ECS4810-12M
L2 Gigabit Ethernet Carrier Grade Switch

Product Overview

The Edge-Core ECS4810-12M is a Carrier Ethernet access switch ideal for Ethernet service demarcation, extension, and aggregation. The ECS4810-12M allows service providers to deliver managed converged services, such as voice, video, and data over virtual Ethernet and IP networks. With flexible combination Gigabit ports, QoS, advanced operation, administration, and maintenance (OAM), ITU-T Synchronous Ethernet (Sync-E), and support for extended temperature range environments, the ECS4810-12M adds value and builds differentiated services over Carrier Ethernet networks.

Ethernet Carrier Grade Switch

Key Features and Benefits

Carrier-Class Design

The Edge-Core ECS4810-12M is a carrier-grade aggregation switch that consists of 12 combination Gigabit Ethernet ports.

Any of the combination Gigabit ports can be flexibly assigned as 1000BASE-X fiber or 10/100/1000BASE-T copper connections to subscriber-side devices. The other ports can be assigned as network connections to service-side devices. The switch is ideal for locating at the edge of broadband-access networks to aggregate traffic from multiple services.

All interfaces of the ECS4810-12M are located on the same panel, including the CIT (Craft Interface Terminal) out-of-band management port, external alarm input/output interface, and power outlets.

The ECS4810-12M is a carrier grade switch that provides dual power inputs for AC and DC power, with an operating temperature range from 0ºC to 65ºC. The fan-less design of the switch ensures noiseless operation and increases the reliability of the system.

The ECS4810-12M is designed for high energy efficiency. The 55nm switch controller chipset and Green Ethernet power saving features significantly reduce power consumption.

Support for dying gasp. When a loss of power is detected, the dying gasp allows 200 msec for the switch to notify the system administrator by an SNMP trap.

Continuous Availability

The ECS4810-12M 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 msec.

Service Monitoring and Management

The ECS4810-12M supports IEEE 802.1ag Connectivity Fault Management (CFM) 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 having to dispatch an engineer to the site.

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

Advanced Synchronization

The ECS4810-12M provides synchronization options optimized for cellular operators looking to backhaul their data and voice traffic from base stations to their core network over Ethernet transport.

The ECS4810-12M supports bit-layer clock recovery solutions, ITU-T G.8261 Synchronous Ethernet, and provides a highly robust hop-by-hop frequency mechanism.

Comprehensive QoS

The ECS4810-12M supports Two Rate Three Color Marker and Policing, Committed Information Rate (CIR) two rate, CIR + Peak Information Rate (PIR) Traffic Policing, and drop or remark of priority tags for packets that exceed burst size.

Virtual Private Network

The ECS4810-12M supports L2 Virtual Private Networks (VPNs) by using QinQ functions, where an 802.1Q tag from a customer VLAN (called a CE-VLAN ID) is encapsulated in a second 802.1Q tag from a service-provider network (called an SP-VLAN ID). The switch supports the rewrite of VLAN tags for egress traffic when the ingress traffic is VLAN tagged.

There is also support of L2 Protocol Tunneling for STP, CDP, LLDP, VTP, and PVST+, with Cisco proprietary multicast address (01-00-0C-CD-CD-D0) replacement.

Layer 2 PDU filtering allows a service provider to specify which Layer 2 PDUs are to be dropped at an ingress interface on a provider edge switch.

Features

Physical Ports

12 Gigabit combination (RJ-45/SFP) ports
Dual power inputs with 1 AC and 1 DC power connector
1 out-of-band 1000 Mbps RJ-45 management port
1 RJ-45 console port
1 DB15 alarm port

Performance

Switching Capability: 24 Gbps
Packet Buffer Size: 8 MB
MAC Address Table: 16K

L2 Features

Tri-speed (10/100/1000BASE-T) copper interfaces
Auto-negotiation for port speed and duplex mode
Dual-speed(100 Mbps and 1000 Mbps) fiber interfaces
SFP support for1000BASE-SX/LX/LHX/ZX transceivers
Digital Diagnostic Monitoring (DDM)
Flow Control:
- IEEE 802.3x for full-duplex mode
- Back-Pressure for half-duplex mode

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)
- BPDU Guard
- BPDU filtering
- Root Guard
- BPDU transparent
- Loopback detection

ITU-T G.8032 Ethernet Ring Protection
- Sub 50 msec convergence
- Revertive operation mode
- Multiple-ring network

VLANs:
- Supports 4K VLANs
- Port-based VLANs
- IEEE 802.1Q VLANs
- IEEE 802.1v Protocol-based VLANs and Subnet-based VLANs
- MAC-based VLANs
- Traffic Segmentation
- GVRP

L2 Virtual Private VLANs
- QinQ
- Selective QinQ
- L2 protocol tunneling (xSTP, CDP, VTP, LLDP and PVST+)
- Support Voice VLANs

Link Aggregation:
- Static trunks
- IEEE 802.3ad Link Aggregation Control Protocol
- Trunk groups: 6, up to 8 ports per group

IGMP Snooping:
- IGMP v1/v2/v3 snooping
- IGMP Proxy reporting
- IGMP Filtering
- IGMP Throttling
- IGMP Immediate Leave
- IGMP Querier

MVR (Multicast VLAN Registration)
- Support 5 Multicast VLANs

Port Mirroring
Supports Jumbo frames up to 10 KB

QoS Features

Priority Queues: 8 hardware queues per port
Traffic Classification
- IEEE 802.1p CoS
- IP Precedence
- DSCP
- MAC access control lists (source/destination MAC, Ethertype, priority ID/VLAN ID)
- IP standard access control lists (source IP)
- IP extended access control lists (source/destination IP, protocol, TCP/UDP port number)

Traffic Scheduling
- Strict Priority
- Weighted Round Robin
- Strict + WRR traffic scheduling
- Weighted Random Early Detection

Two Rate Three Color Marker
Ingress traffic policing
Egress traffic shaping
Marking/remarking
Rate Limiting (ingress and egress, per port base)
- GE: Resolution 64 Kbps ~ 1000 Mbps

Bundle Rate Control

Security

Port security
IEEE 802.1X port-based and MAC-based authentication
Dynamic VLAN assignment, auto QoS, auto ACL
MAC authentication, Web authentication
Voice VLAN, Guest VLAN
L2/L3/L4 Access Control Lists
- MAC Access control lists (source/destination MAC, Ethertype, priority ID/VLAN ID)
- IP standard access control lists (source IP)
- IP extended access control lists (source/destination IP, protocol, TCP/UDP port number)

IPv6 ACLs
DHCP Snooping
DHCP Option 82
IP Source Guard
Dynamic ARP Inspection
Login Security
RADIUS authentication
TACACS + authorization and accounting
TACACS+ 3.0
Management Security
SSH (v1.5/v2.0)
SSL for HTTPS
SNMPv3

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

Synchronous Ethernet

ITU-T g.8262 Synchronous Ethernet

Green Ethernet

Cable Diagnostics

IPv6 Features

IPv4/IPv6 dual protocol stack
IPv6 Address Types Stack: Unicast
IPv6 Neighbor Discovery
SNMP over IPv6
HTTP over IPv6
Remote IPv6 ping

Features

Management Features

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

Firmware and Configuration:
- Firmware upgrade via TFTP server
- Multiple configuration files
- Configuration file upload/download via TFTP server

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
(Optional) ECView Pro, powerful network management software that maximizes the managed capabilities of Edge-Core devices with:
- Topology Management
- Performance Management
- Configuration Management
- Event Management
- SNMP Management

Electromagnetic Compatibility

CE Mark
FCC Class A
CISPR Class A

Environmental Specifications

Temperature:
- IEC 68-2-14
- -10ºC to 65ºC (Standard Operating)
- -40ºC to 70ºC (Non-Operating)

Humidity: 10% to 90% (Non-condensing)
Vibration: IEC 68-2-36, IEC 68-2-6
Shock: IEC 68-2-29
Drop: IEC 68-2-32

Power Supply

Dual Power Inputs
- AC 110V ±10V, 60Hz ±3Hz
- DC -42V~-56V
- Internal, auto-ranging transformer: 100 to 240 VAC, 50 to 60 Hz

Power Consumption: 16.1 Watts maximum
Dying gasp

Mechanical

Dimensions (W x D x H): 252 mm x 440 mm x 44 mm
Weight : 3.32 kg
LED Indicators: Port, Uplink, System, Diagnostic

Safety

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

Warranty

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

For More Information

To find out more about Edge-Core Networks products and solutions, visit www.edge-core.com

About Edge-Core Networks

Edge-Core Networks is in the business of providing innovative network solutions. In the service provider network, in the data center or in the cloud, Edge-Core Networks delivers the software and systems that transform the way the world connects. Edge-Core Networks serves customers and partners worldwide. Additional information can be found at www.edge-core.com.

To purchase Edge-Core Networks solutions, please contact your Edge-Core Networks representative at 886 3 668 6111 or authorized reseller.

Ordering Information

Optional Accessories	Product Description
ET4201-SX	1 Gbps, Small Form Factor Pluggable (Distance: 500 m; Wavelength: 850 nm)
ET4201-LX	1 Gbps, Small Form Factor Pluggable (Distance: 10 km; Wavelength: 1310 nm)
ET4201-LHX	1 Gbps, Small Form Factor Pluggable (Distance: 40 km; Wavelength: 1310 nm)
ET4201-ZX	1 Gbps, Small Form Factor Pluggable (Distance: 80 km; Wavelength: 1550 nm)
Network Management System	ECView Pro Network Management Software

* Future Release

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