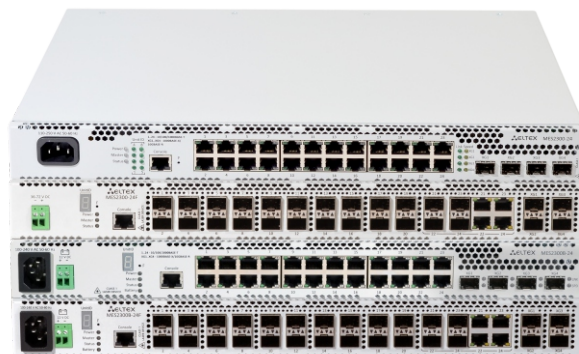


- Bandwidth up to 128 Gbps
- Non-blocking architecture
- Up to 4 ports of 10G
- L3 switches
- Stacking up to 8 devices
- Uninterrupted power from battery<sup>1</sup>



The new generation of MES access switches connects end users to the network of large enterprises, small and medium-sized businesses and service provider networks using 1G/10G interfaces.

MES2300-24F and MES2300B-24F can be also used in service provider networks as the aggregation transport switches.

The device ports support both 1 Gbps and 10 Gbps speeds, providing flexibility in use and the ability to gradually upgrade to higher data rates. The non-blocking architecture allows correct processing of packets under maximum loads, while maintaining minimal and predictable delays on all types of traffic.

The switch functionality provides physical stacking, support for VLANs, multicast groups, and advanced security features.

#### Uninterrupted power<sup>1</sup>

MES2300B-24 and MES2300B-24F switches have the ability to connect a rechargeable battery to ensure guaranteed power supply in case of the 230 V primary network failure. The switch is equipped with a power module that allows charging the battery when 220 V is available. The backup power system makes it possible to monitor the state of the primary network and notify of a power type switching.

### Technical features

	MES2300-24	MES2300B-24	MES2300-24F	MES2300B-24F
<b>Interfaces</b>				
10/100/1000BASE-T (RJ-45)	24	24	—	—
1000BASE-X/100BASE-FX (SFP)	—	—	20	20
10/100/1000BASE-T/1000BASE-X/100BASE-FX Combo	—	—	4	4
10GBASE-R (SFP+)/1000BASE-X (SFP)			4	
Console port RS-232 (RJ-45)			1	
<b>Performance</b>				
Bandwidth	128 Gbps			
Throughput for 64 bytes <sup>2</sup>	95.2 MPPS			
Buffer memory	1.5 MB			
RAM (DDR4)	2 GB			
ROM (RAW NAND)	512 MB			
MAC table	16384			
ARP table <sup>3</sup>	2039			
VLAN table	4094			
L2 Multicast groups	2048			
SQinQ rules	988 (ingress), 988 (egress)			
MAC ACL rules	1966			
IPv4/IPv6 ACL rules	1975/988			

<sup>1</sup> Only for MES2300B-24, MES2300B-24F.

<sup>2</sup> Values are given for one-way transmission.

<sup>3</sup> For each host in the ARP table, an additional entry is created in the switching table.

## Technical features (continued)

	MES2300-24	MES2300B-24	MES2300-24F	MES2300B-24F
L3 IPv4 Unicast routes <sup>1</sup>			4066	
L3 IPv6 Unicast routes <sup>1</sup>			1015	
L3 IPv4 Multicast (IGMP Proxy, PIM) <sup>1</sup> routes			2029	
L3 IPv6 Multicast (IGMP Proxy, PIM) <sup>1</sup> routes			505	
VRRP routers			255	
Maximum size of ECMP groups			8	
VRF number			16 (including default VRF)	
L3 interfaces			2032	
Link Aggregation Groups (LAG)			32, up to 8 ports per LAG	
Quality of Service (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

### L2 Multicast functions

- Multicast groups
- Static Multicast groups
- IGMP Snooping v1,2,3
- Host/port-based IGMP Snooping Fast Leave
- 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, IEEE 802.1s)
- PVSTP+
- RPVSTP+

- Spanning Tree Fast Link option
- STP Root Guard
- BPDU Filtering
- STP BPDU Guard
- Loopback Detection (LBD)
- ERPS (G.8032v2)
- Flex-link
- Private VLAN
- Layer 2 Protocol Tunneling (L2PT)

### L3 functions

- Static IP routes
- Dynamic routing protocols RIPv2, OSPFv2, OSPFv3, IS-IS (IPv4 Unicast), BGP<sup>2</sup> (IPv4 Unicast, IPv4 Multicast)
- BFD protocols (for BGP)
- Address Resolution Protocol (ARP)
- Proxy ARP
- VRRP
- Multicast dynamic routing protocols PIM SM, PIM DM, IGMP Proxy, MSDP
- ECMP Load Balancing
- IP Unnumbered
- VRF lite

### Link Aggregation functions

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

### IPv6 functions

- IPv6 Host
- Dual-stack IPv6, IPv4

### Service functions

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

<sup>1</sup> IPv4/IPv6 Unicast/Multicast routes share hardware resources.

<sup>2</sup> BGP protocol support is provided under the license.

## Features and capabilities (continued)

### Security functions

- Protection against unauthorized DHCP servers (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
- 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:
  - Switch port
  - IEEE 802.1p
  - VLAN ID
  - EtherType
  - DSCP
  - IP 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
- Storm control for different traffics (broadcast, multicast, unknown unicast)
- Bandwidth management
- Strict Priority and Weighted Round Robin (WRR) scheduling algorithms
- Three marking colors
- ACL-based traffic classification
- ACL-based CoS/DSCP assignment
- Setting the IEEE 802.1p priority for management VLAN
- DSCP to CoS, CoS to DSCP remarking
- ACL-based VLAN assignment
- 802.1p, DSCP mark assignment for IGMP

### OAM

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

### Management functions

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

- Telnet server, SSH server
- Telnet client, SSH client
- SSL
- Macrocommands
- CLI commands logging
- System log
- DHCP autoprovision
- DHCP Relay (IPv4 support)
- DHCP Option 12
- Debugging commands
- Traffic to CPU rate limiting
- Password encryption
- Password recovery
- Ping (IPv4/IPv6)

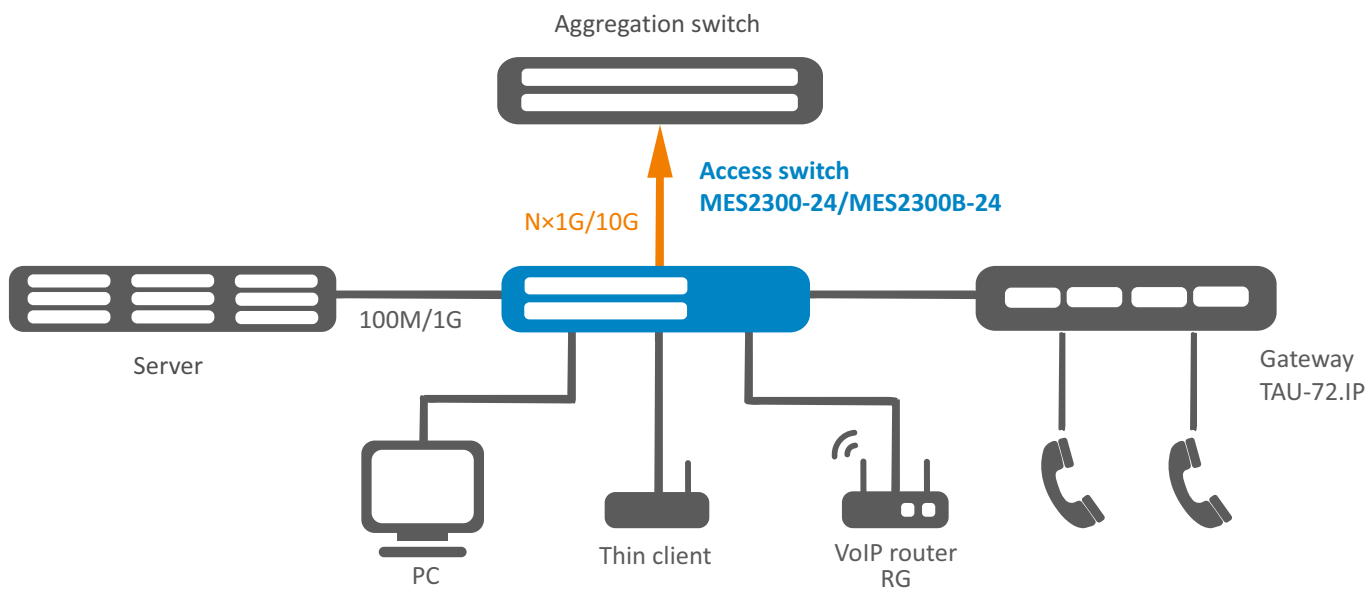
### Monitoring functions

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

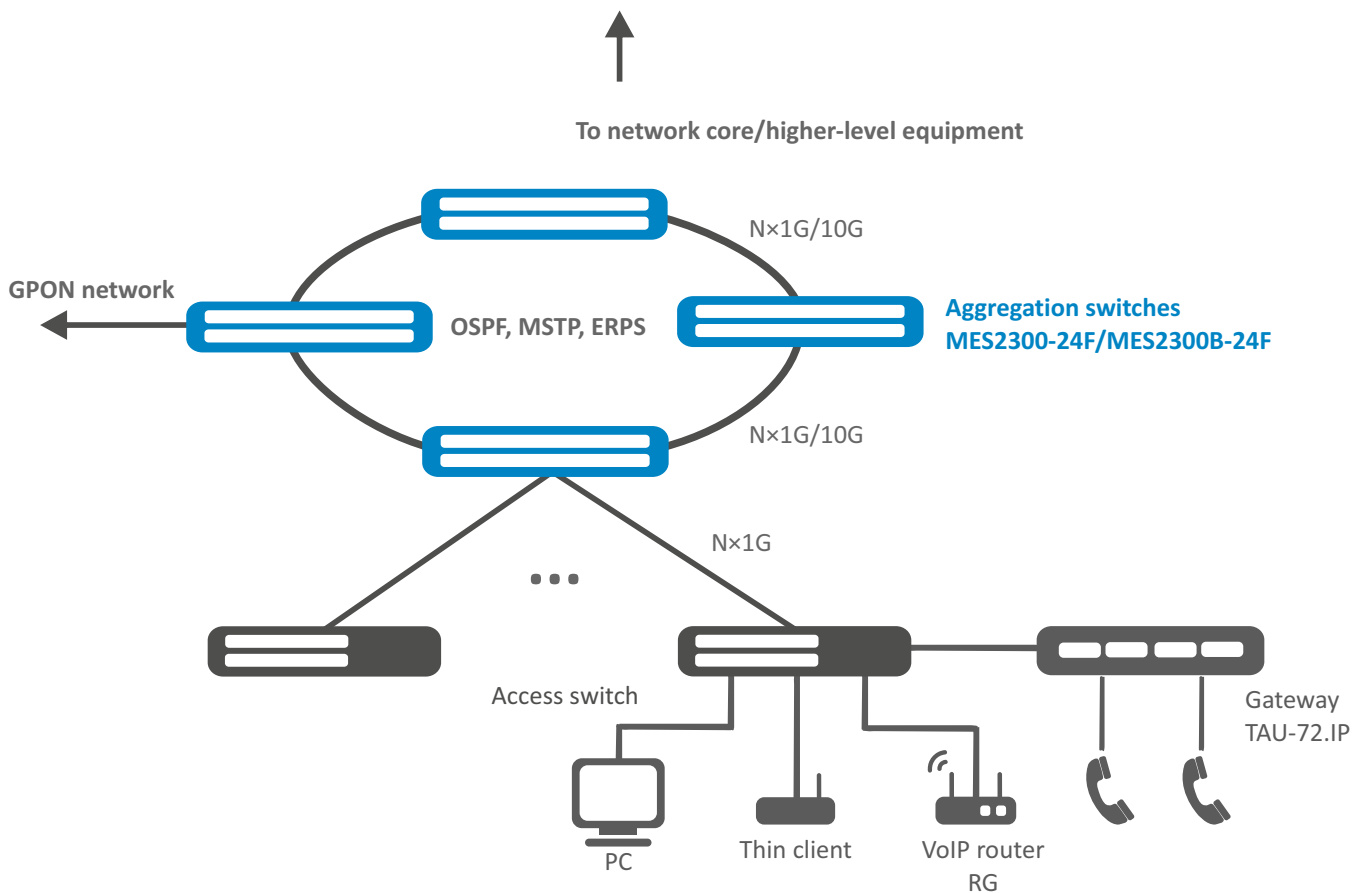
### MIB

- 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 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 3289 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 Definition of the 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
- RFC 854 Telnet
- IEC 61850

### Use case



### Use case for aggregation switches



## Physical parameters

	MES2300-24	MES2300B-24	MES2300-24F	MES2300B-24F
<b>Physical parameters and environmental features</b>				
Power supply	100–240 V AC, 50–60 Hz	100–240 V AC, 50–60 Hz; 12 V DC	36–72 V DC	100–240 V AC, 50–60 Hz; 12 V DC
Input current	0.15–0.3 A	including battery: 0.2–0.7 A excluding battery: 0.15–0.4 A	0.4–1 A	including battery: 0.3–0.8 A excluding battery: 0.2–0.6 A
Maximum power consumption	20 W	50 W	35 W	55 W
Maximum power consumption excluding battery charge	—	24 W	—	40 W
Heat dissipation	20 W	27 W	35 W	43 W
Dying Gasp support	yes	no	no	yes
Operating temperature	from -20 to +50 °C	from -20 to +50 °C	from -20 to +65 °C	from -20 to +65 °C
Storage temperature	from -50 to +70 °C			
Operating humidity	no more than 80 %			
Cooling	passive	passive	Front-to-Back, 4 fans	Front-to-Back, 4 fans
Form factor	19", 1U			
Dimensions (W × H × D)	430 × 44 × 204 mm	430 × 44 × 204 mm	430 × 44 × 305 mm	430 × 44 × 305 mm
Weight	2.94 kg	2.79 kg	4.03 kg	4.08 kg

## Ordering information

Name	Description
<b>MES2300-24 AC</b>	MES2300-24 AC Ethernet switch, 24×10/100/1000BASE-T, 4×10GBASE-R (SFP+)/1000BASE-X (SFP), L3, 100–240 V AC
<b>MES2300B-24 AC</b>	MES2300B-24 AC Ethernet switch, 24×10/100/1000BASE-T, 4×10GBASE-R (SFP+)/1000BASE-X (SFP), L3, 100–240 V AC, 12 V DC
<b>MES2300-24F DC</b>	MES2300-24F DC Ethernet switch, 20×1000BASE-X/100BASE-FX (SFP), 4×10/100/1000BASE-T/1000BASE-X/100BASE-FX Combo, 4×10GBASE-R (SFP+)/1000BASE-X (SFP), L3, 36–72 V DC
<b>MES2300B-24F AC</b>	MES2300B-24F AC Ethernet switch, 20×1000BASE-X/100BASE-FX (SFP), 4×10/100/1000BASE-T/1000BASE-X/100BASE-FX Combo, 4×10GBASE-R (SFP+)/1000BASE-X (SFP), L3, 100–240 V AC, 12 V DC

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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.