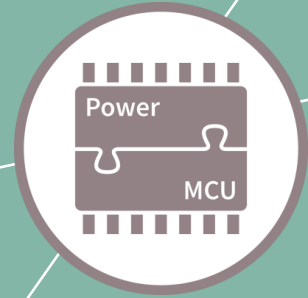


Evaluation Board and Evaluation Kit Getting Started for MOTIX™ TLE986x/7x

Toolchain Setup for:

- › TLE9869_EVALKIT
- › TLE9879 EVALKIT
- › TLE986x EVALB_JLINK
- › TLE987x EVALB_TQFP
- › TLE987x EVALB_VQFN



October 2021



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Toolchain Installation for Keil μ Vision5

General Overview



The information in steps 1-3 on how to install these tools can also be found as a video tutorial [here](#)

MOTIX™ Embedded Power ICs are supported by a complete development toolchain provided by Infineon and third party vendors.

STEP1

Download and install
[Keil \$\mu\$ Vision5](#)



Arm® Keil μ Vision is an integrated development environment which consists of code editor, compiler and debugger.

STEP2

Download
[Infineon Developer Center](#)
and [Config Wizard](#)



Infineon provides the Infineon Developer Center which is designed to install and use Infineon plugins and tools. Config Wizard allows easy configuration of chip modules.

STEP3

Download
and install
[Segger J-Link Driver](#)



SEGGER J-Link is a widely used driver for on-board or stand-alone debuggers.

STEP4

Download
the SDK via
 **μ Vision5
Pack Installer**
(See step 1)



The Embedded Power Software Development Kit (SDK) is a low level driver library which can be downloaded within the Pack Installer for Keil μ Vision5.

Toolchain installation for Keil μ Vision5

Step 1: Keil μ Vision5

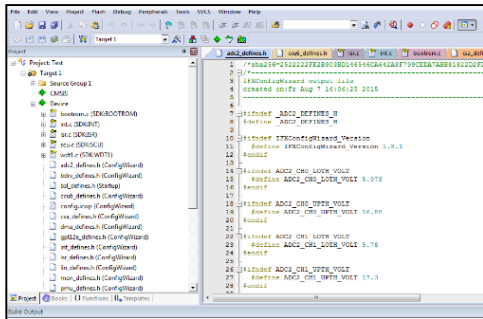


Keil μ Vision5



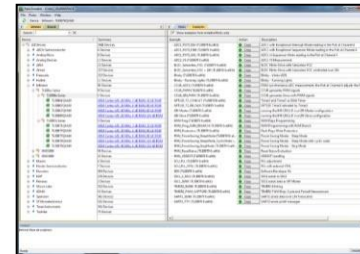
- › Download from: <https://www.keil.com/demo/eval/arm.htm>

- › Software development environment for Arm® Cortex-M® based microcontroller devices
- › Code editor, online debugger and Arm C/C++ compiler



Pack Installer

- › For downloading, installing, updating and managing the different software packages
- › Quick access to example projects that can be used as a reference for own development



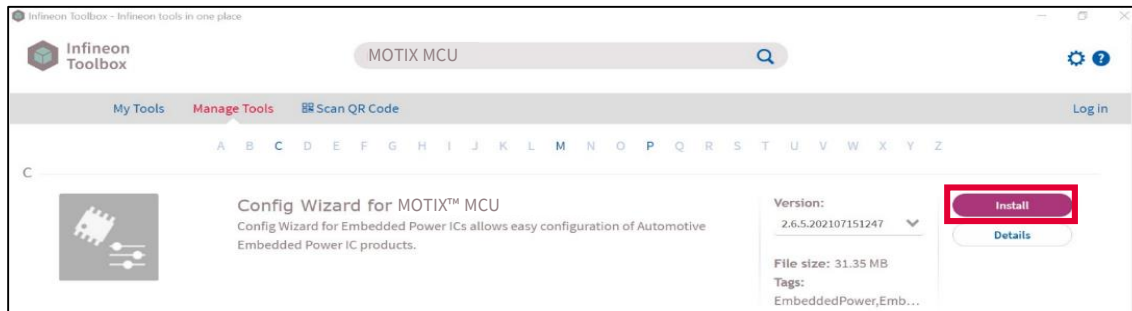
Toolchain installation for Keil μ Vision5

Step 2: Infineon Developer Center and Config Wizard (1)



Infineon Developer Center & Config Wizard for MOTIX™ MCU

- › Install the [Infineon Developer Center](#) (*) and start the tool
- › Within the Infineon Developer Center:
 1. Select the tab *Manage tools*, search for *Config Wizard for MOTIX™ MCU* and click on *Install*



(*) For more information about the Infineon Developer Center installation, please refer to the [Installation Manual](#).

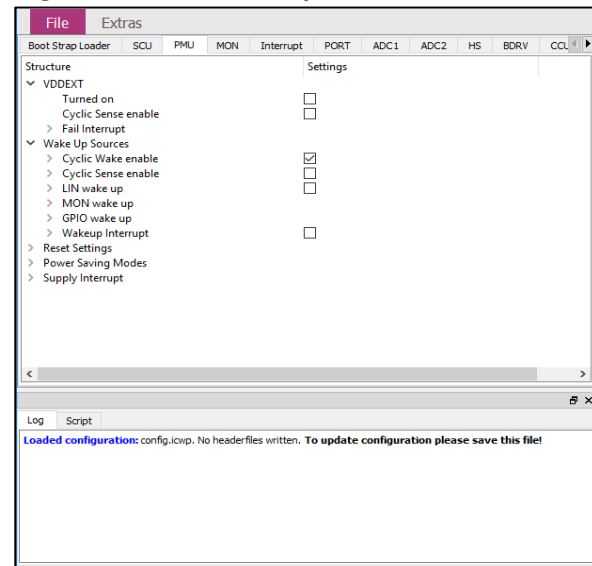
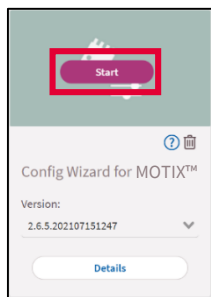
Toolchain installation for Keil μ Vision5

Step 2: Infineon Developer Center and Config Wizard (2)



Infineon Developer Center & Config Wizard for MOTIX™ MCU

2. Start the tool *Config Wizard for MOTIX™ MCU* once to trigger the integration into Keil μ Vision5



3. Close Config Wizard and the Infineon Developer Center
- › Config Wizard for MOTIX™ MCU enables the easy configuration of Automotive Embedded Power IC products.

Toolchain installation for Keil μ Vision5

Step 3: Segger J-Link Driver



Segger J-Link Driver

- › Driver for 'on-board' or 'stand-alone' debugger
- › Install driver from:
https://www.segger.com/downloads/jlink/JLink_Windows.exe



Toolchain installation for Keil μ Vision5

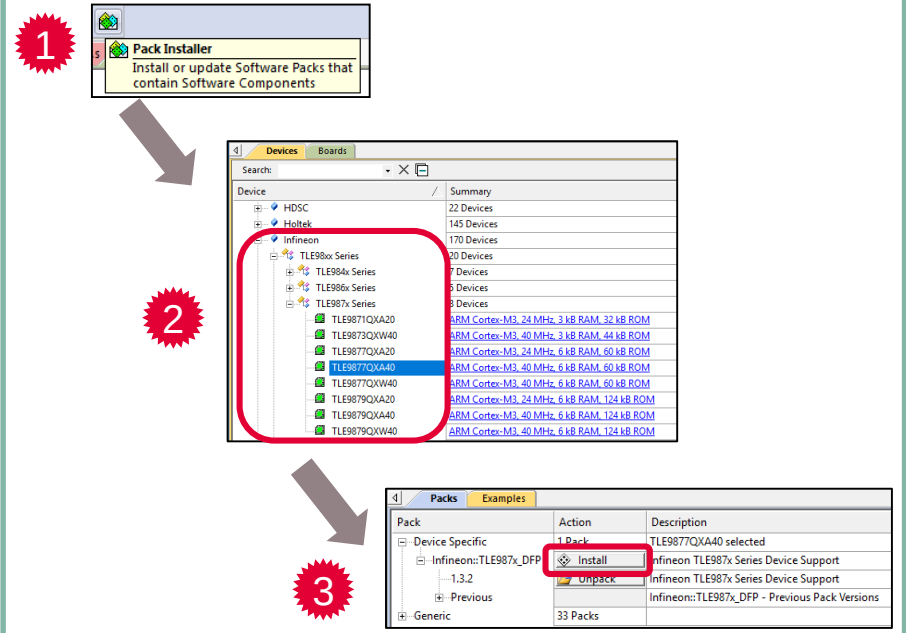
Step 4: Pack File



Pack File TLE986x and TLE987x for Keil μ Vision5

1. From Keil μ Vision5, open the *Pack Installer*
2. On the left side, select *Infineon*
3. On the right side, install the pack *Infineon::TLE987x_DFP*

- › Includes SDK (Software Development Kit) and Example code
- › Device support for flashing/erasing
- › SFR description for register debugging
- › Device description for Config Wizard



The screenshot illustrates the steps to install the Infineon TLE987x_DFP pack in Keil μ Vision5. It shows the Pack Installer window with the 'Devices' tab selected. The 'Infineon' series is expanded, and the 'TLE987x Series' is selected. The 'TLE9877QXA40' device is highlighted. The 'Packs' tab is also shown, with the 'Infineon::TLE987x_DFP' pack selected and the 'Install' button highlighted.

1 Pack Installer
Install or update Software Packs that contain Software Components

2

3

Pack	Action	Description
Device Specific		
Infineon::TLE987x_DFP	Install	Infineon TLE987x Series Device Support
-1.3.2	Uninstall	Infineon TLE987x Series Device Support
Previous		Infineon::TLE987x_DFP - Previous Pack Versions
Generic		33 Packs

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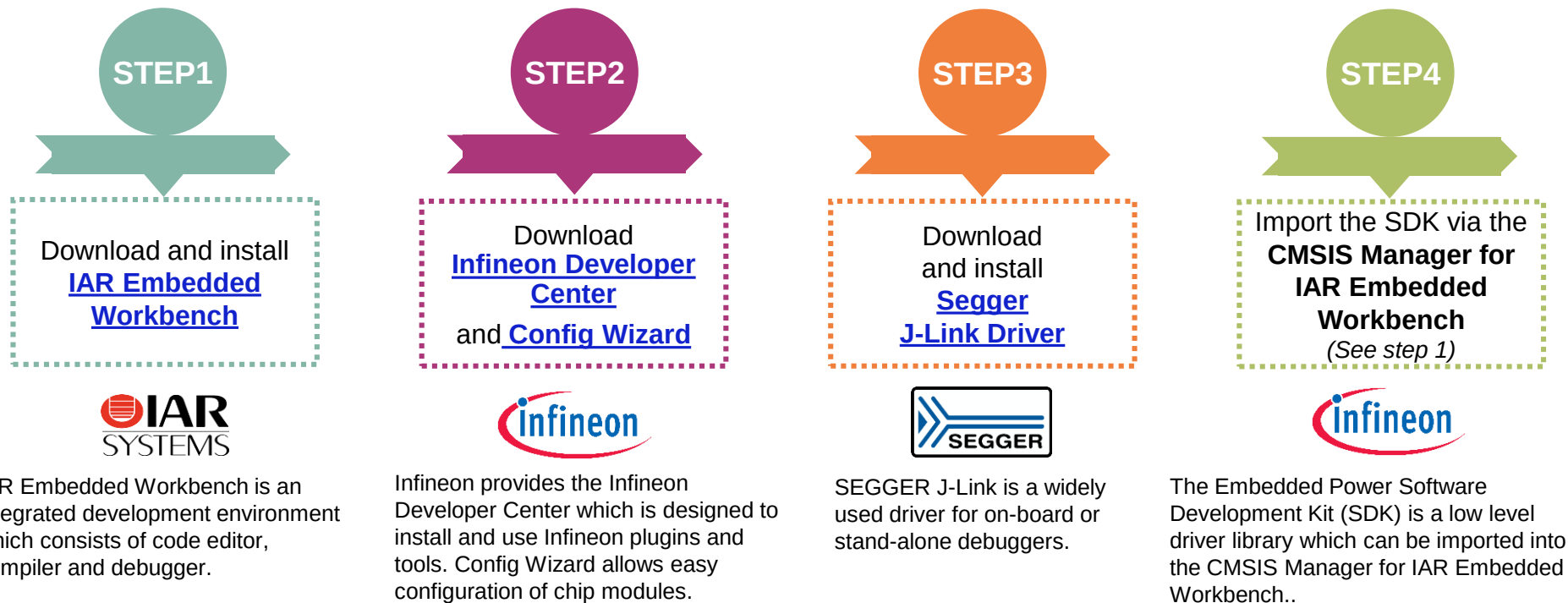
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Toolchain Installation for IAR Embedded Workbench

General Overview



MOTIX™ Embedded Power ICs are supported by a complete development toolchain provided by Infineon and third party vendors.



Toolchain Installation for IAR Embedded Workbench

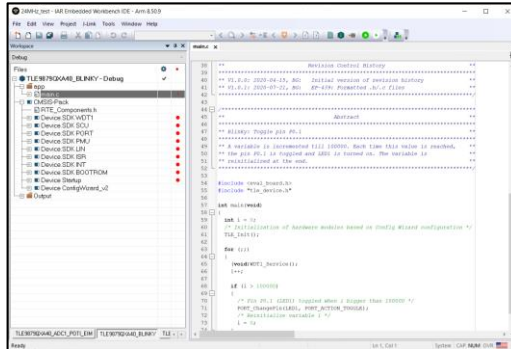
Step 1: IAR Embedded Workbench for ARM



IAR Embedded Workbench for ARM

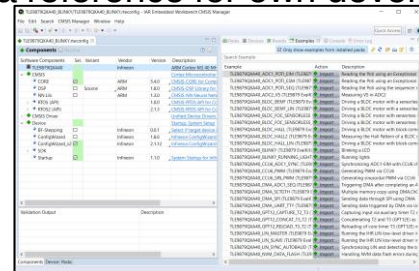


- › Download from: <https://www.iar.com/products/architectures/arm/iar-embedded-workbench-for-arm/>
- › Software development environment for Arm® Cortex-M® based microcontroller devices
- › Code editor, online debugger and Arm C/C++ compiler



CMSIS Manager

- › For importing, updating and managing the different software packages
- › Quick access to example projects that can be used as a reference for own development



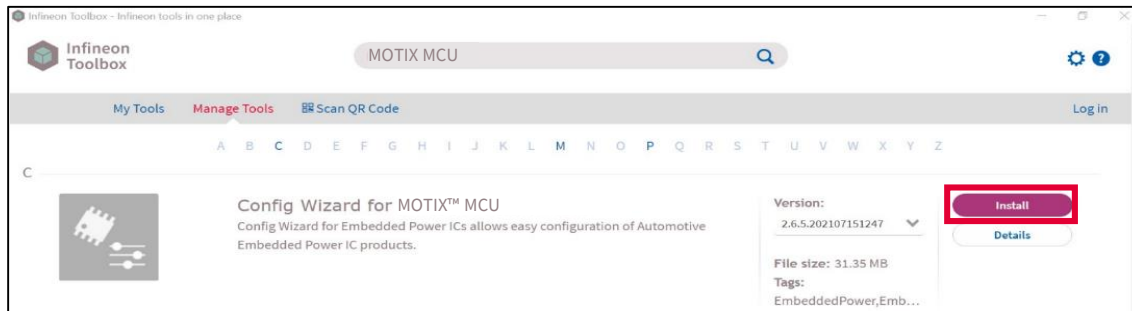
Toolchain installation for IAR Embedded Workbench

Step 2: Infineon Developer Center and Config Wizard (1)



Infineon Developer Center & Config Wizard for MOTIX™ MCU

- › Install the [Infineon Developer Center](#) (*) and start the tool
- › Within the Infineon Developer Center:
 1. Select the tab *Manage tools*, search for *Config Wizard for MOTIX™ MCU* and click on *Install*



(*) For more information about the Infineon Developer Center installation, please refer to the [Installation Manual](#).

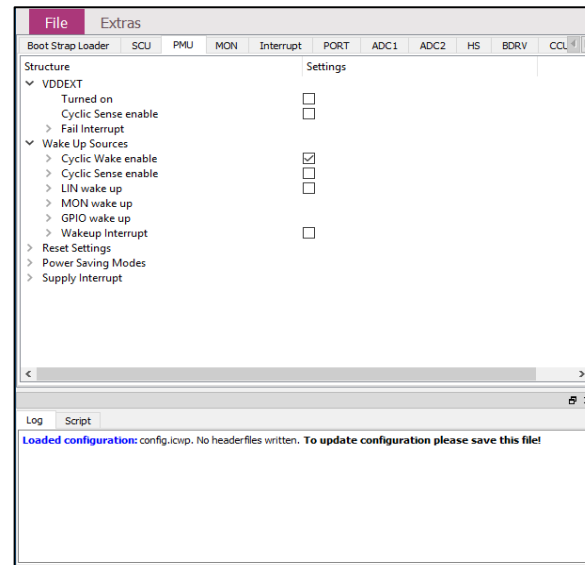
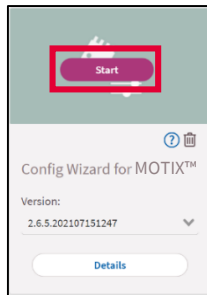
Toolchain Installation for IAR Embedded Workbench

Step 2: Infineon Developer Center and Config Wizard (2)



Infineon Developer Center & Config Wizard for MOTIX™ MCU

2. Start the tool *Config Wizard for MOTIX™ MCU* by clicking on Start



3. Close Config Wizard and the Infineon Developer Center
- › Config Wizard for MOTIX™ MCU enables the easy configuration of Automotive Embedded Power IC products.

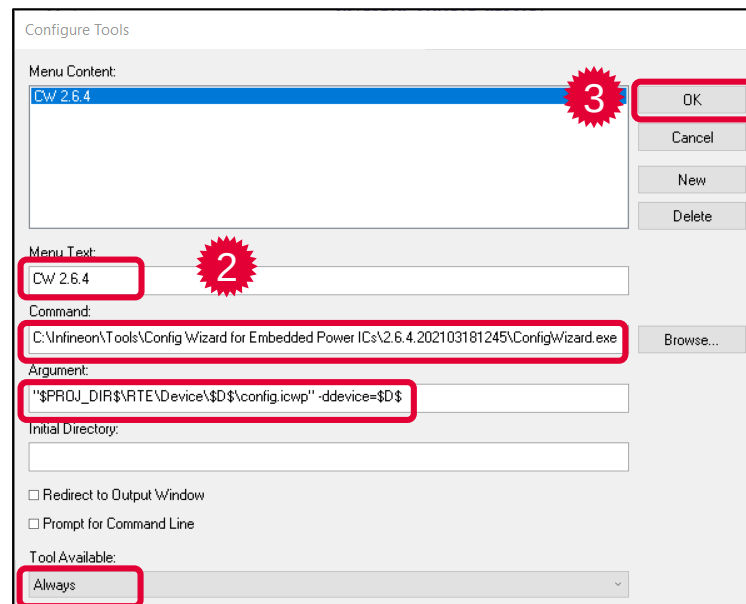
Toolchain Installation for IAR Embedded Workbench

Step 2: Infineon Developer Center and Config Wizard (3)



Infineon Developer Center & Config Wizard for MOTIX™ MCU

- › Unlike for Keil µVision5, the Config Wizard is not integrated automatically into the IAR Embedded Workbench.
1. Select the tab *Tools > Configure Tools...*
 2. Define a name and set up the following:
 - › Command: Path to the tool exe
 - › Argument (from Config Wizard v2.6.4):
`"$PROJ_DIR$RTE\Device\$$\config.icwp" -ddevice=$D$`
 - › Tool Available: *Always*
 3. Click on *OK*



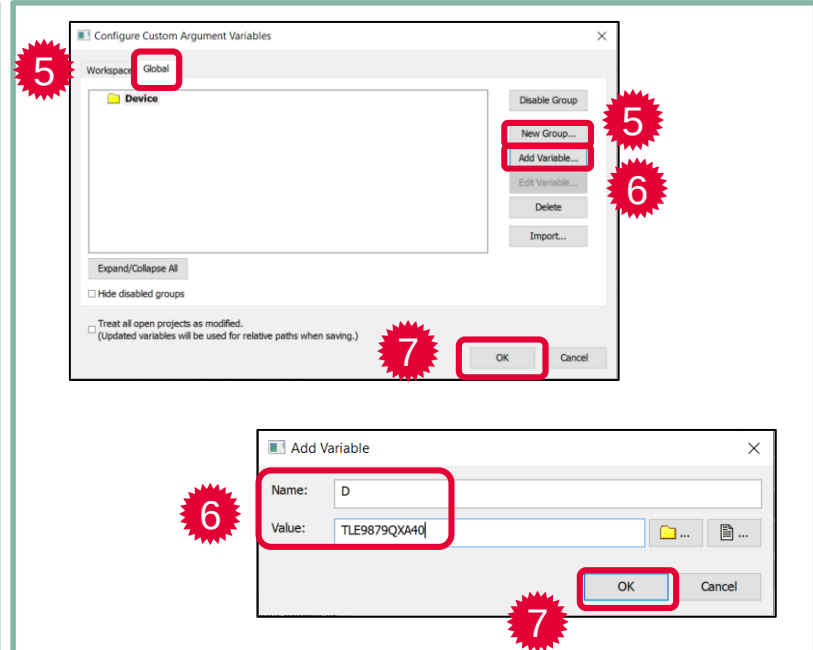
Toolchain Installation for IAR Embedded Workbench

Step 2: Infineon Developer Center and Config Wizard (4)



Infineon Developer Center & Config Wizard for MOTIX™ MCU

4. Click on *Tools > Configure Custom Argument Variables...* to define the variable \$D\$ in the argument phrase
5. Select the tab *Global*, then define a name for the *New Group...* (here, Device)
6. Click on *Add Variable...* and define its name (here, D) and its value (here, TLE9879QXA40)
7. Click twice on *OK* to save your settings
8. Config Wizard is now fully accessible



Toolchain Installation for IAR Embedded Workbench

Step 3: Segger J-Link Driver



Segger J-Link Driver

- › Driver for 'on-board' or 'stand-alone' debugger
- › Install driver from:
https://www.segger.com/downloads/jlink/JLink_Windows.exe





1. Open the *CMSIS Manager*
2. On the right side, select *Import Existing Packs...* and import the pack from your local disk (all packs are available [here](#), under Infineon)
3. The tab *Devices* shows the supported devices
4. The tab *Examples* shows the examples

-
- The sequence of images illustrates the process of importing CMSIS-Pack Manager packs into the STM32CubeIDE:
- Open CMSIS-Pack Manager:** The first screenshot shows the 'CMSIS-Pack Manager' window with the 'Open CMSIS-Pack Manager' button highlighted.
 - Import Existing Packs:** The second screenshot shows the 'Import Existing Packs...' dialog box, which is used to select packs to import.
 - Select Examples:** The third screenshot shows the 'CMSIS-Pack Manager' window with the 'Examples' tab selected, displaying a list of available packs.
 - Select Devices:** The fourth screenshot shows the 'STM32CubeIDE' window with the 'Devices' tab selected, displaying a list of available packs for the selected device (ARM Cortex-M3).

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The example shown in this section is also covered by a video tutorial [here](#)

Keil μ Vision5 Template

- › Create new project with Infineon SDK
- › Write code

Infineon Config Wizard

- › Initialize modules
- › Set up Timers
- › Set up GPIOs

J-Link Configuration

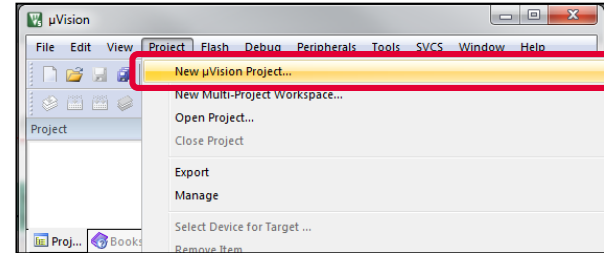
- › Connect device
- › Program flash
- › Use of debug window

Getting Started with Keil μ Vision5

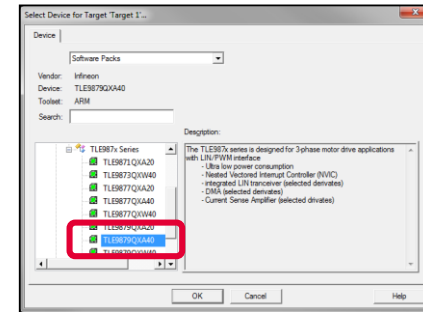
Step 1: Create New Project

1) Create New Project

- › Open Keil MDK
- › Select *Project > New μ Vision Project*
- › Name the project: ("TIMER2BLINK")



- › Select the device
 - › e.g. TLE9879QXA40 for TLE9879_EVALKIT



Getting Started with Keil μ Vision5

Step 2: Configure the Run-Time Environment

2) Configure the Run-Time Environment

1. Expand *Device*

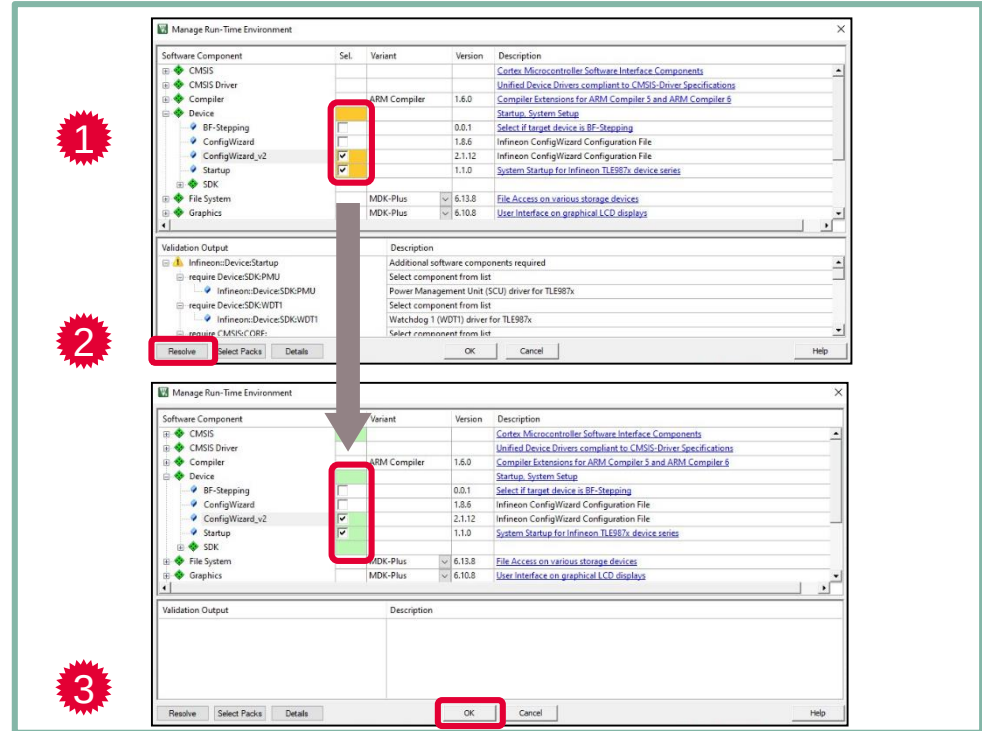
- › Check *ConfigWizard_v2*
- › Check *Startup*

➤ The selected cell background is **orange**

2. Click on *Resolve*

➤ The selected cell background is **green**

3. Click on *OK*

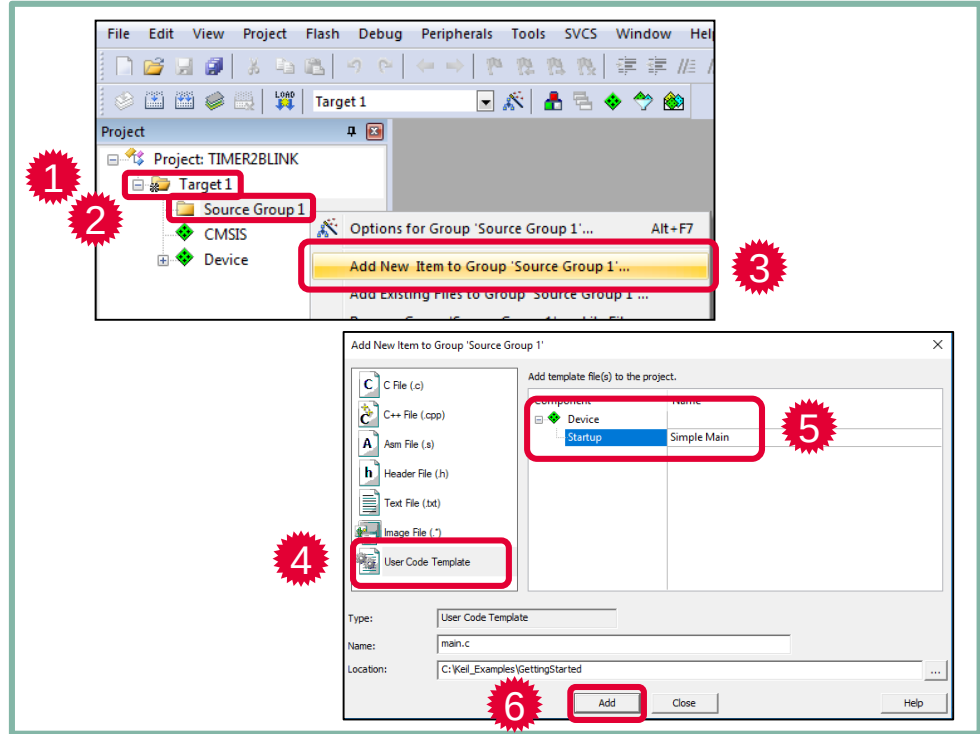


Getting Started with Keil μ Vision5

Step 3: Use the main.c template

3) Use the main.c Template

1. Expand *Target 1*
2. Right click on *Source Group 1*
3. Choose *Add New Item to Group 'Source Group 1'*
4. Choose *User Code Template*
5. Expand *Device*
 - › Choose *Startup*
6. Click on *Add*



Getting Started with Keil μ Vision5

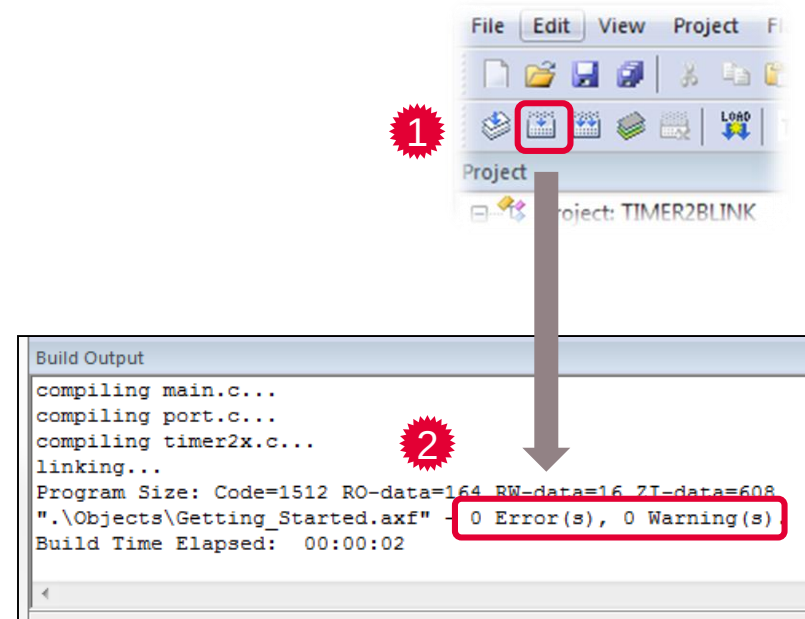
Step 4: Compile the Project

4) Compile the Project

1. Compile Project:

- › Press the *Build* button or press *F7*

2. The Build Output window shows 0 Error(s) , 0 Warning(s)

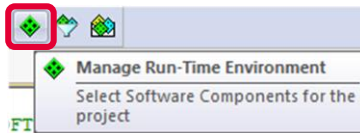


Getting Started with Keil μ Vision5

Step 5: Add Modules from the Run-Time Environment

5) Add Modules from the Run-Time Environment

1. Click on *Manage Run-Time Environment*

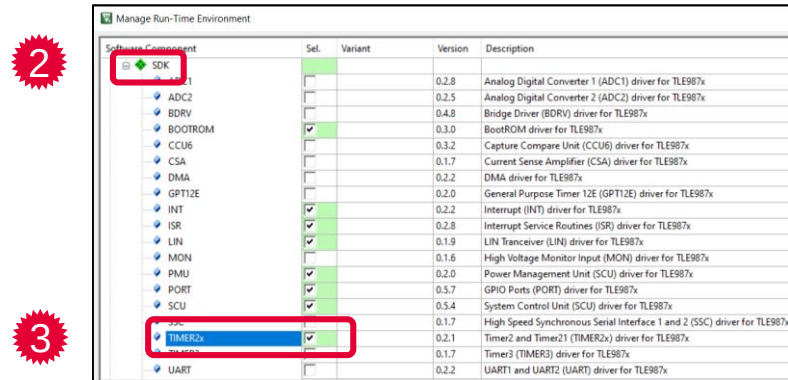


2. Expand *Device*, then the *SDK* section

3. Select *TIMER2x* and click *OK*

4. Add code to the main.c file:

- Include Libraries
- Initialize Modules



```
49 /*****  
50 ** Includes  
51 *****/  
52 #include "tle_device.h"  
53  
54 #include "port.h"  
55 #include "timer2x.h"
```

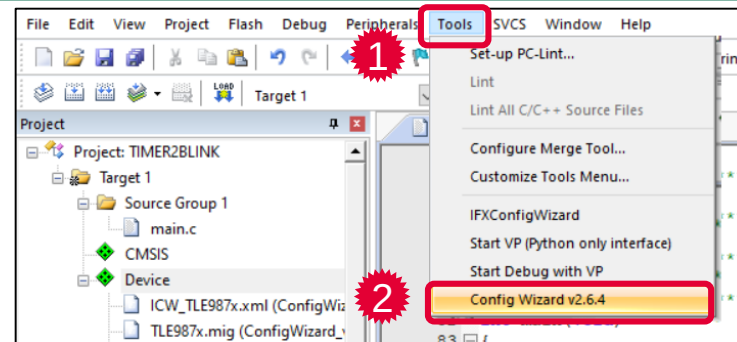
```
82 int main(void)  
83 {  
84     /* Initialization of the hardware modules  
85     based on Config Wizard config */  
86     TLE_Init();
```

Getting Started with Keil μ Vision5

Step 6: Use the Config Wizard v2 (1)

6) Use the Config Wizard v2 (1)

1. Select the tab *Tools*
2. Open *Config Wizard v2*
3. Config Wizard opens in a separate window

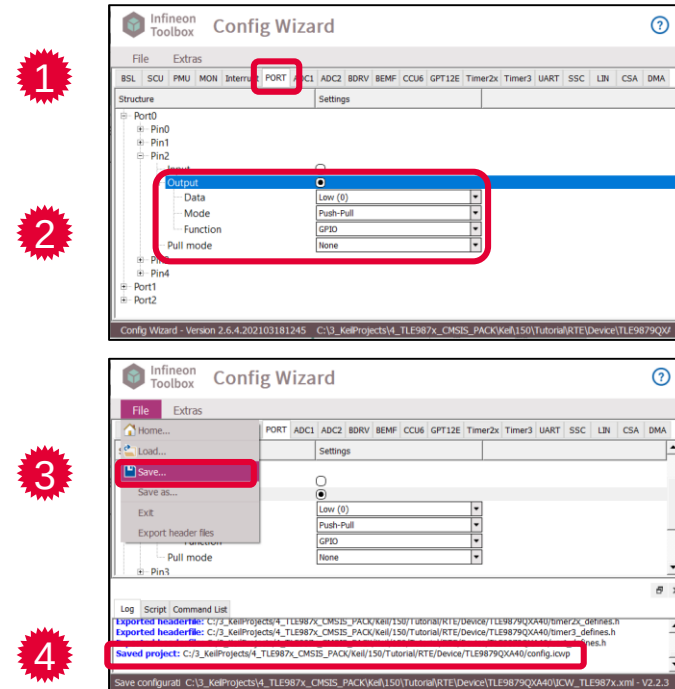


Getting Started with Keil μ Vision5

Step 6: Use the Config Wizard v2 (2)

6) Use the Config Wizard v2 (2)

1. Select the tab *PORT*
2. Go to the *Port0 > Pin2* section
3. Configure pin to *Output* mode
4. Save with *File > Save*

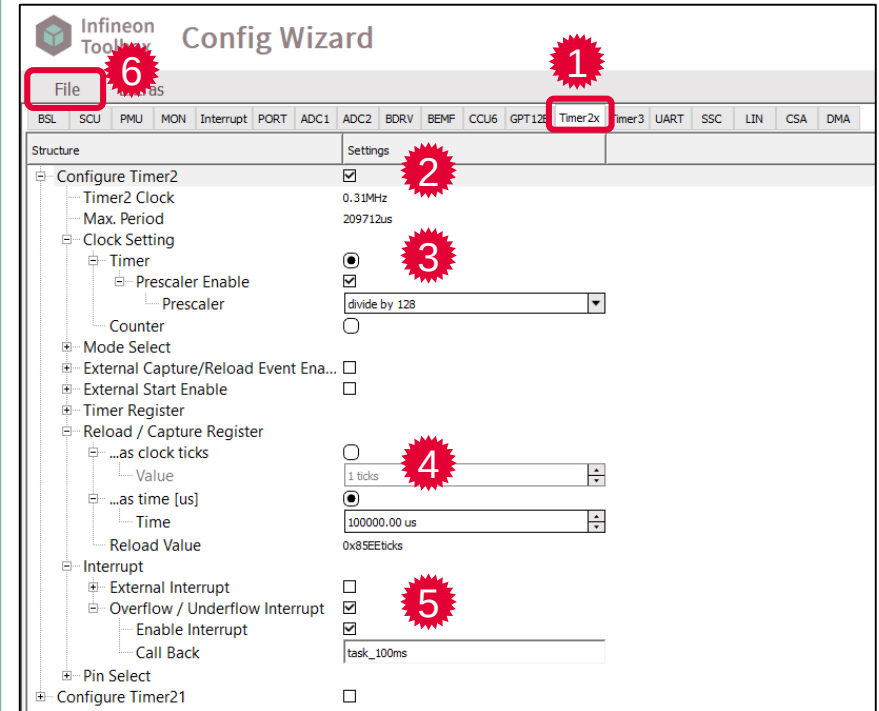


Getting Started with Keil μ Vision5

Step 6: Use the Config Wizard v2 (3)

6) Use the Config Wizard v2 (3)

1. Click on the tab *Timer2x*
2. Enable the checkbox *Configure Timer2*
3. In the section *Clock Setting*:
 - › Enable the prescaler and select *divide by 128*
4. In the section *Reload / Capture Register*:
 - › Select *...as time[us]* and enter *100000.00 us*
5. In the section *Interrupt*:
 - › Enable the checkboxes *Overflow / Underflow Interrupt* and *Enable Interrupt*
 - › Call Back Name: *task_100ms*
6. Save with *File > Save*



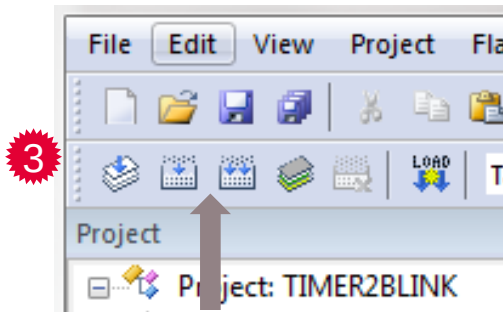
Getting Started with Keil μ Vision5

Step 7: Edit the File main.c

7) Edit the File main.c

In the file main.c in Keil MDK:

1. Start Timer2 before the “for (;;)” loop
2. Declare and define the function of the interrupt call back
 - › Use API function “PORT_ChangePin()”
3. Save and build (F7) the project



1

```
81  /*****  
82  ** Place your application code here  
83  *****/  
84  TIMER2_Start();  
85  /*****  
86  ** Main endless loop  
87  *****/  
88  for (;;)   
89  {
```

2

```
66  /*****  
67  ** Private Function Declaration  
68  *****/  
69  void task_100ms(void);
```

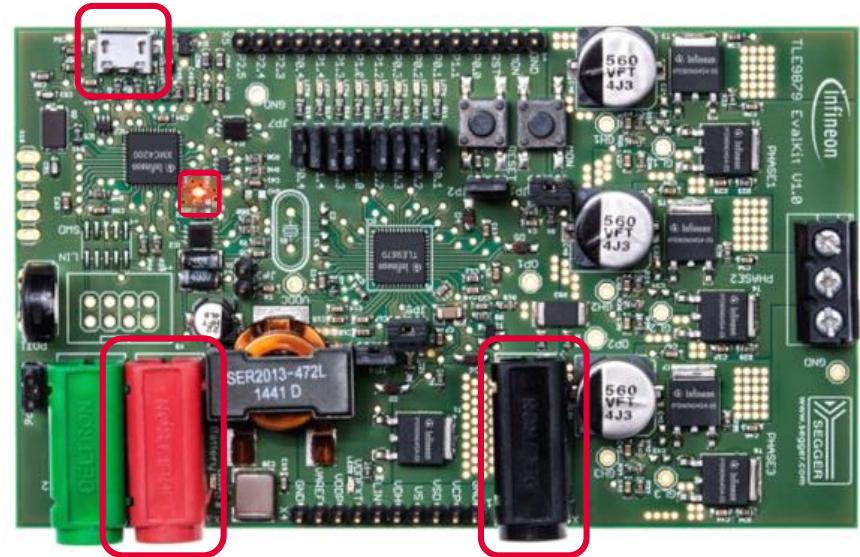
```
106 void task_100ms(void)  
107 {  
108     PORT_ChangePin(0x02, PORT_ACTION_TOGGLE);  
109 }
```

Getting Started with Keil μ Vision5

Step 8: Power up the Evaluation Board

8) Power up the Evaluation Board

- › Connect micro USB cable
- › Supply board via banana jacks (VBAT, GND)
- › Debug LED lights up

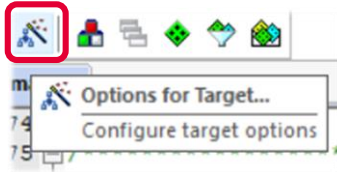


Getting Started with Keil μ Vision5

Step 9: Connect the Debugger

9) Connect the Debugger

1. Click on *Options for Target*

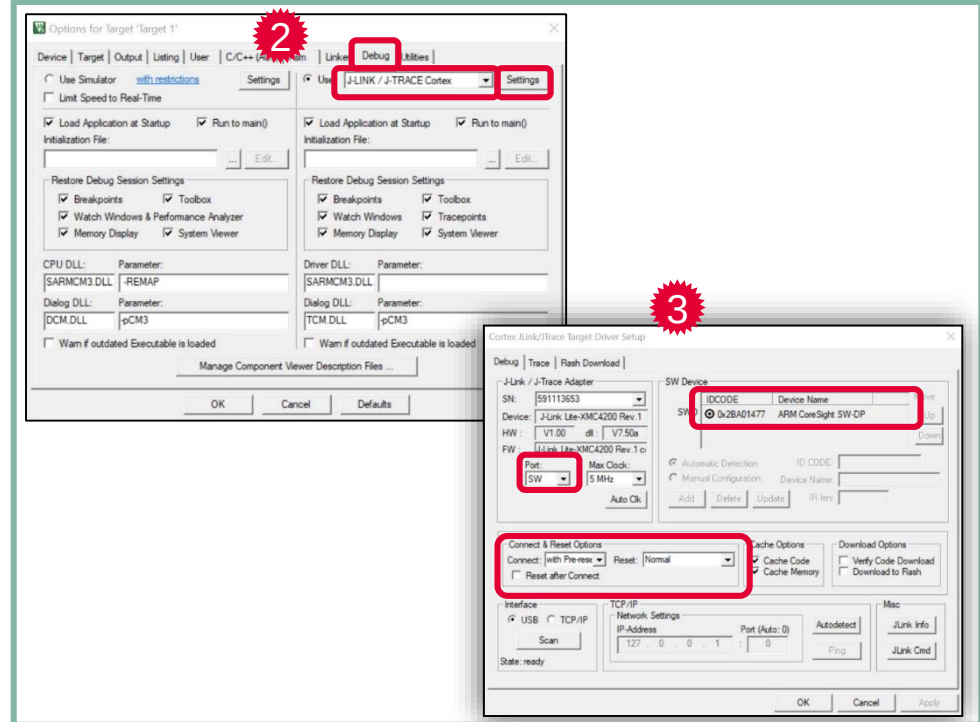


2. Click on the tab *Debug* and select *J-Link*

3. Click on *Settings* and set up the following:

- › Port: SW
- › Connect: *with Pre-Reset*
- › Reset: *Normal*

- SWD connection established when "IDCODE" is visible

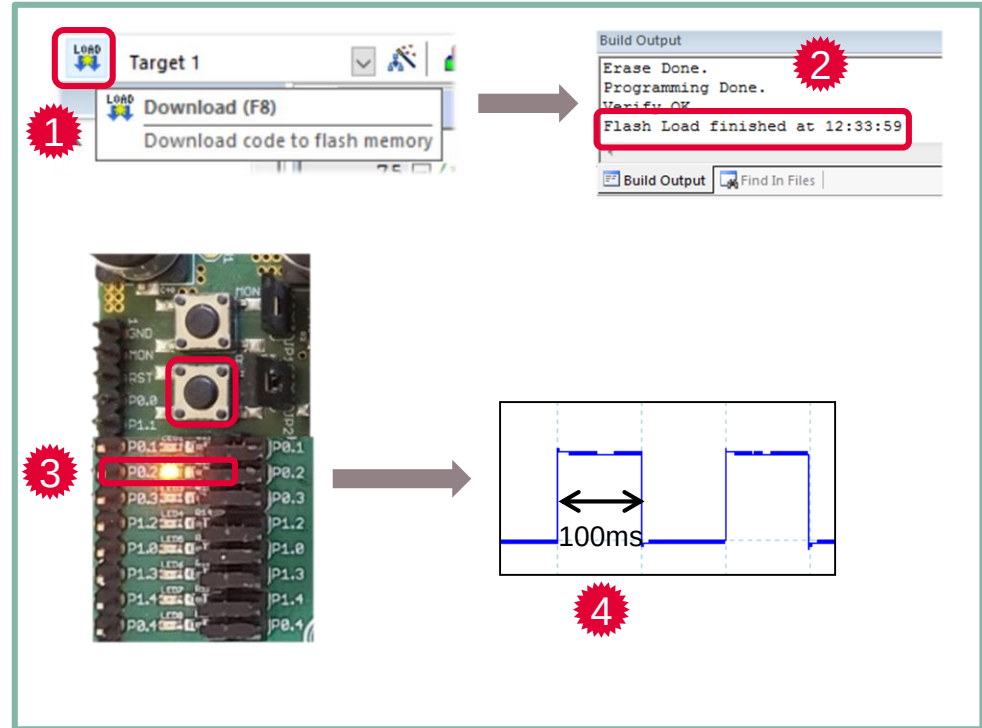


Getting Started with Keil μ Vision5

Step 10: Download and Run Code

10) Download and Run Code

1. Load the code into the target or press *F8*
 - › *Flash Load finished* is shown in the *Build Output* window
2. Press the *Reset* button on the evaluation board
3. The LED on Port P0.2 lights up
4. The port toggles every 100 ms

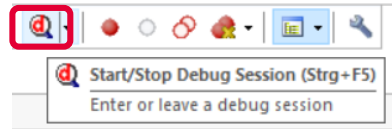


Getting Started with Keil μ Vision5

Step 11: Use the Runtime Debug

11) Use the Runtime Debug

1. Click on *Start/Stop Debug Session*



2. Left click in the dark grey area left of the code to place a breakpoint

3. Click on *Run* or press *F5* to start the code execution

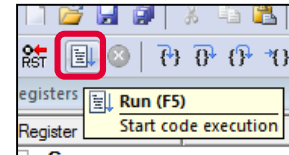
4. The code is executed and stops at the breakpoint

- › In this example, every time you click on Run, the LED P0.2 is toggled

2

```
146  /** *****  
147  **                               Private Function Definitions  
148  ** *****  
149  void task_100ms(void)  
150  {  
151  PORT_ChangePin(0x02,PORT_ACTION_TOGGLE);  
152  }  
153
```

3



4

```
146  /** *****  
147  **                               Private Function Definitions  
148  ** *****  
149  void task_100ms(void)  
150  {  
151  PORT_ChangePin(0x02,PORT_ACTION_TOGGLE);  
152  }  
153
```

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Getting Started with IAR Embedded Workbench

Infineon Embedded Power SDK



IAR Embedded Workbench Template

- › Create new project with Infineon SDK
- › Write code

Infineon Config Wizard

- › Initialize modules
- › Set up Timers
- › Set up GPIOs

J-Link Configuration

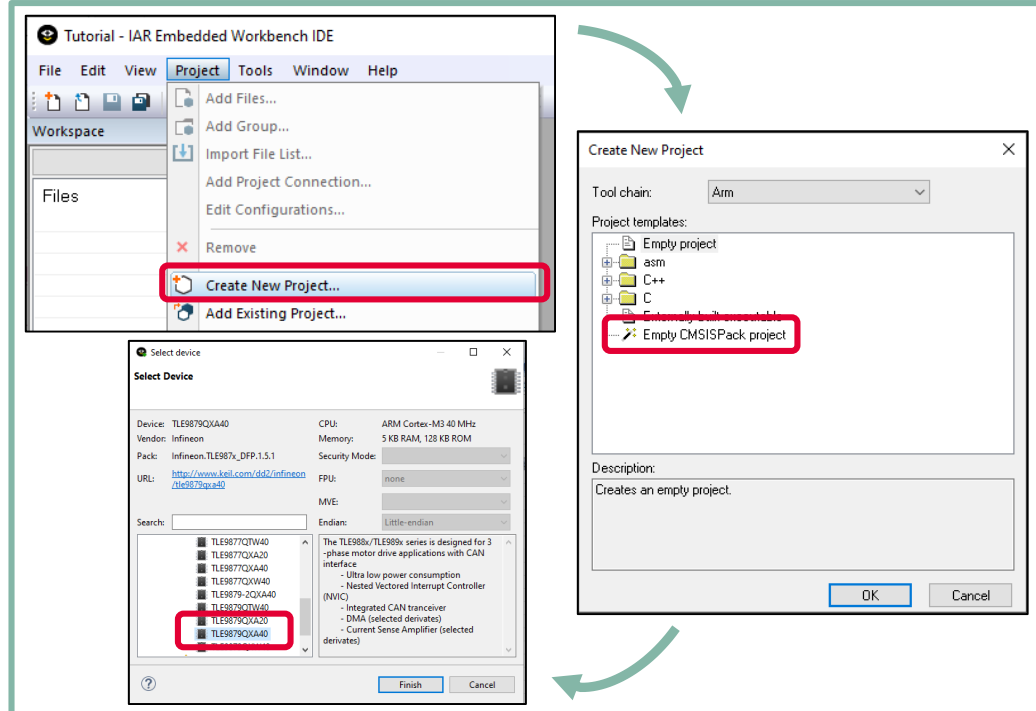
- › Connect device
- › Program flash
- › Use of debug window

Getting Started with IAR Embedded Workbench

Step 1: Create New Project

1) Create New Project

- › Open IAR Embedded Workbench
- › Select a workspace to contain your project
- › Select *Project > Create New Project...*
- › Select *Empty CMSISPack project*
- › Name the project: ("TIMER2BLINK")
- › Select the device
 - › e.g. TLE9879QXA40 for TLE9879_EVALKIT



Getting Started with IAR Embedded Workbench

Step 2: Configure the Run-Time Environment

2) Configure the Run-Time Environment

In the TIMER2BLINK.rteconfig file that opens in the CMSIS Manager:

1. Expand *Device*

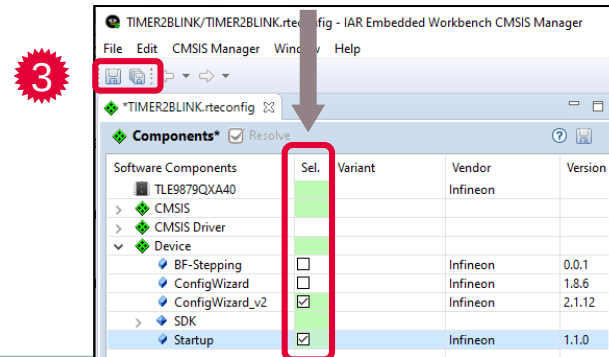
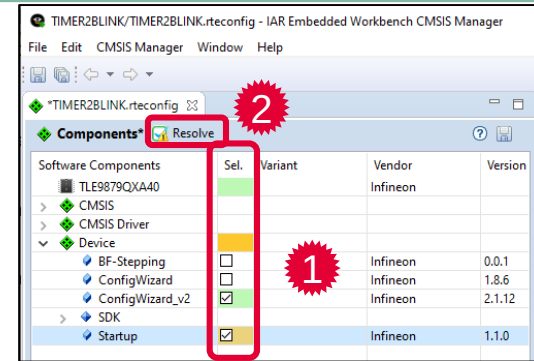
- › Check *ConfigWizard_v2*
- › Check *Startup*

➤ The selected cell background is **orange**

2. Click on *Resolve*

➤ The selected cell background is **green**

3. Save your configuration: the selected modules appear under the section CMSIS-Pack in your workspace



Getting Started with IAR Embedded Workbench

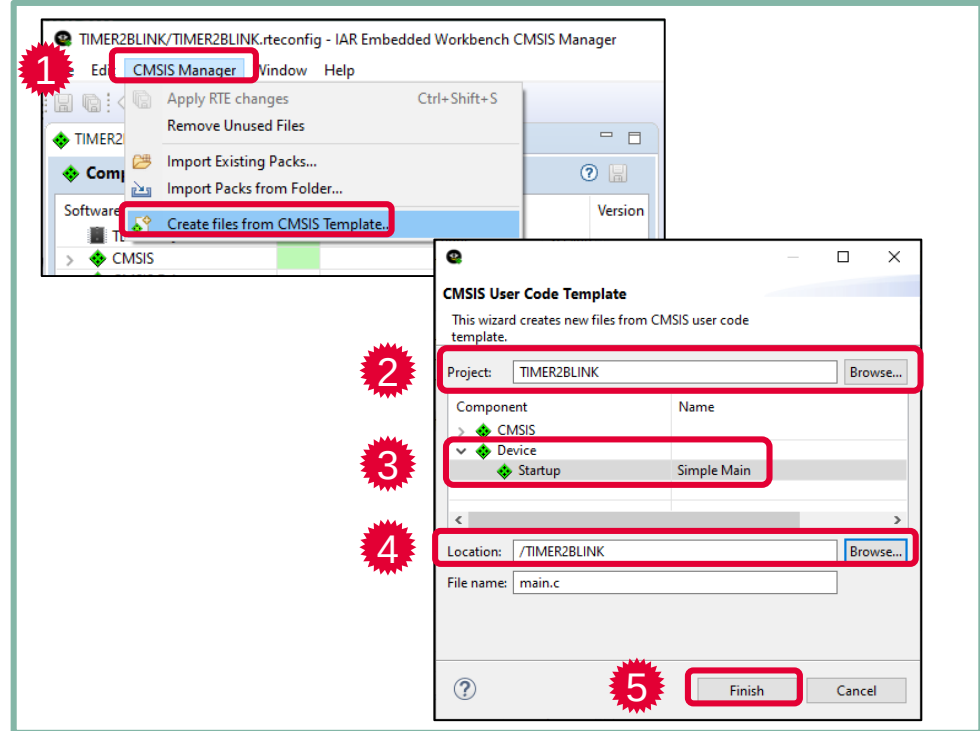
Step 3: Use the main.c template (1)

3) Use the main.c Template (1)

In the CMSIS Manager:

1. Open the menu *CMSIS Manager* and select *Create files from CMSIS Template...*
2. Select the project *TIMER2BLINK*
3. Expand *Device* and select *Startup/Simple Main*
4. Browse for the file location
5. Click on *Finish*

The file was added to your project but still does not appear in your workspace.



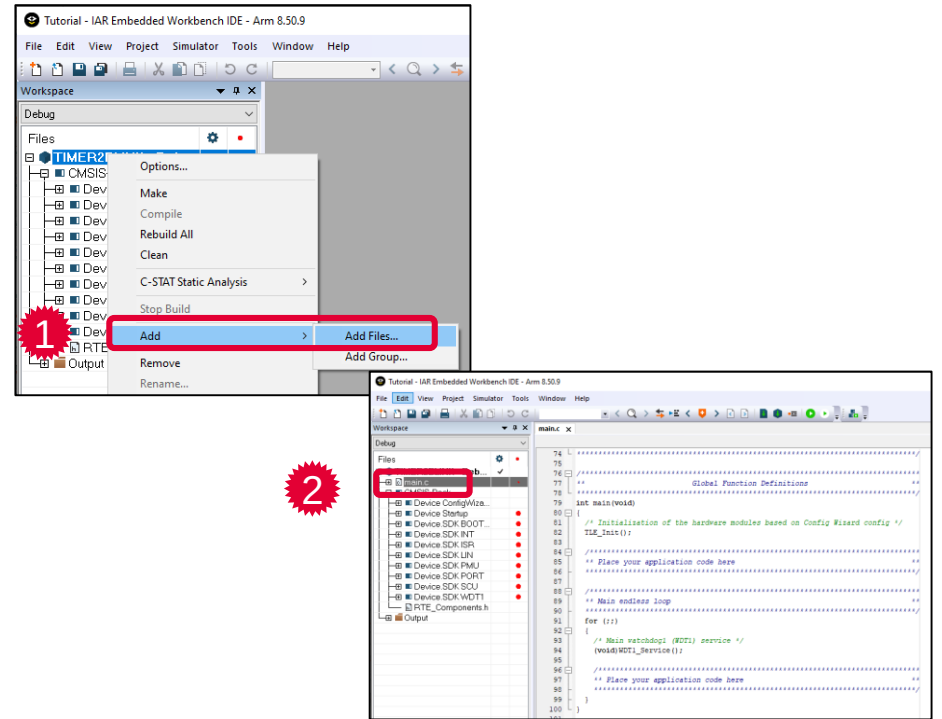
Getting Started with IAR Embedded Workbench

Step 3: Use the main.c template (2)

3) Use the main.c Template (2)

In your workspace:

1. Right click on the project name and select *Add > Add Files...*
 - Select the *main.c* file in the Windows Explorer and click on Open
2. The *main.c* file is visible in your project

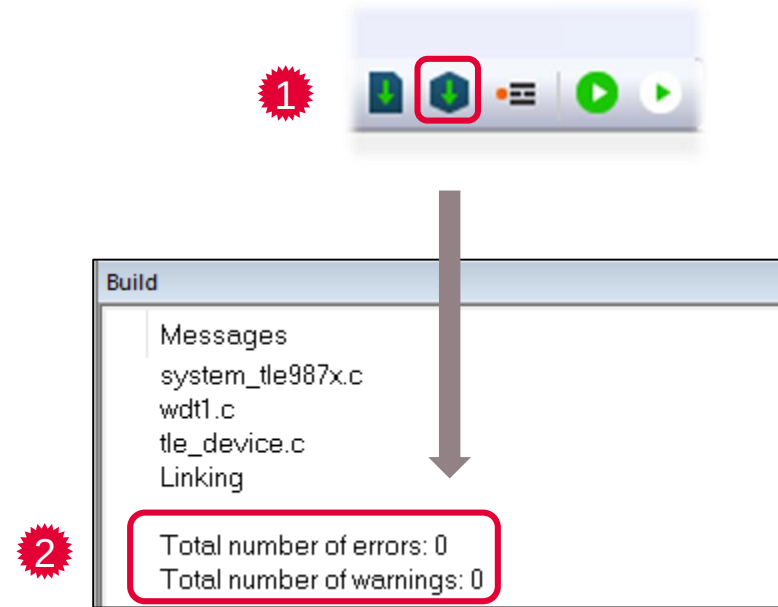


Getting Started with IAR Embedded Workbench

Step 4: Compile the Project

4) Compile the Project

1. Compile the project:
 - › Press the *Make* button or press *F7*
2. The Build window shows
0 Error(s) , 0 Warning(s)



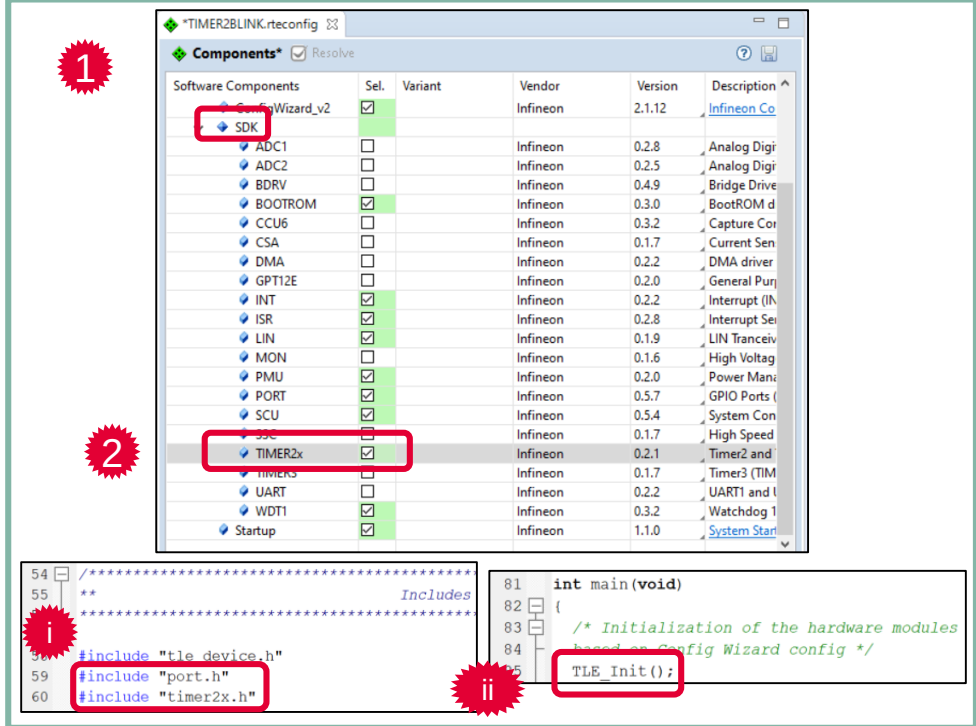
Getting Started with IAR Embedded Workbench

Step 5: Add Modules from the Run-Time Environment

5) Add Modules from the Run-Time Environment

In the `TIMER2BLINK.rteconfig` file in the CMSIS Manager:

1. Expand *Device*, then the *SDK* section
2. Select *TIMER2x* and save your configuration
3. Add code to the `main.c` file:
 - i. Include Libraries
 - ii. Initialize Modules



The screenshot shows the CMSIS Manager window for the `TIMER2BLINK.rteconfig` file. The 'Components' tab is selected, and the 'SDK' section is expanded. The 'TIMER2x' component is highlighted. Below the screenshot, the code in the `main.c` file is shown, with red boxes highlighting the include statements and the initialization function call.

Software Components	Sel.	Variant	Vendor	Version	Description
Config Wizard_v2	☒		Infineon	2.1.12	Infineon Co
SDK	☒				
ADC1	☐		Infineon	0.2.8	Analog Digi
ADC2	☐		Infineon	0.2.5	Analog Digi
BDRV	☐		Infineon	0.4.9	Bridge Drive
BOOTROM	☒		Infineon	0.3.0	BootROM d
CCU6	☐		Infineon	0.3.2	Capture Con
CSA	☐		Infineon	0.1.7	Current Sen
DMA	☐		Infineon	0.2.2	DMA driver
GPT12E	☐		Infineon	0.2.0	General Purp
INT	☒		Infineon	0.2.2	Interrupt (IN
ISR	☒		Infineon	0.2.8	Interrupt Sei
LIN	☒		Infineon	0.1.9	LIN Tranceiv
MON	☐		Infineon	0.1.6	High Voltag
PMU	☒		Infineon	0.2.0	Power Manu
PORT	☒		Infineon	0.5.7	GPIO Ports (
SCU	☒		Infineon	0.5.4	System Con
SSC	☐		Infineon	0.1.7	High Speed
TIMER2x	☒		Infineon	0.2.1	Timer2 and
TIMER3	☐		Infineon	0.1.7	Timer3 (TIM
UART	☒		Infineon	0.2.2	UART1 and I
WDT1	☒		Infineon	0.3.2	Watchdog 1
Startup	☒		Infineon	1.1.0	System Star

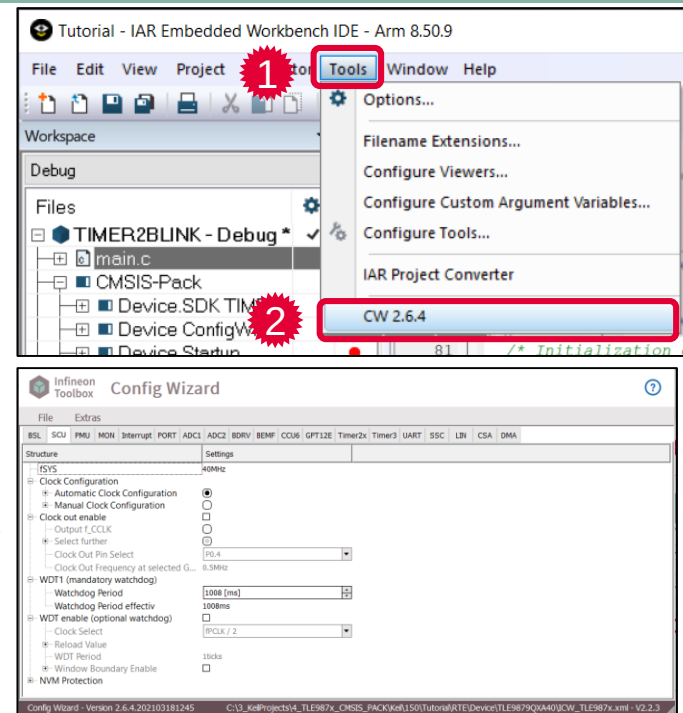
```
54 //***** Includes *****
55 /**
56 *****
57 #include "t1e device.h"
58 #include "port.h"
59 #include "timer2x.h"
60
61
62 int main(void)
63 {
64     /* Initialization of the hardware modules
65     based on Config Wizard config */
66     TLE_Init();
67 }
```

Getting Started with IAR Embedded Workbench

Step 6: Use the Config Wizard v2 (1)

6) Use the Config Wizard v2 (1)

1. Select the tab *Tools*
2. Open *Config Wizard v2*
3. Config Wizard opens in a separate window

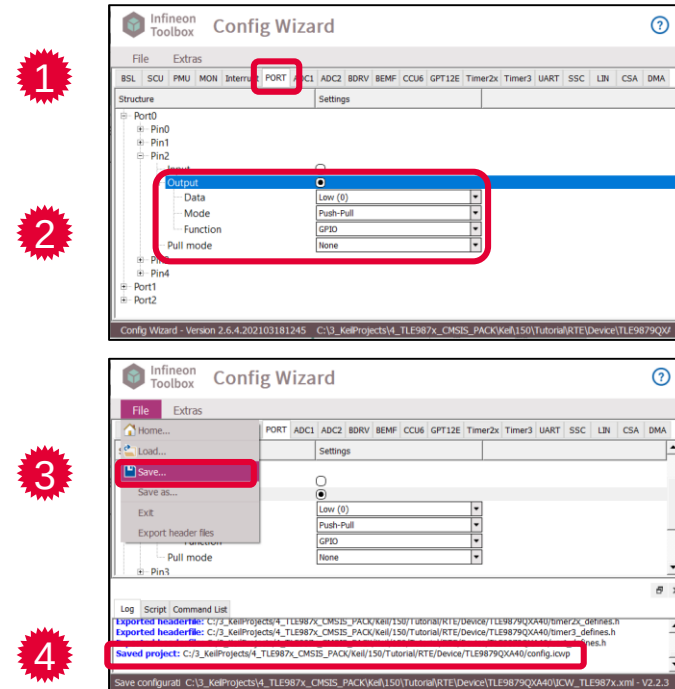


Getting Started with IAR Embedded Workbench

Step 6: Use the Config Wizard v2 (2)

6) Use the Config Wizard v2 (2)

1. Select the tab *PORT*
2. Go to the *Port0 > Pin2* section
3. Configure pin to *Output* mode
4. Save with *File > Save*

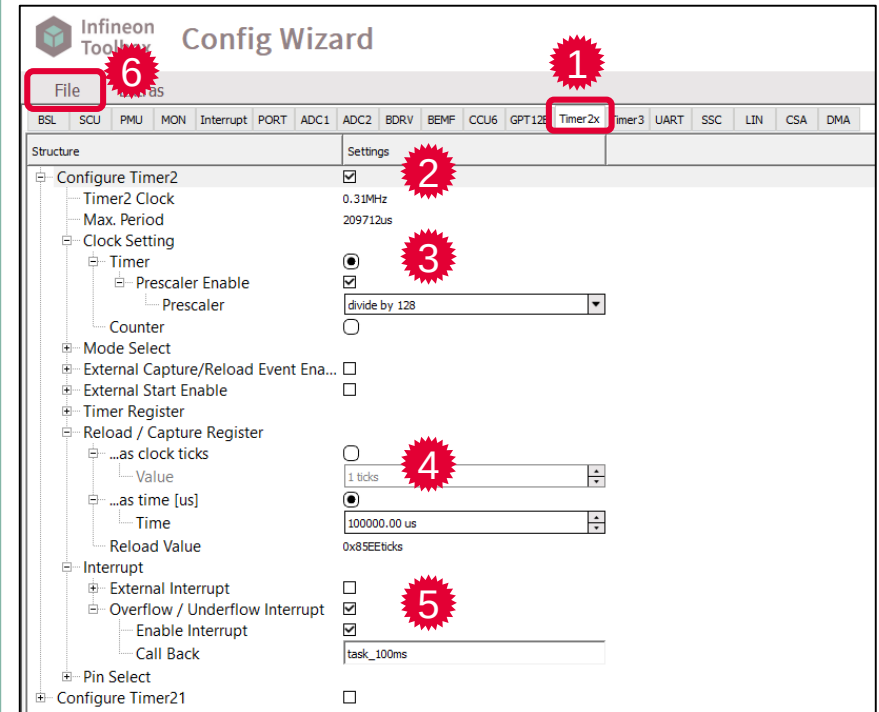


Getting Started with IAR Embedded Workbench

Step 6: Use the Config Wizard v2 (3)

6) Use the Config Wizard v2 (3)

1. Click on the tab *Timer2x*
2. Enable the checkbox *Configure Timer2*
3. In the section *Clock Setting*:
 - › Enable the prescaler and select *divide by 128*
4. In the section *Reload / Capture Register*:
 - › Select *...as time[us]* and enter *100000.00 us*
5. In the section *Interrupt*:
 - › Enable the checkboxes *Overflow / Underflow Interrupt* and *Enable Interrupt*
 - › Call Back Name: *task_100ms*
6. Save with *File > Save*



Getting Started with IAR Embedded Workbench

Step 7: Edit the File main.c

7) Edit the File main.c

In the file main.c in Keil MDK:

1. Start Timer2 before the “for (;;)” loop
2. Declare and define the function of the interrupt call back
 - › Use API function “PORT_ChangePin()”
3. Save and build (F7) the project



1

```
87 | *****  
88 | ** Place your application code here  
89 | *****  
90 | TIMER2_Start();  
91 | *****  
92 | *****  
93 | ** Main endless loop  
94 | *****  
95 | for (;;) {  
96 |
```

2

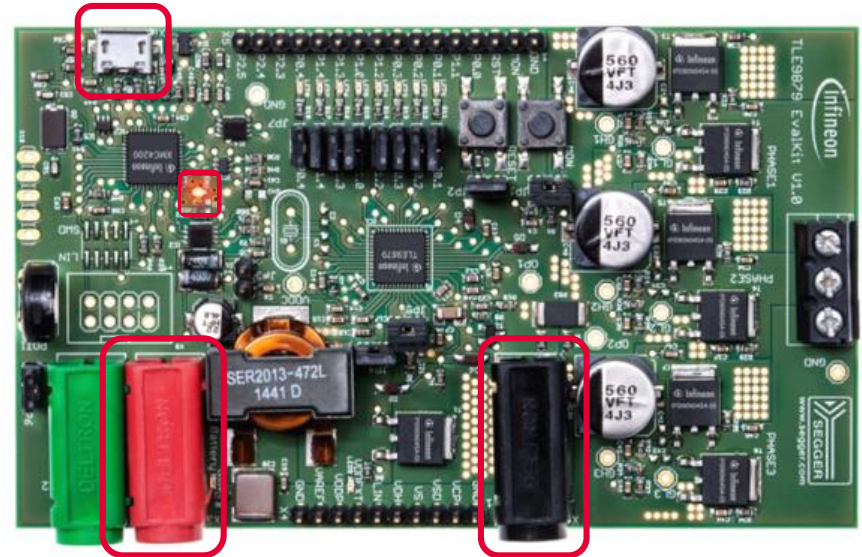
```
66 | *****  
67 | ** Private Function Declarations  
68 | *****  
69 | void task_100ms(void);  
  
106 | void task_100ms(void)  
107 | {  
108 | PORT_ChangePin(0x02, PORT_ACTION_TOGGLE);  
109 | }
```

Getting Started with IAR Embedded Workbench

Step 8: Power up the Evaluation Board

8) Power up the Evaluation Board

- › Connect micro USB cable
- › Supply board via banana jacks (VBAT, GND)
- › Debug LED lights up

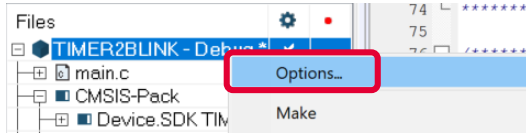


Getting Started with IAR Embedded Workbench

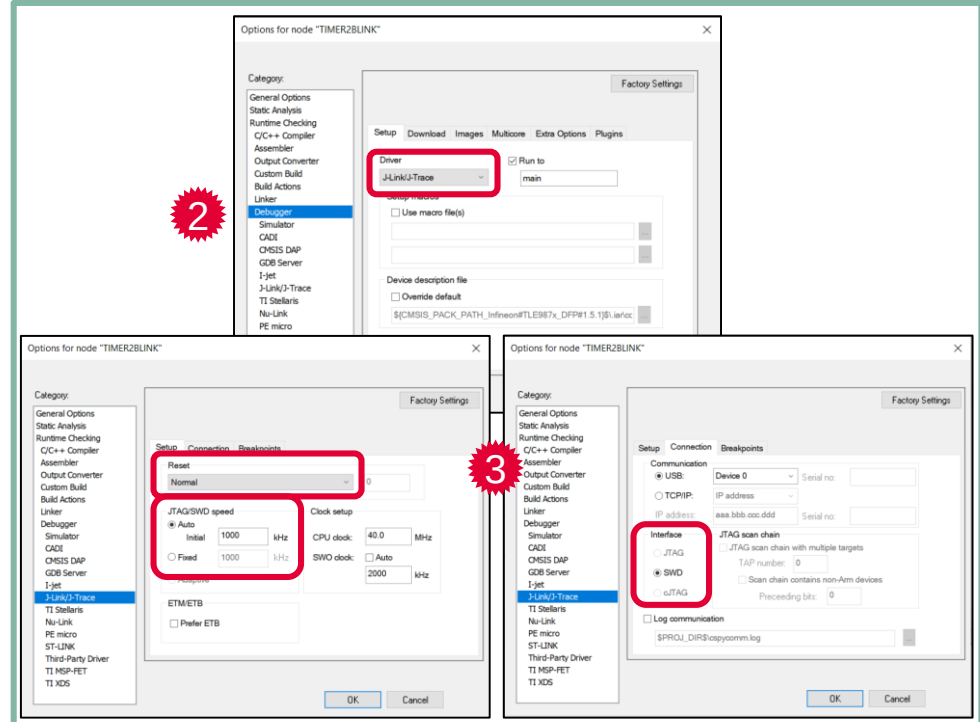
Step 9: Connect the Debugger

9) Connect the Debugger

1. Right click on the project name and select *Options*



2. Select the category *Debugger*, then the driver *J-Link/J-Trace*
3. In the category *J-Link/J-Trace*, the following setups should be per default:
 - › Setup: *Reset* > *Normal*
 - › Setup: *SWD speed* > *Auto*
 - › Connection: *Interface* > *SWD*

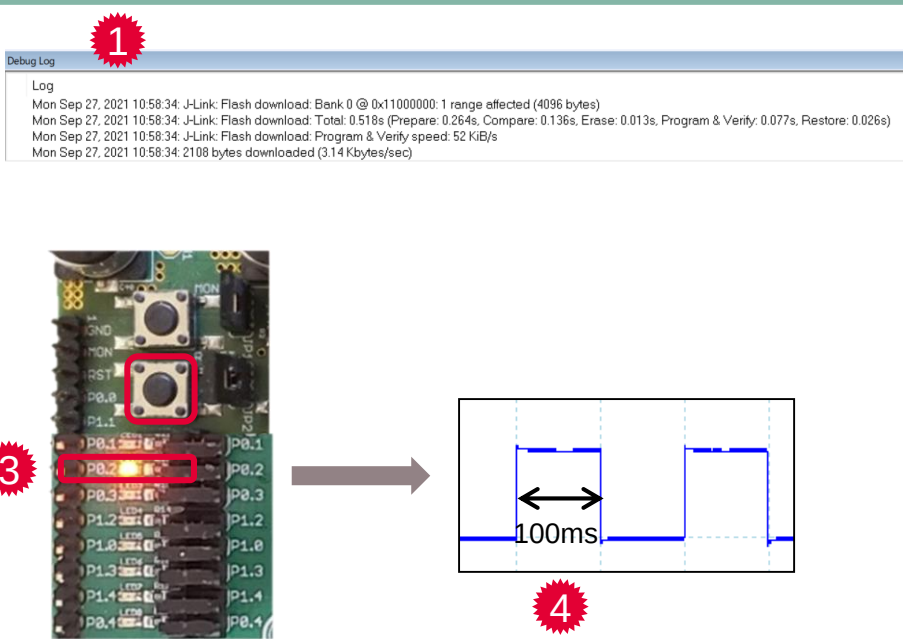


Getting Started with IAR Embedded Workbench

Step 10: Download and Run Code

10) Download and Run Code

1. Select *Project > Download > Download active application* to load the code into the target
 - *Flash download* is shown in the *Debug Log* window
- You can also click on  to download the code into the target and start a debug session
2. Press the *Reset* button on the evaluation board
3. The LED on Port P0.2 lights up
4. The port toggles every 100ms



The screenshot displays the IAR Embedded Workbench interface. At the top, the 'Debug Log' window shows the following text:

```
Log
Mon Sep 27, 2021 10:58:34: J-Link: Flash download: Bank 0 @ 0x11000000: 1 range effected (4096 bytes)
Mon Sep 27, 2021 10:58:34: J-Link: Flash download: Total: 0.518s (Prepare: 0.264s, Compare: 0.136s, Erase: 0.013s, Program & Verify: 0.077s, Restore: 0.026s)
Mon Sep 27, 2021 10:58:34: J-Link: Flash download: Program & Verify speed: 52 KiB/s
Mon Sep 27, 2021 10:58:34: 2108 bytes downloaded (3.14 Kbytes/sec)
```

Below the log, a photograph of an evaluation board is shown. A red box highlights the 'Reset' button (labeled '1'), and another red box highlights the LED on Port P0.2 (labeled '3'). An arrow points from the board to a timing diagram (labeled '4') showing a square wave with a period of 100ms.

Getting Started with IAR Embedded Workbench

Step 11: Use the Runtime Debug

11) Use the Runtime Debug

1. Click on *Download and Debug*



2. Left click in the dark grey area left of the code to place a breakpoint
3. Click on Go or press *F5* to start the code execution
4. The code is executed and stops at the breakpoint
 - › In this example, every time you click on Run, the LED P0.2 is toggled

2

```
106 void task_100ms(void)
107 {
108     PORT_ChangePin(0x02, PORT_ACTION_TOGGLE);
109 }
```

3



4

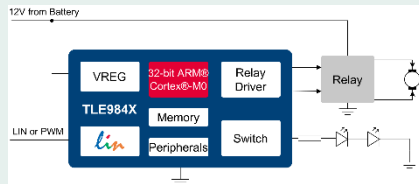
```
106 void task_100ms(void)
107 {
108     PORT_ChangePin(0x02, PORT_ACTION_TOGGLE);
109 }
```

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MOTIX™ Embedded Power ICs Product Portfolio based on Arm® Cortex®-M processor

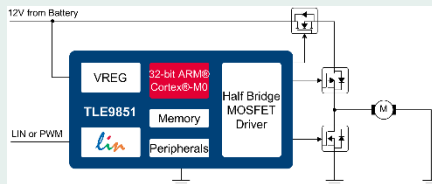
Smart Relay IC DC Motor



TLE9842/3/4

- > Window Lift
- > Sunroof
- > Wiper

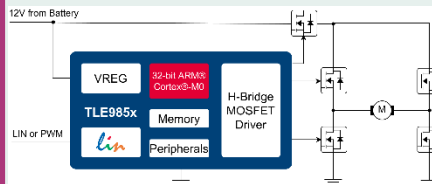
Smart Half Bridge



TLE9845/TLE9851

- > HVAC Fan
- > Engine Cooling Fan
- > Fuel Pump
- > Water Pump

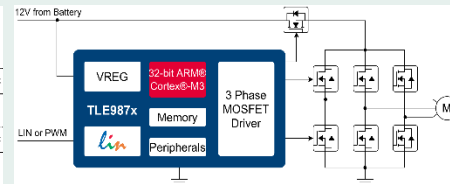
Smart H-Bridge Driver



TLE985x/TLE986x

- > Window Lift
- > Sunroof
- > Wiper
- > Power Folding Roof
- > Power Sliding Door
- > Power Trunk/ Tailgate

Smart BLDC Driver IC



TLE987x

- > Fuel Pump
- > HVAC Fan
- > Engine Cooling Fan
- > Water Pump
- > Oil Pump
- > Sunroof
- > Wiper

MOTIX™ MCU

Evalboard and Evalkit Overview for TLE986x

TLE9869QX – Evaluation Kit

- › 2-Phase N-MOS Bridge
- › Single Shunt in GND path
- › Integrated LIN (inside device)
- › Virtual Com Port via J-Link
- › Debug LEDs
- › Onboard Segger J-Link Debugger

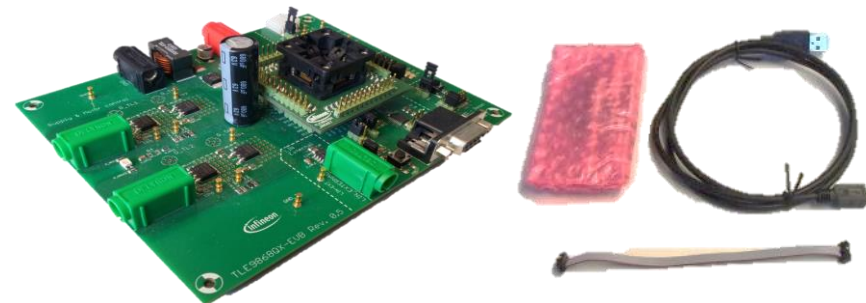
TLE9869 EVALKIT: **SP001388252**



TLE986x – 2-Phase Board with Socket

- › H-Bridge N-MOS Bridge
- › Integrated LIN
- › External LIN Transceiver
- › RS232
- › Debug LEDs
- › Debug Connector SWD
- › J-Link Lite Debugger

TLE986x EVALB_JLINK: **SP001253678**



Evalboard and Evalkit Overview for TLE987x

TLE9879QX – Evaluation Kit

- › 3-Phase N-MOS Bridge
- › Single Shunt in GND path
- › Integrated LIN (inside device)
- › Virtual Com Port via J-Link
- › Debug LEDs
- › Onboard Segger J-Link Debugger

TLE9879 EVALKIT: **SP001389172**



TLE987x – 3-Phase Board with Socket

- › 3-Phase N-MOS Bridge
- › Integrated LIN
- › External LIN Transceiver
- › RS232
- › Debug LEDs
- › Debug Connector SWD
- › J-Link Lite Debugger

TLE987x EVALB_TQFP: **SP005421936**

TLE987x EVALB_VQFN: **SP005421934**

TLE987x EVALB_TQFP



TLE987x EVALB_VQFN



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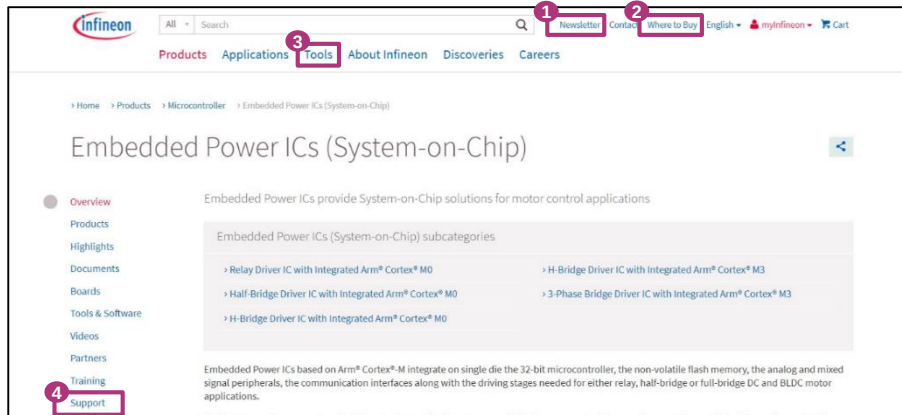
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Product Information Links

Overview	› Product Brief › Selection Guides › Product Presentations	› Embedded Power IC Overview › TLE986xQX Overview › TLE987xQX Overview
Technical Material	› Datasheets › Application Notes › Getting Started › PCB Design Data	› TLE986xQX Documents › TLE987xQX Documents
Evaluation Boards	› Evaluation Boards › Application Kits	› Kits and Boards Overview › Information about TLE9879_Evalkit › Information about TLE9869_Evalkit
Software & Tools	› Config Wizard for MOTIX™ MCU › Keil µVision5 › IAR Embedded Workbench › Software Examples	› Link to Software & Tools
Videos	› More than 30 videos	› Link to Videos

Support Online Tools and Services

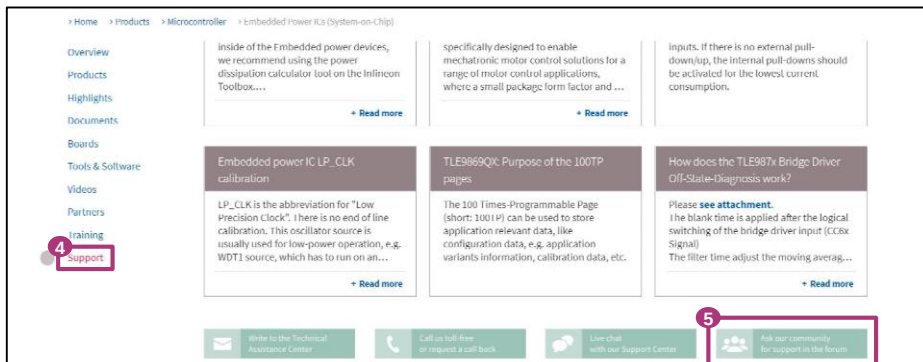
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