24-Port 10/100Mbps with 12-Port PoE + 2 Gigabit TP/SFP Managed Switch

Cost effective Managed PoE Switch for SMB Networking

PLANET's FGSW-2612PVM Switch features IEEE 802.3af Power over Ethernet (PoE) function which optimizes the installation and safe power management of network devices such as wireless access points (AP), Voice over IP (VoIP) phones and IP Surveillance cameras. IEEE 802.3af PoE capabilities reduces installation costs of add-in network productivity devices. It frees the wireless AP deployment from the restrictions of hard to reach or absent power outlet sources. Its PoE function features integrated power and data switching delivered via a single cable, eliminating costs for additional AC wiring and reducing installation time. The device provides a compact, affordable, safe and reliable power solution for small to medium enterprises.

To meet the need for easy management and centralized SNMP applications that monitor the status of switches and traffic per port, the cost-effective Managed PoE Switche, the FGSW-2612PVM offers the following key features:

• 802.3af PoE	• SNMP and 4 RMON groups
• WEB / SSL / Telnet	• Access Control List
• 802.1Q / Q-in-Q VLAN	• IGMP Snooping
• Rapid Spanning Tree	• 802.1X Authentication / RADIUS

Easy PoE Installation

The FGSW-2612PVM is a IEEE 802.3af compliant device that is able to power 12 PoE compliant devices at distances of up to 100 meters via the 4-pair Cat 5/5e UTP wire. With data and power delivered via the Ethernet cable, the FGSW-2612PVM reduces cable deployment and eliminates the need for dedicated electrical outlets that are hard to reach or absent. The ethernet carries both data and power and lowers installation costs, simplifying the installation effort and eliminating the need for electricians or extension cords. The energy-efficient device and out preform four linear power adapters in the long-term with a more efficient power supply.

Centralized Power Distribution with Remote Management

The remote PoE management functions of the FGSW-2612PVM makes it easy to survey and control PoE power provisioning of devices and ensure interoperability with equipment from other vendors. Via Web interface, SNMP trap and SNMP monitoring, the network administrator can obtain status alerts from the PoE devices. The over-heating temperature protection of the PoE Switch offers a safety and stable PoE operation by limiting the output power according to the detected temperature to protect the device from damage due to overheating.

High Performance Wire-Speed Switching

PLANET's FGSW-2612PVM offers 24 10/100Mbps Fast Ethernet ports and 2 Gigabit TP/SFP combo ports. The two Gigabit TP/SFP combo ports can be either 1000Base-T for 10/100/1000Mbps or 1000Base-SX/LX through SFP (Small Factor Pluggable) interface. PLANET's FGSW-2612PVM boasts a high-performance switch architecture that is capable of providing a non-blocking switch fabric and wire-speed throughput as high as 8.8Gbps. Its two built-in GbE uplink ports also offer incredible extensibility, flexibility and connectivity to the Core switch or Servers.

Efficient Management

For expanding networks, PLANET's FGSW-2612PVM provides a console and telnet command line interface, advanced WEB and SNMP management interfaces to fill the demand of growing networks. With its built-in Web-Based management, the FGSW-2612PVM offers an easy-to-use, platform-independent management and configuration facility. The FGSW-2612PVM supports standard Simple Network Management Protocol (SNMP) and can be monitored via any standard-based management software. For Text-Based management, the FGSW-2612PVM can also be accessed via Telnet and the console port. In addition, the FGSW-2612PVM offers secure remote management by supporting Secure Socket Layer (SSL) connection encrypting packet content at each session.

Robust Layer 2 Features

For efficient management via WEB interface the FGSW-2612PVM can be programmed for basic switch management functions such as port speed configuration, Port link aggregation, IEEE 802.1Q VLAN and Q-in-Q VLAN, Port Mirroring, Rapid Spanning Tree and ACL security. Additionally, the firmware includes advanced features such as IGMP snooping, QoS (Quality of Service), broadcast storm and bandwidth control, to enhance bandwidth utilization.

Advanced Security and Quality of Service

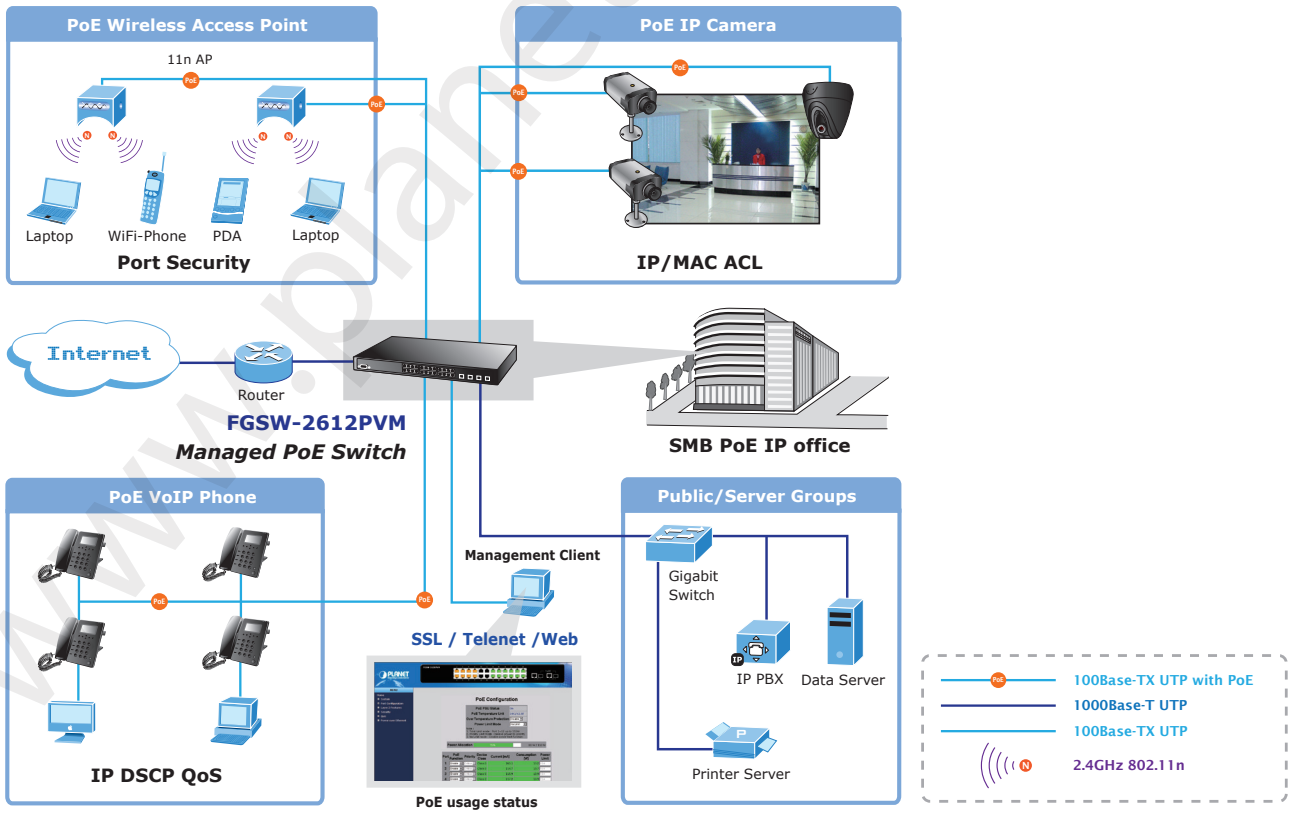
PLANET's FGSW-2612PVM offers a comprehensive Layer 2, Layer 3 and Layer 4 Access Control List (ACL) to filter out unwanted traffic. Its protection mechanisms comprises of RADIUS and Port-Based 802.1X user and device authentication. Moreover, the switch provides a MAC filter, Static MAC, IP/MAC binding and Port Security for enforcing maximum security. Administrators can now construct highly secure corporate networks in considerably less time and at a lower cost.

To ensure IP voice and video communication recives the quality service it needs, the FGSW-2612PVM classifies traffic and prioritizes Layer 2 802.1p or Layer 3 IP DSCP traffic into four hardware queues that support strict or Weighted Round Robin (WRR) queuing algorithms. It also empowers the SMB IP office to take full advantages of the limited network resources and guarantees the best performance in VoIP and Video conferencing transmission.

APPLICATIONS

PoE IP Telephony Office

With the expansion of a business, additional telephones could be installed at a lower cost with the implementation of a PoE IP Telephony system than that of the traditional circuit wiring telephony system. PLANET's FGSW-2612PVM PoE Managed Switch helps SMB's create an integrated data, voice, and powered network. PLANET's 802.3af compliant IP Phones can be installed without the need of an additional power cables because the device delivers power via the standard Ethernet cable that connects the FGSW-2612PVM. PoE IP Phones and Analog Telephony Adapters work perfectly with the FGSW-2612PVM which delivers power through the Ethernet cables and the IP DSCP priority of QoS feature improves voice communication. With FGSW-2612PVM, IP Telephony deployment is more reliable and cost effective, helping SMB's save on installation costs when upgrading from the traditional telephony to an IP Telephony communications infrastructure.

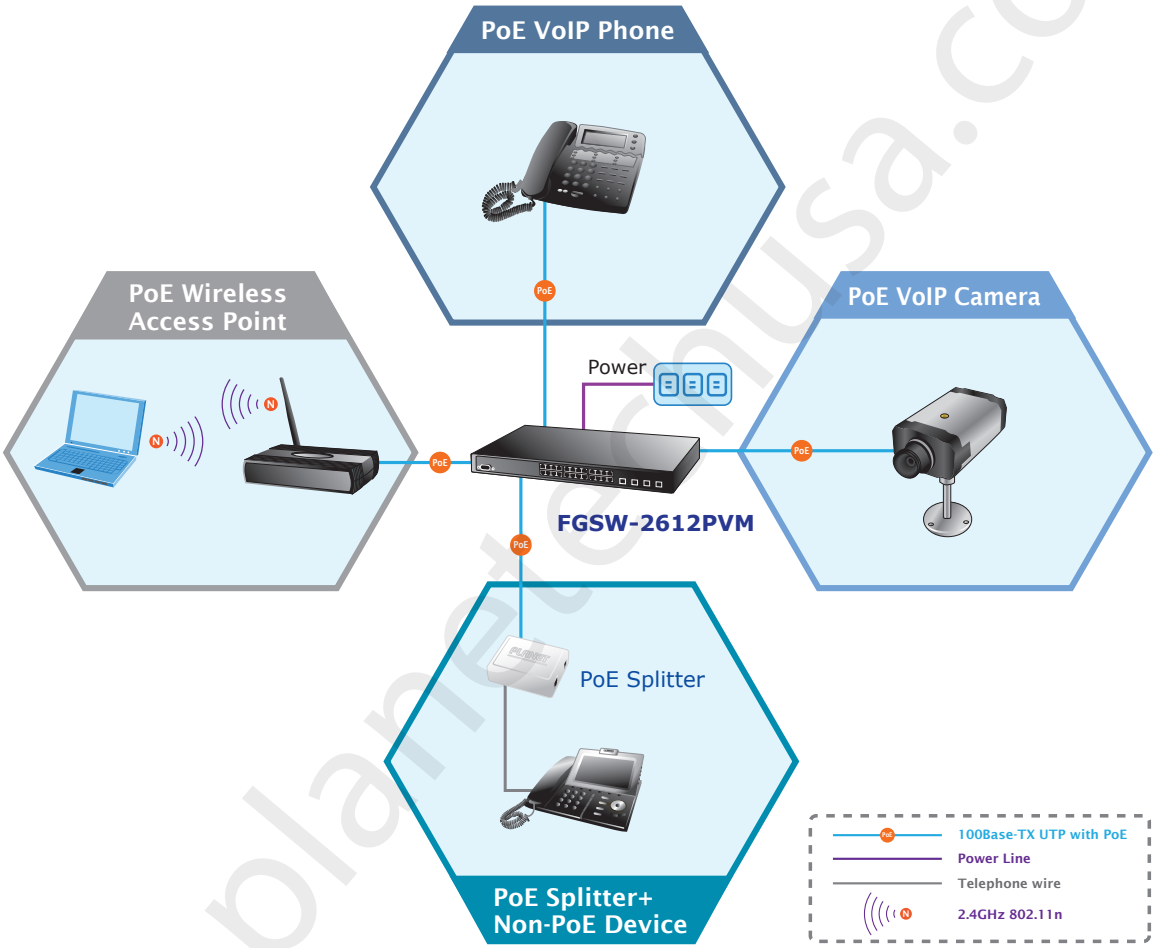


Department / Workgroup PoE Switch

Providing up to 12 PoE ports, the FGSW-2612PVM Managed PoE Switch can easily build a powerful centrally controlled IP phone system, IP camera system, or Wireless AP group for the enterprises. For example, 12 cameras or APs can be easily installed in a company for surveillance demands or to building a wireless roaming environment in the office. Without requiring additional power sources, the PoE Switch makes the installation of cameras or WLAN AP more easily and efficiently.

Factory / Warehouse Applications

As video surveillance systems become increasingly important for security in factories and warehouses, IP cameras with the PoE function facilitates surveillance deployment when the power outlets are hard to reach or absent. For example, for the monitoring of a factory or a warehouse storage facility, PoE IP surveillance cameras can be installed anywhere when needed without requiring additional power sources. With the PoE Switch as the central control manager that offers remote power-monitoring via the Web interface or SNMP trap and SNMP monitoring, the network administrator can recieve status alerts from the of PoE devices immediately. Administrators can also control PoE IP cameras increasing management efficiency and improving productivity.



Key Features

PHYSICAL PORT

- 24 10/100 Mbps Fast Ethernet ports and 12 PoE Injector ports (Port 1 to port 12)
- 2 10/100/1000Mbps TP and SFP shared combo interfaces
- RS-232 male DB9 console interface for Switch basic management and setup
- Reset button for system management

POWER OVER ETHERNET

- Complies with IEEE 802.3af Power over Ethernet End-Span PSE
- Up to 12 IEEE 802.3af devices powered
- Supports PoE Power up to 15.4 Watts for each PoE port
- Auto detect powered device (PD)
- Circuit protection prevent power interference between ports
- Remote power feeding up to 100m
- PoE Management
  - Total PoE power budget control
  - Over Temperature Protection function enable / disable
  - Pert port PoE function enable / disable
  - PoE Port Power feeding priority
  - Per PoE port power limit
  - PD classification detection

LAYER 2 FEATURES

- Complies with the IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z Gigabit Ethernet standards
- Auto-Negotiation and Full-Duplex / Half-Duplex modes for all 10Base-T/100Base-TX and 1000Base-T ports.
- Auto-MDI / MDI-X detection for each RJ-45 port
- Prevents packet loss Flow Control:
  - IEEE 802.3x FAUSE Frame flow control for Full-Duplex mode
  - Back-Pressure Flow Control in Half-Duplex mode
- High performance of Store-and-Forward architecture, runt/CRC filtering eliminate erroneous packets to optimize the network bandwidth
- Broadcast / Multicast / Unicast storm control
- 8K MAC address table, automatic source address learning and ageing
- VLANs
  - IEEE 802.1Q Tag-Based VLAN
  - Port-Based VLAN
  - Q-in-Q tunneling
  - Up to 255 VLANs groups, out of 4041 VLAN IDs
- Link Aggregation
  - up to 13 trunk groups
  - up to 8 ports per trunk group with 1.6Gbps bandwidth (Full Duplex Mode)
  - IEEE 802.3ad LACP (Link Aggregation Control Protocol)
  - Cisco ether-channel (Static Trunk)
- Spanning Tree Protocol
  - STP, IEEE 802.1D (Classic Spanning Tree Protocol)
  - RSTP, IEEE 802.1w (Rapid Spanning Tree Protocol)
- Port Mirroring to monitor the incoming or outgoing traffic on a particular port

QUALITY OF SERVICE

- 4 priority queues on all switch ports
- Traffic classification:
  - IEEE 802.1p CoS
  - IP TOS / DSCP to 802.1p priority mapping
  - Port-Based priority
- Strict priority and Weighted Round Robin (WRR) CoS policies
- Supports QoS and In/Out bandwidth control on each port

MULTICAST

- Supports IGMP Snooping v1 and v2
- IGMP Snooping v2 fast leave
- Querier mode support

SECURITY

- IEEE 802.1x Port-Based network access control protocol
- RADIUS users access authentication
- L3 / L4 Access Control List (ACL)
- MAC Filtering and Source IP-MAC / Port-Binding
- Port Security for Source MAC address entries filtering

MANAGEMENT

- Switch Management Interface
  - Console / Telnet Command Line Interface
  - Web switch management
  - SNMP v1, v2c switch management
  - SSL switch management
- DHCP client for IP address assignment
- Built-in Trivial File Transfer Protocol (TFTP) client
- Firmware upgrade via TFTP or HTTP
- Configuration upload / download via TFTP or HTTP
- Four RMON groups 1, 2, 3, 9 (history, statistics, alarms, and events)
- SNMP trap for interface Link Up and Link Down notification
- Ping function

Specification

Product	24-Port 10/100Mbps with 12-Port PoE +2 Gigabit TP/SFP Combo Managed Switch
Model	FGSW-2612PVM
Hardware Specification	
10/100Mbps Copper Ports	24 10/ 100Base-TX RJ-45 Auto-MDI/MDI-X ports
1000Mbps Copper Ports	2 10/100/1000Mbps RJ-45 Auto-MDI/MDI-X ports
SFP/mini-GBIC Slots	2 1000Base-SX/LX/BX, shared with Port-25~Port-26
PoE Ports	12 (port 1 to port 12)
Switch Architecture	Store-and-Forward
Switch Fabric	8.8Gbps / non-blocking
Switch Throughput	6.547Mpps @64Bytes
Address Table	8K entries
Share Data Buffer	512Kbytes
Maximum Frame Size	9K Bytes
Flow Control	Back pressure for Half-Duplex IEEE 802.3x Pause Frame for Full-Duplex
LED	Power, FAN Alarm Link / Activity (Green) PoE In-Use (Amber) 1000 LNK / ACT(Green) 10/100 LNK / ACT(Green)
Reset Button	< 5 sec: System reboot > 8 sec: Factory Default
Dimension (W x D x H)	440 x 265 x 44 mm, 1U height
Weight	3.6kg
Power Requirement	100~240V AC, 50-60 Hz
Power Consumption / Dissipation	150 Watts maximum / 511.5 BTU/hr maximum
Power over Ethernet	
PoE Standard	IEEE 802.3af Power over Ethernet / PSE
PoE Power Supply Type	End-Span
PoE Power Output	Per Port 48V DC, 350mA . Max. 15.4 Watts
Power Pin Assignment	1/2(+), 3/6(-)
PoE Power Budget	110 Watts
Max. number of Class 2 PD	12
Max. number of Class 3 PD	6
Layer 2 function	
Management Interface	Console, Telnet, Web Browser, SSL, SNMPv1, v2c
Port Configuration	Port disable / enable Auto-Negotiation 10/100/1000Mbps full and half duplex mode selection Flow Control disable / enable
Port Status	Display each port's speed duplex mode, link status and Flow control status Auto negotiation status, trunk status
Bandwidth Control	Ingress / Egress Rate Control Allow to configure per 128Kbps
VLAN	IEEE 802.1Q Tag-Based VLAN Port-Based VLAN Q-in-Q tunneling Up to 255 VLANs groups, out of 4041 VLAN IDs
Link Aggregation	Static Port Trunk IEEE 802.3ad LACP (Link Aggregation Control Protocol) Supports 13 groups of 8-Port trunk support
QoS	Traffic classification based on: - Port priority - 802.1p priority - DSCP / TOS field in IP Packet
IGMP Snooping	IGMP (v1 / v2) Snooping, up to 256 multicast Groups IGMP Querier support
Port Mirror	RX / TX / Both 1-to-1 mirroring

Security	IEEE 802.1x Port-Based Network access control Port Security Static MAC MAC Filtering MAC / IP Binding	
Access Control List	IP-Based Layer 3 / Layer 4 ACL Up to 220 ACL rule entries	
SNMP MIBs	RFC-1213 MIB-II RFC-2863 Interface MIB RFC-2665 EtherLike MIB RFC-1493 Bridge MIB RFC-2819 RMON MIB (Group 1, 2, 3,9) RFC-2737 Entity MIB POWER-ETHERNET-MIB	
Standards Conformance		
Regulation Compliance	FCC Part 15 Class A, CE	
Standards Compliance	IEEE 802.3	10Base-T
	IEEE 802.3u	100Base-TX
	IEEE 802.3z	1000Base- SX/LX
	IEEE 802.3ab	1000Base-T
	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 802.1p	Class of service
	IEEE 802.1Q	VLAN Tagging
	IEEE 802.1x	Port Authentication Network Control
	IEEE 802.3af	Power over Ethernet

Ordering Information

FGSW-2612PVM	24-Port 10/100Mbps with 12-Port PoE +2 Gigabit TP/SFP Combo Managed Switch

Available Modules for FGSW-2612PVM

MGB-GT	SFP-Port 1000Base-T mini-GBIC module
MGB-SX	SFP-Port 1000Base-SX mini-GBIC module
MGB-LX	SFP-Port 1000Base-LX mini-GBIC module
MGB-L30	SFP-Port 1000Base-LX mini-GBIC module - 30km
MGB-L50	SFP-Port 1000Base-LX mini-GBIC module - 50km
MGB-L70	SFP-Port 1000Base-LX mini-GBIC module - 70km
MGB-L120	SFP-Port 1000Base-LX mini-GBIC module - 120km
MGB-LA10	SFP-Port 1000Base-LX mini-GBIC module - LC WDM (TX:1310nm), SM, 10km
MGB-LB10	SFP-Port 1000Base-LX mini-GBIC module - LC WDM (TX:1550nm), SM, 10km
MGB-LA20	SFP-Port 1000Base-LX mini-GBIC module - LC WDM (TX:1310nm), SM, 20km
MGB-LB20	SFP-Port 1000Base-LX mini-GBIC module - LC WDM (TX:1550nm), SM, 20km
MGB-LA40	SFP-Port 1000Base-LX mini-GBIC module - LC WDM (TX:1310nm), SM, 40km
MGB-LB40	SFP-Port 1000Base-LX mini-GBIC module - LC WDM (TX:1550nm), SM, 40km

Longer distance modules (up to 120km) are available upon request.

Relative PoE Products

POE-151S-5V	IEEE 802.3af Power over Ethernet Splitter with 5V / 12V DC output
ICA-750	Dual Mode CCD Box Internet Camera
IVS-110	1-Channel Internet Video Server
ICA-M230	Mega-Pixel CMOS Pan/Tilt IR Internet Camera
WAP-4033PE	54Mbps Wireless PoE Access Point
WAP-4060PE	54/108Mbps Super G Wireless LAN Managed Access Point with PoE
VIP-254PT	SIP PoE IP Phone
VIP-351PT	Business PoE IP Phone

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