Xilinx Artix-7 FPGA AC701 Evaluation Kit

Part number: EK-A7-AC701-G


Product Description

The Artix®-7 FPGA AC701 Evaluation Kit features the leading system performance per watt Artix-7 family to get you quickly prototyping for your cost sensitive applications. This includes all the basic components of hardware, design tools, IP, and pre-verified reference designs. This also features a targeted reference design enabling high-performance serial connectivity and advanced memory interfacing equipped with a full license for the Northwest Logic DMA engine.

Key Features & Benefits

- Optimized for quickly prototyping cost sensitive applications using Artix-7 FPGAs
- Hardware, design tools, IP, and pre-verified reference designs
- Demonstrates a high performance data transfer system using a PCI Express® x4 Gen2
- Reference design implemented with Northwest Logic DMA engine attached to a AXI interface
- Advanced memory interface with 1GB DDR3 SODIMM up to 533MHz / 1066Mbps
- Enabling high-performance serial connectivity with GTP ports on FMC, SFP, & SMA
- Supports embedded processing with MicroBlaze, soft 32bit RISC
- Develop networking applications with 10-100-1000 Mbps Ethernet (RGMII)
- Implement Video display applications with HDMI out
- Expand I/O with the FPGA Mezzanine Card (FMC) interface

What's Included

- AC701 evaluation board featuring the XC7A200T-2FBG676C FPGA
- Full seat Vivado® Design Suite: Design Edition
  - Node locked & Device-locked to the Artix-7 XC7A200T FPGA, with 1 year of updates and support
- Full license for the Northwest Logic DMA with AXI interface
- Targeted Reference Design featuring DDR3, PCIe® and DMA
- AMS 101 evaluation card
- Printed Getting Started Guide
- Cables & Power Supply
- 90-day limited warranty
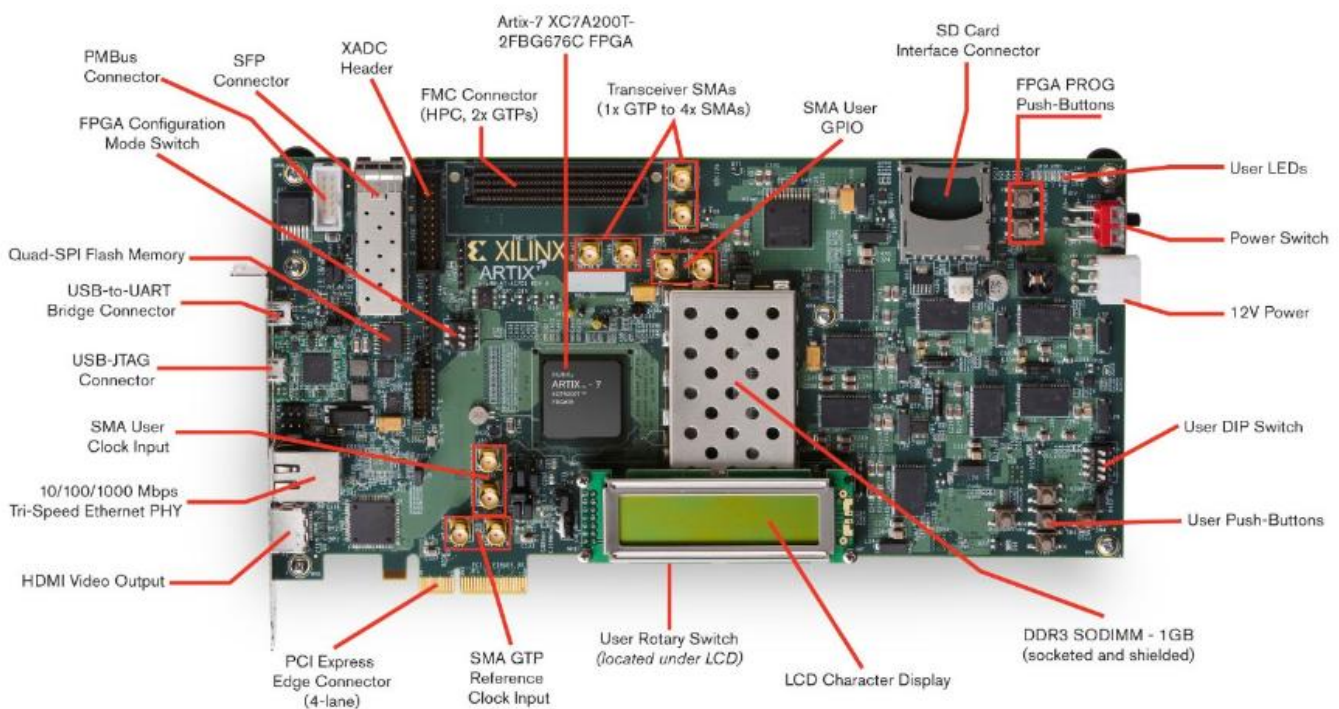
Key Features

FPGA: Artix-7 XC7A200T-2FBG676C FPGA

- ROHS compliant AC701 kit including the XC7A200T-2FBG676C FPGA

Configuration

- Onboard JTAG configuration circuitry to enable configuration over USB
- JTAG header provided for use with Xilinx download cables such as the Platform Cable USB II
- Quad SPI Flash: 32MB (256Mb)

Memory

- DDR3 SODIMM 1GB up to 533MHz / 1066Mbps
- Quad SPI Flash: 32MB (256Mb)
- IIC EEPROM: 8Kb

- SD Card Slot

Communication & Networking

- 10/100/1000 Mbps Ethernet (RGMII)
- SFP cage
- GTP port (TX, RX) with four SMA connectors
- UART To USB Bridge
- PCI Express 4-lane edge connector

Display

- HDMI video output
- LCD display (2x16)
- User LEDs (x4)

Expansion Connectors

- FMC-HPC (Partially Populated) connector
  - GTP Transceivers (x2) , 116 single-ended or 58 differential (34 LA & 24 HA) user defined signals
  - VADJ can support 1.8V, 2.5V (default), or 3.3V
- PMOD (1x6 0.1" Header)

Clocking

- Fixed Oscillator with differential 200MHz output
  - Used as the "system" clock for the FPGA
- User Programmable (IIC) Differential Oscillator (Range: 10MHz - 810 MHz, 156.250 MHz default)
- Differential SMA clock input
- Differential SMA GTP reference clock input
- Jitter attenuated clock
  - Used to support CPRI/OBSAI applications that perform clock recovery from a user-supplied SFP/SFP+ module

Control & I/O

- User Push Buttons (x5)
- User DIP Switch (4-position)
- SMA User I/O (Diff Pair)
- AMS FAN Header (2 I/O)
- 7 I/O pins available through LCD header

Power

- AC Power adapter (12V) or ATX

Analog

- XADC header