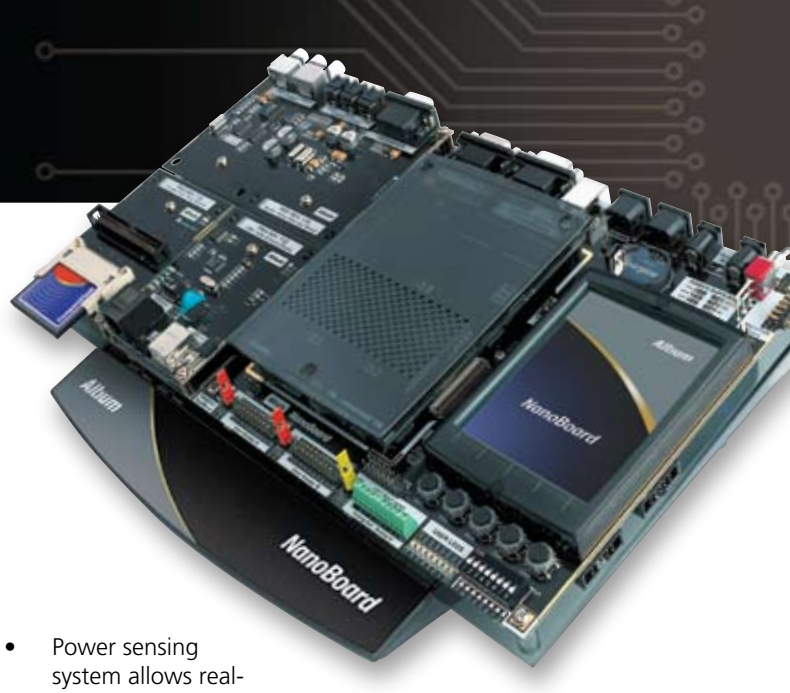
Altium's Desktop NanoBoard

NB2DSKOI



Architectural Highlights

- Innovative and reconfigurable hardware platform harnesses the power of today's high-capacity, low-cost programmable devices – allowing rapid system development and implementation
- Works seamlessly and in full synchronization with Altium Designer unified electronics design system
- Real-time on-board power monitoring and analysis for the entire system
- Automatic peripheral and daughter board detection and configuration
- Eliminates the need to work in simulated environments or build multiple prototypes during development

NB2DSKOI Main Board Specifications

- Supports range of swappable target-FPGA and processor daughter boards from all major chip vendors
- Automatic detection of peripheral and daughter board configuration for plug-&-play platform creation
- High-speed PC interconnection through USB 2.0 allows faster downloading and debugging
- NanoTalk Controller – manages real time proprietary communication with Altium Designer, the board, and the NanoBoard firmware using a Xilinx Spartan-3 (XC3S1500-4FG676C) controller with JTAG-accessible Flash configuration PROM
- Integrated color TFT touch screen facilitates direct interaction with NanoBoard controller and firmware
- Dual User Board JTAG headers for direct interaction and development on production board
- Master-Slave connectors for chaining multiple development boards – allowing multiple-FPGA system development
- Programmable clock, 6 to 200 MHz, available to target FPGA
- SPI Real-Time Clock with 3V battery back-up
- Stereo analog audio system with high-quality on-board amplifiers, mixer, line in/out and stereo speakers
- Four channel, 8-bit ADC and 10-bit DAC, I2C-compatible
- SD card reader – for additional I/O flexibility including the ability to download a variety of files
- Power – Dual 5V DC power daisy-chain connectors with power switch, 5V DC power output connector, power supply test points for all supply levels available on the board, four GND points
- Onboard memory for NanoTalk Controller – includes two 256K x 16 common-bus SRAM, two 256M (16M x 16) common-bus SDRAM, one 256M (32M x 16) common-bus 3.0V Page Mode Flash memory, two 256K x 16 independent SRAM
- Variety of standard communication interfaces: RS-232 serial, CAN, PS/2 mini-DIN
- Variety of general purpose switches and LEDs
- User definable PDA-style push button switches that function as generic design inputs
- Home/ Reset button – Home button enables firmware to take control of TFT panel; Reset provides NanoBoard reset functionality
- Power sensing system allows real-time monitoring of system and device power consumption
- Board ID Memory – 1-Wire® ID system uniquely identifies each daughter board and peripheral board

Included in the box

Peripheral Boards

The Desktop NanoBoard caters for the use of up to three peripheral boards, and is delivered with the following standard peripheral boards:

Audio/Video Peripheral Board (PB01)

- Composite and S-Video output and capture
- 24-bit VGA output
- High-performance I2S stereo audio codec

Interface Peripheral Board (PB02)

- Compact Flash
- SD card slot
- ATA hard-drive interfaces

Data Communications Peripheral Board (PB03)

- 10/100 Ethernet interface
- USB 2.0 interface
- 4MBits/sec IrDA

Additional peripheral boards continue to be developed by Altium, making it easy to evaluate new and alternate technology options.

Choice of Daughter Board

Each Desktop NanoBoard comes with one daughter board, which can be selected from the following:

Spartan-3 (DB30)

- With Xilinx® Spartan™-3 FPGA (XC3S1500-4FG676C)

Cyclone II (DB31)

- Altera® Cyclone™ II FPGA (EP2C35F672C8)

Lattice ECP (DB32)

- Lattice ECP™ FPGA (LFECP33E-3FN672C)

Additional daughter boards will continue to be developed to provide a wider range of FPGA devices and processors, and will be sold separately.

For information on all available NanoBoard configurations visit the Altium website at **www.altium.com/NanoBoard/**
Complimentary Altium Designer training is available at **www.altium.com/Community/TRAININGcenter/**

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