

ES3510MA-AC/DC

L2 Fast Ethernet Standalone Switch



Product Overview

The Edgecore ES3510MA-AC/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 (Q-in-Q) 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/LHX)

1 RS-232 RJ-45 console port

Performance

Switching Capability: 5.6 Gbps Packet Buffer Size: 4 MBit MAC Address Table: 8K Forwarding Rate: 4.1 Mpps

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)

Spanning Tree Fast Forwarding

Loopback Detection

Auto Edge Port

BPDU Filter

BPDU Guard

Root Guard

VLANs:

Supports 4093 IEEE 802.1Q VLANs

Port-based VLANs

MAC-based VLANs

IP-Based

IEEE 802.1v protocol-based VLANs

Private VLANs

Selective Q-in-Q

GVRP

Q-in-Q

Voice VLANs

Link Aggregation:

Static Trunk

IEEE 802.3ad Link Aggregation Control Protocol

Unicast/Multicast traffic

Balance over Trunking port

IGMP Snooping:

IGMP Snooping v1/v2

IGMP v1/v2 querier

IGMP Immediate Leave

IGMP Filtering

IGMP Throttling

IGMP SNP Leave Proxy

IGMP v1/v2/v3 Proxv

Storm Control: Broadcast/Multicast/UnknownUnicast

MVR (Multicast VLAN Registration)

Supports jumbo frames up to 10 KB

G.8032 (ERPS)

Digital Diagnostic Monitoring (DDM)

QoS Features

Priority Queues: 4 hardware queues per port

802.1p-based CoS

IP DSCP-based CoS

TCP/UDP port-based CoS

WRR priority scheduling

Strict priority scheduling

Hybrid scheduling

Rate Limiting (ingress and egress, per port base)

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

Diffserv

IPv6 Features

IPv4/IPv6 dual protocl stack

IPv6 address type

Unicast

Multicast (internal used)

ICMPv6

ICMPv6 Redirect (Host)

IPv6 Path MTU Discovery

IPv6 Neighbor Discovery

Router discovery

Duplicate Address Detection

Parameter discovery

Prefix discovery

Address resolution

Unreachable neighbor detection

Stateless autoconfiguration

Manual configuration

SNMP over IPv6

HTTP over IPv6

SSH over IPv6

IPv6 Telnet support

IPv6 DNS resolver

IPv6 Syslog support

IPv6 SNTP support IPv6 TFTP support

Remote IPv6 Ping

Pina over IPv6

Trace route over IPv6

IPv6 sFlow

DHCPv6

Client

Snooping

MVR6

IPv6 Source Guard

RA Guard

MLD Snooping v1/v2

IPv6 ACL

Features

Management Switch Management: Web-based management CLI-based management Telnet Client Server Software/configuration download/upgrade **TFTP** HTTP FTP **Dual Images** Auto Upgrade **TFTP** FTP SNMP v1 v2c v3 **RMON** RMON1 (groups 1, 2, 3, and 9) **BOOTP** Client DHCP Client Snooping Snooping Option82 Dynamic Provision (via Option 66, 67) IP Source Guard Port mirroring VLAN mirror MAC-based mirror Remote port mirror (RSPAN) Event/Error Logging Syslog (local flash) Remote log SMTP (e-mail notification) DNS Client Proxy Remote Ping **SNTP** NTP IP Clustering LLDP (802.1ab) Link Layer Discovery Protocol (LLDP) LLDP-MED (VoIP related) Mac flush Dynamic ARP Inspection (DAI) Auto Traffic Control (ATC) (SW rate limit) Delay reload Cable diagnostics/TDR

OAM (Operations Administration Maintenance)

IEEE 802.3ah Link Ethernet Link OAM
IEEE 802.1ag Connectivity Fault Management
Connectivity check
Lookback
Linktrace

ITU-T Y.1731 Performance and Throughput Management

Frame Delay

Frame Delay variation

Security

Port security IEEE 802.1X: Port-based MAC-based

VLAN assignment QoS assignment

Guest VLAN
Supplicant support

EAPOL frames pass-through

MAC authentication
WEB authentication
RADIUS authentication
RADIUS accounting
TACACS+ authentication
TACACS+ authorization

TACAXS+ accounting Access Control List:

L2/L3/L4 Time-based SSH (v1.5/v2.0) HTTPS/SSL

User name password authentication:

Local authentication Remote authentication Intrusion Lock (Link Detection) MAC filter

Traffic Segmentation
PPPoE Intermediate Agent

Mechanical

Dimensions (W x D x H): 19.5 cm x 11.5 cm x 3.6 cm (small form factor)
Weight: 0.68 kg (1.5 lb)
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

Features

Warranty

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

For More Information

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

About Edgecore Networks Corporation

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Edgecore Networks Corporation is a subsidiary of Accton Technology Corporation, the leading network ODM company. The Edgecore Data Center switches are developed and manufactured by Accton.

To purchase Edgecore Networks solutions, please contact your Edgecore Networks Corporation representatives at +886 3 563 8888 (HQ) or +1 (949)-336-6801 or authorized resellers.

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Ordering Information

Optional Accessories	Product Description
ET4201-SX	1Gbps, Small Form Factor Pluggable (Distance: 500 m; Wavelength: 850nm)
ET4201-LX	1Gbps, Small Form Factor Pluggable (Distance: 10 km; Wavelength: 1310 nm)
ET4201-LHX	1Gbps, Small Form Factor Pluggable (Distance: 40 km; Wavelength: 1310 nm)
ET4202-SX	1Gbps, Small Form Factor Pluggable (Distance: 550 m; Wavelength: 850 nm, DDM)
ET4202-LX	1Gbps, Small Form Factor Pluggable (Distance: 10 km; Wavelength: 1310nm, DDM)
ECView Pro	Network Management Software