Tallac Networks

Tallac SD-LAN Datasheet

ECS4310-28P

L2+ Gigabit Ethernet Access/Aggregation PoE Switch with 4 10G Uplinks

Product Overview

The ECS4310-28P switch is a Gigabit Ethernet PoE access switch with four 10G uplink ports. The switch is ideal for SMB, enterprise, and campus networks to connect power devices such as VoIP phones, wireless access points, surveillance cameras etc. PoE enables both power and data to be transferred over existing Cat. 5 cables, eliminating the need for individual power sources for devices in the network and saving on costs for power cables. The ECS4310-28P switch is packed with features that bring high availability, comprehensive security, robust multicast control, and advanced 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.

Key Features and Benefits

Performance and Scalability

The ECS4310-28P 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 Gigabit CPEs, PCs,11n/ac Wi-Fi APs etc, significantly improving the responsiveness of applications and file transfer times.

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

The Voice VLAN function automatically detects VoIP devices by OUI or LLDP and groups the voice traffic into a separate VLAN for better performance. It can also automatically change port priorities, so a higher CoS value can be assigned for guaranteed voice quality.

Reliability and Energy Efficiency

The design of the ECS4310-28P incorporates high energy efficiency in order to reduce the impact on the environment. The Green Ethernet power-saving features significantly reduce the power consumption.

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 ECS4310-28P supports IEEE 802.3ad Link Aggregation Control Protocol (LACP). LACP increases bandwidth by automatically aggregating several physical links together as a logical trunk and offers load balancing and fault tolerance for uplink connections.

The ECS4310-28P 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 to 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 ECS4310-28P also supports both RADIUS and TACACS+ authentication methods to secure your network.

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Comprehensive QoS
The ECS4310-28P 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 ECS4310-28P 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.

Private VLANs and 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, and MVR6.

Service Monitoring and Management
The ECS4310-28P 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.

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 ECS4310-28P 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 ECS4310-28P 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.

PoE Features
The ECS4310-28P can provide up to 30 Watts of power to attached devices, such as VoIP phones, wireless access points, and surveillance cameras etc, all over existing Cat. 5 cables. The switch can deliver up to 30 Watts on 13 ports, or 15.4 Watts on 24 ports.

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, and the power allocation is configurable.

The PoE power can be enabled or disabled remotely by setting a time schedule. For example, during off-duty hours all the PoE devices can be shut down for power saving without human intervention.

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Port	RJ-45 10/100/1000 Ports	24
	100/1000 SFP Ports	0
	10/100/1000 Combo Ports	0
	SFP+ 10 Gigabit Uplink Ports	4
	GE out of band Management Port	No
	RJ-45 Consde Port	1
Performance	Switching Capacity	128 Gbps
	Forwarding Rate	95 Mpps
	Flash Memory	256 MB
	DRAM	512 MB
	MAC Address Table Size	16 K
	Jumbo Frames	9 K
	Auto-negotiation, Auto-MDI/MDIX	Yes
PoE	Support on all Gigabit ports based on IEEE 802.3af	Yes
	PoE+ based on IEEE 802.3at	Yes
	Auto disable after exceeding power budget	Yes
	Dynamic Power Allocation	Yes
	PoE Power Budget	400 W
Mechanical	Rack Space	19"
	Dimension (W x D x H) cm	33 x 44 x 4.4
	Weight	4.53 kg
Power Supply	100-240 VAC, 50-60 Hz	Yes
	Max System Power Consumption (Watts)	460 W
Environmental	Operating Temperature	0ºC to 50ºC
	Storage Temperature	-40ºC to 70ºC
	Operating Humidity (non-condensing)	10% to 90%
	Storage Humidity (non-condensing)	10% to 90%
	Environmental Regulation compliance: WEEE	Yes
	Environmental Regulation compliance: RoHS	Yes
Certification	FCC Class A	Yes
	CE	Yes
	Safety Compliance: CB	Yes
	Safety Compliance: UL	Yes

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L2 Features

Tri-speed (10/100/1000BASE-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/ER),
   IEEE 802.3z (1000BASE-SX/LX/LHX/ZX) transceivers, and
     10G DAC/AOC
Digital Diagnostic Monitoring (DDM) on 10G SFP+ port only
Flow Control:
   IEEE 802.3x for full duplex mode
   Back-Pressure for half duplex mode
Jumbo frames 9KB
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, 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
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
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
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
RADIUS authorization
TACACS + authentication
TACACS + accounting
TACACS + authorization
Management Interface Access Filtering (SNMP, WEB, Telnet)
SSH (v1.5/v2.0) for secure Telnet
SSL for HTTPS
SNMPv3

Green Ethernet

IEEE 802.3az Energy-Efficient Ethernet (EEE)

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Routing
IPv4 Static Route
IPv6 Static Route

IPv6
IPv4/IPv6 dual protocol stack
IPv6 Address Types Stack: Unicast
IPv6 Neighbor Discovery:
   Address resolution
   Duplicate address
   Unreachable neighbor detection
Stateless auto-configuration
Manual configuration
Remote IPv6 ping
IPv6 Telnet support
IPv6 TFTP support
IPv6 SNTP support
IPv6 DNS Resolver
IPv6 Syslog support
MLD Snooping v1/v2
HTTP over IPv6
SNMP over IPv6
SSH over IPv6
RA Guard
IPv6 ND Snooping
IPv6 source guard
DHCPv6 snooping
DHCPv6 option
37* MVR6

Management

Firmware & Configuration
   Firmware upgrade via TFTP/HTTP/FTP server
   Multiple configuration files
   Configuration file upload/download via TFTP/HTTP/FTP server
Switch Management:
   CLI via console port or Telnet
   WEB management
   SNMP v1, v2c, v3
RMON (groups 1, 2, 3 and 9)
BOOTP, DHCP client for IP address assignment
DHCP dynamic provision option 66,67
SNTP
Event Error Log
Syslog
SMTP
Supports LLDP (802.1ab)
IP clustering
sFlow v4, v5
Cable Diagnostics
(Optional) ECview Pro, a powerful network management software that maximizes the managed capabilities of Edgecore devices with:
   Topology Management
   Performance Management
   Configuration Management
   Event Management
   SNMP Management

OAM
IEEE 802.3ah Link
IEEE 802.1ag Connectivity Fault Management
   Connectivity check
   Loopback
   Linktrace
ITU-T Y.1731 Performance and Throughput Management
   Frame Delay
   Frame Delay variation

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 50˚C (standard operating)
-40˚C to 70˚C (non-operating)
Humidity: 10% to 90% (non-condensing)

Power Supply
Power Input:
   100 to 240 VAC, 50/60 Hz
   AC/DC: 90 VAC~300 VAC, 50/60 Hz

Warranty
5 years