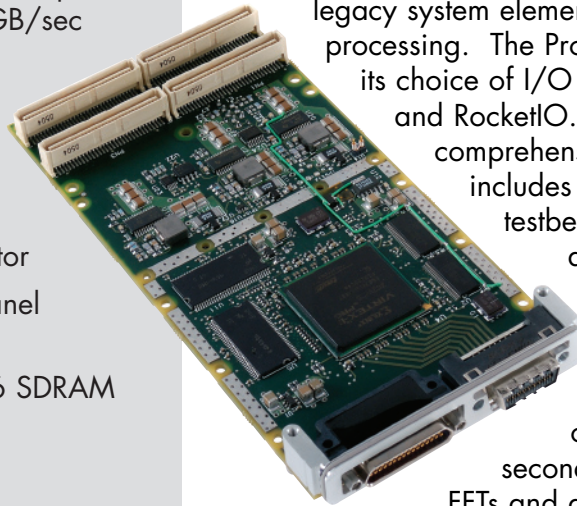




ProWare PMC-440

- ◆ Xilinx Virtex-II Pro™ Platform FPGA (XC2VP20 or XC2VP40)
- ◆ 64-bit, 66MHz PCI interface (tracking provision for PCI-X)
- ◆ Four RocketIO transceivers to front-panel connector offering up to 1.6 GB/sec aggregate peak throughput
- ◆ Four RocketIO transceivers to Pn4 connector offering up to 1 GB/sec aggregate peak throughput
- ◆ 48 LVDS/LVTTL to Pn4 connector
- ◆ 30 LVDS/LVTTL I/O to front-panel connector
- ◆ 256 Mbytes of 32-bit DDR266 SDRAM
- ◆ Temperature sensor
- ◆ Current sensor
- ◆ 4 Indicator LEDs
- ◆ Support for ChipScope Pro and JTAG processor debug interfaces
- ◆ ProWare Design Kit (PDK) offers a library of IP modules, simulation testbench files, a reference design, a VxWorks driver, documentation, and a test cable
- ◆ Range of air- and conduction-cooled ruggedization levels available



The PMC-440 ProWare PMC module provides systems integrators with a powerful, easy-to-use means to capture EO/IR, radar, and other sensor data inputs, interface to legacy system elements, and perform sensor data pre-processing. The ProWare module offers flexibility with its choice of I/O options that include LVDS, LVTTL, and RocketIO. Ease-of-use is provided via a comprehensive ProWare Design Kit (PDK) that includes a library of IP modules, simulation testbench files, a reference design and full documentation. For sensor data pre-processing, the ProWare module with Xilinx XC2VP40 offers the power of up to 192 18x18 multipliers for a theoretical maximum of over 20 billion operations per second to apply to DSP operations such as FFTs and digital filters. The PMC-440 ProWare PMC is an ideal front-end interface/processing module for products such as CWCEC's VME SBCs such as the 18x and Raptor/Rhino series, CompactPCI SBCs such as the 122 and G4C, the CHAMP-AV, CHAMP-FX and Manta series multi-computing products.

For more information on our broad range of high-integrity computing solutions, please visit our website at www.cwembedded.com.

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ProWare PMC-440

PMC-440 ProWare Logic Resources

Device	Logic Slices	Total Block RAM (Kbits, (Blocks))	18 x 18 Multipliers	Digital Clock Management Blocks	Supported RocketIO Transceivers
XC2VP20	9,280	(1,584), 88	88	8	8
XC2VP40	19,392	(3,456), 192	192	8	8

FPGA Capability

The PMC-440 ProWare module comes with either a Xilinx Virtex II Pro XC2VP20 or VP40 FPGA that offers the following features:

- ◆ high-performance “-6” speed grade, example performance attributes include:
 - max input clock frequency of 420 MHz (using DCM outputs)
 - 16-bit adder up to 334 MHz
 - 18-bit x 18-bit multiplier up to 147 MHz
 - max device pad-to-pad input setup time/hold time of .26/.29 nsec
- ◆ I/O connectivity:
 - 48 LVDS/LVTTL I/Os to Pn4 connector
 - 30 LVDS/LVTTL I/O to front panel (air-cooled modules only)
 - 4 RocketIO transceivers to Pn4 connector, configured for 625 Mbits/sec or 1.25 Gbit/sec operation
 - 4 RocketIO transceivers to front panel, configured for 1.0 or 2.0 Gbits/sec operation (air-cooled modules only)
- ◆ Extensive logic resources (see Table above)

Utility Features

- ◆ a 133 MHz clock is provided as standard for FPGA logic
- ◆ a spare site is provided for an application-specific clock (factory installed)
- ◆ PCI-readable temperature sensor
- ◆ PCI-readable current sensor
- ◆ header for JTAG/ChipScope Pro connection
- ◆ one red and three green LEDs
- ◆ only input voltage required is 5V

PMC Interface

- ◆ 64-bit PCI
- ◆ tracking for PCI-X, provided IP is 33/66 MHz PCI-capable
- ◆ PCI interface is 5V-tolerant (level shifters used)
- ◆ conduction-cooled module conforms to VITA 20-2001 including left and right secondary thermal interfaces

ProWare Design Kit

A ProWare Design Kit (PDK) is available for the PMC-440 ProWare module consisting of the following elements:

- ◆ IP library with the following functional elements:
 - 64-bit, 66 MHz PCI interface with integral DMA controller
 - 32-bit DDR SDRAM controller
 - discrete digital I/O module including LED control bits
 - temperature and current sensor interface module
- ◆ associated project, pinout files and constraint files
- ◆ associated simulation files including MacroCad PCI testbench
- ◆ reference design incorporating all the elements of the IP library into an example design that is preloaded onto the module when delivered
- ◆ VxWorks driver
- ◆ documentation
- ◆ front-panel loop-back cable
- ◆ adapter cable to interface to Xilinx Parallel Cable IV

Each off-chip interface module is encrypted and viewed as a black-box and the IP module placement is fixed such that the IP provided always meets timing requirements.

Note that the ProWare Design Kit is sold separately from the PMC-440 ProWare modules and is licensed on a per-program, per-site basis.

ProWare PMC-440 Block Diagram

