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Product Specifications

16-Port 10/100/1000T 802.3at PoE + 2-Port 1000X SFP Gigabit Ethernet Switch

GSW-1820HP

Version 1.0

Change History:

Revision:	Date:	Author:	Change List
Version 1.0	2020/4/29	Angeline	Initial Release

Author:	Angeline	Editor:	Angeline
Reviewed By:		Approved By:	Kent Kang

1. PRODUCT DESCRIPTION

Centralized Power Management for Gigabit Ethernet PoE Networking

To facilitate 30W PoE power network applications with Gigabit speed transmission, the GSW-1820HP is equipped with **16 10/100/1000BASE-T** Gigabit Ethernet ports and **2 1000BASE-X SF**P interfaces with the inner power system. With a total of 240 watts of PoE budget, it features high-performance Gigabit IEEE 802.3af PoE (up to 15.4W) and IEEE 802.3at PoE+ (up to 30W) capabilities on all ports.

By offering reliable switching technology and advanced networking features, the GSW-1820HP optimizes the installation and power management of network devices such as wireless access points, VoIP phones, and security cameras. It also eliminates time and cost of deployment by integrating power and data switching into one unit and freeing network devices from restrictions of power outlet locations and the additional AC wiring.

Perfect Integrated Solution for PoE IP Surveillance

The GSW-1820HP brings an ideal secure surveillance system at a lower total cost. The GSW-1820HP provides 16 10/100/1000Mbps 802.3at PoE+ ports able to feed sufficient PoE power for 16 IEEE 802.3af/IEEE 802.3at PoE+ IP cameras at the same time. It is also able to connect with one 16-channel NVR or two 8-channel NVRs, uplinked to backbone switch and the monitoring center. With such high-performance switch architecture, the recorded video files from the PoE IP cameras can be saved to the NVR system where the administrator can control and monitor the surveillance images in both the local LAN and remote sites.

Ethernet Data Transmission Distance Extension

The DIP switch provides "**Standard**", "**VLAN**" and "**Extend**" operation modes.
- The GSW-1820HP operates as a normal IEEE 802.3at PoE+ switch in the "Standard" operation mode.
- The "**VLAN**" operation mode features with port-based VLAN function that helps to prevent the IP camera's multicast or broadcast storm from influencing each other.

- In the "**Extend**" operation mode, the GSW-1820HP operates on a per-port basis at 10Mbps duplex operation but supports 22-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 GSW-1820HP provides an additional solution for 802.3at PoE+ distance extension, thus saving the cost of Ethernet cable installation.

Energy-saving Design

The GSW-1820HP uses new engine that incorporates two advanced Green Networking technologies:

- **Idle Mode Link Down power savings**
- **Intelligent Scales Power based on cable length**

The Idle mode Link Down power savings of the GSW-1820HP complies with IEEE 802.3az Energy Efficient Ethernet (EEE) standard to automatically lower power for a given port when it is not linked. The Intelligent Scales Power technology actively determines the appropriate power level based on the cable length. When connecting to the GSW-1820HP with Ethernet cable shorter than 20m, a device can obtain maximum power savings because the GSW-1820HP would automatically detect the Ethernet cable length and reduce power usage. The connected device can substantially reduce the overall power consumption, which makes a significant contribution to energy savings.

Flexible Extension Solution

The two mini-GBIC slots built in the GSW-1820HP are compatible with the 1000BASE-SX/LX SFP (Small Form-factor Pluggable) fiber transceiver, uplinked to 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.

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2. PRODUCT FEATURES

▶ **Physical Port**

■ **16-port 10/100/1000BASE-T** Gigabit RJ45 copper with 802.3at PoE+ injector function

■ **2 1000BASE-X** mini-GBIC/SFP slots

▶ **Power over Ethernet**

■ Complies with IEEE 802.3af/at Power over Ethernet end-span PSE

■ Up to 16 ports of IEEE 802.3af/802.3at devices powered

■ Supports PoE power up to 30 watts for each PoE port, all power up to 240W PoE budget.

■ Each port supports 52V DC power to PoE powered device

■ Auto detects powered device (PD)

■ Circuit protection prevents power interference between ports

■ Remote power feeding up to 100m

▶ **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

■ Integrates address look-up engine, supporting 8K absolute MAC addresses

■ 9K jumbo frame supports all speeds (10/100/1000Mbps)

■ IEEE 802.1Q VLAN transparency

■ Hardware DIP switch for Standard, VLAN and Extend mode selection;
  - VLAN mode: Ports 1 to 22 cannot communicate with each other, but can communicate with the uplink ports 23 to 24 and SFP1 to SFP2
  - Extend mode: Ports1 to 8 have data rate of 10Mbps. The farthest transmission distance of up to 250 meters and all ports can communicate with each other.

■ The DIP switch can isolate ports to prevent broadcast storm and defend DHCP spoofing

■ Automatic address learning and address aging

■ Supports Energy-Efficient Ethernet (EEE) function (IEEE 802.3az)

▶ **Hardware**

■ 19-inch desktop size, 1U height

■ LED indicators for PoE ready and PoE activity

■ Ethernet Link Energy-saving technology
  - Link down power savings
  - Intelligent use of power based on cable length

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3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

Switch ASIC:	Realtek RTL8382L x 1
Gigabit Ethernet PHY:	Realtek RTL8218B x 2
PoE Control	IC Plus IP808 x 2
Power Supply Unit	Gospell G0591-26012510F (260 watts) x 1. 54V/4.5A; 12V/1.5A

3.2 FUNCTION SPECIFICATIONS

Model	GSW-1820HP
Hardware Specifications	
10/100/1000BASE-T Copper Ports	16 auto-MDI/MDI-X ports
802.3at PoE+ Injector Port	16
1000BASE-X SFP Slots	2
DIP Switch	Selectable operation mode ■ Standard ■ VLAN ■ Extend
Dimensions (W x D x H)	440 x 208 x 44 mm (1U height)
Enclosure	Metal
Weight	2.67kg
Power Requirements	100~240V AC, 50/60Hz, 5A max.
Power Consumption/Dissipation	Max. 270 watts/921 BTU
Thermal Fan	2
Protection	6KV surge protection 8KV ESD protection

LED Indicators	**System**
	  Power (**Green**)
	10/100/1000T RJ45 Interfaces
	  1000 LNK / ACT (**Green**), 10/100 LNK/ACT (**Amber**), PoE (**Amber**)
	1000X SFP Interfaces
	  1000 LNK / ACT (**Green**)

Switching	
Switch Architecture	Store-and-Forward

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Switch Fabric	36Gbps/non-blocking
Switch Throughput@64bytes	26.8Mpps
MAC Address Table	8K entries
Jumbo Frame	9216 bytes
Flow Control	IEEE 802.3x pause frame for full duplex; back pressure for half duplex
Power over Ethernet	
PoE Standard	IEEE 802.3at Power over Ethernet Plus/PSE Backward compatible with IEEE 802.3af Power over Ethernet
PoE Power Supply Type	End-span: 1/2 (+), 3/6 (-)
PoE Power Output	Per port 52V DC, 300mA. max. 15.4 watts (IEEE 802.3af) Per port 52V DC, 600mA. max. 30 watts (IEEE 802.3at)
PoE Power Budget	240 watts
Number of PDs, 7 watts	16
Number of PDs, 15.4 watts	15
Number of PDs, 30 watts	8
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
Environment	
Operating	Temperature: 0 ~ 50 degrees C Relative Humidity: 5 ~ 95% (non-condensing)
Storage	Temperature: -10 ~ 70 degrees C Relative Humidity: 5 ~ 95% (non-condensing)

3.3 PHYSICAL SPECIFICATIONS:

- **Dimensions:**
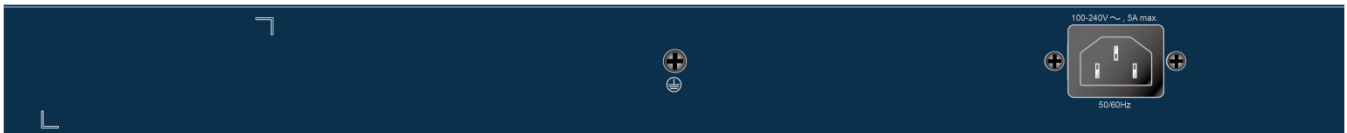
  440 x 208 x 44 mm (W x D x H), 1U height

- **Weight:**

  2.67kg

- **Front Panel:**

- **Rear Panel:**

■ **LED Definition**

- **System**

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

- **Per 10/100/1000BASE-T Port**

LED	Color	Function
1000 LNK/ACT	**Green**	**Lights** to indicate the link through that port is successfully established at 1000Mbps. **Blinks** to indicate that the Switch is actively sending or receiving data over that port.
10/100 LNK/ACT	**Amber**	**Lights** to indicate the link through that port is successfully established at 10/100Mbps. **Blinks** to indicate that the Switch is actively sending or receiving data over that port.
PoE in Use	**Amber**	**Lights** to indicate the port is providing 52V DC in-line power.

■ **Per 1000BASE-X SFP Interface**

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

3.4 ENVIRONMENTAL SPECIFICATIONS

Operating:

Temperature: 0°C ~ 50 degrees C

Relative Humidity: 5% ~ 95% (non-condensing)

Storage:

Temperature: -10°C ~ 70 degrees C

Relative Humidity: 5% ~ 95% (non-condensing)

3.5 ELECTRICAL SPECIFICATION

Input Voltage:	100~240V AC, 50/60Hz, Auto-sensing	
Power Consumption	110V: 17.7 watts	60.4BTU
(System on):	230V: 17.6 watts	60.4BTU
Power Consumption	110V: 235 watts *	802BTU
(PoE+ Ethernet Full Loading):	230V: 270 watts *	921BTU

3.6 REGULATORY COMPLIANCE

FCC Part 15 Class A, CE

3.7 RELIABILITY

MTBF > 50,000 hrs @ 25 degrees C

3.8 BASIC PACKAGING

- GSW-1820HP x 1
- User's Manual x 1
- Power Cord x 1
- Rubber Feet x 4
- SFP Dust Cap x 2
- Rack-mount Brackets Kit x 1
- Screws x 8

3.9 PACKING INFORMATION

Box Dimensions (W x D x H):	555 x 295 x 88 mm
Gross Weight:	4.18kg
Carton Dimensions (W x D x H):	572 x 370 x 315 mm
Total Weight:	18.6kg
Quantity:	4pcs per carton