



- 16K MAC address table
- Policy-based QoS optimizes multi-service quality
- IGMP snooping v1, v2, v3; MVR
- Multilayer-aware (L2/L3/L4) ACL for security protection
- High redundancy and resilient architecture with RSTP and port trunking
- “Front access” design; external alarm input/output block
- Temperature harden and protection against humidity and dust
- Removable fan module
- Intelligent fan control for power saving
- AC/DC dual power

## **MGS-3712/ MES-3728**

**12-port GbE L2 Switch/  
24-port FE L2 Switch**

## **Intelligent L2 Switches Delivering Resilient Performance, Security and Robust Switching**

The ZyXEL MGS-3712/MES-3728 12/24-port GbE/FE L2 Switch is specially designed for businesses to deliver efficient and reliable Ethernet services. With the high-performance hardware platform, businesses can easily extend network topologies while enabling robust security, QoS and management functions to fulfill differentiated needs in modern applications.

### **Benefits**

#### **Advanced QoS for significant services**

Consistent service quality and reliable connecting ability in a converged network is the key for businesses to sustain the operation or services; therefore the ability to control traffic flow and set traffic policy becomes more critical than ever. The ZyXEL MGS-3712/MES-3728 offers wire-speed flow control that classifies and prioritizes the incoming packets according to the predefined QoS policies that efficiently facilitates all kinds of applications adopted in businesses.

In terms of classification, the Differentiated Services Code Point (DSCP) field and the 802.1p Class of Service (CoS) field are identified to assess the priority of incoming packets. Classification and reclassification can be based on criteria as specific as rules based on IP, MAC addresses, VLAN ID or TCP/UDP port number. For bandwidth management, the MGS-3712/MES-3728 provides 8 priority queues per port for different types of traffics, allowing businesses to set rule-based rate limitations that take full advantage of constrained network resources and guarantee the best performance.

#### **Enhanced security for robust networks**

The MGS-3712/MES-3728 offers a complete set of security features to protect user data while administrating the traffics. The intrusion lock function detects the “plugged” and “unplugged” status change of Ethernet cables, and the switch would deactivate a specific port automatically if needed, and the 802.1X authentication can secure the network from unauthorized users. Port security provides the ability to deny unauthorized users from accessing the network.

Moreover, the 802.1X feature cooperating with RADIUS is useful to prevent unauthorized access based on username and password (or other credentials) and acts as powerful access control for converged networks with mixed wired and wireless access.

The MGS-3712/MES-3728 provides a multilayer (L2/L3/L4) ACL suite of sophisticated rule-based control mechanisms that enables businesses to deploy easily based on actual network environment needs via a Web GUI or command line interface to prevent abnormal or illegal access. The rules can be defined to deny packets based on source and destination MAC addresses, IP addresses or TCP/UDP ports.



## **MGS-3712/MES-3728**

### **12-port GbE L2 Switch/ 24-port FE L2 Switch**

#### **Resilient and redundant design**

A quick recovery and round-the-clock network is vital for modern networks to establish a robust network. The MGS-3712/MES-3728 provides comprehensive features to make sure network is well operated. The IEEE 802.3ad Link Aggregation feature reduces network downtime by providing redundant paths and bandwidth aggregation to critical connections, while IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) and IEEE 802.1s Multiple Spanning Tree Protocol (MSTP) allow immediate recovery from failed connections by sending packets via the backup link. Furthermore, since the MGS-3712/MES-3728 supports backup power system, the power is supplied to the switch in case of an unexpected outage.

#### **Intelligent fan control algorithm for power saving**

Fans play an important role in energy consumption since it's the key to heat dissipation. The MGS-3712/MES-3728 features auto temperature detection and appropriate fan speeds with the Intelligent Fan Control algorithm based on complex mathematics and physics formulas. When the ambient temperature is low, the switch would decrease fan speed to prevent unnecessary power waste from excessive cooling.

Additionally, removable fan modules provide flexibility and high availability, and they solve the noise problem when the modules are approaching the end of their life cycle.

#### **Digital Diagnostics Monitoring Interface (DDMI) supported SFP interface**

The enhanced digital interface allows real-time access to device operating parameters, and includes optional digital features such as soft control and monitoring of SFP I/O signals. In addition, it fully incorporates the functionality needed to implement digital alarms and warnings.

The digital diagnostic monitoring interface enables users to have the capability of performing component monitoring, fault isolation and failure prediction tasks on their transceiver-based applications.

##### **DDMI Monitors:**

- Temperature
- Supply voltage
- Transmitted bias current
- Transmitted power
- Received power

All features listed above include alarm and warning thresholds.

## Specifications

Model	MGS-3712	MES-3728
Product Name	12-port GbE L2 Switch 	24-port FE L2 Switch 
<b>Port Density</b>		
10/100BASE-TX, fixed	-	24
10/100/1000BASE-T, fixed	8	-
Dual Personality Ports (Fixed RJ-45 1000BASE-T or SFP Open Slots)	4	2
Open SFP Slot (GbE)	-	2
<b>Performance</b>		
Switch Fabric Speed (Gbps)	24	12.8
Forwarding Rate	17.8	9.6
Packet Buffer (Bytes)	1M	1M
MAC Address Table	16k	16k
<b>Power Requirement—Input Power</b>		
AC, DC Dual Power Supply	Yes	Yes
AC Power	100 - 240 V AC, 50/60 Hz	100 - 240 V AC, 50/60 Hz
DC Power	-48 to -60 V DC	-48 to -60 V DC
<b>Physical Specifications</b>		
Dimensions (WxDxH)(mm/in.)	438 x 225 x 44.5/17.24 x 8.86 x 1.75	438 x 225 x 44.5/17.24 x 8.86 x 1.75
Weight, Fully Loaded (kg/lb.)	3.4/7.5	3.4/7.5
Mean Time Between Failure (MTBF)(hours)	320,302	307,007
<b>Environmental Specifications</b>		
Operating Temperature	0°C to 65°C/32°F to 149°F	0°C to 65°C/32°F to 149°F
Storage Temperature	-25°C to 70°C/-13°F to 158°F	-25°C to 70°C/-13°F to 158°F
Operating Humidity	-10% to 99% (Non-condensing)	-10% to 99% (Non-condensing)

## Features

### Standard Compliance

- IEEE 802.3 10BASE-T Ethernet
- IEEE 802.3u 100BASE-Tx Ethernet
- IEEE 802.ab 1000BASE-T Ethernet
- IEEE 802.3z 1000BASE-X
- IEEE 802.3x flow control
- 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, priority protocols
- IEEE 802.1Q VLAN tagging
- IEEE 802.1X port authentication
- IEEE 802.3ad LACP aggregation
- IEEE 802.1ad VLAN stacking

### Traffic Management and QoS

- Broadcast storm control
- IEEE 802.1p with 8 hardware priority queues per port for different types of traffic

- IEEE 802.1ad QinQ
- IEEE 802.1Q tag-based and port-based VLAN
- Selective QinQ (MGS-3712)
- Weighted Fair Queuing (WFQ)/WRR/SPQ scheduling algorithm
- Policy based rate limiting
- Policy based bandwidth control
- Port based traffic shaping
- Rule-based traffic mirroring
- IGMP snooping (v1, v2, v3)
- IGMP filtering
- Jumbo frame support (9K Bytes) for high performance data backup or recovery services
- Support GVRP, automatic VLAN member registration
- Supports Dual-Rate-Three-Color marking
- Multicast VLAN Registration (MVR)
- BPDU Transparency

### Link Aggregation

- IEEE 802.3ad LACP link aggregation compliant
- Support static manually port trunking
- Up to 6 aggregation groups, 8 ports/per group randomly selected
- VLAN trunking

### Redundancy for Fault Backup

- Backup Power System (BPS) support, one power connector with ZyXEL BPS-120
- IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) provides rapid convergence of spanning tree independent of spanning-tree timer
- IEEE 802.1s multiple spanning tree provides link availability in multiple VLAN environments by allowing multiple spanning trees
- MRSTP—Multiple RSTP

#### User Security and Authentication

- IEEE 802.1X authentication
- IP source guard (static IP/MAC binding, DHCP snooping, ARP inspection)
- IP subnet VLAN & VLAN isolation
- Limiting MAC number per port
- Loop guard prevents a switch from being affected by another switch which is already in a looping status
- MAC filtering per port secures access to each port
- MAC freeze
- Port security, port isolation, port mirroring, intrusion lock
- RADIUS MAC authentication
- Static MAC forwarding per port: only specified MAC addresses can access the network (port security)
- Wire speed filtering per MAC/IP/TCP/UDP
- Wire speed mirroring per MAC/IP/TCP/UDP
- Wire speed rate limiting per MAC/IP/TCP/UDP

#### Network Administration Security

- SSH v1/v2
- SSL
- RADIUS accounting
- TACACS+ authentication, accounting
- NTP, daylight saving

#### Network Management

- Supports ZyXEL iStacking™, up to 24 switches can be managed by one IP address
- Intuitive Web-based management with all features configurable
- Text-based configuration profile for massive deployment
- Telnet CLI
- SNMP v1, v2c, v3
- SNMP trap group
- RMON four RMON groups 1, 2, 3, 9 (history, statistics, alarms, and events) for enhanced traffic management, monitoring, and analysis
- Out-of-Band management: RS-232c local console & RJ-45 console
- Firmware upgrade, configuration backup/restore via ftp
- Alarm led indicator for early warning of hardware troubles
- Send system trap to trap server
- DHCP relay, DHCP relay per VLAN, DHCP relay option 82, DHCP client
- Port mirroring: supports source/destination/both port mirroring
- IEEE 802.3ah Ethernet OAM (Operations, Administration and Management)
- IEEE 802.1ag CFM

#### Intelligent ACL

##### (L2/L3/L4 Access List Control)

- Based on port
- Based on MAC + VLAN ID
- Based on IP address (source/destination)
- Based on protocol type
- Based on TCP/UDP port number

#### MIB


- RFC1213 MIB II
- RFC1493 Bridge MIB
- RFC1643 Ethernet MIB
- RFC1757 RMON Group 1, 2, 3, 9
- RFC2011 IP MIB
- RFC2012 TCP MIB
- RFC2013 UDP MIB
- RFC2674 VLAN MIB
- RFC2925 PING-MIB and TRACEROUTE-MIB
- ZyXEL Private MIB

#### Safety Agency Certification

- UL 60950-1
- CSA 60950-1
- EN 60950-1
- IEC 60950-1
- EU RoHS compliant

## Accessories

#### Backup Power System (Optional)

Model	Features
<b>BPS-120</b> 	<ul style="list-style-type: none"> <li>• Up to 6 switches can be connected to one BPS-120</li> <li>• Provides power to one switch without traffic interruption, user interruption or switch reboot in case of any internal power supply failure on the switch</li> <li>• Temperature, power and fan speed monitoring</li> <li>• Dimensions (WxDxH): 438 x 270 x 44.5 mm (17.24" x 10.63" x 1.75")</li> </ul>

#### SFP Transceivers (Optional)

Speed	Model	Type	Description
Gigabit	SFP-1000T	RJ-45 connector	Up to 100 m (300 ft) using standard Ethernet cable
	SFP-SX-D	LC connector	SFP SX 550 m (1800 ft) commercial type transceiver, DDMI version
	SFP-LX-10-D	LC connector	SFP LX 10 km (6 mi) commercial type transceiver, DDMI version
	SFP-BX1310-10-D	LC connector	Bidirectional singlemode, up to 10 km (6 mi) reach, DDMI version*
	SFP-BX1490-10-D	LC connector	Bidirectional singlemode, up to 10 km (6 mi) reach, DDMI version*
	SFP-LHX1310-40-D	LC connector	SFP LHX 1310 wavelength 40 km (24 mi) commercial type transceiver, DDMI version
	SFP-ZX-80-D	LC connector	SFP ZX 80 km (50 mi) commercial type transceiver, DDMI version

\*: Bi-directional SFP must be used in pairs (For example, connect 1 x SFP-BX1310-10-D and 1 x SFP-BX1490-10-D as a solution).

For more product information, visit us on the web at [www.ZyXEL.com](http://www.ZyXEL.com)



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