MATrix-II

Reload your Applications...

MATrix-II the next frontier in VLSI prototyping is here; unprecedented convergence and integration of diversified VLSI applications on a single platform.

MATrix-II has been revised for higher frequency applications and expansion capabilities. With this users will get more freedom for prototyping of designs.

This application specific platform provide a deeper understanding of how the application is performing and provide the visibility required to resolve the most complex design issues.

- Embedded System Development
- FPGA Prototyping
- MicroController based designs
- Control Logic Building
- PC based Interface
- Power Electronics and Control Drives
- Display and Interface

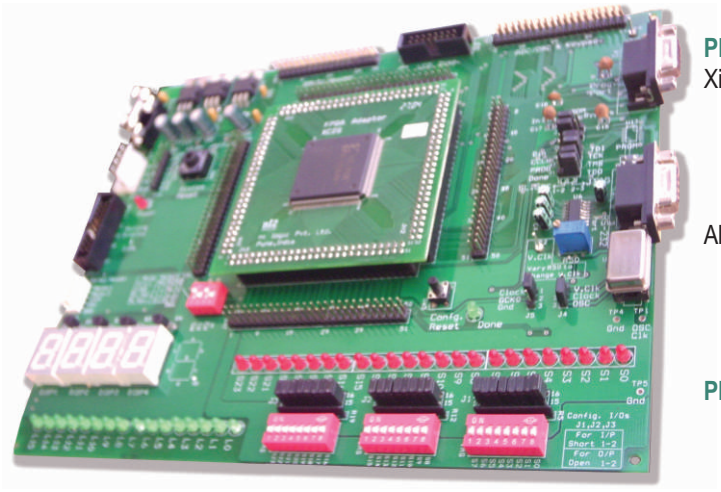
Spanning a wide range of applications, the *MATrix-II* provides the greatest degree of prototyping flexibility to help you in design and development; resulting in high asset utilization at the lowest cost.

2 innovations nurturing

MATrix-II

The *MATrix-II* (Multiple Application Tricks) is a low cost universal platform for testing and verifying HDL designs based on the Xilinx and Altera PLDs. Tthe purpose of *MATrix-II* is to teach the basic concepts of VLSI designing with various electronic circuits. The *MATrix-II* has been revised & extended to some basic electronic circuits for application development and their realization. With this protoboard user can develop his PLD designs with complete applications. Also it gives a complete set of modules for project development for beginners.

MATrix-II supports multiple vendor devices from Xilinx and Altera, who are world leader in PLD manufacturing. It supports Spartan-2 and XC9500 series of devices from Xilinx; and ACEX 1K and MAX7000s series of devices from Altera.



Features & Specifications

Multi-vendor device support for Xilinx and Altera PLDs.
Packages supported PLCC84, TQ144 and PQ208.
Voltage support to +1.2V, +2.5V, + 3.3V & +5V devices.
Upto 140 user I/Os.
All FPGA I/Os accessible through headers.
Four Multiplexed 7-Segment displays (with segment map)
Interface to RS232 with 9-pin D-type connector.
User selectable configuration modes, using FLASH PROM / JTAG / Slave Serial.
Byte-blaster cable interface for configuration of Altera FPGAs.
On board 8-MHz Clock oscillator (user selectable).
Variable frequency generator (from 100Hz to 10KHz range).
Higher frequency board support.
Configurable 24 switches as I/P or O/P.
16 digital LED indicated outputs.
Power on Reset and configuration reset key.
Support for different I/O Standards.
4x4 Keyboard matrix card.
Interface to Atmel AT89s8252 microcontroller.
Facility for I2C interface.
8-bit ADC/DAC add-on card.
Four 5x7 Dot Matrix displays.
Optically isolated relay card.
16x2 character LCD display with contrast control.
Short circuit protection circuit.

Individual Module Specifications

PLD Cards

Xilinx Modules
XC9572 PC84 containing 72 macrocells
50,000 gates Spartan-II FPGA; XC2S50 PQ208

Altera Modules
MAX7128S CPLD containing 128 macrocells
50,000 gates ACEX1K FPGA; EP1K50 TQ144

Pluggable Micro Controller Module

Atmel AT89S8252 ISP Micro Controller
On board In System Programming (ISP) circuit
8KB ISP Flash & 2KB of EEPROM
Coupled with FPGA for embedded applications
All 32 I/O lines accessible to FPGA
On board reset circuit Timer and interrupt ports

ADC/DAC Module

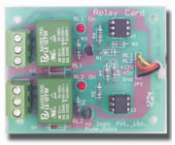
8 channel ADC 0809 (8-bit, 20KHz/Channel)
Single channel DAC0800 of 8-bit resolution
Facility for onboard gain and reference voltage adjustment

Liquid Crystal Display (LCD) Module

16 x 2 characters LCD display
Display contrast control

Relay Module

Two Optically isolated relays
NC, NO, COMM I/Os on power header
Relay ON indication



Dot Matrix Rolling Display Module

Matrix of four 5x7 LED display
Total 140 LEDs on the board

Keyboard Adaptor

4x4 membrane keypad

Applications

FPGA based design development
Tiny Embedded Applications
Temperature Controller
Access Control System

PC based Applications
8051 Microcontroller based Applications
Design of 8/16/24/32 bit Counters
8/16/24/32 bit Shift Registers

Timer Designs IC8254 and IC8253
8255 PPI Design
4-bit and 8-bit ALUs
All Digital Logic Gates and Functions

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