tp-link | Omada Business Networking Solution

Installation Guide

About this Installation Guide

This Installation Guide describes the hardware characteristics, installation methods and the points that should be attended to during the installation. This Installation Guide is structured as follows:

Chapter 1 Introduction

This chapter describes the external components of the switch.

Chapter 2 Installation

This chapter illustrates how to install the switch.

Chapter 3 Connection

This chapter illustrates how to do the physical connection of the switch.

Chapter 4 Configuration

This chapter illustrates how to configure the switch.

Appendix A Troubleshooting

Appendix B Hardware Specifications

Audience

This Installation Guide is for:

Network Engineer Network Administrator

Conventions

- Some models featured in this guide may be unavailable in your country or region. For local sales information, visit https://www.tp-link.com.
- The figures in Chapter 2, Chapter 3, and Chapter 4 are for demonstration purposes only. Your switch may differ in appearance from that depicted.
- PoE budget calculations are based on laboratory testing. Actual PoE power budget is not guaranteed and will vary as a result of client limitations and environmental factors.
- This guide uses the specific formats to highlight special messages. The following table lists the notice icons that are used throughout this guide.

	Remind to be careful. A caution indicates a potential which may result in device damage.
	Remind to take notice. The note contains the helpful information for a better use of the product.

Related Document

The User Guide and CLI Reference Guide of the product are provided on Download Center. To obtain the latest product information, visit the official website: https://www.tp-link.com.

Contents

Chapter 1 Introduction — 01

1.1 Product Overview 01

1.2 Appearance 01

Chapter 2 Installation — 16

2.1 Package Contents 16

2.2 Safety Precautions 16

2.3 Installation Tools 18

2.4 Product Installation 18

Chapter 3 Connection — 20

3.1 Ethernet Port 20

3.2 SFP/SFP+ Slot 20

3.3 Console Port 20

3.4 Verify Installation 21

3.5 Power On 22

3.6 Initialization 22

Chapter 4 Configuration — 23

4.1 Configuration Overview 23

4.2 Standalone Mode 23

4.3 Controller Mode 24

Appendix A Troubleshooting — 27

Appendix B Specifications — 28

Chapter 1 Introduction

1.1 Product Overview

Designed for workgroups and departments, TP-Link Omada's L2+ Managed Switch provides wire-speed performance and abundant L2 management features. It provides a variety of service features and multiple powerful functions with high security.

The EIA-standardized framework and smart configuration capacity can provide flexible solutions for a variable scale of networks. ACL, 802.1x and Dynamic ARP Inspection provide robust security strategies. QoS and IGMP snooping/filtering optimize voice and video application. Link aggregation (LACP) increases aggregated bandwidth, optimizing the transport of business critical data. SNMP, RMON, WEB and CLI Log-in bring abundant management policies. TP-Link Omada's L2+ Managed Switch integrates multiple functions with excellent performance, and is friendly to manage, which can fully meet the need of the users demanding higher networking performance.

SX3206HPP/SG3210XHP-M2/SG3218XP-M2/SG3428MP/SG3428XMP/SG3428XPP-M2/SG3452P/SG3452XP is also a Power Sourcing Equipment (PSE*). All the RJ45 ports* on the switch support Power over Ethernet (PoE*) function, which can automatically detect and supply power to those powered devices (PDs*) complying with IEEE 802.3af, IEEE 802.3at and/or IEEE 802.3bt.

*For SG3218XP-M2, only port 1-8 supports the Power over Ethernet (PoE) function.

*PSE: a device (switch or hub for instance) that provides power through an Ethernet cable.

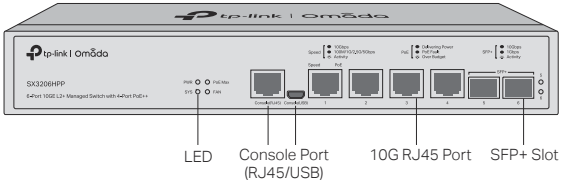
*PoE: This technology describes a system to transmit electrical power, along with data, to remote devices over standard twisted-pair cable in an Ethernet.

*PD: a device powered by a PSE and thus consumes energy. Examples include powering network cameras, wireless LAN access points, IP telephones, network hubs, embedded computers etc.

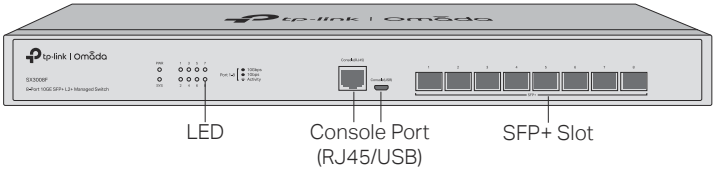
1.2 Appearance

- **Front Panel** (The figures are for demonstration only. They may differ from your actual products.)

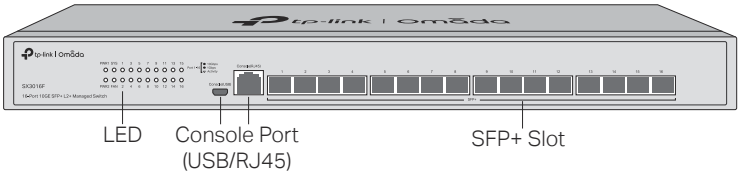
The front panel of SX3206HPP is shown as the following figure.



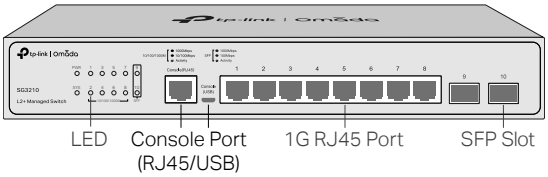
The front panel of SX3008F is shown as the following figure.



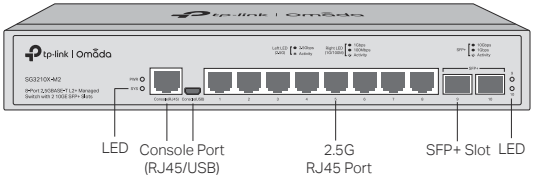
The front panel of SX3016F is shown as the following figure.



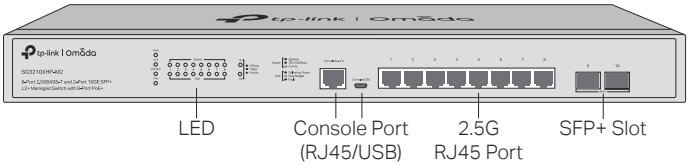
The front panel of SG3210 is shown as the following figure.



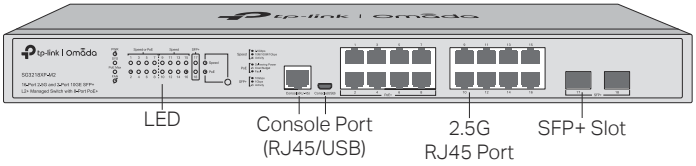
The front panel of SG3210X-M2 is shown as the following figure.



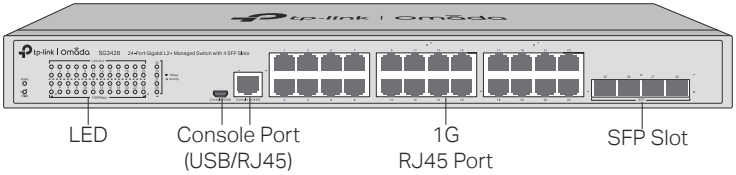
The front panel of SG3210XHP-M2 is shown as the following figure.



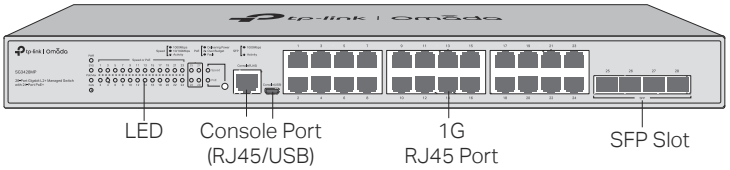
The front panel of SG3218XP-M2 is shown as the following figure.



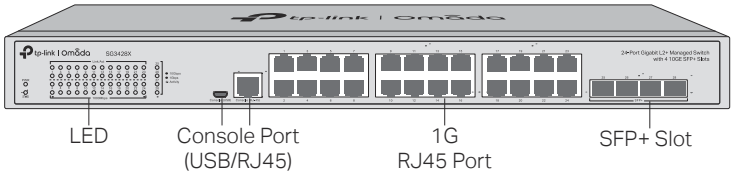
The front panel of SG3428 is shown as the following figure.



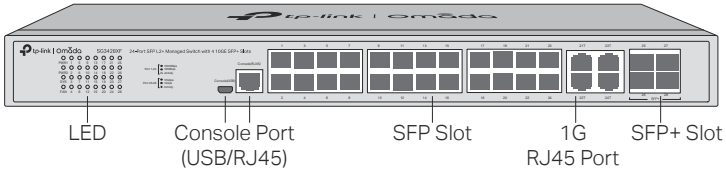
The front panel of SG3428MP is shown as the following figure.



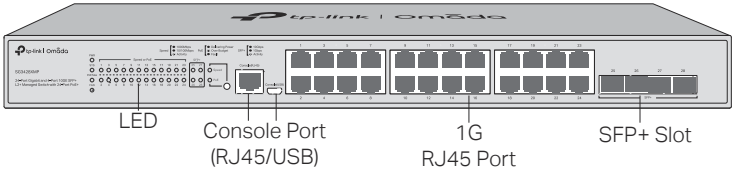
The front panel of SG3428X is shown as the following figure.



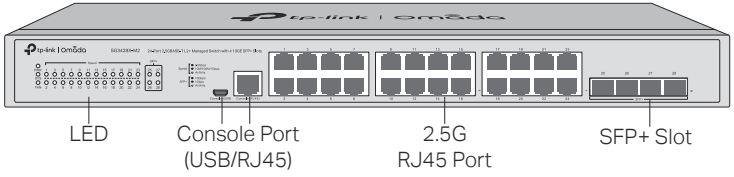
The front panel of SG3428XF is shown as the following figure.



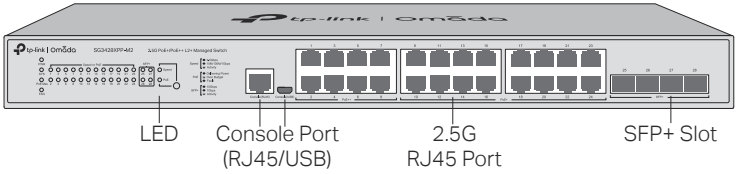
The front panel of SG3428XMP is shown as the following figure.



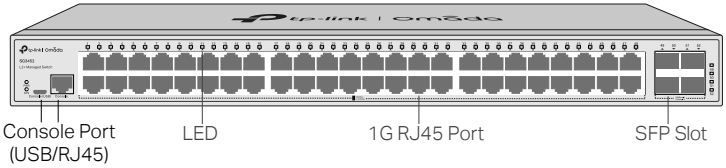
The front panel of SG3428X-M2 is shown as the following figure.



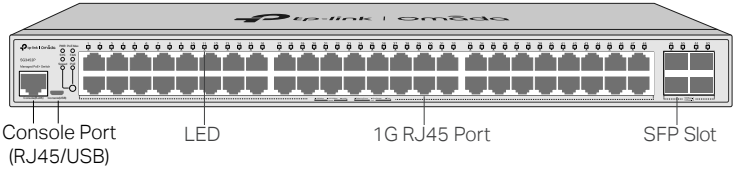
The front panel of SG3428XPP-M2 is shown as the following figure.



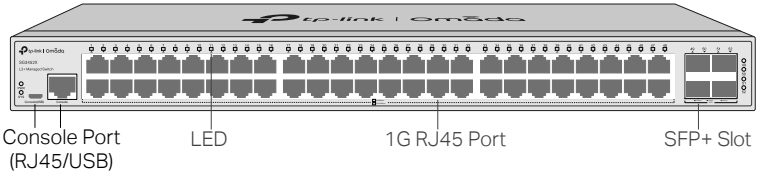
The front panel of SG3452 is shown as the following figure.



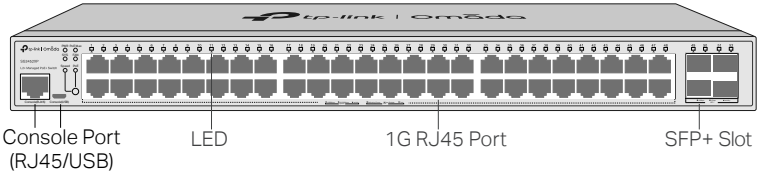
The front panel of SG3452P is shown as the following figure.



The front panel of SG3452X is shown as the following figure.



The front panel of SG3452XP is shown as the following figure.



LEDs

For SX3206HPP

LED	Indication
PWR	**On**: The switch is powered on. **Off**: The switch is powered off or power supply is abnormal. **Flashing**: Power supply is abnormal.
SYS	**Flashing**: The switch works properly. **On or Off**: The switch works improperly.
PoE Max	**On**: The remaining PoE power is ≤ 7 W. **Flashing**: The remaining PoE power keeps ≤ 7 W after this LED is on for 2 minutes. **Off**: The remaining PoE power is > 7 W.
FAN	**Green**: All the fans work properly. **Yellow**: Not all the fans work properly.
Speed	**Green On**: Running at 10 Gbps, but no activity. **Green Flashing**: Running at 10 Gbps and transmitting or receiving data. **Yellow On**: Running at 100M/1G/2.5G/5Gbps, but no activity. **Yellow Flashing**: Running at 100M/1G/2.5G/5Gbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port.
PoE	**Green On**: The port is supplying power normally. **Green Flashing**: The supply power exceeds the correponding port's maximum power. **Yellow On**: Overload or short circuit is detected. **Yellow Flashing**: Power-on self-test failed. **Off**: Not providing PoE power on the port.
SFP+	**Green On**: Running at 10 Gbps, but no activity. **Green Flashing**: Running at 10 Gbps and transmitting or receiving data. **Yellow On**: Running at 1 Gbps, but no activity. **Yellow Flashing**: Running at 1 Gbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port.

For SX3008F

LED	Indication
PWR	**On**: The switch is powered on. **Off**: The switch is powered off or power supply is abnormal. **Flashing**: Power supply is abnormal.
SYS	**Flashing**: The switch works properly. **On or Off**: The switch works improperly.

LED	Indication
Port 1–8	**Green On**: Running at 10 Gbps, but no activity. **Green Flashing**: Running at 10 Gbps and transmitting or receiving data. **Yellow On**: Running at 1 Gbps, but no activity. **Yellow Flashing**: Running at 1 Gbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port.

For SX3016F

PWR1*	PWR2	Indication
Green On	Off	The switch is powered by PWR1. PWR2 is disconnected or it works improperly.
Green On	Yellow On**	The switch is powered by PWR1. PWR1 and PWR2 are connected.*
Off	Green On	The switch is powered by PWR2. PWR1 is disconnected or it works improperly.
Off	Off	The switch is powered off or both PWR1 and PWR2 work improperly.

LED	Indication
SYS	**Flashing**: The switch works properly. **On or Off**: The switch works improperly.
FAN	**Green**: All the fans work properly. **Yellow**: Not all the fans work properly.
Port 1–16	**Green On**: Running at 10 Gbps, but no activity. **Green Flashing**: Running at 10 Gbps and transmitting or receiving data. **Yellow On**: Running at 1 Gbps, but no activity. **Yellow Flashing**: Running at 1 Gbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port.

*PWR1 is the primary power supply and it takes priority over PWR2.

**When both PWR1 and PWR2 work properly and the switch is powerd by PWR1, it takes 10-20 seconds for the LED PWR2 (yellow) to go out after PWR2 is unplugged.

For SG3210X-M2

LED	Indication
PWR	**On**: The switch is powered on. **Off**: The switch is powered off or power supply is abnormal. **Flashing**: Power supply is abnormal.
SYS	**Flashing**: The switch works properly. **On or Off**: The switch works improperly.

LED	Indication
2.5G	**On**: Running at 2.5 Gbps, but no activity. **Flashing**: Running at 2.5 Gbps and transmitting or receiving data. **Off**: Running at 1000/100 Mbps or no device is linked to the corresponding port.
1G/100M	**Green On**: Running at 1 Gbps, but no activity. **Green Flashing**: Running at 1 Gbps and transmitting or receiving data. **Yellow On**: Running at 100 Mbps, but no activity. **Yellow Flashing**: Running at 100 Mbps and transmitting or receiving data. **Off**: Running at 2.5 Gbps or no device is linked to the corresponding port.
SFP+	**Green On**: Running at 10 Gbps, but no activity. **Green Flashing**: Running at 10 Gbps and transmitting or receiving data. **Yellow On**: Running at 1 Gbps, but no activity. **Yellow Flashing**: Running at 1 Gbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port.

For SG3210XHP-M2

LED	Indication
PWR	**On**: The switch is powered on. **Off**: The switch is powered off or power supply is abnormal. **Flashing**: Power supply is abnormal.
SYS	**Flashing**: The switch works properly. **On or Off**: The switch works improperly.
PoE Max	**On**: The remaining PoE power is ≤ 7 W. **Flashing**: The remaining PoE power keeps ≤ 7 W after this LED is on for 2 minutes. **Off**: The remaining PoE power is > 7 W.
FAN	**Green**: All the fans work properly. **Yellow**: Not all the fans work properly.
Speed	**Green On**: Running at 2.5 Gbps, but no activity. **Green Flashing**: Running at 2.5 Gbps and transmitting or receiving data. **Yellow On**: Running at 100/1000 Mbps, but no activity. **Yellow Flashing**: Running at 100/1000 Mbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port.
PoE	**Green On**: The port is supplying power normally. **Green Flashing**: The supply power exceeds the correponding port's maximum power. **Yellow On**: Overload or short circuit is detected. **Yellow Flashing**: Power-on self-test failed. **Off**: Not providing PoE power on the port.

LED	Indication
Port 9–10	**Green On**: Running at 10 Gbps, but no activity. **Green Flashing**: Running at 10 Gbps and transmitting or receiving data. **Yellow On**: Running at 1 Gbps, but no activity. **Yellow Flashing**: Running at 1 Gbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port.

For SG3218XP-M2

LED	Indication
PWR	**On**: The switch is powered on. **Off**: The switch is powered off or power supply is abnormal. **Flashing**: Power supply is abnormal.
SYS	**Flashing**: The switch works properly. **On or Off**: The switch works improperly.
PoE Max	**On**: The remaining PoE power is ≤ 7 W. **Flashing**: The remaining PoE power keeps ≤ 7 W after this LED is on for 2 minutes. **Off**: The remaining PoE power is > 7 W.
FAN	**Green**: All the fans work properly. **Yellow**: Not all the fans work properly.
Speed or PoE (When the Speed LED is on)	**Green On**: Running at 2.5Gbps, but no activity. **Green Flashing**: Running at 2.5Gbps and transmitting or receiving data. **Yellow On**: Running at 10/100/1000Mbps, but no activity. **Yellow Flashing**: Running at 10/100/1000Mbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port.
Speed or PoE (When the PoE LED is on)	**Green On**: The port is supplying power normally. **Green Flashing**: The supply power exceeds the correponding port's maximum power. **Yellow On**: Overload or short circuit is detected. **Yellow Flashing**: Power-on self-test failed. **Off**: Not providing PoE power on the port.
Speed	**Green On**: Running at 2.5Gbps, but no activity. **Green Flashing**: Running at 2.5Gbps and transmitting or receiving data. **Yellow On**: Running at 10/100/1000Mbps, but no activity. **Yellow Flashing**: Running at 10/100/1000Mbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port.
SFP+	**Green On**: Running at 10 Gbps, but no activity. **Green Flashing**: Running at 10 Gbps and transmitting or receiving data. **Yellow On**: Running at 1 Gbps, but no activity. **Yellow Flashing**: Running at 1 Gbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port.

For SG3210, SG3452 and SG3452X

LED	Indication
PWR	**On**: The switch is powered on. **Off**: The switch is powered off or power supply is abnormal. **Flashing**: Power supply is abnormal.
SYS	**Flashing**: The switch works properly. **On or Off**: The switch works improperly.
10/100/1000M	**Green On**: Running at 1000 Mbps, but no activity. **Green Flashing**: Running at 1000 Mbps and transmitting or receiving data. **Yellow On**: Running at 10/100 Mbps, but no activity. **Yellow Flashing**: Running at 10/100 Mbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port.
Port 49–52/SFP	**Green On**: Running at 1000 Mbps, but no activity. **Green Flashing**: Running at 1000 Mbps and transmitting or receiving data. **Yellow On**: Running at 100 Mbps, but no activity. **Yellow Flashing**: Running at 100 Mbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port. Note: Port 49–52 for SG3452, SFP for SG3210.
SFP+	**Green On**: Running at 10 Gbps, but no activity. **Green Flashing**: Running at 10 Gbps and transmitting or receiving data. **Yellow On**: Running at 1 Gbps, but no activity. **Yellow Flashing**: Running at 1 Gbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port. Note: For SG3452X

For SG3428

LED	Indication
PWR	**On**: The switch is powered on. **Off**: The switch is powered off or power supply is abnormal. **Flashing**: Power supply is abnormal.
SYS	**Flashing**: The switch works properly. **On or Off**: The switch works improperly.
Link/Act	**On**: A device is linked to the port but no activity. **Off**: No device is linked to the corresponding port. **Flashing**: Transmitting or receiving data.
1000Mbps	**On**: Running at 1000 Mbps. **Off**: Running at 10/100 Mbps or no device is linked to the port.
Port 25–28	**On**: Running at 1 Gbps, but no activity. **Flashing**: Running at 1 Gbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port.

For SG3428X

LED	Indication
PWR	**On**: The switch is powered on. **Off**: The switch is powered off or power supply is abnormal. **Flashing**: Power supply is abnormal.
SYS	**Flashing**: The switch works properly. **On or Off**: The switch works improperly.
Link/Act	**On**: A device is linked to the port but no activity. **Off**: No device is linked to the corresponding port. **Flashing**: Transmitting or receiving data.
1000Mbps	**On**: Running at 1000 Mbps. **Off**: Running at 10/100 Mbps or no device is linked to the port.
Port 25–28	**Green On**: Running at 10 Gbps, but no activity. **Green Flashing**: Running at 10 Gbps and transmitting or receiving data. **Yellow On**: Running at 1 Gbps, but no activity. **Yellow Flashing**: Running at 1 Gbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port.

For SG3428XF

PWR1*	PWR2	Indication
Green On	Off	The switch is powered by PWR1. PWR2 is disconnected or it works improperly.
Green On	Yellow On**	The switch is powered by PWR1. PWR1 and PWR2 are connected.*
Off	Green On	The switch is powered by PWR2. PWR1 is disconnected or it works improperly.
Off	Off	The switch is powered off or both PWR1 and PWR2 work improperly.

LED	Indication
SYS	**Flashing**: The switch works properly. **On or Off**: The switch works improperly.
FAN	**Green**: All the fans work properly. **Yellow**: Not all the fans work properly.
Port 1-24	**Green On**: Running at 1000 Mbps, but no activity. **Green Flashing**: Running at 1000 Mbps and transmitting or receiving data. **Yellow On**: Running at 100 Mbps, but no activity. **Yellow Flashing**: Running at 100 Mbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port.

LED	Indication
Port 25–28	**Green On**: Running at 10 Gbps, but no activity. **Green Flashing**: Running at 10 Gbps and transmitting or receiving data. **Yellow On**: Running at 1 Gbps, but no activity. **Yellow Flashing**: Running at 1 Gbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port.

*PWR1 is the primary power supply and it takes priority over PWR2.

**When both PWR1 and PWR2 work properly and the switch is powerd by PWR1, it takes 10-20 seconds for the LED PWR2 (yellow) to go out after PWR2 is unplugged.

For SG3428X-M2

LED	Indication
PWR	**On**: The switch is powered on. **Off**: The switch is powered off or power supply is abnormal. **Flashing**: Power supply is abnormal.
SYS	**Flashing**: The switch works properly. **On or Off**: The switch works improperly.
FAN	**Green**: All the fans work properly. **Yellow**: Not all the fans work properly.
Speed	**Green On**: Running at 2.5 Gbps, but no activity. **Green Flashing**: Running at 2.5 Gbps and transmitting or receiving data. **Yellow On**: Running at 10/100/1000Mbp, but no activity. **Yellow Flashing**: Running at 10/100/1000Mbp and transmitting or receiving data. **Off**: No device is linked to the corresponding port.
Port 25–28	**Green On**: Running at 10 Gbps, but no activity. **Green Flashing**: Running at 10 Gbps and transmitting or receiving data. **Yellow On**: Running at 1 Gbps, but no activity. **Yellow Flashing**: Running at 1 Gbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port.

For SG3428XPP-M2

LED	Indication
PWR	**On**: The switch is powered on. **Off**: The switch is powered off or power supply is abnormal. **Flashing**: Power supply is abnormal.
SYS	**Flashing**: The switch works properly. **On or Off**: The switch works improperly.
PoE Max	**On**: The remaining PoE power is ≤ 7 W. **Flashing**: The remaining PoE power keeps ≤ 7 W after this LED is on for 2 minutes. **Off**: The remaining PoE power is > 7 W.

LED	Indication
FAN	**Green**: All the fans work properly. **Yellow**: Not all the fans work properly.
Speed or PoE (When the Speed LED is on)	**Green On**: Running at 2.5Gbps, but no activity. **Green Flashing**: Running at 2.5Gbps and transmitting or receiving data. **Yellow On**: Running at 10/100/1000Mbps, but no activity. **Yellow Flashing**: Running at 10/100/1000Mbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port.
Speed or PoE (When the PoE LED is on)	**Green On**: The port is supplying power normally. **Green Flashing**: The supply power exceeds the correponding port's maximum power. **Yellow On**: Overload or short circuit is detected. **Yellow Flashing**: Power-on self-test failed. **Off**: Not providing PoE power on the port.
SFP+	**Green On**: Running at 10 Gbps, but no activity. **Green Flashing**: Running at 10 Gbps and transmitting or receiving data. **Yellow On**: Running at 1 Gbps, but no activity. **Yellow Flashing**: Running at 1 Gbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port.

For SG3428MP, SG3428XMP, SG3452P and SG3452XP

LED	Indication
PWR	**On**: The switch is powered on. **Off**: The switch is powered off or power supply is abnormal. **Flashing**: Power supply is abnormal.
SYS	**Flashing**: The switch works properly. **On or Off**: The switch works improperly.
PoE Max	**On**: The remaining PoE power is ≤ 7 W. **Flashing**: The remaining PoE power keeps ≤ 7 W after this LED is on for 2 minutes. **Off**: The remaining PoE power is > 7 W.
FAN	**Green**: All the fans work properly. **Yellow**: Not all the fans work properly.
Speed or PoE (When the Speed LED is on)	**Green On**: Running at 1000 Mbps, but no activity. **Green Flashing**: Running at 1000 Mbps and transmitting or receiving data. **Yellow On**: Running at 10/100 Mbps, but no activity. **Yellow Flashing**: Running at 10/100 Mbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port.
Speed or PoE (When the PoE LED is on)	**Green On**: The port is supplying power normally. **Green Flashing**: The supply power exceeds the correponding port's maximum power. **Yellow On**: Overload or short circuit is detected. **Yellow Flashing**: Power-on self-test failed. **Off**: Not providing PoE power on the port.

LED	Indication
SFP	**On**: Running at 1 Gbps, but no activity. **Flashing**: Running at 1 Gbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port. Note: For SG3428MP
1000Base-X/ 100Base-FX	**Green On**: Running at 1000 Mbps, but no activity. **Green Flashing**: Running at 1000 Mbps and transmitting or receiving data. **Yellow On**: Running at 100 Mbps, but no activity. **Yellow Flashing**: Running at 100 Mbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port. Note: For SG3452P
SFP+	**Green On**: Running at 10 Gbps, but no activity. **Green Flashing**: Running at 10 Gbps and transmitting or receiving data. **Yellow On**: Running at 1 Gbps, but no activity. **Yellow Flashing**: Running at 1 Gbps and transmitting or receiving data. **Off**: No device is linked to the corresponding port. Note: For SG3428XMP/SG3452XP

Console Port

Designed to connect with a computer for monitoring and configuring the switch. When the switch has an RJ45 console port and a micro-USB console port, console input is active on only one console port at a time. By default, the micro-USB connector takes precedence over the RJ45 connector.

100 Mbps/1 Gbps/2.5 Gbps/5 Gbps/10 Gbps RJ45 Port

Designed to connect to the device with a bandwidth of 100 Mbps,1 Gbps, 2.5 Gbps, 5 Gbps or 10 Gbps. For PoE switches, the port can also provide power for PDs.

10 Mbps/100 Mbps/1000 Mbps/2.5 Gbps RJ45 Port

Designed to connect to the device with a bandwidth of 10 Mbps, 100 Mbps,1000 Mbps, 2.5 Gbps. For PoE switches, the port can also provide power for PDs.

10/100/1000 Mbps RJ45 Port

Designed to connect to the device with a bandwidth of 10 Mbps, 100 Mbps or 1000 Mbps. For PoE switches, the port can also provide power for PDs.

SFP/SFP+ Slot

SFP slot is designed to install the 1 Gbps SFP module. SFP+ slot is designed to install the 10 Gbps SFP+ module.

Port Feature

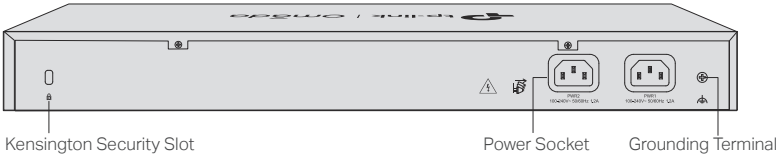
Model	100 M/1 G/2.5 G/ 5 G/10 Gbps RJ45 Port	10 M/100 M/ 1000 M/2.5 Gbps RJ45 Port	10/100/1000 Mbps RJ45 Port	SFP+ Slot	SFP Slot	Console Port
SX3206HPP	4	/	/	2	/	2
SX3008F	/	/	/	8	/	2

Model	100 M/1 G/2.5 G/ 5 G/10 Gbps RJ45 Port	10 M/100 M/ 1000 M/2.5 Gbps RJ45 Port	10/100/1000 Mbps RJ45 Port	SFP+ Slot	SFP Slot	Console Port
SX3016F	/	/	/	16	/	2
SG3210	/	/	8	/	2	2
SG3210X-M2	/	8*	/	2	/	2
SG3210XHP-M2	/	8*	/	2	/	2
SG3218XP-M2	/	16	/	2	/	2
SG3428	/	/	24	/	4	2
SG3428MP	/	/	24	/	4	2
SG3428X	/	/	24	4	/	2
SG3428XF	/	/	4**	4	24	2
SG3428XMP	/	/	24	4	/	2
SG3428X-M2	/	24	/	4	/	2
SG3428XPP-M2	/	24	/	4	/	2
SG3452	/	/	48	/	4	2
SG3452P	/	/	48	/	4	2
SG3452X	/	/	48	4	/	2
SG3452XP	/	/	48	4	/	2

*The RJ45 ports of SG3210X-M2/SG3210XHP-M2 does not support 10 Mbps rate.
**The 4 RJ45 ports of SG3428XF form combo ports with 4 SFP slots and they are not able to negotiate with a speed of 10 Mbps.

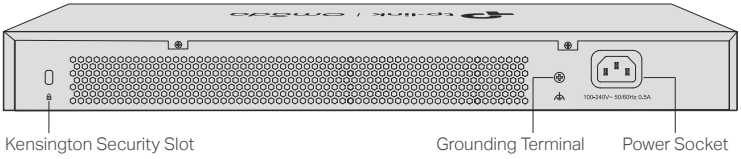
- **Rear Panel**

The rear panel of SX3016F/SG3428XF is shown as the following figure. The figure is for demonstration purposes only. Your switch may differ in appearance from the depicted.



Note:
PWR1 is the primary power supply and it takes priority over PWR2.

The rear panel of other models is shown as the following figure. The figure is for demonstration purposes only. Your switch may differ in appearance from the depicted.



Kensington Security Slot

Secure the lock (not provided) into the security slot to prevent the device from being stolen.

Grounding Terminal

The switch already comes with lightning protection mechanism. You can also ground the switch through the PE (Protecting Earth) cable of AC cord or with Ground Cable. For detailed lightning protection measures, go to https://www.tp-link.com/support, search the model number of your switch and go to the product Support web page, refer to the **Lightning Protection Guide** from the Related Documents: https://www.tp-link.com/us/configuration-guides/lightning_protection_guide/.

Power Socket

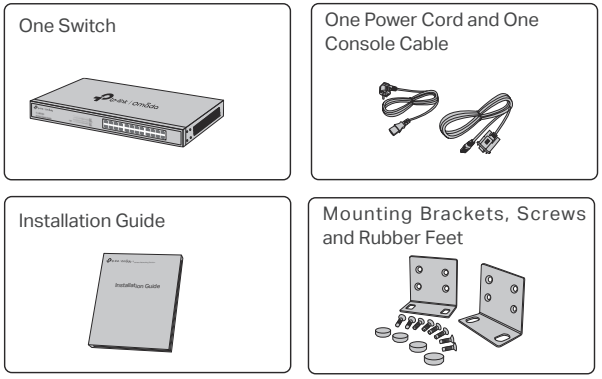
Connect the female connector of the power cord here, and the male connector to the AC power outlet. Make sure that the voltage of the power supply meets the requirement of the input voltage (100–240 V~ 50/60 Hz).

Caution:
Please use the provided power cord.

Chapter 2 Installation

2.1 Package Contents

Make sure that the package contains the following items. Please contact your distributor, if any of the listed items is damaged or missing. The figures are for demonstration only. The actual items may differ in appearance and quantity from the depicted.



2.2 Safety Precautions

To avoid any device damage and bodily injury caused by improper use, you should observe the following rules.

- **Safety Precautions**

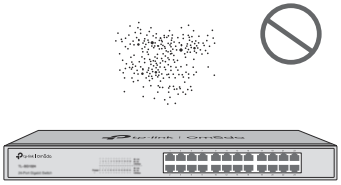
- Keep the power off during the installation.
- Wear an ESD-preventive wrist strap, and make sure that the wrist strap has a good skin contact and is well grounded.
- Use only the power cord provided with the switch.
- Make sure that the supply voltage matches the specifications indicated on the rear panel of the switch.
- Ensure that the switch is installed in a well-ventilated environment and its ventilation hole is not blocked.
- Do not open or remove the cover of the switch.
- Before cleaning the device, cut off the power supply. Do not clean it by the waterish cloth, and never use any other liquid cleaning method.
- Place the device with its bottom surface downward.

- **Site Requirements**

Temperature/Humidity

Keep the equipment room at an appropriate level of temperature and humidity. Too much or too little humidity may lead to bad insulation, leakage of electricity, mechanical property changes, and corrosion. High temperatures may accelerate aging of the insulation materials, significantly shortening the service life of the device. To find out the best temperature and humidity conditions for the device, check the Appendix B Specifications.

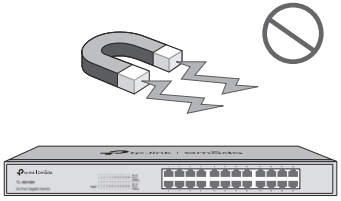
Clearness



The dust accumulated on the switch can be absorbed by static electricity and result in poor contact of metal contact points. Some measures have been taken for the device to prevent static electricity, but too strong static electricity can cause deadly damage to the electronic elements on the internal circuit board. To avoid the effect of static electricity on the operation of the switch, attach much importance to the following items:

- Dust the device regularly, and keep the indoor air clean.
- Keep the device well grounded and ensure that the static electricity has been transferred.

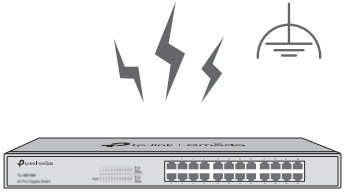
Electromagnetic Interference



Electronic elements including capacitance and inductance on the device can be affected by external interferences, such as conducted emission by capacitance coupling, inductance coupling, and impedance coupling. To decrease the interferences, make sure to take the following measures:

- Use the power supply that can effectively filter interference from the power grid.
- Keep the device far from high-frequency and strong-current devices such as radio transmitting station.
- Use electromagnetic shielding when necessary.

Lightning Protection



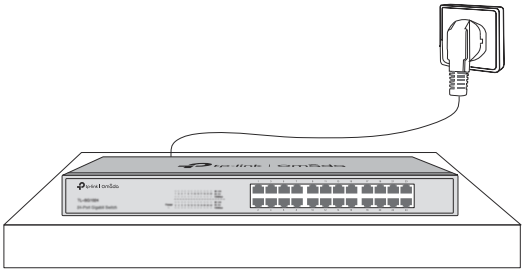
Extremely high voltage currents can be produced instantly when lightning occurs and the air in the electric discharge path can be instantly heated up to 20,000 °C. As this instant current is strong

enough to damage electronic devices, more effective lightning protection measures should be taken.

- Ensure that the rack and the device are well earthed.
- Make sure the power socket has a good contact with the ground.
- Keep a reasonable cabling system and avoid induced lightning.
- Use the signal SPD (Surge Protective Device) when wiring outdoor.

Note:
For detailed lightning protection measures, go to https://www.tp-link.com/support, search the model number of your switch and go to the product Support web page, refer to the **Lightning Protection Guide** from the Related Documents:
https://www.tp-link.com/us/configuration-guides/lightning_protection_guide/.

Installation Site



When installing the device on a rack or a flat workbench, attach much importance to the following items:

- The rack or workbench is flat, stable, and sturdy enough to support the weight of 5.5 kg at least.
- The rack or workbench has a good ventilation system. The equipment room is well ventilated.
- The rack is well grounded. Keep the device less than 1.5 meters away from the power socket.

2.3 Installation Tools

- Phillips screwdriver
- ESD-preventive wrist wrap
- Cables

Note:
These tools are not included with our product. If needed, you can purchase them separately.

2.4 Product Installation

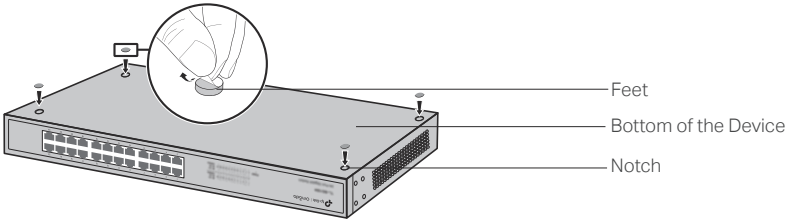
▪ Desktop Installation

To install the device on the desktop, follow the steps:

1. Set the device on a flat surface which is strong enough to support the entire weight of the device with all fittings.
2. Remove the adhesive backing papers from the rubber feet.

3. Turnover the device and attach the supplied rubber feet to the recessed areas on the bottom at each corner of the device.

Figure 2-1 Desktop Installation

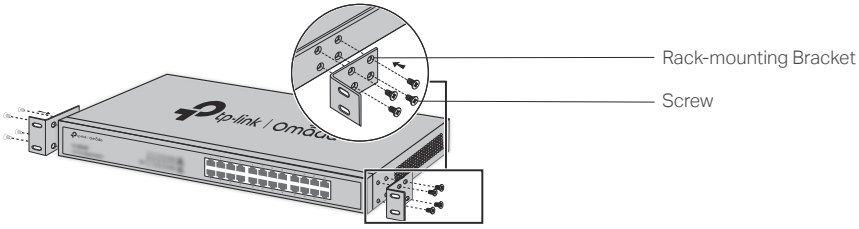


▪ Rack Installation

To install the device in an EIA standard-sized, 19-inch rack, follow the instructions described below:

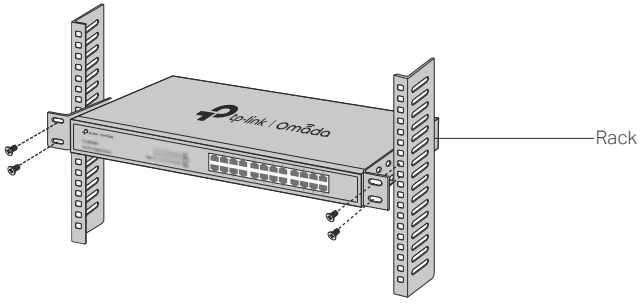
1. Check the efficiency of the grounding system and the stability of the rack.
2. Secure the supplied rack-mounting brackets to each side of the device with supplied screws, as illustrated in the following figure.

Figure 2-2 Bracket Installation



3. After the brackets are attached to the device, use suitable screws (not provided) to secure the brackets to the rack, as illustrated in the following figure.

Figure 2-3 Rack Installation



Caution:

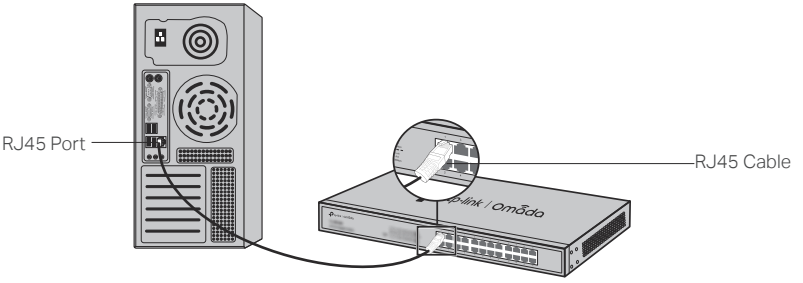
- Leave 5 to 10 cm gaps around the devices for air circulation.
- Avoid placing heavy things on the device.
- Place the device with its bottom facing downwards.
- Mount devices in sequence from the bottom to top of the rack and ensure a certain clearance between devices for the purpose of heat dissipation.

Chapter 3 Connection

3.1 Ethernet Port

Connect an Ethernet port of the switch to the computer by RJ45 cable as the following figure shows.

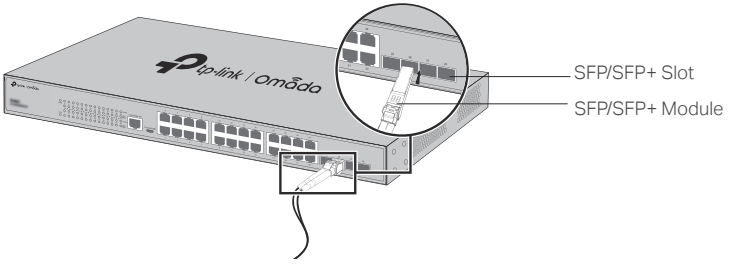
Figure 3-1 Connecting the RJ45 Port



3.2 SFP/SFP+ Slot

The following figure demonstrates the connection of SFP/SFP+ slot to an SFP/SFP+ module.

Figure 3-2 Inserting the SFP/SFP+ Module

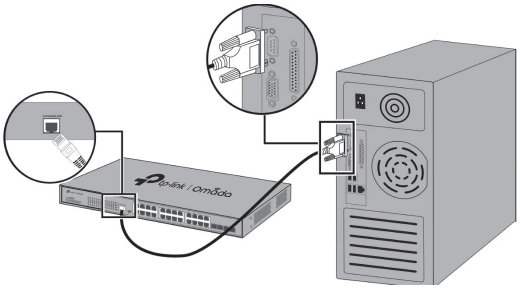


3.3 Console Port

CLI (Command Line Interface) enables you to manage the switch, thus you can load the CLI after connecting the PCs or Terminals to the console port on the switch via a cable (an RJ45 console cable is provided, while micro-USB cable is not provided).

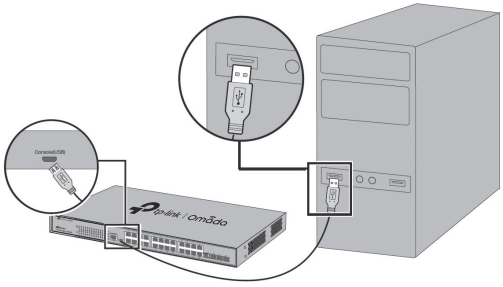
Connect the console (RJ45) port of the device with your computer by the console cable as the following figure shows.

Figure 3-3 Connecting the Console (RJ45) Port



Connect the console (USB) port of the device with your computer by the USB cable (not provided) as the following figure shows.

Figure 3-4 Connecting the Console (USB) Port



Note:

- Console (RJ45) port and console (USB) port cannot be used concurrently. Console (USB) port takes priority over the Console (RJ45) port.
- The console (USB) port is hot-pluggable while the console (RJ45) port is not. Keep the device power off when plugging the console cable into the console (RJ45) port.
- Do not connect the console port with other ports by RJ45 cable.

3.4 Verify Installation

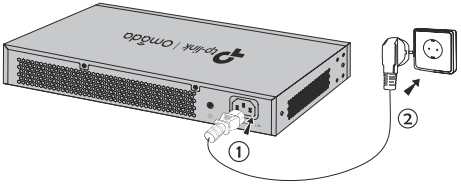
After completing the installation, verify the following items:

- There should be 5 to 10 cm of clearance around the device for ventilation and make sure the air flow is adequate.
- The voltage of the power supply meets the requirement of the input voltage of the device.
- The power socket, device and rack are well grounded.
- The device is correctly connected to other network devices.

3.5 Power On

Plug the female connector of the provided power cord into the power socket of the device and plug the positive connector into a power outlet as the following figure shows. Make sure that the voltage of the power supply meets the requirement of the input voltage (100-240 V~ 50/60 Hz).

Figure 3-5 Connecting to Power Supply



Note:
1. The figure is to illustrate the application and principle. The provided plug and the socket in your region may differ from the figures above.

3.6 Initialization

After the device is powered on, it begins the Power-On Self-Test. A series of tests run automatically to ensure the device functions properly. During this time, its LED indicators will respond in the following order:

1. The PWR LED indicator lights on all the time. The SYS LED and the LED indicators of all the ports keep off.
2. After about one minute, the SYS LED and LED indicators of all the ports will flash momentarily and then turn off.
3. Several seconds later, the SYS LED indicator will flash, which represents a successful initialization.

Chapter 4 Configuration

4.1 Configuration Overview

The switch supports two configuration options:

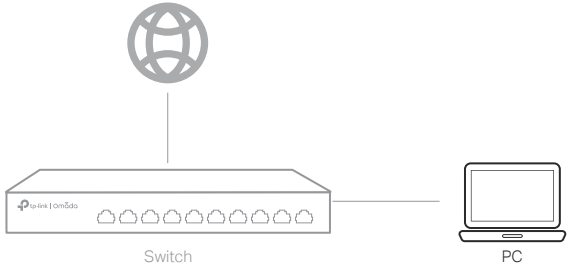
- Standalone Mode: Configure and manage the switch singly.
- Controller Mode: Configure and manage the network devices centrally. It is recommended in the large-scale network, which consists of mass devices such as access points, switches, and gateways.

Note:
When the switch is changed from Standalone Mode to Controller Mode, configurations of the switch will be lost. For details, refer to the related documents on the download center of our official website: https://www.tp-link.com/support/download/.

4.2 Standalone Mode

In Standalone Mode, use a computer to configure and manage the switch using GUI (Graphical User Interface) or CLI (command-line interface).

Figure 4-1 Topology for Standalone Mode



Using the GUI

1. To access the management page of the switch, make sure the switch and computer are in the same subnet. Open a browser and type the switch's IP address in the address field, then press the Enter key.

- If the switch obtains IP address from the DHCP server (typically a router), find the switch's IP address on the DHCP server.
- If not, use the default IP address 192.168.0.1 to launch the switch's management page.

2. Enter **admin** for both the username and password in the lower case letters to log in. The first time you log in, change the password to better protect your network and devices.

3. After a successful login, the main page will appear. You can click the menus on the top side and left side to configure the corresponding functions.

For the detailed configurations, refer to the User Guide and CLI Guide. The guides can be found on the download center of our official website: https://www.tp-link.com/support/download/.

Using the CLI

- Set up a Telnet or SSH connection to access the switch via CLI.

- Use the console port to access the switch. When using the console port, start the terminal emulation program (such as the Hyper Terminal) on the PC and configure the terminal emulation program as follows:

Baud Rate	Data Bits	Parity	Stop Bits	Flow Control
38400 bps	8	None	1	None

For the detailed configurations, refer to the **User Guide** and **CLI Guide**. The guides can be found on the download center of our official website: https://www.tp-link.com/download-center.html

Note:
For certain devices, you may need to change the password the first time you log in, which will better protect your network and devices.

4.3 Controller Mode

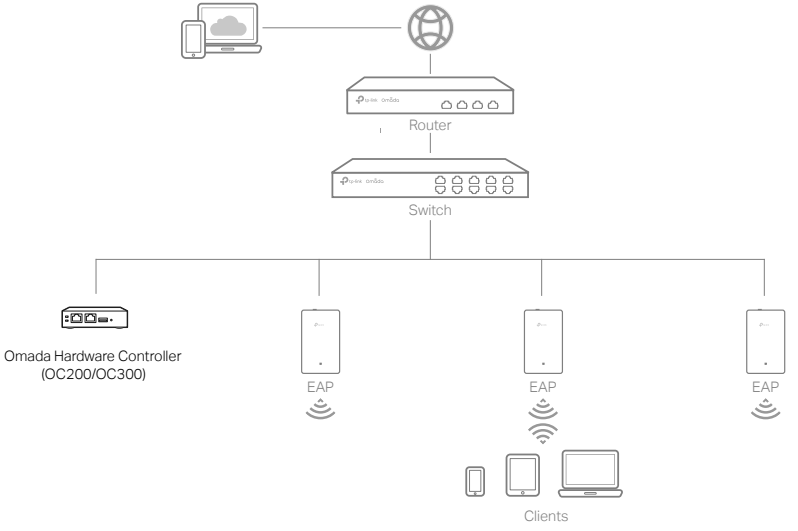
Controller Mode applies to the large scale network with mass devices. All devices can be centrally configured and monitored via Omada Hardware Controller or Omada Software Controller.

Note:
Before the following configurations, make sure the switch can access the internet. When using Omada Software/Hardware Controller, make sure the switch and the controller are in the same subnet. Typically, the switch obtains IP address from the DHCP server. You can check the switch's IP address on the DHCP server.

- **Via Omada Hardware Controller (OC200/OC300)**

Omada Hardware Controller (OC200/OC300) is a good alternative if you have no spare PC to keep running Omada Software Controller in the network. It needs to be purchased additionally. Follow the steps below to configure the Omada Hardware Controller.

Figure 4-2 Manage the network via Omada Software/Hardware Controller



Note:

- Before you start, be sure to power up and connect your devices according to the topology figure.
- A DHCP server (typically a router with DHCP function enabled) is required to assign IP addresses to the EAPs and clients in your local network.
- Omada Controller must have network access to your Omada devices (the router, switch, or EAPs) in order to find, adopt, and manage them.

1. Find the IP address of the router. Open the command line on your PC and enter ipconfig. In the result list, find the Default Gateway, which is also the IP address of the router.

2. Launch a web browser and enter the IP address of the router. Log into the router's web page, and both the username and password are admin by default. Then go to **Network** > **LAN** > **DHCP Client List** to find the IP address of your controller according to its MAC address.

3. Enter the IP address of the your controller in the address bar to open its web page.

4. On the Omada Controller's web page, follow the wizard to complete the quick setup.

5. After the quick setup, the login page appears. Enter the username and password you have created and click **Log in**. Then you can further configure the controller.

6. If you want to manage the devices reomotely, follow the next steps:

   a. Make sure that Cloud Access is enabled on your controller. By default, Cloud Access is enabled. Make sure that the Cloud LED is flashing slowly.

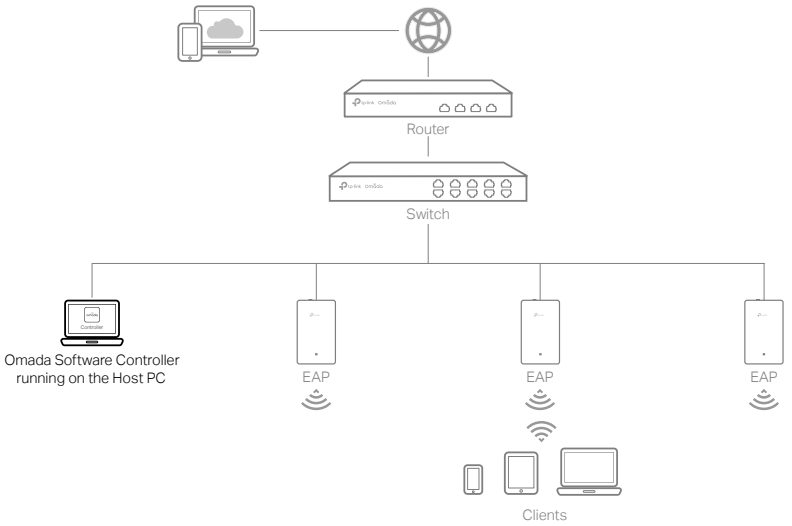
   b. Launch a web browser and enter **https://omada.tplinkcloud.com** in the address bar. Enter your TP-Link ID and password to log in. Click **+ Add Controller** and choose **Hardware Controller** to add your controller. Then you can further configure the controller.

For more details, refer to the Installation Guide of OC200/OC300.

- **Via Omada Software Controller**

On a PC with Windows OS or Linux OS, download the Omada Software Controller from **https://www.tp-link.com/support/download/omada-software-controller/**. Then run the file and follow the wizard to install the Omada Software Controller. Follow the steps below to configure the Controller.

Figure 4-3 Manage the network via Omada Software/Hardware Controller



Note: To manage your devices, Omada Software Controller needs to keep running on your computer.

1. Launch the Omada Software Controller on your PC. After the initiation process, the controller automatically opens its web page. If not, click **Launch a Browser to Manage the Network**.

2. On the Omada Controller's web page, follow the wizard to complete the quick setup.

3. After the quick setup, the login page appears. Enter the username and password you have created and click **Log in**. Then you can further configure the controller.

4. If you want to manage the devices reomotely, follow the next steps:

   a. Make sure that Cloud Access is enabled on your controller and your controller has been bound with your TP-Link ID. On the Omada Controller's web page, go to **Settings** > **Cloud Access** to enable **Cloud Access** and bind your TP-Link ID. If you have set it up in the quick setup, skip this step.

   b. Launch a web browser and enter **https://omada.tplinkcloud.com** in the address bar. Enter your TP-Link ID and password to log in. A list of controllers that have been bound with your TP-Link ID will appear. Then you can click **Launch** to further configure the controller.

*** Omada App**

With the Omada app, you can also manage your controller at a local site or a remote site via your mobile device.

For the detailed configurations, refer to the **User Guide** of the controller. The guide can be found on the download center of our official website: **https://www.tp-link.com/support/download/**.

Appendix A Troubleshooting

Q1. What could I do if I forgot the username and password of the switch?

1. Connect the console port of the PC to the console port of the switch and open a terminal emulation program.
2. Power off and restart the switch. Perform the action indicated by the terminal emulation program to reach the bootUtil menu. The action differs from product to product. Possible actions are listed below:
   - Press any key to stop autoboot.
   - Press CTRL-B to reach the bootUtil menu.
3. The bootUtil menu will be shown. Enter the number 6 to select the “Password recovery” option and enter Y to delete all the users and passwords. The default login username and password are both **admin**. The other configurations in the switch will not be changed.
4. For models without the password recover feature, select the "Reset" option to restore all the configurations to factory defaults. The default login username and password are both **admin**.

Q2. Why does the PWR/Power LED work abnormally?

The PWR/Power LED should be lit up when the power system works normally. If the PWR/Power LED worked abnormally, take the following steps:

1. Make sure that the power cable is connected properly, and the power contact is normal.
2. Make sure the voltage of the power supply meets the requirement of the input voltage of the switch.

Q3. What should I do if I cannot access the web management page?

Try the following:

1. Check every port LED on the switch and make sure the Ethernet cable is connected properly.
2. Try another port on the switch and make sure the Ethernet cable is suitable and works normally.
3. Power off the switch and, after a while, power it on again.
4. Make sure the IP address of your PC is set within the subnet of the switch.
5. If you still cannot access the configuration page, reset the switch to its factory defaults. Then the IP address of your PC should be set as 192.168.0.x ("x" is any number from 2 to 254) and subnet mask as 255.255.255.0.

Q4. Why is the terminal emulation program not displaying correctly?

Try the following:

1. Make sure the power supply is normal and the console cable is properly connected.
2. Check if the console cable is the right type.
3. Ensure the parameters of the terminal emulation program are correct: configure Bits per second as 38400, Data bits as 8, Parity as None, Stop bits as 1, and Flow control as None.

Appendix B Specifications

Specifications for Switches with RJ45 Ports and SFP/SFP+ Slots

Item	Content
Standards	IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3ad, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, IEEE 802.1q, IEEE 802.1x, IEEE 802.1d, IEEE 802.1s, IEEE 802.1w, IEEE 802.1ab
	IEEE 802.3af/at (For SX3206HPP, SG3210XHP-M2, SG3218XP-M2, SG3428MP, SG3428XMP, SG3452P, SG3452XP, SG3428XPP-M2)
	IEEE 802.3bt (For SX3206HPP, SG3428XPP-M2)
	IEEE 802.3i (Except SG3210XHP-M2, SX3206HPP)
	IEEE 802.3ae (For SX3206HPP, SG3210X-M2, SG3210XHP-M2, SG3218XP-M2, SG3428X, SG3428XF, SG3428XMP, SG3428X-M2, SG3428XPP-M2, SG3452X, SG3452XP)
	IEEE 802.3bz (For SX3206HPP, SG3210X-M2, SG3210XHP-M2, SG3218XP-M2, SG3428X-M2, SG3428XPP-M2)
	IEEE 802.3an (For SX3206HPP)

Transmission Medium	10BASE-T: 2-pair UTP/STP of Cat. 3,4,5 (maximum 100 m) (Except SX3206HPP, SG3210XHP-M2, SG3428XF) 100BASE-TX: 2-pair UTP/STP of Cat. 5 or above (maximum 100 m) 1000BASE-T: 4-pair UTP/STP of Cat. 5e or above (maximum 100 m) 2.5GBASE-T: 4-pair UTP/STP of Cat. 5e or above (maximum 100 m) (For SX3206HPP, SG3210X-M2, SG3210XHP-M2, SG3218XP-M2, SG3428X-M2, SG3428XPP-M2) 5GBASE-T: 4-pair UTP/STP of Cat. 5e or above (maximum 100 m) (For SX3206HPP) 10GBASE-T: 4-pair UTP of Cat 6 (maximum 55 m) or STP of Cat 6, 6a, 7 (maximum 100 m) (For SX3206HPP) 100BASE-FX/LX10/BX10: MMF, SMF (For SG3210, SG3428XF, SG3452, SG3452P) 1000BASE-SX/LX/LX10/BX10: MMF, SMF 10GBASE-SR/LR: MMF, SMF (For SX3206HPP, SG3210X-M2, SG3210XHP-M2, SG3218XP-M2, SG3428X, SG3428XF, SG3428X-M2, SG3428XPP-M2, SG3428XMP, SG3452X, SG3452XP) 10GSFP+CU SFP+ Direct Attach Cable (SM5220-1M, SM5220-3M) (For SX3206HPP, SG3210X-M2, SG3218XP-M2, SG3428X, SG3428XF, SG3428XMP, SG3428X-M2, SG3428XPP-M2, SG3452X, SG3452XP)
LED	SX3206HPP: PWR, SYS, PoE Max, FAN, Speed, PoE, SFP+ SG3210: PWR, SYS, 10/100/1000Mbps, SFP SG3210X-M2: PWR, SYS, Link/Act, SFP+ SG3210XHP-M2: PWR, SYS, PoE Max, FAN, Speed, PoE, SFP+ SG3218XP-M2: PWR, SYS, PoE Max, FAN, Speed or PoE, SFP+, Speed, PoE SG3428MP: PWR, SYS, PoE Max, FAN, Speed or PoE, SFP, Speed, PoE SG3428/SG3428X: PWR, SYS, Link/Act, 1000Mbps, Port 25–28 SG3428XF: PWR, SYS, 100/1000Mbps, FAN, SFP+ SG3428XMP: PWR, SYS, PoE Max, FAN, Speed or PoE, SFP+, Speed, PoE SG3428X-M2: PWR, SYS, FAN, Speed, SFP+ SG3428XPP-M2: PWR, SYS, PoE Max, FAN, Speed or PoE, SFP+, Speed, PoE SG3452: PWR, SYS, 10/100/1000Mbps, Port 49-52 SG3452X: PWR, SYS, 10/100/1000Mbps, SFP+ SG3452P: PWR, SYS, Speed, PoE Max, FAN, PoE, Port 1-52 SG3452XP: PWR, SYS, Speed, PoE Max, FAN, PoE, SFP+

Operating Temperature	SG3428X-M2, SG3428XPP-M2, SG3452, SG3452P, SG3452X, SG3452XP: 0 °C to 40 °C (32 °F to 104 °F) SG3210, SG3428, SG3428MP, SG3428X, SG3428XF, SG3428X-UPS, SG3428XMP: 0 °C to 45 °C (32 °F to 113 °F) SX3206HPP, SG3210X-M2, SG3210XHP-M2, SG3218XP-M2: 0 °C to 50 °C (32 °F to 122 °F)
Storage Temperature	-40 °C to 70 °C (-40 °F to 158 °F)
Operating Humidity	10% to 90% RH Non-condensing
Storage Humidity	5% to 90% RH Non-condensing

Specifications for Switches with Full SFP+ Slots (SX3008F/SX3016F)

Item	Content
Standards	IEEE 802.3, IEEE 802.3z, IEEE 802.3ae, IEEE 802.3x
Transmission Medium	1000BASE-SX/LX/LX10/BX10: MMF, SMF 10GBASE-SR/LR: MMF, SMF
LED	SX3008F: PWR, SYS, Port 1–8 SX3016F: PWR1, PWR2, SYS, FAN, Port 1–16
Operating Temperature	0 °C to 45 °C (32 °F to 113 °F)
Storage Temperature	-40 °C to 70 °C (-40 °F to 158 °F)
Operating Humidity	10% to 90% RH Non-condensing
Storage Humidity	5% to 90% RH Non-condensing

CE Mark Warning

This is a class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

EU Declaration of Conformity

TP-Link hereby declares that the device is in compliance with the essential requirements and other relevant provisions of directives 2014/30/EU, 2014/35/EU, 2011/65/EU and (EU)2015/863.

The original EU Declaration of Conformity may be found at https://www.tp-link.com/en/support/ce/

UK Declaration of Conformity

TP-Link hereby declares that the device is in compliance with the essential requirements and other relevant provisions of the Electromagnetic Compatibility Regulations 2016 and Electrical Equipment (Safety) Regulations 2016.

The original UK Declaration of Conformity may be found at https://www.tp-link.com/support/ukca/

Продукт сертифіковано згідно с правилами системи УкрСЕПРО на відповідність вимогам нормативних документів та вимогам, що передбачені чинними законодавчими актами України.

CAUTION:

Double pole, neutral fusing.

Disconnect mainsbefore servicing.

*This caution applies to the following models: SG3428XPP-M2, SG3452XP.

Safety Information

- Keep the device away from water, fire, humidity or hot environments.
- Do not attempt to disassemble, repair, or modify the device.If you need service, please contact us.
- Place the device with its bottom surface downward.
- The plug on the power supply cord is used as the disconnect device, the socket-outlet shall be easily accessible.

- Plug the product into the wall outlets with earthing connection through the power supply cord or plug.
- The socket-outlet shall be installed near the equipment and shall be easily accessible.

This equipment is not suitable for use in locations where children are likely to be present.

Please read and follow the above safety information when operating the device. We cannot guarantee that no accidents or damage will occur due to improper use of the device. Please use this product with care and operate at your own risk.

To ask questions, find answers, and communicate with TP-Link users or engineers, please visit https://community.tp-link.com to join TP-Link Community.

For technical support, the user guide and other information, please visit https://www.tp-link.com/support, or simply scan the QR code.

© 2023 TP-Link 7106510675 REV1.1.0