

# L3 24-Port 2.5GBASE-T 802.3bt PoE + 6-Port 10GBASE-X SFP+ Managed Ethernet Switch



## Perfect Managed Multigigabit Ethernet Switch with L3/L2 Switching and Security

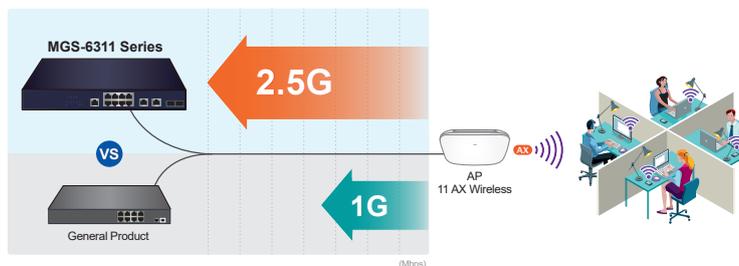
PLANET MGS-6311-24UPL6X is a brand-new Layer 3 managed multigigabit switch delivering 2.5Gbps over existing UTP, purpose-built for high-bandwidth edge such as Wi-Fi 6/6E/7 access points, NAS, and workstations with 2.5GBASE-T interfaces. It features 24 10/100/1000/2500BASE-T copper ports with IEEE 802.3bt PoE++ (up to 95W/port) and a total PoE budget up to 720W, plus 6 10GBASE-X SFP+ fiber uplinks to flexibly extend distance.

The MGS-6311-24UPL6X provides high-density performance, Layer 3 static routing, RIP and OSPF. With six 10Gbps uplinks, it securely aggregates large volumes of traffic to enterprise backbones or high-capacity servers. Its comprehensive security enables effective traffic control for ISP and enterprise VoIP, video streaming and multicast applications. A smart fan design further balances cooling and acoustics based on load and temperature.

## 2.5Gbps Capability for Diversified Bandwidth Applications

With Wi-Fi 6/6E/7 APs pushing multi-gigabit throughput, traditional Gigabit access is no longer sufficient. Supporting 2.5Gbps and 802.3bt PoE++, the MGS-6311-24UPL6X delivers both data and high power over existing CAT5e cabling to APs, IP cameras and other PDs—speed you demand with plug-and-play simplicity for fast rollouts.

## New Generation of Multigigabit Switch



The fiber-optic 10GBASE-X SFP+ interfaces of the MGS-6311-24UPL6X support multi-speed operation at 1G, 2.5G, and 10G, allowing network administrators to flexibly choose suitable SFP or SFP+ transceivers according to required transmission distance or bandwidth, enabling seamless network expansion across diverse environments.

## Physical Ports

- 24 10/100/1000/2500BASE-T ports with IEEE 802.3bt PoE++ injector function (up to 95W per port)
- 6 10GBASE-SR/LR SFP+ slots, backward compatible with 1000/2500BASE-X SFP transceivers
- RJ45 to DB9 console interface for switch basic management and setup

## IP Routing Features

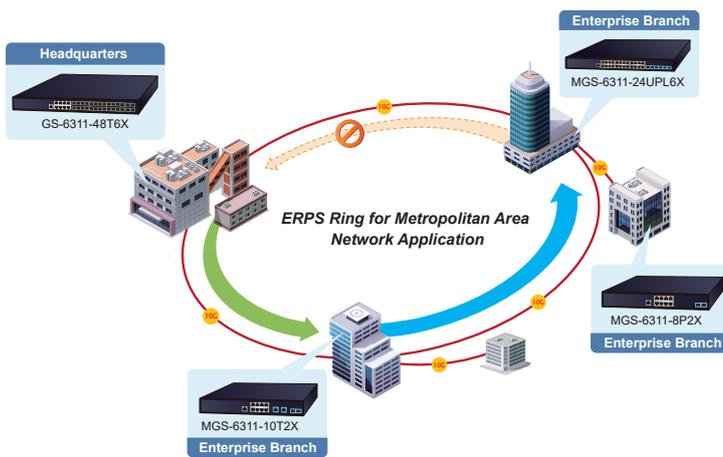
- IP routing protocol supports RIPv1/v2, RIPv6, OSPFv2/v3, BGP4/BGP6
- IPv4/IPv6 static routing and VRRP (IPv4/IPv6) function provide reliable Layer 3 gateway redundancy
- Routing interface provides per VLAN routing mode
- Supports route redistribution

## Layer 2 Features

- Complies with the IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z, IEEE 802.3bz Gigabit Ethernet standard
- 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 detection
- 32K MAC address table, automatic source address learning and aging
- Supports VLAN
  - IEEE 802.1Q tag-based VLAN
  - GVRP for dynamic VLAN management
  - 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 64 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, BPDU Filtering and BPDU Forwarding.

### Redundant Ring, Fast Recovery for Critical Network Applications

The MGS-6311-24UPL6X supports redundant ring technology and features strong, rapid self-recovery capability to prevent interruptions and external intrusions. It incorporates advanced ITU-T G.8032 ERPS (Ethernet Ring Protection Switching) technology and Spanning Tree Protocol (802.1s MSTP) into customer's network to enhance system reliability and uptime in harsh environments. In a certain simple Ring network, the recovery time could be less than 15ms to quickly bring the network back to normal operation.



### Layer 3 Routing Support

The MGS-6311-24UPL6X is equipped with advanced Layer 3 routing capabilities, including Static Route, RIP/RIPng, OSPF/OSPFv3, and BGP4/BGP6, enabling efficient inter-VLAN and inter-domain routing within enterprise networks.

With full support for VRRP (IPv4/IPv6), the switch provides gateway redundancy and ensures uninterrupted network connectivity in case of link or device failure. These features make the MGS-6311-24UPL6X ideal for large-scale or multi-segment deployments that require scalable, resilient, and secure Layer 3 performance.

### Strong Multicast

The MGS-6311-24UPL6X supports abundant multicast features. In Layer 2, it features IPv4 IGMPv1/v2/v3 snooping and IPv6 MLD v1/v2 snooping. With Multicast VLAN Register (MVR), multicast receiver/sender control and illegal multicast source detect functions which makes the MGS-6311-24UPL6X great for any robust networking.

### Full IPv6 Support

The MGS-6311-24UPL6X 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 MGS-6311-24UPL6X can be programmed for basic switch management functions such as port speed configuration, port aggregation, VLAN, Multiple Spanning Tree Protocol, bandwidth control and IGMP snooping. This switch provides 802.1Q tagged VLAN, Q-in-Q, voice VLAN and GVRP Protocol

- Port mirroring to monitor the incoming or outgoing traffic on a particular port (many to many)
- Provides port mirror (many-to-1)
- Supports G.8032 ERPS (Ethernet Ring Protection Switching)

### 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
- Supports IPv6 MLD v1 and v2 snooping
- Querier mode support
- Supports Multicast VLAN Register (MVR)
- IGMP proxy and fast-leave mechanisms are available to optimize multicast forwarding

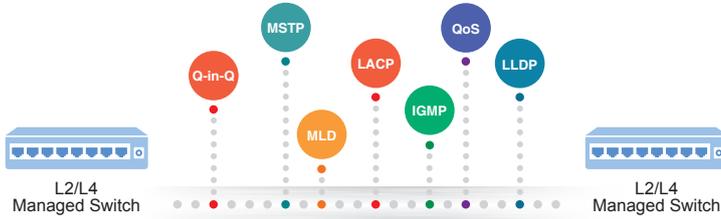
### Security

- 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
  - SSHv2/TLSv1.2 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

functions. By supporting port aggregation, the MGS-6311-24UPL6X allows the operation of a high-speed trunk combined with multiple ports. It enables up to 64 groups for trunking with a maximum of 8 ports for each group.



### Excellent Layer 2 to Layer 4 Traffic Control

The MGS-6311-24UPL6X 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.

### Powerful Network Security

The MGS-6311-24UPL6X 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 applications. Its protection mechanism also comprises 802.1x Port-based, MAC-based and web-based user and device authentications, which can be deployed with RADIUS, to ensure the port level security and block illegal users.

### Advanced IP Network Protection

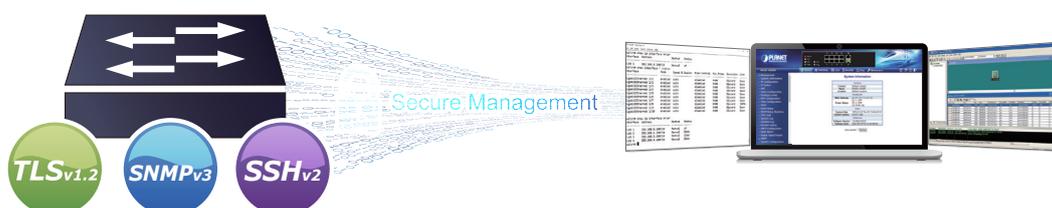
The MGS-6311-24UPL6X also provides DHCP Snooping, IP Source Guard and Dynamic ARP Inspection functions to prevent IP snooping from attack and discard ARP packets with invalid MAC address. The network administrators can now construct highly-secure corporate networks with considerably less time and effort than before.

### Efficient and Secure Management

For efficient management, the MGS-6311-24UPL6X is equipped with console, Web and SNMP management interfaces.

- With the built-in Web-based management interface, the MGS-6311-24UPL6X offers an easy-to-use, platform-independent management and configuration facility.
- For text-based management, it can be accessed via Telnet and the console port. For reducing product learning time, the MGS-6311-24UPL6X offers Cisco-like command and customer doesn't need to learn new command from these switches
- For standard-based monitor and management software, it offers SNMPv3 connection which encrypts the packet content at each session for secure remote management.

Moreover, the MGS-6311-24UPL6X offers secure remote management by supporting SSHv2 connection which encrypts the packet content at each session.



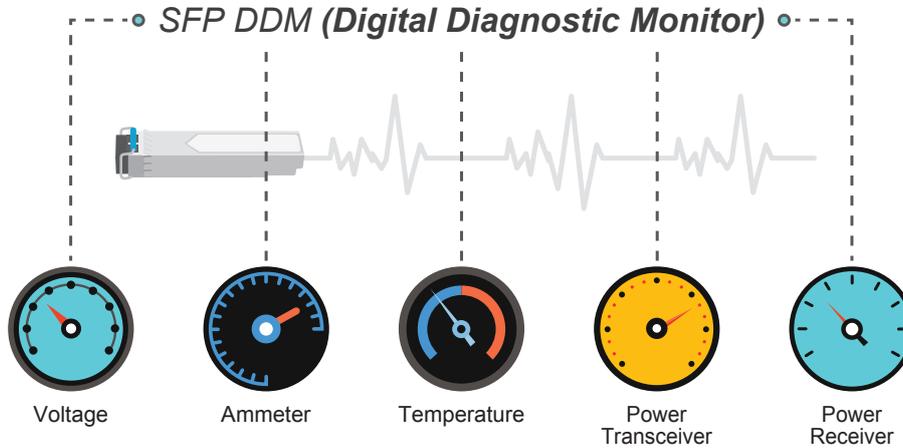
- Four RMON groups 1, 2, 3, 9 (history, statistics, alarms and events)
- Supports sFlow
- Supports ULDP
- Supports ULPP (Uplink Protection Protocol)
- Supports ULSM (Uplink State Monitor protocol)
- Supports LLDP/LLDP MED
- Supports DHCP Option82/43/60/61/67
- Supports ping, trace route function for IPv4 and IPv6
- PLANET Smart Discovery Utility for deployment management
- Supports PLANET NMS for centralized deployment and management

### Power over Ethernet

- Complies with IEEE 802.3bt Power over Ethernet Plus Plus
- Up to 24 ports of IEEE 802.3bt PoE++ with each offering up to 95 watts (Ports 1-24)
- Supports maximum 720-watt PoE budget
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100 meters
- PoE management
  - Total PoE power budget control
  - Per port PoE function enable/disable
  - PoE port power feeding priority
  - Per PoE port power limitation
  - PD classification detection
  - PoE schedule
- Intelligent PoE features
  - PD alive check
  - PoE schedule

### Intelligent SFP Diagnosis Mechanism

The MGS-6311-24UPL6X supports SFP-DDM (Digital Diagnostic Monitor) function that greatly helps network administrator to easily monitor real-time parameters of the SFP and SFP+ transceivers, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.

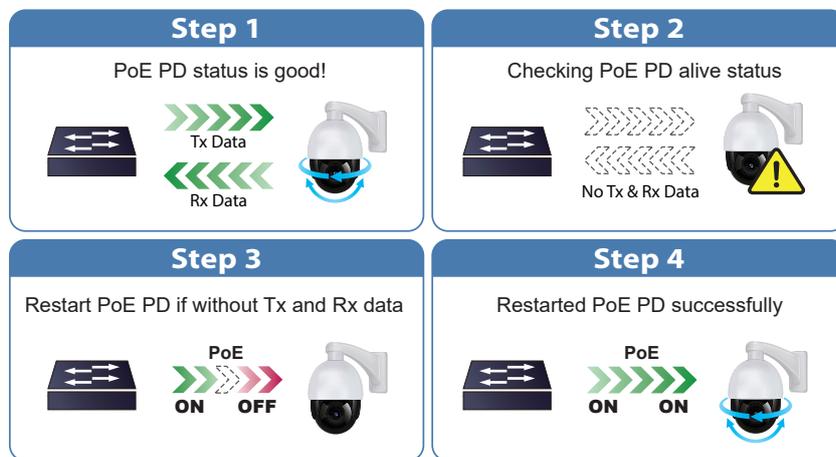


### Centralized Power Management for Gigabit Ethernet PoE Networking

To meet higher-power PoE applications with multi-gig access, the MGS-6311-24UPL6X provides 24 IEEE 802.3bt PoE++ ports delivering up to 95W per port (PD dependent) and a total 720W PoE budget. Power and data are integrated, centrally managed and delivered over a single cable—cutting AC wiring costs and installation time while supporting IR/PTZ/speed-dome cameras, Wi-Fi 6/6E/7 APs and more.

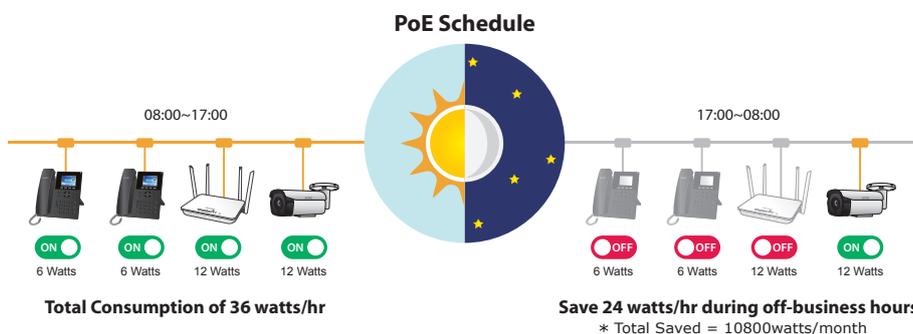
### Intelligent Powered Device Alive Check

The MGS-6311-24UPL6X can monitor connected PD status in real time via PD alive check function. Once the PD stops working and responding, the MGS-6311-24UPL6X will resume the PoE power and bring the PD back to work. It will greatly enhance the network reliability through the PoE port resetting the PD's power source and reducing administrator management burden.



### PoE Schedule for Energy Savings

Besides being used for IP surveillance, the MGS-6311-24UPL6X is certainly applicable to build any PoE network including VoIP and wireless LAN. Under the trend of energy saving worldwide and contributing to the environmental protection on the Earth, the MGS-6311-24UPL6X can effectively control the power supply besides its capability of giving high watts power. The “PoE schedule” function helps you to enable or disable PoE power feeding for each PoE port during specified time intervals and it is a powerful function to help SMBs or enterprises save energy and budget.



Remote Management Solution with NMS

The MGS-6311 series with the NMS helps IT staff remotely manage all network devices and monitor PDs' operational statuses. Thus, they are designed for both the enterprises and industries where deployments of PDs can be as remote as possible, without having to go to the actual location once a bug or faulty condition is found. With the NMS, all kinds of businesses can now be speedily and efficiently managed from one platform.

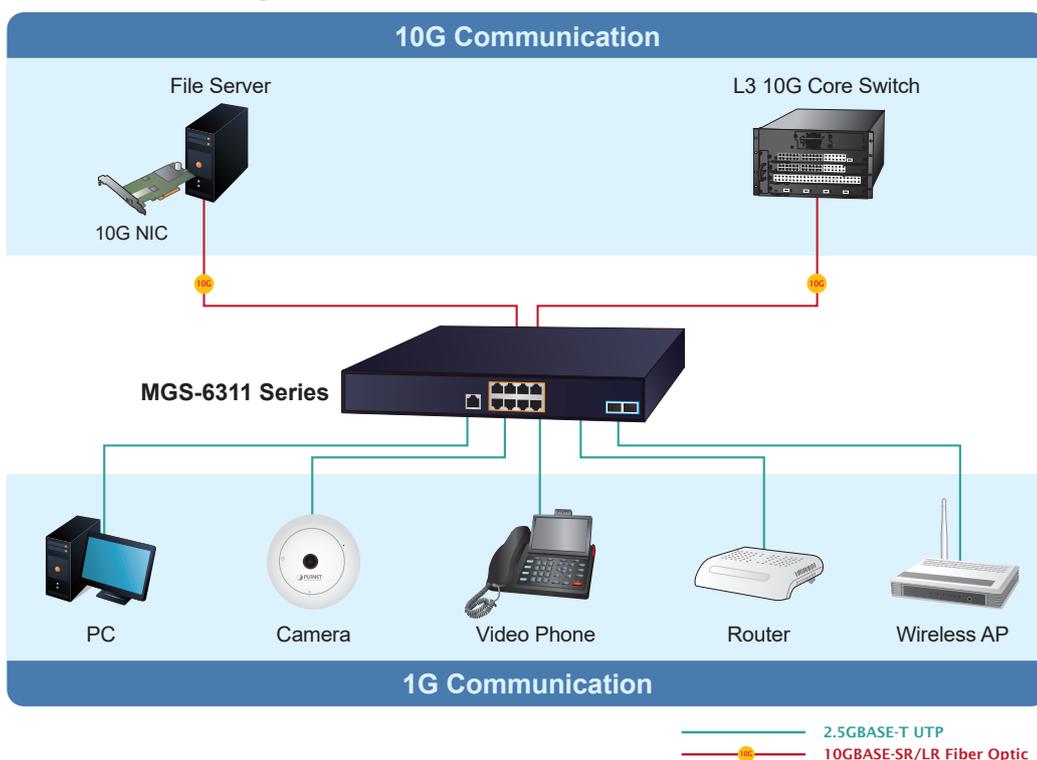


## Applications

Excellent Solution to Enterprise Security and QoS Switch

The MGS-6311-24UPL6X performs 240 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 six built-in SFP+ ports, the MGS-6311-24UPL6X 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.

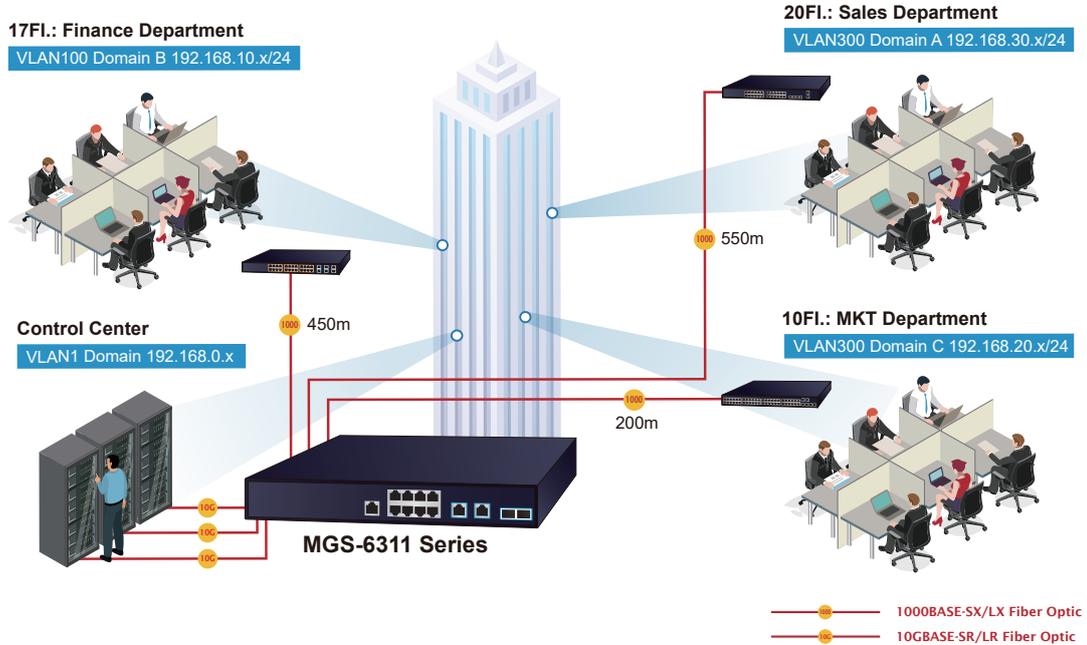
### High Performance Server Service



Layer 3 VLAN Routing

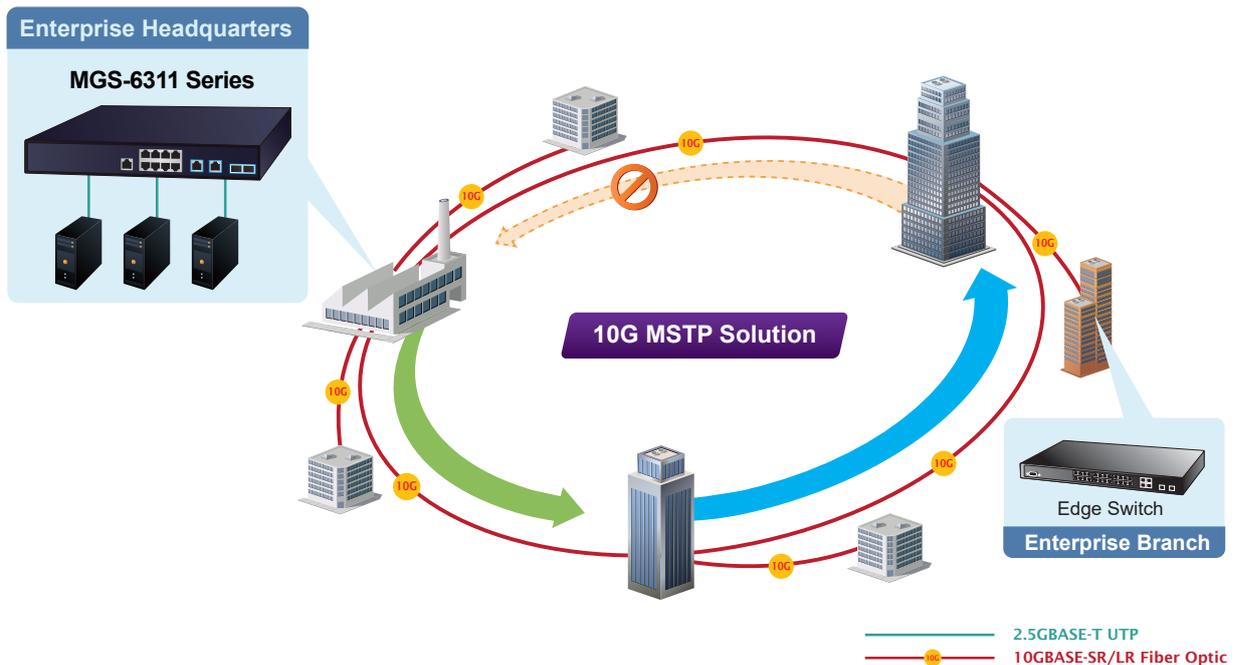
With the built-in robust Layer 3 traffic routing protocols, the MGS-6311-24UPL6X ensures reliable routing between VLANs and network segments. The routing protocols can be applied via VLAN interface. The MGS-6311-24UPL6X is certainly a cost-effective and ideal solution for enterprises.

## VLAN Routing + 10G Uplink Applications



High Availability Mesh Networking Solution for Big Data System

Highly flexible, extendable and easy to deploy, the MGS-6311-24UPL6X offers high-throughput optical uplinks with long-distance options up to 120km (module-dependent) and rapid self-recovery (MSTP/ERPS). It is ideal for data centers, service providers and telecoms to build redundant connections and high-bandwidth aggregation for big-data server farms.



## Specifications

Product	MGS-6311-24UPL6X
<b>Hardware Specifications</b>	
Copper Ports	24 10/100/1000/2500BASE-T RJ45 copper ports (ports 1 to 24)
PoE Injector Port	24 ports with IEEE 802.3bt PoE++ injector function (up to 95W per port, total 720W)
10G SFP+ Ports	6 10GBASE-SR/LR SFP+ interfaces (ports 25 to 30) Backward compatible with 1000/2500BASE-X SFP transceivers
Console Port	1 x RJ45-to-RS232 serial port (9600, 8, N, 1)
CPU	MIPS InterAptiv Dual-Core, up to 1GHz
RAM	512Mbytes
Flash Memory	32Mbytes
ESD Protection	Contact ±6KV , Air ±8KV
Surge Protection	Differential mode ±2KV , Common mode ±4KV
Dimensions (W x D x H)	440 x 330 x 44 mm, 1U height
Weight	5076g
Power Consumption	29.1 watts / 99.3BTU (System) 818 watts/ 2791.1 BTU (System+PoE)
Power Requirements- AC	AC 100~240V, 50/60Hz
Fan	6
LED	<b>System:</b> PWR (Green), SYS (Green) <b>Ports:</b> <b>Per 2.5GBASE-T RJ45 Ports:</b> 10/100/1000/2500Mbps LNK/ACT (Green) PoE-in-Use (Amber) <b>Per 10GBASE-X SFP Ports:</b> 1G/2.5G/10G LNK/ACT (Green)
<b>Switching Specifications</b>	
Switch Architecture	Store-and-forward
Switch Fabric	240Gbps/non-blocking
Switch Throughput	178.56Mpps
Address Table	32K MAC address table with auto learning function
ARP Table	8K
Routing Table	12K
IP Interface	32
ACL Table	4K
Shared Data Buffer	16Mbit
Multicast Table	1K
Jumbo Frame	12KBytes
Flow Control	Back pressure for half duplex IEEE 802.3x pause frame for full duplex
<b>Power over Ethernet Specifications</b>	
PoE Standard	IEEE 802.3bt PoE++ PSE Backward compatible with IEEE 802.3at/af PoE PSE
PoE Power Supply Type	802.3bt : End-span+Mid-span 802.3at : End-span
PoE Power Output	Port 1 to 24 – 95W (max.)
Power Pin Assignment	802.3bt: 1/2(-), 3/6(+), 4/5(+), 7/8(-) 802.3at PoE: End-span: 1/2(-), 3/6(+)
PoE Power Budget	720 watts (max)
Number of 95W 802.3bt Type-4 PDs	7
Number of 60W 802.3bt Type-3 PDs	12
Number of 802.3at PDs	24
<b>IPv4 Layer 3 Functions</b>	
IP Routing Protocol	Static route RIPv1/v2 OSPFv2/v3 BGP4 VRRP PIM
Layer 3 Protocol	ARP ARP Proxy IGMP Proxy

IPv6 Layer 3 Functions	
IP Routing Protocol	IPv6 Static Route RIPng OSPFv3 BGP6 VRRP (IPv6) PIM (IPv6)
Layer 3 Protocol	MLD Proxy
Other	ICMPv6,ND,DNSv6
Layer 2 Functions	
Port Configuration	EEE Green energy savings disable/enable Port disable/enable 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 VLAN, up to 4K 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
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 and root guard, BPDU Filtering and BPDU Forwarding
Bandwidth Control	TX/RX/Both
Link Aggregation	IEEE 802.3ad LACP/static trunk Supports 64 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 IPv4 Querier mode support IPv6 MLD v1/v2 snooping Multicast VLAN Register (MVR) Up to 1024
Security Functions	
Access Control List	Supports Standard and Expanded ACL IP-based ACL/MAC-based ACL Time-based ACL Up to 4K entries
Security	Port isolation 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 82/43/60/61/67 Command line authority control based on user levels
AAA	TACACS+ and IPv4/IPv6 over RADIUS
Authentication	IEEE 802.1x port-based network access control
Switch Management Functions	
System Configuration	Console, Telnet, Web browser, SNMP v1, v2c
Secure Management Interfaces	SSHv2, TLSv1.2, SNMPv3

Management	<p>IPv4 and IPv6 dual stack management</p> <p>User IP security inspection for IPv4/IPv6 SNMP</p> <p>SNMP v1, v2c and v3</p> <p>SNMP MIB and TRAP</p> <p>SNMP RMON 1, 2, 3, 9 four groups</p> <p>IPv4/IPv6 FTP/TFTP</p> <p>IPv4/IPv6 NTP</p> <p>RADIUS authentication for IPv4/IPv6 Telnet user name and password</p> <p>IPv4/IPv6 SSH</p> <p>The right configuration for users to adopt RADIUS server's shell management</p> <p>CLI, console, Telnet</p> <p>Security IP safety net management function: avoid unlawful landing at nonrestrictive area</p> <p>Syslog server for IPv4 and IPv6</p> <p>TACACS+</p> <p>PLANET Smart Discovery Utility</p> <p>PLANET NMS controller supported</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</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 SNMP v3 notify</p> <p>RFC 2574 SNMP v3 vacm</p> <p>RFC 2674 Bridge MIB Extensions (IEEE 802.1Q MIB)</p> <p>RFC 2674 Bridge MIB Extensions (IEEE 802.1P MIB)</p> <p>RFC 3635 Ethernet-like MIB</p> <p>RFC 2863 Interface Group MIB</p> <p>RFC 2819 RMON (1, 2, 3,9)</p> <p>RFC 1493 Bridge MIB</p>
<b>Standard Conformance</b>		
Regulatory Compliance	FCC Part 15 Class A, CE	
Standards Compliance	<p>IEEE 802.3 10BASE-T</p> <p>IEEE 802.3u 100BASE-TX</p> <p>IEEE 802.3z Gigabit 1000BASE-SX/LX</p> <p>IEEE 802.3ab Gigabit 1000BASE-T</p> <p>IEEE 802.3bz Gigabit 2.5G, 5GBASE-T</p> <p>IEEE 802.3ae 10Gb/s Ethernet</p> <p>IEEE 802.3x flow control and back pressure</p> <p>IEEE 802.3ad port trunk with LACP</p> <p>IEEE 802.1ag CFM</p> <p>IEEE 802.1D Spanning Tree Protocol</p> <p>IEEE 802.1w Rapid Spanning Tree Protocol</p> <p>IEEE 802.1s Multiple Spanning Tree Protocol</p> <p>IEEE 802.1p Class of Service</p> <p>IEEE 802.1Q VLAN tagging</p> <p>IEEE 802.1X port authentication network control</p> <p>IEEE 802.1ab LLDP</p> <p>IEEE 802.3af Power over Ethernet</p>	<p>IEEE 802.3at Power over Ethernet PLUS</p> <p>RFC 768 UDP</p> <p>RFC 783 TFTP</p> <p>RFC 793 TCP</p> <p>RFC 791 IP</p> <p>RFC 792 ICMP</p> <p>RFC 2068 HTTP</p> <p>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> <p>ITU-T G.8032 ERPS Ring</p>
<b>Environment</b>		
Operating	<p>Temperature: 0 ~ 50 degrees C</p> <p>Relative Humidity: 5 ~ 90% (non-condensing)</p>	
Storage	<p>Temperature: -10 ~ 70 degrees C</p> <p>Relative Humidity: 5 ~ 90% (non-condensing)</p>	

## Ordering Information

MGS-6311-24UPL6X

L3 24-Port 2.5GBASE-T 802.3bt PoE + 6-Port 10GBASE-X SFP+ Managed Ethernet Switch

## Related Products

MGS-6311-10T2X	L3 8-Port 2.5GBASE-T + 2-Port 10GBASE-T + 2-Port 10GBASE-X SFP+ Managed Ethernet Switch
MGS-6311-8P2X	L3 8-Port 2.5GBASE-T 802.3at PoE + 2-Port 10GBASE-X SFP+ Managed Ethernet Switch (150W)
XGS-6311-12X	Layer 3 12-Port 10GBASE-X SFP+ Managed Ethernet Switch
GS-6311-24T4X	L3 24-Port 10/100/1000T + 4-Port 10G SFP+ Managed Ethernet Switch
GS-6311-24HP4X	L3 8-Port 802.3bt PoE + 16-Port 802.3at PoE + 4-Port 10G SFP+ Managed Ethernet Switch
GS-6311-16S8C4XR	L3 16-Port 100/1000X SFP + 8-Port Gigabit TP/SFP + 4-Port 10G SFP+ Managed Ethernet Switch with 36-72V DC Redundant Power
GS-6311-48T6X	L3 48-Port 10/100/1000T + 6-Port 10G SFP+ Managed Ethernet Switch
GS-6311-48P6X	L3 48-Port 10/100/1000T 802.3at PoE + 6-Port 10G SFP+ Managed Ethernet Switch
XGS-6350-48X2Q4C	Layer 3 48-Port 10G SFP+ + 2-Port 40G QSFP+ + 4-Port 100G QSFP28 Managed Switch

## Available SFP/SFP+ Modules

### 10 Gigabit Ethernet Transceiver (10GBASE-X SFP+)

MTB-LB40	1-Port 10GBASE-BX SFP+ Fiber Optic Module - 40km (TX:1330nm RX:1270nm)
MTB-LA40	1-Port 10GBASE-BX SFP+ Fiber Optic Module - 40km (TX:1270nm RX:1330nm)
MTB-LB20	1-Port 10GBASE-BX SFP+ Fiber Optic Module - 20km (TX:1330nm RX:1270nm)
MTB-LA20	1-Port 10GBASE-BX SFP+ Fiber Optic Module - 20km (TX:1270nm RX:1330nm)
MTB-SR	1-Port 10GBASE-SR SFP+ Fiber Optic Module - 300m
MTB-LR	1-Port 10GBASE-LR SFP+ Fiber Optic Module - 10km
MTB-LA60	1-Port 10GBASE-BX SFP+ Fiber Optic Module - 60km (TX:1270nm RX:1330nm)
MTB-LB60	1-Port 10GBASE-BX SFP+ Fiber Optic Module - 60km (TX:1330nm RX:1270nm)
MTB-RJ	1-Port 10GBASE-T SFP+ Copper Fiber Optic Module - 30m
MTB-LR40	1-Port 10GBASE-LR SFP+ Fiber Optic Module - 40km
MTB-SR2	1-Port 10GBASE-SR SFP+ Fiber Optic Module - 2km
MTB-LR20	1-Port 10GBASE-LR SFP+ Fiber Optic Module - 20km
MTB-LR60	1-Port 10GBASE-LR SFP+ Fiber Optic Module - 60km
MTB-LR80	1-Port 10GBASE-LR SFP+ Fiber Optic Module - 80km
MTB-LA10	1-Port 10GBASE-BX SFP+ Fiber Optic Module - 10km (TX:1270nm RX:1330nm)
MTB-LB10	1-Port 10GBASE-BX SFP+ Fiber Optic Module - 10km (TX:1330nm RX:1270nm)

### 2.5 Gigabit Ethernet Transceiver (2500GBASE-X SFP)

MGB-2GSR	2.5G SFP Transceiver (Multi-mode, 850nm, DDM, 0~70 degrees C) - 300m
MGB-2GLA20	2.5G SFP Transceiver (Single mode WDM, TX:1310nm RX:1550nm, DDM, 0~70 degrees C) - 20km
MGB-2GLB20	2.5G SFP Transceiver (Single mode WDM, TX:1550nm RX:1310nm, DDM, 0~70 degrees C) - 20km
MGB-2GLR20	2.5G SFP Transceiver (Single mode, 1310nm, DDM) - 20km
MGB-2GLR2	2.5G SFP Transceiver (Single mode, 1310nm, DDM) - 2km

**Gigabit Ethernet Transceiver (1000GBASE-X SFP)**

MGB-GT	SFP-Port 1000BASE-T Module
MGB-LX	SFP-Port 1000BASE-LX mini-GBIC module - 20km
MGB-SX	SFP-Port 1000BASE-SX mini-GBIC module - 550m
MGB-SX2	SFP-Port 1000BASE-SX mini-GBIC module - 2km
MGB-L40	SFP-Port 1000BASE-LX mini-GBIC module - 40km
MGB-L80	SFP-Port 1000BASE-LX mini-GBIC module - 80km
MGB-L120	SFP-Port 1000BASE-LX mini-GBIC module - 120km
MGB-LA10	SFP-Port 1000BASE-BX (WDM, TX:1310nm) mini-GBIC module - 10km
MGB-LB10	SFP-Port 1000BASE-BX (WDM, TX:1550nm) mini-GBIC module - 10km
MGB-LA20	SFP-Port 1000BASE-BX (WDM, TX:1310nm) mini-GBIC module - 20km
MGB-LB20	SFP-Port 1000BASE-BX (WDM, TX:1550nm) mini-GBIC module - 20km
MGB-LA40	SFP-Port 1000BASE-BX (WDM, TX:1310nm) mini-GBIC module - 40km
MGB-LB40	SFP-Port 1000BASE-BX (WDM, TX:1550nm) mini-GBIC module - 40km
MGB-LA80	SFP-Port 1000BASE-BX (WDM, TX:1490nm) mini-GBIC module - 80km
MGB-LB80	SFP-Port 1000BASE-BX (WDM, TX:1550nm) mini-GBIC module - 80km
MGB-GT	SFP-Port 1000BASE-T Module
MGB-LX	SFP-Port 1000BASE-LX mini-GBIC module - 20km
MGB-SX	SFP-Port 1000BASE-SX mini-GBIC module - 550m
MGB-SX2	SFP-Port 1000BASE-SX mini-GBIC module - 2km
MGB-L40	SFP-Port 1000BASE-LX mini-GBIC module - 40km
MGB-L80	SFP-Port 1000BASE-LX mini-GBIC module - 80km
MGB-L120	SFP-Port 1000BASE-LX mini-GBIC module - 120km
MGB-LA10	SFP-Port 1000BASE-BX (WDM, TX:1310nm) mini-GBIC module - 10km
MGB-LB10	SFP-Port 1000BASE-BX (WDM, TX:1550nm) mini-GBIC module - 10km
MGB-LA20	SFP-Port 1000BASE-BX (WDM, TX:1310nm) mini-GBIC module - 20km
MGB-LB20	SFP-Port 1000BASE-BX (WDM, TX:1550nm) mini-GBIC module - 20km
MGB-LA40	SFP-Port 1000BASE-BX (WDM, TX:1310nm) mini-GBIC module - 40km
MGB-LB40	SFP-Port 1000BASE-BX (WDM, TX:1550nm) mini-GBIC module - 40km
MGB-LA80	SFP-Port 1000BASE-BX (WDM, TX:1490nm) mini-GBIC module - 80km
MGB-LB80	SFP-Port 1000BASE-BX (WDM, TX:1550nm) mini-GBIC module - 80km