

# IGS-20160HPT

# Industrial L3 16-Port 10/100/1000T 802.3at PoE + 2-Port 10/100/1000T + 2-Port 1G/2.5G SFP Managed Ethernet Switch



#### Advanced Manageable PoE Solution for Hardened Environment

PLANET IGS-20160HPT L3 Industrial Managed PoE+ Switch, featuring **16 10/100/1000BASE-T 802.3at PoE+ ports** with each port powering up to 36 watts, **2 10/100/1000BASE-T RJ45 ports**, and **2 100/1000/2500BASE-X SFP ports** in an IP30 rugged metal case, can be installed in any difficult environment. It provides user-friendly yet advanced **IPv6/IPv4 management** interfaces, abundant **L2/L4 switching functions**, **Layer 3 OSPFv2 dynamic routing** capability, and advanced **ITU-G.8032 ERPS Ring** technology to improve the rapid self-recovery capability and PLANET **intelligent PoE** functions for controlling the PoE outdoor IP surveillance and wireless network applications. It is able to operate reliably, stably and quietly in the temperature range from **-40 to 75 degrees C**.



#### High Power PoE for Security and Public Service Applications

As the whole system comes with a total **360-watt** PoE budget, the IGS-20160HPT 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.

#### Intelligent Alive Check for Powered Device

The IGS-20160HPT can be configured to monitor connected PD's status in real time via ping action. Once the PD stops working and responding, the IGS-20160HPT will recycle the PoE port power and bring the PD back to work. It also greatly

# **Physical Port**

- 16 10/100/1000BASE-T Gigabit Ethernet RJ45 ports with
  IEEE 802.3at PoE+ Injector
- 2 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

#### Power over Ethernet

- Complies with IEEE 802.3at Power over Ethernet Plus/endspan PSE
- Up to 16 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; 250m in extended mode at speed of 10Mbps
- · PoE management features
  - PoE admin-mode control
  - PoE management mode selection
  - PoE Legacy mode selection
  - PoE Budget setup option
  - 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
  - Temperature threshold control
  - PoE usage threshold control
  - PoE extension
  - PoE schedule
  - PD alive check
  - LLDP PoE Neighbors
- Industrial Protocol
- · Modbus TCP for real-time monitoring in the SCADA system
- IEEE 1588v2 PTP (Precision Time Protocol) transparent clock mode
- · Industrial Case and Installation
- · IP30 aluminum case
- · DIN-rail or wall-mount design
- 48~54V DC, redundant power with reverse polarity protection



enhances the reliability in that the PoE port will reset the PD power, thus reducing administrator's management burden.



#### PoE Schedule for Energy Savings

Under the trend of energy savings worldwide and contributing to environmental protection on the Earth, the IGS-20160HPT can effectively control the power supply besides its capability of giving high watts power. The built-in "**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 or enterprises save power and money.



#### Scheduled Power Recycling

The IGS-20160HPT allows each of the connected PoE IP cameras or PoE wireless access points to reboot at a specific time each week. Therefore, it will reduce the chance of IP camera or AP crash resulting from buffer overflow.



#### Convenient and Smart ONVIF Devices with Detection Feature

PLANET has developed an awesome feature -- ONVIF Support -- which is specifically designed for co-operating with video IP surveillances. From the IGS-20160HPT GUI, clients just need one click to search and show all of the ONVIF devices via network application. In addition, clients can upload floor images to the switch series, making the deployments of surveillance and other devices easy for

- Supports 6KV 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 RIPv2 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
  - Broadcast/Multicast/Unicast
- Supports VLAN
  - IEEE 802.1Q tagged VLAN
  - Up to 4K VLANs groups, out of 4094 VLAN IDs
  - Supports provider bridging (VLAN Q-in-Q, IEEE 802.1ad)
  - Private VLAN Edge (PVE)
  - Port Isolation
  - MAC-based VLAN
  - IP Subnet-based VLAN
  - Protocol-based VLAN
  - VLAN Translation
  - 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 Filtering/BPDU Guard
- Supports Link Aggregation
  - 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (static trunk)
  - Maximum 10 trunk groups with 16 ports per trunk group
  - Up to 32Gbps bandwidth (duplex mode)
- Provides port mirror (many-to-1)



planning and inspection purposes. Moreover, clients can get real-time surveillance's information and online/offline status; the PoE reboot can be controlled from the GUI.



# Redundant Ring, Fast Recovery for Critical Network Applications

The IGS-20160HPT 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 simple Ring network, the recovery time of data link can be as fast as 10ms.





#### 1588 Time Protocol for Industrial Computing Networks

The IGS-20160HPT is ideal for telecom and Carrier Ethernet applications, supporting MEF service delivery and timing over packet solutions for IEEE 1588 and synchronous Ethernet.

- 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)
- Provides ONVIF for co-operating with PLANET video IP surveillances

#### 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 co-operate with the RADIUS servers
  - TACACS+ login users access authentication
  - RADIUS / TACACS+ users access authentication
  - Guest VLAN assigns clients to a restricted VLAN with limited services
- Access Control List
  - IP-based Access Control List (ACL)