SMC Networks

USER GUIDE

EZ Switch™ 10/100
24-Port 10/100Mbps + 2G Combo Unmanaged PoE Switch

SMCFS2601P

EZ Switch™ 10/100 User Guide

From SMC's EZ line of low-cost workgroup LAN solutions

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SMCFS2601P
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WARRANTY AND PRODUCT REGISTRATION

To register SMC products and to review the detailed warranty statement, please refer to the Support Section of the SMC Website at http://www.smc.com.

COMPLIANCES AND SAFETY STATEMENTS

FCC - CLASS A

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:

- This device may not cause harmful interference.
- 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 DECLARATION OF CONFORMANCE FOR EMI AND SAFETY (EEC)

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.

CE

Declaration of Conformity (DoC) can be obtained from www.smc.com -> support -> download

About This Guide

Purpose

This guide details the hardware features of the switch, including the physical and performance-related characteristics, and how to install the switch.

Audience

The guide is intended for use by network administrators who are responsible for installing and setting up network equipment; consequently, it assumes a basic working knowledge of LANs (Local Area Networks).

Conventions

The following conventions are used throughout this guide to show information:

Note: Emphasizes important information or calls your attention to related features or instructions.

Caution: Alerts you to a potential hazard that could cause loss of data, or damage the system or equipment.

Warning: Alerts you to a potential hazard that could cause personal injury.

Revision History

This section summarizes the changes in each revision of this guide.

October 2013 Revision

This is the first revision of this guide.

CONTENTS

1 INTRODUCTION

OVERVIEW

SMC Network's SMCFS2601P 24-Port 10/100 +2G Combo Unmanaged PoE Switch provides seamless network connections, integrating 1000 Mbps Gigabit Ethernet, 100 Mbps Fast Ethernet, and 10 Mbps Ethernet network capabilities.

The PoE ports can automatically detect and supply power to IEEE 802.3af/at-compliant Powered Devices (PDs). The electrical power is transmitted along with data in one single cable, allowing you to expand your network to where there are no power lines or outlets, to where you need to locate devices such as APs, IP cameras or IP phones, etc.

The SMCFS2601P is easy to install and requires no configuration. With its desktop design, outstanding performance and quality, the 24-Port 10/100 + 2G Combo PoE switch is an ideal choice for expanding your home or office network.

FEATURES

- Complies with IEEE 802.3, IEEE 802.3u, and IEEE 802.3ab standards
- 24 10/100 Mbps auto-negatiating RJ-45 ports
- Two 10/100/1000 (RJ-45+SFP) combo ports
- Support for PoE on ports 1-24
- Supports 30 W of power on six ports, or 15.4 W on 12 ports
- Ports 1-24 can provide up to 30 W PoE power budget; total switch PoE budget is 180 W
- LED indicators for monitoring Power, LNK/ACK, PoE in Use, and 1000 Mbps
- Rack-mountable steel case

PoE Features

The SMCFS2610P can provide up to 30 Watts of power to attached devices, such as VoIP phones, wireless access points, surveillance cameras etc, all over existing Cat.5 cables. The switch can deliver up to 30 Watts on 6 ports, or 15.4 Watts on 12 ports. This eliminates the need for individual power sources for devices in the network, saving on costs for power cables and avoiding power outlet availability issues.

2 HARDWARE DESCRIPTION

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

FRONT PANEL

The front panel of the SMCFS2601P consists of switch LED indicators, 24 10/100 Mbps ports, and two 10/100/1000 combo ports.

Figure 1: SMCFS2601P Switch Front Panel

PORT AND SYSTEM STATUS LEDS

The switch includes a display panel for key system and port indications that simplifies installation and network troubleshooting. The LEDs, which are located on the front panel, are described in the following table.

Table 1: System and Port Status LEDs

LED	Condition	Status
Power	On Green	The internal power supply is operating normally.
	Off	The unit has no power connected.
LNK/ACT	On Green	Port has established a valid 10/100 Mbps network connection.
	On Amber	Port has established a valid 10/100/1000 Mbps network connection.
	Off	There is no valid link on the port.

Table 1: System and Port Status LEDs (Continued)

LED	Condition	Status
PoE In Use	On Green	A PoE device is connected.
	Off	No PoE device connected.

RJ-45 PORTS

The switch contains 24 100BASE-TX and 2 1000BASE-T RJ-45 ports. All ports support automatic MDI/MDI-X operation, so you can use straight-through cables for all network connections to PCs or servers, or to other switches or hubs.

Each of these ports support auto-negotiation, so the optimum transmission mode (half or full duplex), and data rate (10, 100, or 1000 Mbps) is selected automatically.

Each port also supports IEEE 802.3x auto-negotiation of flow control, so the switch can automatically prevent port buffers from becoming saturated.

REAR PANEL

The rear panel of the switch features the AC power socket.

Figure 2: SMCFS2601P Switch Rear Panel

AC POWER SOCKET

Connect the female connector of the power cord here, and the male connector to the AC power outlet. Note that the socket includes the PE (Protective Earth) pole to connect the switch to ground through an AC power cord. Make sure the voltage of the power supply meets the requirement of the input voltage and use an appropriate AC power outlet that includes a Protective Earth pole.

3 INSTALLING THE SWITCH

Before installing the switch, verify that you have all the items listed under "Package Contents." If any of the items are missing or damaged, contact your local SMC distributor. Also be sure you have all the necessary tools and cabling before installing the switch.

PACKAGE CONTENTS

The following contents should be found in your package:

- One SMCFS2601P Switch
- Power Cord
- This User Guide
- Rack-mount Kit
- Quick Installation Guide
- SMC Warranty Card
- Four Rubber Foot Pads

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

CAUTION: Do not plug a phone jack connector in the RJ-45 port. This may damage this device.

Les raccordeurs ne sont pas utilisé pour le système téléphonique!

PRECAUTIONS

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

SAFETY REQUIREMENTS

- Before cleaning the switch, disconnect the power supply. Do not clean the switch using a wet cloth, and never use any other liquid for cleaning.
- 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 holes are well ventilated and unblocked.
- Do not open or remove the cover of the switch.

LOCATION REQUIREMENTS

When you choose a location for the switch, 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.

INSTALLATION

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

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

DESKTOP INSTALLATION

To install the switch on the desktop, follow these 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. Turn the switch over and attach the supplied rubber feet to the recessed areas on the bottom at each corner of the switch.

Figure 3: Attaching Rubber Feet

4. Upturn the switch and set in the desired location, making sure there is enough ventilation space on all sides for proper airflow.

5. Connect the switch to a power source with the provided power cord. See "How to Connect to AC Power" on page 18.

CAUTION: Avoid placing anything heavy on the switch.

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 4: Attaching Brackets

2. Use suitable screws (not provided) to secure the brackets to the rack, as illustrated in the following figure.

Figure 5: Mounting the Switch

3. Connect the switch to a power source with the provided power cord. See "How to Connect to AC Power" on page 18.

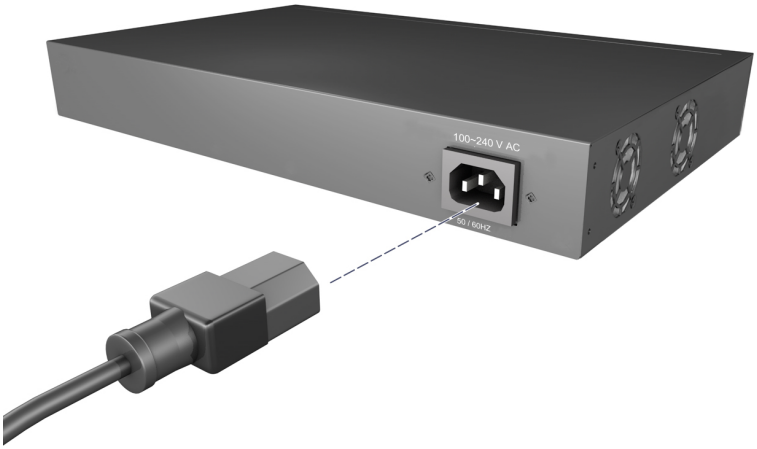
HOW TO CONNECT TO AC POWER

To supply AC power to the switch, first verify that the external AC power supply can provide 100 to 240 VAC, 50-60 Hz, 0.5 A minimum.

To connect the switch to a power source:

1. Plug the power cord into a grounded, 3-pin, AC power source.

Figure 6: AC Power Cord and Power Socket



2. Insert the plug on the other end of the power cord directly into the AC input socket on the back of the switch.

NOTE: Your country's AC power outlet standards may not match the power plug of the included AC power cord, you may need to change the AC power cord. You must use a cord set that has been approved for the socket type in your country.

3. Check the LED indicators on the switch front panel as the unit is powered on to verify that power is being received. If not, recheck the power cord connections at the AC supply source and back panel power input connector.

POWERING ON

The SMCFS2601P switch is powered by connecting to an AC power supply using a power cord. When powering on the switch, it automatically initializes and the LED indicators respond as follows:

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

2. The Power LED indicator turns on green.

CONNECTING NETWORK DEVICES

The switch is designed to be connected to 10, 100, or 1000 Mbps network cards in PCs and servers, as well as to other switches and hubs.

CABLING GUIDELINES

The RJ-45 ports on the switch support automatic MDI/MDI-X pinout configuration, so you can use standard straight-through twisted-pair cables to connect to any other network device (PCs, servers, switches, routers, or hubs).

Each device requires an unshielded twisted-pair (UTP) cable with RJ-45 connectors at both ends. Use Category 5 or better for 100BASE-TX connections, and Category 3 or better for 10BASE-T connections.

CONNECTING TO PCS, SERVERS, HUBS AND SWITCHES

1. Attach one end of a twisted-pair cable segment to the device's RJ-45 connector.

2. Attach the other end of the cable segment to an available port on the switch.

   Make sure each twisted pair cable does not exceed 100 meters (328 ft) in length.

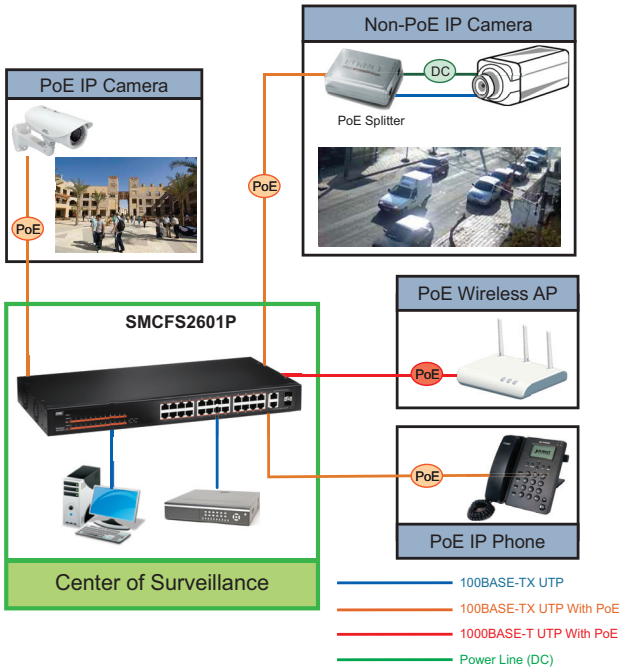
3. As each connection is made, the relevant port LED (on the switch) corresponding to each port will turn on green to indicate that the connection is valid.

4 PRODUCT APPLICATION

DEPARTMENT/WORKGROUP POE SWITCH

The SMCFS2601P provides 24 PoE port interfaces and can build a centrally-controlled IP phone system, IP camera system, or wireless AP group for the enterprise. Cameras can be installed around the company or campus for surveillance needs, or wireless APs can build a wireless roaming environment in the office. Without being limited by power-socket availability, the switch makes installation of cameras or wireless APs easy and efficient.

Figure 7: Applications



POWER OVER ETHERNET POWERED DEVICES

Table 2: Power over Ethernet Powered Devices

 3~5 Watts	**Voice over IP phones** Enterprises can install PoE VoIP phones, ATA and other Ethernet/ non-Ethernet end-devices connected to a central location where an un-interruptible power supply and power control system are installed.
 6~12 Watts	**Wireless LAN Access Points** Museums, sightseeing spots, airports, hotels, campuses, factories, and warehouses can install access points anywhere without limitations.
 10~12 Watts	**IP Surveillance** Enterprises, museums, campuses, hospitals, and banks can install IP cameras without any location limits - no need for an electrician to install AC sockets.
 3~12 Watts	**PoE Splitter** A PoE splitter splits the PoE 48 VDC from the Ethernet cable into a 5/12V DC power output. It frees device deployment from the restrictions of power outlet location, which eliminates the costs for additional AC wiring and reduces installation time.

A TROUBLESHOOTING

DIAGNOSING SWITCH INDICATORS

THE POWER LED IS OFF

- Make sure the AC power cord is connected to the switch and power source properly.
- Make sure the power source is ON.

THE LINK/ACT LED IS OFF 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 properly.
- The cable must be less than 100 meters long (328 feet).
- Check the port on the attached device and cable connections for possible defects. Replace the defective cable if necessary.

POWER AND COOLING PROBLEMS

If the power indicator does not turn on when the power cord is plugged in, you may have a problem with the power outlet, power cord, or internal power supply. However, if the unit powers off after running for a while, check for loose power connections, power losses or surges at the power outlet. If you still cannot isolate the problem, the internal power supply may be defective.

INSTALLATION

Verify that all system components have been properly installed. If one or more components appear to be malfunctioning (such as the power cord or network cabling), test them in an alternate environment where you are sure that all the other components are functioning properly.

B SPECIFICATIONS

PHYSICAL CHARACTERISTICS

STANDARDS
IEEE 802.3 10BASE-T
IEEE 802.3u 100BASE-TX
IEEE 802.3ab 1000BASE-T

TOPOLOGY
Star

PROTOCOL
CSMA/CD

DATA TRANSFER RATE
Ethernet: 10 Mbps (half/full duplex)
Fast Ethernet: 100 Mbps (half/full duplex)
Gigabit Ethernet: 1000 Mbps (full duplex)

NETWORK MEDIA (CABLE)
10BASE-T: UTP Category 3, 4, 5 cable (maximum 100 m)
EIA/TIA-568 100 STP (maximum 100 m)
100BASE-TX: UTP Category 5, 5e cable (maximum 100 m)
EIA/TIA-568 100 STP (maximum 100 m)
1000BASE-T: UTP Category 5e, 6 cable (maximum 100 m)
EIA/TIA-568 100 STP (maximum 100 m)

NUMBER OF PORTS

24 10/100 Mbps auto-negotation RJ-45 ports
2 10/100/1000 Mbps combo (RJ-45+SFP) port

LED INDICATORS

POWER, LNK/Act, PoE in Use, 1000 Mbps

TRANSFER METHOD

Store-and-Forward

MAC ADDRESS LEARNING

Automatically learning, automatically aging

FRAME FILTER RATE

10BASE-T: 14881 pps/port
100BASE-TX: 148810 pps/port
1000BASE-T: 1488095 pps/port

FRAME FORWARD RATE

10BASE-T: 14881 pps/port
100BASE-TX: 148810 pps/port
1000BASE-T: 1488100 pps/port

SWITCHING DATABASE

4K MAC address entries

BUFFER MEMORY

2.75 MBits / device

SWITCHING CAPACITY

8.8 Gbps

POWER ADAPTER

AC INPUT :100V~240V 50/60Hz
DC OUTPUT:DC 51V 4.7A

DIMENSIONS

440 x 208 x 44 mm (17.3 x 8.1 x 1.77 in.)

WEIGHT

2.70 kg (5.95 lbs)

FEATURE

IEEE 802.3x Flow Control
Auto MDI/MDI-X
Supports auto-negotiation of speed (10/100 Mbps) and duplex mode (half/full)
Wire-speed packet filtering and forwarding rate
Store-and-forward architecture filters fragment & CRC error packets
Support IEEE 802.3af/802.3at
Support Power to PD: 30 W
Total PoE Budget: 180 W
PoE Ports: 24 ports (1-24)

TEMPERATURE

Operating: 0 to 40 °C (32 to 104 °F)
Storage: -40 to 70 °C (-40 to 158 °F)

HUMIDITY

Operating: 10% to 90% (non-condensing)
Storage: 10% to 90% (non-condensing)

ELECTROMAGNETIC COMPATIBILITY

CE
FCC

IMMUNITY
EN55024
IEC61000-4/2/3/4/5/6/8/11

EMISSIONS
FCC Class A, EN55022/EN61000-3-2/3

SAFETY
LVD (EN60950)

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