

GPIO_LED_Button_1

for KIT_AURIX_TC275_LK

LED controlled via a push button

AURIX™ TC2xx Microcontroller Training
V1.0.0



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Scope of work

An LED is controlled via a push button.

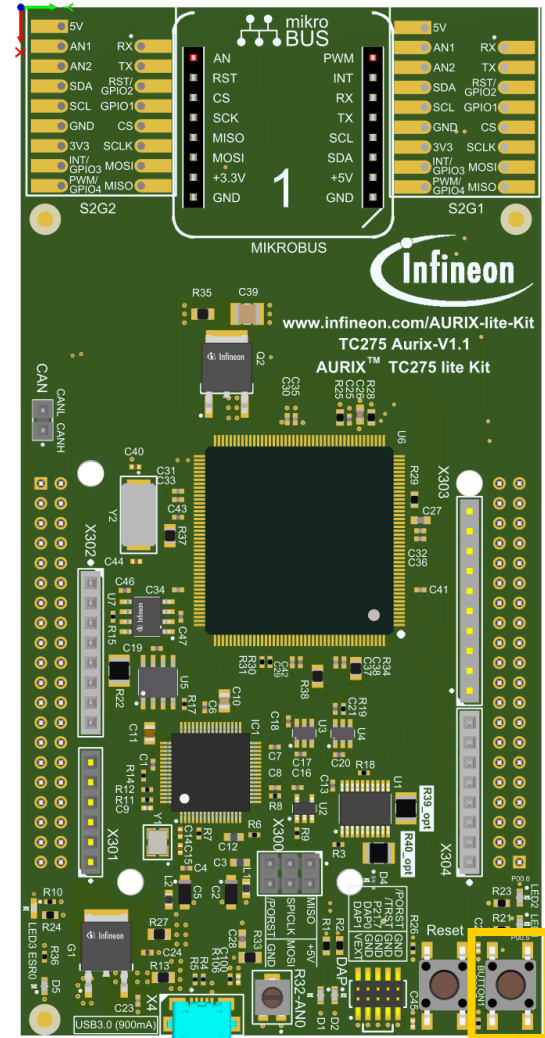
Upon pressure of a push button, an LED is turned on and the LED is turned off when releasing the button. One port pin is configured as input for checking the push button state and the other port pin is configured as output to control the LED.

Introduction

- › The port pins of AURIX™ can individually be configured either as input or as output
- › When configured as input, the port pin has high impedance. Alternatively, an internal weak pull-up resistor or pull-down resistor can be selected
- › As output the port pin can be configured in push-pull output state or open-drain state
- › The state of a port pin can always be read back, independent whether a port pin is configured as input or output

Hardware setup

This code example has been developed for the board KIT_AURIX_TC275_LITE.



Implementation

Configuring the port pins:

The function *init_GPIOs()* configures one port pin to control an LED and one port pin to check the button's state.

- › The port pin with the connected LED is configured to push-pull output by calling the function *IfxPort_setPinMode()* with the function parameter *IfxPort_Mode_outputPushPullGeneral* (enumerated type value)
- › The port pin connected to the push button is set to input direction with an internal weak pull-up by calling *IfxPort_setPinMode()* with the function parameter *IfxPort_Mode_inputPullUp*

All functions above are provided by the iLLD header *IfxPort.h*.

Implementation

Controlling the LED:

The function ***control_LED()*** reads the state of the push button and, depending on the push button's state, an LED is turned on or off:

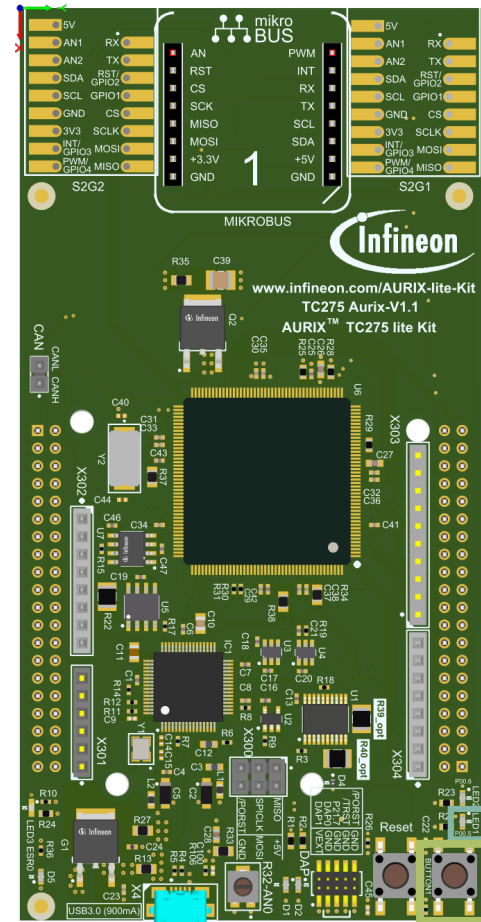
- › The port pin state is read by calling the function ***IfxPort_getPinState()***
- › The port pin with the connected LED is set to low or high by using the function ***IfxPort_setPinState()***

All functions are provided by the iLLD header ***IfxPort.h***.

Run and Test

After code compilation and flashing the device, you can observe the following behavior:

- While the button is pressed, the LED (1) stays on



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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



- › 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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Edition 2021-06

Published by

Infineon Technologies AG
81726 Munich, Germany

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Document reference

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