

Product Specification

WGSW-24040

L2+ 24-Port 10/100/1000T with 4 Shared SFP
Managed Gigabit Switch

WGSW-24040R

L2+ 24-Port 10/100/1000T with 4 Shared SFP
Managed Gigabit Switch / -48V DC Redundant Power

Version 2.1

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Change History:

Revision:	Date:	Author:	Change List
Version 1.0	2008/8/14	Kent Kang	Initial Release
Version 1.1	2008/09/15	Kent Kang	1. Number Active VLANs from 4k to 256 2. Remove Port Security
Version 2.0	2012/10/04	Neo Tsai	Hardware Change
Version 2.1	2014/8/21	Jos Li	SDK upgrading to 3.40b

Author:	Jos Li	Editor:	Jos Li
Reviewed By:	Tom Shih	Approved By:	Tom Shih

1. PRODUCT DESCRIPTION

Cost-effective IPv6 Managed Gigabit Switch Solution for Enterprises

PLANET WGSW-24040 series is a Layer 2+ managed Gigabit Switch that features 24-Port 10/100/1000BASE-T + 4-Port Shared 100/1000Base-X SFP and supports static Layer 3 routing for enterprise-level network. The abundant L2 / L4 switching engine offered by the WGSW-24040 series performs effective data traffic control for enterprises and VoIP service providers, video streaming, and multicast applications. Providing user-friendly but advanced IPv6 / IPv4 management interfaces, it is well suited for backbone and workgroup network applications by providing affordability, high performance, and stable transmission quality.

Robust Layer2 Features

The WGSW-24040 series can be programmed for advanced switch management function, such as dynamic port link aggregation, **Q-in-Q VLAN**, **Multiple Spanning Tree Protocol (MSTP)**, Layer 2/4 QoS, bandwidth control and **IGMP/MLD snooping**. Via the link aggregation of supporting ports, the WGSW-24040 series allows the operation of a high-speed trunk combine with multiple ports. It enables a maximum of 12 trunk groups with 8 ports per group, and supports connection fail-over as well.

Flexible and Extendable Solution

The four mini-GBIC SFP slots built in the WGSW-24040 series support dual speed as it features 100BASE-FX and 1000BASE-SX/LX SFP (Small Form-factor Pluggable) fiber-optic modules, meaning 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 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.

Intelligent SFP Diagnosis Mechanism

The WGSW-24040 series supports **SFP-DDM (Digital Diagnostic Monitor)** function that greatly helps network administrator to easily monitor real-time parameters of the SFP transceivers, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.

Redundant AC / DC Power Supply to Ensure Continuous Operation

Particularly for the WGSW-24040R, it is equipped with one 100~240V AC power supply unit and one DC -48V connector to provide an enhanced reliable and scalable redundant power supply installation. The continuous power system is specifically designed to fulfill the demands of high tech facilities requiring the highest power integrity. The -48V DC power supply implemented makes the WGSW-24040R the telecom level device that can be located at the electronic room.



2. PRODUCT FEATURES

➤ **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
- RS-232 DB9 console interface for 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
- 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
 - 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 loops

➤ **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
- 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
 - DHCP Relay
 - DHCP Option82
 - 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
- **Redundant Power System (WGSW-24040R)**
- 100~240V AC / 48V DC dual power redundant
 - Active-active redundant power failure protection
 - Backup of catastrophic power failure on one supply
 - Fault tolerance and resilience.

3. PRODUCT SPECIFICATION

3.1 MAIN COMPONENT

Switch ASIC:	VITESSE VSC7426	X1
Giga PHY:	VITESSE VSC8512	X1
CPU	MIPS 416MHz (integrated with VSC7426)	X 1
Flash:	MX25L12845EMI-10G (16Mbytes / 128Mbits)	X1
DDR RAM:	MT47H128M8CF-25E (128Mbytes / 1Gbits)	X1
Power supply	Open frame 12V / 2.5A max. output	X1

3.2 FUNCTION SPECIFICATION

Product	WGSD-24040	WGSD-24040R
Hardware Specifications		
Hardware Version	Version 2	
Copper Ports	24 10/100/1000BASE-T RJ45 Auto-MDI/MDI-X ports	
SFP/mini-GBIC Slots	4 1000BASE-SX/LX/BX SFP interfaces, shared with port-21 to port-24 Supports 100/1000Mbps dual mode and DDM	
Console Port	1 x RS-232 DB9 serial port (115200, 8, N, 1)	
Switch Architecture	Store-and-Forward	
Switch Fabric	48Gbps / non-blocking	
Switch Throughput	35.7Mpps@64Bytes	
Address Table	8K entries, automatic source address learning and ageing	
Shared Data Buffer	1392 kilobytes	
Flow Control	IEEE 802.3x pause frame for full-duplex Back pressure for half-duplex	
Jumbo Frame	9Kbytes	
Reset Button	< 5 seconds: System reboot > 5 seconds: Factory default	
LED	Power 10/100/1000 Link / Act per RJ45 port, 100/1000 Link / Act per SFP port,	
Dimension (W x D x H)	440 x 200 x 44.5mm, 1U high	
Weight	2740g	2850g
Power Requirements	100~240V AC, 50/60Hz	100~240V AC, 50/60Hz -48V DC @ 0.6A, DC voltage range: -36 ~ -60V
Power Consumption	Max. 21.0 watts / 71.652 BTU	
ESD Protection	6KV	

Layer 2 function	
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 <ul style="list-style-type: none"> - 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

	<p>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</p>
Standards Conformance	
Regulation Compliance	FCC Part 15 Class A, CE
Standards Compliance	<p>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 802.1ab 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</p>
Environment	
Operating	<p>Temperature: 0 ~ 50 degrees C Relative Humidity: 20 ~ 95% (non-condensing)</p>
Storage	<p>Temperature: -20 ~ 70 degrees C Relative Humidity: 20 ~ 95% (non-condensing)</p>

3.3 PHYSICAL SPECIFICATIONS:

Dimensions:

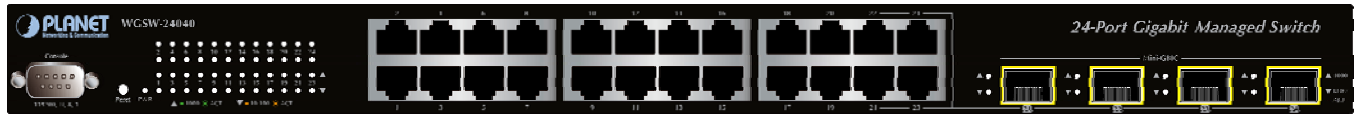
440 x 200 x 44.5mm (W x D x H), 1U height

Weight:

2.85 KG

■ Front Panel:

WGSW-24040



WGSW-24040R



■ Rear Panel:

WGSW-24040



WGSW-24040R



■ LED definition

■ System

LED	Color	Function
PWR	Green	Lights to indicate that the switch has power.

■ Per 10/100/1000BASE-T Port

LED	Color	Function
1000 LNK/ACT	Green	Lights to indicate the port is running in 1000Mbps speed and successfully established. Blink: indicate that the switch is actively sending or receiving data over that port.
10/100 LNK/ACT	Orange	Lights to indicate the port is running in 10/100Mbps speed and successfully established. Blink: indicate that the switch is actively sending or receiving data over that port.

■ Per 100/1000BASE-X SFP Interfaces

LED	Color	Function
1000	Green	Lights to indicate that the port is operating at 1000Mbps . Off to indicate the port is operating at 100Mbps or no link.
LNK/ACT	Orange	Lights to indicate the port is successfully established. Blink: indicate that the switch is actively sending or receiving data over that port.

3.4 ENVIRONMENTAL SPECIFICATION

Operating:

Temperature: 0°C ~ 50 degrees C
Relative Humidity: 5% ~ 95% (non-condensing)

Storage:

Temperature: -20°C ~ 70 degrees C
Relative Humidity: 5% ~ 95% (non-condensing)

3.5 ELECTRICAL SPECIFICATION

Model	WGSW-24040	WGSW-24040R
AC Power Input Voltage:	100 - 240V AC, 50 - 60Hz, Auto-sensing.	100 - 240V AC, 50 - 60Hz, Auto-sensing
DC Power Input Voltage:	-	-36 ~ -60V DC
Power Consumption(System on):	110V AC: 10 Watts / 34.1 BTU	-36V DC: 9.5 Watts / 32.395 BTU
	220V AC : 10.4Watts / 35.464 BTU	-48V DC: 10 Watts / 34.1 BTU
		-60V DC: 10.2 Watts / 34.782 BTU
Power Consumption(Full Load):	110V AC : 20.3 Watts / 69.223 BTU	-36V DC: 20.1 Watts / 68.541 BTU
	220V AC: 21.0 Watts / 71.652 BTU	-48V DC: 20.2 Watts / 68.882 BTU
		-60V DC: 20.8 Watts / 70.928 BTU

3.6 REGULATORY COMPLIANCE

EMI:

EN 55022 CLASS A:2006
 EN61000-3-2:2006
 EN61000-3-3: 1995+1A:2001+A2:2005

EMS:

EN 55024:1998+A1:2001+A2:2003
 IEC 61000-4-2:2001
 IEC 61000-4-3:2008
 IEC 61000-4-4:2004

IEC 61000-4-5:2005
IEC 61000-4-6:2008
IEC 61000-4-8:2001
IEC 61000-4-11:2004
IEC/EN 60950-1

3.7 REALIABILITY

MTBF > 50,000 hrs @ 25 degrees C

3.8 BASIC PACKAGING

- WGSW-24040 / WGSW-24040R X1
- Quick Installation Guide X1
- Power Cord X1
- DR9 to RS232 console cable X1
- SFP dusty cap X4
- Rubber fee X4
- Rack Mount Accessory Kit X1

3.9 PACKING DIMENSION

Dimension: 554mm (W) x 308mm (D) x 95mm (H)
Weight: **TBD KG (Gross Weight)**
5 pcs in one carton