4 GHz
- Max. peak gain: 3.95dBi

Omni-directional

- Frequency band: 5GHz (5.2-5.3GHz)
- Max. peak gain: 4.20dBi

Omni-directional

- Frequency band: 5GHz (5.6-5.8GHz)
- Max. peak gain: 4.83dBi

Radio Characteristics

Supported frequencies:

- 2.400 ~ 2.4835 GHz
- 5.150 ~ 5.250 GHz
- 5.250 ~ 5.350 GHz
- 5.470 ~ 5.725 GHz
- 5.725 ~ 5.850 GHz

Modulation Technique

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

Data Rate

- 802.11a/g: 54/48/36/24/18/12/9/6Mbps
- 802.11b: 11/5.5/2/1Mbps

[1] Supports up to 200 clients maximum per single TQm5403
[2] Supported frequencies: 5.150 ~ 5.250 GHz
5.725 ~ 5.850 GHz
[3] Using 256 Quadrature Amplitude Modulation

- 802.11n: 6.5 - 400Mbps[3] (MCS 0 - 15)
- 802.11n: 6.5 - 300Mbps (MCS 0 - 15)
- 802.11ac: 6.5 – 866.7Mbps (MCS 0 - 9, NSS 1 - 2)

Media Access
- CSMA/CA + Ack with RTS/CTS

Diversity
- Spatial diversity

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 802.3x Flow Control
IEEE 802.3at Power over Ethernet+
IEEE 802.1Q VLAN Tagging

Wireless
IEEE 802.11 a/b/g/n/ac (Wave 2) 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/WPA2/802.1x for Security

Ordering Information

AT-TQm5403-xx
SMB 802.11ac Wave 2 Wireless Access Point with 3 radios and embedded antenna

Where xx = [none] Regulatory Domain: Worldwide (except United States)
01 Regulatory Domain: United States Reserved

Related Products

AT-MWS0091
AC adapter

Wireless Management Licenses
Wireless management of the TQm5403 is available from the Vista Manager EX network management platform, and from the Vista Manager Mini running on our SwitchBlade x908 GEN2 switch or x950 Series or AR-Series firewalls and routers.

PLATFORM	LICENSE NAME	DESCRIPTION
Vista Manager EX	**AT-FL-VISTA-BASE-1/5YR**	Vista Manager EX network monitoring and management software license
Vista Manager EX	**AT-FL-VISTA-AWC10-1/5YR**[4]	Autonomous Wave Controller (AWC) plug-in license for Vista Manager
SwitchBlade x908 GEN2	**AT-FL-GEN2-AWC40-1/5YR**	Autonomous Wave Controller (AWC) plug-in license for SBx908 GEN2 (Up to 40 nodes)
SwitchBlade x908 GEN2	**AT-FL-GEN2-AWC80-1/5YR**	Autonomous Wave Controller (AWC) plug-in license for SBx908 GEN2 (Up to 80 nodes)
SwitchBlade x908 GEN2	**AT-FL-GEN2-AWC120-1/5YR**	Autonomous Wave Controller (AWC) plug-in license for SBx908 GEN2 (Up to 120 nodes)
SwitchBlade x908 GEN2	**AT-FL-GEN2-AWC250-1/5YR**	Autonomous Wave Controller (AWC) plug-in license for SBx908 GEN2 (Up to 250 nodes)
x950 Series	**AT-FL-x950-AWC40-1/5YR**	Autonomous Wave Controller (AWC) plug-in license for x950 (Up to 40 nodes)
x950 Series	**AT-FL-x950-AWC80-1/5YR**	Autonomous Wave Controller (AWC) plug-in license for x950 (Up to 80 nodes)
x950 Series	**AT-FL-x950-AWC120-1/5YR**	Autonomous Wave Controller (AWC) plug-in license for x950 (Up to 120 nodes)
AR4050S UTM Firewall	**AT-FL-AR4-AWC20-1/5YR**[5]	Autonomous Wave Controller (AWC) plug-in license for AR4050S (Up to 20 nodes)

[4] The AWC license also requires the Vista Manager EX license to operate
[5] 5 APs can be managed for free. 25 APs (max) can be managed with the addition of the 20 node license

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