

XC8xx/C500/8051 8-Bit Microcontrollers: Architecture and Embedded Programming

Objectives

You can generate C51 modules using Keil tools and combine them with other modules to form an executable program. You are able to create, manage and debug projects under μ Vision3. You know the standard on-chip periphery of the XC8xx/8051 components and can program and debug these components.

Participants

Software and hardware architects, software and hardware developers, test engineers

Requirements

Basic knowledge of the programming language ANSI-C as well as knowledge of digital technology and data processing. Practical experience in microprocessor system development is an advantage.

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Content

Set-up of an 8 Bit Microcontroller of the C500/8051 Family

- CPU, memory set-up, bus structure
- Interrupt controller
- Overview on instruction set and addressing modes
- Standard on-chip periphery (ports, timer, serial interface)

Infineon Architecture XC8xx Specifics and Extensions

- Dual-cycle 8051 core, on-chip OSC, PLL and EVR
- Embedded flash

Standard On-chip Periphery

- Ports, timer, serial interfaces (USART/UART - ASC)

Application Specific XC8xx On-chip Periphery (Overview)

- Flexible PWM unit (CCU6E)
- 10 bit A/D converter
- Serial interfaces: SSC, LIN support, CAN

Summary of ANSI-C Basics

Hardware-near C-Programming

- Intrinsic functions, interrupt service routines
- Type qualifier volatile
- Access to on-chip and external periphery (e.g. `_at_`, pointer cast)

C-Functions

- Parameter transfer from/to functions (with C /Assembler interface)

Environment Tools (Keil)

- Project creation and management
- Tool options (A51, C51, BL51)
- Device initialization with DAVe (Digital Application virtual Engineer)

Trainings

Price *	Duration
2.350,00 €	5 days

Training code: E-8051

* Price per attendee, in Euro plus VAT

Coaching

Our coaching services offer a major advantage: our specialists introduce their expertise and experience directly in your solution process, thus contributing to the success of your projects.

We will be happy to provide you with further information or submit a quotation tailored to your requirements.