Alcatel-Lucent OmniAccess Stellar AP1301

WLAN Access Point - Indoor 802.11 ax (Wi-Fi 6)

The Alcatel-Lucent OmniAccess® Stellar AP1301 WLAN Access Point (AP) with 802.11ax technology, enables faster speeds, more capacity, and efficient airtime allocation for clients on both 2.4 Ghz and 5 Ghz Wi-Fi bands. Wi-Fi 6 technology serves a higher density of clients, delivers more capacity for bandwidth-hungry and latency-sensitive voice and video clients, and provides a dependable, secure network. The OmniAccess Stellar WLAN portfolio brings unparalleled connectivity, coverage, and performance to the modern Internet of Things (IoT) connected enterprise.

The 802.11ax high performance OmniAccess Stellar AP1301 is designed to accommodate the diverse and increasing capacity needs of next generation mobility and IoT-enabled networks. The OmniAccess Stellar AP1301 is powered with dual radios 2.4 Ghz/5 Ghz band serving high density Wi-Fi clients, supporting a maximum aggregate data rate of ˜1.77 Gbps (1.2 Gbps in 5 GHz and 573 Mbps in 2.4 GHz).

The OmniAccess Stellar AP1301 supports 802.11ax (Wi-Fi 6) features, which include OFDMA, DL MU-MIMO, 1024-QAM modulation and more, making tomorrow's diverse digital workspaces highly reliable and efficient.

The OmniAccess Stellar AP1301 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 solutions.

802.11 ax (Wi-Fi 6) high efficiency features

IEEE 802.11ax 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 remaining fully backward compatible with existing 802.11 a/b/g/n/ac deployments. The 802.11ax standard is a dramatic step forward in wireless LAN technology for all organizations. Some of the key 802.11ax features enabled on OmniAccess Stellar AP1301 include:

- Orthogonal frequency division multiple access (OFDMA) enabling more clients to simultaneously operate in the same channel and thereby improving efficiency, latency, and throughput. OFDMA can concurrently address multiple clients in both directions downlink (DL) and uplink (UL), including OFDMA Resource Units (RUs). OFDMA is very effective in environments where there are many devices with short frames demanding lower latency.

- Multi-user multiple input, multiple output (MU-MIMO) allowing more data to be transferred at once and enables an access point to handle a larger number of concurrent clients.
- 1024 quadrature amplitude modulation mode (1024-QAM) boosting peak data-rates by as much as 25 percent.
- BSS Coloring improves spatial reuse in dense environments by providing a mechanism for color coding different overlapping BSS's, allowing more simultaneous transmissions.
- Extended Range (ER) provides increased coverage in scenarios where the receiving side encounters high path loss and channel delay spread, especially in outdoor environments.
- Target Wake Time (TWT) makes Wi-Fi CERTIFIED 6 devices more power efficient. This capability lets client devices sleep much longer, and wake up to less contention, extending the battery life of smart phones, IoT sensors, and other devices.
- 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 AP1301 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 allowing 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 AP1301 provides enhanced security with WPA3, a new security standard for enterprise and public networks, improving Wi-Fi security using advanced security algorithms and stronger ciphers in enterprises, including the 192-bit security suite. Public spaces which provide open non-protected access will soon provide encryption and privacy using OmniAccess Stellar, which is ready to support the new security standard, Wi-Fi Enhanced Open based on Opportunistic Wireless Encryption (OWE).

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

For medium to large-size enterprises, **Alcatel-Lucent OmniVista® 2500 Network Management System** (NMS) 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. OmniVista 2500 NMS 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 AP1301 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 2500 NMS provides advanced options for RF management, wIDS/wIPS for intrusion detection and prevention, and heatmaps for WLAN site planning. To further simplify IT, the APs can be managed as one or more access point groups (a logical grouping of one or more access points).

Cloud-enabled with Alcatel-Lucent OmniVista Cirrus Network Management as a Service

The OmniAccess Stellar AP1301 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 offers IT-friendly unified access with secure authentication and policy enforcement for users and devices.

On premises deployment with OmniVista 2500 NMS

The OmniAccess Stellar AP1301 can be managed on premises from the OmniVista 2500 NMS.

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

The OmniAccess Stellar AP1301, 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 which is 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 AP1301 also supports secure zero-touch provisioning with Alcatel-Lucent 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.

The 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 creation and management, and can be used by any non-IT person such as a front desk worker or receptionist. The OmniAccess Stellar AP1301 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 AP1301 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 DFS/TPC, and ensures that APs stay clear of all radio frequency interference (RFI) sources to deliver a reliable, high-performance WLAN. The OmniAccess Stellar AP1301 can be configured to provide part-time or dedicated scanning for spectrum analysis and wireless intrusion protection.

Product specifications

Features	Description
Radio Specifications	• AP type: Indoor • Dual Radio, 5 GHz 802.11ax 2x2:2 and 2.4 GHz 802.11ax 2x2:2 ¬ 5 GHz: 2x2:2 up to 1.2 Gbps wireless data rate to individual 2SS HE80 802.11ax client devices ¬ 2.4 GHz: 2x2:2 up to 573 Mbps wireless data rate to individual 2SS HE40 802.11ax client devices • Supported frequency bands (country-specific restrictions apply): ¬ 2.400 to 2.4835 GHz ¬ 5.150 to 5.250 GHz ¬ 5.250 to 5.350 GHz ¬ 5.470 to 5.725 GHz ¬ 5.725 to 5.850 GHz • Available channels: Dependent on configured regulatory domain • Brazil: Maximum transmit power: 21 dBm on 2.4 GHz, 21 dBm on 5 GHz • Maximum (aggregate, conducted total) transmit power (limited by local regulatory requirements): ¬ 21 dBm on 2.4 GHz (18 dBm per chain) ¬ 21 dBm on 5 GHz (18 dBm per chain) • DFA (Dynamic Frequency Adjustment) optimizes available channels and provides proper transmission power • Short guard interval for 20-MHz, 40-MHz, and 80-MHz 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 (2.4 GHz): 6.5 to 300 (MCS0 to MCS15, HT20 to HT40) ¬ 802.11n (5 GHz): 6.5 to 600 (MCS0 to MCS31, HT20 to HT40) ¬ 2.4 GHz 256-QAM: 6.5 to 400 (MCS0 to MCS9, NSS=1 to 2, VHT20 to VHT40) ¬ 802.11ac: 6.5 to 866.7 (MCS0 to MCS9, NSS = 1 to 2, VHT20 to VHT80) ¬ 802.11ax (2.4GHz): 3.6 to 573 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40) ¬ 802.11ax (5GHz): 3.6 to 1201 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE80) • 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 • 802.11n 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 • Advanced Cellular Coexistence (ACC) Minimizes interference from 3G/4G cellular networks, distributed antenna systems, and commercial small cell/femtocell equipment
Interfaces	• 2x 10/100/1000Base-T autosensing (RJ-45) port, Power over Ethernet (PoE) 802.3af compliant • 1x USB 2.0 Type C (5V, 500mA) • 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 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

Features	Description		
Antenna	• AP1301: 2×2:2 @ 2.4 GHz, 2x2:2 @ 5 GHz ¬ Integrated omni-directional antennas with maximum antenna gain of 3.3 dBi in 2.4 GHz and 3.3 dBi in 5 GHz		
Receive sensitivity		2.4 GHz	5 GHz
	1 Mbps	-97	
	11 Mbps	-90	
	6 Mbps	-93	-93
	54 Mbps	-76	-77
	HT20(MCS0/8)	-93	-93
	HT20(MCS7/15)	-73	-76
	HT40(MCS0/8)	-91	-91
	HT40(MCS7/15)	-72	-74
	VHT20(MCS0)	-93	-93
	VHT20(MCS8)	-71	-73
	VHT40(MCS0)	-91	-91
	VHT40(MCS9)	-67	-68
	VHT80(MCS0)		-88
	VHT80(MCS9)		-64
	HE20(MCS0)	-93	-93
	HE20(MCS11)	-64	-65
	HE40(MCS0)	-90	-91
	HE40(MCS11)	-62	-62
	HE80(MCS0)		-88
	HE80(MCS11		-59
Maximum Transmit power (per chain)		2.4 GHz	5 GHz
	1 Mbps	18 dBm	
	11 Mbps	18 dBm	
	6 Mbps	18 dBm	18 dBm
	54 Mbps	16 dBm	16 dBm
	HT20(MCS0/8)	18 dBm	18 dBm
	HT20(MCS7/15)	15 dBm	15 dBm
	HT40(MCS0/8)	18 dBm	18 dBm
	HT40(MCS7/15)	15 dBm	15 dBm
	VHT20(MCS0)	18 dBm	18 dBm
	VHT20(MCS8)	14 dBm	15 dBm
	VHT40(MCS0)	18 dBm	18 dBm
	VHT40(MCS9)	14 dBm	15 dBm
	VHT80(MCS0)		18 dBm
	VHT80(MCS9)		14 dBm
	HE20(MCS0)	18 dBm	18 dBm
	HE20(MCS11)	14 dBm	15 dBm
	HE40(MCS0)	18 dBm	18 dBm
	HE40(MCS11)	14 dBm	15 dBm
	HE80(MCS0)		18 dBm
	HE80(MCS11)		14 dBm
	Note: Maximum transmit power is limited by local regulatory settings.		
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: ¬ 48 V DC nominal, +/- 5% • Power over Ethernet (PoE): ¬ IEEE 802.3af source • Maximum (worst case) power consumption: ¬ 13.1W (input IEEE 802.3af POE); Unrestricted functionality		
Mounting	Ceiling/wall mounting (Mount kit needs to be ordered separately		
Environmental	• Operating: ¬ Temperature: 0°C to 45°C (-32°F to +113°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: ¬ 180mm (W) x 180mm (D) x 36mm (H) - 7.08” (W) x 7.08” (D) x 1.41” (H) ¬ 574g/1.26lb • Single AP including packing box and accessories: ¬ 228mm (W) x 198mm (D) x 66mm (H) - 8.97” (W) x 7.79” (D) x 2.59” (H) ¬ 780g/1.71lb
Reliability	MTBF: 1,118,457h (127.67 years) at +25ºC operating temperature
Capacity	• Up to 8 SSID per radio (total 16 SSID) • Support for up to 512 associated client devices
Software feature	• Up to 4K APs when managed by OmniVista 2500. 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/black 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 • IEEE 802.11e WMM, U-APSD • IEEE 802.11h, 802.11i, 802.11e QoS • IEEE 802.1Q (VLAN Tagging) • 802.11k Radio Resource Management • 802.11v BSS Transition Management • 802.11r Fast roaming

Features	Description
Regulatory and certification	• CB Scheme Safety, cTUVus • Wi-Fi CERTIFIED, Wi-Fi 6, Passpoint R3 • FCC • CE Marked • EN 60601-1-1 and EN 60601-1-2 • RoHS, REACH, WEEE • EMI and susceptibility (Class B) • 2014/35/EU Low Voltage Directive • 2014/30/EU EMC Directive • 2011/65/EU RoHS Directive • 2014/53/EU Radio Equipment Directive • EN 55032 • IEC/EN 60950 and 62368 • EN 300 328 • EN 301 893 • EN 301 489-1 • EN 301 489-17

Ordering information

Access points	Description
OAW-AP1301-RW	OmniAccess Stellar Indoor AP1301. Dual radio 2.4/5 Ghz 2x2:2 802.11ax, integrated omni antenna. 2x 1GbE uplink, 1x RS-232 Console, USB, 48V DC. AP mount kit to be ordered separately. Not for use in US, Egypt, Israel, Japan.
OAW-AP1301-ME	OmniAccess Stellar Indoor AP1301. Dual radio 2.4/5 Ghz 2x2:2 802.11ax, integrated omni antenna. 2x 1GbE uplink, 1x RS-232 Console, USB, 48V DC. AP mount kit to be ordered separately. Restricted Regulatory Domain: Egypt, Israel
OAW-AP1301-US	OmniAccess Stellar Indoor AP1301. Dual radio 2.4/5 Ghz 2x2:2 802.11ax, integrated omni antenna. 2x 1GbE uplink, 1x RS-232 Console, USB, 48V DC. AP mount kit to be ordered separately. Restricted Regulatory Domain: US

Accessories	Description
OAW-AP-MNT-B (single pack) OAW-AP-MNT-B-10 (10 pack)	Mounting kit, (Type B19/16 and B215/16) for T shaped spare ceiling rail mounting. Applicable for OmniAccess Stellar Indoor 1101, 12xx and 13xx series.
OAW-AP-MNT-W (single pack) OAW-AP-MNT-W-10 (10 pack)	Mounting kit, Type A wall mount and ceiling mount with screws. Applicable for OmniAccess Stellar Indoor 1101, 12xx and 13xx series.
OAW-AP-MNT-C (single pack)	Mounting kit, Type C1 (Open Silhouette) and C2 Flanged Interlude), for other shaped ceiling rail mounting. Applicable for OmniAccess Stellar Indoor 1101, 12xx and 13xx series.
PD-9001GR/AT/AC	1-Port IEEE 802.3at PoE Midspan. Port speed 10/100/1000M PoE power 30W. No power cord included. Please order PWR-CORD-XX for country specific power cord.
ADP-50GRBE	48V/50W 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.

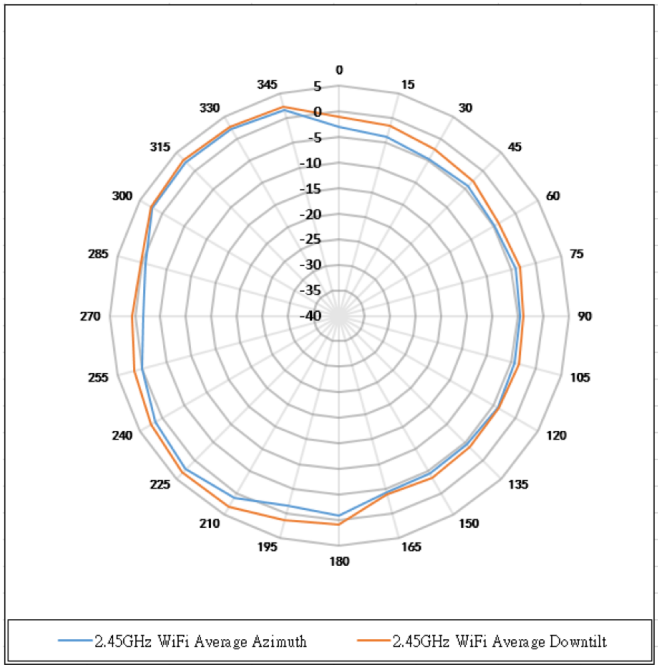
Warranty

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

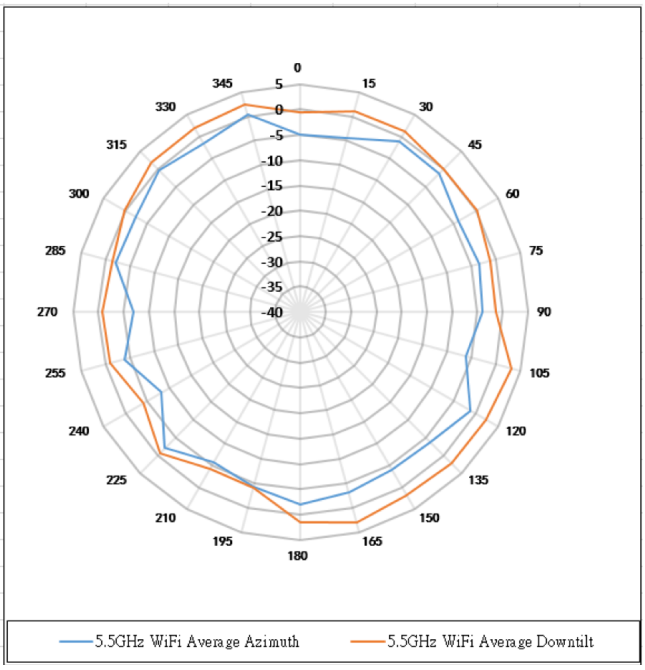
Services and support

OmniAccess Stellar Access Points include 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

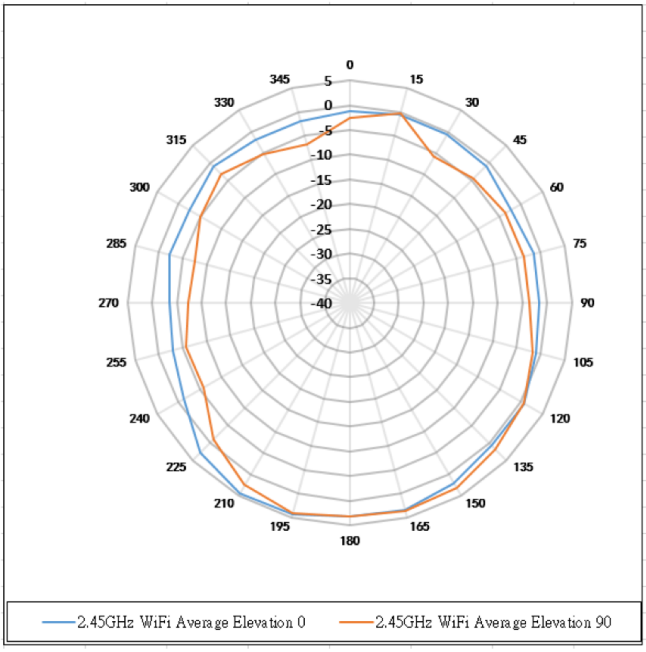
Figures. OmniAccess Stellar AP1301 antenna pattern plots

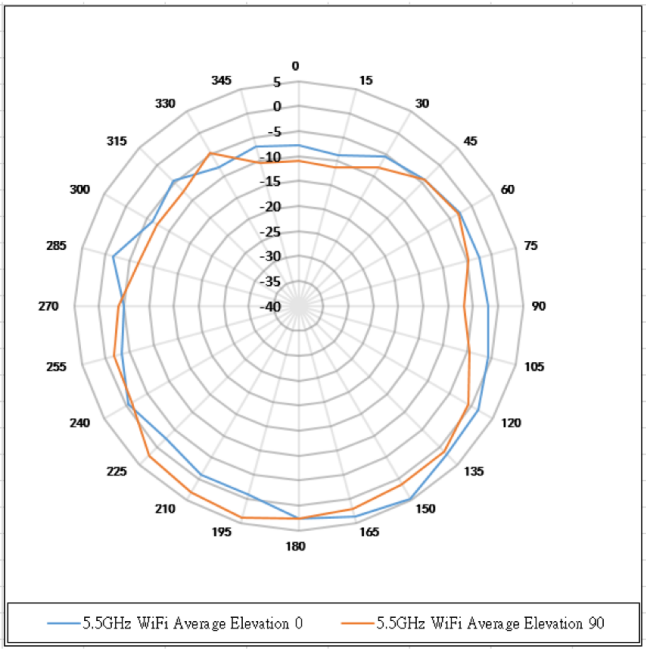


Azimuth plane (top view) - 2.45GHz



Azimuth plane (top view) - 5.5GHz





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