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.

802.3bt PoE++ 95-watt Power over 4-pair UTP Solution

As the IGS-5225-4UP1T2S adopts the IEEE 802.bt PoE++ standard technology, it is capable to source up to 95 watts of power by using all the four pairs of standard Cat5e/6 Ethernet cabling to deliver power and full-speed data to each remote PoE compliant powered device (PD). Its power capability is three times more than that of the conventional 802.3at PoE+ and it is an ideal solution for those high power consuming network PDs, such as:

- PoE PTZ speed dome cameras
- Network devices
- Thin clients
- AIO (all-in-one) touch PCs, point of sale (POS) and information kiosks
- Remote digital signage displays
- PoE lightings

802.3bt PoE++ and Advanced PoE Power Output Mode Management

To meet the demand of various powered devices consuming stable PoE power, the IGS-5225-4UP1T2S supports multi-PoE operation modes that include 95-watt 802.3bt type-4 PoE++ mode, 4-pair legacy and force modes to solve the incompatibility of non-standard 4-pair PoE PDs in the field.

- 95W 802.3bt PoE++ Power Output Mode
- 36W End-span 802.3at PoE+ Power Output Mode
- 36W Mid-span 802.3at PoE+ Power Output Mode

Industrial Case and Installation

- IP30 aluminum case
- DIN-rail and wall-mount designs
- DC 48-54V, redundant power with reverse polarity protection
- Supports 6000 VDC 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
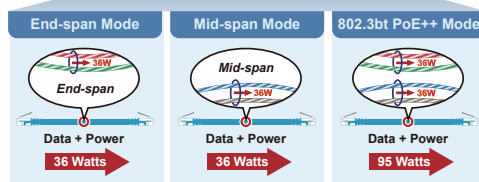- Transfer alarm to IP network via email and SNMP trap

Layer 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
  - VLAN Translation
  - 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 3 trunk groups with 7 ports per trunk group
  - Up to 14Gbps bandwidth (duplex mode)
- Provides port mirror (many-to-1)
- Port mirroring to monitor the incoming or outgoing traffic on a particular port

PoE Watts	PoE Operation Mode	Power Output Mode
95W	**802.3bt PoE++**	(Pins 1, 2, 3, 6 + Pins 4, 5, 7, 8)
36W	End-span 802.3at PoE	(Pins 1, 2, 3, 6)
36W	Mid-span 802.3at PoE	(Pins 4, 5, 7, 8)

Selectable End-span/Mid-span/UPoE 802.3bt PoE++ Power Inline Mode

Port	PoE Mode	Schedule	Power Inline Mode	PD Type	Extended mode	Priority	Power Allocation [W]
*	<All>	<All>	<All>	<All>	<All>	<All>	95
1	Enable	Profile 1	<All>	Standard	Disable	High	95
2	Enable	Profile 1	End-Span / Mid-Span	Standard	Disable	High	95
3	Enable	Profile 1	BT	Standard	Disable	High	95
4	Enable	Profile 1	BT	Standard	Disable	High	95

End-span Mode — End-span — Data + Power — 36 Watts

Mid-span Mode — Mid-span — Data + Power — 36 Watts

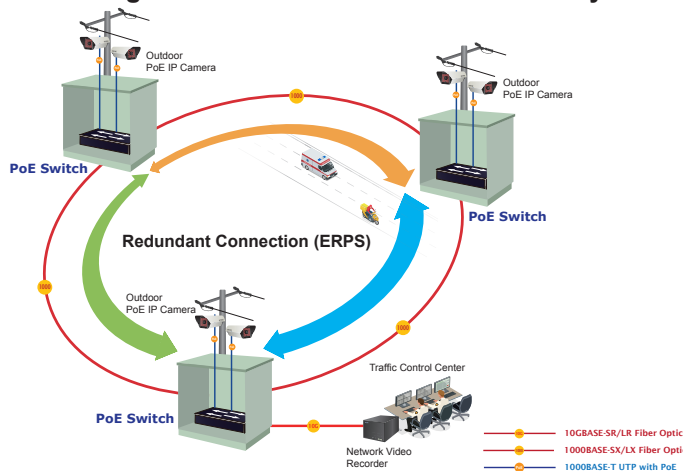802.3bt PoE++ Mode — Data + Power — 95 Watts

Redundant Ring, Fast Recovery for Critical Network Applications

The IGS-5225-4UP1T2S 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-5225-4UP1T2S 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.

ERPS Ring for Video Transmission Redundancy

Outdoor PoE IP Camera
Outdoor PoE IP Camera
PoE Switch
PoE Switch
Redundant Connection (ERPS)
Outdoor PoE IP Camera
PoE Switch
Traffic Control Center
Network Video Recorder

10GBASE-SR/LR Fiber Optic
1000BASE-SX/LX Fiber Optic
1000BASE-T UTP with PoE

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-5225-4UP1T2S's GUI, you just need one click to search and show all of the

- 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) 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)