

# ECS3510-28T

## L2 Fast Ethernet Standalone Switch



### Product Overview

The Edgecore ECS3510-28T is a high-performance Fast Ethernet Layer 2/4 switch featuring 28 ports; 24 10/100BASE-TX ports and four combination Gigabit Ethernet RJ-45/SFP (Small Form Factor Pluggable) ports. It is ideal for desktop Fast Ethernet connectivity and wiring closet installations. 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

With 12.8 Gbps switching capacity, the ECS3510-28T delivers wire-speed switching performance on all Gigabit ports, allowing users to take full advantage of existing high-performance, Gigabit integrated servers, PCs and laptops by significantly improving the responsiveness of applications and file transfer times.

The device also has four Gigabit Ethernet combination ports for uplink flexibility, allowing copper or fiber uplinks to servers or the network backbone.

#### 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.

Multicast VLAN Registration (MVR) is designed for applications such as Media-on-Demand that sends multicast traffic across an Ethernet network.

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

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

Support for IEEE 802.1Q-in-Q VLAN tags expands the VLAN space by double tagging packets.

#### 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 ensures 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, with support for 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, 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+ 3.0 authentication for applications, such as network access or IP mobility, enables centralized control of the switch and prevents unauthorized users from altering the 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.

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

If you run out of ACLs, IP Source Guard can be enabled on a trunk port with a large number of VLANs that have DHCP snooping enabled.

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

## Features

### Physical Ports

- 24 RJ-45 10/100BASE-TX ports
- 4 Combo Gigabit (RJ-45/SFP) ports
- 1 RS-232 DB-9 console port

### Performance

- Switching Capability: 12.8 Gbps
- Forwarding Rate: 9.5 Mpps
- Packet Buffer Size: 8 Mbit
- MAC Address Table: 16K

### L2 Features

- Auto-negotiation for port speed and duplex mode
- Broadcast/multicast/unknown unicast storm control
- 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/Guard
- Root Guard
- VLANs:
  - Supports 4K IEEE 802.1Q VLANs
  - Port-based VLANs
  - IEEE 802.1v protocol-based VLANs
  - Private VLAN
  - GVRP
  - Q-in-Q
  - Voice VLANs
  - MAC-based
  - IP-based
  - VLAN trunking
- Link Aggregation:
  - Static Trunk
  - IEEE 802.3ad Link Aggregation Control Protocol
  - Trunk groups: 16, 2~8 ports trunk for FE and 4 ports trunk for GE
  - Traffic balance over trunking port
- IGMP Snooping:
  - IGMP v1/v2/v3 snooping
  - IGMP v1/v2 querier support
  - IGMP Immediate Leave
  - IGMP Filtering/Throttling
  - IGMP SNP Leave Proxy
  - IGMP v1/v2/v3 Proxy
- G.8032v2 (ERPS)
- MVR (Multicast VLAN Registration)
- Jumbo frames up to 10KB
- MAC VLAN with MASK and priority
- IGMP SNP Forward with priority
- MAC learning can be configured
- Auto Traffic Control (ATC) (software rate limiting)
- Non-STP loopback detection
- UniDirectional Link Detection (UDLD)

### OAM

- Y.1731
- 802.1ag (CFM)
- 802.3ah (OAM)

### IPv6 Features

- IPv4/IPv6 dual protocol stack
- IPv6 Address Types Stack: Unicast
- IPv6 Neighbor Discovery
  - Duplicate address
  - Address resolution
  - Unreachable neighbor detection
- SNMP over IPv6
- HTTP over IPv6
- SSH over IPv6
- IPv6 Telnet support
- IPv6 DNS Resolver
- MVR6
- Remote IPv6 ping
- IPv6 source guard
- DHCPv6 snooping
- DHCPv6 option 37
- Stateless autoconfiguration
- Manual configuration
- IPv6 Syslog support
- IPv6 SNTP support
- IPv6 TFTP support
- IPv6 Source Guard
- RA Guard
- IPv6 ND Snooping
- MLD Snooping v1/v2

### QoS Features

- Priority Queues: 4 hardware queues per port
- Traffic classification based on IEEE 802.1p CoS, IP Precedence, DSCP, TCP/UDP port number
- Support WRR, Strict scheduling and Hybrid
- Rate Limiting (ingress and egress, per port base)
  - FE: Resolution 64 Kbps ~ 100 Mbps
  - GE: Resolution 64 Kbps ~ 1000 Mbps
- Diffserv

### Security

- Port security
  - Static port security (MAC-based)
  - Dynamic port security (MAC-based)
- Support multiple IEEE 802.1X port- and MAC-based access control
  - Dynamic VLAN Assignment
  - QoS Assignment
  - ACL Assignment
- MAC-based authentication, Web authentication
- Voice VLAN, Guest VLAN
- RADIUS authentication and authorization
- TACACS+ authentication, authorization, and accounting
- TACACS+ 3.0
- L2/L3/L4 Access Control List
- SSH (v1.5/v2.0)
- SSL
- MAC filter
- MAC limitation per port
- Supplicant support
- EAPOL frames pass-through
- ACL: Time-based
- Intrusion Lock (link detection)
- PPPoE Intermediate Agent

## Features

### Management

- Switch Management:
  - CLI via console port or Telnet
  - Web management
  - SNMP v1, v2c, v3
- Firmware and Configuration:
  - Firmware upgrade via TFTP/HTTP/FTP
  - Multiple configuration files
  - Configuration file upload/download via TFTP/HTTP
- RMON (groups 1, 2, 3 and 9)
- BOOTP, DHCP client for IP address assignment
- DHCP Option 82, DHCP Snooping
- SNTP event/error log/syslog, SMTP
- LLDP (802.1ab)
- IP Source Guard
- MIB I/II
- Dynamic provision (via Option 66,67)
- Dynamic ARP inspection
- Port mirroring
- MAC flush
- (Optional) ECView Pro, a powerful network management software that maximizes the managed capabilities of Edgecore devices with:
  - Topology management
  - Performance management
  - Configuration management
  - Event management
  - SNMP management
- Remote port mirroring (RSPAN)
- MAC-based mirror
- ACL mirror
- VLAN mirror
- CPU protection
- Cable Diagnostics/TDR

### Electromagnetic Compatibility

- CE
- FCC Class A
- VCCI Class A
- BSMI
- EN55022: 2010/AC: 2011, Class A
- EN61000-3-2: 2014
- EN61000-3-3: 2013
- EN55024: 2010 + A1 : 2015
- RoHS compliant

### Safety

- UL/C-UL (CSA 22.2 No 60950-1 & UL 60950-1)
- CB (IEC 60950-1/EN60950-1)

### Environmental Specifications

- Temperature:
  - 0 °C to 55 °C (32 °F to 131 °F) standard operating
  - 20 °C to 70 °C (-40 °F to 158 °F) non-operating
- Humidity: 10% 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.)
- LED Indicators: Port, Uplink, System, Diagnostic
- Weight: 2 kg (4.4 lbs)
- 19 inch rack space

### Power

- AC power cord
  - 100 to 240 V, 50-60 Hz, 1.0A
- Power supply
  - Internal, auto-ranging transformer: 100 to 240 VAC, 50 to 60 Hz
- Power consumption
  - 20 Watts (68.24 BTU/Hr) maximum

### Warranty

Please check [www.edge-core.com](http://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](http://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](http://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.

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## Ordering Information

Optional Accessories	Product Description
ET4201-SX	1Gbps, Small Form Factor Pluggable (Distance: 500 m; Wavelength: 850 nm)
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)
ET4201-ZX	1Gbps, Small Form Factor Pluggable (Distance: 80 km; Wavelength: 1550 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: 1310 nm, DDM)
ECView Pro	SNMP Network Management Software