

Xilinx System Generator Software

System Generator for DSP is the industry's leading high-level tool for designing high-performance DSP systems using FPGAs. The tool provides abstractions that enable you to develop highly parallel systems with the industry's most advanced FPGAs, providing system modeling and automatic code generation from Simulink® and MATLAB® (The MathWorks, Inc.). System Generator is a key component of the Xilinx XtremeDSP™ solution that combines state-of-the-art FPGAs, design tools, intellectual property cores, and partnerships, as well as design and educational services.

Device Family Support :-

- > Spartan™-3A DSP, Spartan-3A, AN, Spartan-3, 3E, Spartan-II, IIE
- > Virtex™-5, Virtex-4, Virtex-II Pro, Virtex-II, Virtex-E

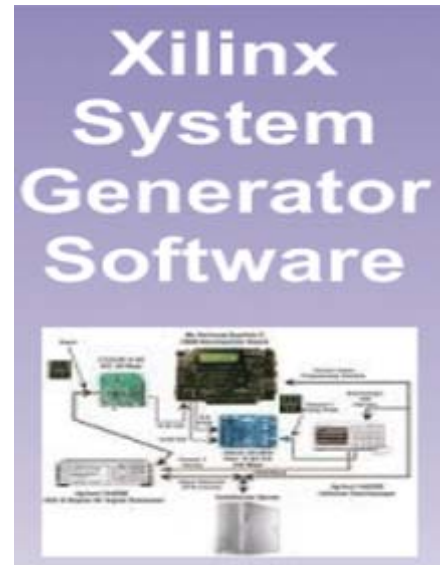
Key Features :-

> **DSP modeling** (1). Build and debug high-performance DSP systems in Simulink using the Xilinx Blockset that contains functions for signal processing (e.g., FIR filters, FFTs), error correction (e.g., Viterbi decoder, Reed-Solomon encoder/decoder), arithmetic, memories (e.g., FIFO, RAM,ROM), and digital logic. The Xilinx Blockset also provides blocks for importing MATLAB functions (e.g., to create control circuits) and HDL modules (System Generator provides HDL co-simulation interfaces to Mode ISim from Mentor Graphics and the Xilinx ISE™ Simulator)

> **Automatic code generation of VHDL or Verilog from Simulink.** Implement behavioral (RTL) generation and target specific Xilinx IP cores from the Xilinx Block set. There is also a limited (but useful) ability to generate RTL for functions written in MATLAB. Deliver “black box” HDL modules as part of a larger design.

> **Hardware co-simulation.** Create an “FPGA-in-the-loop” simulation target: a code generation option that allows you to validate working hardware and accelerate simulations in Simulink and MATLAB. System Generator supports Ethernet(10/100/Gigabit), PCI, Cardbus, and JTAG communication between a hardware platform and Simulink.

> **Hardware / software co-design of embedded systems.** Build and debug DSP coprocessors for the Xilinx MicroBlaze™ 32-bit RISC processor. System Generator provides a shared memory abstraction of the HW/SW interface, automatically generating the DSP coprocessor, the bus interface logic, software drivers, and software documentation for using the co-processor.



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