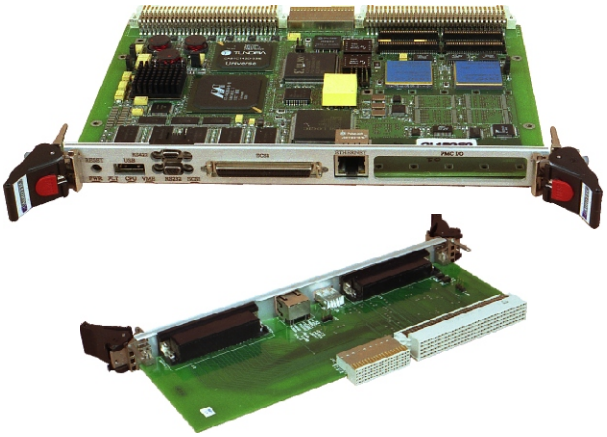
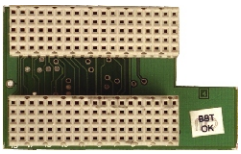
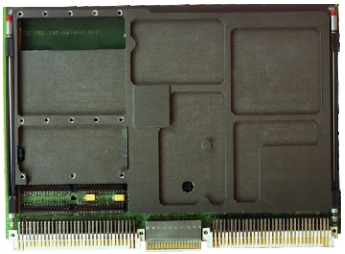
AT-VME-SBC-PPC750CXe

VME SBC With MultiProtocol Interface
Power PC 750Cxe with RT-Linux Support







- **VME 6U Single Slot SBC**
- **Compliant with VME64x Architecture**
- **Processor - PowerPC 750CXe from IBM**
- **Up to 256 KB L2 cache[1]**
- **Clock Frequency - 600 Mhz**
- **Available in two variants - Air-Cooled, Conduction Cooled**
- **Front and Rear I/O connectivity options[3]**
- **SDRAM Memory - Up to 512 MB**
- **User Flash Memory - Up to 32 MB**
- **Boot Flash Memory - Up to 8 MB**
- **Non-Volatile RAM - 32 KB**
- **1GB Nand Flash- Optional**
- **128MB Flash File- Optional**
- **Two 10/100 Ethernet interfaces**
- **Ultra SCSI interface**
- **Two USB 2.0 ports**
- **Two dual redundant MIL-STD-1553B channels- optional**
- **Two Multi-Protocol High Speed Synchronous serial ports (HDLC, SDLC, Bisync)**
- **Four serial UART ports**
- **16 Digital I/O channels**
- **One PMC slot**
- **Four on-board 32-bit counter/timers**
- **Real Time Clock & Watchdog Timer**
- **Linux, VxWorks and LynxOS available**

OVERVIEW

AT family of 6U VME 64x bus compatible Single Board Computers (SBC) are based on PowerPC processors from IBM. The SBC is fully compliant to ANSI/VITA 1.1-1997 VME64x standard. The AT-VME-SBC is a rugged single slot SBC powered by IBM's PowerPC 750CXe low power, high performance processor series, featuring state of the-art Reduced Instruction Set Computer (RISC) architecture. It offers superior computing power providing up to 256 KB of L2 cache1, up to 600 MHz of clock speed2, up to 512 MB of SDRAM with ECC Protection, 8 MB of Boot Flash, 32 MB of User Flash and 32 KB of NVRAM. There is also an option for providing 128 MB of High-Density Flash File for mass storage purposes. The AT-VME-SBC has its internal architecture based on two separate PCI buses, one operating at 66MHz and the other at 33MHz, allowing the separation of the slower PCI devices from the faster ones. This enables each of the PCI devices to operate at their maximum speeds. In addition to the high performance processor architecture, the SBC provides multi-protocol interfaces in the form of two dual redundant MILSTD- 1553B channels (available optionally), two high-speed synchronous serial ports, four standard UART serial ports and 16 digital I/O channels. The SBC also features a watchdog timer, Real Time Clock and comes equipped with one PMC module site.

PRODUCT SPECIFICATIONS

CPU

- Processor: One PowerPC 750CXe
- Clock Frequency: Up to 600 Mhz
- Cache: 256 KB of L2 cache1

Memory

- PowerPC System controller is GT-64260 controller from Marvell
- Global Memory: Up to 512 MB SDRAM
- ECC: Standard
- Boot Flash: 8 MB
- User Flash: 32 MB
- NVRAM: 32KB
- Flash File: Up to 128 MB (Optional)
- Nand Flash: Up to 1GB (Optional)

VME Interface

- Tundra UNIVERSE-II PCI-VME bridge controller
- VME64x backplane interface
- A32/A24/A16 master/slave
- 5 row connectors

PCI Interface

- PCI 32/64 bit
- 33 or 66 MHz selectable PCI frequency
- Fully compliant to PCI Specs- Rev 2.2

PMC Interface

- Compliant to IEEE 1386/1386.1- 2001
- One PMC slot
- I/O (P4) Signals are routed to VME P2 connector

I/O Interfaces

- 2 on-board dual redundant MIL-STD-1553B channels-Optional
- Ultra SCSI interface
- Two USB ports
- One PMC slot
- Two 10/100 Ethernet ports
- Two Synchronous serial buses
- One each of RS-232 and RS-422 serial ports- Front Panel
- Two serial ports programmable as RS-232/422- Rear I/O
- 16 TTL/CMOS voltage level digital I/O channels

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JTAG

- On-board JTAG interface to the processor for debugging and development purposes

Mechanical

- 6U VME 64x single slot interface
- Dimensions- 233.35mm x 160mm

Weight

- Air-Cooled version- 500 gm
- Conduction cooled version- 625 gm

Power

- Derived form +5.0V of VME64x backplane
- 3.3V, 2.5V, 1.8V are generated from on-board power circuitry
- 3.3V alternately derived from VME64x backplane
- Current consumption < 6.5A

Test And Diagnostic Software

- Boot software for initialization
- Monitor/Debugger tool
- BIT/POST software

Operating Systems

- RT-Linux (Kernel Ver 2.4) driver Support
- Compliant to POSIX standards

Environmental

	Air-Cooled	Conduction-Cooled
Operating Temperature	-20ºC to + 65ºC	-40ºC to + 85ºC
Storage Temperature	-40ºC to + 85ºC	-45ºC to + 100ºC

- The temperature range for conduction-cooled boards is the operating card edge temperature
- Meets MIL-STD-810F standards for temperature, shock, vibration etc
- Meets MIL-STD-461C Part-II standards for EMI/EMC

Ruggedization

- Series 'A': Air-Cooled Version - As per IEEE 1101.10
- Series 'R': Conduction-Cooled Version - As per IEEE 1101.2

Warranty

- 1 year limited warranty

ORDERING INFORMATION

Hardware Selection

a) AT-VME-2-2-SBC-750CXe-SDRAM-FLASH File-NAND Flash-1553- Ruggedization

- A = Air-Cooled Version
  R = Conduction-Cooled Version
- 0 = Without MIL-STD-1553B
  1 = With 1 dual redundant MIL-STD-1553B channel
  2 = With 2 dual redundant MIL-STD-1553B channels
- 0 = No Nand Flash Memory
  1 = With 1 GB Nand Flash Memory
- 0 = No Flash File Memory
  1 = With 128 MB Flash File Memory
- 1 = 128 MB
  2 = 256 MB
  3 = 512 MB

b) AT-VME-750-RTB

- Rear I/O Board

Software Selection

AT-VME-SBC-750CXe-BSP

- 1= RT-Linux BSP

- Contact sales for support for other Operating Systems
- Contact sales for configuration of front and rear I/O configuration
- Contact sales for environmental options

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