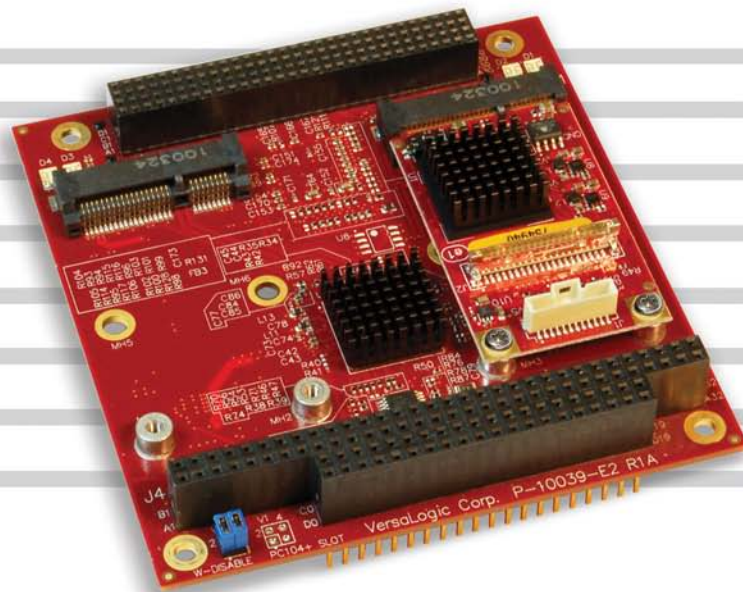


# VL-EPM-V7

## PC/104-Plus™ Video and I/O Expansion Module



### Overview

The VL-EPM-V7 module provides video and I/O expansion capabilities for PC/104-Plus embedded systems. It provides VGA and LVDS display outputs to PC/104-Plus embedded systems. An on-board Mini PCIe socket accommodates plug-in modules such as A/D convertors, Ethernet, Wi-Fi modems, MIL-STD-1553, and other devices.

With a full industrial temperature rating and rugged construction, the VL-EPM-V7 is an ideal solution for embedded video applications in harsh, mobile, and/or remote environments.

This I/O board is compatible with a variety of popular x86 operating systems including Windows, Windows Embedded, and Linux.

As with all VersaLogic products, the VL-EPM-V7 is designed to support OEM applications where high reliability and long-term availability are required. From application design-in support, to its 5+ year production life guarantee, the VL-EPM-V7 provides a durable video expansion with an excellent cost of ownership.

### Highlights

- **Industrial Temperature**  
-40° to +85°C operation for harsh environments.
- **Latching Connector**  
Prevents detachment failures.
- **PC/104-Plus**  
Rugged industry-standard form factor.
- **Mini PCIe I/O expansion**  
Mini PCIe socket supports A/D convertors, Ethernet, Wi-Fi modems, MIL-STD-1553, and other plug-in devices.
- **Video Outputs**  
Analog VGA and/or LVDS (simultaneous/independent).
- **Standard Operating System Drivers (Windows, Linux)**  
No additional drivers needed.
- **MIL-STD-202G**  
Qualified for high shock/vibration environments.
- **5+ Year Production Life Guarantee**

## Specifications

General			
<b>Board Size</b>	PC/104 standard: 90 mm x 96 mm (3.55" x 3.78")		
<b>Power Requirements (+5V) *</b>	<i>Idle</i>	<i>Typical</i>	<i>Max.</i>
	3.28W	3.33W	3.38W
<b>Stackable Bus</b>	PC/104-Plus: PCI, ISA (pass-through only)		
<b>Manufacturing Standards</b>	IPC-A-610 Class 2 compliant		
<b>RoHS</b>	RoHS (EU 2015/863)		

Environmental			
<b>Operating Temperature</b>	-40° to +85°C Derate -1.1°C per 305m (1,000 ft.) above 2,300m (7,500 ft.).*		
<b>Storage Temperature</b>	-40° to +85°C		
<b>Altitude</b>	Operating *	To 15,000 ft. (4,570m)	
	Storage	To 40,000 ft. (12,000m)	
<b>Cooling</b>	None (fanless)		
<b>Airflow Requirements</b>	None (free air)		
<b>Thermal Shock</b>	5°C/min. over operating temperature.		
<b>Humidity</b>	Less than 95%, noncondensing.		
<b>Vibration, Sinusoidal Sweep †</b>	MIL-STD-202G, Method 204, Modified Condition A: 2g constant acceleration from 5 to 500 Hz, 20 min. per axis.		
<b>Vibration, Random †</b>	MIL-STD-202G, Method 214A, Condition A: 5.35g rms, 5 min. per axis.		
<b>Mechanical Shock †</b>	MIL-STD-202G, Method 213B, Condition G: 20g half-sine, 11 msec. duration per axis.		

Video	
<b>Controller</b>	Silicon Motion SM750. 2D Graphic Accelerator Video core with 128-bit 2D graphic engine. Supports a single display, two cloned displays, or two simultaneous independent displays.
<b>VRAM</b>	16MB DDR SDRAM (32-bit) embedded in SM750 controller.
<b>Desktop Display Interface</b>	Analog output (VGA). Up to 1920 x 1080 16-bit.
<b>OEM Flat Panel Interface</b>	Single-channel LVDS interface. Up to 1280 x 1024 18/24-bit.

Software	
<b>BIOS</b>	On-board SPI-based video BIOS supports VESA standard graphics modes.
<b>Operating Systems</b>	Compatible with most x86 operating systems including Windows, Windows Embedded, and Linux.

\* For extended altitude information contact VersaLogic Sales Dept.

† MIL-STD-202G shock and vibrate 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.

Specifications are subject to change without notification. PC/104 and PC/104-Plus are trademarks of the PC/104 Consortium. VESA is a trademark of the Video Electronics Standards Association. All other trademarks are the property of their respective owners.

## Tailor a Module to Your Exact Requirements

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

## Ordering Information

Model	VGA	LVDS	Stackable Bus	Mini PCIe Socket Support	Operating Temp.
VL-EPM-V7E	Y	Y	PC/104-Plus	1 (PCIe Signaling)	-40° to +85°C
VL-EPMp-V7E	Y	Y	PCI-104	1 (PCIe Signaling)	-40° to +85°C

## Accessories

Part Number	Description
<b>Cables</b>	
VL-CBR-1204	12" VGA Interface Cable, 12-pin PicoClasp Cable to 15-pin VGA, ET, RoHS
VL-CBR-1206	18" 12-pin Pico-Clasp / 15-pin VGA, RoHS
VL-CBR-2014	LVDS to VGA Adaptor Board, ET, RoHS
VL-CBR-2015	20" 24-bit LVDS Hirose Cable, RoHS
VL-CBR-2016	20" 18-bit LVDS FPD Cable with JAE Connector, RoHS
<b>Hardware</b>	
VL-HDW-105	0.6" standoff package (metric thread)
VL-HDW-106	0.6" standoff package (English thread)
VL-HDW-108	Mini PCIe module hold-down screws (10) for use with 2.5 mm standoffs
<b>Miscellaneous</b>	
VL-HDW-203	PC/104 extractor tool (metal)

## 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-E3E	Gigabit Ethernet adapter	PCIe
VL-MPEe-U2E	Four Serial ports. Twelve GPIO lines	PCIe
VL-MPEe-W2E	Wi-Fi 802.11 a/b/g/n	PCIe

Call VersaLogic Sales at (503) 747-2261 for more information!



Mini PCIe Modules