



## ECS4130-28T/ECS4130-28T-DC

### L2+/L3 Lite Gigabit Ethernet Switch



#### Product Overview

The Edgecore ECS4130-28T switch is a Gigabit Ethernet access switch with four 10G SFP+ uplinks. The switch is ideal for Internet Service Providers (ISPs) and Multiple System Operators (MSOs) to provide home users with triple-play services with up to Gigabit bandwidth. It is also an ideal Gigabit access switch for SMB, enterprise, and campus networks. ECS4130-28T is packed with features that bring high availability, comprehensive security, robust multicast control, and advance QoS to the network edge, while maintaining simple management. The switch also supports the most advance IPv6 management, IPv6 security, and IPv6 multicast control in accordance with the growth of IPv6 deployment.

#### Key Features and Benefits

##### Performance and Scalability

The EdgeCore ECS4130-28T is a high-performance Gigabit Ethernet Layer 2+ managed switch with 128Gbps switching capacity. The switch delivers wire-speed switching performance on all Gigabit ports, taking full advantage of existing high-performance CPEs, PCs, 11n/ac Wi-Fi APs etc, significantly improving the responsiveness of applications and file transfer times.

The four 10G SFP+ ports provide uplink flexibility, allowing the insertion of fiber or copper gigabit transceivers, to create up to 20Gbps high-speed uplinks to service provider, corporate, campus networks, reducing bottlenecks and increasing the performance of the access network

##### Continuous Availability

The 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.

The IEEE 802.1s Multiple Spanning Tree Protocol runs STP per VLAN base, providing Layer 2 load sharing on redundant links up to 64 instances.

The ECS4130-28T supports IEEE 802.3ad Link Aggregation Control Protocol (LACP). It increases bandwidth by automatically aggregating several physical links together as a logical trunk and offers load balancing and fault tolerance for uplink connections.

The ECS4130-28T supports G.8032 Ethernet Ring Protection Switching with the ability for the network to detect and recover from incidents without impacting users, meeting the most demanding quality and availability requirements. Rapid recovery time when problems do occur is as low as 50ms

##### Reliability and Energy Efficiency

The fanless design of ECS4130-28T ensures noiseless operation and increases the reliability of the system. The design of the ECS4130 Series incorporates high energy efficiency in order to reduce the impact on the environment.

The Green Ethernet power-saving features and fanless design significantly reduce the power consumption

##### Enhanced Security

Port security 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. When a user is authenticated, the VLAN, QoS and security policy are automatically applied the port where the user is connected, otherwise the port is grouped in a guest VLAN with limited access.

DHCP snooping allows a switch to protect a network from rogue DHCP servers that offer invalid IP addresses.

IP Source Guard prevents users from using IP addresses that were not assigned to them.

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.

Private VLANs (traffic segmentation per port) isolate edge ports to ensure user privacy.

DAI (Dynamic ARP Inspection) is a security feature that validates Address Resolution Protocol (ARP) packets in a network. DAI allows a network administrator to intercept, log, and discard ARP packets with invalid MAC-to-IP address bindings.

Secure Shell (SSH) and Secure Sockets Layer (SSL/HTTPS) encrypt Telnet and web access to the switch, providing secure network management.

The ECS4130-28T also supports both RADIUS and TACACS+ authentication methods to secure your network.

### **Comprehensive QoS**

The ECS4130-28T offers advanced QoS for marking, classification, and scheduling to deliver best-in-class performance for data, voice, and video traffic at wire speed. Eight egress queues per port enable differentiated management of up to eight traffic types through the switch.

Traffic is prioritized according to 802.1p and DSCP to provide optimal performance for real-time applications. Weighted Round Robin (WRR) and strict priority ensure differential prioritization of packet flows and avoid congestion of ingress and egress queues.

Asymmetric bidirectional rate-limiting, per port or per traffic class, preserves network bandwidth and allows maximum control of network resources.

### **Robust Multicast Control**

IGMP snooping prevents the flooding of multicast traffic by dynamically configuring switch ports so that multicast traffic is forwarded to only those ports associated with an IP multicast receiver. IGMP increases the performance of networks by reducing multicast traffic flooding.

IGMP groups allow you to create customer packages for IP-TV channels, making switch configuration easy. IGMP Filtering prevents subscribers seeing unsubscribed IP-TV channels. And, IGMP Throttling allows you to set how many IP-TV channels a subscriber can receive simultaneously.

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

Multicast VLANs are shared in the network, while subscribers remain in separate VLANs. This increases network security and saves bandwidth on core links. Multicast streams do not have to be routed in core L3 switches, which saves CPU power.

### **IPv6 Support**

The switch supports a number of IPv6 features, including IPv6 Management, DHCPv6 Snooping with Option 37, IPv6 Source Guide, and MVR6.

### **Superior Management**

An industry-standard command-line interface (CLI), accessed through the console port or Telnet, provides a familiar user interface and command set for users to manage the switch.

An embedded user-friendly web interface helps users to quickly and simply configure switches.

The ECS4130-28T supports SNMPv1,2c,3 and four-group RMON. The switch provides a complete private MIB for the configuration of most functions via the SNMP protocol.

Administrators can backup and restore firmware and configuration files via TFTP or FTP. The switch also provides the configuration of auto-provision for ease of use in large deployments.

AAA (Authentication, Authorization and Accounting) via RADIUS, TACACS+, enables centralized control of the switches. Access rights can be authorized per user and account for all actions performed by administrators.

### **Virtual Private Networks**

The ECS4130-28T supports Layer 2 VPNs by using Q-in-Q functions, where an 802.1Q tag from a customer VLAN (called CE-VLAN ID) is encapsulated in a second 802.1Q tag from a service-provider network (called an SP-VLAN ID). The switch supports rewriting the VLAN tag of egress traffic when the ingress traffic is tagged.

The switch also supports Layer 2 Protocol Tunneling for STP, CDP, VTP, PVST+, with Cisco-proprietary multicast address (01-00-0c-cd-cd-d0) replacement..

# ECS4130-28T Product Specifications

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

## Features

Product Model		ECS4130-28T	ECS4130-28T-DC
Product Image			
Port	RJ-45 2.5G /1000M Ports	24	24
	SFP+ 10 Gigabit Uplink Ports	4	4
	RJ-45 Console Port	1	1
	USB port	1	1
Performance	Switching Capacity	128 Gbps	128 Gbps
	Forwarding Rate	95 Mpps	95 Mpps
	Flash Memory	1 GB	1 GB
	DRAM	512 MB	512 MB
	MAC Address Table Size	16K	16K
	Jumbo Frames	10KB	10KB
	Auto-negotiation, Auto-MDI/MDIX	Yes	Yes
Mechanical	Dimension (W x D x H)	330 x 230 x 44mm	330 x 230 x 44mm
	Weight	2381g	2381g
Power Supply	AC 100-240 VAC, 50/60 Hz	Yes	No
	DC 36-60V, 2A	No	Yes
	Max System Power Consumption (Watts)	20 W	20 W
Environment	Operating Temperature	0°C to 45°C	0°C to 45°C
	Storage Temperature	-40°C to 70°C	-40°C to 70°C
	Operating Humidity (non-condensing)	5% to 95%	5% to 95%
	Storage Humidity (non-condensing)	5% to 95%	5% to 95%
	Environmental Regulation compliance: WEEE	Yes	Yes
	Environmental Regulation compliance: RoHS	Yes	Yes
Certification	FCC Class A	Yes	Yes
	CE	Yes	Yes
	Safety Compliance: CB	Yes	Yes
	Safety Compliance: UL	Yes	Yes

# ECS4130-28T Product Specifications



## Features

### L2 Features

- 1000BASE-T copper interfaces
- Auto-negotiation for port speed and duplex mode
- Auto MDI/MDI-X
  
- Dual-speed(1G and 10G) fiber interfaces
- SFP+ ports support:
  - IEEE 802.3ae changeable (10GBASE-SR/LR),
  - IEEE 802.3z (1000BASE-SX/LX) transceivers, and 10G DAC/AOC
- Digital Diagnostic Monitoring (DDM) on 10G SFP+ port
  
- Flow Control:
  - IEEE 802.3x for full duplex mode
  - Back-Pressure for half duplex mode
  
- Jumbo frames 10KB
  
- Broadcast/Multicast/ Unknown Unicast Storm Control
  
- 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), 64 instances
  - BPDU Guard
  - BPDU filtering
  - Root Guard
  - BPDU transparent
  - Loopback detection
  
- Non-Spanning Tree Loopback detection
  
- ITU-T G.8032 Ethernet Ring Protection
  - Sub 50 msec convergence
  - Revertive operation mode
  - Multiple-ring network
  
- VLANs:
  - Supports 4K VLAN
  - Port-based VLAN
  - IEEE 802.1Q VLAN
  - GVRP
  - IEEE 802.1v Protocol-based VLAN
  - IP Subnet-based VLAN
  - MAC-based VLAN
  - Traffic Segmentation
  
- L2 Virtual Private VLAN
  - Q-in-Q
  - L2 Protocol tunneling (xSTP, CDP, VTP & PVST+, LLDP)
  - CDP/PVST+ Filtering
  - Selective Q-in-Q
  
- Link Aggregation:
  - Static Trunk
  - IEEE 802.3ad Link Aggregation Control Protocol
  - Trunk groups: 16, up to 8 GE/ 4 10G ports per group
  - Load Balancing: SA+DA, SA, DA, SIP+DIP, SIP, DIP
  
- IGMP Snooping:
  - IGMP v1/v2/v3 snooping
  - IGMP Proxy reporting
  - IGMP Filtering
  - IGMP Throttling
  - IGMP Immediate Leave
  - IGMP Querier
  
- MVR (Multicast VLAN Registration)
  - Supports 5 multicast VLANs
  
- Port mirroring
- Remote port mirror (RSPAN)

### QoS Features

- Priority Queues: 8 hardware queues per port
  
- Traffic classification
  - IEEE 802.1p CoS
  - IP Precedence
  - DSCP
  - MAC Access control list ( Source/Destination MAC, Ether type, Priority ID/ VLAN ID )
  - IP Standard access control list (Source IP)
  - IP extended access control list (Source/Destination IP, Protocol, TCP/UDP port number)
  
- Traffic Scheduling
  - Strict Priority
  - Weighted Round Robin
  - Strict + WRR
- Ingress policy map (police rate, remark CoS)
- Egress policy map (police rate, remark CoS/DSCP)
  
- Rate Limiting (Ingress and Egress, per port base)
  - GE: Resolution 64Kbps ~ 1,000Mbps
  - 10G: Resolution 64Kbps ~ 10,000Mbps
  
- Auto Traffic Control

### Security

- Port security
- IEEE 802.1X port based and MAC based authentication
- Dynamic VLAN Assignment, Auto QoS
- MAC authentication
- Web authentication
- Voice VLAN
- Guest VLAN
  
- L2/L3/L4 Access Control List
  - MAC Access control list ( Source/Destination MAC, Ether type, Priority ID/ VLAN ID )
  - IP standard access control list (Source IP)
  - IP extended access control list (Source/Destination IP, Protocol, TCP/UDP port number)
  
- IPv6 ACL
  
- DHCP Snooping
- DHCP Option 82
- DHCP Option 82 Relay
- IP Source Guard
  
- PPPoE IA
  
- Dynamic ARP Inspection
  
- Denial of Service
  
- Login Security
- RADIUS authentication
- RADIUS accounting
- TACACS + authentication
- TACACS + accounting
- TACACS + authorization
  
- Management Interface Access Filtering (SNMP, WEB, Telnet)
- SSH (v1.5/v2.0) for security Telnet
- SSL for HTTPS
- SNMPv3

### Green Ethernet

- IEEE 802.3az Energy-Efficient Ethernet (EEE)

# Features

## IPv6 Features

IPv4/IPv6 Dual Protocol stack  
IPv6 Address Types Stack: Unicast  
IPv6 Neighbor Discovery

- Duplicate address
- Address resolution
- Unreachable neighbor detection

Stateless auto-configuration  
Manual configuration  
Remote IPv6 ping  
IPv6 Telnet support  
HTTP over IPv6  
SNMP over IPv6  
IPv6 Syslog support  
IPv6 TFTP support  
MLD Snooping v1/v2  
IPv6 source guard  
DHCPv6 snooping  
MVR6

## Management

Switch Management:

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

Firmware & Configuration:

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

RMON (groups 1, 2, 3 and 9)  
BOOTP, DHCP client for IP address assignment  
DHCP dynamic provision option 66,67  
SNTP  
Syslog (local Flash)  
Remotelog (RFC3164)  
SMTP (E-mail Notification)  
Supports LLDP (802.1ab)  
sFlow v4, v5

## Routing

IPv4 Static Route

## Safety

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

## Electromagnetic Compatibility

CE Mark  
FCC Class A  
CISPR Class A  
BSMI

## Environmental Specifications

Temperature:

- 0°C to 45°C (Standard Operating)
- -40°C to 70°C (Non-Operating)

Humidity: 5% to 95% (Non-condensing)

## Power Supply

Power input

- 100 to 240 VAC, 50/60 Hz (ECS4130-28T)
- DC in 36-60V (ECS4130-28T-DC)

\* Future Release

# Ordering Information

ET4202-SX  
ET4201-LX  
ET4352-BX20  
ET4532-BX20  
ET5402-SR  
ET5402-LR  
ET5402-DAC-3M  
ET5402-AOC-7M

1000BASE-SX Multi mode LC Duplex SFP transceiver, up to 550 m (850 nm)  
1000BASE-LX Single mode LC Duplex SFP transceiver, up to 10 km (1310 nm)  
1000BASE Single mode LC Simplex SFP transceiver with DDM, up to 20 km, Wavelength: Tx1310 nm/Rx1550 nm  
1000BASE Single mode LC Simplex SFP transceiver with DDM, up to 20 km, Wavelength: Tx1550 nm/Rx1310 nm  
10GBASE-SR Multi mode LC Duplex SFP+ transceiver with DDM, up to 300 m (850 nm)  
10GBASE-LR Single mode LC Duplex SFP+ transceiver with DDM, up to 10 km (1310 nm)  
10G to 10G DAC cable, 10G SFP+ DAC cable, 3m  
10G to 10G AOC cable, 10G SFP+ AOC cable, 7m