tp-link Business Networking Solution

Installation Guide

JetStream Stackable L3 Managed Switch

T3700G-52TQ

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 Preparing For Installation.

This chapter illustrates the safety precautions before installing the switch.

Chapter 3 Installation.

This chapter illustrates how to install the switch.

Chapter 4 Lightning Protection.

This chapter illustrates how to prevent lightning damage.

Chapter 5 Connection.

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

Chapter 6 Configuration

This chapter instructs you to configure the switch via Web Interface and CLI commands.

Appendix A Troubleshooting.

Appendix B Hardware Specifications.

Audience

This Installation Guide is for:

Network Engineer   Network Administrator

Conventions

- The figures in Chapter 2 to Chapter 4 are for demonstration purposes only. Your switch may differ in appearance from that depicted.

- 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 the resource CD. To obtain the latest product information, please visit the official website:

http://www.tp-link.com

Contents

Chapter 1   Introduction

1.1   Product Overview

T3700G-52TQ is an L3 managed switch that features advanced L3 routing, 10Gbps wire-speed, physical stacking and removable power supply module and fan module, designed to meet the needs of convergence layer. T3700G-52TQ is ideal for large businesses, campuses or SMB networks requiring an outstanding, reliable and affordable 10 Gigabit solution.

T3700G-52TQ supports stacking of up to 8 units, thus providing flexible scalability and protective redundancy for your networks. Moreover, aiming to better protect your network, T3700G-52TQ supports 2 power supply modules. T3700G-52TQ can fully implement resilient scalable networks due to its advanced features such as OSPF, VRRP, IGMP and PIM DM/SM.

1.2   Appearance

■   **Front Panel**

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

Figure 1-1   Front Panel

Micro-USB Console Port

LEDs   10/100/1000Mbps RJ45 Port   SFP Port   SFP+ Port   Unit ID LED
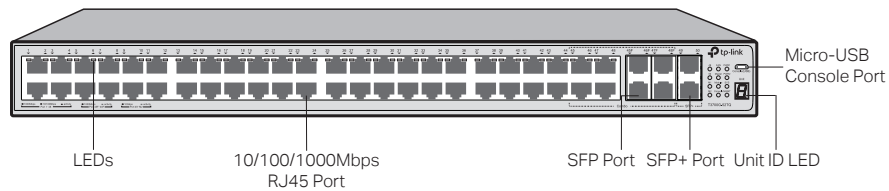
LEDs

LED	Status		Indication
PWR1	On	Green	The power supply module connected to the corresponding power slot works properly.
		Yellow	The power supply module connected to the corresponding power slot works improperly.
	Off		The corresponding power slot is not connected to any power supply module.
PWR2	On	Green	The power supply module connected to the corresponding power slot works properly.
		Yellow	The power supply module connected to the corresponding power slot works improperly.
	Off		The corresponding power slot is not connected to any power supply module.
SYS	Flashing (green)		The switch works properly.
	On/Off		The switch works improperly.

LED	Status		Indication
MGMT	Green	On	A 1000Mbps device is connected to the corresponding port, but no activity.
		Flashing	Data is being transmitted or received.
	Yellow	On	A 10/100Mbps device is connected to the corresponding port, but no activity.
		Flashing	Data is being transmitted or received.
	Off		No device is connected to the corresponding port.
FAN	Green		The fan module works properly.
	Yellow		The fan module works improperly.
	Off		No fan module is connected to the switch.
Master	On		The switch works as master in the stack system, or does not join any stack system.
	Off		The switch works as member in the stack system.
Module	On (green)		An Interface Card is connected to the switch and works properly.
	On (yellow)		An Interface Card is connected to the switch, but works improperly.
	Off		No Interface Card is connected to the switch.
Console	On (green)		Data is being transmitted or received.
	Off		No data being transmitted or received for more than 6 minutes.
Link/Act (Port1-48)	Green	On	A 1000Mbps device is connected to the corresponding port, but no activity.
		Flashing	Data is being transmitted or received.
	Yellow	On	A 10/100Mbps device is connected to the corresponding port, but no activity.
		Flashing	Data is being transmitted or received.
	Off		No device is connected to the corresponding port.
49, 50	Green	On	A 10Gbps device is connected to the corresponding port, but no activity.
		Flashing	Data is being transmitted or received.
	Off		No device is connected to the corresponding port.
M1,M2	Green	On	A 10Gbps device is connected to the corresponding port of the Interface Card, but no activity.
		Flashing	Data is transmitting or received.
	Off		▪ No Interface Card is connected. ▪ No device is connected to the corresponding port of the Interface Card.

10/100/1000Mbps Port

Port 1-48 designed to connect to the device with a bandwidth of 10Mbps, 100Mbps or 1000Mbps. Each has a corresponding Link/Act LED.

SFP Port

Port 45F-48F, designed to install the SFP transceiver. These four SFP transceiver slots are shared with the associated RJ45 ports. The associated two ports are referred as a "Combo" port, which means they cannot be used simultaneously, otherwise only RJ45 port works. The SFP ports support 1000M SFP module connection only.

SFP+ Port

Port 49-50, designed to install the 10Gbps SFP+ transceiver or SFP+ cables. T3700G-52TQ also provides an interface card slot on the rear panel to install the expansion card (TX432 of TP-Link for example). If TX432 is installed, you get another two 10Gbps SFP+ ports.

Micro-USB Console Port

Designed to connect with the USB port of a computer for monitoring and configuring the switch. The switch has an RJ-45 console port and a micro-USB console port available. Console input is active on only one console port at a time. By default, the micro-USB connector takes precedence over the RJ-45 connector.
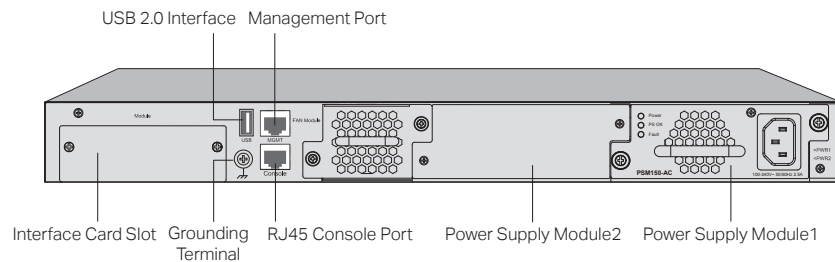
Unit ID LED

Designed to display the stack Unit ID of the switch. For the switch that does not join any stack system, it displays its default Unit ID. To modify the default unit number, please log in to the GUI of the switch and go to **Stack**→**Stack Management**→**Stack Config** page.

■ **Rear Panel**

The rear panel of the switch is shown as the following figure.

Figure 1-2   Rear Panel (1)

Note: The Interface Card Slot and Power Supply Module2 are shipped with protective covers.

Interface Card Slot

Designed to extend the interfaces. You can select a TP-Link Interface Card (TX432 for example) for your switch if needed. For how to install an Interface Card, please refer to **3.4 Installing & Removing the Interface Card**.

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 information, please refer to **Chapter 4 Lightning Protection**.

USB 2.0 Interface

USB 2.0 interface is used to connecting peripheral equipment.

Management Port

Designed to connect to the device with a bandwidth of 10Mbps, 100Mbps or 1000Mbps. It has a corresponding MGMT LED on the front panel. You need assign an IP address for the port to manage the switch.

RJ-45 Console Port

Designed to connect with the serial port of a computer or terminal for monitoring and configuring the switch. The switch has an RJ-45 console port and a micro-USB console port available. Console input is active on only one console port at a time. By default, the micro-USB connector takes precedence over the RJ-45 connector.

Power Supply Module 1/2

One AC Power Supply Module PSM150-AC has been installed in the switch. The malfunctioned PSM150-AC can be replaced with a TP-Link power supply module of the same model. Its input voltage is 100-240V~ 50/60Hz.

The AC Power Supply Module is fully hot swappable, helping to ensure no system interruption during installation or replacement. For how to install/remove the Power Supply Module, please refer to **3.3 Installing & Removing the Power Supply Module**.

⚠ **Caution:** Please use the provided power cord.

With all the protective covers removed, the Interface Card (TX432 for example) and the AC Power Supply Module PSM150-AC inserted, the rear panel of T3700G-52TQ is shown as the following figure.
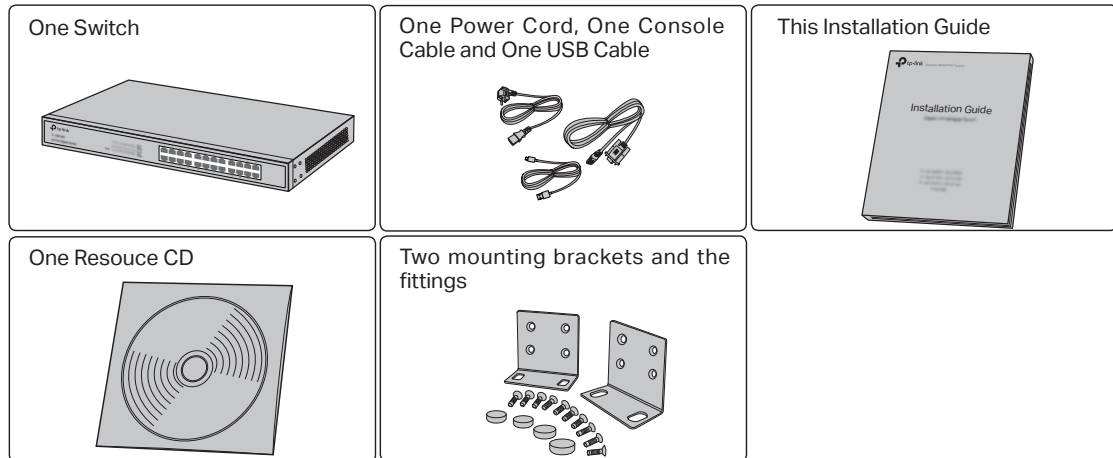
Figure 1-3   Rear Panel (2)
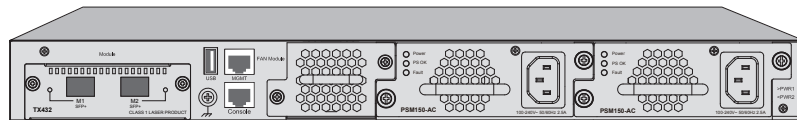
Chapter 2   Preparing For Installation

2.1 Package Contents

Make sure that the package contains the following items. If any of the listed items is damaged or missing, please contact your distributor.

One Switch	One Power Cord, One Console Cable and One USB Cable	This Installation Guide

One Resouce CD	Two mounting brackets and the fittings

2.2 Safety Precautions

To avoid any device damage and bodily injury caused by improper use, please 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 the vent hole is well ventilated and unblocked.

- 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.

- **Site Requirements**

Temperature/Humidity

Please keep a proper temperature and humidity in the equipment room. Too high/low humidity may lead to bad insulation, electricity leakage, mechanical property changes and corrosions. Too high temperature may accelerate aging of the insulation materials and can thus significantly shorten the service life of the device. For normal temperature and humidity of the device, please check the following table.

| Environment	Temperature	Humidity
Operating	0℃ to 40℃	10% to 90%RH Non-condensing
Storage	-40℃ to 70℃	5% to 90%RH Non-condensing

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, please attach much importance to the following items:

- Dust the device regularly, and keep the indoor air clean.

- Keep the device well grounded and ensure static electricity has been transferred.

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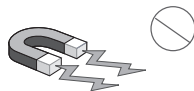
Electronic elements including capacitance and inductance on the device can be affected by external interferences, such as conducted emission by capacitance coupling, inductance coupling, and impedance coupling. To decrease the interferences, please make sure to take the following measures:

- Use the power supply that can effectively filter interference from the power grid.

- Keep the device far from high-frequency, strong-current devices, such as radio transmitting station.

- Use electromagnetic shielding when necessary.

Lightening 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℃. As this instant current is strong

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

- Ensure the rack and 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, please refer to **Chapter 4 Lightning Protection**.

Installation Site
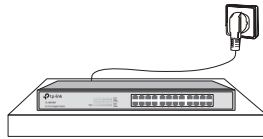
When installing the device on a rack or a flat workbench, please note the following items:

- The rack or workbench is flat and stable, and sturdy enough to support the weight of 5.5kg at least.

- The rack or workbench has a good ventilation system. The equipment room is well ventilated.

- The rack is well grounded. Keep the power socket less than 1.5 meters away from the device.

2.3 Installation Tools

- Phillips screwdriver

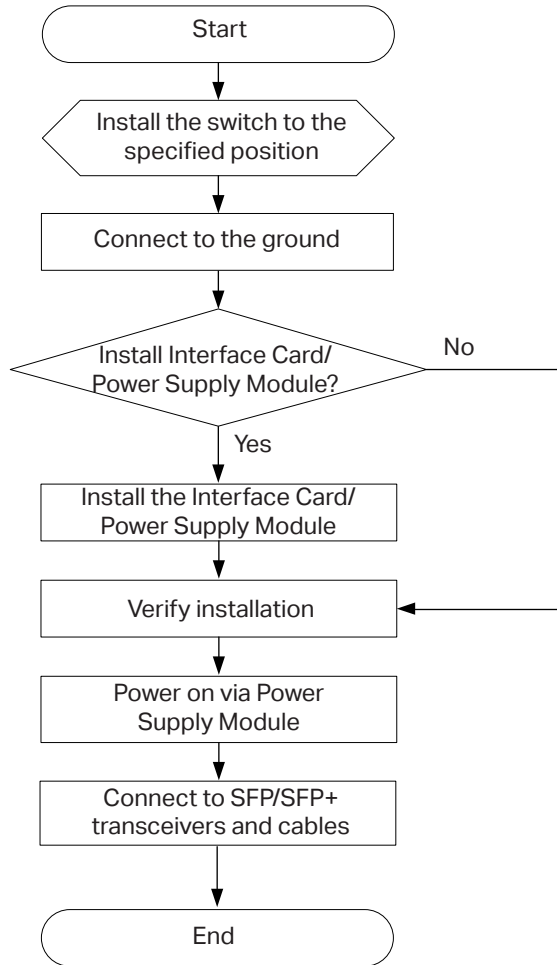- ESD-preventive wrist wrap

- Cables

Note:
These tools are not provided with our product. If needed, please self purchase them.

2.4 Installation & Connection Flow

The switch provides two interfaces to install the swappable Power Supply Module, and one interface to install the Interface Card. The switch has already been installed with a Power Supply Module PSM150-AC, and you can also self-purchase the Interface Card/Power Supply Module if needed.

The Installation & Connection flow is shown as the following figure.

Figure 2-2   Installation & Connection Flow

```
                    ┌─────────────────────┐
                    │       Start          │
                    └─────────────────────┘
                              │
                              ▼
                   ╱─────────────────────╲
                   │ Install the switch to the │
                   │   specified position      │
                   ╲─────────────────────╱
                              │
                              ▼
                    ┌─────────────────────┐
                    │ Connect to the ground │
                    └─────────────────────┘
                              │
                              ▼
                    ╱─────────────────╲        No
                   ╱ Install Interface Card/ ╲──────────┐
                   ╲ Power Supply Module?    ╱          │
                    ╲─────────────────╱                 │
                              │                          │
                             Yes                         │
                              ▼                          │
                    ┌─────────────────────┐             │
                    │ Install the Interface Card/ │      │
                    │   Power Supply Module        │     │
                    └─────────────────────┘             │
                              │                          │
                              ▼                          │
                    ┌─────────────────────┐             │
                    │ Verify installation  │◄────────────┘
                    └─────────────────────┘
                              │
                              ▼
                    ┌─────────────────────┐
                    │  Power on via Power   │
                    │   Supply Module        │
                    └─────────────────────┘
                              │
                              ▼
                    ┌─────────────────────┐
                    │ Connect to SFP/SFP+   │
                    │ transceivers and cables │
                    └─────────────────────┘
                              │
                              ▼
                    ┌─────────────────────┐
                    │         End           │
                    └─────────────────────┘
```

Note: The switch can be powered by the two Power Supply Modules simultaneously or individually. If simultaneously, the two Power Supply Modules together will enable your network to enjoy the benefit of uninterrupted operation.

Chapter 3   Installation

3.1   Installing the Switch on a Desktop

To install the switch on the desktop, please follow the steps below:

1. Set the switch on a flat surface 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 switch and attach the supplied rubber feet to the recessed areas on the bottom at each corner of the switch.

Figure 3-1   Desktop Installation

Feet

Bottom of the Device

Notch
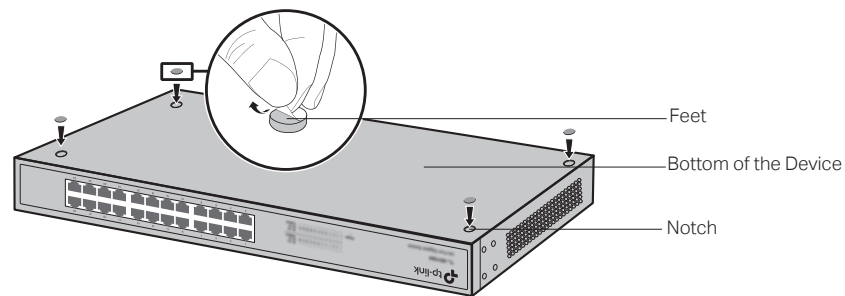
3.2   Installing the Switch Into a 19-inch Rack

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

1. Check the grounding and stability of the rack.

2. Secure the supplied rack-mounting brackets to each side of the switch with supplied screws, as illustrated in the following figure.

Figure 3-2   Bracket Installation

Rack-mounting Bracket
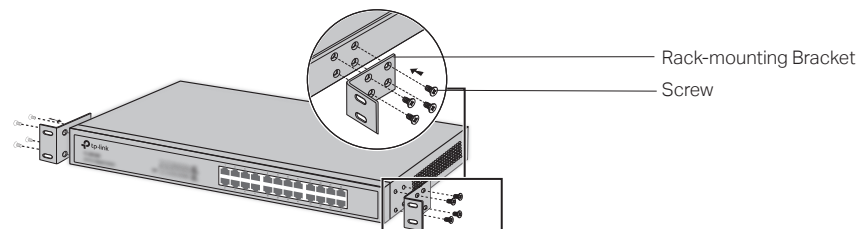
Screw

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 3-3   Rack Installation
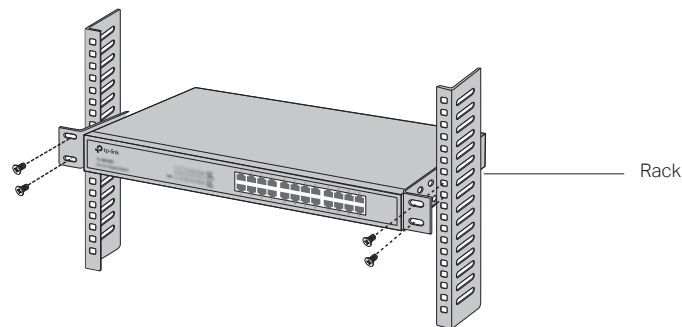
Caution:
- Please set 5 to 10cm gaps around the device for air circulation.
- Please avoid any heavy thing placed on the device.
- Please mount devices in sequence from the bottom to top of the rack and ensure a certain clearance between devices for the purpose of heat dissipation.

3.3 Installing & Removing the Power Supply Module

One Power Supply Module has already been installed in the switch. Operate as the following steps if you need to replace the Power Supply Module.

■ **Removing the Power Supply Module**

1. Wear an ESD-preventive wrist strap, and make sure that it has good skin contact and is well grounded.

2. Remove the power cord from the power module and the external power supply system.

3. Use a Phillips screwdriver to loosen the captive screws at both sides of the power supply module until all spring pressure is released.

4. Pull the handle by one hand towards you along the guide rails, and hold the bottom of the module by the other hand, until it completely comes out of the switch chassis.

5. In order to better protect the removed power supply module, it is recommended to package it by an antistatic bag.

6. After removing the PSM150-AC, please install the protective cover as soon as possible to prevent dust from entering and ensure the normal ventilation in the switch.

■ **Installing the Power Supply Module**

1. Wear an ESD-preventive wrist strap, and make sure that it has good skin contact and is well grounded.

2. If the protective cover has been installed on the power supply module slot of the switch, use a Phillips screwdriver to loosen the mounting screws of the protective cover and remove the protective cover, as shown in the following figure.

Figure 3-4   Removing the Protective Cover
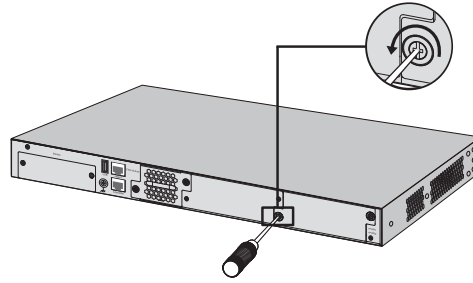
3. Grip the handle of the module by one hand, and hold the bottom of the module by the other hand, as shown in the following figure. Then gently push the module in along the slot guide rail until the module is flush with the switch.

> **Note:** Do not use too much force in the operation. If resistance is encountered or positions of the power supply module appear larger deflection in the operation of installation, you must first remove the module and then reinstall the module.

Figure 3-5   Installing the Power Supply Module
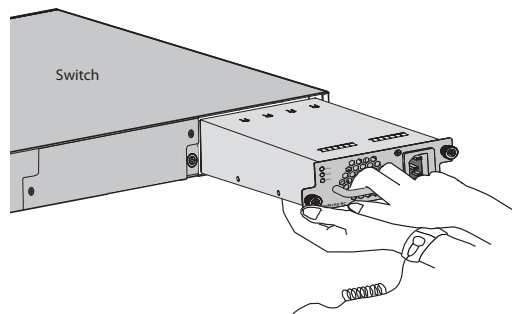
4. Tighten the captive screws with a Phillips screwdriver to fix the power supply module in place. If the screws cannot be tighten, probably because the power supply module is not installed properly due. Please check carefully.

3.4   Installing & Removing the Interface Card (Optional)

■   Installing the Interface Card

1. Wear an ESD-preventive wrist strap, and make sure that it has good skin contact and is well grounded.

2. Use a Phillips screwdriver to loosen the mounting screws of the protective cover on the interface card slot of the switch and remove the protective cover, similar to the procedure shown in Figure 3-4.

3. Hold the captive screws on the front panel of the interface card, and gently push the interface card in along the slot guide rail until the interface card is flush with the switch, as shown in the following figure.

Figure 3-6   Installing the Interface Card
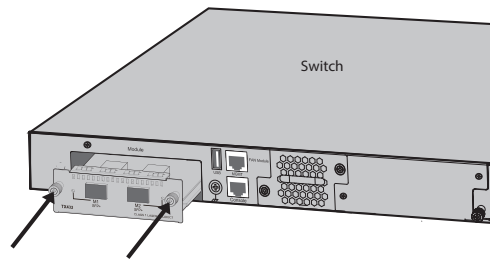
4. Tighten the captive screws with a Phillips screwdriver to fix the interface card in place.

■ **Removing the Interface Card**

1. Wear an ESD-preventive wrist strap, and make sure that it has good skin contact and is well grounded.

2. Use a Phillips screwdriver to loosen the captive screws at both sides of the interface card until all spring pressure is released.

3. Pull the interface card towards you along the guide rails, until it completely comes out of the switch chassis.

4. After removing an interface card, if no new interface card is to be installed, please install the protective cover as soon as possible to prevent dust from entering and ensure the normal ventilation in the switch.

Note:
- TX432 supports hot plug, so if necessary you can install or remove the interface card when the switch is operating. However, it is recommended that the power be turned off during installation.
- Do not touch the surface-mounted components directly with your hand while the switch is in operation.

3.5 Stacking Using Interface Card on Rear Panel

You can connect up to 8 switches to form a stack with a single management IP address. Follow the steps below to connect the switches and configure the stack ports, then the switches will automatically elect a master unit and establish a stack. Once the stack is established, you can use any port of any switch in the stack to manage the stack system.

You can use either the SFP+ ports on the front panel or the Interface Card on the rear panel to create a stack. These two pairs of stack ports cannot be mixedly used in the stack connection.

 Here we take stacking using Interface Card for example.

1. Install an Interface Card (TX432 for example) into the Interface Card Slot of each switch, see **3.4 Installing & Removing the Interface Card**.

2. Log in to the GUI of each switch, go to **Stack→Stack Management→Stack Config** page to enable the stack mode of port M1 and M2 (port 1/1/1 and 1/1/2 on the GUI). Remember to click **Save Config** after the configuration.

3. Power off the switches, and then connect a 10G SFP+ cable (TXC432-CU1M/TXC432-CU3M of TP-Link for example) between each pair of Interface Cards among the switches, thus forming a

ring topology as the following figure shows. A ring topology system provides redundancy and resiliency to the stack.

Figure 3-7   Stacking Using Interface Card
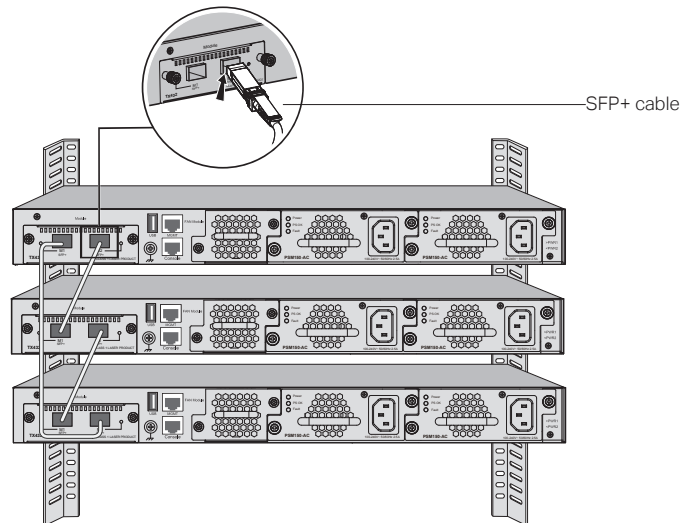
4. Power on the switches, then the switches will automatically select a master unit. The Master LED of the selected switch will be on.

5. You can access to any member of the stack via Web/SSH/Telnet/Console connection, thus to manage all the switches in the stack.

Caution: In the process of using TP-Link SFP+ Cables, please never bend them into a radius of 45mm (1.77 inch) or less, because it may permanently damage the SFP+ Cables.

Chapter 4   Lightning Protection

4.1   Cabling Reasonably

In the actual network environment, you may need cable outdoors and indoors, and the requirements for cabling outdoors and indoors are different. A reasonable cabling system can decrease the damage of induced lightning to devices.

Note:
It's not recommended using Ethernet cables outdoors. When cabling outdoors, please use a signal lightning arrester.

■   **Requirements for Cabling Outdoors**

▪   Aerial cabling without safeguard is not allowed.

Building 1   Building 2
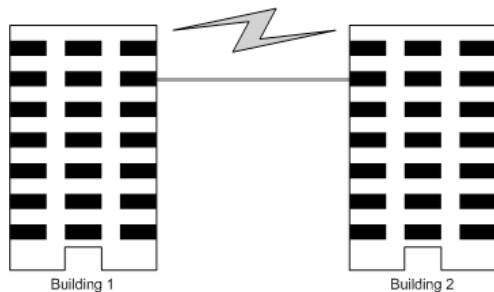
▪   It's not allowed cabling down the building to connect network devices in different floors.
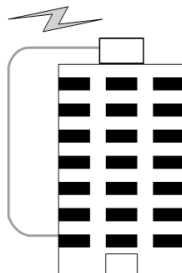
▪   Outdoor cables should be buried and paved to the indoor through basement. A piece of steel wire should be paved underground along the pipe and connected to the lightning protection terminal of the building for shielding. Before connecting the cable to the device, install a signal lightning arrester on the corresponding port.

▪   When an aerial cable is set up, the cable should be through a metal pipe (15m long at least) before coming into the building. The two ends of this metal pipe should be grounded. Before connecting the cable to the device, install a signal lightning arrester on the corresponding port.

▪   It's not necessary to pave STP cables through pipes. The shielded layer of STP cable should be well grounded. Before connecting the cable to the device, install a signal lightning arrester on the corresponding port.

■ **Requirements for Cabling Indoors**

When cabling indoors, keep a certain distance away from the devices that may cause high-frequency interferences, such as down-conductor cable, powerline, power transformer and electromotor.

- The main cable should be paved in the metal raceway of the access shaft. When cabling, keep the loop area formed by the cable itself as small as possible.

- Requirements for the distance between Ethernet cable and other pipelines are shown in the table.

Other Pipelines	Ethernet Cable	
	Min Parallel Net Length L (mm)	Min Parallel-overlapping Net Height H (mm)
Down-conductor	1000	300
PE	50	20
Service pipe	150	20
Compressed air pipe	150	20
Thermal pipe (not wrapped)	500	500
Thermal pipe (wrapped)	300	300
Gas pipe	300	20

The two diagrams below demonstrate parallel net length and parallel-overlapping net height.
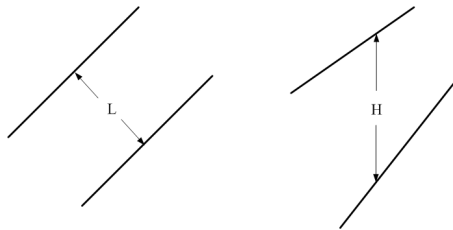
📑 **Note:**
The above minimum net length/height is required when metal raceway is not used. If any requirements cannot be met, you can add a steel tube or metal raceway for shielding.

- Requirements for the distance between Ethernet cable and high-power electric devices are in following tables.

Cable	Pave Way	Min Parallel Length (mm)
<2kVA powerline	Parallel cabling	130
	One is in the grounded metal raceway or metal pipe	70
	The both are in the grounded metal raceway or metal pipe	10
2 to 5kVA powerline	Parallel cabling	300
	One is in the grounded metal raceway or metal pipe	150
	The both are in the grounded metal raceway or metal pipe	80
>5kVA powerline	Parallel cabling	600
	One is in the grounded metal raceway or metal pipe	300
	The both are in the grounded metal raceway or metal pipe	150

| Device	Min Distance (m)
Switch case	1.00
Transformer room	2.00
Elevator tower	2.00
Air-conditioner room	2.00

4.2 Connect to Ground

Connecting the device to ground is to quickly release the lightning over-voltage and over-current of the device, which is also a necessary measure to protect the body from electric shock.

In different environments, the device may be grounded differently. The following will instruct you to connect the device to the ground in two ways, connecting to the grounding bar or connecting to the ground via the power cord. Please connect the device to ground in the optimum way according to your specific operation environment.

■ **Connecting to the Grounding Bar**

If the device is installed in the Equipment Room, where a grounding bar is available, you are recommended to connect the device to the grounding bar as shown in the following figure.

Figure 4-1   Connecting to the Grounding Bar

① Switch (Rear Panel)　② Grounding Terminal
③ Ground Cable　④ Grounding Bar
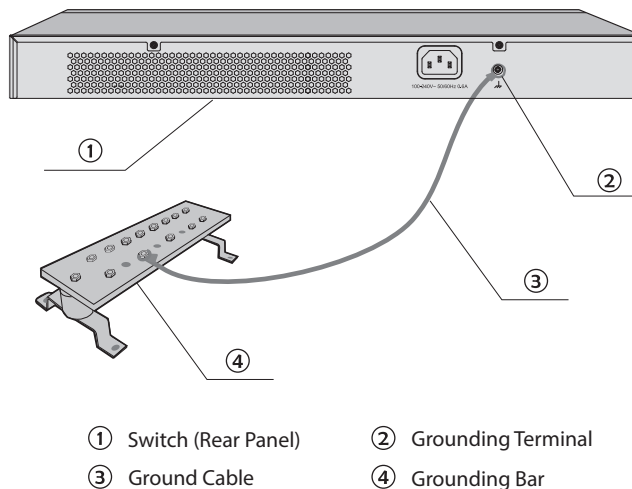
Note:
The grounding bar and the ground cable are not provided with our product. If needed, please self purchase them.

■ **Connecting to the Ground via the Power Supply**

If the device is installed in the normal environment, the device can be grounded via the PE (Protecting Earth) cable of the AC power supply as shown in the following figure.

Figure 4-2   Connecting to the Ground
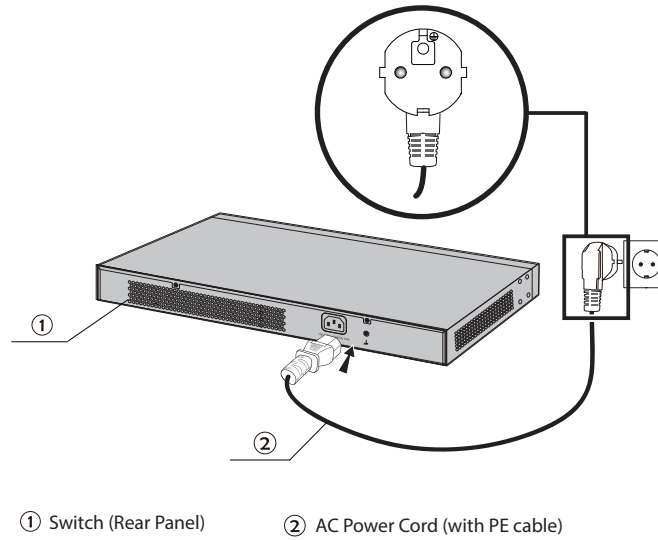
① Switch (Rear Panel)   ② AC Power Cord (with PE cable)

Note:
- The figure is to illustrate the application and principle. The power plug you get from the package and the socket in your situation will comply with the regulation in your country, so they may differ from the figure above.
- If you intend to connect the device to the ground via the PE (Protecting Earth) cable of AC power cord, please make sure the PE (Protecting Earth) cable in the electrical outlet is well grounded in advance.

4.3   Equipotential Bonding

Equipotential Bonding is the practice of intentionally electrically connecting all earthed systems to the same grounding grid or connecting the grounding grids of all the earthed systems together through the ground or overground metal so as to create an earthed equipotential zone. When lightning occurs, the high voltage produced by lightning current in all systems will meanwhile exist in their ground cables, and thus all ground cables have the same electrical potential and basically eliminate the electric strikes between the systems.

The figure below illustrates how to practice equipotential bonding in a network.

Figure 4-3   Equipotential Bonding

①	Grounding Terminal	②	Equipotential Bonding Cable
③	Ground Cable	④	Grounding Bar
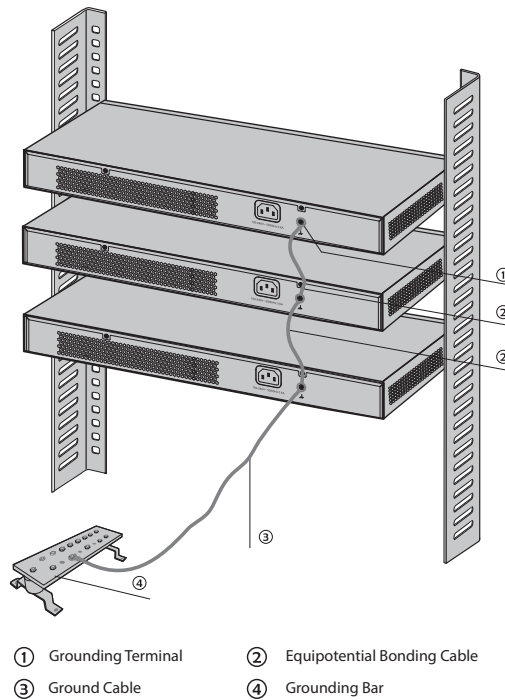
When equipotential bonding, please note that the cable should be copper wrapped Kelly with its area being 6mm^2 at least. The shorter cable the better, and use a grounding bar to establish an equipotential bonding point.

Note:
The equipotential bonding cable and ground cable are not provided with our product. If needed, please self purchase it.

4.4   Use Lightning Arrester

Power lightning arrester and signal lightning arrester are used for lighting protection.

Power lightning arrester is used for limiting the voltage surge due to a lightning. If an outdoor AC power cord should be directly connected to the device, please use a power lightning arrester.

Note:
Power lightning arrester is not provided with our product. If needed, please self purchase it.

Signal lightning arrester is used to protect RJ45 ports of the device from lightning. When cabling outdoors, please install a signal lightning arrester before connecting the cable to the device.

When purchasing or using a signal lightning arrester, please observe the following rules:

- The port rate of the signal lightning arrester should match the rate of the desired port on the device. If it is not matched, this signal lighting arrester will not work. Purchase a standard lightning arrester.

- Install signal lightning arrester near the protected device and connect it to the ground via a shorter ground cable.

Figure 4-4   Equipotential Bonding

① Grounding Terminal   ② Equipotential Bonding Cable   ③ Ethernet Cable

④ Signal Lightning Arrester ⑤ Device
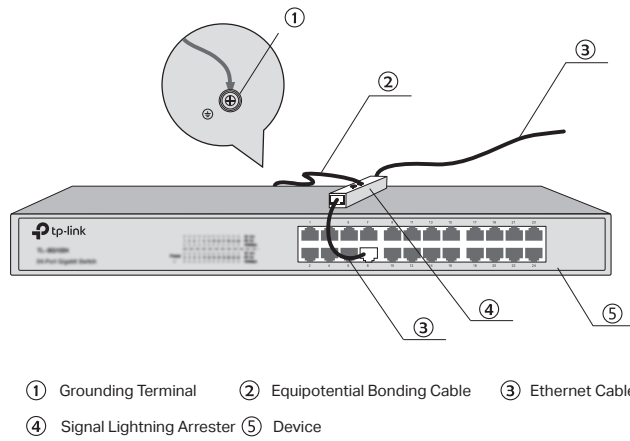
Note:
Signal lightning arrester is not provided with our product. If needed, please self purchase it.

Chapter 5   Connection

5.1   Ethernet Port

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

Figure 5-1   Connecting the RJ45 Port
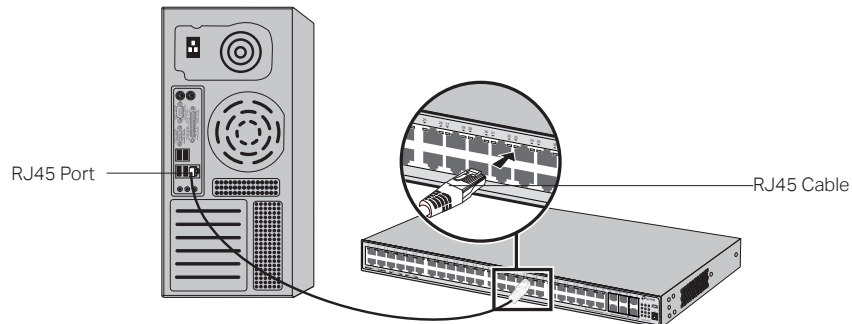
5.2   SFP/SFP+ Port

Connect an SFP transceiver to the SFP port, or connect an SFP+ transceiver/cable to the SFP+ port. For the switch, if an RJ45 port which is combo with SFP port has a valid link, the associated SFP port will be disabled and cannot be used.

The following takes SFP Transceiver installation as an example.

Figure 5-2   Inserting the SFP Module
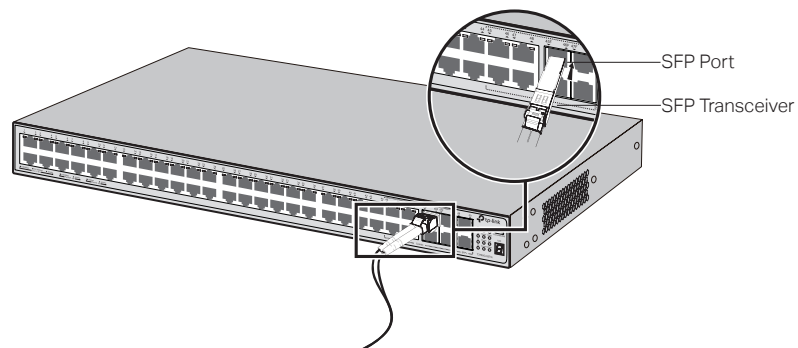
5.3   Console Port

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 the provided cable.

Connect the RJ-45 console port of the device with your computer by the console cable as the following figure shown.

Figure 5-3   Connecting the RJ-45 Console Port
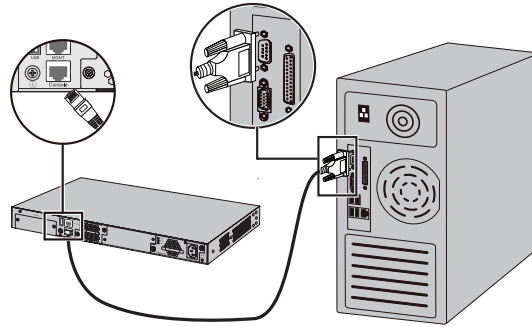
Connect the USB Console port of the device with your computer by the USB cable as the following figure shows.

Figure 5-4   Connecting the USB Console Port

Console(USB)
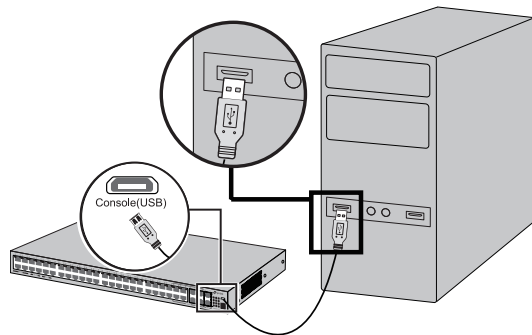
You can also manage the device through the console port, for details please refer to the CLI Reference Guide on the resource CD.

Note:
▪ RJ-45 Console port and USB Console port cannot be used cocurrently. USB Console port takes priority over the RJ-45 Console port.
▪ The USB Console port is hot-pluggable while the RJ-45 Console port is not. Please keep the device power off when plugging the console cable into the RJ-45 Console port.
▪ Do not connect the console port with other ports by RJ45 cable.

5.4   Verify Installation

After completing the installation, please verify the following items:

▪ There are 5 to 10cm of clearance around the sides of the device for ventilation and 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.

5.5 Power On

After the Power Supply Module (PSM150-AC for example) is installed on the switch, please plug the female connector of the provided power cord into the power socket of the device, and the male connector into a power outlet as the following figure shows.

Figure 5-5　　Power on via PSM150-AC
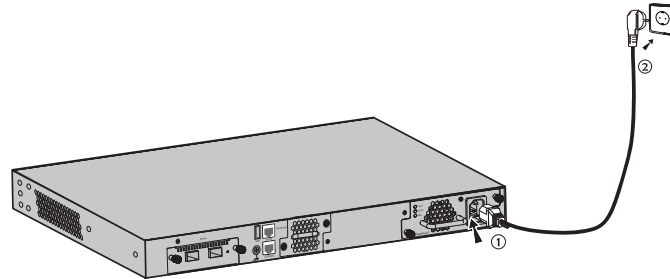
> **Note:**
> The figure is to illustrate the application and principle. The power plug you get from the package and the socket in your situation will comply with the regulation in your country, so they may differ from the figure above.

5.6 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 as follows:

1. After keeping off for about one minute, the seven-segment digital tubes (Unit ID LED) will flash twice in a clockwise direction.

2. All the LED indicators will flash momentarily, and enter normal work state in about one minute, then work as the table in **1.2 Appearance** shows after the initialization.

Chapter 6   Configuration

6.1   Configure the Switch via GUI

1. To access the GUI of the switch, open a web browser and type the default management address http://192.168.0.1 in the address field of the browser, then press the Enter key.

Figure 6-1   Web Browser
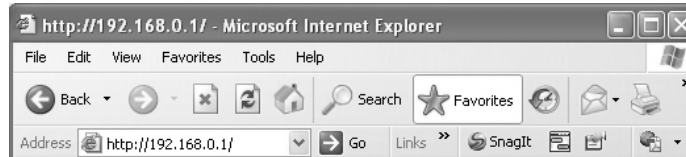
Note:
To log in to the GUI of the switch, the IP address of your PC should be set in the same subnet addresses of the switch. The IP address is 192.168.0.x ("x" is any number from 2 to 254), Subnet Mask is 255.255.255.0.
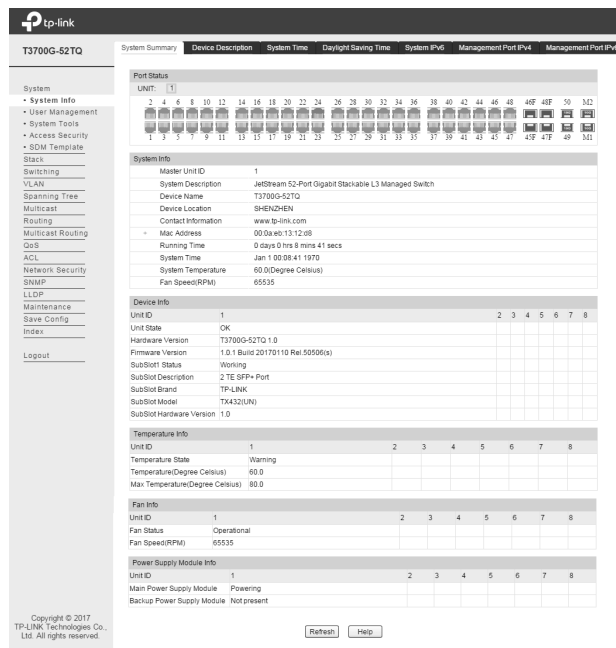
2. Enter admin for the default User Name and Password, both in lower case letters. Then click the Login button or press the Enter key.

Figure 6-2   Login

3. After a successful login, the main page will appear as the following figure, and you can configure the function by clicking the setup menu on the left side of the screen.

Figure 6-3   Main Page of the Switch

6.2   Configure the Switch Using CLI

You can log in to the switch and access the CLI by the following two methods:

- Log in to the switch by the Console (USB) port or Console (RJ-45) port on the switch.

- Log in to the switch remotely by a Telnet or SSH connection through an Ethernet port.

■   Logon by a Console Port

The switch has two console ports: an RJ-45 console port and a Micro-USB console port. Console output is active on devices connected to both console ports, but console input is only active on one console port at a time. The Micro-USB connector takes precedence over the RJ-45 connector.

Install the TP-Link USB Console Driver if you are using the USB serial port for the first time on a Windows-based PC. The driver can be found on the attached CD and Download page of our official website. Refer to the User Guide to learn more about the installation.

To log in to the switch by the console port on the switch, please take the following steps:

1. Connect the PCs or Terminals to the console port on the switch by a provided cable. Refer to **5.3 Console Port** to learn how to connect.

2. If you attach a PC, start the terminal emulation program (such as the Hypertermi-nal) on the PC.

3. Specify the connection COM port in the terminal emulation program. If the Micro-USB console port is used, you can view which COM port number is assigned to the USB serial port in the following path: Control Panel -> Hardware and Sournd -> Device Manager -> Ports -> USB Serial Port.

4. Configure the terminal emulation program or the terminal. You can use the default settings as follows:

    - Baud rate: 38400 bps

- Data bits: 8

- Parity: none

- Stop bits: 1

- Flow control: none

5. The DOS prompt "T3700G-52TQ>" will appear after pressing the Enter button as Figure 6-4 shows. It indicates that you can use the CLI now.
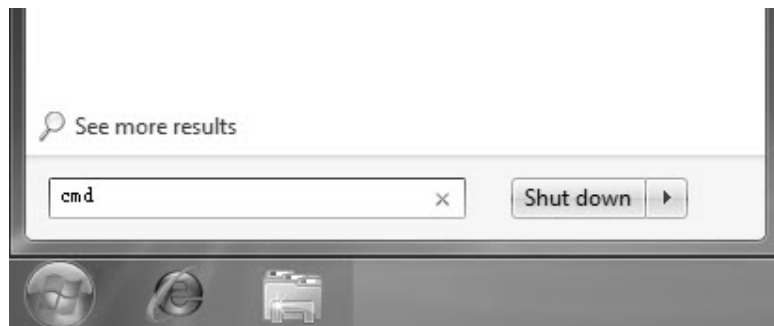
Figure 6-4   Log in to the Switch
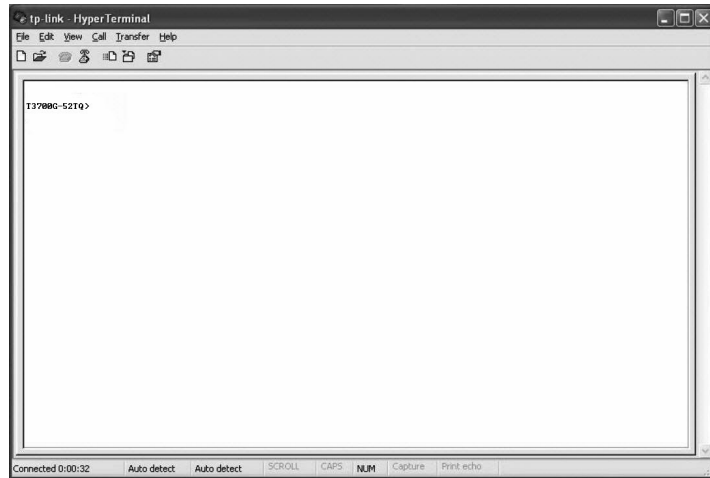
■   **Logon by Telnet**

By default, you can logon by Telnet in login local mode directly. To log in to the switch by a Telnet connection, please take the following steps:
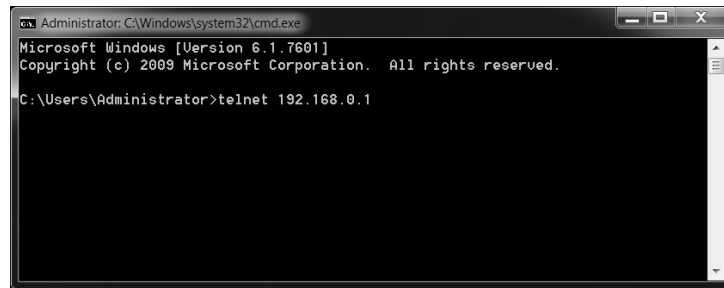
1. Make sure the switch and the PC are in the same LAN.

2. Click Start and type in **cmd** in the Search programs and files window and press the Enter button.

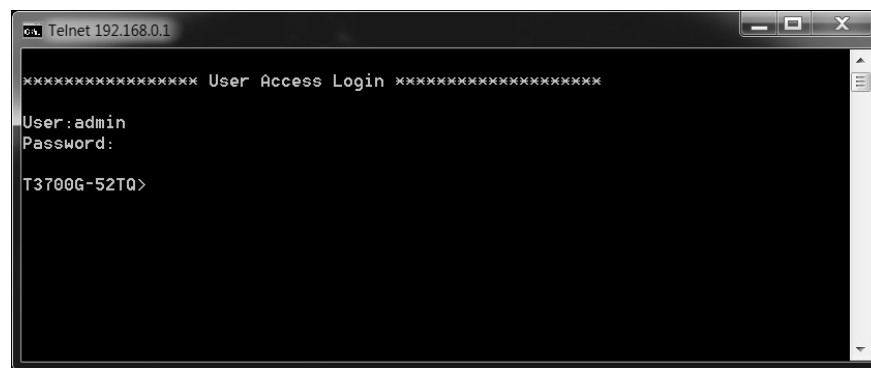Figure 6-5   Open the RUN Window

3. Type telnet **192.168.0.1** in the command prompt shown as Figure 6-6, and press the **Enter** button.

Figure 6-6   Connecting the Switch

4. Type the default user name and password (both of them are **admin**), then press the **Enter** button so as to enter User EXEC Mode.

Figure 6-7   Enter into the User EXEC Mode

For detailed CLI configuration instructions, please refer to the CLI Reference Guide on the resource CD.

Appendix A Troubleshooting

Q1. What should I do if I forget the username and password for 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 is shown in the following figure.

```
Hit any key to stop autoboot:  0
               **********************************************
               *            TP-LINK  BOOTUTIL(v1.0.0)       *
               **********************************************
               Copyright (c) 2016 TP-LINK Tech. Co., Ltd
               Create Date: Jul 16 2016 - 17:09:35

    Boot Menu
0  - Print this boot menu
1  - Reboot
2  - Reset
3  - Start
4  - Activate Backup Image
5  - Display image(s) info

Enter your choice(0-5)
```

4. 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 LED work abnormally?

The PWR LED should be lit up when the power system works normally. If the PWR LED worked abnormally, please 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?

Please 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, please restore 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?

Please 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 Hardware Specifications

Item	Content
Standards	IEEE802.3, 802.3i, 802.3u, 802.3ab, 802.3z, 802.3ae, 802.3ad, 802.3x, 802.1p, 802.1q, 802.1x, 802.1d, 802.1s, 802.1w
Transmission Medium	10Base-T: UTP/STP of Cat. 3 or above
	100Base-TX: UTP/STP of Cat. 5 or above
	1000Base-T: 4-pair UTP (≤100m) of Cat. 5e and Cat. 6 or above
	1000Base-X: MMF or SMF SFP Transceiver
	10GBASE-SR: MMF SFP+ Transceiver
	10GBASE-LR: SMF SFP+ Transceiver
LEDs	PWR1, PWR2, SYS, MGMT, FAN, Master, Module, Console, Port 1-48, 45F-48F, 49, 50, M1, M2, Unit ID LED
Operating Temperature	0℃ to 40℃ (32°F to 104°F)
Storage Temperature	-40℃ to 70℃ (-40°F to 158°F)
Operating Humidity	10% to 90%RH Non-condensing
Storage Humidity	5% to 90%RH Non-condensing

FCC STATEMENT

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1) This device may not cause harmful interference.

2) This device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CE Mark Warning

$C\epsilon$

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.

EAC

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

Safety Information

• When product has power button, the power button is one of the way to shut off the product; when there is no power button, the only way to completely shut off power is to disconnect the product or the power adapter from the power source.

• Don't disassemble the product, or make repairs yourself. You run the risk of electric shock and voiding the limited warranty. If you need service, please contact us.

• Avoid water and wet locations.

BSMI Notice

安全諮詢及注意事項

1) 請使用原裝電源供應器或只能按照本產品注明的電源類型使用本產品。

2) 清潔本產品之前請先拔掉電源線。請勿使用液體、噴霧清潔劑或濕布進行清潔。

3) 注意防潮，請勿將水或其他液體潑灑到本產品上。

4) 插槽與開口供通風使用，以確保本產品的操作可靠並防止過熱，請勿堵塞或覆蓋開口。

5) 請勿將本產品置放於靠近熱源的地方。除非有正常的通風，否則不可放在密閉位置中。

6) 請不要私自打開機殼，不要嘗試自行維修本產品，請由授權的專業人士進行此項工作。

7) 此為甲類資訊技術設備，于居住環境中使用時，可能會造成射頻擾動，在此種情況下，使用者會被要求採取某些適當的對策。

Industry Canada Statement

CAN ICES-3 (A)/NMB-3(A)

Explanation of the symbols on the product label

Symbol	Explanation
∿	AC voltage
⌂	Indoor use only
♻	RECYCLING This product bears the selective sorting symbol for Waste electrical and electronic equipment (WEEE). This means that this product must be handled pursuant to European directive 2012/19/EU in order to be recycled or dismantled to minimize its impact on the environment. User has the choice to give his product to a competent recycling organization or to the retailer when he buys a new electrical or electronic equipment.

この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

VCCI-A

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