24-Port 100/1000X SFP with 4 Optional 10G slots Layer 3 Managed Stackable Switch

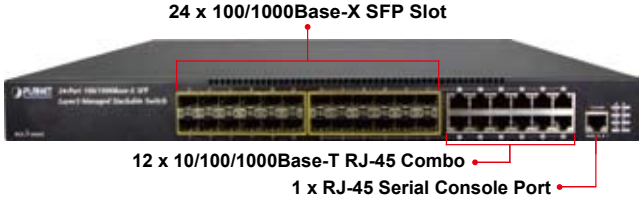
IPv6 Routing and 10G Ethernet Switch Solutions for the Next Generation Internet Protocol

IPv6 (Internet Protocol version 6) is well known as the next generation Internet Protocol to solve the lack of available IPv4 addresses. IPv6 can provide larger address space than IPv4 for the rapid growing networks. To provide smooth migration path from IPv4 to IPv6 for the future network upgrades, PLANET releases the **multi-layer IPv6 / IPv4 Gigabit Ethernet Routing Switch, XGS3-24242**, to satisfy the bandwidth requirements and protect network investment for enterprises. The XGS3-24242 is implemented with the following advanced technologies:

- IPv6 / IPv4 Routing and Management
- 10G Ethernet Switching
- Single IP Address Management
- Redundant Power System

Multi port Fiber Optical connective capability extend the coverage of Multi-Layer Routing Services

The XGS3-24242 Multi-Layer Switch is an essential Layer 3 functionality multimedia Switch which brings high-end security and traffic control to the edge of the network. The XGS3-24242 offers multi port fiber optical connective capability and helps to extend the coverage of Multi-Layer routing Services. With IP routing and multicast routing capabilities and flexible SFP interfaces, the XGS3-24242 is the ideal choice for the core layer of Telecoms, campuses, and enterprises that need long reach and stability of IP metro access networks.



Supports 10Gb Ethernet

10Gb Ethernet which adopts full-duplex technology instead of low-speed, half-duplex CSMA/CD protocol, is a big leap in the evolution of Ethernet. 10Gb Ethernet can be deployed in star or ring topologies. With 10Gb Ethernet technology applied, the XGS3-24242 provides broad bandwidth and powerful processing capacity. It is suitable for metropolitan networks and wide area networks. Using the XGS3-24242, users can simplify network structures and reduce cost of network construction.

Two optional 2-Port 10Gbps SFP+ uplink module for XGS3-24242

XGS3-2SFP+

Networking Protocols

The XGS3-24242 supports various networking protocols to meet the requirements of complex network constructions. It is compatible with 802.1d/w/s, 802.1Q, 802.1p, 802.3ad, 802.3x, GVRP, DHCP, SNTP and etc. The Switch also supports multicast protocols including IGMP, DVMRP and PIM. Moreover, the XGS3-24242 complies RIPv1/2, OSPF and IPv6.

Reliable Power Supply

The XGS3-24242 provides AC/DC power redundancy. It can be deployed with 100~240V AC power input, -48V DC power input or 100~240V AC power/-48V DC power input simultaneously.

ACL

The XGS3-24242 supports ACL policies comprehensively. The traffic can be classified 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 XGS3-24242 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.

QoS

The XGS3-24242 switch fully supports DiffServ Module. Users can specify a queue bandwidth on each port. WRR/SP/SWRR scheduling is also provided. The XGS3-24242 supports the port security to enable users to deploy trusted CoS, DSCP, IP precedence and port priority. Users can modify packets' DSCP and COS values so the traffic can be classified by port, VLAN, DSCP, IP precedence and ACL table. User can also modify packets' DSCP and IP precedence values to specify different bandwidths for voice / data / video to customize different qualities of service.

Perfect Web Management

The XGS3-24242 supports SNMP, In-band and Out-of-band Management, CLI and WEB interface, and RMON. It can mail the correlative sensitive information to the administrator abide by SMTP protocol. The XGS3-24242 supports SSH protocol to ensure the configuration management security of the switch.

Key Features

PHYSICAL PORT

- 24 100/1000Base-X mini-GBIC/SFP slots
- 12-Port 10/100/1000Base-T RJ-45 copper, shared with Port-13 to Port-24
- 2 10G module slots, supports up to 4 10G SFP+ transceivers
- 1 RJ-45 serial console interface for Switch basic management and setup

IP STACKING

- Connects with stack member via both Gigabit TP/SFP interface or 10G Stack slots
- Single IP address management, supports up to 24 units stacking together

IP ROUTING FEATURES

- IP Routing protocol supports RIPv1/v2, OSPFv2/v3, BGP4/4+
- Routing interface provides Per-Port routing and VLAN routing mode
- VRRPv1/v3 protocol for redundant routing deploy
- Supports route redistribution

MULTICAST ROUTING FEATURES

- Supports PIM-DM and PIM-SM (Protocol Independent Multicast - Dense Mode) and PIM-SM (Protocol Independent Multicast - Sparse Mode)
- Supports DVMRP (Distance Vector Multicast Routing Protocol)
- Supports IGMP v1/v2/v3 and MLD v1/v2

LAYER 2 FEATURES

- Complies with the IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z Gigabit Ethernet standards
- Supports Auto-negotiation and half duplex / full duplex modes for all 10Base-T / 100Base-TX and 1000Base-T ports
- Auto-MDI/MDI-X detection for each RJ-45 port
- 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, broadcast storm control and runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- 16K MAC address table, automatic source address learning and ageing
- Supports VLAN
  - IEEE 802.1Q Tagged VLAN
  - Up to 4K VLANs groups, out of 4096 VLAN IDs
  - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
  - GVRP protocol for VLAN Management
  - Private VLAN Edge (PVE)
  - Voice VLAN
  - MAC-based VLAN
  - Protocol-based VLAN
- Supports 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, spanning tree by VLAN)
- Supports Link Aggregation
  - 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (Static Trunk)
  - Maximum 16 trunk groups, up to 8 ports per trunk group
  - Up to 16Gbps bandwidth (Duplex Mode)
- Provides Port Mirror (many-to-1)
- Port Mirroring to monitor the incoming or outgoing traffic on a particular port

QUALITY OF SERVICE

- 8 priority queues on all switch ports
- Supports for strict priority and Weighted Round Robin (WRR) CoS policies
- Ingress Shaper and Egress Rate Limit per port bandwidth control
- Traffic-policing policies based on application

MULTICAST

- Supports IGMP Snooping v1, v2 and v3
- Support MLD Snooping v1 and v2
- Querier mode support
- MVR (Multicast VLAN Registration)

SECURITY

- IEEE 802.1x Port-Based network access authentication
- MAC-Based network access authentication
- IP-Based Access Control List (ACL)
- MAC-Based Access Control List
- Static MAC
- IEEE 802.1x Port-Based network access authentication
- MAC-Based network access authentication
- IP-Based Access Control List (ACL)
- MAC-Based Access Control List
- Static MAC
- MAC address binding & filter
- ARP inspection to defense ARP-DOS attack and address clone
- Support URPF to avoid IP address clone

MANAGEMENT

- Switch Management Interfaces
  - Console / Telnet Command Line Interface
  - Web-Based switch management
  - SNMP v1, v2c, and v3 security set and get requests
  - SSH (Secure Shell) / SSL secure access
- Four groups (history, statistics, alarms, and events) of embedded remote monitoring (RMON) agents for network monitoring and traffic analysis
- Built-in Trivial File Transfer Protocol (TFTP) client
- IPv6 IP Address / NTP / DNS management
- DHCP Relay
- User Privilege levels control
- NTP (Network Time Protocol)
- Link Layer Discovery Protocol (LLDP) Protocol
- BOOTP and DHCP for IP address assignment
- Firmware upload via HTTP / TFTP

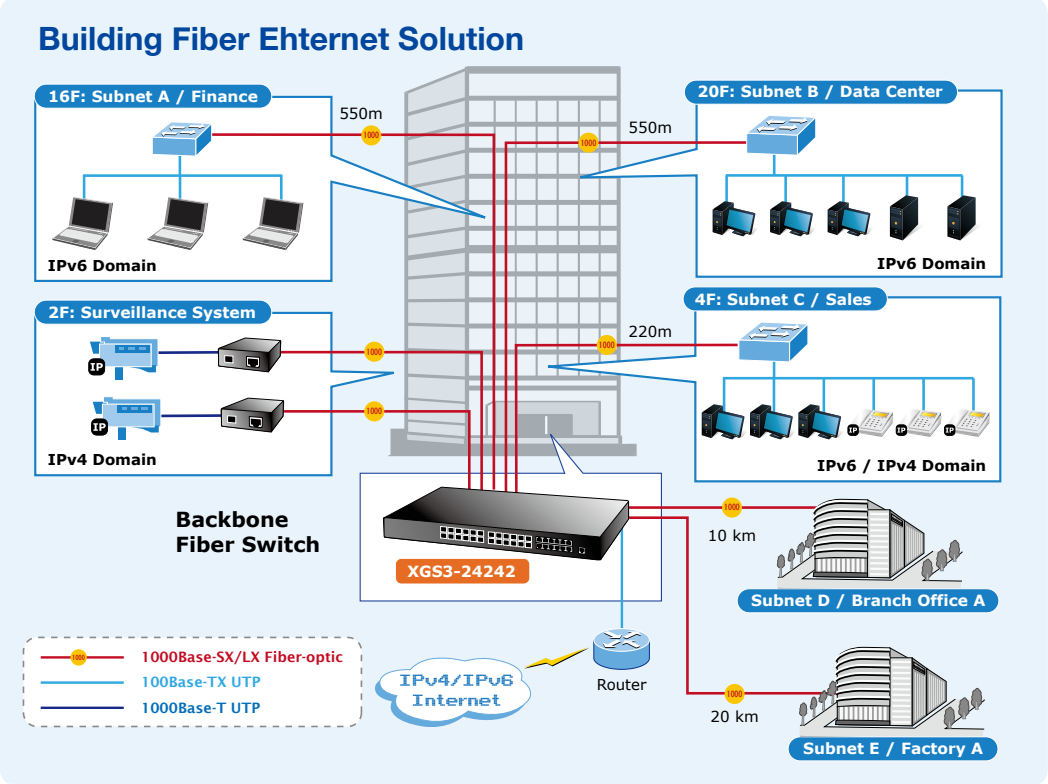
REDUNDANT POWER SYSTEM

- 100~240V AC / 12V DC Dual power redundant
- Active-active redundant power failure protection
- Backup of catastrophic power failure on one supply

APPLICATIONS

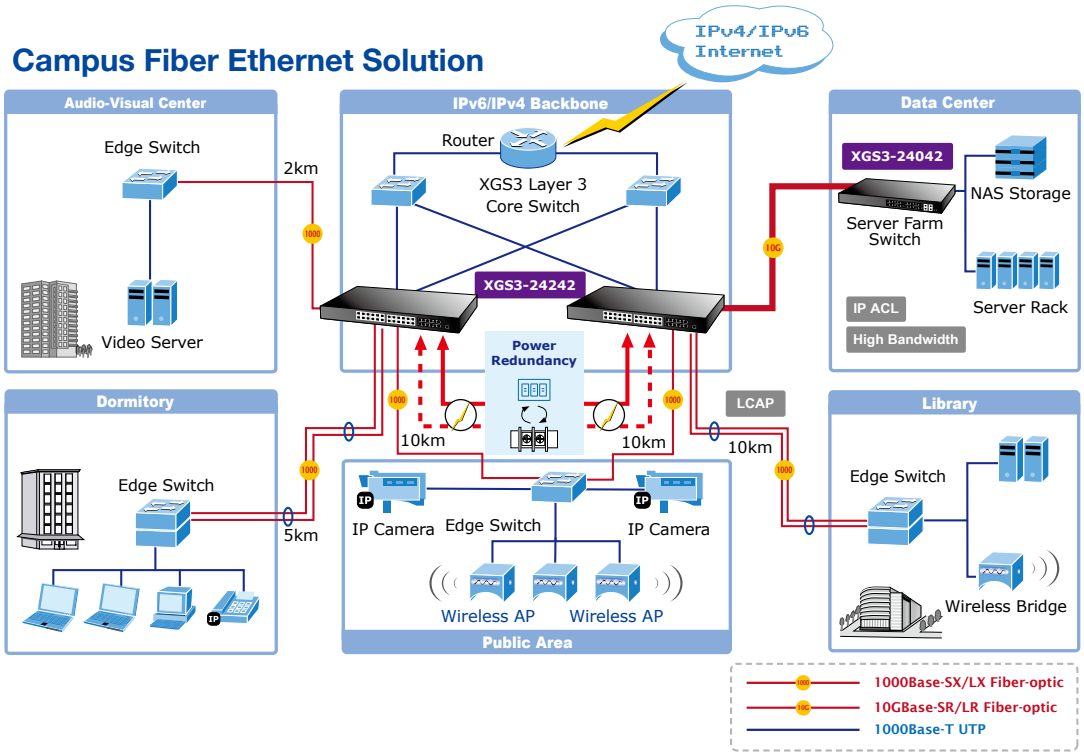
Core Routing Switch

With 24 SFP fiber interfaces with 12 shared Gigabit ports and Layer 3 IP / Multicast Routing capability, the XGS3-24242 provides a cost-effective and high-performance solution for Telecom, Network Service Providers and enterprises.



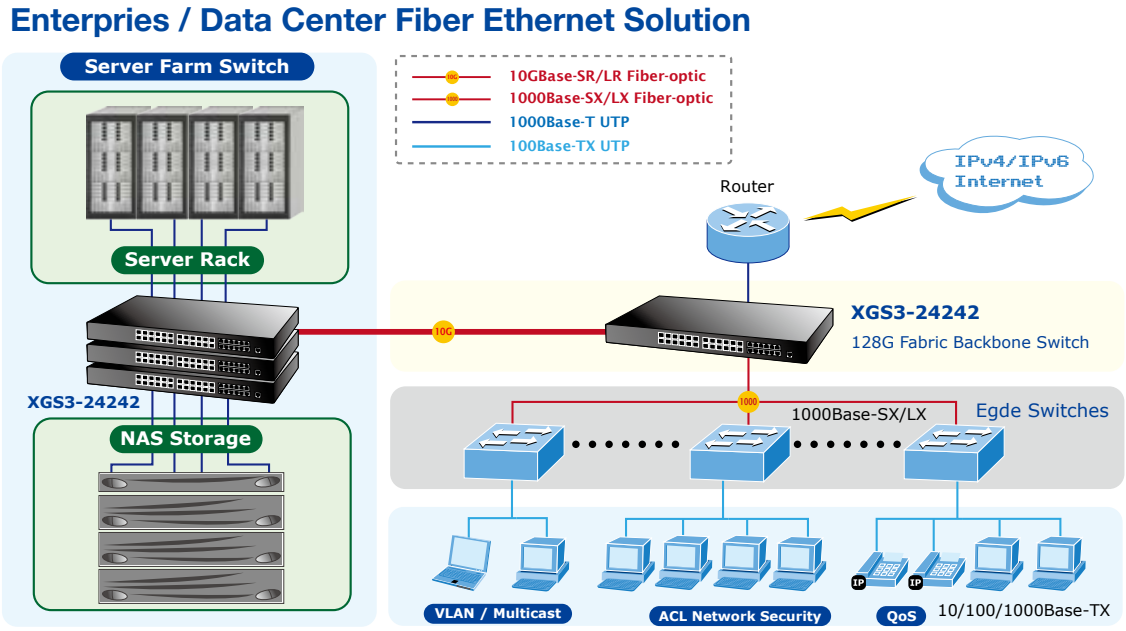
Campus / ISP / Telecom High density and VRRP Backbone Routing Switch

With the built-in robust IPv4 / IPv6 Layer 3 IP and Multicast routing protocols, the XGS3-24242 ensures reliable routing between VLANs and network segments. The routing protocols can be applied by VLAN interface with up to 1K routing entries. The high-density routing interfaces provide expandability to meet the growing network's needs. Moreover, with the hot VLAN feature – Q-in-Q (VLAN stacking) supported, it allows the service providers to offer certain services such as Internet access on specific VLANs for specific customers and yet still provides other types of services for their other customers on other VLANs.



Data Center Security and QoS Switch

The XGS3-24242 performs 128 Gigabits per second, non-blocking switch fabric so it can easily provide a local, high bandwidth, and Gigabit Ethernet network for backbone of your department. With the 24 built-in SFP ports, the XGS3-24242 provides the uplink to the backbone network through Gigabit Ethernet LX/SX SFP modules. It further improves the network efficiency and protects the network clients by offering the security and QoS features.



SPECIFICATION

Product	24-Port 100/1000X SFP with 4 Optional 10G slots Layer 3 Managed Stackable Switch
Model	XGS3-24242
Hardware Specification	
SFP/mini-GBIC Slots	24 SFP slots, 100/1000Base-X SFP transceiver
Copper Ports	12 10/100/1000Base-T RJ-45 Auto-MDI/MDI-X ports compatible Shared with Port-13 to Port-24
Expansion Slots	2 slots for PLANET XGS3-2SFP+, 2-Port 10G SFP+ optic module Supports module Hot-swappable
Switch Processing Scheme	Store-and-Forward
Switch Fabric	128Gbps
Throughput	95Mpps@64Bytes
Address Table	16K entries
Share Data Buffer	1.5Mbytes
VLAN Table	4K
ACL Table	1K
Routing Table	13K
Layer 3 Interface	1K
Port Queues	8
Flow Control	IEEE 802.3x Pause Frame for Full-Duplex Back pressure for Half-Duplex
Jumbo Frame	9Kbytes
LED	System: Power, SYS diagnostic, Redundant Power, Module, Stack Ports: 10/100/1000 Link/Act
Dimension (W x D x H)	415 x 325 x 44.5 mm, 1U height
Weight	4.3kg
Power Requirement	AC: 100 ~ 240VAC, 50 / 60Hz, Auto-sensing DC: -48V DC
Power Consumption	79 Watts max.
IPv4 Layer 3 Functions	
IP Routing Protocol	Static Route, RIPv1/v2, OSPFv2, BGPv4 Policy-Based Routing (PBR) LPM Routing (MD5 authentication)
Multicast Routing Protocol	IGMP v1 / v2 / v3, DVMRP, PIM-DM/SM, PIM-SSM
Layer 3 Protocol	VRRP v1/v3, ARP, ARP Proxy
Routing Interface	Per VLAN
IPv6 Layer 3 Functions	
IP Routing Protocol	RIPng, OSPFv3, BGPv4+
Multicast Routing Protocol	PIM-SM/DM for IPv6 MLD for IPv6 (v1) MLDv1/v2 MLD Snooping, 6 to 4 Tunnels Multicast receive control Illegal multicast source detect
Layer 3 Protocol	Configured Tunnels, ISATAP, CIDR
Layer 2 Functions	
Port Configuration	Port disable/enable Auto-negotiation 10/100/1000Mbps full and half duplex mode selection Bandwidth control on each port Port Loopback detect
VLAN	802.1Q Tagged Based VLAN, up to 4K VLAN groups Q-in-Q GVRP Private VLAN Voice VLAN MAC-based VLAN Protocol-based VLAN
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, spanning tree by VLAN) Root Guard BPDU Guard

Link Aggregation	Static Trunk IEEE 802.3ad LACP Supports 16 groups of 8-Port trunk
QoS	Traffic classification based, Strict priority and WRR 8-level priority for switching - Port Number - 802.1p priority - DSCP/TOS field in IP Packet Policy-based DiffServ
Multicast	IGMP v1/ v2 / v3 Snooping IGMP Proxy IGMP Querier mode support MLD v1/ v2, MLD v1/v2 Snooping
Access Control List	Support Standard and Expanded ACL IP-Based ACL / MAC-Based ACL Time-Based ACL ACL Pool can be used for QoS classification Up to 4K entries
Security	Support MAC+ port binding IPv4 / IPv6 + MAC+ port binding IPv4 / IPv6 + port binding Support MAC filter ARP Spoofing Prevention ARP Scanning Prevention IP Source Guard
Authentication	IEEE 802.1x Port-Based network access control AAA Authentication: IPv4 / IPv6 over RADIUS
SNMP MIBs	RFC-1213 MIB-II IF-MIB RFC-1493 Bridge MIB RFC-1643 Ethernet MIB RFC-2863 Interface MIB RFC-2665 Ether-Like MIB RFC-2674 Extended Bridge MIB RFC-2819 RMON MIB (Group 1, 2, 3 and 9) RFC-2737 Entity MIB RFC-2618 RADIUS Client MIB RFC-2933 IGMP-STD-MIB RFC-3411 SNMP-Frameworks-MIB IEEE 802.1X PAE LLDP MAU-MIB
Management Functions	
System Configuration	Console, Telnet, SSH, Web Browser, SSL, SNMPv1, v2c and v3
Management	Supports the unite for IPv4 / IPv6 HTTP and SSL Supports the user IP security inspection for IPv4 / IPv6 SNMP Supports MIB and TRAP Supports IPv4 / IPv6 FTP/TFTP Supports IPv4 / IPv6 NTP Supports RMOM 1, 2, 3, 9 four group 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 the function for timing-reset bases needs Supports CLI, Console (RS-232), Telnet Supports SNMPv1 / v2c / v3 Supports Security IP safety net management function: avoid unlawful landing at nonrestrictive area Supports TACACS+

Standards Conformance		
Regulation Compliance	FCC Part 15 Class A, CE	
Standards Compliance	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX IEEE 802.3z Gigabit SX/LX IEEE 802.3ab Gigabit 1000Base-T IEEE 802.3ae 10 Gigabit 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	
Environment		
Operating	Temperature:	0 ~ 50 Degree C
	Relative Humidity:	5 ~ 90% (non-condensing)
Storage	Temperature:	-10 ~ 70 Degree C
	Relative Humidity:	5 ~ 90% (non-condensing)

Ordering Information

XGS3-24242	24-Port 100/1000X SFP with 4 Optional 10G slots Layer 3 Managed Stackable Switch

Relative Product

XGS3-2SFP+	2-Port 10G SFP+ Optic Module for XGS3-24242
CB-DASFP-0.5M	10G SFP+ Direct Attached Copper Cable - 0.5M

Available 10G Modules for XGS3-24242

MTB-LR	SFP+ Port 10GBase-LR mini-GBIC module (Single mode / 1310nm / max. 10km)
MTB-SR	SFP+ Port 10GBase-SR mini-GBIC Module (Multi-mode / 850nm / max. 300m)

Available 1000Base-X Modules for XGS3-24242

MGB-GT	SFP-Port 1000Base-T Module
MGB-SX	SFP-Port 1000Base-SX mini-GBIC module
MGB-LX	SFP-Port 1000Base-LX mini-GBIC module
MGB-L30	SFP-Port 1000Base-LX mini-GBIC module-30km
MGB-L50	SFP-Port 1000Base-LX mini-GBIC module-50km
MGB-L70	SFP-Port 1000Base-LX mini-GBIC module-70km
MGB-L120	SFP-Port 1000Base-LX mini-GBIC module-120km
MGB-LA10	SFP-Port 1000Base-LX (WDM,TX:1310nm) mini-GBIC module-10km
MGB-LB10	SFP-Port 1000Base-LX (WDM,TX:1550nm) mini-GBIC module-10km
MGB-LA20	SFP-Port 1000Base-LX (WDM,TX:1310nm) mini-GBIC module-20km
MGB-LB20	SFP-Port 1000Base-LX (WDM,TX:1550nm) mini-GBIC module-20km
MGB-LA40	SFP-Port 1000Base-LX (WDM,TX:1310nm) mini-GBIC module-40km
MGB-LB40	SFP-Port 1000Base-LX (WDM,TX:1550nm) mini-GBIC module-40km

Available 100Base-FX Modules for XGS3-24242

MFB-FX	SFP-Port 100Base-FX Transceiver (1310nm)-2km
MFB-F20	SFP-Port 100Base-FX Transceiver (1310nm)-20km
MFB-F40	SFP-Port 100Base-FX Transceiver (1310nm)-40km
MFB-F60	SFP-Port 100Base-FX Transceiver (1310nm)-60km
MFB-FA20	SFP-Port 100Base-BX Transceiver (WDM,TX:1310nm)-20km
MFB-FB20	SFP-Port 100Base-BX Transceiver (WDM,TX:1550nm)-20km