

# AP510C/CX

## Highlights

### Radio Technology

- 5GHz 4x4:4
- 2.4GHz 4x4:4

### Radio Modes – SSR

- 5GHz/2.4 GHz – Fixed
- 5GHz/5 GHz – Dual 5 GHz
- 5 GHz/Sensor both bands

### High Density Environments

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

### WPA 3 Support

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

### Fully Functional over 802.3at

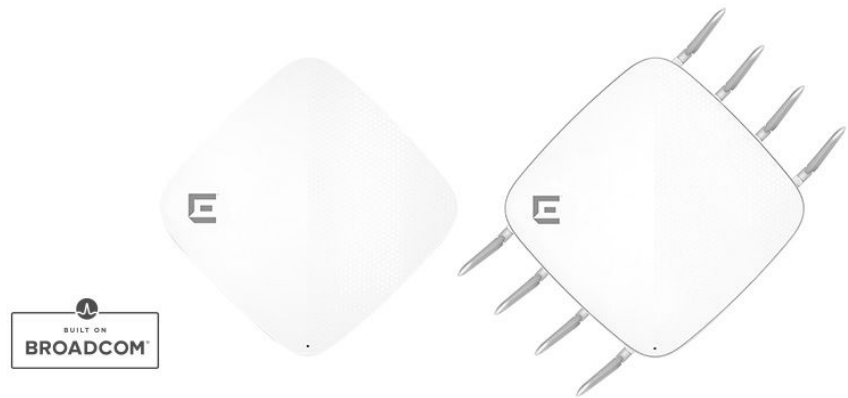
- Reduced functionality with 802.3af

### Smart Management Choices

- ExtremeCloud™ IQ delivers powerful, simple, and secure public or private cloud management capabilities

### Cellular Coexistence Filter (CCF)

- Minimizes the impact of interference from cellular networks



## Wi-Fi CERTIFIED™ 6 (802.11ax) Indoor Access Point with integrated or external antenna options

Extreme's AP510C/CX is a high performance, enterprise class Wi-Fi 6 access point that is ideal for many verticals, including; retail, education, hospitality, and healthcare. These enterprises need to support a high density of users and IoT devices, while delivering an exceptional user experience.

World SKU is the latest innovation from Extreme Networks to simplify the sales ordering process. The World SKU allows our customers, partners, and distributors to order one model for any region instead the age-old problem of country specific SKU. ExtremeCloud IQ enables us to geo-locate an access point and accurately provide it the corresponding set of channel and power specifications that the product can operate under in that country. A single model AP510C/CX is orderable for anywhere in the world.

The AP510C/CX provides high-efficiency 802.11ax aggregate data rates up to 4.8 Gbps currently in both the 5 GHz and 2.4 GHz bands. It also supports a Software Selectable Radio (SSR), providing the flexibility to simultaneously operate both radios in the 5 GHz band.

Despite the exponential growth of users, BYOD devices, IoT, high-bandwidth applications, and security threats straining the infrastructure, the AP510 combines performance, security services and insightful ML/AI management capabilities to deliver an enterprise class solution at a value price.

## Security

The AP510C/CX 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, Private Pre-Shared Key (PPSK) and much more.

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## Wi-Fi6 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 [here](#).

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## Programmable Radios

Extreme launched the Industry's first software defined 802.11ax access point supporting not only a dual 5GHz capability but also three software programmable modes to optimally manage radios to provide the highest level of client performance. The AP510C/CX intelligent monitoring of the software configurable radios enables network managers to configure network RF topology based on user environment and configure the access points in different modes as required.

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## Management Analytics

In conjunction with ExtremeCloud IQ, the AP510C/CX provides a very rich set of data displayed via real-time analytics as well as a historical timeline. The Network 360 and Client 360 views powered by machine learning provide context-specific granularity with perspective views for locations, network, APs, individual client devices as well as policy roles.

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## RF Monitoring

Network managers will appreciate a powerful choice of RF management for their Wi-Fi networks, with Adaptive RF management with AI/ML-like functionality. Adaptive RF algorithms provide intelligent selection of the best channels and transmit power for unimpaired dual 5 GHz operation. Load balancing, band steering, and many other attributes of the RF can all be automated.

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## Integrated BLE and Zigbee

To support both IoT and Guest Engagement services the AP510C/CX 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.

## Technical Specs

### Max Users

- SSID per Radio/Total: 8/16
- Users per Radio/total: 512/1024

### Radio Specifications

#### Wireless Frequency Range

- USA: 2.400 ~ 2.483 GHz, 5.15 ~ 5.35 GHz, 5.47 ~ 5.725 GHz, 5.725 ~ 5.85 GHz
- Europe: 2.400 ~ 2.483 GHz, 5.15 ~ 5.35 GHz, 5.47 ~ 5.725 GHz
- Japan: 2.400 ~ 2.497 GHz, 5.15 ~ 5.35 GHz, 5.47 ~ 5.725 GHz
- China: 2.400 ~ 2.483 GHz, 5.725 ~ 5.85 GHz

#### Modes

- IEEE802.11a 5 GHz OFDM
- IEEE802.11b 2.4 GHz DSSS/CCK
- IEEE802.11g 2.4 GHz OFDM
- IEEE802.11n 2.4 GHz/5 GHz OFDM
- IEEE802.11ac OFDM
- IEEE802.11ax OFDMA

### Channel Support

#### 802.11b/g/n/ax

- US/Canada: 11 (1 ~ 11)
- Europe: 13 (1 ~ 13)
- Japan: 11b: 14 (1~13 or 14th), 11g: 13 (1 ~ 13)
- China: 13 (1 ~ 13)

#### 802.11a/n/ac/ax

- US/Canada: 24 non-overlapping channels (36, 40, 44, 48, 52, 56, 60, 64;100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140; 149, 153, 157, 161, 165)
- Europe: 19 non-overlapping channels (36, 40, 44, 48, 52, 56, 60, 64;100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140)
- Japan: 19 non-overlapping channels (36, 40, 44, 48, 52, 56, 60, 64; 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140)
- China: 5 non-overlapping channels (149, 153, 157, 161, 165)

### Modulation Technology

#### 802.11 Legacy a/b/g

- DSSS(DBPSK, DQPSK, CCK) OFDM (BPSK, QPSK, 16-QAM, 64-QAM)
- DSSS (Direct Sequence Spread Spectrum) with DBPSK (Differential Binary Phase Shift Keying 1 Mbps), DQPSK (Differential Quaternary Phase Shift Keying 2 Mbps), and CCK (Complementary Code Keying 5.5 and 11 Mbps), and OFDM (Orthogonal Frequency Division Multiplexing with BPSK for 6, 9 Mbps, QPSK for 12, 18 Mbps, 16QAM for 24, 36 Mbps, 64QAM for 48, 54 Mbps)

#### 802.11n

- OFDM (BPSK, QPSK, 16-QAM, 64-QAM)

#### 802.11ac

- OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM)

#### 802.11ax

- OFDMA (1024-QAM)

### Interfaces

- 1x 10/100/1000 Gigabit Ethernet
- 1x 2.5 mCig
- RJ-45 Console Port

### IEEE Standards

- IEEE 802.11d, 802.11h, 802.11k, 802.11r, 802.11v
- EAP-SIM

### Radios

- Dual Radio AP, 2.4 GHz/5 GHz and 5 GHz radios supporting dual band or dual 5 GHz operation
- 2.4 GHz/5 GHz, 802.11a/b/g/n/ac/ax, 4x4
- 5 GHz, 802.11 a/n/ac/ax, 4x4
- 160MHz,1024-QAM supported
- 1x Bluetooth radio

### Power Consumption

- DC Power: Typical 18.78 W, Max 20.65 W
- 802.3at PoE+ Power: Typical 15.72 W, Max 19.92 W
- 802.3az Energy Efficient Ethernet
- Redundant POE Capable

### Environmental

- Operating Temperature:
  - AP510C -0°C to 40°C
  - AP510CX -20°C to 55 °C
- Storage Temperature: -40°C to 70 °C
- Humidity: 10% to 95%

### Physical

- Dimensions: 225mm x 225mm x 37.5mm
- Weight: 2.8lb (1.27kg)
- Wall or ceiling mountable
- MTBF: 347,530 Hours @ 25 °C (estimate)
- RoHS: -2 Compliant
- TPM chip

### Antenna

- 4x 2.4 GHz/5 GHz, RPSMA Connectors
- 4x 5 GHz, RPSMA Connectors
- 1x internal Bluetooth antenna

#### Peak Antenna Gain

- 2.4 GHz omnidirectional, gain 4.6 dBi
- 5 GHz omnidirectional, gain 5.7 dBi
- Bluetooth omnidirectional, gain 5.2 dBi

#### Environmental Compliance

- UL2043 - Plenum Rated

#### Regulatory Compliance

##### Product Safety

- 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/EN60601-1-2
- EN 50385
- EN 301 489-1
- EN 301 489-3
- EN 301 489-17
- EN 55032 (Class B)
- EN 55024
- EN 300 328
- EN 301 893
- EN 300 440

## Antenna Gains

	Radio 0	Radio 1	IoT
Fixed Dual	2.4 Ghz 4.5 dBi	5 Ghz 6 dBi	4.2 dBi
Dual 5G	5 Ghz 5.7 dBi	5 Ghz 6 dBi	4.2 dBi

## 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, Personal

## Power and Sensitivity Tables

### Power- 2.4 GHz

Channel	Data Rate	Power (dBm)
11b	1, 2, 5.5, 11 Mbps	18
11g	54 Mbps	15
	48 Mbps	16
	36 Mbps	17
	6 Mbps	18
11n HT20	MCS0, 1, 2	18
	MCS3	17
	MCS4, 5	16
	MCS6, 7	15
	MCS8, 9	14
	MCS10,11	12
11n HT40	MCS0,1, 2	18
	MCS3	17
	MCS4, 5	16
	MCS6, 7	15
	MCS8, 9	14
	MCS10,11	12

### Power- 5 GHz

Channel	Data Rate	Power (dBm)
11a	6 Mbps	19
	36 Mbps	18
	48 Mbps	16
	54 Mbps	15
11n HT20	MCS0,1, 2, 3, 4, 8, 9, 10, 11	19
	MCS5, 13, 21	18
	MCS6, 14, 22	16
	MCS7,15, 23	15
	MCS12,16, 17, 18, 19, 20	19
11n HT40	MCS0,1, 2, 3, 4, 8	19
	MCS5, 13, 21	18
	MCS6, 14, 22	16
	MCS7,15, 23	14
	MCS9,10, 11, 12, 16	19
	MCS17,18, 19, 20	19
11ac HT	256QAM @ 3/4 Code Rate	12
	256QAM @ 5/6 Code Rate	11

Maximum EIRP may vary based upon deployed country.

## Receive Sensitivity- 2.4 GHz

Channel	Data Rate	Sensitivity
11b	1 Mbps	-100
	11 Mbps	-93
11g	6 Mbps	-95
	24 Mbps	-88
	36 Mbps	-86
	48 Mbps	-82
	54 Mbps	-80
11n HT20	MCS0,8, 16	-95
	MCS5, 13, 21	-81
	MCS6, 14, 22	-79
	MCS7,15, 23	-77
11n HT40	MCS0,8, 16	-92
	MCS5, 13, 21	-78
	MCS6, 14, 22	-76
	MCS7,15, 23	-74

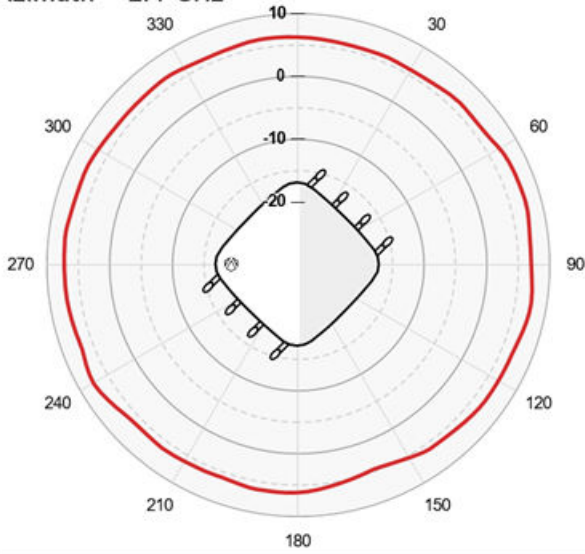
## Receive Sensitivity - 5 GHz

Channel	Data Rate	Sensitivity
11a	6 Mbps	-95
	36 Mbps	-86
	48 Mbps	-81
	54 Mbps	-80
11n HT20	MCS0,8, 16	-91
	MCS5, 13, 21	-78
	MCS6, 14, 22	-76
	MCS7,15, 23	-74
11n HT40	MCS0,8, 16	-88
	MCS5, 13, 21	-75
	MCS6, 14, 22	-73
	MCS7,15, 23	-71
11n HT80	MCS7	-69
11ac HT20	3/4	-65
	5/6	-63
11acHT40	3/4	-62
	5/6	-60
11ac HT80	3/4	-59
	5/6	-57
11ac HT160	3/4	-56
	5/6	-54

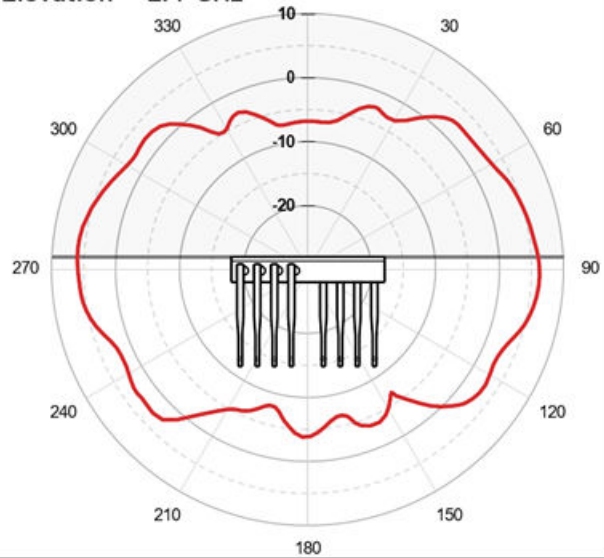
Maximum EIRP may vary based upon deployed country.

# Radiation Patterns – Azimuth and Elevation

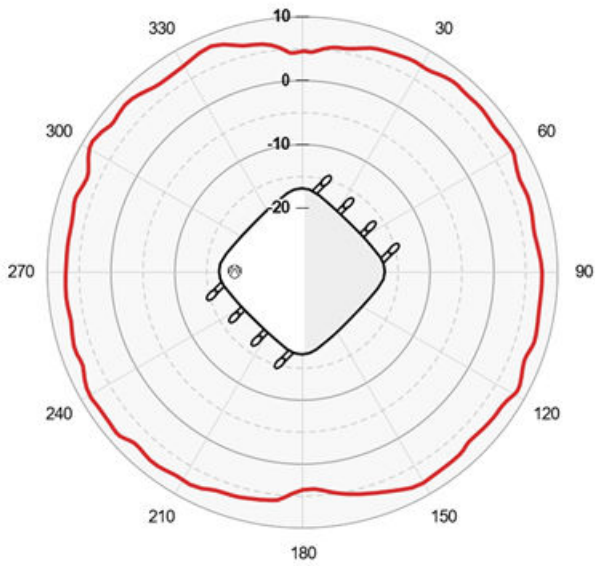
Azimuth - 2.4 GHz



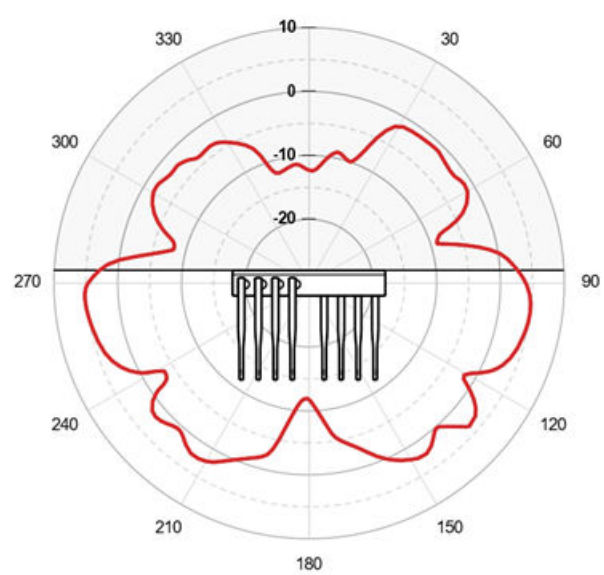
Elevation - 2.4 GHz



Azimuth - 5 GHz



Elevation - 5 GHz



## Ordering Information

### AP510C

SKU	Description
AP510C-WW	ExtremeCloud IQ: Indoor Wi-Fi 6 AP, 4x4 radios, 2.5 GbE & 1 GbE port. Integrated light/power sensors and BLE. AI/ML green mode. Internal antennas, T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Includes Connect. All regulatory domains World SKU
AP510CX-WW	ExtremeCloud IQ: Indoor Wi-Fi 6 AP, 4x4 radios, 2.5 GbE & 1 GbE port. Integrated light/power sensors and BLE. AI/ML green mode. External antennas, T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Includes Connect. All regulatory domains World SKU
AP510C-CAN	ExtremeCloud IQ: Indoor Wi-Fi 6 AP, 4x4 radios, 2.5 GbE and 1 GbE port. Integrated light/power sensors and BLE/Zigbee. AI/ML green mode. Internal antennas, T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Includes Connect. Domain: Canada
AP510C-CE	ExtremeCloud IQ: Indoor Wi-Fi 6 AP, 4x4 radios, 2.5 GbE and 1 GbE port. Integrated light/power sensors and BLE/Zigbee. AI/ML green mode. Internal antennas, T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Includes Connect. Domain: EMEA
AP510C-FCC	ExtremeCloud IQ: Indoor Wi-Fi 6 AP, 4x4 radios, 2.5 GbE and 1 GbE port. Integrated light/power sensors and BLE/Zigbee. AI/ML green mode. Internal antennas, T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Includes Connect. Domain: FCC Regulatory Domain
AP510C-W	ExtremeCloud IQ: Indoor Wi-Fi 6 AP, 4x4 radios, 2.5 GbE and 1 GbE port. Integrated light/power sensors and BLE/Zigbee. AI/ML green mode. Internal antennas, T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Includes Connect. Domain: Rest of World
AP510CX-CAN	ExtremeCloud IQ: Indoor Wi-Fi 6 AP, 4x4 radios, 2.5 GbE and 1 GbE port. Integrated light/power sensors and BLE/Zigbee. AI/ML green mode. External antenna, T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Includes Connect. Domain: Canada
AP510CX-CE	ExtremeCloud IQ: Indoor Wi-Fi 6 AP, 4x4 radios, 2.5 GbE and 1 GbE port. Integrated light/power sensors and BLE/Zigbee. AI/ML green mode. External antenna, T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Includes Connect. Domain: EMEA
AP510CX-FCC	ExtremeCloud IQ: Indoor Wi-Fi 6 AP, 4x4 radios, 2.5 GbE and 1 GbE port. Integrated light/power sensors and BLE/Zigbee. AI/ML green mode. External antenna, T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Includes Connect. Domain: FCC Regulatory Domain
AP510CX-W	ExtremeCloud IQ: Indoor Wi-Fi 6 AP, 4x4 radios, 2.5 GbE and 1 GbE port. Integrated light/power sensors and BLE/Zigbee. AI/ML green mode. External antenna, T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Includes Connect. Domain: Rest of World
ACT-AP510C	Activation for AP510C. Not required in all countries.
ACT-AP510CX	Activation for AP510CX. Not required in all countries.

### Power Accessories

SKU	Description
PD-9001GR-ENT	Single port 802.3at compliant midspan
AH-ACC-PW-30W	30W power adapter (12VDC, 2.5A) for AP650, AP650X
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



## Antennas

SKU	Description
ML-2452-APA2-02	Dipole Omni, 3.2/4.9 dBi, White (need 4 for AP305CX)
AH-ACC-ANT-AX-KT (8 per pack)	Articulated indoor antenna kit (8 x Dual Band 5dBi antennas)

## Mounting Accessories

SKU	Description
AH-ACC-BKT-AX-IL	Mounting bracket for Interlude ceilings
AH-ACC-BKT-AX-SL	Mounting bracket for Silhouette 1/8" and Silhouette 1/4" ceilings
AH-ACC-BKT-AX-TB	Mounting bracket for Prelude 15/16" and Suprafine 9/16" ceilings
AH-ACC-BKT-AX-WL	Mounting bracket for direct-to-wall installations

Note: AH-ACC-BKT-AX-TB included in AP



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