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Enterprise

Alcatel-Lucent OmniAccess Stellar AP1561

The Alcatel-Lucent OmniAccess® Stellar outdoor AP1561 Wi-Fi 7 Access Point (AP) provides high-efficiency, high-performance 802.11be aggregate data rates up to 9.328 Gbps across the 6GHz, 5 GHz and 2.4GHz bands for outdoor or rugged environments.

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 while increasing their battery-powered lifespan. The OmniAccess Stellar WLAN portfolio brings unparalleled experience in connectivity, coverage and performance for the modern, IoT- connected enterprise, in all environments.

The outdoor Wi-Fi 7 AP1561 access points are ready for 6 GHz operations, supporting Automated Frequency Coordination (AFC). As in some RF domains, the use of the 6GHz band in outdoor locations is not permitted, the 6GHz radio is software configurable to operate in 6GHz or 5GHz.

The AP is powered by a 5GE Multigig Ethernet uplink port, allowing to connect existing LAN Access OmniSwitch layers without investing in upgrading the access layer. AP1561 features Wi-Fi 7 serving radios and is optimized to work with IEEE 802.3at, thereby protecting existing investments in the network access layer.

The OmniAccess Stellar AP1561 series is **IP67 rated for harsh environments**, including exposure to high and low temperatures, direct sunlight, persistent moisture and precipitation and industrial-grade surge protection.

The OmniAccess Stellar AP1561 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 the diverse digital workspaces highly reliable and efficient.

The OmniAccess Stellar **AP1561** features enhanced WLAN technology with **RF Radio Dynamic Adjustment**, a **distributed control Wi-Fi architecture**, secure network admission control with **Unified Access** and **built-in application intelligence and analytics**, making it ideal for enterprises of all sizes that demand a 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 802.11 a/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 AP1561 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 the SLAs of next-generation user applications.
- **OFDMA**: Enables more clients to simultaneously operate in the same channel, thereby 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.
- **Multiple non-contiguous RU allocations per client**: Allows for increased RF spectrum utilization efficiency and reduced interference impact on bandwidth
- **MU-MIMO**: Allows more data to be transferred at once and enables an AP to handle a larger number of concurrent clients
- **4096-QAM**: Boosts peak data rates by as much as 25%
- **Transmit beamforming**: Improves signal power, resulting in significantly higher rates at a given range
- **Support for 512 Compressed Block Ack**: An advanced acknowledgment technique that efficiently confirms receipt of up to 512 data frames simultaneously, optimizing network performance in Wi-Fi 7
- **Triggered uplink access**: Allows a device to request and allocate uplink transmission opportunities dynamically, often as part of MLO. This feature improves uplink efficiency, reduces latency and enhances overall network performance by enabling more flexible and coordinated uplink transmissions across multiple links.

Deliver enterprise-grade security and scale with simplicity

The OmniAccess Stellar AP1561 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 AP1561 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.

The OmniAccess Stellar AP1561 supports **802.1ae MACsec in the uplink port**. This way, the path from the AP to the network access switch can be protected with data confidentiality, data integrity and data origin authenticity. Also, this provides protection against man-in-the-middle attacks.

Alcatel-Lucent OmniVista® Network Management System

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 an integrated unified policy authentication manager (UPAM), which helps define authentication strategy and policy enforcement for employees, guest management and BYOD

devices. The OmniAccess Stellar AP1561 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).

The **OmniVista Network Management System** provides two deployment models: **cloud-based or on premises**. Learn more about the OmniVista Network Management System.

- The OmniAccess Stellar AP1561 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.
- The OmniAccess Stellar AP1561 can be managed **on-premises from OmniVista**, dedicated for on-premises deployment, which addresses stringent requirements for local infrastructure management, data sovereignty and advanced security compliance.

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

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.

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 AP1561 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 AP1561 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 AP1561 can be configured to provide part-time or dedicated scanning for spectrum analysis and wireless intrusion protection.

Product specifications

Features	Description
Radio specification	• AP type: Outdoor Wi-Fi 7(802.11be) • Tri Radio, Tri Band: 6 GHz High 2x2:2, 5 GHz 2x2:2, and 2.4 GHz 2x2:2 ¬ 6 GHz: 2x2:2 up to 5.76Gbps wireless data rate to individual 2SS EHT320 802.11be client devices. This radio is Software configurable, supporting 5GHz operation in some Radio Frequency domains where the use of 6GHz band is not allowed. ¬ 5 GHz: 2x2:2 up to 2.882Gbps wireless data rate to individual 2SS EHT160 802.11be client devices. ¬ 2.4 GHz: 2x2:2 up to 688Mbps 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): ¬ 31.9dBm on 2.4GHz ¬ 31.0dBm on 5GHz ¬ 31.2dBm 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 600 (MCS0 to MCS31, 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 1733 (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)

Features	Description
Interfaces	1 x multi-gigabit 100M/1G/2.5G/5G IEEE 802.3bz compliant autosensing (RJ-45) port Eth0. Power over Ethernet (PoE) 802.3at compliant. IEEE 802.3az Energy-Efficient Ethernet (EEE). MACsec. Reset button: Factory reset
Visual indicators (7 LEDs)	For system and radio status • SYS ON: Power on and system running • SYS Flashing: Bootloader-OS loading or upgrading • 2.4G ON: 2.4GHz SSID created and running • 5G/5G_L ON: 5GHz all or 5GHz Low SSID created and running. • 6G/5G_H ON: 6GHz or 5GHz High SSID created and running • Eth0 ON: Green ON - Ethernet0 link UP; Green Blinking - Ethernet0 transmitting data • RSRV: Reserved
Security	• Integrated Trusted Platform Module (TPM 2.0) for secure storage of credentials and keys • 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 • MACsec Eth0
Antenna	• AP1561: 2×2:2 @ 2.4GHz, 2x2:2 @ 5GHz, 2x2:2 @ 6GHz/5GHz, software configurable if RF domain does not allow the use of 6GHz • Integrated omni antennas (H and V polarized) with maximum antenna gain of 6.9dBi in 2.4 GHz, 8.0dBi in 5 GHz and 8.2dBi in 6Gz

Receive sensitivity	2.4 GHz	5 GHz	6 GHz
1 Mbps	-98		
11 Mbps	-89		
6 Mbps	-94	-92	-93
54 Mbps	-76	-74	-75
HT20(MCS0/8)	-94	-92	-93
HT20(MCS7/15)	-75	-73	-74
HT40(MCS0/8)	-92	-89	-90
HT40(MCS7/15)	-73	-71	-72
VHT20(MCS0)	-94	-92	-93
VHT20(MCS8)	-71	-69	-70
VHT40(MCS0)	-92	-89	-90
VHT40(MCS9)	-68	-66	-67
VHT80(MCS0)		-86	-87
VHT80(MCS9)		-62	-63
HE20(MCS0)	-94	-92	-93
HE20(MCS11)	-65	-63	-64
HE40(MCS0)	-92	-89	-90
HE40(MCS11)	-62	-60	-61
HE80(MCS0)		-86	-87
HE80(MCS11)		-58	-59
HE160(MCS0)		-84	-85
HE160(MCS11)		-55	-56
EHT20(MCS0)	-94	-92	-93
EHT20(MCS13)		-56	-57
EHT40(MCS0)	-92	-89	-90

Features	Description			
	EHT40(MCS13)		-55	-56
	EHT80(MCS0)		-86	-87
	EHT80(MCS13)		-53	-54
	EHT160(MCS0)		-84	-85
	EHT160(MCS13)		-52	-53
	EHT320(MCS0)			-82
	EHT320(MCS13)			-50
Maximum transmit power (per chain)		2.4 GHz	5 GHz	6 GHz
	1 Mbps	22 dBm		
	11 Mbps	22 dBm		
	6 Mbps	22 dBm	20 dBm	20 dBm
	54 Mbps	22 dBm	19 dBm	19 dBm
	HT20(MCS0/8)	22dBm	20 dBm	20 dBm
	HT20(MCS7/15)	21 dBm	18 dBm	18 dBm
	HT40(MCS0/8)	22 dBm	19 dBm	19 dBm
	HT40(MCS7/15)	21 dBm	18 dBm	18 dBm
	VHT20(MCS0)	22 dBm	20 dBm	20 dBm
	VHT20(MCS8)	20 dBm	17 dBm	17 dBm
	VHT40(MCS0)	22 dBm	19 dBm	19 dBm
	VHT40(MCS9)	20 dBm	17 dBm	17 dBm
	VHT80(MCS0)		19 dBm	19 dBm
	VHT80(MCS9)		17 dBm	17 dBm
	HE20(MCS0)	22 dBm	20 dBm	20 dBm
	HE20(MCS11)	19 dBm	16 dBm	16 dBm
	HE40(MCS0)	22 dBm	19 dBm	19 dBm
	HE40(MCS11)	19 dBm	16 dBm	16 dBm
	HE80(MCS0)		19 dBm	19 dBm
	HE80(MCS11)		16 dBm	16 dBm
	HE160(MCS0)		19 dBm	19 dBm
	HE160(MCS11)		16 dBm	16 dBm
	EHT20(MCS0)	22 dBm	20 dBm	20 dBm
	EHT20(MCS13)	18 dBm	16 dBm	16 dBm
	EHT40(MCS0)	22 dBm	19 dBm	19 dBm
	EHT40((MCS13)	18 dBm	16 dBm	16 dBm
	EHT80(MCS0)		19 dBm	19 dBm
	EHT80(MCS13)		16 dBm	16dBm
	EHT160(MCS0)		19 dBm	19 dBm
	EHT160(MCS13)		16 dBm	16 dBm
	EHT320(MCS0)			19 dBm
	EHT320(MCS13)			16 dBm

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

Features	Description
Power	Supports Power over Ethernet (PoE) • PoE: IEEE 802.3at-compliant source • Maximum (worst case) power consumption: ¬ 23.64W (single input IEEE 802.3at POE):
Mounting	• Pole/Wall mounting for AP1561 (Mount kit needs to be ordered separately)
Environmental	• Operating: ¬ Temperature: -40°C to 65°C (-40°F to +149°F) ¬ Humidity: 10% to 90% non-condensing • Storage and transportation: ¬ Temperature: -40°C to +85°C (-40°F to +185°F) • Wind resistance: ¬ Up to 100MPH sustained winds ¬ Up to 165MPH wind gusts
Dimensions/Weight	Single AP excluding packing box and accessories: • 243mm (W) x 243mm (D) x 85mm (H) -9.56" (W) x 9.56" (D) x 3.34" (H) • 2500g / 5.51lb Single AP including packing box and accessories: • 320mm (W) x 300mm (D) x 135mm (H) -12.6" (W) x 11.81" (D) x 5.31"(H) • 3121g / 6.88lb
Reliability	MTBF: 953,235h (108.74 years) at +25ºC operating temperature
Capacity	Up to 16 SSID/Radio. Support for up to 256 associated per radio. Support for 768 associated clients per AP1561.
Software features	Up to 5K APs when managed by OmniVista Terra (OVT)(1) Up to 12K APs when managed by OmniVista Cirrus (OVC) for a single tenant(1) Up to 255 APs per web managed (HTTP/ HTTPS) cluster (Express Mode) Auto channel selection Auto transmit power control Bandwidth control per SSID L2 roaming L3 Roaming with OmniVista Captive portal (Internal/External) Guest self-registration with optional SMS notification with OmniVista Internal user database RADIUS client Guest social-login with OmniVista RADIUS proxy authentication with OmniVista LDAP/AD proxy authentication with OmniVista Wireless QoE Band steering Client smart load balance Client sticky avoidance User behavior tracking Allow/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 Heatmap with OmniVista Stanley Healthcare/Aeroscout RTLS support (1) Please check the current scalability from your ALE Sales representative, as these numbers increase in each OmniVista release. Up to 4K APs with OmniVista 2500.
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) 802.3az Energy-Efficient Ethernet 802.11w Protected Management Frames 802.11k Radio Resource Management 802.11v BSS Transition Management 802.11r Fast roaming 802.1ae MAC Security – MACsec 802.1x Port-Based Network Access Control (Including MACsec Key Agreement protocol)

Features	Description
Regulatory & certification	CB Scheme Safety, cTUVus Wi-Fi certified Wi-Fi 7, Passpoint R3 FCC CE Marked Bluetooth SIG RoHS, REACH, WEEE 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-AP1561-RW	OmniAccess Stellar Outdoor AP1561. Tri radio, Tri band 2.4/5/6GHz 2x2 Wi-Fi 7, integrated omni antenna. 1 x 2.5GE RJ-45 (PoE). AP mount to be ordered separately. Regulatory domain not for use in US, ME, Japan.
OAW-AP1561-US	OmniAccess Stellar Outdoor AP1561. Tri radio, Tri band 2.4/5/6GHz 2x2 Wi-Fi 7, integrated omni antenna. 1 x 2.5GE RJ-45 (PoE). AP mount to be ordered separately. Regulatory domain: US.
OAW-AP1561-ME	OmniAccess Stellar Outdoor AP1561. Tri radio, Tri band 2.4/5/6GHz 2x2 Wi-Fi 7, integrated omni antenna. 1 x 2.5GE RJ-45 (PoE). AP mount to be ordered separately. Regulatory domain: ME.

Accessories	Description
AP-MNT-OUT	OAW-AP1561, OAW-AP1570, OAW-AP1360 outdoor Pole/Wall mount kit.
POEO75U-1BT-X-R	IEEE 802.3bt Outdoor Single Port 10GE PoE midspan. IP67 Rated for Outdoor Applications.

Warranty

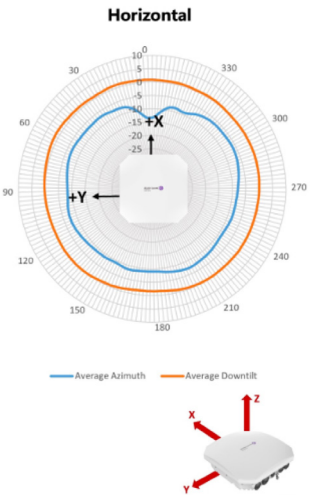
OmniAccess Stellar APs come with Hardware Limited Lifetime Warranty (HLLW).

Services and support

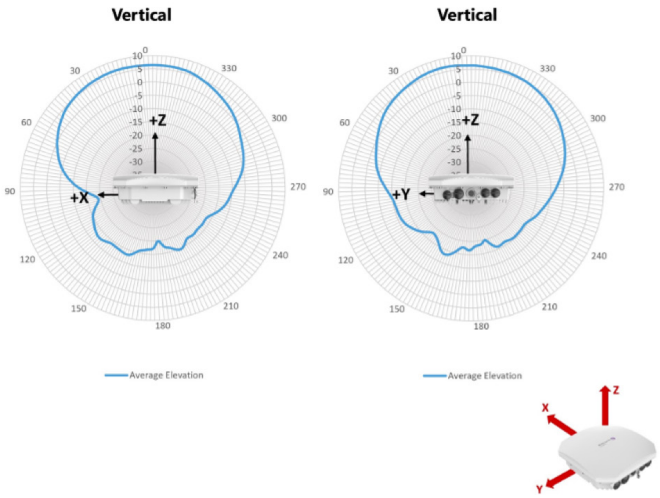
For information about our Professional services, Support services and Managed services, please go to:
https://www.al-enterprise.com/en/services

OmniAccess AP1561 antenna pattern plots

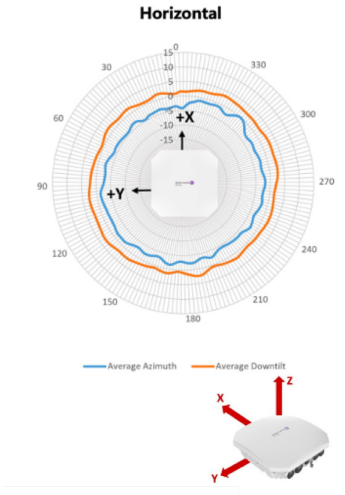
Azimuth plane (top view) – 2.45GHz



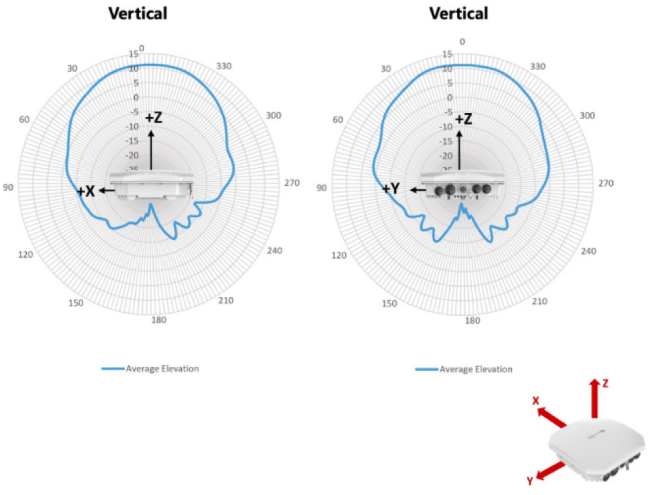
Elevation plane (side view) - 2.45GHz



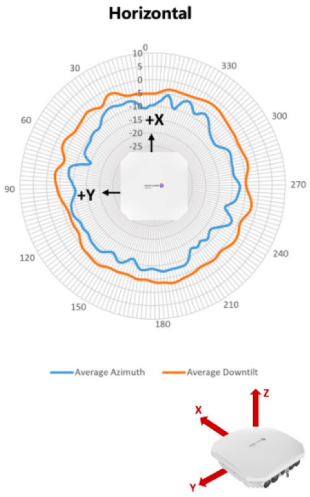
Azimuth plane (top view) – 5.50GHz



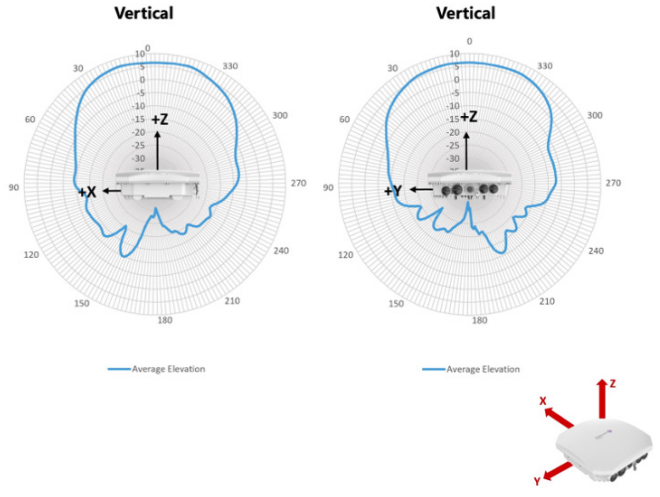
Elevation plane (side view) – 5.50GHz



Azimuth plane (top view) – 6.50GHz



Elevation plane (side view) – 6.50GHz



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