TP-Link EAP650-Outdoor

TP-Link EAP650-Outdoor AX3000 Gigabit Outdoor Access Point User Manual

Model: EAP650-Outdoor

1. Introduction

This manual provides comprehensive instructions for the installation, operation, and maintenance of your TP-Link EAP650-Outdoor AX3000 Gigabit Outdoor Access Point. This device is designed to extend Wi-Fi 6 connectivity to outdoor environments, offering high-speed and reliable wireless access.
The EAP650-Outdoor features ultra-fast Wi-Fi 6 speeds, a durable IP67 weatherproof enclosure, and seamless integration into the Omada Software Defined Networking (SDN) platform for centralized management. It supports advanced wireless technologies such as Mesh WiFi, Seamless Roaming, Band Steering, Load Balancing, Airtime Fairness, and Beamforming.

2. Product Overview

2.1 Package Contents

- Access Point EAP650-Outdoor
- Passive PoE Adapter
- Power Cord
- Mounting Kits
- Installation Guide

2.2 Device Features

- **Ultra-Fast True Wi-Fi 6 Speeds:** Designed with 1024-QAM, HE60, and Long OFDM Symbol, boosting dual-band Wi-Fi speeds up to 2976 Mbps.

- **Indoor/Outdoor Use:** IP67 weatherproof enclosure with high-gain antennas protects against harsh outdoor conditions.
- **Integrated into Omada SDN:** Part of Omada's Software Defined Networking platform for unified management of network devices.
- **Cloud Access & Omada Compatibility:** Remote cloud access and Omada app enable centralized management from anywhere.
- **Advanced Wireless Tech:** Supports Mesh WiFi, Seamless Roaming, Band Steering, Load Balancing, Airtime Fairness, and Beamforming.

2.3 Product Views

Figure 2.3.1: Front view of the EAP650-Outdoor Access Point.

Figure 2.3.2: IP67 Weatherproof Enclosure for outdoor environments, showing lightning and ESD protection, no dust ingress, and waterproof design.

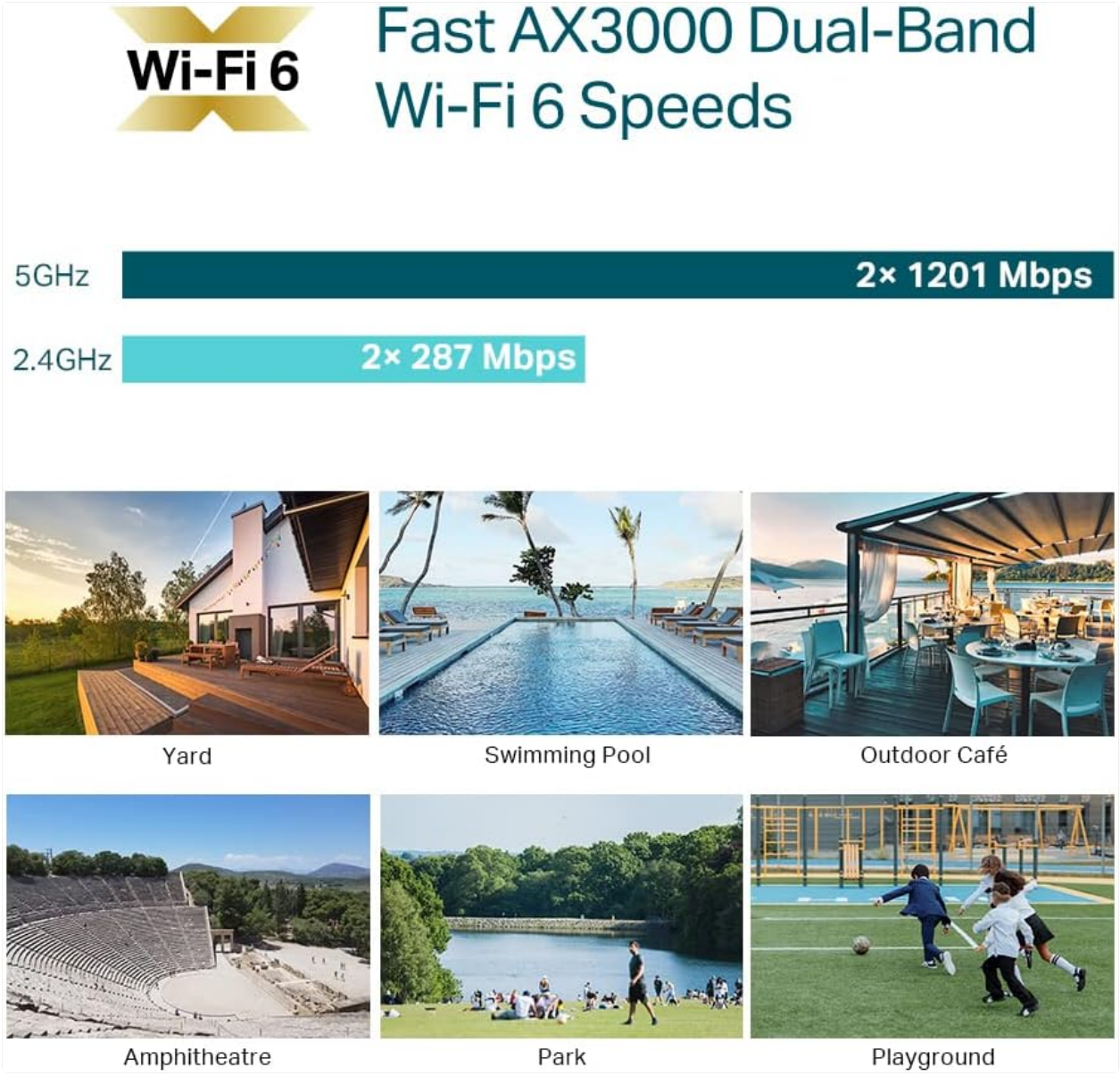

Figure 2.3.3: Fast AX3000 Dual-Band Wi-Fi 6 Speeds, illustrating 5GHz and 2.4GHz performance in various outdoor settings.

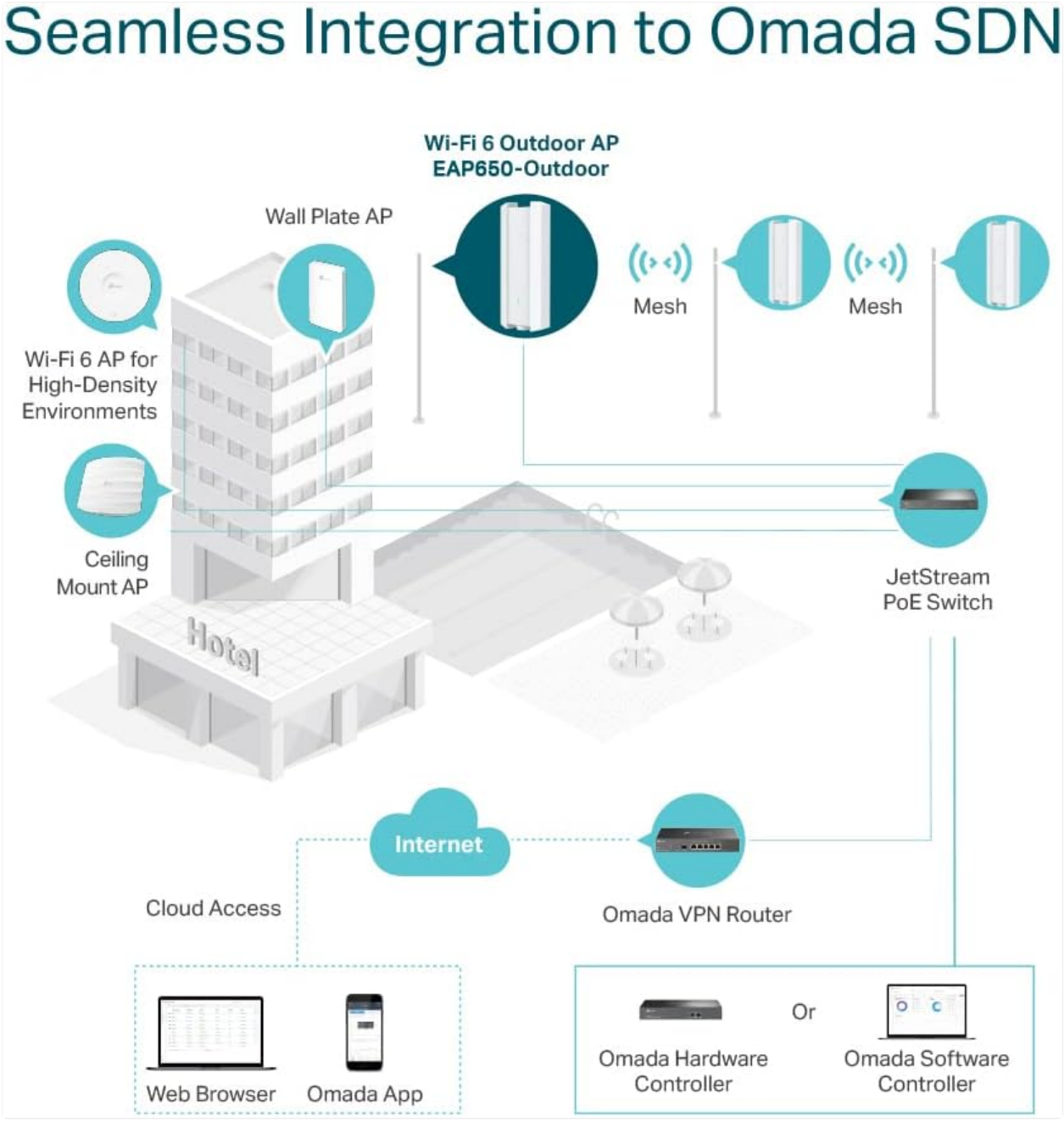

Figure 2.3.4: Seamless Integration to Omada SDN, depicting how the EAP650-Outdoor connects within an Omada network.

Figure 2.3.5: Close-up view of the Gigabit Ethernet Port, supporting both PoE+ and Passive PoE.

3. Setup

3.1 Mounting the Access Point

The EAP650-Outdoor can be mounted on a pole or a wall using the provided mounting kits. Ensure the mounting location provides optimal Wi-Fi coverage and is within reach of a power source or PoE injector.

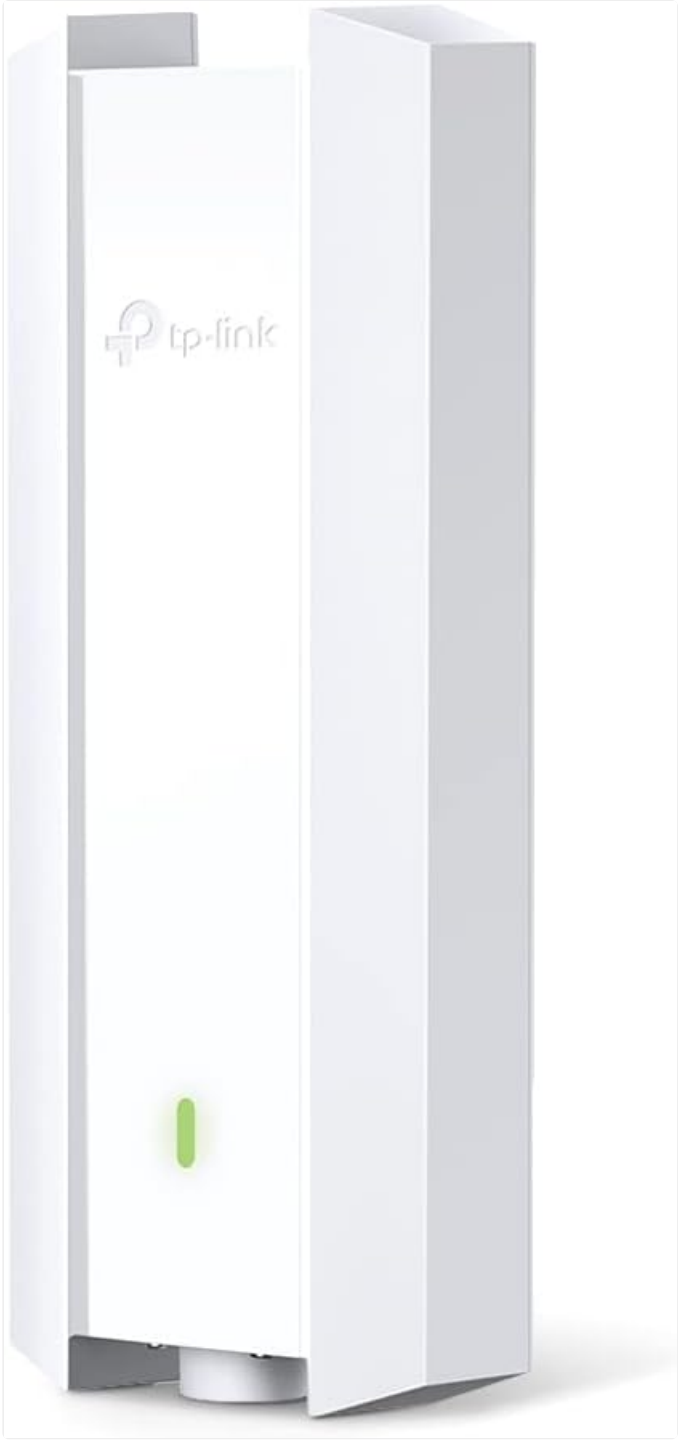

Figure 3.1.1: Pole Mounting illustration.

Figure 3.1.2: Wall Mounting illustration.

3.2 Powering the Device

The EAP650-Outdoor supports Power over Ethernet (PoE+) or Passive PoE. Use the provided Passive PoE Adapter to power the device. Connect an Ethernet cable from your router or network switch to the PoE adapter, and then connect another Ethernet cable from the PoE adapter to the EAP650-Outdoor's Gigabit Ethernet port.

Figure 3.2.1: Using the Provided Passive PoE Adapter for power and data connection.

3.3 Network Configuration

For initial setup and advanced management, the EAP650-Outdoor is designed to be integrated into the Omada SDN platform. You can manage the device using an Omada Hardware Controller, Omada Software Controller, or the Omada cloud-based controller. Standalone mode is also supported for basic configurations. Download the Omada app or access the Omada controller via a web browser for detailed configuration steps. Refer to the Omada SDN documentation for specific instructions on adding and managing access points within your network.

4. Operating the Access Point

Once installed and configured, the EAP650-Outdoor will broadcast Wi-Fi signals. Devices can connect to the network using the configured SSID and password. The Omada controller provides a centralized interface to monitor network status, connected clients, and adjust settings.

4.1 Advanced Features

- **Mesh WiFi:** Create a seamless mesh network with other Omada devices for extended coverage.
- **Seamless Roaming:** Clients automatically switch to the access point with the strongest signal as they move, ensuring uninterrupted connectivity.
- **Band Steering:** Automatically pushes dual-band clients to the faster 5 GHz band.
- **Load Balancing:** Distributes client connections across multiple access points to optimize network performance.
- **Airtime Fairness:** Ensures that slower clients do not monopolize airtime, improving overall network efficiency.
- **Beamforming:** Focuses Wi-Fi signals towards connected devices for stronger, more reliable connections.

5. Maintenance

To ensure optimal performance and longevity of your EAP650-Outdoor, consider the following maintenance practices:

- **Regular Firmware Updates:** Check the TP-Link website or your Omada controller for the latest firmware updates to ensure security and performance improvements.
- **Physical Inspection:** Periodically inspect the device and its cables for any signs of damage or wear, especially after severe weather conditions.
- **Cleaning:** Gently wipe the exterior of the device with a soft, dry cloth. Do not use liquid cleaners or abrasive materials.
- **Environmental Considerations:** While IP67 rated, avoid direct, prolonged exposure to extreme

conditions if possible, and ensure proper grounding.

6. Troubleshooting

If you encounter issues with your EAP650-Outdoor, try the following troubleshooting steps:

- **No Power:** Verify that the PoE adapter is properly connected to a power source and the Ethernet cable is securely connected to the access point's PoE port. Check the LED indicator on the device.
- **No Wi-Fi Signal:** Ensure the device is powered on and the LED indicator is showing normal operation. Check your Omada controller for any configuration errors or disabled SSIDs.
- **Poor Performance:** Consider the distance between the access point and client devices. Obstructions like thick walls or metal objects can degrade signal quality. Check for interference from other wireless devices. Ensure the device is mounted correctly for optimal signal propagation.
- **Cannot Access Omada Controller:** Verify network connectivity between your management device and the controller. Ensure the controller software is running or the hardware controller is powered on and accessible.
- **Resetting the Device:** If issues persist, you may perform a factory reset. Locate the reset button (refer to Figure 2.3.5 for location) and press and hold it for approximately 5-10 seconds until the LED behavior changes. This will revert all settings to factory defaults.

7. Specifications

Attribute	Value
Wireless Type	802.11ax
Brand	TP-Link
Series	EAP650-Outdoor
Item Model Number	EAP650-Outdoor
Operating System Compatibility	Microsoft Windows XP, Vista, Windows 7, Windows 8, Windows 10, Windows 11, Linux
Item Weight	1.76 pounds
Product Dimensions	11.04 x 4.19 x 2.24 inches
Color	White
Voltage	12 Volts
Manufacturer	TP-Link
Special Feature	Access Point Mode, WPS
Frequency Band Class	Dual-Band
Wireless Communication Standard	802.11ax
Compatible Devices	Personal Computer

Frequency	5 GHz
Recommended Uses For Product	Home
Connectivity Technology	Ethernet

8. Warranty and Support

For warranty information and technical support, please refer to the official TP-Link website or the documentation included with your product. TP-Link provides comprehensive support resources, including FAQs, troubleshooting guides, and contact information for customer service.
Visit the TP-Link Store on Amazon for additional product information and accessories.