



DELL EMC NETWORKING W-320 SERIES ACCESS POINTS

Bringing a switch-like experience to 802.11ac

Multi-functional 320 Series (W-AP324, W-AP325, W-IAP324, and W-IAP325) wireless access points (AP) provide optimal 802.11ac Wi-Fi connectivity to enable the highest capacity, performance, and efficiency in extremely high-density environments.

With a maximum concurrent data rate of 1,733Mbps in the 5GHz band and 800Mbps in the 2.4GHz band (aggregated data rate of 2.5Gbps), 320 Series APs support multi-user MIMO (MU-MIMO) and four spatial streams (4SS) to provide simultaneous data transmission to multiple devices, maximize data throughput and improve network efficiency.

The 320 Series includes the patent-pending Enhanced ClientMatch technology that extends the client steering technology with MU-MIMO client awareness. It automatically identifies MU-MIMO capable mobile devices and steers those devices to the closest MU-MIMO capable access point. Grouping MU-MIMO-capable mobile devices together allows the network to take advantage of simultaneous transmissions to increase its overall capacity. These dynamic roaming policies are based on device types to help customers achieve the best WLAN performance in a mixed device environment during the technology transition period.

The 320 Series has an integrated Bluetooth Beacon that simplifies the remote management of a network of large-scale battery-powered beacons while providing advanced location and indoor way finding and proximity-based push notification capabilities. This enables businesses to utilize the mobility context to develop applications that improve the user experience and increase the value of the wireless network.

Unique benefits

- Dual radio 4x4 802.11ac access point with multi-user MIMO
 - Supports up to 1,733Mbps in the 5GHz band (with 4SS/VHT80 clients) and 800Mbps in the 2.4GHz band (with 4SS/VHT40 clients).
- Built-in Bluetooth Low-Energy (BLE) radio
 - Enables location based services with BLE-enabled mobile devices receiving signals from multiple Beacons at the same time.
 - Simplifies battery-powered beacon management.

- Supports up to 1,300Mbps in the 5GHz band (with 3SS/VHT80 clients) and up to 400Mbps in the 2.4 GHz band (with 2SS/VHT40 clients) 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 Microsoft 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.
 - 320 Series APs 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.
- Supports up to 1,300Mbps in the 5GHz band (with 3SS/VHT80 clients) and up to 400Mbps in the 2.4 GHz band (with 2SS/VHT40 clients) Support for additional 5GHz bands
 - Supports software upgrade to enable additional 5GHz bands when governments expand available frequencies.
- Supports up to 1,300Mbps in the 5GHz band (with 3SS/VHT80 clients) and up to 400Mbps in the 2.4 GHz band (with 2SS/VHT40 clients) Spectrum analysis
 - Capable of part-time or dedicated air monitoring, the spectrum analyzer remotely scans the 2.4GHz and 5GHz radio bands to identify sources of RF interference.
- 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.

Choose your operating mode

320 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, 320 Series APs offer centralized configuration, data encryption, policy enforcement, and network services, as well as distributed and centralized traffic forwarding.
- Instant mode – A single Instant AP (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 about five minutes. If WLAN requirements change, a built-in migration path allows 320 Series IAPs 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.

320 Series specifications

- W-AP325 and W-IAP325
 - 5GHz (1,733Mbps max rate) and 2.4GHz (800Mbps max rate) radios, each with 4x4 MIMO support and a total of eight integrated omni-directional downtilt antennas.
- W-AP324 and W-IAP324
 - 5GHz (1,733Mbps max rate) and 2.4GHz (800Mbps max rate) radios, each with 4x4 MIMO support and a total of four dual-band external RP-SMA antenna connectors.

Wi-Fi radio specifications

- AP type: Indoor, dual radio, 5GHz 802.11ac and 2.4GHz 802.11n 4x4 MIMO.
- Software-configurable dual radio supports 5GHz (Radio 0) and 2.4GHz (Radio 1).
- Four spatial stream SU-MIMO for up to 1,733Mbps wireless data rate to a single client device.
- Three spatial stream MU-MIMO for up to 1,300Mbps wireless data rate to up to three MU-MIMO capable client devices simultaneously.
- 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 (aggregate, conducted total) transmit power (limited by local regulatory requirements):
 - 2.4GHz band: +24 dBm (18 dBm per chain)
 - 5GHz band: +24 dBm (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 20, 40 and 80MHz 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 beamforming (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 450 (MCS0 to MCS23)
 - 802.11ac: 6.5 to 1,733 (MCS0 to MCS9, NSS = 1 to 4).
- 802.11n high-throughput (HT) support: HT 20/40
- 802.11ac very high throughput (VHT) support: VHT 20/40/80
- 802.11n/ac packet aggregation: A-MPDU, A-MSDU

Wi-Fi antennas

- W-AP324/W-IAP324: Four RP-SMA connectors for external dual band antennas. Internal loss between radio interface and external antenna connectors (due to diplexing circuitry): 2.5 dB in 2.4GHz and 1.5 dB in 5GHz.
- W-AP325/W-IAP325: Eight integrated downtilt omni-directional antennas for 4x4 MIMO with maximum antenna gain of 3.5 dBi

in 2.4GHz and 5.0 dBi in 5GHz. Built-in antennas are optimized for horizontal ceiling-mounted orientation of the AP. The downtilt angle for maximum gain is ~ 30 degrees.

Other interfaces

- Two 10/100/1000BASE-T Ethernet network interfaces (RJ-45)
 - Auto-sensing link speed and MDI/MDX
 - Link Aggregation support to achieve platform throughput up to 2Gbps
 - 802.3az Energy Efficient Ethernet (EEE)
 - PoE-PD: 48V DC (nominal) 802.3af or 802.3at PoE
- DC power interface, accepts 2.1/5.5 mm center-positive circular plug with 9.5mm length
- USB 2.0 host interface (Type A connector)
- Bluetooth low energy (BLE) radio
 - Up to 4 dBm transmit power (class 2) and -94 dBm receive sensitivity
 - Integrated antenna, -5 dBi gain (30 degrees downtilt)
 - Can be disabled with configuration
- Visual indicators (tri-color LEDs): For system and radio status
- Reset button: Factory reset (during device power up)
- Serial console interface (RJ-45)
- Kensington security slot

Power

- Maximum (worst-case) power consumption: 20W (802.3at PoE), 13.5W (802.3af PoE) or 18.5W (DC)
 - Excludes power consumed by external USB device (and internal overhead); this could add up to 6W (POE) or 5.5W (DC) for 5W/1A USB device
- Maximum (worst-case) power consumption in idle mode: 8W (PoE) or 7W (DC)
- Direct DC source: 12V DC nominal, +/- 5%
- Power over Ethernet (PoE): 48V DC (nominal) 802.3af/802.3at compliant source
 - Unrestricted functionality with 802.3at PoE
 - Reduced functionality (power-save mode) with 802.3af PoE
 - USB port disabled
 - Second Ethernet port disabled
 - 2.4GHz radio in 1x1:1 mode
- Power sources sold separately
- When both DC and PoE power sources are available, DC power takes priority

Mounting

- The AP ships with two 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):
 - 203mm (W) x 203mm (D) x 57mm (H)
8.0" (W) x 8.0" (D) x 2.2" (H)
 - 950g/34 oz
- Dimensions/weight (shipping):
 - 315mm(W) x 265mm(D) x 100mm (H)
12.4" (W) x 10.4" (D) x 3.9" (H)
 - 1,350g/48 oz

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: 739,935 hrs (84.5yrs) at 25° C operating temperature (W-AP325)

Regulatory model numbers

- W-AP324 and W-IAP324: APIN0324
- W-AP325 and W-IAP325: APIN0325

Certifications

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

Warranty

- Extended Life Warranty

Minimum operating system software versions

- Controller AOS 6.4.4.0
(320 Series Access Points are not supported on 650 Series Mobility Controllers).
- InstantOS 4.2.1.1

RF performance table

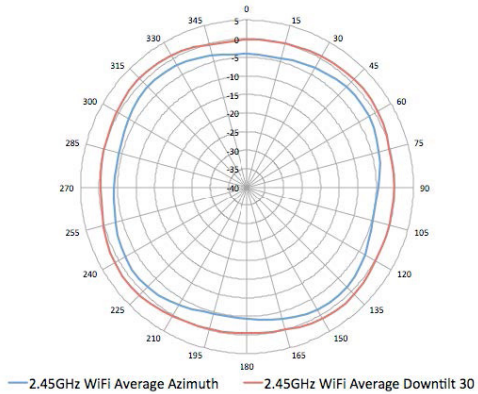
	Maximum transmit power (dBm) per transmit chain	Receiver sensitivity (dBm) per receive chain
802.11b 2.4GHz		
1Mbps	18.0	-97.0
11Mbps	18.0	-89.0
802.11g 2.4GHz		
6Mbps	18.0	-93.0
54Mbps	18.0	-75.0
802.11n HT20 2.4GHz		
MCS0/8/16	18.0	-92.0
MCS7/15/23	16.0	-72.0
802.11n HT40 2.4GHz		
MCS0/8/16	18.0	-90.0
MCS7/15/23	16.0	-70.0
802.11a 5GHz		
6Mbps	18.0	-93.0
54Mbps	16.5	-75.0
802.11n HT20 5GHz		
MCS0/8/16	18.0	-92.0
MCS7/15/23	16.0	-72.0
802.11n HT40 5GHz		
MCS0/8/16	18.0	-89.0
MCS7/15/23	16.0	-69.0
802.11ac VHT20 5GHz		
MCS0	18.0	-92.0
MCS9	14.0	-65.0
802.11ac VHT40 5GHz		
MCS0	18.0	-89.0
MCS9	14.0	-62.0
802.11ac VHT80 5GHz		
MCS0	18.0	-86.0
MCS9	14.0	-59.0

Maximum capability of the hardware provided (excluding antenna gain). Maximum transmit power is limited by local regulatory settings.

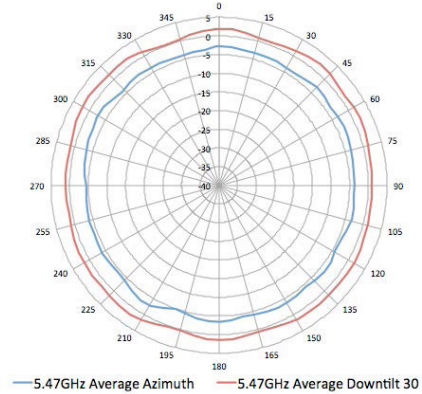
Antenna pattern plots

Horizontal planes (top view, AP facing forward)

Showing azimuth (0 degrees) and 30 degrees downtilt pattern



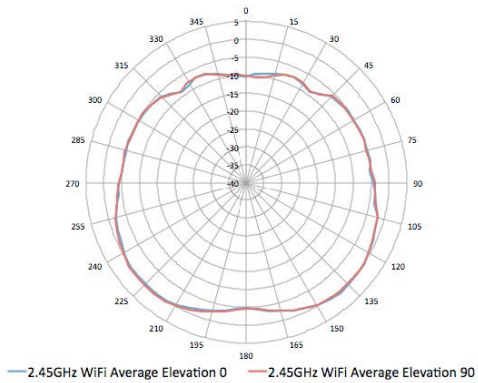
2.45GHz Wi-Fi (antennas 5,6,7,8)
5.5GHz



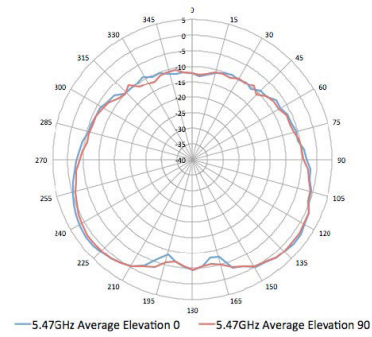
5.5GHz Wi-Fi Vpol (antennas 0,1,3,4)

Elevation planes (side view, AP facing down)

Showing side view with AP rotated 0 and 90 degrees



2.45GHz Wi-Fi (antennas 5,6,7,8)
5.5GHz



5.5GHz Wi-Fi Vpol (antennas 0,1,3,4)

Ordering information

Part number	Description
Access points	
W-AP324	Dell EMC Networking W-AP324 wireless access point, 802.11n/ac, 4x4:4 MU-MIMO, dual radio, antenna connectors
W-IAP324-RW	Dell EMC Networking W-IAP324 wireless instant access point, 802.11n/ac, 4x4:4 MU-MIMO, dual radio, antenna connectors – Restricted regulatory domain: Rest of World
W-IAP324-US	Dell EMC Networking W-IAP324 wireless instant access point, 802.11n/ac, 4x4:4 MU-MIMO, dual radio, antenna connectors – Restricted regulatory domain: United States
W-IAP324-JP	Dell EMC Networking W-IAP324 wireless instant access point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors – Restricted regulatory domain: Japan
W-AP325	Dell EMC Networking W-AP325 wireless access point, 802.11n/ac, 4x4:4 MU-MIMO, dual radio, integrated antennas
W-IAP325-RW	Dell EMC Networking W-IAP325 wireless instant access point, 802.11n/ac, 4x4:4 MU-MIMO, dual radio, integrated antennas – Restricted regulatory domain: Rest of World
W-IAP325-US	Dell EMC Networking W-IAP325 wireless instant access point, 802.11n/ac, 4x4:4 MU-MIMO, dual radio, integrated antennas – Restricted regulatory domain: United States
W-IAP325-JP	Dell EMC Networking W-IAP325 wireless instant access point, 802.11n/ac, 4x4:4 MU-MIMO, dual radio, integrated antennas – Restricted regulatory domain: Japan
Mounting accessories	
AP-220-MNT-C1	Access Point Mount Kit (ceiling grid). Contains 2x ceiling grid rail adapters (for flat rails). Color: black. Spare.
AP-320-MNT-T	Access Point Mount Kit (ceiling tile)
AP-220-MNT-C2	Access Point Mount Kit (ceiling grid). Contains 2x ceiling grid rail adapters (for Interlude and silhouette style rails). Color: black
AP-MNT-CM1	Suspended ceiling rail mount kit for indoor campus access points (metal, industrial grade). Fits most rail types.
AP-220-MNT-W1	Access Point Mount Kit (basic, flat surface). Contains 1x flat surface wall/ceiling mount bracket. Color: black
AP-220-MNT-W1W	Access Point Mount Kit (basic, flat surface). Contains 1x flat surface wall/ceiling mount bracket. Color: white
AP-220-MNT-W2	Access Point Mount Kit (secure, flat surface). Contains 1x flat surface wall/ceiling mount cradle. Color: black
AP-220-MNT-W2W	Access Point Mount Kit (secure, flat surface). Contains 1x flat surface wall/ceiling mount cradle. Color: white
AP-220-MNT-W3	Indoor Access Point flat surface mount kit (box style, secure, low-profile, large, white)

Ordering information

Part number	Description
Powering accessories	
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).
AP-AC-12V30UN	12V/30W Indoor Access Point AC power adapter. Universal, ships with 8 country-specific plug inserts (US, EU, UK, Australia, China, Korea, Argentina, Brazil), covering all Dell EMC core countries
PD-9001GR-AC	30W 802.3at PoE midspan injector, 10/100/1000BASE-T Ethernet. Add country-specific AC power cord from the list below.
Power cords	
PC-AC-ARG	Argentina
PC-AC-AUS	Australia
PC-AC-BR	Brazil
PC-AC-CHN	China
PC-AC-DEN	Denmark
PC-AC-EC	Continental Europe
PC-AC-IN	India
PC-AC-IT	Italy
PC-AC-JP	Japan
PC-AC-KOR	Korea
PC-AC-NA	North America
PC-AC-SWI	Switzerland
PC-AC-TW	Taiwan
PC-AC-UK	United Kingdom

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