Product Specifications

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

IGS-614HPT

Version 1.0

Change History:

Revision:	Date:	Author:	Change List
Version 1.0	2019/8/12	Marc Liao	Initial Release

Author:	Marc Liao	**Editor:**	Kent Kang
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-614HPT 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+**, **one extra 10/100/1000BASE-T** RJ45 copper and **one 100/1000BASE-X fiber** optic interface for uplink connection.

The IGS-614HPT is designed with redundant power system and is able to operate reliably, stably and quietly in any hardened environment without affecting its performance. 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-614HPT adopts **12~48V DC to 54V power boost technology** to solve power source issue but does not require special power supplies. The IGS-614HPT provides an integrated power solution with a wide range of voltages (**12~48V DC**) for worldwide operability. It also provides dual-redundant, reversible polarity 12~56V DC power supply inputs for high availability applications.

Fiber Optic Link Capability for Flexible Distance Extension

The additional mini-GBIC slot built in the IGS-614HPT supports SFP auto-detection and dual speed as it features **100BASE-FX** and **1000BASE-SX/LX SFP** (Small Form-factor Pluggable) fiber-optic modules, meaning the administrator now can flexibly choose the suitable SFP transceiver according to the transmission distance or the transmission speed required to extend the network efficiently. The distance can be extended from 550 meters to 2 kilometers (multi-mode fiber) and 10/20/30/40/50/60/70/120 kilometers (single-mode fiber or WDM fiber). They are well suited for applications to uplink to backbone switch and monitoring center in long distance.

Environmentally Hardened Design

With the **IP40** metal industrial case, the IGS-614HPT 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-614HPT can be placed in almost any difficult environment.

Robust Protection

The IGS-614HPT 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.

Intelligent LED Indicator for Real-time PoE Usage

The IGS-624HPT 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

Flexible and Easy Installation with Limited Space

The compact sized IGS-614HPT 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
- One SFP slot, supporting 1000BASE-X and 100BASE-FX transceiver in dual modes

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
- 12~56V 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 PD69104B	x 1

3.2 FUNCTION SPECIFICATIONS

Model	**IGS-614HPT**
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	1 1000BASE-SX/LX/BX SFP interface Compatible with 100BASE-FX SFP
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. 7 watts/23BTU (Ethernet Full Loading) Max. 125 watts/426BTU (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	12Gbps
Throughput (packet per second)	8.93Mpps@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 802.3az Gigabit SX/LX 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:

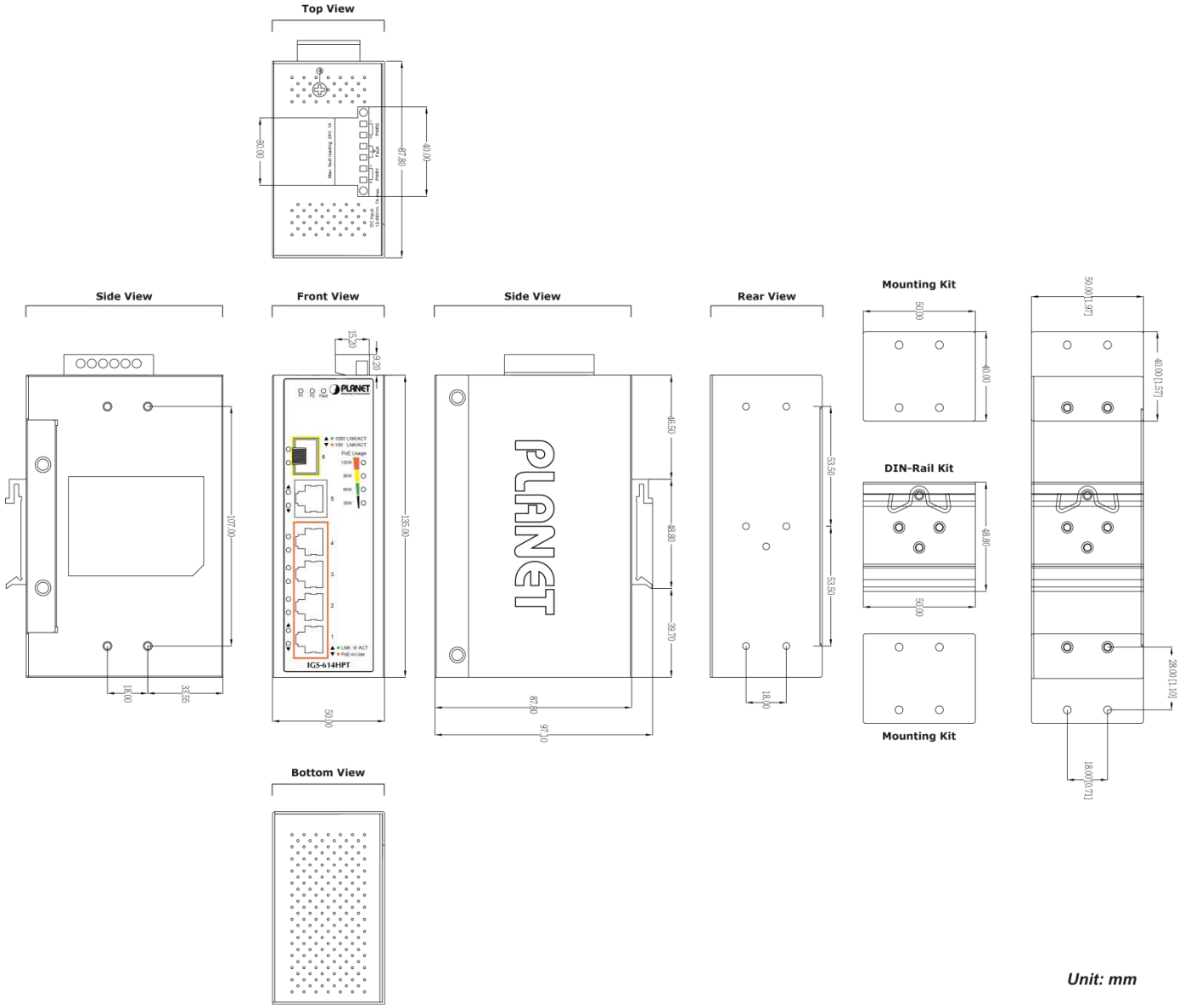
■ **Dimensions:**

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

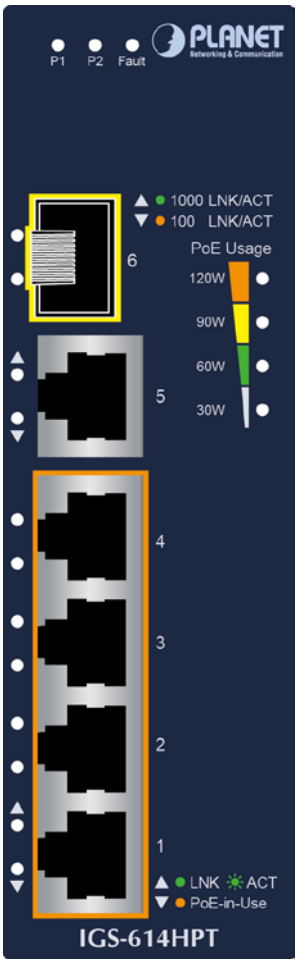
■ **Weight:**

605g

■ **Diagram**



■ 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:** indicates that the PoE usage is around 100W to 119W. **Lights:** indicates the PoE usage is at the maximum.

▶ **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).

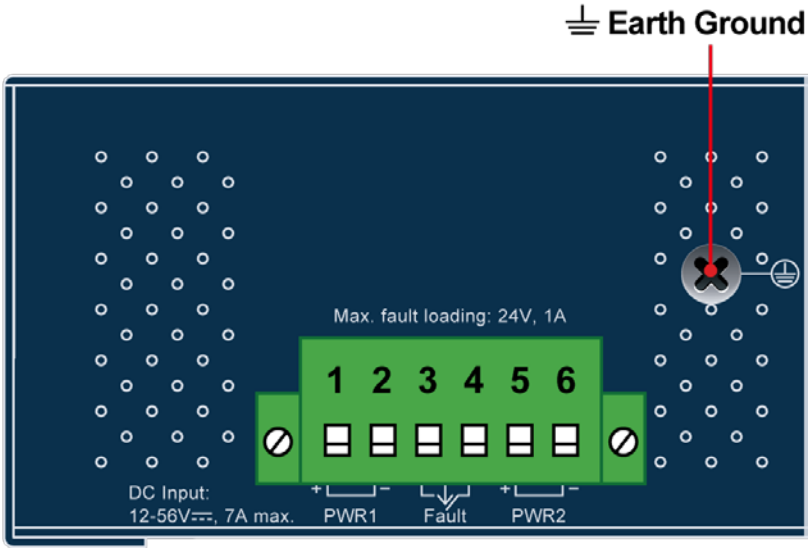
▶ **Per 10/100/1000BASE-T Interface (Port 5)**

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.

▶ **Per 100/1000BASE-X SFP Slot (Port 6)**

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.
100 LNK/ACT	Amber	**Lights** to indicate the port is successfully established at 100Mbps
		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-6 Link Up with Data Full Loading	Port-1~Port-6 Link Up with Data + PoE Full Loading
DC 12V	4.3 watts/14.6BTU	5.7 watts/19BTU	67 watts/228BTU
DC 24V	5 watts/17BTU	6.2 watts/21BTU	112 watts/382BTU
DC 54V	5.9 watts/20BTU	7 watts/23BTU	125 watts/426BTU

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-614HPT	x 1
☑ User's Manual	x 1
☑ DIN-rail Kit	x 1
☑ Wall Mounting Kit	x 1
☑ RJ45 Dust Cap	x 5
☑ SFP Dust Cap	x1

3.9 PACKING INFORMATION

Box Dimensions (W x D x H):	202 × 140 × 94 mm
Weight (gross weight):	802 g
Carton Dimensions (W x D x H):	600 × 239 × 332 mm
Carton Weight (gross weight):	10.4 kg
Quantity:	12pcs in one carton