

Industrial 8-port 10/100/1000T 802.3at PoE + 2-port 1G/2.5G SFP Managed Switch



Environmentally Hardened Design

PLANET Industrial 8-port Gigabit 802.3at PoE+ Switch, IGS-10020HPT series, is equipped with a rugged IP30 metal case for stable operation in heavy industrial environments. Thus, the IGS-10020HPT series 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-10020HPT series can be placed in almost any difficult environment. The IGS-10020HPT series also allows either DIN rail or wall mounting for efficient use of cabinet space.

Model	Console	PoE Standard	LAN Port Speed	SFP Slot Speed
IGS-10020HPT	RJ45	IEEE 802.3af/at	10/100/1000Mbps	100/1000/2500BASE-X
IGS-10020HPT-U	Micro USB	IEEE 802.3af/at	10/100/1000Mbps	100/1000/2500BASE-X



Physical Port

- 8 10/100/1000BASE-T Gigabit Ethernet RJ45 ports with IEEE 802.3at PoE+ Injector
- 2 100/1000/2500BASE-X mini-GBIC/SFP slots for SFP type auto detection
- One RJ45 console interface for basic management and setup (IGS-10020HPT)
- One USB console interface for basic management and setup (IGS-10020HPT-U)

Power over Ethernet

- Complies with IEEE 802.3at Power over Ethernet Plus/end-span PSE
- Up to 8 IEEE 802.3af/802.3at 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 100m in standard mode and 200m in extend mode
- PoE management features
 - PoE admin-mode control
 - PoE management mode selection
 - Per port PoE function enable/disable
 - PoE port power feeding priority
 - Per PoE port power limit
 - PoE Port Status monitoring
 - PD classification detection
 - Sequence port PoE

Intelligent PoE features

- PoE Legacy mode enable/disable
- Temperature threshold control
- PoE usage threshold control
- PoE schedule
- PD alive check
- LLDP PoE Neighbors

Industrial Protocol

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

Industrial Case and Installation

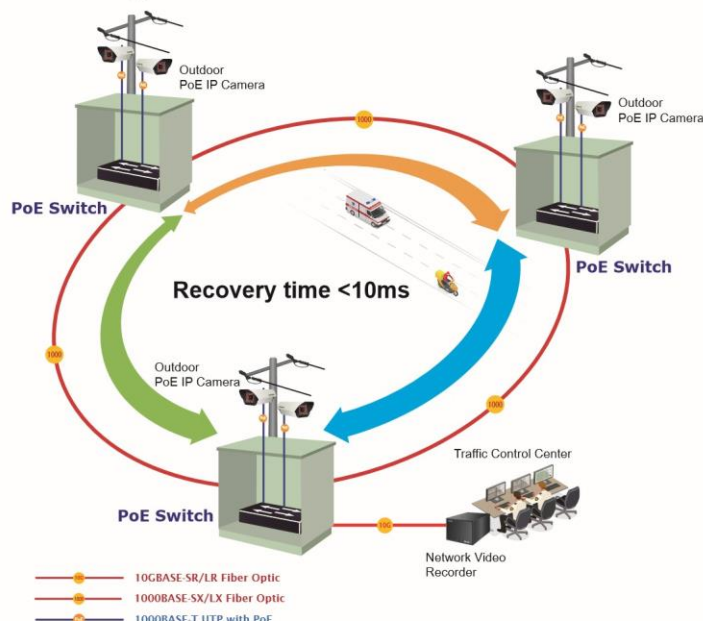
- IP30 aluminum case
- DIN rail and wall-mount designs

Redundant Ring, Fast Recovery for Critical Network Applications

The IGS-10020HPT series 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-10020HPT series 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 was interrupted accidentally, the fault recovery times could be **less than 50ms** to quickly bring the network back to normal operation.

ERPS Ring for Video Transmission Redundancy



In-vehicle and ITS Industrial Ethernet PoE Solution

The IGS-10020HPT series is compliant with e-Mark requirements, making it suitable for a variety of in-vehicle applications and surveillance systems. To facilitate the 802.3at PoE+ usage with commonly used 12~48/54V DC power input for transportation and industrial-level applications, the IGS-10020HPT series adopts 12~48/54V DC to 54V power boost technology to solve power source issue but does not require special power supplies. It fulfills the needs of surveillance systems, video transmissions and wireless services on the bus, shuttles and other vehicles for power and data transmissions.

Model	DC Power Input	PoE Power Budget
IGS-10020HPT	DC 12-48V	60W maximum (DC 12V power input) 120W maximum (DC 24V power input) 240W maximum (DC 48V power input)
IGS-10020HPT-U	DC 12-54V	60W maximum (DC 12V power input) 120W maximum (DC 24V power input) 240W maximum (DC 54V power input)

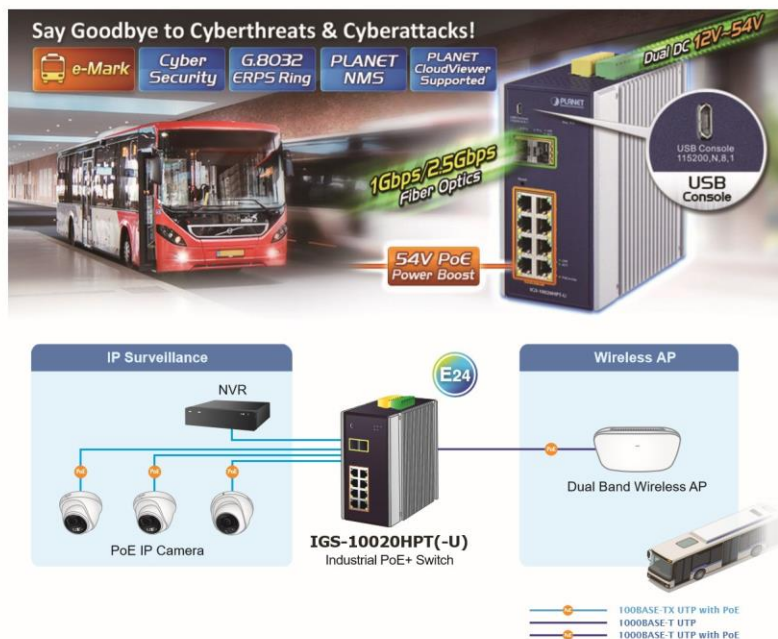
- DC 12-48V, redundant power with reverse polarity protection (IGS-10020HPT)
- DC 12-54V, redundant power with reverse polarity protection (IGS-10020HPT-U)
- Supports 6000 VDC Ethernet ESD protection
- -40 to 75 degrees C operating temperature
- E-Mark certification

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

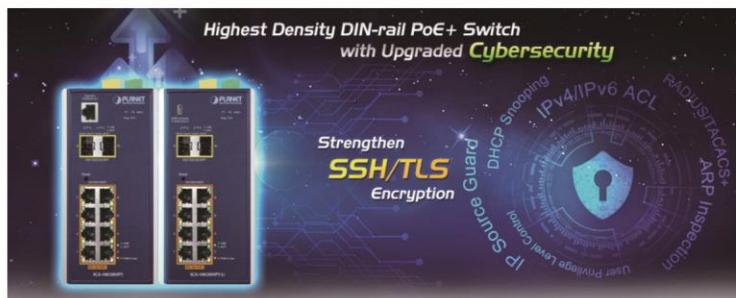
Layer 2 Features

- 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
 - Supports provider Bridging (VLAN Q-in-Q, IEEE 802.1ad)
 - Private VLAN Edge (PVE)
 - Port Isolation
 - MAC-based VLAN
 - Protocol-based VLAN
 - Voice VLAN
 - GVRP
- 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 5 trunk groups with 10 ports per trunk group
 - Up to 20Gbps 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



Cybersecurity Network Solution to Minimize Security Risks

The cybersecurity features that virtually need no effort and cost to have included 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.



High Power PoE for Security and Public Service Applications

To fulfill the demand of High Power PoE for network applications with Gigabit speed transmission under wide temperature, the IGS-10020HPT series provides 8 10/100/1000Mbps ports featuring **IEEE 802.3at** Power over Ethernet Plus (PoE+) that combines up to **36-watt** power output and data per port over one Cat5E/6 Ethernet cable. As the whole system comes with a total **240-watt** PoE budget, the IGS-10020HPT series is designed specifically to satisfy the growing demand of higher power consuming network PDs (powered devices) such as multi-channel (802.11a/b/g/n) wireless LAN access points, PTZ (Pan, Tilt & Zoom)/Speed Dome network cameras and other PoE network devices, doubling that of the current conventional 802.3af PoE.

- Link Layer Discovery Protocol (LLDP) and LLDP-MED
- Provides ONVIF for co-operating with PLANET video IP surveillances

Layer 3 IP Routing Features

- Supports maximum 32 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

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/MAC-based network access authentication
 - 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