– **Bandwidth up to 440 Gbps**
– **Non-blocking architecture**
– **L3 switch**
– **12 ports of 10G**
– **Stacking up to 8 devices**
– **Multicast support (IGMP Snooping, MVR)**
– **Advanced security functions (L2-L4 ACL, IP Source Guard, Dynamic ARP Inspection, etc.)**

MES2310-12XU 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 25GBASE-R interfaces.

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

Technical features

Interfaces	
10/100/1000/2.5G/5G/10GBASE-T PoE++	12
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[1]	327.38 MPPS
Buffer memory	3 MB
RAM (DDR4)	2 GB
ROM (RAW NAND)	512 MB
MAC table	32768
ARP table[2]	8180
VLAN table	4094
L2 Multicast group	4092
SQinQ rules	1320 (ingress), 1320 (egress)[3]
MAC ACL rules	6070
IPv4/IPv6 ACL rules	6070
L3 IPv4 Unicast routes[4]	32735
L3 IPv6 Unicast routes[4]	8181
L3 IPv4 Multicast (IGMP Proxy, PIM) routes[4]	8180
L3 IPv6 Multicast (IGMP Proxy, PIM) routes[4]	4088
VRRP routers	127
Maximum size of ECMP groups	1024
ECMP routes	64

[1] Values are given for one-way transmission.
[2] For each host in the ARP table, an additional entry is created in the switching table.
[3] The fetures share TCAM hardware resources.
[4] IPv4/IPv6 Unicast/Multicast routes share hardware resources.

Technical features (continued)

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	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 (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-vased 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 IP routes
– Dynamic routing protocols RIPv2, OSPFv2, OSPFv3, IS-IS (Ipv4 Unicast), BGP[1] (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

[1] 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

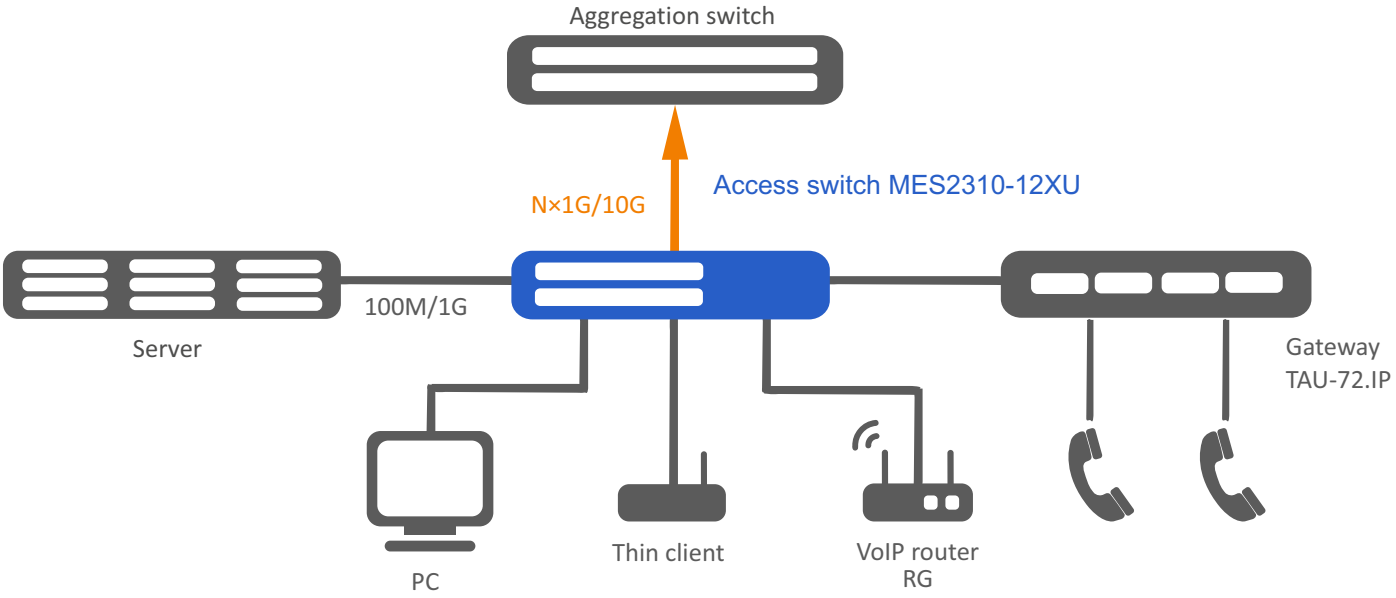
Time synchronization
– SNTP (Simple Network Time Protocol)
– NTP (Network Time Protocol), NTP server, NTP peer-to-peer

Management functions
– Configuration file download and upload via TFTP/SCP/SFTP
– SNMP
– CLI (Command Line Interface)
– Web interface
– Syslog
– Ping (IPv4/IPv6)
– Traceroute
– 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 headers
– 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, 50–60 Hz; (up to 2 hot-swappable power supplies)
Input current	4–6 A
Maximum power consumption (with PoE)	1050 W
PoE budget	800 W
Heat dissipation	60 W
Dying Gasp support	no
Operating temperature	from -20 to +50 °C
Storage temperature	from -50 to +70 °C
Operating humidity	no more than 80 % (without condensing)
Cooling	Front-to-Back, 4 fans
Maximum acoustic noise level	from the front panel, max < 47.1 dB from the rear panel, max < 54.2 dB
Form factor	19", 1U
Dimensions (W × H × D)	440 × 44 × 342.7 mm
Weight	6.45 kg

Ordering information

Name	Description
MES2310-12XU	MES2310-12XU Ethernet switch, 12 × 10/100/1000/2.5G/5G/10GBASE-T (PoE++), 4 × 1000BASE-X (SFP)/10GBASE-R (SFP+)/25GBASE-R (SFP28), L3
Related products	
PM450-220/56	PM450-220/56 power module, 200-240 V AC, 450 W
Related software	
ECCM-MES2310-12XU	ECCM-MES2310-12XU option of Eltex ECCM management system for Eltex network elements management and monitoring: 1 network element MES2310-12XU

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About Eltex

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.