

Carrier Switches Product Highlight

Cabinet Switch Solution

MES-3728

Metro Managed Layer 2
Fast Ethernet Switch



MEF9 & MEF14 Certified
(EPL, EVPL and E-LAN)



The ZyXEL MES-3728 (RoHS compliant; green product) L2 Ethernet switch offers Layer 2 switching. With non-blocking 12.8 Gbps switching fabric.

MGS-3712/MGS-3712F

Metro Managed Layer 2
Gigabit Ethernet Switch



MEF9 & MEF14 Certified
(EPL, EVPL and E-LAN)



The ZyXEL MGS-3712 and MGS-3712F L2 Gigabit Ethernet switches offer Layer 2 switching capability in a smart enclosure. With non-blocking 24 Gbps switching fabric, the MGS-3712 and MGS-3712F feature 8 GbE copper ports (8 port GbE SFP on MGS-3712F) and 4 dual-personality GbE (GbE SFP + 1000BASE-T) ports.

Key Benefits

Optimized Design for Cabinet

The cabinet switch solution (MES-3728, MGS-3712, and MGS-3712F) is the ZyXEL's Metro Ethernet Switch that offers high operating temperature tolerance, flexible AC/DC dual-input power source as well as protection against humidity and dust for service providers to extend their networks. The cabinet switches adopt the "front access" design, technicians can easily wire and maintain outdoor cabinets; the external alarm input/output block connects mechanical cabinet parts to the management networks and offers higher protection to the equipment.

Advanced QoS for Significant Service

A consistency service quality and reliable connecting ability in a converged network is the key for service providers to trust customer and build customer loyalty. Therefore, the ability to control traffic flow and set traffic policy becomes increasing critical. The cabinet switch solution offers wire-speed flow control which can classify, policy, and prioritize the incoming packets according to predefined QoS policies which can meet service provider's requirements. In classification, Differentiated Services Code Point field (DSCP) 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 rule-based on IP, MAC addresses, VLAN ID, TCP/UDP port number. Moreover, for bandwidth management, the cabinet switch solution provide 8 priority queues per port for different types of traffics, allowing service provider to set rule-based rate limiting which takes full advantage of limited network resources and guarantees the best performance.

Enhanced Security Help Create Protection among Customers

Avoiding subscribers affecting each other in a shared network or shared device is a major concern for service providers. The cabinet switch solution offers complete set of security to protect user's data and administrative traffic. The intrusion lock function detects the "plugged" and "unplugged" status change of Ethernet cables, and the switch will deactivate the port automatically if needed. 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, Cooperating with RADIUS, 802.1x is useful to prevent unauthorized access based on username and password (or other credentials) and acts as powerful access control for convergent networks with mixed wired and wireless access.

Furthermore, the cabinet switch solution provides multilayer (L2/L3/L4) ACLs suite of sophisticated rule-based control mechanisms, enabling service provider easily deployed, based on realistic network environments via a Web GUI or command line to prevent abnormal and illegal access. The rules can be defined to deny packets based on source and destination MAC addresses, IP addresses, or TCP/UDP ports.

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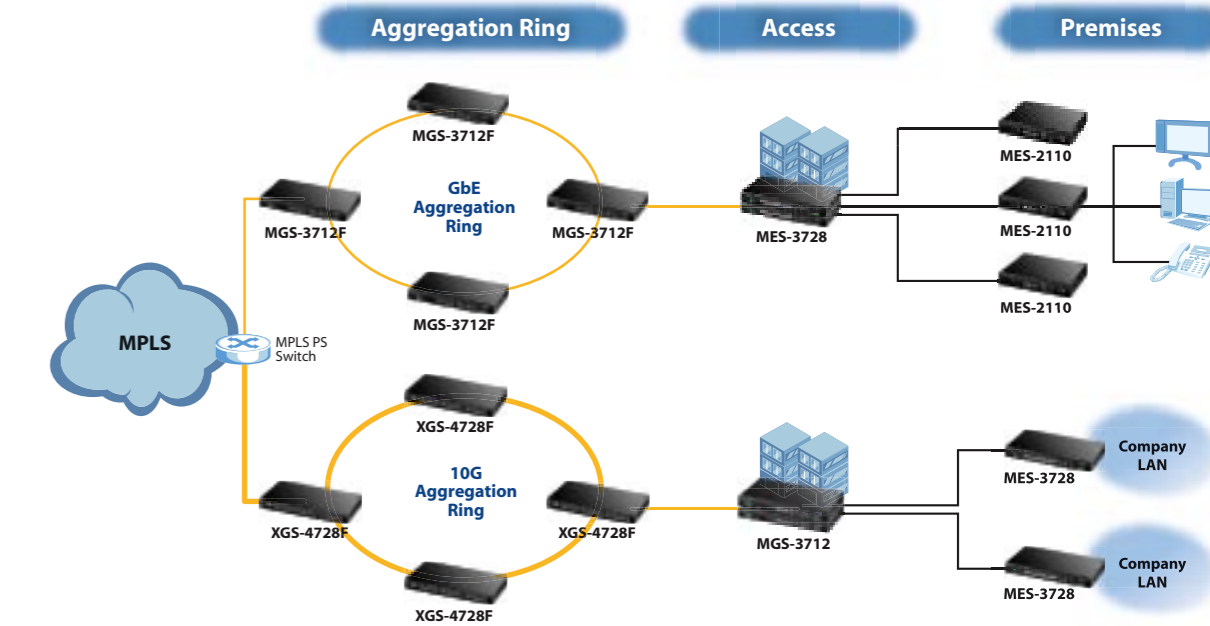
Carrier Switches Quick Sales Guide

Carrier Switches Solution Scenario

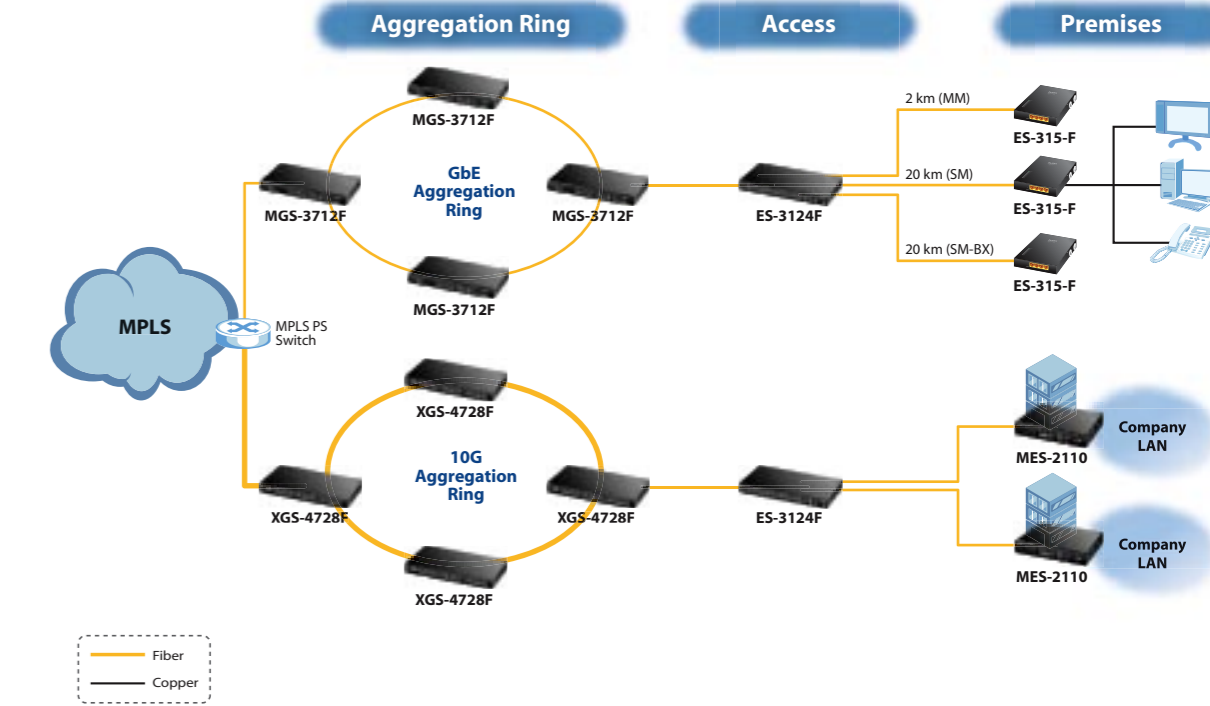
Services Provider Networks

Competitive and customer pressure now compel you to offer unique, in order to satisfy home and commercial subscribers with Triple-Play services incorporating astounding voice, video and data delivery, ZyXEL solutions help customers to offer responsive, rich and personalized online experience for ubiquitous connectivity and therefore more revenue.

Last Mile Copper



Last Mile Fiber



Carrier Switches Quick Finder

Category	Series	Layer	Model Name	Image
Metro Aggregation Switches	Metro Switch 4000 Series	Layer 3 10G	XGS-4728F	
		Layer 3 Gigabit Ethernet	GS-4012F	
	Metro Switch 3000 Series	Layer 2 Gigabit Ethernet	MGS-3712	
			MGS-3712F	
Metro Access Switches	Metro Switch 3000 Series	Layer 2 Fast Ethernet	MES-3728	
			ES-3124F	
	Metro Switch 2000 Series	MES-2110		

Model Name	Ports	Key Features
XGS-4728F	24 Dual Personality GbE ports 2 12G stacking port 1 optional 2-port 10G module	<ul style="list-style-type: none"> Unique 24-port GbE copper and fiber connectivity in a 1U-height design Built-in stacking ports eliminate hidden network expansion cost True wire-speed L3 switching for high-performance networks Layer 3 advanced routing protocols, OSPF, VRRP and DVMRP Multilayer-aware (L2/L3/L4) ACL for security protection and traffic optimization Port security and enhanced 802.1x port authentication IEEE 802.1ag CFM
GS-4012F	8 SFP open slot (GbE) 4 Dual Personality GbE ports	<ul style="list-style-type: none"> High-performance wire-speed switching and IP routing Advanced QoS for significant services High redundancy and resilient architecture with RSTP, VRRP & port trunking Multicast DVMRP & IGMP support Multilayer (L2/L3/L4) enterprise access control list Port security and static MAC filtering & limited MAC number per port
MGS-3712	8-port 1000Base-T 4 Dual Personality GbE ports	<ul style="list-style-type: none"> Policy-based QoS optimizes multi-service quality IGMP snooping v1, v2, v3, MVR Multilayer-aware (L2/L3/L4) access control list for security protection High redundancy and resilient Architecture with RSTP, VRRP & port trunking Front Access design External alarm input/output block (4 inputs, 1 output) Flexible AC/DC dual-input power Removable fan modular Temperature harden Protection against humidity and dust Air filter IEEE 802.1ag CFM MEF9 and MEF14 certified for EPL, EVPL and ELAN
MGS-3712F	8 SFP open slot (GbE) 4 Dual Personality GbE ports	<ul style="list-style-type: none"> Easy FTTx deployments Policy-based QoS optimizes multi-service quality IP TV manipulated by MVR and IGMP snooping v3 VLAN stacking (Q-in-Q) support for L2VPN MEF9 and MEF14 certified for EPL
MES-3728	24-port 10/100Base-TX 2 GbE open SFP slots 2 Dual Personality GbE ports	<ul style="list-style-type: none"> Easy FTTx deployments Policy-based QoS optimizes multi-service quality IP TV manipulated by MVR and IGMP snooping v3 VLAN stacking (Q-in-Q) support for L2VPN MEF9 and MEF14 certified for EPL
ES-3124F	24 SFP open slot (FE) 2 SFP open slot (GbE) 2 Dual Personality GbE ports	<ul style="list-style-type: none"> Easy FTTx deployments Policy-based QoS optimizes multi-service quality IP TV manipulated by MVR and IGMP snooping v3 VLAN stacking (Q-in-Q) support for L2VPN MEF9 and MEF14 certified for EPL
MES-2110	8-port 10/100Base-TX 2 Dual Personality GbE ports	<ul style="list-style-type: none"> Front access and multiple power input option Support ARP inspection Support DHCP snooping Independent IGMP snooping and MVR setting

Carrier Switches Specifications Overview

Model Name	Metro Switch 4000 Series		Metro Switch 3000 Series				Metro Switch 2000 Series
	XGS-4728F	GS-4012F	MGS-3712	MGS-3712F	MES-3728	ES-3124F	MES-2110
Port Density							
10/100Base-TX	-	-	-	-	24	-	8
10/100/1000Base-T	-	-	8	-	-	-	-
Dual Personality Ports (Fixed RJ-45 1000Base-T or SFP Open Slots)	24	4	4	4	2	2	2
Open SFP Slot (GbE)	-	8	-	8	2	2	-
Open SFP Slot (FE)	-	-	-	-	-	24	-
10G Extend Slot	1	-	-	-	-	-	-
12G Stacking Port	2	-	-	-	-	-	-
Performance							
Switch Fabric Speed, Gbps (Non-Blocking)	144	24	24	24	12.8	12.8	5.6
Forwarding Rate (Throughput, Mpps)	100	17.8	17.8	17.8	9.6	9.6	4.2
Packet Buffer, Bytes	2 MB on-chip	2 MB on-chip	1 MB on-chip	1 MB on-chip	1 MB on-chip	32 MB (External)	128 K on-chip
MAC Address Table	16K	16K	16K	16K	16K	16K	8K
Power Requirement-Input Power							
AC, DC Dual Power Supply	-	-	Yes	Yes	Yes	-	-
AC Power	100 to 240 V, 50/60 Hz	100 to 240 V, 50/60 Hz	100 to 240 V, 50/60 Hz	100 to 240 V, 50/60 Hz	100 to 240 V, 50/60 Hz	100 to 240 V, 50/60 Hz	100 to 240 V, 50/60 Hz
DC Power	-48 to -60 V DC	-48 to -60 V DC	-48 to -60 V DC	-48 to -60 V DC	-48 to -60 V DC	-48 to -60 V DC	-
Environmental Specifications							
Operating Temperature	0°C ~ 45°C	0°C ~ 45°C	0°C ~ 65°C	0°C ~ 65°C	0°C ~ 65°C	0°C ~ 45°C	0°C ~ 45°C
Storage Temperature	-25°C ~ 70°C	-25°C ~ 70°C	-25°C ~ 70°C	-25°C ~ 70°C	-25°C ~ 70°C	-25°C ~ 70°C	-25°C ~ 70°C
Operating Humidity	10% ~ 90%, (non-condensing)	10% ~ 90%, (non-condensing)	-10% ~ 99%, (non-condensing)	-10% ~ 99%, (non-condensing)	-10% ~ 99%, (non-condensing)	10% ~ 90%, (non-condensing)	10% ~ 90%, (non-condensing)
Physical Specifications							
Dimensions W x D x H (mm)	438 x 310 x 44.45	438 x 225 x 44.45	438 x 225 x 44.45	438 x 225 x 44.45	438 x 225 x 44.45	438 x 270 x 44.5	268 x 128 x 44
Weight (Kg)	7	3.4	4.4	4.4	4.4	3.6	1.2

Transceivers

Speed	Model	Type	Distance
10 Gigabit SFP Transceivers	FTLX8511D3 (XFP-SR)	SC connector	Singlemode, up to 300 m reach
	FTLX1611M3 (XFS-ER)	SC connector	Singlemode, up to 40 km reach
	FTLX1412D3BCL (XFP-LR)	SC connector	Singlemode, up to 10 km reach
Gigabit SFP Transceivers	SFP-1000T	RJ-45 connector	Up to 100 m using standard Ethernet cable
	SFP-SX-D	LC connector	SFP SX 550 m commercial type transceiver, DDMI version
	SFP-LX-10-D	LC connector	SFP LX 10 km commercial type transceiver, DDMI version
	SFP-BX1310-10-D	LC connector	Bidirectional singlemode, up to 10 km reach, DDMI version
	SFP-BX1490-10-D	LC connector	Bidirectional singlemode, up to 10 km reach, DDMI version
	SFP-LHX1310-40-D	LC connector	SFP LHX 1310 wavelength 40 km commercial type transceiver, DDMI version
	SFP-ZX-80-D	LC connector	SFP ZX 80 km commercial type transceiver, DDMI version
Fast Ethernet SFP Transceivers	SFP-100FX-2	LC connector	Multimode, up to 550 m reach
	SFP-100TX	RJ-45 connector	Up to 100 m reach using standard Ethernet cable
	SFP-100LX-20	LC connector	Multimode, up to 550 m reach
	SFP-100BX1310-20-D	LC connector	Bidirectional singlemode, up to 20 km reach, DDMI version
	SFP-100BX1550-20-D	LC connector	Bidirectional singlemode, up to 20 km reach, DDMI version

IMPORTANT: Bi-directional SFP must be used in pairs (Example: 1x SFP-BX1310-10-D and 1x SFP-BX1490-10-D connected together is a solution)

Accessories

10Gb Fiber Module		
EM-412		<ul style="list-style-type: none"> 2-slot CX4 10Gb Extended 10GbE CX4 module for short distance deployment
EM-412		<ul style="list-style-type: none"> 2-slot XFP 10Gb Fiber module Extended 10GbE XFP module for long distance deployment (Requires purchase of 10Gb XFP transceivers)
Backup Power System		
BPS-120		<ul style="list-style-type: none"> Up to 6 switches can be connected to one BPS-120 Provides power to one switch without traffic or user interruption or switch rebooting in the event of a switch internal power supply failure Temperature, power and fan speed monitoring Max. power consumption: 180 watt/613 BTU/hr Dimensions: 440 (W) x 270 (D) x 44.45 (H) mm