ELTEX
Integrated Networking Solutions

- Bandwidth up to 128 Gbps
- Non-blocking architecture
- 4 × 10G ports in basic configuration
- L3 switches
- Stacking up to 8 devices
- Hot-swappable redundant power supplies
- Dual ventilation system
- Front-to-back cooling

The new generation switches can be used in service provider networks as aggregation or transport switches. They ensure high performance due to the interfaces operating at speeds of 10 Gbps or 1 Gbps. MES aggregation switches feature set includes L2 functions, static routing, dynamic routing, stacking of up to 8 devices, redundant and hot-swappable power supplies.

Technical features

	MES3300-24	MES3300-24F
Interfaces		
1000BASE-X/100BASE-FX (SFP)	—	20
10/100/1000BASE-T	24	—
10/100/1000BASE-T/1000BASE-X/100BASE-FX Combo	—	4
10GBASE-R (SFP+)/1000BASE-X (SFP)	4	
10/100/1000BASE-T (OOB)	1	
Console port RS-232 (RJ-45)	1	
Performance		
Bandwidth	128 Gbps	
Throughput for 64 bytes[1]	95.2 MPPS	
Buffer memory	1.5 MB	
RAM (DDR4)	2 GB	
ROM (RAW NAND)	512 MB	
MAC table	16384	
ARP table[2]	4087	
VLAN table	4094	
L2 Multicast groups	4092	
SQinQ rules	1320 (ingress), 1320 (egress)	
MAC ACL rules	3000	
IPv4/IPv6 ACL rules	2999/1500	
L3 IPv4 Unicast routes[3]	13278	
L3 IPv6 Unicast routes[3]	3316	
L3 IPv4 Multicast (IGMP Proxy, PIM) routes[3]	4087	
L3 IPv6 Multicast (IGMP Proxy, PIM) routes[3]	1642	
VRRP routers	255	
Maximum size of ECMP groups	5	
VRF number	16 (including default VRF)	

[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] IPv4/IPv6 Unicast/Multicast routes share hardware resouces.

Technical features (continued)

	MES3300-24	MES3300-24F
L3 interfaces	2050	
Link Aggregation Groups (LAG)	32, up to 8 ports per LAG	
Quality of Service (QoS)	8 egress queues per port	
Jumbo frames size	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
– 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
– 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 Spaning 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 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 IPv4, IPv6

Service functions
– Virtual Cable Tester (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 inder license.

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Features and capabilities (continued)

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 and Weighted Round Robin (WRR) scheduling algorithms
– 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

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

Management functions
– Configuration file download and upload via TFTP/SCP
– SNMP
– Command Line Interface (CLI)
– Web interface
– Syslog
– SNTP (Simple Network Time Protocol)
– Traceroute
– LLDP (802.1ab) + LLDP MED
– Access control — privilege levels for users
– Management interface blocking
– Local authentication
– IP addresses filtering for SNMP
– RADIUS/TACACS+ (Terminal Access Controller Access Control System) clients
– SSH server, Telnet server
– SSH client, Telnet client
– SSL
– Macrocommands
– CLI commands logging
– System log
– DHCP autoprovision
– DHCP Relay (Option 82)
– DHCP Option 12
– Debbugging commands
– Traffic to CPU rate limiting
– Password encryption
– Pasword recovery
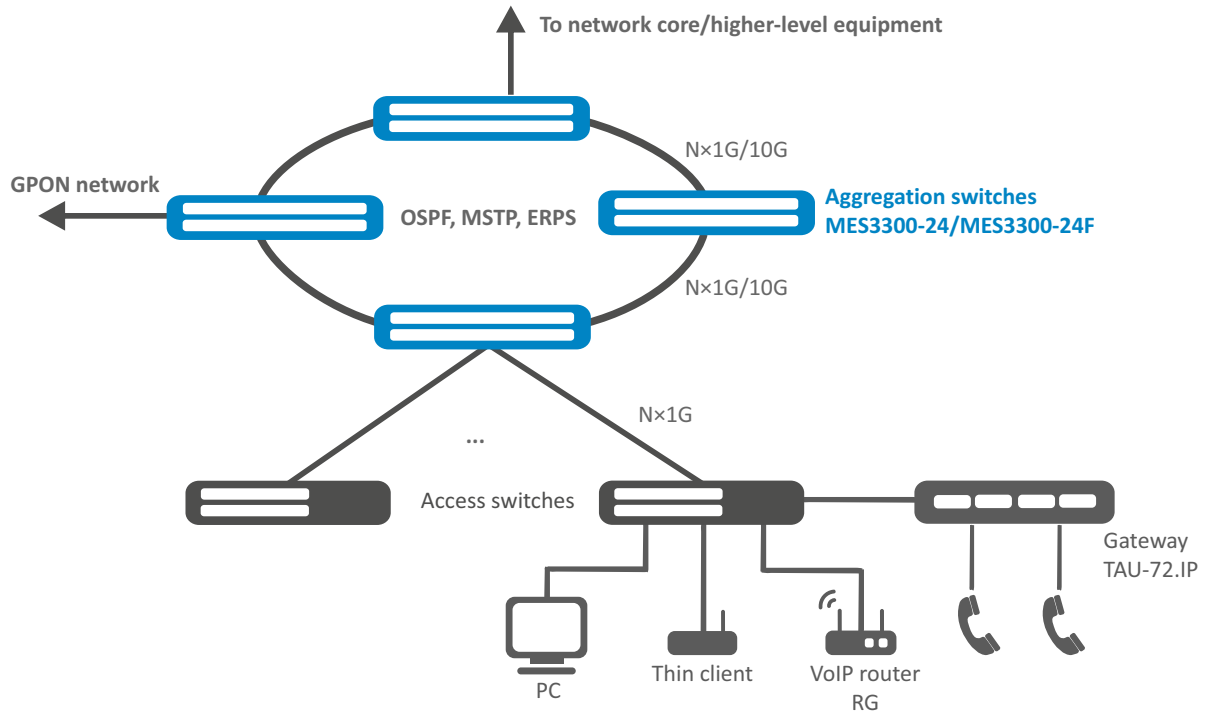– Ping (IPv4/IPv6)

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/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

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Use case

To network core/higher-level equipment

N×1G/10G

GPON network

OSPF, MSTP, ERPS

**Aggregation switches
MES3300-24/MES3300-24F**

N×1G/10G

N×1G

...

Access switches

Gateway
TAU-72.IP

PC

Thin client

VoIP router
RG

Physical parameters

	MES3300-24	MES3300-24F
Power supply	100–240 V AC, 50–60 Hz; 36–72 V DC Power supply options: • 1 AC/DC power supply • 2 hot-swappable AC/DC power supplies	
Input current	0.2–0.35 A for AC 0.4–0.8 A for DC	0.3–0.5 A for AC 0.5–1.1 A for DC
Maximum power consumption	33 W	45 W
Heat dissipation	33 W	45 W
Dying Gasp support	no	
Operating temperature	from -10 to +45 °C	
Storage temperature	from -50 to +70 °C	
Operating humidity	no more than 80 %	
Cooling	Front-to-Back, 4 fans	
Form factor	19", 1U	
Dimensions (W × H × D)	430 × 44 × 330 mm	430 × 44 × 305 mm
Weight	5.13 kg	5.04 kg

Ordering information

Name	Description
MES3300-24	MES3300-24 Ethernet switch, 1×10/100/1000BASE-T (OOB), 24×10/100/1000BASE-T, 4×10GBASE-R (SFP+)/1000BASE-X (SFP), L3
MES3300-24F	MES3300-24F Ethernet switch, 1×10/100/1000BASE-T (OOB), 20×1000BASE-X/100BASE-FX (SFP), 4×10/100/1000BASE-T/1000BASE-X/100BASE-FX, 4×10GBASE-R (SFP+)/1000BASE-X (SFP), L3
Related products	
PM160-220/12	PM160-220/12 power module, 100–240 V AC, 160 W
PM100-48/12	PM100-48/12 power module, 36–72 V DC, 100 W
Related software	
ECCM-MES3300-24	ECCM-MES3300-24 option of Eltex ECCM management system for ELTEX network elements management and monitoring: 1 network element MES3300-24
ECCM-MES3300-24F	ECCM-MES3300-24F option of Eltex ECCM management system for ELTEX network elements management and monitoring: 1 network element MES3300-24F

Contact us

About ELTEX

+7 (383) 274 10 01
+7 (383) 274 48 48

eltex@eltex-co.ru

www.eltex-co.com

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.