

# ECS3510-28T

## L2 Fast Ethernet Standalone Switch



### Product Overview

The Edge-Core 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: 8, 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.8032 (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)

### Operating System of Switch

EdgeCOS

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

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### 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, Auto QoS, Auto ACL  
 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  
 QoS assignment  
 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 Edge-Core 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
- EN 55022: 2010, Class A
- EN 61000-3-2: 2006/A1:2009/A2:2009
- EN 61000-3-3: 2008
- EN55024: 2010
- 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 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 Edge-Core Networks products and solutions, visit [www.edge-core.com](http://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](http://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.

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## Ordering Information

### Optional Accessories

- ET4201-SX
- ET4201-LX
- ET4201-LHX
- ET4201-ZX
- ET4202-SX
- ET4202-LX
- ECView Pro

\* Future Release

### Product Description

- 1Gbps, Small Form Factor Pluggable (Distance: 500m; Wavelength: 850nm)
- 1Gbps, Small Form Factor Pluggable (Distance: 10km; Wavelength: 1310nm)
- 1Gbps, Small Form Factor Pluggable (Distance: 40km; Wavelength: 1310nm)
- 1Gbps, Small Form Factor Pluggable (Distance: 80km; Wavelength: 1550nm)
- Small Form Factor Pluggable (1000BASE-SX; Distance: 500m; Wavelength: 850nm,DDM)
- Small Form Factor Pluggable (1000BASE-SX; Distance: 10km; Wavelength: 1310nm,DDM)
- SNMP Network Management Software