Installation Guide

LP-SGW2404F

24 Copper + 4 Fiber Gigabit Managed Switch

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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.

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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CONTENTS

Package Contents

The following contents should be found in your package:

➢ One LP-SGW2404F switch

➢ One power cord

➢ One console cable

➢ One grounding cable

➢ Two mounting brackets and other fittings

➢ Installation Guide

➢ Resource CD for LP-SGW2404F switch, including:

- • User 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-SGW2404F. 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 the external components of the switch.

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

Appendix A: Pin Explanation for RJ45 Connector.

Appendix B: Troubleshooting.

Chapter 2   Device Description

2.1   Introduction to the Device

The LP-SGW2404F 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-SGW2404F 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.

2.2   Features and Technical Specifications

2.2.1   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**

    + GVRP (GARP VLAN Registration Protocol) allows automatic learning and dynamic assignment of VLANs.

    + Supports 255 active VLAN groups and 4K VLAN IDs.

- **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.

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+ 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.

2.2.2 Technical Specifications

Standards	IEEE802.3 10Base-T Ethernet
	IEEE802.3u 100Base-TX/100Base-FX Fast Ethernet
	IEEE802.3ab 1000Base-T Gigabit Ethernet
	IEEE802.3z 1000Base-X Gigabit Ethernet
	IEEE802.3x Flow Control
Transmission Medium	10Base-T: UTP/STP of Cat. 3 or above
	100Base-TX: UTP/STP of Cat. 5
	100Base-FX: MMF or SMF SFP Module
	1000Base-T: 4-pair UTP (≤100m) of Cat. 5 or above
	1000Base-X: MMF or SMF SFP Module
LED	Power, System,1000Mbps, Link/Act
Operating Environment	Operating Temperature: 0℃ ~ 40℃
	Storage Temperature: -40℃ ~ 70℃
	Operating Humidity: 10% ~ 90% RH
	Storage Humidity: 5% ~ 90% RH
Power Supply	AC 100-240V~ , 50-60Hz

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.

⚠️ Note:

Please unplug the power cord before installing or removing the switch.

3.2.1 Desktop Installation

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

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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.
4) Upturn the switch and connect it to the network devices while keep enough ventilation space around.
5) Connect the switch to power source with the provided power cord.

⚠️ **Note:**

Please avoid any heavy things being placed on the switch.

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.
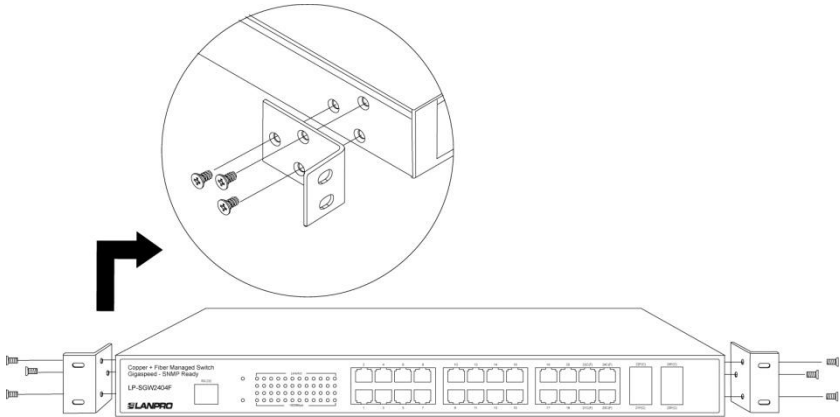

Figure 3-1 Attaching Brackets

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.
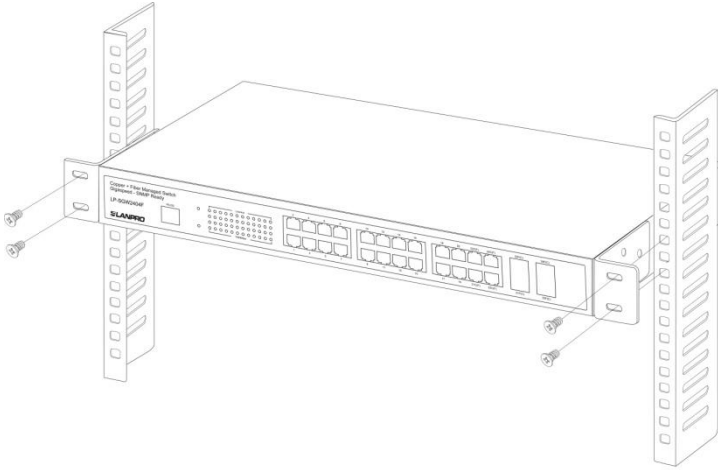
Figure 3-2 Mounting Switch

3) Connect the switch to network devices.

4) Supply power to the switch with the provided power cord.

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.

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Chapter 4 Switch Appearance Description

4.1 Front Panel

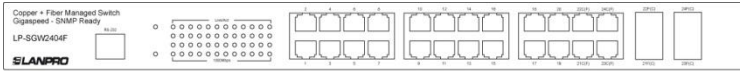The front panel of LP-SGW2404F is configured as follows:

Figure 4-1 LP-SGW2404F Front Panel

➢ **LEDs**

Name	Status	Indication
Power	On	Power is on.
	Flashing	Power supply is abnormal.
	Off	Power is off or power supply is abnormal.
System	On	The switch is working abnormally.
	Flashing	The switch is working normally.
	Off	The switch is working abnormally.
1000Mbps	On	A 1000Mbps device is connected to the corresponding port.
	Off	A 10/100Mbps device or no device is connected to the corresponding port.
Link/Act	On	A device is connected to the corresponding port, but not activity.
	Flashing	Data is being transmitted or received.
	Off	No device is connected to the corresponding port.

➢ **10/100/1000Mbps 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**: The SFP port accommodates a standard SFP module, support 100Base-FX and 1000Base-X Ethernet standard (SFP optics is optional). Port SFP1(21) to Port SFP4(24) share the same LEDs with Port 21 to Port 24. The SFP Ports and the corresponding RJ45 ports are referred to as "combo" ports, which means they cannot be used simultaneously, otherwise only SFP ports work. The SFP module supports hot-plugging.

⚠️**Note:**

When using the SFP port with a 100Mbps module or a gigabit module, you need to

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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-SGW2404F Back Panel

➢   **AC Power Connector**: This is a three-pronged connector that supports the power cable. Plug in the female connector of the provided power cable into this connector, and the male into a power outlet.

➢   **Grounding Terminal**: LP-SGW2404F 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 section **3.3 Connect to Ground**.

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.

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.

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-SGW2404F>" 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. Make sure the switch and the PC are in the same LAN.
2. Click Start→Run to open the Run window, then type "cmd" to login the Command Prompt.
3. Type telnet 192.168.0.1 in the command prompt and press the Enter button to telnet the switch.
4. 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 document: LP-SGW2404F_RG_ENB01.pdf on the resource CD.

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Appendix A: Pin Explain For RJ45 Connector

The switching port can connect to stations wired in standard RJ45 Ethernet station mode using straight cables. Transmission devices connected to each other use crossed cables. The following figure illustrates the pin allocation:

Figure A-1 RJ45 connector

The following shows the way to make the cable use to connect switch to network adapter, and cable used to connect a switch to a switch/hub/bridge.

Pin signal allocation for RJ45 connector		
Pin	MDI-II	MDI-X
1	TX+ (send)	RX+ (receive)
2	TX- (send)	RX- (receive)
3	RX+ (receive)	TX+ (send)
4	No use	No use
5	No use	No use
6	RX- (receive)	TX- (send)
7	No use	No use
8	No use	No use

Straight cable: used to connect the switch (uplink port) or network adapter to another switch/hub/other device (normal port).
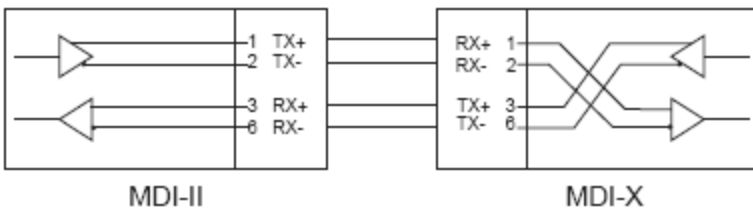

Figure A-2 straight cable

Crossed cable: used to connect the switch (normal port) to another switch/hub/other device (normal port).
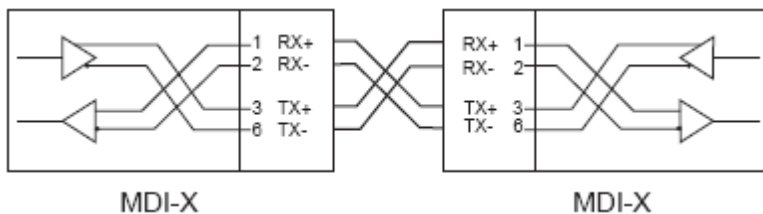

Figure A-3 crossed cable

Appendix B: 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-SGW2404F  BOOTUTIL(v1.0.0)      *
**********************************************
Copyright (c) 2012 LanPro Inc.
Create Date: Mar 30 2012 17:35:10

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.

[LP-SGW2404F]: ^
```

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 can 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.

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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.