

EPSILON-12G2 Managed 14-Port Gigabit Ethernet Switch



EPS-12G2 with 12 1G copper ports and 2 1G/2.5G SFP sockets

FEATURES

12 Gigabit Ethernet ports with non-blocking wire-speed performance

1 1G SFP socket; 1 2.5G SFP socket

Built-in 416MHz MIPS 24KEC microcontroller for configuration and management

RS-232 serial port provides out-of-band management interface

Can operate autonomously or in conjunction with a host SBC

8K MAC addresses and 4K VLANs (IEEE 802.1Q), as well as 8K IPv4 and IPv6 multicast group support

Jumbo frame support at all speeds

Dual leaky bucket policers with remarking and statistics

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

8 priorities and 8 QoS queues per port with scheduling

Shaping/policing per queue and per port

Multiple protocol support: IEEE 802.1d, IEEE 802.1w, IEEE 802.1s, and IEEE 802.1X

Wide input voltage range: +5-40VDC

Latching connectors for improved ruggedness

COM Express form factor module (95 x 125mm)

Extremely rugged -40°C to +85°C operating temperature

The Epsilon-12G series is a family of managed Layer 2+ Ethernet switches offering twelve 10/100/1000Mbps copper twisted pair ports and up to two 1G/2.5G small form factor pluggable (SFP) sockets in a rugged single board solution. Epsilon-12G2 is designed for rugged applications including industrial, on-vehicle and military.

Epsilon-12Gx is a standalone switch that does not require any host computer interface. All switch functions are managed by a 480MHz MIPS processor embedded directly into the switch running embedded management software. The processor is accessed via an in-band web interface over one of the Ethernet ports or via an out-of-band command-line interface over an RS-232 serial port. The integrated web interface provides an intuitive GUI for use in configuring and managing all switch functionality. On-board memory holds dual application images, boot code, MAC addresses, and other parameters, and can also be used for program execution.

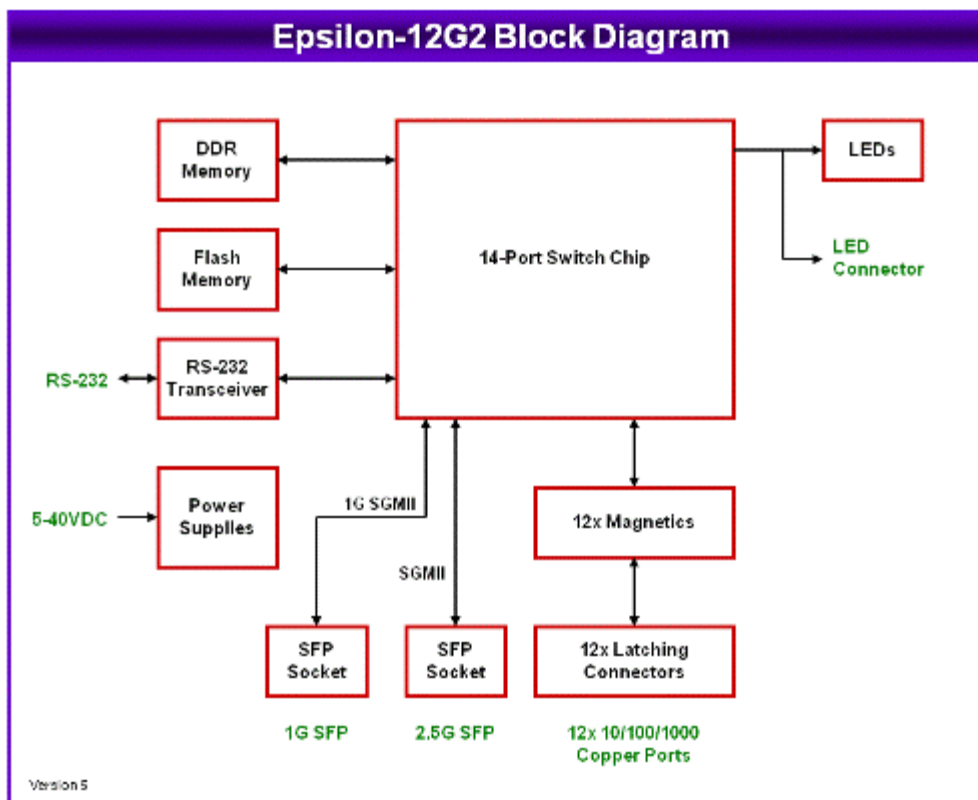
Epsilon-12Gx can be fitted with a single or dual SFP socket for interfacing to 1G/2.5G fiber Ethernet networks or for use with copper SFPs. A no-SFP configuration is also available.

Input power is provided through the built-in, wide-range +5 to +40VDC power supply, enabling operation using industrial power sources.

Epsilon-12G2 was designed for use in vehicle and harsh environment applications. All I/O connectors are latching, providing enhanced reliability over the RJ-45 connectors used in commercial Ethernet switches. A 50% thicker PCB provides better protection against vibration in vehicle environments. The wide range 5-40V input power supply is compatible with all common vehicle and industrial power sources. The -40°C to +85°C operating range makes Epsilon-12G2 suitable for use in outdoor and vehicle applications.

Epsilon-12G2 comes 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.

◆ Block Diagram



◆ Cable Kit

The Epsilon-12G2 cable kit includes cables for Epsilon's input and output. Cable Kit for Epsilon-12G2/12G1/12G0/12GMini Ethernet switches (SFP and fiber optic cables not included).



CK-EPS12G2 includes the following cables:

No.	Qty	Cable	Description	Drawing
1	1	6981050	Serial Cable, 1x3 2mm to DB9M	Show
2	12	6981052	Ethernet cable	Show
3	1	6981053	Power cable	Show

Managed Ethernet Switch	
Switch Type	14-port, Layer 2+ switch Built-in MIPS 416MHz 24KEC microcontroller for configuration and management
Number of Ports	12 10/100/1000Mbps Ethernet ports with non-blocking wire-speed performance 1 1G SFP socket; 1 2.5G SFP socket
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
VLAN	IEEE 802.1Q VLAN switch with 8K MACs and 4K VLANs Push/pop up to two VLAN tags Independent & shared VLAN learning (IVL, SVL)
Multicast	IPv4 and IPv6 multicast group support
Remarking	Dual leaky bucket policers with remarking and statistics
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	IEEE 802.3ad
Security	Advanced security and prioritization available through multistage TCAM engine
RSTP	Rapid Spanning Tree Protocol (IEEE 802.1W) and MSTP
MIBs	Support for both WebStax and CEServices MIBs
Power Management	ActiPHY and PerfectReach power management VeriPHY cable diagnostics
Serial Port	1 RS-232 port for host interface
Indicator LEDs	24 status LEDs, two per port 2 general purpose
Standalone Capable	Standalone network switch, or in combination with a host computer
General	
Power Input	+5 to +40V DC/DC power supply
Power Consumption	9.2W maximum with all ports active
Form Factor	COM Express (95 x 125mm)
Operating Temperature	-40°C to +85°C (-40°F to +185°F)
Weight	4.9oz (138.9g) with heatsink
MTBF	122,656 hours
RoHS	Compliant

◆ Models and Accessories

Epsilon-12G2

available models:

EPS-12G2	12 Gigabit copper + 2 1G/2.5G fiber Ethernet switch, COM Express form factor, -40°C to +85°C	Available
EPS-12G1	12 Gigabit copper + 1 1G/2.5G fiber Ethernet switch, COM Express form factor, -40°C to +85°C	Available
EPS-12G0	12 Gigabit copper Ethernet switch, COM Express form factor, -40°C to +85°C	Available

Please [login](#) or [signup](#) for an online quote request.

Cables and accessories

available models:

CK-EPS12G2	Cable Kit for Epsilon-12G2/12G1/12G0/12GMini Ethernet switches (SFP and fiber optic cables not included)
6981050	Serial Cable, 1x3 2mm to DB9M
6981052	Ethernet cable
6981053	Power cable

Please [login](#) or [signup](#) for an online quote request.

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