STSW-STUSB002

QUICK START

Customizing the STUSB45 using
the Graphical User Interface (GUI)

STREF-SCS001V1
Demo BOARD
Ref. DESIGN

STEVAL-ISC005V1
Eval BOARD

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Introduction

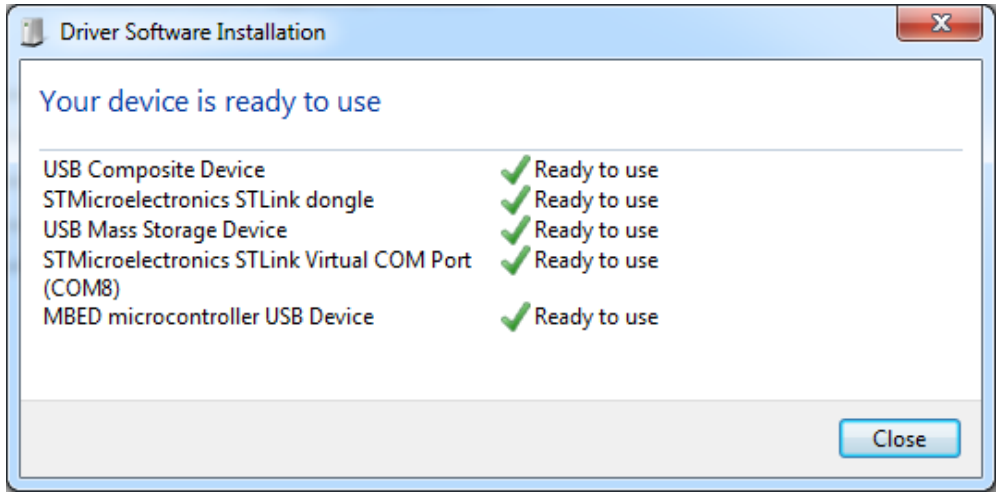
This document describes how to configure an STM32 NUCLEO board as a USB to I²C bridge. Configuration of such a NUCLEO board is required in order to connect the STUSB Graphical User Interface (STSW-STUSB002) running on a laptop with an STUSB evaluation board.

Main components	
NUCLEO-F072RB	STM32 Nucleo-64 development board with AMR Cortex M0
Mini-B USB cable	with USB data support
USB-C cable	with USB data support
STSW-STUSB002	STUSB4500 Graphical User Interface
STEVAL-ISC005V1	STUSB4500 evaluation board
Operating System	Windows OS

HARDWARE CONFIGURATION (1/8)

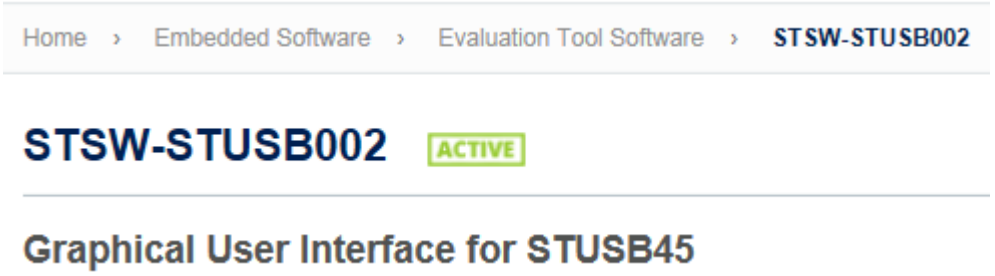
1) Connect the NUCLEO-F072RB to the Laptop using mini-B USB cable

2) Please make sure the device drivers are installed successfully:

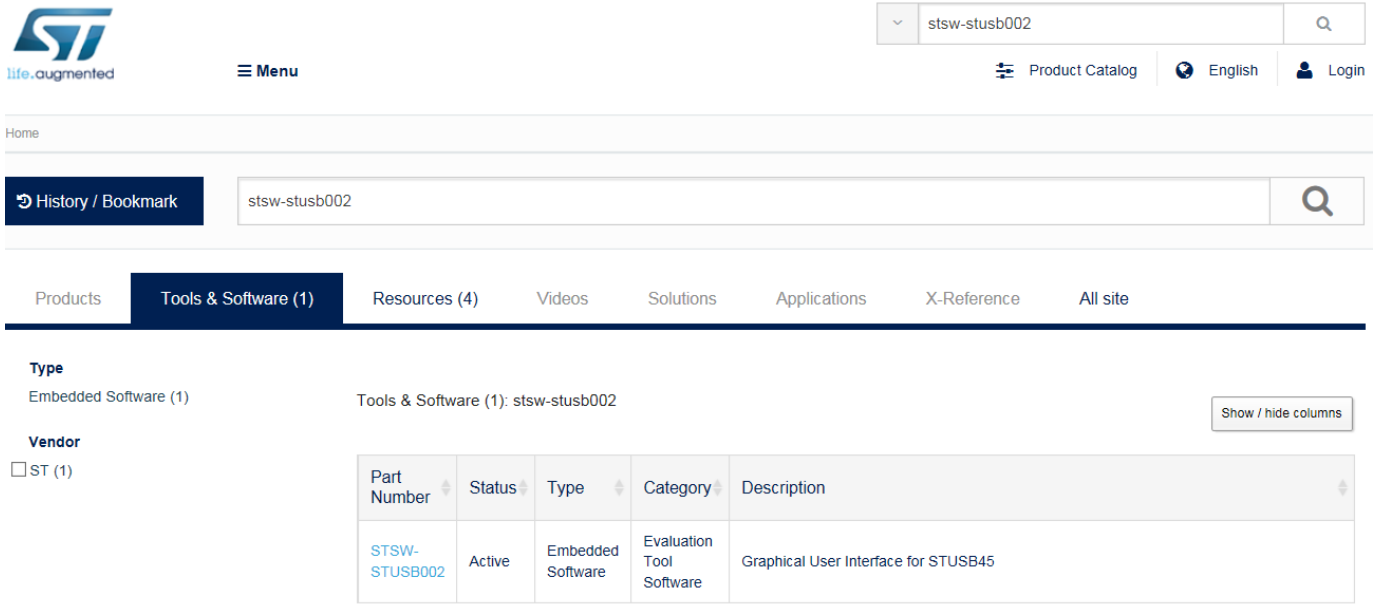


HARDWARE CONFIGURATION (2/8)

3) Download from www.st.com the STUSB45 GUI package (STSW-STUSB002) from the following location:



or by searching STSW-STUSB002 from www.st.com home page:



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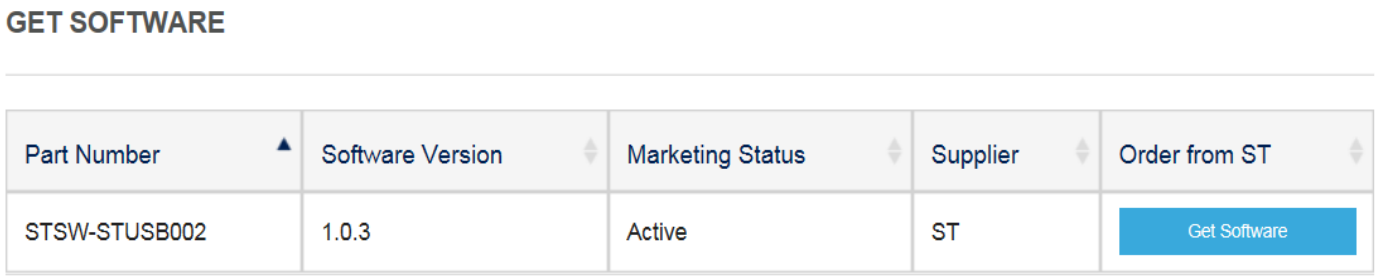
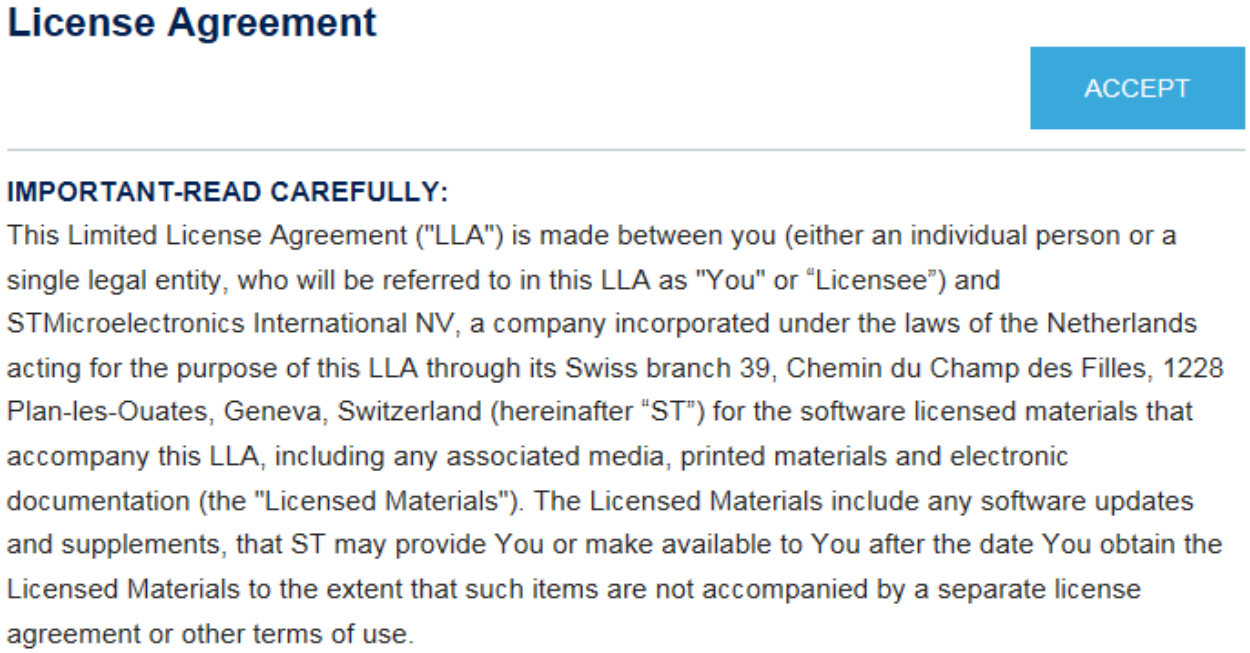
HARDWARE CONFIGURATION (3/8)

4) Then click on “Get Software” from the bottom of the page

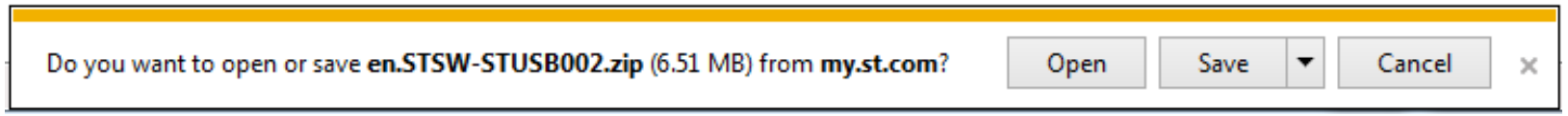


5) Download will start after accepting the License Agreement, and filling contact information.



HARDWARE CONFIGURATION (4/8)

6) Save the file **en.STSW-STUSB002.zip** on your laptop

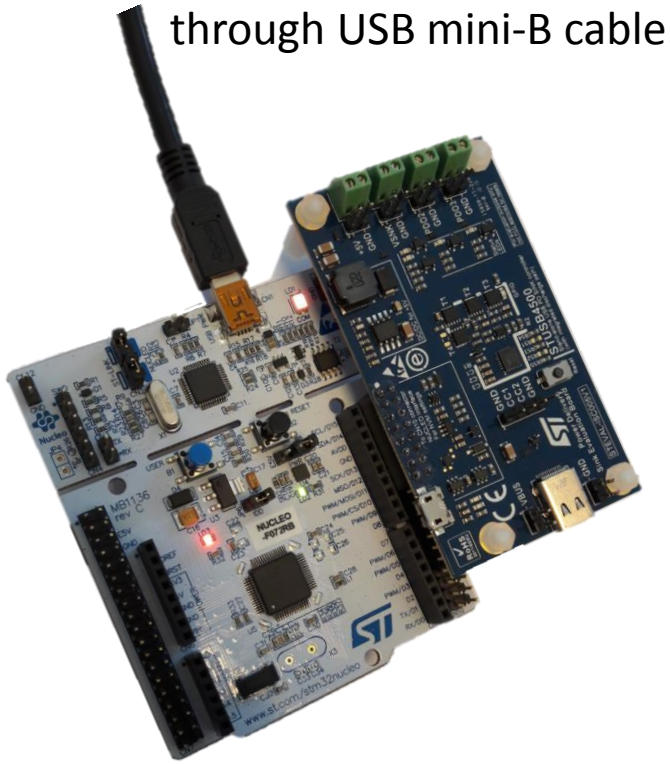


and unzip:

Name	Type	Size
mfc110u.dll	Application extension	4,353 KB
mfc110ud.dll	Application extension	10,677 KB
msvcp110.dll	Application extension	523 KB
msvcr110.dll	Application extension	855 KB
Nucleo_F072RB_STUSB_HID_NVM_config_1.6.bin	BIN File	52 KB
Nucleo_F072RB_STUSB_UART_NVM_config_1.03.bin	BIN File	12 KB
serialg168.dll	Application extension	32 KB
serialwrap.dll	Application extension	95 KB
STUSB4500_GUI_S_1.03.exe	Application	225 KB
uipinterface.dll	Application extension	214 KB

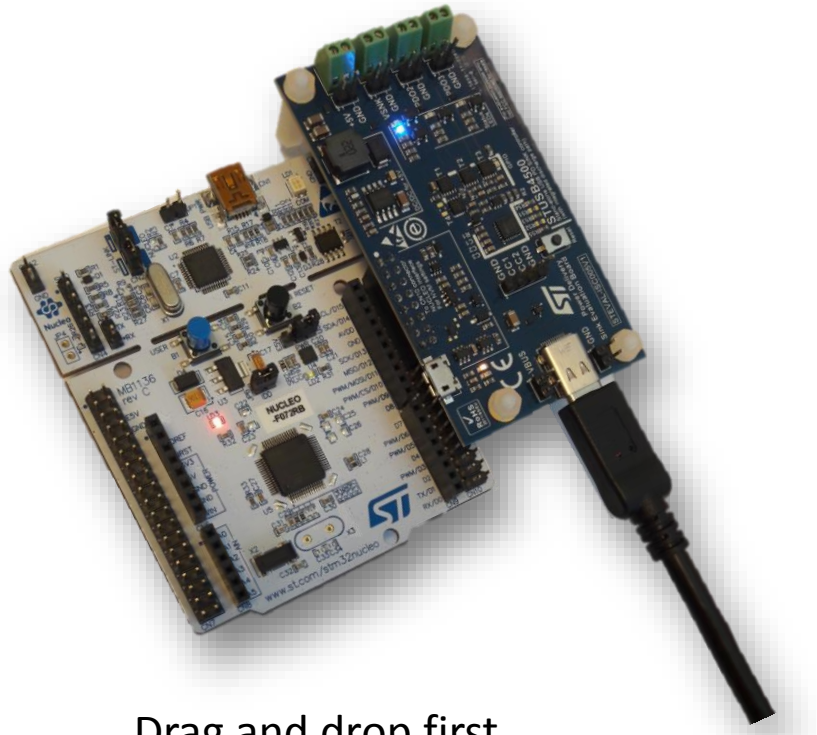
HARDWARE CONFIGURATION (5/8)

Connection between the GUI and NUCLEO-F072RB + STEVAL-ISC005V1 through USB mini-B cable.



Drag and drop NUCLEO_F072RB_STUSB_UART_NVM_config_1.03.bin into NUCLEO-F072RB

Connection between the GUI NUCLEO-F072RB and STEVAL-ISC005V1 with USB type-C cable

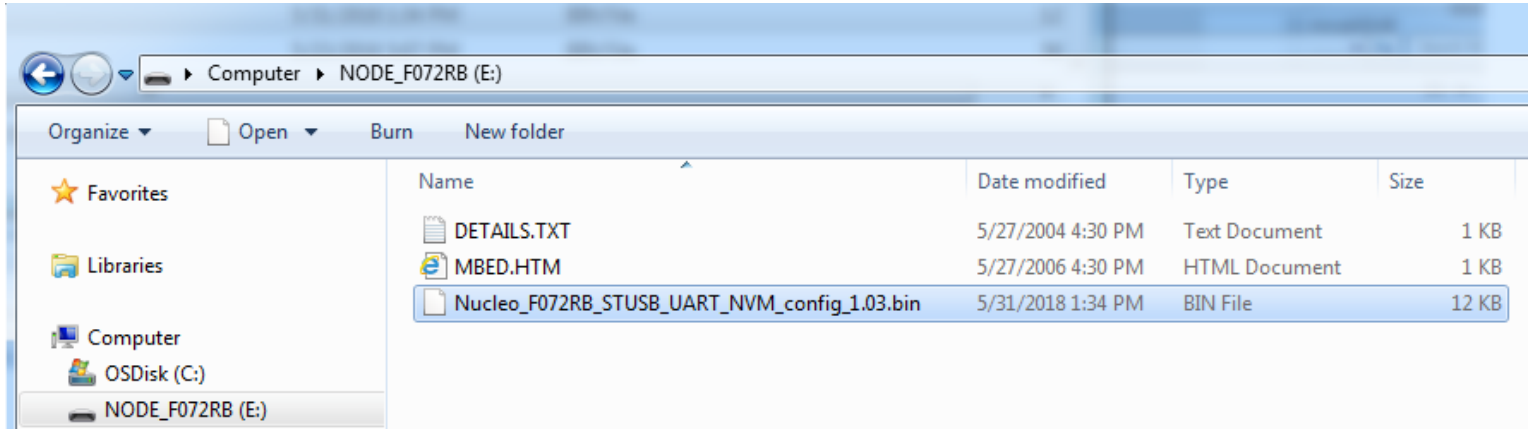


Drag and drop first NUCLEO_F072RB_STUSB_HID_NVM_config_1.6.bin into NUCLEO-F072RB using USB mini-B cable

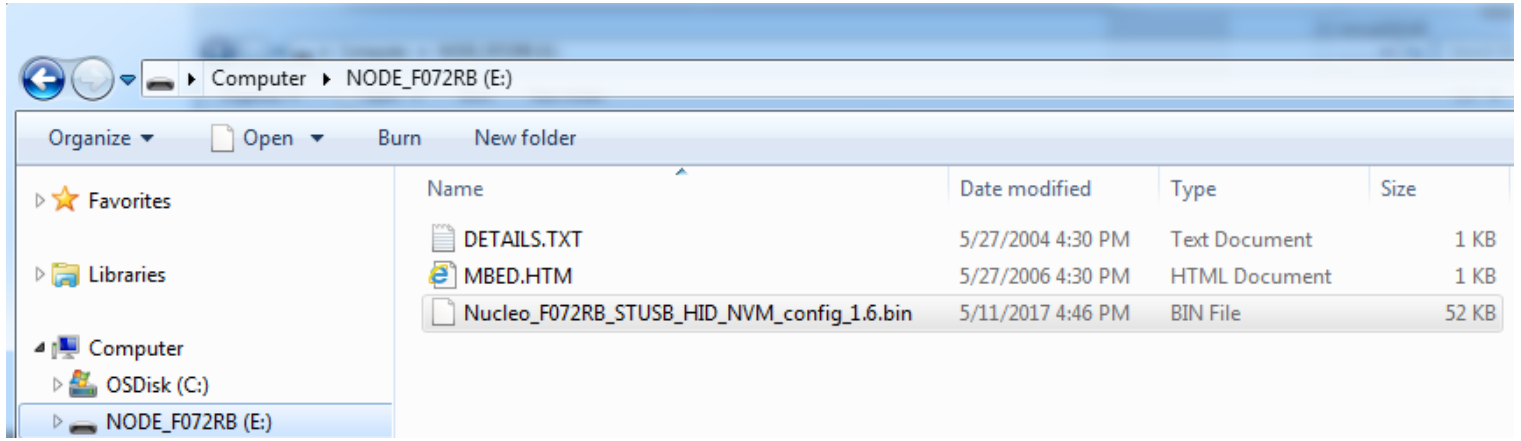
HARDWARE CONFIGURATION (6/8)

7) For the laptop connection (GUI):
   - if using a USB mini-B cable, please follow a)
   - if using a USB type-C cable, please follow b)

a) Drag and drop (*) the BIN file **(NUCLEO_F072RB_STUSB_UART_NVM_config_1.03.bin)** to the STM32 Nucleo board (NODE_F072RB):



b) Drag and drop (*) the BIN file **(NUCLEO_F072RB_STUSB_HID_NVM_config_1.6.bin)** to the STM32 Nucleo board (NODE_F072RB):



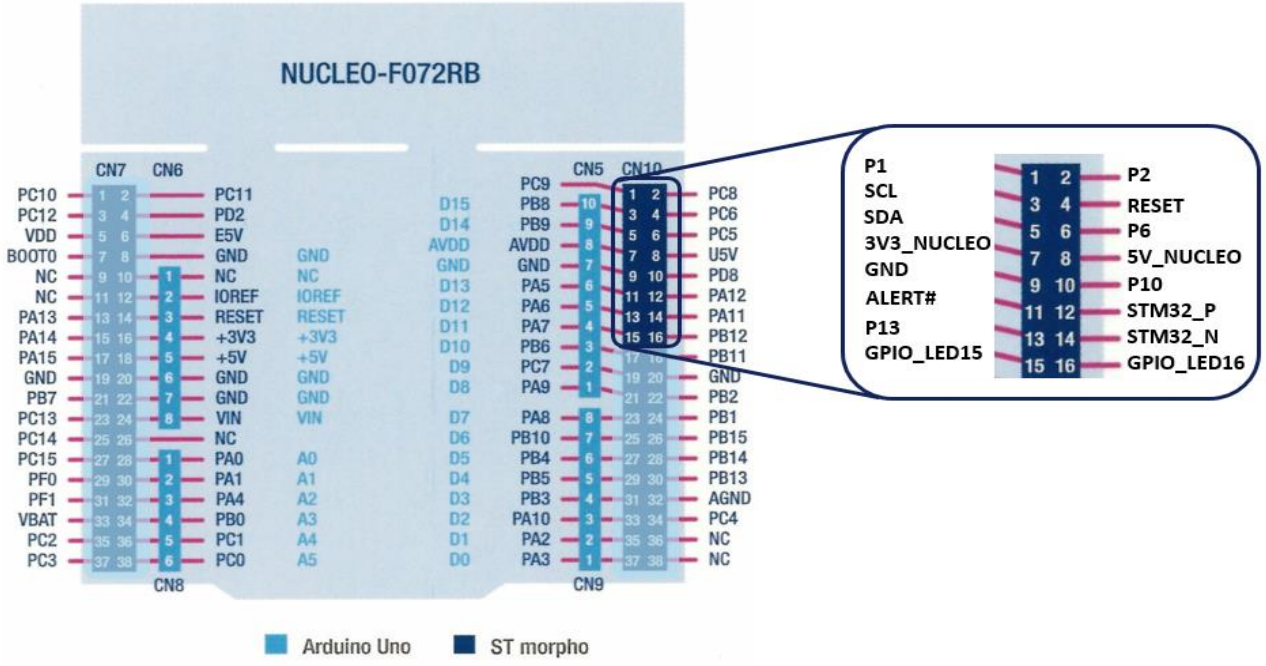
(*) using the mini-B cable

HARDWARE CONFIGURATION (7/8)

8) Press the NUCLEO-F072RB “RESET” button (B2 – Black push button).

9) The board is now configured to act as a USB to I²C bridge between the STUSB Graphical User Interface (GUI) and STUSB4500.

10) Before opening the GUI, please make sure SDA and SCL signals from the STUSB evaluation board are properly connected to their counterpart from NUCLEO-F072B (see below connection).



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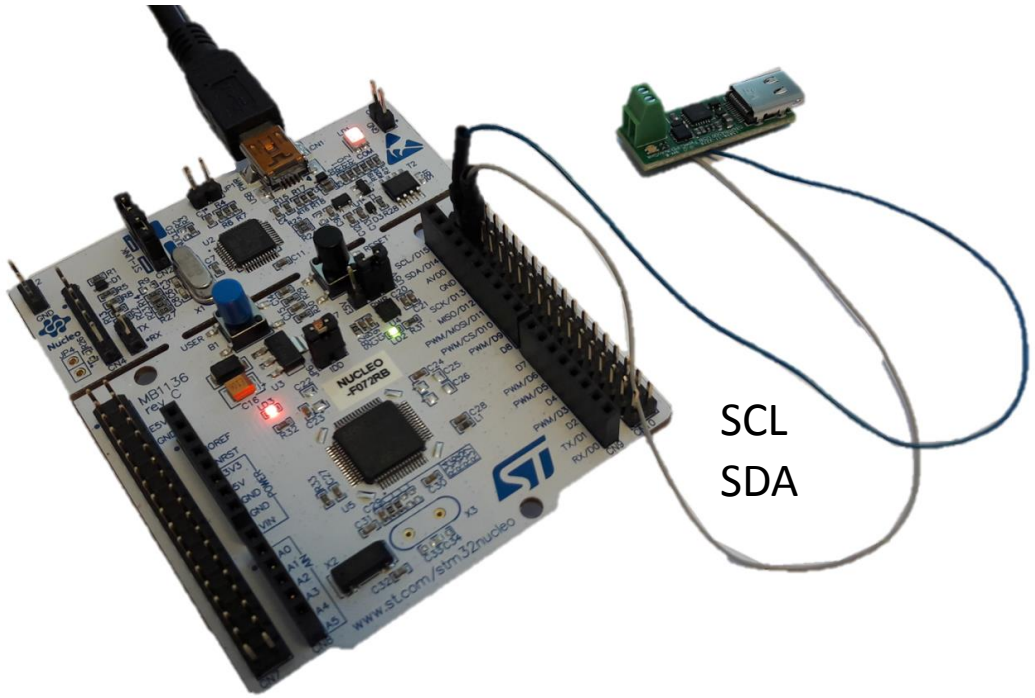
HARDWARE CONFIGURATION (8/8)

I²C connection between
NUCLEO-F072RB and STREF-SCS001V1
using
NUCLEO_F072RB_STUSB_UART_NVM_config_1.03.bin
with USB mini-B cable



NB:
STREF-SCS001V1 must be supplied through USB connector

Additional GND connection to the NUCLEO is recommended

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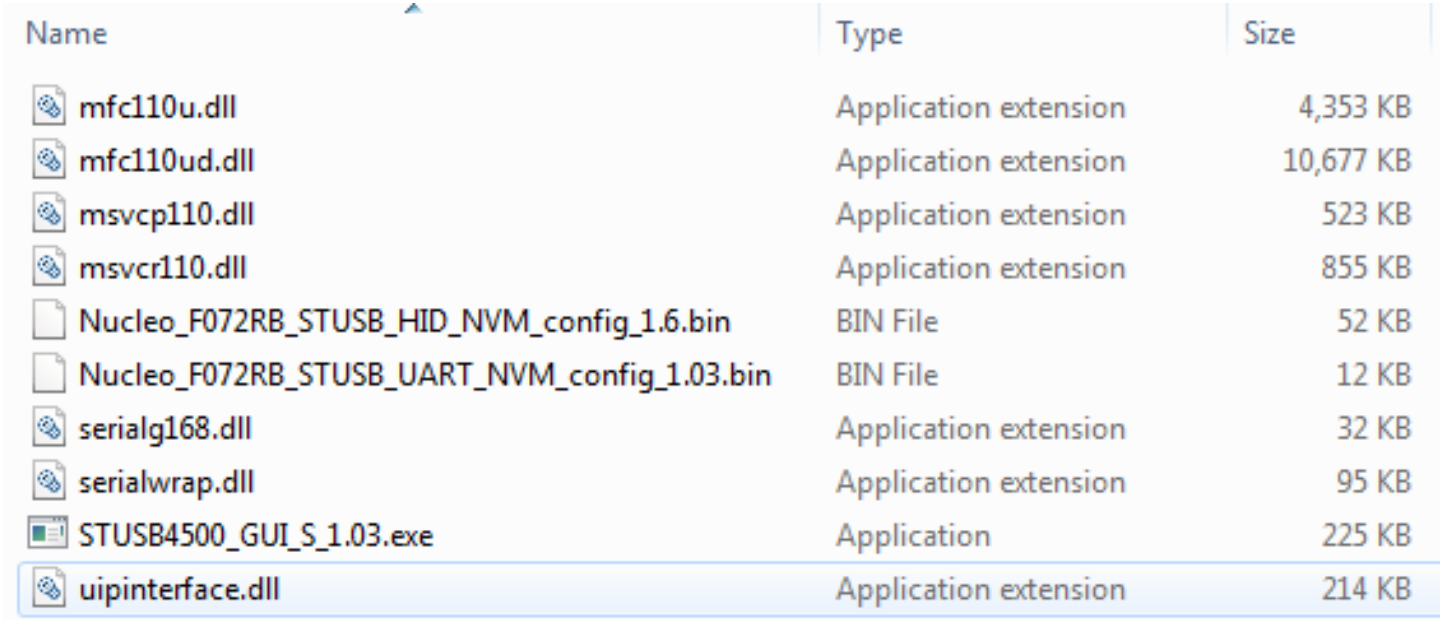
GUI SET-UP (1/2)

11) Extract the bellow files from **en.STSW-STUSB002.zip**,
and make sure the .dll files are in the same directory as the .exe



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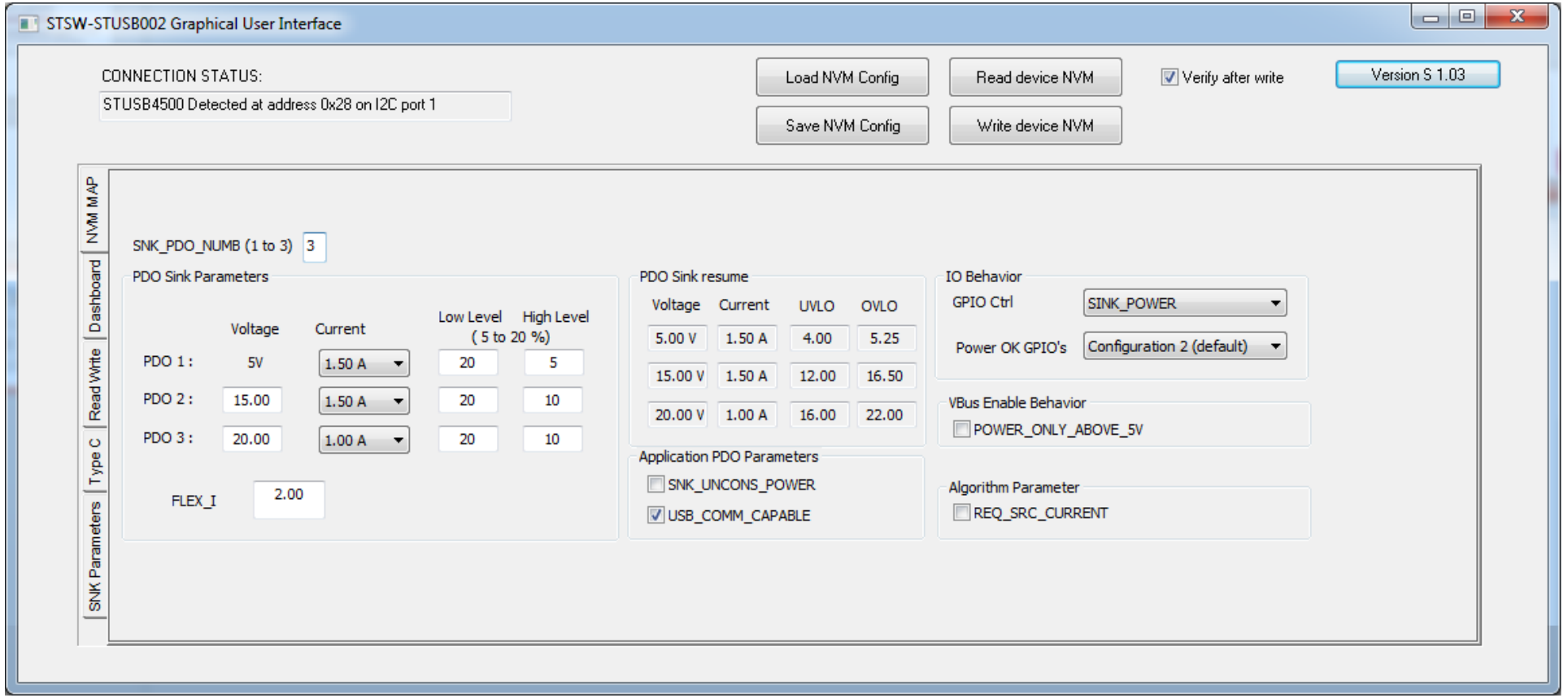
serialwrap.dll	Application extension	95 KB
STUSB4500_GUI_S_1.03.exe	Application	225 KB
uipinterface.dll	Application extension	214 KB

GUI SET-UP (2/2)

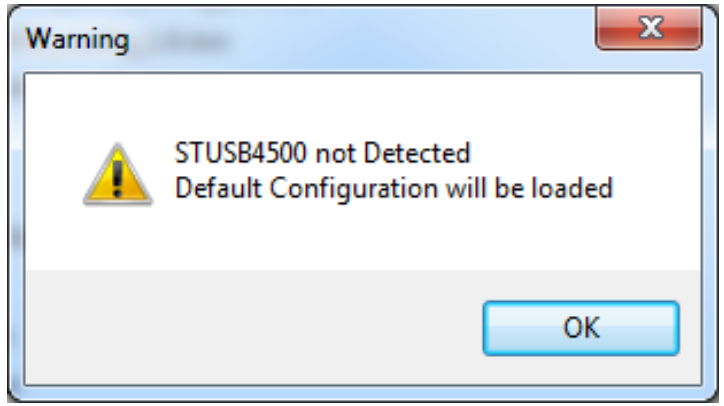
12) Please click on the .exe file to open the GUI. The following window must appear.



The GUI is now ready to use.

For more details about using the GUI, please refer to **STSW-STUSB002** user manual.

ERROR MESSAGE (1/2)



ISSUE: The STUSB evaluation board is not detected by the GUI

RESOLUTION:

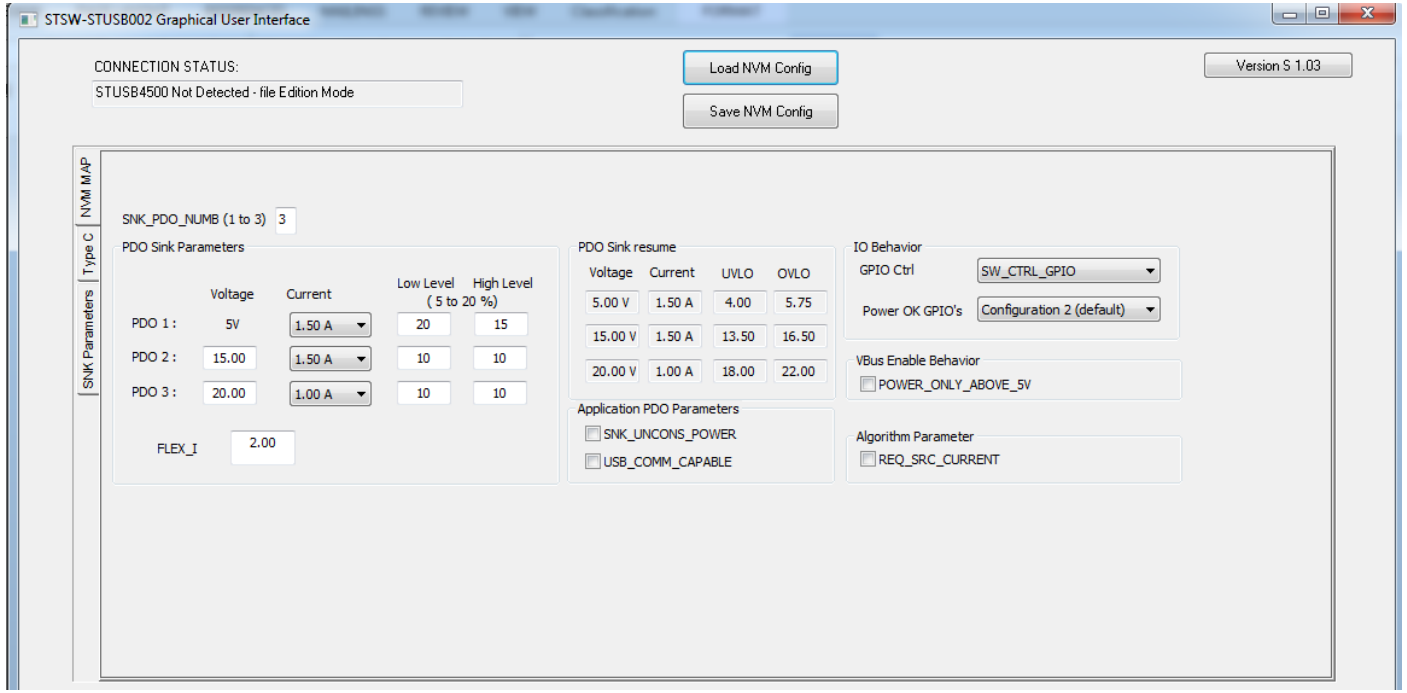
Please check I²C signals (SDA, SCL) connection to MCU (see section 10). Also double check that the STUSB4500 is properly powered (through VDD or VSYS pins) as well as the GROUND. In case the LD2 green LED from the NUCLEO is not blinking, please check the NUCLEO board has been properly configured (see section 7).

Then re-start the GUI.

ERROR MESSAGE (2/2)

NB:

It is possible to use the GUI without STUSB4500 connected to it. In this case, STUSB4500 default configuration (as per the Datasheet) is loaded. This mode (File edition mode) is generally used to IMPORT or EXPORT a STUSB4500 custom configuration into a file.



more information at:

www.st.com/stusb4500-pr