

# Universal Wireless AP410C

## Highlights

### Advanced Radio Technology

#### Tri-Radio Design

- 5 GHz 4x4:4
- 2.4 GHz 2x2:2
- 2.4 GHz/5 GHz/Sensor

### Radio Modes - SSR

- 2.4 GHz/5 GHz/Sensor (2.4 GHz/5GHz)
- 5 GHz/5 GHz - Dual 5 GHz

### Universal Hardware Platform

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

### High Density Environments

- Delivers exceptional end-user experience even in the densest user environments

### 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 over 802.3at

### Smart Management Choices

- ExtremeCloud™ IQ delivers powerful, simple and secure public or private cloud management capabilities
- ExtremeCloud Appliance or VX or NX controller is ideal for on-premises requirements



## Wi-Fi 6 (802.11ax) Tri-Radio 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 AP410C is part of Extreme's Universal Wi-Fi platform and provides users the choice of Wi-Fi operating system (IQ Engine or WiNG Operating System). Customers have the flexibility to select the OS at start-up or at a later stage and the AP will assume the features/capabilities of the selected OS. When first booted, the AP410C automatically connects to ExtremeCloud IQ to find its persona. The pre-provisioned OS persona is then remotely enabled on the AP410C AP and the user can stay in the cloud or select manage the device locally.

The AP410C provides high-efficiency, high-performance 802.11ax aggregate data rates up to 4.8 Gbps in the 5 GHz band and concurrent 574 Mbps in the 2.4 GHz band. The AP410C platforms are the first generation of APs to run multiple Extreme operating systems, providing flexibility and choice of on-premise or cloud deployment, while minimizing total cost of ownership designed for high density environments, AP410C is powerful enough and smart enough to provide the highest level of client services without compromising security monitoring. Unlike other access points that scan only part time, the dedicated, dual-band sensor scans for rogue devices full time, eliminating the risk of vulnerability or attacks. Tri-Radio APs continues the Extreme tradition of software-selectable radios (SSRs) capable of dual 5 GHz connectivity.

With more users, more devices, more things, more applications and more threats straining the infrastructure, the AP410C was engineered to meet those challenges. The AP410C combines powerful 802.11ax Wi-Fi 6 technology, advanced security and ML/AI management capabilities together into an enterprise class solution that allows you to deploy high speed, highly secure Wi-Fi into the toughest environments.



## Security

The AP410C delivers the highest level of security services, beginning with support for the latest Wi-Fi Alliance WPA3 security certifications. Additionally, supporting a stateful L2-L7 DPI firewall for context-based access security.



## Management Analytics

In conjunction with management system, cloud or On-premises the AP410C provides a very rich set of data displayed via context driven widgets, representing 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 from widget library.



## Wi-Fi 6 (802.11ax) Technology

Prior generations of 802.11n, 802.11ac wave 1 and 2, can be considered generational improvements with an emphasis on faster speed. 802.11ax technology instead enhances Wi-Fi efficiency as well as speed, taking Wi-Fi networks to an entirely new level. To learn more about 802.11ax, go to: <https://www.extremenetworks.com/are-you-ready-for-802-11ax/>



## Programmable Radios

Extreme launched the industry's first software defined 802.11ax access point supporting not only a dual 5 GHz capability but also two software programmable modes to optimally manage radios to provide the highest level of client performance. The AP410C intelligent monitoring of the software-configurable radios enables network managers to configure network RF technology based on user environment and configure the access points in different modes as required.



## Universal Hardware

The AP410C 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 AP410C assumes the features/capabilities of the selected OS. When first booted, the AP410C automatically connects to ExtremeCloud IQ to find its persona. The pre-provisioned OS persona is then remotely enabled on the AP410C system, eliminating the need for manual selection



## Integrated BLE

To support both IoT and Guest Engagement services the AP410C integrates Bluetooth to connect with IoT devices wireless to engage loyalty customers with Apple iBeacon<sup>1</sup>. 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.

<sup>1</sup> IoT Radio included for certain AP410C model SKUs

# Product Specifications

## Radio Specifications

### Max Users

- SSID per Radio/Total: 8/16
- 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

### 802.11ac

- 5.150–5.850 GHz Operating Frequency
- 802.11ac Modulation (256-QAM)
- Rates (Mbps): MCS0 – MCS31 (6.5Mbps – 600Mbps)
- 5G: 4x4 Multiple-In, Multiple-Out (MIMO) Radio
- 2.4G: 2x2 Multiple-In, Multiple-Out (MIMO) Radio
- Rates (Mbps): MCS0–MCS9 (6.5Mbps – 3467Mbps), NSS = 1-4.
- 4x4:4 Stream Multiple-In, Multiple-Out (MIMO) Radio
- VHT20/VHT40/VHT80/VHT160 support
- TxBF ( Transmit Beamforming)

### 802.11ax

- 2.4–2.5 GHz and 5.150–5.850 GHz Operating Frequency
- 802.11ax Modulation (1024-QAM)
- Dual-band OFDMA
- Rates (Mbps):
  - 5G: HE0-HE11 (8 Mbps – 4800 Mbps).
  - 2.4G: HE0-HE11 (8Mbps – 574 Mbps).
- 4x4:4 Stream Multiple-In, Multiple-Out (MIMO) Radio@ 5GHz
- 2x2:2 Stream Multiple-In, Multiple-Out (MIMO) Radio @2.4GHz
- 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

- BLE 5 Radio Bluetooth® Low Energy (BLE)<sup>1</sup>

## Interfaces

- (1) 100/1000/2500 Mbps auto-negotiation Ethernet port, RJ45 PoE (Power over Ethernet 802.3at) Port
- (1) 10/100/1000 Mbps auto-negotiation Ethernet port, RJ45
- USB 2.0, Type A , 5V, 0.9A

## Power Specifications

- IEEE 802.3at PoE Power

## Power Options

- Power Draw: Typical: 17.69; Max: 18.74 (w/o USB)  
Typical: 22.69; Max: 23.74 (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)
- 802.3af Power over Ethernet injector

## Physical

- 8" x 8" x 1.8" (205mm x 205mm x 37mm)
- AP410C: 2 lbs (.9 kg)
- TPM chip

## Internal Antennas

- (3) Integrated single band, 5.1-5.8 GHz omnidirectional antennas
- (2) Integrated dual band, 2.4-2.5 GHz and 5.1-5.8 GHz omnidirectional
- (1) Integrated dual band, 2.4-2.5 GHz and 5.1-5.8 GHz omnidirectional for BLE<sup>1</sup> and WiFi 5G
- (1) Integrated dual band, 2.4-2.5 GHz and 5.1-5.8 GHz omnidirectional for sensor

## Mounting

- AP support 15/16 flush ceiling tile included in the box
- Wall Mount sold as an accessory
- Ceiling Tile Recessed 15/16" sold as an accessory
- Built-in slot for Kensington type locks

## Environmental

- Operating: 0 to 40°C
- Storage: -40 to 70°C
- Humidity: 0% to 95% (non-condensing)

## Environmental Compliance

- UL2043 - Plenum Rated

## Regulatory Compliance

### Product Safety Certifications

- IEC 60950-1, EN 60950-1, UL 60950-1, CSA 22.2 No.60950-1-03 AS/NZS 60950.1,
- RoHS Directive 2011/65/EU

### Radio Approvals

- FCC CFR 47 Part 15, Class B
- ICES-003, Class B
- FCC Subpart C 15.247
- FCC Subpart E 15.407
- RSS247
- AS/NZS4268 + CISPR32
- IEC/EN 60601-1-2
- EN 62311
- EN 50385
- EN 301 489-1
- EN 301 489-17
- EN 55032, (Class B)
- EN 55011, (Group 1, Class B)
- EN 55024
- EN 60601-1-2
- EN 61000-3-2
- EN 61000-3-3
- EN 300 328
- EN 301 893
- EN 300 440
- EN 50581

## Support

- Limited Lifetime Warranty

<sup>1</sup> IoT Radio included for certain AP410C model SKUs

## Wi-Fi Alliance Certifications

Wi-Fi Alliance Certifications	
Connectivity	Wi-Fi CERTIFIED 6™ Wi-Fi CERTIFIED™ a, b, g, n, ac
Access	Passpoint*
Optimization	WMM* WMM* - Power Save Wi-Fi Agile Multiband™
Security	Protected Management Frames WPA™ - Enterprise, Personal WPA2™ - Enterprise, Personal WPA3™ - Enterprise, Person

## AP410C Max Antenna Gain

Software Mode	Radio 0	Radio 1	Sensor	IoT
Fixed Dual	2.4 Ghz 4.0dBi	5 Ghz 4.7dBi	2.4Ghz 3.8dBi 5G: 4.5dBi	3.2dBi
Dual 5G	5 Ghz 4.7dBi	5 Ghz 4.7dBi	2.4Ghz 3.8dBi 5G: 4.5dBi	3.2dBi

## Power and Sensitivity Tables

### Power and Receive Sensitivity- 2.4 GHz

Channel	Data Rate	Power (dBm)	Sensitivity
11b	1 - 11 Mbps	18	-94, -87
11g	6 Mbps	18	-90
	54 Mbps	17	-73
11n HT20	MCS0, 7	18, 14	-89, -70
11n HT40	MCS0, 7	18, 14	-86, -67
11ax HE20	HE0, 11	18, 11	-89, -60
11ax HE40	HE0, 11	18, 11	-86, -56

### Power and Receive Sensitivity - 5 GHz (Full Band)

Channel	Data Rate	Power (dBm)	Sensitivity
11a	6 Mbps	18	-92
	54 Mbps	16	-74
11n HT20	MCS0, 7	18, 15	-91, -74
11n HT40	MCS0, 7	18, 15	-89, -71
11ac VHT20	MCS0, 8	18, 14	-91, -70
11ac VHT40	MCS0, 9	18, 13	-90, -65
11ac VHT80	MCS0, 9	18, 13	-87, -63
11ac VHT160	MCS0, 9	17, 12	-82, -58
11ax HE20	HE0, 11	18, 11	-90, -60
11ax HE40	HE0, 11	18, 11	-88, -60
11ax HE80	HE0, 11	18, 11	-85, -54
11ax HE160	HE0, 11	17, 10	-82, -52

### Power and Receive Sensitivity - 5 GHz (Low Band)

Channel	Data Rate	Power (dBm)	Sensitivity
11a	6 Mbps	18	-91
	54 Mbps	15	-73
11n HT20	MCS0, 7	18, 15	-90, -72
11n HT40	MCS0, 7	18, 15	-89, -70
11ac VHT20	MCS0, 8	18, 14	-90, -69
11ac VHT40	MCS0, 9	18, 13	-89, -64
11ac VHT80	MCS0, 9	18, 13	-86, -62
11ax HE20	HE0, 11	18, 11	-89, -59
11ax HE40	HE0, 11	18, 11	-87, -59
11ax HE80	HE0, 11	18, 11	-84, -53

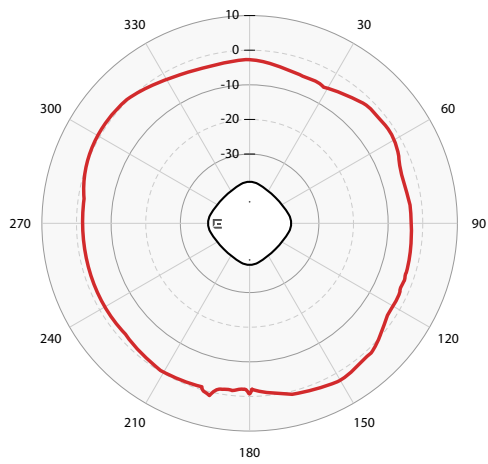
### Power and Receive Sensitivity - 5 GHz (High Band)

Channel	Data Rate	Power (dBm)	Sensitivity
11a	6 Mbps	17	-91
	54 Mbps	15	-73
11n HT20	MCS0, 7	17, 14	-90, -72
11n HT40	MCS0, 7	17, 14	-89, -70
11ac VHT20	MCS0, 8	17, 13	-90, -69
11ac VHT40	MCS0, 9	17, 12	-89, -64
11ac VHT80	MCS0, 9	17, 12	-86, -62
11ac VHT160	MCS0, 9	16, 11	-81, -57
11ax HE20	HE0, 11	17, 10	-89, -59
11ax HE40	HE0, 11	17, 10	-87, -59
11ax HE80	HE0, 11	17, 10	-84, -53
11ax HE160	HE0, 11	16, 9	-81, -51

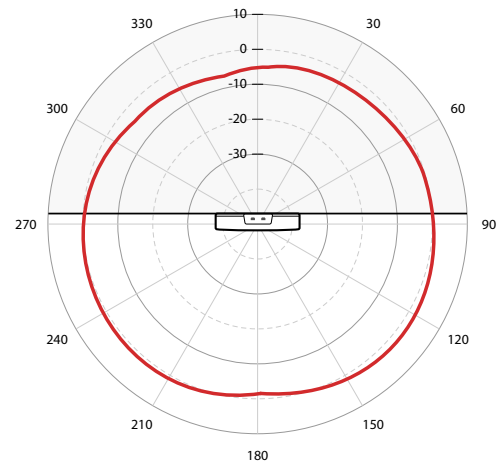
Maximum EIRP may vary based upon deployed country

# Antenna Radiation Patterns

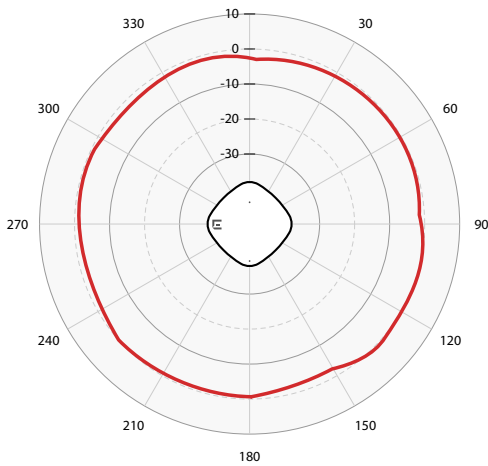
## Azimuth - 2.4 GHz



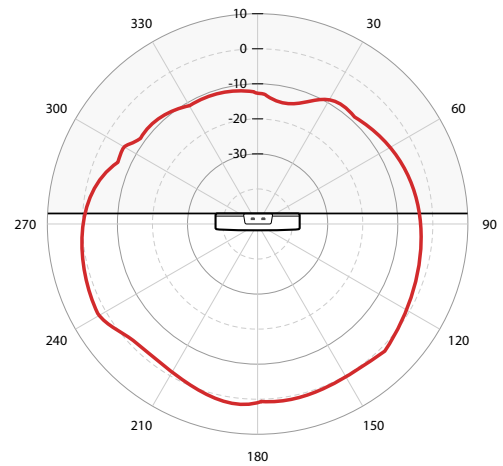
## Elevation - 2.4GHz



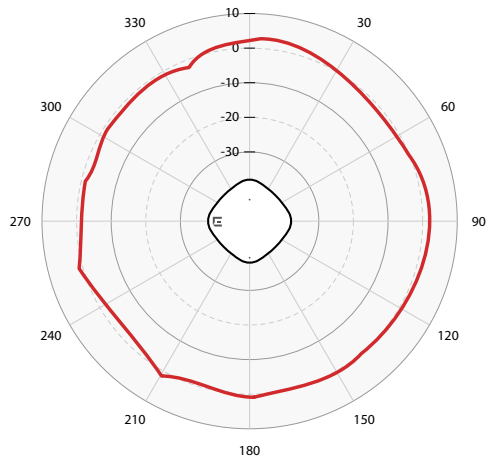
## Radio 0 Azimuth - 5 GHz



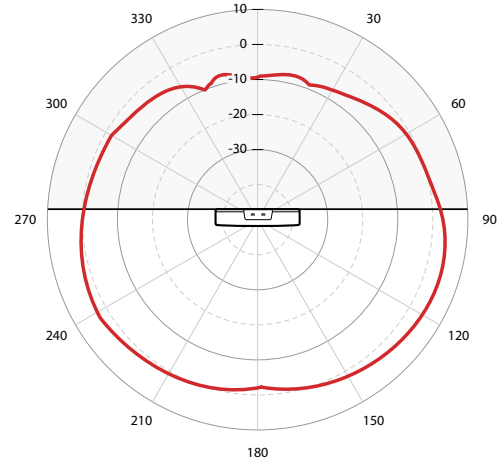
## Radio 0 Elevation - 5 GHz



## Radio 1 Azimuth - 5 GHz

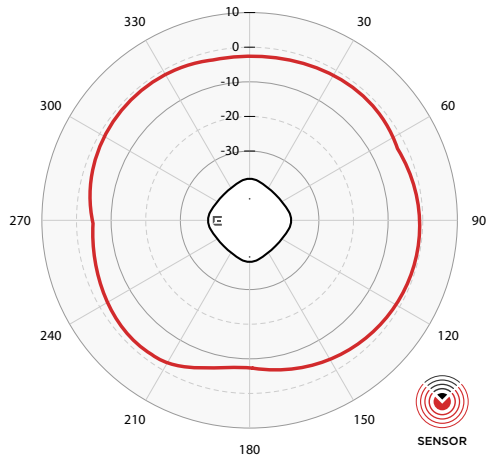


## Radio 1 Elevation - 5 GHz

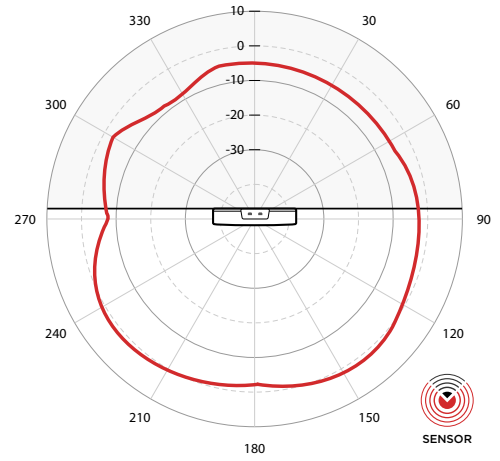


# Antenna Radiation Sensor Patterns

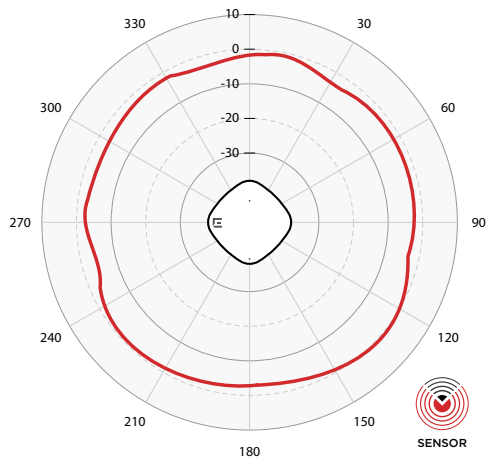
Azimuth - 2.4 GHz



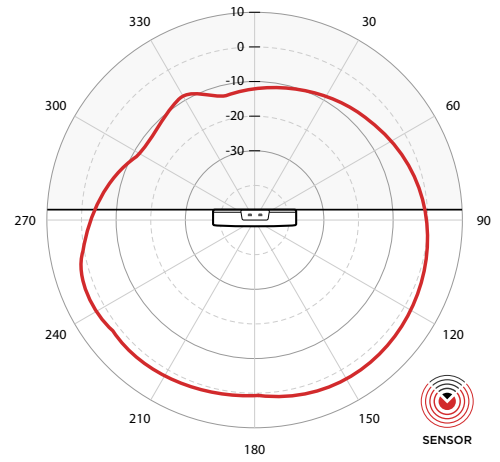
Elevation - 5 GHz



Azimuth - 5 GHz



Elevation - 5 GHz



# Ordering Information

## AP410C - SKUs

Part Number	Description
AP410C-FCC	ExtremeCloud IQ: Indoor Tri Radio WiFi6 AP, 2.4 GHz, 5GHz, and Sensor w/Dual 5GHz and Multirate Port. Environmentally friendly, Light, power sensors. AI/ML green mode. INT antennas. T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). NA
AP410C-CAN	ExtremeCloud IQ: Indoor Tri Radio WiFi6 AP, 2.4 GHz, 5GHz, and Sensor w/Dual 5GHz and Multirate Port. Environmentally friendly, Light, power sensors. AI/ML green mode. INT antennas. T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Canada
AP410C-WR	ExtremeCloud IQ: Indoor Tri Radio WiFi6 AP, 2.4 GHz, 5GHz, and Sensor w/Dual 5GHz and Multirate Port. Environmentally friendly, Light, power sensors. AI/ML green mode. INT antennas. T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Rest of World
AP410C-IL	IL ExtremeCloud IQ: Indoor Tri Radio WiFi 6 AP, 2.4 GHz, 5GHz, & Sensor w/ Dual 5GHz & Multirate Port. Integrated Light, power sensors, BLE/Zigbee. AI/ML green mode. INT antennas. T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Domain: Israel
AP410C-EG	EG ExtremeCloud IQ: Indoor Tri Radio WiFi 6 AP, 2.4 GHz, 5GHz, & Sensor w/ Dual 5GHz & Multirate Port. Integrated Light, power sensors, BLE/Zigbee. AI/ML green mode. INT antennas. T-Bar, Incl Mt (AH-ACC-BKT-AX- TB). Domain: Egypt
AP410C-1-FCC*	ExtremeCloud IQ Indoor Tri Radio WiFi 6 AP 2.4 GHz 5GHz Sensor w/ Dual 5GHz Multirate Port. Integrated Light power sensors. AI/ML green mode. INT antennas. T-Bar Incl Mt (AH-ACC-BKT-AX-TB). Domain: US
AP410C-1-WR*	ExtremeCloud IQ Indoor Tri Radio WiFi 6 AP 2.4 GHz 5GHz Sensor w/ Dual 5GHz Multirate Port. Integrated Light power sensors. AI/ML green mode. INT antennas. T-Bar Incl Mt (AH-ACC-BKT-AX-TB). Domain: Rest of World
AP410C-1-CAN*	ExtremeCloud IQ Indoor Tri Radio WiFi 6 AP 2.4 GHz 5GHz Sensor w/ Dual 5GHz Multirate Port. Integrated Light power sensors. AI/ML green mode. INT antennas. T-Bar Incl Mt (AH-ACC-BKT-AX-TB). Domain: Canada
AP410C-1-EG*	ExtremeCloud IQ Indoor Tri Radio WiFi 6 AP 2.4 GHz 5GHz Sensor w/ Dual 5GHz Multirate Port. Integrated Light power sensors. AI/ML green mode. INT antennas. T-Bar Incl Mt (AH-ACC-BKT-AX-TB). Domain: Egypt
AP410C-1-IL*	ExtremeCloud IQ Indoor Tri Radio WiFi 6 AP 2.4 GHz 5GHz Sensor w/ Dual 5GHz Multirate Port. Integrated Light power sensors. AI/ML green mode. INT antennas. T-Bar Incl Mt (AH-ACC-BKT-AX-TB). Domain: Israel

\* Does not include IoT radio and Bluetooth functionality.

## Accessories

Mounting Accesories		
Marketing Part #	Indoor AP Mounting	Notes
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	
AH-ACC-BKT-AX-TB	Mounting bracket for prelude 15/16" and suprafine 9/16" ceilings and wall (shipped with AP)	Can be used for flush wall mounting
AH-ACC-BKT-AX-WL	Mounting bracket for direct-to-wall installations	Not flush to wall
ACC-BKT-AX-JB	Junction box or wall mounting for indoor access points	
ACC-BKT-AX-BEAM	Beam mounting for indoor access points	
Power Accesories		
Part Number	Description	
PD-9001GR-ENT	Single port 802.3at compliant midspan	
AH-ACC-PW-CBL-US	6ft 18 AWG universal power cord with US plug	
AH-ACC-PW-CBL-UK	6ft universal power cord with UK plug	
AH-ACC-PW-CBL-EU	6ft universal power cord with EU plug	
AH-ACC-PW-CBL-AU	6ft universal power cord with AU plug	
AH-ACC-PW-CBL-JP	6ft universal power cord with Japan plug	
AH-ACC-PW-CBL-KR.	6ft universal power cord with Korea plug	
Other Accessories		
Part Number	Description	
ACC-WIFI-MICRO-USB	Micro-USB to USB Console Adapter Cable for Extreme Wireless Access Points	

## Warranty

The AP410C models are covered under Extreme's Universal LLW policy. For warranty details, please visit: [www.extremenetworks.com/support/policies](http://www.extremenetworks.com/support/policies).



<http://www.extremenetworks.com/contact>

©2023 Extreme Networks, Inc. All rights reserved. Extreme Networks and the Extreme Networks logo are trademarks or registered trademarks of Extreme Networks, Inc. in the United States and/or other countries. All other names are the property of their respective owners. For additional information on Extreme Networks Trademarks please see <http://www.extremenetworks.com/company/legal/trademarks>. Specifications and product availability are subject to change without notice. 26701-0123-09