

- Bandwidth up to 440 Gbps
- Non-blocking architecture
- L3 switch
- 4 ports of 25G
- Stacking up to 8 devices
- Multicast support (IGMP Snooping, MVR)
- Advanced security functions (L2-L4 ACL, IP Source Guard, Dynamic ARP Inspection, etc.)



MES2310-48DP with PoE support is designed to connect end users to the network of large enterprises, small and medium-sized businesses and to the telecommunication operators network using 1G/10G interfaces.

The switch features provide physical stacking, support for virtual local area networks, multicast distribution groups, and advanced security.

## Technical features

Interfaces	
10/100/1000/2500BASE-T PoE/PoE+	48
1000BASE-X (SFP)/10GBASE-R (SFP+)/25GBASE-R (SFP28)	4
10/100/1000BASE-T (OOB)	1
Console port RS-232 (RJ-45)	1
Performance	
Bandwidth	440 Gbps
Throughput for 64 bytes <sup>1</sup>	94.49 MPPS
Buffer memory	3 MB
RAM (DDR4)	2 GB
ROM (RAW NAND)	512 MB
MAC table	32768
ARP table <sup>2</sup>	16317
VLAN table	4094
L2 Multicast group	4092
SQinQ rules	1320 (ingress)/1320 (egress) <sup>3</sup>
MAC ACL rules	6070
IPv4/IPv6 ACL rules	6070/3035
L3 IPv4 Unicast routes <sup>4</sup>	32734
L3 IPv6 Unicast routes <sup>4</sup>	8182
L3 IPv4 Multicast (IGMP Proxy, PIM) routes <sup>4</sup>	8180
L3 IPv6 Multicast (IGMP Proxy, PIM) routes <sup>4</sup>	4089
VRRP routers	127
Maximum size of ECMP groups	1024
ECMP routes	64

<sup>1</sup> Values are given for one-way transmission.

<sup>2</sup> For each host in the ARP table, an additional entry is created in the switching table.

<sup>3</sup> IPv4/IPv6 Unicast/Multicast routes share hardware resources.

## Technical features (continued)

### General parameters

VRF number	16 (including default VRF)
L3 interfaces	2050
Link Aggregation Groups (LAG)	123, up to 8 ports in one LAG
Quality of Services (QoS)	8 egress queues per port
Jumbo frames	10240 bytes
Stacking	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 (SPAN, RSPAN)
- Stacking

### MAC address functions

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

### VLAN functions

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

### L2 Multicast functions

- Multicast groups
- Static Multicast groups
- IGMP Snooping v1,2,3
- Host/port-based IGMP Snooping Fast Leave
- PIM-Snooping
- IGMP proxy-report
- IGMP authorization through 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)
- PVSTP+
- RPVSTP+
- Spanning Tree Fast Link option
- STP Root Guard
- BPDU Filtering
- STP BPDU Guard
- Loopback Detection
- ERPS (G.8032v2)
- Flex-link
- Private VLAN
- Layer 2 Protocol Tunneling (L2PT)

### L3 functions

- Static IPv4 and Ipv6 routes
- Dynamic routing protocols RIPv2, OSPFv2, OSPFv3, IS-IS (IPv4 Unicast), BGP<sup>1</sup> (IPv4 Unicast, IPv4 Multicast)
- BFD protocol (for BGP, OSPF, IS-IS)
- Address Resolution Protocol (ARP)
- Proxy ARP
- Policy-Based Routing (IPv4)
- VRRP
- Multicast dynamic routing protocols PIM SM, PIM DM, IGMP Proxy, MSDP
- ECMP Load Balancing
- IP Unnumbered
- GRE protocol
- VRF lite

### Link Aggregation functions

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

### IPv6 functions

- IPv6 Host
- Dual-stack IPv4, IPv6

### Service functions

- Virtual cable testing (VCT)
- Optical transceiver diagnostics
- Green Ethernet

### Security functions

- Protection against unauthorized DHCP servers (DHCP Snooping)
- DHCP option 82
- IP Source Guard
- Dynamic ARP Inspection
- First Hop Security
- sFlow
- MAC-based authentication, Port Security, 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

<sup>1</sup> BGP protocol support is provided under the license.

## Features and capabilities (continued)

### Access Control Lists (ACL)

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

### Quality of Service (QoS)

- QoS statistics
- Shaping, Policing
- IEEE 802.1p Class of Service
- Storm control for different traffics (broadcast, multicast, unknown unicast)
- Bandwidth management
- Strict priority (SP)/Weighted Round Robin (WRR)
- Three marking colors
- ACL-based CoS/DSCP assignment
- ACL-based VLAN assignment
- Setting the IEEE 802.1p priority for management VLAN
- DSCP to CoS, CoS to DSCP remarking
- 802.1p, DSCP mark assignment for IGMP

### OAM

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

### Time synchronization

- SNTP (Simple Network Time Protocol)
- NTP (Network Time Protocol), NTP server, NTP peer-to-peer

### Management functions

- Configuration file download and upload via TFTP/SCP/SFTP
- SNMP
- CLI (Command Line Interface)
- Web interface
- Syslog
- Traceroute
- Ping (IPv4/IPv6)
- LLDP (802.1ab) + LLDP MED
- LLDP (IEEE 802.1ab)
- TACACS+
- Access control – privilege levels for users
- Management interface blocking
- Local authentication
- IP addresses filtering for SNMP
- RADIUS, TACACS+ client (Terminal Access Controller Access Control System)
- Telnet, SSH server
- Telnet, SSH client
- SSL
- Macrocommands
- CLI commands logging
- System log
- DHCP autoprovision
- DHCP Relay (Option 82)
- DHCP Option 12
- DHCP server

- Debugging commands
- Traffic to CPU rate limiting
- Password encryption
- Password recovery

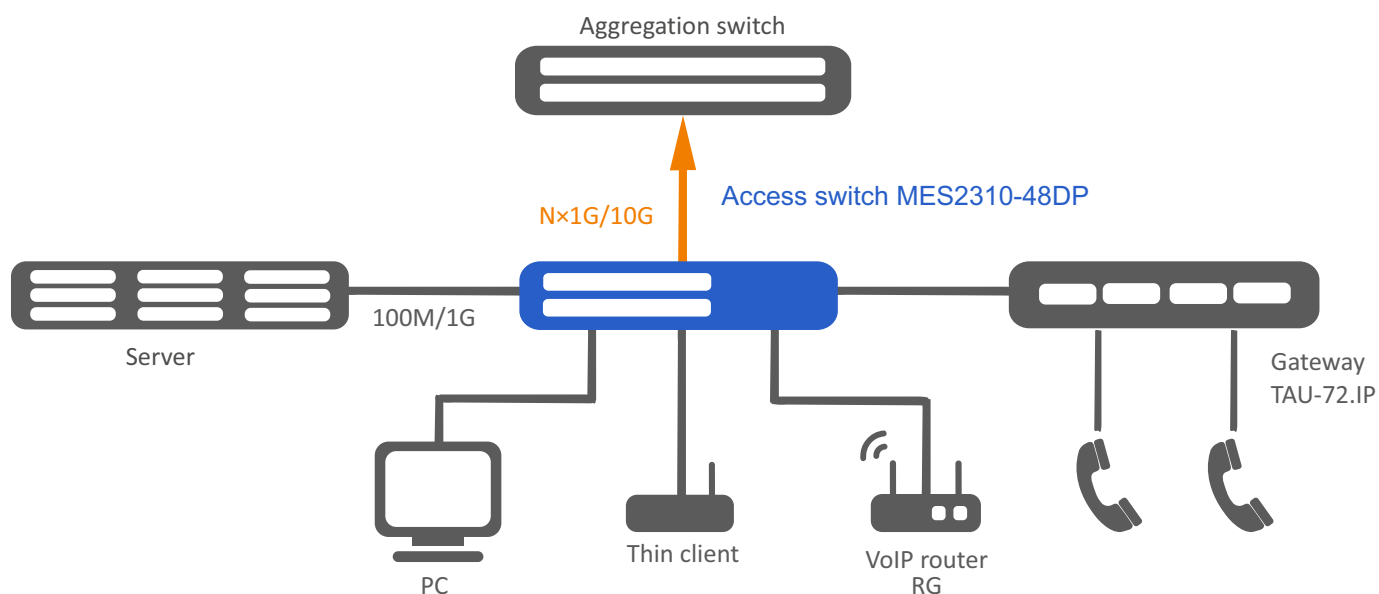
### Monitoring functions

- Interface statistics
- RMON remote monitoring
- IP SLA
- CPU utilization monitoring per task and per traffic type
- RAM monitoring
- Temperature monitoring
- TCAM monitoring

### MIB/IETF

- 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 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 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 Definition of the DS field in the IPv4 and IPv6
- RFC 1321, 2284, 2865, 3580, 3748 Extensible Authentication Protocol (EAP)
- RFC 2571, RFC2572, RFC2573, RFC2574 SNMP
- RFC 826 ARP
- RFC 854 Telnet
- IEC 61850

### Use case



### Physical parameters

#### Physical features and ambient parameters

Power supply	200–240 V AC, 47–63 Hz 36–72 V DC (up to 2 hot-swappable power supplies)
Input current	5–10 A
Maximum power consumption (with PoE)	1600 W
PoE budget	1450 W
Heat dissipation	150 W
Dying Gasp support	no
Operating temperature	from -10 to +50 °C
Storage temperature	from -50 to +70 °C
Operating humidity	no more than 80 % (without condensing)
Operating humidity	4 fans
Maximum acoustic noise level	from the front panel, max < 33 dB from the rear panel, max < 33 dB
Form factor	19", 1U
Dimensions (W × H × D)	440 × 44 × 489 mm
Weight	9.63 kg

Ordering information

Name	Description
<b>MES2310-48DP</b>	MES2310-48DP AC Ethernet switch, 48 × 10/100/1000/2500BASE-T PoE/PoE+, 4 × 1000BASE-X (SFP)/10GBASE-R (SFP+)/25GBASE-R (SFP28), L3
Related products	
<b>PM950-220/56</b>	PM950-220/56 power module, 100–240 V AC, 950 W
<b>PM950-48/56</b>	PM950-48/56 power module, 36–72 V DC, 950 W
Related software	
<b>ECCM-MES2310-48DP</b>	ECCM-MES2310-48DP option of Eltex ECCM management system for Eltex network elements management and monitoring: 1 network element MES2310-48DP

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