



# DELL EMC NETWORKING W-310 SERIES ACCESS POINTS

## High-performance 802.11ac Wave 2

Multi-functional 310 series access points (W-AP314, W-AP315, W-IAP314, and W-IAP315) deliver high performance and superb user experience for mobile devices, Internet of Things (IoT) devices, and applications in dense office environments. Featuring the 4x4:4SS MU-MIMO capability, advanced ClientMatch radio management, and Beacon technologies, the 310 Series enables a cost-effective all-wireless digital work environment.

With a maximum concurrent data rate of 1,733Mbps in the 5GHz band and 400Mbps in the 2.4GHz band (for an aggregate peak data rate of 2.1 Gbps), 310 Series APs can quickly add required capacities to your existing or new wireless networks. The mid-range 310 Series, with its single gigabit Ethernet uplink, is ideal for high device density environments, such as schools, retail branches, hotels and enterprise offices, where the organization is cost sensitive.

The high performance and high density 802.11ac 310 Series APs support 160MHz channel bandwidth (VHT160), multi-user MIMO (MU-MIMO) and four spatial streams (4SS). They provide simultaneous data transmission to multiple devices, maximizing data throughput and improving network efficiency.

The 310 Series APs include the patent-pending enhanced ClientMatch technology that extends the client steering technology with MU-MIMO client awareness. They automatically identify MU-MIMO capable mobile devices and steers those devices to the closest MU-MIMO capable Dell access point. By grouping MU-MIMO capable mobile devices together, the network starts taking advantage of the simultaneous transmission to these devices, increasing its overall capacity. These dynamic roaming policies that are based on device types, help customers achieve the best WLAN performance in a mixed device environment during the technology transition period.

The 310 Series APs have an integrated Bluetooth Beacon that simplifies the remote management of a network of largescale battery-powered beacons while also providing advanced location and indoor way finding, and proximity-based push notification capabilities. It enables businesses to leverage mobility context to develop applications that will deliver an enhanced user experience and increase the value of the wireless network for organizations.

### Unique benefits

- Dual Radio 802.11ac Access Point with Multi-User MIMO
  - Supports up to 1,733Mbps in the 5GHz band (with 4SS/VHT80 or 2SS/VHT160 clients) and up to 400Mbps in the 2.4 GHz band (with 2SS/VHT40 clients).
- Built-in Bluetooth Low-Energy (BLE) radio
  - Enables location based services with BLE-enabled mobile devices receiving signals from multiple Dell Beacons at the same time.
- Advanced Cellular Coexistence (ACC)
  - Minimizes interference from 3G/4G cellular networks, distributed antenna systems and commercial small cell/femtocell equipment.
- Quality of service for Unified Communication apps
  - Supports priority handling and policy enforcement for unified communication apps, including Skype for Business with encrypted videoconferencing, voice, chat and desktop sharing.
- RF Management
  - Adaptive Radio Management™ (ARM) technology automatically assigns channel and power settings, provides airtime fairness and ensures that APs stay clear of all sources of RF interference to deliver reliable, high-performance WLANs
  - 310 Series APs and IAPs can be configured to provide part-time or dedicated air monitoring for spectrum analysis and wireless intrusion protection, VPN tunnels to extend remote locations to corporate resources, and wireless mesh connections where Ethernet drops are not available.
- Support for additional 5GHz bands
  - Supports software upgrade to enable additional 5 GHz spectrums when governments expand available frequencies
- Intelligent app visibility and control
  - AppRF technology leverages deep packet inspection to classify and block, prioritize or limit bandwidth for over 1,500 enterprise apps or groups of apps.
- Security
  - Integrated wireless intrusion protection offers threat protection and mitigation, and eliminates the need for separate RF sensors and security appliances.
  - IP reputation and security services identify, classify, and block malicious files, URLs and IPs, providing comprehensive protection against advanced online threats.

- Integrated Trusted Platform Module (TPM) for secure storage of credentials and keys.
- SecureJack-capable for secure tunneling of wired Ethernet traffic.
- Intelligent Power Monitoring (IPM):
  - Enables the AP to continuously monitor and report its actual power consumption and optionally make autonomous decisions to disable certain capabilities based on the amount of power available to the unit.
  - What capabilities to disable and in what order, is configurable in software
  - For the 310 Series Access Points, the IPM power-save feature applies when the unit is powered by an 802.3af PoE source. By default, the USB interface will be the first feature to turn off if AP power consumption exceed the available power budget.
- Four spatial stream Multi User (MU) MIMO for up to 1,733Mbps wireless data rate to up to three MU-MIMO capable client devices simultaneously
- 2.4GHz: Two spatial stream Single User (SU) MIMO for up to 400Mbps wireless data rate to individual 2x2 VHT40 client devices (300Mbps for HT40 802.11n client devices)
- Support for up to 255 associated client devices per radio, and up to 16 BSSIDs per radio
- Supported frequency bands (country-specific restrictions apply):
  - 2.400 to 2.4835GHz
  - 5.150 to 5.250GHz
  - 5.250 to 5.350GHz
  - 5.470 to 5.725GHz
  - 5.725 to 5.850GHz
- Available channels: Dependent on configured regulatory domain
- Dynamic frequency selection (DFS) optimizes the use of available RF spectrum
- Supported radio technologies:
  - 802.11b: Direct-sequence spread-spectrum (DSSS)
  - 802.11a/g/n/ac: Orthogonal frequency-division multiplexing (OFDM)
- Supported modulation types:
  - 802.11b: BPSK, QPSK, CCK
  - 802.11a/g/n/ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM
- Transmit power: Configurable in increments of 0.5 dBm
- Maximum (conducted) transmit power (limited by local regulatory requirements):
  - 2.4GHz band: +18 dBm per chain
  - 5GHz band: +18 dBm per chain
  - Note: conducted transmit power levels exclude antenna gain. For total (EIRP) transmit power, add antenna gain
- Advanced Cellular Coexistence (ACC) minimizes interference from cellular networks
- Maximum ratio combining (MRC) for improved receiver performance
- Cyclic delay/shift diversity (CDD/CSD) for improved downlink RF performance
- Short guard interval for 20MHz, 40MHz, 80MHz and 160MHz channels
- Space-time block coding (STBC) for increased range and improved reception
- Low-density parity check (LDPC) for high-efficiency error correction and increased throughput
- Transmit beam-forming (TxBF) for increased signal reliability and range
- Supported data rates (Mbps):
  - 802.11b: 1, 2, 5.5, 11
  - 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
  - 802.11n: 6.5 to 600 (MCS0 to MCS31)
  - 802.11ac: 6.5 to 1,733 (MCS0 to MCS9, NSS = 1 to 4 for VHT20/40/80, NSS = 1 to 2 for VHT160)
- 802.11n high-throughput (HT) support: HT 20/40
- 802.11ac very high throughput (VHT) support: VHT 20/40/80/160
- 802.11n/ac packet aggregation: A-MPDU, A-MSDU

### Choose your operating mode

310 Series APs offer a choice of operating modes to meet your unique management and deployment requirements.

- Controller-managed mode - When managed by Dell networking W-Series mobility controllers, 310 Series APs offer centralized configuration, data encryption, policy enforcement and network services, as well as distributed and centralized traffic forwarding.
- Instant mode - In Instant mode, a single IAP automatically distributes the network configuration to other Instant APs in the WLAN. Simply power-up one IAP, configure it over the air, and plug in the other IAPs - the entire process takes minutes. If WLAN requirements change, a built-in migration path allows the 310 Series instant APs to become part of a WLAN that is managed by a mobility controller.
- Remote AP (RAP) for branch deployments
- Air monitor (AM) for wireless IDS, rogue detection and containment
- Spectrum analyzer, dedicated or hybrid, for identifying sources of RF interference
- Secure enterprise mesh\*
  - \* Available in later deployments

### 310 series specifications

- W-AP314 and W-IAP314
  - 802.11ac – 5GHz 4x4 MIMO (1,733Mbps max rate) and 2.4GHz 2x2 MIMO (400Mbps max rate) radios, with a total of four dual-band RP-SMA connectors for external antennas
- W-AP315 and W-IAP315
  - 802.11ac - 5GHz 4x4 MIMO (1,733Mbps max rate) and 2.4GHz 2x2 MIMO (400Mbps max rate) radios, with a total of twelve integrated omni-directional downtilt dual-band antennas

### Wi-Fi radio specifications

- AP type: Indoor, dual radio, 5GHz 802.11ac 4x4 MIMO and 2.4GHz 802.11n 2x2 MIMO
- Software-configurable dual radio supports 5GHz (Radio 0) and 2.4GHz (Radio 1)
- 5GHz:
  - Four spatial stream Single User (SU) MIMO for up to 1,733Mbps wireless data rate to individual 4x4 VHT80 or 2x2 VHT160 client devices

## Wi-Fi antennas

- W-AP314/W-IAP314: Four RP-SMA connectors for external dual band antennas. Internal loss between radio interface and external antenna connectors (due to diplexing circuitry): 0.6dB in 2.4GHz and 1.2dB in 5GHz.
- W-AP315/W-IAP315
  - Four integrated 2.4GHz dual-band downtilt omni-directional antennas for 4x4 MIMO with maximum antenna gain of 3.1dBi in 2.4 GHz and 5.0dBi in 5 GHz. Built-in antennas are optimized for horizontal ceiling mounted orientation of the AP. The downtilt angle for maximum gain is roughly 30 degrees
  - The maximum gain of the combined (summed) antenna patterns for all elements operating in the same band is 3.9dBi in 2.4GHz and 5.7dBi in 5GHz.

## Other interfaces

- One 10/100/1000BASE-T Ethernet network interface (RJ-45)
  - Auto-sensing link speed and MDI/MDX
  - 802.3az Energy Efficient Ethernet (EEE)
- USB 2.0 host interface (Type A connector)
- Bluetooth Low Energy (BLE) radio
  - Up to 4dBm transmit power (class 2) and -91dBm receive sensitivity
  - Integrated antenna with roughly 30 degrees downtilt and peak gain of 3.4dBi (W-AP314/W-IAP314) or 1.5dBi (W-AP315/W-IAP315)
- Visual indicators (multi-color LEDs): for System and Radio status
- Reset button: factory reset (during device power up)
- Serial console interface (RJ45, RS232)
- Kensington security slot

## Power

- The AP supports direct DC power and Power over Ethernet (POE)
- When both power sources are available, DC power takes priority over POE
- Power sources are sold separately
- Direct DC source: 48Vdc nominal, +/- 5%
  - Interface accepts 2.1/5.5mm center-positive circular plug with 9.5mm length
- Power over Ethernet (POE): 48 Vdc (nominal) 802.3af/802.3at compliant source
  - Unrestricted functionality with 802.3at PoE
  - When using IPM, the AP may enter power-save mode with reduced functionality when powered by a POE source (see details on Intelligent Power Monitoring elsewhere in this datasheet)
  - Without IPM, the USB port is disabled and transmit power of the 2.4 GHz radio chains is reduced by 3dB to 15dBm max when the AP is powered by and 802.3af PoE source
- Maximum (worst-case) power consumption: 14.4W (802.3at POE), 13.6W (802.3af POE) or 12.7W (DC)
  - Excludes power consumed by external USB device (and internal overhead); this could add up to 6.3W (PoE) or 5.9W (DC) for a 5W/1A USB device
- Maximum (worst-case) power consumption in idle mode: 6.4W (PoE) or 5.9W (DC)

## Mounting

- The AP ships with two (white) mounting clips to attach to a 9/16-inch or 15/16-inch flat T-bar drop-tile ceiling.
- Several optional mount kits are available to attach the AP to a variety of surfaces; see the Ordering Information section for details.

## Mechanical

- Dimensions/weight (unit, excluding mount accessories):
  - 182mm (W) x 180mm (D) x 48mm (H)
  - 650g/23oz
- Dimensions/weight (shipping):
  - 223mm (W) x 218mm (D) x 55mm (H)
  - 850g/30oz

## Environmental

- Operating:
  - Temperature: 0° C to +50° C (+32° F to +122° F)
- Humidity: 5% to 95% non-condensing
- Storage and transportation:
  - Temperature: -40° C to +70° C (-40° F to +158° F)

## Regulatory

- FCC/Industry of Canada
- CE Marked
- R&TTE Directive 1995/5/EC
- Low Voltage Directive 72/23/EEC
- EN 300 328
- EN 301 489
- EN 301 893
- UL/IEC/EN 60950
- EN 60601-1-1, EN60601-1-2

For more country-specific regulatory information and approvals, please see your Dell EMC representative.

## Reliability

MTBF: 916,373 hrs (105yrs) at +25C operating temperature

## Regulatory model numbers

- W-AP314 and W-IAP314: APIN0314
- W-AP315 and W-IAP315: APIN0315

## Certifications

- CB Scheme Safety, cTUVus
- UL2043 plenum rating
- Wi-Fi Alliance (WFA) certified 802.11a/b/g/n/ac

## Warranty

- Limited lifetime warranty

## Minimum operating system software versions

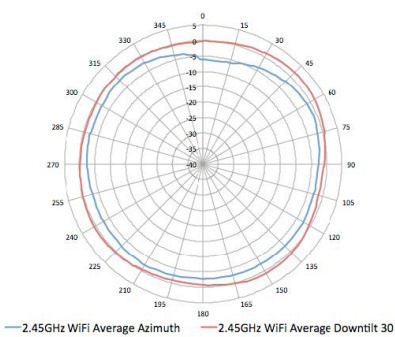
- Controller AOS 6.5.0.0
- InstantOS 4.3.0.0

## Ordering information

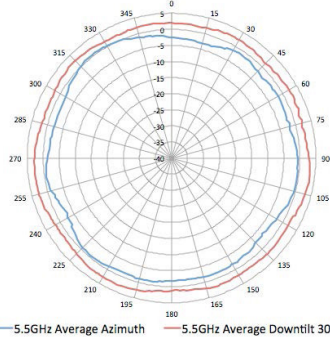
Part number	Description
<b>310 series access points</b>	
W-AP314	Dell Networking W-AP314 wireless access point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors
W-IAP314-RW	Dell Networking Instant W-IAP314 wireless access point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors – Restricted regulatory domain: Rest of World
W-IAP314-US	Dell Networking Instant W-IAP314 wireless access point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors – Restricted regulatory domain: United States
W-IAP314-JP	Dell Networking Instant W-IAP314 wireless access point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors – Restricted regulatory domain: Japan
W-AP315	Dell Networking W-AP315 wireless access point, 802.11n/ac, 4x4 MU-MIMO, dual radio, integrated antennas
W-IAP315-RW	Dell Networking Instant W-IAP315 wireless access point, 802.11n/ac, 4x4 MU-MIMO, dual radio, integrated antennas – Restricted regulatory domain: Rest of World
W-IAP315-US	Dell Networking Instant W-IAP315 wireless access point, 802.11n/ac, 4x4 MU-MIMO, dual radio, integrated antennas – Restricted regulatory domain: United States
W-IAP315-JP	Dell Networking Instant W-IAP315 wireless access point, 802.11n/ac, 4x4 MU-MIMO, dual radio, integrated antennas – Restricted regulatory domain: Japan
<b>Mounting accessories</b>	
W-AP220-MNT-C1	Spare Dell Access Point Mount Kit (ceiling grid). Contains 2x ceiling grid rail adapters (for flat rails). Color: black. Spare.
W-AP220-MNT-C2	Dell Access Point Mount Kit (ceiling grid). Contains 2x ceiling grid rail adapters (for Interlude and silhouette style rails). Color: black
W-AP-MNT-CM1	Suspended ceiling rail mount kit for indoor campus access points (metal, industrial grade). Fits most rail types.
W-AP220-MNT-W1	Dell Access Point Mount Kit (basic, flat surface). Contains 1x flat surface wall/ceiling mount bracket. Color: black
W-AP220-MNT-W1W	Dell Access Point Mount Kit (basic, flat surface). Contains 1x flat surface wall/ceiling mount bracket. Color: white
W-AP220-MNT-W2	Dell Access Point Mount Kit (secure, flat surface). Contains 1x flat surface wall/ceiling mount cradle. Color: black
W-AP220-MNT-W2W	Dell Access Point Mount Kit (secure, flat surface). Contains 1x flat surface wall/ceiling mount cradle. Color: white
W-AP-220-MNT-W3	Indoor Access Point flat surface mount kit (box style, secure, low-profile, large, white)
<b>Other accessories</b>	
AP-AC-12V30B	12V/30W AC-to-DC Desktop Style Power Adapter with Type B DC plug (2.1/5.5/9.5mm circular, 90-degree angled). Note: does not include country specific AC power cord (PC-AC-xx).
PD-3501G-AC	15.4W 802.3af PoE midspan injector, 10/100/1000BASE-T Ethernet. Note: does not include country specific AC power cord (PC-AC-xx)
PD-9001GR-AC	30W 802.3at PoE midspan injector, 10/100/1000BASE-T Ethernet. Note: does not include country specific AC power cord (PC-AC-xx)
AP-CBL-SER	Serial adapter cable for AP console port (proprietary header to DB9 female)

## Antenna pattern plots

Horizontal planes (top view, AP facing forward)  
Showing azimuth (0 degrees) and 30 degrees downtilt pattern

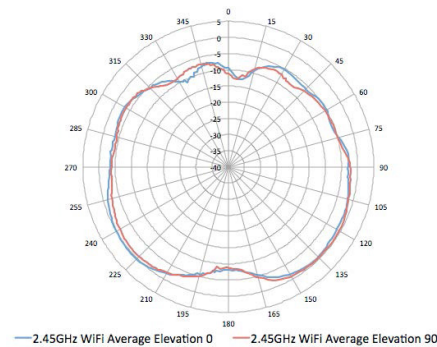


2.45GHz Wi-Fi (antennas 4,5)

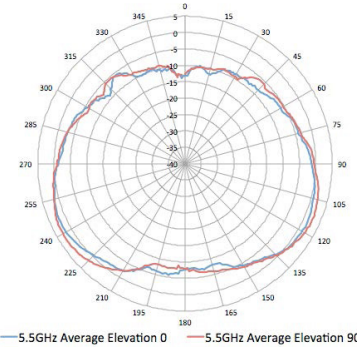


5.5GHz Wi-Fi (antennas 4,5,6,7)

Elevation planes (side view, AP facing down)  
Showing side view with AP rotated 0 and 90 degrees



2.45GHz Wi-Fi (antennas 4,5)



5.5GHz Wi-Fi (antennas 4,5,6,7)

## IT Lifecycle Services for Networking

### Experts, insights and ease

Our highly trained experts, with innovative tools and proven processes, help you transform your IT investments into strategic advantages.



#### Plan & Design

Let us analyze your multivendor environment and deliver a comprehensive report and action plan to build upon the existing network and improve performance.



#### Deploy & Integrate

Get new wired or wireless network technology installed and configured with ProDeploy. Reduce costs, save time, and get up and running fast.



#### Educate

Ensure your staff builds the right skills for long-term success. Get certified on Dell EMC Networking technology and learn how to increase performance and optimize infrastructure.



#### Manage & Support

Gain access to technical experts and quickly resolve multivendor networking challenges with ProSupport. Spend less time resolving network issues and more time innovating.



#### Optimize

Maximize performance for dynamic IT environments with Dell EMC Optimize. Benefit from in-depth predictive analysis, remote monitoring and a dedicated systems analyst for your network.



#### Retire

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