# Industrial L3 8-Port 10/100/1000T 802.3bt PoE + Multi-Port SFP Managed Ethernet Switch



## Outstanding 802.3bt PoE++ Solution for Hardened Environment

Complying with the IEEE 802.3bt Power over Ethernet Plus Plus technology, PLANET IGS-6325-8UP2S2X L3 Industrial Managed PoE++ Switch features **eight 10/100/1000BASE-T 802.3bt PoE++ ports** with each port powering up to **95 watts**, **two 10G SFP+ ports** and **two 100/1000/2500BASE-X SFP** interfaces in a rugged IP30 metal case for stable operation in heavy industrial demanding environments. It supports rich PoE operation modes including **95-watt 802.3bt type-4 PoE++ ports**, Legacy PoE mode and 4-pair force mode to solve the incompatibility of non-standard 4-pair PoE PDs in the field.

Being able to operate under wide temperature range from -40 to 75 degrees C, the IGS-6325 PoE++ Switch series can be placed in almost any difficult environment. The IGS-6325 PoE++ Switch series also allows either DIN rail or wall mounting for efficient use of cabinet space.



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

As the IGS-6325 PoE++ Series adopts the IEEE 802.bt PoE++ standard and PoH technology, 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

## Physical Port

- 8 10/100/1000BASE-T Gigabit Ethernet RJ45 ports with 802.3bt PoE++ Injector function
- 2 100/1000/2500BASE-X SFP slots for SFP type auto detection
- 2 10GBASE-SR/LR SFP+ slots, compatible with 1G/2.5GBASE-X SFP(IGS-6325-8UP2S2X)
- One RJ45-to-RS232 console interface for basic management and setup

## 802.3bt Power over Ethernet

- Complies with IEEE 802.3bt Power over Ethernet Plus Plus Type-4 PSE
- Backward compatible with IEEE 802.3at/af PD device
- Up to 8 ports of IEEE 802.3af/IEEE 802.3at/IEEE 802.3bt PoE++ devices powered
- Supports PoE power up to 95 watts for each PoE port
- Total of 360-watt PoE budget
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100m
- PoE management features
  - Total PoE power budget control
  - Per port PoE function enable/disable
  - PoE admin-mode control
  - PoE port power feeding priority
  - Per PoE port power limit
  - PD classification detection
  - PoE extend mode control to support power feeding up to a distance of up to 200 meters
- Intelligent PoE features
  - Temperature threshold control
  - PoE usage threshold control
  - PD alive check
  - PoE schedule

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
- Any network device that needs higher PoE power to work normally
- Thin clients
- AIO (all-in-one) touch PCs, point of sale (POS) and information kiosks
- Remote digital signage displays
- PoE lightings
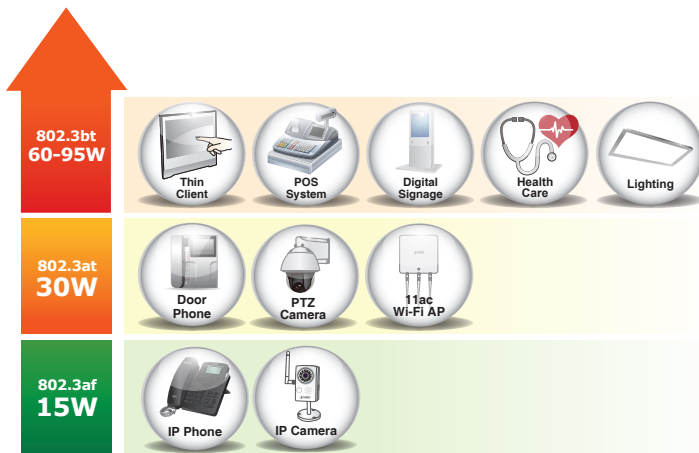


### 802.3bt PoE++ and Advanced PoE Power Output Mode Management

To meet the demand of various powered devices consuming stable PoE power, the IGS-6325 PoE++ Switch series provides five different PoE power output modes for selection.

- **95W 802.3bt PoE++ Power Output Mode**
- **95W UPOE/Legacy Power Output Mode**
- **95W Force Power Output Mode**
- **36W End-span PoE Power Output Mode (Pins 1, 2, 3, 6)**
- **36W Mid-span PoE Power Output Mode (Pins 4, 5, 7, 8)**

### Convenient and Smart ONVIF Devices with Detection Feature

PLANET has newly developed an awesome feature -- ONVIF Support -- which is specifically designed for co-operating with video IP surveillances. From the IGS-6325 PoE++ Switch series GUI, clients just need one click to search and show all of the ONVIF devices via network application.

In addition, clients can upload floor plans to the switch, allowing to locate surveillance devices for easier inspection and planning. Moreover, clients can get real-time surveillance's information and online/offline status, and also allows cameras PoE reboot control from GUI.

### Industrial Protocol

- Modbus TCP for real-time monitoring in the SCADA system
- IEEE 1588v2 PTP (Precision Time Protocol) tramsparent clock mode

### Industrial Hardened Design

- Dual power input, redundant power with reverse polarity protection
  – DC 48 to 54V input
  – Active-active redundant power failure protection
  – Backup of catastrophic power failure on one supply
  – Fault tolerance and resilience
- DIN-rail and wall-mountable designs
- IP30 aluminum case
- Supports 6000V Ethernet ESD protection
- -40 to 75 degrees C operating temperature

### Digital Input and Digital Output

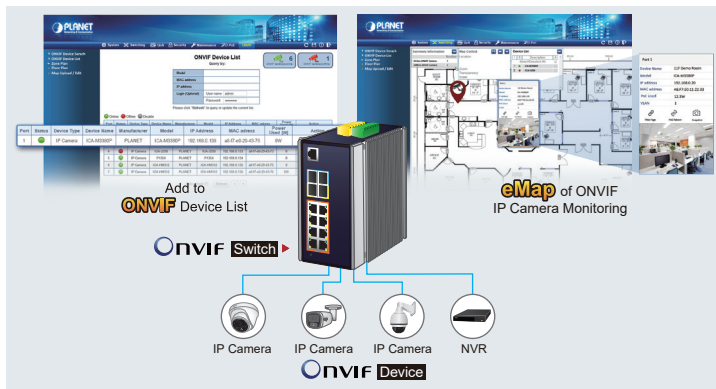- 2 Digital Input (DI)
- 2 Digital Output (DO)
- Integrate sensors into auto alarm system
- Transfer alarm to IP network via email and SNMP trap

### Layer 3 IP Routing Features

- IP dynamic routing protocol supports RIP, OSPFv2 and OSPFv3
- Supports maximum 128 static routes and route summarization
- IPv4 dynamic routing protocol supports OSPFv2
- IPv4/IPv6 hardware static routing
- Routing interface provides per VLAN routing mode

### Layer 2 Features

- Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x pause frame flow control (full-duplex)
- High performance of Store-and-Forward architecture, and runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- Storm Control support
  – Broadcast/Multicast/Unicast
- Supports **VLAN**
  – IEEE 802.1Q tagged VLAN
  – Up to 4K VLANs groups, out of 4095 VLAN IDs

Add to **ONVIF** Device List

**eMap** of ONVIF
IP Camera Monitoring

IP Camera    IP Camera    IP Camera    NVR

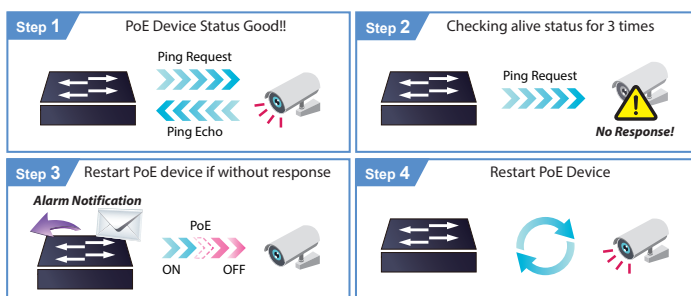## Built-in Unique PoE Functions for Powered Devices Management

Being the managed PoE switches for surveillance, wireless and VoIP networks, the IGS-6325 PoE++ Switch series features the following special PoE management functions:

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

## Intelligent Alive Check for Powered Device

The IGS-6325 PoE++ Series can be configured to monitor connected PD's status in real time via ping action. Once the PD stops working and responding, the IGS-6325 PoE++ Series will recycle the PoE port power and bring the PD back to work. It also greatly enhances the reliability in that the PoE port will reset the PD power, thus reducing administrator's management burden.

## PD Alive Check



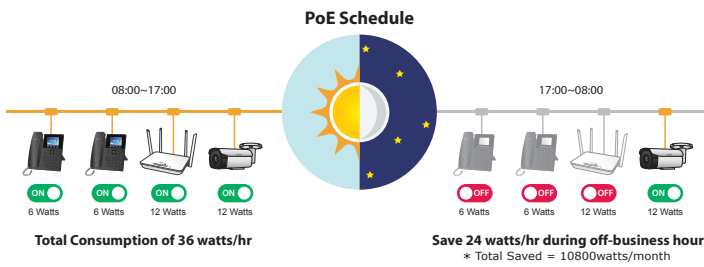| Step 1 | PoE Device Status Good!! |
| Step 2 | Checking alive status for 3 times |
| Step 3 | Restart PoE device if without response |
| Step 4 | Restart PoE Device |

## PoE Schedule for Energy Savings

Under the trend of energy savings worldwide and contributing to environmental protection on the Earth, the IGS-6325 PoE++ Series can effectively control the power supply besides its capability of giving high watts power. The built-in **"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 money.

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- – Supports provider bridging (VLAN Q-in-Q IEEE 802.1ad)
- – Private VLAN Edge (PVE)
- – Protocol-based VLAN
- – MAC-based VLAN
- – Voice VLAN
- – GVRP (GARP VLAN Registration Protocol)
- 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
  - – BPDU Guard
- Supports **Link Aggregation**
  - – 802.3ad Link Aggregation Control Protocol (LACP)
  - – Cisco ether-channel (static trunk)
  - – Maximum 4 trunk groups with 4 ports per trunk group
  - – Up to 40Gbps bandwidth (duplex mode)
- Provides port mirror (many-to-1)
- Port mirroring to monitor the incoming or outgoing traffic on a particular port
- Loop protection to avoid broadcast loops
- Link Layer Discovery Protocol (LLDP)
- Compatible with Cisco uni-directional link detection(UDLD) that monitors a link between two switches and blocks the ports on both ends of the link if the link fails at any point between the two devices
- Supports G.8032 ERPS (Ethernet Ring Protection Switching)
- IEEE 1588 and Synchronous Ethernet network timing

## Quality of Service

- Ingress Shaper and Egress Rate Limit per port bandwidth control
- 8 priority queues on all switch ports
- Traffic classification
  - – IEEE 802.1p CoS
  - – IP TOS/DSCP/IP precedence
  - – 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

**PoE Schedule**

08:00~17:00

ON 6 Watts  ON 6 Watts  ON 12 Watts  ON 12 Watts

**Total Consumption of 36 watts/hr**

17:00~08:00

OFF 6 Watts  OFF 6 Watts  OFF 12 Watts  ON 12 Watts

**Save 24 watts/hr during off-business hours**
＊ Total Saved = 10800watts/month

### *Scheduled Power Recycling*

The IGS-6325 PoE++ Series 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.

IP Camera

AP Router

PoE lighting

IP Phone

Door Phone

**Automatically Reboot**
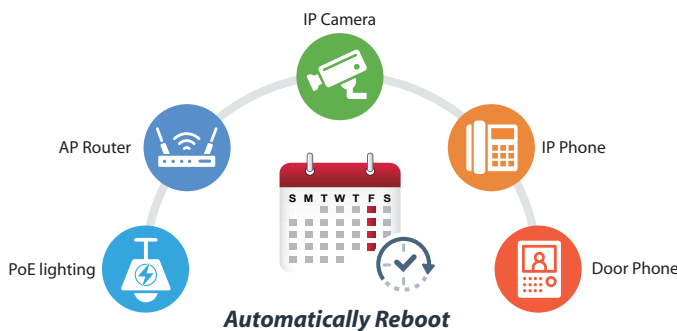
### *PoE Usage Monitoring*

Via the power usage chart in the web management interface, the IGS-6325 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.

### *Layer 3 Network Routing Support*

The IGS-6325 PoE++ Series allows administrators to boost network efficiency by configuring Layer 3 IPv4/IPv6 VLAN static routing manually or automatically through the **Routing Information Protocol (RIP)** or **Open Shortest Path First (OSPF)** settings.

- The **RIP** uses hop count as a routing metric and prevents routing loops by setting a limit on the number of hops allowed in a path from source to destination.

- The **OSPF** is an interior dynamic routing protocol for autonomous systems based on link state. The protocol creates a database of link states by exchanging link states among Layer 3 switches and then uses the Shortest Path First algorithm to generate a route table based on that database.

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

The IGS-6325 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), and **redundant power** input system into customer's industrial automation network to enhance system reliability and uptime in harsh factory environments. In a certain simple Ring network, the recovery time of data link can be as fast as 10ms.

## Multicast

- Supports IPv4 IGMP snooping v1, v2 and v3
- Supports IPv6 MLD snooping v1 and v2
- Querier mode support
- IPv4 IGMP snooping port filtering
- IPv6 MLD snooping port filtering
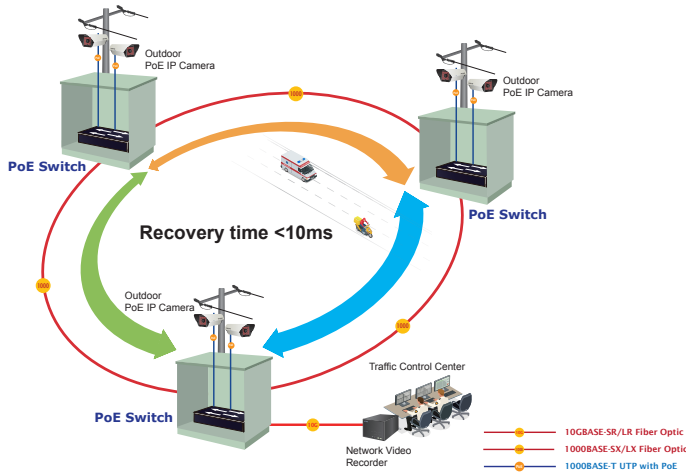- MVR (Multicast VLAN Registration)

## Security

- Authentication
  - IEEE 802.1X Port-based/MAC-based network access authentication
  - Built-in RADIUS client to cooperate with the RADIUS servers
  - TACACS+ login users access authentication
  - RADIUS/TACACS+ users access authentication
  - Guest VLAN assigns clients to a restricted VLAN with limited services.
- Access Control Lit
  - IP-based Access Control List (ACL)
  - MAC-based Access Control List
- Source MAC/IP address binding
- 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
- IP address access management to prevent unauthorized intruder

## Management

- IPv4 and IPv6 dual stack management
- Switch Management Interfaces
  - Console and Telnet Command Line Interface
  - HTTP web switch management
  - SNMP v1 and v2c switch management
  - SSHv2, TLSv1.2 and SNMP v3 secure access
- SNMP Management
  - Four RMON groups (history, statistics, alarms, and events)
  - SNMP trap for interface Link Up and Link Down notification
- IPv6 IP address/NTP/DNS management
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment

## ERPS Ring for Video Transmission Redundancy



**Recovery time <10ms**

- System Maintenance
  - Firmware upload/download via HTTP
  - Reset button for system reboot or reset to factory default
  - Dual images
- DHCP Relay
- DHCP Option 82
- DHCP Server
- User Privilege levels control
- Network Time Protocol (NTP)
- Network Diagnostic
  - SFP-DDM (Digital Diagnostic Monitor)
  - Cable diagnostic technology provides the mechanism to detect and report potential cabling issues
  - ICMPv6/ICMPv4 remote ping
- SMTP/Syslog remote alarm
- System Log
- PLANET UNI-NMS (Universal Network Management) and CloudViewer app for deployment management
- Provides ONVIF for cooperating with PLANET IP video surveillance

*Cybersecurity Network Solution to Minimize Security Risks*

The IGS-6325 PoE++ Series comes with enhanced cybersecurity to fend off cyber threats and cyber attacks. It supports SSHv2 and TLSv1.2 protocols to provide strong protection against advanced threats. Served as a key point to transmit data to customer's critical equipment in a business network, the cybersecurity feature of the IGS-6325 PoE++ Series protects the switch management and enhances the security of the mission-critical network without any extra deployment cost and effort.



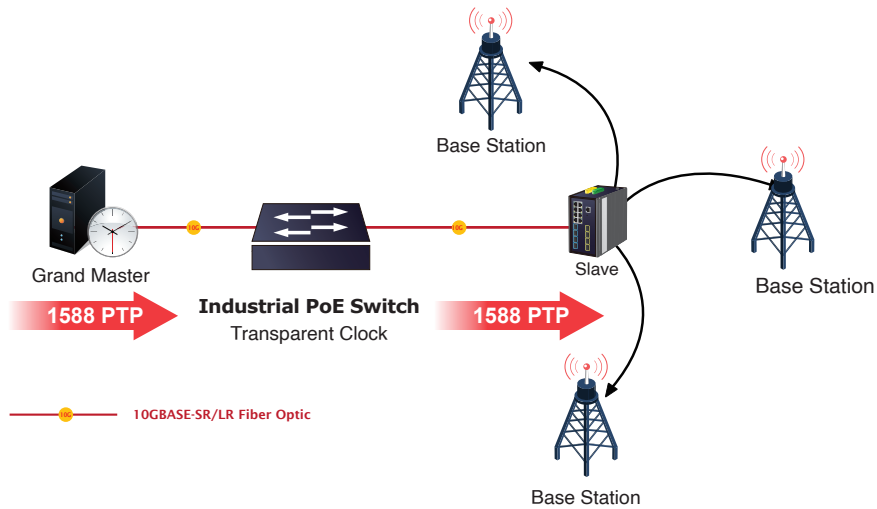*Modbus TCP Provides Flexible Network Connectivity for Factory Automation*

With the supported **Modbus TCP/IP** protocol, the IGS-6325 Series can easily integrate with **SCADA** systems, **HMI** systems and other data acquisition systems in factory floors. It enables administrators to remotely monitor the industrial Ethernet switch's **operating information**, **port information**, communication status, and DI and DO status, thus easily achieving enhanced monitoring and maintenance of the entire factory.

*1588 Time Protocol for Industrial Computing Networks*

The IGS-6325 Series is ideal for telecom and Carrier Ethernet applications, supporting MEF service delivery and timing over packet solutions for IEEE 1588 and synchronous Ethernet.
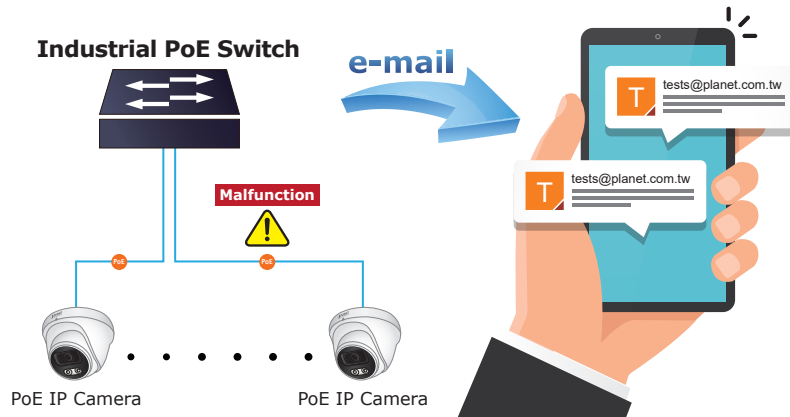
## Time Synchronization in Network



*SMTP/SNMP Trap Event Alert*

The IGS-6325 Series provides event alert function to help to diagnose the abnormal device owing to whether or not there is a break of the network connection, or the rebooting response.
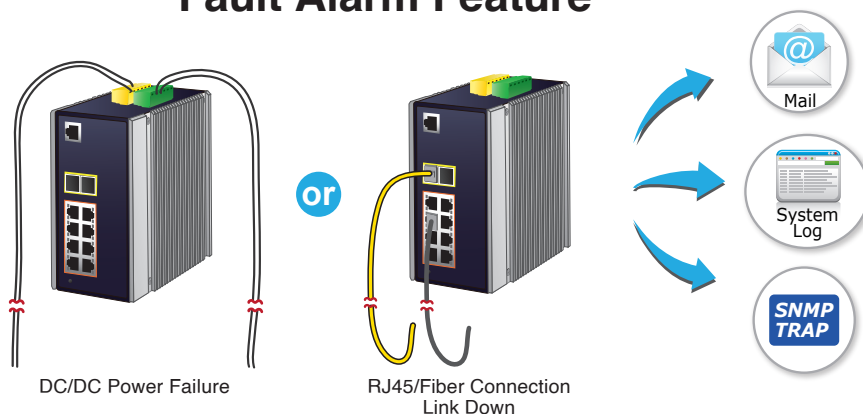
## SMTP/SNMP Trap Event Alert



*Effective Alarm Alert for Better Protection*

The IGS-6325 Series supports a Fault Alarm feature which can alert the users when there is something wrong with the switches. With this ideal feature, the users would not have to waste time finding where the problem is. It will help to save time and human resource.
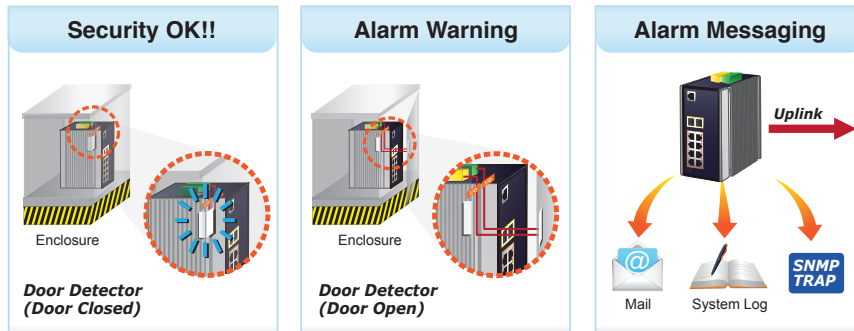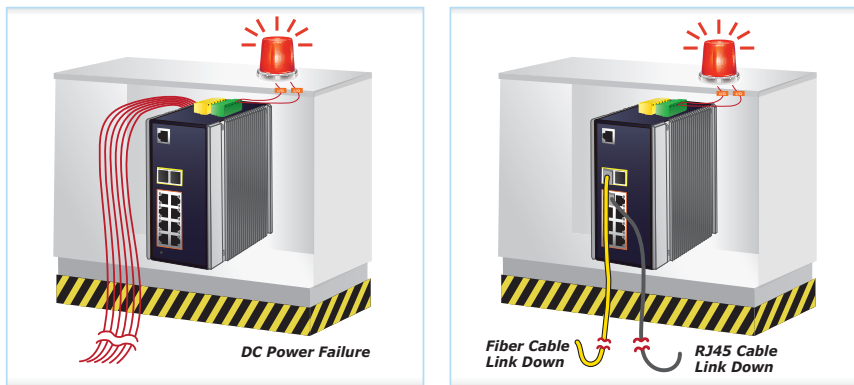
## Fault Alarm Feature

## Digital Input and Digital Output for External Alarm

The IGS-6325 Series supports Digital Input and Digital Output on its front panel. This external alarm enables users to use Digital Input to detect and log external device status (such as door intrusion detector), and send event alarm to the administrators. The Digital Output could be used to alarm the administrators if the I IGS-6325 Series' port shows link down, link up or power failure.

### Digital Input



| Security OK!! | Alarm Warning | Alarm Messaging |
|---|---|---|
| Enclosure | Enclosure | Uplink |
| Door Detector (Door Closed) | Door Detector (Door Open) | Mail   System Log   SNMP TRAP |

### Digital Output



DC Power Failure

Fiber Cable Link Down   RJ45 Cable Link Down

## Robust Layer 2 to Layer 4 Features

The IGS-6325 Series can be programmed for advanced Layer 2 switch management functions such as dynamic port link aggregation, 802.1Q tagged VLAN, Q-in-Q VLAN, private VLAN, Multiple Spanning Tree Protocol (MSTP), Layer 2 to Layer 4 QoS, bandwidth control, IGMP snooping and MLD snooping. Via the aggregation of supporting ports, the IGS-6325 Series allows the operation of a high-speed trunk group that comes with multiple ports and supports fail-over as well.



L2/L4 Managed Switch     L2/L4 Managed Switch
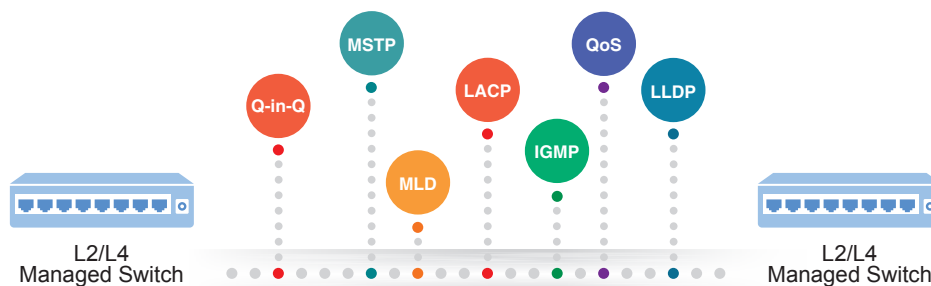
## Efficient Management

For efficient management, the IGS-6325 Series is equipped with console, Web and SNMP management interfaces.

■ With the built-in **Web-based** management interface, it 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.

■ For standard-based monitor and management software, it offers SNMPv3 connection which encrypts the packet content at each session for secure remote management.
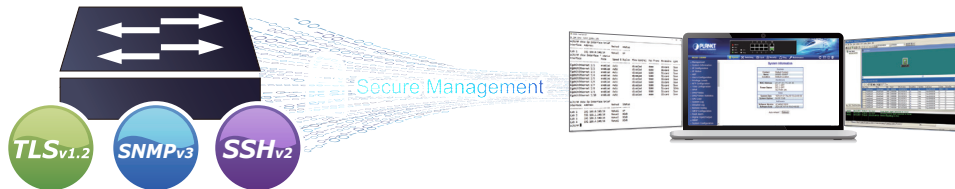
## Remote Management Solution

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 CloudViewerPro app, all kinds of businesses can now be speedily and efficiently managed from one platform.

NMS Controller                                    CloudViewerPro App

## Powerful Network Security

The IGS-6325 Series offers comprehensive 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** and **MAC-based** user and device authentication. With the **private VLAN** function, communication between edge ports can be prevented to ensure user privacy.

## Advanced IP Network Protection

The IGS-6325 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.

## Flexible and Extendable 10Gb Ethernet Solution

10G Ethernet is a big leap in the evolution of Ethernet. Each of the 10G SFP+ slots in the IGS-6325 PoE++ Series supports **multiple speed** and **10GBASE-SR/LR**, **1000BASE-SX/LX** or **2500BASE-X.** With its 2-port, 10G Ethernet link capability and additional 2-port 1G/2.5G Ethernet link capability, the administrator now can flexibly choose the suitable SFP/SFP+ transceiver according to the transmission distance or the transmission speed required to extend the network efficiently. The IGS-6325 Series provides broad bandwidth and powerful processing capacity.

### Intelligent SFP Diagnosis Mechanism

The IGS-6325 Series supports SFP-DDM (digital diagnostic monitor) function that greatly helps network administrator to easily monitor real-time parameters of the SFP and SFP+ trasnceivers, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.



*SFP DDM (Digital Diagnostic Monitor)*

| Voltage | Ammeter | Temperature | Power Transceiver | Power Receiver |
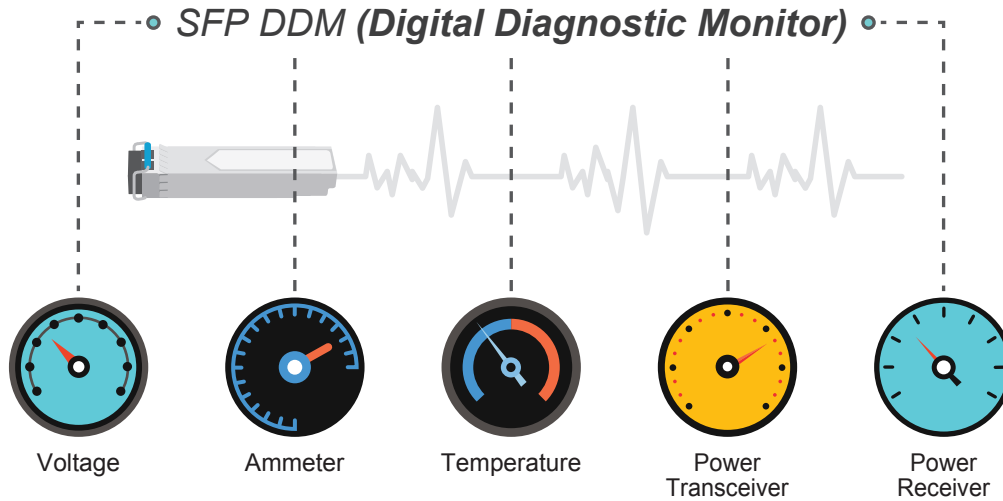
## Applications

### Industrial Area Department/Workgroup PoE Switch

Providing up to eight 802.3bt PoE++, in-line power interfaces, the IGS-6325 PoE++ Series can easily build a power centrally controlled for IP phone system, IP camera system, or wireless AP group for Industrial network. For instance, eight PoE IP cameras or wireless access points can be easily installed around the corner in the industrial environment for surveillance demands or for a wireless roaming network. Without the power-socket limitation, the IGS-6325 PoE++ Series makes the installation of IP cameras or wireless AP easier and more efficient.



**Extending Ethernet Distance**

Outdoor IP Camera

Ethernet up to 100 meters

Network Video Recorder

Fiber Optic Cable up to 120km

Fiber Optic Cable up to 120km

Gigabit Fiber Switch

IGS-6325-8UP2S2X

IGS-6325-8UP2S2X

240km

1000BASE-SX/LX Fiber Optic
1000BASE-T UTP
1000BASE-T UTP with PoE
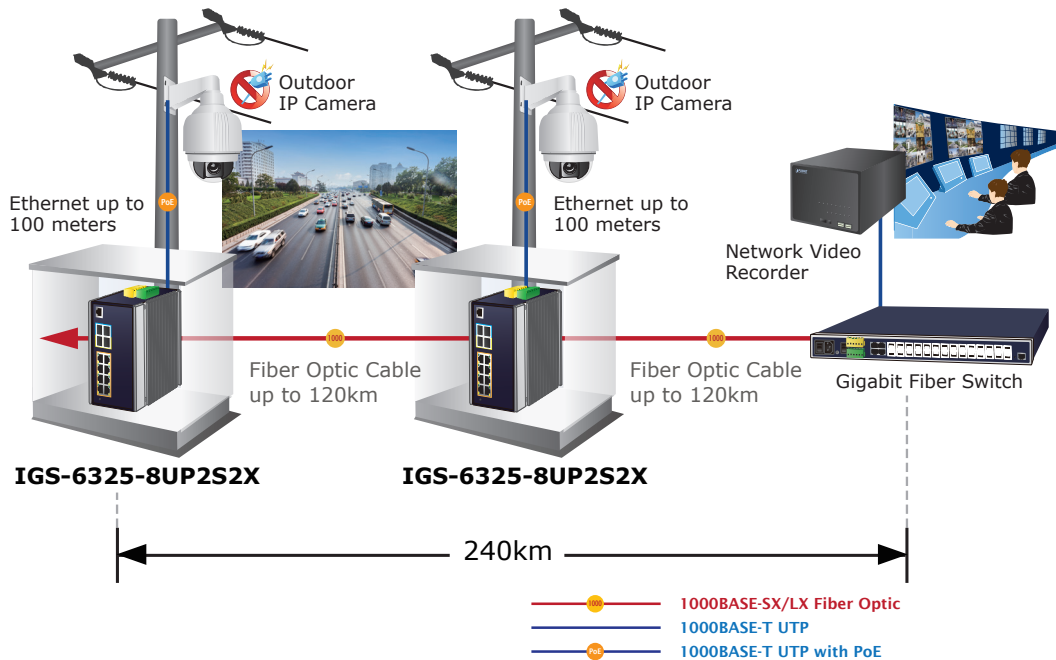
*Gigabit 802.3bt PoE++ and PoE+ Network Deployment*

To control the power system of your networking devices, the IGS-6325 PoE++ Series can directly co-work with network devices such as PoE IP phone to build VoIP network in the office. The 802.3bt PoE++ switch can be directly connected to any third-party IEEE 802.3af/802.3at/802.3bt compliant devices installed within 100 meters. Furthermore, the IGS-6325 PoE++ can extend much longer distance by using PLANET PoE extender for powering up the PoE PD which can be installed over more than 100 meters away.
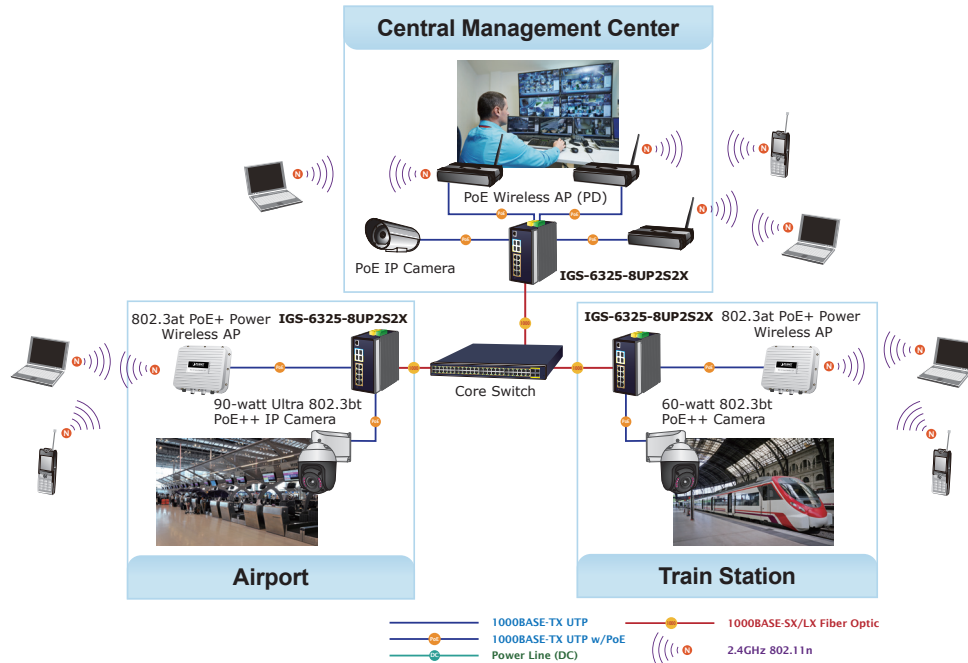


# Specifications

| Product | IGS-6325-8UP2S | IGS-6325-8UP2S2X |
|---|---|---|
| **Hardware Specifications** | | |
| Copper Ports | 8 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports | |
| SFP Ports | 2 1000BASE-SX/LX/BX SFP slot interfaces (Port-9 and Port-10)<br>Compatible with 100BASE-FX and 2500BASE-X SFP | |
| SFP+ Ports | -- | 2 10GbBASE-SR/LR SFP+ interfaces (Port-11 to Port-12)<br>Compatible with 1000BASE-SX/LX/BX and 2500BASE-X SFP transceiver |
| PoE Injector Ports | 8 ports with 802.3bt PoE++ injector function with Port-1 to Port-8 | |
| Console | 1 x RJ45-to-RS232 serial port (115200, 8, N, 1) | |
| Reset Button | < 5 sec: System reboot<br> > 5 sec: Factory default | |
| Connector | Removable 6-pin terminal block for power input<br>   Pin 1/2 for Power 1, Pin 3/4 for fault alarm, Pin 5/6 for Power 2<br>Removable 6-pin terminal block for DI/DO interface<br>   Pin 1/2 for DI 1 & 2, Pin 3/4 for DO 1 & 2, Pin 5/6 for GND | |
| Alarm | One relay output for power failure. Alarm relay current carry ability: 1A @ 24V DC | |
| Digital Input (DO) | 2 digital input:<br>   Level 0: -24~2.1V (±0.1V)<br>   Level 1: 2.1~24V (±0.1V)<br>   Input load to 24V DC, 10mA max. | |
| Digital Output (DO) | 2 digital output:<br>   Open collector to 24VDC, 100mA | |
| Installation | DIN-rail or wall mounting | |
| Enclosure | IP30 aluminum case | |
| Dimensions (W x D x H) | 86 x 107 x 152 mm | |
| Weight | 1,278 g | 1,355 g |
| Power Requirements | Dual DC 48~54V, 8.5A max.<br>  (>52V DC for 802.3bt PoE++ output recommended) | |

| Power Consumption | Max. 11.93 watts/40.71 BTU@ dual 54V DC input (System on)<br>Max. 381.5 watts/1301.73 BTU@ dual 54V DC input (Full loading with 802.3bt PoE++ function) | Max. 27.6 watts/94.18 BTU@ dual 54V DC input (System on)<br>Max. 415.2 watts/1416.72 BTU@ dual 54V DC input (Full loading with 802.3bt PoE++ function) |
|---|---|---|
| ESD Protection | 6KV DC | |
| Surge Protection | 4KV DC | |
| LED Indicator | System:<br>　Power 1 (Green), Power 2 (Green)<br>　Fault Alarm (Red)<br>　Ring (Green), Ring Owner (Green)<br>　DIDO (Red)<br>Per 10/100/1000T RJ45 PoE++ Port:<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 SFP Interface:<br>　1000/2500 LNK/ACT (Green)<br>　100 LNK/ACT (Amber)<br>Per SFP+ Port: (IGS-6325-8UP2S2X)<br>　1000/2500 LNK/ACT (Green)<br>　10Gbps LNK/ACT (Amber)<br>PoE Usage:<br>　90W, 180W, 270W, 360W (Amber) | |

## Switching Specifications

| Switch Architecture | Store-and-Forward | |
|---|---|---|
| Switch Fabric | 56Gbps/non-blocking | 60Gbps/non-blocking |
| Throughput (packet per second) | 41.67Mpps@ 64 bytes packet | 44.64Mpps@ 64 bytes packet |
| Address Table | 16K entries, automatic source address learning and aging | |
| Shared Data Buffer | 32Mbits | |
| Flow Control | IEEE 802.3x pause frame for full-duplex<br>Back pressure for half-duplex | |
| Jumbo Frame | 10Kbytes | |

## Power Over Ethernet

| PoE Standard | IEEE 802.3bt PoE++ Type-4 PSE<br>Backward compatible with 802.3at PoE+ PSE |
|---|---|
| PoE Power Supply Type | ■ 802.3bt<br>■ Legacy<br>■ End-span<br>■ Mid-span<br>■ Force |
| PoE Power Output | 802.3bt PoE++<br>　- Per port 52V~54V DC (depending on the power supply), max. 90 watts<br>UPoE(PoH)<br>　- Per port 52V~54V DC (depending on the power supply), max. 95 watts<br>IEEE 802.3at Standard<br>　- Per port 51V~54V DC (depending on the power supply), max. 36 watts<br>Force<br>　- Per port 51V~54V DC (depending on the power supply), max. 60 watts |
| Power Pin Assignment | End-span: 1/2(-), 3/6(+)<br>Mid-span: 4/5(+), 7/8(-)<br>802.3bt/UPoE: 1/2(-), 3/6(+),4/5(+), 7/8(-) |
| PoE Power Budget | 360W maximum (depending on power input) |
| PoE Ability PD @ 12.5 watts | 8 units |
| PoE Ability PD @ 25 watts | 8 units |
| PoE Ability PD @ 51 watts | 6 units |
| PoE Ability PD @ 71 watts | 4 units |

## PoE Management Functions

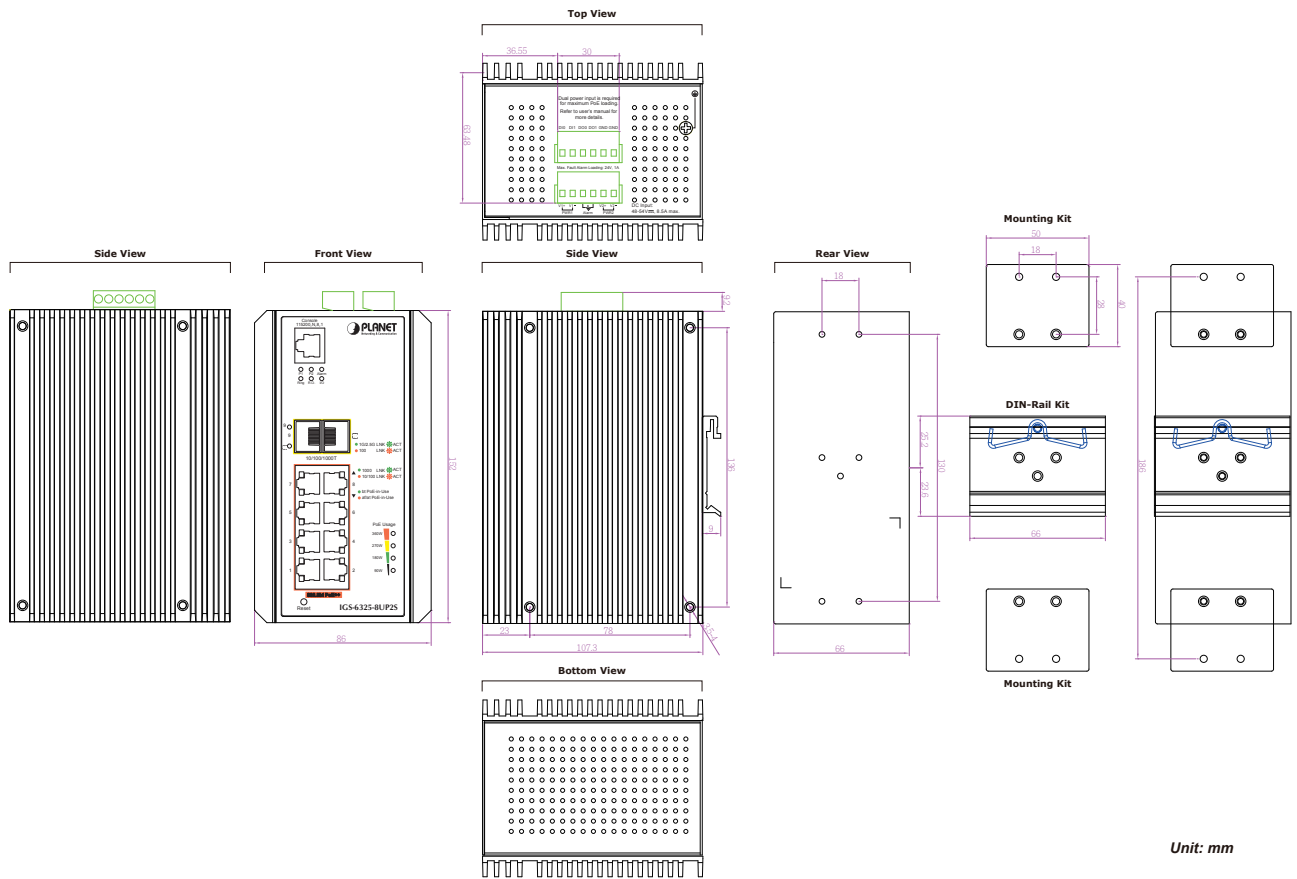| PoE System Management | PoE Port status monitoring<br>Total PoE power budget control<br>Over temperature protection<br>PoE usage threshold and temperature threshold |
|---|---|

| PoE Device Live Detection | Per port remote PD IP address |
| --- | --- |
| | 4 actions |
| |   - None |
| |   - PD reboot |
| |   - PR reboot and alarm |
| | Alarm |
| PoE Power Recycling | Daily or predefined schedule |
| PoE Schedule | 4 schedule profiles |
| PoE Extend Mode | Max. 200 meters |
| **Layer 3 Functions** | |
| IP Interfaces | Max. 128 VLAN interfaces |
| Routing Table | Max. 128 routing entries |
| | Max. 4K H/W routing table entries |
| Routing Protocols | IPv4 RIPv1/v2 |
| | IPv4 OSPFv2 |
| | IPv4 hardware static routing |
| | IPv6 OSPFv3 |
| | IPv6 hardware static routing |
| **Layer 2 Functions** | |
| Port Configuration | Port disable/enable |
| | Auto-negotiation 10/100/1000Mbps full and half duplex mode selection |
| | Flow control disable/enable |
| | Port link capability control |
| Port Status | Display each port's speed duplex mode, link status, flow control status, auto negotiation status, trunk status |
| Port Mirroring | TX/RX/both |
| | Many-to-1 monitor |
| | RMirror – Remote Switched Port Analyzer (Cisco RSPAN) |
| | Supports up to 5 sessions |
| VLAN | IEEE 802.1Q tag-based VLAN |
| | IEEE 802.1ad Q-in-Q tunneling |
| | Private VLAN Edge (PVE) |
| | MAC-based VLAN |
| | Protocol-based VLAN |
| | Voice VLAN |
| | MVR (Multicast VLAN Registration) |
| | GVRP (GARP VLAN Registration Protocol) |
| | Up to 4K VLAN groups, out of 4096 VLAN IDs |
| Spanning Tree Protocol | IEEE 802.1D Spanning Tree Protocol |
| | IEEE 802.1w Rapid Spanning Tree Protocol |
| | IEEE 802.1s Multiple Spanning Tree Protocol |
| | BPDU Guard |
| Link Aggregation | IEEE 802.3ad LACP/static trunk |
| | Supports 6 trunk groups with 4 ports per trunk group |
| IGMP Snooping | IPv4 IGMP (v1/v2/v3) snooping |
| | IPv4 IGMP querier mode support |
| | IPv4 IGMP Snooping port filtering |
| | Supports 255 IGMP groups |
| MLD Snooping | IPv6 MLD (v1/v2) snooping, |
| | IPv6 MLD querier mode support |
| | Supports 255 MLD groups |
| Ring | Supports ERPS, and complies with ITU-T G.8032 |
| | Recovery time < 10ms @ 3 nodes |
| | Recovery time <50ms @ 16 nodes |
| | Supports major ring and sub-ring |
| Synchronization | IEEE 1588v2 PTP (Precision Time Protocol) |
| |   Peer-to-peer transparent clock |
| |   End-to-end transparent clock |

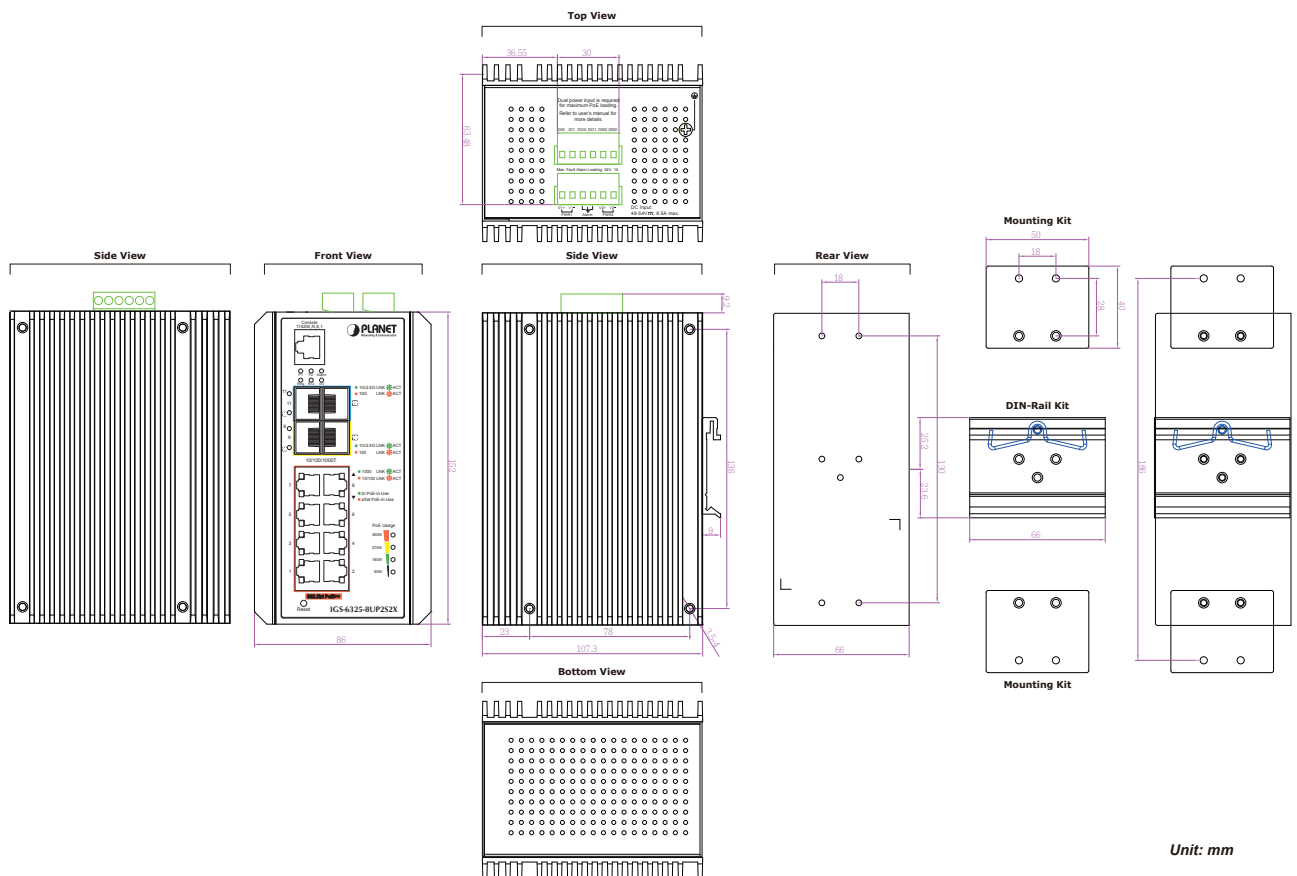| QoS | Traffic classification based, strict priority and WRR |
| | 8-level priority for switching |
| |   - Port number |
| |   - 802.1p priority |
| |   - 802.1Q VLAN tag |
| |   - DSCP/TOS field in IP packet |
| Bandwidth Control | Per port bandwidth control |
| | Ingress: 500Kb~1000Mbps |
| | Egress: 500Kb~1000Mbps |
| **Security Functions** | |
| Access Control List | IP-based ACL/MAC-based ACL |
| | ACL based on: |
| |   - MAC Address |
| |   - IP Address |
| |   - Ethertype |
| |   - Protocol Type |
| |   - VLAN ID |
| |   - DSCP |
| |   - 802.1p Priority |
| | Up to 512 entries |
| Security | Port security |
| | IP source guard, up to 512 entries |
| | Dynamic ARP inspection, up to 1K entries |
| | Command line authority control based on user level |
| | Static MAC address, up to 64 entries |
| AAA | RADIUS client |
| | TACACS+ client |
| Network Access Control | IEEE 802.1x port-based network access control |
| | MAC-based authentication |
| | Local/RADIUS authentication |
| **Management** | |
| Basic Management Interfaces | Console; Telnet; Web browser; SNMP v1, v2c |
| Secure Management Interfaces | SSHv1/SSHv2, TLSv1.2, SNMP v3 |
| System Management | Firmware upgrade by HTTP protocol through Ethernet network |
| | Configuration upload/download through HTTP |
| | Remote syslog |
| | System log |
| | LLDP protocol |
| | NTP |
| | PLANET Smart Discovery Utility |
| | PLANET CloudViewer app |
| Event Management | Remote syslog |
| | System log |
| | SMTP |
| ONVIF | ONVIF device discovery |
| | ONVIF device monitoring |
| | Floor map |
| SNMP MIBs | RFC 1213 MIB-II |
| | RFC 1493 Bridge MIB |
| | RFC 1643 Ethernet MIB |
| | RFC 2863 Interface MIB |
| | RFC 2665 Ether-Like MIB |
| | RFC 2819 RMON MIB (Group 1, 2, 3 and 9) |
| | RFC 2737 Entity MIB |
| | RFC 2618 RADIUS Client MIB |
| | RFC 2863 IF-MIB |
| | RFC 2933 IGMP-STD-MIB |
| | RFC 3411 SNMP-Frameworks-MIB |
| | RFC 4292 IP Forward MIB |
| | RFC 4293 IP MIB |
| | RFC 4836 MAU-MIB |
| | IEEE 802.1X PAE |
| | LLDP |
| | MAU-MIB |

| Standards Conformance | |
|---|---|
| Regulatory Compliance | FCC Part 15 Class A, CE |
| Stability Testing | IEC60068-2-32 (free fall)<br>IEC60068-2-27 (shock)<br>IEC60068-2-6 (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 1000T<br>IEEE 802.3ae 10Gb/s Ethernet (IGS-6325-8UP2S2X)<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 802.1ad Q-in-Q VLAN stacking<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 802.3bt Power over Ethernet Plus Plus<br>IEEE 802.3ah OAM<br>IEEE 802.1ag Connectivity Fault Management (CFM)<br>IEEE 802.3az Energy Efficient Ethernet(EEE)<br>IEEE 1588 PTPv2<br>RFC 768 UDP<br>RFC 783 TFTP<br>RFC 791 IP<br>RFC 792 ICMP<br>RFC 2068 HTTP<br>RFC 1058 RIP v1<br>RFC 2453 RIP v2<br>RFC 1112 IGMP v1<br>RFC 2236 IGMP v2<br>RFC 3376 IGMP v3<br>RFC 2710 MLD v1<br>FRC 3810 MLD v2<br>RFC 2328 OSPF v2<br>RFC 2740 OSPF v3<br>ITU-T G.8032 ERPS Ring<br>ITU-T Y.1731 Performance Monitoring |
| Environment | |
| Operating | Temperature: -40 ~ 75 degrees C<br>Relative Humidity: 5 ~ 95% (non-condensing) |
| Storage | Temperature: -40 ~ 85 degrees C<br>Relative Humidity: 5 ~ 95% (non-condensing) |

# Dimensions

■ IGS-6325-8UP2S

**Top View**

**Side View**

**Front View**

**Side View**

**Rear View**

**Mounting Kit**

**DIN-Rail Kit**

**Mounting Kit**

IGS-6325-8UP2S

**Bottom View**

*Unit: mm*

■ IGS-6325-8UP2S2X

**Top View**

**Side View**

**Front View**

**Side View**

**Rear View**

**Mounting Kit**

**DIN-Rail Kit**

**Mounting Kit**

IGS-6325-8UP2S2X

**Bottom View**

*Unit: mm*

## Ordering Information

| | |
|---|---|
| IGS-6325-8UP2S | Industrial L3 8-Port 10/100/1000T 802.3bt PoE + 2-Port 1G/2.5G SFP Managed Ethernet Switch |
| IGS-6325-8UP2S2X | Industrial L3 8-Port 10/100/1000T 802.3bt PoE + 2-Port 1G/2.5G SFP + 2-Port 10G SFP+ Managed Ethernet Switch |

## Related Products

| | |
|---|---|
| IGS-6329-8UP2S2X | Industrial L3 8-Port 10/100/1000T 802.3bt PoE + 2-Port 1G/2.5G SFP + 2-Port 10G SFP+ Managed Ethernet Switch |
| IGS-6320-8UP2S4X | Industrial L3 8-Port 10/100/1000T 802.3bt PoE + 2-Port 1G/2.5G SFP + 4-Port 10G SFP+ Managed Ethernet Switch |
| IGS-6325-4UP2X | Industrial L3 4-Port 2.5GBASE-T 802.3bt PoE + 2-Port 10G SFP+ Managed Ethernet Switch |
| IGS-5225-4UP1T2S | Industrial L2+ 4-Port 10/100/1000T 802.3bt PoE + 1-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch |
| IGS-5225-8P2S2X | L3 Industrial 8-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP + 2-Port 10G SFP+ Managed Ethernet Switch (-40~75 degrees C) |
| IGS-5225-8P4S | L2+ Industrial 8-Port 10/100/1000T 802.3at PoE + 4-Port 100/1000X SFP Managed Ethernet Switch (-40~75 degrees C) |
| IGS-5225-8P2T2S | L2+ Industrial 8-Port 10/100/1000T 802.3at PoE + 2-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Ethernet Switch (-40~75 degrees C) |
| IGS-5225-4P2S | L2+ Industrial 4-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Managed Ethernet Switch (-40~75 degrees C) |
| IGS-10020HPT | L2+ Industrial 8-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Managed Ethernet Switch (-40~75 degrees C) |
| IPOE-E174 | 1-Port 802.3bt PoE++ to 4-Port 802.3af/at Gigabit PoE Extender |
| IPOE-E302 | Industrial IP67 1-Port 802.3bt PoE to 2-Port 802.3at Gigabit PoE Extender |

## Available 10Gbps Modules

| | |
|---|---|
| MTB-LB40 | 1-Port 10GBASE-BX SFP+ Fiber Optic Module - 40km (TX:1330nm RX:1270nm) |
| MTB-LA40 | 1-Port 10GBASE-BX SFP+ Fiber Optic Module - 40km (TX:1270nm RX:1330nm) |
| MTB-LB20 | 1-Port 10GBASE-BX SFP+ Fiber Optic Module - 20km (TX:1330nm RX:1270nm) |
| MTB-LA20 | 1-Port 10GBASE-BX SFP+ Fiber Optic Module - 20km (TX:1270nm RX:1330nm) |
| MTB-SR | 1-Port 10GBASE-SR SFP+ Fiber Optic Module - 300m |
| MTB-LR | 1-Port 10GBASE-LR SFP+ Fiber Optic Module - 10km |
| MTB-LA60 | 1-Port 10GBASE-BX SFP+ Fiber Optic Module - 60km (TX:1270nm RX:1330nm) |
| MTB-LB60 | 1-Port 10GBASE-BX SFP+ Fiber Optic Module - 60km (TX:1330nm RX:1270nm) |
| MTB-RJ | 1-Port 10GBASE-T SFP+ Copper Fiber Optic Module - 30m |
| MTB-LR40 | 1-Port 10GBASE-LR SFP+ Fiber Optic Module - 40km |
| MTB-SR2 | 1-Port 10GBASE-SR SFP+ Fiber Optic Module – 2km |
| MTB-LR20 | 1-Port 10GBASE-LR SFP+ Fiber Optic Module - 20km |
| MTB-LR60 | 1-Port 10GBASE-LR SFP+ Fiber Optic Module - 60km |
| MTB-LR80 | 1-Port 10GBASE-LR SFP+ Fiber Optic Module - 80km |
| MTB-LA10 | 1-Port 10GBASE-BX SFP+ Fiber Optic Module - 10km (TX:1270nm RX:1330nm) |
| MTB-LB10 | 1-Port 10GBASE-BX SFP+ Fiber Optic Module - 10km (TX:1330nm RX:1270nm) |

## Available 2500Mbps Modules

| | |
|---|---|
| MGB-2GSR | 2.5G SFP Transceiver (Multi-mode, 850nm, DDM, 0~70 degrees C) - 300m |
| MGB-2GLA20 | 2.5G SFP Transceiver (Single mode WDM, TX:1310nm RX:1550nm, DDM, 0~70 degrees C) - 20km |
| MGB-2GLB20 | 2.5G SFP Transceiver (Single mode WDM, TX:1550nm RX:1310nm, DDM, 0~70 degrees C) - 20km |
| MGB-2GLR20 | 2.5G SFP Transceiver (Single mode, 1310nm, DDM) - 20km |
| MGB-2GLR2 | 2.5G SFP Transceiver (Single mode, 1310nm, DDM) - 2km |

## Available 1000Mbps Modules

| | |
|---|---|
| MGB-GT | SFP-Port 1000BASE-T Module |
| MGB-LX | SFP-Port 1000BASE-LX Mini-GBIC Module - 20km |
| MGB-SX | SFP-Port 1000BASE-SX Mini-GBIC Module - 550m |
| MGB-SX2 | SFP-Port 1000BASE-SX Mini-GBIC Module - 2km |
| MGB-L40 | SFP-Port 1000BASE-LX Mini-GBIC Module - 40km |
| MGB-L80 | SFP-Port 1000BASE-LX Mini-GBIC Module - 80km |
| MGB-L120 | SFP-Port 1000BASE-LX Mini-GBIC Module - 120km |
| MGB-LA10 | SFP-Port 1000BASE-BX (WDM, TX:1310nm) Mini-GBIC Module - 10km |
| MGB-LB10 | SFP-Port 1000BASE-BX (WDM, TX:1550nm) Mini-GBIC Module - 10km |
| MGB-LA20 | SFP-Port 1000BASE-BX (WDM, TX:1310nm) Mini-GBIC Module - 20km |
| MGB-LB20 | SFP-Port 1000BASE-BX (WDM, TX:1550nm) Mini-GBIC Module - 20km |
| MGB-LA40 | SFP-Port 1000BASE-BX (WDM, TX:1310nm) Mini-GBIC Module - 40km |
| MGB-LB40 | SFP-Port 1000BASE-BX (WDM, TX:1550nm) Mini-GBIC Module - 40km |
| MGB-LA80 | SFP-Port 1000BASE-BX (WDM, TX:1490nm) Mini-GBIC Module - 80km |
| MGB-LB80 | SFP-Port 1000BASE-BX (WDM, TX:1550nm) Mini-GBIC Module - 80km |

## Available Modules

| | |
|---|---|
| MTB Series | 10GBASE-LR/SR/BX/T Modules |
| MGB2G-Series Transceiver | 2500BASE-SX/LX Transceiver |
| MGB-Series Transceiver | 1000BASE-SX/LX Transceiver |
| MFB-Series Transceiver | 100BASE-FX SFP Transceiver |

## Related Power Supply

| | |
|---|---|
| PWR-480-48 | 48V, 480W DIN-rail Power Supply (NDR-480-48, adjustable 48-56V DC Output) |

**IGS-6325-8UP2S2X/IGS-6325-8UP2S**