



Nios® II Development Kit, Cyclone™ II Edition



Altera's Nios II Development Kit, Cyclone II Edition provides everything needed for system-on-a-programmable-chip (SOC) development. Based on Altera's Nios II family of embedded processors and the low cost Cyclone II EP2C35 device, this development kit provides an ideal environment for developing and prototyping a wide range of price sensitive embedded applications.

Kit Includes:
• Nios II family of embedded processors • Nios II development tools, including: • Nios II integrated development environment (IDE) and debuggers • GNU tools • Nios II instruction set simulator (ISS)
• MicroC/OS-II real-time operating system with development license • Lightweight TCP/IP stack
• Quartus II design software, including the SOPC Builder system development tool • Library of standard microprocessor peripherals • RoHS-Compliant development board: • Cyclone II EP2C35F672 device • MAX EPM7128AE CPLD configuration control logic • 1-Mbyte synchronous SRAM • 16-Mbyte DDR SDRAM • 16-Mbyte flash memory • EPCS64 serial configuration device (64 Mbit) • CompactFlash connector header for Type I CompactFlash cards (40 available) • 10/100 Ethernet physical layer/media access control (PHY/MAC) • Ethernet connector (RJ-45) • One serial connector (RS-232 DB9 port) • Two expansion/prototype headers (2 x 41 available user I/O pins) • JTAG connectors for FPGA and CPLD • Micror trace/debug connector • One set PMC headers (32-bit) • Four user-defined push-button switches • Eight user-defined LEDs • Dual 7-segment LED display • Power-on reset circuitry • **Cables and accessories:** • USB-Blaster Rev B download cable • Serial cable (RS-232) • 9-V power supply • International power cords • LCD module • Ethernet (RJ-45) cable (7 feet) • Ethernet crossover adapter • Many hardware and software reference designs targeted to the Nios development board Cyclone II edition • One-year subscription to Nios II processor-related tool upgrades • There are no license or royalty fees connected with the Nios II development kit used to develop with Altera FPGA's and HardCopy series structured ASICs • Coupon for a 20% discount on any one instructor-led Altera Technical Training course scheduled in North America

544-1698-ND (DK-NIOS-2C35N) \$1073.61

Nios® II Embedded Evaluation Kit, Cyclone™ III Edition



The Nios II Embedded Evaluation Kit, Cyclone III Edition, is a first class, low cost evaluation platform for embedded developers, software developers, especially those new to FPGA design, can install and evaluate the Nios II Embedded Design Suite (EDS) - a comprehensive software development suite for embedded applications - all at no cost. The included software tutorials and examples come with full source code showing applications such as Picture Viewer, Web Server, C-to-Hardware (C2H) acceleration and graphics.

Kit Includes:
• **CYCLONE III STARTER BOARD:** Cyclone III EP3C25F324 FPGA • **Configuration:** Embedded USB-Blaster™ circuitry (includes an Altera EPM3128A CPLD) allowing download of FPGA configuration files via the user's USB port • **Power and analog devices from Linear Technology:** • Switching power supply LTM4603EV-1 • Switching and step-down regulators LTC3413, LT1959 • **Memory:** • 32 Mbytes of DDR SDRAM • 1-Mbyte of Synchronous SRAM • 16-Mbytes of Intel P30/P33 flash • **Clocking:** 50 MHz on-board oscillator • **Switches and indicators:** • Six push buttons total, four user controlled • Seven LEDs total, four user controlled • **LCD DAUGHTER CARD:** • Color LCD touch-screen display: 800 x 480 resolution • 24-bit CD quality Audio CODEC with line-in, line-out, and microphone-in jacks • 10/100 Ethernet physical layer/media access control (PHY/MAC) • **Connectors:** • VGA output • Composite TV-in • Audio-out, audio-in, and microphone-in • Secure digital (SD) card • Serial connector (RS-232 DB9 port) • PS/2 • Ethernet connector (RJ-45) • **NIOS II EVALUATION KIT CD-ROM:** • **Example applications:** • Application selector • Picture viewer • Mandelbrot acceleration with the Nios C2H compiler • Web server/Remote FPGA configuration • **Hardware tutorials:** • Create an FPGA design in one hour • Build a 32-bit soft processor system inside an FPGA **Software tutorials:** My First Software Application • **Complete documentation:** • Quick start guide • User guide • Reference manual • Board schematic, layout, and bill of materials • Product and partner information • **CABLES AND ACCESSORIES** • 128-Mbyte SD card and USB-to-SD card adapter • USB cable • 9V power supply • International power cords • Ethernet (RJ-45) cable (7 ft.) • Ethernet crossover adapter • **ALTERA COMPLETE DESIGN SUITE DVD (Free):** • Quartus® II Web Edition (FPGA design software) • ModelSim® Altera Web Edition (FPGA simulation software from ModelSim) • Nios II Embedded Design Suite (32-bit microprocessor software) • MicroC/OS-II real-time operating system evaluation • Nios II C-to-Hardware acceleration compiler evaluation • NicheStack TCP/IP Network Stack - Nios II Edition evaluation • MegaCore® IP Library (Library of intellectual property cores)

544-2411-ND (DK-N2EVAL-3C25N-0B) \$484.47

DSP Development Kit, Cyclone™ II Edition



The DSP Development Kit, Cyclone II Edition provides everything you need to develop complete system-on-a-programmable-chip (SOC) solutions.

Kit Includes:
• Cyclone II DSP Development Board with and EP2C70 device • DSP Development Kit, Cyclone II Edition Version 6.0.1 CD-ROM • DSP Builder Version 6.0.1 CD-ROM • The MathWorks MATLAB and Simulink CD-ROM Release 2006a (2006a) • Quartus II Software Development Kit Edition (DKE) version 6.0 SP1 CD-ROM • Nios II Embedded Processor Windows Evaluation Edition version 6.0.1 CD-ROM • IP MegaCore Library version 6.0.1 CD-ROM • SLP-50 anti-aliasing filter from Mini-Circuits • SMA Cable • USB-Blaster download cable and USB cable • Power supply and adapters for North America/Japan, Europe and the United Kingdom • Quartus II Design Software Installation and Licensing for PCs manual

544-1699-ND (DK-DSP-2C70N) \$1073.61

Video Development Kit, Cyclone™ II Edition



The Video Development Kit, Cyclone II Edition, featuring the Texas Instruments (TI) TVP5146 Family of video analog-to-digital (A/D) converters, delivers a complete development environment for digital video and image processing. The kit facilitates the entire design process from design conception through hardware implementation. The Video Development Kit, Cyclone II Edition includes the Cyclone II DSP development board, Altera's video input daughter card, DSP Builder development tool, Quartus II development software, evaluation intellectual property (IP) cores, system reference designs and labs, as well as power supplies, cables and documentation.

Kit Includes:
• **Cyclone II EP2C70 DSP development board:** Cyclone II EP2C70F672C6 device • **Video input daughter card:** • Composite video input channels TI TVP5146 (Supports NTSC/PAL, 10-bit BT.656 output) • **Analog I/O:** • Two 14-bit, 125-MSPS analog-to-digital (A/D) converter - TI ADS5500 • Two 14-bit 165-MSPS digital-to-analog (D/A) converter - TI DAC904 • **VGA digital-to-analog converter (D/A) • Stereo audio coder/decoder (CODEC), 96kHz • Digital I/O:** • EMIF connector for TI's C6000 DSP Starter Kit (DSK) to enable peripheral expansion and FPGA co-processing • MICROTOR connector for Agilent and Tektronix logic analyzers • Expansion prototyping connector • **Memory:** • 256-Mbyte DDR2 DIMM • 1-Mbyte synchronous SRAM • Two EPCS64 devices • **MATLAB/Simulink Evaluation Software • DSP Builder development tool • Quartus II DKE • Evaluation IP cores • System reference designs and labs:** • Video and image processing reference design • DSP Builder filtering design • DSP Builder/SOPC Builder image processing reference design • Fast Fourier transform (FFT) coprocessor reference design for TI's TMS320C6416DSK • Nios II reference designs • DDR2 DIMM reference design • **Cables and accessories:** • USB-Blaster download cable • Power supply • International power cords

544-1703-ND (DK-VIDEO-2C70N) \$1181.51

Video Input Daughtercard



The Video Input Daughter Card from Altera enables composite video to be interfaced with Altera's or third party partner FPGA development board equipped with a standard expansion connector. It is ideal for developing applications with the Video and Image Processing Solutions that need to perform any image processing. The daughter card is included as part of the Video Development Kit, Cyclone II Edition and it can be purchased as a separate item.

Features: • 2 Composite Video Input Channels using the Texas Instruments (TI) TVP5146 ADC • Support for NTSC/PAL • 10-bit BT.656 Output • Compatibility with expansion connector, standard on most Altera development kits

544-1704-ND (DK-VIDEO-TVP5146N) \$210.41

PCI Development Kit with Cyclone™ II



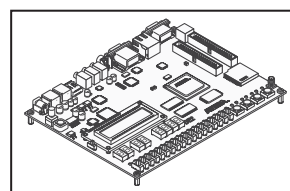
The Cyclone II EP2C35 PCI Express Development Board provides a hardware platform for developing and prototyping PCI Express, DDR2 SDRAM, and the 10/100/1,000 Ethernet interface. Based on Cyclone II FPGAs and using Altera MegaCore functions or your own IP, Cyclone II EP2C35 PCI Express Development Board allows users to quickly solve design problems that typically require time-consuming and custom solutions.

649-1001-ND (KS-ALT-2C35-30) \$1618.50

NEW! terasic DE2 Development and Education Board



Specifications: **FPGA:** • Cyclone II EP2C35F672C6 FPGA and EPCS16 • **RoHS Compliant**
serial configuration device I/O Devices:
• Built-in USB Blaster for FPGA configuration • 10/100 Ethernet, RS-232, Infrared port • Video Out (VGA 10-bit DAC) • Video In (NTSC/PAL/Multi-format) • USB 2.0 (type A and type B) • PS/2 mouse or keyboard port • Line-in, Line-out, microphone-in (24-bit audio CODEC) • Expansion headers (76 signal pins) **Memory:** • 8MB SDRAM, 512KB SRAM, 4MB Flash • SD memory card slot **Switches, LEDs, Displays and Clocks:** • 18 toggle switches • 4 debounced pushbutton switches • 18 red LEDs, 9 green LEDs • Eight 7-segment displays • 16 x 2 LCD display • 27MHz and 50MHz oscillators, external SMA clock input



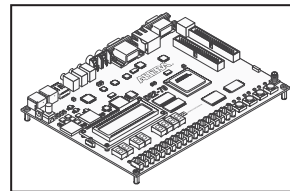
P0301-ND (P0301) \$534.11

Note: Academic pricing available; call Digi-Key for pricing.

DE2-70 Development and Education Board



Includes: • Altera Cyclone® II 2C70 FPGA device • Altera Serial Configurations device EPCS16 • USB Blaster (on board) for programming and user API control; both JTAG and Active Serial (AS) programming modes are supported • 2-Mbyte SSRAM • Two 32-Mbyte SDRAM • 8-Mbyte Flash memory • SD Card socket • 4 pushbutton switches • 18 toggle switches • 18 red user LEDs • 9 green user LEDs • 50MHz oscillator and 28.635MHz oscillator for clock sources • 24-bit CD-quality audio CODEC with line-in, line-out and microphone-in jacks • VGA DAC (10-bit high-speed triple DACs) with VGA-out connector • 2 TV Decoder (NTSC/PAL/SECAM) and TV-in connector • 10/100 Ethernet Controller with a connector • USB Host/Slave Controller with USB type A and type B connectors • RS-232 transceiver and 9-pin connector • PS/2 mouse/keyboard connector • IrDA transceiver • 1 SMA connector • Two 40-pin Expansion Headers with diode protection



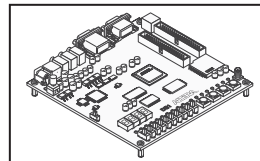
P0304-ND (P0304) \$646.32

Note: Academic pricing available; call Digi-Key for pricing.

DE1 Development and Education Board



Specifications: **FPGA:** • Cyclone II EP2C20F48C7 FPGA and EPCS4 serial configuration device **I/O Devices:**
• Built-in USB Blaster for FPGA configuration RS-232 port • VGA DAC resistor network (4096 colors) • PS/2 mouse or keyboard port • Line-in, Line-out, microphone-in (24-bit audio CODEC) • Expansion headers (76 signal pins) **Memory:** • 8-MB SDRAM, 512KB SRAM, 4MB Flash • SD memory card slot **Switches, LEDs, Displays and Clocks:** • 10 toggle switches • 4 debounced pushbutton switches • 10 red LEDs, 8 green LEDs • Four 7-segment displays • 27MHz and 50MHz oscillators, external SMA clock input



P0528-ND (P0528) \$171.97

Digital Development Kits and Sensor



P0424-ND: The TRDB_LCM Kit provides everything you need to develop applications using a digital panel on the Altera DE2 board and Altera Cyclone II FPGA Starter Development Kit (CII Starter Kit). **Kit Includes:** • Complete reference designs and source code for implementing a TV player or a Color Pattern Generator using TRDB_LCM and Altera DE2/CII Starter Kits.
P0307-ND: The 4.3" Ultra-high Resolution LCD Touch Panel Development Kit provides users an 800 x 480 full-color high-quality LCD Touch Panel with complete reference designs with source code to allow users to develop applications using a touch panel on the Altera DE2-70/DE2/DE1 boards and Altera Cyclone II/Cyclone III Starter Kits.
P0349-ND: The TRDB_DC2 1.3 Mega Pixel Digital Camera module that provides everything you need to build a 1.3 Mega Pixel Digital Camera on the Altera DE2/DE1 board and CII Starter Kit. **Kit Includes:** • TRDB_DC2: 1.3 Mega Pixel Daughter card • Complete reference design with source code in Verilog • User Manual with Live Demo examples **Note:** *Use M0344-ND with this module.*
M0344-ND: This CMOS Sensor is to be used with P0349-ND.

P0424-ND (P0424) 3.6 Inch Digital Panel Development Kit \$106.82
P0307-ND (P0307) 4.3 Inch Digital Touch Panel Development Kit \$183.43
P0349-ND (P0349) 1.3 Mega Pixel Digital Camera Development Kit \$75.53
M0344-ND (M0344) Sensor for use with P0349-ND \$21.58

All prices in Canadian dollars and include duty and brokerage fees.

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