Layer 3 12-Port 10G SFP+ + 8-Port 10/100/1000T Managed Switch with Dual 100~240V AC Redundant Power

Powerful 10Gbps Solution for All Long-Reach Networks

PLANET XGS-6350-12X8TR is a Layer 3 Managed Gigabit Switch that provides high-density performance by its **Layer 3 10Gigabit static routing** with **12 SFP+ fiber** interfaces and **8 Gigabit** interfaces delivered in a rugged case. The administrator can flexibly choose the suitable SFP/SFP+ transceiver according to the transmission distance or the transmission speed required to extend the 10G network efficiently. Besides, with **256Gbps switching fabric**, the XGS-6350-12X8TR can handle extremely large amounts of data in a secure topology linking to backbone or high capacity servers for enterprises, data centers, campuses and so on where VoIP, video streaming, and multicast applications are utilized.

Dual AC Redundant Power to Ensure Continuous Operation

The XGS-6350-12X8TR is equipped with two 100~240V AC power supply units for redundant power supply installation. A redundant power system is also provided to enhance the reliability with AC power supply units. The redundant power system is specifically designed to handle the demands of high-tech facilities requiring the highest power integrity.

RJ45 Type Console
Reset Button
8 x 10/100/1000BASE-T   12 x 1G/10G SFP+
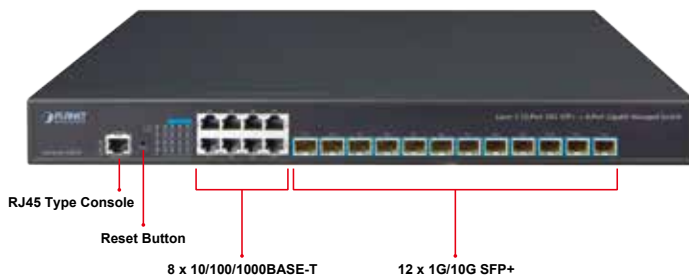
Physical Port

- **8 10/100/1000BASE-T** RJ45 ports
- **12 10GBASE-SR/LR SFP+** slots, compatible with 1000BASE-SX/LX/BX SFP
- RJ45 to DB9 console interface for switch basic management and setup

IP Routing Features

- Supports maximum 128 static routes and route summarization
- Supports dynamic routing protocol: RIP and OSPF

Layer 2 Features

- Complies with the IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z Gigabit Ethernet standard
- Supports auto-negotiation and half-duplex/full-duplex modes for all 10BASE-T, 100BASE-TX and 1000BASE-T ports
- Auto-MDI/MDI-X detection on each RJ45 port
- Prevents packet loss flow control
  - IEEE 802.3x pause frame flow control in full-duplex mode
  - Back-pressure flow control in half-duplex mode
  - High performance Store-and-Forward architecture, broadcast storm control, port loopback detect
- 32KC MAC address table, automatic source address learning and aging
- Supports VLAN
  - IEEE 802.1Q tag-based VLAN
  - GVRP for dynamic VLAN management
  - Up to 4094 active VLANs
  - Provider Bridging (VLAN Q-in-Q, IEEE 802.1ad) supported
  - Private VLAN Edge (PVE) supported
  - GVRP protocol for Management VLAN
  - Protocol-based VLAN
  - MAC-based VLAN

AC Power Input   AC Power Input

Power Switch   Grounding   Power Switch

Layer 3 Routing Support

The XGS-6350-12X8TR **enables the administrator to conveniently boost network efficiency** by configuring Layer 3 static routing manually, the RIP (Routing Information Protocol) or OSPF (Open Shortest Path First) settings automatically. The RIP can employ the hop count as a routing metric and prevent routing loops by implementing a limit on the number of hops allowed in a path from the source to a destination. The OSPF is an interior dynamic routing protocol for autonomous system based on link-state. The protocol creates a link-state database by exchanging link-states among Layer3 switches, and then uses the Shortest Path First algorithm to generate a route table based on that database.

High Performance

The XGS-6350-12X8TR boasts a high-performance switch architecture that is capable of providing non-blocking switch fabric and wire-speed throughput as high as 256Gbps, which greatly simplifies the tasks of upgrading the LAN for catering to increasing bandwidth demands.

Abundant IPv6 Support

The XGS-6350-12X8TR provides **IPv6 management** and enterprise-level secure features such as **SSH**, **ACL**, **WRR** (Weighted Round Robin) and **RADIUS** authentication. The XGS-6350-12X8TR thus helps the enterprises to step in the IPv6 era with the lowest investment. In addition, you don't need to replace the network facilities when the IPv6 FTTx edge network is built.

Excellent and Secure Traffic Control

The XGS-6350-12X8TR is loaded with powerful traffic management and WRR features to enhance services offered by telecoms and enterprises. The **WRR** functionalities include wire-speed Layer 4 traffic classifiers and bandwidth limitation which are particularly useful for multi-tenant unit, multi-business unit, Telco, or network service applications.

- Supports Link Aggregation
  - Maximum 32 trunk groups with up to 8 ports per trunk group
  - IEEE 802.3ad LACP (Link Aggregation Control Protocol)
  - Cisco ether-channel (static trunk)
- Supports Spanning Tree Protocol
  - STP, IEEE 802.1D (Classic Spanning Tree Protocol)
  - RSTP, IEEE 802.1w (Rapid Spanning Tree Protocol)
  - MSTP, IEEE 802.1s (Multiple Spanning Tree Protocol, spanning tree by VLAN)
  - BPDU & root guard
- Port mirroring to monitor the incoming or outgoing traffic on a particular port (many to many)
- Provides port mirror (many-to-1)

Quality of Service

- 8 priority queues on all switch ports
- Supports strict priority and WRR (Weighted Round Robin) CoS policies
- Traffic classification
  - IEEE 802.1p CoS/ToS
  - IPv4/IPv6 DSCP
  - Port-based WRR
- Strict priority and WRR CoS policies

Multicast

- Supports IPv4 IGMP snooping v1, v2 and v3; and IPv6 MLD v1 and v2 snooping
- Querier mode supports
- Supports Multicast VLAN Register (MVR)

Security

- IEEE 802.1x port-based network access authentication
- MAC-based network access authentication
- Built-in RADIUS client to co-operate with the RADIUS servers for IPv4 and IPv6
- TACACS+ login users access authentication
- IP-based Access Control List (ACL)
- MAC-based Access Control List
- Supports DHCP snooping
- Supports ARP inspection
- **IP Source Guard** prevents IP spoofing attacks
- **Dynamic ARP Inspection** discards ARP packets with invalid MAC address to IP address binding

Powerful Security

The ACL policies supported can classify the traffic by source/destination IP addresses, source/destination MAC addresses, IP protocols, TCP/UDP, IP precedence, time ranges and ToS. Moreover, various policies can be conducted to forward the traffic. The XGS-6350-12X8TR also provides IEEE 802.1x port based access authentication, which can be deployed with RADIUS, to ensure the port level security and block illegal users. Thus, the XGS-6350-12X8TR empowers enterprises and campuses to take full advantage of the limited network resources and guarantees the best performance in VoIP and video conferencing transmission.

Robust Layer 2 Features

The XGS-6350-12X8TR can be programmed for basic switch management functions such as port speed configuration, port aggregation, VLAN, Spanning Tree Protocol, WRR, bandwidth control and IGMP snooping. It also supports 802.1Q tagged VLAN, Q-in-Q, voice VLAN and GVRP Protocol. In addition, the number of VLAN interfaces is 1K and the number of VLAN IDs is 4K. By supporting port aggregation, the XGS-6350-12X8TR allows the operation of a high-speed trunk combined with multiple ports. It enables up to 32 groups for trunking with a maximum of 8 ports for each group.

Management

- Management IP for IPv4 and IPv6
- Switch Management Interface
  – Console/Telnet Command Line Interface
  – Web switch management
  – SNMP v1, v2c and v3 switch management
  – SSH secure access
- BOOTP and DHCP for IP address assignment
- Firmware upload/download via TFTP or HTTP Protocol for IPv4 and IPv6
- SNTP (Simple Network Time Protocol) for IPv4 and IPv6
- User privilege levels control
- Syslog server for IPv4 and IPv6
- Four RMON groups 1, 2, 3, 9 (history, statistics, alarms and events)
- Supports ping, trace route function for IPv4 and IPv6

Efficient and Secure Management

For efficient management, the XGS-6350-12X8TR Managed 10Gigabit Switch is equipped with console, Web and SNMP management interfaces. With its built-in Web-based management interface, the XGS-6350-12X8TR offers an easy-to-use, platform-independent management and configuration facility. The XGS-6350-12X8TR supports standard Simple Network Management Protocol (SNMP) and can be managed via any standard-based management software. For reducing product learning time, the XGS-6350-12X8TR offers Cisco-like command via Telnet or console port. Moreover, the XGS-6350-12X8TR offers secure remote management by supporting SSH connection which encrypts the packet content at each session.

Flexibility and Extension Solution

The XGS-6350-12X8TR provides eight 100/1000Mbps Ethernet ports and twelve 1/10Gbps SFP+ Fiber ports. Each of the SFP+ slots supports **Dual Speed**, **10GBASE-SR/LR** or **1000BASE-SX/LX**. Therefore, the administrator can flexibly choose the suitable SFP transceiver according to not only the transmission distance, but also the transmission speed required. The distance can be extended from 550 meters to 2km (multi-mode fiber) or up to 10/20/30/40/50/70/120 km (single-mode fiber or WDM fiber). They are well suited for applications within the enterprise data centers and distributions.

### High Performance 10Gbps Server Service
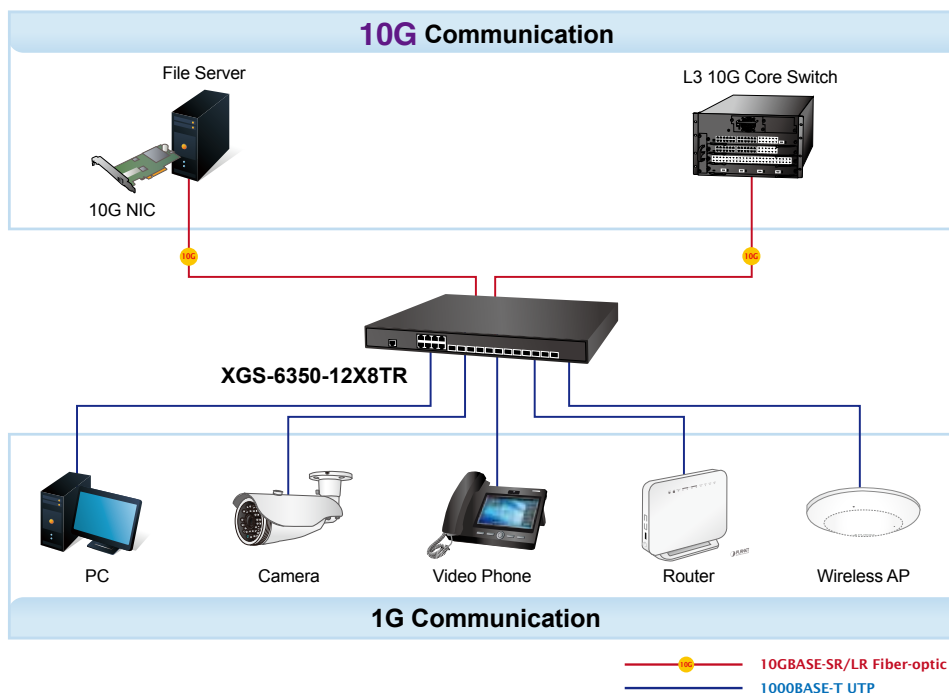
Applications

High Availability Mesh Networking Solution for Big Data System

By means of improving the technology of Optical Fiber Ethernet with highly-flexible, highly-extendable and easy-to-install features, the XGS-6350-12X8TR offers up to **256Gbps** data exchange speed via Optical Fiber interface and the transmission distance can be extended to 120km (single-mode fiber). The XGS-6350-12X8TR features strong rapid self-recovery capability to prevent interruptions and external intrusions. It incorporates **Multiple Spanning Tree Protocol (802.1s MSTP)** into customer's automation network to enhance system reliability and uptime. The XGS-6350-12X8TR is the ideal solution for data centers, service providers and telecoms to build redundant connection and establish high bandwidth for **Big Data** server farm.
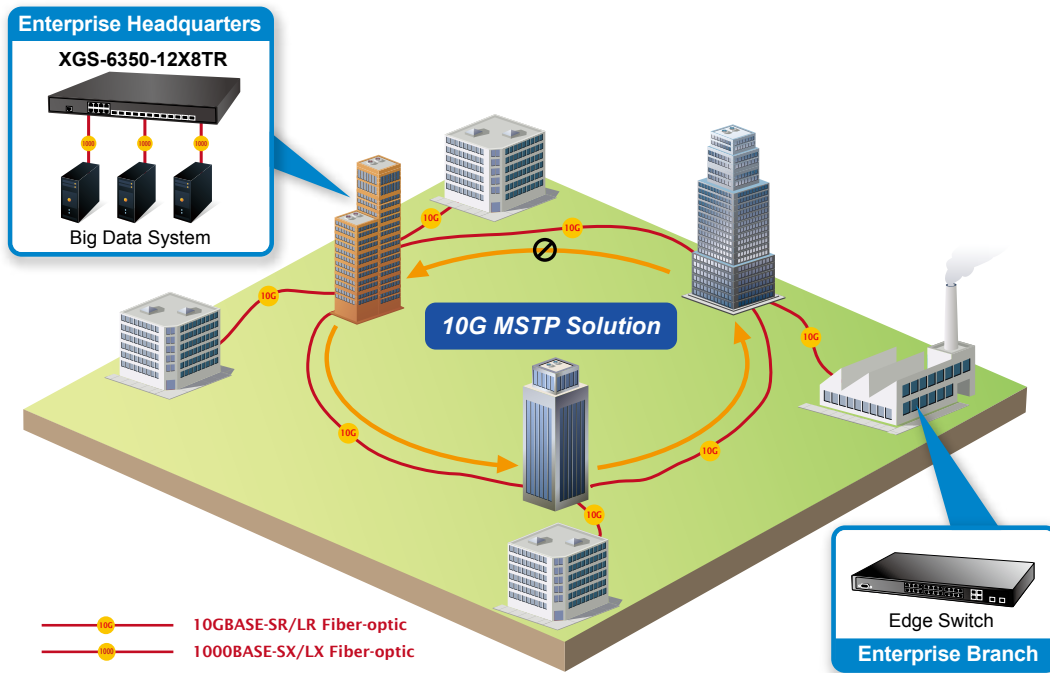
Triple Play Service of Backbone Network Solution

In telecommunications, triple play service is a marketing term for the provisioning over a single broadband connection of more bandwidth-intensive services, such as broadband Internet access, television and the latency-sensitive telephone. The XGS-6350-12X8TR provides up to **256Gbps** bandwidth to exchange data, voice and video packets via fiber patch cable. It's the suitable aggregation switch for ISPs and Telcos building a heavy traffic backbone network infrastructure.
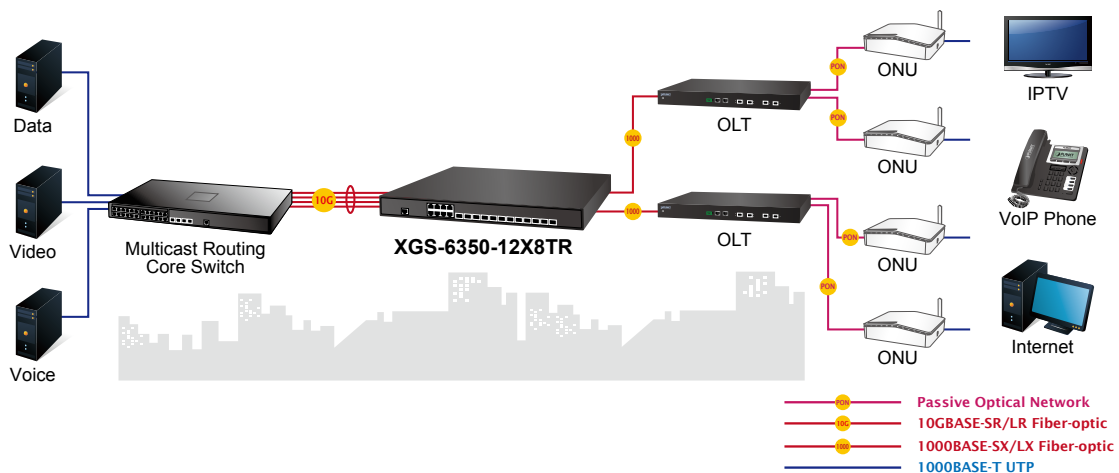
Layer 3 VLAN Routing and 10G Uplink Application

With the built-in robust Layer 3 routing protocols, the XGS-6350-12X8TR ensures reliable routing between VLANs and network segments. The routing protocols can be applied by VLAN interface with up to 128 routing entries. The XGS-6350-12X8TR, the ideal solution for enterprises, offers greater security, control and bandwidth conservation, and high-speed uplink.

VLAN Routing + 10G Uplink Applications

Specifications

Product	XGS-6350-12X8TR
Hardware Specifications	
Ethernet Ports	8 1000BASE-T RJ45 auto-MDI/MDI-X ports
SFP+ Slots	12 10GBASE-SR/LR SFP+ interface Compatible with 1000BASE-SX/LX/BX SFP transceiver
Console	1 x RJ45-to-DB9 serial port (9600, 8, N, 1)
Reset Button	Reset to factory default
Switch Architecture	Store-and-forward
Switch Fabric	256Gbps/non-blocking
Switch Throughput	180Mpps
Address Table	32K MAC address table with auto learning function
Shared Data Buffer	3MB
Flow Control	Back pressure for half duplex IEEE 802.3x pause frame for full duplex
Jumbo Frame	9KB
LED	System: PWR, SYS Ports: 10/100/1000T RJ45 Port: LNK/ACT 1/10G SFP+ Slot: LNK/ACT
Dimensions (W x D x H)	442.5 x 315 x 44 mm, 1U height
Weight	4178g
Power Consumption	55 watts/187.66 BTU (maximum)
Power Requirements	AC 100~240V, 50/60Hz
Fan	2
Management Function	
System Configuration	Console, Telnet, SSH, Web browser, SNMP v1, v2c and v3
Management	Supports both IPv4 and IPv6 addressing Supports the user IP security inspection for IPv4/IPv6 SNMP Supports MIB and TRAP Supports IPv4/IPv6 TFTP Supports IPv4/IPv6 NTP Supports RMON 1, 2, 3, 9 groups Supports the RADIUS authentication for IPv4/IPv6 Telnet user name and password Supports IPv4/IPv6 SSH The right configuration for users to adopt RADIUS server's shell management Supports CLI, console, Telnet Supports SNMPv1, v2c and v3 Supports Security IP safety net management function: avoid unlawful landing at non-restrictive area Supports Syslog server for IPv4 and IPv6 Supports TACACS+
Layer 3 Function	
Routing Protocol	Static routing, RIP and OSPF
Routing Table	128
DHCP	DHCP client DHCP server, default-route
VRRP	Configure vrrp in interface vlan; Vrrp priority; Vrrp standby; Vrrp track
Load Balancing	Use of equivalent routing, the correct load balancing function (by flow)
Layer 2 Function	
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 Port loopback detect
Port Status	Display each port's speed duplex mode, link status, flow control status and auto negotiation status

VLAN	802.1Q tag-based VLAN, up to 4K VLAN entries 802.1ad Q-in-Q (VLAN stacking) GVRP for VLAN management Private VLAN Edge (PVE) supported Protocol-based VLAN MAC-based VLAN IP subnet VLAN
Bandwidth Control	TX/RX/both
Link Aggregation	IEEE 802.3ad LACP/static trunk Supports 32 groups with 8 ports per trunk group

QoS	8 priority queues on all switch ports
	Supports strict priority and Weighted Round Robin (WRR) CoS policies
	Traffic classification:
	  - IEEE 802.1p CoS/ToS
	  - IPv4/IPv6 DSCP
	  - Port-based WRR

Multicast	IGMP v1/v2/v3 snooping Querier mode support MLD v1/v2 snooping Querier mode support Multicast VLAN Register (MVR)
Access Control List	Supports Standard and Expanded ACL IP-based ACL/MAC-based ACL Time-based ACL Up to 1K entries
Bandwidth Control	At least 64Kbps stream
Security	Port isolation Supports IP + MAC + port binding Identification and filtering of L2/L3/L4 based ACL Defend against DOS or TCP attacks Suppression of broadcast, multicast and unknown unicast packet DHCP Snooping, DHCP Option 82 Command line authority control based on user levels
Authentication	IEEE 802.1x port-based network access control AAA authentication: TACACS+ and IPv4/IPv6 over RADIUS
SNMP MIBs	RFC 1213 MIB-II RFC 1215 Internet Engineering Task Force RFC 1271 RMON RFC 1354 IP-Forwarding MIB RFC 1493 Bridge MIB RFC 1643 Ether-like MIB RFC 1907 SNMPv2 RFC 2011 IP/ICMP MIB RFC 2012 TCP MIB RFC 2013 UDP MIB RFC 2096 IP forward MIB RFC 2233 if MIB RFC 2452 TCP6 MIB RFC 2454 UDP6 MIB RFC 2465 IPv6 MIB RFC 2466 ICMP6 MIB RFC 2573 SNMPv3 notification RFC 2574 SNMPv3 VACM RFC 2674 Bridge MIB Extensions

Standard Conformance	
Regulatory Compliance	FCC Part 15 Class A, CE
Standards Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3z Gigabit 1000BASE-SX/LX IEEE 802.3ab Gigabit 1000BASE-T IEEE 802.3ae 10Gb/s Ethernet 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 RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP v1 RFC 2236 IGMP v2 RFC 3376 IGMP v3 RFC 2710 MLD v1 FRC 3810 MLD v2 RFC 2328 OSPF v2 RFC 1058 RIP v1 RFC 2453 RIP v2
Environment	
Operating	Temperature: 0 ~ 60 degrees C Relative Humidity: 10 ~ 85% (non-condensing)
Storage	Temperature: -40 ~ 80 degrees C Relative Humidity: 5 ~ 95% (non-condensing)

Ordering Information

XGS-6350-12X8TR	Layer 3 12-Port 10G SFP+ +8-Port 10/100/1000T Managed Switch with Dual 100~240V AC Redundant Power

Related Products

SGS-6340-24T4S	Layer 3 24-Port 10/100/1000T + 4-Port 1000X SFP Stackable Managed Switch
SGS-6340-48T4S	Layer 3 48-Port 10/100/1000T + 4-Port 1000X SFP Stackable Managed Switch
SGS-6340-24P4S	Layer 3 24-Port 10/100/1000T 802.3at PoE + 4-Port 1000X SFP Stackable Managed Switch (370W)
CB-DASFP-0.5M/2M	10G SFP+ Directly-attached Copper Cable (0.5/2M in length)

Available Modules for XGS-6350-12X8TR

10Gigabit Ethernet Transceiver (10GBASE-X SFP+)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MTB-SR	10G	LC	Multi Mode	300m	850nm	0 ~ 60 degrees C
MTB-LR	10G	LC	Single Mode	10km	1310nm	0 ~ 60 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)	Wavelength (RX)	Operating Temp.
MGB-LA10 MGB-LB10	1000	WDM (LC)	Single Mode	10km	1310nm / 1550nm	1550nm / 1310nm	0 ~ 60 degrees C
MGB-LA20 MGB-LB20	1000	WDM (LC)	Single Mode	20km	1310nm / 1550nm	1550nm / 1310nm	0 ~ 60 degrees C
MGB-LA40 MGB-LB40	1000	WDM (LC)	Single Mode	40km	1310nm / 1550nm	1550nm / 1310nm	0 ~ 60 degrees C
MGB-LA60 MGB-LB60	1000	WDM (LC)	Single Mode	60km	1310nm / 1550nm	1550nm / 1310nm	0 ~ 60 degrees C
MGB-TLA10 MGB-TLB10	1000	WDM (LC)	Single Mode	10km	1310nm / 1550nm	1550nm / 1310nm	-40 ~ 75 degrees C
MGB-TLA20 MGB-TLB20	1000	WDM (LC)	Single Mode	20km	1310nm / 1550nm	1550nm / 1310nm	-40 ~ 75 degrees C
MGB-TLA40 MGB-TLB40	1000	WDM (LC)	Single Mode	40km	1310nm / 1550nm	1550nm / 1310nm	-40 ~ 75 degrees C
MGB-TLA60 MGB-TLB60	1000	WDM (LC)	Single Mode	60km	1310nm / 1550nm	1550nm / 1310nm	-40 ~ 75 degrees C

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	1310nm	0 ~ 60 degrees C
MFB-TFX	100	LC	Multi Mode	2km	1310nm	-40 ~ 75 degrees C
MFB-TF20	100	LC	Single Mode	20km	13100nm	-40 ~ 75 degrees C

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

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (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

XGS-6350-12X8TR