

# Product Specifications

8-Port 10/100TX 802.3at PoE + 2-Port Gigabit TP/ SFP Combo Desktop Switch  
with PoE LCD Monitor

**FGSD-1022VHP**

Version 2.0

This document contains confidential proprietary information and is property of PLANET. The contents of this document should not be disclosed to unauthorized persons without the written consent of PLANET.

## Change History:

Revision:	Date:	Author:	Change List
Version 1.0	2016/3/9	Marc Liao	Initial Release
Version 2.0	2018/04/16	Brandon Wang	Hardware Revision. - Chipset change - LCD change

<b>Author:</b>	Brandon Wang	<b>Editor:</b>	Jonas Yang
<b>Reviewed By:</b>	Jonas Yang	<b>Approved By:</b>	Kent Kang

## 1. PRODUCT DESCRIPTION



### Just “Plug and Watch” for a Quick Solution

PLANET FGSD-1022VHP is an ideal **Plug and Watch Power over Ethernet** solution which provides quick installation, real-time PoE work status monitoring and immediate troubleshooting through its unique LCD display to improve work efficiency and quality without any PC or software required.

PLANET FGSD-1022VHP is equipped with **8 10/100/1000BASE-T ports** with each port taking up 30 watts of PoE+ power, and **2 Gigabit TP/SFP combo** interfaces with inner power system. With a total PoE+ power budget of **120 watts** and non-blocking data switching performance, the FGSD-1022VHP can fulfill the demand of sufficient PoE power for HD IP surveillance. It offers a desktop-sized, reliable and visible power solution for small businesses and system integrators deploying Power over Ethernet networks.

### Smart and Intuitive LCD Control

PLANET FGSD-1022VHP provides an intuitive color panel on its front panel that facilitates the Ethernet management and PoE PD management. They greatly promote management efficiency in large-scale networks for enterprises, hotels, shopping malls, government buildings and other public areas, and feature the following special management and status functions:

- PoE management and status
- Port management and status
- Switch mode: Standard, VLAN, Extend
- Budget and bandwidth control
- PD alive check
- Maintenance: Screen saver, fan control, factory default and save configuration

### Standard, VLAN and Extend Operation Modes Offered

PLANET FGSD-1022VHP provides Standard, VLAN and Extend operation modes. The FGSD-1022VHP operates as a normal IEEE 802.3af/at PoE Switch in the Standard operation mode. The VLAN operation mode features the port-based VLAN function that can help to prevent the IP camera’s multicast or broadcast storm from influencing each other.

In the Extend operation mode, the FGSD-1022VHP operates on a per-port basis at 10Mbps duplex operation but

can support 30-watt PoE power output over a distance of up to 250 meters overcoming the 100m limit on Ethernet UTP cable. With this brand-new feature, the FGSD-1022VHP provides an additional solution for 802.3at/af PoE distance extension, thus saving the cost of Ethernet cable installation. Its VLAN isolation function isolates ports so as to prevent broadcast storm and defend DHCP spoofing in the Extend operation mode.

### **Flexible Extension Solution**

PLANET FGSD-1022VHP provides 2 extra Gigabit TP/SFP combo interfaces supporting 10/100/1000BASE-T RJ45 copper for surveillance network devices such as NVR, video streaming server or NAS to facilitate surveillance management. Or through these Gigabit speed fiber SFP slots, the 1000BASE-SX/LX SFP (Small Form-factor Pluggable) fiber transceiver is inserted to be uplinked to a backbone switch and monitoring center over a long distance. The distance can be extended from 550m to 2km (multi-mode fiber), even going up to 10/20/30/40/50/60/70/120km (single-mode fiber or WDM fiber). They are well suited for applications within the enterprise data centers and distributions.

### **Robust Protection**

PLANET FGSD-1022VHP provides contact discharge of  $\pm 4\text{KV}$  DC and air discharge of  $\pm 6\text{KV}$  DC for Ethernet ESD protection. It also supports  $\pm 4\text{KV}$  surge immunity to improve product stability and protects users' networks from devastating ESD attacks, making sure the flow of operation does not fluctuate.

### **Easy Installation and Cable Connection**

As data and power are transmitted over one cable, the FGSD-1022VHP does not need a second cable and electrical outlets on the wall, ceiling or any unreachable place. Thus, it helps to lower the installation costs and simplify the installation effort. All the RJ45 copper interfaces of the FGSD-1022VHP support 10/100Mbps auto-negotiation for optimal speed detection through RJ45 Category 6, 5 or 5e cable. It also supports standard auto-MDI/MDI-X that can detect the type of connection to any Ethernet device without requiring special straight-through or crossover cables.

## 2. PRODUCT FEATURES

### ➤ Physical Port

- 8-port 10/100/1000BASE-T Gigabit RJ45 copper
- 2 10/100/1000BASE-T TP interfaces and 2 1000BASE-X mini-GBIC SFP shared combo interfaces

### ➤ Power over Ethernet

- Complies with IEEE 802.3af/at Power over Ethernet end-span PSE
- Up to 8 ports of IEEE 802.3af/802.3at devices powered
- Supports PoE power up to 32 watts for each PoE port
- Each port supports 52V DC power to PoE powered device
- 120-watt PoE budget
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100m in standard mode and 250m in extend mode

### ➤ Smart LCD

- LCD switch mode for “Standard”, “VLAN” and “Extend” mode selection; the “Extend” mode features 30-watt PoE transmit distance of 250m at speed of 10Mbps and VLAN isolation
- Solid LCD switch mode to isolate ports to prevent broadcast storm and defend DHCP spoofing
- Power low-voltage, power over-voltage and PSE over-temperature protection
- Screen saver, fan control, factory default and save configuration
- PoE management
  - Total PoE power budget control
  - Per port PoE function enable/disable
  - PoE port power feeding priority
  - Per PoE port power limitation
  - PD alive check

### ➤ Switching

- Hardware-based 10/100Mbps or 10/100/1000Mbps auto-negotiation and auto MDI/MDI-X
- Flow control for full duplex operation and back pressure for half duplex operation
- 9216bytes packet size
- Integrates address look-up engine, supporting 8K absolute MAC addresses
- IEEE 802.1Q VLAN transparency
- Automatic address learning and address aging

### ➤ Hardware

- 12-inch desktop size, 1U height, rack mountable
- 2-inch color LCD with smart management functions
- LED indicators for system power, per port PoE ready and PoE activity, speed, Link/Act

- 1 silent fan to provide stable and efficient power performance
- Supports Energy-Efficient Ethernet (EEE) function (IEEE 802.3az)
- Supports contact discharge of  $\pm 4\text{KV}$  DC and air discharge of  $\pm 6\text{KV}$  DC for Ethernet ESD protection
- Supports  $\pm 4\text{KV}$  surge immunity

### 3. PRODUCT SPECIFICATIONS

#### 3.1 Main Components

Switch ASIC	IC+ IP1810	x 1
Fast Ethernet PHY	IC+ IP1810 (8 10/100M RJ45)	x 1
Gigabit PHY	Atheros AR8033 (2 Gigabit TP and SFP)	x 2
PoE Controller	TI TPS23861	x 2
Power Supply	GangQi 130W (53V DC output)	x 1

#### 3.2 Function Specifications

Model	<b>FGSD-1022VHP</b>
<b>Hardware Specifications</b>	
802.3af/802.3at PoE Injector Port	8
10/100BASE-TX MDI/MDIX Ports	8
10/100/1000BASE-T MDI/MDIX Ports	2 (Combo)
1000BASE-X SFP/mini-GBIC Slots	2 (Combo)
Switch Architecture	Store-and-Forward
Switch Fabric	5.6Gbps/non-blocking
Switch Throughput@64 bytes	4.17Mpps@64 bytes
MAC Address Table	8K entries
Maximum Frame Size	9216 bytes
Flow Control	IEEE 802.3x pause frame for full duplex; back pressure for half duplex
LED	<p><b>System:</b> Power (<b>Green</b>)</p> <p><b>10/100BASE-TX RJ45 Interfaces:</b> 10/100Mbps LNK/ACT (<b>Green</b>) PoE-in-Use (<b>Orange</b>)</p> <p><b>1000BASE-X SFP Interfaces:</b> LNK/ACT (<b>Green</b>)</p> <p><b>1000BASE-T TP Interfaces:</b> LNK/ACT (<b>Green</b>) 1000Mbps(<b>Green</b>)</p>
LCD Monitor (W x D)	40.6mm x 30.5mm, 2-inch

<b>Buttons</b>	Menu, Enter, Back, Up and Down
<b>Dimensions (W x D x H)</b>	180 x 280 x 44mm (1U height)
<b>Enclosure</b>	Metal
<b>Weight</b>	1.8kg
<b>Power Requirements</b>	100~240V AC, 50/60Hz, 2.5A max.
<b>Power Consumption/Dissipation</b>	Max. 130 watts/446 BTU
<b>Thermal Fan</b>	1
<b>ESD Protection</b>	Contact discharge of $\pm 4$ KV DC Air discharge of $\pm 6$ KV DC
<b>Surge Protection</b>	$\pm 4$ KV
<b>Power over Ethernet</b>	
<b>PoE Standard</b>	IEEE 802.3af Power over Ethernet/PSE IEEE 802.3at Power over Ethernet Plus/PSE
<b>PoE Power Supply Type</b>	End-span
<b>PoE Power Output</b>	Per port 52V-54V DC, 300mA. max. 15.4 watts (IEEE 802.3af) Per port 52V-54V DC, 600mA. max. 30 watts (IEEE 802.3at)
<b>Power Pin Assignment</b>	1/2 (+), 3/6 (-)
<b>PoE Power Budget</b>	120 watts
<b>Max. Number of Class 2 PDs</b>	8
<b>Max. Number of Class 3 PDs</b>	8
<b>Max. Number of Class 4 PDs</b>	4
<b>Standards Conformance</b>	
<b>Regulatory Compliance</b>	FCC Part 15 Class A, CE
<b>Standards Compliance</b>	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3ab Gigabit 1000BASE-T IEEE 802.3z Gigabit SX/LX IEEE 802.3x Flow control and back pressure IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus IEEE 802.3az Energy Efficient Ethernet (EEE)
<b>Environment</b>	
<b>Operating</b>	Temperature: -10 ~ 60 degrees C Relative Humidity: 10 ~ 90% (non-condensing) * Temperature < 40 degrees C; Humidity < 90% Temperature > 40 degrees C; Humidity < 50%
<b>Storage</b>	Temperature: -10 ~ 70 degrees C Relative Humidity: 5 ~ 90% (non-condensing)

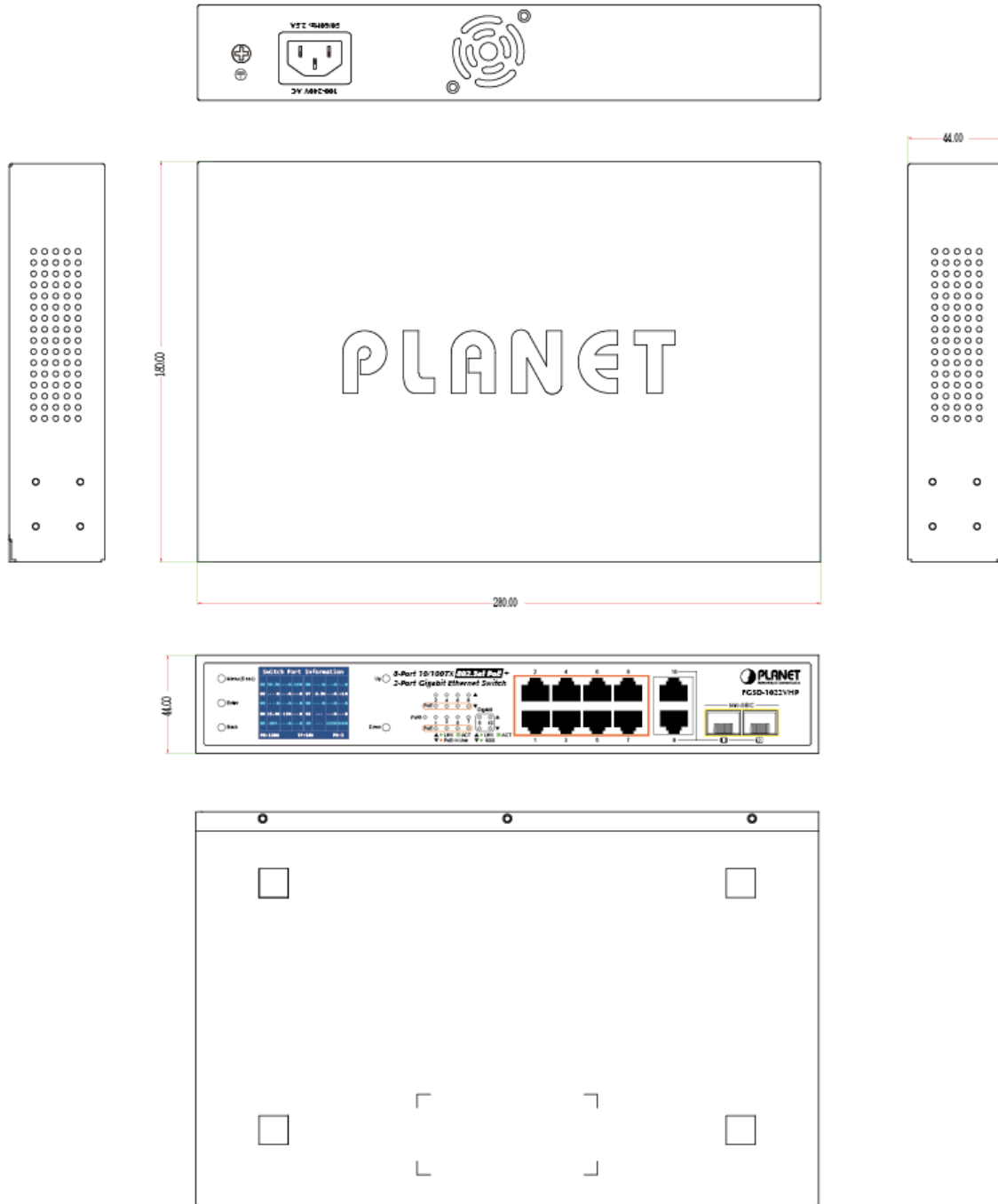
### 3.3 Physical Specifications:

■ **Dimensions (W x D x H):**

180 x 280 x 44 mm

■ **Weight:**

1.8kg



**Dimensions ( unit = mm )**



■ **Front Panel:**



■ **Rear Panel:**



■ **LED Definition**

- **System**

LED	Color	Function
PWR	Green	Lights to indicate that the Switch has power.

- **10/100Mbps PoE Ports**

LED	Color	Function	
LNK/ACT	Green	Lights	Indicates the link through that port is successfully established at 10/100Mbps.
		Blinks	Indicates that the Switch is actively sending or receiving data over that port.
PoE-in-Use	Orange	Lights	Indicates the port is providing 53V DC in-line power.
		Off	Indicates the connected device is not a PoE powered device (PD).

- **1000Mbps SFP Slots**

LED	Color	Function	
LNK/ACT	Green	Lights	Indicates the link through that port is successfully established at 1000Mbps.
		Blinks	Indicates that the Switch is actively sending or receiving data over that port.
1000	Green	Lights	Indicates the port is successfully established at 1000Mbps.

- **1000Mbps TP Slots**

LED	Color	Function	
<b>LNK/ACT</b>	<b>Green</b>	<b>Lights</b>	Indicates the link through that port is successfully established at 1000Mbps.
		<b>Blinks</b>	Indicates that the Switch is actively sending or receiving data over that port.
<b>10/100</b>	<b>--</b>	<b>Dark</b>	Indicates the port is successfully established at 10/100Mbps
<b>1000</b>	<b>Green</b>	<b>Lights</b>	Indicates the port is successfully established at 1000Mbps.

### 3.4 Environmental Specifications

■ **Operating:**

<b>Temperature:</b>	10°C ~ 60 degrees C
<b>Relative Humidity:</b>	10% ~ 90% (non-condensing)

■ **Storage:**

<b>Temperature:</b>	10°C ~ 70 degrees C
<b>Relative Humidity:</b>	5% ~ 90% (non-condensing)

### 3.5 Electrical Specification

<b>Input Voltage:</b>	100~240V AC, 50/60Hz, 2.5A (max.)
<b>Power Consumption (System on):</b>	110V: 2.5 watts/9 BTU
	220V: 2.5 watts/9 BTU
<b>Power Consumption (Ethernet Full Loading):</b>	110V: 3.3 watts/11 BTU
	220V: 3.5 watts/12 BTU
<b>Power Consumption (PoE Full Loading):</b>	110V: 71.5 watts/244 BTU
	220V: 70.5 watts/241 BTU

### 3.6 Regulatory Compliance

FCC Part 15 Class A, CE

### 3.7 Reliability

MTBF > 50,000 hrs @ 25 degrees C

### 3.8 Basic Packaging

- FGSD-1022VHP x 1
- User's Manual x 1
- Two Rack-mounting Brackets with Attachment Screws x 1
- Power Cord x 1
- Foot Pad x 4
- SFP Dust Cap x 2

### 3.9 Packing Information

<b>Box Dimensions (W x D x H):</b>	378 x 234 x 82 mm
<b>Gross Weight:</b>	2.4kg
<b>Carton Dimensions (W x D x H):</b>	524 x 400 x 264 mm
<b>Total Weight:</b>	16kg
<b>Quantity:</b>	6pcs in one carton