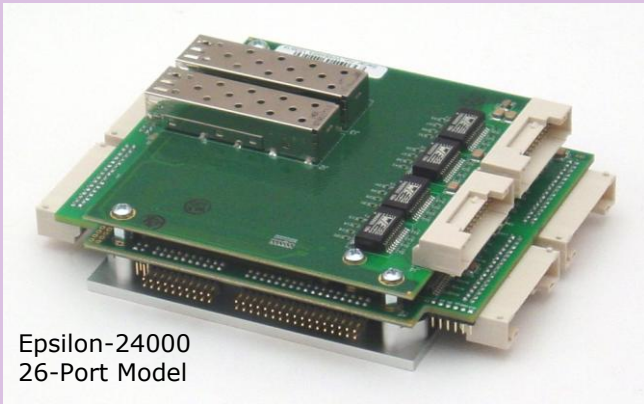


# EPSILON-24000



## Managed 26-Port Gigabit Ethernet Switch

**Standalone switch with wide voltage input and serial management port**



Epsilon-24000  
26-Port Model



Epsilon-24000 16-Port Model

- ◆ 16 or 24 10/100/1000Mbps copper Ethernet ports with nonblocking wire-speed performance
- ◆ 1 1G and 1 2.5G SFP socket
- ◆ 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 +34VDC input
- ◆ PC/104 form factor (3.775" x 4.55")
- ◆ -40°C to +85°C (-40°F to +185°F) operating temperature

### Advanced Gigabit Ethernet Switch

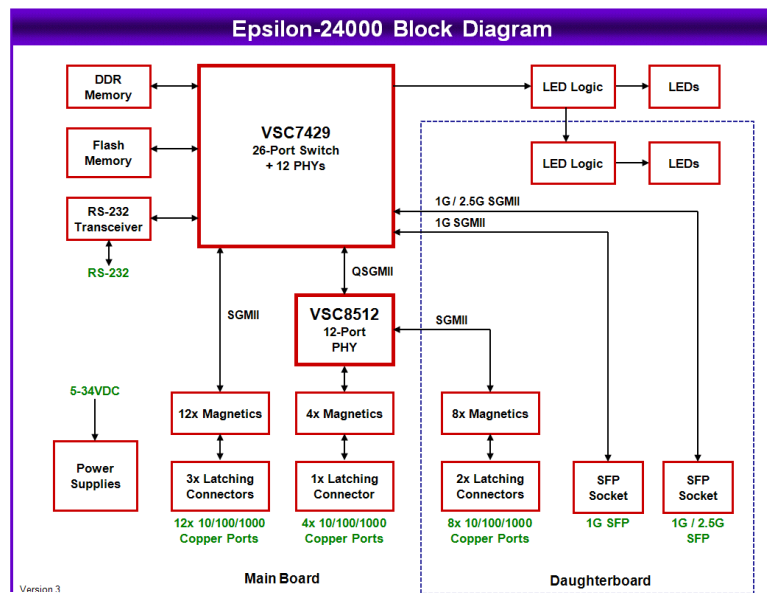
Epsilon-24000 is a standalone 26-port Gigabit Ethernet managed switch. It delivers a comprehensive, end-to-end carrier Ethernet solution supporting MEF service delivery and timing over packet solutions for IEEE 1588 and synchronous Ethernet. Epsilon-24000 includes a dual SFP socket for interfacing to 1G fiber Ethernet networks. One port can operate at enhanced 2.5G speed.

### 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.

### Rugged Design

Extended temperature operation of -40°C to +85°C is tested and guaranteed. Epsilon-24000 was designed with harsh applications in mind including latching connectors to further improve reliability.



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# Epsilon-24000: 26-Port Gigabit Ethernet Switch



## Specifications

<b>Ethernet switch</b>	26-port Layer 2+ switch Built-in microcontroller for configuration and management
<b>Number of ports</b>	16 or 24 10/100/1000Mbps Ethernet ports with non-blocking wire-speed performance 1 1G SFP socket 1 2.5G SFP socket
<b>On-board memory</b>	4Mb packet memory Shared memory buffer with per-port & CoS memory management
<b>MEF</b>	Hierarchical MEF compliant policing & scheduling MEF E-Lane, E-Line, and E-Tree services
<b>Frame buffer</b>	Jumbo frame support at all speeds IEEE 802.1Q VLAN switch with 8K MACs and 4K VLANs
<b>VLAN</b>	Push/pop up to two VLAN tags Independent & shared VLAN learning (IVL, SVL)
<b>Multicast</b>	IPv4 and IPv6 multicast group support
<b>Remarking</b>	Dual leaky bucket policers with remarking and statistics
<b>Classifier</b>	8 priorities and 8 CoS queues per port with strict or deficit-weighted round robin scheduling Shaping/policing per queue and per port
<b>Storm control</b>	Policing with storm control and MC/BC protection
<b>Link aggregation</b>	IEEE 802.3ad
<b>Security</b>	Advanced security and prioritization available through multistage TCAM engine
<b>RSTP</b>	Rapid spanning tree protocol (IEEE 802.1W) and MTSP
<b>MIBs</b>	Support for WebStax and CEServices
<b>Power management</b>	ActiPHY and PerfectReach power management; VeriPHY cable diagnostics
<b>Serial port</b>	1 RS-232 for host interface
<b>Indicator LEDs</b>	50 status LEDs: 2 per copper port, 1 per SFP port
<b>Standalone Capable</b>	Can operate as a standalone network switch or in combination with a host SBC
<b>Power Input</b>	+5V to +34V DC
<b>Power consumption</b>	16 ports active: 10.4W maximum at 12VDC 26 ports active: 15.7W maximum at 12VDC
<b>Form factor</b>	PC/104 3.775" x 4.55" (96mm x 115.5mm)
<b>Operating temp</b>	-40°C to +85°C (-40°F to +185°F)
<b>Weight</b>	4.9oz (139g) with heatsink (16-port model)
<b>MTBF</b>	461,094 hours at 20°C main board 1,661,388 hours at 20°C daughter board
<b>RoHS</b>	Compliant

## Innovative Power Management

Epsilon-24000'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-24000 is supplied 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-24000 is a managed Layer 2+ managed Ethernet switch module offering 16 or 24 10/100/1000Mbps copper twisted pair ports and two SFP optical sockets in a PC/104 form factor board. The 16-port model is implemented on a single PC/104 sized module. An additional 8 ports and the two SFP ports are available via a daughter board that connects below the main board.

Epsilon-24000 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-24000'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 +34VDC 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.

## Ordering Information

<b>EPS-24016-104</b>	16-Port Gigabit Ethernet Switch, PC/104 form factor, -40°C to +85°C operating temperature
<b>EPS-24026-104</b>	26-Port Gigabit Ethernet Switch including 2 SFP ports, PC/104 form factor, -40°C to +85°C operating temperature
<b>DK-EPS24016</b>	EPS-24016-104 Development Kit: EPS-24016-104 switch, CK-EPS-24016, ACC-LED-EPS24000
<b>DK-EPS24026</b>	EPS-24026-104 Development Kit: EPS-24026-104 switch, CK-EPS-24026, ACC-LED-EPS24000
<b>CK-EPS24016</b>	Cable Kit for EPS-24016-104 with 4 quad port Ethernet cables, 1 serial cable, 1 power cable
<b>CK-EPS24026</b>	Cable Kit for EPS-24026-104 with 6 quad port Ethernet cables, 1 serial cable, 1 power cable
<b>ACC-EPS24000-DB</b>	EPS-24000 Daughterboard, 8-Port Gigabit Ethernet, 2 SFP ports, PC/104 form factor
<b>ACC-EPS24K-LED-S</b>	LED Accessory Board with sockets
<b>ACC-EPS24K-LED-C</b>	LED Accessory Board, pin headers/cables
<b>ACC-HS104-10</b>	Heat Sink Accessory



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