

Designing with DSP Builder

Advanced Blockset



Course Description

Learn the timing-driven Simulink® design flow to implement high-speed DSP designs. This course focuses on implementing DSP algorithms using the advanced blockset capability of DSP Builder—an interface between Quartus® Prime software & MATLAB® and Simulink tools from The MathWorks. You'll analyze & design your DSP algorithm using the DSP Builder advanced blockset in MATLAB & Simulink. You'll explore architecture & performance tradeoffs with system-level constraints. Also you'll verify functionality & performance of generated hardware in the Quartus II software. Finally, you'll speed design time by incorporating ready made ModelIP cores in your design.

Skills Developed

- Implement DSP algorithms using Intel® DSP Builder Advanced Blockset
- Incorporate ModelIP and ModelPrim cores in a design
- Explore design architecture and performance tradeoffs using system level constraints
- Incorporate a DSP Builder Advanced Blockset model into a Qsys subsystem
- Verify the hardware performance and implementation in Quartus II software

Skills Required

- Familiarity with DSP fundamentals and design
- Familiarity with Intel Quartus Prime software is helpful, but not necessary
- Familiarity with Mathworks Matlab and Simulink is helpful, but not necessary
- Familiarity with digital modem design is helpful, but not necessary

Exercises

- Floating Point ModelPrim System
 - Implement a floating point ModelPrim System
 - Simulate the Design in Simulink
 - Verify the Design
 - Build Design in Quartus
 - Download and run the Design on a Board
- Algorithm Implementation using the ModelIP library
 - Calculate Theoretical Wire/Channel Structure of a DSP Algorithm
 - Build DSP algorithm using DSP Builder Advanced Blockset
- System Integration, Design Exploration
 - Incorporate a DSP Builder Advanced Blockset Component into a Qsys System and Quartus II Project
 - Explore Hardware Multiplier Trade-Offs

Course Length	1 day
Language	Presentation in German or English and documentation in English
Platform	PC Windows 10
Pricing	Public: 800,- EUR / attendee In-House: On Request
Dates	See schedule at elcamino.de