ELTEX

Integrated Networking Solutions

- **Bandwidth 800 Gbps**
- **Non-blocking architecture**
- **24x10G ports, 4x40G ports**
- **L3 switch**
- **Stacking up to 8 devices**
- **Hot-swappable redundant power supplies**
- **Hot-swappable fans**
- **Front-to-Back cooling**

MES5324 switches are high performance devices with 10GBASE-R and 40GBASE-SR4/LR4 interfaces that can be used as aggregation switches in carrier networks and as Top-of-Rack or End-of-Row switches for data centers.

The device's ports support operation at rates of 1 Gbps (SFP), 10 Gbps (SFP+) and 40 Gbps (QSFP) that provides flexible using and ability of smooth transition to higher data rates. The non-blocking architecture guarantees lossless packet forwarding at wire speed with minimum and predictable delays for all types of traffic. The front-to-back cooling provides effective cooldown in modern data centers.

The redundant and hot-swappable fans and AC/DC power supplies together with advanced hardware monitoring functions provide high network reliability and uninterrupted services.

MES5324 switches comply with CE requirements.

Technical features

Common parameters	
Packet processor	Marvell 98CX8129-A1 (Hooper)
Interfaces	
10GBASE-R(SFP+)/1000BASE-X (SFP)	24
40GBASE-SR4/LR4 (QSFP)	4
10/100/1000BASE-T (OOB)	1
10/100/1000BASE-T (Management in-band)	1
Console port RS-232 (RJ-45)	1
Performance	
Bandwidth	800 Gbps
Throughput for 64 bytes[1]	512.8 MPPS
Buffer memory	4 MB
RAM (DDR3)	4 GB
ROM (NAND)	2 GB
MAC table	64K
VLAN table	4094
L2 Multicast groups	4K
ARP table[2]	7 748
Link Aggregation Groups (LAG)	48, up to 8 ports per LAG
Maximum size of ECMP groups	64

[1] The value is given for one-way transmission

[2] For each host in the ARP table, an entry is created in the routing table

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Technical features

Quality of Service (QoS)	8 egress queues per port
Number of ACL rules	1 982
L3 IPv4 Unicast[1]	7 748
L3 IPv6 Multicast[1]	1 942
L3 IPv4 Multicast (IGMP Proxy, PIM)[1]	4 024
L3 IPv6 Multicast (IGMP Proxy, PIM)[1]	1 006
Jumbo frames size	10 240 bytes
Stacking	8 devices

Features and capabilities

Interfaces functions
– Head-of-line blocking (HOL) protection
– Back Pressure
– Auto MDI/MDIX
– Jumbo Frames
– Flow Control (IEEE 802.3X)
– Port Mirroring
– Stacking

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

VLAN functions
– Voice VLAN
– IEEE 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
– 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) per VLAN
– ERPS (G.8032v2)
– Flex-link
– Private VLAN, Private VLAN Trunk
– Layer 2 Protocol Tunneling (L2PT)

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

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

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 clients filtering
– BPDU attack prevention
– NetBIOS/NetBEUI
– PPPoE Intermediate agent

IPv6 functions
– IPv6 Host
– Dual-stack

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

Features and capabilities

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

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

ACL (Access Control List)
– L2-L3-L4 ACL
– 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

Management functions
– Download and upload of configuration file via TFTP
– Redirecting the output of CLI commands to an arbitrary file on ROM
– SNMP
– 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, Telnet server
– SSH, 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 support)
– DNS server (Resolver)

Monitoring functions
– Interface statistics
– RMON/SMON
– 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 271,1757, 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 DS field in the IPv4 and IPv6 header
– RFC 1321, 2284, 2865, 3580, 3748 Extensible Authentication Protocol (EAP)
– RFC 2571, RFC2572, RFC2573, RFC2574 SNMP
– RFC 826 ARP
– RFC 854 Telnet

Physical specifications

Physical specifications and environmental parameters	
Maximum power consumption	85 W
Power supply	100–240 V AC, 50–60 Hz 36–72 V DC Power supply options: • 1 AC/DC power supply • 2 AC/DC hot-swappable power supplies
Input current	0.85–0.35 A for AC 2.36–1.18 A for DC
Operating temperature	from 0^0 to $+45^0$ C
Storage temperature	from -50^0 to $+70^0$ C
Operating humidity	no more than 80%
Cooling	Front-to-back, 4 fans
Form factor	19'', 1U
Dimensions (WxHxD), mm	430x44x298
Weight	3.95 kg

Ordering information

Name	Description	Image
MES5324	MES5324 Ethernet switch, 1 port of 10/100/1000BASE-T (OOB), 1 port of 10/100/1000BASE-T (Management), 24 ports of 10GBASE-R (SFP+)/1000BASE-X (SFP), 4 ports of 40GBASE-SR4/LR4, L3 switch	
Related products		
PM160-220/12	PM160-220/12 power supply module, 100–240 V AC, 160 W	
PM100-48/12	PM100-48/12 power supply module, 36–72 V DC, 100 W	
Related software		
EMS-MES-aggregation	EMS-MES-aggregation option of Eltex.EMS for ELTEX network elements management and monitoring: 1 network element is an aggregation switch	

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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.