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

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

Cost effective Managed PoE Switch for SMB Networking

The PLANET 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 reduce installation costs of add-in network productivity devices. It frees the wireless AP deployment from restrictions of power outlet locations. With PoE features, power and data switching are integrated into one unit and delivered over a single cable, eliminating costs for additional AC wiring and reducing installation time. It provides a compact, affordable, safe and reliable power solution for small to medium enterprises.

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

Power over Ethernet, Easy Cabling Installation

The PoE in-line power following the standard IEEE 802.3af makes the FGSW-2612PVM able to power on 12 PoE compliant devices at the distance up to 100 meters through the 4-pair Cat 5/5e UTP wire. With data and power over Ethernet from one unit, the FGSW-2612PVM shall reduce cables deployment and eliminates the need for dedicated electrical outlets on the wall, ceiling or any unreachable place. A wire carries both data and power lowering the installation costs, simplifying the installation effort and eliminating the need for electricians or extension cords. It is also proud of the key feature – energy saving. With more efficient switching power supply, the efficiency of the FGSW-2612PVM would be much better than four linear power adapters in a long run.

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

Centralized Power Distribution with Remote Management

The remote PoE management functions of FGSW-2612PVM make it easy to survey and control the PoE power provision to the devices and ensure interoperability with equipment from other vendors. Via Web interface, SNMP trap and SNMP monitoring, the manager can get the PoE devices status and alert immediately. The over-temperature protection of the PoE Switch offers a safety and stable PoE operating by limit the output power according to detected temperature to prevent destructive breakdown due to un-expected overheating.

High Performance Wire-Speed Switching

The PLANET 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 FGSW-2612PVM boasts a high performance switch architecture that is capable of providing 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

Afford the current network to grow and expand, the PLANET FGSW-2612PVM provides console and telnet command line interface, advanced WEB and SNMP management interface to fill this kind of demand. 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. Moreover, the FGSW-2612PVM offers secure remote management by supporting Secure Socket Layer (SSL) connection which encrypts the 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

The PLANET FGSW-2612PVM offers 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 MAC filter, Static MAC, IP/MAC binding and Port Security for enforcing security policies to the edge. The administrators can now construct highly secured corporate networks with considerably less time and effort than before.

- 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

To ensure IP voice and video communication get the quality of service needed, 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.

Application

PoE IP Telephony Office

With the business office expansion, the additional telephones required could be installed in less cost via the implementation of PoE IP Telephony system than that of the traditional circuit wiring telephony system. PLANET FGSW-2612PVM PoE Managed Switch helps SMB to create an integrated data, voice, and powered network. PLANET 802.3af compliant IP Phones can be installed without the need of an additional power cables because the power can be provided from the standard Ethernet cable connecting to the FGSW-2612PVM. PoE IP Phones and Analog Telephony Adapter work perfectly with the FGSW-2612PVM which injects power through the Ethernet cables and the IP DSCP priority of QoS feature improves the voice communicating. With FGSW-2612PVM, IP Telephony deployment becomes more reliable and cost effective, which helps SMB save tremendous cost when upgrading from the traditional telephony to IP Telephony communications infrastructure.
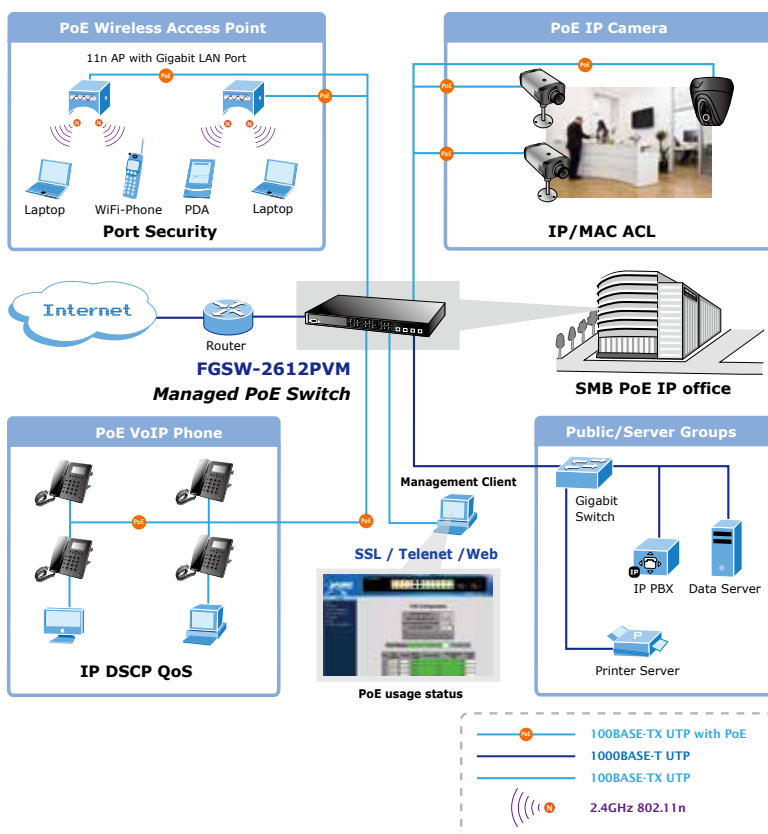
Security

- 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

3

Department / Workgroup PoE Switch

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

Factory / Warehouse Applications

While video surveillance system becomes more and more important for visible security in the factory and warehouse, the IP cameras with PoE function would be a lot helpful for the surveillance deployment when the power outlet not easily found in the ceiling or in the outdoor. For example, in the factory operation or in the warehouse storage security, the PoE IP cameras can be installed anywhere when needed regardless of the restrictions of power outlet location. With the PoE Switch as the central control manager and offering remote power monitoring via Web interface or SNMP trap and SNMP monitoring, the manager can get the status and alert of PoE devices immediately. The PoE IP cameras could also be controlled remotely, which increases the administrator management efficiency and improve the productivity.
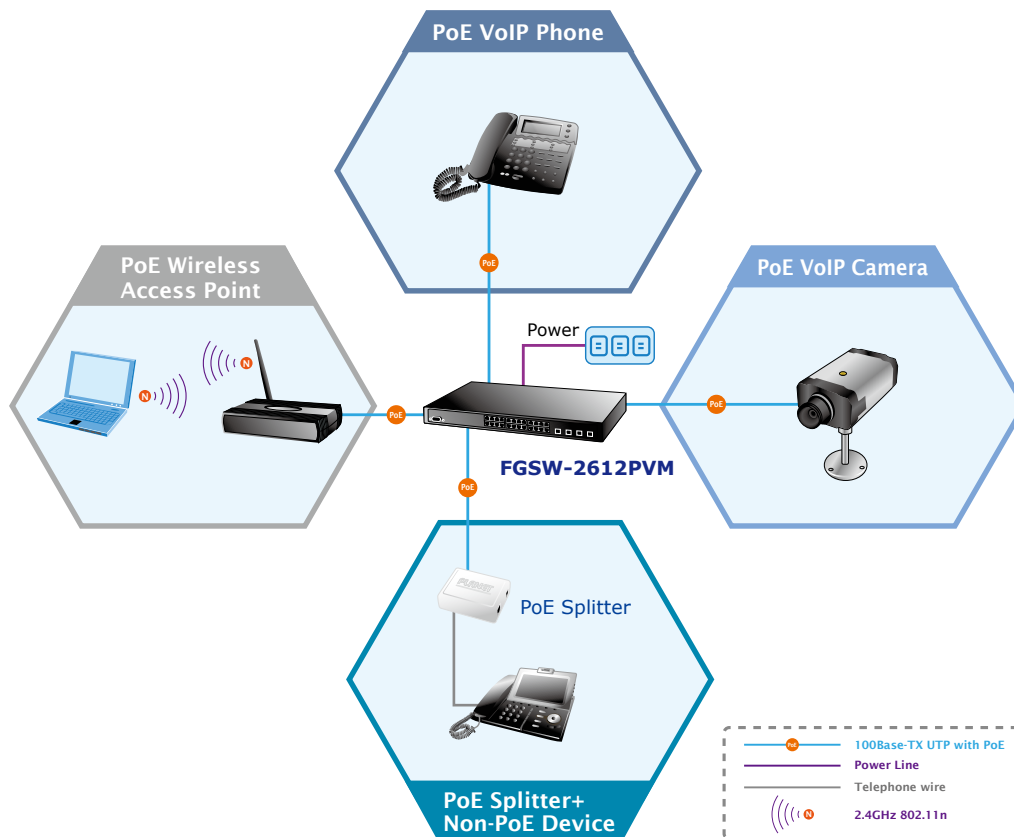
Specification

Product	FGSW-2612PVM 24-Port 10/100Mbps with 12-Port PoE +2 Gigabit TP/SFP Combo Managed Switch
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) 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
Environmental	
Operating	Temperature: 0 ~ 50 Degree C Relative Humidity: 20% ~ 95%
Storage	Temperature: -10 ~ 70 Degree C Relative Humidity: 20% ~ 95% (non-condensing)

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.

PLANET Technology Corporation

11F., No.96, Minquan Rd., Xindian Dist., New Taipei City
231, Taiwan (R.O.C.)
Tel: 886-2-2219-9518   Fax: 886-2-2219-9528
Email: sales@planet.com.tw   www.planet.com.tw

FGSW-2612PVM