

# 24-Port 10/100/1000Mbps PoE + 4-Port Gigabit TP/SFP Combo Managed Switch



PLANET is pleased to introduce the latest in Managed Gigabit PoE Switch technology. The WGSW-28040P series is perfectly designed for SMB and SOHO (small office / home office) network construction. The unit satisfies the high demand for IPv6 / IPv4 management and features abundant L2 / L4 switching functions. The WGSW-28040P series applies Green technology to provide a quiet, energy saving, high speed and reliable office network environment. It allows the SMB and SOHO users to build a Gigabit network environment for the price of a Fast Ethernet Switch. The affordable WGSW-28040P series is suitable for the next generation of network deployment. It is the best investment for business that are expanding or upgrading their network infrastructure.

## High Performance

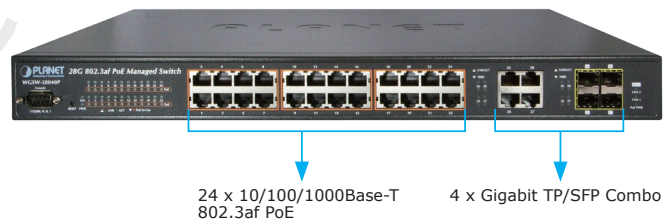
The WGSW-28040P series provides 28 Gigabit Ethernet ports of which include 4 shared Gigabit SFP slots. It boasts a high performance architecture that is capable of providing a non-blocking switch fabric and wire-speed throughput as high as 56Gbps, which simplifies the task of upgrading the LAN to satisfy the increasing bandwidth demands.

## Easy Installation

The WGSW-28040P series is compliant with IEEE 802.3af standards and is able to power 24 PoE compliant devices at distances of up to 100 meters through a 4-pair Cat 5/5e UTP wire. The PoE function carries both data and power and makes it easy to build a powerful centrally-controlled IP phone system, IP camera system, or Wireless AP group for the enterprises. The WGSW-28040P series reduces the number of cables needed for its deployment since the PoE function removes the need for dedicated electrical outlets that are hard to reach or that are inaccessible such as on a wall or ceiling. Therefore, the WGSW-28040P series helps SMBs lower installation costs by eliminating the need for electricians and extension cords.

## IPv6 / IPv4 Dual Stack

The device integrates IPv6 management features and is backward compatible with IPv4. The WGSW-28040P series helps SMBs move into the IPv6 era with minimum investment since it removes the need to replace the network facilities while the ISP constructs the IPv6 FTTx edge network.



## Robust Layer 2 Features

The WGSW-28040P series can be programmed for advanced switch management functions such as dynamic Port link aggregation, 802.1Q VLAN and Q-in-Q VLAN, Multiple Spanning Tree protocol (MSTP), Loop and BPDU Guard, and IGMP Snooping. Via the aggregation of supporting ports, the WGSW-28040P series allows the operation of a high-speed trunk combining multiple ports as a 16Gbps fat pipe. The device supports fail-over as well.

## Efficient Traffic Control

The WGSW-28040P series is loaded with robust QoS and powerful traffic management features that enhance to business-class data, voice, and video services. The functionality includes broadcast / multicast storm control, per port bandwidth control, IP DSCP QoS priority and remarking. It guarantees the best VoIP and Video stream transmission and allows enterprises to take full advantage of their network resources.

## Enhanced and Secure Management

The WGSW-28040P series is equipped with console, WEB, telnet and SNMP management interfaces. With the built-in Web-Based management interface, the WGSW-28040P series offers an easy-to-use, platform-independent management and configuration facility. By supporting standard Simple Network Management Protocol (SNMP), the switch can be managed via any standard management software. For text-based management, the switch can be accessed via Telnet and the console port. Moreover, the WGSW-28040P series offers secure remote management by supporting SSH and SSL connections which encrypt the packet content at each session.

## Powerful Security for User Management

PLANET WGSW-28040P series offers comprehensive Layer 2 to Layer 4 Access Control List (ACL) for maximum security. It can be used to restrict network access by rejecting packets based on source and destination IP address, TCP/UDP ports or defined typical network applications. Its protection mechanism also comprises 802.1X Port-Based authentication, which can be deployed with RADIUS, to ensure port level security and block illegal users. With the Protected Port function, communication between edge ports can be prevented so as to guarantee user privacy. With Port Security, administrators can limit the number of users on a given port. Network administrators can now construct secure corporate networks with considerably less time and effort than before.

### Flexible Network Extension Solution

The four mini-GBIC slots built in the WGSW-28040P series are compatible with 1000Base-SX/LX and WDM SFP (Small Form Factor Pluggable) fiber-optic modules. The transmission distance can be extended from 550 meters (Multi-Mode fiber) up to above 10/20/30/40/50/70/120 kilometers (Single-Mode fiber or WDM fiber). It is well suited for applications in the enterprise data centers and distributions.

## KEY FEATURES

### PHYSICAL PORT

- 28-Port 10/100/1000Base-T Gigabit RJ-45 copper with 24-Port IEEE 802.3af PoE Injector
- 4 1000Base-X mini-GBIC/SFP slots, shared with Port-25 to Port-28
- RS-232 DB9 console interface for Switch basic management and setup

### 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
- Supports VLAN
  - IEEE 802.1Q Tagged VLAN
  - Up to 256 VLAN groups, out of 4094 VLAN IDs
  - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
  - Private VLAN Edge (PVE / Port Isolation)
- 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
- Supports Link Aggregation
  - IEEE 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (Static Trunk)
  - Maximum 8 trunk groups, up to 8 ports per trunk group
  - Up to 16Gbps bandwidth (Duplex Mode)
- Provides Port Mirror (many-to-1)
- Port Mirroring to monitor the incoming or outgoing traffic on a particular port

### POWER OVER ETHERNET

- Complies with IEEE 802.3af Power over Ethernet End-Span PSE
- Up to 24 ports for IEEE 802.3af devices powered
- Supports PoE Power up to 15.4 watts for each PoE ports
- Auto detect powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100m
- PoE Management
- Per port PoE function enable / disable

### QUALITY OF SERVICE

- Ingress / Egress Rate Limit per port bandwidth control
- 8 priority queues on all switch ports

- Traffic classification
  - Port-Based priority
  - IEEE 802.1p CoS
  - IP DSCP of IPv4 / IPv6 packets
- Strict priority and Weighted Round Robin (WRR) CoS policies
- DSCP remarking

### MULTICAST

- Supports IGMP Snooping v1, v2 and v3
- Querier mode support
- IGMP Snooping v2 fast leave
- Unknown Multicast drop

### SECURITY

- Storm Control support
  - Broadcast / Multicast / Unknown-Unicast / Unknown-Multicast
- Authentication
  - IEEE 802.1x Port-Based network access authentication
  - Built-in RADIUS client to co-operate with the RADIUS servers
- Access Control List
  - IP-Based ACL
  - MAC-Based ACL
- MAC Security
  - Static MAC
  - Source / Destination MAC Filtering
  - Port Security for Source MAC address entries filtering

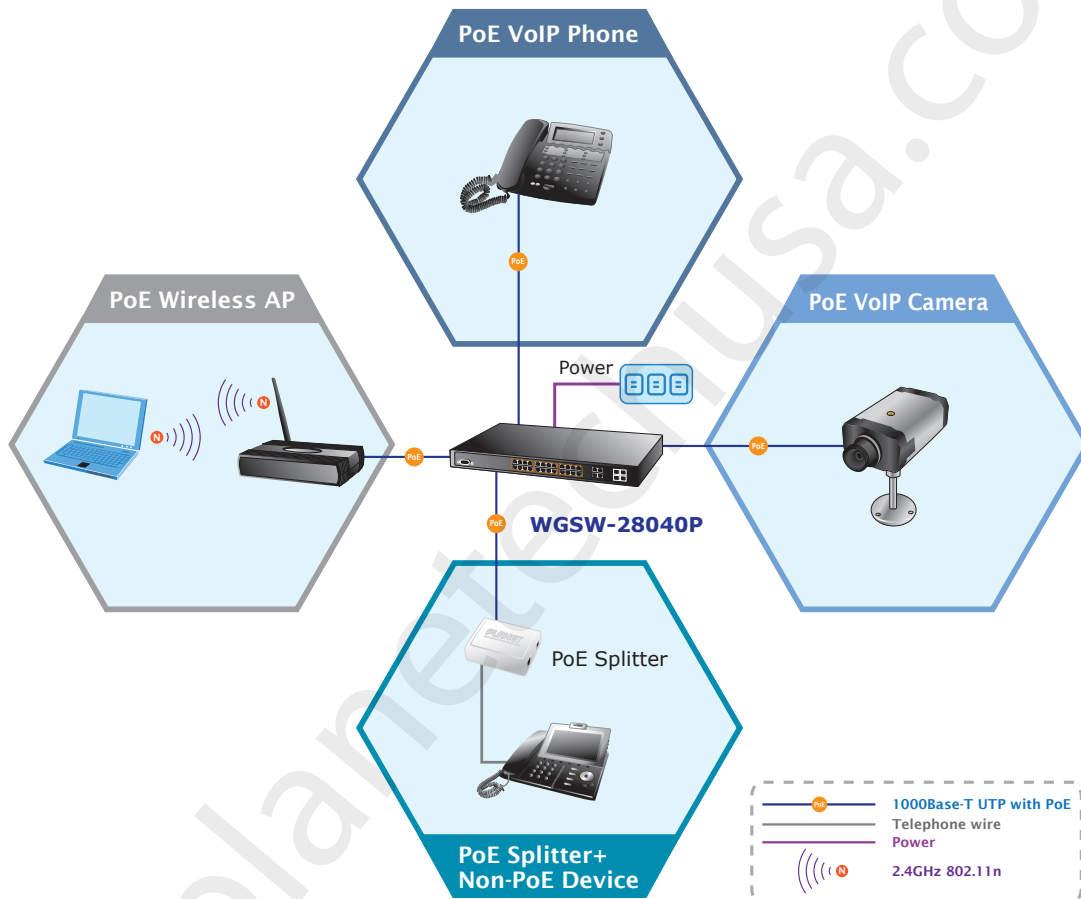
### MANAGEMENT

- IPv6 / IPv4 Dual Stack
- Switch Management Interfaces
  - Console / Telnet Command Line Interface
  - Web switch management
  - SNMP v1, v2c switch management
  - SSH / SSL secure access
- Four RMON groups (history, statistics, alarms and events)
- SNMP trap for interface Link Up and Link Down notification
- Simple Network Time Protocol (SNTP)
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- Firmware upload / download via HTTP and TFTP
- Event message logging to remote Syslog server
- Reset button for system reboot or reset to factory default

**APPLICATIONS**

**PoE IP Telephony Office**

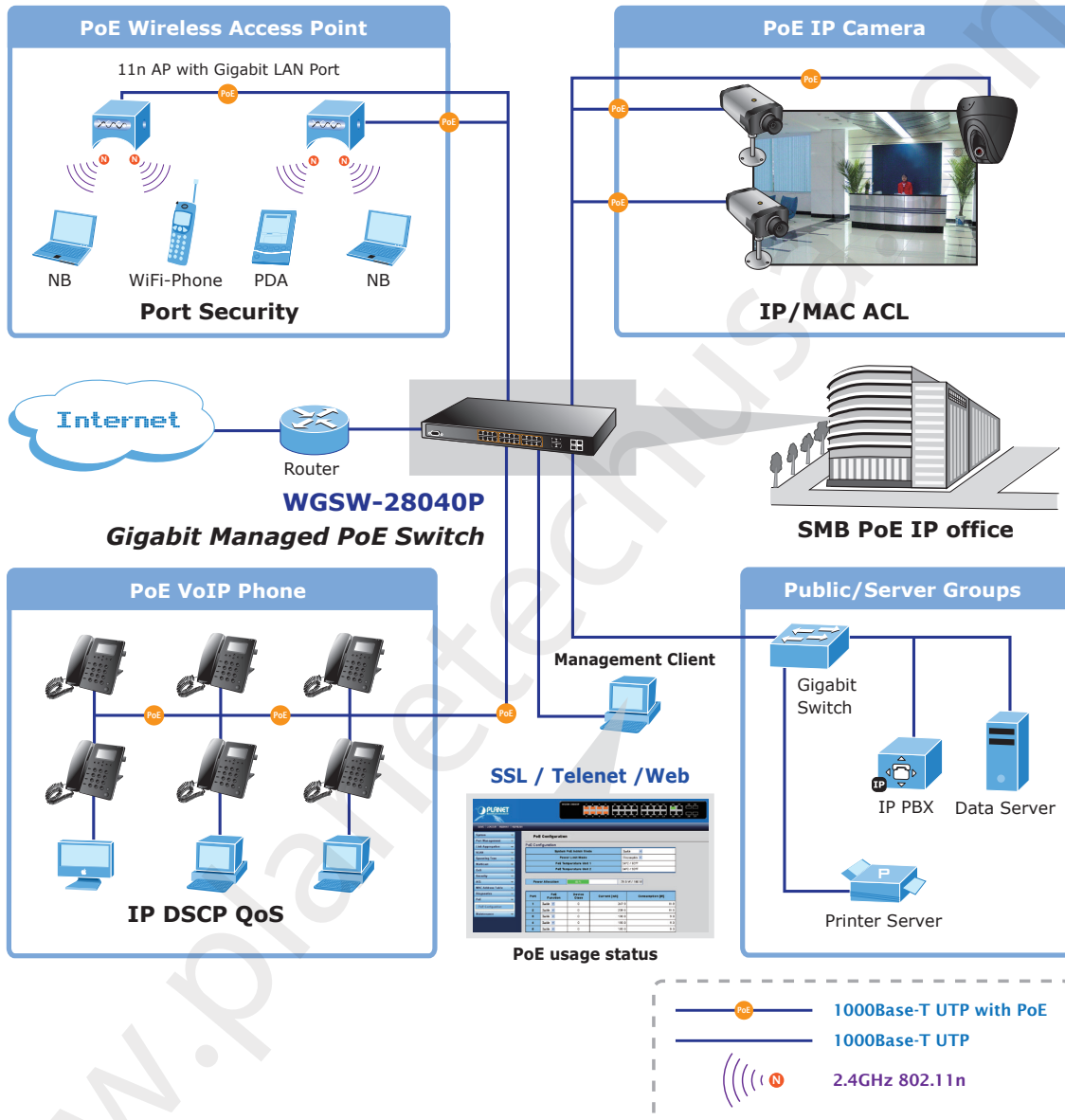
For businesses seeking to expand, additional telephone lines could be installed at a minimum cost via the implementation of PoE IP Telephony system in comparison to that of a traditional circuit wiring telephony system. PLANET WGSW-28040P series PoE Managed Switch helps SMBs create an integrated data and voice-powered network. The 802.3af compliant IP Phones can be installed without the need of additional power cables because the power can be provided via the standard Ethernet cable from the WGSW-28040P series. The WGSW-28040P series works perfectly with PoE IP Phones and Analog Telephony Adapters and its IP DSCP priority of QoS feature improves the voice communication quality. The WGSW-28040P series simplifies, IP Telephony deployment and reduces the costs associated with upgrading from the traditional telephony to IP Telephony Communications Infrastructure.



**APPLICATIONS**

**Department / Workgroup PoE Switch**

The unit provides up to 24-Port PoE, in-line power interface. The WGSW-28040P series Managed PoE Switch can easily build a powerful 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 for surveillance or wireless roaming demands in the office. Without the need for electrical power outlets, the PoE Switch facilitates the installation of cameras or Wireless LAN AP.



## SPECIFICATION

Product	24-Port 10/100/1000Mbps PoE + 4-Port Gigabit TP/SFP Combo Managed Switch	
Model	WGSW-28040P	WGSW-28040P4
<b>Hardware Specification</b>		
Copper Ports	28 10/100/1000Base-T RJ-45 Auto-MDI / MDI-X ports	
SFP/mini-GBIC Slots	4 SFP interfaces, shared with Port-25 to Port-28	
Switch Processing Scheme	Store-and-Forward	
Switch Fabric	56Gbps / non-blocking	
Throughput @ 64Kbytes	41.67Mpps	
MAC Address Table	16K entries	
Share Data Buffer	448K bytes	
Flow Control	IEEE 802.3x Pause Frame for Full-Duplex Back pressure for Half-Duplex	
Jumbo Frame	9216 Bytes	
LED	PWR, SYS, LNK / ACT, PoE In-Use, 1000, PWR Alert, FAN 1 & 2 Alert	
Dimension (W x D x H)	440 x 300 x 44.5 mm, 1U height	
Weight	3.9kg	4.3kg
Power Consumption	Max. 202 Watts / 688.82 BTU	Max. 398 Watts / 1357.18 BTU
Power Requirement	AC 100~240V, 50/60Hz	
ESD Protection	6KV DC	
<b>Power over Ethernet</b>		
PoE Standard	IEEE 802.3af PoE	
PoE Power Supply Type	End-Span, PSE	
PoE Power Output	Per Port 48V DC Max. 15.4 Watts	
Power Pin Assignment	1/2(+), 3/6(-)	
PoE Power Budget	180 Watts	380 Watts
PoE Ability	Number of PD @ 7Watts	24
	Number of PD @ 15.4Watts	11
<b>Layer 2 Function</b>		
Basic Management Interfaces	Console, Telnet, Web Browser, SNMPv1, v2c	
Security Management Interfaces	SSH, SSL	
Port Configuration	Port disable / enable	
	Auto-Negotiation 10/100/1000Mbps full and half duplex mode selection	
	Flow Control disable / enable	
Port Status	Port Description	
	Display each port's speed duplex mode, link status, flow control status, auto negotiation status, and trunk status	
VLAN	802.1Q Tagged Based VLAN	
	Q-in-Q Up to 256 VLAN groups, out of 4094 VLAN IDs	
Link Aggregation	IEEE 802.3ad LACP / Static Trunk 8 groups of 8-Port trunk support	
QoS	<ul style="list-style-type: none"> <li>8-Level priority queue for switching</li> <li>Traffic classification based, Strict priority and WRR <ul style="list-style-type: none"> <li>802.1p priority</li> <li>IP DSCP field</li> </ul> </li> </ul>	
IGMP Snooping	IGMP (v1 / v2 / v3) Snooping, up to 255 multicast Groups IGMP Querier mode support	
Access Control List	IP-Based ACL / MAC-Based ACL Up to 256 entries	
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)	
RFC 2737 Entity MIB		
RFC 3411 SNMP-MIB		

Standards Conformance	
Regulation Compliance	FCC Part 15 Class A, CE
Standards Compliance	IEEE 802.3 10Base-T
	IEEE 802.3u 100Base-TX
	IEEE 802.3z 1000Base-SX/LX
	IEEE 802.3ab Gigabit 1000Base-T
	IEEE 802.3x Flow Control
	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 802.3af Power over Ethernet	
Environment	
Operating	Temperature: 0 ~ 50 Degree C
	Relative Humidity: 20 ~ 95% (non-condensing)
Storage	Temperature: -10 ~ 70 Degree C
	Relative Humidity: 20 ~ 95% (non-condensing)

## ORDERING INFORMATION

WGSW-28040P	24-Port 10/100/1000Mbps PoE + 4-Port Gigabit TP/SFP Combo Managed Switch / 180W PoE budget
WGSW-28040P4	24-Port 10/100/1000Mbps PoE + 4-Port Gigabit TP/SFP Combo Managed Switch / 380W PoE budget

## AVAILABLE MODULES FOR WGSW-28040P SERIES

MGB-GT	SFP-Port 1000Base-T Module
MGB-SX	SFP-Port 1000Base-SX mini-GBIC module - 220/550m
MGB-LX	SFP-Port 1000Base-LX mini-GBIC module - 10km
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

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