

## 48-Port Gigabit with 4 Shared SFP Managed Switch



### *High-Density / Cost-effective / Telecom class Gigabit solution for Enterprise backbone and Data Center Networking*

The PLANET WGSW-48000 is a Layer 2 / Layer 4 full managed Gigabit Switch that provides high density performance and is rack mountable. With 96Gbps switching fabric, the WGSW-48000 can handle extremely large amounts of data in a secure topology linking to an enterprise backbone or high capacity servers. The powerful QoS and Network Security features make WGSW-48000 to perform effective data traffic control for both ISP and Enterprise VoIP, video streaming and multicast applications.

### *High Performance*

The WGSW-48000 provides 48 10/100/1000Mbps Gigabit Ethernet ports with 4 shared Gigabit SFP slots. It boasts a high performance switch architecture that is capable of providing non-blocking switch fabric and wire-speed throughput as high as 96Gbps, which greatly simplifies the tasks of upgrading the LAN for catering to increasing bandwidth demands.

### *Robust Layer 2 Features*

The WGSW-48000 can be programmed for basic Switch management functions such as Port speed configuration, Port aggregation, VLAN, Spanning Tree protocol, QoS, bandwidth control and IGMP Snooping. The WGSW-48000 provides 802.1Q Tagged VLAN and GVRP protocol. The VLAN groups allowed on the WGSW-48000 will be maximally up to 255. By supporting port aggregation, the WGSW-48000 allows the operation of a high-speed trunk combining multiple ports. It enables up to 14 groups of maximum 8-ports for trunking, and supports fail-over as well.

### *Excellent Traffic Control*

PLANET WGSW-48000 is loaded with powerful traffic management and QoS features to enhance services offered by telecoms. The functionality includes QoS features such as wire-speed Layer 4 traffic classifiers and bandwidth limiting that are particular useful for multi-tenant unit, multi business unit, Telco, or Network Service Provide applications. It also empowers the enterprises to take full advantages of the limited network resources and guarantees the best performance at VoIP and Video conferencing transmission.

### *Efficient Management*

For efficient management, the WGSW-48000 Managed Ethernet Switch is equipped with console, WEB and SNMP management interfaces. With its built-in Web-based management interface, the PLANET WGSW-48000 offers an easy-to-use, platform-independent management and configuration facility. The WGSW-48000 supports standard Simple Network Management Protocol (SNMP) and can be managed via any standard-based management software. For text-based management, WGSW-48000 can be accessed via Telnet and the console port. Moreover, the WGSW-48000 offers secure remote management by supporting SSL and SSH connection which encrypts the packet content at each session.

### *Powerful Security*

PLANET WGSW-48000 offers comprehensive Access Control List (ACL) for enforcing security to the edge. Its protection mechanisms also comprise port-based 802.1x user and device authentication. The port-security is effective in limiting the numbers of clients pass through, so that network administrators can now construct highly secured corporate networks with time and effort considerably less than before.

### *Flexibility and Extension solution*

The four mini-GBIC slots built in the WGSW-48000 are compatible with 1000Base-SX/LX and WDM SFP (Small Factor Pluggable) fiber-optic modules. The distance can be extended from 550 meters (Multi-Mode fiber) up to above 10/50/70/120 kilometers (Single-Mode fiber or WDM fiber). It is well suited for applications within the enterprise data centers and distributions.

## KEY FEATURES

### PHYSICAL PORT

- 48-Port 10/100/1000Base-T Gigabit Ethernet RJ-45
- 4 mini-GBIC/SFP slots, shared with Port-23, Port-24, Port-47 and Port-48
- RS-232 DB9 console interface for Switch basic management and setup

### LAYER 2 FEATURES

- Complies with the IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z Gigabit Ethernet standard
- Supports Auto-negotiation and Half-Duplex / Full-Duplex modes for all 10Base-T/100Base-TX and 1000Base-T ports.
- Auto-MDI/MDI-X detection on each RJ-45 port
- Prevents packet loss Flow Control:
  - IEEE 802.3x FAUSE Frame flow control for Full-Duplex mode
  - Back-Pressure Flow Control in Half-Duplex mode
- High performance Store and Forward architecture, broadcast storm control, runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- 8K MAC address table, automatic source address learning and ageing
- 4Mbits embedded memory for packet buffers
- Support VLAN
  - IEEE 802.1Q Tag-based VLAN
  - GVRP for dynamic VLAN Management
  - Up to 255 VLANs groups, out of 4041 VLAN IDs
  - Private VLAN Edge (PVE) supported
  - Management VLAN
- Support Link Aggregation
  - up to 14 trunk groups
  - up to 8 ports per trunk group with 1.6Gbps bandwidth (Full Duplex Mode)
  - IEEE 802.3ad LACP (Link Aggregation Control Protocol)
  - Cisco ether-channel (Static Trunk)
- Spanning Tree Protocol
  - STP, IEEE 802.1D (Classic Spanning Tree Protocol)
  - RSTP, IEEE 802.1w (Rapid Spanning Tree Protocol)
  - MSTP, IEEE 802.1s (Multiple Spanning Tree Protocol, spanning tree by VLAN)
- Port Mirroring to monitor the incoming or outgoing traffic on a particular port (many to many)

### QUALITY OF SERVICE

- 4 priority queues on all switch ports
- Traffic classification:
  - IEEE 802.1p CoS
  - IP TOS / DSCP / IP Precedence
  - Port-Based QoS
- DSCP remarking based on ACL

- Strict priority and Weighted Round Robin (WRR) CoS policies
- Supports QoS and In/Out bandwidth control on each port

### MULTICAST

- Support IGMP Snooping v1 and v2
- IGMP Querier / IGMP Proxy / IGMP Immediately Leave support

### SECURITY

- IEEE 802.1x Port-Based Authentication
- Build-in RADIUS client to co-operate with the RADIUS servers
- TACACS+ login users access authentication
- IP-Based Access Control List (ACL)
- MAC-Based Access Control List
- Port Security
- Supports DHCP Snooping
- Supports Dynamic ARP Inspection
- Supports IP Source Guard
- Supports Auto Dos

### MANAGEMENT

- Switch Management Interface
  - Console / Telnet Command Line Interface
  - Web switch management
  - SNMP v1, v2c, and v3 switch management
  - SSH / SSL secure access
- DHCP client for IP address assignment
- Support DHCP relay function
- Built-in Trivial File Transfer Protocol (TFTP) client
- Firmware upload / download via TFTP or HTTP protocol
- Configuration upload / download via TFTP or HTTP protocol
- SNTP (Simple Network Time Protocol)
- Message / event/ error / SNMP Trap logs
- Logging to local file and syslog server
- Four RMON groups 1, 2, 3, 9 (history, statistics, alarms, and events)
- Supports Ping function
- Cable Diagnostic technology provides the mechanism to detect and report potential cabling issues, such as cable opens, cable shorts, and etc. on Copper Links
- Link Layer Discovery Protocol (LLDP)
- Management IP
- Power Saving ability for Green networking

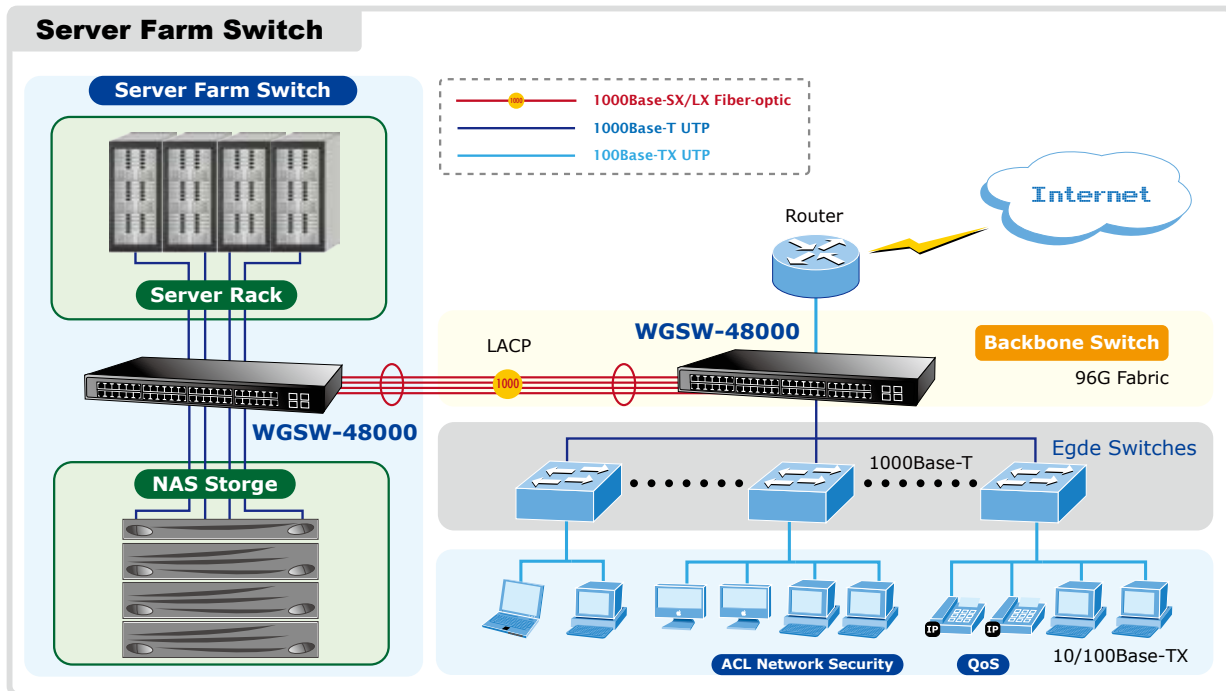
**APPLICATIONS**

**Backbone Switch**

With up to 96Gbps non-blocking switch fabric and 48 high density ports design, the WGSW-48000 can easily provide the high bandwidth required for both now and future. It can easily offer a local, high bandwidth, and Gigabit Ethernet network for backbone of enterprises or Telecoms. With the four SFP ports, the WGSW-48000 provides the uplink to the edge network through Gigabit Ethernet LX/SX SFP modules.

**Server Farm Switch**

The WGSW-48000 provides up to 48 Gigabit Ethernet ports for Enterprises and Network servers. It is ideal to be used as a server farm switch connecting servers. With its port trunking function, an 8 GB fat pipe is provided for connecting to the backbone if required.



**Department Security and QoS Switch**

With the security, Multicast IGMP Snooping and QoS features, the WGSW-48000 improves the network efficiency and protects the network clients. With the four SFP ports, the WGSW-48000 provides the uplink to the backbone network through Gigabit Ethernet LX/SX SFP modules.

**SPECIFICATION**

<b>Product</b>	<b>48-Port 10/100/1000Mbps with 4 Shared SFP Managed Gigabit Switch</b>
<b>Model</b>	<b>WGSW-48000</b>
<b>Hardware Specification</b>	
<b>Copper Ports</b>	48 10/ 100/1000Base-T RJ-45 Auto-MDI/MDI-X ports
<b>SFP / mini-GBIC slots</b>	4 1000Base-SX/LX SFP interfaces, shared with Port-23, Port-24, Port-47 and Port-48
<b>Switch Architecture</b>	Store-and-forward
<b>Switch Fabric</b>	96Gbps / non-blocking
<b>Switch throughput</b>	71.4Mpps
<b>Address Table</b>	8K MAC address table with Auto learning function
<b>Share data Buffer</b>	4Mbits
<b>Flow Control</b>	Back pressure for Half-Duplex IEEE 802.3x Pause Frame for Full-Duplex
<b>Jumbo Frame</b>	9K
<b>LED</b>	Power, Link/Act per port
<b>Reset Button</b>	< 10 sec: System reboot > 10 sec: Factory Default
<b>Dimension (W x D x H)</b>	430 x 350x 44.5 mm, 1U height
<b>Weight</b>	3.5 KG
<b>Power Consumption</b>	74 Watt / 252.34 BTU (Maximum)
<b>Power Requirement</b>	AC 100~240V, 50/60Hz
<b>Layer 2 Function</b>	
<b>Management Interface</b>	Console, Telnet, SSH, Web Browser, SSL, SNMPV1, v2c and v3 Port disable/enable.
<b>Port configuration</b>	Auto-negotiation 10/100/1000Mbps full and half duplex mode selection. Flow Control disable / enable.
<b>Port Status</b>	Display each port's speed duplex mode, link status, Flow control status. Auto negotiation status, trunk status
<b>VLAN</b>	IEEE 802.1Q Tag-based VLAN GVRP for VLAN Management Up to 255 VLANs groups, out of 4041 VLAN IDs Private VLAN Edge (PVE) supported
<b>Bandwidth Control</b>	Ingress Rate Limit Egress Traffic Shaper
<b>Link Aggregation</b>	IEEE 802.3ad LACP / Static Trunk Supports 14 groups of 8-Port trunk
<b>QoS</b>	Traffic classification based on 802.1p priority, DS/TOS field in IP Packet
<b>IGMP Snooping</b>	IGMP (v1/v2) Snooping, IGMP Querier mode
<b>Access Control List</b>	IP-Based ACL / MAC-Based ACL Up to 254 entries
<b>SNMP MIBs</b>	RFC-1213 MIB-II RFC-2863 Interface MIB RFC-2665 EtherLike MIB RFC-1493 Bridge MIB RFC-2674 Extended Bridge MIB RFC-2819 RMON MIB (Group 1, 2, 3 and 9) RFC-2737 Entity MIB RFC-2618 RADIUS Client MIB
<b>Standard Conformance</b>	
<b>Regulation Compliance</b>	FCC Part 15 Class A, CE
<b>Standards Compliance</b>	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX / 100BASE-FX IEEE 802.3z Gigabit SX/LX IEEE 802.3ab Gigabit 1000T IEEE 802.3x 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 802.1ad LLDP

**ORDERING INFORMATION**

<b>WGSW-48000</b>	48-Port 10/100/1000Mbps with 4 Shared SFP Managed Gigabit Switch
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**AVAILABLE MODULES FOR WGSW-48000**

<b>MGB-GT</b>	SFP-Port 1000Base-T Module
<b>MGB-SX</b>	SFP-Port 1000Base-SX mini-GBIC module
<b>MGB-LX</b>	SFP-Port 1000Base-LX mini-GBIC module
<b>MGB-L30</b>	SFP-Port 1000Base-LX mini-GBIC module-30km
<b>MGB-L50</b>	SFP-Port 1000Base-LX mini-GBIC module-50km
<b>MGB-L70</b>	SFP-Port 1000Base-LX mini-GBIC module-70km
<b>MGB-L120</b>	SFP-Port 1000Base-LX mini-GBIC module-120km
<b>MGB-LA10</b>	SFP-Port 1000Base-LX (WDM,TX:1310nm) mini-GBIC module-10km
<b>MGB-LB10</b>	SFP-Port 1000Base-LX (WDM,TX:1550nm) mini-GBIC module-10km
<b>MGB-LA20</b>	SFP-Port 1000Base-LX (WDM,TX:1310nm) mini-GBIC module-20km
<b>MGB-LB20</b>	SFP-Port 1000Base-LX (WDM,TX:1550nm) mini-GBIC module-20km
<b>MGB-LA40</b>	SFP-Port 1000Base-LX (WDM,TX:1310nm) mini-GBIC module-40km
<b>MGB-LB40</b>	SFP-Port 1000Base-LX (WDM,TX:1550nm) mini-GBIC module-40km