Highlights

Advanced Radio Technology

Tri-Radio Design

- 2.4 GHz (4x4:4)
- 5 GHz (4x4:4)
- 6 GHz (4x4:4)

Operational modes

- Mode 1: 2.4 GHz/5 GHz/6 GHz Data Radios
- Mode 2: 5 GHz/6 GHz Data radios + Tri-frequency sensor (2.4 GHz/5 GHz/6 GHz)

Universal Hardware Platform

- On-Premise: WiNG OS (Centralized and Distributed*)
- Cloud: IQ Engine

Superior Tri-Frequency Radio Performance

- Multi-band filter reduces interference and enables 5 GHz and 6 GHz operation across all available channels without restrictions
- Multi-band functionality out-of-the-box without the need for a software or hardware upgrade

WPA3 Support

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

Cellular Coexistence Filter (CCF)

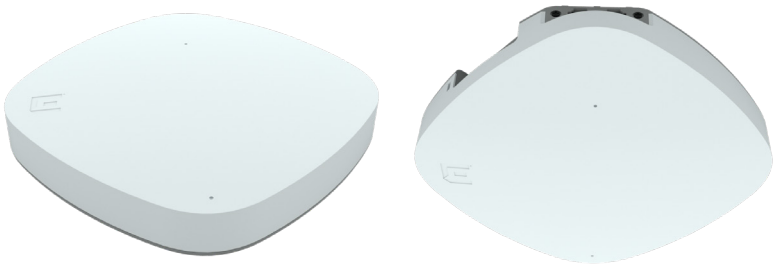
- Minimizes the impact of interference from cellular networks

Fully Functional Wi-Fi with 802.3at

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

* WiNG Distributed available in future release.



Universal Wireless AP5010

Wi-Fi 6E Tri-Radio Indoor Access Point with Support for Multiple Extreme Operating Systems

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 and reduce cost. 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 AP5010 is an Enterprise Universal and World SKU Wi-Fi 6E Wireless access point. This innovation simplifies the sales ordering process and reinforces Extreme's commitment to the journey to the "Infinite Enterprise". The World SKU allows customers, partners, and distributors to order one model for any region, replacing the age-old problem of country specific models. 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 AP5010 Wi-Fi 6E access point, with three 4x4:4 radios, provides high-efficiency, high-performance 802.11ax aggregate data rates up to 10 Gbps in the 6 GHz, 5 GHz, and 2.4 GHz band. Designed for high density environments, such as schools, warehouses, healthcare facilities, and stadiums, the AP5010 is powerful and intelligent enough to provide the highest level of client services without compromising security. Despite powerful capabilities, the AP5010 can operate with fully-functional Wi-Fi capabilities using 802.3at PoE, simplifying power capacity planning.

With more users, more devices, more applications, and more threats straining the infrastructure, the AP5010 was engineered to meet those challenges. The AP5010 combines powerful 802.11ax Wi-Fi 6E technology, advanced security, and ML/AI management capabilities together as an enterprise-class solution that allows you to deploy high speed, highly secure Wi-Fi into high-density environments.

Unlike other access points that scan only part-time, the AP5010 features a dedicated tri-frequency sensor that monitors for rogue devices full time, eliminating the risk of vulnerability and attacks. This tri-radio AP is capable of multiple operating modes, optimizing for maximum performance without trading off security. The AP5010 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 AP5010 operates across 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	4.8 Gbps
5 GHz	25	160MHz	4.8 Gbps
2.4 GHz	3	20 MHz	572 Mbps
Total	87		10 Gbps

*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 to learn more.

Management Analytics

In conjunction with Extreme centralized management software, cloud or on-premises, the AP5010 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.

Tri-Radio Programmable AP

Extreme launched the industry's first software defined Wi-Fi 6E access point supporting two software programmable modes to optimally manage radios to provide the highest level of client performance. The AP5010 is a tri-radio access point can transmit with three data radios or with two data radios and a dedicated tri-frequency sensor. The AP5010 intelligently monitors the software-configurable radios, enabling network managers to configure network RF technology based on the user environment and configure the access points in different modes as required.

*Country Dependent

Security

The AP5010 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. Additionally, the access point 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 AP5010 as a universal hardware platform 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 AP5010 assumes the features or capabilities of the selected OS. When first booted, the AP5010 automatically connects to ExtremeCloud™ IQ to find its persona. The pre-provisioned OS persona is then remotely enabled on the AP5010 system, eliminating the need for manual selection.

Integrated Bluetooth Low Energy and USB Port

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: 8/24
- Users per Radio/total: 512/1536

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 – MCS31 (6.5MBps - 600Mbps)

802.11ac

- 5.150–5.850 GHz Operating Frequency
- 802.11ac Modulation (256-QAM)
- 5G: 4x4 Multiple-In, Multiple-Out (MIMO) Radio
- 2.4G: 4x4 Multiple-In, Multiple-Out (MIMO) Radio
- Rates (Mbps): MCS0–MCS9 (6.5Mbps), 3466Mbps, NSS = 1-4.
- 4x4:4 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 – 4800 Mbps)
  - 5G: HE0-HE11 (8 Mbps – 4800 Mbps)
  - 2.4G: HE0-HE11 (8Mbps – 1148 Mbps)
- 4x4:4 Stream Multiple-In, Multiple-Out (MIMO) Radio@ 6 GHz
- 4x4:4 Stream Multiple-In, Multiple-Out (MIMO) Radio@ 5 GHz
- 4x4:4 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, Eth1: (2) Wired Ethernet ports (RJ-45)
  - 100/1000/2500/5000Mbps auto-sensing link speed Ethernet port, PoE PD
  - 100/1000/2500Mbps auto-sensing link speed Ethernet port, optional PoE 15.4W PSE mode requires 802.3bt on Eth0)
  - 802.3az Energy Efficient Ethernet(EEE)
- USB 2.0, Type A, 5V/500mA

Power Options

- Power Draw: 802.3at PoE: Typical 21W; Max: 25.5W (802.3at profile) w/o PoE out and USB
- Power Draw: 802.3bt: PoE out enable with USB
- Gigabit Ethernet port RJ45

Physical Specifications

- Dimensions: 9.5″ x 9.5″ x 1.5″ (243mm x 243mm x 38mm)
- Weight: 2.9 lbs

Security

- Kensington lock slot
- Trusted Platform Module(TPM)

Internal Antennas

- (4) Dual Banded 2.4 GHz and 5 GHz
- (4) Single band 6 GHz
- (2) 5 GHz Sensor
- (2) 6 GHz Sensor

Mounting

- AP support 15/16 flush ceiling tile include in box
- Wall mount included in box or sold as an accessory
- Ceiling Tile Recessed 15/16 sold as accessory
- Beam sold as an accessory
- Junction Box sold as an accessory
- IL or 9/16 t-bar sold as an accessory
- SL (Silhouette) sold as an accessory
- Wing Main Plate adaptor sold as an accessory
- Built in slot for Kensington

Environmental Specifications

- Operating: AP5010: 0 to 50°C (0 to 122 °F)
- Storage: 40 to 70°C (32 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 based on country availability

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 certificate 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 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 AP5010 is covered under Extreme's Universal LLW policy. For warranty details, please.visit: www.extremenetworks.com/support/policies.

Regulatory based on country availability

Power and Sensitivity Tables

Power and Sensitivity - 2.4 GHz Radio

Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11b	1 - 11 Mbps	18	-96, -89
11g	6 Mbps	18	-94
	54 Mbps	16	-76
11n HT20	MCS0, 7	18, 16	-94, -75
11n HT40	MCS0, 7	18, 16	-92, -74
11ax HE20	HE0, 11	18, 14	-93, -65
11ax HE40	HE0, 11	18, 14	-90, -60

Power and Sensitivity - 2.4 GHz Sensor

Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11b	1 - 11 Mbps	18	-96, -89
11g	6 Mbps	18	-94
	54 Mbps	16	-76
11n HT20	MCS0, 7	18, 16	-94, -75
11n HT40	MCS0, 7	18, 16	-92, -74
11ax HE20	HE0, 11	18, 14	-93, -65
11ax HE40	HE0, 11	18, 14	-90, -60

Power and Sensitivity - 5 GHz Radio

Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11a	6 Mbps	18	-94
	54 Mbps	16	-76
11n HT20	MCS0, 7	18, 16	-94, -75
11n HT40	MCS0, 7	18, 16	-91, -72
11ac VHT20	MCS0, 8	18, 15	-94, -71
11ac VHT40	MCS0, 9	18, 15	-92, -68
11ac VHT80	MCS0, 9	18, 15	-89, -64
11ac VHT160	MCS0, 9	18, 15	-85, -61
11ax HE20	HE0, 11	18, 14	-93, -64
11ax HE40	HE0, 11	18, 14	-91, -61
11ax HE80	HE0, 11	18, 14	-88, -58
11ax HE160	HE0, 11	16, 14	-84, -54

Power and Sensitivity - 5 GHz Sensor

Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11a	6 Mbps	18	-94
	54 Mbps	16	-76
11n HT20	MCS0, 7	18, 16	-94, -75
11n HT40	MCS0, 7	18, 16	-91, -72
11ac VHT20	MCS0, 8	18, 15	-94, -71
11ac VHT40	MCS0, 9	18, 15	-92, -68
11ac VHT80	MCS0, 9	18, 15	-89, -64
11ac VHT160	MCS0, 9	17, 15	-85, -61
11ax HE20	HE0, 11	18, 14	-93, -64
11ax HE40	HE0, 11	18, 14	-91, -61
11ax HE80	HE0, 11	18, 14	-88, -58
11ax HE160	HE0, 11	17, 14	-84, -54

Power and Sensitivity - 6 G Radio

Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11a	6 Mbps	18	-93
	54 Mbps	16	-75
11n HT20	MCS0, 7	18, 15	-93, -75
11n HT40	MCS0, 7	17, 15	-92, -72
11ac VHT20	MCS0, 8	18, 14	-93, -71
11ac VHT40	MCS0, 9	17, 13	-92, -67
11ac VHT80	MCS0, 9	17, 13	-89, -64
11ac VHT160	MCS0, 9	16, 13	-85, -61
11ax HE20	HE0, 11	18, 12	-92, -63
11ax HE40	HE0, 11	17, 12	-92, -60
11ax HE80	HE0, 11	17, 12	-88, -58
11ax HE160	HE0, 11	16, 12	-84, -54

Power and Sensitivity - 6 G Sensor

Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11a	6 Mbps	18	-94
	54 Mbps	16	-76
11n HT20	MCS0, 7	18, 16	-94, -75
11n HT40	MCS0, 7	18, 16	-92, -72
11ac VHT20	MCS0, 8	18, 15	-94, -72
11ac VHT40	MCS0, 9	18, 15	-92, -68
11ac VHT80	MCS0, 9	18, 15	-89, -65
11ac VHT160	MCS0, 9	17, 15	-85, -61
11ax HE20	HE0, 11	18, 14	-93, -64
11ax HE40	HE0, 11	18, 14	-92, -61
11ax HE80	HE0, 11	18, 14	-89, -59
11ax HE160	HE0, 11	17, 14	-84, -54

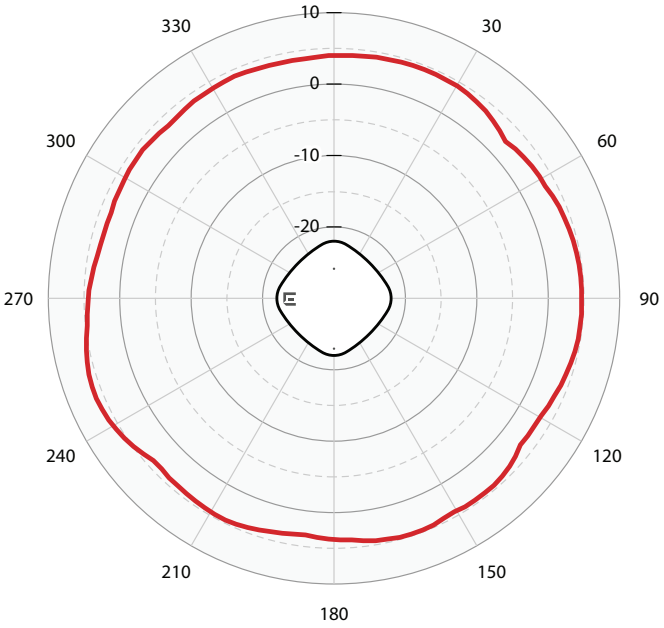
Antenna Gain Matrix

Max Antenna Gain (AP5010)				
Software Mode	Radio 1	Radio 2	Radio 3	IoT Radio
Mode 1	2G 4.2 dBi	5G 6 dBi	6G 5.2 dBi	4.2 dBi
Mode 2	2G 4.2 dBi 5G 6 dBi 6G 6 dBi	5G 6 dBi	6G 5.2 dBi	4.2 dBi

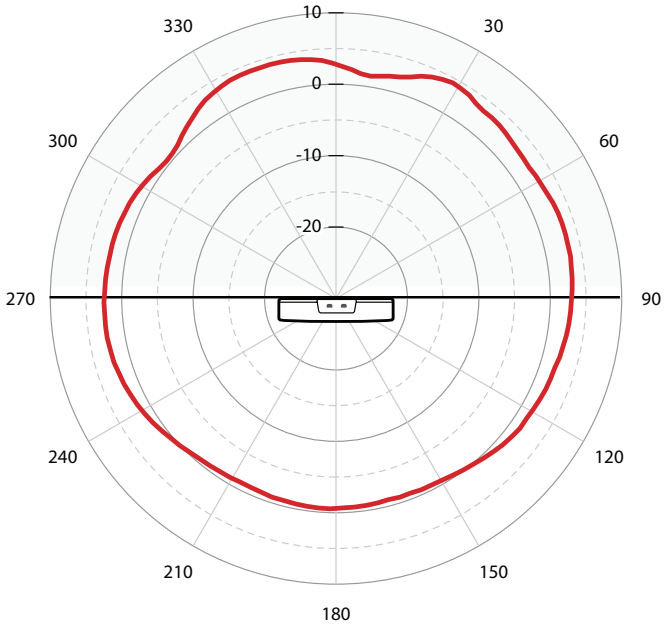
Radiation Patterns – Azimuth and Elevation

AP5010 Antenna Radiation Patterns - 2.4 GHz

AZIMUTH 2.4 GHz

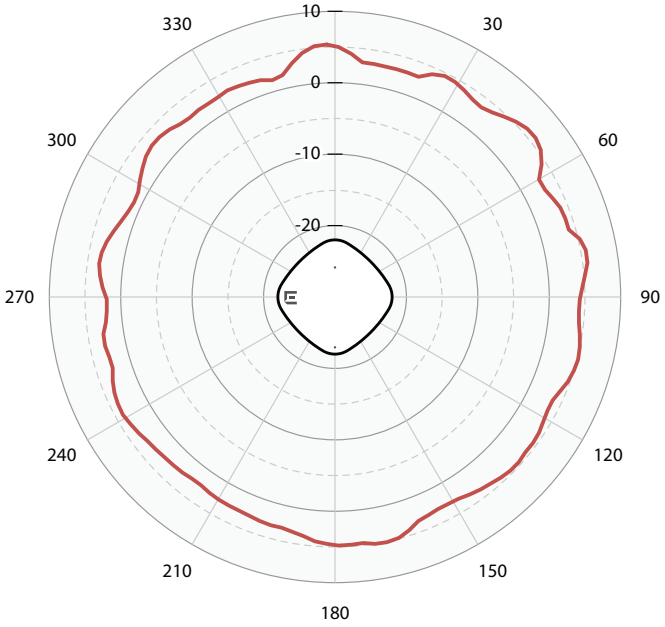


ELEVATION 2.4 GHz

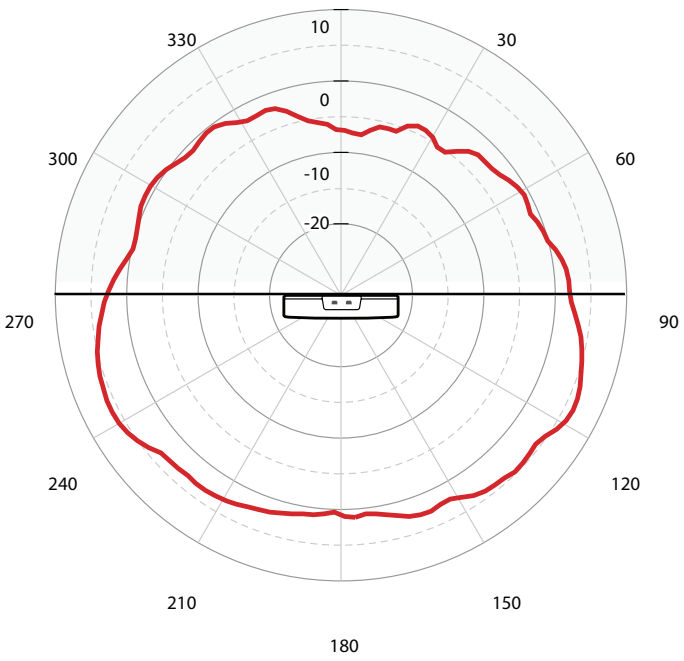


AP5010 Antenna Radiation Patterns - 5 GHz

AZIMUTH 5 GHz

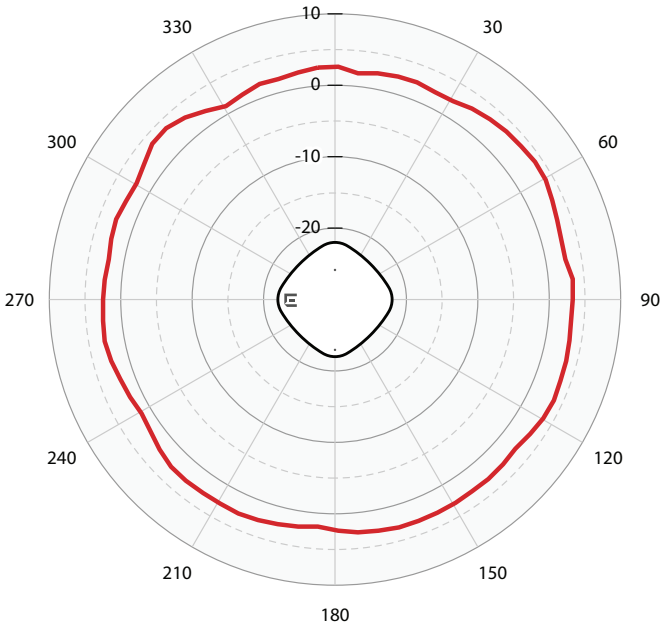


ELEVATION 5 GHz

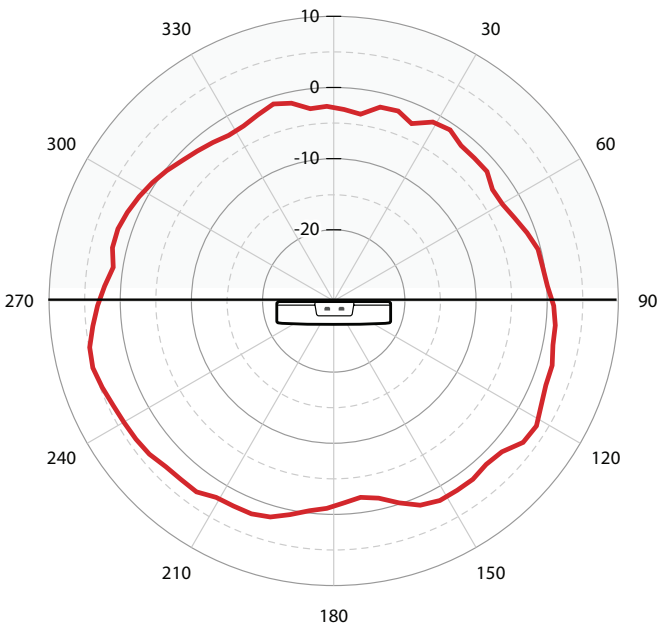


AP5010 Antenna Radiation Patterns - 6 GHz

AZIMUTH 6 GHz

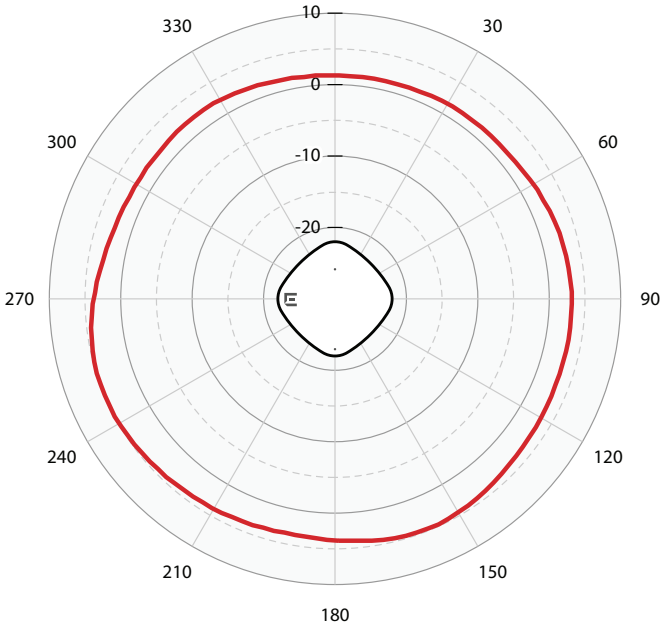


ELEVATION 6 GHz

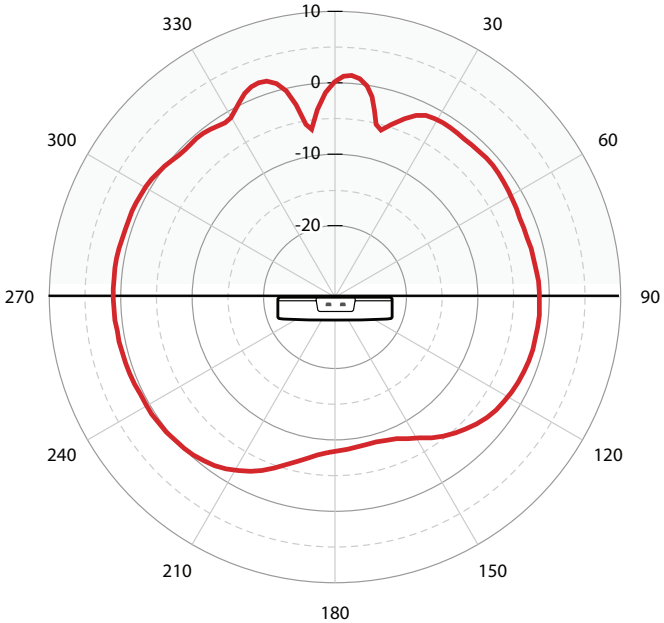


AP5010 Antenna Radiation Patterns - 2.4 GHz BLE

AZIMUTH BLE 2 GHz

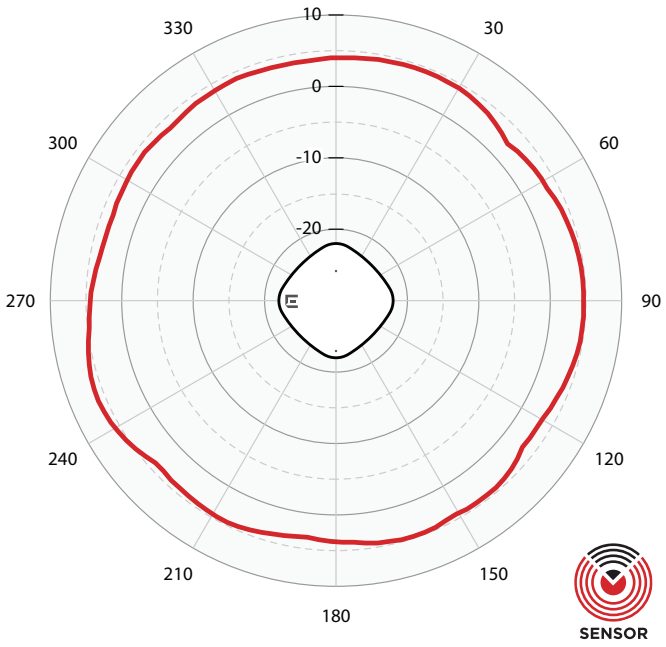


ELEVATION - BLE 2 GHz

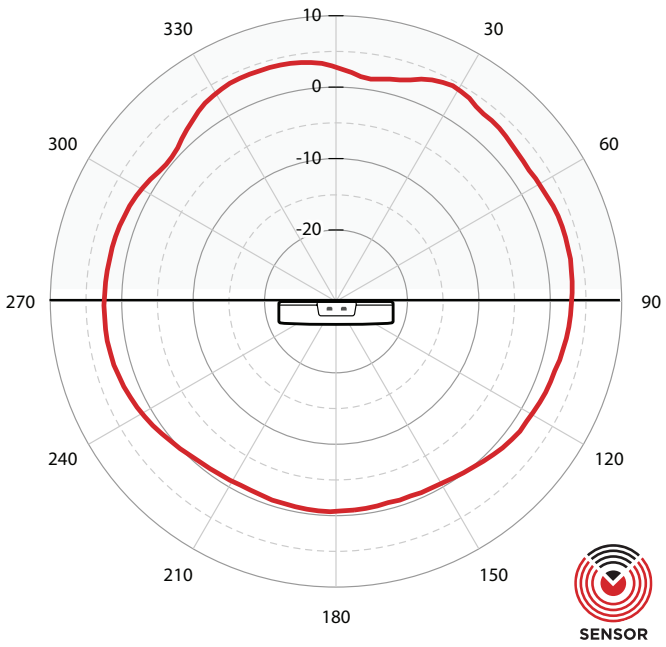


AP5010 Antenna Radiation Patterns - 2.4 GHz Sensor

AZIMUTH 2 GHz SENSOR

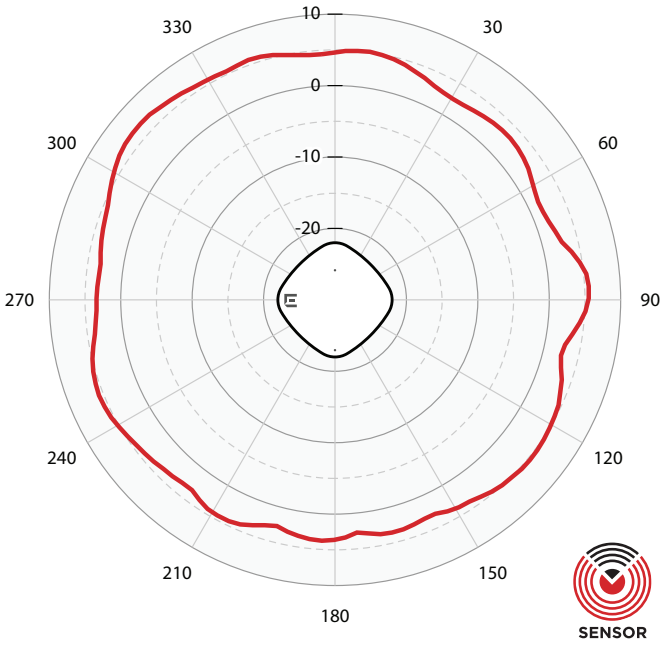


ELEVATION 2 GHz SENSOR

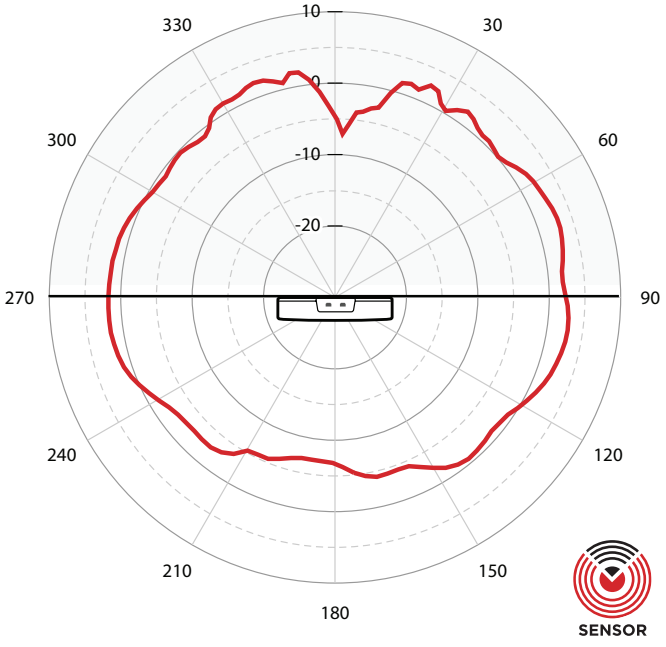


AP5010 Antenna Radiation Patterns - 5 GHz Sensor

AZIMUTH 5 GHz SENSOR

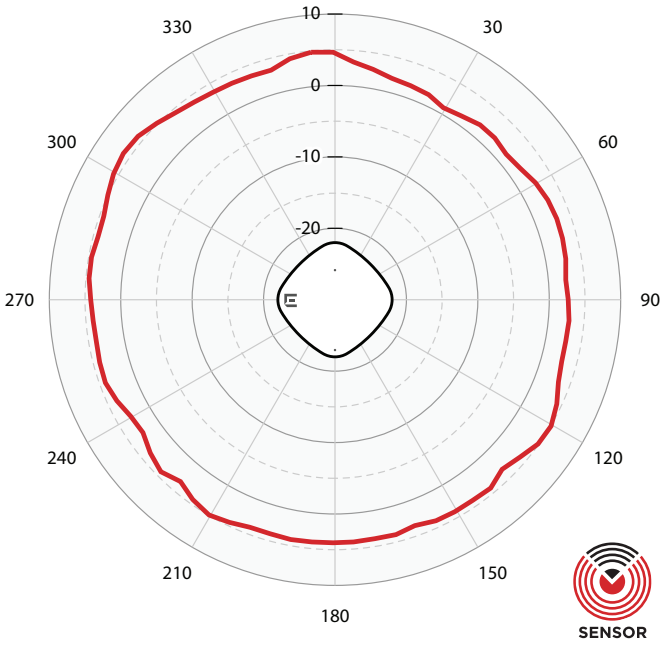


ELEVATION 5 GHz SENSOR

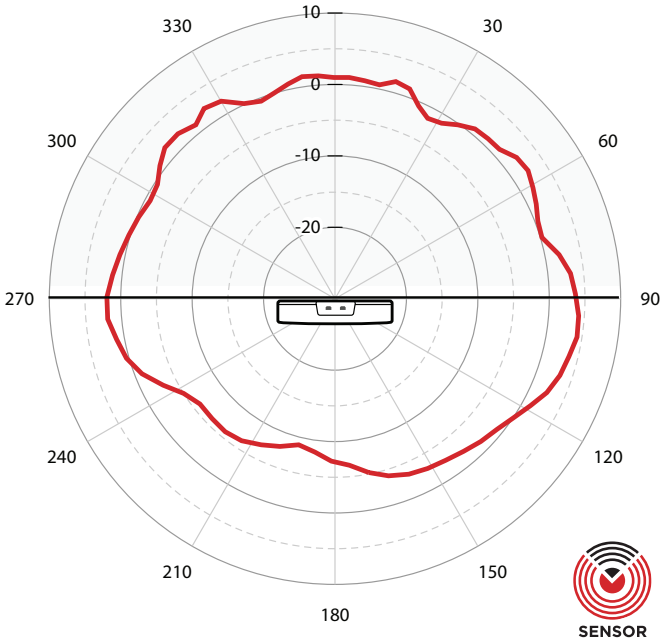


AP5010 Antenna Radiation Patterns - 6 GHz Sensor

AZIMUTH 6 GHz SENSOR



ELEVATION 6 GHz SENSOR



Ordering Information

AP5010 - SKUs

Part Number	Description
AP5010-WW	Indoor Tri Radio Wi-Fi 6E AP (4x4:4): 2.4 GHz, 5 GHz, 6 GHz and Multirate Port, Internal antennas. T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Domain: World SKU

Accessories

Mounting Accessories

Marketing Part #	Indoor AP Mounting	Notes
AH-ACC-BKT-AX-TB	Mounting bracket for prelude 15/16″ and suprafine 9/16″ ceilings and walls	Ships with AP5010 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.
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	5/16″ Wide T-Bars Non-Flat/Protruded ceiling tiles
ACC-BKT-AX-WNGADAPT	Adaptor backet for Cloud AP to WiNG Mounting Plate (#37201). 10 pack	Allow twist mount to mount to legacy mounts

Power Accessories

Part Number	Description
37219	PWR 12VDC, 3A, 2.5mm x 5.5mm connector
10061	Pwr Cord,10A,NEMA 5-15P,IEC320-C13,125V, 18AWG (for US)
10034	Pwr Cord,10A,BS1363,IEC320-C13,250V, 0.75MMSQ (for UK)
10033	Pwr Cord,10A,CEE 7/7,IEC320-C13,250V, 0.75MMSQ (for EU)
10036	Pwr Cord,10A,AS3112,IEC320-C13,250V, 0.75MMSQ (for AU)
10062	Pwr Cord,12A,JISC8303,IEC320-C13,125V, 1.25MMSQ (for Japan)
10033	Pwr Cord,10A,CEE 7/7,IEC320-C13,250V, 0.75MMSQ (for Korea)

Other Accessories

Part Number	Description
ACC-WIFI-MICRO-USB	Micro-USB to USB Console Adapter Cable for Extreme Wireless Access Points

See Product Installation guide for more details

Extreme networks

http://www.extremenetworks.com/contact