

FPGA Development Kit

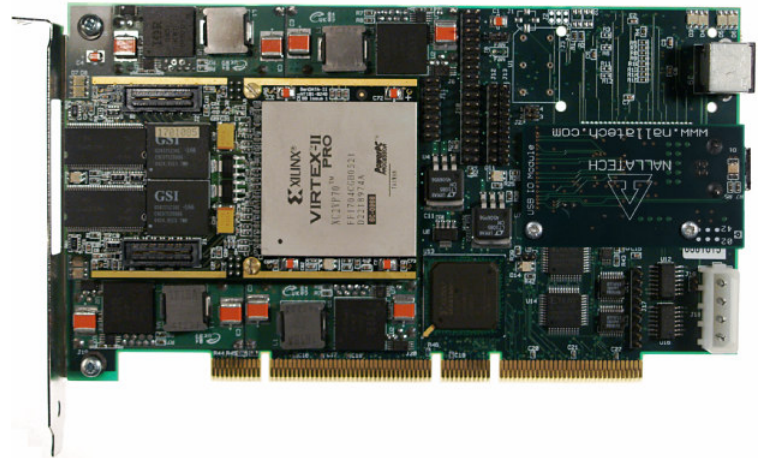
Xilinx Virtex-II Pro FPGA, SRAM and SDRAM



This high performance FPGA development platform provides users with a professional, easy to use and low risk solution ideal for FPGA application development.

A Xilinx™ Virtex™-II Pro FPGA, featuring embedded IBM 405 PowerPC™s is available exclusively for user applications. Additional features include two independent banks of ZBT® SRAM and DDR SDRAM memory, and eight off-module high speed serial I/O links.

The card interfaces to host computers via PCI or USB, and is supplied with software and drivers supporting both Windows® and Linux® operating systems. Documentation, example designs and VHDL source code is supplied in addition to technical support and a hardware warranty.



Xilinx Virtex-II Pro FPGA and two independent banks of ZBT SRAM and DDR SDRAM memory



Key features

- » PCI form factor with USB support
- » Onboard Xilinx Virtex-II Pro FPGAs. Up to:
 - 66k logic cells
 - 328 embedded multipliers
 - 2 embedded IBM 405 PPCs
- » 16 MB of ZBT SRAM memory
- » 256 MB of DDR SDRAM memory
- » Multiple off-card digital I/O headers
- » Windows and Linux Operating System support

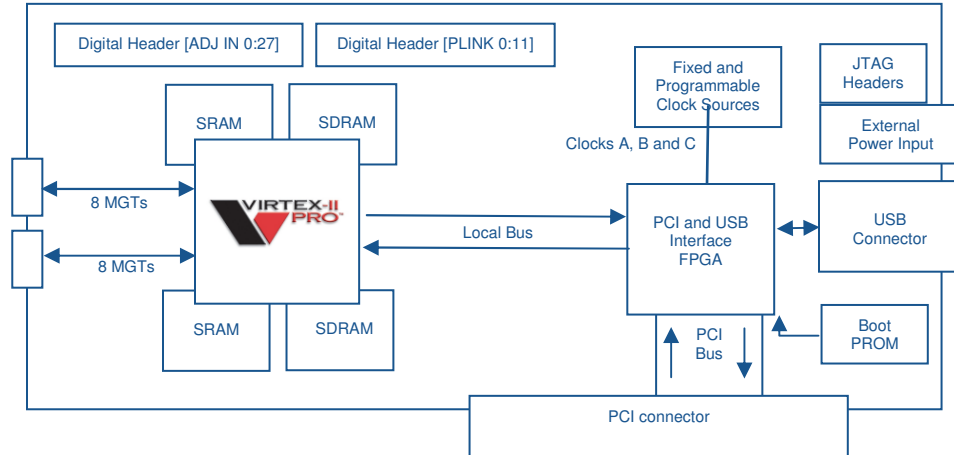
Benefits

- » PCI and USB
 - Industry standard host computer interfaces
- » Xilinx Virtex-II Pro FPGA
 - Two PowerPC 405, 32-bit RISC processor cores per FPGA. These industry-standard processors offer high performance and a broad range of third-party support.
 - RocketIO™ transceivers allow users to experiment with multiple high speed serial I/O links and protocols.
- » Support for multiple FPGA design flows
 - Easy application development, enhanced functionality

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Xilinx Virtex-II Pro FPGA, SRAM and SDRAM

Functional diagram



Full specification

Form factor

- » Half-length PCI

Host interface

- » 32-bit / 33MHz PCI Bus

Host interface performance

- » Theoretical maximum performance 132 Mbytes/s
- » Actual performance up to 80 Mbytes/s (sustained) - performance is host computer chipset and operating system dependant

FPGA processing

- » Xilinx Virtex-II Pro FPGA: 2VP70-5

FPGA programming

- » Embedded JTAG programming through API software functions

SRAM memory

- » 16 MB ZBT SRAM
- » Two independent 8 MB banks
- » 64-bit data bus per bank
- » Max. clock frequency: 166 MHz
- » Max. bandwidth per bank: 1.33 GB/s
- » Total bandwidth: 2.66 GB/s
- » ZBT SRAM controller IP core included

DDR SDRAM memory

- » 256 MB DDR200 SDRAM
- » DDR SDRAM controller IP core included
- » 2 independent 128 MB banks
- » 32-bit data bus per bank
- » Max. clock frequency: 166 MHz
- » Max. data rate: 333 MHz
- » Max. bandwidth per bank: 1.33 GB/s

External interfaces (Digital I/O)

- » ADJ IN [0:27]
 - 3.3V interface
 - Single-ended, bi-directional LVTTTL
- » PLINK [0:11]
 - 3.3V interface
 - Single-ended, bi-directional LVTTTL
- » MGTs [8 links]
 - 8 off-module MGT links
 - 4 per MGT connector
 - 2.5 Gbps per MGT

Clocking

- » Two programmable clock domains and a fixed oscillator clock

Software

- » Nallatech API for Windows 32-bit, Linux 32-bit and 64-bit.
- » Runtime FPGA programming, hardware control, and application communication.
- » API for C/C++

Application development software

- » Compatible with Nallatech optional DIMETalk software
- » Supports multiple design flows including VHDL, Verilog®, and Xilinx System Generator®
- » Compatible with all major synthesis design flows and Xilinx ISE

Ordering and deliverables

Ordering

- » Product order code: NT-BD2

Deliverables

- » PCI card, USB and external power brick accessories
- » API software and documentation CD
- » 30 days product maintenance (technical support, support lounge access)

Additional options

- » DIMETalk software
- » FUSE Toolbox for MATLAB®

Electrical

- » On-card power derived from +3.3V and PCI slot
- » Maximum power dissipation of up to 25W via PCI slot
- » FPGA power dissipation - application dependent
- » Optional power header for applications that require more than the power available via the PCI bus

Quality

- » Manufactured and delivered to meet IPC610-Class 3 standard.
- » Designed and Supplied to ISO9001:2000 certification

Cooling

- » Fitted with active cooling (chip fans).
- » Passive heatsink option available on request - require forced-air cooling

Environmental

- » Cooling: Air convection
- » Operating temperature: 0 °C to 50 °C
- » Storage temperature: -20 °C to 80 °C
- » Relative humidity: 45 to 95% (non-condensing)

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