EPSM-10GX EPSM-10GX Ultra-Compact Managed 26-Port Gigabit Ethernet Switch Module

Description

The EPSM-10GX is a managed 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 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 compact, rugged 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.

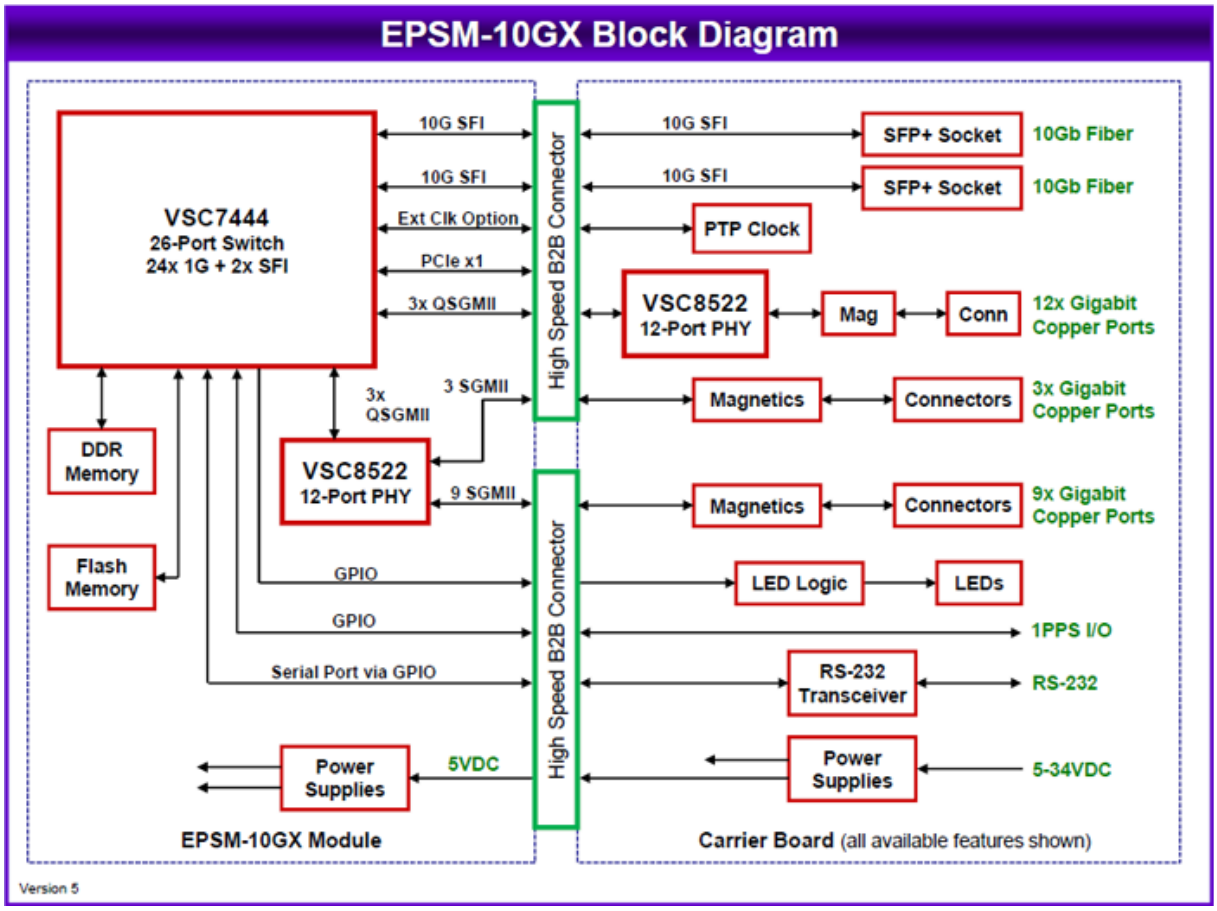
Two software packages are available, Layer 2+ switching and Layer 3 routing/switching. In addition, IEEE-1588 precision time protocol support is available with a minor modification to support an external precision clock circuit and 1pps signal source provided by the carrier board. All software features 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.

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 fine-pitch 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 50% thicker PCB, -40/+85°C operating temperature range, and MIL-STD-202G shock/vibration resistance.

Block Diagram


EPSM-10GX Block Diagram
VSC7444
26-Port Switch
24x 1G + 2x SFI
10G SFI
10G SFI
Ext Clk Option
PCIe x1
3x QSGMII
3x QSGMII
3 SGMII
DDR Memory
Flash Memory
VSC8522
12-Port PHY
9 SGMII
GPIO
GPIO
Serial Port via GPIO
Power Supplies
5VDC
High Speed B2B Connector
High Speed B2B Connector
10G SFI
10G SFI
SFP+ Socket
10Gb Fiber
SFP+ Socket
10Gb Fiber
PTP Clock
VSC8522
12-Port PHY
Mag
Conn
12x Gigabit Copper Ports
Magnetics
Connectors
3x Gigabit Copper Ports
Magnetics
Connectors
9x Gigabit Copper Ports
LED Logic
LEDs
1PPS I/O
RS-232 Transceiver
RS-232
Power Supplies
5-34VDC
EPSM-10GX Module
Carrier Board (all available features shown)
Version 5