

# UART\_VCOM\_1

## for KIT\_AURIX\_TC397\_TFT

UART communication between PC and device

AURIX™ TC3xx Microcontroller Training  
V1.0.3



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## Scope of work

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**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.

# Introduction

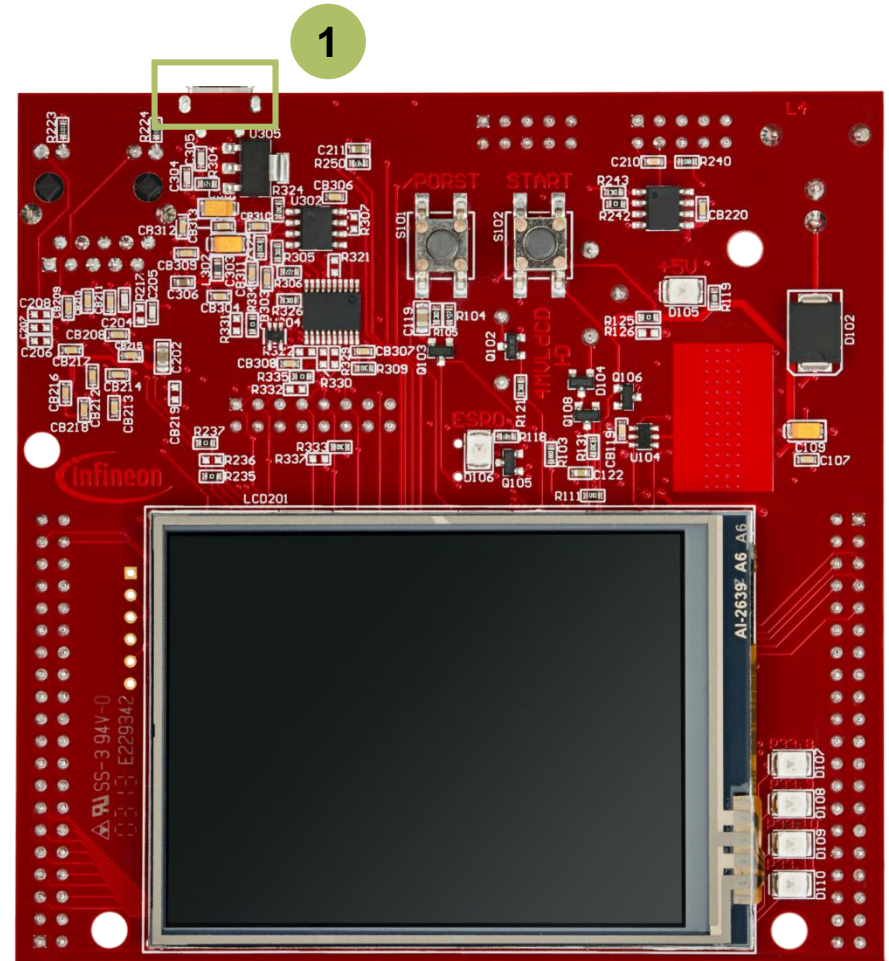
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- › The Asynchronous/Synchronous Interface (ASCLIN) module enables asynchronous/synchronous serial communication with external devices. For this training, asynchronous reception/transmission (UART) is used for the communication between a PC and an 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).



# Implementation

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## Configure the ASCLIN

Configuration of the ASCLIN module for UART communication is done in the setup phase by initializing an instance of the ***IfxAsclin\_Asc\_Config*** structure with default values through the function ***IfxAsclin\_Asc\_initModuleConfig()***.

The following parameters are then modified:

- › ***baudrate*** – structure to set the actual communication speed in bit/s
- › ***interrupt*** – structure to set:
  - transmit interrupt priority (***txPriority***)
  - ***typeOfService*** – defines which service provider is responsible for handling the interrupt, which can be any of the available CPUs, or the DMA
- › ***pins*** – structure to set which GPIO port pins are used for the communication
- › ***txBuffer***, ***txBufferSize*** – to configure the buffer that holds the outgoing data

Finally, the configuration is applied via the function ***IfxAsclin\_Asc\_initModule()***.

All the above functions can be found in the iLLD header ***IfxAsclin\_Asc.h***.

# Implementation

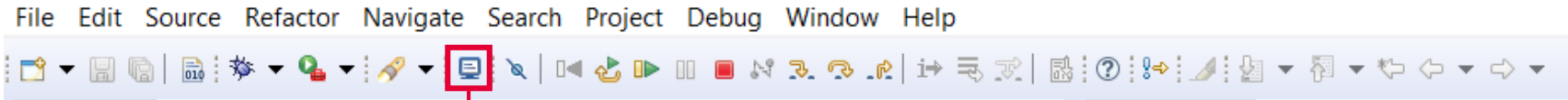
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## The UART send function:

- › 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***

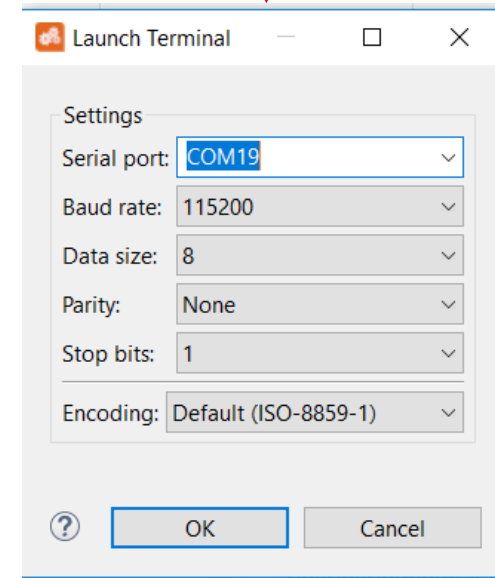
# Run and Test

- > 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](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

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| <b>Revision</b> | <b>Description of change</b>                                    |
|-----------------|---|
| V1.0.3          | Update of version to be in line with the code example's version |
| V1.0.2          | Update of version to be in line with the code example's version |
| V1.0.1          | Update of version to be in line with the code example's version |
| V1.0.0          | Initial version   |

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**Edition 2022-06**

**Published by**

**Infineon Technologies AG  
81726 Munich, Germany**

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**Document reference**

**UART\_VCOM\_1\_KIT\_TC397\_TFT**

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