![Chipsmall logo]

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!
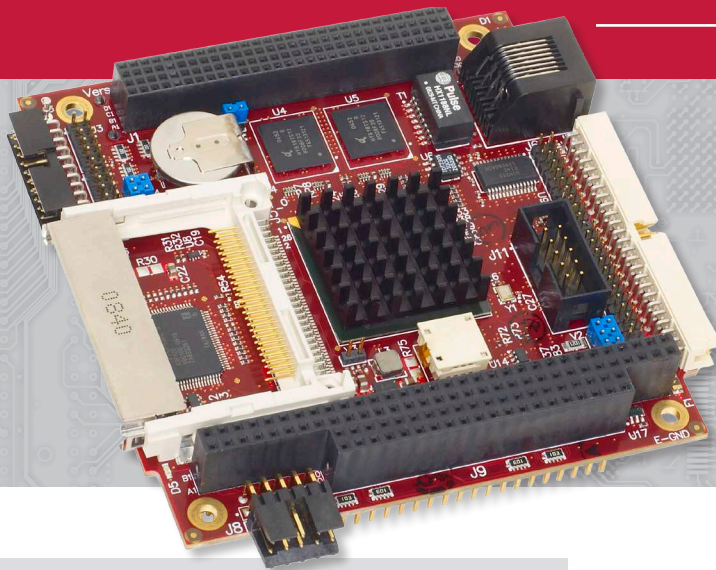

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- DMP Vortex86DX processor
- IDE interface
- Very low power consumption
- CompactFlash® socket
- Fast Ethernet
- Fanless operation
- Up to 512 MB soldered-on RAM
- Extended temp. version
- USB 2.0 (2 ports)
- MIL-STD-202G shock/vibe
- Serial I/O (4 ports)

Highlights

PC/104-*Plus* Form Factor
Supports PCI and ISA expansion on a highly rugged format.

Vortex86DX Processor
800 MHz performance with ultra-low power consumption.

Network Support
Fast Ethernet with remote boot support.

System RAM
Up to 512 MB soldered-on RAM for harsh environments.

USB I/O
Two USB 2.0 ports support keyboard, mouse, and other devices.

Device I/O
Four serial ports, IDE, and LPT.

Flash Memory
CompactFlash socket for solid-state storage.

Fanless Operation
No moving parts required for CPU cooling.

Extended Temperature Version
-40º to +85ºC operation for harsh environments.

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

Overview

The Tomcat single board computer features the ultra-low power DMP Vortex86DX processor. Based on the PC/104-*Plus* industry standard form factor, the Tomcat supports PCI and ISA stackable expansion boards. With mid-range performance (800 MHz) and ultra-low power consumption (3.1W typ.), the Tomcat is well suited to size, weight, and power constrained applications. With no moving parts (fanless operation), full industrial temperature rating, soldered-on RAM, and a compact rugged form factor, it is ideal for operation in harsh, mobile, and/or remote environments.

The Tomcat is "headless". It is designed for applications that do not require any type of video output.

Like all VersaLogic products, the Tomcat 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 Tomcat provides a durable embedded computer solution with an excellent cost of ownership. The Tomcat is manufactured and tested to the highest quality standards and is fully RoHS compliant. Customization is available, even in low OEM quantities.

Details

Driven by a DMP Vortex86DX processor, the Tomcat runs at 800 MHz. The 32-bit CPU integrates memory and I/O controller hub functions to provide an x86-compatible single-chip solution with ultra-low power consumption.

Tomcat's standard on-board features include Fast Ethernet, up to 512 MB soldered-on DDR2 RAM, two USB 2.0 ports, four serial ports, IDE and LPT interfaces, a CompactFlash socket for removable flash storage, and two general purpose timers. The PC/104-*Plus* platform provides plug-in access to industry standard expansion modules. Support for keyboard and mouse is provided via USB or PS/2.

Available in both commercial (0° to +70°C) and industrial (-40° to +85°C) temperature versions; the Tomcat provides fanless operation and meets MIL-STD-202G specifications for shock and vibration. Transient voltage suppression (TVS) devices on critical I/O ports provide enhanced electrostatic discharge (ESD) protection for the system.

The Tomcat is compatible with a variety of x86 operating systems including Windows, Windows Embedded, Linux, VxWorks, and QNX.
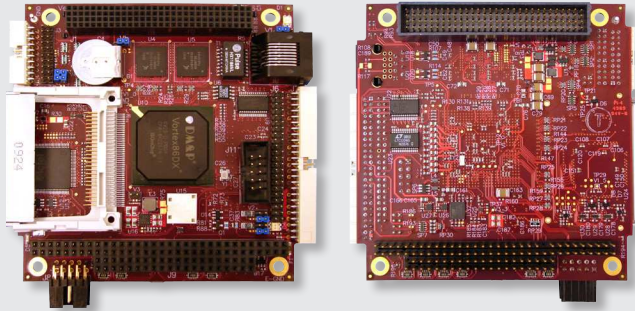
VL-EPM-16S (Top)

VL-EPM-16S (Bottom)

Ordering Information

Model	Processor	Speed	RAM	Operating Temp.	Cooling
VL-EPM-16V	Vortex86DX	800 MHz	256 MB	0° to +70°C	None
VL-EPM-16F	Vortex86DX	800 MHz	256 MB	-40° to +85°C	Heatsink
VL-EPM-16S	Vortex86DX	800 MHz	128 MB	0° to +70°C	None
VL-EPM-16E	Vortex86DX	800 MHz	128 MB	-40° to +85°C	Heatsink

Accessories

Tomcat Cable Kit (VL-CKR-TOMC)

VL-CBR-1008	ATX to 10-pin power connector cable
VL-CBR-1013	Dual USB transition cable
VL-CBR-2003	12" 20-pin 2 mm / DB-25F LPT cable
VL-CBR-4405	2 mm to 0.1" IDE adapter board
VL-CBR-4406	18" 44-pin latching IDE cable
VL-CBR-5009	Front panel I/O cable assembly
VL-HDW-105	0.6" standoff package (metric thread)

Accessories

VL-EPM-V7E	Video Expansion Module: VGA and LVDS, Industrial Temp.
VL-EPM-P2E	Mini PCIe socket x2 Adapter, Industrial Temp.
VL-CF-CLIP1	Retention clip for CompactFlash
VL-CFM-xxx	CompactFlash module
VL-ENCL-5C	Development enclosure
VL-HDD35-xx	3.5" IDE hard disk drive
VL-HDW-106	0.6" standoff package (English thread)
VL-HDW-203	PC/104 extractor tool, metal
VL-PS200-ATX	Development power supply

SPECIFICATIONS

General	Board Size	PC/104-*Plus* compliant: 95 mm x 96 mm (3.76" x 3.78")
	Processor	DMP Vortex86DX. 256 KB L2 cache.
	Power Requirements[a]	(see table below)
	System Reset & Hardware Monitors	Watchdog with programmable timeout. V_{CC} sensing (resets below 4.63V typ.).
	Stackable Bus	PC/104-*Plus*: PCI, ISA
	RoHS	Compliant

Power Requirements[a]:

Model	Idle	Typical[b]	Max[c]
VL-EPM-16V/F	0.54A (2.7W)	0.60A (3.0W)	0.65A (3.3W)
VL-EPM-16S/E	0.56A (2.8W)	0.61A (3.1W)	0.66A (3.3W)

Environmental	Operating Temperature	(see table below)
	Storage Temperature	-40° to +85°C
	Airflow Requirements	Free air from -40° to +85°C
	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

Operating Temperature:

Model	Operating Temperature
VL-EPM-16V/S	0° to +70°C
VL-EPM-16F/E	-40° to +85°C

Memory	System RAM	Up to 512 MB soldered-on DDR2 SDRAM
Video	Interface	None. Use VL-EPM-V7 module or similar during development.
Mass Storage	Hard Drive	ATA/66 IDE interface. 44-pin 2 mm connector.
	Flash	One CompactFlash socket (Type II) with DMA. Optional latching retention clip available.
Network Interface	Ethernet[d]	One autodetect 10BaseT/100BaseTX port
	Network Boot Option	Via BIOS extension
Device I/O	USB[d/e]	Two USB 2.0/1.1 ports
	COM 1/2 Interface[e]	RS-232. 16C550 compatible. 115 Kbps.
	COM 3/4 Interface[e]	RS-232/422/485 selectable. 16C550 compatible. 115 Kbps.
	LPT Interface	SPP/EPP/ECP compatible
	Counter/Timers	Two general-purpose timer inputs
	Other	PS/2 keyboard and mouse
Software	BIOS	AMI BIOS. Field reprogrammable. Support for USB keyboard/mouse and USB boot.
	Operating Systems	Compatible with most x86 operating systems, including Windows, Windows Embedded, Linux, VxWorks, and QNX

[a] All power specifications represent operation at +25°C with +5V supply running Windows XP with Ethernet, keyboard, and mouse. [b] Typical power computed as the mean value of Idle and Maximum power specifications. [c] Maximum power as measured with 95% CPU utilization. [d] TVS protected port (enhanced ESD protection). [e] Power pins on this port are overload protected.

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12/04/14