

# Layer 3 24-Port 10G SFP+ plus 4-Port 100G QSFP28 Managed Switch



### Powerful 100Gbps Solution for All Long-Reach Networks

PLANET XGS-6350-24X4C is a high performance Layer 3 Managed Switch that meets the next generation Metro, Data Center, Campus and Enterprise network requirements. It has high-density **24 10G SFP+** and **4 40G/100GbE QSFP28** fiber interfaces delivered in a 1RU rugged case.

The XGS-6350-24X4C comes with the complete Layer 3 managed function with comprehensive protocols and applications to facilitate the rapid service deployment and management for both the traditional L2 and L3 networks. With support for advanced features, including **RIP, OSPF, BGP, PIM-DM/SM**, etc., this switch is ideal for the traditional or fully virtualized data center.

The administrator can flexibly choose the suitable transceivers according to the transmission distance or the transmission speed required extending the **1G/10G/40G/100G** network efficiently. Besides, with **1.28Tbps** switching capacity, the XGS-6350-24X4C 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.



### Extractive Power Supply Design to Increase Flexibility

The XGS-6350-24X4C is equipped with one extractive 100~240V AC power supply unit, so it is easy to replace the power for users. Besides, the XGS-6350-24X4C reserves another backup power slot on the rear panel and users can add the second AC or DC power to the redundant power supply installation. The AC power or DC power is optional. The redundant power system is specifically designed to handle the demands of high-tech facilities requiring the highest power integrity.

### Physical Ports

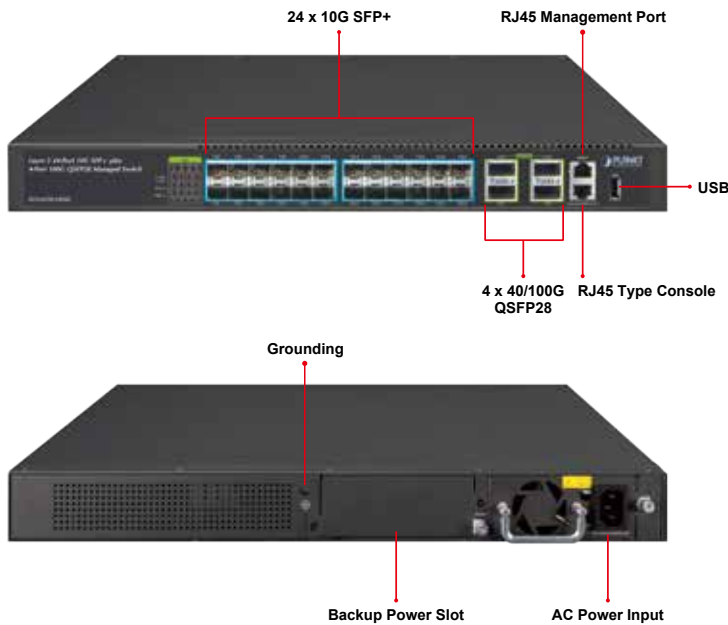
- 24 10GBASE-SR/LR SFP+ slots, compatible with 1000BASE-SX/LX/BX SFP
- 4 QSFP28 slots, each supports native 100 Gigabit Ethernet, 40G and 4 x 10 Gigabit Ethernet modes
- RJ45 to DB9 console interface for switch basic management and setup

### IP Routing Features

- Supports maximum 128 static routes and route summarization
- Supports dynamic routing protocol: RIP and OSPF

### Layer 2 Features

- 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
- 32KC MAC address table, automatic source address learning and aging
- Supports VLAN
  - IEEE 802.1Q tag-based VLAN
  - GVRP for dynamic VLAN management
  - Up to 4094 active VLANs
  - 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
- Supports Link Aggregation
  - Maximum 32 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
  - STP, IEEE 802.1D (Classic Spanning Tree Protocol)
  - RSTP, IEEE 802.1w (Rapid Spanning Tree Protocol)

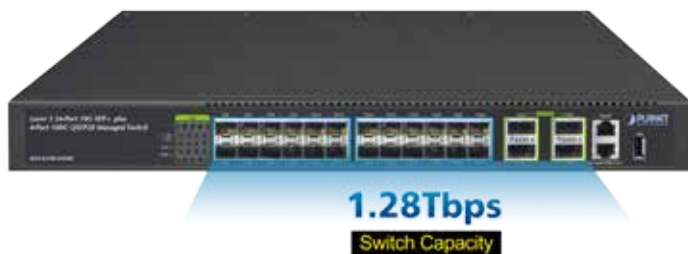


### Layer 3 Routing Support

The XGS-6350-24X4C 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 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

The XGS-6350-24X4C boasts a high-performance switch architecture that is capable of providing non-blocking switch capacity and wire-speed throughput as high as **1.28Tbps**, which greatly simplifies the tasks of upgrading the LAN for catering to increasing bandwidth demands.



### Abundant IPv6 Support

The XGS-6350-24X4C provides IPv6 management and enterprise-level secure features such as **SSH, ACL, WRR (Weighted Round Robin)** and **RADIUS** authentication. The XGS-6350-24X4C 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.

- MSTP, IEEE 802.1s (Multiple Spanning Tree Protocol, spanning tree by VLAN)
- 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

### 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 co-operate 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 secure access

**Excellent and Secure Traffic Control**

The XGS-6350-24X4C is loaded with powerful traffic management and WRR features to enhance services offered by telecoms and enterprises. 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 XGS-6350-24X4C 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 XGS-6350-24X4C empowers enterprises and campuses to take full advantage of the limited network resources and guarantees the best performance in VoIP and video conferencing transmission.

- 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, trace route function for IPv4 and IPv6

**Robust Layer 2 Features**

The XGS-6350-24X4C 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. In addition, the number of VLAN interfaces is 1K and the number of VLAN IDs is 4K. By supporting port aggregation, the XGS-6350-24X4C allows the operation of a high-speed trunk combined with multiple ports. It enables up to 32 groups for trunking with a maximum of 8 ports for each group.

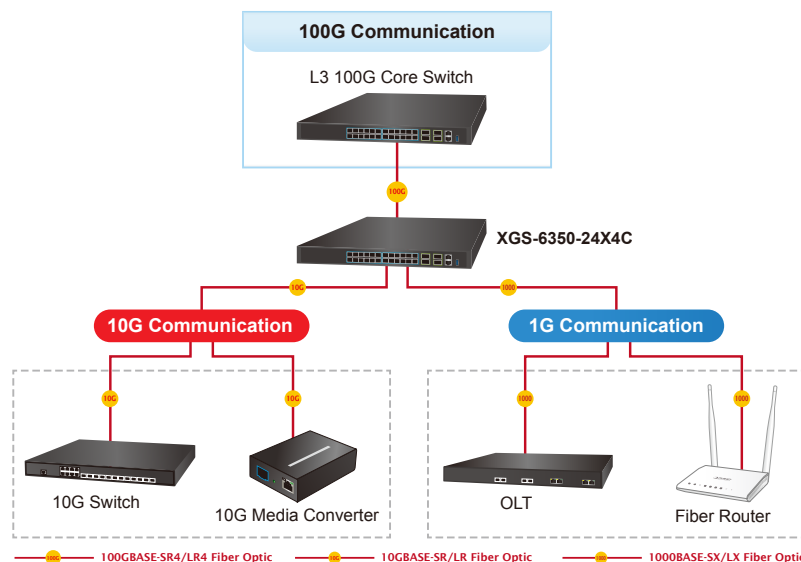
**Efficient and Secure Management**

For efficient management, the XGS-6350-24X4C Managed 100Gigabit Switch is equipped with console, Web and SNMP management interfaces. With its built-in Web-based management interface, the XGS-6350-24X4C offers an easy-to-use, platform-independent management and configuration facility. The XGS-6350-24X4C supports standard Simple Network Management Protocol (SNMP) and can be managed via any standard-based management software. For reducing product learning time, the XGS-6350-24X4C offers Cisco-like command via Telnet or console port. Moreover, the XGS-6350-24X4C offers secure remote management by supporting SSH connection which encrypts the packet content at each session.

**Flexibility and Extension Solution**

The XGS-6350-24X4C provides twenty four 10Gbps SFP+ and four 100Gbps QSFP28 Fiber interfaces. Each of the SFP+ slots supports Dual Speed, 10GBASE-SR/LR or 1000BASE-SX/LX and each of the QSFP28 slots supports native 100 Gigabit Ethernet, 40G and 4 x 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.

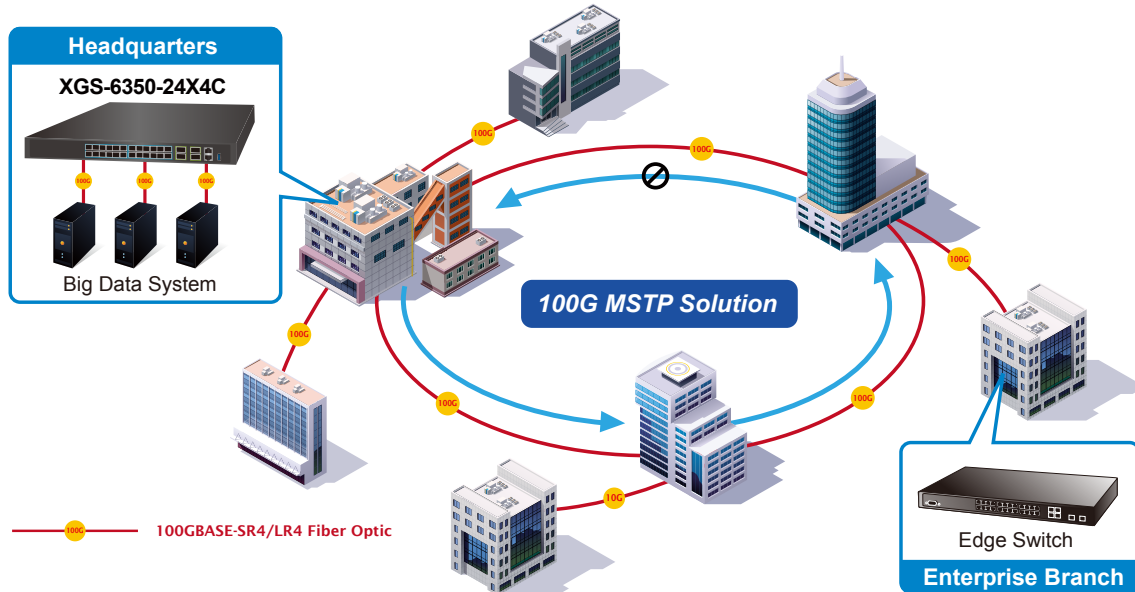
**High Performance 100Gbps Server Service**



## Applications

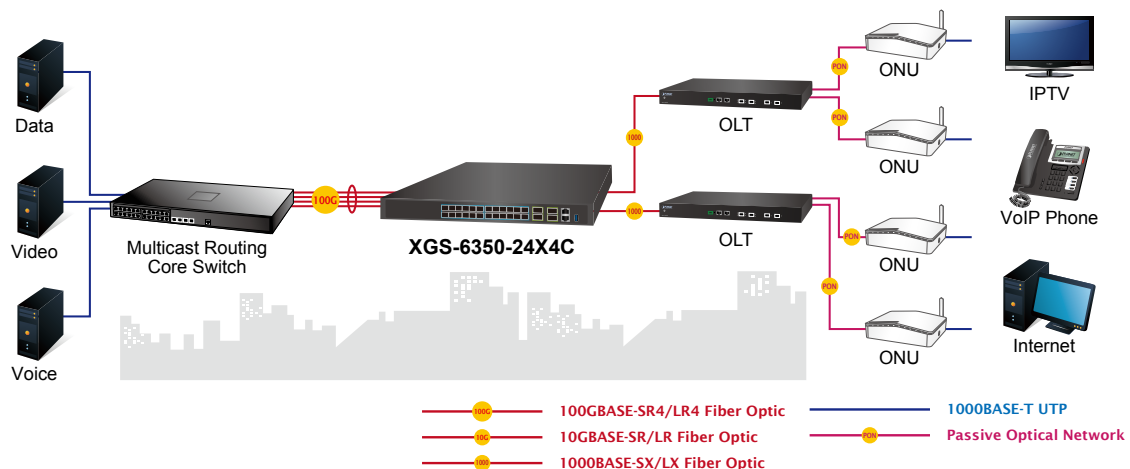
### High Availability Mesh Networking Solution for Big Data System

By means of improving the technology of Optical Fiber Ethernet with highly-flexible, highly-extendable and easy-to-install features, the XGS-6350-24X4C offers up to **1.28Tbps** data exchange speed via Optical Fiber interface and the transmission distance can be extended to 120km (single-mode fiber). The XGS-6350-24X4C features 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 XGS-6350-24X4C 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

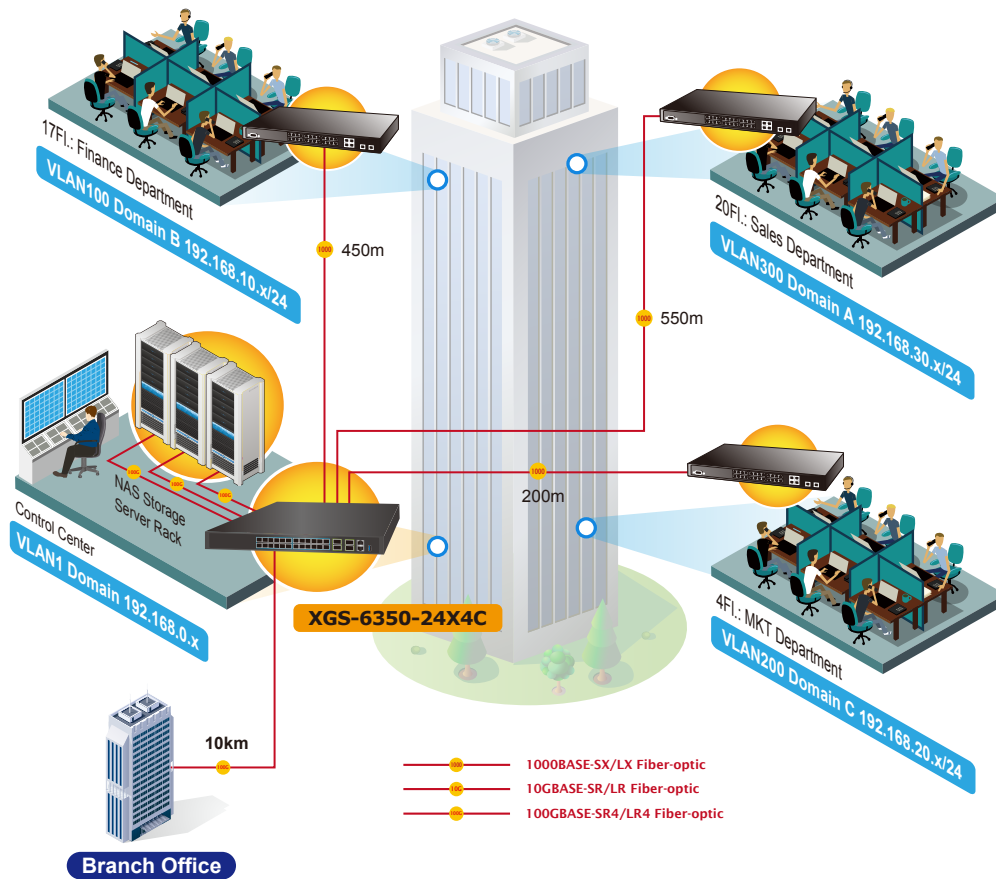
In telecommunications, triple play service is a marketing term for the provisioning over a single broadband connection of more bandwidth-intensive services, such as broadband Internet access, television and the latency-sensitive telephone. The XGS-6350-24X4C provides up to **1.28Tbps** bandwidth to exchange 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 100G Uplink Application*

With the built-in robust Layer 3 routing protocols, the XGS-6350-24X4C ensures reliable routing between VLANs and network segments. The routing protocols can be applied by VLAN interface with up to 128 routing entries. The XGS-6350-24X4C, the ideal solution for enterprises, offers greater security, control and bandwidth conservation, and high-speed uplink.

## VLAN Routing + 100G Uplink Applications



## Specifications

Product	XGS-6350-24X4C
<b>Hardware Specifications</b>	
QSFP28 Slots	4, each supports native 100/40 Gigabit Ethernet and 4 x 10 Gigabit Ethernet modes
SFP+ Slots	24 10GBASE-SR/LR SFP+ interfaces Compatible with 1000BASE-SX/LX/BX SFP transceiver
MGMT	1 x 10/100/1000Base-T RJ45 port
Console	1 x RJ45-to-DB9 serial port (9600, 8, N, 1)
USB	1 x USB 2.0
Switch Architecture	Store-and-forward
Switch Capacity	1.28Tbps/non-blocking
Switch Throughput	960Mpps
Address Table	32K MAC address table with auto learning function
Shared Data Buffer	4MB
Flow Control	Back pressure for half duplex IEEE 802.3x pause frame for full duplex
Jumbo Frame	9KB
LED Indicator	System: PWR, SYS Ports: 40G/100G QSFP Port: LNK/ACT
Dimensions (W x D x H)	442.5 x 364 x 44 mm, 1U height
Weight	5990g
Power Consumption	75 watts/210 BTU (maximum)
Power Requirements	AC 100~240V, 50/60Hz
Fan	4
<b>Management Function</b>	
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 TFTP Supports IPv4/IPv6 NTP Supports RMON 1, 2, 3, 9 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: avoid unlawful landing at non-restrictive area Supports syslog server for IPv4 and IPv6 Supports TACACS+
<b>Layer 3 Function</b>	
Routing Protocol	Static routing, RIP and OSPF
Routing Table	16K
DHCP	DHCP client DHCP server, default route DHCP relay
VRRP	Configure VRRP in interface VLAN; VRRP priority; VRRP standby; VRRP track
Load Balancing	Use of equivalent routing, the correct load balancing function (by flow)
<b>Layer 2 Function</b>	
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	<p>802.1Q tag-based VLAN, up to 4K VLAN entries</p> <p>802.1ad Q-in-Q (VLAN stacking)</p> <p>GVRP for VLAN management</p> <p>Private VLAN Edge (PVE) supported</p> <p>Protocol-based VLAN</p> <p>MAC-based VLAN</p> <p>IP subnet VLAN</p>
Bandwidth Control	TX/RX/both
Link Aggregation	<p>IEEE 802.3ad LACP/static trunk</p> <p>Supports 32 groups with 8 ports per trunk group</p>
QoS	<p>8 priority queues on all switch ports</p> <p>Supports strict priority and Weighted Round Robin (WRR) CoS policies</p> <p>Traffic classification:</p> <ul style="list-style-type: none"> <li>- IEEE 802.1p CoS/ToS</li> <li>- IPv4/IPv6 DSCP</li> <li>- Port-based WRR</li> </ul>
Multicast	<p>IGMP v1/v2/v3 snooping</p> <p>Querier mode support</p> <p>MLD v1/v2 snooping</p> <p>Querier mode support</p> <p>Multicast VLAN Register (MVR)</p>
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 1K entries</p>
Bandwidth Control	At least 64Kbps stream
Security	<p>Port isolation</p> <p>Supports IP + MAC + port binding</p> <p>Identification and filtering of L2/L3/L4 based ACL</p> <p>Defend against DOS or TCP attacks</p> <p>Suppression of broadcast, multicast and unknown unicast packet</p> <p>DHCP Snooping, DHCP Option 82</p> <p>Command line authority control based on user levels</p>
Authentication	<p>IEEE 802.1x port-based network access control</p> <p>AAA authentication: TACACS+ and IPv4/IPv6 over RADIUS</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 SNMPv2</p> <p>RFC 2011 IP/ICMP MIB</p> <p>RFC 2012 TCP MIB</p> <p>RFC 2013 UDP MIB</p> <p>RFC 2096 IP forward MIB</p> <p>RFC 2233 if MIB</p> <p>RFC 2452 TCP6 MIB</p> <p>RFC 2454 UDP6 MIB</p> <p>RFC 2465 IPv6 MIB</p> <p>RFC 2466 ICMP6 MIB</p> <p>RFC 2573 SNMPv3 notification</p> <p>RFC 2574 SNMPv3 VACM</p> <p>RFC 2674 Bridge MIB Extensions</p>

**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 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: 10 ~ 85% (non-condensing)
Storage	Temperature: -40 ~ 80 degrees C Relative Humidity: 5 ~ 95% (non-condensing)

## Ordering Information

XGS-6350-24X4C	Layer 3 24-Port 10G SFP+ + 4-Port 100G QSFP28 Managed Switch
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## Related Products

XGS-6350-12X8TR	Layer 3 12-Port 10G SFP+ + 8-Port 10/100/1000T Managed Switch with Dual 100~240V AC Redundant Power
XGS3-42000R	4-Slot Layer 3 IPv6/IPv4 Routing Chassis Switch
SGS-6341-16S8C4XR	Layer 3 16-Port 100/1000X SFP + 8-Port Gigabit TP/SFP + 4-Port 10G SFP+ Stackable Managed Switch (100~240V AC, 12V DC)
XT-705A	10G/5G/2.5G/1G/100M Copper to 10GBASE-X SFP+ Media Converter
CB-DASFP-0.5M/2M	10G SFP+ Directly-attached Copper Cable (0.5/2M in length)

## Available Modules for XGS-6350-24X4C

100Gbps QSFP28 (100G Ethernet/100GBASE-SR4/LR4)

Model	DDM	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
QSFP-100G-SR4	YES	100G	MPO	Multi Mode	100m (OM3) 150m (OM4)	850nm	0 ~ 60 degrees C
QSFP-100G-LR4	YES	100G	LC	Single Mode	10km	1310nm	0 ~ 70 degrees C

40Gbps QSFP+ (40G Ethernet/40GBASE-SR4/LR4)

Model	DDM	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
QSFP-40G-SR4	YES	40G	MPO/MTP	Multi Mode	100m (OM3) 150m (OM4)	850nm	0 ~ 60 degrees C
QSFP-40G-LR4	YES	40G	LC	Single Mode	10km	1310nm	0 ~ 60 degrees C

10Gigabit SFP+ (10G Ethernet/10GBASE)

Model	DDM	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MTB-RJ	-	10G	Copper	-	30m	-	0 ~ 70 degrees C
MTB-SR	YES	10G	LC	Multi Mode	Up to 300m	850nm	0 ~ 60 degrees C
MTB-LR	YES	10G	LC	Single Mode	10km	1310nm	0 ~ 60 degrees C
MTB-TSR	YES	10G	LC	Multi Mode	Up to 300m	850nm	-40 ~ 75 degrees C
MTB-TLR	YES	10G	LC	Single Mode	10km	1310nm	-40 ~ 75 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.
MTB-LA20	YES	10G	WDM(LC)	Single Mode	20km	1270nm	1330nm	0 ~ 60 degrees C
MTB-LB20		10G	WDM(LC)	Single Mode	20km	1330nm	1270nm	0 ~ 60 degrees C
MTB-LA40	YES	10G	WDM(LC)	Single Mode	40km	1270nm	1330nm	0 ~ 60 degrees C
MTB-LB40		10G	WDM(LC)	Single Mode	40km	1330nm	1270nm	0 ~ 60 degrees C
MTB-LA60	YES	10G	WDM(LC)	Single Mode	60km	1270nm	1330nm	0 ~ 60 degrees C
MTB-LB60		10G	WDM(LC)	Single Mode	60km	1330nm	1270nm	0 ~ 60 degrees C

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
MGB-TSX	YES	1000	LC	Multi Mode	550m	850nm	-40 ~ 75 degrees C
MGB-TSX2	YES	1000	LC	Multi Mode	2km	1310nm	-40 ~ 75 degrees C
MGB-TLX(V2)	YES	1000	LC	Single Mode	20km	1310nm	-40 ~ 75 degrees C
MGB-TL40	YES	1000	LC	Single Mode	40km	1310nm	-40 ~ 75 degrees C
MGB-TL80	YES	1000	LC	Single Mode	80km	1550nm	-40 ~ 75 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)						1550nm	1310nm	
MGB-LA20(V2)	YES	1000	WDM(LC)	Single Mode	20km	1310nm	1550nm	0 ~ 60 degrees C
MGB-LB20(V2)						1550nm	1310nm	
MGB-LA40(V2)	YES	1000	WDM(LC)	Single Mode	40km	1310nm	1550nm	0 ~ 60 degrees C
MGB-LB40(V2)						1550nm	1310nm	
MGB-LA80	YES	1000	WDM(LC)	Single Mode	80km	1490nm	1550nm	0 ~ 60 degrees C
MGB-LB80						1550nm	1490nm	
MGB-TLA10(V2)	YES	1000	WDM(LC)	Single Mode	10km	1310nm	1550nm	-40 ~ 75 degrees C
MGB-TLB10(V2)						1550nm	1310nm	
MGB-TLA20	YES	1000	WDM(LC)	Single Mode	20km	1310nm	1550nm	-40 ~ 75 degrees C
MGB-TLB20						1550nm	1310nm	
MGB-TLA40	YES	1000	WDM(LC)	Single Mode	40km	1310nm	1550nm	-40 ~ 75 degrees C
MGB-TLB40						1550nm	1310nm	
MGB-TLA80	YES	1000	WDM(LC)	Single Mode	80km	1490nm	1550nm	-40 ~ 75 degrees C
MGB-TLB80						1550nm	1490nm	

Fast Ethernet Transceiver (100BASE-X SFP)

Model	DDM	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	1550nm	0 ~ 60 degrees C
MFB-TFX	-	100	LC	Multi Mode	2km	1310nm	-40 ~ 75 degrees C
MFB-TF20	-	100	LC	Single Mode	20km	1310nm	-40 ~ 75 degrees C

Fast Ethernet Transceiver (100BASE-BX, Single Fiber Bi-directional SFP)

Model	DDM	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
MFB-TSA	YES	100	WDM(LC)	Multi Mode	2km	1310nm	1550nm	-40 ~ 75 degrees C
MFB-TSB	YES	100	WDM(LC)	Multi Mode	2km	1550nm	1310nm	-40 ~ 75 degrees C
MFB-TFA20	-	100	WDM(LC)	Single Mode	20km	1310nm	1550nm	-40 ~ 75 degrees C
MFB-TFB20	-	100	WDM(LC)	Single Mode	20km	1550nm	1310nm	-40 ~ 75 degrees C
MFB-TFA40	-	100	WDM(LC)	Single Mode	40km	1310nm	1550nm	-40 ~ 75 degrees C
MFB-TFB40	-	100	WDM(LC)	Single Mode	40km	1550nm	1310nm	-40 ~ 75 degrees C