# MES2324P and MES2348P PoE PoE+ switches

Description:

The MES23xxP PoE/PoE+ switches are designed to connect end users to a largescale corporate network, small and medium business networks and to a service provider networks using 1G/10G Ethernet interfaces. The switches support physical stacking, VLANs, multicast groups and advanced security functions. The MES23xxP switches comply with CE requirements.

MES2324P-AC

MES2348P-AC
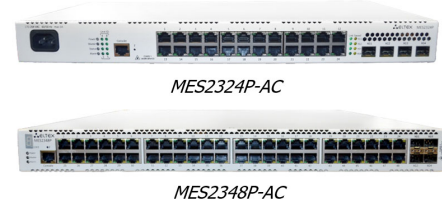
Features:

- Throughput capacity 176 Gbps
- Non-blocking switching fabric
- L3 functions, Stacking support
- Multicast support (IGMP Snooping, MVR)
- Advanced security functions (L2-L4 ACL, IP Source Guard, Dynamic ARP Inspection, etc.)

Specifications:

	MES2324P	MES2348P
Packet processor	Marvell 98DX3236-A1 (AlleyCat3)	Marvell 2x98DX3236-A1 (AlleyCat3)
10/100/1000BASE-T (RJ-45) PoE/PoE+	24	48
10GBASE-R (SFP+)/1000BASE-X (SFP)	4	4
Console port	RS-232/RJ-45	
Bandwidth	128 Gbps	176 Gbps
Packet forwarding rate (64B)	93.1 Mpps	130.9 Mpps
Buffer memory	12 Mb	24 Mb
RAM (DDR3)	512 MB	
ROM (RAW NAND)	512 MB	
MAC table	16k	
VLAN table	4k	
L2 Multicast groups	2k	
Quality of Service (QoS)	8 egress queues per port	
TCAM	For routing: 1024xIPv4, For traffic processing: 1024x24B	
ARP table1	1k	
Link Aggregation Groups (LAG)	16, up to 8 ports per LAG	
Maximum size of ECMP groups	8	
Jumbo frames size	10240	
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

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

- Auto-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, IEEE802.1s)
- STP Multiprocess
- PVSTP+
- RPVSTP+
- Spanning Tree Fast Link option
- EAPS[1]
- STP Root Guard
- STP Loop Guard
- BPDU Filtering
- STP BPDU Guard
- VLAN-based Loopback Detection (LBD)
- ERPS (G.8032v2)
- Flex-link
- Private VLAN, Private VLAN Trunk
- Layer 2 Protocol Tunneling

Link Aggregation functions

- Static LAG
- Dynamic LAG (LACP)
- LAG Balancing Algorithms
- 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 VLAN1
- DoS attack prevention
- Traffic segmentation
- Protection against non-authorized DHCP servers
- DHCP client filtering
- BPDU attack prevention
- NetBIOS/NetBEUI filtering
- PPPoE Intermediate Agent

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

Quality of service (QoS) and rate limiting

- QoS statistics
- Shaping, Policing
- IEEE 802.1p Class of Service (CoS)
- Storm Control for different types of traffic (broadcast, multicast, unicast)
- Bandwidth management
- Scheduling algorithms: Strict Priority/Weighted Round Robin (WRR)
- Three marking colors
- ACL-based CoS/DSCP assignment
- Setting the IEEE 802.1p priority for management VLAN
- DSCP to CoS/CoS to DSCP remarking
- ACL-based VLAN assignment
- 802.1p, DSCP mark assignment for IGMP

OAM/CFM

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

L3 functions

- Static IP routes
- Dynamic routing protocols RIPv2, OSPFv2, OSPFv3,
- IS-IS, BGP2
- Address Resolution Protocol (ARP)
- Proxy ARP
- Policy-Based Routing (IPv4)
- VRRP
- PIM SM, PIM DM, IGMP Proxy, MSDP
- ECMP Load Balancing
- IP Unnumbered

Monitoring functions

- Statistics of interfaces
- RMON/SMON
- IP SLA
- CPU utilization monitoring per task and per traffic type
- Temperature monitoring
- TCAM utilization monitoring
- RAM utilization monitoring

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

IPv6 functions

- IPv6 Host
- Dual-stack

Management functions

- Download and upload of configuration file via TFTP/SCP
- Redirecting the output of CLI commands to an arbitrary file on ROM
- SNMP (Simple Network Management Protocol)
- 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
- Charge of Authorization (CoA)
- Telnet server, SSH server
- Telnet client, SSH 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)

Service functions

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

MIB

- 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 IPv4 and IPv6 header
- RFC 1321, 2284, 2865, 3580, 3748 Extensible Authentication Protocol (EAP)
- RFC 2571, 2572, 2573, 2574 SNMP
- RFC 826 ARP
- RFC 854 Telnet

Physical parameters and parameters of environment

	MES2324P-AC	MES2324P-DC	MES2348P
Maximum power consumption ((ncluding PoE)	410 W		1600 W
Power supply	170-265 V AC, 50-60 Hz;	36-72 V DC	100-240 V AC, 50-60 Hz (up to 2 hot-swappable power supplies)
PoE budget	380 W		1450 W
Input current	1.55-2.41 A	5.69-11.4 A	6.67-16.0 A-
Operating temperature	from -20 to +50°C		from -10 to +50°C
Storage temperature		from -50 to +70°C	

Operating humidity		no more than 80%	
Cooling	2 fans	4 fans	
Form factor	19", 1U		
Dimensions (W x D x H)	440 x 203 x 44	440 x 490 x 44	
Weight	3.16 kg	4.02 kg	9.55 kg
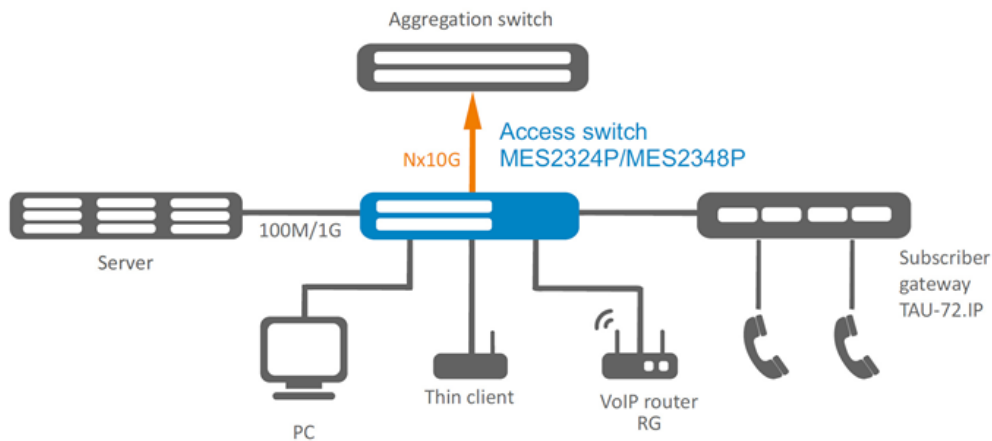
Ordering code:

Name	Description
MES2324P-AC	MES2324P Ethernet switch, 24 ports of 10/100/1000BASE-T (RJ-45) with PoE/PoE+ support, 4 ports of 10GBASE-R (SFP+)/1000BASE-X (SFP), L3, 170–264 V AC
MES2324P-DC	MES2324P Ethernet switch, 24 ports of 10/100/1000BASE-T (RJ-45) with PoE/PoE+ support, 4 ports of 10GBASE-R (SFP+)/1000BASE-X (SFP), L3, 36–72 V DC
MES2348P-AC-xx*	MES2348P Ethernet switch, 48 ports of 10/100/1000BASE-T (RJ-45) with PoE/PoE+ support, 4 ports of 10GBASE-R(SFP+)/1000BASE-X (SFP), L3, 100–240 V AC, two slots for power supply modules
PM950-220/56	Power supply module PM950-220/56, 220V AC, 950W (for MES2348P)
EMS-MES-Access	Option EMS-MES-Access option of EMS system for management and monitoring of OPTOKON, a.s. network elements: 1 network element is an access switch
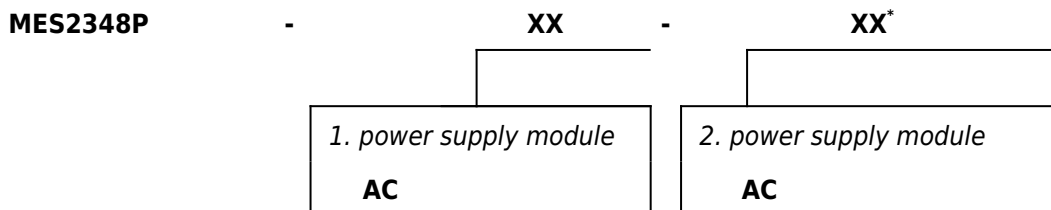
Note: The switch must be equipped at least with one power supply module.
*It's neccessery use 2 power supply module if you need PoE,PoE+ on all ports. The switch MES2348P is device with flexible PoE power budget from 750W from one module up to 1450 kW from two modules.

Example of Orderig Code

MES2348P-AC   The switch MES2348P with one power supply module PM950-220/56
MES2348P-AC-AC   The switch MES2348P with two power supply modules PM950-220/56 (for max.
PoE budget 1450 kW)