

# Multicore\_1

## for KIT\_AURIX\_TC375\_SB

### Multicore LED control

AURIX™ TC3xx Microcontroller Training  
V1.0.0



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## Scope of work

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**One LED is controlled by using three different cores.**

Core 0 is switching on an LED. When the LED flag is set, Core 1 is switching off the LED. Core 2 is controlling the state of the LED flag.

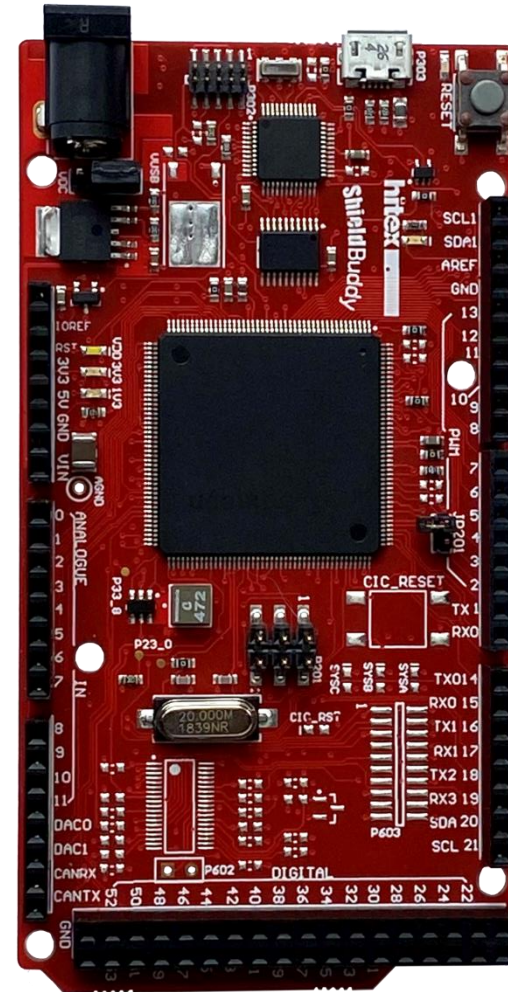
# Introduction

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- › The AURIX™ TC3xx microcontroller architecture features up to six independent processor cores, which allow seamless hosting of multiple applications and operating systems on a unified platform.
- › Due to the implementation of multiple program Flash modules with independent read interfaces, the architecture supports further real-time capabilities.
- › AURIX™ is built for performance, safety and security, featuring parallel execution of processes, lockstep cores and further enhanced hardware safety mechanisms.

# Hardware setup

This code example has been developed for the board KIT\_A2G\_TC375\_ARD\_SB.



# Implementation

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## Configure and control the LED

An LED is toggled by CPU0 and CPU1. Before using the LED, a port pin to which the LED is connected must be configured during the initialization phase.

- › First step is to set the port pin to level “LOW”; this keeps the LED turned off as a default state (*lfxPort\_setPinLow()* function).
- › Second step is to set the port pin to push-pull output mode with the *lfxPort\_setPinMode()* function.

Depending on the state of the global variable *g\_turnLEDOn*, either CPU0 turns the LED on (*lfxPort\_setPinHigh()*) or CPU1 turns it off (*lfxPort\_setPinLow()*).

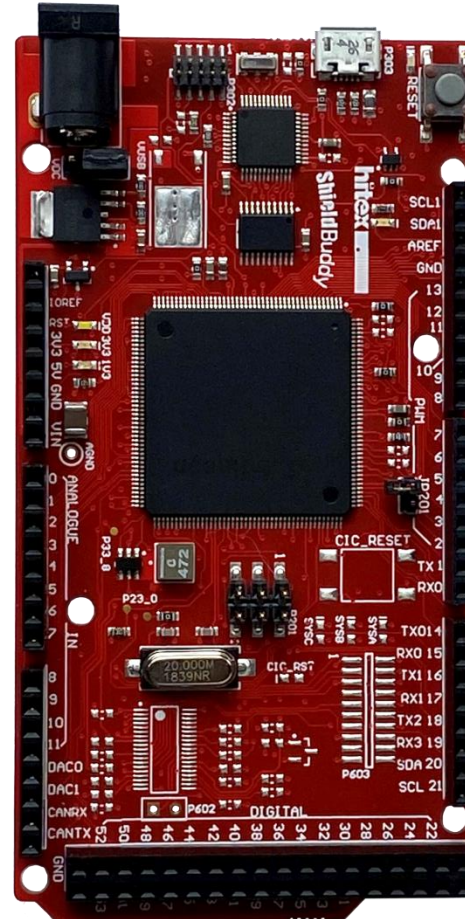
The state of the global variable *g\_turnLEDOn* is changed by CPU2 every second using the *wait()* function from the header *Bsp.h*.

All functions used to control the port pin are declared in the iLLD header *lfxPort.h*.

# Run and Test

After code compilation and flashing the device, observe the behavior of the LED:

- > The state of the LED (1) toggles every second



# References



- › AURIX™ Development Studio is available online:
- › <https://www.infineon.com/aurixdevelopmentstudio>
- › Use the „*Import...*“ function to get access to more code examples.



- › More code examples can be found on the GIT repository:
- › [https://github.com/Infineon/AURIX\\_code\\_examples](https://github.com/Infineon/AURIX_code_examples)



- › For additional trainings, visit our webpage:
- › <https://www.infineon.com/aurix-expert-training>



- › For questions and support, use the AURIX™ Forum:
- › <https://www.infineonforums.com/forums/13-Aurix-Forum>

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### Document reference

**Multicore\_1\_KIT\_TC375\_SB**

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