

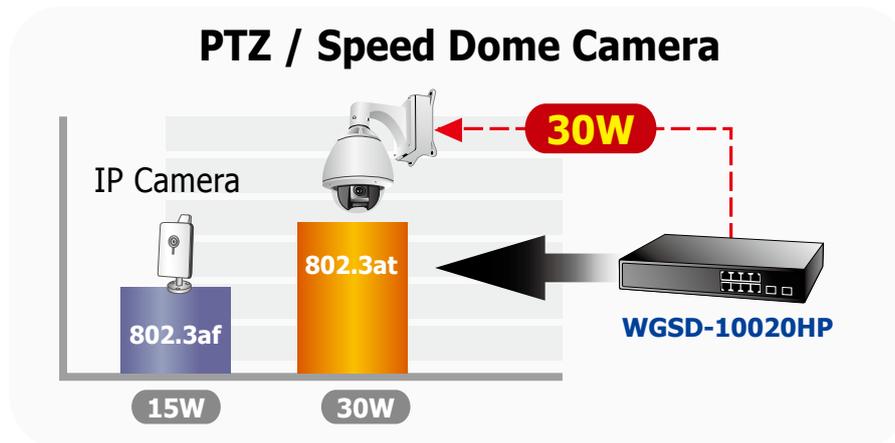
# 8-Port 10/100/1000Mbps PoE Plus + 2 100/1000X SFP Managed Ethernet Switch



### Centralized Power Management for Gigabit Ethernet Networking

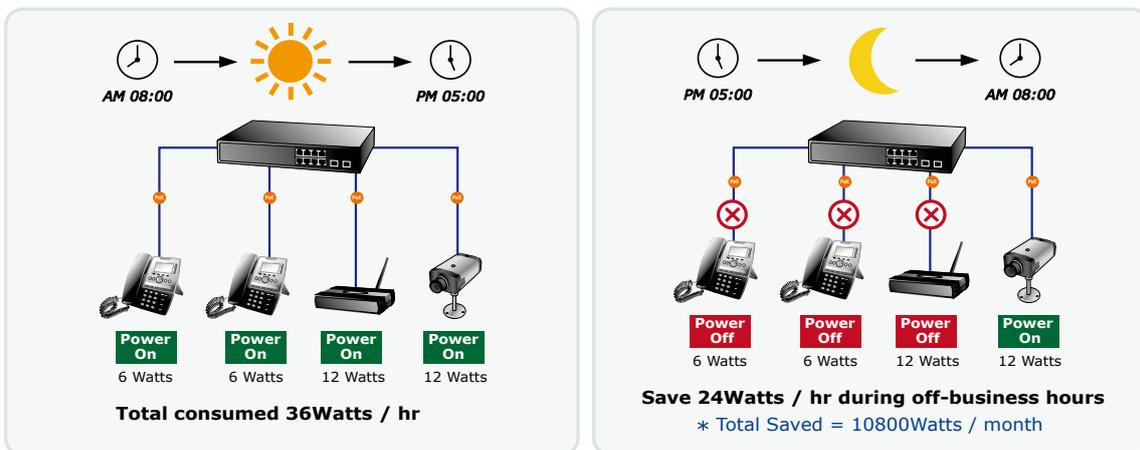
To satisfy the PoE network applications requiring higher power supply with Gigabit speed transmission, PLANET introduces the **WGSD-10020HP**, the **8-Port Gigabit High Power over Ethernet Managed Switch** designed in **13-inch desktop size for flexible deployment**. The **WGSD-10020HP** features high 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 its Gigabit ports for powering PDs (Powered Device), with a maximum PoE delivery of 150 Watts for all ports to per device in order to satisfy the increasing needs of power consumption by powered devices. 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 cameras, large screen PoE Video phones, thin-clients and etc.



### PoE Schedule for Energy Saving

Under the trend of energy saving worldwide and contribution to environment protection on the earth, the WGSD-10020HP can effectively control the power supply along with its capability of giving high watts power over Ethernet. The "PoE schedule" function enables you to activate or inactivate PoE power feeding for each PoE port during specified time intervals, which is a powerful function to help SMB or Enterprise save power and money.



1000Base-T UTP with PoE

### *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 original IPv4 network structure and also support the IPv6 network structure in the future. With plenty of management functions designed in easy and friendly management interfaces, the WGSD-10020HP is the best choice for ISPs 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 and 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*

PLANET 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 also 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.

### *Excellent Traffic Control*

The WGSD-10020HP is loaded with powerful traffic management and QoS features to enhance services offered by telecoms. The QoS features includes wire-speed Layer 4 traffic classifiers and bandwidth limiting that are particular 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.

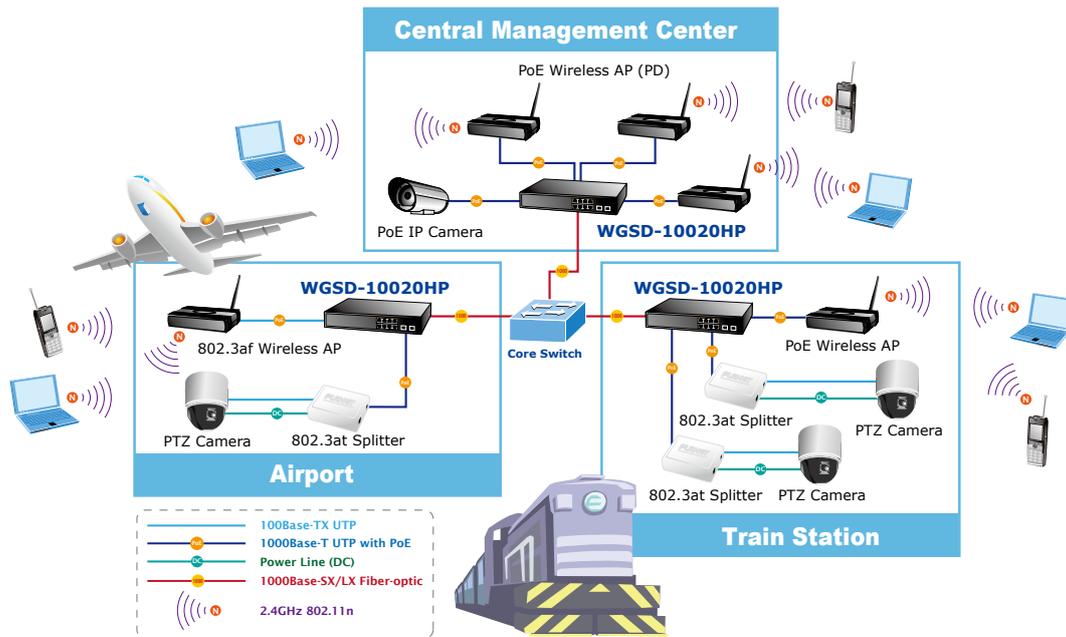
### *Flexibility and Extension Solution*

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.

**APPLICATIONS**

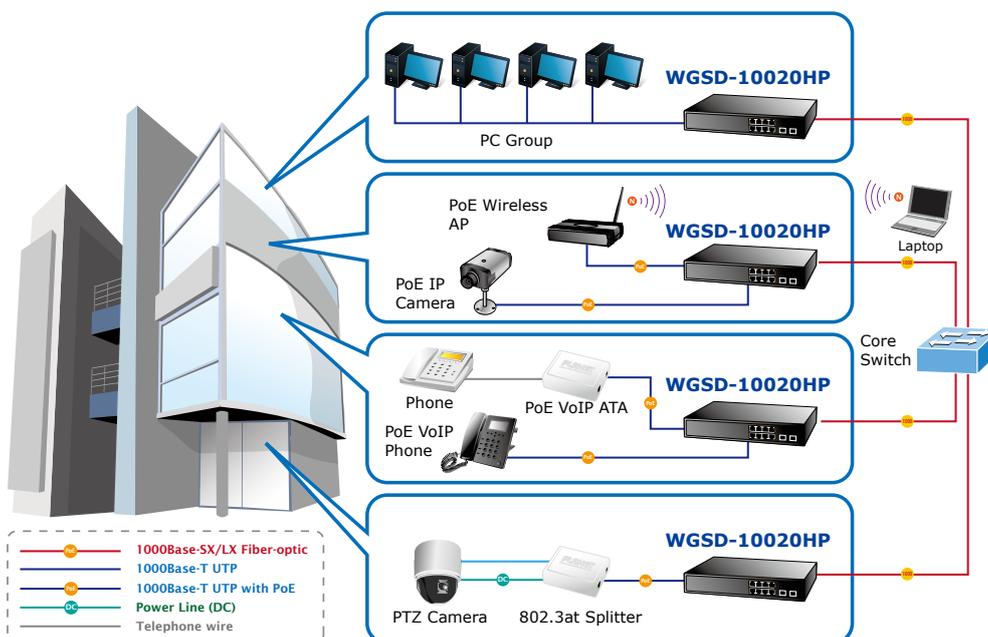
*High Power IP Surveillance and Wireless LAN Service in Public Transportation*

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



*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 helps enterprises to create an integrated data, voice, and powered network. PLANET 802.3af compliant IP Phones can be installed without additional power cable because the power can be provided via the standard Ethernet cable from the connected WGSD-10020HP. PoE IP Phones and Analog Telephony Adapter work perfectly with the WGSD-10020HP which injects power and transmit data simultaneously through the Ethernet cables. With the WGSD-10020HP, IP Telephony deployment becomes more reliable and cost effective. It helps enterprises save tremendous cost when upgrading from the traditional telephony system to IP Telephony communications infrastructure.



## KEY FEATURES

### PHYSICAL PORT

- **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 / 802.3at devices powered
- Supports PoE Power up to 30.8 Watts for each PoE ports
- Auto detect powered device (PD)
- Circuit protection prevent power interference between ports
- Remote power feeding up to 100m
- PoE Management
- Total PoE power budget control
- Port port PoE function enable / disable
- PoE Port Power feeding priority
- Per PoE port power limit
- PD classification detection

### 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 eliminate erroneous packets to optimize the network bandwidth
- Storm Control support
  - Multicast / Unknown-Unicast
- 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

### 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
- Supports 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
- **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
- Network Time Protocol (NTP)
- Link Layer Discovery Protocol (LLDP)
- 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

**SPECIFICATION**

Product	<b>8-Port 10/100/1000Mbps PoE PLUS + 2 100/1000X SFP Managed Ethernet Switch</b>	
Model	<b>WGSD-10020HP</b>	
<b>Hardware Specification</b>		
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) 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	
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 Back pressure for Half-Duplex	
Jumbo Frame	9Kbytes	
Reset Button	< 5 seconds: System reboot > 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, 10/100/1000 Link / Act per RJ-45 port, 100/1000 Link / Act per SFP port, PoE In-Use for Port-1~ 8	
Power Consumption	Max. 172.9 Watts / 589.6 BTU	
Power Requirement	AC 100~240V, 50/60Hz	
<b>Power over Ethernet</b>		
PoE Standard	IEEE 802.3af / 802.3at PoE	
PoE Power Supply Type	End-Span, PSE	
PoE Power Output	Per Port 56V DC Max. 30.8 Watts	
Power Pin Assignment	1/2(+), 3/6(-)	
PoE Power Budget	150 Watts	
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, SNMP v3	
Port Configuration	Port disable / enable Auto-Negotiation 10/100/1000Mbps full and half duplex mode selection Flow Control disable / enable Bandwidth control on each port Power saving mode control	
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, up to 256 VLAN groups Q-in-Q tunneling Private VLAN Edge (PVE) MAC-Based VLAN Protocol-Based VLAN Voice VLAN MVR (Multicast VLAN Registration) Up to 256 VLAN groups, out of 4096 VLAN IDs	
Link Aggregation	IEEE 802.3ad LACP / Static Trunk 5 groups of 10-Port trunk support	
QoS	Traffic classification based, Strict priority and WRR 8-level priority for switching - Port Number - 802.1p priority - 802.1Q VLAN tag - 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
Access Control List	IP-Based ACL / MAC-Based ACL Up to 123 entries
Bandwidth Control	Per port bandwidth control Ingress: 500Kb~80Mbps Egress: 64Kb~80Mbps
SNMP MIBs	RFC-1213 MIB-II IF-MIB RFC-1493 Bridge MIB RFC-1643 Ethernet MIB RFC-2863 Interface MIB RFC-2665 Ether-Like MIB RFC-2737 Entity MIB RFC-2618 RADIUS Client MIB RFC-2933 IGMP-STD-MIB RFC-3411 SNMP-Frameworks-MIB IEEE 802.1X PAE LLDP MAU-MIB
<b>Standards Conformance</b>	
Regulation Compliance	FCC Part 15 Class A, CE
Standards Compliance	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX/100Base-FX IEEE 802.3z Gigabit SX/LX IEEE 802.3ab Gigabit 1000Base-T 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 plus RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP version 1 RFC 2236 IGMP version 2 RFC 3376 IGMP version 3 RFC 2710 MLD version 1 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**

<b>WGSD-10020</b>	8-Port 10/100/1000Mbps with 2 Shared SFP Managed Switch
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**AVAILABLE 1000BASE-X MODULES FOR WGSD-10020HP**

<b>MGB-GT</b>	SFP-Port 1000Base-T Module
<b>MGB-SX</b>	SFP-Port 1000Base-SX mini-GBIC module
<b>MGB-LX</b>	SFP-Port 1000Base-LX mini-GBIC module
<b>MGB-L30</b>	SFP-Port 1000Base-LX mini-GBIC module-30km
<b>MGB-L50</b>	SFP-Port 1000Base-LX mini-GBIC module-50km
<b>MGB-L70</b>	SFP-Port 1000Base-LX mini-GBIC module-70km
<b>MGB-L120</b>	SFP-Port 1000Base-LX mini-GBIC module-120km
<b>MGB-LA10</b>	SFP-Port 1000Base-LX (WDM,TX:1310nm) mini-GBIC module-10km
<b>MGB-LB10</b>	SFP-Port 1000Base-LX (WDM,TX:1550nm) mini-GBIC module-10km
<b>MGB-LA20</b>	SFP-Port 1000Base-LX (WDM,TX:1310nm) mini-GBIC module-20km
<b>MGB-LB20</b>	SFP-Port 1000Base-LX (WDM,TX:1550nm) mini-GBIC module-20km
<b>MGB-LA40</b>	SFP-Port 1000Base-LX (WDM,TX:1310nm) mini-GBIC module-40km
<b>MGB-LB40</b>	SFP-Port 1000Base-LX (WDM,TX:1550nm) mini-GBIC module-40km

**AVAILABLE 100BASE-FX MODULES FOR WGSD-10020HP**

<b>MFB-FX</b>	SFP-Port 100Base-FX Transceiver (1310nm)-2km
<b>MFB-F20</b>	SFP-Port 100Base-FX Transceiver (1310nm)-20km
<b>MFB-F40</b>	SFP-Port 100Base-FX Transceiver (1310nm)-40km
<b>MFB-F60</b>	SFP-Port 100Base-FX Transceiver (1310nm)-60km
<b>MFB-FA20</b>	SFP-Port 100Base-BX Transceiver (WDM,TX:1310nm)-20km
<b>MFB-FB20</b>	SFP-Port 100Base-BX Transceiver (WDM,TX:1550nm)-20km