

## Introduction

STEVAL-VNH5180A offers dedicated power stage and controls suitable for electric DC motor driving. This evaluation board features the VNH5180A. It is an H-bridge belonging to the VNH Motor Driver series based on VIPower® proprietary technology. Typical applications are door lock and dead lock.

This evaluation board consists of a motherboard (STM8 Universal Board) and a daughter-board. The motherboard, based on STM8 microcontroller, provides the logic section for monitoring and driving the VNH5180A assembled in the daughter-board. With the aim of simplifying board usage and settings, ST provides dedicated and user-friendly software including a Graphic User Interface (GUI). The GUI allows setting VNH5180A parameters (PWM, Motor direction...), while showing real time device diagnostic information, such as current output evolution, battery voltage monitoring, board temperature and much more.

**Figure 1. STEVAL-VNH5180A**



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# Contents

<b>1</b>	<b>Hardware description and setup</b> .....	<b>4</b>
1.1	Components description .....	4
1.2	Board connections and setup .....	4
<b>2</b>	<b>Software installation</b> .....	<b>6</b>
2.1	USB Driver installation .....	6
2.2	Graphical User Interface (GUI) installation .....	7
<b>3</b>	<b>Graphical user interface</b> .....	<b>8</b>
<b>4</b>	<b>Revision history</b> .....	<b>10</b>

## List of figures

Figure 1.	STEVAL-VNH5180A.....	1
Figure 2.	STEVAL-VNH5180A block diagram .....	4
Figure 3.	STEVAL-VNH5180A connections.....	5
Figure 4.	Driver installation window (1/2).....	6
Figure 5.	Driver installation window (2/2).....	6
Figure 6.	GUI installation (1/2).....	7
Figure 7.	GUI installation (2/2).....	7
Figure 8.	Main Window (1/2) .....	8
Figure 9.	Main Window (2/2) .....	8
Figure 10.	Current measurement (graph) .....	9
Figure 11.	Driving profiles .....	9

# 1 Hardware description and setup

This section provides a description of the main components of this evaluation kit, giving instruction for a quick setup of the motor control system.

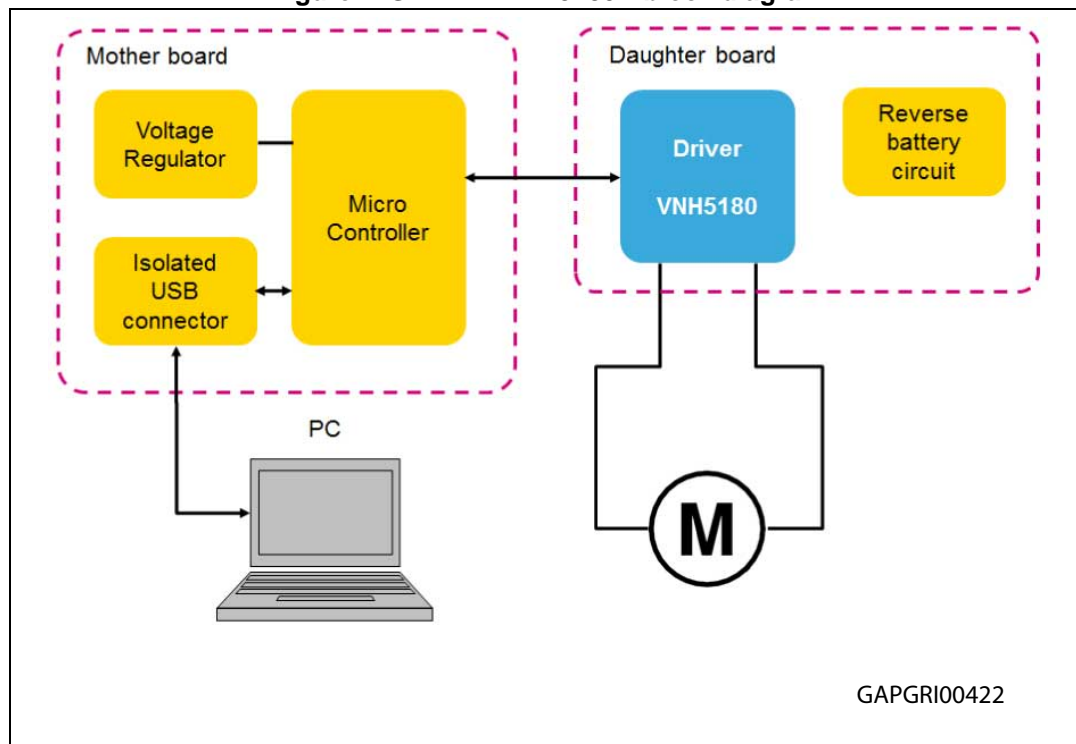
## 1.1 Components description

The evaluation kit consists of two main components:

- Mother board based on STM8A microcontroller, interfacing host PC with H-Bridge controller. The communication with the PC is established through isolated USB.
- Daughter board assembling VNH5180A and the reverse battery protection. The DC motor has to be connected to this module.

The daughter board and the mother board are provided already properly plugged

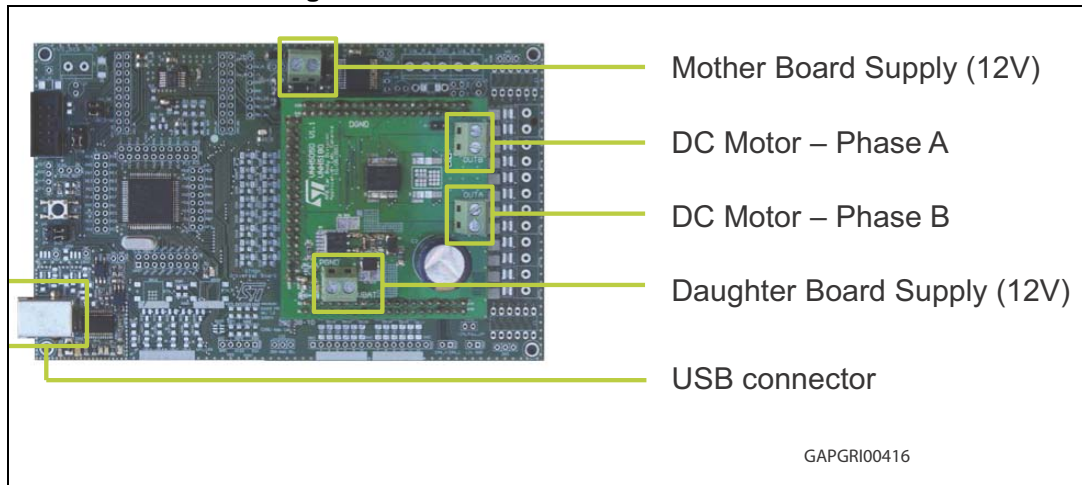
Figure 2. STEVAL-VNH5180A block diagram



## 1.2 Board connections and setup

Below figure shows the placement of the connectors to be used for supplying the evaluation board, plugging the electric DC motor and connecting with a host PC through USB cable.

Figure 3. STEVAL-VNH5180A connections



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Jumpers are already set in their default position.

Table 1. Motherboard jumper configuration

Jumper	Description	Default position
JP2	+ 5 V_DB	Not present
JP2	+ 5 V_STM8	Present
JP4	RxD	USART
JP5	TxD	USART
JP6	Reset	STM8
JP7	Swim	STM8

## 2 Software installation

### 2.1 USB Driver installation

The following installation procedure starts automatically after plugging the Evaluation Board to the host PC.

Figure 4. Driver installation window (1/2)

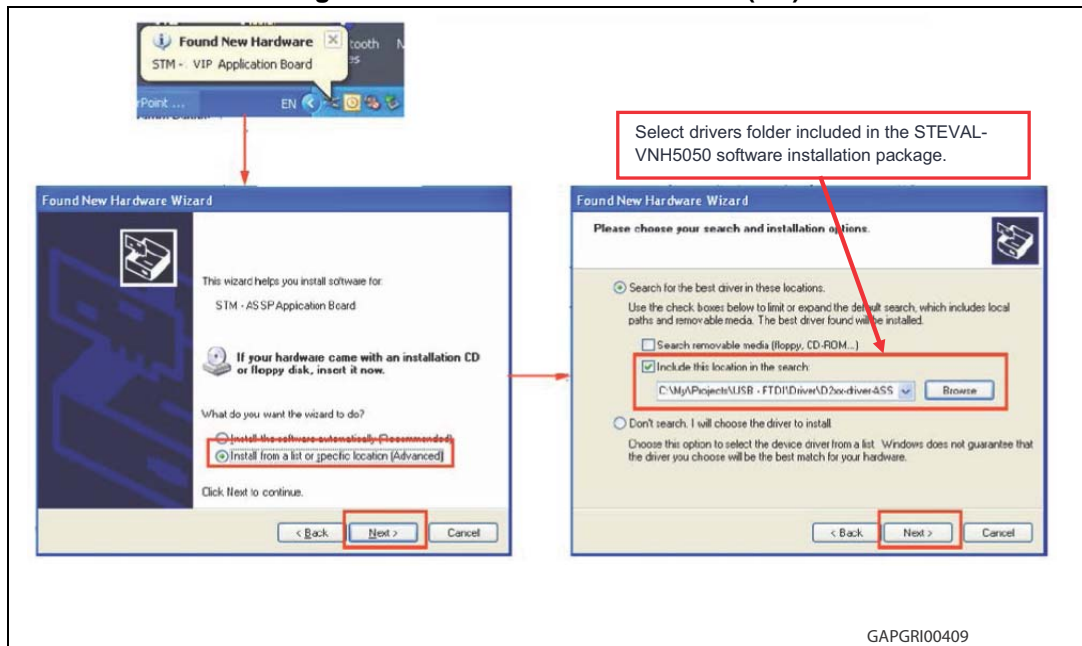
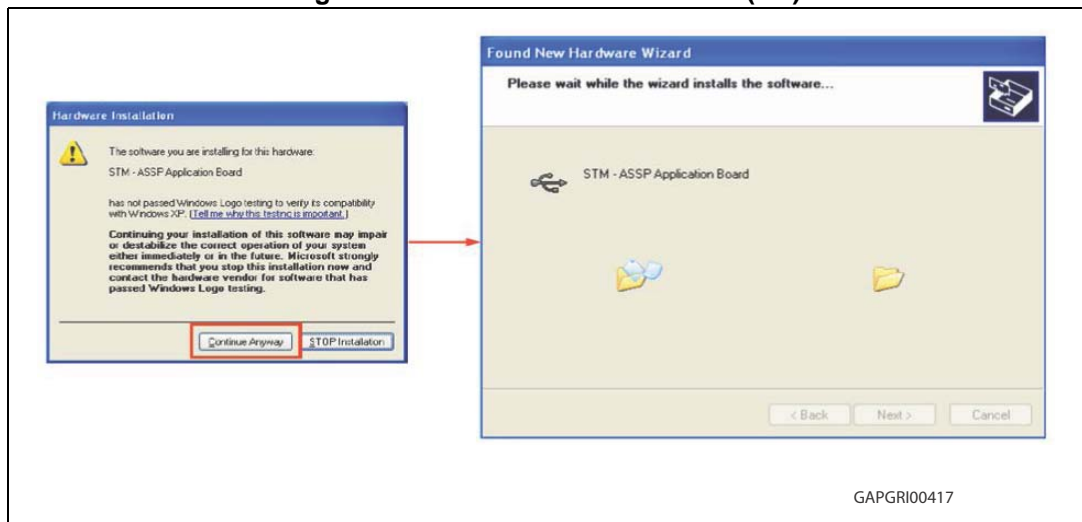


Figure 5. Driver installation window (2/2)



## 2.2 Graphical User Interface (GUI) installation

Launching Setup.exe, GUI installs to the destination folder indicated by the wizard.

Default folder is "C:\Program Files(x86)\VNHFULLBridge", but the user is free to indicate another path name and folder.

Figure 6. GUI installation (1/2)

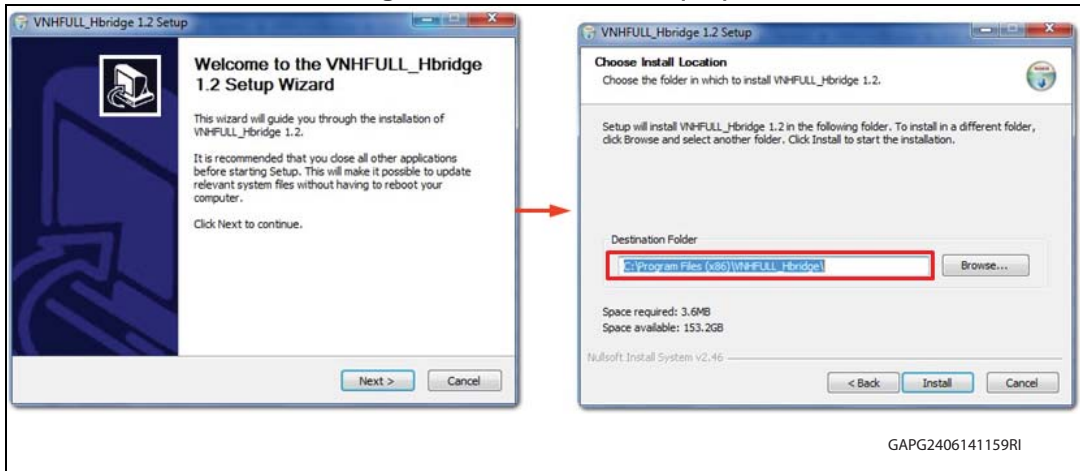
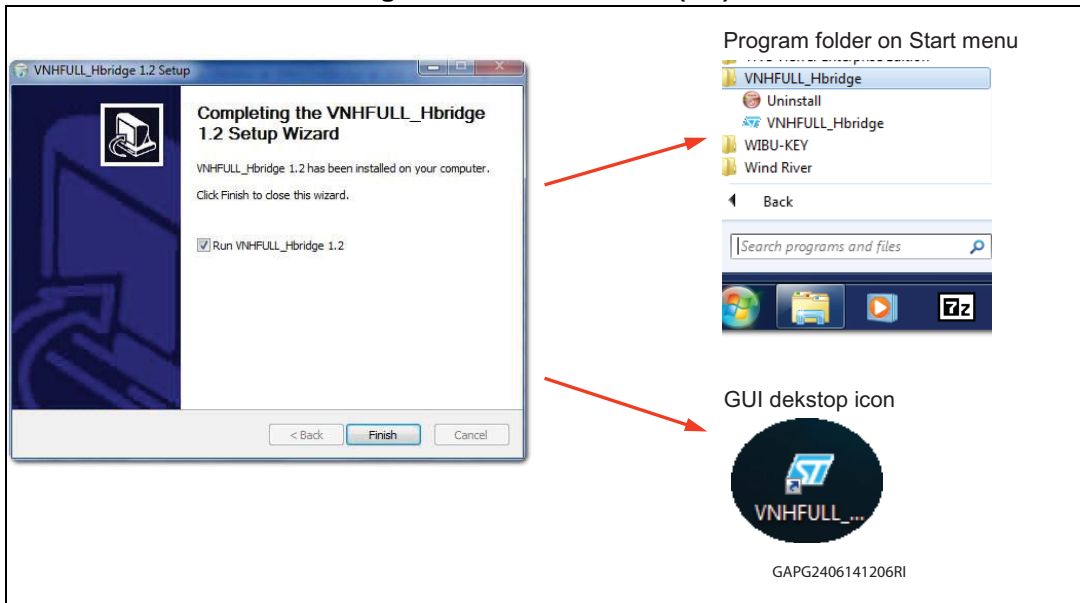


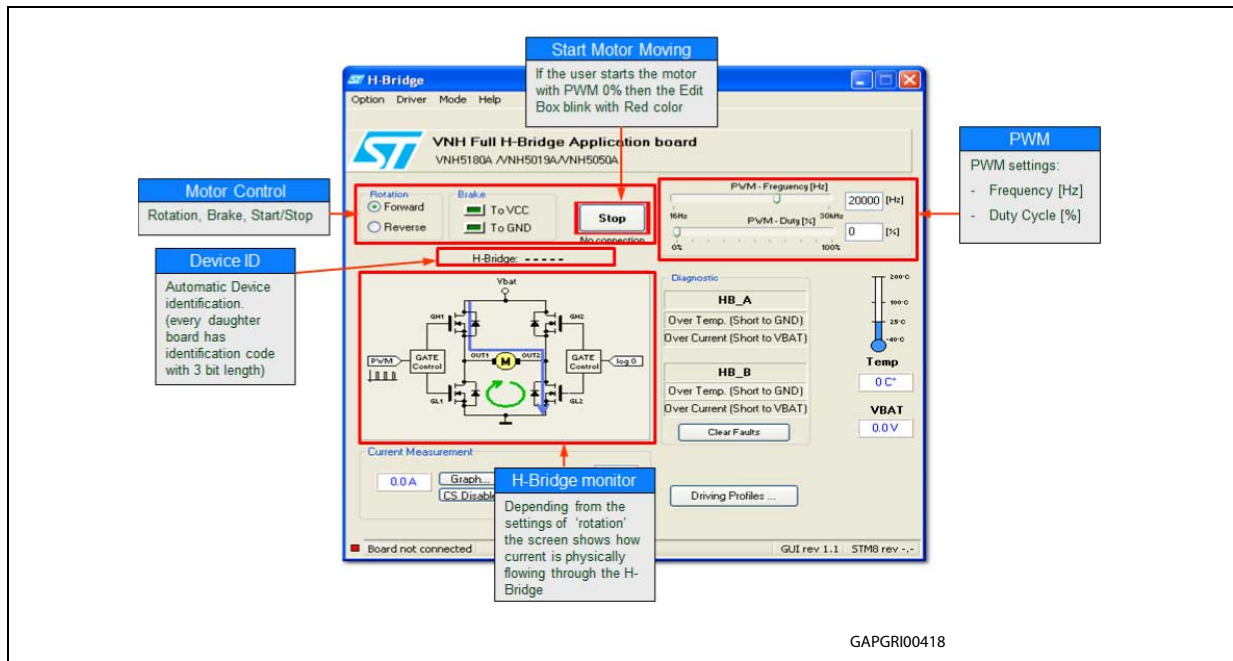
Figure 7. GUI installation (2/2)





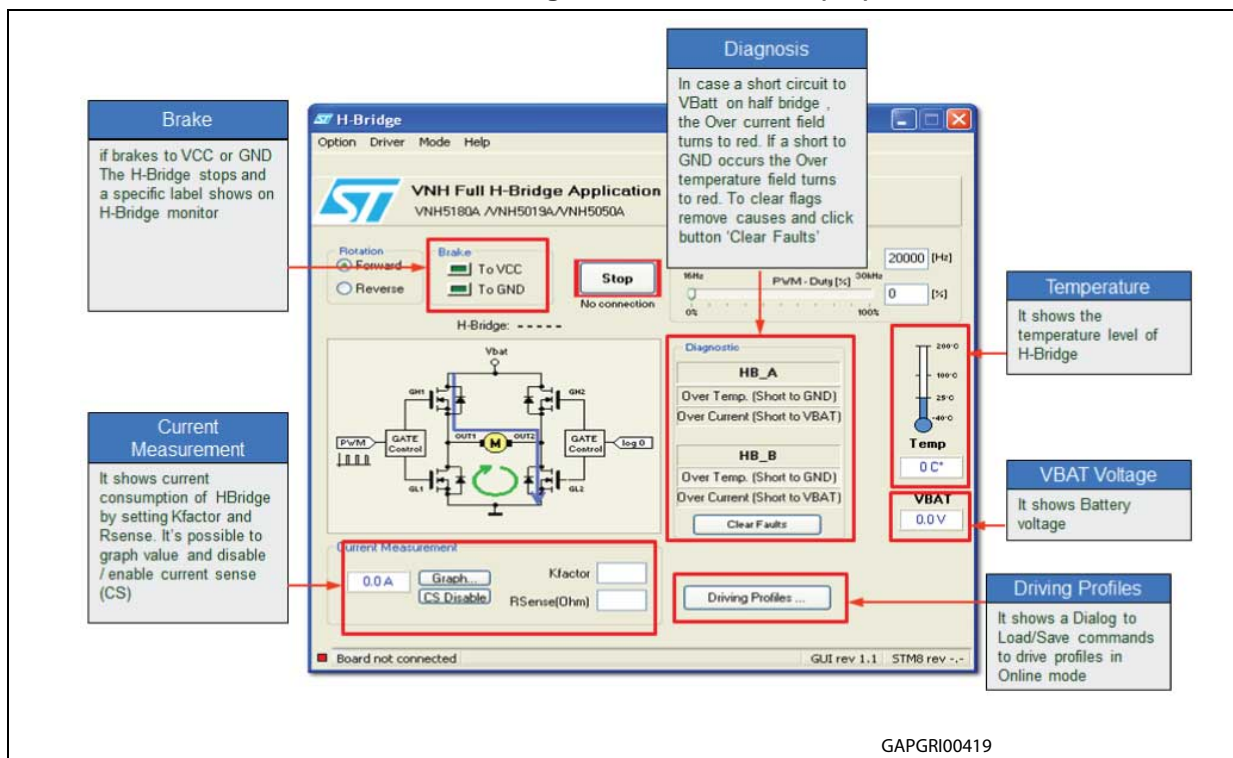
### 3 Graphical user interface

Figure 8. Main Window (1/2)



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Figure 9. Main Window (2/2)



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Figure 10. Current measurement (graph)

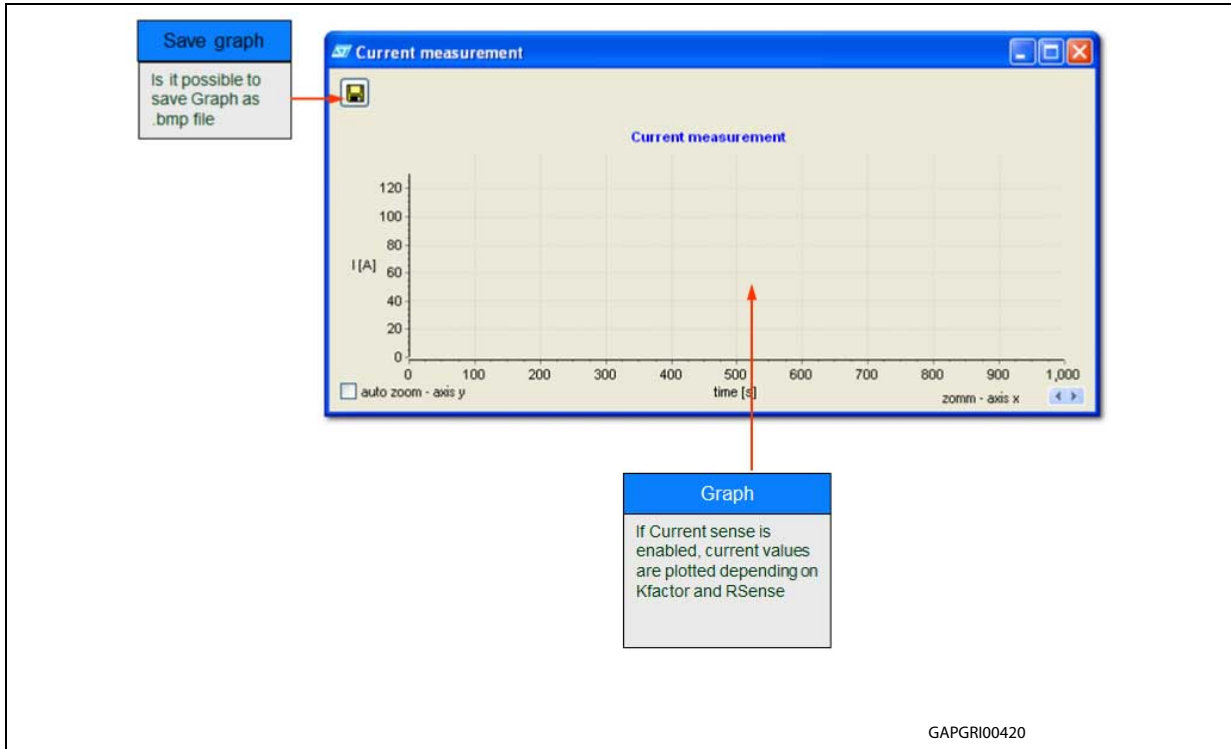
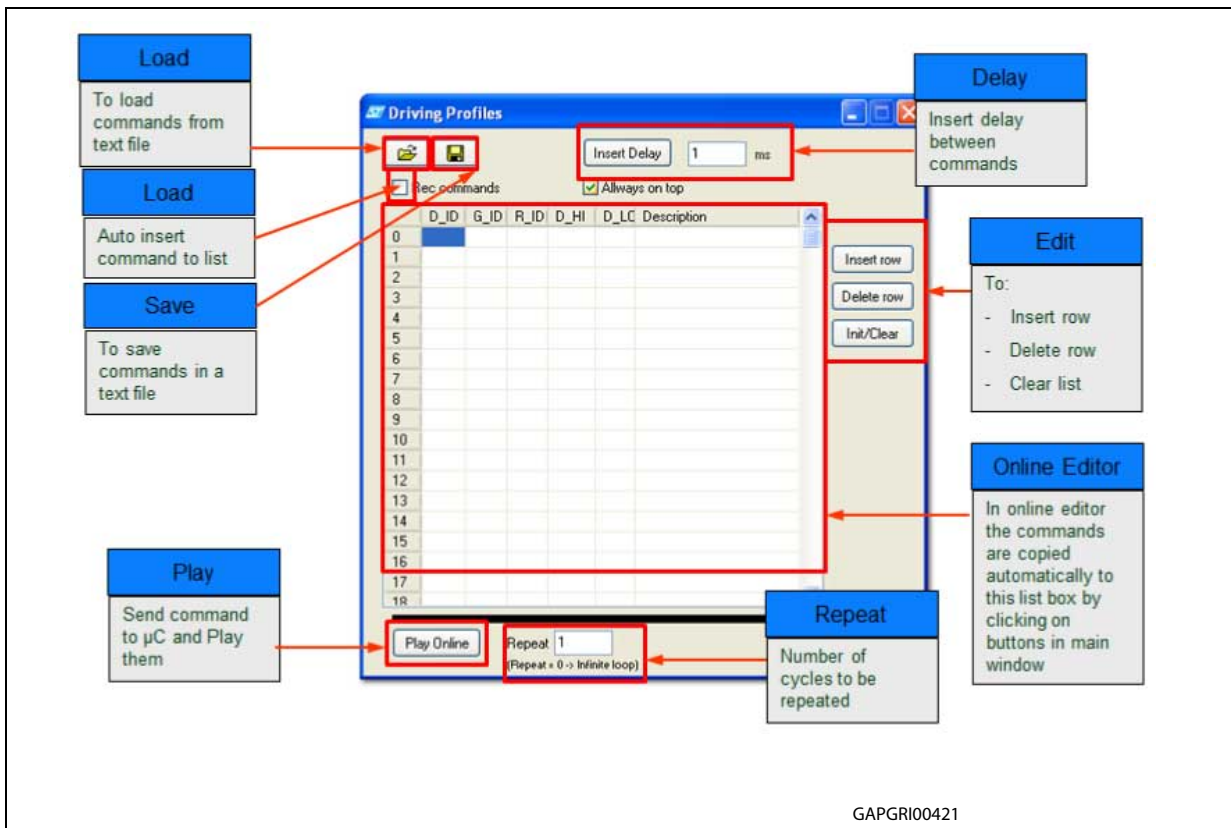


Figure 11. Driving profiles



## 4 Revision history

Table 2. Document revision history

Date	Revision	Changes
20-Oct-2013	1	Initial release.
24-Jun-2014	2	Added <a href="#">Section 2.1</a> and <a href="#">Section 2.2</a> .

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