

- Bandwidth up to 128 Gbps
- Non-blocking architecture
- L3 switch
- Passive cooling
- Hardware support for PTP (IEEE 1588v2)
- Hardware support for PRP (IEC 62439-3)
- Multicast (IGMP Snooping, MVR)
- Advanced security functions (L2-L4 ACL, IP Source Guard, Dynamic ARP Inspection, etc.)



MES3510S-08P



MES3510DS-24F

MES3510S-08P and MES3510DS-24F industrial switches are designed to organize secure fault-tolerant data transmission networks on sites with high requirements to temperature, vibrations and mechanical impact.

MES3510S-08P has ports of 10/100/1000BASE-T with PoE/PoE+ technology support. MES3510DS-24F has Combo ports of 10/100/1000BASE-T/100BASE-FX/1000BASE-X and ensures high performance due to the interfaces operating at speeds of 10 Gbps or 1 Gbps.

Both models are equipped with 100BASE-FX/1000BASE-X ports for SFP transceiver installation.

For high-precision time synchronization, the PTP (IEEE 1588v2) protocol is supported in Transparent Clock mode. To ensure data channel redundancy without packet loss during switching, the PRP (IEC 62439-3) protocol is implemented.

Technical features

	MES3510S-08P	MES3510DS-24F
Interfaces		
10/100/1000BASE-T PoE/PoE+ (RJ-45)	8	–
100BASE-FX/1000BASE-X (SFP)	4	16
10/100/1000BASE-T/100BASE-FX/1000BASE-X (RJ-45/SFP) Combo	–	8
10GBASE-R (SFP+)	–	4
Console port RS-232 (RJ-45)	1	
USB 2.0	1	
10/100/1000BASE-T (OOB)	–	1
Performance		
Bandwidth	24 Gbps	128 Gbps
Throughput for 64 bytes ¹	17.8 MPPS	95.23 MPPS
Buffer memory	3 MB	
RAM (DDR4)	2 GB	
ROM (RAW NAND)	512 MB	
MAC table	16384	
ARP table ²	8123	
VLAN table	4094	
L2 Multicast groups	4092	
SQinQ rules	1320 (ingress), 1320 (egress)	
MAC ACL rules	3545	
IPv4/IPv6 ACL rules	3545/1772	
L3 IPv4 Unicast routes ³	13280	13278
L3 IPv6 Unicast routes ³	3318	
L3 IPv4 Multicast (IGMP Proxy, PIM) routes ³	1523	
L3 IPv6 Multicast (IGMP Proxy, PIM) routes ³	1523	
VRRP routers	15	
ECMP groups	761	
Routes in ECMP group	8	

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 resources.

Technical features (continued)

	MES3510S-08P	MES3510DS-24F
Performance		
VRF	16 (including default VRF)	
L3 interfaces	2050	
Link Aggregation Groups (LAG)	123, 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)
- Stacking¹

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
- 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)
- PRP (IEC 62439-3)

¹ Only for MES3510DS-24F.² BGP protocol support is provided under the license.

L3 functions

- Static IP routes
- Dynamic routing protocols RIPv2, OSPFv2, OSPFv3, IS-IS (IPv4 Unicast), BGP² (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
- VRF lite

Link Aggregation functions

- LAG (Link Aggregation Groups)
- 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

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) client
- NTP (Network Time Protocol) client, NTP server, NTP peer
- Hardware support for PTP (IEEE 1588v2) in 1/2-step modes for Transparent Clock (TC):
 - Support for L3E2E (IEC 62439-3 Annex C), L2P2P (IEC 62439-3 Annex C) profiles, Power Profile (IEEE C37.238)
 - PRP consistency (IEC 62439-3)

Management functions

- Configuration file download and upload via TFTP/SCP/SFTP
- SNMP
- CLI (Command Line Interface)
- Web interface
- Syslog
- 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
- 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
- Ping (support for IPv4/IPv6)

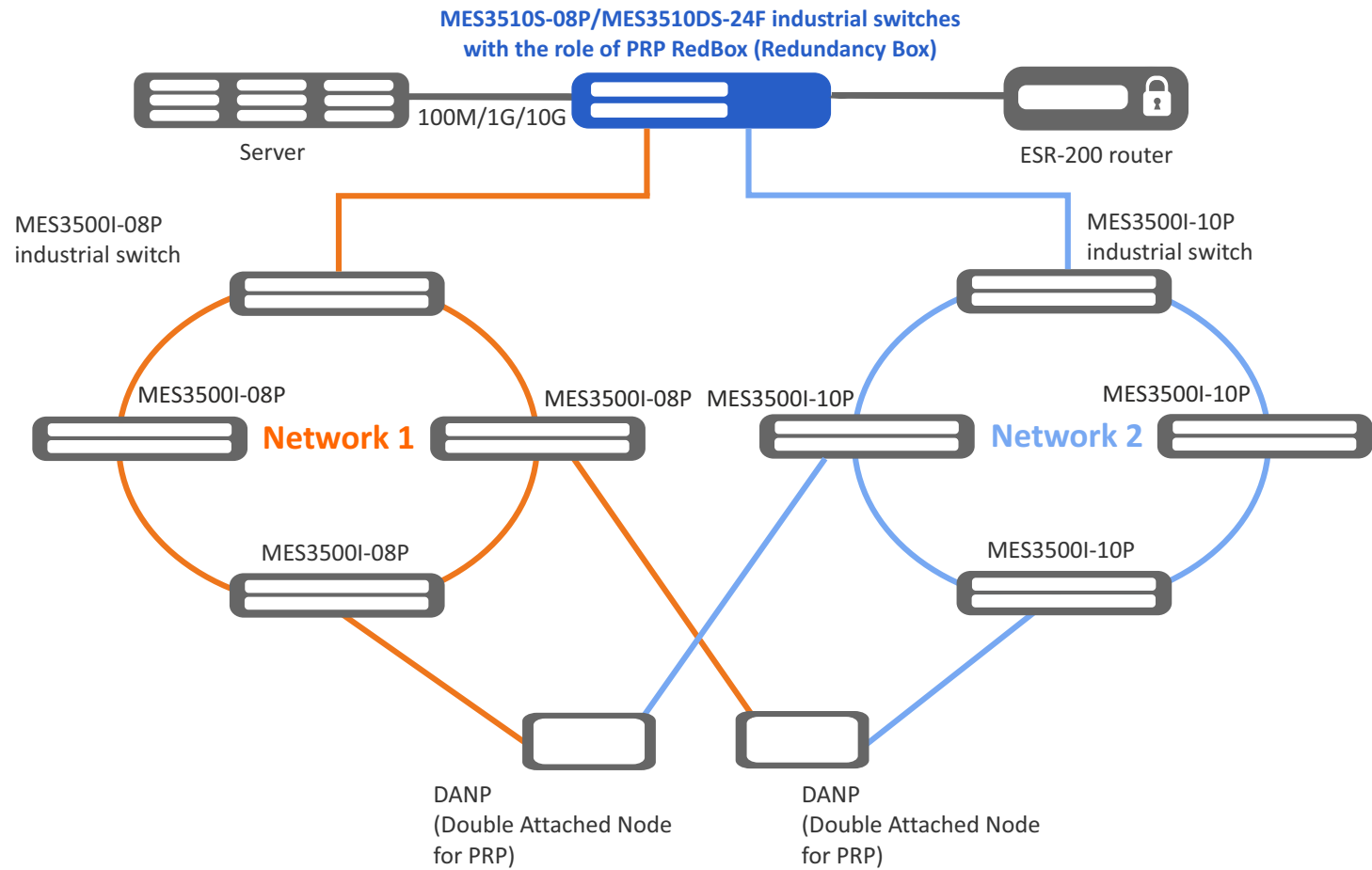
Monitoring functions

- 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

	MES3510S-08P	MES3510DS-24F
Physical features and ambient parameters		
Power supply	100–240 V AC, 47–63 Hz (for PM65-220/12, PM160-220/12, PM165-220/12) with PoE enabled: 45–57 V DC with PoE disabled: 20–57 V DC Power supply options: 1 AC/DC power supply 2 AC/DC hot-swappable power supplies	
Input current	5.5–4.4 A (with PoE) 0.8–0.3 (without PoE)	0.5–0.2 A for AC 1.0–0.4 A for DC
Maximum power consumption	260 W	39 W
PoE budget	240 W (for 802.3at applications, 54–56 V DC is recommended)	–
Heat dissipation	20 W	39 W
Dying Gasp support	no	
Operating temperature	from -40 to +70 °C	
Storage temperature	from -50 to +85 °C	
Operating humidity	from 5 to 95 % (non-condensing)	
Cooling	passive cooling	
Maximum acoustic noise level	from the front panel, max < 33 dB from the rear panel, max < 33 dB	

Physical parameters (continued)

	MES3510S-08P	MES3510DS-24F
Physical features and ambient parameters		
Casing	metal case, IP30	
Form factor	DIN rail for wall mounting (optional in supply package)	19", 1U
Dimensions (W × H × D)	87 × 175 × 115 mm	430 × 44 × 305 mm
Weight	1.87 kg	5.56 kg

Ordering information

Name	Description
MES3510S-08P	MES3510S-08P Ethernet switch, 8 × 10/100/1000BASE-T (PoE/PoE+), 4 × 100BASE-FX/ 1000BASE-X (SFP), L3, 45–57 V DC with PoE (20–57 V DC without PoE)
MES3510DS-24F	MES3510DS-24F Ethernet switch, 16 × 100BASE-FX/ 1000BASE-X (SFP), 8 × 10/100/1000BASE-T/ 100BASE-FX/ 1000BASE-X (RJ-45/SFP) Combo, 4 × 10GBASE-R (SFP+), L3,
Related products	
DRS-270-56	DRS-270-56 power module, 115–240 V AC, 270 W (only for MES3510S-08P)
PM65-220/12 ¹	PM65-220/12 power module, 100–240 V AC, 65 W (only for MES3510DS-24F)
PM160-220/12	PM160-220/12 power module, 100–240 V AC, 160 W (only for MES3510DS-24F)
PM165-220/12	PM165-220/12 power module, 100–240 V AC, 165 W (only for MES3510DS-24F)
PM100-48/12	PM100-48/12 power module, 36–72 V AC, 100 W (only for MES3510DS-24F)
Related software	
ECCM-MES3510S-08P	ECCM-MES3510S-08P option of Eltex ECCM management system for Eltex network elements monitoring: 1 network element MES3510S-08P
ECCM-MES3510DS-24F	ECCM-MES3510DS-24F option of Eltex ECCM management system for Eltex network elements monitoring: 1 network element MES3510DS-24F

¹ For the PM65-220/12 power module, it is permissible to use a DC power source with a voltage of 120–370 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.