Product Specifications

Industrial 4-Port 10/100/1000T 802.3at PoE + 4-Port 10/100/1000T Managed Switch (-40~75 degrees C)

IGS-4215-4P4T

Version 1.1

Change History:

Revision	Date	Author	Change List
Version 1.1	2017/3/23	Bryant Wu	Fixed Fault LED description incorrectly
Version 1.0	2015/12/29	Bryant Wu	Initial release

Author	Bryant Wu	**Editor:**	Bryant Wu
Reviewed by:	Kent Kang	**Approved by:**	Kent Kang

1. PRODUCT DESCRIPTION

Ideal, Cost-effective, Manageable PoE Solution for Hardened Environment

Designed to be installed in heavy industrial demanding environments, the IGS-4215-4P4T is the new generation of PLANET Industrial-grade, DIN-rail type L2/L4 Managed Gigabit PoE+ Switch featuring **PLANET intelligent PoE** functions to improve the availability of critical business applications. It provides **IPv6/IPv4 dual stack management** and built-in **L2/L4 Gigabit switching engine** along with **4 10/100/1000BASE-T** ports featuring **30-watt 802.3at PoE+ and 4 additional Gigabit copper ports**. The IGS-4215-4P4T is able to operate reliably, stably and quietly in any environment without affecting its performance. It comes with a total power budget of up to **144 watts** for different kinds of PoE applications and operating temperature ranging from **-40 to 75 degrees C** in a rugged IP30 metal housing.

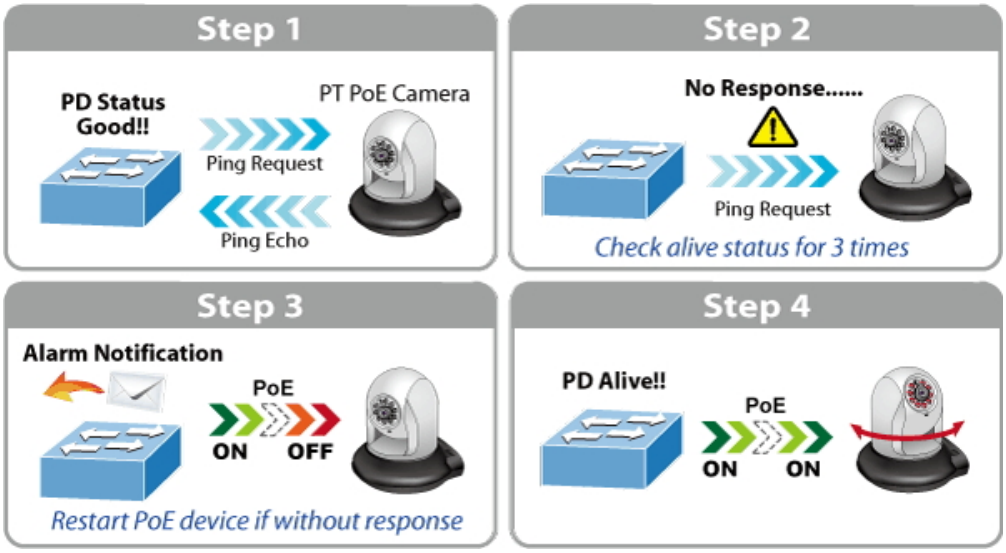
Built-in Unique PoE Functions for Powered Devices Management

As it is the managed PoE switch for surveillance, wireless and VoIP networks, the IGS-4215-4P4T features the following special PoE management functions:

- **PD alive check**
- **Scheduled power recycling**
- **PoE schedule**
- **PoE usage monitoring**

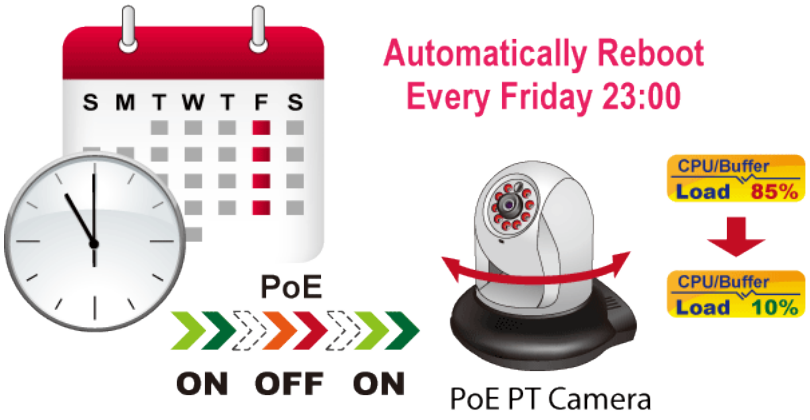
Intelligent Powered Device Alive Check

The IGS-4215-4P4T can be configured to monitor connected PD (Powered Device) status in real time via ping action. Once the PD stops working and responding, the IGS-4215-4P4T will resume the PoE port power and bring the PD back to work. It will greatly enhance the network reliability through the PoE port resetting the PD's power source and reducing administrator management burden.



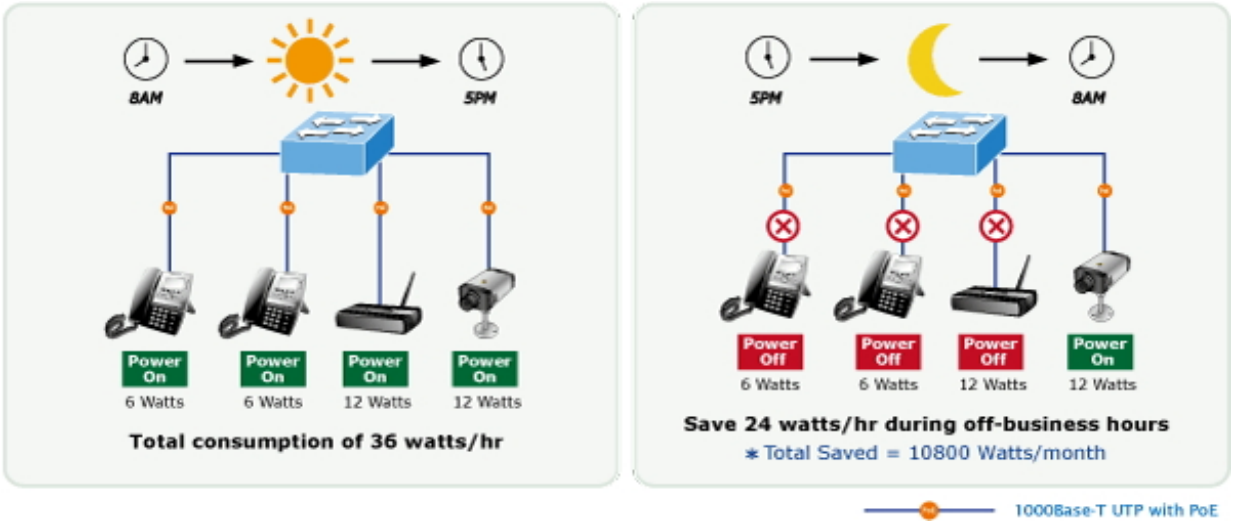
Scheduled Power Recycling

The IGS-4215-4P4T allows each of the connected PoE IP cameras or PoE wireless access points to reboot at a specific time each week. Therefore, it will reduce the chance of IP camera or AP crash resulting from buffer overflow.



PoE Schedule for Energy Saving

Under the trend of energy saving worldwide and contributing to environmental protection, the IGS-4215-4P4T can effectively control the power supply besides its capability of giving high watts power. The "**PoE schedule**" function helps you to enable or disable PoE power feeding for each PoE port during specified time intervals and it is a powerful function to help SMBs or enterprises save power and budget. It also increases security by powering off PDs that should not be in use during non-business hours.



PoE Usage Monitoring and Intelligent LED Indicator for Real-time PoE Usage

Via the power usage chart in the web management interface, the IGS-4215-4P4T enables the administrator to monitor the status of the power usage of the connected PDs in real time. Thus, it greatly enhances the management efficiency of the facilities. Moreover, the IGS-4215-4P4T helps users to monitor the current status of PoE power usage easily and efficiently via its advanced LED indication. Called "**PoE Power Usage**", the front panel of the IGS-4215-4P4T has four LED indicators of different power usages.

PoE Power Usage Display

Environmentally Hardened Design

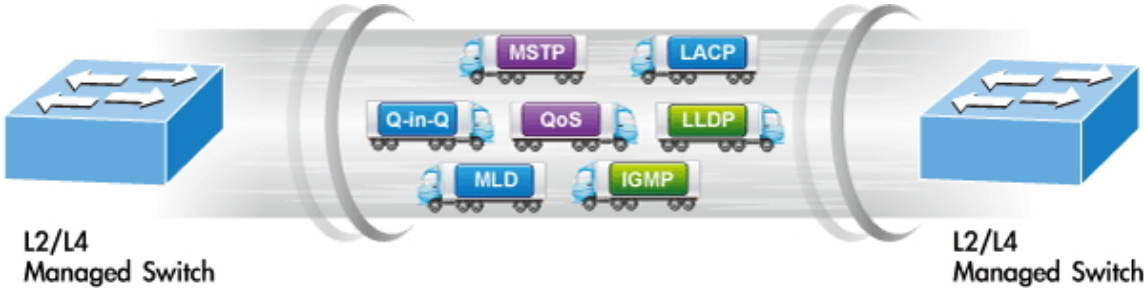
With the IP30 aluminum industrial case, the IGS-4215-4P4T provides a high level of immunity against electromagnetic interference and heavy electrical surges which are usually found on plant floors or in curb-side traffic control cabinets without air conditioner. Being able to operate under the temperature range from -40 to 75 degrees C, the IGS-4215-4P4T can be placed in almost any difficult environment.

IPv6/IPv4 Dual Stack Management

Supporting both IPv6 and IPv4 protocols, the IGS-4215-4P4T helps the system integrators to step in the IPv6 era with the lowest investment as its network facilities need not be replaced or overhauled if the IPv6 network is set up.

Robust Layer 2 Features

The IGS-4215-4P4T can be programmed for advanced switch management functions such as dynamic port link aggregation, 802.1Q VLAN, **Q-in-Q VLAN, Multiple Spanning Tree Protocol (MSTP)**, Loop and **BPDU Guard, IGMP Snooping**, and **MLD Snooping**. Via the link aggregation, the IGS-4215-4P4T allows the operation of a high-speed trunk to combine with multiple ports such as a 16Gbps fat pipe, and supports fail-over as well. Also, the **Link Layer Discovery Protocol (LLDP)** is the Layer 2 protocol included to help discover basic information about neighboring devices on the local broadcast domain.



Efficient Traffic Control

The IGS-4215-4P4T is loaded with robust QoS features and powerful traffic management to enhance services to business-class data, voice, and video solutions. The functionality includes broadcast/multicast/unicast **storm control**, per port **bandwidth control**, 802.1p/CoS/IP DSCP QoS priority and remarking. It guarantees the best performance in VoIP and video stream transmission, and empowers the enterprises to take full advantage of the limited network resources.

Friendly and Secure Management

For efficient management, the IGS-4215-4P4T is equipped with **web**, **Telnet** and **SNMP** management interfaces. With the built-in web-based management interface, the IGS-4215-4P4T offers an easy-to-use, platform-independent management and configuration facility. By supporting the standard SNMP, the switch can be managed via any standard management software. For text-based management, the switch can be accessed via Telnet. Moreover, the IGS-4215-4P4T offers secure remote management by supporting **SSH, SSL** and **SNMP v3** connections which encrypt the packet content at each session.

Advanced Network Security

PLANET IGS-4215-4P4T offers a comprehensive **IPv4/IPv6** Layer 2 to Layer 4 **Access Control List (ACL)** for enforcing security to the edge. Its protection mechanism also comprises **802.1X port-based** user and device authentication, which can be deployed with RADIUS to ensure the port level security and block illegal users. With the **protected port** function, communication between edge ports can be prevented to guarantee user privacy. Furthermore, the IGS-4215-4P4T also provides **DHCP snooping**, **IP source guard** and **dynamic ARP inspection** functions to prevent IP snooping from attack and discarded ARP packets with invalid MAC address. The network administrators can now construct highly-secure corporate networks with considerably less time and effort than before.

2. PRODUCT FEATURES

Physical Port

- **8-port 10/100/1000BASE-T** Gigabit RJ45 copper with 4-port **IEEE 802.3at/af** PoE Injector (Port-1 to Port-4)
- RJ45 console interface for switch basic management and setup

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/802.3at devices powered
- Supports PoE power up to 36 watts for each PoE port
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100 meters
- PoE management
  - Total PoE power budget control
  - Per port PoE function enable/disable
  - PoE port power feeding priority
  - Per PoE port power limitation
  - PD classification detection
  - PD alive-check
  - PoE schedule

Industrial Case & Installation

- IP30 aluminum case
- DIN-rail and wall-mounted design
- Supports -40 to 75 degrees C operating temperature
- Supports ESD 6KV DC Ethernet protection
- Redundant power design
  - 48V~56V DC wide power input with polarity reverse protect
- Provides one relay output for power failure

Switching

- Hardware based 10/100Mbps (half/full duplex), 1000Mbps (full duplex), auto-negotiation and auto MDI/MDI-X
- 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
- 8K MAC address table size
- 10K jumbo frame
- Automatic address learning and address aging
- Supports CSMA/CD protocol

Layer 2 Features

- Supports **VLAN**
  - IEEE 802.1Q tagged VLAN
  - Provider bridging (VLAN Q-in-Q, IEEE 802.1ad) support
  - Protocol VLAN
  - Voice VLAN

- Private VLAN (Protected port)
- Management VLAN
- GVRP

- Supports **Spanning Tree Protocol**
  - STP (Spanning Tree Protocol)
  - RSTP (Rapid Spanning Tree Protocol)
  - MSTP (Multiple Spanning Tree Protocol)
  - STP BPDU Guard, BPDU Filtering and BPDU Forwarding
- Supports **Link Aggregation**
  - IEEE 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (static trunk)
  - Maximum 4 trunk groups, up to 4 ports per trunk group
- Provides port mirror (many-to-1)
- Loop protection to avoid broadcast loops

Quality of Service

- Ingress/Egress Rate Limit per port bandwidth control
- Traffic classification
  - IEEE 802.1p CoS
  - TOS/DSCP/IP precedence of IPv4/IPv6 packets
- Strict priority and Weighted Round Robin (WRR) CoS policies

Multicast

- Supports IPv4 IGMP snooping v2, v3
- Supports IPv6 MLD snooping v1, v2
- IGMP querier mode support
- IGMP snooping port filtering
- MLD snooping port filtering

Security

- Storm Control support
  - Broadcast/unknown unicast/unknown multicast
- Authentication
  - IEEE 802.1X port-based network access authentication
  - Built-in RADIUS client to cooperate with the RADIUS servers
  - DHCP Option 82
  - RADIUS/TACACS+ authentication
- Access Control List
  - IPv4/IPv6 IP-based ACL
  - IPv4/IPv6 IP-based ACE
  - MAC-based ACL
  - MAC-based ACE
- MAC Security
  - Static MAC
  - MAC filtering
- Port security for source MAC address entries filtering
- DHCP snooping to filter distrusted DHCP messages
- Dynamic ARP inspection discards ARP packets with invalid MAC address to IP address binding

- IP source guard prevents IP spoofing attacks
- DoS attack prevention

Management

- IPv4 and IPv6 dual stack management
- Switch Management Interface
  - IPv4/IPv6 Web switch management
  - Console and telnet Command Line Interface
  - SNMP v1, v2c, v3
  - SSH and SSL secure access
- User privilege levels control
- Built-in Trivial File Transfer Protocol (TFTP) client
- Static and DHCP for IP address assignment
- System Maintenance
  - Firmware upload/download via HTTP/TFTP
  - Configuration upload/download through HTTP/TFTP
  - Hardware reset button for system reboot or reset to factory default
  - Dual images
- SNTP Network Time Protocol
- Cable diagnostics
- Link Layer Discovery Protocol (LLDP) Protocol and LLDP-MED
- SNMP trap for interface Link Up and Link Down notification
- Event message logging to remote syslog server
- Four RMON groups (history, statistics, alarms and events)
- PLANET Smart Discovery Utility

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

Switch ASIC:	Realtek RTL8380Mi	x 1
PSE Chipset:	Microsemi PD69104B1	x 1
DRAM:	NANYA NT5CB128M8FN-DII/1Gb DDR3-1600	x 1
Flash:	MXIC MX25L12835FM2I-10G Flash 128Mb bit	x 1

3.2 FUNCTION SPECIFICATIONS

Product	IGS-4215-4P4T
Hardware Specifications	
Copper Ports	8 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports
PoE Injector Port	4 ports with 802.3af/802.3at PoE injector function (Port-1 to Port-4)
Console	1 x RS232-to-RJ45 serial port (115200,8, N, 1)

Switch Architecture	Store-and-Forward
Switch Fabric	16Gbps/non-blocking
Switch Throughput@64 bytes	11.9Mpps @64 bytes
MAC Address Table	8K entries
Shared Data Buffer	4.1 megabits
Flow Control	IEEE 802.3x pause frame for full-duplex Back pressure for half-duplex
Jumbo Frame	10 Kbytes
Reset Button	< 5 sec: System reboot > 5 sec: Factory default
LED	3 x LED for System and Power: ■ Green: DC Power 1 ■ Green: DC Power 2 ■ Red: Power Fault 2 x LED for PoE Copper Port (Port-1~Port-4): ■ Green: LNK/ACT ■ Orange: PoE-in-use 2 x LED for 10/100/1000T Copper Port (Port-5~Port-8): ■ Green: LNK/ACT ■ Orange: 1000Mbps 4 x LED for PoE Power Usage (W) ■ Orange: 30, 60, 90 and 120W
Connector	Removable 6-pin terminal block Pin 1/2 for Power 1; Pin 3/4 for fault alarm; Pin 5/6 for Power 2
Alarm	One relay output for power failure. Alarm relay current carry ability: 1A @ 24V AC
Power Requirements	48~56V DC, 3.5A (max.)
Power Consumption/ Dissipation	5.04 watts, 17.1BTU (Standby without PoE function) 7.28 watts, 23 BTU (Full loading without PoE function) 151.28 watts, 516.1 BTU (Full loading with PoE function)
Dimensions (W x D x H)	161 x 107 x 72 mm
Weight	1001g
ESD Protection	6KV DC
Enclosure	IP30 aluminum case
Installation	DIN-rail kit and wall-mount ear
Power over Ethernet	
PoE Standard	IEEE 802.3af/802.3at Power over Ethernet PSE
PoE Power Supply Type	End-span
PoE Power Output	IEEE 802.3af Standard - Per port 48V~56V DC (depending on the power supply), max. 15.4 watts IEEE 802.3at Standard - Per port 50V~56V DC (depending on the power supply), max. 36 watts
Power Pin Assignment	1/2(+), 3/6(-)
PoE Power Budget	144 watts (depending on power input)

Max. Number of Class 2 PDs	4
Max. Number of Class 3 PDs	4
Max. Number of Class 4 PDs	4
Layer 2 Functions	
Port Mirroring	TX/RX/Both Many-to-1 monitor
VLAN	802.1Q tagged-based VLAN Up to 256 VLAN groups, out of 4094 VLAN IDs 802.1ad Q-in-Q tunneling (VLAN stacking) Voice VLAN Protocol VLAN Private VLAN (Protected port) GVRP Management VLAN
Link Aggregation	IEEE 802.3ad LACP and static trunk Supports 4 groups with 4 ports per trunk
Spanning Tree Protocol	IEEE 802.1D Spanning Tree Protocol (STP) IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) IEEE 802.1s Multiple Spanning Tree Protocol (MSTP) STP BPDU Guard, BPDU Filtering and BPDU Forwarding
IGMP Snooping	IPv4 IGMP snooping v2, v3 IGMP querier Up to 256 multicast groups
MLD Snooping	IPv6 MLD snooping v2, v3, up to 256 multicast groups
Access Control List	IPv4/IPv6 IP-based ACL/MAC-based ACL IPv4/IPv6 IP-based ACE/MAC-based ACE
QoS	8 mapping IDs to 8 level priority queues - Port number - 802.1p priority - DSCP/IP precedence of IPv4/IPv6 packets Traffic classification based, strict priority and WRR Ingress/Egress Rate Limit per port bandwidth control
Security	IEEE 802.1X port-based authentication Built-in RADIUS client to cooperate with RADIUS server RADIUS/TACACS+ authentication IP-MAC port binding MAC filtering Static MAC address DHCP snooping and DHCP Option82 STP BPDU guard, BPDU filtering and BPDU forwarding DoS attack prevention ARP inspection

	IP source guard Storm control support - Broadcast/unknown unicast/unknown multicast
Management Functions	
Basic Management Interfaces	Web browser, Console, Telnet, SNMP v1, v2c, v3 Firmware upgrade by HTTP/TFTP protocol through Ethernet network Configuration upload/download through HTTP/TFTP Remote/local syslog System log LLDP protocol SNTP PLANET Smart Discovery Utility
Secure Management Interfaces	SSH, SSL, SNMP v3
SNMP MIBs	RFC 1213 MIB-II RFC 1215 Generic Traps RFC 1493 Bridge MIB RFC 2674 Bridge MIB Extensions RFC 2737 Entity MIB v2 RFC 2819 RMON (1, 2, 3, 9) RFC 2863 Interface Group MIB RFC 3635 Ethernet-like MIB
Standards Conformance	
Regulatory Compliance	FCC Part 15 Class A, CE
Stability Testing	IEC 60068-2-32 (free fall) IEC 60068-2-27 (shock) IEC 60068-2-6 (vibration)
Standards Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3ab Gigabit 1000BASE-T IEEE 802.3x Flow Control and Back Pressure IEEE 802.3ad Port Trunk with LACP IEEE 802.1D Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1s Multiple Spanning Tree Protocol IEEE 802.1p Class of Service IEEE 802.1Q VLAN Tagging IEEE 802.1x Port Authentication Network Control IEEE 802.1ab LLDP IEEE 802.3at Power over Ethernet Plus PSE IEEE 802.3az for Energy-Efficient Ethernet RFC 768 UDP RFC 793 TFTP

	RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP v1 RFC 2236 IGMP v2 RFC 3376 IGMP v3 RFC 2710 MLD v1 RFC 3810 MLD v2
Environment	
Operating	Temperature: -40 ~ 75 degrees C Relative Humidity: 5 ~ 95% (non-condensing)
Storage	Temperature: -40 ~ 85 degrees C Relative Humidity: 5 ~ 95% (non-condensing)

3.3 PHYSICAL SPECIFICATIONS:

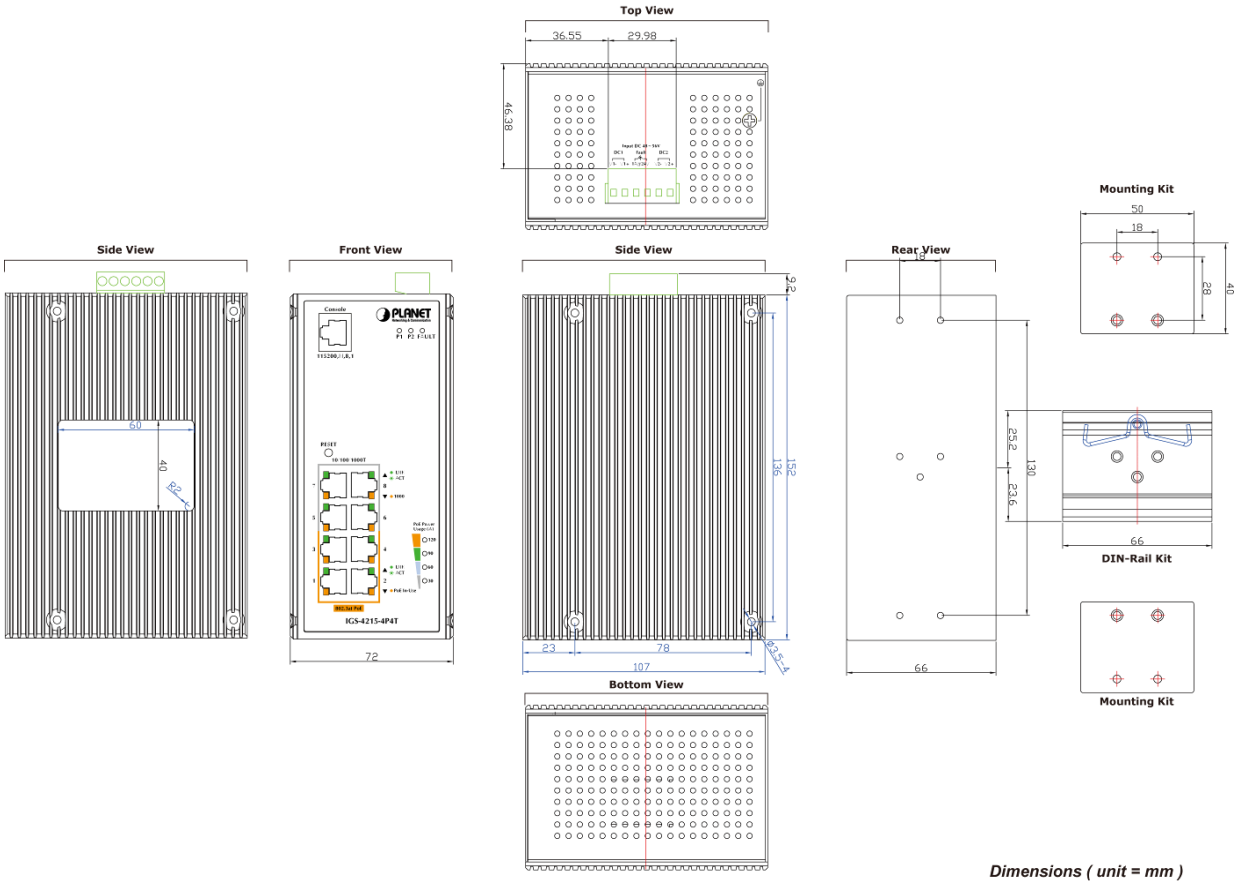
Dimensions:

161 x 107 x 72 mm (W x D x H)

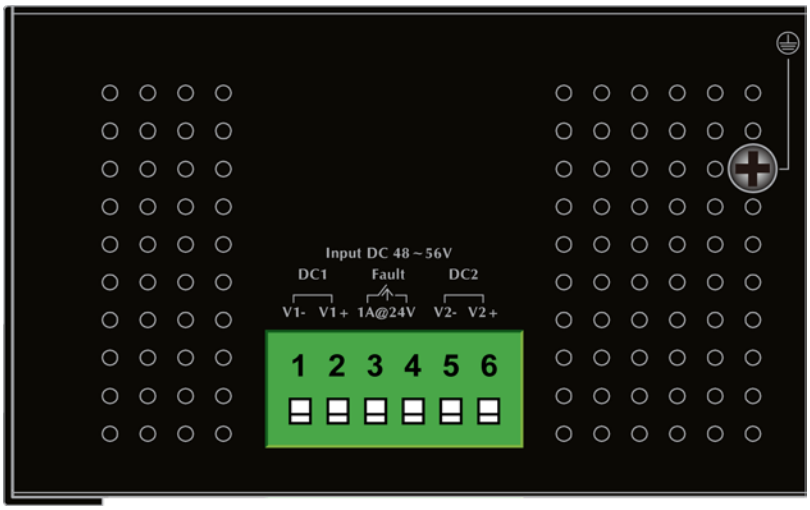
Weight:

1001g

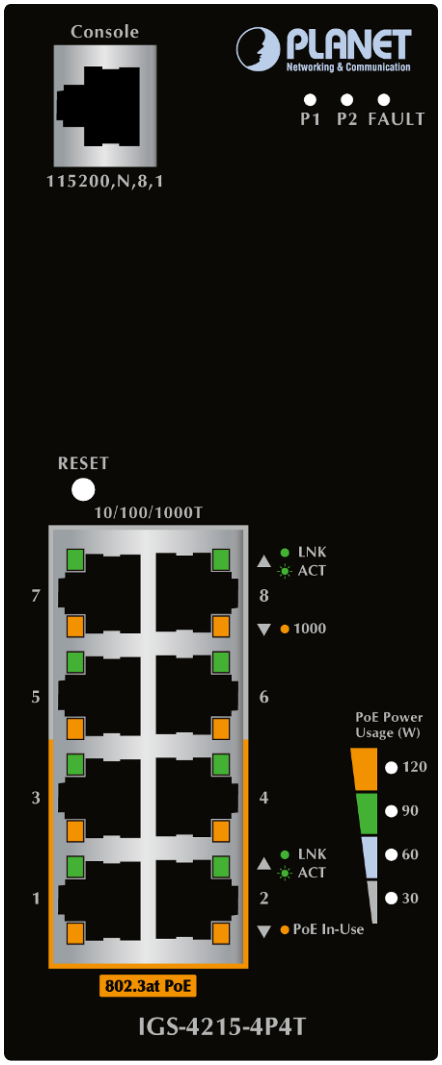
Diagram:



Top View



Front View



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 10/100/1000BASE-T Interfaces(Port-1 to Port-4)**

LED	Color	Function	
LNK/ACT	**Green**	**Lights**:	To indicate the link through that port is successfully established.
		Blinks:	To indicate that the switch is actively sending or receiving data over that port.
PoE	**Orange**	**Lights**:	To indicate the port is providing DC in-line power.
		Off:	To indicate the connected device is not a PoE Powered Device (PD)

■ **10/100/1000BASE-T Interfaces(Port-5 to Port-8)**

LED	Color	Function	
LNK/ACT	**Green**	**Lights**:	To indicate the link through that port is successfully established.
		Blinks:	To indicate that the switch is actively sending or receiving data over that port.
1000	**Orange**	**Lights**:	To indicate that the port is operating at **1000Mbps**.
		Off:	If LNK/ACT LED is lit, it indicates that the port is operating at **10/100Mbps**. If LNK/ACT LED is off, it indicates that the port is link-down.

■ **PoE Power Usage (Unit: Watt)**

LED	Color	Function	
30	**Orange**	**Lights**:	To indicate the system consumes over 30-watt PoE power budget
60	**Orange**	**Lights**:	To indicate the system consumes over 60-watt PoE power budget
90	**Orange**	**Lights**:	To indicate the system consumes over 90-watt PoE power budget
120	**Orange**	**Lights**:	To indicate the system consumes over 120-watt PoE power budget

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 SPECIFICATIONS

Power Consumption (System on):	48V	**4.32** watts/14.7 BTU
	52V	**4.68** watts/15.9BTU
	56V	**5.04** watts/17.1 BTU
Power Consumption (Ethernet Full Load Operation):	48V	**6.24** watts/21.2 BTU
	52V	**6.76** watts/23 BTU
	56V	**7.28** watts/24.8 BTU
Power Consumption (PoE Full Loading + Ethernet Full Loading):	48V	**67.84** watts/231.4 BTU
	52V	**150.76** watts/514.3 BTU
	56V	**151.28** watts/516.1 BTU

3.6 REGULATORY COMPLIANCE

FCC Class A, CE

3.7 RELIABILITY

MTBF > 100,000Hrs @ 25 degrees C

3.8 BASIC PACKAGING

- ☑ The Industrial Managed Switch x 1
- ☑ Quick Installation Guide x 1
- ☑ DIN-rail Kit x 1
- ☑ Wall Mounting Kit x 1
- ☑ RJ45 Dust Cap x 9

3.9 PACKING DIMENSIONS

Dimensions: 300 x 170 x 90mm
Weight: TBD
Carton Unit : 15pcs in one carton