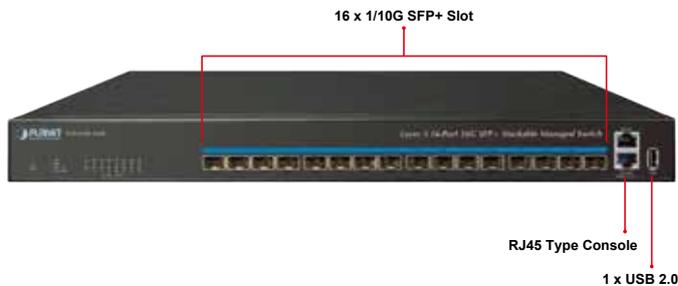


Layer 3 16-Port 10GBASE-SR/LR SFP+ Stackable Managed Switch (100~240V AC, -48~-60V DC)



Powerful All-port 10Gbps Solution for Enterprise Core Networks

PLANET SGS-6340-16XR is a Layer 3 Stackable Managed Gigabit Switch that provides high-density performance via its Layer 3 10Gigabit static routing with 16 SFP+ fiber interfaces delivered in a rugged case. The administrator can flexibly choose a suitable SFP/SFP+ transceiver according to the transmission distance or the transmission speed required to extend the 10G network efficiently. Besides, with the 320Gbps switching fabric, the SGS-6340-16XR 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.



AC and DC Redundant Power to Ensure Continuous Operation

The SGS-6340-16XR is equipped with one 100~240V AC power supply unit and one additional -48 ~ -60V DC power supply unit for redundant power supply installation. A redundant power system is also provided to enhance the reliability with either AC or DC power supply unit. The redundant power system is specifically designed to handle the demands of high-tech facilities requiring the highest power integrity. Furthermore, with the -48 ~ -60V DC power supply implemented, the SGS-6340-16XR can act as a telecom level device.



Physical Ports

- 16 10GBASE-SR/LR SFP+ slots, compatible with 1000BASE-SX/LX/BX SFP
- 1 USB2.0 interface for configuration and firmware storage
- RJ45 to DB9 console interface for switch basic management and setup

IP Stacking

- Connects with stack member via both SFP+ interfaces
- Single IP address management, supporting up to 24 units stacked together

IP Routing Features

- Supports maximum 64 static routes and route summarization
- Supports dynamic routing protocol: RIP and OSPF

Layer 2 Features

- Supports auto-negotiation and half-duplex/full-duplex modes for 10BASE-T, 100BASE-TX and 1000BASE-T MGMT 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
- 16K MAC address table, automatic source address learning and aging
- Supports VLAN
 - IEEE 802.1Q tag-based VLAN
 - GVRP for dynamic VLAN management
 - Up to 256 VLANs groups, out of 4041 VLAN IDs
 - 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
 - IP subnet VLAN
- Supports Link Aggregation
 - Maximum 128 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
 - IEEE 802.1D Classic Spanning Tree Protocol (STP)
 - IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
 - IEEE 802.1s Multiple Spanning Tree Protocol (MSTP), spanning tree by VLAN
 - BPDU & root guard

Layer 3 Routing Support

The Switch 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 maximum number of hops allowed for the RIP is 15. 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 Layer 3 switches, and then uses the Shortest Path First algorithm to generate a route table based on that database.

High Performance

With a high-performance architecture, the SGS-6340-16XR is capable of providing non-blocking switch fabric and wire-speed throughput as high as 320Gbps, which greatly simplifies the tasks of upgrading the LAN for catering to increasing bandwidth demands.



Abundant IPv6 Support

The SGS-6340-16XR provides IPv6 management and enterprise-level secure features such as SSH, ACL, WRR (Weighted Round Robin) and RADIUS authentication. The SGS-6340-16XR 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 SGS-6340-16XR is loaded with powerful traffic management and WRR features to enhance services offered by enterprises and campuses. 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.

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 SGS-6340-16XR 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 SGS-6340-16XR empowers enterprises and campuses to take full advantage of

- 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 cooperate 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

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/SSL 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 and trace route functions for IPv4 and IPv6

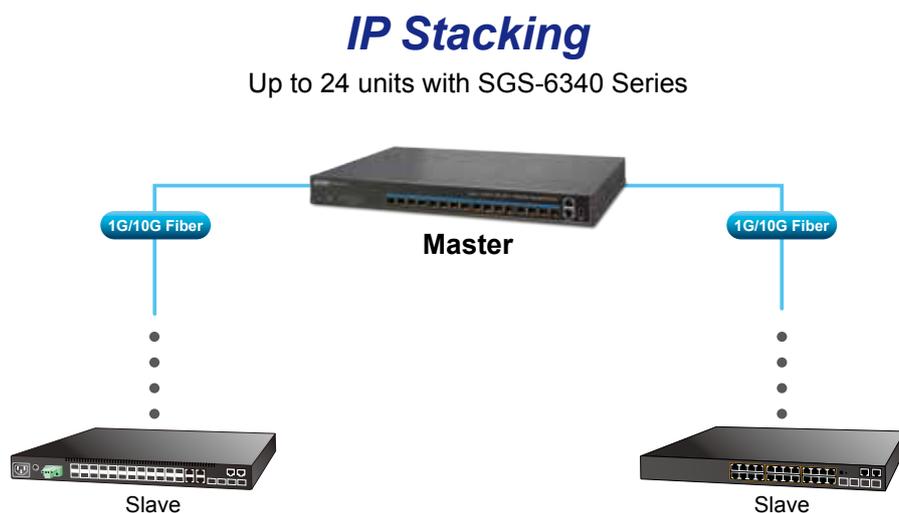
the limited network resources and guarantees the best performance in VoIP and video conferencing transmission.

Robust Layer 2 Features

The Switch 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. The VLAN groups allowed to be on the SGS-6340-16XR will be maximally up to 256. By supporting port aggregation, the SGS-6340-16XR allows the operation of a high-speed trunk combined with multiple ports. It enables up to 128 groups for trunking with a maximum of 8 ports for each group.

IP Stacking Management

The SGS-6340-16XR supports IP stacking function that helps network managers to easily configure up to 24 switches in the same series via one single IP address instead of connecting and setting each unit one by one. The IP Stacking technology groups SGS-6340 switch series together to enable centralized management through a single unit, regardless of physical location or switch type, as long as they are connected to the same local network.



Efficient and Secure Management

For efficient management, the SGS-6340-16XR Managed 10Gigabit Switch is equipped with console, Web and SNMP management interfaces. With its built-in Web-based management interface, the SGS-6340-16XR offers an easy-to-use, platform-independent management and configuration facility. The SGS-6340-16XR supports standard Simple Network Management Protocol (SNMP) and can be managed via any standard-based management software.

For reducing product learning time, the SGS-6340-16XR offers Cisco-like command via Telnet or console port. Moreover, the SGS-6340-16XR offers secure remote management by supporting SSH connection which encrypts the packet content at each session.

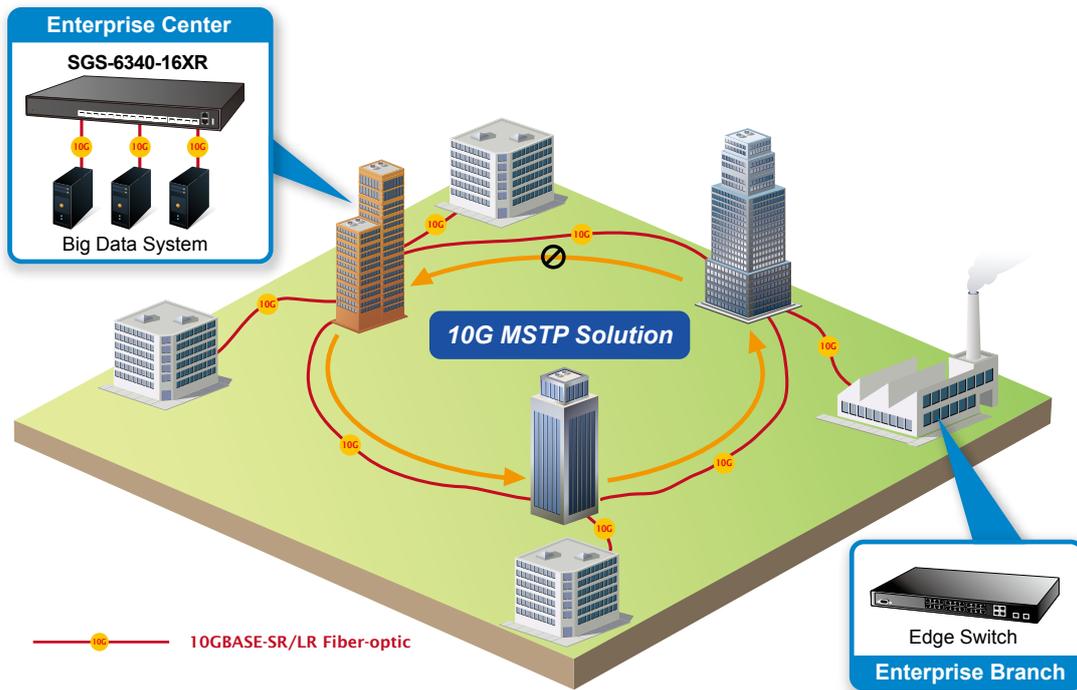
Flexibility and Extension Solution

The SGS-6340-16XR provides 16 1G/10Gbps dual speed 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/SFP+ transceiver according to not only the transmission distance, but also the transmission speed required. The distance can be extended from 550 meters to 10km (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.

Applications

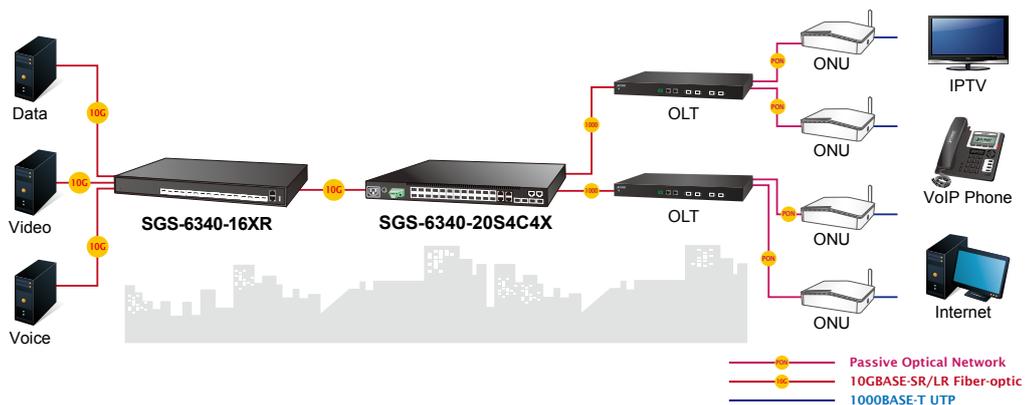
High Availability Mesh Networking Solution for Big Data System

By means of improving the technology of Optical Fiber Ethernet with highly-flexible, highly-extendable and easy-to-install features, the SGS-6340-16XR offers up to 320Gbps data exchange speed via Optical Fiber interface and the transmission distance can be extended to 10km. The SGS-6340-16XR features a 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 SGS-6340-16XR 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

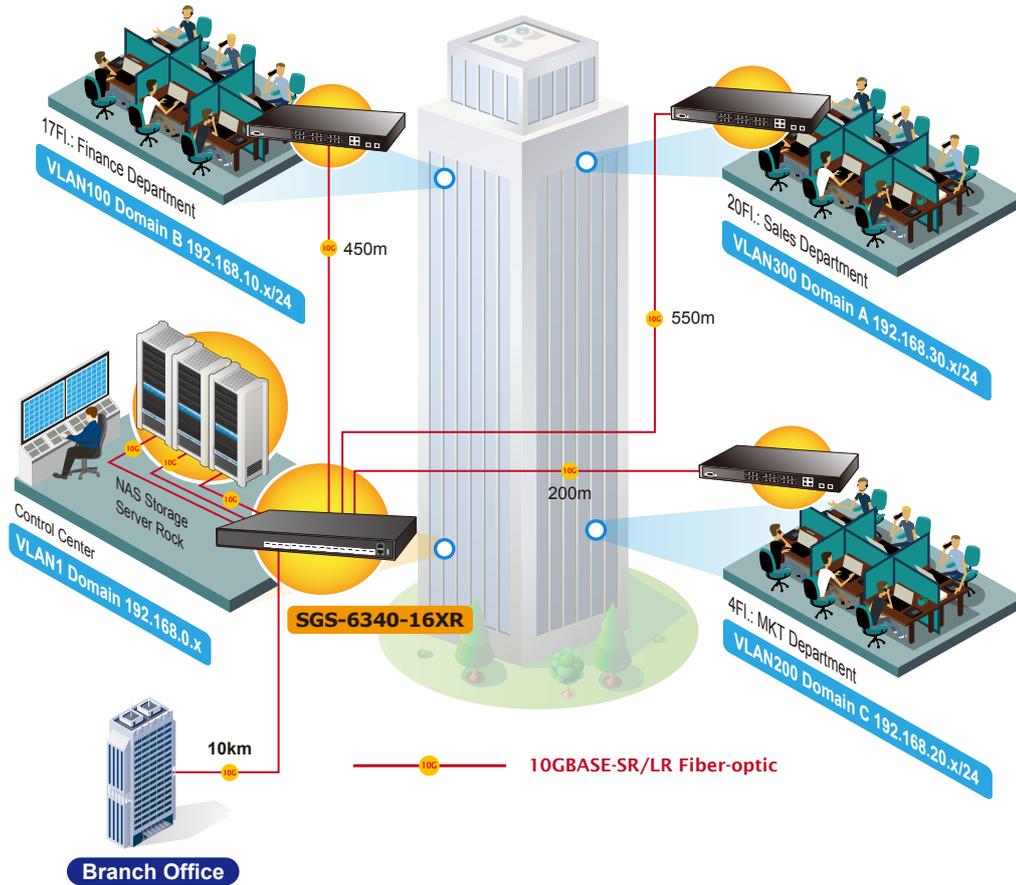
In telecommunications, triple play service is a marketing term for the provisioning of more bandwidth-intensive services, such as broadband Internet access, television and the latency-sensitive telephone, over a single broadband connection. The SGS-6340-16XR provides up to 320Gbps bandwidth to exchange 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 SGS-6340-16XR ensures reliable routing between VLANs and network segments. The routing protocols can be applied by VLAN interface with up to 64 routing entries. The SGS-6340-16XR, certainly an ideal solution for enterprises, offers greater security, control and bandwidth conservation, and high-speed uplink.

VLAN Routing + 10G Uplink Applications



Specifications

Product	SGS-6340-16XR
Hardware Specifications	
SFP+ Slots	16 10GBASE-SR/LR SFP+ interface Compatible with 1000BASE-SX/LX/BX SFP transceiver
Console	1 x RJ45-to-RS232 serial port (9600, 8, N, 1)
Switch Architecture	Store-and-forward
Switch Fabric	320Gbps/non-blocking
Switch Throughput	238Mpps
Address Table	16K MAC address table with auto learning function
Shared Data Buffer	2MB
Flow Control	Back pressure for half-duplex IEEE 802.3x pause frame for full-duplex
Jumbo Frame	9KB
LED	System: PWR, SYS, FAN Ports: MGMT: LNK, ACT 1/10G SFP+ Slot: LNK/ACT
Dimensions (W x D x H)	440 x 240 x 44 mm, 1U height
Weight	3.1kg
Power Consumption	27 watts/93 BTU (maximum)
Power Requirements	AC 100~240V, 50/60Hz DC -48 ~ -60V
Fan	1
Management Function	
System Configuration	Console, Telnet, SSH, Web browser, SNMP v1, v2c and v3
Management	Supports both IPv4 and IPv6 Protocols Supports the user IP security inspection for IPv4/IPv6 SNMP Supports MIB and TRAP Supports IPv4/IPv6 FTP/TFTP Supports IPv4/IPv6 NTP Supports RMON 1, 2, 3, 9 four 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: Avoiding 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	64
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 tagged based VLAN, up to 256 VLAN groups 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 128 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 512 entries
Bandwidth Control	At least 64Kbps stream
Security	Supports MAC + port binding IPv4/IPv6 + MAC + port binding IPv4/IPv6 + port binding Supports MAC filter ARP scanning prevention
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 802.3z Gigabit 1000BASE-SX/LX 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 RFC 3810 MLD v2 RFC 2328 OSPF v2 RFC 1058 RIP v1 RFC 2453 RIP v2
Environment	
Operating	Temperature: 0 ~ 50 degrees C Relative Humidity: 5 ~ 90% (non-condensing)
Storage	Temperature: -10 ~ 70 degrees C Relative Humidity: 5 ~ 90% (non-condensing)

Ordering Information

SGS-6340-16XR	Layer 3 16-Port 10GBASE-SR/LR SFP+ Stackable Managed Switch (100~240V AC, -48~-60V DC)
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Related Products

SGS-6340-24T4S	Layer 3 24-Port 10/100/1000T + 4-Port 1000X SFP Stackable Managed Switch
SGS-6340-20S4C4X	Layer 3 20-Port 100/1000X SFP + 4-Port Gigabit TP/SFP + 4-Port 10G 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)

Available Modules for SGS-6340-16XR

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

10Gigabit Ethernet Transceiver (10GBASE-BX, Single Fiber Bi-directional SFP+)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MTB-LA20 MTB-LB20	10G	WDM(LC)	Single Mode	20km	1270nm	1330nm	0 ~ 60 degrees C
					1330nm	1270nm	
MTB-LA40 MTB-LB40	10G	WDM(LC)	Single Mode	40km	1270nm	1330nm	0 ~ 60 degrees C
					1330nm	1270nm	
MTB-LA60 MTB-LB60	10G	WDM(LC)	Single Mode	60km	1270nm	1330nm	0 ~ 60 degrees C
					1330nm	1270nm	

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	0 ~ 60 degrees C
					1550nm	1310nm	
MGB-LA20 MGB-LB20	1000	WDM(LC)	Single Mode	20km	1310nm	1550nm	0 ~ 60 degrees C
					1550nm	1310nm	
MGB-LA40 MGB-LB40	1000	WDM(LC)	Single Mode	40km	1310nm	1550nm	0 ~ 60 degrees C
					1550nm	1310nm	
MGB-LA60 MGB-LB60	1000	WDM(LC)	Single Mode	60km	1310nm	1550nm	0 ~ 60 degrees C
					1550nm	1310nm	
MGB-TLA10 MGB-TLB10	1000	WDM(LC)	Single Mode	10km	1310nm	1550nm	-40 ~ 75 degrees C
					1550nm	1310nm	
MGB-TLA20 MGB-TLB20	1000	WDM(LC)	Single Mode	20km	1310nm	1550nm	-40 ~ 75 degrees C
					1550nm	1310nm	
MGB-TLA40 MGB-TLB40	1000	WDM(LC)	Single Mode	40km	1310nm	1550nm	-40 ~ 75 degrees C
					1550nm	1310nm	
MGB-TLA60 MGB-TLB60	1000	WDM(LC)	Single Mode	60km	1310nm	1550nm	-40 ~ 75 degrees C
					1550nm	1310nm	