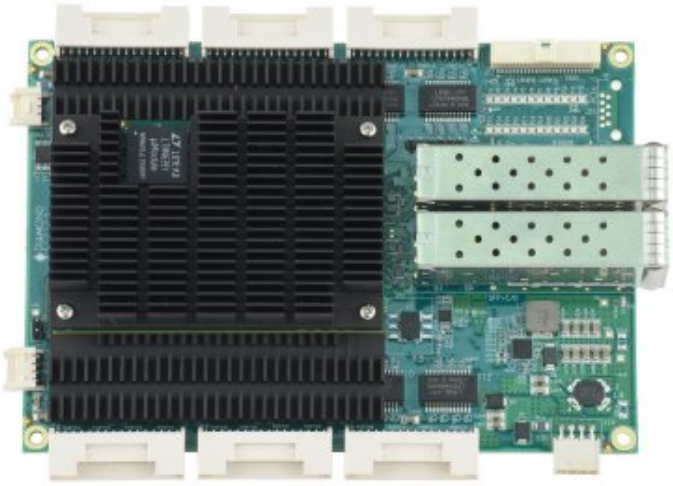
EPS-24G4X EPS-24G4X Managed 28-Port Gigabit Ethernet Switch with 4 10G SFP+ Ports



EPS-24G4X top view

HSP Model with heat spreader assembly for conduction cooling installation

FEATURES

- Rugged Ethernet switch for vehicle and other harsh environment applications
- 24 total gigabit Ethernet ports
- 4 10G SFI ports with SFP+ sockets
- Activity and status LEDs for all ports
- 7-40VDC input range
- Thicker PCB, latching connectors, and -40 to +85°C operating temperature support rugged mobile applications
- Layer 2+ switching and Layer 3 routing software available
- Software customization and branding available
- IEEE 1588 PTP support available
- Design kit available with carrier board schematics and bill of materials
- Custom carrier board and complete switch solution design and manufacturing services available

Overview

The EPS-24G4X is a managed Ethernet switch based on Diamond's **EPSM-10GX4 switch module**. The switch implements all features of the style='text-decoration: underline'>EPSM-10GX4 Ethernet switch module, including 24 10/100/1000Mbps copper ports and 4 10Gbps SFI ports accessed via SFP+ sockets. Depending on the ordering configuration, the switch contains embedded software supporting Layer 2 switching, Layer 3 routing/switching, and optional IEEE1588 PTP operation.

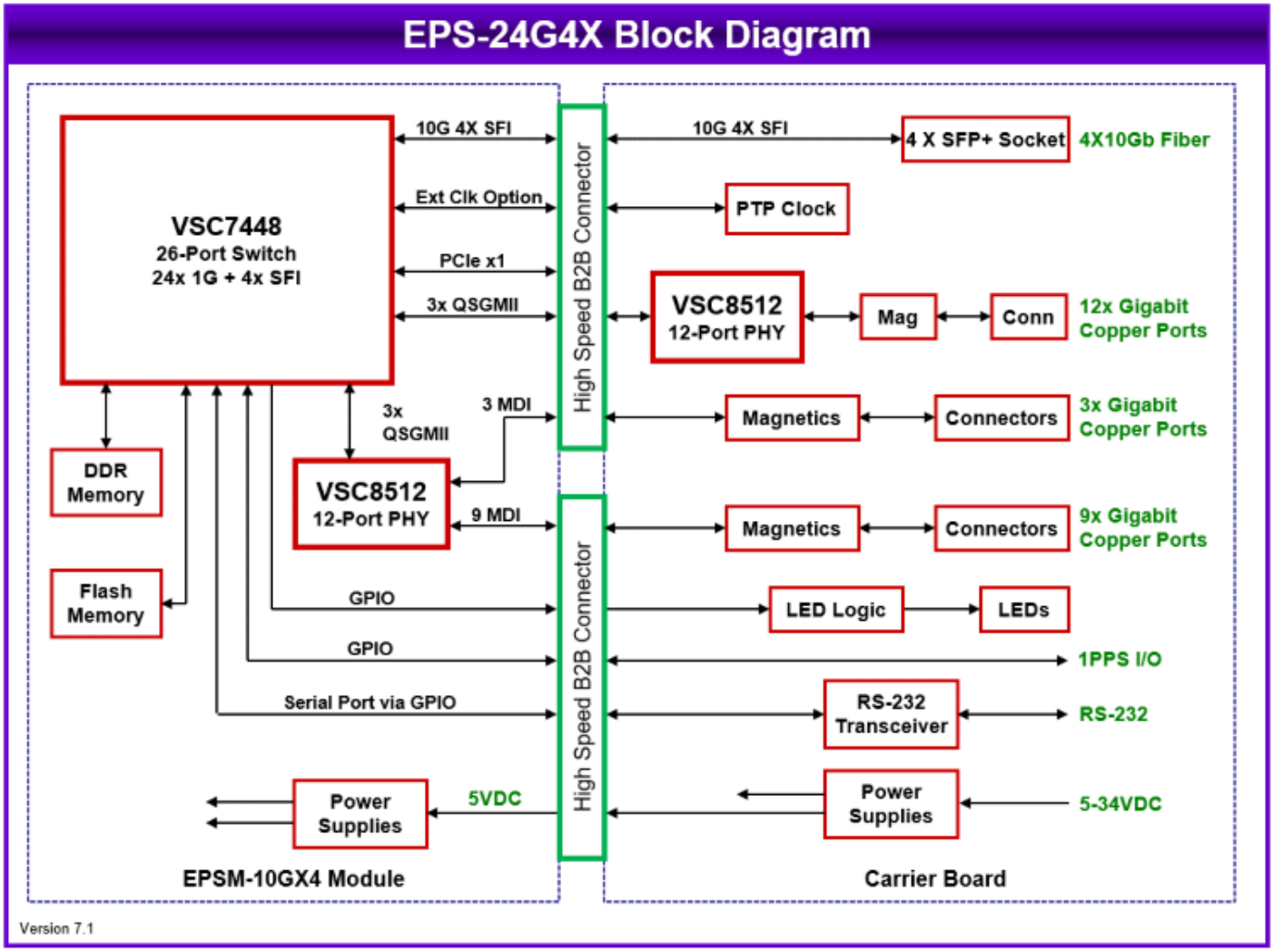
Two software packages are available, Layer 2+ switching and Layer 3 routing/switching. In addition, IEEE-1588 precision time protocol support is available with a minor modification to support an external precision clock circuit and 1pps signal source provided by the carrier board. All software features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

EPS-24G4X is designed specifically to meet the challenges of vehicle and other rugged environments, with its -40/+85°C operating temperature range, 50% thicker PCB, latching I/O connectors, and its MIL-STD-202G shock/vibration resistance. A wide-range input power supply with built-in transient protection provides

compatibility with a range of industrial and vehicle power supplies. The board also forms the heart of Diamond's SabreNet-24000 rugged Ethernet switch. Cooling for EPS-24G4X is provided via two heat sinks: a low-profile heat sink between the carrier board and the EPSM module and a taller heat sink for the EPSM module.

The EPS-24G4X is included as part of the EPSM-10GX4 development kit. Schematics and bill of materials are included to simplify the development of custom advanced Ethernet switching solutions based on the EPSM-10GX4 module.

Block Diagram



Embedded Software

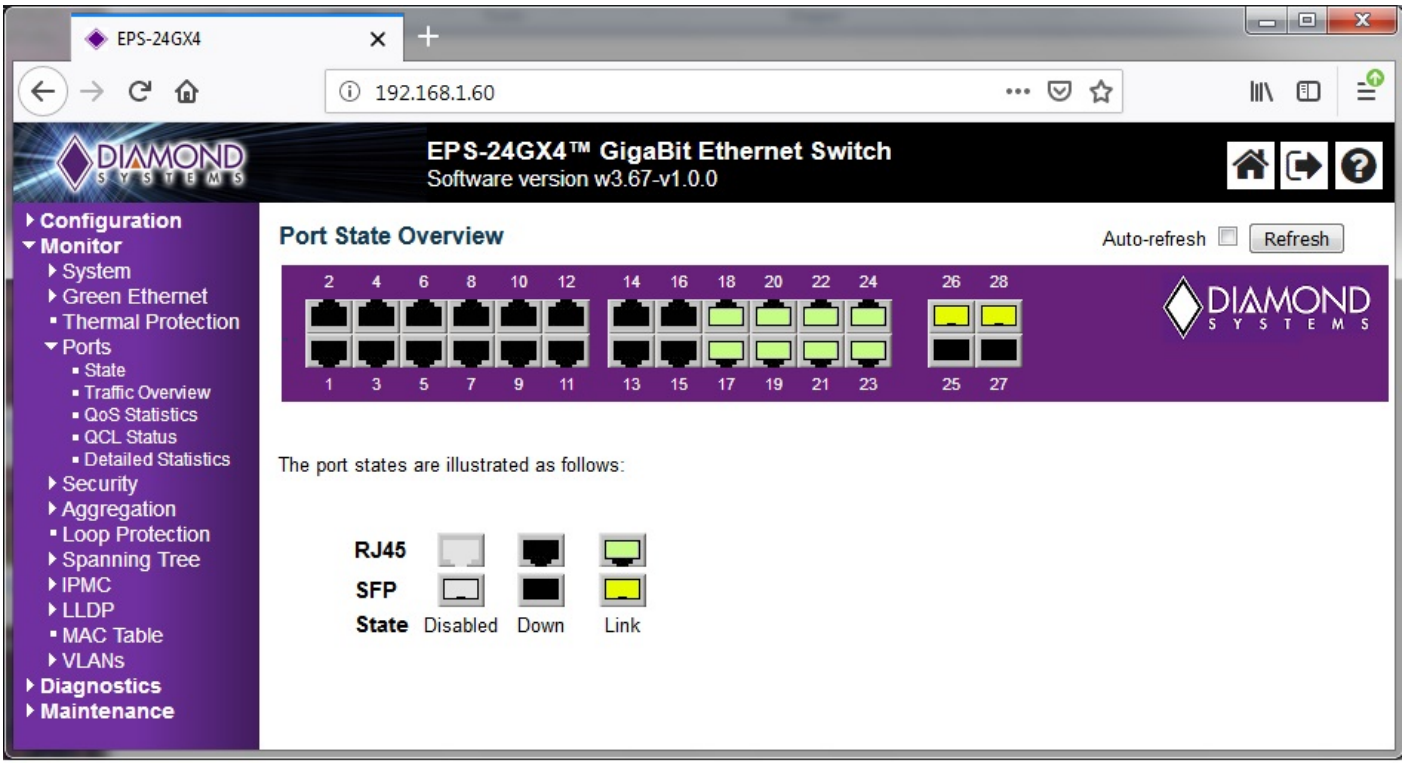
Two software packages are available for EPS-24G4X, Layer 2+ switching and Layer 3 routing/switching. In addition, IEEE-1588 precision time protocol support is available with a minor modification to install a precision clock circuit on the board. All software features are manageable via a GUI web interface accessible over any port, as well as with a command language accessed via a built-in RS-232 port. Customer branding is available to put your logo / color scheme / part numbers on the GUI and serial interface.

The table below shows some of the more popular features available. For a complete list of features available in each software package, **click here.**

Layer 2+ software highlights include the following:
8K MAC addresses and 4K VLANs (IEEE 802.1Q)
8K IPv4 and IPv6 multicast group support
Jumbo frame support at all speeds
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
Multiple protocol support: IEEE 802.1d, IEEE 802.1w, IEEE 802.1s, and IEEE 802.1X
8 priorities and 8 QoS queues per port with scheduling

Layer3 software additional highlights:
Hardware- and software-based IPv6 L3 static routing

RFC 2328 OSPFv2 dynamic routing
IEEE 1588 precision time protocol (PTP)
RADIUS accounting
Port and Queue policers

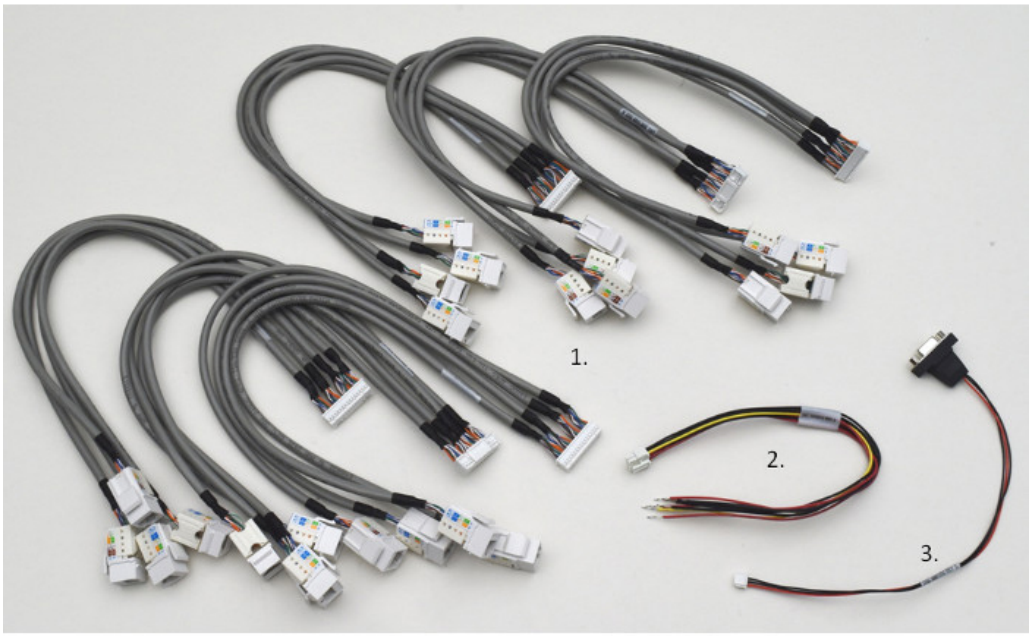


Models

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 software
EPS-24G4X-1588	Epsilon 28-port Ethernet switch with 24 10/100/1000 ports + 4 10G SFI ports, Layer 3 routing/switching software with IEEE-1588 PTP clock circuit and software support

Cables

A cable kit is available to provide convenient access to all features of the board except the 1PPS signal. Cable kit includes 6 4-port 10/100/1000 Cat 5e RJ-45 cables, power cable, and serial interface cable.



CK-EPS24G2X-01 includes the following cables:

No.	Qty	Cable	Description	Drawing
1	6	6981508	Ethernet Cable, 4 Ports, JST 32 Pin	**Show**
2	1	6980512	Power input cable, discrete wires	**Show**
3	1	6981050	Serial Cable, 1x3 2mm to DB9M	**Show**

Specifications

Number of Ports	24 10/100/1000Mbps Ethernet ports with non-blocking wire-speed performance 4 10G SFP+ ports
Power Management	ActiPHY and PerfectReach power management reduce power for shorter cable lengths and shut down power to disconnected ports
Operating temperature	-40 to +80°C
Weight	389g / 13.7oz
RohS	Compliant
Implementation	2-board solution: EPSM-10GX4 switch module provides core switch function and 12 PHYs; additional 12 PHYs and remaining circuitry implemented on carrier board
On-board Memory	4MB packet memory
Network Management	SNMP v1/v2c/v3; Web GUI and command line interface (CLI)
Serial Port	1 RS-232 port for host interface, 38400/N/8/1
Indicator lights	LEDs for each port indicate link status and speed
Dimensions	107 x 156mm / 4.213 x 6.142"
Input voltage	7-40VDC
Power consumption	Vin = 24VDC: 13W, all ports idle 20W, all 24 1G ports active 26W, all 24G ports and all 4 10G ports active

Models and Accessories

EPS-24G4X

available models:

EPS-24G4X	Ethernet switch with 24 1G ports, 4 10G SFP+ ports, and Layer 2+ management software	Available
EPS-24G4X-1588	Ethernet switch with 24 1G ports, 4 10G SFP+ ports, and Layer 3 management software with routing and IEEE-1588 PTP support	Available
EPS-24G4X-L3	Ethernet switch with 24 1G ports, 4 10G SFP+ ports, and Layer 3 management software with routing support	Available
EPS-24G4X-HSP	Ethernet switch with 24 1G ports, 4 10G SFP+ ports, Layer 2+ management software, and heat spreader mounting system	Available
EPS-24G4X-HSP-1588	Ethernet switch with 24 1G ports, 4 10G SFP+ ports, Layer 3 management software with routing and IEEE-1588 PTP support, and heat spreader mounting system	Available
EPS-24G4X-HSP-L3	Ethernet switch with 24 1G ports, 4 10G SFP+ ports, Layer 3 management software with routing support, and heat spreader mounting system	Available

Please login or signup for an online quote request.

Cables and accessories

available models:

CK-EPS24G2X-01	Cable kit including 6 4-port 10/100/1000 Cat 6 RJ-45 cables, power cable, and serial interface cable
6981508	Ethernet Cable, 4 Ports, JST 32 Pin
6980512	Power input cable, discrete wires
6981050	Serial Cable, 1x3 2mm to DB9M

Please login or signup for an online quote request.