

ProcSparkII™ Cyclone II 35 Board

Overview

ProcSparkII™ board provides an FPGA-based platform for reconfigurable computing. The FPGA, the memory and the daughterboards' flexible architecture (system I/O, DSP etc.) of the *ProcSparkII* system, enable the user to build complex designs at affordable price. The cost and performance of ProcSpark II make it very attractive for production requirements.

With the *GiDEL ProcPak II*™ design & debug kit, time-to-market improves significantly. There is no need to design the board, the PCI driver, the application driver layer, define board constraints, design memory controller and write environment FPGA code. This enables designers to focus on their proprietary value-added design instead of spending their valuable effort to recreate standard design components.

With the *ProcMultiPort*™ innovative memory controller, the generated HDL code enables high speed, easy-to-use parallel access to large memories.

Key Features

- Altera Cyclone II EP2C35 FPGA.
- 33216 Logic Elements.
- PCI 64/32bit 66/33MHz with 2 DMAs running at 400MB/s sustain access rate.
- Three-level memory structure:
 - ♦ 105 M4K Dual Port RAM blocks (256 x 18 bits, 69GB/s at 150MHz)
 - ♦ 64MB DDR DRAM @ 900MB/s sustain rate
- Innovative DDR memory controller with 2 to 16 ports.
- Up to 3 TMS320C6414-1Ghz DSPs on a PSDB_DSP1G daughter board, with 64MB per DSP.
- Up to 2 PSDBs (*ProcSparkII* Daughter Boards): CameraLink, Machine I/Os and other functions.
- Up to 314 available I/Os.
- Flexible clocking system.
- Typical system frequencies: 50 - 200MHz.
- Supported by *GiDEL Proc Developer's Kit*



Benefits

- High performance
- Low cost
- High flexibility to fit customer needs
- Cuts development cycle time and budget
- Reliability
- Maintainability
- Long life cycle

Application examples

- Powerful frame grabber
- Vision, imaging and image recognition
- Rapid Prototyping
- DSP
- System hardware acceleration
- Test equipment
- Aerospace and military systems
- Algorithm design and verification

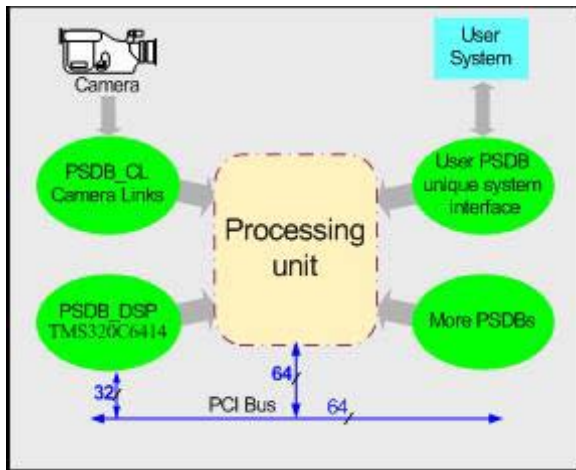
Development Environment

GiDEL's intuitive design & debug kit, the *ProcPak II*, facilitates your design development effort.

The kit contains the *ProcSparkII* board, the *ProcWizard*[™], the *ProcMultiPort* IP and ByteBlaster (Quartus Web Edition is supplied for free by Altera).

The *ProcWizard* performs hardware initialization and automatically generates the following:

- C++ class application driver
- Top-level designs and the interface modules / entities
- Device constraints (as pin-outs)
- Interface documentation in HTML or Microsoft Word



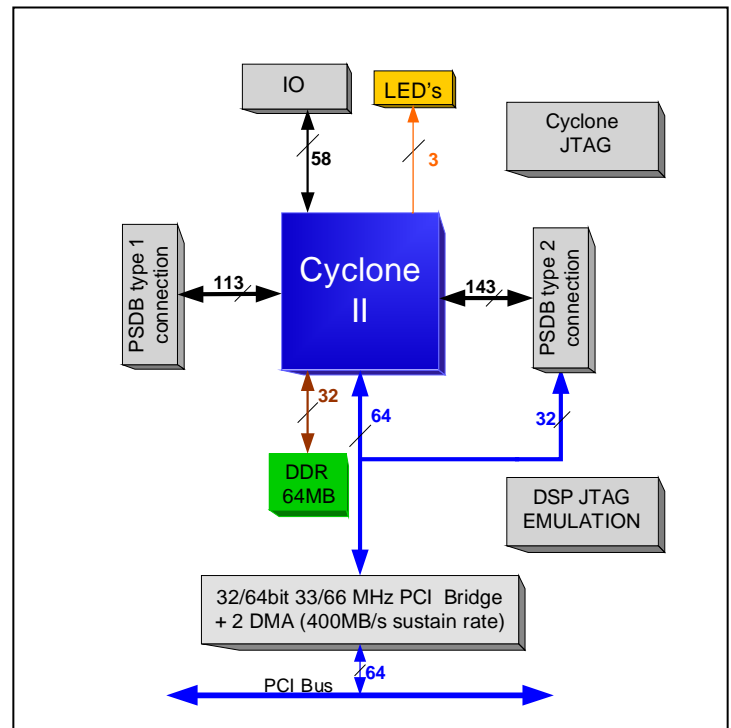
ProcSparkII System Example

The *ProcMultiPort* core provides two basic benefits:

- Simplifies achieving high system performance
- Replaces the need for an inventory of special memories with standard memory and IP.

The *ByteBlaster* enables visibility of internal nodes using the available on-board memory.

The *PSDB_Proto*[™] daughterboard includes prototyping area that enables rapid system additions by wiring/soldering devices & connectors. In addition, the daughterboard includes logic analyzer connections for easy debugging.



ProcSparkII Block Diagram

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