# L2+ Industrial 4-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Ethernet Switch

For Harsh and Space-limited Environments

PLANET IGS-5225-4T2S, **the smallest**, **fully-managed Gigabit fiber switch** for harsh environments, features 4 10/100/1000Mbps copper ports, **2 100/1000/2500X SFP** ports and redundant power system in an IP30 rugged but compact-sized case. The IGS-5225-4T2S can be installed in any difficult environment as it can operate stably under the temperature range from **-40** to **75 degrees C**. With such a slim enclosure, it does not need a big space to install. The switch features user-friendly yet advanced **IPv6/IPv4 management** interfaces, abundant **L2/L4 switching functions** and Layer 3 static routing capability. It allows either DIN-rail or wall mounting for efficient use of cabinet space. With **2 dual-speed SFP fiber slots**, it can be flexibly applied to extend the connection distance.
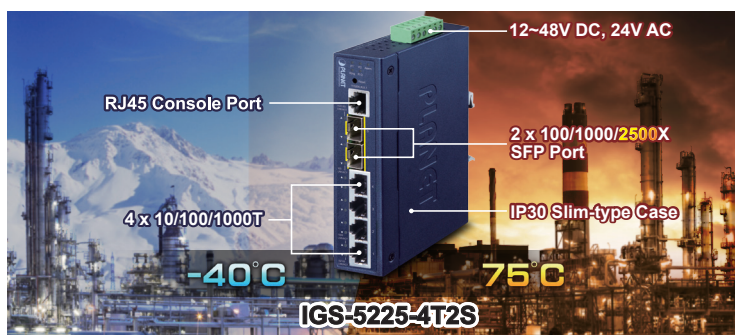
Physical Port
- **4 10/100/1000BASE-T** Gigabit Ethernet RJ45 ports
- **2 100/1000/2500BASE-X SFP** slots for SFP type auto detection
- One RJ45 console interface for basic management and setup

Industrial Case and Installation
- IP30 metal case
- DIN-rail and wall-mount designs
- 12~48V DC, redundant power with reverse polarity protection
- 24V AC power input acceptable
- Supports 6KV DC Ethernet ESD protection
- -40 to 75 degrees C operating temperature

Layer 3 IP Routing Features
- Supports maximum 32 static routes and route summarization
- 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
  - Provider Bridging (IEEE 802.1ad VLAN Q-in-Q) support
  - 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)

Port Backup Mode

Via the managed interface, the IGS-5225-4T2S can be configured for port backup. When in the port backup mode, it provides rapid copper/fiber redundancy of link for highly critical Ethernet applications. The port backup mode also supports auto-recovering function. If the destination port of a packet is link-down, it will forward the packet to the other port of the backup pair.

Site to Site Port Backup
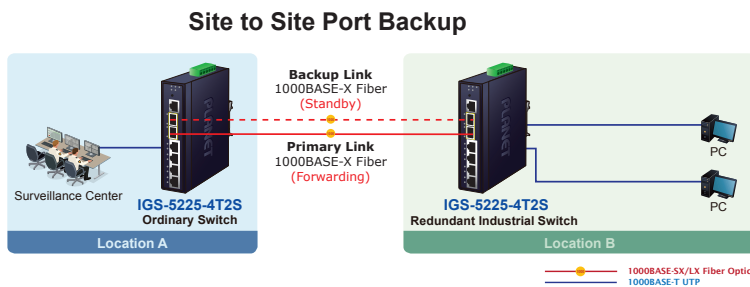
Network with Cybersecurity Helps Minimize Security Risks

The IGS-5225-4T2S comes with enhanced cybersecurity to fend off cyberthreats and cyberattacks. It supports SSHv2, TLSv1.2 and SNMPv3 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-5225-4T2S protects the 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-5225-4T2S 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.
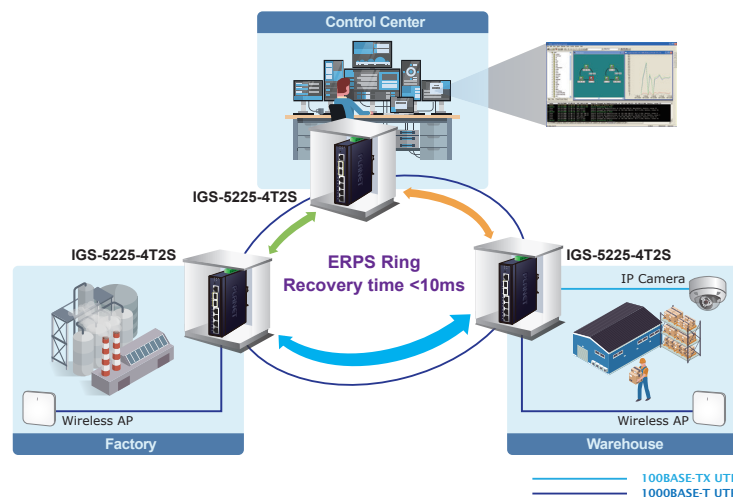
- Cisco ether-channel (static trunk)
- Maximum 4 trunk groups with 4 ports per trunk group
- Up to 8Gbps bandwidth (duplex mode)
- Provides port mirror (many-to-1)
- Port mirroring to monitor the incoming or outgoing traffic on a particular port
- Loop protection to avoid broadcast loops
- Supports ERPS (Ethernet Ring Protection Switching)
- 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
- Link Layer Discovery Protocol (LLDP)
- IEEE 802.3ah OAM

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

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 restricted VLAN with limited

Site to Site Fiber Link Redundancy
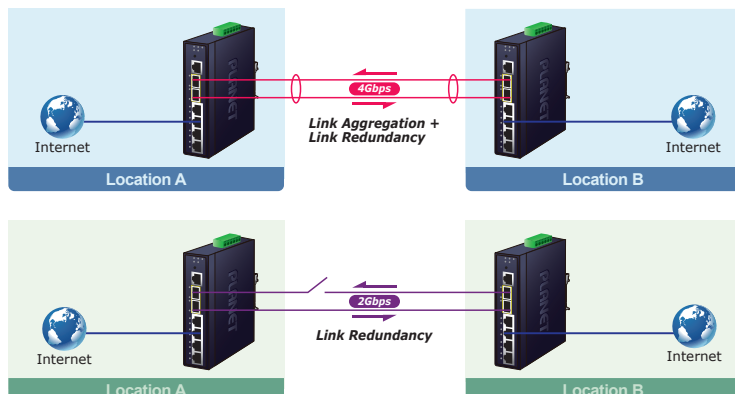
SMTP/SNMP Trap Event Alert and Fault Alarm

The IGS-5225-4T2S 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. It 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
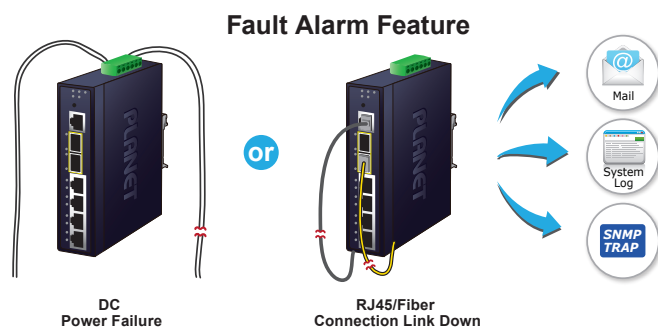
Layer 3 IPv4 and IPv6 Software VLAN Routing for Secure and Flexible Management

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 cross over 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 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-5225 Series allows the operation of a high-speed trunk group that comes with multiple ports and supports fail-over as well.
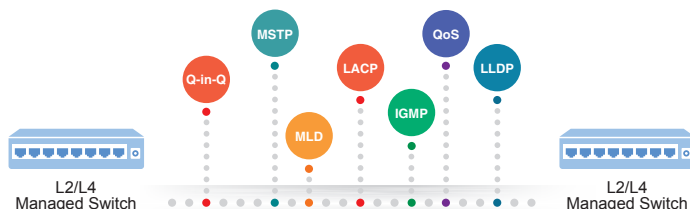
services

- Access Control List
  - 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/Telnet Command Line Interface
  - 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
- System Maintenance
  - Firmware upload/download via HTTP/TFTP
  - Reset button for system reboot or reset to factory default
  - Dual images
- DHCP Relay and 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 IP ping
- SMTP, Syslog and SNMP trap remote alarm
- Local System Log
- PLANET Smart Discovery Utility for deployment management
- PLANET NMS(Universal Network Management) system and CloudViewer for deployment management