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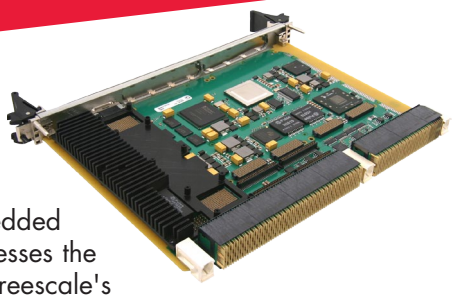
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Fact Sheet

VPX6-187

Freescale™ QorIQ™ P4040/4080 Single Board Computer



- Powerful general-purpose SBC with Freescale™ QorIQ™ P4080/4040
- Four or eight e500mc Cores running up to 1.5 GHz
- Up to 4 GB DDR3 SDRAM controlled by dual 64-bit controllers
- Full complement of I/O capability (Ethernet, Serial ports, USB 2.0, MIL-STD-1553, SATA, TTL and differential discretes)
- VPX/VPX REDI formats with up to six fabric ports, supporting SRIO and PCI PCIe
- Wind River® VxWorks® 6.8+ BSP, Wind River Linux 4.0 BSP, and GreenHills INTEGRITY BSP
- Continuum Software Architecture (CSA) firmware providing a comprehensive suite of system debug, exerciser, and update functions, Built-in Test (BIT), and non-volatile memory sanitization function
- Designed for harsh environment applications, both air- and conduction-cooled
- Pin compatible with Curtiss-Wright's VPX6-185 SBC and OpenVPX Ready
- Supported OpenVPX/VITA 65 Profiles
  - MOD6-PER-4F-12.3.1-1
  - MOD6-PAY-4F2T-12.2.2-1
  - MOD6-PAY-4F1Q2U2T-12.2.1-1

Curtiss-Wright Controls Embedded Computing's VPX6-187 harnesses the power and performance of Freescale's QorIQ P4040/4080 Communications Processor. Eight Power Architecture™ processor cores, associated high-performance data-path acceleration logic and network and peripheral bus interfaces provide the ultimate platform for a wide range of harsh environment embedded applications.

The VPX6-187 provides two PMC/XMC sites supporting the acquisition, processing, and distribution of sensor data such as video, radar, and sonar data. High-speed backplane connectivity through PCI Express® (PCIe) Gen2 and Serial RapidIO® (SRIO) provides multi-GB/s data flows for board-to-board communications. A rich I/O complement of 4 GbE ports, options for multi-function EIA-232/422/485 serial ports, MIL-STD-1553, SATA, and TTL and differential discretes provides connectivity integration with other system elements, without using up PMC/XMC sites.

The VPX6-187 is also supported by a wealth of software including Curtiss-Wright standard CSA firmware, Wind River VxWorks, Wind River Linux BSP and Driver Suites, as well as a MIL-STD-1553 software driver. An INTEGRITY® BSP is available from Green Hills® Software.

Features

- Freescale QorIQ P4080/4040
  - Four or eight e500mc processors up to 1.5 MHz
  - 128 KB L2 cache per processor
  - 2 MB L3 front side cache
  - Classic Double Precision Floating-point unit
  - Extensive debug features

VPX™ VPX REDI™ OpenVPX™

Learn More
Sales Info: sales.cwcembedded.com
Sales Email: sales@cwcembedded.com

ABOVE & BEYOND

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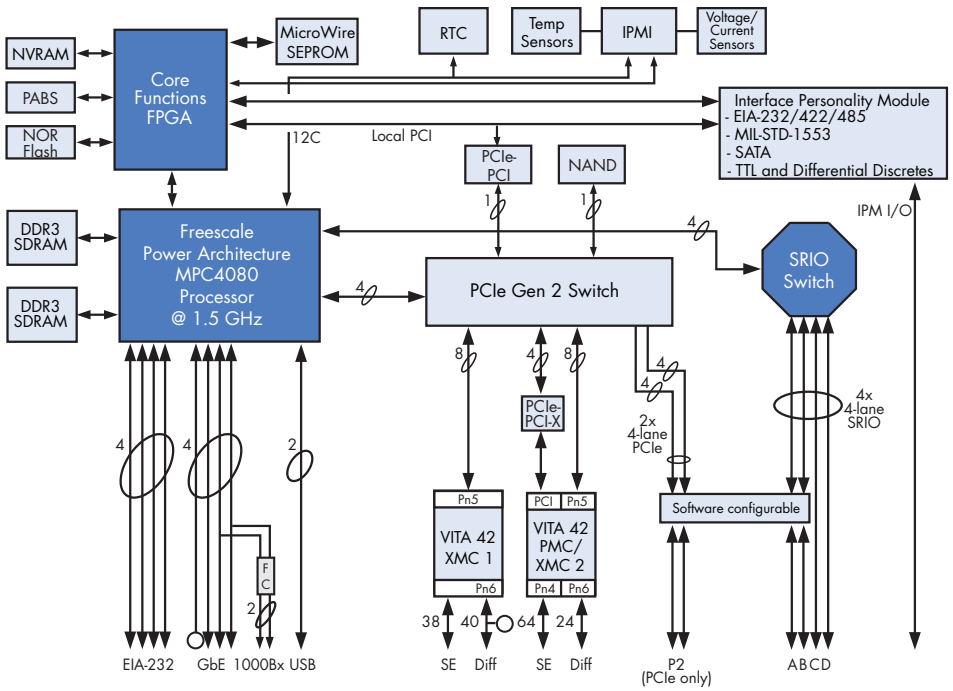
Fact Sheet

VPX6-187

Features continued

- Two independent 64-bit DDR3 SDRAM controllers integrated into the P4080 processor
- Up to 4 GB of DDR3 SDRAM with ECC
- 256 or 512 MB of contiguous direct-mapped flash memory
  - Hardware flash write protection jumper
- 8 GB NAND flash
- Permanent Alternate Boot Site (PABS) provides back-up boot capability
- 512 KB AutoStore FRAM
- Up to six serial fabric ports on the VPX P1 and P2 connectors
  - Two ports are fixed for SRIO, and two can be selected as PCIe Gen2 or SRIO
  - or 4x4 lane ports of SRIO on P1 and 2x4 lane PCIe ports on P2
- One PMC/XMC (VITA 42.3) site
  - Provides a 133 MHz PCI-X capable interface or 8-lane PCIe interface, auto-selected
  - 64-bits of PMC I/O through Pn4 and 24-bits through Pn6 mapped per VITA 46.9 5.5.2 P5w1-P64S+X12D
- One XMC (VITA 42.3) site
  - Provides an 8-lane PCIe interface
  - I/O routed as VITA 46.9 Rule 5.4-1 P3w3-X38s+X8d+X12d
- Conduction-cooling of PMC/XMC sites optimized with secondary thermal interfaces and mid-plane thermal shunt
- 4 GbE interfaces:
  - Three to rear-panel connectors and one to front-panel connector on air-cooled cards. Option for 4.
- Intelligent Platform Management Interface (IPMI) support
- Four asynchronous EIA-232 serial ports
- Two USB 2.0 ports
- Six general-purpose 32-bit user timers provided by Core Functions FPGA
- General-purpose DMA controllers
- Two avionics-style watchdog timers with external watchdog event indicator discrete
- Real-time Clock with automatic switch over to 3.3V_Aux
- Four onboard temperature sensors
- Red Fail LED and two green user LEDs
- 12 V or 5 V only operation (configuration option)
- Standard conformal coating is acrylic
- Factory-installed Interface Personality Module (IPM) allows for combinations of the following:
  - Four EIA-232/422/485 serial channels
  - 14 LVTTL discretes
  - Two MIL-STD-1553 channels
- Power management features
  - Ability to disable unused high-speed fabric ports
  - Extensive power management features in the P4080
- Trusted and secure boot support
- Available in a range of ruggedization levels
  - Air- and conduction-cooled per VITA 46.0 (1.0" pitch)
  - Conduction-cooled per VITA 48.2, Type 1 card (1.0" pitch with top and bottom covers)
- CSA firmware providing a comprehensive suite of system debug, update functions, BIT, and non-volatile memory sanitization function
- Available software packages
  - Wind River VxWorks 6.8+ BSP and Driver Suite supporting Workbench 3.x IDE
  - Wind River Linux 4.0
  - Green Hills INTEGRITY BSP available from Green Hills Software
- PWB meets UL 94 V-0 flammability rating
- Circuit card assembly is done to Class 3 standards of IPC-A-610C, Acceptability of Electronic Assemblies

Figure 1: VPX6-187 Block Diagram



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