XC878 EK Getting Started

Examples for XC878CM

Never stop thinking

Overview

- Codegenerator – IDE – Compiler – Debugger
  - Toolgrid for 800 Easy Kit
  - XC878 EK Hardware
- Examples with XC878CM
  - Blinky: Toggle all P3.0 LEDs
  - UART: Communicate with a PC
  - ADC: Sampling an analog value
  - CC6: Compare output and capture Input
  - CAN: ping pong in loopback mode
  - EEPROM: interactive write/erase of DFLASH
  - U2CAN: using the XC878EK as a CAN sniffer and CAN flasher

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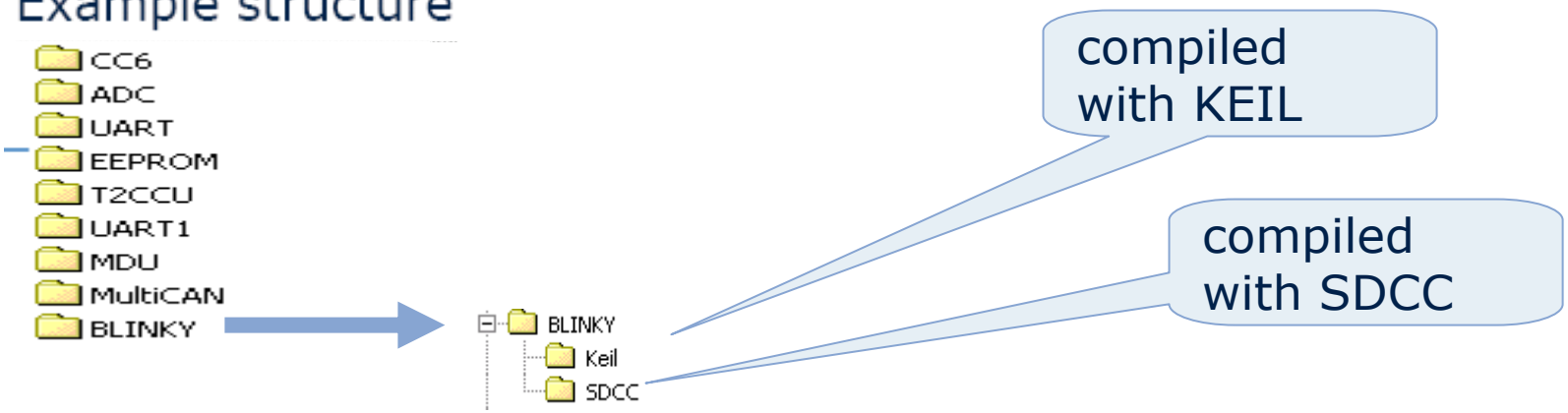
Getting Started 878CM EK

- This Getting Started shows the usage of a free toolchain for XC800 family based on SDCC-Compiler.
- All necessary tools are shown and explained by hands of running and tested example code.
- All examples are explained shortly showing special features of the XC800 devices.

- Example structure



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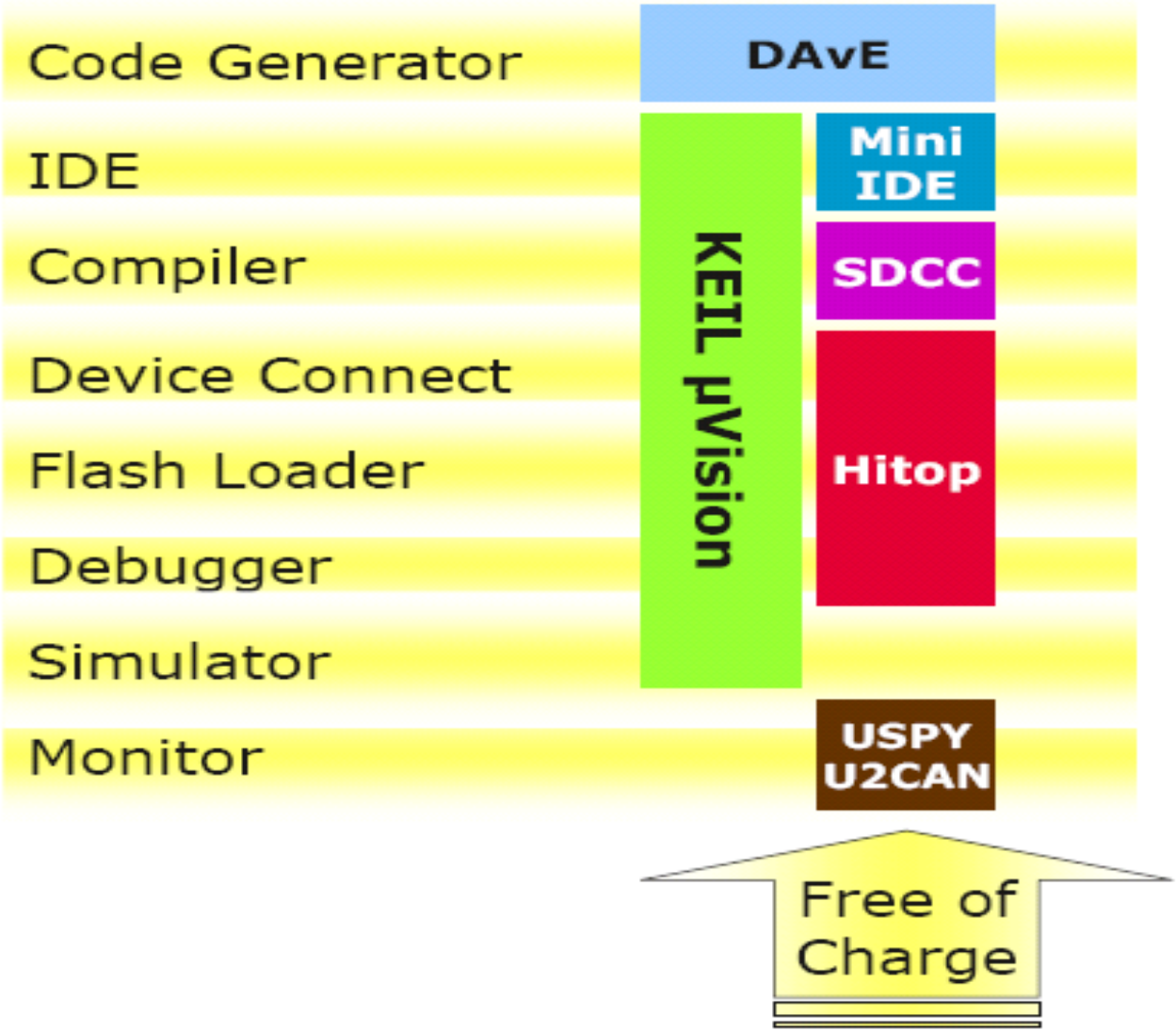
Tool Grid for XC800 Family



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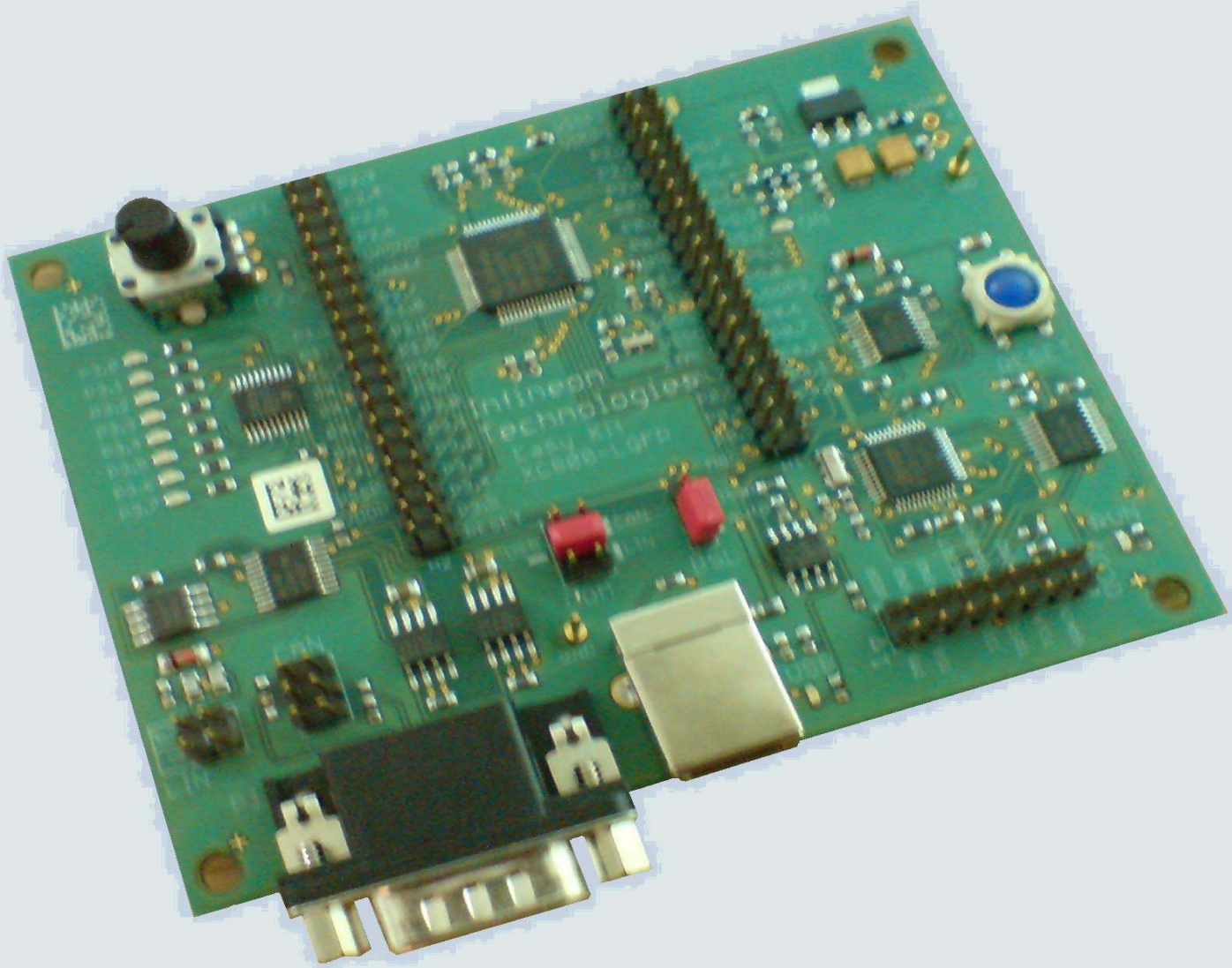
XC878CM EK Hardware



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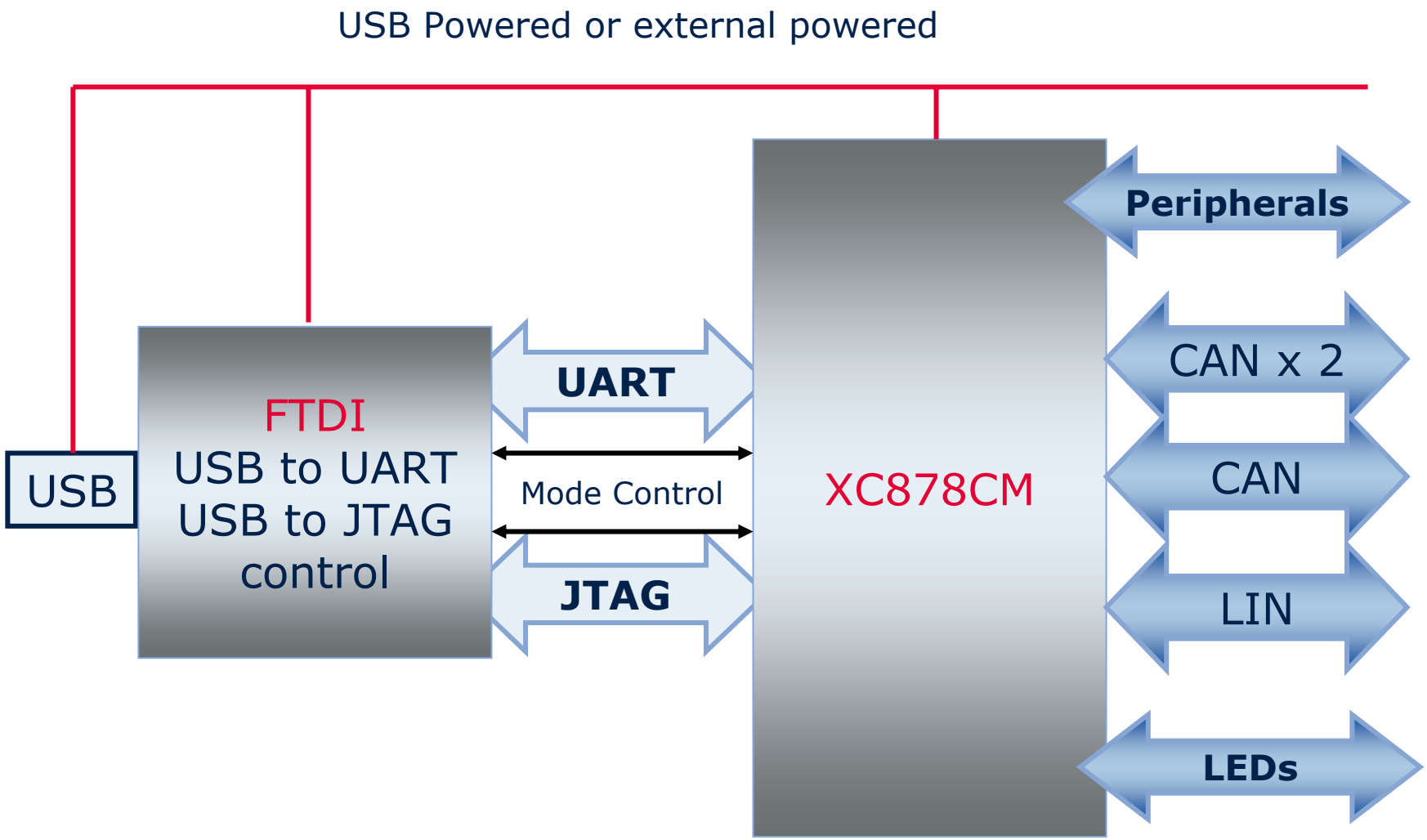
Block Diagram



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Getting Started – Tool installation

- DAvE with DIP files (XC878CM)
  - www.infineon.com/DAvE
- Hitop for XC800(and DAS server)
  - www.hitex.com/XC800
- SDCC(compiler)
  - sdcc.sourceforge.net
- MiniIDE with dot NET framework(IDE)
  - and miniIDE Patch (copies *.XML files to target)
  - and miniMON(optional Debugger)
  - ftp://ftp.extra.infineon.com/xc800
- USpy (monitor)

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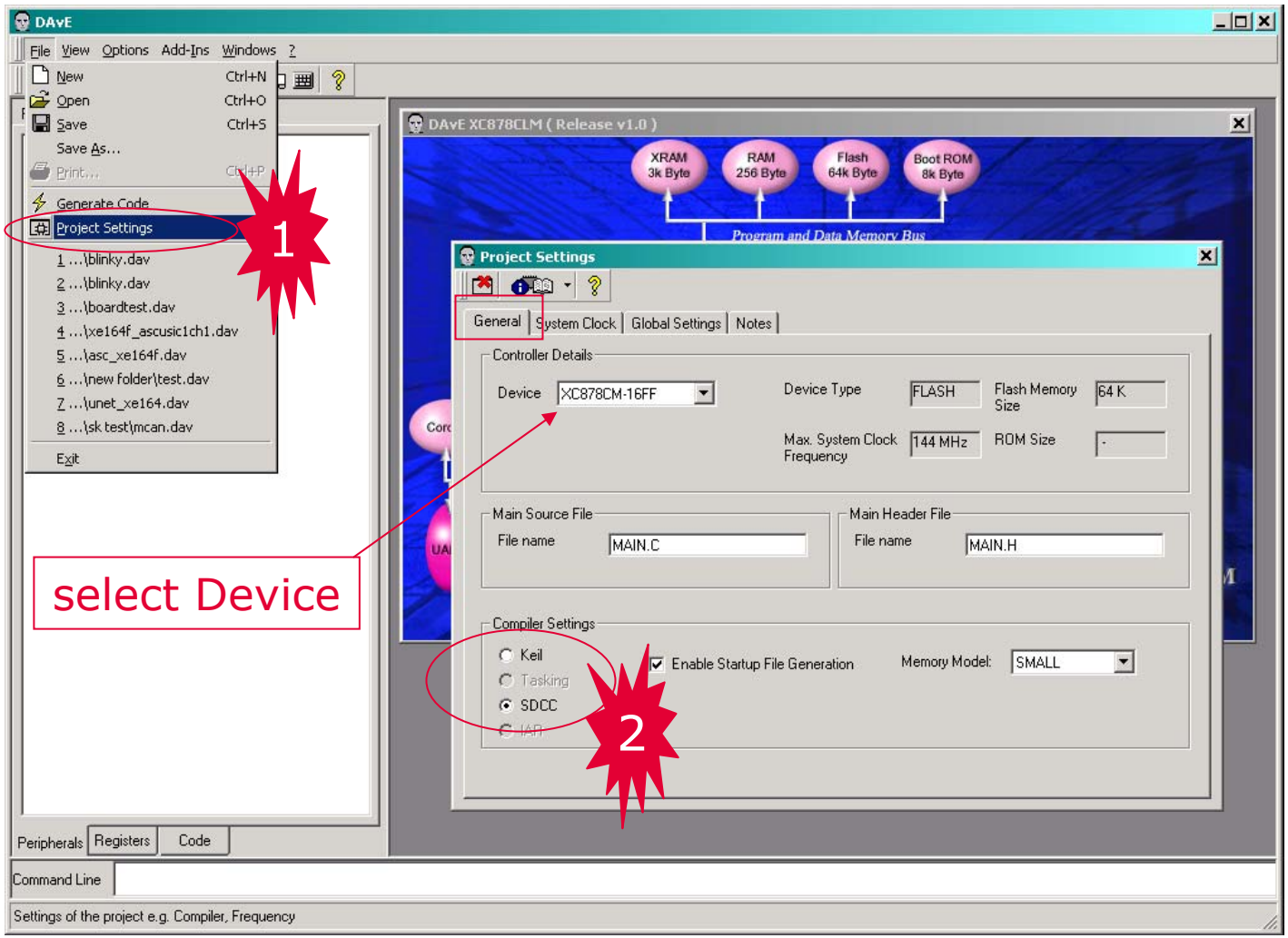
Getting Started – Example Blinky(1)

- select the device and select SDCC as the Compiler



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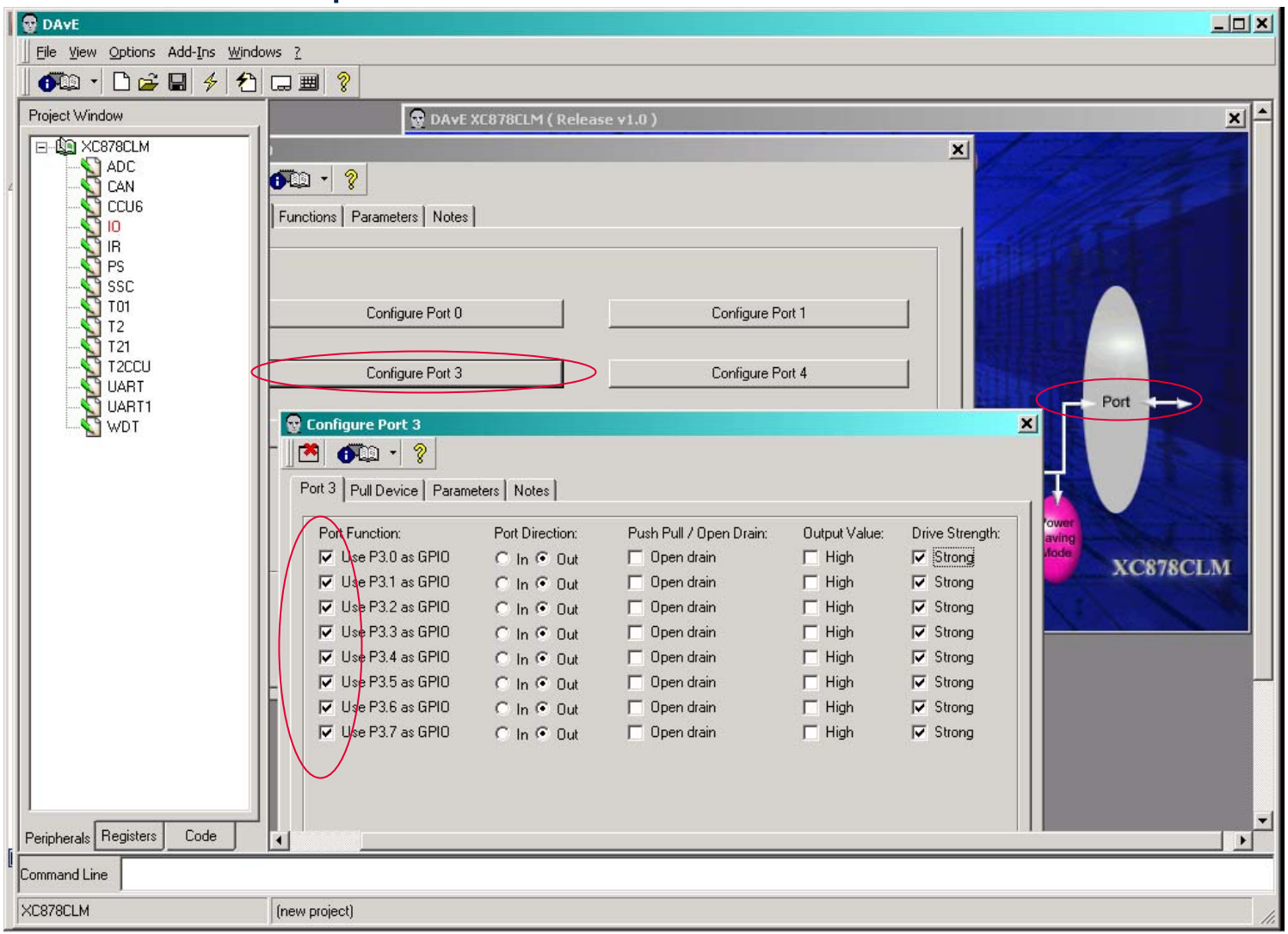
Getting Started – Example Blinky(2)

- configure P3 and output



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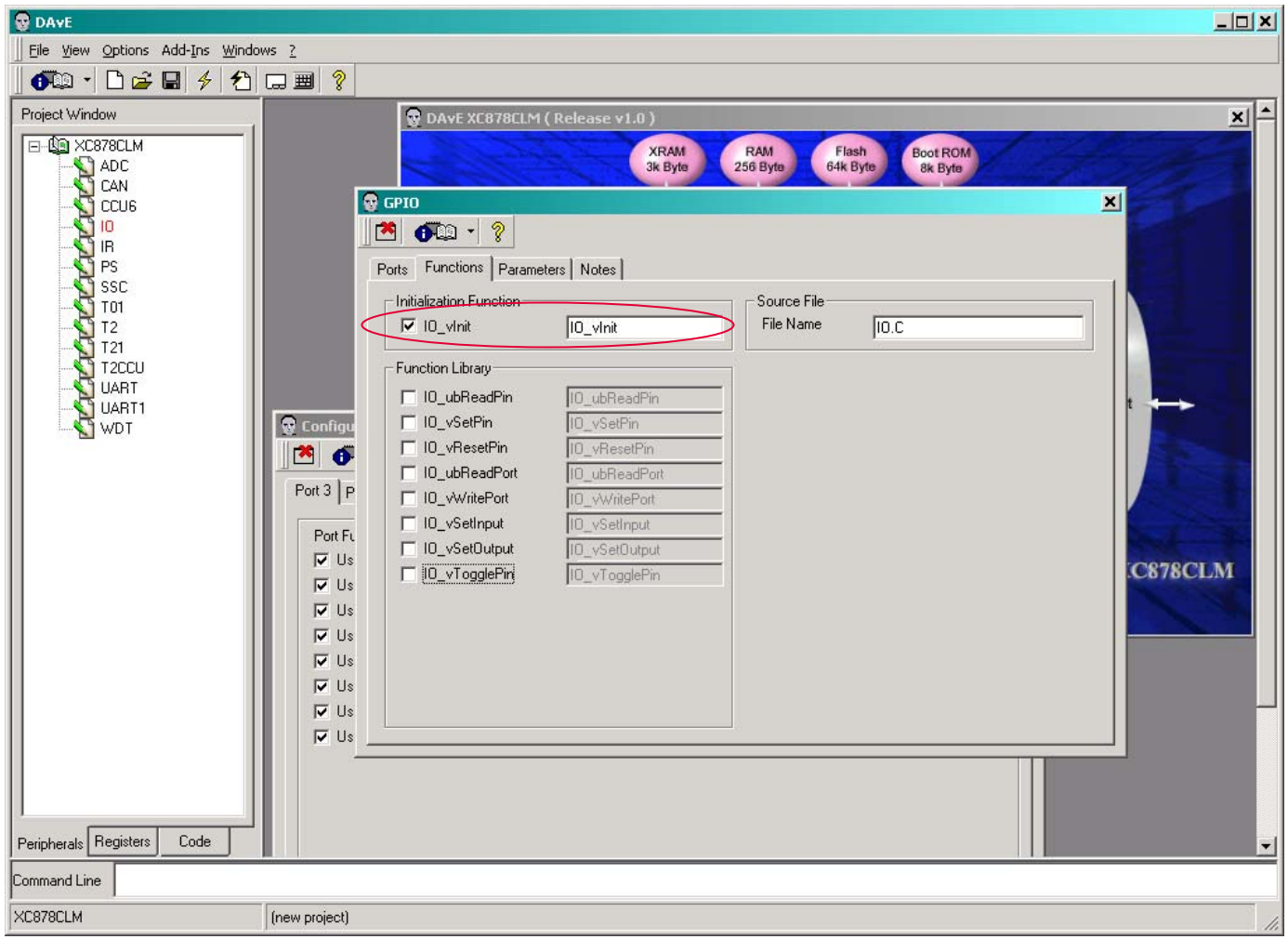
Getting Started – Example Blinky(3)

- select Port Functions: IO_vInit



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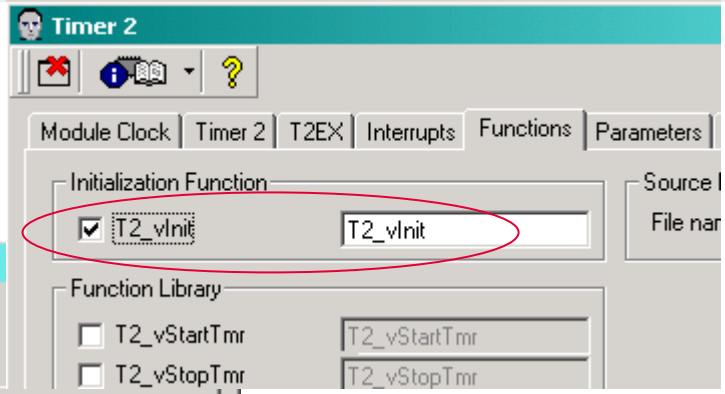
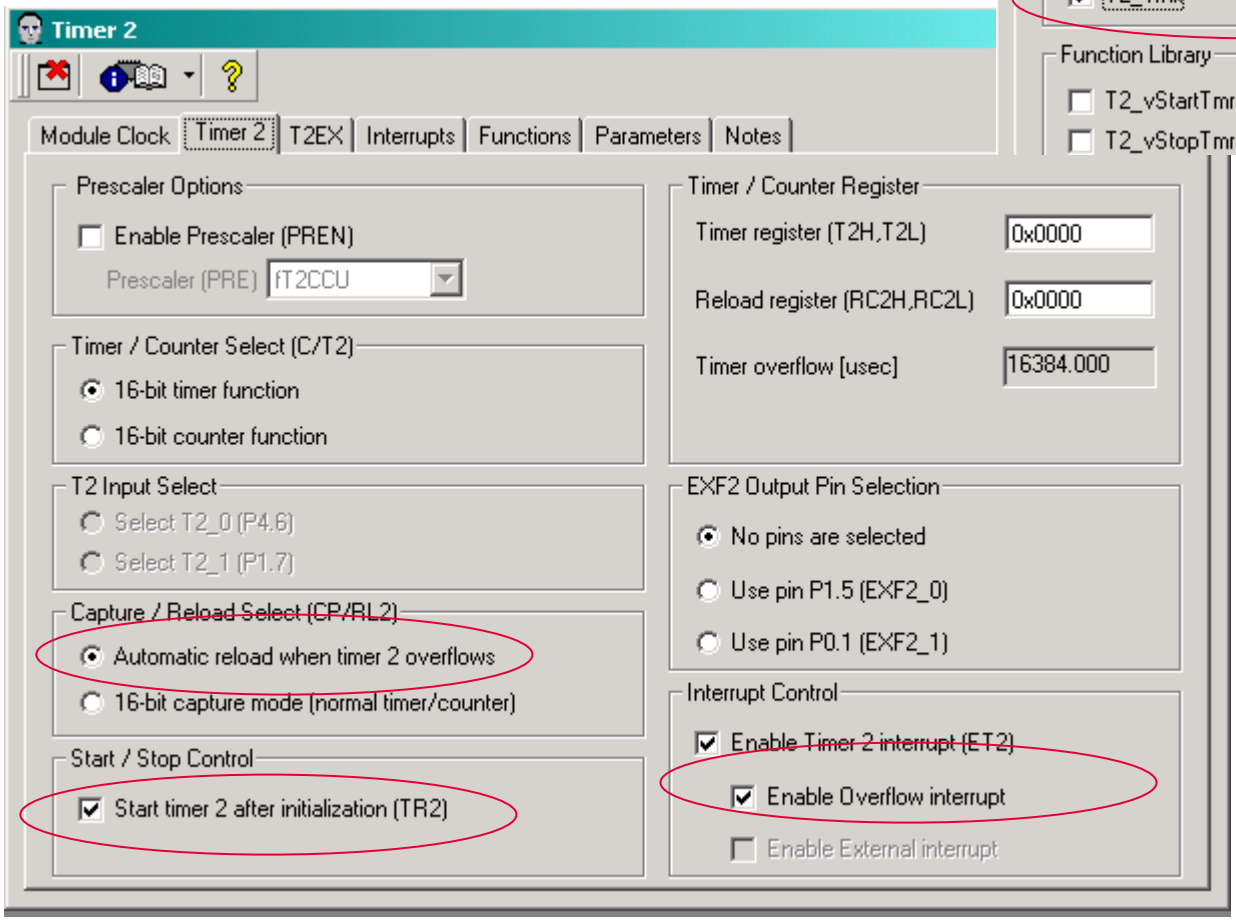
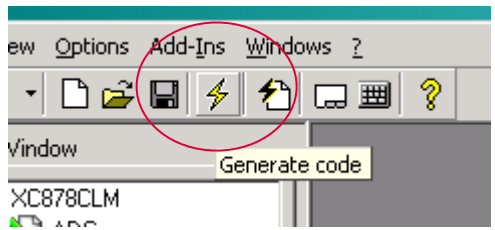
Getting Started – Example Blinky(4)

- configure T2 Interrupt







generate initialisation code – Blinky.dpt is generated

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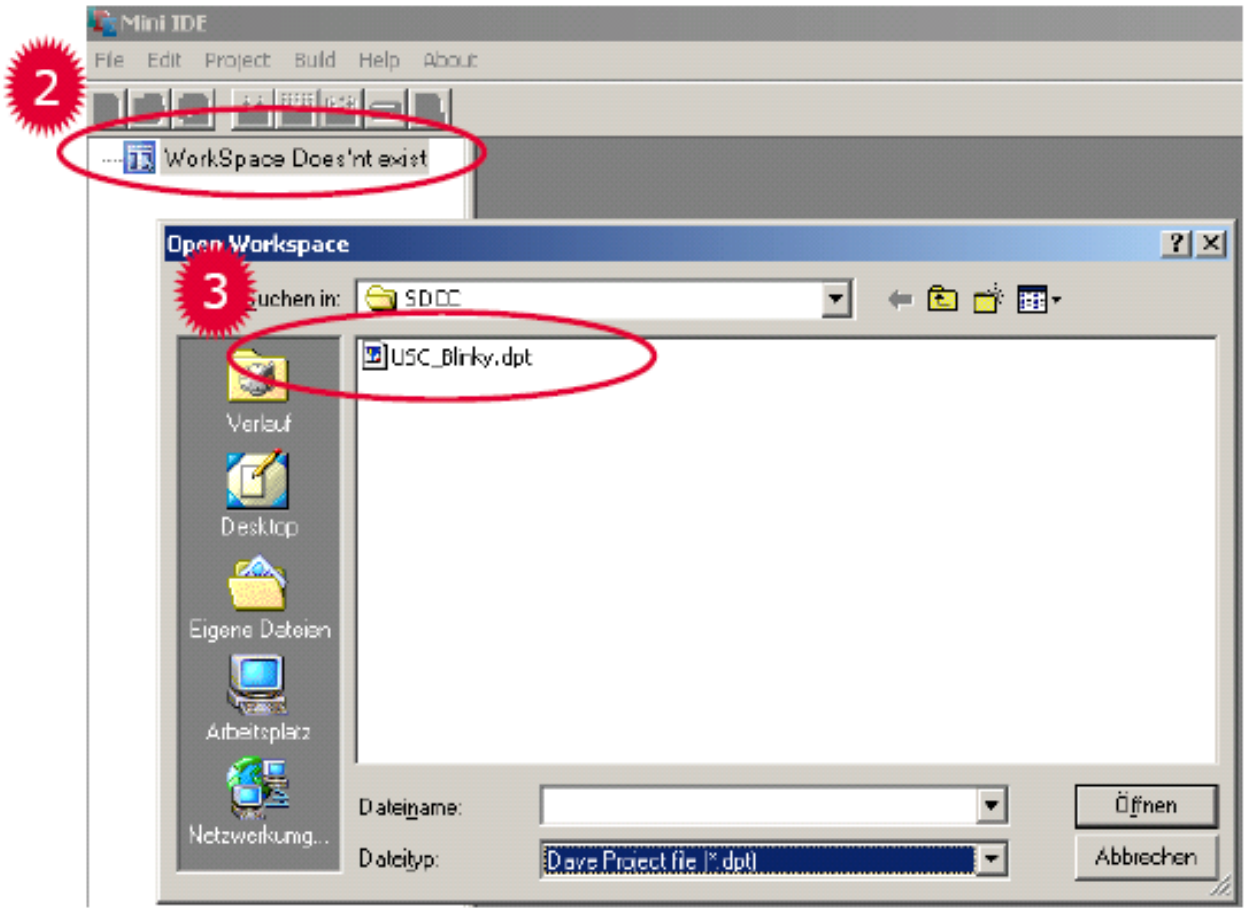
Getting Started – Example Blinky(5)

- Generate Project Workspace with Mini IDE

1. Start MiniIDE
2. Right click on empty workspace icon and select "Open Existing Workspace"
3. select Blinky.dpt file (DAvE File)



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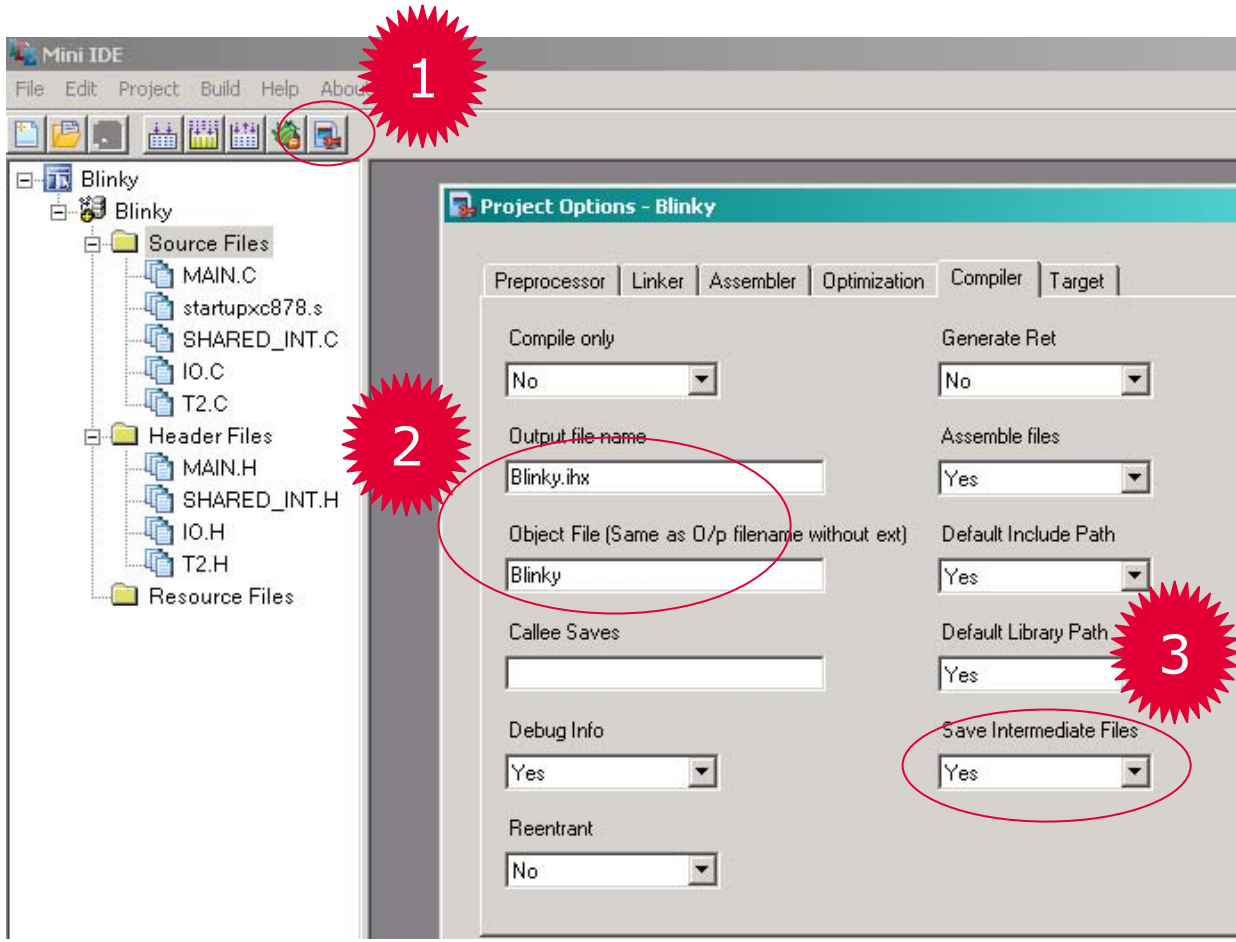
Getting Started – Example Blinky(6)

- Configure SDDC options

1. Click on "Project Options"
2. Name output file
3. Save Intermediate Files → Yes for mem/map file generation



- Note: Default setting can be changed in *\MiniIDE\IDE\IDE\Compiler\SDCC.XML*

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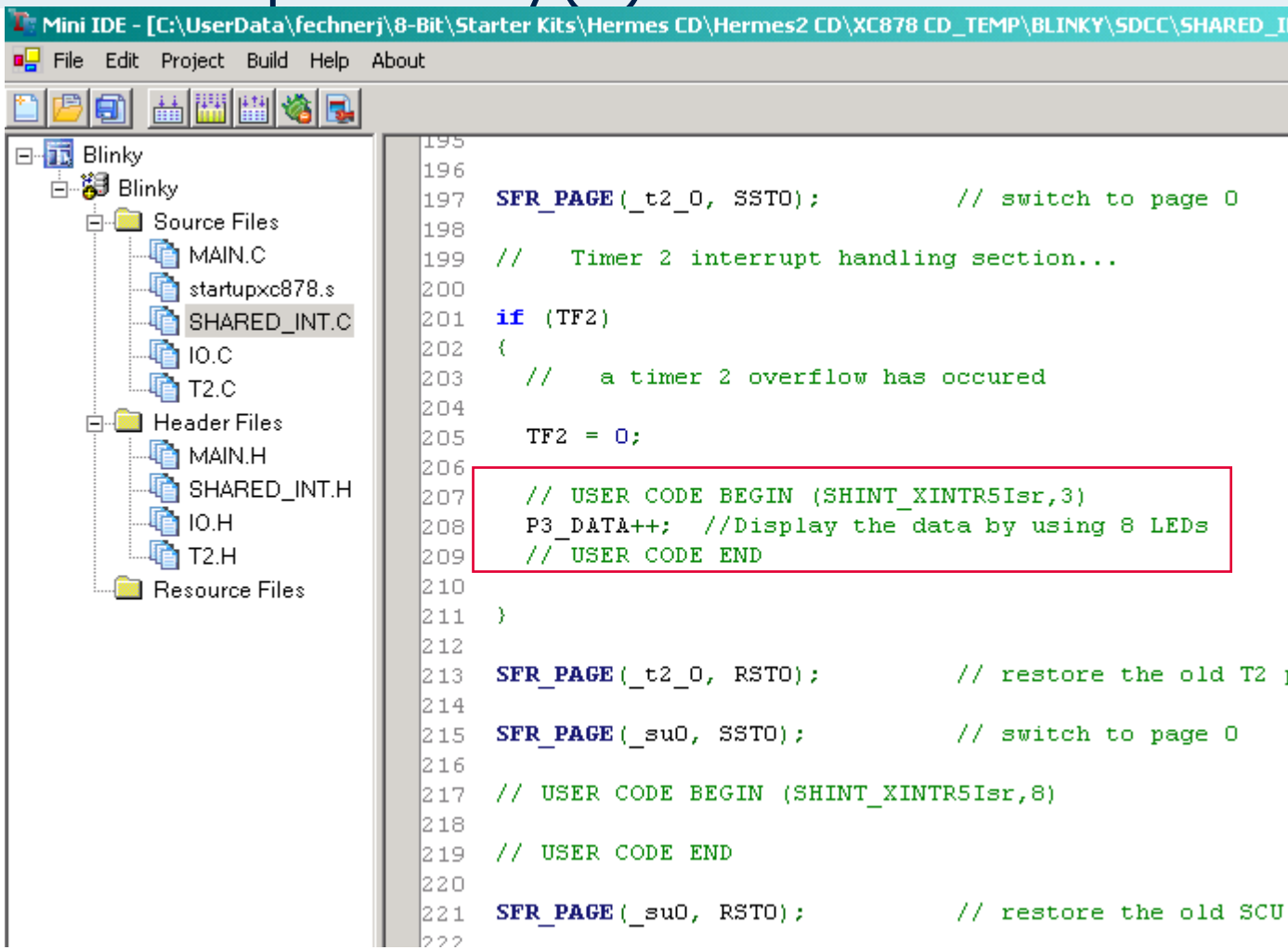
Getting Started – Example Blinky(7)

Insert User Code

- open SHARED_INT.C
  - insert inbetween

//USER CODE BEGIN
P3_DATA++;
//USER CODE END

this will increment P3 every interrupt and change the LED pattern



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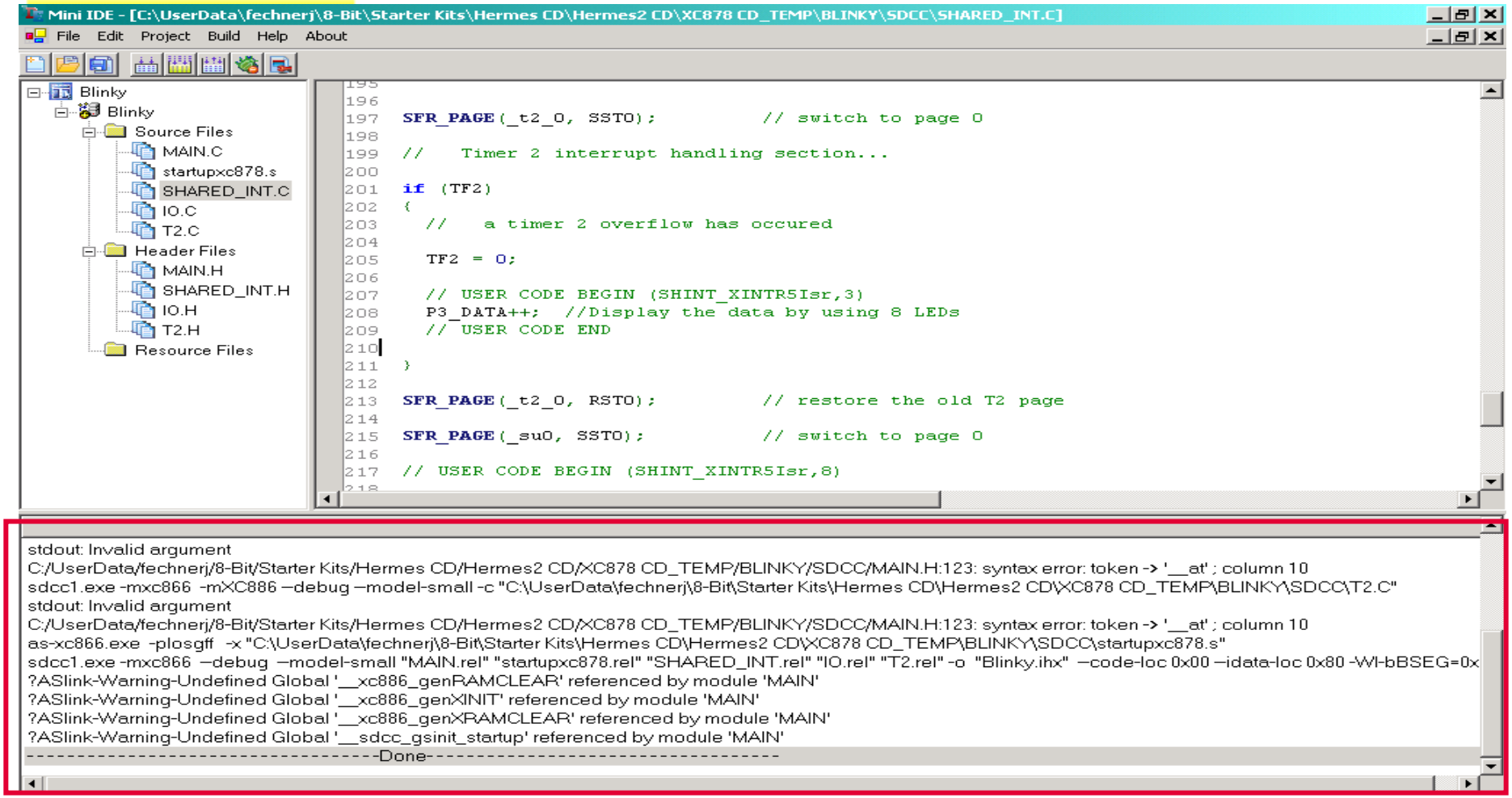
Getting Started – Example Blinky(8)

- Compile



- Watch output window and check on successful compilation
- Save MiniIDE under Blinky.dws

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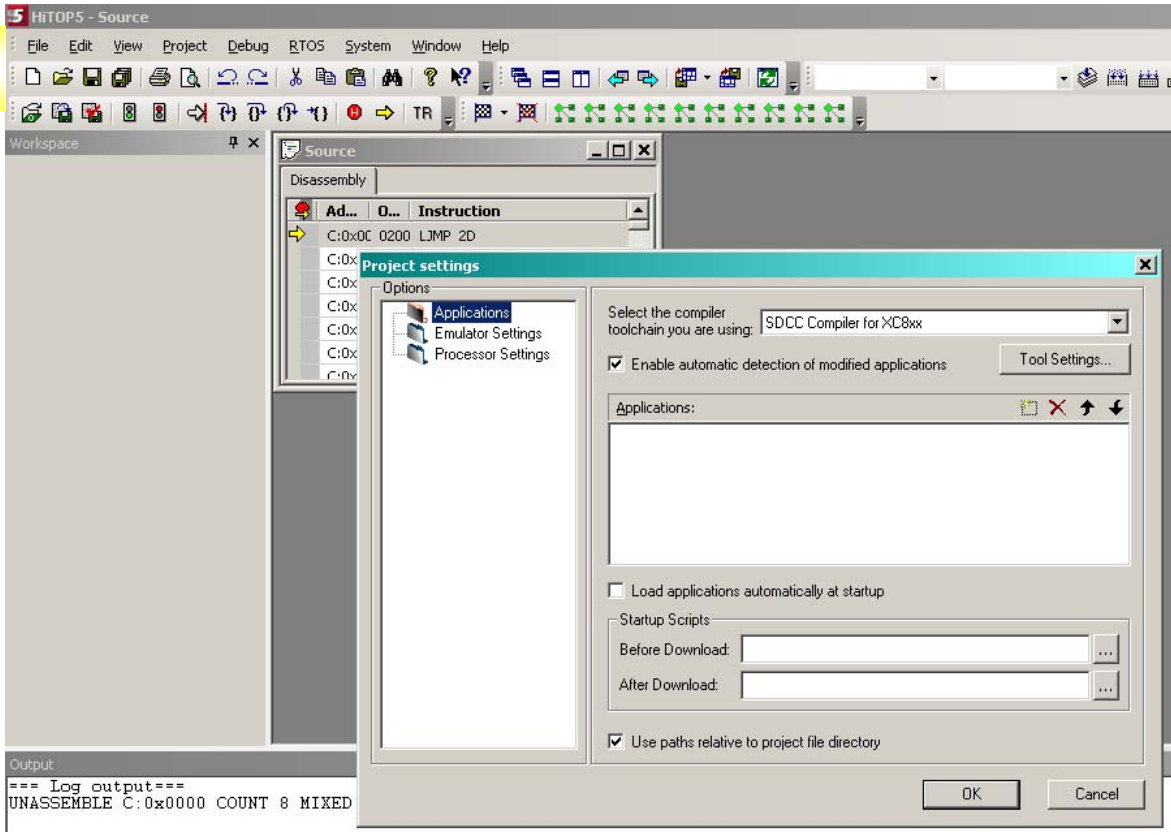
Getting Started – Example Blinky(8)

Configure Hitop (1)

1. **Start Hitop52-XC800**
2. **Click Create Empty Project**
3. **Name Project and select folder**
4. **Follow Tool selection guide and choose the correct target device**
5. **Hitop will now connect to the target device**
6. **Project settings will pop up**

Note: if the connection to the target does not work at first time, please try once more



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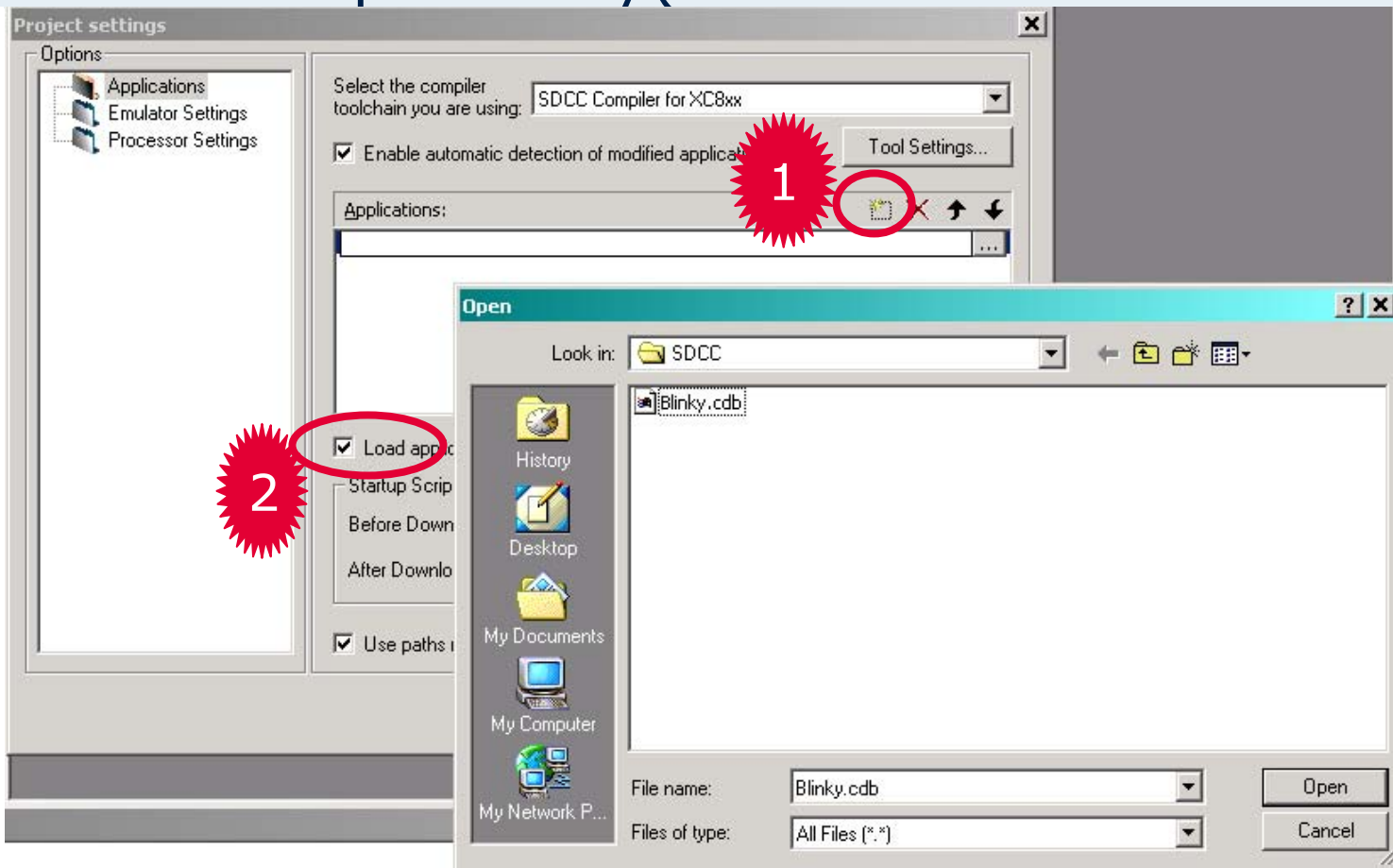
Getting Started – Example Blinky(810

Configure Hitop (2)

1. Add file
   Blinky.CDB
   to applications window
   (this file contains all debug information)
2. Click Load application automatically



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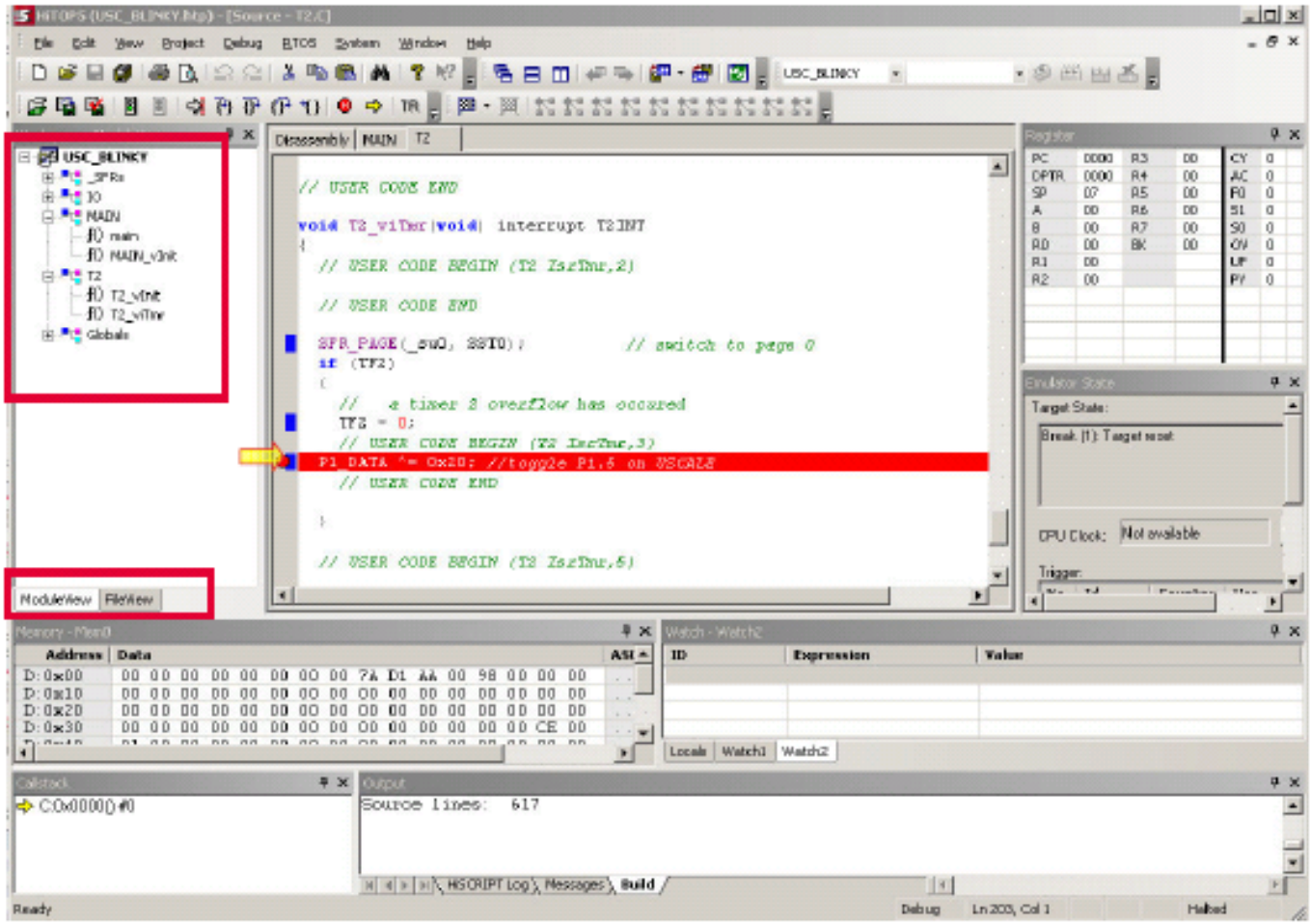
Getting Started – Example Blinky(11)

Debug with Hitop

1. Project window is generated from USC_Blinky.cdb with
   - module view
   - file view
2. Click on Debug "Download"
3. Select an interesting point in your application and set a breakpoint with right mouse click
   → red point
4. Press Go (F5)
   → yellow arrow will appear on break hit
5. ... and debug with a professional tool
6. save file under Blinky.dpt



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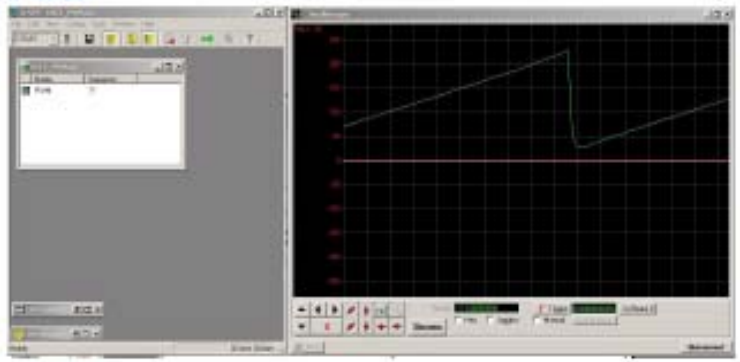
Getting Started – Monitoring Tools(12)

- USPY
- USPY is a serial (UART) monitor
- Simple commands can be sent directly to target
- → a few variables can be displayed in realtime on a SoftScope (no printf needed, as USPY understands HEX)
- → simple program control thru PC-UART/USB



- U2CAN
- U2CAN is a CAN monitor
- Simple UART-commands can be sent from PC to USCALE which acts as a UART to CAN bridge
- Data from the target can be sent to USCALE and received and displayed on PC
- → variables and buffers can be displayed in realtime on a SoftScope
  → simple program control thru PC-UART/USB

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