K2

PowerPC™ 750 Hot Swap CompactPCI®

Single Board Computers and CPUs

Features

- IBM PowerPC™ 750 to 500 MHz
- 1 MB IBM L2 cache
- IBM CPC710 dual bridge and memory controller
- 2 PMC expansion slots for T1/E1, HSSI, ATM, OC-3 or dual Ethernet functionality
- Full hot swap per PICMG 2.1 R1.0
- 128 MB to 1 GB SDRAM
- 2 to 16 MB flash memory
- 100 MHz system bus
- IDE interface
- 10BaseT/100BaseTX Ethernet
- Two serial ports
- Watchdog timer
- Autosensing System/non-System
- Software support for VxWorks® and Hard Hat™ Linux®

K2 is a high-performance, 6U CompactPCI® single board computer designed for use in a wide variety of computing applications like network switching and routing as well as front-end processing. The latest IBM PowerPC 750 is available in frequency options to 500 MHz, and is complemented with 1 Mbyte of L2 cache, 128 Mbytes to 1 Gbyte of SDRAM, 2 to 16 Mbytes of flash memory and 512 Kbytes of boot flash. To enhance flexibility, K2 has two PMC slots for the addition of LAN, WAN, graphics, or other I/O functions readily available from SBS and other third-party suppliers.

The system bus operates at 100 MHz, and has a 64-bit interface between the processor and the CompactPCI bus and 144-bit interface to system memory. Other features include on-board 10/100 Ethernet, two serial ports, an IDE port, parallel port, real-time clock, and watchdog timer.

Using the industry standard CompactPCI 6U form factor, K2 occupies a single slot. The board is capable of operating as a System slot or non-System slot board. A rear transition module is available to gain access to the rear IDE interface, parallel and serial ports. The transition module hard drive is optional. K2 supports full hot swap modes as defined by PICMG 2.1 R1.0.

Real-time operating systems supported include VxWorks. In addition, Hard Hat Linux has been ported for open system applications like high-speed web servers and internet related firewalls or routers.

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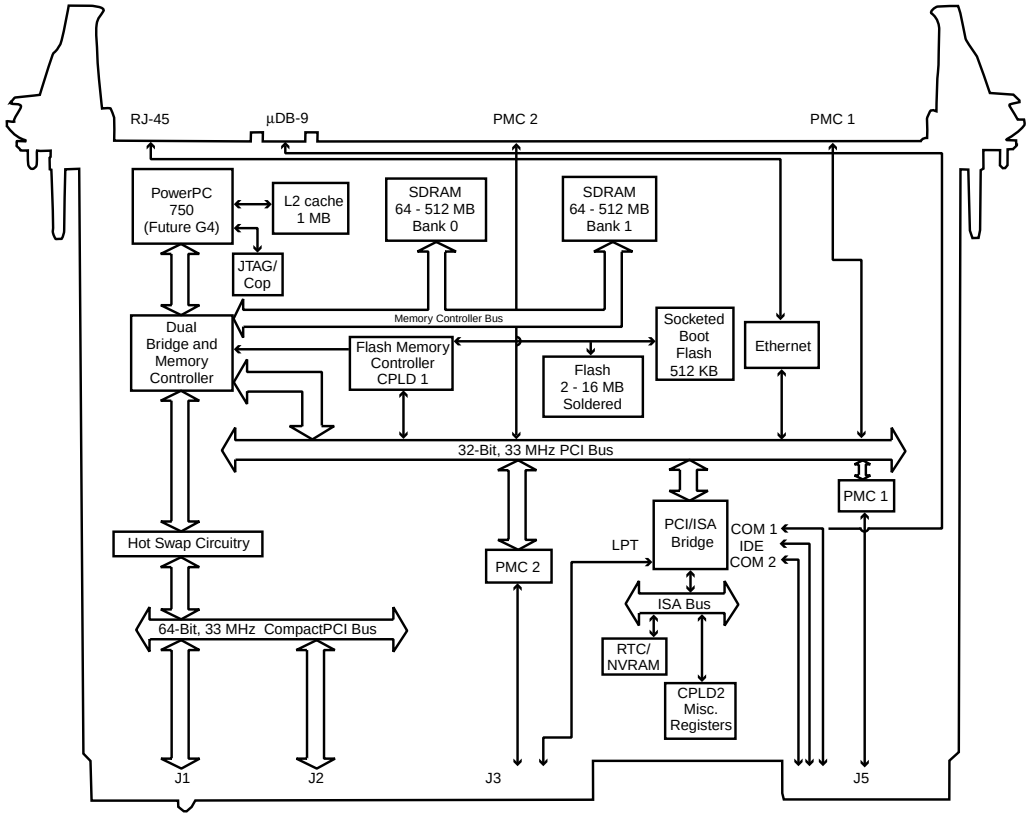
Block Diagram



Specifications

IBM 750 PowerPC Processor
- 400 MHz, 450 MHz, 500 MHz
- On-chip cache, 32K/32K

IBM L2 Cache
- 1 MB
- 2:1 speed of the processor

IBM CPC710 Dual Bridge and Memory Controller
- 144-bit data path to memory, interleaved
- 32-bit, 33 MHz PCI peripheral bus
- 64-bit, 33 MHz CompactPCI bus

Memory
- 128 MB to 1 GB SDRAM, ECC
- 2-16 MB flash memory, organized as eight 2 MB pages
- 512 KB socketed boot flash
- 32 KB NVRAM

PCI Interface Controllers
- 32-bit/33 MHz
- 3.3 V/5 V

PMC Interface
- Two slots, 32-bit/33 MHz
- Conforms to IEEE P1386 and P1386.1
- Front-panel or rear J5/J3 connectors

Ethernet
- Intel 82559
- 10/100BaseTX
- RJ-45 on front-panel

IDE Interface
- Acer 1543C
- Dual channels

Serial Interface
- Two 16550-compatible ports
- RS-232 to 115 Kbps
- One port front-panel, one port J5

Parallel Port
- Acer 1543C
- IEEE 1284-compliant

Counters/Timers
- Three 16-bit timers
- ST-Thompson M48T37Y real-time clock
- Watchdog timer

Full Hot Swap
- Per PICMG 2.1 R1.0

Software
- VxWorks
- Hard Hat Linux

Temperature
- Operating: 0˚ to 50˚ C (ambient)
- Storage: -40˚ to 85˚ C

Humidity
- 10% to 95% (non-condensing)

Cooling
- Forced air 200 LFM (min)

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