

ArmTracer User Guide

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Preface

Documentation

This document describes how to use the ArmTracer tool.

Reading object

This document is suitable for testers, etc.

The content is introduced

This document consists of four sections, respectively:

Chapter1: overview. The function, file composition and running environment of ArmTracer tool are introduced briefly;

Chapter2: software interface description. The ArmTracer tool interface is described and the simple operation steps are described;

Chapter3: the software parameters Settings;

Chapter4: simple and practical process;

Chapter 5: access to the software License;

Chapter 6: use guide. The usage of ArmTracer tool is described;

Chapter 7: the appendix.

The document conventions

This document USES the following bold signs to indicate areas of particular attention during the operation.



attention:

Remind the matters that should notice in operation.



instructions:

Explain the more important things.

The related documents

The Orders to record

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Chapter 1 overview

1.1 System overview

The ArmTracer tool software receives the running log of ARM through serial port or network card in real time, and also can decode, display, query, export and play the log in real time or playback the offline log files.

1.2 Software installation

This software can be used without installation, just uncompressing the package and run the exe.

1.3 Operating environment

This software supports windows XP/7/10. For Win7/10, run it as administrator and XP SP3 compliant.


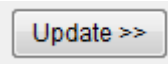
1.4 License problems

Without a valid license, the software cannot be used properly. The license authorization information feedback table needs to be returned to generate a valid license file before the tool can be used normally.

1.5 Startup software

Double-click the armtracer.exe file in the software directory to start the software.

1.6 Upgrade software

Click the toolbar button  to launch the online upgrade function. Select the version of the tool and click the button  to download the specified version of the tool. It also supports rollback of previous versions.

 **Instructions:**

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The upgrade tool can only be used in Unisoc's OA network.



0-1 Software upgrade tool

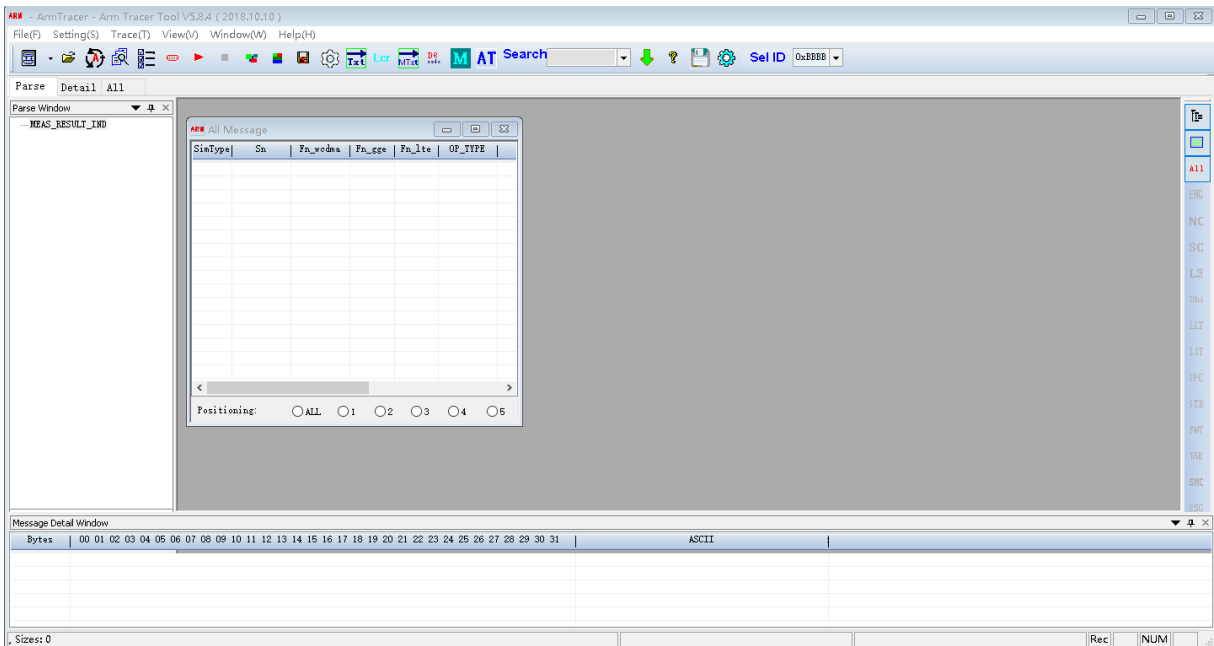
1.7 References

Serial number	Document name	version	release date	publisher
1				
2				

Chapter 2 software interface description

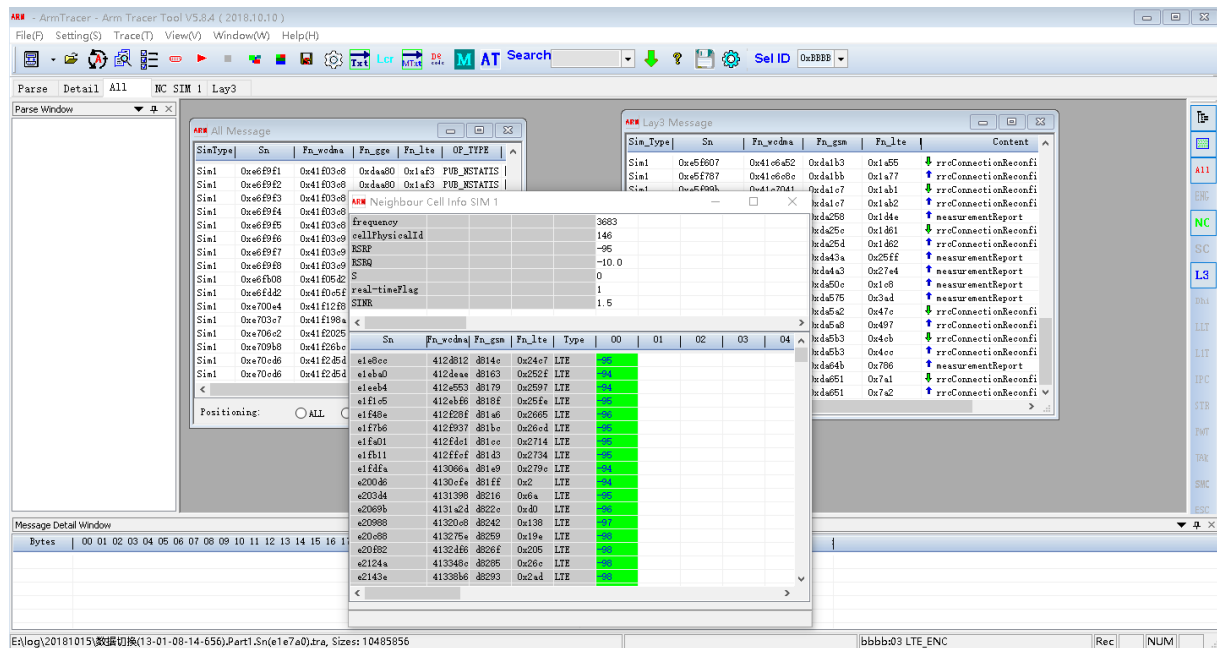
2.1 interface description

After the software starts, each window receives the data display interface as follows: see figure 2-1, 2-2 for details.The specific tool version of the interface.



0-1 Initial software interface

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0-2 Tool main interface





Toolbar description



















The tool's main toolbar is under the main menu. Under the main toolbar is the currently established subwindow list window, at the right side is the auxiliary toolbar, with the function of the subwindow list window.



0-3 The main toolbar

The main features of the tool are shown on the toolbar.

Toolbar icon	instructions
	Select communication mode.including:COM、CoolHost、PHY. COM: Receive data from the trace serial port. CoolHost: Receive data from CoolWatcher tool. PHY: Receive data from the PHY test platform.
	Open the log file for playback.
	Multiple ArmTracer processes can be set up to locate messages between them.The default open.
	Total query information from log files on a batch disk.

	Message category Settings that need to be decoded
	Serial port communication parameters or Settings with CoolHost, PHY communication port, etc
	Enable trace function
	Stop tracking function
	Overlapping windows
	Tile windows
	Save the window layout design
	Set the log file storage path
	Export query results
	Decode the export of four TXT files
	Export the log files in the specified directory to the TXT file
	DHI, L3 message byte stream decoding
	Start the query window
	Online upgrade software
	About the software
	Save the current log data
	Modify the display icon of the tool in the taskbar
	Sets the frame header flag for the log data
	ARM and ZSP messages are displayed in separate windows

Parse	Detail	All	IPC	MSC	ESC	L1C	HFN	Lay3	NC	L1G	BS Error	
-------	--------	-----	-----	-----	-----	-----	-----	------	----	-----	----------	--

0-4 An established subwindow

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


















This window automatically generates new windows and names these windows according to the log message data category. Double - click a window name to open the corresponding window and display.If the window is already displayed, click to hide the window, if the window is hidden, click to display the window.



0-5 Auxiliary toolbar

Auxiliary toolbar

Toolbar icon	instructions
--------------	--------------

	Displays or hides the Tree type decoding window
	Displays or hides the byte stream decoding window at the bottom of the software
	Displays or hides the ALL message window
	Show or hide the ENG information window
	Display or hide the measurement information window of the neighborhood;
	Show or hide the service cell message window
	Displays or hides the Lay3 message window
	Show or hide the Dhi message window
	Display or hide LLT message window
	Displays or hides the L1T message window
	Displays or hides the IPC message window
	Displays or hides the STR message window
	Displays or hides the FWT message window
	Show or hide the TAK message window
	Show or hide the TAK message window
	Show or hide the ESC message window
	Display or hide MSC message window
	Show or hide the WRN message window
	Display or hide the L1G message window

2.2 Status bar description


F:\Tool_Log\ArmTracer\8910\2018\08\Arm(03-17-08-26-866).Sn(201a).tra, Sizes: 1769044	bbbb:c9 PUB_NDYN	Rec	NUM
--------------------------------------------------------------------------------------	------------------	-----	-----

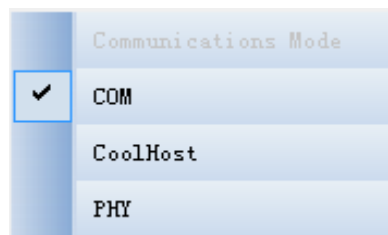
0-6 The status bar

The status bar displays some status information during real-time tracking or playback. For example: current log path, received data size, communication rate and others.

Chapter 3 software parameter setting

3.1 Set communication mode

The software supports three communication modes;COM, CoolHost, PHY; Click the down arrow on the right of the toolbar  and the following menu will pop up. Select the communication mode according to the actual situation.



0-1 Communication mode selection



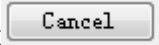
3.1.1 Description of communication mode

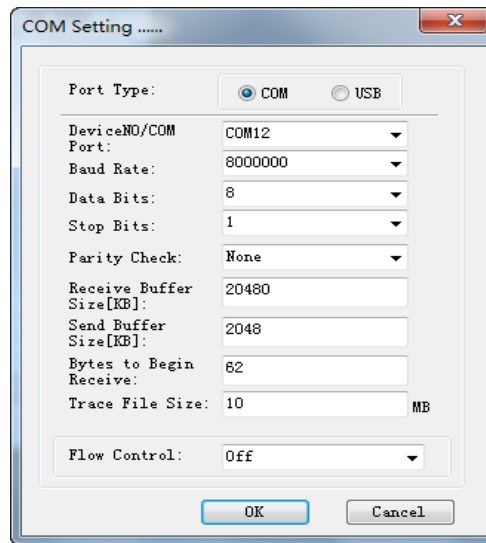
COM: Use the serial port to receive log data

CoolHost: Receive log data through the CoolWatcher tool


PHY: Receive log data through physical layer software

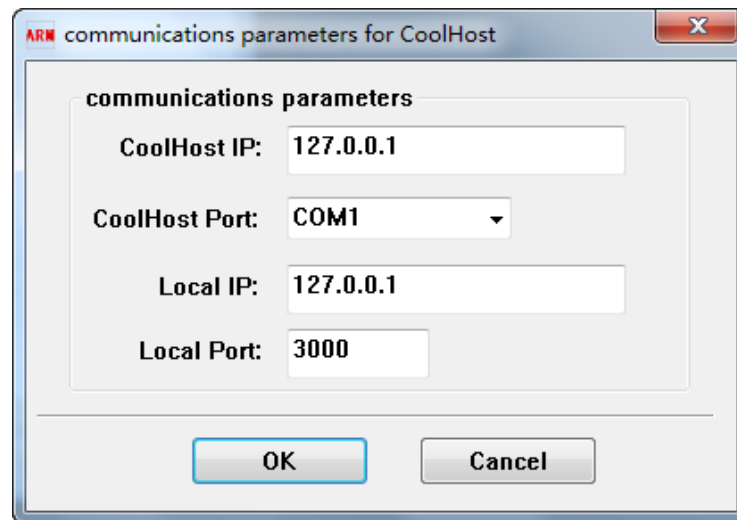
3.1.2 Set communication parameters

1. If set to COM mode, click the toolbar  to pop up the serial port parameter setting window. After setting the communication parameters according to the actual situation, click  to save the parameters;Click  will not save the parameters.



0-2 COM Communication parameter setting

- If the communication mode is set to CoolHost or PHY, network card will be used. Click the toolbar button , The following setting window will pop up. Set up the IP and port used by CoolHost, PHY and ArmTracer according to the actual situation.






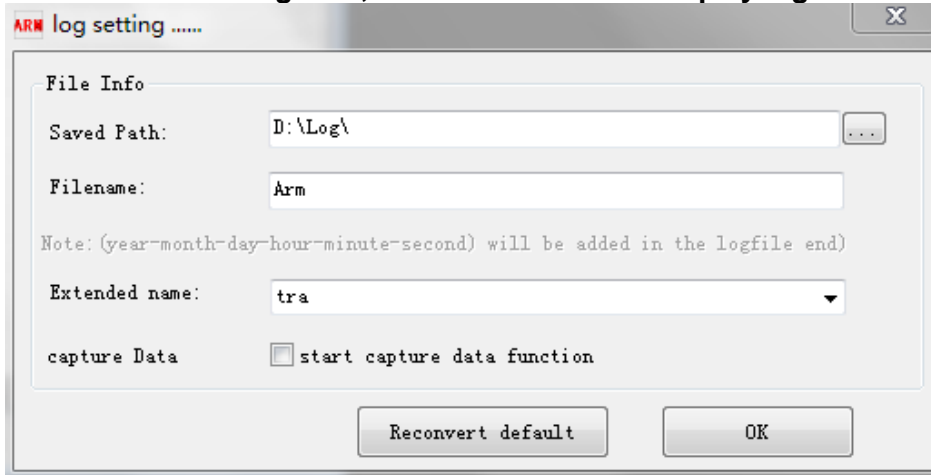
0-3 Set CoolHost and PHY mode communication parameters

3.2 Set the log file storage path

Click the toolbar  button, and the log file setting window pops up, as shown in picture 3-4. Set the log storage path, file name prefix, file extension, and click

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the  button. Click the  button will restore the software settings last time. Click , the software will only receive and save log data, but not decode and display log data in real time.




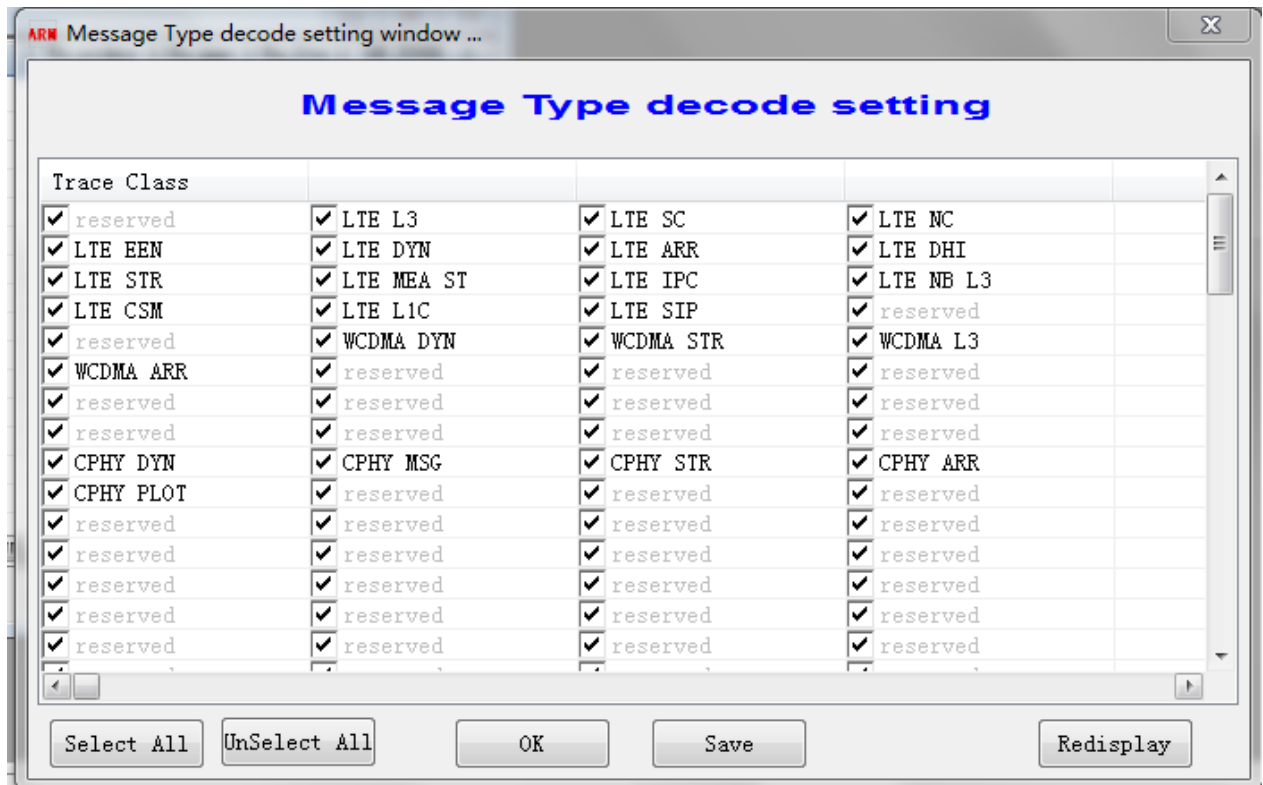
0-4 log File Settings

3.3 Set the frame format of log data

Click on the toolbar , select the frame header ID of the log message: 0xB BBBB or 0xC CCC. It depends on the device under test.

3.4 Message decoding category Settings


Click on the toolbar  button to pop up the decoding message category setting, select the message categories as you need. Only the selected messages could be decode, display, query, and so on.




0-5 Set the message category to be decoded

Chapter 4 simply USES the process


4.1 Set software communication mode

Click on the toolbar  button down arrow, pop up the setting interface, set the communication mode to receive log data.

4.2 Set communication parameters

Click the toolbar button , according to different communication modes, different settings are displayed. Set the communication parameters according to the actual situation.

4.3 Start the trace function


Click on the toolbar  button. Set the log storage parameter in the pop-up window. Click OK to start the tracking function.

If ☒ start capture data function is selected, the tool only receives and stores log data, and does not decode and display log data in real time.

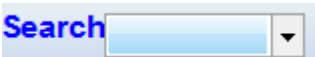
4.4 Stop tracking

Click on the toolbar  button to stop tracking.

4.5 log File playback

Click on the toolbar  button to select the playback log file, or directly drag the log file to the software interface, the playback of log file can be achieved.

4.6 Information query

Press Ctrl+F to start query window 1 by default. Or click on the toolbar  to select the query window to start (5 query windows can be

started), select the category of query, input the key word, press ENTER or click the 'OK' button to query the specified information.

4.7 Message decoding

Click a message in any window, such as L3 message, DHI message, IPC message, PHY message, etc., which can be decoded as ASN.1 or decoded by data structure, then the decoding information of the message is displayed by tree structure in the Tree window on the left of the main interface. At the same time, the original data flow information corresponding to this message is displayed in byte stream window at the bottom.

If it is a message that does not need further decoding, the original data flow information for the message is displayed in the window at the bottom of the interface.

When a message is clicked, it is positioned on the corresponding message or adjacent SN message in each window.

If two or more copies of ArmTracer are started, when you click on one message, other processes are notified and located on adjacent SN messages.

4.8 Exit the software

Press the button  to exit the software.

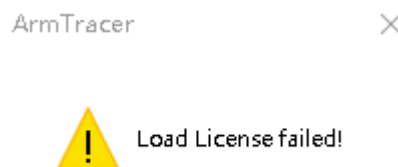
Chapter 5 obtaining softwareLicense

Without a valid License License, the software cannot be used properly. Therefore, it is necessary to return the authorization information feedback table and generate a valid license file before the tool can be used normally.


The steps to generate the authorization information feedback table are as follows:

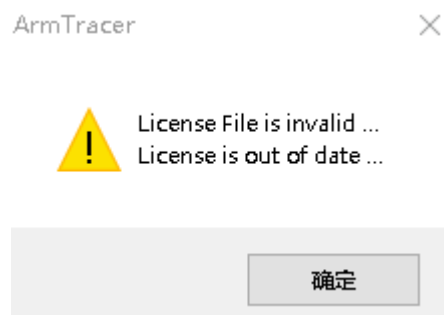
5.1 Run ArmTracer

Double-click armtracer.exe to start the software. If an error message window appears, regardless of it, click OK to start the software.



5.2 Generate the authorization information feedback table

Click on the toolbar icon , An invalid authorization prompt appears and click ok. A feedback table output window appears. After filling in the user account name (English), the License information FeedBack form will be automatically generated by clicking the "OK" button after the start and end time of the software. The FeedBack form will be stored in the software FeedBack subdirectory. Please return the generated.fbt to generate the License information file.



用户信息反馈表建立

用户授权信息填写

授权信息

用户名: shnk3000

起始时间: 2017-08-02

结束时间: 2018-08-02

OK Cancel

注：请将FeedBack下.fbt文件传回


0-1 License Information generated

5.3 Installation License

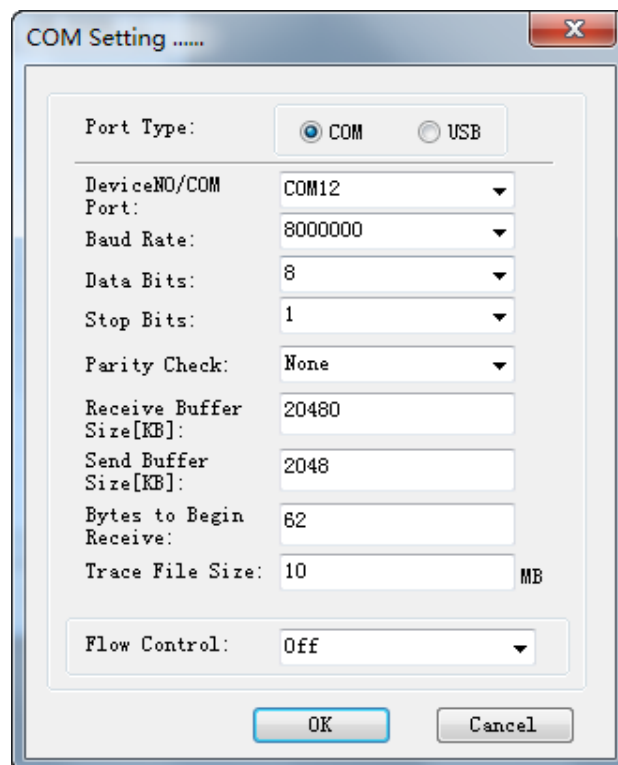
Copy the valid license file into the software's DLL subdirectory, overwriting it if the file already exists. Restart the ArmTracer software, it can be used normally.

Chapter 6 Guidelines for user

6.1 Serial port parameter Settings

In COM communication mode, click the toolbar  icon to start the serial port parameter setting window.

After setting according to the actual situation, click OK to save the parameters.




0-1 Serial port parameter setting window

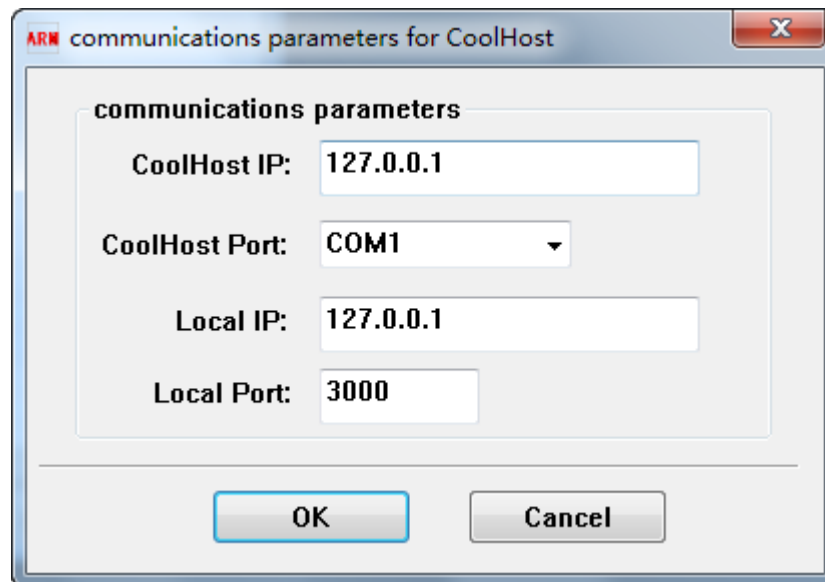
Parameter Settings are described below:

- **Port type:** Select the port type for collecting logs. While using the driver provided by Unisoc, select the COM port. USB option is set just in case that the third-party FTDI driver been used.
- **COM Port:** Serial port number for log transmission. According to the actual situation.
- **Baud Rate:** The baud rate used for serial communication. In the software, 110--8000000 can be selected directly by default. If you do not need the baud rate, you can directly input in the display box.

- **Data Bits:** The data bits for communication can be set to 4, 5, 6, 7, and 8 bits. Generally 8 bits.
- **Stop Bits:** Stop bit of communication. 1 bit, 1.5 bit, 2 bit. Generally 1 bit.
- **Parity Check:** Parity Settings. None: None, Odd: Odd, Even: Even, Mask: Mask, Space: empty. General to None.
- **Receive Buffer Size:** Buffer size Settings (in KB) for data received by the serial port. If the baud rate is high, try to set it as large as possible. For example, 10240 (10 megabytes), 20480 (20 megabytes).
- **Send Buffer Size:** size of serial sending buffer (unit KB).
- **Bytes to Begin Receive:** The serial buffer begins receiving after how many bytes it receives. Generally 1 byte.
- **Trace File Size:** Size of each log file (in megabytes).
- **Flow Control:** Set the flow control mode for communication. Off: No, RTS/CTS, XON/XOFF.

6.2 Network card parameter Settings

In CoolHost and PHY communication mode, click the toolbar  button to start the interface of setting network card communication parameters. Set parameters and click OK.



0-2 Network card communication parameter setting

parameter instructions:

CoolHost IP: Set the IP address used by CoolHost software in CoolWatcher


CoolHost Port: Set the port used by CoolHost software



Local IP: Set the IP address used by ArmTracer

Local Port: Set the port used by ArmTracer

6.3 Start tracking function

Click the toolbar  icon or press F2 to start the tracking function.

Once the communication parameters are set, you can click the button  to start the tracking function. When started, the log file save parameter setting window will pop up first.

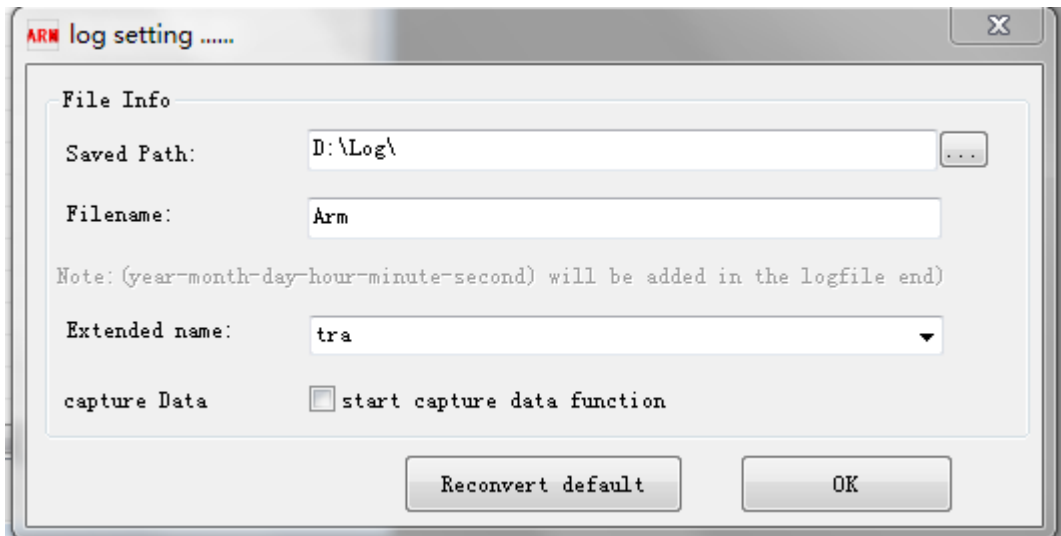
The log saving path can be input in the 'Saved Path', or click the button  to select. If the path does not exist, it will be created automatically and support multiple subdirectories. Then enter the prefix of the log file name, click to select the log file extension , or directly enter the extension name.

Click  button, The path is set to the syslog subclass in the directory.

Click 'OK' and start tracking.

The software will save the settings automatically. The settings will be used as default value when start tracking next time.

The software, such as receipt of the log message, will automatically establishes the display window of the corresponding message, and display the decoded message in the window.




0-3 log File saving parameter Settings

6.4 Stop tracking

Click on the toolbar  icon or press F3, will stop tracking function.

At this point, the software will save the tracked log data automatically. The storage path is stored as the 'Saved Path' in the parameter setting window of the log file, which will be stored as the name of the file name (date _ hour _ minute _ second _ hundredth second).Sn(start Sn number). Extension).

If automatic save failed, click the toolbar  button to save the log data manually.

6.5 Message display window overview

Each display window are similar. Every real-time display window has a right menu. ALL message window contains the messages of all others. The same message displayed in different windows are linked to each other, while click one message in one of those windows, the other windows will show the corresponding position of this message. By clicking a message in the message windows, the decoding information of the message will display on the left and the original byte stream information will display on the bottom.

6.5.1 Click on the message

Click a message, and the message will display the original byte stream data in the byte stream detail window. If it is Lay3, neighborhood message, service cell message, DHI message, FWT message, IPC message, etc., the complete decoding result of the message will be sent to the left Tree message decoding window to display in the form of Tree. If Message Positioning is checked in other windows, it will be located on corresponding messages in other windows.

And for a window does not have this kind of message, some message windows have adjacent correlation. That is, if there is no corresponding message in a window, the message will be positioned on the adjacent Sn.

6.5.2 Overview of right-click menu

Right click menus are available in each message display window. Each window can be controlled independently. It includes control of data display column, window refresh control, message positioning control, data receiving control, memory book window setting parameters, etc.

Display column control mainly refers to the display of columns in the control window. The column name is checked and set to control the display or hiding of this column, so that users can focus on a certain column or several columns of data and shield the data information that users do not need to check.

The window refresh control mainly refers to the data refresh of the control window. The refresh button is the control button of the window refresh. When line refresh is selected, the tool automatically checks the refresh and cancels page refresh. The window will refresh the data row by row. Line refresh will display the received data in real time, but it consumes a lot of CPU resources. When page refresh is selected, it will check the refresh and cancel line refresh. When the window receives the specified number of message records, it will refresh the window. The window does not need real-time refresh, which reduces CPU consumption. However, it is not convenient for users to view messages in real time. CPU consumption is minimal without refresh. Users can choose different refresh methods according to actual needs.

Message positioning control. When you click a message, you can locate the corresponding message between the query window and other windows that allow


message positioning.If it's not selected, other windows will not locate the message when clicking the message.

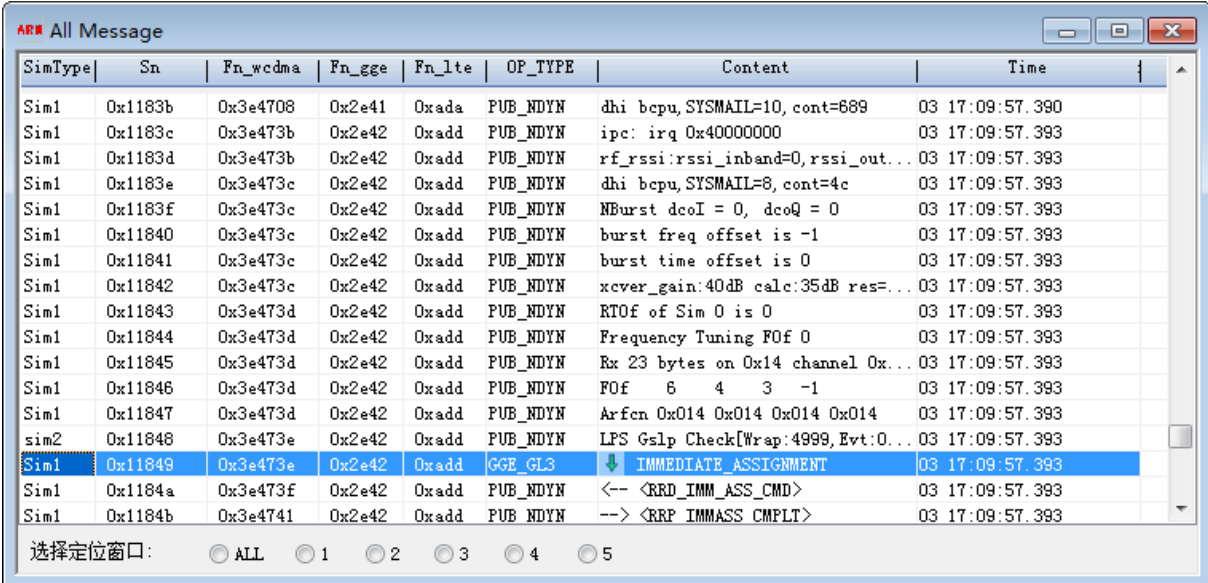
Data receiving control controls whether the window receives, decodes and displays data, and does not affect the data receiving of other windows.

Even if all windows stop receiving data, the software still receives and stores the log data in the background. This function will work while 'start capture data function' is selected when you start tracking.

Save window settings parameters. When user starts the tool next time, it is unnecessary to set the window parameters again.

6.5.3 ALL message display window

When the ARMTracer tool starts, the ALL message window will start automatically.When the ALL message window displayed, clicking the icon  will hide this window.Clicking again will display it.The window displays as shown in figure 6-4.



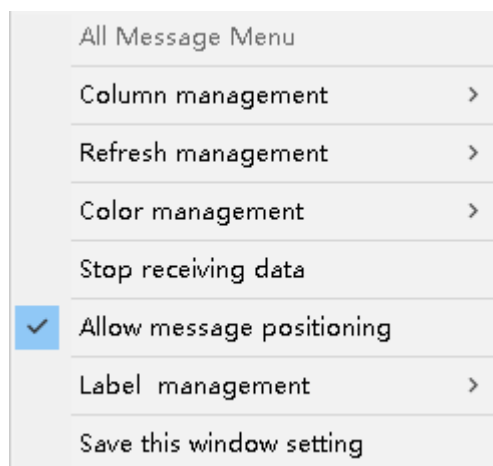
SimType	Sn	Fn_wcdma	Fn_gge	Fn_lte	OP_TYPE	Content	Time
Sim1	0x1183b	0x3e4708	0x2e41	0xada	PUB_NDYN	dhi bcpu, SYSMAIL=10, cont=689	03 17:09:57.390
Sim1	0x1183c	0x3e473b	0x2e42	0xadd	PUB_NDYN	ipc: irq 0x40000000	03 17:09:57.393
Sim1	0x1183d	0x3e473b	0x2e42	0xadd	PUB_NDYN	rf_rssi:rssi_inband=0, rssi_out...	03 17:09:57.393
Sim1	0x1183e	0x3e473c	0x2e42	0xadd	PUB_NDYN	dhi bcpu, SYSMAIL=8, cont=4c	03 17:09:57.393
Sim1	0x1183f	0x3e473c	0x2e42	0xadd	PUB_NDYN	NBurst dcoI = 0, dcoQ = 0	03 17:09:57.393
Sim1	0x11840	0x3e473c	0x2e42	0xadd	PUB_NDYN	burst freq offset is -1	03 17:09:57.393
Sim1	0x11841	0x3e473c	0x2e42	0xadd	PUB_NDYN	burst time offset is 0	03 17:09:57.393
Sim1	0x11842	0x3e473c	0x2e42	0xadd	PUB_NDYN	xcver_gain:40dB calc:35dB res=...	03 17:09:57.393
Sim1	0x11843	0x3e473d	0x2e42	0xadd	PUB_NDYN	RTOf of Sim 0 is 0	03 17:09:57.393
Sim1	0x11844	0x3e473d	0x2e42	0xadd	PUB_NDYN	Frequency Tuning FOf 0	03 17:09:57.393
Sim1	0x11845	0x3e473d	0x2e42	0xadd	PUB_NDYN	Rx 23 bytes on 0x14 channel 0x...	03 17:09:57.393
Sim1	0x11846	0x3e473d	0x2e42	0xadd	PUB_NDYN	FOf 6 4 3 -1	03 17:09:57.393
Sim1	0x11847	0x3e473d	0x2e42	0xadd	PUB_NDYN	Arfcn 0x014 0x014 0x014 0x014	03 17:09:57.393
sim2	0x11848	0x3e473e	0x2e42	0xadd	PUB_NDYN	LFS Gslp Check[Wrap:4999, Evt:0...	03 17:09:57.393
Sim1	0x11849	0x3e473e	0x2e42	0xadd	GGE_GL3	IMMEDIATE ASSIGNMENT	03 17:09:57.393
Sim1	0x1184a	0x3e473f	0x2e42	0xadd	PUB_NDYN	<-- <RRD_IMM_ASS_CMD>	03 17:09:57.393
Sim1	0x1184b	0x3e4741	0x2e42	0xadd	PUB_NDYN	--> <RRP IMM_ASS_CMPLT>	03 17:09:57.393

选择定位窗口: ☐ ALL ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

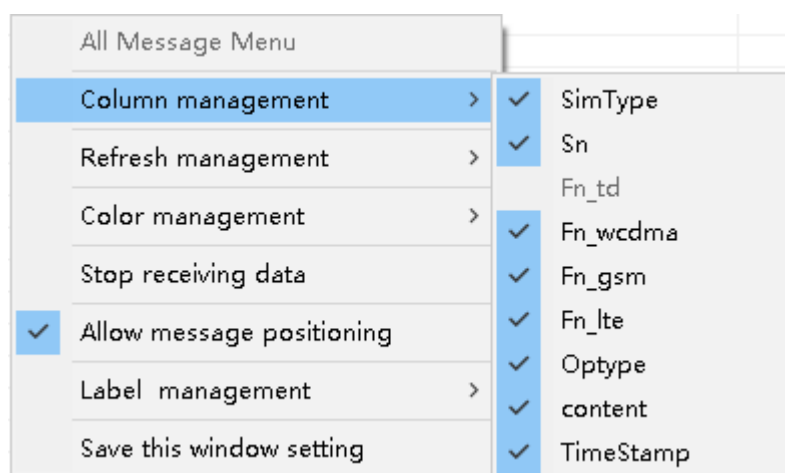
0-4 ALL message display window

Click the right mouse button in the ALL message window to pop up as shown in figure 6-5. The corresponding list parameters and function setting options in the ALL message window will be displayed in this menu.

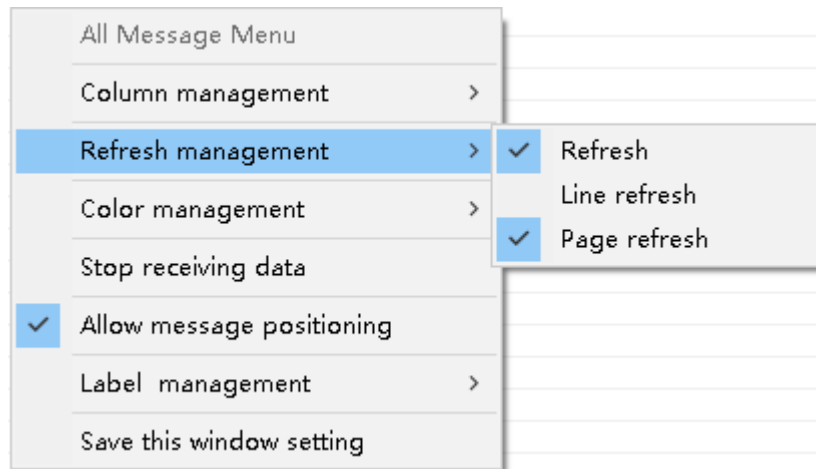
de



0-5 ALL window right-click menu



0-6 Display column control menu



0-7 Window refresh control menu

You can see the **ALL window data display column**, which is described as follows:

- **Sn:** Message number
- **Fn_td:** TD frame number
- **Fn_GSM:** GSM frame number
- **Fn_lte:** LTE frame number
- **OP_TYPE:** message category
- **Content:** The decoded content of the message

Displays the settings of the data column in the window. Selected, then show, if not, then hide.


For winows refresh management, the refresh control must be turned on first. When 'Refresh' is not selected, the window will not refresh. If the refresh function has been turned on, select 'line refresh', the window will refresh row by row and 'Page refresh' will be invalid. While Selecting to 'Page refresh' the window will refresh when the received data reaches the specified number of records per page and 'Line refresh' will be invalid.

Select different refresh methods, the system resources and processing speed are completely different. Do not open refresh, the software processing speed is the fastest, the system resource consumption is the least.

de



Line refresh: the window will refresh when every message received. The software data processing speed is the slowest, system resource consumption is the largest.

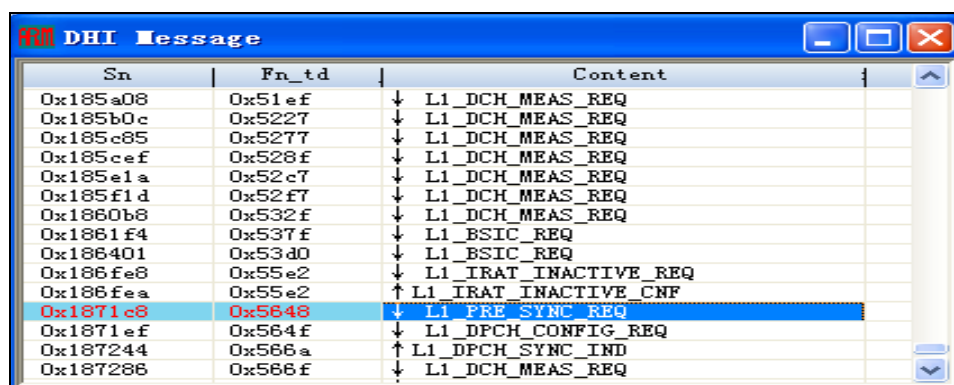
Page refresh: after receiving the specified number of messages, the window will be refreshed. This setting, software processing speed, system resource consumption is moderate.

Stop receiving data: this option is in ALL message right-click menu, while it's selected the window will no longer receive, decode, or display log messages. But the software is still receiving data in the background, unless you click the  icon on the toolbar or press F3 to stop tracking. If the log data is too large to display in real time, you can use this mode to receive the log first, and then play back for analysis.

Allow message positioning: this option is in ALL message right-click menu, while it's selected, a message can be located between the query window and other windows that allow message positioning to a corresponding message.

6.5.4 DHI message display window

When the DHI class log data is received, the software creates the DHI message window dynamically. When a DHI message window displayed in the tool, click the  icon will hide the window. When the DHI message window is hidden, click the toolbar  icon to display the DHI message window. The window displays as shown in figure 6-8.





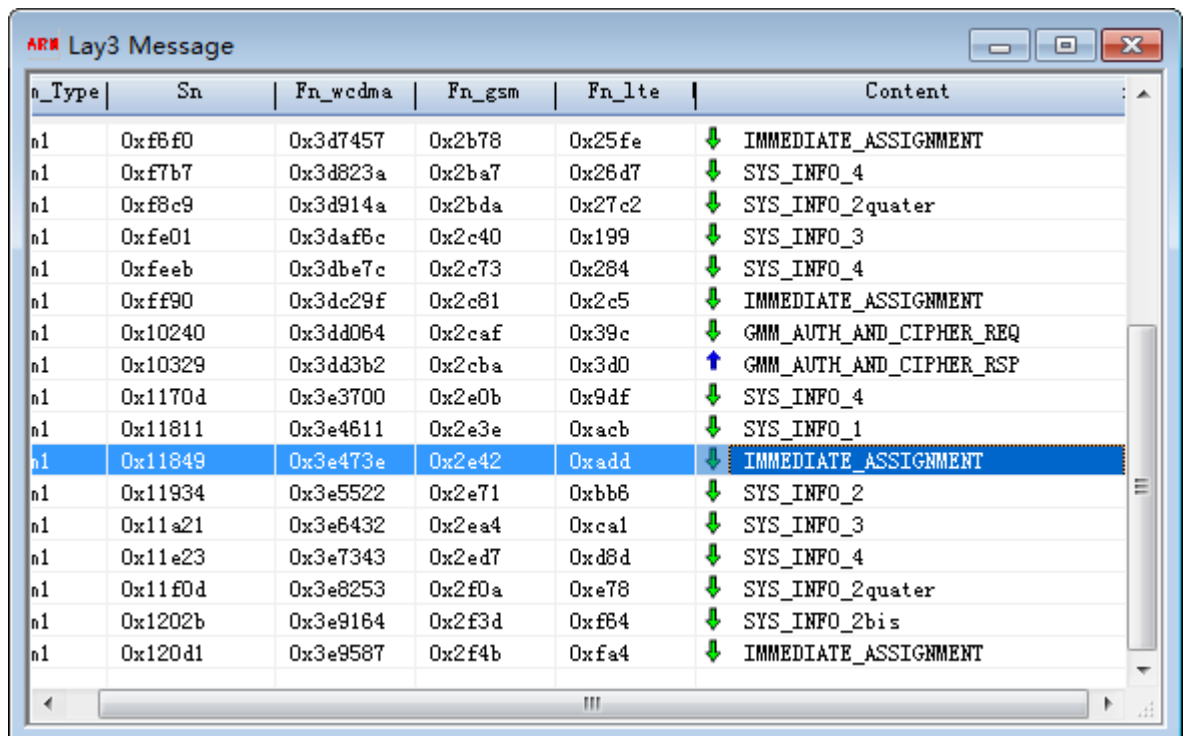
Sn	Fn_td	Content
0x185a08	0x51ef	↓ L1_DCH_MEAS_REQ
0x185b0c	0x5227	↓ L1_DCH_MEAS_REQ
0x185c85	0x5277	↓ L1_DCH_MEAS_REQ
0x185cef	0x528f	↓ L1_DCH_MEAS_REQ
0x185e1a	0x52c7	↓ L1_DCH_MEAS_REQ
0x185f1d	0x52f7	↓ L1_DCH_MEAS_REQ
0x1860b8	0x532f	↓ L1_DCH_MEAS_REQ
0x1861f4	0x537f	↓ L1_BSIC_REQ
0x186401	0x53d0	↓ L1_BSIC_REQ
0x186fe8	0x55e2	↓ L1_IRAT_INACTIVE_REQ
0x186fea	0x55e2	↑ L1_IRAT_INACTIVE_CNF
0x1871c8	0x5648	↓ L1_FRE_SYNC_REQ
0x1871ef	0x564f	↓ L1_DPCH_CONFIG_REQ
0x187244	0x566a	↑ L1_DPCH_SYNC_IND
0x187286	0x566f	↓ L1_DCH_MEAS_REQ

0-8 DHI message window

The DHI message window also has a right-click menu that functions similar to the ALL message window.

6.5.5 LAY3 message display window

When the L3 class log data is received, the software will create the Lay3 message window dynamically. When the Lay3 message window displayed in the tool, click the  icon to hide the window. When the Lay3 message window is hidden, click the toolbar  icon to display the Lay3 message window. The window displays as shown in figure 6-9.





n_Type	Sn	Fn_wcdma	Fn_gsm	Fn_lte	Content
n1	0xf6f0	0x3d7457	0x2b78	0x25fe	IMMEDIATE_ASSIGNMENT
n1	0xf7b7	0x3d823a	0x2ba7	0x26d7	SYS_INFO_4
n1	0xf8c9	0x3d914a	0x2bda	0x27c2	SYS_INFO_2quater
n1	0xfe01	0x3daf6c	0x2c40	0x199	SYS_INFO_3
n1	0xfeeb	0x3dbe7c	0x2c73	0x284	SYS_INFO_4
n1	0xff90	0x3dc29f	0x2c81	0x2c5	IMMEDIATE_ASSIGNMENT
n1	0x10240	0x3dd064	0x2caf	0x39c	GMM_AUTH_AND_CIPHER_REQ
n1	0x10329	0x3dd3b2	0x2cba	0x3d0	GMM_AUTH_AND_CIPHER_RSP
n1	0x1170d	0x3e3700	0x2e0b	0x9df	SYS_INFO_4
n1	0x11811	0x3e4611	0x2e3e	0xacb	SYS_INFO_1
n1	0x11849	0x3e473e	0x2e42	0xadd	IMMEDIATE_ASSIGNMENT
n1	0x11934	0x3e5522	0x2e71	0xbb6	SYS_INFO_2
n1	0x11a21	0x3e6432	0x2ea4	0xca1	SYS_INFO_3
n1	0x11e23	0x3e7343	0x2ed7	0xd8d	SYS_INFO_4
n1	0x11f0d	0x3e8253	0x2f0a	0xe78	SYS_INFO_2quater
n1	0x1202b	0x3e9164	0x2f3d	0xf64	SYS_INFO_2bis
n1	0x120d1	0x3e9587	0x2f4b	0xfa4	IMMEDIATE_ASSIGNMENT

0-9 Lay3 message display window

Lay3 message window also has a right-click menu, similar to the ALL message window.

6.5.6 Project mode message display window



When ENG engineering mode class data is received, the software creates the engineering mode message window dynamically, and the window always displays at the top of the screen. When the message window displayed in the tool, click the  icon will hide the window. When the message window is hidden, click the toolbar icon  to display the message window.

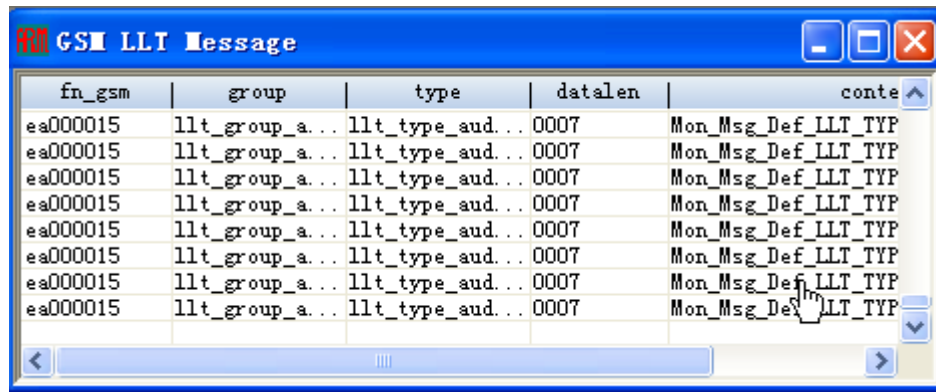
de

TCN 360 Project Mode								
asnVersion	pdpDataFlag	ipCheckCtrl	miAttachType	lockFreq	lockCell	hsupaCategory	sdpaCategory	ueCategory
0x4d	0x4d	0x49	0x5f	0x46	0x53			0x73

0-10 Engineering mode window

6.5.7 LLT message display window

When the log data of LLT class is received, the software will create the LLT message window dynamically. When the message window displayed in the tool, click the icon  will hide the window. When the message window is hidden, click the toolbar  icon to display the message window. The window displays as shown in figure 6-11.





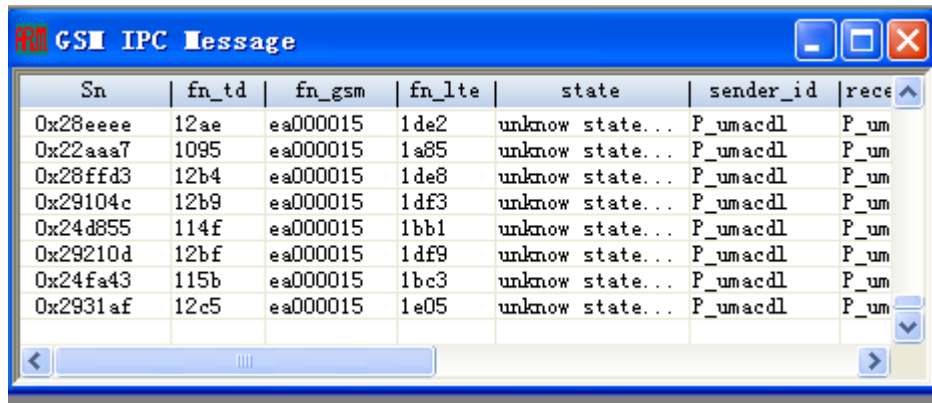
fn_gsm	group	type	datalen	conte
ea000015	llt_group_a...	llt_type_aud...	0007	Mon_Msg_Def_LL
ea000015	llt_group_a...	llt_type_aud...	0007	Mon_Msg_Def_LL
ea000015	llt_group_a...	llt_type_aud...	0007	Mon_Msg_Def_LL
ea000015	llt_group_a...	llt_type_aud...	0007	Mon_Msg_Def_LL
ea000015	llt_group_a...	llt_type_aud...	0007	Mon_Msg_Def_LL
ea000015	llt_group_a...	llt_type_aud...	0007	Mon_Msg_Def_LL
ea000015	llt_group_a...	llt_type_aud...	0007	Mon_Msg_Def_LL
ea000015	llt_group_a...	llt_type_aud...	0007	Mon_Msg_Def_LL

0-11 LLT window

The LLT message window also has a right-click menu, similar to the ALL message window.

6.5.8 IPC message display window

When the IPC class log data is received, the software will create the IPC message window dynamically, and when the message window displayed in the tool, clicking the icon  will hide the window. When the message window is hidden, click the toolbar  icon to display the message window. A window displays as shown in figure 6-12.





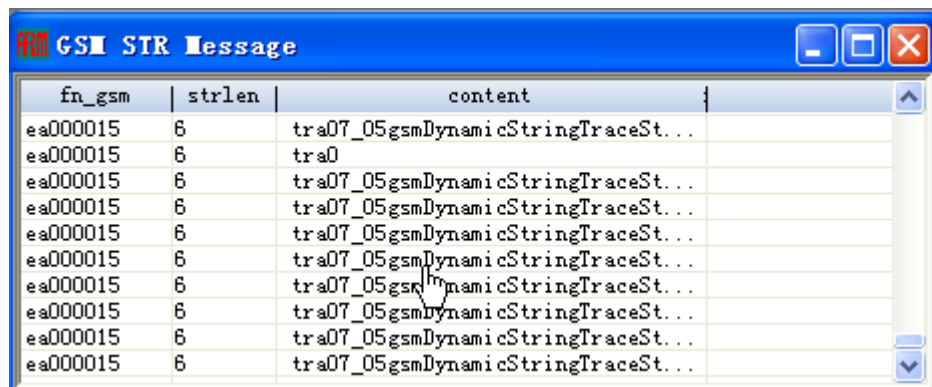
Sn	fn_td	fn_gsm	fn_lte	state	sender_id	rece
0x28eeee	12ae	ea000015	1de2	unknow state...	P_umacdl	P_um
0x22aaa7	1095	ea000015	1a85	unknow state...	P_umacdl	P_um
0x28ffd3	12b4	ea000015	1de8	unknow state...	P_umacdl	P_um
0x29104c	12b9	ea000015	1df3	unknow state...	P_umacdl	P_um
0x24d855	114f	ea000015	1bb1	unknow state...	P_umacdl	P_um
0x29210d	12bf	ea000015	1df9	unknow state...	P_umacdl	P_um
0x24fa43	115b	ea000015	1bc3	unknow state...	P_umacdl	P_um
0x2931af	12c5	ea000015	1e05	unknow state...	P_umacdl	P_um

0-12 IPC window

The IPC message window also has a right-click menu, similar to the ALL message window.

6.5.9 STR message display window

When the STR class log data is received, the software will dynamically create the STR message window. When the message window displayed in the tool, click the  icon will hide the window. When the message window is hidden, click the toolbar icon  to display the message window window. The window displays as shown in figure 6-13.





fn_gsm	strlen	content
ea000015	6	tra07_05gsmDynamicStringTraceSt...
ea000015	6	tra0
ea000015	6	tra07_05gsmDynamicStringTraceSt...
ea000015	6	tra07_05gsmDynamicStringTraceSt...
ea000015	6	tra07_05gsmDynamicStringTraceSt...
ea000015	6	tra07_05gsmDynamicStringTraceSt...
ea000015	6	tra07_05gsmDynamicStringTraceSt...
ea000015	6	tra07_05gsmDynamicStringTraceSt...
ea000015	6	tra07_05gsmDynamicStringTraceSt...
ea000015	6	tra07_05gsmDynamicStringTraceSt...

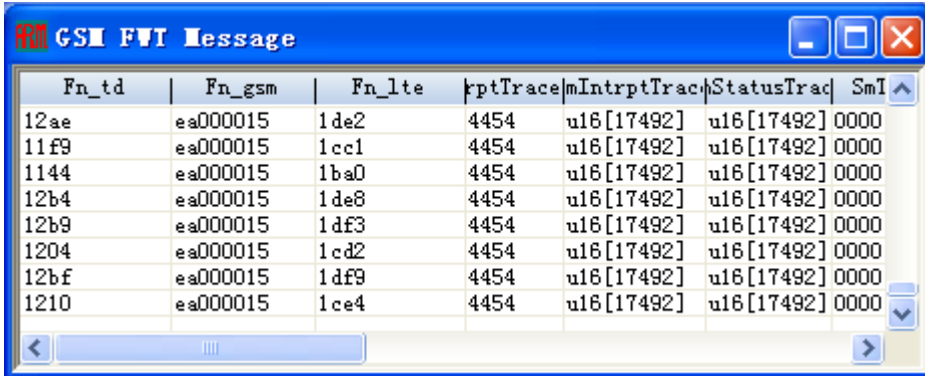
0-13 STR String window

STR message window also has a right-click menu, similar to the ALL message window.

de

6.5.10 FWT message display window

When the FWT data is received, the software will create the FWT message window dynamically. When the message window displayed in the tool, click the  icon to hide the window. When the message window is hidden, click the toolbar icon  to display the message window. The window displays as shown in figure 6-14.





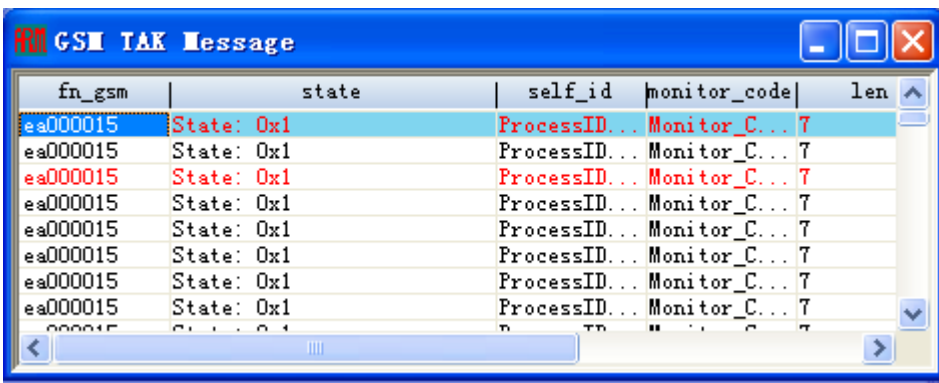
Fn_td	Fn_gsm	Fn_lte	kptTrace	mIntrptTrac	pStatusTrac	SmI
12ae	ea000015	1de2	4454	u16[17492]	u16[17492]	0000
11f9	ea000015	1cc1	4454	u16[17492]	u16[17492]	0000
1144	ea000015	1ba0	4454	u16[17492]	u16[17492]	0000
12b4	ea000015	1de8	4454	u16[17492]	u16[17492]	0000
12b9	ea000015	1df3	4454	u16[17492]	u16[17492]	0000
1204	ea000015	1cd2	4454	u16[17492]	u16[17492]	0000
12bf	ea000015	1df9	4454	u16[17492]	u16[17492]	0000
1210	ea000015	1ce4	4454	u16[17492]	u16[17492]	0000

0-14 FWT window

FWT message window also has a right-click menu, similar to the ALL message window.

6.5.11 TAK message display window

When the TAK class log data is received, the software will create the TAK message window dynamically, and when the message window displayed in the tool, click the  icon will hide the window. When the message window is hidden, click the toolbar icon  to display the message window. The window displays as shown in figure 6-15.





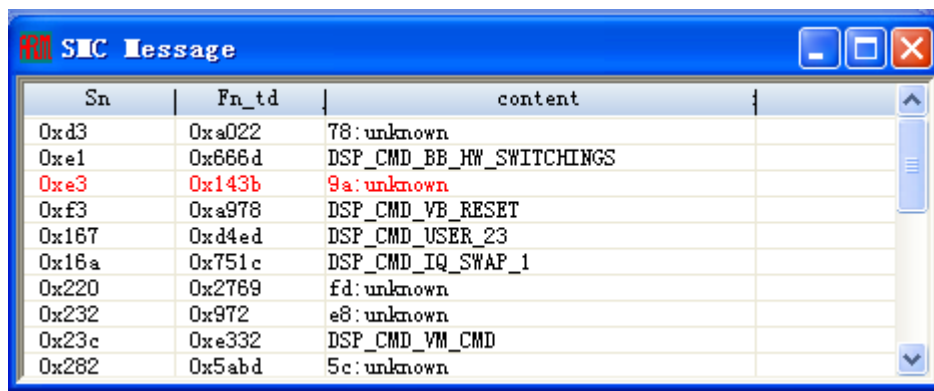
fn_gsm	state	self_id	monitor_code	len
ea000015	State: 0x1	ProcessID...	Monitor_C...	7
ea000015	State: 0x1	ProcessID...	Monitor_C...	7
ea000015	State: 0x1	ProcessID...	Monitor_C...	7
ea000015	State: 0x1	ProcessID...	Monitor_C...	7
ea000015	State: 0x1	ProcessID...	Monitor_C...	7
ea000015	State: 0x1	ProcessID...	Monitor_C...	7
ea000015	State: 0x1	ProcessID...	Monitor_C...	7
ea000015	State: 0x1	ProcessID...	Monitor_C...	7

0-15 GSM TAK Task window

TAK message window also has a right-click menu, similar to the ALL message window.

6.5.12 SMC message display window

When the SMC class log data is received, the software will create the SMC message window dynamically, and when the message window displayed in the tool, click the  icon will hide the window. When the message window is hidden, click the toolbar icon  to display the message window. Window display as:




Sn	Fn_td	content
0xd3	0xa022	78: unknown
0xe1	0x666d	DSP_CMD_BB_HW_SWITCHINGS
0xe3	0x143b	9a: unknown
0xf3	0xa978	DSP_CMD_VB_RESET
0x167	0xd4ed	DSP_CMD_USER_23
0x16a	0x751c	DSP_CMD_IQ_SWAP_1
0x220	0x2769	fd: unknown
0x232	0x972	e8: unknown
0x23c	0xe332	DSP_CMD_VM_CMD
0x282	0x5abd	5c: unknown

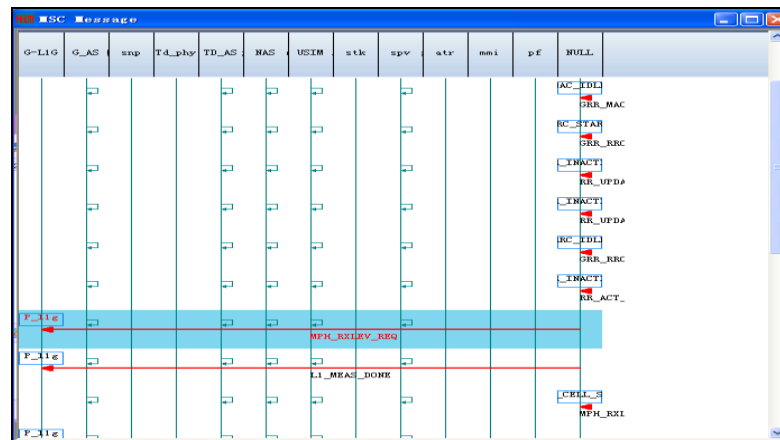
0-16 SMC Message window

SMC message window also has a right-click menu, similar to the ALL message window.

6.5.13 MSC message display window


When the MSC and IPC class log data are received, the software will create the MSC message window dynamically. When the message window displayed in the tool, click the  icon to hide the window. When the message window is hidden, click the toolbar icon to display the message window. The window displays as shown in figure 6-17.

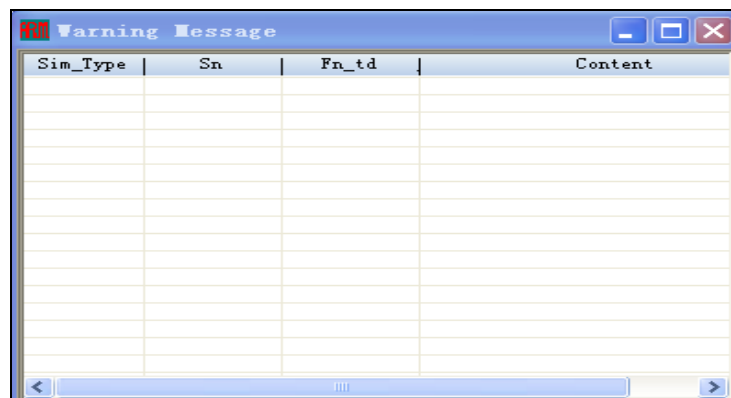
de



0-17 MSC window


6.5.14 WRN message display window

When the log data of the WRN class is received, the software will create the WRN message window dynamically. When the message window displayed in the tool, the  icon will hide the window. When the message window is hidden, click the toolbar icon to display the message window. The window displays as shown in figure 6-18.

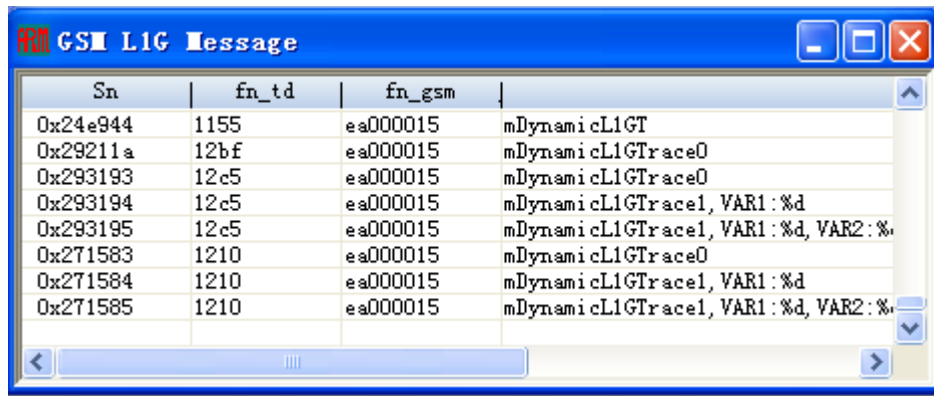


0-18 WRN Message window

6.5.15 L1G message display window

When the L1G class log data is received, the software will create the L1G message window dynamically. When the message window displayed in the tool, click the  icon to hide the window. When the message window is hidden, click the

toolbar icon to display the message window. The window displays as shown in figure 6-19.




Sn	fn_td	fn_gsm	
0x24e944	1155	ea000015	mDynamicL1GT
0x29211a	12bf	ea000015	mDynamicL1GTrace0
0x293193	12c5	ea000015	mDynamicL1GTrace0
0x293194	12c5	ea000015	mDynamicL1GTrace1, VAR1:%d
0x293195	12c5	ea000015	mDynamicL1GTrace1, VAR1:%d, VAR2:%d
0x271583	1210	ea000015	mDynamicL1GTrace0
0x271584	1210	ea000015	mDynamicL1GTrace1, VAR1:%d
0x271585	1210	ea000015	mDynamicL1GTrace1, VAR1:%d, VAR2:%d

0-19 GSM L1G window

L1G message window also has a right-click menu, similar to the ALL message window.

6.5.16 Display window of neighborhood information

When receiving the log data of measurement class in neighboring cell, the software will dynamically create the NC window of neighboring cell message. When the message window displayed in the tool, click the  icon to hide the window. When the message window is hidden, click the toolbar icon to display the message window. The window displays as shown in figure 6-20.

The neighborhood window consists of three parts, and the specific window interface is shown in figure 6-20.

In all measurement message windows, the same frequency in the last message are displayed in the same column. The first frequency of each message is shown in green. The frequency in a message which is not in the previous message is shown in gray.

de

frequency	cellPhysicalId	rsrpLevel	rsrqLevel	S	R	sinrLevel	Sn	Fn_wcdma	Fn_gsm	Fn_lte	Type	00	01	02	03	04
20	13	55	-1	31	-1	0	f52e	3d83ff	347	0x24fe	LTE	56	83	83	83	83
80	255	0	-1	255	255	0	f89d	3d906c	2bd7	0x27b4	LTE	55	0	0	0	0
90	255	0	-1	255	255	0	10785	3de688	2cfa	0x4f8	LTE	55	0	1	0	0
100	255	0	-1	255	255	0	10dfd	3e0834	2d5c	0x704	LTE	55	0	1	0	0
110	255	0	-1	255	255	0	11491	3e29e1	2dde	0x912	LTE	55	0	1	0	0
							11915	3e...	2e6f	0xbad	LTE	55	0	0	0	0
							12000	3e9084	2f3a	0xf58	LTE	55	0	2	0	0

0-20 Neighborhood measurement message window

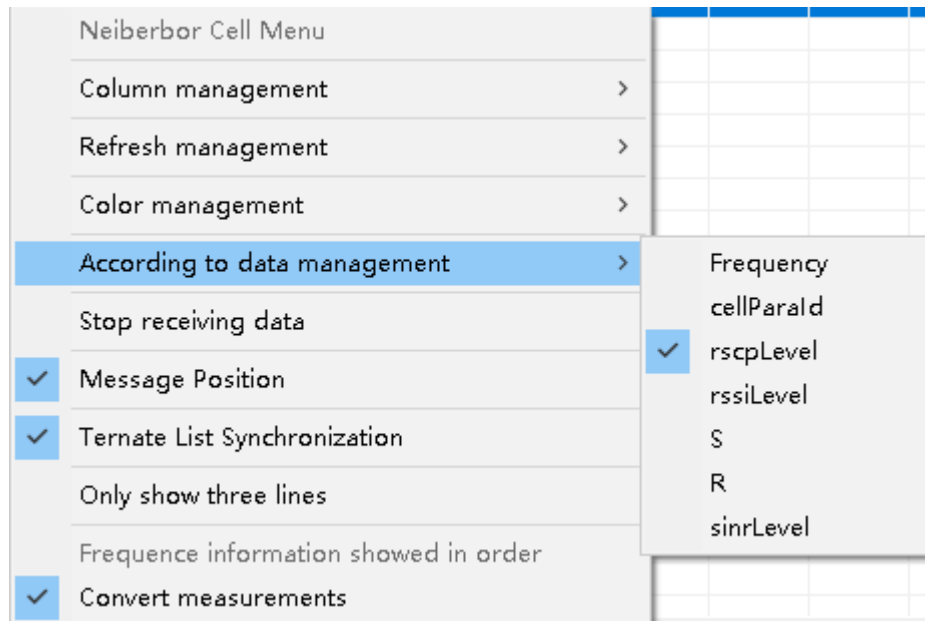
Top window: current measurement message display window.If you click on a measurement message in the middle window, the information of a measurement message is displayed.

Middle window: all measurement message display windows.Displays information of up to 40 frequency points, which is automatically overwritten from left to right after exceedin.

Bottom window: the full information display window of a measurement message.

In all measurement message windows, the same frequency points in the last message are displayed in the same column.The first frequency point of each message is shown in green.The frequency points in a message that are not in the previous message are shown in gray.

Right-click anywhere in all measurement information windows, and the right menu will pop up as shown in figure 6-21 , neighborhood Right-click menu.




0-21 neighborhood Right-click menu

The common control function of the right-click menu is basically the same. If user select 'Ternate List Synchronization', all three windows will roll at the same time when drag the slider. If it's not selected, only the top and middle windows will roll at the same time when drag the slider.

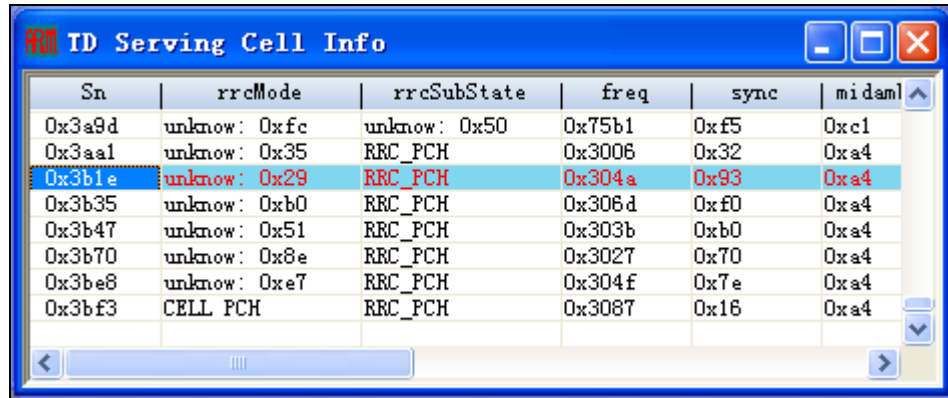
If 'Only show three lines' is selected, the current measuring message window displays only the top three rows of parameters. If it's not selected, all seven lines parameters will be displayed.

Which patameter to show in the measurement message display windows can be set through 'According to data management'. User can choose one of the measurement parameters including Frequency、cellParald、rscpLevel、rssiLevel、S、R、sinrLevel to display in the windows as needed.

6.5.17 SC message display window

When SC class log data is received, the software will create SC message window (service cell window) dynamically, and when the message window displayed in the tool, click the  icon will hide the window. When the message window is hidden, click the toolbar icon to display the message window. The window displays as shown in figure 6-22.

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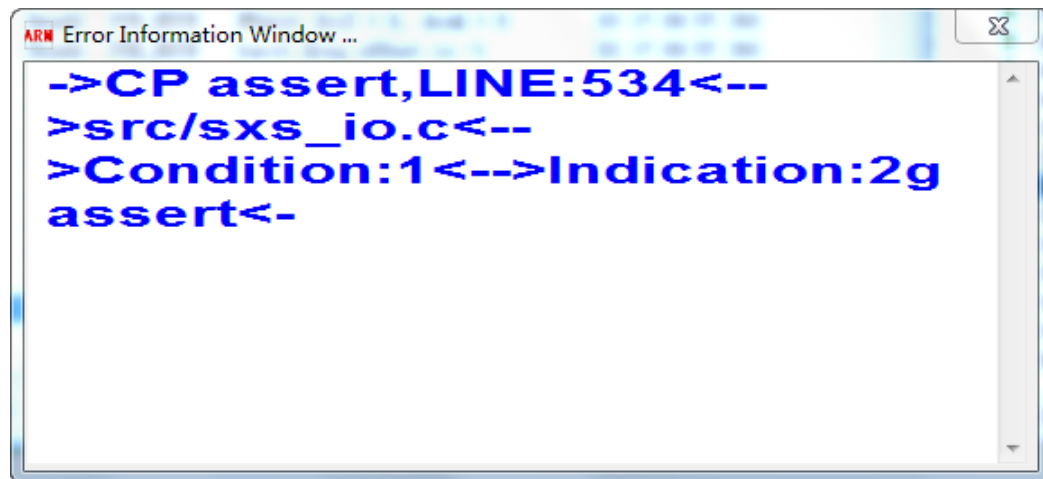
Sn	rrcMode	rrcSubState	freq	sync	midam1
0x3a9d	unknow: 0xfc	unknow: 0x50	0x75b1	0xf5	0xc1
0x3aa1	unknow: 0x35	RRC_PCH	0x3006	0x32	0xa4
0x3b1e	unknow: 0x29	RRC_PCH	0x304a	0x93	0xa4
0x3b35	unknow: 0xb0	RRC_PCH	0x306d	0xf0	0xa4
0x3b47	unknow: 0x51	RRC_PCH	0x303b	0xb0	0xa4
0x3b70	unknow: 0x8e	RRC_PCH	0x3027	0x70	0xa4
0x3be8	unknow: 0xe7	RRC_PCH	0x304f	0x7e	0xa4
0x3bf3	CELL_PCH	RRC_PCH	0x3087	0x16	0xa4

0-22 Service cell window

The SC message window also has a right-click menu, similar to ALL message window.

6.5.18 Error information window

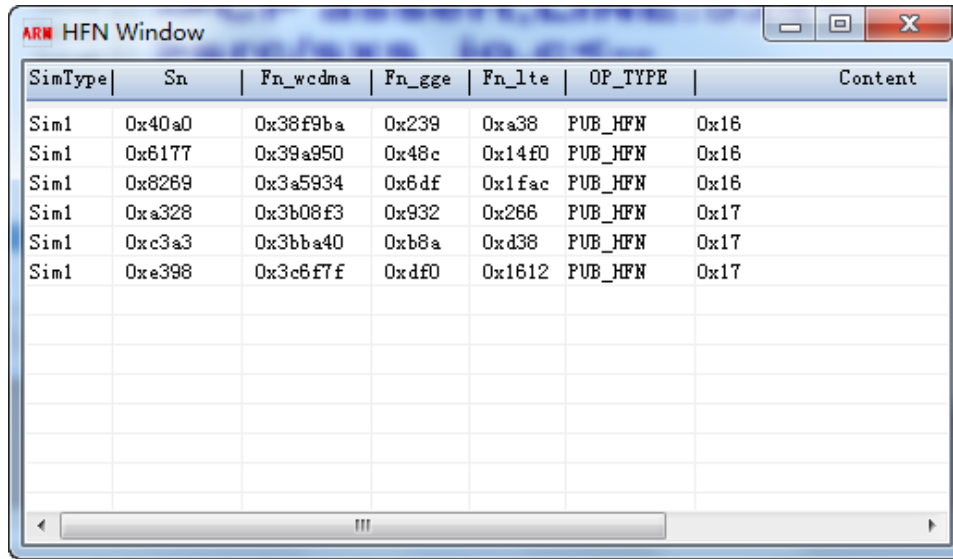
After receiving the assert class log information, the software automatically creates an Error window to display the assert information. As shown in figure 6-23.



0-23 Error information window

6.5.19 HFN Superframe window

When the software receives the log data of the hyperframe number, it will create the HFN window dynamically and display the hyperframe number. As shown in figure 6 – 24.

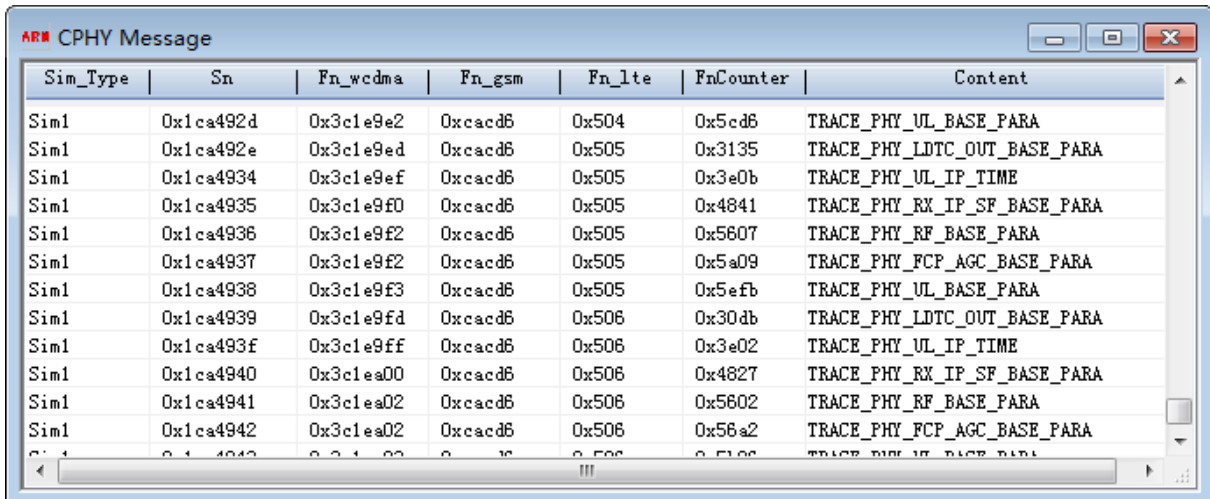


SimType	Sn	Fn_wcdma	Fn_gge	Fn_lte	OP_TYPE	Content
Sim1	0x40a0	0x38f9ba	0x239	0xa38	PUB_HFN	0x16
Sim1	0x6177	0x39a950	0x48c	0x14f0	PUB_HFN	0x16
Sim1	0x8269	0x3a5934	0x6df	0x1fac	PUB_HFN	0x16
Sim1	0xa328	0x3b08f3	0x932	0x266	PUB_HFN	0x17
Sim1	0xc3a3	0x3bba40	0xb8a	0xd38	PUB_HFN	0x17
Sim1	0xe398	0x3c6f7f	0xdf0	0x1612	PUB_HFN	0x17

0-24 Superframe window

6.5.20 PHY Message display window

The software receives the physical layer PHY class log data and sets up the PHY window dynamically. As shown in figure 6-25. Click a message to display the decoding of the message data structure in the Tree window.



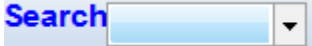
Sim_Type	Sn	Fn_wcdma	Fn_gsm	Fn_lte	FnCounter	Content
Sim1	0x1ca492d	0x3c1e9e2	0xcacd6	0x504	0x5cd6	TRACE_PHY_UL_BASE_PARA
Sim1	0x1ca492e	0x3c1e9ed	0xcacd6	0x505	0x3135	TRACE_PHY_LDTC_OUT_BASE_PARA
Sim1	0x1ca4934	0x3c1e9ef	0xcacd6	0x505	0x3e0b	TRACE_PHY_UL_IP_TIME
Sim1	0x1ca4935	0x3c1e9f0	0xcacd6	0x505	0x4841	TRACE_PHY_RX_IP_SF_BASE_PARA
Sim1	0x1ca4936	0x3c1e9f2	0xcacd6	0x505	0x5607	TRACE_PHY_RF_BASE_PARA
Sim1	0x1ca4937	0x3c1e9f2	0xcacd6	0x505	0x5a09	TRACE_PHY_FCP_AGC_BASE_PARA
Sim1	0x1ca4938	0x3c1e9f3	0xcacd6	0x505	0x5efb	TRACE_PHY_UL_BASE_PARA
Sim1	0x1ca4939	0x3c1e9fd	0xcacd6	0x506	0x30db	TRACE_PHY_LDTC_OUT_BASE_PARA
Sim1	0x1ca493f	0x3c1e9ff	0xcacd6	0x506	0x3e02	TRACE_PHY_UL_IP_TIME
Sim1	0x1ca4940	0x3c1ea00	0xcacd6	0x506	0x4827	TRACE_PHY_RX_IP_SF_BASE_PARA
Sim1	0x1ca4941	0x3c1ea02	0xcacd6	0x506	0x5602	TRACE_PHY_RF_BASE_PARA
Sim1	0x1ca4942	0x3c1ea02	0xcacd6	0x506	0x56a2	TRACE_PHY_FCP_AGC_BASE_PARA

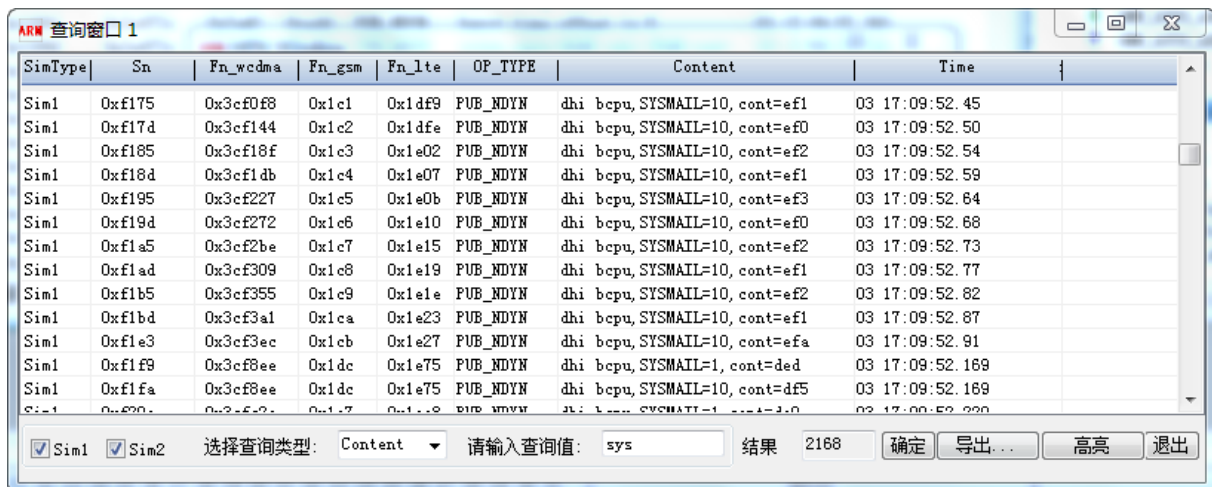
0-25 PHY Message display window

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6.6 Query window



6.6.1 Start the query window

Press **Ctrl+F** on **ALL** window to start query window 1 by default, or click the toolbar button  to select the query window (5 query windows can be chosen).As shown in figure 6-26.



0-26 Information query window

6.6.2 Query information input

Select the query type (default value is Content) from here , input the key word , press enter or click the 'OK' button to query the messages.

6.6.3 Query information export

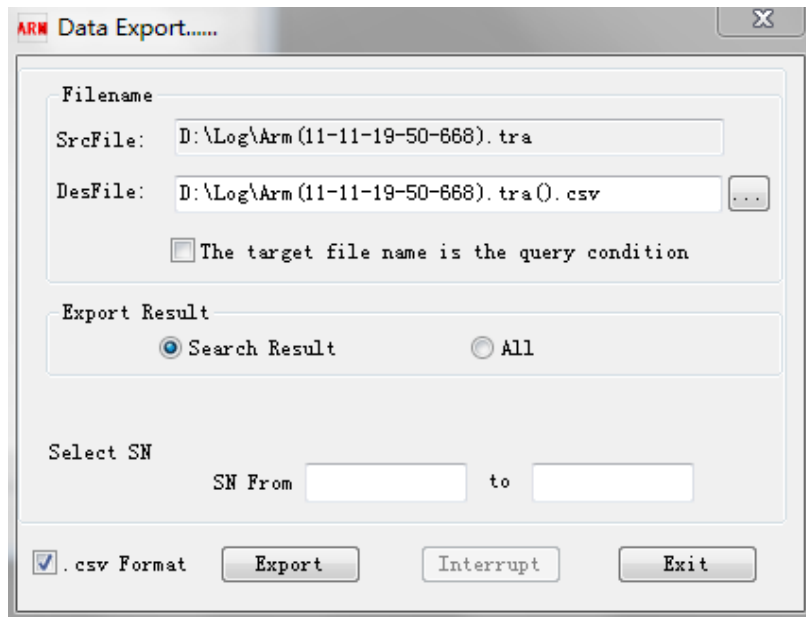
Click the  button in the query window and the export window will pop up as shown in figure 6-27. The query results are exported in Excel's.csv format.

Click ☐ The target file name is the query condition , the export file will be named by the key word;

Click ☒ All will export all displayed information of the current log file.


If not select ☒ .csv Format , the export file format is text.

If user input the SN range, the export file will contain the messages within the specified SN range only.



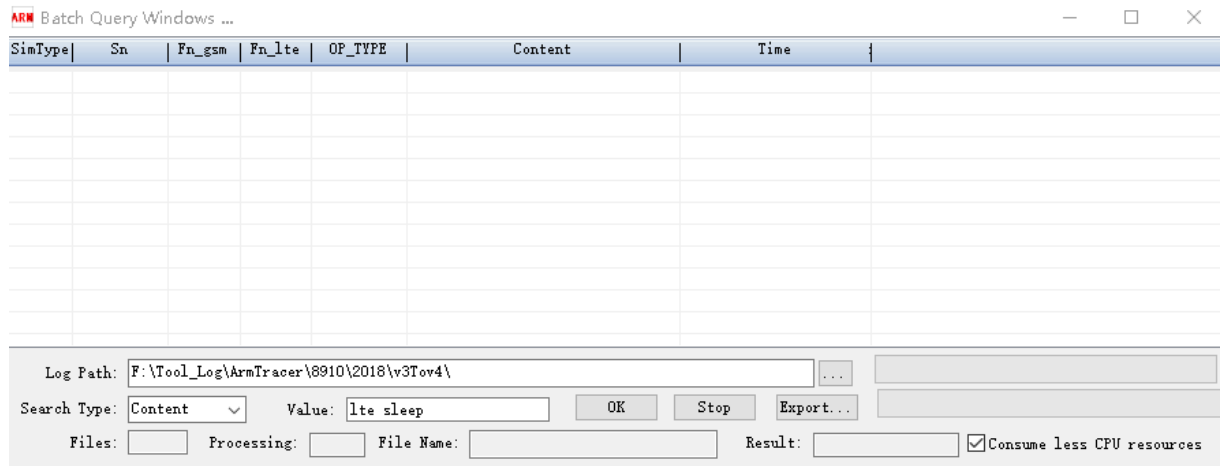
0-27 Query result export

6.7 Batch log query window introduction

Click the button  on the software toolbar to start the batch log query function, and the window as shown in figure 6-28 pops up. The window queries the specified information directly from a set of log files in the specified directory. The way to use is similar to chapter 6.6.


'Consume less CPU resource' is selected by default, if you want the query to be faster, please disable this option ☒ Consume less CPU resources.

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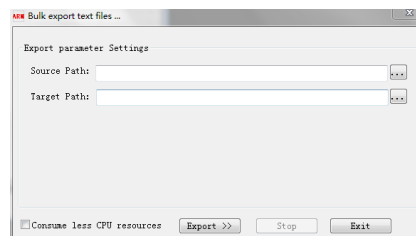


0-28 Batch log query window

6.8 Batch log export window introduction

Click the toolbar  button to start the batch export function. As shown in figure 6-29. This function converts all log files in the specified directory into text files.


Select the storage path of the source log file and the storage path of the exported text file, and click the export button to start the export.



0-29 Batch log file export

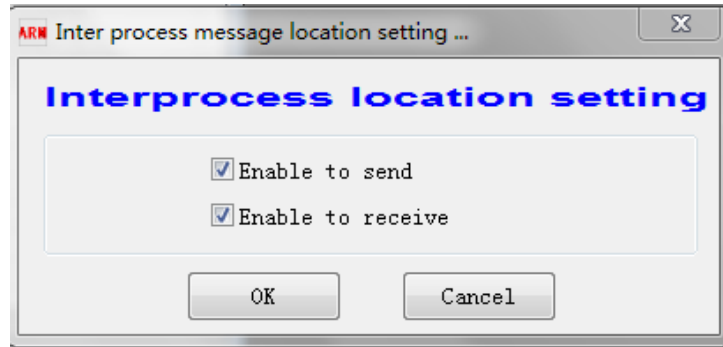
6.9 ArmTracer Interprocess message location capability

If two or more copies of the ArmTracer software are running, click a message in one ArmTracer will locate an adjacent SN message in another ArmTracer. If you don't need this feature, you can disable it.

Click the toolbar  button and the window as shown in figure 6-30 will pop up. Click OK after setting.

☒ Enable to send : Allows this ArmTracer to send location information to other ArmTracer.

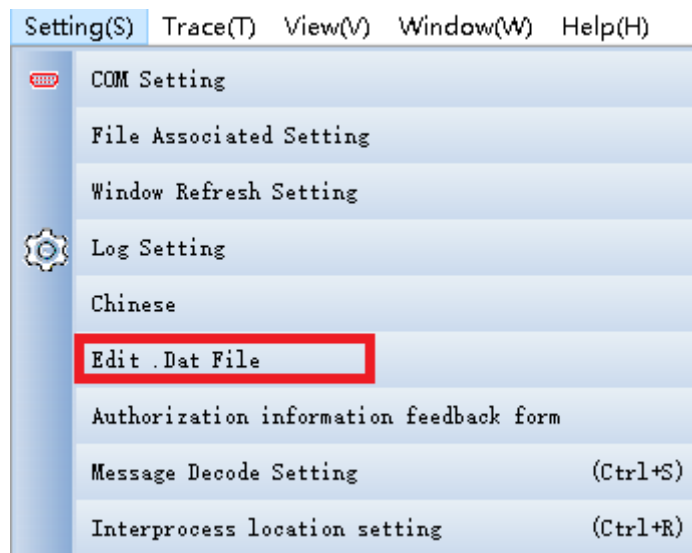
☒ Enable to receive : Allows this ArmTracer to receive location information for other ArmTracer.



0-30 ArmTracer Interprocess message localization Settings

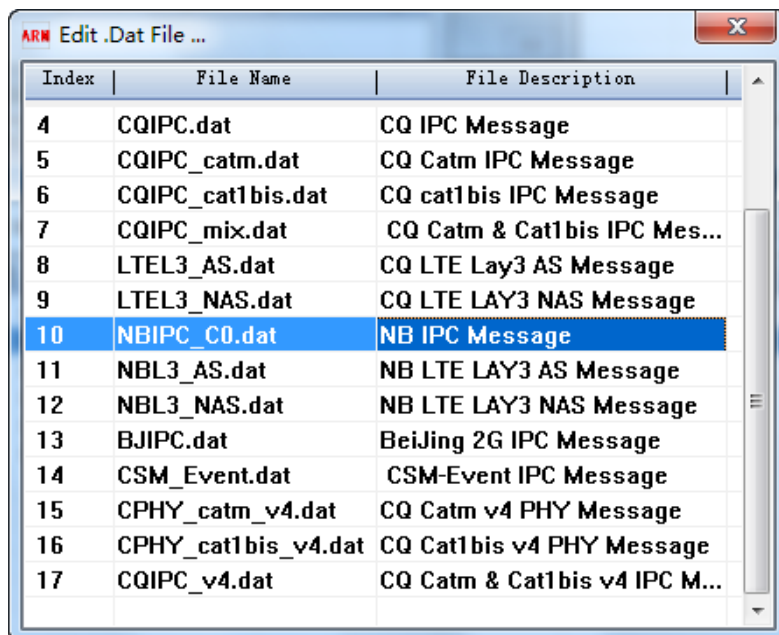
6.10 message decoding script editing

Click the edit DAT file function in the system menu, pop up the DAT file selection window. Double-click a file, the operating system's default text edit tool will open it. After editing the file, save it and restart the Armtracer.



0-31 Software system Settings menu

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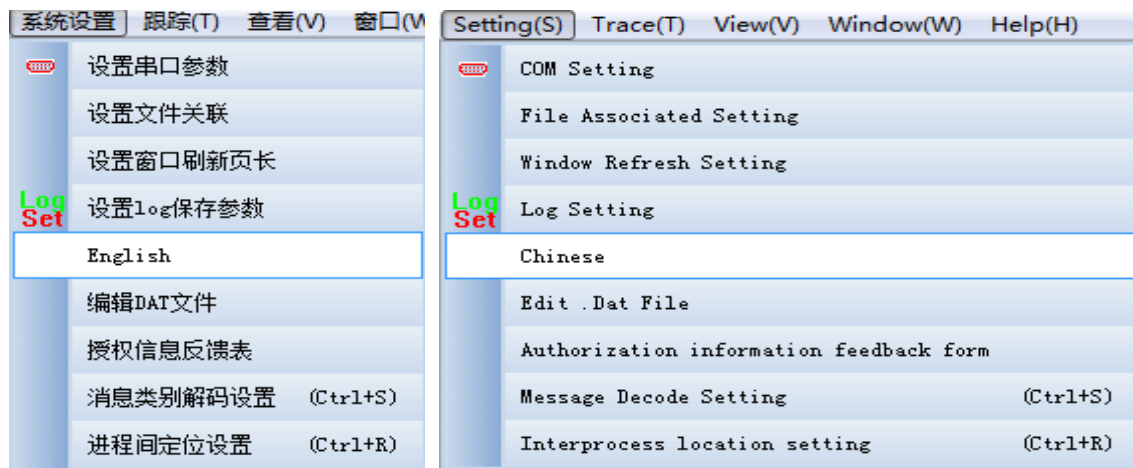


Index	File Name	File Description
4	CQIPC.dat	CQ IPC Message
5	CQIPC_catm.dat	CQ Catm IPC Message
6	CQIPC_cat1bis.dat	CQ cat1bis IPC Message
7	CQIPC_mix.dat	CQ Catm & Cat1bis IPC Mes...
8	LTEL3_AS.dat	CQ LTE Lay3 AS Message
9	LTEL3_NAS.dat	CQ LTE LAY3 NAS Message
10	NBIPC_C0.dat	NB IPC Message
11	NBL3_AS.dat	NB LTE LAY3 AS Message
12	NBL3_NAS.dat	NB LTE LAY3 NAS Message
13	BJIPC.dat	BeiJing 2G IPC Message
14	CSM_Event.dat	CSM-Event IPC Message
15	CPHY_catm_v4.dat	CQ Catm v4 PHY Message
16	CPHY_cat1bis_v4.dat	CQ Cat1bis v4 PHY Message
17	CQIPC_v4.dat	CQ Catm & Cat1bis v4 IPC M...

0-32 Message script list window

6.11 Language

The software only supports Chinese or English display. Click the English menu item under the system menu, and the software will switch to the English interface. Click the Chinese menu item under setting menu and switch to the Chinese interface.



0-33 Software system menu

Chapter 7 Appendix

7.1 Revision History

[illegible]

7.2 software description

The features of each software version may not be consistent with this guide. Some features have been modified, and some have not been described. The specific functions are related to the software version.