TP-Link SG3218XP-M2

TP-Link Omada SG3218XP-M2 User Manual

16-Port Multi-Gig 2.5G PoE Switch with 2x10GE SFP+ Ports

Product Overview

The TP-Link Omada SG3218XP-M2 is a high-performance L2+ Smart Managed Switch designed for robust network environments. It features 16 multi-gigabit ports, including 8 PoE+ ports and 8 non-PoE ports, along with 2x 10GE SFP+ slots for high-bandwidth uplinks. This switch is an integral part of the Omada SDN solution, offering centralized cloud management and advanced security features.

Figure 1: Front view of the TP-Link Omada SG3218XP-M2 switch, showing all ports and LED indicators.

Key features include:

- **2.5G Ports for WiFi 7/6E/6:** 8× 2.5 Gbps PoE+ ports & 8× 2.5 Gbps Non-PoE ports to support high-speed wireless access points.
- **10G Lightning-Fast Uplink:** 2× 10 Gbps SFP+ slots for high-bandwidth connectivity and non-blocking switching capacity.
- **240W PoE Budget:** 8× 802.3at/af-compliant PoE+ ports with a total power supply of 240 W.
- **Omada SDN Support:** Zero-Touch Provisioning (ZTP), Centralized Cloud Management, and Intelligent Monitoring.
- **Centralized Management:** Cloud access and Omada app for ultra convenience and easy management.
- **Static Routing:** Helps route internal traffic for more efficient use of network resources.
- **Robust Security Strategies:** IP-MAC-Port Binding, ACL, Port Security, DoS Defend, Storm control, DHCP Snooping, 802.1X, Radius Authentication, and more.
- **Optimized Voice and Video Applications:** L2/L3/L4 QoS and IGMP snooping.

Setup Guide

This section provides instructions for the physical installation and initial setup of your SG3218XP-M2 switch.

Package Contents

Before you begin, ensure all items are present:

- SG3218XP-M2 Switch
- Power Cord
- Quick Installation Guide
- Rackmount Kit
- Rubber Feet

Physical Installation

The SG3218XP-M2 can be placed on a desktop or mounted in a standard 19-inch equipment rack.

1. **Desktop Placement:** Attach the included rubber feet to the bottom of the switch to prevent scratching and ensure stability. Place the switch on a flat, stable surface with adequate ventilation.
2. **Rack Mounting:** Use the provided rackmount kit to secure the switch in a standard 19-inch rack. The mounting brackets can be rotated for wall or under-desk mounting if preferred.

Figure 2: Angled view of the switch, highlighting its compact design suitable for various installations.

Connecting the Switch

1. **Power Connection:** Connect the power cord to the power inlet on the rear panel of the switch and then to a power outlet. Ensure the power source meets the switch's requirements (100-240V~ 50/60Hz 5.0A).

Figure 3: Rear view of the switch, showing the power inlet and grounding screw.

2. **Network Connections:**

- **2.5G Ethernet Ports (1-16):** Connect your devices (e.g., computers, servers, Wi-Fi 7/6E/6 APs) to these ports using standard Ethernet cables. Ports 1-8 support PoE+ for powering compatible devices.
- **10GE SFP+ Slots (17-18):** Insert compatible SFP+ modules (not included) into these slots for high-speed fiber or copper uplinks to other network devices or your core network.
- **Console Port:** Use the RJ45 console port for command-line interface (CLI) management.

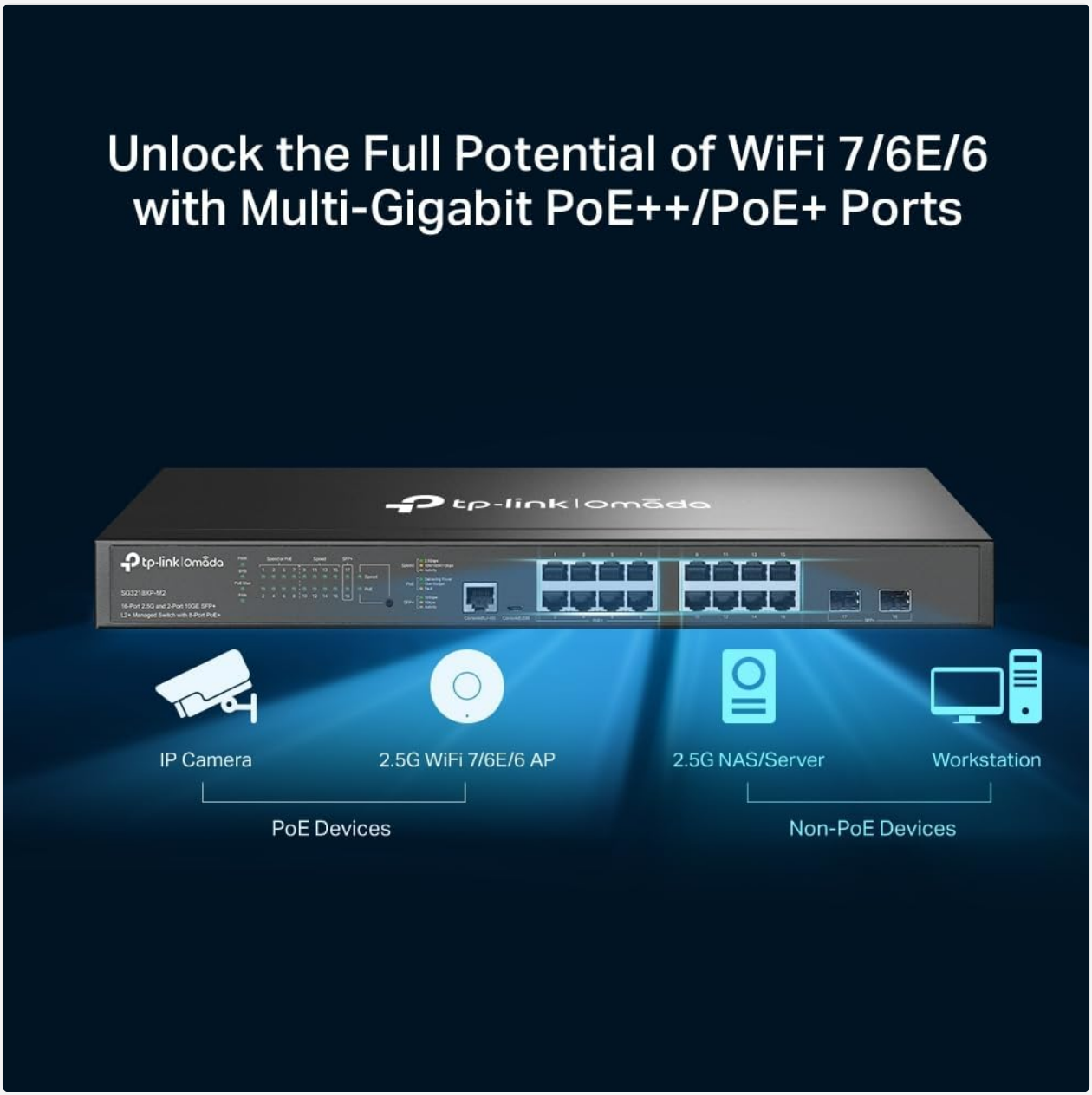

Figure 4: Application diagram illustrating connections for PoE devices (IP Camera, 2.5G WiFi AP) and Non-PoE devices (2.5G NAS/Server, Workstation).

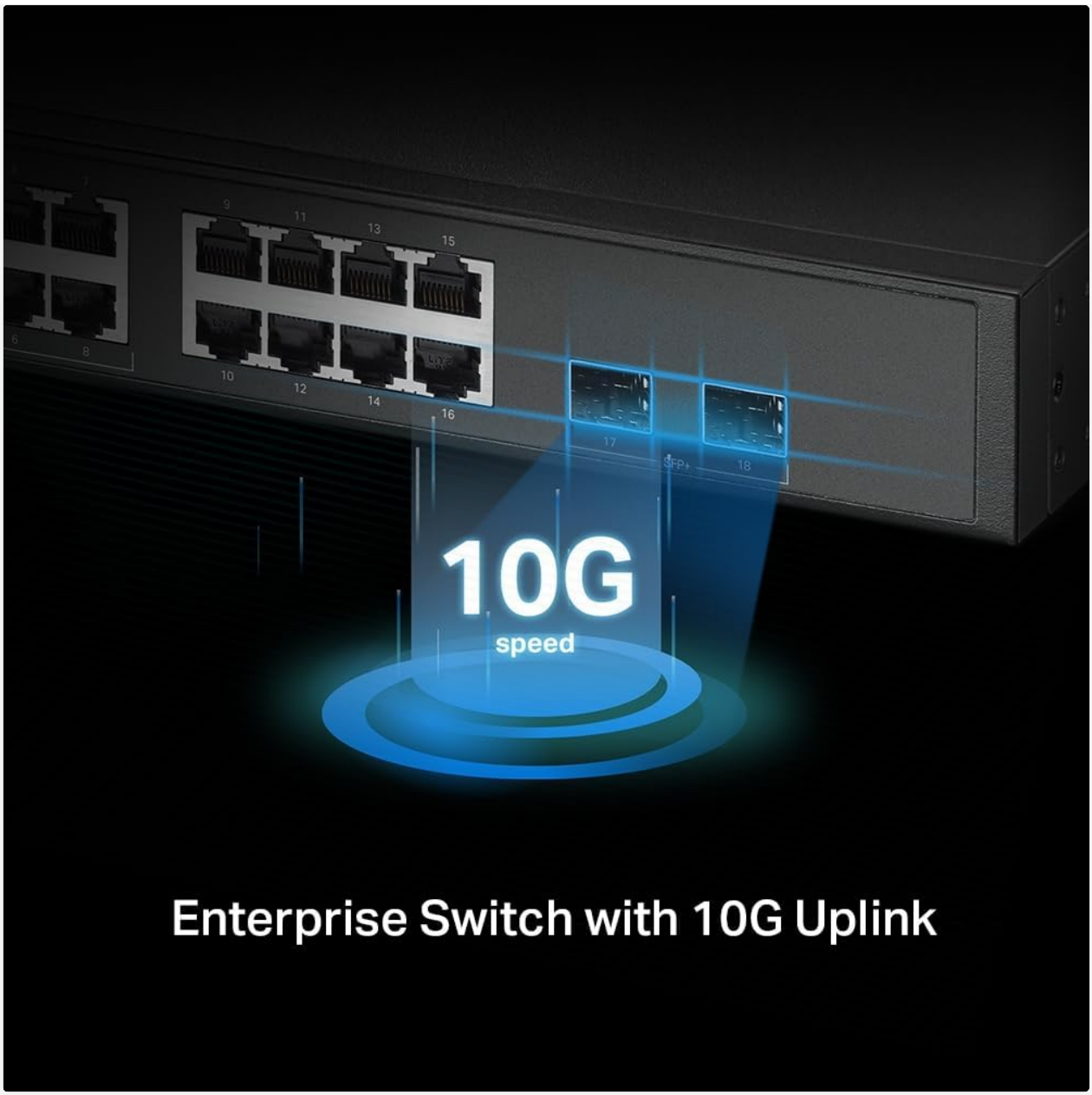

Figure 5: Diagram emphasizing the 10G SFP+ uplink ports (17 and 18) for high-speed network backbone connections.

Initial Configuration

The switch can be managed via its web-based GUI or through the Omada SDN Controller.

- **Web GUI Access:** Refer to the Quick Installation Guide for default IP address and login credentials. Connect a computer directly to one of the switch's Ethernet ports and configure your computer's IP address to be in the same subnet as the switch.
- **Omada SDN Controller:** For centralized management, integrate the switch into your Omada SDN network. This allows for Zero-Touch Provisioning (ZTP) and management via the Omada Cloud or Omada app.

Operating Instructions

Once powered on and connected, the SG3218XP-M2 operates automatically. For advanced features and network optimization, use the management interface.

LED Indicators

Monitor the front panel LEDs for switch status:

- **Power LED:** Indicates power status.
- **System LED:** Indicates system operational status.
- **Link/Act LEDs (per port):** Indicates network link and activity.
- **PoE Max LED:** Indicates if the PoE power budget is nearing its limit.

Basic Network Operation

- **Data Forwarding:** The switch automatically forwards data packets between connected devices at 2.5Gbps or 10Gbps speeds, depending on the port and connected device capabilities.
- **Power over Ethernet (PoE+):** Ports 1-8 automatically detect and provide power to 802.3at/af compliant PoE devices, simplifying deployment of IP cameras, VoIP phones, and Wi-Fi access points.

Advanced Management (via Omada SDN or Web GUI)

The SG3218XP-M2 offers a comprehensive suite of management features:

- **VLAN Configuration:** Create virtual LANs to segment your network for improved security and performance.
- **QoS (Quality of Service):** Prioritize network traffic for critical applications like voice and video to ensure smooth performance.
- **IGMP Snooping:** Optimize multicast traffic delivery, essential for IPTV and other streaming services.
- **Link Aggregation (LACP):** Combine multiple ports to increase bandwidth and provide link redundancy.
- **Security Features:** Configure ACLs (Access Control Lists), Port Security, DoS Defend, and 802.1X authentication to protect your network.
- **Static Routing:** Define static routes to manage internal network traffic efficiently.

Maintenance

Proper maintenance ensures the longevity and optimal performance of your switch.

- **Cleaning:** Regularly clean the exterior of the switch with a soft, dry cloth. Do not use liquid or aerosol cleaners. Ensure ventilation openings are free from dust and obstructions.
- **Ventilation:** Ensure the switch is placed in a well-ventilated area. Do not block the air vents on the sides of the device. Overheating can lead to performance degradation or damage.
- **Firmware Updates:** Periodically check the TP-Link website or your Omada SDN Controller for firmware updates. Keeping the firmware up-to-date ensures you have the latest features, security patches, and performance improvements. Follow the instructions provided with the firmware update carefully.
- **Power Cycling:** If the switch becomes unresponsive, perform a power cycle by disconnecting the power cord, waiting for 10 seconds, and then reconnecting it.

Troubleshooting

This section addresses common issues you might encounter with the SG3218XP-M2 switch.

No Power

- Ensure the power cord is securely connected to the switch and a working power outlet.
- Verify the power outlet is supplying power by testing it with another device.
- Check the Power LED on the front panel. If it is off, there might be a power issue.

No Link on a Port

- Verify that the Ethernet cable is securely connected to both the switch port and the connected device.
- Ensure the connected device is powered on and functioning correctly.
- Try a different Ethernet cable to rule out a faulty cable.
- Check the Link/Act LED for the specific port. If it's off, there's no link.
- For SFP+ ports, ensure the SFP+ module is correctly inserted and compatible.

PoE Device Not Receiving Power

- Ensure the device connected to the PoE+ port is 802.3at/af compliant.
- Check the PoE Max LED. If it is lit, the total PoE budget (240W) might be exceeded. Disconnect some PoE devices or use an external power source for some devices.
- Verify the Ethernet cable is of good quality and supports PoE (Cat5e or higher recommended).

Web Management Interface Unresponsive

- Ensure your computer's IP address is in the same subnet as the switch's management IP.
- Clear your browser's cache or try a different web browser.
- Perform a power cycle on the switch.
- If using Omada SDN, ensure the controller is running and the switch is adopted.

Fan Noise

The switch is equipped with cooling fans. While some noise is normal, especially during startup or under heavy load, excessive or unusual noise might indicate an issue. Ensure proper ventilation and that the ambient temperature is within the operating range.

Technical Specifications

Feature	Specification
Model Number	SG3218XP-M2
Switch Type	Managed
Number of Ports	16 (8x 2.5Gbps PoE+, 8x 2.5Gbps Non-PoE) + 2x 10Gbps SFP+
PoE+ Budget	240 W
Interface Type	PoE, SFP+
Case Material	Metal
Dimensions (Package)	21 x 9.75 x 3.25 inches
Item Weight	6.74 pounds
Operating Temperature	0°C to 40°C (32°F to 104°F)
UPC	840030709722
Included Components	Switch, Power Cord, Quick Installation Guide, Rackmount Kit, Rubber Feet

Warranty Information

The TP-Link Omada SG3218XP-M2 switch is backed by an industry-leading**5-year warranty**. This warranty covers defects in materials and workmanship under normal use. Please retain your proof of purchase for warranty claims. For detailed warranty terms and conditions, refer to the official TP-Link website or contact customer support.

Technical Support

TP-Link provides comprehensive technical support for the SG3218XP-M2 switch.

- **Free Technical Support:** Available from 6 AM to 6 PM PST, Monday to Friday.
- **Online Resources:** Visit the official TP-Link support website for FAQs, troubleshooting guides, firmware downloads, and community forums.
- **Omada App:** Utilize the Omada app for convenient management and monitoring of your switch and other Omada devices.
- **Cloud Access:** Manage your Omada network remotely via the Omada Cloud.

For immediate assistance, please contact TP-Link customer service through their official channels.