

LPWA CATM Series Log/Upgrade Tool Manual

LPWA CATM Module Series

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About the Document

Revision History

Version	Date	Author	Description
-	2022-11-24	Linkin WANG	Creation of the document
1.0.1	2023-01-05	Linkin WANG	Add driver chapter

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1 Introduction

This document describes how to collect logs and upgrade on different LPWA CAT-M1 BG95Mx & BG96Mx & BG77xA-GL & BG95xA-GL series module.

1.1. Special Marks

Table 1: Special Marks

Mark	Definition
*	Unless otherwise specified, when an asterisk (*) is used after a function, feature, interface, pin name, AT command, or argument, it indicates that the function, feature, interface, pin, AT command, or argument is under development and currently not supported; and the asterisk (*) after a model indicates that the sample of the model is currently unavailable.

2 Environment Setup

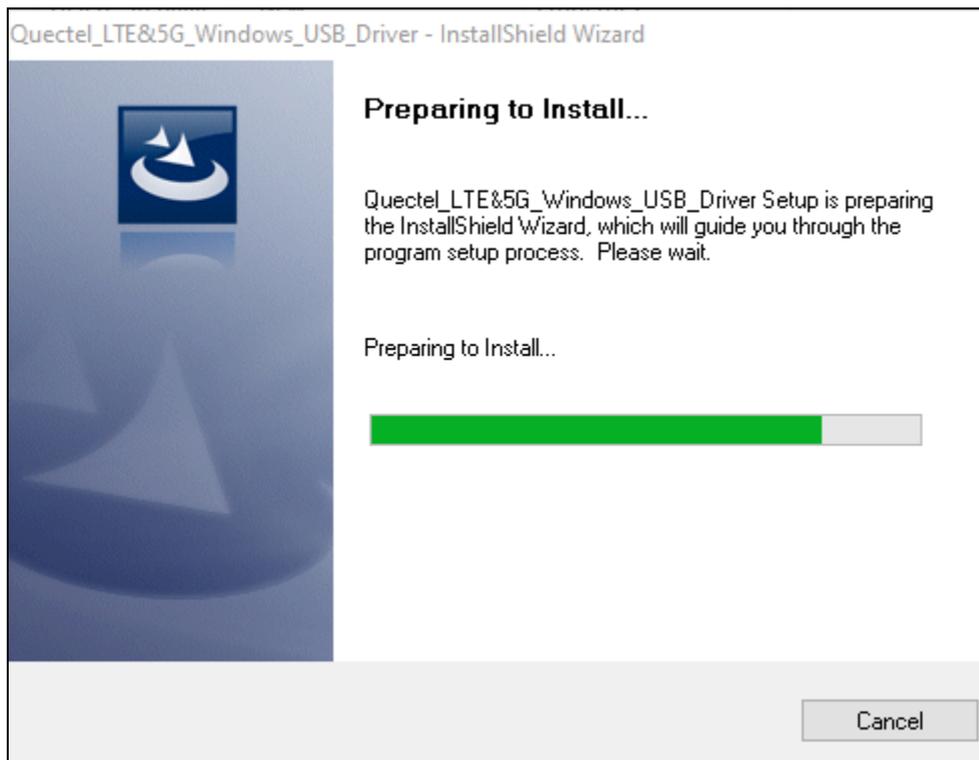
2.1. Drivers

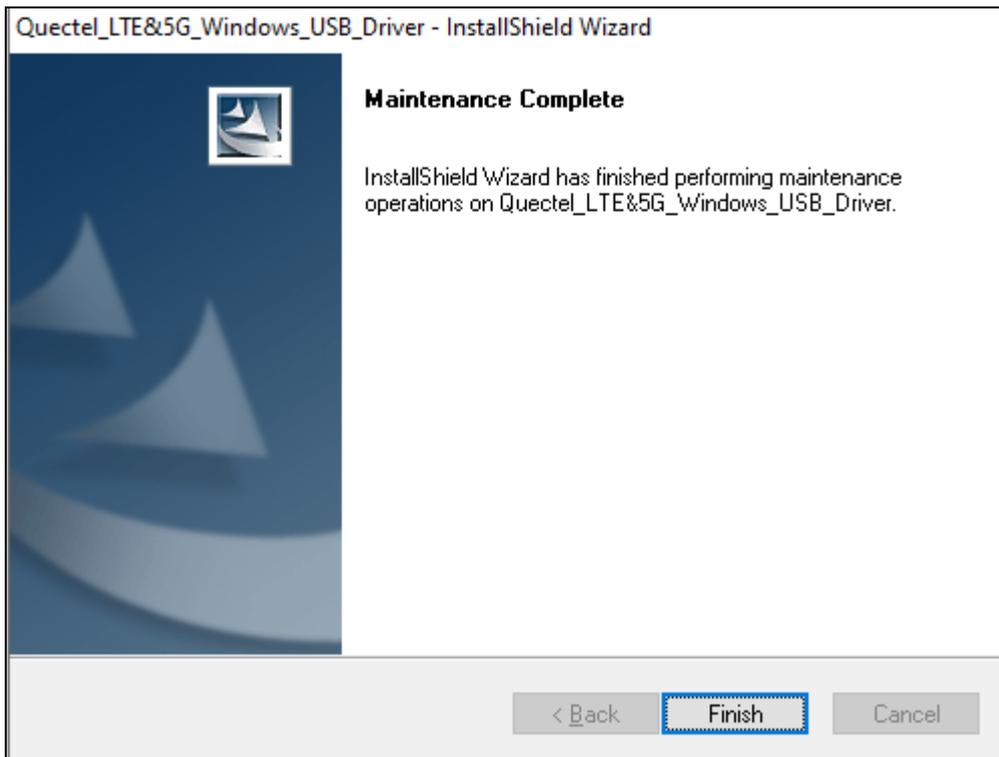
BG95Mx & BG96Mx series module driver: [BG95Mx&BG96Mx series module driver](#)

BG77xA-GL&BG95xA-GL series module driver: [BG77xA-GL&BG95xA-GL series module driver](#)

2.2. Driver Install

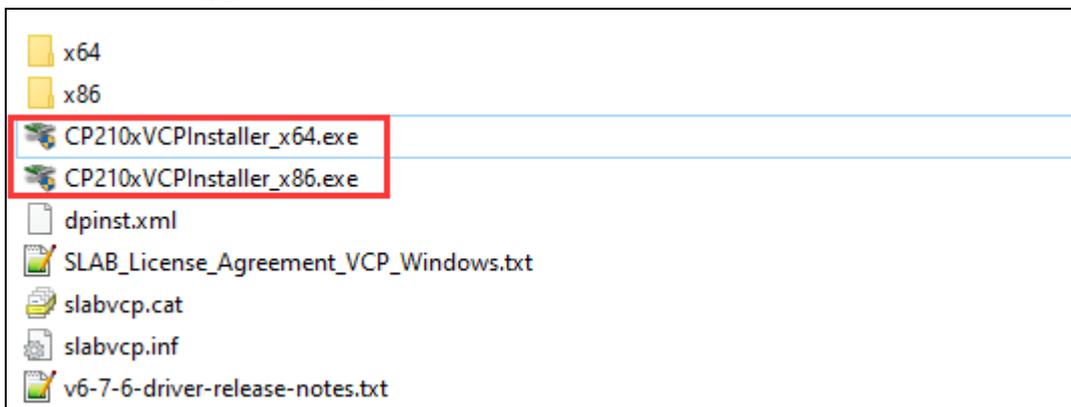
BG95Mx & BG96Mx series module driver install as below:





BG77xA-GL&BG95xA-GL series module driver install as below:

Please according your PC's system and select one to install.



CP210x USB to UART Bridge Driver Installer

License Agreement



To continue, accept the following license agreement. To read the entire agreement, use the scroll bar or press the Page Down key.

LICENSE AGREEMENT
 SILICON LABS VCP DRIVER
 IMPORTANT: READ CAREFULLY BEFORE AGREEING TO TERMS

THIS PRODUCT CONTAINS THE SILICON LABS VCP DRIVER AND INSTALLER PROGRAMS AND OTHER THIRD PARTY SOFTWARE. TOGETHER THESE PRODUCTS ARE REFERRED TO AS THE "LICENSED SOFTWARE". USE OF THE LICENSED SOFTWARE IS SUBJECT TO THE TERMS OF THIS LICENSE

I accept this agreement
 I don't accept this agreement

CP210x USB to UART Bridge Driver Installer



Completing the Installation of the CP210x USB to UART Bridge Driver

The drivers were successfully installed on this computer.

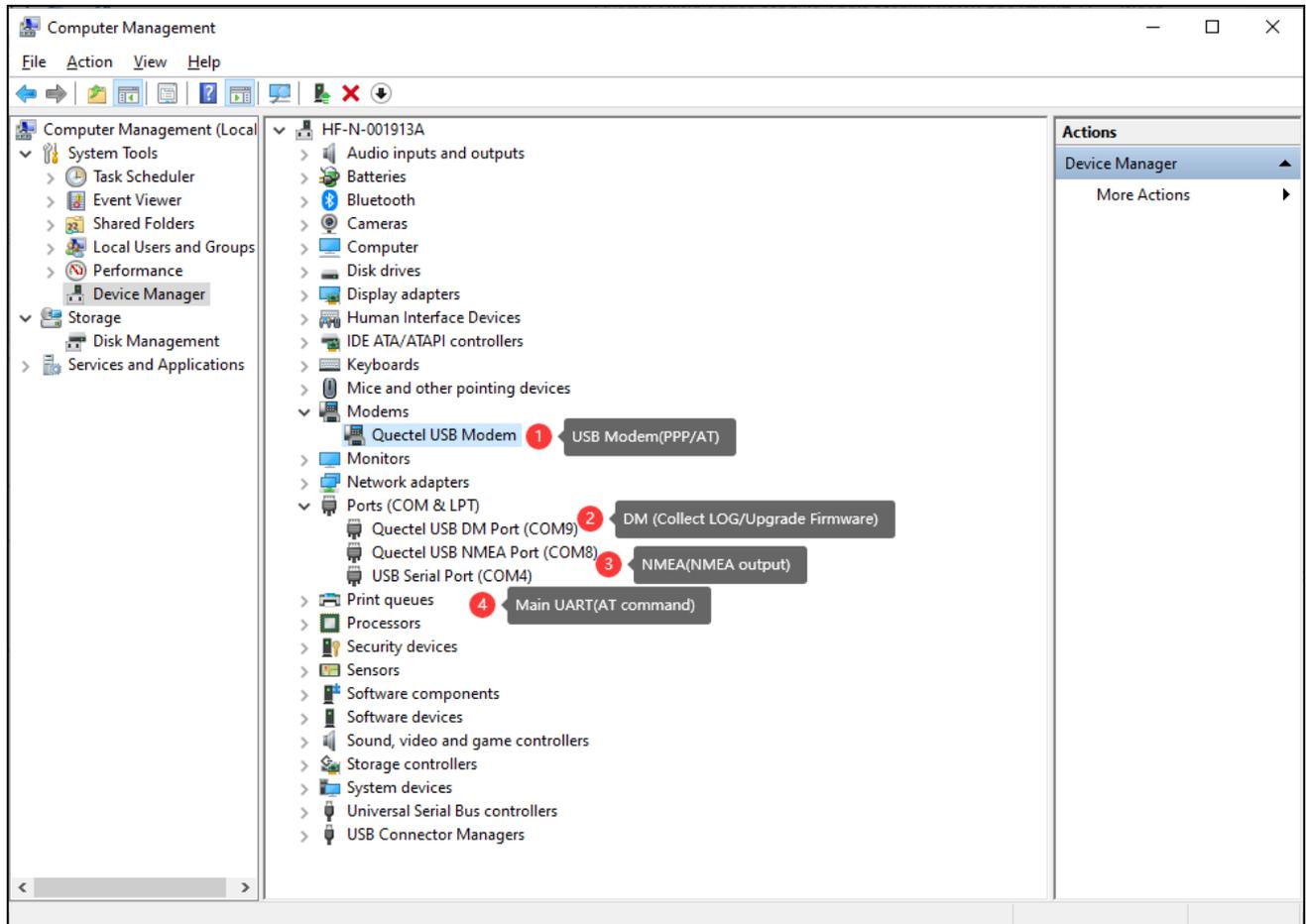
You can now connect your device to this computer. If your device came with instructions, please read them first.

Driver Name	Status
✓ Silicon Laboratories Inc. ...	Ready to use

2.3. Ports Checking

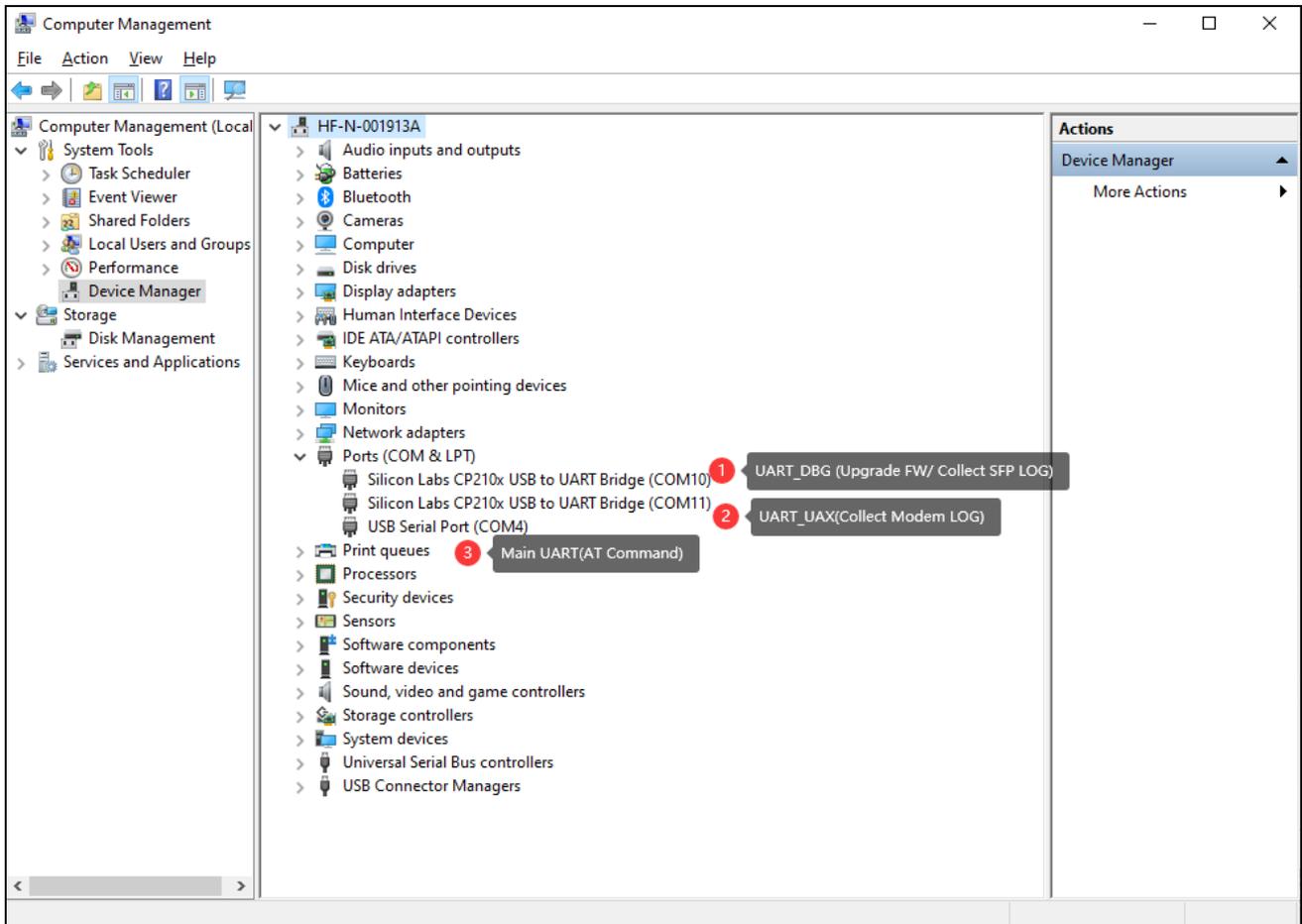
For BG95Mx and BG96Mx series module:

Please refer to [chapter 3.1.1](#) to setup module and after installed driver you will get these ports in your device manager:



For BG77xA-GL and BG95xA-GL series module:

Please refer to [chapter 3.2.1](#) to setup module and after installed driver you will get these ports in your device manager:



3 Upgrade Tool

3.1. QFLASH Tool

For QFLASH tool Download here -> [QFlash_V6.2](#)

3.2. MDM9205 MDM9206 BGxx Series Module

MDM9205 MDM9206 BGxx series module include:

MDM9205:

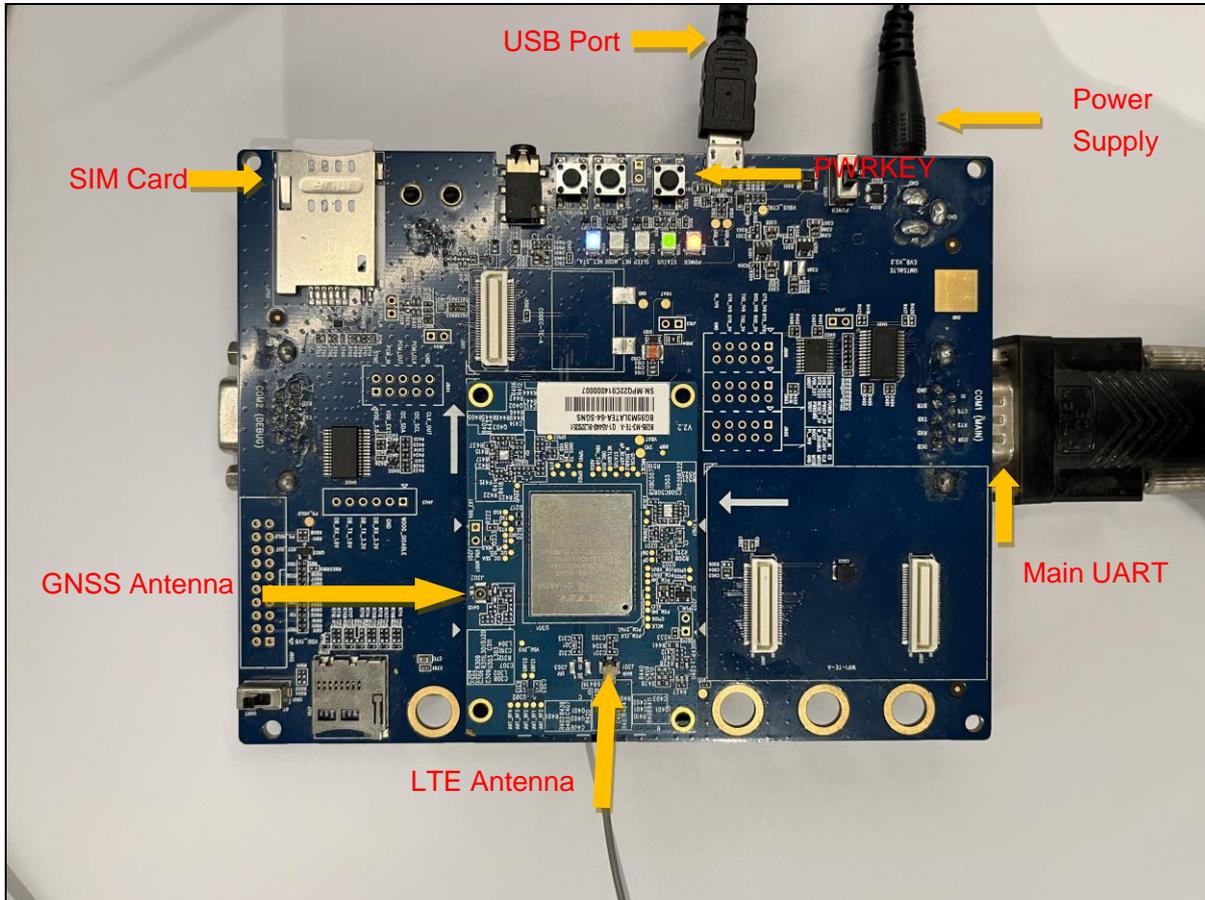
```
{  
BG77  
BG95-M1  
BG95-M2  
BG95-M3  
BG95-M4  
BG95-M5  
BG95-M6  
BG95-M8  
BG95-MF  
BG600L-M3  
}
```

MDM9206:

```
{  
BG96-MA  
BG96-MC  
}
```

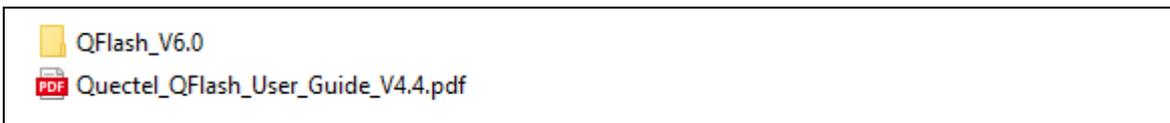
3.2.1. HW Overview

Here is an example (BG95-M3) on Qualcomm platform.



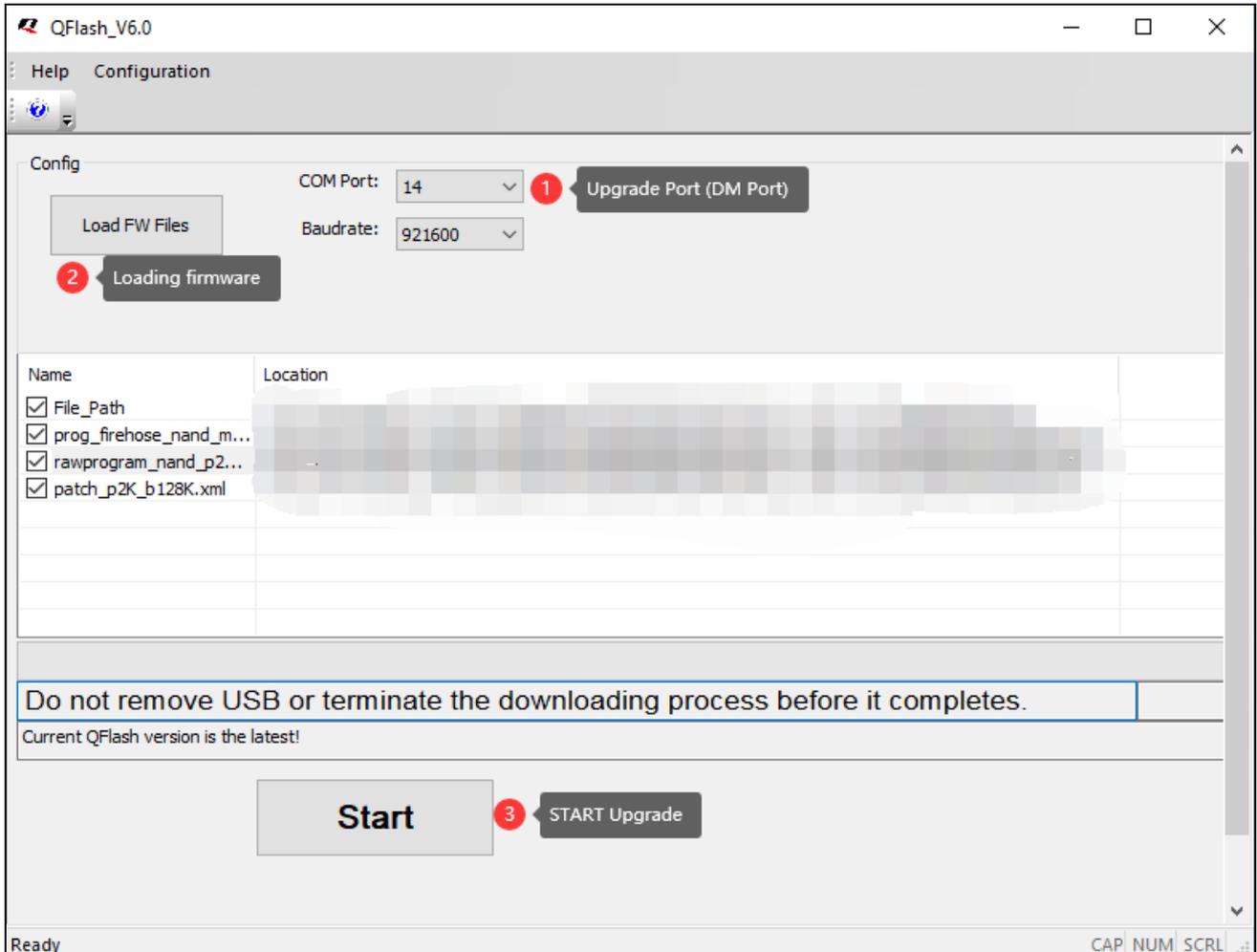
3.2.2. QFLASH Introduction

QFLASH is a tool which using for upgrade *Quectel* series module, and please ask sales or support@quectel.com for latest released tool.

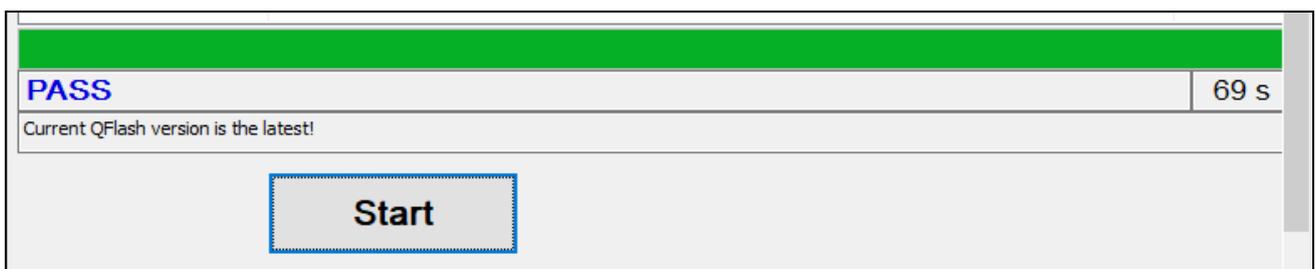


3.2.3. FLASHING

- [1] COM Port select DM Port (*Please be sure DM port is available*)
- [2] Baudrate is not fixed, 921600 or any others should be OK
- [3] Load FW: select one file which in [BG95M3LAR0xA0x_xx.00x.0x.00xupdatefirehose](#) folder
- [4] Click START button.



Once Received **PASS**, Upgrade done.



3.3. ALT1250 BG77xA-GL & BG95xA-GL Series Module

ALT1250 series module include:

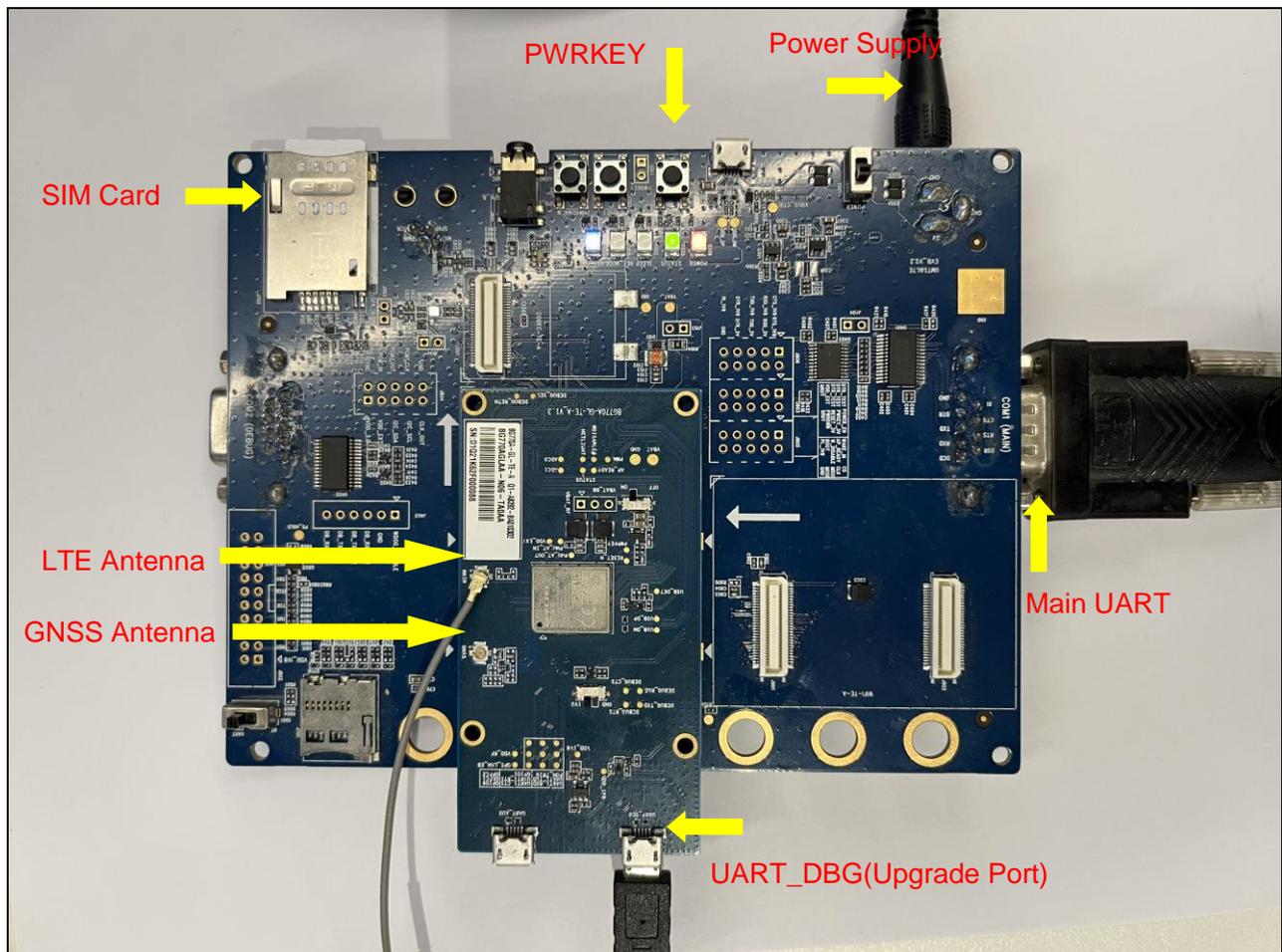
ALT1250:

- {
- BG770A-GL
- BG772A-GL
- BG773A-GL
- BG950A-GL
- BG951A-GL
- BG952A-GL
- BG953A-GL
- BG955A-GL*
- }

BG951A-GL quite different with other series, Needs flash both modem firmware and GNSS firmware. Please refer to [chapter 3.2.4](#).

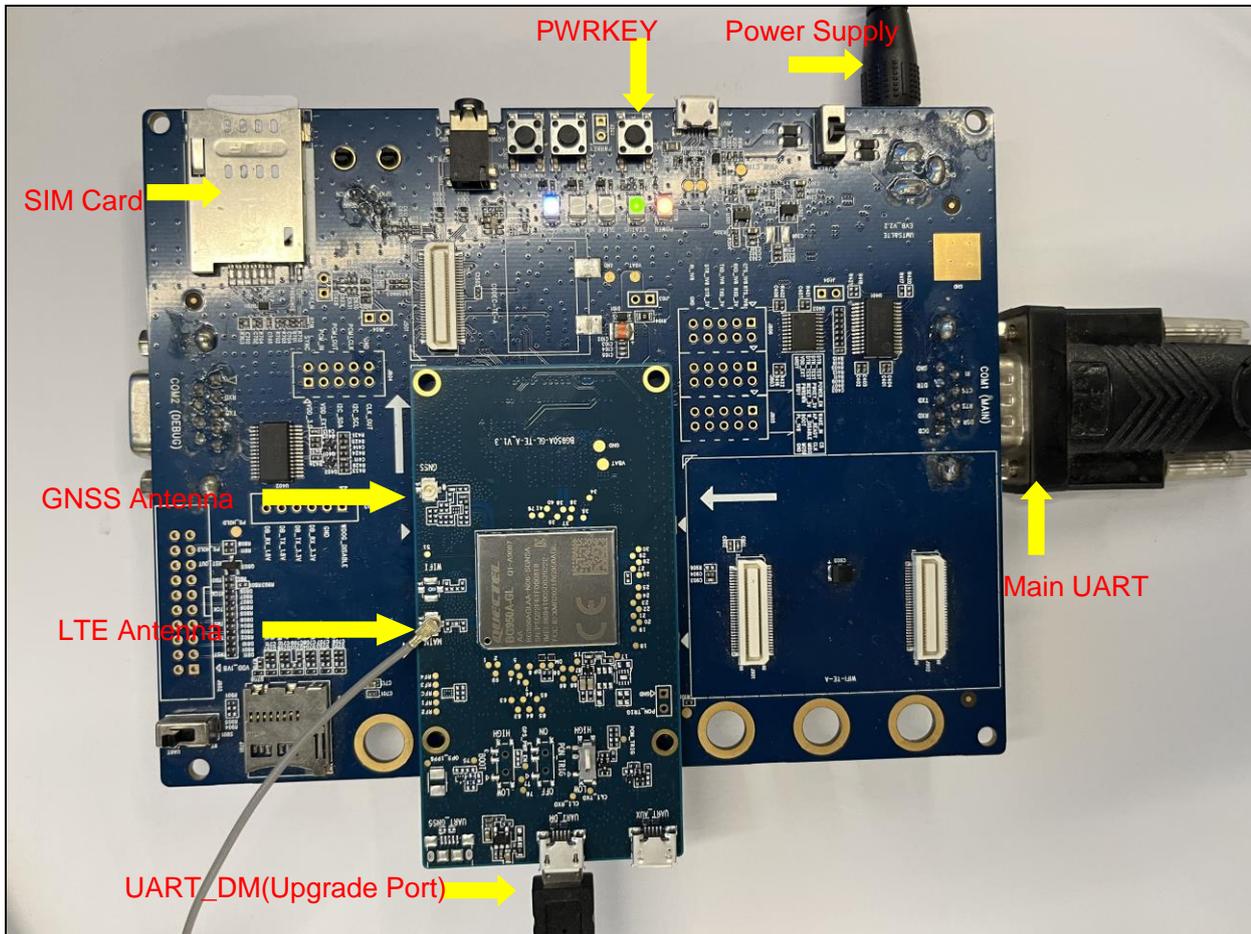
3.3.1. HW Overview

Here is an example (BG770A-GL) on Sony Platform.



BG77xA-GL Series Module

Here is an example (BG95xA-GL) on Sony Platform.



BG95xA-GL Series Module

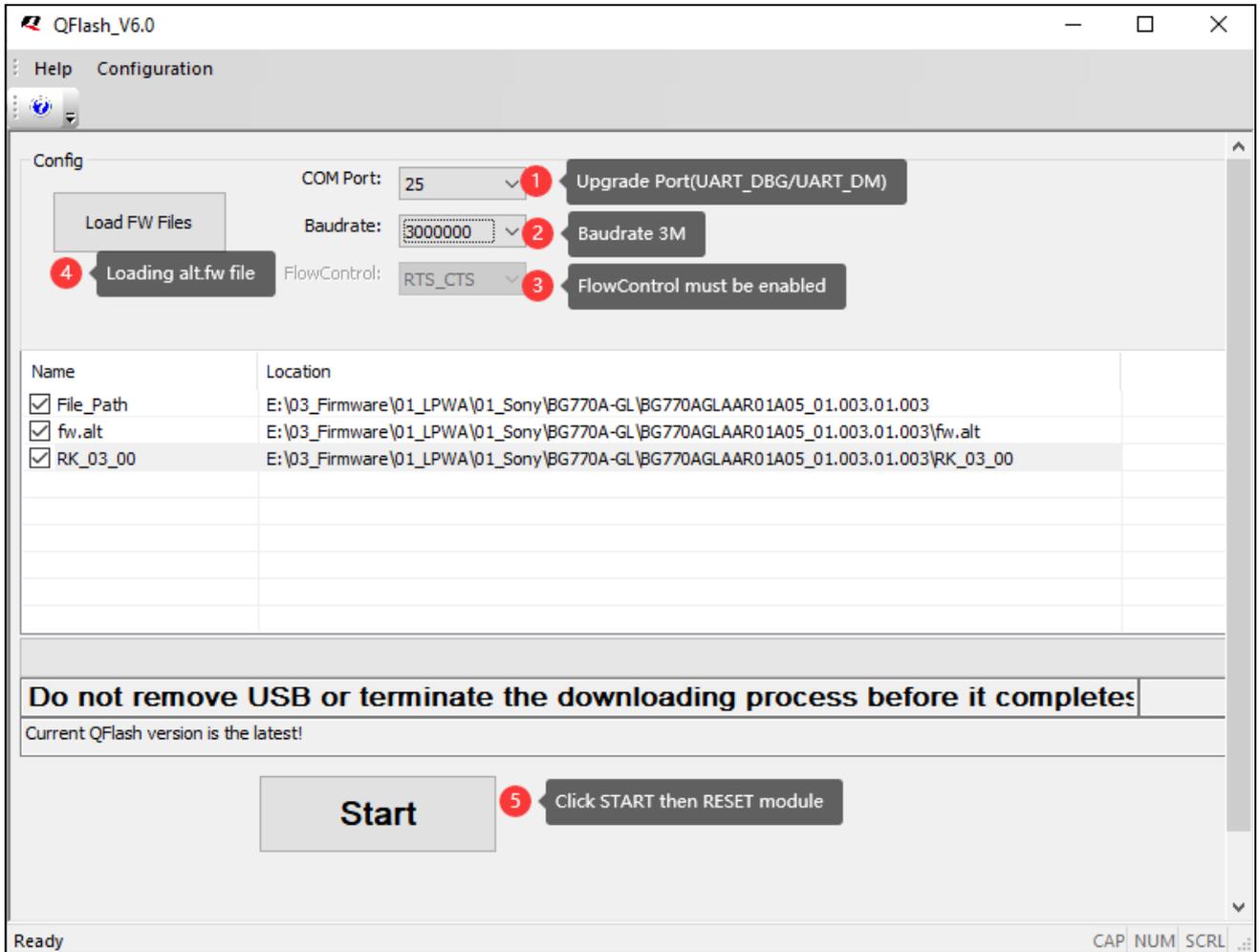
3.3.2. QFLASH Introduction

Please refer to chapter 2.1.2

3.3.3. FLASHING

- [1] For BG77xA-GL series module, upgrade port is UART_DBG. (Please be sure is available)
For new TE-A board upgrade port named UART_DM
- [2] For BG95xA-GL (*except BG951A-GL*) series module, upgrade port is UART_DM.
- [3] Max Baudrate 3M and CTS/RTS must be enabled.
- [4] Load FW, Select fw.alt file from firmware folder.

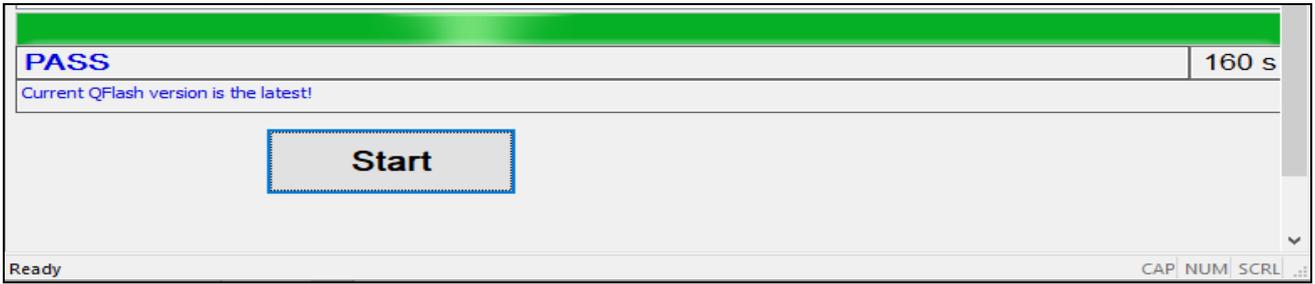
[5] Must **RESET** module once start upgrade.



Once report *Please reset*, do RESET module.

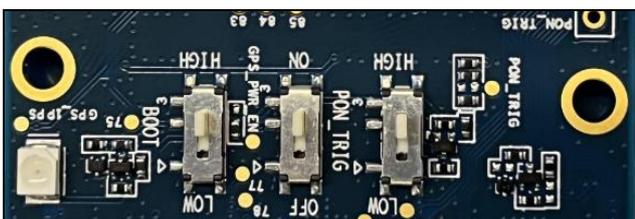
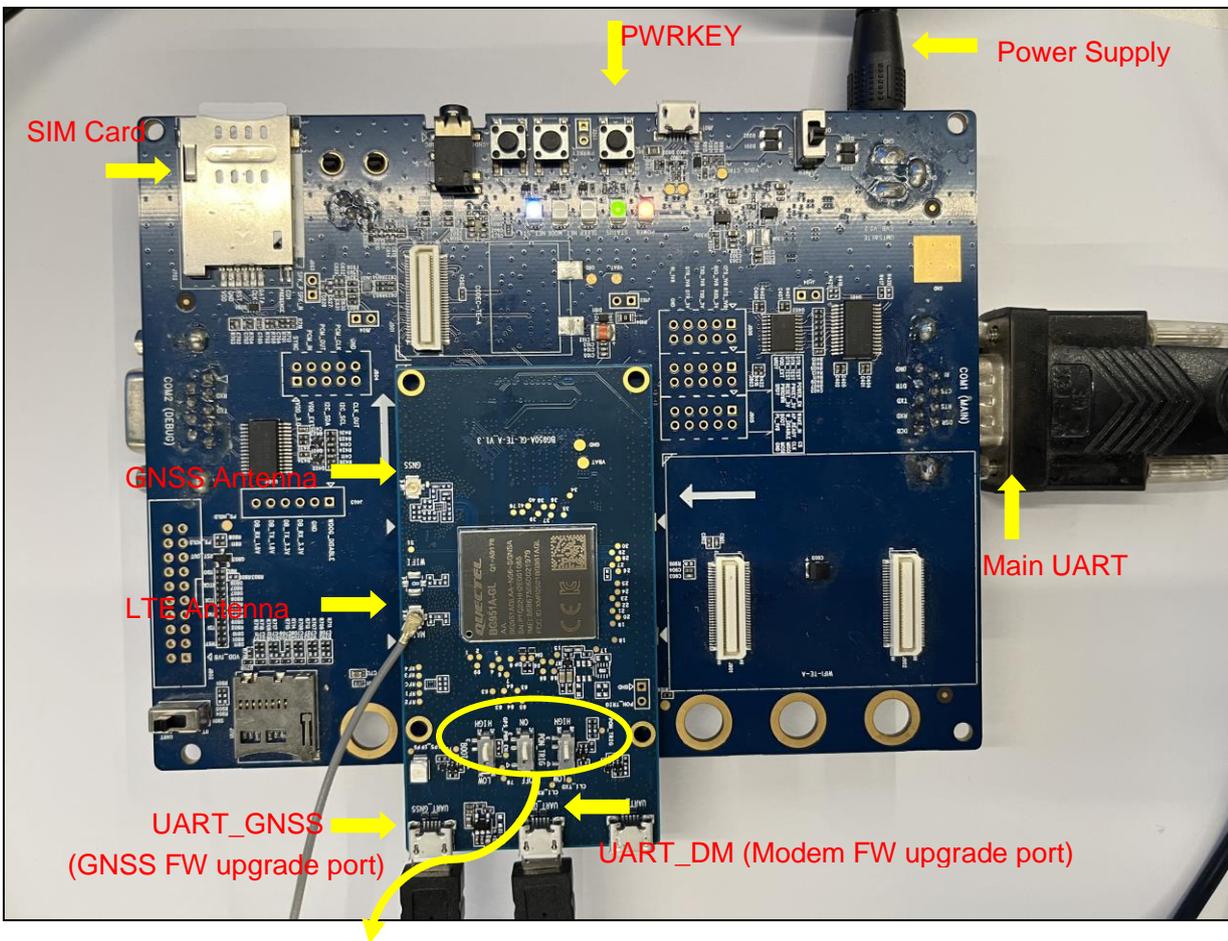


Once Received **PASS**, Upgrade done.



3.3.4. Special for BG951A-GL module

3.3.4.1. HW Overview



BOOT Switch: **HIGH**

GPS_PWR_EN switch: **ON**

PON_TIRG: **HIGH**

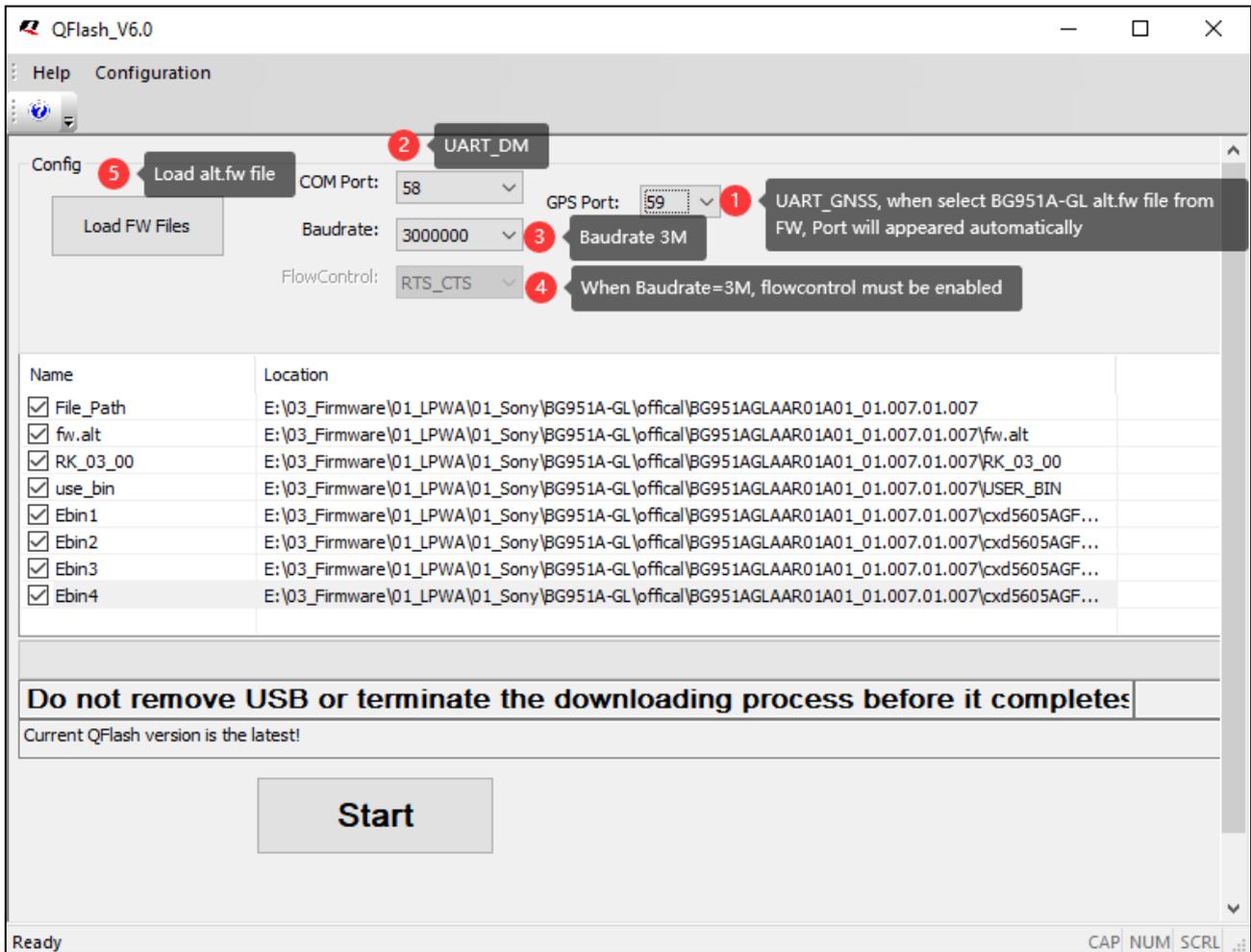
3.3.4.2. FLASHING

- [1] Both UART_DM and UART_GNSS connected.
- [2] **AT+QGPSCFG="GNSS_MODE",2** reboot to take effect.
- [3] UART_DM flashing modem FW, UART_GNSS flashing GNSS FW.
- [4] Switch should be **ON/HIGH**
- [5] Max Baudrate 3M and CTS/RTS must be enabled.
- [6] Load FW, Select fw.alt file from firmware folder.
- [7] Must **RESET** module once start upgrade.
- [8] Check UART_GNSS port must be in **H>** mode.

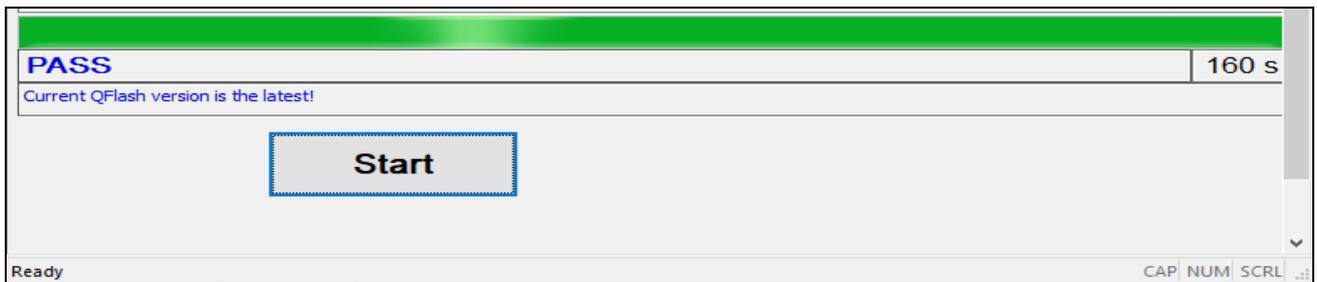
How to enter H> mode?

- 1) Module Power ON
- 2) Switch BOOT to HIGH
- 3) Switch GPS_PWR_EN to ON
- 4) Then UART_GNSS should be report **H>**, and next do upgrade ASAP.

Note: When you loaded BG951A-GL alt.fw file, the GPS port will automatically appear in QFLASH.



Once Received **PASS**, Upgrade done.



4 LOG Collecting Tool

4.1. MDM9205 MDM9206 BGxx Series Module

4.1.1. Modem LOG

MDM9205 and MDM9206 collect log tool [QWinLog](#)

Please ask sales/FAE or support@quectel.com for latest log tool.



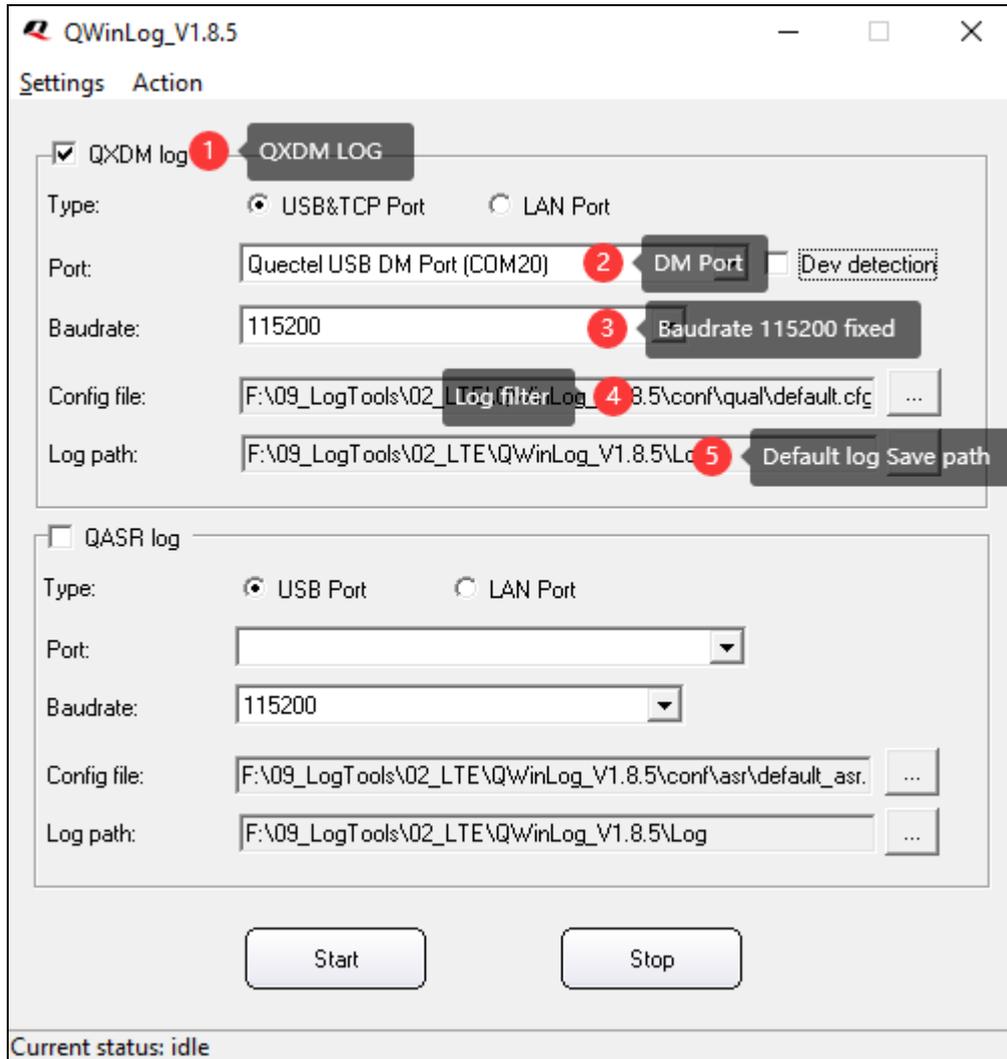
4.1.1.1. Pre-Settings

Before Collecting logs, must enable log mode via command:

- [1] `AT+QCFG="DBGCTL",0` // for modem log, optional when collecting DUMP log
- [2] `AT+QCFGEXT="dump",1` // for dump log, optional when collecting modem log
- [3] Log Type: **QXDM**
- [4] Log Port: **DM port**
- [5] Log Filter: Select a suitable filter in `xxxx\QWinLog_V1.8.5\conf\qual` folder.

If command return ERROR means log mode is enabled. [1],[2] can be configured same time.

4.1.1.2. Collecting



4.1.2. Dump LOG

Both MDM9205 and MDM9206 use [QPST](#) tool to collect DUMP log. Please ask sales/FAE or support@quectel.com for latest released tool.

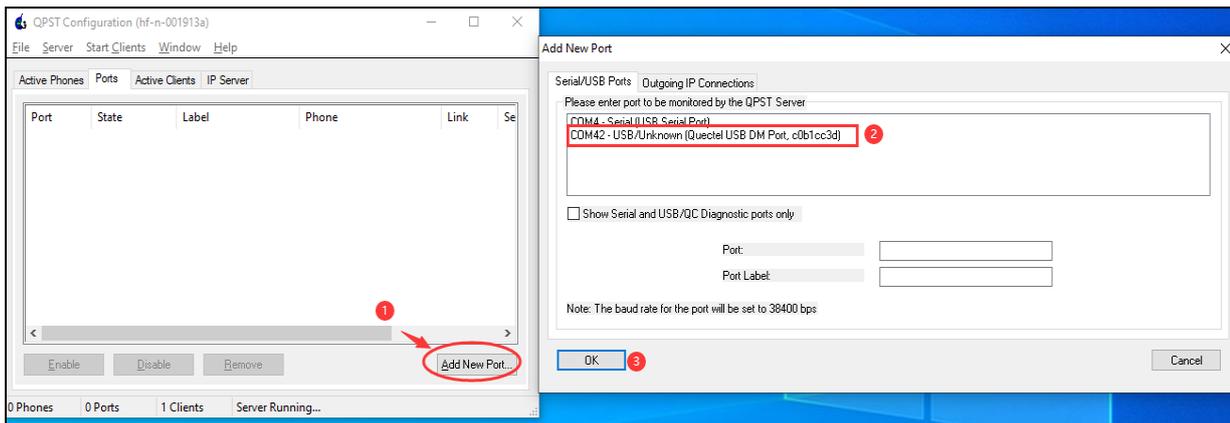
When module crashed there will be auto automatically generate a DUMP log. This is quite necessary for crash analysis.

4.1.2.1. Collecting When QPST Tool not Opened

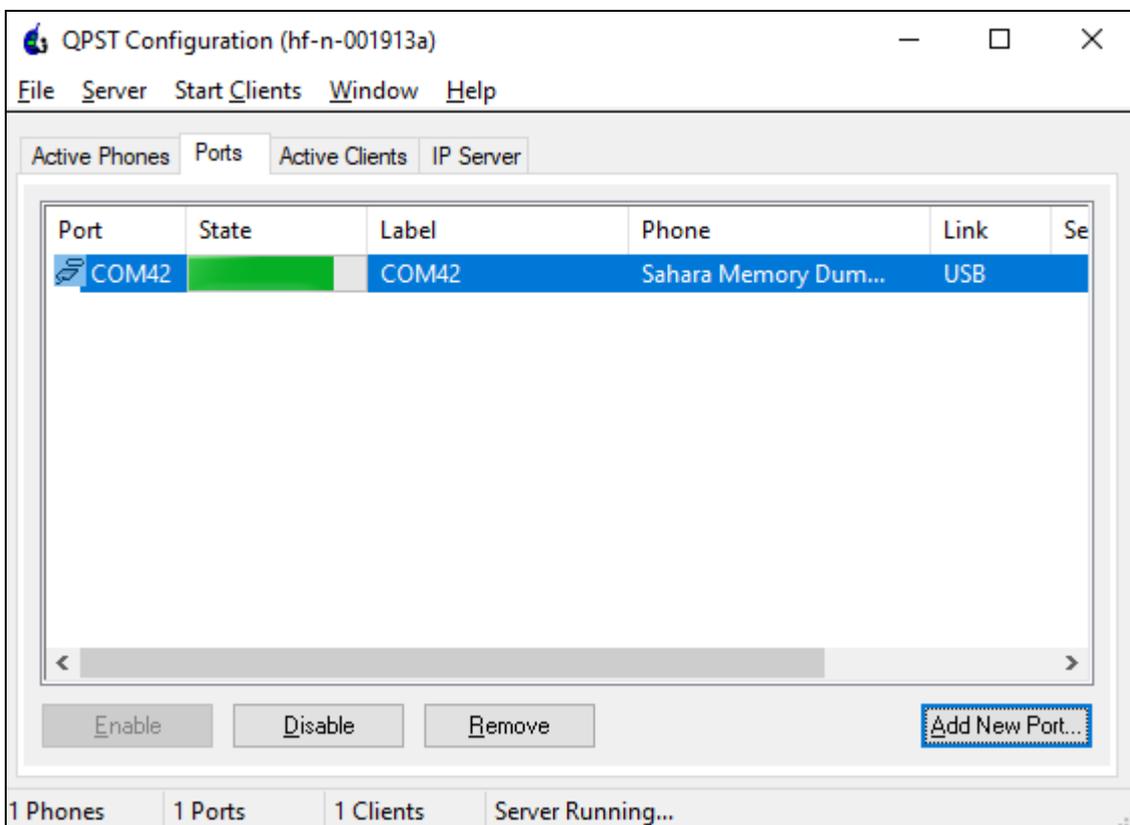
And when module happened crash, the AT port will be stuck and only POWER light on, meanwhile both AT/ USB NMEA port will be disappeared.



Then open QPST Tool and do **Add New Port**, Select DM port.

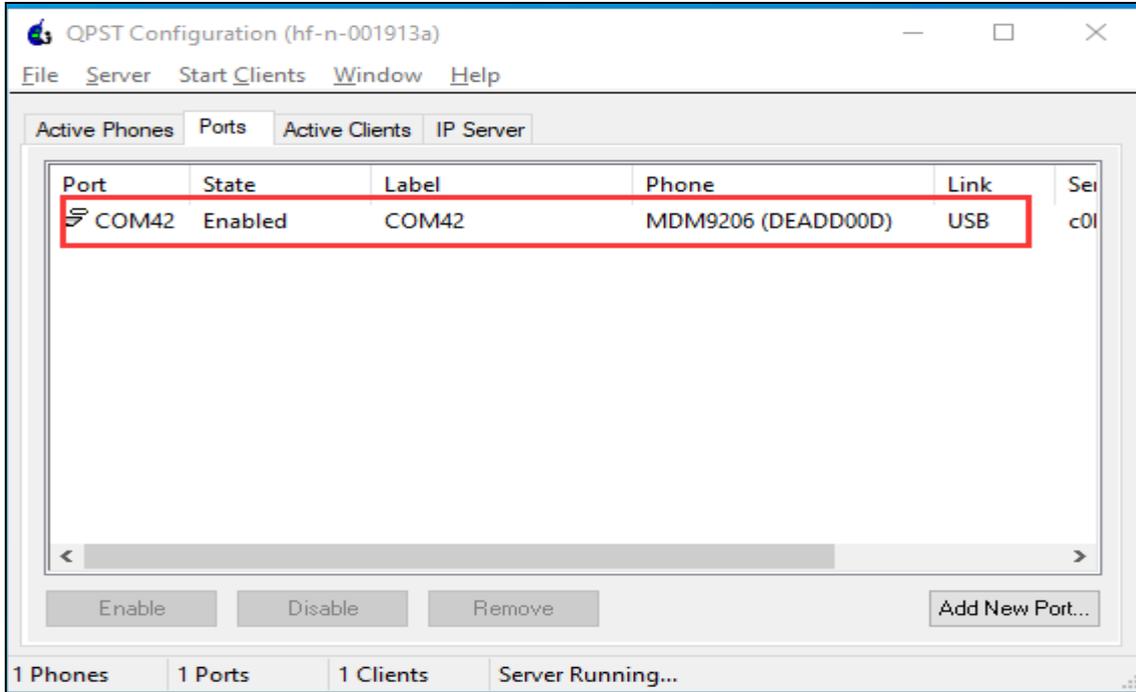


After Click OK, the tool is collecting DUMP log as below:

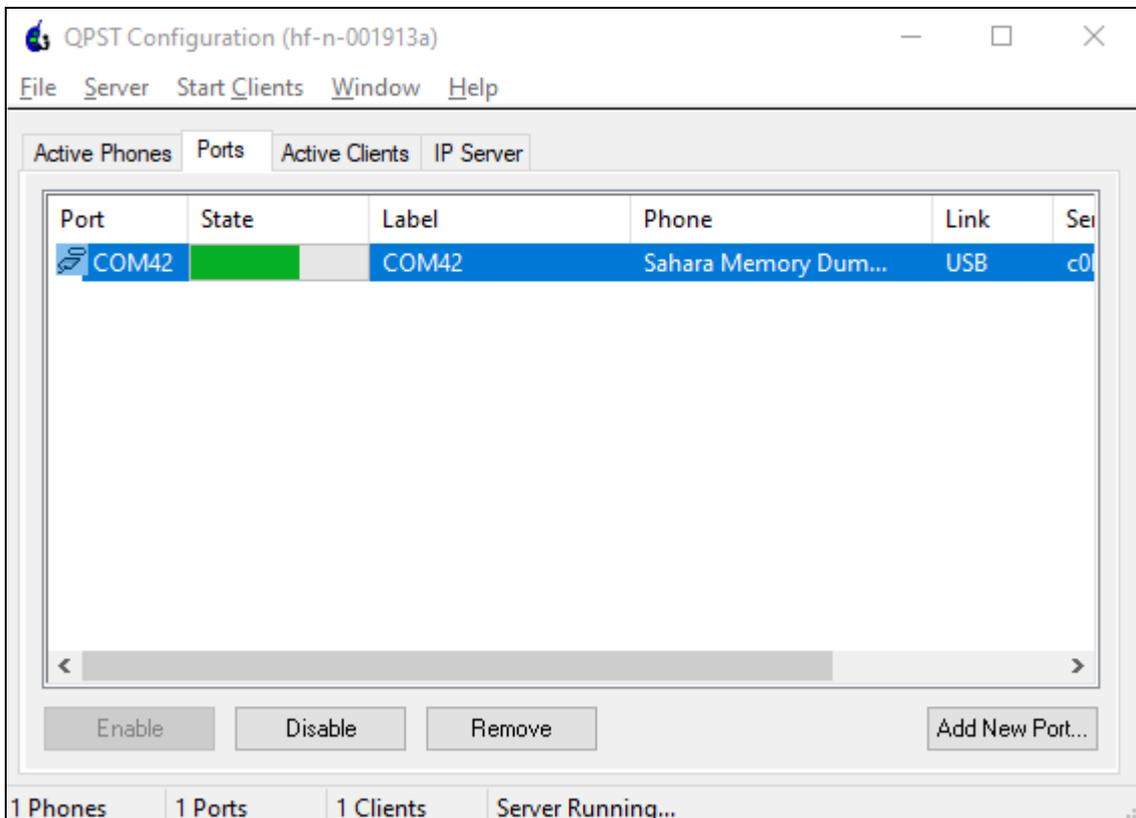


4.1.2.2. Collecting When QPST Tool Opened

When QPST tool opened and DM port added to tool before dump crash appeared.



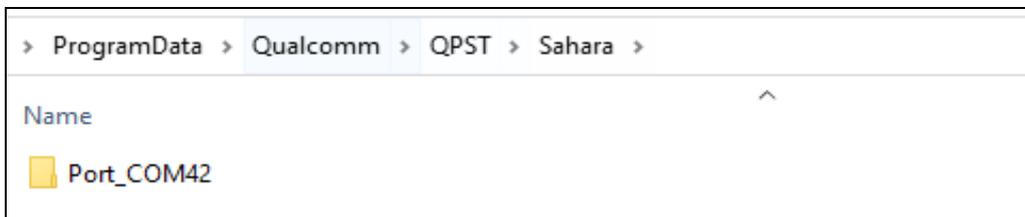
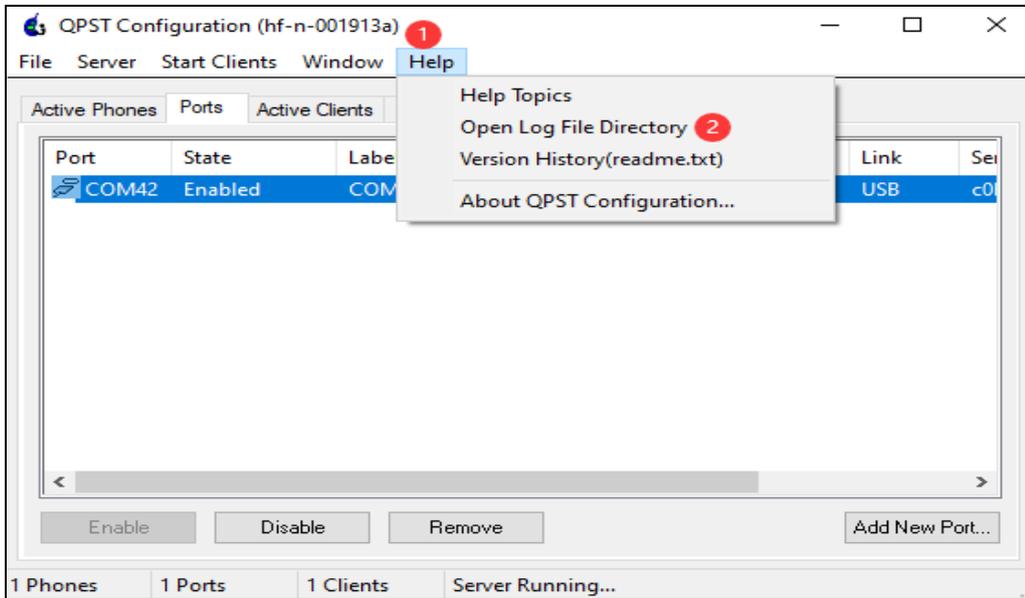
It will be auto automatically generating a DUMP log, there is no need manually add DM port to tool after crashed.



4.1.2.3. DUMP log saved

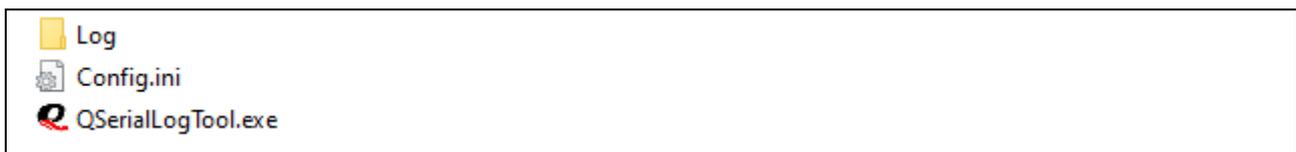
Currently, when installed QPST with default, the DUMP log will be saved in folder:
C:\ProgramData\Qualcomm\QPST\Sahara

Also, you can get dump log via QPST tool quickly button as below:



4.2. ALT1250 BG77xA-GL & BG95xA-GL Series Module

BG77xA-GL& BG95xA-GL series module collect log tool [QserialLog](#)
 Please ask sales/FAE or support@quectel.com for latest log tool.



4.2.1. Modem LOG

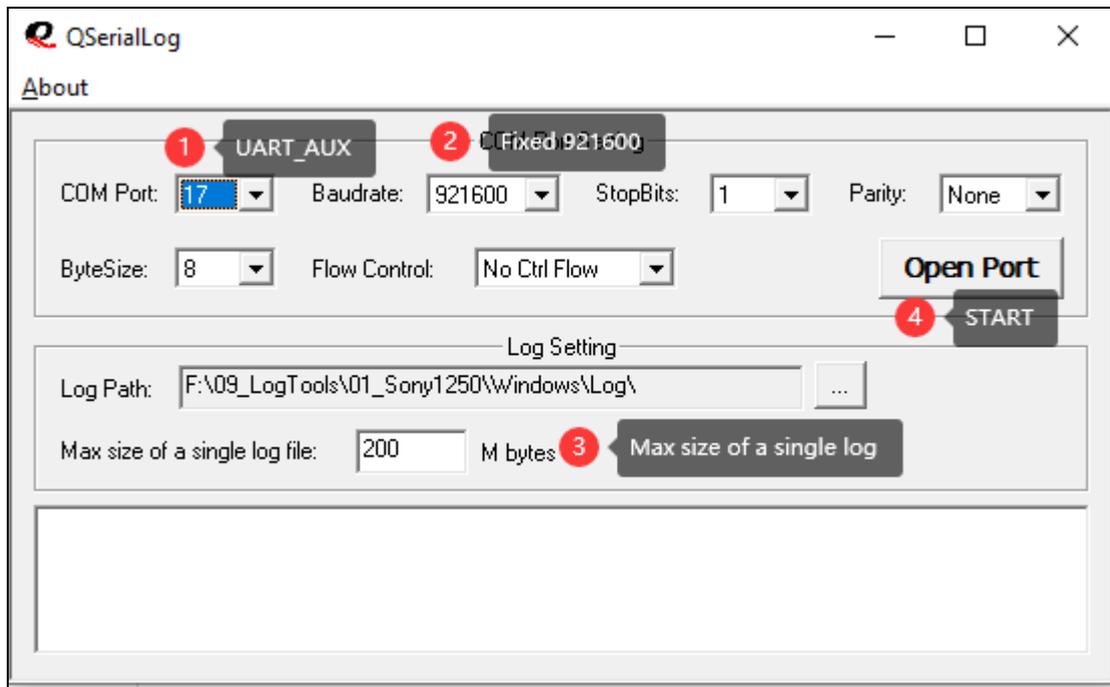
4.2.1.1. Pre-Settings

Before Collecting logs, must enable debug mode via command:

- [1] `AT+QCFGEXT="debug",1` reboot to take effect.
- [2] LOG Port: `UART_AUX` for FW log.
- [3] LOG Port: `UART_DM` for SFP log.
- [4] Baudrate: must be `921600`.

4.2.1.2. Collecting

You can open two QserialLogTool terminal to collect both FW log and SFP log.



4.2.2. collectLogs

For BG77xA-GL and BG95xA-GI series module, there is no special tool to collect DUMP log. And currently only manual way to collect dump log.

4.2.2.1. Pre-settings

- [1] Cannot collect modem log and dump log at the same time.
- [2] Dump log will output from UART_DM(UART_DBG) port with baudrate **115200**.
- [3] Use terminal tool (e.g QCOM Putty etc) to save output characters.
- [4] Send **AT+QCFGEXT="debug",2** the CollectLogs will be output.

4.2.2.2. Collecting

The screenshot shows the QCOM_V1.6 software interface. It is divided into several sections:

- COM Port Setting:** Includes fields for COM Port (58), Baudrate (115200), StopBits (1), Parity (None), ByteSize (8), and Flow Control (No Ctrl Flow). A "Close Port" button is also present.
- Command List:** A list of 29 commands, each with a checkbox and a "HEX" checkbox. Command 18 is checked.
- Operation:** Includes a "Clear Information" button, checkboxes for DTR (checked), RTS, View File, Show Time, HEX String, Show In HEX, and Send With Enter (checked). There is an "Input String" field and a "Send Command" button.
- Terminal Output:** A large text area displaying log data, including timestamps and JSON-like structures for instances 2, 15, 16, and 19. It also shows "coap_cmd version: 1.0.0", "QGITVER: qgitver:828ee7c026263f8307d05e91c80a81197ee6f20d", and "radio version: 1.0.0". The log ends with "Collect Logs - END".