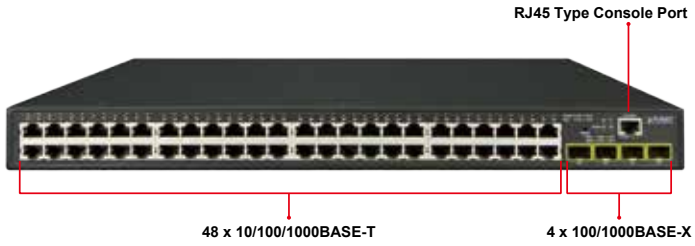
48-Port 10/100/1000BASE-T + 4-Port 100/1000BASE-X SFP Gigabit Managed Switch

Cost-optimized High-density Managed Gigabit Switch for Small and Medium Businesses

PLANET GS-4210-48T4S Gigabit Managed Switch is perfectly designed for SMB and enterprise network infrastructures. Besides the IPv6 / IPv4 management and abundant L2 / L4 switching functions, the GS-4210-48T4S comes with fanless feature and green technology to provide a quiet, energy-saving, high-speed and reliable office network environment. It benefits the SMB and enterprise users as it provides Gigabit network performance but it comes at the cost of a Fast Ethernet switch. The GS-4210-48T4S is quite suitable for the next-generation network deployment and offers the lowest total cost of ownership. It is the best investment for business expansion or upgrading its network infrastructure.

High Performance

The GS-4210-48T4S provides **48 10/100/1000BASE-T** Gigabit Ethernet RJ45 ports and **4 additional 100/1000BASE-X SFP** slots. It boasts a high-performance switch architecture that is capable of providing the non-blocking switch fabric and wire-speed throughput as high as 104Gbps, which greatly simplifies the tasks of upgrading the LAN for catering to increasing bandwidth demands.



Fanless Design

Adopting the latest chip process and green technology, the GS-4210-48T4S successfully reduces substantial power consumption with the fanless and noiseless design collocating with the effective cooler. Therefore, the GS-4210-48T4S is able to operate stably and quietly in any environment without affecting its performance.

Physical Port

- **48-port 10/100/1000BASE-T** Gigabit RJ45 copper
- **4 100/1000BASE-X** mini-GBIC/SFP slots
- Reset button for system factory default
- RJ45 console interface for basic management and setup

Layer 2 Features

- Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x pause frame flow control (full-duplex)
- High performance Store and Forward architecture, runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- Supports **VLAN**
  - IEEE 802.1Q tagged VLAN
  - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
  - Protocol VLAN
  - Voice VLAN
  - Private VLAN (Protected port)
  - Management VLAN
  - GVRP
- Supports **Spanning Tree Protocol**
  - STP (Spanning Tree Protocol)
  - RSTP (Rapid Spanning Tree Protocol)
  - MSTP (Multiple Spanning Tree Protocol)
  - STP BPDU Guard, BPDU Filtering and BPDU Forwarding
- Supports **Link Aggregation**
  - IEEE 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (static trunk)
  - Maximum 8 trunk groups, up to 8 ports per trunk group
- Provides port mirror (many-to-1)
- Loop protection to avoid broadcast loops

Quality of Service

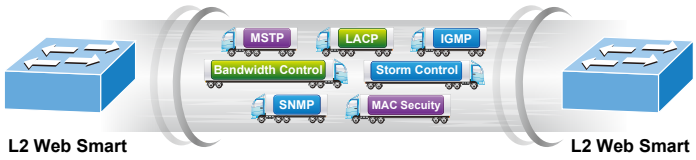
- Ingress and egress rate limit per port bandwidth control
- Storm control support
  - Broadcast / Unknown unicast / Unknown multicast
- Traffic classification
  - IEEE 802.1p CoS
  - TOS / DSCP / IP precedence of IPv4/IPv6 packets
- Strict priority and Weighted Round Robin (WRR) CoS policies

IPv6 / IPv4 Dual Stack

By supporting both IPv6 and IPv4 protocols, the GS-4210-48T4S helps the SMBs to step in the IPv6 era with the lowest investment as network facilities do not need to be fully replaced. Thus, the IPv4 network can be easily upgraded by ISPs to the IPv6 FTTx edge network.

Robust Layer 2 Features

The GS-4210-48T4S can be programmed for advanced switch management functions such as dynamic port link aggregation, 802.1Q VLAN and Q-in-Q VLAN, Multiple Spanning Tree protocol (MSTP), Loop and BPDU Guard, and IGMP Snooping. Via the aggregation of supporting ports, the GS-4210-48T4S allows the operation of a high-speed trunk to combine with multiple ports such as a 16Gbps fat pipe and supports fail-over as well.



Efficient Traffic Control

The GS-4210-48T4S 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**, IP DSCP QoS priority and remarking. It guarantees the best performance of VoIP and video stream transmission, and empowers the enterprises to take full advantage of the limited network resources.

Enhanced and Secure Management

For efficient management, the GS-4210-48T4S is equipped with **Web**, **Telnet** and **SNMP** management interfaces. With the built-in Web-based management interface, the GS-4210-48T4S offers an easy-to-use, platform-independent management and configuration facility. By supporting standard Simple Network Management Protocol (SNMP), the switch can be managed via any standard management software. For text-based management, the switch can be accessed via Telnet port. Moreover, the GS-4210-48T4S offers secure remote management by supporting **SSH** and **SSL** connections which encrypt the packet content at each session.

Powerful Security

PLANET GS-4210-48T4S 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 **802.1X port-based** authentication, which can be deployed with RADIUS to ensure the port level security and block illegal users. With the **Protected Port** function, communication between edge ports can be prevented to guarantee user privacy. **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.

Multicast

- Supports IPv4 IGMP snooping v2 and v3
- Supports IPv6 MLD snooping v1, v2
- IGMP querier mode support
- IGMP snooping port filtering
- MLD snooping port filtering

Security

- Authentication
  - IEEE 802.1X port-based network access authentication
  - Built-in RADIUS client to co-operate with the RADIUS servers
  - DHCP Option 82
  - RADIUS / TACACS+ authentication
- Access Control List
  - IPv4 / IPv6 IP-based ACL
  - IPv4 / IPv6 IP-based ACE
  - MAC-based ACL
  - MAC-based ACE
- MAC Security
  - Static MAC
  - MAC Filtering
- Port security for source MAC address entries filtering
- DHCP snooping to filter distrusted DHCP messages
- Dynamic ARP inspection discards ARP packets with invalid MAC address to IP address binding
- IP source guard prevents IP spoofing attacks
- DoS attack prevention
- SSH/SSL

Management

- IPv4 and IPv6 dual stack management
- Switch Management Interface
  - IPv4 / IPv6 Web switch management
  - Telnet Command Line Interface
  - SNMP v1, v2c and v3
  - HTTPs secure access
- Built-in Trivial File Transfer Protocol (TFTP) client
- User privilege levels control
- Static and DHCP for IP address assignment

Flexible Extension Solution

The four mini-GBIC SFP slots built in the GS-4210-48T4S support dual speed as it features 100BASE-FX and 1000BASE-SX/LX SFP (Small Form-factor Pluggable) fiber-optic modules, meaning 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) and up to above 10/20/30/40/50/70/120 kilometers (single-mode fiber or WDM fiber). It is well suited for applications within the enterprise data centers and distributions.

Green Networking

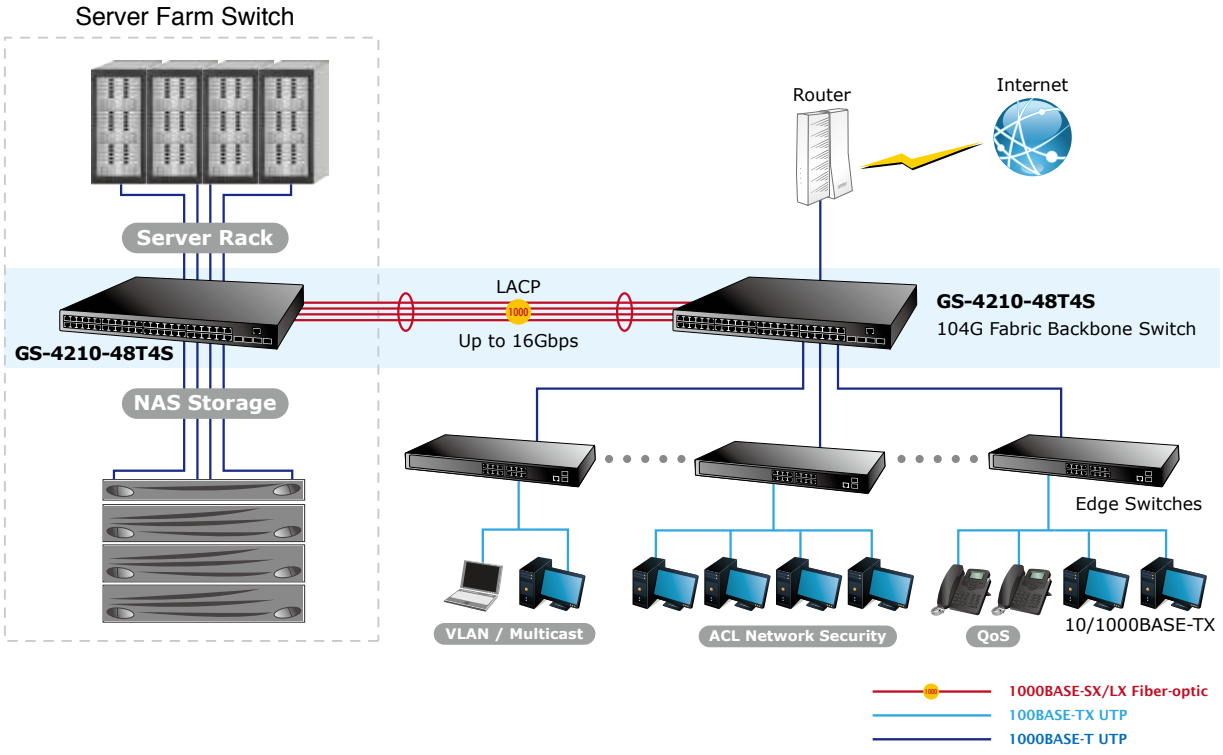
In line with the energy-saving trend worldwide, the GS-4210-48T4S adopts the new-generation green technology which brings both benefits of energy saving and Gigabit performance. The new engine provides up to 60% less energy consumption without reducing the performance, and particularly it offers flexible power-saving mode to meet various demands.

- System Maintenance
  - Firmware upload / download via HTTP / TFTP
  - Configuration upload / download through HTTP / TFTP
  - Dual images
  - Hardware reset button for system reset to factory default
- SNTP Network Time Protocol
- Cable diagnostics
- Link Layer Discovery Protocol (LLDP) and LLDP-MED
- SNMP trap for interface Link Up and Link Down notification
- Event message logging to remote Syslog server
- Four RMON groups (history, statistics, alarms and events)
- PLANET Smart Discovery Utility

Applications

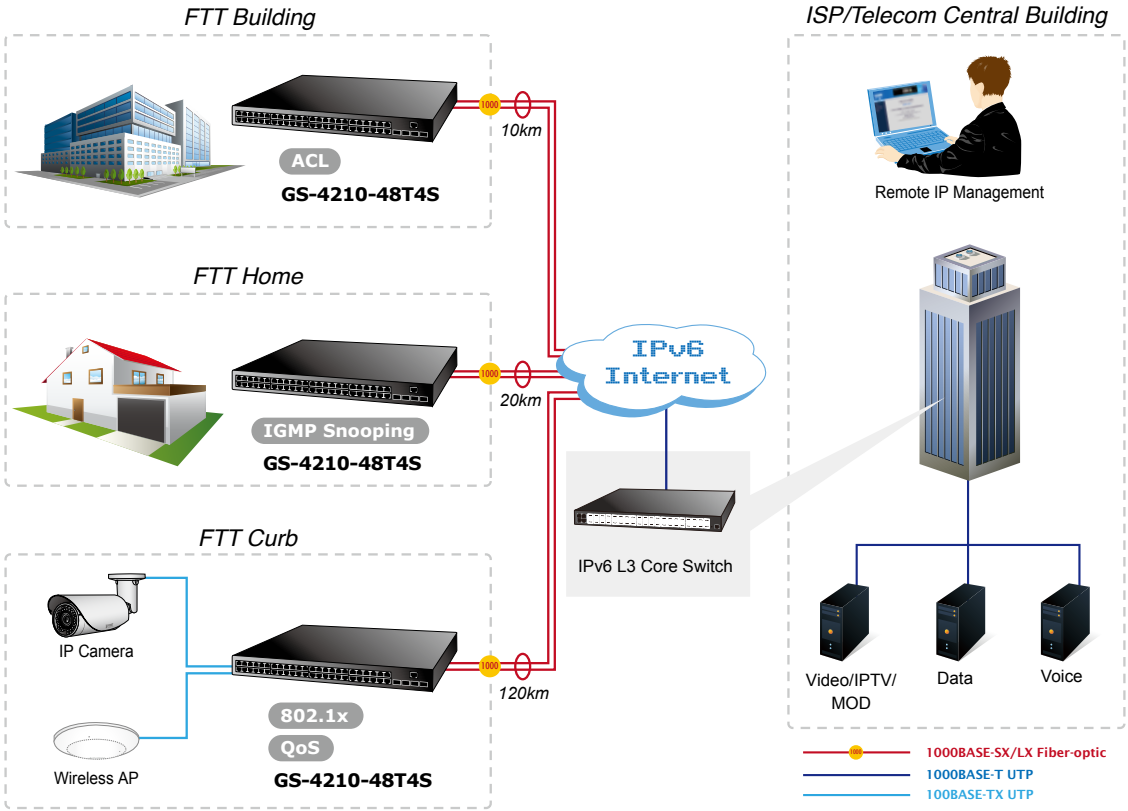
High Performance Backbone / Server Farm Switch

Gigabit Ethernet supported equipment has become the fundamental unit of enterprises and network servers. With up to 104 Gigabits per second of non-blocking switch fabric, the GS-4210-48T4S can easily provide the high bandwidth required from now on. It can easily provide a local, high bandwidth and Gigabit Ethernet network for the backbone of enterprises or SMBs. With its port trunking function, a 16Gbps fat pipe is provided for connecting to the backbone if required. It is ideal to be used as a server farm switch to connect servers. With the four SFP ports, the GS-4210-48T4S provides the uplink to the edge network through Gigabit Ethernet LX/SX/BX SFP modules.



Department / Edge ACL, Security and QoS Switch

With the IEEE 802.1x network access authentication, the GS-4210-48T4S provides the MAC / IP / Protocol Access Control list and Port Security functions which can limit the number of MAC addresses to be passed through one specific port. The IGMP snooping and QoS features in the GS-4210-48T4S improve the network efficiency and protect the network clients.



Specifications

Product	GS-4210-48T4S
Hardware Specifications	
Hardware Version	2
Copper Ports	48 x 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports
SFP/mini-GBIC Slots	4 100/1000BASE-X SFP interfaces,
Console	1 RS232-to-RJ45 serial port (115200, 8, N, 1)
Switch Architecture	Store-and-Forward
Switch Fabric	104Gbps / non-blocking
Switch Throughput@64bytes	77.38Mpps @64bytes
Address Table	16K entries
Shared Data Buffer	12Mbit SRAM packet buffer
Flow Control	IEEE 802.3x pause frame for full-duplex Back pressure for half-duplex
Jumbo Frame	10K bytes
Reset Button	< 5 sec: System reboot > 5 sec: Factory default
LED	System: PWR(Power) (Green) 10/100/1000T RJ45 Interfaces (Port 1 to Port 48): 1000Mbps, LNK/ACT (Green) 10/100Mbps, LNK/ACT (Orange) 100/1000Mbps SFP Interfaces (Port 49 to Port 52): 1000Mbps, LNK/ACT (Green) 100Mbps, LNK/ACT (Orange)
Thermal Fan	Fanless design
Power Requirements	AC 100~240V, 50/60Hz, auto-sensing.
ESD Protection	6KV DC
Power Consumption / Dissipation	37.9 watts / 129.239 BTU
Dimensions (W x D x H)	440 x 330 x 44 mm, 1U height
Weight	4.0 kg
Enclosure	Metal
Layer 2 Functions	
Port Mirroring	TX / RX / Both Many-to-1 monitor
VLAN	802.1Q tagged-based VLAN Up to 256 VLAN groups, out of 4094 VLAN IDs 802.1ad Q-in-Q tunneling (VLAN stacking) Voice VLAN Protocol VLAN Private VLAN (Protected port) GVRP Management VLAN
Link Aggregation	IEEE 802.3ad LACP and static trunk Supports 8 trunk groups with each having 8 ports
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 STP BPDU Guard, BPDU Filtering and BPDU Forwarding
IGMP Snooping	IGMP (v2/v3) snooping IGMP querier Up to 256 multicast groups
MLD Snooping	IPv6 MLD (v1 / v2) snooping, up to 256 multicast groups
Access Control List	IPv4/IPv6 IP-based ACL / MAC-based ACL IPv4/IPv6 IP-based ACE / MAC-based ACE
QoS	8 mapping IDs to 8 level priority queues - Port number - 802.1p priority - DSCP / IP precedence of IPv4 / IPv6 packets Traffic classification based, strict priority and WRR Ingress / Egress Rate Limit per port bandwidth control

Security	IEEE 802.1X port-based authentication Built-in RADIUS client to co-operate with RADIUS server RADIUS / TACACS+ authentication IP-MAC port binding MAC filtering Static MAC address DHCP snooping and DHCP Option82 STP BPDU guard, BPDU filtering and BPDU forwarding DoS attack prevention ARP inspection IP source guard Storm control support - Broadcast / unknown unicast / unknown multicast
Management Functions	
Basic Management Interfaces	Web browser / Telnet / SNMP v1, v2c, v3 Firmware upgrade via HTTP / TFTP protocol through Ethernet network Configuration upload / download through HTTP / TFTP Remote / Local Syslog System log LLDP protocol SNTP PLANET Smart Discovery Utility
Secure Management Interfaces	SSH, SSL, SNMPv3
SNMP MIBs	RFC 3635 Ethernet-like MIB RFC 2863 Interface Group MIB RFC 2819 RMON (1, 2, 3, 9) RFC 1493 Bridge MIB
Standards Conformance	
Regulatory 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 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 RFC 3810 MLD version 2
Environment	
Operating Temperature	Temperature: 0 ~ 50 degrees C Relative Humidity: 5 ~ 95% (non-condensing)
Storage Temperature	Temperature: -20 ~ 70 degrees C Relative Humidity: 5 ~ 95% (non-condensing)

Ordering Information

GS-4210-48T4S	48-Port 10/100/1000BASE-T + 4-Port 100/1000BASE-X SFP Managed Gigabit Switch

Related Products

WGSW-28040	24-Port 10/100/1000T + 4-Port Gigabit TP/SFP Combo Managed Switch
GS-4210-16T2S	16-Port Layer 2 Gigabit Managed Ethernet Switch w/2 SFP Interfaces
GS-4210-24T2S	24-Port Layer 2 Gigabit Managed Ethernet Switch w/2 SFP Interfaces
GS-4210-16P2S	16-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Managed Switch
GS-4210-24P4C / GS-4210-24PL4C	24-Port 10/100/1000T 802.3at PoE + 4-Port Gigabit TP/SFP Combo Managed Switch
GS-4210-48P4S	48-Port 10/100/1000T 802.3at PoE + 4-Port 100/1000BASE-X SFP Managed Switch

Available Modules for GS-4210-48T4S

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	1310nm	-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 MFB-FB20	100	WDM(LC)	Single Mode	20km	1310nm 1550nm	1550nm 1310nm	0 ~ 60 degrees C
MFB-TFA20 MFB-TFB20	100	WDM(LC)	Single Mode	20km	1310nm 1550nm	1550nm 1310nm	-40 ~ 75 degrees C
MFB-TFA40 MFB-TFB40	100	WDM(LC)	Single Mode	40km	1310nm 1550nm	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)	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

PLANET Technology Corporation

11F., No.96, Minquan Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)

Tel: 886-2-2219-9518 Fax: 886-2-2219-9528

Email: sales@planet.com.tw www.planet.com.tw