AURIX™ Application Kit TC297 TFT Getting Started

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Description
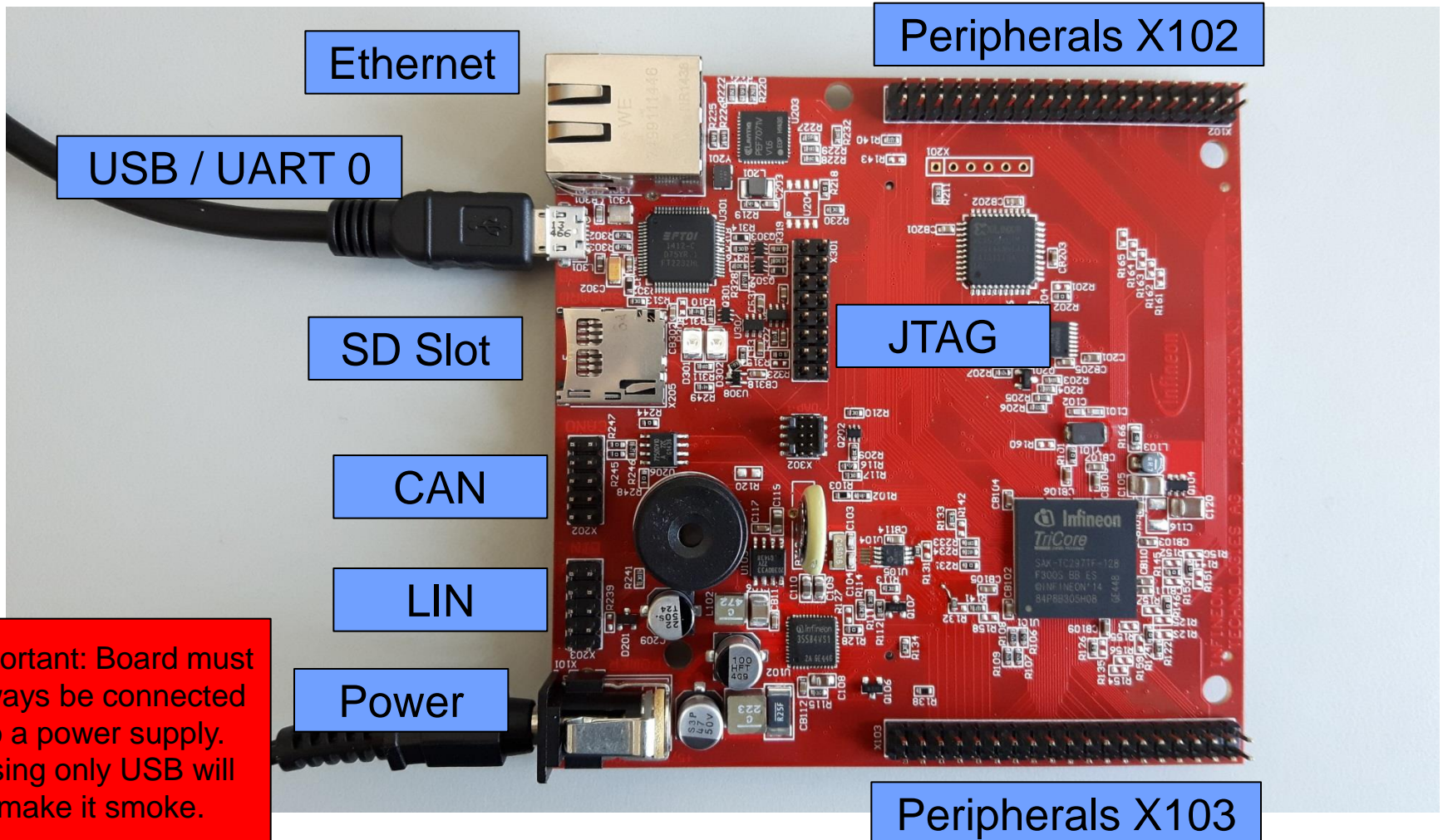
Summary of board features:

- LCD XGA Display 320 x240mini SD card slot
- Mini SD card slot
- Real-Time Clock with alarm, SRAM and unique Mac ID
- On board microUSB debug/flash connector
- Accustic beeper
- USB to UART bridge
- Ethernet PHY (if Ethernet is supported by device)
- LIN Transceiver
- High speed CAN Transceiver
- 4 Low power status LEDs
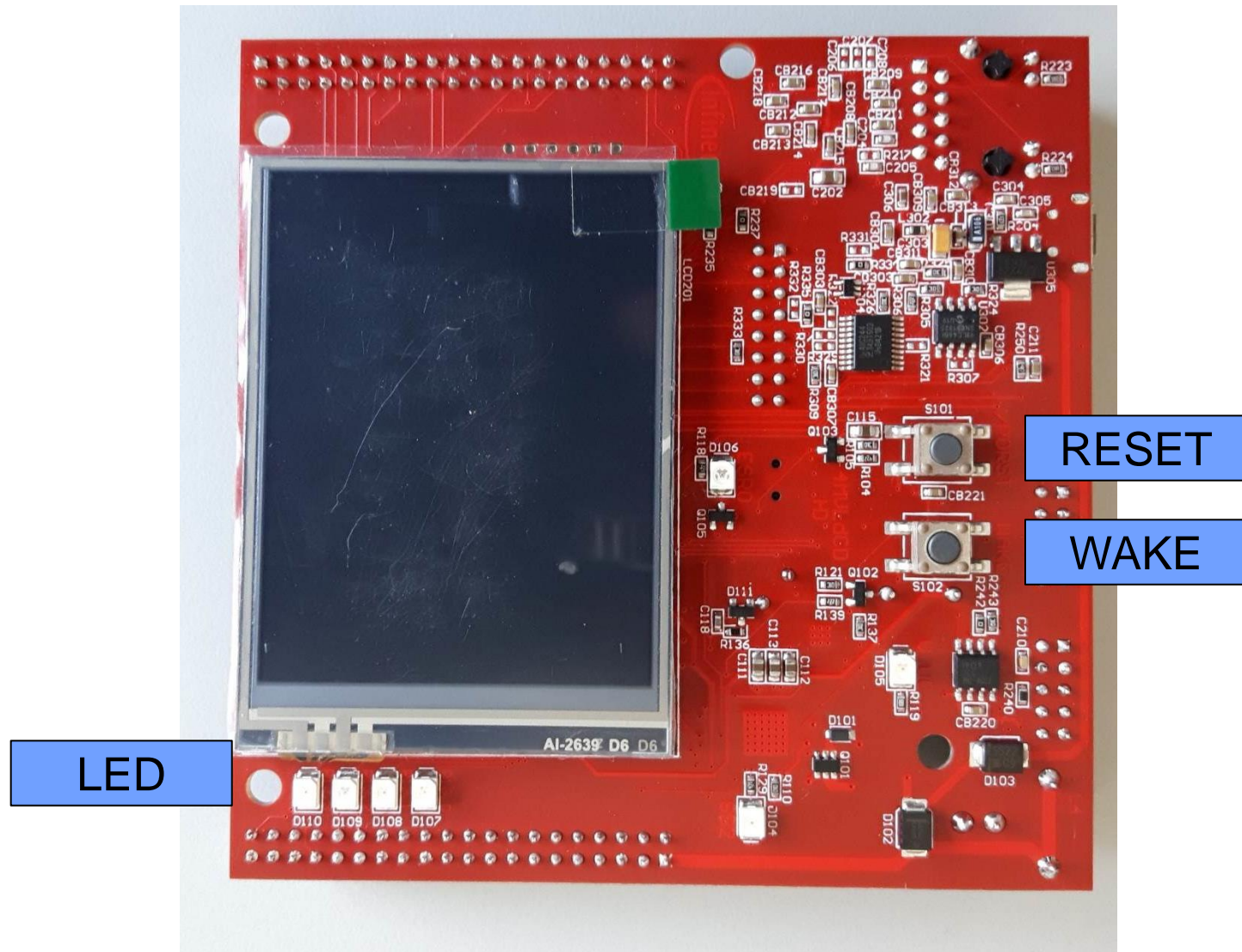- Multi Voltage Safety Micro Processor Supply – TLF35584

Description

Connectors:

- Standard power connector
- microUSB connector for ASC0 interface and debug
- RJ45 Ehernet connector (if Ethernet supported by device)
- 10-pin header for DAP (Debug Access Port)
- 16-pin header for JTAG
- 10-pin 2x5 header for LIN
- 10-pin 2x5 header for CAN0
- 2 x 40-pin connectors with I/O signals RM 2.54mm

Hardware – Upper View

Ethernet

USB / UART 0

SD Slot

CAN

LIN

Power

Peripherals X102

JTAG

Peripherals X103

Important: Board must always be connected to a power supply. Using only USB will make it smoke.

Hardware – Lower View

RESET

WAKE

LED

Pinning

Figure 5-2   IO Connectors TC267, TC277, TC297 - Pinout

UART Pinning – To be verified!!!!!!!. Maybe wrong board

Port	ASCLIN	MCU PIN	Board Pin
uartusb	0	TX - P14.0 RX - P14.1	MicroUSB
uart1	1	TX - P20.10 RX - P15.5	TX - X102(38) RX - X102(34)
uart2	1	TX - P02.02 RX - P02.3	TX - X103(15) RX - X103(16)
uart3	1	TX - P33.12 RX - P14.8	TX - X102(18) RX - X103(07)
uart4	2	TX - P02.00 RX - P02.1	TX - X103(13) RX - X103(14)
uart5	2	TX - P33.09 RX - P33.12	TX - X103(6) RX - X102(18)
uart6	3	TX - P00.00 RX - P00.1	TX - X103(22) RX - X103(23)

Tools

You need the following tools

- HighTec Toolchain
- PLS UDE (v4.6 or later)
- DAS Driver Package

which can be installed from tools.eit.h-da.de

For the HighTec Free Entry Toolchain, please go to
- http://free-entry-toolchain.hightec-rt.com/

Depending on the type of project you might need additional open source tools
- HTERM - http://www.der-hammer.info/terminal/
- Python - https://www.python.org/

Getting Started HighTec Toolchain

- Copy the reference project to your computer and import it into your workspace
- Clean the project and try to build it
- Typically, some file locations need to be updated
- In project properties, check the following entries
  - Include path for the C and C++ compiler (Hidden under the General Tab)
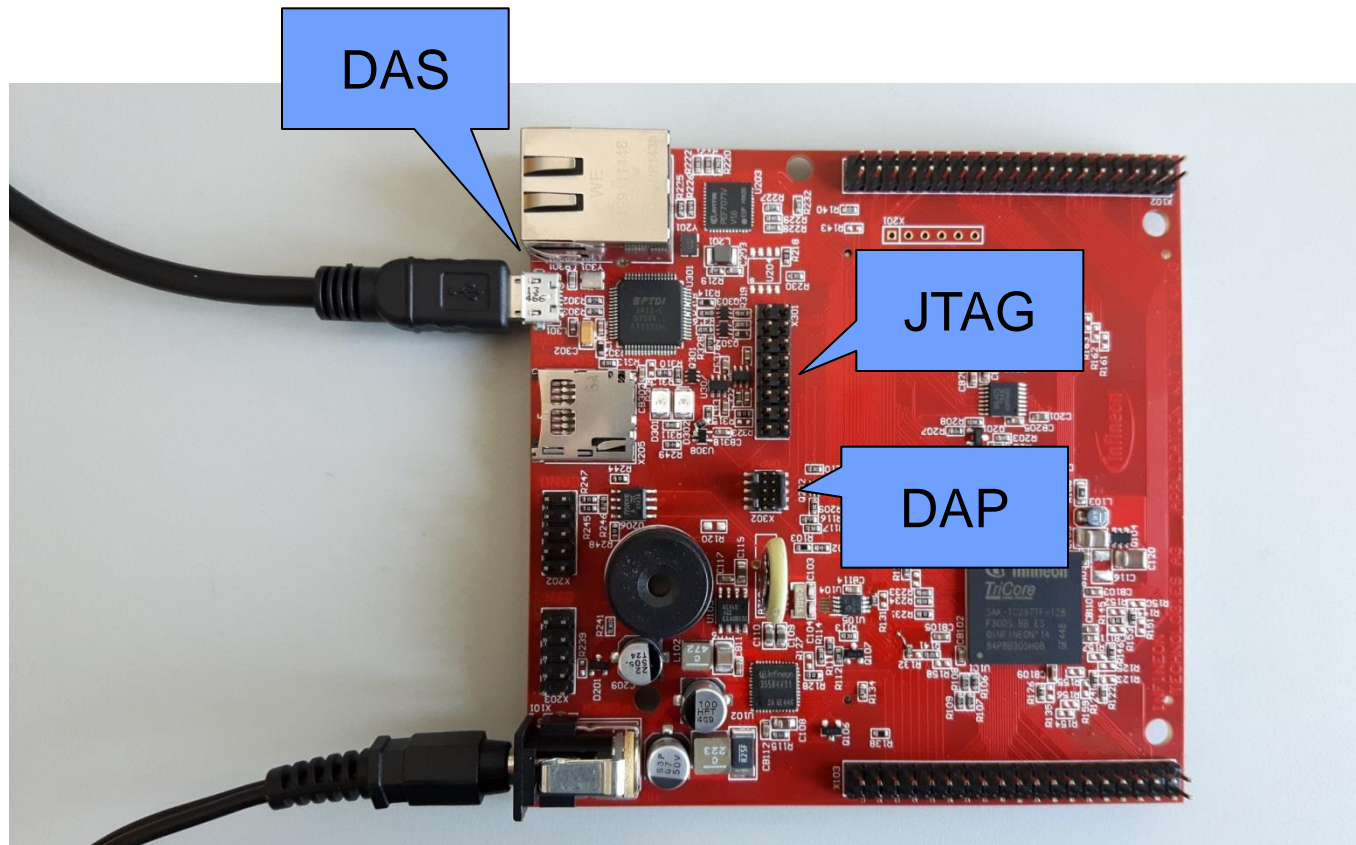 - Linker: Library search path and linker description file
- Always build a ROM configuration!!!
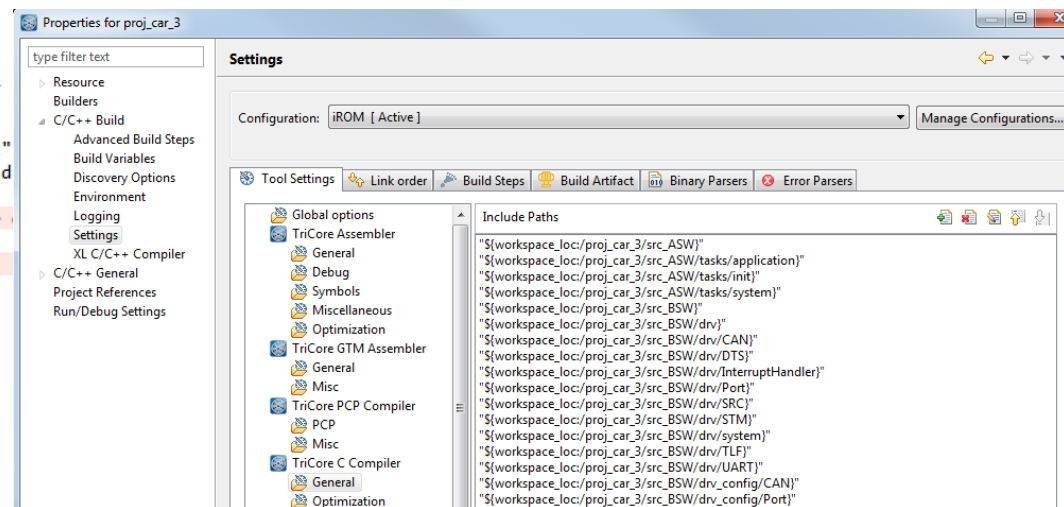
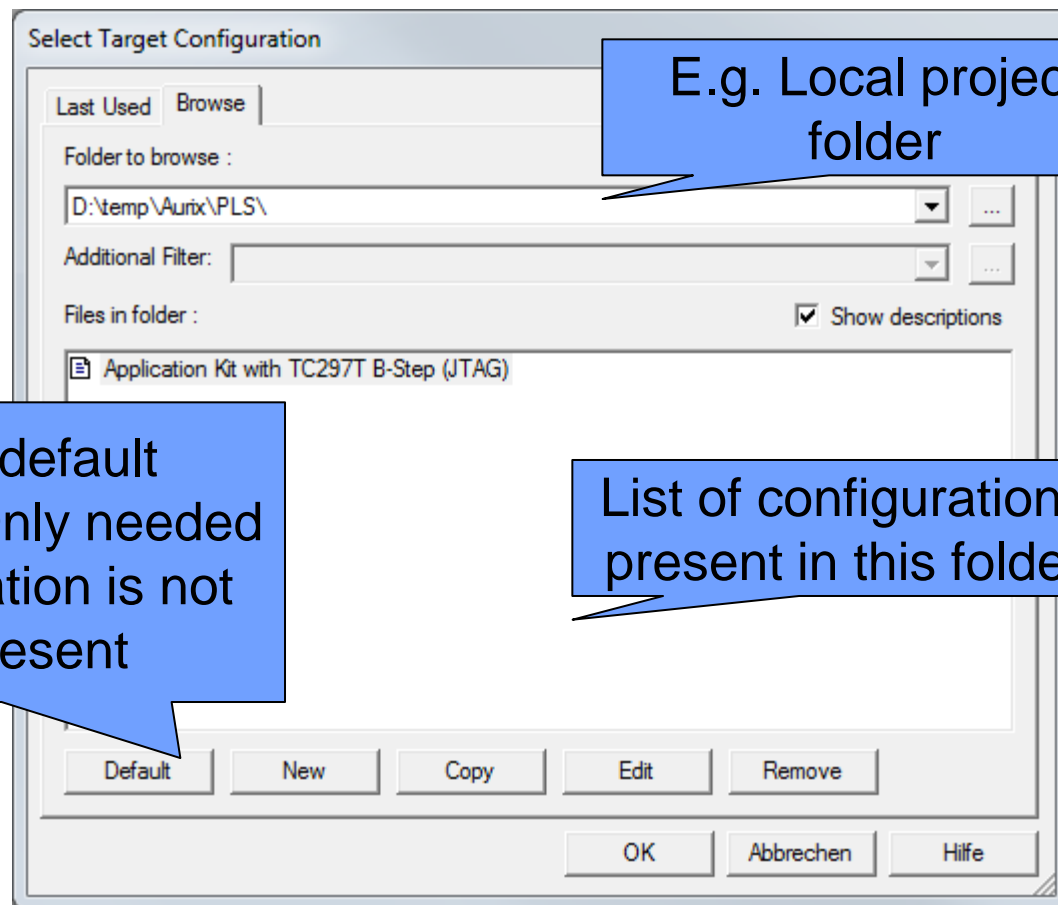# Setting up a project workspace for the PLS Debugger

- Several debug interfaces do exist, which require individual configurations

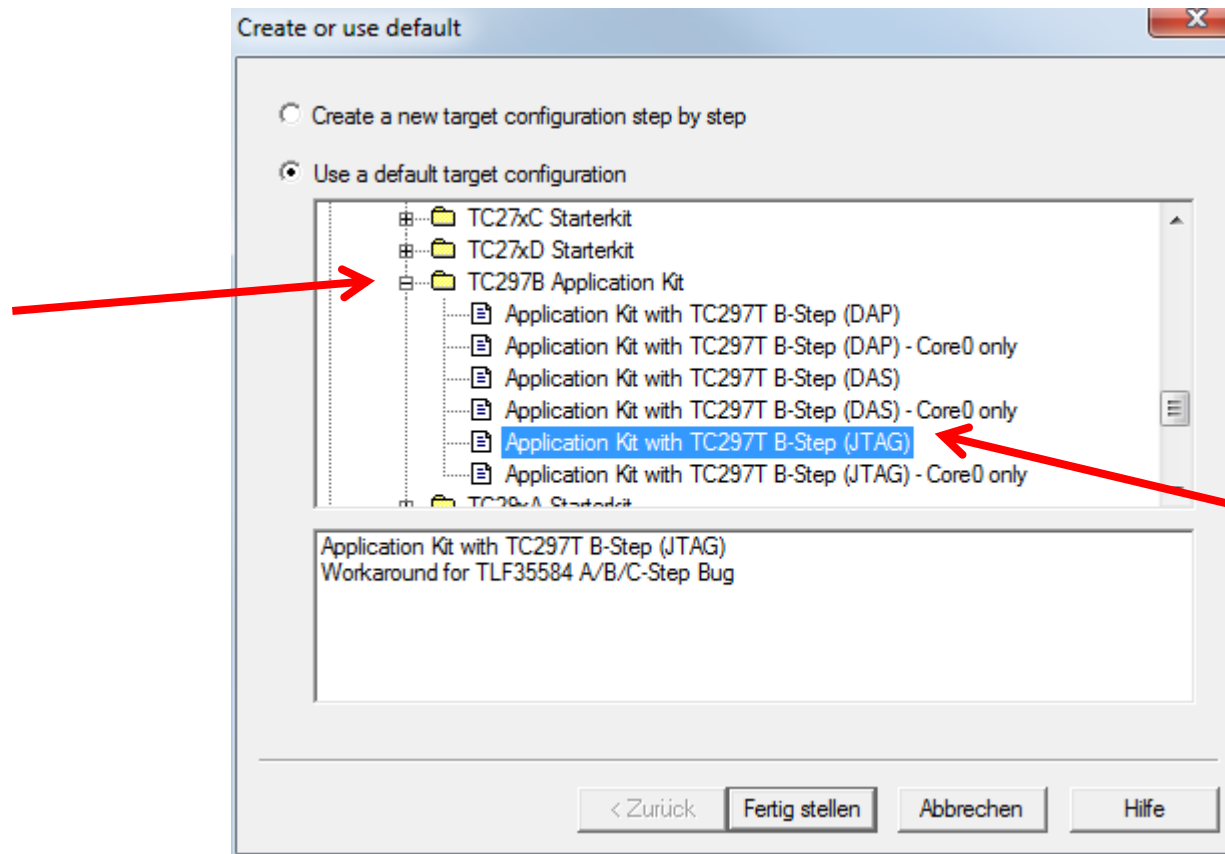# Setting up a project workspace for the PLS Debugger

- PLS provides different preconfigered debug scripts which contain valid settings for the target.
- The following pages show the process for a JTAG connection

E.g. Local project folder

Add a new default configuration. Only needed if the configuration is not already present

List of configurations present in this folder

Setting up a project workspace for the PLS Debugger (1a)

- Make sure to select the correct BOARD and Target Interface

JTAG / DAP

JTAG

DAP

TLF Bug

- It might happen that the Board does not boot because the TLF is not turned off
- In this case, you will see that the red reset LED will flicker a couple of times before the board is dead.

Solution
- Compiler a SMALL program, e.g. the example Serial
- Create a target connection with a PLS configuration which is resetting the TLF by script (check the debug script description for this).
- As soon as the window pops up, that no connection can be established
    - Reset the board
    - Restart the connection (must be done before the TLF times out, i.e. within 1 second)
- Flash a firmware which disables the TLF upon boot.

Setting up a project workspace for the PLS Debugger

- Load your program in the debugger (File ➔ Load Program)
- Select your previously compiled elf file
- Binary to core 0, symbols to all cores
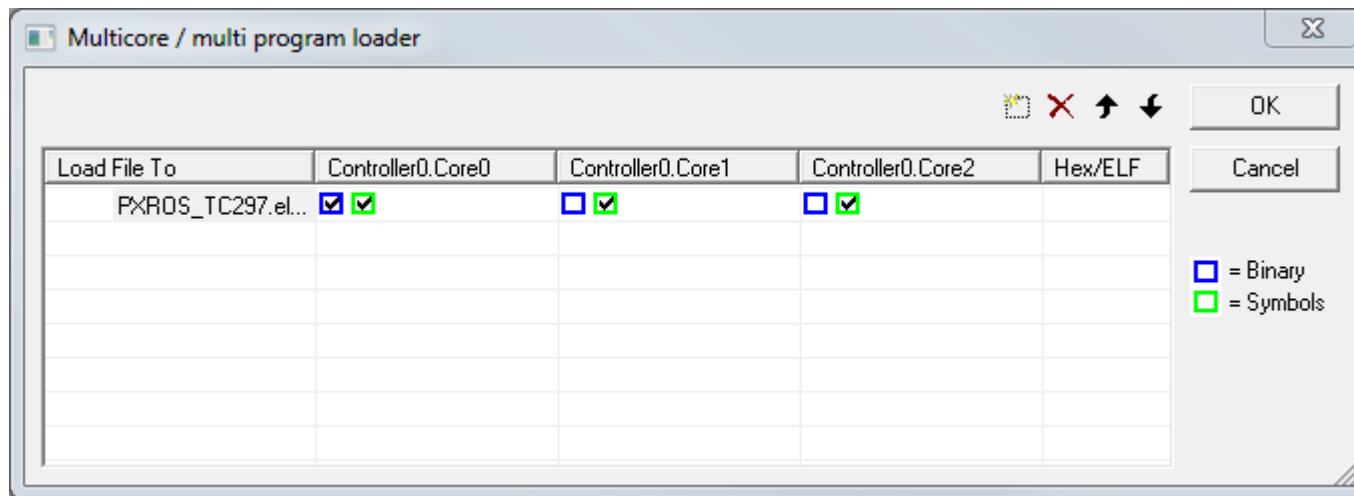
- In the Flash Tool: Program all
- Delete all multicore run configurations (Menu Config)
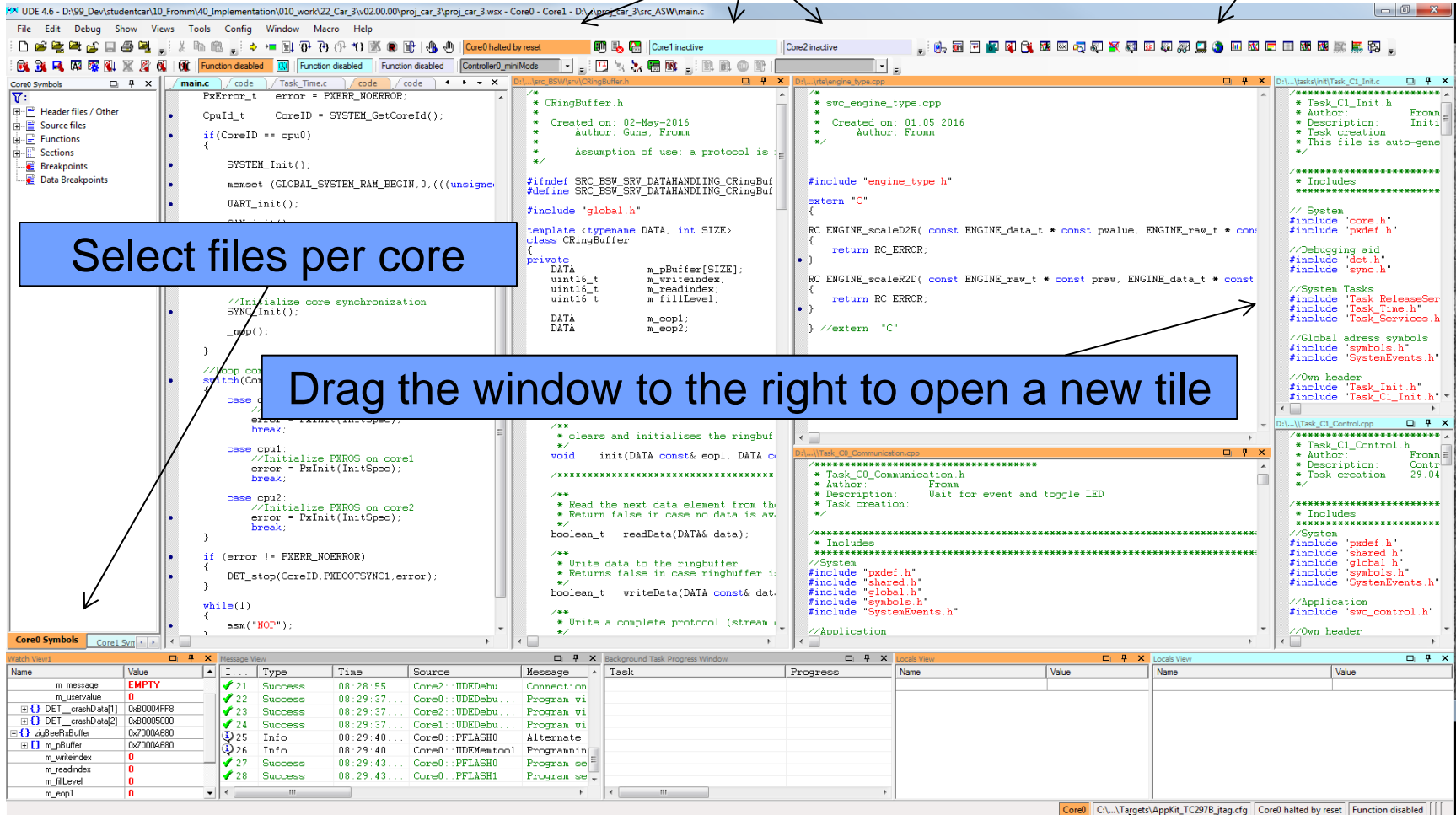
PLS Debugger

Core Status

Open Debug Windows

Select files per core
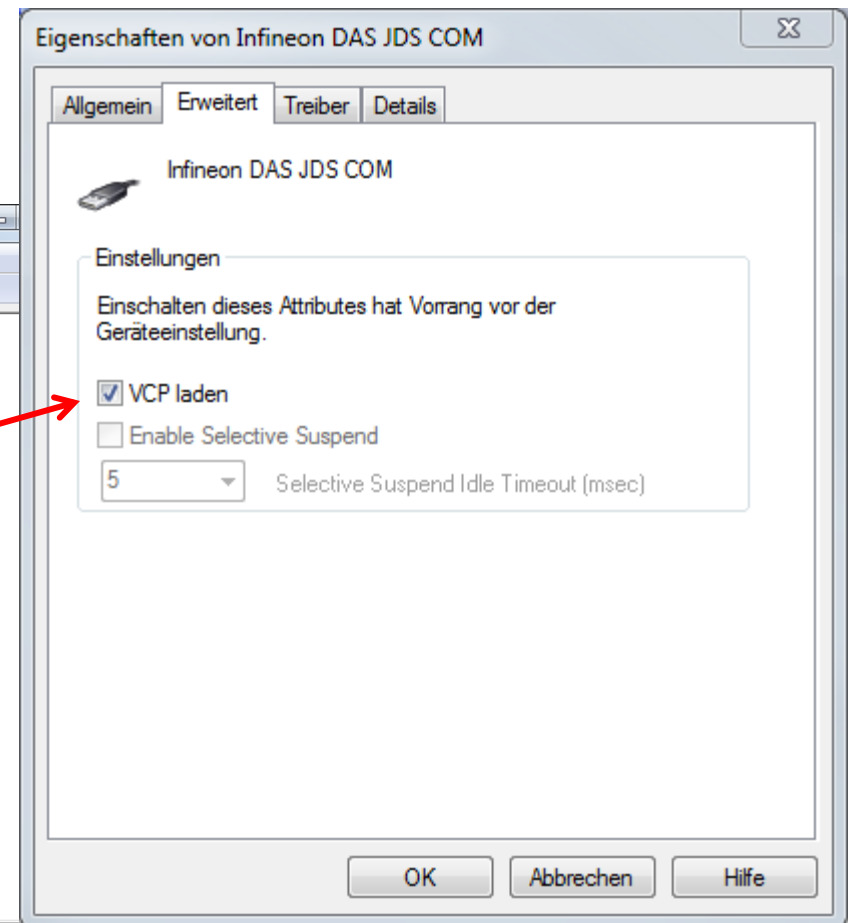
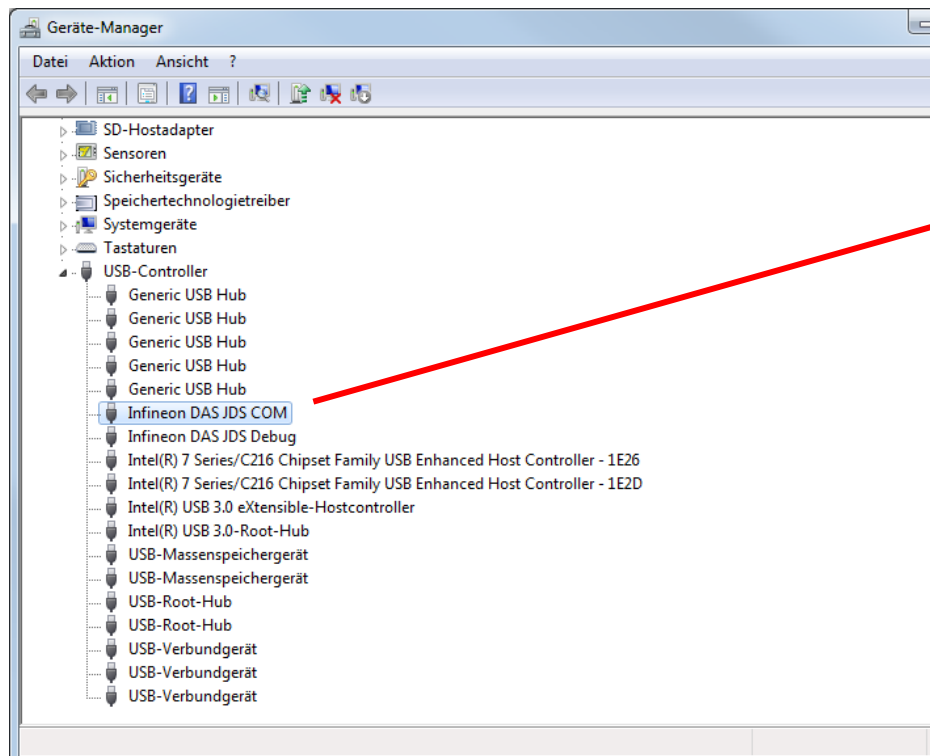Drag the window to the right to open a new tile

Globals

Locals

Using the USB Port

- Install the DAS package
- Connect the USB port to your PC
- Open the devive Manager
- Activate the VCP function
- Reconnect the port

Additional information

- Board User Manual: ApplicationKitManual-TC2X7-V10.pdf
- Aurix HW Manual: tc29xB_um_v1.3.pdf

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http://www.infineon.com/ ➔ MyInfineon
You need an own Login

</div>

Port Configuration

Please add a general description here, explaining the structure and central files

UART – Pinning and Ports

Please provide a table, explaining which pins for which ASCLIN can be used

Provide a brief description of the configuration steps

CAN

GPIO

ADC

23

etc