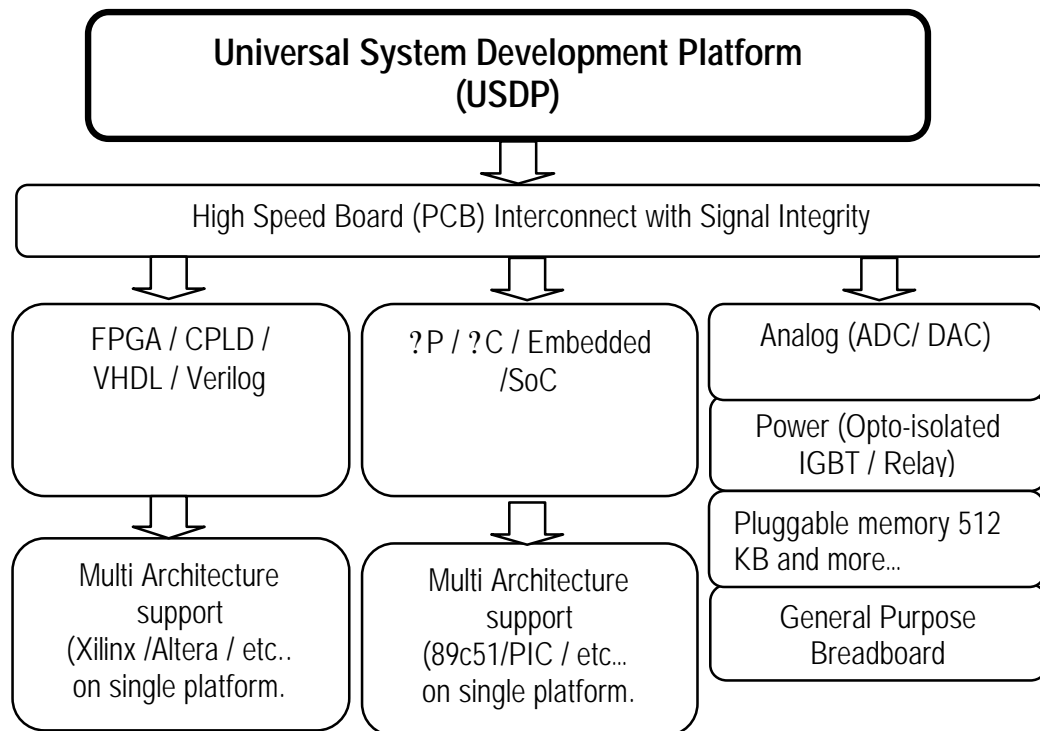


Universal System Development Platform (USDP) Overview



Training Features

- ? Single board / platform for all types of training courses / on Embedded and VLSI.
- ? Suitable for both Advanced and Beginner Courses / Trainings and workshops.
- ? Easy customization of board for training needs of different architectures in VLSI / Embedded.
- ? Easy and Simple to use with very User-friendly interface, making learning the platform operation easy for students /beginners.
- ? Exhaustive Students manual and Instructors guide available with solved examples, covering basic and advanced topics.

Development Features

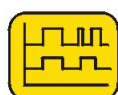
- ? Single Board / Platform for complete system design covering all parts in the system like FPGA / CPLD / ?P / ?C / Embedded / SoC on a single platform.
- ? Multi architecture support for FPGA /CPLD / ?P / ?C allowing evaluation of design performance on different devices like Xilinx Altera, etc... in VLSI and 89c51,PIC, etc... in embedded.
- ? High speed and reliable System Interconnection Bus with proper signal integrity and low skew capable of board / system level data transfer upto 80 MHZ reliably.
- ? Specially mounted High speed gold plated and shielded connectors for signal integrity.
- ? Specially designed Clock network for low board level skew between components.
- ? Specially designed High current capacity power supply for High Speed system, power needs.

Basic Architecture of Universal System Development Platform (USDP)

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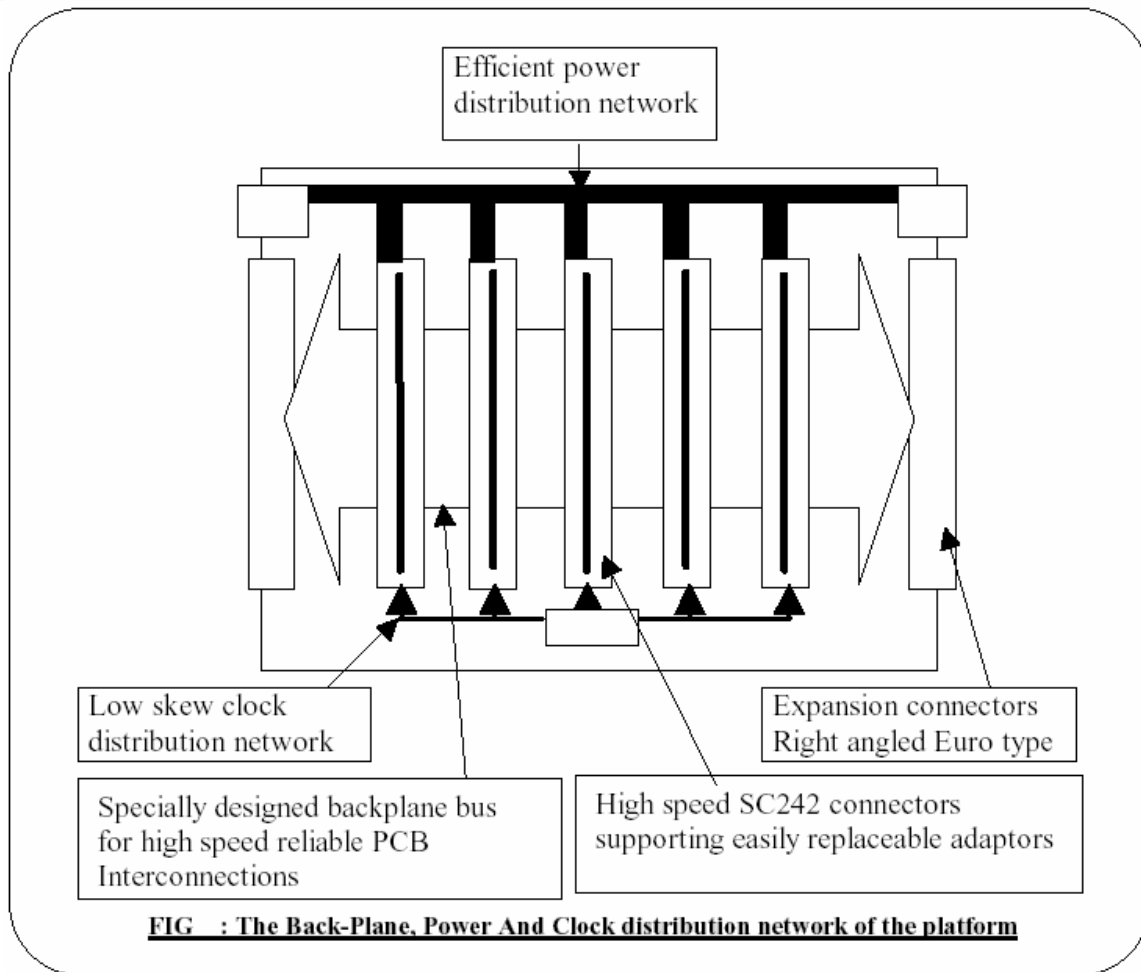
High Speed DSP
Design Solutions



FPGA Backend &
Verification/Testing



Innovative Product Development
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Universal System Development Platform (USDP) can be used for satisfying the varying needs of both a beginner as well as a professional, with its host of advanced features along with easy operation, allowing the developer / student to concentrate on his real task of developing / learning the design issues instead of wasting time in learning the tool operations. Thus achieving the efficient use of his Time, Skills along with researching and developing better Design / Engineering practices.

Some examples have been provided for understanding the use of USDP as a platform for System / Board level development where reliable interface of multiple different modules is required for development of the complete system.

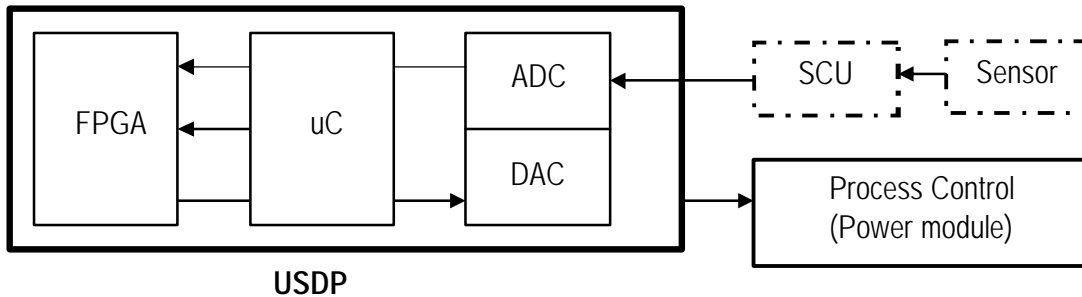
Examples:

Temperature controller

USDP is ideal for temperature control applications. Only a temperature sensor has to be interfaced along with its signal conditioning unit(SCU) to ADC. After the digitization of temperature values, user can manipulate the values and control the process using FPGA or the microcontroller cards.

Modules Can be used

PIC card / 89C51 card, FPGA card, General Purpose PCB card, ADC/DAC Card and power module.



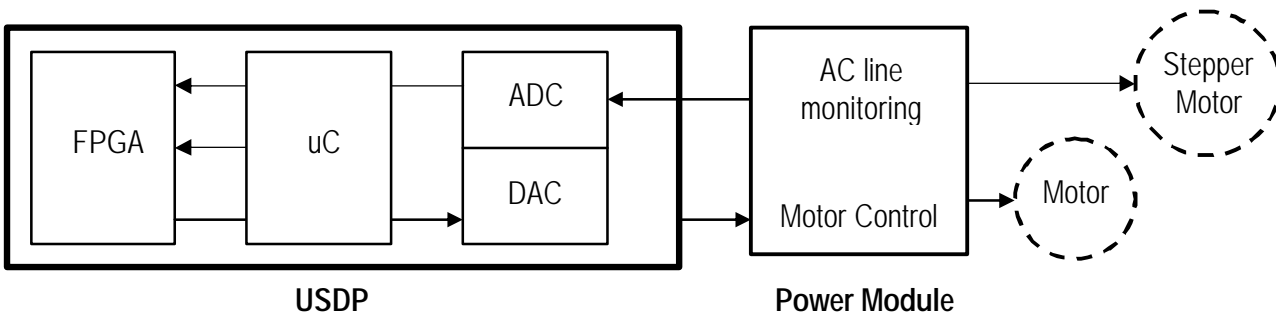
Motion Control

USDP is ideal for robotics applications development. As Stepper motors are widely used and plays vital role in robotics environment for implementing arms, handles, moving/rotating mechanisms.

With the use of external power module USDP can prove good platform for motion control applications. Power card the motor interface can be done, motor processing and control at high speeds can be done by FPGA, Data communication with computer can be done via RS232 on Micro controller, in this way a whole system can be assembled on USDP.

Modules used

PIC card / 89C51 card, FPGA card, General Purpose PCB card, Power module.

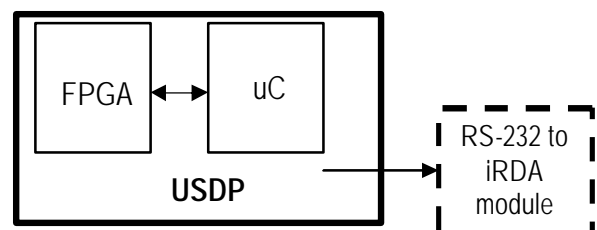


Infrared Communication

USDP is designed to meet a variety of application needs with distinct advantages that enable the embedded system designer to easily add infrared wireless connectivity. IRDA IC's can be easily assembled on General purpose PCB's and data communication can be achieved using the micro controller or FPGA/CPLD.

Modules Can be used

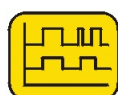
PIC card / 89C51 card, FPGA card, General Purpose PCB card, IRDA IC's.



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High Speed DSP Design Solutions



FPGA Backend & Verification/Testing



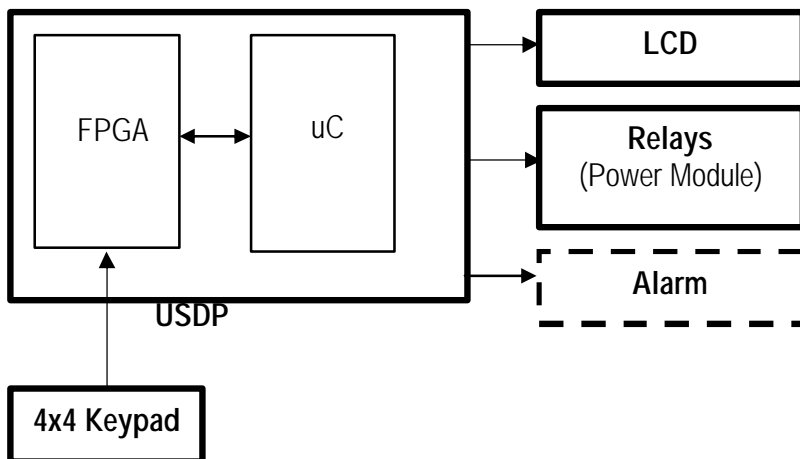
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Access control system

Today many applications are developed for security and access controlling. The basic applications of access control can be developed and prototyped on USDP. The basic model consists of keypad interface for password entering, solenoid for door open & close which can be replaced with relays here, user display for welcome notes, menus and messages and protocol for security maintenance.

Modules Can be used

PIC card / 89C51 card, FPGA card, General Purpose PCB card, LCD, Power module and keypad.

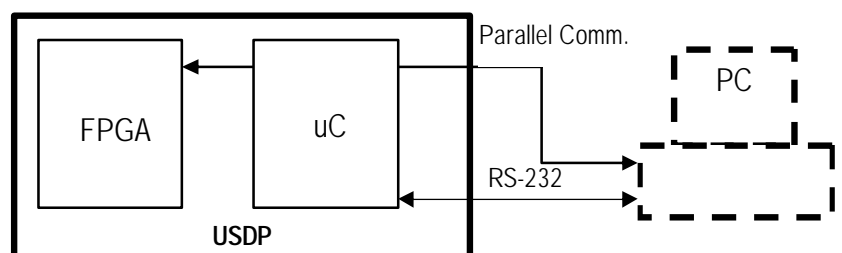


PC based applications

Today most of the applications are having PC communication or control. For communication with PC **USDP** provides both **serial** and **parallel** communication. Parallel port connector is provided on FPGA cards which can be used to communicate with PC from its parallel port. Also every microcontroller is equipped with RS-232 communication port for serial communication with PC. Hence USDP is worth getting product for such PC controlled application development.

Modules Can be used

PIC card / 89C51 card, FPGA card.



8051 microcontroller based applications

USDP can give excellent support of development and implementation of microcontroller based application. The user gets two top of the line microcontroller development cards based on 89c51RD2 and PIC 16F877. Using these controller cards the designer gets the choice for selecting the controller depending on the application requirement. As 89c51 is based on 8051 architecture the students feel comfortable and get the exposure for practical design development and also the PIC 16F877 which is RISC based architecture gives them a real learning experience.

Other Digital experiments and Practicals

Design of 8/16/24/32 bit counters & shift registers, Adders and subtractors, 4-bit and 8-bit ALUs, Timer designs IC8254 & IC8253, 8255 PPI design, Micro-processor design development using HDL, All digital logic gates and functions.