LANPRO

LPSW2400S_UG_ENB01W

SW2400S

24-Port SFF 10/100Mbps Fast Ethernet Switch

Model: LP-SW2400S

User Guide

- 200 Mbps — Up to 200Mbps full duplex bandwidth capability for high speed data processing
- EnergySmart — Innovative Energy-Smart technology saves power up to 70%
- Plug and Play — Hassle free setup, no configuration required
- SFF Small Form Factor Ready — Small Form Factor, can be installed on a shelf or rack mount.

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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.

CONTENTS

Package Contents

The following contents should be found in your box:

a.-	One **LP-SW2400S** switch .
b.-	One power cord .
c.-	Installation Guide.
d.-	1 Set of screws for attaching two “L” brackets used for mounting on 19 inch racks.

Figure 1. Package Contents

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

Chapter 1: Product Introduction

This chapter describes the features of the model of **LP-SW2400S** 24-port 10/100Mbps Fast Ethernet Switch.

1.1 Product Overview

LP-SW2400S 24-port switch provides 24 10/100Mbps Auto-Negotiation RJ45 ports. Each port of the **LP-SW2400S** supports auto MDI/MDI-X function, eliminating the need for crossover cables or Uplink ports. The switch is Plug-and-Play and any port can be simply plugged into a server, a hub or a switch by using straight cable or crossover cable.

The **LP-SW2400S** 24-port 10/100Mbps Fast Ethernet Switch provides you with a low-cost, easy-to-use, high-performance, seamless and standard upgrade to improve your old network to a 100Mbps network. It will boost your network performance up to full duplex data transfer.

The **LP-SW2400S** switch supports Energy-Smart technology, with power saving features to help make your network environmentally friendly without compromising performance. The switch automatically powers down ports that have no link and budgets power output for different Ethernet cable lengths. It can also reduce the power consumption in idle mode or with low traffic mode.

1.2 Features

►	Complies with IEEE802.3, IEEE802.3u, IEEE802.3az, IEEE 802.1p standards.
►	24 10/100Mbps Auto-Negotiation RJ45 ports supporting Auto-MDI/MDIX.
►	Supports IEEE802.3X flow control for full-duplex mode and backpressure for half-duplex mode.
►	Supports IEEE 802.1p QoS.
►	Supports power saving features, with Energy-Smart Technology.
►	LED indicators for monitoring power, link and activity.
►	Desktop or 19 Inch Rack mountable 11.6 Inch wide Small Form Factor (SFF) Steel case.
►	Internal power supply.
►	Plug and Play

1.3 IEEE 802.1p QoS

The **LP-SW2400S** switch supports 802.1p priority queuing Quality of Service (QoS), which is an implementation of the IEEE 802.1p standard. With 802.1p QoS function, you can reserve bandwidth for important functions that require a large bandwidth or have a high priority, such as VoIP (Voice-over Internet Protocol), web browsing applications or video conferencing. The switch has separate hardware queues on every physical port which packets from various applications are mapped to and assigned a priority to. The illustration below shows how 802.1p priority queuing is implemented on the switch.

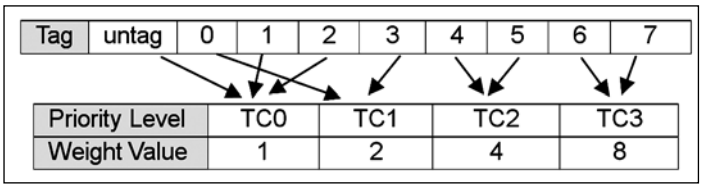

Figure 2. Mapping QoS on the Switch

The switch has four priority levels labeled TC0, TC1, TC2 and TC3. The untagged packets and the eight IEEE 802.1p priority tags defined by the standard are mapped to the four level queues used on the switch. TC3 has the highest priority of the four priority level queues while TC0 has the lowest priority on the switch. The untagged packets and eight priority tags, specified in IEEE 802.1p are mapped to the switch's priority tags as follows:

►	The untagged packets, packets with priority tag 1 and 2 are assigned to the switch's TC0 level queue.
►	Packets with priority tag 0 and 3 are assigned to the switch's TC1 level queue.
►	Packets with priority tag 4 and 5 are assigned to the switch's TC2 level queue.
►	Packets with priority tag 6 and 7 are assigned to the switch's TC3 level queue.

The switch uses WRR (Weighted Robin Round) for scheduling. WRR queue-scheduling algorithm schedules all the queues in turn and every queue can be assured of a certain service time. The default weight value of TC0, TC1, TC2 and TC3 is 1:2:4:8.

1.4 Priority Levels Table

PCP	Priority	Acronym	Traffic Types
1	0 (Lowest)	BK	Background
0	1	BE	Best Effort
2	2	EE	Excellent Effort
3	3	CA	Critical Applications
4	4	VI	Video, < 100 ms latency and jitter
5	5	VO	Voice, <10ms Latency and Jitter
6	6	IC	Internetwork Control
7	7 (Highest)	NC	Network Control

Chapter 2: Identifying External Components

This chapter describes the front panel, rear panel and LED indicators of the switch.

2.1 Front Panel

The front panel of **LP-SW2400S** consists of switch model, switch LED indicators, and 24 10/100Mbps RJ-45 ports.

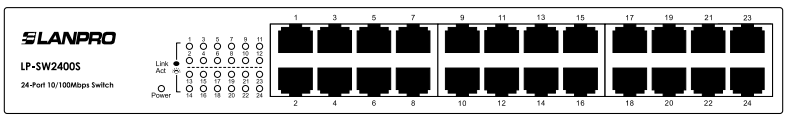

Figure 3. Switch Front Panel Sketch

The LED indicators include Power, Link/Act LED indicators, which are used for monitoring and pre-troubleshooting of the switch. The following section shows the LED indicators of the switch along with explanation of each indicator.

►	**Power LED:** This indicator will light solid green when the switch powers up. If the LED is not lit, please check the power supply and connection.
►	**Link/Act LED:** The LED indicates Link/Active status. The corresponding LED indicator will light solid green when connected to a network device. It flashes green when data is being transmitted or received on the working connection.

2.2 Rear Panel

The rear panel of **LP-SW2400S** features a power socket and a Grounding Terminal (marked with ⏚).

Figure 4. Switch Rear Panel Sketch

►	**Grounding Terminal: LP-SW2400S** 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 detail information, please refer to section **3.3 Connect to Ground**.
►	**AC 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.

Chapter 3: Installation

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.

Caution:

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:

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.

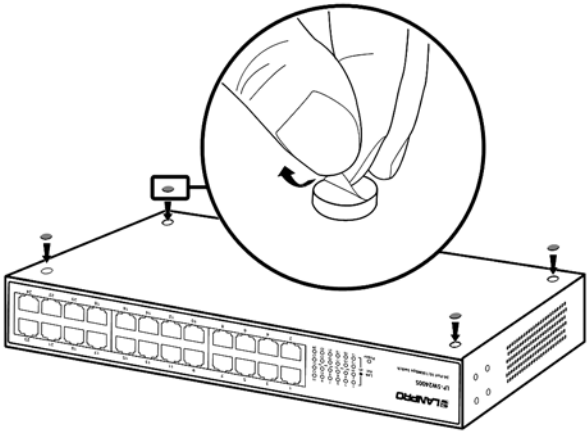

Figure 5. Attaching Rubber Feet

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.

Caution:

Please avoid any heavy thing 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.

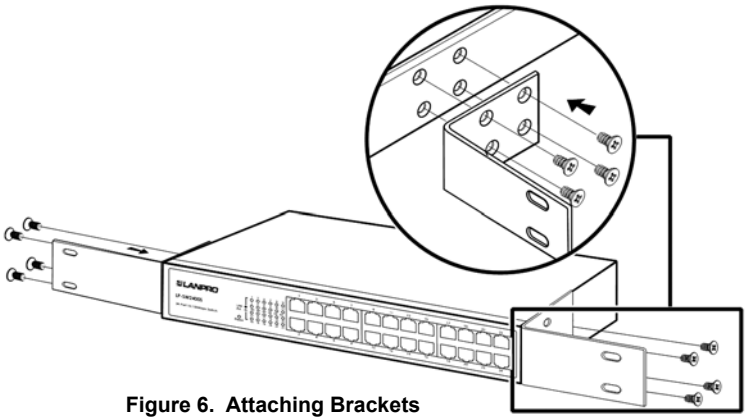

Figure 6. Attaching Brackets

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.

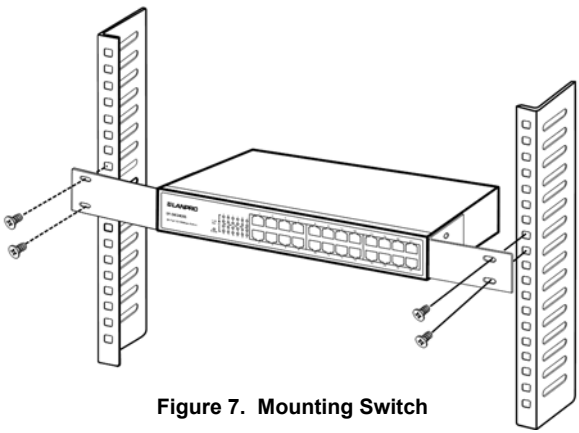

Figure 7. Mounting Switch

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 as shown in the following figure.

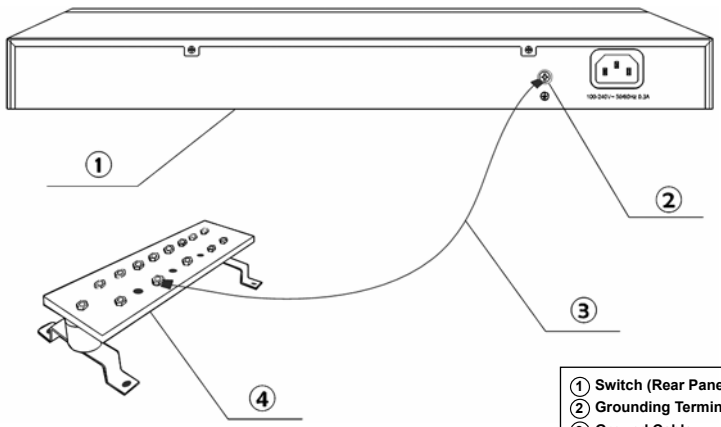

Figure 8. Connecting to the Grounding Bar

Note:

The Grounding Bar and Ground Cable are 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 as shown in the following figure.

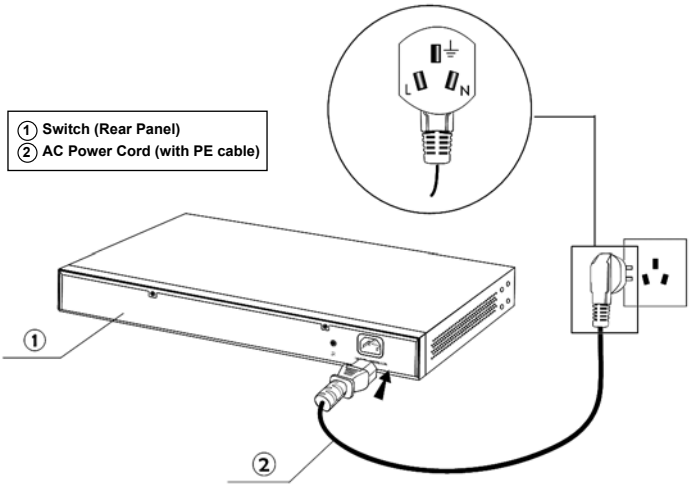

Figure 9. Connecting to the Ground

**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.*

Note: *If you intend to connect the switch 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.*

3.4 Power on

The **LP-SW2400S** 24-port 10/100Mbps Fast Ethernet Switch is powered by an AC Power Supply. Connect the switch and power outlet by power cord. Powering on the switch, it will be automatically initialized and the LED indicators should respond as follows:

1) All of the LED indicators will flash momentarily for one second, which represents a resetting of the system.

2) The Power LED indicator will light up.

Appendix A: Specifications

General	
Standards	IEEE 802.3, IEEE 802.3u, IEEE802.3az, IEEE 802.1p
Topology	Star
Protocol	CSMA/CD
Data Transfer Rate	Ethernet: 10Mbps (Half Duplex) 20Mbps (FullDuplex)
	Fast Ethernet: 100Mbps (Half Duplex) 200Mbps (Full Duplex)
Network Media (Cable)	10Base-T: UTP category 3, 4, 5 cable (maximum 100m) EIA/TIA-568 100 STP (maximum 100m)
	100Base-TX: UTP category 5, 5e cable (maximum 100m) EIA/TIA-568 100 STP (maximum 100m)
Number of Ports	24 10/100Mbps Auto-Negotiation RJ-45 ports
Safety & Emissions	CE
LED indicators	Power, Link/Act
Transfer Method	Store-and-Forward
MAC Address Learning	Automatically learning, automatically aging
Frame Filter Rate	10Base-T: 14881pps/Port
	100Base-Tx: 148810pps/Port
Frame Forward Rate	10Base-T: 14881pps/Port
	100Base-Tx: 148810pps/Port
Backbound Bandwidth	4.8 Gbps
Environmental and Physical	
Operating Temperature	0°C ~40°C (32°F ~104°F)
Storage Temperature	-40°C ~70°C (-40°F ~158°F)
Operating Humidity	10%~90% non-condensing
Storage Humidity	5%~90% non-condensing

Mechanical	
Switch	11.6*7.1*1.7 in. (294*180*44 mm)
Electrical	
Power Specification	110-240V AC, 50-60Hz
Safety And Emission	
CE	

Appendix B: Troubleshooting

1)	**The Power LED is not lit**
►	Make sure the AC power cord connected the switch with power source properly.
►	Make sure the power source is ON.

2)	**The Link/Act LED is not lit when a device is connected to the corresponding port**
►	Make sure that the cable connectors are firmly plugged into the switch and the device
►	Make sure the connected device is turned on and working well.
►	The cable must be less than 100 meters long (328 feet).

RoHS compliant

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