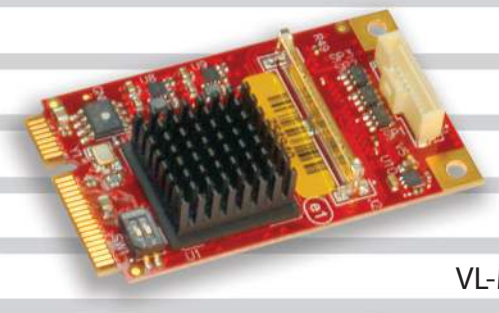
V5/Video

Mini PCIe Module



VL-MPEe-V5E

Actual Size!

Overview

The VL-MPEe-V5 is an extremely small and rugged video module based on the industry-standard Mini PCIe module format. This Mini PCIe module provides an easy and economical way to add VGA and LVDS display outputs to an embedded computing solution.

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-MPEe-V5 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-MPEe-V5 provides a durable video expansion with an excellent cost of ownership.

Highlights

- **Mini PCIe Module Format**
  Small and flexible.
- **Industrial Temperature**
  -40° to +85°C operation for harsh environments.
- **Video Outputs**
  Analog VGA and/or LVDS (simultaneous / independent).
- **Standard Operating System Drivers (Windows, Linux)**
  No additional drivers needed.
- **PCIe Signaling**
  Compatible with Mini PCIe sockets.
- **MIL-STD-202G**
  Qualified for high shock / vibration environments.
- **Latching Connector**
  Prevents detachment failures.
- **Class 3 Manufacturing (optional)**
  IPC-A-610 Class 3 for extreme rugged applications.
- **5+ Year production life guarantee**
  Worry-free availability.

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Specifications

General		
Board Size	Mini PCIe module (full size): 30 mm x 50.95 mm x 6.39 mm	
Power Requirements	3.3V ±5% @ 1.67W Typical W (supplied by the Mini PCIe socket)	
Manufacturing Standards	Standard	IPC-A-610 Class 2
	Optional	IPC-A-610 Class 3
Regulatory Compliance	RoHS (EU 2015/863)	
Mini PCIe Signal Type	PCI Express Base Specification, Rev 1.1	

Environmental		
Operating Temperature	-40° to +85°C Derate -1.1°C per 305m (1,000 ft.) above 2,300m (7,500 ft.).*	
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 msec. duration per axis.	

Video	
Controller	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.
VRAM	16MB DDR SDRAM (32-bit) embedded in SM750 controller
Desktop Display Interface	Analog output (VGA). Up to 1920 x 1080 16-bit.
OEM Flat Panel Interface	Single-channel LVDS interface. Up to 1280 x 1024 18/24-bit

Software	
BIOS	On-board SPI-based video BIOS supports VESA standard graphics modes.
Drivers	Compatible with most x86 operating systems including Windows, Windows Embedded, and Linux using standard software drivers.

* For extended altitude information contact VersaLogic Sales Dept.

† 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.

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	Function	Operating Temp.
VL-MPEe-V5E	Video Display Adapter. VGA and LVDS Interfaces.	-40° to +85°C
VL-MPEe-V5EC §	Video Display Adapter. VGA and LVDS Interfaces. Manufactured to IPC-A-610 Class 3.	-40° to +85°C

§ Special Order Product – Contact VersaLogic Sales for minimum order quantities and lead time.

Accessories

Part Number	Description
PC/104-*Plus* Carrier	
VL-EPM-P2E	PC/104-*Plus* to Dual miniPCIe Adapter
Cables	
VL-CBR-1204	12" VGA Interface Cable, 12-pin PicoClasp Cable to 15-pin VGA, RoHS
VL-CBR-1206	18" 12-pin Pico-Clasp / 15-pin VGA, RoHS
VL-CBR-2014	LVDS to VGA Adaptor Board, RoHS
VL-CBR-2015	20" 24-bit LVDS Hirose Cable, RoHS
VL-CBR-2016	20" 18-bit LVDS FPD Cable with JAE Connector, RoHS
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

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-E3E	Gigabit Ethernet adapter	PCIe
VL-MPEe-FW1	1394 Firewire Module, Industrial Temp.	PCIe
VL-MPEe-U2E	Four Serial ports. Twelve GPIO lines	PCIe
VL-MPEe-W2E	Wi-Fi 802.11 a/b/g/n	PCIe
VL-MPEs-F1Exx	mSATA drive (4/16/32 GB)	SATA
VL-MPEs-S3E	SATA adapter	SATA
VL-MPEu-G2E	GPS receiver	USB

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

Mini PCIe Modules