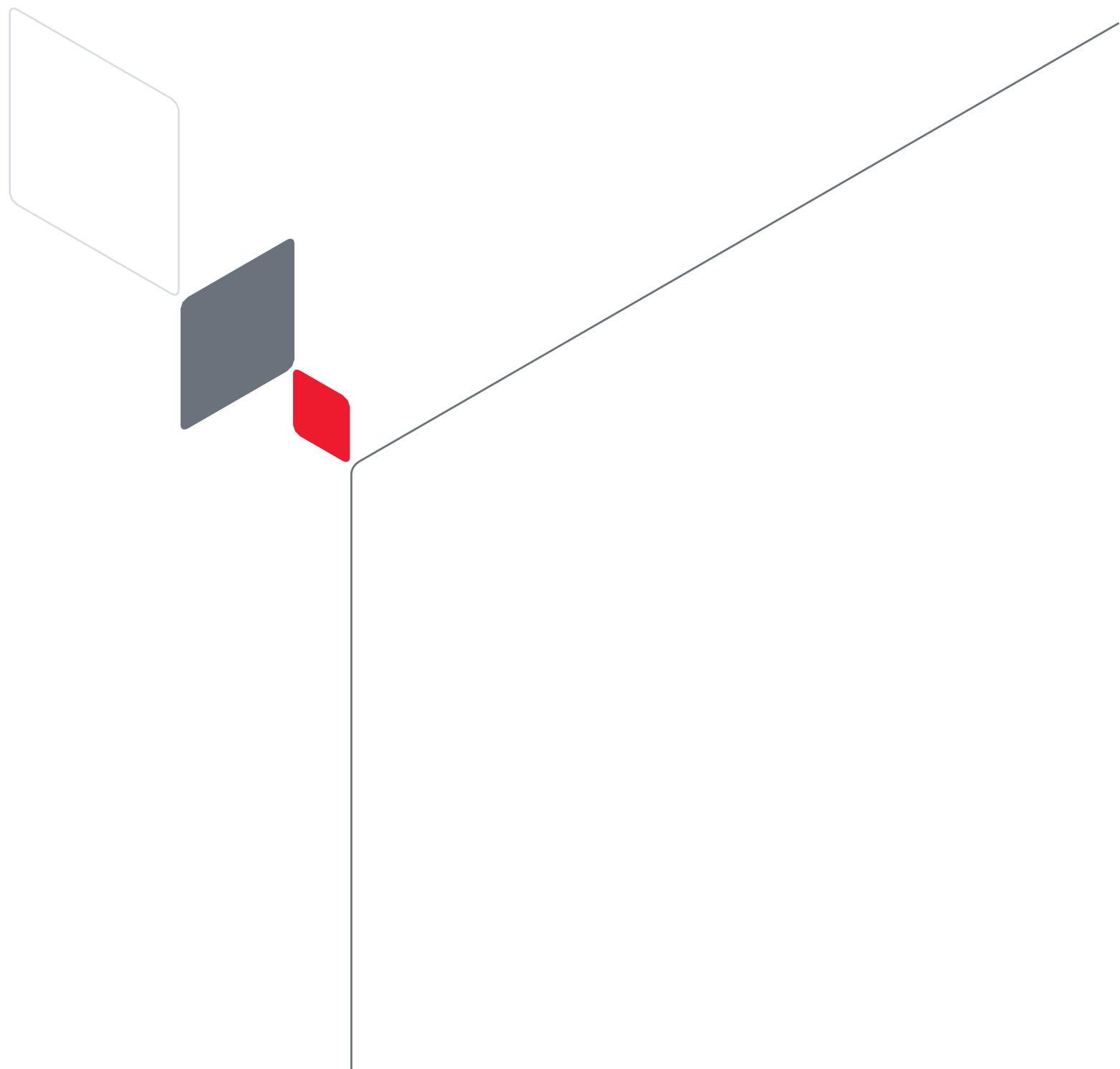


# Type 2GT LoRa Module EVB User Manual



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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.

Murata provides 2 types of 2GT EVB, one type is JS-1076 EVB, another one is JS-1125 EVB. Customer can refer the information based on the different EVB in this file.

# 2 General Overview

## 2.1 View of EVBs

### 2.1.1 View of JS-1076 EVB

The figure 1 shows the top view of the JS-1076 EVB.

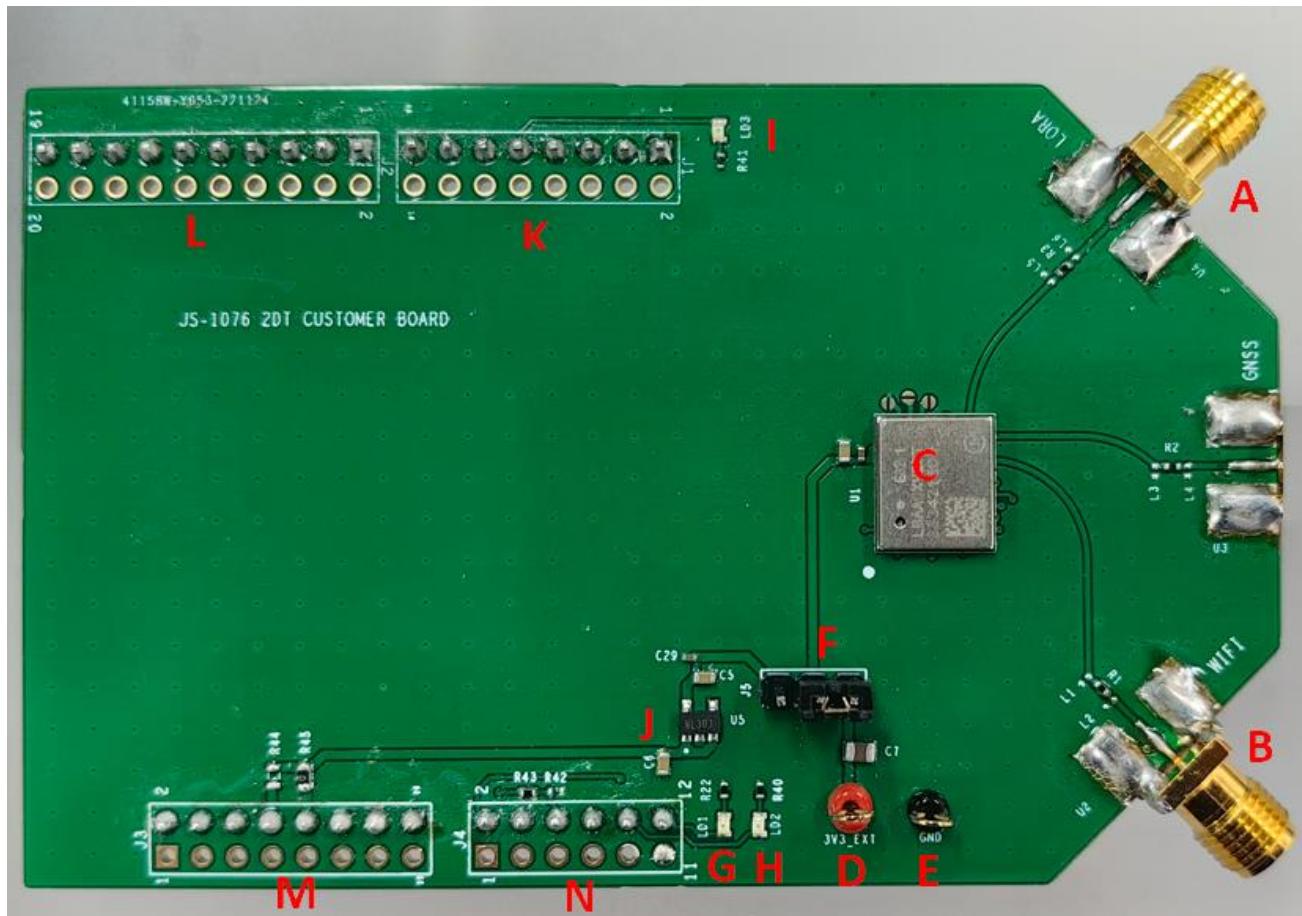


Figure 1: Top View of JS-1076 EVB

The table1 shows the parts on the JS-1076 EVB information.

**Table 1: Parts on the JS-1076 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

## 2.1.2 View of JS-1125 EVB

The figure 2 shows the top view of the JS-1125 EVB.

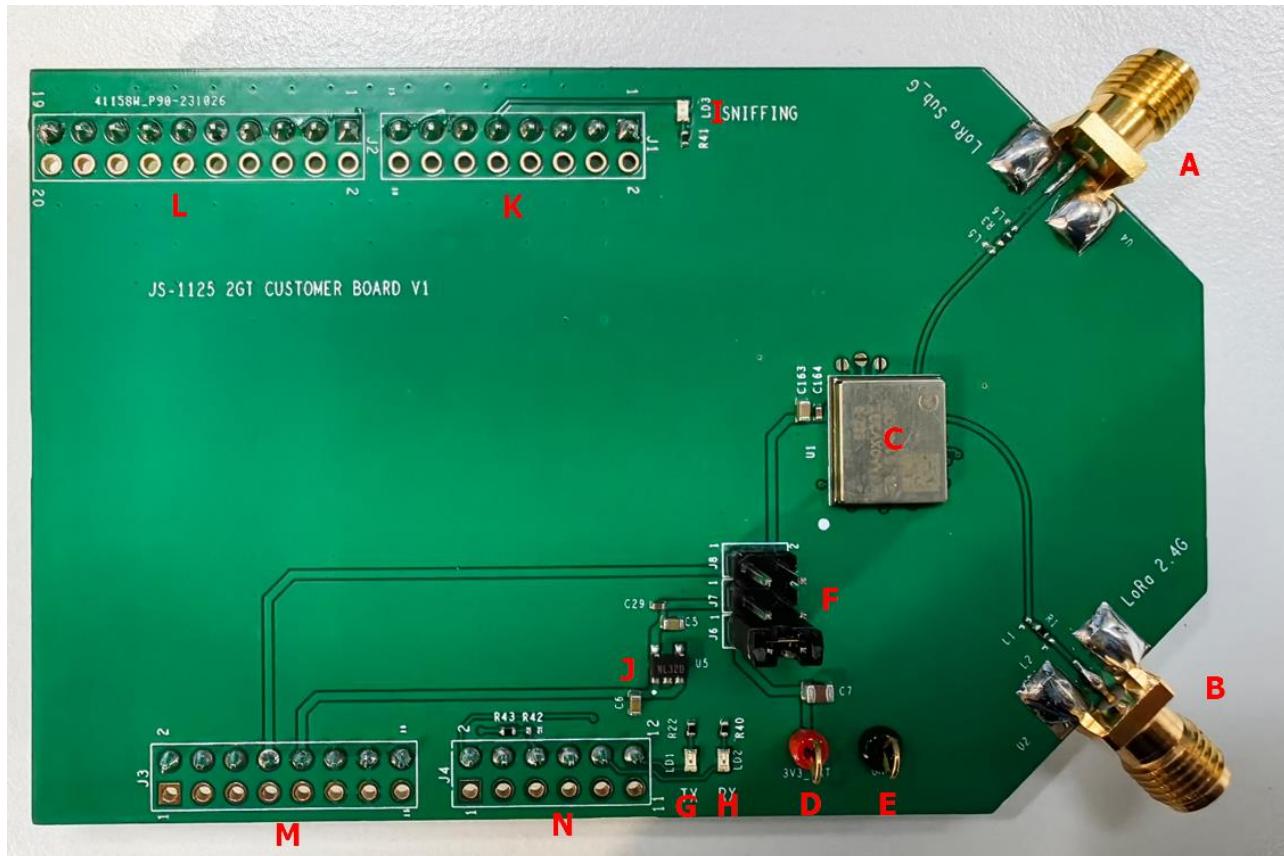


Figure 2: Top View of JS-1125 EVB

The table2 shows the parts on the JS-1125 EVB information.

Table 2: Parts on the JS-1125 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	J6, J7, J8	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 figure3 and figure4 shows the schematic of EVB. User can refer it to check the parts on the EVB.

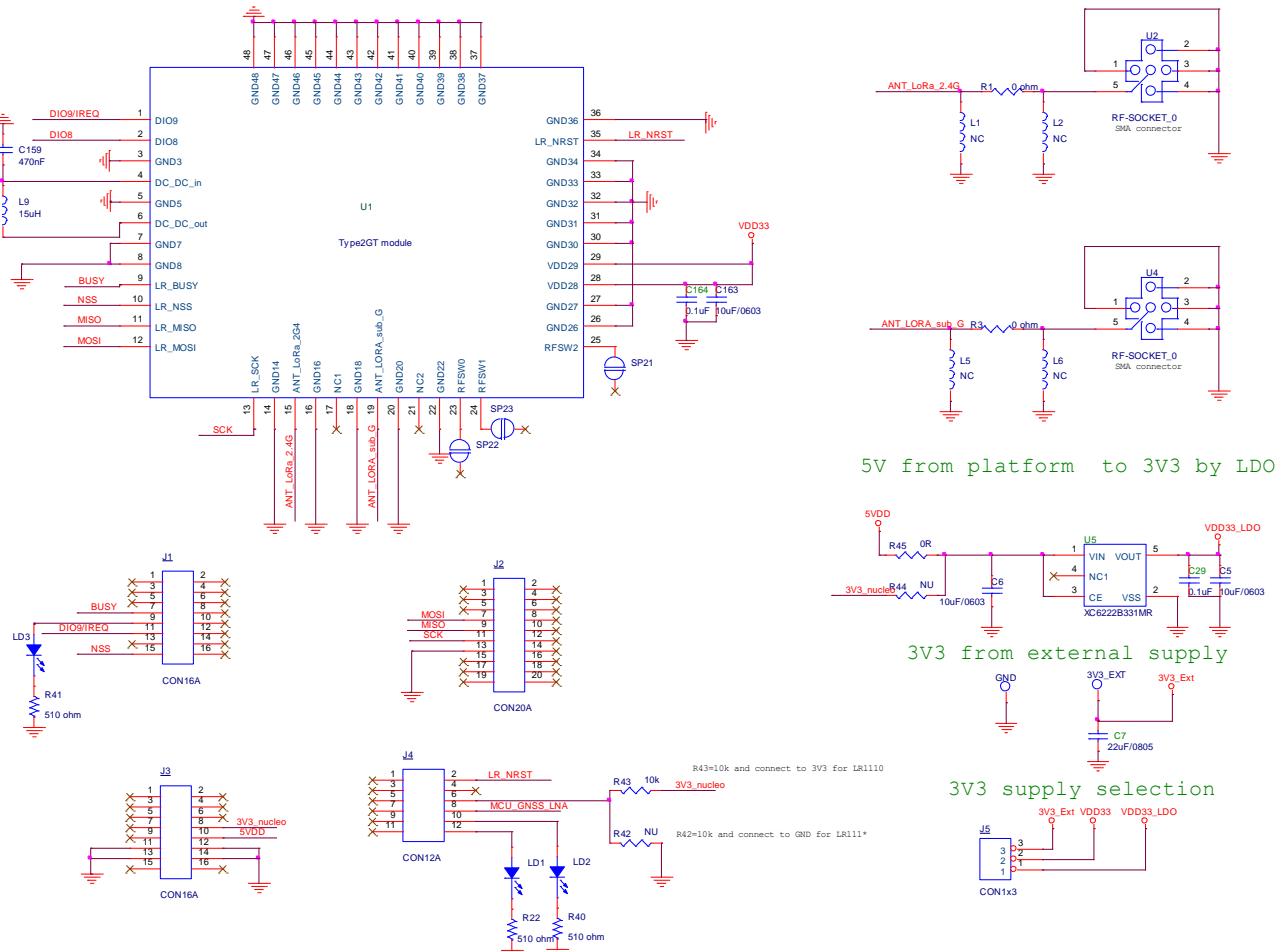


Figure 3: JS-1076 EVB schematic

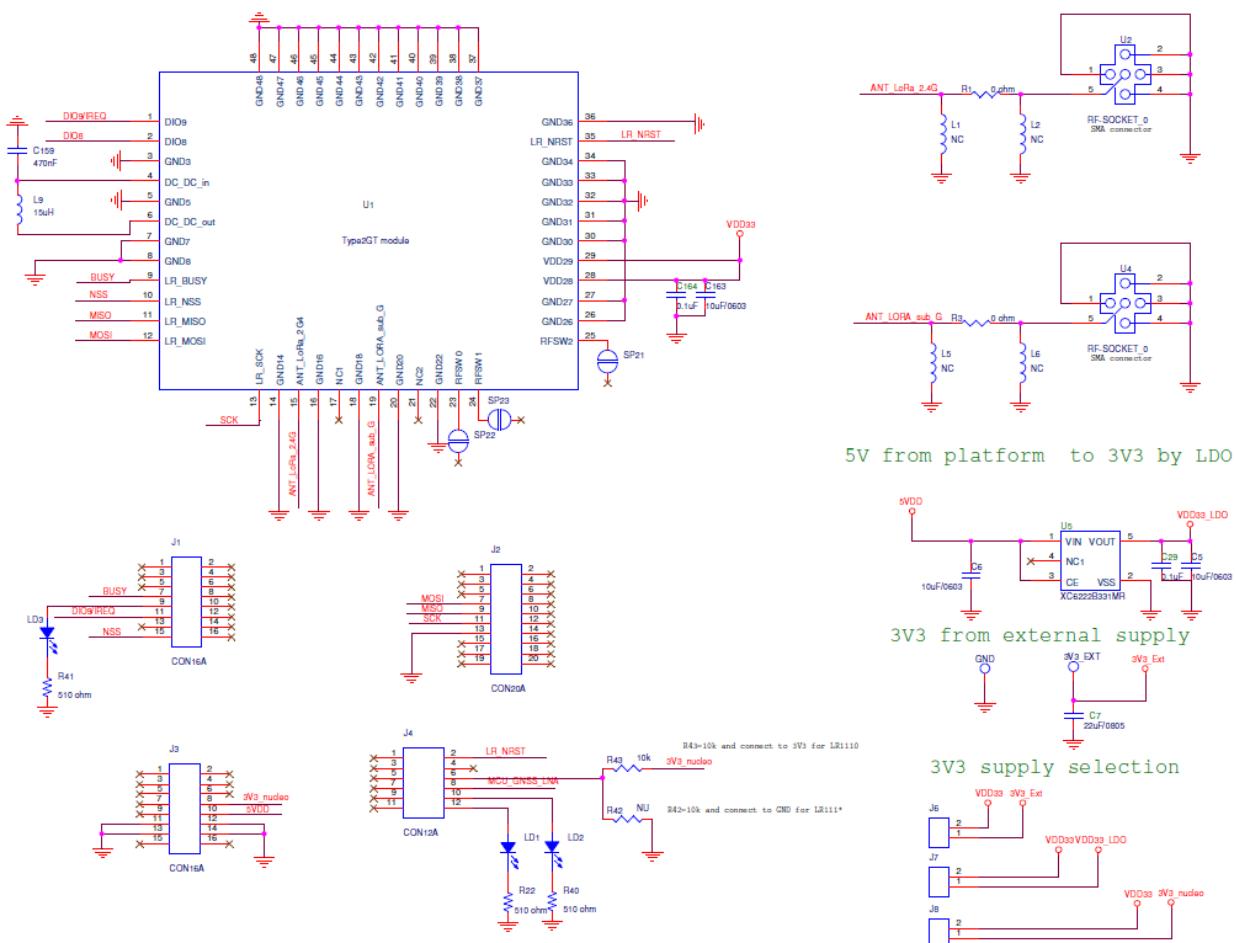


Figure 4: JS-1125 EVB schematic

## 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 3: 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
D	Mini USB	Customer

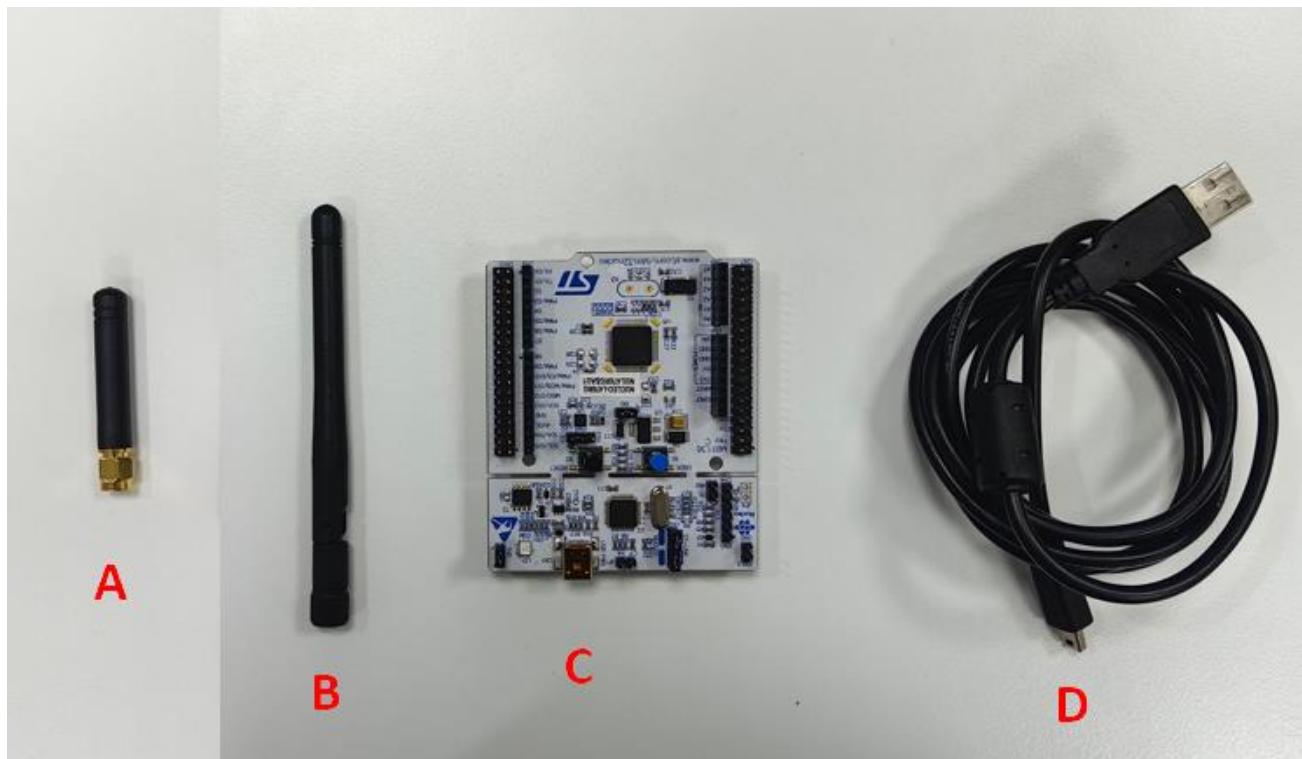


Figure 5: Accessories of EVB

## 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 6.

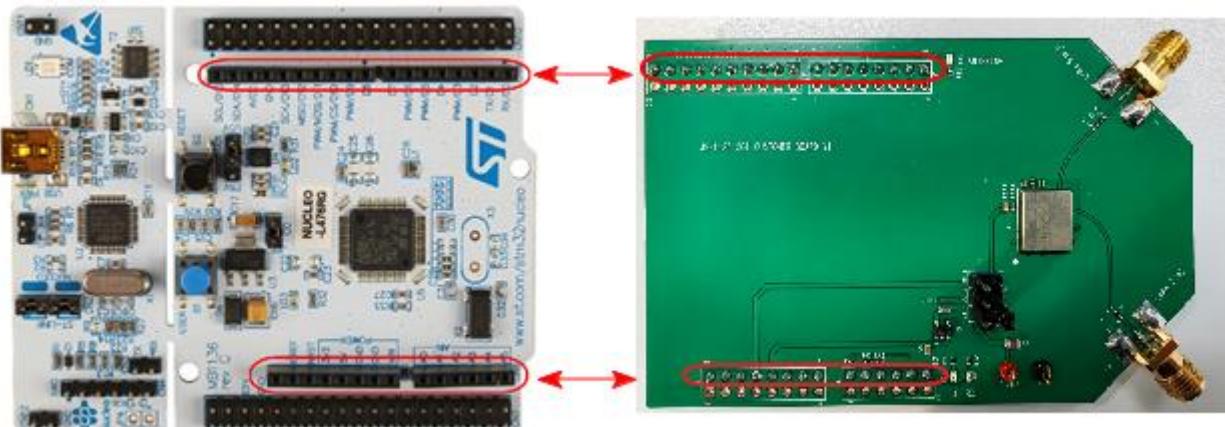


Figure 6: Connection between EVB and NUCLEO-L476RG platform

**STEP2:** Connect the NUCLEO-L476RG to PC by Mini USB interface cable and assembly the antennas on the EVB as showed in figure 7.

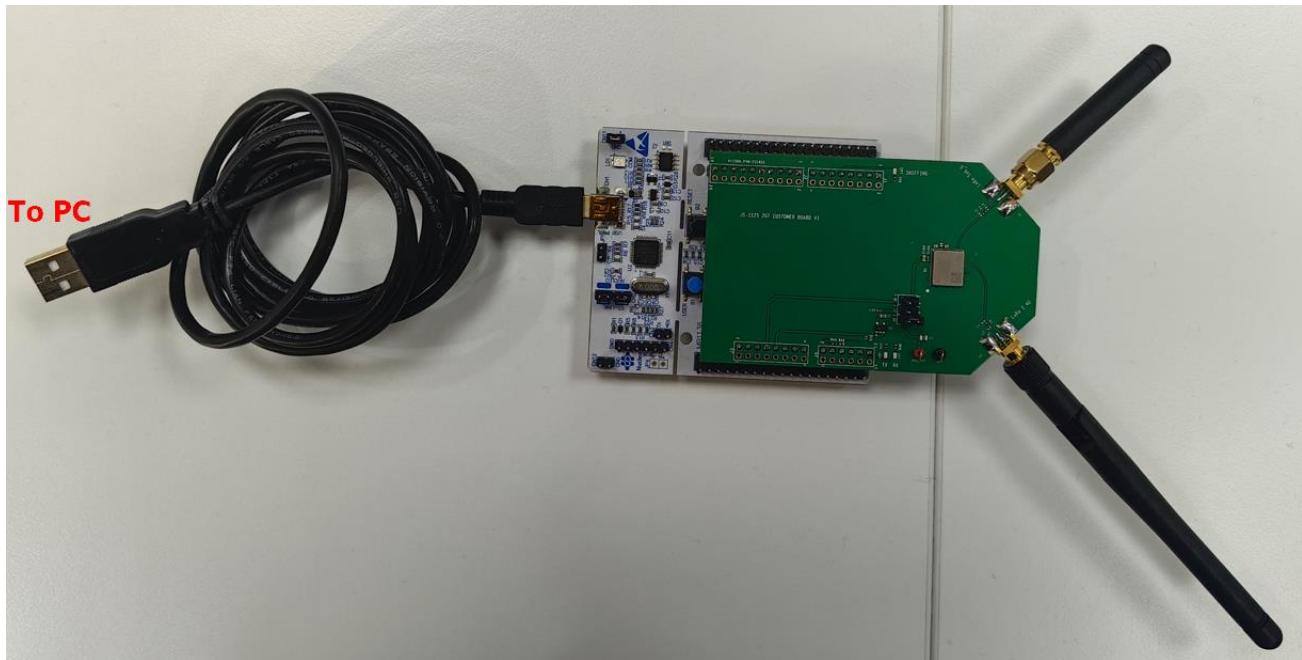


Figure 7: Assembly antennas and connect platform to PC

## 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

#### 3.2.1 Switch on JS-1076 EVB

There is a J5 switch used for the power supply selection as showed in figure 8. If customer want to use the supply from Nucleo board, please connect pin1 and pin2.

If customer want to use external DC supply, please connect pin2 and pin3.

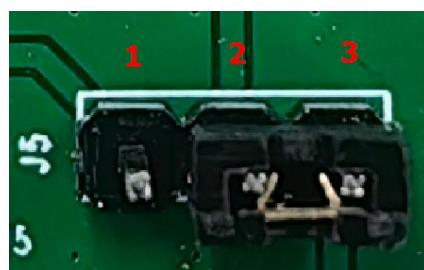


Figure 8: Switch used for power supply on JS-1076 EVB

### 3.2.2 Switch on JS-1125 EVB

There are J6,J7,J8 switchs on JS-1125 EVB used for the power supply selection as showed in figure 9.

If we use the external DC supply, please connect pin1 and pin2 of J6.

If we use the 5V from Nucleo board, please connect pin1 and pin2 of J7.

If we use the 3.3V from Nucleo board, please connect pin1 and pin2 of J8.

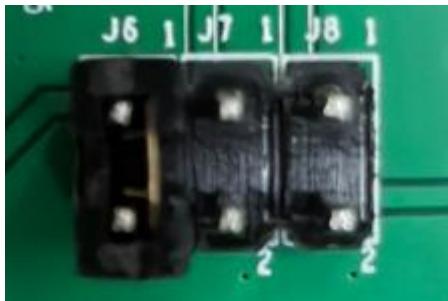


Figure 9: Switch used for power supply on JS-1125 EVB

### 3.3 Indication LEDs

There are 3 LEDs (LD1, LD2 and LD3) on the EVB, the position and description can refer the figure1,2 and table1,2.

## 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 4.

**Step2:** Install the driver successfully and see the com port in figure 10:

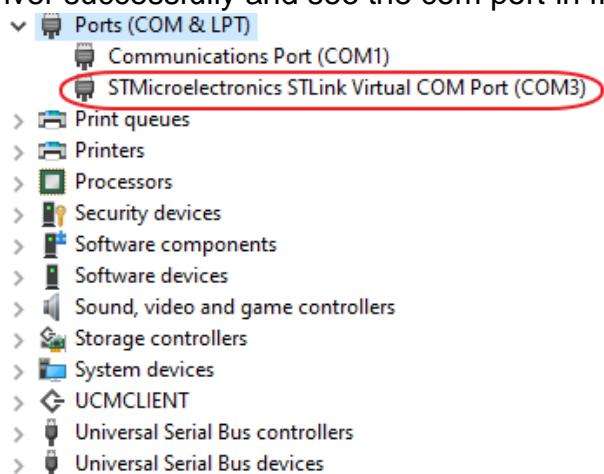


Figure 10: COM information

## 4.2 MCU test firmware install

**Step1:** Open the STM32cuberprogrammer software. Download link is in the table 4

**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 11 and figure12.

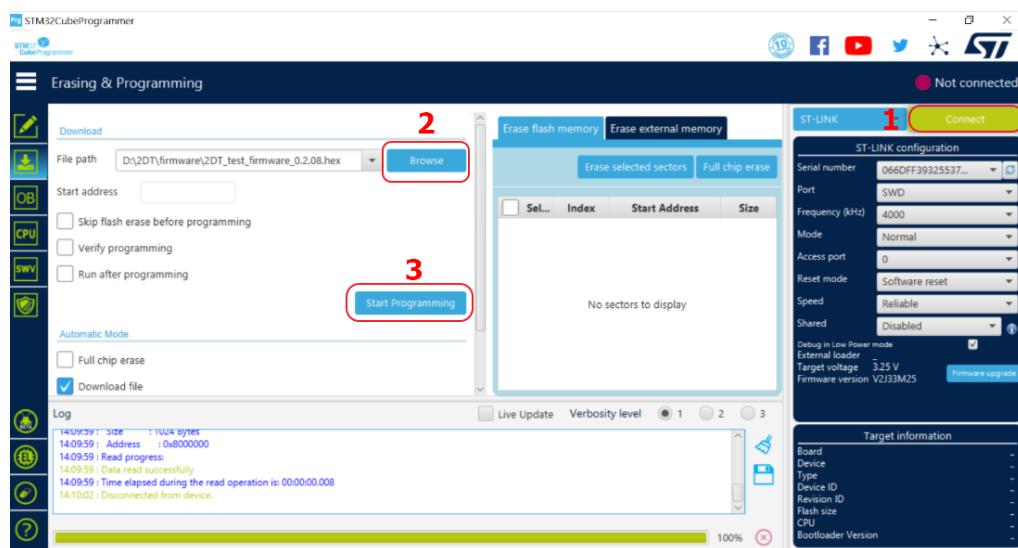


Figure 11: Install MCU firmware process

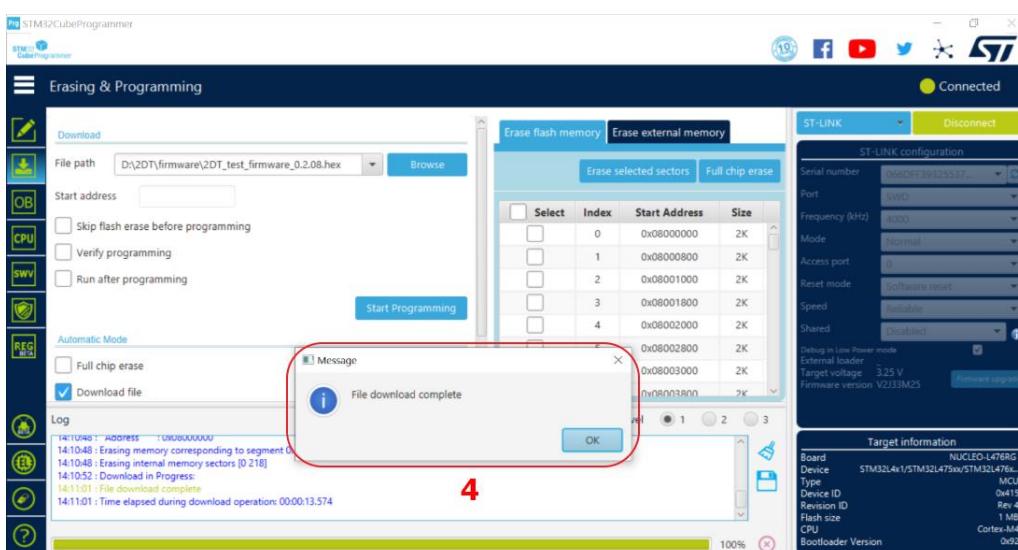


Figure 12: Install MCU test firmware successfully

## 4.3 Set command to EVB

**Step1:** Open tera term, putty or other UART communication tool, download link is in table4.

**Step2:** Select the Serial and choose the correct com port as showed in figure 13.

**Step3:** Go to Setup>Serial port, change the Speed to 115200 and click on new setting as showed in figure 14.

**Step4:** Set the command to EVB. For the command information, please refer to Type-2GT LR11xx test firmware AT command specification.pdf in table 4.

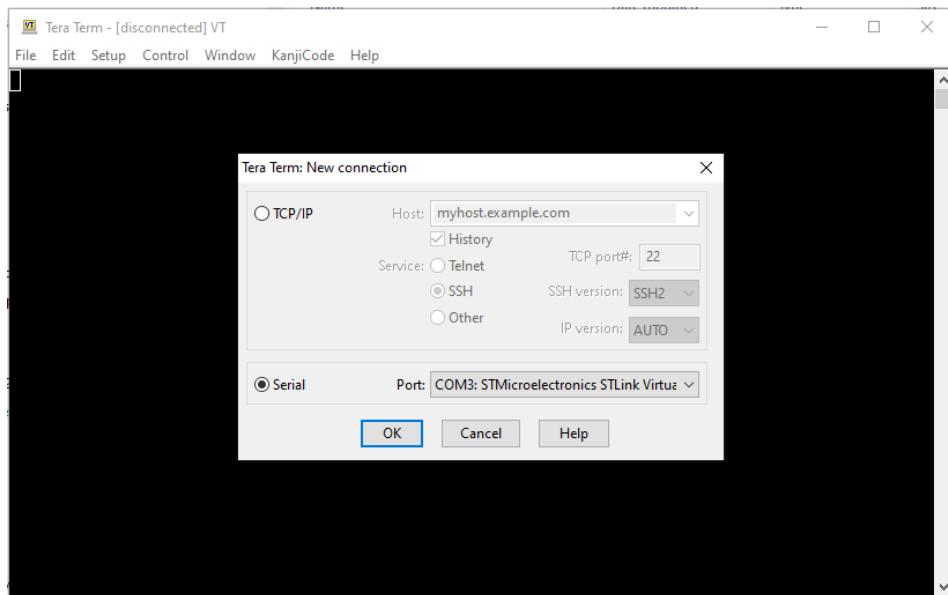


Figure 13: Select the serial port

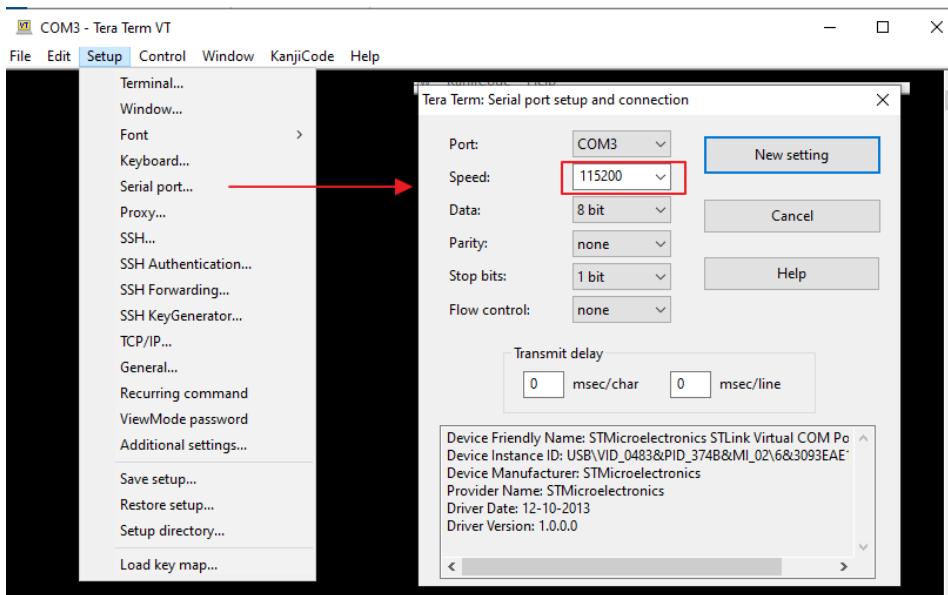


Figure 14: Set the baud rate

## 5 Reference

**Table 4** reviews all the key reference links and documents that user may like to refer to.

**Table 4: Reference Table**

Documents and information	Notes
<b>NUCLEO-I476 Link</b>	<a href="https://www.st.com/en/evaluation-tools/NUCLEO-I476rg.html">https://www.st.com/en/evaluation-tools/NUCLEO-I476rg.html</a>
<b>ST-LINK_USB_V2_Driver Link</b>	<u>STSW-LINK009 - ST-LINK, ST-LINK/V2, ST-LINK/V2-1, STLINK-V3</u> USB driver signed for Windows7, Windows8, Windows10 - STMicroelectronics
<b>STM32cuberprogrammer Link</b>	<u>STM32CubeProg - STM32CubeProgrammer</u> software for all STM32 - STMicroelectronics
<b>Tera Term software Link</b>	<u>Tera Term</u> Open Source Project (osdn.jp)
<b>Putty software Link</b>	Download PuTTY: latest release (0.78) ( <a href="http://www.greenend.org.uk">greenend.org.uk</a> )
<b>Type-2GT LR11xx test firmware AT command specification.pdf</b>	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, EVB is JS-1076.
B	12.28.2023		Added the user manual based on JS-1125 EVB.



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