

Alpha 21164 Microprocessor Evaluation Board

Product Brief

October 1995



Description

The Alpha 21164 Microprocessor Evaluation Board (EB164) is the highest performance evaluation and development board available in the marketplace today. As a motherboard design, the EB164 provides an easy solution for companies interested in delivering the highest performance PCs in the industry. The EB164 evaluation board enables companies to offer high-performance alternatives to their current x86 or RISC platforms.

Hardware Features

- Alpha 21164 Microprocessor running at 266 MHz. The EB164 also supports the 21164 at 300 MHz and 333 MHz.
- DECchip 21171 PCI Core Logic Chipset interfaces to the CPU, system memory, L3 cache, and PCI bus.
- DRAM memory subsystem includes:
 - 256-bit data bus
 - 32MB-to-512MB memory
 - Commodity 36-bit SIMMs
- L3 cache subsystem supports:
 - 128-bit data path
 - 2, 4, or 8MB cache sizes supported
 - Multiple speed SRAMs supported for all cache sizes
- PCI bus support:
 - 32- and 64-bit PCI supported
 - Selectable PCI speed between 25 MHz and 33 MHz
- PCI-to-ISA bridge through an Intel 82378ZB Saturn I/O chip
- Three dedicated PCI slots (one 64-bit and two 32-bit)
- One shared PCI/ISA slot
- ISA provides an expansion bus and the following system support functions:
 - Two dedicated ISA expansion slots plus one shared ISA/PCI slot
 - Mouse and keyboard controller functions provided through an Intel 8242 chip
 - National 87312 combination controller chip provides IDE and diskette control, two UARTs with modem control, and a parallel port
 - DS1287 chip provides time-of-year (TOY) function
 - 1MB flash ROM using an Intel 28F008SA chip

Software Features

- Onboard firmware with the following functions:
 - A Xilinx XC17128 serial read-only memory (SRAM) performs minimum system configuration and loads the next level of firmware.
 - Debug monitor supports both local assembler-level and remote source-level software debug.
- Windows NT ARC firmware supports installation of Windows NT 3.51 (Windows NT operating system purchased separately).





Applications

The EB164 allows motherboard manufacturers and PC companies immediate opportunities with the highest performance systems in the marketplace. Opportunities exist today in CAD, financial analysis, database manipulation, virtual reality, special effects, and so on—anyplace where the user waits for a response from their system.

Evaluation Board Kit Contents

Hardware

- A complete Alpha motherboard that features:
 - Alpha 21164 266-MHz microprocessor
 - 2MB, 10-ns L3 board cache
 - 64MB system memory
 - Three PCI expansion slots
 - Two ISA expansion slots
 - One shared PCI/ISA expansion slot
- Evaluation Board Accessories Kit
 - Includes cables, peripherals, and other accessories to enable setup of the evaluation board in a workbench or lab environment
 - Requires other components to build a complete PC system

Software and Documentation

- Evaluation board user's guide
- Alpha 21164 and DECchip 21171 chip documentation
- Circuit schematics and board artwork
- Circuit design database compatible with Viewlogic Powerview 5.2
- Hardware design application notes
- Evaluation board software developer's kit CD-ROM, which provides the base software for debug of new hardware platforms based on the EB164:
 - Source code and tools for software development, including power-up serial ROM, example PALcode, debug monitor, and sample programs
 - Development tools supported on Alpha host systems that run Digital UNIX or Windows NT
- Windows NT Installation Diskette, which contains EB164 HAL and setup files to install a copy of Windows NT 3.51 on the evaluation board. This kit does not include the Windows NT 3.51 operating system.

For More Information

To learn more about the availability of the Alpha 21164 Microprocessor, the DECchip 21171 Core Logic Chipset, and the EB164 Evaluation Board, contact your local semiconductor distributor. To learn more about our product portfolio, contact the Digital Semiconductor Information Line:

1-800-332-2717

From outside North America, call:

+1-508-628-4760

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EB164 Characteristics	
Characteristic	Specification
Power supply	Standard 3.3-V PC power supply
Operating temperature range	10°C to 40°C (50°F to 104°F)
Storage temperature range	-55°C to 125°C (-67°F to 257°F)
Packaging	33.15 cm x 30.73 cm (13.05 in x 12.1 in)