GENIE_User Guide

BC20&BC26&BC66 Module Series

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About the Document

Revision History

Version	Date	Author	Description
-	2022-12-01	Herbert Pan	Creation of the document

CONTENTS

1 Foreword

In this document, it illustrates how to capture DEBUG log on BC20/BC26/BC66 Series under LPWA modules. In addition, it can be available to capture DEBUG log of such above modules in a fast and effective way via this document. Finally, it can be implemented on relevant applicable analysis based on certain contents.

1.1. Scope

Tools	Manufacturer Revision	Applicable Module Type
Genie	AT+CGMI/MTK_2625	BC20/BC26/BC66

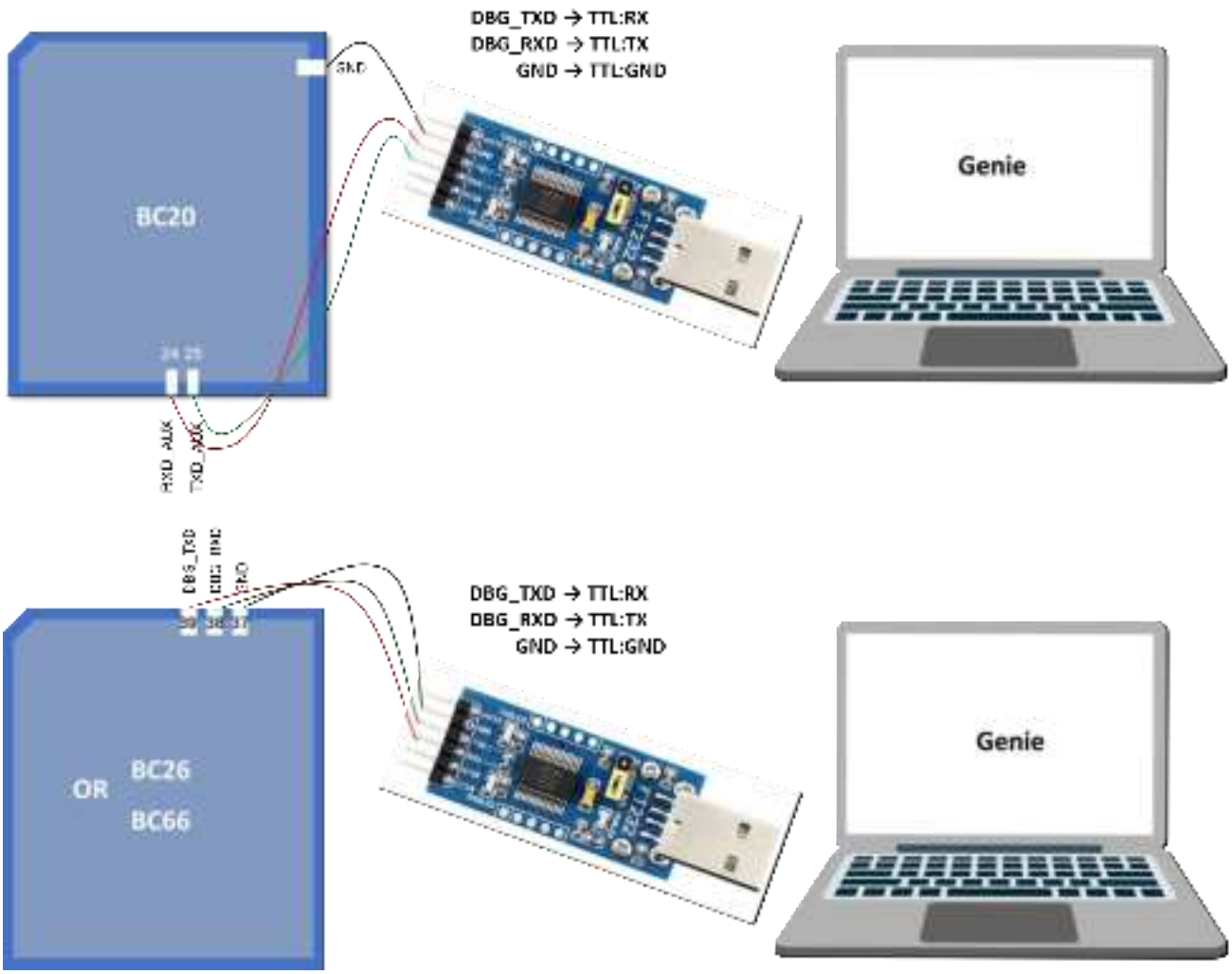
1.2. Download

GENIE	MT2625_nbiot_tools_20220930_exe_V1.2240.5.zip

Note: The tool has a validity period. If it has been expired when deploying, please feel no hesitation to contact with Quectel.

1.3. Device Connection

If the module has been welded or debugged separately, it is recommended to connect to the Genie and capture log as shown below.



Under the circumstance that the TE-B corresponding to MTK module is deployed, please select the second COM port in the “Port” under the drop-list of “Device Manager” , which means the “Silicon Labs Quad CP2108 USB to UART Bridge: Interface 1” will be used to serve as GKI port. While the third COM port, Silicon Labs Quad CP2108 USB to UART Bridge: Interface 2, will serve as HSL port.

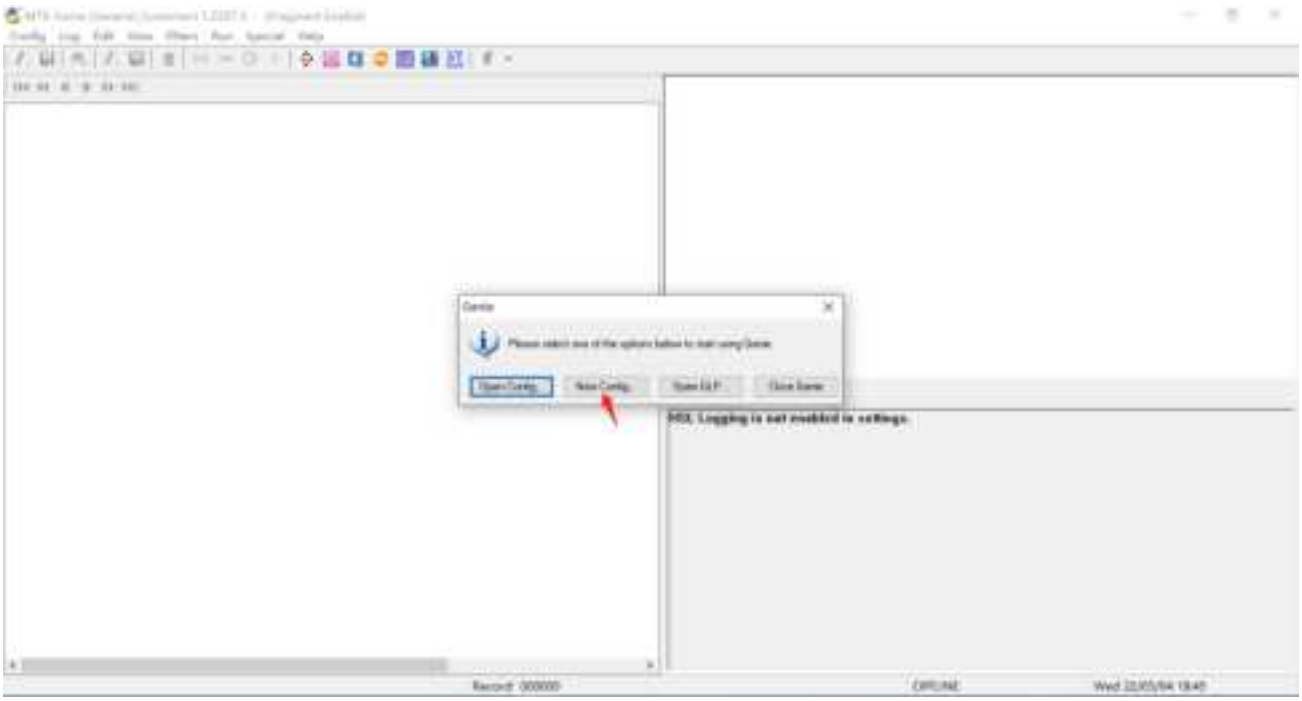
2 Installation

Being installation-free, the Genie can be used after being unzipped. Run **Genie.exe** in the directory of *MT2625_nbiot_tools_20220211_exe_V1.2207.5\nbiot\tools\core\genie*.

GENIE icon

3 Connection

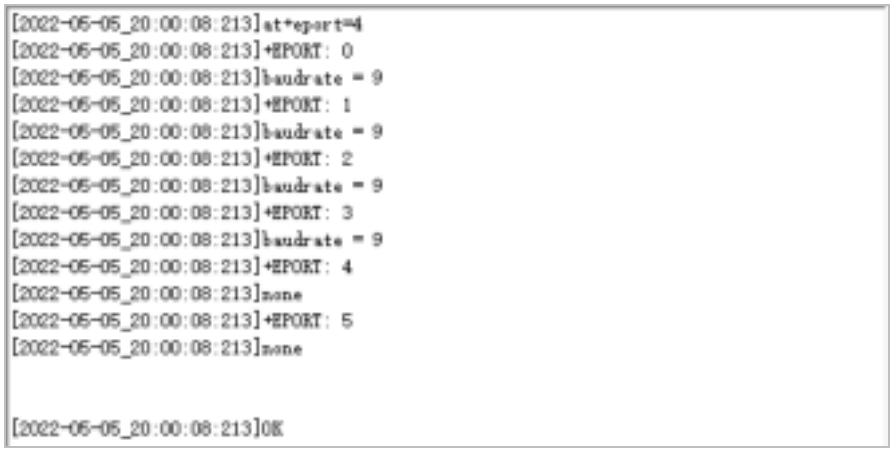
Click the genie icon above to start, the initial display is as shown below; Select "New Config" for related settings.



3.1. UART Connection

The GKI (mandatory one) corresponds to Debug port. While the HSL (optional, untick it if the AUX port is not induced) corresponds to AUX port. In addition, the **.dec** file in the corresponding firmware file is imported into the Database.

As for configuring baud-rate, run the AT command "**AT+EPORT=4**" to query the supported UART port in current module and configure according to the returned value and corresponding table

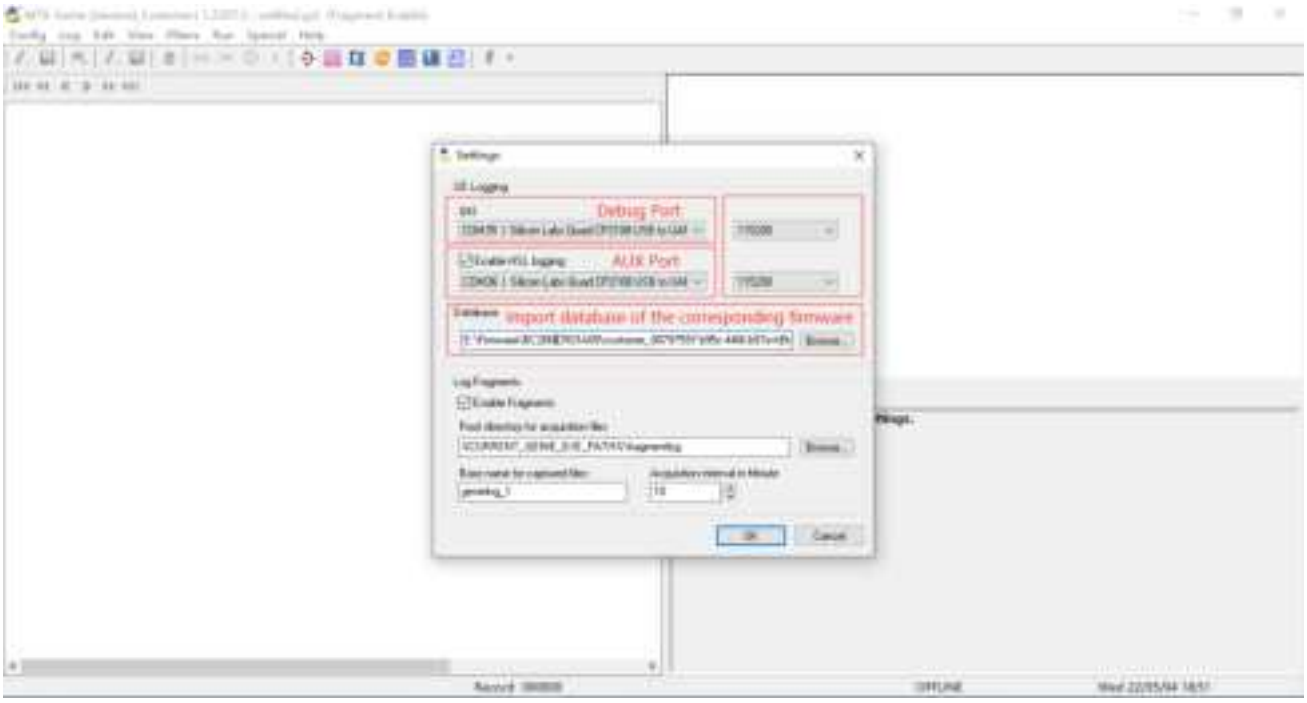


If it is needed to modify the baud-rate of DEBUG port, please refer to following AT command and corresponding configuration list.

AT+EPORT=3,2,<baudrate_index> // To change the baud rate of DEBUG port by the AT command

+EPORT:	0	1	2	3	4	5
	UART	UART	UART	UART	USB	USB
	variable				921600 (fixed)	

Genie Baud-rate Configuration (AT+EPORT=4)								
Baudrate_index	Baud-rate=	0	1	2	3	4	5	
	Baud-rate	110	300	1200	2400	4800	9600	
Baudrate_index	Baud-rate=	6	7	8	9	10	11	12
	Baud-rate	19200	38400	57600	115200	230400	460800	921600



3.2. USB Connection

If the USB is used to output Log, please execute AT commands and set as shown below; It is recommended to disable USB output via relevant commands after the log is outputted.

*******Open USB output*******

AT+EPORT=1,uls,5

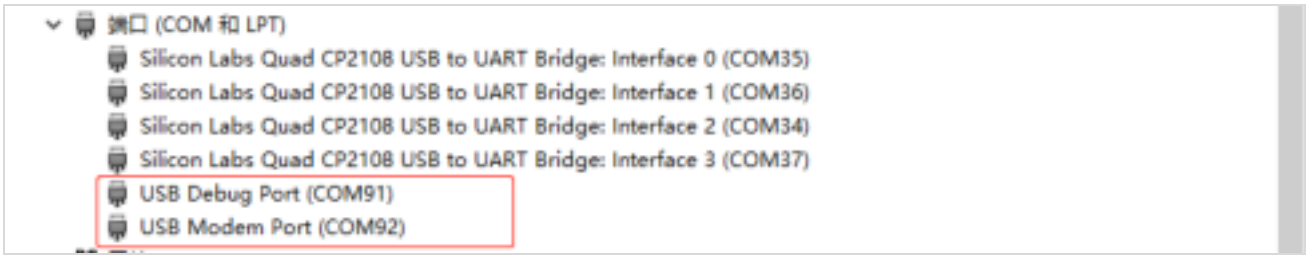
AT+EPORT=1,emmi,4

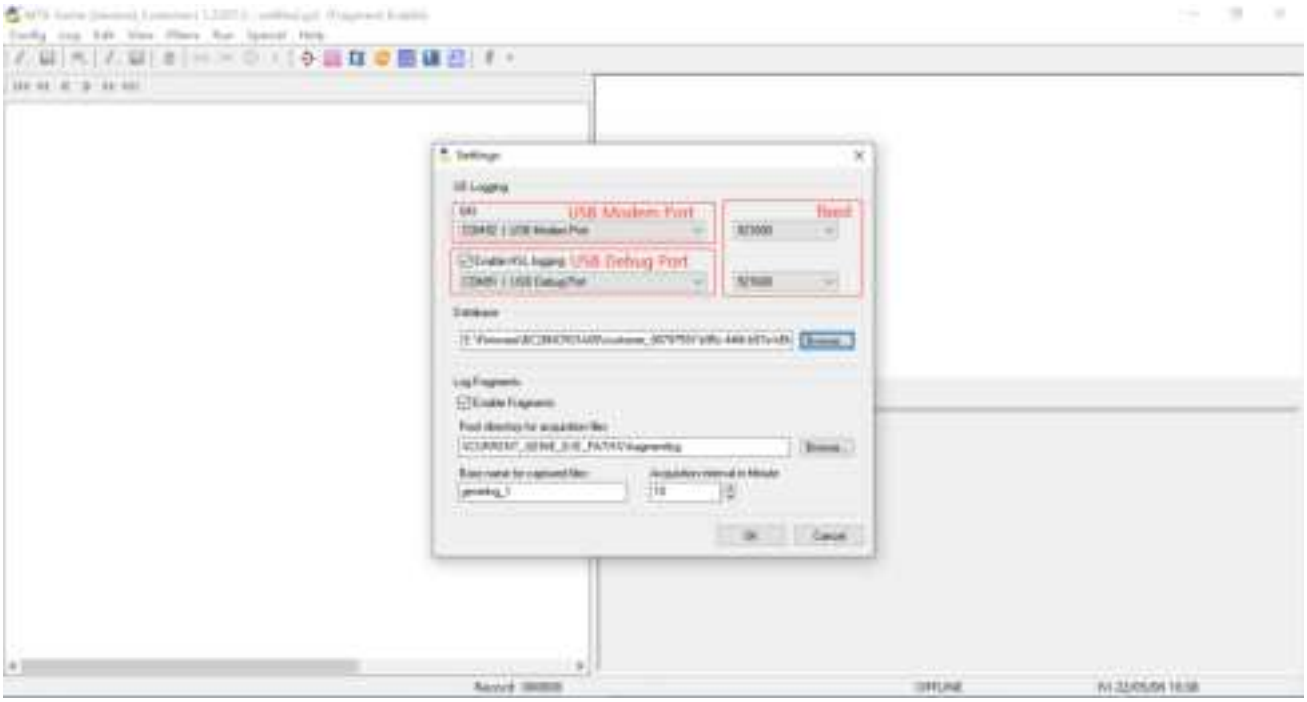
*******Close USB output*******

AT+EPORT=1,uls,2

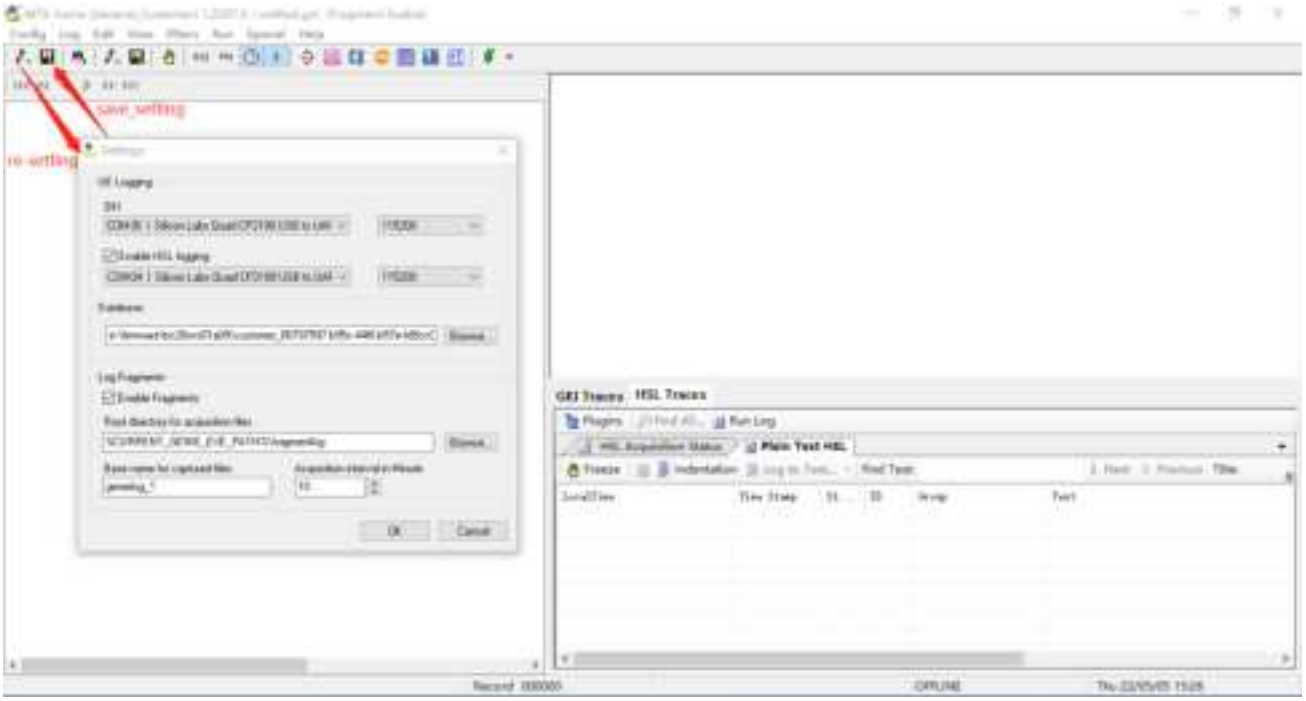
AT+EPORT=1,emmi,1

After above steps, power on or restart the device to take effect. The ports displayed in device Manager are as follows:



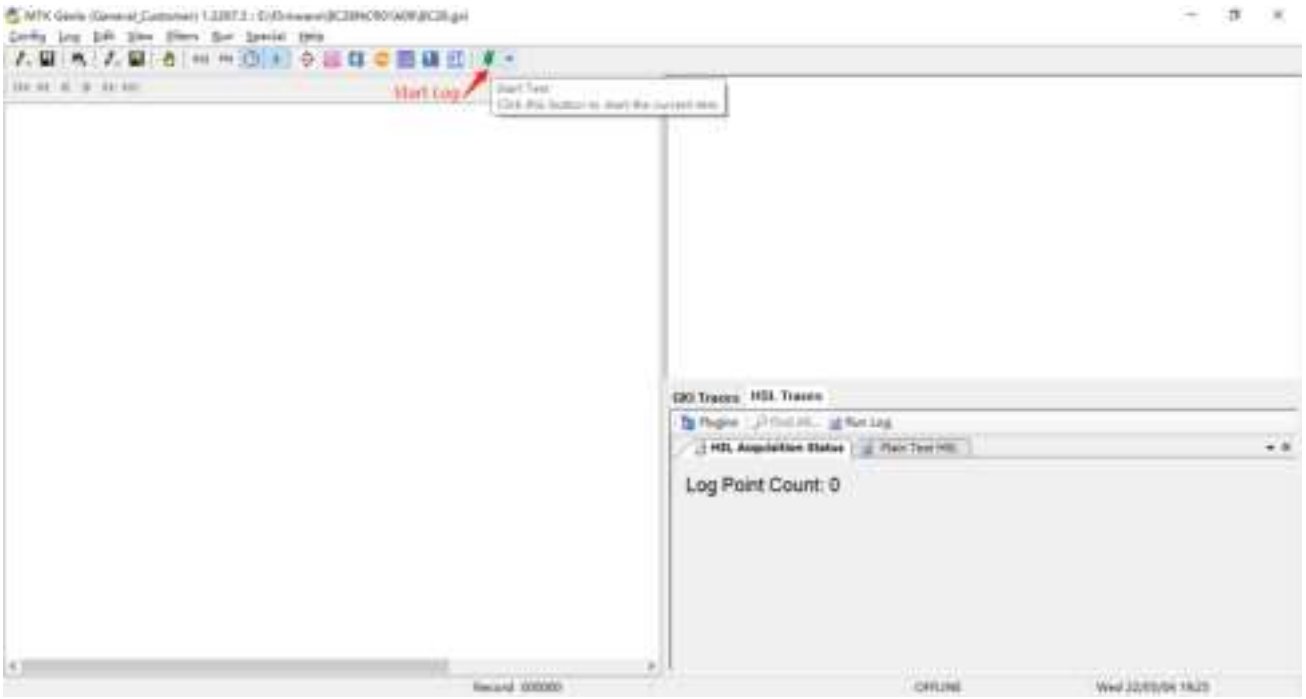


It is available to modify and save configuration parameters via corresponding icon in the toolbar as shown below, or by “New Config” / “Save Config” in the drop-list of “Config”.

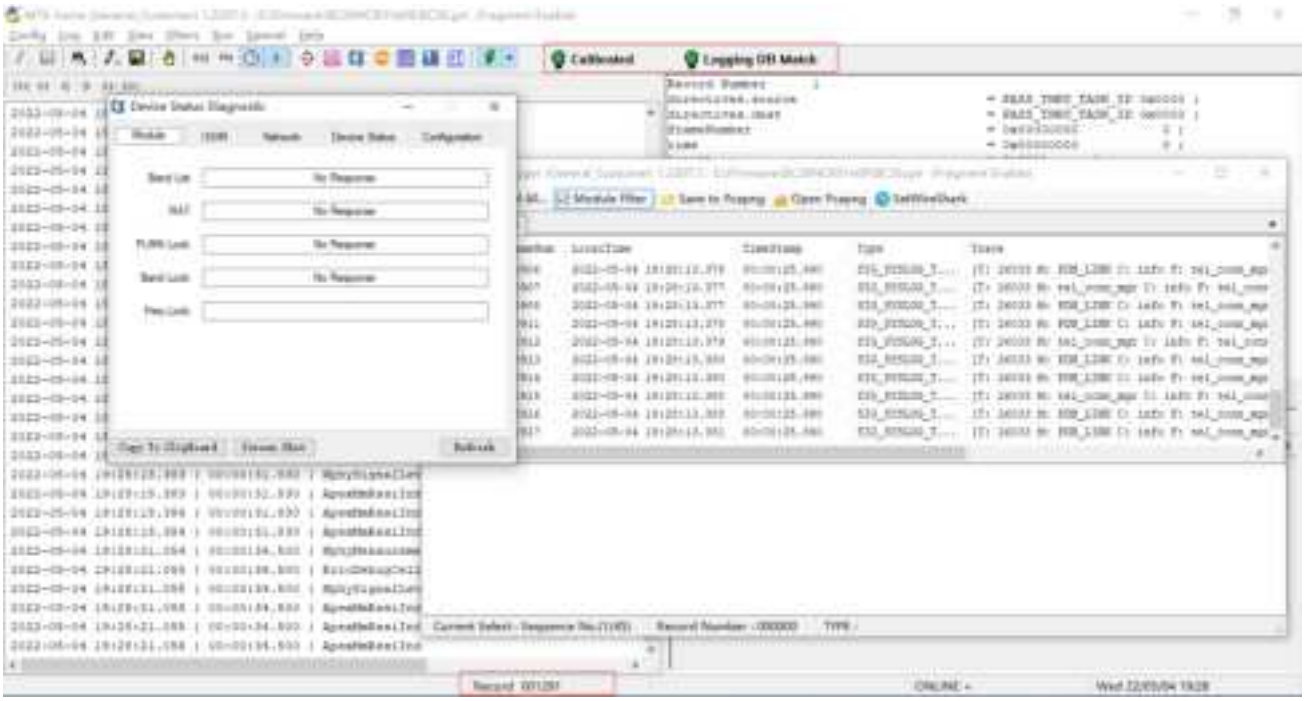


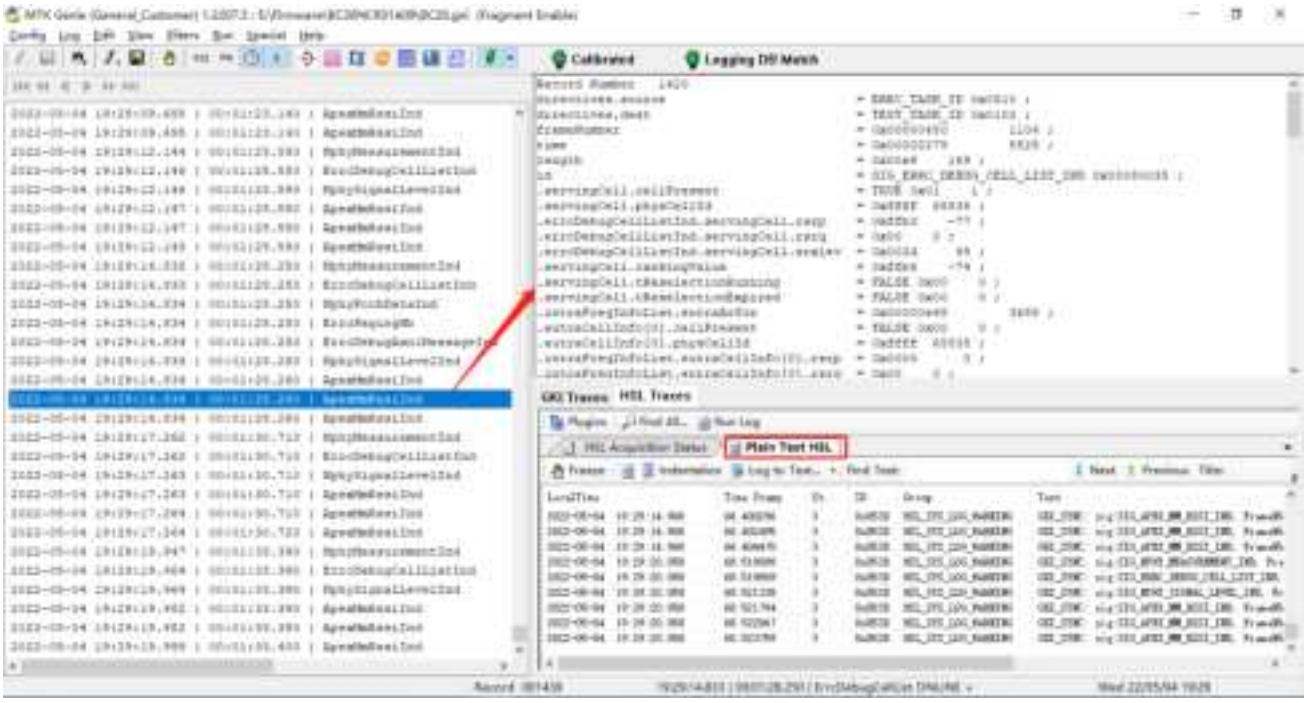
Then, click the icon in the toolbar as shown below to start recording log;

Note: After the device is powered on, it is necessary to call POWERKEY to power on the module.

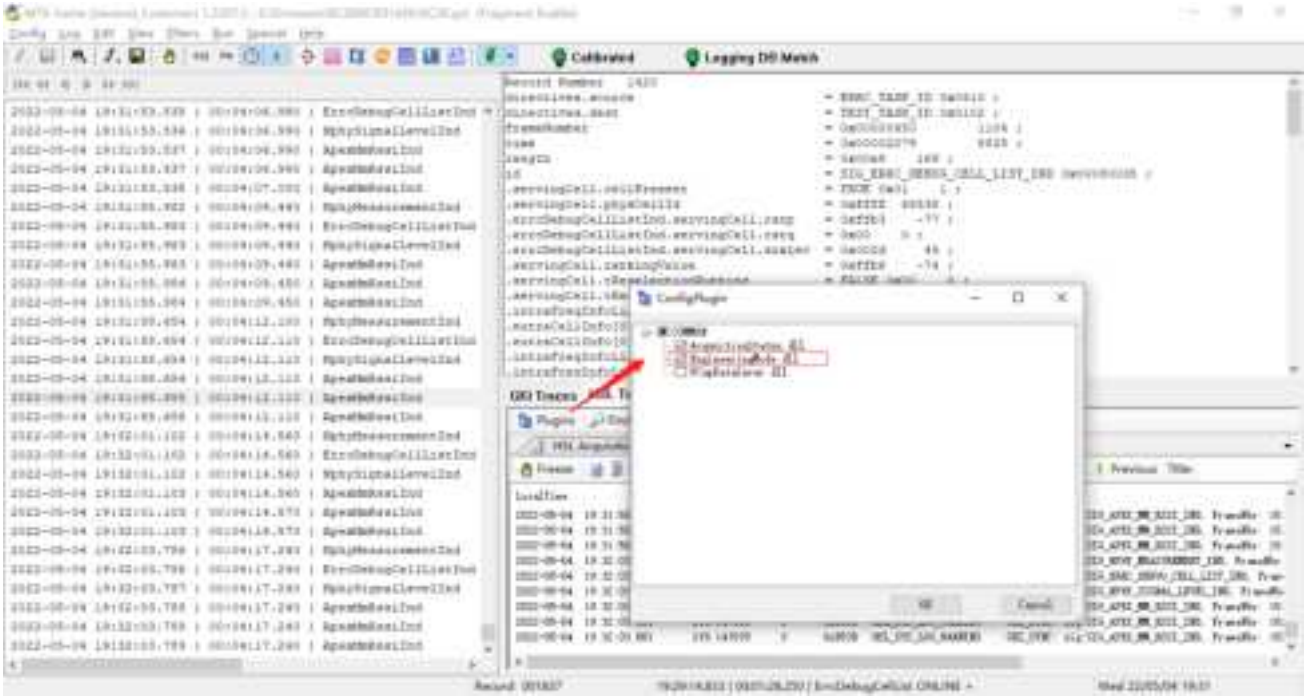


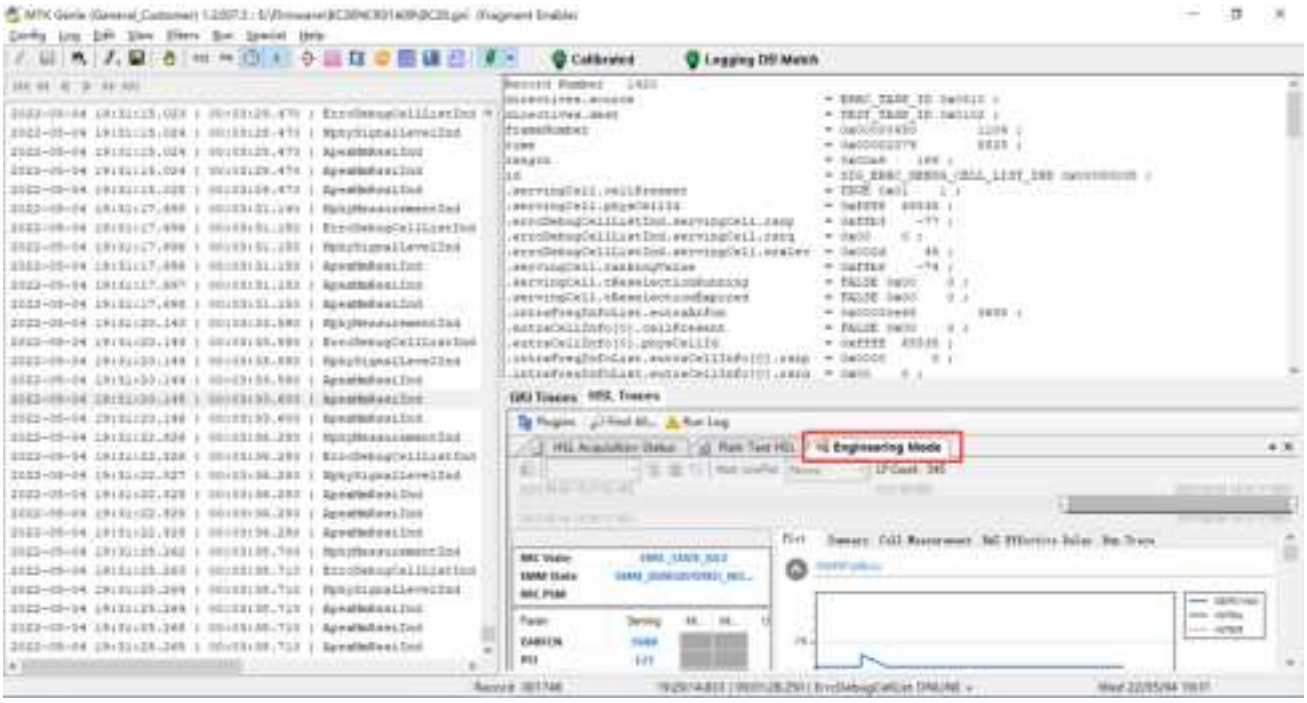
Subsequently, the window will display as follows.



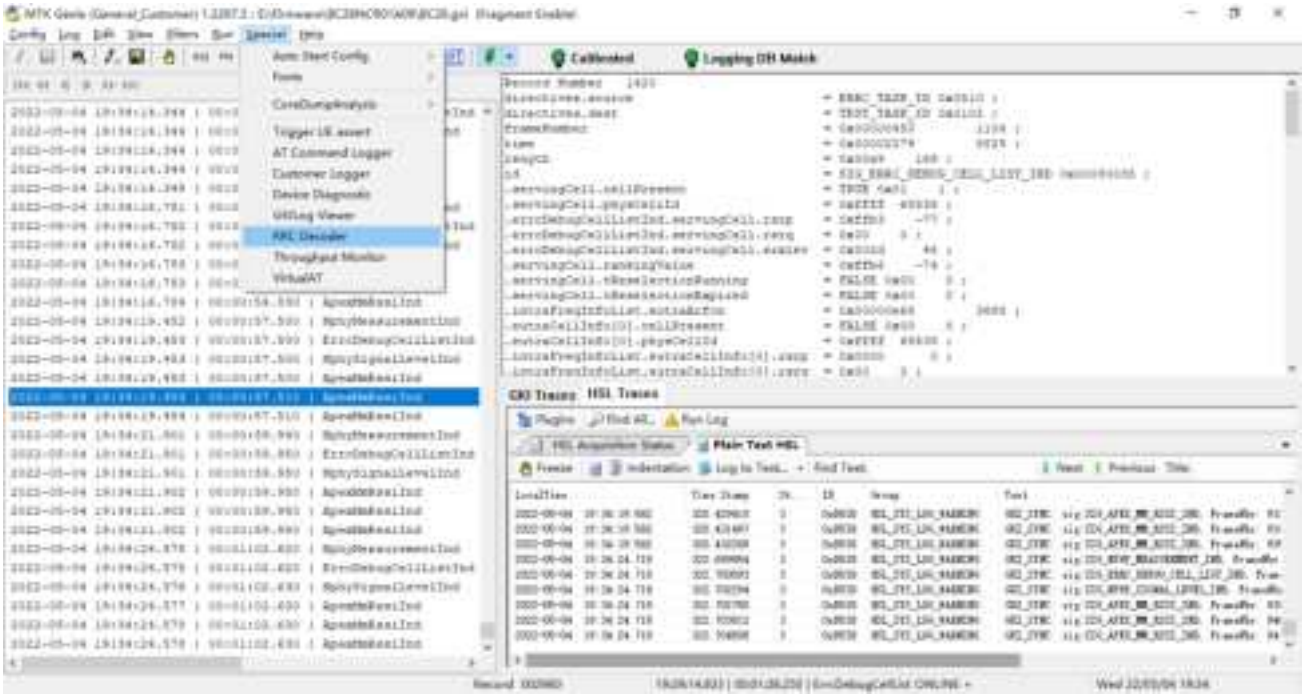


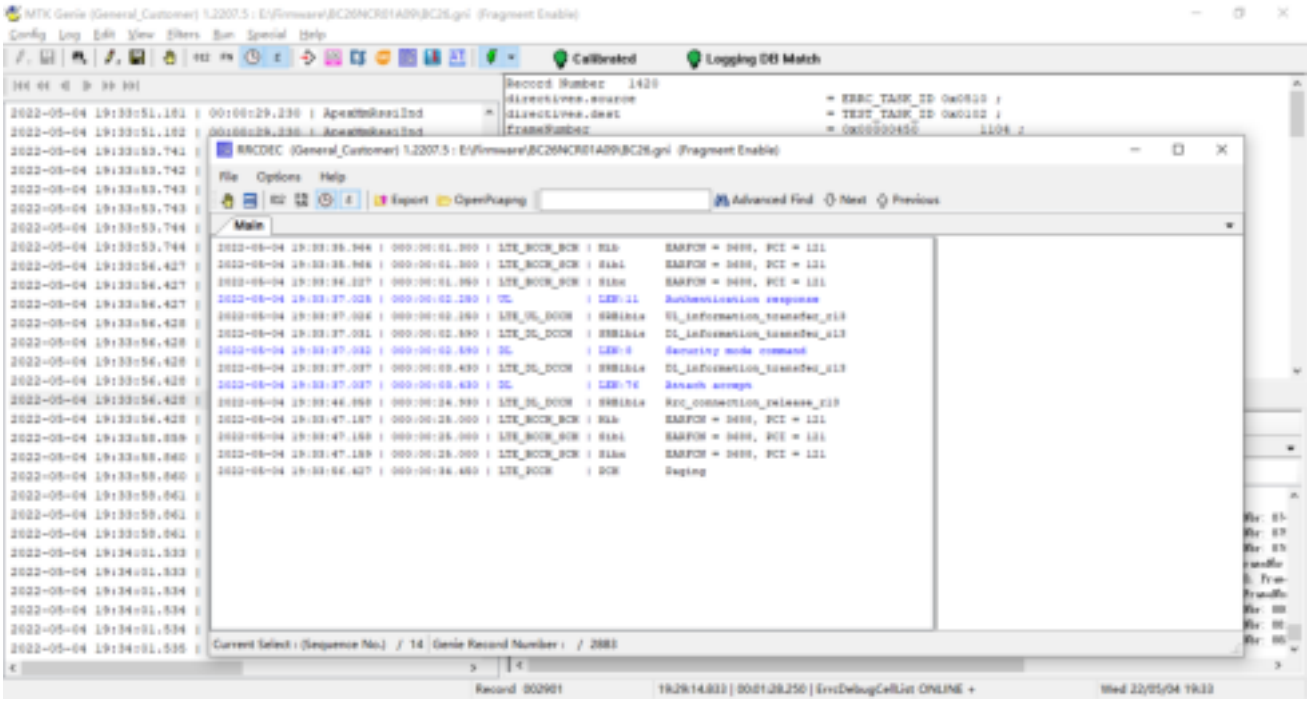
As shown below, the engineering mode in Genie is enabled to facilitate the observation of the signal reference received by the terminal.





As shown below, open genie signalling window via the "RRC Decoder" in the drop-list of “Special”, it is convenient to observe the terminal signaling interaction;

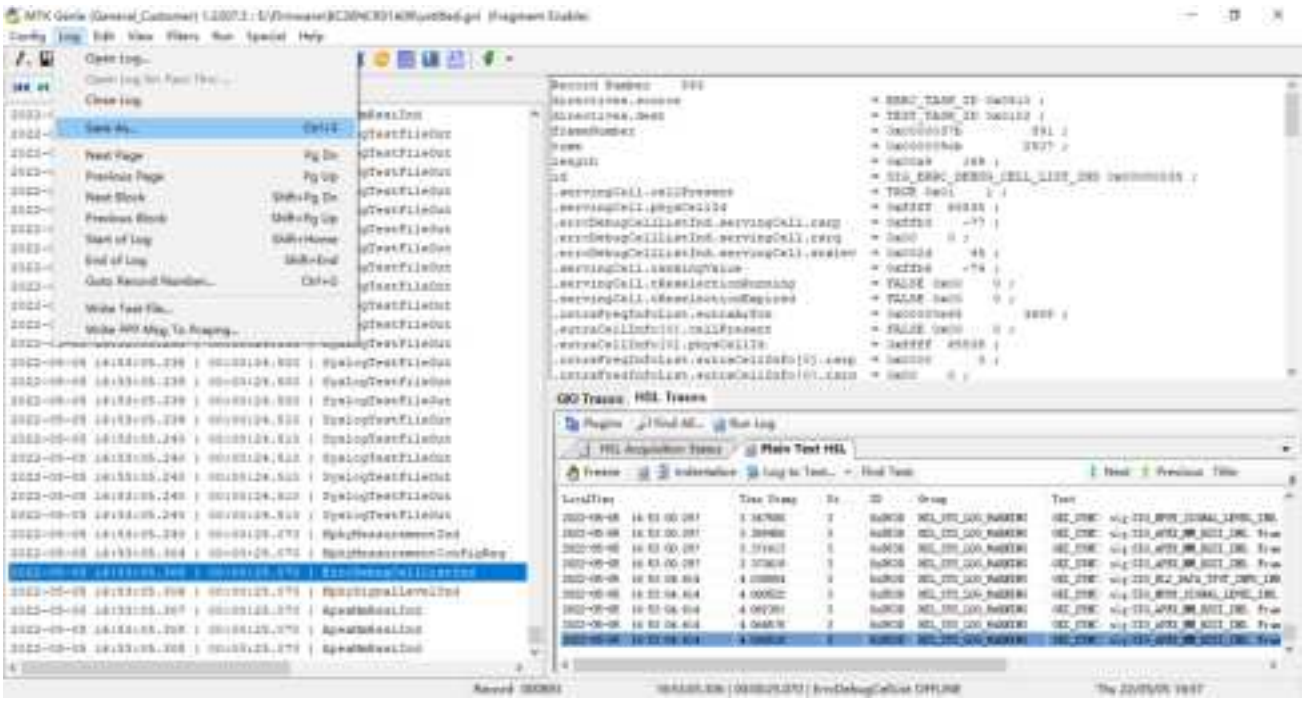




4 Save Log

4.1. Manual Save

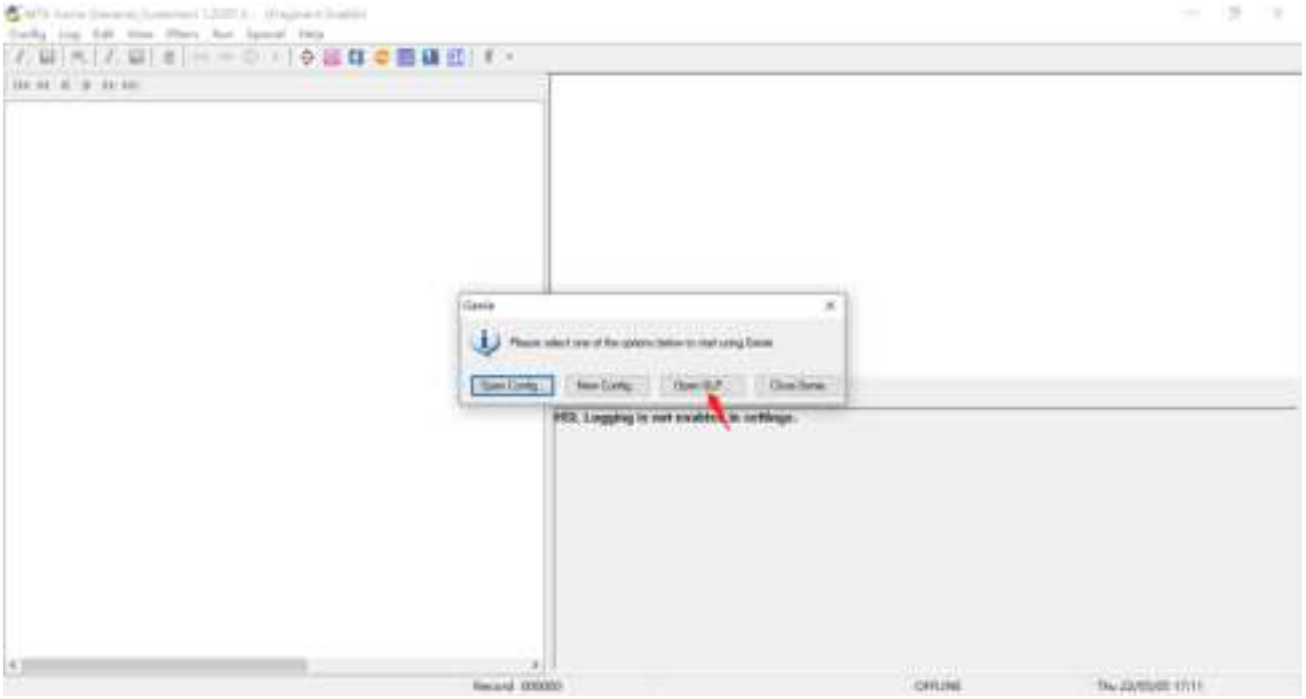
After the log is captured, save the log by “Save As” under the menu of “Log”.



5 Common Analytical Application

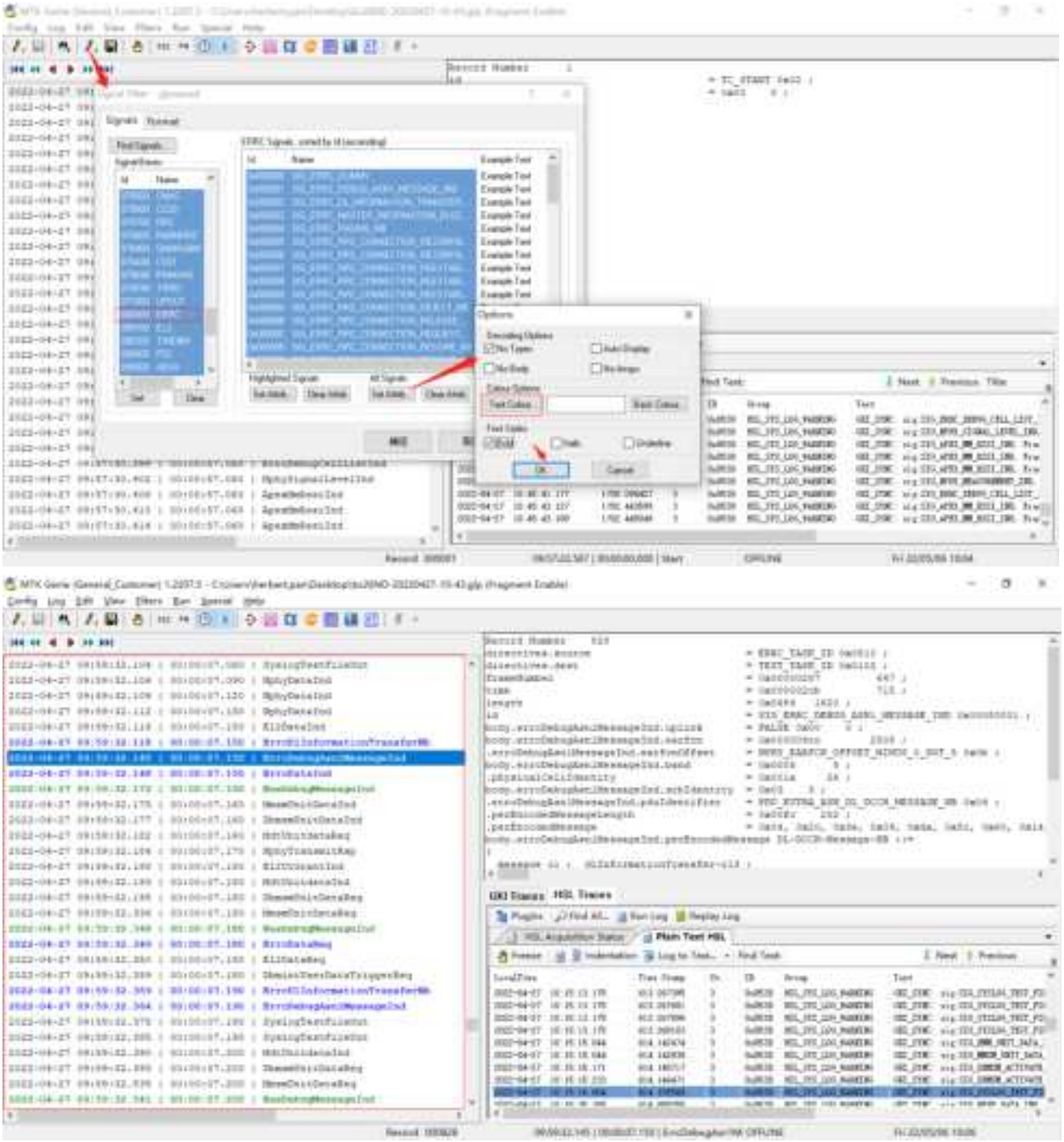
5.1. Import Log

It is available to open log via clicking the saved ***xxx.glp*** file or initiating Genie. See next figure for details.



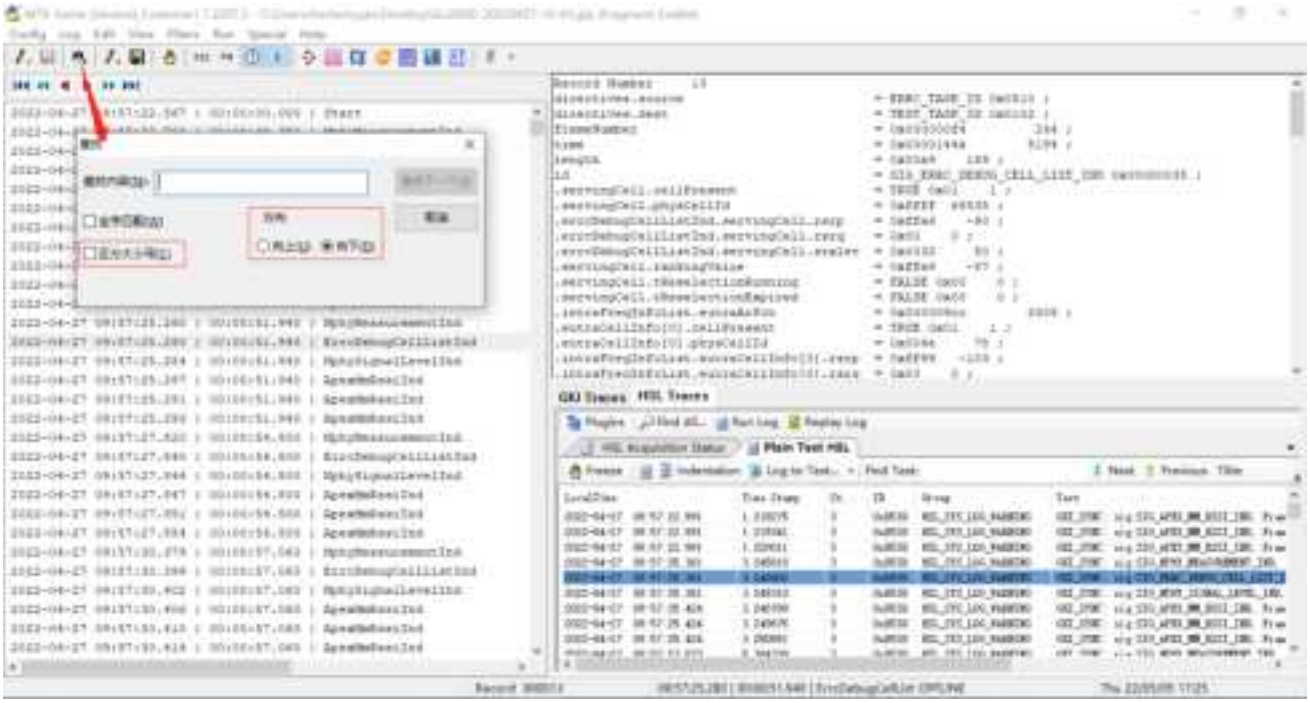
5.2. Hue the Message

By using icons in the toolbar as shown below, different types of Log messages can be hued with various colours, which makes it easier to identify and query.

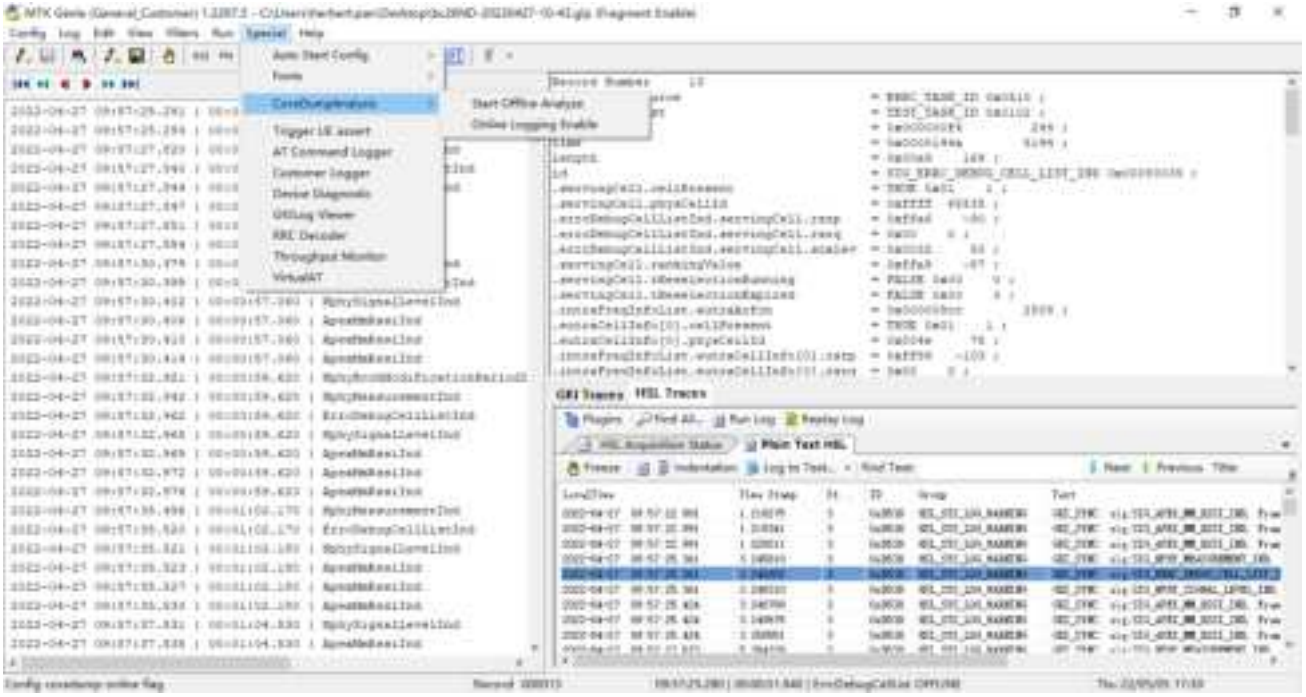


5.3. Filter Log

Open the Find/Search window shown via icons in the toolbar below, or the "Find" hidden in “Edit”. Please note the case options and search direction;

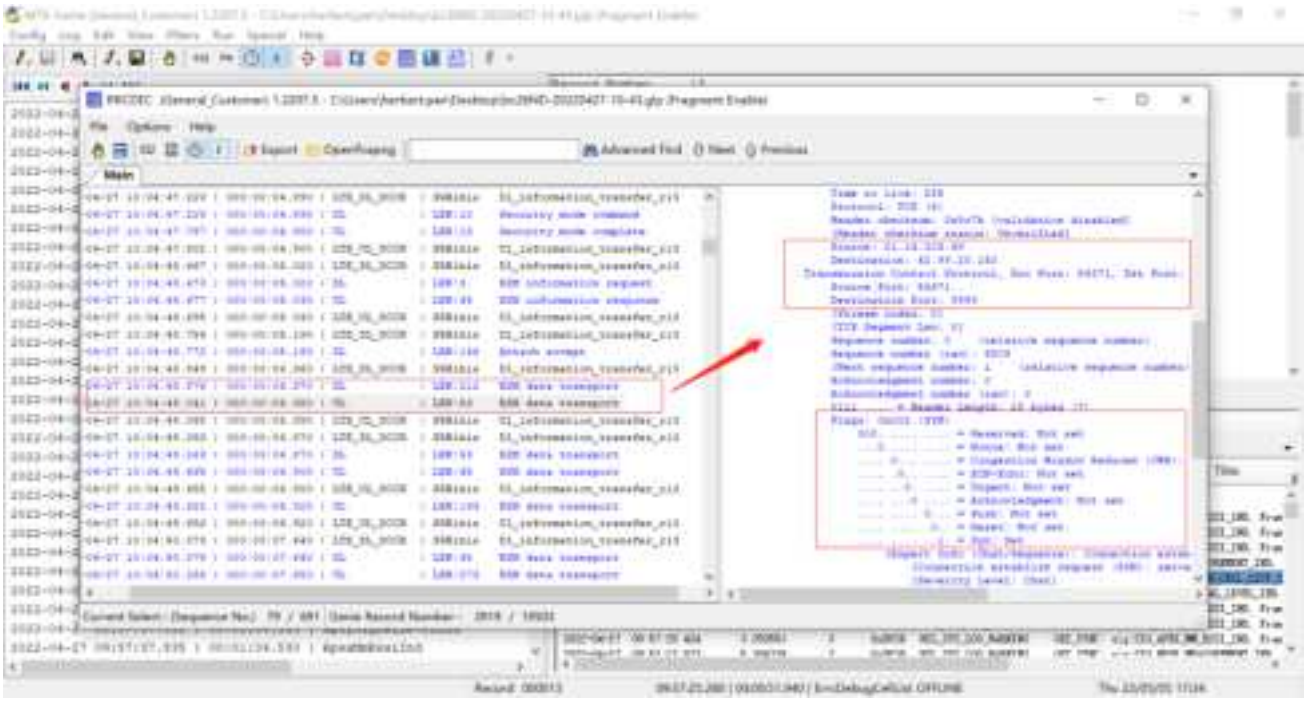


It is also valid to use the "Special" button to filter specific attribute logs, such as AT Command Logger;



5.4. Data Analysis

Open following window via “RRC Decoder" in menu of “Special”, the message in NAS/AS layer can be decrypted.



5.5. Export Pcap

Open following window via “RRC Decoder" in menu of “Special”, select "Export" and refer to corresponding option to export Pcap file.

6 Notes

1) If the issue that debugging or analysing can be attributed to the event of registration, please run AT command AT+CFUN=0/AT+CFUN=1or reboot module/terminal after connecting to Genie to capture the complete registration network process, which can be applied for the possible cause of the failure to current registration network.