

Universal Wireless AP3000/X

Highlights

Advanced Radio Technology

Dual-Radio Design

- 2.4/5 GHz (2x2:2)
- 5/6 GHz (2x2:2)

Universal Hardware Platform

- On-Premises: WiNG OS (Distributed*), ExtremeCloud IQ Controller (Centralized)
- Cloud: ExtremeCloud IQ

Operational Modes

- Mode 1: 2.4 GHz/5 GHz Data Radios
- Mode 2: 5 GHz/6 GHz Data Radios

WPA3 Support

- Includes the latest WPA3 Wi-Fi security standard delivering robust protections for users and IoT devices

Designed for harsh environments

- External antennas and extended temperature range -20°C to +55°C

Cellular Coexistence Filter (CCF)

- Minimizes the impact of interference from cellular networks

Fully Functional Wi-Fi with 802.3af

Smart Management Choices

- ExtremeCloud IQ delivers powerful, simple, and secure public or private cloud management capabilities
- ExtremeCloud IQ Controller is ideal for on-premises requirements

* Distributed in a future release

Wi-Fi 6E Dual-Radio Indoor Access Point With Integrated or External Antenna Options



In today's world, as businesses make capital investments in their technology infrastructure, they must have a keen eye on how those investments can improve operational efficiency. To meet the needs of budget-conscious enterprises who do not want to sacrifice performance, the AP3000/X was engineered to deliver on those requirements. The AP3000/X combines powerful 802.11ax Wi-Fi 6E technology, advanced security, and ML/AI cloud management capabilities as an enterprise-class solution in a small, low-power package that allows you to deploy high speed and highly secure Wi-Fi.

The AP3000/X is a Universal and World SKU Wi-Fi 6E Wireless Access point. With Extreme's Universal infrastructure, customers can take advantage of hardware agility and reduce the total cost of their network by adopting platforms that allow them to run multiple Extreme operating systems. This multi-persona capability provides increased product flexibility and reduced hardware obsolescence. The World SKU allows customers, partners, and distributors to order one model for any region, replacing the age-old problem of country specific SKUs. ExtremeCloud™ IQ geo-locates the Access Point and accurately provides it the corresponding set of channel and power specifications that the product can operate under in that country

The AP3000/X Wi-Fi 6E access point, with two 2x2:2 radios, provides high-efficiency, high-performance 802.11ax aggregate data rates up to 4.8 Gbps in the 6 GHz, 5 GHz, and 2.4 GHz bands. Designed for dense and/or harsh environments, such as classrooms, warehouses, healthcare clinics, and manufacturing, the AP3000/X is powerful and intelligent enough to provide the highest level of client services without compromising security. Despite powerful capabilities, the AP3000/X allows for flexible placement as the market's smallest form-factor Wi-Fi 6E access point to emphasize aesthetics. The AP3000/X features a fully functional Multi-Band filter, enabling simultaneous operations with no performance degradation between all the 5 GHz frequencies and the entire range of 6 GHz frequencies (U-NII-5 thru U-NII-8 bands).*

* Country dependent

Wi-Fi 6E Enhanced Capacity

By utilizing the additional 6 GHz spectrum offered by Wi-Fi 6E, the AP3000/X operate up to three times as much spectrum as previous generations of Wi-Fi to deliver enhanced wireless experiences, faster speeds, and less interference.

Band	Number of 20 MHz Channels	Maximum Channel Size	Maximum throughput
6 GHz	59	160 MHz	2.4 Gbps
5 GHz	25	160 MHz	2.4 Gbps
2.4 GHz	3	20 MHz	287 Mbps

*For US regulatory environments (20 MHz channels)



Wi-Fi 6E (802.11ax) Technology

Wi-Fi 6 ushered a new generation of Wi-Fi. While prior generations emphasized on higher speeds, 802.11ax technology instead focused on improving Wi-Fi efficiency as well as speed, taking Wi-Fi networks to an entirely new level. Now, with addition of the 6 GHz band for unlicensed operation, Wi-Fi 6E has access to up to 1,200 MHz of spectrum*, which is three times that of existing 'usable' spectrum which enables improved quality of service (QoS) in dense environments, new applications and use cases, and an improved user experience. To learn more about 802.11ax and Wi-Fi 6E, visit [here](#).



Management Analytics

In conjunction with Extreme centralized management software, cloud or on-premises, the AP3000/X provides a rich set of data displayed via widgets, representing unlimited historical data or a combination of historical and current data. This provides context-specific granularity with perspective views for locations, network, APs, individual client devices, as well as policy roles. In each context, administrators can make a widget library.



Dual-Radio Programmable AP

Extreme launched the industry's first software defined Wi-Fi 6E access point supporting multiple software programmable modes to optimally manage radios to provide the highest level of client performance. The AP3000/X is a dual radio access point can transmit with two data radios: 2.4 GHz and 5 GHz or 5 GHz and 6 GHz.

*Country Dependent



Security

The AP3000/X delivers the highest level of security services, beginning with support for the latest Wi-Fi Alliance WPA3 security certifications. Leverage [Extreme Fabric Attach](#) to securely automate provisioning and deployment by connecting to a Fabric Connect-enabled switch. AP3000/X supports a stateful L2-L7 DPI firewall for context-based access security, tri-frequency security, and Private Pre-Shared Key (PPSK), location analytics sensor and much more.



Universal Hardware

The AP3000/X is a universal hardware platform that comes with a dual-persona capability allowing user choice of the Wi-Fi operating system (OS). Either the IQ Engine operating system or the WiNG Operating System persona can be enabled as required. The desired persona can be selected at start-up or changed at a later stage. Once selected, the AP3000/X assumes the features or capabilities of the selected OS. When first booted, the AP3000/X automatically connects to ExtremeCloud™ IQ to find its persona. The preprovisioned OS persona is then remotely enabled on the AP3000/X system, eliminating the need for manual selection.



Integrated Bluetooth Low Energy

To support both IoT and Guest Engagement services integrates Bluetooth® to connect with IoT devices wireless to engage loyalty customers with Apple iBeacon. Enterprises can use API driven applications to send advertisements directly to shoppers, guests, and conference attendees. This makes it ideal for businesses to advertise their app download pages, captive portals, or site-specific information.

Product Specifications

Radio Specifications

Max Users

- SSID per Radio/Total: 16/32
- Users per Radio/Total: 512/1024

802.11a

- 5.150–5.850 GHz Operating Frequency
- Orthogonal Frequency Division Multiplexing (OFDM) Modulation
- Rates (Mbps): 54, 48, 36, 24, 18, 12, 9, 6 w/auto fallback

802.11b

- 2.4–2.5 GHz Operating Frequency
- Direct-Sequence Spread-Spectrum (DSSS) Modulation
- Rates (Mbps): 11, 5.5, 2, 1 w/auto fallback

802.11g

- 2.4–2.5 GHz Operating Frequency
- Orthogonal Frequency Division Multiplexing (OFDM) Modulation
- Rates (Mbps): 54, 48, 36, 24, 18, 12, 9, 6 w/auto fallback

802.11n

- 2.4–2.5 GHz and 5.150–5.850 GHz Operating Frequency
- 802.11n Modulation
- HT20 High-Throughput (HT) Support (for both 2.4 GHz and 5 GHz)
- HT40 High-Throughput (HT) Support for 5 GHz
- A-MPDU and A-MSDU Frame Aggregation
- Rates (Mbps): MCS0 – MCS15 (6.5Mbps - 300Mbps)

802.11ac

- 5.150–5.850 GHz Operating Frequency
- 802.11ac Modulation (256-QAM)
- 5G: 2x2 Multiple-In, Multiple-Out (MIMO) Radio
- 2.4G: 2x2 Multiple-In, Multiple-Out (MIMO) Radio
- Rates (Mbps): MCS0-MCS9 (6.5Mbps), 1733.4Mbps, NSS = 1-2.
- 2x2:2 Stream Multiple-In, Multiple-Out (MIMO) Radio
- VHT20/VHT40/VHT80/VHT160
- TxBF (Transmit Beamforming)

802.11ax

- 2.4-2.5GHz, 5.50-5.850 and 5.925-7.125 GHz Operating Frequencies
- 802.11ax Modulation (1024-QAM)
- Dual-band OFDMA
- Rates (Mbps):
- 6G: HE0-HE11 (8 Mbps – 2400 Mbps)
- 5G: HE0-HE11 (8 Mbps – 2400 Mbps)
- 2.4G: HE0-HE11 (8Mbps – 573.3 Mbps)
- 2x2:2 Stream Multiple-In, Multiple-Out (MIMO) Radio@ 6 GHz
- 2x2:2 Stream Multiple-In, Multiple-Out (MIMO) Radio@ 5 GHz
- 2x2:2 Stream Multiple-In, Multiple-Out (MIMO) Radio@ 2.4 GHz
- HE20/HE40/HE80/HE160 support for 6 GHz
- HE20/HE40/HE80/HE160 support for 5 GHz
- HE20/HE40 support for 2.4 GHz
- DL SU-MIMO and MU-MIMO
- TxBF (Transmit Beamforming)

IoT Radio

- Thread, Zigbee®, Bluetooth® 5.2 Low Energy, IEEE 802.15.4

Interfaces

- Eth0 is 2.5/1GE with Power over Ethernet (PoE)
- Eth1 is 1GE/100

Power Options

- Typical Power Draw: 12.5W (w/o USB), 15.3W (w USB)
- Max Power Draw: 13.9W (w/o USB), 17W (w USB)

Power Specifications

- 802.3af Power over Ethernet (PoE) capable w/o USB
- 802.3at Power over Ethernet (PoE) capable w/USB

Physical Specifications

- Kensington lock slot
- Trusted Platform Module (TPM)

AP3000

- Dimensions: 6.4" x 6.4" x 1.4" (16.2 cm x 16.2 cm x 3.6 cm)
- Weight: 1.15 lbs (0.52 kg)

AP3000X

- Dimensions: 6.8" x 6.8" x 1.4" (17.3 cm x 17.3 cm x 3.6 cm) (does not measure attached external antennas)
- Weight: 1.24 lbs (9.56 kg)

Mounting

- Wall/Solid Ceiling/15/16" Tbar: AH-ACC-BKT-AX-TB (included in box)
- Beam: ACC-BKT-AX-BEAM
- Junction Box: ACC-BKT-AX-JB
- 1.5" Tbar: ACC-BKT-AX-TBW
- WiNG: ACC-BKT-AX-WNGADAPT.
- 9&15/16" Tbar (flat): AH-ACC-BKT-AX-TB
- 9/16 Tbar (w/rail): AH-ACC-BKT-AX-IL
- Silhouette: AH-ACC-BKT-AX-SL
- Standoff (1.25") Wall: AH-ACC-BKT-AX-WL
- 9/16" Protruding Tiles Adapter: AH-ACC-BKT-916-KIT
- 15/16" Protruding Tiles Adapter: ACC-BKT-TB-NF

Environmental Specifications

- Operating: AP3000 0° to 50°C, AP3000X -20°C to 55°C
- Storage: -40°C to 70°C (-40°F to 158°F)
- Humidity: 0% to 95% (non-condensing)

Environmental Compliance

- EU RoHS – 2011/65/EU & Amendments(EU) 2015/863
- EU WEEE – 2012/19/EU
- EU REACH - Regulation (EC) No 1907/2006 – Reporting
- EU SCIP – EU Waste Framework Directive
- China RoHS – 2 SJ/T 11364-2014
- Taiwan RoHS CNS 15663(2013.7)

Regulatory Compliance

Radio Standards

USA

- Part 15C - 15.247
- Part 15E - 15.407
- RF exposure - FCC Part 1.1307
- IEC 60601-1-2 EMC for medical devices

Canada

- RSS 247 for 2.4G & 5GHz
- RSS 248 6GHz RLAN
- RF exposure - RSS-102: Issue 5, 2015

CE

- 2014/53/EU Radio Equipment Directive
- EN 300 328, EN 301 893, EN 302 502, EN 300 440
- EN301 489 1, EN 301 489 17, EN 62311, EN 62479

Regulatory and Safety

North American ITE

- UL 60950-1 2nd edition Listed device (U.S.)
- CSA 22.2 No. 60950-1 2nd edition 2014(Canada)
- UL/CuL 62368-1 Listed
- UL 2043 Plenum rated

European ITE

- EN 62368-1
- 2014/35/EU Low Voltage Directive

International ITE

- CB Report and Certificate per IEC 60950-1 + National Differences
- CB Report and IEC 62368-1
- AS/NZS 60950-1 (Australia /New Zealand)

EMI/EMC Standards

North American EMC Standards

- FCC CFR 47 part 15 Class B (USA)
- ICES-003 Class B (Canada)

European EMC Standards

- EN 55032 Class B
- EN 55024
- EN 55035
- EN 55011, EN 60601-1-2
- EN 61000-3-2: (Harmonics)
- EN 61000-3-3 (Flicker)

- 2014/30/EU EMC Directive

International EMC Certifications

- CISPR 32 Class B (International Emissions)
- AS/NZS CISPR32
- CISPR 24/CISPR 35 (International Immunity)

Warranty

The AP3000/X is covered under Extreme's LLW Warranty policy. For warranty details, please visit:

www.extremenetworks.com/support/policies.

Ordering Information

Product SKU	Description
AP3000-WW	Indoor Dual Radio Wi-Fi 6E AP, 2.4 GHz and 5 GHz or 5GHz and 6GHz, Multirate Port, Internal antennas. BLE/Zigbee. Includes AH-ACC-BKT-AX-TB mounting bracket. Domain: World SKU
AP3000X-WW	Indoor Dual Radio Wi-Fi 6E AP, 2.4 GHz and 5 GHz or 5GHz and 6GHz, Multirate Port, External antennas. BLE/Zigbee. Includes AH-ACC-BKT-AX-TB mounting bracket, 2 integral 6 GHz and 2 AI-DSO305360-RPSMA antennas. Domain: World SKU
AP3000-IL	Indoor Dual Radio Wi-Fi 6E AP, 2.4 GHz and 6 GHz or 5 GHz and 6 GHz or 2.4 GHz and 5 GHz, Multirate Port, Internal antennas. Inc Mt (AH-ACC-BKT-AX-TB). Domain: Israel
AP3000-TN	Indoor Dual Radio Wi-Fi 6E AP, 2.4 GHz and 6 GHz or 5 GHz and 6 GHz or 2.4 GHz and 5 GHz, Multirate Port, Internal antennas. Inc Mt (AH-ACC-BKT-AX-TB). Domain: Tunisia

Mounting Accessories

Product SKU	Description	
AH-ACC-BKT-AX-TB	Mounting bracket for prelude 15/16" and suprafine 9/16" ceilings and walls	Ships with AP3000/X Can be used for wall - .25"
AH-ACC-BKT-AX-WL	Mounting bracket for direct-to-wall installations	Can be used for wall - 1.25"
AH-ACC-BKT-AX-IL	Mounting bracket for interlude ceilings	
AH-ACC-BKT-AX-SL	Mounting bracket for Armstrong 1/8" and 1/4" main beam silhouette reveal ceiling grids	Up to .33" ceiling tile protrusion
ACC-BKT-AX-JB	Junction box or wall mounting for indoor access points	Gang/Junction Box
ACC-BKT-AX-BEAM	Beam mounting for indoor access points Up to 0.78" thick beam.	
ACC-BKT-AX-TBW	Cloud AP Bracket for 1.5 inch wide T-bars varying in thickness from 3.175mm to 6.35mm	
AH-ACC-BKT-916-KIT	9/16" ceiling mount brackets for Non-Flat/Protruded ceiling tiles - Use with AH-ACC-BKT-AX-TB	9/16" Non-Flat/Protruded ceiling tiles
ACC-BKT-TB-NF	Adaptor bracket AH-ACC-BKT-TB for 15/16" Wide T-Bars Non-Flat/Protruded ceiling tiles Non-Flat/Protruded ceiling tiles	5/16" Wide T-Bars Non-Flat/Protruded ceiling tiles
ACC-BKT-AX-WNGADAPT	Adaptor bracket for Cloud AP to WiNG Mounting Plate (#37201). 10 pack	Allow twist mount to mount to legacy mounts

See [Product Accessories guide](#) for more details

Antenna Gain Matrix

AP3000-WW Internal Antenna Gains			
Software Mode	Radio 1	Radio 2	IoT Radio
Mode 1	5GHz - 5.07 dBi	2.4GHz - 4.2 dBi	3.65 dBi
Mode 2	5GHz - 5.07 dBi	6GHz - 5.14 dBi	3.65 dBi

AP3000X-WW External Antenna Gains (antennas ship with AP)			
Software Mode	Radio 1	Radio 2	IoT Radio
Mode 1	5GHz - 5.22 dBi	2.4GHz - 3.23 dBi	3.65 dBi
Mode 2	5GHz - 5.22 dBi	6GHz - 5.49 dBi	3.65 dBi

Antennas - AP3000/X

Marketing Part #	Description	Notes
AI-DS0305360-RPSMA	Dipole, 3.2 dBi (2.4 GHz) and 5.2 dBi (5 GHz) dual band with RP-SMA connector (2 pack)	2 Pack ships in box for AP3000X - listed for spares
ML-2452-APA2-01	Dipole, 3.2dBi (2.4 GHz) and 4.9dBi (5 GHz) dual band with RP-SMA connector, color: black	Up to 2 antennas for dual band ports for 2.4 and 5 GHz ports
ML-2452-APA2-02	Dipole, 3.2dBi (2.4 GHz) and 4.9dBi (5 GHz) dual band with RP-SMA connector, color: white	Up to 2 antennas for dual band 2.4 and 5 GHz ports
ML-2452-HPAG5A8-01	Dipole, 4.7dBi (2.4 GHz) and 8dBi (5 GHz) dual band with N-type connector	Need adapter 25-85392-01R per port
ML-2452-HPA5-036	Dipole, 3.9dBi (2.4 GHz) and 5.7dBi (5 GHz) dual band with RP-SMA connector, outdoor rated, color: white	Up to 2 antennas for dual band 2.4 and 5 GHz ports
ML-2452-PTA2M2-036	Patch, 4dBi (2.4 GHz) and 5dBi (5 GHz) dual band with 2 RP-SMA connectors	2 36" antenna leads for dual band 2.4 and 5 GHz ports
ML-2452-HPAG4A6-01	Dipole, 4dBi (2.4 GHz) and 7.3dBi (5 GHz) dual band with standard N-type connector, outdoor rated, color: white	Needs adapter 25-85392-01R for each port
AIO-DD75060-RPSMA	Panel, 60 deg sector, 7.5dBi (2.4 GHz) and 7.5dBi (2.4GHz), dual band 36" lead with 2 RP-SMA connectors, outdoor rated	2 36" antenna leads for dual band 2.4 and 5 GHz ports
AIO-DD05120-RPSMA	Panel, 120 deg sector, 5dBi/5dBi, dual band, outdoor, 36" lead with 2 RP-SMA connectors	2 36" antenna leads for dual band 2.4 and 5 GHz ports
ML-2452-SEC6M4-036	Polarized Panel, Azimuth 100° Elevation Beamwidth 80 deg, 6.92dBi/7.3dBi, dual band, indoor with quad feed 32" leads and standard RP-SMA plug connectors	Use 2 of the 4 antenna leads for dual band 2.4 and 5 GHz ports
ML-2452-PNA5-01R	Panel, 120 deg sector, 4.5dBi/5dBi, dual band, outdoor, 4" lead with standard N-type connector	Need adapter 25-85392-01R per port

* See Antenna Guide - Wi-Fi 6 (802.11ax) Antenna Specifications Guide

Power and Receiver Sensitivity - AP3000/X

2.4 GHz Radio

Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11b	1 - 11 Mbps	18	-94, -87
11g	6 Mbps	18	-91
	54 Mbps	16	-73
11n HT20	MCS0, 7	18, 16	-91, -72
11n HT40	MCS0, 7	18, 16	-88, -69
11ax HE20	HE0, 11	18, 14	-90, -60
11ax HE40	HE0, 11	18, 14	-87, -57

5 GHz Radio

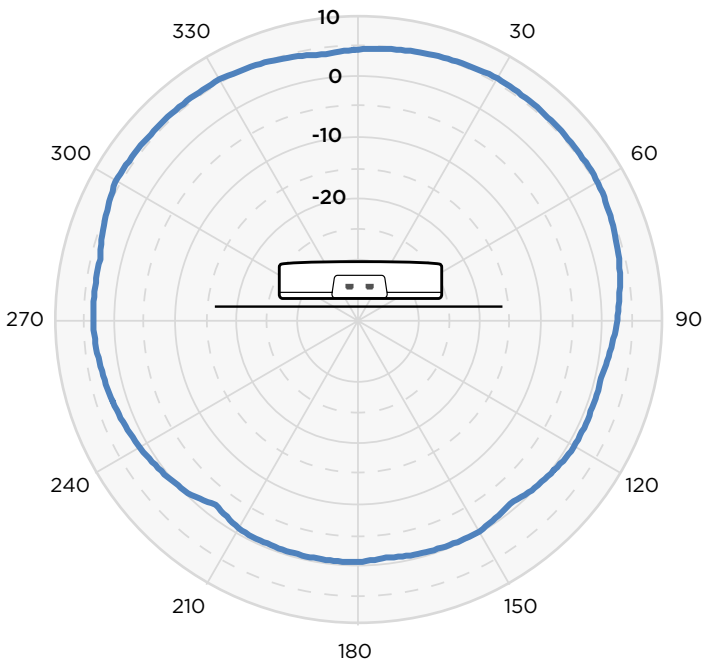
Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11a	6 Mbps	18	-94
	54 Mbps	16	-75
11n HT20	MCS0, 7	18, 16	-94, -75
11n HT40	MCS0, 7	18, 16	-91, -72
11ac VHT20	MCS0, 8	18, 16	-94, -71
11ac VHT40	MCS0, 9	18, 16	-91, -67
11ac VHT80	MCS0, 9	18, 16	-88, -64
11ac VHT160	MCS0, 9	17, 15	-85, -61
11ax HE20	HE0, 11	18, 14	-93, -64
11ax HE40	HE0, 11	18, 14	-90, -60
11ax HE80	HE0, 11	18, 14	-87, -57
11ax HE160	HE0, 11	17, 14	-84, -54

6 GHz Radio

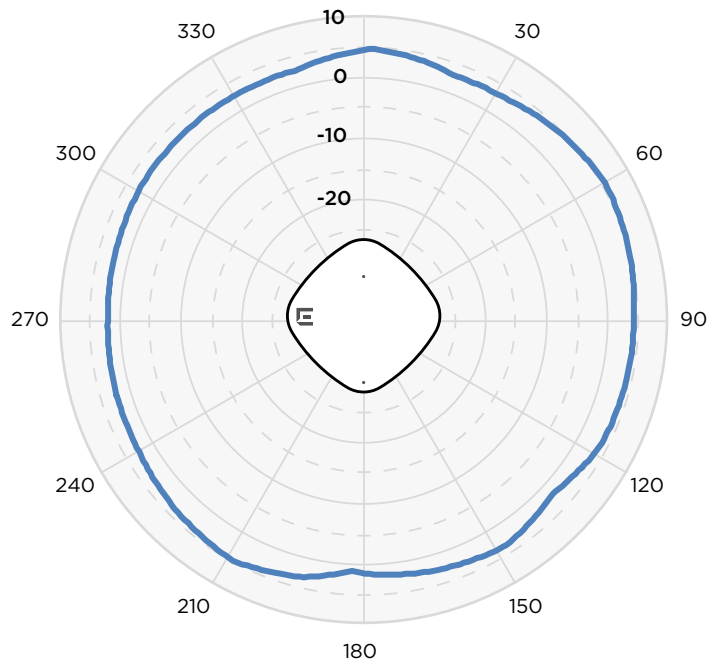
Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11a	6 Mbps	18	-93
	54 Mbps	15	-75
11n HT20	MCS0, 7	18, 15	-93, -75
11n HT40	MCS0, 7	17, 15	-91, -72
11ac VHT20	MCS0, 8	18, 14	-93, -71
11ac VHT40	MCS0, 9	17, 13	-91, -67
11ac VHT80	MCS0, 9	17, 13	-88, -64
11ac VHT160	MCS0, 9	17, 13	-85, -61
11ax HE20	HE0, 11	18, 12	-92, -63
11ax HE40	HE0, 11	17, 12	-90, -60
11ax HE80	HE0, 11	17, 12	-87, -57
11ax HE160	HE0, 11	17, 12	-84, -54

Radiation Patterns - AP3000

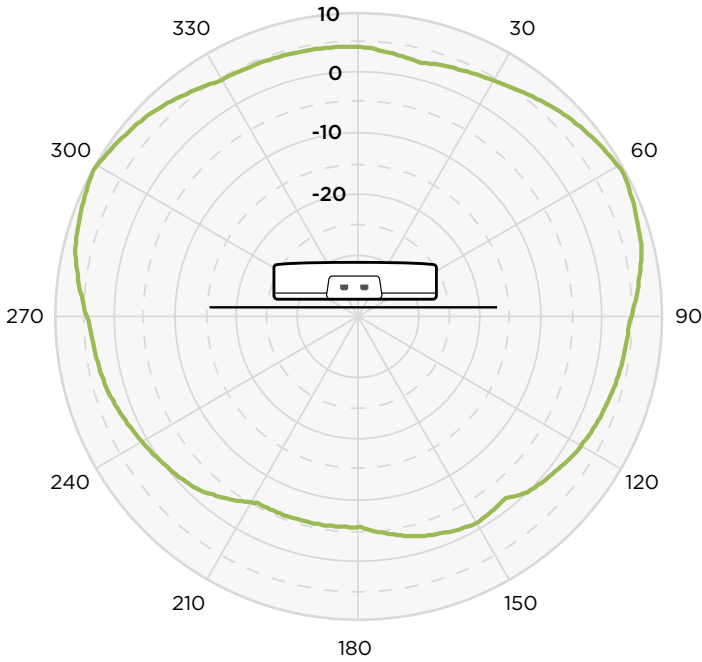
2G Elevation



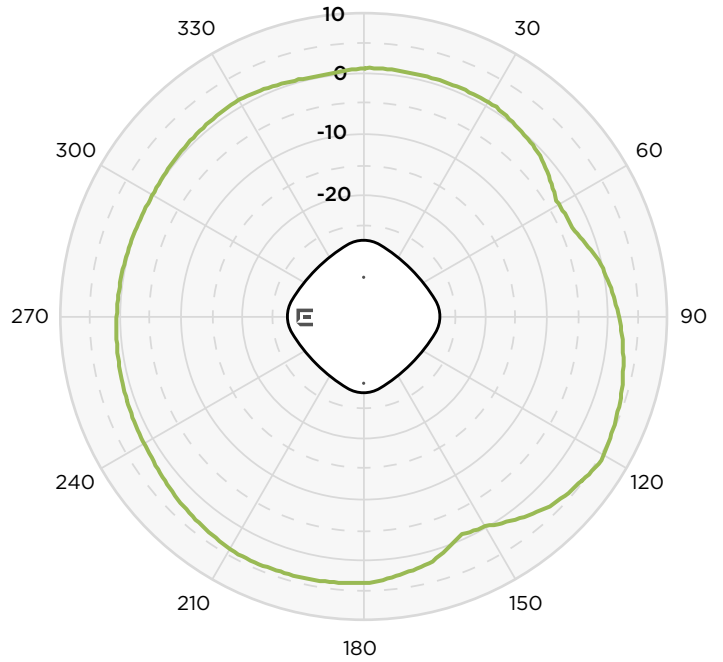
2G Azimuth



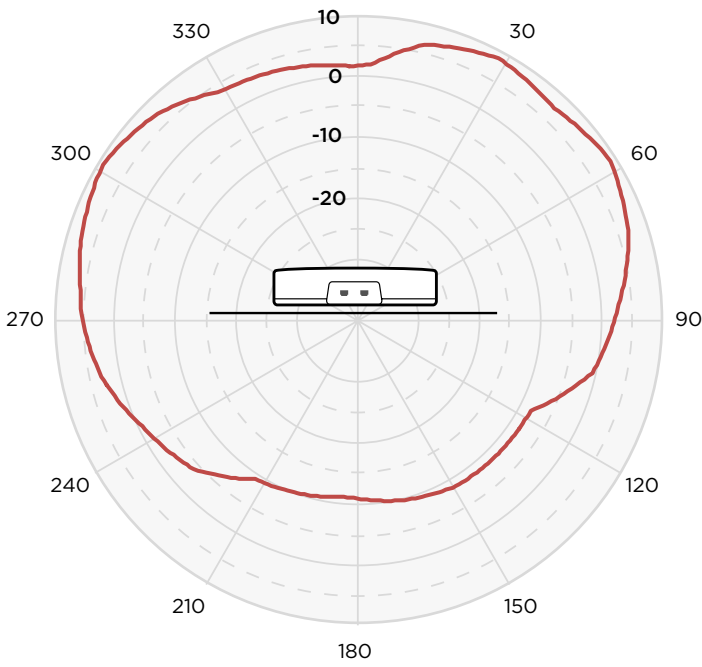
5G Elevation



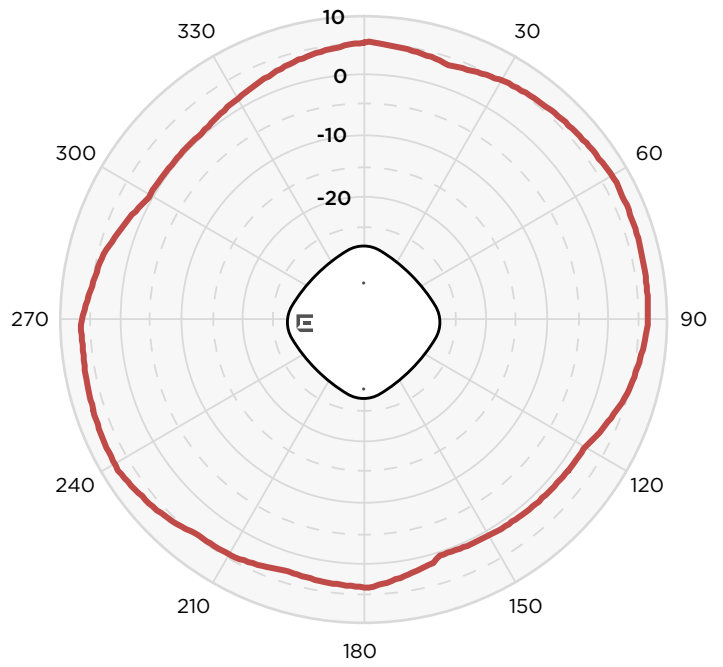
5G Azimuth



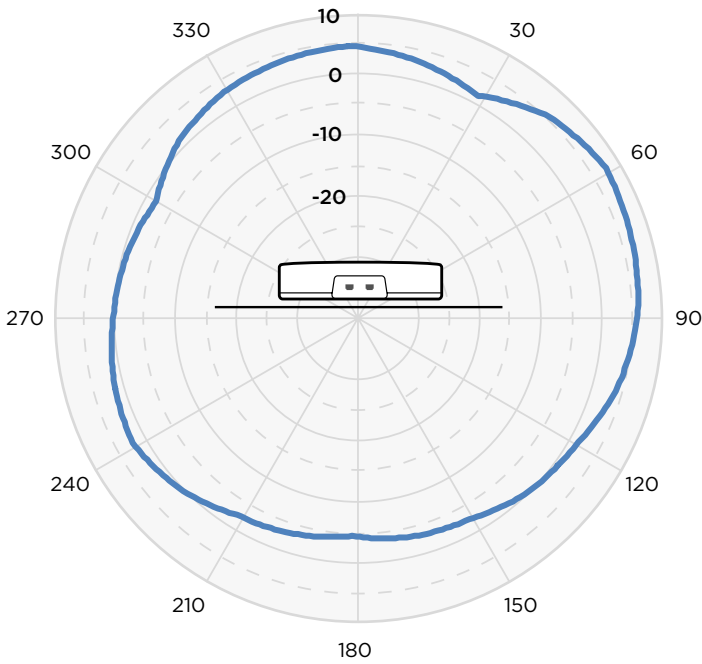
6G Elevation



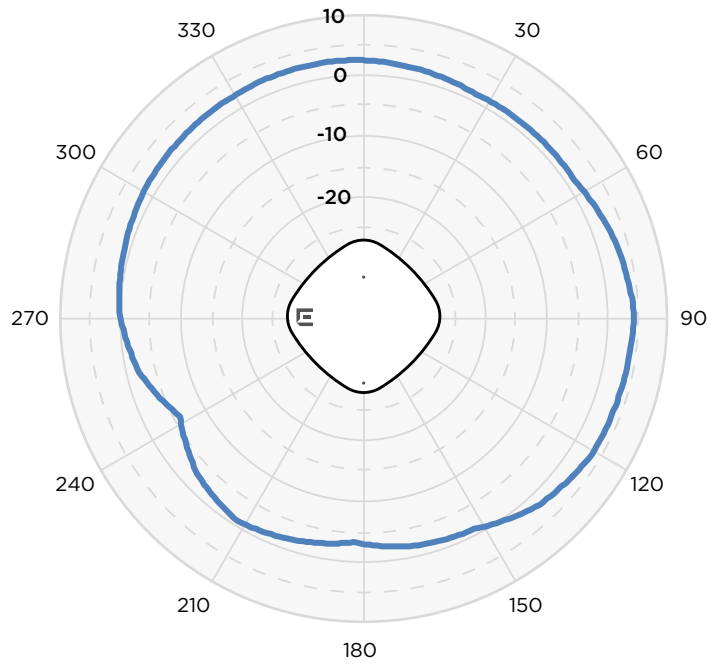
6G Azimuth



BLE Elevation



BLE Azimuth



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