Omada by tp-link

Datasheet

Omada AX3000 Wall Plate Wi-Fi 6 Access Point

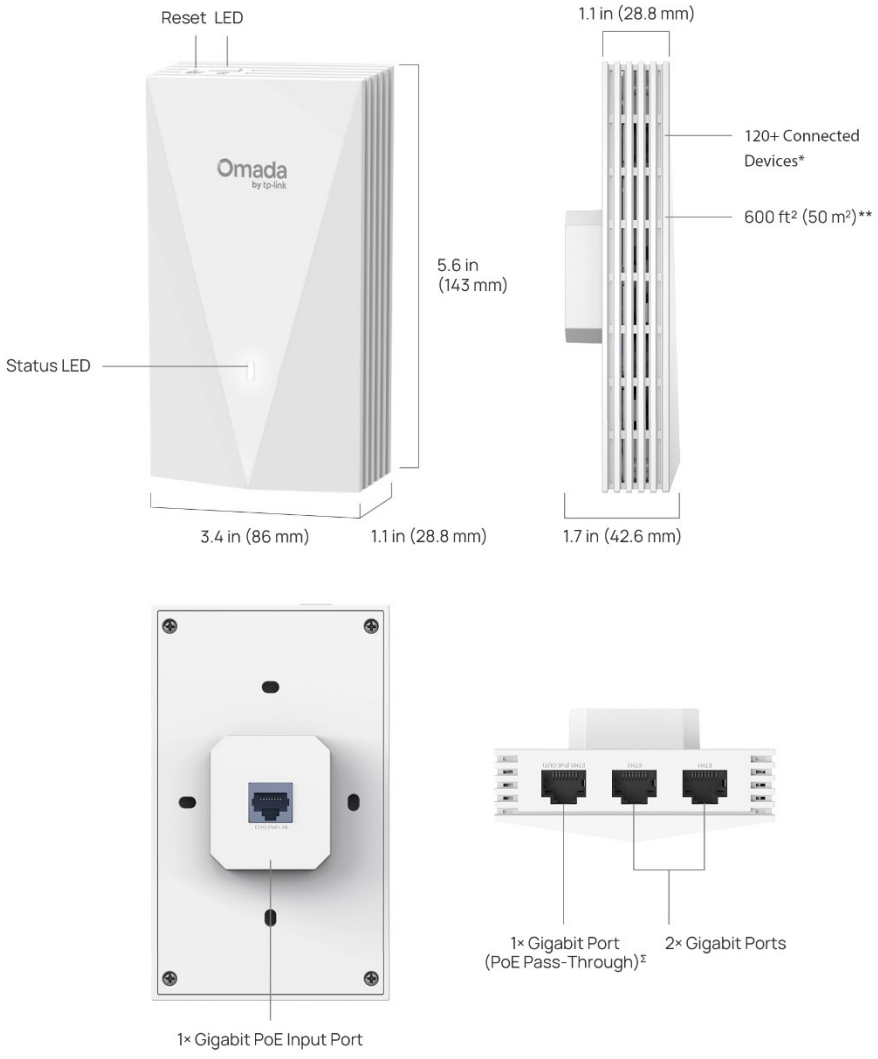
Model: EAP655-Wall

Product Overview

The Omada AX3000 Wall Plate Access Point EAP655-Wall is the ideal choice for a Wi-Fi 6 solution, delivering a high-speed, reliable, and secure dual-band Wi-Fi 6 experience.

- **Dual-Band Wi-Fi 6**: 2,402 Mbps on 5 GHz, and 574 Mbps on 2.4 GHz.[†]
- **Multiple Ports with PoE Flexibility**: 4× Gigabit Ports (1× PoE In, 1× PoE Pass-Through)
- **Low Latency and Interference**: MU-MIMO, OFDMA, and 1024-QAM ensure high performance for your network.[‡]
- **Easy Setup, Easy to Use**: Supports 802.3af/at PoE for flexible installation and Omada SDN for one-click setup.
- **Advanced Features**: Supports centralized management, mesh, and seamless roaming.[△]
- **Complete In-Room Wi-Fi with More Connections**: Supports 120+ concurrent connections[**] and covers up to 600 ft² (50 m²)[*] for reliable and extensive wireless connectivity.

Product Appearance

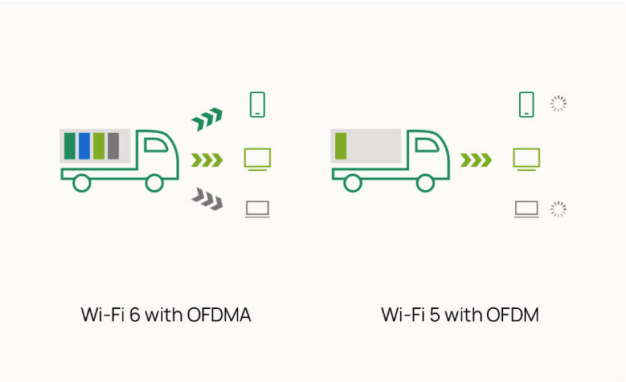


*The actual capacity depends on the wireless environment and client traffic and is generally less than the maximum number of client connections.
**Coverage value is calculated based on laboratory testing. Actual coverage is not guaranteed and will vary as a result of client limitations and environmental factors.

Feature Descriptions

Omada Wi-Fi 6 Technology

Wi-Fi 6 (802.11ax) supports up to 160 MHz bandwidth, MU-MIMO, OFDMA, and 1024-QAM, making it ideal for high-performance wireless networks. 160 MHz bandwidth delivers faster speeds and lower latency. OFDMA allows multiple devices to share channels efficiently. MU-MIMO supports more simultaneous device connections. 1024-QAM increases data transmission rates by 25% compared to Wi-Fi 5.



Higher Efficiency with OFDMA

More Simultaneous Connections with MU-MIMO

Compact Design for Flexible Deployment

EAP655-Wall is compatible with standard EU, standard US, and 86mm wall junction boxes, and features an easy-to-install design. This enables flexible and visually unobtrusive deployment.

Four Gigabit Ports for Optimized Wired Performance

EAP655-Wall features four Gigabit ports (1 uplink + 3 downlinks) for connecting multiple devices, with one downlink port supporting PoE passthrough to eliminate the need for an extra power connection.

Easy Setup via the Omada App or Web Browser, Powered by SDN

Omada Software-Defined Networking (SDN) supports quickly setting up EAP655-Wall through automatic device identification and one-click adoption. Access convenient configuration and on-the-go management via the Omada app or web browser.

Dedicated Complete, Private Wi-Fi Network in Each Room

EAP655-Wall in each room allows users to enjoy their own private Wi-Fi network, delivers a strong signal, and provides corner-to-corner coverage. It also offers advanced security features, including a secure guest network with up to 16 SSIDs, SMS login authentication, WPA2-Enterprise encryption, and rogue AP detection, ensuring safer and more reliable network experiences for both guests and business operations.

Cloud-Based Centralized Management

As part of Omada's unified SDN ecosystem, EAP655-Wall 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.

Specifications

Hardware Specifications

Item	Description	
Wi-Fi Standards	5 GHz: IEEE 802.11a/n/ac/ax 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 • 5 GHz: 2×2 Uplink/Downlink MU-MIMO with 2 spatial streams
	Frequency Bands	2.400 to 2.4835 GHz ISM 5.150 to 5.250 GHz U-NII-1 5.250 to 5.350 GHz U-NII-2A 5.470 to 5.725 GHz U-NII-2C 5.725 to 5.850 GHz U-NII-3/ISM *Note: Country-Specific Restriction Apply
	Bandwidth	2.4 GHz: 20 MHz/40 MHz 5 GHz: 20 MHz/40 MHz/80 MHz/160 MHz *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) • 5 GHz: 8.6 Mbps to 2402 Mbps (MCS0-MCS11, NSS=1 to 2, HE20/40/80/160) *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 • A-MSDU (Aggregate MAC Service Data Unit) for Tx/Rx
	Others	• TWT (Target Wake Time) • MRC (Maximal Ratio Combining) • TxBF (Transmit Beamforming) • WPA3 (Wi-Fi Protect Access 3) • DFS (Dynamic Frequency Selection) • CDD (Cycle Delay Diversity) • CSD (Cycle Shift Diversity) • STBC (Space-Time Block Coding) • 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 5.250 to 5.350 GHz U-NII-2A 5.470 to 5.725 GHz U-NII-2C 5.725 to 5.850 GHz U-NII-3/ISM *Note: Country-Specific Restriction Apply
	Bandwidth	5 GHz: 20 MHz/40 MHz/80 MHz
	Wireless Data Rate	• 5 GHz: 6.5Mbps to 867 Mbps (MCS0-MCS9, NSS=1 to 2, VHT20/40/80)

Item	Description	
	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 • A-MSDU (Aggregate MAC Service Data Unit) for Tx/Rx
	Others	• MRC (Maximal Ratio Combining) • TxBF (Transmit Beamforming) DFS (Dynamic Frequency Selection) • CDD (Cycle Delay Diversity) • CSD (Cycle Shift Diversity) • STBC (Space-Time Block Coding) • LDPC (Low-Density Parity-Check)
802.11n	Spatial Streams	• 2.4 GHz: 2×2 MIMO with 2 spatial streams • 5 GHz: 2×2 MIMO with 2 spatial streams
	Frequency Bands	2.400 to 2.4835 GHz ISM 5.150 to 5.250 GHz U-NII-1 5.250 to 5.350 GHz U-NII-2A 5.470 to 5.725 GHz U-NII-2C 5.725 to 5.850 GHz U-NII-3/ISM *Note: Country-Specific Restriction Apply
	Bandwidth	20 MHz/40 MHz
	Wireless Data Rate	• 2.4 GHz: 6.5Mbps to 300 Mbps (MCS0-MCS7, NSS=1 to 2, HT20/40) • 5 GHz: 6.5Mbps 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 • A-MSDU (Aggregate MAC Service Data Unit) for Tx/Rx
	Others	• MRC (Maximal Ratio Combining) • TxBF (Transmit Beamforming) • DFS (Dynamic Frequency Selection) • CDD (Cycle Delay Diversity) • CSD (Cycle Shift Diversity) • STBC (Space-Time Block Coding) • LDPC (Low-Density Parity-Check)
Antenna	Wi-Fi	• 2.4 GHz: 2 × 3 dBi, internal omnidirectional antennas • 5 GHz: 2 × 5 dBi, internal omnidirectional antennas
Interfaces	Uplink: 1× 10/100/1000 Mbps Ethernet Port (RJ45); POE In Downlink: 3× 10/100/1000 Mbps Ethernet Ports (RJ45); One port supports PoE OUT	
Memory	• Flash: 128Mbit • DRAM: 512Mbit	

Item	Description	
Button	1 × Reset button: Press the button for longer than 5 seconds to make the device restore to factory settings. 1 × LED Button	
Indicator	1 × white LED on the front: • Power-on status • Firmware initialization or upgrade status • Error status	
Reliability	MTBF (Mean Time between Failure)	EU: 820865 hours at the operating temperature of 25℃ (77℉) ; US: 805533 hours at the operating temperature of 25℃ (77℉)
Power Supply	Input	802.3at PoE+: 42.5 - 57 V/ 0.6A, or 802.3af PoE: 36 - 57 V/0.35A
	Output	Passive POE: 42V-57V 0.24A
Power Consumption	• EU: 12W (802.3at PoE, PoE Out off) • US: 12.6W (802.3at PoE, PoE Out off)	
Surge/Lightning Protection	Ethernet Ports: ±2 kV	
ESD/EMP Protection	• Air discharge: ±8 kV • Contact discharge: ±4 kV *Note: ESD/EMP Protection means Electrostatic Discharge/Electromagnetic Pulse Protection independently.	
Tx Power	Maximum transmit power	CE (EIRP) • 2.4 GHz: 20 dBm • 5 GHz: 23 dBm in U-NII-1, 23 dBm in U-NII-2A, 26 dBm in U-NII-2C FCC (Conducted Power) • 2.4 GHz: 21 dBm • 5 GHz: 21 dBm in U-NII-1, 21 dBm in U-NII-2A, 21 dBm in U-NII-2C, 21 dBm in U-NII-3 *Note: MIMO combined power, excluding antenna gains. The actual transmit power depends on local laws and regulations.
	Minimum transmit power	CE (EIRP) • 2.4 GHz: 7 dBm • 5 GHz: 7 dBm in U-NII-1, 7 dBm in U-NII-2A, 7 dBm in U-NII-2C FCC (Conducted Power) • 2.4 GHz: 4 dBm • 5 GHz: 4 dBm in U-NII-1, 4 dBm in U-NII-2A, 4 dBm in U-NII-2C, 4 dBm in U-NII-3 *Note: MIMO combined power, excluding antenna gains. The actual transmit power depends on local laws and regulations.
	Adjustable power increment	1 dBm

Item	Description	
Environment	Temperature	• Operating: 0℃ to +40℃ (32℉ to +104℉) • Storage: -40℃ to +70℃ (-40℉ to +158℉)
	Humidity	• Operating: 10% to 90% (non-condensing) • Storage: 5% to 90% (non-condensing)
	Altitude	• Storage: up to + 2000m(6561feet) • Operating: up to + 2000m(6561feet)
Unit	Dimensions (W×D×H)	• Main Unit: 143 × 86 × 42.6 mm (5.6 × 3.4 × 1.7 in.) • Shipping Unit: 184 × 56 × 117 mm (7.2 × 2.2 × 4.6 in.)
	Weight	• Main Unit: 0.29 kg (0.63 lbs) • Mounting Bracket: 0.007 kg (0.016 lbs) • Shipping Unit: 0.40kg (0.88 lbs)
	Mounting	Wall Plate Mounting (Kits included)

Software Specifications

Item	Description	
Wireless Functions	Maximum number of BSSIDs	16 (8 on each band)
	Maximum number of associated STAs	128
	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	No
	WLAN Optimization	Yes
	WIDS/WIPS	No
	Lock to AP	Yes
	Rate Limit	• SSID Rate Limit • Client Rate Limit
	Load Balance	• Maximum Associated Clients • RSSI Threshold
	Roaming	• 802.11k • 802.11v • 802.11r • Non-Stick Roaming • AI Roaming *Note: Only support Layer 2 Roaming currently.
	Multicast/Broadcast Management	• Multicast-to-Unicast Conversion • ARP-to-Unicast Conversation • Multicast Filtering
	QoS (Quality of Service)	• WMM (Wi-Fi Multimedia) • DSCP (Differentiated Services Code Point) • U-APSD (Unscheduled Automatic Power Save Delivery)
Security and Authentication	ACL	
	MAC Filter	
	802.1X Authentication	

Item	Description	
	MAC-Based Authentication	
	• None • Enhanced Open • WPA/WPA2/WPA3-Personal • WPA/WPA2/WPA3-Enterprise	
	Radius Accounting	
	• PPSK without Radius • PPSK with Radius (Generic Radius with bound MAC/EKMS/Generic Radius with unbound MAC)	
	Captive Portal	• No Authentication • Simple Password • Hotspot (Voucher / Local User / SMS / RADIUS / Form Auth) • RADIUS Server • External Portal Server • Pre-Authentication Access • Authentication-Free Client
	EAP Types	• EAP-TLS • EAP-TTLS • EAP-PEAP • EAP-CHAP • EAP-SIM • EAP-AKA • EAP-GTC • EAP-FAST • EAP-PEAP • EAP-MD5 • EAP-MSCHAPv2 • PEAPv0 • PEAPv1
Management methods	Omada Controller	• Omada Controller V5.15.24 and above • Omada Essential V5.15.24 and above
	App	Omada App V4.24 and above
	Standalone Management	Yes
	Standalone Mesh	Yes
	SSH	Yes
	SNMP	v1, v2c, v3
Operating Modes	AP	Yes
	Mesh	Yes
System Feature	System Log	Yes
	Reboot Schedule	Yes

Item	Description	
	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 • Dynamic VLAN • Management VLAN
	Static IP / DHCP Client	Yes
	IPv4/IPv6	Yes
	LLDP (Link Layer Discovery Protocol)	Yes
	mDNS	Yes
	Tools	• Ping / Traceroute / DNSLookup • Packet Capture • Terminal

Standards Compliance and Certifications

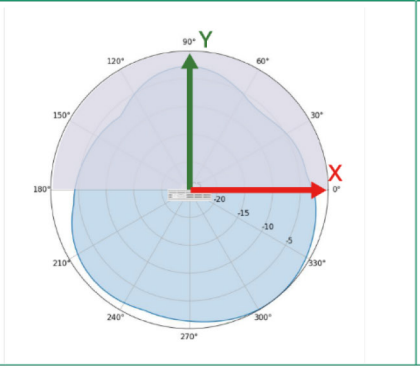
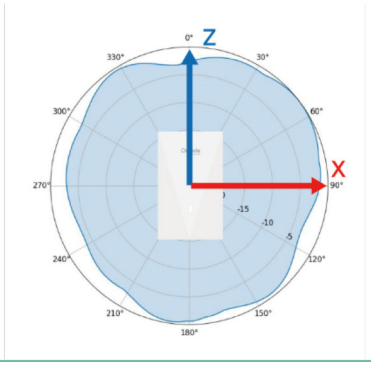
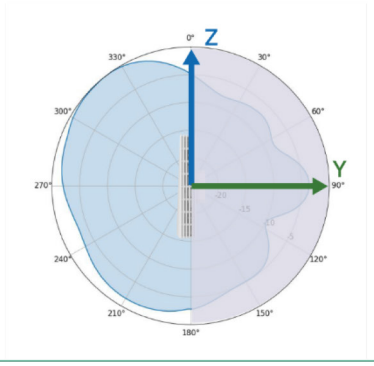
Item	Category	Description
Standards compliance	IEEE Standards	• IEEE 802.11a/b/g/n/ac/ax • IEEE 802.11e/i/k/v/r • IEEE 802.1x/q • IEEE 802.3at • IEEE 802.3ab • IEEE 802.3bz • IEEE 802.3x
	Radio Standards	• ETSI EN 300 328 • ETSI EN 301 893 • EN IEC 62311 • FCC Part 15E • FCC Part 15C • RSS-247, RSS-GEN • LP0002
	EMC standards	• EN 55032 • EN 55035 • EN 301489-1 • EN 301489-17 • FCC Part 15B • ICES-003 issue7 • CNS 15936
	Safety Standards	• EN 62368-1 • IEC 62368-1 • CNS 15598-1
	RoHS	• Directive 2011/65/EU, Directive (EU) 2015/863 • EN IEC 63000: 2018
	Others	• Equipment Radio Regulations: 2008 (including amendments) • VCCI-CISPR 32
Certifications	• FCC/CE/NCC/VCCI/JRF/BSMI/NTRA	

RF Performance

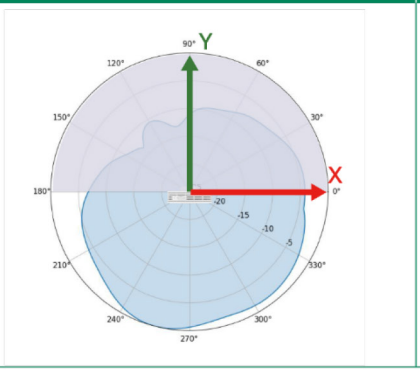
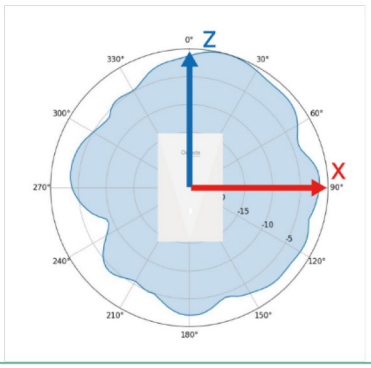
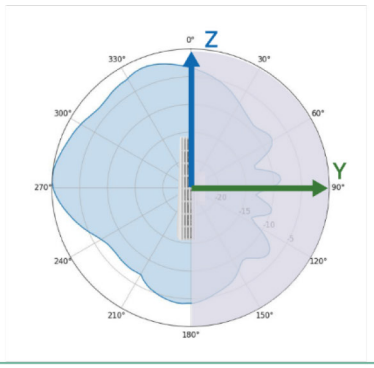
Frequency Band	Wi-Fi Protocol & Bandwidth	MCS Index / Data Rate	EU/US Maximum Transmit Power (dBm) per transmit chain	Receiver Sensitivity (dBm) per receive chain
2.4 GHz	802.11n, HT20	MCS0	15/18	-94
		MCS7	15/15	-76
	802.11n, HT40	MCS0	15/16	-94
		MCS7	15/15	-73
	802.11ax, HE20	MCS0	15/18	-94
		MCS11	12/12	-64.5
	802.11ax, HE40	MCS0	15/16	-91
		MCS11	12/12	-62
5 GHz	802.11n, HT20	MCS0	18/18	-95
		MCS7	14/14	-75
	802.11n, HT40	MCS0	18/18	-92
		MCS7	14/14	-72
	802.11ac, VHT20	MCS0	18/18	-95
		MCS8	13/13	-75.5
	802.11ac, VHT40	MCS0	18/18	-92
		MCS9	13/13	-67
	802.11ac, VHT80	MCS0	18/18	-89
		MCS9	12/12	-64
	802.11ax, HE20	MCS0	18/18	-95
		MCS11	12/12	-64.5
	802.11ax, HE40	MCS0	18/18	-92
		MCS11	12/12	-62
	802.11ax, HE80	MCS0	18/18	-89
		MCS11	11/11	-59
	802.11ax, HE160	MCS0	18/13	-86
		MCS11	9/9	-56

Antenna Radiation Patterns

2.4 GHz

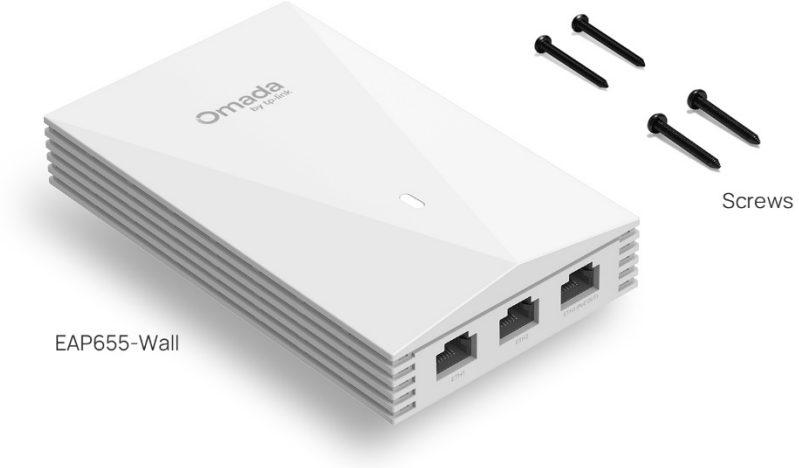
XY Plane	XZ Plane	YZ Plane
		

5 GHz

XY Plane	XZ Plane	YZ Plane
		

Package Contents

Item	Quantity
EAP655-Wall	1
Installation Guide	1
Mounting Screws	4



The accessories may vary by country/region. Please refer to the actual product.

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	2026-07-01	Initial release.

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

‡Use of Wi-Fi 6 (802.11ax), and features including 160 MHz Bandwidth, OFDMA, MU-MIMO, and 1024-QAM requires clients to also support the corresponding features. The 160 MHz bandwidth is only available on 5 GHz band and may be unavailable in some regions/countries due to regulatory restrictions.

*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.

**The actual capacity depends on the wireless environment and client traffic and is generally less than the maximum number of client connections.

△These features require the use of an Omada controller. Please refer to the User Guides of Omada controllers for configuration methods.

Some models featured in this guide may be unavailable in your country or region. Visit TP-Link website for local sales information: **https://www.omadanetworks.com**. Specifications are subject to change without notice.