ECIS4500 PoE Series

Industrial PoE+ Gigabit Ethernet Switches

EN 50121-4 NEMA TS2 Certified

Industrial PoE+ Gigabit Ethernet Switches

Product Overview

The Edgecore ECIS4500 PoE series are managed industrial PoE+ Gigabit Ethernet switches. The switches comply to the IEEE 802.3 af/at standard and are able to deliver up to 30 watts of power per port along with data over standard Ethernet cabling. The switches can be used to power any IEEE 802.3af/at-compliant PoE PD devices, and include PoE power management features that ease the deployment effort and PoE power budget planning, as well as eliminating the need for additional wiring to reach a power source.

Product Highlights

- 8/4 10/100/1000BASE-TX PoE ports plus 4/2 100FX/1000BASE-F SFP slots
- IEEE 802.3af /IEEE 802.3at Power Over Ethernet Compliant
- Ultra PoE Supported (Only ECIS4500-8P2T4F for Port 1& 2)
- Software-based IEEE 1588 PTPv2 (Precision Time Protocol)*
- L2 Wire-speed Switching Engine
- Network redundant LACP, Spanning tree STP, RSTP & MSTP
- E-Ring Technology: fast ring fail-over protection (< 20 ms)
- CLI/Web/SNMP management interfaces
- Dual power input & reverse power protection
- DIN-Rail and Wall mounting option

Full Gigabit

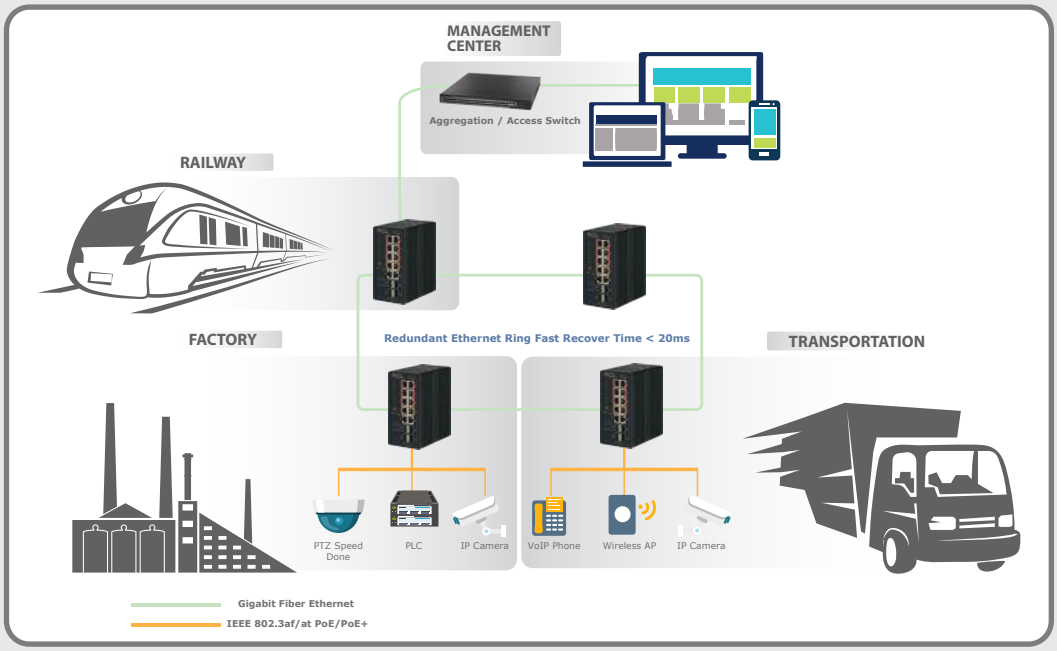
-40°C ~75°C Operating Temperature

IEEE 802.3at/af Compliant

Rich Layer 2 Features

Superior Management

Network Applications



* Future release

ECIS4500 PoE Series Product Specifications

www.edge-core.com

Key Features

Performance and Scalability

The ECIS4500 PoE series are high-performance Gigabit Ethernet Layer 2+ managed switches with 24/20 Gbps switching capacity. The switches deliver wire-speed switching performance on all Gigabit ports, allowing users to take full advantage of existing high-performance Gigabit integrated servers and PCs by significantly improving the responsiveness of applications and file transfer times.

The two/four SFP ports provides uplink flexibility, and allows the insertion of fiber or copper Gigabit transceivers, creating up to 2/4 Gbps high-speed uplinks to service provider, corporate, or campus networks, reducing bottlenecks and increasing the performance of the access network. The switches also support digital diagnostic monitoring (DDM) for SFP transceivers.

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.

The ECIS4500 PoE series support 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 ECIS4500 PoE series support fast failover ring protection (E-Ring) 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 20 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 IP-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.

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

Dynamic VLAN assignment for user authentication and location-independent access to the network.

The ECIS4500 PoE series also support local database, RADIUS and TACACS+ authentication methods to secure your network.

Service Monitoring and Management

The ECIS4500 PoE series support per VLAN mirroring, allowing administrators to monitor all incoming traffic in one or more VLANs by sending a mirror image of that traffic to a configured mirror port.

The switches also provide the capability to manage service availability, identify connectivity and performance issues, and isolate problems from a remote location without dispatching an engineer onsite.

Comprehensive QoS

The ECIS4500 PoE series offer advanced QoS for shaping, 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 to provide optimal performance for real-time applications. Weighted Round Robin (WRR) and Strict Priority Queuing (SPQ) ensure differential prioritization of packet flows and avoid congestion of ingress and egress queues.

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.

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 ECIS4500 PoE series support SNMPv1,2c,3 and four-group RMON. The switches provide a complete private MIB for the configuration of most functions via the SNMP protocol.

Administrators can upgrade and restore firmware and configuration files via TFTP.

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

PoE PSE Support

The ECIS4500 PoE series support PoE as a Power Sourcing Equipment (PSE) device to any attached devices, such as VoIP phones, wireless access points, and surveillance cameras, all over existing Ethernet cables.

The switches are compliant with IEEE 802.3at. Copper ports 1 to 8 can provide up to 30 Watts or 15.4 Watts power per port. The total PoE power budget is 120 W/240 W. In particular, ECIS4500-8P2T4F supports 2 ports Ultra PoE (60W) to power devices with greater power, such as 802.11ac APs, PTZ surveillance cameras, or network routers.

Armed with these powerful features, the ECIS4500 PoE series switches are easy to prioritize, partition and organize the network for higher reliability and quality services.

TEL: +886-3-5638888 FAX: +886-3-6686111
No.1, Creation Rd. III, Hsinchu Science Park, Taiwan 30077
sales@edge-core.com www.edge-core.com

TEL: +1 (949)-336-6801
20 Mason Irvine, CA 92618

ECIS4500 PoE Series Product Specifications

www.edge-core.com

Features

Product Model		ECIS4500-8P2T4F	ECIS4500-8P4F	ECIS4500-4P2T2F	ECIS4500-4P4T
Product Image					
Port	RJ-45 10/100/1000BASE-T Ports	10	8	6	8
	100/1000BASE-X SFP Ports	4	4	2	0
	10/100/1000 Combo Ports	0	0	0	0
	SFP+ 10 Gigabit Uplink Ports	0	0	0	0
	RJ-45 Console Port	1	1	1	1
Performance	Switching Capacity	28 Gbps	24 Gbps	16 Gbps	16 Gbps
	Forwarding Rate	17.9 Mpps	17.9 Mpps	17.9 Mpps	17.9 Mpps
	Flash Memory	16 MB	16 MB	16 MB	16 MB
	DRAM	128 MB	128 MB	128 MB	128 MB
	Throughput (packet per second)	14.8 Mpps	14.8 Mpps	14.8 Mpps	14.8 Mpps
	MAC Address Table Size	8 K	8 K	8 K	8 K
	Jumbo Frames	9 KB	9 KB	9 KB	9 KB
	Auto-negotiation, Auto-MDI/MDIX	Yes	Yes	Yes	Yes
Mechanical	Installation Option	DIN-rail and wall mount	DIN-rail and wall mount	DIN-rail and wall mount	DIN-rail and wall mount
	Dimension (W x D x H)	77 x 128 x 154 mm	77 x 128 x 154 mm	77 x 128 x 154 mm	77 x 128 x 154 mm
	Weight	1.4 kg	1.4 kg	1.4 kg	1.4 kg
PoE	IEEE 802.3af/802.3at	Yes	Yes	Yes	Yes
	Ultra PoE	Yes	No	No	No
	PoE Power Budget	240 W	240 W	120 W	120 W
	PoE Scheduling	Yes	Yes	Yes	Yes
Power Supply	DC Power Input (46-58 V)	Yes	Yes	Yes	Yes
	Max System Power Consumption (Watts)	265 W	265 W	145 W	145 W
Environmental	Operating Temperature	-40°C to 75°C	-40°C to 75°C	-40°C to 75°C	-40°C to 75°C
	Storage Temperature	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C
	Humidity (non-condensing)	5% to 95%	5% to 95%	5% to 95%	5% to 95%
	Environmental Regulation Compliance: WEEE	Yes	Yes	Yes	Yes
	Environmental Regulation Compliance: RoHS	Yes	Yes	Yes	Yes
Certification	FCC Class A	Yes	Yes	Yes	Yes
	CE	Yes	Yes	Yes	Yes
	Safety Compliance: CB	Yes	Yes	Yes	Yes
	Safety Compliance: UL	Yes	Yes	Yes	Yes

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Features

Ports
Switch Ports:
- 8 or 6 or 4 x 10/100/1000BASE-TX PoE ports
- 4 or 2 x SFP each supporting 1G or 100M

SFP with Digital Diagnostic Monitoring (DDM)
Management Port and Power Support Connector on Top Panel:
- 1 x RJ-45 serial console
- 2 x DC PWR
- 1 x Alarm port

Performance
L2 wire-speed/non-blocking switching engine
Switching Capacity: 28/24/16 Gbps
MAC Addresses: 8 K
VLAN IDs: 4096
Jumbo Frames: 9 K Bytes

L2 Features
Flow Control:
- IEEE 802.3x for full-duplex mode
- Back-Pressure for half-duplex mode

Storm Control:
- Broadcast
- Multicast
- Flooding

Spanning Tree Protocol:
- IEEE 802.1D STP
- IEEE 802.1w RSTP
- IEEE 802.1s MSTP

VLAN:
- Supports 4096 VLANs
- Port-based VLANs
- MAC-based VLANs
- IP Subnet-based VLANs
- Protocol-based VLANs
- IEEE 802.1Q tag-based VLANs
- RADIUS-assigned VLANs
- GVRP VLAN

Supports IEEE 802.1ad Double Tagging (Q-in-Q)
Link Aggregation:
- Static Trunk
- 802.3ad Dynamic LACP
- Up to 8 ports per trunk group
- Support 6 trunk groups (2 ports one group)

Multicast Protocols:
- Supports 255 multicast groups
- IGMP v1/v2/v3 Snooping
- IGMP querying support
- IGMP immediate leave and leave proxy
- IGMP Filtering/Throttling

QoS Features
8 Priority queues per port
Traffic Scheduling:
- SPQ (Strict Priority Queuing)
- WRR (Weighted Round Robin)

Traffic Classification (CoS): 802.1p based CoS/port
Traffic Shaper: Port-based shaping
Dynamic QoS assignment

Layer 3 Function
IP Interfaces: Max. 8 VLAN interfaces
Routing Table: Max. 32 routing entries
Routing Protocols:
- IPv4 software static routing
- IPv6 software static routing

Security Features
Port Security
- IEEE 802.1X IP-based authentication network access control
- IEEE 802.1X MAC-based authentication network access control

Username/password authentication
- Local database authentication
- Remote authentication via RADIUS
- Remote authentication via TACACS+

AAA (RADIUS/TACACS+)
RADIUS client for management
HTTPS and SSL (secured web)
SSH (secured Telnet session)
ACL (Access Control List)

Management Features
Switch Management:
- Cisco-like CLI via console port
- Web-based management
- SNMP v1, v2c, v3

Terminal setting (5 sessions)
Software upgrade/restore by TFTP
Configuration upgrade/restore by TFTP
RMON: RMON1 (1,2,3,9 group)
DHCP:
- Client
- Relay
- Server
- Snooping
- Option 82

Per VLAN mirroring
Port mirroring
Ethernet Copper connection diagnostic tool
Event/Error Logging: Syslog (local Flash)
Remote Ping
NTP
LLDP (IEEE 802.1ab): Link Layer Discovery Protocol
LLDP-MED
System Status:
- Device info/status
- Ethernet port status
- PoE status

Physical and Environmental
Dimensions (W x D x H): 77 x 128 x 154 mm (3.03 x 5.04 x 6.06”)
Weight: 1.4 kg (3.11 lb)
Operating Temperature: -40°C to 75°C (-40°F to 167°F)
- cold startup at -40°C

Storage Temperature: -40°C to 85°C (-40°F to 185°F)
Operating Humidity: 5% to 95% non-condensing
Installation Option: DIN-Rail mounting, wall mounting

Alarm
Alarm Relay Output Carrying Capacity: Max 0.5 A @ 24 VDC
System Alarm Notification: configurable alarm profile to enable
- Alarm LED, Alarm relay, SNMP Traps

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Features

Accessory

Wall-mount plates
DIN-rail clip
M3 Screws x 4 (for the wall mount plates and DIN clip)
DC power terminal block
RJ-45 Ethernet port dust cover
SFP Ethernet port dust cover

Power

Power Input: Redundant Input Terminals
Input Voltage Range: 46 to 58 VDC
Total PoE output power budget: 120 W/240 W
PSE output power management:
  Scheduling
  Power control
  PD power consumption monitoring
Reverse power protection: Yes
  Transient Protection: > 15,000 watts peak
  Power Consumption: Max 14 W without PD connected
  Max 265 W with 240 W PSE

Note: The switch does not include a PSU (power supply unit). Need to purchase PSU separately. See Ordering Information.

Regulatory and Compliances

EMC
  CE/FCC Part 15 Class A
  CISPR 22 Class A
  EN 61000-6-2:2005+ AC:2005
  EN 61000-6-4:2007+A1: 2011
  IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV
  IEC 61000-4-3 RS: 80 MHz to 2700 MHz: 20 V/m
  IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV
  IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV
  IEC 61000-4-6 CS: Signal: 10 V
  IEC 61000-4-8:2009
  IEC 61000-4-9:1993+A1:2000
  IEC 61000-4-8:2009
  IEC 61000-4-9:1993+A1:2000
Safety
  UL-60950
Railway Traffic: EN 50121-4 compliance
NEMA TS2 Certified
Shock: IEC 60068-2-27
Freefall: IEC 60068-2-32
Vibration: IEC 60068-2-6
RoHS (Pb free) and WEEE compliant
Ingress Protection: IP30 Metal Case
MTBF: > 25 years

Ethernet Standards

IEEE 802.3 10BASE-T Ethernet
IEEE 802.3u 100BASE-TX Ethernet
IEEE 802.3ab 1000BASE-T Ethernet
IEEE 802.3z 1000BASE-X
IEEE 802.3x Flow Control
IEEE 802.3az EEE support
IEEE 802.1ab Link Layer Discovery Protocol (LLDP)
IEEE 802.1p Class of Service
IEEE 802.1q VLAN support
IEEE 802.1D Spanning Tree Protocol
IEEE 802.1w Rapid Spanning Tree Protocol
IEEE 802.1s Multiple Spanning Trees
IEEE 802.1ad Double Tagging (QinQ)
IEEE 802.1x Authentication
IEEE 802.3ad LACP
IEEE 802.3af PoE (PoE models only)
IEEE 802.3at PoE+ (PoE models only)
RFC 2863 Interfaces MIB
RFC 2233 IF MIB
RFC1213 MIB II
RFC 2819 RMON Statistics Group
RFC 1215 Generic Traps
RFC 2674 Q-Bridge MIB
RFC 3635 Ethernet-like MIB
RFC 2236 Internet Group Management Protocol, Version 2 (IGMPv2)
RFC 3376 Internet Group Management Protocol, Version 3 (IGMPv3)
RFC 2710 Multicast Listener Discovery for IPv6 (MLD)
RFC 2464 Transmission of IPv6 Packets over Ethernet Networks
RFC 4291 IPv6 Addressing Architecture
RFC 4884 ICMPv6

Warranty

Please check www.edge-core.com for the warranty terms your country.

For More Information

To find out more about Edgecore Networks Corporation product 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
ET4205-SX	1Gbps, Small Form Factor Pluggable (Distance: 550 m; Wavelength: 850 nm, DDM), wide operating temperature -40 ~85 °C
ET4205-LX	1Gbps, Small Form Factor Pluggable (Distance: 10 km; Wavelength: 1310 nm, DDM), wide operating temperature -40 ~85 °C
ET4205-LX20	1Gbps, Small Form Factor Pluggable (Distance: 20 km; Wavelength: 1310 nm, DDM), wide operating temperature -40 ~85 °C
ET4205-LHX	1Gbps, Small Form Factor Pluggable (Distance: 40 km; Wavelength: 1310 nm, DDM), wide operating temperature -40 ~85 °C
HDR-15-24	15.2 W 24 VDC Single Output Industrial Power Supply Output DIN Rail -30~+70°C
SDR-120-48	120 W 48 VDC Single Output Industrial Power Supply Output DIN Rail -25~+75°C
SDR-240-48	240 W 48 VDC Single Output Industrial Power Supply Output DIN Rail -25~+75°C
SDR-480-48	480 W 48 VDC Single Output Industrial Power Supply Output DIN Rail -25~+75°C

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