Cyclone FPGA Board

Jop

Cyclone Board
Nios
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JopStick

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Altera Cyclone FPGA Board

Visit JOP on the board running a tiny WebServer

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Features

There is a new buzz word in the FPGA scene: **SOPC**
Altera states: *'The combination of a low-cost structure with the abundant device resources in Cyclone devices allows implementation of complete system-on-a-programmable-chip (SOPC) solutions, ideal for high-volume applications.'*

SOPC means CPU, logic and memory in one chip. But in the memory area there is still a lack in current FPGAs. There is too less main memory on chip and there is no FLASH on chip.
The on chip (fast) memory can be used as cache but it's too small for main memory. It's still neccessery to add extern memory. The new board compensates this lack with an extern three stage memory hirarchy:

- fast asynchron memory as main memory
- (conventional) Flash for coniguration data and application
- (big) NAND Flash for solide state disc

This is combined with minimal periphery like clock, watchdog and serial driver to a module. It is compatible to Jopcore. The expansion module Baseio built for Jopcore with Ethernet connection can be used with this board.
The board is not only usefull for FPGA prototyping, but is a ready to

use module for your application board. Ask for price on larger quantities.

The size of the PCB is: 60mm x 48mm.

The board contains:

- Altera Cyclone EP1C6Q240 or EP1C12Q240 FPGA (see data sheet)
- 512 KB FLASH (for FPGA configuration and program code)
- 1 MB fast SRAM
- up to 128 MB NAND FLASH
- ByteBlasterMV port
- Watchdog with LED
- EPM7064 PLD to load FPGA from FLASH (on watchdog reset)
- Voltage regulator (1V5)
- Crystal clock (20 MHz) at the PLL input (up to 640 MHz internal)
- Serial interface (MAX3232)
- 56 general purpose IO pins

The RAM consists of two independent 16 Bit banks (with own address and control lines). Both RAM chips are on the back side of the PCB direct under the FPGA pins. The traces are very short (below 10 mm) so it is possible to use the RAMs at full speed without reflection problems. The two banks can be combined to form 32 Bit RAM or support two independent CPU cores (like JOP or NIOS).

Documentation for the Cyclone FPGA is available at: Altera Literature: Cyclone Devices. The data sheets for the components on the board can be found here.

Schematic:

cyc.pdf

PCB library

Jopcore.lbr the symbol and part in EAGLE format to be used for your board. EAGLE is a nice PCB layout software with a freeware version for small boards.

Add ons:

There are two expansion boards available:

Baseio with Ethernet, digital IO and analog input.

Simpexp with prototyping area.

Double SD Card connector for Baseio (schematic).

ByteBlasterMV Clone.

Power supply for Europe.

Power supply international.

Price List

Product Code	Description	Price	
CYC1M32M	Cyclone EP1C6, 1 MB SRAM, 512 KB Flash, 32 MB NAND Flash	EUR 199.00	Add to Cart
CYCBIG1M32M	Cyclone EP1C12, 1 MB SRAM, 512 KB Flash, 32 MB NAND Flash	EUR 249.00	Add to Cart
JOPCORE	ACEX 1K50 FPGA Board	EUR 75.00	Add to Cart
BASEIO	Baseio Expansion Board	EUR 179.00	Add to Cart
SDCARD	Double SD Card connector	EUR 39.00	Add to Cart

SIMPEXP	Simpexp Expansion Board	EUR 29.00	Add to Cart
BYTEBMV	ByteBlasterMV Clone	EUR 29.00	Add to Cart
PSEUR	Power Supply Europe	EUR 29.00	Add to Cart
PSINT	Power Supply International	EUR 25.00	Add to Cart
JOPLIC	JOP Licence Fee	EUR 30.00	Add to Cart

View Cart

Place an order for the Cyclone board

There are three ways how You can order a board:

- Use the buttons in the price list to pay via PayPal (credit card possible)
- Ask for an individual payment method: martin@jopdesign.com
- Order a board at Trenz electronic

Getting started

A small introduction to load a simple design to the Cyclone board can be found here: FirstSteps.doc or as a larger PDF: FirstSteps.pdf
A detailed description how to compile JOP and program the configuration flash: Getting Started
A ready to use NIOS configuration and a description how to get it up running: Nios

Additional Information

Register now to get up to date information about new boards!

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