TLE9893_2QKW62S_BLINKY_SIMPLE

About this document

Scope and purpose

The aim of this guide is to present the scope, the implementation, the algorithm and a demonstration of the **TLE9893_2QKW62S_BLINKY_SIMPLE** example code for the TLE989x Infineon Embedded Power ICs based on Arm® Cortex® M3. This example code can be found in the Keil µVision Pack Installer.

The full functionalities and characteristics of the embedded power devices are described in the datasheets and user's manual. Please refer to these documents for more detailed information. Furthermore, a low level (line-by-line) description of the code is not the aim of this document, although occasionally some codeblocks might be reported if necessary to the comprehension.

Note: *The following information is given as a hint for the implementation of the system only and shall not be regarded as a description or warranty of a certain functionality, condition or quality of the referred devices or presented software example.*

Intended audience

Design engineers, system engineers, embedded power designers

Table of contents

1 Introduction

Within the endless main loop, a tick count is incremented. If the tick reaches 100.000 the pin P0.1 is toogled and the LED is switched on or off. Then the tick count is reinitialized to 0.

Figure 1 shows the signal of pin P0.1. This pin is toogled and switches the LED on or off.

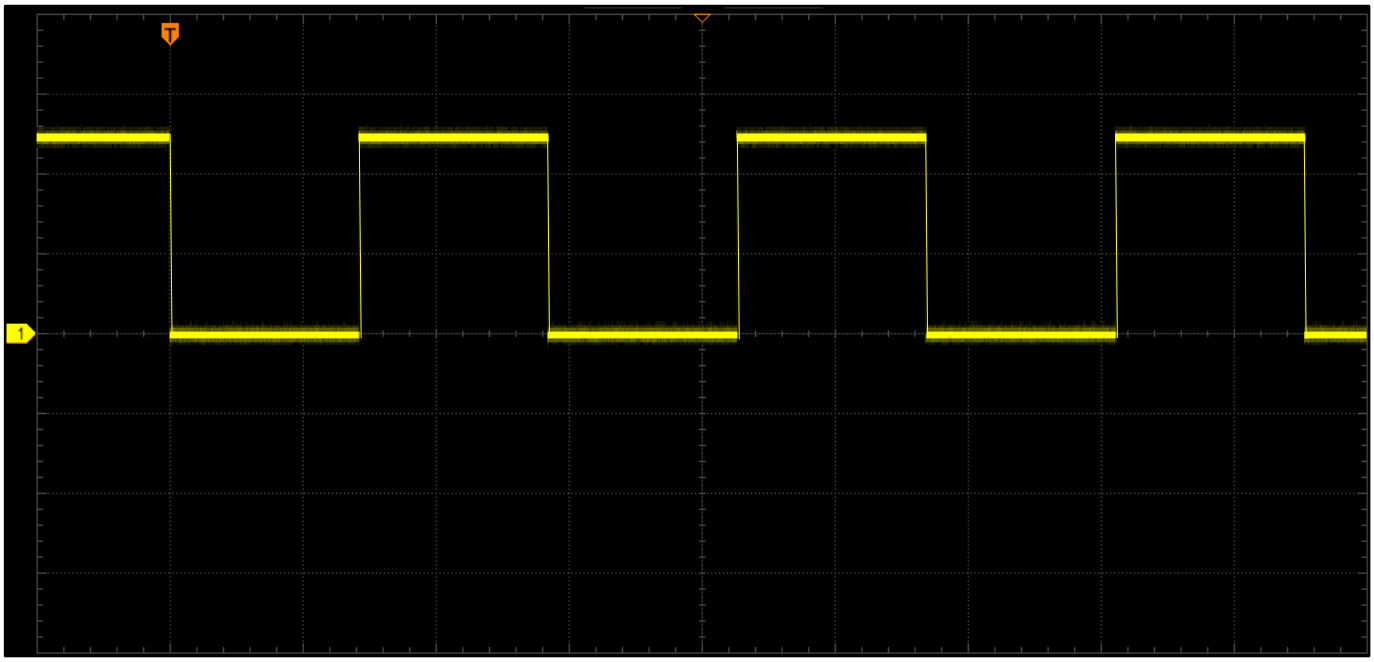

Figure 1 Capture of pin P0.1

2 Hardware

This chapter shows how to run the TLE9893_2QKW62S_BLINKY_SIMPLE example with the TLE988x/TLE989x evaluation board. For this the project must be opened and compiled.

Figure 2 shows the TLE988x/TLE989x evaluation board. The application code must be loaded via a debugger (e.g. ULINK or J-Link) to the board. The board must be powered with 12V (red and black connections). Then the LED at P0.1 is flashing (second LED from the left-hand side).

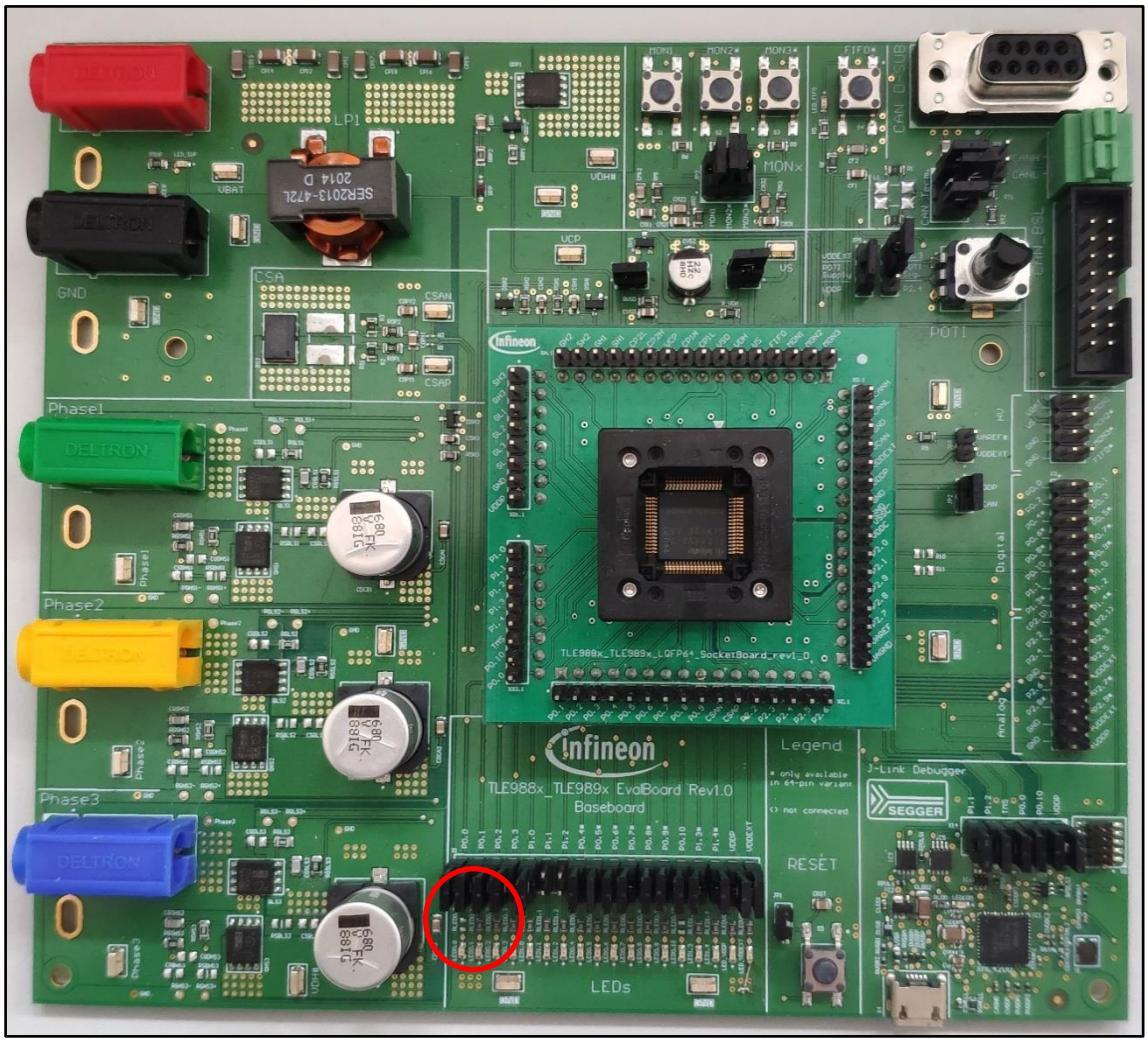

Figure 2 TLE988x/TLE989X evaluation board

3 Implementation

This chapter shows the process to follow to get a working Blinky simple example.

3.1 Get the example via the Pack Installer for Keil

Open the Pack Installer within the Keil IDE. See Figure 3 below.

Choose the appropriate device (here TLE9893_2QKW62S) on the left-hand side. On the right-hand side, select the tab Examples, where you can access the TLE9893_2QKW62S_BLINKY_SIMPLE example.

Clicking on “Copy” will copy the example on your computer and open it.

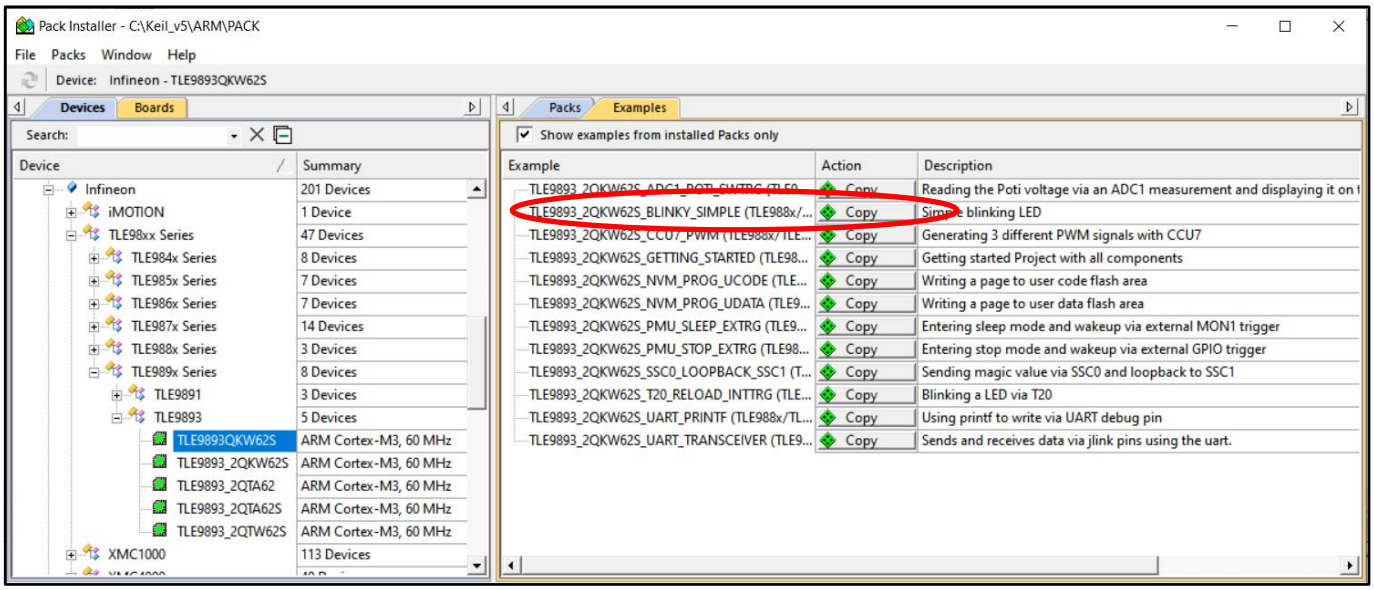

Figure 3 Keil Pack Installer

3.2 Configuration

In order to see the configured output pin for the LED, start the tool Config Wizard. It is available within the Keil IDE through a shortcut in the Tools menu.

The Config Wizard opens and shows an overall status of the current pin configuration. In Figure 4 the pin P0.1 is configured as an output.

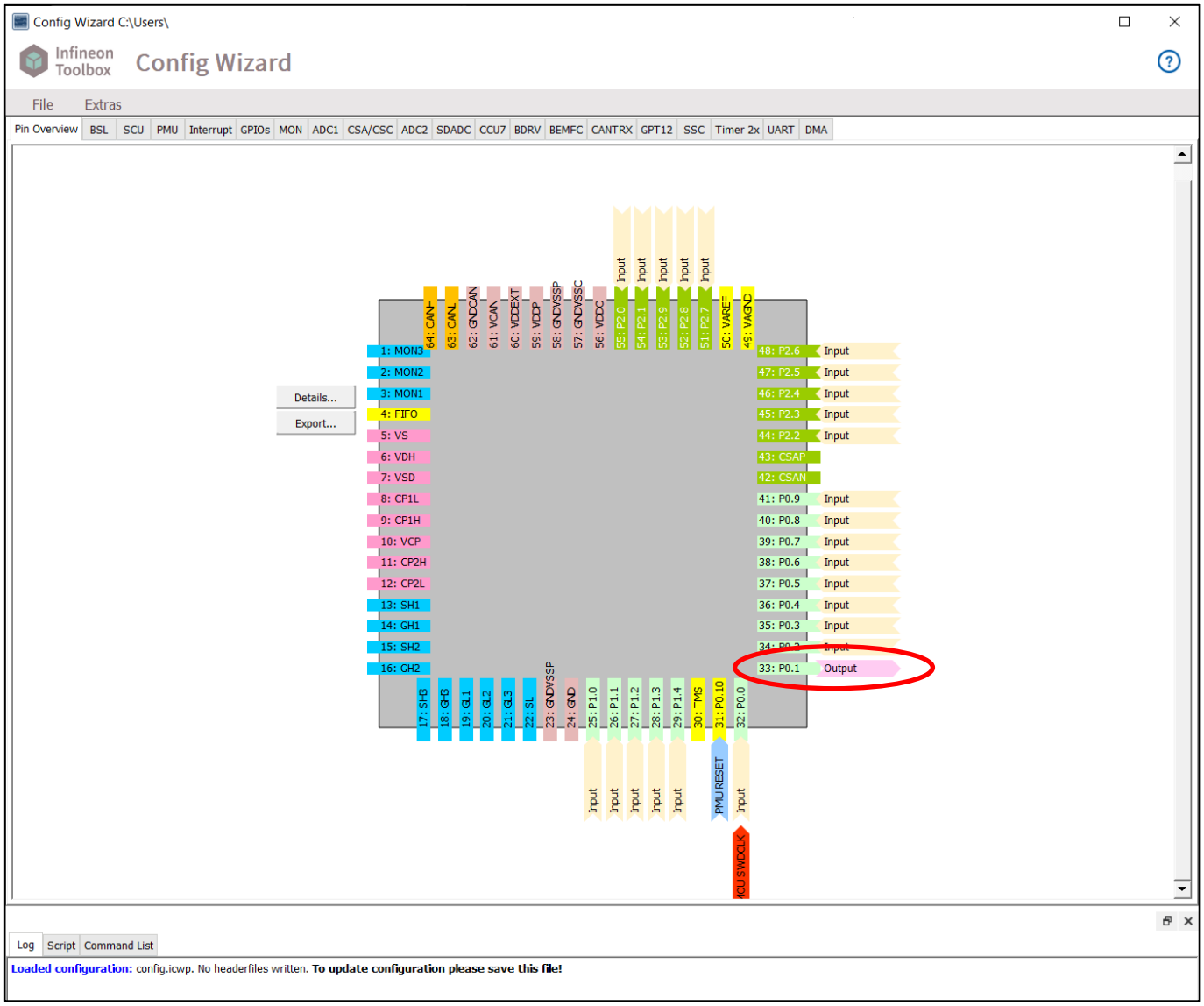

Figure 4 Config Wizard pin overview

In order to change the GPIO pin configuration, click on the GPIO tab, where you can see all available GPIO pins. In this example the pin P0.1 is used and therefore configured as output (see Figure 5).

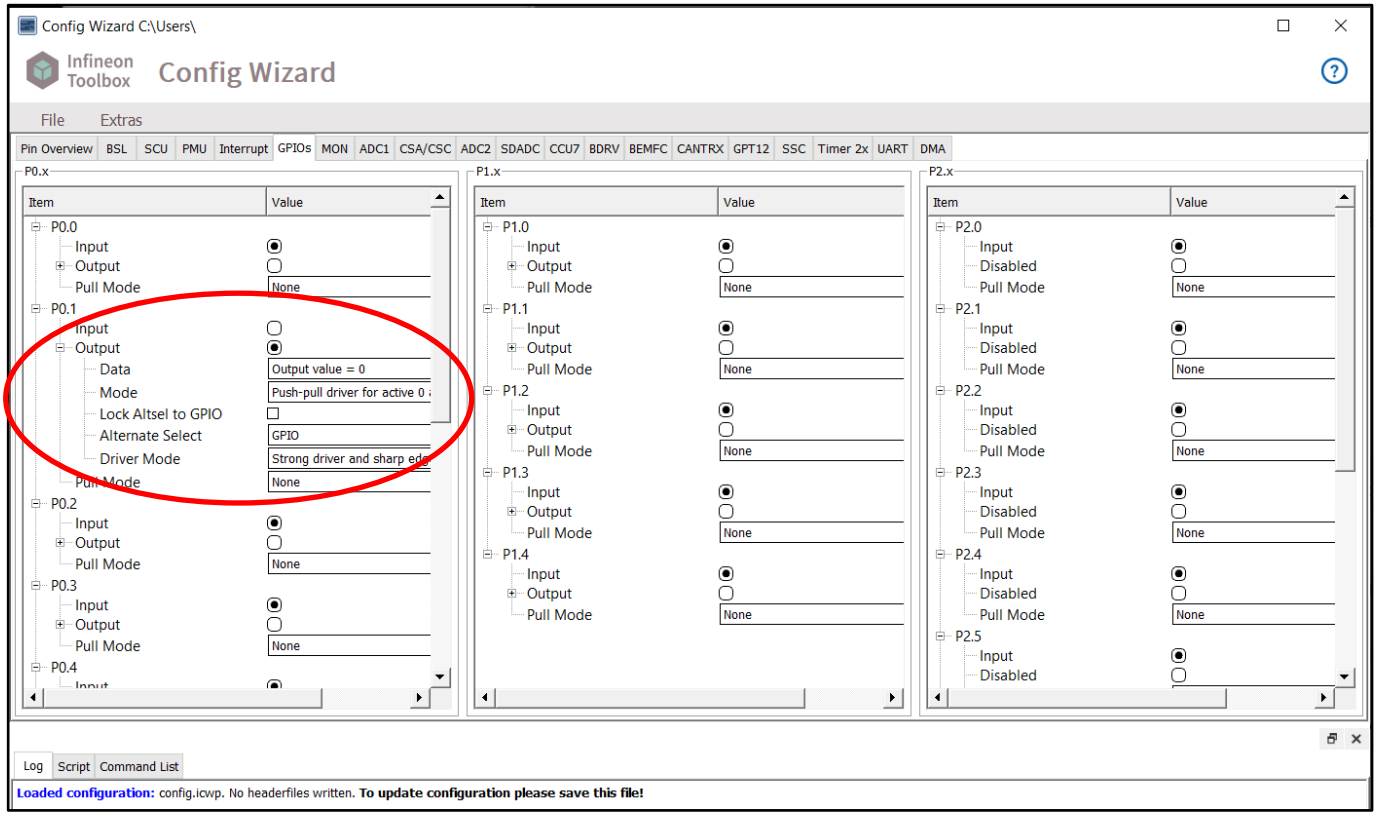

Figure 5 Config Wizard, module GPIOs

Finally, save your configuration to take these changes into account (File -> Save).

3.3 Sample code

Figure 6 shows the application code of the Blinky simple application. Within the loop (line 89) the watchdog service is executed in order to avoid any stall during the execution.

During each loop, the `u32_tick` value is incremented. If the `u32_tick` value reaches 100.000 here the `GPIO_setP01State` call is excuted. This is an available API call which toogles the pin P0.1 through the enum argument `GPIO_STATE_TOOGLE`. Toogle means that the pin is set to low if it was high and vice versa. Once the call is done the `u32_tick` value is reinitialized to 0.

```
88
89      for (;;)
90      {
91          /* Main watchdog1 (WDT1) service */
92          s8_returnCode = PMU_serviceFailSafeWatchdog();
93
94          u32_tick++;
95          if (u32_tick > 100000)
96          {
97              GPIO_setP01State(GPIO_STATE_TOGGLE);
98              u32_tick = 0;
99          }
100     }
```

Figure 6 TLE9893_2QKW62S_BLINKY_SIMPLE application code

References

See the code examples at **www.infineon.com**

Revision history

Document version	Date of release	Description of changes
1.0	2021-01-30	Initial version
1.1	2021-02-11	Incorporated review comment
1.2	2021-03-24	Updated device name and Figure 3
1.3	2022-10-13	Editorial changes

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