

Type 2GT LoRa Module EVB User Manual

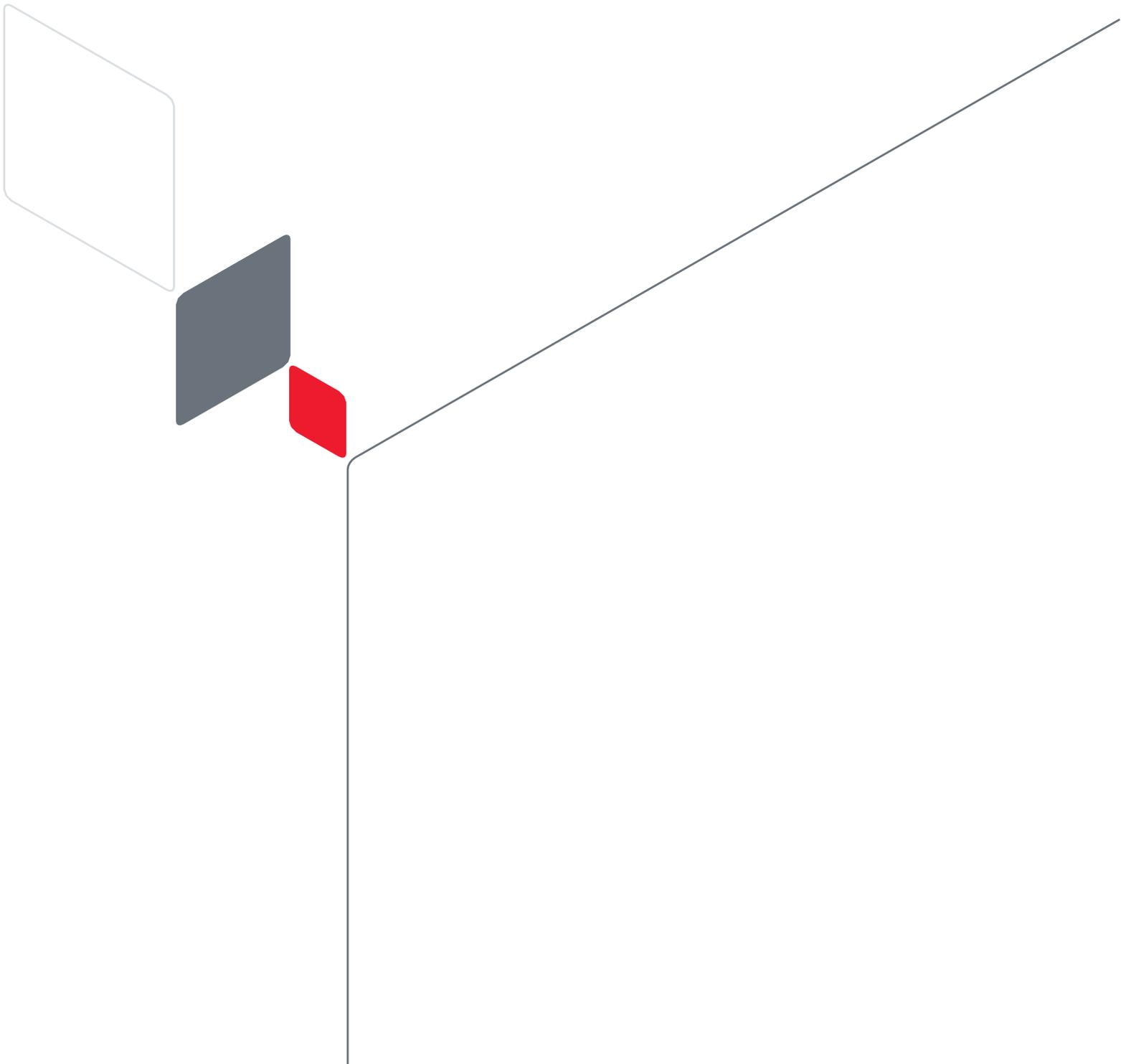


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1 Introduction

This document specifies the usage of 2GT module EVB which is an assistant tool for engineers to develop and test Murata 2GT module.

2 General Overview

2.1 View of EVB

The figure 1 shows the top view of the EVB.

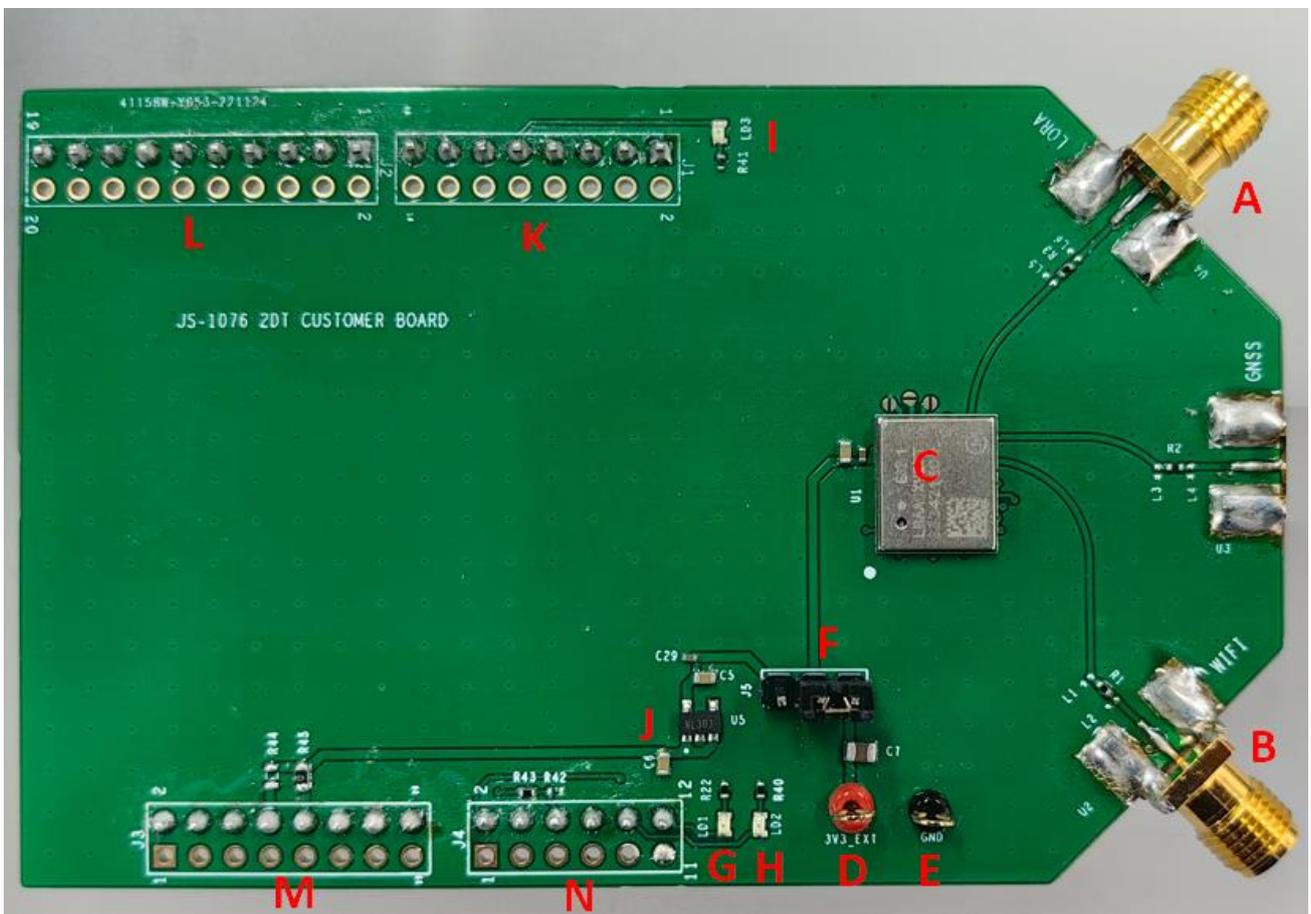


Figure 1: Top View of EVB

The table1 shows the parts on the EVB information.

Table 1: Parts on the EVB

SN	Ref No	Description
A	U4	Lora sub_G RF port
B	U2	Lora 2.4G RF port
C	U1	2GT module
D	3V3_EXT	Connector of external power supply
E	GND	connector of external GND
F	J5	Switch of power supply
G	LD1	LoRa Transmit Data Indication LED
H	LD2	LoRa Receive Data Indication LED
I	LD3	Wi-Fi or GNSS Sniff Indication LED
J	U5	3V3 LDO
K	J1	Connect pins to MCU platform
L	J2	Connect pins to MCU platform
M	J3	Connect pins to MCU platform
N	J4	Connect pins to MCU platform

2.2 EVB schematic

The figure2 shows the schematic of EVB. User can refer it to check the parts on the EVB.

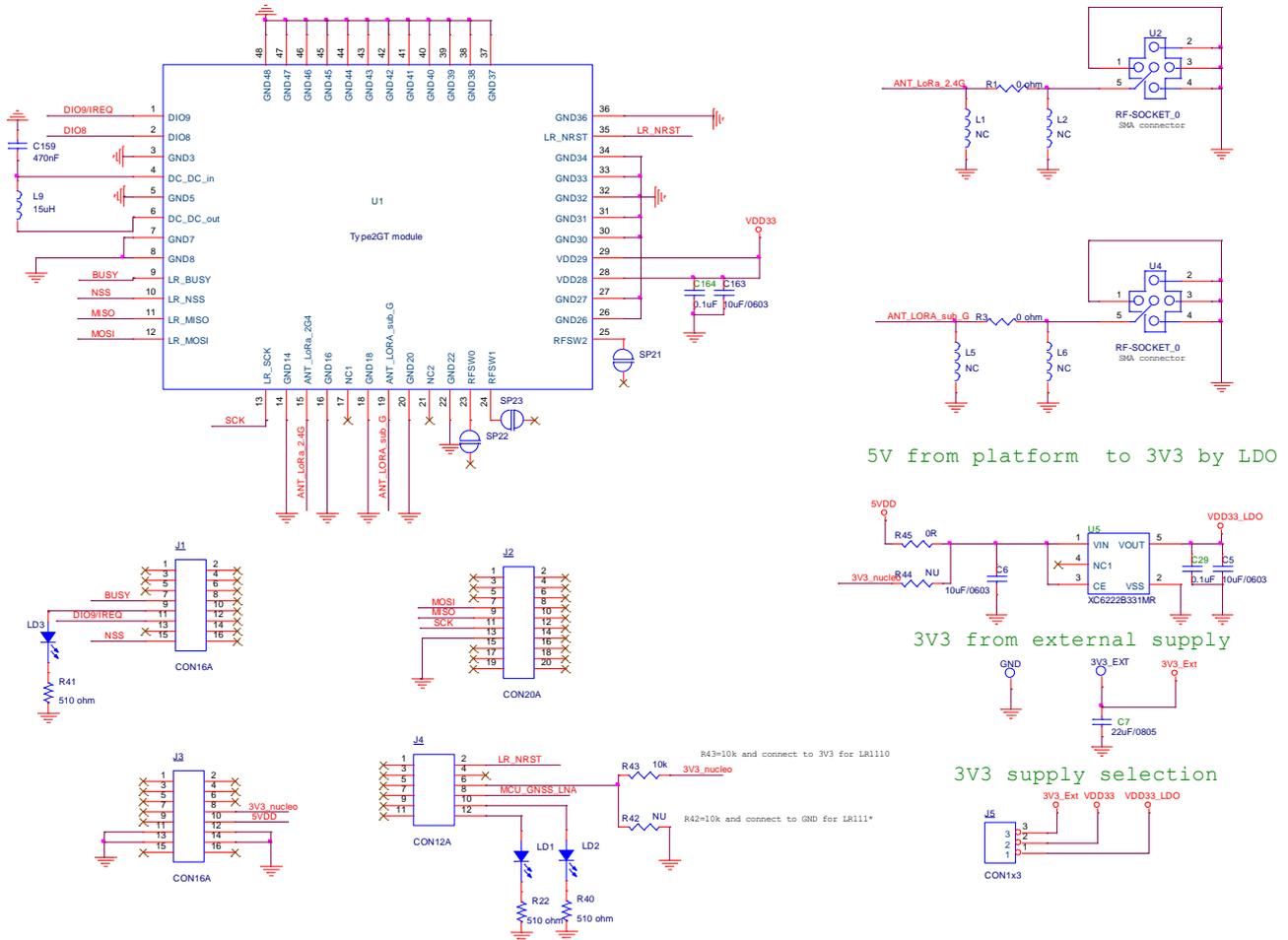


Figure 2: EVB schematic

2.3 Accessories of EVB

The accessories are needed to set up the EVB test system. And table2 and figure3 shows the detailed information.

Table 2: Accessories of EVB

SN	Description	Provider
A	Lora antenna for sub_G band	Murata
B	Lora antenna for 2.4G ISM band	Murata
C	NUCLEO-L476RG MCU platform	Customer or Murata
D	Mini USB	Customer

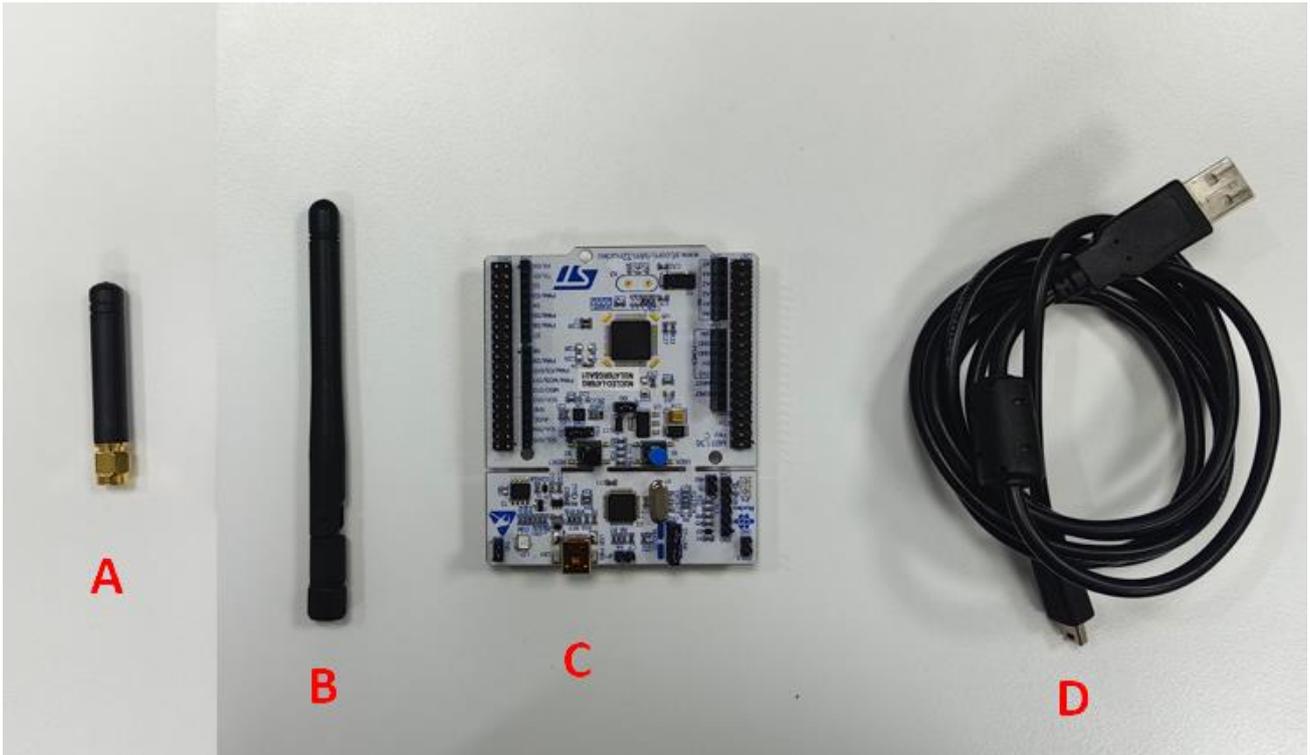


Figure 3: Accessories of EVB

2.4 EVB and Accessories Assembly

STEP1: Connect the EVB to the NUCLEO-L476RG. Make sure the pins are connected in the red areas on the EVB and platform as showed in the figure 4.

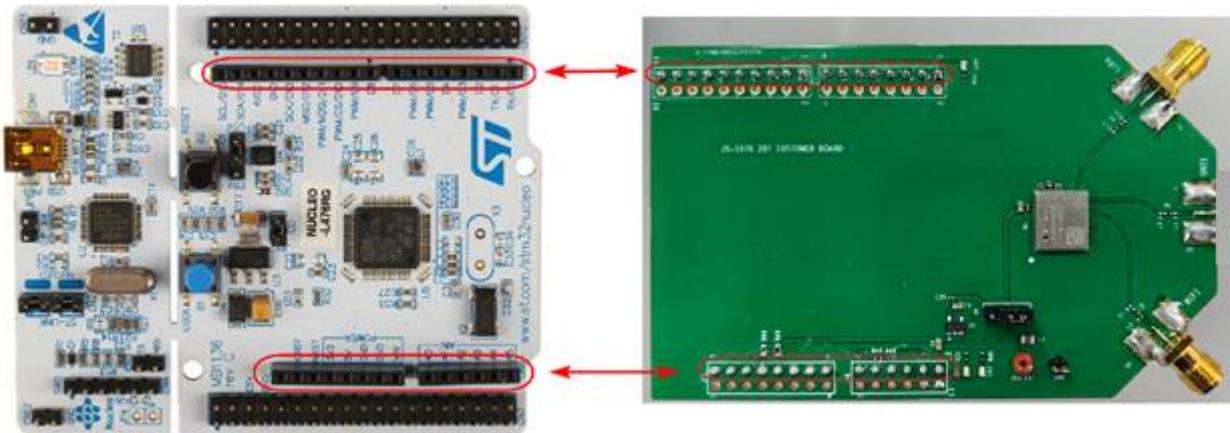


Figure 4: Connection between EVB and NUCLEO-L476RG platform

STEP2: Connect the NUCLEO-L476RG to PC by Mini USB interface cable and assembly the antennas on the EVB as showed in figure 5.

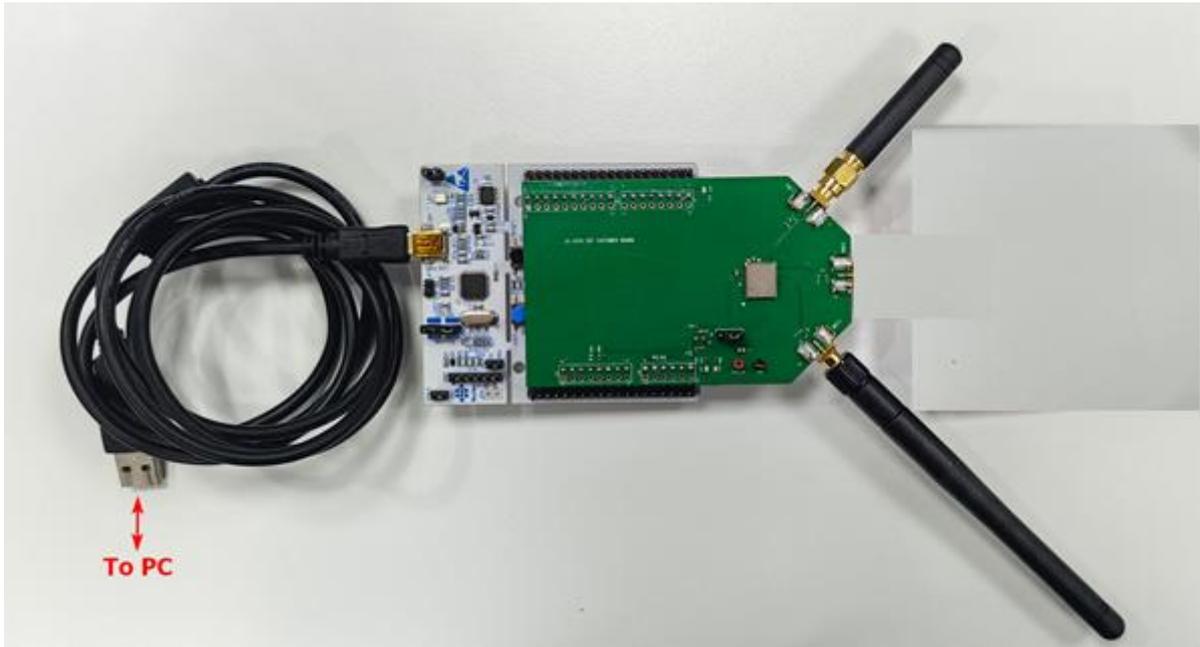


Figure 5: Assembly antennas and connect platform to PC

3 Parts Applications

3.1 Antenna ports

There are 2 RF ports on the EVB, customer can use them to do the conductive test and radioactive test for different purposes. The position and description can refer the figure1 and table1.

3.2 Switch

There is a J5 switch used for the power supply selection as showed in figure 6. If we do not want to use the external DC supply, please connect pin1 and pin2. If we want to test the current of 2GT module or external DC supply, please connect pin2 and pin3.

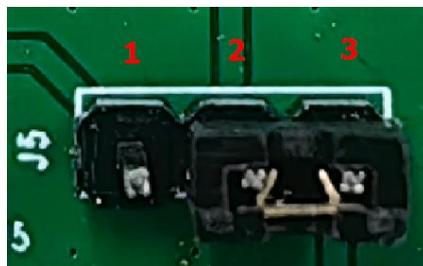


Figure 6: Switch used for power supply

3.3 Indication LEDs

There are 3 LEDs (LD1, LD2 and LD3) on the EVB, the position and description can refer the figure1 and table1.

4 EVB Operation Procedures

4.1 MCU Platform driver install

Step1: Connect the PC USB port to NUCLEO-L476 board USB port, open the **Device Manager** in the PC, then install **ST-LINK_USB_V2_Driver**. Download link is in the table 3

Step2: Install the driver successfully and see the com port in figure 7:

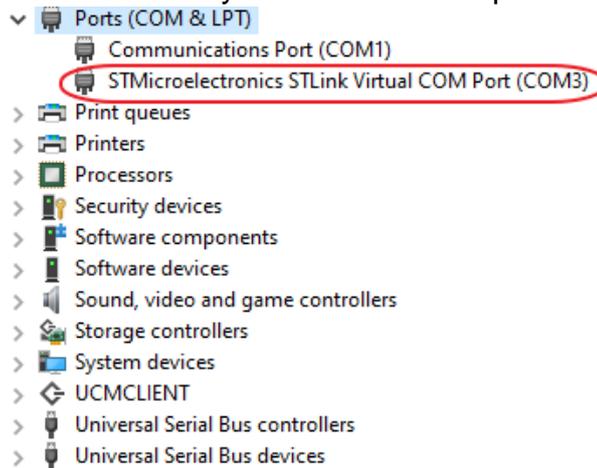


Figure 7: COM information

4.2 MCU test firmware install

Step1: Open the STM32cuberprogrammer software. Download link is in the table 3

Step2: Click connect button.

Step3: Click connect browse button and select test firmware.

Step4: Click start programming.

Step5: Check pop-up windows shows the download complete or not.

These steps showed in the figure 8 and figure9.

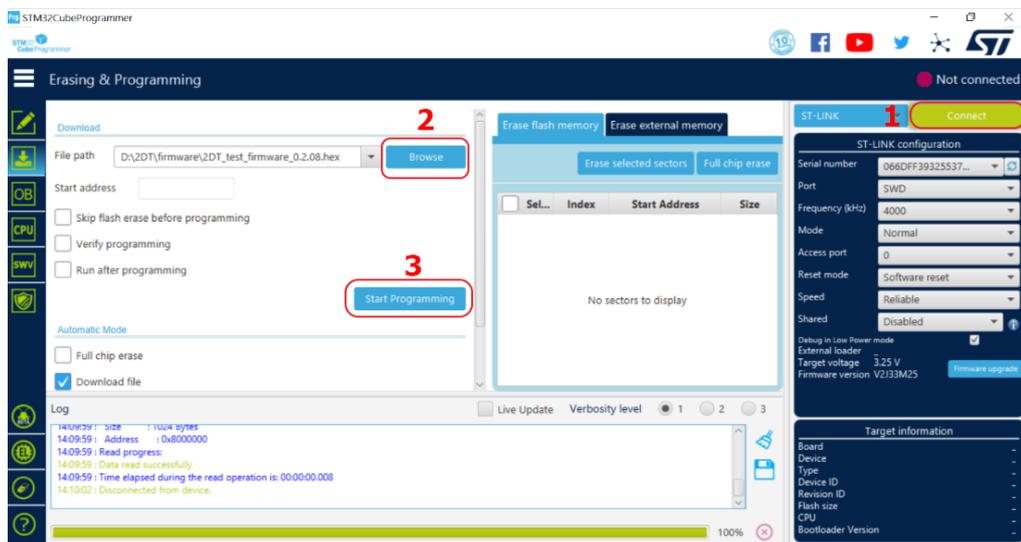


Figure 8: Install MCU firmware process

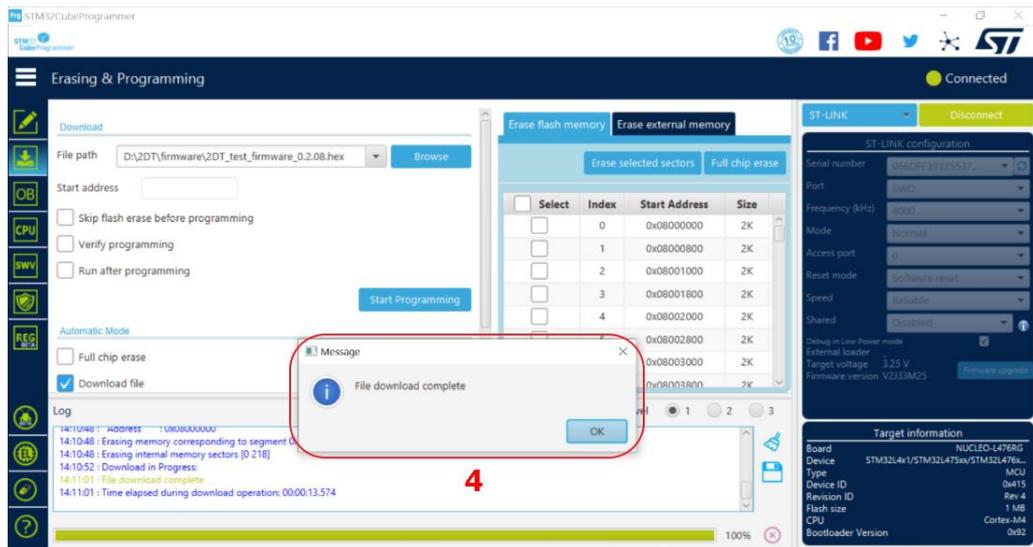


Figure 9: Install MCU test firmware successfully

4.3 Set command to EVB

- Step1:** Open tera term, putty or other UART communication tool, download link is in table3.
- Step2:** Select the Serial and choose the correct com port as showed in figure 10.
- Step3:** Go to Setup>Serial port, change the Speed to 115200 and click on new setting as showed in figure 11.
- Step4:** Set the command to EVB. For the command information, please refer to Type-2GT LR11xx test firmware AT command specification.pdf in table 3.

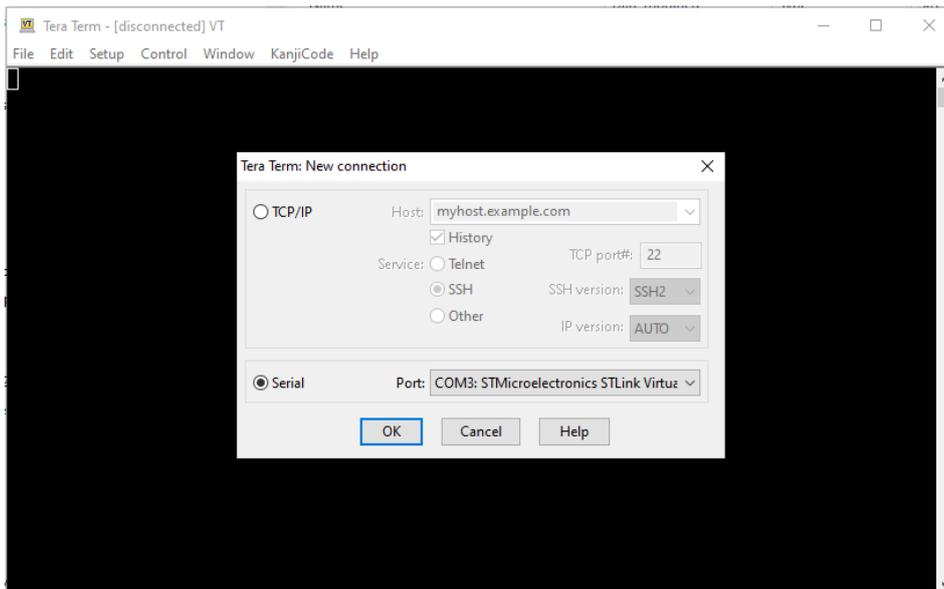


Figure 10: Select the serial port

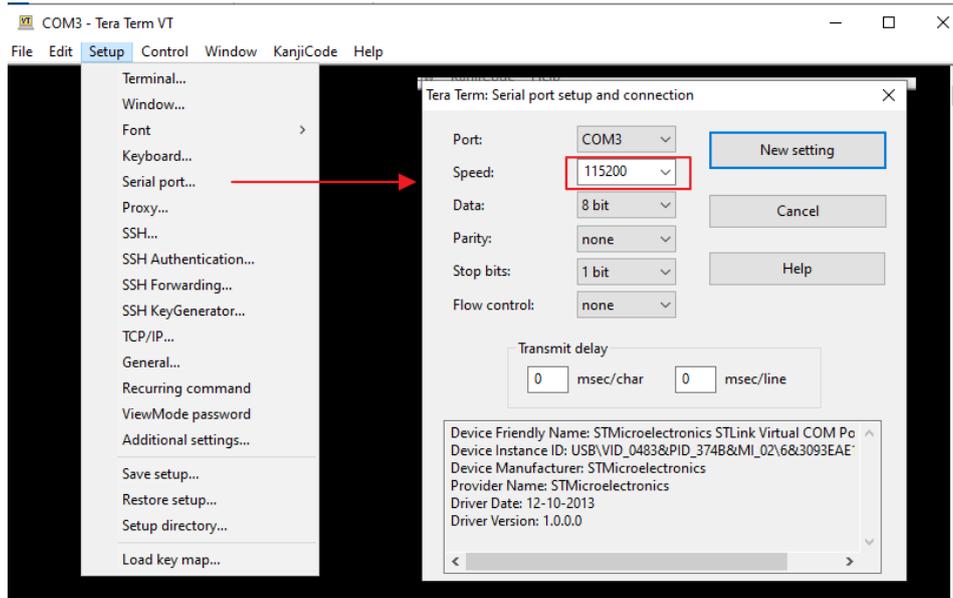


Figure 11: Set the baud rate

5 Reference

Table 3 reviews all the key reference links and documents that user may like to refer to.

Table 3: Reference Table

Documents and information	Notes
NUCLEO-I476 Link	https://www.st.com/en/evaluation-tools/NUCLEO-I476rg.html
ST-LINK_USB_V2_Driver Link	STSW-LINK009 - ST-LINK, ST-LINK/V2, ST-LINK/V2-1, STLINK-V3 USB driver signed for Windows7, Windows8, Windows10 - STMicroelectronics
STM32cuberprogrammer Link	STM32CubeProg - STM32CubeProgrammer software for all STM32 - STMicroelectronics
Tera Term software Link	Tera Term Open Source Project (osdn.jp)
Putty software Link	Download PuTTY: latest release (0.78) (greenend.org.uk)
Type-2GT LR11xx test firmware AT command specification.pdf	This document is intended to describe the command interface and format for Type-2GT LR11xx test firmware.

Revision History

Revision	Date	Section	Change Description
A	07.18.2023		First issue



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