

MATrix-II



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.

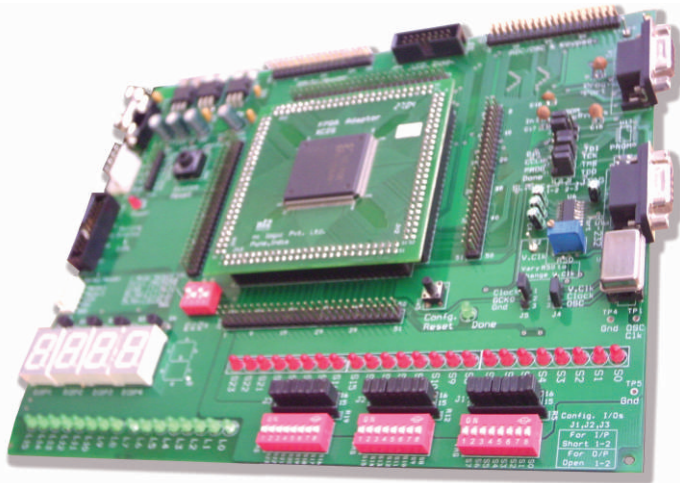
Reload your Applications...



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. The 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.

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

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

