

- Up to 4 USB 2.0 ports
- eUSB interface (optional)
- Industrial temp. operation
- MIL-STD-202G shock/vibe

## Highlights

### SUMIT-micro Form Factor

Small footprint board expands any SUMIT™-based system.

### USB I/O

Up to four USB 2.0 ports support keyboard, mouse, and other devices.

### Flash Memory

Optional eUSB interface for plug-in flash storage.

### Industrial Temperature

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

### MIL-STD-202G

Qualified for high shock/vibration environments.

## Overview

The VL-EPHs-B1 expansion module provides plug-in access to the additional USB capabilities provided by SUMIT-enabled embedded computers. With a small footprint, simplified interface, and extensive ruggedization, the VL-EPHs-B1 is an ideal solution for all embedded applications that require additional USB capabilities.

The VL-EPHs-B1 is designed to support OEM applications where high reliability and long-term availability are required. From application design-in support, to the 5+ year production life guarantee, the VL-EPHs-B1 provides a rugged embedded computer solution with an excellent cost of ownership. The VL-EPHs-B1 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-EPHs-B1 provides USB signals from the SUMIT-A connector on a 90 mm x 32 mm (3.54" x 1.26") mezzanine "SUMIT-micro" card. It mounts to the top of the SUMIT stack using two hardware standoffs. The VL-EPHs-B1A provides two Type A USB ports while the VL-EPHs-B1B provides one Type A USB port and an eUSB interface for flash storage. Both models also provide two additional USB channels via a 10-pin header. A transition cable is available which provides two USB Type A ports from the 10-pin header.

Designed for full industrial (-40° to +85°C) temperature operation; the VL-EPHs-B1 meets MIL-STD-202G specifications for mechanical shock and vibration for use in harsh environments. Transient voltage suppression (TVS) devices on all USB channels provide enhanced electrostatic discharge (ESD) protection for the system.

The VL-EPHs-B1 is compatible with a variety of popular operating systems including Windows, Windows Embedded, Linux, VxWorks, and QNX.

### SPECIFICATIONS



VL-EPHs-B1A (Top)



VL-EPHs-B1A (Bottom)

### Ordering Information

Model	USB Type A Ports	USB Pin-Header Ports	eUSB Interface
VL-EPHs-B1A	2	2	N
VL-EPHs-B1B	1	2	Y

### Accessories

Part Number	Description
VL-CBR-1013	Dual USB transition cable
VL-F15-xxxx	eUSB module (USB)
VL-HDW-105	0.6" standoff package (metric thread)
VL-HDW-106	0.6" standoff package (English thread)
VL-HDW-109	eUSB mounting hardware kit

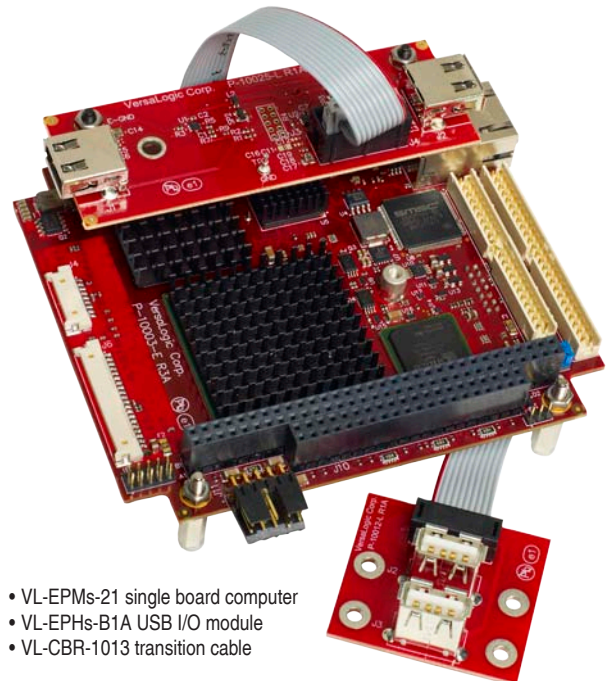
SUMIT Resources		
Form Factor: SUMIT-micro		
	SUMIT-A	SUMIT-B
PCIe x1	-	
PCIe x4		
USB	4	
ExpressCard	-	
LPC	-	
SPI/μWire	-	
SMBus/I <sup>2</sup> C	-	
+12V	-	
+5V	✓	
+5V <sub>ab</sub>	-	
+3.3V	-	

General	Board Size	SUMIT-micro: 32 mm x 90 mm (1.26" x 3.54")						
	Stackable Bus	SUMIT (top of stack only)						
	RoHS	RoHS (2002/95/CE) compliant						
Environmental	Operating Temperature	-40° to +85°C						
	Storage Temperature	-40° to +85°C						
	Airflow Requirements	Free air from -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						
Mass Storage	Flash	eUSB interface (optional) with USB signaling						
Device I/O	USB †‡	<table border="1"> <thead> <tr> <th>Model</th> <th>USB 2.0/1.1 Ports</th> </tr> </thead> <tbody> <tr> <td>VL-EPHs-B1A</td> <td>4</td> </tr> <tr> <td>VL-EPHs-B1B</td> <td>3</td> </tr> </tbody> </table>	Model	USB 2.0/1.1 Ports	VL-EPHs-B1A	4	VL-EPHs-B1B	3
Model	USB 2.0/1.1 Ports							
VL-EPHs-B1A	4							
VL-EPHs-B1B	3							
Software	Operating Systems	Compatible with most x86 operating systems, including Windows, Windows Embedded, Linux, VxWorks, and QNX						

† TVS protected port (enhanced ESD protection)

‡ Power pins on this port are overload protected

Specifications are subject to change without notification. SUMIT is a trademark of the SFF-SIG. SUMIT-micro is a trademark of VersaLogic Corp. All other trademarks are the property of their respective owners.



- VL-EPMs-21 single board computer
- VL-EPHs-B1A USB I/O module
- VL-CBR-1013 transition cable