

# MVME8100 Series

High Performance Power VME64x/VXS board

■ Embedded Computing for  
Business-Critical Continuity™

## Key Features

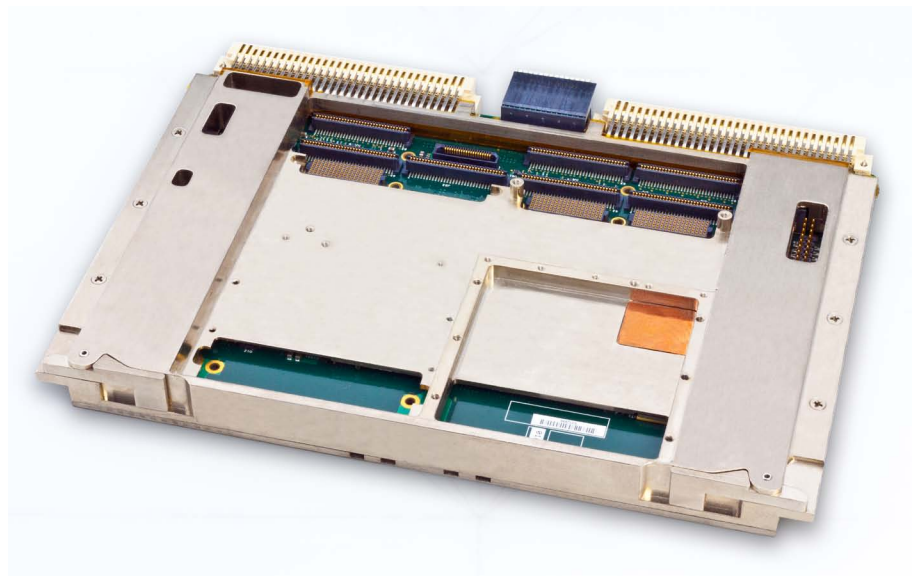
- Freescale QorIQ P5020 1.8/2.0GHz
- Up to 8GB DDR3-1333MHz ECC Memory
- NAND Flash and MRAM for non-volatile storage
- 2 PMC/XMC sites
- Optional 2.5" SATA SSD
- PCIe or SRIO fabric connectivity
- Extended Temperature, Conduction Cooled variant

The MVME8100 is a high performance 6U VME/VXS board featuring the new Freescale P5020 QorIQ processor supporting high speed DDR3-1333MHz with ECC. It offers expanded IO and memory features with PCIe and SRIO fabric connectivity and multiple USB, Serial and Ethernet ports. Memory includes up to 8GB DDR3, 512kB MRAM non volatile memory, and 8GB eMMC NAND Flash.

The MVME8100 is offered in commercial and a fully rugged variants for extreme environments with extended shock, vibration, temperatures and conduction cooling. It is suitable for a range of high end industrial control applications such as SPE and photo lithography and C4ISR, including Radar/Sonar. It will provide technology insertion to prolong current programs while providing more computing performance and data throughput.

The MVME8100 supports a full range of BSPs including Linux, Wind River VxWorks, and Green Hills Integrity.

**Preliminary**



  
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## Hardware Specifications

### PROCESSOR

- Freescale QorIQ P5020
- 1.8GHz: 27W ENP4 variant
- 2.0GHz: 28W ENP variants

### MEMORY

- Up to 8GB of 64 bit DDR3-1333 ECC SDRAM soldered down
- 16 MB SPI ROM for boot code (in 1+1 redundant banks/devices)
- 512kB MRAM for data storage
- 8GB NAND Flash with SD/MMC interface

### MANAGEMENT

- Boot bank/device selection
- Control of module reset and back-end power

### BACKPLANE I/O

- P0
  - ▲ Two USB 2.0
  - ▲ Two SERDES GigE (VITA 41.6) (dedicated)
  - ▲ Up to two SRIO x4 links (VITA 41.2)
  - ▲ Up to two PCIe x4 links (VITA 41.4); root or end-point
  - ▲ One SATA
  - ▲ Four GPIO
- P1
  - ▲ VME64x & 2eSST
- P2
  - ▲ VME64x & 2eSST
  - ▲ Four RS232/422/485
  - ▲ Two 10/100/1000BaseT Ethernet

### OTHER FEATURES

- Real Time Clock with battery backup
- Real time counters
- Watchdog

### EXPANSION MODULE

- Site 1 supports PMC or XMC (PCI-X/PCIe x8)
- Site 2 supports PMC or XMC (PCI-X/PCIe x4) or alternatively supports a 2.5" SATA HDD or SSD

### FRONT PANEL CONNECTIVITY

- Two GigE (RJ45)
- One RS232/422/485 console (Micro-DB9)
- One USB 2.0 (Type A)

### REAR TRANSITION MODULE

- VXS1-RTM1
  - ▲ Two USB 2.0 ports (Type A)
  - ▲ Two RS232/422/485 ports (Micro-DB9)
    - One port is switchable between a console and standard COM port
  - ▲ Two RS232/422/485 ports (internal headers)
  - ▲ Two 10/100/1000BASE-T Ethernet ports (RJ45)
  - ▲ One PMC Interface Module (PIM) site
  - ▲ 4 GPIO to (internal header)
  - ▲ Reset switch
  - ▲ One eSATA port
- MVME7216E RTM
  - ▲ Provides four serial ports and two Ethernet ports when used with MVME8100

## Software and Firmware Specifications

### BOOT

- UBoot binary and source code.

### BOARD SUPPORT PACKAGES

- Wind River VxWorks
- Linux
- Green Hills Integrity
- Hypervisor

## Compliance and Certification Information

Environmental Compliance Standards  
ENP1 and ENP4 available upon release

### ENVIRONMENTAL

Ruggedization Level3	ENP1	ENP2	ENP3	ENP4
<b>Cooling Method:</b>	Forced Air	Forced Air	Conduction	Conduction
<b>Operating Temperature:</b>	0 °C to +55 °C	-40 °C to +71 °C	-40 °C to +71 °C	-40 °C to +85 °C
<b>Storage Temperature:</b>	-40 °C to +85 °C	-50 °C to +100 °C	-50 °C to +100 °C	-50 °C to +125 °C
<b>Vibration Sine: (10min/axis)</b>	1G, 5 - 200 Hz	5G, 15 to 2000Hz	10G, 15 to 2000Hz	10G, 15 to 2000Hz
<b>Vibration Random: (1hr/axis)</b>	.01g <sup>2</sup> /Hz, 15 to 2000Hz	.04g <sup>2</sup> /Hz, 15 to 2000Hz (8GRMS) <sup>1</sup>	0.1g <sup>2</sup> /Hz, 15 to 2000Hz (12GRMS) <sup>2</sup>	0.1g <sup>2</sup> /Hz, 15 to 2000Hz (12GRMS) <sup>2</sup>
<b>Shock:</b>	20g/11mS	30g/11mS	40g/11mS	40g/11mS
<b>Humidity:</b>	to 95% RH	to 100% RH	to 100% RH	to 100% RH
<b>Conformal Coating:</b>	No	Option (Acrylic)	Option (Acrylic)	Option (Acrylic)

Note 1: Flat 15-1000Hz, -6db/octave 1000Hz – 2000Hz [MIL-STD 810F Figure 514.5C-17]

Note 2: +3db/octave 15-300Hz, Flat .1g<sup>2</sup> 300-1000Hz, -6db/octave 1000Hz – 2000Hz [MIL-STD 810F Figure 514.5C-8]

Note 3: Component and/or assembly screening shall be employed to satisfy feature/functional req (where feasible) when components are not available that meet Ruggedization level req's.

### EMC COMPLIANCE STANDARDS

- Industry standard requirements: (FCC, VCCI, MIC, AS/NZ)

### SAFETY STANDARDS

- Industry standard requirements (UL, CSA, Ctick)

### VITA STANDARDS

- VME64x
- VITA 1.5 2eSST
- VITA 39 XMC
- VITA 41.0, 41.2, 41.4, 41.6 VXS

Code Name	Description
MVME8100-202200401S	P5020 2.0GHz, 4GB DDR3, 2PMC/XMC SCANBE ENP1
MVME8100-202200401E	P5020 2.0GHz, 4GB DDR3, 2PMC/XMC IEEE ENP1
MVME8100-202180404	P5020 1.80GHz, 4GB DDR3, 2PMC/XMC ENP4
VXS1-RTM1	RTM for MVME8100 and IVME7300
VME-64GBSSDKIT	SSD and mounting kit
VME-HDMNTKIT	Hard disk Mounting Kit
*Please contact your sales representative for additional processor and memory variants.	

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