



- Low Power AMD GX 500 processor
- High speed DDR RAM
- PC-style connectors
- PC/104-Plus expansion
- Mid-sized EPIC form factor
- Standard and extended temp. models

## Highlights

### EPIC Form Factor

Mid-sized. Multi-vendor support.

### GX 500 Processor

Equivalent 500 MHz performance with lower power draw.

### DDR RAM

Supports up to 512 MB double data-rate RAM. 64-bit data path.

### High Performance Video

Analog and LVDS flat panel outputs for 18 and 24-bit video displays.

### Full SBC I/O

On-board sound, 10/100 Ethernet, 4 USB ports, 4 COM ports (two RS-232 and two RS-422/485), IDE interface.

### ESD Protection

Built-in Transient Voltage Suppressor (TVS) devices provide enhanced ESD protection for keyboard, mouse, USB, Ethernet, and other external I/O lines.

### Analog Inputs

On-board A/D provides eight 12-bit input channels.

### Real-world Connectors

Standard PC-style connectors simplify cabling and lowers costs in many applications.

### Digital I/O

Sixteen line TTL I/O port reduces need for I/O expansion.

### CompactFlash Socket

Removable storage device has no moving parts.

### Fanless Operation

No moving parts required for CPU cooling.

### Watchdog Timer

Provides hardware-level safety control for application run-away conditions.

### Embedded BIOS

OEM embedded features. Field-upgradable, customization available.

## Overview

The Gecko is an efficient mid-sized SBC with an excellent balance of outstanding performance, low power consumption, and a complete set of on-board features. This compact board features a highly reliable design to support OEM applications where long-term availability is required. The Gecko is designed around the advanced AMD GX 500 CPU. This highly integrated processor features fanless operation and very low power consumption (one watt!). The GX 500 sets new standards for efficiency. Its advanced architecture delivers throughput equivalent to 500 MHz processors, yet it operates at less than half of the power consumption. It provides excellent performance, such as extremely fast on-board transfers (6 GB per second), fast DDR memory access, and integrated high-performance video. The Gecko is available in both standard and extended temperature versions.

The Gecko complements the GX 500 with a full range of on-board I/O devices, to form a complete, highly effective single board computer. Based on the EPIC form factor, the Gecko offers a compact, cost-effective solution for developers who require a mid-range platform (sized between EBX and PC/104).

Like all VersaLogic products, the Gecko is designed from day one for high reliability and long-term availability. From initial application design to 5+ years of production, its quality and longevity provide a cost-effective, long-term solution. The Gecko is manufactured to the highest quality standards, and is backed with VersaLogic's excellent (award winning) support. Product customization is available in quantities as low as 100 pieces.

## Details

The Gecko's extensive on-board features support a wide range of applications. In addition to the standard AT-style peripherals (PS/2 mouse and keyboard), it includes 4 USB ports, 10/100 Ethernet with Boot ROM support, 4 COM ports (RS-232 and RS-422), LPT, 16-line TTL user I/O port, and eight 12-bit analog input channels. The Gecko combines the advantages of PC-style connectors, with OEM embedded features such as high-reliability design and a PC/104-Plus expansion site. The Gecko's standard PC architecture is compatible with desktop systems and PC software, making it easy to integrate into a wide variety of applications.

The Gecko includes several features for enhanced application reliability. These include Transient Voltage Suppression (TVS) devices to help protect the board from external static discharges. TVS protection is included on the keyboard, mouse, Ethernet, USB, COM, and LPT ports. A programmable watchdog timer controls application run-away conditions and resets the system

in the event of a serious malfunction. A self-resetting fuse on the 5V power to the keyboard, mouse, USB, and LVDS ports protects the board from cable or connector shorts.

For moderate I/O expansion, the Gecko supports PC/104 and PC/104-Plus plug-in modules. For more extensive OEM I/O requirements, a Gecko version is available with PC/104 connectors that extend through and below the board. This allows the Gecko to be plugged into a user baseboard to drive specialized I/O subsystems. Custom I/O boards of this type can be as large, or larger than the Gecko without creating any mounting challenges.

The Gecko includes General Software's Embedded BIOS with OEM enhancements. This field-reprogrammable BIOS supports custom defaults and the addition of managed boot agent firmware to allow network booting. The Gecko is compatible with a variety of popular operating systems, including Windows, QNX, VxWorks and Linux.



### Ordering Information

EPIC-2b..... AMD GX 500, 500 MHz (equivalent)  
 EPIC-2e..... AMD GX 500, 450 MHz (equivalent), extended temp.

### Accessories

VL-CBR-1007\*..... Video interface cable (RoHS)  
 VL-CBR-2010..... LVDS cable, HIROSE style (RoHS)  
 VL-CBR-2011..... LVDS cable, JAE style (RoHS)  
 VL-CBR-2022\*..... Power adapter cable (RoHS)  
 VL-CBR-2501\*..... Floppy interface cable (RoHS)  
 VL-CBL-4004\*..... Digital and analog I/O breakout cable  
 VL-CBR-4404\*..... 2 mm IDE interface cable (RoHS)  
 VL-CBR-4405\*..... 2 mm to 0.1" IDE adapter (RoHS)  
 VL-CDD-IDE1..... CR-RW, DVD-ROM drive  
 VL-CFM-xxx..... CompactFlash Module  
 VL-CF-CLIP1..... CompactFlash retention clip  
 VL-CKT-GECKO..... Development cable kit  
 VL-ENCL-5..... Development enclosure  
 VL-FDD-144..... 3.5" Floppy drive  
 VL-HDD35-xx..... 3.5" IDE hard disk drive  
 VL-HDW-101\*..... Metric standoff package  
 VL-HDW-201..... PC/104 extractor tool  
 VL-MM5D-xxx..... DDR RAM module (512MB max)  
 VL-PS-200-ATX..... Development power supply  
 VL-DEV-CD-L3..... Debian Linux Board Support Package

\* Included in VL-CKT-GECKO cable kit  
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### Specifications

Specifications		
<b>General</b>	Processor	AMD GX 500
	Chipset	AMD Geode CS5535
	Power Requirements	+5.0V ±5% @ 1A (5W) typ.
	System Reset	Watchdog timeout. VCC sensing (resets below 4.70V typ.)
	Compatibility	EPIC: Fully compatible. PC/104-Plus: Supports 3.3V PCI signaling (2.2 compliant).
<b>Mechanical</b>	Board Size	4.5" x 6.5" (115 mm x 165 mm)
	Storage Temperature	-40° to +85°C
	Operating Temperature	0° to +60°C (EPIC-2b, c) -40° to +85°C (EPIC-2e)
	Humidity	Less than 95%, noncondensing
<b>Memory</b>	System RAM Interface	One SODIMM socket. Up to 512 MB of DDR PC2100 or PC2700 RAM.
	Flash Interface	High retention CompactFlash socket. Type I or II supported.
<b>Video</b>	General	Integrated high-performance video. Up to 1280x1024 with 24-bit color. MMX™ + 3DNow!™
	Desktop Display Interface	Standard analog output. 2 mm IDC connector.
	OEM Flat Panel Interface †	18/24 bit LVDS interface. CMOS-selectable TFT panel types.
<b>Network Interface</b>	Ethernet*	Autodetect 10BaseT/100BaseTX port. Right angle connector.
	Network Boot Option	Argon Managed Boot Agent. Supports PXE, RPL, NetWare, TCP/IP (DHCP, BOOTP) remote boot protocols.
<b>Device I/O</b>	USB* †	Four USB 1.1 ports.
	IDE Interface	ATA-5, UDMA66 interface. 44-pin 2 mm connector.
	COM 1 & 2 Interface*	RS 232 compatible. Standard PC serial connector.
	COM 3 & 4 Interface*	RS 422/485 selectable.
	LPT Interface*	Standard PC parallel port and connector.
	Digital I/O	16 line TTL I/O port. 2 lines routable to IRQs via CMOS options. IDC connector.
	Analog I/O	8-channel, 0 to +4.095V 12 bit 75K samples/sec A/D with interrupt capability. IDC connector.
	Floppy	Supported via LPT connector.
	Audio	AC'97 stereo line in, stereo line out.
	AT Peripherals* †	PS/2 keyboard and mouse port.
<b>Software</b>	Operating Systems	Compatible with most X86 operating systems, including Win98/NT/CE/XP, QNX, VxWorks, and Linux.
	BIOS	General Software's Embedded BIOS with OEM Enhancements. Field reprogrammable. User configurable CMOS defaults.

\*TVS protected port (Enhanced ESD protection).

† Power pins on this port are protected with a self-resetting fuse.

Data represents standard operation at 25°C with 5.0V supply unless otherwise noted. Specifications are subject to change without notice. PC/104 is a trademark of the PC/104 Consortium.