Data Sheet

AP4000 Access Point

Advanced Radio Technology

Tri-Radio Design

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

Operational Modes

- 2.4 GHz/5 GHz/6 GHz data radios
- 2.4 GHz/5 GHz data radios + tri-frequency sensor (2.4 GHz/5 GHz/6 GHz)

Universal Hardware Platform

- Cloud: ExtremeCloud™ IQ
- On-Premises: ExtremeCloud IQ Controller

Superior Tri-Frequency Radio Performance

- Multi-band filter reduces interference and enables 5 GHz and 6 GHz operation
- Multi-Band functionality out-of-the-box without a software or hardware upgrade

Cellular Coexistence Filter (CCF)

- Minimizes the impact of interference from cellular networks

Smart Management Choices

- ExtremeCloud IQ for public, private, and ExtremeCloud Edge cloud management capabilities
- ExtremeCloud IQ Controller is ideal for on-premises requirements

Fully Functional over 802.3at



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

The AP4000 is a Universal and World SKU Wi-Fi 6E wireless access point that can run multiple Extreme operating systems for on-premises or cloud deployments. 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 SKUs.

The AP4000, with three 2x2:2 radios, provides high-efficiency, high-performance 802.11ax aggregate data rates up to 3.9 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, it is powerful and intelligent enough to provide the highest level of client services without compromising security. Despite powerful capabilities, the AP4000 allows for flexible placement with a small form-factor, emphasizing aesthetics.

With more users, more devices, more things, more applications, and more threats straining the infrastructure, the AP4000 was engineered to meet those challenges. It 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 AP4000 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 AP4000 is the first enterprise Wi-Fi 6E access point that 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 through U-NII-8 bands).*

*Country dependent

Wi-Fi 6E Enhanced Capacity

By utilizing the additional 6 GHz spectrum offered by Wi-Fi 6E, the AP4000 operates across three times as much spectrum as previous generations of Wi-Fi to deliver enhanced wireless experiences, faster speeds, and less interference.

Band	No. of 20 MHz Channels	Maximum Channel Size	Maximum Throughput
6 GHz	59	160 MHz	2.4 Gbps
5 GHz	25	80 MHz	1.2 Gbps
2.4 GHz	3	20 MHz	287 Mbps
Total	87		3.9 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 6GHz band for unlicensed operation, Wi-Fi 6E has access to up to 1200 MHz of spectrum*, which is three times that of existing 'usable' spectrum which enables improved quality of service 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.

*Country dependent

Management Analytics

In conjunction with Extreme centralized management software, cloud or on-premises, the AP4000 provides a rich set of data displayed via context driven 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 adjust dashboards 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 AP4000 is a tri-radio AP can transmit with three data radios or with two data radios and a dedicated tri-frequency sensor. The AP4000 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.

Security

The AP4000 delivers the highest level of security services, beginning with support for the latest Wi-Fi Alliance WPA3 security certifications. Additionally, the access point supports a stateful L2-L7 DPI firewall for context-based access security, tri-frequency security and location analytics sensor, Private Pre-Shared Key (PPSK), and much more.

Universal Hardware

The AP4000 as a universal hardware platform comes with a multi-persona capability allowing user choice of the Wi-Fi operating system (OS). The ExtremeCloud IQ operating system or the ExtremeCloud IQ Controller Engine operating system can be enabled as required. The desired persona can be selected at start-up or changed at a later stage.

Once selected, the AP4000 assumes the features/capabilities of the selected OS. When first booted, the AP4000 automatically connects to ExtremeCloud IQ to find its persona. The pre-provisioned OS persona is then remotely enabled on the AP4000 system, eliminating the need for manual selection. ExtremeCloud IQ geo-locates the access point and accurately provides the channel and power specifications under which the product can operate in that country.

Integrated Bluetooth Low Energy and USB Port

To support both IoT and Guest Engagement services, the AP4000 integrates Bluetooth® to connect with IoT devices 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: 16/48
- 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
- HT 20 High-Throughput (HT) Support (for both 2.4 GHz and 5 GHz)
- HT 40 High-Throughput (HT) Support for 5 GHz
- A-MPDU and A-MSDU Frame Aggregation

802.11ac

- 5.150–5.850 GHz Operating Frequency
- 802.11ac Modulation (256-QAM)
- Rates: MCS0 – MCS31 (6.5 Mbps – 600 Mbps)
- 5G: 2x2 Multiple-In, Multiple-Out (MIMO) Radio
- 2.4G: 2x2 Multiple-In, Multiple-Out (MIMO) Radio
- Rates (Mbps): MCS0–MCS9 (6.5 Mbps), 1734 Mbps, NSS = 1-2.
- 2x2:2 Stream Multiple-In, Multiple-Out (MIMO) Radio
- VHT20/VHT40/VHT80 support
- TxBF (Transmit Beamforming)

802.11ax

- 2.4-2.5 GHz, 5.15-5.850 GHz and 5.925-7.125 GHz Operating Frequencies
- 802.11ax Modulation (1024-QAM)
- Dual-band OFDMA
- 6G Rate: HE0-HE11 (8 Mbps – 2400 Mbps)
- 5G Rate : HE0-HE11 (8 Mbps – 1200 Mbps)
- 2.4G Rate: HE0-HE11 (8 Mbps – 574 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 support for 5 GHz
- HE20/HE40 support for 2.4 GHz
- DL SU-MIMO and MU-MIMO
- TxBF (Transmit Beamforming)

IoT Radio

- Thread, Bluetooth® 5.2 Low Energy, IEEE 802.15.4

Note: IoT Radio is included for certain AP4000 model SKUs

Interfaces

- Eth0, Eth1: (2) Wired Ethernet ports (RJ-45)
  - (1) 100/1000/2500Mbps auto-sensing link speed Ethernet port, POE 802.3at
  - (1) 10/100/1000 Mbps auto-sensing link speed Ethernet port
- 802.3az Energy Efficient Ethernet (EEE)
- USB 2.0, Type A, 5V/500mA

Power Specifications

- IEEE 802.3at PoE Power

Power Options

- Power Draw: Typical: 12.3W; Max: 13.8W (w/o USB), Typical: 15W; Max: 16.6W (w USB)
- 802.3at Power over Ethernet (PoE) capable
- Gigabit Ethernet port (RJ-45 power input pins: Wires 4,5,7,8 or 1,2,3,6)

Physical Specifications

Model	Dimensions	Weight
AP4000	8" x 8" x 1.5" (205 mm x 205 mm x 37 mm)	1.88 pounds (0.85 kg)

Security

- Kensington lock slot
- Trusted Platform Module (TPM)

Internal Antennas

- (2) Integrated single band, 5.925-7.125 GHz omnidirectional antennas
- (2) Integrated dual band, 2.4-2.5 GHz and 5.1-5.8 GHz omnidirectional
- (2) Integrated dual band, 2.4-2.5 GHz and 5.1-5.8 GHz omnidirectional for sensor
- (1) Integrated dual band, 2.4-2.5 GHz omnidirectional for IoT

Mounting

- AP support 15/16 flush ceiling tile included 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

Environmental Specifications

- Operating: 0°C to 50°C (32°F to 122°F)
- Storage: -40°C to 70°C (-40°F to 158°F)
- Humidity: 0% to 95% (non-condensing)

Environmental Compliance

- EU RoHS – 2011/65/EU
- EU WEEE – 2012/19/EU
- EU REACH - Regulation (EC) No 1907/2006 – Reporting
- EU SCIP – EU Waste Framework Directive
- China RoHS – SJ/T 11363-2006
- Taiwan RoHS CNS 15663 (2013.7)

Regulatory Compliance

- Radio Standards USA
- Part 15C - 15.247
- Part 15E - 15.407
- Part 15B EMC class B
- RF exposure - KDB 447498D01V06 FCC Part 1.1310
- ANSI C63.4 test methods
- IEC 60601-1-2 EMC for medical devices

Radio Standards Canada

- RSS 247 for 2.4G 802.11
- IECS-003 class B
- RF exposure - RSS-102: Issue 5, 2015

Radio Standards CE

- 2014/53/EU Radio Equipment Directive
- EN 300 328, EN 301 893, EN 302 502, EN 300 440
- EN 301 489 1, EN 301 489 17, EN 62311, EN 62479, EN 50385

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 A (USA)
- ICES-003 Class A (Canada)

European EMC Standards

- EN 55032 Class A
- EN 55035
- EN 55011
- EN 61000-3-2 (Harmonics)
- EN 61000-3-3 (Flicker)
- EN 300 386 (EMC Telecommunications)
- 2014/30/EU EMC Directive

International EMC Certifications

- CISPR 32 Class A (International Emissions)
- AS/NZS CISPR 32
- CISPR 24 Class A (International Immunity)
- IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6
- IEC/EN 61000-4-11

Wi-Fi Alliance Certifications

Connectivity	Wi-Fi CERTIFIED 6™ Wi-Fi CERTIFIED™ a, b, g, n, ac Enhanced Open	Wi Fi 7 CERTIFIED
Optimization	WMM® Wi-Fi Agile Multiband™	
Security	Protected Management Frames WPA™ – Enterprise, Personal WPA2™ – Enterprise, Personal WPA3™ – Enterprise, Personal	

Antenna Gain Matrix

Operational Mode	Radio 1	Radio 2	Radio 3	IoT
1	2.4G: 3.9 dBi	5G: 5.1 dBi	6G: 5.3 dBi	5.3 dBi
2	2.4G: 3.9 dBi	5G: 5.1 dBi	2.4G: 5.3 dBi 5G: 5.9 dBi 6G: 5.3 dBi	5.3 dBi

Power and Sensitivity Tables

Power and Sensitivity – 2.4 GHz Radio

Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11b	1 - 11 Mbps	19	-94, -87
11g	6 Mbps	19	-91
	54 Mbps	16	-73
11n HT20	MCS0, 7	19, 16	-91, -72
11n HT40	MCS0, 7	18, 16	-88, -69
11ax HE20	HE0, 11	19, 14	-90, -60
11ax HE40	HE0, 11	18, 14	-87, -57

2.4 GHz Radio – Sensor

Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11b	1 - 11 Mbps	16	-95, -88
	6 Mbps	16	-94
11g	54 Mbps	16	-77
11n HT20	MCS0, 7	16, 15	-93, -75
11n HT40	MCS0, 7	16, 15	-90, -72
11ax HE20	HE0, 11	16, 14	-92, -62
11ax HE40	HE0, 11	16, 14	-89, -59

Power and Sensitivity – 5 GHz Radio

Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11a	6 Mbps	18	-94
	54 Mbps	17	-75
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	-91, -67
11ac VHT80	MCS0, 9	18, 15	-88, -64
11ax HE20	HE0, 11	18, 14	-93, -64
11ax HE40	HE0, 11	18, 14	-90, -60
11ax HE80	HE0, 11	18, 14	-87, -57

Power and Sensitivity – 5 GHz Radio - Sensor

Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11a	6 Mbps	20	-95
	54 Mbps	17	-76
11n HT20	MCS0, 7	20, 17	-95, -75
11n HT40	MCS0, 7	20, 17	-92, -72
11ac VHT20	MCS0, 8	20, 16	-94, -72
11ac VHT40	MCS0, 9	20, 15	-91, -67
11ac VHT80	MCS0, 9	20, 15	-88, -64
11ac VHT160	MCS0, 9	20, 15	-85, -61
11ax HE20	HE0, 11	20, 15	-94, -64
11ax HE40	HE0, 11	20, 15	-91, -61
11ax HE80	HE0, 11	20, 15	-88, -58
11ax HE160	HE0, 11	20, 15	-85, -55

Power and Sensitivity – 6 GHz Radio

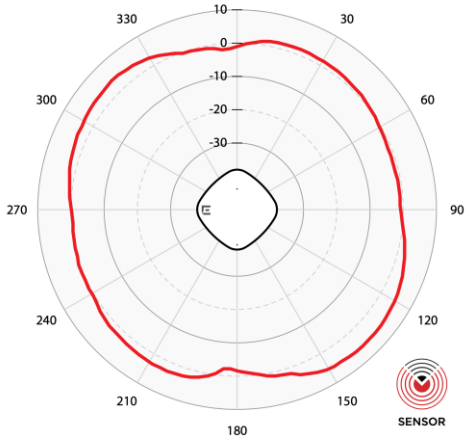
Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11a	6 Mbps	18	-93
	54 Mbps	16	-75
11n HT20	MCS0, 7	18, 15	-93, -75
11n HT40	MCS0, 7	17, 15	-91, -72
11ac VHT20	MCS0, 8	18, 14	-93, -71
11ac VHT40	MCS0, 9	17, 13	-91, -67
11ac VHT80	MCS0, 9	17, 13	-88, -64
11ac VHT160	MCS0, 9	17, 11	-85, -61
11ax HE20	HE0, 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, 11	-84, -54

Power and Sensitivity – 6 GHz Radio – Sensor

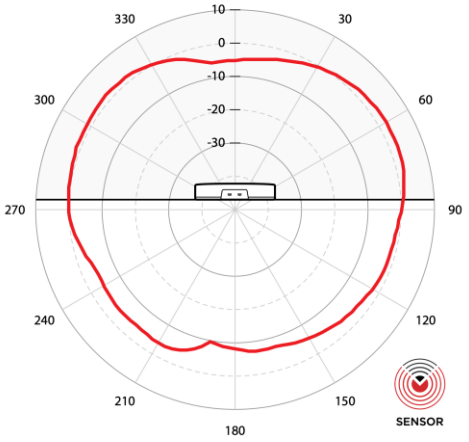
Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11a	6 Mbps	18	-93
	54 Mbps	16	-75
11n HT20	MCS0, 7	18, 15	-93, -75
11n HT40	MCS0, 7	17, 15	-91, -72
11ac VHT20	MCS0, 8	18, 14	-93, -71
11ac VHT40	MCS0, 9	17, 13	-91, -67
11ac VHT80	MCS0, 9	17, 13	-88, -64
11ac VHT160	MCS0, 9	17, 11	-85, -61
11ax HE20	HE0, 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, 11	-84, -54

Radiation Patterns

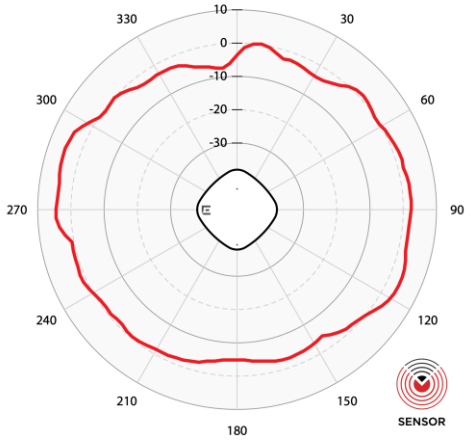
2G Azimuth



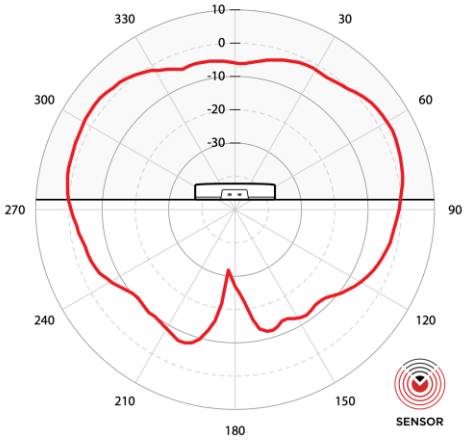
2G Elevation



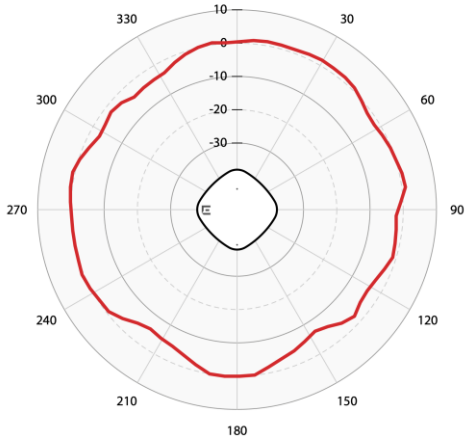
5G Azimuth



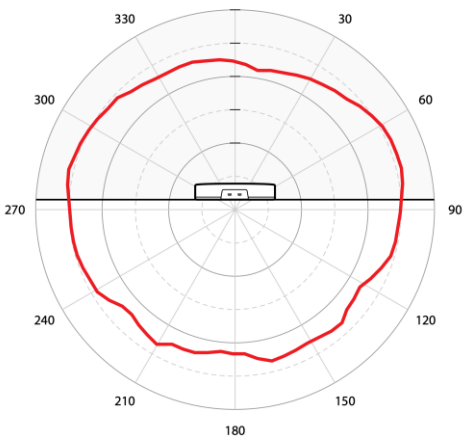
5G Elevation



6G Azimuth

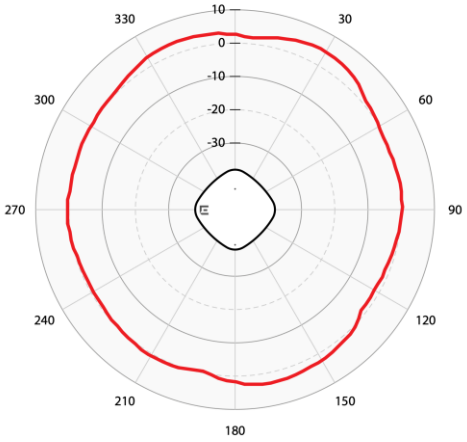


6G Elevation

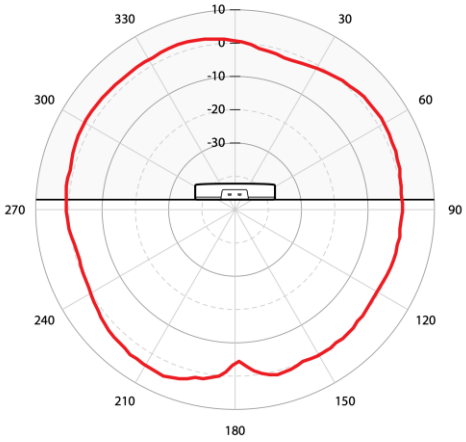


Radiation Patterns – Dual Band

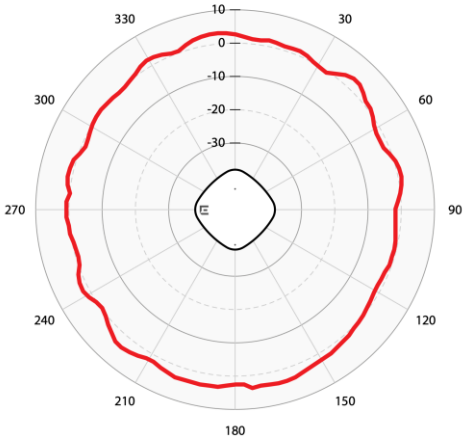
2G Dual Band Azimuth



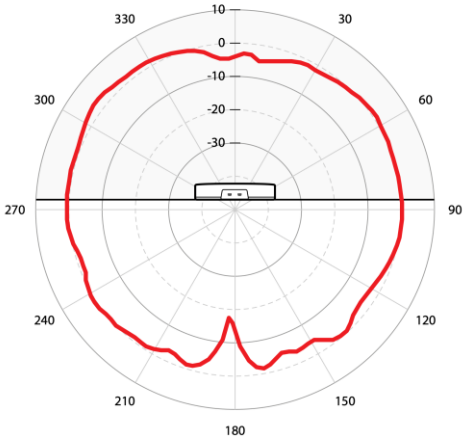
2G Dual Band Elevation



5G Dual Band Azimuth

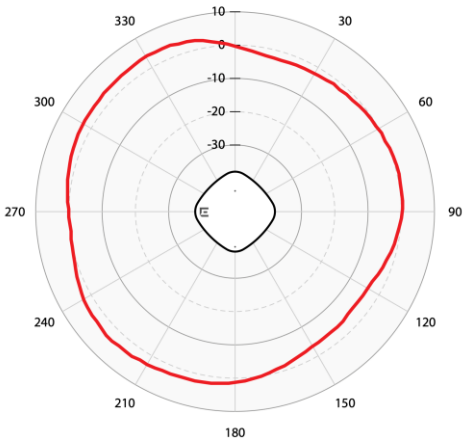


5G Dual Band Elevation

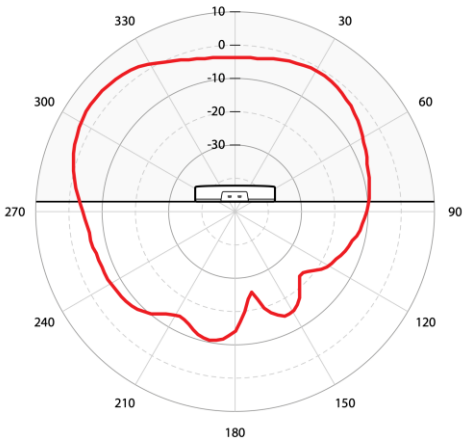


Radiation Patterns – BLE Radio

2G BLE Azimuth



2G BLE Elevation



Ordering Information

AP4000

Part Number	Description
AP4000-WW	Indoor Tri Radio WiFi 6E AP, 2.4 GHz, 5GHz, 6GHz and Multirate Port. Integrated Light, power sensors, IoT Radio. AI/ML green mode. INT antennas. T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Domain: World SKU
AP4000-1-WW*	Indoor Tri Radio WiFi 6E AP, 2.4 GHz, 5GHz, 6GHz & Multi-rate Port. Integrated Light, power sensors. AI/ML green mode. INT antennas. T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Domain: World SKU
AP4000-IL	Indoor Tri Radio WiFi 6E AP, 2.4 GHz, 5GHz, 6GHz & Multirate Port. Integrated Light, power sensors, IoT Radio. AI/ML green mode. INT antennas. T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Domain: Israel

*Non-BLE SKU. AP4000-1-WW has identical functionality as AP4000-WW, except for IoT radio and Bluetooth functionality.

Mounting Accessories

Part Number	Indoor AP Mounting	Notes
ACC-4000-ETH-CAP	Cable cover for AP4000 to hide Ethernet Port and Ethernet cable	Hides ethernet cable for aesthetically pleasing installation Includes a 7" Flat Cat6 RJ45 Cable (5 Pack Kit)
AH-ACC-BKT-AX-TB	Mounting bracket for prelude 15/16" and suprafine 9/16" ceilings and walls	Ships with AP4000 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
PD-9001GR-ENT	Single Port 802.3at Compliant Midspan
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

For more details, refer to the Product Accessories Guide.

Warranty

The AP4000 is covered under Extreme's Universal LLW policy. For warranty details, visit our Policies and Warranties page.

Support Services

Extreme offers a portfolio of services that adapts to your unique environment and technical support needs. Globally available technical support and professional services from our in-house team of experts provide the resiliency and optimization that accelerate your business and innovation.

Combined with Extreme Networks Platform ONE agentic support tools and workflows, Extreme Services helps you to anticipate issues and identify risks before they impact your business. For more information, visit our Services page.

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