# Product Specifications

## Industrial 8-Port 10/100/1000T 802.3bt PoE + 2-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch

## IGS-4215-8UP2T2S

Version 1.0

**Change History:**

| Revision: | Date: | Author: | Change List |
|-----------|-------|---------|-------------|
| Version 1.0 | 2023/1/12 | Sky Chen | Initial Release |

| Author: | Sky Chen | Editor: | Sky Chen |
|---------|----------|---------|----------|
| Reviewed By: | | Approved By: | Kent Kang |

## 1. PRODUCT DESCRIPTION



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

Designed to be installed in heavy industrial environments, the IGS-4215-8UP2T2S 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 **8 10/100/1000BASE-T** ports featuring **95-watt 802.3bt PoE++**, **2 additional Gigabit copper ports** and another **2 extra 100/1000BASE-X SFP fiber slots** for data and video uplink. The IGS-4215-8UP2T2S 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.

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

As the IGS-4215-8UP2T2S adopts the IEEE 802.bt 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

**CONFIDENTIAL**

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

To meet the demand of various powered devices consuming stable PoE power, the IGS-4215-8UP2T2S 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-4215-8UP2T2S 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-4215-8UP2T2S 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-4215-8UP2T2S 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.

## Scheduled Power Recycling

The IGS-4215-8UP2T2S 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-4215-8UP2T2S 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.

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

In the **"Extend"** operation mode, the IGS-4215-8UP2T2S 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-4215-8UP2T2S 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-4215-8UP2T2S 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-4215-8UP2T2S 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-4215-8UP2T2S has four amber LEDs indicating four different PoE power usages, namely **90W, 180W, 270W** and **360W**.

## Cybersecurity Network Solution to Minimize Security Risks

The IGS-4215-8UP2T2S 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-4215-8UP2T2S 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-4215-8UP2T2S 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-4215-8UP2T2S 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-4215-8UP2T2S can be placed in almost any difficult environment.

## Robust Protection

The IGS-4215-8UP2T2S 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-4215-8UP2T2S 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-4215-8UP2T2S 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-4215-8UP2T2S 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-4215-8UP2T2S 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-4215-8UP2T2S 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-4215-8UP2T2S 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-4215-8UP2T2S is equipped with Command line, Web and SNMP management interfaces.

- With the built-in **Web-based** management interface, the IGS-4215-8UP2T2S 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-4215-8UP2T2S offers secure remote management by supporting **SSHv2, TLSv1.2** and **SNMP v3** connections which encrypt the packet content at each session.

**CONFIDENTIAL**

## 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-4215-8UP2T2S provides 2 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-4215-8UP2T2S 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.

**CONFIDENTIAL**

## 2. PRODUCT FEATURES

▶ **Physical Port**

- 8 10/100/1000BASE-T Gigabit Ethernet RJ45 ports with IEEE 802.3bt PoE++ Injector function
- 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 8 ports of IEEE 802.3af/802.3at/802.3bt PoE++ devices powered
- 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
  - 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

&minus;STP BPDU Guard, BPDU Filtering and BPDU Forwarding
- Supports Link Aggregation
  - &minus;IEEE 802.3ad Link Aggregation Control Protocol (LACP)
  - &minus;Cisco ether-channel (static trunk)
  - &minus;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
  - &minus;IEEE 802.1p CoS
  - &minus;IP TCP/UDP port number
  - &minus;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
  - &minus;Broadcast/ unknown multicast/unknown unicast
- Authentication
  - &minus;IEEE 802.1X port-based network access authentication
  - &minus;Built-in RADIUS client to cooperate with the RADIUS servers
  - &minus;DHCP Relay and DHCP Option 82
  - &minus;RADIUS/TACACS+ users access authentication
- Access Control List
  - &minus;IPv4/IPv6 IP-based ACL
  - &minus;IPv4/IPv6 IP-based ACE
  - &minus;MAC-based ACL
  - &minus;MAC-based ACE
- MAC Security
  - &minus;Static MAC
  - &minus;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

**CONFIDENTIAL**

# 3. PRODUCT SPECIFICATIONS

## 3.1 MAIN COMPONENTS

| | | |
|---|---|---|
| Chipset | RTL8382MI | x 1 |
| GbE PHY | RTL8214FCI | x 1 |
| PoE PSE | IP8008 | x 2 |
| Flash: | 16Mbytes | x 1 |
| DDR RAM: | 128Mbytes | x 1 |

## 3.2 FUNCTION SPECIFICATIONS

| Product | IGS-4215-8UP2T2S |
|---|---|
| **Hardware Specifications** | |
| Copper Ports | Ten 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports (Ports 1 to 10) |
| PoE Injector Port | Eight ports with 802.3af/802.3at/802.3bt PoE++ injector function (Ports 1 to 8) |
| SFP Ports | Two 1000BASE-SX/LX/BX SFP interfaces (Ports 11 to 12)<br>Compatible with 100BASE-FX SFP |
| Console | 1 x RS232-to-RJ45 serial port (115200,8, N, 1) |
| RAM | 128Mbytes |
| Flash Memory | 16Mbytes |
| Reset Button | < 5 sec: System reboot<br>> 5 sec: Factory default |
| Connector | Removable 6-pin terminal block<br>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.)<br>(>52V DC for PoE++ output recommended) |
| Power Consumption/ Dissipation | **System On:** Max. 9.18 watts/31.3BTU<br>**PoE Full Loading:** Max. 390 watts/1329.9BTU |
| Dimensions (W x D x H) | 76.8 x 107.3 x 152 mm |
| Weight | 1,091g |
| Enclosure | IP30 aluminum case |
| Installation | DIN-rail kit and wall-mount ear |
| ESD Protection | Contact Discharge 6KV DC<br>Air Discharge 8KV DC |
| Surge Protection | 4KV DC |
| LED | System:<br>    Power 1 (Green) |

|  |  |
|---|---|
|  | Power 2 (Green)<br>Fault Alarm (Red)<br>Ring (Green)<br>R.O.(Green)<br>Per 10/100/1000T RJ45 PoE++ Ports:<br>    1000Mbps LNK/ACT (Green)<br>    10/100Mbps LNK/ACT (Amber)<br>    802.3bt PoE++-in-use x 1 (Green)<br>    802.3at/af PoE-in-use x 1 (Amber)<br>Per 10/100/1000T RJ45Ports:<br>    1000 LNK/ACT (Green)<br>    10/100 LNK/ACT (Amber)<br>Per SFP Interface:<br>    1000 LNK/ACT (Green)<br>    100 LNK/ACT (Amber)<br>PoE Usage:<br>    90W, 180W, 270W, 360W (Amber) |
| **Switching Specifications** | |
| **Switch Architecture** | Store-and-Forward |
| **Switch Fabric** | 24Gbps/non-blocking |
| **Switch Throughput@64 bytes** | 17.85Mpps |
| **MAC Address Table** | 8K entries |
| **Shared Data Buffer** | 4.1 megabits |
| **Flow Control** | IEEE 802.3x pause frame for full duplex<br>Back pressure for half duplex |
| **Jumbo Frame** | 10 Kbytes |
| **Power over Ethernet** | |
| **PoE Standard** | IEEE 802.3bt PoE++ Type-4 |
| **PoE Power Supply Type** | End-span<br>Mid-span<br>BT |
| **Power Pin Assignment** | 802.3bt/UPoE: 1/2(-), 3/6(+),4/5(+), 7/8(-)<br>802.3at/PoE: End-span: 1/2(-), 3/6(+)<br>802.3at/PoE: Mid-span: 4/5(+), 7/8(-) |
| **PoE Power Output** | Per port 48V ~ 54V DC<br>-802.3bt Type-4 mode: maximum 95 watts<br>-End-span mode: maximum 36 watts<br>-Mid-span mode: maximum 36 watts<br>-Force mode: maximum 95 watts |
| **PoE Power Budget** | Single power input: 240W maximum (depending on power input)<br>Dual power input: 360W maximum (depending on power input)<br>※Dual power input must be the same as DC voltage, like dual 54V. |
| **Number of 90W 802.3bt Type-4 PDs** | 4 |

**CONFIDENTIAL**

| | |
|---|---|
| **Number of 60W 802.3bt Type-3 PDs** | 6 |
| **Number of 30W 802.3at Type-2 PDs** | 8 |
| **PoE Management Functions** | |
| **Enhanced PoE Mode** | Standard/Legacy/Force |
| **PoE Management** | PD Alive Check<br>Scheduled Power Recycling<br>PoE Schedule<br>PoE Usage Monitoring<br>PoE Extension |
| **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 |
| **Layer 2 Functions** | |
| **Port Mirroring** | TX/RX/Both<br>Many-to-1 monitor<br>Up to 4 sessions |
| **VLAN** | 802.1Q tagged VLAN<br>802.1ad Q-in-Q tunneling (VLAN stacking)<br>Voice VLAN<br>Protocol VLAN<br>Private VLAN (Protected port)<br>GVRP<br>Management VLAN<br>Up to 256 VLAN groups, out of 4094 VLAN IDs |
| **Link Aggregation** | IEEE 802.3ad LACP and static trunk<br>Supports 6 groups with 8 ports per trunk |
| **Spanning Tree Protocol** | IEEE 802.1D Spanning Tree Protocol (STP)<br>IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)<br>IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)<br>STP BPDU Guard, BPDU Filtering and BPDU Forwarding |
| **IGMP Snooping** | IPv4 IGMP snooping v2, v3<br>IGMP querier<br>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<br>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 |
| **Ring** | Supports ERPS, and complies with ITU-T G.8032<br>Recovery time < 450ms |
| **Security Functions** | |
| **Access Control List** | IPv4/IPv6 IP-based ACL/MAC-based ACL<br><br>IPv4/IPv6 IP-based ACE/MAC-based ACE<br><br>Max. 256 ACL entries |
| **Port Security** | IEEE 802.1X – Port-based authentication<br><br>Built-in RADIUS client to co-operate with RADIUS server<br><br>RADIUS/TACACS+ user access authentication |
| **MAC Security** | IP-MAC port binding<br>MAC filter<br>Static MAC address, max. 256 static MAC entries |
| **Enhanced Security** | DHCP Snooping and DHCP Option82<br>STP BPDU guard, BPDU filtering and BPDU forwarding<br>DoS attack prevention<br>ARP inspection<br>IP source guard |
| **Management Functions** | |
| **Basic Management Interfaces** | RS232 to RJ45 Console<br>Web browser<br>Telnet<br>SNMP v1, v2c |
| **Secure Management Interfaces** | SSHv2, TLS v1.2, SNMP v3 |
| **System Management** | Firmware upgrade by HTTP/TFTP protocol through Ethernet network<br><br>Configuration upload/download through HTTP/TFTP<br><br>LLDP protocol<br><br>SNTP<br><br>PLANET Smart Discovery Utility<br><br>PLANET NMS System/CloudViewer |
| **Event Management** | Remote/Local Syslog<br>System log |
| **SNMP MIBs** | RFC 1213 MIB-II<br>RFC 1215 Generic Traps<br>RFC 1493 Bridge MIB<br>RFC 2674 Bridge MIB Extensions<br>RFC 2737 Entity MIB (Version 2)<br>RFC 2819 RMON (1, 2, 3, 9)<br>RFC 2863 Interface Group MIB<br>RFC 3635 Ethernet-like MIB |

| | |
|---|---|
| | RFC 3621 Power Ethernet MIB |
| **Standards Conformance** | |
| **Regulatory Compliance** | FCC Part 15 Class A<br>EN 55032<br>EN 55035<br>ICES-003 issue 7 |
| **Stability Testing** | IEC 60068-2-32 (free fall)<br>IEC 60068-2-27 (shock)<br>IEC 60068-2-6 (vibration) |
| **Standards Compliance** | IEEE 802.3 10BASE-T<br>IEEE 802.3u 100BASE-TX/100BASE-FX<br>IEEE 802.3z Gigabit SX/LX<br>IEEE 802.3ab Gigabit 1000BASE-T<br>IEEE 802.3x Flow Control and Back Pressure<br>IEEE 802.3ad Port Trunk with LACP<br>IEEE 802.1D Spanning Tree Protocol<br>IEEE 802.1w Rapid Spanning Tree Protocol<br>IEEE 802.1s Multiple Spanning Tree Protocol<br>IEEE 802.1p Class of Service<br>IEEE 802.1Q VLAN Tagging<br>IEEE 802.1x Port Authentication Network Control<br>IEEE 802.1ab LLDP<br>IEEE 802.3af Power over Ethernet<br>IEEE 802.3at Power over Ethernet Plus<br>IEEE 802.3az for Energy-Efficient Ethernet<br>RFC 768 UDP<br>RFC 783 TFTP<br>RFC 791 IP<br>RFC 792 ICMP<br>RFC 2068 HTTP<br>RFC 1112 IGMP v1<br>RFC 2236 IGMP v2<br>RFC 3376 IGMP v3<br>RFC 2710 MLD v1<br>RFC 3810 MLD v2<br>ITU G.8032 ERPS Ring |
| **Environment** | |
| **Operating Temperature** | -40 ~ 75 degrees C |
| **Storage Temperature** | -40 ~ 85 degrees C |
| **Humidity** | 5 ~ 95% (non-condensing) |

## 3.3 PHYSICAL SPECIFICATIONS:

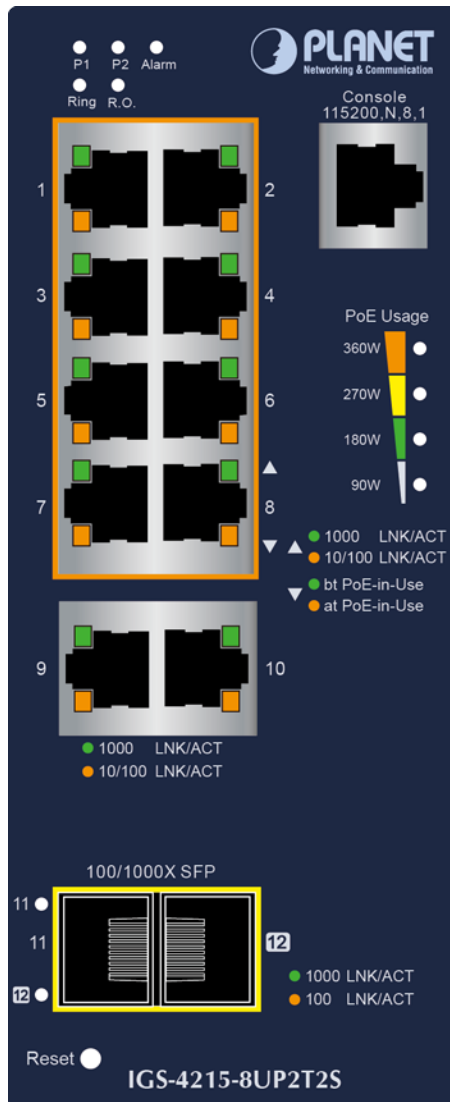■ **Dimensions:**

76.8 x 107.3 x 152 mm (W x D x H)

■ **Weight:**

1091g

■ **Diagram**
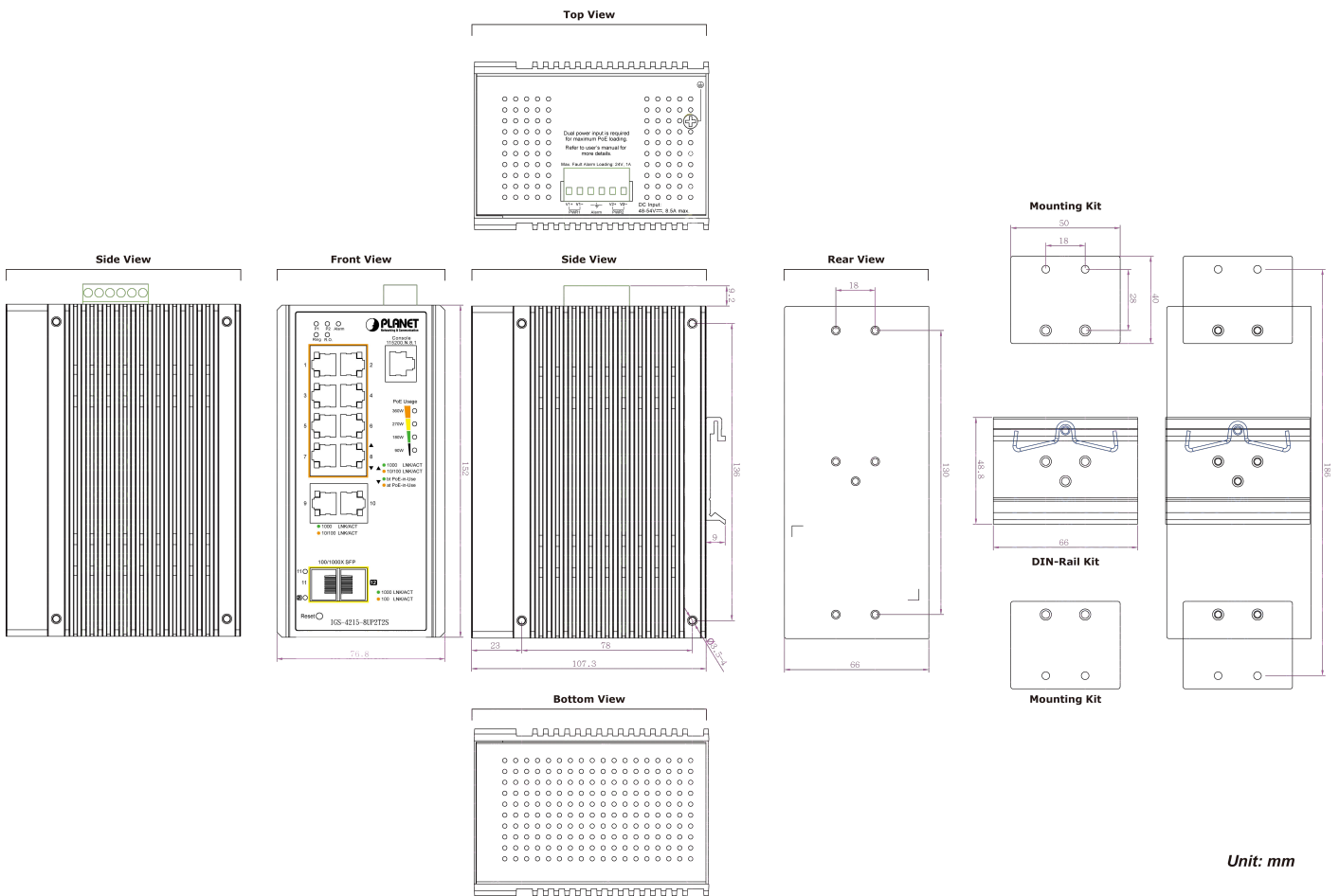


Unit: mm

■ **Front Panel:**



■ **LED Definition**

■ **System**

| LED | Color | Function |
|---|---|---|
| PWR 1 | Green | Lights to indicate DC power input 1 has power. |
| PWR 2 | Green | Lights to indicate DC power input 2 has power. |
| Alarm | Red | Lights to indicate that Switch power input or port has failed. |
| Ring | Green | Lights to indicate that the ERPS Ring has been created successfully. |
| R.O. | Green | Lights to indicate that Ring state is in idle mode. |
|  |  | Blinks to indicate that the Ring state is in protected mode. |

**CONFIDENTIAL**

■ **Per 10/100/1000BASE-T, 802.3bt RJ45 Port (Ports 1 to 8)**

| LED | Color | | Function |
|---|---|---|---|
| **1000 LNK/ACT** | **Green** | **Lights** | To indicate the port is running at 1000Mbps and successfully established. |
| | | **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 running at 10/100Mbps and successfully established. |
| | | **Blinks** | To indicate that the switch is actively sending or receiving data over that port. |
| **PoE-in-Use** | **Green** | **Lights** | Lights to indicate the PoE port is working in **4-pair PoE** mode (Endspan + Mid-span ) and offers up to 95 watts of power. |
| | **Amber** | **Lights** | Lights to indicate the PoE port is working in **802.3at PoE+** mode (End-span or Mid-span) and offers up to 36 watts of power. |

■ **Per 10/100/1000BASE-T RJ45 Port (Ports 9 to 10)**

| LED | Color | | Function |
|---|---|---|---|
| **1000 LNK/ACT** | **Green** | **Lights** | To indicate the port is running at 1000Mbps and successfully established. |
| | | **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 running at 10/100Mbps and successfully established. |
| | | **Blinks** | To indicate that the switch is actively sending or receiving data over that port. |

■ **Per 100/1000BASE-X SFP Interface (Ports 11 to 12)**

| LED | Color | | Function |
|---|---|---|---|
| **1G 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. |

■ **PoE Usage LED**

| LED | Color | | Function |
|---|---|---|---|
| **360** | **Amber** | **Blink**: | To indicate the system consumes **close to** 360-watt PoE power budget |
| **270** | **Amber** | **Lights**: | To indicate the system consumes over 270-watt PoE power budget |
| **180** | **Amber** | **Lights**: | To indicate the system consumes over 180-watt PoE power budget |
| **90** | **Amber** | **Lights**: | To indicate the system consumes over 90-watt PoE power budget |

■ **Top View**
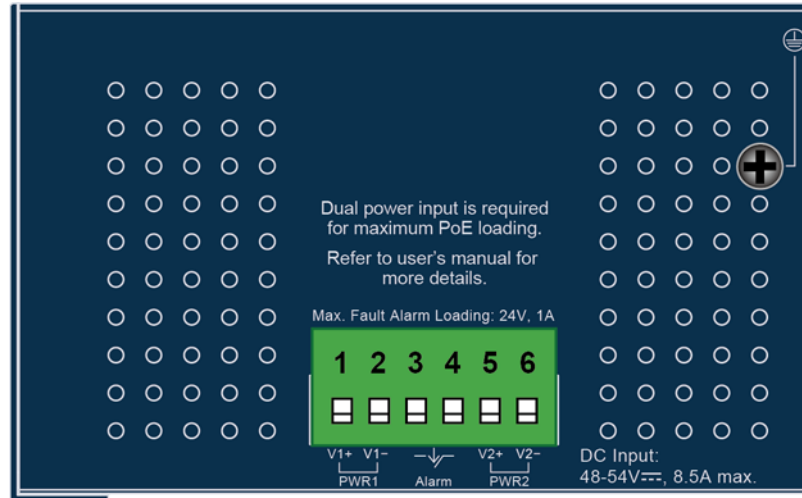


## 3.4 ENVIRONMENTAL SPECIFICATIONS

**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 | Ports 1~8 PoE full loading + Ports 9~12 link up (data + PoE) |
|---|---|---|
| **48V DC** | 9.18 watts/31.3BTU | 390 watts/1329.9BTU |
| **54V DC** | 8.9 watts30.34BTU | 389 watts/1326.49BTU |

## 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-4215-8UP2T2S                    x 1

☑ Quick Installation Guide Sheet           x 1

☑ **RS232 to RJ45 Console Cable**          x 1

☑ DIN-rail Kit                             x 1

☑ Wall Mounting Kit                        x 1

☑ SFP/SFP+ Dust Cap                        x 2

☑ RJ45 Dust Cap                            x 11

## 3.9 PACKING INFORMATION

| | |
|---|---|
| **Box Dimensions (W x D x H)** | 300 x 170 x 90 mm |
| **Weight** (gross weight) | 1.7kg |
| **Carton Dimensions (W x D x H)** | 385 x 330 x 490 mm |
| **Carton Total Weight** | 18.3kg |
| **Quantity** | 10pcs in one carton |