# Kintex®-7 FPGA Development Kit and ARM® Cortex®-A9 Quad Core Single Board Computer

## Kintex-7 FPGA Development Kit Features

Select 1 of 3 development modes to speed your development and implementation

- 100% FPGA core available for user cores
- FMC interface connector
- ARM implementation examples

Professional Xilinx tool chains

- ISE® Design Suite
- Vivado® Design Suite
- Installable ARM Cortex-A9 or other ARM CPUs

PCIe and fast memory bus interface between Kintex-7 & i.MX6Q® Industrial Processor

- Expand SBC feature set with IP cores such as SATA, DSP, video, etc.
- FPGA to i.MX6Q Industrial Processor IRQs

Two options for field deployment

- Port FPGA firmware to your own hardware
- Keep your FPGA firmware on our SBC for OEM production

## Standalone SBC4661 Board Features

- ARM Quad Core Cortex-A9, 1GHz
- Freescale i.MX6Q with ARM NEON™ GPU
- 2 GB DDR3 plus 1GB DDR3 for Kintex-7
- 8 GB NOR Flash
- Four (4) USB3.0 ports
- Dual Gigi Ethernet
- Four (4) serial ports (RS232 and RS485)
- Two (2) SD/MMC card slots
- 200 bits of digital I/O

## Target Applications

- Vision Processing
- Military
- Medical
- High speed communications
- SOC Applications
- Robotics
- Transportation

## Flexible Development Platform

The DK-FPGA4661 is a turn-key single board computer (SBC) development platform for Xilinx's Kintex-7 FPGA. This development kit **reduces development time** by providing a turn-key, ready-to-program FPGA using either the ISE Design Suite tools or Vivado Design Suite tools. You can implement your application with **pre-packaged IP cores** from the extensive Xilinx library, the Micro/sys library, or you can implement your own VHDL firmware. The robust COTS SBC will execute your application and provide connectivity to the outside world via the **I/O connector options** available with the Kintex-7, including the FMC interface popular with FPGA users. Or, if you wish to port off your firmware to your own hardware, the DK-FPGA4661 acts as a great proof-of-concept device for debugging with the ultimate goal of porting to user-designed hardware.

## The COTS Advantage

The skillfully integrated SBC4661 marries the Xilinx Kintex-7 with an off-the-shelf SBC powered by Freescale's i.MX6 Quad Core Industrial Processor. After development, this rugged SBC doubles as the **OEM target hardware**. This COTS approach to FPGA implementation provides users with an OEM component **available for 15 years from release date** plus unlimited potential for future product upgrades and customized version control from the factory or by users upgrading FPGA functionality. **Customizable I/O** for the SBC includes simple I/O through fast data transferring, expanded communication protocols, and vision processing.

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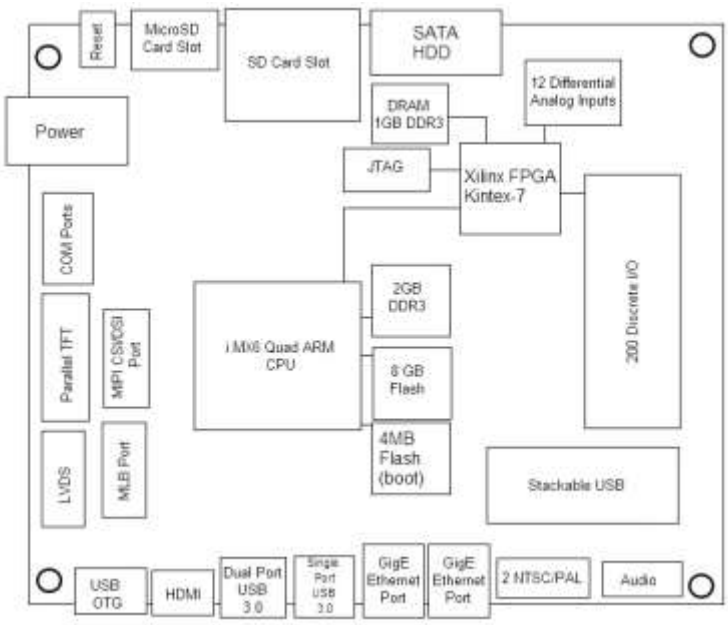


## Turn-key Development Platform

With the DK-FPGA4661, the **system integration is done for you**, which allows you to immediately start your FPGA development on the Kintex-7. This turn-key kit enables designers to focus on building their applications and fine tuning the differentiating features of their system. **Designers** profit from being able to choose between the easy-to-use Xilinx ISE Design Suite: Embedded Edition (including the EDK design software) or the fully featured, high-end Vivado Design Suite. Additionally there is a vast selection of **validated IP cores** from Xilinx, third parties and Micro/sys, leveraging our almost **40 years in the embedded system marketplace**. The DK-FPGA4661 comes with multiple on-board connectivity options including 200 lines of bi-directional **GPIO signals**, multiple pre-validated **transceivers**, and 1G of DDR3 **memory** dedicated to servicing the Kintex-7 only. These added features allow **easy addressing and decoding for customized protocols** by enabling designers to interface a 32-bit data bus as well as addressing lines for a variety of IP cores via the 64 GPIO lines. Typical functions for such features might be real time video, motion control, or industrial Ethernet.

## Development Kit Includes

Board
- SBC4661 (Linux or Android)

Tools & IP
- Xilinx ISE software (free download from Xilinx)
- Xilinx Vivado evaluation software (downloadable from Xilinx)
- Micro/sys interface code to the Freescale WEIM, and PCIe bus for direct communication between the CPU & FPGA

Targeted Reference Designs & Demos
- How to implement ARM-Cortex
- How to install CameraLink or other vision IP cores
- How to implement drivers to DDR3 memory
- How to implement DIO and drivers.

Documentation
- DK-FPGA4661 Getting Started Guide
- DK-FPGA4661 Hardware User Manual
- Popular StackableUSB™ expansion bus
- Linux and Android BSPs
- OEM pricing options available
- DK-FPGA4661 Reference Design User Guide

Cables and Adapters
- 5V wall-mount power supply
- Xilinx Platform Cable USB-II
- 4 GB Solid State Drive (SSD)
- RJ45 Ethernet Cable
- Mini B to Type A USB Cable
- 20-pin high density to 20-pin screw terminal
- 40-pin high density to 40-pin screw terminal
- 50-pin high density to 50-pin screw terminal
- Industrial enclosure
- Power supply
- Graphical Runtime kit includes panel



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