As of 17.04.2026

AURIX™ TC4xx Crash Course: 32-Bit Multicore Microcontroller Family (Aurix-3G Third Generation) - Live Online Training

Objectives

You know the architecture and particularly the innovations and features (multicore and safety extensions) of the latest generation of the AURIX™ device family.

You can efficiently adapt your software architectures to hardware, thus developing high-performance systems.

The compact training format enables you to quickly implement your new knowledge in your projects.

YOUR BENEFIT:

Efficient and compact jump-start into the overall topic (saves three months according to our customers)

Practical tips on multicore and safety

Participants

Integrators, architects, developers, test engineers, those switching to or starting to work with AURIX™

Requirements

Experience in microcontroller/microprocessor system programming and architecture. Knowledge of earlier AURIX generations is an advantage but not a requirement.

Live-Online-Training

* Price per attendee, in Euro plus VAT

Training code: LE-A3GCRSH

Face-To-Face - English

Duration
2.5 days

Live Online - German

Duration
2.5 days

Face-To-Face - German

Duration
2.5 days

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Content

Introduction

- History
- Markets and applications
- Key differentiators
- Main building blocks

System Architecture

- Block diagrams
- Clustering and accelerators
- Main CPU subsystems
- Memory architecture
- Buses
- Conclusions for software architecture

Infrastructure

- Crossbars
- Peripheral buses
- Bridges

Virtualization

- Use cases
- Implementation patterns

TriCore™ CPU Subsystems

- Core architecture
- Block diagram
- Pipelines
- Core specific function registers
- Register files and context switching
- Specific instructions and spinlock example
- Extensions for virtualization
- Trap system
- Memory protection unit (MPU)
- System timer (STM)

Protection Mechanisms

- PROT
- Access protection unit (APU)

Interrupt Router

- Configuration
- Software trigger
- Broadcasting
- External interrupts

System Control and Management

- Clocking
- Non maskable interrupts (NMI)
- Reset
- External service request pins (ESR)
- System modes
- Booting

Safety Concept

- Measures
- Safety and security management unit (SMU)

Security Concept

- Cybersecurity real-time module (CSRM)
- Cybersecurity satellite

Debug and trace aspects

- New internal architecture
- SMP vs. AMP debug

IMPORTANT NOTE:

- A valid NDA with the chip vendor is a pre-requirement to attend the Aurix-3G crash course.