Alcatel-Lucent OmniAccess Stellar AP1511

WLAN Access Points - Indoor Wi-Fi 7

The Alcatel-Lucent OmniAccess® Stellar AP1511 premium entry Wi-Fi 7 Access Point (AP), provides high-efficiency, high-performance 802.11be aggregate data rates up to 9.328 Gbps across the 2.4/5/6GHz band. Wi-Fi 7 technology supports a higher density of clients, delivers more capacity for bandwidth-hungry and latency-sensitive applications and provides a dependable, secure network for Internet of Things (IoT) devices. The OmniAccess Stellar WLAN portfolio brings unparalleled experience in connectivity, coverage and performance for the modern, IoT-connected enterprise.

The Wi-Fi 7 OmniAccess Stellar AP1511 is designed to accommodate the dense and high-capacity needs of next-generation mobility and IoT-enabled networks. The access point is powered with three radios serving Wi-Fi clients and an integrated Bluetooth/Zigbee radio enabling the growing needs of enterprise IoT connectivity for powering location and building automation services. The OmniAccess Stellar AP1511 series supports a maximum aggregate data rate of 9.328 Gbps (688 Mbps in 2.4GHz, 2.882 Gbps in 5GHz, 5.76 Gbps in 6GHz). The access point provides 1 x 5GE Power over Ethernet (PoE) uplink.

The OmniAccess Stellar AP1511 supports 802.11be features, which include Multi-Link Operation (MLO), Orthogonal Frequency Division Multiplexing (OFDMA), Downlink Multi-User Multiple Input, Multiple Output (DL MU-MIMO), Uplink Multi-User Multiple Input, Multiple Output (UL MU-MIMO), 4096 Quadrature Amplitude Modulation mode (4096-QAM) and more, making tomorrow's diverse digital workspaces highly reliable and efficient.

The OmniAccess Stellar AP1511 features enhanced WLAN technology with RF Radio Dynamic Adjustment, a distributed control Wi-Fi architecture, secure network admission control with Unified Access, built-in application intelligence and analytics, this makes it ideal for enterprises of all sizes that demand simple, secure and scalable wireless solution.

802.11be high efficiency features

IEEE 802.11be allows enterprises to deliver high performance wireless LAN services with increased throughput, enabling more clients in dense environments and bringing power efficiency to IoT devices, while it remains fully backward compatible with existing 802.11a/b/g/n/ac/ax deployments. The 802.11be standard is a dramatic step forward in wireless LAN technology for all organizations. Some of the key 802.11be features enabled on OmniAccess Stellar AP1511 include:

- **MLO**: A Wi-Fi technology that enables devices connected to a Wi-Fi AP to simultaneously send and/or receive data across different frequency bands and channels. MLO is one of the many core features added in Wi-Fi 7 that help enhance the user experience. The deployment flexibility rendered by MLO is key to addressing SLAs of next-generation user applications.
- **OFDMA**: Enables more clients to simultaneously operate in the same channel, improving efficiency, latency and throughput. OFDMA can concurrently address multiple clients in both directions (DL and UL), including OFDMA Resource Units (RUs). OFDMA is very effective in environments where there are many devices with short frames demanding lower latency.
- **MU-MIMO**: Allows more data to be transferred at once and enables an access point to handle a larger number of concurrent clients
- **4096-QAM**: Boosts peak data rates by as much as 25 percent
- **Transmit beamforming**: Improves signal power resulting in significantly higher rates at a given range

Deliver enterprise-grade security and scale with simplicity

The OmniAccess Stellar AP1511 enables a visionary, **distributed Wi-Fi architecture with centralized management and policy control**. This enforces security at every step starting at the network edge and allows unparalleled scale in network capacity. This architecture is vital for enabling the next generation of digital enterprise that demands business agility, seamless mobility and secure, IoT-enabled infrastructure, empowering business transformation through continuous innovation.

The OmniAccess Stellar AP1511 provides enhanced security with **WPA3, a new security standard for enterprise and public networks, improving Wi-Fi security** by using advanced security algorithms and stronger ciphers in enterprises including the 192-bit security suite. Public spaces which provide open, non-protected access can now deliver encryption and privacy using OmniAccess Stellar, which supports a new security standard Wi-Fi Enhanced Open based on Opportunistic Wireless Encryption (OWE).

The APs can be deployed in three different modes, all through a single version of software simplifying IT operations.

For mid- to large-scale enterprises, the **Alcatel-Lucent OmniVista® Network Management System** provides secure plug-and-play APs for large scale deployment, with user friendly workflows for wireless services and unified access for end-to-end security. It comes with integrated unified policy authentication manager (UPAM) which helps define authentication strategy and policy enforcement for employees, guest management and BYOD devices. The OmniAccess Stellar AP1511 has built-in DPI technology providing real-time application monitoring and enforcement capabilities. The network administrator can obtain a comprehensive view of applications running in the network and apply adequate controls to optimize the performance of the network for business-critical applications. OmniVista provides advanced options for RF management, wireless Intrusion Detection System/ wireless Intrusion Prevention System (wIDS/wIPS) and heatmaps for WLAN site planning. To further simplify IT, the APs can be managed as one or more groups (a logical grouping of one or more APs).

Cloud-enabled with OmniVista Cirrus Network Management as a Service

The OmniAccess Stellar AP1511 can be managed by the OmniVista Cirrus cloud platform. **OmniVista Cirrus powers a secure, resilient and scalable cloud-based network management platform**. It offers hassle-free network deployment and easy service rollout with advanced analytics for smarter decision-making. OmniVista Cirrus also provides IT-friendly unified access with secure authentication and policy enforcement for users and devices.

On-premises deployment with OmniVista 2500 Network Management System (NMS)

The OmniAccess Stellar AP1511 can be managed on-premises from the OmniVista 2500 NMS.

For small to medium-sized enterprises, **Wi-Fi Express provides secure web managed (HTTPS) cluster deployment**.

The OmniAccess Stellar AP1511, by default, can operate in a cluster architecture to provide simplified plug-and-play deployment. The AP cluster is an autonomous system that consists of a group of OmniAccess Stellar APs managed by one AP that is elected as the primary virtual manager. One AP cluster supports up to 255 APs.

The AP cluster architecture ensures simplified and quick deployment. Once the first AP is configured using the configuration wizard, the remaining APs in the network will come up automatically with an updated configuration. This ensures the whole network is up and functional within a few minutes.

The OmniAccess Stellar AP1511 also supports secure zero-touch provisioning with the OXO Connect R2 which provides a mechanism by which all APs in a cluster will obtain bootstrap data securely from an on-premises OXO Connect.

W-Fi Express mode supports role-based management access to the AP cluster which includes Admin, Viewer and GuestOperator access. GuestOperator access simplifies guest account management and can be used by any non-IT person such as a front desk worker or receptionist. The OmniAccess Stellar AP1511 also supports a built-in, customizable captive portal, which enables customers to offer secure and seamless guest access experience.

Quality of service for unified communication apps

The OmniAccess Stellar AP1511 supports **fine-tuned, quality of service (QoS) parameters** to differentiate and provide appropriate QoS for each application such as voice, video and desktop sharing. Application-aware RF scanning avoids interruption of real-time applications.

RF management

Radio Dynamic Adjustment (RDA) technology automatically assigns channels and power settings, provides Dynamic Frequency Selection/Transmit Power Control (DFS/TPC), and ensures that APs stay clear of all radio frequency interference (RFI) sources to deliver reliable, high-performance WLAN. The OmniAccess Stellar AP1511 can be configured to provide part-time or dedicated scanning for spectrum analysis and wireless intrusion protection.

Product specifications

Feature	Description
Radio Specification	AP type: Indoor Wi-Fi 7(802.11be)
	• Tri Radio, Tri Band: 2.4GHz 2x2 + 5GHz 2x2 + 6GHz 2x2
	• 6GHz: 2x2:2 up to 5.76 Gbps wireless data rate to individual 2SS EHT320 802.11be client devices.
	• 5GHz: 2x2:2 up to 2.882 Gbps wireless data rate to individual 2SS EHT160 802.11be client devices.
	• 2.4GHz: 2x2:2 up to 688 Mbps wireless data rate to individual 2SS EHT40 802.11be client devices.
	Supported frequency bands (country-specific restrictions apply):
	• 2.400 to 2.4835GHz
	• 5.150 to 5.250GHz
	• 5.250 to 5.350GHz
	• 5.470 to 5.725GHz
	• 5.725 to 5.850GHz
	• 5.925 to 6.425GHz
	• 6.425 to 6.525GHz
	• 6.525 to 6.875GHz
	• 6.875 to 7.125GHz
	Available channels: Dependent on configured regulatory domain
	Brazil: Maximum transmit power: 24dBm on 2.4GHz, 24dBm on 5GHz
	Maximum transmit power (limited by local regulatory requirements):
	• 26dBm on 2.4GHz
	• 26dBm on 5GHz
	• 27dBm on 6GHz
	DFA (dynamic frequency adjustment) optimizes available channels and provides proper transmission power
	Short guard interval for 20MHz, 40MHz, 80MHz, 160MHz and 320MHz channels
	Transmit beamforming (TxBF) for increased signal reliability and range
	802.11n/ac packet aggregation: Aggregated MAC protocol data unit (A-MPDU), Aggregated MAC service data unit (A-MSDU)
	Supported data rates (Mbps):
	• 802.11b: 1, 2, 5.5, 11
	• 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
	• 802.11n(2.4GHz): 6.5 to 300 (MCS0 to MCS15, HT20 to HT40)
	• 802.11n(5GHz): 6.5 to 300 (MCS0 to MCS15, HT20 to HT40)
	• 802.11ac(2.4GHz): 6.5 to 400 (MCS0 to MCS9, NSS=1 to 2, VHT20 to VHT40)
	• 802.11ac(5GHz): 6.5 to 866.7 (MCS0 to MCS9, NSS = 1 to 2, VHT20 to VHT80)
	• 802.11ax(2.4GHz): 3.6 to 574 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40)
	• 802.11ax(5GHz): 3.6 to 2402 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE160)
	• 802.11ax(6GHz): 3.6 to 2402 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE160)
	• 802.11be(2.4GHz): 3.6 to 688 (MCS0 to MCS13, NSS = 1 to 2, EHT20 to EHT40)
	• 802.11be(5GHz): 3.6 to 2882 (MCS0 to MCS13, NSS = 1 to 2, EHT20 to EHT160)
	• 802.11be(6GHz): 3.6 to 5765 (MCS0 to MCS13, NSS = 1 to 2, EHT20 to EHT320)
	Supported modulation types:
	• 802.11b: BPSK, QPSK, CCK
	• 802.11a/g/n/ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM
	• 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM
	• 802.11be: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM, 4096-QAM
	• 802.11n high-throughput (HT) support: HT 20/40
	• 802.11ac very high throughput (VHT) support: VHT 20/40/80
	• 802.11ax high efficiency (HE) support: HE 20/40/80/160
	• 802.11be Extreme High Throughput (EHT) support: EHT 20/40/80/160/320
	• 802.11ac very high throughput (VHT) support: VHT 20/40/80
	• 802.11ax high efficiency (HE) support: HE 20/40/80/160
	• 802.11be Extreme High Throughput (EHT) support: EHT 20/40/80/160/320
	Advanced cellular coexistence (ACC)
	Minimizes interference from 3G/4G cellular networks, distributed antenna systems and commercial small cell/femtocell equipment
	802.11mc/az Fine timing measurement (FTM)
	Bluetooth 5.4/Zigbee: up to 6dBm transmit power (class 1) and -93dBm receive sensitivity
	Integrated omnidirectional antenna with peak gain of 4.3dBi

Features	Description		
Interfaces	1x multi-gigabit 1/2.5/5GE autosensing (RJ-45) uplink port Eth0. Power over Ethernet (PoE) 802.3at compliant. 1x USB 2.0 Type C (5V, 500mA) 1x USB Type C console Reset button: Factory reset		
Visual indicators (Tri-color LED)	For system and radio status • Red flashing: System abnormal, link down • Red light: System startup • Red and blue rotate flashing: System running, OS upgrading • Blue light: System running, dual or tri bands working • Green flashing: System running, no SSID created • Green light: System running, single band working • Red, blue and green rotate flashing: System running, use for location of an AP		
Security	• 802.11i, WPA2, WPA3, Enterprise with CNSA option, Personal (SAE) • 802.1X • WEP, Advanced Encryption Standard (AES), Temporal Key Integrity Protocol (TKIP) • Firewall: ACL, wIPS/wIDS and DPI application policy enforcement with OmniVista • Portal page authentication		
Antenna	Integrated omni-directional antennas with maximum antenna gain of 5.6dBi in 2.4GHz and 5.9dBi in 5GHz and 6.4dBi in 6GHz		

Receive sensitivity	2.4 GHz	5 GHz	6 GHz
1 Mbps	-99		
11 Mbps	-90		
6 Mbps	-95	-94	
54 Mbps	-77	-76	
HT20(MCS0/8)	-94	-95	
HT20(MCS7/15)	-76	-75	
HT40(MCS0/8)	-93	-92	
HT40(MCS7/15)	-74	-73	
VHT20(MCS0)	-94	-94	
VHT20(MCS8)	-73	-72	
VHT40(MCS0)	-93	-92	
VHT40(MCS9)	-68	-68	
VHT80(MCS0)		-89	
VHT80(MCS9)		-64	
HE20(MCS0)	-94	-94	-93
HE20(MCS11)	-66	-65	-64
HE40(MCS0)	-91	-91	-89
HE40(MCS11)	-63	-62	-61
HE80(MCS0)		-89	-87
HE80(MCS11)		-61	-59
HE160(MCS0)		-87	-86
HE160(MCS11)		-57	-56
EHT20(MCS0)	-93	-94	-92
EHT20(MCS13)		-59	-57
EHT40(MCS0)	-93	-91	-89
EHT40(MCS13)		-57	-56
EHT80(MCS0)		-89	-88
EHT80(MCS13)		-56	-55
EHT160(MCS0)		-87	-86
EHT160(MCS13)		-54	-53
EHT320(MCS0)			-83
EHT320(MCS13)			-52

Features	Description	2.4 GHz	5 GHz	6 GHz
Maximum transmit power (per chain)				
	1 Mbps	18 dBm		
	11 Mbps	18 dBm		
	6 Mbps	18 dBm	18 dBm	
	54 Mbps	18 dBm	18 dBm	
	HT20(MCS0/8)	18 dBm	18 dBm	
	HT20(MCS7/15)	17 dBm	17 dBm	
	HT40(MCS0/8)	18 dBm	18 dBm	
	HT40(MCS7/15)	17 dBm	17 dBm	
	VHT20(MCS0)	18 dBm	18 dBm	
	VHT20(MCS8)	16 dBm	17 dBm	
	VHT40(MCS0)	18 dBm	18 dBm	
	VHT40(MCS9)	15 dBm	16 dBm	
	VHT80(MCS0)		18 dBm	
	VHT80(MCS9)		16 dBm	
	HE20(MCS0)	18 dBm	18 dBm	18 dBm
	HE20(MCS11)	13 dBm	16 dBm	15 dBm
	HE40(MCS0)	18 dBm	18 dBm	18 dBm
	HE40(MCS11)	13 dBm	16 dBm	15 dBm
	HE80(MCS0)		18 dBm	18 dBm
	HE80(MCS11)		16 dBm	16 dBm
	HE160(MCS0)		18 dBm	18 dBm
	HE160(MCS11)		16 dBm	16 dBm
	EHT20(MCS0)	18 dBm	18 dBm	18 dBm
	EHT20(MCS13)	14 dBm	15 dBm	14 dBm
	EHT40(MCS0)	18 dBm	18 dBm	18 dBm
	EHT40((MCS13)	14 dBm	15 dBm	14 dBm
	EHT80(MCS0)		18 dBm	18 dBm
	EHT80(MCS13)		15 dBm	15 dBm
	EHT160(MCS0)		18 dBm	18 dBm
	EHT160(MCS13)		15 dBm	15 dBm
	EHT320(MCS0)			18 dBm
	EHT320(MCS13)			15 dBm

Note: Maximum transmit power is limited by local regulatory settings.

Features	Description
Power	Supports direct DC power and Power over Ethernet (PoE) When both power sources are available, DC power takes priority over PoE Direct DC source: • 40~57V; PoE: • IEEE 802.3at/bt compliant source Maximum (worst case) power consumption: • 23.4W (single input IEEE 802.3at PoE);
Mounting	Ceiling/wall mounting (Mount kit needs to be ordered separately)
Environmental	Operating: • Temperature: 0°C to 50°C (-32°F to +122°F) • Humidity: 5% to 95% non-condensing Storage and transportation: Temperature: -40°C to +70°C (-40°F to +158°F)

Features	Description
Dimensions/Weight	Single AP excluding packing box and accessories: • 190mm (W) x 190mm (D) x 38mm (H) - 7.48" (W) x 7.48" (D) x 1.50" (H) • 764g/1.68lb Single AP including packing box and accessories: • 228mm (W) x 198mm (D) x 66mm (H) - 8.98" (W) x 7.80" (D) x 2.60" (H) • 943g/2.07lb
Reliability	MTBF: 1,075,632h (122.79 years) at +25ºC operating temperature
Capacity	Up to 16 SSID/Radio. Support for up to 256 associated client devices per radio
Software features	Up to 4K APs when managed by OV2500. No limit on number of AP groups Up to 255 APs per web managed (HTTP/ HTTPS) cluster Auto channel selection Auto transmit power control Bandwidth control per SSID L2 roaming L3 roaming with OmniVista 2500 Captive portal (Internal/External) Guest self-registration optional SMS notification) with OmniVista 2500 Internal user database RADIUS client Guest social-login with OmniVista 2500 RADIUS proxy authentication with OmniVista 2500 LDAP/AD proxy authentication with OmniVista 2500 Wireless QoS Band steering Client smart load balance Client sticky avoidance User behavior tracking White/Block list Zero-Touch Provisioning (ZTP) NTP Client ACL DHCP/DNS/NAT Wireless MESH P2P/P2MP Wireless Bridge Rogue AP location and containment Dedicated Scanning AP System log report SSHv2 SNMPv2 Wireless attack detection with OmniVista 2500 Floor plan and heat map with OmniVista 2500 Stanley Healthcare/Aeroscout RTLS support
IEEE standard	IEEE 802.11a/b/g/n/ac/ax/be IEEE 802.11e WMM, U-APSD IEEE 802.11h, 802.11i, 802.11e QoS IEEE 802.1Q (VLAN Tagging) 802.11w Protected Management Frames 802.11k Radio Resource Management 802.11v BSS Transition Management 802.11r Fast roaming

Features	Description
Regulatory & certification	CB Scheme Safety, cTUVus
	Wi-Fi CERTIFIED Wi-Fi 7, Passpoint R3
	FCC
	CE Marked
	Bluetooth SIG
	RoHS, REACH, WEEE
	UL2043 Plenum rating
	2014/35/EU Low Voltage Directive
	2014/30/EU EMC Directive
	2011/65/EU RoHS Directive
	2014/53/EU Radio Equipment Directive
	EN 55032
	EN 55035
	EN 60601-1-1 & EN 60601-1-2
	IEC/EN 60950 and 62368
	EN 300 328
	EN 301 893
	EN 301 489-1
	EN 301 489-17
	EN 62311
	EN 303 687

Ordering information

Access Points	Description
OAW-AP1511-RW	OmniAccess Stellar Indoor AP1511. Tri radio, Tri band 2.4/5/6GHz 2x2 Wi-Fi 7, integrated omni antenna. BLE/Zigbee radio. 1x 5GE (PoE), Console, USB, 48V DC. AP mount to be ordered separately. Regulatory domain not for use in US, Japan.
OAW-AP1511-US	OmniAccess Stellar Indoor AP1511. Tri radio, Tri band 2.4/5/6GHz 2x2 Wi-Fi 7, integrated omni antenna. BLE/Zigbee radio. 1x 5GE (PoE), Console, USB, 48V DC. AP mount to be ordered separately. Restricted Regulatory Domain: US

Accessories	Description
AP-MNT-IN-BE (single pack)	Indoor mounting kit enhanced, Type B1 (9/16) and Type B2 (15/16) for T shaped ceiling rail mounting. Applicable for OmniAccess Stellar Indoor AP1101, AP12xx, AP13xx, AP14xx and AP15xx series.
AP-MNT-IN-WE (single pack)*	Indoor metal mounting kit, Type WE for flat surface: wall, ceiling and electrical box mounting.
AP-MNT-IN-CE (single pack)	Indoor mounting kit enhanced, Type C1 (Open Silhouette) and C2 (Flanged Interlude), for other shaped ceiling rail mounting. Applicable for OmniAccess Stellar Indoor AP1101, AP12xx, AP13xx, AP14xx and AP15xx series.
POE60U-1BT-X-R	IEEE 802.3bt (60W) PoE midspan. Support data speeds 1/2.5/5/10GE. No power cord included. Please order PWR-CORD-XX for country specific power cord.
ADP-50GRBD	48V/30W AC-to-DC Power Adapter with Type A DC plug 2.1*5.5*9.5mm circular, straight. Please order PWR-CORD-XX for country specific power cord.

*Coming soon

Warranty

OmniAccess Stellar Access Points come with Hardware Limited Lifetime Warranty (HLLW).

Services and support

OmniAccess Stellar Access Points include one (1) year of complementary support software for partners. For more information about our Professional services, Support services and Managed services, please go to:
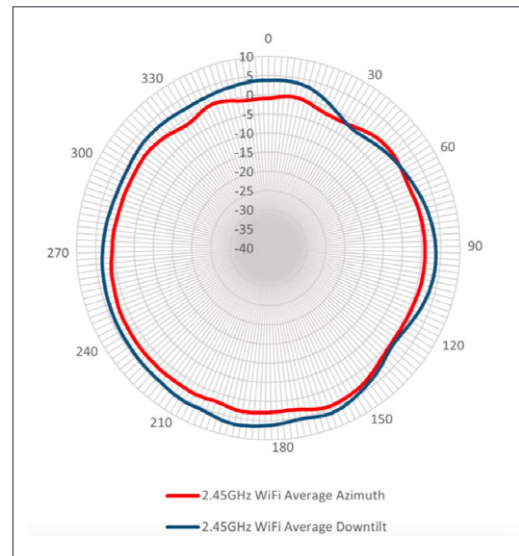
http://enterprise.alcatel-lucent.com/?services=EnterpriseServices&page=directory
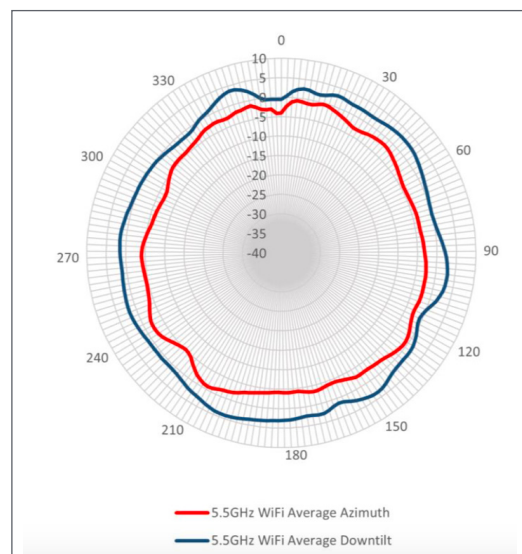
Azimuth plane (top view) - 2.4GHz
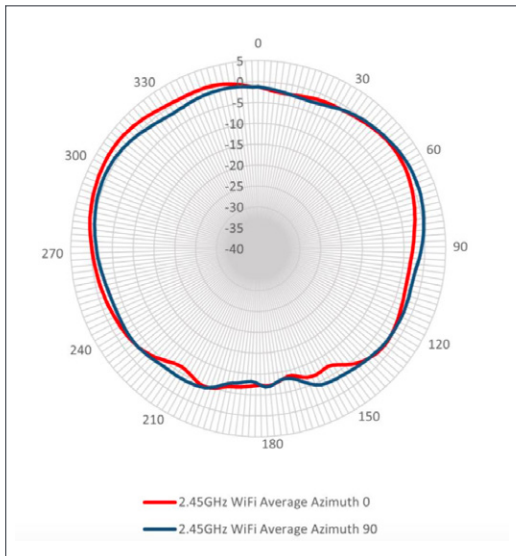
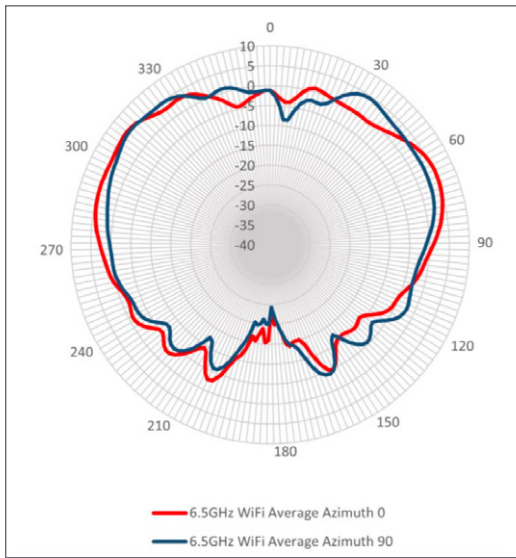Elevation plane (side view) - 2.4GHz

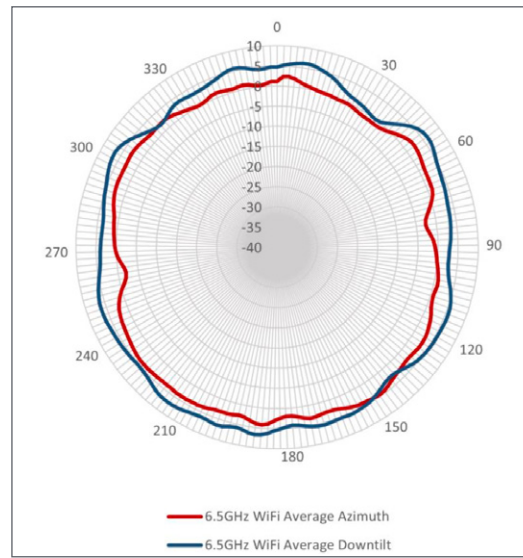Azimuth plane (top view) - 5GHz
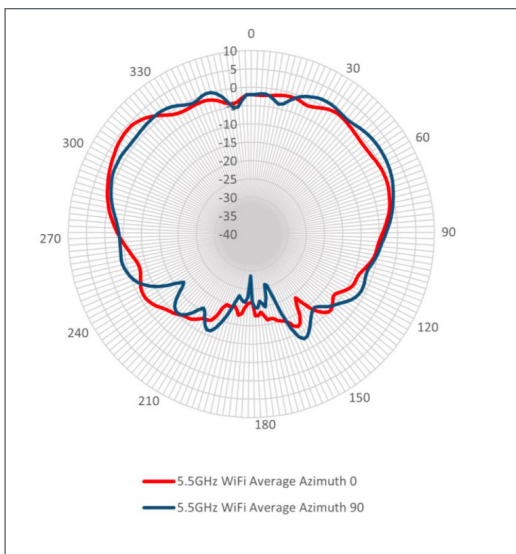
Elevation plane (side view) - 5GHz
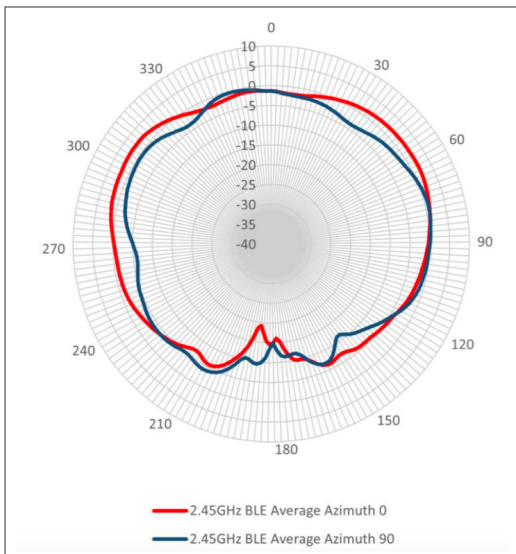
Azimuth plane (top view) - 6GHz

Elevation plane (side view) - 6GHz

BLE radio antenna pattern

Azimuth plane (top view) - BLE

Elevation plane (side view) - BLE

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