Allied Telesis™

Datasheet

TQ7413-R

Wi-Fi 7 Tri-band Access Point

Optimized for dense, dynamic,
high-performance enterprise networks

Wi Fi 7 CERTIFIED | AlliedWare Plus™ OPERATING SYSTEM | OPENROAMING™ WIRELESS BROADBAND ALLIANCE | TAA COMPLIANT

Product Overview

The **Allied Telesis TQ7413-R** is a tri-band **Wi-Fi 7 (802.11be)** enterprise access point engineered to deliver predictable, high-performance connectivity in the most demanding environments. Featuring **three concurrent 2×2 radios** across **2.4 GHz, 5 GHz, and 6GHz**, it leverages **Multi-Link Operation (MLO)** to enable low-latency, resilient communications, while advanced capabilities such as **Multiple Resource Units (M-RU)** and **4K-QAM** improve spectrum efficiency and peak throughput. Together, these innovations deliver up to **9 Gbps** of aggregate capacity with enhanced efficiency, reliability, and performance in dense deployments.

- Built on AlliedWare Plus OS, ensuring consistent operational experience across Allied Telesis switches, firewalls, routers, and wireless infrastructure.
- Streamlined management via industry-standard CLI, integrated Device GUI, and centralized control through AWC in Vista Manager™, simplifying provisioning, monitoring, and RF optimization.
- Flexible deployment with desktop, wall, or ceiling mounting; dual multigigabit Ethernet ports, each supporting IEEE 802.3at/bt PoE input, enabling single-port operation with optional secondary PoE for redundancy or an AC adapter.

Enterprise Deployment Solutions[1]

Ultra-dense client environments

Hundreds of concurrent devices - auditoriums, open offices, event floors, public venues.

Always-on video & rich media

Built for continuous streaming and heavy uplink traffic - security video, broadcasting, content creation.

High-mobility & fast roaming

Smooth transitions for moving users and devices - campus, hospitals, warehouses, transit hubs.

Distributed enterprise & guest access

Predictable performance for branch sites, multi-tenant spaces, and guest-heavy networks.

Real-time interactive experiences

Responsive performance for AR/VR training, remote assistance, live collaboration, and cloud apps.

Mission-critical operations

Reliable connectivity for workflows that can't stall - healthcare, logistics, manufacturing, field operations.

Mixed device populations

Optimized for heterogeneous clients - new Wi-Fi 7 devices, previous generations of Wi-Fi, and IoT endpoints together.

High-performance refresh cycles

A straightforward upgrade path to Wi-Fi 7 capacity and lower latency without redesigning the network.

[1] Example solutions. Designed as a general-purpose enterprise Wi-Fi 7 platform across industries.

Features

Wi-Fi 7 (802.11be – Extremely High Throughput)

Advanced 802.11be capabilities optimized for high-density enterprise deployments

- Advanced multi-user efficiency (Multi-RU, OFDMA, MU-MIMO): Concurrent multi-user scheduling for consistent performance in dense, mixed-traffic environments.
- Multi-Link Operation (MLO): Multi-band link aggregation for reduced latency and enhanced resilience (client dependent).
- 4096-QAM (4K-QAM): Increased peak data rates and improved spectral efficiency in high-SNR conditions (client and RF dependent).
- 320-MHz channels (6 GHz, where permitted): Expanded spectrum utilization with automatic regional compliance.
- Preamble puncturing: Maintains wide-channel performance by mitigating sub-channel interference

Backward compatible with Wi-Fi 6E / Wi-Fi 6 / Wi-Fi 5 and legacy clients.

Intelligent RF Optimization & Mobility

Built for dense Wi-Fi 7 environments, the TQ7413-R combines automated RF intelligence, seamless mobility, and application-aware prioritization to deliver predictable, high-performance wireless at scale.

- **Dedicated RF scanning radio for optimization, security & visibility:** A dedicated scanning radio continuously monitors the wireless environment without impacting client traffic, enabling real-time RF optimization, enhanced security detection, and improved network diagnostics.
  - **Continuous RF spectrum monitoring & optimization:** Analyzes surrounding interference and noise in real time and feeds Intelligence to the AWC controller, enabling automatic channel selection and power adjustments to maintain optimal performance without disrupting active clients.
  - **Wireless threat detection (WIDS/WIPS):** Scans for rogue access points, unauthorized clients, and potential wireless attacks across 2.4 GHz, 5 GHz, and 6 GHz bands, providing faster and more reliable threat detection than client-serving radios.
  - **Zero-wait DFS:** Performs off-channel radar detection to clear DFS channels in advance, enabling instant channel switching.
- **Airtime fairness:** Protects performance from slower or legacy devices.
- **RF load balancing:** Distributes clients to prevent congestion.
- **Band steering:** Moves capable devices to higher-capacity bands.
- **Wireless QoS:** Policy-based traffic prioritization to ensure predictable performance for latency-sensitive applications (802.11e WMM).
- **Fast roaming (802.11k/v/r):** Improves AP discovery and selection and enables seamless roaming; security key exchange helps reduce re-authentication delays (deployment/auth method dependent).
- **Wi-Fi scheduling:** Schedule radio behavior by time of day (e.g., reduce/disable radios overnight) to help limit unauthorized access and reduce power use when Wi-Fi isn't required.
- **Integrated multiprotocol IoT radio (BLE & IEEE802.15.4[2]):** Provides continuous Bluetooth device visibility and location services via BLE, while consolidating infrastructure with built-in Zigbee/Thread gateway capabilities for scalable IoT deployments.

[2] Future release.

Deployment, Scalability & Centralized Control

Flexible deployment architectures supporting enterprise growth.

Deployment Modes

- **Centralized management (Vista Manager EX):** Supports up to 3,000 APs.
- **Centralized management (Vista Manager Network Appliance – VST-APL):** Supports up to 3000 APs.
- **Standalone operation:** Up to 256 clients per radio without external controller.
- **Built-in controller (small deployments):** The Device GUI includes an embedded wireless controller to manage 50 APs, including the TQ7413-R

Enterprise Management, Automation & Resilience

Integrated management platform for operational efficiency and lifecycle control.

Unified Control & RF Optimization

- **Autonomous Wave Control (AWC):** Centralized AP management with continuous RF analysis and automated optimization.
- **Self-optimizing Wi-Fi:** AWC continuously analyzes the RF environment and automatically optimizes settings to reduce interference and minimize coverage gaps—no manual tuning required.
- **Non-stop Wi-Fi:** If APs lose connectivity to the AWC controller, they continue serving clients and forwarding traffic, helping prevent business disruption.

Automation & Lifecycle Management

- **Automated backup & lifecycle management:** AMF Plus automatically backs up firmware, configuration, and licenses to a designated master device, enabling plug-and-play recovery, zero-touch provisioning, and automated upgrades.
- **Lower operational cost at scale:** Vista Manager + AWC + AMF Plus deliver visual and automated workflows that help reduce time and cost for multi-AP deployments.

Network Management Interfaces

- NETCONF / RESTCONF with YANG models
- SNMP v1/v2c/v3
- Industry-standard CLI with context-sensitive help
- Built-in Device GUI

Monitoring & Diagnostics

- Firmware upgrades and configuration backup/restore
- Syslog and comprehensive event logging
- Built-in packet capture
- DHCP and NTP client support
- Event-triggered scripting for automated workflows

Application Visibility & Analytics

Operational insight at the wireless edge.

Application-aware traffic shaping: Integrated Layer-7 Deep Packet Inspection (DPI) captures application usage statistics at the wireless edge to identify the most-used applications and traffic patterns, and enables application-aware QoS policies to prioritize mission-critical traffic while managing bandwidth for non-essential applications. Policies can be applied per network, SSID, user group, or individual user.

Top application dashboards: Vista Manager provides a Top 10 applications view and pie charts, selectable from the last hour up to the last 24 hours.

Zone-based analytics: View aggregated statistics across multiple APs to monitor usage patterns in different areas of the network.

Enterprise Security, Access & Segmentation

- Comprehensive protection across authentication, encryption, onboarding, segmentation, and automated threat response.

Authentication & Secure Access

- Wi-Fi Alliance certified Passpoint®
- OpenRoaming support
- QR-code onboarding

Encryption

- WPA/WPA2: CCMP (AES), TKIP
- WPA3: CCMP / GCMP (AES/CNSA)
- WEP (64/128-bit, legacy support)

Segmentation & Policy Control

- Virtual APs (VAP) / Multiple SSIDs: Configure different SSIDs with distinct security policies per VAP on a single device (recommended 5 or less per band).
- VLAN mapping for role-based segmentation.
- Client isolation
- MAC address filtering (up to 3,072 entries)
- Neighbor AP detection.

Automated Threat Response

- AMF-Security (AMF-Sec) + Application Proxy: Enables LAN threat detection and automatic endpoint isolation. When a firewall detects suspicious traffic from a wireless client, the AMF-Security controller can instruct the AP (via AMF Application Proxy) to block or quarantine the device to help contain threats automatically. (AMF-Security controller and Vista Manager AWC wireless management required.)

Hardware Security

- Integrated Trusted Platform Module (TPM)
- Kensington security slot

Product Specifications

Radios

- 4 (3 Active, 1 Scanning) plus 1 Multiprotocol IoT Radio (BLE + ZigBee)

Frequency Bands (GHz)

- ISM 2.4 2.484 GHz
- U-NII-1 5.15 5.25 GHz
- U-NII-2A 5.25 5.35 GHz
- U-NII-2C 5.47 5.725 GHz
- U-NII-3 5.725 5.85 GHz
- U-NII-4 5.850 5.925 GHz (Not supported)
- U-NII-5 5.925 6.425 GHz
- U-NII-6 6.425 6.525 GHz
- U-NII-7 6.525 6.875 GHz
- U-NII-8 6.875 7.125 GHz

802.11be

- Tri-band: 2.4/5.0/6.0GHz
- 2x2 uplink/downlink MU-MIMO with 2-spatial streams each for 2.4GHz, 5GHz and 6GHz bands with beamforming.
- 4096 QAM, Multilink operation (MLO), Preamble puncturing, Uplink/downlink OFDMA, TWT, BSS coloring
- 20-, 40-, 80-, 160- and 320-MHz channels (6 GHz), 20-, 40-, 80-, and 160-MHz channels (5 GHz), and 20-MHz channels (2.4 GHz)
- 802.11 Dynamic Frequency Selection (DFS)
- Wi-Fi Protected Access 3 (WPA3) support
- PHY rates: up to 688 Mbps (2.4 GHz), 2,882 Mbps (5 GHz), and 5,764 Mbps (6 GHz)

802.11ax

- Tri-band: 2.4/5.0/6.0GHz
- 2x2 uplink/downlink MU-MIMO with 2-spatial streams each for 2.4GHz, 5GHz and 6GHz bands with beamforming.
- 1024 QAM, Uplink/downlink OFDMA, TWT, BSS coloring
- 20-, 40-, 80-, 160-MHz channels (5 and 6GHz), and 20-MHz channels (2.4 GHz)
- 802.11 Dynamic Frequency Selection (DFS)
- Wi-Fi Protected Access 2 (WPA2)/(WPA3) support
- PHY rates: up to 573Mbps (2.4GHz), 2402Mbps (5GHz), and 2402Mbps (6GHz)

802.11a/b/g/n/ac: Supported

Integrated Multiprotocol IoT Radio (BLE & IEEE 802.15.4[2])

- Bluetooth beaconing and scanning
- Multiprotocol support: Bluetooth® Low Energy 5.2 and IEEE 802.15.4 (Zigbee, Thread)
- Transmit power: Up to +20 dBm (region dependent) for extended IoT coverage
- Frequency band: 2.4 GHz ISM band (global operation)
- Device roles: BLE beaconing & scanning; Zigbee/ Thread gateway functionality
- Concurrent operation: Simultaneous BLE and 802.15.4 support for mixed IoT deployments

Integrated Antenna System

- Integrated omnidirectional antennas with up to 4 dBi gain (2.4 GHz), 6 dBi (5 GHz), and 6 dBi (6 GHz).

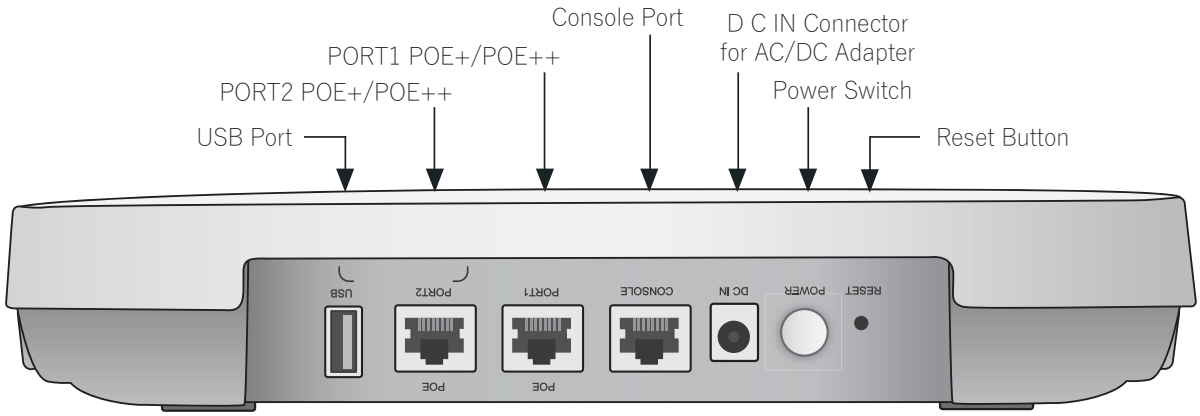
CPU/RAM

- Quad-Core Cortex-A53 @ 1.5GHz processor, 2GB DRAM, 8GB eMMC flash 4GB usable

[2] Future release.

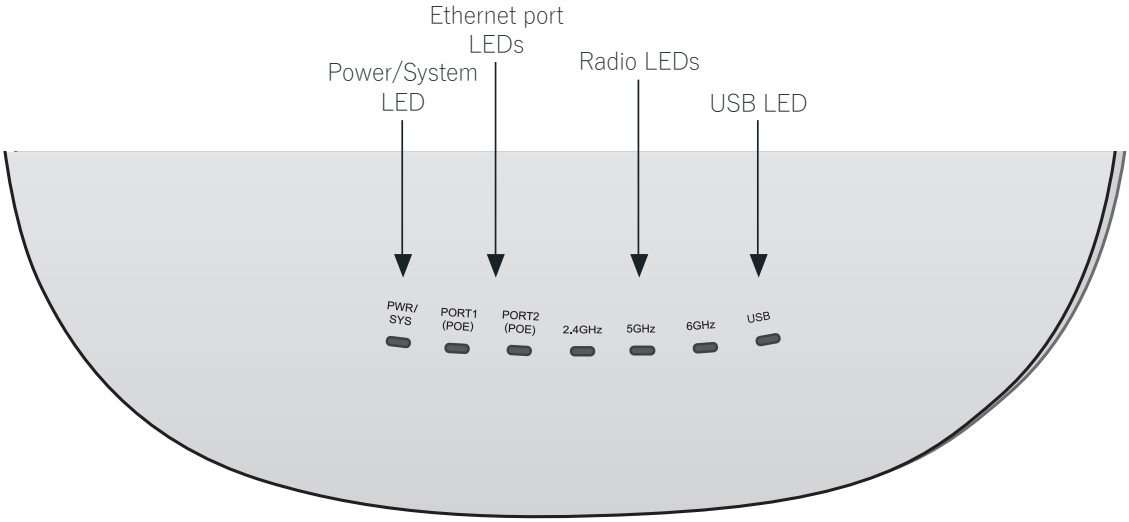
Interfaces

- 2x 100M/1000M/2.5G/5G/10G Multigigabit Ethernet (RJ-45) - POE+/POE++
- Management console port (RJ-45) with default speed of 115200 bps
- USB 2.0.



Indicators

- Status LEDs for power, ethernet ports, radios and USB



Dimensions: (W X L x H)

- 240 mm x 240 mm x 45 mm
  (9.4 in x 9.4 in x 1.8 in)

Weight

- 1.5 kg (3.3 lb) - with mounting bracket

Power consumption (Preliminary[3])

Power Supply	Maximum Power Consumption
100-240VAC	25.0W
PoE	26.0W

[3] Max Throughput conditions with 2-Multigigabit Ethernet ports and 3-Radios. USB (2.5W). Values are preliminary estimates. Final specifications will be confirmed upon product validation and may change.

Environmental

- Operating temperature: 0°C to 50°C (32°F to 122°F)
- Storage temperature: -25°C to 70°C (-13°F to 158°F)
- Operating humidity: 5% to 95% non-condensing
- Storage relative humidity range: 5% to 95% non-condensing
- Operating altitude: Up to 3,048 meters maximum (10,000 ft)

Regulatory, Safety & Standards Compliance

Global Certifications

- CE
- Radio Equipment Directive (RED) 2014/53/EU
- 47 CFR FCC Part 15C, 15.247, 15.407
- Wi-Fi certified
- SIRIM (Malaysia)
- ARIB STD T-66 / T-71

Product Safety

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

EMC – Emissions

- EN 55032, Class B
- EN 61000-3-2, Class A
- EN 61000-3-3
- VCCI Class B

EMC – Immunity

- EN 301 489-1
- EN 301 489-17
- EN 55035
- EN 60601-1-2
- 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

Radio Equipment

- EN 300 328
- EN 301 893
- EN 303 68

* For complete country certification information, please visit - www.alliedtelesis.com/us/en/products/certifications.

Standards Compliance

Wireless LAN Standards

- IEEE 802.11a/b/g/n/ac/ax/be
- IEEE 802.11k – Radio Resource Measurement
- IEEE 802.11v – BSS Transition Management
- IEEE 802.11r – Fast BSS Transition

Bluetooth SIG

- Bluetooth Low Energy

Ethernet & Network Standards

- IEEE 802.3u – 100BASE-TX
- IEEE 802.3ab – 1000BASE-T
- IEEE 802.3bz – 2.5GBASE-T / 5GBASE-T
- IEEE 802.3an – 10GBASE-T
- IEEE 802.3at – PoE+
- IEEE 802.3bt – PoE++
- IEEE 802.3x – Flow Control
- IEEE 802.1Q – VLAN Tagging
- IEEE 802.1AX-2008 – Link Aggregation (static and dynamic)

Licenses

The TQ7413-R integrates with Vista Manager EX for centralized wireless management and automation at scale. For smaller deployments, the embedded wireless controller within supported Allied Telesis switch and firewall platforms enables streamlined local management. Flexible licensing models support scalable growth from single-site installations to distributed enterprise environments.

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	Vista Manager AWC plug-in license for managing up to 10 access points	3000
Vista Manager EX (Virtual (OVF))	AT-FL-VISTA-AWC10-1/5YR	Vista Manager AWC plug-in license for managing up to 10 access points	3000
Vista Manager EX (Network Appliance)	AT-FL-VISTA-AWC10-1/5YR	Vista Manager AWC plug-in license for managing up to 10 access points	500
SwitchBlade x908 GEN2	AT-SW-AWC10-1/5YR	Cumulative Autonomous Wave Controller (AWC) license for up to 10 access points	305
x950 Series	AT-SW-AWC10-1/5YR	Cumulative Autonomous Wave Controller (AWC) license for up to 10 access points	185
x930 Series	AT-SW-AWC10-1/5YR	Cumulative Autonomous Wave Controller (AWC) license for up to 10 access points	125
x550 Series	AT-SW-AWC10-1/5YR	Cumulative Autonomous Wave Controller (AWC) license for up to 10 access points	45
x540L Series	AT-SW-AWC10-1/5YR	Cumulative Autonomous Wave Controller (AWC) license for up to 10 access points	45
x530 Series	AT-SW-AWC10-1/5YR	Cumulative Autonomous Wave Controller (AWC) license for up to 10 access points	45
ARX200S-GTX	AT-RT-AWC10-1/5YR	Cumulative Autonomous Wave Control (AWC) license for up to 10 access points	50
AR4050S UTM Firewall	AT-RT-AWC5-1/5YR	Cumulative Autonomous Wave Controller (AWC) license for up to 5 access points	25

Ordering Information

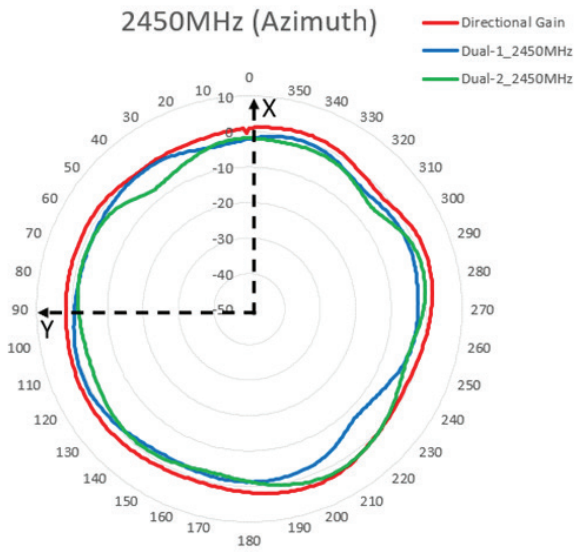
AT-TQ7413-R-xx[2]	Enterprise-Class Wi-Fi 7 AP with 3 radios (2x2 2.4GHz and 2x2 5GHz and 2x2 6GHz), and embedded antenna, TAA[3]
AT-PWRADP-01	AC adapter for TQ7413-R
AT-7101GHTm-yy	Multi-Gigabit Ethernet PoE++ (802.3bt) injector
AT-BRKT-CONV-AP1	Replacement bracket converter

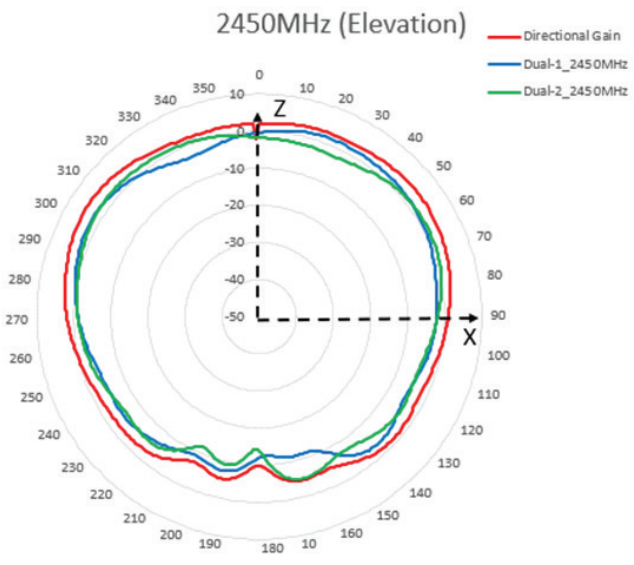
[2] Check for availability in your region
[3] Trade Act Agreement compliant

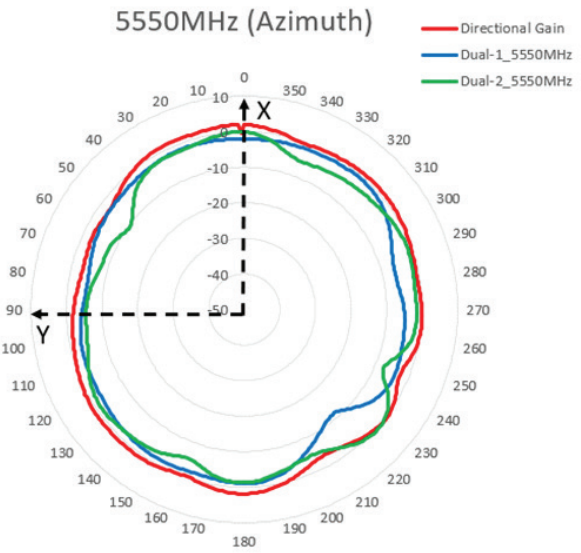
Where yy = 10 for US power cord
30 for UK power cord
40 for Australian power cord
50 for European power cord

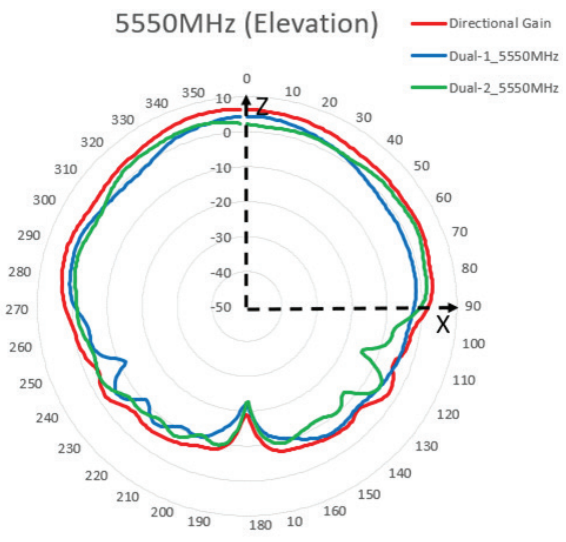
Where xx = 05 Regulatory Domain: Malaysia
00 Regulatory Domain: Europe

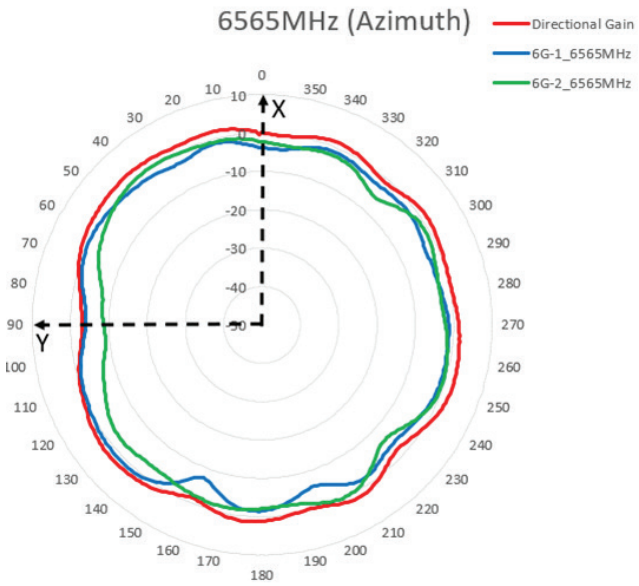
Wi-Fi Antenna Radiation Pattern

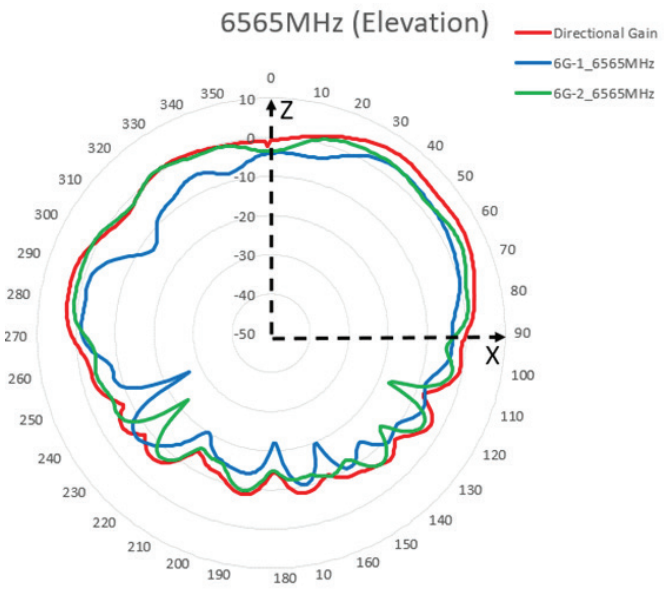












BLE/ZigBee Antenna Radiation Pattern