

Product Specification

28-Port 10/100/1000Mbps with 4 Shared SFP Managed Switch

WGSW-28040

Version 2.0

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Change History:

Revision:	Date:	Author:	Change List
Version 1.0	2011/2/18	Neo Tsai	Initial Release
Version 2.0	2011/12/29	Neo Tsai	Function Enhance

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1. PRODUCT DESCRIPTION

High-Performance, Cost-effective Gigabit Networking Solution for SMB

The PLANET WGSW-28040 is a Layer 2 Managed Gigabit Switch which can handle extremely large amounts of data in a secure topology linking to an Enterprise backbone or high capacity network server with 56Gbps switching fabric. The advanced features of QoS and network security included enable the WGSW-28040 to offer effective data traffic control for SMB and Enterprises, such as VoIP, video streaming and multicast applications. It is ideal for the enterprise networks and the aggregation layer of IP metropolitan networks.

High Performance

The WGSW-28040 provides 28 10/100/1000Mbps Gigabit Ethernet ports in which with 4 shared Gigabit SFP slots. It boasts high performance architecture of switch that is capable for providing the non-blocking switch fabric and wire-speed throughput as high as 56Gbps, which greatly simplifies the tasks of upgrading the LAN for catering to increasing bandwidth demands.

Robust Layer 2 Features

The WGSW-28040 can be programmed for advanced switch management functions such as dynamic Port link aggregation, Q-in-Q VLAN, private VLAN, Multiple Spanning Tree protocol, Layer 2 QoS, bandwidth control and IGMP Snooping. The WGSW-28040 provides 802.1Q Tagged VLAN, and the VLAN groups allowed will be maximally up to 255. Via aggregation of supporting ports, the WGSW-28040 allows the operation of a high-speed trunk combining multiple ports. It enables maximum up to 8 groups of 8 ports for trunking and supports fail-over as well.

Excellent Traffic Control

The WGSW-28040 is loaded with Port speed configuration, Port aggregation, VLAN, Spanning Tree protocol, QoS, bandwidth control and IGMP Snooping features to enhance services to business-class data, voice, security, and wireless solutions. The functionality includes QoS features, and bandwidth limiting that are particular useful for multi-tenant unit and multi-business unit applications. It also empowers the enterprises to take full advantages of the limited network resources and guarantees the best performance in VoIP and Video conferencing transmission.

Efficient Management

For efficient management, the WGSW-28040 Managed Ethernet Switch is equipped with console, WEB and SNMP management interfaces. With the built-in Web-Based management interface, the WGSW-28040 offers an easy-to-use, platform-independent management and configuration facility. The WGSW-28040 supports standard Simple Network Management Protocol (SNMP) and can be managed via any standard management software. For text-based management, the WGSW-28040 can be accessed via Telnet and the console port.

Powerful Security

PLANET WGSW-28040 offers comprehensive Layer 2 to Layer 4 Access Control List (ACL) for enforcing security to the edge. It can be used to restrict network access by denying packets based on source and destination IP address, TCP/UDP ports or defined typical network applications. Its protection mechanism also comprises of 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 network administrators can now construct highly secured corporate networks with considerably less time and effort than before.

Flexibility and Extension Solution

The four mini-GBIC slots built in the WGSW-28040 are compatible with 1000Base-SX/LX and WDM SFP (Small Form Factor Pluggable) fiber-optic modules. The 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 within the enterprise data centers and distributions.

2. PRODUCT FEATURES

➤ **Physical Port**

- **28-Port 10/100/1000Base-T** Gigabit RJ-45 copper
- **4 100/1000Base-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**
 - Management VLAN
 - IEEE 802.1Q Tagged VLAN
 - Up to 256 VLANs groups, out of 4094 VLAN IDs
 - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
 - Private VLAN Edge (PVE / Port Isolation)
 - IP Subnet 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**
 - 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)
- Provide Port Mirror (many-to-1)
- Port Mirroring to monitor the incoming or outgoing traffic on a particular port

➤ **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
- 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
 - RADIUS / TACACS+ user access authentication
- 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
- DHCP Snooping to filter untrusted DHCP messages
- Dynamic ARP Inspection discards ARP packets with invalid MAC address to IP address binding
- IP Source Guard prevents IP spoofing attacks

➤ **Management**

- Switch Management Interfaces
 - Console / Telnet Command Line Interface
 - IPv4 and IPv6 Web switch management
 - SNMP v1, v2c & v3 switch management
 - SSH / SSL secure access
- Four RMON groups (history, statistics, alarms, and events)
- SNMP trap for interface Link Up and Link Down notification
- SNTP (Simple Network Time Protocol)
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment

- Firmware upload/download via HTTP / TFTP
- DHCP Relay
- DHCP Option 82
- Link Layer Discovery Protocol (LLDP) Protocol
- Event message logging to remote Syslog server
- Reset button for system reboot or reset to factory default
- IP Stacking management up to 16 units

3. PRODUCT SPECIFICATION

3.1 MAIN COMPONENT

Switch ASIC:	Realtek RTL8389LM	X1
Giga PHY:	Realtek RTL8218	X3
Combo PHY:	Realtek RTL8214FB	X1
Flash:	MXIC MX25L6406E (64MBit)	x 1
DDR RAM:	Winbond W9825G6EH-6 (256M)	x 1
Open Frame Power Supply:	Output: 12V / 2.5A	x1

3.2 FUNCTION SPECIFICATION

Product	WGSW-28040
Hardware Specification	
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, compatible with 100Base-FX
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, 1000
Dimension (W x D x H)	440 x 200 x 44.5 mm, 1U height
Weight	2.7 KG

Power Consumption	Max. 12 Watts / 40.92 BTU
Power Requirement	AC 100~240V, 50/60Hz
ESD Protection	6KV DC
Layer 2 Function	
Basic Management Interfaces	Console, Telnet, IPv4 & IPv6 Web Browser, SNMPv1, v2c
Security 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 Description
Port Status	Display each port's speed duplex mode, link status, Flow control status, Auto negotiation status, trunk status.
VLAN	802.1Q Tagged Based VLAN Q-in-Q Private VLAN Edge (PVE) IP Subnet VLAN Voice VLAN Up to 256 VLAN groups, out of 4094 VLAN IDs
Link Aggregation	IEEE 802.3ad LACP / Static Trunk Supports 8 groups of 8-Port trunk support
QoS	<ul style="list-style-type: none"> • 8-Level priority queue for switching • Traffic classification based, Strict priority and WRR <ul style="list-style-type: none"> - 802.1p priority - IP DSCP field
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 Gigabit SX/LX IEEE 802.3ab Gigabit 1000T 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
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)

3.3 PHYSICAL SPECIFICATIONS:

Dimensions:

440 x 200 x 44.5mm (W x D x H), 1U height

Weight:

2.7 kg

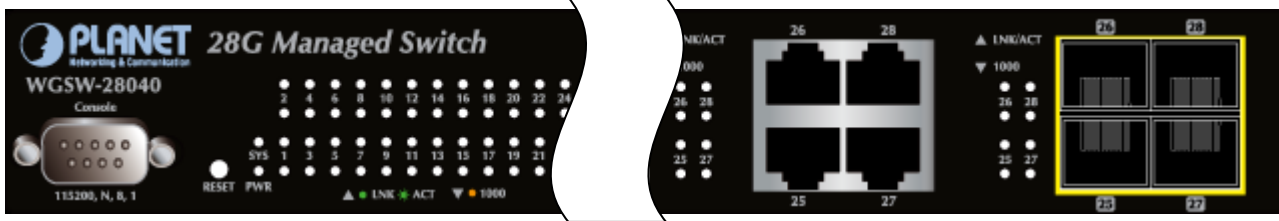
■ **Front Panel:**



■ **Rear Panel:**



■ LED Definition



WGSW-28040 LED panel

■ System

LED	Color	Function
PWR	Green	Lights to indicate that the Switch has power.
SYS	Green	Lights to indicate the system is working.

■ 10/100/1000Base-T interfaces

LED	Color	Function
LNK/ACT	Green	Lights: To indicate the link through that port is successfully established. Blink: To indicate that the switch is actively sending or receiving data over that port.
1000	Green	Lights: indicate that the port is operating at 1000Mbps . Off: If LNK/ACT LED light-> indicate that the port is operating at 10/100Mbps If LNK/ACT LED Off -> indicate that the port is link down

■ 1000Base-SX/LX SFP interfaces (shared with Port-25 to Port-28)

LED	Color	Function
LNK/ACT	Green	Lights: To indicate the link through that port is successfully established. Blink: To indicate that the switch is actively sending or receiving data over that port.
1000	Green	Lights: indicate that the port is operating at 1000Mbps . Off: If LNK/ACT LED light-> indicate that the port is operating at 100Mbps If LNK/ACT LED Off -> indicate that the port is link down

3.4 ENVIRONMENTAL SPECIFICATION

Operating:

- Temperature: 0°C ~ 50 Degree C
- Relative Humidity: 20% ~ 95% (non-condensing)

Storage:

Temperature: -10°C ~ 70 Degree C

Relative Humidity: 20% ~ 95% (non-condensing)

3.5 ELECTRICAL SPECIFICATION

Model		WGSW-28040
AC Power Input Voltage:		100 ~ 240VAC, 50 / 60Hz, Auto-sensing.
Power Consumption(System on):	110V	7 Watts / 23.87 BTU
	220V	8 Watts / 27.28 BTU
Power Consumption(Full Load):	110V	11 Watts / 37.51 BTU
	220V	12 Watts / 40.92 BTU

3.6 REGULATORY COMPLIANCE

FCC Class A, CE.

3.7 REALIABILITY

MTBF > 50,000 hrs @ 25 Degree C

3.8 BASIC PACKAGING

- WGSW-28040 Switch X1
- User's Manual CD X1
- Quick Installation Guide X1
- Power Cord X1
- RS232 Cable X1
- Rubber Feet X4
- Two Rack-mounting Brackets with Attachment Screws X2

3.9 PACKING DIMENSION

Dimension: 565 (W) x 305 (D) x 95(H) mm

Weight: TBD KG (Gross Weight)

5pcs in one carton