FIBOCOM QXDM Tool User Guide

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Applicability type

No.	Product model	Description

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Versions

Version	Update Date	Description
V1.0.0	2018-04-15	Initial version

Fibocom

Contents

QXDM User Guide

QXDM Introduction

The QXDM (QUALCOMM Extensible Diagnostic Monitor) released by Qualcomm is an effective tool that can be used to track data sent from mobile devices. Through the analysis of data, it can diagnose the signaling process and analyze the correctness of data packets. It plays an important role in the test. Correct and reasonable use can provide convenient means for our test. The following will briefly introduce its use.
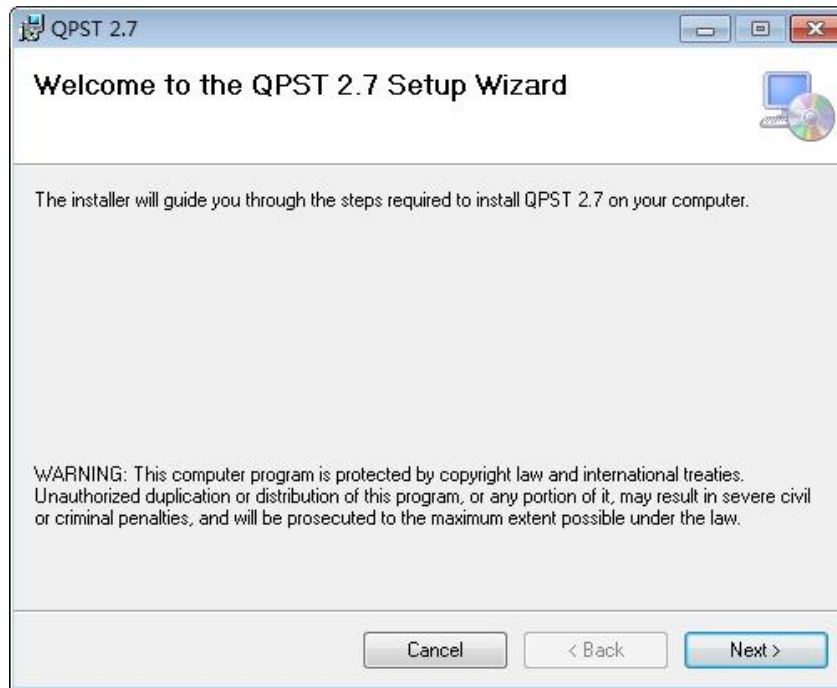
It is recommended that QPST be installed before QXDM so that it will be more convenient to start them at the same time.

1. Install QPST

1) Decompress the QPST installation package, and double-click setup.exe in the root directory to run the installation file.
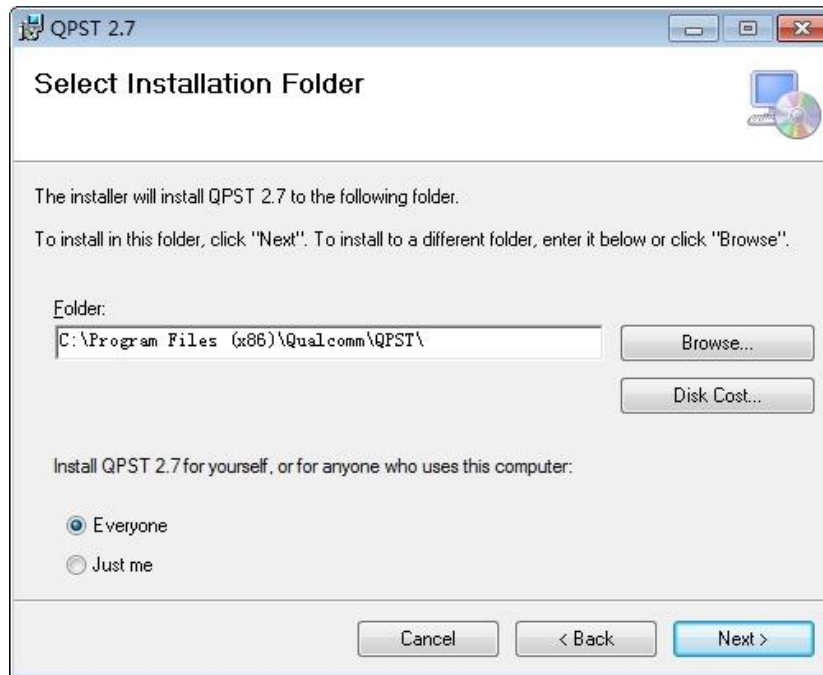

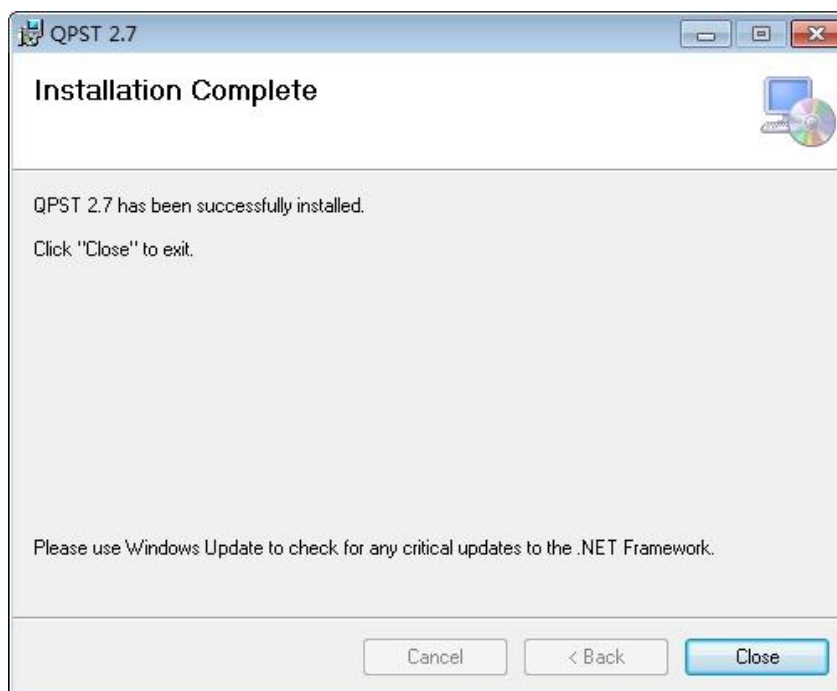2) After Step 1 is completed, the QPST installation interface will pop up:

![Fibocom logo]

3) Click Next, and select "I agree" to proceed.

4) Select the installation path.

![Fibocom logo]

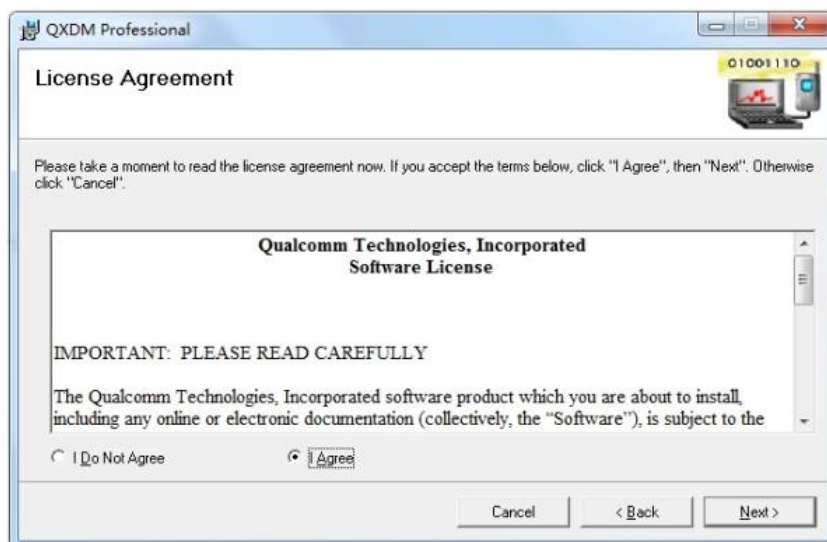5) Confirm the installation again until the completion of the installation, and click "CLOSE".
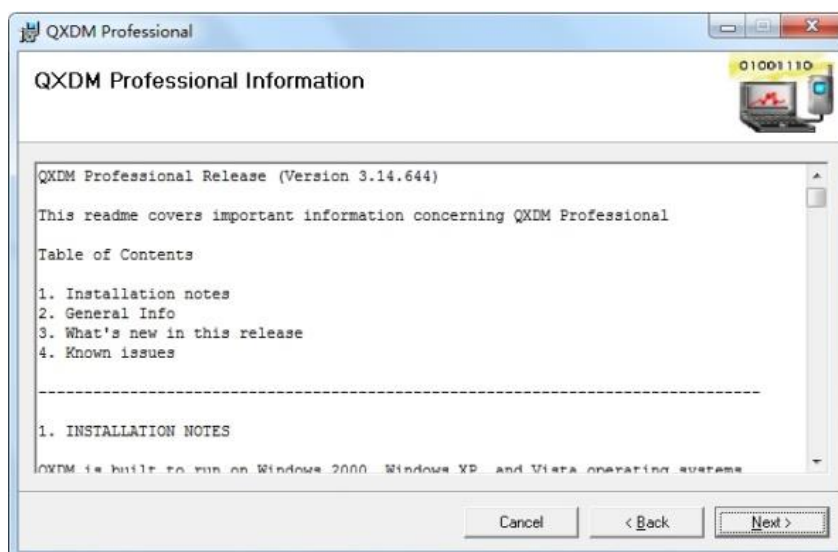

2. Install QXDM

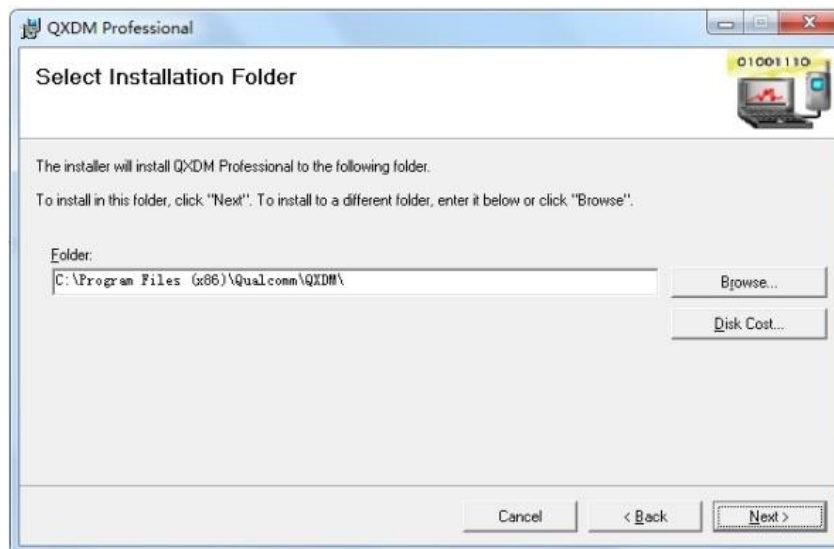1) Choose the XP system or WIN7 system according to needs, and double-click setup.exe.

![Fibocom logo]

2) Click Next, and choose "I agree" to authorize.

3) Confirm the QXDM information, and click "Next".

![Fibocom]

4) Confirm the installation path, and wait for the installation to complete.

3. Register QXDM

1) From the "Start" menu select "All Programs"→ "QXDM Professional"→ "QXDM Professional" to run QXDM

2) In the registration dialog box, enter the correct user name, password and Admin Key for remote support and activation. For specific activation questions, please contact the module vendor.
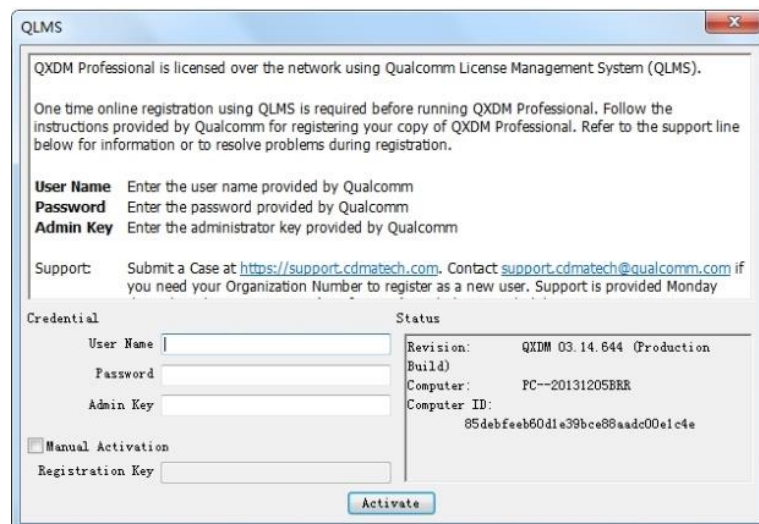
3) Click ACTIVE, and after the registration is successful, you will automatically enter the QXDM interface.

![Fibocom logo]
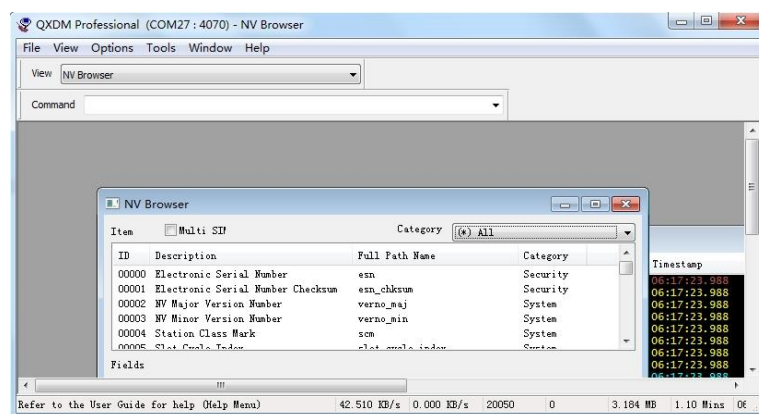
4. Physical Connection

QXDM uses QPST Server (Section 3.3.1.1) to connect to a PC's COM port through a USB extension cable or serial port, as shown in Figure 1-1.
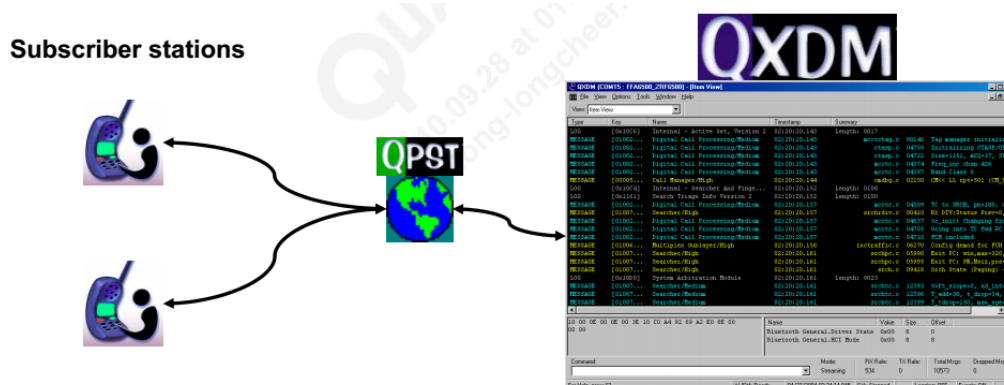

Figure 1-1 Physical Connection

5. Step by Step Learn Common Functions of QXDM

5.1 How to connect QXDM and mobile phone correctly?

In Figure 1-1, we can clearly see that QXDM manages the port connections collectively and realizes the

![Fibocom logo]

interactive function between the mobile device and PC's user graphical interface QPST software.

After we connect the mobile phone to the computer via the USB extension cable, if the USB driver of the mobile device has been correctly installed, the following menu should be visible in "My Computer (Right click)->Administration->Device Manager": from Figure 3-1 we can see that the COM port number used by the device is: COM16 port (diag port).
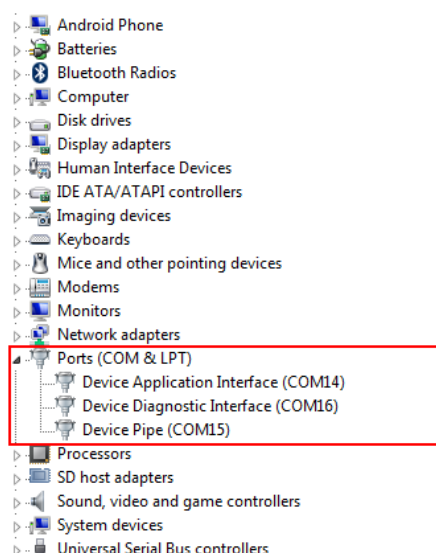

Figure 5-1 COM Port Used by UE

Figure 5-2 QPST configuration globe

In the system tray of the taskbar, we can see a blue-green icon resembling Earth, which is QPST. Double-click the QPST icon as shown in Figure 3-2. The interface shown in Figure 3-3 will pop up:
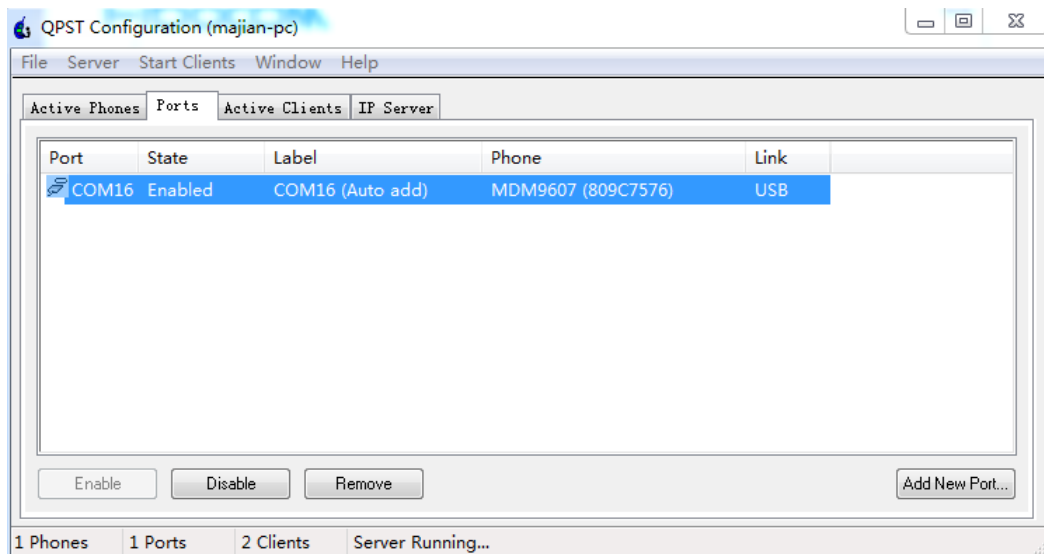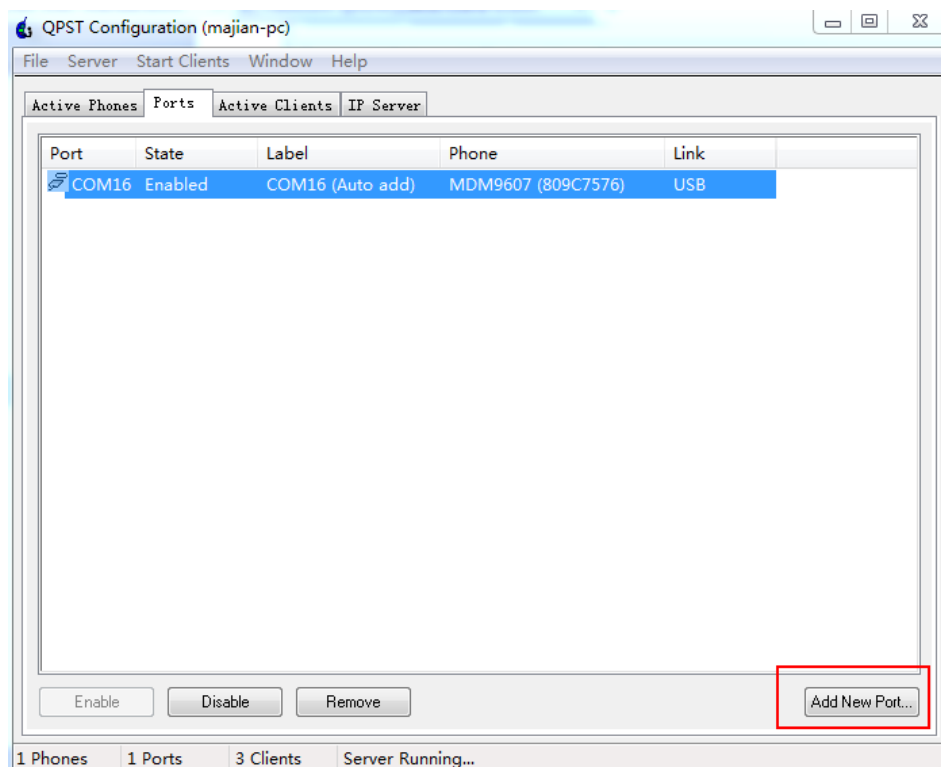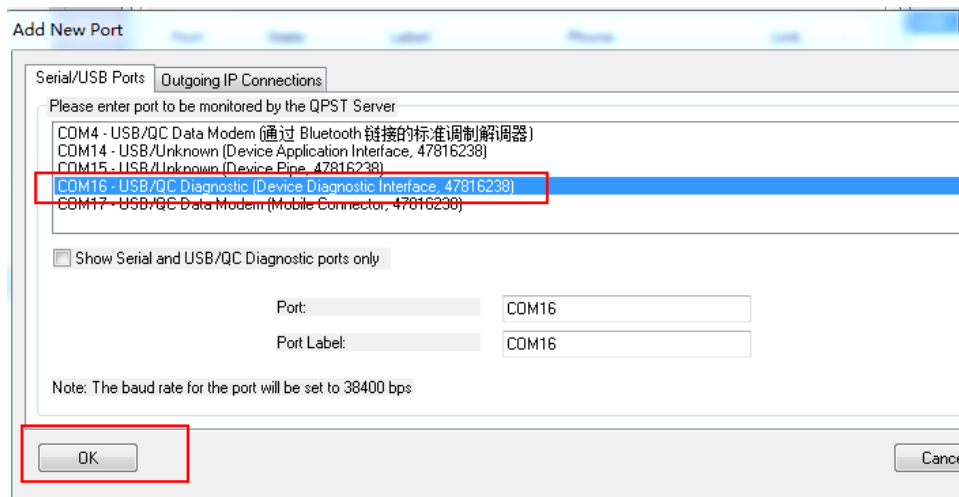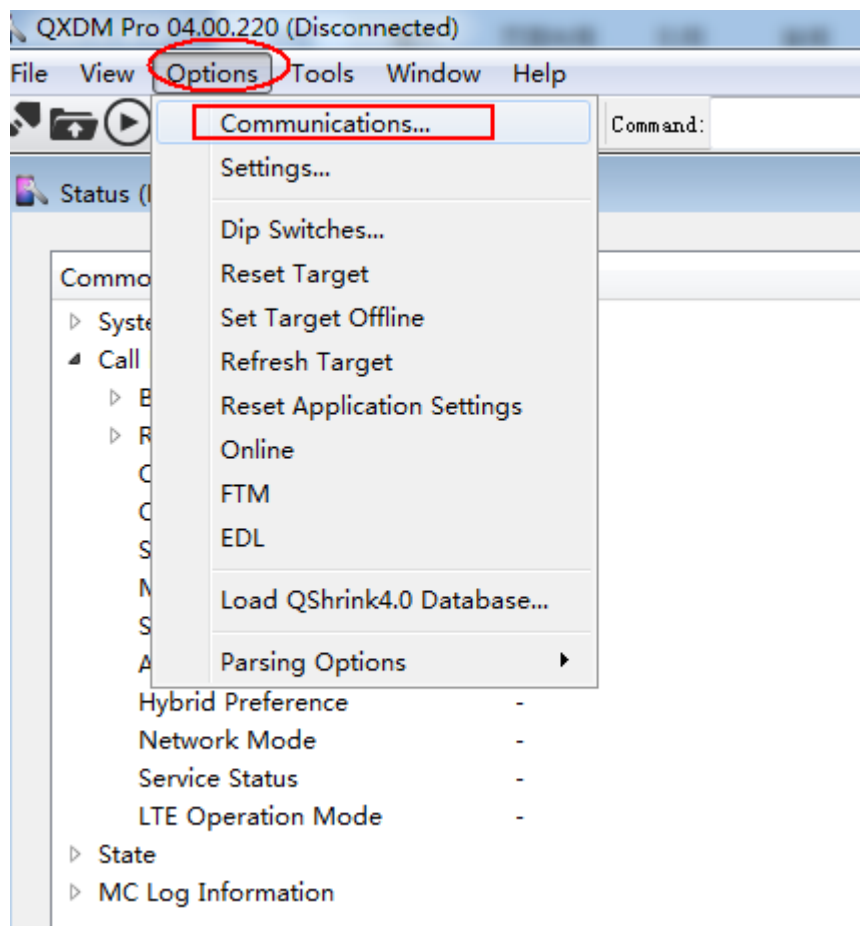
Figure 5-3 QPST Port Loading

We don't see the COM16 port that we need. Just click "Add New Port..." to add a new port. Click the "Options" → "Communications..." dialog menu, then select "COM16" and click "OK".

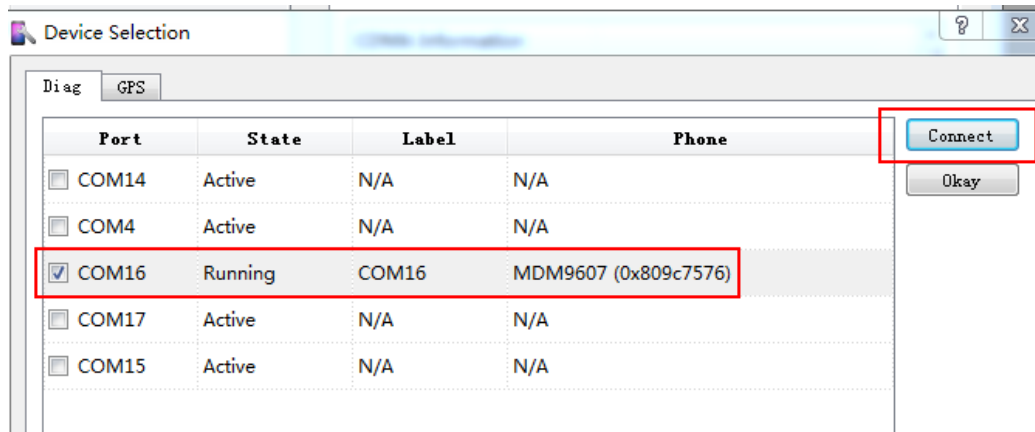Set the COM port used by the QXDM to connect the UE.

Figure 5-4 Options → Communications-->com16--->connect

5.2 How to load the configuration file?

We know that the amount of information captured by QXDM traces is large, but there is a lot of unwanted information and we need to filter it. However, the settings in the QXDM are complicated. If you need to reset the settings before each tracking, it will take a lot of time and effort. So, we import the R&D specified configuration file or the configuration file specified by Qualcomm.

Load the setup file, and use this menu to load the original saved setup file directly to eliminate the need for repeated setup (.DMC extension).
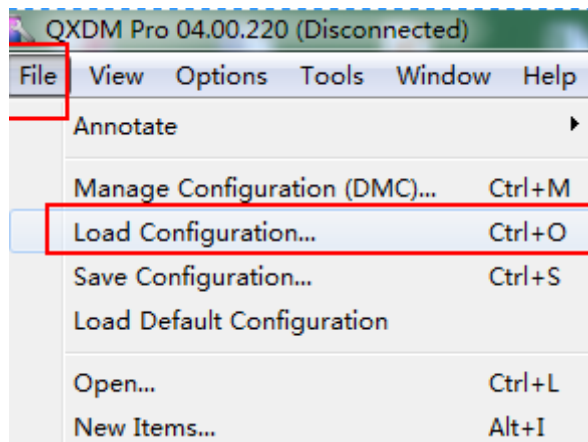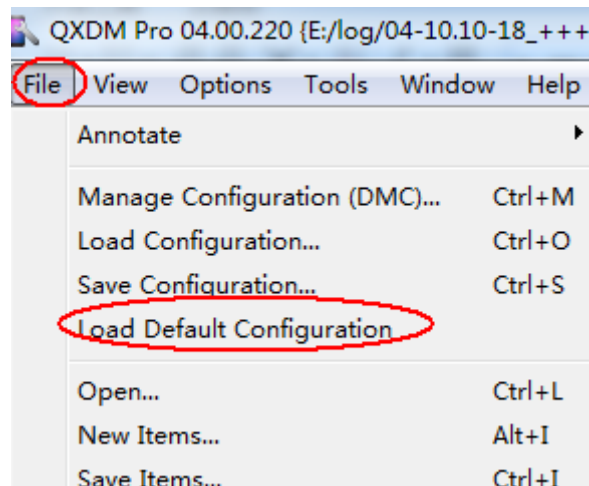

Select the specified .dmc file and you can use it directly.

Or use another method. Double-click on the specified .dmc file. After it is opened, use communication to use it.

File → load Default Configuration

In general use, if R&D or Qualcomm does not make explicit requirement, please use the configuration file as follows: file--->load Default Configuration
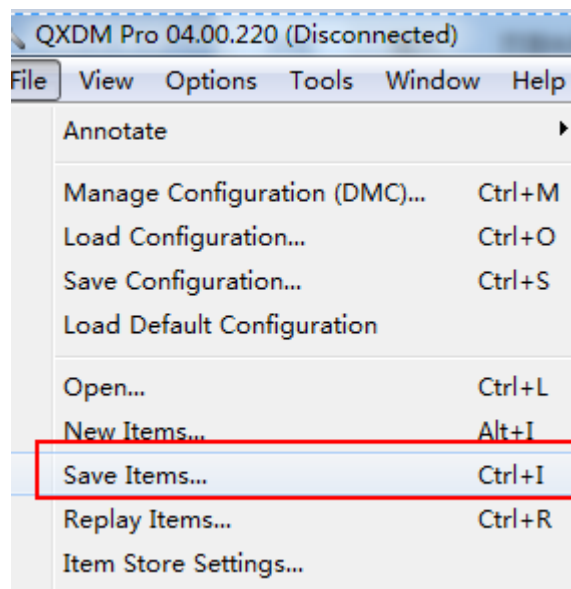
5.3 How to save a log?

When you have captured a lot of data, and want to save the log and capture again, you can use the shortcut (ctrl + I) to select the save directory.
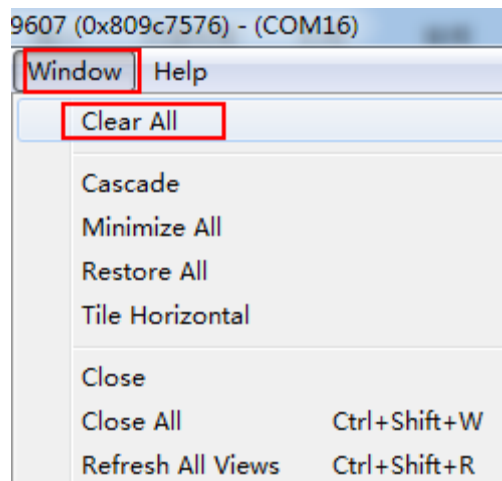
File →Save Items...

Save the trace data default directory (C:\Documents and Settings\All Users \Documents \Qualcomm \QXDM\ISF .)(ctrl+I).

5.4 How to clear log?

When you have captured a lot of data, and want to capture again without saving the existing log, you can

use window--->Clear all to clear unnecessary log.

5.5 How to perform signaling message tracking?

Right click on the list item will pop up the following menu (as shown in Figure 3-11). Then use the "Refilter Items..." menu to filter.
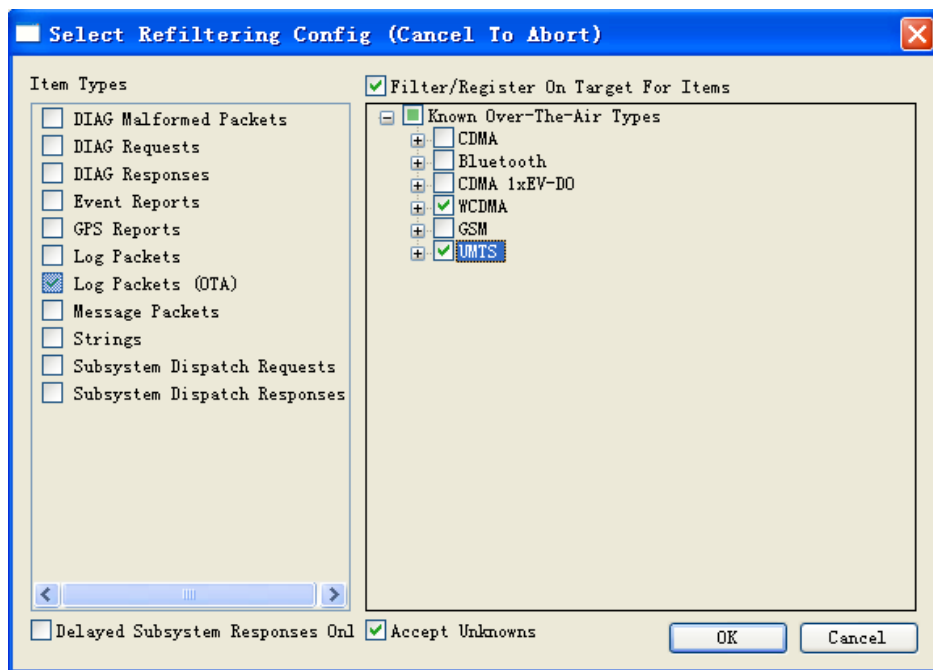

Figure 3-1 Common signaling message tracking

Select Log Packets (OTA) and then select all signaling of WCDMA and UMTS in the right panel. After this setting, we can see the whole process signaling of established call in the newly opened filter(3) window, as shown in Figure 3-13. There are two panels, and the contents of the currently selected message are

displayed in the second panel. Through the tracking and analysis of signaling messages, it is easier to
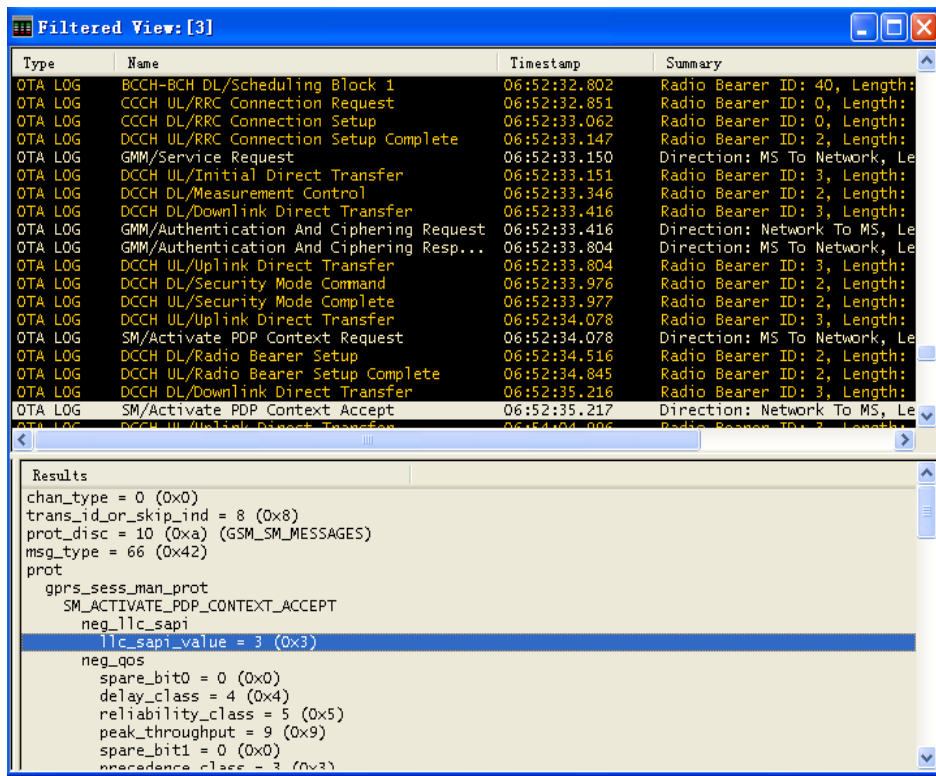
locate problems.

Figure 3-2 Common signaling message tracking

5.6 How to use the nv browser to reconfigure the mobile phone?

For Qualcomm's terminals, it is often necessary to switch a function or rewrite NV item by rewriting the contents of the non-volatile memory.

Select an item, and click "read" to read the current content, then double-click the corresponding value in

the Input column, write the contents after the edit box appears, and then click Write.
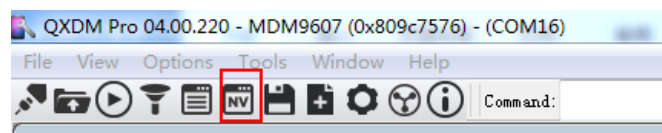
The following is the NV read process. Pay attention to success of read, the lower left corner will show read, otherwise it will prompt NV bad or NV inactive
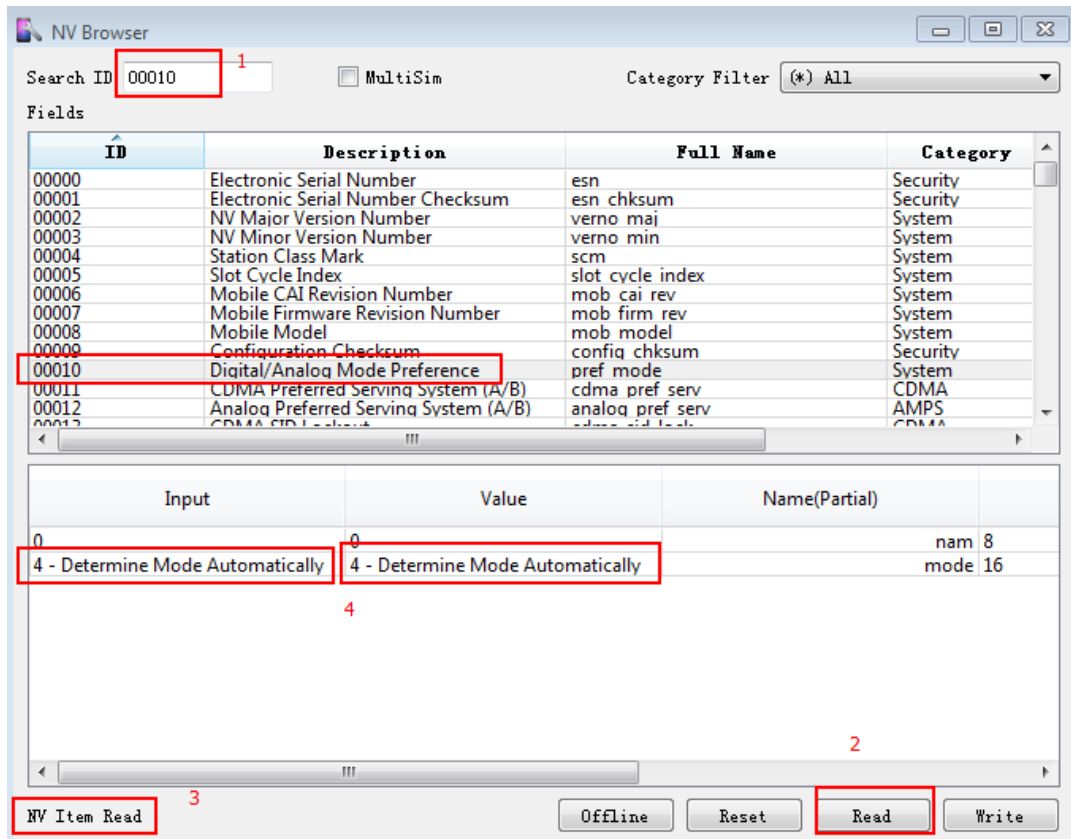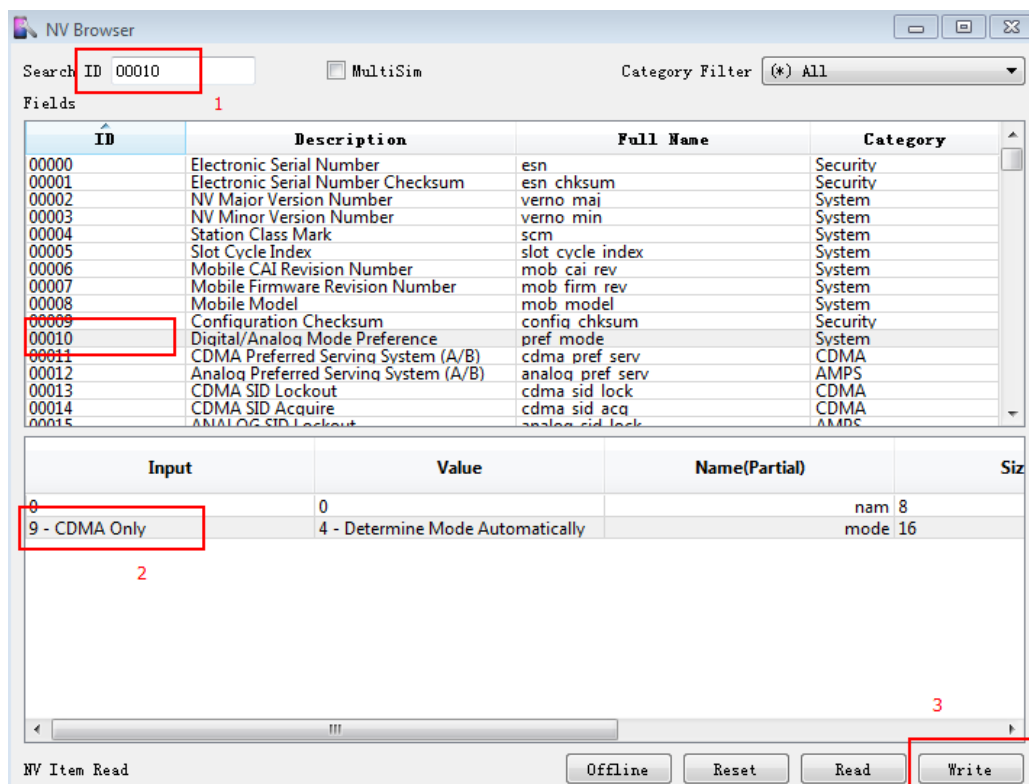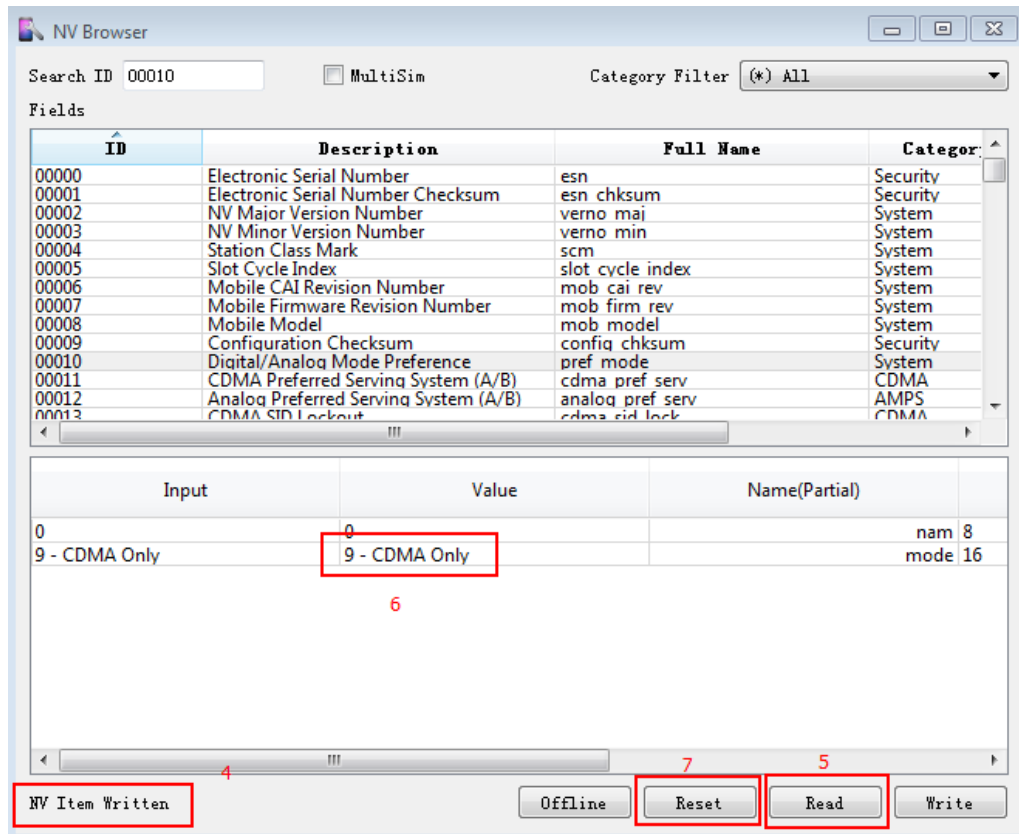
Figure nv read operation

nv_read_item 4173   // Read nv item 4173

nv_write_item 4173 0x00   // Write nv item value 4173 to 0

Offline

Make the phone in offline mode before writing NV items.

Reset

Restart the phone after writing NV item

Read

Read the contents of the corresponding NV item.

Write

Write the value to the phone's corresponding NV item.

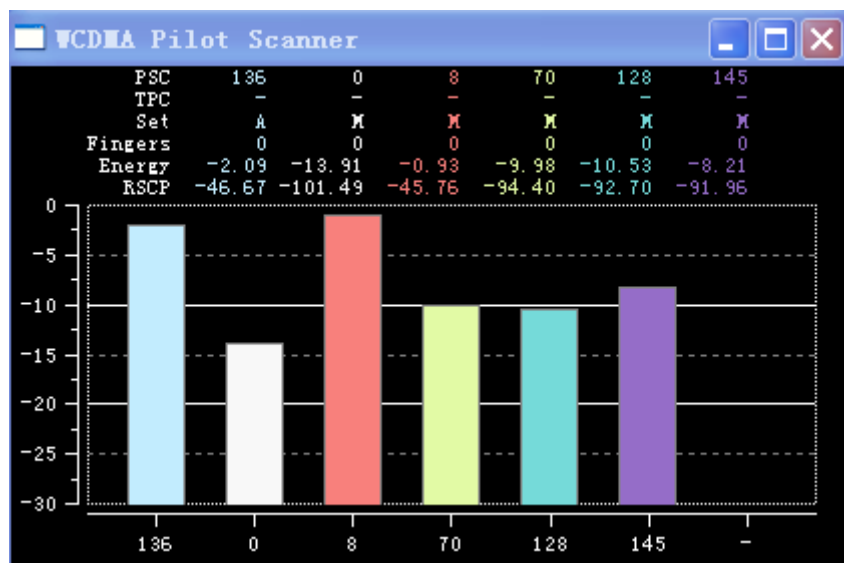## 5.7 How to observe the current search status?

Figure 3-3 WCDMA Pilot Scanner

In the view bar, we can find the WCDMA Pilot Scanner. Figure 3-16 shows the signal strengths and other parameters of different cells at the moment of the phone startup and scanning the network. Then the phone will select the most suitable cell according to rules, as shown in Figure 3-17.

It can also be accessed via the following menu:
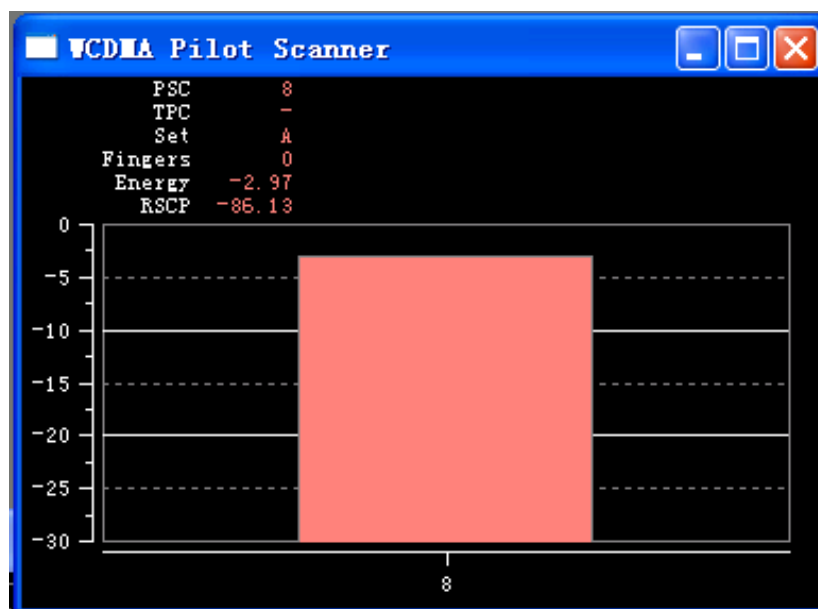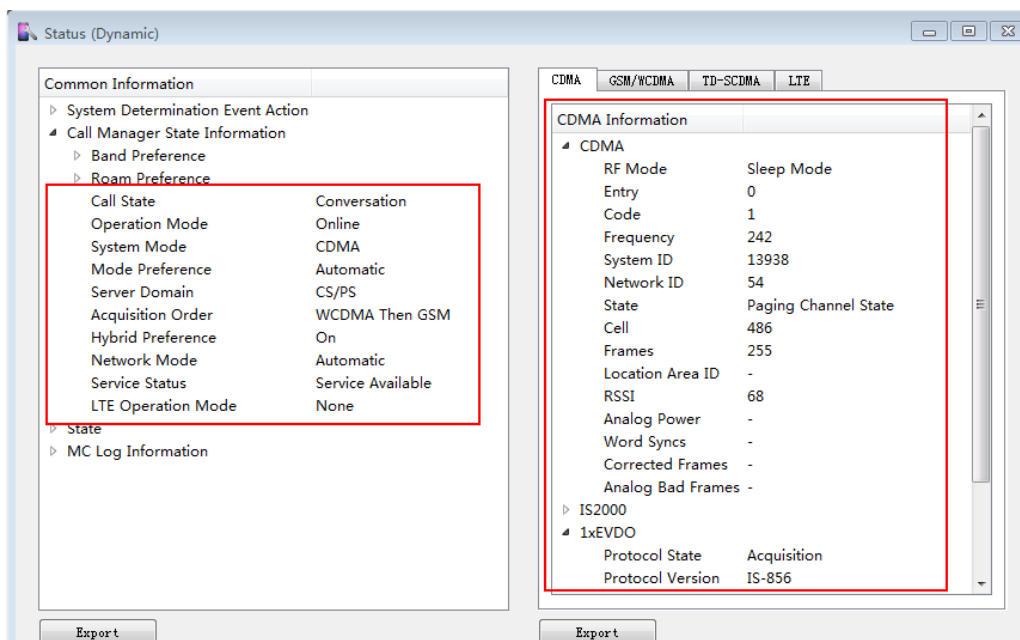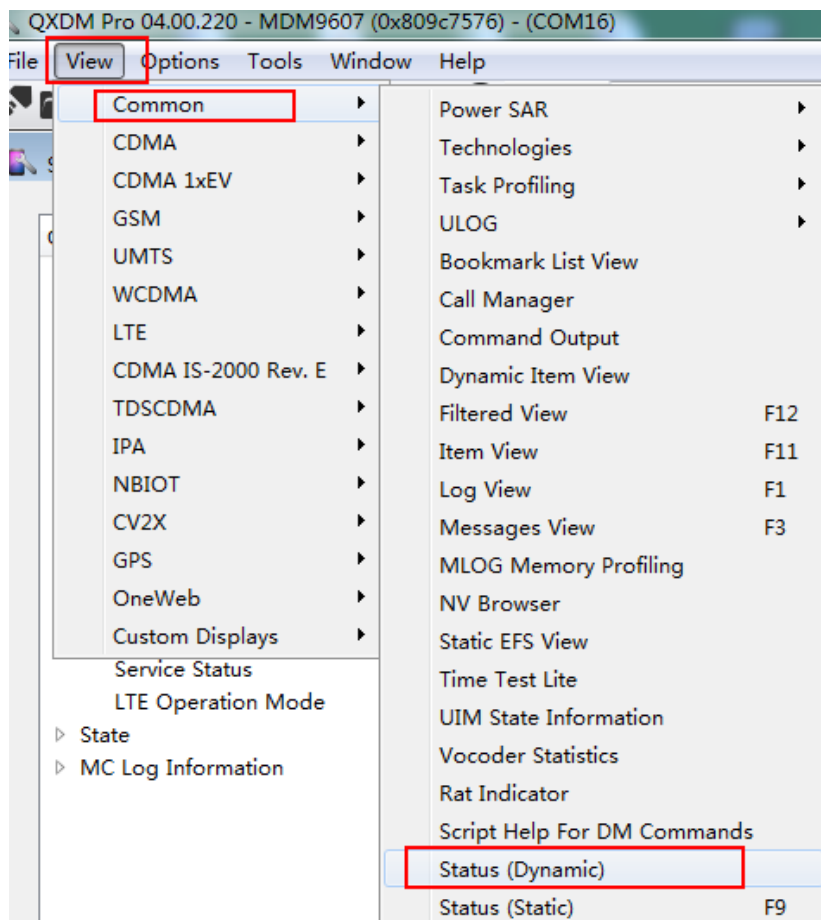
   View->new->WCDMA-> WCDMA Pilot Scanner

Figure 3-4 Mobile phone resided cell

To view the current registered network status, view it in view-->common--->status(dynamic). System mode displays the current network system, and call state displays the current session status. Service state displays the current service status.

5.8 How to view the current transceiver power

In the view bar, we can find the WCDMA Power option, where we can monitor the current transceiver power in real time.
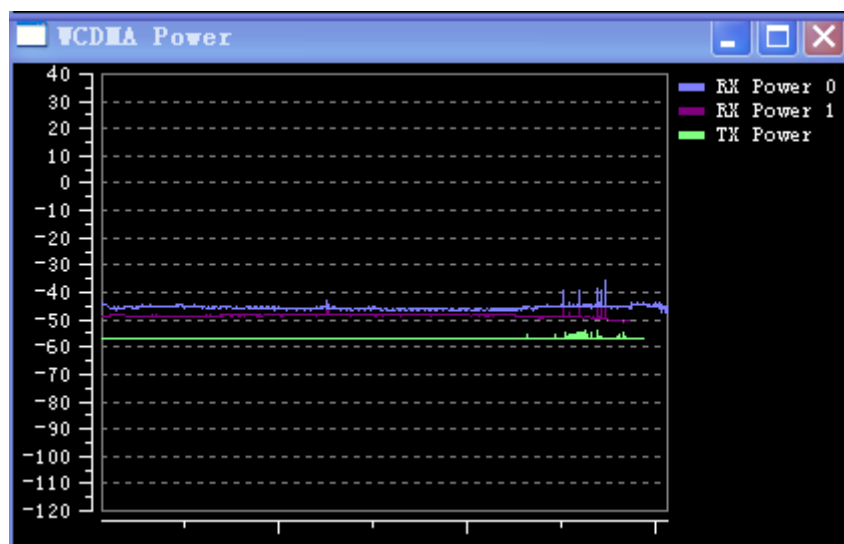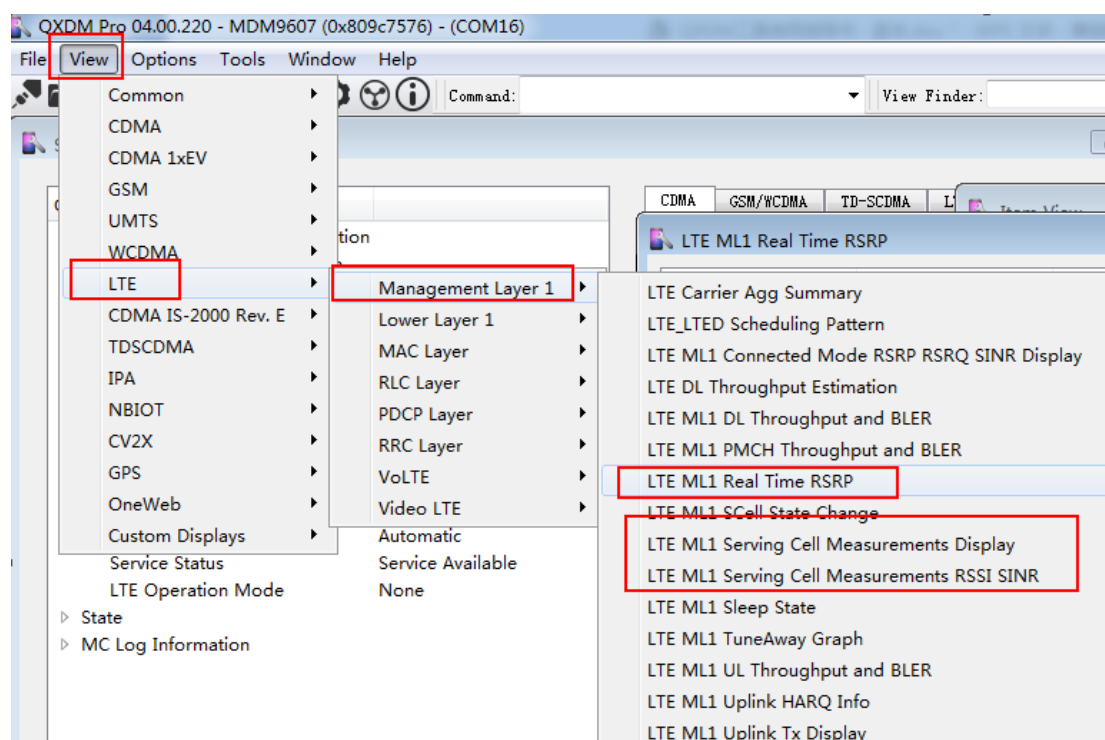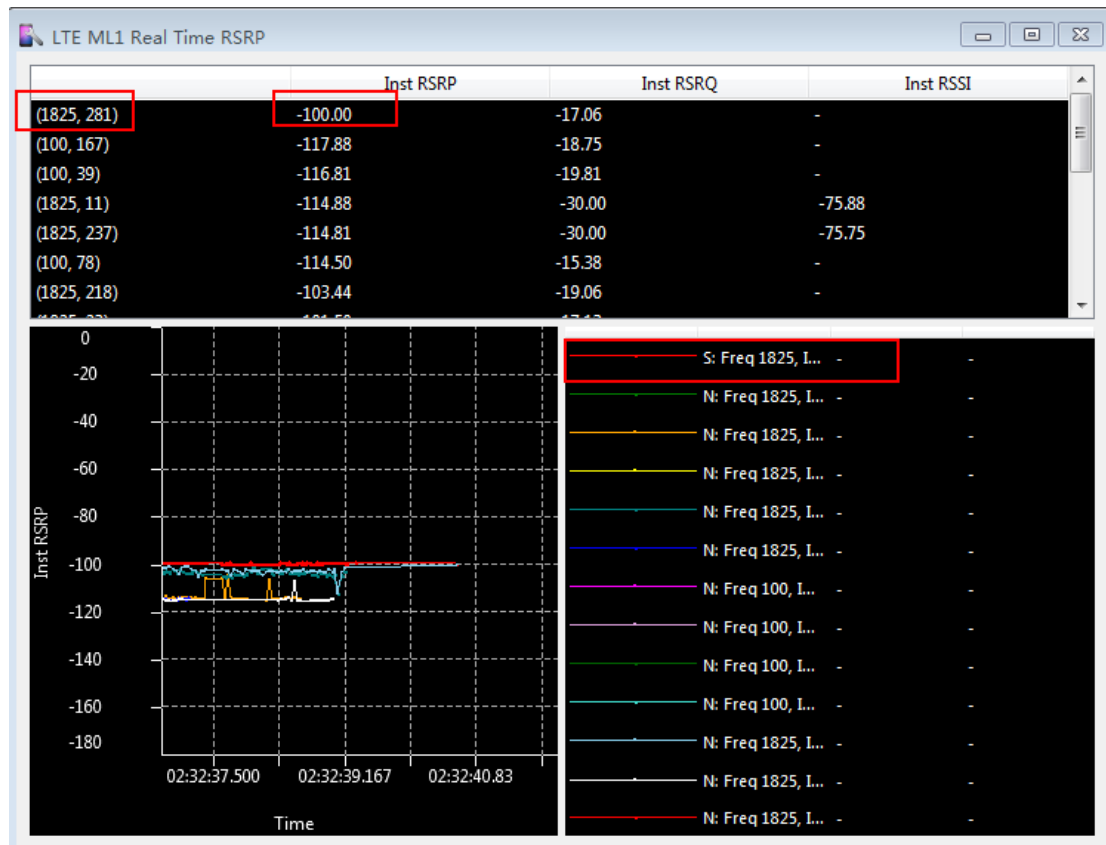

Figure 3-5 Wcdma Power

View->new->WCDMA-> WCDMA Power

The strength of the power signal under LTE can be viewed from view--->LTE--->management Layers---->real Time RSRP. The first cell information (1825,281) is the current registered cell and the signal strength is RSRP -100

5.9 How to observe the current network status of the terminal?

In the view bar, we can find WCDMA RRC Status, where you can see the current uplink and downlink frequency number, RRC status, cell ID, URa ID, cell status (barred or not, reserved or not), and whether the UE resides in a certain cell, as shown in Figure 3-19.

Figure 3-6 WCDMA RRC Status

View->WCDMA-> WCDMA RRC Status

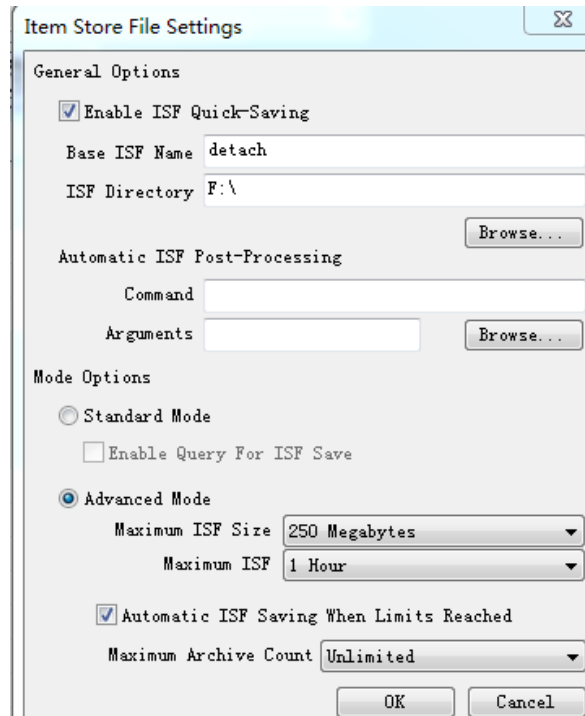LTE is in view--->LTE--->RRC Layers---->LTE RRC Status Screen

You can see the current band information, PLMN information, and earfcn information.

6. QXDM LOG Automatic Save

When it takes a long time to capture the LOG, the QXDM tool has a function to automatically save the LOG.

Refer to the figure below
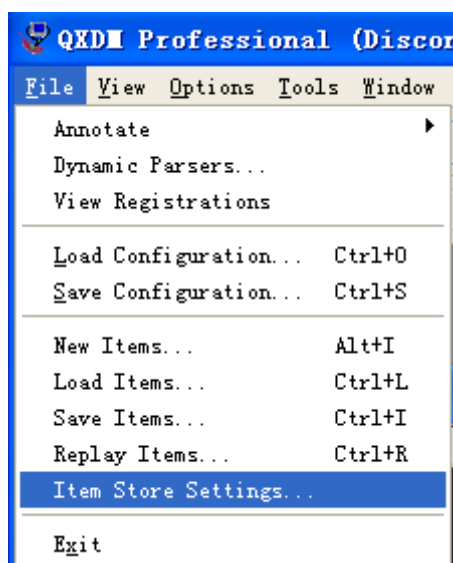
Automatically save LOG to F: In the root directory, the file name is automatically added with "detach". At the same time, the size of each LOG is 250M, and the maximum duration of each LOG is 1 hour.