VLSI Training & Designing Boards

Programmable Logic Devices are playing major role in System Design due to their flexible architecture, re-programmability and fast time to market resulting in a smaller design-cycle period. Also lower design risk is involved with the use of PLDs because small design changes can be made without any PCB changes. The Scientech CPLD / FPGA boards have been designed to offer an platform for, low-cost system for designers / Students who need a flexible platform to gain exposure to the CPLD / FPGA device, or for those who need to rapidly prototype designs. These boards come with a power supply and programming cable, so designs can be implemented immediately without the need for any additional hardware. The experimental board includes almost all elements generally used in digital logic circuits, thus providing a complete training or a fast prototyping circuit design environment

▶ Universal Kit ◀

This Universal PLD kit is an ideal trainer to implement and test the designs both for the beginner and the expert. It is "assembled ready" for various interfaces that include ADC/DAC, display, keyboard, RAM, serial communication etc. The user has to implement the design into the PLD using the given ucf.

The Universal kit consists of a common mother board and various daughter boards. As the name says this is a Universal Kit i.e. it has almost all the primary interfaces that a PLD may be used for. This Kit is designed to interface PLDs of any make (Xilinx, Altera, Actel etc...), any gate count and any package.

Features:

- can use PLD (CPLD / FPGA) from any vendor
- Any package of Chip (Present or Future) can be used with it.
- Independent Daughter boards. Can be used with other compatible main boards
- 16 DIP Switch Inputs & 16 LED Outputs
- 3x4 Keyboard Interface
- 2 Key Inputs [Pulse]
- Multiplexed 8 Digit / Non Multiplexed 2 Digit 7 Segment display. (Selectable through jumper cable)
- 8 Bit ADC Interface (ADC0804)
- 8 Bit DAC Interface (TLC7528)
- 64 K byte Memory Interface
- I^2C Interface
- RS-232 Interface

Kit Includes :
- J -TAG programming cable
- Power Supply (SMPS) with built-in spike suppressor
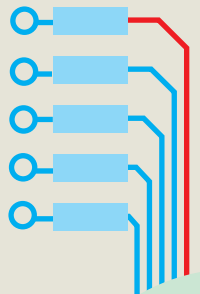- User Manual

Daughter boards supported by the Universal Kit:

- Xilinx CPLD 95XX series TQ100
- Xilinx FPGA Spartan series Vq100
- Xilinx FPGA Spartan-II series TQ144
- Xilinx Coolrunner series VQ100
- Xilinx Virtex series
- Altera Flex10K series
- Cypress Delta39K series
- Cypress PSoC Micro Controller
- Atmel 89C51 Micro Controller

▶ CPLD Kit ◀

CPLD Kit is a trainer kit useful for students who wish to initiate the VLSI Design subject. It is based around popular CPLD supplied by Xilinx Inc. - a world leader company manufacturing programmable logic devices. The CPLD used in the kit is 9572 fitted in 84-pin socket. This PLD is sufficient for students who can write small programs & then verify them by downloading the bit stream files in the actual CPLD. There is a Display I/O board and you can apply 16 inputs and 16 outputs from it. The levels are displayed on LEDs. Additionally there are two seven-segment displays, which can be used to display counter functions. All the CPLD pins are brought out on four FRC connectors. Flat cables can be connected to them to interface the CPLD with the external signals. A JTag cable is provided with the kii. The bitstream can be downloaded through thecable.

Features:

- Supports Xilinx CPLDs in PC84 package (XC9572 / XC95108 etc)
- On board 4 MHz Clock module
- Internal / External clock selection facility
- On board JTAG port for programming and testing
- Power on Reset with Reset Switch
- PLD I/O pins available on connectors for external interface
- The I/O Display Board within the kit has
    - Two 7- segment displays (non-multiplexed)
    - 16 Red LEDs for Output indication
    - 16 Green LEDs for Input indication
    - 16 DIP switches for Input stimulus
    - Two tactile switches for normal pulse operation
  Kit Includes :
- J -TAG programming cable
- + 5 V Power Supply
- User Manual

▶ FPGA Kit ◀

Scientech FPGA Kit is an excellent platform for learning VLSI Design. It provides an "all-in-one" platform that contains everything needed to implement a wide variety of circuits, making it the perfect choice for those encountering digital circuits, FPGAs and/or CAD tools for the first time.The FPGA used in the kit is XCS05 fitted in 84-pin PLCC socket. The kit comes with a Display I/0 board and, one can apply 16 inputs and 16 outputs from it. The levels are displayed on LEDs. Additionally there are two seven-segment displays, which can be used to display counter functions. A J-Tag cable is provided with the kit. The bitstream can be downloaded through the cable. Alternately a copy of the bitstream can also be programmed in a serial EPROM and used to configure the FPGA. There is also a facility of parallel EPROM. The users can also use devices that are pin compatible to the XCS05, and use the parallel EPROM to configure them.

Features:

- Supports Xilinx FPGAs in PC84 package
  (XC5202 / XC4000 / XCS Series etc)
- On board 4 MHz Clock module
- Internal / External clock selection facility
- Program Mode Selection
- On Board Hardware Debugger cable for programming
- Program can be downloaded through EPROM or OTP
- Power on Program with switch
- PLD I/O pins available on connectors for external interface
- The I/O Display Board within the kit has
    - Two 7- segment displays (non-multiplexed)
    - 16 Red LEDs for Output indication
    - 16 Green LEDs for Input indication
    - 16 DIP switches for Input stimulus
    - Two tactile switches (Push Button) for
      normal pulse operation

Kit Includes :
- J -TAG programming cable
- + 5 V Power Supply
- User Manual

Specifications are subject to change

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