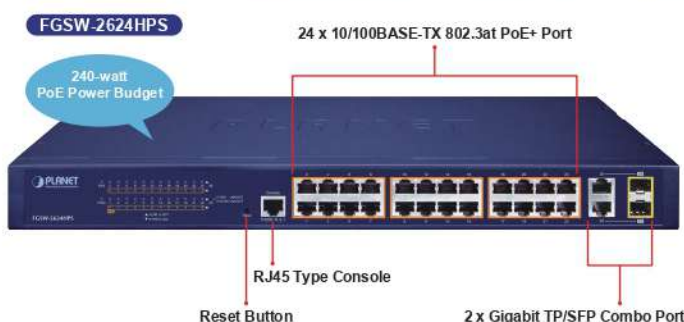# 16-/24-Port 10/100TX 802.3at PoE + 2-Port Gigabit TP/SFP Combo Managed Ethernet Switch

PLANET's newly-revised Layer 2 Managed PoE+ Switch series is designed for enterprises and industries where a network of PDs can be centrally managed. The Switch's management functions have been enhanced to include intelligent PoE management, IPv6 management, ACL, GVRP, and more.

Cost-optimized Managed PoE+ Switch with L2/L4 Switching and Security

PLANET Managed PoE+ Switch series is an ideal model which provides cost-effective advantage to local area network and is widely accepted in the SMB office network. It offers **intelligent Layer 2 data packet switching and management functions**, **user-friendly web user interface and stable operation**. The Managed PoE+ Switch series complies with **IEEE 802.3at Power over Ethernet Plus (PoE+)** at an affordable price; the Managed PoE+ Switch series is equipped with **16/24** 10/100BASE-TX Fast Ethernet ports and **2 Gigabit TP/SFP combo** interfaces with inner power system. With its 16/24 Fast Ethernet ports integrated with 802.3at PoE+ injector function and total power budget of up to **370 watts**, it offers a rack-mountable, affordable, safe and reliable power solution for SMBs deploying Power over Ethernet networks, or requiring enhanced data security and network traffic management.

Layer 2 PoE+ Managed Solution for Enhanced Performance

IPv6 IPv4 | Intelligent PoE | IGMP/MLD Snooping | GVRP | ACL

FGSW-2624HPS

240-watt PoE Power Budget

24 x 10/100BASE-TX 802.3at PoE+ Port

RJ45 Type Console

Reset Button

2 x Gigabit TP/SFP Combo Port

Physical Port

- **16/24-port 10/100BASE-TX** RJ45 copper with IEEE 802.3at/af PoE+ injector
- **2-port 10/100/1000BASE-T** Gigabit RJ45 copper (Combo Interface)
- **2 100/1000BASE-X mini-GBIC/SFP slots** (Combo Interface)
- RJ45 console interface for switch basic management and setup
- Reset button for system factory default

Switching

- Hardware-based 10/100Mbps, half/full duplex and 1000Mbps full duplex mode, flow control and auto-negotiation, and auto MDI/MDI-X
- Features Store-and-Forward mode with wire-speed filtering and forwarding rates
- IEEE 802.3x flow control for full duplex operation and back pressure for half duplex operation
- Automatic address learning and address aging
- Supports CSMA/CD protocol

Power over Ethernet

- Complies with IEEE 802.3at Power over Ethernet Plus
- Backward compatible with IEEE 802.3af Power over Ethernet
- Up to 16/24 ports of IEEE 802.3af/802.3at devices powered
- Supports PoE Power up to 30 watts for each PoE port
- 240/370-watt PoE budget
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 250m via extend mode
- PoE Management
  - Per port PoE function enable/disable
  - Per Port PoE operation mode selection
  - Per PoE port power budget control
  - PD classification detection and PoE consumption usage status
- Intelligent PoE features
  - PD alive check

Solution for IPv6 Networking

With the support for IPv6/IPv4 protocol, and easy and user-friendly management interfaces, the Managed PoE+ Switch is the ideal choice for IP surveillance, VoIP and wireless service providers to connect with the IPv6 network. It also helps SMBs to step in the IPv6 era with the lowest investment and without having to replace the network facilities even though ISPs establish the IPv6 FTTx edge network.
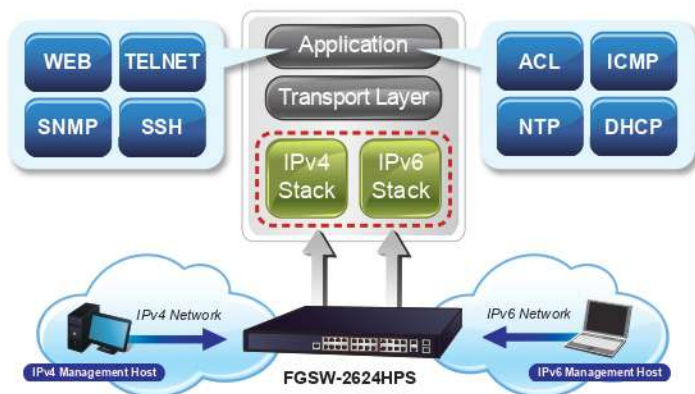
Built-in Unique PoE Functions for Surveillance Management

As a managed PoE Switch for surveillance network, it features the following intelligent PoE management functions:

- PD Alive Check
- PoE Port Sequence
- PoE Schedule

Intelligent Powered Device Alive Check

The Managed PoE+ Switch can be configured to monitor a connected PD status in real time via ping action. Once the PD stops working and it is without response, the Managed PoE+ Switch will resume the PoE port 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, thus reducing administrator management burden.
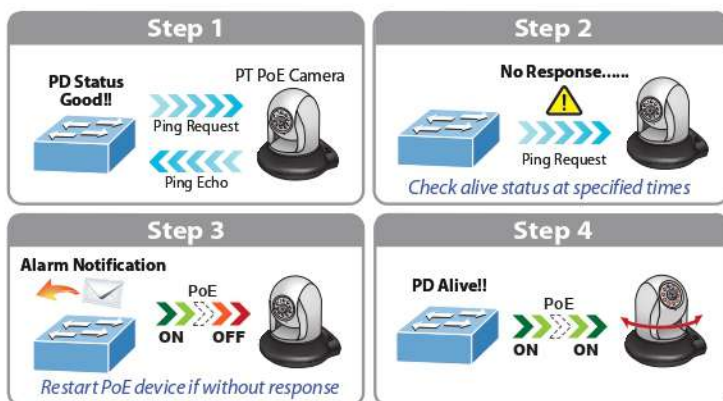
PoE Port Sequence

To prevent all the PoE ports of the Managed PoE+ Switch from being active at the same time when the Switch has booted up, the PoE ports of the Managed PoE+ Switch can be configured to allow each port to be activated at an interval time. In addition, the "Delay" setting is to delay power feeding on each port when the Managed PoE+ Switch has completely booted up.

- – PoE port sequence
- – PoE schedule

Layer 2 Features

- Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x pause frame flow control (full-duplex)
- High performance Store and Forward architecture, runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- Supports **VLAN**
  - – Port-based VLAN, up to 18/26 VLAN groups
  - – IEEE 802.1Q tagged VLAN
  - – Protocol VLAN
  - – Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
  - – GVRP
  - – Voice VLAN
- Supports **Spanning Tree Protocol**
  - – STP (IEEE 802.1D Spanning Tree Protocol)
  - – RSTP (IEEE 802.1w Rapid Spanning Tree Protocol)
  - – MSTP (IEEE 802.1s Multiple Spanning Tree Protocol)
  - – STP BPDU Filtering, BPDU Protect
- Supports **Link Aggregation**
  - – IEEE 802.3ad Link Aggregation Control Protocol (LACP)
  - – 1 LACP group, up to 2 ports per LACP group
  - – Cisco ether-channel (static trunk)
  - – 1 trunk group, up to 2 ports per trunk group
- Provides port mirror (many-to-1)
- Loop detection

Quality of Service

- Ingress/Egress Rate Limit per port bandwidth control
- Storm Control support
  - – Broadcast/ Multicast /DLF (Destination Lookup Fail)/ARP/ICMP
- Traffic classification
  - – IEEE 802.1p Qos/CoS
  - – TCP/UDP/DSCP/IP precedence of IPv4/IPv6 packets
- Strict priority and Weighted Round Robin (WRR) CoS policies

Multicast

- Supports IPv4 IGMP snooping v1/ v2 and v3

PoE Schedule for Energy Saving

Besides being used for IP surveillance, the Managed PoE+ Switch 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 Managed PoE+ Switch 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 and enterprises save energy and budget.
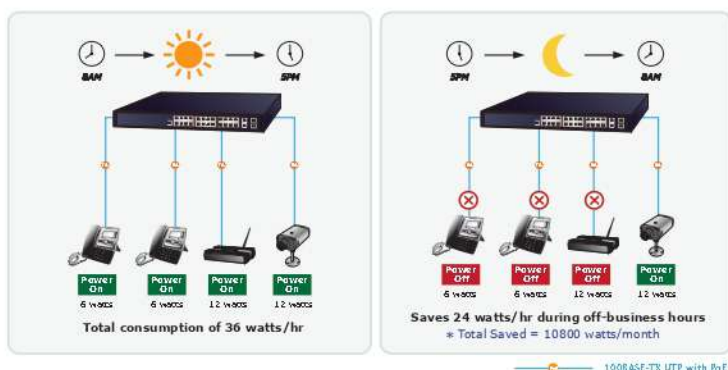
Ethernet Data Transmission Distance Extension

In the "Extended" operation mode, the Managed PoE+ Switch operates on a per-port basis at 10Mbps duplex operation but can support PoE power output over a distance of up to 250 meters overcoming the 100 meters limit on Ethernet UTP cable.

Robust Layer 2 Features

The Managed PoE+ Switch can be programmed for advanced switch management functions, such as **Multiple Spanning Tree Protocol (MSTP)**, BPDU filtering, BPDU Guard, dynamic port link aggregation, **IGMP/MLD snooping**, DHCP relay agent, loop detection and **GVRP**, voice VLAN and the **Link Layer Discovery Protocol (LLDP)**. The Layer 2 protocol included is to help discover basic information about neighboring devices in the local broadcast domain. Other features included are the port-based/802.1Q VLAN and Q-in-Q VLAN, Layer 2/4 QoS, port mirroring, broadcast storm control and bandwidth control.

Enhanced Security and Traffic Control

The Managed PoE+ Switch offers the 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/MAC address or defined typical network applications. The Managed PoE+ Switch also

- Supports IPv6 MLD snooping v1, v2

Security

- Access Control List
  - IPv4/IPv6 IP-based ACL
  - MAC-based ACL
- Port-MAC-IP Address Binding
  - Port-MAC-IP Port Setting
  - Port-MAC-IP Entry Setting
- MAC Address Binding
  - Static MAC
  - MAC Filtering
- DHCP snooping to filter distrusted DHCP messages
- ARP Inspection discards ARP packets with invalid MAC address to IP address binding

Management

- IPv4 and IPv6 dual stack management
- Switch management interface
  - RJ45 Console local management
  - Web switch management
  - Telnet command line interface
  - SNMP v1, v2c and v3
- BOOTP and DHCP for IP address assignment
- System maintenance
  - Firmware upgrade via HTTP
  - Configuration upload/download through web interface
  - Hardware-based reset button for system reset to factory default
- SNTP Network Time Protocol
- Link Layer Discovery Protocol (LLDP)
- SNMP trap for interface link up and link down notification
- Event message logging to remote Syslog server
- PLANET smart discovery utility

provides DHCP Snooping, ARP Inspection and MAC Verification functions to prevent IP snooping from attack and discard ARP packets with invalid MAC address. Also included are per port MAC/IP address binding and MAC address binding. The network administrator can now build highly-secure corporate networks with considerably less time and effort than before.

Cybersecurity Network Solution to Minimize Security Risks

The cybersecurity features that virtually need no effort and cost to have included the protection of the switch management and the enhanced security of the mission-critical network. Both SSH and TLS protocols are utilized to provide strong protection against advanced threats. The network administrator can now construct highly-secure corporate networks with considerably less time and effort than before.

Efficient Management

For efficient management, the Managed PoE+ Switch is equipped with Web, Telnet and SNMP management interfaces. With the built-in Web-based management interface, the Managed PoE+ Switch offers an easy-to-use, platform-independent management and configuration facility. By supporting the standard Simple Network Management Protocol (SNMP), the Managed PoE+ Switch can be managed via any standard management software. For text-based management, the switch can be accessed via Telnet. Moreover, the Managed PoE+ Switch offers secure remote management by supporting SNMPv3 connections which encrypt the packet content at each session.

Flexible and Extendable Uplink Solution

The Managed PoE+ Switch provides 2 extra Gigabit TP/SFP combo interfaces supporting 10/100/1000BASE-T RJ45 copper to connect with surveillance network devices such as NVR, Video Streaming Server or NAS to facilitate surveillance management. Or through these fiber SFP slots occupied by the 1000BASE-SX/LX SFP (small form-factor pluggable) fiber transceivers, it can be uplinked to a backbone switch and monitoring center in long distance. The distance can be extended from 550 meters to 2km (multi-mode fiber) to 10/20/40/80/120 kilometers (single-mode fiber or WDM fiber). They are well-suited for applications within the industrial data centers and distributions.

Applications

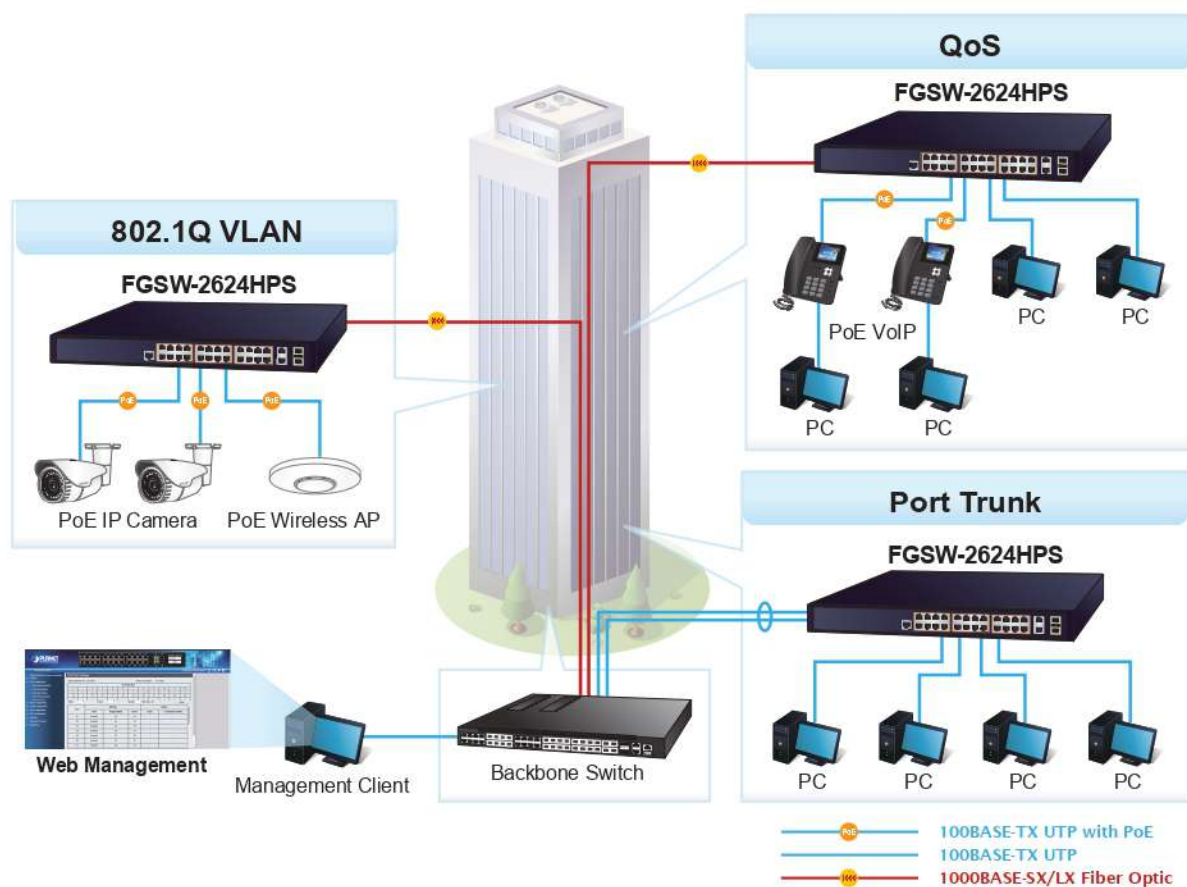### PoE IP Surveillance with Extended Network Infrastructure for SMBs / Workgroups

Providing 24 10/100BASE-TX PoE+ ports, in-line power interfaces and two Gigabit TP/SFP Combo interfaces, the FGSW-2624HPS can easily build an IP camera system for the enterprises where its power is centrally controlled. It can work with one 25-channel NVR to perform comprehensive security monitoring with 24 IP cameras via one Gigabit TP/SFP Combo port. The FGSW-2624HPS comes with non-blocking design, desktop size and SFP fiber-optic modules, bringing flexibility to building a network infrastructure at a low cost.
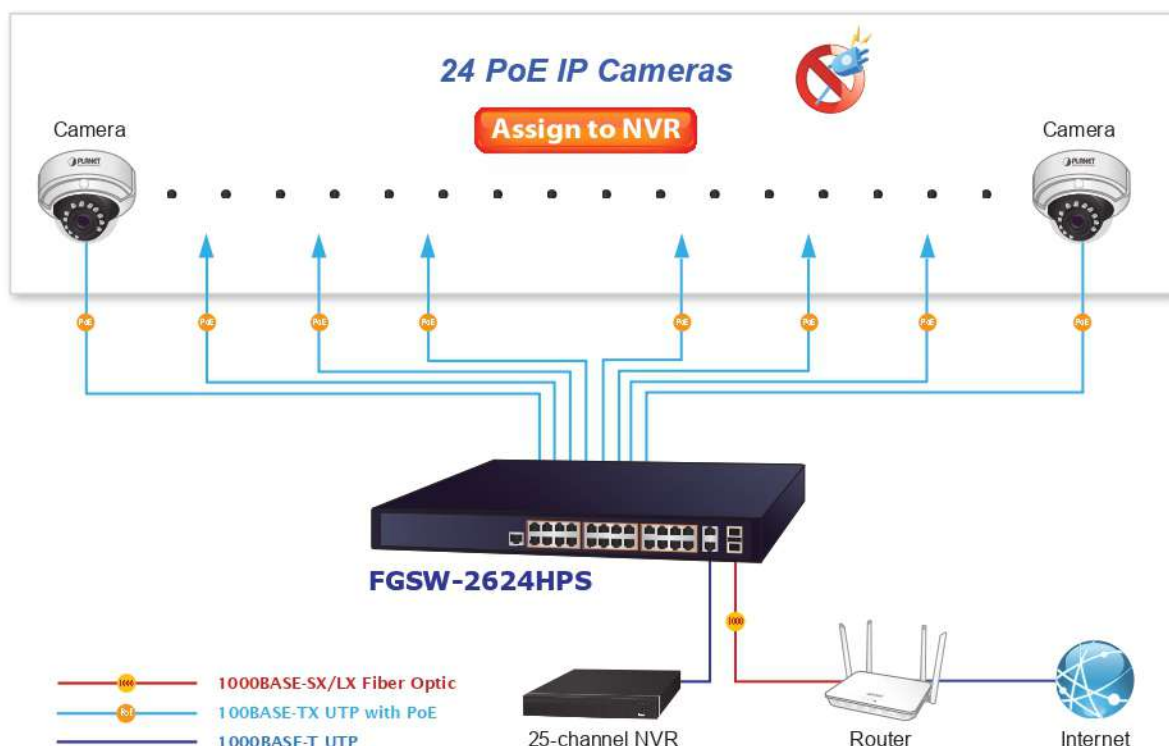
Department/Workgroup PoE Network

Providing 24 PoE in-line power interfaces, the FGSW-2624HPS can easily build a power that centrally controls IP phone system, IP camera system and wireless AP group for enterprises. The FGSW-2624HPS delivers full ports of 802.3af/at compliant Fast Ethernet network connectivity with high-performance and cost-effective advantages for the increasing number of PoE IP telephones, PoE IP cameras, PoE wireless access points and other devices applied at the edge of the small or medium enterprise network. The FGSW-2624HPS improves the network efficiency and protects the network clients with the powerful features:

- Layer 2 to Layer 4 security
- QoS/802.1Q VLAN/static trunk/LACP
- Multicast IGMP snooping

Specifications

Product	FGSW-1816HPS	FGSW-2624HPS	FGSW-2624HPS4
Hardware Specifications			
Copper Ports	16 10/100BASE-TX RJ45 Auto-MDI/MDI-X ports	24 10/100BASE-TX RJ45 Auto-MDI/MDI-X ports	
PoE Injector Port	16 802.3af/802.3at PoE+ injector ports	24 802.3af/802.3at PoE+ injector ports	
Gigabit Copper Ports	2 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports		
SFP/mini-GBIC Slots	2 100/1000BASE-X SFP interfaces, shared with Gigabit copper ports		
Console	1 x RS-232-to-RJ45 serial port (115200, 8, N, 1)		
Reset Button	> 5 sec: Factory default < 5 sec: System reboot		
Thermal Fan	2		
Power Requirements	100~240V AC, 50/60Hz, 3.6A (max.)	100~240V AC, 50/60Hz, 3.6A (max.)	100~240V AC, 50/60Hz, 6.5A (max.)
Power Consumption/Dissipation	Max. 270watts/921BTU	Max. 281watts/959BTU	Max. 413watts/1409BTU
Dimensions (W x D x H)	440 x 208 x 44 mm, 1U height		
Weight	2332g	2700g	2787g
Enclosure	Metal	Metal	

LED	**System:**
	  Power (Green)
	  SYS (Green)
	10/100TX RJ45 Interfaces:
	  LNK/ACT (Green), PoE-in-Use (Amber)
	10/100/1000BASE-T RJ45 / SFP Interfaces:
	  LNK/ACT10/100 (Amber), 1000 (Green)		

Switching			
Switch Architecture	Store-and-Forward		
Switch Fabric	7.2Gbps/non-blocking	8.8Gbps/non-blocking	
Switch Throughput@64bytes	5.35Mpps @64bytes	6.55Mpps @64bytes	
MAC Address Table	16K entries		
Shared Data Buffer	4Mb		
Flow Control	IEEE 802.3x pause frame for full duplex Back pressure for half duplex		
Jumbo Frame	16K bytes		
Power over Ethernet			
PoE Standard	IEEE 802.3af Power over Ethernet/PSE IEEE 802.3at Power over Ethernet Plus/PSE		
PoE Power Output	Per Port 54V DC, 300mA. Max. 15.4 watts (IEEE 802.3af) Per Port 54V DC, 600mA. Max. 30 watts (IEEE 802.3at)	Per Port 53 DC, 300mA. Max. 15.4 watts (IEEE 802.3af) Per Port 53 DC, 600mA. Max. 30 watts (IEEE 802.3at)	
PoE Power Supply Type	End-span	Mid-span	
Power Pin Assignment	1/2(+), 3/6 (-)	4/5(+), 7/8 (-)	
PoE Power Budget	240 watts	240 watts	370 watts
Number of PDs, 7 watts	16	24	24
Number of PDs, 15.4 watts	15	15	24
Number of PDs, 30 watts	8	8	12
Layer 2 Functions			
Port Mirroring	TX/RX/both Many-to-1 monitor		
VLAN	Port-based VLAN, up to 18 VLAN groups IEEE 802.1Q tagged VLAN - Up to 256 VLAN groups, out of 4094 VLAN IDs Protocol VLAN Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad) GVRP Voice VLAN	Port-based VLAN, up to 26 VLAN groups IEEE 802.1Q tagged VLAN - Up to 256 VLAN groups, out of 4094 VLAN IDs Protocol VLAN Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad) GVRP Voice VLAN	
Link Aggregation	IEEE 802.3ad LACP supports one 2-port trunk group; static trunk supports one 2-port trunk group		

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)
	STP BPDU filtering, BPDU Guard
IGMP Snooping	IPv4 IGMP snooping v1/ v2 and v3
MLD Snooping	IPv6 MLD snooping v1, v2
Access Control List	IPv4/IPv6 IP-based ACL
	MAC-based ACL
QoS	Ingress/Egress Rate Limit per port bandwidth control
	Storm Control support
	- Broadcast/ Multicast /DLF (Destination Lookup Failure)/ARP/ICMP
	Traffic classification
	- IEEE 802.1p Qos/CoS
	- TCP/UDP/DSCP/IP precedence of IPv4/IPv6 packets
	Strict priority and Weighted Round Robin (WRR) CoS policies
Security	Access Control List
	- IPv4/IPv6 IP-based ACL
	- MAC-based ACL
	Port-MAC-IP Address Binding
	- Port-MAC-IP Port Setting
	- Port-MAC-IP Entry Setting
	MAC Address Binding
	- Static MAC
	- MAC Filtering
	DHCP snooping to filter distrusted DHCP messages
	ARP Inspection discards ARP packets with invalid MAC address to IP address binding
Management Functions	
Basic Management Interfaces	IPv4 and IPv6 dual stack management
	Switch management interface
	- RJ45 console local management
	- Web switch management
	- Telnet command line interface
	- SNMP v1, v2c and v3
	BOOTP and DHCP for IP address assignment
	System maintenance
	- Firmware upgrade via HTTP
	- Configuration upload/download through web interface
	- Hardware-based reset button for system reset to factory default
	SNTP Network Time Protocol
	Link Layer Discovery Protocol (LLDP)
	Event message logging to remote Syslog server
	PLANET smart discovery utility
Secure Management Interfaces	SNMP v3, SSHv2, TLS v1.2
Standards Conformance	
Regulatory Compliance	FCC Part 15 Class A, CE
Standards Compliance	IEEE 802.3 10BASE-T
	IEEE 802.3u 100BASE-TX
	IEEE 802.3z Gigabit SX/LX
	IEEE 802.3ab Gigabit 1000T
	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 802.1ab LLDP
	IEEE 802.3af Power over Ethernet
	IEEE 802.3at Power over Ethernet Plus
	RFC 2068 HTTP
	RFC 1112 IGMP version 1
	RFC 2236 IGMP version 2
	RFC 3376 IGMP version 3
	RFC 2710 MLD version 1
	RFC 3810 MLD version 2

Standards Conformance	
Operating	Temperature: 0 ~ 50 degrees C Relative Humidity: 10 ~ 90% (non-condensing)
Storage	Temperature: -10 ~ 70 degrees C Relative Humidity: 5 ~ 90% (non-condensing)

Ordering Information

FGSW-1816HPS	18-Port 10/100TX 802.3at PoE + 2-Port Gigabit TP/SFP Combo Managed Ethernet Switch (240W)
FGSW-2624HPS	24-Port 10/100TX 802.3at PoE + 2-Port Gigabit TP/SFP Combo Managed Ethernet Switch (240W)
FGSW-2624HPS4	24-Port 10/100TX 802.3at PoE + 2-Port Gigabit TP/SFP Combo Managed Ethernet Switch (370W)

Related PoE Products

FGSD-1008HPS	8-Port 10/100TX 802.3at PoE + 2-Port Gigabit TP/SFP Combo Managed Ethernet Switch
ICA-3280	H.265 1080p Smart IR Bullet IP Camera
ICA-4280	H.265 1080p Smart IR Dome IP Camera
ICA-M3580P	H.265 5 Mega-pixel Smart IR Bullet IP Camera with Remote Focus and Zoom
ICA-M4580P	H.265 5 Mega-pixel Smart IR Dome IP Camera with Remote Focus and Zoom
ICA-A3280	H.265 1080p Smart IR Bullet IP Camera with Artificial Intelligence
ICA-A4280	H.265 1080p Smart IR Dome IP Camera with Artificial Intelligence
POE-E201	IEEE 802.3at Power over Ethernet Extender
WDAP-C7210E	1200Mbps 802.11ac Wave 2 MU-MIMO Dual Band Ceiling-mount Wireless Access Point
ICF-1900	HD Touch Screen Android Multimedia Conferencing Phone

Available 1000Mbps Modules

MGB-GT	SFP-Port 1000BASE-T Module
MGB-SX	SFP-Port 1000BASE-SX mini-GBIC module - 550m
MGB-SX2	SFP-Port 1000BASE-SX mini-GBIC module - 2km
MGB-LX	SFP-Port 1000BASE-LX mini-GBIC module - 10km
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-LX (WDM,TX:1310nm) mini-GBIC module - 10km
MGB-LB10	SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module - 10km
MGB-LA20	SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module - 20km
MGB-LB20	SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module - 20km
MGB-LA40	SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module - 40km
MGB-LB40	SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module - 40km

FGSW-1816HPS/FGSW-2624HPS/FGSW-2624HPS4