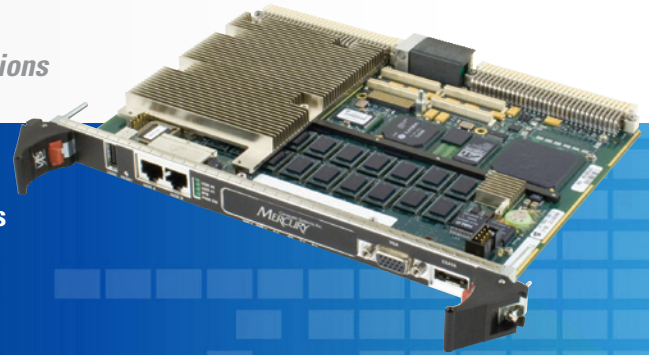


VX6-200R Dual Dual-Core Xeon® VXS Air-Cooled Single-Board Computer

State-of-the-Art Performance Levels for Compute-Intensive Applications



- Brings server-level performance to a single VME slot
- 4-way SMP configuration eases porting from existing configurations
- Abundant I/O interfaces with easy connectivity
- PMC-X/XMC expansion site for added versatility
- Bridges the gap from legacy to industry-standard I/O
- Air-cooled

The VX6-200R Dual Dual-Core Xeon® VXS Single-Board Computer (SBC) from Mercury Computer Systems delivers unprecedented levels of performance with dual dual-core Intel® Xeon® processors in an air-cooled format. The architecture supports 4-way symmetric multiprocessing (SMP), which provides significant performance advantages for compute-intensive applications, while requiring minimal software porting.

The numerous I/O interfaces include quad Gigabit Ethernet, RS-232 serial I/O, high-speed serial ATA-150 (SATA), USB 2.0, and SVGA interfaces, with most available at the front panel for easy connectivity. For added versatility and flexibility, the VX6-200R features a single-wide PMC-X/XMC expansion site that supports both front-panel and rear I/O.

Processor Circuit

The dual-core Intel® Xeon® processors coupled with the Intel® E7520 Memory Controller Hub (MCH) and Intel® 6300ESB I/O Controller Hub (ICH), provide the processing power for even the most demanding embedded computer environments.

The MCH supports three PCI Express® x8 links, each capable of bandwidths of up to 2 GB/s, a 667-MHz front side bus with parity, and dual DDR2-400 ECC memory interfaces that can access up to 4 GB of memory.

The ICH provides a wealth of I/O functionality, including a SATA-150 host controller, 16550-compatible UARTs, EHCI USB 2.0 host controllers, and an IDE Ultra ATA-100 controller. The ICH supports a wide range of system configurations and system management functions, including advanced programmable interrupt controller, an enhanced four-channel DMA controller for moving large blocks of data efficiently, and an LPC interface for connecting to a firmware hub and IPMI BMC controller.

Gigabit Ethernet

Four Gigabit Ethernet link ports are standard. Two link ports are available in a dual RJ-45 front-panel connector with link, speed, and activity LEDs for convenient network accessibility. Two additional dedicated ports are provided at the backplane on the VME P2 connector. Each dual-channel Gigabit Ethernet controller is connected directly to the MCH via PCI Express®, allowing maximum bandwidth potential.

Serial, USB, and Mass Storage Interfaces

Serial I/O technology is changing, and the VX6-200R helps bridge from legacy asynchronous RS-232 serial I/O to industry-standard USB 2.0 connectivity. Legacy asynchronous RS-232 serial I/O is supported via two dedicated serial ports at the backplane. For highspeed USB connections, the VX6-200R includes one front-panel USB 2.0 Type A connector and two additional USB ports at the backplane.

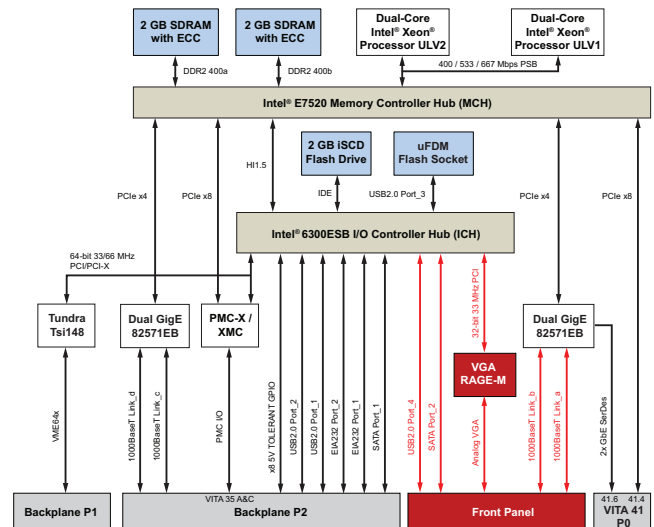


Figure 1: VX6-200R functional block diagram

One eSATA port from the ICH is available on the front panel, and another SATA port is routed to the VME P2 connector. The IDE iSCD is an embedded single-chip flash drive with a 2-GB capacity. For additional onboard mass storage, the USB socket is available for uFDM flash devices.

Video

The VX6-200R supports optional SVGA video with an onboard ATI RAGE™ Mobility M graphics chip that has 4 MB of on-chip SDRAM. The RAGE Mobility supports 16.7 million colors with 2D/3D resolutions of up to 1280 x 1024. Analog video output is available at the front panel through an HD-15 connector.

Software Support

The VX6-200R supports the following operating systems:

- Linux Fedora Core 7
- Windows® XP Professional
- Windows® Server 2003

PMC-X/XMC Site

The face of expansion I/O cards is changing, and the VX6-200R is bridging the gap by supporting both traditional IEEE 1386/1386.1 64-bit PCI mezzanine cards (PMC-X) and the latest VITA 42.3 switched mezzanine cards (XMC) with PCI Express in one single-wide PMC-X/XMC site.

Switch fabric solutions are quickly increasing throughout the embedded computer industry, and the VX6-200R allows the system integrator to take advantage of this emerging technology today. XMC modules can more than double the bandwidth (2 GB/s each direction with 8 lanes) of traditional PMC modules (1 GB/s with PCI-X), while maintaining the flexibility of modular expansion. The PMC-X site supports both PCI-X and PCI running at up to 66 MHz.

Specifications

Dual-Core Intel® Xeon® Processors

Two Dual-Core Intel® Xeon® processors ULV at 1.66 GHz

Intel® E7520 Memory Controller Hub

PCI Express (PCIe) Three x8 links
Dual-channel memory interface 2 GB or 4 GB DDR2-400
Processor system bus interface 667 MHz

Intel® 6300ESB I/O Controller Hub

16550-compatible UARTs
Two USB 2.0 ports
IDE port with 2-GB flash drive

Firmware Hub BIOS™ storage (write-protected)

Gigabit Ethernet

Two Intel® 82571EB dual-port Gigabit Ethernet MAC/PHY chips
Two link ports available at front panel (dual RJ-45 connector)
Two link ports available at the P2 backplane

Serial RS-232 I/O

Two asynchronous serial RS-232 port interfaces at P2 backplane

USB 2.0

Single USB 2.0 Type A connector at front panel
Two USB interfaces at P2 backplane
USB uFDM flash device socket

SATA

eSATA connector at front panel
Second SATA port at P2 backplane

GPIO

8 GPIO pins available on the J2 backplane (5V tolerant)

SVGA Graphics (Air-Cooled Version)

ATI RAGE Mobility M graphics with 4-MB on-chip SDRAM
Resolutions up to 1280 x 1024
HD-15 VGA connector at front panel

PMC-X/XMC Site

IEEE 1386/1386.1 PCI mezzanine card
VITA 39 PMC with PCI-X running at up to 66 MHz
VITA 42.3 XMC switched mezzanine card with PCI Express
User I/O pins routed to J2 per VITA 35

Backplane Interface

System controller or peripheral card operation through the backplane bridge
VME64 Tundra® Tsi148™ PCI-to-VME bridge

Dimensions

Form factor 6U VME per VITA 41
Height 9.2 in (233 mm)
Depth 6.3 in (160 mm)

Weight

1.2 lb (0.544 kg) air-cooled

Power Requirements

5V, 3.3V Required from backplane

±12V As required by PMC module

Specifications

Power Consumption*

Dual processor, dual memory configuration

5V	34W
3.3V	42W
Total	76W

* Power consumption values are estimates of worst-case conditions.

Environmental Specifications

Temperature

Operating	-25°C to +55°C, air-cooled
Storage	-40°C to +85°C

Humidity (air cooled) 5-95% at 40°C (non-condensing)

Shock 50 z-axis; 80g x/y axis; 11 ms half-sine

Vibration 0.04g, 22/Hz at 20-20,000 Hz, 1 hr/axis, air-cooled

Airflow 270 LFM minimum, air-cooled

Altitude

Operating	0-30,000 ft, Level 1 air-cooled
Storage	0-50,000 ft, air-cooled

Standards Compliance*

Safety Designed to meet standard UL1950/60950

Emissions Designed to meet FCC Part15, Sub-Part A

* VX6-200R SBC is designed to be certified within a system environment.

Innovation That Matters, Echotek, EchoCore, Ensemble and MultiCore Plus are registered trademarks, and StreamDirect, Application Ready Subsystem and ARS are trademarks of Mercury Systems, Inc. Other products mentioned may be trademarks or registered trademarks of their respective holders. Mercury Systems, Inc. believes this information is accurate as of its publication date and is not responsible for any inadvertent errors. The information contained herein is subject to change without notice.

Some of Mercury's products are subject to the jurisdiction of the U. S. International Traffic in Arms Regulations (ITAR). Please contact your Mercury sales representative for more information.

Copyright © 2013 Mercury Systems, Inc.

2164.00E-0413-DS-vx6200r



Innovation That Matters™

CORPORATE HEADQUARTERS

201 Riverneck Road
Chelmsford, MA 01824-2820 USA
(978) 967-1401 • (866) 627-6951
Fax (978) 256-3599
www.mrcy.com

EUROPE MERCURY SYSTEMS, LTD.

Unit 1 - Easter Park, Benyon Road
Silchester, Reading
RG7 2PQ United Kingdom
+ 44 0 1189 702050 • Fax + 44 0 1189 702321
www.mrcy.com