AP310i/e

Highlights

Radio Technology
- 5 GHz 2x2:2
- 2.4 GHz 2x2:2

Radio Modes – SSR
- 2.4 GHz / 5 GHz
- 5 GHz / 5 GHz – Dual 5 GHz
- Sensor (2.4 GHz/5 GHz) / 5 GHz

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 802.3af
- USB port usage requires 802.3at

Smart Management Choices
- ExtremeCloud™ IQ Controller or VX/NX controllers ideal for for on-premises requirements
- Optional ExtremeCloud IQ visibility supported via on-premises controller

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

The AP310i/e is based on a new system-on-a-chip (SoC) with two built in dual band 2x2 radios providing the best value with Wi-Fi 6 high efficiency. Priced for the mass market, this enterprise-grade access point is ideal for budget-conscious enterprises that do not want to sacrifice performance. While other vendors may reduce features and functionality, the AP310i/e retains all the capabilities of higher-end APs including software-selectable-antenna (SSR). 802.11ax data rates of up to 2.4 Gbps are available concurrently in both the 2.4 GHz and 5 GHz band. The AP310i/e also provides the flexibility to provide the same data rates simultaneously on two 5 GHz channels using dual-5 GHz SSR technology.

Despite the exponential growth of users, BYOD devices, IoT, high-bandwidth applications, and security threats straining the infrastructure, the AP310 combines performance, security services, and insightful ML/AI management capabilities to deliver an enterprise-class solution at a value price.

Security

The AP310i/e 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.

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/wifi6/what-is-80211ax/.

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 AP310i/e 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.

Management Analytics

In conjunction with management system, cloud or on-premises, the AP310i/e 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, and policy roles. In each context, administrators can adjust dashboards from widget library.

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.

Integrated BLE and Zigbee

To support both IoT and Guest Engagement services, the AP310i/e integrates Bluetooth to connect with IoT devices with Thread wireless or engage loyalty customers with Apple iBeacon[1]. Enterprises can use Google Eddystone 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.

[1] IoT Radio included for certain AP310i/e model SKUs

Product Specifications

Max Users
SSID per Radio/Total: 8/16
Users per Radio/Total: 512/1024

Radio Specifications
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

2.4–2.5GHz 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

Rates (Mbps): MCS0 - MCS15 (6.5Mbps - 300Mbps)

2x2:2 Multiple-In, Multiple-Out (MIMO) Radio

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–MCS9 (6.5Mbps – 867Mbps), NSS = 1-2

2x2:2 Stream Multiple-In, Multiple-Out (MIMO) Radio

20 MHz channel

VHT20/VHT40/VHT80 support

TxBF (Transmit Beamforming)

802.11ax

2.4–2.5 GHz & 5.150–5.850 GHz Operating Frequency

802.11ax Modulation (1024-QAM)

Downlink and uplink OFDMA

5 GHz rates (Mbps): HE0-HE11 (8 Mbps – 1200 Mbps)

2.4 GHz rates (Mbps): HE0-HE11 (8 Mbps – 574 Mbps)

2x2:2 Stream Multiple-In, Multiple-Out (MIMO) Radio

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
BLE Radio Bluetooth® Low Energy (BLE) and IEEE® 802.15.4 compliant[1]

[1] IoT Radio included for certain AP310i/e model SKUs

Interfaces
(2) Autosensing 10/100/1000 Ethernet Port, RJ45

USB 3.0, Type A , 0.5A

Power Specifications
IEEE 802.3af PoE Power

Power Options
Power Draw: Typical: 9W, Max: 11.1W (w/o USB)

Typical: 12W, Max: 14W (w/ USB)

802.3af 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

PoE Out Supports 802.3af Powered Devices (PD) when powered by 802.3at

Physical
6.4" x 6.4" x 1.7" (165mm x 165mm x 45mm)

AP310i/e: 1.5 lb (0.7 kg)

Antennas
AP310i – Internal Antennas

(2) Integrated dual band, 2.4 GHz/5 GHz omnidirectional antennas

(2) Integrated single band, 5.1-5.8 GHz omnidirectional antennas

(1) Integrated single band, 2.4-2.5 GHz omnidirectional antennas for BLE[2]

AP310e – External Antenna

(4) RP SMAs connectors

(1) RP SMAs connectors for BLE[2]

[2] IoT Radio included for certain AP310i/e model SKUs

Mounting

Wall, and flat tile and 15/16" wide t-bar, mount included as part of AP

Built-in slot for Kensington type locks

5/8" Ceiling tile protrusions on 9/16", 15/16", and 1.5" wide t-bars sold as an accessory

Flush ceiling tiles with 9/16", 15/16", and 1.5" wide t-bars sold as an accessory

Environmental

Operating:

AP310i: 0°C to 50°C

AP310e: -20°C to 55°C

Storage: -40°C to 70°C

Environmental Discharge

+/-8 kV (contact discharge)/ +/-15 kV (Air Discharge)

Environmental Compliance

UL2043 – Plenum Rated

Regulatory Compliance

Product Safety Certifications

IEC 62368/60950-1, EN 62368/60950-1, USA 62368/60950-1, AS/NZS 62368/60950.1, Intertek NTRL

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 61000-3-2

EN 61000-3-3

EN 300 328

EN 301 893

EN 50581

Support

Limited Lifetime Warranty WiNG

Peak Gains

Software Mode	Radio 1	Radio 2	IoT Radio
Dual Band	2.4GHz – 4.5 dBi	5GHz - 4.8 dBi	4.7 dBi
Sensor	2.4GHz - 4.5 dBi	5GHz - 4.8 dBi	4.7 dBi
	5GHz – 5.2 dBi		
Dual 5G	5GHz - 5.2 dBi	5GHz - 4.8 dBi	4.7 dBi

AP310i

AP310i Power and Receive Sensitivity - 2.4 GHz

Channel	Data Rate	Power (dBm)	Sensitivity
11b	1 - 11 Mbps	20	-94, -87
11g	6 Mbps	20	-90
	54 Mbps	18	-73
11n HT20	MCS0,7	20,17	-89, -70
11n HT40	MCS0,7	19,16	-86, -67
11ax HE20	HE0,11	20, 14	-89, -60
11ax HE40	HE0,11	19,13	-86, -56

AP310i Power and Receive Sensitivity - 5 GHz (Full Band)

Channel	Data Rate	Power (dBm)	Sensitivity
11a	6 Mbps	20	-90
	54 Mbps	18	-74
11n HT20	MCS0,7	20, 18	-90, -70
11n HT40	MCS0,7	19, 17	-87, -68
11ac VHT20	MCS0,8	20, 17	-89, -66
11ac VHT40	MCS0,9	19, 16	-87, -62
11ac VHT80	MCS0,9	19, 16	-84, -59
11ax HE20	HE0,11	20, 15	-89, -61
11ax HE40	HE0,11	19, 15	-87, -58
11ax HE80	HE0,11	19, 15	-85, -56

AP310i Power and Receive Sensitivity - 5 GHz (High Band)

Channel	Data Rate	Power (dBm)	Sensitivity
11a	6 Mbps	18	-89
	54 Mbps	17	-73
11n HT20	MCS0,7	18, 16	-89, -69
11n HT40	MCS0,7	18, 16	-86, -67
11ac VHT20	MCS0,8	18, 15	-88, -65
11ac VHT40	MCS0,9	18, 15	-86, -61
11ac VHT80	MCS0,9	18, 15	-83, -58
11ax HE20	HE0,11	18, 14	-88, -60
11ax HE40	HE0,11	18, 14	-86, -57
11ax HE80	HE0,11	18, 14	-84, -55

AP310i Power and Receive Sensitivity - 5 GHz (Low Band)

Channel	Data Rate	Power (dBm)	Sensitivity
11a	6 Mbps	18	-89
	54 Mbps	16	-73
11n HT20	MCS0,7	18, 16	-89, -69
11n HT40	MCS0,7	17, 15	-86, -67
11acVHT20	MCS0,8	18, 15	-88, -65
11ac VHT40	MCS0,9	17, 14	-86, -61
11acVHT80	MCS0,9	17, 14	-83, -58
11ax HE20	HE0,11	18, 13	-88, -60
11ax HE40	HE0,11	17, 13	-86, -57
11ax HE80	HE0,11	17, 13	-84, -55

AP310e

AP310e Power and Receive Sensitivity - 2.4 GHz

Channel	Data Rate	Power (dBm)	Sensitivity
11b	1 - 11 Mbps	19	-93, -86
11g	6 Mbps	19	-89
	54 Mbps	17	-72
11n HT20	MCS0,7	19, 16	-88, -69
11n HT40	MCS0,7	18, 15	-85, -66
11ax HE20	HE0,11	19, 15	-88, -59
11ax HE40	HE0,11	18, 12	-85, -55

AP310e Power and Receive Sensitivity - 5 GHz (Full Band)

Channel	Data Rate	Power (dBm)	Sensitivity
11a	6 Mbps	20	-90
	54 Mbps	18	-74
11n HT20	MCS0,7	20, 18	-90, -70
11n HT40	MCS0,7	19, 17	-87, -68
11ac VHT20	MCS0,8	20, 17	-89, -66
11ac VHT40	MCS0,9	19, 16	-87, -62
11ac VHT80	MCS0,9	19, 16	-84, -59
11ax HE20	HE0,11	20, 15	-89, -61
11ax HE40	HE0,11	19, 15	-87, -58
11ax HE80	HE0,11	19, 15	-85, -56

### AP310e Power and Receive Sensitivity - 5 GHz (High Band)

Channel	Data Rate	Power (dBm)	Sensitivity
11a	6 Mbps	18	-89
	54 Mbps	17	-73
11n HT20	MCS0,7	18, 16	-89, -69
11n HT40	MCS0,7	18, 16	-86, -67
11ac VHT20	MCS0,8	18, 15	-88, -65
11ac VHT40	MCS0,9	18, 15	-86, -61
11ac VHT80	MCS0,9	18, 15	-83, -58
11ax HE20	HE0,11	18, 14	-88, -60
11ax HE40	HE0,11	18, 14	-86, -57
11ax HE80	HE0,11	18, 14	-84, -55

### AP310e Power and Receive Sensitivity - 5 GHz (Low Band)

Channel	Data Rate	Power (dBm)	Sensitivity
11a	6 Mbps	16	-89
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11n HT20	MCS0,7	16, 14	-89, -69
11n HT40	MCS0,7	15, 13	-86, -67
11acVHT20	MCS0,8	16, 13	-88, -65
11ac VHT40	MCS0,9	15, 12	-86, -61
11acVHT80	MCS0,9	15, 12	-83, -58
11ax HE20	HE0,11	16, 11	-88, -60
11ax HE40	HE0,11	15, 11	-86, -57
11ax HE80	HE0,11	15, 11	-84, -55

Radiation Patterns – Azimuth and Elevation

AP310i/e Antenna Radiation Patterns — 2.4GHz
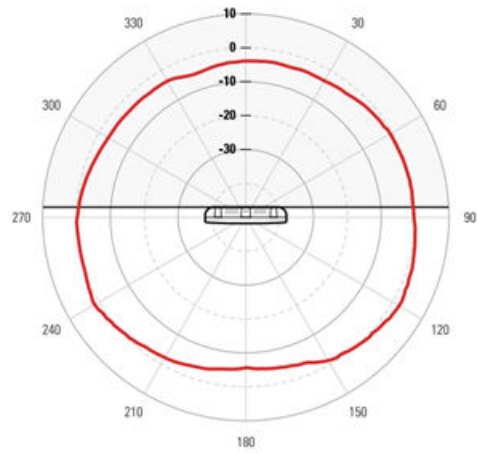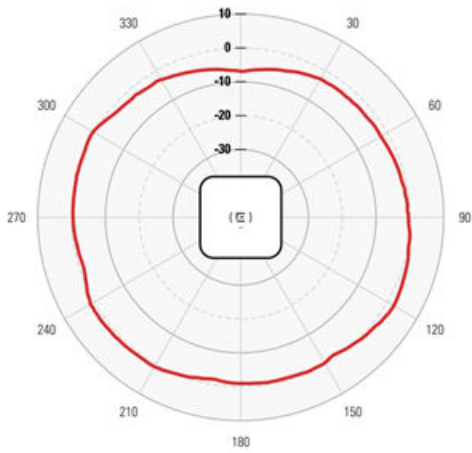
AP310i/e Antenna Radiation Patterns — 5.0GHz
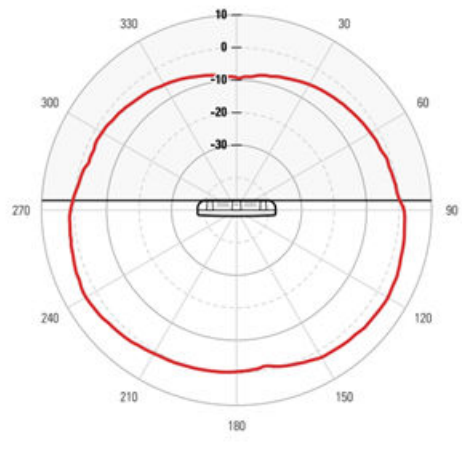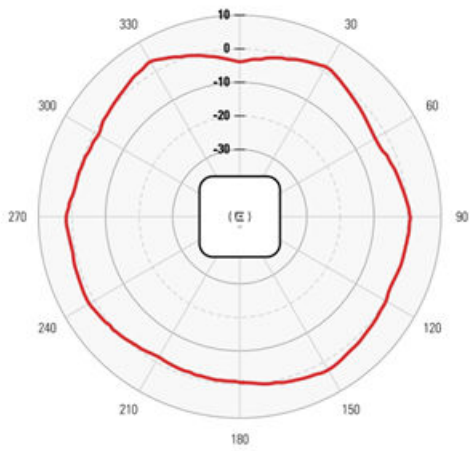
Ordering Information

AP310i/e

Mkt Part #	Description
AP310i-FCC	Dual Radio 802.11ax - 2x2:2, Dual 5G Indoor Internal Antenna Access Point. Domain: US, and Puerto Rico
AP310i-WR	Dual Radio 802.11ax - 2x2:2, Dual 5G Indoor Internal Antenna Access Point. Domain: EMEA, and Rest of World
AP310i-CAN	Dual Radio 802.11ax - 2x2:2, Dual 5G Indoor Internal Antenna Access Point. Domain: Canada
AP310e-FCC	Dual Radio 802.11ax - 2x2:2, Dual 5G Indoor External Antenna Access Point. Domain: US, and Puerto Rico
AP310e-CAN	Dual Radio 802.11ax - 2x2:2, Dual 5G Indoor External Antenna Access Point. Domain: Canada
AP310e-WR	Dual Radio 802.11ax - 2x2:2, Dual 5G Indoor External Antenna Access Point. Domain: EMEA, Rest of World
AP310i-1-WR*	Dual Radio 802.11ax - 2x2:2, Dual 5G Indoor Internal Antenna Access Point. Wi-Fi 6 - Domain: EMEA, Rest of World
AP310e-1-WR*	Dual Radio 802.11ax - 2x2:2, Dual 5G Indoor External Antenna Access Point. Wi-Fi 6 - Domain: EMEA, Rest of World

* Non-BLE SKU. AP310i-1-WR and AP310e-1-WR have identical functionality as AP310i-WR and AP310e-WR respectively, with the exception of IoT radio and Bluetooth functionality.

Mounting Options – AP310i/e

Mkt Part #	Description
37201	Mounting Plate for Indoor APs (included in box)
KT-135628-01	Universal Mounting Kit for WLAN APs Requires (37201) bracket for mounting
BRKT-000147A-01	Beam Clip Accessory
37210	Flat Metal Indoor Bracket
30518	WS-MBI-DCMTR01 bracket
30516	WS-MBI-WALL04
37211	WS-MBI-DCFLUSH

Power Options – AP310i/e

Mkt Part #	Description
PD-3501G-ENT	Single Port 802.3AF Midspan Device
PD-9001GR-ENT	Single Port 802.3AT Compliant Midspan
37215	PWR 12VDC, 3A, 2.5mm x 5.5mm connector

Antennas – AP310i/e

Mkt Part #	Description
ML-2452-APA2-01	Dipole, 3.2dBi/4.9dBi, dual band, black with RPSMA plug connector (up to 5 per AP)
ML-2452-APA2-02	Dipole, 3.2dBi/4.9dBi, dual band, white with RPSMA plug connector (up to 5 per AP)
ML-2452-HPA5-036	Dipole, 3.9dBi/ 5.7dBi, dual band, outdoor, white with RPSMA plug connector (up to 5 per AP)

Mkt Part #	Description
ML-2452-HPAG4A6-01	Dipole, 4dBi/ 7.3dBi, dual band, outdoor, white with standard N plug connector (up to 5 per AP)
ML-2452-PNA5-01R	Panel, 120 deg sector, 4.5dBi/ 5dBi, dual band, outdoor, 4" lead with standard N plug connector (up to 5 per AP)
ML-2452-PTA4M4-036	Patch, 360 deg, 4dBi/ 5dBi, dual band, indoor, with quad feed 36" leads and RP SMA plug connectors
ML-2452-HPAG5A8-01	Dipole Omni, 7.5dBi/8dBi, dual band, outdoor with standard N Plug connector (up to 5 per AP)
ML-2452-SEC6M4-036	Polarized Panel, 10 0/ 80 deg, 6.92dBi/ 7.23dBi, dual band, indoor with quad feed 32" leads and standard RP SMA plug connectors
ML-2452-PNA7-01R	Panel, 68/ 52 deg sector, 7.8dBi/ 10.7dBi, dual band, outdoor, 4" lead with standard N plug connector (up to 5 per AP)
AI-DQ04360S	Dipole Omni Array, 5.5dBi/ 6dBi, dual band, outdoor with quad feed 36" leads and RP SMA connectors
30702	WS-AI-DQ05120 Indoor, 2.3-2.7/4.9-6.1GHz, 4-feed, 5dBi, 120 degree sector antenna with standard RP SMA-type plug connector
30705	WS-AI-DE07025 Indoor 2.4GHz/5GHz, eight feed, 6.5/5.5dBi, 25 degree sector antenna with standard RP SMA-type plug connector
30707	WS-AI-DE10055 Indoor 2.4GHz/5GHz, eight feed, 10/6dBi, 55 degree sector antenna with standard RP SMA-type plug connector