16-Port 10/100/1000Mbps 802.3at PoE+ Ethernet Switch

GSW-1600HP

User's Manual

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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.

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.

Energy Saving Note of the Device

This power required device does not support Standby mode operation.

For energy saving, please remove the power cable to disconnect the device from the power circuit.

Without removing power cable, the device will still consuming power from the power source. In the view of Saving the Energy and reduce the unnecessary power consuming, it is strongly suggested to remove the power connection for the device if this device is not intended to be active.

WEEE Warning

To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

Revision

PLANET 16-Port 10/100/1000Mbps 802.3at PoE+ Ethernet Switch User's Manual
For Model: GSW-1600HP

Revision: 1.0 (February, 2013)

Part No.: 2351-AK5020-000

Table of Contents

1. Introduction

1.1 Checklist

Check the contents of your package for following parts:

- GSW-1600HP x 1

- User's Manual x 1

- Power Cord x 1

- Rubber Feet x 4

- Two Rack-mounting Brackets with Attachment Screws x 8

If any of these pieces are missing or damaged, please contact your dealer immediately, if possible, retain the carton including the original packing material, and use them against to repack the product in case there is a need to return it to us for repair.

In the following section, the term **"802.3at PoE+ Ethernet Switch"** means the Switch device, ie. GSW-1600HP; term of **"switch"** can be any third switches.

1.2 Product Description

Centralized Power Management for Gigabit Ethernet PoE Networking

To fulfill the needs of higher power required PoE network applications with Gigabit speed transmission, the **16-Port Gigabit High Power over Ethernet Switch – GSW-1600HP** which features high performance Gigabit **IEEE 802.3af PoE (Up to 15.4W)** and **IEEE 802.3at High-Power PoE (Up to 30.8W)** on all ports. By supporting reliable switching technology and advanced networking features which optimize the installation and power management of network devices such as wireless access points (AP), Voice over IP (VoIP) phones, and security video cameras. The PoE capabilities also help to reduce deployment costs for network devices like the wireless AP as a result of freeing from restrictions of power outlet locations. Power and data switching are integrated into one unit and delivered over a single cable. It thus eliminates cost for additional AC wiring and reduces installation time.

Perfect Integration Solution for IP PoE Camera and NVR System

The GSW-1600HP provides 16 10/100/1000Mbps 802.3at PoE ports, it offer sufficient PoE power for 16 IEEE 802.3af PoE IP camera devices at the same time. The GSW-1600HP also can support for connecting to one 16-Channel NVR or two 8-Channel NVR systems, also uplink to backbone switch and monitor center. With high performance switch architecture, the recorded video files from 16 IEEE 802.3af PoE IP Camera devices can be saved in the NVR systems; the NVR systems can be

controlled and monitored both in the local LAN and the remote site via Internet, the GSW-1600HP brings an ideal secure surveillance system with lower total cost.

Energy-Saving

The GSW-1600HP uses new engine that incorporates one advanced Green Networking technologies:

■ **Idle Mode Link Down power saving**

■ **Intelligent Scales Power based on cable length**

The Idle mode Link Down power saving of the GSW-1600HP complies with Pre-IEEE 802.3az Energy Efficient Ethernet (EEE) standard to automatically lower power for a given port when it is not linked. The Intelligent Scales Power technology actively determines the appropriate power level based on the cable length. When connecting to the GSW-1600HP with Ethernet cable shorter than 20m, a device can obtain maximum power saving because the GSW-1600HP would automatically detect the Ethernet cable length and reduce power usage. The connected device can substantially reduce overall power consumption, which makes a significant contribution to energy saving.

Easy Installation & Cable Connection

Providing data transfer and High Power PoE in one unit, the GSW-1600HP shall reduce the need of extension cables and dedicated electrical outlets on the wall, ceiling or any unreachable place. It helps to lower the installation costs and simplify the installation effort. All RJ-45 copper interfaces in the GSW-1600HP supports 10/100/1000Mbps Auto-Negotiation for optimal speed detection through RJ-45 Category 6, 5 or 5e cables. It also supports standard Auto-MDI/MDI-X that can detect the type of connection to any Ethernet device without requiring special straight or crossover cables.

1.3 Features

■ **RJ-45 Interface**

❏ 16-Port 10/100/1000Mbps Gigabit Ethernet ports

❏ 16-Port supports 52V DC power to PoE Powered Device

■ **Power over Ethernet**

❏ Comply with IEEE 802.3af / IEEE 802.3at Power over Ethernet

❏ Up to 16 IEEE 802.3af / IEEE 802.3at devices powered

❏ Supports PoE Power up to 30 Watts for each PoE port

❏ Auto detect powered device (PD)

❏ Circuit protection prevents power interference between ports

❏ Remote power feeding up to 100m

■ Switching

- ❏ Hardware based 10/100/1000Mbps Auto-Negotiation and Auto MDI/MDI-X
- ❏ Flow control for Full Duplex operation and back pressure for Half Duplex operation
- ❏ Integrates address look-up engine, supporting 8K absolute MAC addresses
- ❏ 9K Jumbo Frame supports at all speed (10/100/1000Mbps)
- ❏ Automatic address learning and address aging
- ❏ Supports Pre-Energy-Efficient Ethernet (EEE) function (IEEE 802.3az)

■ Hardware

- ❏ 19-inch desktop size, 1U height
- ❏ LED indicators for PoE ready and PoE activity
- ❏ Ethernet Link Energy-Saving technology
    - ◆ Link down power saving
    - ◆ Intelligent scales power based on cable length

1.4 Specification

Model	**GSW-1600HP** 16-Port 10/100/1000Mbps 802.3at PoE+ Ethernet Switch
Hardware Specification	
Network Connector	16-Port RJ-45 for 10/100/1000Base-TX
PoE Inject Port	16-Port with 802.3af / 802.3at PoE injector function
LED Display	**System:** Power (Green) **PoE Ethernet Interfaces** PoE In-Use (Orange) **10/100/1000Base-T Ports** 1000 (LNK/ACT, Green), 10/100 (LNK/ACT, Orange)
Switch Architecture	Store and Forward switch architecture
MAC Address	8K MAC address table with Auto learning function
Switch Fabric	32Gbps
Switch Throughput	23.8Mpps@64Bytes
Jumbo Packet Size	9K Bytes
Flow Control	Back pressure for Half-Duplex. IEEE 802.3x Pause Frame for Full-Duplex

Power Requirement	AC 100~240V, 50/60Hz, 3.5A max.
Power Consumption	Max. 260 Watts / 885 BTU
Dimension (W x D x H)	445 x 207 x 45 mm (1U height)
Weight	2.54kg
Power over Ethernet	
PoE Standard	IEEE 802.3af Power over Ethernet / PSE IEEE 802.3at Enhancement Power over Ethernet / PSE
PoE Power Output	Per Port 52V DC, 300mA. Max. 15.4 Watts (IEEE 802.3af) Per Port 52V DC, 590mA. Max. 30 Watts (IEEE 802.3at)
PoE Power Budget	220 Watts
Number of PD, 7Watts	16
Number of PD, 15.4Watts	14
Number of PD, 30.8Watts	7
Environment	
Operating environment	0 ~ 50 Degree C
Storage environment	-40 ~ 70 Degree C
Operating Humidity	5 ~ 95%, relative humidity, non-condensing
Storage Humidity	5 ~ 95%, relative humidity, non-condensing
Standard Conformance	
Standard Compliance	IEEE 802.3 Ethernet IEEE 802.3u Fast Ethernet IEEE 802.3x Flow Control IEEE 802.3af Power over Ethernet IEEE 802.3at Enhancement Power over Ethernet IEEE 802.3az Pre-Energy-Efficient Ethernet
Regulation Compliance	FCC Class A, CE

2. Hardware Description

This product provides three different running speeds – 10Mbps, 100Mbps and 1000Mbps in the same switch and automatically distinguishes the speed of incoming connection.

This section describes the hardware features of GSW-1600HP. For easier management and control of the Switch, familiarize yourself with its display indicators, and ports. Front panel illustrations in this chapter display the unit LED indicators. Before connecting any network device to the GSW-1600HP, please read this chapter carefully.

2.1 Front Panel

The Front Panel of the GSW-1600HP 802.3at PoE+ Ethernet Switch consists of 16 x Auto-Sensing 10/100/1000Mbps Ethernet RJ-45 Ports. The LED Indicators are also located on the front panel of the GSW-1600HP.

Figure 2-1: GSW-1600HP Switch Front Panel

2.1.1 LED Indicators

System

LED	Color	Function
PWR	Green	**Light:** Indicate the Switch has power.

Per 10/100/1000Mbps Port

LED	Color	Function
1000 LNK/ACT	Green	**Light:** Indicate the link through that port is successfully established at 1000Mbps. **Blink:** Indicate that the Switch is actively sending or receiving data over that port.
10/100 LNK/ACT	Orange	**Light:** Indicate the link through that port is successfully established at 10/100Mbps. **Blink:** Indicate that the Switch is actively sending or receiving data over that port.
PoE In Use	Orange	**Light:** Indicate the port is providing 52V DC in-line power.

2.2 Rear Panel

The rear panel of the GSW-1600HP PoE Fast Ethernet Switch indicates an AC inlet power socket, which accepts input power from 100 to 240V AC, 50-60Hz, 3.5A.

Figure 2-2: GSW-1600HP Switch Rear Panel

Power Notice	1. The device is a power-required device, it means, it will not work till it is powered. If your networks should active all the time, please consider using UPS (Uninterrupted Power Supply) for your device. It will prevent you from network data loss or network downtime. 2. In some area, installing a surge suppression device may also help to protect your GSW-1600HP from being damaged by unregulated surge or current to the GSW-1600HP or the power adapter.

3. Hardware Installation

Start up

Please refer to the followings for your cabling:

10/100/1000Base-TX

All 10/100/1000Base-T ports come with Auto-Negotiation capability. They automatically support 1000Base-T, 100Base-TX and 10Base-T networks. Users only need to plug a working network device into one of the 10/100/1000Base-T ports, and then turn on the GSW-1600HP. The port will automatically runs in 10Mbps, 20Mbps, 100Mbps or 200Mbps and 1000Mbps or 2000Mbps after the negotiation with the connected device.

Cabling

Each 10/100/1000Base-T ports use RJ-45 sockets -- similar to phone jacks -- for connection of unshielded twisted-pair cable (UTP). The IEEE 802.3 / 802.3u 802.3ab Fast / Gigabit Ethernet standard requires Category 5 UTP for 100Mbps 100Base-TX. 10Base-T networks can use Cat.3, 4, 5 or 1000Base-T use 5/5e/6 UTP (see table below). Maximum distance is 100meters (328 feet).

Port Type	Cable Type	Connector
10Base-T	Cat. 3, 4, 5, 2-pair	RJ-45
100Base-TX	Cat. 5, 5e UTP, 4-pair	RJ-45
1000Base-T	Cat.5/5e/6 UTP, 4-pair	RJ-45

Any Ethernet devices like hubs/ PCs can connect to the GSW-1600HP by using straight-through wires. The eight-10/100Mbps ports are auto-MDI/MDI-X can be used on straight-through or crossover cable.

3.1 Desktop Installation

To install the 802.3at PoE+ Ethernet Switch on desktop, simply follow the next steps:

Step1: Attach the rubber feet to the recessed areas on the bottom of the 802.3at PoE+ Ethernet Switch, as shown in Figure 3-1.
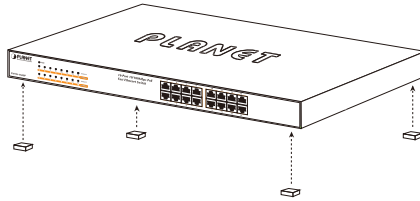

Figure 3-1: Attaching the Rubber Feet to the 802.3at PoE+ Ethernet Switch

Step2: Place the 802.3at PoE+ Ethernet Switch on desktop near an AC power source.

Step3: Keep enough ventilation space between the 802.3at PoE+ Ethernet Switch and the surrounding objects.

Note	When choosing a location, please keep in mind the environmental restrictions discussed in Chapter 1, Section 4, in Specification.

Step4: Connect your 802.3at PoE+ Ethernet Switch to 802.3af / 802.3at complied Power Devices (PD) and other network devices.

    A. Connect one end of a standard network cable to the 10/100/1000 RJ-45 ports at front panel of the 802.3at PoE+ Ethernet Switch.

    B. Connect the other end of the cable to the network devices such as printer servers, workstations or routers…etc.

Note	Connection to the Switch requires UTP Category 5, 5e, 6 network cabling with RJ-45 tips. For more information, please see the Cabling Specification in Appendix A.

Step5: Supply power to the 802.3at PoE+ Ethernet Switch.

    A. Connect one end of the power cable to the 802.3at PoE+ Ethernet Switch.

    B. Connect the power plug of the power cable to a standard wall outlet.

When the 802.3at PoE+ Ethernet Switch receives power, the Power LED should remain solid Green.

3.2 Rack Mounting

To install the 802.3at PoE+ Ethernet Switch in a 19-inch standard rack, follow the instructions described below.

Step1: Place your 802.3at PoE+ Ethernet Switch on a hard flat surface, with the front panel positioned towards your front side.

Step2: Attach a rack-mount bracket to each side of the 802.3at PoE+ Ethernet Switch with supplied screws attached to the package. Figure 3-2 shows how to attach brackets to one side of the 802.3at PoE+ Ethernet Switch.
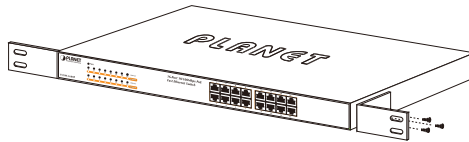

Figure 3-2: Attaching the Brackets to the 802.3at PoE+ Ethernet Switch.

You must use the screws supplied with the mounting brackets. Damage caused to the parts by using incorrect screws would invalidate the warranty.

Step3: Secure the brackets tightly.

Step4: Follow the same steps to attach the second bracket to the opposite side.

Step5: After the brackets are attached to the Switch, use suitable screws to securely attach the brackets to the rack, as shown in Figure 3-3.
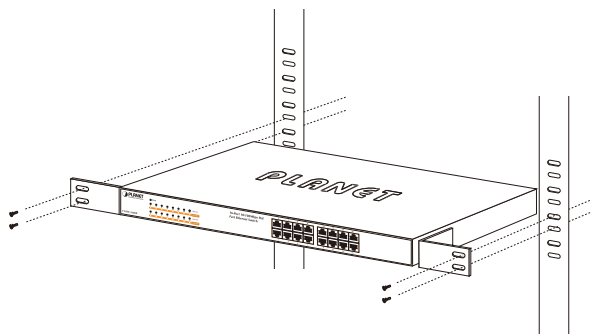
Figure 3-3: Mounting the 802.3at PoE+ Ethernet Switch in a Rack

Step6: Proceeds with the steps 4 and steps 5 of session 3.1 Desktop Installation to connect the network cabling and supply power to your Switch.

3.3 Product Application

Department/ Workgroup PoE Switch:

Providing 16-Port PoE in-line power interfaces, the GSW-1600HP can easily build a power centrally-controlled IP phone system, IP Camera system and Wireless AP group for the enterprise. Cameras can be installed around the corner in the company or campus for surveillance demands. Without the power-socket limitation, the Switch makes the installation of cameras more easily and efficiently.
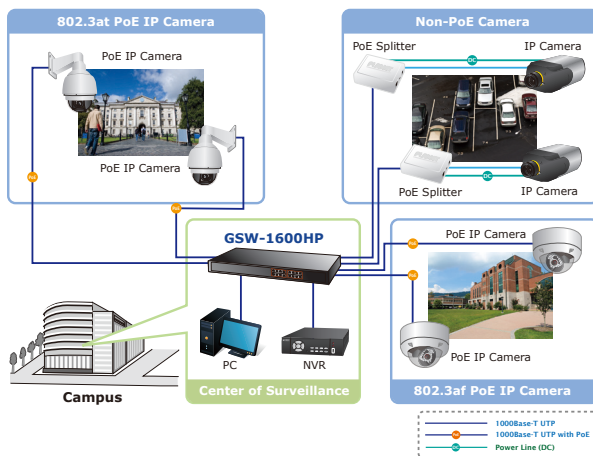

Figure 3-4: Department / Workgroup PoE Switch Connection

3.4 Power over Ethernet Powered Device

3~5 Watts	**Voice over IP phones** Enterprise can install POE VoIP Phone, ATA and other Ethernet/non-Ethernet end-devices to the central where UPS is installed for un-interrupt power system and power control system.
6~12 Watts	**Wireless LAN Access Points** Museum, Sightseeing, Airport, Hotel, Campus, Factory, Warehouse can install the Access Point any where with no hesitation.
10~12 Watts	**IP Surveillance** Enterprise, Museum, Campus, Hospital, Bank, can install IP Camera without limits of install location – no need electrician to install AC sockets.
3~12 Watts	**PoE Splitter** PoE Splitter split the PoE 48V DC over the Ethernet cable into 5/12V DC power output. It frees the device deployment from restrictions due to power outlet locations, which eliminate the costs for additional AC wiring and reduces the installation time.
30 Watts	**High Power Speed Dome** This state-of-the-art design is considerable to fit in various network environments like traffic centers, shopping malls, railway stations, warehouses, airports, and production facilities for the most demanding outdoor surveillance applications- no need electrician to install AC sockets.

Note	Since the GSW-1600HP per PoE port supports 51V DC PoE power output, please check and assure the Powered Device (PD) acceptable DC power range is from 51V DC. Otherwise, it will damage the Powered Device (PD).

4. Power over Ethernet Overview

What is PoE?

The PoE is an abbreviation of Power over Ethernet; the PoE technology means a system to pass electrical power safely, along with data on Ethernet UTP cable. The IEEE standard for PoE technology requires Category 5 cable or higher for high power PoE levels, but can operate with category 3 cable for low power levels. Power is supplied in common mode over two or more of the differential pairs of wires found in the Ethernet cables and comes from a power supply within a PoE-enabled networking device such as an Ethernet switch or can be injected into a cable run with a mid-span power supply.

The original IEEE 802.3af-2003 PoE standard provides up to 15.4 W of DC power (minimum 44V DC and 350mA) to each device. Only 12.95 W is assured to be available at the powered device as some power is dissipated in the cable.

The updated IEEE 802.3at-2009 PoE standard also known as PoE+ or PoE plus, provides up to 25.5 W of power. The 2009 standard prohibits a powered device from using all four pairs for power

The 802.3af / 802.3at define two types of source equipment: Mid-Span and End-Span.

Mid-Span

Mid-Span device is placed between legacy switch and the powered device. Mid-Span is tap the unused wire pairs 4/5 and 7/8 to carry power, the other four is for data transmit.

End-Span

End-Span device is direct connecting with power device. End-Span could also tap the wire 1/2 and 3/6.

PoE System Architecture

The specification of PoE typically requires two devices: the **Powered Source Equipment (PSE)** and the **Powered Device (PD)**. The PSE is either an End-Span or a Mid-Span, while the PD is a PoE-enabled terminal, such as IP Phones, Wireless LAN, etc. Power can be delivered over data pairs or spare pairs of standard CAT-5 cabling.

Powered Source Equipment (PSE)

Power sourcing equipment (PSE) is a device such as a switch that provides (sources) power on the Ethernet cable. The maximum allowed continuous output power per cable in IEEE 802.3af is 15.40 W. A later specification, IEEE 802.3at, offers 25.50 W. When the device is a switch, it is commonly called an End-span (although IEEE 802.3af refers to it as endpoint). Otherwise, if it's an intermediary device between a non PoE capable switch and a PoE device, it's called a Mid-span. An external PoE injector is a Mid-span device.

Powered device

A powered device (PD) is a device powered by a PSE and thus consumes energy. Examples include wireless access points, IP Phones, and IP cameras. Many powered devices have an auxiliary power connector for an optional, external, power supply. Depending on the PD design, some, none, or all power can be supplied from the auxiliary port, with the auxiliary port sometimes acting as backup power in case of PoE supplied power failure.

How is the Power Transferred Through the Cable

A standard CAT5 Ethernet cable has four twisted pairs, but only two of these are used for 10BASE-T and 100BASE-TX. The specification allows two options for using these cables for power, shown in Figure 1 and Figure 2:

The spare pairs are used. Figure 1 shows the pair on pins 4 and 5 connected together and forming the positive supply, and the pair on pins 7 and 8 connected and forming the negative supply. (In fact, a late change to the spec allows either polarity to be used).
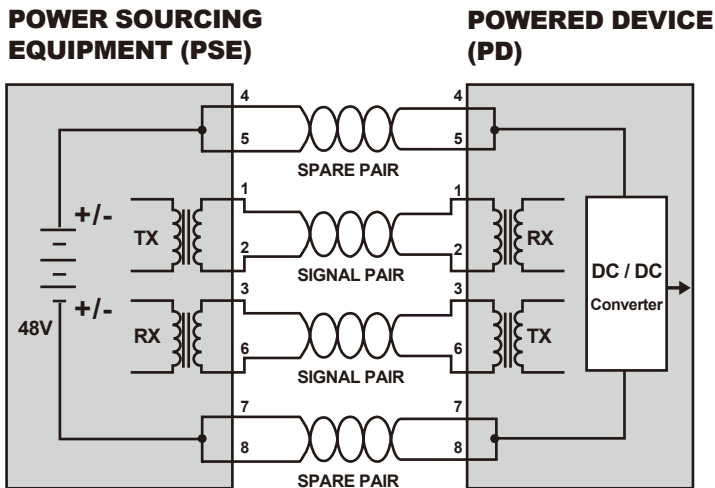

Figure 1 - Power Supplied over the Spare Pins

The data pairs are used. Since Ethernet pairs are transformer coupled at each end, it is possible to apply DC power to the center tap of the isolation transformer without upsetting the data transfer. In this mode of operation the pair on pins 3 and 6 and the pair on pins 1 and 2 can be of either polarity.
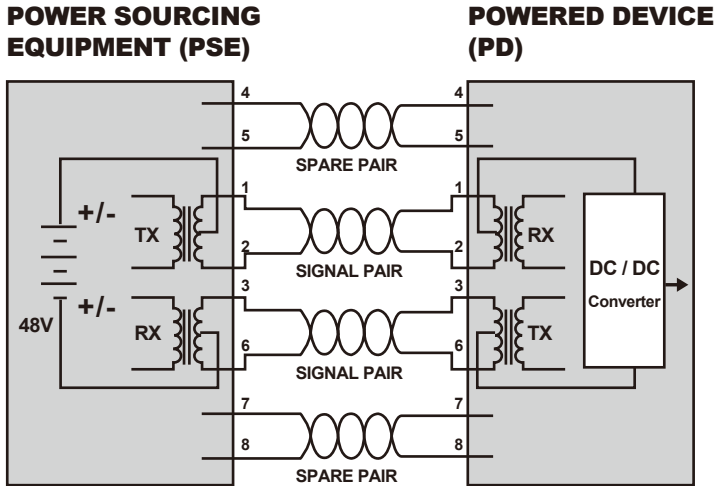
POWER SOURCING EQUIPMENT (PSE)   **POWERED DEVICE (PD)**

Figure 2 - Power Supplied over the Data Pins

When to install PoE?

Consider the following scenarios:

● You're planning to install the latest VoIP Phone system to minimize cabling building costs when your company moves into new offices next month.

● The company staff has been clamoring for a wireless access point in the picnic area behind the building so they can work on their laptops through lunch, but the cost of electrical power to the outside is not affordable.

● Management asks for IP Surveillance Cameras and business access systems throughout the facility, but they would rather avoid another electrician's payment.

5. Troubleshooting

This chapter contains information to help you solve issues. If the 802.3at PoE+ Ethernet Switch is not functioning properly, make sure the 802.3at PoE+ Ethernet Switch was set up according to instructions in this manual.

The Link LED is not light

Solution:

Check the cable connection and also try to swap one new cable.

1000Base-TX port link LED is light, but the traffic is irregular

Solution:

Check that the attached device is not set to dedicate full duplex. Some devices use a physical or software switch to change duplex modes. Auto-negotiation may not recognize this type of full-duplex setting.

Why the Switch doesn't connect to the network

Solution:

Check the LNK/ACT LED on the switch Try another port on the Switch Make sure the cable is installed properly Make sure the cable is the right type Turn off the power. After a while, turn on power again.

Why connects PoE device to GSW-1600HP and it cannot power on?

Solution:

Please check the cable type of the connection from GSW-1600HP (port 1 to port 16) to the other end. The cable should be an 8-wire UTP, Category 5 or above, EIA568 cable within 100 meters. A cable with only 4-wire, short loop or over 100 meters, all will affect the power supply.

Please check and assure the device that fully complied with IEEE 802.3af / IEEE 802.3at standard.

What is the power output of each PoE port?

Solution:

1. Each PoE port supports **52V DC, 590mA, max 30 Watts** power output. Detect and inject by the standard of IEEE 802.3at.

2. Each PoE port supports **52V DC, 300mA, max 15.4 Watts** power output. Detect and inject by the standard of IEEE 802.3af.

Appendix a networking connection

A.1 Switch's Data RJ-45 Pin Assignments - 1000Mbps, 1000Base-T

| PIN NO	MDI	MDI-X
1	BI_DA+	BI_DB+
2	BI_DA-	BI_DB-
3	BI_DB+	BI_DA+
4	BI_DC+	BI_DD+
5	BI_DC-	BI_DD-
6	BI_DB-	BI_DA-
7	BI_DD+	BI_DC+
8	BI_DD-	BI_DC-

Implicit implementation of the crossover function within a twisted-pair cable, or at a wiring panel, while not expressly forbidden, is beyond the scope of this standard.

A.2 10/100Mbps, 10/100Base-TX

When connecting Switch to another Fast Ethernet switch, a straight or crossover cable might necessary. Each port of the Switch supports auto-MDI/MDI-X detection. That means you can directly connect the Switch to any Ethernet devices without making a crossover cable. The following table and diagram show the standard RJ-45 receptacle/connector and their pin assignments:

RJ-45 Connector pin assignment		
Contact	MDI Media Dependant Interface	MDI-X Media Dependant Interface-Cross
1	Tx + (transmit)	Rx + (receive)
2	Tx - (transmit)	Rx - (receive)
3	Rx + (receive)	Tx + (transmit)
4, 5	Not used	
6	Rx - (receive)	Tx - (transmit)
7, 8	Not used	

The standard cable, RJ-45 pin assignment
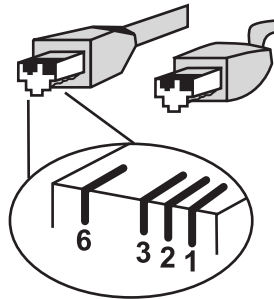
The standard RJ-45 receptacle/connector

There are 8 wires on a standard UTP/STP cable and each wire is color-coded. The following shows the pin allocation and color of straight cable and crossover cable connection:

		SIDE 1	SIDE 2
Straight Cable		1 = White/Orange	1 = White/Orange
	SIDE 1	2 = Orange	2 = Orange
1 2 3 4 5 6 7 8		3 = White/Green	3 = White/Green
		4 = Blue	4 = Blue
		5 = White/Blue	5 = White/Blue
1 2 3 4 5 6 7 8	SIDE 2	6 = Green	6 = Green
		7 = White/Brown	7 = White/Brown
		8 = Brown	8 = Brown
		SIDE 1	SIDE 2
Crossover Cable		1 = White/Orange	1 = White/Green
	SIDE 1	2 = Orange	2 = Green
1 2 3 4 5 6 7 8		3 = White/Green	3 = White/Orange
		4 = Blue	4 = Blue
		5 = White/Blue	5 = White/Blue
1 2 3 4 5 6 7 8	SIDE 2	6 = Green	6 = Orange
		7 = White/Brown	7 = White/Brown
		8 = Brown	8 = Brown

Figure A-1: Straight-Through and Crossover Cable

Please make sure your connected cables are with same pin assignment and color as above picture before deploying the cables into your network.

PLANET
Networking & Communication

EC Declaration of Conformity

For the following equipment:

*Type of Product: 16-Port 10/100/1000Mbps 802.3at PoE Switch (220 Watts)
*Model Number: GSW-1600HP

* Produced by:
Manufacturer's Name   :   **Planet Technology Corp.**
Manufacturer's Address: 10F., No.96, Minquan Rd., Xindian Dist.,
                                       New Taipei City 231, Taiwan (R.O.C.)

is herewith confirmed to comply with the requirements set out   in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility Directive on (2004/108/EC).
For the evaluation regarding the EMC, the following standards were applied:

EN55022	(2006 + A1:2007 + A2:2010)
EN 61000-3-2	(2006 + A1:2009 + A2:2009)
EN 61000-3-3	(2008)
EN55024	(2010)
IEC 61000-4-2	(2008)
IEC 61000-4-3	(2006+A1: 2007 + A2:2010)
IEC 61000-4-4	(2004 + A1:2010)
IEC 61000-4-5	(2005)
IEC 61000-4-6	(2008)
IEC 61000-4-8	(2009)
IEC 61000-4-11	(2004)

Responsible for marking this declaration if the:

☒ **Manufacturer**   ☐ **Authorized representative established within the EU**

Authorized representative established within the EU (if applicable):

Company Name: **Planet Technology Corp.**

Company Address: **10F., No.96, Minquan Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)**

Person responsible for making this declaration

Name, Surname   **Kent Kang**

Position / Title :   **Product Manager**

__Taiwan__   __1th April, 2013__
Place   *Date*   *Legal Signature*

PLANET TECHNOLOGY CORPORATION

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