

## RAPTOR-EPSILON SWITCH Rugged Embedded Gigabit Ethernet System with wide voltage input and serial management port



### FEATURES

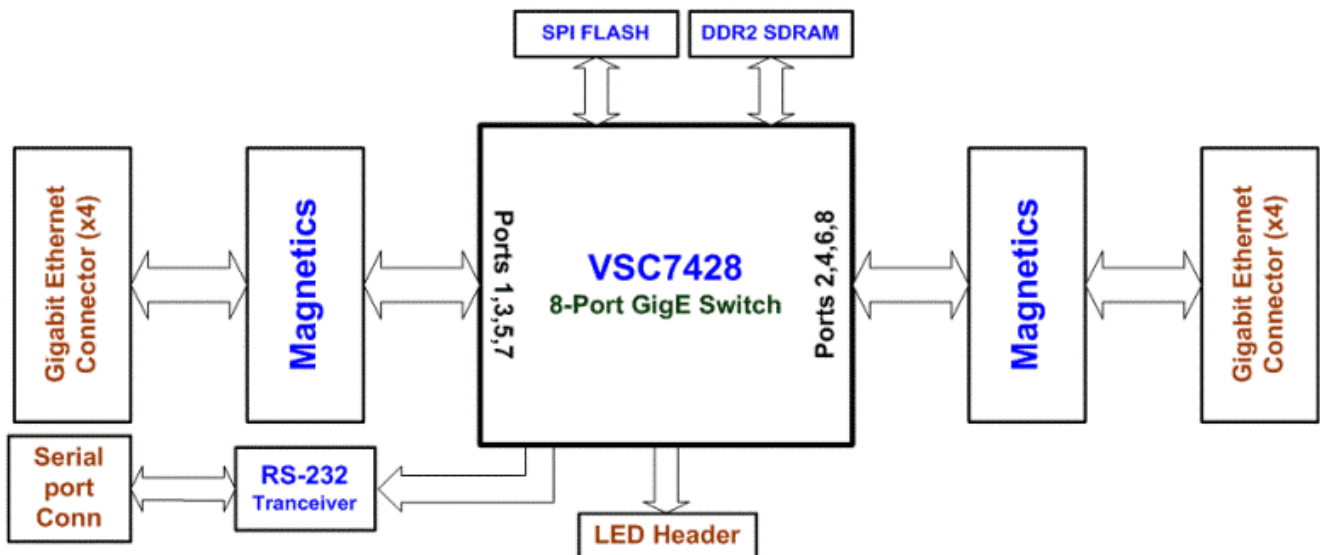
- Self contained Ethernet switch system in rugged enclosure
- 8 10/100/1000Mbps copper-twisted Ethernet ports with non-blocking wire-speed performance
- Multiple protocol support: IEEE 802.1D, IEEE 802.1w, IEEE 802.1s, and IEEE 802.1X
- Flexible link aggregation support based on Layer-2 through Layer-4 information (IEEE 802.3ad)
- 8K MAC addresses and 4K VLANs (IEEE 802.1Q), as well as 8K IP multicast group support
- Jumbo frame support at all speeds
- Dual leaky bucket policers with remarking and statistics
- 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
- Built-in 416MHz MIPS 24KEC microcontroller for configuration and management
- RS-232 serial port provides out-of-band management interface
- Wide input voltage range: +5 to +32VDC
- 40°C to +85°C operating temperature
- Highly resistant to shock and vibration MIL-STD-202G tested
- MIL-STD-461 compliant with integrated filter
- Aluminum enclosure, IP65 environmental protection
- MIL-DTL-38999 connectors for all I/O

The rugged Raptor-Epsilon Ethernet switch system is packed with desirable features that provide enhanced performance and reliability. Layer 2+ switch capabilities provides advanced features such as VLAN, aggregation, jumbo frame support, programmable multi-layer classifier with 8 QoS queues per port, DSCP remarking for IPv4 and IPv6 frames, and multicast/broadcast storm control/flooding control. Automatic power savings intelligence powers down used ports and dynamically adjusts the power output on each active port based on cable length.

The standard system configuration includes MIL D38999 connectors with four 8-wire Gigabit ports per connector, one RS-232 configuration port connector, and one power connector. The serial port is available on the first Ethernet connector. Custom cable configurations, enclosure modifications, and coatings are also available.

An RS-232 serial port enables communication between the system's on-board management microcontroller and a host processor for out-of-band management. The built-in microcontroller is also accessible via a web management interface over any of the Ethernet ports. Input power is provided through the wide-range +5-32VDC power supply and feature MIL-STD-461 compliance. To support the temperature extremes of fixed and mobile applications in both indoor and outdoor environments, the switch supports operation over -40°C to +85°C.

Raptor-Epsilon's advanced Ethernet switch 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. The system is 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.



## ◆ Specifications

Gigabit Ethernet Switch	
<b>Switch Type</b>	8, 12, 13 or 14-port, layer 2+ switch Built-in 416MHz MIPS 24KEC microcontroller for configuration and management
<b>Number of Ports</b>	8 or 12 10/100/1000Mbps Ethernet ports with non-blocking wire-speed performance 1 1GB SFP port and 1 2.5GB SFP port (optional)
<b>On-board Memory</b>	4MB packet memory Shared memory buffer with per-port and 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
<b>VLAN</b>	IEEE 802.1Q VLAN switch with 8K MACs and 4K VLANs 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>Rapid Spanning Tree Protocol</b>	IEEE 802.1W and MSTP
<b>Power Management</b>	ActiPHY and PerfectReach power management VeriPHY cable diagnostics
<b>Serial Port</b>	1 RS-232 port for host interface, 230kbps max
<b>Standalone Capable</b>	Standalone network switch, or in combination with a host computer
<b>Indicator LEDs</b>	Up to 28 status LEDs, 2 per port 2 general purpose LEDs
General	
<b>Power Input</b>	+5 to +32V DC/DC power input
<b>Power Consumption</b>	1.8W plus 0.45W per active port at +5VDC
<b>Dimensions, not including mounting flanges</b>	7.5"L x 6.5"W x 2.8"H without SFP ports 9.5"L x 6.5"W x 2.8"H with 1 SFP port 11.0"L x 6.5"W x 2.8"H with 2 SFP ports
<b>Operating Temperature</b>	-40°C to +85°C (-40°F to +185°F)
<b>Weight</b>	Up to 5.0lbs (2.3kg)
<b>Shock</b>	MIL-STD-202G compatible
<b>Vibration</b>	MIL-STD-202G compatible
<b>Enclosure</b>	Sealed construction, IP65 rated
<b>Chassis</b>	Aluminum T6061, HBW or anodized
<b>Connectors</b>	MIL-DTL-38999 Series III TV K-finish passivated stainless steel, service rating M
<b>Cooling method</b>	Conduction cooling or add-on heat sink

<b>RoHS</b>	Compliant
<b>Customization</b>	Various chassis & connector configurations available

◆ **Models and Accessories**

**Raptor-Epsilon Switch**

available models:

<b>RS-EG8-002</b>	Raptor Ethernet Switch System with 8 copper Gigabit Ethernet ports and Layer 2+ management software	Available
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[www.diamondsystems.com](http://www.diamondsystems.com) | Sunnyvale, California USA | +1-650-810-2500 | [sales@diamondsystems.com](mailto:sales@diamondsystems.com)