UART_VCOM_1
for KIT_AURIX_TC397_TFT
UART communication between PC and device

AURIX™ TC3xx Microcontroller Training
V1.0.1

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Scope of work

UART communication via ASCLIN is used to send "Hello World!" from the device to the computer.

The string "Hello World!" is sent from the device to the PC via UART. The string is then visualized in a serial monitor.
The Asynchronous/Synchronous Interface (ASCLIN) module enables asynchronous/synchronous serial communication with external devices. For this training, asynchronous reception/transmission (UART) is used for the communication between a PC and an AURIX™ device.
Hardware setup

This code example has been developed for the board KIT_A2G_TC397_5V_TFT.

The board should be connected to the PC through the USB port (1).
Implementazione

Configura l’ASCLIN

La configurazione dell’ASCLIN modulare per la comunicazione UART avviene nel fase di configurazione iniziale inizializzando un’istanza della struttura `IfxAsclin_Asc_Config` con i valori predefiniti utilizzando la funzione `IfxAsclin_Asc_initModuleConfig()`. Le seguenti impostazioni possono essere quindi modificati:

- **baudrate** – struttura per impostare la velocità di comunicazione reale in bit/s
- **interrupt** – struttura per impostare:
  - priorità dell’interruzione di trasmissione (**txPriority**)
  - **typeOfService** – definisce quale fornitore di servizi è responsabile per l’elaborazione dell’interruzione, che può essere qualsiasi dei processori disponibili, o la DMA
- **pins** – struttura per impostare quali pin dei port GPIO sono usati per la comunicazione
- **txBuffer, txBufferSize** – per configurare il buffer che contiene i dati da inviare

Infine, la configurazione viene applicata utilizzando la funzione `IfxAsclin_Asc_initModule()`. Tutte le funzioni sopra descritte possono essere trovate nell’header `IfxAsclin_Asc.h`.

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Implementation

The UART send function:

› Sending the string “Hello World!” is implemented inside the function `send_UART_message()` which is called once after initialization of the ASCLIN module.

› This function calls `IfxAsclin_Asc_write()` which is provided by the iLLD header `IfxAsclin_Asc.h`.
Run and Test

For this training, a serial monitor is required for visualizing the values. The monitor can be opened inside the AURIX™ Development Studio using the following icon:

The serial monitor must be configured with the following parameters to enable the communication between the board and the PC:
  - Speed (baud): 115200
  - Data bits: 8
  - Stop bit: 1
Run and Test

After code compilation and flashing the device, perform the following steps:

› The board must be connected to PC via the USB cable
› Open a serial monitor with the above configuration and connect.
› The board has to be reset using the PORST button
› The string can be observed on the serial monitor
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
# Revision history

<table>
<thead>
<tr>
<th>Revision</th>
<th>Description of change</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1.0.1</td>
<td>Update of version to be in line with the code example’s version</td>
</tr>
<tr>
<td>V1.0.0</td>
<td>Initial version</td>
</tr>
</tbody>
</table>

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