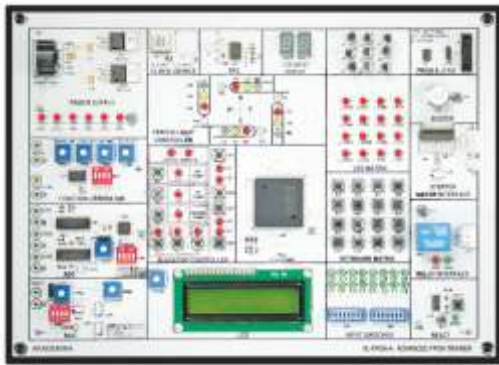


AKADEMIKA



Product Catalogue

VL-FPGA-A Advanced FPGA Development Board



SPECIFICATIONS

Device

- FPGA XC3S400-PQ208

Onboard Function generator

- Provision for Square and Triangular wave generation
- Frequency variable from 40 to 100 KHz with provision of fine and coarse selection for both square and triangular wave
- Amplitude variable from 0 to 2Vp-p for both square and triangular wave
- Offset adjustment for triangular wave

Onboard motor interface

- Stepper motor interface using 12-VDC, 200 steps / revolutions motor
- 12V DC, DC motor interfaced using unpolarized connection so that it can be reversed

Onboard relay interface

- One NO and NC contacts are provided using 12-VDC relay

Onboard Buzzer interface

Analog inputs

- ADC AD7938 (1.5MSPS and 12-bit) with 4 channels used
- Thermistor interface is given to ADC channel 4
- Anti aliasing filter at the input of ADC (channel 1) with provision for time constant adjustment

Analog output

- DAC TLV 5619 (12-bit, 100ns conversion time)
- Reconstruction filter at the output DAC with provision for time constant adjustment

Onboard application

- Traffic light controller
- Elevator controller

User interface

- 16 input switches
- 4X4 LED matrix
- 4 X 4 matrix keyboard
- Two 7- segment displays
- 16 X 2 character LCD display

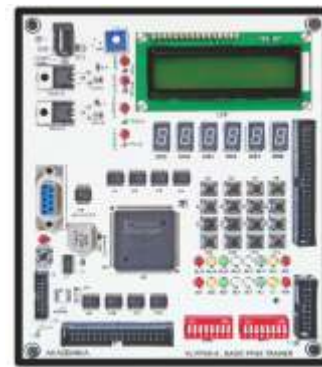
FPGA configuration through

- USB JTAG
- Clock oscillator
- 4MHz

EXPERIMENTS

- Interfacing ADC-DAC
- Stepper motor, DC motor, Relay interface, Buzzer interface, seven segment display & LCD interface
- Implementation of multiplexer, decoder, encoder, flip flop
- 2-bit comparator, binary to gray code converter, adder and subtractor
- Design of arithmetic logic unit
- Generating ramp waveform using DAC
- Traffic light controller
- Two floor elevator controller
- Temperature sensing using ADC-DAC interfacing and display on LCD
- Application using LED matrix
- PRBS generator

VL-FPGA-B Basic FPGA Development Board



SPECIFICATIONS

- VL-FPGA-B prototype board provides easy to use development platform
- Useful to physically verify simple digital designs using FPGA

Basic functions

- FPGA : Spartan-XC3S400 in PQ208 pin package
- Free I/Os : Available on FRC Connector
- Clock oscillator : 4MHz (compatible up to 40MHz)
- Configuration through : JTAG port

User interface

- 16 digital output LEDs
- 4 X 4 matrix keyboard
- Six 7 segment display
- 16 input switches

EXPERIMENTS

- 8:3 encoder, flip flop
- 2 - bits comparator, 4 - bits arithmetic logic unit
- Binary to gray code converter
- LCD controller
- Implementing UART functionality

Note:

- All experiments as shown in the university syllabus can be conducted on the trainer as long as the device feature and on- board resources support the same.

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