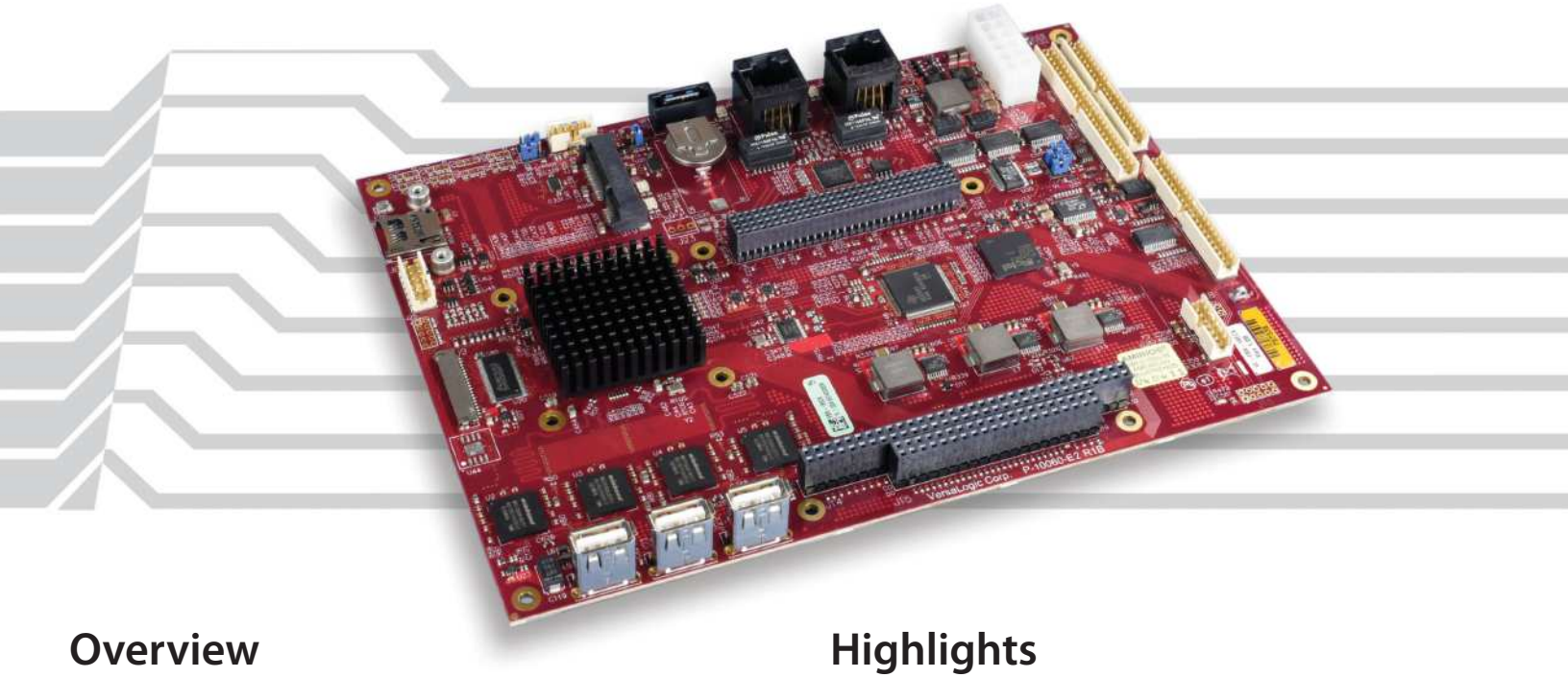
Anaconda

EBX Single Board Computer



Overview

The Anaconda is a moderate performance, low power embedded computer designed on a standard EBX form factor. It is powered by a DMP Vortex86DX2 processor that enables the entire board to use less than 7W (typ.). Several I/O interfaces, multiple expansions buses, and thermal management options provide systems designers with flexibility and lower overall system cost.

Anaconda was designed with no moving parts, soldered-on RAM, and ready to withstand high shock and vibration. Industrial temperature versions are available. This Single Board Computer is an ideal choice for applications that require high quality, low-power, and long product life.

As with all VersaLogic products, the Anaconda is backed by a five-year warranty, 5+ year off-the-shelf availability guarantee, and expert US-based technical support. Product Life Extension options support availability through the year 2025.

Highlights

- Industrial temp. (-40° to +85°C) versions
- Shock & vibration per MIL-STD-202G
- EBX™ form factor
- Low power draw
- Fanless Operation
- DMP Vortex DX2 CPU
- Up to 2 GB soldered-on RAM
- PC/104-*Plus* expansion
- Dual 10/100 Ethernet
- VGA and LVDS video
- Mini PCIe / mSATA socket
- USB 2.0 ports (5)
- Serial I/O (RS-232/422/485)
- SATA port
- Digital I/O (32 lines)
- Analog Input (8 chan.)
- VersaAPI software support

VERSALOGIC CORPORATION

Features

1 DMP Vortex86DX2 32-bit Processor
Vortex86DX2 x86 low power processor with integrated I/O and 2D graphics engine.

2 Video Output
LVDS video output for flat panel displays. Standard analog VGA output. Simultaneous output from both ports.

3 Network Support
Dual Ethernet interfaces, autodetect 10BaseT/100BaseTX with network boot capability.

4 RAM
Up to 2 GB soldered-on memory.

5 SATA
One SATA 1.5 Gb/s port supports high-capacity storage (solid-state drives or rotating media).

6 Device I/O
Five USB 2.0 ports support keyboard, mouse, and other devices (6a). Two RS-232/422/485 and two RS-232 serial ports, and three 8254 timer/counters (6b).

7 Analog + Digital I/O
On-board data acquisition support. Eight analog inputs (7a) and thirty-two digital I/O lines (7b).

8 MicroSD Socket
Supports removable microSD card solid-state drives.

9 Mini PCIe/mSATA Socket
Supports Wi-Fi modems, Ethernet, Analog I/O, Serial ports, GPS, MIL-STD-1553, Ethernet, solid-state mSATA drives, and other plug-in devices.

10 SPI Interface
Supports SPI and SPX devices, including low cost analog and digital modules.

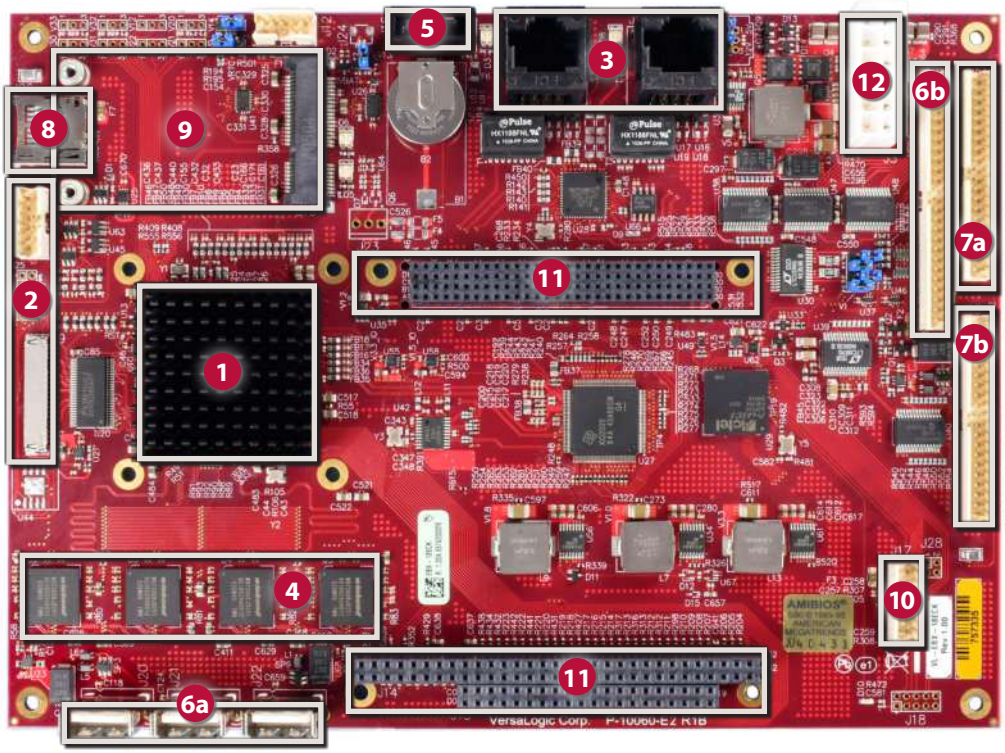
11 PC/104 Expansion
Industry-standard PC/104-Plus expansion site.

12 Power Input
Wide input 9 to 15V or 5V. Jumper selectable.

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

MIL-STD-202G
Qualified for high shock and vibration environments.

Software Support
Compatible with a variety of popular x86 operating systems including Windows, Windows Embedded, and Linux.
Linux support includes VersaAPI software for onboard I/O devices.



Tailor Anaconda to Your Exact Requirements

Customization options are available in quantities as low as 100 pieces.

- Conformal Coating
- Custom Cabling
- Connector & I/O Changes
- Custom Testing
- Custom Labeling
- BGA Underfill
- BIOS Modifications
- Software and Drivers
- Revision Locks
- Custom Screening
- Application-Specific Testing
- And more –

Specifications

General				
Board Size	EBX standard: 5.75" x 8" (146 mm x 203 mm)			
Processor	DMP Vortex86DX2 32-bit			
Input Voltage	5V +/- 5% or wide input: 9 to 15V (12V nominal). Jumper selectable.			
Power Requirements §	*Model*	*Idle*	*Typical*	*Max.*
	VL-EBX-18SAK	5.5W	5.8W	6.0W
	VL-EBX-18SBK	6.0W	6.5W	7.0W
	VL-EBX-18SCK	6.0W	6.8W	7.5W
	VL-EBX-18EAK	5.5W	5.8W	6.0W
	VL-EBX-18EBK	6.0W	6.5W	7.0W
	VL-EBX-18ECK	6.0W	6.3W	6.5W
System Reset & Hardware Monitors	All voltage rails monitored. Watchdog timer with programmable timeout. CPU temperature monitoring. Push-button reset.			
Stackable Bus	PC/104-*Plus* expansion site			
Manufacturing Standards	Standard	IPC-A-610 Class 2 modified		
	Special Order	IPC-A-610 Class 3 modified		
RoHS	RoHS (EU 2015/863)			

Environmental		
Operating Temperature ◊	0° to +60°C or -40° to +85°C *See Ordering Information for Specific Models*	
Storage Temperature	-40° to +85°C	
Altitude	Operating *	To 4,570m (15,000 ft.)
	Storage	To 12,000m (40,000 ft.)
Airflow Requirements	*Temp. Range*	*Airflow Requirements*
	Standard 0° to +60°C	0.5 Linear Meters per Second (100 Linear Feet per Minute)
	Extended -40° to +85°C	0.5 Linear Meters per Second (100 Linear Feet per Minute)
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 ms duration per axis	

Memory	
System RAM	Up to 2 GB DDR2 soldered-on memory.

§ Represents operation at +25°C and +12V running Windows 7 with on-board, VGA display, SATA, Ethernet, COM, and USB keyboard/mouse. Typical power computed as the mean value of Idle and Maximum power specifications. Maximum power measured with 95% CPU utilization.

‡ TVS protected port (enhanced ESD protection)

Power pins are overload protected

◊ Derate -1.1°C per 305m (1,000 ft.) above 2,300m (7,500 ft.)

* For extended altitude information contact VersaLogic Sales Dept.

¤ MIL-STD-202G shock and vibe levels were used to illustrate the overall ruggedness of this product. Certification at higher levels or different types of shock or vibration methods per the specific requirements of the application is available. Contact VersaLogic Sales for further information.

Specifications are subject to change without notification. EBX and PC/104-*Plus* are trademarks of the PC/104 Consortium. All other trademarks are the property of their respective owners.

Video	
General	Integrated video controller.
VRAM	Up to 64 MB shared DRAM frame buffer.
Desktop Display Interface ‡	Standard analog output (VGA). Up to 1920 x 1440 (60 Hz). 32-bit. 2 mm IDC connector.
OEM Flat Panel Interface #	LVDS interface. 18/24-bit. Up to 1024 x 768 (60 Hz). 8 bpp. CMOS-selectable TFT panel types. Support for FPD power control.

Mass Storage	
Rotating Drives / Flash / Solid-State Drives	One SATA 1.5 Gb/s port with latching connector.
	One Mini PCIe / mSATA socket (SATA signaling, bootable)
	One microSD socket. Supports up to 32 GB. Bootable.

Network Interface	
Ethernet ‡	Two autodetect 10BaseT/100BaseTX ports with RJ45 connectors.
Network Boot Option	Via BIOS extension

Device I/O	
USB # ‡	Five USB 2.0 host ports.
COM 1 / 2 ‡	RS-232 16C550 compatible.
COM 3 / 4 ‡	RS-232/422/485 selectable. 16C550 compatible.
Analog Input	Eight channels. 12-bit. Single-ended and/or differential pairs. 100 Ksps. 0 to 5V, ±5V, 0 to +10V, and ±10V
Digital I/O	Thirty-two TTL I/O lines 3.3V. Independently configurable.
Audio	Optional. Use VL-ADR-01 audio interface.
Counter/Timers	Three 8254 16-bit timers
AT Peripherals #	PS/2 Keyboard and mouse port.

Other I/O	
Mini PCIe / mSATA Socket	Full-size Mini PCIe / mSATA socket. Supports Wi-Fi modems, GPS receivers, solid state mSATA drives, and other plug-in modules.
SPI Interface	Supports SPI and SPX devices. Supports up to four SPX modules.

Software	
BIOS	AMI BIOS. Support for USB keyboard/mouse and USB boot.
VersaAPI	VersaLogic Application Programming Interface to support on-board I/O devices (Linux only).
Sleep Mode	None
Operating Systems	Compatible with most x86 operating systems including Windows, Windows Embedded, and Linux. Please contact VersaLogic Technical Support for complete operating system information. **Constraints for Windows 7 and Windows Embedded 7 operating systems require a platform with a minimum of 1 GB RAM.**

Ordering Information

Model	Nominal Speed	Memory Size	Operating Temp. †	Cooling
VL-EBX-18SAK	933 MHz	512 MB	0° to +60°C	Heat Sink
VL-EBX-18SBK	933 MHz	1 GB	0° to +60°C	Heat Sink
VL-EBX-18SCK	933 MHz	2 GB	0° to +60°C	Heat Sink
VL-EBX-18EAK	800 MHz	512 MB	-40° to +85°C	Heat Sink
VL-EBX-18EBK	800 MHz	1 GB	-40° to +85°C	Heat Sink
VL-EBX-18ECK	800 MHz	2 GB	-40° to +85°C	Heat Sink

† Derate -1.1°C per 305m (1,000 ft.) above 2,300m (7,500 ft.)

Other configurations are possible. Please contact VersaLogic Sales at (503) 747-2261 to discuss requirements!

Accessories

Part Number	Description
Cable Kit	
VL-CKR-ANACON	Development Cable kit for EBX-18. Includes: VL-CBR-5009, 4004 (x2), 2022, 1201, 0702, and HDW-105 (x2)
VL-CBR-5009	Primary Breakout Cable: 18" 2mm Latching 50-pin to 50-pin
VL-CBR-4004	12" 2mm 40 pin to 40 pin IDC cable
VL-CBR-2022	12" ATX to 10-pin power adapter cable
VL-CBR-1201	12-pin to 15-pin VGA
VL-CBR-0702	20" SATA cable – rugged latching
VL-HDW-105	0.6" standoff package (metric thread)
Cables	
VL-CBR-0401	6.25" ATX to SATA power cable
VL-CBR-1203	12" ATX 12V power adapter cable (12-pins)
VL-CBR-1401	6" 14-pin cable assembly for (2) SPX modules
VL-CBR-1402	12" 14-pin cable assembly for (4) SPX modules
VL-CBR-2014	LVDS to VGA Adapter board
VL-CBR-2015	20" 24-bit LVDS flat panel cable (Hirose)
VL-CBR-2016	20" 18-bit LVDS flat panel cable (JAE)
VL-CBR-2017	20" 24-bit LVDS 20-pin 1mm (Hirose) to 1.25mm (Hirose)
VL-CBR-2034	6" 20-pin (F) ATX to 24-pin (M) ATX adapter cable (use with PS-ATX12-300A)
Audio	
VL-ADR-01	USB to Audio Adapter
Solid-State Storage (flash memory)	
VL-F41-xxxx	microSD card (SDIO), SLC, industrial temp.
Drives	
VL-HDS35-xxx	3.5" hard drive (SATA)
Hardware	
VL-PS-ATX12-300A	Bench-top / development power supply
VL-HDW-106	0.6" standoffs, English thread (four per kit)
VL-HDW-108	Mini PCIe / mSATA hardware kit (metric thread) 2.5 mm
VL-HDW-112	PC104 (ISA) Spacer
VL-HDW-113	PC104 (PCI) Spacer
VL-HDW-115	PC104 (blank) Spacer
Miscellaneous	
VL-HDW-111	Half to Full Size Mini PCIe Adapter kit. Metal adapter and screws (2)
VL-HDW-203	PC/104 extractor tool (metal)

Expansion Modules

Part Number	Description	Form Factor
Network		
VL-MPEe-W2E	Wi-Fi 802.11 a/b/g/n	Mini PCIe
VL-MPEe-E3E	Gigabit Ethernet adapter	Mini PCIe
Serial I/O		
VL-MPEe-U2E	Quad serial plus twelve GPIOs	Mini PCIe
Analog & Digital I/O		
VL-MPEe-A1E	Analog input (12-bit resolution)	Mini PCIe
VL-MPEe-A2E	Analog input (16-bit resolution)	Mini PCIe
VL-SPX-1	Analog Input Module 8-Channels	SPX
VL-SPX-2	Digital I/O Module 16-lines	SPX
VL-SPX-4	Analog Output Module 4-channels 12-bit	SPX
VL-SPX-5	Solid State Switch Module 8-channel	SPX
GPS		
VL-MPEu-G2E	GPS receiver	Mini PCIe
Video		
VL-EPM-V7E	Video Expansion Module: VGA and LVDS	PC/104-*Plus*
VL-MPEe-V5E	VGA and LVDS Interface	Mini PCIe
Solid-State Storage (flash memory)		
VL-MPEs-F1Exx	mSATA module (4/16/32 GB) (SATA)	Mini PCIe
Adapters		
VL-MPEs-S3E	SATA adapter	Mini PCIe

Mini PCIe Modules

Take the Risk out of Embedded Computing

Whether it's selecting the optimum solution for your application, providing expert support during development, or on-time delivery of defect-free products, VersaLogic is here to make sure your project goes smoothly from initial concept through the extended life of your program. Contact VersaLogic today to learn more.

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