

EPSILON-24000 Rugged 26-Port Gigabit Ethernet Switch: 24x 1G + 2x SFP



FEATURES

Features

16 or 24 Gigabit Ethernet ports with non-blocking wire-speed performance

1 1G SFP socket; 1 2.5G SFP socket

Built-in 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

8K MAC addresses and 4K VLANs (IEEE 802.1Q), as well as 8K IPv4 and IPv6 multicast group support

Jumbo frame support at all speeds

Dual leaky bucket policers with remarking and statistics

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

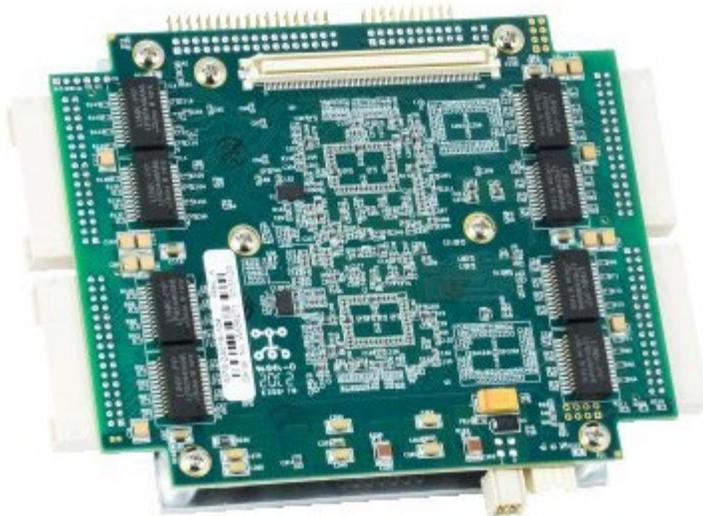
Multiple protocol support: IEEE 802.1d, IEEE 802.1w, IEEE 802.1s, and IEEE 802.1X

Wide input voltage range: +5-34VDC

Latching connectors for improved ruggedness

PC/104 form factor module
3.55" x 3.775" (90mm x 96mm)

Extremely rugged -40°C to +85°C operating temperature



EPS-24016-104 16 port Ethernet switch



EPS-24026-104 26 port Ethernet switch; 24x 1G Copper + 2x 1/2.5G Fiber



EPS-24016-104 heat spreader side



EPS-24016-104 edge view

Epsilon-24000 is a managed Layer 2+ Ethernet switch module offering up to 24 10/100/1000Mbps copper twisted pair ports and 2 small form factor pluggable (SFP) sockets in the compact PC/104 form factor. Epsilon-24000 is designed for rugged applications including industrial, on-vehicle and military.

Epsilon-24000 is a standalone switch that does not require any host computer interface. All switch functions are managed by a microprocessor embedded directly into the switch. The processor is accessed via an in-band web interface over one of the Ethernet ports or via an out-of-band command-line interface over an RS-232 serial port. The integrated web interface provides an intuitive GUI for use in configuring and managing all switch functionality. On-board memory holds dual application images, boot code, MAC addresses, and other parameters, and can also be used for program execution.

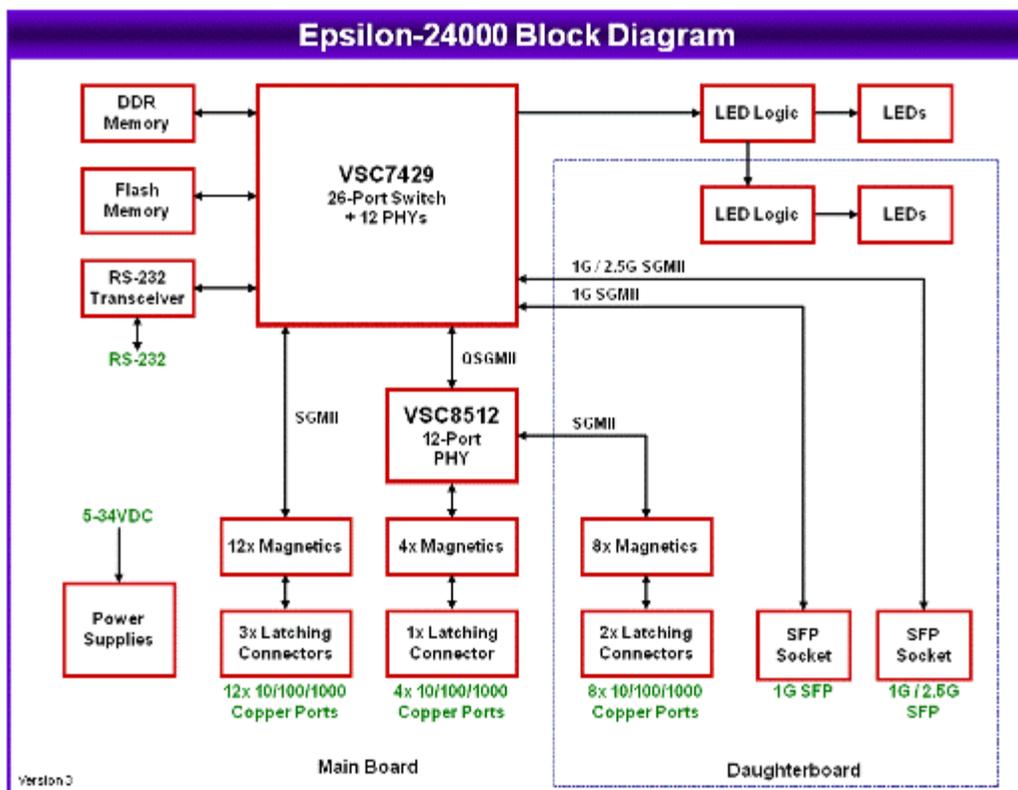
Epsilon-24000 includes a dual SFP socket for interfacing to 1G fiber Ethernet networks. One port can operate at enhanced 2.5G speed to support efficient stacking of two switches together for a combined total of 50 ports.

Epsilon-24000's advanced Ethernet switch board includes two innovative features that enable automatic power savings. The switch can detect unused Ethernet ports on network devices and power them down or place them in stand-by mode. Additionally, the switch actively adjusts the power level needed based on cable length, saving energy on links shorter than the 100m maximum specified length. Input power is provided through the built-in, wide-range +5 to +34VDC power supply, enabling operation using industrial power sources.

Epsilon-24000 was designed for use in vehicle and harsh environment applications. All I/O connectors are latching, providing enhanced reliability over the RJ-45 connectors used in commercial Ethernet switches. A 50% thicker PCB provides better protection against vibration in vehicle environments. The wide range 5-34V input power supply is compatible with all common vehicle and industrial power sources. The -40°C to +85°C operating range makes Epsilon-24000 suitable for use in outdoor and vehicle applications.

Epsilon-24000 comes loaded with all required firmware, enabling its immediate operation without any development effort. The included web interface provides an intuitive GUI for use in configuring and managing switch functionality. The ACC-EPS24000-DB product upgrades the EPS-24016-104 model to the EPS-24026-104 model, adding 8 Gigabit Ethernet ports and 2 SFP sockets.

◆ Block Diagrams



◆ Development Kit

Two Development Kits are available for the Epsilon-24000. The DK-EPS24026 Development Kit contains an EPS-24026-104 26-port Gigabit Ethernet switch, cable kit and LED accessory board. The DK-EPS24016 Development Kit contains an EPS-24016-104 16-port Gigabit Ethernet switch, cable kit and LED accessory board.

◆ Cable Kit

CK-EPS24016



CK-EPS24026



Cable kits include the following cables:

No.	Cable	Description	Drawing	CK-EPS24016	CK-EPS24026
1	6981050	Serial Cable, 1x3 2mm to DB9M	Show	1	1
2	6981508	Ethernet Cable, 4 Ports, JST 32 Pin	Show	4	6
3	6981507	Power Cable, IPD 2x2 to Leads, 20AV	Show	1	1

◆ Specifications

Managed Ethernet Switch	
Switch Type	26-port, Layer 2+ switch Built-in microcontroller for configuration and management
Number of Ports	16 or 24 10/100/1000Mbps Ethernet ports with non-blocking wire-speed performance 1 1G SFP socket; 1 2.5G SFP socket
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 through multistage TCAM engine
RSTP	Rapid Spanning Tree Protocol (IEEE 802.1W) and MSTP
MIBs	Support for both WebStax and CEServices MIBs
Power Management	ActiPHY and PerfectReach power management VeriPHY cable diagnostics
Serial Port	1 RS-232 port for host interface
Indicator LEDs	50 status LEDs: 2 per copper port, 1 per SFP port
Standalone Capable	Standalone network switch, or in combination with a host computer
General	
Power Input	+5 to +34V DC/DC power supply
Power Consumption	16 ports active: 10.4W maximum at +12VDC 26 ports active: 15.7W maximum at +12VDC
Form Factor	PC/104 3.55" x 3.775" (90mm x 96mm)
Operating Temperature	-40°C to +85°C (-40°F to +185°F)
Weight	4.9oz (138.9g) with heatsink
MTBF	461,094 hours at 20°C main board 1,661,388 hours at 20°C daughter board
RoHS	Compliant

◆ Models and Accessories

Epsilon-24000		
available models:		
EPS-24026-104	26-Port Gigabit Ethernet Switch including 2 SFP ports, PC/104 form factor, -40°C to +85°C operating temperature	Available
EPS-24016-104	16-Port Gigabit Ethernet Switch, PC/104 form factor, -40°C to +85°C operating temperature	Available
DK-EPS24026	EPS-24026-104 Development Kit: EPS-24026-104 switch, CK-EPS24026, ACC-EPS24K-LED-S	Available
DK-EPS24016	EPS-24016-104 Development Kit: EPS-24016-104 switch, CK-EPS24016, ACC-EPS24K-LED-S	Available
ACC-EPS24000-DB	EPS-24000 Daughterboard, 8-Port Gigabit Ethernet & 2 SFP ports, PC/104 form factor	Available
ACC-EPS24K-LED-C	Epsilon-24000 LED Accessory Board with pin headers and cables	Available
ACC-EPS24K-LED-S	Epsilon-24000 LED Accessory Board with sockets	Available
Please login or signup for an online quote request.		

Cables and accessories

available models:

ACC-HS104-12.7	Heat Sink Accessory
CK-EPS24016	Cable Kit for EPS-24016-104 with 4 quad port Ethernet cables, 1 serial cable, 1 power cable
CK-EPS24026	Cable Kit for EPS-24026-104 with 6 quad port Ethernet cables, 1 serial cable, 1 power cable
6981050	Serial Cable, 1x3 2mm to DB9M
6981508	Ethernet Cable, 4 Ports, JST 32 Pin
6981507	Power Cable, IPD 2x2 to Leads, 20AV

Please [login](#) or [signup](#) for an online quote request.

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