



Ethernet switch ESN310

ESN310 is a Layer 2 Fast Ethernet switch with built-in Power over Ethernet (PoE) facility. ESN310 is an aggregation switch used for upstream concentration of data traffic in Ericsson's EDA broadband solution.

Description

ESN310 has 24 tributary (downlink) ports of the 10/100 Mbps Fast Ethernet type and two aggregate (uplink) ports of the 10/100/1000 Mbps Ethernet type. It has built-in Power over Ethernet (PoE) functionality for power distribution to the connected IP DSLAMs via the tributary Ethernet ports. ESN310 is prepared for both 19" and ETSI rack mounting.

Quality of Service

Priority queues are used to guarantee the Quality of Service (QoS) needed for delay-sensitive applications like voice (IP telephony), video conferencing or video broadcasting. Each packet going through the switch can be assigned a queue priority. Packets with a higher priority are allowed to pass through the switch first (strict scheduling).

Virtual LAN (VLAN)

By use of the VLAN technology, it is possible to create separate logical networks within the Ethernet LAN. In the EDA solution, VLAN is used to separate traffic types or different services and to improve security.

By configuration, a dedicated VLAN can be used for management signaling. A default VLAN number is configured for management.

IP Multicast (IGMP snooping)

ESN310 supports multicast loading of IP DSLAM software and multicast video streaming by use of IGMP snooping (IGMP; the Internet Group Management Protocol). The switch listens to IGMP messages to build a mapping table and associate forwarding filters. It dynamically configures the switch ports to forward IP multicast traffic only to those ports associated with multicast hosts.

Management

ESN310 is managed by the Public Ethernet Manager (PEM), which is based on HP OpenView and SNMPv2c. ESN310 can be managed through an RS-232C console port or via any of the Ethernet ports.

ESN310 has built-in fan units that can be replaced without service interruption.

Technical data

THIS DOCUMENT IS VALID FOR RELEASES

- EDA 2.0, EDA 2.1 and EDA 2.2

GENERAL

- RFC 2236 IGMP Multicast
- IEEE 802.1D Bridged Ethernet
- IEEE 802.1D Spanning Tree
- IEEE 802.1w Rapid Spanning Tree
- IEEE 802.3ad Link aggregation (1-4 ports in 6 groups)
- IEEE 802.1Q VLAN
- Up to 255 VLANs
- GVRP Automatic VLAN configuration

INTERFACES

Tributary interfaces, 24 ports:

- IEEE 802.3 10/100Base-T/TX Ethernet using shielded RJ-45 ports
- MDI/MDI-X auto sensing for twisted pair 10/100Base-TX ports

Aggregate interfaces, 2 Gigabit combo ports with:

- 2 x IEEE802.3ab 1000Base-T Gigabit Ethernet on twisted-pair, or
- 2 x 1000 SFP module interfaces (optical fiber)
 - SMF SX: < 500 m
 - SMF LX: 10 km, 35 km, 80 km

Management Interface

- RS-232 console port for local out-of-band management

MANAGEMENT

- Ericsson Public Ethernet Manager (PEM) for in-band management through any Ethernet port
- Default VLAN pre-configured for management
- SNMPv2c alarms
- RFC 2665 Ethernet-like MIB
- RFC 2737 ENTITY-MIB alarms
- RFC 1757 RMON-MIB alarms
- RFC 1907 SNMPv2
- RFC 2933 IGMP MIB
- RFC 1493 Bridge MIB
- RFC 2674 Extended Bridge MIB
- RFC 2819 Traps

QUALITY OF SERVICE

- IEEE 802.3x Flow control in full duplex operation
"Back-pressure" in half-duplex operation
- IEEE 802.1p, with 4 priority queues per egress port Strict scheduling or Weighted Round Robin

CAPACITY

- Throughput: 4.4Gbps full-duplex, 8.8Gbps half-duplex
- Packet/Sec: 8.9 Mbps
- MAC address table capacity: 8192 MAC addresses

POWER

- Dual power inlet
- Nominal input voltage: -48 V
- Power consumption (24 ports):
 - Cable length 1.3 m: Idle/Typical/Max: 50/62/70 W
 - Cable length 100m: Idle/Typical/Max: 50/64/74 W
- Maximum heat dissipation:
 - Without PoE: 45 W
 - With PoE: approx. 75 W

POWER OVER ETHERNET FEATURES

- Power over Ethernet (PoE) capability to IP DSLAMs
- Up to 23 W/600 mA continuous load per port
- Automatic load sensing
- Overload and short-circuit protection per port
- LED indicator for power status per port

RELIABILITY

- Fans are replaceable without service interruption
- MTBF 10 years at 25°C ambient

SAFETY

- CSA/NRTL (UL 1950, CSA 22.2.950)
- TUV/GS (EN 60950)

DIMENSIONS

- HxWxD: 43 x 440 x 250 mm
- Weight: 4 kg

ELECTROMAGNETIC COMPATIBILITY

- EN 300 386:2001 for Telecommunication Centers and Locations other than Telecommunication Centers. Class A.
- FCC Part 15 Class A

ENVIRONMENTAL

- ETS 300 019-2-1 class 1.2 (Storage)
- ETS 300 019-2-2 class 2.3 (Transportation)
- ETS 300 019-2-3 class 3.2 (Operation)
- Operational temperature range: 0°C to +55°C