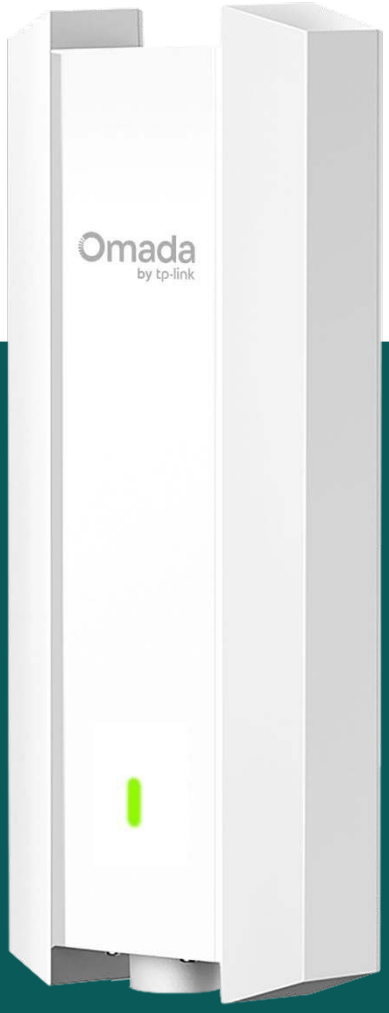
Omada by tp-link

Datasheet




# Omada Omnidirectional AX1800 Wi-Fi 6 Indoor/Outdoor Access Point

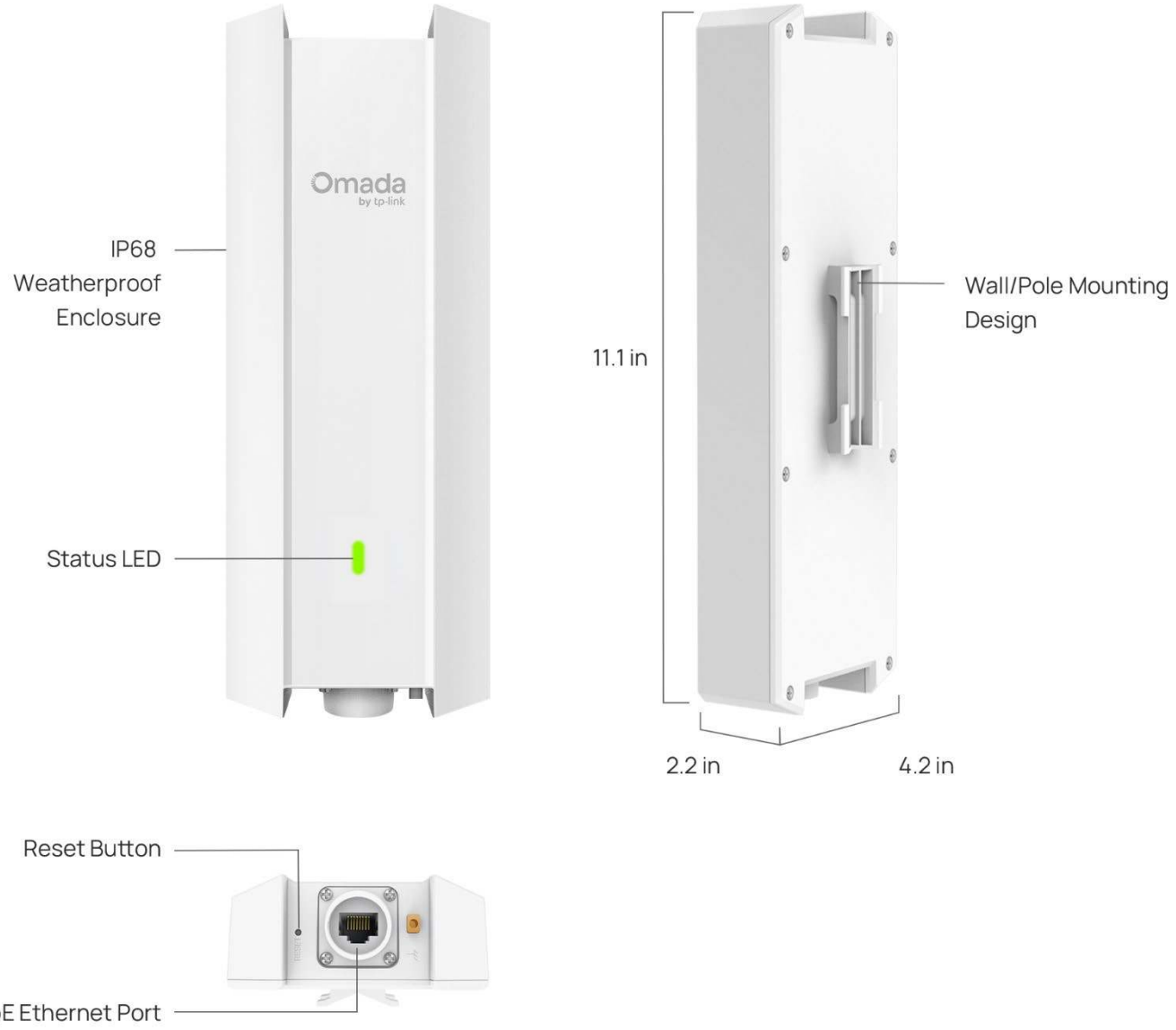
Model: EAP610-Outdoor

# Product Overview

EAP610-Outdoor is an Omada Omnidirectional AX1800 Wi-Fi 6 Indoor/Outdoor Access Point, providing reliable and stable outdoor network connections. It is suitable for outdoor scenarios such as yards, swimming pools, and parks.

- **Dual-Band 4-Stream Wi-Fi 6:** Up to 1.8 Gbps†
- **Long-Range Omnidirectional Coverage:** Features dual-band antennas with MU-MIMO technology, delivering extended coverage up to 984 ft (300 m)‡
- **Outdoor-Ready Durability:** Features an IP68-rated weatherproof enclosure and 6 kV lightning protection
- **Flexible Deployment with PoE Support:** 1× Gigabit PoE+ port reduces costs by delivering power and data over a single Ethernet cable
- **Quick and Easy Setup:** Features wall/pole mounting with Omada SDN for one-click setup
- **Advanced Features:** Centralized management, mesh, and seamless roaming△

# Product Appearance



# Feature Descriptions

## Omada Wi-Fi 6 Technology*

Wi-Fi 6 (802.11ax) delivers 8×8 UL/DL MU-MIMO, OFDMA, 1024-QAM, and a 4× longer OFDMA symbol that extends coverage while improving data transmission speeds by 11% compared to Wi-Fi 5- making it the ideal solution for high-performance, high-density wireless networks.

## Long-Range Omnidirectional Coverage

Internal antennas equipped with high-power amplifiers utilize Wi-Fi 6 technology to provide strong and expansive wireless coverage to various outdoor environments, delivering extended coverage up to 656 ft (200 m) over 2.4 GHz and 984 ft (300 m) over 5 GHz.

## Outdoor-Ready Design for Extreme Conditions

EAP610-Outdoor offers complete dustproof protection and the ability to withstand prolonged submersion in water. It supports IP68 weatherproof and 6 kV lightning protection. Additionally, an extended temperature tolerance of -30 °C to 70 °C makes it ideal for extremely hot and cold environments.

## Flexible Deployment with PoE Support

1× Gigabit PoE+ port delivers both power and data through a single cable, cutting deployment costs and outdoor wiring complexity. Works with standard PoE+ switches or the included passive PoE adapter for flexible installation.

## Quick and Easy Setup

Flexible installation options, including wall and pole mounts, enable quick deployment in diverse settings. Integration with Omada SDN allows for one-click adoption and automatic device discovery, streamlining the setup process.

## Cloud-Based Centralized Management

As part of Omada's unified SDN ecosystem, EAP610-Outdoor works with Omada switches, gateways, and controllers. Businesses gain end-to-end visibility, automated optimization, zero-touch provisioning, and batch configuration—all managed from a single cloud interface.

## Seamless Connectivity with Mesh and Roaming

Ensures customers enjoy uninterrupted streaming when moving around by switching clients automatically to the access points with the optimal signal.

# Specifications

## Hardware Specifications

| Item | Description | |
|---|---|---|
| Wi-Fi Standards | 5 GHz: IEEE 802.11a/n/ac/ax<br>2.4 GHz: IEEE 802.11b/g/n/ax | |
| 802.11ax | Spatial Streams | • 2.4 GHz: 2×2 Uplink/Downlink MU-MIMO with 2 spatial streams<br>• 5 GHz: 2×2 Uplink/Downlink MU-MIMO with 2 spatial streams |
| | Frequency Bands | 2.400 to 2.4835 GHz ISM<br>5.150 to 5.250 GHz U-NII-1<br>5.250 to 5.350 GHz U-NII-2A<br>5.470 to 5.725 GHz U-NII-2C<br>5.725 to 5.850 GHz U-NII-3/ISM<br>*Note: Country-Specific Restriction Apply |
| | Bandwidth | 2.4 GHz: 20 MHz/40 MHz<br>5 GHz: 20 MHz/40 MHz/80 MHz<br>*Note: Country-Specific Restriction Apply |
| | Wireless Data Rate | • 2.4 GHz: 8.6 Mbps to 574 Mbps (MCS0-MCS11, NSS=1 to 2, HE20/40)<br>• 5 GHz: 8.6 Mbps to 1201 Mbps (MCS0-MCS11, NSS=1 to 2, HE20/40/80)<br>*Note: Country-Specific Restriction Apply |
| | Radio Technology | Uplink/Downlink OFDMA (Orthogonal Frequency-Division Multiple Access) |
| | Modulation Type | 1024-QAM, 256-QAM. 64-QAM, 16-QAM, QPSK, BPSK |
| | Frame Aggregation | • A-MPDU (Aggregate MAC Protocol Data Unit) for Tx/Rx<br>• A-MSDU (Aggregate MAC Service Data Unit) for Tx/Rx |
| | Others | • TWT (Target Wake Time)<br>• MRC (Maximal Ratio Combining)<br>• TxBF (Transmit Beamforming)<br>• DFS (Dynamic Frequency Selection)<br>• CDD (Cycle Delay Diversity)<br>• CSD (Cycle Shift Diversity)<br>• STBC (Space-Time Block Coding)<br>• LDPC (Low-Density Parity-Check) |
| 802.11ac | Spatial Streams | • 5 GHz: 2×2 Downlink MU-MIMO with 2 spatial streams |
| | Frequency Bands | 5.150 to 5.250 GHz U-NII-1<br>5.250 to 5.350 GHz U-NII-2A<br>5.470 to 5.725 GHz U-NII-2C<br>5.725 to 5.850 GHz U-NII-3/ISM<br>*Note: Country-Specific Restriction Apply |
| | Bandwidth | 5 GHz: 20 MHz/40 MHz/80MHz |

| Item | Description | |
|---|---|---|
| | Wireless Data Rate | • 5 GHz: 6.5 Mbps to 867 Mbps (MCS0-MCS9, NSS=1 to 2, VHT20/40/80) |
| | Radio Technology | OFDM (Orthogonal Frequency-Division Multiplexing) |
| | Modulation Type | 256-QAM. 64-QAM, 16-QAM, QPSK, BPSK |
| | Frame Aggregation | • A-MPDU (Aggregate MAC Protocol Data Unit) for Tx/Rx<br>• A-MSDU (Aggregate MAC Service Data Unit) for Tx/Rx |
| | Others | • MRC (Maximal Ratio Combining)<br>• TxBF (Transmit Beamforming)<br>DFS (Dynamic Frequency Selection)<br>• CDD (Cycle Delay Diversity)<br>• CSD (Cycle Shift Diversity)<br>• STBC (Space-Time Block Coding)<br>• LDPC (Low-Density Parity-Check) |
| 802.11n | Spatial Streams | • 2.4 GHz: 2×2 MIMO with 2 spatial streams<br>• 5 GHz: 2×2 MIMO with 2 spatial streams |
| | Frequency Bands | 2.400 to 2.4835 GHz ISM<br>5.150 to 5.250 GHz U-NII-1<br>5.250 to 5.350 GHz U-NII-2A<br>5.470 to 5.725 GHz U-NII-2C<br>5.725 to 5.850 GHz U-NII-3/ISM<br>*Note: Country-Specific Restriction Apply |
| | Bandwidth | 20 MHz/40 MHz |
| | Wireless Data Rate | • 2.4 GHz: 6.5 Mbps to 300 Mbps (MCS0-MCS7, NSS=1 to 2, HT20/40)<br>• 5 GHz: 6.5 Mbps to 300 Mbps (MCS0-MCS7, NSS=1 to 2, HT20/40) |
| | Radio Technology | OFDM (Orthogonal Frequency-Division Multiplexing) |
| | Modulation Type | 64-QAM, 16-QAM, QPSK, BPSK |
| | Frame Aggregation | • A-MPDU (Aggregate MAC Protocol Data Unit) for Tx/Rx<br>• A-MSDU (Aggregate MAC Service Data Unit) for Tx/Rx |
| | Others | • MRC (Maximal Ratio Combining)<br>• TxBF (Transmit Beamforming)<br>• DFS (Dynamic Frequency Selection)<br>• CDD (Cycle Delay Diversity)<br>• CSD (Cycle Shift Diversity)<br>• STBC (Space-Time Block Coding)<br>• LDPC (Low-Density Parity-Check) |
| Antenna | Wi-Fi | 2.4 GHz:<br>• 2 × 4 dBi (peak gain), internal omnidirectional antennas<br>5 GHz:<br>• 2 × 5 dBi (peak gain), internal omnidirectional antennas<br>*Note: The gains above are the single-antenna peak gains. |

| Item | Description | |
|---|---|---|
| Interfaces | • 1 x 10M/100M/1000M Ethernet Port (RJ45); PoE in<br>• 1 x Grounding Terminal | |
| Memory | • Flash: 1024 Mbit<br>• DRAM: 4096 Mbit*1 | |
| Button | 1 × Reset button: Press the button for longer than 5 seconds to make the device restore to factory settings. | |
| Indicator | 1 × multi-color system LED indicates on the front:<br>• Power-on status<br>• Firmware initialization or upgrade status<br>• Uplink service status<br>• Error status | |
| Reliability | MTBF (Mean Time between Failure) | CE:<br>• 522584 hours at the operating temperature of 25℃（77℉）<br>• 308790 hours at the operating temperature of 40℃（104℉）<br>FCC:<br>• 448824 hours at the operating temperature of 25℃（77℉）<br>• 256431 hours at the operating temperature of 40℃（104℉） |
| Power Supply | Input | 802.3at PoE+: 42.5 - 57 V ⎓ 0.6 A |
| | Output | / |
| Power Consumption | • 802.3at (PoE+): 14.7W, 2.4GHz radio 2×2, 5GHz radio 2×2, wired link rate can be up to 1 Gbps, etc.<br>• Idle mode: 5.3W (PoE) | |
| Surge/Lightning Protection | Ethernet Ports: ±6 kV | |
| ESD/EMP Protection | • Air discharge: ±8 kV<br>• Contact discharge: ±4 kV<br>*Note: ESD/EMP Protection means Electrostatic Discharge/Electromagnetic Pulse Protection independently. | |
| Tx Power | Maximum transmit power | CE (EIRP)<br>• 2.4 GHz: 20 dBm<br>• 5 GHz: 23 dBm in U-NII-1, 23 dBm in U-NII-2A, 28 dBm in U-NII-2C<br>FCC (Conducted Power)<br>• 2.4 GHz: 25 dBm<br>• 5 GHz: 25 dBm in U-NII-1, 25 dBm in U-NII-3<br>*Note: MIMO combined power, excluding antenna gains. The actual transmit power depends on local laws and regulations. |

| Item | Description | |
|---|---|---|
| | Minimum transmit power | CE (EIRP)<br>• 2.4 GHz: 6 dBm<br>• 5 GHz: 7 dBm in U-NII-1, 7 dBm in U-NII-2A, 7 dBm in U-NII-2C<br>FCC (Conducted Power)<br>• 2.4 GHz: 4 dBm<br>• 5 GHz: 4 dBm in U-NII-1, 4 dBm in U-NII-2A, 4 dBm in U-NII-2C, 4dBm in U-NII-3<br>*Note: MIMO combined power, excluding antenna gains. The actual transmit power depends on local laws and regulations. |
| | Adjustable power increment | 1 dBm |
| Environment | Temperature | • Operating: -30℃ to +70℃ (-22℉ to +158℉)<br>• Storage: -40℃ to +70℃ (-40℉ to +158℉) |
| | Humidity | • Operating: 10% to 90% (non-condensing)<br>• Storage: 5% to 90% (non-condensing) |
| | Altitude | • Storage: up to + 2000m (6561feet)<br>• Operating: up to + 2000m (6561feet) |
| | Windproof | / |
| | Weatherproof Enclosure | IP68 |
| Unit | Dimensions (W×D×H) | • Main Unit: 280.4*106.5*56.8 mm (11.04 in. x 4.35 in. x 2.24 in.)<br>• Shipping Unit: 325*241*67 mm (12.80 in. x 9.49 in. x 2.64 in.) |
| | Weight | • Main Unit: 0.81 kg (1.79 lbs)<br>• Mounting Bracket: 0.09 kg (0.20 lbs)<br>• Shipping Unit: 1.41kg (3.11 lbs) |
| | Mounting | • Pole Mount (Kits included)<br>• Wall Mount (Kits included) |

## Software Specifications

| Item | Description | |
|---|---|---|
| Wireless Functions | Maximum number of BSSIDs | 16 (8 on each band) |
| | Maximum number of associated STAs | 250+ |
| | Guest Network | Yes |
| | ACS (Automatic Channel Selection) | Yes |
| | Airtime Fairness | Yes |
| | Band Steering | Yes |
| | 802.11 Rate Control | Yes |
| | Rogue AP Detection | Yes |
| | URL Filtering | Yes |
| | RF Scan | Yes |
| | WLAN Optimization | Yes |
| | WIDS/WIPS | No |
| | Lock to AP | Yes |
| | Rate Limit | • SSID Rate Limit<br>• Client Rate Limit |
| | Load Balance | • Maximum Associated Clients<br>• RSSI Threshold |
| | MLO | • NO |
| | Roaming | • 802.11 k<br>• 802.11v<br>• 802.11r<br>• Non-Stick Roaming<br>• Ping-Pong Roaming Suppression<br>• AI Roaming<br>*Note: Only support Layer 2 Roaming currently. |
| | Multicast/Broadcast Management | • Multicast-to-Unicast Conversion<br>• ARP-to-Unicast Conversation<br>• Multicast Filtering<br>• Multicast/Broadcast Rate Limit |
| | QoS (Quality of Service) | • WMM (Wi-Fi Multimedia)<br>• DSCP (Differentiated Services Code Point)<br>• U-APSD (Unscheduled Automatic Power Save Delivery) |
| Security and Authentication | ACL | |

| Item | Description | |
|---|---|---|
| | MAC Filter | |
| | 802.1X Authentication | |
| | MAC-Based Authentication | |
| | • None<br>• Enhanced Open<br>• WPA/WPA2/WPA3-Personal<br>• WPA/WPA2/WPA3-Enterprise | |
| | Radius Accounting | |
| | • PPSK without Radius<br>• PPSK with Radius (Generic Radius with bound MAC/EKMS/Generic Radius with unbound MAC) | |
| | Captive Portal | • No Authentication<br>• Simple Password<br>• Hotspot (Voucher / Local User / SMS / RADIUS / Form Auth)<br>• RADIUS Server<br>• External LDAP Server<br>• External Portal Server<br>• Pre-Authentication Access<br>• Authentication-Free Client |
| | EAP Types | • EAP-TLS<br>• EAP-TTLS<br>• EAP-PEAP<br>• EAP-CHAP<br>• EAP-SIM<br>• EAP-AKA<br>• EAP-GTC<br>• EAP-FAST<br>• EAP-PEAP<br>• EAP-MD5<br>• EAP-MSCHAPv2<br>• PEAPv0<br>• PEAPv1 |
| Management methods | Omada Controller | • Omada Controller V5.15 and above<br>• Omada Essential V5.15 and above |
| | App | Omada App V4.25 and above |
| | Standalone Management | Yes |
| | Standalone Mesh | Yes |
| | SSH | Yes |
| | SNMP | v1, v2c, v3 |
| Operating Modes | AP | Yes |

| Item | Description | |
|---|---|---|
| | Repeater | Yes |
| | Mesh | Yes |
| System Feature | System Log | Yes |
| | Reboot Schedule | Yes |
| | WLAN Schedule | Yes |
| | NTP (Network Time Protocol) | Yes |
| | Email Alerts | Yes |
| | Firmware Upgrade | Yes |
| | Restore & Backup | Yes |
| | LED Control | Yes |
| Network Features | VLAN | • SSID VLAN<br>• Dynamic VLAN<br>• Management VLAN |
| | Static IP / DHCP Client | Yes |
| | IPv4/IPv6 | Yes |
| | LLDP (Link Layer Discovery Protocol) | Yes |
| | mDNS | Yes |
| | Tools | • Ping / Traceroute / DNSLookup / ARP Table<br>• Packet Capture<br>• Terminal |

# Standards Compliance and Certifications

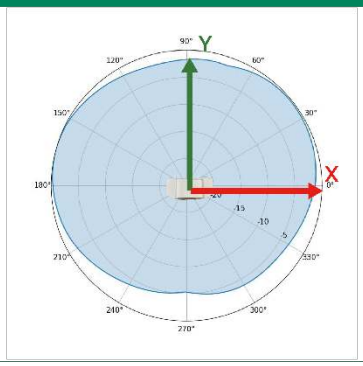
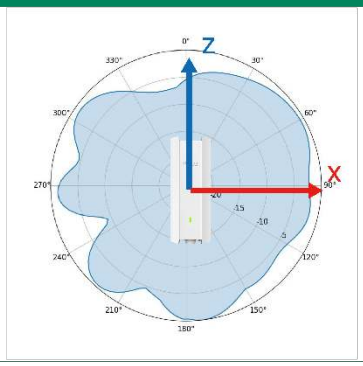
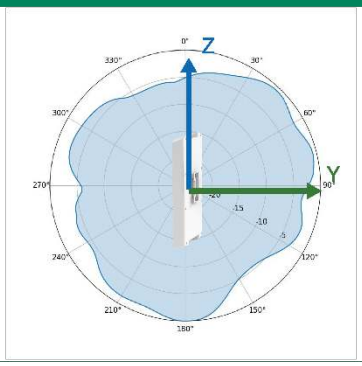
| Item | Category | Description |
|---|---|---|
| Standards compliance | IEEE Standards | • IEEE 802.11a/b/g/n/ac/ax<br>• IEEE 802.11e/i/k/v/r<br>• IEEE 802.1x/q<br>• IEEE 802.3at<br>• IEEE 802.3ab<br>• IEEE 802.3x |
| | Radio Standards | • ETSI EN 300 328<br>• ETSI EN 301 893<br>• EN 50385 EN IEC 62311 EN62232<br>• FCC Part 15<br>• RSS-247, RSS-GEN |
| | EMC standards | • EN 55032<br>• EN 55035<br>• EN 301489-1<br>• EN 301489-17<br>• FCC Part 15<br>• ICES-003 issue7<br>• CNS 15936 |
| | Safety Standards | • EN 62368-1<br>• IEC 62368-1<br>• CNS 15598-1 |
| | RoHS | • Directive 2011/65/EU, Directive (EU) 2015/863<br>• EN IEC 63000: 2018 |
| | Others | • Equipment Radio Regulations: 2008 (including amendments)<br>• VCCI-CISPR 32 |
| Certifications | • Wi-Fi Alliance: Wi-Fi 6 (R2), WPA3-R3, WPA3-Suite B, Enhanced Open Security<br>• FCC/CE/NCC/BSMI | |

# RF Performance

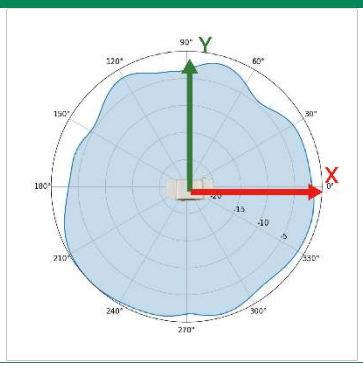
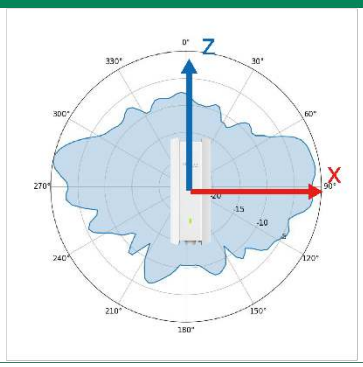
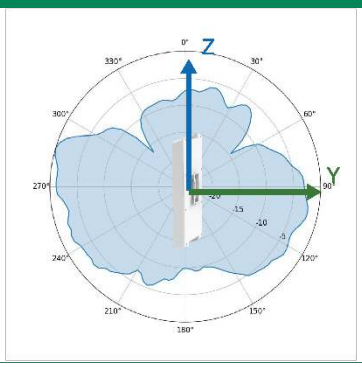
| Frequency Band | Wi-Fi Protocol & Bandwidth | MCS Index / Data Rate | EU/US Maximum Transmit Power (dBm) per transmit chain | Receiver Sensitivity (dBm) per receive chain |
|---|---|---|---|---|
| 2.4 GHz | 802.11n, HT20 | MCS0 | 15/22 | -94.5 |
| | | MCS7 | 15/19 | -75 |
| | 802.11n, HT40 | MCS0 | 15/22 | -93 |
| | | MCS7 | 15/19 | -73.5 |
| | 802.11ax, HE20 | MCS0 | 15/22 | -94.5 |
| | | MCS11 | 15/17 | -66 |
| | 802.11ax, HE40 | MCS0 | 15/22 | -92 |
| | | MCS11 | 15/17 | -63.5 |
| 5 GHz | 802.11n, HT20 | MCS0 | 22/22 | -95.5 |
| | | MCS7 | 19/19 | -75.5 |
| | 802.11n, HT40 | MCS0 | 22/22 | -92 |
| | | MCS7 | 19/19 | -73 |
| | 802.11ac, VHT20 | MCS0 | 22/22 | -95.5 |
| | | MCS7 | 19/19 | -75.5 |
| | 802.11ac, VHT40 | MCS0 | 22/22 | -92 |
| | | MCS9 | 18/18 | -67 |
| | 802.11ac, VHT80 | MCS0 | 22/22 | -88.5 |
| | | MCS9 | 18/18 | -63.5 |
| | 802.11ax, HE20 | MCS0 | 22/22 | -94.5 |
| | | MCS11 | 17/17 | -64 |
| | 802.11ax, HE40 | MCS0 | 22/22 | -91 |
| | | MCS11 | 17/17 | -61 |
| | 802.11ax, HE80 | MCS0 | 22/22 | -88 |
| | | MCS11 | 17/17 | -57.5 |

# Antenna Radiation Patterns

## 2.4 GHz

| XY Plane | XZ Plane | YZ Plane |
| --- | --- | --- |
|  |  |  |

## 5 GHz

| XY Plane | XZ Plane | YZ Plane |
| --- | --- | --- |
|  |  |  |

# Package Contents

| Item | Quantity |
|---|---|
| EAP610-Outdoor | 1 |
| Passive PoE Adapter | 1 |
| Power Cord | 1 |
| Waterproof Kit | 1 |
| Mounting Kit | 1 |
| Installation Guide | 1 |

# Support Services

We are committed to providing you with comprehensive and reliable support services to ensure seamless experience with Omada products.

- Contact Support: https://support.omadanetworks.com/#contact-us
- Warranty Services: https://www.omadanetworks.com/support/replacement-warranty/

# Revision History

| Version | Date | Description |
|---|---|---|
| V1.0 | 2026-1-16 | Initial release. |

†Maximum wireless signal rates are the physical rates derived from IEEE Standard 802.11 specifications. Actual wireless data throughput and wireless coverage are not guaranteed and will vary as a result of network conditions, client limitations, and environmental factors, including building materials, obstacles, volume and density of traffic, and client location.

‡Coverage value is calculated based on laboratory testing. Actual coverage is not guaranteed and will vary as a result of client limitations and environmental factors.

△Omada Mesh, Seamless Roaming, Captive Portal, and Cloud Access require the use of an Omada controller. Please refer to the User Guides of Omada controllers for configuration methods.

*Use of Wi-Fi 6 (802.11ax) and its features, including OFDMA, 1024-QAM, and more, requires clients to support the corresponding features.

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