

## Industrial L2/L4 Multi-port 802.3bt PoE++ 2-Port 100/1000X SFP Managed Ethernet Switch Series



### Cost-optimized Full PoE+ Power Solution Ideal for Hardened Environment

Designed to be installed in heavy industrial demanding environments, the IGS-4215 802.3bt PoE series is the new member of PLANET Industrial-grade, DIN-rail type L2/L4 Managed Gigabit PoE++ Switch family 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 or 8 10/100/1000BASE-T** ports featuring **95-watt 802.3bt PoE++**, **2 or 4 additional Gigabit copper ports** and another 2 extra 100/1000BASE-X SFP fiber slots for data and video uplink. The IGS-4215 802.3bt PoE series 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 **360 watts** for different kinds of PoE applications and operating temperature ranging from **-40 to 75 degrees C** in a rugged IP30 metal housing.

Item	Model Name	IGS-4215-4UP4T2S	IGS-4215-8UP2T2S
10/100/1000BASE-T Copper		8	10
100/1000BASE-X SFP		2	2
PoE Standard		IEEE 802.3bt PoE++	IEEE 802.3bt PoE++
PoE Ports		4	8
PoE Budget		240 watts	360 watts
Power Input		48~54V DC x 2	



### Physical Port

- **4/8 10/100/1000BASE-T** Gigabit Ethernet RJ45 ports with **IEEE 802.3bt PoE++** Injector function
- **4/2 10/100/1000BASE-T** Gigabit Ethernet RJ45 ports
- **Two 100/1000BASE-X SFP** slots for SFP type auto detection
- One RJ45 console interface for basic management and setup

### Power over Ethernet

- Complies with IEEE 802.3bt Power over Ethernet Plus Type-4 PSE
- Backward compatible with IEEE 802.3af/at PD device
- Up to 4/8 ports of IEEE 802.3af/802.3at/802.3bt PoE++ devices powered
- 240-/360-watt PoE budget
- Supports PoE power up to 95 watts for each PoE port
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100 meters in standard mode and 250m in extend mode
- 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
- Intelligent PoE features
  - PD alive check
  - PoE schedule

### Industrial Hardened Design

- 48~54V DC, redundant power with reverse polarity protection
- DIN-rail and wall-mount designs
- IP30 aluminum case
- Supports 6KV DC Ethernet ESD protection
- -40 to 75 degrees C operating temperature

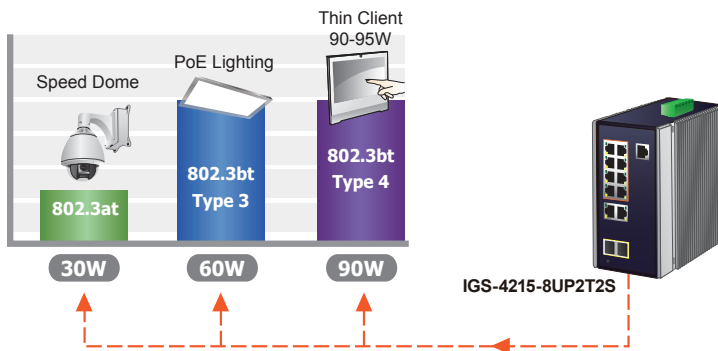
### Layer 2 Features

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

### 802.3bt PoE++ 90~95-watt Power over 4-pair UTP Solution

As PLANET IGS-4215 802.3bt PoE series adopts the IEEE 802.3bt PoE++ standard, it is capable to source up to 95 watts of power by using all the four pairs of standard Cat5e/6 Ethernet cabling to deliver power and full-speed data to each remote PoE compliant powered device (PD). It possesses triple amount of power capability than the conventional 802.3at PoE+ and is an ideal solution to satisfy the growing demand for higher power consuming network PDs, such as:

- PoE PTZ speed dome cameras
- Network devices
- Thin clients
- AIO (all-in-one) touch PCs, point of sale (POS) and information kiosks
- Remote digital signage displays
- PoE lightings



### 802.3bt PoE++ and Advanced PoE Power Output Mode Management

To meet the demand of various powered devices consuming stable PoE power, the IGS-4215 802.3bt PoE series provides four different PoE power output modes for selection.

- 95W 802.3bt PoE++ Power Output Mode
- 95W Force Power Output Mode
- 36W End-span PoE Power Output Mode
- 36W Mid-span PoE Power Output Mode

### Built-in Unique PoE Functions for Powered Devices Management

As the industrial PoE++ managed switch for surveillance, wireless and VoIP networks, the IGS-4215 802.3bt PoE series features special PoE management functions:

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

### Intelligent Powered Device Alive Check

The IGS-4215 802.3bt PoE series 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 802.3bt PoE series 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 the administrator's management burden.

- Voice VLAN
- Private VLAN (Protected port)
- Management VLAN
- GVRP
- Supports **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), spanning tree by VLAN
  - 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 6 trunk groups, up to 8 ports per trunk group
- Provides port mirror (many-to-1)
- Loop protection to avoid broadcast loops
- Supports ERPS (Ethernet Ring Protection Switching)
- Link Layer Discovery Protocol (LLDP)

### Quality of Service

- Ingress/Egress Rate Limit per port bandwidth control
- Traffic classification
  - IEEE 802.1p CoS
  - IP TCP/UDP port number
  - Typical network application
- Strict priority and Weighted Round Robin (WRR) CoS policies
- Supports QoS and In/Out bandwidth control on each port
- Traffic-policing on the switch port
- DSCP remarking

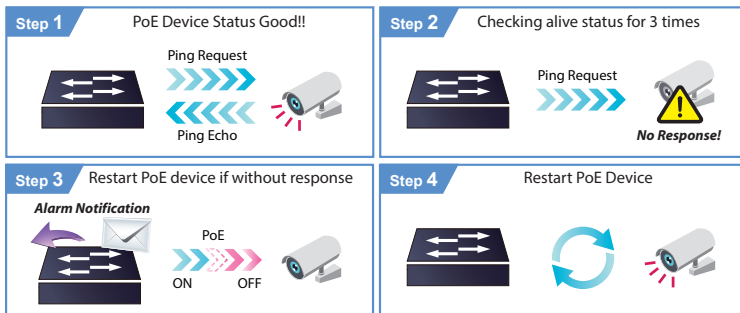
### Multicast

- 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

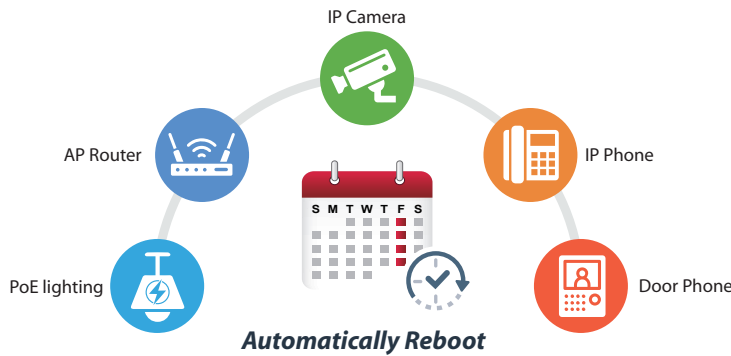
- Storm Control support
  - Broadcast/ unknown multicast/unknown unicast
- Authentication
  - IEEE 802.1X port-based network access authentication
  - Built-in RADIUS client to cooperate with the RADIUS servers
  - DHCP Relay and DHCP Option 82
  - RADIUS/TACACS+ users access authentication
- Access Control List
  - IPv4/IPv6 IP-based ACL
  - IPv4/IPv6 IP-based ACE
  - MAC-based ACL
  - MAC-based ACE

### PD Alive Check



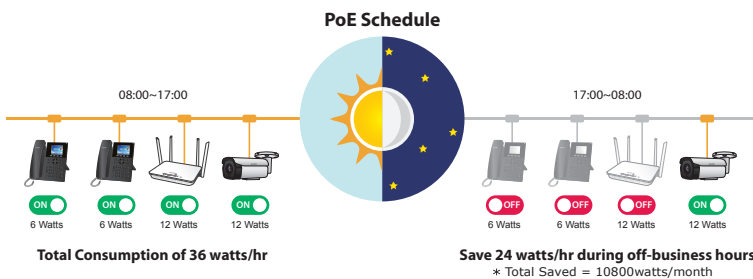
#### Scheduled Power Recycling

The IGS-4215 802.3bt PoE series allows each of the connected PoE IP cameras or PoE wireless access points to reboot at a specified time each week. Therefore, it will reduce the chance of IP camera or AP crash resulting from buffer overflow.



#### PoE Schedule for Energy Savings

Under the global trend of energy saving and contributing to environmental protection, the IGS-4215 802.3bt PoE series 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, which 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.



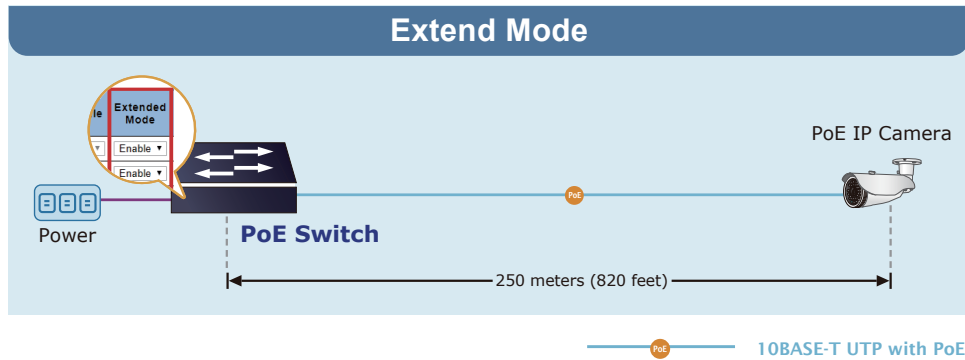
- MAC Security
  - Static MAC
  - MAC filtering
- Port security for source MAC address entries filtering
- DHCP snooping to filter distrusted DHCP messages
- Dynamic ARP inspection discards ARP packets with invalid MAC address to IP address binding
- IP source guard prevents IP spoofing attacks
- DoS attack prevention

#### Management

- IPv4 and IPv6 dual stack management
- Switch Management Interface
  - Web switch management
  - Console/Telnet Command Line Interface
  - SNMP v1 and v2c switch management
  - SSHv2, TLSv1.2 and SNMP v3 secure access
- SNMP Management
  - SNMP trap for interface Link Up and Link Down notification
  - Four RMON groups (history, statistics, alarms and events)
- 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
  - Dual images
  - Hardware reset button for system reboot or reset to factory default
- SNTP Network Time Protocol
- Network Diagnostic
  - Cable diagnostics
  - ICMPv6/ICMPv4 Remote Ping
  - SFP-DDM (Digital Diagnostic Monitor)
- Link Layer Discovery Protocol (LLDP) Protocol and LLDP-MED
- Event message logging to remote syslog server
- PLANET Smart Discovery Utility for deployment management
- PLANET NMS system and CloudViewer for deployment management

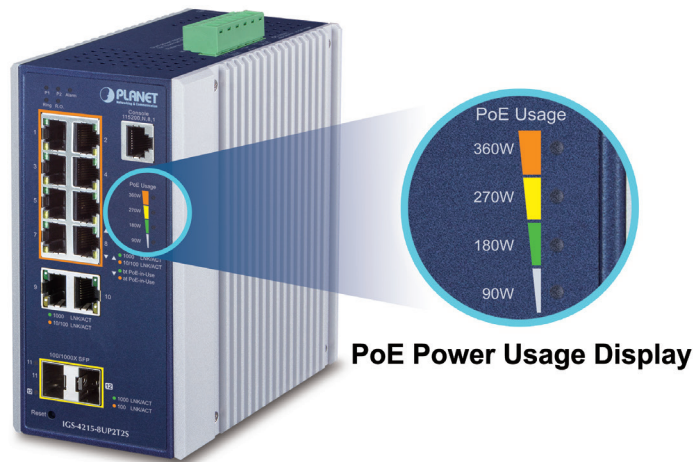
**802.3bt PoE++ Power and Ethernet Data Transmission Distance Extension**

In the “**Extend**” operation mode, the IGS-4215 802.3bt PoE series operates on a per-port basis at 10Mbps duplex operation but can support 83-watt PoE power output over a distance of up to 250 meters overcoming the 100m limit on Ethernet UTP cable. With this brand-new feature, the IGS-4215 802.3bt PoE series provides an additional solution for 802.3at/af PoE distance extension, thus saving the cost of Ethernet cable installation.



**Intelligent LED Indicators for Real-time PoE Usage Monitoring**

Via the power usage chart in the web management interface, the IGS-4215 802.3bt PoE series 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 802.3bt PoE series 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 802.3bt PoE series has four amber LEDs indicating four different PoE power usages.



**Cybersecurity Network Solution to Minimize Security Risks**

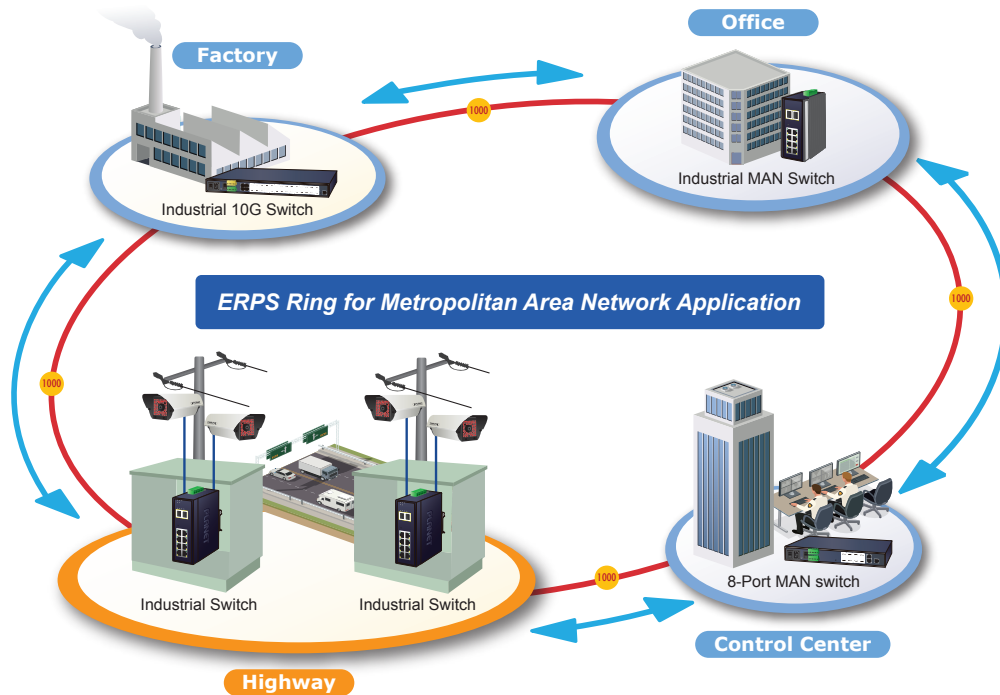
The IGS-4215 802.3bt PoE series comes with enhanced cybersecurity to fend off cyberthreats and cyberattacks. It supports SSHv2 and TLSv1.2 protocols to provide strong protection against advanced threats. Served as a key point to transmit data over a long-distance fiber optic cable to customer's critical equipment in a business network, the cybersecurity feature of the IGS-4215 802.3bt PoE series protects the switch management and enhances the security of the mission-critical network without any extra deployment cost and effort.





**Redundant Ring, Fast Recovery for Critical Network Applications**

The IGS-4215 802.3bt PoE series supports redundant ring technology and features strong, rapid self-recovery capability to prevent interruptions and external intrusions. It incorporates advanced **ITU-T G.8032 ERPS (Ethernet Ring Protection Switching)** technology, Spanning Tree Protocol (802.1s MSTP) into customer's network to enhance system reliability and uptime in various environments.



**Environmentally Hardened Design**

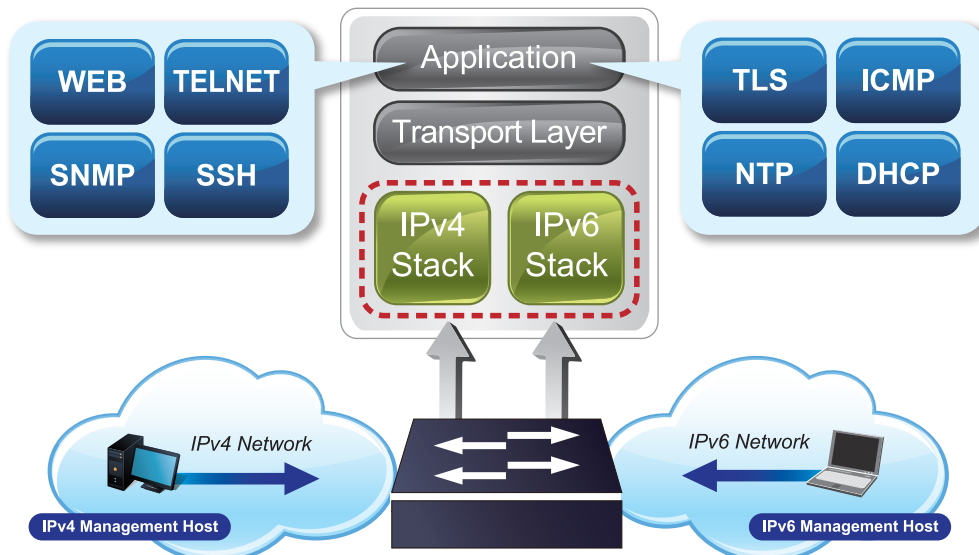
With the IP30 aluminum industrial case, the IGS-4215 802.3bt PoE series provides a high level of immunity against electromagnetic interference and heavy electrical surges which are usually found on plant floors or in curb-side traffic control cabinets without air conditioner. Being able to operate under the temperature range from -40 to 75 degrees C, the IGS-4215 802.3bt PoE series can be placed in almost any difficult environment.

**Robust Protection**

The IGS-4215 802.3bt PoE series provides contact discharge of ±6KV DC and air discharge of ±8KV DC for Ethernet ESD protection. It also supports ±4KV surge immunity to improve product stability and protects users' networks from devastating ESD attacks, making sure the flow of operation does not fluctuate.

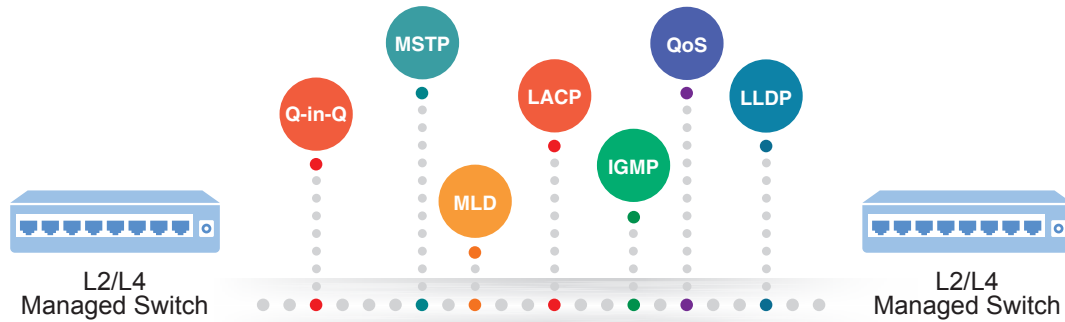
**IPv6/IPv4 Dual Stack Management**

Supporting both IPv6 and IPv4 protocols, the IGS-4215 802.3bt PoE series helps the SMBs to step in the IPv6 era with the lowest investment as its network facilities need not be replaced or overhauled if the IPv6 FTTx edge network is set up.



### Robust Layer 2 Features

The IGS-4215 802.3bt PoE series 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 802.3bt PoE series allows the operation of a high-speed trunk to combine with multiple ports such as an 8Gbps 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 802.3bt PoE series 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.

### Powerful Security

PLANET IGS-4215 802.3bt PoE series offers comprehensive **IPv4/IPv6** Layer 2 to Layer 4 **Access Control List (ACL)** for enforcing security to the edge. It can be used to restrict network access by denying packets based on source and destination IP address, TCP/UDP ports or defined typical network applications. 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, **Port security** function allows to limit the number of network devices on a given port. The network administrators can now construct highly-secure corporate networks with considerably less time and effort than before.

### Advanced Network Security

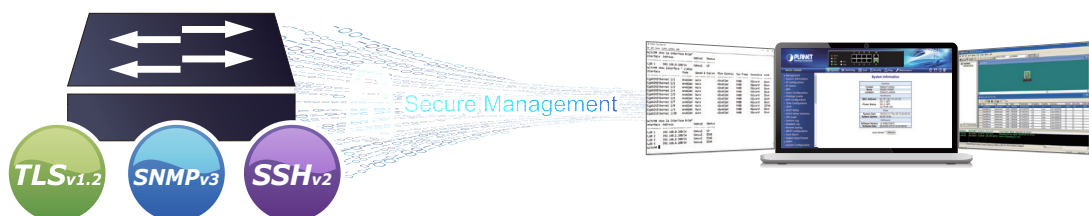
The IGS-4215 802.3bt PoE series also provides **DHCP Snooping**, **IP Source Guard** and **Dynamic ARP Inspection** functions to prevent IP snooping from attack and discard ARP packets with invalid MAC address. The network administrators can now construct highly-secure corporate networks with considerably less time and effort than before.

### User-friendly and Secure Management

For efficient management, the IGS-4215 802.3bt PoE series is equipped with Command line, Web and SNMP management interfaces.

- With the built-in **Web-based** management interface, the IGS-4215 802.3bt PoE series offers an easy-to-use, platform-independent management and configuration facility.
- For **text-based** management, it can be accessed via Telnet and the console port.
- By supporting the standard SNMP protocol, the switch can be managed via any SNMP-based management software.

Moreover, the IGS-4215 802.3bt PoE series offers secure remote management by supporting **SSHv2**, **TLSv1.2** and **SNMP v3** connections which encrypt the packet content at each session.



*Remote Management Solution*

PLANET's **Universal Network Management System (UNI-NMS)** and **CloudViewer app** support IT staff by remotely managing all network devices and monitoring PDs' operational statuses. Thus, they're designed for both the enterprises and industries where deployments of PDs can be as remote as possible, without having to go to the actual location once a bug or faulty condition is found. With the UNI-NMS or CloudViewer app, all kinds of businesses can now be speedily and efficiently managed from one platform.

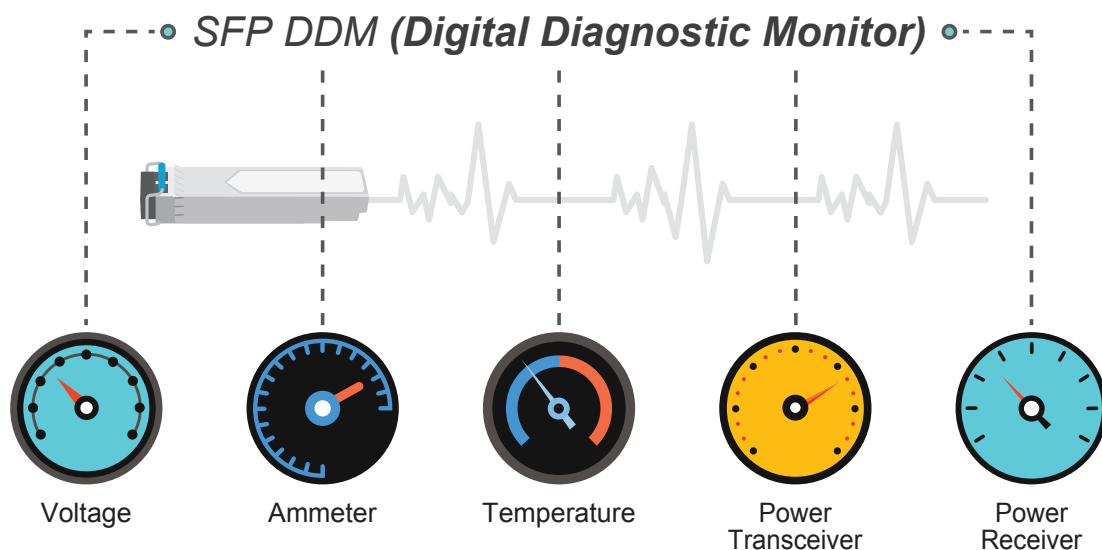


*Flexible Long-distance Extension Solution*

The IGS-4215 802.3bt PoE series provides 2 or 4 extra Gigabit TP interfaces supporting 10/100/1000BASE-T RJ45 copper to connect with surveillance network devices such as NVR, Video Streaming Server or NAS to facilitate surveillance management. Or through the two **dual-speed fiber SFP slots**, it can also connect with the **100BASE-FX /1000BASE-SX/LX SFP** (Small Form-factor Pluggable) fiber transceiver to uplink to backbone switch and monitoring center in long distance. The distance can be extended from 550 meters to 2 kilometers (multi-mode fiber) and to 10/20/40/60/80/120 kilometers (single-mode fiber or WDM fiber). They are well suited for applications within the enterprise data centers and distributions.

*Intelligent SFP Diagnosis Mechanism*

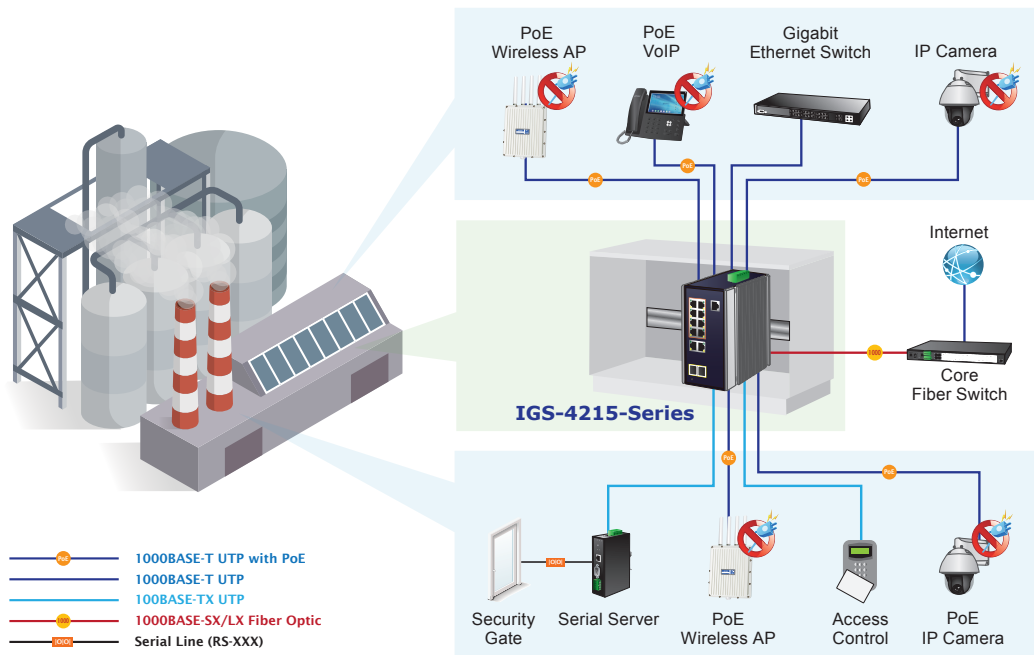
The IGS-4215 802.3bt PoE series supports **SFP-DDM (Digital Diagnostic Monitor)** function that can easily monitor real-time parameters of the SFP for the network administrator, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.



## Applications

### Industrial-grade PoE++ Switch for Building Automation and Security

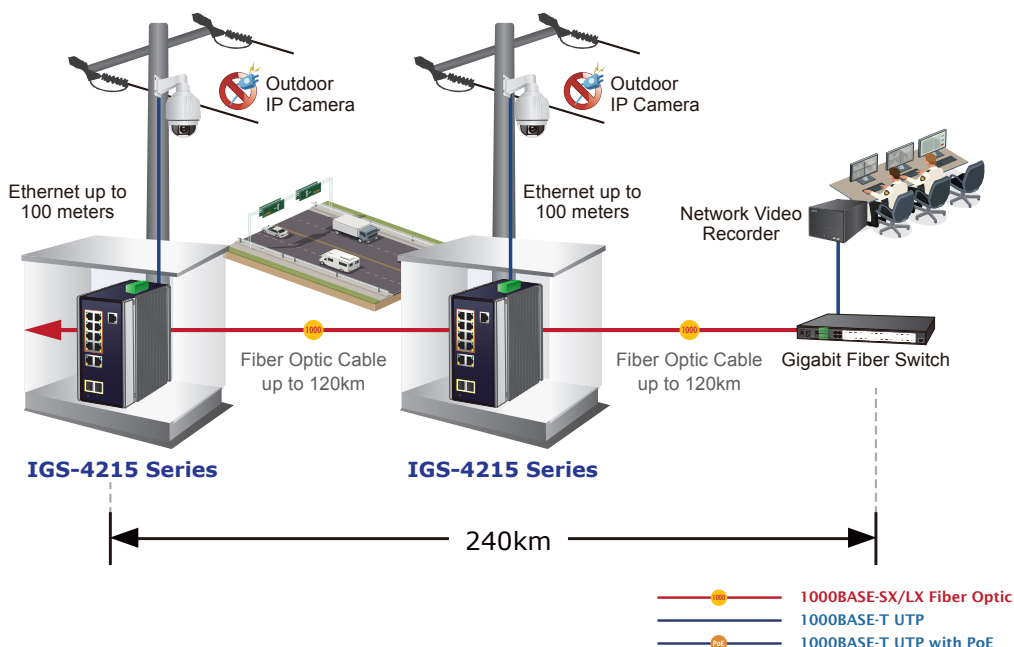
Suitable for buildings where security is strictly to be enforced, the IGS-4215 802.3bt PoE series, with up to eight 802.3bt PoE++, in-line power interfaces, can easily build a power centrally controlled for an IP phone system, IP surveillance system, and wireless AP group in the harsh Industrial environment. For instance, 8 PoE IP cameras or PoE wireless APs can be easily installed for surveillance demands or a wireless roaming environment in the industrial area can be built. Without the power-socket limitation, the IGS-4215 802.3bt PoE series makes the installation of IP cameras or wireless APs easier and more efficient.



### Perfect Integration Solution for IP PoE Camera and NVR System

The IGS-4215 802.3bt PoE series provides 4 or 8 10/100/1000BASE-T 802.3bt PoE++ ports which can offer sufficient PoE power to multiple PoE IP cameras at the same time. In addition, with the two 100/1000BASE-X SFP interfaces, the IGS-4215 802.3bt PoE series can connect to a core fiber switch and send video streams to an NVR and monitoring center. Through the high-performance switch architecture, the IGS-4215 802.3bt PoE series facilitates the recorded video files from the 4 or 8 PoE++ IP cameras to be saved in the NVR systems. Furthermore, the NVR systems can be controlled and monitored in both the local LAN and the remote site via Internet. The IGS-4215 802.3bt PoE series undoubtedly brings an ideal secure surveillance system at a lower total cost.

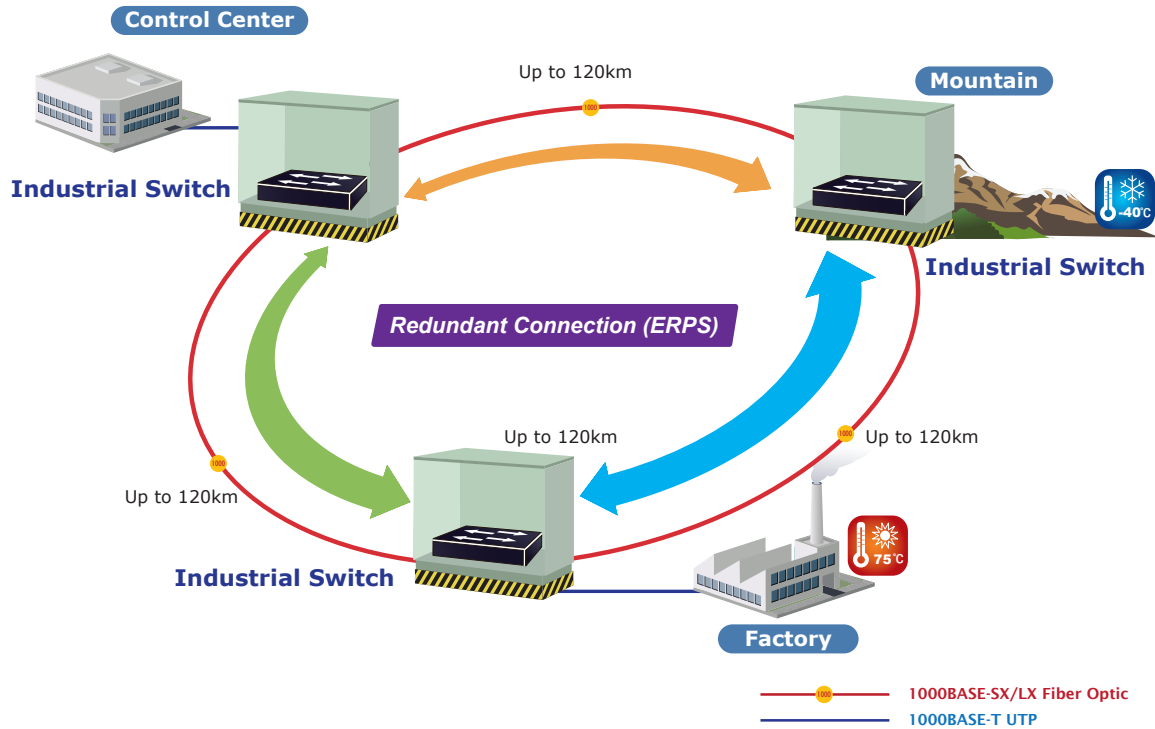
## Extending Ethernet Distance





*ITU-T G.8032 ERPS Makes Data Transmission Uninterrupted*

The IGS-4215 802.3bt PoE series features strong rapid self-recovery capability to prevent interruptions and external intrusions. It incorporates **ITU-T G.8032 ERPS (Ethernet Ring Protection Switching)** technology into customer's automation network to enhance system reliability and uptime. Applying the IEEE 802.3bt Power over Ethernet standard, the IGS-4215 802.3bt PoE series can directly connect with any IEEE 802.3bt end-nodes like PTZ (Pan, Tilt & Zoom) network cameras and speed dome cameras. The IGS-4215 802.3bt PoE series can easily help system integrators with the available network infrastructure to build wireless AP, IP camera and VoIP systems where power can be centrally-controlled.



## Specifications

Product		IGS-4215-4UP4T2S	IGS-4215-8UP2T2S
<b>Hardware Specifications</b>			
Copper Ports		8 10/100/1000BASE-T RJ45 auto-MDI/MDI-X port	10
SFP Ports		2 1000BASE-SX/LX/BX SFP interfaces Compatible with 100BASE-FX SFP	2
PoE Injector Port		4 802.3bt PoE++	8 802.3bt PoE++
Console		1 x RS232-to-RJ45 serial port (115200,8, N, 1)	
RAM		128Mbytes	
Flash Memory		16Mbytes	
Reset Button		< 5 sec: System reboot > 5 sec: Factory default	
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		48~54V DC, 8.5A (max.) (>52V DC for PoE++ output recommended)	48~54V DC, 8.5A (max.)
Power Consumption/ Dissipation	System On	Max.8.2 watts/27.96BTU	Max. 9.18 watts/31.3BTU
	PoE Full Loading	Max. 264 watts/900. 24BTU	Max. 390 watts/1329.9BTU
Dimensions (W x D x H)		76.8 x 107.3 x 152 mm	
Weight		1,054g	1,091g
Enclosure		IP30 aluminum case	
Installation		DIN-rail kit and wall-mount ear	
ESD Protection		Contact Discharge 6KV DC Air Discharge 8KV DC	
Surge Protection		4KV DC	
<b>Switching Specifications</b>			
Switch Architecture		Store-and-Forward	
Switch Fabric		20Gbps/non-blocking	24Gbps/non-blocking
Switch Throughput@64 bytes		14.8Mpps	17.85Mpps
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	
<b>Power over Ethernet</b>			
PoE Standard		IEEE 802.3bt PoE++ Type-4	
PoE Power Supply Type		End-span Mid-span BT (End-span + Mid-span)	
Power Pin Assignment		802.3bt/UPoE: 1/2(-), 3/6(+),4/5(+), 7/8(-) 802.3at/PoE: End-span: 1/2(-), 3/6(+) 802.3at/PoE: Mid-span: 4/5(+), 7/8(-)	
PoE Power Output		Per port 48V ~ 54V DC -802.3bt Type-4 mode: Maximum 95 watts -End-span mode: Maximum 36 watts -Mid-span mode: Maximum 36 watts -Force mode: Maximum 95 watts	
PoE Power Budget		Maximum 240 watts	Single power input: Maximum 240W (depending on power input) Dual power input: Maximum 360W (depending on power input) * Dual power input must be the same as DC voltage, like dual 54V
Number of 90W 802.3bt Type-4 PDs		2	4
Number of 60W 802.3bt Type-3 PDs		4	6
Number of 30W 802.3at Type-2 PDs		8	8
<b>PoE Management Functions</b>			
Enhanced PoE Mode		Standard/Legacy/Force	

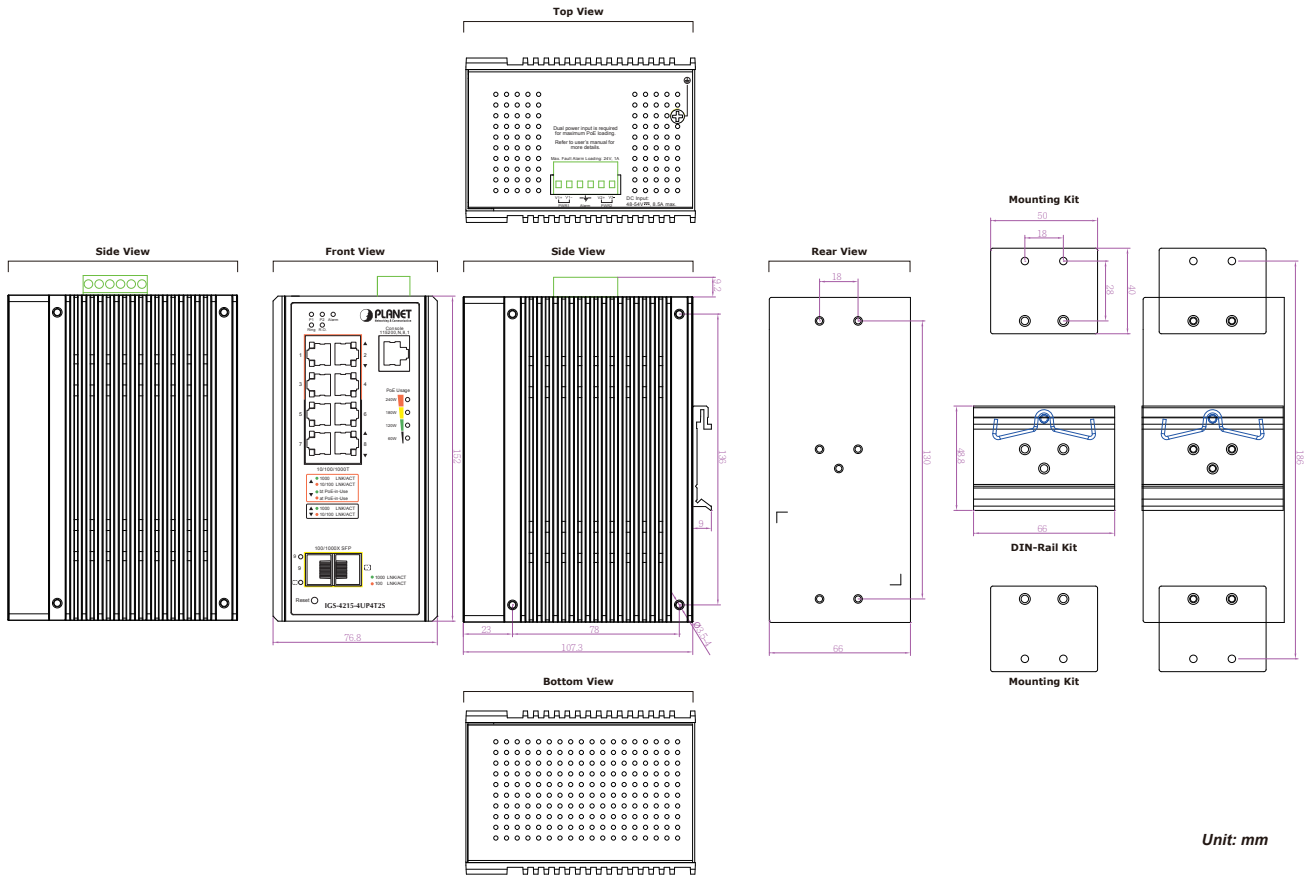
PoE Management	<p>PD Alive Check</p> <p>Scheduled Power Recycling</p> <p>PoE Schedule</p> <p>PoE Usage Monitoring</p> <p>PoE Extension</p>
Active PoE Device Live Detection	Yes
PoE Power Recycling	Yes, daily or predefined schedule
PoE Schedule	4 schedule profiles
PoE Extend Mode	Yes, max. up to 250 meters
<b>Layer 2 Functions</b>	
Port Mirroring	<p>TX/RX/Both</p> <p>Many-to-1 monitor</p> <p>Up to 4 sessions</p>
VLAN	<p>802.1Q tagged VLAN</p> <p>802.1ad Q-in-Q tunneling (VLAN stacking)</p> <p>Voice VLAN</p> <p>Protocol VLAN</p> <p>Private VLAN (Protected port)</p> <p>GVRP</p> <p>Management VLAN</p> <p>Up to 256 VLAN groups, out of 4094 VLAN IDs</p>
Link Aggregation	<p>IEEE 802.3ad LACP and static trunk</p> <p>Supports 6 groups with 8 ports per trunk</p>
Spanning Tree Protocol	<p>IEEE 802.1D Spanning Tree Protocol (STP)</p> <p>IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)</p> <p>IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)</p> <p>STP BPDU Guard, BPDU Filtering and BPDU Forwarding</p>
IGMP Snooping	<p>IPv4 IGMP snooping v2, v3</p> <p>IGMP querier</p> <p>Up to 256 multicast groups</p>
MLD Snooping	IPv6 MLD snooping v2, v3, up to 256 multicast groups
Access Control List	<p>IPv4/IPv6 IP-based ACL/MAC-based ACL</p> <p>IPv4/IPv6 IP-based ACE/MAC-based ACE</p>
QoS	<p>8 mapping IDs to 8 level priority queues</p> <ul style="list-style-type: none"> <li>- Port number</li> <li>- 802.1p priority</li> <li>- DSCP/IP precedence of IPv4/IPv6 packets</li> </ul> <p>Traffic classification based, strict priority and WRR</p> <p>Ingress/Egress Rate Limit per port bandwidth control</p>
Ring	<p>Supports ERPS, and complies with ITU-T G.8032</p> <p>Recovery time &lt; 450ms</p>
<b>Security Functions</b>	
Access Control List	<p>IPv4/IPv6 IP-based ACL/MAC-based ACL</p> <p>IPv4/IPv6 IP-based ACE/MAC-based ACE</p> <p>Max. 256 ACL entries</p>
Port Security	<p>IEEE 802.1X – Port-based authentication</p> <p>Built-in RADIUS client to co-operate with RADIUS server</p> <p>RADIUS/TACACS+ user access authentication</p>
MAC Security	<p>IP-MAC port binding</p> <p>MAC filter</p> <p>Static MAC address, max. 256 static MAC entries</p>
Enhanced Security	<p>DHCP Snooping and DHCP Option82</p> <p>STP BPDU guard, BPDU filtering and BPDU forwarding</p> <p>DoS attack prevention</p> <p>ARP inspection</p> <p>IP source guard</p>
<b>Management Functions</b>	
Basic Management Interfaces	<p>RS232 to RJ45 Console</p> <p>Web browser</p> <p>Telnet</p> <p>SNMP v1, v2c</p>

Secure Management Interfaces	SSHv2, TLS v1.2, SNMP v3
System Management	Firmware upgrade by HTTP/TFTP protocol through Ethernet network Configuration upload/download through HTTP/TFTP LLDP protocol SNTP PLANET Smart Discovery Utility PLANET NMS System/CloudViewer
Event Management	Remote/Local Syslog System log
SNMP MIBs	RFC 1213 MIB-II RFC 1215 Generic Traps RFC 1493 Bridge MIB RFC 2674 Bridge MIB Extensions RFC 2737 Entity MIB (Version 2) RFC 2819 RMON (1, 2, 3, 9) RFC 2863 Interface Group MIB RFC 3635 Ethernet-like MIB RFC 3621 Power Ethernet MIB
<b>Standards Conformance</b>	
Regulatory Compliance	FCC Part 15 Class A EN 55032 EN 55035 ICES-003 issue 7
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/100BASE-FX IEEE 802.3z Gigabit SX/LX 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 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus IEEE 802.3az for Energy-Efficient Ethernet RFC 768 UDP RFC 783 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 ITU G.8032 ERPS Ring
<b>Environment</b>	
Operating Temperature	-40 ~ 75 degrees C
Storage Temperature	-40 ~ 85 degrees C
Humidity	5 ~ 95% (non-condensing)



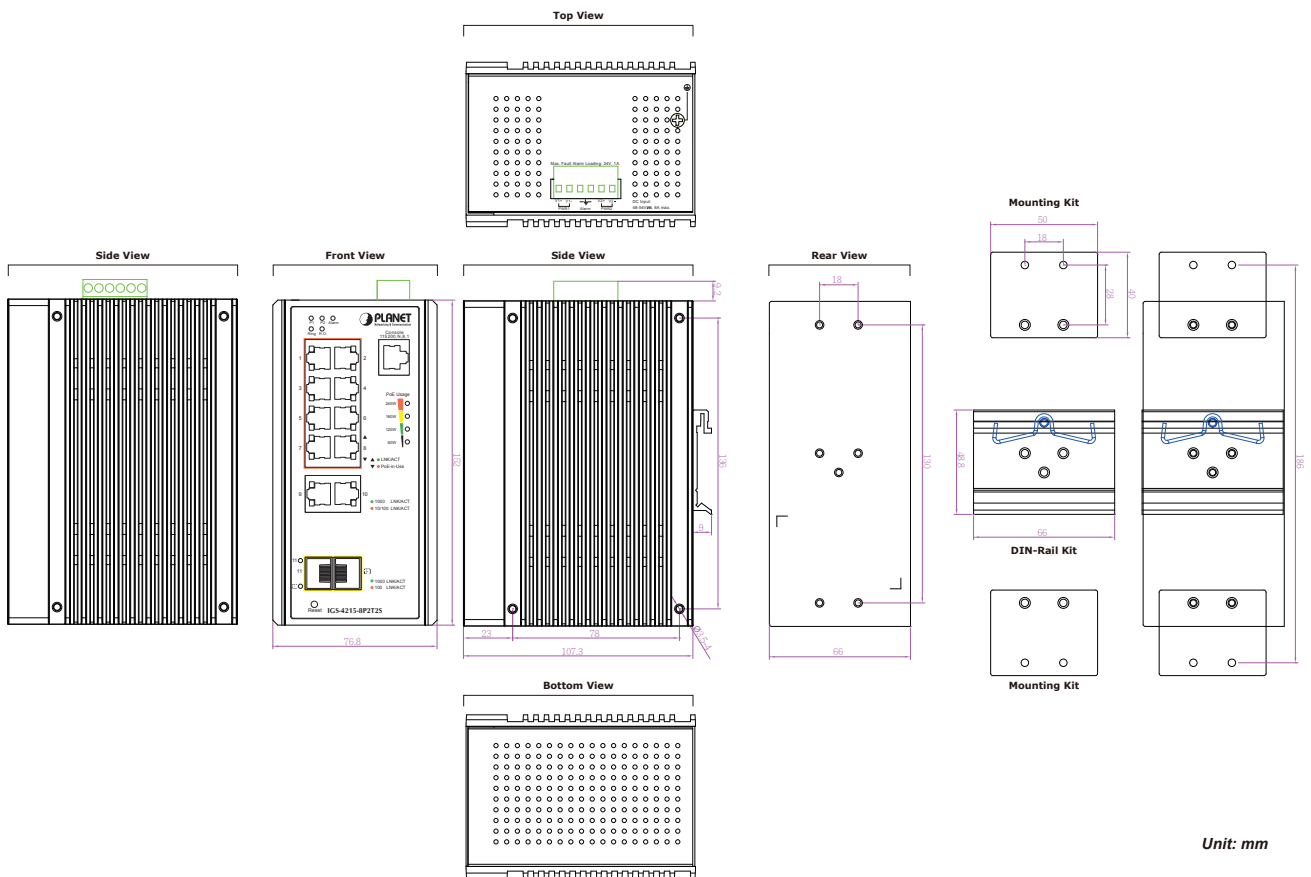
## Dimensions

### ■ IGS-4215-4UP4T2S



Unit: mm

### ■ IGS-4215-8UP2T2S



Unit: mm

## Ordering Information

IGS-4215-4UP4T2S	Industrial 4-Port 10/100/1000T 802.3bt PoE + 4-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch (-40~75 degrees C)
IGS-4215-8UP2T2S	Industrial 8-Port 10/100/1000T 802.3bt PoE + 2-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch (-40~75 degrees C)

## Related Products

IGS-4215-4P4T	Industrial 4-Port 10/100/1000T 802.3at PoE + 4-Port 10/100/1000T Managed Switch (-40~75 degrees C)
IGS-4215-4P4T2S	Industrial 4-Port 10/100/1000T 802.3at PoE + 4-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch (-40~75 degrees C)
IGS-4215-8P2T2S	Industrial 8-Port 10/100/1000T 802.3at PoE + 2-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch (-40~75 degrees C)
IGS-4215-4T2S	Industrial L2/L4 4-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch (-40~75 degrees C)
IGS-4215-8T2S	Industrial L2/L4 8-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch (-40~75 degrees C)
IGS-4215-16T2S	Industrial L2/L4 16-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch (-40~75 degrees C)
WGS-804HP	8-Port 10/100/1000T Wall Mounted Gigabit Ethernet Switch with 4-Port PoE+ (-40~75 degrees C)
WGS-4215-8P2S	Industrial 8-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Wall-mounted Managed Switch (-40~75 degrees C)
WGS-4215-8HP2S	Industrial 4-Port 10/100/1000T 802.3bt PoE + 4-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Wall-mount Managed Switch (-40~75 degrees C)
WGS-4215-16P2S	Industrial 16-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Wall-mounted Managed Switch (-10~60 degrees C)

## Accessories

PWR-240-48	240W 48V DC Single Output Industrial DIN-rail Power Supply (-20 ~ 70 degrees C)
PWR-480-48	480W 48V DC Single Output Industrial DIN-rail Power Supply (-20 ~ 70 degrees C)

## Available Gigabit SFP Modules

### Gigabit Ethernet Transceiver (1000BASE-X SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MGB-GT	1000	Copper	--	100m	--	0 ~ 60 degrees C
MGB-TSX	1000	LC	Multi Mode	550m	850nm	-40 ~ 75 degrees C
MGB-TLX	1000	LC	Single Mode	10km	1310nm	-40 ~ 75 degrees C
MGB-TL30	1000	LC	Single Mode	30km	1310nm	-40 ~ 75 degrees C
MGB-TL70	1000	LC	Single Mode	70km	1550nm	-40 ~ 75 degrees C

### Gigabit Ethernet Transceiver (1000BASE-BX, Single Fiber Bi-directional SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MGB-TLA10	1000	WDM(LC)	Single Mode	10km	1310nm	1550nm	-40 ~ 75 degrees C
MGB-TLB10	1000	WDM(LC)	Single Mode	10km	1550nm	1310nm	-40 ~ 75 degrees C
MGB-TLA20	1000	WDM(LC)	Single Mode	20km	1310nm	1550nm	-40 ~ 75 degrees C
MGB-TLB20	1000	WDM(LC)	Single Mode	20km	1550nm	1310nm	-40 ~ 75 degrees C
MGB-TLA40	1000	WDM(LC)	Single Mode	40km	1310nm	1550nm	-40 ~ 75 degrees C
MGB-TLB40	1000	WDM(LC)	Single Mode	40km	1550nm	1310nm	-40 ~ 75 degrees C
MGB-TLA60	1000	WDM(LC)	Single Mode	60km	1310nm	1550nm	-40 ~ 75 degrees C
MGB-TLB60	1000	WDM(LC)	Single Mode	60km	1550nm	1310nm	-40 ~ 75 degrees C

## Available Fast Ethernet SFP Modules

### Fast Ethernet Transceiver (100BASE-X SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MFB-TFX	100	LC	Multi Mode	2km	1310nm	-40 ~ 75 degrees C
MFB-TF20	100	LC	Single Mode	20km	1550nm	-40 ~ 75 degrees C

### Fast Ethernet Transceiver (100BASE-BX, Single Fiber Bi-directional SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MFB-TFA20	100	WDM(LC)	Single Mode	20km	1310nm	1550nm	-40 ~ 75 degrees C
MFB-TFB20	100	WDM(LC)	Single Mode	20km	1550nm	1310nm	-40 ~ 75 degrees C
MFB-TFA40	100	WDM(LC)	Single Mode	40km	1310nm	1550nm	-40 ~ 75 degrees C
MFB-TFB40	100	WDM(LC)	Single Mode	40km	1550nm	1310nm	-40 ~ 75 degrees C