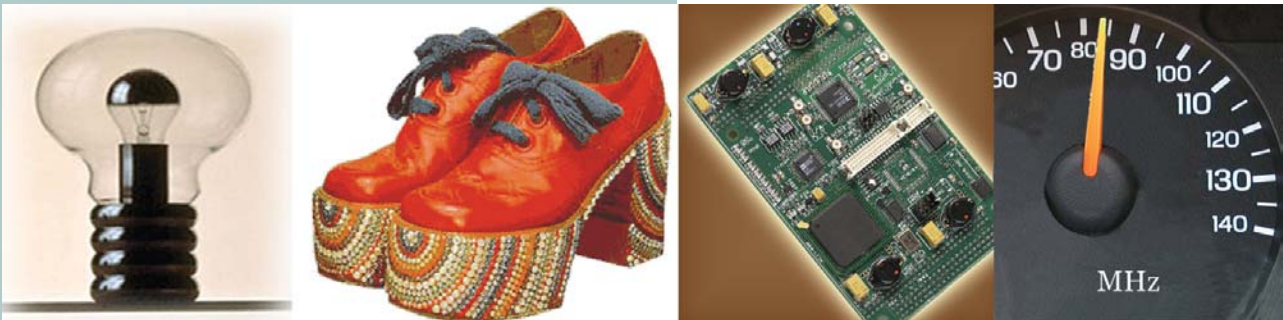




A Complete Design Platform

Innovate application with a **Platform** to support **Systems** requiring **Speed**



Before the advent of FPGA revolution, conventional protoboards let you achieve fairly predictable results. Not anymore.

Designers today face unprecedented challenges in prototyping different applications based on VLSI and Embedded Systems, dealing with multi-million gate designs.

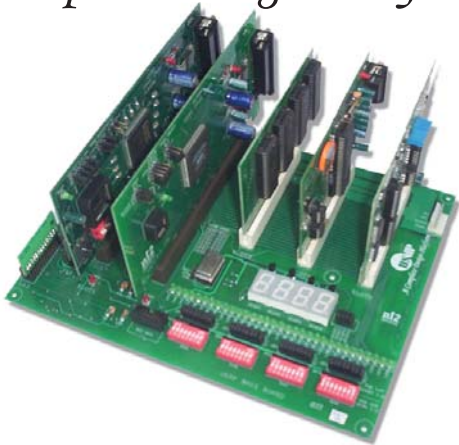
ni2designs delivers new-generation platform **USDIP** with integrated design technologies and methodologies that help you address all aspects of electronics design in the nanometer era.

This incisive system development platform can make you prototype exceedingly complex applications based on VLSI, Embedded Systems, DSP, Power Electronics and Micro-controllers. This means - One platform for complete System Development. That's why we call it "**The Almighty Kit**".





A Complete Design Platform



Individual Module Specifications

Micro-controller Card

- Philips 89C51 RD2 controller
- 80C51 CPU with 64 kB FLASH & 1KB RAM
- RS-232 interface
- On board serial EEPROM & RTC
- In system serial programmable (ISP)
- All the I/Os are accessible to FPGA
- Available with sample codes

PIC Micro-controller Card

- Microchip 16F877 PIC MicroController
- High performance RISC, with 8K x 14 FLASH Program Memory
- In system Programmable
- On board RTC and RS 232 Interface
- Interrupt port
- All ports accessible through edge connector

Memory Add-On Card

- Add on module for Memory intensive applications
- 512KB x 4 SRAMs, total 2MB capacity
- Direct interface with FPGA module with 70ns of access time

ADC/DAC Add-On card

- 4-channel ADC (2.5us conversion time) & 2-channel DAC (100ns settling time)
- 8-bit ADC resolution & 12-bit DAC resolution
- 0-5V or +/- 2.5V ADC input voltage range

Power Electronics Module

- IGBT based I/O, with current rating upto 600V/60Amps
- Dual high current relays
- Stepper motor controller circuit
- High Voltage DC rectifier
- Step down transformer (/100) for line monitoring applications
- 5 optical isolated O/Ps
- 2 optical isolated I/Ps
- High current capacity connectors
- Easily interfaced with motors and other circuits
- Available as isolated board, compatible to USDP
- Optimum choice for PWM, motion & control applications

General Purpose Add-On Card

- Board with general purpose layouts with FPGA interface
- Useful in mixed signals designs SMD adapters available on request

Features & Specifications

- Easy to use and implement system designs
- Slot cards for FPGA from Altera, Xilinx and other vendors with package support up to Fg256
- Stacking of multiple FPGAs (can be of different vendors)
- 64 bit general purpose bus interface with FPGA
- 77 bit bus sharing between FPGAs
- High performance backplane, good frequency response upto 80MHz designs (one of the fastest protoboards available in India)
- On board JTAG circuit for downloading
- Multiple configuration options with JTAG chaining of devices
- User selectable configuration modes, using either FLASH PROM/ JTAG
- 32 Digital I/Ps and O/Ps, each can be configured as input or output giving flexibility to designers
- On board system reset circuit
- Configuration reset circuit
- Four seven segment Multiplexed display
- 4x4 switch matrix keyboard interface
- On board crystal oscillator socket (user can select his desired oscillators)
- General-purpose user area for interface of user clock circuit
- Ability to use Clock management circuits of FPGAs
- Proper configuration of FPGAs with high-speed clocks through special scheme
- Support for different I/O Standards
- A complete I/O bank for user VREF interface, using DB25 connector
- Parallel port interface
- Easily accessible user I/Os
- 3 on board 120-pin connector for Add-on card interface
- Stacking of maximum three Add-on card modules of different technologies
- 89c51 Microcontroller card for traditional 8051 applications with ISP support
- PIC Microcontroller card for industrial based applications
- Memory Card for data intensive applications
- High performance ADC/DAC add-on card
- Power module for motion control and electro-mechanical applications
- Intensive user manual support with various examples and source codes
- SMPS with current rating upto 3Amps

Specifications of PLD Modules

- Support for Spartan-II FPGA's from Xilinx and ACEX1K series devices from Altera
- On board Regulators, supporting 5V, 3.3V, 2.5V, 1.8V devices
- User selectable configuration modes
- Support for different I/O Standards
- High speed interface with other add-on cards
- Capability to use special clock management features of FPGA's
- A complete I/O bank for user VREF interface, using DB25 connector
- Parallel port interface directly from add-on card of FPGA
- On board configuration reset

Note : User gets three PLD modules along with USDP; XC2S200PQ208-5c, XC2S50PQ208-5c and EP1K50Q208-3c. *Customized modules can be developed.*

Other Accessories Provided

- Programming Cables, serial cables for RS-232 communication
- SMPS with 3Amps current rating
- 4x4 membrane keypad with cable
- 16x2 character LCD with cable
- CD-ROM containing user manual, source codes, reference designs and programming softwares (Also hard copy of user manual)

Applications of USDP

- Research and development of high-speed FPGA designs
- Design and development of FPGA based DSP & Embedded applications
- To train designers how to exploit architectural features of FPGAs from different vendors
- Robotics and Motion control applications
- MicroController based applications
- PC controlled design development
- Many more...