

ES3510MA-DC

L2 Fast Ethernet Standalone Switch



Product Overview

The Edge-Core ES3510MA-DC is a high-performance Fast Ethernet Layer 2/4 switch featuring 10 ports; 8 10/100 Mbps ports and 2 combination Gigabit Ethernet RJ-45/SFP (Small Form Factor Pluggable, dual-speed 100/1000 Mbps) ports. It is ideal for Fast Ethernet desktop connectivity and wiring closet installations. Using IP Clustering in a virtual stack of up to 36 switches, the whole stack can be managed as a single entity with a single IP address. This switch is packed with features and is a cost-effective solution that brings continuous availability, enhanced security, and advanced QoS to the network edge, while maintaining simplicity of management.

Key Features and Benefits

Performance and Scalability

This entry-level managed switch provides 5.6 Gbps wire-speed switching performance across all ports. This enables the switch to fully support existing high-performance PCs and laptops, which significantly improves application response times and the speed of large file transfers.

The two Gigabit Ethernet combination ports enable uplink flexibility, offering copper or fiber uplinks to servers or the network backbone.

Continuous Availability

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

The IEEE 802.1s Multiple Spanning Tree Protocol runs STP per VLAN base (up to 32 instances), providing Layer 2 load sharing on redundant links.

Multicast VLAN Registration (MVR) is designed for applications such as Media-on-Demand that stream multicast traffic across an Ethernet network. □ IGMP snooping prevents the flooding of IP multicast traffic and limits bandwidth-intensive video traffic to only ports connected to subscribers.

The voice VLAN feature enables access ports to carry IP voice traffic from IP phones.

IEEE 802.1Q Tunneling (QinQ) is designed for service providers carrying traffic for multiple customers across their networks.

Comprehensive QoS

Traffic is prioritized according to 802.1p, DSCP, IP precedence, and TCP/UDP port number, 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 limits the total number of devices that can access a switch port based on MAC address, 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 a standard-based RADIUS server and supports dynamic VLAN assignment and a guest VLAN.

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, and TCP/UDP ports. ACLs are hardware supported, so switching performance is not compromised.

Secure Shell (SSH v1.5/v2.0) and Secure Sockets Layer (SSL/HTTPS) encrypts Telnet and web access to the switch, providing secure network management.

TACACS+ 3.0 Authentication for applications such as network access or IP mobility enables centralized control of the switch and prevents unauthorized users from altering switch configuration.

Private VLANs isolate edge ports to ensure user privacy.

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.

IP Source Guard can be enabled with DHCP snooping on trunk ports with a large number of VLANs to filter and control IP traffic access to the network.

DHCP snooping provides security by filtering un-trusted DHCP messages and by building and maintaining a DHCP snooping binding table.

DHCP Option 82 is feature that adds device information to client TCP/IP configuration requests that are relayed to a DHCP server.

Features

Physical Ports

8 10/100Base-TX ports
 2 Combination Gigabit (RJ-45/SFP) ports
 (SFP ports support dual-speed 100Base-FX/BX and 1000Base-SX/LX/ZX)
 1 RS-232 RJ-45 console port

Performance

Switching Capability: 5.6 Gbps
 Packet Buffer Size: 4 MBit
 MAC Address Table: 8K

L2 Features

Auto-negotiation for port speed and duplex mode
 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)

 VLANs:

- Supports 255 IEEE 802.1Q VLANs
- Port-based VLANs
- IEEE 802.1v Protocol-based VLANs*
- GVRP
- Supports QinQ
- Support Voice VLANs

 Link Aggregation:

- Static Trunk
- IEEE 802.3ad Link Aggregation Control Protocol

 IGMP Snooping:

- IGMP v1/v2snooping
- IGMP Querier and Filtering

 MVR (Multicast VLAN Registration)
 Supports jumbo frames up to 10 KB

IPv6 Features

IPv4/IPv6 Dual Protocol stack
 IPv6 Neighbor Discovery
 SNMP over IPv6
 HTTP over IPv6
 Remote IPv6 ping

QoS Features

Priority Queues: 4 hardware queues per port
 Traffic classification based on IEEE 802.1p CoS, IP Precedence, DSCP,
 TCP/UDP port number
 Supports WRR and Strict scheduling
 Rate Limiting (Ingress and Egress, per port base)

- FE: Resolution 64 Kbps ~ 100 Mbps
- GE: Resolution 64 Kbps ~ 1000 Mbps

Security

Port security
 Supports IEEE 802.1X port based and MAC access control
 Dynamic VLAN Assignment, Auto QoS, Auto ACL
 MAC-based authentication, Web authentication
 Voice VLAN, Guest VLAN
 RADIUS authentication
 TACACS + authorization and accounting
 TACACS+ 3.0
 L2/L3/L4 Access Control List
 SSH (v1.5/v2.0)
 SSL

Management

Switch Management:

- CLI via console port or Telnet
- WEB management
- SNMP v1, v2c, v3

 Firmware & Configuration:

- Firmware upgrade via TFTP server
- Multiple configuration files
- Configuration file upload/download via TFTP server

 Supports RMON (groups 1, 2, 3 and 9)
 Supports BOOTP, DHCP client for IP address assignment
 Supports DHCP Option 82, DHCP Snooping
 Supports SNTP
 Event/Error Log/Syslog, SMTP
 Supports LLDP (802.1ab)
 Support IP Source Guard
 (Optional) ECView Pro: Powerful network management software that maximizes the managed capabilities of Edge-Core devices with:

- Topology Management
- Performance Management
- Configuration Management
- Event Management
- SNMP Management

Mechanical

Dimensions (W x D x H): 195 mm x 115 mm x 36 mm (Smaller Form Factor)
 Weight : 0.68 Kg (1.5Lbs)
 LED Indicators: Port, Uplink, System, Diagnostic

Safety

UL (CSA 22.2. NO 60950-1 & UL60950-1)
 CB (IEC60950-1)

Electromagnetic Compatibility

CE Mark
 FCC Class A
 CISPR Class A

Environmental Specifications

Temperature:

- IEC 68-2-14
- 0°C to 45°C (Standard Operating)
- 40°C to 70°C (Non-Operating)

 Humidity: 10% to 90% (Non-condensing)
 Vibration: IEC 68-2-36, IEC 68-2-6
 Shock: IEC 68-2-29
 Drop: IEC 68-2-32

Power Supply

DC Power Input

- 36 to 75 VDC, 0.373 A

 Power Supply Connector

- 48 VDC supply circuit

 Power Consumption

- 32 Watts maximum

Warranty

Three years warranty

Ordering Information

Optional Accessories

ET4201-SX
 ET4201-LX
 ET4201-LHX
 ET4201-ZX
 ECView Pro

Product Description

1 Gbps, Small Form Factor Pluggable (Distance: 500 m; Wavelength: 850 nm)
 1 Gbps, Small Form Factor Pluggable (Distance: 10 km; Wavelength: 1310 nm)
 1 Gbps, Small Form Factor Pluggable (Distance: 40 km; Wavelength: 1310 nm)
 1 Gbps, Small Form Factor Pluggable (Distance: 80 km; Wavelength: 1550 nm)
 SNMP Network Management Software

* Future Release