

# Multicore\_1

## for KIT\_AURIX\_TC277\_TFT

### Multicore LED control

AURIX™ TC2xx Microcontroller Training  
V1.0.1



# Scope of work

---

**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.

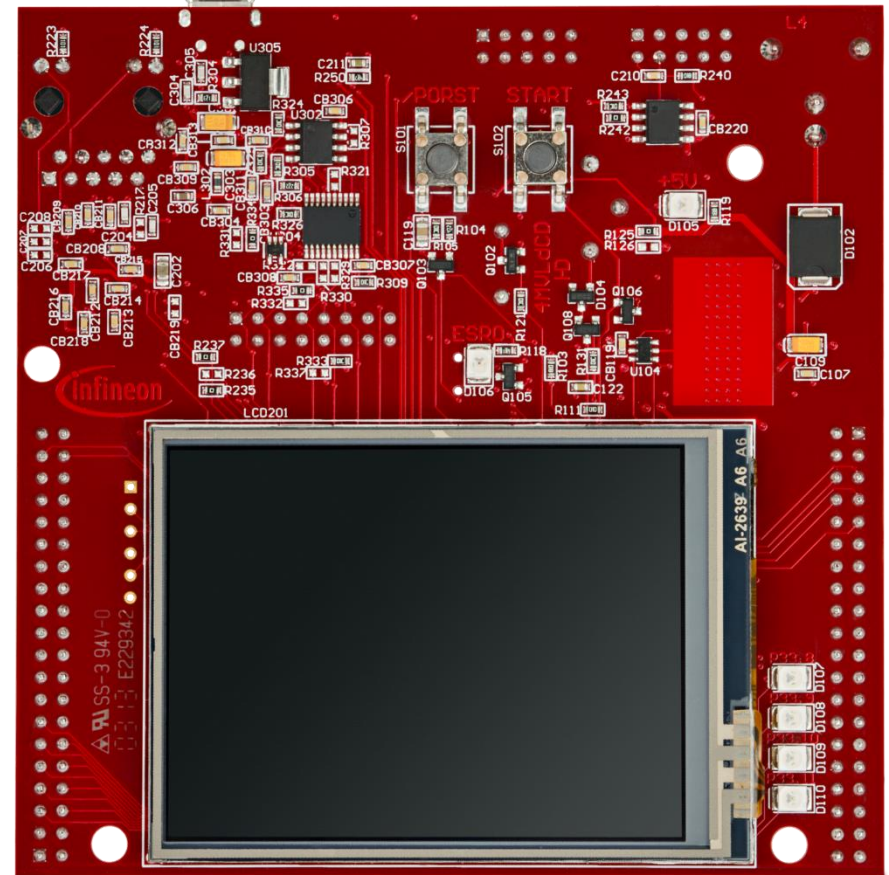
# Introduction

---

- › The AURIX™ TC2xx microcontroller architecture features up to three 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\_AURIX\_TC277\_TFT\_DC-Step.



# Implementation

---

## 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 “HIGH”; this keeps the LED turned off as a default state (***lfxPort\_setPinHigh()*** 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\_setPinlow()***) or CPU1 turns it off (***lfxPort\_setPinHigh()***).

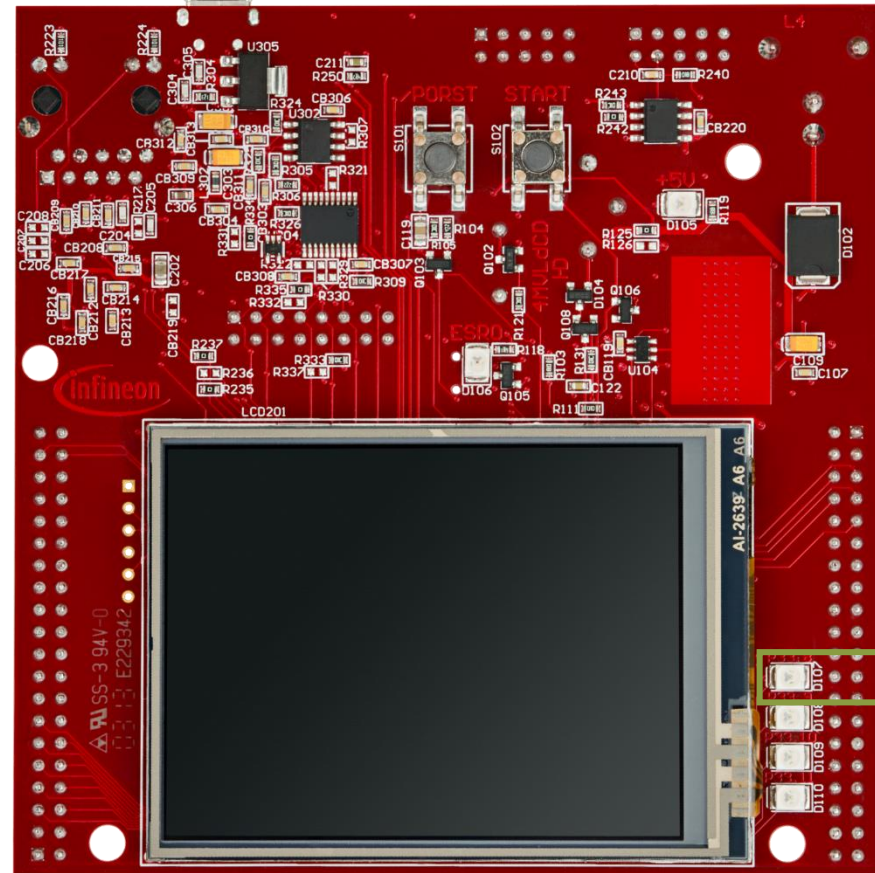
The state of the global variable ***g\_turnLEDon*** is changed by CPU2 every second using the ***wait()*** function from the header ***Bsp.h***.

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 D107 (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>

# Revision history

---

Revision	Description of change
V1.0.1	Update of version to be in line with the code example's version
V1.0.0	Initial version



## Trademarks

All referenced product or service names and trademarks are the property of their respective owners.

**Edition 2020-12**

**Published by**

**Infineon Technologies AG**

**81726 Munich, Germany**

**© 2020 Infineon Technologies AG.**

**All Rights Reserved.**

**Do you have a question about this document?**

**Email: [erratum@infineon.com](mailto:erratum@infineon.com)**

**Document reference**

**Multicore\_1\_KIT\_TC277\_TFT**

## IMPORTANT NOTICE

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics ("Beschaffenheitsgarantie").

With respect to any examples, hints or any typical values stated herein and/or any information regarding the application of the product, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation warranties of non-infringement of intellectual property rights of any third party.

In addition, any information given in this document is subject to customer's compliance with its obligations stated in this document and any applicable legal requirements, norms and standards concerning customer's products and any use of the product of Infineon Technologies in customer's applications.

The data contained in this document is exclusively intended for technically trained staff. It is the responsibility of customer's technical departments to evaluate the suitability of the product for the intended application and the completeness of the product information given in this document with respect to such application.

For further information on the product, technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies office ([www.infineon.com](http://www.infineon.com)).

## WARNINGS

Due to technical requirements products may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies office.

Except as otherwise explicitly approved by Infineon Technologies in a written document signed by authorized representatives of Infineon Technologies, Infineon Technologies' products may not be used in any applications where a failure of the product or any consequences of the use thereof can reasonably be expected to result in personal injury.