L2+/Lite L3 10G Multi-Gigabit Ethernet Switch

ECS5500-12T/ECS5500-12P

Product Highlights:

- -20°C to 55°C*
- 6KV surge protection
- 1/2.5/5/10G mG support
- 32K MAC address table
- IEEE 802.3 af/at/bt support with 480 W budget (ECS5500-12P)
- Web/CLI/SNMP/CLOUD multi-management
- Dying Gasp/ERPS
- 3-year warranty

* boot up temperature -5 to 55°C

ecCLOUD

TELECOM INFRA PROJECT
OpenLAN Switching (OLS)

The Edgecore ECS5500-12T/12P switch is a 10G Ethernet access switch with 8 x 10GBASE-T ports and 2 x 10G SFP+/2 x 10GBASE-T as uplink ports. The switch is ideal for SMB networks as a core switch. This switch is also positioned as cloud-edge access switch to connect IOTs and other devices in Enterprises and SMB deployments. It is also an ideal 10G access switch for SMB, enterprise, and campus networks, especially with its multi-Gig support for different 100M/1G/2.5G/5G/10G speed LAN devices. The ECS5500-12P is a PoE switch that can provide up to 60 watts (480 W budget) to power devices such as wireless access points (especially Wi-Fi 7), VoIP phones, surveillance cameras, IoT devices, and PoE-powered computers over Cat. 6a UTP cable, eliminating the need for individual power sources. The ECS5500-12T/12P 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

PoE++ Support for Wi-Fi 6/6E/7 APs
The ECS5500-12P can provide up to 60 W of power to attached devices with a total power budget of 480 W. The switch can deliver up to 60 W on 8 ports with its unmatched PoE power budget.

PoE eliminates the need for individual power sources for devices in the network, saving on costs for power cables and avoiding power outlet availability issues. If the power demand exceeds the switch's maximum power budget, ports can be prioritized to receive power.

10G/Multi-Gig Performance and Scalability
The Edgecore ECS5500-12T/12P is a high performance 100M/1G/2.5G/5G/10G Gigabit (Multi-Gig) Ethernet Layer 2+ managed switch with 240 Gbps switching capacity. The switch delivers wire-speed switching performance on all 10 Gigabit ports, taking full advantage of existing high-performance 1G/2.5G/5G/10G Gigabit 802.11ax/802.11be Wi-Fi APs etc, significantly improving the responsiveness of applications and file transfer times.

The two 10G SFP+ ports and two 10G Ethernet ports provide uplink flexibility, allowing the insertion of fiber or copper Ethernet cable, to create up to 40 Gbps high-speed uplinks to 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 ECS5500-12T/12P 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 ECS5500-12T/12P 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 50 ms.

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 edgeports to ensure userprivacy.

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 ECS5500-12T/12P also supports both RADIUS and TACACS+ authentication methods to secure your network.

Comprehensive QoS
The ECS5500-12T/12P 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 networkresources.

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 trafficflooding.

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 receivesimultaneously.

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, DHCPv6 Snooping with Option 37, IPv6 Source Guard, and MVR6.

Superior Management
An industry-standard command-line interface (CLI), accessed through the console port or Telnet/SSH, 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 ECS5500-12T/12P 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.

Service Monitoring and Management
The ECS5500-12T/12P supports IEEE 802.1ag and ITU-T Y.1731, allowing service providers to monitor end-to-end services, identify connectivity and performance issues, and isolate problems from a remote location without dispatching an engineer onsite.

The switch also provides the capability to monitor service availability, delay, jitter, and dropped packets for verifying SLA conformance (for billing purposes) and providing advance indication of performance degradation before a service outage occurs.

Virtual Private Networks
The ECS5500-12T/12P 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.

Reliability and Energy Efficiency
The design of the ECS5500-12T/12P incorporates high energy efficiency in order to reduce the impact on the environment. The Green Ethernet power-saving features and smart-fan design significantly reduce the power consumption.

Datasheet L2+/Lite L3 10GbE Access Switch

Product Model		ECS5500-12T	ECS5500-12P
	Product Image		
Port	RJ-45 100M/1G/2.5G/5G/10G Ports	8	8
	SFP+ 10G Uplink Ports	2	2
	RJ-45 10G Uplink Ports	2	2
	RJ-45 Console Port	1	1
	USB Port	1	1
Performance	Switching Capacity	240 Gbps	240 Gbps
	Forwarding Rate	178.51 Mpps	178.51 Mpps
	Flash Memory (NOR/NAND)	64 MB/256 MB	64 MB/256 MB
	DRAM	1 GB	1 GB
	Packet Buffer Size	2 MB	2 MB
	MAC Address Table Size	32 K	32 K
	Jumbo Frames	12 KB	12 KB
	Auto-negotiation, Auto-MDI/MDIX	Yes	Yes
	Surge Protection	6KV/4KV (RJ-45, Power)	6KV/6KV (RJ-45, Power)
	MTBF (hr) (25°C)	> 500 K	> 500 K
	Heat Dissipation (BTU/hr)	273	2047
	Acoustic Noise (25°C)	< 39 dB (A)	< 39 dB (A)
PoE	PoE Ports	x	8
	PoE++ based on IEEE 802.3bt (60 W)	x	Yes
	PoE+ based on IEEE 802.3at/802.3af	x	Yes
	Auto Disable After Exceeding Power Budget	x	Yes
	Dynamic Power Allocation	x	Yes
	PoE Power Budget	x	480 W
Mechanical	Dimension (W x D x H) cm	33 x 22.3 x 4.4	33 x 22.3 x 4.4
	Weight	2.38 kg (5.25 lb)	2.93 kg (6.46 lb)
Power Supply	100-240 VAC, 50-60 Hz	Yes	Yes
	Max System Power Consumption (Watts)	80 W	600 W (with 100% PoE load)
Environmental	Operating Temperature*	-20°C to 55°C*	-20°C to 55°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
ecCLOUD/TIP (OLS) Management		Supported	Supported

*Boot up temperature: -5~55°C

Datasheet L2+/Lite L3 10GbE Access Switch

Edge-corE NETWORKS

L2 Features

- 1/2.5/5/10G BASE-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 12KB
- 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 and 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 64 Kbps ~ 1,000 Mbps
  10G: Resolution 64 Kbps ~ 10,000 Mbps
- Auto Traffic Control

Security

- Port security
- IEEE 802.1X port-based and MAC-based authentication
- Dynamic VLAN Assignment, AutoQoS
- 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 sccess filtering (SNMP, Web, Telnet)
- SSH (v2) for secure Telnet
- SSL for HTTPS
- SNMP v1/v2c/v3

Green Ethernet

- IEEE 802.3az Energy-Efficient Ethernet (EEE)

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
- DHCPv6snooping
- MVR6

Management
- Switch Management:
  CLI via console port or Telnet/SSH
  Web management
  SNMP v1, v2c,v3
- Firmware and Configuration:
  Firmware upgrade via TFTP/HTTP/FTP/SFTPserver
  Multiple configuration files
  Configuration file upload/download viaTFTP/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 (email notification)
- Support LLDP (802.1ab)
- sFlow v4,v5

Routing
- IPv4/IPv6 static route
- RIP v1/v2

Dying Gasp

6KV Surge Protection (BASE-T Ports)

Power Supply
- Power Input: 100 to 240 VAC, 50/60 Hz

Safety
- UL (CSA 22.2 NO 62368-1 and UL62368-1)
- CB (IEC62368-1)
- BSMI (CNS 15598-1)

Electromagnetic Compatibility
- CE Mark
- FCC Class A
- CISPR Class A
- BSMI
- VCCI

Environmental Specifications
- Temperature:
  -20°C to 55°C standard operation*
  -40°C to 70°C (non-operating)
- Humidity: 10% to 90% (non-condensing)
  *Boot-up temperature -5°C to 55°C

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
ET4202-SX	1Gbps, (Distance: 500 m; Wavelength: 850 nm, DDM)
ET4202-LX	1Gbps, (Distance: 10 km; Wavelength: 1310 nm, DDM)
ET4202-EX	1Gbps, (Distance: 40 km; Wavelength: 1310 nm, DDM)
ET4202-ZX	1Gbps, (Distance: 80 km; Wavelength: 1550 nm, DDM)
ET4202-RJ45	1Gbps , (Distance:100 m)
ET5402-SR	10Gbps, (Distance: 3000 m; Wavelength: 850 nm, DDM)
ET5402-LR	10Gbps, (Distance: 10 km; Wavelength: 1310 nm, DDM)
ET5402-ER	10Gbps, (Distance: 40 km; Wavelength: 1550 nm, DDM)
ET5402-ZR	10Gbps, (Distance: 80 km; Wavelength: 1550 nm, DDM)
ET5402-DAC-xM	10G to 10G DAC cable,10G SFP+ DAC cable, 1-5 m
ET5402-AOC-xM	10G to 10G AOC cable,10G SFP+ AOC cable, 5-100 m
ecCLOUD Network Management Software	

• Note: More optics and detailed cabling information can be found at www.edge-core.com.