



HIGH-PERFORMANCE DSP
DESIGN PLATFORM

KINTEX-7 FPGA DSP KIT: BASE PLATFORM PLUS INTEGRATED HIGH-SPEED ANALOG ACCELERATES ADVANCED DSP DESIGNS

Design Challenges

- Performance bottlenecks—solutions require more processing bandwidth for a lower cost
- Power budget—current designs consume too much power
- Time to market—extreme pressures to shorten development schedules

Xilinx Solutions

- Kintex-7 FPGA family and 28nm leadership drive up performance while slashing price and power
- High single-chip DSP performance
- Integrated Targeted Design Platform accelerates time to market with a combination of silicon, software, IP, and reference designs
- Proven, easy-to-use design methods and high-level languages (MATLAB® and Simulink®) speed implementation and verification of DSP algorithms on FPGAs

Next-generation products with digital signal processor (DSP) technology need to deliver more performance and versatility than ever—in less time, for less cost, and consuming less power. The proven flexibility and industry-leading price-performance of Xilinx 7 series FPGAs address all of these challenges. Delivering more than 5000 GMACs of fixed-point and 1.3 TFLOPs floating-performance system performance, 7 series devices push the limits far beyond traditional DSPs in terms of total performance and performance per watt.

As the industry's leading supplier of FPGAs for DSP applications, Xilinx continually advances silicon and Targeted Design Platforms to accelerate DSP designer productivity. The Kintex™-7 FPGA DSP Kit lets developers rapidly migrate to the 7 series using a platform that fosters innovative and highly differentiated solutions. Designers can reduce schedule risk, shorten time to market, and more quickly focus on adding unique value to solutions targeted for wireless communications infrastructure (remote radio heads, software-defined radio, DPG feedback, and more), aerospace and defense, instrumentation, medical imaging, and general-purpose data acquisition.

An Integrated Platform for High-Level Synthesis

Each Xilinx DSP design platform provides out-of-the-box development solutions that streamline DSP development processes and improve productivity. The Kintex-7 FPGA DSP Kit includes development boards, IO daughter cards, design tools, and reference designs, and gives designers the industry's largest portfolio of DSP, video, and floating-point IP blocks. Kit documentation shows how both RTL and high-level design methodologies can be used to extend and modify reference designs to end-user requirements.

High-Speed Analog

The Kintex-7 FPGA DSP Kit includes an integrated high-speed analog FPGA mezzanine card (FMC) to interface to real-world signals. Featuring dual-channel 800 MSPS 16-bit digital-to-analog converters (DACs) and dual-channel 250 MSPS 14-bit analog-to-digital converters (ADCs), the high-speed analog module delivers exceptional throughput when combined with the massively parallel processing bandwidth of Kintex-7 KX325T FPGA through the DSP48E1 slice. Data paths to and from the DSPs can be created and integrated into systems using industry-standard AXI4™ interface conventions.

KINTEX-7 FPGA DSP KIT



Kintex-7 FPGA DSP Kit Contents

Hardware and Documentation

- KC705 base board with the Kintex-7 XC7K325T-FF900-2 FPGA
- 4DSP FMC150 high-speed ADC/DAC FMC module
- USB, Ethernet, and MMCX RF coax cables; universal power supply
- Downloadable schematics, BOM, and design files
- Documentation, including Getting Started Guide

Software and IP

- Full-seat ISE® Design Suite Logic Edition, device-locked for the XC7K325T-FF900-2 FPGA
- CoreGen IP
- MathWorks® evaluation software (MATLAB and Simulink)

Targeted Reference Designs and Tutorials

- Getting Started Reference Design
- High-Performance DSP Reference Design, available at: www.em.avnet.com/kintex7dsp
- DSP design technique tutorials, available at: www.em.avnet.com/kintex7dsp

Take the NEXT STEP

For more information, support, documents, and reference designs, or to purchase, please visit: www.xilinx.com/k7dspkit

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Printed in the U.S.A. PN 2498