Micro Inspector Pro
Getting started

Version 2.0

Micro Inspector Pro
Feature List

Feature	Micro Inspector Pro
View workspace	☑
Create/Edit workspace	☑
Save workspace	☑
View oscilloscope	☑
Create/Edit oscilloscope	☑
Target device selection	☑
Symbol browser	☑
Create/Edit memory dump screen	☑
View memory dump screen	☑

Getting started: Micro Inspector Pro

Chapter 1: Preconditions

- Necessary preconditions

Chapter 2: Installing Micro Inspector Pro

- Download Infineon Toolbox
- Install the tool
- How to get a license

Chapter 3: Working with Micro Inspector Pro

- Informative notes
- Creating a Dashboard
- Creating an Oscilloscope

Getting started: Micro Inspector Pro
Chapter 1: Necessary Preconditions

1. Have an Evalkit available
(in this example the TLE9879)

2. A compiled program for that board as an ELF/axf file
(or a file with respective information)

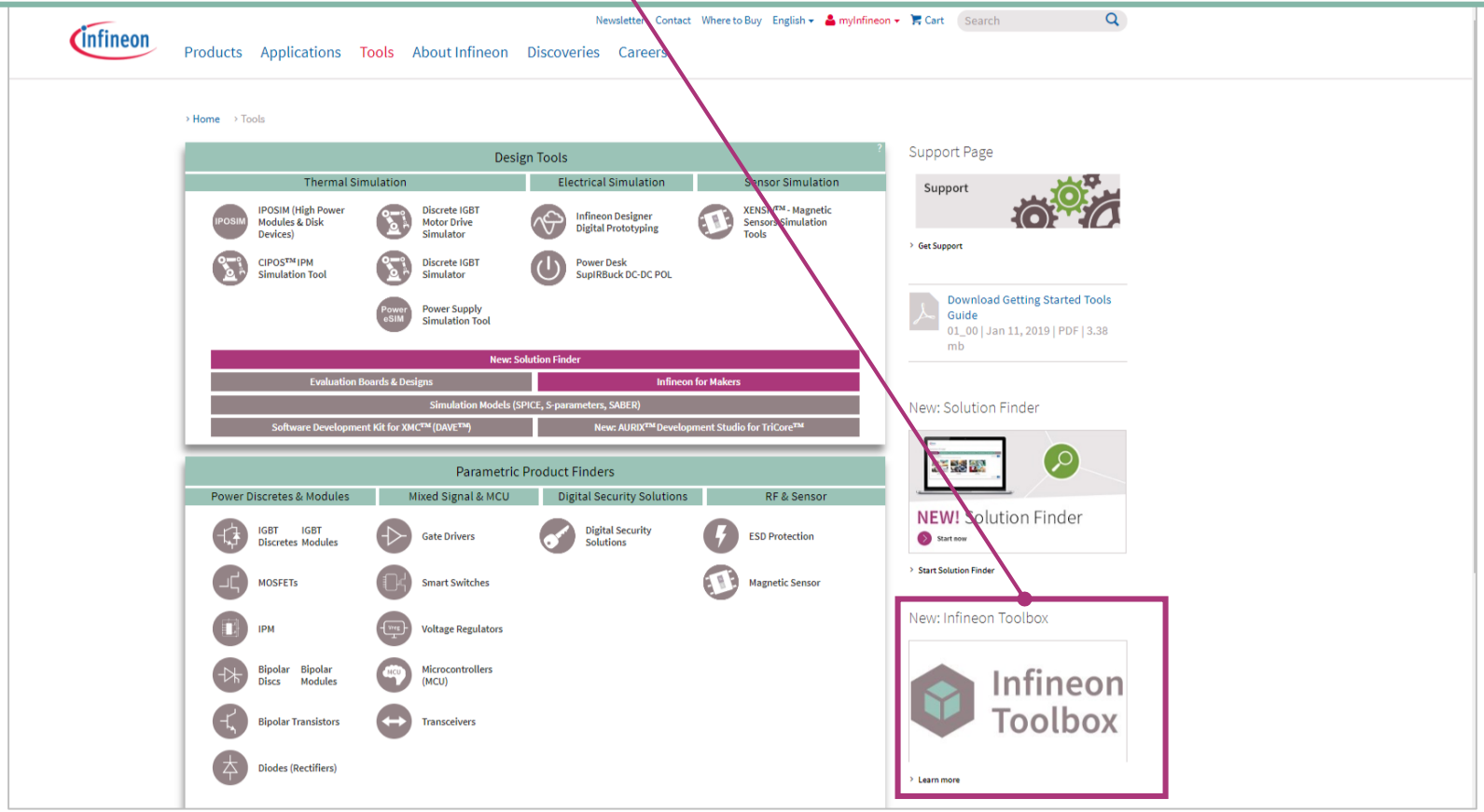
3. A HEX file available and also flashed to the board
(in this example the TLE9879)

4. SEGGER JLink downloaded and installed and SEGGER JLink driver needs to be installed in host PC
https://www.segger.com/downloads/jlink/#J-LinkSoftwareAndDocumentationPack

Getting started: Micro Inspector Pro
Chapter 2: Infineon Toolbox Installation

Open http://www.Infineon.com

- Navigate to “Tools”
- Install the Infineon Toolbox

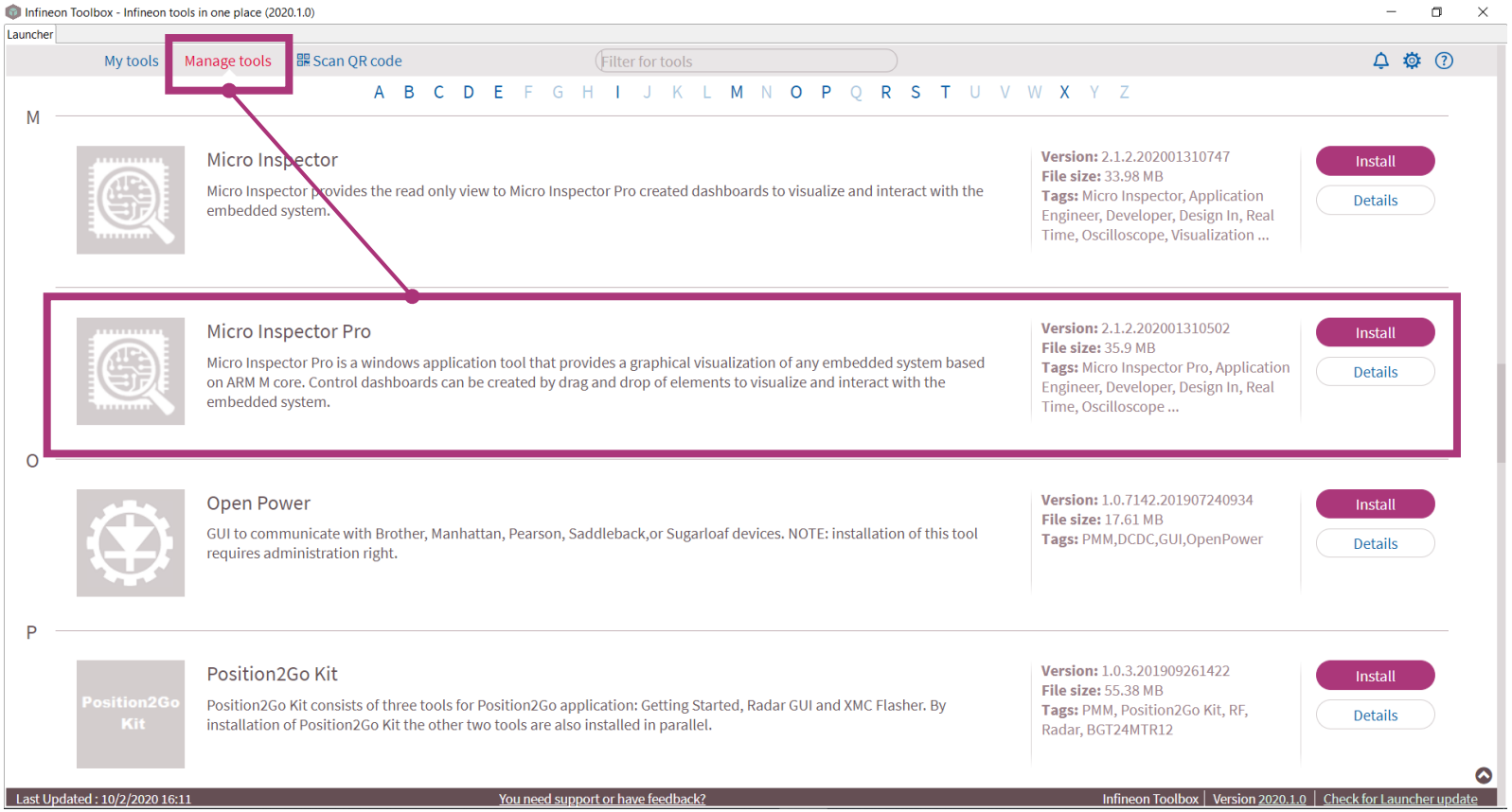


Getting started: Micro Inspector Pro
Chapter 2: Micro Inspector Pro installation

Open Infineon Toolbox

› Navigate to “Manage Tools”

› Install the Micro Inspector Pro

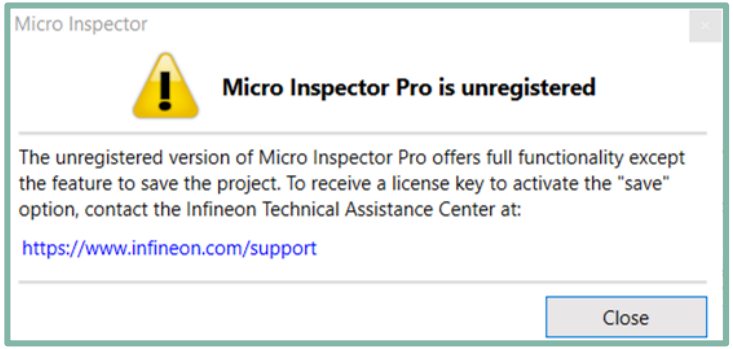


Getting started: Micro Inspector Pro

Chapter 2: How to upgrade from unregistered to registered version

Open the Micro Inspector Pro tool

- This message will be displayed
- Click on the link inside the pop-up window
- http://www.Infineon.com/support



- Provide the necessary information on the Infineon support page and submit your request
- You get your license details via e-mail (approx. after 2 working days)
- Open the tool and click on "Unregistered" in the bottom right corner
- Enter the license details in the window that opens
- Proceed with the licensed tool

Getting started: Micro Inspector Pro
Chapter 4: Informative notes

Micro Inspector Pro has two modes:

Default mode: No connection to the device
Elements can be added to the Dashboard, variables can be assigned but elements are not clickable

Play mode: Connection to device
Graphical elements can be clicked

- To ensure a smooth Dashboard creation, make sure that the zooming level is set to 100%.
- The use of writing variables can lead to changes in your program.

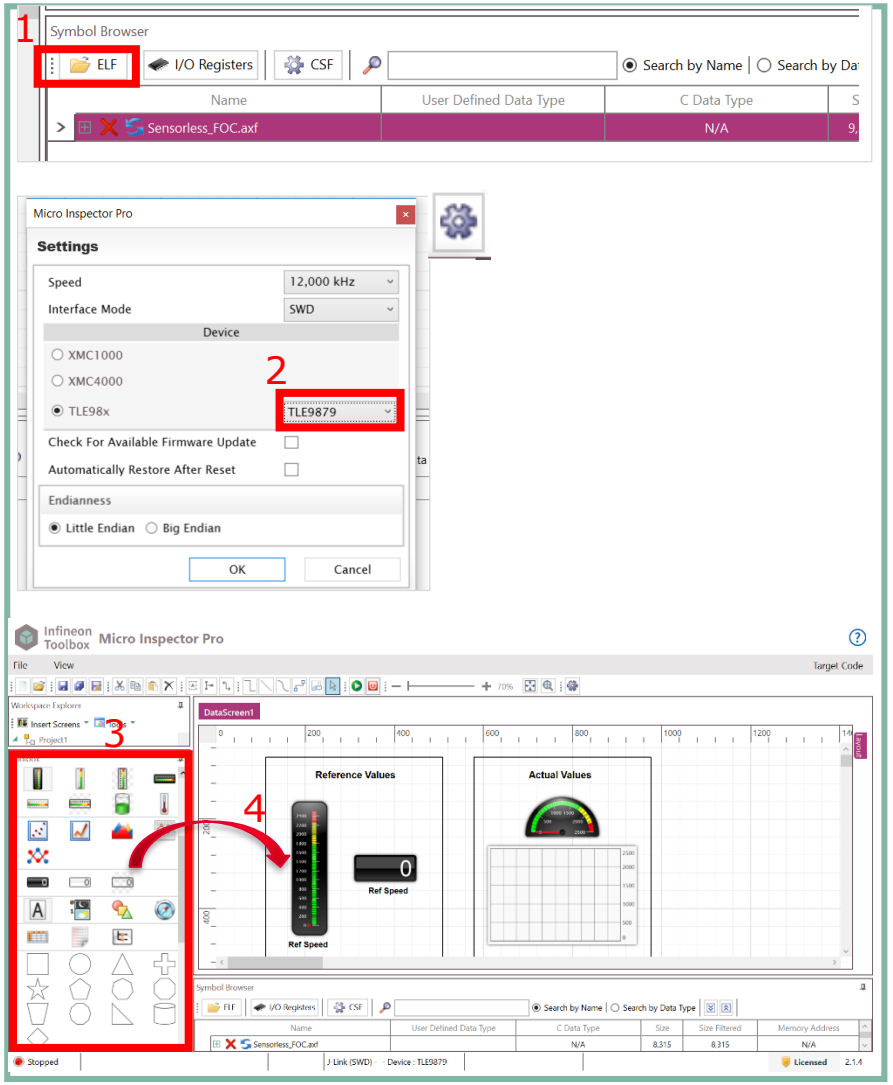
Getting started: Micro Inspector Pro
Creating a Dashboard I

1. Load the ELF/axf file of your project in the Symbol Browser located in:
   xxx\Boards\Infineon\TLE9879_EvalKit\BLDC_SENSORLESS_FOC_EXAMPLE_TLE987X\Objects
   (Make sure that the program is already compiled)

2. Choose TLE9879 in the Settings Menu

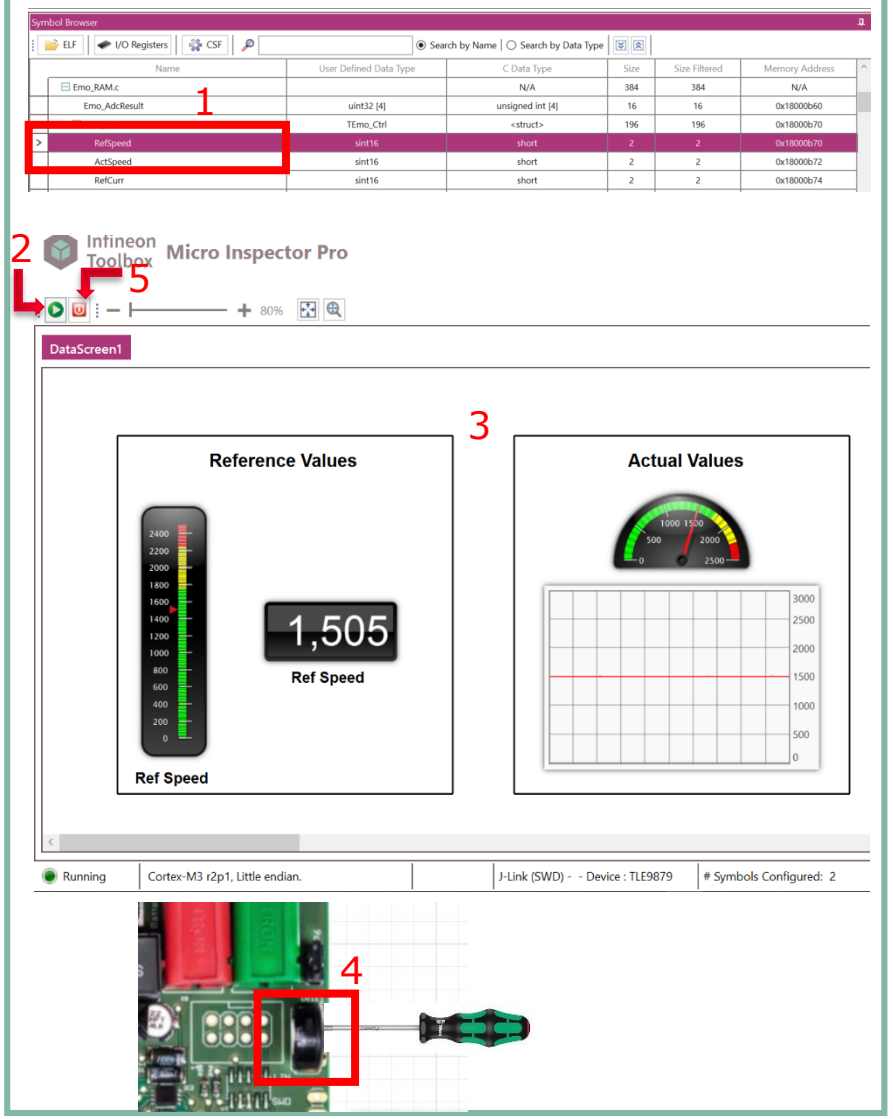
3. Choose the elements you need from the Micro Inspector Pro Toolbox

4. Add them to the data screen using drag and drop



Getting started: Micro Inspector Pro
Creating a Dashboard II

1. Assign the right variables from your ELF/afx file to the respective elements via drag and drop from the Symbol Browser
2. Click on 'Run' to run your Dashboard
3. The executed example Dashboard looks like this
4. Using on-board potentiometer to set motor speed
5. Clicking on 'Stop' terminates the execution.



Getting started: Micro Inspector Pro
Creating an Oscilloscope I

Project adaption to support the Oscilloscope feature

Preconditions:

- Any IDE (in this case KEIL µVision is used): https://www.keil.com/demo/eval/arm.htm
- Target code to use the Oscilloscope of Micro Inspector Pro
- Please click on 'Target Code' in the menu bar of Micro Inspector Pro and you can find the target code file (TargetCode.zip) needed for Oscilloscope

Getting started: Micro Inspector Pro
Creating an Oscilloscope II

Project adaption to support the Oscilloscope feature

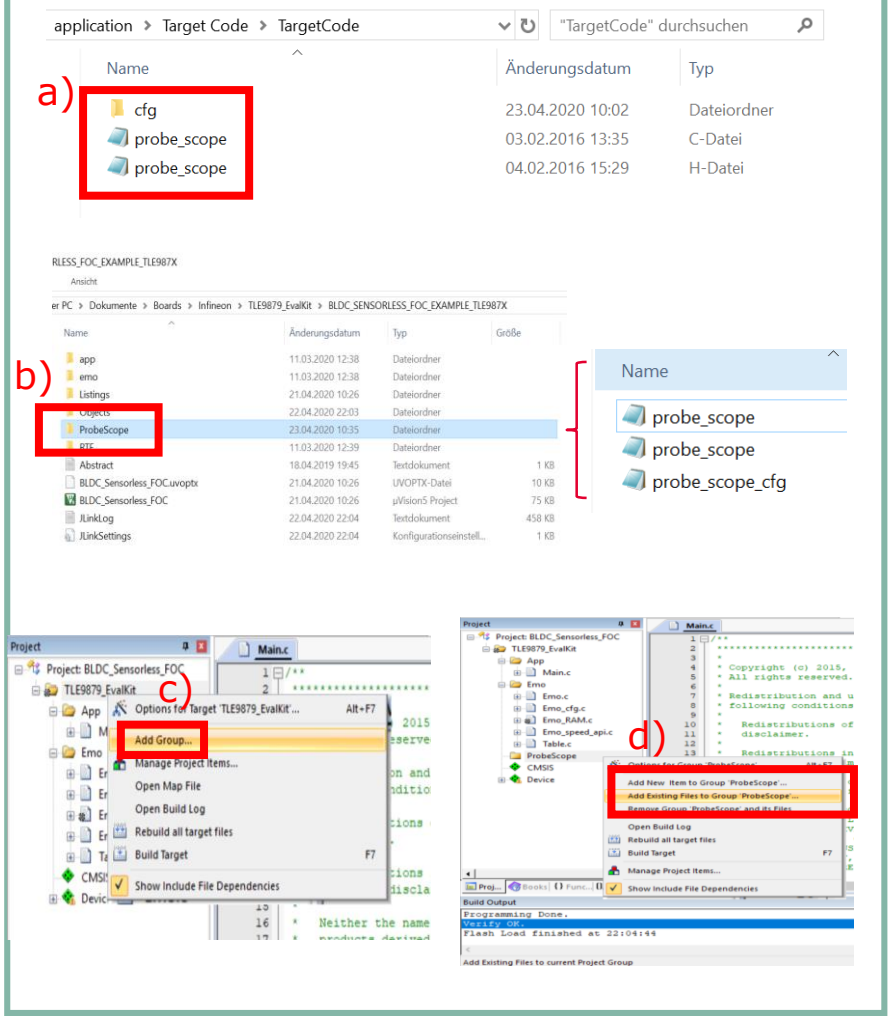
1. Add the target code to your project, files:

   a) Copy the probe_scope.c, probe_scope.h and probe_scope_cfg.h files from the target code

   b) Create a new folder in example project and paste the probe_scope files in this folder

   c) Add a new group under your main folder in your KEIL project

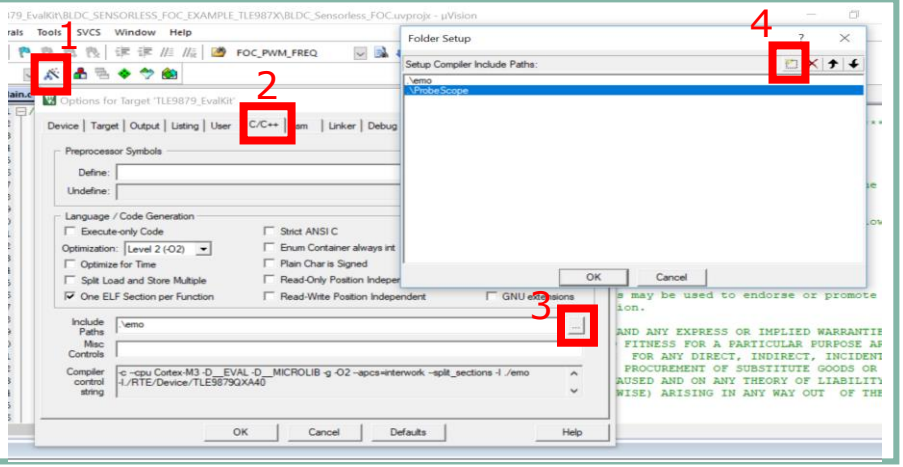
   d) Add the probe_scope files to the new group



Getting started: Micro Inspector Pro
Creating an Oscilloscope III

Project adaption to support the Oscilloscope feature

e) Setup the project to include the folder by
1. Clicking on "Options for target"
2. "C/C++" perspective
3. Include the path
4. Select the folder with the probe_scope files



2. Add the target code to your project, code
   a. Include the probe_scope.h file in your main.c file in the KEIL project
   Code: #include "probe_scope.h"

```
44  **                              Includes
45  **********************************
46  #include "tle_device.h"
47  #include "Emo_RAM.h"
48  #include "probe_scope.h"
```

   b. Call the ProbeScope_Init function in your main function
   Code: ProbeScope_Init(20000);

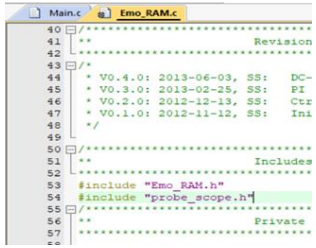
```
82  int main(void)
83  {
84    /* Initialize device drivers
85    /* Note: Watchdog is already
86    TLE_Init();
87    Emo_Init();
88    ProbeScope_Init(20000);
89
```

Getting started: Micro Inspector Pro
Creating an Oscilloscope IV

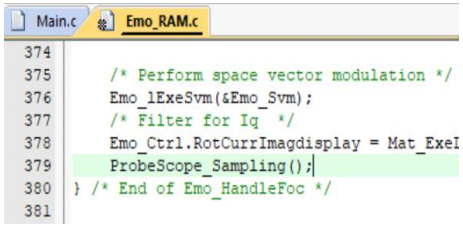
Project adaption to support the Oscilloscope feature

c) Open the Emo_RAM.c file and include the same "probe scope" header file as in the main.c

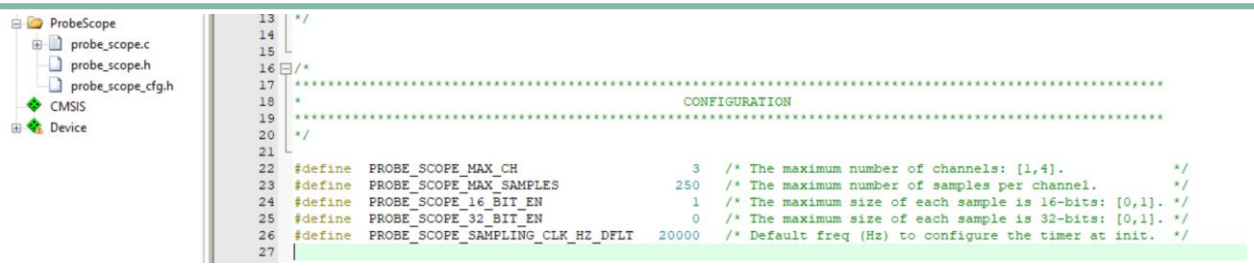
Code: #include "probe_scope.h"



d) Call the *ProbeScope_Sampling();* function in the ‚Emo_handleFOC‘ function → This function returns the output value and it is called in "Emo_handleFOC"



e) Configure the probe_scope files
Open the probe_scope_cfg.h file and configure the values according to your requirements (see example below for TLE9879 EvalKit)



Getting started: Micro Inspector Pro
Creating an Oscilloscope V

Project adaption to support the Oscilloscope feature

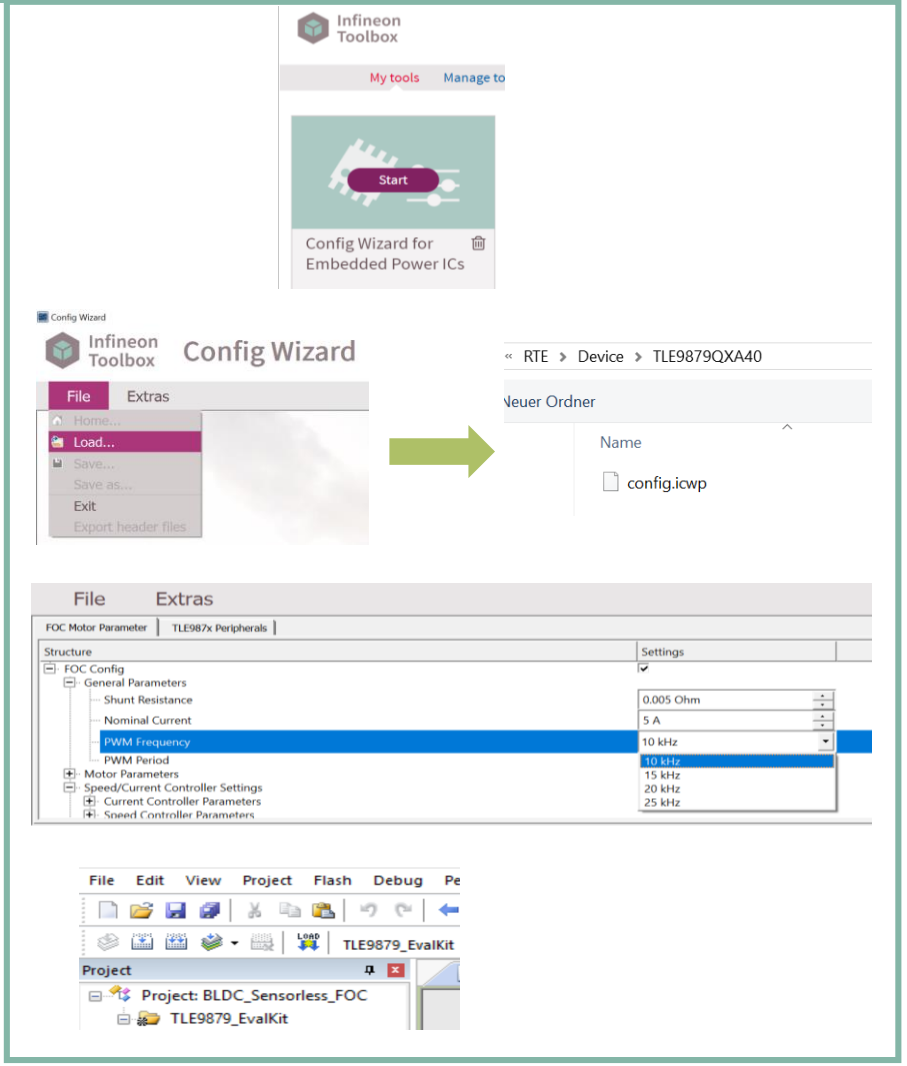
3. Set the PWM Frequency:

a) Open Infineon Toolbox → Search for "Config Wizard for Embedded Power ICs" → Install and start it

b) Load the config.icwp file located in:
…path\Boards\Infineon\TLE9879_EvalKit\BLDC_SENSORLESS_FOC_EXAMPLE_TLE987X\RTE\Device\TLE9879QXA40

c) Set the PWM Frequency to 10 kHz → Save the change

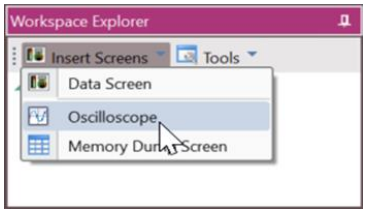
d) Go to Keil uVision → Compile project →Flash to target device



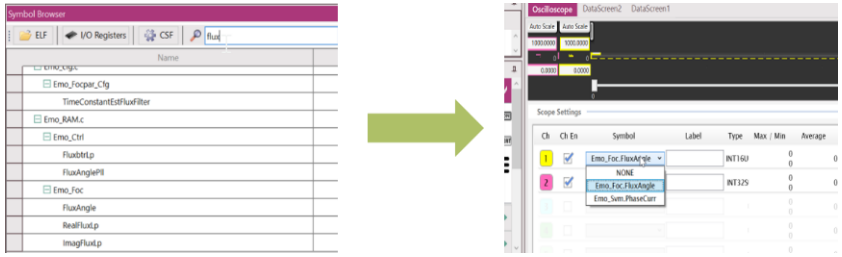
Getting started: Micro Inspector Pro
Creating an Oscilloscope VI

Project adaption to support the Oscilloscope feature

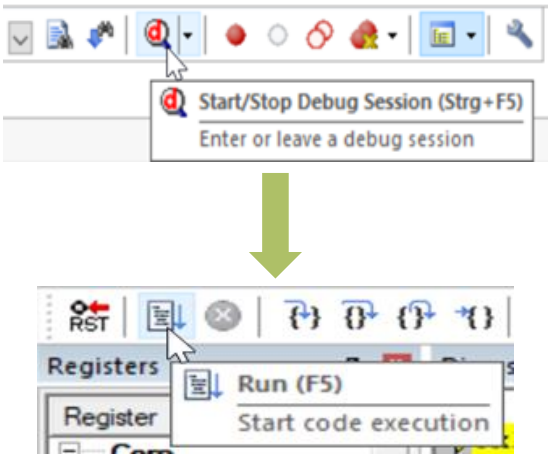
4. Start Micro Inspector Pro
   a. Open the ELF/afx. File
   b. Add an Oscilloscope to your screens



5. Configure the Oscilloscope
   a. Search for the necessary variables in the Symbol Browser
   b. Assign the to channels by double-clicking on them



6. Establish a debug connection to the target device
   a. Initiate the debug session in KEIL This enables the Micro Inspector Pro to establish a connection to the debugger
   b. Run the example project



Part of your life. Part of tomorrow.