Industrial L2+ 4-Port 10/100/1000T Ultra PoE + 1-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch

TAIWAN EXCELLENCE 2018

Environmentally Hardened Design

PLANET Industrial **4-port Gigabit Ultra PoE** Switch, IGS-5225-4UP1T2S, is equipped with a rugged IP30 metal case for stable operation in heavy industrial demanding environments. Thus, the IGS-5225-4UP1T2S provides a high level of immunity against electromagnetic interference and heavy electrical surges which are usually found on plant floors or in curbside traffic control cabinets.

Being able to operate under wide temperature range from -40 to 75 degrees C, the IGS-5225-4UP1T2S can be placed in almost any difficult environment. The IGS-5225-4UP1T2S also allows either DIN rail or wall mounting for efficient use of cabinet space.

Physical Port

- **4 10/100/1000BASE-T** Gigabit Ethernet RJ45 ports with **Ultra PoE** Injector
- **1 10/100/1000BASE-T** Gigabit Ethernet RJ45 ports ports
- **2 100/1000BASE-X mini-GBIC/SFP** slots for SFP type auto detection
- One RJ45 console interface for basic management and setup

Power over Ethernet

- Ultra Power over Ethernet end-span/mid-span PSE
- Backward compatible with IEEE 802.3at/af PD device
- Up to 4 ports of IEEE 802.3af/IEEE 802.3at/Ultra PoE devices powered
- Supports PoE power up to 72 watts for each PoE port
- 240-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
- Intelligent PoE features
  - Temperature threshold control
  - PoE usage threshold control
  - PD alive check
  - PoE schedule

Industrial Case and Installation

- IP30 aluminum case
- DIN-rail or wall-mount design
- 48~56V DC, redundant power with polarity reverse protect function
- Supports 6000V DC 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

802.3bt Ready -- 60 Watts of Power over 4-pair UTP System

The IGS-5225-4UP1T2S Ultra PoE solution adopts the IEEE 802.3at/af PoE standard. Instead of delivering power over 2-pair twisted UTP – be it end-span (Pins 1, 2, 3 and 6) or mid-span (Pins 4, 5, 7 and 8), it provides the capability to source up to 60 watts of power by using all the four pairs of standard Cat5e/6 Ethernet cabling. In the new 4-pair system, the IGS-5225-4UP1T2S is able to deliver per port up to 60 watts of power to each remote PoE compliant powered device (PD). It possesses double amount of power capability than the conventional 802.3at PoE and is an ideal solution to satisfying the growing demand for higher power consuming network PDs, such as:

■ PoE PTZ speed dome
■ Any network device that needs higher PoE power to work normally
■ Thin-client
■ AIO (all-in-one) touch PC, point of sale (POS) and information kiosks
■ Remote digital signage display

Thin Client

Speed Dome

60W

Ultra PoE

802.3at

30W   60W
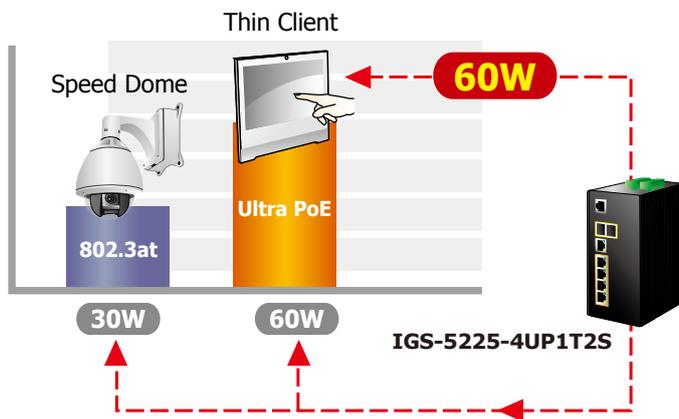
IGS-5225-4UP1T2S

Advanced PoE Power Output Mode Management

To meet the demand of various powered devices consuming stable PoE power, the IGS-5225-4UP1T2S provides three different PoE power output modes for selection.

■ **72W UPOE PoE Power Output Mode** (Pins 1, 2, 3, 6 + Pins 4, 5, 7, 8)
■ **30W End-span PoE Power Output Mode** (Pins 1, 2, 3, 6)
■ **30W 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-5225-4UP1T2S GUI, clients just need one click to search and show all of the ONVIF devices via network application. In addition, clients can upload floor images into switch and allows for deploying location of surveillance devices for easier inspection and planning. Moreover, clients can get real-time surveillance's information and online/offline status, and also allows PoE reboot control from GUI.

Intelligent Alive Check for Powered Device

The IGS-5225-4UP1T2S PoE Switch can be configured to monitor connected PD's status in real time via ping action. Once the PD stops working and responding, the IGS-5225-4UP1T2S 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.
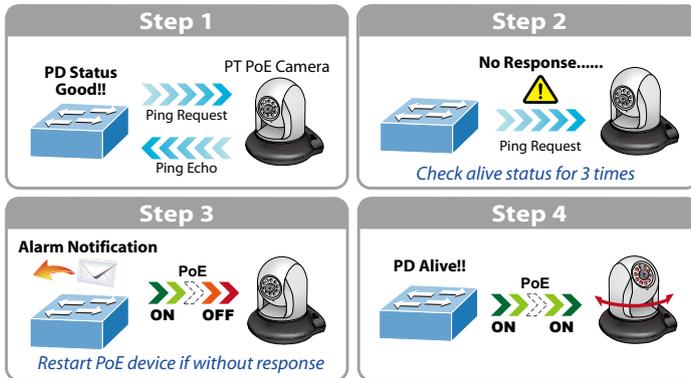
Layer 2 Features

• 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 255 VLANs groups, out of 4095 VLAN IDs
 – Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
 – Private VLAN Edge (PVE)
 – Protocol-based VLAN
 – MAC-based VLAN
 – Voice VLAN
• 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 3 trunk groups with 3 ports per trunk group
 – Up to 6Gbps bandwidth (duplex mode)
• Provides port mirror (1-to-1)
• Port mirroring to monitor the incoming or outgoing traffic on a particular port
• Loop protection to avoid broadcast loops
• Supports ERPS (Ethernet Ring Protection Switching)

Layer 3 IP Routing Features

• Supports maximum 32 software static routes and route summarization

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 policies on the switch port
• DSCP remarking

Step 1	Step 2
PD Status Good!! PT PoE Camera — Ping Request / Ping Echo	**No Response......** Ping Request — *Check alive status for 3 times*

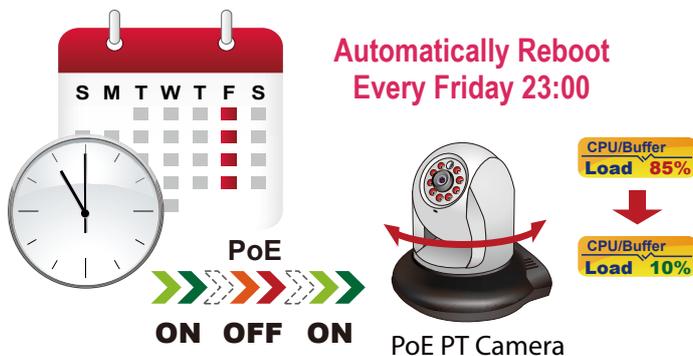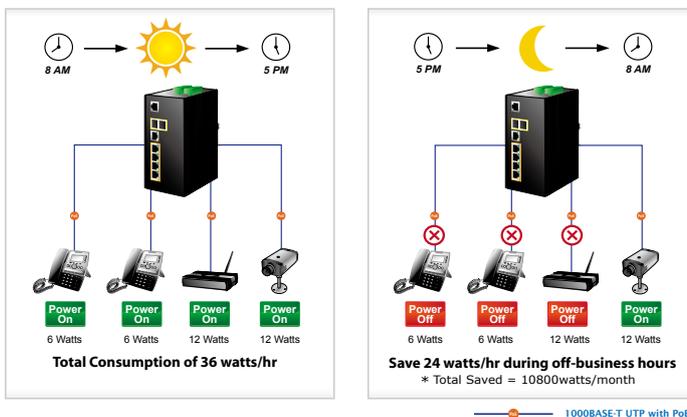| Step 3	Step 4
Alarm Notification PoE ON OFF — *Restart PoE device if without response*	**PD Alive!!** PoE ON ON

PoE Schedule for Energy Saving

Under the trend of energy saving worldwide and contributing to environmental protection on the Earth, the IGS-5225-4UP1T2S 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.

Scheduled Power Recycling

The IGS-5225-4UP1T2S 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.

8 AM → 5 PM	5 PM → 8 AM
Power On — 6 Watts / Power On — 6 Watts / Power On — 12 Watts / Power On — 12 Watts	Power Off — 6 Watts / Power Off — 6 Watts / Power Off — 12 Watts / Power On — 12 Watts
Total Consumption of 36 watts/hr	**Save 24 watts/hr during off-business hours** ＊ Total Saved = 10800watts/month

1000BASE-T UTP with PoE

Automatically Reboot Every Friday 23:00

S M T W T F S

PoE
ON   OFF   ON

PoE PT Camera

CPU/Buffer Load 85%
CPU/Buffer Load 10%

Multicast

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

Security

- 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
- 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

- Switch Management Interfaces
  - Console/Telnet Command Line Interface
  - Web switch management
  - SNMP v1 and v2c switch management
  - SSH/SSL and SNMP v3 secure access
- Four RMON groups (history, statistics, alarms, and events)
- **IPv6** IP address/NTP/DNS management
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- Firmware upload/download via HTTP/TFTP
- DHCP Relay
- DHCP Option 82
- User Privilege levels control
- Network Time Protocol (NTP)
- Link Layer Discovery Protocol (LLDP)
- SFP-**DDM** (Digital Diagnostic Monitor)
- Cable diagnostic technology provides the mechanism to detect and report potential cabling issues
- Reset button for system reboot or reset to factory default
- PLANET Smart Discovery Utility for deployment management

Redundant Ring, Fast Recovery for Critical Network Applications

The IGS-5225-4UP1T2S 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.
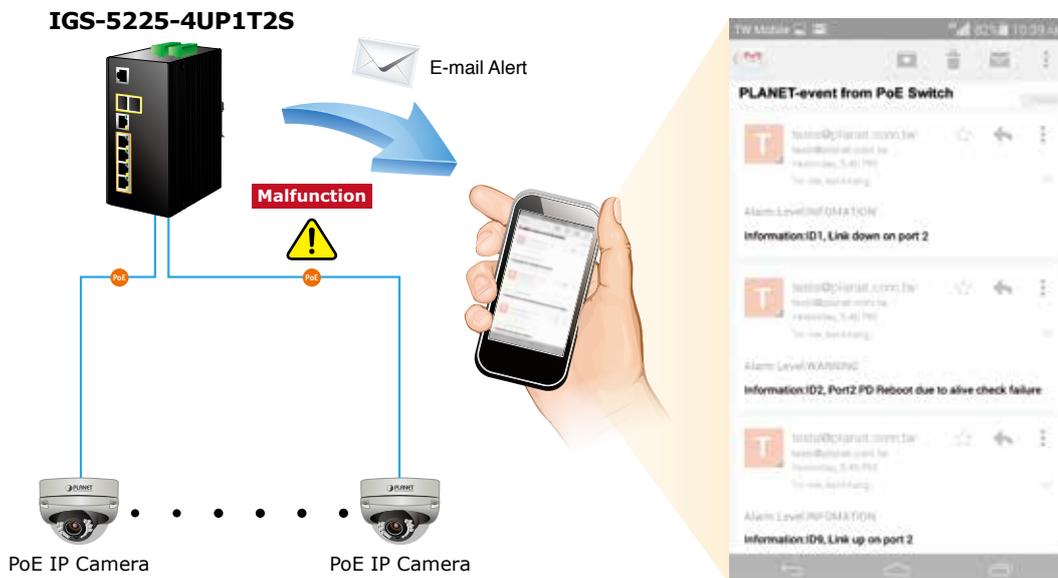
ERPS Ring for Video Transmission Redundancy

SMTP/SNMP Trap Event Alert
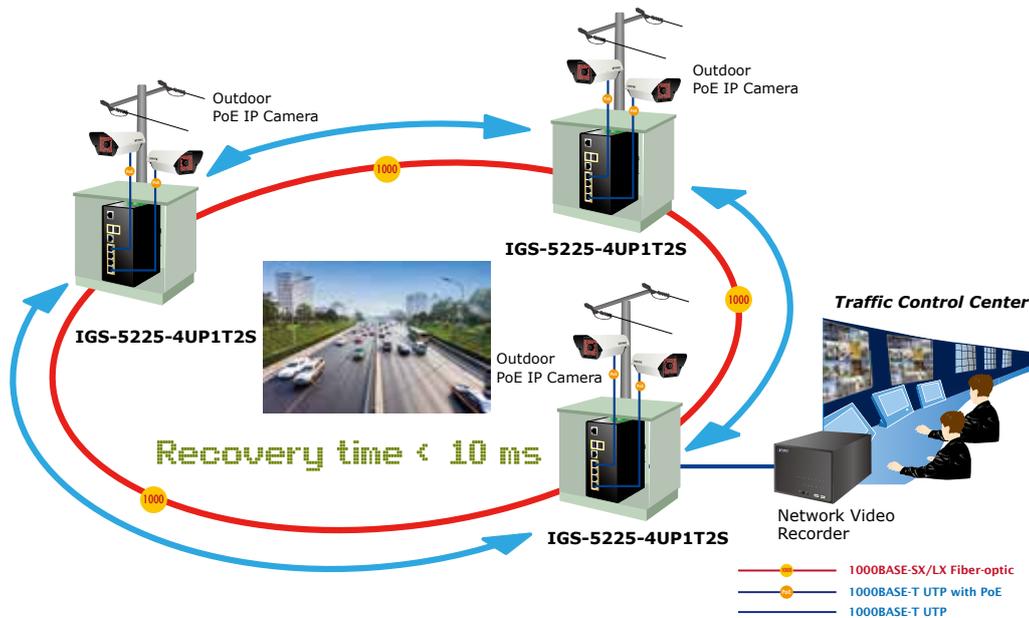
SMTP/SNMP Trap Event Alert

The IGS-5225-4UP1T2S 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-5225 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.
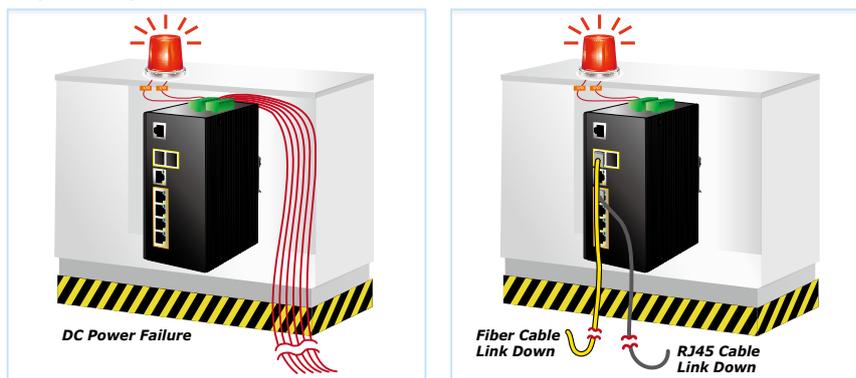
Fault Alarm Feature

DC/DC Power Failure

Fiber/RJ45 Connection Link Down

or

Mail

System Log

SNMP TRAP
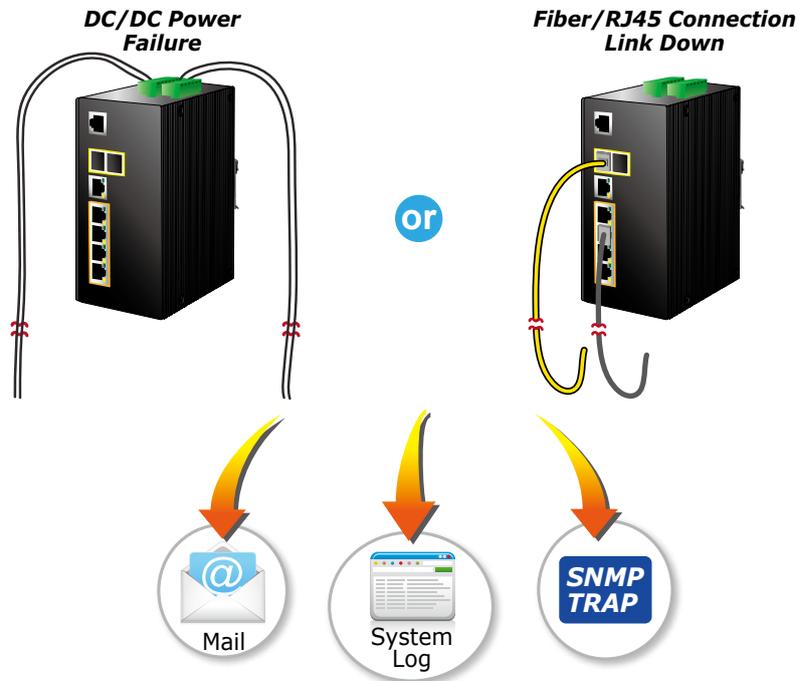
Digital Input and Digital Output for External Alarm

The IGS-5225-4UP1T2S 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 IGS-5225-4UP1T2S 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**

Layer 3 IPv4 and IPv6 Software VLAN Routing for Secure and Flexible Management

To help customers stay on top of their businesses, the IGS-5225 series not only provides ultra high transmission performance and excellent Layer 2 technologies, but also IPv4/IPv6 software VLAN routing feature which allows to crossover different VLANs and different IP addresses for the purpose of having a highly-secure, flexible management and simpler networking application.

Robust Layer 2 Features

The IGS-5225 series can be programmed for advanced switch management functions such as dynamic port link aggregation, Q-in-Q VLAN, private VLAN, Rapid Spanning Tree Protocol, Layer 2 to Layer 4 QoS, bandwidth control and IGMP snooping. The IGS-5225 series provides 802.1Q tagged VLAN, and the VLAN groups allowed will be maximally up to 255. Via aggregation of supporting ports, the IGS-5225-4UP1T2S allows the operation of a high-speed trunk combining multiple ports. It enables a maximum of up to 3 trunk groups with 3 ports per trunk group, and supports fail-over as well.

Efficient Management

For efficient management, the IGS-5225 Managed Ethernet Switch series is equipped with console, Web and SNMP management interfaces. With the built-in Web-based management interface, the IGS-5225 series offers an easy-to-use, platform-independent management and configuration facility. For text-based management, the IGS-5225 series can be accessed via Telnet and the console port. Moreover, it also offers secure remote management via any standard-based management software by supporting SNMPv3 connection which encrypts the packet content at each session.

Computer

Secure Management

SSL SNMPv3 SSH

Powerful Security

The IGS-5225 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. The network administrators can now construct highly-secure corporate networks with considerably less time and effort than before.

Flexibility and Extension Solution

The additional two mini-GBIC slots built in the IGS-5225-4UP1T2S support dual speed, 100BASE-FX and 1000BASE-SX/LX SFP (Small Form-factor Pluggable) fiber-optic modules, meaning the administrator now can flexibly choose the suitable SFP transceiver according to not only the transmission distance but also the transmission speed required. The distance can be extended from 550 meters (multi-mode fiber) to 10/50/70/120 kilometers (single-mode fiber or WDM fiber). They are well suited for applications within the enterprise data centers and distributions.
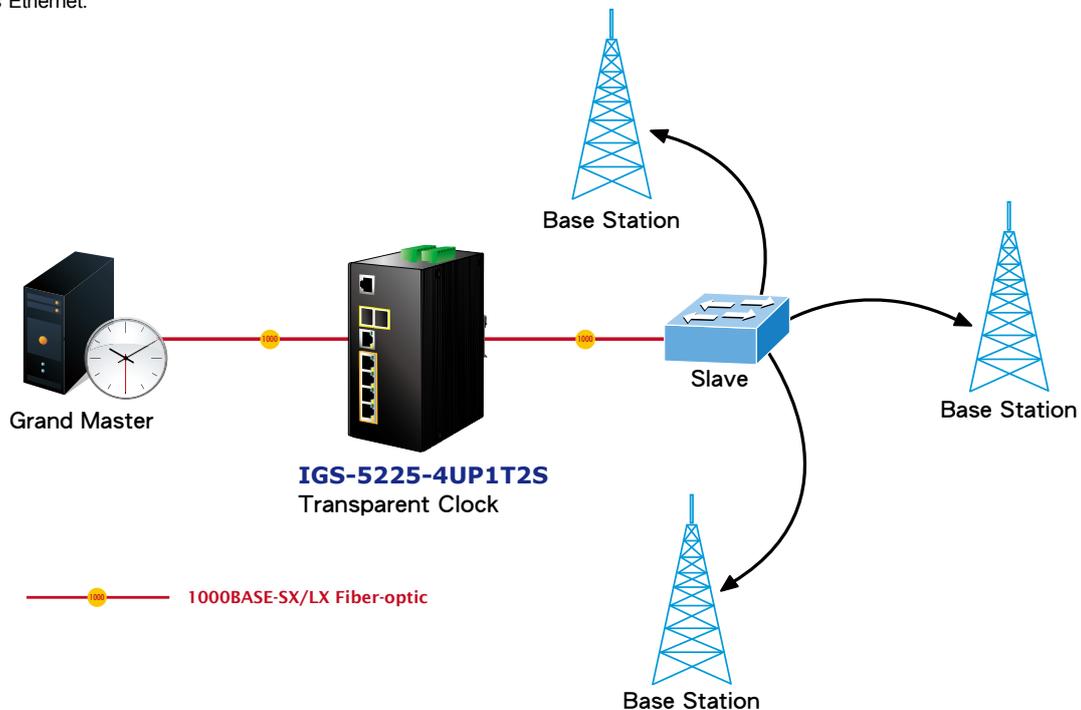
Intelligent SFP Diagnosis Mechanism

The IGS-5225 series supports SFP-**DDM** (Digital Diagnostic Monitor) function that greatly helps network administrator to easily monitor real-time parameters of the SFP, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.

Digital Diagnostic Monitor *(DDM)*

Voltage

Ammeter

Temperature

Power Receiver

Power Transceiver

1588 Time Protocol for Industrial Computing Networks

The IGS-5225 series is ideal for telecom and Carrier Ethernet applications, supporting MEF service delivery and timing over packet solutions for IEEE 1588 and synchronous Ethernet.

Base Station

Base Station

Slave

Base Station

Grand Master

IGS-5225-4UP1T2S
Transparent Clock

1000BASE-SX/LX Fiber-optic

Base Station

Modbus TCP provides Flexible Network Connectivity for Factory Automation

With the supported Modbus TCP/IP protocol, the IGS-5225-4UP1T2S can easily integrate with SCADA systems, HMI systems and other data acquisition systems in factory floors. It enable administrators to remotely monitor the industrial Ethernet switch's operating information, port information and communication status, thus easily achieving enhanced monitoring and maintenance of the entire factory.

Applications

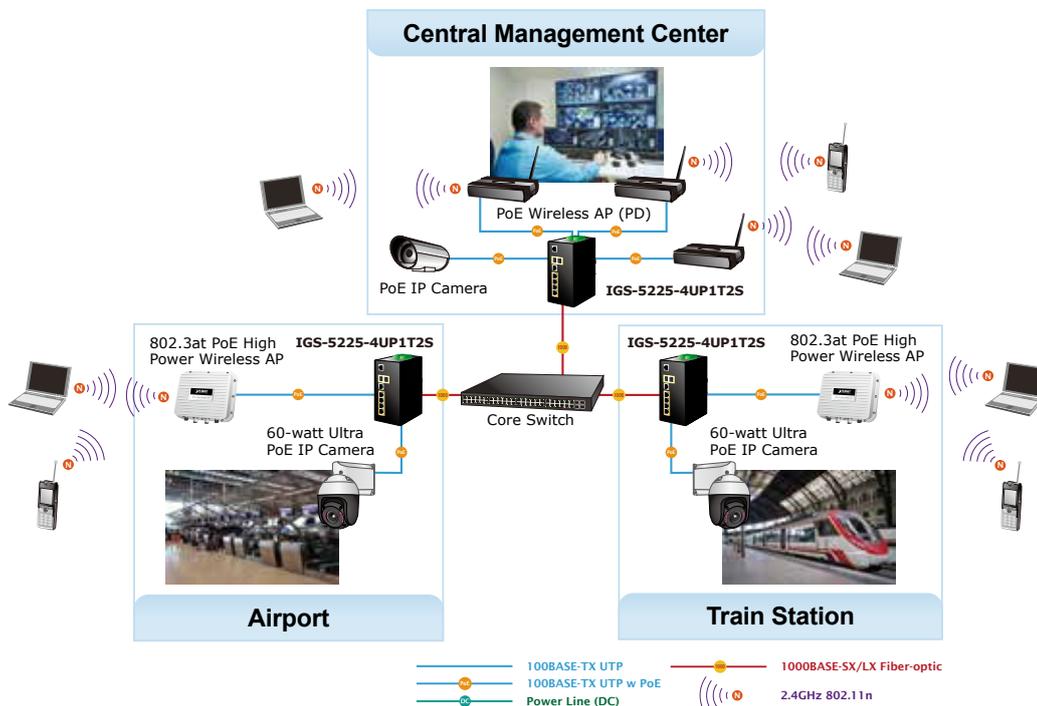## Industrial Area Department/Workgroup PoE Switch

Providing up to 4 Ultra PoE, in-line power interfaces, the IGS-5225-4UP1T2S can easily build a power centrally controlled for IP phone system, IP camera system, or wireless AP group for Industrial network. For instance, 4 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-5225-4UP1T2S makes the installation of IP cameras or wireless AP easier and more efficient.

Extending Ethernet Distance
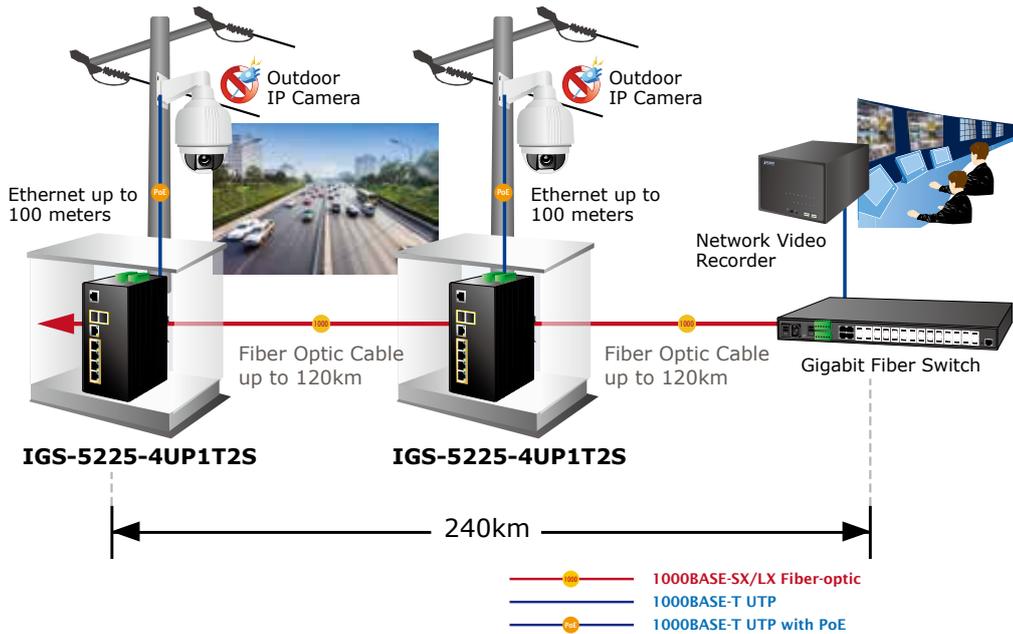
Gigabit Ultra PoE and PoE+ Network Deployment

To control the power system of your networking devices, the IGS-5225-4UP1T2S can directly co-work with network devices such as PoE IP phone to build VoIP network in the office. The Ultra PoE switch can be directly connected to any third-party IEEE 802.3af/802.3at compliant devices installed within 100 meters. Furthermore, the IGS-5225-4UP1T2S 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.
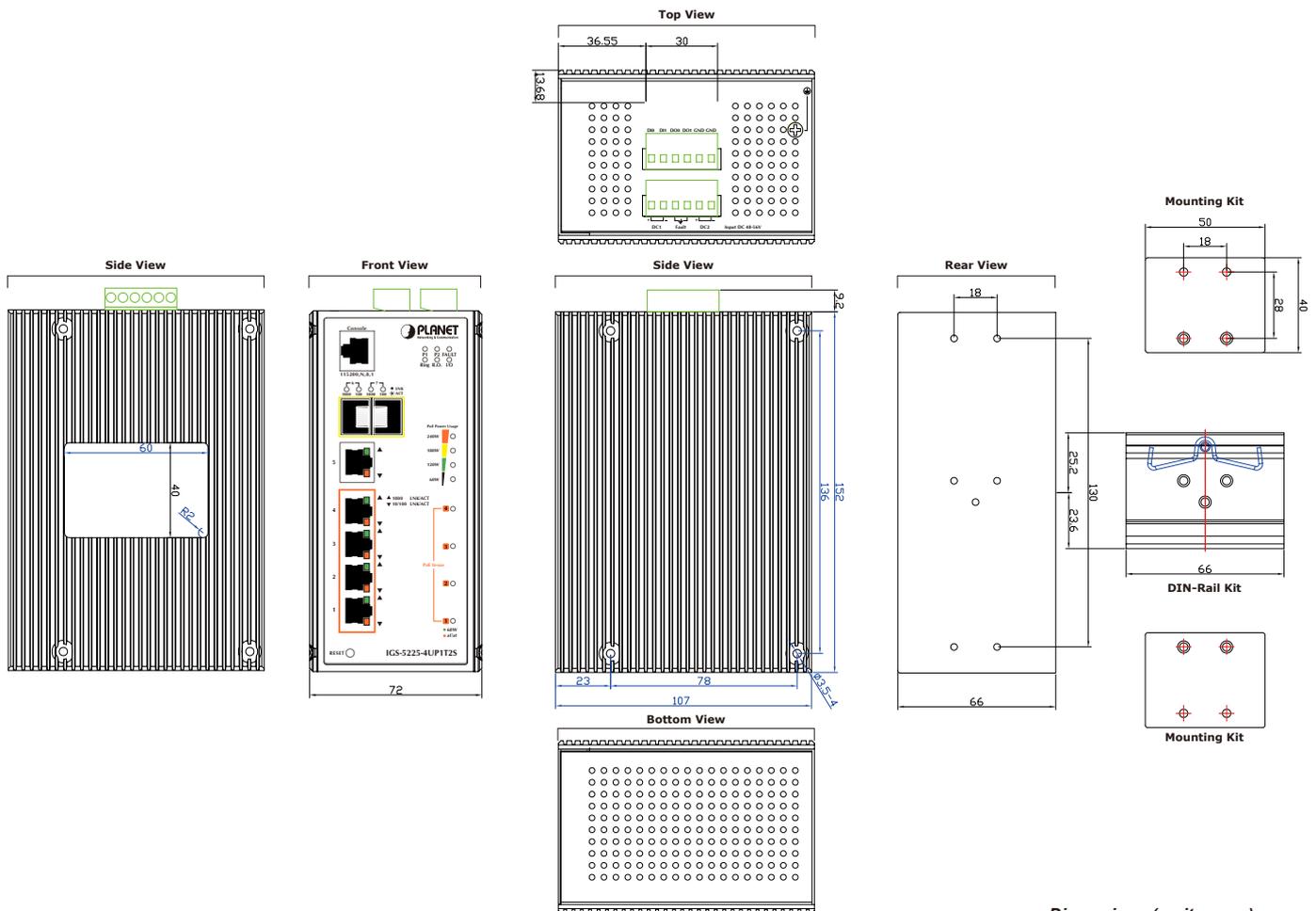
Specifications

Product	IGS-5225-4UP1T2S
Hardware Specifications	
Hardware Version	3
Copper Ports	5 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports
SFP/mini-GBIC Slots	2 1000BASE-SX/LX/BX SFP interfaces (Port-6 to Port-7) Compatible with 100BASE-FX SFP
PoE Injector Port	4 ports with Ultra PoE/802.3at/af PoE injector function with Port-1 to Port-4
Console	1 x RJ45-to-RS232 serial port (115200, 8, N, 1)
Switch Architecture	Store-and-Forward
Switch Fabric	14Gbps/non-blocking
Throughput (packet per second)	10.42Mpps@ 64 bytes packet
Address Table	8K entries, automatic source address learning and aging
Shared Data Buffer	4Mbits
Flow Control	IEEE 802.3x pause frame for full-duplex Back pressure for half-duplex
Jumbo Frame	9Kbytes
Reset Button	< 5 sec: System reboot > 5 sec: Factory default
ESD Protection	6KV DC
Enclosure	IP30 aluminum case
Installation	DIN rail kit and wall-mount kit
Connector	Removable 6-pin terminal block for power input Pin 1/2 for Power 1, Pin 3/4 for fault alarm, Pin 5/6 for Power 2 Removable 6-pin terminal block for DI/DO interface 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
DI/DO	2 Digital Input (DI)	Level 0: -24V~2.1V (±0.1V) Level 1: 2.1V~24V (±0.1V) Input load to 24V DC, 10mA max.
	2 Digital Output (DO)	Open collector to 24V DC, 100mA max.

LED Indicator	System:
	    Power 1 (Green)
	    Power 2 (Green)
	    Fault Alarm (Red)
	    Ring (Green)
	    Ring Owner (Green)
	    DIDO (Red)
	Per 10/100/1000T RJ45 Ports:
	    100 LNK/ACT (Orange)
	    1000 LNK/ACT (Green)
	  Per SFP Interface:
	    100 LNK/ACT (Orange)
	    1000 LNK/ACT (Green)
	Per PoE Port:
	    Ultra PoE-in-use x 1 (Green)
	    802.3at/af PoE-in-use x1 (Orange)
	PoE Usage:
	    60W, 120W, 180W, 240W (Green)

Dimensions (W x D x H)	72 x 107 x 152 mm
Weight	1050g
Power Requirements	Dual 48~56V DC (>52V DC for PoE+ output recommended)
Power Consumption	Max. 6.6 watts/22.52BTU (Power on without any connection) Max. 282 watts/962.22BTU (Full loading with Ultra PoE function)
Power Over Ethernet	
PoE Standard	IEEE 802.3af/802.3at/Ultra PoE PSE
PoE Power Supply Type	End-span/Mid-span/UPoE

PoE Power Output	IEEE 802.3af Standard
	  - Per port 48V~52V DC (depending on the power supply), max. 15.4 watts
	IEEE 802.3at Standard
	  - Per port 52V~56V DC (depending on the power supply), max. 36 watts
	Ultra PoE
	  - Per port 48V~56V DC (depending on the power supply), max. 72 watts

Power Pin Assignment	End-span: 1/2(-), 3/6(+) Mid-span: 4/5(+), 7/8(-) UPoE: 1/2(-), 3/6(+),4/5(+), 7/8(-)	
PoE Power Budget	240W maximum (depending on power input)	
PoE Ability PD @ 15 watts	4 units	
PoE Ability PD @ 30 watts	4 units	
PoE Ability PD @ 60 watts	4 units	
Layer 2 Function		
Basic Management Interfaces	Console; Telnet; Web browser; SNMP v1, v2c	
Secure Management Interfaces	SSH, SSL, SNMP v3	
Port Configuration	Port disable/enable Auto-negotiation 10/100/1000Mbps full and half duplex mode selection Flow control disable/enable	
Port Status	Display each port's speed duplex mode, link status, flow control status, auto negotiation status, trunk status	
Port Mirroring	TX/RX/both 1 to 1 monitor	
VLAN	802.1Q tagged based VLAN, up to 255 VLAN groups Q-in-Q tunneling Private VLAN Edge (PVE) MAC-based VLAN Protocol-based VLAN Voice VLAN MVR (Multicast VLAN Registration) Up to 255 VLAN groups, out of 4095 VLAN IDs	
Link Aggregation	IEEE 802.3ad LACP/static trunk Supports 3 trunk groups with 3 ports per trunk group	
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	
IGMP Snooping	IGMP (v1/v2/v3) snooping, up to 255 multicast groups IGMP querier mode support	
MLD Snooping	MLD (v1/v2) snooping, up to 255 multicast groups MLD querier mode support	
Access Control List	IP-based ACL/MAC-based ACL Up to 123 entries	

Bandwidth Control	Per port bandwidth control
	  Ingress: 500Kb~1000Mbps
	  Egress: 500Kb~1000Mbps	

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 (Groups 1, 2, 3 and 9) RFC 2737 Entity MIB	RFC 2618 RADIUS Client MIB RFC 2933 IGMP-STD-MIB RFC 3411 SNMP-Frameworks-MIB IEEE 802.1X PAE LLDP MAU-MIB
Layer 3 Function		
IP Interfaces	Max. 8 VLAN interfaces	
Routing Table	Max. 32 routing entries	
Routing Protocols	IPv4 software static routing IPv6 software static routing	
Standards Conformance		
Regulatory Compliance	FCC Part 15 Class A, CE	
Stability Testing	IEC60068-2-32 (free fall) IEC60068-2-27 (shock) IEC60068-2-6 (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 1000T 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 802.3bt Power over Ethernet ready RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP v1 RFC 2236 IGMP v2
Environment		
Operating Temperature	-40 ~ 75 degrees C	
Storage Temperature	-40 ~ 85 degrees C	
Humidity	5 ~ 95% (non-condensing)	

Dimensions

Dimensions (unit = mm)

Ordering Information

IGS-5225-4UP1T2S	Industrial L2+ 4-Port 10/100/1000T Ultra PoE + 1-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch

Related Products

IGS-5225-8T2S2X	L2+ Industrial 8-Port 10/100/1000T + 2-Port 100/1000X SFP + 2-Port 10G SFP+ Managed Ethernet Switch (-40~75 degrees C)
IGS-5225-8P2S2X	L2+ Industrial 8-Port 10/100/1000T 802.3at PoE + 4-Port 100/1000X SFP + 2-Port 10G SFP+ Managed Ethernet Switch (-40~75 degrees C)
IGS-12040MT	L2+ Industrial 8-Port 10/100/1000T + 4-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 Ultra PoE to 4-Port 802.3af/at Gigabit PoE Extender

Available Modules for IGS-5225-4UP1T2S

• 1000Mbps SFP transceiver modules

MGB-GT	SFP-Port 1000BASE-T Module
MGB-SX	SFP-Port 1000BASE-SX mini-GBIC module - 550m
MGB-SX2	SFP-Port 1000BASE-SX mini-GBIC module - 2km
MGB-LX	SFP-Port 1000BASE-LX mini-GBIC module - 10km
MGB-L30	SFP-Port 1000BASE-LX mini-GBIC module - 30km
MGB-L50	SFP-Port 1000BASE-LX mini-GBIC module - 50km
MGB-L70	SFP-Port 1000BASE-LX mini-GBIC module - 70km
MGB-L120	SFP-Port 1000BASE-LX mini-GBIC module - 120km
MGB-LA10	SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module - 10km
MGB-LB10	SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module - 10km
MGB-LA20	SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module - 20km
MGB-LB20	SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module - 20km
MGB-LA40	SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module - 40km
MGB-LB40	SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module - 40km
MGB-TSX	SFP-Port 1000BASE-SX mini-GBIC module - 550m (-40 ~ 75 degrees C)
MGB-TLX	SFP-Port 1000BASE-LX mini-GBIC module - 10km (-40 ~ 75 degrees C)
MGB-TL30	SFP-Port 1000BASE-LX mini-GBIC module - 30km (-40 ~ 75 degrees C)
MGB-TL70	SFP-Port 1000BASE-LX mini-GBIC module - 70km (-40 ~ 75 degrees C)

• 100Mbps SFP transceiver modules

MFB-FX	SFP-Port 100BASE-FX Transceiver (1310nm) - 2km
MFB-F20	SFP-Port 100BASE-FX Transceiver (1310nm) - 20km
MFB-F40	SFP-Port 100BASE-FX Transceiver (1310nm) - 40km
MFB-F60	SFP-Port 100BASE-FX Transceiver (1310nm) - 60km
MFB-FA20	SFP-Port 100BASE-BX Transceiver (WDM,TX:1310nm) - 20km
MFB-FB20	SFP-Port 100BASE-BX Transceiver (WDM,TX:1550nm) - 20km
MFB-TFX	SFP-Port 100BASE-FX Transceiver (1310nm) - 2km (-40 ~ 75 degrees C)
MFB-TF20	SFP-Port 100BASE-FX Transceiver (1310nm) - 20km (-40 ~ 75 degrees C)

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