



DG-GS1510HPEV2 Switch
Hardware Installation Guide

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◇ Information of PoE Switch

This section explains the parameters of POE switch.

■ Standard configuration

POE switch standard ports consists of 3 parts: 8 Gigabit Ethernet interfaces with PoE, 2 Giga Ethernet SFP interfaces and 1 Console interface. Refer to the following table:

Features of standard ports:

Port name	Features
Gigabit Ethernet interfaces with PoE	PoE: IEEE 802.3af, Speed: 10/100/100M auto-sense, cable: MDI/MDIX, UTP (RJ45) interface with LINK/ACT, PoE indicator.
SFP interfaces	Speed: 1000M .
Console interface	Speed: 115200bps, RJ45 interface

Components of POE Switch front-panel:

NO.	Name		Description
1	PWR	Power indicator lights	Switch on and indicator lights.
2	Link/Act	Link and Act Indicator of each port.	Indicator lights when the linking is normal. Indicator blinks when data is being sent or received.
3	PoE	PoE Indicator of PoE port.	Indicator lights when PoE linking is normal

Components of POE Switch front-panel:

No.	Name	Explanation
1	AC connector	AC110~260V
2	Grounding bar	Please ground as needed.

■ POE Switch System Properties Parameters

Table of POE Switch property parameters:

Protocol	Standard	IEEE 802.1d Spanning Tree Protocol IEEE 802.1p Class of Service IEEE 802.1q tagged VLAN IEEE 802.3x Flow control IEEE 802.3ad Link aggregation IEEE 802.3af
	Network Management Standard	RFC 1213 MIB II RFC 1493 Bridge MIB RFC 1643 Ether-Like MIB
Hardware Features	CPU	200 MHz MIPS32
	Standard Components	8 10/100/1000M ports with PoE 2 1000M sfp fiber ports 1 Console port
	Temperature/Humidity for working	0°C~60°C; 10%~85% without air conditioning
	Temperature/Humidity for storage	-40°C~80°C; 5%~95% without air conditioning
	Power supply	Input Voltage: AC110~260V; Input frequency: 50/60Hz Input current: 3.6A/110V
	Power consumption	MAX:150W (PoE: 130W)

✧ Preparing for installation

The following discusses the considering cases of switch installation, includes two sections:

Please continue to read "switch Installation" after reading this section.

■ Safety notice

◆ Ensure safety as the following principals

- ✧ Keep the chassis areas clean and dust-free during and after installation;
- ✧ Put the cover in a safe place;
- ✧ Put the tools away from walk areas where you and others could fall over them;
- ✧ Do not wear loose clothing that could get caught in the chassis. Fasten your tie or scarf and roll up your sleeves.
- ✧ If the working environment could cause damage to your eyes, wear protection glasses;
- ✧ Do not do anything that causes damage to human or device.

◆ Safety warnings

Please follow the instructions below. Any mal-operation could cause damage to human;

- ✧ Read the installing instruction carefully before operating the system;
- ✧ Only qualified mechanics are allowed to install or replace the switch;
- ✧ Before working on a chassis or working near power supplies, unplug the power cord on AC units; disconnect the power at the circuit breaker on DC units.
- ✧ Unplug AC plug and disconnect DC connection before working on the case or near the power supply.
- ✧ Ultimate configuration of this product must follow all applicable national laws and regulations.

◆ Safety principal of operation with electricity

Follow these guidelines when working on equipment powered by electricity.

- ✧ Before working on equipment that is connecting to power lines , remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connect to the power and ground and can cause serious burns or can weld the metal objects to the terminals.
- ✧ Before working on a chassis or working near power supplies, unplug the power cord on AC units, disconnect the power at the circuit breaker on DC units.
- ✧ Do not touch the power supply when the power cord is connected .
- ✧ Incorrect connection of this or connected equipment to a general purpose outlet could result in a hazardous situation.

- ✧ Read the installation instructions carefully before you connect the system to its power source.

Notes:

- ✧ Look carefully for possible hazards in your working area, such as moist floors, ungrounded power extension cable, frayed power cord.
- ✧ Locate the emergency power off switch for the room in which you are working. Then, if an electrical accident occurs, you can act quickly to turn off the power.
- ✧ Power off the switch and unplug the power cord before doing the following:
- ✧ Installing or removing the chassis
- ✧ Working near power supply
- ✧ Do not work alone if potentially hazardous condition exists.
- ✧ Never assume that power is disconnected from a circuit. Always check.
- ✧ If an accident occurs, proceed as follows:
- ✧ Turn OFF power to the system
- ✧ Use caution
- ✧ Determine if the victim needs rescue breathing or external cardiac compression; then take appropriate action.
- ✧ If possible, send another person to get medical aids. Otherwise, assess the condition of the victim and then call for help.

◆ Preventing electrostatic discharge damage

Electrostatic discharge can damage equipment and impair electrical circuitry. It occurs when electronic components are improperly handled and can result in complete or intermittent failures.

Always follow electrostatic discharge prevention procedures when removing and replacing components. Ensure that the chassis is electrically connected to earth ground. Wear an ESD-preventive wrist strap, ensuring that it makes good skin contact. Connect the clip to an unpainted surface of the chassis frame to safely channel unwanted ESD voltages to ground. To properly guard against ESD damage and shocks, the wrist strap and cord must be used effectively. If no wrist strap is available, ground yourself by touching the metal part of the chassis.

■ General site requirements

This section describes the requirements your site must meet for safe installation and operation of your system. Ensure that your site is properly prepared before beginning installation.

◆ Site environment

The switch can be placed on a desktop or mounted in a rack. The location of the chassis and the layout of your equipment rack or wiring room are extremely important for proper system operation. Placing equipment too close together, inadequate ventilation, and inaccessible panels can make system maintenance or cause system malfunctions and shutdown.

When planning your site layout and equipment locations, remember the precautions described in the next section, "Preventive Site Configuration". If you are experiencing shutdowns or unusually high errors with your existing equipment, these precautions might help you isolate the cause of failures and prevent future problems.

◆ Preventive site configuration

The following precautions will help you plan an acceptable operating environment for your switch and help you avoid environmentally-caused equipment failures:

- ✧ Ensure that the room in which you operate your system has adequate air circulation. Electrical equipment generates heat. Ambient air temperature might not be able to cool equipment to acceptable operating temperatures without adequate circulation.
- ✧ Always follow the ESD-prevention procedures to avoid damage to equipment. Damage from static discharge can cause immediate or intermittent equipment failure.
- ✧ The chassis is designed to allow cooling air to flow effectively inside it. An open chassis allows air leaks, which might interrupt and redirect the flow of cooling air from internal components.

◆ Configuring Equipment rack

The following information will help you plan an acceptable equipment rack configuration.

- ✧ The equipment in the rack will heat when working. So enclosed racks must have adequate ventilation. The equipment should not be put too close to each other to ensure the racks are not overheat.
- ✧ When mounting a chassis in an open rack ensure that the rack frame does not lock the intake or the exhaust ports. So check the position of the chassis when it is seated all the way into the rack.
- ✧ Ensure that you provide adequate ventilation for equipment at the bottom of rack.
- ✧ Baffles can help to isolate exhaust air from intake air, which also helps to draw cooling air through the chassis. The best placement of the chassis on the airflow in the rack, which can be found by experimenting with different arrangements.

◆ Power supply condition

Check the power at your site to ensure that you are receiving "clean" power. Install a power conditioner if necessary. Ensure that a fuse or circuit breaker no larger than 240V, 10A in terminal is used on the phase conductors.

Warning:

If the power system does not connect to the earth properly, the variables of input power are big or exist excess pulse, it will add error ratio of communication equipment, even to damage the hardware system.

✧ Installing switch

This section explains the detail of POE Switch installation:

Warning:

Only qualified mechanics are allowed to install or replace the device.

■ Installation tools and devices

Tools and devices needed for POE switch are optional devices. Users have to buy according to their needs. The following tools and devices are typical for POE switch:

- ✧ screw driver
- ✧ static ring
- ✧ screws
- ✧ Ethernet Cable
- ✧ other Ethernet terminal devices
- ✧ console terminal

■ Switch Case Installation

Switches can be place on the table, mounting or other surfaces. To install your network correctly, follow the steps in this section. The content includes:

◆ Install on the desk

POE Switch can be placed on a smooth and safe desk.

Note:

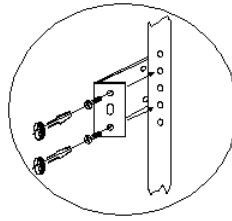
Do not press on the switch. Any pressure more than 4.5kg may cause damage to switch.

◆ Install on the mounting

Switches are mounted on the mounting with brackets.Fixed the mounting and the switches face the front. Operate follows:



Mount the switch after the brackets are fixed. Refer to the following illustration:

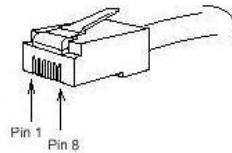


■ Connecting Console port

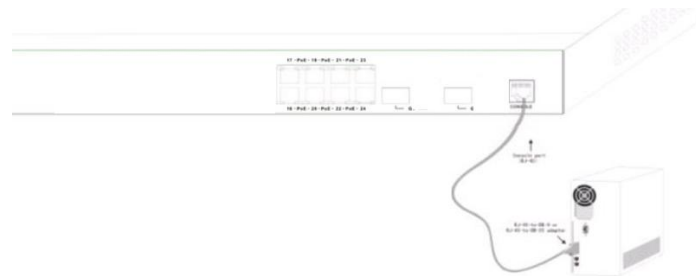
There is a console port on POE switch. This section explains the features and usage of the port.

Speed: 115200bps, standard RJ 45 plug. Use dedicated cable to connect the port to PC parallel port. Use terminal software (such as Windows super terminal) to configure and monitor operations. Cable is provided with host. Terminal parallel communication parameters can be set as: baud rate 115200bps, 8-bit data, 1 stop bit, no parity bit.

Console port uses RJ-45 connectors shown as follows. There are 8pin RJ-45 connectors.



POE switch console port and computer connection:



Console port pins are as follows:

Pin No.	Description	Name	Note
1	Carrier detect	CD	No connect
2	Received data	RXD	Input
3	Data set ready	DSR	No connect
4	Transmitted data	TXD	Output
5	request to send	RTS	No connect
6	clear to send	CTS	No connect
7	Data terminal ready	DTR	No connect
8	signal ground	SG	GND

Note:

DG-GS1510HPEV2 switch Console Port does not support flow control. Therefore, “Data Flow Control” should be set “No” while using super terminal to manage switch.

◆ Console port connection

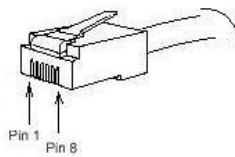
This cable is used to connect POE switch console port to external terminal. One end is RJ45 8-pin plug. The other end is 9 –hole (DB9) plugs. RJ45 connector plugs into POE switch console port. Use DB9 according to the terminal parallel port. The side of the cable is shown as follows. The product No. of this cable is RLC0301.

Console port pins are as follows:

Pin No.	Description	Name	Note
1	No connect	NC	No connect
2	No connect	NC	No connect
3	Received data	RXD	Input
4	signal ground	GND	GND
5	No connect	NC	No connect
6	Transmitted data	TXD	Output
7	No connect	NC	No connect
8	No connect	NC	No connect

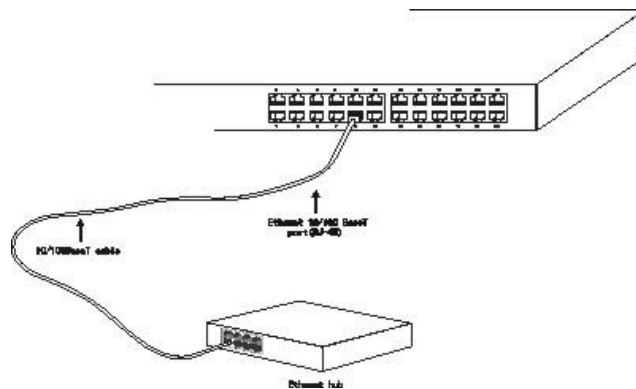
■ Connecting Gigabit Ethernet Interface

POE switch provides 8 10/100/1000M ports. Each port is embedded with 2 LEDs to indicate the statuses of Link/ACT and PoE. Use switch UTP to connect to other Ethernet terminals. UTP no. and console no. are the same. Refer to the following chart..



All of the 8 10/100/1000M ports of POE switch support auto-MDIX. Choose the connection which best fits the connection between POE switch and Ethernet terminal.

10/100/1000M ports and other Ethernet terminal connection is shown as follows:



UTP port explanation is shown as follows:

Pin NO.	Description	Name	Note
1	Data transmission positive and PoE	TPTXD1+	Output
2	Data transmission negative and PoE	TPTXD1-	Output
3	Data receive positive and PoE	TPRXD2+	Input
6	Data receive negative and PoE	TPRXD2-	Input
4	Data Bi-directional positive	BI_D3+	Bidirectional
5	Data Bi-directional negative	BI_D3-	Bidirectional
7	Data Bi-directional positive	BI_D4+	Bidirectional
8	Data Bi-directional negative	BI_D4-	Bidirectional

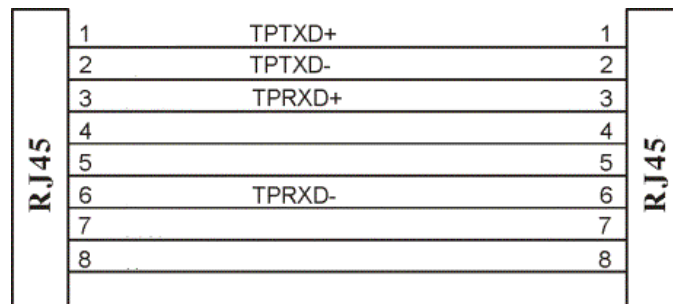


Figure 0-1 Parallel connection UTP5

Note:

Cable connection and colors follow the regulations in EIA/TIA 568A.

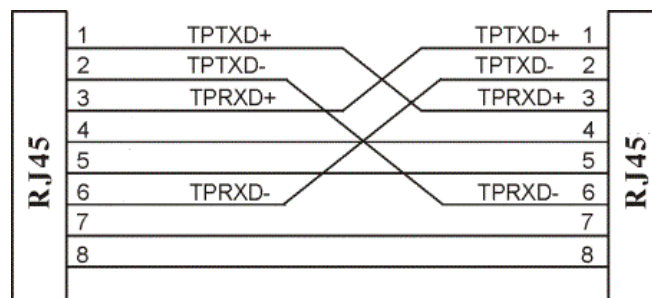


Figure 0-2 Cross connection UTP5



Note:

Cable colors follow the regulation in EIA/TIA 568B.

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❖ Hardware Troubleshooting

■ Trouble analyzing

The key to troubleshooting is to separate trouble from the system. By analyzing what system should do and what system is doing, troubleshooting becomes easy. Think of the following systems while analyzing troubles:

- ❖ Power and cooling system—Power and cooling fan;
- ❖ Ports, cables and connections—ports on the front panel of the switch and cables connected to the ports.

◆ Power and cooling system breakdown

Examine the following conditions to separate troubles:

- ❖ The power is “ON”. Make sure the cooling fan is working normally. If cooling fan is not working normally, check the fan;
- ❖ Examine the environment. The switch cannot be overheated. Make sure the inhale and exhale hole of the switch is clean. Refer to “General Requirement for Working Environment”. The temperature of the switch working environment is 0-40°C (32-104 °F).
- ❖ If switch is not working and “PWR” indicator is not light, check the power supply.

◆ Ports, cables and connections breakdown

To separate problems, check the follow status:

- ❖ If switch port is unable to link, check the connection. Make sure the connection is normal;
- ❖ If the power is “ON”, check the power supply and power cord;
- ❖ If the system is working but the console port is not, make sure the console port configurations are as follows: 9600 baud rate, 8-bit data bit, no parity bit, 1 stop bit and no flow control.

■ LEDs

LEDs indicates what switches are doing. POE switch LED and functions are as follows:

NO.	Name	Description	Note
1	PWR	Power indicator lights	Switch on and indicator lights.
2	Link/Act	Link and Act Indicator of each port.	Indicator lights when the linking is normal. Indicator blinks when data is being sent or received.
3	PoE	PoE Indicator of PoE	Indicator lights when PoE linking is normal

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