LevelOne
GSW-0801T

8Port 10/100/1000TGigabit Ethernet Switch

User's Guide

FCC Warning

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 this user's guide, 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.

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.

VCCI Warning

注意
この装置は、情報処理装置等電波障害自主規制協議会(VCCI)の基準に基づく第一種情報技術装置です。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。

P/N:6012-8000T01 Rev.A1-01

TABLE OF CONTENTS

ABOUT THIS GUIDE

This user's guide tells you how to install your LevelOne GSW-0801T 8Port 10/100/1000T Gigabit Ethernet Switch, how to connect it to your Gigabit Ethernet network.

Terms

For simplicity, this documentation uses the terms "Switch" (first letter upper case) to refer to the LevelOne GSW-0801T 8Port 10/100/1000T Gigabit Ethernet Switch, and "switch" (first letter lower case) to refer to all Ethernet switches, including the LevelOne GSW-0801T 8Port 10/100/1000T Gigabit Ethernet Switch.

Overview of this User's Guide

- *Introduction*. Describes the LevelOne GSW-0801T 8Port 10/100/1000T Gigabit Ethernet Switch and its features.
- *Unpacking and Setup*. Helps you get started with the basic installation of the Switch.
- *Identifying External Components*. Describes the front panel, rear panel, and LED indicators of the Switch.

- *Technical Specifications*. Lists the technical specifications of the Switch.

INTRODUCTION

This section describes the features of the LevelOne GSW-0801T 8Port 10/100/1000T Gigabit Ethernet Switch, as well as giving some background information about Gigabit Ethernet and switching technology.

Gigabit Ethernet Technology

Gigabit Ethernet is an extension of IEEE 802.3 Ethernet utilizing the same packet structure, format, and support for CSMA/CD protocol, full duplex, flow control, and management objects, but with a tenfold increase in theoretical throughput over 100-Mbps Fast Ethernet and a hundredfold increase over 10-Mbps Ethernet. Since it is compatible with all 10-Mbps and 100-Mbps Ethernet environments, Gigabit Ethernet provides a straightforward upgrade without wasting a company's existing investment in hardware, software, and trained personnel.

The increased speed and extra bandwidth offered by Gigabit Ethernet is essential to coping with the network bottlenecks that frequently develop as computers and their busses get faster and more users use

applications that generate more traffic. Upgrading key components, such as your backbone and servers to Gigabit Ethernet can greatly improve network response times as well as significantly speed up the traffic between your subnets.

Gigabit Ethernet supports video conferencing, complex imaging, and similar data-intensive applications. Likewise, since data transfers occur 10 times faster than Fast Ethernet, servers outfitted with Gigabit Ethernet NIC's are able to perform 10 times the number of operations in the same amount of time.

Switching Technology

Another key development pushing the limits of Ethernet technology is in the field of switching technology. A switch bridges Ethernet packets at the MAC address level of the Ethernet protocol transmitting among connected Ethernet or fast Ethernet LAN segments.

Switching is a cost-effective way of increasing the total network capacity available to users on a local area network. A switch increases capacity and decreases network loading by making it possible for a local area network to be divided into different *segments* which don't compete with each other for network

transmission capacity, giving a decreased load on each.

The LevelOne GSW-0801T 8Port 10/100/1000T Gigabit Ethernet Switch acts as a high-speed selective bridge between the individual segments. Traffic that needs to go from one segment to another is automatically forwarded by the LevelOne GSW-0801T 8Port 10/100/1000T Gigabit Ethernet Switch, without interfering with any other segments. This allows the total network capacity to be multiplied, while still maintaining the same network cabling and adapter cards.

Switching LAN technology is a marked improvement over the previous generation of network bridges, which were characterized by higher latencies. Routers have also been used to segment local area networks, but the cost of a router and the setup and maintenance required make routers relatively impractical. Today's switches are an ideal solution to most kinds of local area network congestion problems.

Features

The LevelOne GSW-0801T 8Port 10/100/1000T Gigabit Ethernet Switch was designed for easy installation and high performance in an environment

where traffic on the network and the number of users increase continuously.

- 8 10/100/1000T NWay Auto-MDIX Ethernet ports
- Full/half duplex transfer mode for each 1000BASE-T ports
- Wire speed reception and transmission
- Store-and-Forward switching method
- Integrated address Look-Up Engine, supports 8K absolute MAC addresses
- Supports 512K Bytes data buffer per device
- Extensive front-panel diagnostic LEDs
- IEEE 802.3x flow control for full-duplex
- Back pressure flow control for half-duplex

UNPACKING AND SETUP

This chapter provides unpacking and setup information for the Switch.

Unpacking

Open the shipping carton of the Switch and carefully unpack its contents. The carton should contain the following items:

- One LevelOne GSW-0801T 8Port 10/100/1000T Gigabit Ethernet Switch
- Accessory pack: 2 mounting brackets and screws
- Four rubber feet with adhesive backing
- One AC power cord
- This user's guide

If any item is found missing or damaged, please contact your local reseller for replacement.

Setup

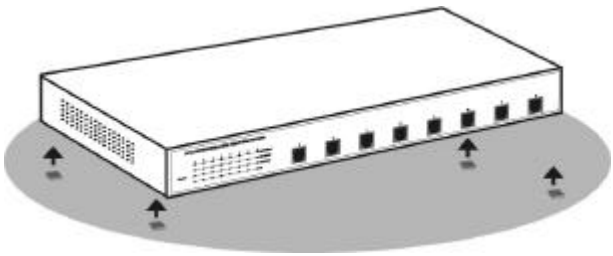
The setup of the LevelOne GSW-0801T 8Port 10/100/1000T Gigabit Ethernet Switch can be performed using the following steps:

- The surface must support at least 5 kg.

- The power outlet should be within 1.82 meters (6 feet) of the device.
- Visually inspect the power cord and see that it is secured fully to the AC power connector.
- Make sure that there is proper heat dissipation from and adequate ventilation around the Switch. Do not place heavy objects on the Switch.

Desktop or Shelf Installation

When installing the LevelOne GSW-0801T 8Port 10/100/1000T Gigabit Ethernet Switch on a desktop or shelf, the rubber feet included with the device must be first attached. Attach these cushioning feet on the bottom at each corner of the device. Allow enough ventilation space between the device and the objects around it.



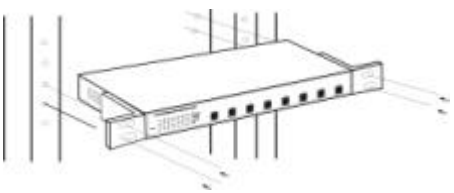
LevelOne 8Port 10/100/1000T Gigabit Ethernet Switch installed on a Desktop or Shelf

Rack Installation

The LevelOne GSW-0801T 8Port 10/100/1000T Gigabit Ethernet Switch can be mounted in an EIA standard size, 19-inch rack, which can be placed in a wiring closet with other equipment. To install, attach the mounting brackets on the switch's front panel (one on each side) and secure them with the screws provided.

Attaching the mounting brackets to the Switch

Then, use the screws provided with the equipment rack to mount the Switch in the rack.



Installing the Switch in an equipment rack

IDENTIFYING EXTERNAL COMPONENTS

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

Front Panel

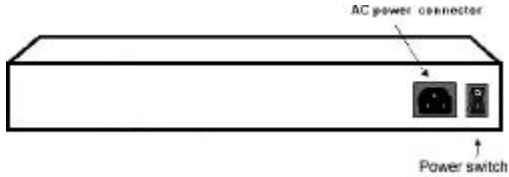
The front panel of the Switch consists of 8 1000BASE-T ports and LED indicators.

LevelOne GSW-0801T 8Port 10/100/1000T Gigabit Ethernet Switch Front Panel

- Eight Gigabit Ethernet ports of 10/100/1000Mbps Auto-Negotiation interface.
- Comprehensive LED indicators that display the conditions of the Switch and status of the network. A description of these LED indicators follows (see *LED Indicators*).

Rear Panel

The rear panel of the Switch consists of an AC power connector. The following shows the rear panel of the Switch.



Rear panel view of the Switch

- **AC Power Connector** This is a three-pronged connector that supports the power cord. Plug in the female connector of the provided power cord into this connector, and the male into a power outlet. Supported input voltages range from 100 ~ 240 VAC at 50 ~ 60 Hz.

LED Indicators

The LED indicators of the Switch include Power, 10/100/1000M Link/Act, and Full-Duplex/Collision. The following shows the LED indicators for the Switch along with an explanation of each indicator.

The Switch LED indicators

Per unit:

- **Power** This indicator lights green when the Switch is receiving power, otherwise, it is off.

Per port:

- **1000M LINK/ACT**. These LED indicators are lighted up when there is a secure connection (or link) to 1000Mbps Gigabit Ethernet device at any of the ports. The LED indicators blink whenever there is reception or transmission (i.e. Activity--Act) of data occurring at a port.
- **100M LINK/ACT**. These LED indicators are lighted up when there is a secure connection (or link) to 100Mbps Fast Ethernet device at any of the ports. The LED indicators blink whenever there is reception or transmission (i.e. Activity--Act) of data occurring at a port.
- **10M LINK/ACT**. These LED indicators are lighted up when there is a secure connection (or link) to 10Mbps Ethernet device at any of the ports. The LED indicators blink whenever there is reception or transmission (i.e. Activity--Act) of data occurring at a port.
- **FDX/COL.** These LED indicators are lighted up when there respective ports are in full duplex (FDX)

mode. Otherwise, there are blinking when collisions are occurring on there respective ports.

TECHNICAL SPECIFICATIONS

General		
Standards:	IEEE 802.3ab 1000BASE-T IEEE 802.3u 100BASE-TX IEEE 820.3 10BASE-T	
Protocol:	CSMA/CD	
Data Transfer Rate:	Ethernet:	10Mbps (Half-duplex) 20Mbps (Full-duplex)
	Fast Ethernet:	100Mbps (Half-duplex) 200Mbps (Full-duplex)
	Gigabit Ethernet:	1000Mbps (Half-duplex) 2000Mbps (Full-duplex)
Topology:	Star	
Network Cables:	Ethernet:	2-pair UTP Cat. 3,4,5, EIA/TIA-568 100-ohm screened twisted-pair (STP)

General		
	Fast Ethernet:	2-pair UTP Cat. 5, EIA/TIA-568 100-ohm screened twisted-pair (STP)
	Gigabit Ethernet:	4-pair UTP Cat. 5, EIA/TIA-568 100-ohm screened twisted-pair (STP)
Number of Ports:	Eight (8) 10/100/1000Mbps Auto-Negotiation ports	

Physical and Environmental	
AC inputs:	100 – 240 VAC Universal, 50/60 Hz
Power Consumption:	40 watts maximum
Operating Temperature:	0 ~ 50 degrees Celsius
Storage Temperature:	-10 ~ 55 degree Celsius
Humidity:	5% ~ 95% RH, non-condensing

Physical and Environmental	
Dimensions:	440 mm x 200 mm x 44 mm (1U), 19 inch rack-mount width
EMI:	FCC Class A, CE Mark Class A, VCCI Class A
Safety:	cUL, TUV/GS

Performance	
Transmission Method:	Store-and-forward
RAM Buffer:	512K Bytes per device
Filtering Address Table:	8K MAC address per device
Packet Filtering/Forwarding Rate:	Full wire speed
MAC Address Learning:	Self-learning, auto-aging