

LBAA0QB1SJ-TEMP-EVK User Manual (V2.0)

2020.7





- This user manual describes how to test LoRa module with LBAA0QB1SJ-TEMP-EVK V2.0, test commands and how to upgrade test FW.
- The test commands are based on FW version V0.0.15. The earlier version FW should be upgraded to this version.
- LoRa module can be evaluated by test commands with test GUI tool .

Contents

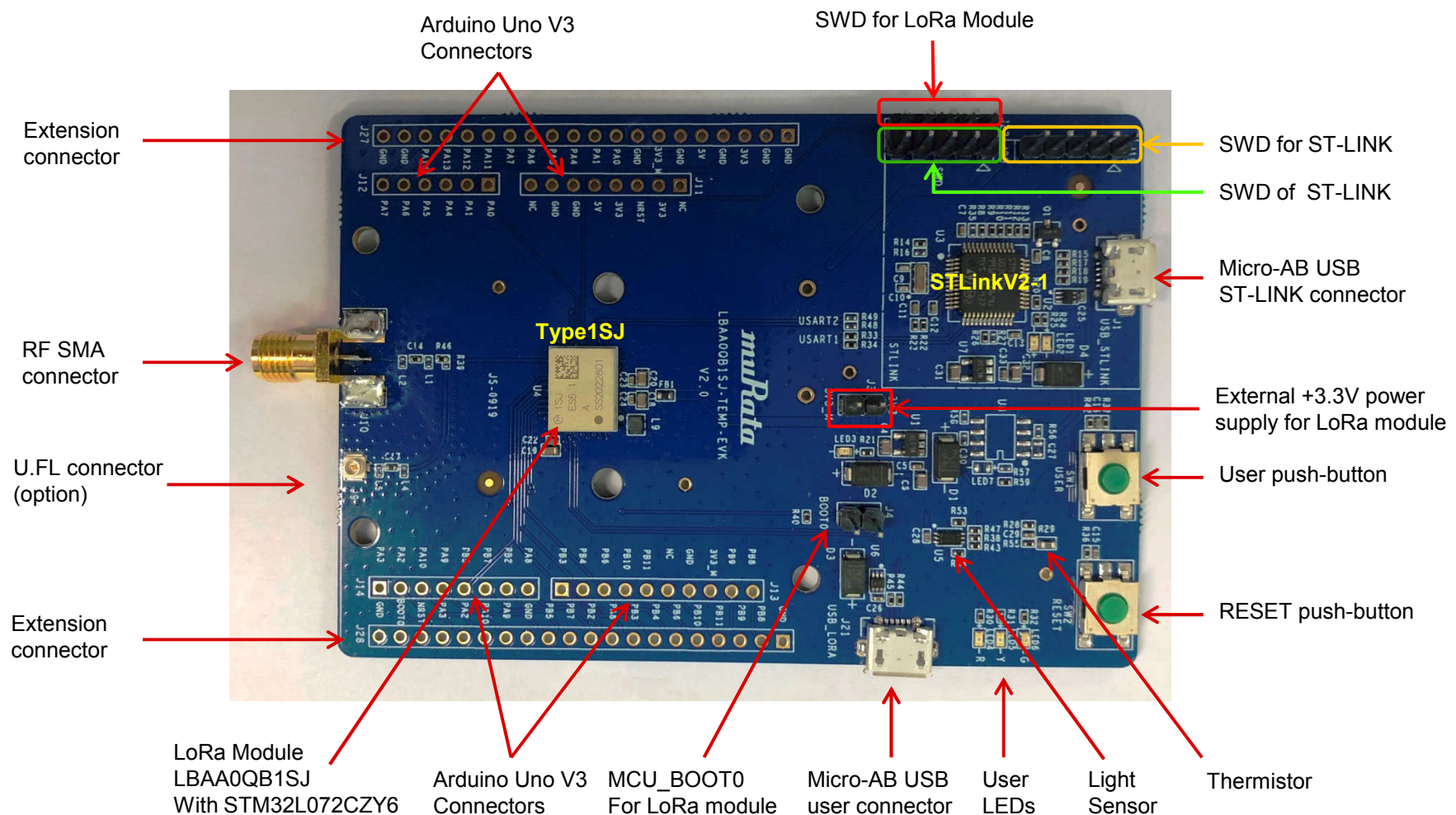


- LBAA0QB1SJ-TEMP-EVK V2.0 Description
- Getting started with LBAA0QB1SJ-TEMP-EVK V2.0
- Test commands with GUI tool
- FW upgrade for LoRa module

LBAA0QB1SJ-TEMP-EVK V2.0 Description



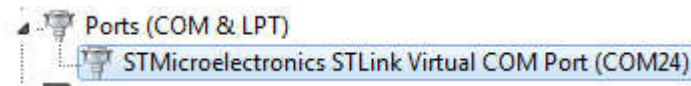
- Below picture shows the main parts on LBAA0QB1SJ-TEMP-EVK V2.0, test FW has been programmed into EVB.



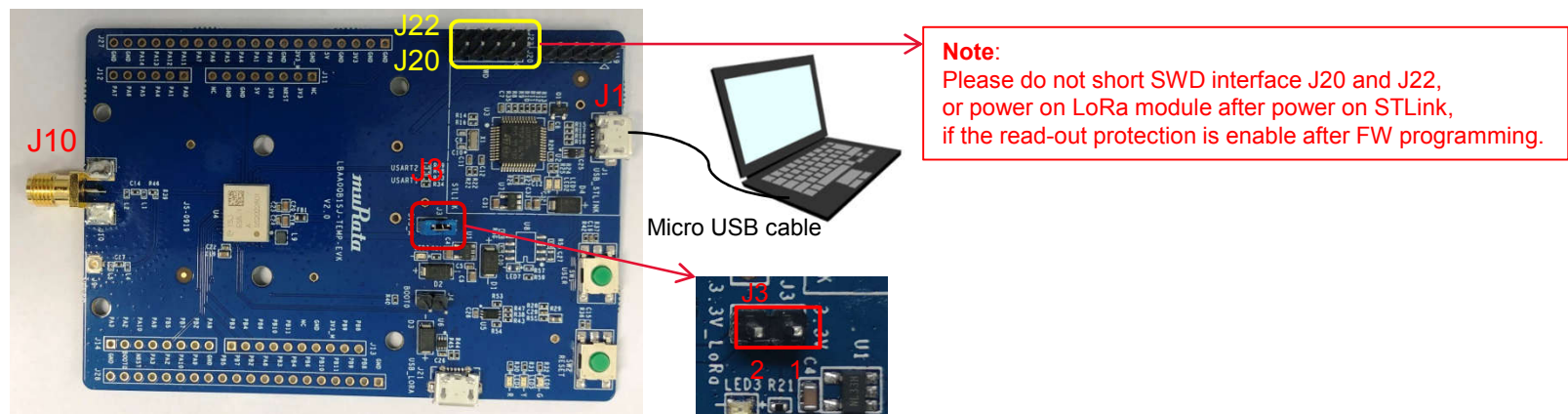
Getting started with LBAA0QB1SJ-TEMP-EVK V2.0



- Steps to get started
 - a) Configure the +3.3V power supply for LoRa module.
 - a) From LDO 3.3V on LBAA0QB1SJ-TEMP-EVK V2.0, by shorting J3.
 - b) From external +3.3V, by connecting external +3.3V to Pin2 of J3(3.3V_LoRa) .
 - b) Connect LBAA0QB1SJ-TEMP-EVK V2.0 to PC with Micro-AB USB connector J1 by Micro USB cable, Below STLink Virtual COM Port will appear in Device Manager once you installed ST-LINK USB Driver correctly.



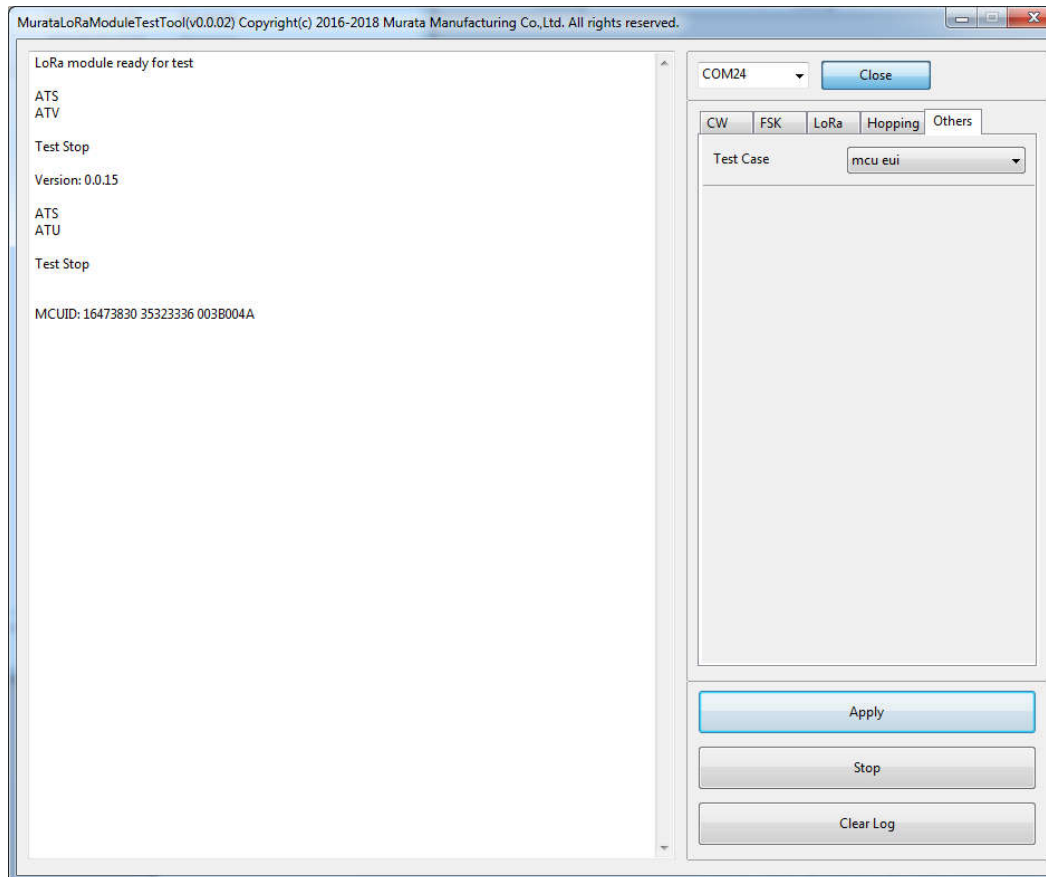
- c) Connect RF cable to RF SMA connector J10.
- d) Run GUI tool on PC and choose correct COM port, message “Lora module ready for test” will display on GUI tool once you push RESET push-button, then you can test LoRa module by GUI tool.



Getting started with LBAA0QB1SJ-TEMP-EVK V2.0



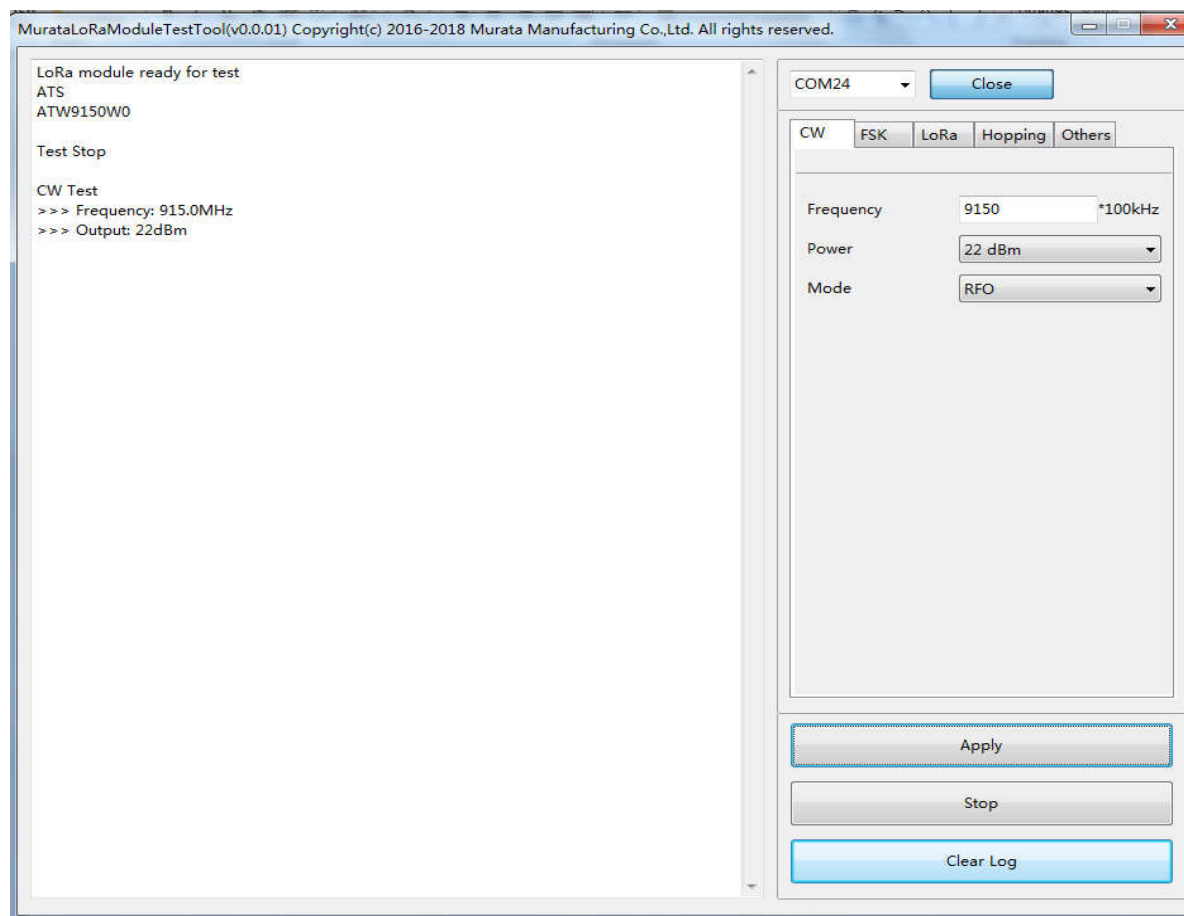
- GUI tool setting
 - Open GUI tool with administrator rights.
 - Choose the correct COM port and click "Open" button.
 - Choose different test command for test.



Test command with GUI Tool



- **CW test (ATW)**
 - This command is used to send CW for TX RF test, and needs click “Stop” button to stop testing
 - Select the CW sheet ,and then Input the center Frequency and choose the right power level and fixed the Mode to RFO
 - Click the “Apply” button and Response will print on the left window

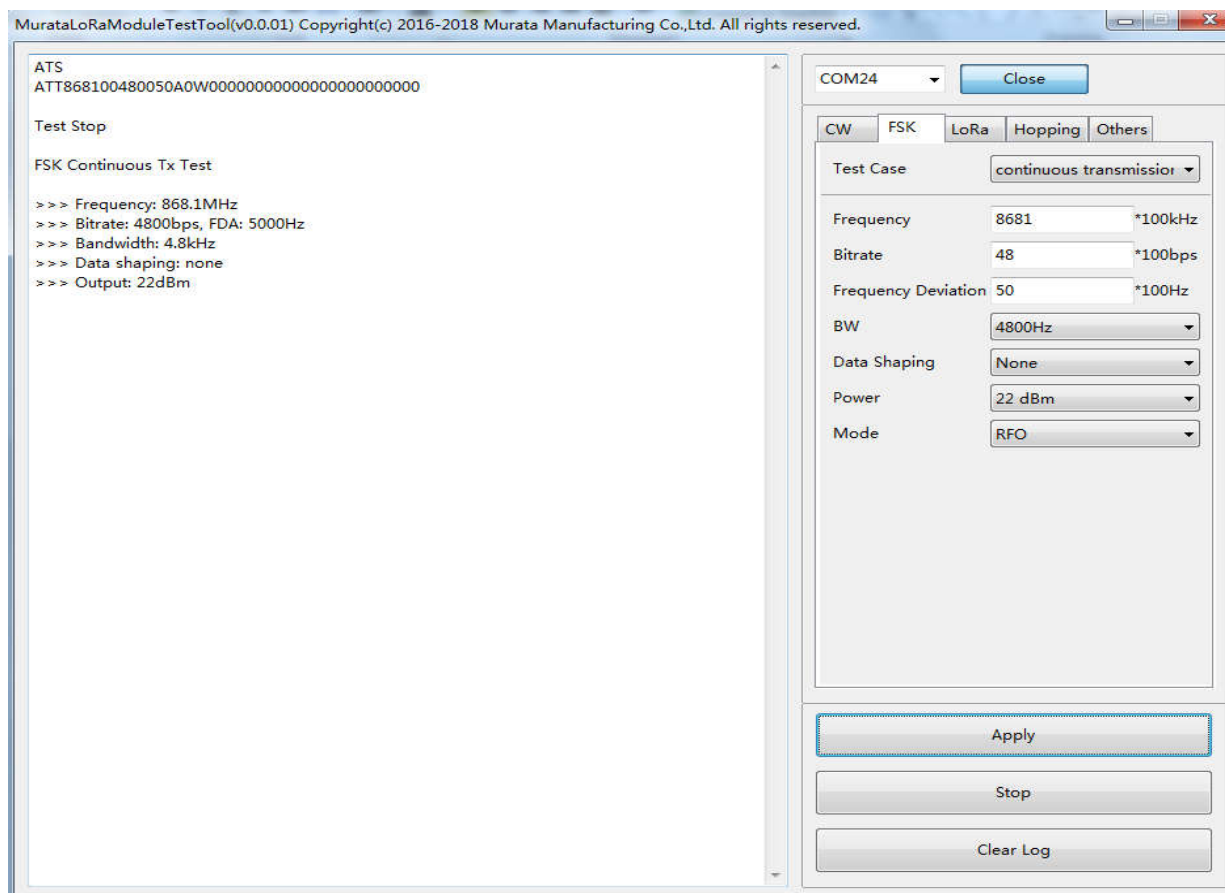


Test command with GUI Tool



- **FSK TX(ATT)**

- This command is used to test FSK modulation TX function, and needs click “Stop” button to stop testing
- Select the FSK sheet ,choose the right Test Case(continuous/packet transmission) and then Input relate Parameters
- Click the “Apply” button and Response will print on the left window

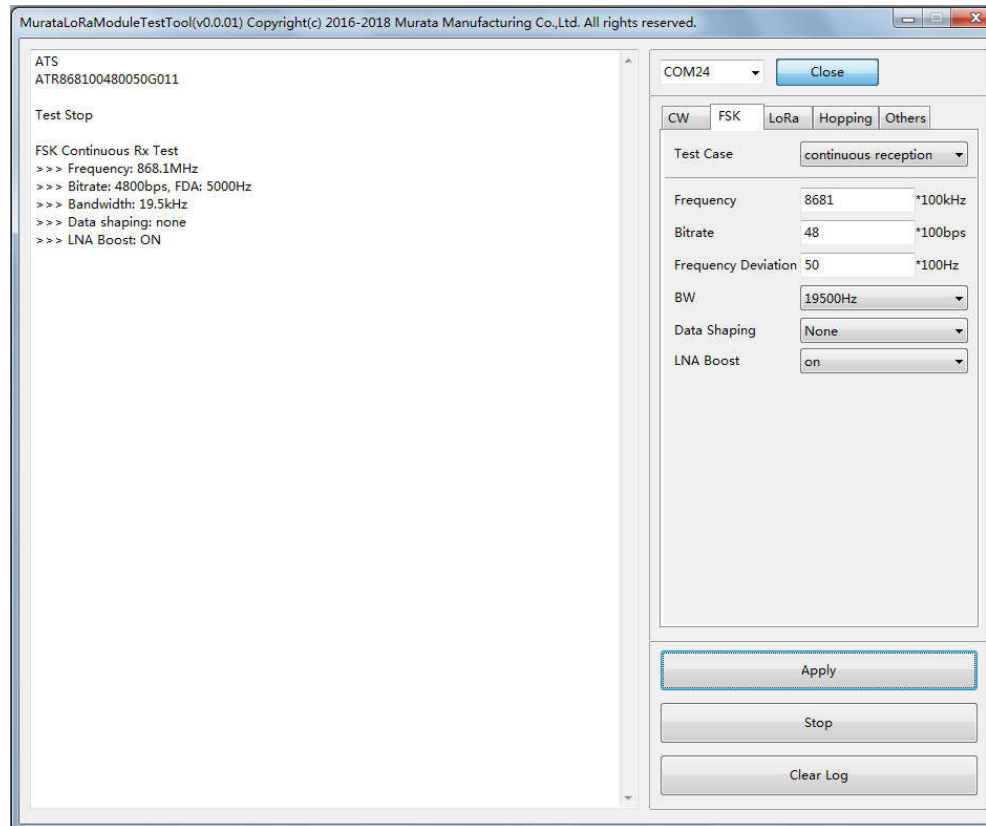


Test command with GUI Tool



- **FSK RX(ATR)**

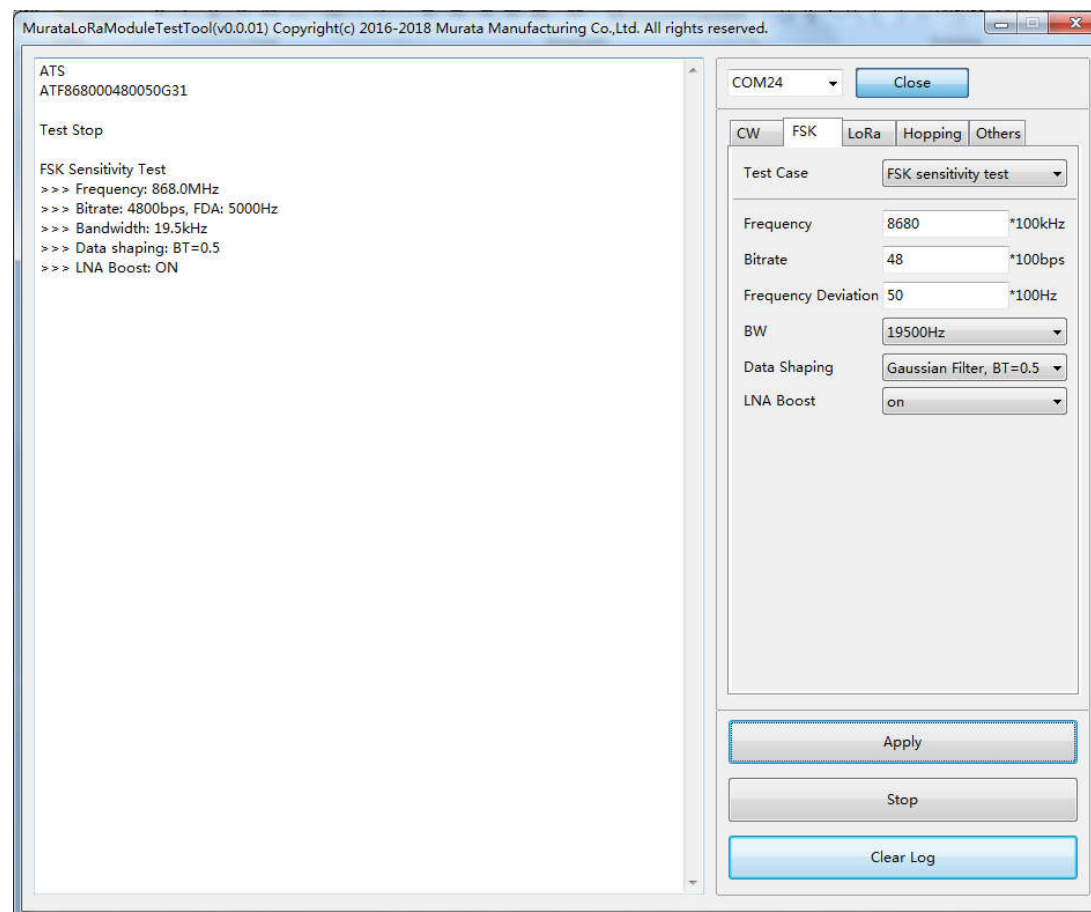
- This command is used to test FSK modulation RX function, and needs click “Stop” button to stop testing
- Select the FSK sheet ,choose the right Test Case(continuous/packet reception) and then Input relate Parameters
- Click the “Apply” button and Response will print on the left window



Test command with GUI Tool



- **FSK Sensitivity test(ATF)**
 - This command is used to test FSK Sensitivity, and needs click “Stop” button to stop testing
 - Select the FSK sheet , choose the right test case(FSK Sensitivity Test) and then input the relate parameters
 - Click the “Apply” button and Response will print on the left window

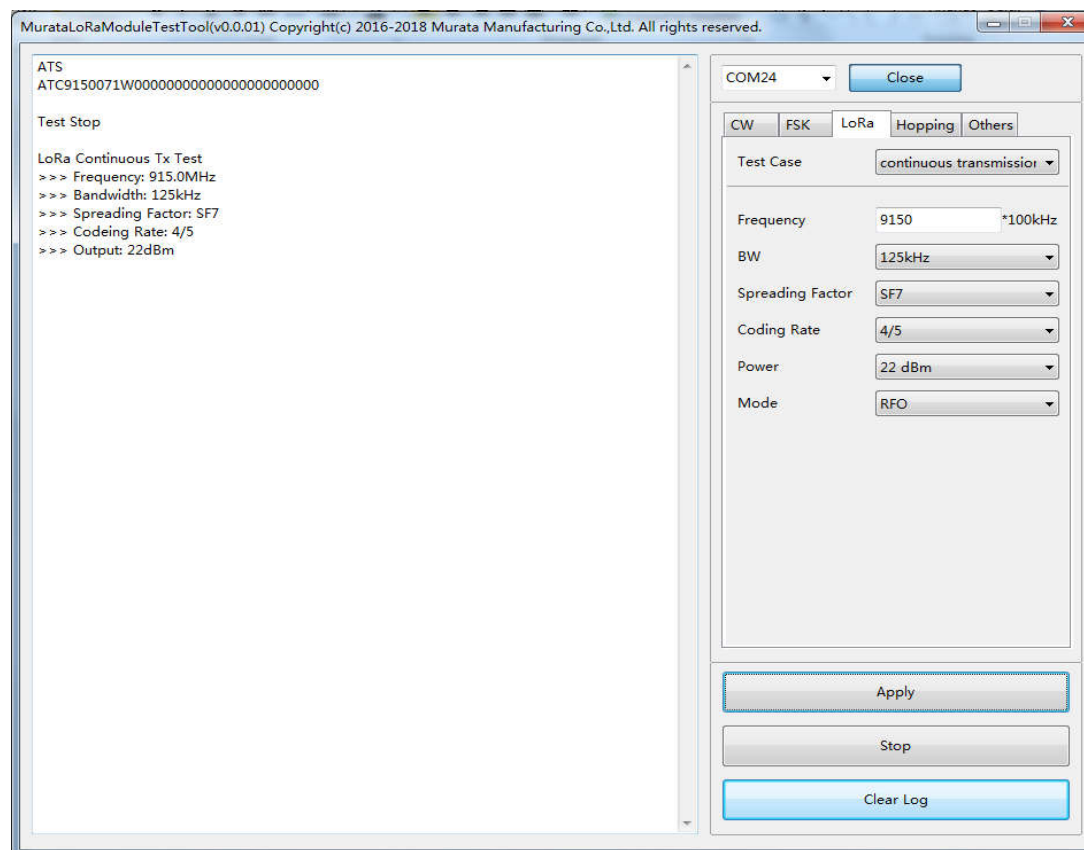


Test command with GUI Tool



- **LoRa TX(ATC)**

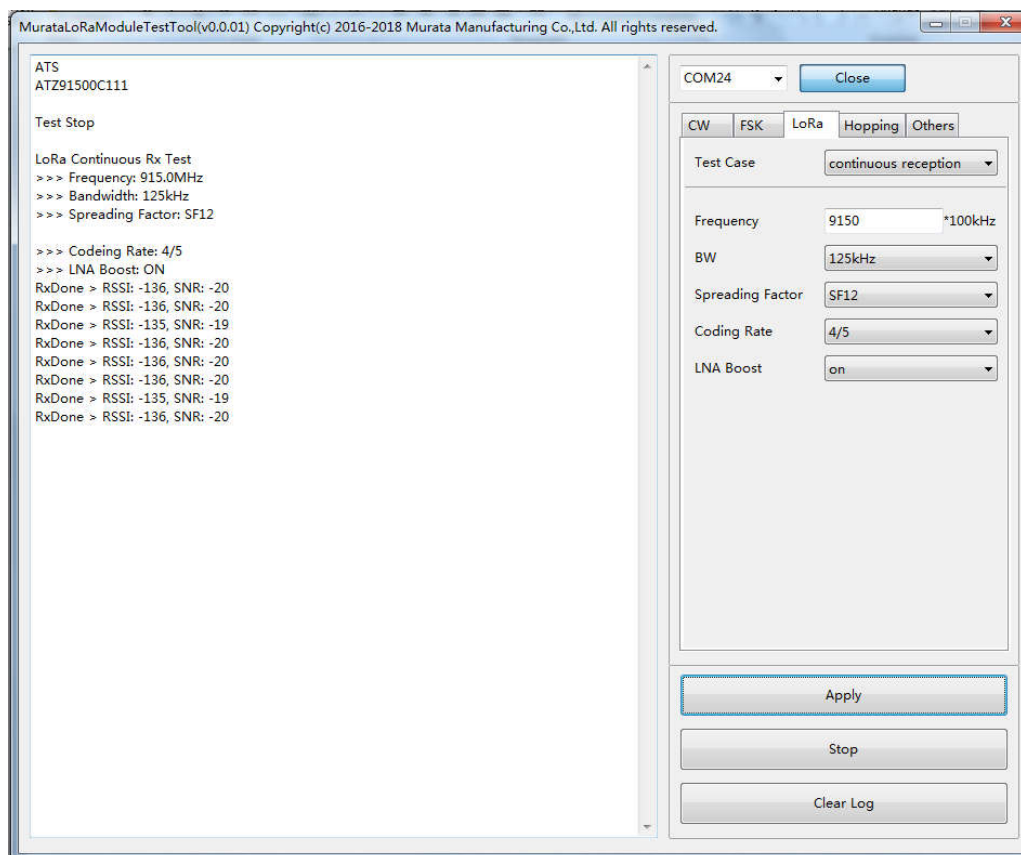
- This command is used to test LoRa modulation TX function, and needs click “Stop” button to stop testing
- Select the LoRa sheet ,choose the right Test Case(continuous/packet transmission) and then Input relate Parameters
- Click the “Apply” button and Response will print on the left window



Test command with GUI Tool



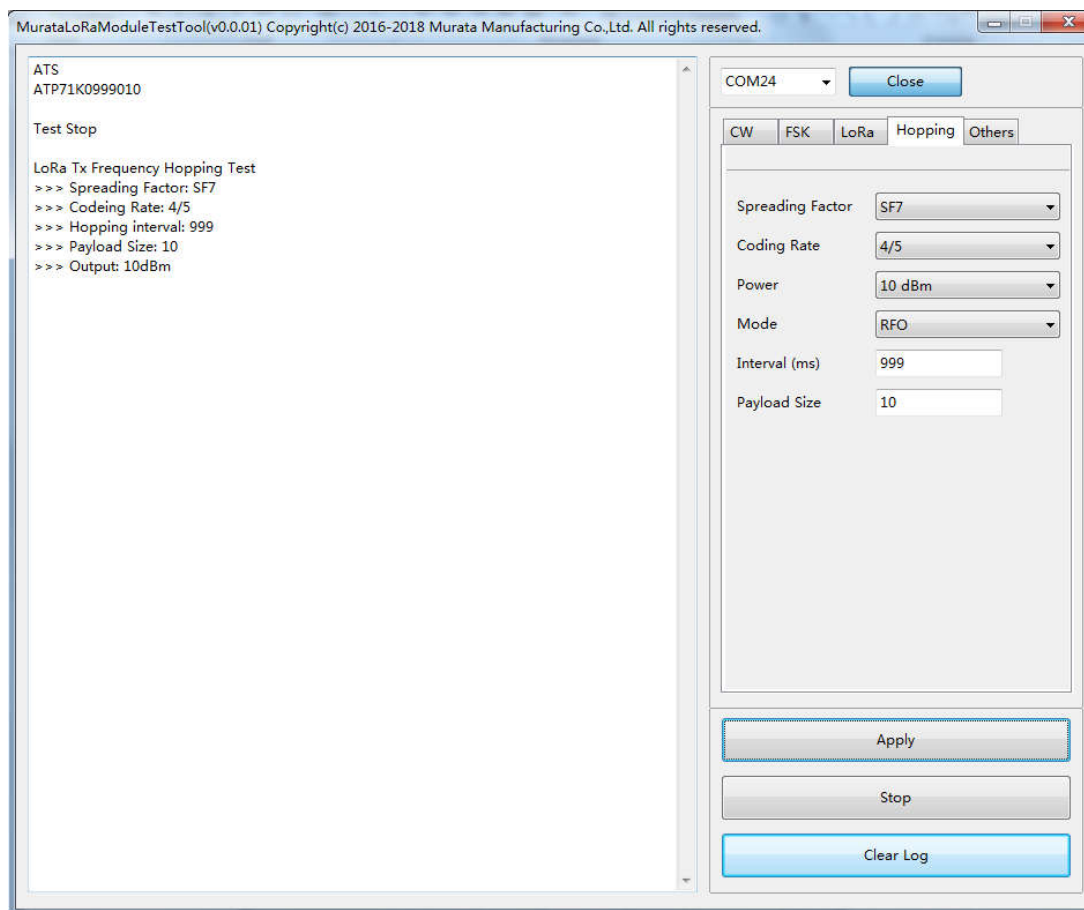
- **LoRa RX(ATZ)**
 - This command is used to test LoRa modulation RX function, and needs click “Stop” button to stop testing
 - Select the LoRa sheet ,choose the right Test Case(continuous/packet reception) and then Input relate Parameters
 - Click the “Apply” button and Response will print on the left window



Test command with GUI Tool



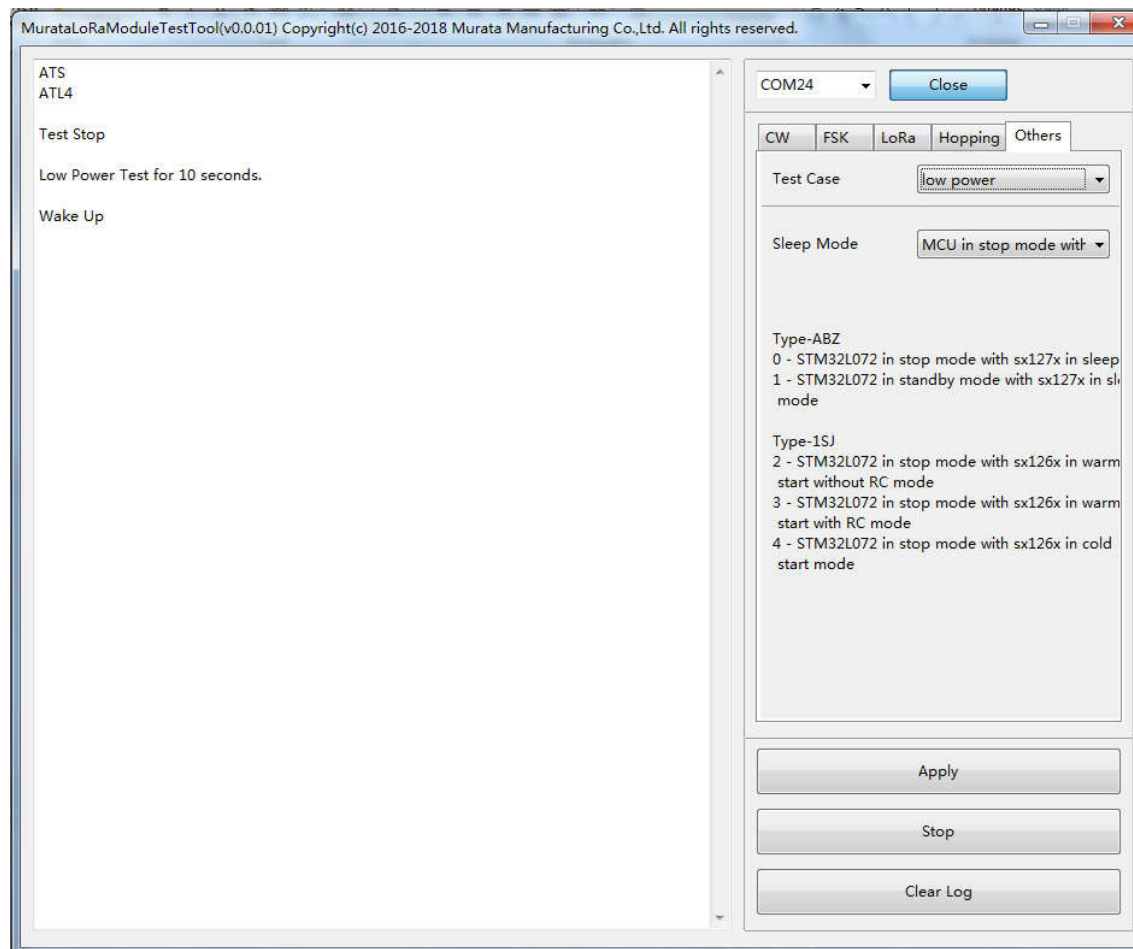
- **LoRa Hopping test(ATP)**
 - This command is used to test LoRa frequency hopping function for FCC, and needs click “Stop” button to stop testing
 - Select the Hopping sheet , Input relate Parameters
 - Click the “Apply” button and Response will print on the left window



Test command with GUI Tool



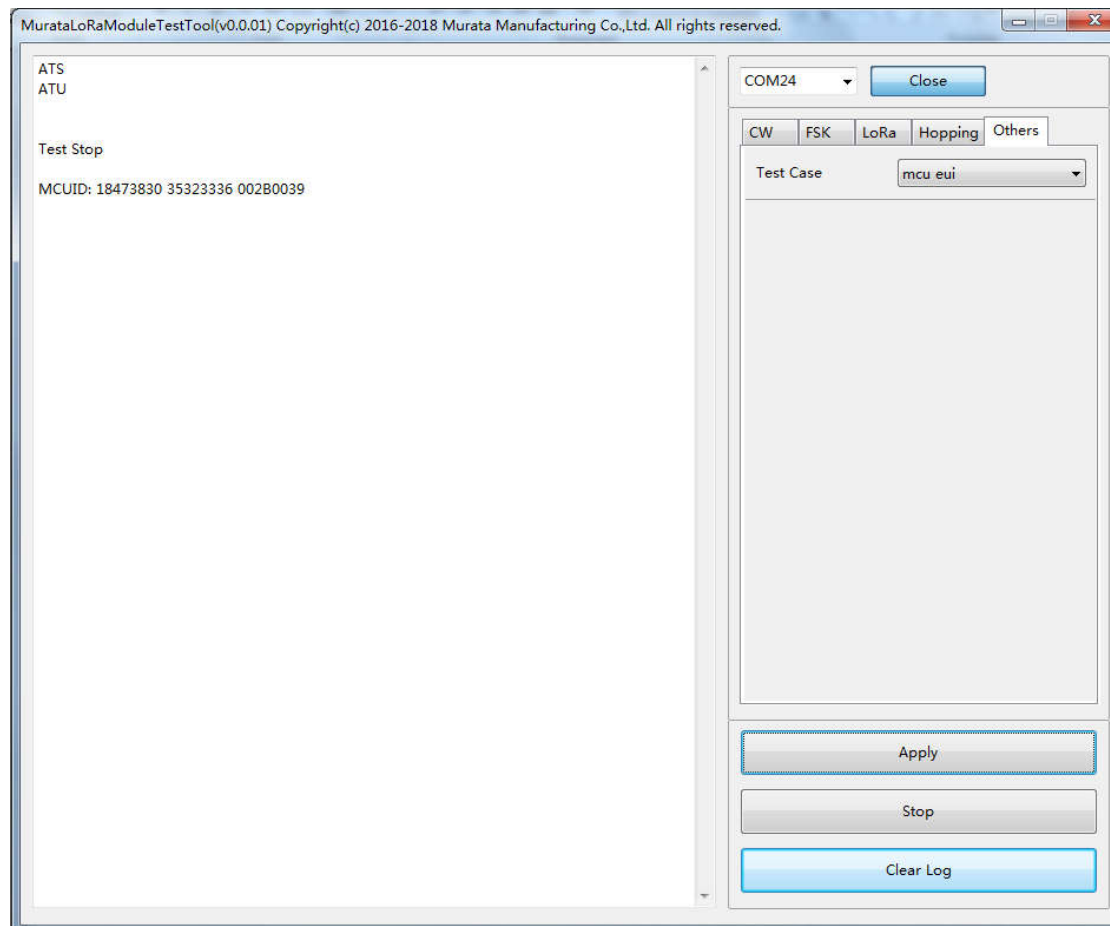
- **Low Power test(ATL)**
 - This command is used to test Low power mode
 - Select the Others sheet , choose the right test case(low power) and then choose sleep mode
 - Click the “Apply” button and Response will print on the left window



Test command with GUI Tool



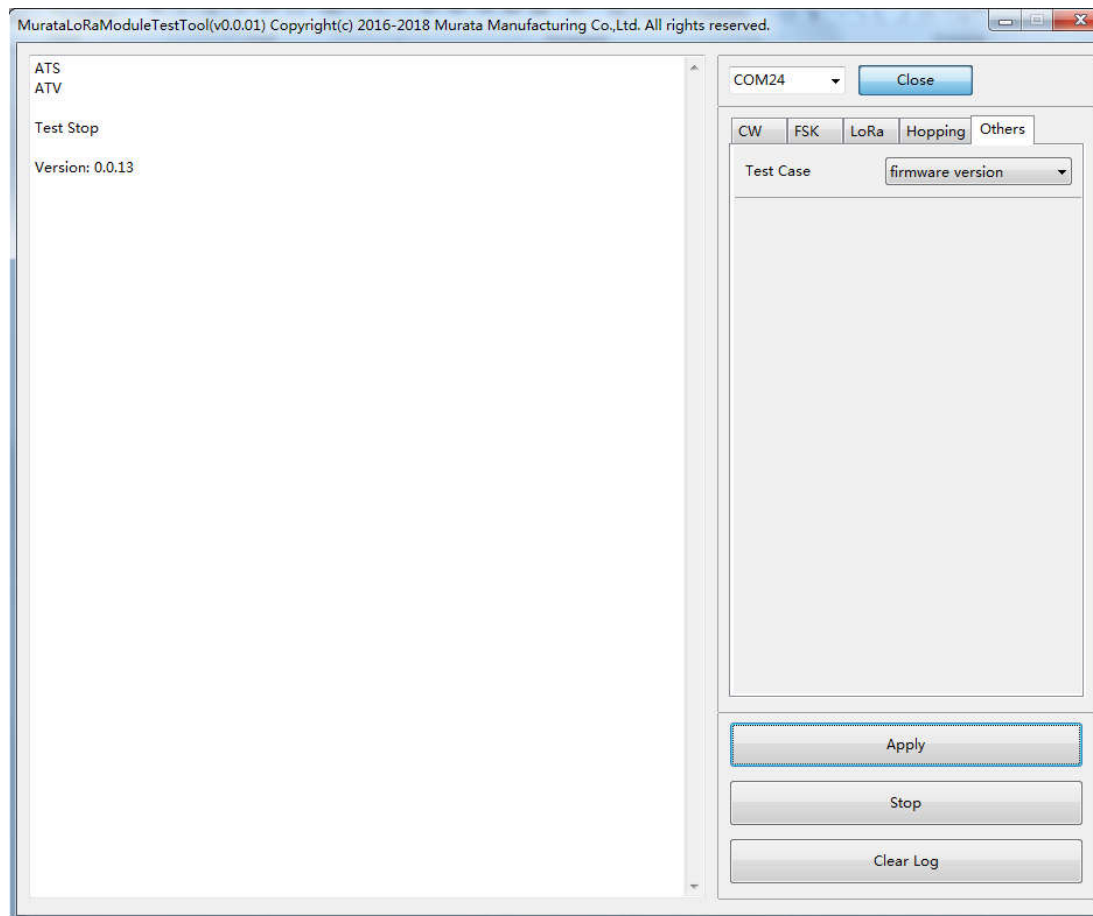
- **MCU ID query (ATU)**
 - This command is used to get mcu id
 - Select the Others sheet , choose test case: mcu eui
 - Click the “Apply” button and Response will print on the left window



Test command with GUI Tool



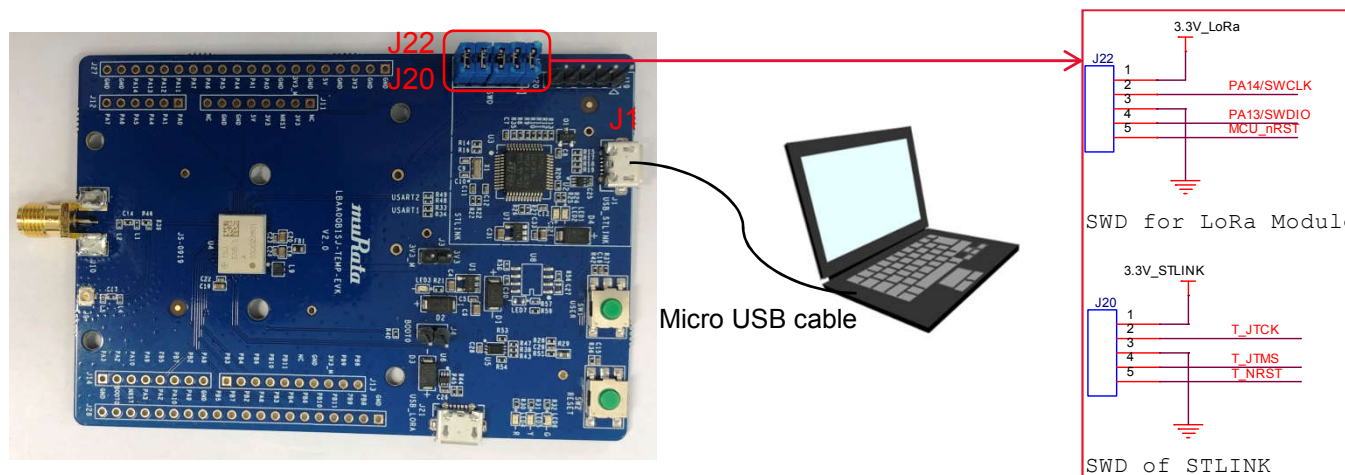
- **Firmware version query (ATV)**
 - This command is used to get Firmware version
 - Select the Others sheet , choose test case: firmware version
 - Click the “Apply” button and Response will print on the left window



FW upgrade for LoRa module

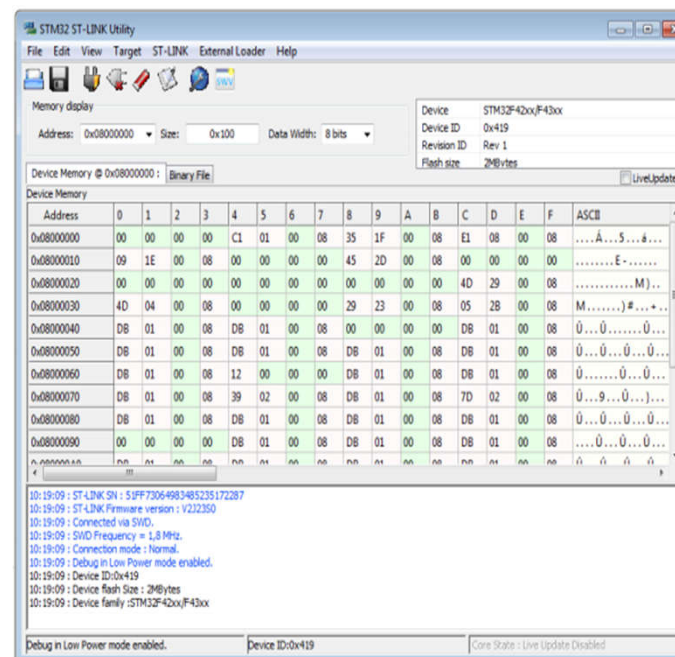
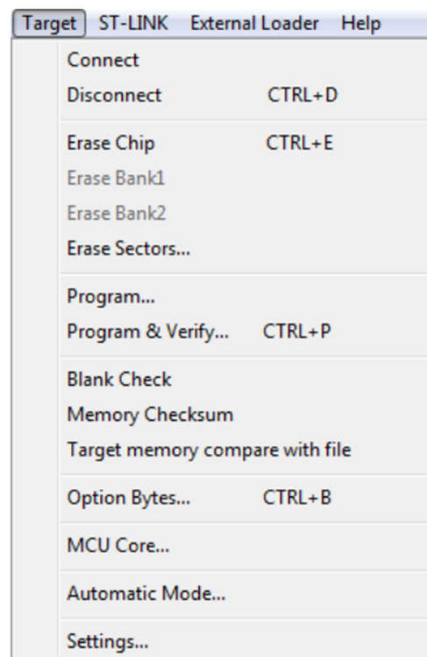


- Step1: Hardware connection
 - a) Short SWD of J20 and J22 as below connection.
 - b) Connect LBAA0QB1SJ-TEMP-EVK V2.0 to PC with Micro-AB USB connector J1 by Micro USB cable.



FW upgrade for LoRa module

- Step2: FW upgrade
 - a) Launch “STM32 ST-LINK Utility” on PC
 - b) Use “Target->Connect” and “Target->Program & Verify...” to program the FW.
- * Please refer to “UM0892” on ST Micro website for more details.





Thanks!