

Product Specifications

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

XGS-6350-24X4C

Version 1.0

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Change History:

Revision:	Date:	Author:	Change List
Version 1.0	11/05/2018	Simon Yeh	Initial release

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1. PRODUCT DESCRIPTION



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.

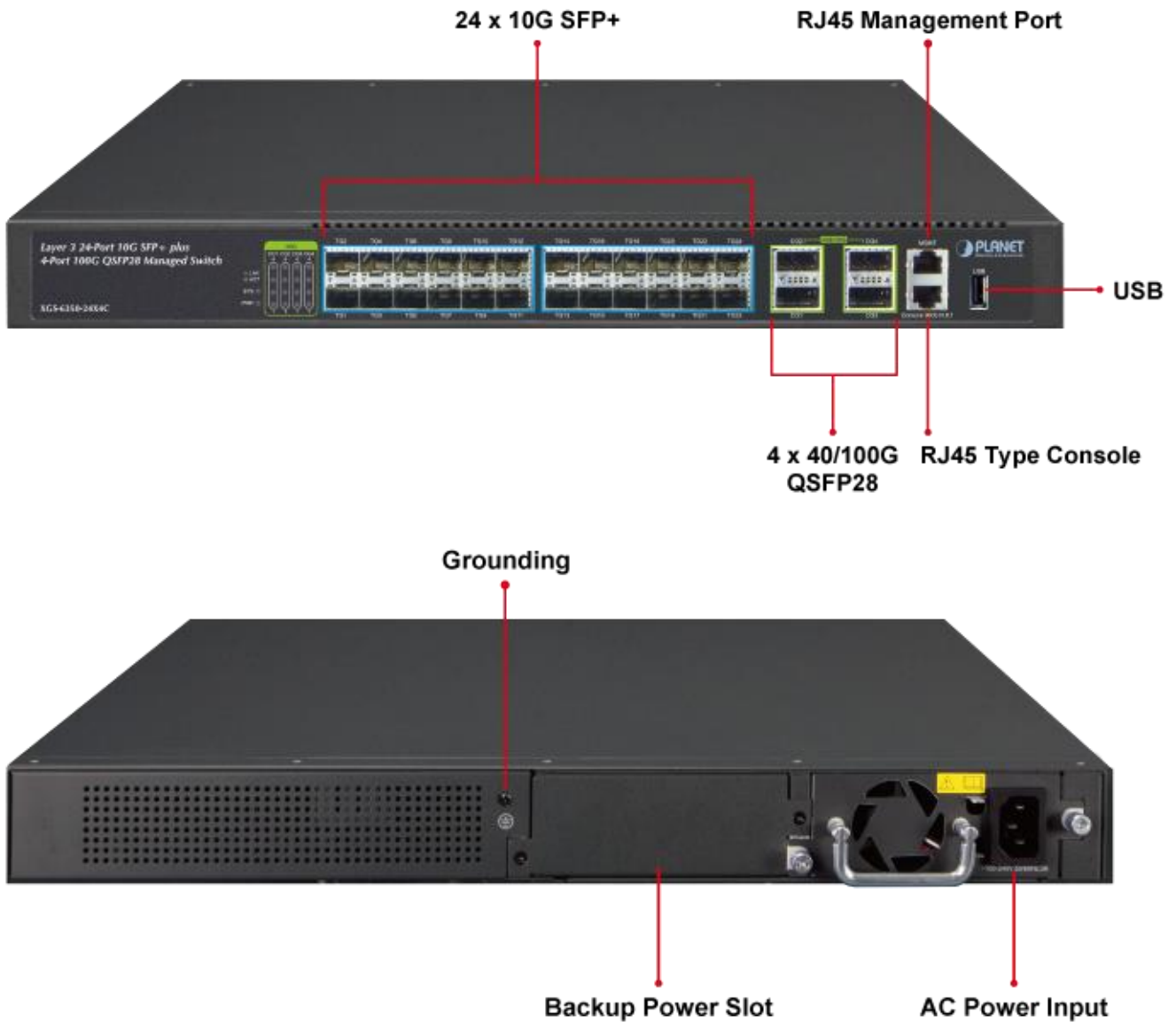
The administrator can flexibly choose the suitable transceivers according to the transmission distance or the transmission speed required extending the **1G/10G/40G/100G** network efficiently. Besides, with 1.28Tbps switching capacity, the XGS-6350-24X4C can handle extremely large amounts of data in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

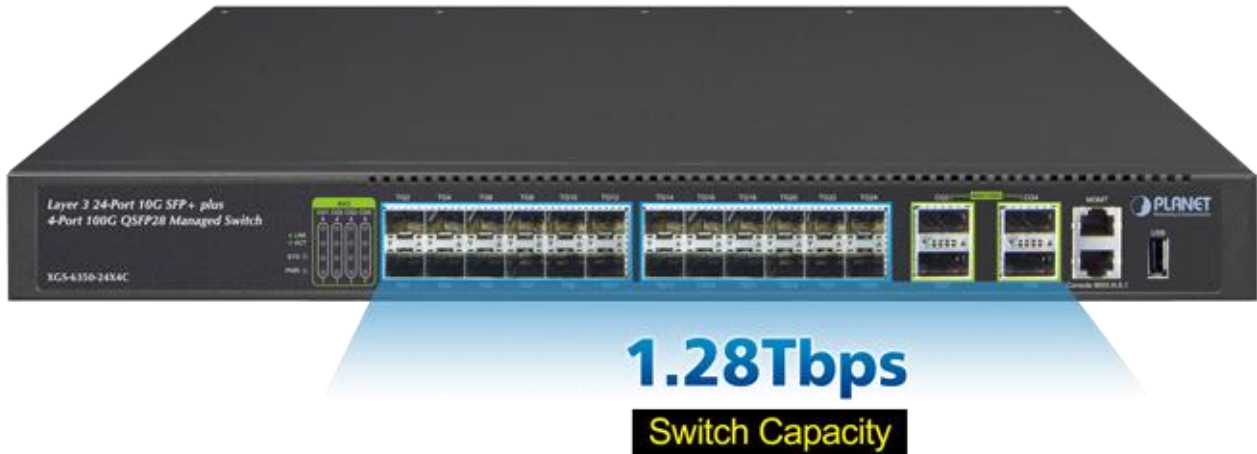


Layer 3 Routing Support

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.

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.

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+ ports and four 100Gbps QSFP28 fiber interfaces. Each of the SFP+ ports supports **Dual Speed, 10GBASE-SR/LR or 100GBASE-SX/LX** and each of the QSFP28 interfaces 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.

2. PRODUCT FEATURES

➤ **Physical Ports**

- 24 10GBASE-SR/LR SFP+** slots, compatible with 1000BASE-SX/LX/BX SFP
- 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

➤ **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
- 32K 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)
 - 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
- 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

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

Switch ASIC:	CTC7148	x 1
Switch PHY:	built in with the switching chip	x 1
CPU:	CAVIUM OCTEON CN7020	x 1
Flash:	32MB	x 1
SDRAM:	1GB	x 1

3.2 FUNCTION SPECIFICATIONS

Product	XGS-6350-24X4C
Hardware Specifications	
QSFP28 Slots	4 with each supporting 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
Console	1 x RJ45-to-DB9 serial port (9600, 8, N, 1)
Management	1 x RJ45 (10/100/1000BASE-T)
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	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

Management Function	
System Configuration	Console; Telnet; SSH; Web browser; SNMP v1, v2c and v3
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 TFTP</p> <p>Supports IPv4/IPv6 NTP</p> <p>Supports RMON 1, 2, 3, 9 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 SNMPv1, v2c and v3</p> <p>Supports Security IP safety net management function: avoid unlawful landing at non-restrictive area</p> <p>Supports syslog server for IPv4 and IPv6</p> <p>Supports TACACS+</p>
Layer 3 Function	
Routing Protocol	<p>Static routing</p> <p>RIP</p> <p>OSPF</p>
Routing Table	16K
DHCP	<p>DHCP client</p> <p>DHCP server, default route</p> <p>DHCP relay</p>
VRRP	<p>Configure VRRP in interface VLAN;</p> <p>VRRP priority;</p> <p>VRRP standby;</p> <p>VRRP track</p>
Load Balancing	Use of equivalent routing, the correct load balancing function (by flow)
Layer 2 Function	
Port Configuration	<p>Port disable/enable</p> <p>Auto-negotiation 10/100/1000Mbps full and half duplex mode selection</p> <p>Flow control disable/enable</p> <p>Bandwidth control on each port</p> <p>Port loopback detect</p>

Port Status	Display each port's speed duplex mode, link status, flow control status and auto negotiation status
VLAN	802.1Q tag-based VLAN, up to 4K VLAN entries 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 32 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	IPv4 IGMP v1/v2/v3 snooping Querier mode support IPv6 MLD v1/v2 snooping Querier mode support Multicast VLAN Register (MVR)
Access Control List	Supports Standard and Expanded ACL IP-based ACL/MAC-based ACL Time-based ACL Up to 1K entries
Bandwidth Control	At least 64Kbps stream
Security	Port isolation Supports IP + MAC + port binding Identification and filtering of L2/L3/L4 based ACL Defends 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
Authentication	IEEE 802.1x port-based network access control AAA authentication: TACACS+ and IPv4/IPv6 over RADIUS

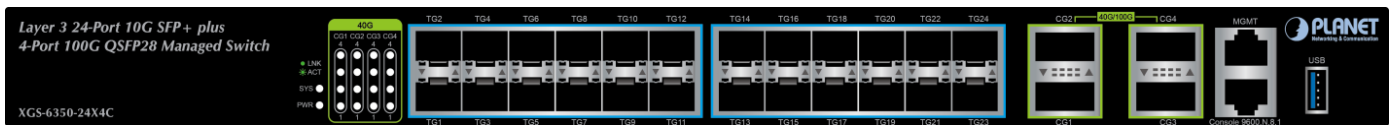
<p>SNMP MIBs</p>	<p>RFC 1213 MIB-II RFC 1215 Internet Engineering Task Force RFC 1271 RMON RFC 1354 IP-Forwarding MIB RFC 1493 Bridge MIB RFC 1643 Ether-like MIB RFC 1907 SNMPv2 RFC 2011 IP/ICMP MIB RFC 2012 TCP MIB RFC 2013 UDP MIB RFC 2096 IP forward MIB RFC 2233 if MIB RFC 2452 TCP6 MIB RFC 2454 UDP6 MIB RFC 2465 IPv6 MIB RFC 2466 ICMP6 MIB RFC 2573 SNMPv3 notification RFC 2574 SNMPv3 VACM RFC 2674 Bridge MIB Extensions</p>
<p>Standard Conformance</p>	
<p>Regulatory Compliance</p>	<p>FCC Part 15 Class A, CE</p>
<p>Standards Compliance</p>	<p>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</p>

	<p>RFC 2236 IGMP v2</p> <p>RFC 3376 IGMP v3</p> <p>RFC 2710 MLD v1</p> <p>RFC 3810 MLD v2</p> <p>RFC 2328 OSPF v2</p> <p>RFC 1058 RIP v1</p> <p>RFC 2453 RIP v2</p>
Environment	
Operating	<p>Temperature: 0 ~ 50 degrees C</p> <p>Relative Humidity: 10 ~ 85% (non-condensing)</p>
Storage	<p>Temperature: -40 ~ 80 degrees C</p> <p>Relative Humidity: 5 ~ 95% (non-condensing)</p>

3.3 PHYSICAL SPECIFICATIONS:

Dimensions (W x D x H)	442.5 x 364 x 44mm, 1U height
Weight	5.99kg

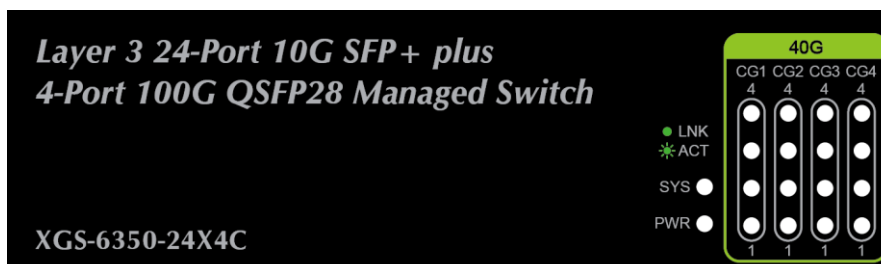
■ Front Panel:



■ Rear Panel:



■ LED Definition



XGS-6350-24X4C LED panel

■ **System**

LED	Color	Function
PWR	Green	Lights to indicate that the Switch has power.
	Off	Power is off.
SYS	Green	Blinks to indicate the system diagnosis is completed; lights to indicate the system is normally starting up.

■ **SFP+ Interfaces**

LED	Color	Function
LNK/ACT	Green	Blinks to indicate the data is transmitting and receiving through the port; lights to indicate the link on the port is normal.

■ **40G Status LED (Divided into 4 10G)**

LED	Color	Function
LNK/ACT (CG1~CG4)	Green	Operating in 100G mode, the LED does not light; when the QSFP+ corresponding port indicator is lit, 4 indicators indicate the LINK/ACT status of the 4 10GE ports corresponding to the QSFP+ port.

3.4 ENVIRONMENTAL SPECIFICATIONS

Operating:	Temperature:	0 ~ 50 degrees C
	Relative Humidity:	10% ~ 85% (non-condensing)
Storage:	Temperature:	-40 ~ 80 degrees C
	Relative Humidity:	5% ~ 95% (non-condensing)

3.5 ELECTRICAL SPECIFICATIONS

AC Power Input Voltage:	100 ~ 240VAC, 50/60Hz, auto-sensing.
Power Consumption (System On):	100V: 40.65 watts
	220V: 39.93 watts
	240V: 39.02 watts
Power Consumption (Full Loading):	100V: 67.48 watts
	220V: 65.38 watts
	240V: 65.12 watts

3.6 REGULATORY COMPLIANCE

FCC Class A, CE.

3.7 RELIABILITY

MTBF > 50,000 hrs @ 25 degrees C

3.8 BASIC PACKAGING

- XGS-6350-24X4C x 1
- Quick Installation Guide x 1
- Power Cord x 1
- RJ45-to-DB9 Console Cable x 1
- SFP Dust Caps x 28
- Rubber Feet x 4
- Rack-mounting Brackets with attachment screws x 2

3.9 PACKING INFORMATION

Dimensions (W x D x H)	590 x 448 x 94 mm
Gross Weight	6.59kg
Carton Dimensions (W x D x H)	605 x 462 x 309 mm
Carton Weight	19.77kg
Carton Unit	3pcs in one carton