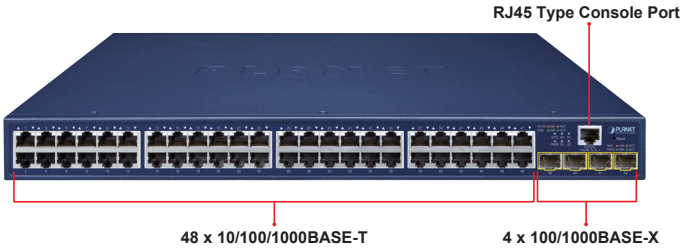
48-Port 10/100/1000BASE-T + 4-Port 100/1000BASE-X SFP Gigabit Managed Switch

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

PLANET GS-4210-48T4S is an ideal Gigabit Switch which provides cost-effective advantage to local area network and is widely accepted in the SMB office network. It offers **intelligent Layer 2 data packet switching and management functions, user-friendly web interface, and stable operation**. Besides the popular 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.

The GS-4210-48T4S is equipped with **48 10/100/1000BASE-T** Gigabit Ethernet ports and **4** additional **100/1000BASE-X** SFP interfaces with inner power system. It offers a rack-mountable, affordable, safe and reliable Gigabit network switch solution for SMBs deploying networks, or requiring enhanced data security and network traffic management.



Cybersecurity Network Solution to Minimize Security Risks

The GS-4210-48T4S supports SSHv2 and TLS protocols to provide strong protection against advanced threats. It includes a range of cybersecurity features such as **DHCP Snooping**, **IP Source Guard**, **dynamic ARP Inspection** Protection, **802.1x port-based** network access control, **RADIUS** and **TACACS+** user accounts management, **SNMPv3** authentication, and so on to complement it as an all-security solution.

Physical Port

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

Switching

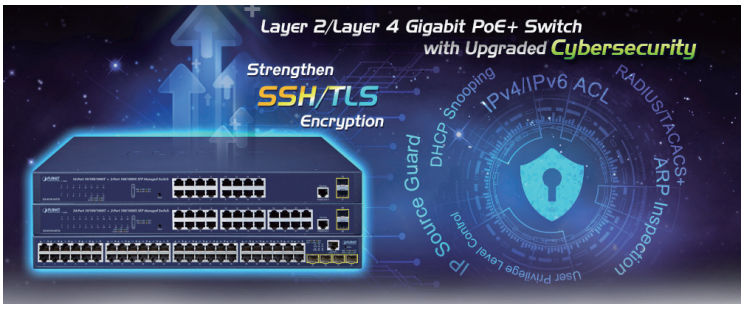
- Hardware-based 10/100Mbps, half/full duplex and 1000Mbps full duplex mode, flow control and auto-negotiation, and auto MDI/MDI-X
- Features Store-and-Forward mode with wire-speed filtering and forwarding rates
- IEEE 802.3x flow control for full duplex operation and back pressure for half duplex operation
- 10K jumbo frame
- Automatic address learning and address aging
- Supports CSMA/CD protocol

Layer 2 Features

- 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
- Supports ERPS (Ethernet Ring Protection Switching)

Quality of Service

- Ingress/Egress Rate Limit per port bandwidth control

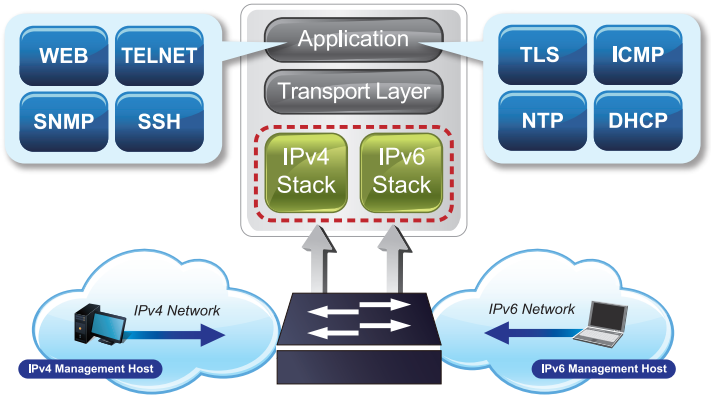


Redundant Ring, Fast Recovery for Critical Network Applications

The GS-4210-48T4S supports redundant ring technology and features strong, rapid self-recovery capability to prevent interruptions and external intrusions. It incorporates advanced **ITU-T G.8032 ERPS (Ethernet Ring Protection Switching)** technology, Spanning Tree Protocol (802.1s MSTP) into customer's network to enhance system reliability and uptime in various environments.

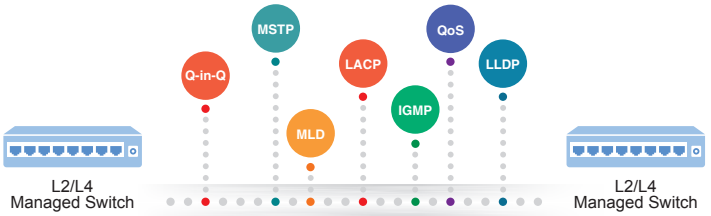
IPv6/IPv4 Dual Stack Management

Supporting both IPv6 and IPv4 protocols, the GS-4210-48T4S helps the SMBs to step in the IPv6 era with the lowest investment as its network facilities need not be replaced or overhauled if the IPv6 FTTx edge network is set up.



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**, **IGMP snooping**, and **MLD snooping**. Via the link aggregation, 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. Also, the **Link Layer Discovery Protocol (LLDP)** is the Layer 2 protocol included to help discover basic information about neighboring devices on the local broadcast domain.



- 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

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 cooperate with the RADIUS servers
  - DHCP Option 82
  - RADIUS/TACACS+ login user access 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

Management

- IPv4 and IPv6 dual stack management
- Switch Management Interface
  - Web switch management
  - Console/Telnet Command Line Interface
  - SNMP v1 and v2c switch management
  - SSHv2, TLSv1.2 and SNMP v3 secure access
- SNMP Management
  - Four RMON groups (history, statistics, alarms, and events)
  - SNMP trap for interface Link Up and Link Down notification

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/unicast storm control, per port bandwidth control, 802.1p/CoS/IP DSCP QoS priority and remarking. It guarantees the best performance at VoIP and video stream transmission, and empowers the enterprises to take full advantage of the limited network resources.

Powerful Security

PLANET GS-4210-48T4S offers comprehensive IPv4/IPv6 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. Furthermore, port security function allows limiting the number of network devices on a given port. The network administrators can now construct highly-secure corporate networks with considerably less time and effort than before.

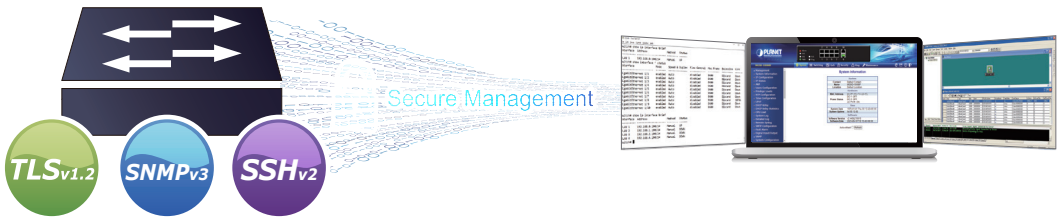
- User Privilege Levels Control
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- System Maintenance
  - Firmware upload/download via HTTP/TFTP
  - Configuration upload/download through Web interface
  - Dual Images
  - Hardware reset button for system reboot or reset to factory default
- SNTP Network Time Protocol
- Network Diagnostic
  - ICMPv6/ICMPv4 Remote Ping
  - Cable Diagnostics
- Link Layer Discovery Protocol (LLDP) Protocol and LLDP-MED
- Event message logging to remote Syslog server
- PLANET Smart Discovery Utility for deployment management
- PLANET NMS system and CloudViewer for deployment management

Friendly and Secure Management

For efficient management, the GS-4210-48T4S is equipped with Command line, Web 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.
- For text-based management, it can be accessed via Telnet and the console port.
- By supporting the standard SNMP protocol, the switch can be managed via any SNMP-based management software.

Moreover, the GS-4210-48T4S offers secure remote management by supporting SSHv2, TLSv1.2 and SNMP v3 connections which encrypt the packet content at each session.



Flexible Extension Solution

The four mini-GBIC slots built in the GS-4210-48T4S are compatible with the **100BASE-FX/1000BASE-SX/LX** SFP (Small Form-factor Pluggable) fiber transceiver to uplink to backbone switch and monitor center in long distance. The distance can be extended from 550 meters to 2 kilometers (multi-mode fiber) and to 10/20/40/60/80/120 kilometers (single-mode fiber or WDM fiber). They are well suited for applications within the enterprise data centers and distributions.

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.

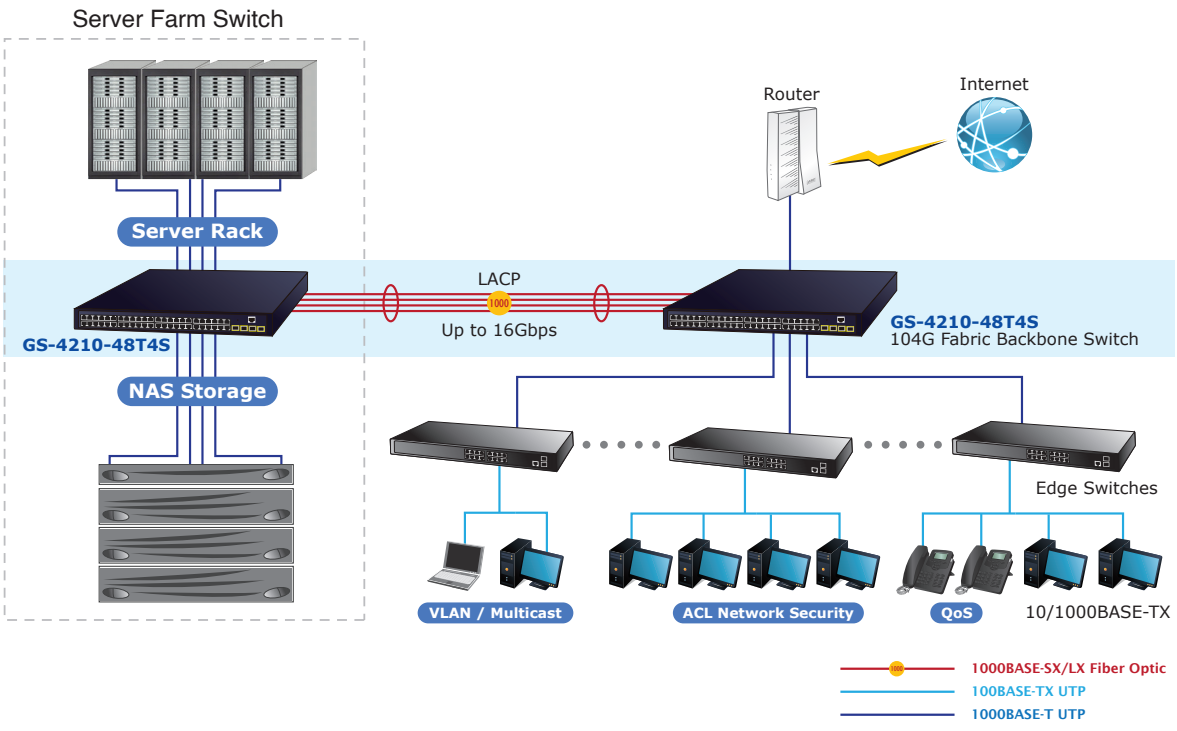
Green Networking

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.

Applications

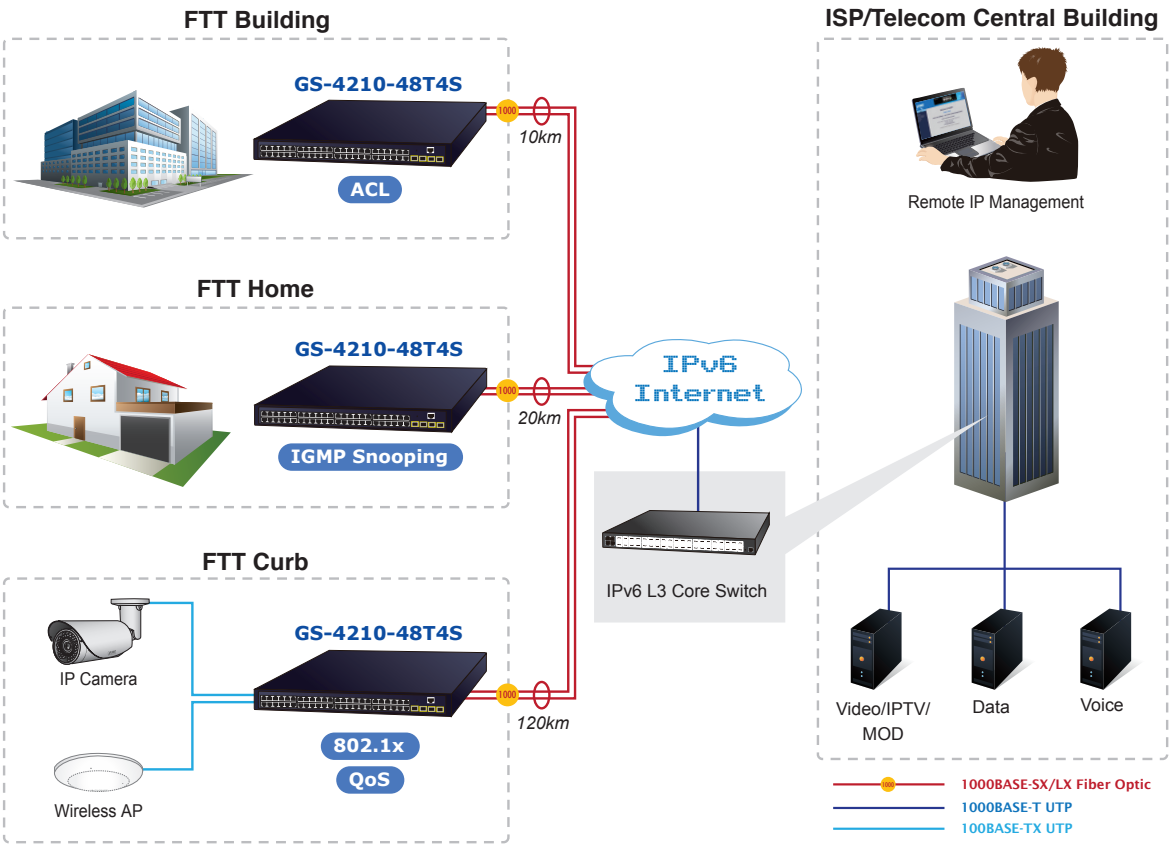
High Performance Backbone/Server Farm Switch

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	3
Copper Ports	48 x 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports
SFP Ports	4 100/1000BASE-X SFP interfaces
Console	1 RS232-to-RJ45 serial port (115200, 8, N, 1)
Reset Button	< 5 sec: System reboot > 5 sec: Factory default
Thermal Fan	Fanless design
Power Requirements	AC 100~240V, 50/60Hz, auto-sensing.
Power Consumption / Dissipation	36.1 watts/123BTU
Dimensions (W x D x H)	440 x 330 x 44 mm, 1U height
Weight	4.2 kg
Enclosure	Metal
ESD Protection	6KV DC
LED	**System:** PWR(Power) (Green). SYS (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)
Switching	
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
Layer 2 Functions	
Port Mirroring	TX/RX/Both Many-to-1 monitor
VLAN	802.1Q tagged 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
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
Ring	Supports ERPS, and complies with ITU-T G.8032

Security Functions		
Access Control List	IPv4/IPv6 IP-based ACL/MAC-based ACL IPv4/IPv6 IP-based ACE/MAC-based ACE	
Port Security	IEEE 802.1X – Port-based authentication Built-in RADIUS client to co-operate with RADIUS server RADIUS/TACACS+ user access authentication	
MAC Security	IP-MAC port binding MAC filtering Static MAC address	
Enhanced Security	DHCP snooping and DHCP Option82 STP BPDU guard, BPDU filtering and BPDU forwarding DoS attack prevention ARP inspection IP source guard Storm control support	
Management Functions		
Basic Management Interfaces	RS232 to RJ45 Console Web browser Telnet SNMP v1, v2c	
Secure Management Interfaces	SSHv2, TLS v1.2, SNMP v3	
System Management	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 PLANET NMS System/CloudViewer	
SNMP MIBs	RFC 1213 MIB-II RFC 1215 Generic Traps RFC 1493 Bridge MIB RFC 2674 Bridge MIB Extensions RFC 2737 Entity MIB (Version 2) RFC 2819 RMON (1, 2, 3, 9) RFC 2863 Interface Group MIB RFC 3635 Ethernet-like 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 783 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 ITU G.8032 ERPS Ring
Environment		
Operating	Temperature: 0 ~ 50 degrees C Relative Humidity: 5 ~ 95% (non-condensing)	
Storage	Temperature: -10 ~ 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

GS-4210-16T2S	16-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch
GS-4210-24T2S	24-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch
GS-4210-24T4S	24-Port 10/100/1000T + 4-Port 100/1000X SFP Managed Switch

Available 1000Mbps 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(V2)	YES	1000	LC	Multi Mode	550m	850nm	0 ~ 60 degrees C
MGB-SX2(V2)	YES	1000	LC	Multi Mode	2km	1310nm	0 ~ 60 degrees C
MGB-LX(V2)	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(V2)	YES	1000	LC	Single Mode	120km	1550nm	0 ~ 60 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(V2)	YES	1000	WDM(LC)	Single Mode	10km	1310nm	1550nm	0 ~ 60 degrees C
MGB-LB10(V2)		1000	WDM(LC)	Single Mode	10km	1550nm	1310nm	0 ~ 60 degrees C
MGB-LA20(V2)	YES	1000	WDM(LC)	Single Mode	20km	1310nm	1550nm	0 ~ 60 degrees C
MGB-LB20(V2)		1000	WDM(LC)	Single Mode	20km	1550nm	1310nm	0 ~ 60 degrees C
MGB-LA40(V2)	YES	1000	WDM(LC)	Single Mode	40km	1310nm	1550nm	0 ~ 60 degrees C
MGB-LB40(V2)		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

Available 100Mbps Modules

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

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

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