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- Intel® Atom™ processor
  - D425 (single core) or
  - D525 (dual core)
- Industrial temp. versions
- Shock & vibe per MIL-STD-202G
- Fanless versions
- High-performance video
- Gigabit Ethernet (2 ports)
- DDR3 RAM (up to 2 GB)

- USB 2.0 (6 ports)
- Serial I/O (4 ports)
- SATA (2 ports)
- Analog input (8 chan.)
- Analog output (4 chan.)
- Digital I/O (16 lines)
- PCIe Mini Card socket
- CompactFlash socket

Highlights

EPIC™ Form Factor
Industry-standard format with PC/104-*Plus* expansion.

Intel Atom D525 or D425 Processor
1.8 GHz performance. Single or dual core options.
Low power consumption.

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

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

High-performance Video
Graphics core supports DirectX 9c, OpenGL 1.5, and MPEG-2 decoding. Analog and LVDS flat panel outputs.

Network
Dual GbE with remote boot support.

Analog + Digital I/O
On-board data acquisition. Eight analog inputs, four analog outputs, sixteen digital I/O lines, two timers.

RAM
Up to 2 GB DDR3 RAM.

USB
Six USB ports support keyboard, mouse, and other devices.

SATA
Supports bootable SATA hard drive and mSATA flash storage options.

PCIe Mini Card Socket
Supports Wi-Fi modems, GPS receivers, MIL-STD-1553, solid-state storage, and other plug-in devices.

Flash Memory
CompactFlash socket, eUSB interface, and PCIe Mini Card socket with mSATA support for plug-in flash storage.

Device I/O
Four serial ports and HD audio.

SPX Expansion
Add low cost analog, digital, and CANbus modules.

Overview

The Iguana is a low-power / high-performance single board computer (SBC) with extensive on-board I/O. Driven by an Intel Atom D525 or D425 processor, the Iguana provides 1.8 GHz performance with dual- and single-core options. Based on the industry-standard EPIC form factor (4.5 x 6.5 inches), this SBC is an excellent solution for embedded applications with substantial I/O requirements.

As with all VersaLogic products, the Iguana 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 Iguana provides a durable embedded computer solution with an excellent cost of ownership. The Iguana is manufactured to IPC-A-610 Class 2 standards and is fully RoHS compliant.

Details

Driven by an Intel Atom D525 (dual core) or D425 (single core) processor, the Iguana provides 1.8 GHz performance with low power consumption (9–13W typical). Enhanced low-power states allow designers to further minimize overall power consumption.

The integrated Intel GMA 3150 graphics core supports DirectX 9c, OpenGL 1.5, MPEG-2 decoding, and adaptive interlacing. A single-channel LVDS flat panel interface and an analog VGA video interface support Extended Desktop, Clone, and Twin display modes. An optional adapter converts LVDS output to VGA for dual VGA operation.

Basic on-board features include dual Gigabit Ethernet with network boot capability, up to 2 GB DDR3 RAM, six USB host ports, four serial ports, SATA interface with support for two devices, and HD audio. Removable flash storage is provided via CompactFlash socket, eUSB interface, and a PCI Express Mini Card socket with mSATA support.

On-board data acquisition features include eight analog inputs, four analog outputs, sixteen digital I/O lines, and two general purpose timers. An industry-standard PC/104-*Plus* expansion site provides plug-in access to off-the-shelf expansion modules from numerous vendors. The PCI Express Mini Card socket accommodates plug-in Wi-Fi modems, GPS receivers, MIL-STD-1553, solid-state storage, and other plug-in devices. The SPX expansion interface provides low-cost plug-in expansion for additional analog, digital, and CANbus I/O.

Available in both standard (0º to +60ºC) and full industrial temperature (-40º to +85ºC) versions, the rugged Iguana board meets MIL-STD-202G specifications for mechanical shock and vibration. Optional latching Ethernet connectors provide additional ruggedization for use in extremely harsh environments. Transient voltage suppression (TVS) devices on critical I/O ports provide enhanced electrostatic discharge (ESD) protection for the system.

The Iguana features an American Megatrends (AMI) UEFI BIOS with OEM enhancements. The field-reprogrammable BIOS supports custom defaults, USB booting, and other application functions. Iguana is compatible with a variety of popular x86 operating systems including Windows, Windows Embedded, Linux, VxWorks, and QNX.

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RoHS ✓

Product customization is available, even in low OEM quantities. Customization options include latching Ethernet headers, pass-through PCI and ISA connectors, three 8254 Programmable Interval Timers, conformal coating, revision locks, custom labeling, customized testing and screening, etc.

Ordering Information

Model	Processor	Cores	Speed	Operating Temp.	Cooling
VL-EPIC-25SA	Atom D425	Single	1.8 GHz	0° to +60°C	Heatsink (fanless)
VL-EPIC-25SB	Atom D525	Dual	1.8 GHz	0° to +60°C	Heatsink (fanless)
VL-EPIC-25EA	Atom D425	Single	1.8 GHz	-40° to +85°C	Fan
VL-EPIC-25RA*	Atom D425	Single	1.8 GHz	-40° to +85°C	Fan
VL-EPIC-25RB*	Atom D525	Dual	1.8 GHz	-40° to +85°C	Fan

* Special order. Ruggedized Ethernet connectors.

Accessories

Part Number	Description
Cable Kit	
VL-CKR-IGUA	Development cable kit
VL-CBR-5013	System I/O paddleboard
VL-CBR-4004	Paddleboards for analog and digital I/O
VL-CBR-2022	ATX power adapter cable
VL-CBR-1201	12-pin 2 mm (latching) / 15-pin VGA adapter
VL-CBR-0702	19.75" SATA cable (latching)
VL-CBR-0401	6.25" ATX to SATA power adapter
VL-HDW-105 (x2)	0.6" standoff package (metric thread)
Cables	
VL-CBR-0201	Wi-Fi antenna interface cable
VL-CBR-0701	19.75" SATA cable
VL-CBR-0804	12" Ethernet adapter (latching)
VL-CBR-1401	Cable assembly for (2) SPX modules
VL-CBR-1402	Cable assembly for (4) SPX modules
VL-CBR-2010	20" 18-bit LVDS flat panel (Hirose)
VL-CBR-2011	20" 18-bit LVDS flat panel (JAE)
VL-CBR-2014	LVDS to VGA adapter board
Memory	
VL-MM7-xxxx	DDR3 SDRAM module
SSD	
VL-CFM-xxx	CompactFlash module (IDE)
VL-F15-xxxx	eUSB module (USB)
VL-F29-xxxx	mSATA module (SATA)
Drives	
VL-HDS35-xxx	3.5" hard drive (SATA)
Expansion Modules	
VL-SPX-x	SPX expansion module
PCIe Mini Cards	
VL-WD10-CBN	802.11g/n Wi-Fi transceiver module
Development	
VL-ENCL-5x	Development enclosure
VL-PS200-ATX	200W ATX-style development power supply
Hardware	
VL-HDW-106	0.6" standoff package (English thread)
VL-HDW-107	PCIe Mini Card / mSATA hardware kit (metric thread)
VL-HDW-109	eUSB hardware kit
Miscellaneous	
VL-CBR-ANT-01	802.11n Wi-Fi antenna
VL-CF-CLIP1	CompactFlash retention clip
VL-HDW-201	PC/104™ board extraction tool

† Power specifications represent operation at +25°C with +5V supply running Windows XP with 2 GB RAM, LVDS display, SATA, GbE, and USB keyboard/mouse. Typical power computed as the mean value of Idle and Maximum power specifications. Maximum power is measured with 95% CPU utilization.

‡ TVS protected port (enhanced ESD protection)

§ Power pins on this port are overload protected

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Specifications

General	Board Size	EPIC standard: 115 mm x 165 mm (4.5" x 6.5")
	Processor	Intel Atom D425 (single core) or D525 (dual core). 512K L2 cache per core.
	Chipset	Intel 82801HBM ICH8 Mobile (ICH8M)

	Power Requirements (+5V)†	Model	Idle	Typical	Max.	S3
		VL-EPIC-25SA	8.4W	9.1W	9.7W	0.8W
		VL-EPIC-25SB	10.4W	11.7W	12.9W	0.8W
		VL-EPIC-25EA / RA	9.4W	10.1W	10.7W	0.8W
		VL-EPIC-25RB	11.4W	12.7W	13.9W	0.8W

	System Reset & Hardware Monitors	Major voltage rails monitored. Watchdog timer with programmable timeout. CPU temperature and fan speed monitoring. Push-button reset and power.
	Stackable Bus	PC/104-*Plus*: PCI, ISA
	Manufacturing Standards	IPC-A-610 Class 2 compliant
	RoHS	RoHS (2002/95/CE) compliant
Environmental	Operating Temperature	*See Ordering Information*
	Storage Temperature	-40° to +85°C
	Cooling	*See Ordering Information*
	Airflow Requirements	None (free air within operating temperature range)
	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
Memory	System RAM	One SO-DIMM socket. Up to 2 GB DDR3 SDRAM. 800 MT/s (400 MHz clock).
Video	General	Integrated high-performance video. Intel GMA 3150 graphics core supports DirectX 9c, OpenGL 1.5, MPEG-2 decode, and adaptive interlacing. Analog and LVDS flat panel video interfaces support Extended Desktop, Clone, and Twin display modes. Optional video adapter card converts LVDS output to VGA for dual VGA operation.
	VRAM	Up to 224 MB shared DRAM
	Desktop Display Interface ‡	Standard analog output (VGA). 24-bit. Up to 2048 x 1536 (60 Hz).
	OEM Flat Panel Interface §	Single-channel LVDS interface. 18-bit. Up to 1366 x 768 (60 Hz). CMOS-selectable TFT panel types.
Mass Storage	Rotating Drive	Two SATA (Revision 2.0) ports. Latching SATA connectors.
	Flash/SSD	eUSB (USB signaling)
		CompactFlash (IDE signaling)
		mSATA (SATA signaling)

Network Interface	Ethernet ‡	Two autodetect 10BaseT/100BaseTX/1000BaseT ports. On-board status LEDs and external LED header. IEEE 1588 Precision Time Protocol (PTP) compatible.	
		Standard	RJ45 connectors
		Special Order	Latching headers
	Network Boot Option	Via BIOS extension	

Device I/O	USB ‡ §	Six host USB 2.0 ports	
	COM 1 / 2 / 3 / 4 Interface ‡	RS-232/422/485 selectable. 16C550 compatible. 460 Kbps.	
	Analog Input	Eight channels. 12-bit. Single-ended. 100 Ksps. Per-channel input ranges of 0 to +5V, ±5V, 0 to +10V, and ±10V.	
	Analog Output	Four channels. 12-bit. Single-ended. 100 Ksps. 0 to +4.096V.	
	Digital I/O	Sixteen TTL I/O lines (3.3V). Independently configurable.	
	Audio	Intel High-Definition Audio (HDA)	
	Counter / Timers	Standard	Two general-purpose 16-bit timers
		Custom	Three 8254 Programmable Interval Timers

Other I/O	PCIe Mini Card Socket	Supports Wi-Fi modems, GPS receivers, non-volatile flash data storage with auto-detect mSATA support, and other plug-in modules
	VersaLogic SPX Interface	Add low cost analog, digital, and CANbus modules
Software	BIOS	American Megatrends (AMI) UEFI BIOS with OEM enhancements. Field reprogrammable. Support for USB keyboard/mouse and USB boot. User-configurable CMOS defaults.
	Sleep Mode	ACPI 3.0. Support for S0, S3 and S4 suspend states and C1 processor state.
	Operating Systems	Compatible with most x86 operating systems including Windows, Windows Embedded, Linux, VxWorks, and QNX