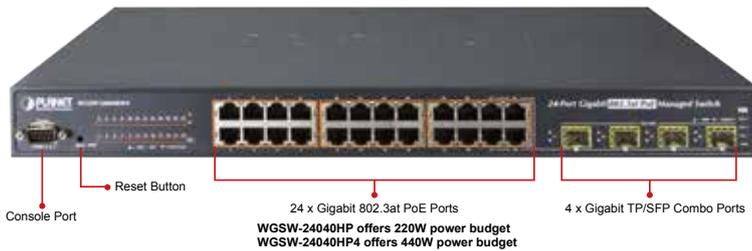


24-Port 10/100/1000Mbps 802.3at PoE+ Managed Switch with 4 Shared SFP Ports



The WGSW-24040HP series is the latest generation of PLANET Managed Gigabit PoE Switches featuring 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 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.



Centralized Power Management for Gigabit Ethernet PoE Networking

To fulfill the needs of higher power required PoE network applications with Gigabit speed transmission, the WGSW-24040HP series features **IEEE 802.3at PoE+** that combines up to **30 watts** of power output and data per port over one CAT 5E/6 Ethernet cable. It is designed specifically to meet the demand of higher power consuming network PD (powered devices) such as IR, PTZ, speed dome cameras or even box type IP cameras with built-in fan and heater. Compliant with both 802.3at and 802.3af, the WGSW-24040HP series allows more flexibility in power requirement for a variety of PDs.

Number of Powered Device		Model & PoE Budget	WGSW-24040HP	WGSW-24040HP4
Applications			220 watts	440 watts
PoE Ability (100 meters)	Class 2 PD @ 7 watts	 PoE Mini Dome  PoE VoIP Phone	24	24
	Class 3 PD @ 15 watts	 PoE Box IP Camera  PoE Wireless AP	14	24
	Class 4 PD @ 30 watts	 PoE+ Speed Dome	7	14

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 power recycling schedule

Layer 2 Features

- Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x pause frame flow control (full-duplex)
- High performance of Store-and-Forward architecture and runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- Storm control support
 - Broadcast/Multicast/Unicast/Unknown-unicast
- Supports VLAN
 - IEEE 802.1Q tagged VLAN
 - Up to 255 VLANs groups, out of 4095 VLAN IDs
 - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
 - Private VLAN Edge (PVE)
 - Protocol-based VLAN

Built-in Unique PoE Functions for Powered Devices Management

As a managed PoE Switch for surveillance, wireless access and VoIP network, the WGSW-24040HP series features special PoE Management functions:

- PD Alive Check
- Scheduled Power Recycling
- SMTP/SNMP Trap Event Alert
- PoE Schedule

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. It will greatly enhance the network reliability through the PoE port resetting the PD's power source and reducing administrator management burden.

PoE PD Alive-checking



Scheduled Power Recycling

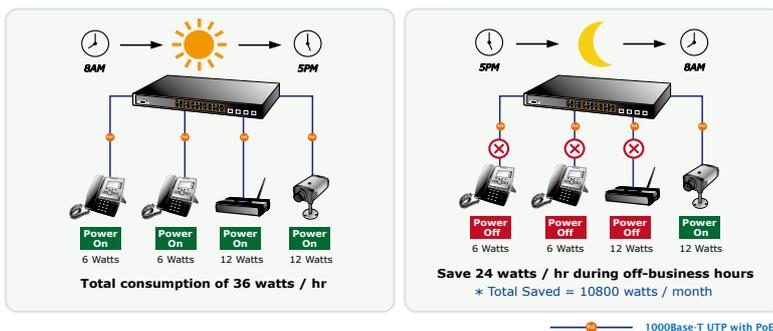
The WGSW-24040HP series allows each of the connected PoE IP cameras to reboot in a specific time each week. Therefore, it will reduce the chance of IP camera crash resulting from buffer overflow.

SMTP/SNMP Trap Event Alert

Though most NVR or camera management softwares offer SMTP email alert function, the WGSW-24040HP series further provides event alert function to help to diagnose the abnormal device owing to the network connection break, lost of PoE power or the rebooting response by PD Alice Check process.

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 its 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 and enterprises save power and money.



- MAC-based VLAN
- IP Subnet-based VLAN
- Voice VLAN
- Management VLAN
- Supports **Spanning Tree Protocol**
 - STP, IEEE 802.1D Spanning Tree Protocol
 - RSTP, IEEE 802.1w Rapid Spanning Tree Protocol
 - MSTP, IEEE 802.1s Multiple Spanning Tree Protocol (by VLAN)
 - STP BPDU Guard and BPDU filtering
- Supports **Link Aggregation**
 - IEEE 802.3ad Link Aggregation Control Protocol (LACP)
 - Cisco ether-channel (Static Trunk)
 - Maximum 12 trunk groups, up to 8 ports per trunk group
 - Up to 16Gbps bandwidth (full duplex mode)
- Provides port mirror (many-to-1)
- Port mirroring to monitor the incoming or outgoing traffic on a particular port
- Loop protection to avoid broadcast loop

Layer 3 IP Routing Features

- Supports maximum 32 software static routes and route summarization

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
- Traffic-policing policies on the switch port
- DSCP remarking

Multicast

- Supports IGMP snooping v1, v2 and v3 for IPv4 multicasting network

Cost-effective IPv6 Managed Gigabit Switch Solution for SMBs

Faced with the increasingly large number of IP cameras and wireless APs being installed and deployed in all kinds of applications, more and more network equipment start to support IPv6 protocol for next generation networking. To fulfill the IPv6 management demand, the WGSW-24040HP series works with the original IPv4 network structure, and also supports the new IPv6 network structure. With easy and friendly management interfaces and plenty of management functions included, the WGSW-24040HP series is the best choice for SMBs, and IP surveillance and wireless service providers to connect with IPv6 network.

Layer 3 IPv4 and IPv6 Software 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 IPv4/IPv6 software VLAN routing feature which allows to cross over different VLANs and different IP addresses for the purpose of having a highly secured, flexible management and simpler networking application.

Efficient 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 standard SNMP v1 and v2 management software. For the text-based management mode, the WGSW-24040HP can be accessed via Telnet and the console port. Moreover, the WGSW-24040HP series offers remote secure management by supporting SSH, SSL and SNMPv3 connection whose packet content can be encrypted at each session.

Robust Layer 2 Features

The WGSW-24040HP series can be programmed for advanced switch management function, such as dynamic port link aggregation, Q-in-Q VLAN, private VLAN, Rapid Spanning Tree protocol, Layer 2 to Layer 4 QoS, bandwidth control and IGMP/MLD snooping. The WGSW-24040HP series provides 802.1Q tagged VLAN and the VLAN groups allowed will be maximally up to 255. The WGSW-24040HP not only allows the operation of a high-speed trunk combining multiple ports, but also supports connection fail-over.

Powerful Security

The WGSW-24040HP series offers a 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. 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 secured corporate networks with considerably less time and effort than before.

- Supports MLD snooping v1 and v2 for IPv6 multicasting network
- Querier mode support
- IGMP snooping port filtering
- MLD snooping port filtering
- MVR (Multicast VLAN Registration)

Security

- Authentication
 - IEEE 802.1x port-based/MAC-based network access authentication
 - Built-in RADIUS client to co-operate with the RADIUS servers
 - TACACS+ login users access authentication
 - RADIUS/TACACS+ users access authentication
- Access Control List
 - IPv4/IPv6 IP-based ACL
 - MAC-based ACL
- Source MAC/IP address binding
- Port Security for Source MAC address entries filtering
- **DHCP snooping** to filter distrusted 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
- User Privilege levels control
- System Maintenance
 - Firmware upload/download via HTTP/TFTP
 - Configuration upload/download through web interface
 - Dual Images
 - Reset button for system reboot or reset to factory default
 - Built-in Trivial File Transfer Protocol (TFTP) client
- Four RMON groups (history, statistics, alarms, and events)
- **IPv6** IP address/NTP/DNS management and ICMPv6
- BOOTP and DHCP for IP address assignment

Flexible and Extendable Solution

The four mini-GBIC slots built in the WGSW-24040HP series support dual speed, and 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 2km (multi-mode fiber) and above 10/20/30/40/50/70/120 km (single-mode fiber or WDM fiber). They are well suited for applications within the enterprise data centers and distributions.

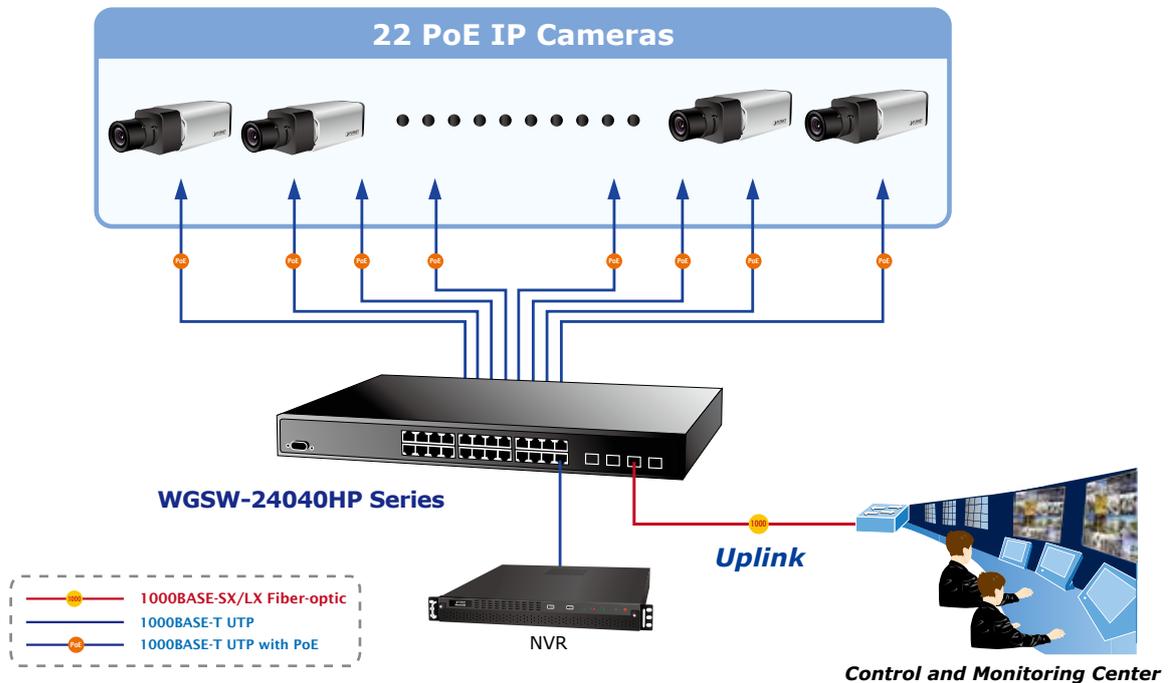
- DHCP Relay and DHCP Option 82
- NTP (Network Time Protocol)
- Link Layer Discovery Protocol (LLDP) Protocol and LLDP-MED
- Cable diagnostic technology provides the mechanism to detect and report potential cabling issues
- PLANET smart discovery utility for deploy management

Applications

Perfect Integration Solution for IP PoE Camera and NVR System

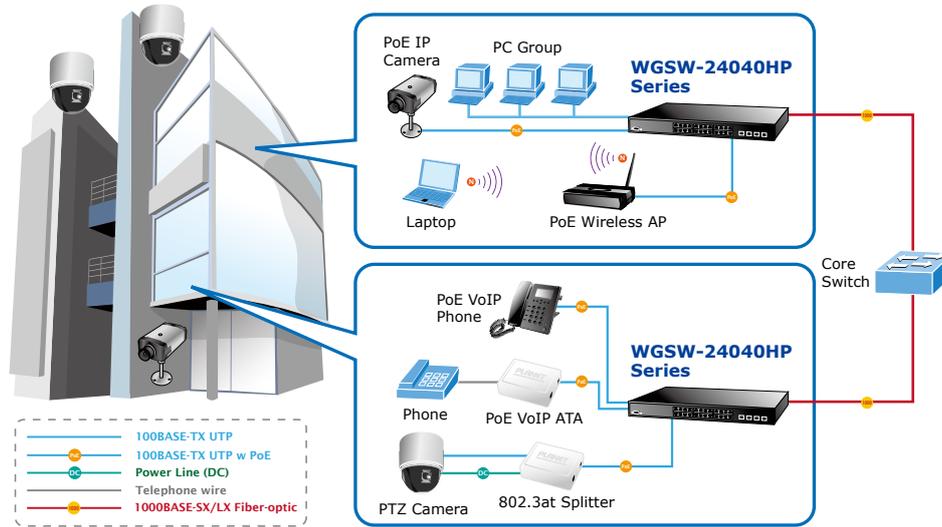
The WGSW-24040HP series brings an ideal secure surveillance system at a lower total cost. It provides 24 10/100/1000Mbps 802.3at PoE ports with 4 Gigabit TP/SFP Combo interfaces, offering sufficient PoE power for a maximum of 24 IEEE 802.3af PoE IP cameras at the same time.

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 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.



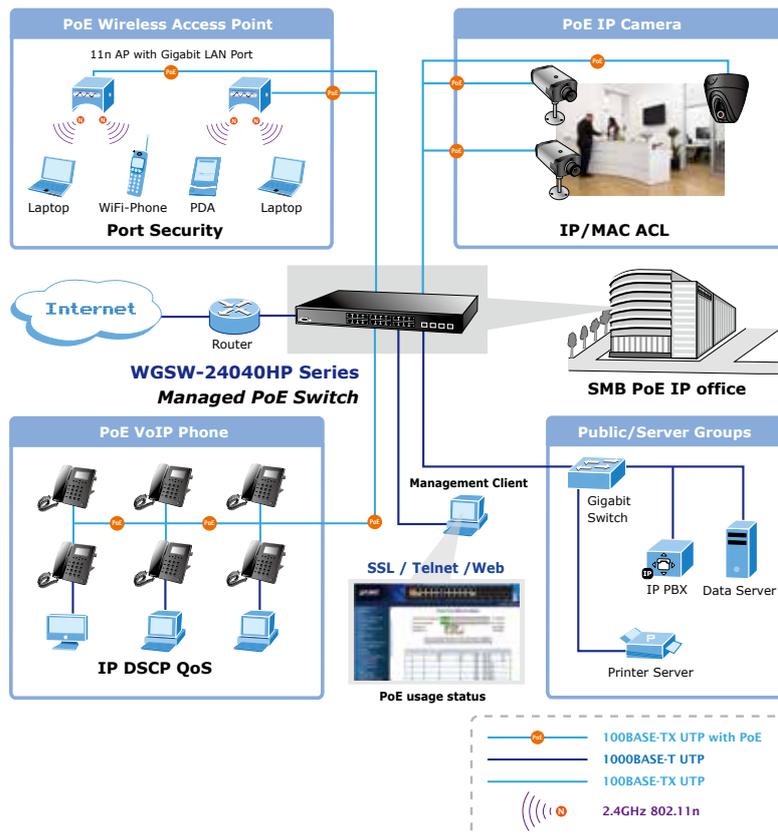
IP Office Department/Workgroup PoE Switch

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, which helps enterprises save tremendous cost when upgrading from the traditional telephony system to IP telephony communications infrastructure.



IP Office Backbone PoE Switch

Providing up to 24 PoE, in-line power interfaces, or up to 20 PoE, in-line power interfaces and 4 Gigabit TP/SFP combo interfaces, the WGSW-24040HP series can easily build an IP phone system, IP camera system, or wireless AP group for the enterprises in which power can be centrally controlled. For instance, IP cameras or wireless APs can be easily installed in the company for surveillance demands or building a wireless roaming environment in the office. Without the power socket limitation, the WGSW-24040HP series makes the deployment of IP cameras or wireless LAN AP easier and more efficient. The 4 Gigabit TP/SFP combo interfaces in the WGSW-24040HP series also offers flexible Gigabit TP or fiber connection for uplink to public server groups.



Specifications

Product	WGSW-24040HP	WGSW-24040HP4	
Hardware Specifications			
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 RS232 DB9 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		
Share 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 (LNK/ACT, Green), 100 (LNK/ACT, Orange)		
Power Requirements	100~240V AC, 50/60Hz, 4A	100~240V AC, 50/60Hz, 6A	
Power Consumption (Full Load)	262 watts	482 watts	
ESD Protection	6KV DC		
Power over Ethernet			
PoE Standard	IEEE 802.3at/802.3af Power over Ethernet/PS0045		
PoE Power Supply Type	End-span		
PoE Power Output	Per port 56V DC, 590mA. max. 30.8 watts		
Power Pin Assignment	1/2(+), 3/6(-)		
PoE Power Budget	220 watts max.	440 watts max.	
PoE Ability	PD @ 7 watts	24 units	24 units
	PD @ 15.4 watts	14 units	24 units
	PD @ 30.8 watts	7 units	14 units
Layer 2 Functions			
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 tagged based VLAN Q-in-Q tunneling Private VLAN Edge (PVE) MAC-based VLAN Protocol-based VLAN Voice VLAN IP Subnet-based VLAN MVR (Multicast VLAN Registration) Up to 255 VLAN groups, out of 4094 VLAN IDs		
Link Aggregation	IEEE 802.3ad LACP/static trunk 12 groups of 8-port trunk supported		
Spanning Tree Protocol	STP, IEEE 802.1D Spanning Tree Protocol RSTP, IEEE 802.1w Rapid Spanning Tree Protocol MSTP, IEEE 802.1s Multiple Spanning Tree Protocol		

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 (v1/v2/v3) snooping, up to 255 multicast groups IGMP querier mode support	
MLD Snooping	MLD (v1/v2) snooping, 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: 100Kbps~1000Mbps Egress: 100Kbps~1000Mbps	
Layer 3 Functions		
IP Interfaces	Max. 8 VLAN interfaces	
Routing Table	Max. 32 routing entries	
Routing Protocols	IPv4 software static routing IPv6 software static routing	
Management		
Basic Management Interfaces	Console/Telnet/Web browser/SNMP v1, v2c	
Secure Management Interfaces	SSH, SSL, SNMP v3	
SNMP MIBs	RFC 1213 MIB-II RFC 1493 Bridge MIB RFC 1643 Ethernet MIB RFC 2863 Interface MIB RFC 2665 Ether-Like MIB RFC 2819 RMON MIB (Group 1, 2, 3 and 9) RFC 2737 Entity MIB RFC 2618 RADIUS Client MIB RFC 2863 IF-MIB	RFC 2933 IGMP-STD-MIB RFC 3411 SNMP-Frameworks-MIB RFC 4292 IP Forward MIB RFC 4293 IP MIB RFC 4836 MAU-MIB IEEE 802.1X PAE LLDP PoE-Ethernet MIB
Standards Conformance		
Regulation Compliance	FCC Part 15 Class A, CE	
Standards Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX/100BASE-FX IEEE 802.3z Gigabit SX/LX IEEE 802.3ab Gigabit 1000T IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet PLUS 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 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 RFC 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	24-Port 10/100/1000Mbps 802.3at PoE + 4-slot Shared SFP Managed Switch (220 watts)
WGSW-24040HP4	24-Port 10/100/1000Mbps 802.3at PoE + 4-slot Shared SFP Managed Switch (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
MGB-L30	SFP-Port 1000BASE-LX mini-GBIC module -30km
MGB-L50	SFP-Port 1000BASE-LX mini-GBIC module -50km
MGB-L70	SFP-Port 1000BASE-LX mini-GBIC module -70km
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

Related PoE Products

ICA-HM136	H.264 2 Mega-pixel 20M IR Vandalproof Dome IP Camera
ICA-HM620	2 Mega-pixel PoE Plus Speed Dome Internet Camera
POE-152S	IEEE 802.3af Power over Ethernet Splitter
POE-162S	IEEE 802.3at Gigabit High Power over Ethernet Splitter
POE-E101	IEEE 802.3af Power over Ethernet Extender
POE-E201	IEEE 802.3at Power over Ethernet Extender
WNAP-6350	2.4GHz 300Mbps 802.11b/g/n Wireless Outdoor Access Point
WNAP-7350	5GHz 300Mbps 802.11a/n Wireless Outdoor Access Point