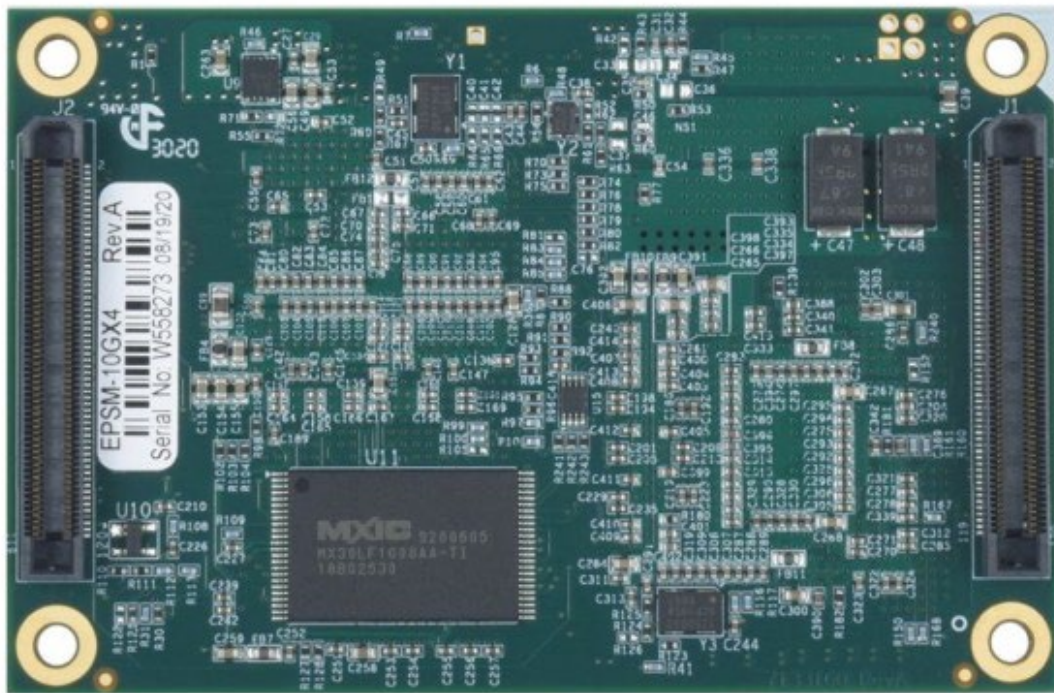# DIAMOND SYSTEMS EPSM-10GX4

MANAGED 26-PORT GIGABIT ETHERNET SWITCH MODULE FOR BASEBOARD APPLICATIONS

Key Features

- Managed 28-Port Gigabit Ethernet Switch
- 24 Gigabit Ethernet ports
- 4 10G SFI ports
- RS-232 management port
- 32k MAC addresses and 4K VLANs
- Layer 2+ switching and Layer 3 routing software available
- -40 to +85°C operating temperature

Introduction

The EPSM-10GX4 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 + 4 10Gbps SFI ports. The module is intended to be used on a carrier board, such as Diamond's EPS-24G4X, to implement a complete Ethernet switching solution. 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.

Customers looking for a complete off-the-shelf solution may be interested in our EPS-24G4X, which provides all of the switch's features in the industry standard 3.5 inch form factor with integrated latching I/O connectors and SFP+ sockets. Diamond Systems also offers custom carrier board design services to provide a perfect fit solution for your application.

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 4 10G SFI ports.

EPSM-10GX4 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.

Main Specification

Function	Implementation: 12 PHYs integrated on main board; QSGMII signals for additional 12-port PHY on board
	Network Management: SNMP v1/v2c/v3; Web GUI and command line interface (CLI)
	Power Management: ActiPHY and PerfectReach power management reduce power for shorter cab and shut down power to disconnected ports
Interface(s)	24 10/100/1000Mbps Ethernet ports with non-blocking wire-speed performance
	4 10G SFI ports for fiber or copper transceivers
	Magnetics and 10G transceivers required on carrier board
	1 serial port for host interface; RS-232 transceiver required on carrier board
Connection(s)	Two high speed board-to-board mating connectors provide all power and I/O connections
	Dual Samtec ERF5 series connectors, 120 pins each, 10mm board to board spacing
	This is a module designed for fitting to a carrier board

General

Electrical	5VDC +/-5%powered, 20W max, all ports active
Mechanical	84 x 55mm, COM Express Mini footprint/mounting holes
Conformal Coating	On request
Software	The switch is ready to plug into your application without any driver installation or firmware upgra A web interface and a CLI provide an intuitive GUI for configuring and managing the switch
Temperature	Temperature range (operation): -40 to +85°C
	Temperature range (storage): -40 to +85°C
Humidity	5% - 95% relative humidity
Weight	85.2 grams (3.00 oz.)
Warranty	2 Years
RoHS	Compliant

Ordering Details

Board	**EPSM-10GX4**	
	10GX4 port switch module, -40 to +85C operating temperature	
Accessories	**EPS-24G4X**	
	Epsilon 28-port Ethernet switch with 24 10/100/1000 ports + 4 10G SFI ports, Layer 2+ switching software	

EPS-24G4X-L3

Epsilon 28-port Ethernet switch with 24 10/100/1000 ports + 4 10G SFI ports, Layer 3 routing/switching so

EPS-24G4X-1588

Epsilon 28-port Ethernet switch with 24 10/100/1000 ports + 4 10G SFI ports, Layer 3 routing/switching so
with IEEE-1588 PTP clock circuit and software support