

- Bandwidth up to 128 Gbps
- Non-blocking architecture
- 4 ports of 10G in basic configuration
- L3 functions
- Stacking up to 8 devices
- Hot-swappable redundant power supplies
- Passive cooling



The new generation MES3500I-24F switch is designed to organize secure fault-tolerant data transmission networks at sites where it is necessary to meet requirements for ensuring resistance to temperature impact. The device has a significant margin in performance due to interfaces operating at 10 Gbps or 1 Gbps. The switch has 1000BASE-X/100BASE-FX Gigabit ports, as well as 10/100/1000BASE-T/1000BASE-X/100BASE-FX combo ports. The distinctive features of the switch are passive cooling and redundant hot-swappable power supplies.

Technical features

Interfaces	
1000BASE-X/100BASE-FX (SFP)	20
10/100/1000BASE-T/1000BASE-X/100BASE-FX Combo	4
10GBASE-R (SFP+)/1000BASE-X (SFP)	4
10/100/1000BASE-T (OOB)	1
USB 2.0	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	4029
VLAN table	4094
L2 Multicast groups	4092
SQinQ rules	1320 (ingress), 1320 (egress)
MAC ACL rules	2998
IPv4/IPv6 ACL rules	2998/1499
L3 IPv4 Unicast routes ³	13279
L3 IPv6 Unicast routes ³	3317
L3 IPv4 Multicast routes (IGMP Proxy, PIM) ³	4027
L3 IPv6 Multicast routes (IGMP Proxy, PIM) ³	1656
VRRP routers	255
Maximum size of ECMP groups	1024
ECMP routes	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)

Performance (continued)	
VRF	16 (including default VRF)
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	10240 bytes
Stacking	8 devices

Features and capabilities

Interface functions

- Head-of-line blocking (HOL) protection
- Back Pressure
- Auto MDI/MDIX
- Jumbo Frames
- Flow control (IEEE 802.3X)
- Port Mirroring (SPAN, RSPAN)
- Stacking

MAC table functions

- Independent learning mode per VLAN
- MAC Multicast Support
- Configurable aging time of MAC addresses
- Static MAC Entries
- MAC Flapping logging

VLAN functions

- Voice VLAN
- 802.1Q
- Q-in-Q
- Selective Q-in-Q
- GVRP

L2 Multicast functions

- Multicast profiles
- Static Multicast groups
- IGMP Snooping v1,2,3
- Port/host-based IGMP Snooping Fast Leave
- Pim-Snooping
- IGMP proxy-report
- IGMP authorization via RADIUS
- MLD Snooping v1,2
- IGMP Querier
- MVR

L2 functions

- Spanning Tree Protocol, IEEE 802.1d
- Rapid Spanning Tree Protocol, IEEE 802.1w
- Multiple Spanning Tree Protocol, IEEE802.1s
- PVSTP+
- RPVSTP+
- Spanning Tree Fast Link option
- STP Root Guard
- BPDU Filtering
- STP BPDU Guard

L3 functions

- Static IP routes
- Dynamic routing protocols RIPv2, OSPFv2, OSPFv3, IS-IS (IPv4 Unicast), BGP¹ (IPv4 Unicast, IPv4 Multicast)
- BFD (for BGP)
- ARP (Address Resolution Protocol)
- Proxy ARP
- Policy-Based Routing (IPv4)
- VRRP
- Multicast dynamic routing protocols PIM SM, PIM DM, IGMP Proxy, MSDP
- ECMP Load Balancing
- IP Unnumbered
- GRE support
- VRF lite

Link Aggregation functions

- Static LAG
- Dynamic LAG (LACP)
- LAG Balancing Algorithm
- Multi-Switch Link Aggregation Group (MLAG)

IPv6 functions

- IPv6 Host
- Dual stack IPv4, IPv6

Service functions

- VCT (Virtual Cable Testing)
- 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)

ACL (Access Control Lists)

- 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)

- QoS statistics
- Shaping, Policing
- IEEE 802.1p Class of Service (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 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

Management functions

- Configuration file download and upload via TFTP/SCP
- SNMP
- CLI (Command Line Interface)
- Web interface
- Syslog
- NTP (Simple Network Time Protocol)
- Traceroute
- LLDP (802.1ab) + LLDP MED
- LLDP (IEEE 802.1ab)
- Authorization of input commands using the TACACS server+
- Access control – privilege levels for users
- Management interface blocking
- Local authentication
- IP addresses filtering for SNMP
- RADIUS and 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
- DHCP server
- Debugging commands
- Rate limit of traffic to CPU
- Password encryption
- Password recovery
- Ping (IPv4/IPv6 support)

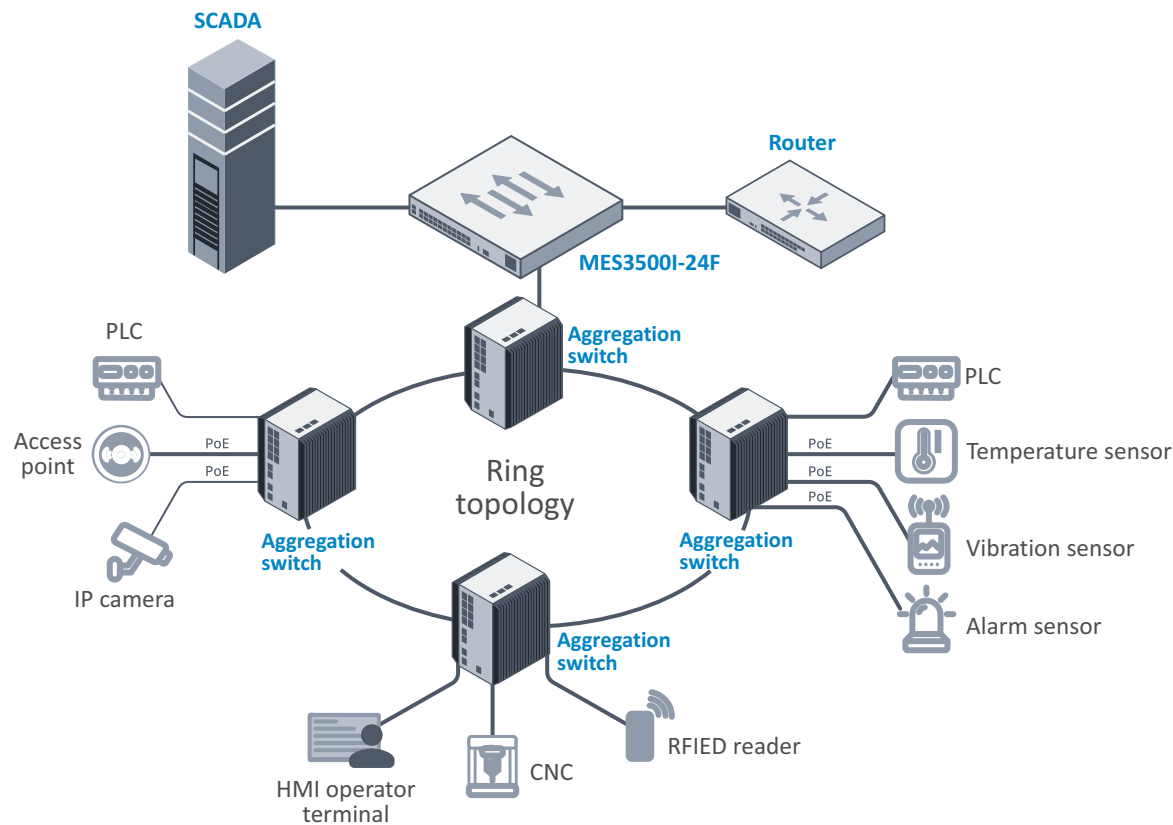
Monitoring functions

- Interface statistics
- RMON/SMON
- IP SLA
- CPU utilization monitoring per task and per traffic type
- RAM utilization 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 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 Differentiated Services Field (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

- 100–240 V AC, 50–60 Hz, 120–370 V DC;
36–72 V DC
Power supply options:
- 1 AC/DC power supply
 - 2 hot-swappable AC/DC power supplies

Input current	0.2–0.5 A for AC 0.4–1.0 A for DC
Maximum power consumption	35 W
Heat dissipation	35 W
Dying Gasp	no
Operating temperature	from -40 to +70 °C
Storage temperature	from -50 to +85 °C
Operating humidity	no more than 95 %
Cooling	passive
Form factor	19", 1U
Dimensions (W × H × D)	430 × 44 × 305 mm
Weight	5.5 kg

Ordering information

Name	Description
MES3500I-24F	MES3500I-24F Ethernet switch, 1 port of 10/100/1000BASE-T (OOB), 20 ports of 1000BASE-X/100BASE-FX (SFP), 4 combo ports of 10/100/1000BASE-T/1000BASE-X/100BASE-FX, 4 ports of 10GBASE-R (SFP+)/1000BASE-X (SFP), 1 port of USB 2.0, L3
Related products	
PM65-220/12	PM65-220/12 power module, 100–240 V AC, 120–370 V DC, 65 W
PM100-48/12	PM100-48/12 power module, 36–72 V DC, 100 W
Related software	
ECCM-MES3500I-24F	ECCM-MES3500I-24F option of Eltex ECCM management system for ELTEX network elements management and monitoring: 1 network element MES3500I-24F

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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.