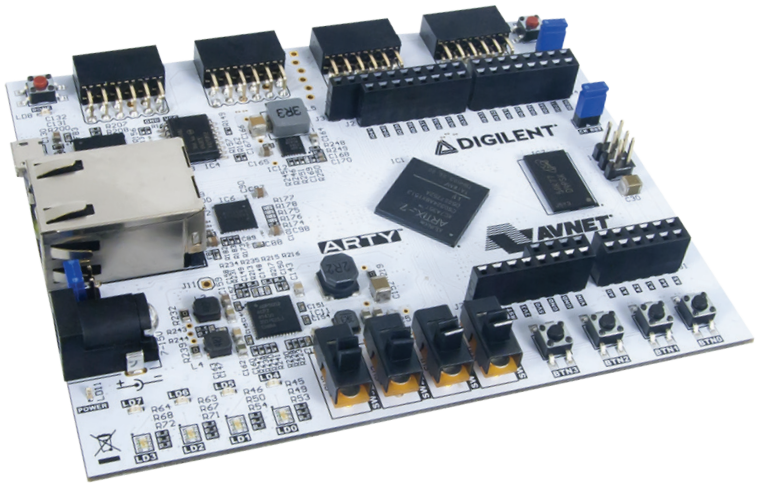
ARTY

The most flexible hardware platform in your toolbox, designed exclusively for MicroBlaze.



XILINX

AVNET

Arty is a ready-to-use development platform designed around the Artix-7™ Field Programmable Gate Array (FPGA) from Xilinx. It was designed specifically for use as a MicroBlaze™ Soft Processing System. When used in this context, Arty becomes the most flexible processing platform you could hope to add to your collection, capable of adapting to whatever your project requires. Unlike other single-board computers, Arty isn't bound to a single set of processing peripherals: One moment it's a communication powerhouse chock-full of UARTs, SPIs, IICs, and an Ethernet MAC, and the next it's a meticulous timekeeper with a dozen 32-bit timers. Additionally, with the universally popular expansion headers (Arduino™ R3 Headers and our Pmod™ headers), Arty will become the most adaptable tool in your project toolbox.

What makes Arty so flexible is its FPGA. Among their many features, FPGAs have the ability to transform into a custom software-defined System-on-a-Chip (SoC). These "Soft SoC" FPGA configurations are designed graphically using a tool called Vivado IP Integrator (Vivado IPI). In this tool, pre-built peripheral blocks are dragged from an extensive library and dropped into your processing system as you see fit. These pre-built peripherals include timers, UART/SPI/IIC controllers, and many of the other devices you would typically find in an SoC or microcontroller. Ambitious users will also find that they can create their own peripheral blocks by writing them in a Hardware Definition Language (HDL), specifically Verilog or VHDL.

To begin designing with Arty, we recommend using the high-performance Vivado Design Suite under the WebPack license. This free license includes the ability to create MicroBlaze soft core processor designs at no additional cost.

Design resources, example projects and tutorials are available for download on the Digilent Arty Resource Center accessible at **reference.digilent.com**.

Features the Xilinx Artix-35T FPGA
- 33,280 logic cells in 5200 slices (each slice contains four 6-input LUTs and 8 flip-flops)
- 1,800 Kbits of fast block RAM;
- Five clock management tiles, each with a phase-locked loop (PLL);
- 90 DSP slices;
- Internal clock speeds exceeding 450MHz;
- On-chip analog-to-digital converter (XADC).
- Programmable over JTAG and Quad-SPI Flash

System Features
- 256MB DDR3L with a 16-bit bus @ 667MHz
- 16MB Quad-SPI Flash
- USB-JTAG Programming circuitry
- Powered from USB or any 7V-15V source

System Connectivity
- 10/100 Mbps Ethernet
- USB-UART Bridge

Interaction and Sensory Devices
- 4 Switches
- 4 Buttons
- 1 Reset Button
- 4 LEDs
- 4 RGB LEDs

Expansion Connectors
- 4 Pmod connectors
- Arduino™/chipKIT Shield connector

Programming
- Includes a free license of Vivado Design Suite

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