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Integrated networking solutions

- **Non-blocking architecture**
- **Advanced L2 features**
- **L3 switches**
- **Multicast (IGMP Snooping, MVR)**
- **Advanced security features (L2-L4 ACL, IP Source Guard, Dynamic ARP Inspection, etc.)**
- **Uninterruptible power supply from rechargeable battery[1]**

MES2424

MES2448B

The Ethernet access switches provide end users connection to networks of large enterprises, small and mid-sized businesses and service providers via 1G/10G interfaces.

The switches support Virtual Local Area networks (VLAN), multicast groups and advanced security functions.

Uninterruptible power[1]

MES2424B, MES2424FB, MES2448B switches can be equipped with a rechargeable battery to ensure power supply in case of the 220 V primary network connection loss. The switches are also equipped with a power supply unit which allows the battery to be charged when 220 V power source is available. Power supply redundancy system makes it possible to monitor the state of the primary network and notify of a power type switching.

Technical features

	MES2424 AC [CE]	MES2424 DC [CE]	MES2424B	MES2424FB	MES2448 DC [CE]	MES2448B
Interfaces						
10/100/1000BASE-T (RJ-45)	24	24	24	—	48	48
100BASE-FX/ 1000BASE-X (SFP)	—	—	—	24	—	—
1000BASE-X (SFP)/ 10GBASE-R (SFP+)	4	4	4	4	4	4
Console port RS-232 (RJ-45)			1			
Performance						
Bandwidth	128 Gbps	128 Gbps	128 Gbps	128 Gbps	176 Gbps	176 Gbps
Throughput for 64-byte packets[2]	95.2 MPPS	95.2 MPPS	95.2 MPPS	95.2 MPPS	130.95 MPPS	130.95 MPPS
Buffer memory	1.5 MB	1.5 MB	1.5 MB	1.5 MB	2 MB	2 MB
RAM (DDR3)			512 MB			
ROM (SPI Flash)			64 MB			
MAC table	16384	16384	16384	16384	32768	32768
ARP table			1000			
VLAN table			4094			
L2 Multicast groups (IGMP Snooping)	1023	1023	1023	1023	4094	4094

[1] Only for MES2424B, MES2424FB, MES2448B.
[2] Values are given for one-way transmission.
CE — device complies with CE requirements.

Technical features (continued)

	MES2424 AC [CE]	MES2424 DC [CE]	MES2424B	MES2424FB	MES2448 DC [CE]	MES2448B
L3 Multicast groups (IGMP proxy)	512	512	512	512	2048	2048
SQinQ rules	1024 (ingress[1]), 512 (egress)				2048 (ingress[1]), 1024 (egress)	
MAC ACL rules	509	509	509	509	766	766
IPv4/IPv6 ACL rules	384/192	384/192	384/192	384/192	640/320	640/320
L3 IPv4 Unicast routes	496	496	496	496	2048	2048
L3 IPv6 Unicast routes	124	124	124	124	512	512
VRRP routers	32					
L3 interfaces	20 VLANs, up to 5 IPv4 addresses per VLAN, up to 124 IPv6 GUA for all VLANs in summary				20 VLANs, up to 5 IPv4 addresses per VLAN, up to 512 IPv6 GUA for all VLANs in summary	
Link Aggregation Groups (LAG)	24 groups, up to 8 ports per LAG					
Quality of Service (QoS)	8 egress queues per port					
Jumbo frames	maximum packet size is 12288 bytes					

Technical features of redundancy power supply[*]

	Battery capacity, Ah	Battery life, h	Battery charge time, h
MES2424B	12	≈6	≈9
	17	≈10	≈13
	20	≈13	≈15
MES2424FB	12	≈5	≈13
	17	≈7	≈18
	20	≈10	≈22
MES2448B	12	≈2.5	≈13
	17	≈5	≈18
	20	≈6.5	≈22

MES2424B/ MES2424FB/ MES2448B

PC   220V   12V
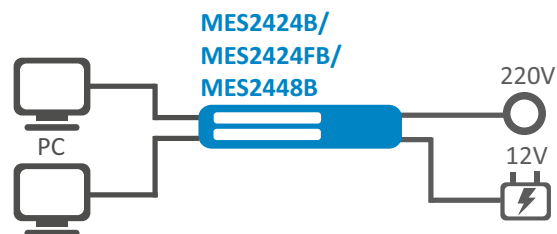
* Note:
— *Parameters are given for environment temperature +25 °C;*
— *For MES2424B the use of a rechargeable battery with a capacity of at least 12 Ah is recommended;*
— *For MES2424FB, MES2448B the use of a rechargeable battery with a capacity of at least 9 Ah is recommended.*

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[1]Mac-based VLAN and sQinQ share hardware resources.

Features and capabilities

Interface features
— Head-of-line blocking (HOL) protection
— Auto MDI/MDIX
— Jumbo frames
— Flow Control (IEEE 802.3X)
— Port mirroring (SPAN, RSPAN)

MAC table
— Independent learning mode per VLAN
— MAC Multicast Support
— Configurable aging time of MAC addresses
— Static MAC Entries
— MAC change events monitoring per ports
— MAC Flapping logging

VLAN features
— Voice VLAN
— IEEE 802.1Q
— Q-in-Q
— Selective Q-in-Q
— GVRP
— MAC-based VLAN
— Protocol-based VLAN

L2 Multicast features
— Multicast profiles
— Static Multicast groups
— IGMP Snooping v1,2,3
— IGMP Snooping fast-leave
— IGMP Proxy-report
— IGMP authorization via RADIUS
— MLD Snooping v1,2[1]
— MLD Snooping fast-leave[1]
— IGMP Querier
— MVR

L2 features
— STP (Spanning Tree Protocol, IEEE 802.1d)
— RSTP (Rapid Spanning Tree Protocol, IEEE 802.1w)
— MSTP (Multiple Spanning Tree Protocol, IEEE 802.1s)
— Rapid-PVST+
— STP Root Guard
— STP Loop Guard
— STP BPDU Guard
— BPDU Filtering
— Spanning Tree Fast Link option
— Loopback Detection (LBD)
— Port isolation
— Storm Control for different traffic types (broadcast, multicast, unknown unicast)
— Layer 2 Protocol Tunneling (L2PT)
— ERPS (G.8032v2)

L3 Multicast features
— IGMP proxy (RFC 4605)
— IGMP proxy fast-leave

L3 features
— Static IPv4, IPv6 routes
— Dynamic routing protocols RIPv1/2, OSPFv2/3
— VRRP

Link Aggregation functions
— Link Aggregation Groups (LAG)
— LACP
— LAG Balancing Algorithm

Service functions
— Virtual Cable Testing (VCT)
— Optical transceiver diagnostics

IPv6 functions
— IPv6 Host
— Dual-stack IPv4, IPv6

Security functions
— DHCP Snooping
— DHCP Option 82
— MAC-based authentication, Port Security, static MAC entries
— Port-based authentication IEEE 802.1x
— Guest VLAN
— DoS attacks prevention
— Traffic segmentation
— DHCP clients filtering
— BPDU attacks prevention
— PPPoE Intermediate agent
— IP Source Guard
— Dynamic ARP Inspection
— DHCPv6 Snooping
— IPv6 Source Guard
— IPv6 ND Inspection
— IPv6 RA Guard

ACL (Access Control List)
— L2-L3-L4 ACL (Access Control List)
— IPv6 ACL
— ACL based on:
    — Switch port
    — IEEE 802.1p priority
    — VLAN ID
    — EtherType
    — DSCP
    — IP protocol
    — TCP/UDP port number
    — User Defined Bytes

Quality of service (QoS) and rate limiting
— Port rate limiting (shaping)
— Rate limiting (policing) according to sr-TCM and tr-TCM
— IEEE 802.1p Class of Service (CoS)
— Strict Priority/Weighted Round Robin (WRR) scheduling algorithms
— Setting the IEEE 802.1p priority for management VLAN
— ACL-based traffic classification
— ACL-based CoS/DSCP marking
— DSCP to CoS remarking
— CoS to DSCP remarking
— ACL-based VLAN assignment

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[1] Not supported for MES2448B in the current firmware version.

Integrated networking solutions

Features and capabilities (continued)

OAM
— IEEE 802.3ah, Ethernet OAM
— IEEE 802.3ah Unidirectional Link Detection (UDLD)

Main management functions
— Configuration file download and upload via TFTP/SFTP
— Automated backup of configuration file via TFTP/SFTP
— Simple Network Management Protocol (SNMP)
— Command Line Interface (CLI)
— Web interface
— Syslog
— SNTP (Simple Network Time Protocol)
— Traceroute
— LLDP (IEEE 802.1ab) + LLDP MED
— Two IEEE 802.1Q headers traffic control
— Commands Authorization using TACACS+ server
— IPv4/IPv6 ACL support for device control
— Switch access management — privilege levels for users
— Management interface blocking
— Local authentication
— IP addresses filtering for SNMP
— RADIUS and TACACS+ (Terminal Access Controller Access
   Control System) clients
— Telnet client, SSH client
— Telnet server, SSH server
— Macro commands
— Input commands logging via TACACS+ protocol
— DHCP autoprovision
— DHCP Relay (IPv4 support)
— DHCP Relay Option 82
— DHCP server
— PPPoE Circuit-ID tag adding
— Flash File System
— Debug commands
— Rate limit of traffic to CPU
— Password encryption
— Ping (IPv4/IPv6 support)
— IPv4/IPv6 static routing
— Support for several versions of configuration file

Monitoring functions
— Interface statistics
— CPU utilization monitoring per task and per queue
— RAM usage monitoring
— Temperature monitoring
— TCAM monitoring

Uninterruptible power supply[1]
— Automatic switching to 12 V rechargeable battery when the
   primary power supply (220V) fails, and vice versa
— 12 V battery charging when operating from 220 V primary
   power supply
— Power supply type monitoring (SNMP)
— Notification of switching from one type of power to another
— Battery connection indication
— Low battery alarm
— Short circuit protection

MIB/IETF standards
— 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 2465 IPv6 MIB
— RFC 2737 Entity MIB
— RFC 4293 IPv6 SNMP Mgmt Interface MIB
— Private 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 3289 MIB for Diffserv
— RFC 2620 RADIUS Accounting Client MIB
— RFC 768 UDP
— RFC 791 IP
— RFC 792 ICMPv4
— RFC 2463, 4443 ICMPv6
— RFC 793 TCP
— RFC 2474, 3260 Definition of the DS field in the IPv4 and IPv6
   headers
— RFC 1321, 2284, 2865, 3580, 3748 Extensible Authentication
   Protocol (EAP)
— RFC 2571, RFC 2572, RFC 2573, RFC 2574 SNMP
— RFC 826 ARP
— RFC 854 Telnet
— IEC 61850

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[1]Only for MES2424B, MES2424FB, MES2448B.

Physical parameters

	MES2424 AC	MES2424 DC	MES2424B	MES2424FB	MES2448 DC	MES2448B
Physical specifications and environmental parameters						
Power supply	100–240 V AC, 50–60 Hz	18–72 V DC	100–240 V AC, 50–60 Hz; 12 V DC	100–240 V AC, 50–60 Hz; 12 V DC	36–72 V DC	110–240 V AC, 50–60 Hz; 12 V DC
Input current	0.3–0.2 A	1.5–0.4 A	0.5–0.3 A for AC 4.1 A for DC	1.0–0.3 A for AC 5.0 A for DC	1.4–0.7 A	0.6–0.3 A for AC 5.5 A for DC
Maximum power consumption	25 W	26 W	49 W	75 W	48 W	66 W
Maximum power consumption without battery charge	—	—	25 W	47 W	—	48 W
Heat dissipation	25 W	26 W	27 W	62 W	48 W	53 W
Hardware support for Dying Gasp	yes	no	no	no	no	yes
Operating temperature range[1]	from -20 °C to +50 °C					
Storage temperature range	from -40 °C to +70 °C					
Cooling	passive			active, Front-to-Back, 4 fans	active, 2 fans	
Operating humidity	no more than 80 %					
Form factor	19", 1U					
Dimensions (W × H × D), mm	430 × 44 × 203	430 × 44 × 203	430 × 44 × 203	430 × 44 × 243	440 × 44 × 280	440 × 44 × 280
Weight, kg	2.44	2.42	2.54	2.69	3.98	3.98

Use case
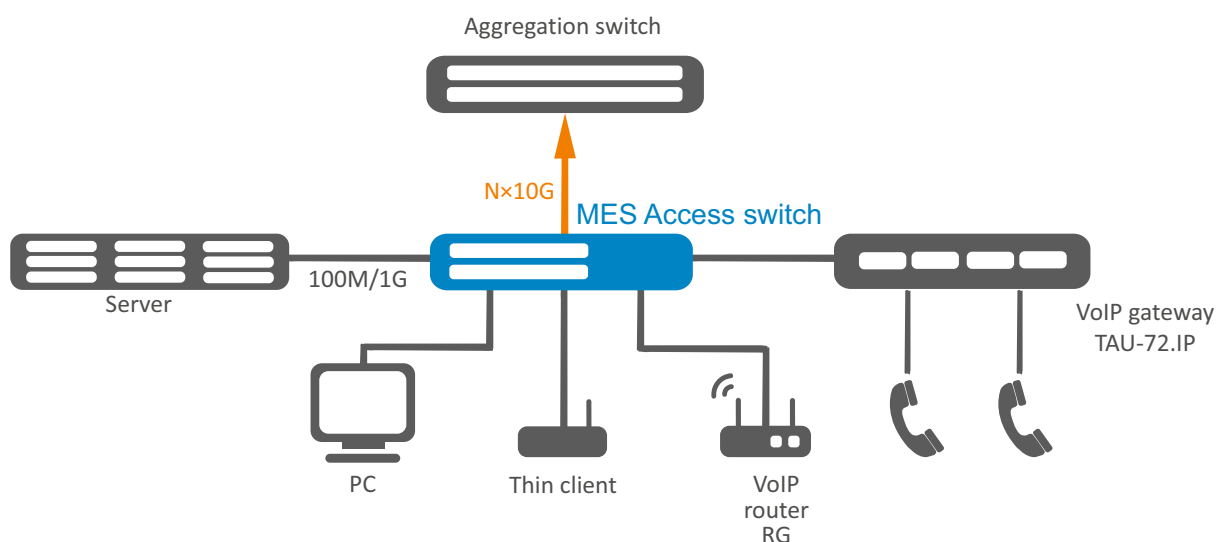
[1] For MES2424 AC, MES2424 DC and MES2424B: when using commercial SFP+ transceivers, ambient temperature must not exceed +45 °C.

Ordering information

Name	Description
MES2424 AC	MES2424 AC Ethernet switch, 24 ports of 10/100/1000BASE-T, 4 ports of 1000BASE-X/10GBASE-R, L3, 110–250 V AC
MES2424 DC	MES2424 DC Ethernet switch, 24 ports of 10/100/1000BASE-T, 4 ports of 1000BASE-X/10GBASE-R, L3, 18–72 V DC
MES2424B	MES2424B Ethernet switch, 24 ports of 10/100/1000BASE-T, 4 ports of 1000BASE-X/10GBASE-R, L3, 110–250 V AC, 12 V DC
MES2424FB	MES2424FB Ethernet switch, 24 ports of 100BASE-FX/1000BASE-X, 4 ports of 1000BASE-X/10GBASE-R, L3, 110–250 V AC, 12 V DC
MES2448 DC	MES2448 DC Ethernet switch, 48 ports of 10/100/1000BASE-T, 4 ports of 1000BASE-X/10GBASE-R, L3, 36–72 V DC
MES2448B	MES2448B Ethernet switch, 48 ports of 10/100/1000BASE-T, 4 ports of 1000BASE-X/10GBASE-R, L3, 110–250 V AC, 12 V DC
Related software	
ECCM-MES2424_AC	ECCM-MES2424_AC option of Eltex ECCM management system to control and monitor ELTEX network elements: 1 network element MES2424 AC
ECCM-MES2424_DC	ECCM-MES2424_DC option of Eltex ECCM management system to control and monitor ELTEX network elements: 1 network element MES2424 DC
ECCM-MES2424B	ECCM-MES2424B option of Eltex ECCM management system to control and monitor ELTEX network elements: 1 network element MES2424B
ECCM-MES2424FB	ECCM-MES2424FB option of Eltex ECCM management system to control and monitor ELTEX network elements: 1 network element MES2424FB
ECCM-MES2448_DC	ECCM-MES2448_DC option of Eltex ECCM management system to control and monitor ELTEX network elements: 1 network element MES2448 DC
ECCM-MES2448B	ECCM-MES2448B option of Eltex ECCM management system to control and monitor ELTEX network elements: 1 network element MES2448B