UM2266
User manual

STSW-L9177A Graphic user interface for EVAL-L9177A

Introduction

The present document describes the L9177A Graphical User Interface (GUI) that allows to initialize and control the EVAL-L9177A evaluation board by changing parameters through the SPI protocol, manage the parallel PWM input and read the output.

The L9177A GUI has been developed using Labview and it uses, as microcontroller interface, the SPC563M-DISP Discovery+ evaluation board.

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1 Graphical User Interface description

The L9177A GUI is made up by ten fields:

Figure 1. GUI interface description
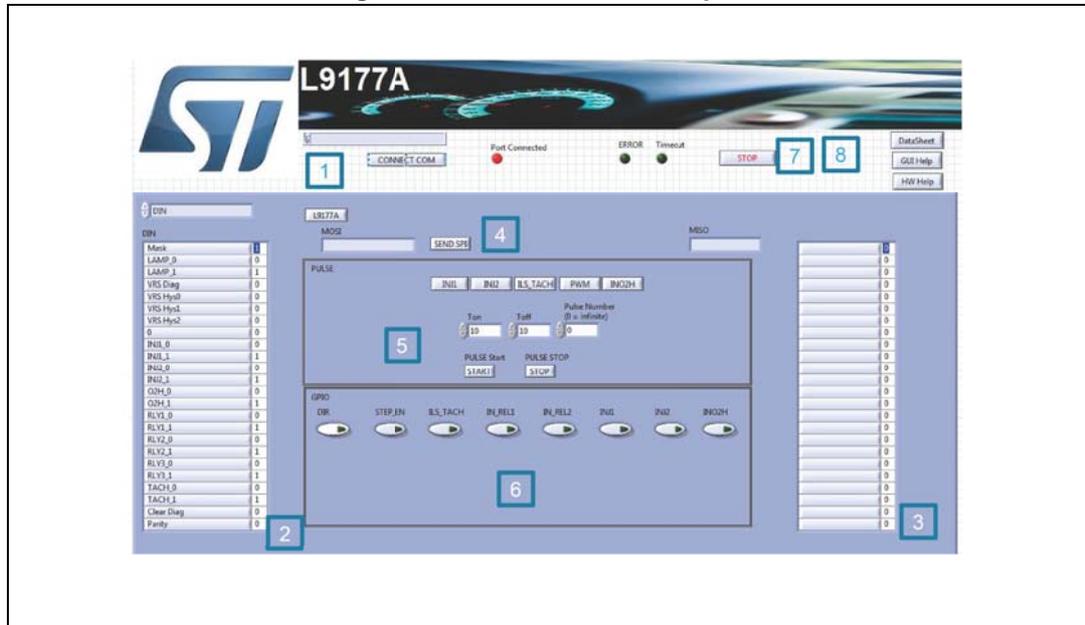
1. **Com Port Setup**: the COM port is automatically recognized once the GUI is launched and the microcontroller board is correctly connected to PC and correct firmware is present on it. In case of issue through the CONNECT COM button is possible to manually select the microcontroller COM port.

2. **MOSI**: through this menu you can select the specific device register and set its required value.

3. **MISO**: through this menu you can read the MOSI register of the device.

4. **SPI Send/Receive**: pushing the [SEND SPI] button, it is possible:

• sending the SPI command configured in the MOSI menu(menu 2)

• sending an SPI command manually written in the MOSI field.

• reading the device answer MISO.

5. **PULSE**: using this field it is possible to generate a pulse train of a predetermined number and duration on INJ1, INJ2, PWM, INO2H or ILS_TACH pins. Setting a value of 0 in Pulse number the pulse generation starts and continues indefinitely until stop button is pressed.

6. **GPIO:** this field allows the user to set the value of DIR, STEP_EN, ILS_TACH, IN_REL1, IN_REL2, INO2H, PWM and INJ1 and INJ2

7. **STOP** button is used to stop the GUI

8. **Documentation button:** these buttons are used to have fast access to HW user manual, GUI user manual, and L9177A datasheet

2 Running procedure

The Start sequence is the following:

1. connecting the microcontroller to the PC using a serial or USB to serial Cable
2. launching the GUI. The COM port will be automatically recognized once you will launch the GUI if the microcontroller board is correctly connected to PC and correct firmware is present on it. In case of issue through the CONNECT COM button is possible to manually select the microcontroller COM port.

3 Labview driver installation guide

The L9177A GUI can be used standalone without a Labview license, but installing the free Runtime Engine for Labview 2016, following the below link:

http://www.ni.com/download/labview-run-time-engine-2016/6067/en/

and the VISA Runtime 16, following the below link:

http://www.ni.com/download/ni-visa-run-time-engine-16.0/6188/en/

4 How to load general purpose FW on SPC56M-Discovery

To use the L9177A GUI the discovery board SPC56M-Discovery+ must be programmed with the dedicated Firmware (L9177A.elf). This is the procedure to program the SPC56M-Discovery+ using the ST toolchain based on SPC5-UDEDEBG

1. Start UDE Visual Platform 4.8

2. If not yet done, create a New Workspace for SPC56M. Click File>New Workspace

Figure 2. UDE: New Workspace creation
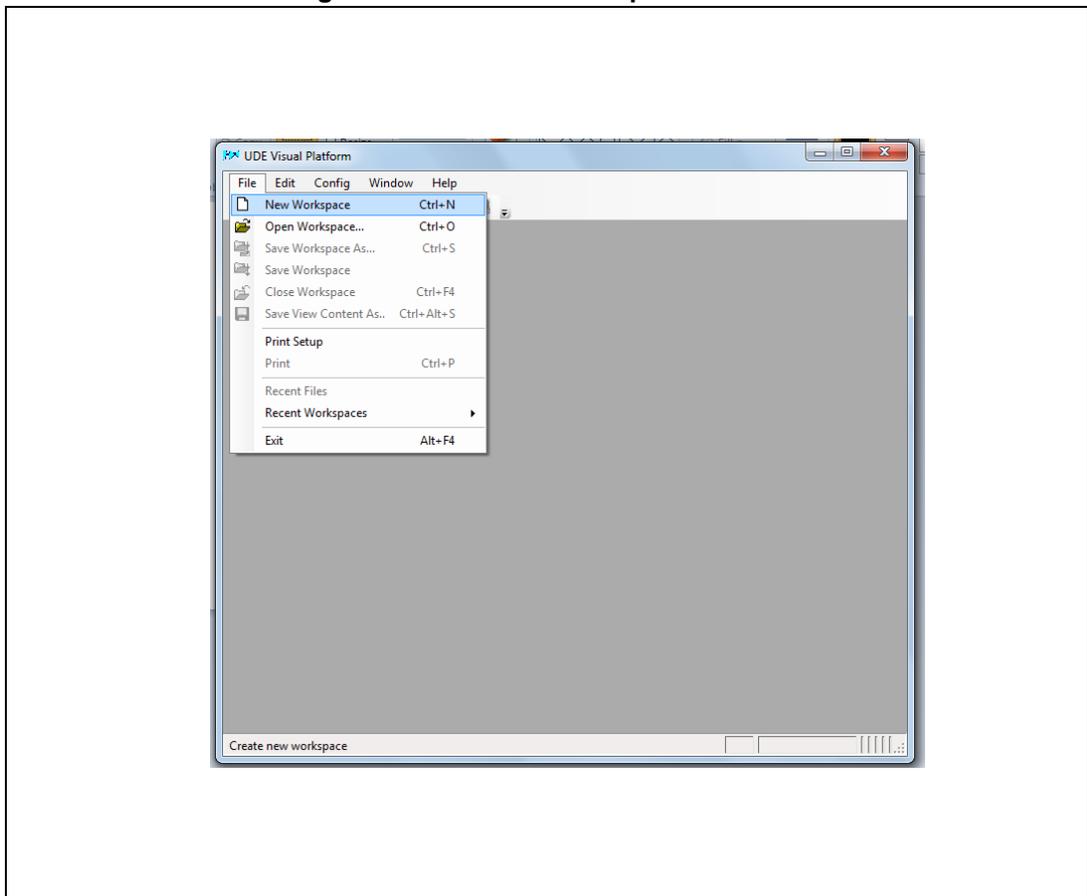
3. Name the new Workspace i.e. *Monaco* and select OPEN.

Figure 3. UDE: workspace load
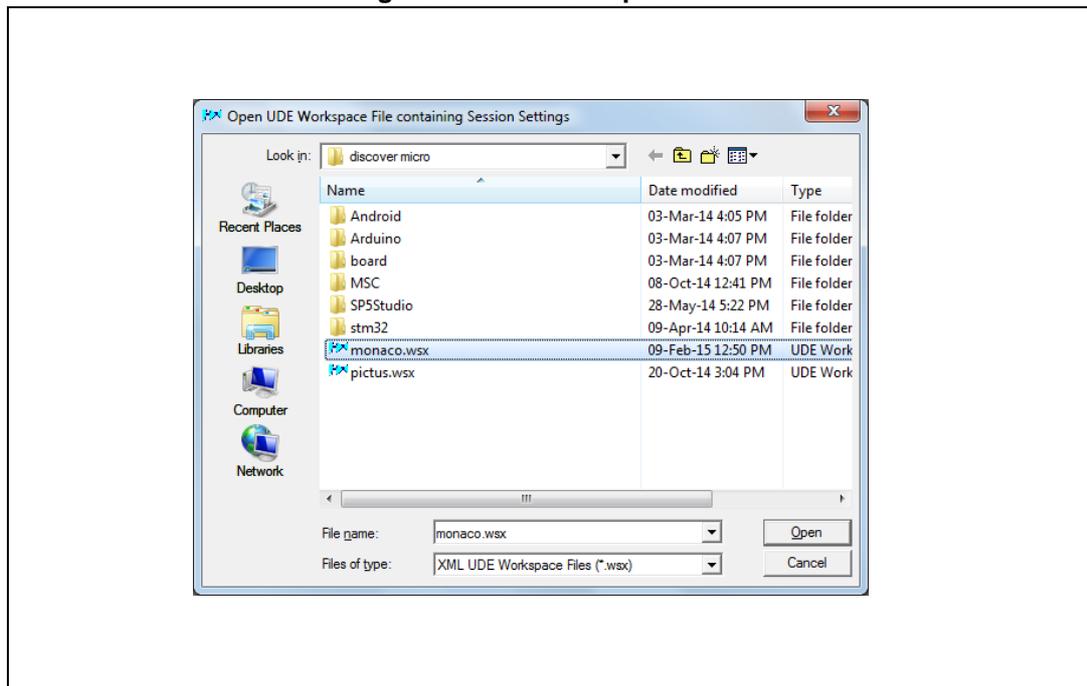
4.   UDE Visual Platform 4.7 will be refreshed and new functionalities will appear, then click on "Load Program" (or File/LoadProgramm)

Figure 4. UDE: main interface
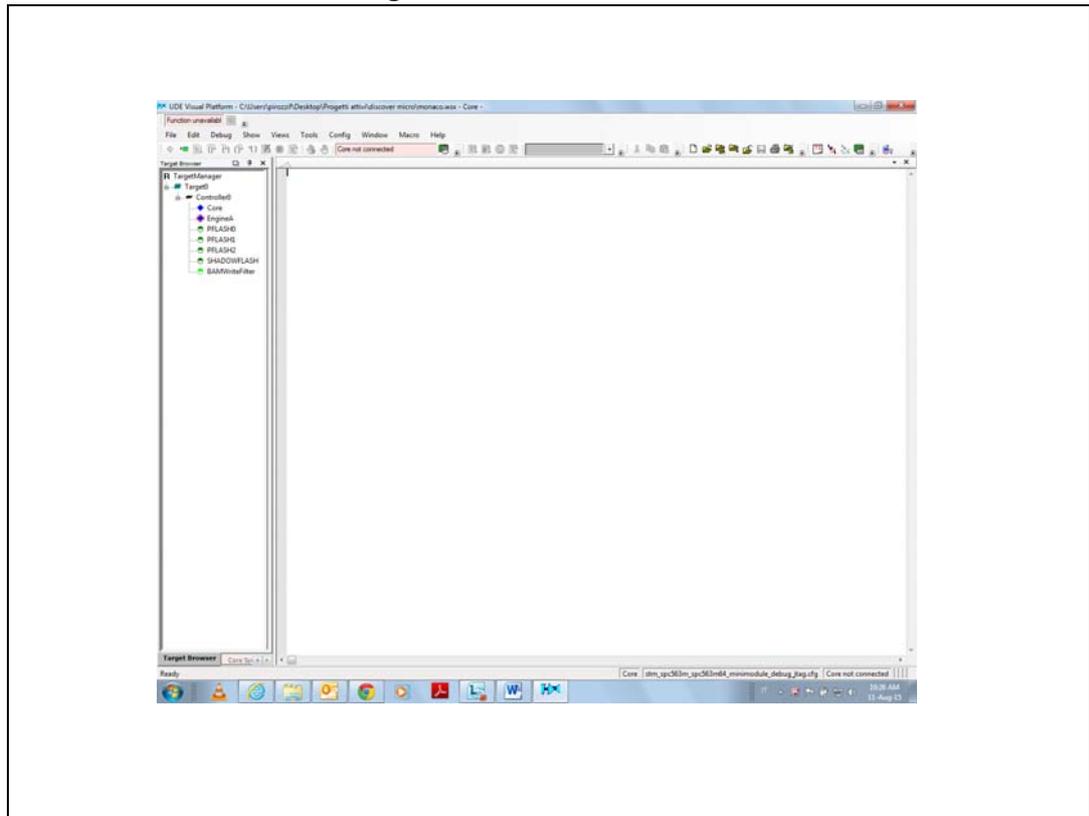
5.   Browse the file L9177A and click "Open"

6.   In the next windows click on "Cancel"

Figure 5. UDE:.elf file loading
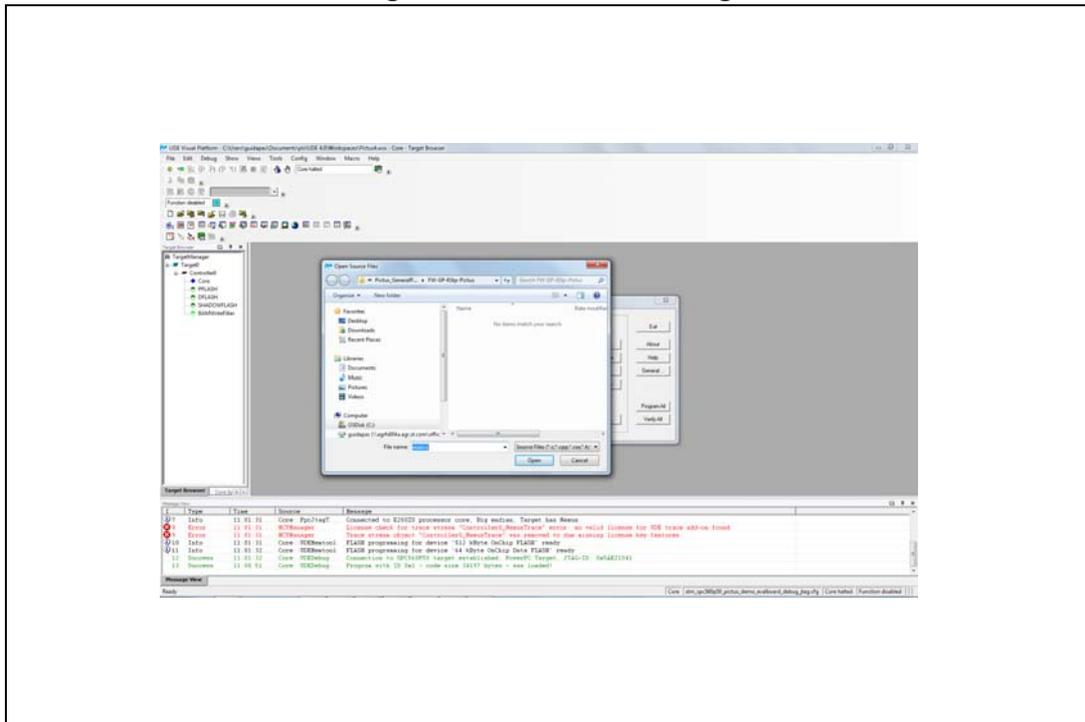
7.   Then click on "Program All".

Figure 6. UDE: program loading on Flash
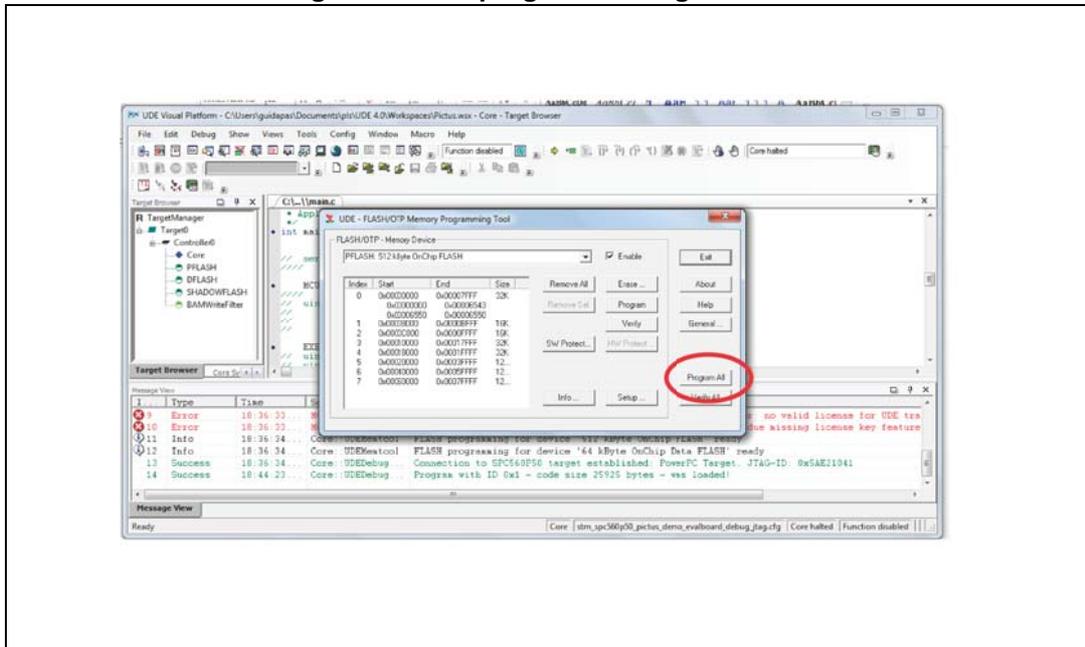
8.   The UDE Visual Platform 4.7 will start to load the program.

Figure 7. UDE: loading progress
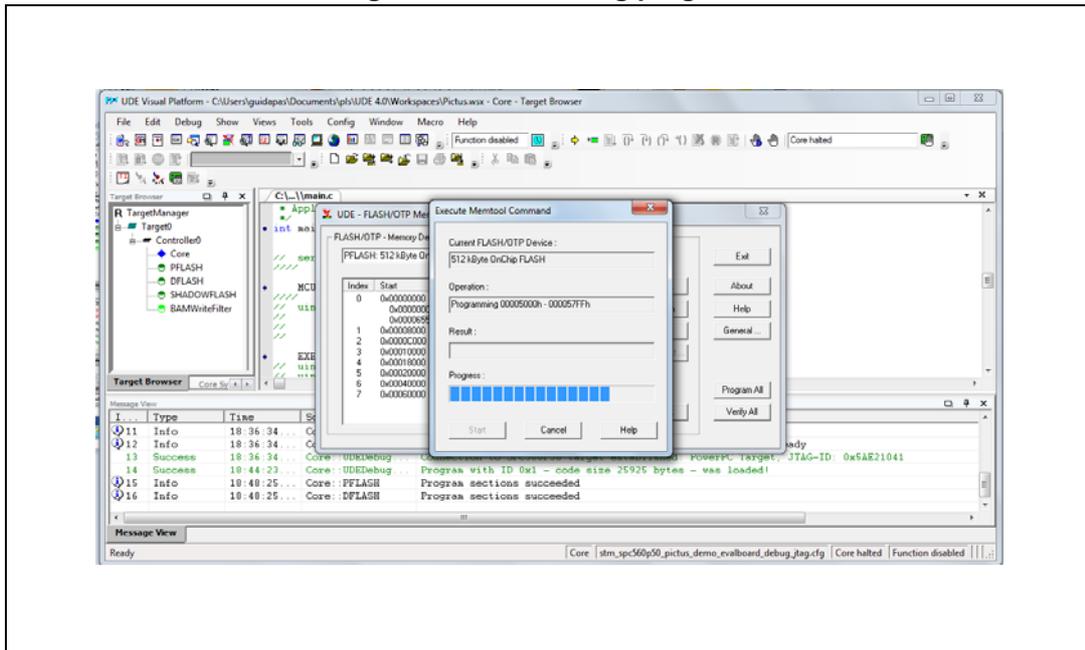
9.   When the procedure is terminated click on "Exit" on all windows

Figure 8. UDE: loading completed
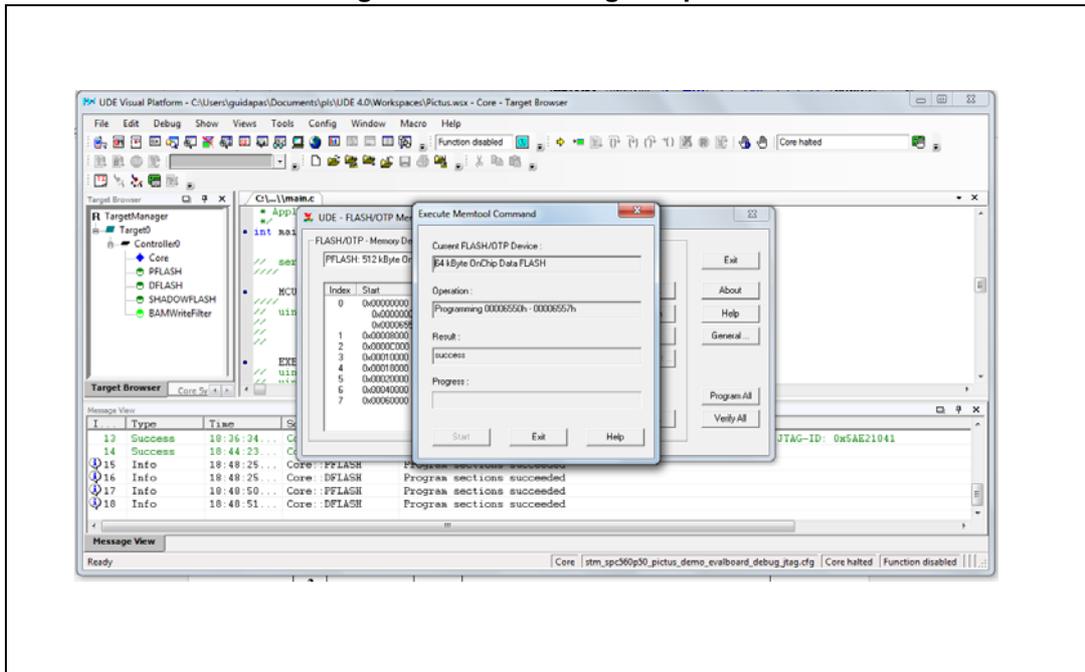
10.   When the procedure is terminated click on "Exit" on all windows and close UDE Visual Platform 4.7. The SPC56M-Discovery is ready to be used with the Graphical User Interface (GUI) for L9177A.

11.   In order to connect to microcontroller board a RS232 cable is needed. In case your PC has not COM port an adapter (i.e. *USB-RS232*) is needed. For the correct installation

please refer to the documentation of the adapter. The cable has to be connected to the COM0 port of SPC56M-Discovery.

1 Revision history

Table 1. Document revision history

Date	Revision	Changes
10-Oct-2017	1	Initial release.
08-Mar-2018	2	Updated document title.

IMPORTANT NOTICE – PLEASE READ CAREFULLY