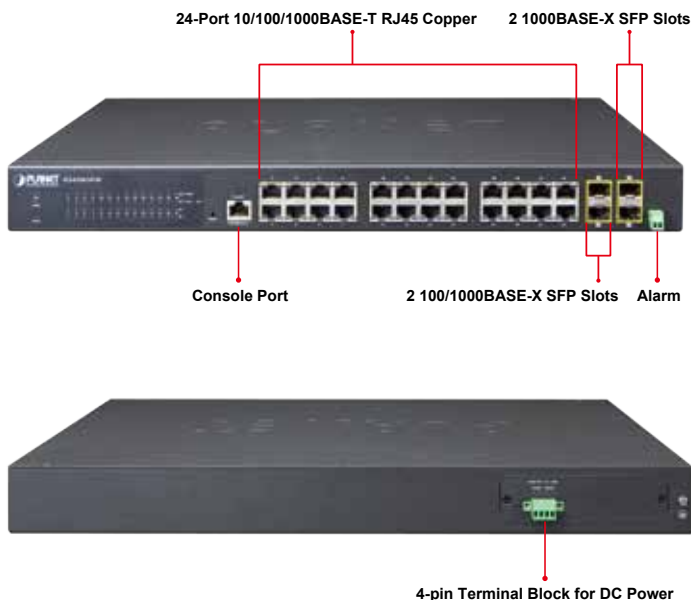


Industrial 24-Port 10/100/1000T + 4 1000X SFP Layer 3 Managed Switch



Powerful Layer 3 Routing Switch for Industrial Environment

PLANET IGS-6330-24T4S is an **Industrial-grade Layer 3 Rack-mount Managed Ethernet Switch** specially designed to build a full Gigabit backbone to transmit reliable but high-speed data in heavy industrial demanding environments and forward data to remote network through fiber optic. It provides **24-Port 10/100/1000BASE-T copper** and **4 extra 1000BASE-X SFP fiber optic** interfaces delivered in an IP30 rugged strong case with redundant power system, and supports various **Layer 3 functions, such as static Layer 3 routing, RIP v1/v2, OSPF v2 and VRRP** for router redundancy.



Physical Port

- **24-Port 10/100/1000BASE-T** RJ45 copper
- **4 1000BASE-X mini-GBIC/SFP** slots; Port 25 and 26 support 100/1000 dual mode SFP type auto detection
- One RJ45 console interface for basic management and setup

Industrial Case / Installation

- IP30 metal case protection
- Rack mount design
- Redundant power design
 - 12 to 48V DC, redundant power with polarity reverse protect function
- Supports EFT protection 2000 VDC for power line
- Supports 6000 VDC Ethernet ESD protection
- -40 to 75 degrees C operating temperature

IP Routing Features

- Static Layer 3 routing
- IP Routing protocol supports RIP v1/v2, OSPF v2
- Routing interface provides per-VLAN routing mode
- VRRP protocol for redundant routing deployment
- Supports route redistribution

Layer 2 Features

- High performance of Store-and-Forward architecture and runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- Storm Control support
 - Broadcast / Unknown-Multicast / Unknown-Unicast
- Supports VLAN
 - IEEE 802.1Q tagged VLAN
 - Up to 255 VLANs groups, out of 4094 VLAN IDs
 - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
 - Private VLAN
 - Protocol-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
- Supports Link Aggregation
 - Cisco ether-channel (Static Trunk)
 - Maximum 2 trunk groups, up to 4 ports per trunk group
 - Up to 8Gbps bandwidth(duplex mode)

Environmentally Hardened Design for Mission-critical Network

With IP30 metal industrial case protection, the IGS-6330-24T4S provides a high level of immunity against electromagnetic interference and heavy electrical surges which are usually found on plant floors or in curbside traffic control cabinets. It also possesses an integrated power supply source with a wide range of voltages (12 to 48V DC) for worldwide high availability applications requiring dual or backup power inputs. Being able to operate under the temperature range from -40 to 75 degrees C as well as with the fan-less cooling system, the IGS-6330-24T4S can be placed in almost any difficult environment.



Dual Redundant Power to Ensure Continuous Operation

The IGS-6330-24T4S supports DC redundant power supplies to ensure reliable and continuous operation in Industrial Network. The redundant power systems of the IGS-6330-24T4S are provided to enhance the reliability with 12~48V DC power supply unit and specifically designed to fulfill the demands of high-tech facilities in handling the highest power integrity.

Layer 3 Wire-speed Routing Performance and VLAN Routing for Secure and Flexible Management

With hardware-based Layer 3 routing capability, the IGS-6330-24T4S provides functionality to facilitate the deployment of applications across networks. It offers VLAN routing feature which allows to cross over different VLANs and different IP addresses for the purpose of having a highly-secured, flexible management and simpler networking application.

Fast Recovery to a Redundant Ethernet Network

The IGS-6330-24T4S features strong and self-recovery capability to prevent interruptions and outside intrusions. It incorporates **Rapid Spanning Protocol (RSTP)**, and **Multiple Spanning Tree (MSTP)** protocols that will shut down specific Ethernet interfaces when system detects a loop. The **port Link Aggregation** allows the operation of a high-speed trunk combining multiple ports and supports connection fail-over as well. It greatly protects customer's industrial automation network with switching recovery capability that is used for implementing fault tolerant ring architectures.

Efficient Traffic Control

The IGS-6330-24T4S is loaded with robust QoS features and powerful traffic management to enhance services to business-class data, voice, and video solutions. The functionality includes broadcast / multicast **storm control**, per port **bandwidth control** and QoS priority. It guarantees the best performance at VoIP and video stream transmission, and empowers the enterprises to take full advantage of the limited network resources.

- Port mirroring of 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
- 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

Multicast

- Supports IGMP snooping v1, v2 and v3
- Querier mode support
- IGMP snooping port filtering
- MVR (Multicast VLAN Registration)

Security

- Authentication
 - IEEE 802.1x port-based network access authentication
 - Built-in RADIUS client to co-operate with the RADIUS servers
 - RADIUS users access authentication
- Access Control List
 - IP-based Access Control List (ACL)
 - MAC-based Access Control List

Management

- Switch Management Interfaces
 - Console / Telnet Command Line Interface
 - Web switch management
 - SNMP v1, v2c, and v3 switch management
 - SSH / SSL secure access
- IP address / SNTP / DNS management
- System Maintenance
 - Firmware upload/download via FTP
 - Reset button for system reboot
 - Dual Images
- User Privilege levels control
- SNTP (Simple Network Time Protocol)
- Syslog remote alarm
- SNMP trap for interface Link Up and Link Down notification
- System Log
- DHCP Server

Powerful Security

The Industrial Managed Gigabit Switch offers comprehensive **Access Control List (ACL)** for enforcing security to the edge. Its protection mechanisms also comprise **802.1x port-based** user and device authentication. **Port Security** allows to limit the number of users on a given port. The network administrators can now construct highly-secured corporate networks with considerably less time and effort than before.

User-friendly Secure Management

For efficient management, the IGS-6330-24T4S is equipped with console, web and SNMP management interfaces. With the built-in web-based management interface, the IGS-6330-24T4S offers an easy-to-use, platform independent management and configuration facility. The IGS-6330-24T4S supports SNMP and it can be managed via any management software based on standard of SNMP v1 and v2 protocol. For text-based management, the switch can be accessed via Telnet and the console port. Moreover, the IGS-6330-24T4S offers remote secure management by supporting **SSH**, **SSL** and **SNMPv3** connection which can encrypt the packet content at each session.

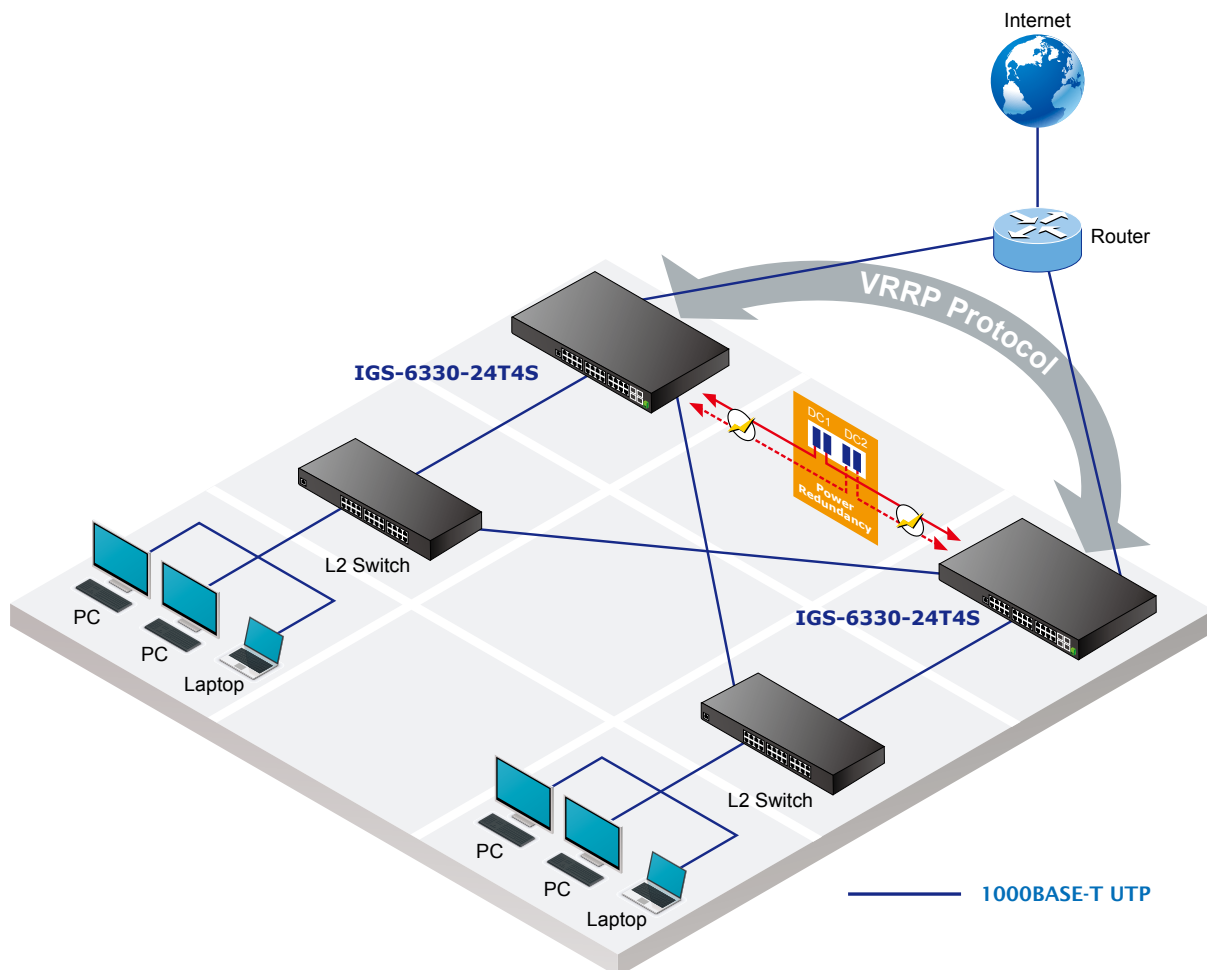
Flexible and Extendable Solution

The 4 mini-GBIC slots built in the IGS-6330-24T4S are compatible with the **1000BASE-SX/LX and WDM SFP** (Small Form-factor Pluggable) fiber transceivers, meaning the administrator now can flexibly choose the suitable SFP transceiver according to the transmission distance required to extend the network efficiently. It is well suited for applications in the industrial data centers and distributions.

Applications

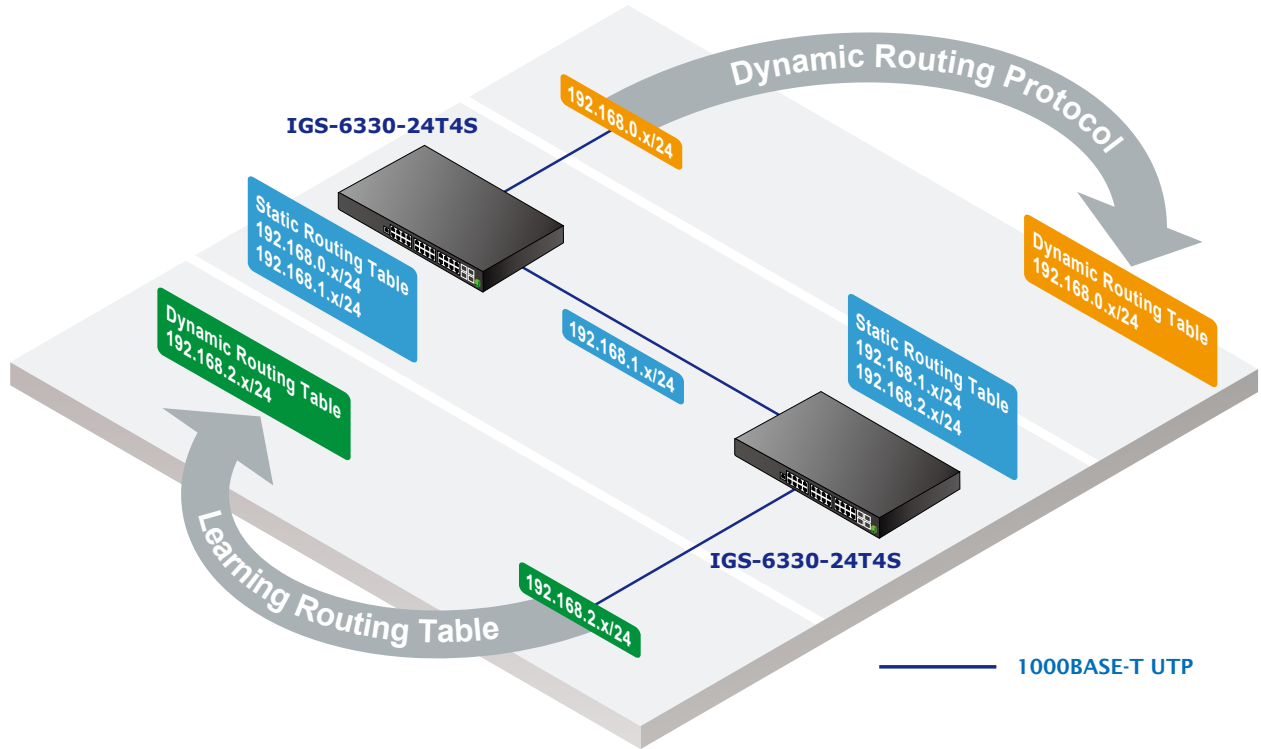
Campus / ISP / Telecom VRRP Backbone Routing Switch

The IGS-6330-24T4S incorporates VRRP (Virtual Router Redundancy Protocol), a fault tolerant protocol, to enhance connection reliability with external Ethernet devices. It then allows the service providers to offer certain services such as Internet access on specific VLANs for specific customers and yet still provides other types of services for their other customers on other VLANs.



Dynamic VLAN Routing Switch

With the built-in robust Layer 3 dynamic routing protocols, the IGS-6330-24T4S ensures reliable routing between VLANs and network segments. The routing protocols can be applied by VLAN interface with up to 512 routing entries. The IGS-6330-24T4S is certainly a cost-effective and ideal solution for enterprises.

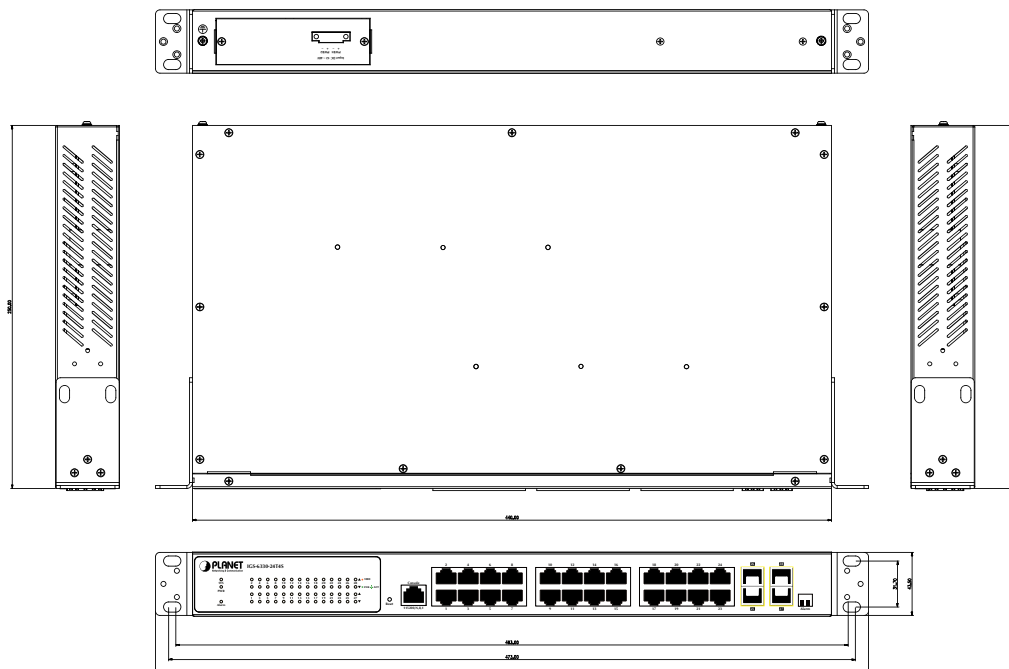


Specifications

Product	IGS-6330-24T4S
Hardware Specifications	
Copper Ports	24 10/100/1000BASE-T RJ45 Auto-MDI/MDI-X ports
SFP/mini-GBIC Slots	4 1000BASE-SX/LX/BX SFP interfaces Compatible with 100BASE-FX SFP for port 25 and 26
Console	1 x RJ45 serial port (115200, 8, N, 1)
Switch Architecture	Store-and-Forward
Switch Fabric	56Gbps / non-blocking
Throughput (packet per second)	41.6Mpps
Address Table	8K entries, automatic source address learning and ageing
Shared Data Buffer	8Mbits
Flow Control	IEEE 802.3x pause frame for full-duplex Back pressure for half-duplex
Jumbo Frame	9Kbytes
Reset Button	< 5 sec: System reboot
ESD Protection	6KV DC
EFT Protection	2KV DC
Enclosure	IP30 metal case
Installation	Rack mount kit
Connector	Removable 4-pin terminal block for power input Pin 1/2 for Power 1; Pin 3/4 for Power 2
Alarm	Removable 2-pin terminal block for fault alarm
LED Indicator	System: SYS (Green) PWR (Green) Alarm (Red) Per Port: 1000 (Orange) LNK/ACT (Green)
Dimensions (W x D x H)	440 x 253 x 44 mm
Weight	3.1kg
Power Requirements	12 to 48V DC
Power Consumption	11.6 watts / 40BTU (System on) 20.8 watts / 71BTU (Full loading)
Layer 2 Functions	
Basic Management Interfaces	Web browser, remote Telnet, SNMPv1, v2c, local console
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
Port Status	Display each port's speed duplex mode, link status, flow control status, auto negotiation status, trunk status.
Port Mirroring	TX / RX 1 to 1 monitor
VLAN	802.1Q tagged-based VLAN, up to 255 VLAN groups Q-in-Q tunneling Private VLAN Edge (PVE) Protocol-based VLAN MVR (Multicast VLAN Registration) Up to 255 VLAN groups, out of 4094 VLAN IDs
Link Aggregation	Static trunk Supports 2 groups of 4-port trunk support
QoS	Traffic classification based, strict priority and WRR 8-level priority for switching - 802.1p priority - 802.1Q VLAN tag
IGMP Snooping	IGMP (v1/v2/v3) snooping, up to 255 multicast Groups IGMP Querier mode support

Access Control List	IP-based ACL / MAC-based ACL Up to 20 entries	
Bandwidth Control	Per port bandwidth control Ingress: 1Kbps~1000Mbps	
Storm Control	Broadcast, Unicast and Multicast storm control Supports storm control by per port and by VLAN interface Rate range: 1~1000000 Kbps	
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 MAU-MIB
Layer 3 Functions		
IP Routing Protocol	RIP v1/v2, OSPF v2, VRRP	
Routing Table	512	
Routing Interface	Per VLAN	
Standards Conformance		
Regulation Compliance	FCC Part 15 Class A, CE	
Stability Testing	IEC 60068-2-32 (Free fall) IEC 60068-2-27 (Shock) IEC 60068-2-6 (Vibration)	
Standards Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX / 100BASE-FX IEEE 802.3z Gigabit SX/LX IEEE 802.3ab Gigabit 1000T IEEE 802.3x flow control and back pressure 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	RFC 768 UDP 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 2131/2132 DHCP (Server) RFC 2328 OSPF v2 RFC 1058 RIP v1 RFC 2453 RIP v2 RFC 3768 VRRP v2
Environment		
Operating	Temperature: -40 ~ 75 degrees C Relative Humidity: 5 ~ 95% (non-condensing)	
Storage	Temperature: -40 ~ 85 degrees C Relative Humidity: 5 ~ 95% (non-condensing)	

Dimensions



Ordering Information

IGS-6330-24T4S Industrial 24-Port 10/100/1000T + 4 1000X SFP Layer 3 Managed Switch (-40~75 degrees C)

Related Products

Fast Ethernet Transceiver (100BASE-X SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MFB-FX	100	LC	Multi Mode	2km	1310nm	0 ~ 60 degrees C
MFB-F20	100	LC	Single Mode	20km	1310nm	0 ~ 60 degrees C
MFB-F40	100	LC	Single Mode	40km	1310nm	0 ~ 60 degrees C
MFB-F60	100	LC	Single Mode	60km	1310nm	0 ~ 60 degrees C
MFB-F120	100	LC	Single Mode	120km	1550nm	0 ~ 60 degrees C
MFB-TFX	100	LC	Multi Mode	2km	1310nm	-40 ~ 75 degrees C
MFB-TF20	100	LC	Single Mode	20km	1550nm	-40 ~ 75 degrees C

Fast Ethernet Transceiver (100BASE-BX, Single Fiber Bi-Directional SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX/RX)	Operating Temp.
MFB-FA20	100	WDM(LC)	Single Mode	20km	1310nm / 1550nm	0 ~ 60 degrees C
MFB-FB20	100	WDM(LC)	Single Mode	20km	1550nm / 1310nm	0 ~ 60 degrees C
MFB-TFA20	100	WDM(LC)	Single Mode	20km	1310nm / 1550nm	-40 ~ 75 degrees C
MFB-TFB20	100	WDM(LC)	Single Mode	20km	1550nm / 1310nm	-40 ~ 75 degrees C
MFB-TFA40	100	WDM(LC)	Single Mode	40km	1310nm / 1550nm	-40 ~ 75 degrees C
MFB-TFB40	100	WDM(LC)	Single Mode	40km	1550nm / 1310nm	-40 ~ 75 degrees C

Gigabit Ethernet Transceiver (1000BASE-X SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MGB-GT	1000	Copper	--	100m	--	0 ~ 60 degrees C
MGB-SX	1000	LC	Multi Mode	550m	850nm	0 ~ 60 degrees C
MGB-SX2	1000	LC	Multi Mode	2km	1310nm	0 ~ 60 degrees C
MGB-LX	1000	LC	Single Mode	10km	1310nm	0 ~ 60 degrees C
MGB-L30	1000	LC	Single Mode	30km	1310nm	0 ~ 60 degrees C
MGB-L50	1000	LC	Single Mode	50km	1550nm	0 ~ 60 degrees C
MGB-L70	1000	LC	Single Mode	70km	1550nm	0 ~ 60 degrees C
MGB-L120	1000	LC	Single Mode	120km	1550nm	0 ~ 60 degrees C
MGB-TSX	1000	LC	Multi Mode	550m	850nm	-40 ~ 75 degrees C
MGB-TLX	1000	LC	Single Mode	10km	1310nm	-40 ~ 75 degrees C
MGB-TL30	1000	LC	Single Mode	30km	1310nm	-40 ~ 75 degrees C
MGB-TL70	1000	LC	Single Mode	70km	1550nm	-40 ~ 75 degrees C

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

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX/RX)	Operating Temp.
MGB-LA10	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	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	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-LA60	1000	WDM(LC)	Single Mode	60km	1310nm / 1550nm	0 ~ 60 degrees C
MGB-LB60	1000	WDM(LC)	Single Mode	60km	1550nm / 1310nm	0 ~ 60 degrees C
MGB-TLA10	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	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	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-TLA60	1000	WDM(LC)	Single Mode	60km	1310nm / 1550nm	-40 ~ 75 degrees C
MGB-TLB60	1000	WDM(LC)	Single Mode	60km	1550nm / 1310nm	-40 ~ 75 degrees C