

# Config Wizard Tool for MOTIX™ multi half-bridge ICs

## About this document

### Scope and purpose

Config Wizard for MOTIX™ multi half-bridge ICs allows easy configuration of the MOTIX™ multi half-bridge IC products.

### Intended audience

This document is intended for developers who intend to evaluate the MOTIX™ multi half-bridge IC products.

## Table of contents

	<b>About this document</b> .....	1
	<b>Table of contents</b> .....	2
<b>1</b>	<b>Introduction to Config Wizard for MOTIX™ multi half-bridge ICs</b> .....	4
1.1	Tool overview .....	4
1.2	Starting the tool .....	4
1.3	User guide and forum .....	5
<b>2</b>	<b>Config Wizard for MOTIX™ multi half-bridge ICs for TLE94103</b> .....	6
2.1	Open Config Wizard for MOTIX™ multi half-bridge ICs for TLE94103 Evalboard .....	6
2.2	Introduction .....	6
2.3	Hardware .....	7
2.3.1	Hardware description .....	8
2.4	Getting started .....	10
2.5	Description of the GUI .....	11
<b>3</b>	<b>Config Wizard for MOTIX™ multi half-bridge ICs for TLE94104</b> .....	12
3.1	Open Config Wizard for MOTIX™ multi half-bridge ICs for TLE94104 Evalboard .....	12
3.2	Introduction .....	12
3.3	Hardware .....	13
3.3.1	Hardware description .....	14
3.4	Getting started .....	16
3.5	Description of the GUI .....	17
<b>4</b>	<b>Config Wizard for MOTIX™ multi half-bridge ICs for TLE94106</b> .....	18
4.1	Open Config Wizard for MOTIX™ multi half-bridge ICs for TLE94106 Evalboard .....	18
4.2	Introduction .....	18
4.3	Hardware .....	19
4.3.1	Hardware description .....	20
4.4	Getting started .....	22
4.5	Description of the GUI .....	23
<b>5</b>	<b>Config Wizard for MOTIX™ multi half-bridge ICs for TLE94108</b> .....	25
5.1	Open Config Wizard for MOTIX™ multi half-bridge ICs for TLE94108 Evalboard .....	25
5.2	Introduction .....	25
5.3	Hardware .....	26
5.3.1	Hardware description .....	27
5.4	Getting started .....	29
5.5	Description of the GUI .....	30
<b>6</b>	<b>Config Wizard for MOTIX™ multi half-bridge ICs for TLE94110</b> .....	32
6.1	Open Config Wizard for MOTIX™ multi half-bridge ICs for TLE94110 Evalboard .....	32
6.2	Introduction .....	32

## Table of contents

---

6.3	Hardware .....	33
6.3.1	Hardware description .....	34
6.4	Getting started .....	36
6.5	Description of the GUI .....	37
<b>7</b>	<b>Config Wizard for MOTIX™ multi half-bridge ICs for TLE94112 .....</b>	<b>39</b>
7.1	Open Config Wizard for MOTIX™ multi half-bridge ICs for TLE94112 Evalboard .....	39
7.2	Introduction .....	39
7.3	Hardware .....	40
7.3.1	Hardware description .....	41
7.4	Getting started .....	43
7.5	Description of the GUI .....	44
<b>8</b>	<b>Tool disclaimer .....</b>	<b>46</b>
	<b>Revision history .....</b>	<b>47</b>
	<b>Disclaimer .....</b>	<b>48</b>

## 1 Introduction to Config Wizard for MOTIX™ multi half-bridge ICs

# 1 Introduction to Config Wizard for MOTIX™ multi half-bridge ICs

## 1.1 Tool overview

The Config Wizard for MOTIX™ multi half-bridge ICs is a tool within Infineon Developer Center and allows easy configuration of Automotive multi half-bridge IC products.

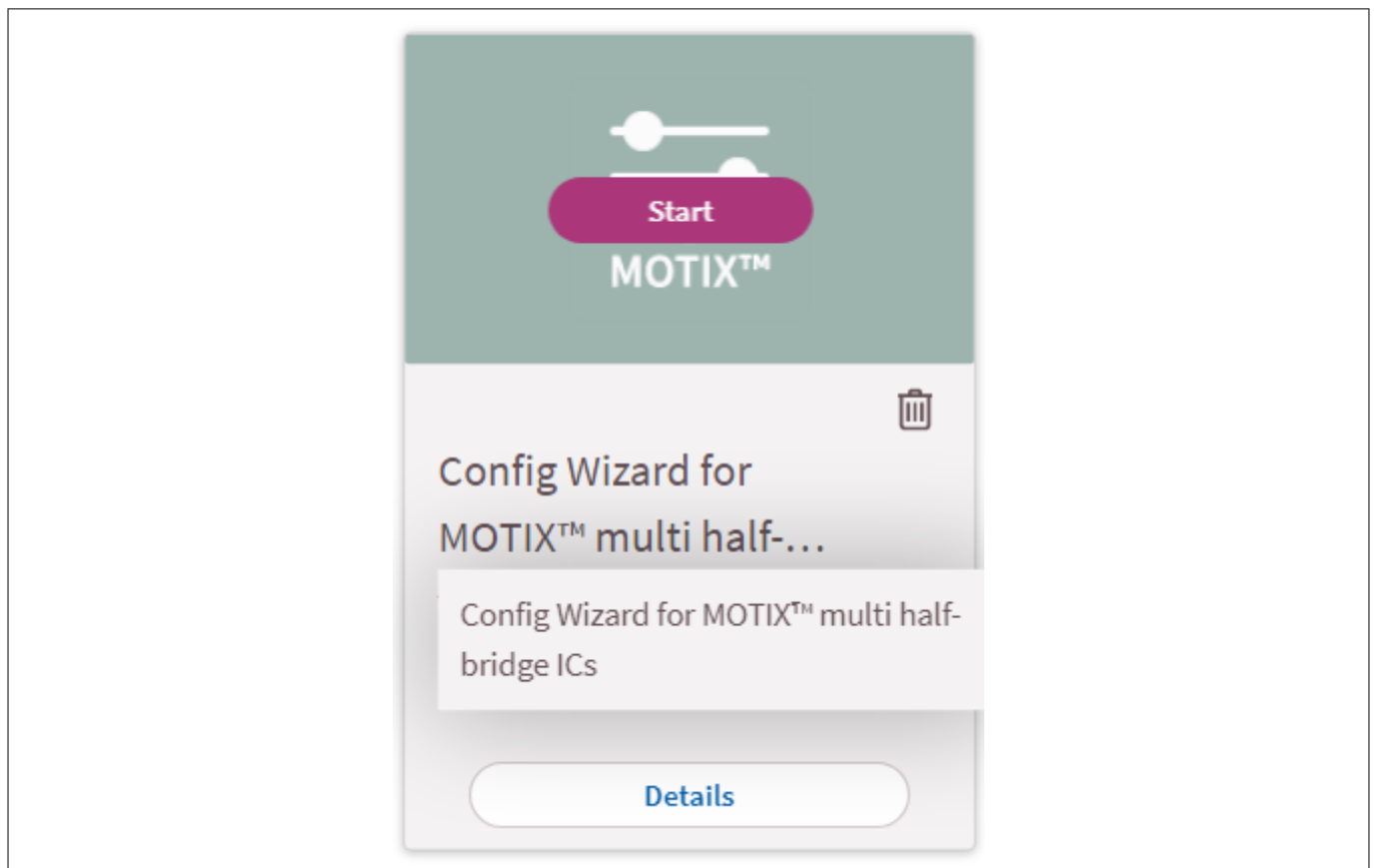
The download link and installation instructions can be found [here](#).

This tool consists of:

- one graphical user interface (GUI) to control Infineon's MOTIX™ multi half-bridge ICs for TLE94103 Evalboard
- one graphical user interface (GUI) to control Infineon's MOTIX™ multi half-bridge ICs for TLE94104 Evalboard
- one graphical user interface (GUI) to control Infineon's MOTIX™ multi half-bridge ICs for TLE94106 Evalboard
- one graphical user interface (GUI) to control Infineon's MOTIX™ multi half-bridge ICs for TLE94108 Evalboard
- one graphical user interface (GUI) to control Infineon's MOTIX™ multi half-bridge ICs for TLE94110 Evalboard
- one graphical user interface (GUI) to control Infineon's MOTIX™ multi half-bridge ICs for TLE94112 Evalboard

## 1.2 Starting the tool

After the installation of the Config Wizard for MOTIX™ multi half-bridge ICs, the installed tool can be found in the Infineon Developer Center Launcher. Click on the corresponding “Start” button to launch the tool.

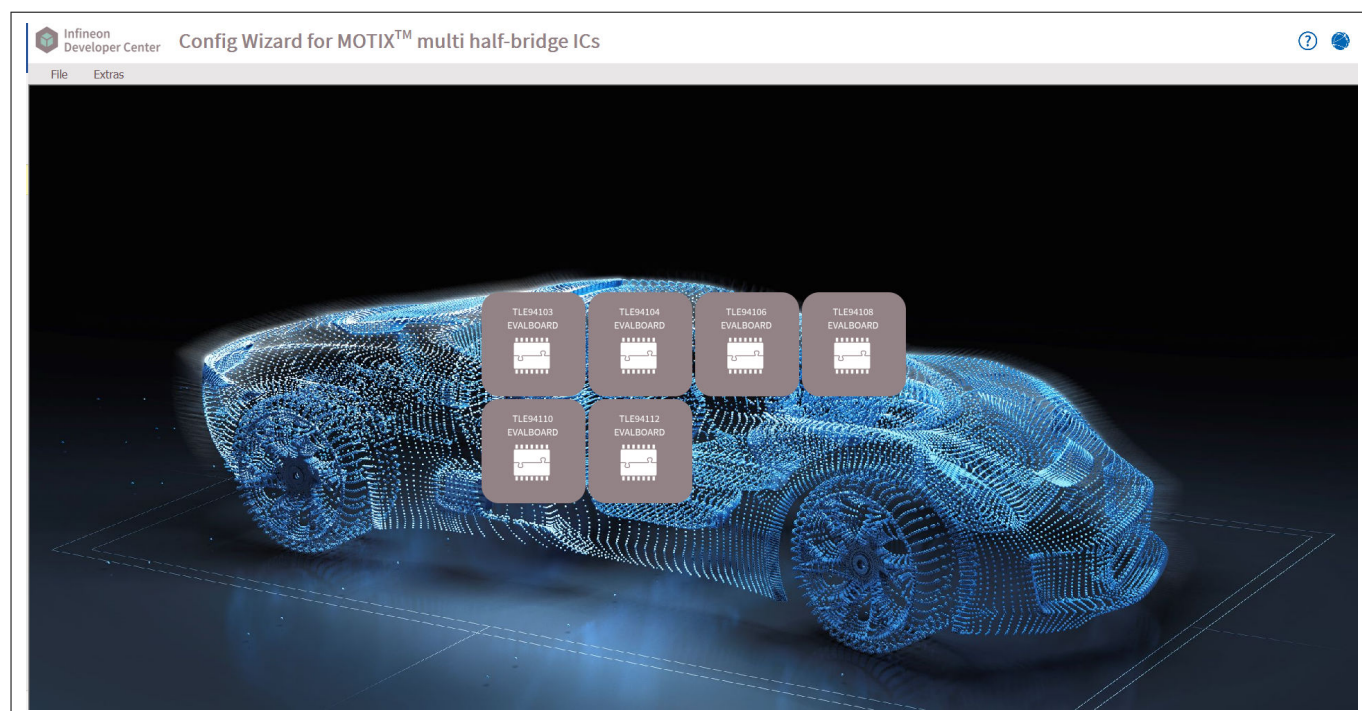


**Figure 1** Starting the Config Wizard for MOTIX™ multi half-bridge ICs

Select the product or calculation view you want to configure.



## 1 Introduction to Config Wizard for MOTIX™ multi half-bridge ICs



**Figure 2** Product selection in the Config Wizard for MOTIX™ multi half-bridge ICs

### 1.3 User guide and forum

Click on the question mark icon to open the user guide to find a GUI explanation, configuration examples, general information, and recommendations.



**Figure 3** Opening the user guide

Click on the world icon to open the forum for MOTIX™ Bridge. In the forum you can find discussions on the products, gain access to the community, as well as further information.



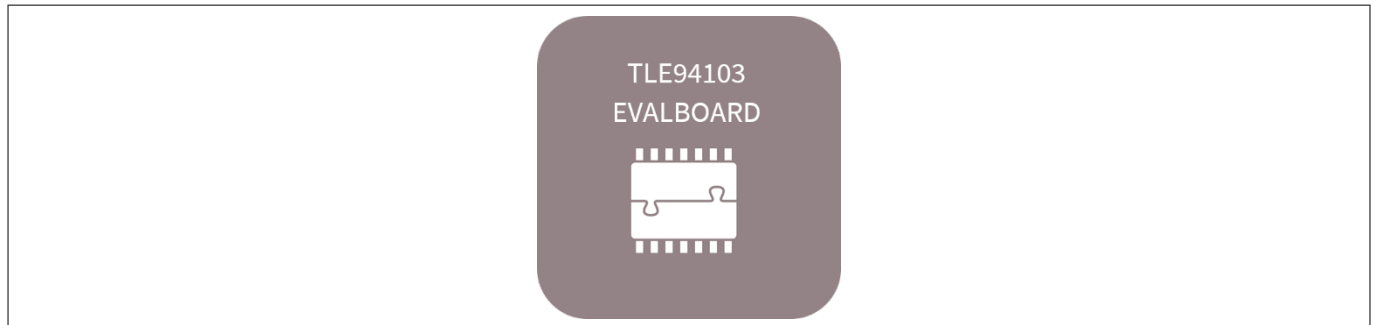
**Figure 4** Accessing the forum

## 2 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94103

## 2 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94103

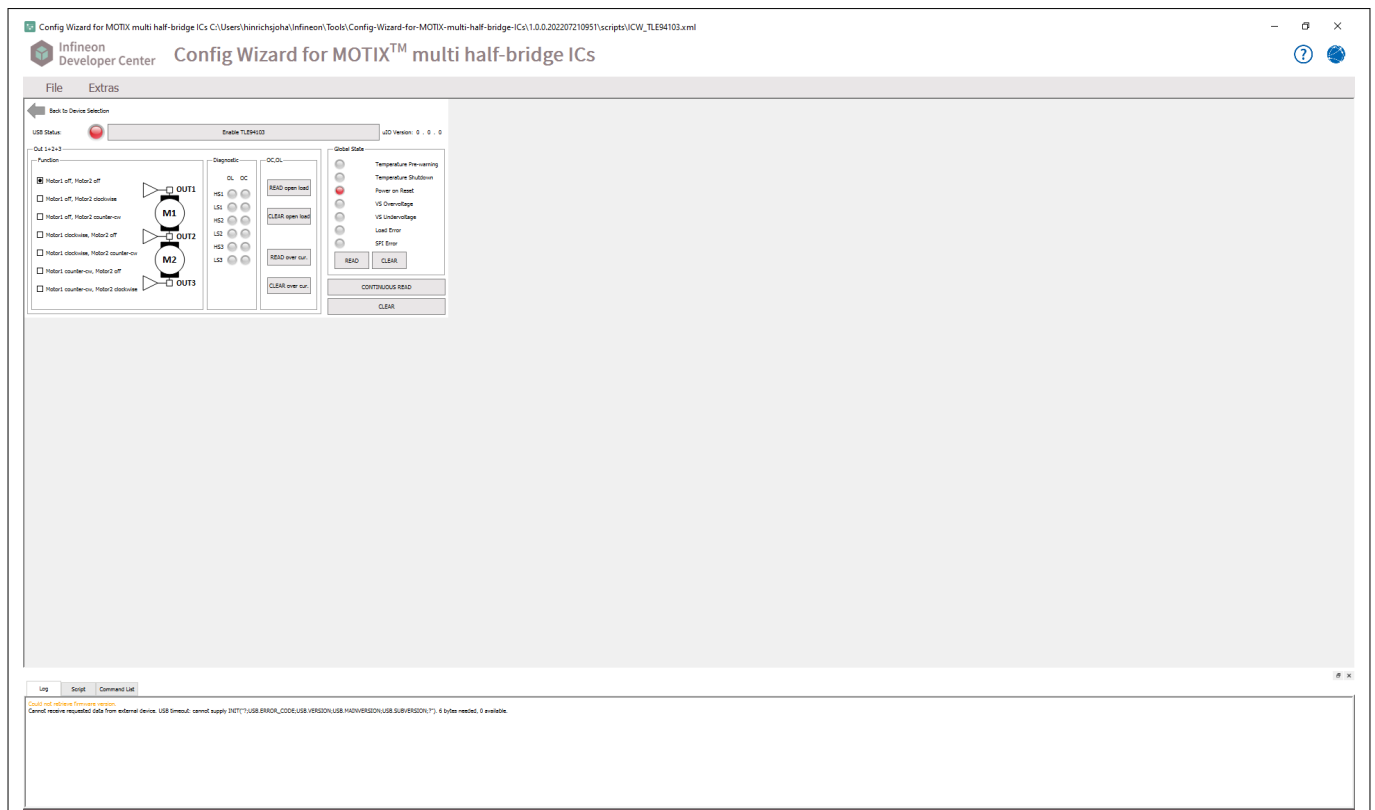
### 2.1 Open Config Wizard for MOTIX™ multi half-bridge ICs for TLE94103 Evalboard

Select icon below to open the product view.



**Figure 5** Starting the GUI for the TLE94103 Evalboard

The following view will be displayed.



**Figure 6** Starting view of the GUI for the TLE94103 Evalboard

### 2.2 Introduction

The TLE94103 evaluation board is intended to provide a simple and easy-to-use tool for getting familiar with the device features and for first application tests.

Refer to the corresponding product page for more details: [Link](#).

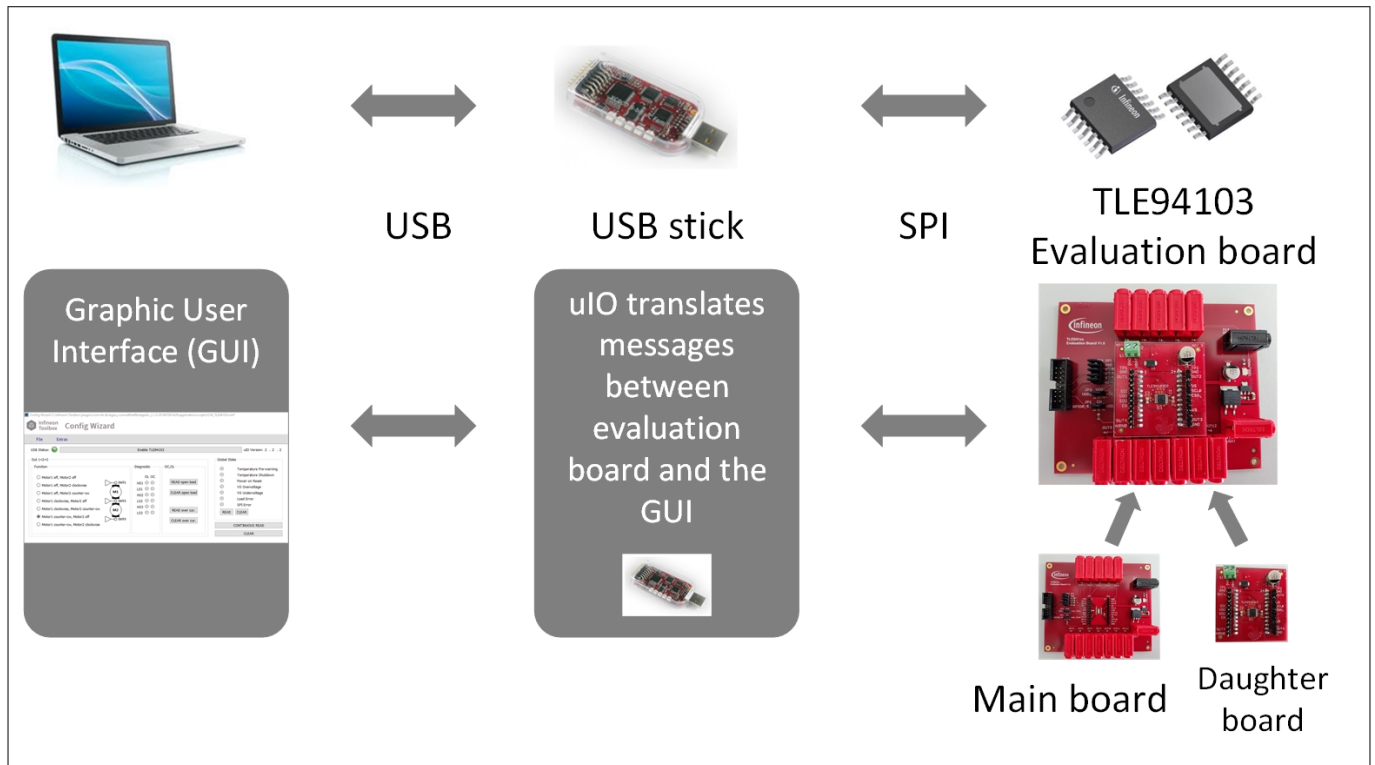
## 2 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94103

The uIO-stick is the interface between the PC and the TLE94103 evaluation board.

The SPI communication is emulated by the uIO-stick, which is controlled by the PC software.

The TLE94103 evaluation board has:

- A connector for the uIO-stick
- Connectors for the power supply
- Connectors for the motor output
- An active reverse battery protection



**Figure 7 TLE94103 evaluation board concept**

Controlling the TLE94103 evaluation board with the GUI requires:

- The main board: TLE941xx Evaluation Board
- The TLE94103 daughter board
- The uIO stick
- 12 V DC power supply, which is able to provide sufficient current for the motor load. For evaluation purpose motor loads which less than 1 A current consumption are recommended

The uIO stick must be ordered separately.

Details about the uIO stick can be found [here](#).

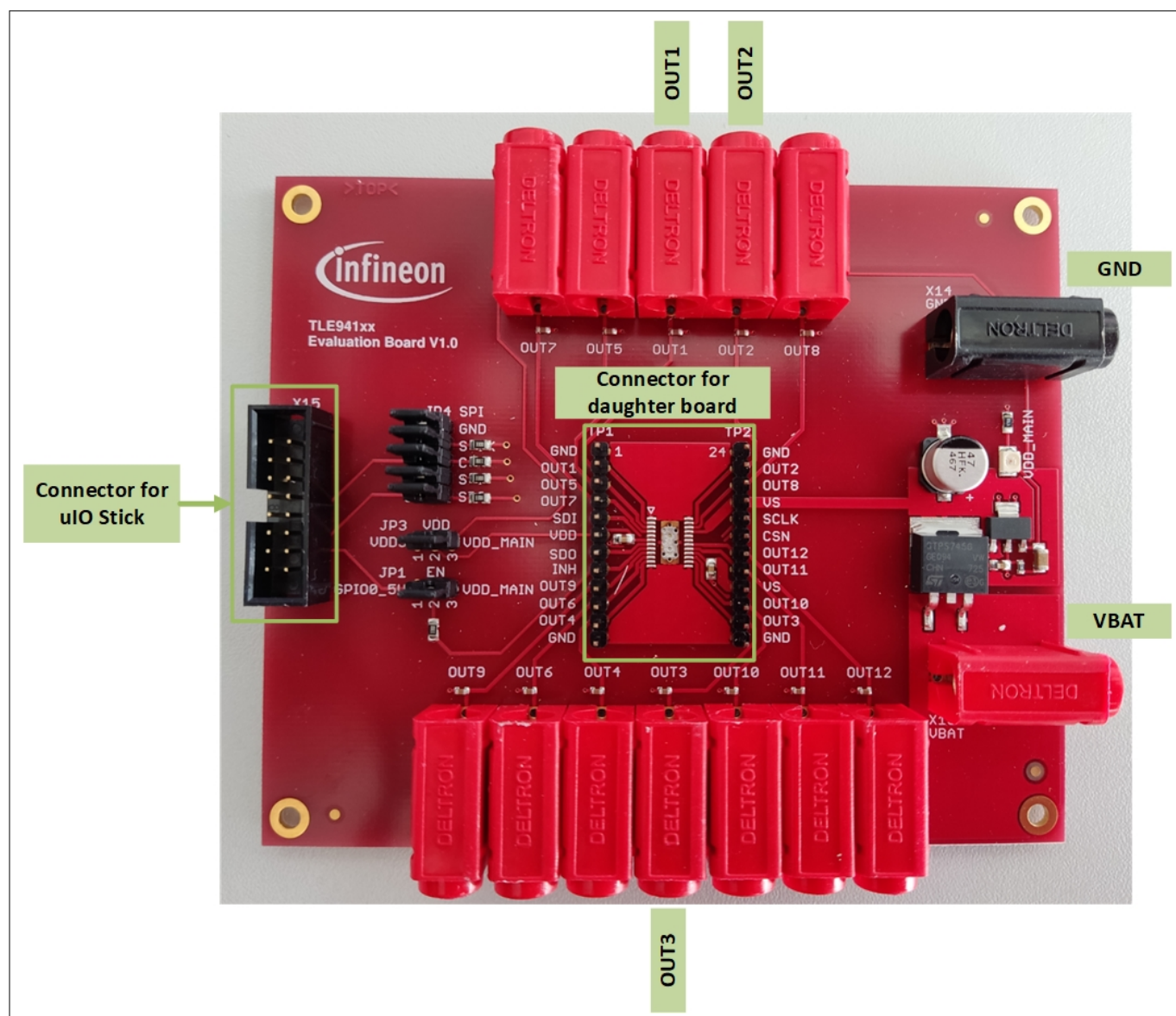
### 2.3 Hardware

Operating the GUI for the TLE94103 evaluation board requires:

- The main board: TLE941xx evaluation board
- The TLE94103 daughter board
- The uIO stick
- 12 V DC power supply, which is able to provide sufficient current for the motor load. For evaluation purpose motor loads which less than 1 A current consumption are recommended

## 2 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94103

### 2.3.1 Hardware description



**Figure 8** TLE94103 evaluation board – main board

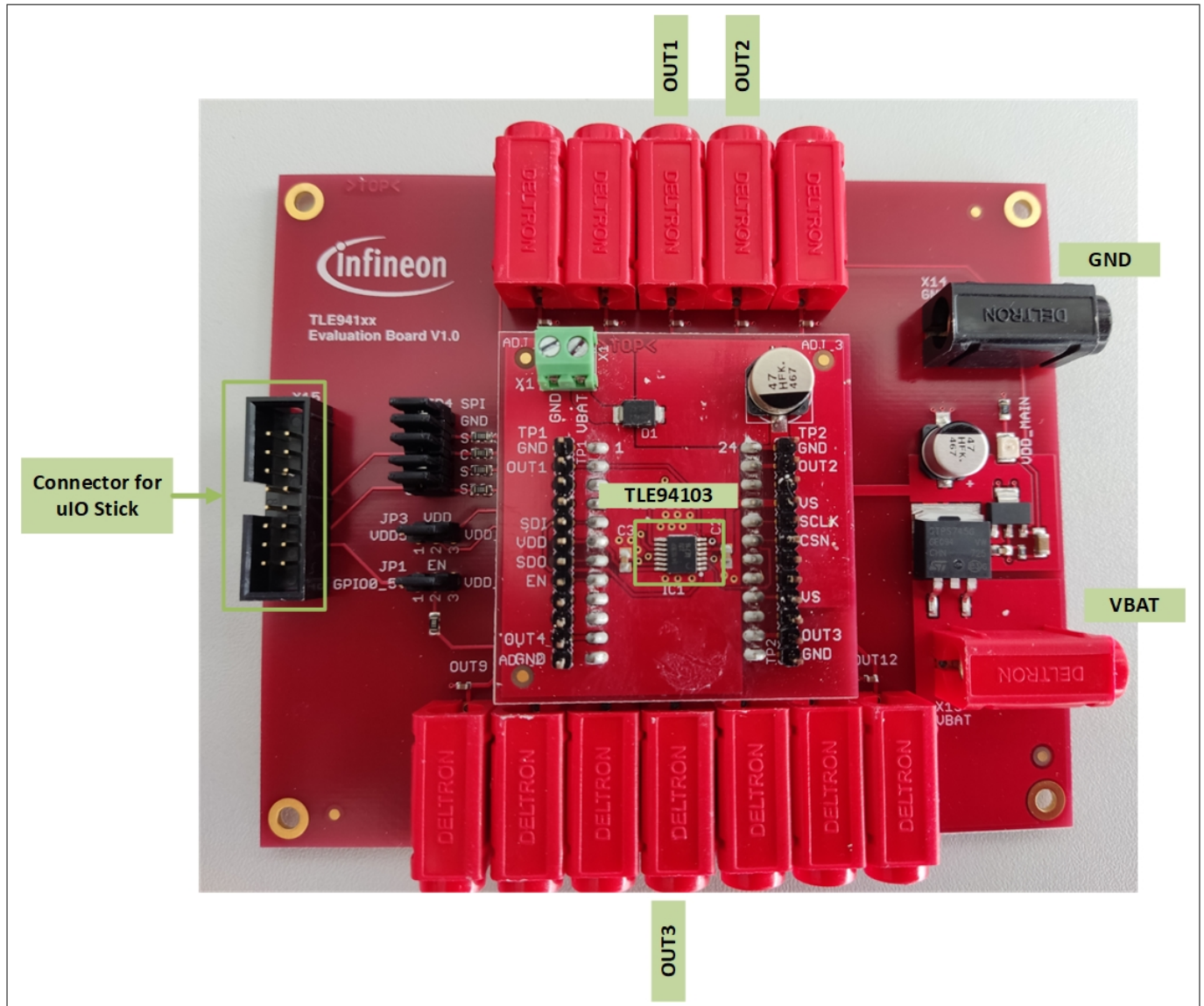


## 2 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94103



**Figure 9** TLE94103 evaluation board – daughter board

## 2 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94103



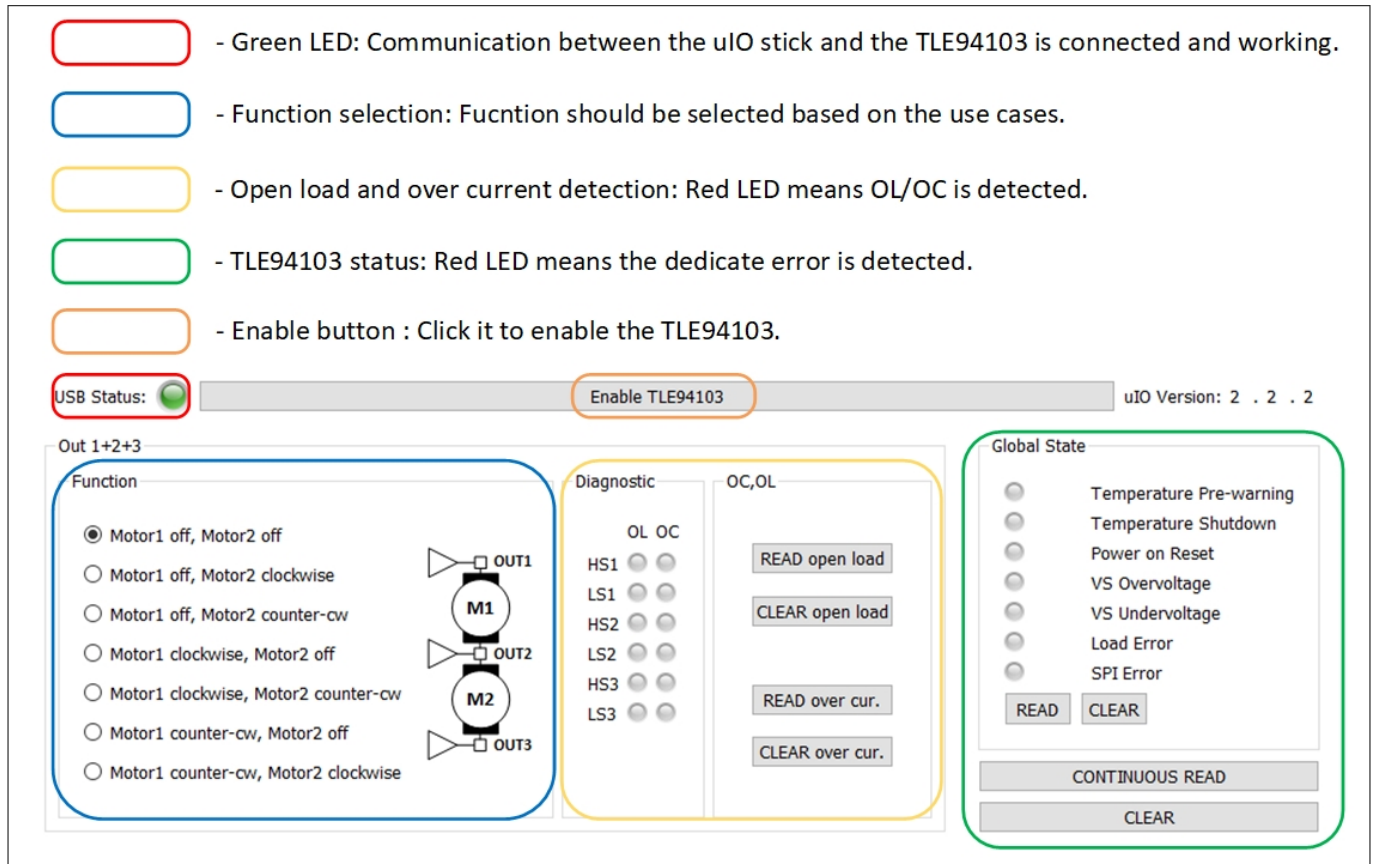
**Figure 10** TLE94103 evaluation board – main board with daughter board

### 2.4 Getting started

1. Plug in the TLE94103 daughter board
2. Connect the motors
3. Connect the uIO stick to the TLE94103 evaluation board and to the PC
4. Connect the 12 V supply
5. Turn on the 12 V supply
6. Start the TLE94103 GUI
7. To operate the motors:
  - a. Enable TLE94103
  - b. Select the function
  - c. If required:
    1. Clear the error flag for open load detection
    2. Clear the error flag for over current detection
    3. Clear the global status flags

## 2 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94103

### 2.5 Description of the GUI



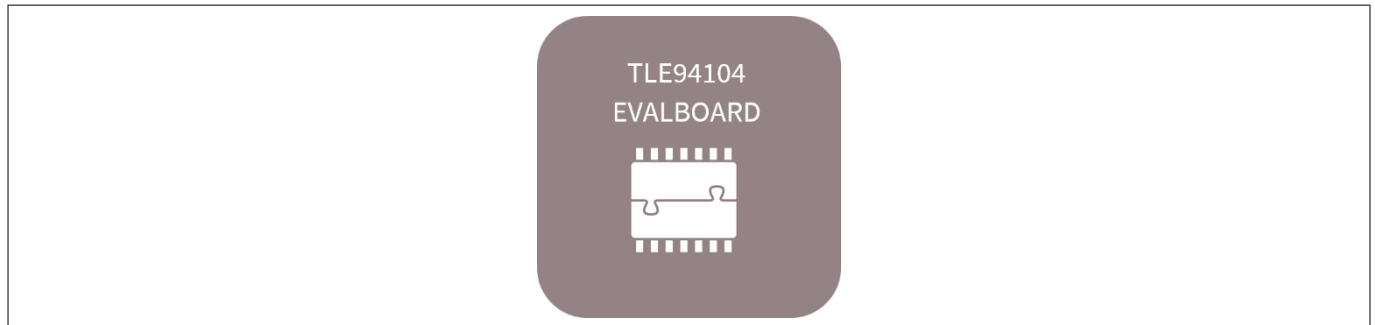
**Figure 11** GUI for the TLE94103 evaluation board

## 3 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94104

### 3 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94104

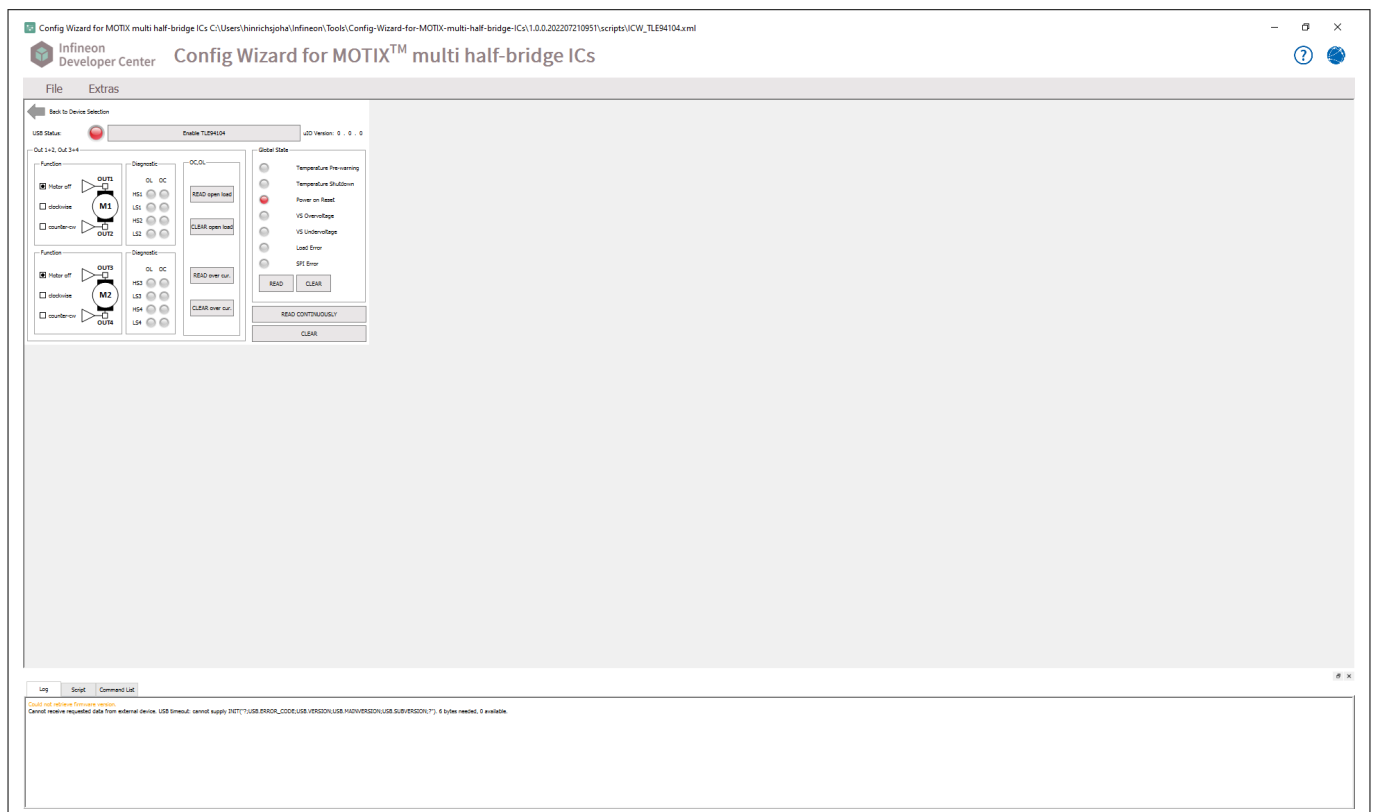
#### 3.1 Open Config Wizard for MOTIX™ multi half-bridge ICs for TLE94104 Evalboard

Select icon below to open the product view.



**Figure 12** Starting the GUI for the TLE94104 Evalboard

The following view will be displayed.



**Figure 13** Starting the GUI for the TLE94104 Evalboard

#### 3.2 Introduction

The TLE94104 evaluation board is intended to provide a simple and easy-to-use tool for getting familiar with the device features and for first application tests.

Refer to the corresponding product page for more details: [Link](#).



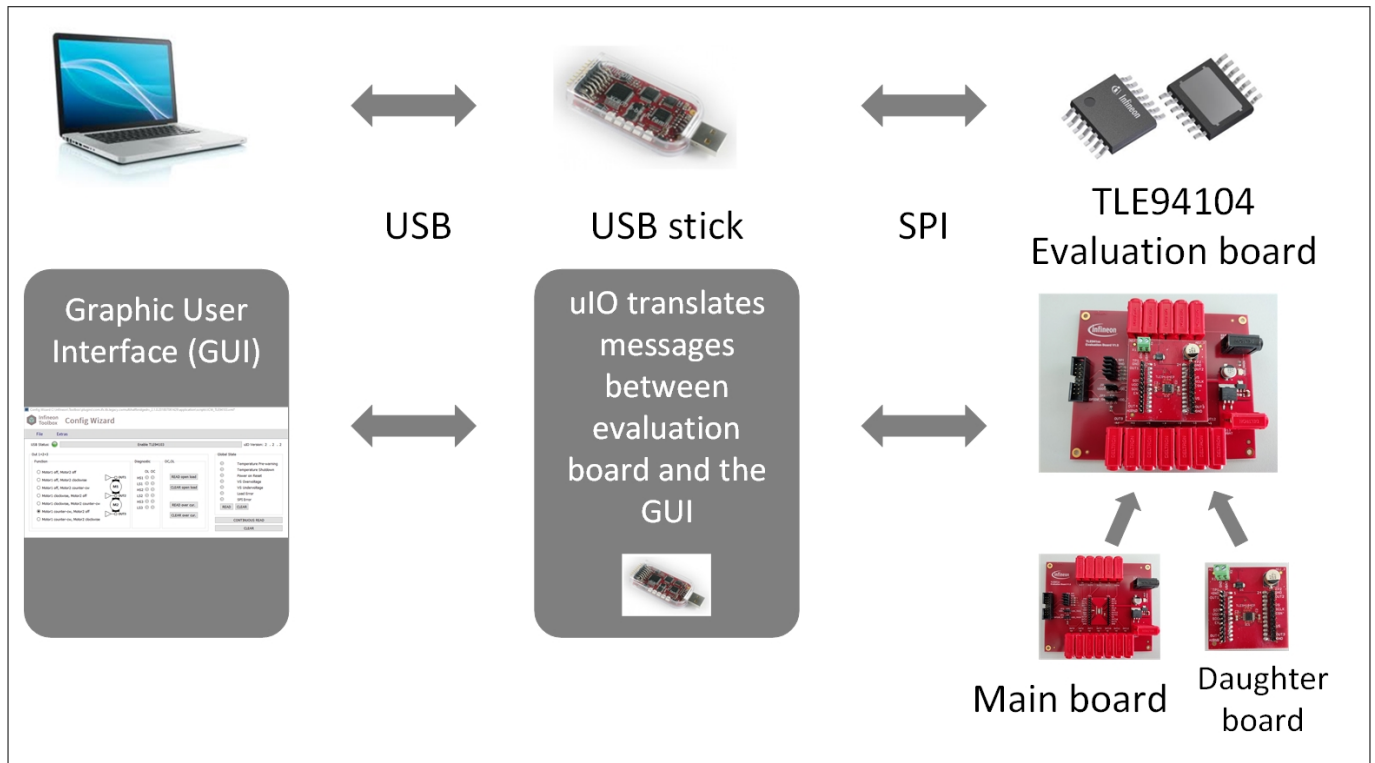
## 3 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94104

The uIO-stick is the interface between the PC and the TLE94104 evaluation board.

The SPI communication is emulated by the uIO-stick, which is controlled by the PC software.

The TLE94104 evaluation board has:

- A connector for the uIO-stick
- Connectors for the power supply
- Connectors for the motor output
- An active reverse battery protection



**Figure 14 TLE94104 evaluation board concept**

Controlling the TLE94104 evaluation board with the GUI requires:

- The main board: TLE941xx Evaluation Board
- The TLE94104 daughter board
- The uIO stick
- 12 V DC power supply, which is able to provide sufficient current for the motor load. For evaluation purpose motor loads which less than 1 A current consumption are recommended

The uIO stick must be ordered separately.

Details about the uIO stick can be found [here](#).

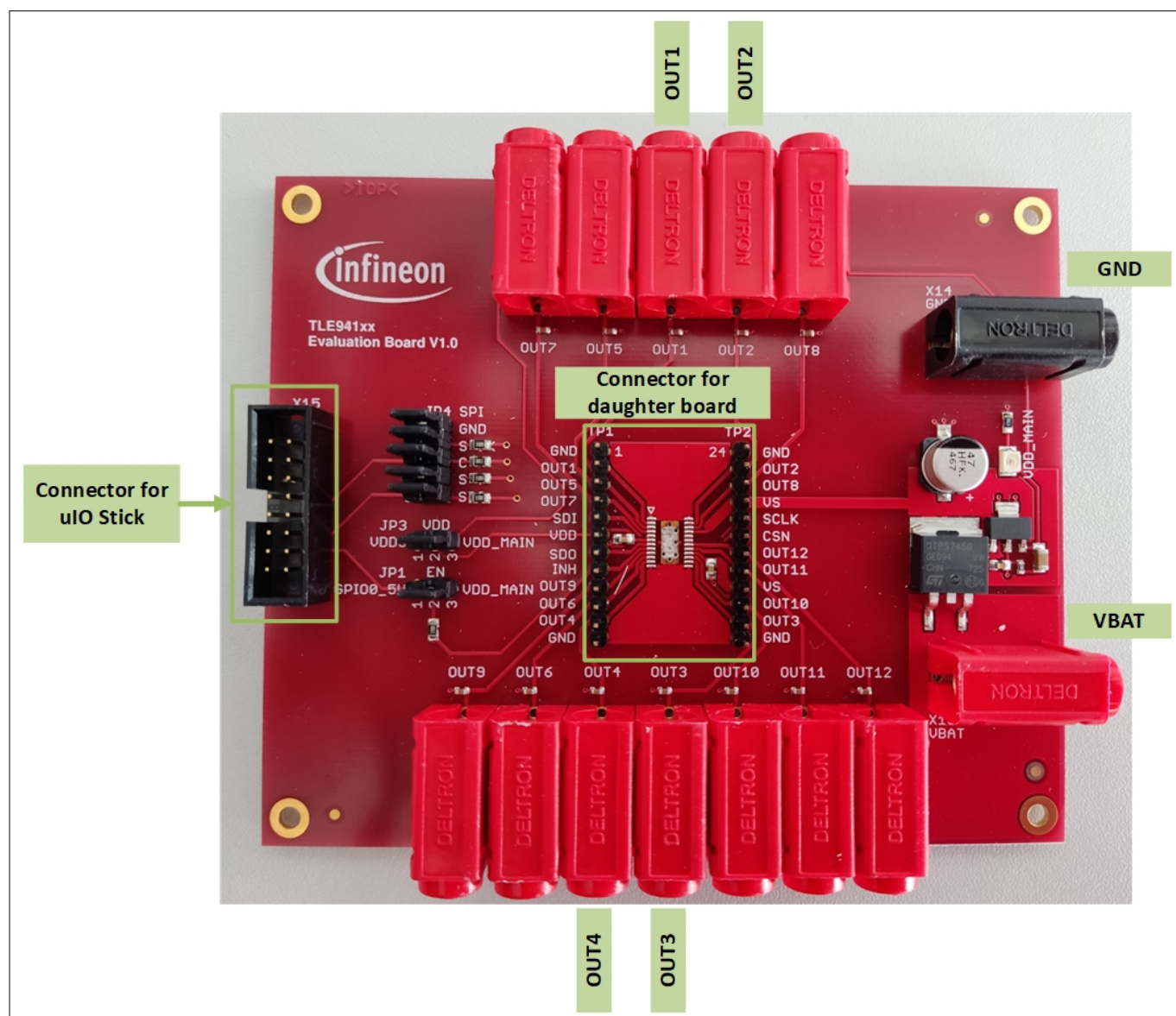
### 3.3 Hardware

Operating the GUI for the TLE94104 evaluation board requires:

- The main board: TLE941xx Evaluation Board
- The TLE94104 daughter board
- The uIO stick
- 12 V DC power supply, which is able to provide sufficient current for the motor load. For evaluation purpose motor loads which less than 1 A current consumption are recommended

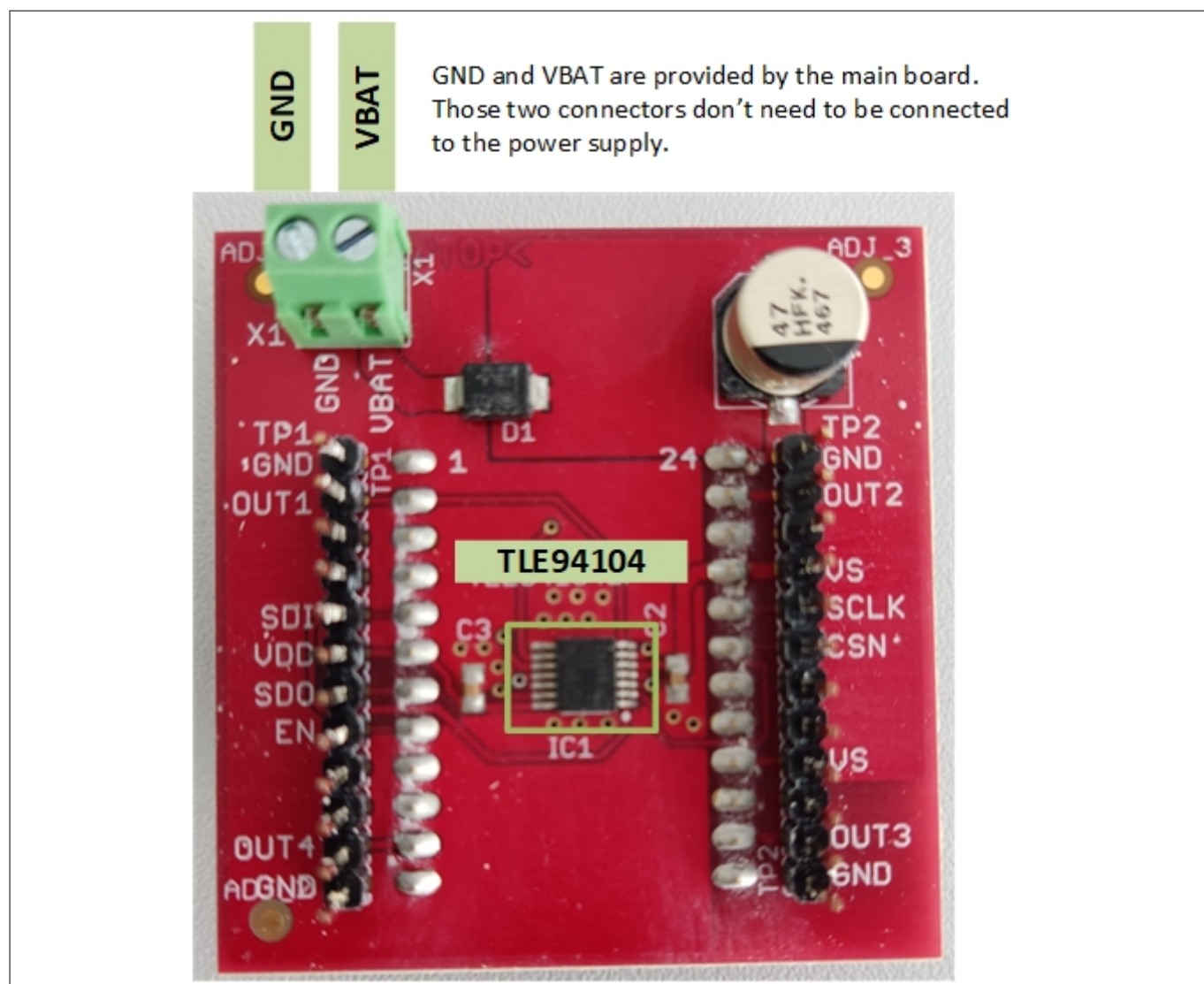
## 3 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94104

### 3.3.1 Hardware description



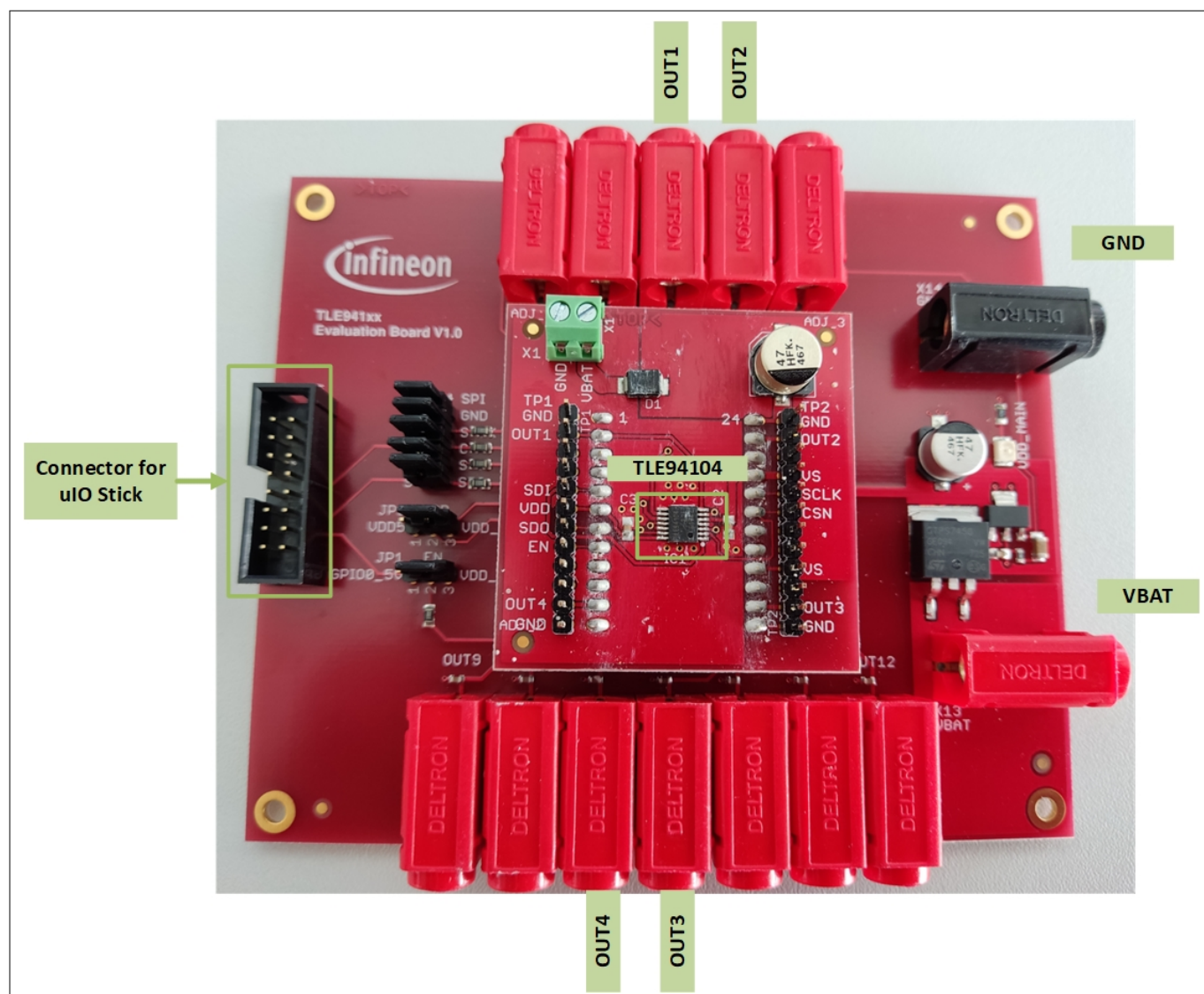
**Figure 15** TLE94104 evaluation board – main board

## 3 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94104



**Figure 16** TLE94104 evaluation board – daughter board

### 3 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94104



**Figure 17** TLE94104 evaluation board – main board with daughter board

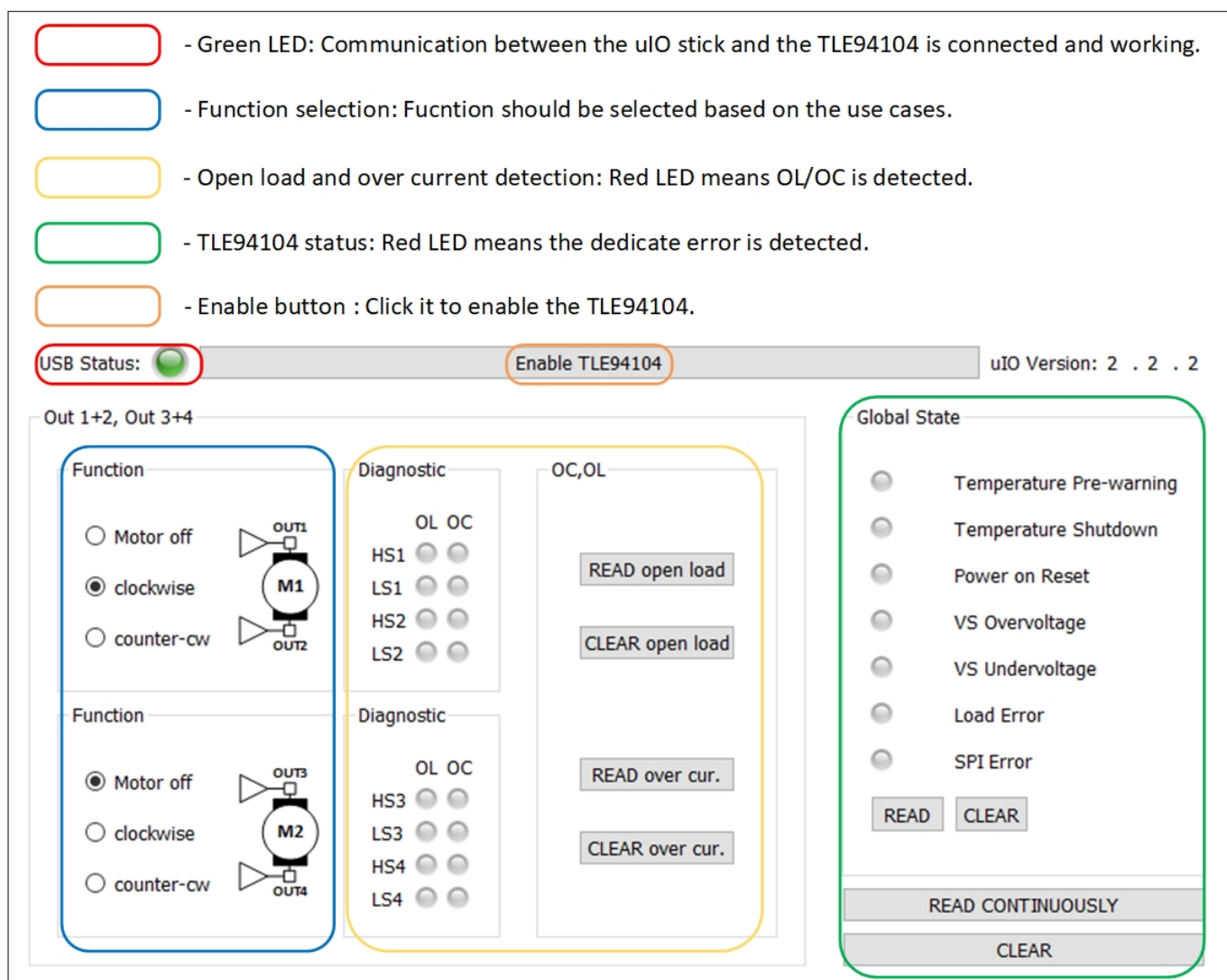
### 3.4 Getting started

- 1.** Plug in the TLE94104 daughter board
- 2.** Connect the motors
- 3.** Connect the uO stick to the TLE94104 evaluation board and to the PC
- 4.** Connect the 12 V supply
- 5.** Turn on the 12 V supply
- 6.** Start the TLE94104 GUI
- 7.** To operate the motors:
  - a.** Enable TLE94104
  - b.** Select the function
  - c.** If required:
    - 1.** Clear the error flag for open load detection
    - 2.** Clear the error flag for over current detection
    - 3.** Clear the global status flags



## 3 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94104

### 3.5 Description of the GUI



**Global State**

- ☐ Temperature Pre-warning
- ☐ Temperature Shutdown
- ☐ Power on Reset
- ☐ VS Overvoltage
- ☐ VS Undervoltage
- ☐ Load Error
- ☐ SPI Error

READ CLEAR

READ CONTINUOUSLY

CLEAR

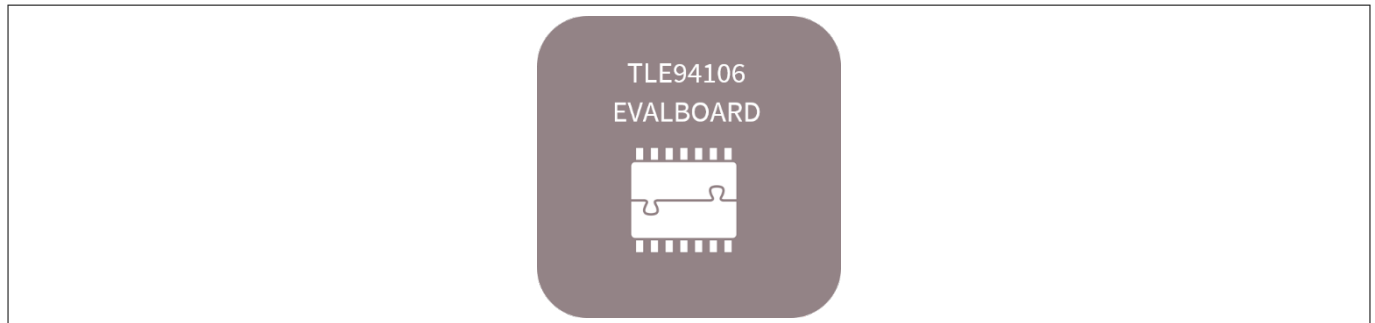
**Figure 18** GUI for the TLE94104 evaluation board

## 4 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94106

### 4 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94106

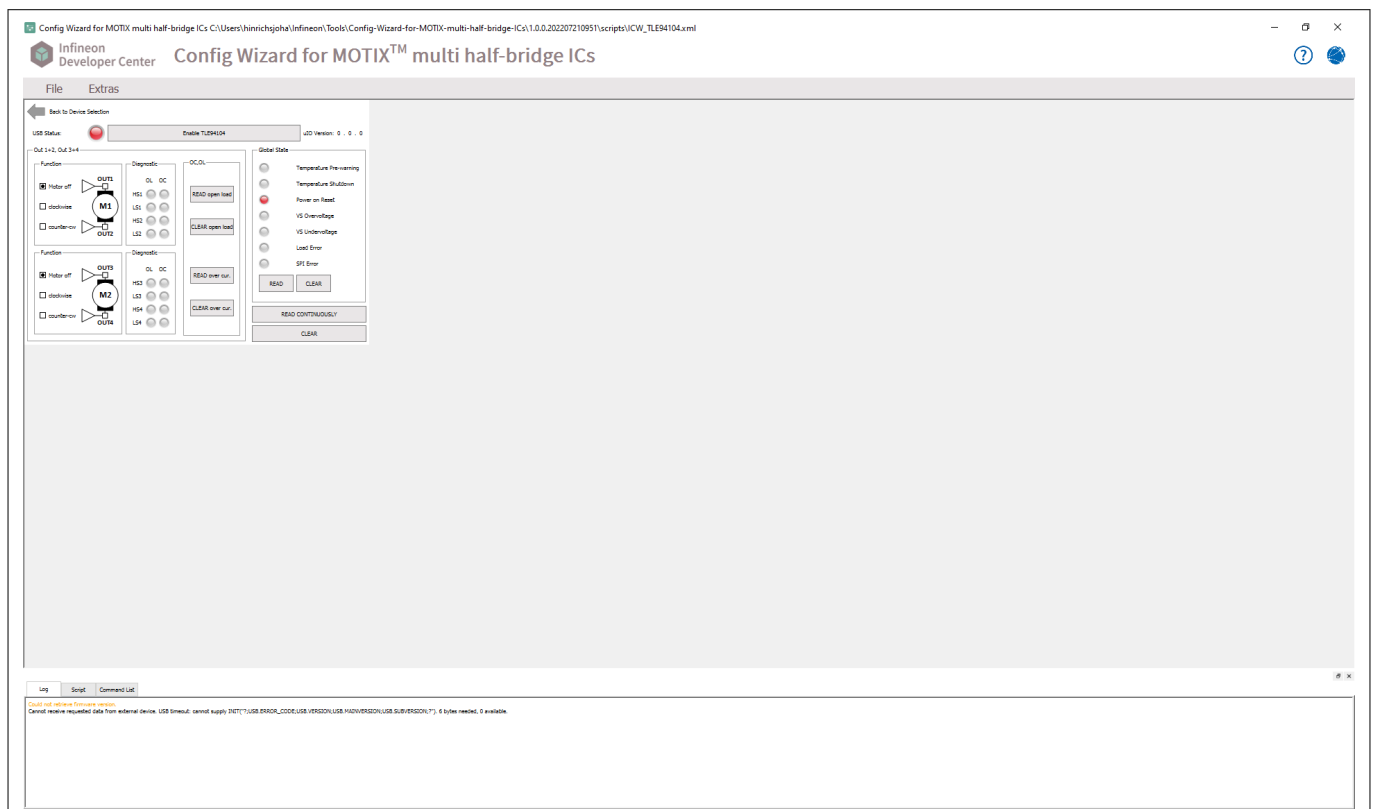
#### 4.1 Open Config Wizard for MOTIX™ multi half-bridge ICs for TLE94106 Evalboard

Select icon below to open the product view.



**Figure 19** Starting the GUI for the TLE94106 Evalboard

The following view will be displayed.



**Figure 20** Starting view of the GUI for the TLE94106 Evalboard

#### 4.2 Introduction

The TLE94106 evaluation board is intended to provide a simple and easy-to-use tool for getting familiar with the device features and for first application tests.

Refer to the corresponding product page for more details: [Link](#).

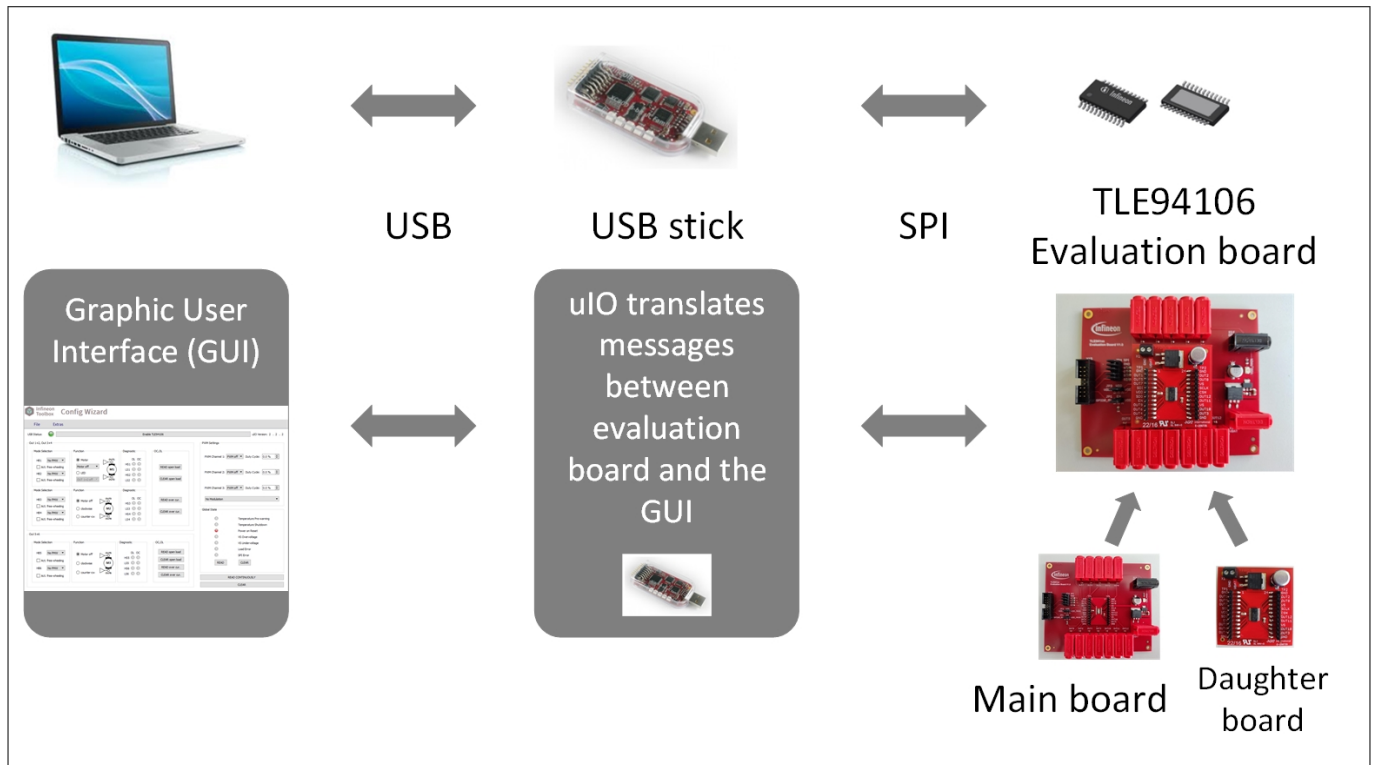
## 4 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94106

The uIO-stick is the interface between the PC and the TLE94106 evaluation board.

The SPI communication is emulated by the uIO-stick, which is controlled by the PC software.

The TLE94106 evaluation board has:

- A connector for the uIO-stick
- Connectors for the power supply
- Connectors for the motor output
- An active reverse battery protection



**Figure 21 TLE94106 evaluation board concept**

Controlling the TLE94106 evaluation board with the GUI requires:

- The main board: TLE941xx Evaluation Board
- The TLE94106 daughter board
- The uIO stick
- 12 V DC power supply, which is able to provide sufficient current for the motor load. For evaluation purpose motor loads which less than 1 A current consumption are recommended

The uIO stick must be ordered separately.

Details about the uIO stick can be found [here](#).

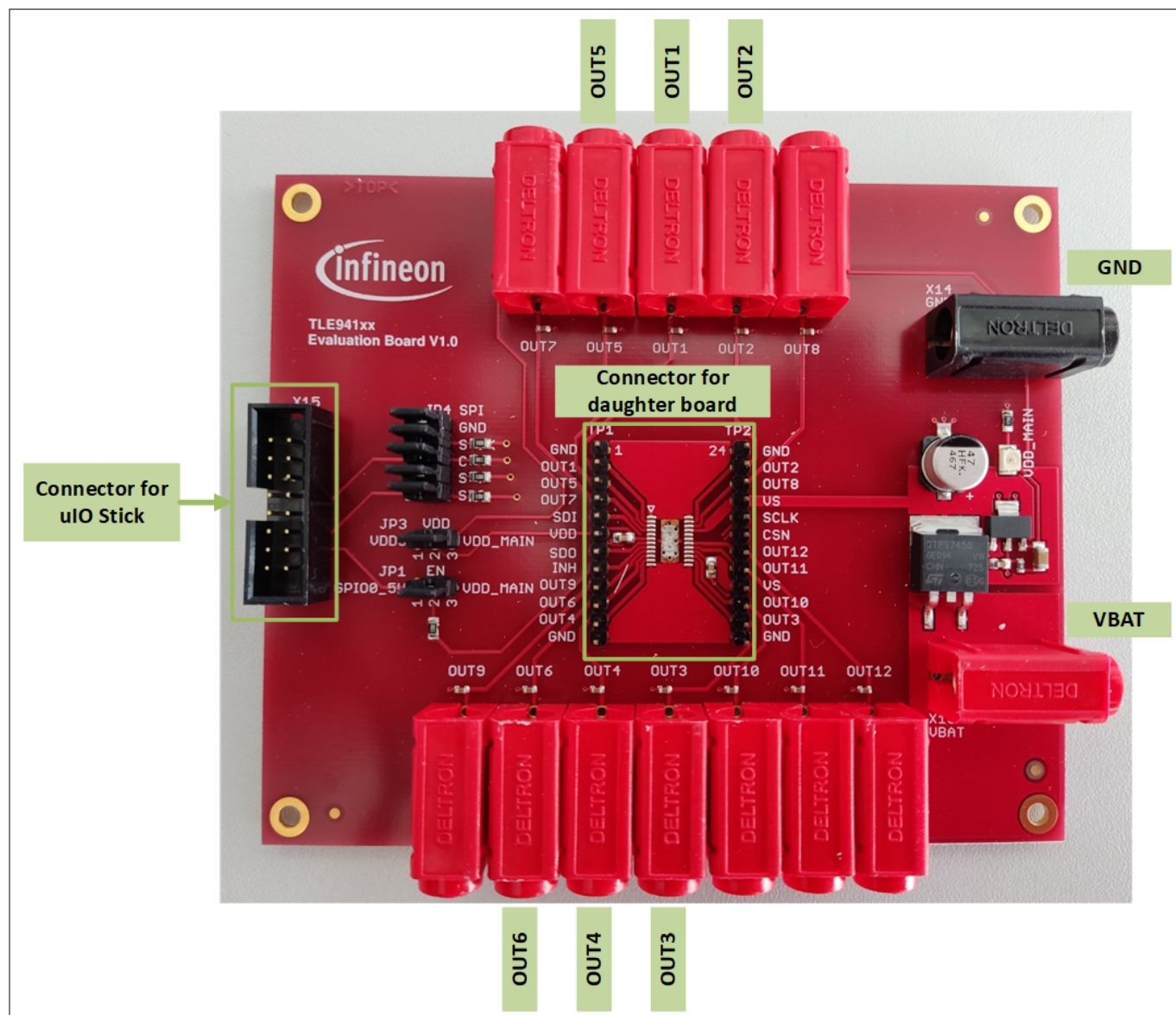
### 4.3 Hardware

Operating the GUI for the TLE94106 evaluation board requires:

- The main board: TLE941xx Evaluation Board
- The TLE94106 daughter board
- The uIO stick
- 12 V DC power supply, which is able to provide sufficient current for the motor load. For evaluation purpose motor loads which less than 1 A current consumption are recommended

## 4 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94106

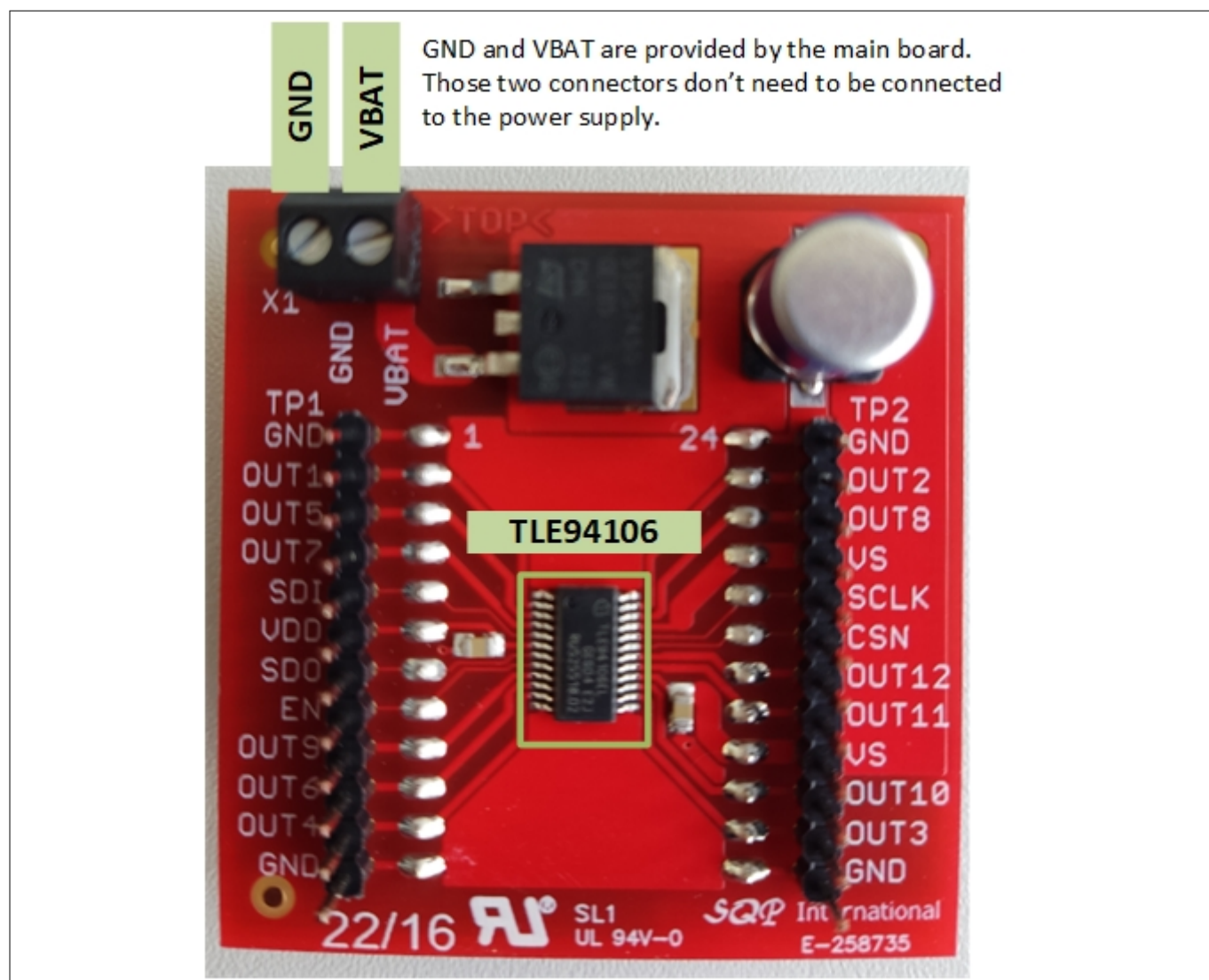
### 4.3.1 Hardware description



**Figure 22** TLE94106 evaluation board – main board

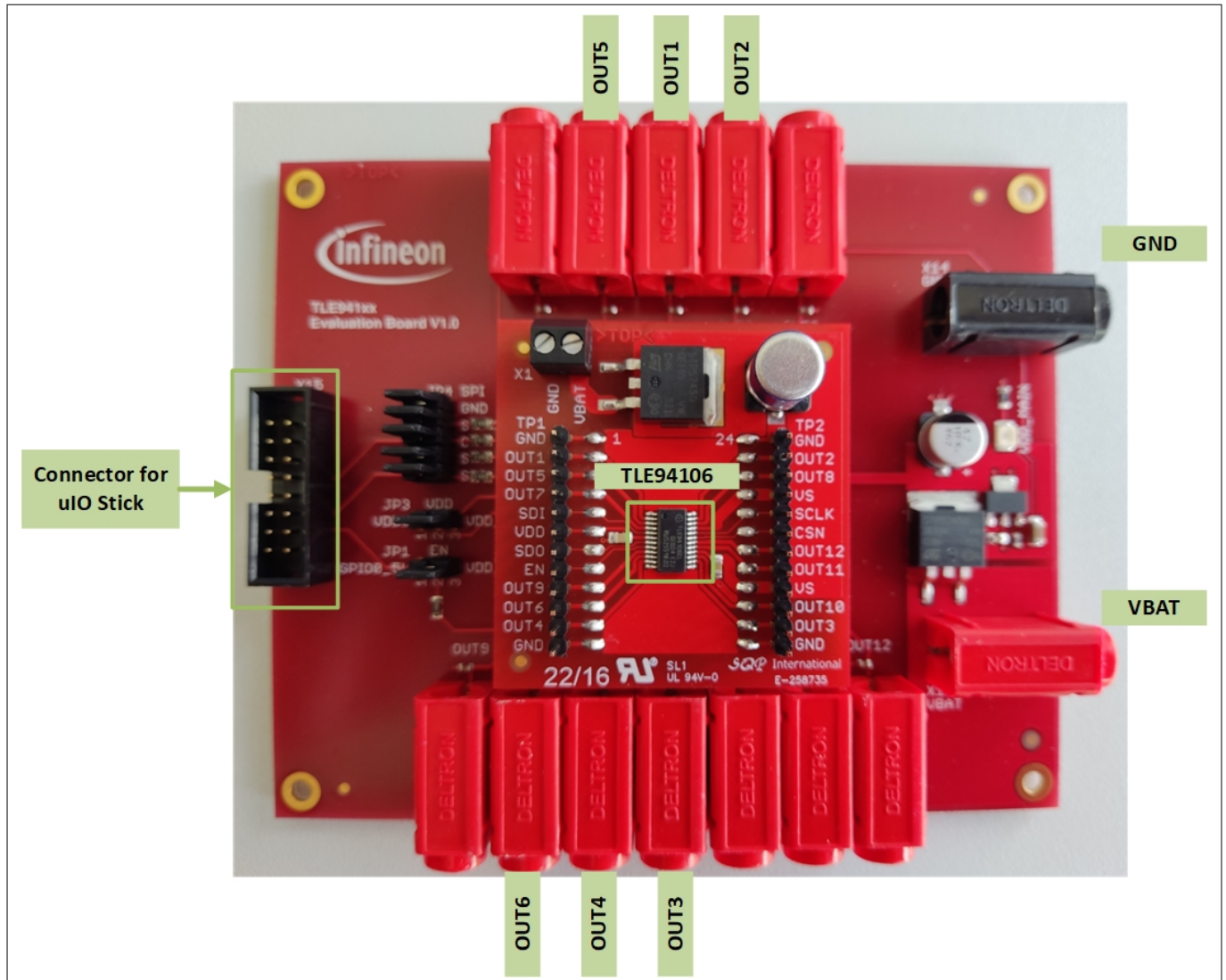


## 4 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94106



**Figure 23** TLE94106 evaluation board – daughter board

## 4 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94106



**Figure 24** TLE94106 evaluation board – main board with daughter board

### 4.4 Getting started

1. Plug in the TLE94106 daughter board
2. Connect the motors
3. Connect the uIO stick to the TLE94106 evaluation board and to the PC
4. Connect the 12 V supply
5. Turn on the 12 V supply
6. Start the TLE94106 GUI
7. To operate the motors:
  - a. Enable TLE94106
  - b. Select the function
  - c. If required:
    1. Clear the error flag for open load detection
    2. Clear the error flag for over current detection
    3. Clear the global status flags

## 4 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94106

### 4.5 Description of the GUI

  - Green LED: Communication between the uIO stick and the TLE94106 is connected and working.

  - Function selection: Function should be selected based on the use cases.

  - Open load and over current detection: Red LED means OL/OC is detected.

  - TLE94106 status: Red LED means the dedicated error is detected.

  - PWM setting: PWM frequency and duty cycle

  - Enable button : Click it to enable the TLE94106.

**Figure 25** GUI overview for the TLE94106 evaluation board

## 4 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94106

Out 1+2, Out 3+4

Mode Selection

HB1 No PMW

Act. free-wheeling

HB2 No PMW

Act. free-wheeling

Function

Motor

Motor off

LED

OUT 1+2 off

OUT1

OUT2

M1

Out 3+4

Mode Selection

HB3 No PMW

Act. free-wheeling

HB4 No PMW

Act. free-wheeling

Function

Motor off

clockwise

counter-cw

OUT3

OUT4

M2

Out 5+6

Mode Selection

HB5 No PMW

Act. free-wheeling

HB6 No PMW

Act. free-wheeling

Function

Motor off

clockwise

counter-cw

OUT5

OUT6

M3

PWM Settings

PWM Channel 1: PWM off Duty Cycle: 0.0 %

PWM Channel 2: PWM off Duty Cycle: 0.0 %

PWM Channel 3: PWM off Duty Cycle: 0.0 %

No Modulation

- Use case selection for HB1 and HB2: Motor or LED
- Motor rotation mode selection: Off, clockwise or counter clockwise
- Switching mode selection: No PWM, PWM controlled by channel 1, 2 or 3
- Freewheeling selection: Passive freewheeling or active freewheeling
- PWM frequency: Off, 80Hz, 100Hz or 200Hz
- Duty cycle setting for PWM signal
- Modulation frequency selection: 16.625kHz, 31.250kHz or 62.500kHz

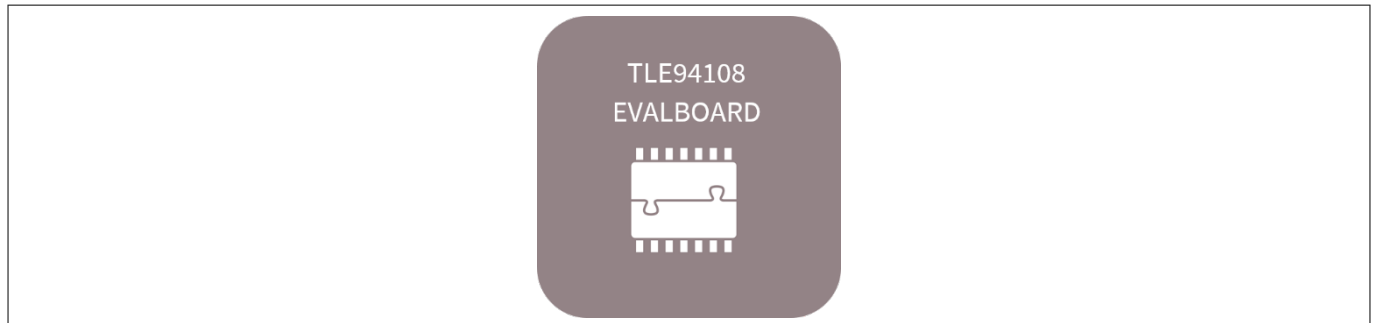
**Figure 26** Function selection for the TLE94106 evaluation board

## 5 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94108

### 5 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94108

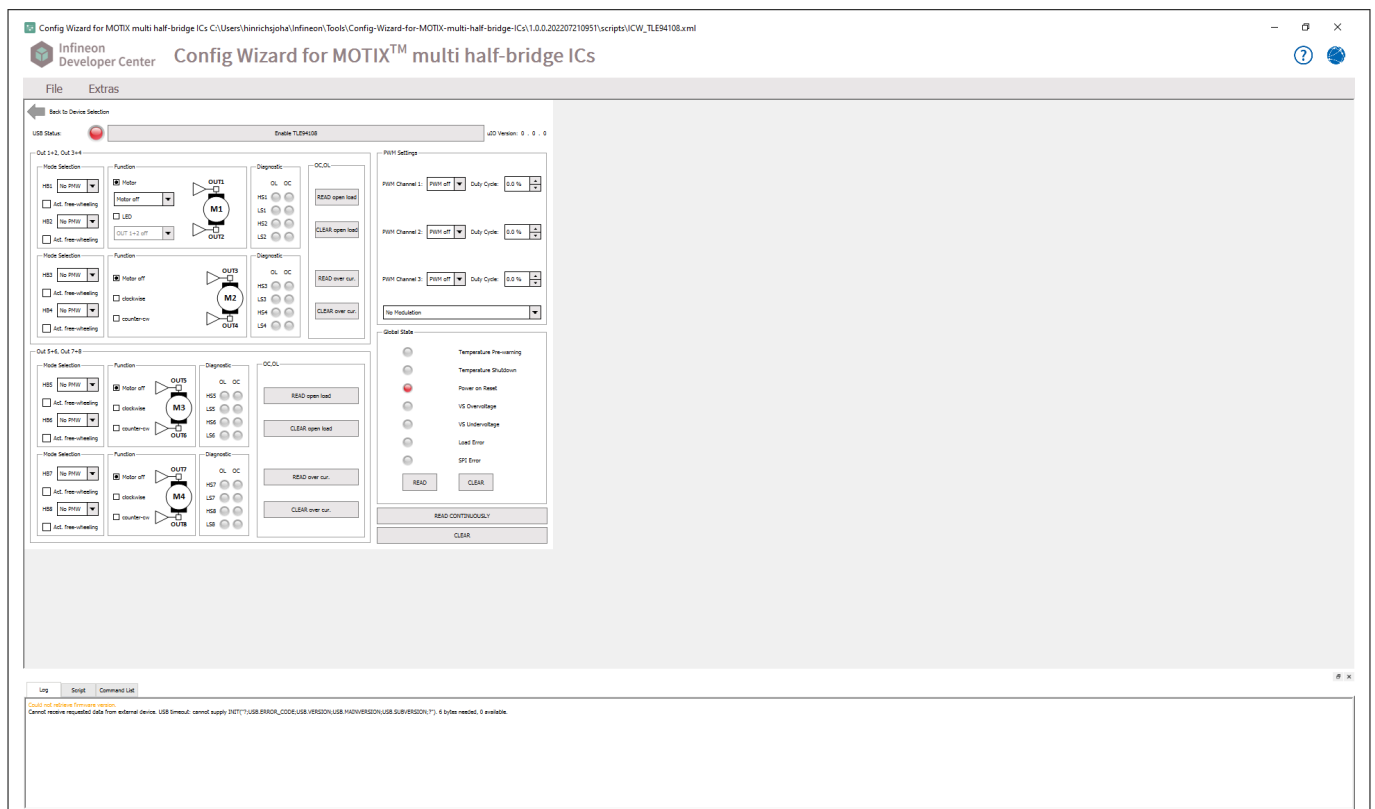
#### 5.1 Open Config Wizard for MOTIX™ multi half-bridge ICs for TLE94108 Evalboard

Select icon below to open the product view.



**Figure 27** Starting the GUI for the TLE94108 Evalboard

The following view will be displayed.



**Figure 28** Starting view of the GUI for the TLE94108 Evalboard

#### 5.2 Introduction

The TLE94108 evaluation board is intended to provide a simple and easy-to-use tool for getting familiar with the device features and for first application tests.

Refer to the corresponding product page for more details: [Link](#).

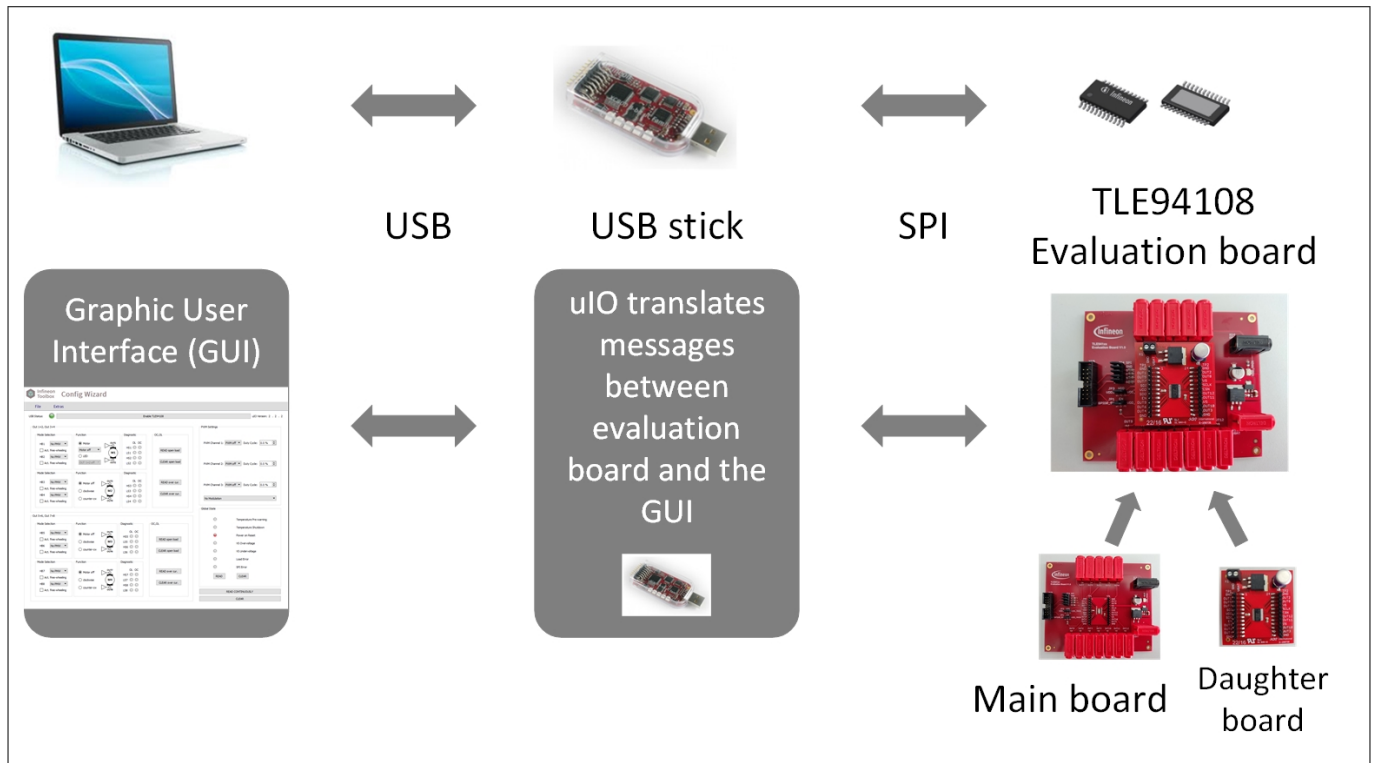
## 5 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94108

The uIO-stick is the interface between the PC and the TLE94108 evaluation board.

The SPI communication is emulated by the uIO-stick, which is controlled by the PC software.

The TLE94108 evaluation board has:

- A connector for the uIO-stick
- Connectors for the power supply
- Connectors for the motor output
- An active reverse battery protection



**Figure 29 TLE94108 evaluation board concept**

Controlling the TLE94108 evaluation board with the GUI requires:

- The main board: TLE941xx Evaluation Board
- The TLE94108 daughter board
- The uIO stick
- 12 V DC power supply, which is able to provide sufficient current for the motor load. For evaluation purpose motor loads which less than 1 A current consumption are recommended

The uIO stick must be ordered separately.

Details about the uIO stick can be found [here](#).

### 5.3 Hardware

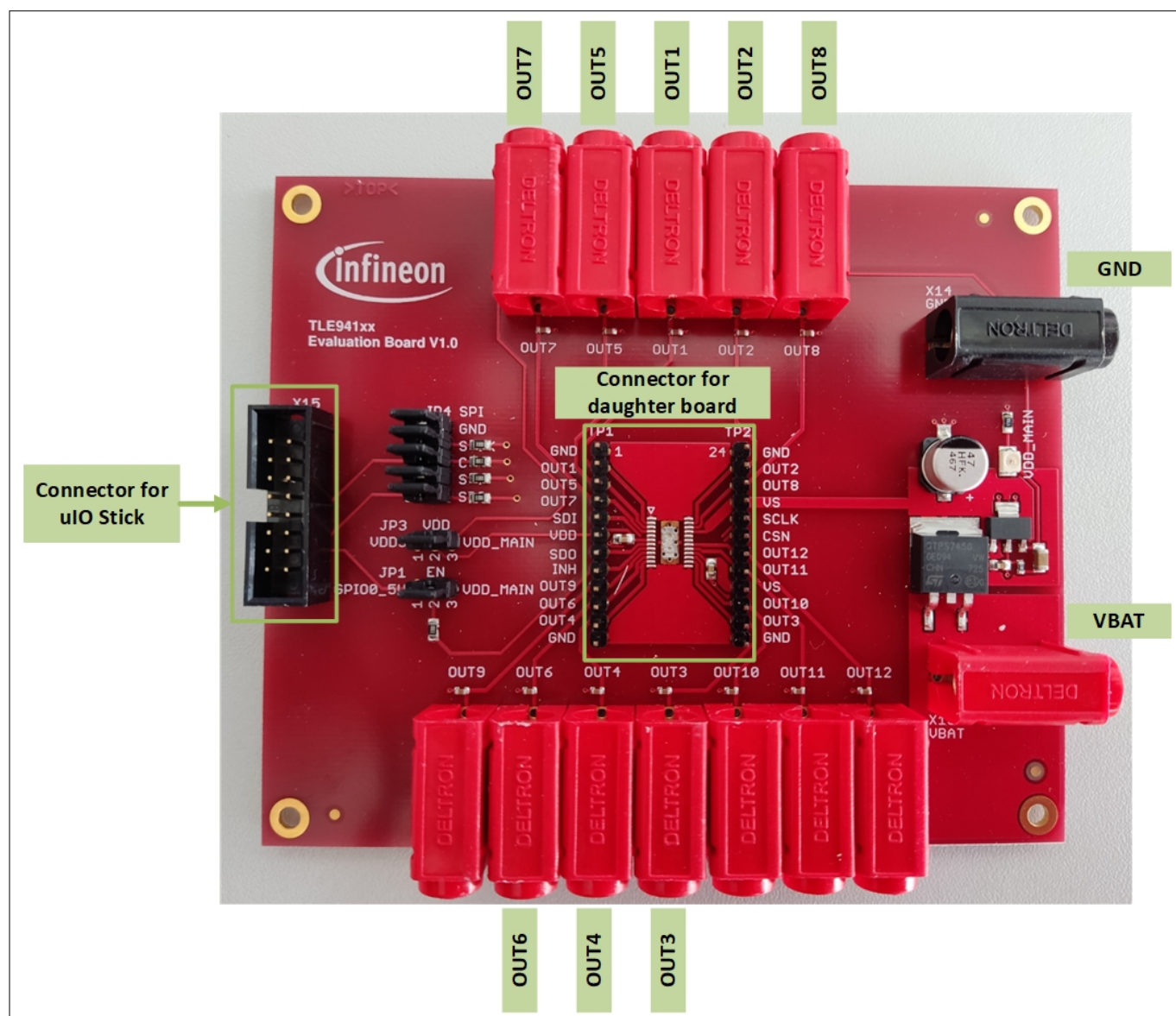
Operating the GUI for the TLE94108 evaluation board requires:

- The main board: TLE941xx Evaluation Board
- The TLE94108 daughter board
- The uIO stick
- 12 V DC power supply, which is able to provide sufficient current for the motor load. For evaluation purpose motor loads which less than 1 A current consumption are recommended



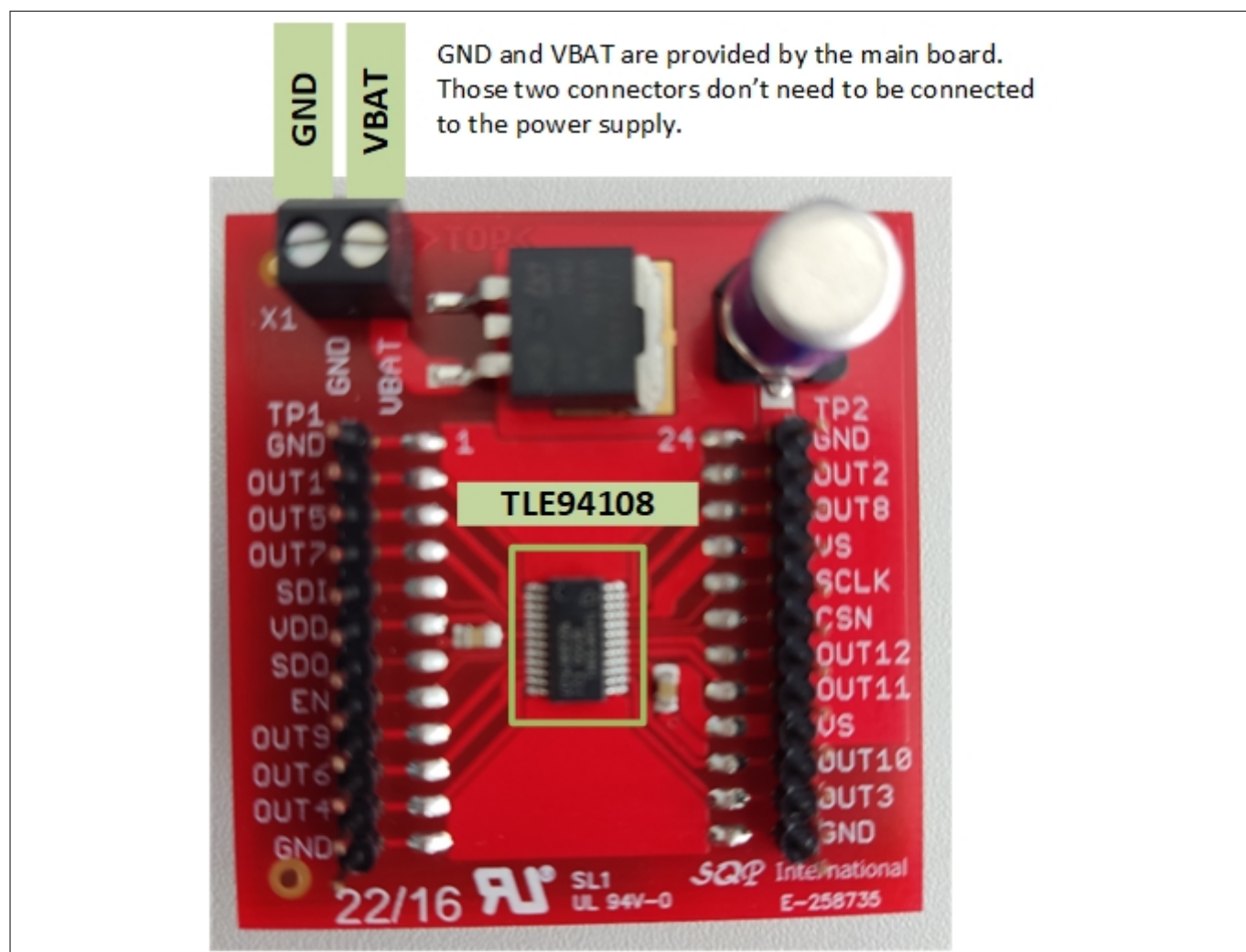
## 5 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94108

### 5.3.1 Hardware description



**Figure 30** TLE94108 evaluation board – main board

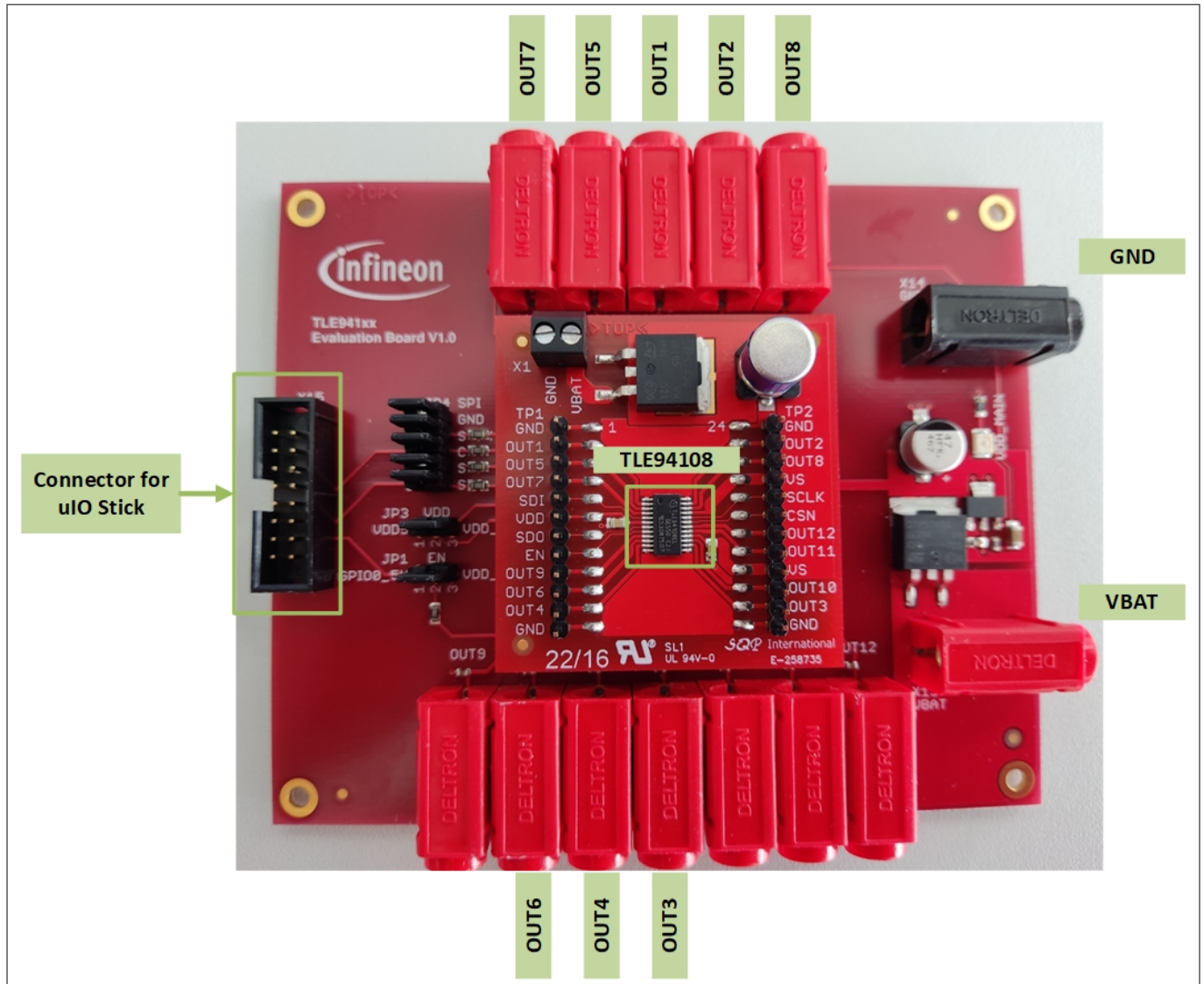
## 5 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94108



**Figure 31** TLE94108 evaluation board – daughter board



## 5 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94108



**Figure 32** TLE94108 evaluation board – main board with daughter board

### 5.4 Getting started

1. Plug in the TLE94108 daughter board
2. Connect the motors
3. Connect the uIO stick to the TLE94108 evaluation board and to the PC
4. Connect the 12 V supply
5. Turn on the 12 V supply
6. Start the TLE94108 GUI
7. To operate the motors:
8. Enable TLE94108
9. Select the function
10. If required:
  - a. Clear the error flag for open load detection
  - b. Clear the error flag for over current detection
  - c. Clear the global status flags

## 5 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94108

### 5.5 Description of the GUI

USB Status:  - Green LED: Communication between the uIO stick and the TLE94108 is connected and working.

Function selection:  - Function selection: Function should be selected based on the use cases.

Open load and over current detection:  - Open load and over current detection: Red LED means OL/OC is detected.

TLE94108 status:  - TLE94108 status: Red LED means the dedicated error is detected.

PWM setting:  - PWM setting: PWM frequency and duty cycle

Enable button:  - Enable button: Click it to enable the TLE94108.

**Figure 33** GUI overview for the TLE94108 evaluation board

## 5 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94108

Out 1+2, Out 3+4

Mode Selection

HB1 No PWM  
Act. free-wheeling

HB2 No PWM  
Act. free-wheeling

Function

Motor  
Motor off  
LED  
OUT 1+2 off

Out 3+4

Mode Selection

HB3 No PWM  
Act. free-wheeling

HB4 No PWM  
Act. free-wheeling

Function

Motor off  
clockwise  
counter-cw

Out 5+6, Out 7+8

Mode Selection

HB5 No PWM  
Act. free-wheeling

HB6 No PWM  
Act. free-wheeling

Function

Motor off  
clockwise  
counter-cw

Out 7+8

Mode Selection

HB7 No PWM  
Act. free-wheeling

HB8 No PWM  
Act. free-wheeling

Function

Motor off  
clockwise  
counter-cw

PWM Settings

PWM Channel 1: PWM off Duty Cycle: 0.0 %

PWM Channel 2: PWM off Duty Cycle: 0.0 %

PWM Channel 3: PWM off Duty Cycle: 0.0 %

No Modulation

- Use case selection for HB1 and HB2: Motor or LED
- Motor rotation mode selection: Off, clockwise or counter clockwise
- Switching mode selection: No PWM, PWM controlled by channel 1, 2 or 3
- Freewheeling selection: Passive freewheeling or active freewheeling
- PWM frequency: Off, 80Hz, 100Hz or 200Hz
- Duty cycle setting for PWM signal
- Modulation frequency selection: 16.625kHz, 31.250kHz or 62.500kHz

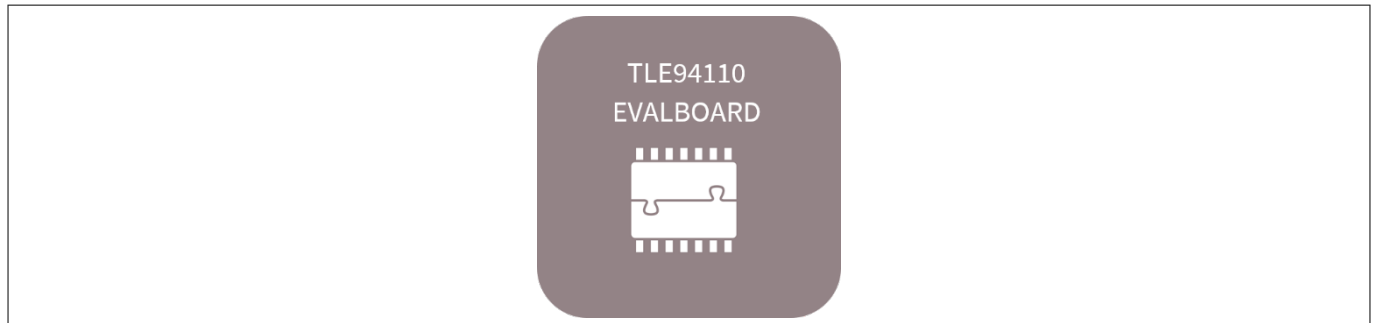
**Figure 34** Function selection for the TLE94108 evaluation board

## 6 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94110

### 6 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94110

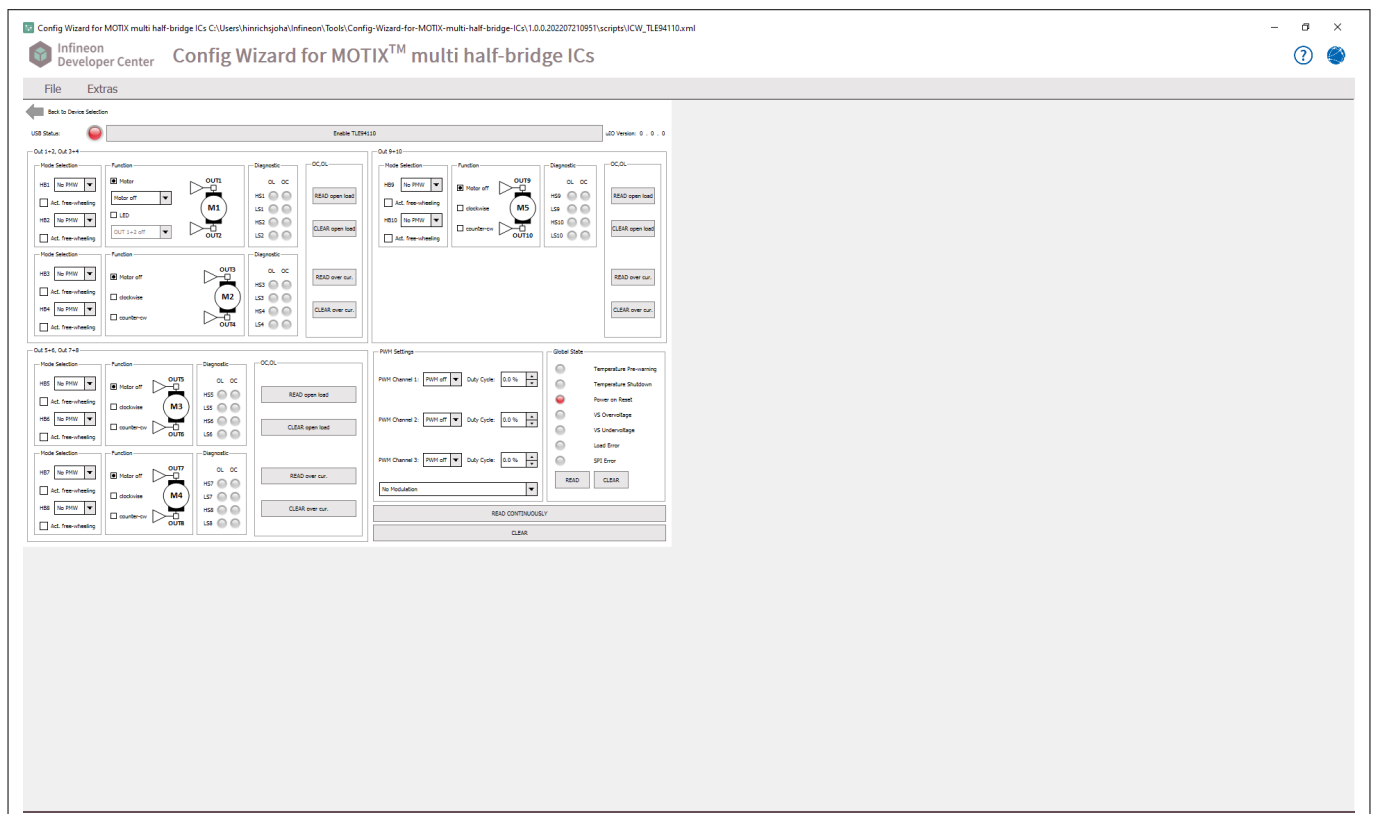
#### 6.1 Open Config Wizard for MOTIX™ multi half-bridge ICs for TLE94110 Evalboard

Select icon below to open the product view.



**Figure 35** Starting the GUI for the TLE94110 Evalboard

The following view will be displayed.



**Figure 36** Starting view of the GUI for the TLE94110 Evalboard

#### 6.2 Introduction

The TLE94110 evaluation board is intended to provide a simple and easy-to-use tool for getting familiar with the device features and for first application tests.

Refer to the corresponding product page for more details: [Link](#).

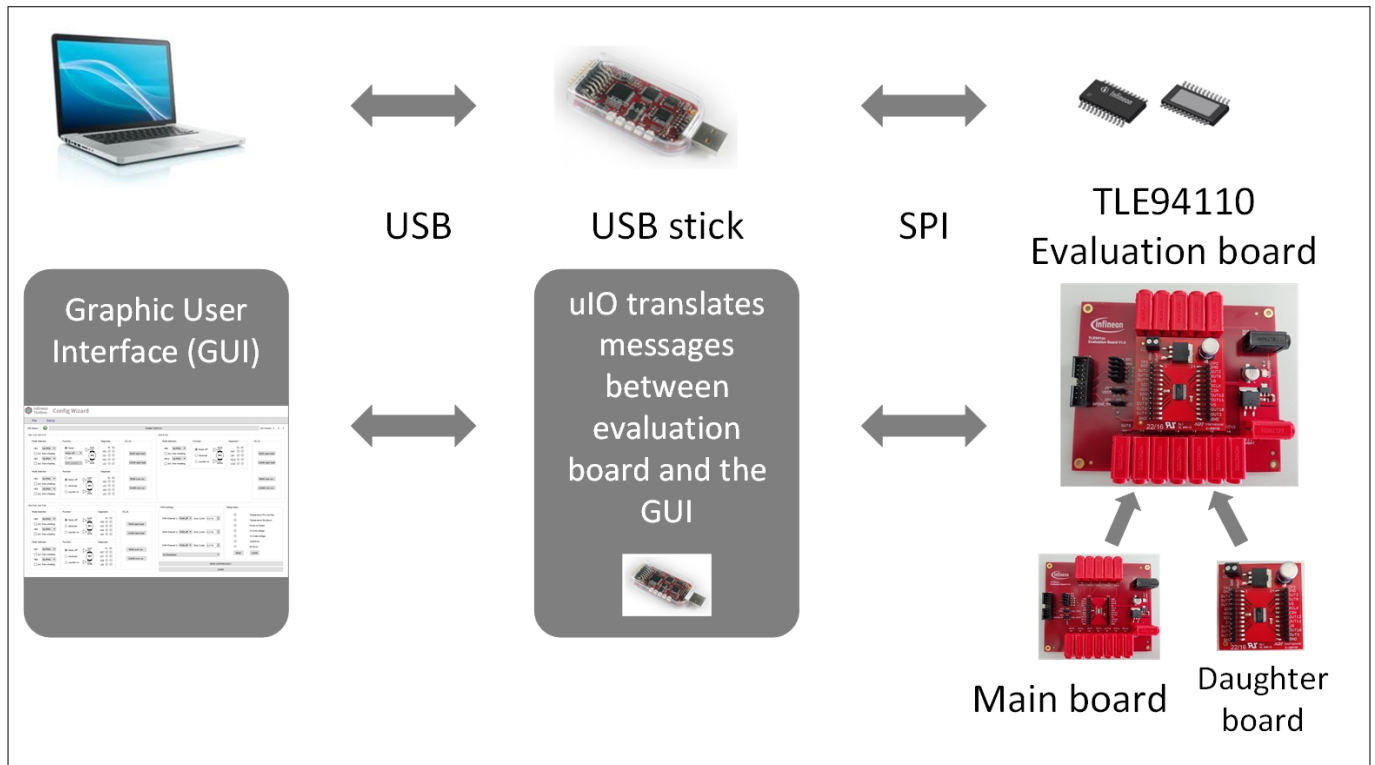
## 6 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94110

The uIO-stick is the interface between the PC and the TLE94110 evaluation board.

The SPI communication is emulated by the uIO-stick, which is controlled by the PC software.

The TLE94110 evaluation board has:

- A connector for the uIO-stick
- Connectors for the power supply
- Connectors for the motor output
- An active reverse battery protection



**Figure 37 TLE94110 evaluation board concept**

Controlling the TLE94110 evaluation board with the GUI requires:

- The main board: TLE941xx Evaluation Board
- The TLE94110 daughter board
- The uIO stick
- 12 V DC power supply, which is able to provide sufficient current for the motor load. For evaluation purpose motor loads which less than 1 A current consumption are recommended

The uIO stick must be ordered separately.

Details about the uIO stick can be found [here](#).

### 6.3 Hardware

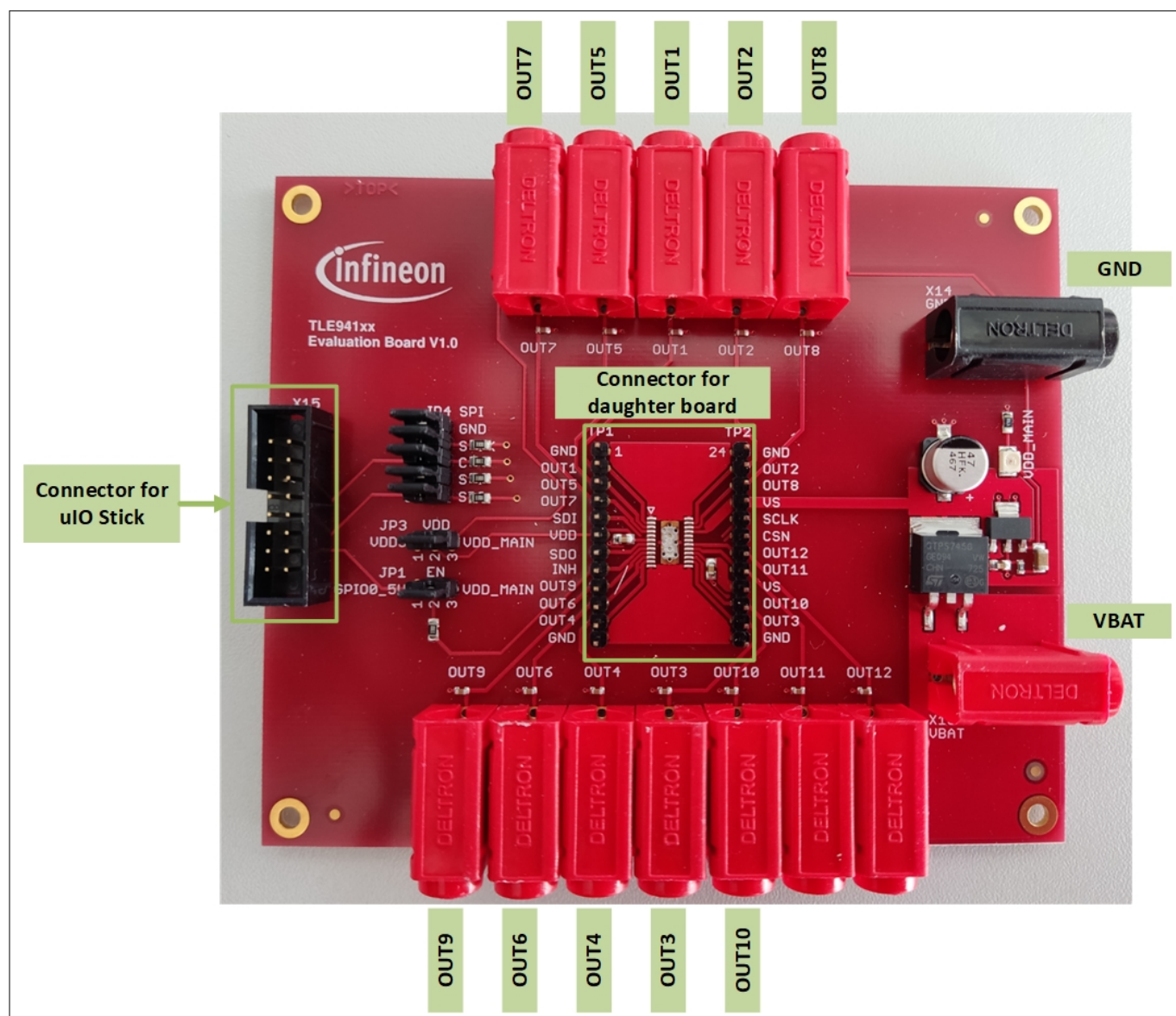
Operating the GUI for the TLE94110 evaluation board requires:

- The main board: TLE941xx Evaluation Board
- The TLE94110 daughter board
- The uIO stick
- 12 V DC power supply, which is able to provide sufficient current for the motor load. For evaluation purpose motor loads which less than 1 A current consumption are recommended



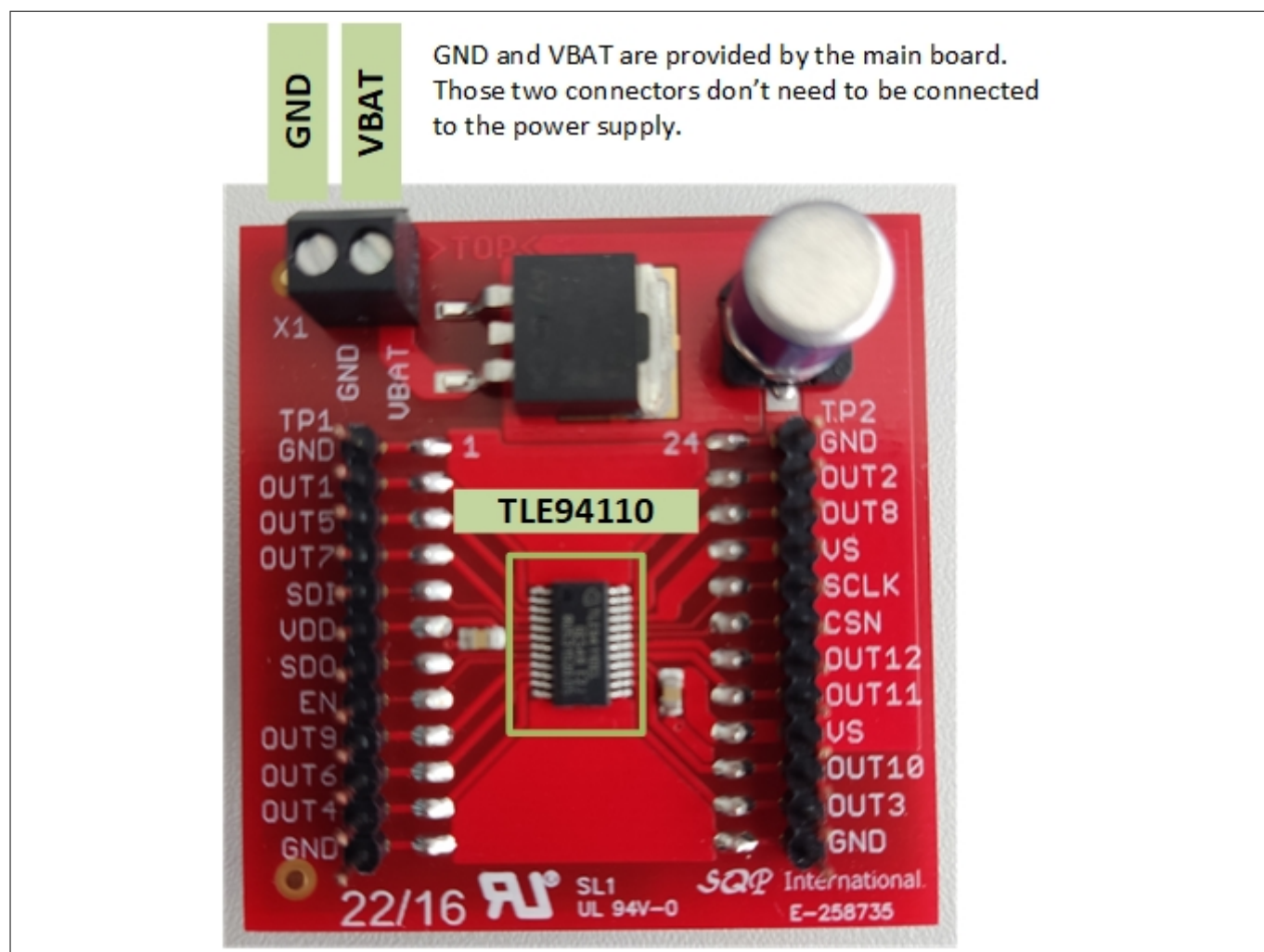
## 6 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94110

### 6.3.1 Hardware description



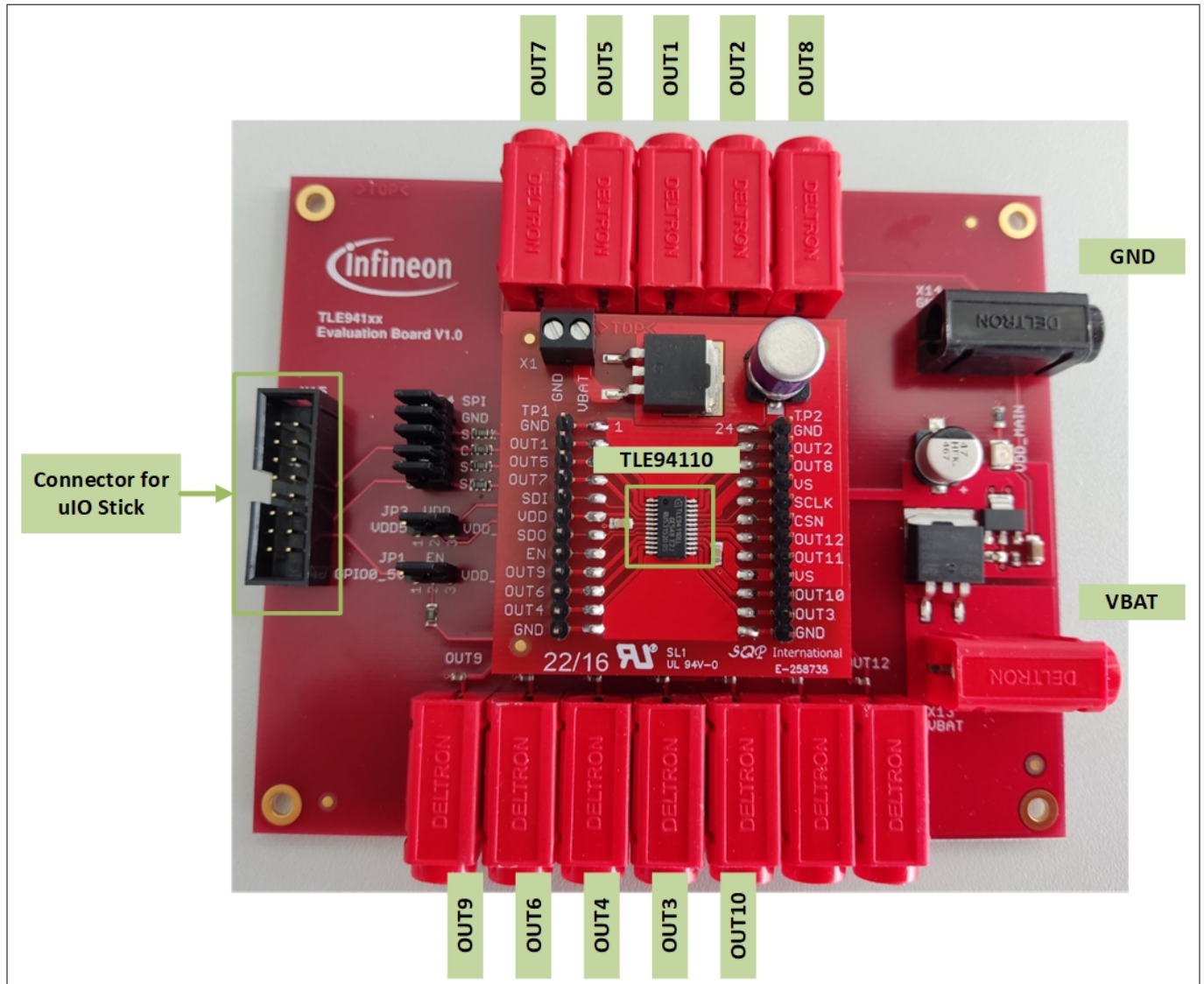
**Figure 38** TLE94110 evaluation board – main board

## 6 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94110



**Figure 39** TLE94110 evaluation board – daughter board

## 6 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94110



**Figure 40** TLE94110 evaluation board – main board with daughter board

### 6.4 Getting started

1. Plug in the TLE94110 daughter board
2. Connect the motors
3. Connect the uIO stick to the TLE94110 evaluation board and to the PC
4. Connect the 12 V supply
5. Turn on the 12 V supply
6. Start the TLE94110 GUI
7. To operate the motors:
  - a. Enable TLE94110
  - b. Select the function
  - c. If required:
    1. Clear the error flag for open load detection
    2. Clear the error flag for over current detection
    3. Clear the global status flags



## 6 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94110

### 6.5 Description of the GUI

  - Green LED: Communication between the uIO stick and the TLE94110 is connected and working.  
  - Function selection: Function should be selected based on the use cases.  
  - Open load and over current detection: Red LED means OL/OC is detected.  
  - TLE94110 status: Red LED means the dedicated error is detected.  
  - PWM setting: PWM frequency and duty cycle  
  - Enable button : Click it to enable the TLE94110  
  - Read and clear the error flags.

**Figure 41** GUI overview for the TLE94110 evaluation board

## 6 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94110

**Out 1+2, Out 3+4**

**Mode Selection**

HB1: No PWM (selected), Act. free-wheeling (unchecked)

HB2: No PWM (selected), Act. free-wheeling (unchecked)

**Function**

Motor (selected), Motor off (selected), LED (unchecked), OUT 1+2 off (selected)

**Out 5+6, Out 7+8**

**Mode Selection**

HB3: No PWM (selected), Act. free-wheeling (unchecked)

HB4: No PWM (selected), Act. free-wheeling (unchecked)

**Function**

Motor off (selected), clockwise (unchecked), counter-cw (unchecked)

**Out 9+10**

**Mode Selection**

HB9: No PWM (selected), Act. free-wheeling (unchecked)

HB10: No PWM (selected), Act. free-wheeling (unchecked)

**Function**

Motor off (selected), clockwise (unchecked), counter-cw (unchecked)

**PWM Settings**

PWM Channel 1: PWM off (selected), Duty Cycle: 0.0 %

PWM Channel 2: PWM off (selected), Duty Cycle: 0.0 %

PWM Channel 3: PWM off (selected), Duty Cycle: 0.0 %

No Modulation (selected)

**Legend:**

- Red box: Use case selection for HB1 and HB2: Motor or LED
- Green box: Motor rotation mode selection: Off, clockwise or counter clockwise
- Blue box: Switching mode selection: No PWM, PWM controlled by channel 1, 2 or 3
- Orange box: Freewheeling selection: Passive freewheeling or active freewheeling
- Pink box: PWM frequency: Off, 80Hz, 100Hz or 200Hz
- Yellow box: Duty cycle setting for PWM signal
- Purple box: Modulation frequency selection: 16.625kHz, 31.250kHz or 62.500kHz

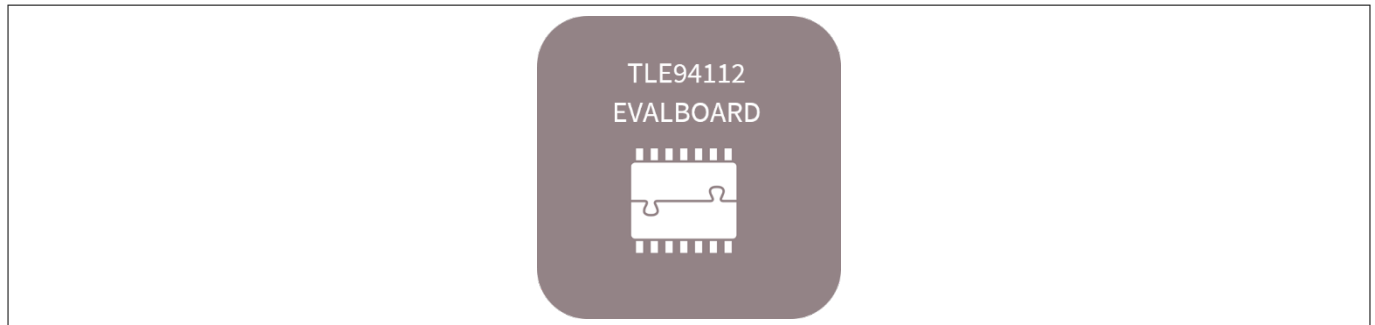
**Figure 42** Function selection for the TLE94110 evaluation board

## 7 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94112

### 7 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94112

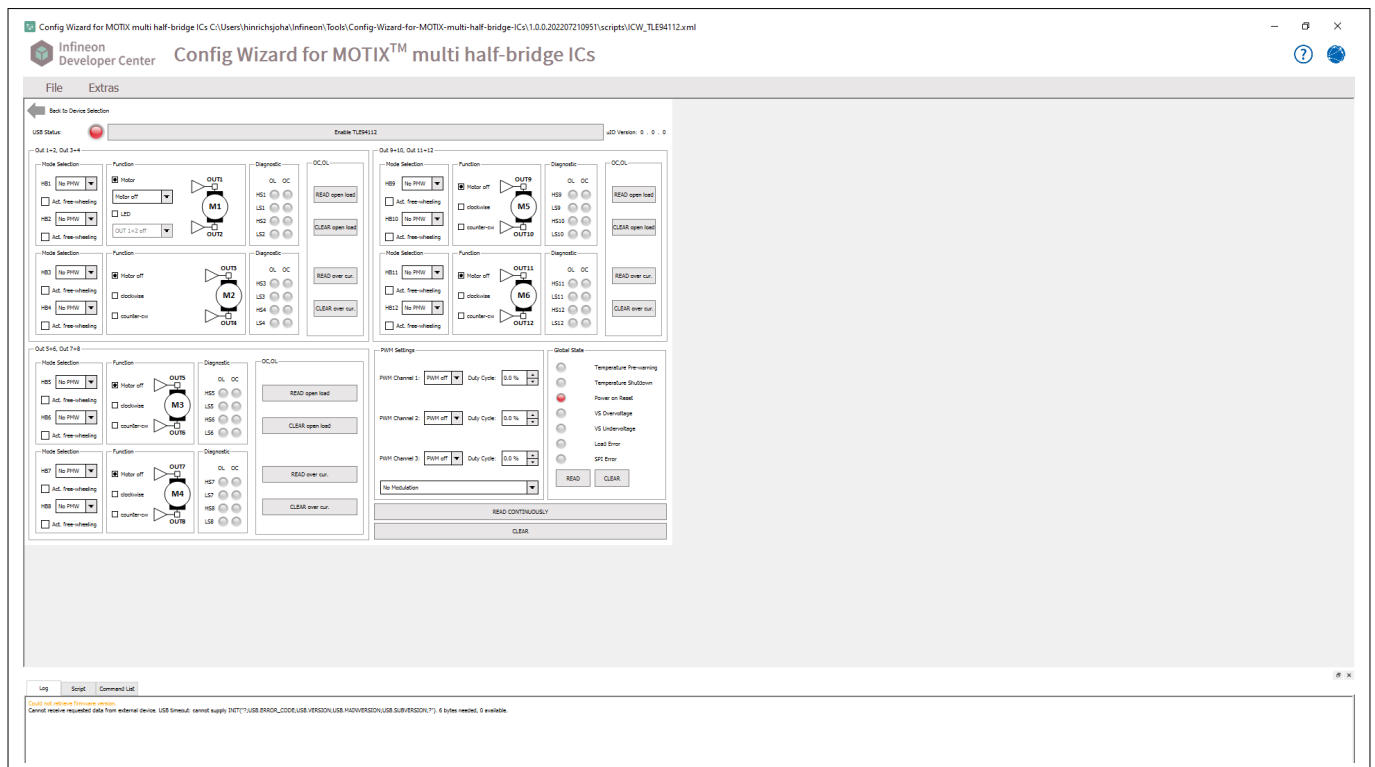
#### 7.1 Open Config Wizard for MOTIX™ multi half-bridge ICs for TLE94112 Evalboard

Select icon below to open the product view.



**Figure 43** Starting the GUI for the TLE94112 Evalboard

The following view will be displayed.



**Figure 44** Starting view of the GUI for the TLE94112 Evalboard

#### 7.2 Introduction

The TLE94112 evaluation board is intended to provide a simple and easy-to-use tool for getting familiar with the device features and for first application tests.

Refer to the corresponding product page for more details: [Link](#).

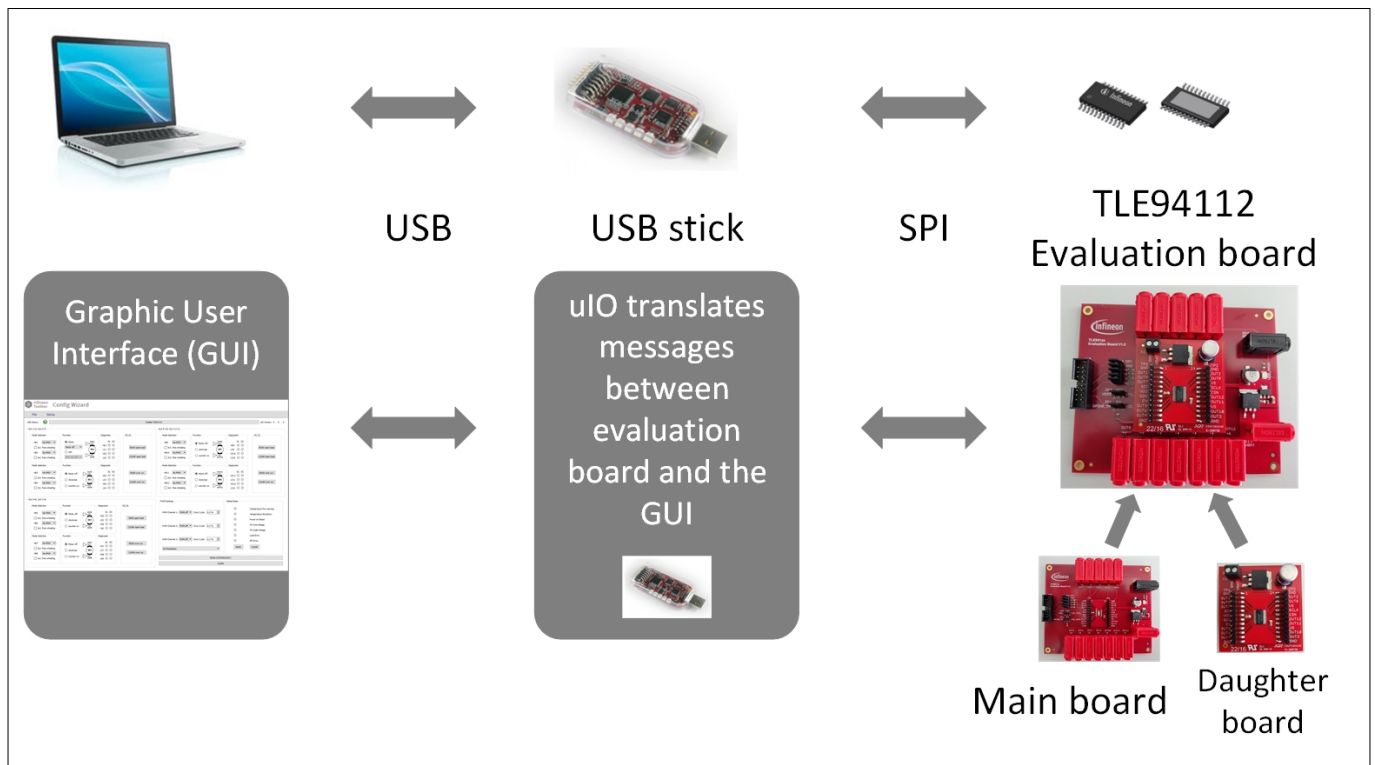
The uIO-stick is the interface between the PC and the TLE94112 evaluation board.

## 7 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94112

The SPI communication is emulated by the uIO-stick, which is controlled by the PC software.

The TLE94112 evaluation board has:

- A connector for the uIO-stick
- Connectors for the power supply
- Connectors for the motor output
- An active reverse battery protection



**Figure 45 TLE94112 evaluation board concept**

Controlling the TLE94112 evaluation board with the GUI requires:

- The main board: TLE941xx Evaluation Board
- The TLE94112 daughter board
- The uIO stick
- 12 V DC power supply, which is able to provide sufficient current for the motor load. For evaluation purpose motor loads which less than 1 A current consumption are recommended

The uIO stick must be ordered separately.

Details about the uIO stick can be found [here](#).

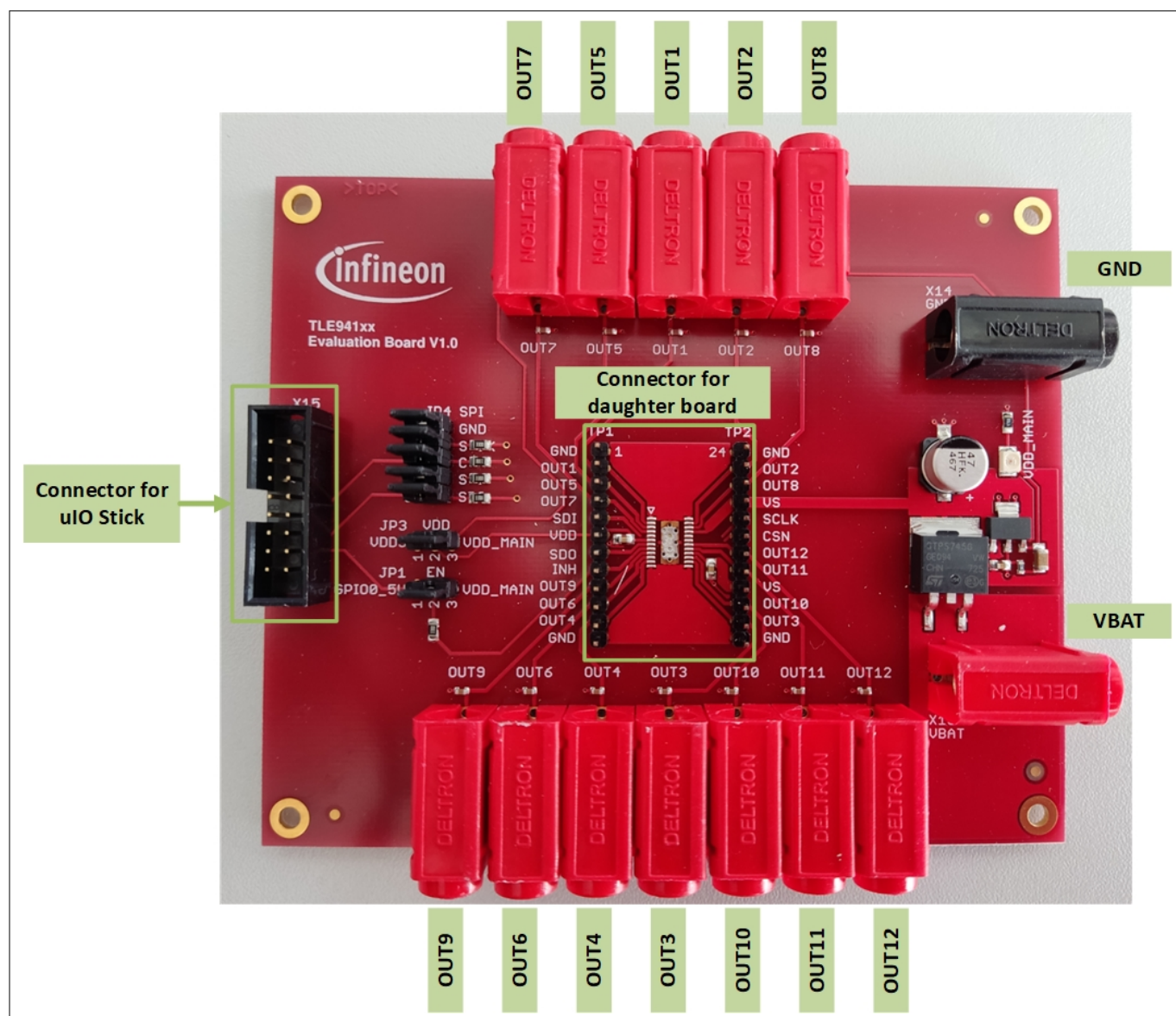
### 7.3 Hardware

Operating the GUI for the TLE94112 evaluation board requires:

- The main board: TLE941xx Evaluation Board
- The TLE94112 daughter board
- The uIO stick
- 12 V DC power supply, which is able to provide sufficient current for the motor load. For evaluation purpose motor loads which less than 1 A current consumption are recommended

## 7 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94112

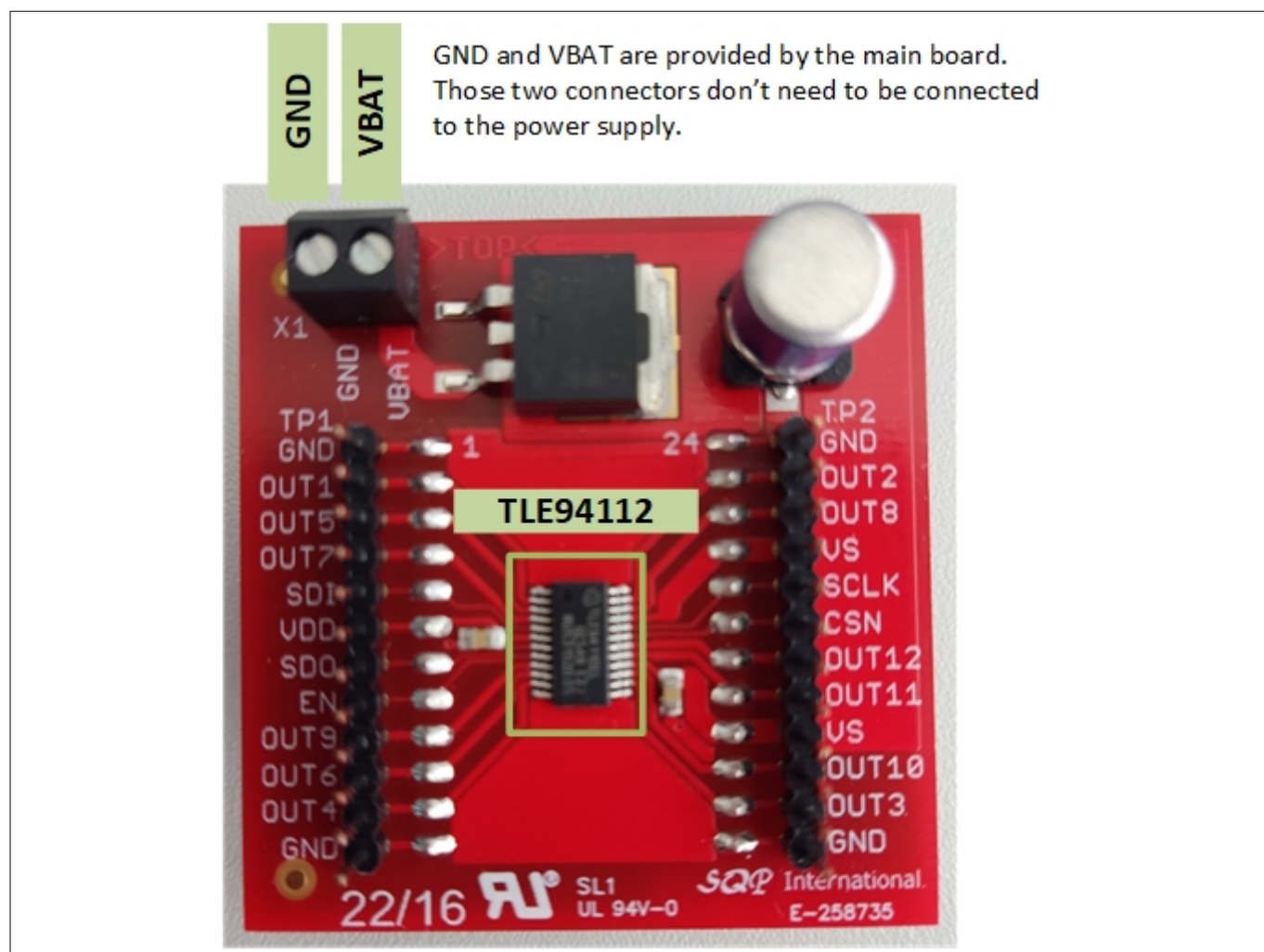
### 7.3.1 Hardware description



**Figure 46** TLE94112 evaluation board – main board

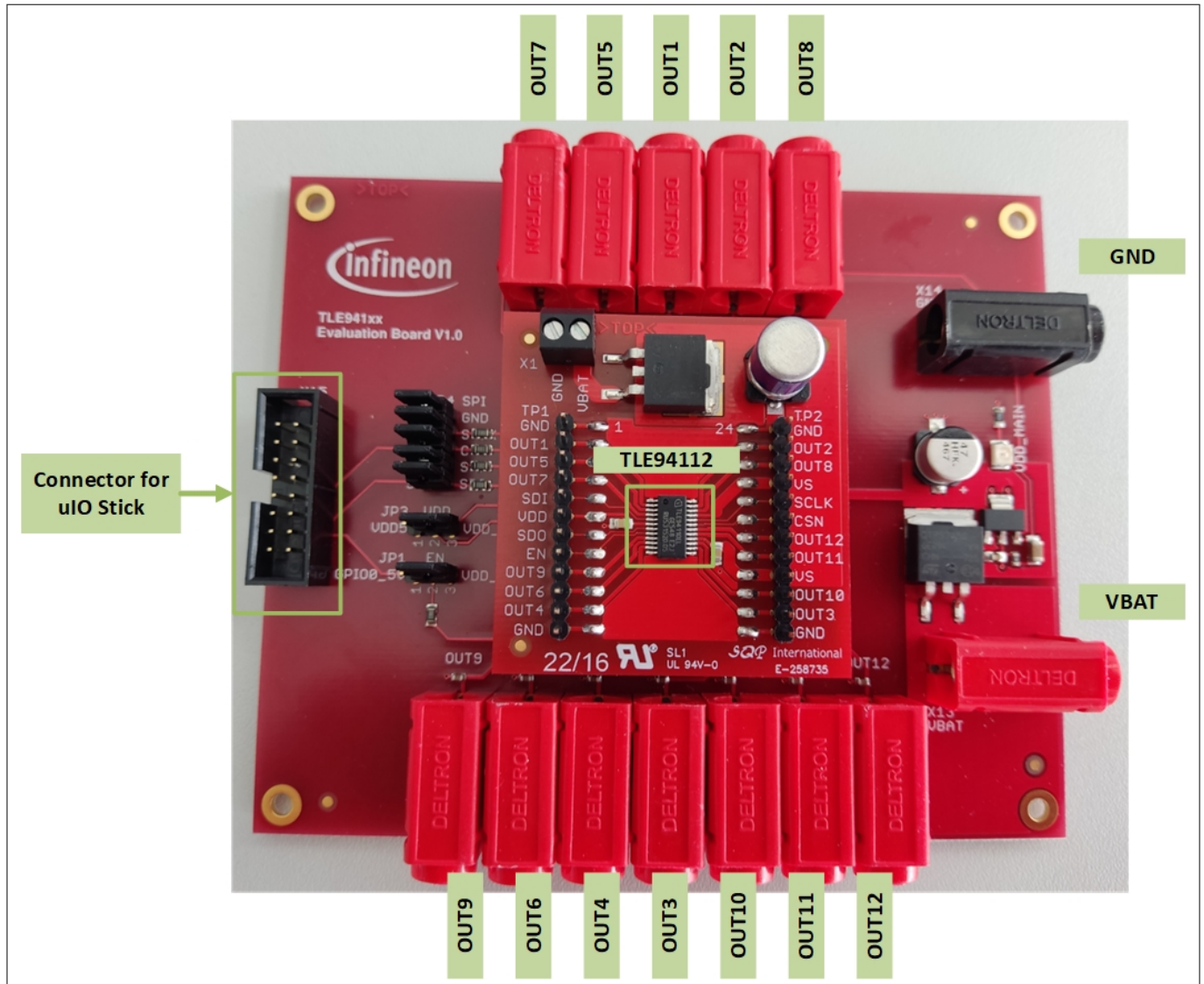


## 7 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94112



**Figure 47** TLE94112 evaluation board – daughter board

## 7 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94112



**Figure 48** TLE94112 evaluation board – main board with daughter board

### 7.4 Getting started

1. Plug in the TLE94112 daughter board
2. Connect the motors
3. Connect the uIO stick to the TLE94112 evaluation board and to the PC
4. Connect the 12 V supply
5. Turn on the 12 V supply
6. Start the TLE94112 GUI
7. To operate the motors:
  - a. Enable TLE94112
  - b. Select the function
  - c. If required:
    1. Clear the error flag for open load detection
    2. Clear the error flag for over current detection
    3. Clear the global status flags

## 7 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94112

### 7.5 Description of the GUI

- Green LED: Communication between the uIO stick and the TLE94112 is connected and working.

- Function selection: Function should be selected based on the use cases.

- Open load and over current detection: Red LED means OL/OC is detected.

- TLE94112 status: Red LED means the dedicated error is detected.

- PWM setting: PWM frequency and duty cycle

- Enable button : Click it to enable the TLE94112

- Read and clear the error flags.

USB Status: ●

Enable TLE94112

uIO Version: 0 . 0 . 0

**Out 1+2, Out 3+4**

**Mode Selection**

HB1 No PMW

☐ Act. free-wheeling

HB2 No PMW

☐ Act. free-wheeling

HB3 No PMW

☐ Act. free-wheeling

HB4 No PMW

☐ Act. free-wheeling

**Function**

☒ Motor

Motor off

☐ LED

OUT 1+2 off

**Diagnostic**

OL OC

HS1 ☐ LS1 ☐

HS2 ☐ LS2 ☐

**OC,OL**

READ open load

CLEAR open load

**Out 9+10, Out 11+12**

**Mode Selection**

HB9 No PMW

☐ Act. free-wheeling

HB10 No PMW

☐ Act. free-wheeling

HB11 No PMW

☐ Act. free-wheeling

HB12 No PMW

☐ Act. free-wheeling

**Function**

☒ Motor off

clockwise

counter-cw

**Diagnostic**

OL OC

HS9 ☐ LS9 ☐

HS10 ☐ LS10 ☐

**OC,OL**

READ open load

CLEAR open load

**Out 5+6, Out 7+8**

**Mode Selection**

HB5 No PMW

☐ Act. free-wheeling

HB6 No PMW

☐ Act. free-wheeling

HB7 No PMW

☐ Act. free-wheeling

HB8 No PMW

☐ Act. free-wheeling

**Function**

☒ Motor off

clockwise

counter-cw

**Diagnostic**

OL OC

HS5 ☐ LS5 ☐

HS6 ☐ LS6 ☐

**OC,OL**

READ open load

CLEAR open load

**PWM Settings**

PWM Channel 1: PWM off Duty Cycle: 0.0 %

PWM Channel 2: PWM off Duty Cycle: 0.0 %

PWM Channel 3: PWM off Duty Cycle: 0.0 %

No Modulation

**Global State**

☐ Temperature Pre-warning

☐ Temperature Shutdown

☐ Power on Reset

☐ VS Overvoltage

☐ VS Undervoltage

☐ Load Error

☐ SPI Error

READ CLEAR

READ CONTINUOUSLY

CLEAR

**Figure 49 GUI overview for the TLE94112 evaluation board**

## 7 Config Wizard for MOTIX™ multi half-bridge ICs for TLE94112

Out 1+2, Out 3+4

Mode Selection

HB1 No PWM

Act. free-wheeling

HB2 No PWM

Act. free-wheeling

Function

Motor

Motor off

LED

OUT 1+2 off

OUT1

OUT2

OUT3

OUT4

Out 5+6, Out 7+8

Mode Selection

HB3 No PWM

Act. free-wheeling

HB4 No PWM

Act. free-wheeling

Function

Motor off

clockwise

counter-cw

OUT5

OUT6

OUT7

OUT8

Out 9+10, Out 11+12

Mode Selection

HB9 No PWM

Act. free-wheeling

HB10 No PWM

Act. free-wheeling

Function

Motor off

clockwise

counter-cw

OUT9

OUT10

OUT11

OUT12

PWM Settings

PWM Channel 1 PWM off Duty Cycle: 0.0 %

PWM Channel 2 PWM off Duty Cycle: 0.0 %

PWM Channel 3 PWM off Duty Cycle: 0.0 %

No Modulation

- Use case selection for HB1 and HB2: Motor or LED
- Motor rotation mode selection: Off, clockwise or counter clockwise
- Switching mode selection: No PWM, PWM controlled by channel 1, 2 or 3
- Freewheeling selection: Passive freewheeling or active freewheeling
- PWM frequency: Off, 80Hz, 100Hz or 200Hz
- Duty cycle setting for PWM signal
- Modulation frequency selection: 16.625kHz, 31.250kHz or 62.500kHz

**Figure 50** Function selection for the TLE94112 evaluation board

---

## 8 Tool disclaimer

### 8 Tool disclaimer

Config Wizard for MOTIX™ multi half-bridge ICs is based in part on the work of the Qwt project (<http://qwt.sf.net>).

The following LGPL/GPLv3 are used in our software and can be found in the license folder:

- QuaZip
- qt 5.12.2
- libiconv 1.14
- PythonQt



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## Revision history

### Revision history

Document version	Date of release	Description of changes
01.00	2022-10-27	<ul style="list-style-type: none"><li>Initial document release</li></ul>

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