

8-Port 10/100Mbps + 2G TP / SFP Combo PoE Managed Switch



Advanced Features and Centralized Power Management for SMB and Public Service PoE Networking

The PLANET FGSD-1022P PoE Switch features IEEE 802.3af Power over Ethernet (PoE) function, which optimizes the installation and power management of network devices such as wireless access points (AP), Voice over IP (VoIP) phones and security video cameras. IEEE 802.3af PoE helps to 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.

Full-Functioned / Robust Layer2 Features

The FGSD-1022P can be programmed for basic switch management functions such as port speed configuration, Port aggregation, VLAN, Spanning Tree protocol, QoS, bandwidth control and IGMP Snooping. It provides IEEE 802.1Q Tagged VLAN and the VLAN groups allowed on the FGSD-1022P will be maximally up to 256. Via aggregation of supporting port, the FGSD-1022P allows the operation of high-speed trunk combining multiple ports. Maximum up to 8 ports can be assigned for 13 trunk groups and it supports fail-over as well.

- 802.3af Power over Ethernet
- 802.1Q VLAN
- DHCP Relay & DHCP Option 82
- IGMP Snooping
- 802.1s Multiple Spanning Tree
- TOS/DSCP QoS
- SNMP and SNMP Trap
- Access Control List
- 802.1X Authentication / RADIUS
- SSL

Full PoE Power Switch for Centralize Power Management

Provides 8 PoE in-line power interface, the FGSD-1022P PoE Managed Switch offers totally 180Watts for 8 PoE port and it can easily build a power central-controlled IP phone system, IP Camera system, or wireless AP group for the enterprises. For instance, 8 IP cameras or APs can be easily installed in the company for surveillance demands or build 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.

Excellent Traffic Control

The PLANET FGSD-1022P is loaded with powerful traffic management and QoS features to enhance services offered by Service Providers. The functionality includes QoS features such as wire-speed Layer 4 traffic classifiers and bandwidth limiting applications that are particular useful for multi-tenant unit, multi business unit, Telco, or Network Service Provider. It also empowers the enterprises to take full advantages of the limited network resources and guarantees the best performance in VoIP and Video conferencing transmission.

Powerful Management and Easy To Use

For efficient management, the FGSD-1022P is equipped with console, WEB and SNMP management interfaces. With its built-in Web-based management interface, the FGSD-1022P offers an easy-to-use, platform-independent management and configuration facility. It supports standard Simple Network Management Protocol (SNMP) and can be managed via any standard-based management software. For text-based management, the FGSD-1022P can be accessed via Telnet and the console port. Moreover, the FGSD-1022P offers secure remote management by supporting SSL connection which encrypts the packet content at each session.

Powerful Security

The PLANET FGSD-1022P offers comprehensive Access Control List (ACL) for enforcing security to the edge. Its protection mechanism also comprises Port-based IEEE 802.1x user, Web Authentication user and device authentication. The Port-security is effective in limiting the numbers of clients pass through so that network administrators can now construct highly secured corporate networks with considerably less time and effort than before.

Flexibility and Extension solution

The two mini-GBIC slots are compatible with 1000Base-SX/LX and WDM SFP (Small Form Factor Pluggable) fiber-optic modules. The distance can be extended from 550 meters (Multi-Mode fiber cable) up to 10/30/50/70/120 kilometers (Single-Mode fiber or WDM fiber cable). They are well suited for applications within the enterprises data centers, distributions or remote PoE equipments data link.

KEY FEATURES

PHYSICAL PORT

- 8-Port 10/100TX Fast Ethernet ports with IEEE 802.3af PoE injector
- 2 10/100/1000T TP combo interfaces
- 2 mini-GBIC/SFP slots, shared with Port-9 and Port-10
- Reset button for system management
- 1 RS-232 male DB9 console interface for Switch basic management and setup

POWER OVER ETHERNET

- Complies with IEEE 802.3af Power over Ethernet End-Span PSE
- Up to 8 IEEE 802.3af devices powered
- Offers totally 180 Watts for PoE power output
- Supports PoE Power up to 15.4 Watts for each PoE ports
- 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
 - Per port PoE function enable/disable
 - PoE Port Power feeding priority
 - Per PoE port power limit
 - PD classification detection
 - Over Temperature Protection function

LAYER 2 FEATURES

- 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
- Supports VLAN
 - IEEE 802.1Q Tag-based VLAN
 - Port-Based VLAN
 - Q-in-Q tunneling
 - GVRP for dynamic VLAN Management
 - Private VLAN Edge (PVE / Protect Port)

- Supports 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)
 - MSTP, IEEE 802.1s (Multiple Spanning Tree Protocol, spanning tree by VLAN)
- 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 / IP Precedence
 - IP TCP / UDP port number
- Strict priority and Weighted Round Robin (WRR) CoS policies
- Supports QoS and In/Out bandwidth control on each port
- In/Out rate limit 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)
- Source IP-MAC / Port-Binding
- Port Security for Source MAC address entries filtering

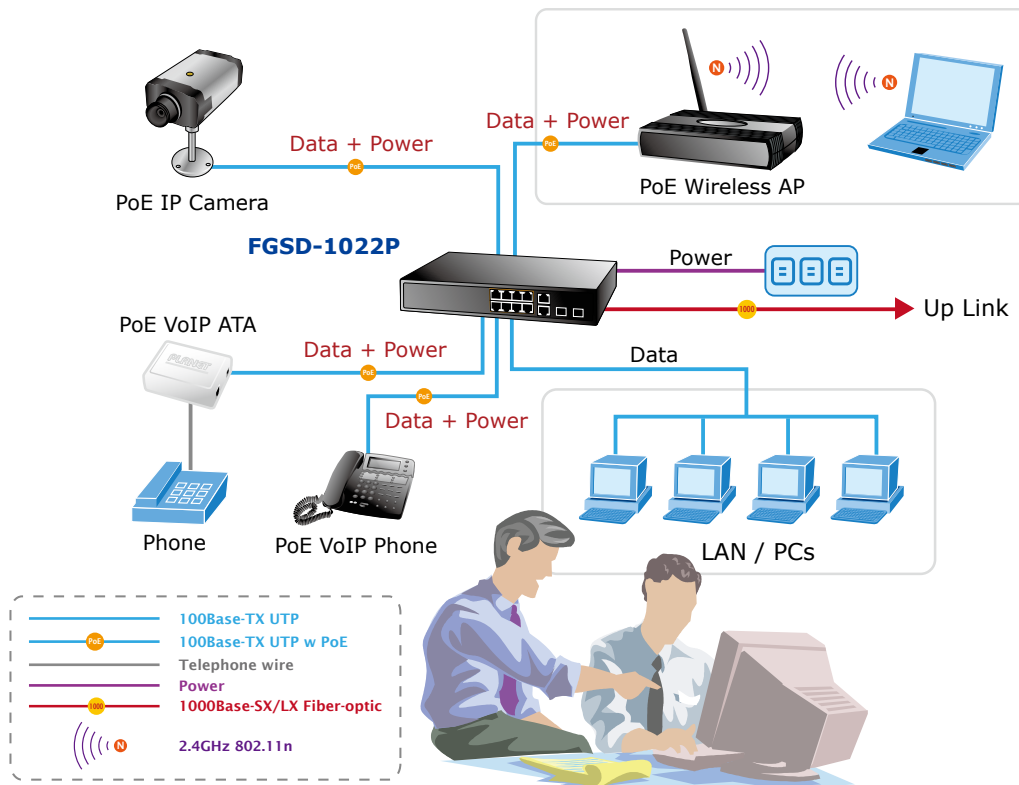
MANAGEMENT

- Switch Management Interface
 - Telnet Command Line Interface
 - Web switch management
 - SNMP v1, v2c, v3 switch management
 - SSL switch management
- DHCP client for IP address assignment
- DHCP Option82 and DHCP Relay
- Link Layer Discovery Protocol (LLDP) for easy network management
- Built-in Trivial File Transfer Protocol (TFTP) client
- Firmware upgrade via TFTP or HTTP
- Configuration restore / backup via TFTP or HTTP
- Event message logging to remote Syslog server
- Four RMON groups 1, 2, 3, 9 (history, statistics, alarms, and events)
- SNMP trap for interface Link Up and Link Down notification
- Supports Ping function

APPLICATIONS
IP 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 FGSD-1022P PoE Managed Switch helps enterprises to create an integrated data, voice, and powered network. PLANET IEEE 802.3af compliant IP Phones can be installed without the need of an additional power cable because the power can be provided from the standard Ethernet cable connecting to the FGSD-1022P. PoE IP Phones and Analog Telephony Adapter work perfectly with the FGSD-1022P which injects power through the Ethernet cables.

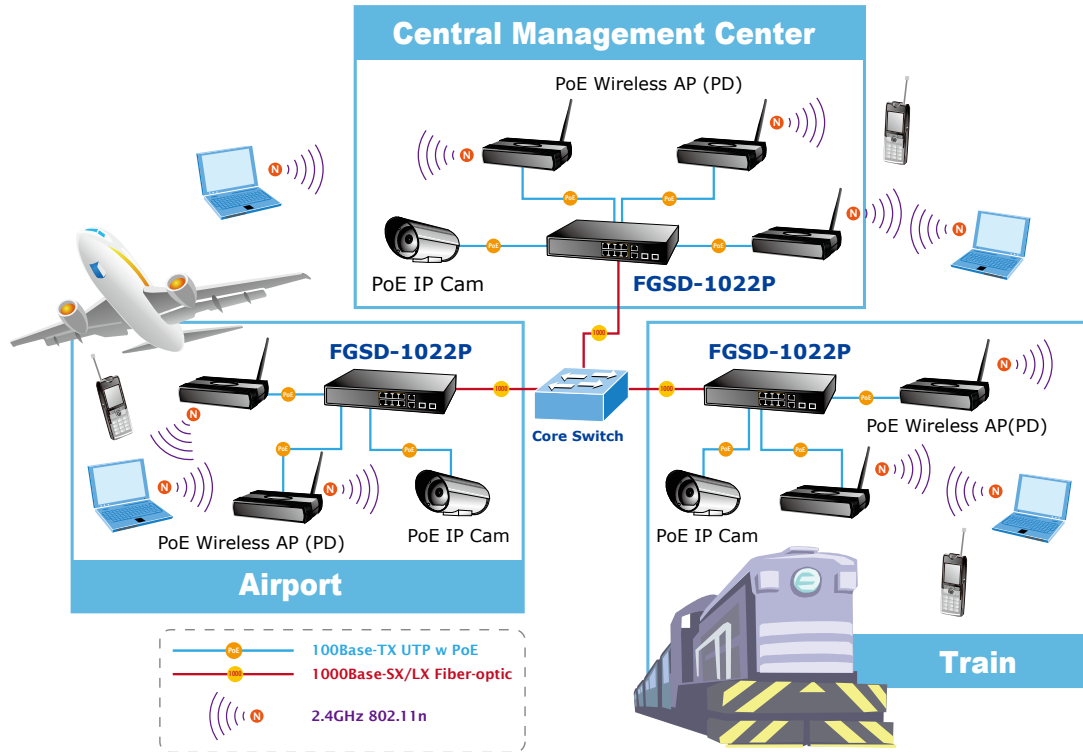
With the FGSD-1022P, IP Telephony deployment becomes more reliable and cost effective, which helps enterprises save tremendous cost when upgrading from the traditional telephony to IP Telephony communications infrastructure.



Transportation – Wireless and IP Surveillance

In modern time, Internet service is mostly demanded during travel times, either for business or for leisure. Besides the wired Internet network, the wireless LAN would be more efficient for the transportation station to provide high-speed and wide area Internet services for travelers. With the PoE wireless LAN APs connected to FGSD-1022P that provides long distance fiber capability, people can experience the wireless LAN roaming service within the Wi-Fi coverage even when the transportation itself like train, bus or ship moving on the way. By adopting PoE Wireless LAN structure, the transportation authority gains benefit from costing less while providing better Internet services in wider areas for the travelers.

On the other hand, the PoE IP Surveillance system deployed helps watch the transportation security and PoE IP Telephony system improves the voice communicating in the station with lower cost.



SPECIFICATION

Product	8-Port 10/100Mbps + 2 Gigabit TP / SFP Managed PoE Switch
Model	FGSD-1022P
Hardware Specification	
10/100Mbps Copper Ports	8 10/ 100Base-TX RJ-45 Auto-MDI/MDI-X ports
1000Mbps Copper Ports	2 10/100/1000Base-T RJ-45 Auto-MDI/MDI-X ports
SFP/mini-GBIC Slots	2 1000Base-SX/LX/BX, shared with Port-9~Port-10
Switch Architecture	Store-and-Forward
Switch Fabric	5.6Gbps / non-blocking
Switch Throughput	4.16Mpps @64Bytes
Address Table	8K entries
Share Data Buffer	2 Mbits
Maximum Frame Size	9K Bytes
Flow Control	Back pressure for Half-Duplex IEEE 802.3x Pause Frame for Full-Duplex
LED	Power (Green) Link/Activity (Green) PoE In-Use (Orange) 1000 LNK / ACT(Green) 10/100 LNK / ACT(Orange)
Reset Button	< 1-3 seconds: System reboot > 10 seconds: Factory Default
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	180 Watts*
Max. number of Class 2 PD	8
Max. number of Class 3 PD	8
Layer 2 Function	
Management Interface	Console, Telnet, Web Browser, SSL, SNMPv1, v2c, v3
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.
Port Mirroring	TX / RX / Both 1 to 1 monitor
Bandwidth Control	Ingress / Egress Rate Control • Allow to configure per 128Kbps
VLAN	IEEE 802.1Q Tag-based VLAN, up to 255 VLANs groups, out of 4041 VLAN IDs Port-based VLAN Q-in-Q tunneling GVRP for VLAN Management, up to 128 dynamic VLAN entries Private VLAN Edge(PVE / Protected port) with two protected port groups
Link Aggregation	Static Port Trunk IEEE 802.3ad LACP (Link Aggregation Control Protocol) Supports 13 groups of 8-Port trunk support
QoS	4 priority queue 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
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 802.3ab	1000Base-T
	IEEE 802.3z	1000Base-SX/LX
	IEEE 802.3x	Flow Control and Back pressure
	IEEE 802.3ad	Port trunk with LACP
	IEEE 802.1D	Spanning tree protocol
	IEEE 802.1s	Multiple 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
	RFC 768	UDP
	RFC 793	TFTP
	RFC 791	IP
	RFC 792	ICMP
	RFC 2068	HTTP
RFC 1112	IGMP version 1	
RFC 2236	IGMP version 2	

ORDERING INFORMATION

FGSD-1022P	8-Port 10/100Mbps + 2 Gigabit TP / SFP combo PoE Managed Switch
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RELATIVE POE PRODUCTS

POE-151S-5V	IEEE 802.3af Power over Ethernet Splitter with 5V DC output
POE-151S-12V	IEEE 802.3af Power over Ethernet Splitter with 12V DC output
ICA-107P	PoE CMOS IP Camera
ICA-310	30-meter Infrared Internet Camera
ICA-510	Dual Mode CCD Dome Internet Camera
ICA-700	CCD Box Internet Camera
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
WDAP-2000PE	54/108Mbps Super A+G WLAN Managed Access Point with PoE
VIP-254PT	SIP PoE IP Phone
VIP-155PT	Power over Ethernet SIP IP Phone
VIP-156PE	802.3af PoE SIP Analog Telephone Adapter
VIP-351PT	Business PoE IP Phone

AVAILABLE MODULES FOR FGSD-1022P

MGB-GT	SFP-Port 1000Base-T 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 (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