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**GEU-0822**  
**8-Port Gigabit Switch**

V1.2\_20151223

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# 1. INTRODUCTION

## 1.1 Product Briefs

The switch is a un-management layer 2 10/100/1000Mbps switch; it provide dedicated 10, 100 or 1000 Mbps Ethernet bandwidth on each port. The ports will automatically detect the speed, duplex and MDI/MDIX status of the device it is connecting to, and adjust these settings accordingly. The Switch ports can be used to network computers, printers, servers, routers, other switches or any device equipped with an Ethernet port. For best performance, use Category 5 or better Ethernet cabling.

This stand-alone Switch is very easy to set up, there is no network management required. Just power on the Switch and connect the cables. Keep in mind however that the standard rules of Ethernet regarding cable length apply to this and all Ethernet devices. The length of an Ethernet cable from one device to another cannot exceed 100 meters (or 300 feet).

## 1.2 Product Features

The Switches do not require any management. All Switches are designed for easy installation, flexibility and high performance. Connect devices to the Switch as the scale and volume of network traffic increases.

- 8 10/100/1000Mbps Ethernet ports
- Auto-Negotiation for 10/100/1000Mbps and duplex mode
- Auto-MDI/MDIX for each port
- Supports Full/Half-duplex transfer mode for 10 and 100Mbps
- Supports Full-duplex transfer mode for 1000Mbps
- Full wire speed reception and transmission
- Store-and-Forward Switching method
- Supports 8K absolute MAC addresses
- Switch Supports embedded SRAM for data buffering
- IEEE 802.3x flow control for Full-duplex
- Back pressure flow control for Half-duplex

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.

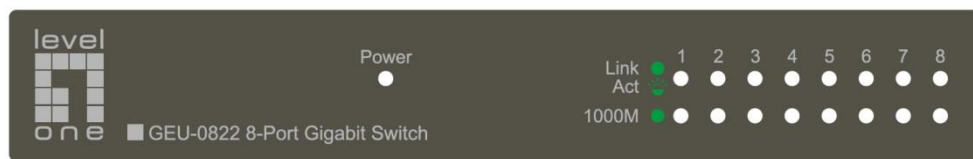
The increased speed and extra bandwidth offered by Gigabit Ethernet is essential to coping with the network bottlenecks that frequently develop as computers and their bus speeds get faster and more users use applications that generate more traffic. Upgrading key components, such as your backbone and servers to Gigabit Ethernet can greatly improve network response times as well as significantly speed up the traffic between your subnets.

## 1.3 Hardware Introduction

### 1.3.1 Product Appearance

#### 1. Front Panel

The figure below shows the front panel of the Switch.

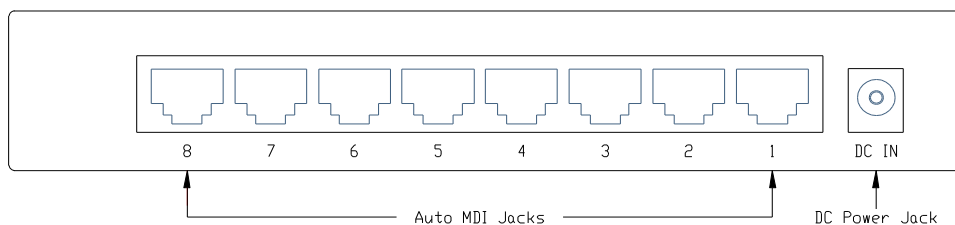


8-port Gigabit Switch Steel Front Panel

The first LED is Power Indicator and other five LEDs are Status Indicator. Details will be described in the next chapter See the chapter 1.3.2

#### 2. Rear Panel

The figure below shows the rear panel of the Switch, Including All MDI/MDI-X ports



8-port Switch Steel Rear Panel

Auto MDI/MDI-X Ports:

All ports support automatic MDI/MDI-X crossover detection. The AutoMDI/MDI-X function makes it simple to connect to the switch—just plug either a Crossover or Straight-Through CAT5 cable into any port.

### 1.3.2 LED Indicators

Table 1-3 Gigabit Ethernet Switch LED Indicators

LED	Panel signature	Status	Description
Power Indicator	Power	Green ON	Switch is powered ON
		OFF	Switch is powered OFF
Status Indicator	Link/Act	Green ON	Link
		Green Blinking	Activity
		OFF	No link path
Status Indicator	1000M	Green ON	1000Mbps Link
		OFF	10/100Mbps Link OR OFF

## 2. CONNECTING THE SWITCH

### 2.1 Package Contents

Open the shipping carton of the Switch and carefully unpack its contents.

The carton should contain the following items:

- One 8 Port 10/100/1000BASE-T Gigabit Ethernet Switch
- Power Adapter
- CD-ROM with Manual and QIG
- Quick Installation Guide

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

### 2.2 Before You Connect to the Network

The site where you install the Switch may greatly affect its performance. Please follow these guidelines for setting up the Switch.

- Install the Switch on a sturdy, level surface that can support at least 3 kg (6.6 lbs) of weight. Do not place heavy objects on the Switch.
- The power outlet should be within 1.82 meters (6 feet) of the Switch.
- Visually inspect the power cord and see that it is fully secured to the AC power port.
- Make sure that there is adequate space for proper heat dissipation from and adequate

ventilation around the Switch. Leave at least 10 cm (4 inches) of space at the front and rear of the Switch for ventilation.

- Install the Switch in a fairly cool and dry place for the acceptable temperature and humidity operating ranges.
- Install the Switch in a site free from strong electromagnetic field generators (such as motors), vibration, dust, and direct exposure to sunlight.
- When installing the Switch on a level surface, attach the rubber feet to the bottom of the device. The rubber feet cushion the Switch, protect the casing from scratches and prevent it from scratching other surfaces.

### 3. Connecting the switch

#### Cable Quality

For all connections to the Switch, use these rules to determine the Cable quality.

- For connections to 10BASE-T and 100BASE-TX devices, use Category 5 or 5e UTP/STP cable.
- For connections to 1000BASE-T and 100BASE-TX devices, use Category 5e or better UTP/STP cable. All 1000BASE-T connections operate in full duplex mode.



**NOTE:** UTP (Unshielded Twisted Pair) Ethernet cabling is adequate for most small office environments. More expensive STP (Shielded Twisted Pair) can also be used, but is generally only needed where there will be risk of strong Electromagnetic of Radio Frequency Interference.

- **PC to Switch**

A computer can be connected to the 8-Port 10/100/1000Mbps Switch via a two-pair Category 3, 4, 5 UTP/STP Straight-Through or Crossover cable. A computer equipped with a RJ-45 10/100/1000Mbps port can be connected to any of the five 8-Port 10/100/1000Mbps Switch ports.

The LED indicators for the PC connection depend on the capability of the computer's Ethernet card. If the LED indicators are not lit after making a proper connection, check the computer's Ethernet card, the cable, and the 8-Port 10/100/1000Mbps Switch's conditions and connections.

- **Hub to Switch**

A hub can be connected to the 8-Port 10/100/1000Mbps Switch via a two-pair Category 3, 4, or 5 UTP/STP Straight-Through or Crossover cable. For 1000Mbps operation a Category 5 cable must be used. The connection is accomplished from any port of the hub to any port of the 8-Port 10/100/1000 Mbps Switch.

- **Switch to other devices**

The 8-Port 10/100/1000Mbps Switch can be connected to another switch or other devices (routers, bridges, etc.) via a two-pair Category 3, 4, 5 UTP/STP Straight-Through or Crossover cable. A Category 5 cable must be used for 1000Mbps operation. The connection can be accomplished from any port on the 8-Port 10/100/1000Mbps Switch to any of the 10Mbps ,100Mbps or 1000Mbps ports on another switch or other devices.

- Port Speed & Duplex Mode

After plugging the selected cable to a specific port, the system uses auto-negotiation to determine the transmission mode, auto-detecting the network speed for any new twisted-pair connection.

If the attached device does not support auto-negotiation or has auto-negotiation disabled, an auto-sensing process is initiated to select the speed and half-duplex mode is selected.

## 4. Appendix

### 4.1 Technical Specifications

Table 4-1 Gigabit Ethernet Switch General Features

Specification	
Standards	IEEE 802.3 10BaseT IEEE 802.3u 100BaseTX IEEE 802.3ab 1000BaseT IEEE 802.3x Flow Control
Features	RJ-45 Ports: 8 MAC Address: 8K Buffer Memory: 128KB Jumbo Frames: 9K Transmission Method: Store and Forward
Filtering/Forwarding Rates	1000Mbps port – 1,488,000pps 100Mbps port - 148,800pps 10Mbps port - 14,880pps
Transmission Media	10BaseT Cat. 3, 4, 5 UTP/STP 100BaseTX Cat. 5 UTP/STP 1000BaseT Cat. 5E UTP/STP
Led Indicators	Per Port: Link/Act

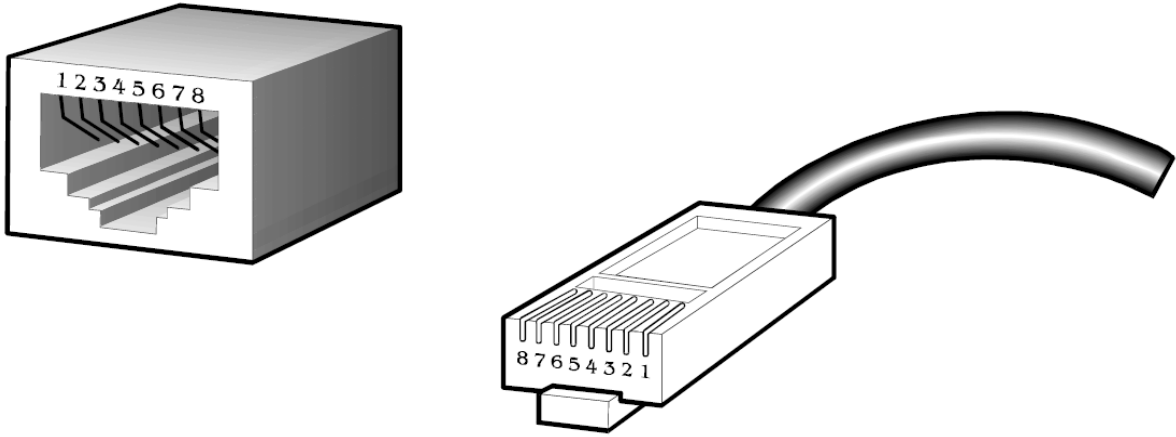
	Per Port:1000Mbps Link Per Unit: Power
Power Requirement	9V/1A
Power Consumption	< 5 Watts
Dimensions	137mm×75mm×25mm(L x W x H)
Weight	<=0.5 kg
Operating Temperature	0°C to 40°C
Storage Temperature	-20°C to 70°C
Humidity	Operating:10 to 90% RH (non-condensing) Storage: 5 to 95% RH (non-condensing)

## 4.2 RJ-45 PIN SPECIFICATION

The following diagram and tables show the standard RJ-45 receptacle/connector and their pin assignments.

RJ-45 Connector pin assignment	
Contact	Media Direct Interface Signal
1	TX_D1+
2	TX_D1-
3	RX_D2+
4	BI_D3+
5	BI_D3-
6	RX_D2-
7	BI_D4+
8	BI_D4-





Standard RJ-45 receptacle/connector