

Bus Interface

- **VMEbus**
 - VME64 architecture with 64-bit data path, 32-bit addressing and 7 bus interrupts
 - Operates in Master or Slave Mode (Compliance Level: D64A32(7))
 - 64-bit and 32-bit wide block transfers using local DMA capability
 - Uses Newbridge SCV64 interface IC
 - 58 Mbytes/sec peak master VME read rate

 - **Mailbox interrupts**
 - Allows remote control of Laguna via specified VMEbus addresses
 - CPU interrupt and VMEbus lock functions supported

 - **I/O bus**
 - Connects all 8-bit board peripherals such as real-time clock, serial ports, timers, counters, and display drivers
 - Minimizes loading on local bus
 - Endian independent
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Processor & Memory

- **IDT R4600**
- Operates at 133 MHz
- True 64-bit RISC processor
- 5-stage instruction pipeline
- 16 KB instruction cache / 16 KB data cache
- Floating point unit on-chip
- Instruction set fully compatible with R4000 processor family
- 92 SPECint92 @ 133 MHz
- 82 SPECfp92 @ 133 MHz

- **Random Access Memory**
- 16 or 64 Mbytes DRAM on-card
- 16 or 64 Mbytes DRAM on mezzanine
- Memory options available: 16, 32, 64, 128 Mbytes
- 2 bank interleaved architecture with parity

- **Read Only Memory**
- Two 44-pin PLCC EPROM sockets
- Up to 1 Mbyte capacity
- Provides boot code storage

- **Flash Memory**
 - 2 Mbytes flash memory on-board
 - Board can be booted from flash memory
 - Provides field upgradeable non-volatile program storage

 - **Timers/Counters**
 - Three 16-bit timer/counters
 - Interrupt capability

 - **Real-Time Clock**
 - DS1386 battery backed real-time clock
 - Watchdog timer providing interrupt resolution of 0.01 seconds to 99.9 seconds
 - 32 Kbytes of NVRAM
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Peripheral I/O

- **Ethernet Interface**
 - Intel 82596DX 32-bit LAN coprocessor
 - On-chip DMA and memory management
 - On-chip FIFOs
 - Conforms to IEEE 802.3

 - **Small Computer Systems Interface (SCSI)**
 - NCR 53C720 SCSI I/O processor
 - ANSI compatible SCSI 2 (fast & wide) permitting connection of up to fifteen additional independent, compatible I/O controllers
 - 8 or 16-bit single ended I/O
 - Supports variable block size and scatter/gather data transfers
 - Supports 32-bit word data bursts with variable burst lengths
 - Full 32-bit on-chip DMA to speed up memory-to-I/O transfers without host CPU intervention
 - 20 Mbytes/sec 16-bit synchronous performance
 - 10 Mbytes/sec 8-bit synchronous transfers
 - High level programmer's interface (SCRIPTS™)
 - Low-level programmability

 - **Serial I/O**
 - Two front panel serial I/O ports provided via 85C30 controller
 - Multi-protocol data communications peripheral
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Software support

- Wind River Systems' VxWorks(TM) real-time operating system and development environment
 - IDT/sim on-board monitor and power-on diagnostics
 - Rational Software Ada
 - Green Hills compilers and tools
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- Multilayer with ground and VCC planes
 - Board size: 23.35 cm x 16.0 cm (9.19 in. x 6.3 in.)
 - Estimated power requirements: +5VDC @ 5A, +-12VDC @ 0.1A
 - Storage Temperature: -40C to 85C
 - Operating range: 0-55C, 85% relative humidity (non-condensing)

 - **Front Panel**
 - SCSI, Ethernet, and serial connectors
 - User programmable 7 segment display
 - Reset / Interrupt switch
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Target Applications

- Video on demand
 - Graphics-oriented applications such as simulation, image processing and printing
 - Data acquisition
 - Machine vision
 - Embedded control
 - Communications system control
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