

Product Specifications

L2+ 24-Port 10G SFP+ plus 2-Port 40G QSFP+ Managed Switch
with 36-72V DC Redundant Power

XGS-5240-24X2QR

Version 1.0

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Change History:

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1. PRODUCT DESCRIPTION



Powerful 40Gbps Solution for Networks

PLANET XGS-5240-24X2QR is a high performance Layer 2+ Managed Switch that meets the next generation Metro, Data Center, Campus and Enterprise network requirements. It has high-density **24 10G SFP+** and **2 40G QSFP** fiber interfaces delivered in a 1RU rugged case.

To help customer stay on top of business, the XGS-5240-24X2QR not only offers ultra high transmission performance, but also IPv4/IPv6 VLAN routing feature which allows to cross over different VLAN groups and IP addresses for the purpose of having a highly-secure, flexible management.

The administrator can flexibly choose the suitable transceivers according to the transmission distance or the transmission speed required extending the **1G/10G/40G** network efficiently. Besides, with 640Gbps switching capacity, the XGS-5240-24X2QR can handle extremely large amounts of data in a secure topology linking to backbone or high capacity servers where audio, video streaming and multicast applications are utilized.

High Reliability Hardware Stacking

Using QSFP+ port to connect several servers and build a virtually logical facility, the XGS-5240-24X2QR gives the enterprises, service providers and telecoms flexible control over port density, uplinks and switch stack performance. The stack redundancy of the XGS-5240-24X2QR ensures that data integrity is retained even if one switch in the stack fails. You can even hot-swap switches without disrupting the network, which greatly simplifies the tasks of upgrading the LAN for catering to increasing bandwidth demands

Redundant AC/DC Power Supply to Ensure Continuous Operation

The XGS-5240-24X2QR is particularly equipped with one 100~240V AC power supply unit and one 36~72V DC power supply unit to provide an enhanced reliable and scalable redundant power supply. The continuous power system is specifically designed to fulfill the demands of high-tech facilities requiring the highest power integrity. With the 36~72V DC power supply, the XGS-5240-24X2QR is able to act as a telecom-level device that can be located in the electronic room.



Robust Layer 2 Features

The XGS-5240-24X2QR can be programmed for advanced switch management functions such as dynamic port link aggregation, **Q-in-Q VLAN**, private VLAN, **Multiple Spanning Tree Protocol (MSTP)**, Layer 2/4 QoS, bandwidth control and **IGMP/MLD snooping**. The XGS-5240-24X2QR provides 802.1Q tagged VLAN. Via aggregation of supporting ports, the XGS-5240-24X2QR allows the operation of a high-speed trunk combining multiple ports. The switch enables a maximum of up to 128 trunk groups with 8 ports for each trunk group and supports connection fail-over as well.

Efficient and Secure Management

For efficient management, the XGS-5240-24X2QR is equipped with console, Web and SNMP management interfaces. With the built-in Web-based management interface, the XGS-5240-24X2QR offers an easy-to-use, platform-independent management and configuration facility. The XGS-5240-24X2QR supports standard Simple Network Management Protocol (SNMP) and can be managed via any standard-based management software. For text-based management, the XGS-5240-24X2QR can be accessed via Telnet and the console port. Moreover, the XGS-5240-24X2QR offers secure remote management by supporting **SSH, SSL** and **SNMP v3** connection which encrypt the packet content at each session.

More and more engineers or administrators use Cisco command to manage Ethernet switch. For reducing product learning time, the XGS-5240-24X2QR offers Cisco-like command and customers do not need to learn new command. With easy and friendly management interfaces, and plenty of management functions included, The XGS-5240-24X2QR is the best choice for ISPs to build the IPv6 FTTx edge service and for SMBs to connect with the IPv6 network.

Flexibility and Extension Solution

The XGS-5240-24X2QR provides twenty-four 10Gbps SFP+ and two 40Gbps QSFP Fiber interfaces. Each of the SFP+ slots supports **Dual Speed, 10GBASE-SR/LR** or **1000BASE-SX/LX** and each of the QSFP slots supports native **40G and four 10 Gigabit Ethernet modes**. Therefore, 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) 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.

Enhanced Security

The XGS-5240-24X2QR 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 application. Their protection mechanism also comprises **802.1x Port-based** and **MAC-based** customer and device authentication. As to **private VLAN** function, communications between edge ports can be protected to

ensure customer privacy. The XGS-5240-24X2QR also provides functions of **DHCP snooping**, **Option 82** and **ARP guard**, and **Anti-ARP scanning** so as to prevent IP from attacking and discarding ARP packets with invalid MAC address. The network administrators can now construct a highly-secure corporate network with considerably less time and effort than before.

IPv6/IPv4 Dual Stack

As the XGS-5240-24X2QR supports the IPv6 Protocol, they help SMBs and enterprises to step in the IPv6 era with the lowest investment, meaning the existing network facilities need not be replaced.

Intelligent SFP Diagnosis Mechanism

The XGS-5240-24X2QR supports SFP-DDM (**Digital Diagnostic Monitor**) function that greatly helps network administrator to easily monitor real-time parameters of the SFP, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.

2. PRODUCT FEATURES

➤ **Physical Port**

- **24 10GBASE-SR/LR SFP+ slots**, compatible with 1000BASE-SX/LX/BX SFP
- 2 QSFP+ slots with each supporting native 40G and four 10 Gigabit Ethernet modes.
- 1 10/100/1000BASE-T RJ45 MGMT port
- 1 USB2.0 interface for configuration and firmware storage
- RJ45 console interface for switch basic management and setup

➤ **Stacking Features**

- Hardware Stacking
 - Virtualized multiple XGS-5240-24X2QR switches into one logical device
 - Connects with stack member via assigned 10G SFP+ interfaces or 40G QSFP+ interfaces
 - Single IP address stack management, supporting up to 4 hardware units stacked together
 - Stacking architecture supports redundancy Ring mode

➤ **Layer 2 Features**

- 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 and port loopback detection
- 32K MAC address table, automatic source address learning and aging
- Supports VLAN
 - IEEE 802.1Q tag-based VLAN
 - Up to 4K VLAN IDs
 - Provider Bridging (VLAN Q-in-Q, IEEE 802.1ad) supported
 - Private VLAN Edge (PVE) supported
 - Protocol-based VLAN
 - MAC-based VLAN
 - IP subnet VLAN
- Supports Link Aggregation
 - Maximum 128 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

- Support for 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; IPv6 MLD v1 and v2 snooping
 - Querier mode support
 - Supports Multicast VLAN Register (MVR)

- **DHCP**
 - IPv4/IPv6 DHCP Client, IPv4/IPv6 DHCP Relay
 - Option 82
 - IPv4/IPv6 DHCP Snooping, IPv4/IPv6 DHCP Server

- **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 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
 - 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
 - OAM EFM; OAM CFM
 - Four RMON groups 1, 2, 3, 9 (history, statistics, alarms and events)
 - Supports sFlow
 - Supports ULDP (like Cisco UDLD)

- Supports LLDP/LLDP MED
- Supports ping, trace route function for IPv4 and IPv6

➤ **Redundant Power System**

- Redundant 100~240V AC/36-72V DC dual power
- Active-active redundant power failure protection
- Backup of catastrophic power failure on one supply
- Fault tolerance and resilience

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

Switch ASIC:	BCM53570	x 1
CPU:	Dual-core ARM 1.25GHz	x 1
Flash Size	SPI Flash 32M	x 1
	NAND Flash 128M	
DRAM Size	512M DDR3	x 1

3.2 FUNCTION SPECIFICATIONS

Product	XGS-5240-24X2QR
Hardware Specifications	
SFP+ Slots	24 10GBASE-SR/LR SFP+ interfaces Compatible with 1000BASE-SX/LX/BX SFP transceiver
QSFP+ Slots	2 with each supporting 40 Gigabit Ethernet and four 10 Gigabit Ethernet modes
Console	1 x RJ45-to-RS232 serial port (9600, 8, N, 1)
Switch Architecture	Store-and-forward
Switch Fabric	640Gbps/non-blocking
Switch Throughput	476Mpps
Address Table	32K MAC address table with auto learning function
ACL Table	3K (ingress) + 1K (egress)
Shared Data Buffer	4MB
Flow Control	Back pressure for half duplex IEEE 802.3x pause frame for full duplex
Jumbo Frame	10Kbytes
LED	System: PWR/DC/MGMT/SYS(Green) Ports: 1/10G SFP+ slot: LNK/ACT(Orange/ Green) 40G QSFP+ slot: LNK/ACT (Green)
Dimensions (W x D x H)	440 x 318x 43.6 mm, 1U height
Weight	4.3kg

Power Consumption	56.64W/ 194.33 BTU
Power Requirements	AC 100~240V, 50/60Hz DC 36-72V
Fan	3
Layer 3 Protocol	<ul style="list-style-type: none"> ■ Configured Tunnels ■ ISATAP ■ GRE Tunnel
Other	ICMPv6,ND,DNSv6
Layer 2 Functions	
Port Configuration	Port disable/enable 1 & 10Gbps full duplex mode selection Flow control disable/enable Bandwidth control on each port Port loopback detection
VLAN	Port-based VLAN IEEE802.1Q Private VLAN Protocol VLAN Voice VLAN MAC VLAN VLAN Translation
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: <ul style="list-style-type: none"> - 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	<p>Supports Standard and Expanded ACL</p> <p>IP-based ACL/MAC-based ACL</p> <p>Time-based ACL</p> <p>Up to 512 entries</p>
Security	<p>Supports MAC + port binding</p> <p>IPv4/IPv6 + MAC + port binding</p> <p>IPv4/IPv6 + port binding</p> <p>Supports MAC filter</p> <p>ARP scanning prevention</p>
Authentication	<p>IEEE 802.1x port-based network access control</p> <p>AAA authentication: TACACS+ and IPv4/IPv6 over RADIUS</p>
Management functions	
System Configuration	Console, Telnet, Web browser, SNMP v1, v2c
Secure Management Interfaces	SSH, SSL, SNMPv3
Management	<p>Supports both IPv4 and IPv6 addressing</p> <p>Supports the user IP security inspection for IPv4/IPv6 SNMP</p> <p>Supports MIB and TRAP</p> <p>Supports IPv4/IPv6 FTP/TFTP</p> <p>Supports IPv4/IPv6 NTP</p> <p>Supports RMON 1, 2, 3, 9 four groups</p> <p>Supports the RADIUS authentication for IPv4/IPv6 Telnet user name and password</p> <p>Supports IPv4/IPv6 SSH</p> <p>The right configuration for users to adopt RADIUS server's shell management</p> <p>Supports CLI, console, Telnet</p> <p>Supports SNMP v1, v2c and v3</p> <p>Supports Security IP safety net management function: avoid unlawful landing at nonrestrictive area</p> <p>Supports Syslog server for IPv4 and IPv6</p> <p>Supports TACACS+</p>
SNMP MIBs	<p>RFC 1213 MIB-II</p> <p>RFC 1215 Internet Engineering Task Force</p> <p>RFC 1271 RMON</p> <p>RFC 1354 IP-Forwarding MIB</p> <p>RFC 1493 Bridge MIB</p> <p>RFC 1643 Ether-like MIB</p>

	<p>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)</p>
Standard Conformance	
Regulatory Compliance	FCC Part 15 Class A, CE
Standards Compliance	<p>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</p>
Environment	
Operating	<p>Temperature: 0 ~ 50 degrees C Relative Humidity: 5 ~ 90% (non-condensing)</p>
Storage	<p>Temperature: -10 ~ 70 degrees C Relative Humidity: 5 ~ 90% (non-condensing)</p>

3.3 PHYSICAL SPECIFICATIONS:

Dimensions:

440 x 318x 43.6 mm, 1U height

Weight:

4.3kg

■ **Front Panel:**



■ **LED Definition**

■ **System/Alert**

LED	Color	Function
PWR	Green	Lights to indicate that the Switch has power.
	Off	Power is off.
DC	Green	Lights to indicate that the Switch has power.
	Off	Power is off.
SYS	Green	Lights to indicate the system diagnosis is completed.
		Blinks to indicate system diagnosis is running.
MGMT	Green	Lights to indicate the link through that port is successfully established
		Blinks to indicate that the port is activity
	Off	No connection

■ **1/10G SFP+ Interfaces (Port-1 to Port-24)**

LED	Color	Function
LNK/ACT	Green	Lights: To indicate the 10Gbps link through that port is successfully established.
		Blinks: To indicate that the switch is actively sending or receiving data over that port.
LNK/ACT	Amber	Lights: To indicate the 1Gbps link through that port is successfully established.
		Blinks: To indicate that the switch is actively sending or receiving data over that port.

■ **40G QSFP+ Interfaces (Port-25 to Port-26)**

LED	Color	Function
LNK/ACT	Green	Lights: To indicate the 40Gbps link through that port is successfully established.
		Blinks: To indicate that the switch is actively sending or receiving data over that port.

■ Rear Panel:



3.4 ENVIRONMENTAL SPECIFICATIONS

Operating:

Temperature: 0°C ~ 50°C

Relative Humidity: 5% ~ 95% (non-condensing)

Storage:

Temperature: -10°C ~ 70°C

Relative Humidity: 5% ~ 95% (non-condensing)

3.5 ELECTRICAL SPECIFICATIONS

Model		XGS-5240-24X2QR
36~72V DC Power Input		TBD
100~240V AC Power Input	System on	TBD watts/ TBD BTU
	Full Loading	TBD watts/ TBD BTU

3.6 REGULATORY COMPLIANCE

FCC Class A, CE.

3.7 RELIABILITY

MTBF > 500,000 hrs @ 25 degrees C

3.8 BASIC PACKAGING

- The Managed Switch x 1
- Quick Installation Guide x 1
- RJ45-to-DB9 RS232 Cable x 1
- Rack Mounting Kit x 1
- Rubber Feet x 4
- SFP Dust Cap x 24
- QSDP Dust Cap x 2
- Ground Cable x 1
- Power Cord x 1

3.9 PACKING INFORMATION

Box Dimensions (W x D x H):	530 × 470 × 110 mm
Weight (gross weight):	5.98kg
Carton Dimensions (W x D x H):	555 × 375 × 510 mm
Carton Weight (gross weight):	18.5kg
Quantity:	3pcs in one carton