

- High performance (up to 2.16 Tbps)
- Non-blocking architecture
- L3 switches
- Stacking up to 8 devices
- Power supply redundancy
- Front-to-Back cooling

MES5310-48, MES5400-24 and MES5400-48 switches are high performance devices with 40GBASE-R and 100GBASE-R interfaces that can be used as aggregation switches in carrier networks and as Top-of-Rack or End-of-Row switches for data centers.

The switch ports support speed of 1 Gbps (SFP), 10 Gbps (SFP+), 40 Gbps (QSFP+), and 100 Gbps (QSFP28)¹. HG interface split mode supports speed of 1 Gbps, 10 Gbps, and 25 Gbps. Split mode allows to split up to 6 HG interfaces for a total of 24 TWE interfaces².

The non-blocking architecture guarantees lossless packet forwarding at wire speed with minimum and predictable delays for all types of traffic.

Fault tolerance of the devices is ensured by redundant power supplies (1+1) and the use of replaceable fans.



MES5400-48



MES5310-48

The redundant and hot-swappable fans and AC/DC power supplies along with advanced hardware monitoring functions provide high reliability and uninterrupted services.

The devices support EVPN/VXLAN technology to create networks with simple, high-performance and scalable data center architecture.

Technical features

	MES5400-24	MES5310-48	MES5400-48
Interfaces			
10/100/1000BASE-T (OOB)		1	
1000BASE-X (SFP)/10GBASE-R (SFP+)	24	48	48
40GBASE-R4 (QSFP+)/100GBASE-R4 (QSFP28)		6	
USB 2.0		1	
Console port RS-232 (RJ-45)		1	
Performance			
Bandwidth	1.68 Tbps	2.16 Tbps	2.16 Tbps
Throughput for 64 bytes ³	878.3 MPPS	1028.5 MPPS	1041.5 MPPS
Buffer memory		12 MB	
RAM (DDR4)		8 GB	
ROM (embedded uSSD)		8 GB	
MAC table	65536	65536	262144
ARP table ⁴	32701	32701	131005

¹ The recommended 100G DAC cable length is up to 3 meters.

² For MES5400-24, HG3–HG6 interfaces are available in split mode. There is no such restriction for MES5400-24 rev.B.

³ Values are given for one-way transmission.

⁴ For each host in the ARP table, an additional entry is created in switching table. The number of ARP with EVPN license installed are 30661 for MES5310-48, MES5400-24 and 128965 for MES5400-48.

Technical features (continued)

	MES5400-24	MES5310-48	MES5400-48
Performance			
VLAN table	4094		
L2 Multicast groups	4092		
SQinQ rules	1320 (ingress), 1320 (egress)		
MAC ACL rules ¹	6070	6070	10738
IPv4/IPv6 ACL rules ¹	6070/3035	6070/3035	10738/5368
L3 IPv4 Unicast ²	32735		
L3 IPv6 Unicast ²	8181		
L3 IPv4 Multicast ²	16366		
L3 IPv6 Multicast ²	4088		
VRRP routers	127		
Maximum number of ECMP groups	1024		
ECMP routes	64		
VRF number	251 (including default VRF)		
L3 interfaces	2050		
Maximum number of VXLAN	4093		
Link Aggregation Groups (LAG)	128, up to 32 ports in one LAG	128, up to 8 ports in one LAG	128, up to 32 ports in one LAG
Quality of Service (QoS)	8 egress queues per port		
Jumbo frames	10240 bytes		
Stacking	up to 8 devices		

Features and capabilities

Interface features

- Head-of-line blocking (HOL) protection
- Back pressure
- Auto MDI/MDIX
- Jumbo frames
- Flow Control (IEEE 802.3X)
- Port Mirroring
- Stacking

MAC table features

- Independent learning mode per VLAN
- MAC Multicast Support
- Configurable MAC address aging time
- Static MAC Entries
- MAC Flapping logging

VLAN features

- Voice VLAN
- IEEE 802.1Q
- Q-in-Q
- Selective Q-in-Q
- GVRP
- Subnet-based VLAN

L2 Multicast functions

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

L2 functions

- STP (Spanning Tree Protocol, IEEE 802.1d)
- RSTP (Rapid Spanning Tree Protocol, IEEE 802.1w)
- MSTP (Multiple Spanning Tree Protocol, IEEE 802.1s)
- Spanning Tree Fast Link option
- STP Root Guard
- BPDU Filtering
- STP BPDU Guard
- Loopback Detection (LBD)
- ERPS (G.8032v2)
- Flex-link
- PVSTP+
- RPVSTP+

¹The number of MAC/IPv4/IPv6 rules with EVPN license installed for MES5400-48 is 10225/10225/5112.

²IPv4/IPv6 Unicast/Multicast routes share hardware resources.

Features and capabilities (continued)

L3 functions

- Static routing
- Dynamic routing protocols RIPv2, OSPFv2, OSPFv3, IS-IS, BGP¹ (IPv4 Unicast, IPv4 Multicast)
- Address Resolution Protocol (ARP)
- Policy-Based Routing (IPv4)
- VRRP
- PIM SM, PIM DM, IGMP Proxy, MSDP
- BFD (for BGP, OSPF, IS-IS)
- IP Unnumbered
- GRE protocol
- VRF lite

EVPN/VXLAN²

- L2VPN
- L3VPN (symmetric IRB)
- Ingress replication
- Multicast replication
- EVPN multihoming
- Anycast gateway
- ARP suppression
- IPv4 gateway address (for type 5 routes)
- MAC mobility

Link Aggregation functions

- Link Aggregation Groups (LAG)
- LACP
- LAG Balancing Algorithm
- Multi-Switch Link Aggregation Group (MLAG)

IPv6 support

- IPv6 Host
- Dual stack IPv6, IPv4

Service functions

- Optical transceiver diagnostics

Security functions

- DHCP Snooping
- DHCP Option 82
- IP Source Guard
- Dynamic ARP Inspection
- sFlow
- MAC-based authentication, MAC address limitation, static MAC entries
- Port-based authentication IEEE 802.1x
- Guest VLAN
- DoS attack prevention
- Traffic segmentation
- DHCP clients filtering
- BPDU attack prevention
- NetBIOS/NetBEUI filtering

Access Control Lists (ACL)

- L2-L3-L4 ACL (Access Control List)
- Time-Based ACL
- IPv6 ACL
- ACL based on:
 - Physical port number
 - IEEE 802.1p
 - VLAN ID
 - EtherType
 - DSCP
 - Protocol type
 - TCP/UDP port number

Quality of Service (QoS) and rate limiting

- QoS statistics
- Shaping, Policing
- IEEE 802.1p Class of Service (CoS)
- Broadcast Storm Control
- Bandwidth management
- Strict Priority/Weighted Round Robin (WRR)
- Three marking colors
- ACL-based CoS/DSCP metric assignment
- ACL-based VLAN metric assignment
- Setting the IEEE 802.1p priority for management VLAN
- DSCP to CoS, CoS to DSCP remarking
- 802.1p DSCP mark assignment for IGMP protocol

OAM

- 802.3ah Ethernet Link OAM
- 802.3ah Unidirectional Link Detection

Management functions

- Configuration and firmware download and upload via TFTP/SCP/SFTP
- SNMP
- Command Line Interface (CLI)
- Web interface
- Syslog
- Simple Network Time Protocol (SNTP)
- Network Time Protocol (NTP), NTP server, NTP peer-to-peer
- Traceroute
- LLDP (802.1ab) + LLDP MED
- LLDP (802.1ab)
- TACACS+
- Access control – privilege levels
- Management ACL
- Management interface blocking
- Local authentication
- IP addresses filtering for SNMP
- RADIUS/TACACS+ (Terminal Access Controller Access Control System) client

¹ BGP support is provided under the license.

² EVPN support is provided under the license.

Features and capabilities (continued)

- SSH server
 - Telnet server
 - SSL
 - Macrocommands
 - CLI command logging
 - System log
 - DHCP auto provisioning
 - DHCP Relay (Option 82)
 - DHCP Option 12
 - DHCP server
 - Debugging commands
 - Rate limit of traffic to CPU
 - Password encryption
 - Password recovery
 - Ping (IPv4/IPv6)
- Monitoring functions**
- Interface statistics
 - RMON
 - Task and traffic type-based CPU utilization monitoring
 - Temperature monitoring
 - TCAM 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 1271, 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 IEEE 802.3 MAU MIB
 - RFC 2674, 4363 IEEE 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 to support Multi-Part messages
 - RFC 793 TCP
 - RFC 2474, 3260 Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 headers
 - RFC 1321, 2284, 2865, 3580, 3748 Extensible Authentication Protocol (EAP)
 - RFC 2571-2574 SNMP
 - RFC 826 ARP
 - IEC 61850

Physical parameters

	MES5400-24	MES5310-48	MES5400-48
Power supply	100–240 V AC, 50–60 Hz 36–72 V DC Power supply options: • one AC/DC power supply • two AC/DC hot-swappable power supplies	176–264 V AC, 50–60 Hz 36–72 V DC Power supply options: • one AC/DC power supply • two AC/DC hot-swappable power supplies	
Input current	0.5–1.7 A for AC 4–2 A for DC	0.5–1.0 A for AC 2–4.5 A for DC	0.5–1.0 A for AC 2–4.5 A for DC
Maximum power consumption	150 W	170 W	170 W
Heat dissipation	150 W	170 W	170 W
Dying Gasp support	no		
Operating temperature	from 0 to +45 °C		
Storage temperature	from -50 to +70 °C		

Physical parameters

	MES5400-24	MES5310-48	MES5400-48
Operating humidity	no more than 80 %		
Maximum acoustic noise level	from the front panel, max < 65 dB from the rear panel, max < 71.2 dB	from the front panel, max < 62.5 dB from the rear panel, max < 70.8 dB	from the front panel, max < 62.5 dB from the rear panel, max < 70.8 dB
Cooling	Front-to-Back, 4 fans		
Dimensions (W × H × D)	440 × 44 × 321 mm	440 × 44 × 447 mm	440 × 44 × 447 mm
Weight	6.36 kg	8.7 kg	8.7 kg

Ordering information

Name	Description
MES5400-24	Ethernet switch MES5400-24, 1×10/100/1000BASE-T (OOB), 24×1000BASE-X (SFP)/10GBASE-R (SFP+), 6×40GBASE-R4 (QSFP+)/100GBASE-R4 (QSFP28), 1×USB 2.0, L3
MES5310-48	Ethernet switch MES5310-48, 1×10/100/1000BASE-T (OOB), 48×1000BASE-X (SFP)/10GBASE-R (SFP+), 6×40GBASE-R4 (QSFP+)/100GBASE-R4 (QSFP28), 1×USB 2.0, L3
MES5400-48	Ethernet switch MES5400-48, 1×10/100/1000BASE-T (OOB), 48×1000BASE-X (SFP)/10GBASE-R (SFP+), 6×40GBASE-R4 (QSFP+)/100GBASE-R4 (QSFP28), 1×USB 2.0, L3
Related products	
PM160-220/12	Power module PM160-220/12, 220 V AC, 160 W (for MES5400-24)
PM160-48/12	Power module PM160-48/12, 48 V DC, 160 W (for MES5400-24)
PM350-220/12¹	Power module PM350-220/12, 220 V AC, 350 W (for MES5310-48, MES5400-48)
PM350-48/12²	Power module PM350-48/12, 48 V DC, 350 W (for MES5310-48, MES5400-48)
Related software	
ECCM-MES5400-24	ECCM-MES5400-24 option of Eltex ECCM management system for Eltex network elements management and monitoring: 1 network element MES5400-24
ECCM-MES5310-48	ECCM-MES5310-48 option of Eltex ECCM management system for Eltex network elements management and monitoring: 1 network element MES5310-48
ECCM-MES5400-48	ECCM-MES5400-48 option of Eltex ECCM management system for Eltex network elements management and monitoring: 1 network element MES5400-48

¹ It is recommended to use PM350-220/12 power supplies that are at least revision B or higher.² It is recommended to use PM350-48/12 power supplies that are at least revision 2v0 or higher.

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Eltex Enterprise is a leading Russian developer and manufacturer of communication equipment with 30 years of history. Complete solutions and their seamless integrability into the Customer's infrastructure are the priority growth areas of the company.