Industrial switch MES3710P
Data Sheet

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

MES3710P industrial switches manufactured by ELTEX are designed to organize fault-tolerant networks on sites with high requirements to temperature, vibrations and mechanical impact. The switches have 10/100/1000BASE-T ports with PoE/PoE+ technology support and 100BASE-FX/1000BASE-X (SFP) ports.

Technical features

Interfaces	
10/100/1000BASE-T PoE/PoE+ (RJ-45)	8
1000BASE-X/100BASE-FX (SFP)	4
Console port RS-232 (RJ-45)	1
Performance	
Bandwidth	24 Gbps
Throughput for 64 bytes[1]	17.8 MPPS
Buffer memory	2 MB
RAM (DDR3)	512 MB
ROM (SPI Flash)	64 MB
MAC table	32768
ARP table	1000
VLAN table	4094
L2 Multicast groups (IGMP Snooping)	4094
L3 Multicast groups (IGMP Proxy)	2048
SQinQ rules	2048 (ingress[2]), 1024 (egress)
MAC ACL rules	766
IPv4/IPv6 ACL rules	640/320
L3 IPv4 Unicast routes	2048
L3 IPv6 Unicast routes	512
VRRP switches	32
L3 interfaces	20 VLAN, up to 5 IPv4 addresses for each VLAN, up to 512 IPv6 GUA for all VLANs in summary
Link Aggregation Groups (LAG)	24 groups, up to 8 ports per LAG
Quality of Service (QoS)	8 output queues per port
Jumbo frames	12288 bytes

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[1] Values are for one-way transmission.
[2] Mac-based VLAN and SQinQ share hardware resources.

Features and capabilities

Interface functions
– Head-of-line blocking (HOL) protection
– Auto MDI/MDIX
– Jumbo frames
– Flow control (IEEE 802.3X)
– Port mirroring (SPAN, RSPAN)

MAC table functions
– Independent learning mode per VLAN
– MAC Multicast Support
– Configurable aging time of MAC addresses
– Static MAC Entries
– MAC Change logging on ports
– MAC Flapping

VLAN functions
– Voice VLAN
– 802.1Q
– Q-in-Q
– Selective Q-in-Q
– GVRP
– MAC-based VLAN
– Protocol-based VLAN

L2 Multicast functions
– Multicast profiles
– Multicast static groups
– IGMP Snooping v1,2,3
– Port/host based IGMP snooping Fast Leave
– IGMP Proxy-report
– Support for IGMP authorization via RADIUS
– 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, IEEE 802.1s)
– Rapid-PVST+
– STP Root Guard
– STP Loop Guard
– STP BPDU Guard
– BPDU Filtering
– Spanning Tree Fast Link option
– Loopback Detection (LBD)
– Port isolation
– Storm control for different types of traffic (broadcast, multicast, unknown unicast)
– Layer 2 Protocol Tunneling (L2PT)
– ERPS (G.8032v2)

L3 Multicast functions
– IGMP proxy (RFC 4605)
– IGMP proxy fast-leave

L3 functions
– Static IPv4, IPv6 routes
– RIPv1/2, OSPFv2/3
– VRRP

Link Aggregation functions
– Static LAG
– Dynamic LAG (LACP)
– LAG Balancing Algorithms

IPv6
– IPv6 Host
– Dual-stack IPv4, IPv6

Service functions
– Virtual Cable Testing (VCT)
– Optical transceiver diagnostics

Security functions
– DHCP Snooping
– DHCP option 82
– MAC-based authentication, Port Security, static MAC entries
– Port-based authentication IEEE 802.1x
– Guest VLAN
– DoS attack prevention
– Traffic segmentation
– DHCP client filtering
– BPDU attack prevention
– PPPoE Intermediate Agent
– IP Source Guard
– Dynamic ARP Inspection
– DHCPv6 Snooping
– IPv6 Source Guard
– IPv6 ND Inspection
– IPv6 RA Guard

Access Control Lists (ACL)
– L2-L3-L4 ACL (Access Control List)
– IPv6 ACL
– ACL based on:
    – 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
– Shaping
– Policing according to sr-TCM and tr-TCM
– IEEE 802.1p CoS
– Scheduling algorithms: Strict priority/Weighted Round Robin (WRR)
– IEEE 802.1p priority adjustment for Management VLAN
– ACL-based traffic classification
– ACL-based DSCP to CoS, CoS to DSCP remarking
– ACL-based VLAN assignment

OAM
– 802.3ah Ethernet Link OAM
– 802.3ah Unidirectional Link Detection

Main management functions
– Configuration file download and upload via TFTP/SFTP
– Automatic backup of configuration file via TFTP/SFTP
– SNMP (Simple Network Management Protocol)
– Command Line Interface (CLI)
– Web interface
– Syslog
– SNTP (Simple Network Time Protocol)

eLTEX
Integrated networking solutions

Features and capabilities (continued)

– Traceroute
– LLDP (802.1ab) + LLDP MED
– Processing of management traffic with two 802.1Q headers
– Authorization of entered commands using TACACS+ server
– Access control — privilege levels
– Management interface blocking
– Local authentication
– IP address filtering for SNMP
– RADIUS, TACACS+ (Terminal Access Controller Access Control System) client
– SSH server, Telnet server
– SSH client, Telnet client
– Macro commands
– Input commands logging via TACACS+
– DHCP autoprovision
– DHCP Relay (support for IPv4)
– DHCP Relay Option 82
– DHCP server
– PPPoE Circuit-ID tag adding
– Flash File System
– Debugging commands
– Limiting of traffic to CPU
– Password encryption
– Ping (support for IPv4/IPv6)
– IPv4/IPv6 static routes support
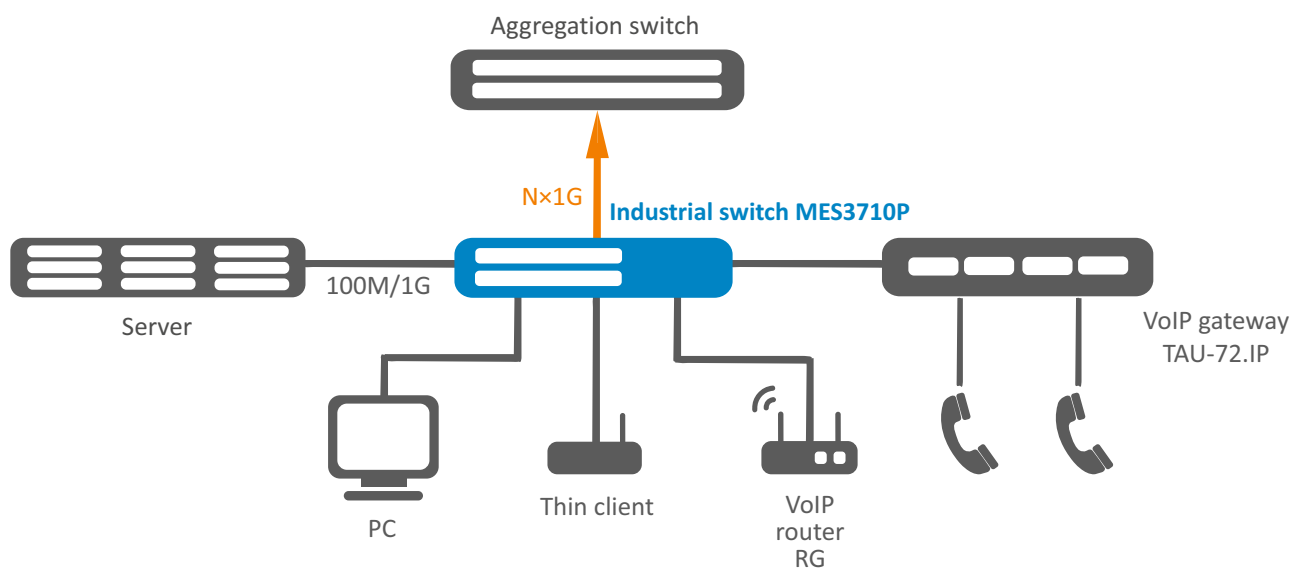– Support for several versions of configuration file

Monitoring functions
– Interface statistics
– CPU utilization monitoring per task and per queue
– RAM utilization 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 2465 IPv6 MIB
– RFC 2737 Entity MIB
– RFC 4293 IPv6 SNMP Mgmt Interface MIB
– Private 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 3289 MIB for Diffserv
– RFC 2620 RADIUS Accounting Client MIB
– RFC 768 UDP
– RFC 791 IP
– RFC 792 ICMPv4
– RFC 2463, 4443 ICMPv6
– RFC 793 TCP
– RFC 2474, 3260 DS field definition in IPv4 and IPv6 headers
– RFC 1321, 2284, 2865, 3580, 3748 Extensible Authentication Protocol (EAP)
– RFC 2571, RFC 2572, RFC 2573, RFC 2574 SNMP
– RFC 826 ARP
– RFC 854 Telnet
– IEC 61850

Use case

Aggregation switch

N×1G
Industrial switch MES3710P

100M/1G

Server

PC

Thin client

VoIP router RG

VoIP gateway TAU-72.IP

ELTEX
Integrated networking solutions

Physical specifications

Physical specifications and environmental parameters	
Power supply	with PoE enabled: 48–57 V DC with PoE disabled: 18–57 V DC
Input current	with PoE enabled: 6–4.5 A with PoE disabled: 1.1–0.3 A
Maximum power consumption (including PoE)	275 W
Maximum power consumption (excluding PoE)	20 W
PoE budget	240 W (for 802.3at applications, 54–56 V DC)
Heat dissipation	40 W
Dying Gasp support	no
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
Operating 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 (W × H × D)	85 × 175 × 115 mm
Weight	1.77 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
MES3710P	Industrial switch MES3710P, 8 ports of 10/100/1000BASE-T (PoE/PoE+), 4 ports of 1000BASE-X/ 100BASE-FX (SFP), L3, 48–57 V DC with PoE (18–57 V DC without PoE)
Related products	
DRS-270-56	DRS-270-56 power module, 115–240 V AC, 270 W
Related software	
ECCM-MES3710P	ECCM-MES3710P option of Eltex.ECCM system to manage and monitor ELTEX network elements: 1 network element MES3710P