

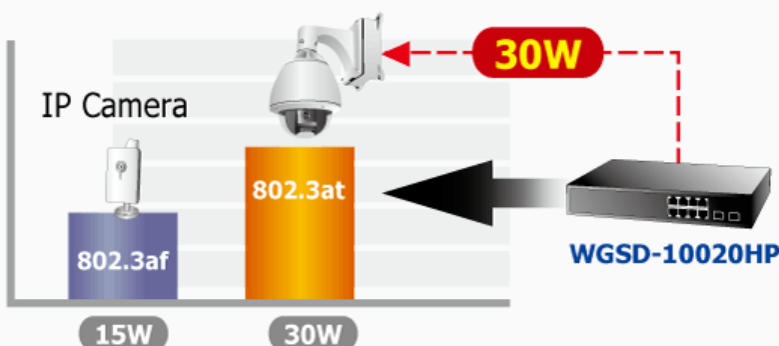
# 8-Port 10/100/1000Mbps PoE Plus + 2 100/1000X SFP Managed Ethernet Switch



### Centralized Power Management for Gigabit Ethernet Networking

To fulfill the demand of higher power required PoE network applications with Gigabit speed transmission, PLANET introduces new high PoE, desktop 13-inch size Gigabit Managed Switch – WGSD-10020HP which features high performance Gigabit IEEE 802.3af PoE (Up to 15.4W) and IEEE 802.3at PoE Plus (Up to 30.8W) on all ports. A maximum of 30.8 Watts is available on each Gigabit ports of the WGSD-10020HP for powering per PD, with a maximum PoE delivery of 150 Watts for all ports in order to satisfy the increasing needs of power consumption by PDs. Providing Gigabit throughput and high power supply, the WGSD-10020HP optimizes the installation and power management of network devices such as 11n wireless access points (AP) with Gigabit PoE LAN port, security PTZ / Speed Dome network video camera, large screen PoE Video phones, thin-clients and etc.

### PTZ / Speed Dome Camera



### Wirelessly Multimedia Projection

- 8-Port 10/100/1000Base-T Gigabit Ethernet RJ-45 with IEEE 802.3af / 802.3at PoE Injector
- 2 100/1000Base-X mini-GBIC/SFP slots, SFP type auto detection
- RS-232 DB9 console interface for basic management and setup

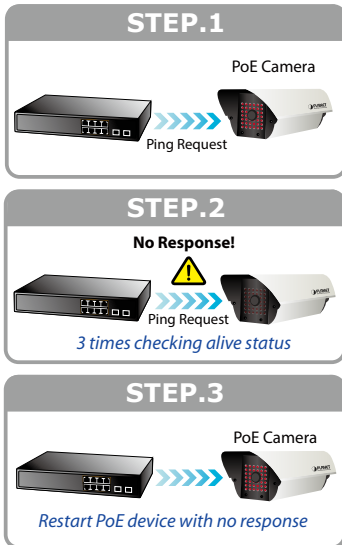
### Power over Ethernet

- Complies with IEEE 802.3af Power over Ethernet End-Span PSE
- Complies with IEEE 802.3at high-power Power over Ethernet End-Span PSE
- Up to 8 ports for IEEE 802.3af / at devices powered
- Supports PoE Power up to 30.8 Watts for each PoE port
- Auto detect powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100m
- PoE Management
- Total PoE power budget control
- Per port PoE function enable / disable
- PoE Port Power feeding priority
- Per PoE port power limit
- PD classification detection
- PD Alive check

**Intelligent Powered Device Alive Check**

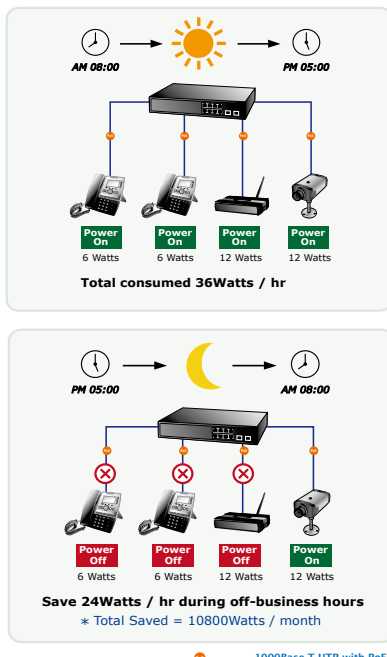
The WGSD-10020HP PoE Gigabit Managed Switch can be configured to monitor connected PD (Powered Device) status in real-time via ping action. Once the PD stops working and no response, the WGSD-10020HP will recycle the PoE port power and bring the PD back to work. It will greatly enhance the network reliability through the PoE port resetting the PD's power source and reduce administrator management burden.

**PoE PD Alive-checking**



**PoE Schedule for Energy Saving**

Under the trend of energy saving worldwide and contributes to environment protection on the earth, the WGSD-10020HP 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 SMB or Enterprise save power and money.



**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 run/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- Storm Control support
  - Multicast / Unknown-Unicast / Broadcast
- Supports VLAN
  - IEEE 802.1Q Tagged VLAN
  - Up to 256 VLANs groups, out of 4095 VLAN IDs
  - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
  - Private VLAN Edge (PVE)
  - Protocol-Based VLAN
  - MAC-Based VLAN
  - Voice VLAN
- Supports Spanning Tree Protocol
  - STP, IEEE 802.1D Spanning Tree Protocol
  - RSTP, IEEE 802.1w Rapid Spanning Tree Protocol
  - MSTP, IEEE 802.1s Multiple Spanning Tree Protocol, 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, up to 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

### Cost-effective IPv6 Managed Gigabit Switch Solution for SMB

To fulfill the demand of IPv6 (Internet Protocol version 6) network infrastructure, the WGSD-10020HP supports both IPv4 and IPv6 management functions. It can work with current IPv4 network structure and also support the new IPv6 network structure in the future. With easy and friendly management interfaces and plenty of management functions included, the WGSD-10020HP is the best choice for ISP to build the IPv6 FTTx edge service and for SMB to connect with IPv6 network.

### Diversity for Multiple Applications

The WGSD-10020HP is a desktop size, Layer 2 / Layer 4 Full Managed Gigabit Switch which can handle extremely large amounts of data in a secure topology linking to an Enterprise backbone or high capacity network server with 20Gbps switching fabric. The powerful features of QoS and network security offered by the WGSD-10020HP provides effective data traffic control for ISPs and Enterprises VoIP, video streaming and multicast applications. It is ideal for the remote access layer of campus or enterprise networks and the aggregation layer of IP metropolitan networks.

### Robust Layer 2 Features

The WGSD-10020HP 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. The WGSD-10020HP provides 802.1Q Tagged VLAN, and the VLAN groups allowed will be maximally up to 255. Via aggregation of supporting ports, the WGSD-10020HP allows the operation of a high-speed trunk combining multiple ports. It enables maximum up to 5 groups of 10 ports for trunk and supports fail-over as well.

### Enhanced Security

The WGSD-10020HP offers 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 comprises of 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 WGSD-10020HP also provides Network Security functions including DHCP Snooping, IP Source Guard and Dynamic ARP Inspection to prevent IP snooping attack and discard ARP packets with invalid MAC address. The network administrators can now construct highly secured corporate networks with considerably less time and effort than before.

### 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 IGMP Snooping v1, v2 and v3
- Support MLD Snooping v1 and v2
- Querier mode support
- IGMP Snooping port filtering
- MLD Snooping port filtering
- MVR (Multicast VLAN Registration)

### Security

- 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
- IP-Based Access Control List (ACL)
- MAC-Based Access Control List
- Source MAC / IP address binding
- DHCP Snooping to filter untrusted DHCP messages

### *Excellent Traffic Control*

The WGSD-10020HP is loaded with powerful traffic management and QoS features to enhance services offered by telecoms. The QoS features include wire-speed Layer 4 traffic classifiers and bandwidth limiting that are particularly useful for multi-tenant unit, multi business unit, Telco, or Network Service Provider applications. The WGSD-10020HP also empowers the enterprises to take full advantages of the limited network resources and guarantees the best performance in VoIP and Video conferencing transmission.

### *Efficient and Secure Management*

For efficient management, the WGSD-10020HP Managed Ethernet Switch is equipped with console, WEB and SNMP management interfaces. With the built-in Web-Based management interface, the WGSD-10020HP offers an easy-to-use, platform-independent management and configuration facility. The WGSD-10020HP supports standard Simple Network Management Protocol (SNMP) and can be managed via any standard-based management software. For text-based management, the WGSD-10020HP can be accessed via Telnet and the console port. Moreover, the WGSD-10020HP offers secure remote management by supporting SSH, SSL and SNMPv3 connection which encrypt the packet content at each session.

### *Flexibility and Extension Solution*

The two mini-GBIC slots built in the WGSD-10020HP support Dual-Speed, 100Base-FX and 1000Base-SX/LX SFP (Small Form-Factor Pluggable) fiber-optic modules, that means, the administrator now can flexibly choose the suitable SFP transceiver according to the transmission distance or the transmission speed required. The distance can be extended from 550 meters (Multi-Mode fiber) up to above 10/20/30/40/50/60/70/120 kilometers (Single-Mode fiber or WDM fiber). They are well suited for applications within the enterprise data centers and distributions.

- Dynamic ARP Inspection discards ARP packets with invalid MAC address to IP address binding
- IP Source Guard prevents IP spoofing attacks
- Auto DoS rule to defend DoS attack
- IP address access management to prevent unauthorized intruder

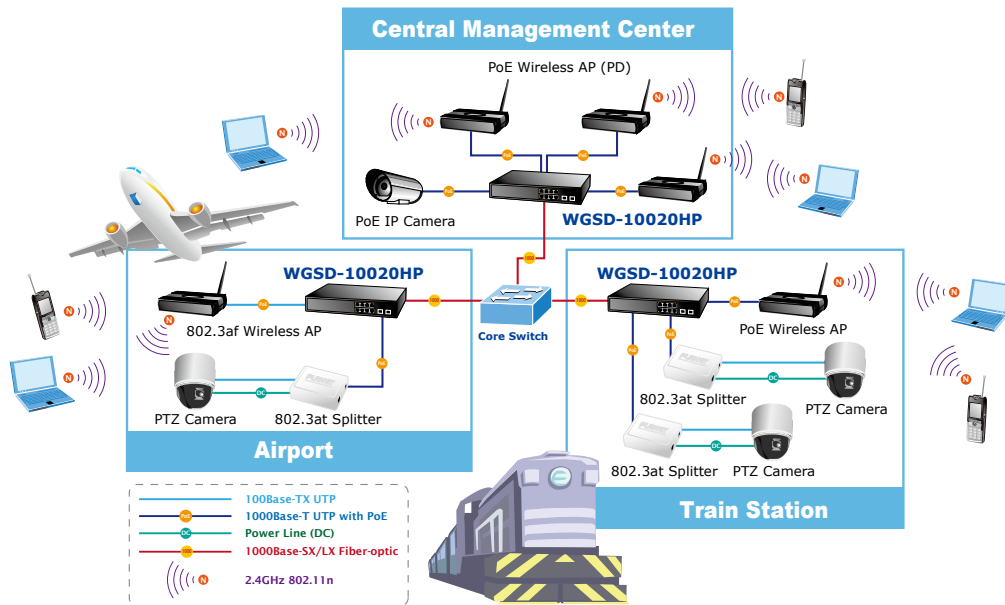
## Management

- Switch Management Interfaces
  - Console / Telnet Command Line Interface
  - Web switch management
  - SNMP v1, v2c, and v3 switch management
  - SSH / SSL secure access
- Four RMON groups (history, statistics, alarms, and events)
- IPv6 IP Address / NTP / DNS management
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- Firmware upload / download via HTTP / TFTP
- DHCP Relay
- DHCP Option 82
- User Privilege levels control
- NTP (Network Time Protocol)
- Link Layer Discovery Protocol (LLDP) Protocol
- Cable Diagnostic technology provides the mechanism to detect and report potential cabling issues
- Reset button for system reboot or reset to factory default
- PLANET Smart Discovery Utility for deploy management

## Application

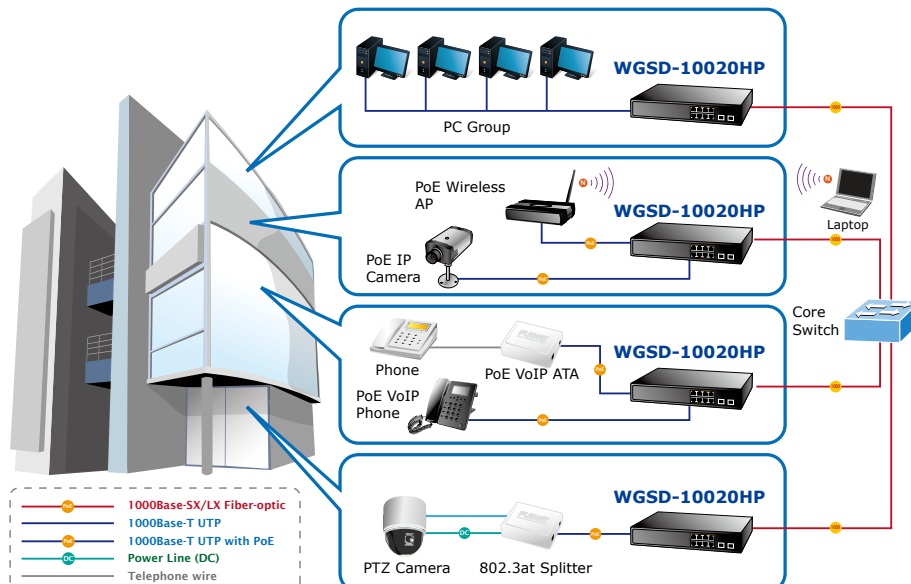
High Power IP Surveillance and Wireless LAN Service in Public Transportation

Having the capability of IEEE 802.3at Power over Ethernet function, the WGSD-10020HP can directly connect with any IEEE 802.3at end-nodes like PTZ (Pan, Tilt & Zoom) network cameras, PTZ Speed Dome cameras, color touch- screen Voice over IP (VoIP) telephones, and multi-channel wireless LAN access points. Besides the wired Internet network, by adopting PoE Wireless LAN structure, the transportation authority gains benefits from more efficiency and less cost while providing better high-speed Internet services in wider areas for the travelers.



### VoIP Network in IP Office

With the business office expansion, the additional telephones required could be installed in less cost via the implementation of PoE IP Telephony system than that of the traditional circuit wiring telephony system. PLANET WGSD-10020HP 802.3at Desktop PoE Switch that backward compatible with 802.3af helps enterprises to create an integrated data, voice, and powered network. PLANET 802.3af / 802.3at compliant IP Phones and Analog Telephony Adapter can be installed without additional power cable because the power can be provided via the standard Ethernet cable from the connected WGSD-10020HP. With the WGSD-10020HP, IP Telephony deployment becomes more reliable and cost effective, which helps enterprises save tremendous cost when upgrading from the traditional telephony system to IP Telephony communications infrastructure.



## Specification

|                               |   |   |
|-------------------------------|---|---|
| Product                       | WGSD-10020HP  |   |
| <b>Hardware Specification</b> |   |   |
| Hardware Version              | 2   |   |
| Copper Ports                  | 8 10/100/1000Base-T RJ-45 Auto-MDI/MDI-X ports  |   |
| SFP/mini-GBIC Slots           | 2 1000Base-SX/LX/BX SFP interfaces (Port-9 and Port-10)<br>Compatible with 100Base-FX SFP   |   |
| Console Port                  | 1 x RS-232 DB9 serial port (115200, 8, N, 1)  |   |
| Switch Architecture           | Store-and-Forward   |   |
| Switch Fabric                 | 20Gbps / non-blocking   |   |
| Throughput                    | 14.88Mpps   |   |
| Address Table                 | 8K entries, automatic source address learning and ageing  |   |
| Share Data Buffer             | 1392 kilobytes  |   |
| Flow Control                  | IEEE 802.3x Pause Frame for Full-Duplex<br>Back pressure for Half-Duplex  |   |
| Jumbo Frame                   | 9Kbytes   |   |
| Reset Button                  | < 5 seconds: System reboot<br>> 5 seconds: Factory Default  |   |
| Dimension (W x D x H)         | 330 x 155 x 43.5 mm, 1U high  |   |
| Weight                        | 1.8kg   |   |
| LED                           | Power, FAN Alert,<br>Link/Act per Gigabit port,<br>PoE In-Use for Port-1~ 8   |   |
| Power Consumption             | Max. 172.9 Watts / 589.6 BTU  |   |
| Max. 172.9 Watts / 589.6 BTU  | AC 100~240V, 50/60Hz  |   |
| <b>Power over Ethernet</b>    |   |   |
| PoE Standard                  | IEEE 802.3af / at PoE / PSE   |   |
| PoE Power Supply Type         | End-Span  |   |
| PoE Power Output              | Per Port 56V DC<br>Max. 30.8 Watts  |   |
| Power Pin Assignment          | 1/2(+), 3/6(-)  |   |
| PoE Power Budget              | 150 Watts maximum   |   |
| PoE Ability                   | Number of PD @ 7 Watts  | 8 |
|                               | Number of PD @ 15.4 Watts   | 8 |
|                               | Number of PD @ 30.8 Watts   | 4 |
| <b>Layer 2 Function</b>       |   |   |
| Basic Management Interfaces   | Console, Telnet, Web Browser, SNMPv1, v2c   |   |
| Secure Management Interface   | SSH, SSL, SNMPv3  |   |
| Port configuration            | Port disable / enable<br>Auto-Negotiation 10/100/1000Mbps full and half duplex mode selection<br>Flow Control disable / enable<br>Bandwidth control on each port<br>Power saving mode control   |   |
| Port Status                   | Display each port's speed duplex mode, link status, Flow control status,<br>Auto negotiation status, trunk status   |   |
| Port Mirroring                | TX / RX / Both<br>Many to 1 monitor   |   |
| VLAN                          | 802.1Q Tagged Based VLAN, up to 256 VLAN groups<br>Q-in-Q tunneling<br>Private VLAN Edge (PVE)<br>MAC-Based VLAN<br>Protocol-Based VLAN<br>Voice VLAN<br>MVR (Multicast VLAN Registration)<br>Up to 256 VLAN groups, out of 4096 VLAN IDs |   |
| Link Aggregation              | IEEE 802.3ad LACP / Static Trunk<br>Supports 5 groups of 10-Port trunk support  |   |

|                              |  |
|------------------------------|--|
| QoS                          | Traffic classification based, Strict priority and WRR<br>8-Level priority for switching<br>- Port Number<br>- 802.1p priority<br>- 802.1Q VLAN tag<br>- DSCP/TOS field in IP Packet  |
| IGMP Snooping                | IGMP (v1/v2/v3) Snooping, up to 255 multicast Groups<br>IGMP Querier mode support  |
| MLD Snooping                 | MLD (v1/v2) Snooping, up to 255 multicast Groups<br>MLD Querier mode support   |
| Access Control List          | IP-Based ACL / MAC-Based ACL<br>Up to 123 entries  |
| Bandwidth Control            | Per port bandwidth control<br>Ingress: 500Kb~80Mbps<br>Egress: 64Kb~80Mbps   |
| SNMP MIBs                    | RFC-1213 MIB-II<br>IF-MIB<br>RFC-1493 Bridge MIB<br>RFC-1643 Ethernet MIB<br>RFC-2863 Interface MIB<br>RFC-2665 Ether-Like MIB<br>RFC-2737 Entity MIB<br>RFC-2618 RADIUS Client MIB<br>RFC3411 SNMP-Frameworks-MIB<br>IEEE 802.1X PAE<br>LLDP<br>MAU-MIB   |
| <b>Standards Conformance</b> |  |
| Regulation Compliance        | FCC Part 15 Class A, CE  |
| Standards Compliance         | IEEE 802.3 10Base-T<br>IEEE 802.3u 100Base-TX/100Base-FX<br>IEEE 802.3z Gigabit SX/LX<br>IEEE 802.3ab Gigabit 1000Base-T<br>IEEE 802.3x Flow Control and Back pressure<br>IEEE 802.3ad Port trunk with LACP<br>IEEE 802.1D Spanning tree protocol<br>IEEE 802.1w Rapid spanning tree protocol<br>IEEE 802.1s Multiple spanning tree protocol<br>IEEE 802.1p Class of service<br>IEEE 802.1Q VLAN Tagging<br>IEEE 802.1X Port Authentication Network Control<br>IEEE 802.1ab LLDP<br>IEEE 802.3af Power over Ethernet<br>IEEE 802.3at Power over Ethernet Plus<br>RFC 768 UDP<br>RFC 793 TFTP<br>RFC 791 IP<br>RFC 792 ICMP<br>RFC 2068 HTTP<br>RFC 1112 IGMP version 1<br>RFC 2236 IGMP version 2<br>RFC 3376 IGMP version 3<br>RFC 2710 MLD version 1<br>FRC 3810 MLD version 2 |

## Ordering Information

|              |   |
|--------------|---|
| WGSD-10020HP | 8-Port 10/100/1000Mbps PoE Plus + 2 100/1000X SFP Managed Ethernet Switch |
|--------------|---|

## Relative Product

|            |   |
|------------|---|
| WGSD-10020 | 8-Port 10/100/1000Mbps with 2 Shared SFP Managed Switch |
|------------|---|

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**WGSD-10020HPv2**