Product Specifications

8-Port 10/100/1000T + 2-Port 100/1000X SFP
Managed Desktop Switch (PoE PD, External PWR)

GSD-1002M

Version 1.0

Change History:

Revision	Date	Author	Change List
Version 1.0	2014/02/18	Jos	Initial release.

Author	Jos Li	Editor:	Jos Li
Reviewed by:	Kent Kang	Approved by:	Tom Shih

1. PRODUCT DESCRIPTION

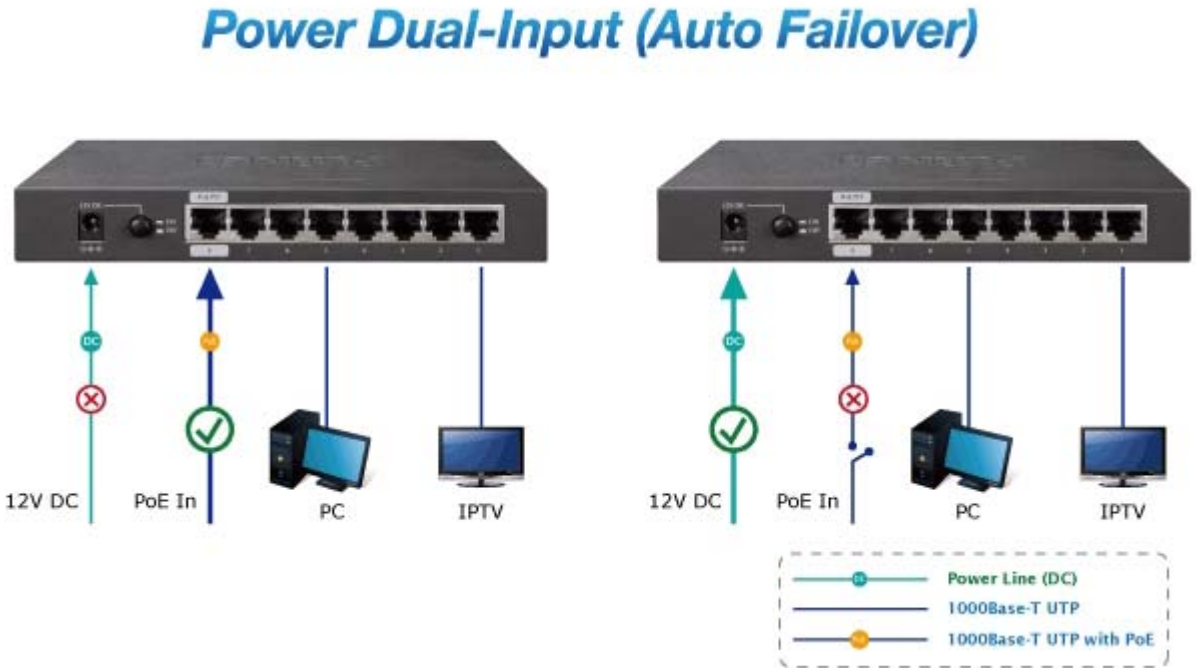
PLANET GSD-1002M is an **8-port 10/100/1000Mbps + 2-port 100/1000X SFP Managed Desktop Switch** specially designed to build a full Gigabit backbone to transmit reliable and forward data to remote network through fiber optic. It provides **8-port 10/100/1000Base-T copper** and **2 extra 100/1000Base-X SFP fiber optic interfaces** with dual power system. Besides support for 20Gbps switch fabric to handle extremely large amounts of video, voice and important data in a secure topology, the GSD-1002M provides user-friendly but advanced **IPv6 / IPv4 management** interfaces and abundant L2 / L4 switching functions. It is the best investment for businesses/SOHOs expanding or upgrading their network infrastructure.

IPv6 / IPv4 Full-functioned Secure Switch

The GSD-1002M is the ideal solution to fulfilling the demand of IPv6 management Gigabit Ethernet Switch. It supports both IPv4 and IPv6 management functions and can work with original network structure. It provides advanced Layer 2 to Layer 4 data switching and Quality of Service traffic control, Access Control List, network access control and authentication, and Secure Management features to protect building automation network connectivity with reliable switching recovery capability that is suitable for implementing fault tolerant and mesh network architectures.

Spanning Tree Protocol and Dual Power Input for High Available Network System

The GSD-1002M features strong rapid self-recovery capability to prevent interruptions and external intrusions. It incorporates Spanning Tree Protocol (802.1s MSTP), auto loop protection and **dual power** input system (**PoE In + 12V DC**) into customer's automation network to enhance system reliability and uptime. In the example below, PoE power has failed with dropped cable and DC power will run hardware failover function automatically to keep powering the switch without any loss.



Handheld Size for FTTD Solution

The GSD-1002M provides high-performance edge service and plug-and-play design for FTTD solutions. FTTD (Fiber to the desktop) service is fiber optic cable reliable and expandable, lower-cost wiring architectures with long distance. It supports dual-speed, **100Base-FX** and **1000Base-SX/LX** SFP(Small Form-factor Pluggable) fiber-optic modules to connect fiber access point, with high flexibility to install in Communication Closet or major computer room for SMBs.

2. PRODUCT FEATURES

- **Physical Ports**
  - 8-port 10/100/1000Mbps Gigabit Ethernet ports with auto-MDI/MDI-X supported
  - 1 port (Port 8) supports 802.3af / at PoE 48~56V DC in-line power
  - 2 100/1000Base-X mini-GBIC/SFP slots

- **Installation**
  - Dual Power Design
    - 802.3af / at PoE In
    - 12V DC power adapter acceptable
  - 0 to 50 degrees C operating temperature

- **Layer 2 Features**
  - Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x pause frame flow control (full-duplex)
  - High performance Store and Forward architecture, broadcast storm control, runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
  - Supports **VLAN**
    - IEEE 802.1Q tagged VLAN
    - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
    - Protocol VLAN
    - Voice VLAN
    - Private VLAN
    - Management VLAN
    - GVRP
  - Supports **Spanning Tree Protocol**
    - STP (Spanning Tree Protocol)
    - RSTP (Rapid Spanning Tree Protocol)
    - MSTP (Multiple Spanning Tree Protocol)
    - STP BPDU Guard, BPDU Filtering and BPDU Forwarding
  - 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
  - Provides Port Mirror (many-to-1)
  - Loop protection to avoid broadcast loops

- **Quality of Service**
  - Ingress / Egress Rate Limit per port bandwidth control

- Storm Control support
  - Broadcast / Unknown-Unicast / Unknown-Multicast
- Traffic classification:
  - IEEE 802.1p CoS
  - TOS / DSCP / IP Precedence of IPv4/IPv6 packets
- Strict priority and Weighted Round Robin (WRR) CoS policies

Multicast

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

Security

- Authentication
  - IEEE 802.1X Port-based network access authentication
  - Built-in RADIUS client to co-operate with the RADIUS servers
  - RADIUS / TACACS+ login user access authentication
- Access Control List
  - IPv4 / IPv6 IP-based ACL
  - MAC-based ACL
- MAC Security
  - Static MAC
  - MAC Filtering
- 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
- DoS Attack Prevention
- SSH/SSL

Management

- IPv4 and IPv6 dual stack management
- Switch Management Interface
  - Web switch management
  - Telnet Command Line Interface
  - SNMP v1, v2c and v3
  - SSH / SSL secure access
- User Privilege Levels Control
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment

- System Maintenance
  - Firmware upload/download via HTTP / TFTP
  - Configuration upload / download through Web interface
  - Dual Images
  - Hardware reset button for system reboot or reset to factory default
- SNTP Network Time Protocol
- Cable Diagnostics
- Link Layer Discovery Protocol (LLDP) Protocol and LLDP-MED
- SNMP trap for interface Link Up and Link Down notification
- Event message logging to remote Syslog server
- Four RMON groups (history, statistics, alarms, and events)
- PLANET Smart Discovery Utility

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

Switch ASIC:	Realtek **RTL8380M**	x 1
FLASH	16M bytes	x 1
RAM	128M bytes	x 1
Power Adapter	100-240V AC 50,60 Hz, Output 12V/1A	x 1

3.2 FUNCTION SPECIFICATIONS

Product	**GSD-1002M**
Hardware Specifications	
Copper Ports	8 x 10/100/1000Base-T RJ45 Auto-MDI/MDI-X ports
SFP/mini-GBIC Slots	2 100/1000Base-X SFP interfaces Supports 100/1000Mbps dual mode and DDM
Switch Architecture	Store-and-Forward
Switch Fabric	20Gbps / non-blocking
Switch Throughput@64Bytes	14.8Mpps@64Bytes
Address Table	8K entries
Share Data Buffer	4.1 megabits
Flow Control	IEEE 802.3x pause frame for full-duplex Back pressure for half-duplex
Jumbo Frame	10K bytes
Reset Button	< 5 sec: System reboot

	> 5 sec: Factory Default
LED	System: Power (Green) 10/100/1000T RJ45 Interfaces (Port 1 to Port 8): 1000Mbps (Orange), LNK/ACT (Green) 100/1000Mbps SFP Interfaces (Port 9 to Port 10): 1000Mbps (Orange), LNK/ACT (Green)
Thermal Fan	Fan-less design (No Fan)
Power Requirement	■ IEEE802.3af / at PoE 48V ~ 56V DC in-line power ■ 12V DC power adapter
ESD Protection	6KV DC
Power Consumption / Dissipation	10.9 watts / 37.2 BTU
Dimensions (W x D x H)	191 x 86 x 26 mm
Weight	396 g
Enclosure	Metal
Layer 2 Functions	
Port Mirroring	TX / RX / Both Many-to-1 monitor
VLAN	802.1Q Tagged-based VLAN Up to 256 VLAN groups, out of 4094 VLAN IDs 802.1ad Q-in-Q tunneling Voice VLAN Protocol VLAN Private VLAN (Protected port) GVRP
Link Aggregation	IEEE 802.3ad LACP and static trunk Supports 8 groups of 8-port trunk
Spanning Tree Protocol	STP / RSTP / MSTP
IGMP Snooping	IGMP (v2/v3) Snooping IGMP Querier Up to 256 multicast groups
MLD Snooping	MLD (v1/v2) Snooping, up to 256 multicast groups
Access Control List	IPv4/IPv6 IP-based ACL / MAC-based ACL
QoS	8 mapping ID to 8 level priority queues - Port Number - 802.1p priority - 802.1Q VLAN tag - DSCP field in IP Packet Traffic classification based, Strict priority and WRR
Security	IEEE 802.1X – Port-based authentication Built-in RADIUS client to co-operate with RADIUS server

	RADIUS / TACACS+ user access authentication IP-MAC port binding MAC Filter Static MAC Address DHCP Snooping and DHCP Option82 STP BPDU Guard, BPDU Filtering and BPDU Forwarding DoS Attack Prevention ARP Inspection IP Source Guard
Management Functions	
Basic Management Interfaces	Web browser / Telnet / SNMP v1, v2c Firmware upgrade by HTTP / TFTP protocol through Ethernet network Remote / Local Syslog System log LLDP protocol SNTP
Secure Management Interfaces	SSH, SSL, SNMP v3
SNMP MIBs	RFC 3635 Ethernet-like MIB RFC 2863 Interface Group MIB RFC 2819 RMON (1, 2, 3, 9) RFC 1493 Bridge MIB
Standards Conformance	
Regulation Compliance	FCC Part 15 Class B, CE
Standards Compliance	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 IEEE 802.3af (Power over Ethernet) IEEE 802.3at (High Power over Ethernet) 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
Environment	
Operating	Temperature: 0 ~ 50 degrees C Relative Humidity: 5 ~ 95% (non-condensing)
Storage	Temperature: -20 ~ 70 degrees C Relative Humidity: 5 ~ 95% (non-condensing)

3.3 PHYSICAL SPECIFICATIONS:

- **Dimensions**

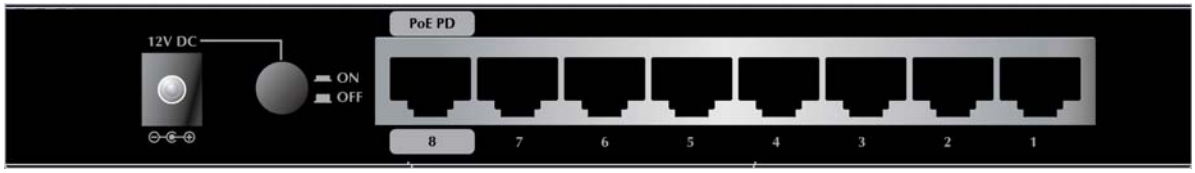
  191 x 86 x 26 mm (W x D x H).

- **Weight:**

  396 g

- **Front Panel**

- **Rear Panel**



- **LED definition**

➢ **System**

LED	Color	Function
PWR	**Green**	Lights to indicate this switch has powered.

➢ **Per 10/100/1000Mbps RJ-45 Port**

LED	Color	Function
LNK/ACT	**Green**	Lights to indicate the port link is established at 10/100/1000Mbps successfully. Blinks to indicate the switch is sending or receiving data over that port actively.
1000	**Orange**	Lights to indicate the port is working at 1000Mbps Lights off to indicate the port is working at 10/100Mbps.

➢ **Per 100/1000Mbps SFP Port**

LED	Color	Function
LNK/ACT	**Green**	Lights to indicate the port link is established at 100/1000Mbps successfully. Blinks to indicate the switch is sending or receiving data over that port actively.
1000	**Orange**	Lights to indicate the port is working at 1000Mbps Lights off to indicate the port is working at 100Mbps.

3.4 Environmental Specifications

Operating

Temperature: 0 ~ 50 degrees C

Relative Humidity: 5% ~ 95% (non-condensing)

Storage

Temperature: -20 ~ 70 degrees C

Relative Humidity: 5% ~ 95% (non-condensing)

3.5 ELECTRICAL SPECIFICATIONS

Input Voltage:	DC 12V / 1A @ External Power Adapter DC 48V~56VDC @ IEEE 802.3af/at PoE input	
Power Consumption (System on):	110V: 3.2 watts	10.9BTU/hr
	220V: 4.0 watts	13.6BTU/hr
	PoE: 3.3 watts	11.3BTU/hr
Power Consumption (Ethernet Full Load Steady):	110V: 10.4 watts	34.5BTU/hr
	220V: 10.9 watts	37.2BTU/hr
	PoE: 10.3 watts	35.1BTU/hr
Power Consumption (Ethernet Full Load Operating):	110V: 10.4 watts	34.5BTU/hr
	220V: 10.9 watts	37.2BTU/hr
	PoE: 10.3 watts	35.1BTU/hr

3.6 REGULATORY COMPLIANCE

FCC Class B, CE.

3.7 RELIABILITY

MTBF > 50,000 hrs @ 25 degrees C

3.8 BASIC PACKAGING

■ The GSD-1002M	x 1
■ User's manual CD	x 1
■ Quick Installation Guide	x 1
■ Power Adapter	x 1
■ Rubber Feet	x 4
■ SFP Dusty Cap	x 2

3.9 Packing Dimensions

Dimensions: TBD

Weight: TBD

20pcs in one carton