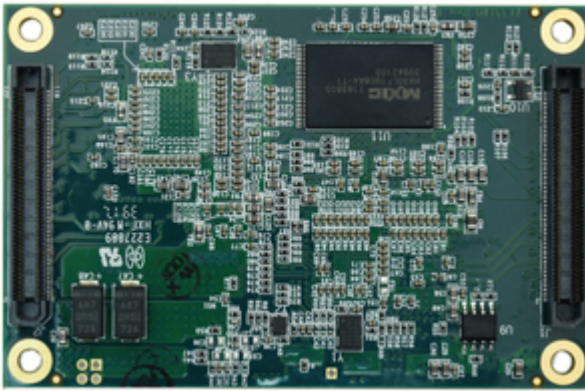


EPSM-10GX

Ultra-Compact Managed 26-Port Gigabit Ethernet Switch Module



EPSM-10GX without heatsink



EPSM-10GX bottom view showing the B2B connectors

FEATURES

- ♦ 24 10/100/1000Mbps Gigabit Ethernet ports
- ♦ 2 10G SFI ports for use with SFP+ 10G fiber/copper sockets
- ♦ Integrated 500 MHz MIPS CPU for control of all switch functions
- ♦ Embedded management website provides access to all switch features
- ♦ Support for Status LEDs on carrier board
- ♦ IEEE802.1Q switch with 4K VLANs and 32K MAC table entries
- ♦ Independent and shared VLAN learning (IVL, SVL)
- ♦ Jumbo frame support
- ♦ Push/pop/translate up to three VLAN tags on ingress and egress
- ♦ Policing with storm control and MC/BC protection
- ♦ RSTP and MSTP support
- ♦ TCAM-based classification and VCAP-II security
- ♦ 1PPS input option for IEEE1588 timing support (requires advanced software package)
- ♦ Two high speed board-to-board mating connectors provide all power and I/O connections
- ♦ +5VDC input
- ♦ COM Express Mini form factor, 2.2" H x 3.3"W / 55 x 84mm
- ♦ -40°C to +85°C (-40°F to +185°F) operating temperature
- ♦ Tested to MIL-STD-202G shock/vibration levelst

◆ Description

The EPSM-10GX is a managed Layer 2+ Ethernet switch module in an ultra-compact 2.2" x 3.3" (55 x 84mm) size offering 24 10/100/1000Mbps copper ports + 2 10Gbps SFI ports. The module is intended to be used on a carrier board. The core Ethernet switching technology is almost fully encapsulated on the module; for many applications, only the "last inch" of magnetics and I/O connectors is required to complete the circuit, enabling easy development of custom form factor Ethernet switch solutions.

The small size, based on the industry-standard COM Express Mini form factor, makes EPSM-10GX a perfect choice for use as a building block for creating custom Ethernet switch solutions in a variety of space-demanding applications, such as drones, ground and underwater vehicles, and robots. EPSM-10GX can also be mounted on a carrier board to create quick Ethernet switching solutions in other industry standard form factors such as VPX. Customers looking for a complete off-the-shelf solution may be interested in our **EPS-24G2X**, which provides all of the switch's features in the industry standard 3.5 inch form factor.

The standard Layer 2 software embedded in the module provides a comprehensive set of Ethernet switch features suitable for a wide range of industrial applications. All features are manageable via a GUI web interface accessible over any port, as well as with a command language accessed via a built-in RS-232 port. A more advanced software package, offering Layer 3 routing performance as well as IEEE1588 PTP protocol, is available upon request. These features are fully supported in the EPSM-10GX hardware.

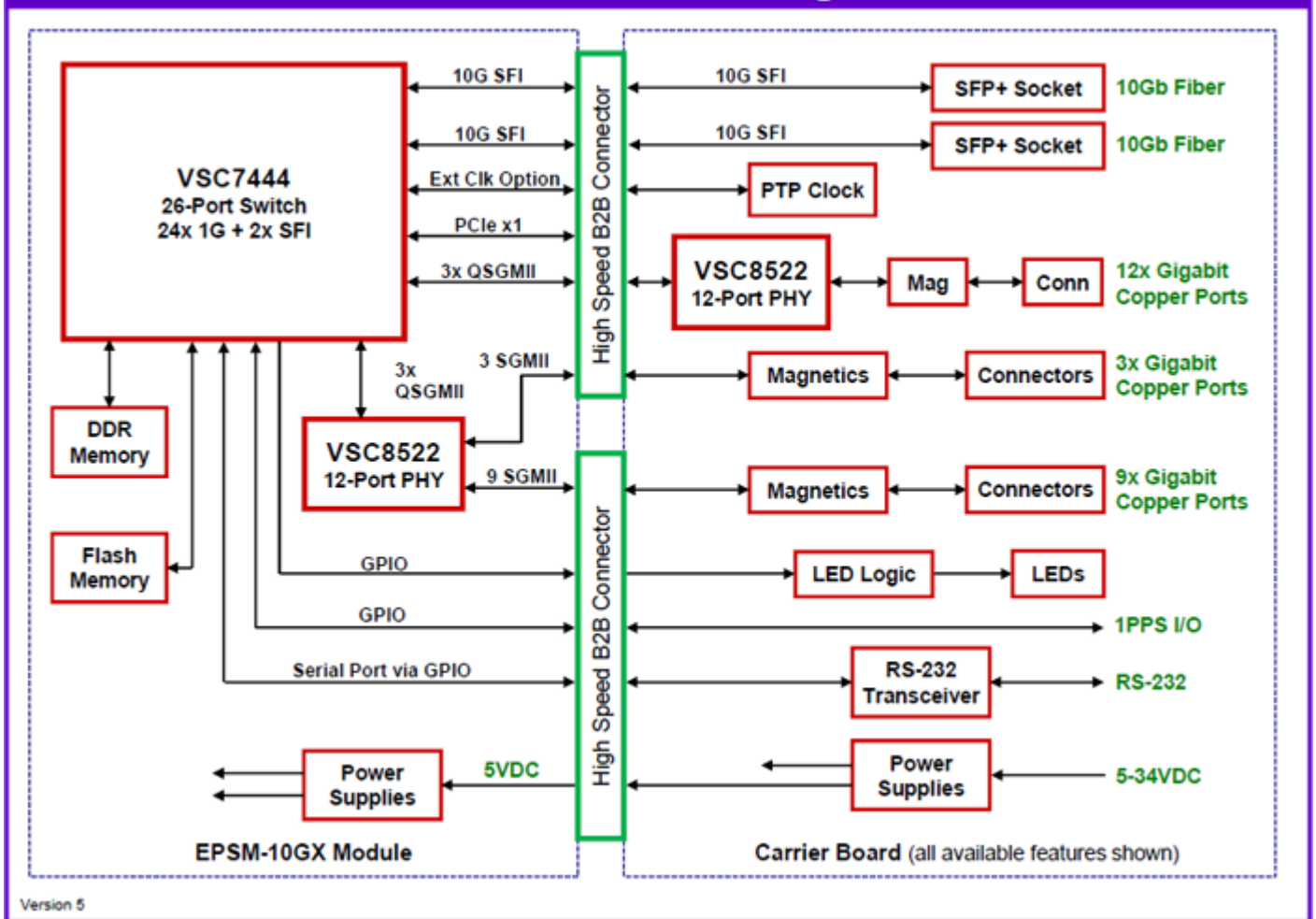
Two cooling accessory options are available: A heat sink provides convection cooling in a low profile, while a heat spreader provides improved conduction cooling for superior high temperature performance in applications where physical contact with the system enclosure is available.

Two high-speed connectors provide all power and data communications between the module and the carrier board. The first connector provides power, 9 10/100/1000 ports, the serial interface, and a serial LED data stream. Applications requiring 9 ports or less may use just this connector. The second connector contains 3 more 10/100/1000 ports, QSGMII signals for an additional 12-port PHY to provide 12 additional 10/100/1000 ports, and the 2 10G SFI ports.

EPSM-10GX is designed to meet the challenges of vehicle environments with its -40/+85°C operating temperature range and its MIL-STD-202G shock/vibration resistance.

◆ Block Diagram

EPSM-10GX Block Diagram



◆ Development Support

A design guide provides instructions for incorporating the EPSM-10GX into your own circuit. Under NDA a complete carrier board reference schematic and PCB layout are available to provide the starting point for a custom Ethernet switch based on the EPSM-10GX. This design is also available off the shelf as our EPS-24G2X product.

◆ Specifications

Ethernet Switch	24-port Layer 2/3 switch Built-in 500MHz MIPS 24KEC microcontroller for configuration and management
Number of Ports	24 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
Network Management	SNMP v1/v2c/v3 Web GUI Command Line Interface (CLI)
VLAN	IEEE 802.1Q VLAN switch with 32K MACs and 4K VLANs Push/pop up to three VLAN tags Independent & shared VLAN learning (IVL, SVL)
Multicast	IPv4/IPv6 uni & multicast group support
Remarking	Dual leaky bucket policers with remarking and statistic
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
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	EEE 802.3ad
RSTP	Rapid spanning tree protocol (IEEE 802.1W) and MTSP
MIBs	Support for WebStax
Power Management	ActiPHY and PerfectReach power management; VeriPHY cable diagnostics
Serial Port	1 RS-232 port for host interface
Indicator Lights	24 status LEDs, two per port; 2 general purpose
Standalone Cable	Standalone network switch, or in combination with a host computer
General	
Power Input	5VDC
Power consumption	20W
Form factor	COM Express Mini, Type 10
Operating temp	-40°C to +85°C (-40°F to +185°F)
Weight	85.2 grams (3.00 oz.)
MTBF	TBD
RoHS	Compliant

www.diamondsystems.com | Sunnyvale, California USA | +1-650-810-2500 | sales@diamondsystems.com