Industrial IP67-rated 6-Port 10/100/1000T M12 Managed Ethernet Switch (-40~75 degrees C, X-coded M12)

Suitable for Industrial Environment

PLANET IGS-5227-6MT-X, an Industrial Layer 2+ Managed Ethernet Switch, comes with an IP67-rated industrial case, 6-port 10/100/1000T and static Layer 3 routing, providing 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. The IGS-5227-6MT-X can be easily mounted on a DIN-rail or wall taking up less space.

IP67 Rugged Case

6 x Waterproof Gigabit M12

9~48V DC Waterproof
Redundant Power Input

Waterproof and Dustproof M12 Ethernet Connector

The IGS-5227-6MT-X is equipped with a 6-port 10/100/1000BASE-T, auto-negotiation, waterproof and dustproof M12 connector. The M12 connector provides tight and strong connection, and guarantees stable Ethernet operation performance under high vibration and shock environment. It comes with the industrial protection rating of IP67 capable of withstanding humidity, dirt, dust, shock, vibrations, heat and cold.

Physical Port

- **6-port 10/100/1000BASE-T, waterproof** and **dustproof** M12 X-coded female connectors

Hardware Conformance

- IP67-rated aluminum case
- Redundant power design
  - 9 to 48V DC, redundant power with polarity reverse protect function
  - Active-active redundant power failure protection
  - Backup of catastrophic power failure on one supply
  - Fault tolerance and resilience
- DIN-rail and wall-mount design
- Supports 6000V DC Ethernet ESD protection
- -40 to 75 degrees C operating temperature

Layer 3 IP Routing Features

- Supports maximum 32 static routes and route summarization

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 that 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
  - Provides Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
  - Private VLAN Edge (PVE)
  - Protocol-based VLAN
  - MAC-based VLAN
  - IP subnet-based VLAN
  - Voice VLAN

Environmentally Hardened Design

The IGS-5227-6MT-X is able to protect itself from dust and water ingress, and to operate under the temperature range from **-40 to 75 degrees C**. All these features ensure the highest level of reliability for mission-critical applications in any difficult environment.


Dual Power Input for High Availability Network System

The IGS-5227-6MT-X features a strong dual power input system (**Dual 9V~48V DC**) incorporated into customer's automation network to enhance system reliability and uptime. For example, when DC Power 1 fails to work, the hardware failover function will be activated automatically to keep powering the IGS-5227-6MT-X via DC Power 2 alternatively without any loss of operation.

Redundant Ring, Fast Recovery for Critical Network Applications

The IGS-5227-6MT-X 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 20ms.
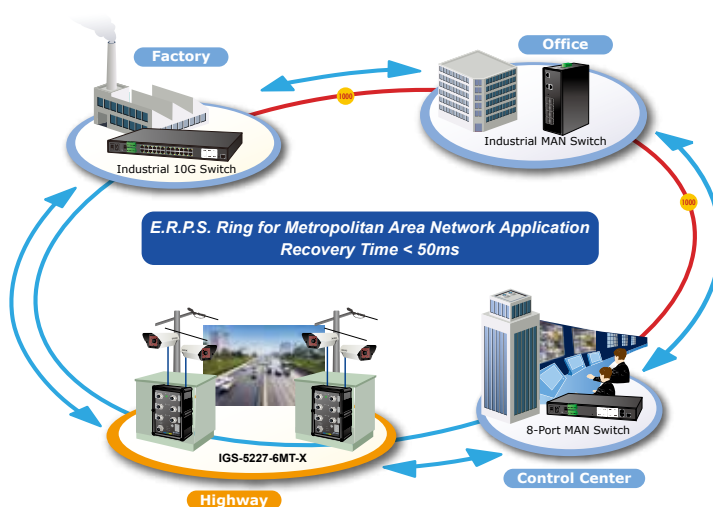
- Supports **Spanning Tree Protocol**
  - IEEE 802.1D Spanning Tree Protocol (STP)
  - IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
  - IEEE 802.1s Multiple Spanning Tree Protocol (MSTP), spanning tree by VLAN
  - BPDU Guard
- Supports **Link Aggregation**
  - 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (static trunk)
  - Maximum 3 trunk groups, with 6 ports for each trunk
  - Up to 12Gbps bandwidth (full duplex mode)
- Provides port mirror (many-to-1)
- Port mirroring monitors the incoming or outgoing traffic on a particular port
- Loop protection to avoid broadcast loops
- Supports ITU-T G.8032 ERPS (Ethernet Ring Protection Switching)

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
  - ToS/DSCP/IP precedence of IPv4/IPv6 packets
  - IP TCP/UDP port number
  - Typical network application
- Strict priority and Weighted Round Robin (WRR) CoS policies
- Traffic-policing policies on the switch port
- DSCP remarking

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

- Authentication
  - IEEE 802.1x port-based/MAC-based network access authentication

SMTP/SNMP Trap Event Alert

Though most NVR or camera management software offers SMTP email alert function, the IGS-5227-6MT-X further provides event alert function to help to diagnose the abnormal device owing to whether or not there is a break of the network connection.

### SMTP/SNMP Trap Event Alert
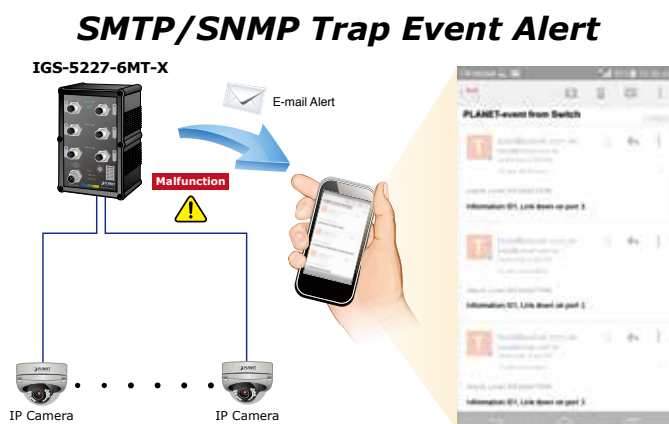
IPv6/IPv4 Dual Stack

Supporting both IPv6 and IPv4 protocols, the IGS-5227-6MT-X helps data centers, campuses, telecoms, and more to experience 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.

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

The IGS-5227-6MT-X not only provides ultra high transmission performance, and excellent Layer 2 and Layer 4 technologies, but also Layer 3 IPv4/IPv6 VLAN routing feature which allows to cross over different VLANs and different IP addresses for the purpose of having a highly-secure, flexibly-managed and simple networking application.

Robust Layer 2 Features

The IGS-5227-6MT-X can be programmed for advanced switch management functions such as dynamic port link aggregation, **Q-in-Q VLAN**, private VLAN, **Multiple Spanning Tree Protocol (MSTP)**, Layer 2 to Layer 4 QoS, bandwidth control and **IGMP/MLD Snooping**. Via the link aggregation of supporting ports, the IGS-5227-6MT-X allows the operation of a high-speed trunk to combine with multiple fiber ports and supports fail-over as well.
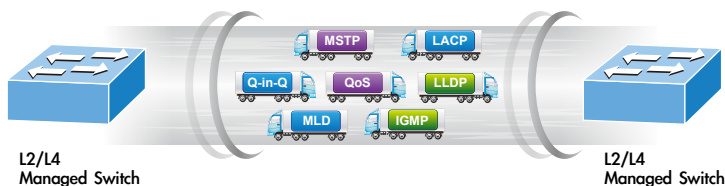
- IEEE 802.1x authentication with guest VLAN
- Built-in RADIUS client to cooperate with the RADIUS servers
- RADIUS/TACACS+ users access authentication
- Access Control List
  - - IP-based Access Control List (ACL)
  - - MAC-based Access Control List (ACL)
- Source MAC/IP address binding
- DHCP Snooping 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
  - Telnet command line interface
  - Web switch management
  - SNMP v1, v2c, and v3 switch management
  - SSH/SSL secure access
- IPv6 address/NTP management
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- System Maintenance
  - Firmware upload/download via HTTP/TFTP
  - Dual images
- DHCP relay and option 82
- User privilege levels control
- NTP (Network Time Protocol)
- Link Layer Discovery Protocol (LLDP) and LLDP-MED
- Network diagnostic
  - Cable diagnostic technology provides the mechanism to detect and report potential cabling issues
  - ICMPv6/ICMPv4 remote ping
- SMTP/Syslog remote alarm
- Four RMON groups (history, statistics, alarms and events)
- SNMP trap for interface link up and link down notification
- System Log
- PLANET Smart Discovery Utility for deployment management