

Installation Guide

LP-SGW2404FP

24 Copper PoE + 4 Fiber Gigabit Managed Switch



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

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.

SAFETY NOTICES

Caution:

Do not use this product near water, for example, in a wet basement or near a swimming pool.

Avoid using this product during an electrical storm. There may be a remote risk of electric shock from lightning.

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Package Contents

The following contents should be found in your package:

- One LP-SGW2404FP switch
- One power cord
- One console cable
- One ground cable
- Two mounting brackets and other fittings
- Installation Guide
- Resource CD for LP-SGW2404FP switch, including:
 - User Guide
 - CLI Reference Guide
 - Other Helpful Information

Note:

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

Chapter 1 Introduction

Thank you for choosing the LP-SGW2404FP. The switch provides a friendly management interface and excellent performance.

1.1 Intended Audience

This guide is intended for network administrators familiar with IT concepts and network terminology.

1.2 Guide Overview

This Installation Guide is divided into the following sections to provide concise information for configuring, and managing the device.

Chapter 1: Introduction.

Chapter 2: Device Description -- Provides an overview about the switch.

Chapter 3: Mounting Device -- Describes the mounting procedure of the switch.

Chapter 4: Switch Appearance Description -- Describes external components of the switch.

Chapter 5: Configuration -- Instructs you to configure the switch via Web Interface and CLI commands.

Appendix A: Troubleshooting.

Chapter 2 Device Description

2.1 Introduction to the Device

The LP-SGW2404FP switch, designed for workgroups and departments, provides wire-speed performance and abundant layer 2 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/CLI/Telnet Log-in bring abundant management policies. The LP-SGW2404FP 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.

LP-SGW2404FP Managed PoE Switch is also a Power Sourcing Equipment (PSE*). All the Auto-Negotiation RJ45 ports on the switch support Power over Ethernet (PoE*) function, which can automatically detect and supply power with those powered devices (PDs*) complying with IEEE 802.3af and IEEE 802.3at.

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- PSE: A device (switch or hub for instance) that will provide power in a PoE setup.
- PoE: This technology describes a system to transmit electrical power, along with data, to remote devices over standard twisted-pair cable in an Ethernet.
- PDs: A device powered by a PSE and thus consumes energy. Examples include powering IP telephones, wireless LAN access points, network cameras, network hubs, embedded computers etc.
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2.2 Features

- Resiliency and Availability
 - + Link aggregation (LACP) increases aggregated bandwidth, optimizing the transport of business critical data.
 - + IEEE 802.1s Multiple Spanning Tree provides high link availability in multiple VLAN environments.
 - + Multicast snooping automatically prevents flooding of IP multicast traffic.
 - + Root Guard protects root bridge from malicious attack or configuration mistakes
- Layer 2 Switching
 - + Supports up to 4K VLANs simultaneously (out of 4K VLAN IDs).

- + GVRP (GARP VLAN Registration Protocol) allows automatic learning and dynamic assignment of VLANs.
- Quality of Service
 - + Supports L2/L3 granular CoS with 4 priority queues per port.
 - + Rate limiting confines the traffic flow accurately according to the preset value.
- Security
 - + Supports multiple industry standard user authentication methods such as 802.1x, RADIUS.
 - + Dynamic ARP Inspection blocks ARP packets from unauthorized hosts, preventing man-in-the-middle attacks.
 - + L2/L3/L4 Access Control Lists restrict untrusted access to the protected resource.
 - + Provides SSHv1/v2, SSL 2.0/3.0 and TLS v1 for access encryption.
- Manageability
 - + IP Clustering provides high scalability and easy Single-IP-Management.
 - + Supports Telnet, CLI, SNMP v1/v2c/v3, RMON and web access.
 - + Port Mirroring enables monitoring selected ingress/egress traffic.

2.3 Technical Specifications

Standards	IEEE802.3 10Base-T Ethernet
	IEEE802.3u 100Base-TX/100Base-FX
	IEEE802.3ab 1000Base-T
	IEEE802.3z 1000Base-X
	IEEE802.3x Flow Control
Transmission Medium	10Base-T: UTP/STP of Cat. 3 or above
	100Base-TX: UTP/STP of Cat. 5 or above
	100Base-FX: MMF or SMF SFP Module (optional)
	1000Base-T: 4-pair UTP ($\leq 100\text{m}$) of Cat. 5, Cat 5e, Cat 6 or above
	1000Base-X: MMF or SMF SFP Module (optional)
LEDs	Power, System, Speed, Port Status LED, PoE, PoE Max
Operating Temperature	0°C ~ 40°C

Storage Temperature	-40°C ~ 70°C
Operating Humidity	10% ~ 90% RH non-condensing
Storage Humidity	5% ~ 90% RH non-condensing

Chapter 3 Mounting Device

3.1 Precautions

To ensure a long-term and stable performance of the switch, please pay attention to the following before the installation.

1) Safety Requirements

- Before cleaning the switch, cut off the power supply. Do not clean it by the waterish cloth, and never use any other liquid cleaning method.
- Take waterproof measures during storage, transportation and operation of the equipment.
- Use only the power cord provided with the switch.
- Make sure the voltage of the power supply meets the requirement of the input voltage of the switch.
- Do not push any objects into the openings of the switch.
- Ensure the vent hole is well ventilated and unblocked.
- Do not open or remove the cover of the switch.

2) Location Requirements

When you choose a location for the switch, please follow these guidelines:

- Install the switch on a flat and stable surface that can support the entire weight of the switch with all fittings.
- Locate the switch far from strong electromagnetic field generators (such as motors), vibration, dust, and direct exposure to sunlight.
- To ensure adequate air flow around the switch. At least 10 cm (4 inches) of space at the front and rear of the switch is needed for ventilation.
- Make sure that the switch will be accessible and that the cables can be easily connected.
- Position the switch away from water and moisture sources, be sure to provide an acceptable temperature and humidity operating environment.

3.2 Installation

This switch can be either installed on the standard 19-inch mountable rack or located on the desktop.

3.2.1 Desktop Installation

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

- 1) Set the switch on a flat surface strong enough to support the entire weight of the switch 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.

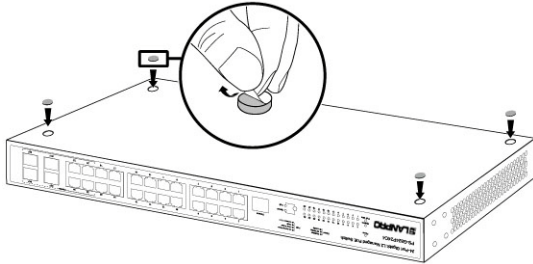


Figure 3-1 Desktop Installation

3.2.2 Rack Installation

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

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

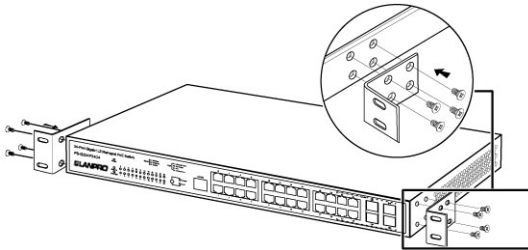


Figure 3-2 Attaching Brackets

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

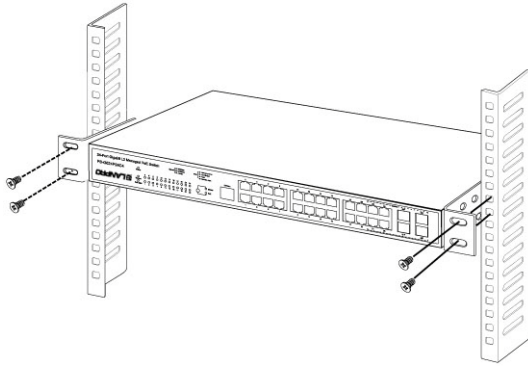


Figure 3-3 Mounting Switch

3.3 Connect to Ground

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

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

- **Connecting to the Grounding Bar**

If the switch is installed in the Equipment Room, where a Grounding Bar is available, you are recommended to connect the switch to the Grounding Bar.



Tips:

The Grounding Bar is not provided with our product.

- **Connecting to the Ground via the power supply**

If the switch is installed in the normal environment, the switch can be grounded via the PE (Protecting Earth) cable of the AC power supply. Please make sure the PE (Protecting Earth) cable in the electrical outlet is well grounded in advance.

Chapter 4 Switch Appearance Description

4.1 Front Panel

The front panel of LP-SGW2404FP is configured as follows:



Figure 4-1 LP-SGW2404FP Front Panel

➤ LEDs

LP-SGW2404FP has an LED mode switch button which is for switching the LED status indication. When the Speed LED is on, the port LED is indicating the data transmission rate. When the PoE LED is on, the port LED is indicating the power supply status. By default the Speed LED is on. Pressing the mode switch button, the Speed LED will turn off and the PoE LED will light up. Then the PoE LED will turn off after being on for 60 seconds and the Speed LED will light up again.

When the Speed LED is on, the port LED is indicating the data transmission rate.

LED	Status	Indication	
Power	On	The switch is powered on.	
	Flashing	Power supply is abnormal.	
	Off	The switch is powered off or power supply is abnormal.	
System	On/Off	The switch works improperly	
	Flashing	The switch works properly.	
10/100/1000Mbps Port LED	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.	

When the PoE LED is on, the port LED is indicating the power supply status.

LED	Status	Indication	
Power	On	The switch is powered on.	
	Flashing	Power supply is abnormal.	
	Off	The switch is powered off or power supply is abnormal.	
System	On/Off	The switch works improperly	
	Flashing	The switch works properly.	
PoE Max	On	The remaining PoE power $\leq 7W$.	
	Flashing	The remaining PoE power keeps $\leq 7W$ after this LED is on for 2 minutes.	
	Off	The remaining PoE power $\geq 7W$.	
10/100/1000Mbps Port LED	Green	On	The port is supplying power normally.
		Flashing	The supply power exceeds the corresponding port's maximum power.
	Yellow	On	Overload or short circuit is detected.
		Flashing	Power-on self-test has failed.
	Off	No PoE power supply is provided on the port.	

- **10/100/1000Mbps RJ45 Ports:** Designed to connect to the device with a bandwidth of 10Mbps, 100Mbps or 1000Mbps. Each has a corresponding 1000Mbps LED.
- **Console Port:** Designed to connect with the serial port of a computer or terminal for monitoring and configuring the switch.
- **SFP ports:** Designed to install the SFP module. LP-SGW2404FP switch features some SFP transceiver slots that 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 SFP port works.



Note:

When using the SFP port with a 100Mbps module or a gigabit module, you need to log on to the GUI (Graphical User Interface) of the switch and configure its corresponding Speed and Duplex mode on **Switching→Port→Port Config** page. For 100Mbps module, please select 100MFD while select 1000MFD for gigabit module. By default, the Speed and Duplex mode of SFP

port is 1000MFD.

4.2 Back Panel

The back panel of the switch is configured as follows:



Figure 4-2 LP-SGW2404FP Back Panel

- **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.
- **Power Socket:** Connect the female connector of the power cord here, and the male connector to the AC power outlet. Please make sure the voltage of the power supply meets the requirement of the input voltage (100-240V~ 50/60Hz).

4.3 Note

- The surface on which the switch is placed should be adequately secured to prevent it from becoming unstable and/or falling over.
- Ensure that the power source circuits are properly grounded.
- Ensure that the power cable, extension cable, and/or plug is not damaged.
- Ensure that the switch is not exposed to water.
- Ensure that the switch is not exposed to radiators and/or heat sources.
- Do not push foreign objects into the switch, as it may cause a fire or electric shock.
- Allow the switch to cool before removing covers or touching internal equipment.
- Use the switch only with approved equipment. If the switch is connected to other network device with UTP cable, ensure the cable is not more than 100 meters length.

Chapter 5 Configuration

5.1 Configure the Switch via GUI

1. Connect the Ethernet ports of the switch to the PC.
2. 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 5-1 Web Browser

Note:
 To log on 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. For the detailed instructions as to how to do this, please refer to Appendix B in the User Guide on the Resource CD.

3. Enter admin for the default User Name and Password, both in lower case letters. Then click the **Login** button or press the **Enter** key.



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Figure 5-2 Login

4. 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 5-3 Main Page of the Switch

5.2 Configure the Switch via CLI

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

1. Log on to the switch by the console port on the switch.
2. Log on to the switch remotely by a Telnet or SSH connection through an Ethernet port.

5.2.1 Logon by a Console Port

The device is connected to a terminal through a console port on the front panel, which enables a connection to a terminal desktop system running terminal emulation software for monitoring and configuring the device. To log on 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 the provided cable.
2. Ensure that the terminal emulation software is set as follows:
 - a) Select the appropriate port to connect to the device.
 - b) Configure Bits per second as 38400, Data bits as 8, Parity as None, Stop bits as 1, Flow control as None.
3. Type the User name and Password in the Hyper Terminal window, the factory default value for both of them is "admin". The DOS prompt

“LP-SGW2404FP>” will appear after pressing the **Enter** button. It indicates that you can use the CLI now.

5.2.2 Logon by Telnet

To log on to the switch by a Telnet connection, please take the following steps:

1. Firstly CLI commands about configuring Telnet login mode, login authentication information and Privileged EXEC Mode password should be configured through Console Connection. For more details please refer to the CLI Reference Guide on the resource CD (LP-SGW2404FP_RG_ENB01W)
2. Make sure the switch and the PC are in the same LAN.
3. Click Start→Run to open the Run window, then type “cmd” to login the Command Prompt.
4. Type **telnet 192.168.0.1** in the command prompt and press the **Enter** button to telnet the switch.
5. Type the User name and Password (the factory default value for both of them is “admin”) to log on the switch, then you can use the CLI now.

**Note:**

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

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 hyper terminal.
2. Power off and restart the switch. When you are prompted that “Press CTRL-B to enter the bootUtil” in the hyper terminal, please press CTRL-B key to enter into bootUtil menu shown as the following figure.

```
Press CTRL-B to enter the bootUtil
-----
- LP-SGW2404FP BOOTUTIL(v1.0.0) -
-----
Copyright (c) 2013 LANPRO Inc.
Create Date: Mar 21 2013 15:14:20

help          - print this list
reboot       - reboot the system
ifconfig     - config the interface
ftp          - config the remote host ip,the user name,user password
and the image file name
upgrade      - upgrade the firmware
start        - start the system
reset        - reset the system to the factory config.
```

3. Enter the reset command to reset the system. The system will be reset to the factory default settings, and the default login user name and password are both “admin”.

Q2. Why does the Power LED work abnormally?

The Power LED should be lit up when the power system works normally. If the Power 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 could I do if I could not access the web-based configuration page?

You are recommended to check the following items:

1. Check every port LED on the switch and make sure the cable is installed properly.
2. Try another port on the switch and make sure the cable meets the requirement and works normally.

3. Turn off the power. After a while, turn on the power 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 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 does the hyper terminal display abnormally?

Please check as follows:

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 hyper terminal are correct: configure Bits per second as 38400, Data bits as 8, Parity as None, Stop bits as 1 and Flow Control as None.