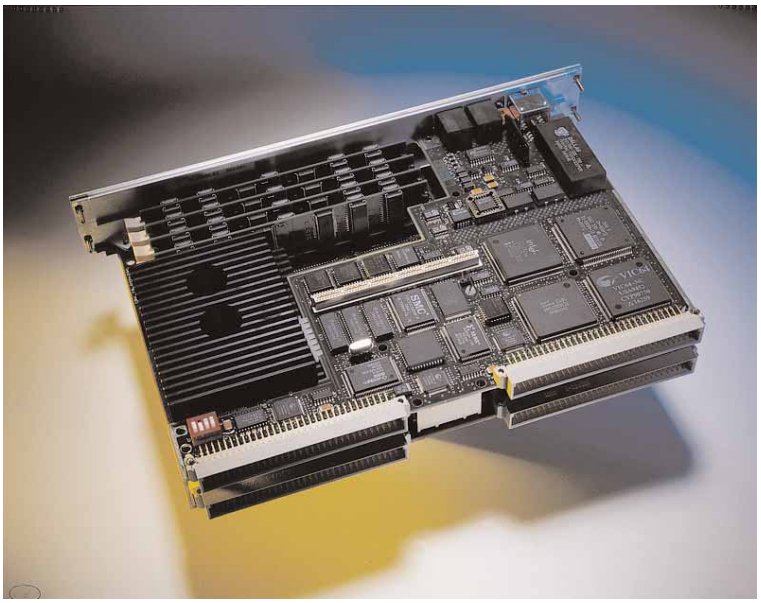
# Alpha VME 5/480 SBC

DATASHEET



*Ultra fast dual-slot 6U VME single board computer*

## Features

- Dual-slot 6U VME
- SPECint95: 13.6, SPECfp95: 15.2
- 2 MByte of onboard ECC protected L3 cache, operating at 700 MByte/sec
- 16 MByte to 512 MByte DRAM, ECC protected, autoconfiguration for 128-bit or 256-bit data bus
- Full 32-bit VMEbus master/slave interface with VME64 and DMA capability
- Onboard Ethernet and SCSI controllers
- 4 MByte Flash memory
- Two serial ports, 3 16-bit timers, a watchdog timer, a time-of-year clock, and 32 KByte NVRAM
- Optional PMC I/O companion card that provides two PMC slots and front panel keyboard/mouse connect
- Tru64 UNIX and VxWorks for Alpha operating system support

## Highlights

This new ultra-fast board computer based on the 21164 Alpha microprocessor achieves unprecedented performance for VME applications  With up to 1.9 billion operations per second, it is sure to satisfy the most demanding customers in mission-critical applications such as aerospace/defense, medical imaging, and telecommunications.

The 21164 microprocessor and associated core logic feature more than double the SPECmark® performance and about three times the memory bandwidth over the previous generation board computers.

This AlphaPowered VME board computer utilizes the peripheral component interconnect (PCI) as the onboard bus for the interconnection of high-performance SCSI, Ethernet, and VME interfaces. It supports the IEEE® P1386.1 PCI mezzanine card (PMC) I/O option. It can accept two single-width or one double-width PMC card(s), and contains a keyboard, mouse, and parallel ports to facilitate turning your VME board computer into a VME workstation.

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# Alpha VME 5/480 SBC

SPECIFICATIONS

### Processor

- Alpha processor 21164A, 480 MHz
- SPECint95: 13.6, SPECfp95: 15.2
- 8/8 KByte L1, 96 KByte L2 cache, 2 MByte onboard L3 cache
- 16 to 512 MByte DRAM with ECC
- 4 MByte Flash Memory
- 32 KByte NVRAM

### Networking

- Alpha 21040 PCI Ethernet controller
- 10BaseT Ethernet

### Interfaces

- SCSI interface
- Serial interface, keyboard, mouse, parallel port
- PMC I/O companion card

### Clocks and Timers

- Real-time clock
- Three 16-bit timers
- Watchdog timer

### Operating systems

- Tru64 UNIX
- VxWorks for Alpha

### VME Specifications

- VMEbus interface ANSI/IEEE standard 1014-1987, supports extensions for 64-bit data transfers
- VMEbus transactions:
  Master: A32/24/16, D64/32/16/8
  Slave: A32/24/16, D64/32/16/8
  UAT, BLT, MBLT
- Arbitration: PRI, RRS, SGL, FAIR

### Physical Characteristics

- Size: Dual-height Eurocard format (6U)
  233 x 160 (9 x 6.25”), 8 TE (40.3 mm) wide
- Two or three VME slots
- PMC mezzanine card: 150 x 75 mm (5.9 x 2.95”)
- Breakout module: Dual-slot version

### Power requirements

- +5 Volts 11 A idle, 15 A peak
- +12 Volts 0.15 A
- -12 Volts < 0.15 A
- Dissipation (typ.): 60 W

### Environmentals

- Temperature (operating): 0°C to 50°C with forced air cooling
- Temperature (storage): -40°C to 66°C
- Temperature change: 20°C/h
- Relative humidity: 10% to 95% (non-condensing)

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