

# Ethernet Access switches MES23xx

## Description

New generation of **MES access switches** provides end users connection to a large-scale corporate network, small and medium business networks and to a service provider networks using 1G/10G interfaces.

The switches support physical stacking, VLANs, multicast groups and advanced security functions.

- L2+ switch
- Stacking support
- Multicast support (IGMP Snooping, MVR)
- Advanced security functions (L2-L4 ACL, IP Source Guard, Dynamic ARP Inspection, etc.)



MES2324



MES2324FB-AC

## Technical features

	MES2324	MES2324B-AC	MES2324F-DC	MES2324FB-AC	MES2348B-AC
<b>Common parameters</b>					
Packet processor	Marvell 98DX3236-A1 (AlleyCat3)				
<b>Interfaces</b>					
10/100/1000BASE-T (RJ-45)	24	24	-	-	48
1000BASE-X (SFP)	-	-	20	20	-
10/100/1000BASE-T/ 1000BASE-X Combo	-	-	4	4	-
10GBASE-R (SFP+) 1000BASE-X (SFP)	4	4	4	4	4
Console port	RS-232/RJ-45				
<b>Performance</b>					
Bandwidth	128 Gbps				176 Gbps
Throughput for 64 bytes	92.1 MPPS				130.9 MPPS
Buffer memory	12 Mbit				24 Mbit
RAM (DDR3)	512 MB				
ROM (RAW NAND)	512 MB				
MAC table	16K				
VLAN table	4K				
The number of L2 Multicast groups	2K				
The number of ARP entries	1K				
Link Aggregation Groups (LAG)	16, up to 8 ports in a LAG				
Quality of Service (QoS)	8 egress queues per port				
TCAM	For routing: 1024xIPv4 For traffic processing: 1024x24 B				
Maximum Jumbo frames size	10240 bytes				
Stacking	8 devices				

## Features and capabilities

### Interfaces functions

- Head-of-line blocking (HOL) prevention
- Back Pressure
- Auto MDI/MDIX
- Jumbo Frames support
- IEEE 802.3X Flow control
- Port Mirroring
- Stacking

### MAC table functions

- Independent learning mode per VLAN
- MAC Multicast Support
- Configurable aging time of MAC addresses per VLAN
- Static MAC Entries

### VLAN functions

- Voice VLAN
- 802.1Q
- Q-in-Q
- Selective Q-in-Q
- GVRP

### L2 Multicast functions

- Multicast profiles
- Static Multicast groups
- IGMP Snooping v1,2,3
- Port/host-based IGMP Snooping Fast Leave
- IGMP authorization via RADIUS
- MLD Snooping v1,2
- IGMP Querier
- MVR

### L2 functions

- STP (Spanning Tree Protocol, IEEE 802.1d)
- RSTP (Rapid Spanning Tree Protocol, IEEE 802.1w)
- MSTP (Multiple Spanning Tree Protocol, IEEE802.1s)
- STP Multiprocess
- Spanning Tree Fast Link option
- EAPS<sup>1</sup>
- STP Root Guard
- BPDU Filtering
- STP BPDU Guard
- Loopback Detection (LBD)
- ERPS (G.8032v2)
- Private VLAN
- Layer 2 Protocol Tunneling

### Link Aggregation functions

- Static LAG
- Dynamic LAG (LACP)
- LAG Balancing Algorithm

### IPv6 functions

- IPv6 Host
- Dual-stack

### Service functions

- Virtual Cable Testing (VCT)
- Optical transceiver diagnostics
- Green Ethernet

### Security functions

- DHCP Snooping
- DHCP Option 82
- IP Source Guard
- Dynamic ARP Inspection
- sFlow
- MAC-based authentication, Port Security, Static MAC entries
- Port-based authentication IEEE 802.1x
- Guest VLAN<sup>1</sup>
- DoS attack prevention
- Traffic segmentation
- Protection against non-authorized DHCP servers
- DHCP clients filtering
- BPDU attacks prevention
- NetBIOS/NetBEUI filtering
- PPPoE Intermediate Agent

### ACL (Access Control Lists)

- L2-L3-L4 ACL
- Time-Based ACL
- IPv6 ACL
- ACL based on:
  - Physical port number
  - IEEE 802.1p
  - VLAN ID
  - EtherType
  - DSCP
  - Protocol type
  - TCP/UDP port number
  - User Defined Bytes

### Quality of Service (QoS) and rate limiting

- QoS statistics
- Shaping, Policing
- IEEE 802.1p Class of Service (CoS)
- Storm Control
- Bandwidth management
- Scheduling algorithms: Strict Priority/Weighted Round Robin (WRR)
- Three marking colors
- ACL-based CoS/DSCP assignment

### OAM/CFM

- 802.3ah Ethernet Link OAM
- Dying Gasp
- 802.1ag Connectivity Fault Management (CFM)<sup>1</sup>
- 802.3ah Unidirectional Link Detection

### HW configuration

- CPU 800 MHz
- RAM 512 MB (DDR3)
- NAND Flash 512 MB

### L3 functions

- RIP
- OSPF
- PIM-SM

<sup>1</sup> Not supported in the current firmware version 4.0.10.1

### Main management functions

- Download and upload of configuration file via TFTP
- SNMP
- Command Line Interface (CLI)
- Web interface
- Syslog
- SNTP (Simple Network Time Protocol)
- Traceroute
- LLDP (802.1ab) + LLDP MED
- Access control – privilege levels
- Management interface blocking
- Local authentication
- IP addresses filtering for SNMP
- RADIUS and TACACS+ (Terminal Access Controller Access Control System) clients
- SSH server
- SSL
- Macrocommands
- CLI commands logging
- DHCP autoprovision
- DHCP Relay (support for IPv4)
- DHCP Option 12
- DHCP Relay Option 82
- PPPoE Circuit-ID tag
- Flash File System
- Debugging commands
- Rate limit of traffic transmitted to CPU
- Password encryption
- Password recovery
- Ping (IPv4/IPv6 support)
- FTP server<sup>1</sup>
- DNS server

### Monitoring functions

- Interface statistics
- RMON/SMON
- CPU utilization monitoring per tasks and per traffic type
- RAM utilization monitoring
- Temperature monitoring
- TCAM utilization monitoring

### MIB

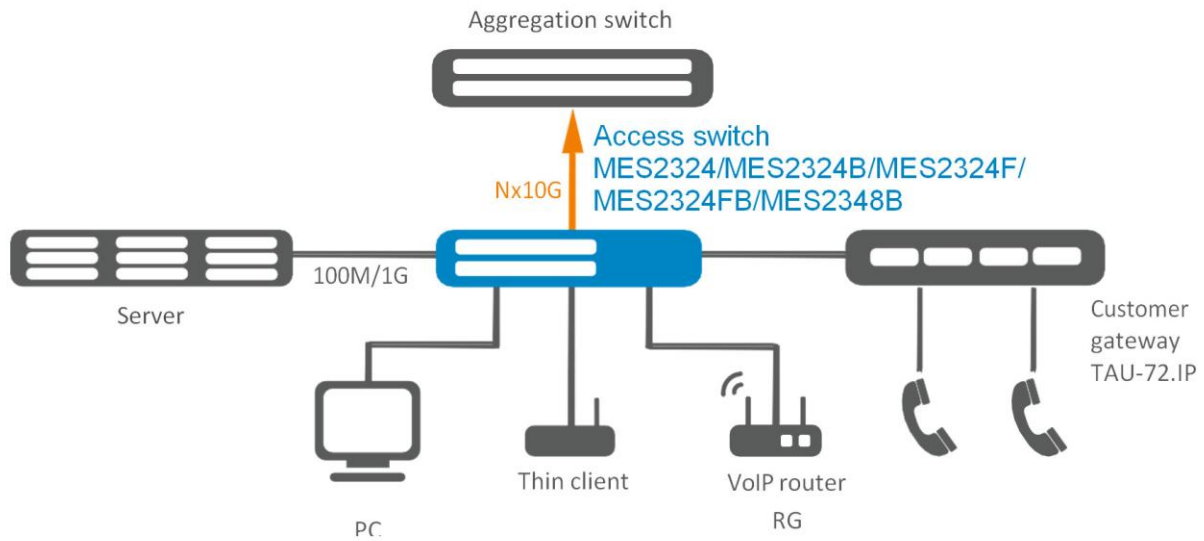
- RFC 1065, 1066, 1155, 1156, 2578 MIB Structure
- RFC 1212 Concise MIB Definitions
- RFC 1213 MIB II
- RFC 1215 MIB Traps Convention
- RFC 1493, 4188 Bridge MIB
- RFC 1157, 2571-2576 SNMP MIB
- RFC 1901-1908, 3418, 3636, 1442, 2578 SNMPv2 MIB
- RFC 271,1757, 2819 RMON MIB
- RFC 2465 IPv6 MIB
- RFC 2466 ICMPv6 MIB
- RFC 2737 Entity MIB
- RFC 4293 IPv6 SNMP Mgmt Interface MIB
- Private MIB
- RFC 3289 DIFFSERV MIB
- RFC 2021 RMONv2 MIB
- RFC 1398, 1643, 1650, 2358, 2665, 3635 Ether-like MIB
- RFC 2668 802.3 MAU MIB
- RFC 2674, 4363 802.1p MIB
- RFC 2233, 2863 IF MIB
- RFC 2618 RADIUS Authentication Client MIB
- RFC 4022 MIB for TCP
- RFC 4113 MIB for UDP
- RFC 3298 MIB for Diffserv
- RFC 2620 RADIUS Accounting Client MIB
- RFC 2925 Ping & Traceroute MIB
- RFC 768 UDP
- RFC 791 IP
- RFC 792 ICMPv4
- RFC 2463, 4443 ICMPv6
- RFC 4884 Extended ICMP for Multi-Part messages support
- RFC 793 TCP
- RFC 2474, 3260 DS field in the IPv4 and IPv6 header
- RFC 1321, 2284, 2865, 3580, 3748 Extensible Authentication Protocol (EAP)
- RFC 2571, RFC2572, RFC2573, RFC2574 SNMP
- RFC 826 ARP

<sup>1</sup> Not supported in the current firmware version 4.0.10.1







## Physical parameters

	MES2324	MES2324B-AC	MES2324F-DC	MES2324FB-AC	MES2348B
<b>Physical parameters and parameters of environment</b>					
<b>Maximum power consumption</b>	25 W	50 W	35 W	85 W	85 W
<b>Power supply</b>	220 VAC, 50 Hz; 48V DC	220 VAC, 50 Hz	48 VDC	220 VAC, 50 Hz; 12 VDC	220 VAC, 50 Hz
<b>Operating temperature</b>	from -20 to +50°C				
<b>Storage temperature</b>	from -40 to +70°C				
<b>Operating humidity</b>	80%				
<b>Cooling</b>	Passive cooling		Active cooling (4 fans)		
<b>Form factor</b>	19", 1U				
<b>Dimensions</b>	430 x 158 x 44	430 x 158 x 44	430 x 243 x 44	430 x 243 x 44	440 x 280 x 44
<b>Weight</b>	2.25 kg	2.25 kg	3.25 kg	3.55 kg	3.85 kg

## Application diagram



## Ordering Code

Name	Description	Image
<b>MES2324-AC</b>	Ethernet switch MES2324, 24 x 10/100/1000BASE-T ports, 4 x 10GBASE-R (SFP+)/1000BASE-X (SFP) ports, L2+, 220 VAC	
<b>MES2324-DC</b>	MES2324 Ethernet switch, 24 ports of 10/100/1000BASE-T, 4 ports of 10GBASE-R(SFP+)/1000BASE-X (SFP), L2+, 48V DC	
<b>MES2324B-AC</b>	Ethernet switch MES2324B, 24 x 10/100/1000BASE-T ports, 4 x 10GBASE-R (SFP+)/1000BASE-X (SFP) ports, L2+, 220 VAC, 12 VDC	
<b>MES2324F-DC</b>	Ethernet switch MES2324F, 20 x 1000BASE-X (SFP) ports, 4 x 10/100/1000BASE-T/ 1000BASE-X Combo ports, 4 x 10GBASE-R (SFP+)/1000BASE-X (SFP) ports, L2+, 48 VDC	
<b>MES2324FB-AC</b>	Ethernet switch MES2324FB, 20 x 1000BASE-X (SFP) ports, 4 x 10/100/1000BASE-T/ 1000BASE-X Combo ports, 4 x 10GBASE-R (SFP+)/1000BASE-X (SFP) ports, L2+, 220 VAC, 12 VDC	
<b>MES2348B-AC</b>	Ethernet switch MES2348, 48 x 10/100/1000BASE-T ports, 4 x 10GBASE-R (SFP+)/1000BASE-X (SFP) ports, L2+, 220 VAC, 12 VDC	
<b>EMS-MES-access</b>	EMS-MES-access option for EMS system for management and monitoring of network elements: 1 network element - an access switch	



MES2348B-AC



MES2324B-AC