ECS4530 Series

L2+/L3 Lite Gigabit Ethernet CSFP Switch with 4 10G and 2 20G Uplinks

Product Overview

The Edgecore ECS4530 Series switch is a high port density Gigabit Ethernet fiber switch with four 10G uplink ports. By inserting a CSFP transceiver with two bidirectional fiber ports into a CSFP port, Internet Service Providers (ISPs) and Multiple System Operators (MSOs) can support twice as many subscribers per port and reduce the space and heating or cooling costs needed for deploying two 24 port switches and larger 48-port switches. The switch is ideal for ISPs/MSOs that want to provide home users with FTTH triple-play services with up to a Gigabit of bandwidth. It is also ideal for ISPs/MSOs that want to aggregate FE/GE access switches with Gigabit fiber uplinks. The ECS4530 Series switch 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 advanced IPv6 management, IPv6 security, and IPv6 multicast control in accordance with the growth of IPv6 deployment.

L2+/L3 Lite Gigabit Ethernet Switch

Key Features and Benefits

Performance and Scalability

The Edgecore ECS4530 Series is a high-performance Gigabit Ethernet Layer 2+ managed switch with 256Gbps switching capacity. The switch delivers wire-speed switching performance on all Gigabit ports, taking full advantage of existing high-performance Gigabit fiber IAD, CPEs, and access switches with Gigabit fiber uplinks etc, significantly improving the responsiveness of applications and file transfer times.
There are 24 CSFP ports, and by inserting a CSFP transceiver that supports two BIDI fiber ports, each port can connect to two CPE/IAD devices, so the total number of physical ports is 48.

The four built-in 10G SFP+ ports provide uplink flexibility, allowing the insertion of fiber or copper, Gigabit or 10G transceivers, to create 10 Gbps high-speed uplinks to servers or service provider, corporate, or 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 ECS4530 Series 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 ECS4530 Series 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.

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 people 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 ECS4530 Series also supports both RADIUS and TACACS+ authentication methods to secure your network.

Key Features and Benefits

Comprehensive QoS

The ECS4530 Series 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.

The ECS4530 Series supports Three Color Marker and Policing Single rate: Committed Information Rate (CIR) Two rate: CIR + Peak Information Rate (PIR) Traffic Policing: The switch drops or remarks the priority tags of packets when they exceed the burst size.

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
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.

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

IPv6 Support

The switch supports a number of IPv6 features, including IPv6 Management, DCHPv6 Snooping with Option 37, IPv6 Source Guide.

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 ECS4530 Series 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 switch. You can also authorize access rights per user and account for all actions performed by administrators.

Virtual Private Networks

The ECS4530 Series 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, LACP, LLDP, CDP, VTP, PVST+, with Cisco-proprietary multicast address (01-00-0c-cd-cd-d0) replacement.

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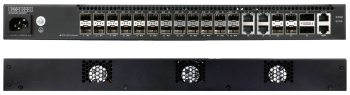
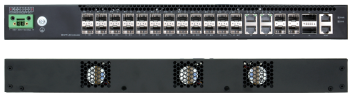
ECS4530 Series Product Specifications

www.edge-core.com

Product Model		ECS4530-54CSFP	ECS4530-54CSFP-DC-I
Product Image			
Port	GE CSFP Ports	24	24
	GE Combo Ports (RJ-45/CSFP)	4 RJ-45/2 CSFP	4 RJ-45/2 CSFP
	SFP+ 10 Gigabit Uplink Ports	4	4
	20G QSFP+ Uplink	2	2
	GE out of band Management Port	1	1
	RJ-45 Console Port	1	1
Performance	Switching Capacity	256 Gbps	256 Gbps
	Forwarding Rate	190.48 Mpps	190.48 Mpps
	Flash Memory	2 GB	2 GB
	DRAM	2 GB	2 GB
	MAC Address Table Size	16 K	16 K
	Jumbo Frames	10 KB	10 KB
	Auto-negotiation, Auto-MDI/MDIX	Yes	Yes
Mechanical	Rack Space	19"	19"
	Dimension (W x D x H) cm	44 x 22 x 4.4	44 x 22 x 4.4
	Weight	3 kg	3 kg
Power Supply	DC Power Input (-48~-60 V)	N/A	Yes
	100-240 VAC, 50-60 Hz	Yes	N/A
	Max System Power Consumption (Watts)	150 W	150 W
Environmental	Operating Temperature	0°C to 50°C	0°C to 60°C
	Storage Temperature	-40°C to 70°C	-40°C to 70°C
	Operating Humidity (non-condensing)	10% to 90%	10% to 90%
	Storage Humidity (non-condensing)	10% to 90%	10% to 90%
	Environmental Regulation Compliance: WEEE	Yes	Yes
	Environmental Regulation Compliance: RoHS	Yes	Yes
Certification	FCC Class A	Yes	Yes
	CE	Yes	Yes
	Safety Compliance: CB	N/A	Yes
	Safety Compliance: UL	N/A	Yes

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Features

L2 Features

1Gbps CSFP fiber interfaces
Combo Gigabit ports
Either RJ-45 or CSFP port can be chosen at a time
Tri-speed (10/100/1000BASE-T) RJ-45 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/ZR/ER),
•IEEE 802.3z (1000BASE-SX/LX/LHX/ZX) transceivers
•10G DAC/AOC
Digital Diagnostic Monitoring (DDM) on 1G CSFP and 10G SFP+ port
Flow Control:
•IEEE 802.3x for full-duplex mode
•Back-Pressure for half-duplex mode
Jumbo frames 10 KB
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
•VLAN Trunking
•IEEE 802.1v Protocol-based VLAN
•IP Subnet-based VLAN
•MAC-based VLAN
Traffic Segmentation
L2 Virtual Private VLAN
•Q-in-Q
•VLAN Translation
•L2 Protocol tunneling (xSTP, LACP, LLDP, CDP, VTP & PVST+)
•CDP/PVST+ Filtering
Link Aggregation:
•Static Trunk
•IEEE 802.3ad Link Aggregation Control Protocol
•Trunk groups: 26, 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
•IGMP Authentication
MVR (Multicast VLAN Registration)
•Supports 5 multicast VLANs
Port mirroring/ ACL/MAC/VLAN Mirroring
Remote port mirror (RSPAN)
MLAG

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
Single/ Two rate Three color marker
Ingress policy map
Egress policy map
Rate Limiting (Ingress and Egress, per port base)
•GE: Resolution 64Kbps ~ 1,000Mbps
•10G: Resolution 64Kbps ~ 10,000Mbps
•20G: Resolution 64Kbps ~ 20,000Mbps
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)
•ARP access control list (ip, request, response)
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
RADIUS authorization
TACACS + authentication
TACACS + accounting
TACACS + authorization
Management Interface Access Filtering (SNMP, Web, Telnet)
SSH (v2.0) for security Telnet
SSL for HTTPS
SNMPv3

Routing

IPv4 Static Route
IPv6 Static Route

OAM

IEEE 802.3ah Link

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ECS4530 Series Product Specifications

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
Ping over IPv6
IPv6 Telnet support
IPv6 DNS Resolver
HTTP over IPv6
SNMP over IPv6
SSH over IPv6
IPv6 Syslog support
IPv6 SNTP support
IPv6 TFTP support
RA Guard
IPv6 ND Snooping
MLD Snooping v1/v2
IPv6 source guard
DHCPv6 snooping
DHCPv6 option 37
DHCPv6 client

Management

Switch Management:
•CLI via console port or Telnet
•Web management
•SNMP v1, v2c, v3
Firmware & Configuration:
•Firmware upgrade via TFTP/HTTP/FTP server
•Multiple configuration files
•Configuration file upload/download via TFTP/HTTP/FTP server
RMON (groups 1, 2, 3 and 9)
DHCP client for IP address assignment
DHCP dynamic provision option 66,67*
SNTP
Event/Error Log
Syslog
SMTP
Supports LLDP (802.1ab)
sFlow v4, v5
NTP
DNS
Cable Diagnostic

Safety

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

Electromagnetic Compatibility

CE Mark
FCC Class A
VCCI

Environmental Specifications

Temperature:
•0°C to 50°C (Standard Operating for ECS4530-54CSFP)
•0°C to 60°C (Standard Operating for ECS4530-54CSFP-DC-I)
•-40°C to 70°C (Non-Operating)
Humidity: 10% to 90% (Non-condensing)

Power Supply

AC 100 to 240 VAC, 50/60 Hz (ECS4530-54CSFP)
DC -48~-60 V (ECS4530-54CSFP-DC-I)

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.

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Ordering Information

Optional Accessories	Product Description
ET4532-CSFP20	1000BASE Single mode LC Simplex CSFP transceiver with DDM, up to 20 km, Wavelength: Tx1550 nm/Rx1310 nm
ET4932-CSFP20	1000BASE Single mode LC Simplex CSFP transceiver with DDM, up to 20 km, Wavelength: Tx1490 nm/Rx1310 nm
ET4352-BX20	1000BASE Single mode LC Simplex SFP transceiver with DDM, up to 20 km, Wavelength: Tx1310 nm/Rx1550 nm
ET4392-BX20	1000BASE Single mode LC Simplex SFP transceiver with DDM, up to 20 km, Wavelength: Tx1310 nm/Rx1490 nm
ET4532-BX20	1000BASE Single mode LC Simplex SFP transceiver with DDM, up to 20 km, Wavelength: Tx1550 nm/Rx1310 nm
ET4201-SX	1000BASE-SX Multi mode LC Duplex SFP transceiver, up to 550 m (850 nm)
ET4201-LX	1000BASE-LX Single mode LC Duplex SFP transceiver, up to 10 km (1310 nm)
ET4201-LHX	1000BASE-LHX Single mode LC Duplex SFP transceiver, up to 40 km (1310 nm)
ET4201-ZX	1000BASE-ZX Single mode LC Duplex SFP transceiver, up to 80 km (1550 nm)
ET4202-SX	1000BASE-SX Multi mode LC Duplex SFP transceiver with DDM, up to 550 m (850 nm)
ET4202-LX	1000BASE-LX Single mode LC Duplex SFP transceiver with DDM, up to 10 km (1310 nm)
ET4202-ZX	1000BASE-ZX Single mode LC Duplex SFP transceiver with DDM, up to 80 km (1550 nm)
ET5402-SR	10GBASE-SR Multi mode LC Duplex SFP+ transceiver with DDM, up to 300 m (850 nm)
ET5402-LR	10GBASE-LR Single mode LC Duplex SFP+ transceiver with DDM, up to 10 km (1310 nm)
ET5402-ER	10GBASE-ER Single mode LC Duplex SFP+ transceiver with DDM, up to 40 km (1550 nm)
ET5402-ZR	10GBASE-ZR Single mode LC Duplex SFP+ transceiver with DDM, up to 80 km (1550 nm)
ET5402-RJ45	10GBASE-T SFP+ transceiver with DDM, Copper RJ45 Connector, 0 to 70°C
ET5402-DAC-3M	10G SFP+ Direct Attach Cable(DAC) 3 m
ET5402-AOC-7M	10G SFP+ Active Optical cable(AOC) 7 m
ET6402-40DAC-1M	40G QSFP+ Direct Attach Cable(DAC) 1 m
ET6402-40DAC-3M	40G QSFP+ Direct Attach Cable(DAC) 3 m

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