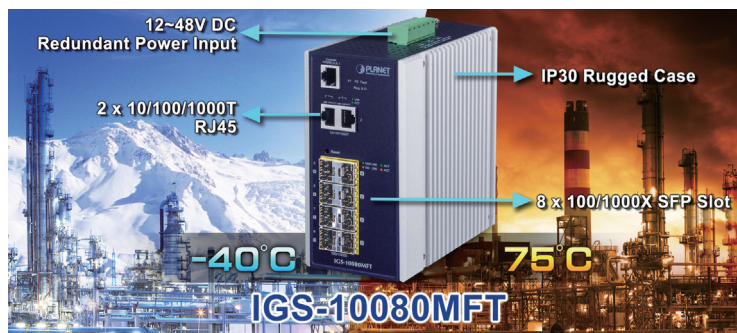


Industrial 8-Port 100/1000X SFP + 2-Port 10/100/1000T Managed Switch (-40 ~ 75 degrees C)



Multiple SFP Fiber Ports for Long-reach Networking

PLANET IGS-10080MFT is an Industrial 10-Port Full Gigabit Managed Ethernet Switch specially designed to build a full Gigabit backbone to transmit reliable, high speed data in heavy industrial demanding environments and also can forward data to remote network through fiber optic cabling. It provides **eight 100/1000BASE-X SFP fiber optic ports** and **two extra 10/100/1000BASE-T copper interfaces** delivered in an IP30 rugged strong case with redundant power system. Being able to operate under the temperature range from -40 to 75 degrees C, the IGS-10080MFT can be placed in almost any harsh environment.



Designed for Building Automation Networking

The IGS-10080MFT is the ideal solution to fulfill the demand of IPv6 management Gigabit Ethernet Switch, especially in the Industrial hardened environment. It supports both **IPv4 and IPv6 management** functions and can work with original network structure. The IGS-10080MFT provides advanced Layer 2 to Layer 4 data switching and redundancy, quality of service traffic control, network access control and authentication, and secure management features to protect customer's industrial and automation network connectivity.

Fast Recovery to a Redundant Ethernet Network

The IGS-10080MFT features strong and self-recovery capability to prevent interruptions and outside intrusions. It incorporates **Rapid Spanning Protocol (RSTP)**, **Multiple Spanning Tree (MSTP)** as well as the Loop protection function

Physical Port

- 2 10/100/1000BASE-T Ethernet ports (Port 1 to port 2)
- 2 100/1000/2500BASE-X mini-GBIC SFP ports (Port 3 to port 4)
- 6 100/1000BASE-X mini-GBIC SFP ports (Port 5 to port 10)

Industrial Case and Installation

- IP30 aluminum case
- DIN-rail and wall mount designs
- Redundant power design
 - 12 to 48V DC, redundant power with reverse polarity protection
 - AC 24V power adapter acceptable
- Supports EFT protection 6000 VDC for power line
- Supports 6000 VDC Ethernet ESD protection
- -40 to 75 degrees C operating temperature

Industrial Protocol

- Modbus TCP for real-time monitoring in SCADA system
- IEEE 1588v2 PTP (Precision Time Protocol)

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 runt/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 255 VLANs groups, out of 4095 VLAN IDs
 - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
 - Private VLAN
 - Protocol-based VLAN
 - MAC-based VLAN
 - Voice VLAN
- Supports **Spanning Tree Protocol**
 - STP, IEEE 802.1D Spanning Tree Protocol

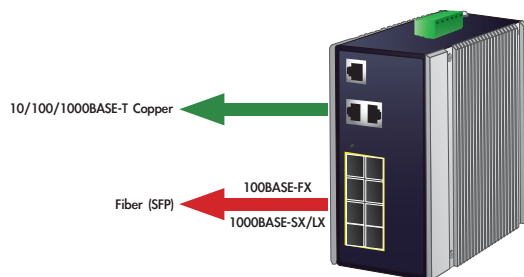
that will shut down specific Ethernet interfaces when system detects a loop. The dynamic port **Link Aggregation** and **Redundant Power System** are provided in customers' industrial automation network to enhance system reliability and uptime in the harsh factory environments. It greatly protects customer's industrial network with switching recovery capability that is used for implementing fault tolerant ring architectures.

Modbus TCP Provides Flexible Network Connectivity for Factory Automation

With the supported Modbus TCP/IP protocol, the IGS-10080MFT can easily integrate with **SCADA** systems, **HMI** systems and other data acquisition systems in factory floors. It enables administrators to remotely monitor the industrial Ethernet switch's **operating information**, **port information**, **communication status**, and **DI** and **DO status**, thus easily achieving enhanced monitoring and maintenance of the entire factory.

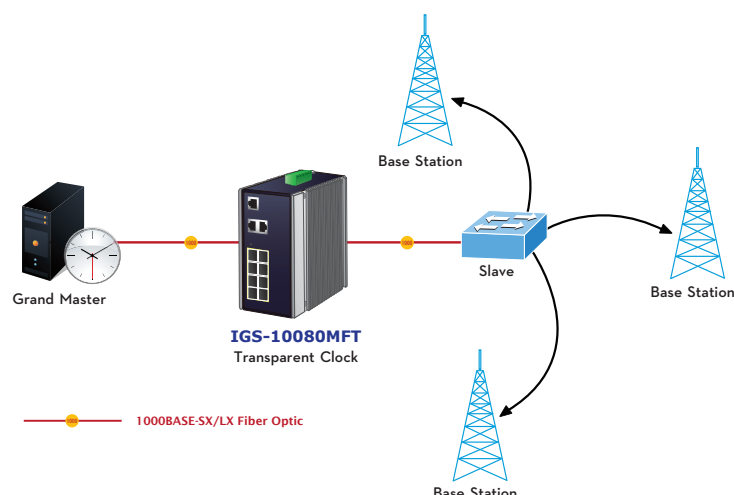
Flexible and Extendable Solution

The 8 mini-GBIC slots built in the IGS-10080MFT support dual-speed, **100BASE-FX** and **1000BASE-SX/LX** SFP (small form-factor pluggable) fiber-optic modules, meaning the administrator now can flexibly choose the suitable SFP transceiver according to the transmission distance or the transmission speed required to extend the network efficiently.



1588 Precision Time Protocol for Industrial Computing Networks

The IGS-10080MFT is intended for telecom and carrier Ethernet applications, supporting MEF service delivery and timing over packet solutions for the IEEE 1588 Precision Time Protocol and synchronous Ethernet. The protocol can precisely synchronize multiple clocks on a network.



- 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
- Supports E.R.P.S. (Ethernet Ring Protection Switching)

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)

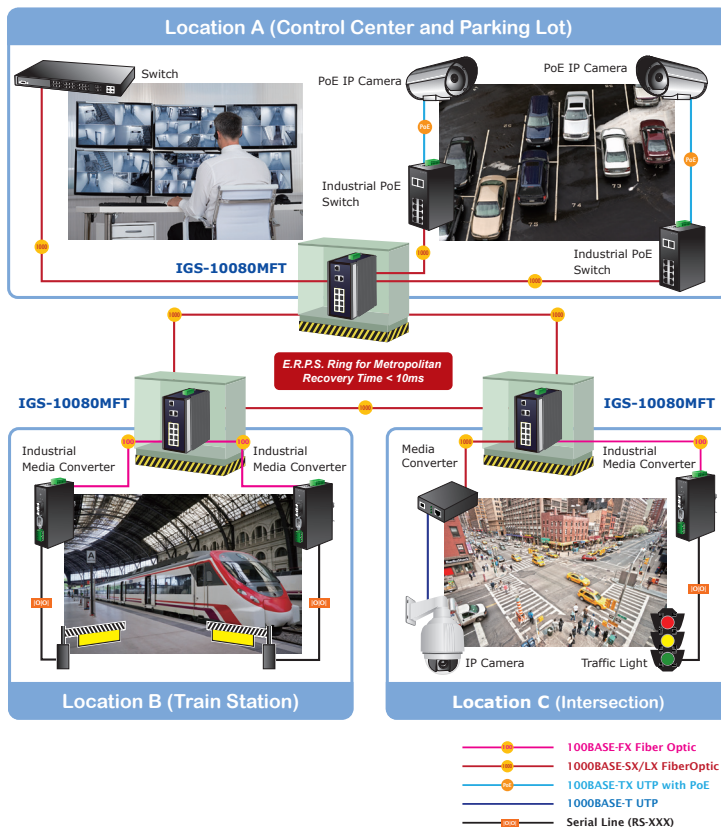
Security

- IEEE 802.1x Port-based/MAC-based network access authentication
- Built-in RADIUS client to co-operate with the RADIUS servers

Applications

Industrial Area Manageable Switch for Data Collection and Forwarding

The IGS-10080MFT offers **high performance and high reliability** to make sure the continuous industrial operation in harsh environments such as control cabinet of transportation, factory floors, outdoor, and the places where are in extremely low or high temperatures. With a non-blocking design and desktop size, the installation of the IGS-10080MFT is easy and helpful to build up a Gigabit high-bandwidth switched network quickly.



FTTx / MAN Edge Switch

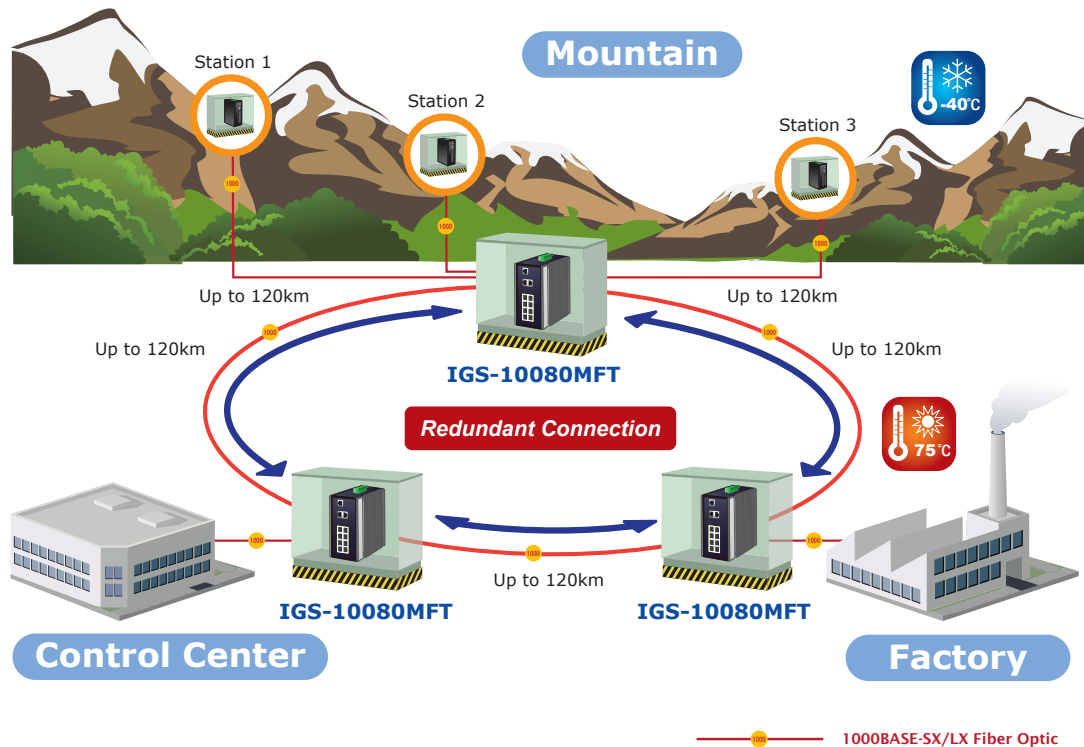
By means of improving the technology of Optical Fiber Ethernet with high-flexible, high-extendable and easy-installation features, the IGS-10080MFT offers up to 1Gbps data exchange speed via Optical Fiber interface and the transmission distance extends to 120km. The IGS-10080MFT is the ideal solution for service providers such as ISP and Telecom to build Metropolitan Area Network (MAN) based on Fiber technology to the Wide-Area-Network.

- TACACS+ login users access authentication
- RADIUS/TACACS+ users access authentication
- IP-based Access Control List (ACL)
- MAC-based Access Control List (ACL)
- 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
- **Loop Protection**
- IP address access management to prevent unauthorized intruder

Management

- Switch Management Interfaces
 - Web switch management
 - Remote Telnet 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 Option82
- User Privilege levels control
- NTP (Network Time Protocol)
- PTP (Precision 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 deployment management

With IP30 aluminum industrial case, the IGS-10080MFT provides a high level of immunity against electromagnetic interference and heavy electrical surges which are usually found on plant floors or in curb-side traffic control cabinets. It also possesses an integrated power supply source with wide range of voltages (**12 to 48V DC or 24V AC**) 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**, the IGS-10080MFT can be placed in almost any difficult environment.

[illegible]

Unit: mm

Specifications

Model Name	IGS-10080MFT
Hardware Specifications	
SFP/mini-GBIC Slots	8 100/1000BASE-SX/LX mini-GBIC SFP slots
Copper Ports	2 10/100/1000BASE-T Ethernet interface
Switch Architecture	Store-and-Forward
Switch Fabric	20Gbps/non-blocking
Throughput (packet per second)	14.8Mpps
Address Table	8K entries, automatic source address learning and ageing
Flow Control	IEEE 802.3x Pause Frame for full duplex. Back pressure for half duplex
Jumbo Frame	9Kbytes
Reset Button	< 5 sec: System reboot > 5 sec: Factory default
ESD Protection	6KV DC
EFT Protection	6KV DC
Enclosure	IP30 aluminum
Installation	DIN-rail or wall mounting
Alarm	One relay output for power failure Alarm relay current carry ability: 1A @ DC 24V
LED Indicator	System: Power 1 (Green) Power 2 (Green) Fault Alarm (Green) Ring (Green) R.O. (Green) Per 10/100/1000T RJ45 Ports: 1000 (Orange) LNK/ACT (Green) Per SFP Interface: 1000 LNK/ACT (Green) 100 LNK/ACT (Orange)
Dimension (W x D x H)	152 x 107x 72 mm
Weight	1036g
Power Requirement	DC 12 to 48V, AC 24V Power Adapter
Power Consumption	13.92 Watts/47.76BTU (Full loading)
Layer 2 Function	
Basic Management Interfaces	Web Browser, Remote Telnet, SNMP v1, v2c
Secure Management Interface	SSH, SSL, SNMP v3
Industrial Protocol	Modbus TCP for real-time monitoring in SCADA system
Port Configuration	Port disable/enable Auto-negotiation 10/100/1000Mbps full and half duplex mode selection Auto-detection/Forced 100/1000Mbps SFP Fiber transceiver speed Flow Control disable/enable 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
E.R.P.S. Ring	Recovery time <10ms
VLAN	802.1Q tagged VLAN, up to 255 VLAN groups Q-in-Q tunneling Private VLAN MAC-based VLAN Protocol-based VLAN Voice VLAN MVR (Multicast VLAN Registration) Up to 255 VLAN groups, out of 4095 VLAN IDs
Link Aggregation	IEEE 802.3ad LACP/Static Trunk Supports 5 groups of 10-Port trunk
QoS	Traffic classification based, Strict priority and WRR 8-Level priority for switching - Port Number - 802.1p priority - 802.1Q VLAN tag - DSCP field in IP Packet

Synchronization	IEEE 1588v2 PTP (Precision Time Protocol) - Peer-to-peer transparent clock - End-to-end transparent clock
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 256 entries
Bandwidth Control	Per port bandwidth control Ingress: 500Kb~1000Mbps Egress: 500Kb~1000Mbps
SNMP MIBs	RFC-1213 MIB-II RFC-2236 IGMPv2 RFC-2710 MLDv1 RFC-3376 IGMPv3 RFC-2879 RMON 1, 2, 3, 9 RFC-1493 Bridge MIB RFC-1643 Ethernet MIB RFC-2863 Interface MIB RFC-2665 Ether-Like MIB RFC-2819 RMON MIB (Group 1, 2, 3 and 9) RFC-2737 Entity MIB RFC-2618 RADIUS Client MIB RFC-3411 SNMP-Frameworks-MIB IEEE 802.1X PAE IF-MIB LLDP MAU-MIB
Standards Conformance	
Regulatory Compliance	FCC Part 15 Class A, CE
Stability Testing	IEC60068-2-32 (Free fall) IEC60068-2-27 (Shock) IEC60068-2-6 (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 802.3ad 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 1588v2
Standards Conformance	
Operating	Temperature: -40 ~ 75 degrees C Relative Humidity: 5 ~ 95% (Non-condensing)
Storage	Temperature: -40 ~ 75 degrees C Relative Humidity: 5 ~ 95% (Non-condensing)

Ordering Information

IGS-10080MFT	Industrial 8 100/1000X SFP + 2-Port 10/100/1000T Managed Switch (-40 ~ 75 degrees C)
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Available 100Mbps Modules

MFB-FX	SFP-Port 100BASE-FX Transceiver (1310nm) -2km
MFB-F20	SFP-Port 100BASE-FX Transceiver (1310nm) - 20km
MFB-FA20	SFP-Port 100BASE-BX Transceiver (WDM,TX:1310nm) -20km
MFB-FB20	SFP-Port 100BASE-BX Transceiver (WDM,TX:1550nm) -20km
MFB-F40	SFP-Port 100BASE-FX Transceiver (1310nm) - 40km
MFB-F60	SFP-Port 100BASE-FX Transceiver (1310nm) - 60km
MFB-TFX	SFP-Port 100BASE-FX Transceiver (1310nm) -2km (-40~75 degrees C)
MFB-TF20	SFP-Port 100BASE-FX Transceiver (1310nm) - 20km (-40~75 degrees C)
MFB-TFA20	SFP-Port 100BASE-BX (WDM, TX:1310nm) mini-GBIC module-20km (-40~75 degrees C)
MFB-TFB20	SFP-Port 100BASE-BX (WDM, TX:1550nm) mini-GBIC module-20km (-40~75 degrees C)
MFB-TFA40	SFP-Port 100BASE-BX (WDM, TX:1310nm) mini-GBIC module-40km (-40~75 degrees C)
MFB-TFB40	SFP-Port 100BASE-BX (WDM, TX:1550nm) mini-GBIC module-40km (-40~75 degrees C)
MFB-TSA	SFP-Port 100BASE-BX Transceiver (Multi-mode/WDM,TX:1310nm RX:1550nm/DDM) - 2km (-40~75 degrees C)
MFB-TSB	SFP-Port 100BASE-BX Transceiver (Multi-mode/WDM,TX:1550nm RX:1310nm/DDM) - 2km (-40~75 degrees C)

Available 1000Mbps Modules

MGB-GT	SFP-Port 1000BASE-T Module
MGB-LX	SFP-Port 1000BASE-LX mini-GBIC module - 20km
MGB-SX	SFP-Port 1000BASE-SX mini-GBIC module - 550m
MGB-SX2	SFP-Port 1000BASE-SX mini-GBIC module - 2km
MGB-L40	SFP-Port 1000BASE-LX mini-GBIC module - 40km
MGB-L80	SFP-Port 1000BASE-LX mini-GBIC module - 80km
MGB-L120	SFP-Port 1000BASE-LX mini-GBIC module - 120km
MGB-LA10	SFP-Port 1000BASE-BX (WDM, TX:1310nm) mini-GBIC module - 10km
MGB-LB10	SFP-Port 1000BASE-BX (WDM, TX:1550nm) mini-GBIC module - 10km
MGB-LA20	SFP-Port 1000BASE-BX (WDM, TX:1310nm) mini-GBIC module - 20km
MGB-LB20	SFP-Port 1000BASE-BX (WDM, TX:1550nm) mini-GBIC module - 20km
MGB-LA40	SFP-Port 1000BASE-BX (WDM, TX:1310nm) mini-GBIC module - 40km
MGB-LB40	SFP-Port 1000BASE-BX (WDM, TX:1550nm) mini-GBIC module - 40km
MGB-LA80	SFP-Port 1000BASE-BX (WDM, TX:1490nm) mini-GBIC module - 80km
MGB-LB80	SFP-Port 1000BASE-BX (WDM, TX:1550nm) mini-GBIC module - 80km
MGB-TSX	SFP-Port 1000BASE-SX mini-GBIC module - 550m (-40~75 degrees C)
MGB-TSX2	SFP-Port 1000BASE-SX mini-GBIC module - 2km (-40~75 degrees C)
MGB-TLX	SFP-Port 1000BASE-LX mini-GBIC module - 20km (-40~75 degrees C)
MGB-TL40	SFP-Port 1000BASE-LX mini-GBIC module - 40km (-40~75 degrees C)
MGB-TL80	SFP-Port 1000BASE-LX mini-GBIC module - 80km (-40~75 degrees C)
MGB-TLA10	SFP-Port 1000BASE-BX (WDM, TX:1310nm) mini-GBIC module - 10km (-40~75 degrees C)
MGB-TLB10	SFP-Port 1000BASE-BX (WDM, TX:1550nm) mini-GBIC module - 10km (-40~75 degrees C)
MGB-TLA20	SFP-Port 1000BASE-BX (WDM, TX:1310nm) mini-GBIC module - 20km (-40~75 degrees C)
MGB-TLB20	SFP-Port 1000BASE-BX (WDM, TX:1550nm) mini-GBIC module - 20km (-40~75 degrees C)
MGB-TLA40	SFP-Port 1000BASE-BX (WDM, TX:1310nm) mini-GBIC module - 40km (-40~75 degrees C)
MGB-TLB40	SFP-Port 1000BASE-BX (WDM, TX:1550nm) mini-GBIC module - 40km (-40~75 degrees C)
MGB-TLA80	SFP-Port 1000BASE-BX (WDM, TX:1490nm) mini-GBIC module - 80km (-40~75 degrees C)
MGB-TLB80	SFP-Port 1000BASE-BX (WDM, TX:1550nm) mini-GBIC module - 80km (-40~75 degrees C)
MGB-TSA	SFP-Port 1000BASE-BX (WDM, TX:1310nm) mini-GBIC module - 2km (-40~75 degrees C)
MGB-TSB	SFP-Port 1000BASE-BX (WDM, TX:1550nm) mini-GBIC module - 2km (-40~75 degrees C)
MGB-TGT	SFP-Port 1000BASE-T Module - 100m (-40~75 degrees C)

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