EPAT_User Guide

BC260Y&BC660K&BC28F&BC95GF&BC300Y&BC950K Module Series

Version: 1.0

Date: 2023-10-10

Status: Released

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About the Document

Revision History

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

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1 Foreword

In this document, it illustrates how to capture DEBUG log on BC260Y/BC660K/BC28F/BC95GF/BC300Y Module 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
EPAT	AT+CGMI/EC616/EC616s/QCX212	BC28-F/BC95-GF/BC260Y/BC300Y/BC660K/BC950K

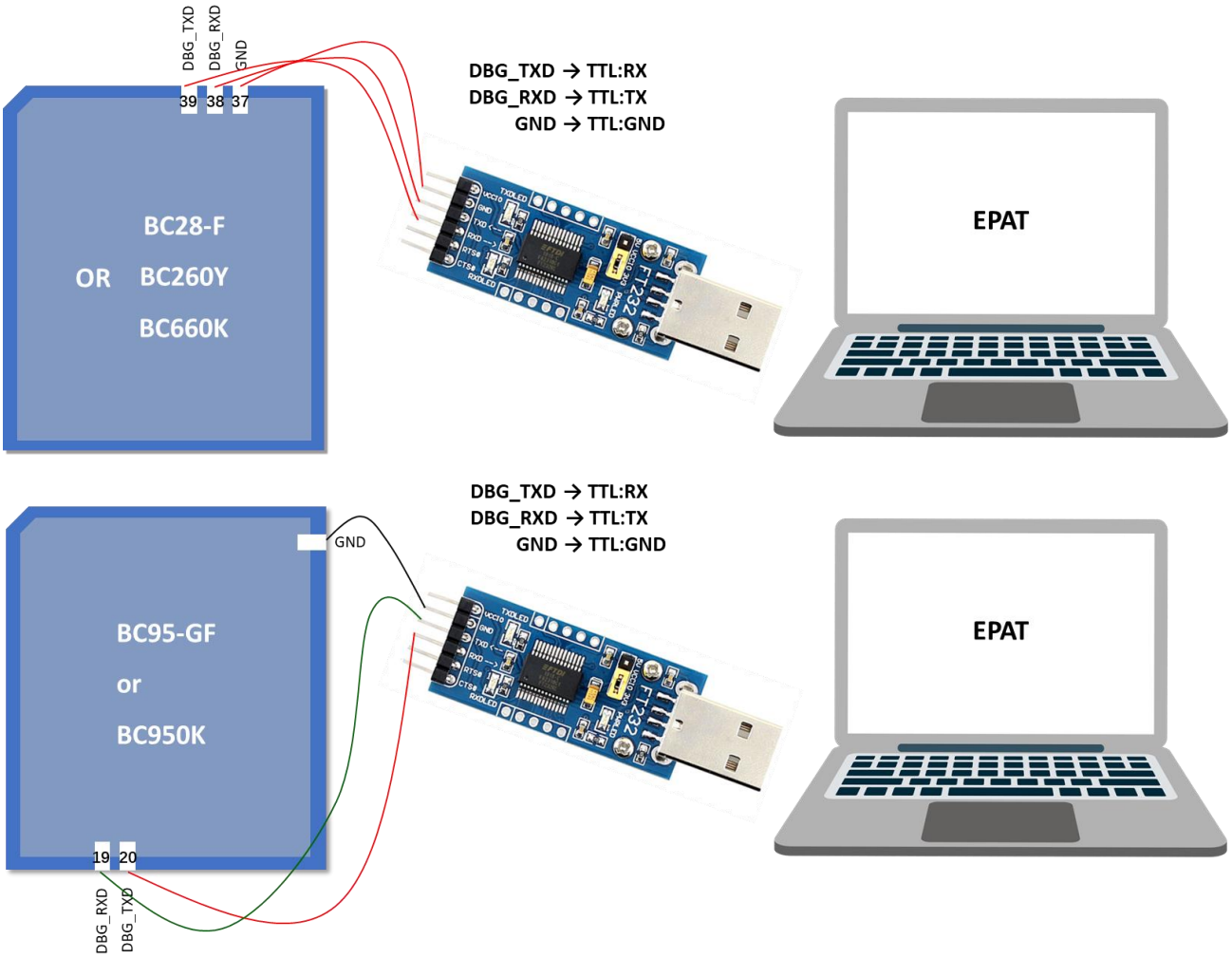
1.2. Download

EPAT	EPAT_V1.3.137.236.zip

1.3. Device Connection

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

Note: Since the Debug port of the BC28-F/BC95-GF/BC260Y/BC300Y/BC660K/BC950K requires a high output rate, it is suggested to use uart-to-usb Convertor (TTL) that supporting 3M or 6M.



If the TE-B corresponding to EC616/QCX212 module is used, please select the third COM port in the "Port" under the drop-list of "Device Manager" .

2 Installation

Being installation-free, the EPAT can be used after being unzipped. Run *EPAT.exe* in the directory of *EPAT\bin*.

EPAT icon

Note: The VCMFCDLLs is required by EPAT, as a result, if it is a failure to run EPAT, please install ***vc_redistepat.x86. exe*** in the directory of ***EPAT\bin***.

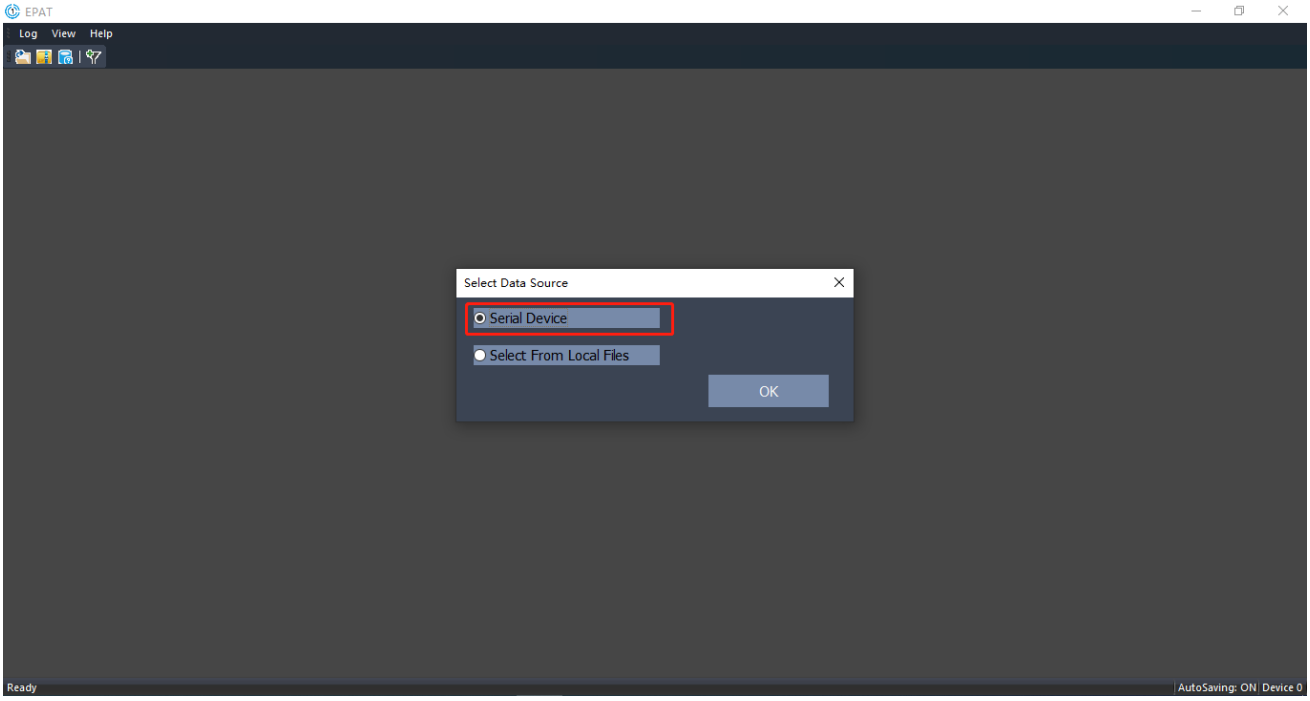
3 Connection

Before capturing the Debug log,you need excute the AT Command by the main serial port (TxD/RxD) :(BC660K/BC950K included)

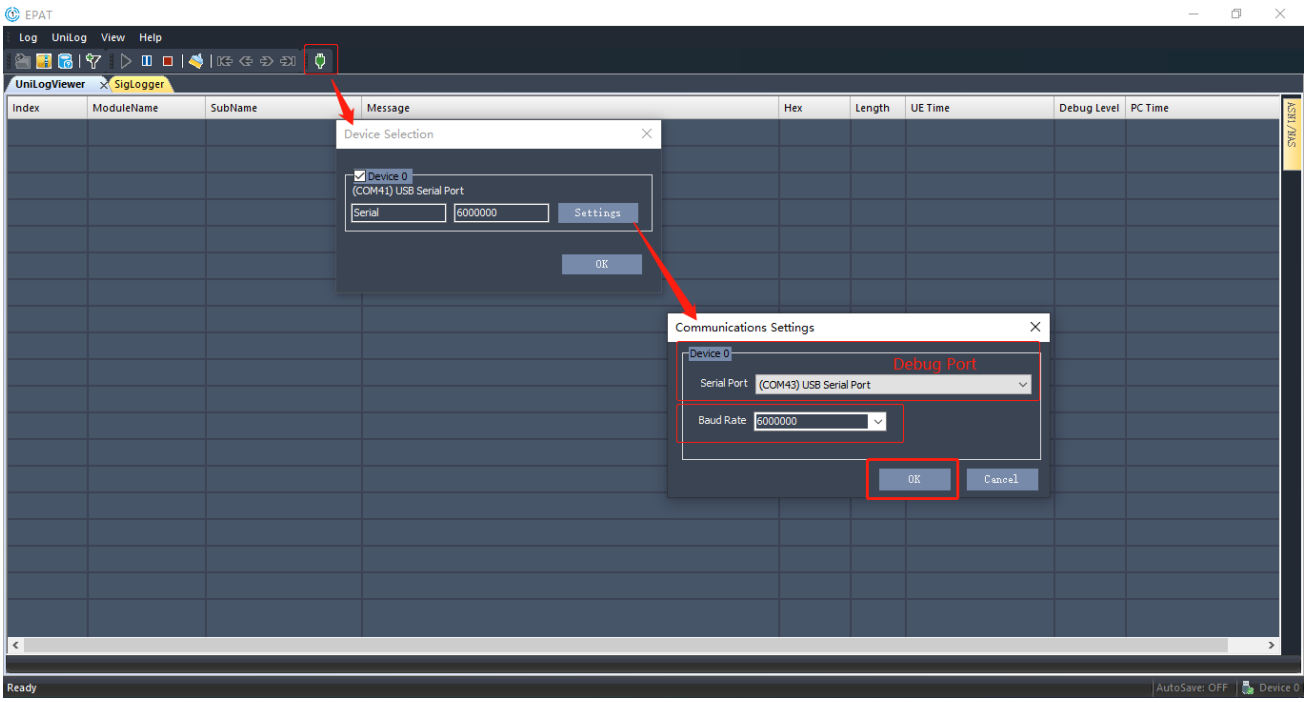
```
AT+ECPCFG="logCtrl",2
```

Query the default baud rate of the corresponding module by command **AT + QCFG?**.

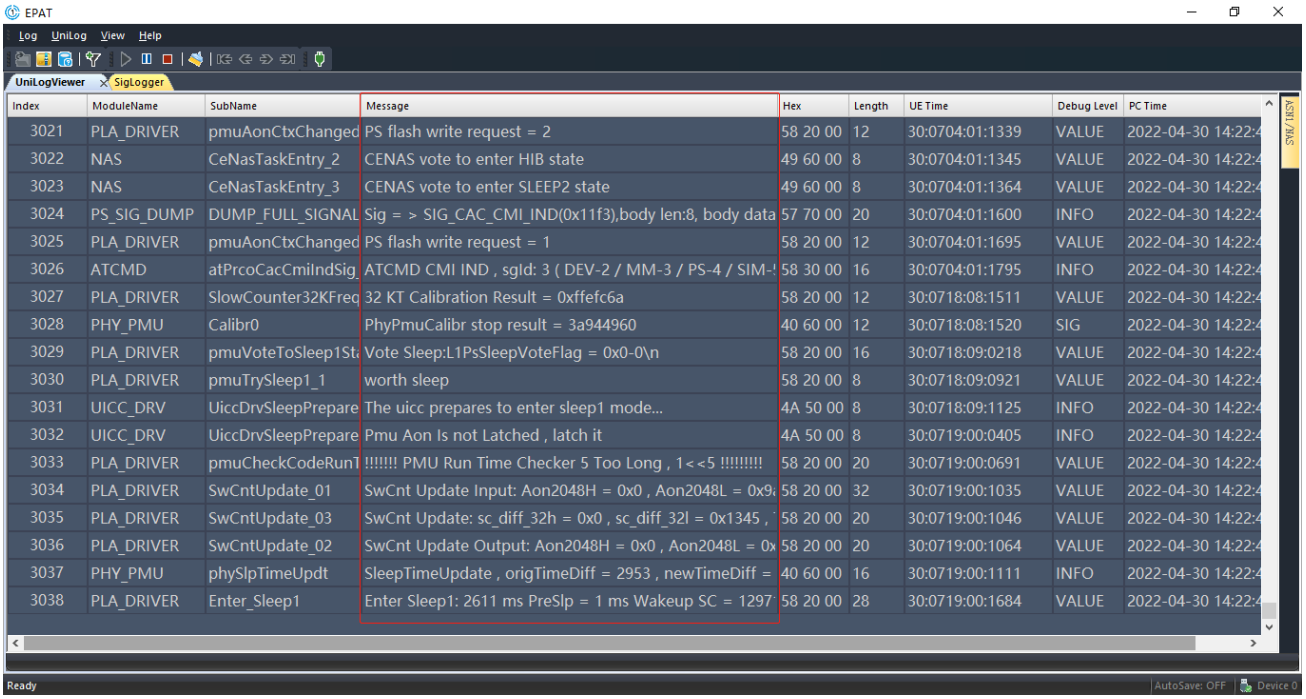
```
AT+QCFG?

.....
+QCFG: "logbaudrate",6000000
.....
```



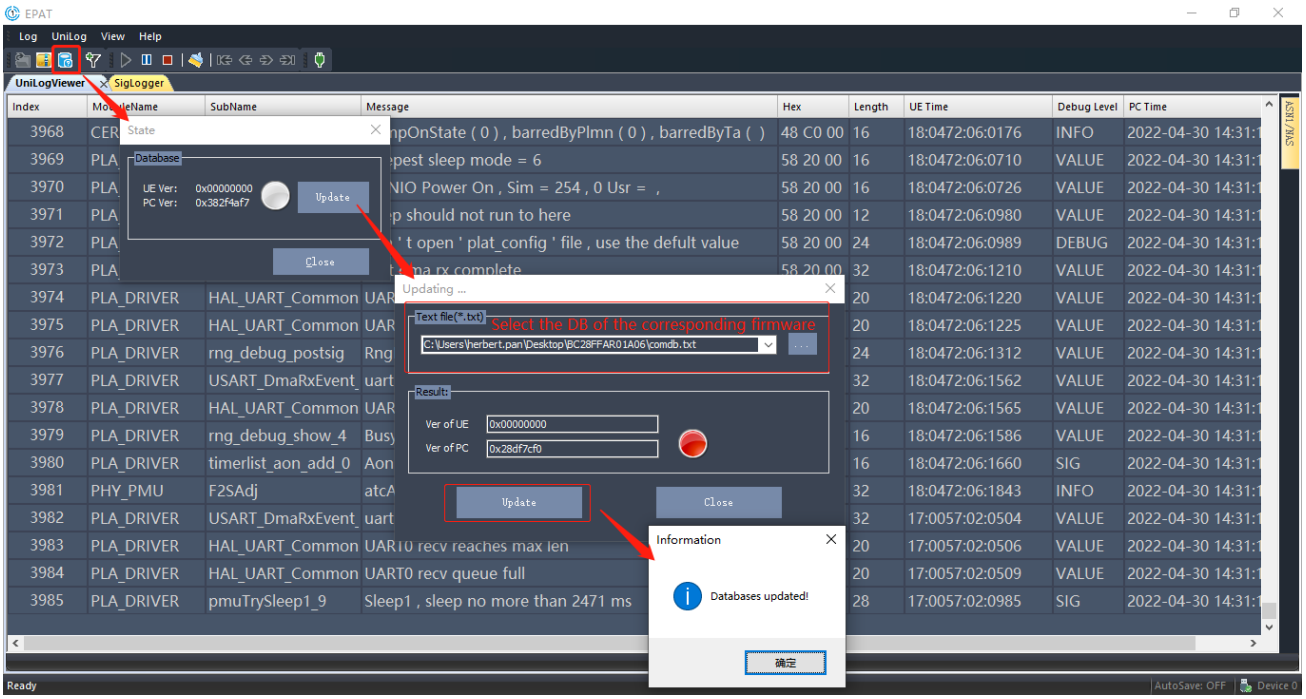
Click the icon in the toolbar as shown below, select Debug port and configure baud rate (Which should be aligned with baud-rate queried by module).



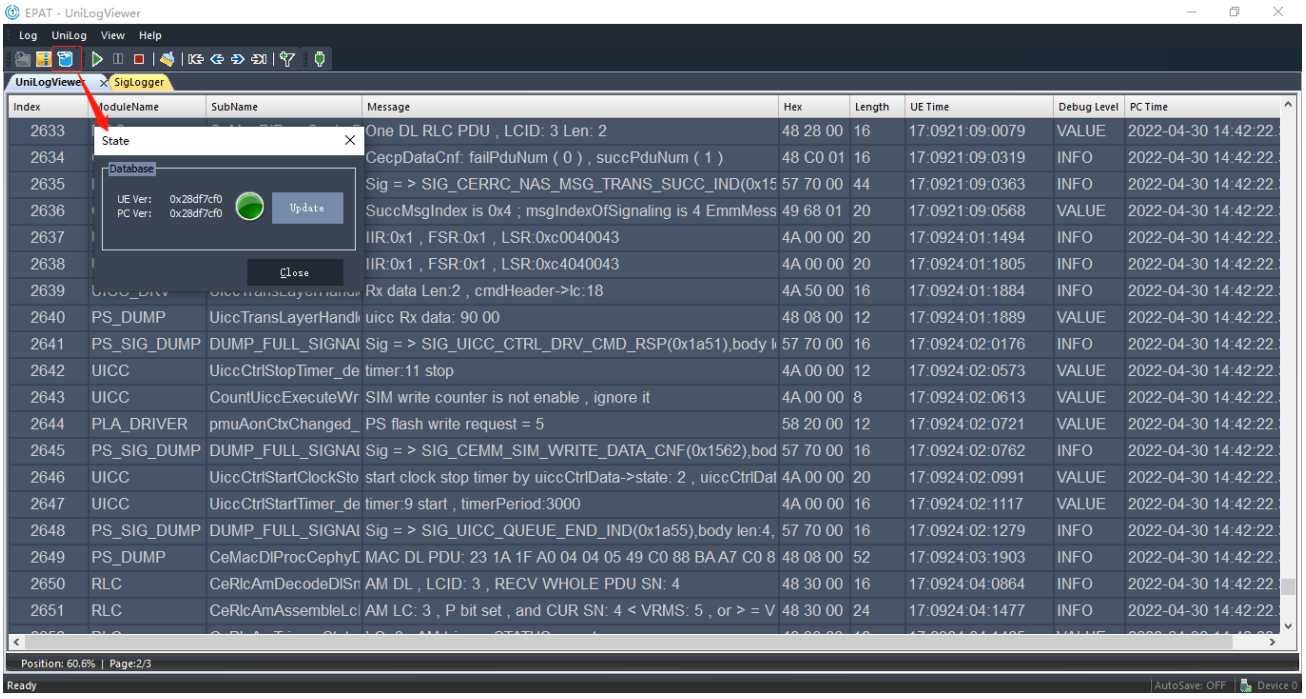
Generally, the output LOG is shown as below. If massive HEX codes are outputted in Message, the DB file needs to be imported or updated.



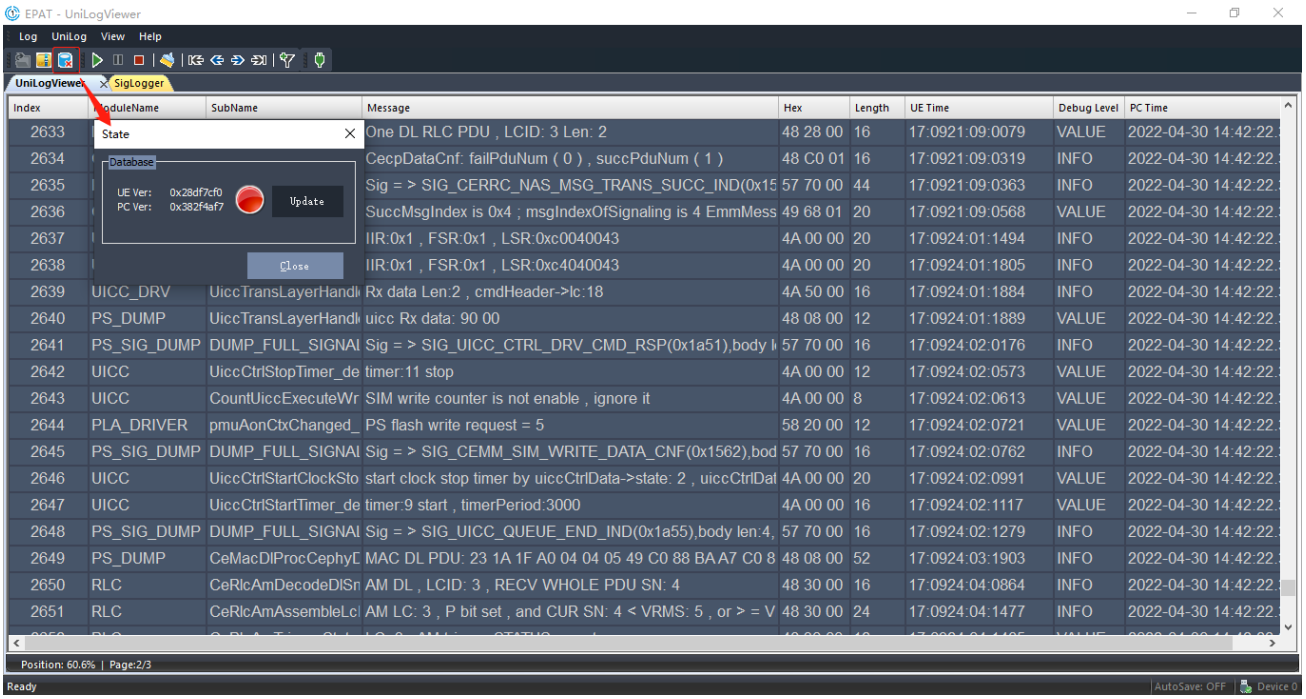
Click the icon in the toolbar shown as below, select the **comdb.txt** file of the corresponding firmware of the module and import the DB file.



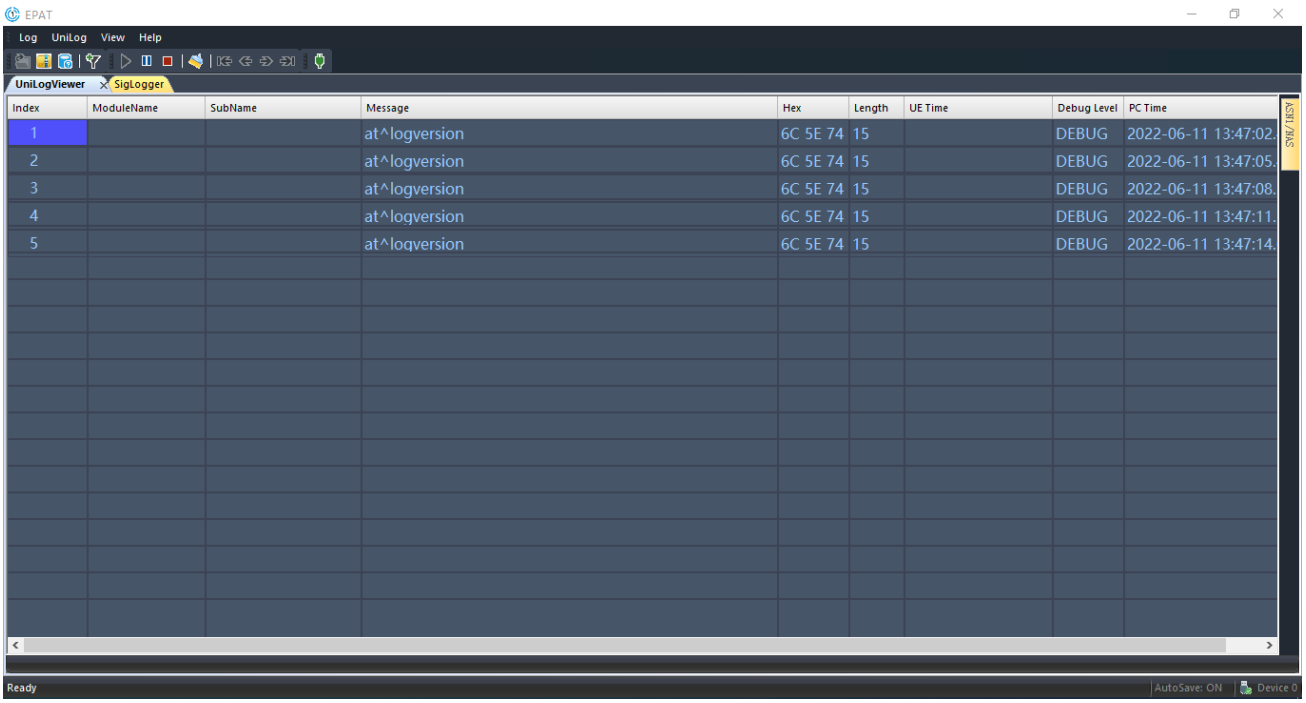
By rebooting or resetting, the DB status will change as shown below.

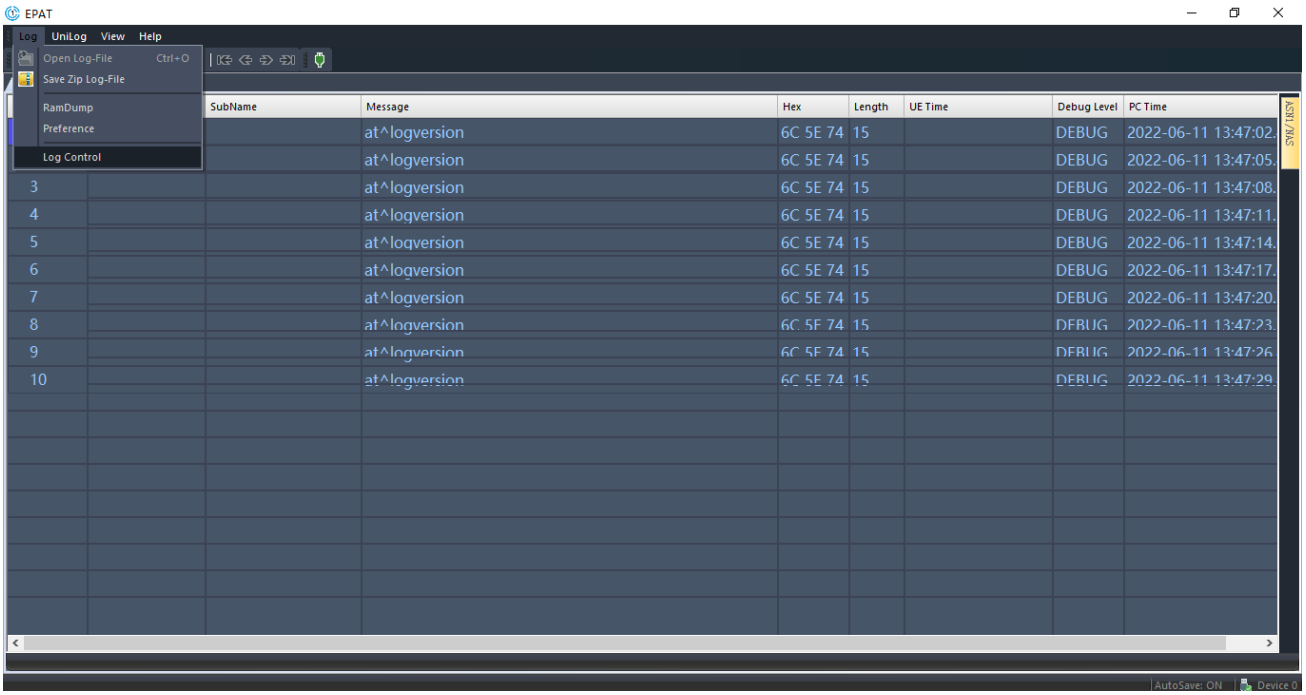


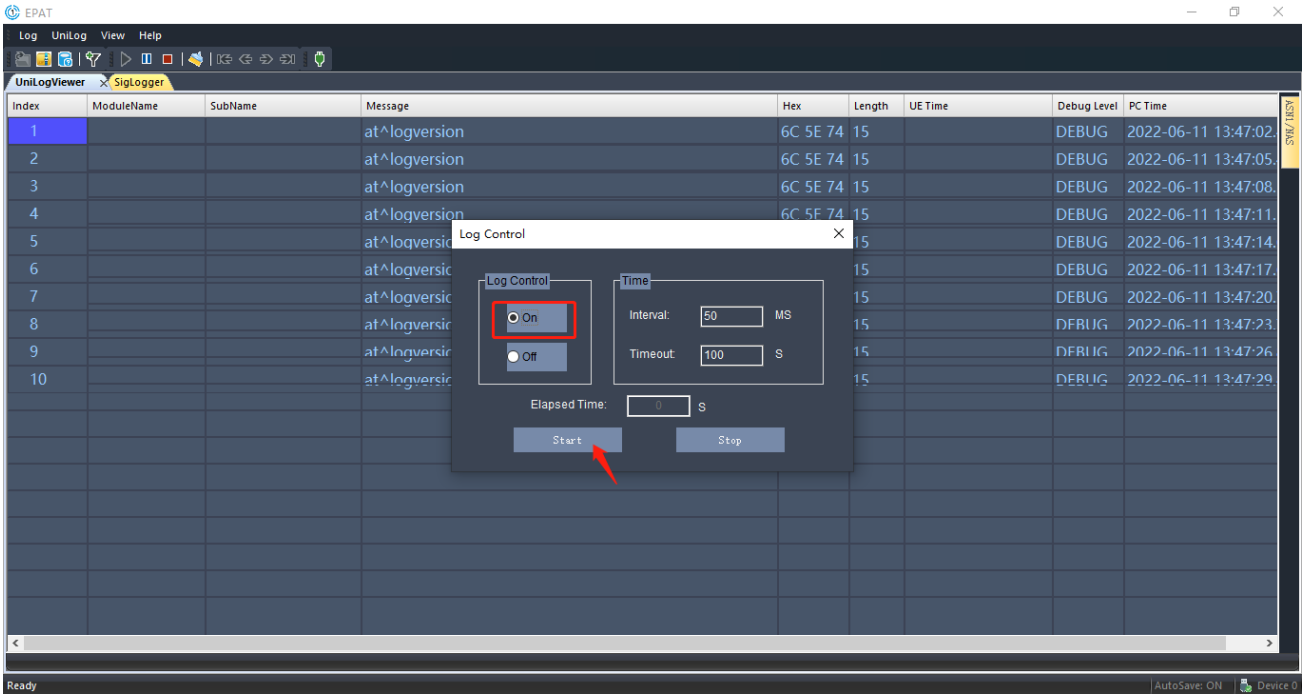
If the imported DB file is not compatible with current module firmware, the DB status will change as follows.



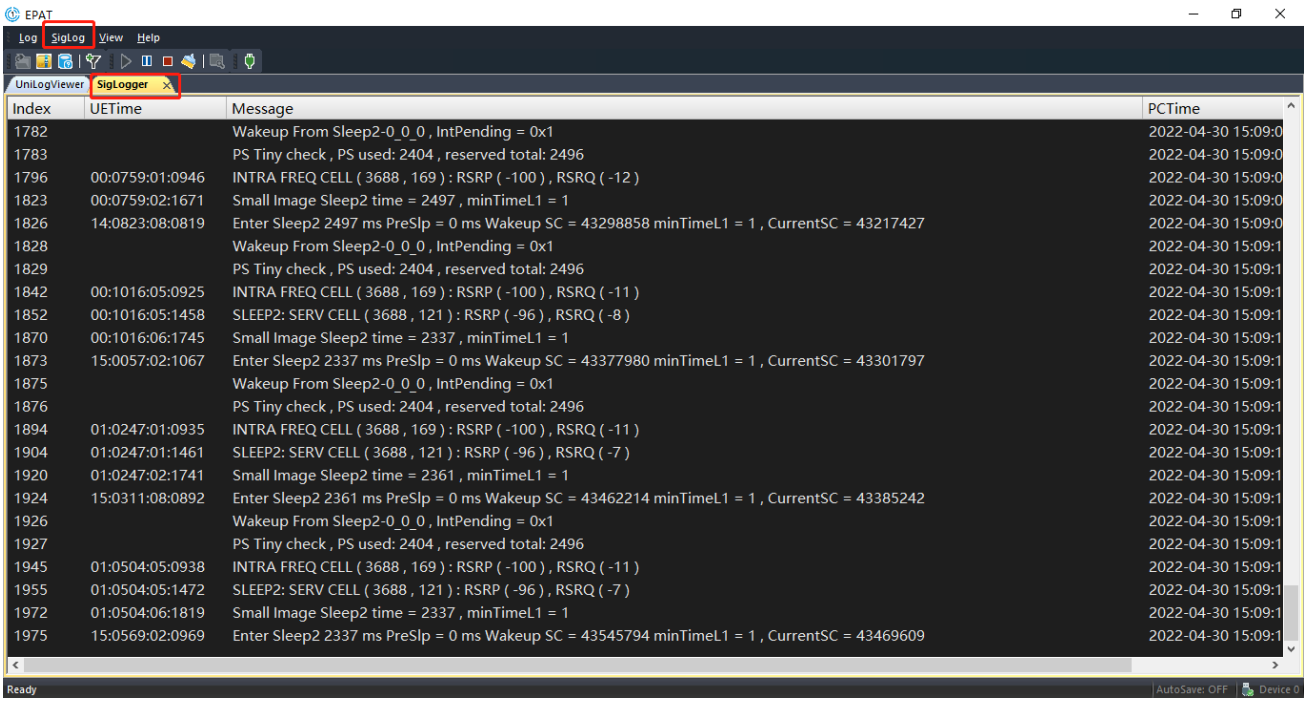
If it only outputs Log messages after clicking the "UniLogViewer" in EPAT as shown below, select “Log Control" in the drop-list of “Log” firstly. Subsequently, select "On" and click "Start" in current window, the corresponding command will be displayed. After executing for several times, reboot or reset module; the debug will be enabled and outputted via AT command **AT+ECPCFG="logCtrl",2**.

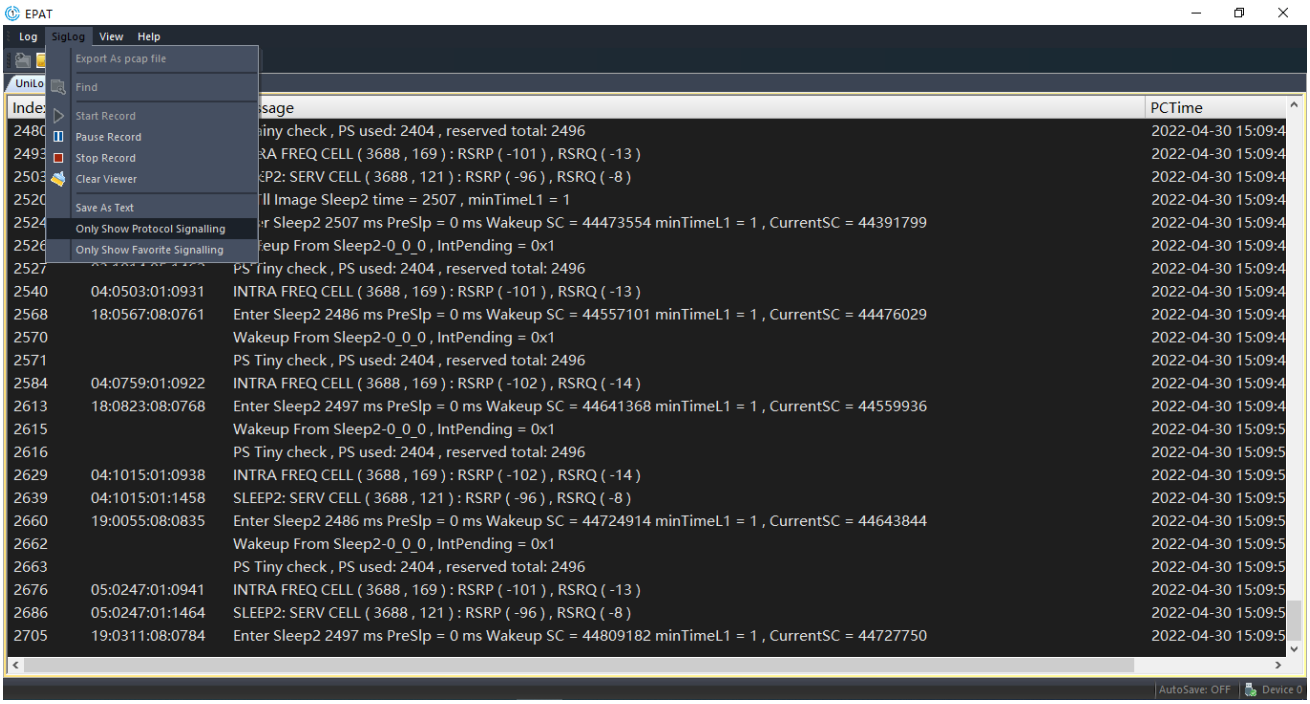


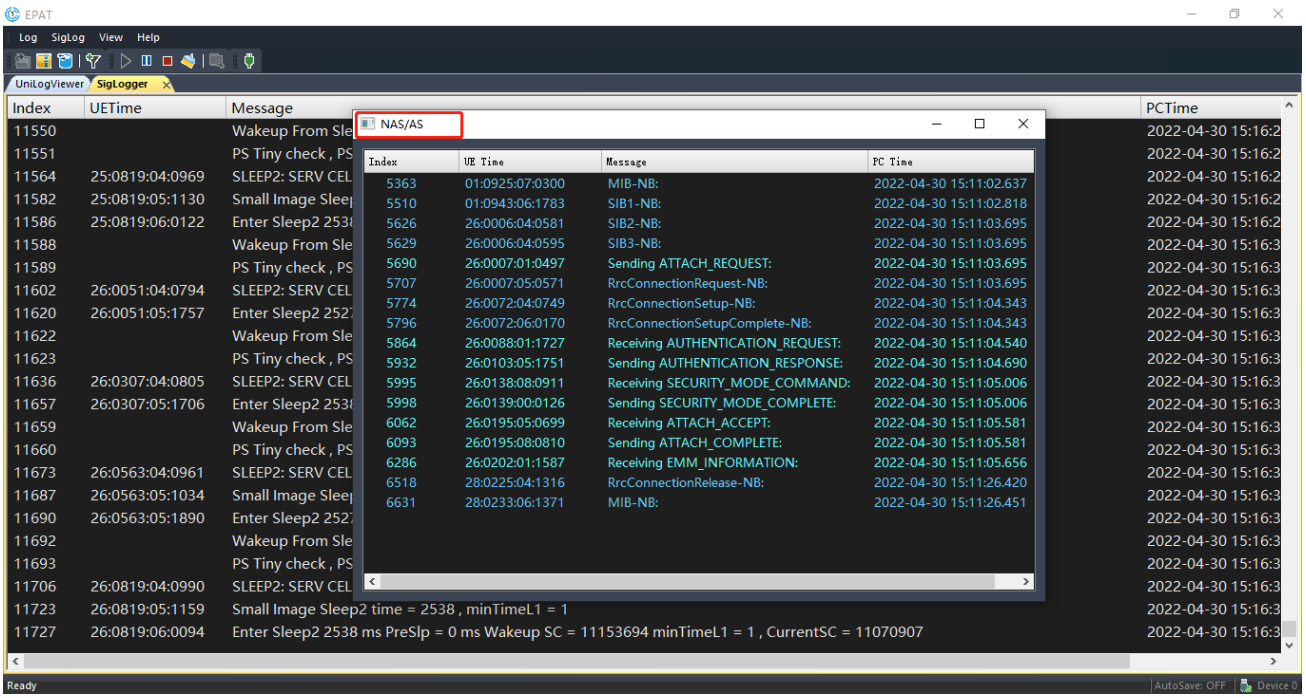




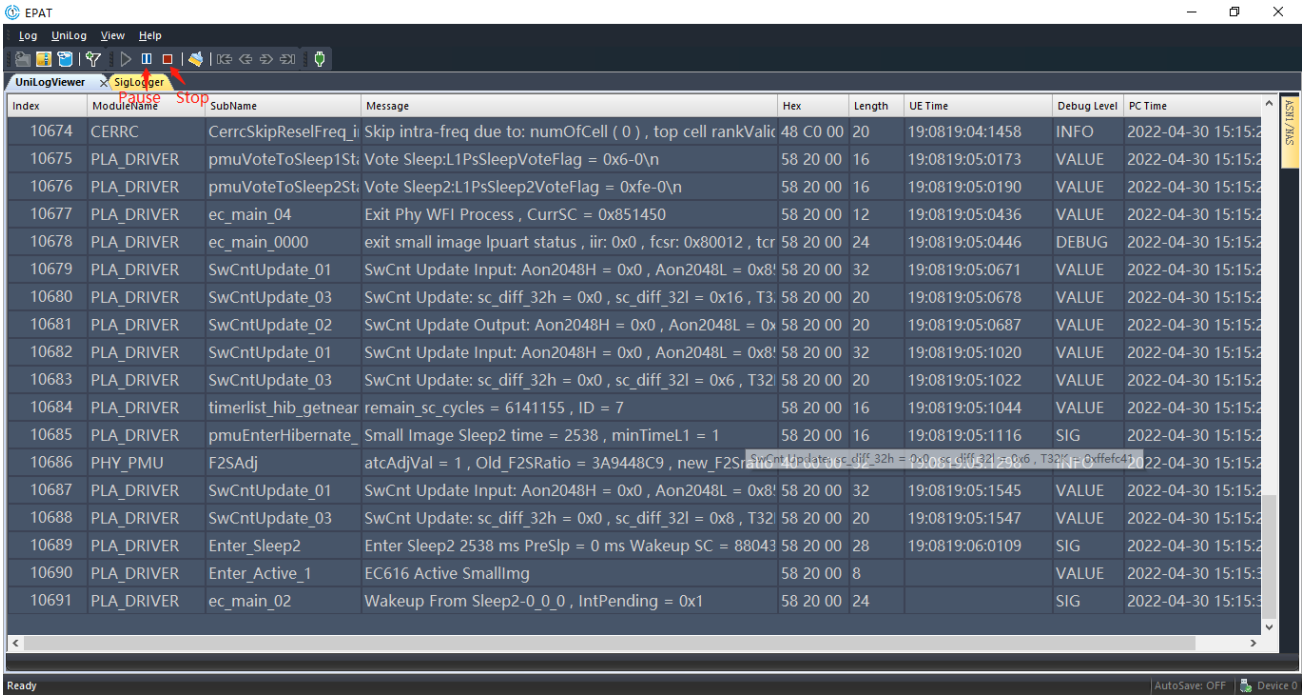
As shown below, select “Only Show Protocol Signalling” in the menu of “Siglog” under the SigLogger window. In this situation, the NAS/AS message will be approachable.


EPAT
Log
SigLog
View
Help
UniLogViewer
SigLogger
Index
UETime
Message
PCTime
1782 Wakeup From Sleep2-0_0_0 , IntPending = 0x1 2022-04-30 15:09:0
1783 PS Tiny check , PS used: 2404 , reserved total: 2496 2022-04-30 15:09:0
1796 00:0759:01:0946 INTRA FREQ CELL (3688 , 169) : RSRP (-100) , RSRQ (-12) 2022-04-30 15:09:0
1823 00:0759:02:1671 Small Image Sleep2 time = 2497 , minTimeL1 = 1 2022-04-30 15:09:0
1826 14:0823:08:0819 Enter Sleep2 2497 ms PreSlp = 0 ms Wakeup SC = 43298858 minTimeL1 = 1 , CurrentSC = 43217427 2022-04-30 15:09:0
1828 Wakeup From Sleep2-0_0_0 , IntPending = 0x1 2022-04-30 15:09:1
1829 PS Tiny check , PS used: 2404 , reserved total: 2496 2022-04-30 15:09:1
1842 00:1016:05:0925 INTRA FREQ CELL (3688 , 169) : RSRP (-100) , RSRQ (-11) 2022-04-30 15:09:1
1852 00:1016:05:1458 SLEEP2: SERV CELL (3688 , 121) : RSRP (-96) , RSRQ (-8) 2022-04-30 15:09:1
1870 00:1016:06:1745 Small Image Sleep2 time = 2337 , minTimeL1 = 1 2022-04-30 15:09:1
1873 15:0057:02:1067 Enter Sleep2 2337 ms PreSlp = 0 ms Wakeup SC = 43377980 minTimeL1 = 1 , CurrentSC = 43301797 2022-04-30 15:09:1
1875 Wakeup From Sleep2-0_0_0 , IntPending = 0x1 2022-04-30 15:09:1
1876 PS Tiny check , PS used: 2404 , reserved total: 2496 2022-04-30 15:09:1
1894 01:0247:01:0935 INTRA FREQ CELL (3688 , 169) : RSRP (-100) , RSRQ (-11) 2022-04-30 15:09:1
1904 01:0247:01:1461 SLEEP2: SERV CELL (3688 , 121) : RSRP (-96) , RSRQ (-7) 2022-04-30 15:09:1
1920 01:0247:02:1741 Small Image Sleep2 time = 2361 , minTimeL1 = 1 2022-04-30 15:09:1
1924 15:0311:08:0892 Enter Sleep2 2361 ms PreSlp = 0 ms Wakeup SC = 43462214 minTimeL1 = 1 , CurrentSC = 43385242 2022-04-30 15:09:1
1926 Wakeup From Sleep2-0_0_0 , IntPending = 0x1 2022-04-30 15:09:1
1927 PS Tiny check , PS used: 2404 , reserved total: 2496 2022-04-30 15:09:1
1945 01:0504:05:0938 INTRA FREQ CELL (3688 , 169) : RSRP (-100) , RSRQ (-11) 2022-04-30 15:09:1
1955 01:0504:05:1472 SLEEP2: SERV CELL (3688 , 121) : RSRP (-96) , RSRQ (-7) 2022-04-30 15:09:1
1972 01:0504:06:1819 Small Image Sleep2 time = 2337 , minTimeL1 = 1 2022-04-30 15:09:1
1975 15:0569:02:0969 Enter Sleep2 2337 ms PreSlp = 0 ms Wakeup SC = 43545794 minTimeL1 = 1 , CurrentSC = 43469609 2022-04-30 15:09:1
Ready
AutoSave: OFF
Device 0


EPAT
Log
SigLog
View
Help
Export As pcap file
Find
Start Record
Pause Record
Stop Record
Clear Viewer
Save As Text
Only Show Protocol Signalling
Only Show Favorite Signalling
PCTime
2540 04:0503:01:0931 INTRA FREQ CELL (3688 , 169) : RSRP (-101) , RSRQ (-13) 2022-04-30 15:09:4
2568 18:0567:08:0761 Enter Sleep2 2486 ms PreSlp = 0 ms Wakeup SC = 44557101 minTimeL1 = 1 , CurrentSC = 44476029 2022-04-30 15:09:4
2570 Wakeup From Sleep2-0_0_0 , IntPending = 0x1 2022-04-30 15:09:4
2571 PS Tiny check , PS used: 2404 , reserved total: 2496 2022-04-30 15:09:4
2584 04:0759:01:0922 INTRA FREQ CELL (3688 , 169) : RSRP (-102) , RSRQ (-14) 2022-04-30 15:09:4
2613 18:0823:08:0768 Enter Sleep2 2497 ms PreSlp = 0 ms Wakeup SC = 44641368 minTimeL1 = 1 , CurrentSC = 44559936 2022-04-30 15:09:4
2615 Wakeup From Sleep2-0_0_0 , IntPending = 0x1 2022-04-30 15:09:5
2616 PS Tiny check , PS used: 2404 , reserved total: 2496 2022-04-30 15:09:5
2629 04:1015:01:0938 INTRA FREQ CELL (3688 , 169) : RSRP (-102) , RSRQ (-14) 2022-04-30 15:09:5
2639 04:1015:01:1458 SLEEP2: SERV CELL (3688 , 121) : RSRP (-96) , RSRQ (-8) 2022-04-30 15:09:5
2660 19:0055:08:0835 Enter Sleep2 2486 ms PreSlp = 0 ms Wakeup SC = 44724914 minTimeL1 = 1 , CurrentSC = 44643844 2022-04-30 15:09:5
2662 Wakeup From Sleep2-0_0_0 , IntPending = 0x1 2022-04-30 15:09:5
2663 PS Tiny check , PS used: 2404 , reserved total: 2496 2022-04-30 15:09:5
2676 05:0247:01:0941 INTRA FREQ CELL (3688 , 169) : RSRP (-101) , RSRQ (-13) 2022-04-30 15:09:5
2686 05:0247:01:1464 SLEEP2: SERV CELL (3688 , 121) : RSRP (-96) , RSRQ (-8) 2022-04-30 15:09:5
2705 19:0311:08:0784 Enter Sleep2 2497 ms PreSlp = 0 ms Wakeup SC = 44809182 minTimeL1 = 1 , CurrentSC = 44727750 2022-04-30 15:09:5
AutoSave: OFF
Device 0



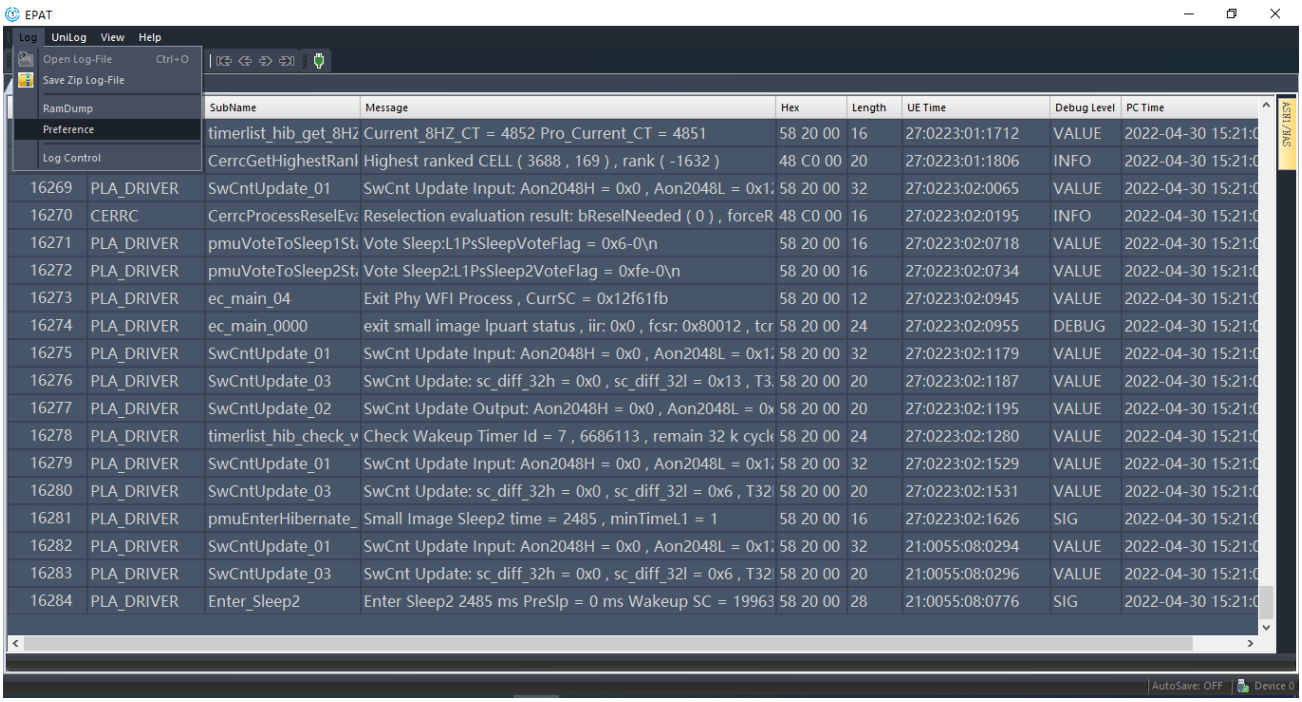
The “Pause” or “Stop” icon in the window can be available to pause or stop capturing Log. See details as described below.

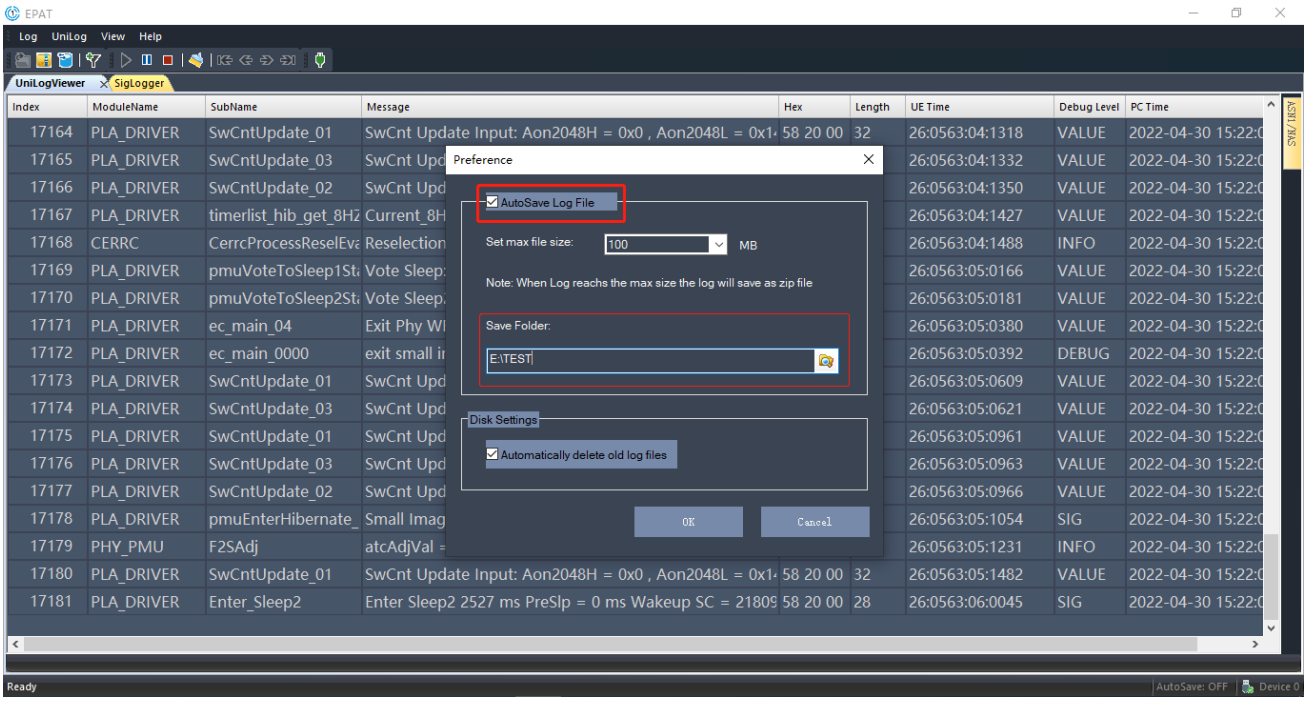


4 Save Log

4.1. Auto Save

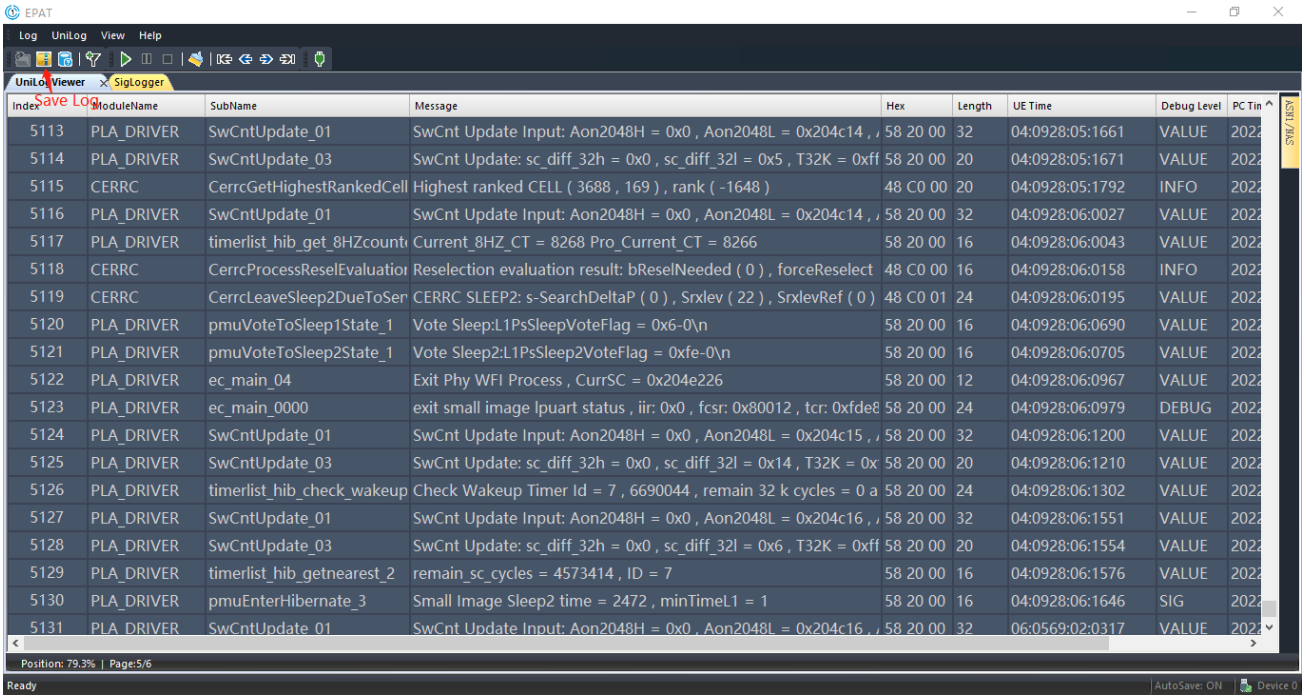
As next figure shows, it is available to select auto-save, path and configure the maximum size of file to be saved in the “Preference” under “Log”. (Auto-save is not recommended. Only when the log reaches the maximum auto-save size can it be outputted to the auto-save path.)





4.2. Manual Save

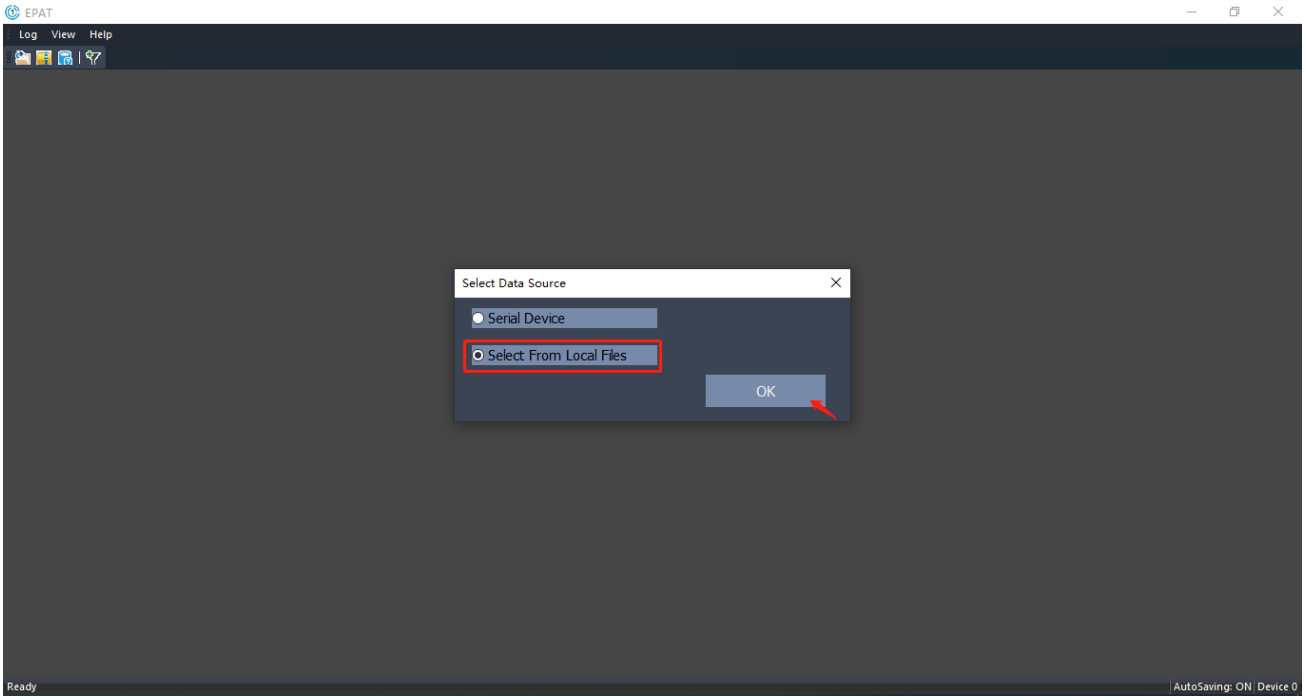
Click the icon in the bar as below, "Ctrl+S", or “Save Zip log-file" under “Log” to save Log.



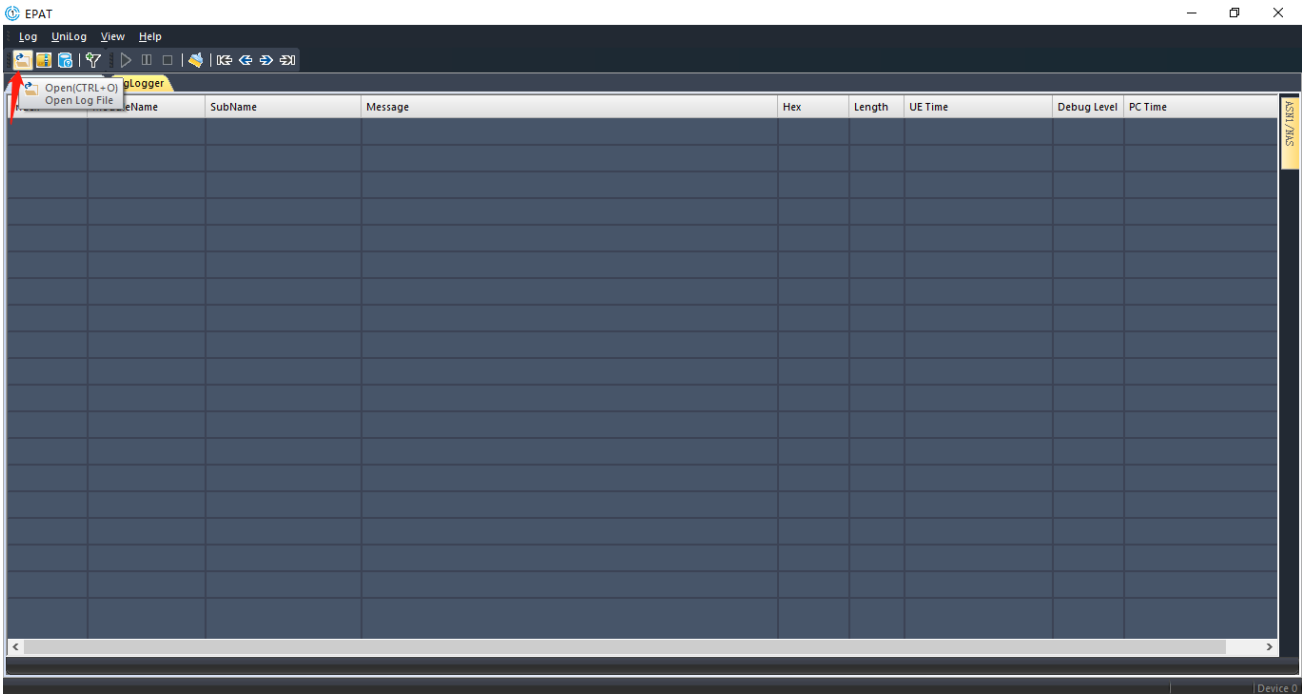
5 Common Analytical Application

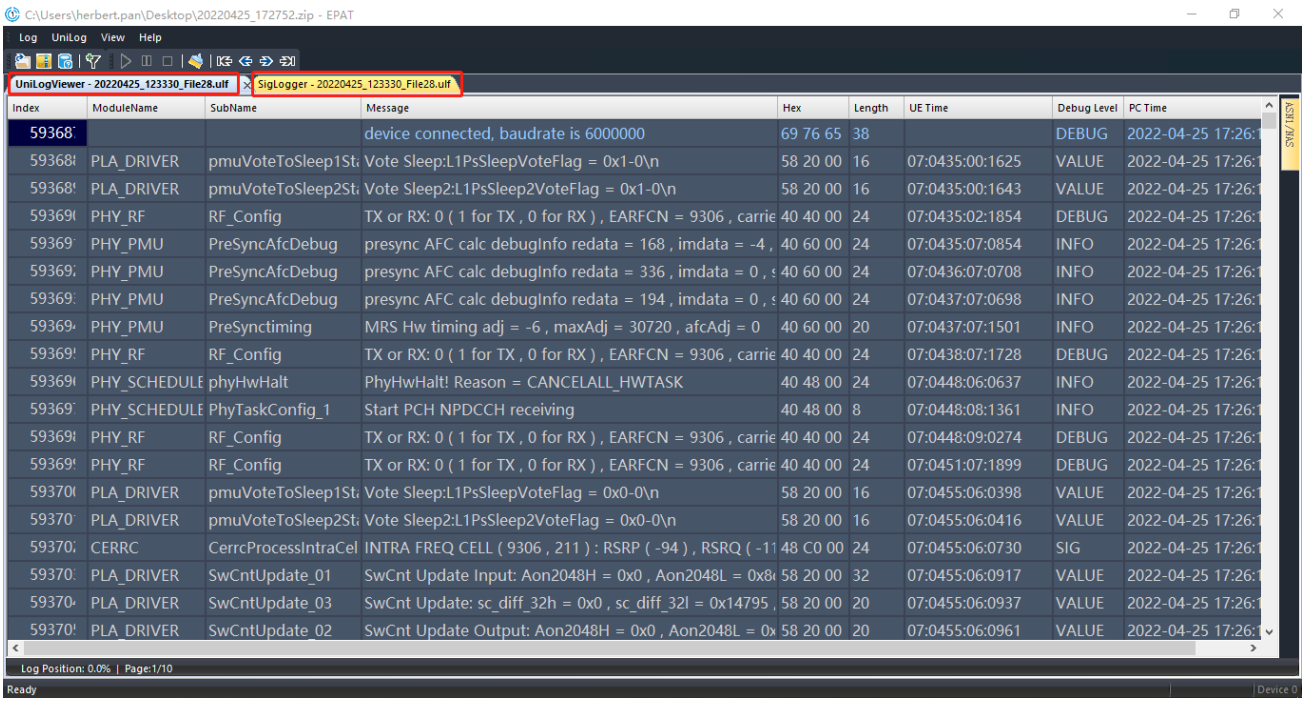
5.1. Import Log

When analysing the outputted log, please select “Select from Local Files” as shown below.



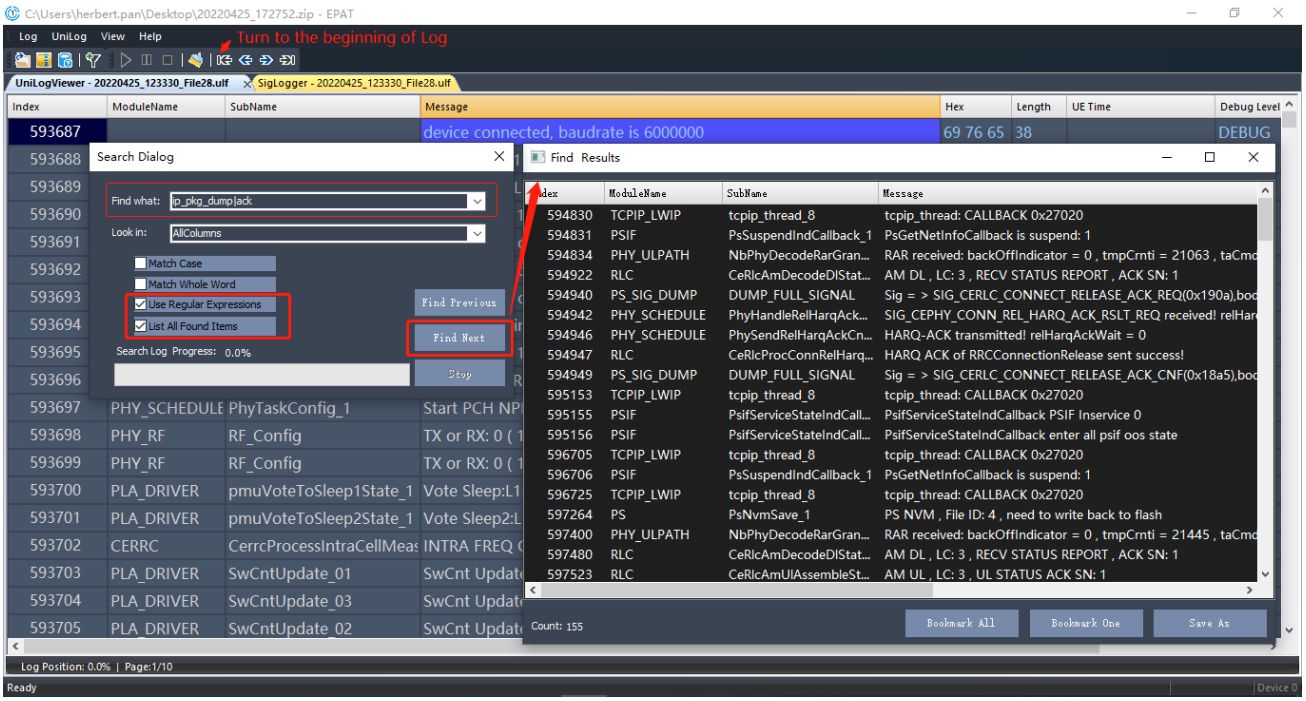
It is valid to import log file via the “Open Log File” in the drop-list of “Log” or the icon shown as following figure.





5.2. Search/Filter Log

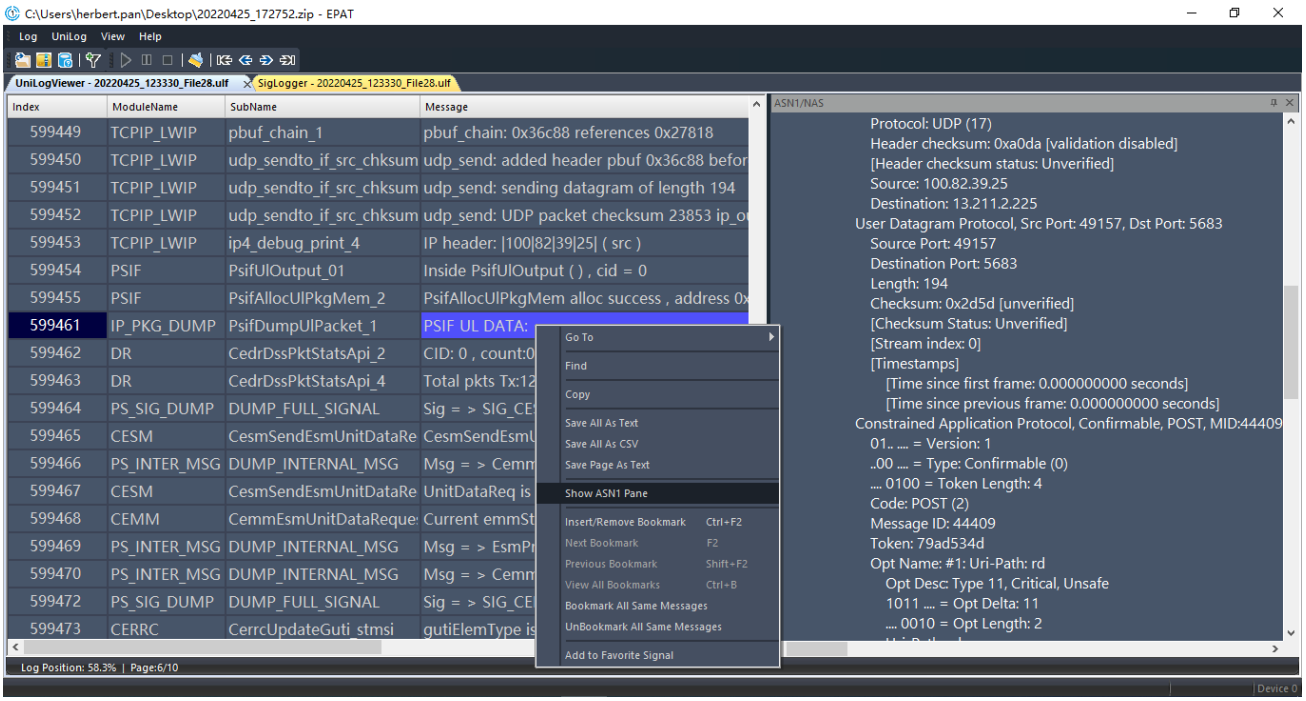
The corresponding window can be displayed via shortcut "Ctrl+F". Select the option as follows to filter multiple keywords via RE based on vertical bar “|”.



5.3. Data Decryption

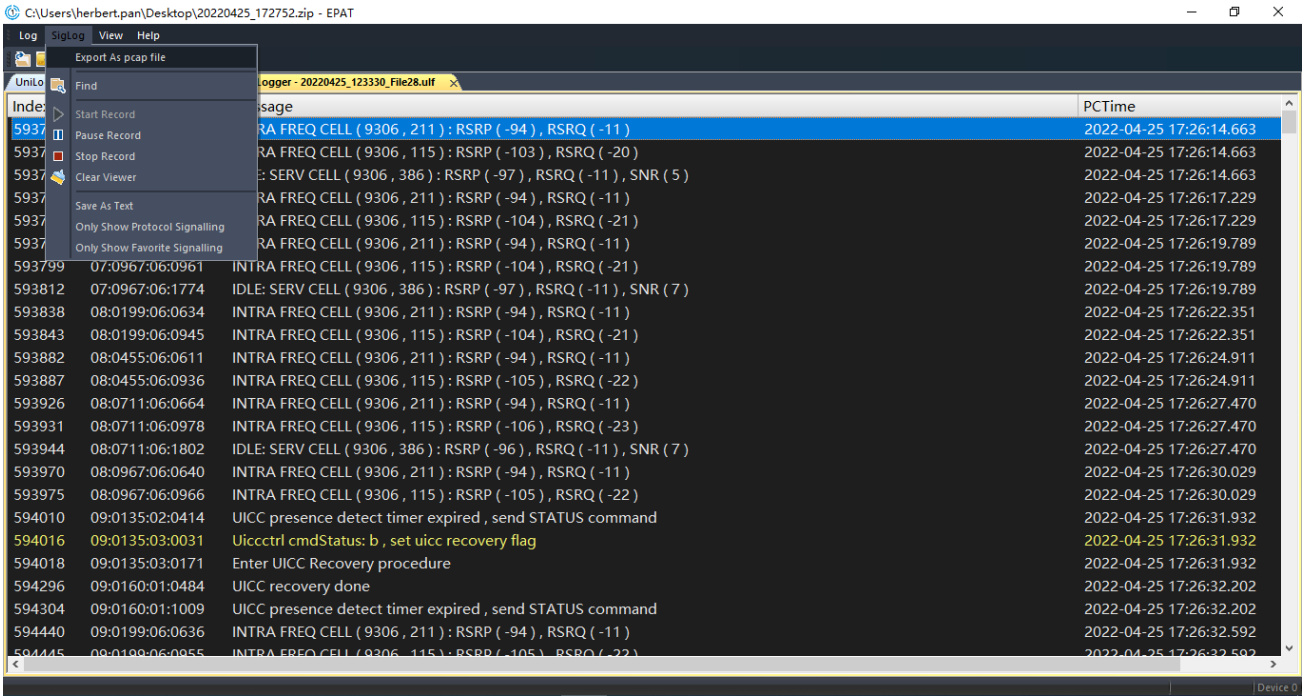
In the UniLogViewer window, select the ASN1/NAS type message. Then, right click and choose "Show

ASN1 Pane", ASN1/NAS message can be tarred correspondingly. Therefore, it is available to carry out deeper data decryption.



5.4. Export Pcap

Select SigLogger window and click "Export As PCAP File" under the menu of “SigLog”, the Pcap file can be exported to facilitate analysis via Wireshark. See specifics as described below.



5.5. Dump Log

Run the following command to start dump. After dump is output, you should stop dumping.

```
AT+QCFG="faultaction",3    // complete Dump logs into the EPAT and Flash. And take effect after reboot or reset.
AT+QCFG="faultaction",4    //The module is reset directly during Dump. This value is set during mass production.
```

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=1 after connecting to EPAT to capture the complete registration network process, which can be applied for the possible cause of the failure to current registration network.