ES3528MV2/ES3528MV2-DC

L2 Fast Ethernet Standalone Switches

Product Overview

The Edge-Core ES3528MV2 and ES3528MV2-DC are Fast Ethernet Layer 2/4 switches featuring 28 ports; 24 100BASE-TX ports and 4 combination Gigabit Ethernet RJ-45/SFP (Small Form Factor Pluggable) ports. They are ideal for desktop Fast Ethernet connectivity and wiring closet installations with their fanless design for silent operation. Using IP Clustering for a virtual stack of up to 36 switches, the whole stack can be managed as a single entity with a single IP address. These switches are packed with features and are a cost-effective solution that brings continuous availability, enhanced security and advanced QoS to the network edge, while maintaining simplicity of management with optional DC power capability.

Fast Ethernet Standlond Switch

Key Features and Benefits

Performance and Scalability

With 12.8 Gbps switching capacity, the ES3528MV2 and ES3528MV2-DC deliver wire-speed switching performance on all Fast and Gigabit Ethernet ports, allowing users to take full advantage of existing high-performance, PCs and laptops by significantly improving the responsiveness of applications and file transfer times.

There are four Gigabit Ethernet combination ports for uplink flexibility, allowing copper or fiber uplinks. The switch also supports digital diagnostic monitoring (DDM) for SFP transceivers.

Continuous Availability

IEEE 802.1w Rapid Spanning Tree Protocol provides a loop-free network and redundant links to the core network with rapid convergence, to ensure faster recovery from failed links, enhancing overall network stability and reliability.

IEEE 802.1s Multiple Spanning Tree Protocol runs STP per VLAN base, providing Layer 2 load sharing on redundant links.

IEEE 802.3ad Link Aggregation Control Protocol (LACP) increases bandwidth by automatically aggregating several physical links together as a logical trunk and providing load balancing and fault tolerance for uplink connections.

The ES3528MV2 and ES3528MV2-DC support G.8032 Ethernet Ring Protection Switching with the ability for the network to detect and recover from incidents without impacting users, meeting the most demanding quality and availability requirements. Rapid recovery time when problems do occur is as low as 50ms.

Comprehensive QoS

Eight egress queues per port enable differentiated management of up to eight traffic types. Traffic is prioritized according to 802.1p and DSCP, giving optimal performance to real-time applications such as voice and video.

Asymmetric bidirectional rate-limiting, per port or per traffic class, preserves network bandwidth and allows maximum control of network resources.

Enhanced Security

Port security allows access to switch ports based on MAC address, limits the total number of devices from using a switch port, and protects against MAC flooding attacks.

IEEE 802.1X port-based or MAC-based access control ensures all users are authorized before being granted access to the network. User authentication is carried out using any standard-based RADIUS server.

Access Control Lists (ACLs) can be used to restrict access to sensitive network resources by denying packets based on source and destination MAC addresses, IP addresses, or TCP/UDP ports. ACLs are hardware supported, so switching performance is not compromised.

Secure Shell (SSH) and Secure Sockets Layer (SSL/HTTPS) encrypts Telnet and web access to the switch, providing secure network management.

TACACS+/RADIUS authentication enables centralized control of the switch and prevents unauthorized users from altering the configuration of the switch.

Private VLANs isolate edge ports to ensure user privacy.

IGMP snooping prevents flooding of IP multicast traffic and limits bandwidth intensive video traffic to only the subscribers.

Service Monitoring and Management

The ES3528MV2 and ES3528MV2-DC support IEEE 802.1ag Connectivity Fault Management (CFM) and ITU-T Y.1731, allowing service providers to monitor end-to-end services, identify connectivity/performance issues, and isolate problems from a remote location without dispatching onsite service personnel.

Additionally, this provides the capability to monitor service availability, delay, jitter, and dropped packets, used to verify SLA conformance for billing purposes while providing advance indication of performance degradation before a service outage occurs.

Simple Management

An industry-standard Command Line Interface (CLI), accessed through the console port or Telnet, provides a convenient way to configure and troubleshoot the switch. An embedded user-friendly web interface helps users quickly and simply configure the switch. Four-group RMON is supported to collect traffic statistics and run network diagnostics. The switch can also backup and restore firmware and configuration files via TFTP.

ES3528MV2/ES3528MV2-DC Product Specifications

www.edge-core.com

Features

Physical Ports

24 100BASE-TX ports
4 Combo Gigabit (RJ-45/SFP) ports
1 RS-232 DB-9 console port

Performance

Switching Capability: 12.8 Gbps
Packet Buffer Size: 8 Mb
CPU: 800MHz
Memory: 128 MB
FLASH: 32 MB
MAC Address Table: 16 K
ACL: 1 K
Multicast groups: 1 K
RFC2544 testing standard

L2 Features

Flow Control:
- IEEE 802.3x for full-duplex mode
- Back-Pressure for half-duplex mode

Spanning Tree Protocol:
- IEEE 802.1D Spanning Tree Protocol (STP)
- IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
- IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
- Loop Back Detection
- BPDU Guard
- BPDU Filter
- Root Guard
- Auto Edge

VLANs:
- Supports 4K IEEE 802.1Q VLANs
- Port-based VLANs
- IEEE 802.1v protocol-based VLANs
- Private VLANs
- GVRP
- Vlan Translation

Link Aggregation:
- Static trunk
- IEEE 802.3ad Link Aggregation Control Protocol
- Trunk groups: 8, Trunk links: 2~8

IGMP Snooping:
- IGMP v1/v2/v3 snooping
- IGMP Querier
- IGMP filtering

MVR (Multicast VLAN Registration)
DHCP Option 82
DHCP dynamic provision
Support for jumbo frames up to 10KB
Q-in-Q
Select Q-in-Q
G.8032 (ERPS)

QoS Features

Priority Queues: 8 hardware queues per port
Traffic classification based on IEEE 802.1p CoS, IP, and DSCP
Supports WRR and strict scheduling
Bandwidth Control:
- Egress rate limiting: FE: 64K bits/sec ~ 100M bits/sec
  GE: 64K bits/sec ~ 1000M bits/sec
- Ingress rate limiting: FE: 64K bits/sec ~ 100M bits/sec
  GE: 64K bits/sec ~ 1000M bits/sec

Security

Supports IEEE 802.1X port-based/MAC-based access control
QoS assignment
RADIUS authentication
IP Source Guard
Dynamic ARP Inspection
Link detection
MAC filter
TACACS+
Access Control List
SSH (v1.5/v2.0)
SSL

IPv6 Features

IPv4/IPv6 dual protocol stack
IPv6 Address Types Stack: Unicast
IPv6 Neighbor Discovery
SNMP over IPv6
HTTP over IPv6
Remote IPv6 ping
MVR6
IPv6 sFlow

Management

Switch Management:
- CLI via console port or Telnet
- Web management
- SNMP v1, v2, v3

Firmware and Configuration:
- Dual firmware images
- Firmware upgrade via TFTP server
- Multiple configuration files
- Configuration file upload/download via TFTP server

Auto upgrade via TFTP server
RMON (groups 1, 2, 3, and 9)
BOOTP, DHCP for IP address assignment
SNTP
Event/Error Log, Syslog
(Optional) ECView Pro is a powerful network management system that maximizes the capabilities of Edge-Core devices with:
- Topology management
- Performance management
- Configuration management
- Event management
- SNMP management

Dynamic ARP Inspection
sFlow
MAC-based mirror
ATC
Delay reload
Engress ACL
Performace monitoring

OAM

IEEE 802.3ah Link
IEEE 802.1ag Connectivity Fault Management
Connectivity check
Loopback
Linktrace
ITU-T Y.1731 Performance and Throughput Management
Frame Delay
Frame Delay variation
Complies with MEF 9 and 14 specifications

SNMP Standards

RFC 1493 Bridge MIB
RFC 3289 Differentiated Service MIB
RFC 2742 SNMP Agents MIB
RFC 2096 Forwarding Table MIB
RFC 2933 IGMP MIB
RFC 2233 Interface Group MIB
RFC 2668 MAU MIB
RFC 1213 MIB II
RFC 2621 RADIUS Authentication Client MIB
RFC 2819 RMON MIB
RFC 2021 RMON II Probe Configuration Group
RFC 2011 SNMPv2 IP MIB
RFC 3584 SNMP Community MIB
RFC 3411 SNMP Framework MIB
RFC 3412 SNMP-MPD MIB
RFC 3413 SNMP Target MIB, SNMP Notification MIB
RFC 3414 SNMP User-Based SM MIB
RFC 3415 SNMP View Based ACM MIB
RFC 2013 TCP MIB
RFC 1215 Trap
RFC 2012 UDP MIB
RFC 2013 TCP MIB
RFC 1541 DHCP Client
RFC 1112 IGMP
RFC 2236 IGMPv2
RFC 2618 RADIUS
RFC 1757 RMON
RFC 1157 SNMP
RFC 2571 SNMPv2
RFC 2030 SNTP
RFC 1350 TFTP
TACACS Authentication Client MIB
Private MIB
Quality of Service MIB

TEL: 886-3-5638888 FAX: 886-3-6686111
No.1, Creation Rd. III, Hsinchu Science Park, Taiwan 30077
sales_ec@edge-core.com www.edge-core.com

ES3528MV2/ES3528MV2-DC Product Specifications

www.edge-core.com

Features

IEEE Standards

IEEE 802.1D Spanning Tree Protocol and traffic priorities
IEEE 802.1w Rapid Spanning Tree Protocol
IEEE 802.1p priority tags
IEEE 802.1Q VLAN
IEEE 802.1v protocol-based VLANs
IEEE 802.1x port authentication
IEEE 802.3-2005
Ethernet, Fast Ethernet, and Gigabit Ethernet
Full-Duplex flow control
Link Aggregation Control Protocol
IEEE 802.3ac VLAN tagging

Electromagnetic Compatibility

CE Mark
FCC Class A
CISPR Class A

Environmental Specifications

Temperature:
- IEC 68-2-14
- 0ºC to 55ºC (32 °F to 131 °F) standard operating
- -20ºC to 70ºC (-4 °F to 158 °F) non-operating

Humidity: 5% to 95% non-condensing
Vibration: IEC 68-2-36, IEC 68-2-6
Shock: IEC 68-2-29
Drop: IEC 68-2-32

Mechanical

Dimensions (H x W x D): 4.3 x 44 x 17.1 cm (1.69 x 17.32 x 6.73 in.) (1RU)
LED Indicators: Port, Uplink, System, Diagnostic
Weight: 2 kg (4.41 lbs)
Quiet fanless design

Maximum Current

ES3528MV2
0.25 A @ 115 VAC
0.12 A @ 230 VAC
ES3528MV2-DC
0.3 A @ -48 VDC

Safety

CSA/NRTL (UL1950, CSA 22.2.9.50)
TUV/GS (EN60950)

Warranty

Please check www.edge-core.com for the warranty terms in your country.

For More Information

To find out more about Edge-Core Networks products and solutions, visit www.edge-core.com

About Edge-Core Networks

Edge-Core Networks is in the business of providing innovative network solutions. In the service provider network, in the data center or in the cloud, Edge-Core Networks delivers the software and systems that transform the way the world connects. Edge-Core Networks serves customers and partners worldwide. Additional information can be found at www.edge-core.com.

To purchase Edge-Core Networks solutions, please contact your Edge-Core Networks representative at 886 3 563 8888 or authorized reseller.

Ordering Information

Optional Accessories	Product Description
Pluggable Optics	
ET3201-FXP	Small Form Factor Pluggable Transceiver (100BASE-FX; Multimode; Distance: 2 km; Wavelength:1310 nm)
ET3201-FX20	Small Form Factor Pluggable Transceiver (100BASE-FX; Distance: 20 km; Wavelength: 1310 nm)
ET4201-SX	Small Form Factor Pluggable Transceiver (1000BASE-SX; Distance: 500 m; Wavelength: 850 nm)
ET4201-LX	Small Form Factor Pluggable Transceiver (1000BASE-SX; Distance: 10 km; Wavelength: 1310 nm)
ET4201-LHX	Small Form Factor Pluggable Transceiver (1000BASE-SX; Distance: 40 km; Wavelength: 1310 nm)
ET4201-ZX	Small Form Factor Pluggable Transceiver (1000BASE-SX; Distance: 80 km; Wavelength: 1550 nm)
ET4202-SX	Small Form Factor Pluggable Transceiver (1000BASE-SX; Distance: 500 m; Wavelength: 850 nm,DDM)
ET4202-LX	Small Form Factor Pluggable Transceiver (1000BASE-SX; Distance: 10 km; Wavelength: 1310 nm.DDM)
Network Management System	ECView Pro Network Management Software

TEL: 886-3-5638888 FAX: 886-3-6686111
No.1, Creation Rd. III, Hsinchu Science Park, Taiwan 30077
sales_ec@edge-core.com www.edge-core.com