Industrial IP67-rated 4-Port 10/100/1000T 802.3at PoE + 2-Port 10/100/1000T Managed Ethernet Switch (-40~75 degrees C, 24V)

Suitable for Industrial Environment

PLANET IGS-5227-4MP2MT, an Industrial Layer 2+ Managed Ethernet Switch, comes with an IP67-rated industrial case, 4-port 10/100/1000T 802.3at PoE+, 2-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-5227-4MP2MT can be easily mounted on a DIN rail or wall taking up less space. Each of the four Gigabit PoE+ ports provides 36 watts of power, which means a total power budget of up to 144 watts can be utilized simultaneously without considering the different types of PoE applications being employed. It also provides a quick, safe and cost-effective Power over Ethernet network solution to IP security surveillance for small businesses and enterprises.

Waterproof and Dustproof M12 Ethernet Connector

The IGS-5227-4MP2MT is equipped with a 6-port 10/100/1000BASE-T auto-negotiation dustproof M12 connector with 4-port IEEE 802.3at PoE+ (Port 3 to Port 6); each PoE port provides 36 watts PoE output. 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. The IGS-5227-4MP2MT is able 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.

Physical Port

- 6-port 10/100/1000BASE-T waterproof and dustproof M12 connectors with 4-port IEEE 802.3at/af Power over Ethernet Injector function

Hardware Conformance

- Complies with IEEE 802.3at Power over Ethernet Plus end-span PSE
- Complies with IEEE 802.3af Power over Ethernet end-span PSE
- Up to 4 ports of IEEE 802.3at/802.3af devices powered
- Supports PoE Power up to 36 watts for each PoE port
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100 meters
- PoE Management
  - Total PoE power budget control
  - Per port PoE function enable/disable
  - PoE Port Power feeding priority
  - Per PoE port power limitation
  - PD classification detection
  - PD alive check
  - PoE schedule
  - PD scheduled power recycling
- IP67-rated aluminum case
- Redundant power design
  - 24 to 48V DC, redundant power with reverse polarity protection
  - 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

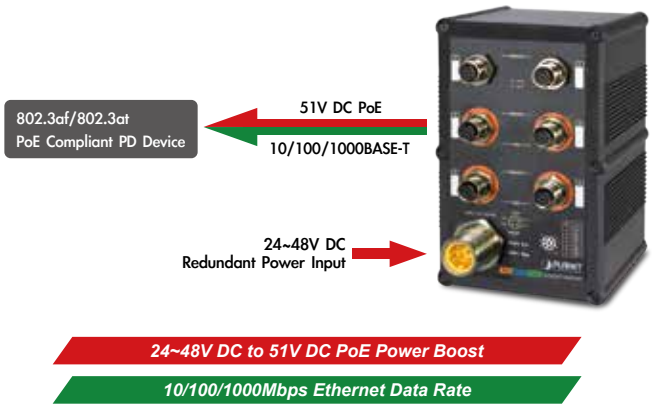
- Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x pause frame flow control (full-duplex)
- High performance of Store-and-Forward architecture, and runt/CRC filtering that eliminates erroneous packets to optimize the network bandwidth
- Storm control support
  - Broadcast/Multicast/Unicast
- Supports VLAN

Dual Power Input for High Availability Network System

The IGS-5227-4MP2MT features a strong dual power input system (Dual 24V~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-5227-4MP2MT via DC Power 2 alternatively without any loss of operation.

Convenient and Reliable Power System

To facilitate the 802.3at High Power PoE usage with the commonly used 24~48V DC power input in transportation and industrial-level applications, the IGS-5227-4MP2MT adopts 24~48V DC to 51V DC power boost technology to solve power source issue which is not required for special power supplies to achieve the level of High Power PoE+ output. To enhance the operation reliability and flexibility, the IGS-5227-4MP2MT is equipped with two DC power input connectors for redundant power supply installation.



Centralized Power Management for Gigabit Ethernet PoE Networking

To fulfill the needs of higher power required PoE network applications with Gigabit speed transmission, the IGS-5227-4MP2MT features high-performance Gigabit IEEE 802.3at PoE+ (up to 36 watts) on all ports. It perfectly meets the power requirements of PoE VoIP phone, PoE Wireless AP and all kinds of PoE IP cameras such as IR, PTZ, speed dome cameras and even box type IP cameras with a built-in fan and heater for high power consumption. The IGS-5227-4MP2MT's PoE capabilities also help to reduce deployment costs for network devices as a result of freeing from restrictions of power outlet locations. Power and data switching are integrated into one unit, delivered over a single cable and managed centrally. It thus eliminates cost for additional AC wiring and reduces installation time.

- 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

- 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 2 ports for each trunk
  - Up to 4Gbps 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
  - IEEE 802.1x authentication with guest VLAN
  - Built-in RADIUS client to cooperate with the RADIUS servers

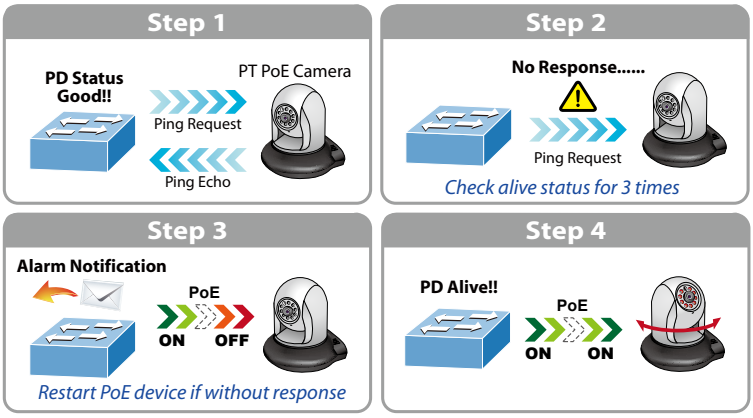
Built-in Unique PoE Functions for Surveillance Management

As a managed PoE Switch for surveillance network, the IGS-5227-4MP2MT features the following intelligent PoE management functions:

- PD Alive Check
- Scheduled Power Recycling
- SMTP/SNMP Trap Event Alert
- PoE Schedule

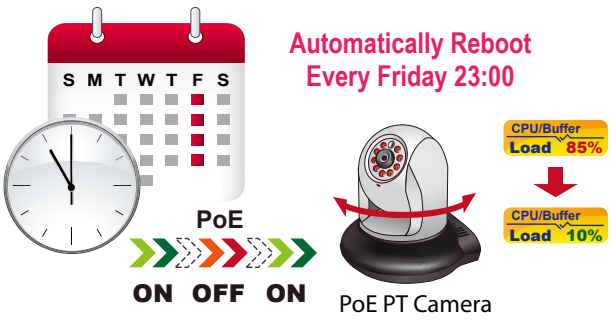
Intelligent Powered Device Alive Check

The IGS-5227-4MP2MT can be configured to monitor a connected PD (Powered Device) status in real time via ping action. Once the PD stops working and it is without response, the IGS-5227-4MP2MT will resume the PoE port power and bring the PD back to work. It will greatly enhance the network reliability through the PoE port resetting the PD's power source, thus reducing administrator management burden.



Scheduled Power Recycling

The IGS-5227-4MP2MT allows each of the connected PDs to reboot at a specified time each week. Therefore, it will reduce the chance of PD crash resulting from buffer overflow.



SMTP/SNMP Trap Event Alert

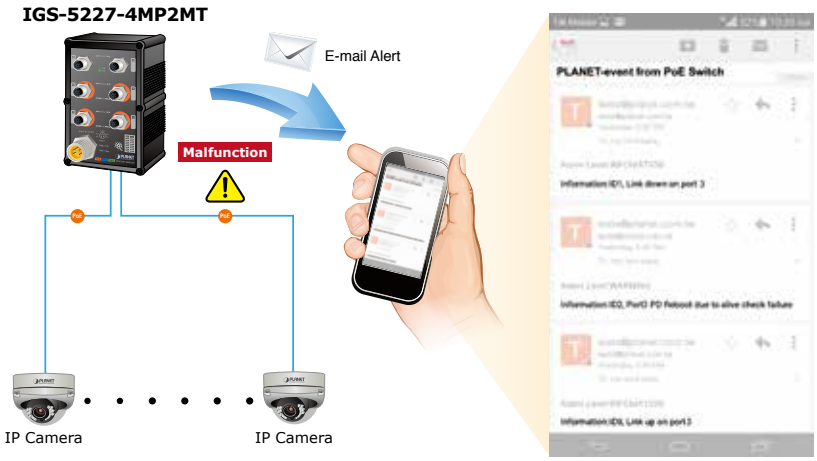
Though most NVR or camera management software offers SMTP email alert function, the IGS-5227-4MP2MT further provides event alert function to help to diagnose the abnormal device owing to whether or not there is a break of the network connection, loss of PoE power or the rebooting response by the PD Alive Check process.

- 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

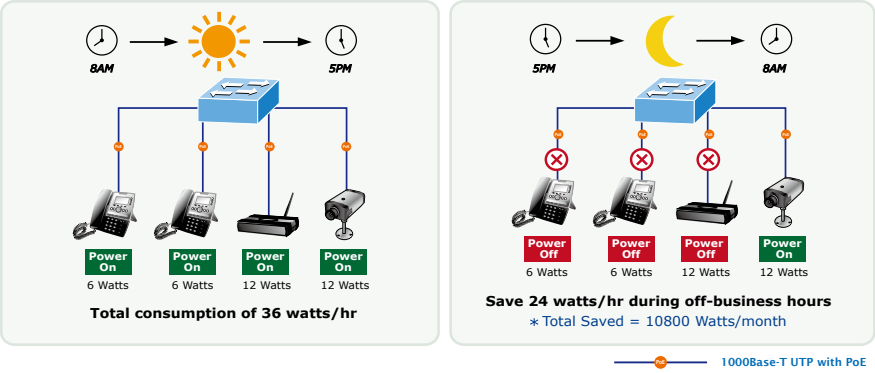
- IPv4 and IPv6 dual stack management
- Switch Management Interfaces
  - Telnet command line interface
  - Web switch management
  - SNMP v1, v2c, and v3 switch management
  - SSH/SSL secure access
- IPv6 address/NTP management
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP 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
  - 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

SMTP/SNMP Trap Event Alert



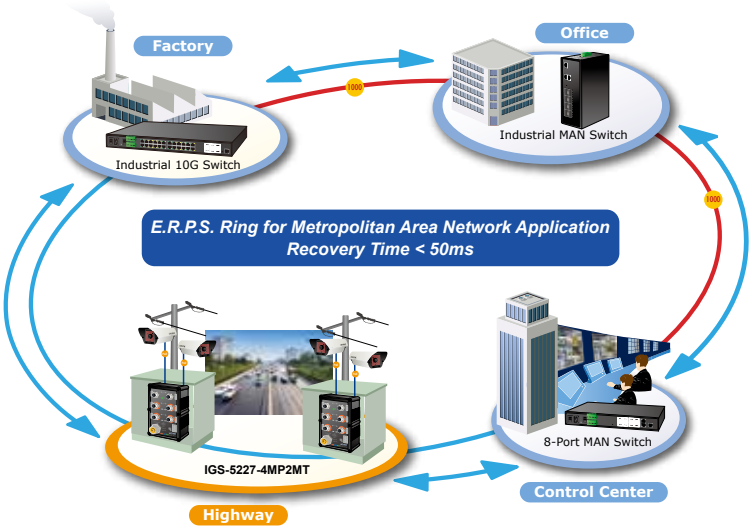
PoE Schedule for Energy Saving

Besides being used for IP surveillance, the IGS-5227-4MP2MT is certainly applicable to build any PoE network including VoIP and wireless LAN. Under the trend of energy saving worldwide and contributing to the environmental protection on the Earth, the IGS-5227-4MP2MT can effectively control the power supply besides its capability of giving high watts power. The "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 and enterprises save energy and budget.



Redundant Ring, Fast Recovery for Critical Network Applications

The IGS-5227-4MP2MT 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.



IPv6/IPv4 Dual Stack

Supporting both IPv6 and IPv4 protocols, the IGS-5227-4MP2MT 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-5227-4MP2MT 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-5227-4MP2MT 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-5227-4MP2MT allows the operation of a high-speed trunk to combine with multiple fiber ports and supports fail-over as well.

Powerful Security

The IGS-5227-4MP2MT offers a 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 IGS-5227-4MP2MT 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.

Excellent Traffic Control

The IGS-5227-4MP2MT is loaded with powerful traffic management and QoS features to enhance connection services by telecoms and ISPs. The QoS features include wire-speed Layer 4 traffic classifiers and bandwidth limit that are particularly useful for multi-tenant units, multi-business units, Telco and network service providers' applications. It also empowers the industrial environment to take full advantage of the limited network resources and guarantees the best performance in VoIP and video conferencing transmission.

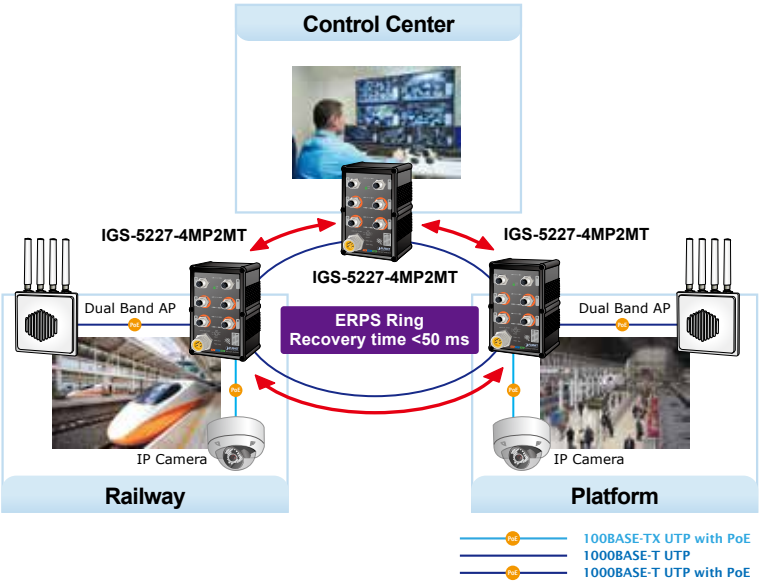
Efficient and Secure Management

With built-in Web-based management interface, the IGS-5227-4MP2MT L2+ Managed Switch offers an easy-to-use, platform-independent configuration facility which includes Web and SNMP management interfaces. For reducing product learning time, it offers Cisco-like command via Telnet and customer does not need to learn new console command. Moreover, it also offers secure remote management by supporting SSH, SSL and SNMP v3 connections which encrypt the packet content at each session.

Applications

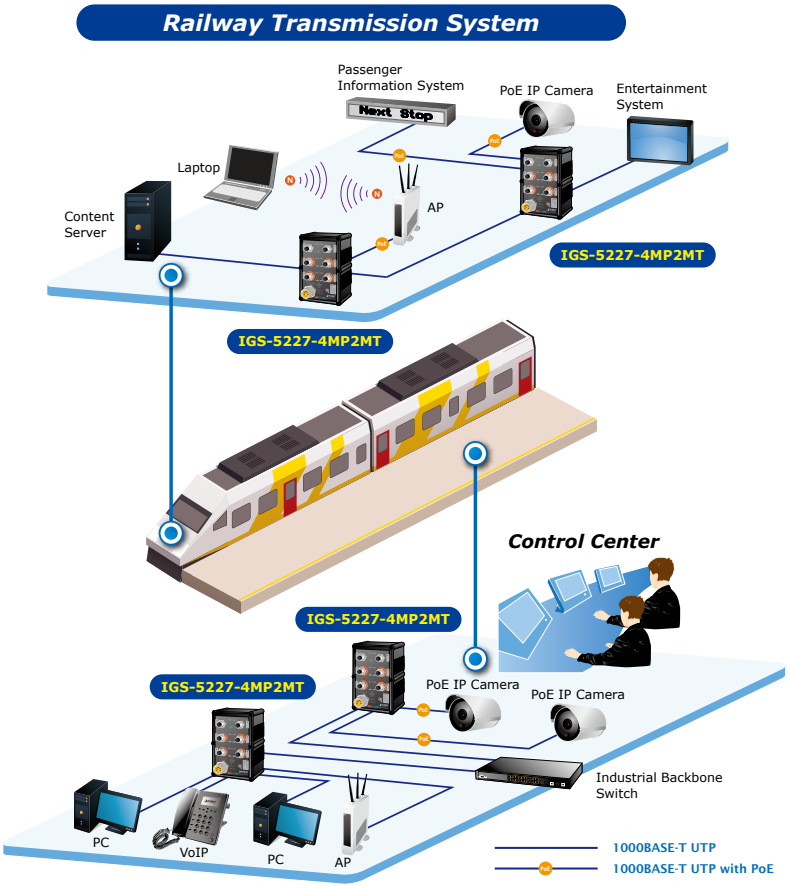
High Availability Networking Solution for Surveillance System

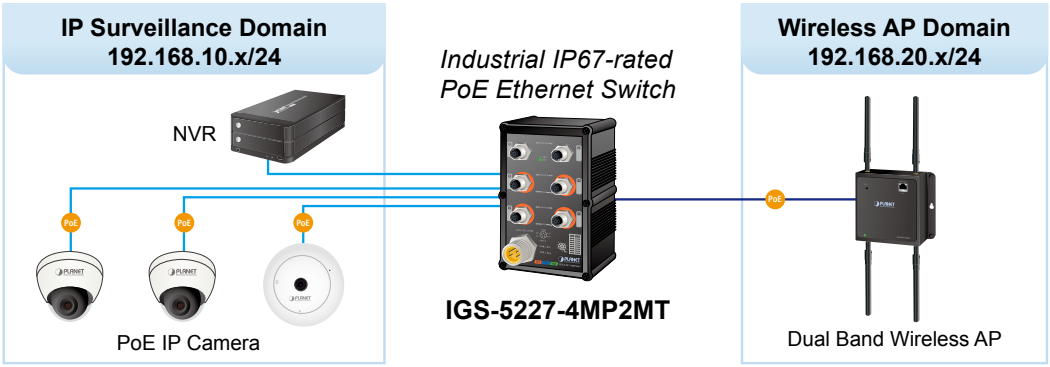
The IGS-5227-4MP2MT's strong, rapid, self-recovery capability helps to prevent network interruptions and external intrusions. Customer's automation network is integrated with ITU-T G.8032 ERPS (Ethernet Ring Protection Switching) so as to enhance system reliability and uptime. The IGS-5227-4MP2MT is the ideal solution for surveillance system to build redundant connection and establish high bandwidth for the public and railway transmission system.

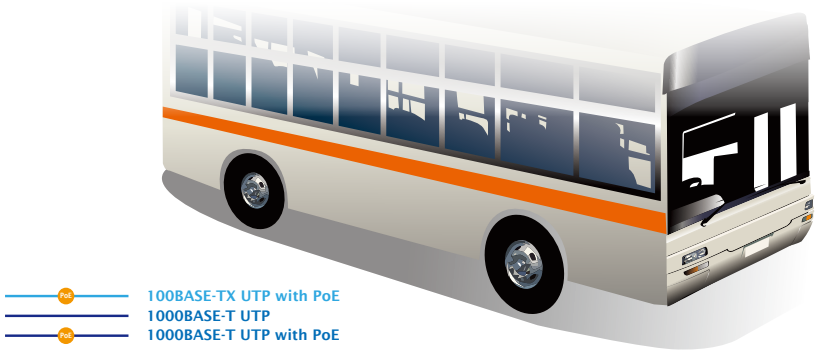


Layer 3 VLAN Routing and PoE Application

With the built-in, robust Layer 3 routing protocols, the IGS-5227-4MP2MT ensures reliable routing between VLANs and network segments. The routing protocols can be applied by VLAN interface with up to 32 routing entries. The IGS-5227-4MP2MT, certainly an ideal solution for industries, offers greater security, control and bandwidth conservation, and high-speed uplink.







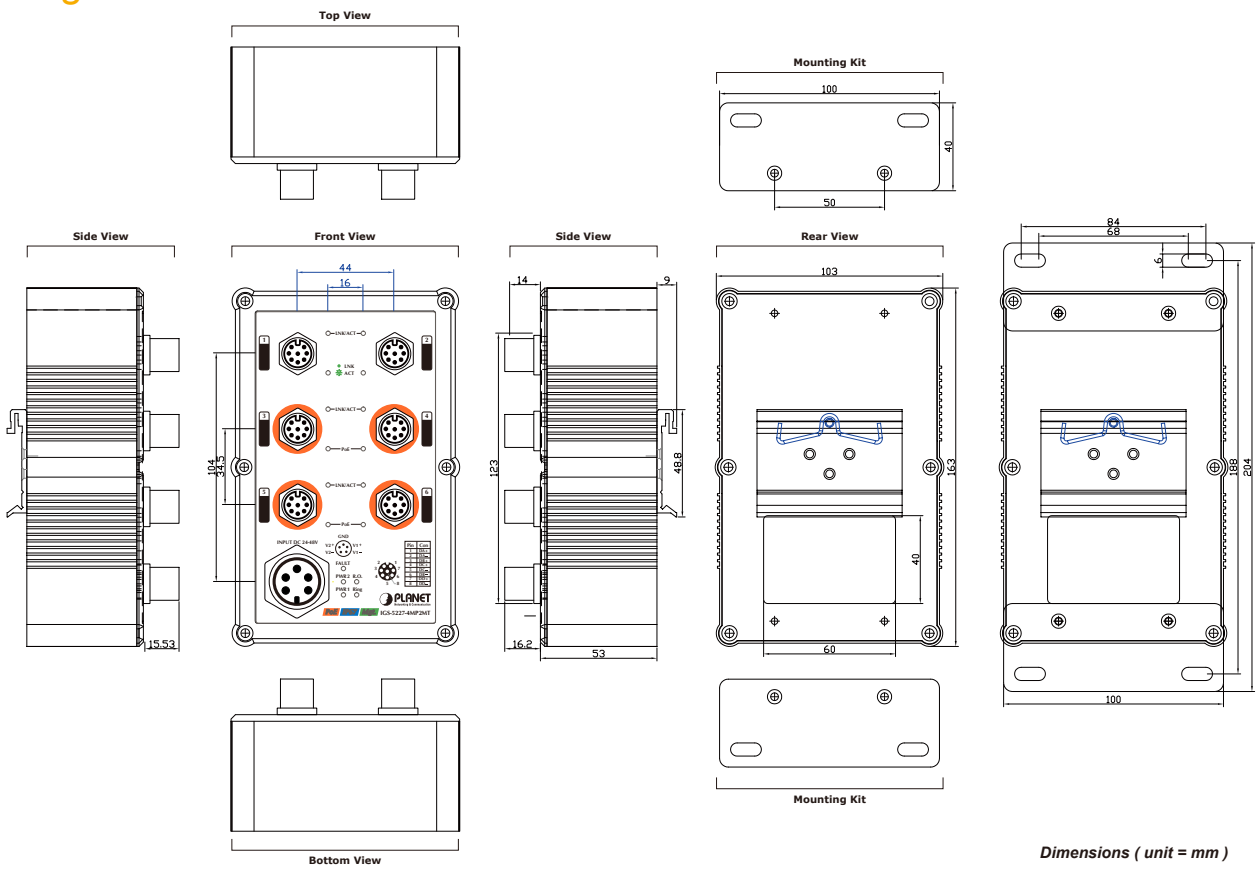
Specifications

Model	IGS-5227-4MP2MT
Hardware Specifications	
Copper Ports	6 x M12, 8-pin A-coded female connector, 10/100/1000BASE-T auto-MDI/MDI-X ports
Power Connector	1 x M23, 5-pin A-coded male connector
Switch Architecture	Store-and-Forward
Switch Fabric	12Gbps/non-blocking
Throughput	8.9Mpps@64bytes
Address Table	8K entries, automatic source address learning and aging
Shared Data Buffer	4M bits
Flow Control	IEEE 802.3x pause frame for full-duplex Back pressure for half-duplex
Jumbo Frame	9K bytes
Dimensions (W x D x H)	103 x 68.2 x 163 mm
Weight	1155g
Enclosure	IP67 aluminum case
Installation	Wall-mount kit and DIN-rail kit
LED	System: PWR1 (Green), PWR2 (Green), Fault (Red) Ring (Green), R.O. (Green) 10/100/1000T RJ45 Interfaces (Port 1 to Port 2): LNK/ACT (Green) 10/100/1000T RJ45 Interfaces (Port 3 to Port 6): LNK/ACT (Green) PoE-in-Use (Orange)
Power Consumption	Max. 155 watts/528.89 BTU
Power Requirements	Dual 24~48V DC
ESD Protection	6KV DC
Power over Ethernet	
PoE Standard	IEEE 802.3at/802.3af PoE/PSE
PoE Power Supply Type	End-span
PoE Power Output	Per port 51V DC, 350mA; max. 15.4 watts (IEEE 802.3af) Per port 51V DC, 590mA; max. 36 watts (IEEE 802.3at)

Power Pin Assignment	1/2(+), 3/6(-)
PoE Power Budget	144 watts max. (depending on power input)
PoE Ability	PD @ 7 watts: 4 units PD @ 15.4 watts: 4 units PD @ 30.8 watts: 4 units
Layer 2 Management Functions	
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 Many-to-1 monitor
VLAN	802.1Q tagged based VLAN Q-in-Q tunneling Private VLAN Edge (PVE) MAC-based VLAN Protocol-based VLAN Voice VLAN IP Subnet-based VLAN MVR (Multicast VLAN registration) Up to 255 VLAN groups, out of 4095 VLAN IDs
Link Aggregation	IEEE 802.3ad LACP/static trunk 3 groups with 2 ports per trunk
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)
QoS	Traffic classification based strict priority and WRR 8-level priority for switching: - Port number - 802.1p priority - 802.1Q VLAN tagging - 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
Bandwidth Control	Per port bandwidth control Ingress: 100Kbps~1000Mbps Egress: 100Kbps~1000Mbps
Access Control List	IP-based ACL/MAC-based ACL Up to 256 entries
Layer 3 Functions	
IP Interfaces	Max. 8 VLAN interfaces
Routing Table	Max. 32 routing entries
Routing Protocols	IPv4 software static routing IPv6 software static routing
Management	
Basic Management Interfaces	Telnet; Web browser; SNMP v1, v2c
Secure Management Interfaces	SSH/SSL, SNMP v3
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 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
Standards Conformance	
Regulatory Compliance	FCC Part 15 Class A, CE
Stability Testing	IEC 60068-2-32 (free fall) IEC 60068-2-27 (shock) IEC 60068-2-6 (vibration)

Railway Traffic	EN50155
Standards Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX 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 RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP v1 RFC 2236 IGMP v2 RFC 3376 IGMP v3 RFC 2710 MLD v1 RFC 3810 MLD v2 ITU-T G.8032 ERPS (Ethernet Ring Protection Switching)
Environment	
Operating	Temperature: -40 ~ 75 degrees C Relative Humidity: 5 ~ 95% (non-condensing)
Storage	Temperature: -40 ~ 80 degrees C Relative Humidity: 5 ~ 95% (non-condensing)
Standard Accessories	
Packet Contents	1 x 8-pin A-coded M12-to-RJ45 UTP Cable (2m) 1 x Wall-mount Kit 1 x DIN-rail Kit 1 x Quick Installation Guide 6 x M12 Female Dust Cap 1 x M23 Power Waterproof Cap M23 5-pin A-coded female connector power cable (Not included in the packet)

Drawing



Dimensions (unit = mm)

Ordering Information

IGS-5227-4MP2MT	Industrial IP67-rated 4-Port 10/100/1000T 802.3at PoE + 2-Port 10/100/1000T Managed Ethernet Switch (-40~75 degrees C, 24V)

Related Products

IGS-604HPT-RJ	Industrial IP67-rated 4-Port 10/100/1000T 802.3at PoE + 2-Port 10/100/1000T Managed Ethernet Switch (-40~75 degrees C)
IGS-604HPT-M12	Industrial IP67-rated 4-Port 10/100/1000T 802.3at PoE + 2-Port 10/100/1000T Managed Ethernet Switch (-40~75 degrees C)
IGS-5227-6MT-X	Industrial IP67-rated 6-Port 10/100/1000T M12 Managed Ethernet Switch (-40~75 degrees C)
ISW-800T-M12	Industrial IP67-rated 8-Port 10/100Mbps M12 Ethernet Switch (-40~75 degrees C)
ISW-804PT-M12	Industrial IP67-rated 8-Port 10/100Mbps M12 Ethernet Switch with 4-Port PoE (-40~75 degrees C)
POE-E101	IEEE 802.3af Power over Ethernet Extender
POE-E201	IEEE 802.3at Power over Ethernet Extender

Related Products

CB-M12A8MRJ-200	8-pin A-coded M12 Male to RJ45 Ethernet Cable (2 meters)
CB-M23F5F-120	5-pin M23 Female to bare end power cable (1.2 meters)

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