Arty S7: Spartan-7 FPGA Development Board

The Arty family of Digilent FPGA/SoC boards was designed with versatility and flexibility in mind. With universally popular Arduino™ headers and multiple Pmod™ ports, an Arty will be the most adaptable FPGA/SoC board in your toolbox.

The Arty S7 is an affordable, ready-to-use development platform designed around the Xilinx Spartan®-7 FPGA family. With the Spartan®-7 devices, the Arty S7 board offers best-in-class performance-per-watt, along with small form-factor packaging to meet the most stringent requirements. With the Micro Blaze Soft Processor Core from Xilinx, you can create embedded applications with a variety of peripherals, memory, and interfaces.

The Arty S7 is supported by Xilinx's Vivado Design Suite, including the free Web PACK version. You can also leverage the Vitis Core Development Kit or Xilinx Software Development Kit to start developing for the Micro Blaze processor with no prior FPGA experience.

There are two variants of the Arty S7: The Arty S7-25 features the XC7S25-CSGA324, and the Arty S7-50 features the larger XC7S50-CSGA324.

If your application requires transceiver lines on the FPGA, the higher-performance Arty A7, featuring the Artix-7 FPGA, may be a better option. If you are looking for an SoC-based development board, consider the Arty Z7, featuring the Zynq-7000 APSoC. Guides and demos are available to help you get started quickly with the Arty S7. These can be found through the *Support Materials* tab.

Features

- ➢ FPGA Features
  - • Internal clock speeds exceeding 450MHz;
  - • On-chip analog-to-digital converter (XADC).
  - • Programmable over JTAG and Quad-SPI Flash
- ➢ System Features
  - ▪ 256 MB DDR3L with a 16-bit bus @ 650 MHz
  - ▪ 128 Mbits Quad-SPI Flash
  - ▪ 100 MHz External Clock
  - ▪ USB-JTAG Programming circuitry (Micro B USB cable required, **NOT** included.
  - ▪ Powered from USB or any 7V-15V source
- ➢ System Connectivity
  - ▪ USB-UART Bridge
- ➢ Interaction and Sensory Devices
  - ▪ 4 Switches
  - ▪ 4 Buttons
  - ▪ 1 Board Reset Button

- 1 FPGA Reset Button
- 4 Green LEDs
- 2 RGB LEDs
- Expansion Connectors
- 4 Pmod connectors
- Arduino/chip KIT Shield connector