

# 16-Port 10/100/1000T 802.3at PoE + 2-Port 10/100/1000T + 2-Port 1000X SFP Desktop Switch



## Centralized Power Management for Gigabit Ethernet PoE Networking

To facilitate 32W PoE power network applications with Gigabit speed transmission, the GSD-2022P is equipped with **16 10/100/1000BASE-T Gigabit Ethernet ports**, 2 extra Gigabit TP ports and **2 1000BASE-X SFP** interfaces with the inner power system. With a total of 185 watts of PoE budget, it features high-performance Gigabit IEEE 802.3af PoE (up to 15.4W) and IEEE 802.3at PoE+ (up to 32W) capabilities on all ports.

By offering reliable switching technology and advanced networking features, the GSD-2022P optimizes the installation and power management of network devices such as wireless access points, VoIP phones, and security cameras. It also eliminates time and cost of deployment by integrating power and data switching into one unit and freeing network devices from restrictions of power outlet locations and the additional AC wiring.



## Perfect Integrated Solution for PoE IP Surveillance

The GSD-2022P brings you an ideally secure surveillance system at a lower total cost. The GSD-2022P provides 16 10/100/1000Mbps 802.3at PoE+ ports able to feed sufficient PoE power to 16 IEEE 802.3af/IEEE 802.3at PoE+ IP cameras at the same time. It is also able to connect with one 16-channel NVR or two 8-channel NVRs, uplinked to backbone switch and the monitoring center. With such a high-performance switch architecture, the recorded video files from the PoE IP cameras can be saved to the NVR system where the administrator can control and monitor the surveillance images in both the local LAN and remote sites.

## Physical Port

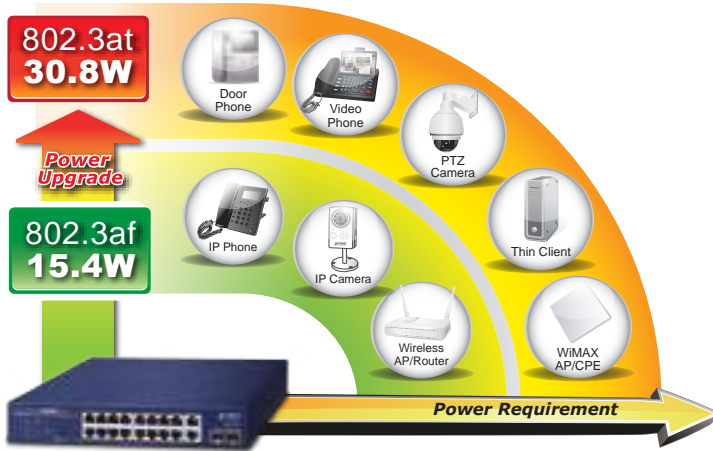
- 16-port 10/100/1000BASE-T Gigabit RJ45 copper with IEEE 802.3at PoE+ injector function
- 2 10/100/1000BASE-T Gigabit RJ45 copper interfaces
- 2 1000BASE-X SFP interfaces

## Power over Ethernet

- Complies with IEEE 802.3at Power over Ethernet end-span PSE
- Up to 16 ports of IEEE 802.3af/802.3at devices powered (ports 1~16)
- Supports PoE power up to 32 watts for each PoE port, with a total PoE budget of 185W.
- Each port supports 54V DC power to PoE powered device
- Auto detects powered device (PD)
- Supports PD alive function
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100m in standard mode with 250m in extend mode

## Switching

- Hardware-based 10/100/1000Mbps auto-negotiation and auto MDI/MDI-X
- Supports IEEE 802.3x flow control in full-duplex mode and backpressure in half-duplex mode
- Integrates address look-up engine, supporting 8K absolute MAC addresses
- 9K jumbo frame supports all speeds (10/100/1000Mbps)
- Hardware DIP switch for **Standard**, **VLAN** and **Extend** mode selection;
  - VLAN mode: Ports 1 to 16 cannot communicate with each other, but can communicate with the uplink ports 17 to 18 and SFP ports 19 to 20
  - Extend mode: Ports 1 to 8 have data rate of 10Mbps. The farthest transmission distance of up to 250 meters and all ports can communicate with each other.
- VLAN mode is to isolate ports to prevent broadcast storm and defend DHCP spoofing
- Automatic address learning and address aging
- Supports Energy-Efficient Ethernet (EEE) function (IEEE 802.3az)



**Hardware**

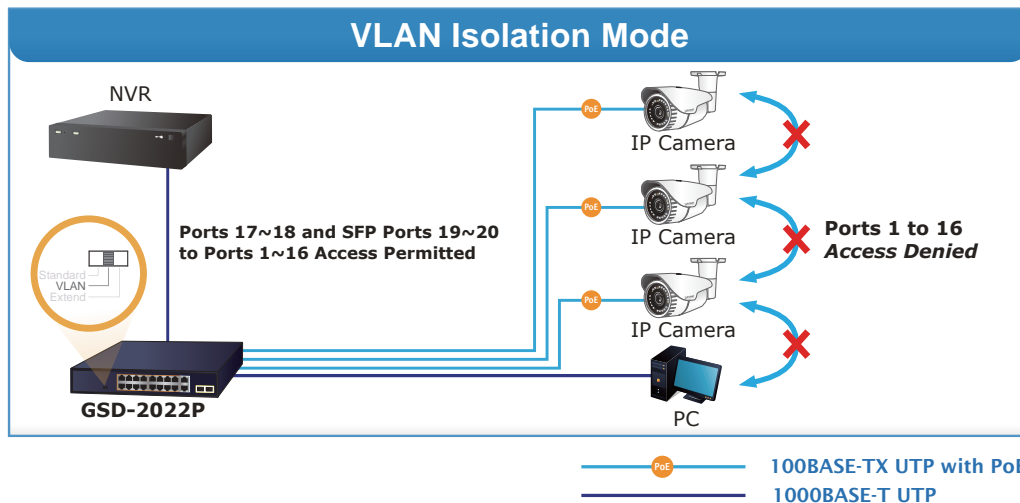
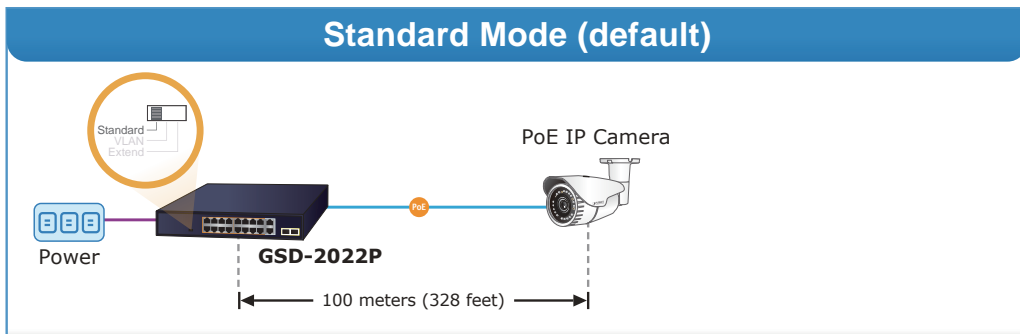
- 12-inch desktop size, 1U height
- LED indicators for system power, per port PoE ready and PoE activity, speed, Link/Act
- 1 silent fan to provide stable and efficient power performance
- Supports contact discharge of  $\pm 6\text{KV}$  DC and air distance discharge of  $\pm 8\text{KV}$  DC for Ethernet ESD protection
- Supports  $\pm 6\text{KV}$  surge immunity

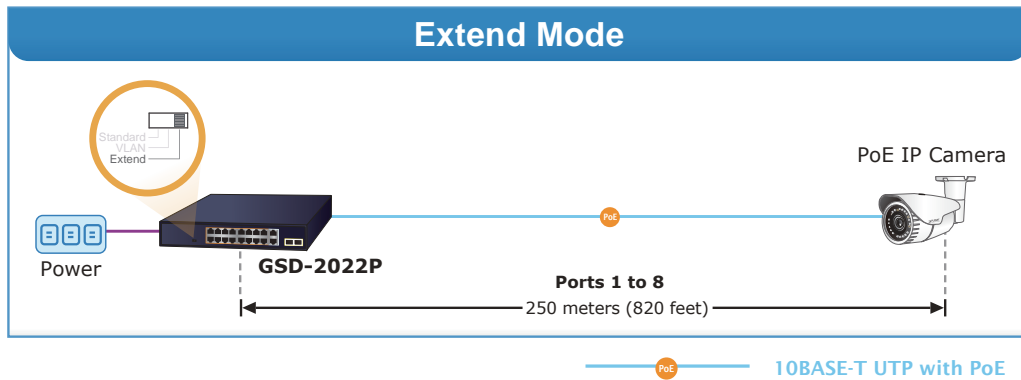
**Ethernet Data Transmission Distance Extension**

The DIP switch provides “Standard”, “VLAN” and “Extend” operation modes.

- The GSD-2022P operates as a normal IEEE 802.3at PoE+ switch in the “Standard” operation mode.
- The “VLAN” operation mode features port-based VLAN function that helps to prevent the IP camera’s multicast or broadcast storm from influencing each other.
- In the “Extend” operation mode, the GSD-2022P operates on a per-port basis at 10Mbps duplex operation but supports 20-watt PoE power output over a distance of up to 250 meters overcoming the 100m limit on Ethernet UTP cable.

With this brand-new feature, the GSD-2022P provides an additional solution for 802.3at PoE+ distance extension, thus saving the cost of Ethernet cable installation.





**Powered Device Alive Check**

The GSD-2022P adopts not only Power over Ethernet technology, but also automated PD monitoring and real-time PoE status. The PD alive check feature is applied in Standard, VLAN and Extend modes. After the PoE of the port is powered on, the device starts to detect whether the port is transmitting data. If the port does not transmit data and the duration exceeds a specific time, PoE will automatically power off and then re-power. It also will greatly enhance the network reliability in that the PoE port will reset the PD power, thus reducing administrator’s management burden.

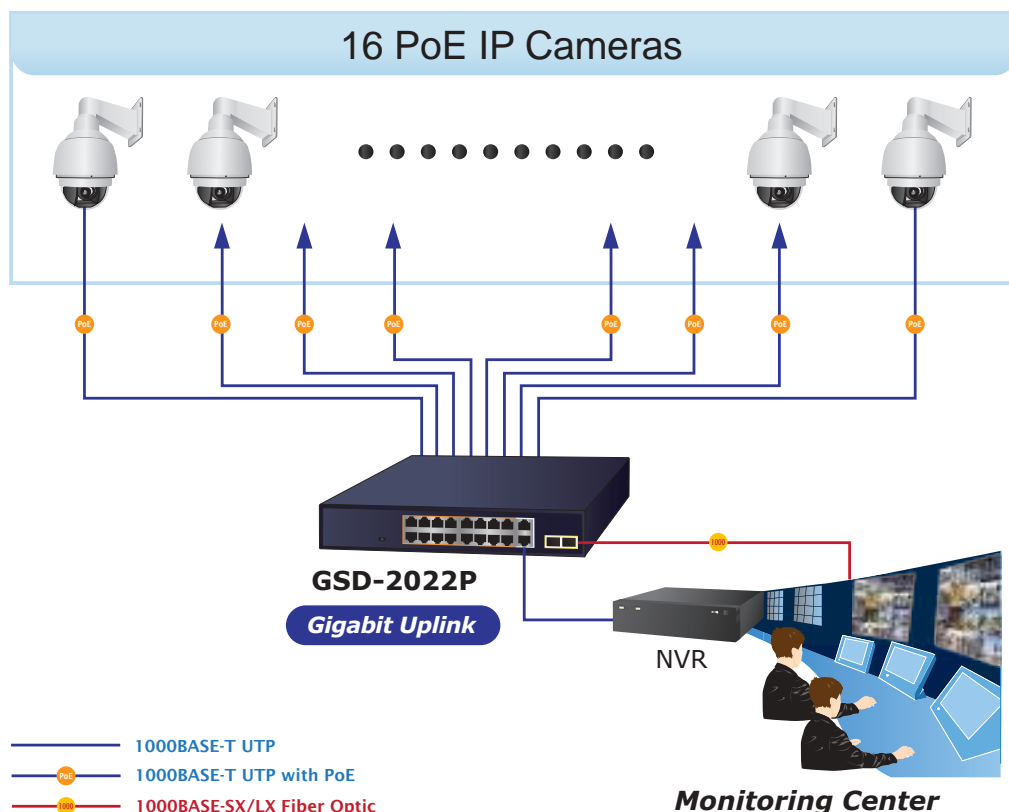
**Flexible Extension Solution**

The two mini-GBIC slots built in the GSD-2022P are compatible with the 1000BASE-SX/LX SFP (Small Form-factor Pluggable) fiber transceiver, uplinked to backbone switch and monitoring center in long distance. The distance can be extended from 550 meters (multi-mode fiber) to 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

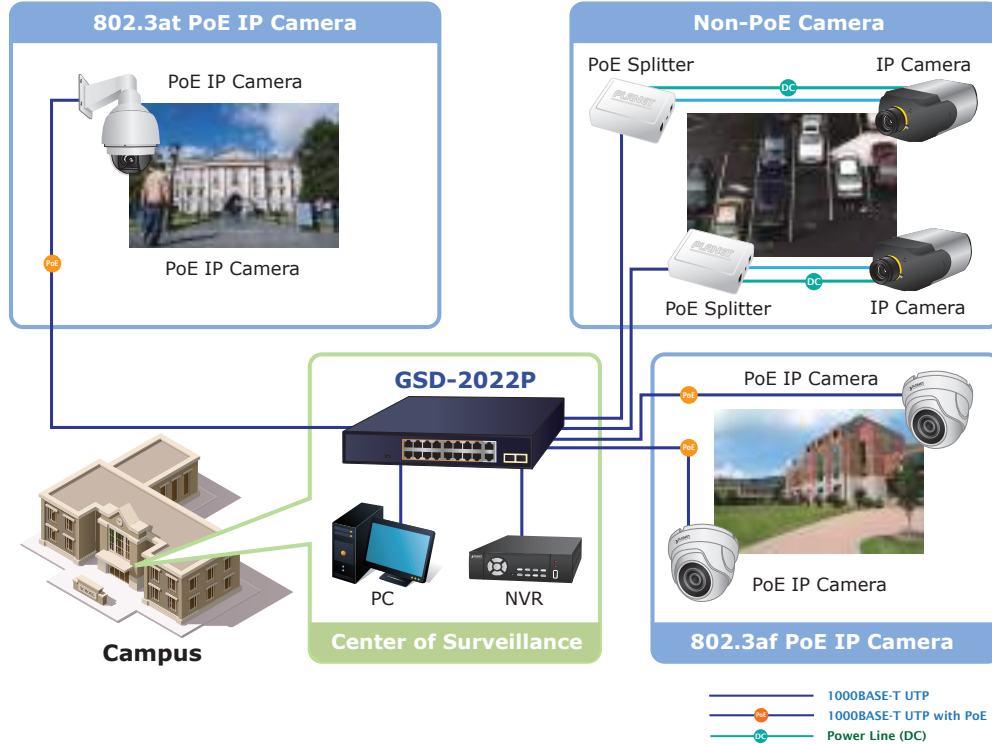
**Perfectly Integrated Solution for IP PoE Camera and NVR System**

Particularly designed for the growing popular IP Surveillance applications, the GSD-2022P 802.3at PoE Switch is positioned as a Surveillance Switch for quick and easy PoE IP camera deployment with power feeding. The GSD-2022P provides both 802.3at and 802.3af PoE functions along with 16 10/100/1000BASE-TX ports featuring 30-watt 802.3at or 15.4-watt 802.3af PoE in RJ45 interface, 2 extra Gigabit copper ports and 2 Gigabit SFP uplink interfaces supporting high-speed transmission of surveillance images and videos.



Department / Workgroup PoE Network

Providing 16 PoE in-line power interfaces, the GSD-2022P can easily build a power that can centrally control IP phone system, IP camera system and wireless AP group for the enterprise. Cameras can be installed around the corner in the company or campus for surveillance demands. Without the power-socket limitation, the GSD-2022P makes the installation of cameras easier and more efficient.



## Specifications

|                                |   |
|--------------------------------|---|
| Model                          | GSD-2022P   |
| <b>Hardware Specifications</b> |   |
| 10/100/1000BASE-T Copper Ports | 18 auto MDI/MDIX  |
| 1000BASE-X SFP/mini-GBIC Slots | 2   |
| DIP Switch                     | Selectable operation mode <ul style="list-style-type: none"> <li>■ Standard</li> <li>■ VLAN</li> <li>■ Extend</li> </ul>  |
| LED Indicators                 | <b>System</b><br>Power (Green)<br><b>10/100/1000T RJ45 Interfaces</b><br>10/100/1000 LNK / ACT (Green)<br>PoE-in-Use (Amber)<br><b>1000X SFP Interfaces</b><br>1000 LNK / ACT (Green) |
| Dimensions (W x D x H)         | 280 x 180 x 44 mm (1U height)   |
| Enclosure                      | Metal   |
| Weight                         | 1810g   |
| Power Requirements             | 100~240V AC, 50/60Hz, 5A max.   |
| Power Consumption/Dissipation  | Max. 201 watts/686 BTU  |
| Thermal Fan                    | 1   |
| ESD Protection                 | Contact discharge of ±6KV DC,<br>Air discharge of ±8KV DC   |
| Surge Protection               | ±6KV  |
| Installation                   | Desktop or rack-mount installation  |
| <b>Switching</b>               |   |
| Switch Architecture            | Store-and-Forward   |
| Switch Fabric                  | 40Gbps/non-blocking   |
| Switch Throughput@64bytes      | 29.76Mpps   |
| MAC Address Table              | 8K entries  |

|                              |  |
|------------------------------|--|
| Jumbo Frame                  | 9216 bytes   |
| Flow Control                 | IEEE 802.3x pause frame for full duplex; back pressure for half duplex   |
| <b>Power over Ethernet</b>   |  |
| PoE Standard                 | IEEE 802.3at Power over Ethernet Plus/PSE  |
| PoE Injector Ports           | 16   |
| PoE Power Supply Type        | End-span/Mid-span: 1/2/4/5 (+), 3/6/7/8 (-)  |
| PoE Power Output             | Per port 54V DC, 300mA. max. 15.4 watts (IEEE 802.3af)<br>Per port 54V DC, 600mA. max. 30 watts (IEEE 802.3at)   |
| PoE Power Budget             | 185 watts  |
| Number of PDs, 7 watts       | 16   |
| Number of PDs, 15.4 watts    | 12   |
| Number of PDs, 30 watts      | 6  |
| <b>Standards Conformance</b> |  |
| Regulatory Compliance        | FCC Part 15 Class A, CE  |
| Standards Compliance         | IEEE 802.3 10BASE-T<br>IEEE 802.3u 100BASE-TX<br>IEEE 802.3ab Gigabit 1000BASE-T<br>IEEE 802.3z Gigabit SX/LX<br>IEEE 802.3x flow control and back pressure<br>IEEE 802.3af Power over Ethernet<br>IEEE 802.3at Power over Ethernet Plus<br>IEEE 802.3az Energy-Efficient Ethernet |
| <b>Environment</b>           |  |
| Operating                    | Temperature: 0 ~ 50 degrees C<br>Relative Humidity: 5 ~ 95% (non-condensing)   |
| Storage                      | Temperature: -10 ~ 70 degrees C<br>Relative Humidity: 5 ~ 95% (non-condensing)   |

## Ordering Information

|           |  |
|-----------|--|
| GSD-2022P | 16-Port 10/100/1000T 802.3at PoE + 2-Port 10/100/1000T + 2-Port 1000X SFP Desktop Switch |
|-----------|--|

## Related Products

|              |   |
|--------------|---|
| ICA-A4280    | H.265 1080p Smart IR Dome IP Camera with Artificial Intelligence        |
| ICA-A3280    | H.265 1080p Smart IR Bullet IP Camera with Artificial Intelligence      |
| ICA-M4580P   | H.265 5 Mega-pixel Smart IR Dome IP Camera with Remote Focus and Zoom   |
| ICA-M3580P   | H.265 5 Mega-pixel Smart IR Bullet IP Camera with Remote Focus and Zoom |
| ICA-4280     | H.265 1080p Smart IR Dome IP Camera                                     |
| ICA-3280     | H.265 1080p Smart IR Bullet IP Camera                                   |
| ICA-4460V    | H.265 4MP PoE Dome IR IP Camera with Vari-focal Lens                    |
| ICA-3460V    | H.265 4MP PoE Bullet IR IP Camera with Vari-focal Lens                  |
| ICA-4250     | 1080p IR Dome PoE IP Camera   |
| ICA-3250     | 1080p IR Bullet PoE IP Camera   |
| ICA-HM620    | 2 Mega-pixel PoE Plus Speed Dome Internet Camera                        |
| ICA-E8550    | 5 Mega-pixel Outdoor IR PoE Fisheye IP Camera                           |
| ICA-E6260    | 2 Mega-pixel PoE Plus Speed Dome IP Camera                              |
| WNAP-W2200UE | 300Mbps 802.11n In-Wall Wireless Access Point                           |
| WDAP-C7200E  | 1200Mbps 802.11ac Dual Band Ceiling-mount Wireless Access Point         |
| WDAP-1750AC  | 1750Mbps 802.11ac Dual Band Wall Mount Wireless Access Point            |
| WNAP-C3220E  | 300Mbps 802.11n Wireless Ceiling-mount Access Point                     |
| WBS-202N     | 2.4GHz 802.11n 300Mbps Outdoor Wireless CPE (Built-in 14dBi Antenna)    |
| WBS-502N     | 5GHz 802.11a/n 300Mbps Outdoor Wireless CPE (Built-in 15dBi Antenna)    |
| WBS-512AC    | 5GHz 802.11ac 900Mbps Outdoor Wireless CPE                              |
| WDAP-802AC   | 1200Mbps Dual Band 802.11ac Outdoor Wireless AP                         |
| WDAP-8350    | 600Mbps Dual Band 802.11n Outdoor Wireless CPE                          |
| WAP-252N     | 2.4GHz 300Mbps 802.11n Outdoor Wireless AP                              |

|              |  |
|--------------|--|
| WAP-552N     | 5GHz 300Mbps 802.11n Outdoor Wireless AP   |
| VIP-1120PT   | High Definition Color PoE IP Phone   |
| VIP-2140PT   | High Definition Color PoE IP Phone with Dual Display   |
| ICF-1800     | HD Touch Screen Android Multimedia Conferencing Phone  |
| VTS-700P     | 7-inch SIP Indoor Touch Screen PoE Video Intercom  |
| HDP-1160PT   | 720p SIP Vandalproof Door Phone with PoE   |
| HDP-5240PT   | 720p SIP Multi-unit Door Phone with RFID and PoE   |
| HDP-5260PT   | 720p SIP Multi-unit Apartment Vandalproof Door Phone with RFID and PoE                         |
| VIP-156PE    | SIP Telephone Adapter (1 x LAN, 1 x PC, 1 x RJ11, 802.3af PoE)                                 |
| POE-161S     | IEEE 802.3at Gigabit Power over Ethernet Plus Splitter with 5V/12VDC output (10/100/1000Mbps)  |
| POE-162S     | IEEE 802.3at Gigabit Power over Ethernet Plus Splitter with 12V/24VDC output (10/100/1000Mbps) |
| IPOE-162S    | Industrial IEEE 802.3at Gigabit High Power over Ethernet Splitter                              |
| POE-E101     | IEEE 802.3af Power over Ethernet Extender  |
| POE-E201     | IEEE 802.3at Power over Gigabit Ethernet Extender  |
| POE-E202     | 1-port 802.3at PoE+ to 2-port 802.3af/at Gigabit PoE Extender                                  |
| LRP-101C-KIT | 1-Port Long Reach PoE over coax Extender Kit (LRP-101CH + LRP-101CE)                           |
| LRP-101U-KIT | 1-Port Long Reach PoE over UTP Extender Kit (LRP-101UH + LRP-101UE)                            |

## Available Modules

### Gigabit Ethernet Transceiver (1000BASE-X SFP)

| Model    | DDM | Speed (Mbps) | Connector Interface | Fiber Mode  | Distance | Wavelength (nm) | Operating Temp.    |
|----------|-----|--------------|---------------------|-------------|----------|-----------------|--------------------|
| MGB-GT   | --  | 1000         | Copper              | --          | 100m     | --              | 0 ~ 60 degrees C   |
| MGB-SX   | YES | 1000         | LC                  | Multi Mode  | 550m     | 850nm           | 0 ~ 60 degrees C   |
| MGB-SX2  | YES | 1000         | LC                  | Multi Mode  | 2km      | 1310nm          | 0 ~ 60 degrees C   |
| MGB-LX   | YES | 1000         | LC                  | Single Mode | 20km     | 1310nm          | 0 ~ 60 degrees C   |
| MGB-L40  | YES | 1000         | LC                  | Single Mode | 40km     | 1310nm          | 0 ~ 60 degrees C   |
| MGB-L80  | YES | 1000         | LC                  | Single Mode | 80km     | 1550nm          | 0 ~ 60 degrees C   |
| MGB-L120 | YES | 1000         | LC                  | Single Mode | 120km    | 1550nm          | 0 ~ 60 degrees C   |
| MGB-TSX  | YES | 1000         | LC                  | Multi Mode  | 550m     | 850nm           | -40 ~ 75 degrees C |
| MGB-TSX2 | YES | 1000         | LC                  | Multi Mode  | 2km      | 1310nm          | -40 ~ 75 degrees C |
| MGB-TLX  | YES | 1000         | LC                  | Single Mode | 20km     | 1310nm          | -40 ~ 75 degrees C |
| MGB-TL40 | YES | 1000         | LC                  | Single Mode | 40km     | 1310nm          | -40 ~ 75 degrees C |
| MGB-TL80 | YES | 1000         | LC                  | Single Mode | 80km     | 1550nm          | -40 ~ 75 degrees C |

### Gigabit Ethernet Transceiver (1000BASE-BX, Single Fiber Bi-directional SFP)

| Model     | DDM | Speed (Mbps) | Connector Interface | Fiber Mode  | Distance | Wavelength (TX) | Wavelength (RX) | Operating Temp.    |
|-----------|-----|--------------|---------------------|-------------|----------|-----------------|-----------------|--------------------|
| MGB-LA10  | YES | 1000         | WDM(LC)             | Single Mode | 10km     | 1310nm          | 1550nm          | 0 ~ 60 degrees C   |
| MGB-LB10  |     | 1000         | WDM(LC)             | Single Mode | 10km     | 1550nm          | 1310nm          | 0 ~ 60 degrees C   |
| MGB-LA20  | YES | 1000         | WDM(LC)             | Single Mode | 20km     | 1310nm          | 1550nm          | 0 ~ 60 degrees C   |
| MGB-LB20  |     | 1000         | WDM(LC)             | Single Mode | 20km     | 1550nm          | 1310nm          | 0 ~ 60 degrees C   |
| MGB-LA40  | YES | 1000         | WDM(LC)             | Single Mode | 40km     | 1310nm          | 1550nm          | 0 ~ 60 degrees C   |
| MGB-LB40  |     | 1000         | WDM(LC)             | Single Mode | 40km     | 1550nm          | 1310nm          | 0 ~ 60 degrees C   |
| MGB-LA80  | YES | 1000         | WDM(LC)             | Single Mode | 80km     | 1490nm          | 1550nm          | 0 ~ 60 degrees C   |
| MGB-LB80  |     | 1000         | WDM(LC)             | Single Mode | 80km     | 1550nm          | 1490nm          | 0 ~ 60 degrees C   |
| MGB-TLA10 | YES | 1000         | WDM(LC)             | Single Mode | 10km     | 1310nm          | 1550nm          | -40 ~ 75 degrees C |
| MGB-TLB10 |     | 1000         | WDM(LC)             | Single Mode | 10km     | 1550nm          | 1310nm          | -40 ~ 75 degrees C |
| MGB-TLA20 | YES | 1000         | WDM(LC)             | Single Mode | 20km     | 1310nm          | 1550nm          | -40 ~ 75 degrees C |
| MGB-TLB20 |     | 1000         | WDM(LC)             | Single Mode | 20km     | 1550nm          | 1310nm          | -40 ~ 75 degrees C |
| MGB-TLA40 | YES | 1000         | WDM(LC)             | Single Mode | 40km     | 1310nm          | 1550nm          | -40 ~ 75 degrees C |
| MGB-TLB40 |     | 1000         | WDM(LC)             | Single Mode | 40km     | 1550nm          | 1310nm          | -40 ~ 75 degrees C |
| MGB-TLA80 | YES | 1000         | WDM(LC)             | Single Mode | 80km     | 1490nm          | 1550nm          | -40 ~ 75 degrees C |
| MGB-TLB80 |     | 1000         | WDM(LC)             | Single Mode | 80km     | 1550nm          | 1490nm          | -40 ~ 75 degrees C |