EPSILON-8100

Managed 8-Port Gigabit Ethernet Switch

Standalone PC/104 module with wide voltage input and serial management port
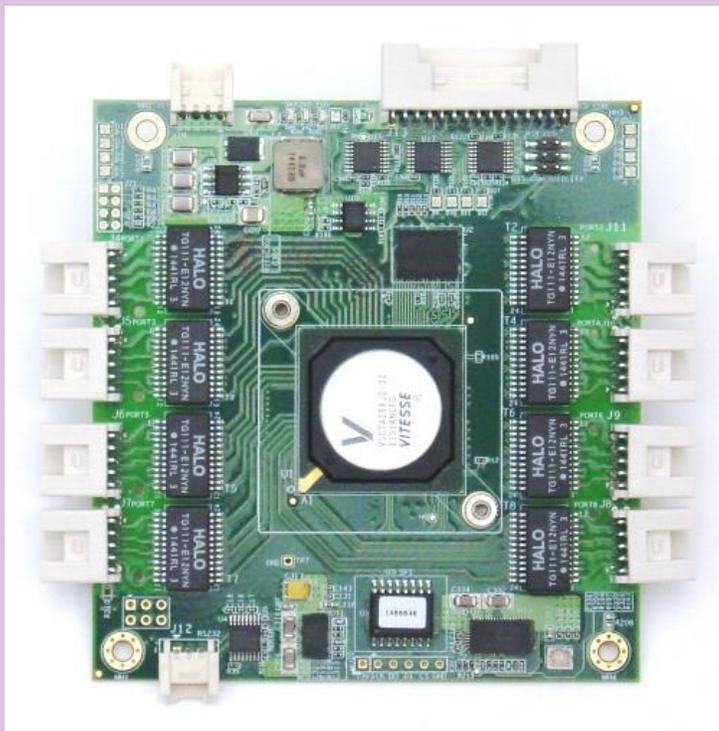
Advanced Gigabit Ethernet Switch

Epsilon-8100 is a standalone 8-port Gigabit Ethernet managed switch. It delivers a comprehensive, end-to-end carrier Ethernet solution supporting MEF service delivery and timing over packet solutions for IEEE 1588 and synchronous Ethernet.

Layer 2+ Managed Switch

The advanced Ethernet switch chip includes a built-in microcontroller for configuration and management. It can be accessed either out-of-band, through the on-board RS-232 port, or via one of the Ethernet ports.

Wide Input Power Supply

Input power is provided through the built-in, wide-range +5 to 36VDC power supply, enabling operation using industrial power sources.

Rugged Design

Extended temperature operation of -40°C to +85°C is tested and guaranteed. Epsilon-8100 was designed with harsh applications in mind including latching connectors to further improve reliability.

- 8 10/100/1000Mbps copper Ethernet ports with nonblocking wire-speed performance
- Dual leaky bucket policers with remarking and statistics
- Jumbo frame support at all speeds
- 8K MAC addresses and 4K VLANs (IEEE 802.1Q), as well as 8K IPv4 and IPv6 multicast group support
- Flexible link aggregation support based on Layer-2 through Layer-4 information (IEEE 802.3ad)
- Multicast and broadcast storm control, as well as flooding control
- Rapid Spanning Tree protocol (RSTP) and MSTP
- 8 priorities and 8 QoS queues per port with scheduling
- Shaping/policing per queue and per port
- Multiple protocol support: IEEE 802.1d, IEEE 802.1w, IEEE 802.1s, and IEEE 802.1X
- Built-in 416MHz MIPS 24KEC microcontroller for configuration and management
- RS-232 serial port provides out-of-band management interface
- Can operate autonomously or in conjunction with a host SBC
- Wide input voltage range: +5 to +36VDC input
- Conduction cooled with heat spreader or convection cooled with heat sink
- PC/104 form factor (3.55 x 3.775 in.)
- -40°C to +85°C (-40°F to +185°F) operating temperature
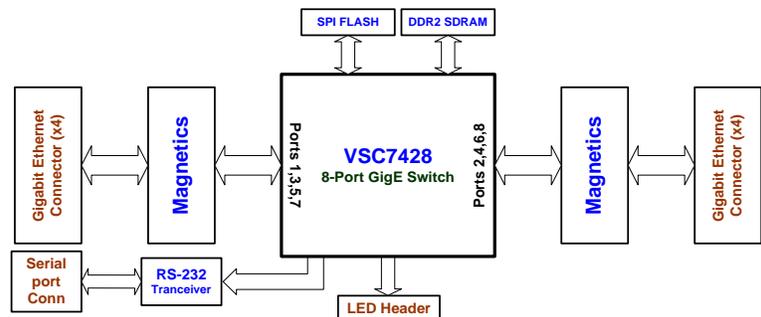
Epsilon-8100: 8-Port Gigabit Ethernet Switch

Specifications

Ethernet switch	8-port Layer 2+ switch Built-in 416MHz MIPS 24KEC microcontroller for configuration and management
Number of ports	8 10/100/1000Mbps Ethernet ports with non-blocking wire-speed performance
On-board memory	4Mb packet memory Shared memory buffer with per-port & CoS memory management
MEF	Hierarchical MEF compliant policing & scheduling MEF E-Lane, E-Line, and E-Tree services
Frame buffer	Jumbo frame support at all speeds
VLAN	IEEE 802.1Q VLAN switch with 8K MACs and 4K VLANs Push/pop up to two VLAN tags Independent & shared VLAN learning (IVL, SVL)
Multicast	IPv4 and IPv6 multicast group support
Remarking	Dual leaky bucket policers with remarking and statistics
Classifier	8 priorities and 8 CoS queues per port with strict or deficit-weighted round robin scheduling Shaping/policing per queue and per port
Storm control	Policing with storm control and MC/BC protection
Link aggregation	IEEE 802.3ad
Security	Advanced security and prioritization available though multistage TCAM engine
RSTP	Rapid spanning tree protocol (IEEE 802.1W) and MTSP
MIBs	Support for WebStax and CEServices
Power management	ActiPHY and PerfectReach power management; VeriPHY cable diagnostics
Serial port	1 RS-232 for host interface
Indicator LEDs	16 status LEDs, 2 per port
Standalone Capable	Can operate as a standalone network switch or in combination with a host SBC
Power Input	+5V to +36V DC
Power consumption	5.4W typical at +5VDC
MTBF	624,170 hours at 20°C
Form factor	PC/104 (3.55 x 3.775 in.)
Operating temp	-40°C to +85°C (-40°F to +185°F)
Weight	3.5oz (99g) with heatsink
RoHS	Compliant

Innovative Power Management

Epsilon-8100's advanced Ethernet switch chip includes two innovative features enable automatic power savings:

- It detects unused Ethernet ports on network devices and powers them down or places them in stand-by mode.

- It actively adjusts the power level needed based on cable length, saving energy on links shorter than the 100m maximum specified length.

Software Support

Epsilon-8100 comes with all required firmware and drivers, enabling its immediate operation without any development effort. The included web interface provides an intuitive GUI for use in configuring and managing switch functionality.

Key Features

Epsilon-8100 is a managed Layer 2+ managed Ethernet switch module offering eight 10/100/1000Mbps copper twisted pair ports in a PC/104 form-factor board.

Epsilon-8100 can be used standalone, without any connection to a single board computer, or in conjunction with a host SBC. The module's built-in microcontroller handles configuration and management. On-board memory holds dual application images, boot code, MAC addresses, and other parameters, and can also be used for program execution.

An RS-232 serial port enables communication between the module's on-board management microcontroller and a host processor. Epsilon-8100's built-in microcontroller is also accessible via a web management interface over one of the Ethernet ports.

Input power is provided through the built-in, wide-range +5 to +36VDC power supply, enabling operation using industrial power sources.

To address the temperature extremes of fixed and mobile applications in both indoor and outdoor environments, the module supports fanless operation over -40°C to +85°C and is available with either a conduction cooled heat spreader or convection cooled heat sink.

Ordering Information

EPS-8100-XT	8-Port Gigabit Ethernet Switch with heatspreader, PC/104 form factor, -40°C to +85°C operating temperature
EPS-8100	8-Port Gigabit Ethernet Switch with heatsink, PC/104 form factor, -40°C to +85°C operating temperature
C-EPS8000-KIT	Cable Kit for Epsilon-8100
6981050	Serial interface cable
6981052	Ethernet cable (1 per port)
6981053	Power input cable

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