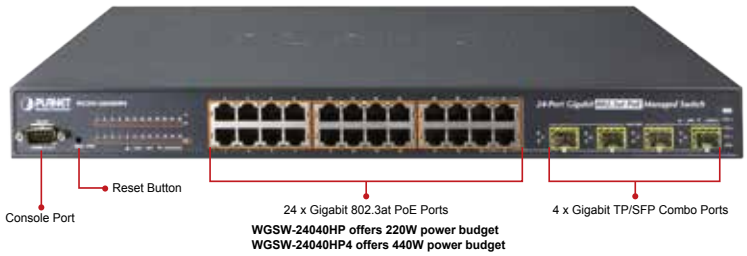
L2+ 24-Port 10/100/1000Mbps 802.3at PoE+ Managed Switch with 4 Shared SFP Ports

Cost-effective IPv6 Managed Gigabit Switch Solution for Enterprises

PLANET WGSW-24040HP series is a Layer 2+ managed Gigabit PoE Switch that features PLANET intelligent PoE functions to improve the availability of critical business applications. The series provides IPv6/IPv4 management and built-in L2/L4 Gigabit Switching engine along with **24 10/100/1000BASE-T ports** featuring **30-watt 802.3at Power over Ethernet plus (PoE+)** and 4 Gigabit SFP slots. With a total power budget up to 220W and 440W for different kinds of PoE applications, the series provides quick, safe and cost-effective Power over Ethernet network solutions to security IP surveillance for small businesses and enterprises.



Cybersecurity Network Solution to Minimize Security Risks

The new generation of WGSW-24040HP series has the cybersecurity feature to protect the switch management and enhance the security for mission-critical network without extra deployment cost and effort. The new WGSW-24040HP series expands its memory and upgrades the kernel of SSH and SSL protocols to provide strong protection against advanced threats. It includes a range of cybersecurity features such as DHCP Snooping, IP Source Guard, ARP Inspection Protection, 802.1x port-based and mac-based network access control, RADIUS and TACACS+ user accounts management, SNMPv3 authentication, and so on to complement it as an all-security solution. The network administrator can now construct highly-secure corporate networks with considerably less time and effort than before.

Physical Port

- **24-port 10/100/1000BASE-T** RJ45 copper
- **4 100/1000BASE-X mini-GBIC/SFP** slots , shared with port-21 to port-24
- RS232 DB9 console interface for basic management and setup

Power over Ethernet

- Complies with IEEE 802.3at High Power over Ethernet end-span PSE
- Complies with IEEE 802.3af Power over Ethernet end-span PSE
- Up to 24 ports of IEEE 802.3at/802.3af devices powered
- Supports PoE power up to 30.8 watts for each PoE port
- Auto detects powered device (PD)
- Circuit protection prevents 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
  - PD alive check
  - PoE schedule
  - PD scheduled power recycling

Layer 2 Features

- High performance of Store-and-Forward architecture and runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- Storm Control support
  - Broadcast / Multicast / Unknown unicast
- Supports **VLAN**
  - IEEE 802.1Q tagged VLAN
  - Up to 255 VLANs groups, out of 4094 VLAN IDs
  - Supports provider bridging (VLAN Q-in-Q, IEEE 802.1ad)
  - Private VLAN Edge (PVE)
  - Protocol-based VLAN
  - MAC-based VLAN
  - Voice VLAN
  - GVRP (GARP VLAN Registration Protocol)

Convenient and Smart ONVIF Devices with Detection Feature

PLANET has newly developed an awesome feature -- ONVIF Support -- which is specifically designed for co-operating with video IP surveillances. From the WGSW-24040HP Series GUI, clients just need one click to search and show all of the ONVIF devices via network application. In addition, clients can upload floor images to the switch series, making the deployments of surveillance and other devices easy for planning and inspection purposes. Moreover, clients can get real-time surveillance's information and online/offline status. They allow PoE reboot control from the GUI.

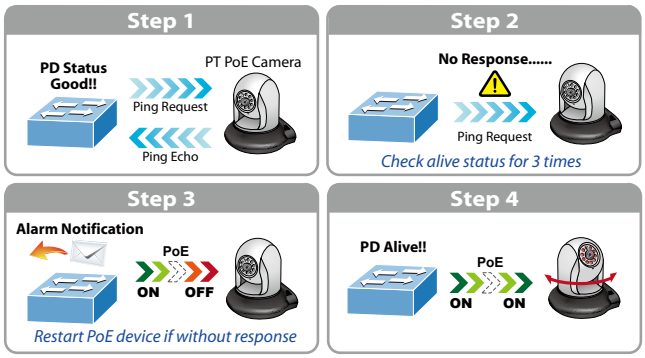
Built-in Unique PoE Functions for Powered Devices Management

Being the managed PoE switches for surveillance, wireless and VoIP networks, the WGSW-24040HP Series features the following special PoE management functions:

- PD alive check
- Scheduled power recycling
- PoE schedule
- PoE usage monitoring

Intelligent Powered Device Alive Check

The WGSW-24040HP Series can be configured to monitor connected PD (powered device) status in real time via ping action. Once the PD stops working and responding, the WGSW-24040HP Series will resume the PoE port power and bring the PD back to work. They will greatly enhance the network reliability through the PoE port resetting the PD's power source and reducing administrator management burden.



- Supports Spanning Tree Protocol
  - IEEE 802.1D Spanning Tree Protocol (STP)
  - IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
  - IEEE 802.1s Multiple Spanning Tree Protocol (MSTP), spanning tree by VLAN
  - BPDU Guard
- Supports **Link Aggregation**
  - 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (static trunk)
  - Maximum 12 trunk groups, up to 4 ports per trunk group
  - Up to 32Gbps bandwidth (full duplex mode)
- Provides port mirroring (many-to-1)
- Port mirroring to monitor the incoming or outgoing traffic on a particular port
- Loop protection to avoid broadcast loops
- Compatible with Cisco **Uni-directional link detection** (UDLD) that monitors a link between two switches and blocks the ports on both ends of the link if the link fails at any point between the two devices.

Quality of Service

- Ingress Shaper and Egress Rate Limit per port bandwidth control
- 8 priority queues on all switch ports
- Traffic classification
  - IEEE 802.1p CoS
  - TOS / DSCP / IP Precedence of IPv4/IPv6 packets
  - IP TCP/UDP port number
  - Typical network application
- Strict priority and Weighted Round Robin (WRR) CoS policies
- Supports QoS and In/Out bandwidth control on each port
- Traffic policing on the switch port
- DSCP remarking

Multicast

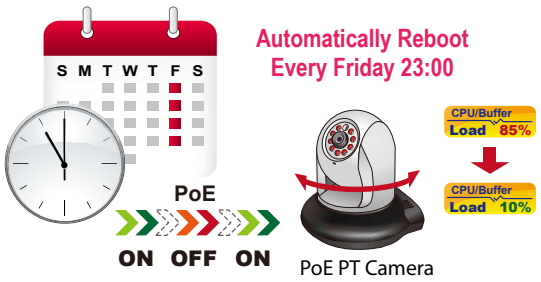
- Supports IGMP Snooping v1, v2 and v3
- Supports MLD Snooping v1 and v2
- Querier mode support
- IGMP Snooping port filtering
- MLD Snooping port filtering
- Multicast VLAN Registration (MVR) support

Security

- Authentication
  - IEEE 802.1x Port-based / MAC-based network access authentication
  - Built-in RADIUS client to co-operate with the RADIUS servers

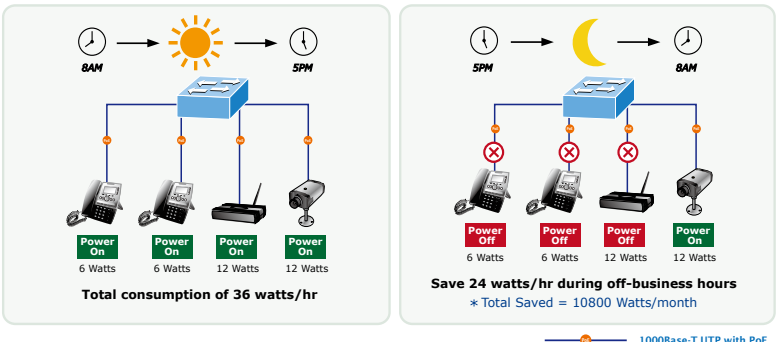
Scheduled Power Recycling

The WGSW-24040HP Series allows each of the connected PoE IP cameras or PoE wireless access points to reboot at a specified time each week. Therefore, they will reduce the chance of IP camera or AP crash resulting from buffer overflow.



PoE Schedule for Energy Saving

Under the trend of energy saving worldwide and contributing to environmental protection, the WGSW-24040HP Series can effectively control the power supply besides their capability of giving high watts power. The “PoE schedule” function helps you to enable or disable PoE power feeding for each PoE port during specified time intervals and it is a powerful function to help SMBs or enterprises save power and money. It also increases security by powering off PDs that should not be in use during non-business hours.

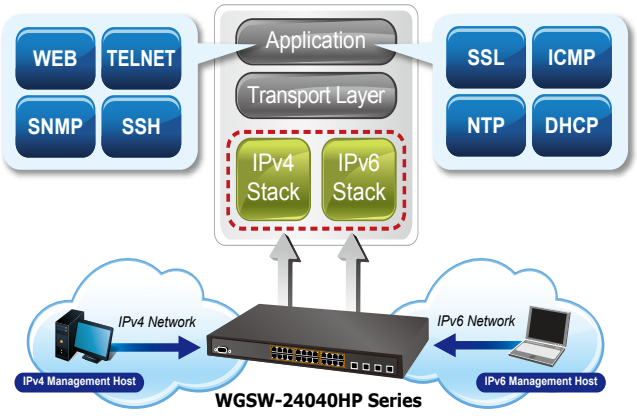


PoE Usage Monitoring

Via the power usage chart in the web management interface, the WGSW-24040HP Series enables the administrator to monitor the status of the power usage of the connected PDs in real time. Thus, they greatly enhance the management efficiency of the facilities.

Solution for IPv6 Networking

By supporting IPv6/IPv4 dual stack and plenty of management functions with easy and friendly management interfaces, the WGSW-24040HP series is the best choice for IP surveillance, VoIP and wireless service providers to connect with the IPv6 network. It also helps the SMB to step in the IPv6 era without having to replace the existing network facilities, thus saving the investment budget.



  - TACACS+ login users access authentication
  - RADIUS / TACACS+ users access authentication
- Access Control List
  - IP-based Access Control List (ACL)
  - MAC-based Access Control List
- Source MAC / IP address binding
- **DHCP Snooping** to filter un-trusted DHCP messages
- **Dynamic ARP Inspection** discards ARP packets with invalid MAC address to IP address binding
- **IP Source Guard** prevents IP spoofing attacks
- Auto DoS rule to defend DoS attack
- IP address access management to prevent unauthorized intruder

Management

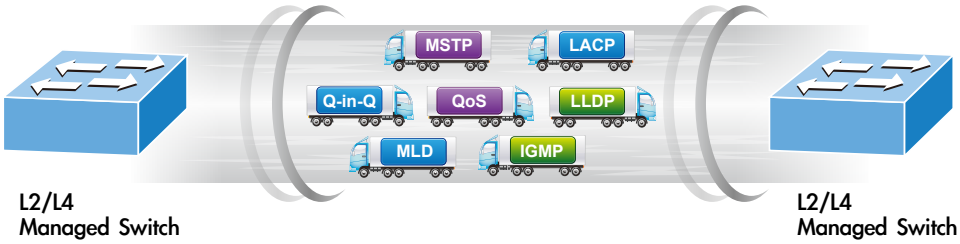
- IPv4 and IPv6 dual stack management
- Switch Management Interfaces
  - Console / Telnet Command Line Interface
  - Web switch management
  - SNMP v1, v2c, and v3 switch management
  - SSH / SSL secure access
- **IPv6** IP Address / NTP / DNS management
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- System Maintenance
  - Firmware upload/download via HTTP / TFTP
  - Reset button for system reboot or reset to factory default
  - Dual Images
- DHCP Relay
- DHCP Option82
- DHCP Server
- User Privilege levels control
- NTP (Network Time Protocol)
- Link Layer Discovery Protocol (LLDP) and LLDP-MED
- Network Diagnostic
  - ICMPv6 / ICMPv4 Remote Ping
  - Cable Diagnostic technology provides the mechanism to detect and report potential cabling issues
- SMTP / Syslog remote alarm
- Four RMON groups (history, statistics, alarms and events)
- SNMP trap for interface Link Up and Link Down notification
- System Log
- PLANET Smart Discovery Utility for deployment management

IPv4 and IPv6 VLAN Routing for Secure and Flexible Management

To help customers stay on top of their businesses, the WGSW-24040HP series not only provides ultra high transmission performance and excellent Layer 2 technologies, but also offers IPv4/IPv6 VLAN routing feature which allows to cross over different VLANs and different IP addresses for the purpose of having a highly-secure, flexible management and simpler networking application.

Robust Layer 2 Features

The WGSW-24040HP can be programmed for advanced switch management function, such as dynamic port link aggregation, **Q-in-Q VLAN, Multiple Spanning Tree Protocol (MSTP)**, Layer 2/4 QoS, bandwidth control and **IGMP/MLD snooping**. The WGSW-24040HP series allows the operation of a high-speed trunk combining multiple ports. It enables up to 12 trunk groups with 4 ports per trunk group and supports connection fail-over as well.



Powerful Security

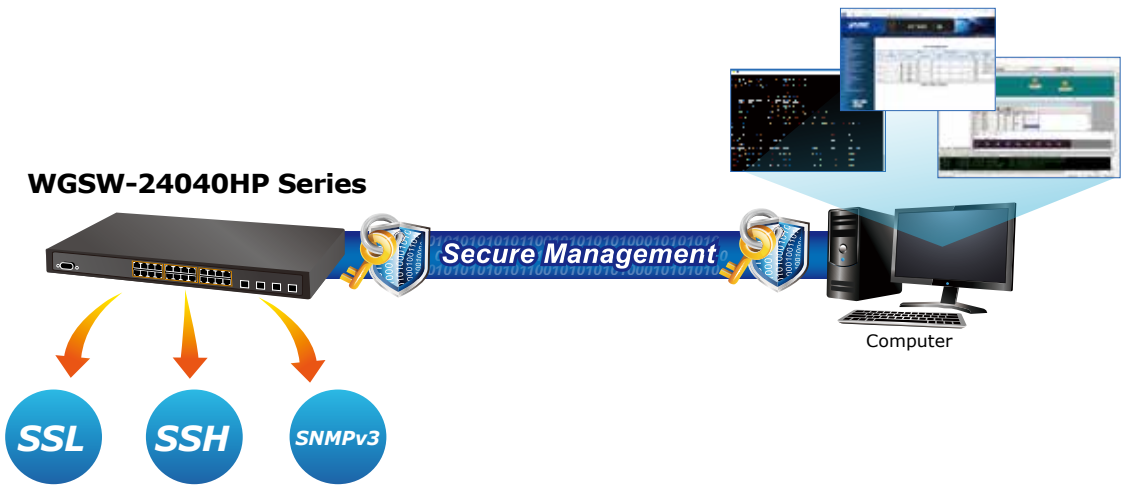
The WGSW-24040HP series offers comprehensive Layer 2 to Layer 4 access control list (ACL) for enforcing security to the edge. It can be used to restrict to network access by denying packets based on source and destination IP address, TCP/UDP port number or defined typical network applications. Its protection mechanism also comprises 802.1x Port-based and MAC-based user and device authentication. With the private VLAN function, communication between edge ports can be prevented to ensure user privacy.

Enhanced Security and Traffic Control

The WGSW-24040HP series also provides DHCP Snooping, IP Source Guard and Dynamic ARP Inspection functions to prevent IP snooping from attack and discard ARP packets with invalid MAC address. The network administrator can now construct highly-secure corporate networks with considerably less time and effort than before.

User-friendly Secure Management

For efficient management, the WGSW-24040HP managed switch series is equipped with console, web and SNMP management interfaces. With the built-in web-based management interface, the WGSW-24040HP series offers an easy-to-use, platform-independent management and configuration facility. The WGSW-24040HP series supports SNMP and it can be managed via any management software based on standard of SNMP v1 and v2 protocol. For reducing product learning time, the WGSW-24040HP series offers Cisco-like command via Telnet or console port and customer doesn't need to learn new command from these switches. Moreover, the WGSW-24040HP series offers remote secure management by supporting **SSH**, **SSL** and **SNMPv3** connection which can encrypt the packet content at each session.

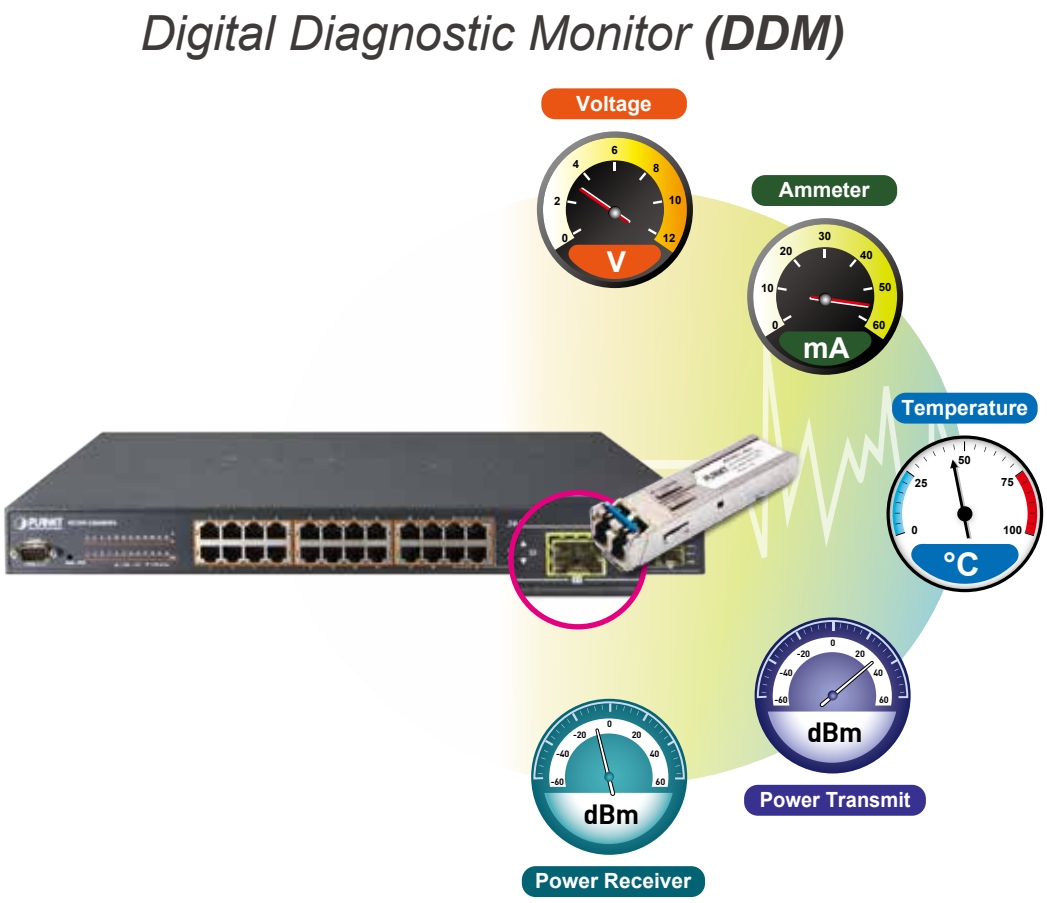


Flexible and Extendable Solution

The 4 mini-GBIC SFP slots built in the WGSW-24040HP support dual speed as it features 100BASE-FX and 1000BASE-SX/LX SFP (Small Form-factor Pluggable) fiber-optic modules. Now the administrator can flexibly choose the suitable SFP transceiver according to not only the transmission distance, but also the transmission speed required. The distance can be extended from 550 meters to 2 kilometers (multi-mode fiber) and up to 10/20/30/40/50/70/120 kilometers (single-mode fiber or WDM fiber). They are well suited for applications within the enterprise data centers and distributions.

Intelligent SFP Diagnosis Mechanism

The WGSW-24040HP supports **SFP-DDM (Digital Diagnostic Monitor)** function that greatly helps network administrator to easily monitor real-time parameters of the SFP and SFP+ transceivers, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.

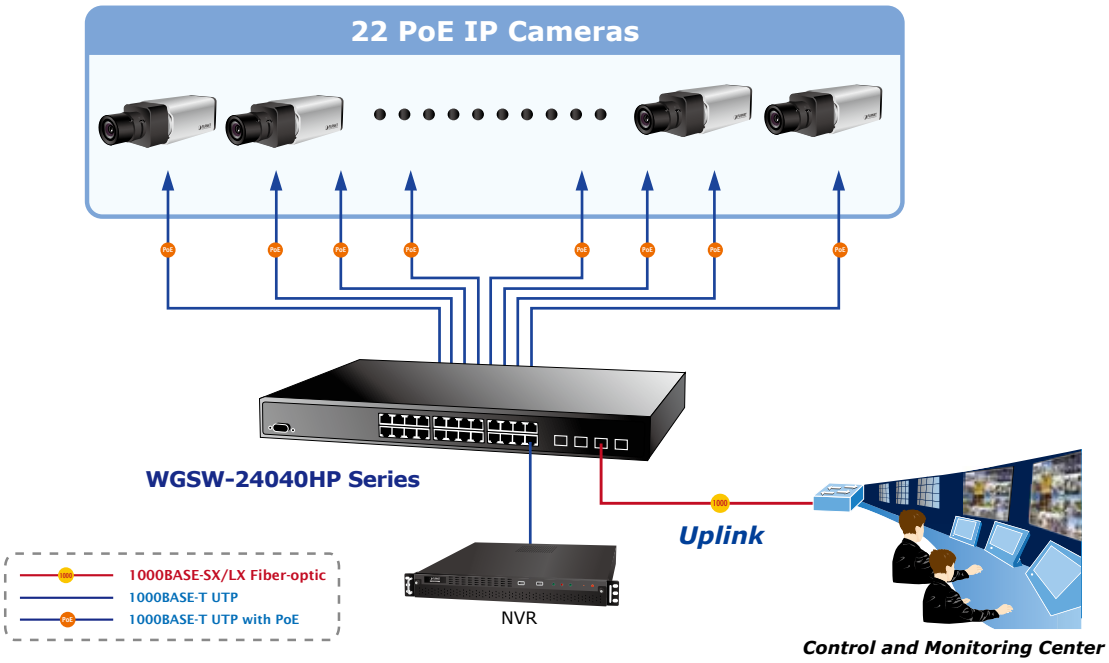


Applications

Perfect Integration Solution for IP PoE Camera and NVR System

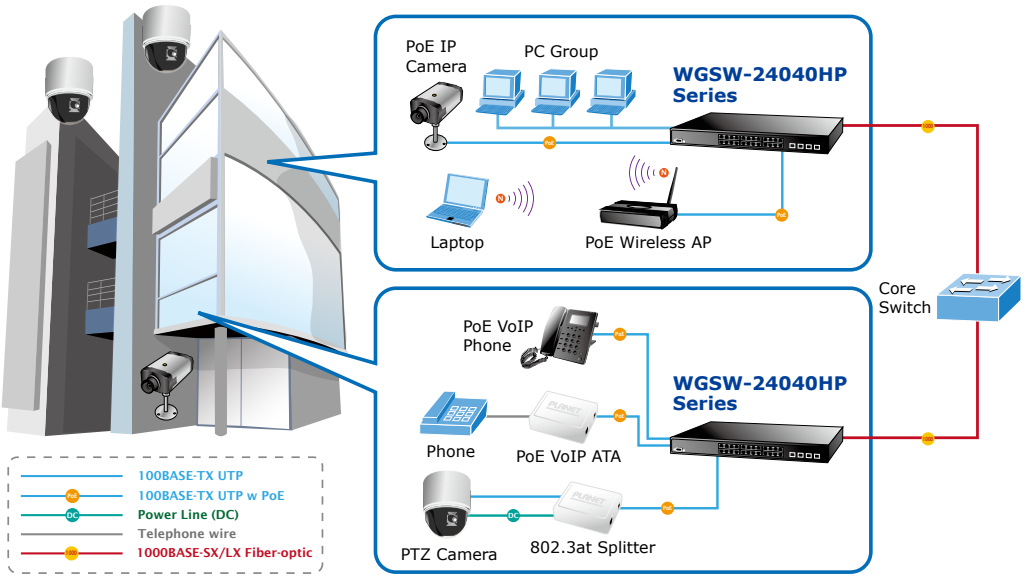
The WGSW-24040HP series brings an ideal secure surveillance system at a lower total cost. It provides 24 10/100/1000Mbps 802.3at PoE ports with 4 Gigabit TP/SFP Combo interfaces, offering sufficient PoE power for a maximum of 24 IEEE 802.3af PoE IP cameras at the same time.

With 4 Gigabit TP/SFP Combo interfaces, the WGSW-24040HP series supports connection to three 8-channel NVR systems to receive stream from 20 IP cameras and also to backbone switch from an uplink port, and then access to the control center. With its high performance switch architecture, the recorded video files from the 20 IEEE 802.3af PoE IP cameras can be saved in the NVR systems, which can be controlled and monitored both in the local LAN and the remote site via Internet.



IP Office Department/Workgroup PoE Switch

As the business expands, the additional telephones required could be installed at less cost via the implementation of PoE IP telephony system than that of the traditional circuit wiring telephony system. The WGSW-24040HP series helps enterprises to efficiently create an integrated data, voice, and powered VoIP network. PLANET IEEE 802.3af compliant IP phones can be installed without any power cable because it can be powered via the standard Ethernet cable from the connected WGSW-24040HP series. With the WGSW-24040HP series, IP telephony deployment becomes more reliable and cost effective, thus helping enterprises save tremendous cost when upgrading from the traditional telephony system to an IP telephony communications infrastructure.



Specifications

Product		WGSW-24040HP	WGSW-24040HP4
Hardware Specifications			
Hardware Version		2	
Copper Ports		24 10/ 100/1000BASE-T RJ45 auto-MDI/MDI-X ports	
10/100/1000Mbps / SFP Combo Interfaces		4 10/100/1000Mbps TP and SFP shared combo interfaces, SFP (Mini-GBIC) supports 100/1000Mbps Dual mode DDM, shared with Port-21 to Port-24	
Console		1 x RJ45 serial port (115200, 8, N, 1)	
Switch Architecture		Store-and-Forward	
Switch Fabric		48Gbps / non-blocking	
Throughput		35.7Mpps@64Bytes	
Address Table		8K entries, automatic source address learning and ageing	
Shared Data Buffer		4 megabits	
Flow Control		IEEE 802.3x pause frame for full duplex Back pressure for half duplex	
Jumbo Frame		9K bytes	
Reset Button		< 5 sec: System reboot > 5 sec: Factory Default	
LED		System: Power (Green) WGSW-24040HP Alert: Fan 1 (Green), Fan 2 (Green), PWR (Green) WGSW-24040HP4 Alert: Fan 1 (Green), Fan 2 (Green), Fan 3 (Green), PWR (Green) PoE Ethernet Interfaces (Port 1 to Port 24): LNK/ACT (10/100/1000Mbps, Green), PoE-in-Use (Orange) 100/1000Mbps SFP Combo Interfaces (Port 21 to Port 24): 1000 (Green), 100 (None), LNK/ACT(Orange)	
Power Requirements		100~240V AC, 50/60Hz, 4A	100~240V AC, 50/60Hz, 6A
Power Consumption (Full Loading)		262 watts	482 watts
ESD Protection		6KV DC	
Dimensions (W x D x H)		440 x 200 x 44.5 mm, 1U high	
Weight		4.25 kg	4.75 kg
Layer 2 Management Function			
PoE Standard		IEEE 802.3at/802.3af Power over Ethernet	
PoE Power Supply Type		End-span	
PoE Power Output		Per port 52V DC, 590mA. max. 30.8 watts	
Power Pin Assignment		1/2(+), 3/6(-)	
PoE Power Budget		220 watts max.	440 watts max.
PoE Ability	24 units	24 units	24 units
	14 units	14 units	24 units
	7 units	7 units	14 units
Layer 2 Management Function			
Basic Management Interfaces		Console; Telnet; Web Browser; SNMP v1, v2c	
Secure Management Interfaces		SSH, SSL, SNMP 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, flow control status, auto negotiation status, trunk status	
Port Mirroring		TX / RX / Both Many-to-1 monitor	
VLAN		802.1Q tag-based VLAN, up to 255 VLAN groups Q-in-Q tunneling Private VLAN Edge (PVE) MAC-based VLAN Protocol-based VLAN Voice VLAN MVR (Multicast VLAN Registration) Up to 255 VLAN groups, out of 4094 VLAN IDs	
Link Aggregation		IEEE 802.3ad LACP (static trunk) Supports 12 trunks groups with 4 ports per trunk group	

QoS	Traffic classification based, strict priority and WRR 8-Level priority for switching - Port Number - 802.1p priority - 802.1Q VLAN tag - DSCP/TOS field in IP packet
IGMP Snooping	IGMP Snooping (v1/v2/v3), up to 255 multicast groups IGMP Querier mode support
MLD Snooping	MLD Snooping ((v1/v2), up to 255 multicast groups MLD Querier mode support
Access Control List	IP-based ACL / MAC-based ACL Up to 256 entries
Bandwidth Control	Per port bandwidth control Ingress: 500Kb~80Mbps Egress: 64Kb~80Mbps
SNMP MIBs	RFC 1213 MIB-II IF-MIB RFC 1493 Bridge MIB RFC 1643 Ethernet MIB RFC 2863 Interface MIB RFC 2665 Ether-Like MIB RFC 2737 Entity MIB RFC 2819 RMON MIB (Groups 1, 2, 3 and 9) RFC 2618 RADIUS Client MIB RFC 3411 SNMP-Frameworks-MIB IEEE 802.1X PAE LLDP MAU-MIB
Layer 3 Functions	
IP Interface	Max. 8 VLAN interfaces
Routing Table	Max. 32 routing entries
Routing Protocols	IPv4 software static routing IPv6 software static routing
Standards Conformance	
Regulatory Compliance	FCC Part 15 Class A, CE
Standards Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX/100BASE-FX IEEE 802.3z 1000BASE-SX/LX IEEE 802.3ab 1000BASE-T IEEE 802.3x flow control and back pressure IEEE 802.3ad port trunk with LACP IEEE 802.1D Spanning Tree protocol IEEE 802.1w Rapid 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 802.1ab LLDP IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet PLUS 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 RFC 3376 IGMP version 3 RFC 2710 MLD version 1 FRC 3810 MLD version 2
Environment	
Operating	Temperature: 0 ~ 50 degrees C Relative Humidity: 20 ~ 95% (non-condensing)
Storage	Temperature: -20 ~ 70 degrees C Relative Humidity: 20 ~ 95% (non-condensing)

Ordering Information

WGSW-24040HP	L2+ 24-Port 10/100/1000Mbps 802.3at PoE+ Managed Switch with 4 Shared SFP Ports (220 watts)
WGSW-24040HP4	L2+ 24-Port 10/100/1000Mbps 802.3at PoE+ Managed Switch with 4 Shared SFP Ports (440 watts)

Available Modules for WGSW-24040HP series

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 - 20km
MGB-L40	SFP-Port 1000BASE-LX mini-GBIC module - 40km
MGB-L80	SFP-Port 1000BASE-LX mini-GBIC module - 80km
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
MFB-FX	SFP-Port 100BASE-FX Transceiver (1310nm) - 2km
MFB-F20	SFP-Port 100BASE-FX Transceiver (1310nm) - 20km
MFB-F40	SFP-Port 100BASE-FX Transceiver (1310nm) - 40km
MFB-F60	SFP-Port 100BASE-FX Transceiver (1310nm) - 60km
MFB-FA20	SFP-Port 100BASE-BX Transceiver (WDM,TX:1310nm) - 20km
MFB-FB20	SFP-Port 100BASE-BX Transceiver (WDM,TX:1550nm) - 20km

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