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

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 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 business and enterprises.

Console Port
Reset Button
24 x Gigabit 802.3at PoE Ports
4 x Gigabit TP/SFP Combo Ports
WGSW-24040HP offers 220W power budget
WGSW-24040HP4 offers 440W power budget

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 power over Ethernet plus(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 series allows more flexibility in power requirement for a variety of PDs.

Physical Port

• 24-Port 10/100/1000Base-T RJ-45 copper with IEEE 802.3at/802.3af Power over Ethernet Injector function
• 4 100/1000Base-SX/LX DDM SFP shared interfaces
• RS-232 DB9 console interface

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 100 meters
• 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/Unknown unicast
• Supports VLAN
  – IEEE 802.1Q Tagged VLAN

| Number of Powered Devices	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

Built-in Unique PoE Functions for Powered Devices Management

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

- PD ALIVE Check
- Schedule Power Recycle
- 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
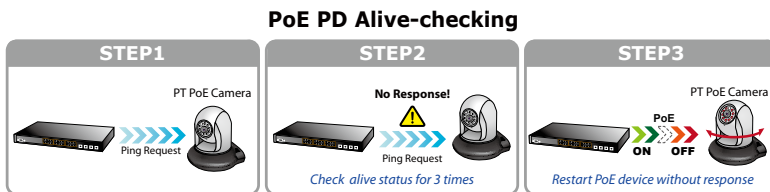

Schedule Power Recycle

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 software offers SMTP email alert function, the WGSW-24040HPs further provides event alert function to help to diagnose the abnormal device owing to whether 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 SMB or Enterprise save power and money.
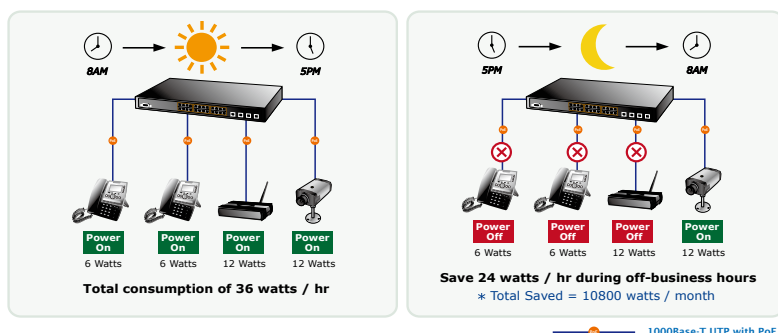
- Up to 255 VLANs groups, out of 4094 VLAN IDs
- Supports provider bridging (VLAN Q-in-Q, IEEE 802.1ad)
- Private VLAN Edge (PVE)
- Protocol-based VLAN
- MAC-based VLAN
- Voice VLAN
- Supports Spanning Tree Protocol
  - STP, IEEE 802.1D Spanning Tree Protocol
  - RSTP, IEEE 802.1w Rapid Spanning Tree Protocol
  - MSTP, IEEE 802.1s Multiple Spanning Tree Protocol, spanning tree by VLAN
  - BPDU Guard
- Supports Link Aggregation
  - 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (Static Trunk)
  - Maximum 10 trunk groups, up to 16 ports per trunk group
  - Up to 32Gbps 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 loops

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 policies on the switch port
- DSCP remarking

Multicast

- Supports IGMP Snooping v1, v2 and v3
- Supports MLD Snooping v1 and v2
- Querier mode support

Cost-effective IPv6 Managed Gigabit Switch Solution for SMB

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 SMB, and IP Surveillance and wireless service providers to connect with IPv6 network.

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 based on standard of SNMP v1 and v2 management software. For 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 which can be encrypted the packet content at each session.

Robust Layer2 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, layer2 to layer4 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 comprehensive layer2 to layer4 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.

Flexible and Extendable Solution

The four mini-GBIC slots built in the WGSW-24040HP series supports dual speed that 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) up to above 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.

- IGMP Snooping port filtering
- MLD Snooping port filtering
- Multicast VLAN Registration (MVR) support

Security

- 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
- 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
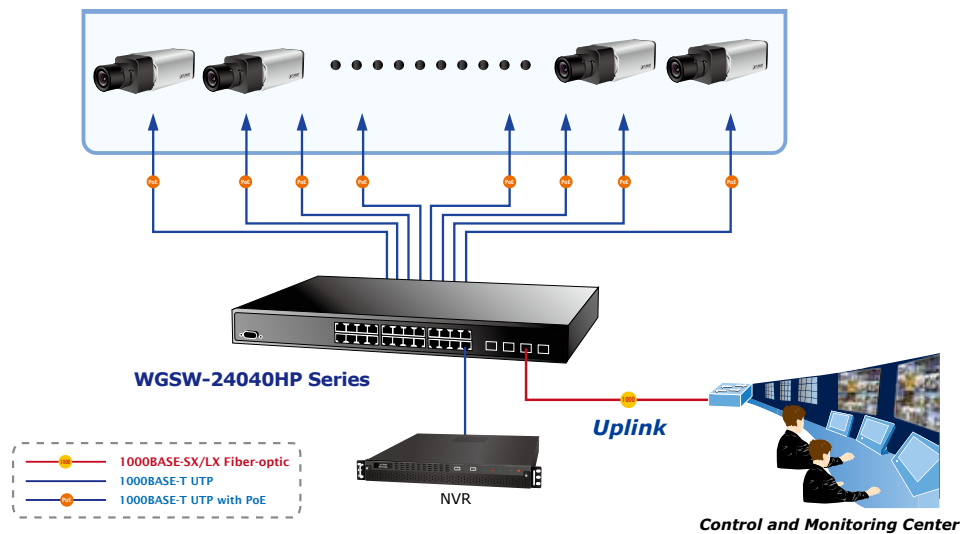
Management

- Switch Management Interfaces
  - Console / Telnet Command Line Interface
  - Web switch management
  - SNMP v1, v2c, and v3 switch management
  - SSH / SSL secure access
- Four RMON groups (history, statistics, alarms, and events)
- IPv6 IP Address / NTP / DNS management
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- Firmware upload/download via HTTP / TFTP
- DHCP Relay
- DHCP Option82
- User Privilege levels control
- NTP (Network Time Protocol)
- Link Layer Discovery Protocol (LLDP) Protocol
- Cable Diagnostic technology provides the mechanism to detect and report potential cabling issues
- Reset button for system reboot or reset to factory default
- PLANET Smart Discovery Utility for deploy management
- ICMPv6

Application

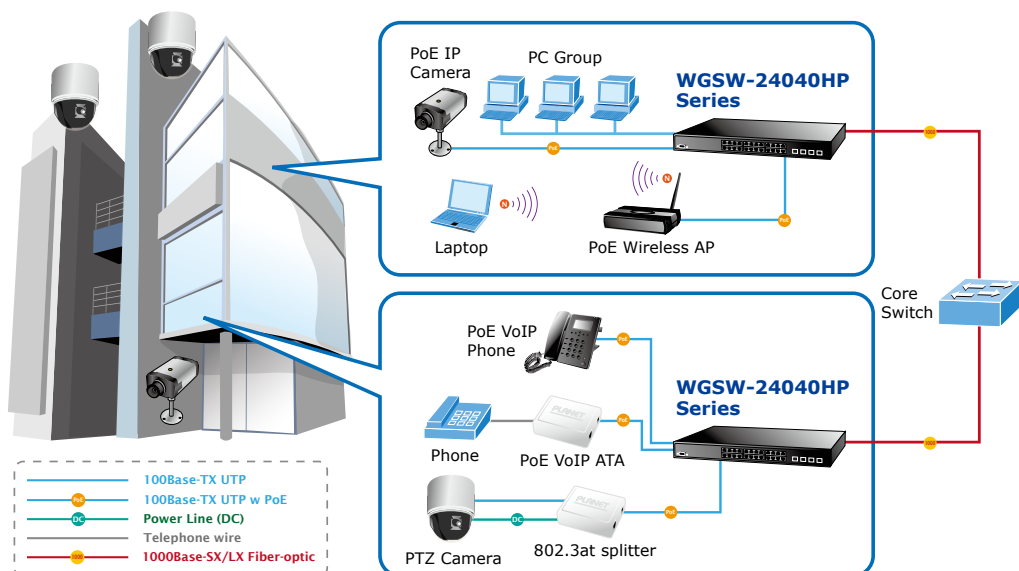*Perfect Integration Solution for IP PoE Camera and NVR System*

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-port 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-port Gigabit TP/SFP Combo interfaces, the WGSW-24040HP series supports connection to three 8-Channel NVR systems to receive stream from 20 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 camera devices can be saved in the NVR systems, which can be controlled and monitored both in the local LAN and the remote site via Internet.
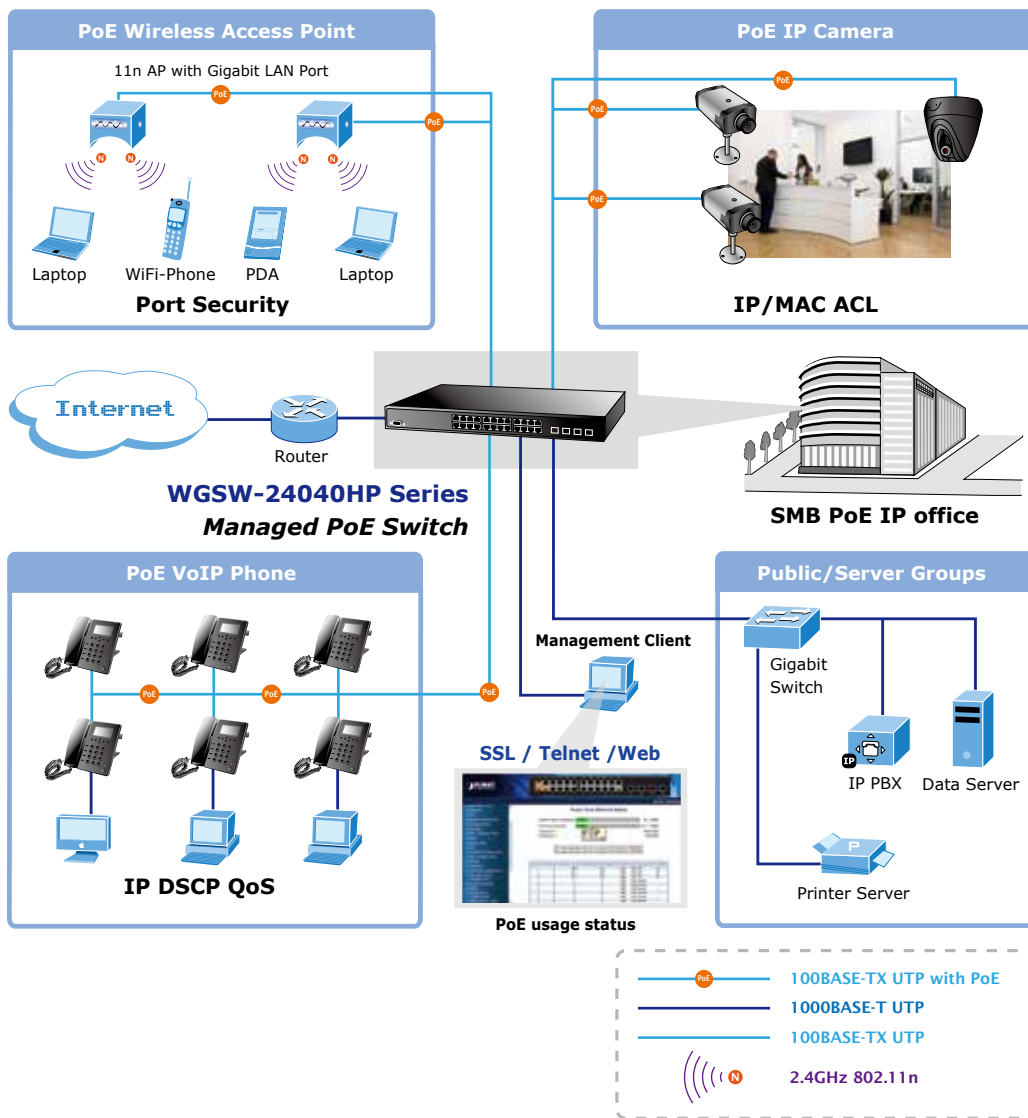

WGSW-24040HP Series

1000BASE-SX/LX Fiber-optic
1000BASE-T UTP
1000BASE-T UTP with PoE

Uplink

NVR

Control and Monitoring Center

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.

PoE IP Camera
PC Group
WGSW-24040HP Series
Laptop
PoE Wireless AP

Core Switch

PoE VoIP Phone
WGSW-24040HP Series
Phone
PoE VoIP ATA
PTZ Camera
802.3at splitter

100Base-TX UTP
100Base-TX UTP w PoE
Power Line (DC)
Telephone wire
1000Base-SX/LX Fiber-optic

4

IP Office Backbone PoE Switch

Providing up to 24 PoE, in-line power interfaces or providing up to 20 PoE, in-line power interfaces and 4 gigabit TP/SFP combo interfaces, the WGSW-24040HP series can easily build a power centrally controlled IP phone system, IP camera system, or wireless AP group for the enterprises. 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 Specification		
Copper Ports	24 10/100/1000Base-T RJ-45 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 RS-232 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:** FAN1 (Green), FAN2 (Green), PWR (Green) **WGSW-24040HP4 Alert:** FAN1 (Green), FAN2 (Green), FAN3 (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/IEEE 802.3af Power over Ethernet / PSE	
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	440 watts max.
PoE Ability — PD @ 7 watts	24 units	24 units
PoE Ability — PD @ 15.4 watts	14 units	24 units
PoE Ability — PD @ 30.8 watts	7 units	14 units
Layer2 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 Tagged 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 10 groups of 16-Port trunk	

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: 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-2819 RMON MIB (Group 1, 2, 3 and 9) RFC-2737 Entity MIB RFC-2618 RADIUS Client MIB RFC-3411 SNMP-Frameworks-MIB IEEE 802.1X PAE LLDP MAU-MIB 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 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

Ordering Information

WGSW-24040HP	24-Port 10/100/1000Mbps 802.3at PoE with 4 shared SFP Managed Switch
WGSW-24040HP4	24-Port 10/100/1000Mbps 802.3at PoE with 4 shared SFP Managed Switch (440Watts)

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-2200	Full HD PoE Box IP Camera
ICA-2500	5 Mega-Pixel PoE Box IP Camera
ICA-3350V	3 Mega-Pixel Vari-Focal Bullet IR IP Camera
ICA-5350V	3 Mega-Pixel Vandalproof IR IP Camera
ICA-HM101	2 Mega-Pixel PoE Cube IP Camera
ICA-HM126	H.264 Full HD Box IP Camera
ICA-HM127	3 Mega-Pixel H.264 Box IP Camera
ICA-HM131	H.264 Full-HD Fixed Dome IP Camera
ICA-HM131R	H.264 Real Time Full-HD Fixed Dome IP Camera
ICA-HM132	H.264 2 Mega-Pixel 20M IR Vari-Focal Dome IP Camera
ICA-HM136	H.264 2 Mega-Pixel 20M IR Vandalproof Dome IP Camera
ICA-HM312	2 Mega-Pixel 25M IR Outdoor Bullet PoE IP Camera
ICA-HM316	2 Mega-Pixel Outdoor IR PoE IP Camera
ICA-HM351	2 Mega-Pixel 35M IR Outdoor Box PoE 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-C3220	802.11n Wireless Ceiling Mount PoE Access Point
WNAP-1120PE	802.11n Wireless Access Point with PoE
WNAP-6350	2.4GHz 300Mbps 802.11b/g/n Wireless Outdoor Access Point
WNAP-7350	5GHz 300Mbps 802.11a/n Wireless Outdoor Access Point
VIP-254PT	802.3af PoE SIP IP Phone
VIP-255PT	Multi–Language PoE IP Phone
VIP-256PT	802.3af PoE SIP IP Phone
VIP-360PT	Business PoE IP Phone
VIP-361PE	Professional PoE IP Phone (5-Line)
VIP-560PE	Professional PoE IP Phone with Expansion Function
VIP-560PT	Professional PoE IP Phone
ICF-1700	Touch Screen Internet Multimedia Phone