

Aggregation Ethernet switches MES5324

Description:

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



Features:

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

Specifications:

Packet processor	Marvell98CX8129
RAM	4 GB
NAND FLASH	2 GB
Interfaces	1x10/100/1000BASE-T (OOB); 1x10/100/1000BASE-T (Management in-band) 24x10GBASE-R(SFP+)/1000BASE-X (SFP); 4x40GBASE-SR4/LR4 (QSFP)
Console port	RS232/RJ-45
Bandwidth	800 Gbps
Buffer memory	32 Mbit
MAC table	64K
VLAN table	4K
L2 Multicast groups	4K
ARP table1	8K
Link Aggregation Groups (LAG)	16, up to 8 ports per LAG

Quality of Service (QoS)	8 egress queues per port
TCAM	for routing: 8192 for traffic processing: 8192 x 24B
Jumbo-frames size	10240 bytes
Stacking	8 devices

Physical and environmental features

Power supply	AC power: 220 V+-20%, 50 GHz' DC power: -36..-72V Power supply options: - 1 AC/DC power supply - 2 AC/DC hot-swappable power supplies
Max power consumption	85 W
Cooling	Front-to-back, 4 fans
Operating temperature	from -5° to +50°C
Operating humidity	80% max
Storage temperature	from -40° to +70°C
Dimensions (WxDxH), mm	430x298x44
Weight	3.95 kg

¹ For each host in the ARP table, an entry is created in the routing table

Interface 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 detection

IPv6 functions

- IPv6 Host
- Dual-stack

L2 Multicast functions

- Multicast profiles
- Static Multicast groups
- IGMP Snooping v1,2,3
- Port/host-based IGMP Snooping Fast Leave
- 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, IEEE802.1s)
- STP Multiprocess
- Spanning Tree Fast Link option
- EAPS¹
- STP Root Guard
- STP Loop Guard
- BPDU Filtering
- STP BPDU Guard
- Loopback Detection (LBD) per VLAN
- ERPS (G.8032v2)
- Private VLAN
- Layer 2 Protocol Tunneling

Security functions

- DHCP Snooping
- DHCP Option 82
- IP Source Guard
- Dynamic ARP Inspection
- sFlow
- MAC-based authentication, Port Security, Static MAC entries
- Port-based authentication IEEE 802.1x
- Guest VLAN¹
- DoS attack prevention
- Traffic segmentation
- Protection against non-authorized DHCP servers
- DHCP clients filtering
- BPDU attack prevention
- NetBIOS/NetBEUI
- PPPoE Intermediate agent

Link Aggregation functions

- Static LAG
- Dynamic LAG (LACP)
- LAG Balancing Algorithm

VLAN functions

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

L3 functions

- Static IP routes
- RIPv2, OSPFv2, OSPFv3
- Address Resolution Protocol (ARP)
- VRRP
- PIM SM, IGMP Proxy

Quality of Service (QoS)

- QoS statistics
- Shaping, Policing
- IEEE 802.1p Class of Service (CoS)
- Storm Control
- 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

Management functions

- Download and upload of configuration file via TFTP
- 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
- SSH server
- SSL
- Macrocommands
- CLI commands logging
- System log
- DHCP autoprovision
- DHCP Relay (IPv4 support)
- DHCP Option 12
- DHCP Relay Option 82
- PPPoE Circuit-ID tag
- Flash File System
- Debugging commands
- Rate limit of traffic to CPU
- Password encryption
- Password recovery
- Ping (IPv4/IPv6 support)
- FTP server¹

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

OAM

- 802.3ah Ethernet OAM
- Dying Gasp
- 802.1ag Connectivity Fault Management (CFM)¹
- 802.3ah Unidirectional Link Detection

Service functions

- Virtual Cable Testing (VCT)
- Optical transceiver diagnostics
- Green Ethernet

Monitoring functions

- Interface statistics
- RMON/SMON
- CPU utilization monitoring per task and per traffic type
- RAM utilization monitoring
- Temperature monitoring
- TCAM utilization monitoring

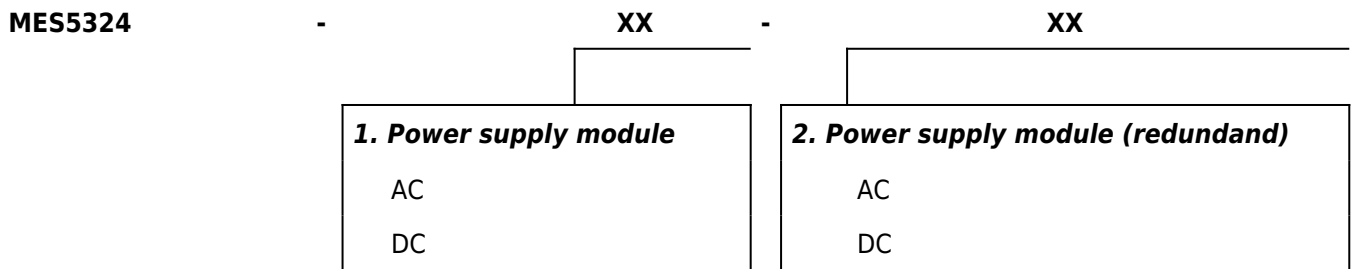
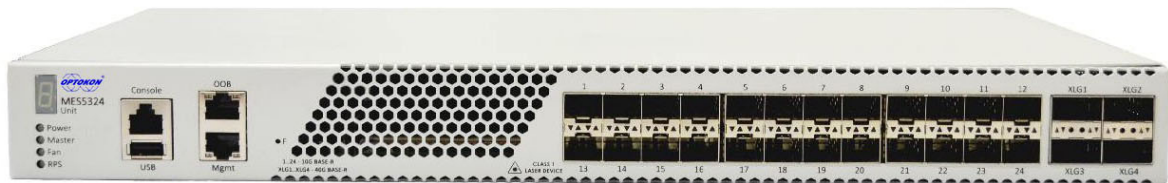
Data Center Bridging (DCB) functions¹

- IEEE 802.1Qaz Enhanced Transmission Selection (ETS)
- IEEE 802.1Qbb Priority-Based Flow Control (PFC)
- Cut-through switching

Ordering code:

MES5324-XX1-XX2	MES5324 Ethernet switch, 24 ports of 10GBASE-R, 4 ports of 40GBASE-SR4/LR4, L3 switch
PM160-220/12	AC Power supply module PM160-220/12, 220V AC, 160W
PM100-48/12	DC Power supply module PM100-48/12, 48V DC, 100W
EMS-MES-aggregation	EMS-MES-aggregation option of EMS system for managing and monitoring of OPTOKON network elements: 1 aggregation network element

Note 1-2: The switch is equipped with defined power supply module



Note: The switch must be equipped at least with one power supply module

Example of Orderig code

MES5324-AC	The switch MES5324 with one power supply module PM160-220/12
MES5324-DC	The switch MES5324 with one power supply module PM100-48/12
MES5324-AC-AC	The switch MES5324 with two power supply modules PM160-220/12
MES5324-AC-DC	The switch MES5324 with first power supply module PM160-220/12 and second power supply module PM100-48/12