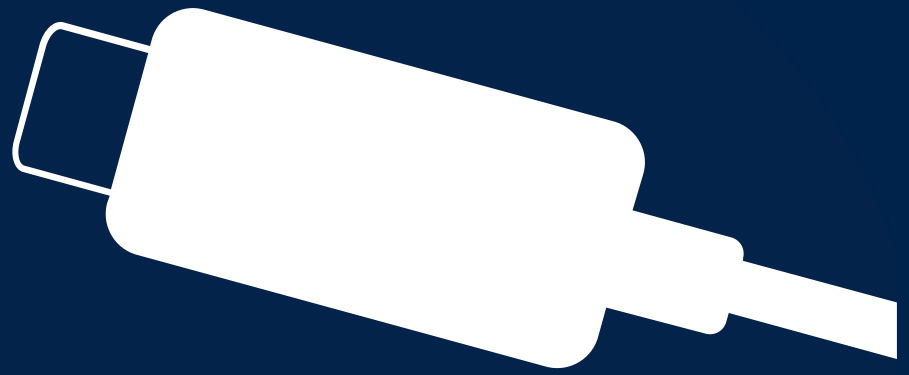


STSW-STUSB021
Quick Start Guide

STUSB

Installing STUSB4531 NVM flasher

Introduction

This document describes how to install STUSB4531 Non Volatile Memory flasher (STSW-STUSB021).
This tool is useful to access STUSB4531 Non Volatile Memory.

Related SOFTWARE	
STSW-STUSB021	STUSB4531 NVM flasher
Operating System	Windows
Related HARDWARE	
NUCLEO-C071RB	STM32 Nucleo-64 development board with STM32C071RB MCU
or **NUCLEO-F072RB**	STM32 Nucleo-64 development board with STM32F072RB MCU
USB cable	With data support
EVAL-SCS006V1 (*)	STUSB4531 mini dongle
or **EVAL-SCS007V1** (*)	STUSB4531 evaluation board

(*) and following revisions (if available)

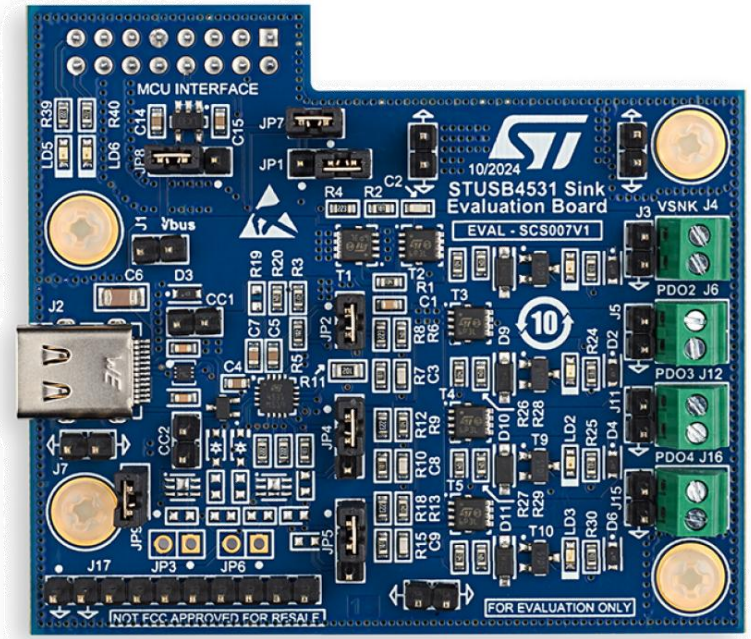
Supported Hardware

MINI-DONGLE

EVAL-SCS006V1 (*)

EVALUATION BOARD

EVAL-SCS007V1 (*)



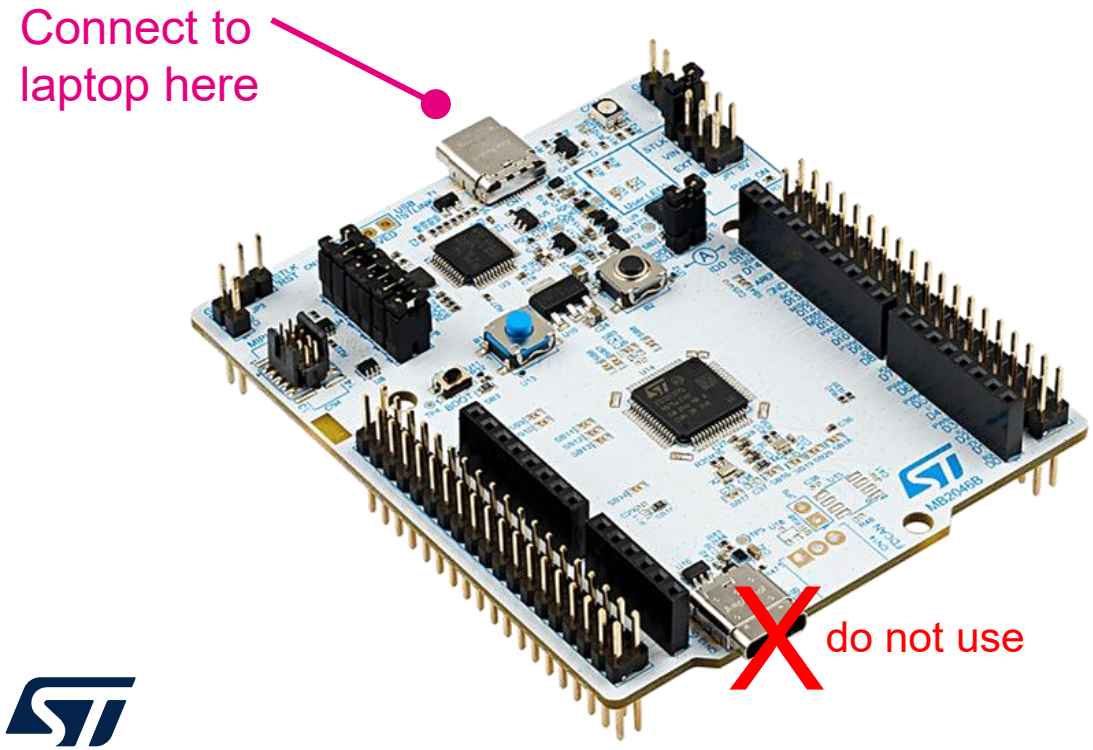
(*) and following revisions (if available)

Installation process

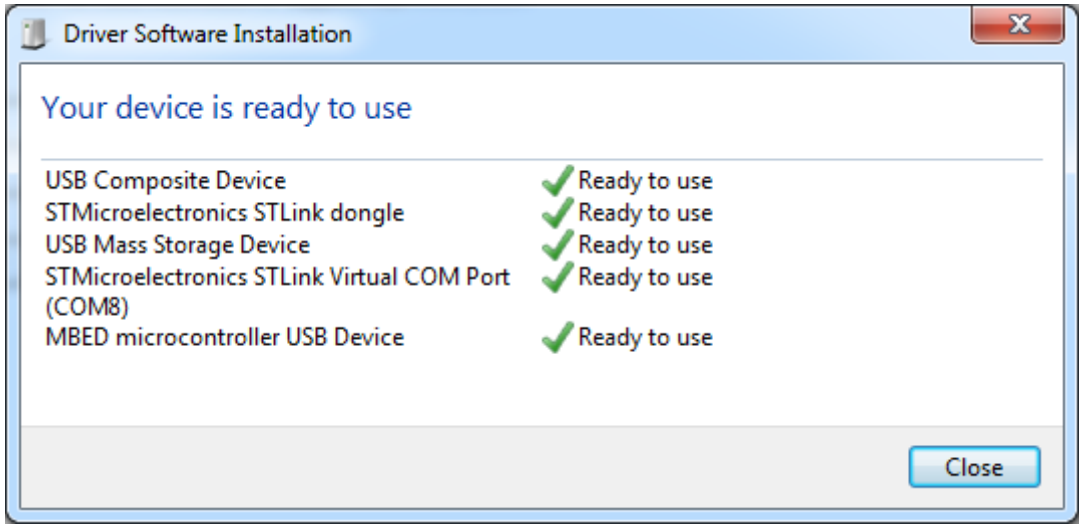
1	NUCLEO FW upgrade	from 1 to 5
2	Hardware configuration: • Case 1: with EVAL-SCS007V1 • Case 2: with EVAL-SCS006V1	from 6 to 7 from 8 to 9
3	Flasher set-up	from 10 to 18
4	Open the Flasher and use	from 19 to 21

NUCLEO FW upgrade (1/4)

1. Connect the NUCLEO-C071 (or NUCLEO-F072) to the laptop using USB-C cable

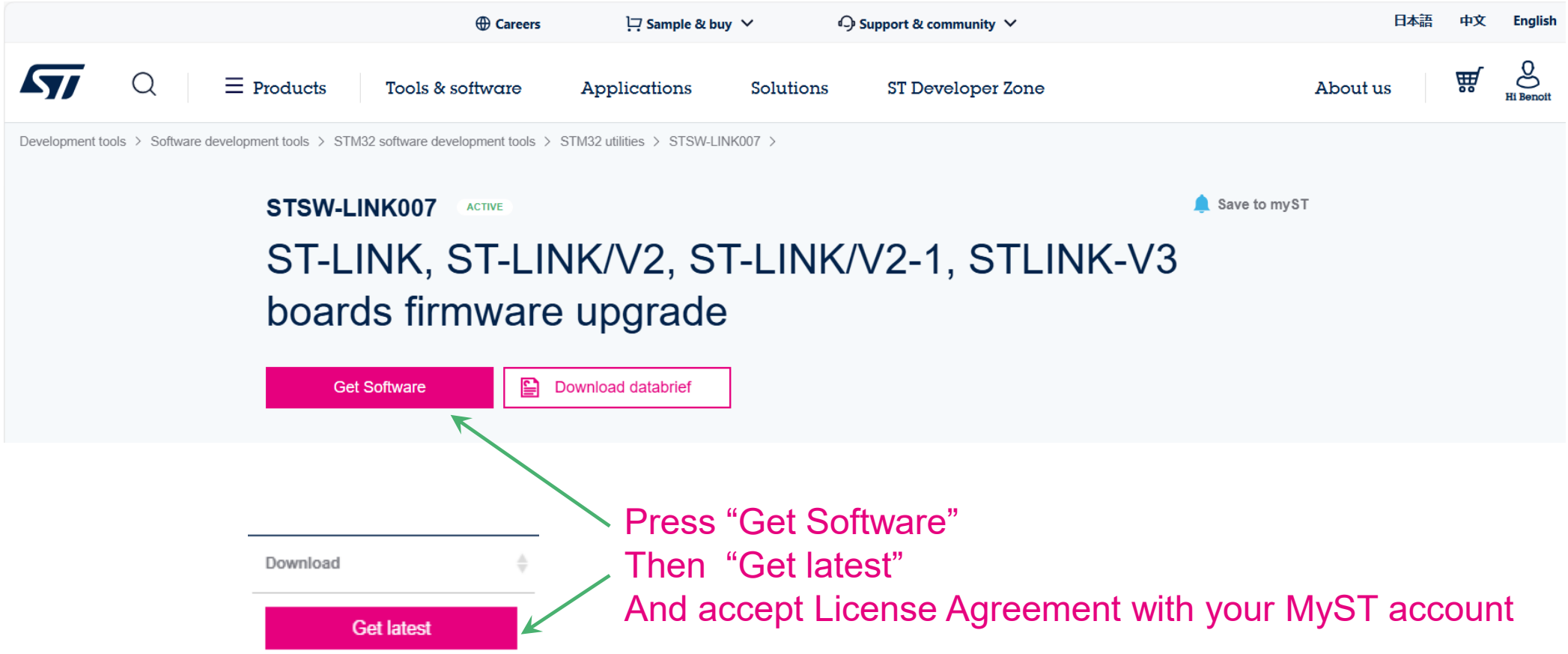


2. Please make sure the device drivers are installed successfully:



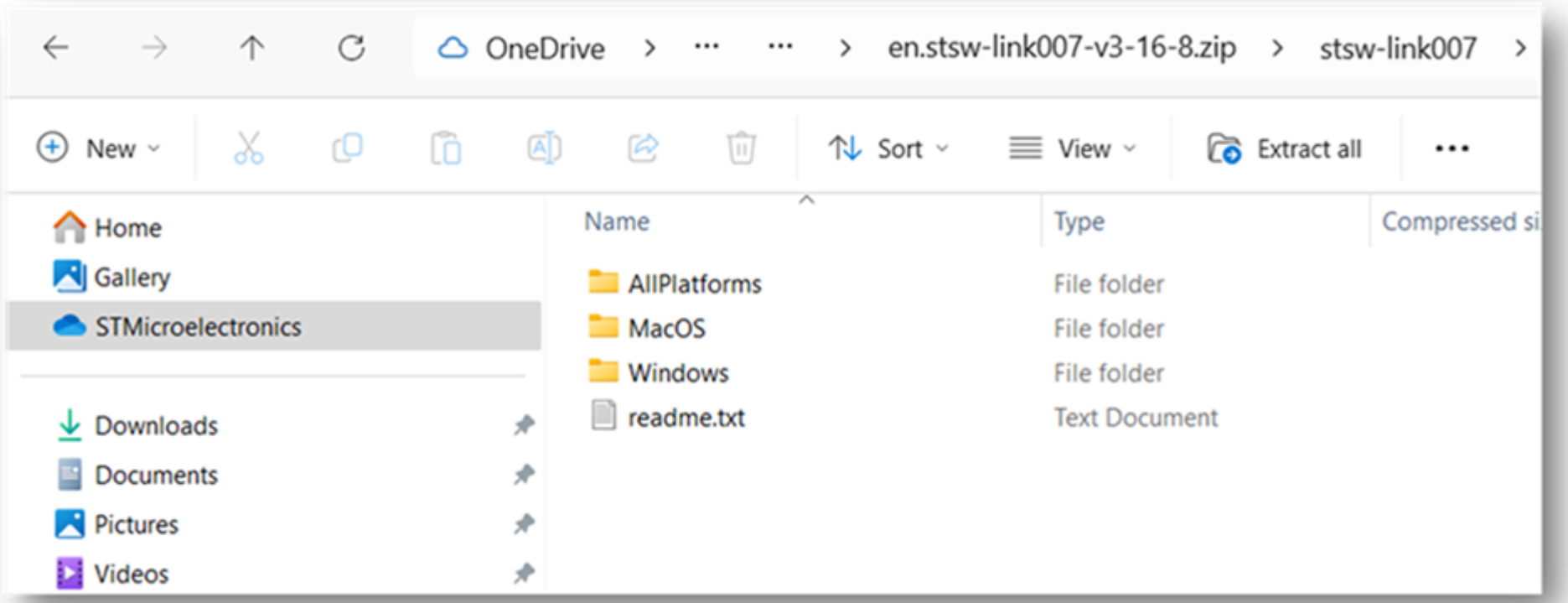
NUCLEO FW upgrade (2/4)

3 Download and install STSW-LINK007



NUCLEO FW upgrade (3/4)

4 Select your operating system and run the STLINKUpgrade.exe to upgrade the NUCLEO-C071



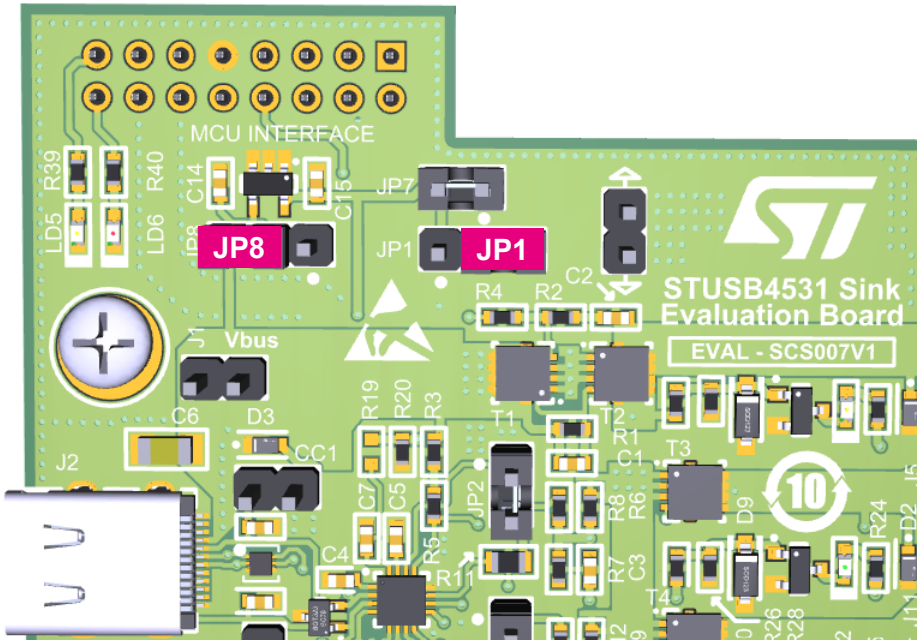
NUCLEO FW upgrade (4/4)

5 Select the STM32 Debug+Mass storage+VCP option

Hardware Configuration (1/4)

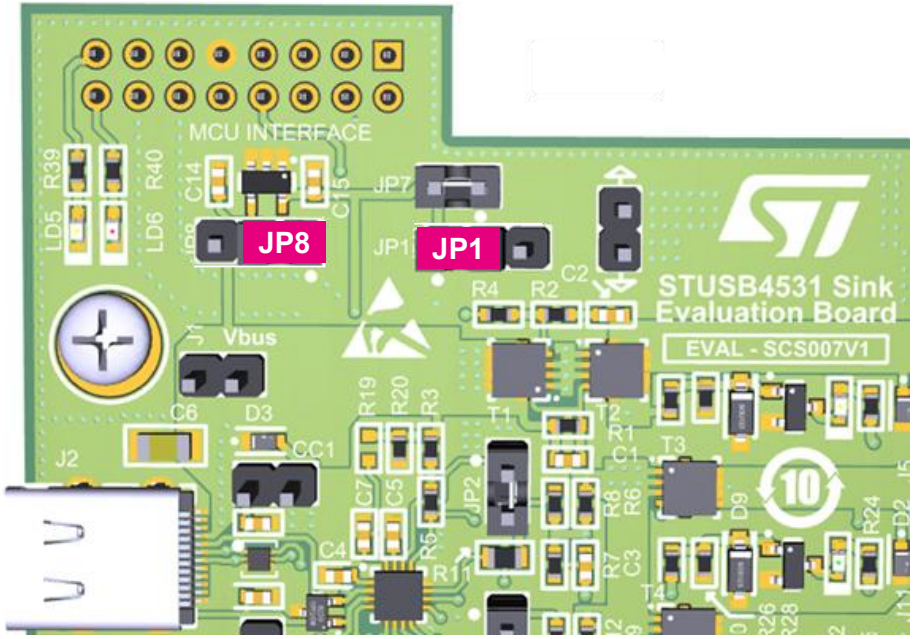
6 Case 1: Using EVAL-SCS007V1: Power the board from the NUCLEO

By default, JP1 and JP8 are in external position:
STUSB4531 is powered by USB-C port (VBUS)



Change JP1 & JP8
Jumpers position

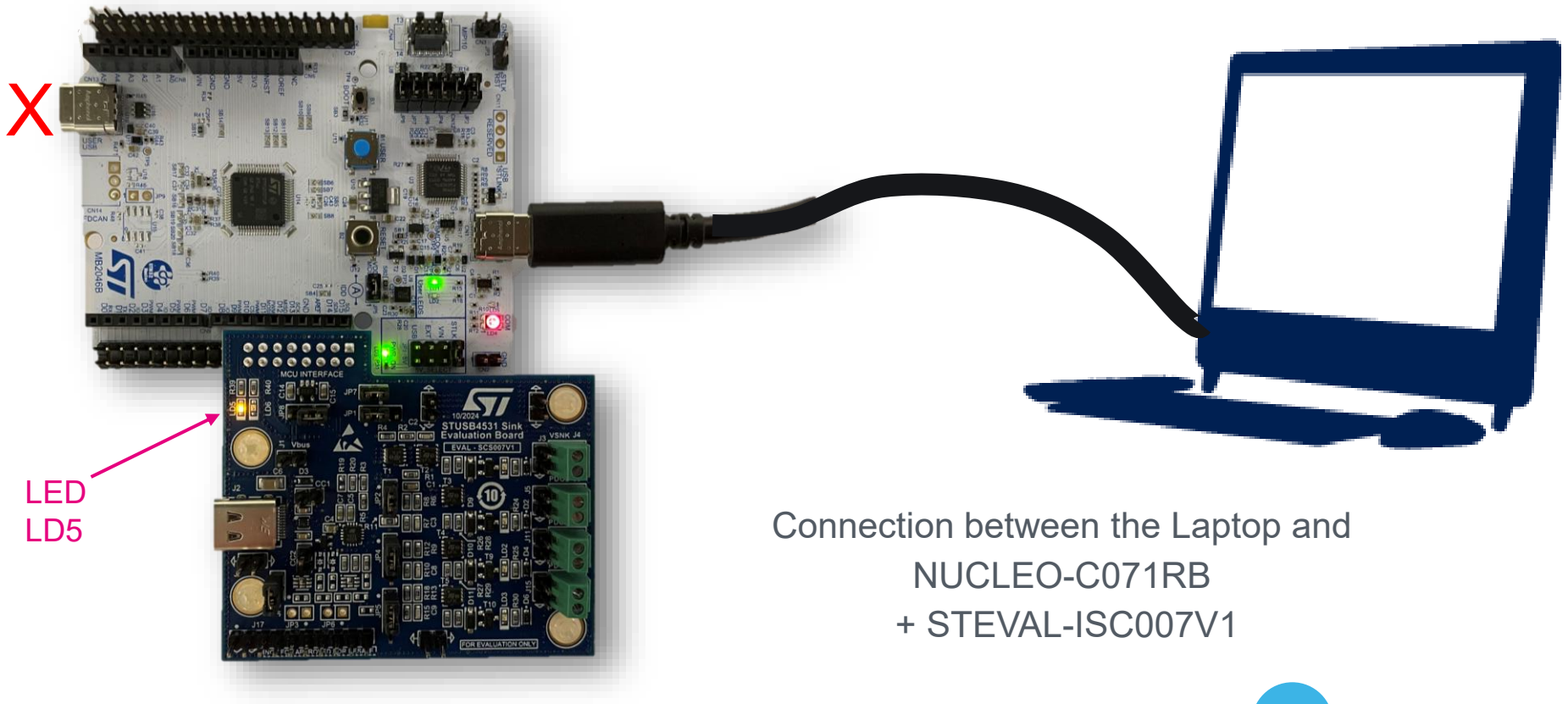
Set JP1 and JP8 in internal position:
STUSB4531 is powered by Nucleo board



Explanation: In order to access to STUSB4531 NVM or I²C registers from the NVM flasher or a GUI, the STUSB4531 must be always ON, even if the STUSB4531 is not attached to a source. That's why, STUSB4531 power supply must come from the system, and not from VBUS

Hardware Configuration (2/4)

7 **Case 1**: Using EVAL-SCS007V1: Connect to the NUCLEO and to the laptop

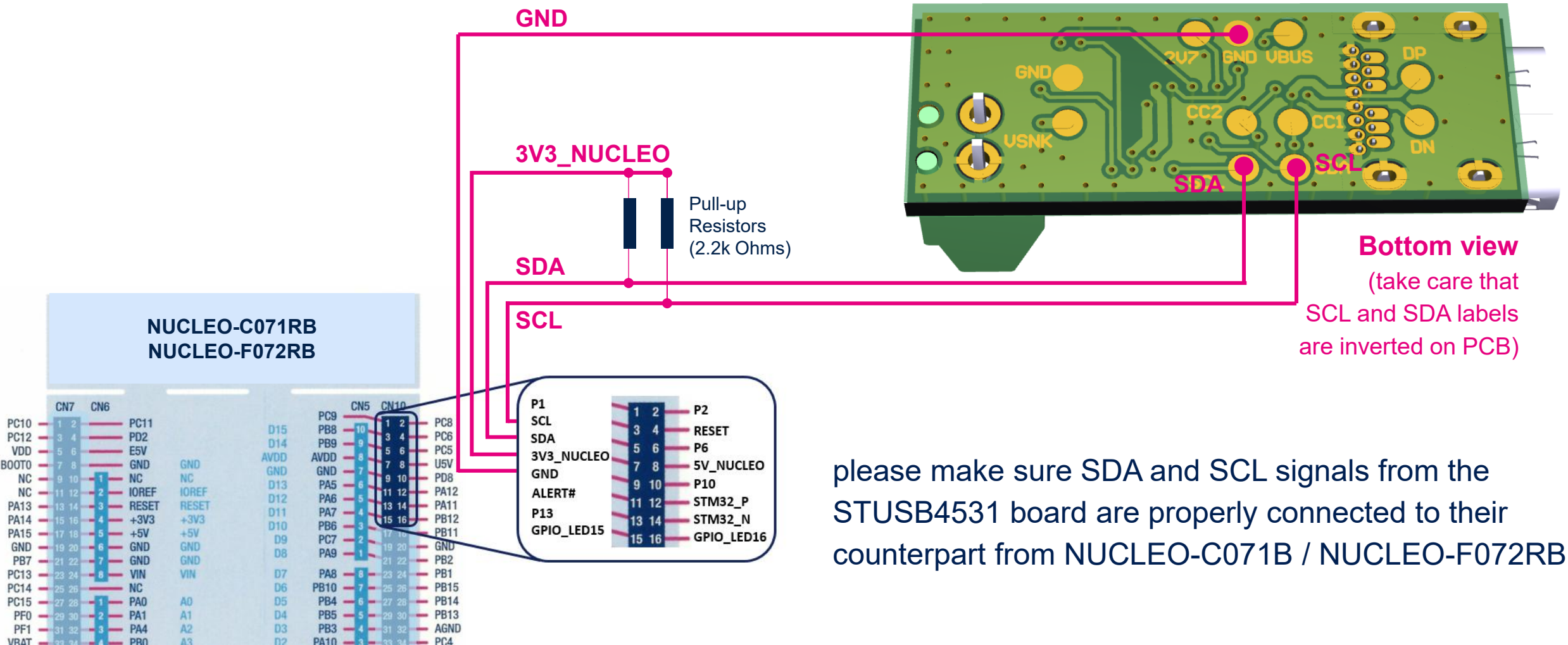


Connection between the Laptop and
NUCLEO-C071RB
+ STEVAL-ISC007V1

➔ GO to 10

Hardware Configuration (3/4)

8 Case 2: Using EVAL-SCS006V1: Connect to the NUCLEO



please make sure SDA and SCL signals from the STUSB4531 board are properly connected to their counterpart from NUCLEO-C071B / NUCLEO-F072RB

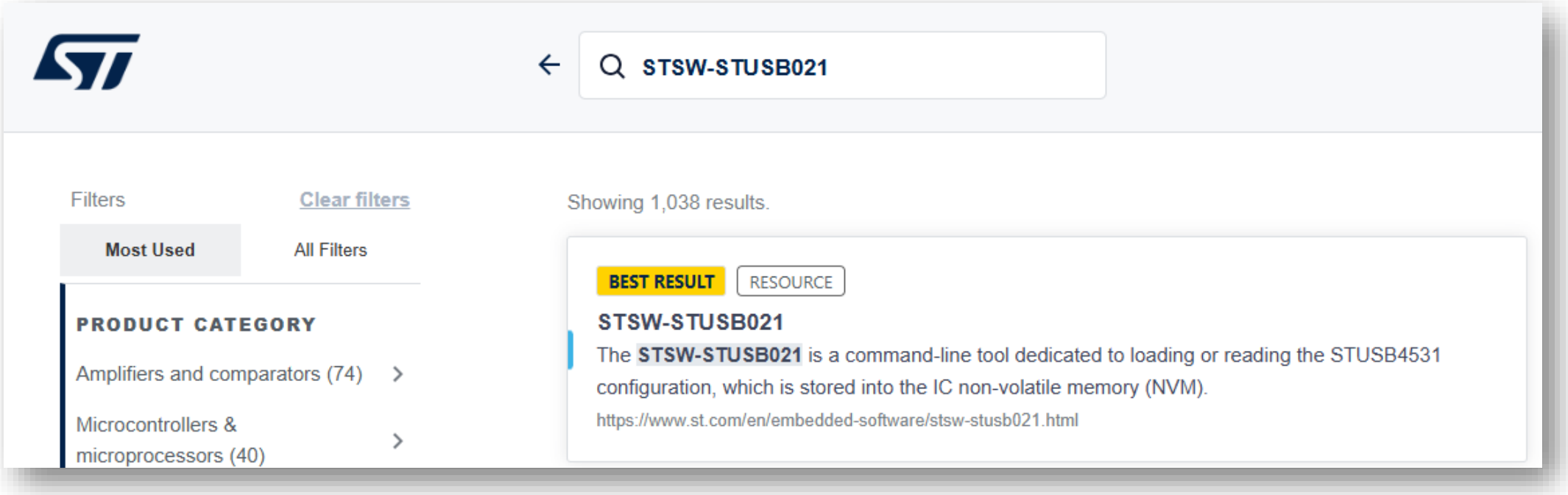
Hardware Configuration (4/4)

9 **Case 2**: Using EVAL-SCS006V1: Power the board from the USB-C port

Explanation: at the opposite of EVAL-SCS007V1, EVAL-SCS006V1 is powered from VBUS exclusively.
In order to access to STUSB4531 NVM or I²C registers from the NVM flasher or the GUI, the EVAL-SCS006V1 must be attached to a SOURCE (A to C cable, power bank, AC adapter, dockin etc…)

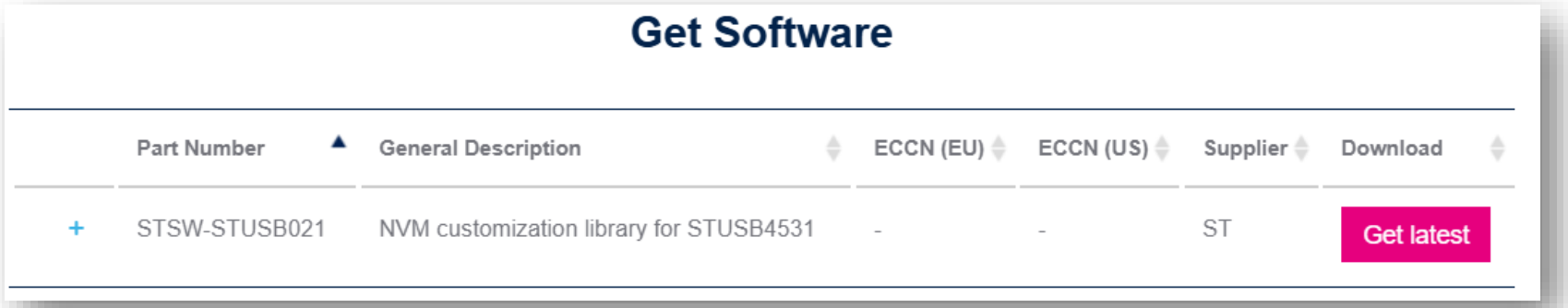
Flasher set-up (1/5)

10 Download the STUSB4531 flasher package by searching STSW-STUSB021 from www.st.com home page:

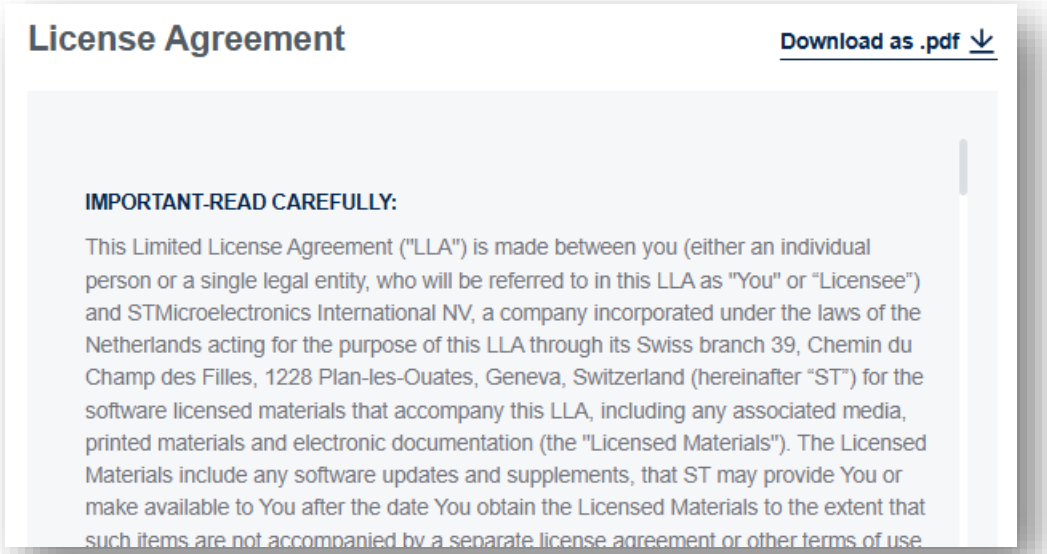


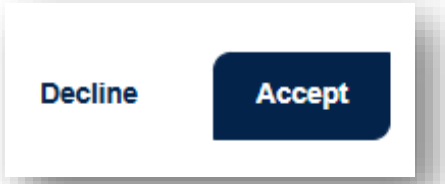
Flasher set-up (2/5)

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



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

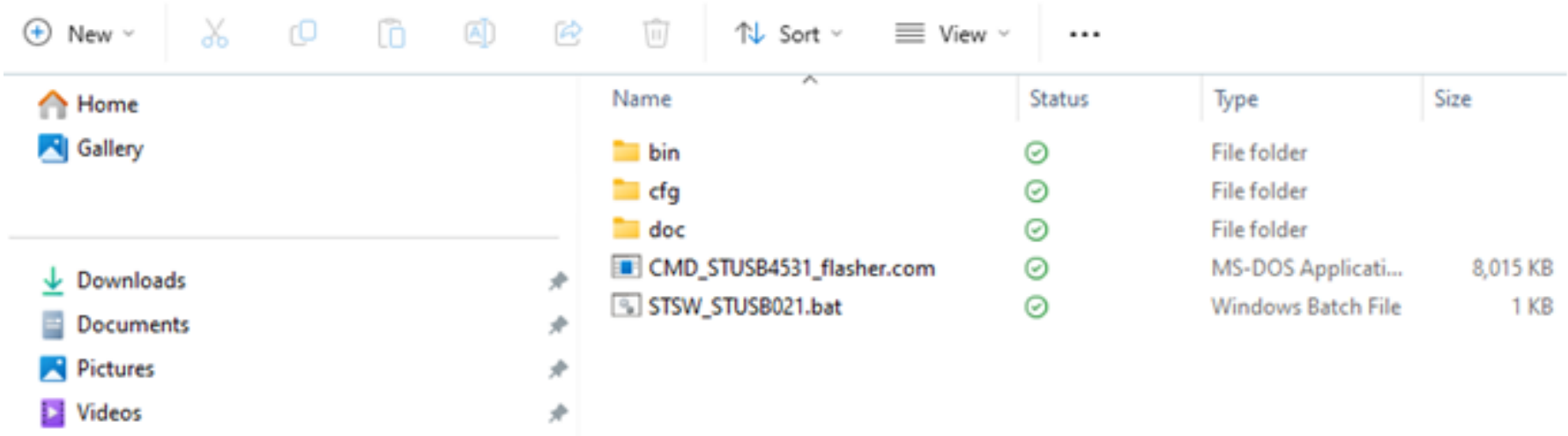




Flasher set-up (3/5)

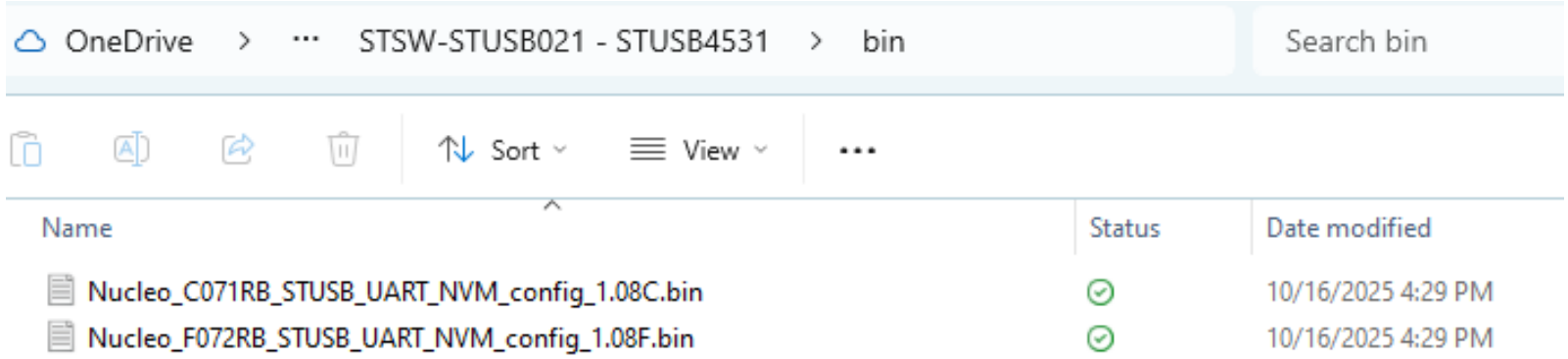
13 Save the file **stsw-stusb021.zip** on your laptop

and unzip:



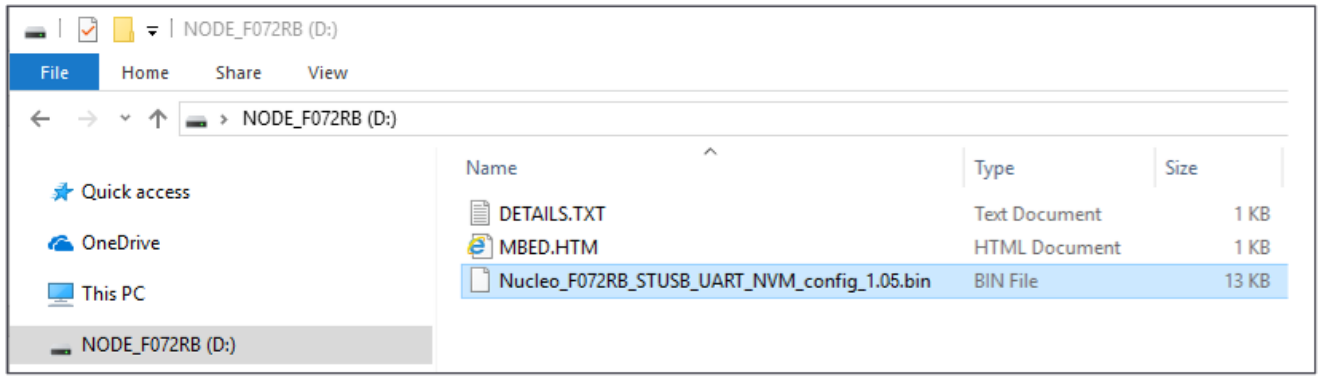
Flasher set-up (4/5)

14 The STM32 Nucleo board must be flashed with the correct binary file contained in the bin directory



15 Connect the Nucleo board to the Laptop (see 7 or 9)

Drag and drop the appropriated BIN file to the Nucleo board (NODE_C071RB or NODE_F072RB)



Flasher set-up (5/5)

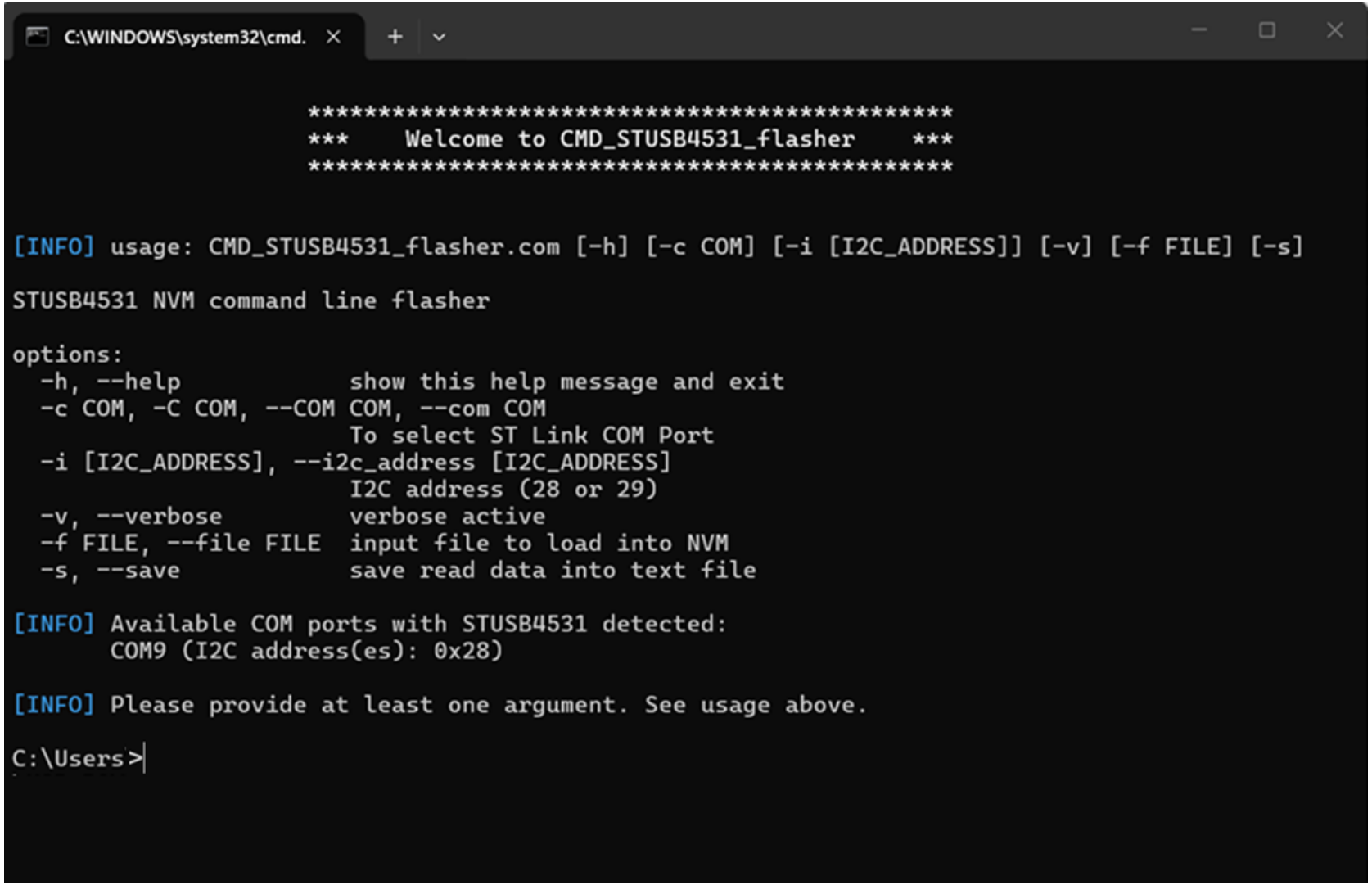
16 Press the NUCLEO-C071RB “RESET” button (B2 – Black push button).

17 If using the EVAL-SCS007V1, the LED LD5 should be blinking (see 7)

18 The board is now configured to act as a USB to I²C bridge between the STSW-STUSB020/1 and STUSB4531.

Open the flasher

19 Open the flasher by clicking on STSW_STUSB021.bat



Command line options

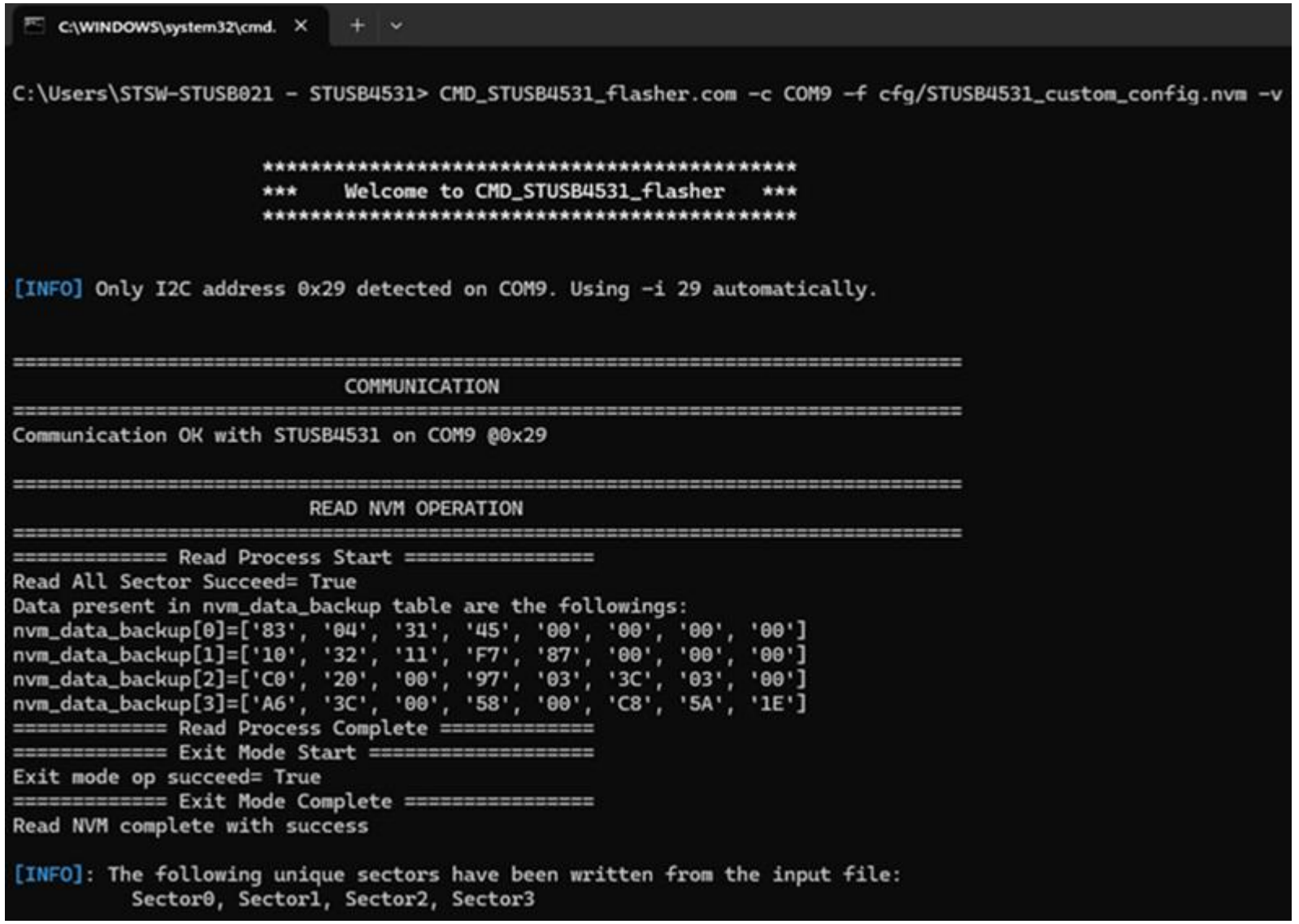
20

CMD_STUSB4531_flasher.com [-h] [-c COM] [-i [I2C_ADDRESS]] [-v] [-f FILE] [-s]

options	Description
-h --help	show this help message and exit
-c COM -C COM --COM COM --com COM	To select ST Link COM Port
-i [I2C_ADDRESS] --i2c_address [I2C_ADDRESS]	I2C address (28 or 29)
-v --verbose	verbose active
-f FILE --file FILE	input file to load into NVM
-s, --save	save read data into text file

Example

21


C:\WINDOWS\system32\cmd.
C:\Users\STSW-STUSB021 - STUSB4531> CMD_STUSB4531_flasher.com -c COM9 -f cfg/STUSB4531_custom_config.nvm -v
****
*** Welcome to CMD_STUSB4531_flasher ***
****
[INFO] Only I2C address 0x29 detected on COM9. Using -i 29 automatically.
COMMUNICATION
Communication OK with STUSB4531 on COM9 @0x29
READ NVM OPERATION
========== Read Process Start ==========
Read All Sector Succeed= True
Data present in nvm_data_backup table are the followings:
nvm_data_backup[0]=['83', '04', '31', '45', '00', '00', '00', '00']
nvm_data_backup[1]=['10', '32', '11', 'F7', '87', '00', '00', '00']
nvm_data_backup[2]=['C0', '20', '00', '97', '03', '3C', '03', '00']
nvm_data_backup[3]=['A6', '3C', '00', '58', '00', 'C8', '5A', '1E']
========== Read Process Complete ==========
========== Exit Mode Start ==========
Exit mode op succeed= True
========== Exit Mode Complete ==========
Read NVM complete with success
[INFO]: The following unique sectors have been written from the input file:
Sector0, Sector1, Sector2, Sector3

Our technology starts with You