– **Bandwidth up to 24 Gbps**
– **Non-blocking architecture**
– **L3 switches**
– **Passive cooling**
– **Support for Multicast (IGMP Snooping, MVR)**
– **Advanced security functions (L2-L4 ACL, IP Source Guard, Dynamic ARP Inspection, etc.)**

MES3508

MES3508P

MES3510P

MES3508, MES3508P and **MES3510P** industrial switches manufactured by ELTEX are designed to organize secure fault-tolerant networks on sites with high requirements to temperature, vibrations and mechanical impact.

The switches have 10/100/1000BASE-T with PoE/PoE+[1] technology support and Combo ports of 10/100/1000BASE-T/1000BASE-X/100BASE-FX for optional connection of an optic-fiber cable.

Technical features

	MES3508	MES3508P	MES3510P
General parameters			
Packet processor	Marvell 98DX3333A1-BTD4I000 (PonCat3 Industrial)		
Interfaces			
10/100/1000BASE-T (RJ-45)	8	—	—
10/100/1000BASE-T PoE/PoE+ (RJ-45)	—	8	
100BASE-FX/1000BASE-X (SFP)	—	—	4
10/100/1000BASE-T/100BASE-FX/1000BASE-X (RJ-45/SFP) Combo	2		—
Console port RS-232 (RJ-45)	1		
Performance			
Bandwidth	20 Gbps		24 Gbps
Throughput for 64 bytes[2]	14 MPPS		17.8 MPPS
Buffer memory	1.5 MB		
RAM (DDR3)	512 MB		
ROM (RAW NAND)	512 MB		
MAC table	16K		
VLAN table	4094		
L2 Multicast groups	4K		
ARP table[3]	4K		
Link Aggregation Groups (LAG)	48, up to 8 ports per LAG		
Maximum size of ECMP groups	8		
Quality of Service (QoS)	8 egress queues per port		
Number of ACL rules	3 006		

[1] Excluding MES3508
[2] Values are given for 1-way transmission
[3] For each host in the ARP table, an entry is created in the routing table

Technical features (continuation)

	MES3508	MES3508P	MES3510P
L3 IPv4 Unicast[1]	12 866		
L3 IPv6 Unicast[1]	3 222		
L3 IPv4 Multicast (IGMP Proxy, PIM)[1]	4 024		
L3 IPv6 Multicast (IGMP Proxy, PIM)[1]	1 006		
Jumbo frames size	10 240 bytes		

Features and capabilities

Interfaces functions
– HOL blocking protection
– Back Pressure
– Auto MDI/MDIX
– Jumbo frames
– IEEE 802.3X flow control
– Port mirroring

MAC table functions
– Independent mode of learning for each VLAN
– MAC Multicast Support
– Automatic MAC addresses aging
– Static MAC Entries
– MAC Flapping logging

VLAN functions
– Voice VLAN
– IEEE 802.1Q
– Q-in-Q
– Selective Q-in-Q
– GVRP

L2 Multicast functions
– Multicast profiles
– Multicast static groups
– IGMP Snooping v1,2,3
– Port/host based IGMP Snooping Fast Leave
– Pim-Snooping
– IGMP proxy-report
– Support for IGMP autorization via 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)
– STP Multiprocess
– PVSTP+
– RPVSTP+
– Spanning Tree Fast Link option
– STP Root Guard
– STP Loop Guard
– BPDU Filtering
– STP BPDU Guard
– Loopback Detection (LBD) based on VLAN
– ERPS (G.8032v2)
– Flex-link
– Private VLAN, Private VLAN Trunk
– Layer 2 Protocol Tunneling (L2PT)

L3 functions
– Static IP routes
– Dynamic routing protocols: RIPv2, OSPFv2, OSPFv3, IS-IS, BGP[2]
– BFD
– Address Resolution Protocol (ARP)
– Proxy ARP
– Policy-Based Routing (IPv4)
– VRRP
– Multicast routing protocols: PIM SM, PIM DM, IGMP Proxy, MSDP
– ECMP load balancing
– IP Unnumbered
– GRE

Link Aggregation functions
– Static LAG
– Dynamic LAG (LACP)
– LAG Balancing Algorithms
– Multi-Switch Link Aggregation Group (MLAG)

IPv6 functions
– IPv6 Host
– Dual-stack

Service functions
– Virtual Cable Testing (VCT)
– Optical transceiver diagnostic
– Green Ethernet

Security functions
– 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
– Protection against non-authorized DHCP servers
– DHCP client filtering
– BPDU attack prevention
– NetBIOS/NetBEUI filtering
– PPPoE Intermediate Agent

[1] *IPv4/IPv6 Unicast/Multicast routes share hardware resources*
[2] *BGP protocol support is provided under license*

Features and capabilities

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
  – User Defined Bytes

Quality of service (QoS) and rate limiting
– QoS statistics
– Port rate limiting (shaping, policing)
– IEEE 802.1p CoS
– Storm Control for different types of traffic (broadcast, multicast, unknown unicast)
– Bandwidth management
– Scheduling algorithms: Strict Priority/Weighted Round Robin (WRR)
– Three marking colors
– ACL-based CoS/DSCP mark assignment
– ACL-based VLAN mark assignment
– 802.1p priorities adjustment for Management VLAN
– CoS to DSCP, DSCP to CoS remarking
– 802.1p DSCP mark assignment for IGMP

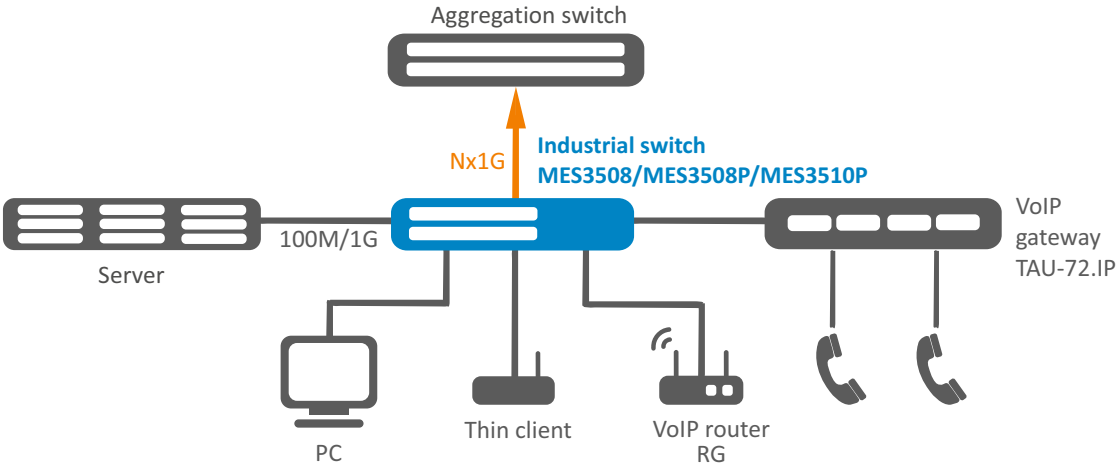
OAM/CFM
– IEEE 802.3ah Ethernet Link OAM
– Dying Gasp
– IEEE 802.1ag Connectivity Fault Management (CFM)
– IEEE 802.3ah Unidirectional Link Detection

Management functions
– Configuration file download and upload via TFTP
– Redirecting the output of CLI commands to an arbitrary file on ROM
– SNMP (Simple Network Management Protocol)
– Command line interface (CLI)
– Web interface
– Syslog
– SNTP (Simple Network Time Protocol)
– Traceroute
– LLDP (802.1ab) + LLDP MED
– Access control – privilege levels
– Management interface blocking
– Local authentication
– IP addresses filtering for SNMP
– RADIUS and TACACS+ (Terminal Access Controller Access Control System) clients
– Change of Authorization (CoA)
– SSH server, Telnet server
– SSH client, Telnet client
– Remote start of commands via SSH
– SSL
– Macrocommands
– CLI commands logging
– System log
– DHCP autoprovision
– DHCP Relay (Option 82)
– DHCP Option 12
– DHCPv6 Relay, DHCPv6 LDRA (Option 18, 37)
– PPPoE Circuit ID tag
– Flash File System
– Debugging commands
– Rate limit of traffic to CPU
– Password encryption
– Password recovery
– Ping (IPv4/IPv6)
– DNS server (Resolver)

Monitoring functions
– Interface statistics
– RMON/SMON
– IP SLA
– CPU utilization monitoring per task and traffic type
– RAM monitoring
– Temperature monitoring
– TCAM utilization 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 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 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

Use case



Physical specifications

	MES3508	MES3508P	MES3510P
Physical specifications and environmental parameters			
Maximum power consumption (including PoE)	15 W	255 W	260 W
PoE budget	—	240 W (for 802.3at applications, 54–56 V DC is recommended)	
Power supply	20–75 V DC	with PoE enabled: 45–57 V DC with PoE disabled: 20–57 V DC	
Input current	0.75–0.2 A	with PoE enabled: 5.67–4.47 A with PoE disabled: 0.75–0.26 A	with PoE enabled: 5.78–4.56 A with PoE disabled: 1.0–0.35 A
Reverse polarity protection	yes		
Signal relay	one signal relay output: 1 A 24 V DC		
Operating temperature	from -40 to +70° C		
Storage temperature	from -50 to +85° C		
Humidity	from 5 to 95% (non-condensing)		
Cooling	passive cooling		
Case	metal, IP30		
Form factor	DIN rail for wall mounting (optional in supply package)		
Dimensions (WxHxD)	85x152x115 mm	85x152x115 mm	85x175x115 mm
Weight	1.36 kg	1.40 kg	1.74 kg
Standards and certificates			
Security	UL 508		
Electromagnetic compatibility	EN 55022 Class A EN 61000-4-2 (ESD) Level 3 EN 61000-4-3 (RS) Level 3 EN 61000-4-4 (EFT) Level 3 EN 61000-4-5 (Surge) Level 3 EN 61000-4-6 (CS) Level 3 EN 61000-4-8		
Application within power engineering facilities	IEC 61850-3 IEEE 1613		
Shock	IEC 60068-2-27		
Free fall	IEC 60068-2-32		
External mechanical stress	0.5–55 Hz, 1g, 3g single strikes		

Ordering information

Name	Description
MES3508	Ethernet switch MES3508, 8 ports of 10/100/1000BASE-T, 2 Combo ports of 10/100/1000BASE-T/100BASE-FX/1000BASE-X, L3, 20–75 V DC
MES3508P	Ethernet switch MES3508P, 8 ports of 10/100/1000BASE-T (PoE/PoE+), 2 Combo ports of 10/100/1000BASE-T/100BASE-FX/1000BASE-X, L3, 45–57 V DC with PoE (20–57 V DC without PoE)
MES3510P	Ethernet switch MES3510P, 8 ports of 10/100/1000BASE-T (PoE/PoE+), 4 ports of 100BASE-FX/1000BASE-X, (SFP), L3, 45–57 V DC with PoE (20–57 V DC without PoE)
Related software	
EMS-MES-aggregation	EMS-MES-aggregation option of Eltex.EMS system for ELTEX network elements management and monitoring: 1 network element is an aggregation switch

Contact us

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

eltex@eltex-co.ru

www.eltex-co.com

About ELTEX

ELTEX company is a leading Russian developer and manufacturer of telecommunication equipment with more than 25 years of history. Integrity of solutions and seamless integration capability into Customer infrastructure is a priority area of company development.