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.

L2 Fast Ethernet Standalone Switch

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.

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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 Proxy
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
Ping over IPv6
Trace route over IPv6
IPv6 sFlow
DHCPv6
    Client
    Snooping
MVR6
IPv6 Source Guard
RA Guard
MLD Snooping v1/v2
IPv6 ACL

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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
- 0ºC to 45ºC (Standard Operating)
- -40ºC to 70ºC (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

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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

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

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.

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

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