

Product Specifications

12-Port 10/100TX 802.3at PoE + 4-Port 10/100TX 802.3bt PoE + 2-Port Gigabit TP + 2-Port SFP Ethernet Switch with LCD Management

FGSW-2022VHP

Version 1.0

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Change History:

| Revision: | Date: | Author: | Change List |
|-------------|------------|------------|-----------------|
| Version 1.0 | 2019/09/12 | Keithy Lin | Initial Release |

| | | | |
|--------------|------------|--------------|-----------|
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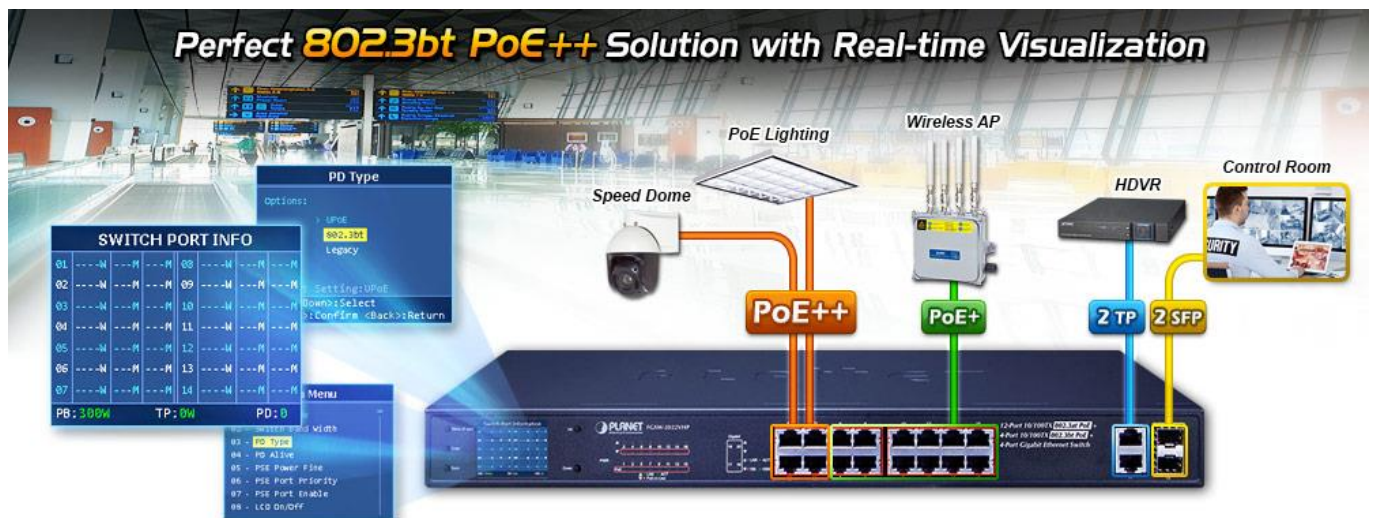
1. PRODUCT DESCRIPTION



Just “Plug and Watch” for a Quick Solution

PLANET FGSW-2022VHP 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-2022VHP is equipped with 12 10/100BASE-TX ports featuring 802.3at Power over Ethernet Plus (PoE+) copper interfaces and **4 10/100BASE-TX ports featuring 802.3bt PoE++** copper interfaces. With a total PoE power budget of up to 300 watts and non-blocking data switching performance, the FGSW-2022VHP fulfills 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

The FGSW-2022VHP 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 network, such as 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 includes Standard, VLAN or Extend
- PD type: 802.3bt, UPoE, Legacy

- Budget and bandwidth control
- PD alive check
- Screen saver, fan control and factory default
- Security password

| Switch Port Information | | | | | | | | | | | |
|-------------------------|-----|---|-------|---|-----|------|----|-----|---|-----|---|
| 01 | --- | W | --- | M | --- | M | 06 | --- | W | --- | M |
| 02 | --- | W | --- | M | --- | M | 07 | --- | W | --- | M |
| 03 | --- | W | --- | M | --- | M | 08 | --- | W | --- | M |
| 04 | --- | W | --- | M | --- | M | 09 | --- | W | --- | M |
| 05 | --- | W | --- | M | --- | M | 10 | --- | W | --- | M |
| PB:300W | | | TP:0W | | | PD:0 | | | | | |

| Main Menu | |
|-----------|-------------------|
| 01 - | Switch Mode |
| 02 - | Budget Control |
| 03 - | PSE Port Priority |
| 04 - | PSE Port Enable |
| 05 - | PD Type |
| 06 - | Alive Check |
| 07 - | Bandwidth |
| 08 - | Fan Control |

| Switch Mode | |
|-------------------------------|----------|
| Options: | |
| > | Standard |
| | VLAN |
| | Extend |
| Current Setting: Standard | |
| <UP>/<Down>:Select | |
| <Enter>:Confirm <Back>:Return | |

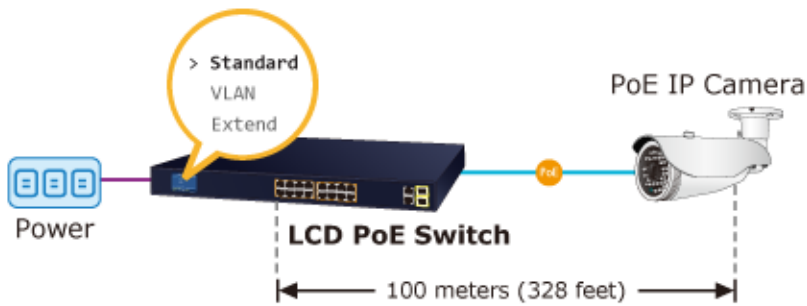
| PSE Port Priority | |
|-------------------------------|----------|
| Port | Priority |
| 01 | Critical |
| | High |
| | > Low |
| Current Setting: LOW | |
| <UP>/<Down>:Select | |
| <Enter>:Confirm <Back>:Return | |



Standard, VLAN or Extend Operation Mode

The FGSW-2022VHP provides Standard, VLAN or Extend operation mode. The FGSW-2022VHP operates as a normal IEEE 802.3at/bt PoE switch in the Standard operation mode.

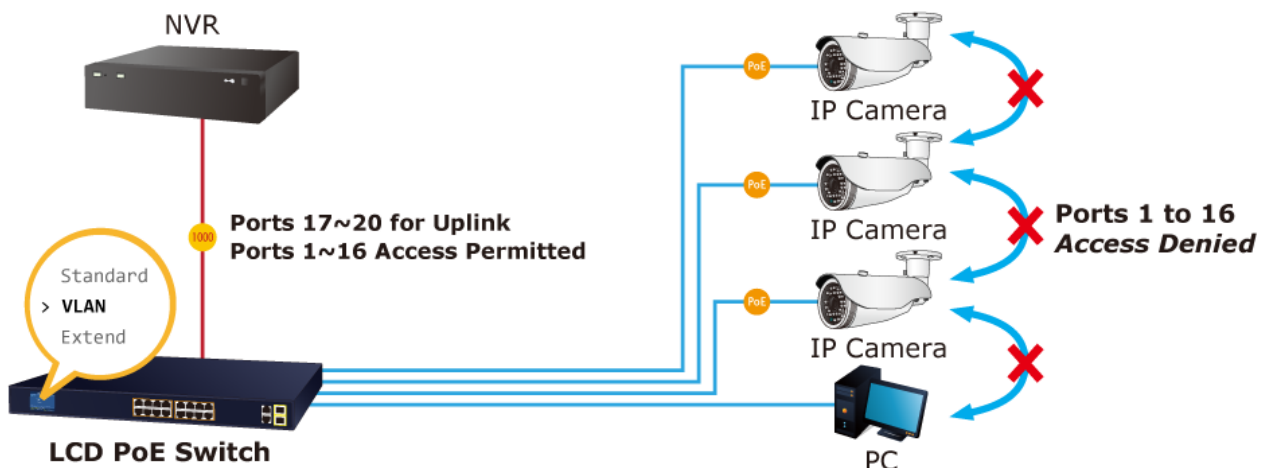
Standard Mode (default)



— PoE — 100BASE-TX UTP with PoE

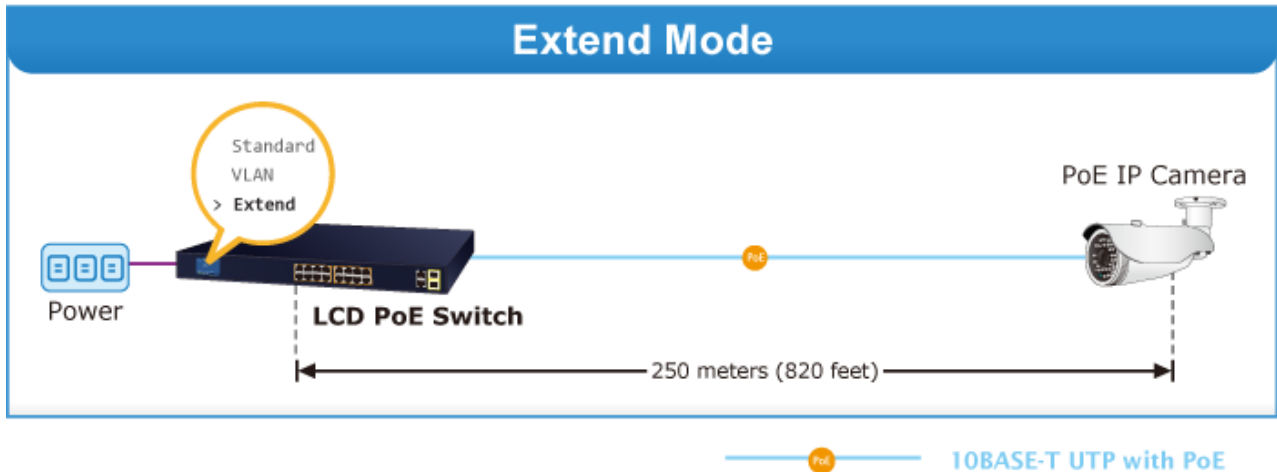
The VLAN operation mode features the port-based VLAN function that can help to prevent the IP camera's multicast or broadcast storm from influencing each other.

VLAN Isolation Mode



— 1000 — 1000BASE-SX/LX Fiber Optic
— — 100BASE-TX UTP
— PoE — 100BASE-TX UTP with PoE

In the Extend operation mode, the FGSW-2022VHP operates on a per-port basis at 10Mbps duplex operation but can provide 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-2022VHP provides an additional solution for 802.3at/bt 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-2022VHP are compatible with the 100/1000BASE-X 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 (multi-mode fiber) 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-2022VHP 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-2022VHP 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-2022VHP support 10/100Mbps auto-negotiation for optimal speed detection through RJ45 Cat. 5e/6 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 Gigabit RJ45 copper
- 2 100/1000BASE-X SFP interfaces

➤ Power over Ethernet

- Complies with IEEE 802.3at/bt Power over Ethernet PSE
- Selectable PoE mode: IEEE 802.3bt/UPoE/Legacy
- Ports 1 to 4 support up to 60 watts; ports 5 to 16 support up to 32 watts
- 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 selection; the “Extend” mode features about 45-/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
- Security password, 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
- 9K Frame size
- Integrates address look-up engine, supporting 8K absolute MAC addresses
- 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 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 | RTL8332L | x 1 |
| Fast Ethernet PHY | RTL8208L | x 2 |
| Gigabit PHY | RTL8214B | x 1 |
| PoE Controller | PD69200 | x 1 |
| PoE PSE | PD69208M | x 3 |
| Power Supply | 330W | x 1 |

3.2 Function Specifications

| | |
|---------------------------------------|--|
| Model | FGSW-2022VHP |
| Hardware Specifications | |
| Copper Ports | 16 10/100BASE-TX RJ45 auto-MDI/MDI-X ports with port-1 to port-16 2 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports with port-17 to port-18 |
| SFP/mini-GBIC Slots | 2 100/1000BASE-X SFP interfaces with port-19 to port-20 |
| PoE Injector Port | 4 ports with 802.3bt PoE++ injector function with port-1 to port-4 12 ports with 802.3at PoE+ injector function with port-5 to port-16 |
| Switch Architecture | Store-and-Forward |
| Switch Fabric | 11.2Gbps/non-blocking |
| Throughput (packet per second) | 8.3Mpps@64 bytes packet |
| MAC Address Table | 8K entries |
| Jumbo Frame | 9K bytes |
| Flow Control | IEEE 802.3x pause frame for full duplex; back pressure for half duplex |
| LED Indicators | System: Power (Green) 10/100BASE-TX RJ45 Interfaces: 10/100Mbps LNK/ACT (Green) PoE-in-Use (Amber) 100/1000BASE-X SFP Interfaces: LNK/ACT (Green) 100Mbps (Red) 1000Mbps (Green) 10/100/1000BASE-T TP Interfaces LNK/ACT (Green) 100Mbps (Red) 1000Mbps (Green) |
| LCD Monitor (W x D) | 40.6 x 30.5 mm, 2-inch |
| Buttons | Menu, Enter, Back, Up and Down |

| | |
|---|---|
| Dimensions (W x D x H) | 233 x 440 x 44 mm (1U height) |
| Enclosure | Metal |
| Weight | 3.3kg |
| Power Requirements | 100~240V AC, 50/60Hz, 5A max. |
| Power Consumption/ Dissipation | Max. 330watts/1132 BTU |
| Thermal Fan | 3 |
| ESD Protection | Contact discharge of ± 6 KV DC Air discharge of ± 8 KV DC |
| Surge Protection | ± 6 KV |
| Power over Ethernet | |
| PoE Standard | IEEE 802.3bt PoE++ Type-3 PSE (Port 1-4) IEEE 802.3af/at PoE+ PSE (Port 5-16) |
| PoE Power Supply Type | 802.3bt/UPoE/Legacy (Port 1-4) End-span (Port 5-16) |
| PoE Power Output | Per PoE++ port 54V DC, 1.2A. max. 60 watts Per PoE+ port 54V DC, 600mA. max. 32 watts |
| Power Pin Assignment | 802.3bt: 1/2 (+), 3/6 (-), 4/5 (+), 7/8 (-) End-span: 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 |
| Max. Number of Class 5 PDs | 4 |
| Max. Number of Class 6 PDs | 4 |
| 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 802.3bt PoE++ (Type 3) |
| Environment | |
| Operating | Temperature: -10 ~ 60 degrees C Relative Humidity: 5 ~ 90% (non-condensing) |
| Storage | Temperature: -15 ~ 70 degrees C Relative Humidity: 5 ~ 90% (non-condensing) |

3.3 Physical Specifications:

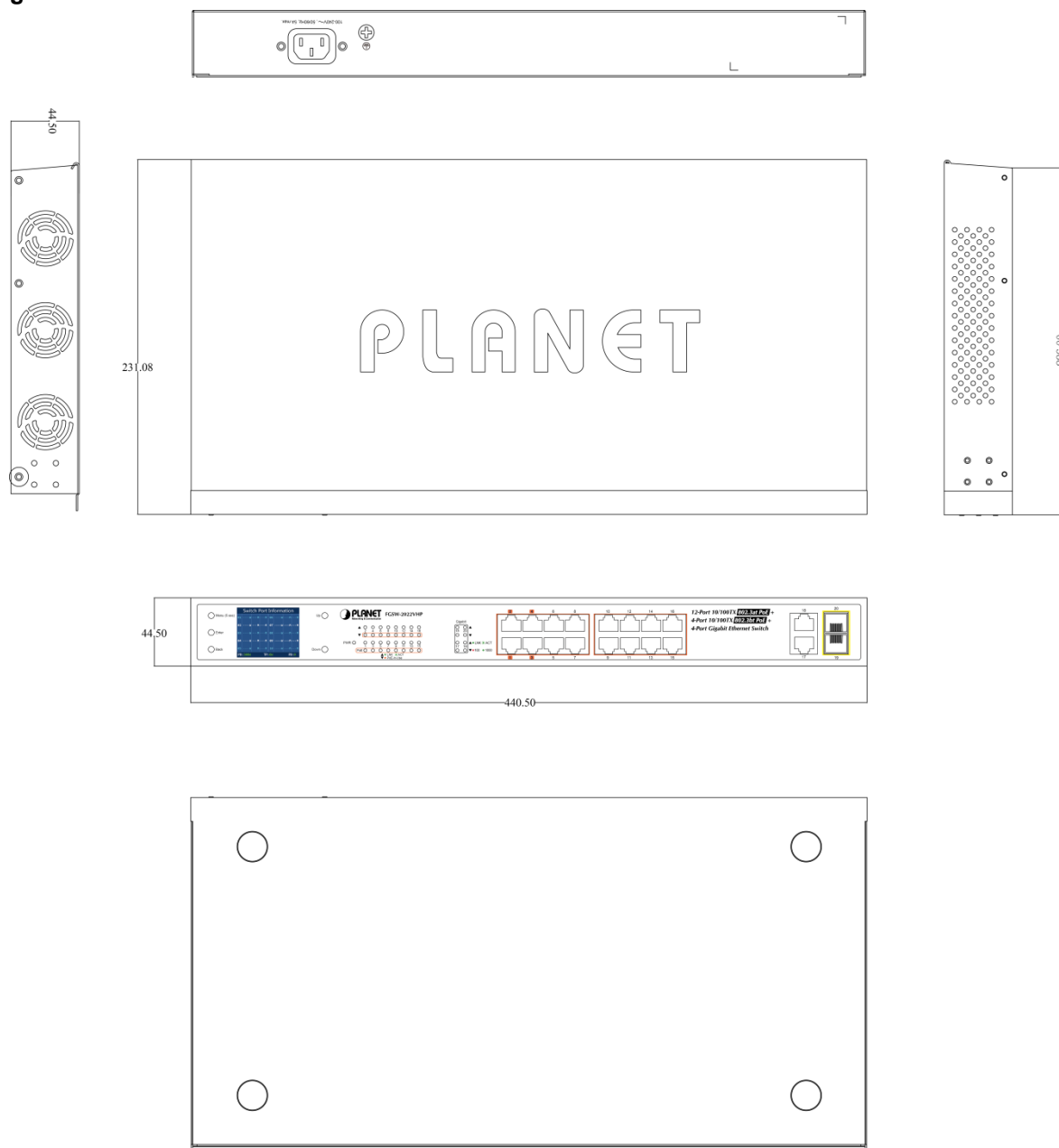
■ Dimensions (W x D x H)

233 x 440 x 44 mm

■ Weight

3.3kg

■ Diagram



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 | Amber | Lights | Indicates the port is providing DC in-line power. |
| | | Off | Indicates the connected device is not a PoE powered device (PD). |

● 10/100/1000Mbps TP and 100/1000Mbps 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. |
| 100 | Red | Lights | Indicates the port is successfully established at 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: | -15 ~ 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: 12.4 watts/42.3 BTU |
| | 110V: 12.7 watts/43.3 BTU |
| | 220V: 12.1 watts/41.2 BTU |
| | 240V: 11.8 watts/40.2 BTU |
| Power Consumption (Data and PoE Full Loading): | 100V: 347 watts/1184 BTU |
| | 110V: 344 watts/1173.7 BTU |
| | 220V: 332 watts/1132.8 BTU |
| | 240V: 331 watts/1129.4 BTU |

3.6 Regulatory Compliance

FCC Part 15 Class A, CE

3.7 Reliability

MTBF > 50,000hrs @ 25 degrees C

3.8 Basic Packaging

| | |
|---|-----|
| ■ FGSW-2022VHP | 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 |
| Box Weight: | 4.4kg |
| Carton Dimensions (W x D x H): | 509 x 238 x 345 mm |
| Carton Weight: | 13.5kg |
| Quantity: | 3pcs in one carton |