

Open Thesis / Project:

Power characteristics optimization in software

Motivation & Summary

Today's embedded systems increase in complexity to cover growing requirements, which not only forces hardware designers to increase system-on-chips' integration density, but also challenges software developers to write power-aware code.

Software has a great impact on the static as well as on the dynamic power consumption. The latter can result in load jumps/power peaks that might reset the affected processing core leading to unpredictable behaviour.

We focus on the automatic detection of such critical code sequences and on their elimination on source code level by applying compiler optimizations on hard real-time multi-core systems.

Recommended Prior Knowledge

- C/C++
- Microcontrollers



Thesis Type

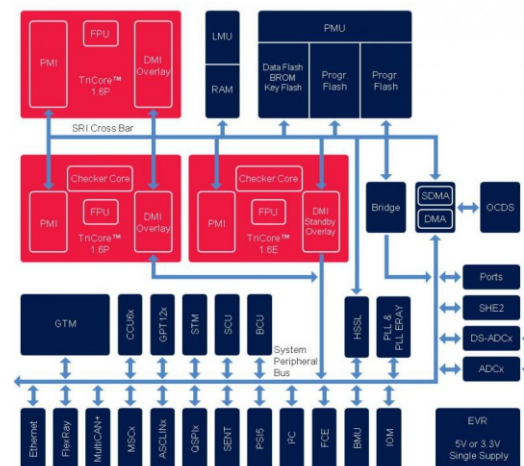
- Master's Project
- Master's Thesis

Student Target Groups

- Information and Computer Engineering (ICE)
- Electrical Engineering (EE)

Goals and Tasks

- Setup of AURIX™ toolchain
- Analyzing code sequences with respect to CPU power consumption
- Automation of code generation for test purposes
- Compiler optimization based on knowledge from code analysis



Sources:

<https://www.infineon.com/>

Contact & Information

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