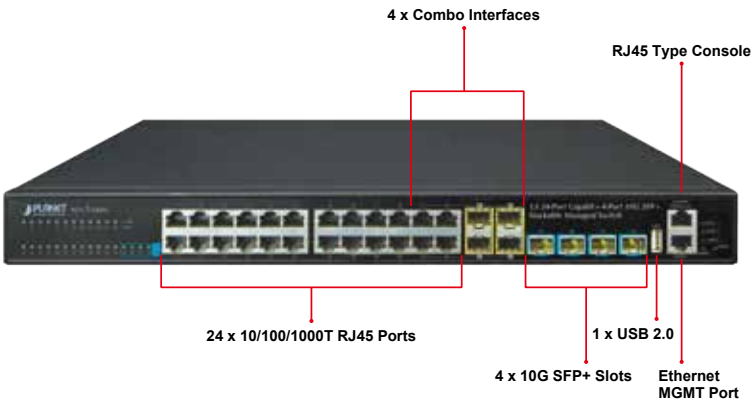
Layer 3 24-Port 10/100/1000T + 4-Port 10G SFP+ Stackable Managed Switch

Powerful Layer 3 Gigabit Routing for Enterprise-level Solution

PLANET XGS3-24042 Layer 3 Stackable Managed Gigabit Switch supports multi-layer IPv6/IPv4 Gigabit Ethernet Routing, and provides **24 10/100/1000Mbps Gigabit Ethernet ports**, **4 shared Gigabit SFP slots** and **4 extra 10G SFP+ uplink slots** to meet the bandwidth requirements and protect network investment for enterprises. The XGS3-24042 is implemented with the following advanced technologies:

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

The XGS3-24042 can handle extremely large amounts of data in a secure topology linking to an enterprise backbone or high capacity servers. The powerful WRR (Weighted Round Robin) and Network Security features make the XGS3-24042 perform effective data traffic control for ISP and enterprise VoIP, video streaming, and multicast applications.



Physical Port

- 24-port 10/100/1000BASE-T RJ45 copper
- 4 100/1000BASE-X mini-GBIC/SFP slots, shared with Port-21 to Port-24
- 4 10GBASE-SR/LR SFP+ slots, compatible with 1000BASE-SX/LX/BX SFP
- RJ45 to DB9 console interface for switch basic management and setup
- 1 RJ45 Ethernet management port for switch basic management and setup
- 1 USB 2.0 for backup/upload configuration and firmware upgrade

IP Stacking

- Connects with stack member via both Gigabit TP and SFP interfacesSingle IP address management, supporting up to 24 units stacked together

IP Routing Features

- IP routing protocol supports **RIPv1/v2**, **RIPng**, **OSPFv2/v3**, **BGP4/4+**
- Routing interface provides per VLAN routing mode
- **VRRPv1/v3** protocol for redundant routing deployment
- Supports route redistribution

Multicast Routing Features

- Supports PIM-DM (Protocol Independent Multicast – Dense Mode) and PIM-SM (Protocol Independent Multicast – Sparse Mode) and PIM-SSM (Protocol Independent Multicast – Source Specific Multicast)
- 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 and IEEE 802.3ae 10Gb/s Ethernet standard

Rich Multi-Layer and Multicast Networking Protocols

The XGS3 series supports IPv6/IPv4 routing protocols including Layer 3 IP Static Routing, **RIPv**1/v2 (Routing Information Protocol), **OSPF**(Open Shortest Path First), and **VRRP**(Virtual Router Redundancy Protocol) protocols. Built in with abundant multicast features, the XGS3 series supports L3 multicast protocols -- **DVMRP**, **PIM-DM**, **PIM-SM** and **PIM-SSM**. Offering the rich application experience, the product supports multicast VLAN registration, multicast receive control and illegal multicast source detect functions. The XGS3 series solution is cost-effective yet has the ability to expand to meet today's demand for network expansion.

High Performance 10Gbps Ethernet Capacity

The XGS3-24042's built-in four SFP+ slots boast a high-performance switch architecture that is capable of providing non-blocking switch fabric and wire-speed throughput as high as 128Gbps, which greatly simplifies the tasks of upgrading the LAN for catering to increasing bandwidth demands. Each of the SFP+ slots supports Dual-**Speed, 10GBASE-SR/LR or 1000BASE-SX/LX**, meaning the administrator now can flexibly choose the suitable SFP/SFP+ transceiver according to the transmission distance or the transmission speed required to extend the network efficiently.

Dual AC Redundant Power to Ensure Continuous Operation

The XGS3-24042 is equipped with two 100~240V AC power supply units for redundant power supply installation. A redundant power system is also provided to enhance the reliability with dual AC power supply units. The redundant power system is specifically designed to handle the demands of high-tech facilities requiring the highest power integrity.

IP Stacking Management

The XGS3-24042 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. PLANET XGS3 series adopting the IP Stacking technology enables centralized management through a single unit, regardless of the physical location or switch type, as long as they are connected to the same local network.

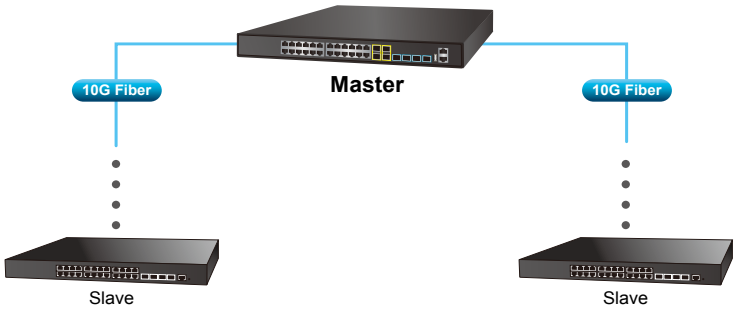
- Supports auto-negotiation and half-duplex/full-duplex modes for all 10BASE-T, 100BASE-TX and 1000BASE-T ports
- Auto-MDI/MDI-X detection on each RJ45 port
- Prevents packet loss flow control
  - IEEE 802.3x pause frame flow control in full-duplex mode
  - Back-pressure flow control in half-duplex mode
- 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 12 trunk groups, up to 8 ports per trunk group
  - IEEE 802.3ad LACP (Link Aggregation Control Protocol)
  - Cisco ether-channel (static trunk)
- Supports Spanning Tree Protocol
  - STP, IEEE 802.1D (Classic Spanning Tree Protocol)
  - RSTP, IEEE 802.1w (Rapid Spanning Tree Protocol)
  - MSTP, IEEE 802.1s (Multiple Spanning Tree Protocol, spanning tree by VLAN)
  - Supports BPDU & root guard
- 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

IP Stacking

Up to 24 units with XGS3-24042



Full IPv6 Support

The XGS3-24042 provides IPv6 management and enterprise-level secure features such as SSH, ACL, WRR and RADIUS authentication. It 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.

Robust Layer 2 Features

The XGS3-24042 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 XGS3-24042 will be maximally up to 256. By supporting port aggregation, the XGS3-24042 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.

Excellent Layer 2 to Layer 4 Traffic Control

The XGS3-24042 is loaded with powerful traffic management and WRR features to enhance services offered by telecoms. 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. It also empowers the enterprises to take full advantage of the limited network resources and guarantees the best in VoIP and video conferencing transmission.

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
- Supports DDM
- Four RMON groups 1, 2, 3, 9 (history, statistics, alarms and events)
- Supports sFlow
- Supports ULDP
- Supports ULPP (Uplink Protection Protocol)
- Supports ULSM (Uplink State Monitor protocol)
- Supports LLDP/LLDP MED
- Supports DHCP Option82, Option37/38
- Supports ping, trace route function for IPv4 and IPv6

Powerful Security

The XGS3-24042 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 XGS3-24042 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.

Efficient and Secure Management

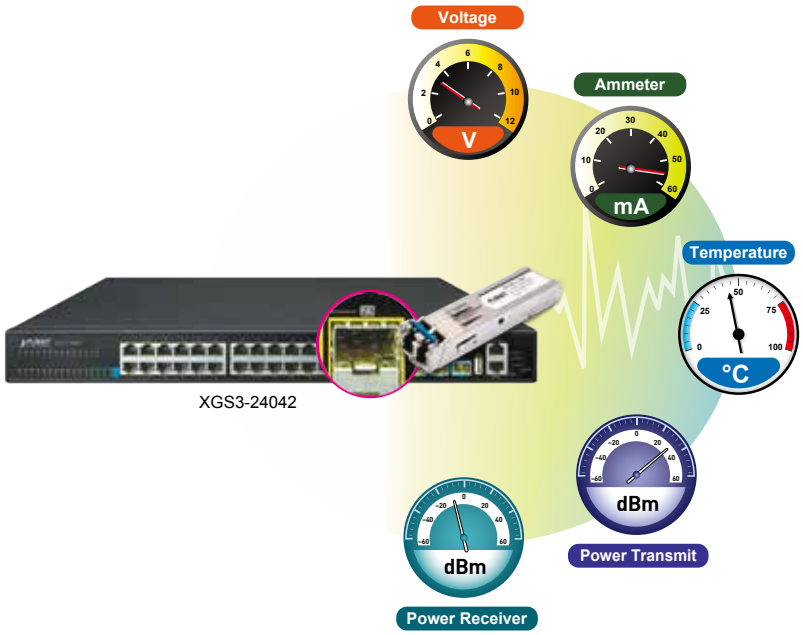
For efficient management, the XGS3-24042 Managed Gigabit Switch is equipped with console, Web and SNMP management interfaces. With its built-in Web-based management interface, the XGS3-24042 offers an easy-to-use, platform-independent management and configuration facility. The XGS3-24042 supports standard Simple Network Management Protocol (SNMP) and can be managed via any standard-based management software.

For reducing product learning time, the XGS3-24042 offers Cisco-like command via Telnet or console port and customer doesn't need to learn new command from these switches. Moreover, the XGS3-24042 offers secure remote management by supporting SSH connection which encrypts the packet content at each session.

Intelligent SFP/SFP+ Diagnosis Mechanism

The XGS3-24042 supports **SFP/SFP+-DDM (Digital Diagnostic Monitor)** function that greatly helps network administrator to easily monitor real-time parameters of the SFP/SFP+, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.

*Digital Diagnostic Monitor **(DDM)***

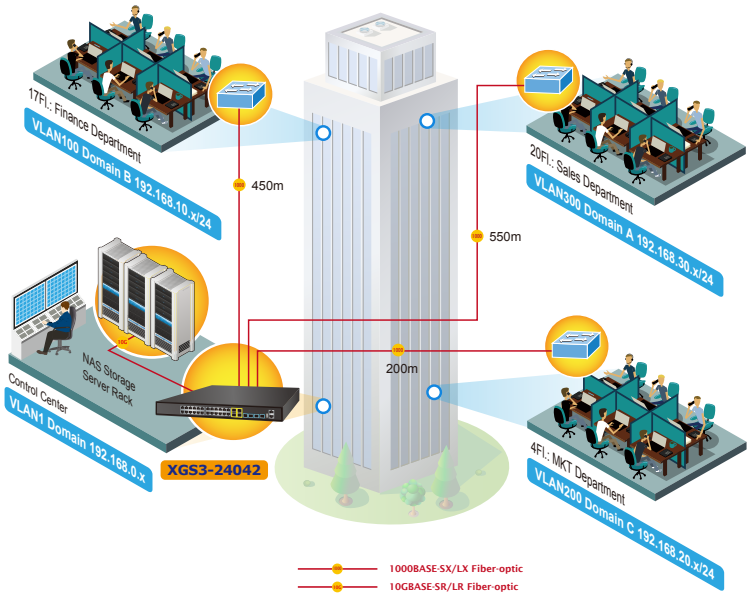


Applications

Core Layer 3 VLAN Routing Switch

With the built-in robust Layer 3 traffic routing protocols, the XGS3-24042 ensures reliable routing between VLANs and network segments. The routing protocols can be applied via VLAN interface. The XGS3-24042 is certainly a cost-effective and ideal solution for enterprises.

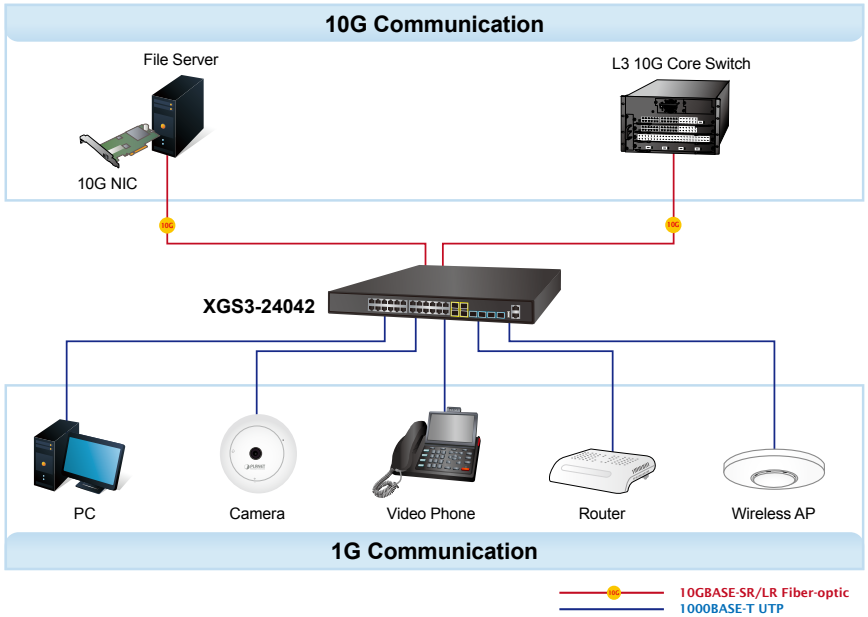
VLAN Routing + 10G Uplink Applications



Excellent Solution to Data Center Security and QoS Switch

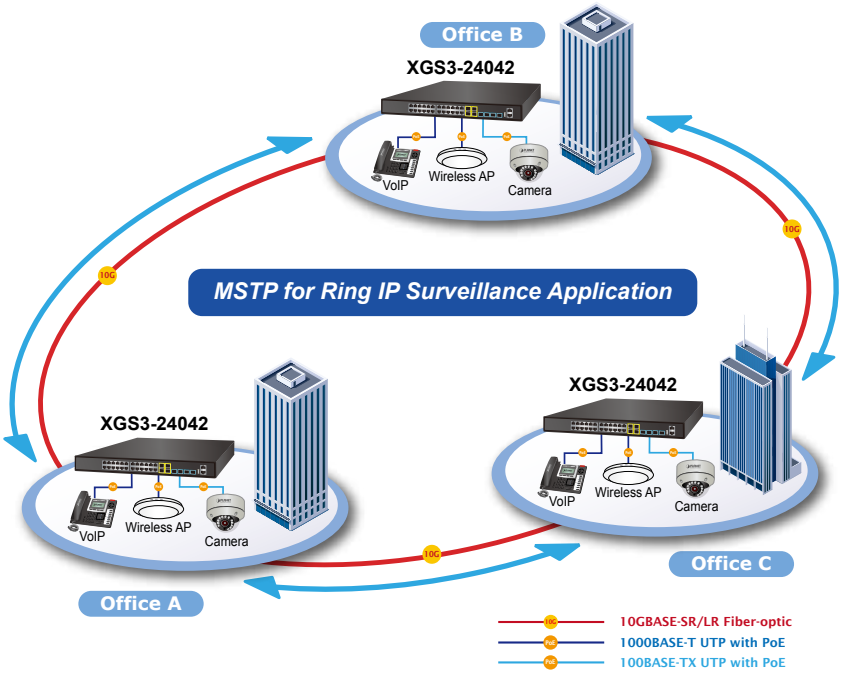
The XGS3-24042 performs 128 Gigabits per second non-blocking switch fabric so it can easily provide a local 10Gbps high bandwidth Ethernet network for the backbone of your department. With the four built-in SFP+ ports, the XGS3-24042 provides the uplink to the backbone network through the 10G Ethernet LR/SR SFP+ modules. It further improves the network efficiency and protects the network clients by offering the security and QoS features.

High Performance Server Service



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 XGS3-24042 offers up to **128Gbps** data exchange speed via Optical Fiber interface and the transmission distance can be extended to 120km. The XGS3-24042 features strong, rapid, self-recovery capability to prevent interruptions and external intrusions. It incorporates **IEEE 802.1s MSTP (Multiple Spanning Tree Protocol, spanning tree by VLAN)** into customer's automation network to enhance system reliability and uptime. The XGS3-24042 is the ideal solution for data centers, service providers and telecoms to build redundant connection and establish high bandwidth for **Big Data** server farm.



Specifications

Product	XGS3-24042
Hardware Specifications	
Hardware Version	3
Copper Ports	24 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports
SFP/Mini-GBIC Slots	4 100/1000BASE-X SFP combo interfaces with Port-21 to Port-24 Supports 100/1000Mbps dual mode and DDM
SFP+Slots	4 10GBASE-SR/LR SFP+ interface (port-25 to port-28) Compatible with 1000BASE-SX/LX/BX SFP transceiver
Console	1 x RJ45-to-RS232 serial port (115200, 8, N, 1)
Switch Architecture	Store-and-forward
Switch Fabric	128Gbps/non-blocking
Switch Throughput	95.23Mpps
Address Table	16K MAC address table with auto learning function
Shared Data Buffer	1.5MB
Flow Control	Back pressure for half -duplex IEEE 802.3x pause frame for full -duplex
Jumbo Frame	10K
LED	System: PWR/MGMT/SYS Ports: 10/100/1000T RJ45 Port: LNK/ACT 1/10G SFP+ slot: LNK/ACT
Dimensions (W x D x H)	440 x 320 x 43.6 mm, 1U height
Weight	4503g
Power Requirements	12 watts/41.17 BTU (System) 27 watts/92.64 BTU (Ethernet full loading)
Power Consumption	AC 100~240V, 50/60Hz
Management Function	
System Configuration	Console, Telnet, SSH, Web browser, SNMP v1, v2c and v3
Management	Supports both IPv4 and IPv6 addressing 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 SNMP v1, v2c and v3 Supports Security IP safety net management function: avoid unlawful landing at nonrestrictive area Supports Syslog server for IPv4 and IPv6 Supports TACACS+
IPv4 Layer 3 Functions	
IP Routing Protocol	Static Routing RIPv1/v2 OSPFv2 BGP4 Policy-based Routing(PBR) LPM Routing
Multicast Routing Protocol	IGMP v1/v2/v3 IGMP Proxy DVMRP PIM-DM PIM-SM PIM-SSM Any Cast RP MSDP Illegal Multicast Source Detect
Layer 3 Protocol	VRRP URPF ECMP BFD
Routing Interface	Per VLAN
IPv6 Layer 3 Functions	
IP Routing Protocol	RIPng OSPFv3 BGP4+ IPv6 LPM Routing IPv6 Policy-based Routing(PBR)

Multicast Routing Protocol	MLD Snooping IPv6 Muticast VLAN MLDv1/v2 PIM-SM/DM for IPv6 IPv6 Any Cast RP IPv6 ACL IPv6 QoS
Layer 3 Protocol	IPv6 VRRPv3 IPv6 URPF IPv6 RA 6to4 Tunnel Configured Tunnel ISATAP Tunnel GRE Tunnel ICMPv6 ND,DNSv6
Layer 2 Functions	
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 12 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 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 step
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 SNMP v2 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 SNMP v3 notify RFC 2574 SNMP v3 vacm RFC 2674 Bridge MIB Extensions (IEEE 802.1Q MIB) RFC 2674 Bridge MIB Extensions (IEEE 802.1P MIB)
Standard Conformance	
Regulatory Compliance	FCC Part 15 Class A, CE

Standards Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3z Gigabit 1000BASE-SX/LX IEEE 802.3ab Gigabit 1000BASE-T 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 FRC 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

XGS3-24042	Layer 3 24-Port 10/100/1000T + 4-Port 10G SFP+ Stackable Managed Switch

Related Products

XGS3-24242	Layer 3 24-Port 100/1000X SFP + 16-Port shared TP + 4-Port 10G SFP+ Stackable Managed Switch

Available Modules for XGS3-24042

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 °C
MTB-LR	10G	LC	Single Mode	10km	1310nm	0 ~ 60 °C
MTB-TSR	10G	LC	Multi Mode	Up to 300m	850nm	-40 ~ 75 °C
MTB-TLR	10G	LC	Single Mode	10km	1310nm	-40 ~ 75 °C

10Gbps SFP+ (10GBASE-BX, Single Fiber Bi-directional SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp
MTB-LA20	10G	WDM(LC)	Single Mode	20km	1270nm	1330nm	0 ~ 60°C
MTB-LB20	10G	WDM(LC)	Single Mode	20km	1330nm	1270nm	0 ~ 60°C
MTB-LA40	10G	WDM(LC)	Single Mode	40km	1270nm	1330nm	0 ~ 60°C
MTB-LB40	10G	WDM(LC)	Single Mode	40km	1330nm	1270nm	0 ~ 60°C
MTB-LA60	10G	WDM(LC)	Single Mode	60km	1270nm	1330nm	0 ~ 60°C
MTB-LB60	10G	WDM(LC)	Single Mode	60km	1330nm	1270nm	0 ~ 60°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 °C
MGB-SX	1000	LC	Multi Mode	550m	850nm	0 ~ 60 °C
MGB-SX2	1000	LC	Multi Mode	2km	1310nm	0 ~ 60 °C
MGB-LX	1000	LC	Single Mode	10km	1310nm	0 ~ 60 °C
MGB-L30	1000	LC	Single Mode	30km	1310nm	0 ~ 60 °C
MGB-L50	1000	LC	Single Mode	50km	1550nm	0 ~ 60 °C
MGB-L70	1000	LC	Single Mode	70km	1550nm	0 ~ 60 °C
MGB-L120	1000	LC	Single Mode	120km	1550nm	0 ~ 60 °C
MGB-TSX	1000	LC	Multi Mode	550m	850nm	-40 ~ 75 °C
MGB-TLX	1000	LC	Single Mode	10km	1310nm	-40 ~ 75 °C
MGB-TL30	1000	LC	Single Mode	30km	1310nm	-40 ~ 75 °C
MGB-TL70	1000	LC	Single Mode	70km	1550nm	-40 ~ 75 °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 °C
MGB-LA20 MGB-LB20	1000	WDM(LC)	Single Mode	20km	1310nm 1550nm	1550nm 1310nm	0 ~ 60 °C
MGB-LA40 MGB-LB40	1000	WDM(LC)	Single Mode	40km	1310nm 1550nm	1550nm 1310nm	0 ~ 60 °C
MGB-LA60 MGB-LB60	1000	WDM(LC)	Single Mode	60km	1310nm 1550nm	1550nm 1310nm	0 ~ 60 °C
MGB-TLA10 MGB-TLB10	1000	WDM(LC)	Single Mode	10km	1310nm 1550nm	1550nm 1310nm	-40 ~ 75 °C
MGB-TLA20 MGB-TLB20	1000	WDM(LC)	Single Mode	20km	1310nm 1550nm	1550nm 1310nm	-40 ~ 75 °C
MGB-TLA40 MGB-TLB40	1000	WDM(LC)	Single Mode	40km	1310nm 1550nm	1550nm 1310nm	-40 ~ 75 °C
MGB-TLA60 MGB-TLB60	1000	WDM(LC)	Single Mode	60km	1310nm 1550nm	1550nm 1310nm	-40 ~ 75 °C

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