Product Specifications

Industrial 4-Port 10/100/1000T 802.3at PoE + 1-Port 10/100/1000T Gigabit Ethernet Switch

IGS-504HPT

Version 2.0

Change History:

Revision:	Date:	Author:	Change List
Version 2.0	2019/8/12	Marc Liao	Initial Release- the same PCB dimension with IGS-614HPT
Version 1.1	2013/05/31	Bryant Wu	Changes PoE Power Usage LED definition
Version 1.0	2013/04/29	Bryant Wu	Initial Release

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Reviewed By:		**Approved By:**	Kent Kang

1. PRODUCT DESCRIPTION

Cost-effective Full PoE+ Power Solution Ideal for Hardened Environment

Featuring Plug and Play designed to be installed in heavy industrial demanding environments, the IGS-504HPT is a PLANET Industrial-grade, DIN-rail type Unmanaged Gigabit Ethernet PoE+ Switch with **four 10/100/1000BASE-T** ports featuring IEEE **802.3at PoE+** and **one extra 10/100/1000BASE-T** RJ45 copper interface for uplink connection.

The special and convenient power system of the IGS-504HPT supports **12~56V DC** power input for power redundancy and operational flexibility. It comes with a total power budget of up to **120 watts** for different kinds of PoE applications and operating temperature ranging from **-40 to 75 degrees C** in a rugged IP40 metal housing.

Convenient and Reliable Power System

To facilitate the 802.3at PoE+ usage with commonly used 12~48V DC power input for transportation and industrial-level applications, the IGS-504HPT adopts **power boost technology** to solve power source issue but does not require special power supplies. The IGS-504HPTprovides an integrated power solution with a wide range of voltages (**12~56V DC)** for worldwide operability. It also provides dual-redundant, reversible polarity power supply inputs for high availability applications.

Plug and Play High Power Sourcing Solution

Complying with the **IEEE 802.3at Power over Ethernet Plus** technology, the IGS-504HPT provides up to **36 watts** of PoE output power to allow users to flexibly deploy standard and high powered devices simultaneously with no need of software configuration. Furthermore, the IGS-504HPT can extend much longer distance by using PLANET PoE Extender for powering up the PoE PD devices which can be installed over more than 100 meters away. By daisy-chaining multiple PoE extenders, it offers the great flexibility of doubling, tripling or quadrupling the distance of PoE network.

Intelligent LED Indicator for Real-time PoE Usage

The IGS-504HPT helps users to monitor current status of PoE power usage easily and efficiently by its advanced LED indication. Called "PoE Power Usage", the front panel of the Industrial Gigabit PoE+ Switch has four orange LEDs indicating **30W**, **60W**, **90W** and **120W** of PoE power usage.

PoE Power Usage Display

Environmentally Hardened Design

With the **IP40** metal industrial case, the IGS-504HPT provides a high level of immunity against electromagnetic interference and heavy electrical surges which are usually found on plant floors or in curb-side traffic control cabinets without air conditioning. It features a ventilated construction in which a cooling fan is not necessary, thereby making its operation noiseless. Being able to operate under the temperature range from **-40 to 75 degrees C**, the IGS-504HPT can be placed in almost any difficult environment.

Robust Protection

The IGS-504HPT provides contact discharge of ±6KV DC and air discharge of ±8KV DC for Ethernet ESD protection. It also supports ±6KV surge immunity to improve product stability and protects users' networks from devastating ESD attacks, making sure the flow of operation does not fluctuate.

Flexible and Easy Installation with Limited Space

The compact sized IGS-504HPT is specially designed to be installed in a narrow environment, such as wall enclosure. It can be installed by fixed wall mounting or DIN rail, thereby making its usability more flexibly and easily in any space-limited location.

DIN-rail Mounting   **Wall Mounting**   **Side Wall Mounting**
(Space saving)

2. PRODUCT FEATURES

Interface

- 5 10/100/1000BASE-T Gigabit Ethernet RJ45 copper ports

Power over Ethernet

- Complies with IEEE 802.3at Power over Ethernet Plus, end-span PSE
- Backward compatible with IEEE 802.3af Power over Ethernet
- Up to 4 ports of IEEE 802.3af/at devices powered
- Up to 120-watt PoE budget
- Supports PoE power up to 36 watts for each PoE port
- Each port supports 54V DC power to PoE powered device
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100m

Layer 2 Switching

- Features Store-and-Forward mode with wire-speed filtering and forwarding rates
- IEEE 802.3x flow control for full duplex operation and back pressure for half duplex operation
- 4K MAC address table size
- 10K jumbo frame
- IEEE 802.1Q VLAN transparency
- Automatic address learning and address aging
- Supports CSMA/CD protocol

Industrial Case and Installation

- IP40 metal case
- DIN-rail, wall-mount or side wall-mount design
- 12~48V DC redundant power with reverse polarity protection
- Fault alarm for power input failed
- Supports 6KV DC Ethernet ESD protection
- -40 to 75 degrees C operating temperature
- 4 real-time PoE power usage indicators

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

Switch ASIC:	Realtek RTL8370MBI	x 1
PoE ASIC:	Microsemi PD69104B1F	x 1

3.2 FUNCTION SPECIFICATIONS

Model	IGS-504HPT
Hardware Specifications	
Copper Ports	5 10/100/1000BASET RJ45 auto-MDI/MDI-X ports
PoE Injector Ports	Four ports with 802.3at PoE+ injector function (Port-1 to Port-4)
SFP Slots	N/A
Connector	Removable 6-pin terminal block Pin 1/2 for Power 1; Pin 3/4 for fault alarm; Pin 5/6 for Power 2
Power Requirements	12~56V DC, 7A (max.) Redundant power with reverse polarity protection function
Power Consumption	Max. 5.9 watts/20BTU (Ethernet Full Loading) Max. 126 watts/429BTU (Ethernet + PoE Full Loading)
Enclosure	IP40 metal case
Installation	DIN-rail kit and wall-mount kit
ESD Protection	6KV
Switch Specifications	
Switch Architecture	Store-and-Forward
Switch Fabric	10Gbps
Throughput (packet per second)	7.4Mpps@64bytes
Address Table	4K entries
Buffer Memory	1M bits on-chip buffer memory
Jumbo Frame	9Kbytes
Flow Control	Back pressure for half duplex IEEE 802.3x pause frame for full duplex
Power over Ethernet	
PoE Standard	IEEE 802.3at Power over Ethernet Plus/PSE
PoE Power Supply Type	End-span
Power Pin Assignment	1/2(+), 3/6(-)
PoE Power Output	Per port 54V DC, max. 36 watts

|	
PoE Power Budget (max.)	60W@12V DC input
	90W@24V DC input
	120W@48V-56V DC input
Max. Number of Class 4 PDs	4
Standards Conformance	
Standards Compliance	IEEE 802.3 Ethernet
	IEEE 802.3u Fast Ethernet
	IEEE 802.3ab Gigabit Ethernet
	IEEE 802.3x Full-Duplex Flow Control
	IEEE 802.3az Energy Efficient Ethernet (EEE)
	IEEE 802.3at Power over Ethernet Plus PSE
	IEEE 802.3af Power over Ethernet
	IEEE 802.1p Class of Service

3.3 PHYSICAL SPECIFICATIONS:

■ **Dimensions:**

50 x 87 x 135 mm (W x D x H)

■ **Weight:**

600g

■ **Diagram**

Unit: mm
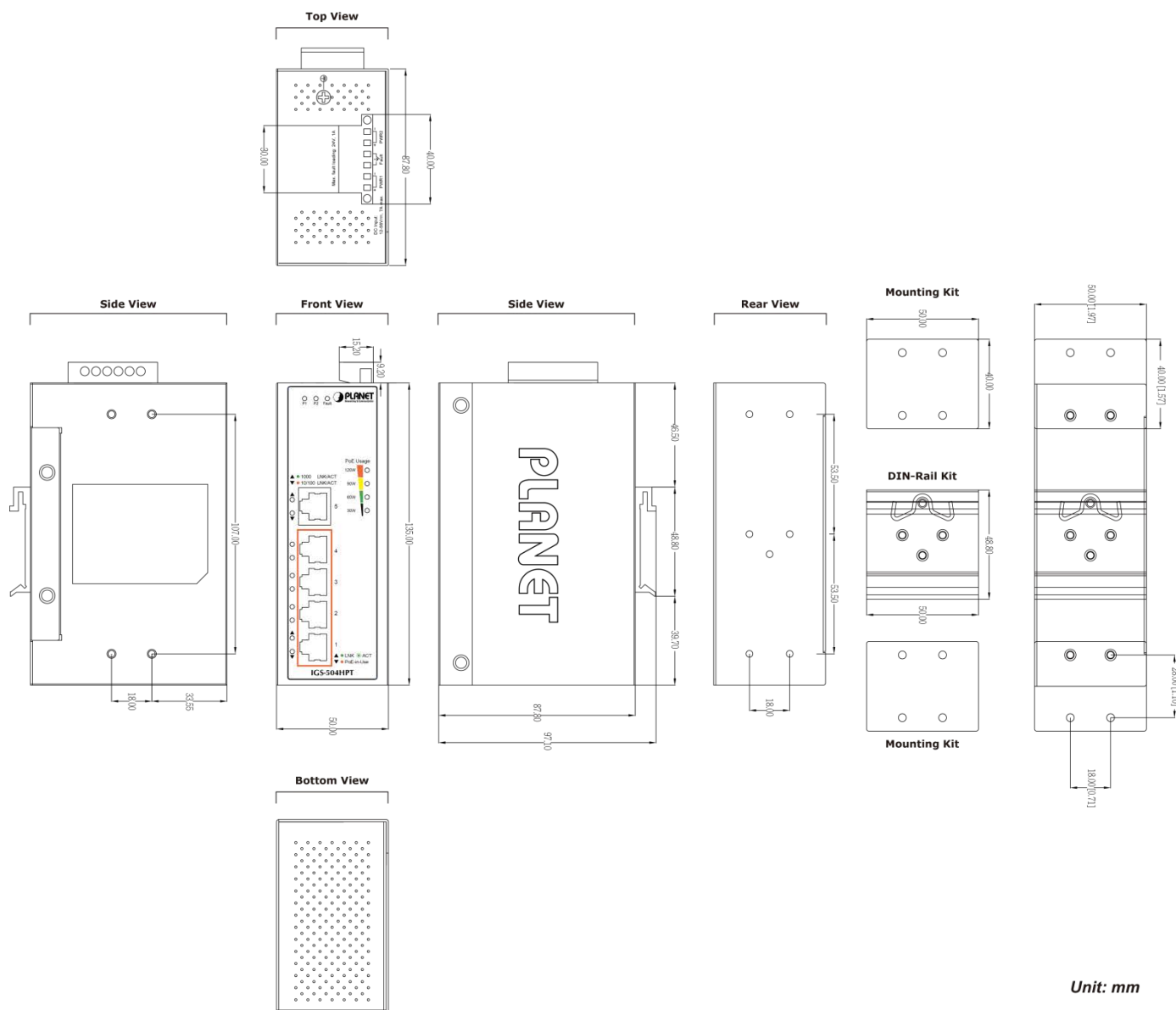
■ **Front Panel:**

■ **LED Definition**

▶ **System**

LED	Color	Function
P1	**Green**	**Lights** to indicate power 1 has power.
P2	**Green**	**Lights** to indicate power 2 has power.
FAULT	**Red**	**Lights** to indicate either power 1 or power 2 has no power.

PoE Power Usage (Unit: Watt)

LED	Color	Function
30W	**Amber**	**Off** to indicate the PoE usage is less than 14W. **Blinks** to indicate that the PoE usage is around 15W to 29W. **Lights** to indicate the PoE usage is around/over 30W.
60W	**Amber**	**Blinks** to indicate that the PoE usage is around 45W to 59W. **Lights** to indicate the PoE usage is around/over 60W.
90W	**Amber**	**Blinks** to indicate that the PoE usage is around 75W to 89W. **Lights** to indicate the PoE usage is around/over 90W.
120W	**Amber**	**Blinks** to indicate that the PoE usage is around 100W to 119W. **Lights** to indicate the PoE usage is at the maximum.

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▶ **Per 802.3at PoE+ 10/100/1000BASE-T Interface (Port 1 to Port 4)**

LED	Color	Function
LNK/ACT	Green	**Lights** to indicate the link through that port is successfully established at 10Mbps or 100Mbps or 1000Mbps. **Blinks** to indicate that the switch is actively sending or receiving data over that port.
PoE-in-Use	Amber	**Lights** to indicate the port is providing DC in-line power. **Off** to indicate the connected device is not a PoE powered device (PD).

▶ **Per 10/100/1000BASE-T Interface (Port 5)**

LED	Color	Function
1000 LNK/ACT	Green	**Lights** to indicate the port is successfully established at 1000Mbps.
		Blinks to indicate that the Switch is actively sending or receiving data over that port.
10/100 LNK/ACT	Amber	**Lights** to indicate the port is successfully established at 100Mbps or 10Mbps.
		Blinks to indicate that the Switch is actively sending or receiving data over that port.

■ **Top View**
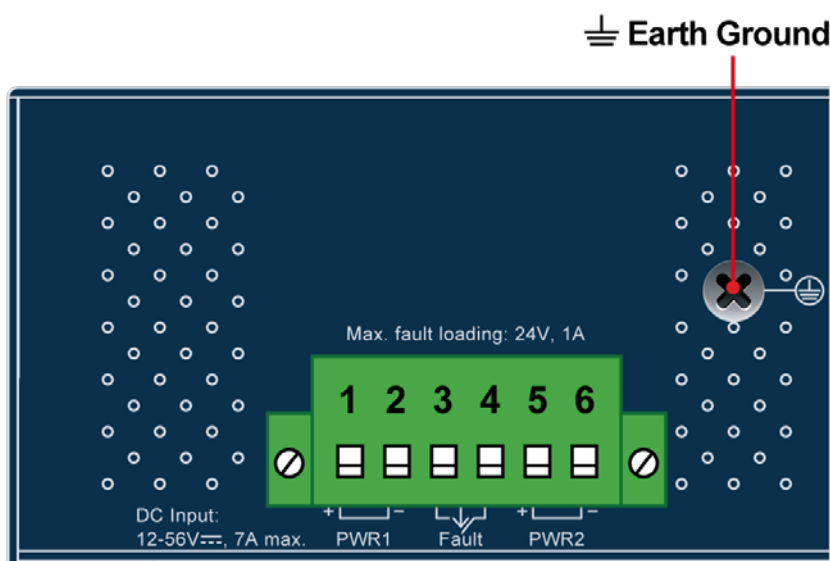
3.4 ENVIRONMENTAL SPECIFICATIONS

Operating:

Temperature: -40°C ~ 75 degrees C

Relative Humidity: 5% ~ 95% (non-condensing)

Storage:

Temperature: -40°C ~ 85 degrees C

Relative Humidity: 5% ~ 95% (non-condensing)

3.5 ELECTRICAL SPECIFICATION

LOADING / INPUT	System on without any devices attached	Port-1~Port-5 Link Up with Data Full Loading	Port-1~Port-5 Link Up with Data + PoE Full Loading
DC 12V	4 watts/13BTU	4.5 watts/15BTU	73 watts/249BTU
DC 24V	4.5 watts/15BTU	5 watts/17BTU	114 watts/388BTU
DC 54V	5.4 watts/18BTU	5.9 watts/20BTU	126 watts/429BTU

3.6 REGULATORY COMPLIANCE

FCC Part 15 Class A, CE

Stability Testing:

- IEC60068-2-32 (Free Fall)
- IEC60068-2-27 (Shock)
- IEC60068-2-6 (Vibration)

3.7 RELIABILITY

MTBF > 100,000Hrs @ 25 degrees C

3.8 BASIC PACKAGING

☑ The IGS-504HPT   x 1

☑ User's Manual   x 1

☑ DIN-rail Kit   x 1

☑ Wall Mounting Kit   x 1

☑ RJ45 Dust Cap   x 5

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3.9 PACKING INFORMATION

Box Dimensions (W x D x H):	202 × 140 × 94 mm
Weight:	800g
Carton Dimensions (W x D x H):	600 × 239 × 332 mm
Total Weight:	9.6kg
Quantity:	12pcs in one carton