

Product Specifications

16-Port 10/100TX 802.3at PoE + 2-Port Gigabit TP +
2-Port SFP Ethernet Switch with LCD PoE Monitor

FGSW-1822VHP

Version 3.0

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	2016/03/09	Marc Liao	Initial Release
Version 2.0	2017/10/18	Brandon Wang	Hardware Revision. - Chipset change - LCD change
Version 3.0	2019/01/09	Simon Yeh	Hardware Revision - Chipset change - LCD change Software Revision - V1.25

Author:	Simon Yeh	Editor:	Jonas Yang
Reviewed By:	Jonas Yang	Approved By:	Kent Kang

1. PRODUCT DESCRIPTION



Simple “Plug and Watch” for a Quick Solution

PLANET FGSW-1822VHP 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.

The FGSW-1822VHP is equipped with 16 10/100BASE-TX ports with each port taking up 30 watts of PoE+ power and 2 Gigabit TP and 2 Gigabit SFP interfaces with inner power system. With a total PoE+ power budget of 300 watts and non-blocking data switching performance, the FGSW-1822VHP 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 FGSW-1822VHP 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

PLANET FGSW-1822VHP provides Standard, VLAN and Extend operation modes. The FGSW-1822VHP 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 FGSW-1822VHP operates on a per-port basis at 10Mbps duplex operation but

can support 20-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 FGSW-1822VHP provides an additional solution for 802.3af/at 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

The two mini-GBIC slots built in the FGSW-1822VHP is compatible with the 1000BASE-SX/LX SFP (Small Form-factor Pluggable) fiber transceiver, uplinked to the backbone switch and monitoring center in long distance. The distance can be extended from 550 meters to 10/20/30/40/50/60/70/120 kilometers (single-mode fiber or WDM fiber). They are well suited for applications within the enterprise data centers and distributions.

Robust Protection

The FGSW-1822VHP provides contact discharge of $\pm 6\text{KV}$ DC and air discharge of $\pm 8\text{KV}$ DC for Ethernet ESD protection. It also supports $\pm 6\text{KV}$ 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 FGSW-1822VHP 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 FGSW-1822VHP support 10/100/1000Mbps 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

- 16-port 10/100BASE-TX Fast Ethernet RJ45 copper
- 2 10/100/1000BASE-T TP and 2 1000BASE-X mini-GBIC SFP interfaces

➤ Power over Ethernet

- Complies with IEEE 802.3af/at Power over Ethernet end-span PSE
- Up to 16 ports of IEEE 802.3af/at devices powered
- Supports PoE Power up to 32 watts for each PoE port
- Each port supports 54V DC power to PoE powered device
- 300-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

- The LCD switch features “**Standard**”, “**VLAN**” or “**Extend**” mode; the “Extend” mode features 20-watt PoE transmission distance of 250m at speed of 10Mbps and VLAN isolation
- The LCD switch is able 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 10/100/1000Mbps 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

- 19-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

- 3 silent fans to provide stable and efficient power performance
- Supports Energy-Efficient Ethernet (EEE) function (IEEE 802.3az)
- Supports contact discharge of $\pm 6\text{KV}$ DC and air discharge of $\pm 8\text{KV}$ DC for Ethernet ESD protection
- Supports $\pm 6\text{KV}$ surge immunity

3. PRODUCT SPECIFICATIONS

3.1 Main Components

Switch ASIC	Realtek RTL8332L	x 1
Fast Ethernet PHY	Realtek RTL8208L	x 1
Gigabit PHY	Realtek RTL8214B	x 1
PoE Controller	STC STC8F2K64S4	x 1
PoE PSE	TI TPS23861	x 4
Power Supply	GangQi 330W (53V DC output)	x 1

3.2 Function Specifications

Model	FGSW-1822VHP
Hardware Specifications	
802.3af/802.3at PoE Injector Port	16
10/100BASE-TX MDI/MDIX Ports	16
10/100/1000BASE-T MDI/MDIX Ports	2
1000BASE-X SFP/mini-GBIC Slots	2
Switch Architecture	Store-and-Forward
Switch Fabric	11.2Gbps/non-blocking
Switch Throughput@64 bytes	8.3Mpps@64bytes
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>System: Power (Green)</p> <p>10/100BASE-TX RJ45 Interfaces: 10/100Mbps LNK/ACT (Green) PoE-in-Use (Amber)</p> <p>10/100/1000BASE-X SFP Interfaces: LNK/ACT (Green)</p> <p>10/100/1000BASE-T TP Interfaces: LNK/ACT (Green) 10/100Mbps (Red) 1000Mbps (Green)</p>
LCD Monitor (W x H)	40.6 x 30.5 mm, 2-inch
Button	Menu, Enter, Back, Up and Down
Dimensions (W x D x H)	440 x 233 x 44 mm (1U height)
Enclosure	Metal

Weight	3.4kg
Power Requirements	AC 100~240V, 50/60Hz, 5A max.
Power Consumption/Dissipation	Max. 330 watts/1132 BTU
Thermal Fan	3
ESD Protection	Contact Discharge of ± 6 KV DC Air Discharge of ± 8 KV DC
Surge Immunity	± 6 KV
Power over Ethernet	
PoE Standard	IEEE 802.3af Power over Ethernet/PSE IEEE 802.3at Power over Ethernet Plus/PSE
PoE Power Supply Type	End-span
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)
Power Pin Assignment	1/2(+), 3/6(-)
PoE Power Budget	300 watts
Max. Number of Class 2 PDs	16
Max. Number of Class 3 PDs	16
Max. Number of Class 4 PDs	11
Standards Conformance	
Regulatory Compliance	FCC Part 15 Class A, CE
Standards Compliance	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)
Environment	
Operating	Temperature: -10 ~ 60 degrees C Relative Humidity: 10 ~ 90% (non-condensing) Temperature: < 40 degrees C; Humidity: < 90% Temperature: > 40 degrees C; Humidity: < 50%
Storage	Temperature: -10 ~ 70 degrees C Relative Humidity: 5 ~ 90% (non-condensing)

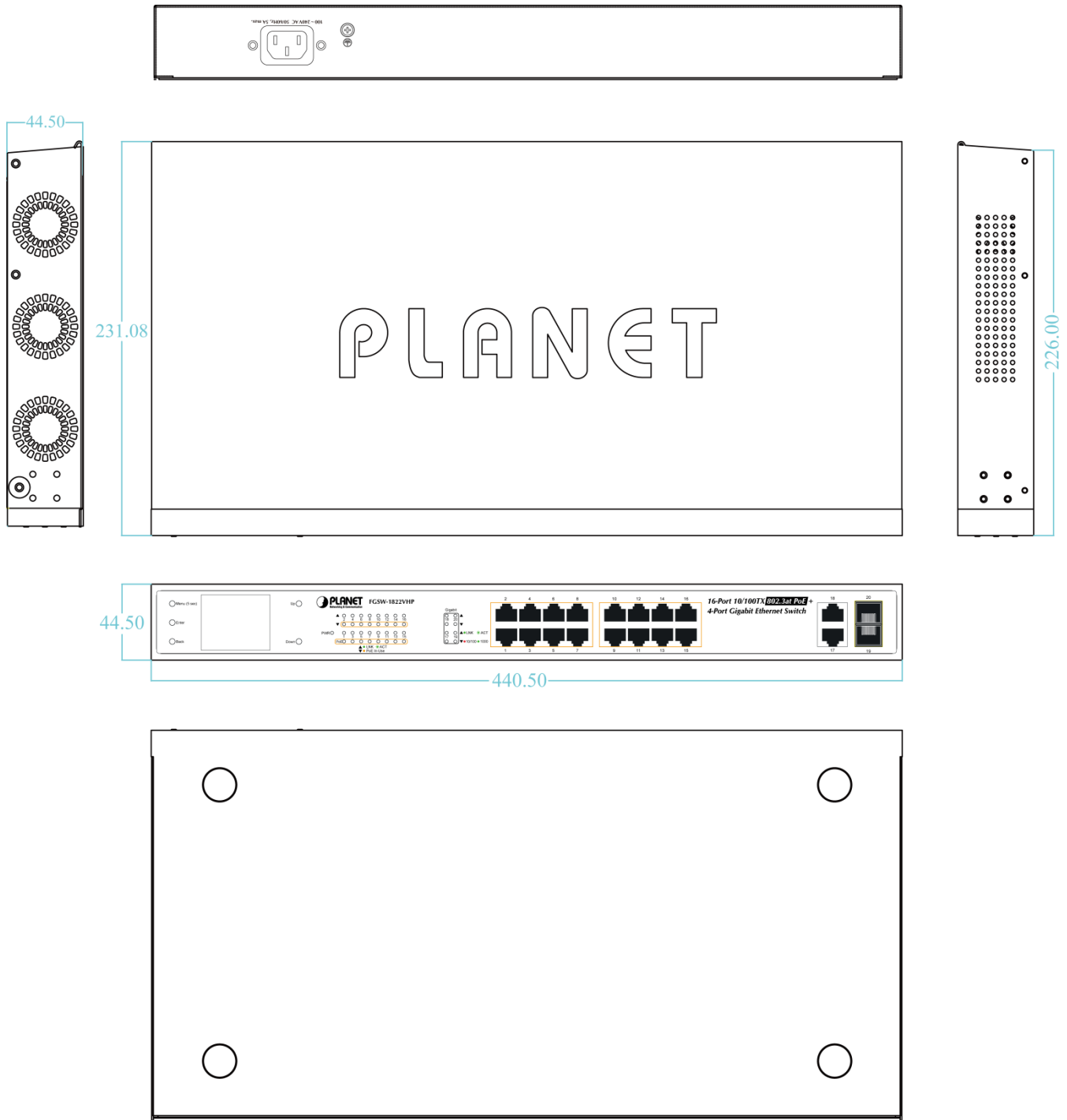
3.3 Physical Specifications:

■ **Dimensions (W x D x H):**

440 x 233 x 44 mm

■ **Weight:**

3.4kg



Dimensions (unit = mm)

➤ **Front Panel:**



➤ **Rear Panel:**



➤ **LED Definition**

■ System

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

■ Per 10/100Mbps Port with PoE Interfaces

LED	Color	Function	
LNK/ACT	Green	Lights	Indicates the link through that port is successfully established at 10/00Mbps.
		Blinks	Indicates that the Switch is actively sending or receiving data over that port.
PoE-in-Use	Amber	Lights	Indicates the port is providing 53V DC in-line power.
		Off	Indicates the connected device is not a PoE powered device (PD).

■ Per 1000Mbps TP/SFP Slot

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.
10/100	Red	Lights	Indicates the port is successfully established at 10/100Mbps
1000	Green	Lights	Indicates the port is successfully established at 1000Mbps.

3.4 Environmental Specifications

■ **Operating:**

Temperature:	-10 ~ 60 degrees C
Relative Humidity:	10% ~ 90% (non condensing)

■ **Storage:**

Temperature:	-10 ~ 70 degrees C
Relative Humidity:	5% ~ 90% (non condensing)

3.5 Electrical Specification

Input Voltage:	100~240V AC, 50/60Hz, 5A (max.)
Power Consumption (System on):	100V: 9.0 watts/31 BTU
	110V: 9.3 watts/32 BTU
	220V: 8.2 watts/28 BTU
	240V: 7.9 watts/27 BTU
Power Consumption (Data and PoE Full Loading):	100V: 347 watts/1184 BTU
	110V: 345 watts/1177 BTU
	220V: 334 watts/1140 BTU
	240V: 333 watts/1136 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

■ FGSW-1822VHP	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

Box Dimensions (W x D x H):	315 x 493 x 72 mm
Gross Weight:	4.5kg
Carton Dimensions (W x D x H):	509 x 238 x 345 mm
Total Weight:	14kg
Quantity:	3pcs in one carton

