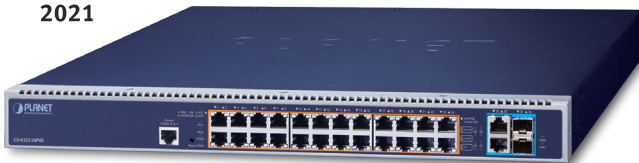# L3 24-Port 10/100/1000T 802.3bt PoE + 2-Port 10GBASE-T + 2-Port 10G SFP+ Managed Switch with Dual Modular Power Supply Slots

Powerful 802.3bt PoE++ Managed Switch with Extremely Large Power Capability

PLANET GS-6322-24P4X Fully-managed **802.3bt PoE++** Switch with **dual modular power supply slots** expandability promotes power management efficiency and flexibility in large-scale networks, such as enterprises, hotels, shopping malls, government buildings, and other public areas. It supports rich PoE operation modes including **24 90-watt 802.3bt type-4 PoE++ ports, 95-watt PoH** (Power over HD-BASE-T) mode and 4-pair **force mode** to solve the incompatibility of non-standard 4-pair PoE PDs in the field. With a total power budget of up to **2200 watts** for different kinds of heavy PoE applications, the GS-6322-24P4X provides a quick, safe and cost-effective 802.3bt PoE network solution for small businesses and enterprises.
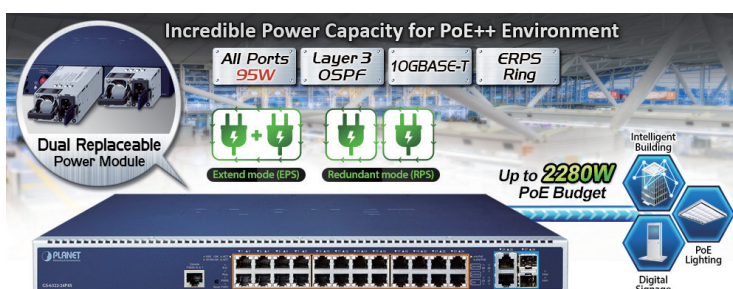
Extractive Power Supply Design to Increase Flexibility

The GS-6322-24P4X is designed with two extractive power module slots to support Redundant Power Supply (RPS) mode or Extended Power Supply (EPS) mode via software setting to handle the demands of power redundancy or additional power for PoE++ ports as needed.

- RPS (1+1) mode: Where critical services are supported by PoE application, the secondary PSU is needed to provide backup power in the event of a power outage. When two PSUs are installed, the power budget is the same as that of one PSU.
- EPS (2+0) mode: Where more PoE budget is required to support complete application, the secondary PSU can provide additional PoE power. The two PSUs combined are able to provide a maximum of total PoE power.

Physical Port

- **24 10/100/1000BASE-T** Gigabit RJ45 copper ports with 24-port **IEEE 802.3bt PoE++** injector function
- **2 10GBASE-T** RJ45 interfaces with auto MDI/MDI-X function
- **2 10GBASE-SR/LR SFP+ slots**, compatible with 1000BASE-SX/LX/BX SFP and 2.5G SFP transceiver
- RJ45 console interface for switch basic management and setup

802.3bt Power over Ethernet

- Complies with IEEE 802.3bt Power over Ethernet Plus Plus
- Backward compatible with IEEE 802.3at Power over Ethernet Plus
- Up to 24 ports of IEEE 802.3af/IEEE 802.3at/IEEE 802.3bt PoE devices powered
- 24 PoE ports with built-in 802.3bt PoE++ Type-4 90W injector function
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100 meters
- PoE management features
  - Total PoE power budget control
  - Per port PoE function enable/disable
  - PoE admin-mode control
  - PoE port power feeding priority
  - Per PoE port power limit
  - PD classification detection
  - PoE extend mode control to support power feeding up to a distance of up to 200 meters
- Intelligent PoE features
  - Temperature threshold control
  - PoE usage threshold control
  - PD alive check
  - PoE schedule

Layer 3 Features

- IP dynamic routing protocol supports OSPFv2
- IPv4/IPv6 hardware static routing
- Routing interface provides per VLAN routing mode
- IP interfaces (Max. 128 VLAN interfaces)
- Routing table (Max. 128 routing entries)

The GS-6322-24P4X can work with three optional 920W/1200W/2000W AC power supplies. Users can flexibly use one or dual power supply according to their application. Its flexible redundant and extended power system is specifically designed for high-tech facilities requiring the highest power integrity.

For example

| PSU Operation mode	Redundant Power Supply mode	Extended Power System mode
Power Redundancy	■	--
PoE budget with 1 1200W PSU	1000W	1000W
PoE budget with 2 1200W PSUs	1000W	2200W

90~95-watt 802.3bt PoE++ and Advanced PoE Power Output Mode Management

As the GS-6322-24P4X adopts the IEEE 802.bt PoE++ standard and PoH technology, it is capable to source up to 95 watts of power by using all the four pairs of standard Cat5e/6 Ethernet cabling to deliver power and full-speed data to each remote PoE compliant powered device (PD). To meet the demand of various powered devices consuming stable PoE power, the GS-6322-24P4X PoE++ Switch provides five different PoE power output modes for selection.

- 95W UPOE/PoH
- 90W 802.3bt PoE++
- 60W Force
- 36W End-span PoE
- 36W Mid-span PoE

10GBASE-T and 10GBASE-X SFP Dual Media Interfaces

The GS-6322-24P4X features built-in hardware-based L2 and L3 switching engine along with **24 10/100/1000BASE-T ports**, **2 10GBASE-T RJ45 ports** and **2** additional **10GBASE-X SFP+ ports**. With two built-in 10GBASE-T copper interfaces with **5-speed (10G/5G/2.5G/1G/100)** auto-negotiation, the GS-6322-24P4X provides 10Gbps data transmission with the existing Cat6A/Cat7 UTP cabling, meaning the speed can be increased without costs. The additional **two 10GBASE-X SFP+** interfaces with **3 speeds (10G/2.5G/1G)** are provided for a long-distance transmission of up to 120km.

24 x 802.3bt PoE++ Type 4 Port   2 x 10GBASE-T Port
RJ45 Type Console Port   2 x 10G SFP+ Port
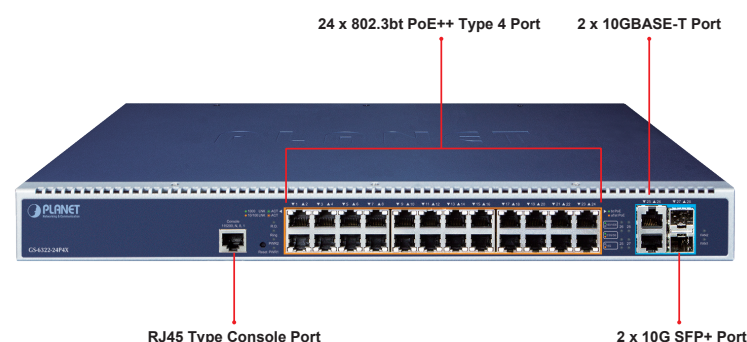
Layer 2 Features

- Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x pause frame flow control (full-duplex)
- High performance of Store-and-Forward architecture and runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- Storm Control support
  - Broadcast/multicast/unknown unicast
- Supports **VLAN**
  - IEEE 802.1Q tagged VLAN
  - Out of 4094 VLAN IDs
  - Supports provider bridging (VLAN Q-in-Q, IEEE 802.1ad)
  - Private VLAN Edge (PVE)
  - Protocol-based VLAN
  - MAC-based VLAN
  - Voice VLAN
  - GVRP (GARP VLAN Registration Protocol)
- Supports 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), spanning tree by VLAN
  - BPDU Guard
- Supports Link Aggregation
  - 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (static trunk)
  - Maximum 4 trunk groups with 4 ports for each trunk group
  - Up to 80Gbps bandwidth (full duplex mode)
- Provides port mirror (many-to-1)
- Port mirroring to monitor the incoming or outgoing traffic on a particular port
- Loop protection to avoid broadcast loops
- Supports ERPS (Ethernet Ring Protection Switching)
- Compatible with Cisco uni-directional link detection(UDLD) that monitors a link between two switches and blocks the ports on both ends of the link if the link fails at any point between the two devices
- Link Layer Discovery Protocol (LLDP)

Quality of Service

- Ingress Shaper and Egress Rate Limit per port bandwidth control
- 8 priority queues on all switch ports
- Traffic classification

Layer 3 Routing Support

The GS-6322-24P4X enables the administrator to conveniently boost network efficiency by configuring Layer 3 IPv4/IPv6 VLAN static routing manually, and the IPv4 **OSPFv2** (Open Shortest Path First) settings automatically. The OSPF is an interior dynamic routing protocol for autonomous system based on link state. The protocol creates a database for link state 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.

Redundant Ring, Fast Recovery for Critical Network Applications

The GS-6322-24P4X 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, Spanning Tree Protocol (802.1s MSTP), and **redundant power** input system into customer's industrial automation network to enhance system reliability and uptime in harsh factory environments. In a certain simple Ring network, the recovery time of data link can be as fast as 10ms.

Convenient and Smart ONVIF Devices with Detection Feature

The GS-6322-24P4X supports an awesome feature -- **ONVIF** Support -- which is specifically designed for co-operating with Video IP Surveillances. From its GUI, clients just need one click to search and show all of the ONVIF devices via network application. In addition, clients can upload floor images to a switch and it allows you to deploy any surveillance devices for easier inspection and planning. Moreover, clients can get real-time surveillance's information and online/offline status, and also allows PoE reboot control from GUI.
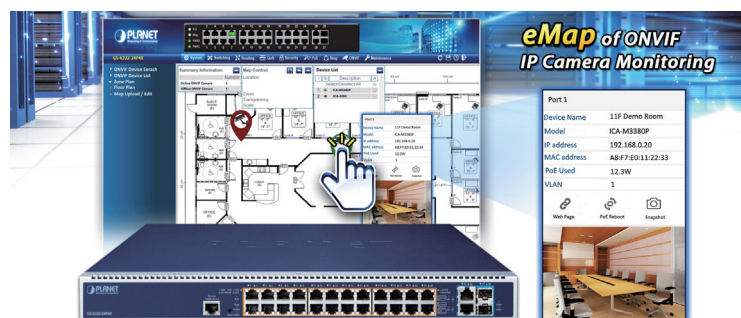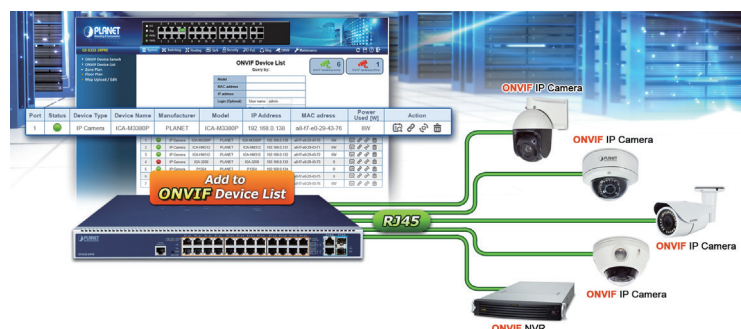
- IEEE 802.1p CoS
- TOS/DSCP/IP precedence of IPv4/IPv6 packets
- IP TCP/UDP port number
- Typical network application
- Strict priority and Weighted Round Robin (WRR) CoS policies
- Supports QoS and In/Out bandwidth control on each port
- Traffic-policing on the switch port
- DSCP remarking

Multicast

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

Security

- Authentication
  - IEEE 802.1x port-based/MAC-based network access authentication
  - Built-in RADIUS client to cooperate with the RADIUS servers
  - TACACS+ login users access authentication
  - RADIUS/TACACS+ users access authentication
  - Guest VLAN assigns clients to a restricted VLAN with limited services.
- Access Control List
  - IP-based Access Control List (ACL)
  - MAC-based Access Control List
- Source MAC/IP address binding
- DHCP Snooping to filter untrusted DHCP messages
- Dynamic ARP Inspection discards ARP packets with invalid MAC address to IP address binding
- IP Source Guard prevents IP spoofing attacks
- IP address access management to prevent unauthorized intruder

Management

- IPv4 and IPv6 dual stack management
- Switch Management Interfaces
  - Console/Telnet Command Line Interface
  - Web switch management
  - SNMP v1, v2c, and v3 switch management