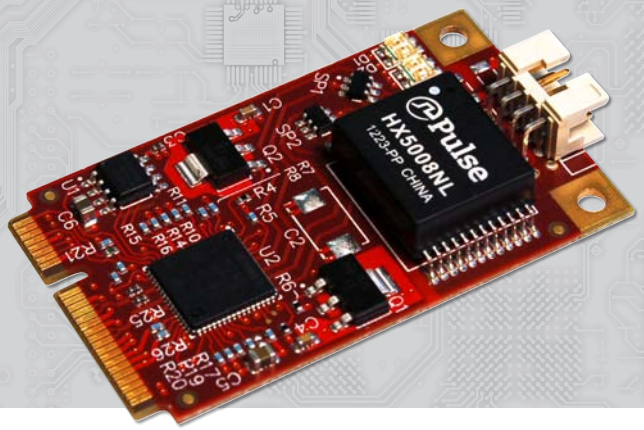
VERSALOGIC CORPORATION

Ethernet

Mini PCIe Module



- Extremely small Mini PCIe module format
- Gigabit Ethernet
- Industrial temp. (-40º to +85ºC) operation
- MIL-STD-202G shock/vibe
- Latching connector

Highlights

Mini PCIe Module Format
Small and flexible.

Network Support
Gigabit Ethernet port. Network boot option.

Industrial Temperature Operation
-40° to +85°C operation for harsh environments.

MIL-STD-202G
Qualified for high shock/vibration environments.

Latching Connector
Prevents detachment failures.

Class 3 Manufacturing (optional)
IPC-A-610 Class 3 for applications requiring extreme reliability.

RoHS

Overview

The VL-MPEe-E3 is an extremely small and rugged Ethernet module based on the industry-standard Mini PCIe module format. Unlike typical I/O expansion boards, Mini PCIe allows additional I/O functions to be added to a system with almost no increase in overall system/package size. Mini PCIe modules provide a simple, economical, and standardized way to add I/O functions to embedded computer products.

Details

In a very small package, this Ethernet board provides a full speed Gigabit Ethernet port based on the Intel® 82574IT controller.

This rugged product is designed and tested for full industrial temperature operation (-40º to +85ºC). It also meets MIL-STD-202G specifications for shock and vibration. Transient voltage suppression (TVS) devices on the external connections provide enhanced protection from electrostatic discharge (ESD) damage. The latching Ethernet connector provides additional ruggedization, making it at home in harsh environments.

A PXE boot option ROM is included in the EEPROM of this board to enable network booting. Three LED outputs can be individually configured to select the particular event, state, or activity indicated for each output. In addition, each LED can be configured for output polarity and blinking / steady-state indication.

This Ethernet board is compatible with a variety of popular x86 operating systems including Windows, Windows Embedded, Linux, VxWorks, and QNX.

The module utilizes PCIe signaling and can be used in any system that supports PCIe signaling at the Mini PCIe socket.

It is manufactured to IPC-A-610 Class 2 standards. Class 3 versions are available for extremely-high-reliability applications.

Product customization is available, even in low quantities. Options include conformal coating, application-specific testing, BOM revision locks, special labeling, etc.

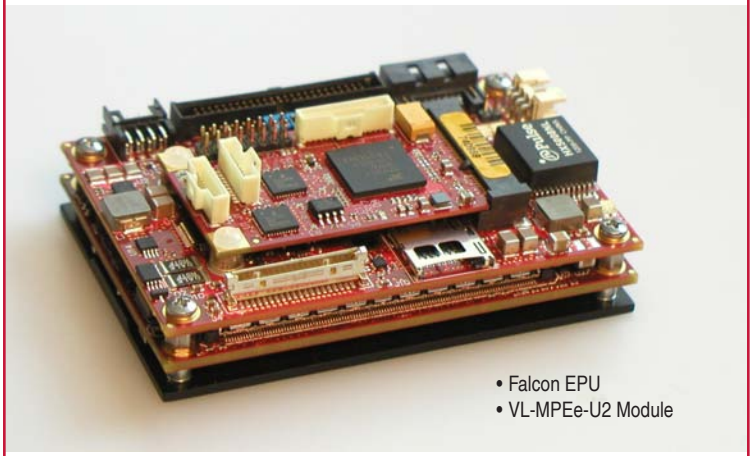
Ethernet
Mini PCIe Module

Ordering Information

Model	Function	Operating Temp.
VL-MPEe-E3E	Gigabit Ethernet. One channel.	-40° to +85°C

Accessories

Part Number	Description
Cables	
VL-CBR-0804	12" Ethernet cable. 8-pin latching connector to panel-mount RJ45.
Hardware	
VL-HDW-108	Mini PCIe module hold-down screws (10) for use with 2.5 mm standoffs
VL-HDW-110	Mini PCIe module hold-down screws (10) for use with 2.0 mm standoffs



- Falcon EPU
- VL-MPEe-U2 Module

Other VersaLogic Mini PCIe Modules

Model	Function	Signaling
VL-MPEe-A1E	Analog input (12-bit resolution)	PCIe
VL-MPEe-A2E	Analog input (16-bit resolution)	PCIe
VL-MPEe-U2E	Quad serial plus twelve GPIOs	PCIe
VL-MPEe-W2E	Wi-Fi 802.11 a/b/g/n	PCIe
VL-MPEs-F1E	mSATA drive (4/16/32 GB)	SATA
VL-MPEs-S3E	SATA adapter	SATA
VL-MPEu-G2E	GPS receiver	USB
VL-MPEu-K1E	Encrypted solid-state drive (8/32 GB)	USB

Specifications

General	Board Size	Mini PCIe module (full size): 30 mm x 50.95 mm x 6.83 mm	
	Power Requirements	3.3V @ 1.27W (supplied from the Mini PCIe socket)	
	Manufacturing Standards	Standard	IPC-A-610 Class 2 modified
		Optional	IPC-A-610 Class 3 modified
	Regulatory Compliance	RoHS	
	Mini PCIe Signal Type	PCI Express Base Specification, Rev 2.0	
Environmental	Operating Temperature	-40° to +85°C	
	Storage Temperature	-40° to +85°C	
	Altitude *	Operating	To 15,000 ft. (4,570m)
		Storage	To 40,000 ft. (12,000m)
	Cooling	None (fanless)	
	Airflow Requirements	None (free air)	
	Thermal Shock	5°C/min. over operating temperature	
	Humidity	Less than 95%, noncondensing	
	Vibration, Sinusoidal Sweep †	MIL-STD-202G, Method 204, Modified Condition A: 2g constant acceleration from 5 to 500 Hz, 20 min. per axis	
	Vibration, Random †	MIL-STD-202G, Method 214A, Condition A: 5.35g rms, 5 min. per axis	
	Mechanical Shock †	MIL-STD-202G, Method 213B, Condition G: 20g half-sine, 11 ms duration per axis	
Device I/O	Ethernet ‡	One autodetect 10BaseT/100BaseTX/1000BaseT port. Latching connector.	
	Network Boot Option	Via on-board BIOS extension	
Software	Operating Systems	Compatible with most x86 operating systems including Windows, Windows Embedded, Linux, VxWorks, and QNX	

* *Extended altitude specifications available upon request*

† *MIL-STD-202G shock and vibe levels are used to illustrate the ruggedness of this product in general. Testing to higher levels and/or different types of shock or vibration methods can be accommodated per the specific requirements of the application. Contact a VersaLogic Sales Engineer for further information.*

‡ *TVS protected port (enhanced ESD protection)*

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