

FPGA Development Kit

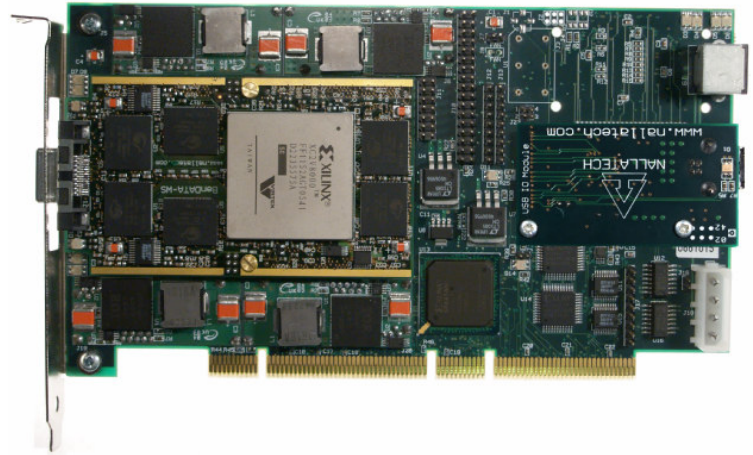
Xilinx Virtex-II FPGA, SRAM and digital I/O



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 FPGA is available exclusively for user applications. Additional features include six independent banks of ZBT® SRAM memory providing users with 6.4GBytes/s of memory bandwidth, and a 16-pin PCI backplate digital header.

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 FPGA and six banks of ZBT SRAM



Key features

- » PCI form factor with USB support
- » Onboard Xilinx Virtex-II FPGAs. Up to:
 - 52k logic cells
 - 120 embedded multipliers
 - 2,160 kbits of BRAM
- » Six independent banks of ZBT SRAM memory
- » Multiple off-card digital I/O headers
- » Onboard programmable clock sources
- » Windows and Linux Operating System support

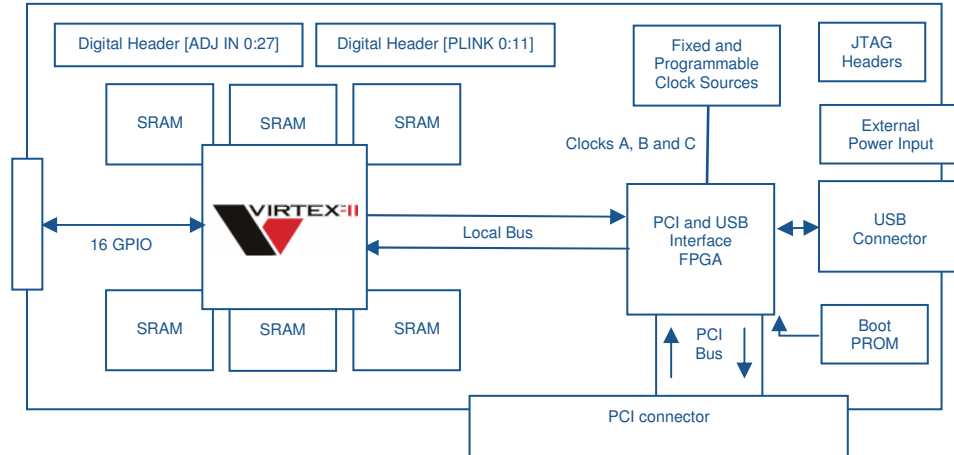
Benefits

- » PCI and USB
 - Industry standard host computer interfaces
- » Six banks of ZBT SRAM memory
 - Allows large amounts of real-time data to be processed quickly in a local environment independent of the PCI bus.
- » Support for multiple FPGA design flows
 - Easy application development, enhanced functionality

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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

- » Choice of Xilinx Virtex-II FGAs: 2V6000-4 2V8000-5

FPGA programming

- » Embedded JTAG programming through API software functions

SRAM memory

- » 24 MB ZBT SRAM
- » Six independent 4 MB banks
- » 64-bit data bus per bank
- » Max clock frequency: 133 MHz
- » Max bandwidth per bank: 1.06 GB/s
- » Total module bandwidth: 6.36 GB/s
- » ZBT SRAM controller IP core included

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
- » PCI Backplate [0:15] - 3.3V interface - Single-ended, bi-directional LVTTTL

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

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)

Ordering and deliverables

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®

Ordering

- » Product order codes: 2V6000-4 : NT-BDWS-6-4 2V8000-5 : NT-BDWS-8-5

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