Layer 3 48-Port 10G SFP+ + 2-Port 40G QSFP+ + 4-Port 100G QSFP28 Managed Switch

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

PLANET XGS-6350-48X2Q4C 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 **48 10G SFP+**, **2 40G QSFP+** and **4 40G/100GbE QSFP28** fiber interfaces delivered in a 1RU rugged case.

The administrator can flexibly choose the suitable transceivers according to the transmission distance or the transmission speed required to extend the **1G/10G/40G/100G** network efficiently. Besides, with **1.92Tbps** switching capacity, the XGS-6350-48X2Q4C 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 Flexibilty

The XGS-6350-48X2Q4C is equipped with one extractive 100~240V AC power supply unit, so it is easy to replace the power for users. Besides, the XGS-6350-48X2Q4C reserves another backup power slot on the rear panel where the second AC or DC power can be added to make it a redundant power supply. The redundant power system is specifically designed to handle the demands of high-tech facilities requiring the highest power integrity.

2 x 40G QSFP+
4 x 40/100G QSFP28

24 x 10G SFP+   24 x 10G SFP+
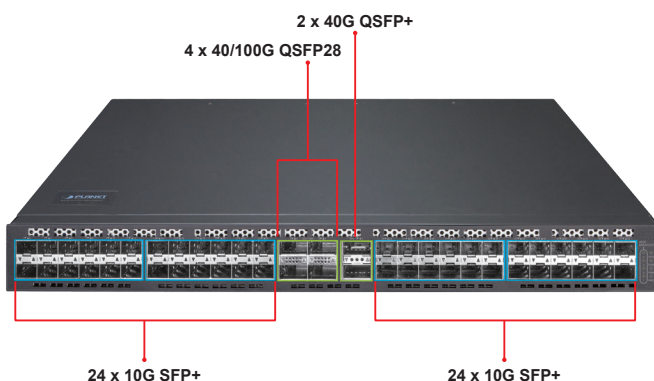
Physical Ports

- **48 10GBASE-SR/LR SFP+** slots, compatible with 1000BASE-SX/LX/BX SFP
- **2 QSFP+ slots** with each supporting 40G and 4 x 10 Gigabit Ethernet modes
- **4 QSFP28** slots with each supporting native 100 Gigabit Ethernet, 40G and 4 x 10 Gigabit Ethernet modes
- RJ45 to DB9 console interface for switch basic management and setup
- MNG port for HTTP server access
- USB port

IPv4 Features

- Static Routing, RIP v1/v2, OSPF and BGP
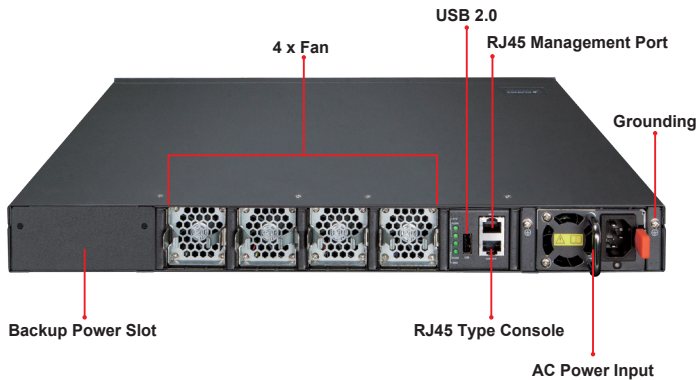- Policy Routing
- BFD for OSPF and BGP

IPv6 Features

- ICMPv6, DHCPv6, ACLv6,IPv6 Telnet
- IPv6 Neighbor Discovery
- Path MTU Discovery
- MLD and MLD Snooping
- IPv6 Static Routing, RIPng, OSPFv3 and BGP4+
- Manual Tunnel, ISATAP Tunnel and 6-to-4 Tunnel

Multicast Routing Features

- Supports Multicast Routing Protocols:
  - PIM-DM (Protocol Independent Multicast - Dense Mode)
  - PIM-SM (Protocol Independent Multicast - Sparse Mode)
  - PIM-SSM (Protocol Independent Multicast - Source-Specific Multicast Mode)
- Supports IGMP v1/v2/v3

Layer 2 Features

- Supports VLAN
  - IEEE 802.1Q tag-based VLAN
  - Provider Bridging (VLAN Q-in-Q, IEEE 802.1ad) supported
  - GVRP for dynamic VLAN management
  - Private VLAN
- Supports Link Aggregation
  - 802.3ad Link Aggregation Control Protocol (LACP)

4 x Fan

USB 2.0

RJ45 Management Port

Grounding

Backup Power Slot

RJ45 Type Console

AC Power Input

Rich Multi-layer Networking Protocols

The XGS-6350-48X2Q4C 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**, **RIPng**, **OSPFv2**, **OSPFv3**, **BGP, BGP4+**, etc., this switch is ideal for the traditional or fully-virtualized data center.

Strong Multicast

The XGS-6350-48X2Q4C supports abundant multicast features. In Layer 2, it features IPv4 IGMPv1/v2/v3 snooping and IPv6 MLD v1/v2 snooping. With Multicast VLAN Registration (MVR), multicast receiver/sender control and illegal multicast source detection functions can be had. In Layer 3 multicast protocols, it features **PIM-DM**, **PIM-SM** and **PIM-SSM** which make the XGS-6350-48X2Q4C great for any robust networking.

Full IPv6 Support

The XGS-6350-48X2Q4C supports **IPv4-to-IPv6 technologies including IPv4 manual/automatic tunnel**, IPv6-to-IPv4 tunnel, and Intra-Site Automatic Tunnel Addressing Protocol (**ISATAP**) tunnel. It comprehensively supports IPv6 Neighbor Discovery, DHCPv6, Path MTU Discovery, IPv6-based Telnet, SSH and ACL, meeting the need of IPv6 network device management and service control.

High Reliability

The key components of the XGS-6350-48X2Q4C such as management module, power system and the fan system support redundancy design. All system modules support hot-swap and seamless switching without manual intervention.

It supports In-service Software Upgrade (**ISSU**) and Graceful Restart (**GR**) for OSPF/BGP routing protocol, guaranteeing the user data non-stop forwarding when the system is upgrading. It supports Bidirectional Forwarding Detection (**BFD**) that realizes fault detection and service recovery in seconds through linking with Layer 2 or Layer 3 protocol.

Excellent and Secure Traffic Control

The XGS-6350-48X2Q4C 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.

– 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)
- Port mirroring to monitor the incoming or outgoing traffic on a particular port (many to 1)
- Loop protection to avoid broadcast loops
- Link Layer Discovery Protocol (LLDP)
- Ethernet OAM 802.3ah/802.1ag/ITU-Y.1731

Quality of Service

- Ingress shaper and egress rate limit per port bandwidth control
- 8 priority queues on all switch ports
  – IEEE 802.1p CoS/DSCP/Precedence
  – VLAN ID
  – Policy-based ingress and egress QoS

Multicast

- Supports IPv4 IGMP snooping v1, v2 and v3
- Supports IPv6 MLD snooping v1 and v2
- Querier mode support
- MVR (Multicast VLAN Registration)

Security

- Authentication
  – IEEE 802.1x port-based network access authentication
  – Built-in RADIUS client to cooperate with the RADIUS servers
  – RADIUS/TACACS+ users access authentication
- Access Control List
  – IP-based Access Control List (ACL)
  – MAC-based Access Control List (ACL)
  – Time-based ACL
- DHCP Snooping to filter distrusted DHCP messages
- Dynamic ARP Inspection discards ARP packets with invalid MAC address to IP address binding
- IP Source Guard prevents IP spoofing attacks

Management

- IPv4 and IPv6 dual stack management
- Switch Management Interfaces
  – Console and Telnet Command Line Interface
  – HTTP web switch management

Powerful Security from Layer 2 to Layer 4

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-6350-48X2Q4C 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-6350-48X2Q4C empowers enterprises and campuses to take full advantage of the limited network resources and guarantees the best performance in VoIP and video conferencing transmissions.

Robust Layer 2 Features

The XGS-6350-48X2Q4C 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-6350-48X2Q4C allows the operation of a high-speed trunk combined with multiple ports, making it an LACP link aggregation.

Efficient and Secure Management

For efficient management, the XGS-6350-48X2Q4C Managed 100Gigabit Switch is equipped with console, Web and SNMP management interfaces.

■ With its built-in Web-based management interface, the XGS-6350-48X2Q4C offers an easy-to-use, platform-independent management and configuration facility.

■ The XGS-6350-48X2Q4C supports standard Simple Network Management Protocol (SNMP) and can be managed via any standard-based management software.

■ For reducing product learning time, the XGS-6350-48X2Q4C offers Cisco-like command via Telnet or console port. Moreover, the XGS-6350-48X2Q4C offers secure remote management by supporting SSH connection which encrypts the packet content at each session.

Centralized Hardware Stacking Management

Several XGS-6350-48X2Q4C switches can be used to build a virtually logical facility. The XGS-6350-48X2Q4C gives the enterprises, service providers and telecoms flexible control over port density, uplinks and switch stack performance. The XGS-6350-48X2Q4C can connect as a ring for redundancy and 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.

Flexibility and Extension Solution

The XGS-6350-48X2Q4C provides forty-eight 10Gbps SFP+, two 40Gbps QSFP+ and four 100Gbps QSFP28 Fiber interfaces. Each of the SFP+ slots support **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

- – SNMP v1 and v2c switch management
- – SSHv2, SSLv3, TLSv1.0 and SNMP v3 secure access
- • SNMP Management
  - – Four RMON groups (history, statistics, alarms, and events)
  - – SNMP trap for interface Link Up and Link Down notification
- • Built-in Trivial File Transfer Protocol (TFTP) client
- • BOOTP and DHCP for IP address assignment
- • System Maintenance
  - – Firmware upload/download via HTTP
  - – Reset button for system reboot or reset to factory default
  - – Dual images
- • DHCP Functions:
  - – DHCP Relay
  - – DHCP Option 82
  - – DHCP Server
- • User Privilege levels control
- • Network Time Protocol (NTP), SPAN, RSPAN
- • Network Diagnostic
  - – SFP-DDM (Digital Diagnostic Monitor)
  - – ICMP remote IP ping
- • Syslog remote alarm
- • System Log

Stacking Management

- • Virtualized multiple XGS-6350-48X2Q4C switches integrated into one logical device
- • Single IP address stack management, supporting up to 2 hardware units stacked together
- • Stacking architecture supports redundant Ring mode

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
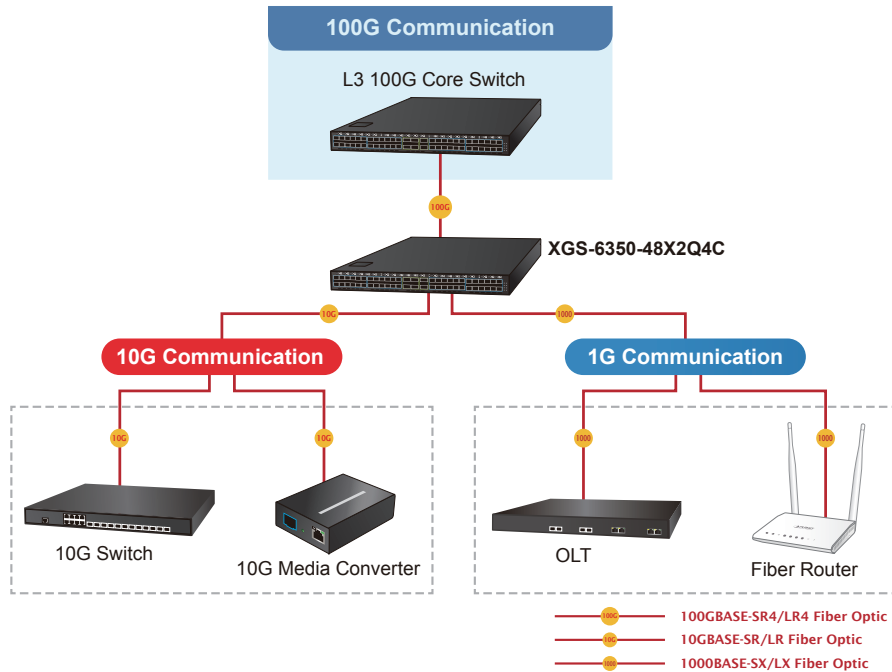
Applications

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-6350-48X2Q4C offers up to **1.92Tbps** data exchange speed via Optical Fiber interface and the transmission distance can be extended to 120km (single-mode fiber). The XGS-6350-48X2Q4C 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-6350-48X2Q4C is the ideal solution for data centers, service providers and telecoms to build redundant connection and establish high bandwidth for Big Data server farm.
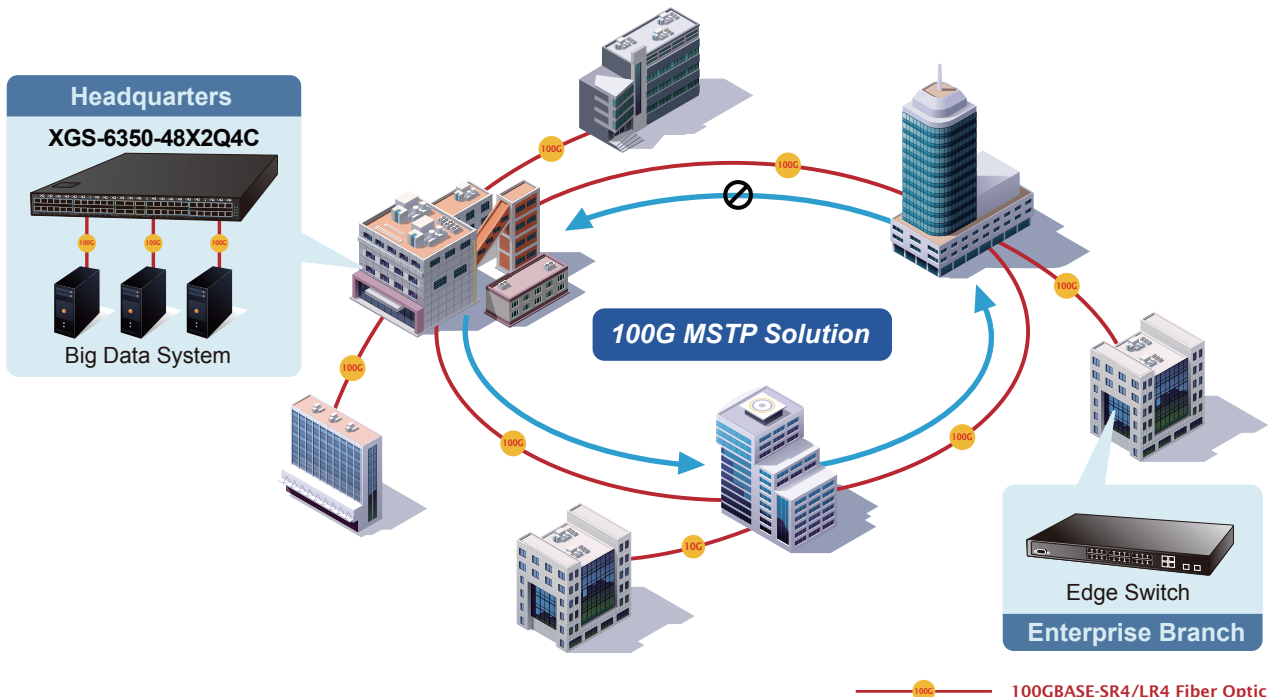
Reliable, High-performance and High-density Enterprise Backbone Switch

40/100 Gigabit Ethernet supported equipment has become the fundamental unit of enterprises and network servers. PLANET XGS-6350-48X2Q4C is the cost-effective, high-density and high-bandwidth chassis switch, which meets today's market requirements. Its dedicated chassis architecture feature makes all modules in the platform operate together as one much larger switch providing multiple high-performance 40/100-Gigabit Ethernet network for backbone of enterprises, campuses or telecoms.

The redundant management modules and three power supplies provide the XGS-6350-48X2Q4C with nonstop network service ability. Moreover, all modules are hot-swappable. They can be added or exchanged without interrupting the operation of the whole system. The XGS-6350-48X2Q4C is ideal for being a server farm switch connecting to servers and perfectly suitable for those networking environments requiring constant access to critical business applications.
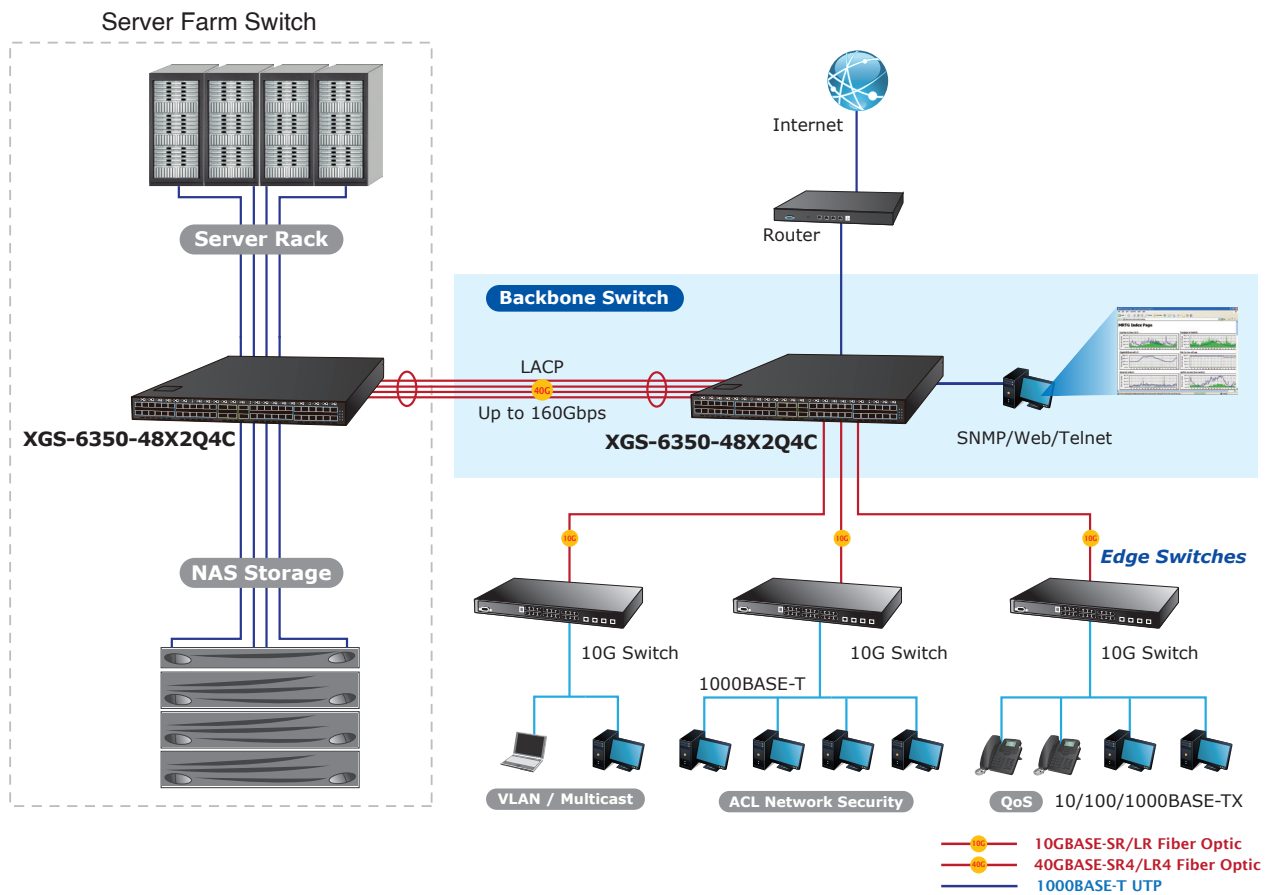
Specifications

Product	XGS-6350-48X2Q4C
Hardware Specifications	
QSFP28 Interfaces	4, each supports native 100/40 Gigabit Ethernet and 4 x 10 Gigabit Ethernet modes
QSFP+ Interfaces	2, each supports 40 Gigabit Ethernet and 4 x 10 Gigabit Ethernet modes
SFP+ Interfaces	48 10GBASE-SR/LR SFP+ interfaces Compatible with 1000BASE-SX/LX/BX SFP transceiver
MNG	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

LED Indicators	System:
	  PWRA, PWRB, **Green**
	  SYS, **Green**
	  MNG, **Green**
	Ports:
	  10G SFP+ interfaces: LNK/ACT, **Green**
	  40G/100G QSFP28 interfaces: LNK/ACT, **Green**
	  40G QSFP+ interfaces: LNK/ACT, **Green**

Dimensions (W x D x H)	442 x 404 x 44, 1U height
Weight	8.8kg
Power Consumption	147 watts/504.3 BTU (maximum)
Power Requirements	AC 100~240V, 50/60Hz DC 36~72V (optional)
Fan	4
Switching Performance	
Switch Architecture	Store-and-forward
Switch Capacity	1.92Tbps/non-blocking
Switch Throughput	1440Mpps@64bytes
Address Table	64K MAC address table with auto learning function
Shared Data Buffer	9MB
Flow Control	Back pressure for half duplex IEEE 802.3x pause frame for full duplex
Jumbo Frame	9K
IPv4 Layer 3 Functions	
IP Routing Protocol	RIP v1/v2 OSPFv2 BGP (Border Gateway Protocol) Static routing
Multicast Routing Protocol	PIM-DM and PIM-SM PIM-SSM
Routing Features	VRRP Policy routing Load balance through equal-cost routing BFD (Bidirectional Forwarding Detection) for OSPF and BGP
IPv6 Layer 3 Functions	
IP Routing Protocol	RIPng OSPFv3 BGP4+
Routing Features	Manual tunnel ISATAP tunnel 6-to-4 tunnel
IPv6 Functions	ICMPv6, DHCPv6, ACLv6, IPv6 Telnet IPv6 Neighbor Discovery Path MTU Discovery
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

VLAN	IEEE 802.1Q tag-based VLAN,
	IEEE 802.1ad Q-in-Q VLAN stacking/tunneling
	GVRP for VLAN management
	Private VLAN
	Up to 4K VLAN groups
Spanning Tree Protocol	IEEE 802.1D Spanning Tree Protocol (STP)
	IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
	IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
	BPDU protection, root protection
IPv4 IGMP Snooping	IPv4 IGMP v1/v2/v3 snooping
	IGMP Fast Leave
	IPv4 Querier mode support
	IGMP Filtering and IGMP Throttling
	IGMP Proxy reporting
IPv6 MLD Snooping	IPv6 MLD v1/v2 snooping
	Multicast VLAN Register (MVR)
Bandwidth Control	Ingress and Egress
	At least 64Kbps stream
Link Aggregation	IEEE 802.3ad LACP/static trunk
	Supports 8 groups with 8 ports per trunk group
QoS	8 priority queues on all switch ports
	Traffic Supervision and Traffic Shaping
	Scheduling for priority queues
	- Weighted Round Robin (WRR)
	- Strict priority (SP)
	- SP+WRR
	Traffic classification:
	- IEEE 802.1p CoS
	- DSCP
	- DiffServ
	- Precedence
	- TOS
	- VLAN ID
	- IP ACL
	- MAC ACL
	Policy-based ingress and egress QoS
	802.1p and DSCP priority remark
Authentication	IEEE 802.1x port-based network access control
	AAA authentication: TACACS+ and IPv4/IPv6 over RADIUS

Security Function	
Access Control List	Supports Standard and Expanded ACL
	IP-based ACL/MAC-based ACL
	Time-based ACL
	Up to 1K entries
Security	Port isolation
	Port security, supports IP + MAC + port binding
	Identification and filtering of L2/L3/L4 based ACL
	Defend against DOS or TCP attacks
	Suppression of broadcast, multicast and unknown unicast packet
	DHCP Snooping, DHCP Option 82
	Command line authority control based on user levels
AAA	TACACS+ and IPv4/IPv6 over RADIUS
Network Access Control	IEEE 802.1x port-based network access control

Management Function	
System Configuration	Console and Telnet
	Web browser
	SNMP v1, v2c
Secure Management Interfaces	SSHv2, SSLv3, TLSv1.0 and SNMPv3
	Maximum 8 sessions for SSH and Telnet connection

System Management	Supports both IPv4 and IPv6 Protocols Supports the user IP security inspection for IPv4/IPv6 SNMP Supports MIB and TRAP Supports TFTP, FTP Supports IPv4/IPv6 NTP Supports RMON 1, 2, 3, 9 groups Supports the RADIUS authentication for IPv4/IPv6 Telnet user name and password The right configuration for users to adopt RADIUS server's shell management Supports Security IP safety net management function: avoid unlawful landing at non-restrictive area Supports TACACS+ Supports SPAN, RSPAN
Event Management	Supports syslog server for IPv4 and IPv6
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 FRC 3810 MLD v2 RFC 2328 OSPF v2 RFC 1058 RIP v1 RFC 2453 RIP v2

Environments	
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-6350-48X2Q4C	Layer 3 48-Port 10G SFP+ + 2-Port 40G QSFP+ + 4-Port 100G QSFP28 Managed Switch

Related Products

XGS-6350-24X4C	Layer 3 24-Port 10G SFP+ + 4-Port 100G QSFP28 Managed Switch
XGS-6350-12X8TR	Layer 3 12-Port 10G SFP+ + 8-Port 10/100/1000T Managed Switch
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-6350-48X2Q4C

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	70m (OM3) 100m (OM4)	850nm	0 ~ 70 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

10Gigabit SFP+ (10GBASE-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) MGB-LB10(V2)	YES	1000	WDM(LC)	Single Mode	10km	1310nm 1550nm	1550nm 1310nm	0 ~ 60 degrees C
MGB-LA20(V2) MGB-LB20(V2)	YES	1000	WDM(LC)	Single Mode	20km	1310nm 1550nm	1550nm 1310nm	0 ~ 60 degrees C
MGB-LA40(V2) MGB-LB40(V2)	YES	1000	WDM(LC)	Single Mode	40km	1310nm 1550nm	1550nm 1310nm	0 ~ 60 degrees C
MGB-LA80 MGB-LB80	YES	1000	WDM(LC)	Single Mode	80km	1490nm 1550nm	1550nm 1490nm	0 ~ 60 degrees C
MGB-TLA10(V2) MGB-TLB10(V2)	YES	1000	WDM(LC)	Single Mode	10km	1310nm 1550nm	1550nm 1310nm	-40 ~ 75 degrees C
MGB-TLA20 MGB-TLB20	YES	1000	WDM(LC)	Single Mode	20km	1310nm 1550nm	1550nm 1310nm	-40 ~ 75 degrees C
MGB-TLA40 MGB-TLB40	YES	1000	WDM(LC)	Single Mode	40km	1310nm 1550nm	1550nm 1310nm	-40 ~ 75 degrees C
MGB-TLA80 MGB-TLB80	YES	1000	WDM(LC)	Single Mode	80km	1490nm 1550nm	1550nm 1490nm	-40 ~ 75 degrees C

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

XGS-6350-48X2Q4C