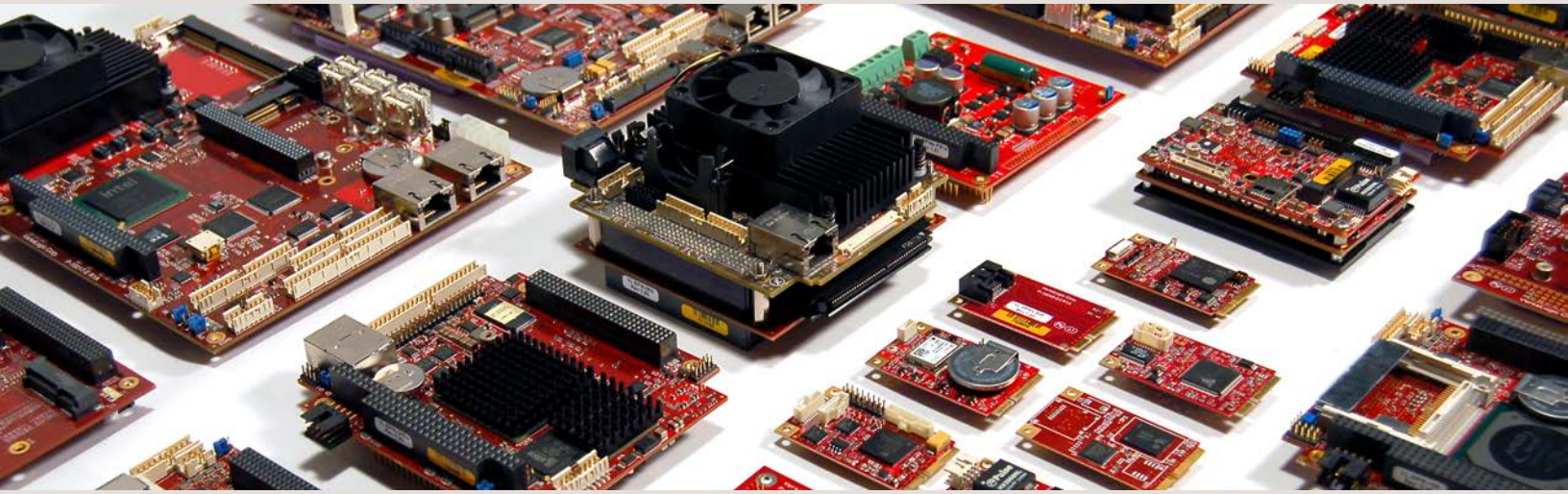
Product Selection Guide

Embedded Computers
Expansion Modules



Take the Risk out of Embedded Computing

- Extremely rugged products
- Industrial temperature products (-40° to +85°C)
- Extensive lifecycle support
  - Full 5-year off-the-shelf availability
  - 10+ year formalized extension programs
- Industry leading 5-year warranty
- US-based design and support
- Low volume customization

VersaLogic products are designed for OEMs implementing demanding applications.

VersaLogic delivers extremely reliable off-the-shelf and customized embedded computers backed with unsurpassed service and extreme availability/longevity.

VersaLogic exists to exceed customers' product, service, support and delivery needs—whenever and wherever the need arises.

VERSALOGIC CORPORATION

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A Key Partner in your System

VersaLogic works hard to be the preeminent supplier for embedded computers in the industry. This attitude is reflected through our employees, partners, and suppliers. VersaLogic customers are not short-term engagements, but long-term relationships.

Designed, Tested, and Manufactured to Perform

VersaLogic's rugged x86 compatible embedded computers are designed, manufactured, and tested to be reliable in critical and demanding environments, including extreme temperature (-40° to +85°C), high impact (shock), and vibration.

To ensure that products are reliable in the field, VersaLogic has rigorous design, verification, and testing processes. From strict component evaluation and selection in the initial design, to worst-case stress testing, to state-of-the-art compliance and validation of high-speed signals and external interfaces, to extensive power and thermal testing, VersaLogic products have seen the worst before they take on your application.

VersaLogic is ISO 9001:2008 certified, and supports the highest manufacturing standards including IPC and J-STD.

Application Development

Development support can be essential for smooth integration in your application. From FDA approval requirements to Mil Specs, VersaLogic has the knowledge needed to navigate the complex requirements of medical, defense, aerospace, and industrial applications. VersaLogic's expert engineers and project managers take pride in the successful completion of their customer's projects.

Customization

Customize any VersaLogic product in quantities as low as 100 pieces. Customizations include conformal coating, cabling, revision locks, custom labeling, BIOS modifications, software, customized testing, screening, and more.

On Time Delivery

VersaLogic customers have production schedules that matter. Delivery delays can be crippling. VersaLogic puts as much effort into delivery commitments as they do into product quality. Dedicated account managers work closely with customers to ensure that their production schedule stays on schedule. VersaLogic's deep in-house inventory helps accommodate unexpected requirements. Samples, emergency spares, and small volume production orders can often be shipped immediately from stock.

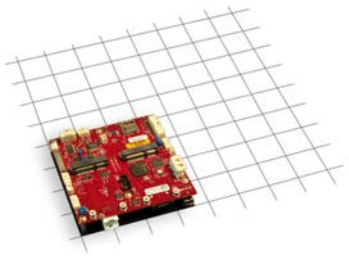
Lifecycle Leadership

Designing an embedded computer into your product is not something that you should have to repeat every year or two. VersaLogic guarantees that their product will be available off-the-shelf for at least five years after introduction. Most are available for 6-8 years. Formal life extension programs are available to extend availability to ten years or more.

EPU Format

VersaLogic's EPU format is ideal for applications where size, weight, and power, are critical. This two-board format creates a smaller overall package than single board formats.

Raven



The Raven combines mid performance Atom Bay Trail processing with extensive on-board I/O in a compact 95 x 95 mm package!

It includes an on-board TPM (Trusted Platform Module) security chip, high-speed USB 3.0 channel and dual Gigabit Ethernet.

A wide-range on-board power supply accepts 8 to 30 VDC input to support both 12 and 24 volt systems! Raven is available in quad-, dual-, and single-core models.

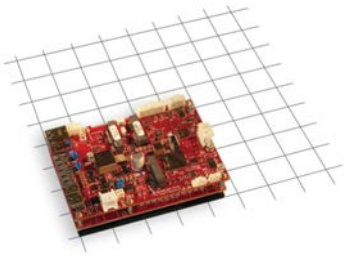
Specifications		Raven		
		VL-EPU-3312EAP	VL-EPU-3312EBP	VL-EPU-3312EDP
General	Size / Dimensions	95 x 95 mm (3.7 x 3.7")	95 x 95 mm (3.7 x 3.7")	95 x 95 mm (3.7 x 3.7")
	Processor	Atom E3815	Atom E3827	Atom E3845
	Processor Speed	1.46 GHz	1.75 GHz	1.91 GHz
	CPU Cores	1	2	4
	Operating Temperature	-40° to +85°C	-40° to +85°C	-40° to +85°C
	Operating Power [k]	6.2W	7.2W	8.9W
	CPU Cooling	Heat Plate	Heat Plate	Heat Plate
	Watchdog Timer	Y	Y	Y
	TPM Security	Y	Y	Y
Mass Storage	SATA	SATA II	SATA II	SATA II
	mSATA [c]	1	1	1
	microSD [c]	1	1	1
	eMMC	–	4 GB	8 GB
Memory	Installed	2 GB	2 GB	4 GB
	Type	DDR3L	DDR3L	DDR3L
	Mounting	Soldered-on	Soldered-on	Soldered-on
Video	Graphics Core	Intel Gen-7	Intel Gen-7	Intel Gen-7
	VRAM (shared DRAM)	Up to 224 MB	Up to 224 MB	Up to 224 MB
	Analog (VGA) Output	Y [u] [m]	Y [u] [m]	Y [u] [m]
	LVDS Flat Panel Output	Y	Y	Y
	Display Port Output	1	1	1
	Simultaneous Displays	2	2	2
Network	Ethernet	GbE	GbE	GbE
	Ports	2	2	2
Serial	RS-232/422/485 Ports	4	4	4
	RS-232/422 Ports	–	–	–
	RS-232	–	–	–
I/O	Mini PCIe Card sockets	2	2	2
	LPT Interface	–	–	–
	USB 2.0	4	4	4
	USB 3.0	1	1	1
	Analog Inputs (12-bit)	8	8	8
	Analog Outputs (12-bit)	-	-	-
	Digital I/O Lines	8	8	8
	Audio	[q] [r]	[q] [r]	[q] [r]
	Expansion	SPI/SPX	SPI/SPX	SPI/SPX
Other	Counter / Timers	3	3	3
Performance	Very High			
	High		✔	✔
	Moderate	✔		
	Low			

[c] Storage capacity limited only by currently available media sizes. [k] The typical power consumption of each product computed as the mean value of Idle and Maximum (measured with 95% CPU utilization) power specifications. All power specifications represent operation at +25°C with +5V supply running Windows with Ethernet, keyboard, and mouse. [m] Analog (VGA) output via optional VL-CBR-2014 LVDS to VGA adapter. [q] Audio available through optional USB to audio adapter. [r] Audio output available through DisplayPort. [u] Analog (VGA) output via optional VL-CBR-2032 mini DisplayPort to VGA adapter.

EPU Format

Product Selection Guide: **Embedded Computers**

Blackbird



The Blackbird provides very high performance in a compact 95 x 125mm footprint. Featuring the Intel Skylake CPU, both dual and quad core versions are available with high performance video processing.

The Blackbird features up to 32 GB RAM, two GbE, USB 3.0 ports, USB 2.0 ports, 6GB SATA ports, and three Mini PCIe expansion sockets.

Specifications		Blackbird	
		VL-EPU-4462-xAP-08	VL-EPU-4462-xBP-16
	Size / Dimensions	95 x 125 mm (3.7 x 4.9")	95 x 125 mm (3.7 x 4.9")
	Processor	Intel Core i3-6100U	Intel Core i5-6300U
	Processor Speed / Max Turbo	2.3 GHz / NA	2.4 GHz / 3.0 GHz
	CPU Cores	2	2
	Operating Temp	SAP=0° to +60°C | EAP=-40° to +85°C"	SBP=0° to +60°C | EBP=-40° to +85°C"
	Operating Power [k]	15.0W	16.8W
	CPU Cooling	Heat Plate	Heat Plate
	Watchdog Timer	Y	Y
	TPM Security	Y	Y
Mass Storage	SATA	(2) SATA III	(2) SATA III
	mSATA [c]	1	1
	microSD [c]	–	–
	eMMC	–	–
Memory	Installed	8 GB	16 GB
	Type	DDR4	DDR4
	Mounting	Pre-Installed	Pre-Installed
Video	Graphics Core	HD 520	HD 520
	Analog (VGA) Output	Y [u], [m]	Y [u], [m]
	LVDS Flat Panel Output	Y	Y
	Display Port Output	2	2
	Simultaneous Displays	3	3
Network	Ethernet	GbE	GbE
	Ports	2	2
Serial	RS-232/422/485 Ports	4	4
	RS-232/422 Ports	–	–
	RS-232	–	–
I/O	Mini PCIe Card sockets	3	3
	LPT Interface	–	–
	USB 2.0	4	4
	USB 3.0	2	2
	Analog Inputs (12-bit)	8	8
	Analog Outputs (12-bit)	4	4
	Digital I/O Lines	24	24
	Audio	Y	Y
	Expansion	SPI/SPX	SPI/SPX
Other	Counter / Timers	3	3
Performance	Very High		✔
	High	✔	
	Moderate		
	Low		

[c] Storage capacity limited only by currently available media sizes. [k] The typical power consumption of each product computed as the mean value of Idle and Maximum (measured with 95% CPU utilization) power specifications. All power specifications represent operation at +25°C with +5V supply running Windows with Ethernet, keyboard, and mouse. [m] Analog (VGA) output via optional VL-CBR-2014 LVDS to VGA adapter. [u] Analog (VGA) output via optional VL-CBR-2032 mini DisplayPort to VGA adapter.

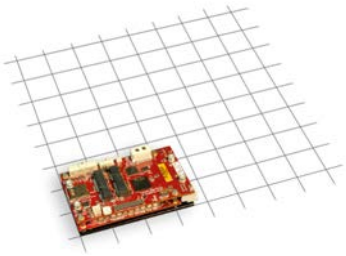
Blackbird (cont.)

VL-EPU-4462-xCP-16	VL-EPU-4562-xBP-16	VL-EPU-4562-xCP-16	VL-EPU-4562-xCP-32
95 x 125 mm (3.7 x 4.9")	95 x 125 mm (3.7 x 4.9")	95 x 125 mm (3.7 x 4.9")	95 x 125 mm (3.7 x 4.9")
Intel Core i7-6600U	Intel Core i5-6442EQ	Intel Core i7-6822EQ	Intel Core i7-6822EQ
2.6 GHz / 3.4 GHz	1.9 GHz / 2.7 GHz	2.0 GHz / 2.8 GHz	2.0 GHz / 2.8 GHz
2	4	4	4
SCP=0° to +60°C ECP=-40° to +85°C"	SBP=0° to +60°C EBP=-40° to +85°C"	SCP=0° to +60°C ECP=-40° to +85°C"	SCP=0° to +60°C ECP=-40° to +85°C"
17.4W	24.6W	25.2W	26.1W
Heat Plate	Heat Plate	Heat Plate	Heat Plate
Y	Y	Y	Y
Y	Y	Y	Y
(2) SATA III	(2) SATA III	(2) SATA III	(2) SATA III
1	1	1	1
–	–	–	–
–	–	–	–
16 GB	16 GB	16 GB	32 GB
DDR4	DDR4	DDR4	DDR4
Pre-Installed	Pre-Installed	Pre-Installed	Pre-Installed
HD 520	HD 520	HD 520	HD 520
Y [u], [m]	Y [u], [m]	Y [u], [m]	Y [u], [m]
Y	Y	Y	Y
2	2	2	2
3	3	3	3
GbE	GbE	GbE	GbE
2	2	2	2
4	4	4	4
–	–	–	–
–	–	–	–
3	3	3	3
–	–	–	–
4	4	4	4
2	2	2	2
8	8	8	8
4	4	4	4
24	24	24	24
Y	Y	Y	Y
SPI/SPX	SPI/SPX	SPI/SPX	SPI/SPX
3	3	3	3
✔	✔	✔	✔

EPU Format

Product Selection Guide: **Embedded Computers**

Osprey



The Osprey features Bay Trail processor performance in a credit-card sized package! It features extensive on-board I/O such as high-speed USB 3.0 channel and dual Gigabit Ethernet.

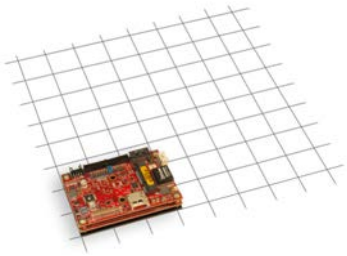
Additional I/O expansion is available using the two on-board Mini PCIe sockets.

Osprey is available in quad, dual, and single-core models to match the power and performance needs of an application. It includes soldered-on RAM for extreme ruggedness.

Specifications		Osprey		
		VL-EPU-3311EAP	VL-EPU-3311EBP	VL-EPU-3311EDP
General	Size / Dimensions	55 x 95 mm (2.2 x 3.7)	55 x 95 mm (2.2 x 3.7)	55 x 95 mm (2.2 x 3.7)
	Processor	Atom E3815	Atom E3827	Atom E3845
	Processor Speed	1.46 GHz	1.75 GHz	1.91 GHz
	CPU Cores	1	2	4
	Operating Temperature	-40° to +85°C	-40° to +85°C	-40° to +85°C
	Operating Power [k]	6.5W	7.7W	8.5W
	CPU Cooling	Heat Plate	Heat Plate	Heat Plate
	Watchdog Timer	Y	Y	Y
	TPM Security	–	–	–
Mass Storage	SATA	SATA II	SATA II	SATA II
	mSATA [c]	1	1	1
	microSD [c]	1	1	1
	eMMC	–	4 GB	8 GB
Memory	Installed	2 GB	2 GB	4 GB
	Type	DDR3L	DDR3L	DDR3L
	Mounting	Soldered-on	Soldered-on	Soldered-on
Video	Graphics Core	Intel Gen-7	Intel Gen-7	Intel Gen-7
	VRAM (shared DRAM)	Up to 224 MB	Up to 224 MB	Up to 224 MB
	Analog (VGA) Output	Y [u] [m]	Y [u] [m]	Y [u] [m]
	LVDS Flat Panel Output	Y	Y	Y
	Display Port Output	1	1	1
	Simultaneous Displays	2	2	2
Network	Ethernet	GbE	GbE	GbE
	Ports	2	2	2
Serial	RS-232/422/485 Ports	2	2	2
	RS-232/422 Ports	–	–	–
	RS-232	–	–	–
I/O	Mini PCIe Card sockets	2	2	2
	LPT Interface	–	–	–
	USB 2.0	4	4	4
	USB 3.0	1	1	1
	Analog Inputs (12-bit)	–	–	–
	Analog Outputs (12-bit)	–	–	–
	Digital I/O Lines	8	8	8
	Audio	[q] [r]	[q] [r]	[q] [r]
	Expansion	–	–	–
Other	Counter / Timers	3	3	3
Performance	Very High			
	High		✔	✔
	Moderate	✔		
	Low			

[c] Storage capacity limited only by currently available media sizes. [k] The typical power consumption of each product computed as the mean value of Idle and Maximum (measured with 95% CPU utilization) power specifications. All power specifications represent operation at +25°C with +5V supply running Windows with Ethernet, keyboard, and mouse. [m] Analog (VGA) output via optional VL-CBR-2014 LVDS to VGA adapter. [q] Audio available through optional USB to audio adapter. [r] Audio output available through DisplayPort. [u] Analog (VGA) output via optional VL-CBR-2032 mini DisplayPort to VGA adapter.

Hawk



The Hawk is designed around the Intel Bay Trail CPU and features a moderate amount of on-board I/O. It is available in single, dual, and quad-core models to match the performance and power needs of each application.

About the size of a credit card and less than an inch thick, the Hawk is ideal for small and ruggedized systems.

It features soldered-on RAM and full industrial temperature operation (-40° to +85°C)!

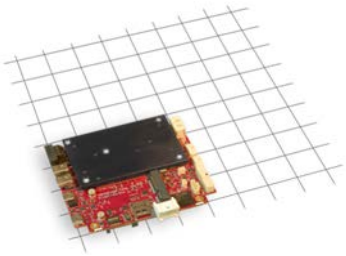
Specifications		Hawk		
		VL-EPU-3310EAP	VL-EPU-3310EBP	VL-EPU-3310EDP
General	Size / Dimensions	55 x 84 mm (2.2 x 3.3")	55 x 84 mm (2.2 x 3.3")	55 x 84 mm (2.2 x 3.3")
	Processor	Atom E3815	Atom E3827	Atom E3845
	Processor Speed	1.46 GHz	1.75 GHz	1.91 GHz
	CPU Cores	1	2	4
	Operating Temperature	-40° to +85°C	-40° to +85°C	-40° to +85°C
	Operating Power [k]	6.1W	6.8W	7.4W
	CPU Cooling	Heat Plate	Heat Plate	Heat Plate
	Watchdog Timer	Y	Y	Y
	TPM Security	–	–	–
Mass Storage	SATA	SATA II	SATA II	SATA II
	mSATA [c]	1	1	1
	microSD [c]	1	1	1
	eMMC	–	4 GB	8 GB
Memory	Installed	2 GB	2 GB	4 GB
	Type	DDR3L	DDR3L	DDR3L
	Mounting	Soldered-on	Soldered-on	Soldered-on
Video	Graphics Core	Intel Gen-7	Intel Gen-7	Intel Gen-7
	VRAM (shared DRAM)	Up to 224 MB	Up to 224 MB	Up to 224 MB
	Analog (VGA) Output	Y [m]	Y [m]	Y [m]
	LVDS Flat Panel Output	Y	Y	Y
	Display Port Output	–	–	–
	Simultaneous Displays	1	1	1
Network	Ethernet	GbE	GbE	GbE
	Ports	1	1	1
Serial	RS-232/422/485 Ports	–	–	–
	RS-232/422 Ports	2	2	2
	RS-232	–	–	–
I/O	Mini PCIe Card sockets	1	1	1
	LPT Interface	–	–	–
	USB 2.0	4	4	4
	USB 3.0	–	–	–
	Analog Inputs (12-bit)	–	–	–
	Analog Outputs (12-bit)	–	–	–
	Digital I/O Lines	–	–	–
	Audio	Y	Y	Y
	Expansion	–	–	–
Other	Counter / Timers	–	–	–
Performance	Very High			
	High		✔	✔
	Moderate	✔		
	Low			

[c] Storage capacity limited only by currently available media sizes. [k] The typical power consumption of each product computed as the mean value of Idle and Maximum (measured with 95% CPU utilization) power specifications. All power specifications represent operation at +25°C with +5V supply running Windows with Ethernet, keyboard, and mouse. [m] Analog (VGA) output via optional VL-CBR-2014 LVDS to VGA adapter.

PC/104 Format

The industry-standard PC/104 format features a self-stacking design that does not require a card cage or other interconnect support. Expansion modules and accessories are available from a wide variety of vendors.

Lion



Lion features the 7th generation Kaby Lake processor for very high performance computing and video processing.

This high-performance single board computer is also qualified to MIL-STD-202G shock and vibration standards for use in harsh environments.

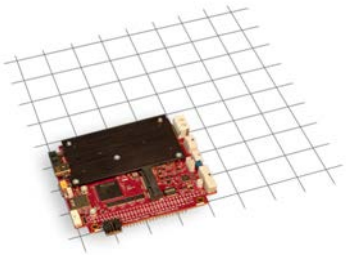
Specifications		Lion		
		VL-EPMe-42SAP-04	VL-EPMe-42SBP-04	VL-EPMe-42SCP-08
General	Expansion Bus	PCIe/104 OneBank	PCIe/104 OneBank	PCIe/104 OneBank
	Expansion Bus Signals	PCIe, PCI	PCIe, PCI	PCIe, PCI
	Size / Dimensions	108 x 96 mm (4.2 x 3.8")	108 x 96 mm (4.2 x 3.8")	108 x 96 mm (4.2 x 3.8")
	Processor	Intel Core i3-7100U	Intel Core i5-7300U	Intel Core i7-7600U
	Processor Speed / Max Turbo	2.4 GHz / NA	2.6 GHz / 3.5 GHz	2.8 GHz / 3.9 GHz
	CPU Cores	2	2	2
	Operating Temp	0° to +60°C	0° to +60°C	0° to +60°C
	Operating Power [k]	8.5W	9.7W	11.0W
	CPU Cooling	Heat Plate	Heat Plate	Heat Plate
	Watchdog Timer	Y	Y	Y
	TPM Security	Y	Y	Y
Mass Storage	Hard Drive	SATA III [x]	SATA III [x]	SATA III [x]
	Flash [c]	mSATA, eUSB	mSATA, eUSB	mSATA, eUSB
Memory	Installed	4 GB	4 GB	8 GB
	Type	DDR3L	DDR3L	DDR3L
	Mounting	Pre-Installed	Pre-Installed	Pre-Installed
Video	Graphics Core	HD 620	HD 620	HD 620
	Analog (VGA) Output	Y [u]	Y [u]	Y [u]
	LVDS Flat Panel Output	[t]	[t]	[t]
	Display Port Output	2	2	2
	Simultaneous Displays	2	2	2
Network	Ethernet	GbE	GbE	GbE
	Ports	2	2	2
Serial	RS-232/422/485 Ports	2	2	2
	RS-232/422 Ports	–	–	–
	RS-232	2	2	2
I/O	Mini PCIe Card sockets	1	1	1
	LPT Interface	–	–	–
	USB 2.0	4	4	4
	USB 3.0	2	2	2
	Analog Inputs (12-bit)	-	-	-
	Analog Outputs (12-bit)	-	-	-
	Digital I/O Lines	8	8	8
	Audio	[q][r]	[q][r]	[q][r]
	Expansion	SPI/SPX	SPI/SPX	SPI/SPX
Other	Counter / Timers	3	3	3
Performance	Very High		✔	✔
	High	✔		
	Moderate			
	Low			

__[c]__ Storage capacity limited only by currently available media sizes. __[k]__ The typical power consumption of each product computed as the mean value of Idle and Maximum (measured with 95% CPU utilization) power specifications. All power specifications represent operation at +25°C with +5V supply running Windows with Ethernet, keyboard, and mouse. __[q]__ Audio available through optional USB to audio adapter. __[r]__ Audio output available through DisplayPort. __[t]__ LVDS available using EPH-V6 - DP to LVDS converter. __[u]__ Analog (VGA) output via optional VL-CBR-2032 mini DisplayPort to VGA adapter. __[x]__ Second SATA channel available as an option.

Lion (cont.)				
VL-EPMe-42SCP-16	**VL-EPMe-42EAP-04**	**VL-EPMe-42EBP-04**	**VL-EPMe-42ECP-08**	**VL-EPMe-42ECP-16**
PCIe/104 OneBank	PCIe/104 OneBank	PCIe/104 OneBank	PCIe/104 OneBank	PCIe/104 OneBank
PCIe, PCI	PCIe, PCI	PCIe, PCI	PCIe, PCI	PCIe, PCI
108 x 96 mm (4.2 x 3.8")	108 x 96 mm (4.2 x 3.8")	108 x 96 mm (4.2 x 3.8")	108 x 96 mm (4.2 x 3.8")	108 x 96 mm (4.2 x 3.8")
Intel Core i7-7600U	Intel Core i3-7100U	Intel Core i5-7300U	Intel Core i7-7600U	Intel Core i7-7600U
2.8 GHz / 3.9 GHz	2.4 GHz / NA	2.6 GHz / 3.5 GHz	2.8 GHz / 3.9 GHz	2.8 GHz / 3.9 GHz
2	2	2	2	2
0° to +60°C	-40° to +85°C	-40° to +85°C	-40° to +85°C	-40° to +85°C
11.0W	8.5W	9.7W	11.0W	11.0W
Heat Plate	Heat Plate	Heat Plate	Heat Plate	Heat Plate
Y	Y	Y	Y	Y
Y	Y	Y	Y	Y
SATA III [x]	SATA III [x]	SATA III [x]	SATA III [x]	SATA III [x]
mSATA, eUSB	mSATA, eUSB	mSATA, eUSB	mSATA, eUSB	mSATA, eUSB
16 GB	4 GB	4 GB	8 GB	16 GB
DDR3L	DDR3L	DDR3L	DDR3L	DDR3L
Pre-Installed	Pre-Installed	Pre-Installed	Pre-Installed	Pre-Installed
HD 620	HD 620	HD 620	HD 620	HD 620
Y [u]	Y [u]	Y [u]	Y [u]	Y [u]
[t]	[t]	[t]	[t]	[t]
2	2	2	2	2
2	2	2	2	2
GbE	GbE	GbE	GbE	GbE
2	2	2	2	2
2	2	2	2	2
–	–	–	–	–
2	2	2	2	2
1	1	1	1	1
–	–	–	–	–
4	4	4	4	4
2	2	2	2	2
–	–	–	–	–
–	–	–	–	–
8	8	8	8	8
[q][r]	[q][r]	[q][r]	[q][r]	[q][r]
SPI/SPX	SPI/SPX	SPI/SPX	SPI/SPX	SPI/SPX
3	3	3	3	3
✔		✔	✔	✔
	✔			

PC/104 Format

BayCat



The BayCat features a full PC/104-*Plus* expansion interface, together with the outstanding Bay Trail processor.

This is an unbeatable combination for a balance of performance, low power, and compatibility in systems using PC/104-*Plus* (ISA and PCI) connectivity.

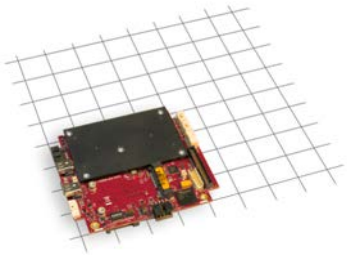
It also features high-performance video, and a USB 3.0 port.

Upgrade your PC/104-*Plus* system with a next-generation processor board that will be available until 2021 and beyond!

Specifications		BayCat		
		VL-EPM-31EAP	VL-EPM-31EBP	VL-EPM-31ECP
General	Expansion Bus	PC/104-*Plus*	PC/104-*Plus*	PC/104-*Plus*
	Expansion Bus Signals	PCI, ISA	PCI, ISA	PCI, ISA
	Size / Dimensions	96 x 90 mm (4.3 x 3.8")	96 x 90 mm (4.3 x 3.8")	96 x 90 mm (4.3 x 3.8")
	Processor	Atom E3815	Atom E3826	Atom E3845
	Processor Speed	1.46 GHz	1.46 GHz	1.91 GHz
	CPU Cores	1	2	4
	Operating Temp	-40° to +85°C	-40° to +85°C	-40° to +85°C
	Operating Power [k]	6.75W	7.25W	8.0W
	CPU Cooling	Heat Plate	Heat Plate	Heat Plate
	Watchdog Timer	Y	Y	Y
	TPM Security	Y	Y	Y
Mass Storage	Hard Drive	SATA II	SATA II	SATA II
	Flash [c]	microSD, mSATA	microSD, mSATA	microSD, mSATA
Memory	Capacity / Installed	8 GB / 0 GB	8 GB / 0 GB	8 GB / 0 GB
	Type	DDR3L	DDR3L	DDR3L
	Mounting	Socketed	Socketed	Socketed
Video	Graphics Core	Intel Gen-7	Intel Gen-7	Intel Gen-7
	VRAM (shared DRAM)	Up to 224 MB	Up to 224 MB	Up to 224 MB
	Analog (VGA) Output	Y	Y	Y
	LVDS Flat Panel Output	[t]	[t]	[t]
	Display Port Output	1	1	1
	Simultaneous Displays	2	2	2
Network	Ethernet	GbE	GbE	GbE
	Ports	2	2	2
Serial	RS-232/422/485 Ports	2	2	2
	RS-232/422 Ports	–	–	–
	RS-232	–	–	–
I/O	Mini PCIe Card sockets	1	1	1
	LPT Interface	-	-	-
	USB 2.0	4	4	4
	USB 3.0	1	1	1
	Analog Inputs (12-bit)	-	-	-
	Analog Outputs (12-bit)	-	-	-
	Digital I/O Lines	24	24	24
	Audio	[q][r]	[q][r]	[q][r]
	Expansion	SPI/SPX	SPI/SPX	SPI/SPX
Other	Counter / Timers	3	3	3
Performance	Very High			
	High		✔	✔
	Moderate	✔		
	Low			

[c] Storage capacity limited only by currently available media sizes. [k] The typical power consumption of each product computed as the mean value of Idle and Maximum (measured with 95% CPU utilization) power specifications. All power specifications represent operation at +25°C with +5V supply running Windows with Ethernet, keyboard, and mouse. [q] Audio available through optional USB to audio adapter. [r] Audio output available through DisplayPort. [t] LVDS available using EPH-V6 - DP to LVDS converter.

Bengal



VersaLogic's Swiss-Army-knife product is an outstanding balance of price, performance and power.

Based on Intel's Bay Trail processer, this board features the high speed PCIe/104 OneBank interface (PCIe and PCI), on-board Mini PCIe socket, and SPI/SPX interface options.

It also includes a USB 3.0 port for high speed camera or networking applications.

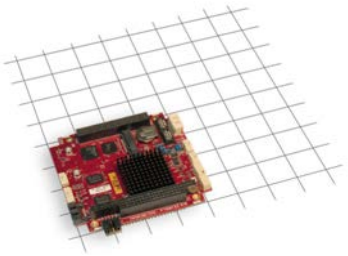
Specifications		Bengal		
		VL-EPMe-30EAP	VL-EPMe-30EBP	VL-EPMe-30ECP
General	Expansion Bus	PCIe/104 OneBank	PCIe/104 OneBank	PCIe/104 OneBank
	Expansion Bus Signals	PCIe, PCI	PCIe, PCI	PCIe, PCI
	Size / Dimensions	96 x 90 mm (4.3 x 3.8")	96 x 90 mm (4.3 x 3.8")	96 x 90 mm (4.3 x 3.8")
	Processor	Atom E3815	Atom E3826	Atom E3845
	Processor Speed	1.46 GHz	1.46 GHz	1.91 GHz
	CPU Cores	1	2	4
	Operating Temp	-40° to +85°C	-40° to +85°C	-40° to +85°C
	Operating Power [k]	6.75W	7.25W	8.0W
	CPU Cooling	Heat Plate	Heat Plate	Heat Plate
	Watchdog Timer	Y	Y	Y
	TPM Security	Y	Y	Y
Mass Storage	Hard Drive	SATA II	SATA II	SATA II
	Flash [c]	mSATA	mSATA	mSATA
Memory	Capacity / Installed	8 GB / 0 GB	8 GB / 0 GB	8 GB / 0 GB
	Type	DDR3L	DDR3L	DDR3L
	Mounting	Socketed	Socketed	Socketed
Video	Graphics Core	Intel Gen-7	Intel Gen-7	Intel Gen-7
	VRAM (shared DRAM)	Up to 224 MB	Up to 224 MB	Up to 224 MB
	Analog (VGA) Output	Y	Y	Y
	LVDS Flat Panel Output	[t]	[t]	[t]
	Display Port Output	2	2	2
	Simultaneous Displays	2	2	2
Network	Ethernet	GbE	GbE	GbE
	Ports	2	2	2
Serial	RS-232/422/485 Ports	2	2	2
	RS-232/422 Ports	–	–	–
	RS-232	–	–	–
I/O	Mini PCIe Card sockets	1	1	1
	LPT Interface	–	–	–
	USB 2.0	5	5	5
	USB 3.0	1	1	1
	Analog Inputs (12-bit)	–	–	–
	Analog Outputs (12-bit)	–	–	–
	Digital I/O Lines	18	18	18
	Audio	[q] [r]	[q] [r]	[q] [r]
	Expansion	SPI/SPX	SPI/SPX	SPI/SPX
Other	Counter / Timers	3	3	3
Performance	Very High			
	High		✔	✔
	Moderate	✔		
	Low			

[c] Storage capacity limited only by currently available media sizes. [k] The typical power consumption of each product computed as the mean value of Idle and Maximum (measured with 95% CPU utilization) power specifications. All power specifications represent operation at +25°C with +5V supply running Windows with Ethernet, keyboard, and mouse. [q] Audio available through optional USB to audio adapter. [r] Audio output available through DisplayPort. [t] LVDS available using EPH-V6 - DP to LVDS converter.

PC/104 Format

Product Selection Guide: **Embedded Computers**

Fox



The Fox is a lower-performance/lower-power product that is a great replacement for VersaLogic's Manx and Cougar products.

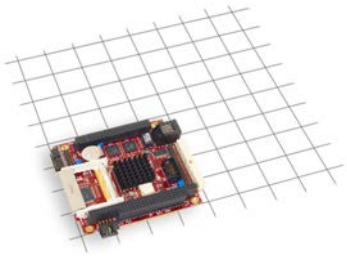
It provides more processing power and lower power draw than its predecessors.

It provides I/O expansion through the PC/104-*Plus* stackable bus (PCI + ISA), as well as a Mini PCIe socket, MicroSD socket, and a SPI/SPX interface.

Specifications		Fox			
		VL-EPM-19SAK	VL-EPM-19SBK	VL-EPM-19EAK	VL-EPM-19EBK
General	Expansion Bus	PCIe/104-*Plus*	PCIe/104-*Plus*	PCIe/104-*Plus*	PCIe/104-*Plus*
	Expansion Bus Signals	PCI, ISA	PCI, ISA	PCI, ISA	PCI, ISA
	Size / Dimensions	96x90 mm (4.3x3.8")	96x90 mm (4.3x3.8")	96x90 mm (4.3x3.8")	96x90 mm (4.3x3.8")
	Processor	DMP Vortex86DX2	DMP Vortex86DX2	DMP Vortex86DX2	DMP Vortex86DX2
	Processor Speed	933 MHz	933 MHz	800 MHz	800 MHz
	CPU Cores	1	1	1	1
	Operating Temp	0° to +60°C	0° to +60°C	-40° to +85°C	-40° to +85°C
	Operating Power [k]	5.5W	5.6W	5.3W	5.4W
	CPU Cooling	Heat Sink	Heat Sink	Heat Sink	Heat Sink
	Watchdog Timer	1	1	1	1
	TPM Security	–	–	–	–
Mass Storage	Hard Drive	SATA	SATA	SATA	SATA
	Flash [c]	mSATA	mSATA	mSATA	mSATA
Memory	Installed	512 MB	1 GB	512 MB	1 GB
	Type	DDR2	DDR2	DDR2	DDR2
	Mounting	Soldered-on	Soldered-on	Soldered-on	Soldered-on
Video	Graphics Core	Integrated Graphics	Integrated Graphics	Integrated Graphics	Integrated Graphics
	VRAM (shared DRAM)	Up to 64 MB	Up to 64 MB	Up to 64 MB	Up to 64 MB
	Analog (VGA) Output	Y	Y	Y	Y
	LVDS Flat Panel Output	Y	Y	Y	Y
	Display Port Output	–	–	–	–
	Simultaneous Displays	2	2	2	2
Network	Ethernet	10/100	10/100	10/100	10/100
	Ports	2	2	2	2
Serial	RS-232/422/485 Ports	2	2	2	2
	RS-232/422 Ports	–	–	–	–
	RS-232	2	2	2	2
I/O	Mini PCIe Card sockets	1	1	1	1
	LPT Interface	–	–	–	–
	USB 2.0	4	4	4	4
	USB 3.0	–	–	–	–
	Analog Inputs (12-bit)	–	–	–	–
	Analog Outputs (12-bit)	–	–	–	–
	Digital I/O Lines	–	–	–	–
	Audio	[q]	[q]	[q]	[q]
	Expansion	SPI/SPX	SPI/SPX	SPI/SPX	SPI/SPX
Other	Counter/Timers	3	3	3	3
Performance	Very High				
	High				
	Moderate				
	Low	✔	✔	✔	✔

[c] Storage capacity limited only by currently available media sizes. [k] The typical power consumption of each product computed as the mean value of Idle and Maximum (measured with 95% CPU utilization) power specifications. All power specifications represent operation at +25°C with +5V supply running Windows with Ethernet, keyboard, and mouse. [q] Audio available through optional USB to audio adapter.

Tomcat



The Tomcat is VersaLogic's lowest power PC/104-*Plus* product, making it ideally suited for power-conscious applications such as Machine-to-Machine and remote monitoring/control applications.

This lower-performance computer includes soldered-on memory and fanless operation even at the extended temperatures (-40° to +85°C).

It is ideal for "headless" systems where video output is not required.

Specifications		Tomcat	
		VL-EPM-16V/S	VL-EPM-16F/E
General	Expansion Bus	PC/104-*Plus*	PC/104-*Plus*
	Expansion Bus Signals	PCI, ISA	PCI, ISA
	Size / Dimensions	96 x 96 mm (3.8 x 3.8")	96 x 96 mm (3.8 x 3.8")
	Processor	Vortex86DX	Vortex86DX
	Processor Speed	800 MHz	800 MHz
	CPU Cores	1	1
	Operating Temp	0° to +70°C	-40° to +85°C
	Operating Power [k]	3.0W	3.0W
	CPU Cooling	None	Heat Sink
	Watchdog Timer	Y	Y
	TPM Security	–	–
Mass Storage	Hard Drive	ATA/66	ATA/66
	Flash [c]	CompactFlash	CompactFlash
Memory	Installed	256 MB [p]	256 MB [p]
	Type	DDR2	DDR2
	Mounting	Soldered-on	Soldered-on
Video	Graphics Core	[b]	[b]
	VRAM (shared DRAM)	[b]	[b]
	Analog (VGA) Output	[b]	[b]
	LVDS Flat Panel Output	[b]	[b]
	Display Port Output	[b]	[b]
	Simultaneous Displays	[b]	[b]
Network	Ethernet	10/100	10/100
	Ports	1	1
Serial	RS-232/422/485 Ports	2	2
	RS-232/422 Ports	–	–
	RS-232	2	2
I/O	Mini PCIe Card sockets	–	–
	LPT Interface	Y	Y
	USB 2.0	2	2
	USB 3.0	–	–
	Analog Inputs (12-bit)	–	–
	Analog Outputs (12-bit)	–	–
	Digital I/O Lines	–	–
	Audio	[q]	[q]
	Expansion	–	–
Other	Counter / Timers	2	2
Performance	Very High		
	High		
	Moderate		
	Low	✔	✔

[b] No on-board video. Use video expansion module to provide video output during development. [c] Storage capacity limited only by currently available media sizes. [k] The typical power consumption of each product computed as the mean value of Idle and Maximum (measured with 95% CPU utilization) power specifications. All power specifications represent operation at +25°C with +5V supply running Windows with Ethernet, keyboard, and mouse. [p] Standard models available with 128 MB installed RAM.
[q] Audio available through optional USB to audio adapter.

EPIC Format

The EPIC standard is sized midway between the EBX and PC/104 form factors. This bolt-down SBC format can provide much of the performance and I/O capacity of the larger EBX size, while fitting more conveniently in compact applications.

Newt

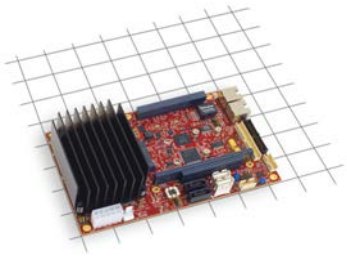
The Newt leverages the DMP Vortex86DX processor for low power/lower performance operation in a medium-sized format.

It can be used for headless applications (no video output), or plug-in video expansion modules may be added.

Specifications		Newt	
		VL-EPIC-17EA/EC	VL-EPIC-17EB/ED
General	Expansion Bus	PC/104-*Plus*	PC/104-*Plus*
	Expansion Bus Signals	PCI, ISA	PCI, ISA
	Size/Dimensions	115 x 165 mm (4.5 x 6.5")	115 x 165 mm (4.5 x 6.5")
	Processor	Vortex86DX	Vortex86DX
	Processor Speed	800 MHz	800 MHz
	CPU Cores	1	1
	Operating Temp	-40° to +85°C	-40° to +85°C
	Operating Power [k]	3.3W	3.8W
	CPU Cooling	Heat Sink	Heat Sink
	Watchdog Timer	Y	Y
	TPM Security	–	–
Mass Storage	Hard Drive	ATA/66	ATA/66
	Flash [c]	CompactFlash, eUSB	CompactFlash
Memory	Installed	256 MB	512 MB
	Type	DDR2	DDR2
	Mounting	Soldered-on	Soldered-on
Video	Graphics Core	[b]	[b]
	VRAM (shared DRAM)	[b]	[b]
	Analog (VGA) Output	[b]	[b]
	LVDS Flat Panel Output	[b]	[b]
	Display Port Output	[b]	[b]
	Simultaneous Displays	[b]	[b]
Network	Ethernet	10/100	10/100
	Ports	1 [l]	2 [l]
Serial	RS-232/422/485 Ports	2	2
	RS-232/422 Ports	–	–
	RS-232	2	2
I/O	Mini PCIe Card sockets	–	–
	LPT Interface	–	–
	USB 2.0	3	4
	USB 3.0	–	–
	Analog Inputs (12-bit)	8	16
	Analog Outputs (12-bit)	4	8
	Digital I/O Lines	32	32
	Audio	[q]	[q]
	Expansion	SPI/SPX	SPI/SPX
Other	Counter/Timers	3	3
Performance	Very High		
	High		
	Moderate		
	Low	✔	✔

[b] No on-board video. Use video expansion module to provide video output during development. [c] Storage capacity limited only by currently available media sizes. [k] The typical power consumption of each product computed as the mean value of Idle and Maximum (measured with 95% CPU utilization) power specifications. All power specifications represent operation at +25°C with +5V supply running Windows with Ethernet, keyboard, and mouse. [l] RJ45 connector(s) or latching header(s) for rugged applications, depending on product model. [q] Audio available through optional USB to audio adapter.

Iguana



The Iguana offers an unbeatable combination of performance, power, ruggedness, and I/O in a medium-sized format.

It offers mid-level video performance and multiple expansion options including PC/104-*Plus* (PCI + ISA), Mini PCIe socket, and SPX interface.

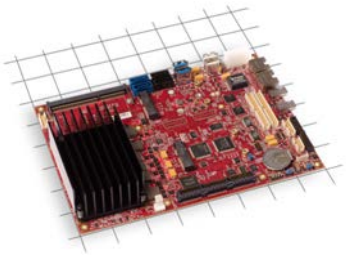
Specifications		Iguana		
		VL-EPIC-25SA	**VL-EPIC-25EA**	**VL-EPIC-25SB**
General	Expansion Bus	PC/104-*Plus*	PC/104-*Plus*	PC/104-*Plus*
	Expansion Bus Signals	PCI, ISA	PCI, ISA	PCI, ISA
	Size / Dimensions	115 x 165 mm (4.5 x 6.5")	115 x 165 mm (4.5 x 6.5")	115 x 165 mm (4.5 x 6.5")
	Processor	Atom D425	Atom D425	Atom D525
	Processor Speed	1.8 GHz	1.8 GHz	1.8 GHz
	CPU Cores	1	1	2
	Operating Temp	0° to +60°C	-40° to +85°C	0° to +60°C
	Operating Power [k]	9.1W	10.1W	11.7W
	CPU Cooling	Heat Sink	Fan	Heat Sink
	Watchdog Timer	Y	Y	Y
	TPM Security	–	–	–
Mass Storage	Hard Drive	(2) SATA II	(2) SATA II	(2) SATA II
	Flash [c]	mSATA, eUSB, CompactFlash	mSATA, eUSB, CompactFlash	mSATA, eUSB, CompactFlash
Memory	Capacity / Installed	4 GB / 0 GB	4 GB / 0 GB	4 GB / 0 GB
	Type	DDR3	DDR3	DDR3
	Mounting	Socketed	Socketed	Socketed
Video	Graphics Core	GMA 3150	GMA 3150	GMA 3150
	VRAM (shared DRAM)	Up to 224 MB	Up to 224 MB	Up to 224 MB
	Analog (VGA) Output	Y	Y	Y
	LVDS Flat Panel Output	Y	Y	Y
	Display Port Output	–	–	–
	Simultaneous Displays	2	2	2
Network	Ethernet	GbE	GbE	GbE
	Ports	2	2	2
Serial	RS-232/422/485 Ports	4	4	4
	RS-232/422 Ports	–	–	–
	RS-232	–	–	–
I/O	Mini PCIe Card sockets	1	1	1
	LPT Interface	–	–	–
	USB 2.0	6	6	6
	USB 3.0	–	–	–
	Analog Inputs (12-bit)	8	8	8
	Analog Outputs (12-bit)	4	4	4
	Digital I/O Lines	16	16	16
	Audio	Y	Y	Y
	Expansion	SPI/SPX	SPI/SPX	SPI/SPX
Other	Counter / Timers	2	2	2
Performance	Very High			
	High			✔
	Moderate	✔	✔	
	Low			

[c] Storage capacity limited only by currently available media sizes. [k] The typical power consumption of each product computed as the mean value of Idle and Maximum (measured with 95% CPU utilization) power specifications. All power specifications represent operation at +25°C with +5V supply running Windows with Ethernet, keyboard, and mouse.

EBX Format

The EBX format is an excellent balance of size, economy, and functionality. This bolt-down format supports embedded designs with higher performance CPUs and generous on-board I/O functions.

Copperhead



The high-performance Copperhead features Intel Core i3, i5, and i7 processors in dual and quad-core versions. The numerous models provide a wide range of price, performance, and power options. Copperhead features high performance video, and can output 3 simultaneous video streams. The PCIe x16 lane expansion site allows the use of very high speed video accelerator and expansion products.

Specifications		Copperhead		
		VL-EBXe-41SJF	VL-EBXe-41EJP	VL-EBXs-41SAK
General	Expansion Bus	PCIe/104 Type 1	PCIe/104 Type 1	SUMIT
	Expansion Bus Signals	PCIe	PCIe	PCIe
	Size / Dimensions	146 x 203 mm (5.75 x 8")	146 x 203 mm (5.75 x 8")	146 x 203 mm (5.75 x 8")
	Processor	Core i7 3615QE	Core i7 3615QE	Core i7 3517UE
	Processor Speed / Max Turbo	2.3 GHz	2.3 GHz / 3.30 GHz	1.7 GHz / 2.8 GHz
	CPU Cores	4	4	2
	Operating Temp	0° to +60°C	-40° to +85°C	0° to +60°C
	Operating Power [k]	37.2W	37.2W	20.7W
	CPU Cooling	Fan	Heat Plate	Heat Sink
	Watchdog Timer	Y	Y	Y
	TPM Security	[d]	[d]	[d]
Mass Storage	Hard Drive	(2) SATA II + (2) SATA III [n]	(2) SATA II + (2) SATA III [n]	(2) SATA II + (2) SATA III [n]
	Flash [c]	eUSB, mSATA	eUSB, mSATA	eUSB, mSATA
Memory	Capacity / Installed	16 GB / 0 GB	16 GB / 0 GB	16 GB / 0 GB
	Type	DDR3L	DDR3L	DDR3L
	Mounting	Socketed [h]	Socketed [h]	Socketed [h]
Video	Graphics Core	HD Graphics 4000	HD Graphics 4000	HD Graphics 4000
	VRAM (shared DRAM)	Up to 512 MB	Up to 512 MB	Up to 512 MB
	Analog (VGA) Output	Y	Y	Y
	LVDS Flat Panel Output	Y	Y	Y
	Display Port Output	2	2	2
	Simultaneous Displays	3	3	3
Network	Ethernet	GbE	GbE	GbE
	Ports	2	2	2
Serial	RS-232 Ports	–	–	–
	RS-232/422 Ports	4	4	4
	RS-232/422/485 Ports	–	–	–
I/O	Mini PCIe Card sockets	2	2	2
	LPT Interface	–	–	–
	USB 2.0	10	10	10
	USB 3.0	2	2	2
	Analog Inputs (12-bit)	16	16	16
	Analog Outputs (12-bit)	8	8	8
	Digital I/O Lines	32	32	32
	Audio	Y	Y	Y
	Expansion	SPI/SPX	SPI/SPX	SPI/SPX
Other	Counter / Timers	3	3	3
Performance	Very High	✔	✔	✔
	High			
	Moderate			
	Low			

[c] Storage capacity limited only by currently available media sizes. [d] Optional. [h] Two (2) SO-DIMM sockets. [k] The typical power consumption of each product computed as the mean value of Idle and Maximum (measured with 95% CPU utilization) power specifications. All power specifications represent operation at +25°C with +5V supply running Windows with Ethernet, keyboard, and mouse. [n] Hardware RAID capability.

Copperhead (cont.)

VL-EBXs-41EAF	VL-EBXe-41EHF	VL-EBXe-41ELF	VL-EBXe-41SLK	VL-EBXe-41SMK	VL-EBXe-41EMF
SUMIT	PCIe/104 Type 1	PCIe/104 Type 1	PCIe/104 Type 1	PCIe/104 Type 1	PCIe/104 Type 1
PCIe	PCIe	PCIe	PCIe	PCIe	PCIe
146 x 203 mm (5.75 x 8")	146 x 203 mm (5.75 x 8")	146 x 203 mm (5.75 x 8")	146 x 203 mm (5.75 x 8")	146 x 203 mm (5.75 x 8")	146 x 203 mm (5.75 x 8")
Core i7 3517UE	Core i7 3517UE	Core i3 3217UE	Core i3 3217UE	Celeron 1047UE	Celeron 1047UE
1.7 GHz / 2.8 GHz	1.7 GHz / 2.8 GHz	1.6 GHz / NA	1.6 GHz / NA	1.4 GHz / NA	1.4 GHz / NA
2	2	2	2	2	2
-40° to +85°C	-40° to +85°C	-40° to +85°C	0° to +60°C	0° to +60°C	-40° to +85°C
20.7W	20.7W	14.4W	14.4W	13.3W	13.3W
Fan	Fan	Fan	Heat Sink	Heat Sink	Fan
Y	Y	Y	Y	Y	Y
[d]	[d]	[d]	[d]	[d]	[d]
(2) SATA II + (2) SATA III [n]	(2) SATA II + (2) SATA III [n]	(2) SATA II + (2) SATA III [n]	(2) SATA II + (2) SATA III [n]	(2) SATA II + (2) SATA III [n]	(2) SATA II + (2) SATA III [n]
eUSB, mSATA	eUSB, mSATA	eUSB, mSATA	eUSB, mSATA	eUSB, mSATA	eUSB, mSATA
16 GB/0 GB	16 GB/0 GB	16 GB/0 GB	16 GB/0 GB	16 GB/0 GB	16 GB/0 GB
DDR3L	DDR3L	DDR3L	DDR3L	DDR3L	DDR3L
Socketed [h]	Socketed [h]	Socketed [h]	Socketed [h]	Socketed [h]	Socketed [h]
HD Graphics 4000	HD Graphics 4000	HD Graphics 4000	HD Graphics 4000	HD Graphics	HD Graphics
Up to 512 MB	Up to 512 MB	Up to 512 MB	Up to 512 MB	Up to 512 MB	Up to 512 MB
Y	Y	Y	Y	Y	Y
Y	Y	Y	Y	Y	Y
2	2	2	2	2	2
3	3	3	3	3	3
GbE	GbE	GbE	GbE	GbE	GbE
2	2	2	2	2	2
–	–	–	–	–	–
4	4	4	4	4	4
–	–	–	–	–	–
2	2	2	2	2	2
–	–	–	–	–	–
10	10	10	10	10	10
2	2	2	2	2	2
16	16	16	16	16	16
8	8	8	8	8	8
32	32	32	32	32	32
Y	Y	Y	Y	Y	Y
SPI/SPX	SPI/SPX	SPI/SPX	SPI/SPX	SPI/SPX	SPI/SPX
3	3	3	3	3	3
✔	✔	✔	✔	✔	✔

EBX Format

Product Selection Guide: **Embedded Computers**

Viper

The Viper combines the EBX form factor, with the popular Bay Trail processor and a traditional PC/104-*Plus*™ expansion interface.

With single, dual, and quad core versions, it is a versatile replacement for systems using previous Intel processor generations.

The Viper also features USB 3.0, dual Mini PCIe sockets, and on-board digital and analog I/O ports.

Specifications		Viper	
		VL-EBX-38EAP	VL-EBX-38EBP
General	Expansion Bus	PC/104-*Plus*	PC/104-*Plus*
	Expansion Bus Signals	PCI, ISA	PCI, ISA
	Size / Dimensions	146 x 203 mm (5.75 x 8")	146 x 203 mm (5.75 x 8")
	Processor	Atom E3815	Atom E3826
	Processor Speed	1.46 GHz	1.46 GHz
	CPU Cores	1	2
	Operating Temp	-40° to +85°C	-40° to +85°C
	Operating Power [k]	5.5W	6.0W
	CPU Cooling	Heat Plate	Heat Plate
	Watchdog Timer	1	1
	TPM Security	Y	Y
Mass Storage	Hard Drive	(2) SATA II	(2) SATA II
	Flash [c]	microSD, mSATA	microSD, mSATA
Memory	Capacity / Installed	8 GB / 0 GB	16 GB / 0 GB [v]
	Type	DDR3L	DDR3L
	Mounting	Socketed [h]	Socketed [h]
Video	Graphics Core	Intel Gen-7	Intel Gen-7
	VRAM (shared DRAM)	Up to 224 MB	Up to 224 MB
	Analog (VGA) Output	Y	Y
	LVDS Flat Panel Output	Y	Y
	Display Port Output	2	2
	Simultaneous Displays	2	2
Network	Ethernet	GbE	GbE
	Ports	2	2
Serial	RS-232/422/485 Ports	4	4
	RS-232/422 Ports	–	–
	RS-232 Ports	–	–
I/O	Mini PCIe Card sockets	2	2
	LPT Interface	–	–
	USB 2.0	6	6
	USB 3.0	1	1
	Analog Inputs (12-bit)	8	8
	Analog Outputs (12-bit)	4	4
	Digital I/O Lines	32	32
	Audio	[q] [r]	[q] [r]
	Expansion	SPI/SPX	SPI/SPX
Other	Counter / Timers	3	3
Performance	Very High		
	High		✔
	Moderate	✔	
	Low		

[c] Storage capacity limited only by currently available media sizes. [h] Two (2) SO-DIMM sockets. [k] The typical power consumption of each product computed as the mean value of Idle and Maximum (measured with 95% CPU utilization) power specifications. All power specifications represent operation at +25° C with +5V supply running Windows with Ethernet, keyboard, and mouse. [q] Audio available through optional USB to audio adapter. [r] Audio output available through DisplayPort. *[v] ECC capable, requires 2 memory modules (refer to User's Manual).*

Viper cont.)
VL-EBX-38ECP
PC/104-*Plus*
PCI, ISA
146 x 203 mm (5.75 x 8")
Atom E3845
1.91 GHz
4
-40° to +85°C
7.0W
Heat Plate
1
Y
(2) SATA II
microSD, mSATA
16 GB / 0 GB [v]
DDR3L
Socketed [h]
Intel Gen-7
Up to 224 MB
Y
Y
2
2
GbE
2
4
–
–
2
–
6
1
8
4
32
[q] [r]
SPI/SPX
3
✔

EBX Format

Anaconda

The Anaconda is virtually a drop-in replacement for VersaLogic's popular EBX-11 Python single board computer.

Using the DMP DX2 processor, it provides a moderate performance level and low power usage. On-board expansion includes a PC/104-*Plus* expansion site (PCI + ISA), along with a Mini PCIe socket, MicroSD socket, and SPI/SPX interface.

Specifications		Anaconda	
		VL-EBX-18SAK	VL-EBX-18SBK
General	Expansion Bus	PC/104-*Plus*	PC/104-*Plus*
	Expansion Bus Signals	PCI, ISA	PCI, ISA
	Size / Dimensions	146 x 203 mm (5.75 x 8")	146 x 203 mm (5.75 x 8")
	Processor	Vortex86DX2	Vortex86DX2
	Processor Speed	800 MHz	800 MHz
	CPU Cores	1	1
	Operating Temp	0° to +60°C	0° to +60°C
	Operating Power [k]	5.5W	5.6W
	CPU Cooling	Heat Sink	Heat Sink
	Watchdog Timer	1	1
	TPM Security	–	–
Mass Storage	Hard Drive	SATA	SATA
	Flash [c]	microSD, mSATA	microSD, mSATA
Memory	Installed	512 MB	1 GB
	Type	DDR2	DDR2
	Mounting	Soldered-on	Soldered-on
Video	Graphics Core	Integrated Graphics	Integrated Graphics
	VRAM (shared DRAM)	Up to 64 MB	Up to 64 MB
	Analog (VGA) Output	Y	Y
	LVDS Flat Panel Output	Y	Y
	Display Port Output	–	–
	Simultaneous Displays	2	2
Network	Ethernet	10/100	10/100
	Ports	2	2
Serial	RS-232/422/485 Ports	2	2
	RS-232/422 Ports	–	–
	RS-232	2	2
I/O	Mini PCIe Card sockets	1	1
	LPT Interface	–	–
	USB 2.0	5	5
	USB 3.0	–	–
	Analog Inputs (12-bit)	8	8
	Analog Outputs (12-bit)	[s]	[s]
	Digital I/O Lines	32	32
	Audio	[q]	[q]
	Expansion	SPI/SPX	SPI/SPX
Other	Counter / Timers	3	3
Performance	Very High		
	High		
	Moderate		
	Low	✔	✔

[c] Storage capacity limited only by currently available media sizes. [k] The typical power consumption of each product computed as the mean value of Idle and Maximum (measured with 95% CPU utilization) power specifications. All power specifications represent operation at +25°C with +5V supply running Windows with Ethernet, keyboard, and mouse. [q] Audio available through optional USB to audio adapter. [s] PWM (Pulse Width Modulation) outputs can be used as Analog Out channels.

Anaconda (cont.)			
VL-EBX-18SCK	**VL-EBX-18EAK**	**VL-EBX-18EBK**	**VL-EBX-18ECK**
PC/104-*Plus*	PC/104-*Plus*	PC/104-*Plus*	PC/104-*Plus*
PCI, ISA	PCI, ISA	PCI, ISA	PCI, ISA
146 x 203 mm (5.75 x 8")	146 x 203 mm (5.75 x 8")	146 x 203 mm (5.75 x 8")	146 x 203 mm (5.75 x 8")
Vortex86DX2	Vortex86DX2	Vortex86DX2	Vortex86DX2
800 MHz	1.0 GHz	1.0 GHz	1.0 GHz
1	1	1	1
0° to +60°C	-40° to +85°C	-40° to +85°C	-40° to +85°C
6.0W	5.3W	5.4W	5.8W
Heat Sink	Heat Sink	Heat Sink	Heat Sink
1	1	1	1
–	–	–	–
SATA	SATA	SATA	SATA
microSD, mSATA	microSD, mSATA	microSD, mSATA	microSD, mSATA
2 GB	512 MB	1 GB	2 GB
DDR2	DDR2	DDR2	DDR2
Soldered-on	Soldered-on	Soldered-on	Soldered-on
Integrated Graphics	Integrated Graphics	Integrated Graphics	Integrated Graphics
Up to 64 MB	Up to 64 MB	Up to 64 MB	Up to 64 MB
Y	Y	Y	Y
Y	Y	Y	Y
–	–	–	–
2	2	2	2
10/100	10/100	10/100	10/100
2	2	2	2
2	2	2	2
–	–	–	–
2	2	2	2
1	1	1	1
–	–	–	–
5	5	5	5
–	–	–	–
8	8	8	8
[s]	[s]	[s]	[s]
32	32	32	32
[q]	[q]	[q]	[q]
SPI/SPX	SPI/SPX	SPI/SPX	SPI/SPX
3	3	3	3
✔	✔	✔	✔

Expansion Modules

Product Selection Guide

	Model	Function	Form Factor	Bus Interface	Temp. Range	RoHS
Network	VL-MPEe-FW1E	1394 Firewire Module	Mini PCIe	Mini PCIe (PCIe)	-40° to +85°C	✔
	VL-SPX-3	CANbus	SPX	SPX	-40° to +85°C	✔
	VL-EPMs-E1A	Gigabit Ethernet (x2) + Mini PCIe module socket	SUMIT on PC/104	SUMIT	-40° to +85°C	✔
	VL-EPMs-E1B	Gigabit Ethernet (x2) + Mini PCIe module socket	SUMIT on PC/104	SUMIT, PC/104	-40° to +85°C	✔
	VL-MPEe-E3E	Gigabit Ethernet	Mini PCIe	Mini PCIe (PCIe)	-40° to +85°C	✔
	VL-EPM-E2A	10/100 Ethernet	PC/104-*Plus*	PC/104-*Plus*	-40° to +85°C	✔
	VL-EPM-E2B	10/100 Ethernet (x2)	PC/104-*Plus*	PC/104-*Plus*	-40° to +85°C	✔
	VL-EPM-E2D	10/100 Ethernet (x2) with latching header	PC/104-*Plus*	PC/104-*Plus*	-40° to +85°C	✔
USB	VL-EPMs-M1A	USB ports (x4) + SATA ports (x2)	SUMIT on PC/104	SUMIT	-40° to +85°C	✔
	VL-EPMs-M1B	USB ports (x3) + SATA ports (x2) + Mini PCIe module socket	SUMIT on PC/104	SUMIT, PC/104	-40° to +85°C	✔
	VL-EPMs-M1C	USB ports (x4) + SATA ports (x1) + mSATA module socket	SUMIT on PC/104	SUMIT	-40° to +85°C	✔
	VL-EPHs-B1A	USB ports (x4)	SUMIT-micro	SUMIT	-40° to +85°C	✔
	VL-EPHs-B1B	USB ports (x3) + eUSB socket	SUMIT-micro	SUMIT	-40° to +85°C	✔
Serial I/O	VL-MPEe-U2E	RS-232/422/485 (x4) + GPIO (x12)	Mini PCIe	Mini PCIe (PCIe)	-40° to +85°C	✔
	VL-EPMs-U1A	RS-232 (x2) + RS-232/422/485 (x2)	SUMIT on PC/104	SUMIT	-40° to +85°C	✔
	VL-EPMs-U1B	RS-232 (x2) + RS-232/422/485 (x4)	SUMIT on PC/104	SUMIT	-40° to +85°C	✔
	VL-EPMs-U1C	RS-232 (x2) + RS-232/422/485 (x2)	SUMIT on PC/104	SUMIT, PC/104	-40° to +85°C	✔
	VL-EPMs-U1E	RS-232 (x2) + GPS	SUMIT on PC/104	SUMIT	-40° to +85°C	✔
Analog & Digital I/O	VL-MPEe-A1E	Analog Inputs (x8 single ended or x4 differential) with 12-bit resolution	Mini PCIe	Mini PCIe (PCIe)	-40° to +85°C	✔
	VL-MPEe-A2E	Analog Inputs (x8 single ended or x4 differential) with 16-bit resolution	Mini PCIe	Mini PCIe (PCIe)	-40° to +85°C	✔
	VCM-DAS-1	Analog Inputs (x16) with 16-bit resolution (100 Ksps) + Analog Outputs (x2) with 12-bit resolution + Digital I/O (x16)	PC/104	PC/104	0° to +60°C	–
	VCM-DAS-2	Analog Inputs (x16) with 16-bit resolution (200 Ksps) + Analog Outputs (x2) with 12-bit resolution + Digital I/O (x16)	PC/104	PC/104	0° to +60°C	–
	VL-SPX-1	Analog Inputs (x8) with 12-bit resolution	SPX	SPX	-40° to +85°C	✔
	VCM-DAS-3	Analog Outputs (x16) with 12-bit resolution + Digital I/O (x24)	PC/104	PC/104	-40° to +85°C	✔
	VL-SPX-4	Analog Outputs (x4) with 12-bit resolution	SPX	SPX	-40° to +85°C	✔
	VL-SPX-2	Digital I/O (x16)	SPX	SPX	-40° to +85°C	✔
	VL-SPX-5	Digital Output - Solid-State Switch (x8)	SPX	SPX	-40° to +85°C	✔
Video	VL-MPEe-V5E	Video Expansion Module with 16 MB VRAM. Analog (VGA) and LVDS outputs.	Mini PCIe	Mini PCIe (PCIe)	-40° to +85°C	✔
	VL-EPM-V7E	Video Expansion Module with 16 MB VRAM, Mini PCIe socket, Analog (VGA) and LVDS outputs.	PC/104	PC/104-Plus	-40° to +85°C	✔
	VL-EPMp-V7E	Video Expansion Module with 16 MB VRAM, Mini PCIe socket, Analog (VGA) and LVDS outputs.	PC/104	PCI-104	-40° to +85°C	✔
	VL-EPH-V6	DisplayPort to Dual LVDS Display Converter.	32 mm x 90 mm	N/A	0° to +60°C	✔
GPS	VL-MPEu-G2E	GPS receiver with backup battery	Mini PCIe	Mini PCIe (USB)	-40° to +85°C	✔
	VL-MPEu-G2E-Z	GPS receiver, no backup battery	Mini PCIe	Mini PCIe (USB)	-40° to +85°C	✔
	VL-EPMs-U1E	RS-232 (x2) + GPS	SUMIT on PC/104	SUMIT	-40° to +85°C	✔
Solid-State Storage	VL-MPEs-F1E4	mSATA drive - 4 GB	Mini PCIe	Mini PCIe (SATA)	-40° to +85°C	✔
	VL-MPEs-F1E16	mSATA drive - 16 GB	Mini PCIe	Mini PCIe (SATA)	-40° to +85°C	✔
	VL-MPEs-F1E32	mSATA drive - 32 GB	Mini PCIe	Mini PCIe (SATA)	-40° to +85°C	✔
Adapters	VL-ADR-01	USB to Audio Adapter	40mm x 50 mm	N/A	0° to +60°C	✔
	VL-MPEs-S3E	SATA adapter	Mini PCIe	Mini PCIe (SATA)	-40° to +85°C	✔
	VL-EPHs-S1E	SATA ports (x2)	SUMIT-micro	SUMIT	-40° to +85°C	✔
	VL-EPHs-P1E	Mini PCIe module socket	SUMIT-micro	SUMIT	-40° to +85°C	✔
	VL-EPM-P2E	Mini PCIe module socket (x2)	PC/104-*Plus*	PC/104-*Plus*	-40° to +85°C	✔
In-Stack Power Supply	VL-EPM-PS1A	+9 to +40 VDC input range, 50W [a] output power, +5V and ±12V output	PC/104-*Plus*	PC/104-*Plus*	-40° to +85°C [a]	✔
	VL-EPMs-PS1A	+9 to +40 VDC input range, 50W [a] output power, +5V and ±12V output	SUMIT on PC/104	SUMIT, PC/104	-40° to +85°C [a]	✔

Notes: ***[a]*** *50W (10A) max. continuous +5V output from -40° to +60°C; 25W (5A) at +85°C.*

Specifications are subject to change without notification.
Not all products are included in this chart.

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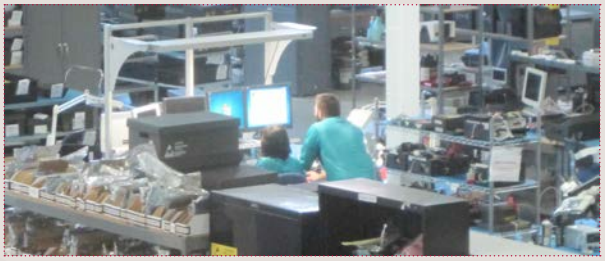

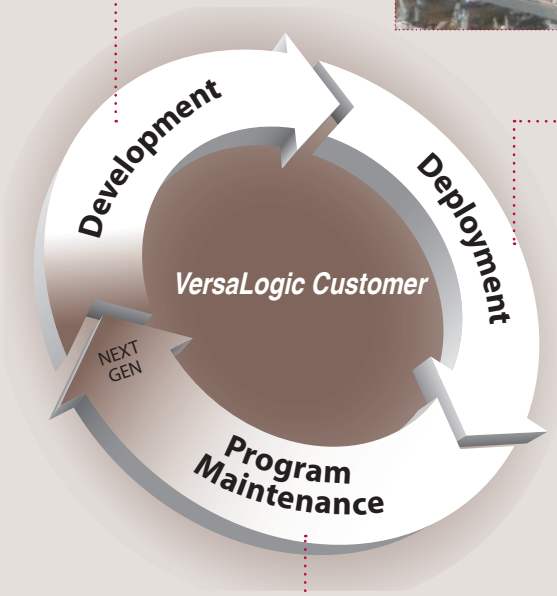

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Product Selection Guide




VersaLogic has built its reputation on reliability through quality products and superior service. It works continuously with its customers and within the industry to promote the highest standards of product reliability.

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