

U Alter-y sa dá nájsť pekný vývojový kit, postavený na Cyclone® V SoC.

Cyclone V SoC integruje dvojjadrový ARM® Cortex®-A9 MPCore™ procesor, periferie a pamäťové rozhranie.

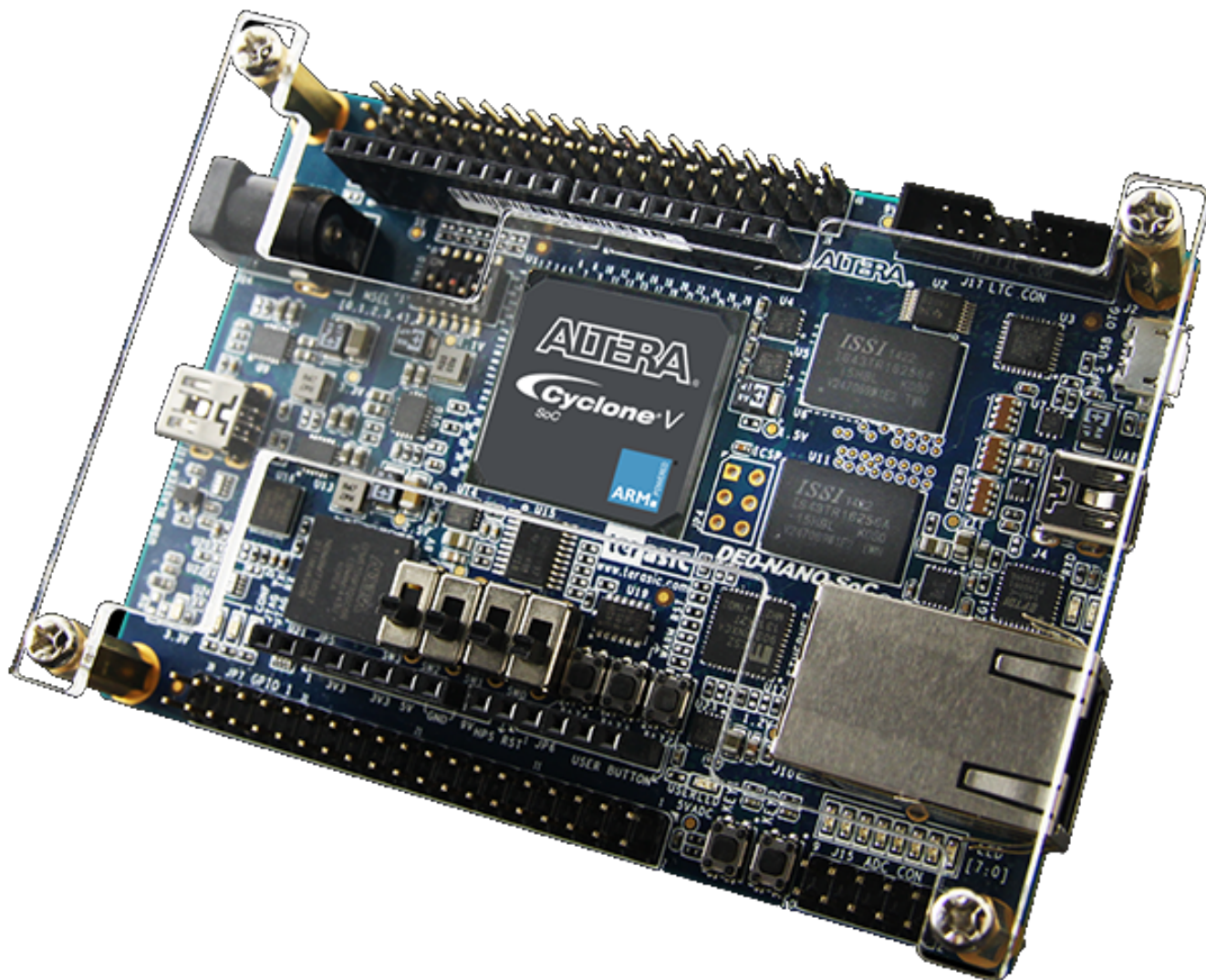
Jedná sa vlastne o dva kity: **Atlas-SoC kit** a **DE0-Nano-SoC kit**

No oba používajú rovnaký hardware.

Rozdiely sú vo vybavení, ktoré na prvý pohľad nevidno: dokumentácia, príklady...

Zatiaľ čo DE0-Nano-SoC je určený pre hardvérových vývojárov (zoznámenie sa s FPGA, HPS), DE0-Nano-SoC je cieleň na embedded vývojárov (bootuje Linux, po štarte nabieha VNC server a Web).

Netreba však panikáriť, zmenu kitu je možné previesť prakticky kedykoľvek zmenou image SD karty (viz odkazy).



zdroj: altera.com

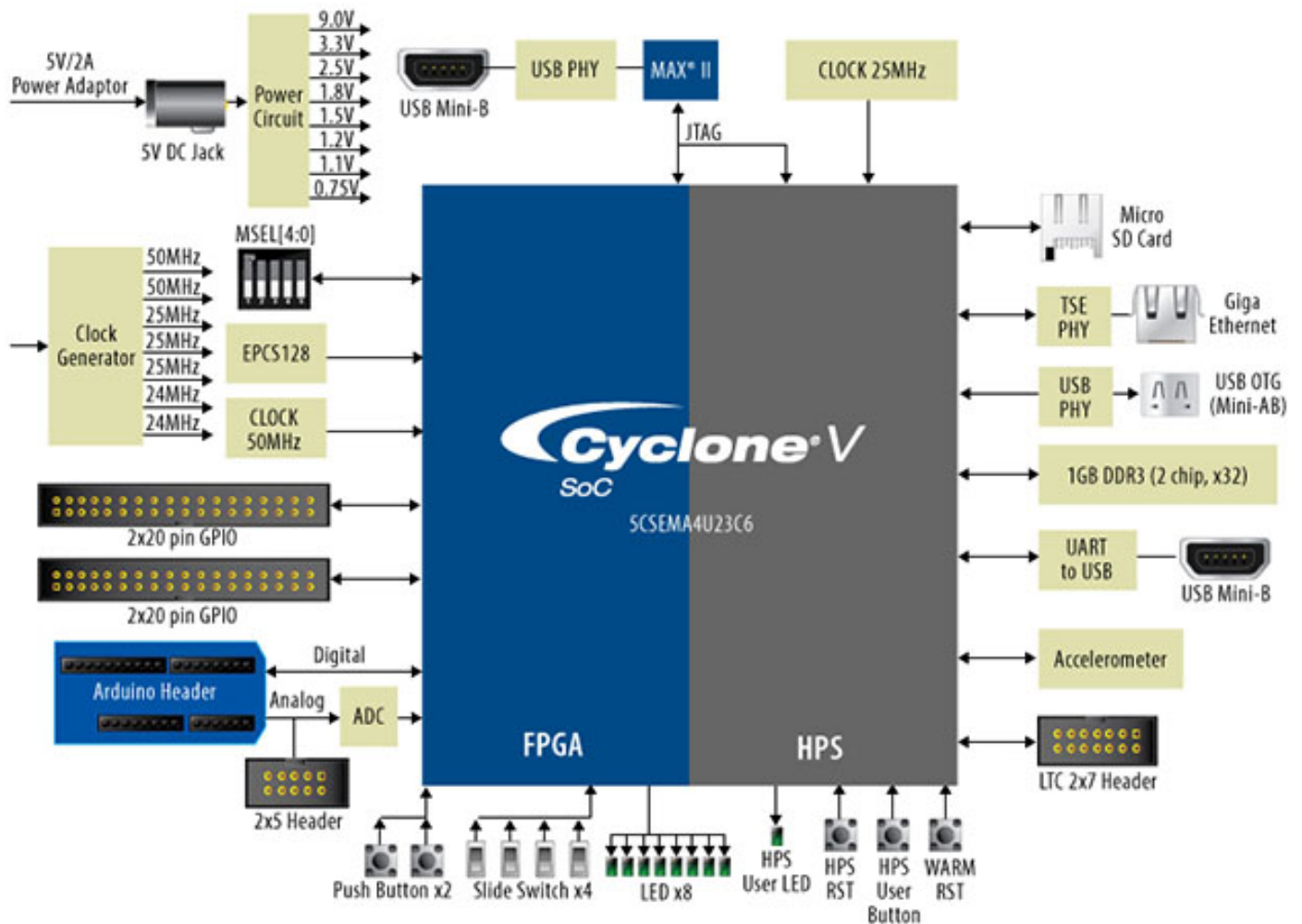
Vlastnosti

- Featured devices
 - Cyclone V SE SoC—5CSEMA4U23C6N (SoC)
 - MAX® II CPLD—EPM570GF100 (embedded USB-Blaster™ II cable)

- FPGA configuration sources
 - Embedded USB-Blaster II (JTAG) cable
 - Serial configuration flash - EPCS128
 - HPS
- FPGA I/O interfaces
 - x2 push buttons
 - x4 slide switches
 - x8 LEDs
 - Three 50 MHz clock sources from the clock generator
 - Two 40-pin expansion header with diode protection
 - One Arduino expansion header (Uno R3 compatibility), can connect with Arduino shields
 - One 10-pin analog input expansion header (shared with Arduino analog input)
 - 8-channel, 12 bit A/D converter, 500ksps 4-pin serial peripheral interface (SPI) with FPGA
- HPS
 - 925 MHz dual-core ARM Cortex-A9 processor
 - 1GB DDR3 SDRAM (32 bit data bus)
 - 1 Gigabit Ethernet PHY with RJ45 connector
 - 1 USB OTG port, USB Micro-AB connector
 - Micro SD card socket
 - 1 4 GB SD card flash
 - Accelerometer (I2C interface + interrupt)
 - UART to USB, USB Mini-B connector
 - Warm reset button and cold reset button
 - One user button and one user LED
 - LTC 2x7 expansion header
- Embedded software
 - Linux kernel 4.0
 - Angstrom v2014.12 Yocto 1.7
- FPGA hardware design
 - 32 bit fast Fourier transform (FFT)
 - x2 direct memory access (DMA)

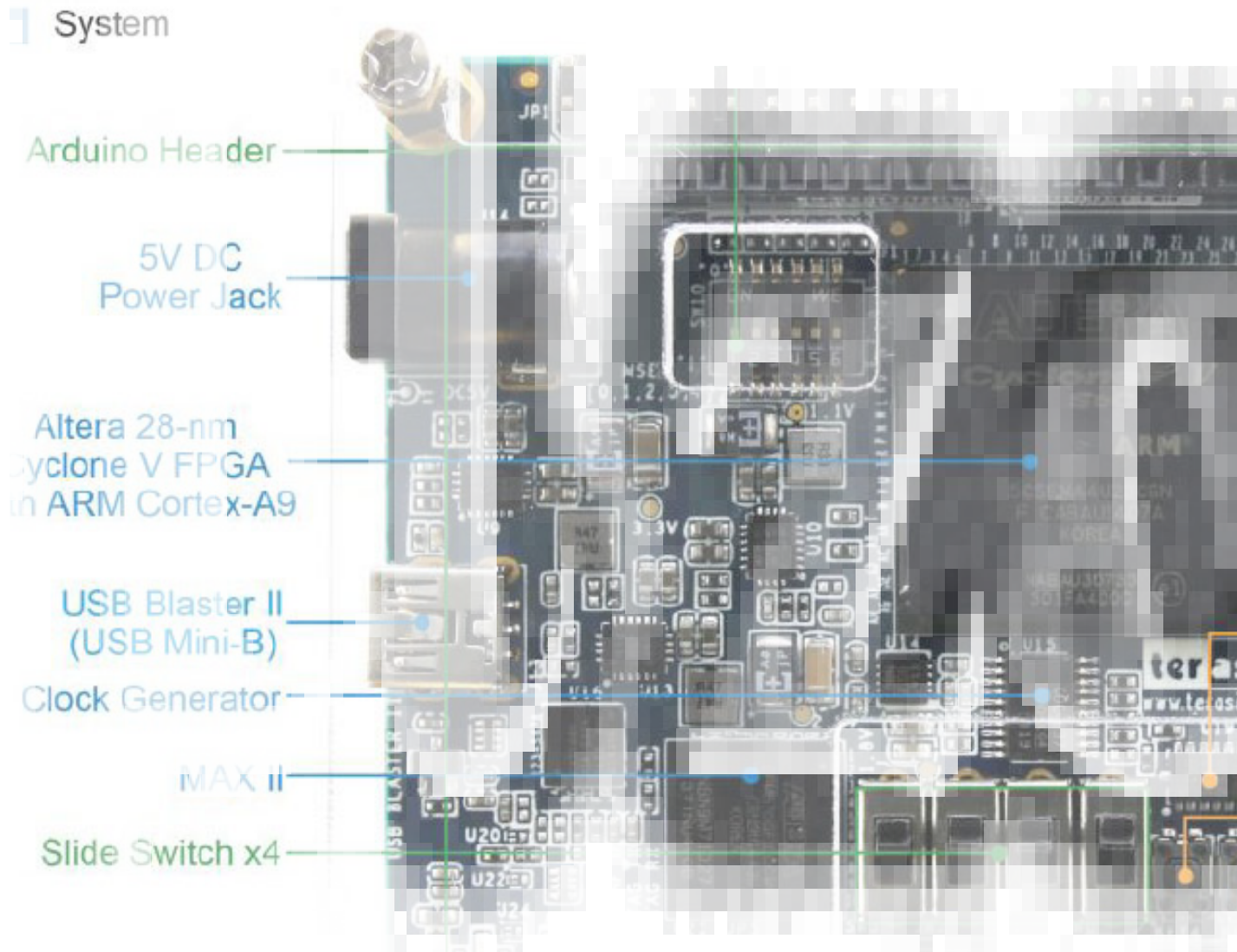
- 4k SRAM buffer
- General-purpose I/O (GPIO) for LEDs, push buttons, and slide switches

Blokové zapojenie



zdroj: altera.com

- FPGA
- HPS
- System



zdroj: rocketboards.org

Demo

Robot riadený DE0-Nano-SoC kitom.

Cena (www.terasic.com.tw)

Atlas-SoC: 99,- USD

DE0-Nano-SoC: 99,- USD

Odkazy

[Altera Cyclone® V SoC product page](#)

[Atlas-SoC Kit Product page](#)

[Atlas-SoC kit Quick Start Guide](#)

[Altera-SoC SDCard contents](#)

[Atlas-SoC User Manual](#)

[DE0-Nano-SoC Kit Product page](#)

[DE0-Nano-SoC Quick Start Guide](#)

[DE0-Nano-SoC CD ROM contents](#)

[DE0-Nano-SoC User Manual](#)