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WS_CCESBF7

System Development with CCES and the ADSP-BF70x Blackfin Processor Family

Course Name:	System Development with CrossCore Embedded Studio (CCES) and the ADSP-BF70x Blackfin Processor Family
Course Code:	WS_CCESBF7
Course Description:	This is a practical and interactive course that is designed to systematically teach how to use the ADSP-BF70x Blackfin Processor Family to its fullest potential. Emphasis is placed on understanding the steps required to create an efficient Blackfin CPU based system in the way that ADI had intended the processor to be used. Several hands on exercises provide an opportunity for the instructor to work one on one with the attendee. Throughout the workshop, attendees are encouraged to ask questions. The CrossCore Embedded Studio (CCES) IDE is covered in detail, including topics on navigating through the IDE, projects and project configuration, the build process, and debug features. Tools based optimizations including compiler and linker optimization are covered. An understanding of the Blackfin architecture will enable getting the best performance out of the processor. Architecture topics covered include the new Blackfin+ core features, security and safety features, system fabric, and an overview of the peripherals. A section on booting covers what happens during the boot process, creating boot image files, and discussing how to get them into the target system. Hardware considerations such as operation of the power management and reset are also discussed. Hardware development tools, such as evaluation boards and ICE's are also covered, including setting up hardware debug sessions and other hardware debug topics. An introduction into Micrium's uC/OS is also covered in the workshop. Throughout the course, a number of hands on exercises will take the attendee through the various aspects of the software development process. Topics covered through exercises include setting up and building projects, C language programming, various optimizations, code debugging (simulation and hardware), and software module support (i.e. System Services and Device Drivers).
Goals and Objectives:	The main course objective is to understand the Blackfin+ architecture (with a focus on the ADSP-BF70x Blackfin Processor Family members) sufficiently to enable DSP system designers to resolve hardware/software issues with their applications. Additional goals include gaining a thorough understanding of Blackfin code development using the CCES tool chain.
Pre-requisites:	Previous embedded microprocessor experience would be an asset (hardware and/or software).
Target Audience:	System Designers needing to make informed decisions on design tradeoffs, Hardware Designers needing to develop external interfaces and low level code, and Code Developers needing to know how to get the highest performance from their algorithms
Duration:	3.5 days