Industrial L3 8-Port 10/100/1000T + 2-Port 1G/2.5G SFP + 2-Port 10G SFP+ Managed Ethernet Switch

Physical Port

- **8 10/100/1000BASE-T** Gigabit Ethernet RJ45 ports
- **2 100/1000/2500BASE-X SFP** slots for SFP type auto detection
- **2 10GBASE-SR/LR SFP+ slots**, backward compatible with 1G/2.5GBASE-X SFP
- One RJ45 console interface for basic management and setup

Industrial Protocol

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

Industrial Case and Installation

- IP30 aluminum case
- DIN-rail and wall-mount designs
- Redundant power
  - 9~48V DC, redundant power with reverse polarity protection
  - 24V AC power input acceptable
- 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

Layer 3 IP Routing Features

- IPv4 dynamic routing protocol supports RIPv1/v2 and OSPFv2
- IPv6 dynamic routing protocol supports OSPFv3
- 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

Advanced Layer 3 Manageable Solution for Hardened Environment

PLANET IGS-5225-8T2S2X is an industrial Layer 3 managed Gigabit Switch that features 8 10/100/1000Mbps copper ports, 2 additional 1G/2.5G SFP ports and 2 10G SFP+ ports, and supports static Layer 3 routing in a rugged IP30 aluminum case for stable operation in heavy industrial demanding environments.

With 10Gbps uplink, the IGS-5225-8T2S2X can handle extremely large amounts of data in a secure topology linking to an enterprise backbone or high capacity servers.

Being able to operate under wide temperature range from -40 to 75 degrees C, the IGS-5225-8T2S2X can be placed in almost any difficult environment. The IGS-5225-8T2S2X also allows either DIN-rail or wall mounting for efficient use of cabinet space.

Cybersecurity Network Solution to Minimize Security Risks

The cybersecurity features that virtually need no effort and cost to have include the protection of the switch management and the enhanced security of the mission-critical network. Both SSHv2 and TLSv1.2 protocols are utilized to provide strong protection against advanced threats. The network administrator can now construct highly-secure corporate networks with considerably less time and effort than before.

Redundant Ring, Fast Recovery for Critical Network Applications

The IGS-5225-8T2S2X 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.

The IGS-5225-8T2S2X also protects customer's industrial network connectivity with switching recovery capability that is used for implementing fault tolerant ring and mesh network architectures. If the Industrial network is interrupted accidentally, the fault recovery time could be as **fast** as **10ms** to quickly bring the network back to normal operation.
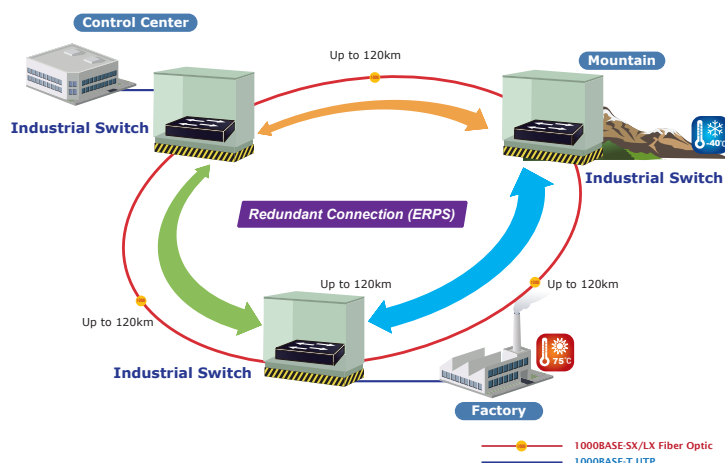
Layer 3 Network Routing Support

The IGS-5225-8T2S2X 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.

- – Broadcast/Multicast/Unicast
- Supports **VLAN**
  - – IEEE 802.1Q tagged VLAN
  - – Up to 4K VLANs groups, out of 4095 VLAN IDs
  - – Supports provider Bridging (VLAN Q-in-Q, IEEE 802.1ad)
  - – Private VLAN Edge (PVE)
  - – Port Isolation
  - – MAC-based VLAN
  - – Protocol-based VLAN
  - – Voice VLAN
  - – VLAN Translation
  - – 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 6 trunk groups with 12 ports per trunk group
  - – Up to 24Gbps 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 G.8032 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) and LLDP-MED
- Link 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
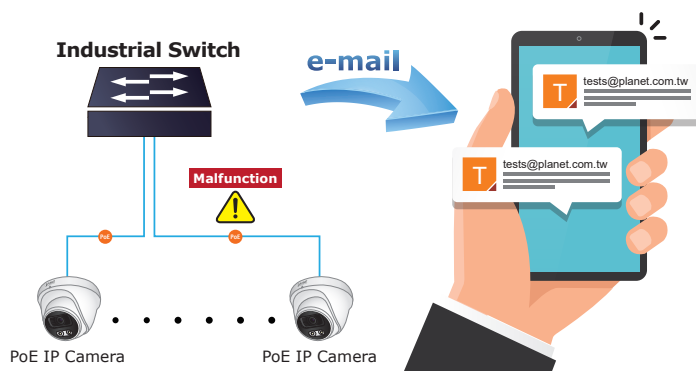
IPv6/IPv4 Dual Stack Management

Supporting both IPv6 and IPv4 protocols, the IGS-5225-8T2S2X 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.
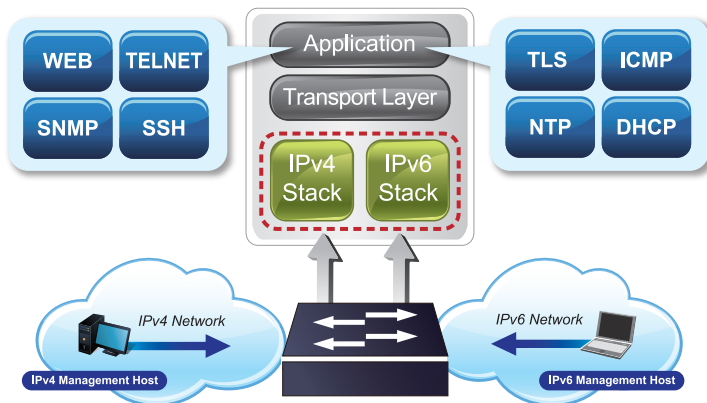
SMTP/SNMP Trap Event Alert

The IGS-5225-8T2S2X 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

Industrial Switch

e-mail

tests@planet.com.tw

Malfunction

tests@planet.com.tw

PoE IP Camera   PoE IP Camera

Effective Alarm Alert for Better Protection

The IGS-5225-8T2S2X 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
Power Failure

or

RJ45/Fiber
Connection Link Down

Uplink

Mail

System Log

SNMP TRAP
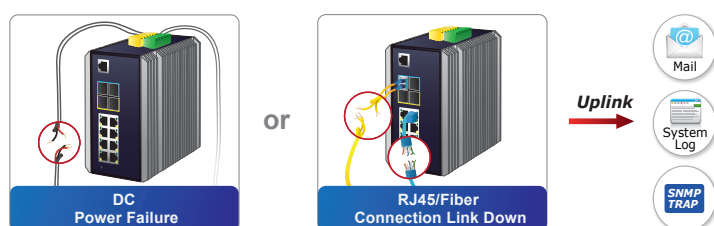
- Supports QoS and In/Out bandwidth control on each port
- Traffic-policing policies on the switch port
- DSCP remarking

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
- Multicast VLAN Registration (MVR) support

Security

- Authentication
  - IEEE 802.1x Port-based and MAC-based network access authentication
  - IEEE 802.1x authentication with guest VLAN
  - Guest VLAN assigns clients to a restricted VLAN with limited services.
  - Built-in RADIUS client to co-operate with the RADIUS servers
  - TACACS+ login users access authentication
  - RADIUS/TACACS+ users access authentication
- Access Control List
  - IP-based Access Control List (ACL)
  - MAC-based Access Control List
- Source MAC/IP address binding
- **DHCP Snooping** to filter un-trusted 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, v2c, and v3 switch management
  - SSHv2 and TLSv1.2 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