Designing with the Zynq UltraScale+ RFSoC

Connectivity 3

CONN-RFSOC-ILT (v1.0)

Course Specification

Course Description

This course is structured to provide designers with an overview of the hard block capabilities for the Zynq® UltraScale+™ RFSoC family. Special emphasis is placed on the Data Converter and Soft-Decision FEC blocks.

Power estimation is covered to help designers identify the power demands of the device in various operating modes. Since the Zynq UltraScale+ RFSoC is both a high-speed and an analog and digital device, proper layout and PCB considerations are also covered.

Level – Connectivity 3

Course Duration – 2 days

Price – $1600 or 16 Xilinx Training Credits

Course Part Number – CONN-RFSOC-ILT

Who Should Attend? – Hardware designers interested in understanding the architecture and capabilities of the Zynq UltraScale+ RFSoC data converter and SD-FEC hard blocks.

Prerequisites

- Suggested: Zynq UltraScale+ MPSoC for the System Architect
- Basic familiarity with data converter terms and principles
- Basic familiarity with forward error correction terms and principles

Software Tools

- Vivado® Design Suite 2018.1

Hardware

- Host computer for running the above software*

* This course focuses on the Zynq UltraScale+ RFSoC architecture. Check with Morgan Advanced Programmable Systems, Inc. for the specifics of the in-class lab board or other customizations.

After completing this comprehensive training, you will have the necessary skills to:

- Describe in general the new Zynq UltraScale+ RFSoC family
- Identify typical applications for the data converters
- Describe the architecture and functionality of the ADC
- Utilize the ADC via configuration, simulation, and implementation
- Describe the architecture and functionality of the DAC
- Utilize the DAC via configuration, simulation, and implementation
- Identify the requirements and options for data converter PCB designs
- Describe the architecture and functionality of the SD-FEC hard IP
- Utilize the SD-FEC via configuration, simulation, and implementation

Course Outline

- Zynq UltraScale+ RFSoC Overview {Lectures}
- RFSoC ADC {Lectures, Demo, Lab}
- RFSoC DAC {Lectures, Demo, Lab}
- RFSoC Data Converter Design {Lectures, Labs}
- PCB Design for RFSoC Devices {Lectures}
- RFSoC SD-FEC {Lectures, Demo, Lab}

Topic Descriptions

- Zynq UltraScale+ RFSoC Overview – Overview of the Zynq UltraScale+ RFSoC architecture, including brief introductions to RF, data converter solutions, SD-FEC solutions, driver support, and tool support.
- RF-ADC – Covers the basics of ADCs. Reviews ADC architecture, functionality, interfaces, configuration, and driver support.
- RF-DAC – Covers the basics of DACs. Reviews DAC architecture, functionality, interfaces, configuration, and driver support.
- Data Converter Design – Describes common features, the design flow, and utilizing the example design by simulation and implementation.
- PCB Design for RFSoC Devices – Describes power requirements, performing power estimation, and utilizing the power design. Analog signal requirements, PCB materials and layer stackup options, and analog trace design are also covered.
- Soft-Decision FEC – Covers the basics of forward error correction. Reviews SD-FEC architecture, functionality, interfaces, configuration, and driver support.

Register Today

Morgan Advanced Programmable Systems, Inc. (MAPS, Inc.) delivers public and private courses in locations throughout the central US region; including Iowa, Illinois, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota and Wisconsin.

Visit **morgan-aps.com/training**, for full course schedule and training information.

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You must have your tuition payment information available when you enroll. We accept credit cards (Visa, MasterCard, or American Express) as well as purchase orders and Xilinx training credits.

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- Students cancellations received more than 7 days before the first day of class are entitled to a 100% refund. Refunds will be processed within 14 days.
- Student cancellations received less than 7 days before the first day of class are entitled to a 100% credit toward a future class.
- Student cancellations must be sent here.

MAPS Inc. Course Cancellation Policy

- We regret from time to time classes will need to be rescheduled or cancelled.
- In the event of cancellation, live on-line training may be offered as a substitute.
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- For additional information or to schedule a private class contact us here.