

- Dual gigabit Ethernet
- PCI Express Mini Card socket
- SUMIT and PC/104™ expansion
- Extended temp. operation

## Highlights

### SUMIT and PC/104 Compatible

Supports SUMIT and ISA expansion on a compact, highly rugged format.

### Network Support

Dual gigabit Ethernet ports for high-bandwidth applications or system redundancy.

### PCI Express Mini Card Socket

High-speed, small form factor cards enable additional wireless functionality.

### Extended Temperature Operation

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

### MIL-STD-202G

Qualified for high shock/vibration environments.

## Overview

The VL-EPMs-E1 is a SUMIT-based dual gigabit Ethernet (GbE) expansion module with a PCI Express Mini Card socket. This versatile expansion module is the ideal solution for high-bandwidth and/or wireless network applications in a wide range of applications including defense, aerospace, homeland security, and industrial automation where a small footprint and extended temperature operation are crucial design factors.

Based on the industry standard PC/104 footprint, the VL-EPMs-E1 features the SUMIT expansion interface. SUMIT provides a stackable expansion interface that supports both high- and low-speed signals. This simplifies adding both standard and custom I/O boards to the system. The VL-EPMs-E1 expansion interfaces include PCIe, USB, LPC, SPI, SMBus, as well as optional ISA bus support for PC/104 modules.

Like all VersaLogic products, the VL-EPMs-E1 is designed to support OEM applications where high reliability and long-term availability are required. From application design-in to 5+ guaranteed years of production life, the VL-EPMs-E1 provides a durable embedded computer solution with an exceptional cost of ownership. The E1 is manufactured and tested to the highest quality standards and is fully RoHS compliant. Customization is available, even in low OEM quantities.

## Details

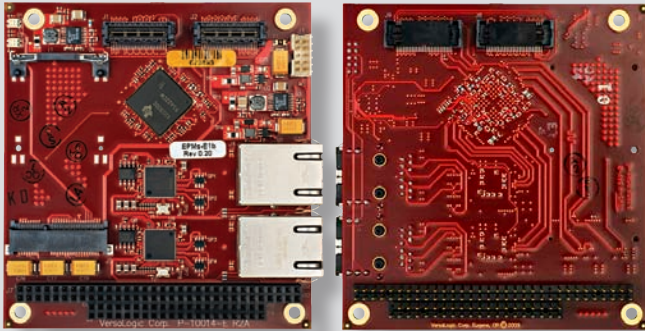
The VL-EPMs-E1 is a SUMIT-104 expansion module that provides two gigabit Ethernet channels based on Intel® 82574L controllers. Additional system expansion and communications flexibility is available via the on-board PCI Express Mini Cards socket. The socket is compatible with:

- 802.11a/b/g Wi-Fi network adapters
- GPS radio modules (for global location and precision time stamping)
- 3G modems
- Solid-state flash drives (SSDs)

This GbE module offers low power consumption (3.5 watts) and low thermal dissipation for heat sensitive applications, as well as transient voltage suppression (TVS) on the Ethernet connections to protect from power spikes and surges. With an Ethernet buffer of 16 KB RAM, data is easily stored and retrieved. Extended temperature operation provides reliability in harsh environments.

The VL-EPMs-E1 works with the entire family of industry-standard SUMIT-based computer and add-on boards.

The VL-EPMs-E1 is compatible with a variety of popular operating systems, including Windows, Windows Embedded, Linux, VxWorks, and QNX.



VL-EPMs-E1b (Top)

VL-EPMs-E1b (Bottom)

### Ordering Information

VL-EPMs-E1a ..... Dual GbE, SUMIT-A connector  
 VL-EPMs-E1b ..... Dual GbE, SUMIT-AB + ISA connectors

### Accessories

VL-CBR-0201 ..... Wi-Fi antenna adapter cable  
 VL-CBR-ANT01 ..... Wi-Fi (802.11n) antenna  
 VL-HDW-105 ..... 0.6" standoff package (metric thread)  
 VL-HDW-106 ..... 0.6" standoff package (English thread)  
 VL-HDW-107 ..... Metric screw and washer kit  
 VL-HDW-201 ..... Extractor tool  
 VL-WD10-CBN ..... PCI Express Mini Card: 802.11g/n wireless

SUMIT Resources Needed		
Form Factor: SUMIT-104		
	SUMIT-A	SUMIT-B*
PCle x1	1	-
PCle x4	-	-
USB	1	-
ExpressCard	-	-
LPC	-	-
SPI/µWire	-	-
SMBus/I <sup>2</sup> C	-	-
+12V	-	-
+5V	✓	✓
+5Vsb	-	-
+3.3V	-	-

\* Optional

### SPECIFICATIONS

General	Board Size	PC/104 standard: 90 mm x 96 mm (3.55" x 3.78")
	Power Requirements	+5 V <sub>DC</sub> : 3.5W
	RoHS	Compliant
Environmental	Operating Temperature	-40° to +85°C
	Storage Temperature	-40° to +85°C
	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 minutes per axis
	Vibration, Random	MIL-STD-202G, Method 214A, Condition A: 5.35g rms, 5 minutes per axis
	Mechanical Shock	MIL-STD-202G, Method 213B, Condition G: 20g half-sine, 11 ms duration per axis
Network Interface	Ethernet*	Dual autodetect 10BaseT/100BaseTX/1000BaseT ports based on Intel 82574L
	Network Boot Option	Intel boot agent (downloadable): supports PXE protocol
Device I/O	PCI Express Mini Card	Latching PCI Express Mini Card interface with retention screws. PCI Express Mini Card Specification 1.2 compliant.
Software	Operating Systems	Compatible with most x86 operating systems, including Windows, Windows Embedded, Linux, VxWorks, and QNX

\* TVS protected port (enhanced ESD protection)

Data represents standard operation at +25°C with +5V supply unless otherwise noted. Specifications are subject to change without notification. PC/104 is a trademark of the PC/104 Consortium. SUMIT is a trademark of the SFF-SIG. All other trademarks are the property of their respective owners.