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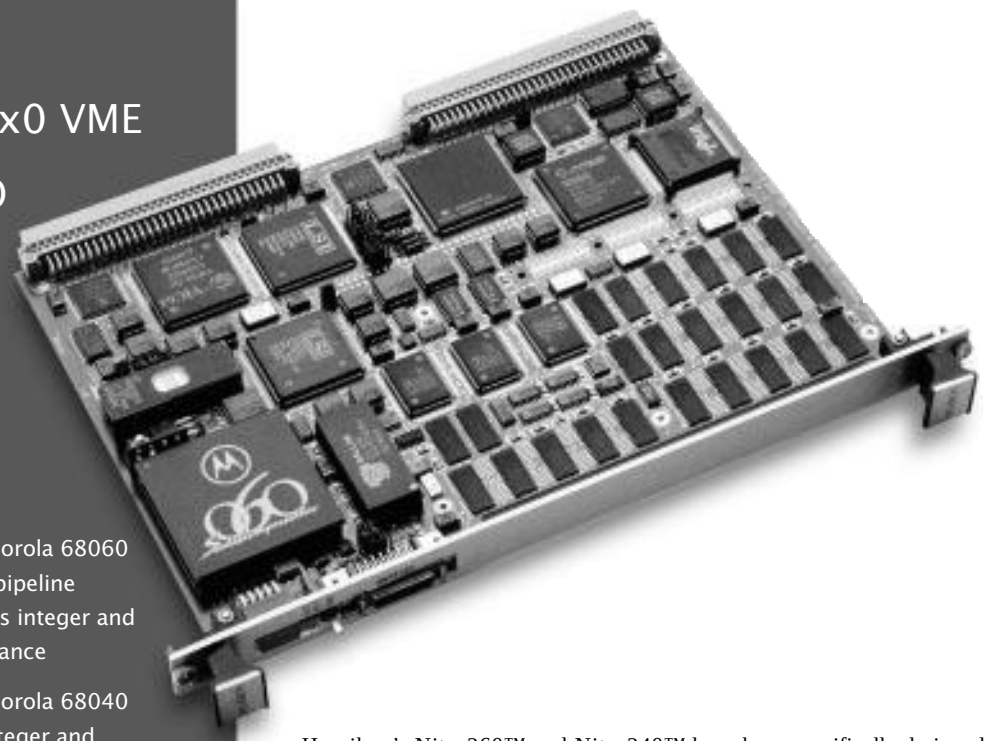
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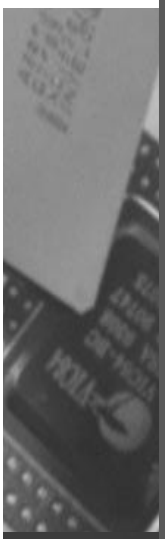
nitro260
nitro240

32-bit | single board | computer

computers for communication
an ISO 9001 certified company

Scalable 680x0 VME board for I/O intensive applications







- Nitro260: 50 MHz Motorola 68060 CPU with superscalar pipeline architecture maximizes integer and floating point performance
- Nitro240: 33 MHz Motorola 68040 CPU for economical integer and floating point performance
- MC68360 Quad Integrated Communication Controller (QUICC) for flexible, high-speed serial communication
- 8, 16, 32, or 64 Mbytes of 2-way interleaved DRAM
- Optimized VME64 interface for high-throughput multiprocessing applications
- ANSI-compatible SCSI II (fast and wide) interface and on-card Ethernet for high performance DMA-supported I/O
- In-house support for VxWorks and OS-9 real-time operating systems
- Quality assured by more than 20 years of experience, ISO 9001 certification and exclusive Gauntlet testing

Heurikon's Nitro260™ and Nitro240™ have been specifically designed to power applications that demand high performance and reliable multiprocessing such as communications, video-on-demand, printing, simulation, and other I/O intensive applications.

At the heart of the Nitro2x0 is Motorola's 50 MHz MC68060 CPU or the 33 MHz MC68040 CPU. The 68060 offers two to four times the performance of the 68040 and employs a superscalar architecture with dual 4-stage integer pipelines.

In addition to its two front-panel console serial ports, the board supports four additional serial channels via Motorola's MC68360 QUad Integrated Communication Controller (QUICC™). In its standard configuration, four of the QUICC chip's multi-protocol serial ports are routed through the VME P2 connector.

A fast and wide SCSI II interface is optional, and on-board Ethernet™ for high performance DMA supported I/O is included as standard.

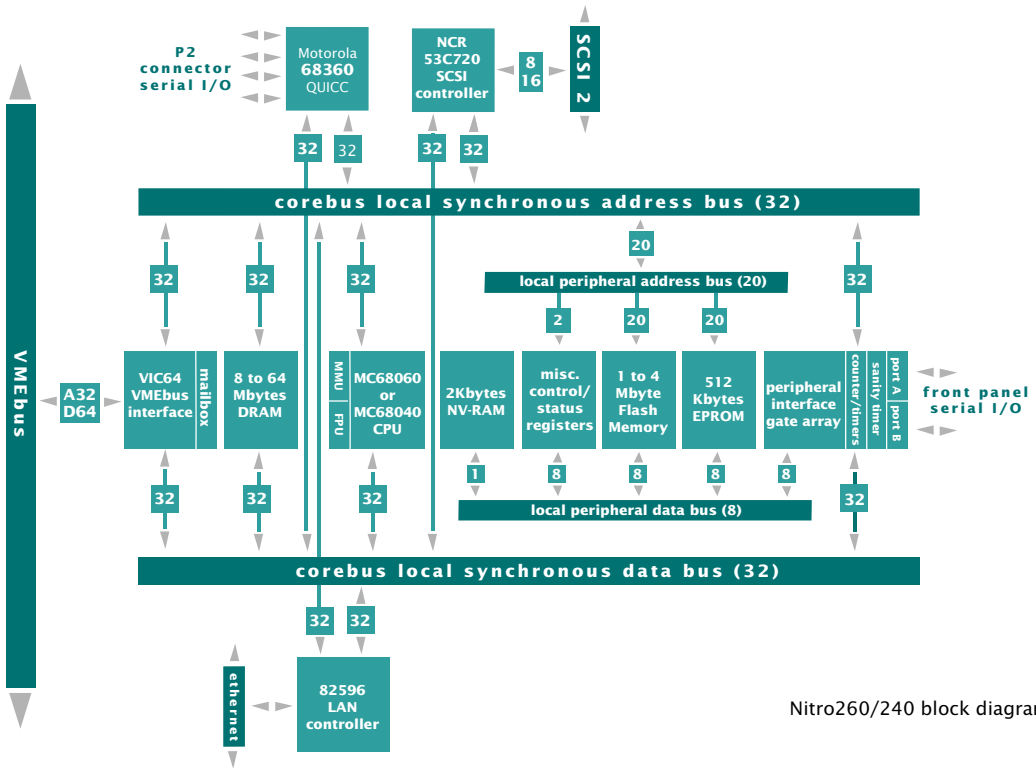
Wind River Systems' VxWorks™ and Microware's OS-9® software provide users with powerful real-time operating systems and a rich set of development tools.

For quality in real-time, choose the performance, reliability and responsiveness of Heurikon. Our engineers and support group are available to answer your inquiries. Please call 1-800-356-9602 for more details.

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Nitro260
Nitro240
technical specifications



Nitro260/240 block diagram

bus interface

VMEbus

- VME64 architecture with 64-bit data path, 32-bit addressing and 7 bus interrupts
- Operates in Master or Slave Mode (Compliance Level: D64A32(7))
- 64-bit and 32-bit wide block transfers using local DMA capability
- System level controller functions including 4 level arbitration
- Uses VIC64 VME Interface Chip
- VME64 interface optimized via custom ASIC providing high reliability and sustained transfer rates of:
  - 63 Mbytes/sec (Nitro240)
  - 49 Mbytes/sec (Nitro260)

MAILBOX INTERRUPTS

- Allows remote control of board via specified VMEbus addresses
- CPU interrupt, reset, VMEbus lock functions supported

processor

NITRO260

- Motorola 68060 CPU operating at 50 MHz internal, 25 MHz external
- Superscalar architecture with dual 4 stage integer execution pipelines
- 8 Kbyte data cache
- 8 Kbyte instruction cache
- 256 entry branch cache
- 100% upward user-level code compatible with '040

NITRO240

- 33 MHz Motorola 68040 CPU
- 4 Kbyte data cache
- 4 Kbyte instruction cache

RANDOM ACCESS MEMORY

- 8 , 16, 32 or 64 MB DRAM with parity
- 2 bank interleaved architecture with write posting buffers
- 70 ns page mode DRAM
- Transparent discrete hardware refresh
- Burst read wait states: 3-0-1-0
- Burst write wait states: 0-0-0-0

READ ONLY MEMORY

- Up to 512 Kbytes EPROM

FLASH MEMORY

- Up to 4Mbytes Flash Memory (512 Kbytes used for monitor and power-on diagnostics)

NON-VOLATILE RAM

- 2 Kbytes user-definable storage
- User definable parameters such as default baud rates, software and hardware revision levels

TIMERS/COUNTERS

- Real-time clock with 10 msec resolution
- Three 32-bit counter/timers with 62.5 ns resolution

peripheral I/O

SERIAL COMMUNICATION

- Motorola MC68360 Quad Integrated Communication Controller (QUICC™)
- 4 independent high speed communication ports
- Supports HDLC, X.25, UART, BISYNC, Signaling System #7, T1/CEPT and other user-defined protocols (additional software required)
- 32-bit internal and external transfers
- Automatically performs efficient packing
- RISC based Communications Processor Module for communication protocol handling
- Single Address Mode for Fastest Transfers
- 2 independent and 14 dedicated serial DMA channels
- 12 port C interrupts on P2

CONSOLE SERIAL I/O

- Two front panel serial I/O ports provided via ASIC
- Transfer rates up to 1Mbit/sec obtainable (cable length dependent)
- Intel 8251A UART emulation

ETHERNET INTERFACE

- Intel 82596CA 32-bit LAN coprocessor
- 800 Kbytes/sec throughput obtained using TCP/IP protocol
- On-chip DMA, FIFOs, and memory management
- Conforms to IEEE 802.3
- 10 BASE 5 Interface via cable off VME P2 connector

SMALL COMPUTER SYSTEMS INTERFACE (SCSI)

- NCR 53C720 SCSI I/O processor
- ANSI compatible SCSI 2 (fast & wide) permitting connection of up to fifteen additional independent, compatible I/O controllers
- 8-bit or 16-bit via P2 connector
- Supports variable block size and scatter/gather data transfers
- Supports 32-bit word data bursts with variable burst lengths
- Full 32-bit on-chip DMA to speed up memory-to-I/O transfers without host CPU intervention
- 20 Mbytes/sec 16-bit synchronous performance

FRONT PANEL

- Reset/Interrupt switch
- Seven segment LED display
- Console serial port connector

board support

SOFTWARE SUPPORT

- In-house support for Wind River Systems' VxWorks real-time operating system
- In-house support for Microware Systems' OS-9 real-time operating system
- Third party support for ISI pSOS+, Microtec Research VRTX/OS, Rational Software Ada, Green Hills compilers and tools.

PHYSICAL CHARACTERISTICS

- Multilayer with ground and VCC planes
- Board size: 23.35 cm x 16.0 cm (9.19 in. x 6.3 in.)
- Power requirements: +5VDC @ 4.3A, ±12VDC @ 30mA
- Operating range: 0˚ - 55˚C, 85% relative humidity (non-condensing)
- MTBF:
  - MIL 217F: 49,502 hours
  - Bellcore Issue 4: 169,148 hours
  - Demonstrated: 211,480 hours

target applications

- Communications control
- Video on demand server
- High speed printing
- Embedded control

HEURIKON CORPORATION

8310 Excelsior Drive
Madison, Wisconsin 53717-1935
800-356-9602
Tel: 608-831-5500
Fax: 608-831-4249
Email: info@heurikon.com
World Wide Web:
http://www.heurikon.com

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