QNavigator User Guide

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About the Document

History

Revision	Date	Author	Description
1.0	2012-01-08	Clare Chen	Initial
1.1	2013-08-01	Karen REN/ Yolanda YAO/ Harvey HE	1. Added the QuecLocator test function. 2. Updated Figures and their corresponding description. 3. Added QNavigator installation's user guide.
1.2	2014-01-07	Lucky DOU/ Dishon ZHOU	Added the UMTS/HSPA function.
1.3	2015-03-27	Hunter LV	Updated QNavigator Version to 1.4

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1 Introduction

This user guide provides a guidance of using the QNavigator tool step-by-step.

QNavigator tool is only used to test Quectel modules. By using this tool, you can be familiar with the working process of main functions like Call, SMS, TCP/UDP, PPP and QuceLocator even when you do not know any AT commands. It will show you the details of how each function works. Referenced documents can be found in the ***Help*** menu of the Toolbar.

This document is applicable to all GSM and UMTS modules.

1.1. Supported OS

The tool can work with the OS of PC as follows:

- Windows XP
- Windows 7
- Windows 8
- Windows Vista

If the tool is installed on windows 7 or Vista, please first set the ***Compatibility*** and then click ***Run this program as an administrator*** before using it. The detailed procedure is shown as below:

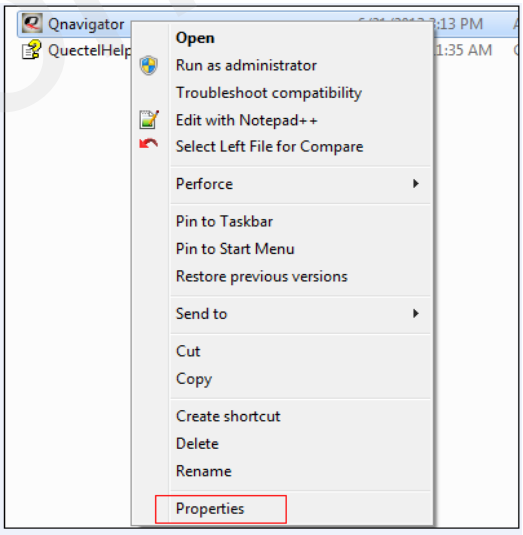

Figure 1: Select the Properties

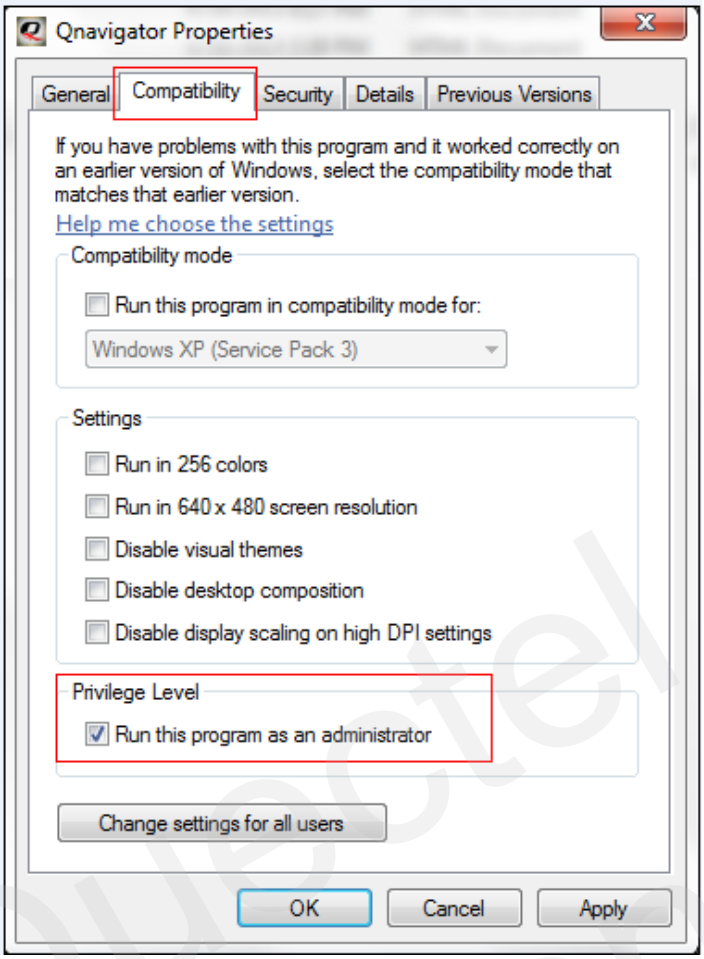

Figure 2: Run This Program as an Administrator

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2 Software Interface

2.1. User Guidance

If it is the first time to use this software, the user guidance would pop up as below. You can also click ***ESC*** button on the keyboard to skip it. Please refer to Chapter 4 if GSM/GPRS module is selected, and refer to Chapter 5 if UMTS/HSPA module is selected.

Step 1: Click the ***Next*** button to enter the next step.

Figure 3: Welcome to Use QNavigator

Step 2: Choose the right module and Click the ***Next*** button to enter the next step.

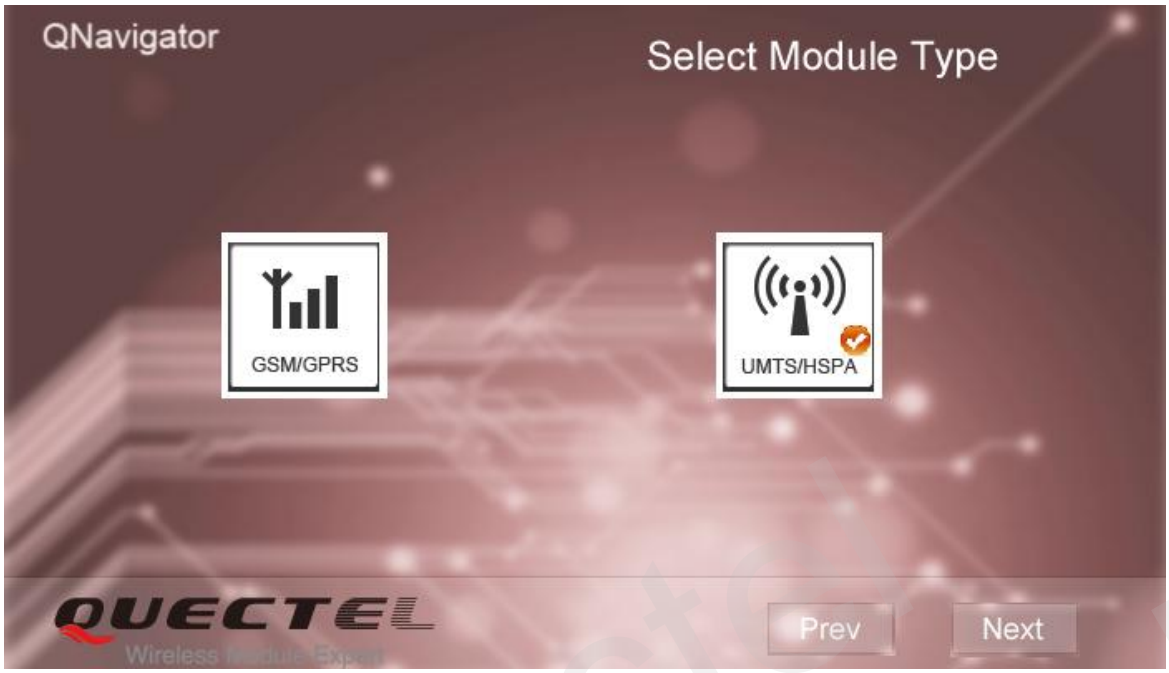

Figure 4: Select the Module Type

Step 3: Click the ***Next*** button to enter the next step. You can also click the ***Prev*** button to go back to the previous step.

Figure 5: Connect to EVB

Step 4: Click the ***Next*** button to enter the next step. You can also click the ***Prev*** button to go back to the previous step.

Figure 6: Confirm the Port Number

Step 5: Click the ***Next*** button to enter the next step. You can also click the ***Prev*** button to go back to the previous step.

Figure 7: Serial Port Setting

Step 6: Click the ***Next*** button to enter the next step. You can also click the ***Prev*** button to go back to the previous step.

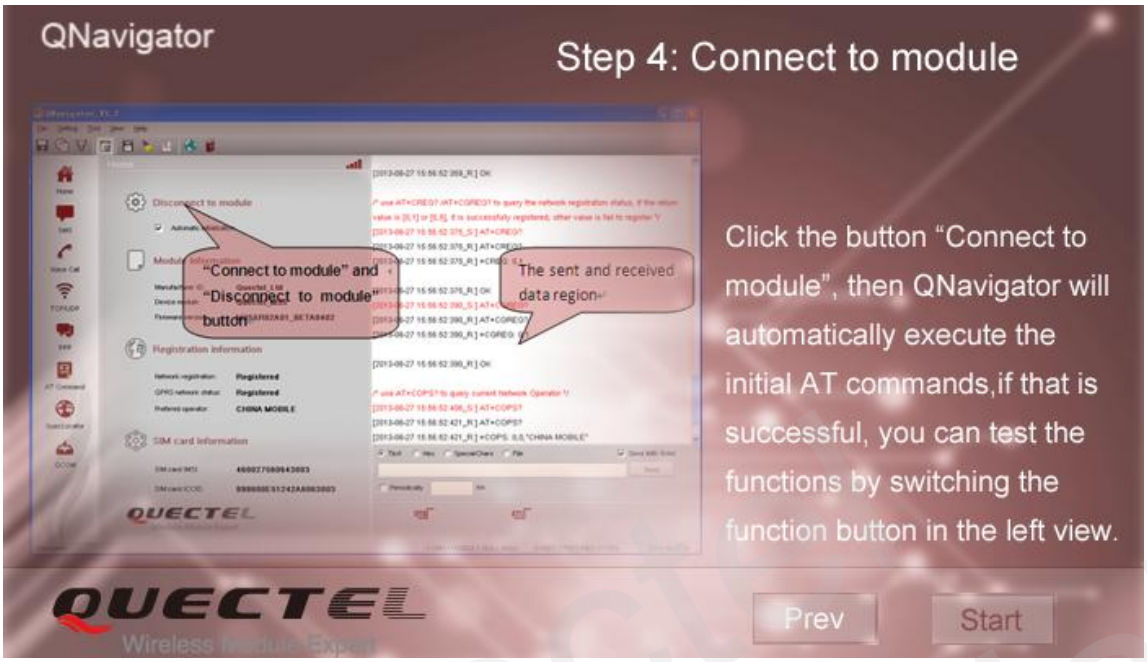

Figure 8: Connect to Module

Then select the Serial port parameter set, as shown in the following figure.

Figure 9: Serial Port Parameter Configuration

Click the ***OK*** button to enter the main interface after parameter settings are completed.

NOTE

The user guidance can be found again by clicking ***Help***->***Guidance*** button in the Menu.

2.2. The Main Software Interface

Enter the program interface shown as below:

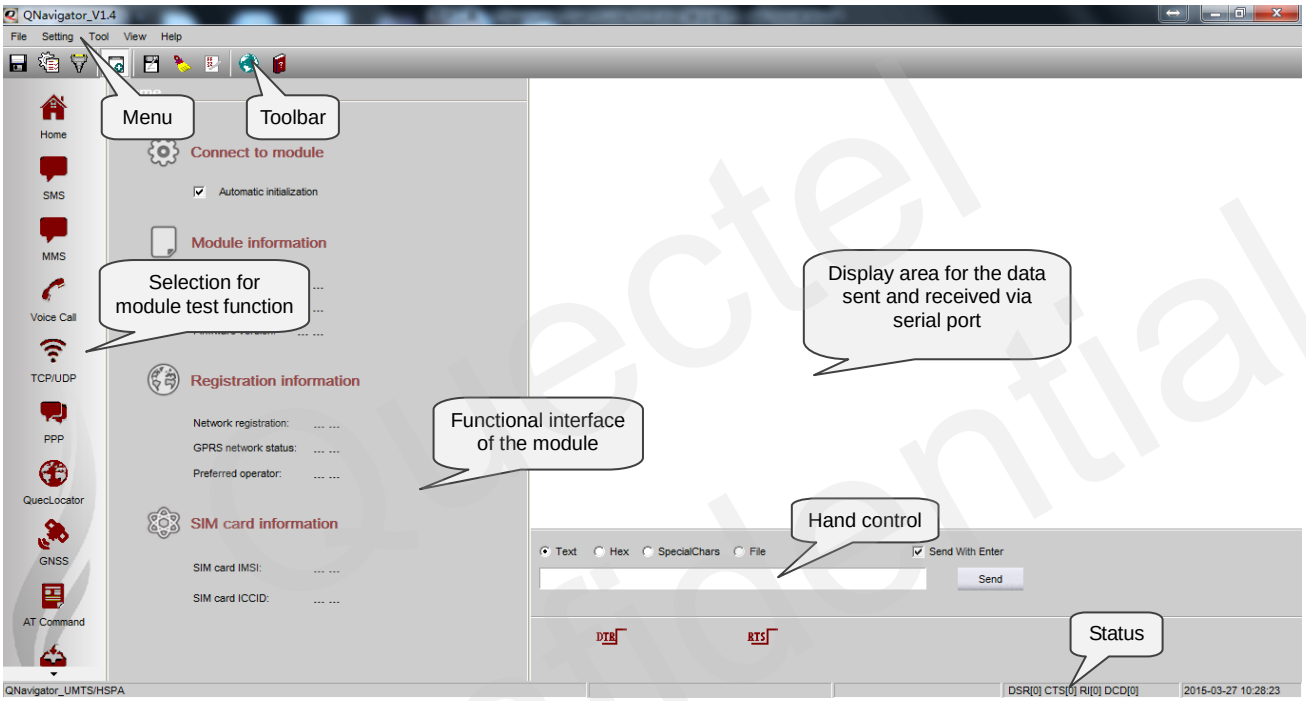

Figure 10: Main Interface

The main interface of the program contains seven parts: Menu, Toolbar, Selection for module test function, Functional interface of the module test, Display area for the data sent and received via serial port, Status and Hand control.

2.3. Toolbar

The Toolbar provides operation buttons for convenience and there is corresponding operation in the menu.

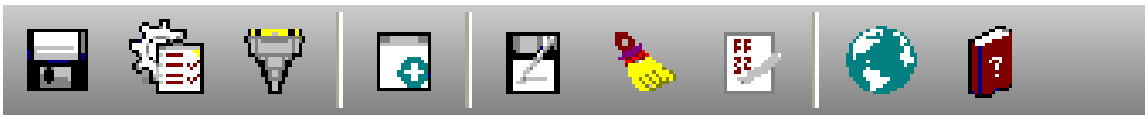

Figure 11: Toolbar

Table 1: Introduction of Icon Button

	Save the editable parameter after modification
	System parameters setting, including the size of the main window, the color of the sent and received data, the log file
	UART parameter setting (it is not allowed if UART has opened)
	Manually sending data interface displayed in the lower right party of the main interface
	Save the current data in display area
	Empty the current data in display area
	Display current data in HEX mode
	Open http://www.quectel.com
	Pop-up documentation window

2.4. Menu Bar

Here is the introduction on submenu of ***Tool*** in the following Figure (The operations shown in the menu are mainly used to assist test).

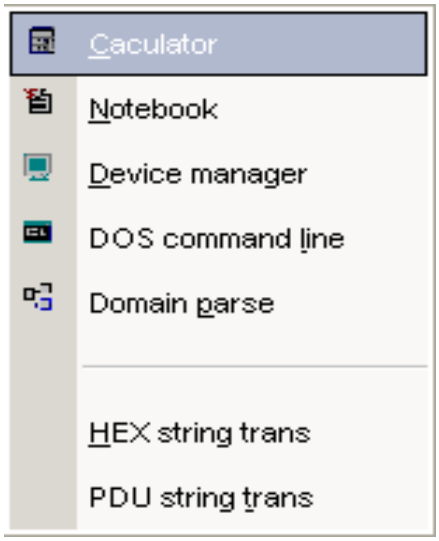

Figure 12: Submenu of Tool

Table 2: Introduction on Submenu of Tool

Calculator	Open the calculator of the operating system
Notebook	Open a Notepad program
Device Manager	Open the Device Manager of the operating system where port can be checked
DOS Command Line	Open a DOS command line window
Domain Parse	Convert Domain name to IP address
HEX String Trans	The conversion between ACSII character and HEX string, Chinese character and UNICODE character
PDU String Trans	Generate the PDU strings of SMS content

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3 Main Parameters Configuration

Necessary parameters must be configured correctly before taking a test.

3.1. UART Parameter Setting

Figure 13: UART Parameter Setting

Before testing it, necessary parameters must be configured first, including Port Number/Baud Rate/Data Bits/Stop Bits/Parity/Flow Control. Each time you click the drop-down box and select a new one, the information of current UART would be automatically updated by system.

3.2. System Parameter Setting

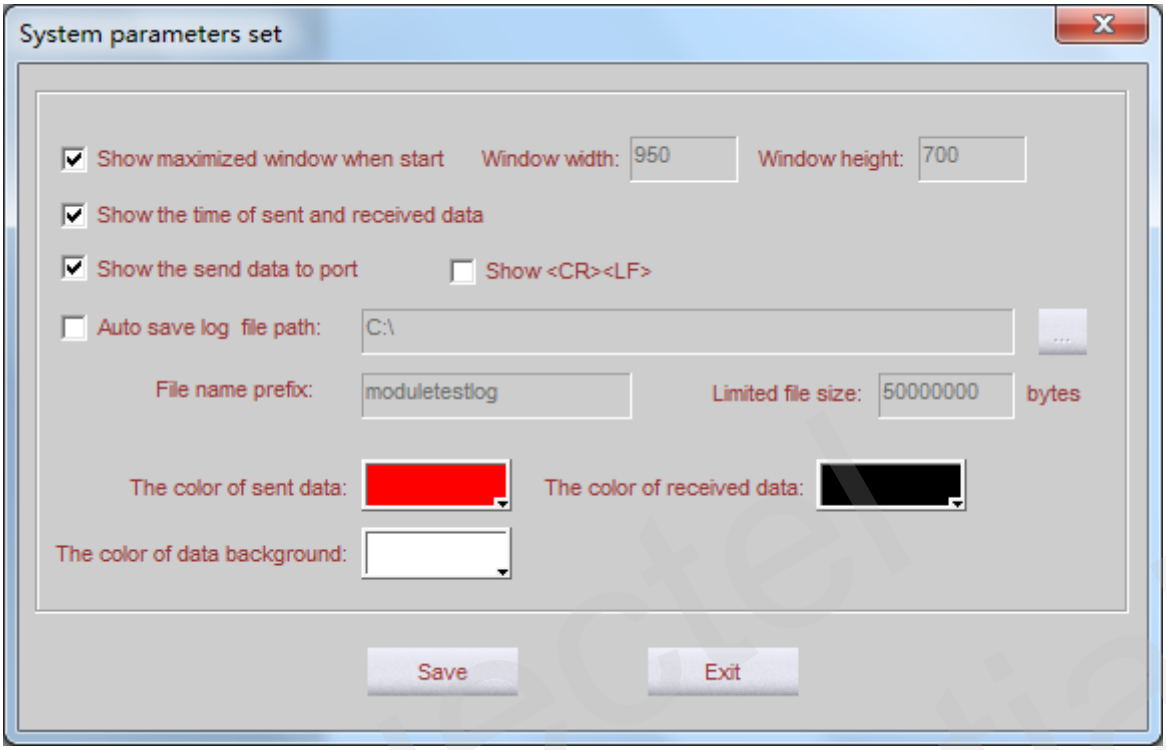

Figure 14: System Parameter Setting

Table 3: Introduction of System Parameter

Show Maximized	If this option has been chosen, the main window would display in maximal size. The size of the window depends on the value of the width and height of text boxes (If the value in these two boxes is too small, the size of the main widow would just show all the information automatically).
Show the Time	If this option has been chosen, time information would be displayed for each sent or received data.
Show the Sent Data	If this option has been chosen, the data sent to port will be displayed.
Auto Save Log	If this option has been chosen, the data that have been sent and received would be saved to a text file automatically, you can set the log file name, file path and limited file size.

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4 Brief Introduction of Each Function (GSM/GPRS)

QNavigator has eight functions: Home, SMS, Voice Call, TCP/UDP, PPP, AT Command, QuecLocator and QCOM. Click the menu to switch to the appropriate page.

4.1. Home Page

It will automatically go to Home page after running the software, shown as below:

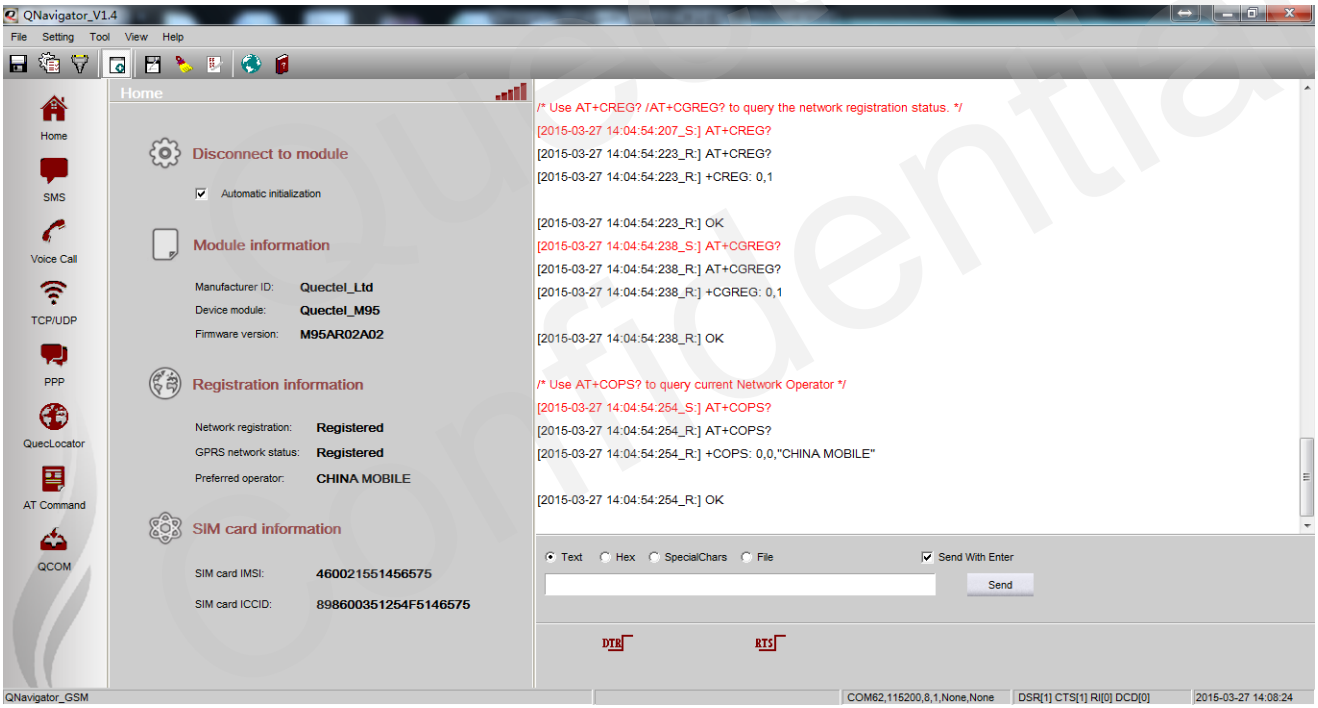

Figure 15: Home Page

Module can be connected by clicking the ***Connect to module*** button. It will go to initialization progress. ***Automatic initialization*** option is selected by default.

NOTE

Module initialization process includes querying the baud rate, version number, SIM card status, signal quality, Network registration status and Network operator.

4.2. SMS

SMS function is used to test SMS messages which has been sent and received under various modes, as well as read, and delete SMS messages in the SIM card.

The program will automatically check the network status to ensure SMS function works normally. SMS function can be executed once the module has been connected with PC successfully. Then you will enter into the SMS function interface shown as below:

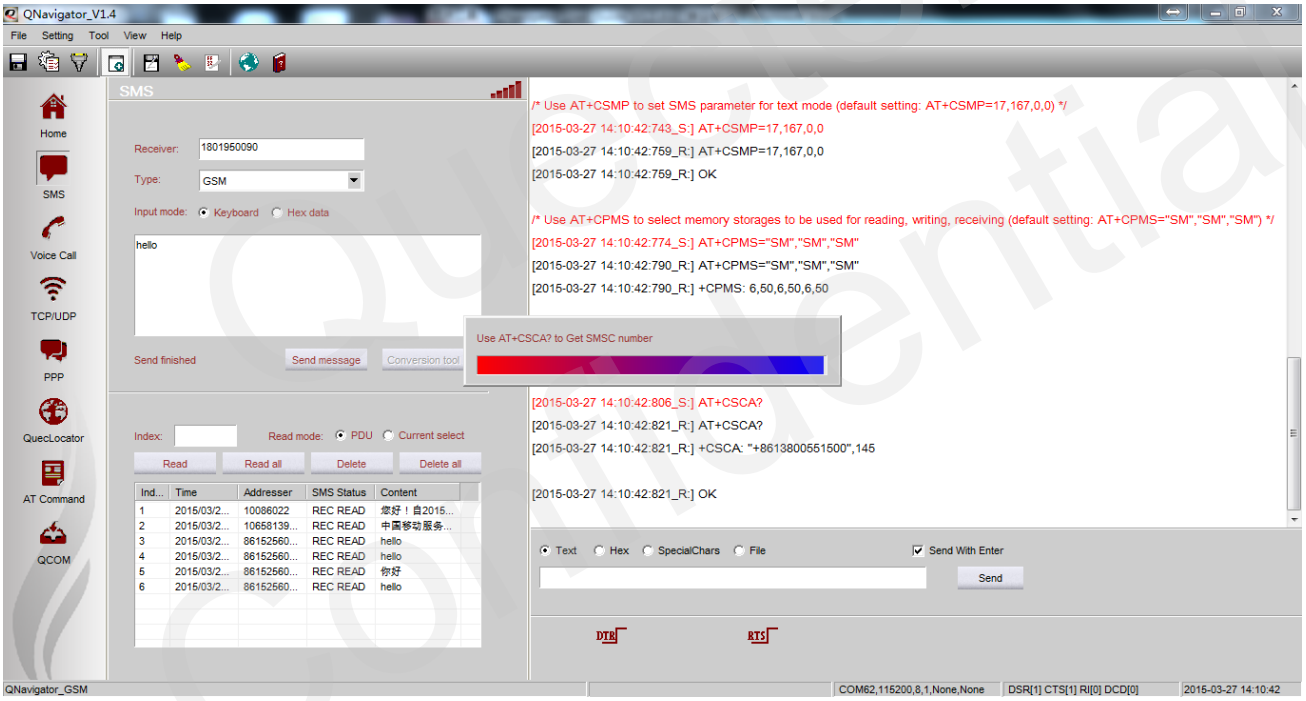

Figure 16: Switch View

If the network status is abnormal, ***Send message*** button will be unavailable. You should check the network status, the SMS settings or the CSCA number.

To read all SMS message, click ***Read all*** button, see the figure below:

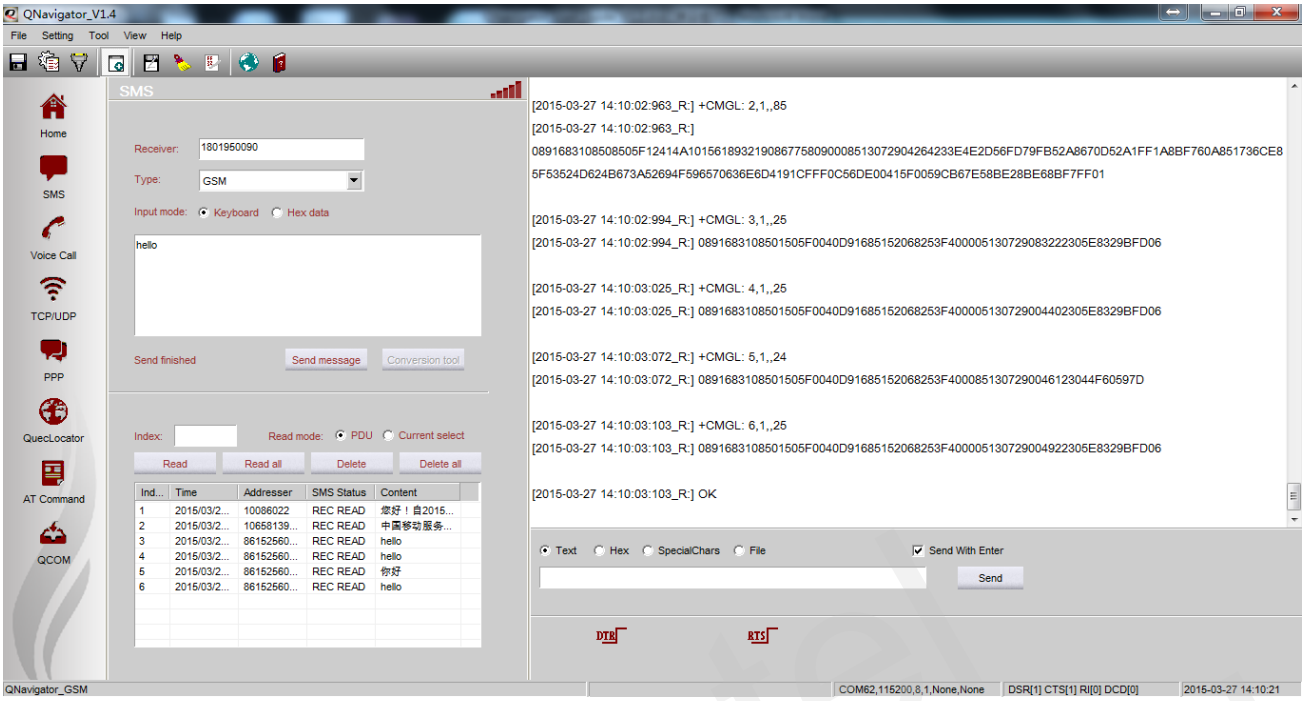

Figure 17: SMS-Read All

The data area displays the corresponding comments of each operation step.

Table 4: Functions of SMS

Read a Message	Select an existing SMS in the list or input the index of a message, then click ***Read*** button
Read all Message	Read all messages (click ***Read all*** button)
Delete a Message	Select an existing SMS in the list or input the index of a message, then click ***Delete*** button
Delete all Message	Delete all messages (click ***Delete all*** button)

There are two read modes: PDU (default) and Current Select. You can choose any mode you want by selecting the corresponding option. The current selected mode depends on the type of selected mode.

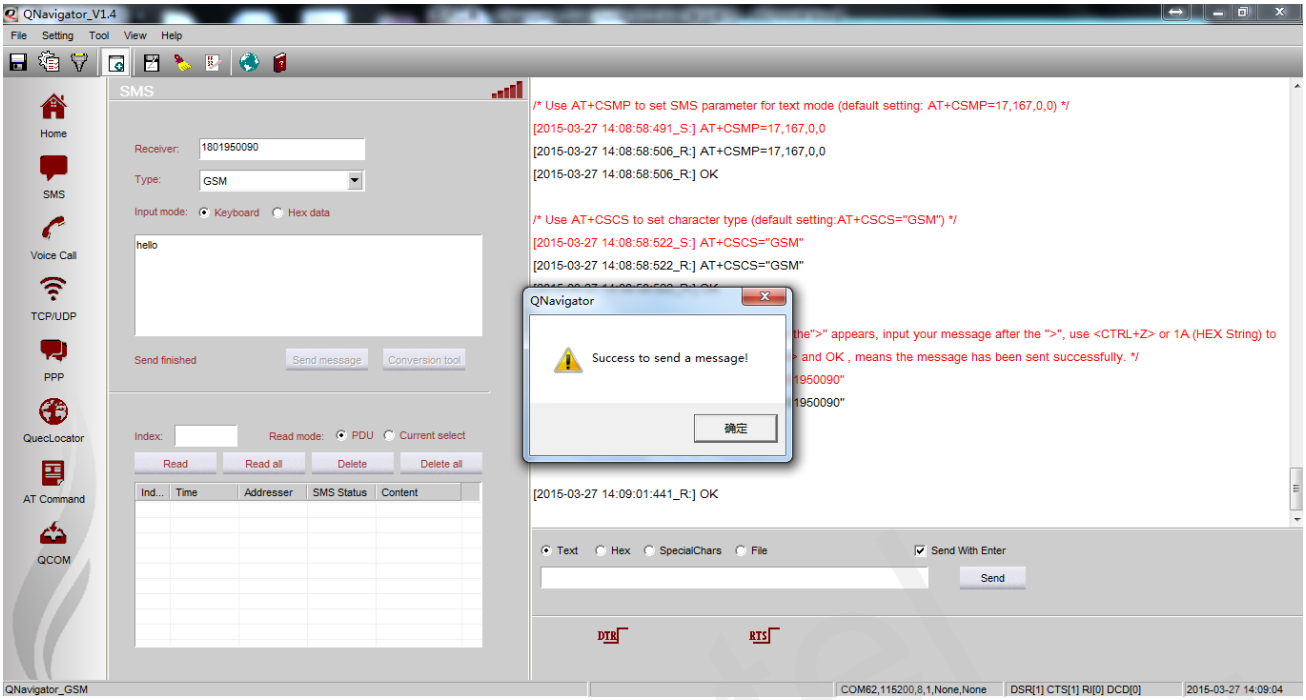

Figure 18: SMS-Send Message

The display area on the right side shows the steps of sending message.

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4.3. Voice Call

Call function is used to dial or answer a call, and set related audio parameters, as shown below.

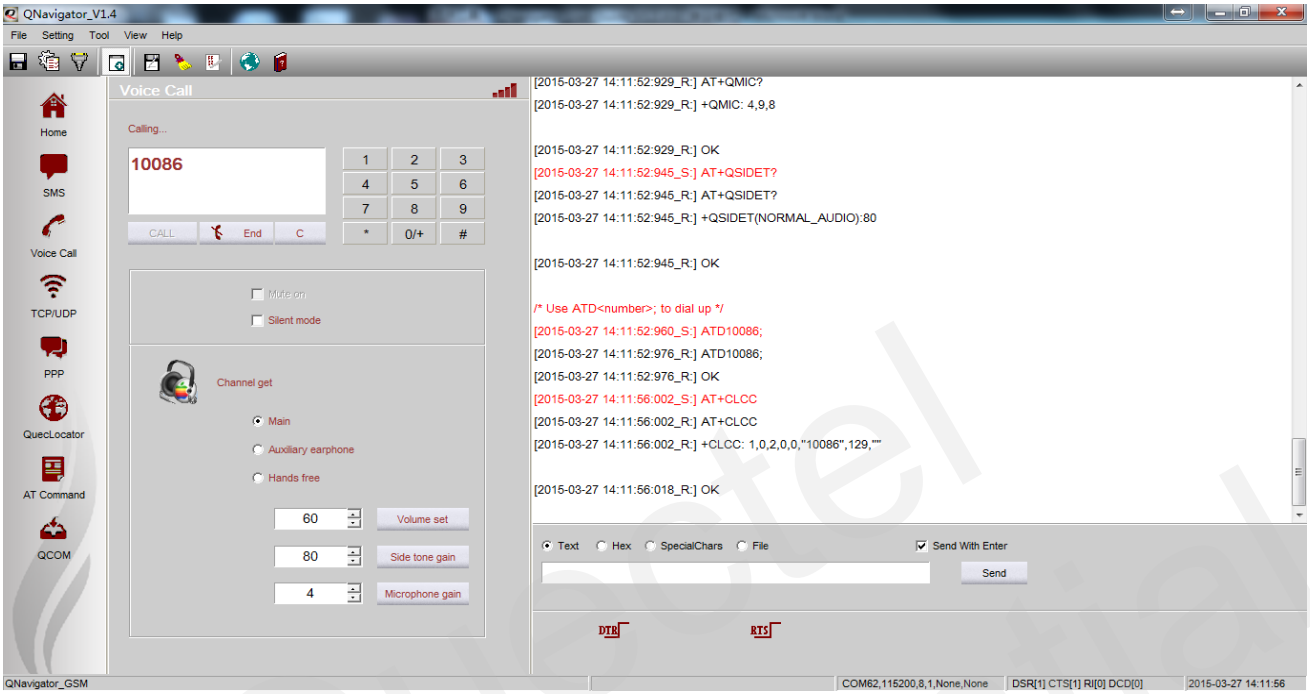

Figure 19: MO Call

Take calling China Mobile's customer service phone 10086 as an example. You can input the phone number by keyboard or click the number button, and then click the ***CALL*** button to start a call. The talk time will be displayed at the top area of the phone number. The data area shows the operation process of AT commands. (It will auto send "AT+CLCC" command to check the call status). If you want to dial extension number, you only need to continuously click the number button.

At the end of the call, the program will automatically end operation process, and you can also use ***OVER*** button to hang up the call.

When a call comes in, ***RING*** message will be displayed in the data area and the button ***CALL*** and ***OVER*** will automatically change to ***Answer*** and ***Decline***, you can answer the phone by clicking the button of ***Answer***, as shown below:

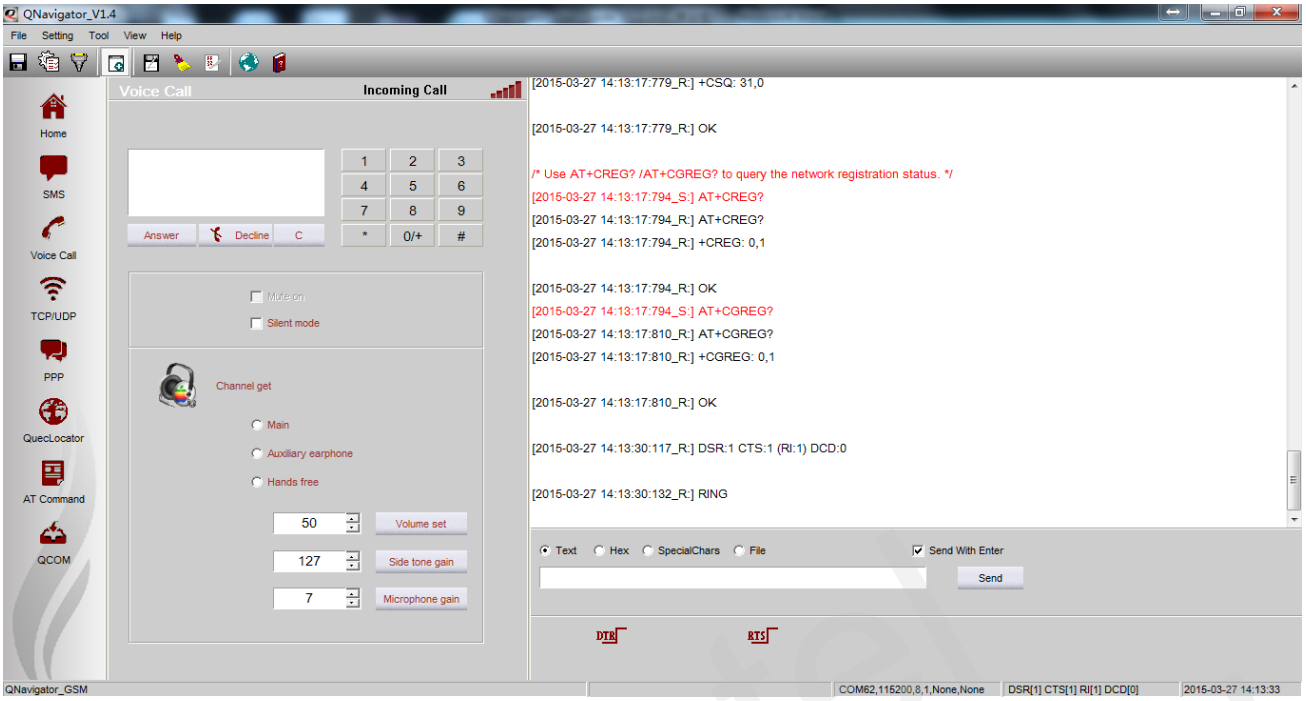

Figure 20: MT Call

4.4. TCP/UDP

TCP/UDP function is used to establish connections between TCP and UDP. After being connected successfully, data can be transferred between server and module, as shown below:

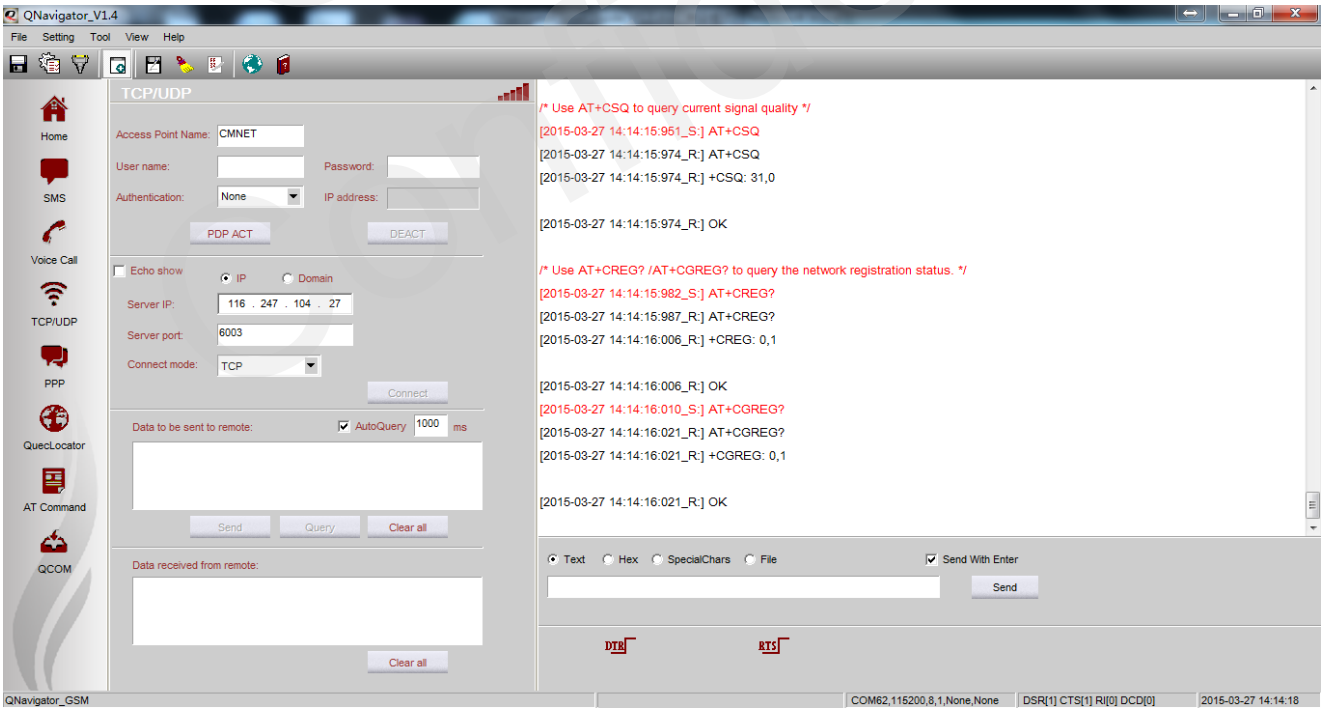

Figure 21: TCP/UDP-PDP ACT

Step 1: Activate the PDP (click the ***PDP ACT*** button).
Step 2: Click the ***Connect*** button after activating PDP successfully.
Step 3: Send data to server by clicking the ***Send*** button.

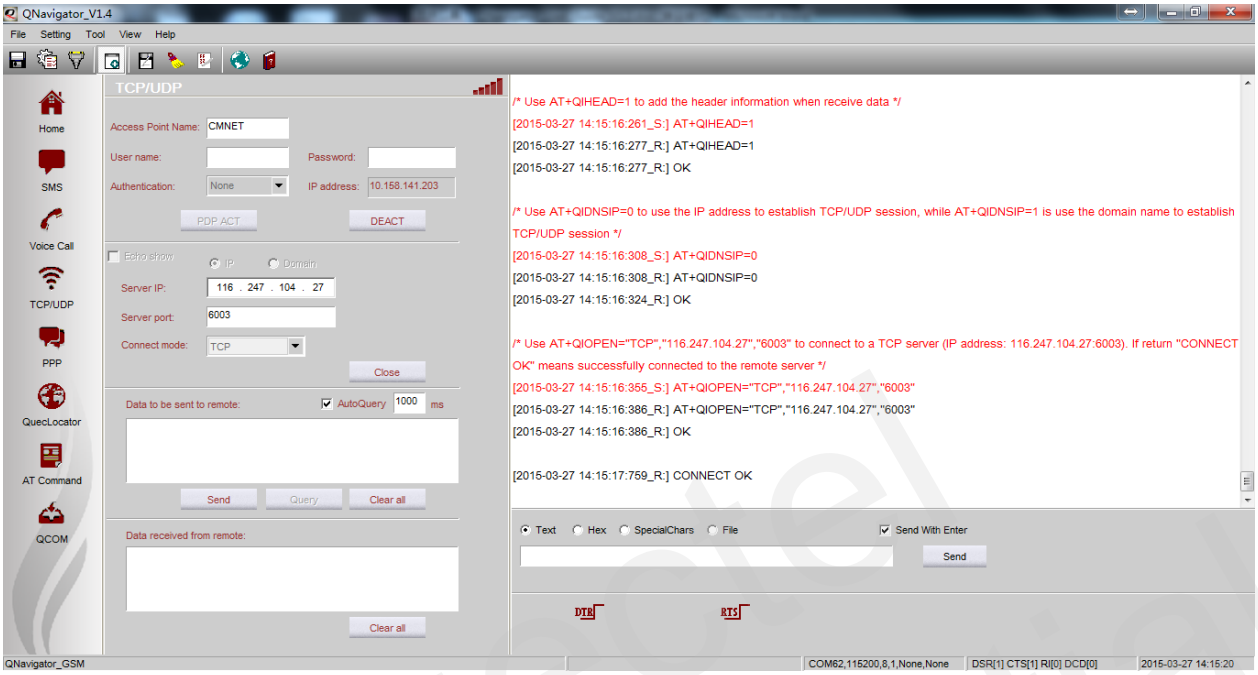

Figure 22: TCP/UDP-Connect

The detailed operation after connection is shown as below:

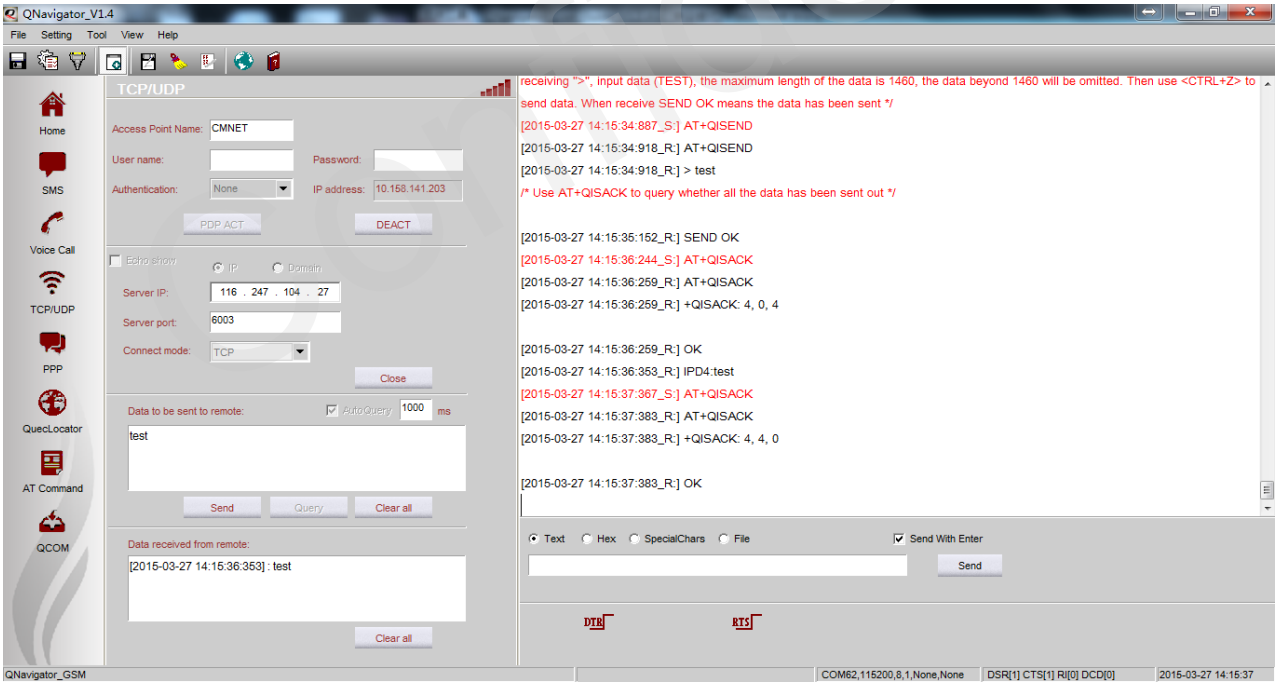

Figure 23: TCP/UDP-Send

It is not allowed to switch to another page or exit from the program without clicking ***DEACT***.

4.5. PPP

PPP test page provides a PPP dial-up test as shown below:

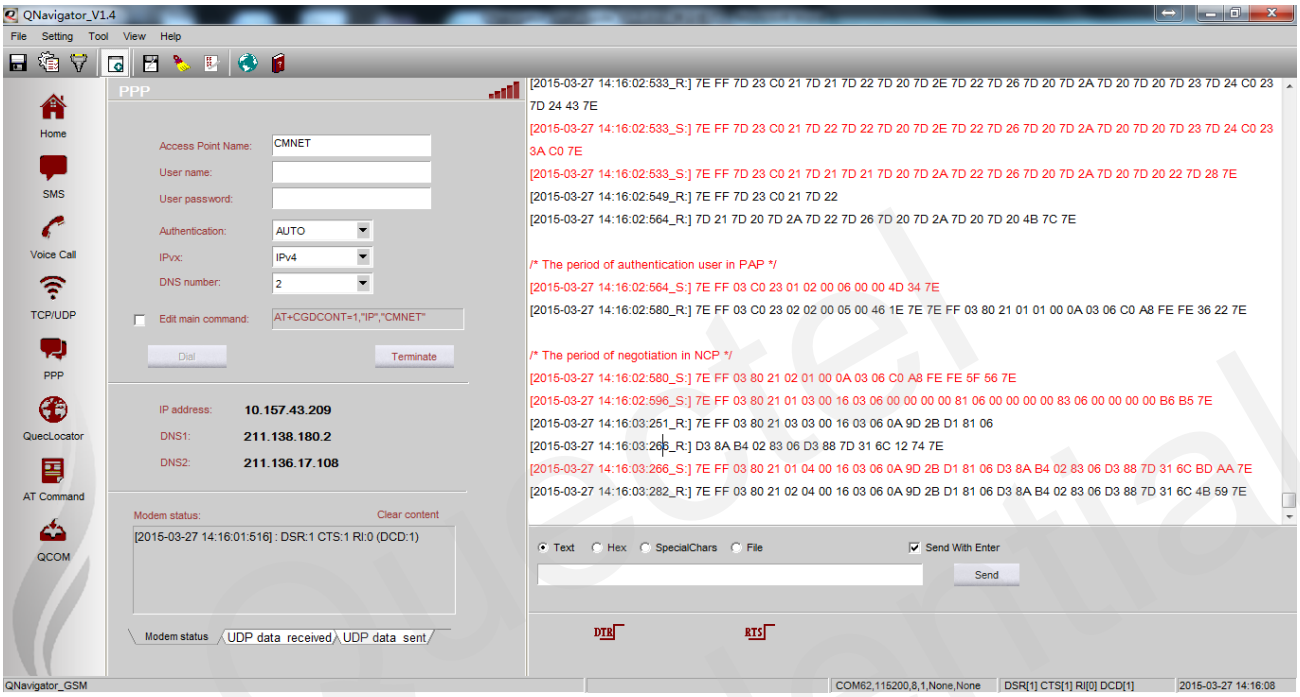

Figure 24: PPP-DIAL

About the number of negotiated DNS, you can choose it from 0 to 2. Click the ***DIAL*** button to dial. Negotiated IP address and DNS will be displayed after successful Dial-up. In the process of PPP dialing, click the ***Stop*** button can cancel the PPP dialing. After PPP dial is succeeded, click the ***Terminate*** button to disconnect the dial, as shown below:

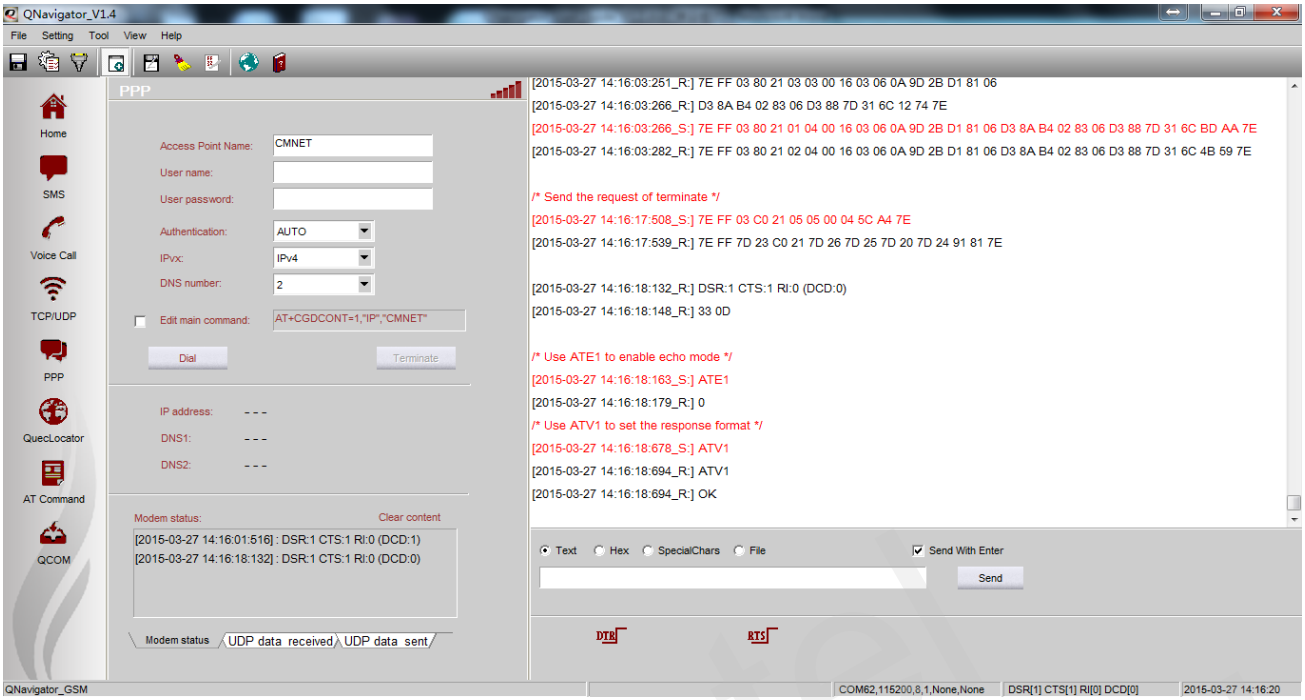

Figure 25: PPP-Terminate

After PPP dial is succeeded, you cannot go to other pages until you terminate the PPP dialing.

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4.6. AT Command

AT Command function provides AT commands for user to query, test, and learn, as shown below.

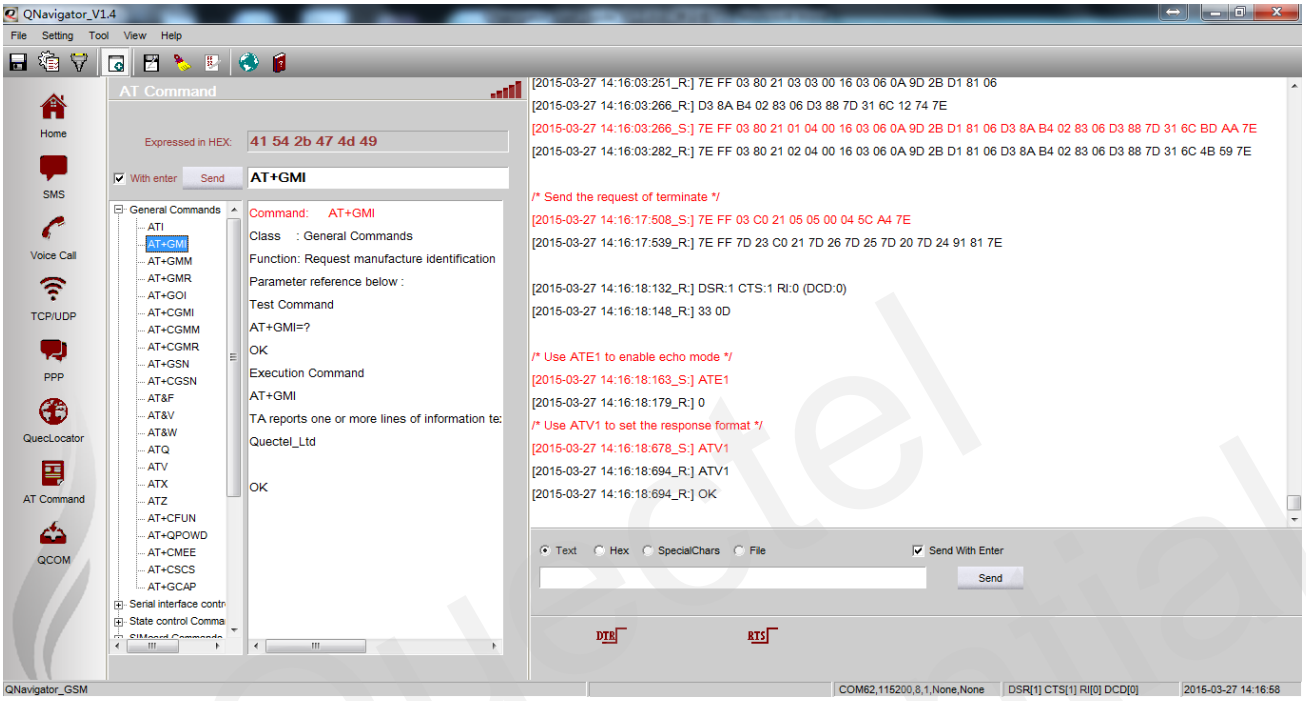

Figure 26: AT Command-1

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Input the keywords in the Send column to query AT commands. The results including the keywords will be displayed. You can drag the dividing strip to see the complete details of these AT commands, as shown below:

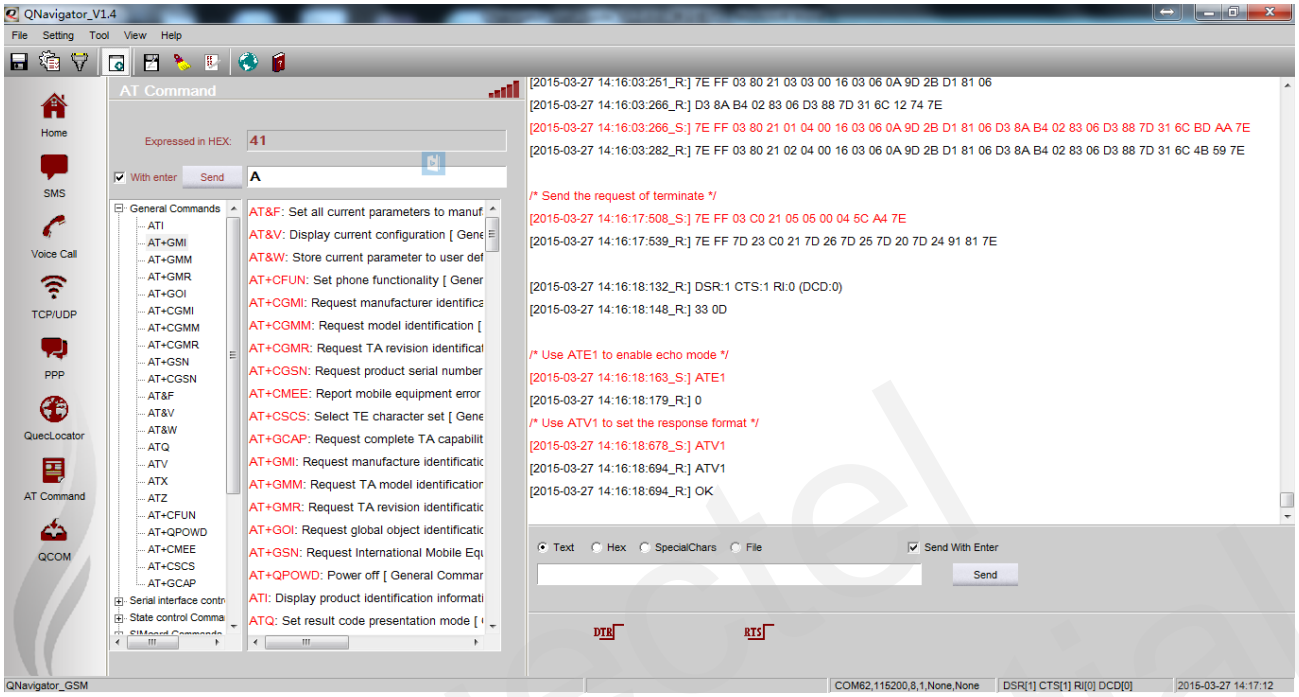

Figure 27: AT Command-2

If the query returns only one result, all the information will be displayed, as shown below:

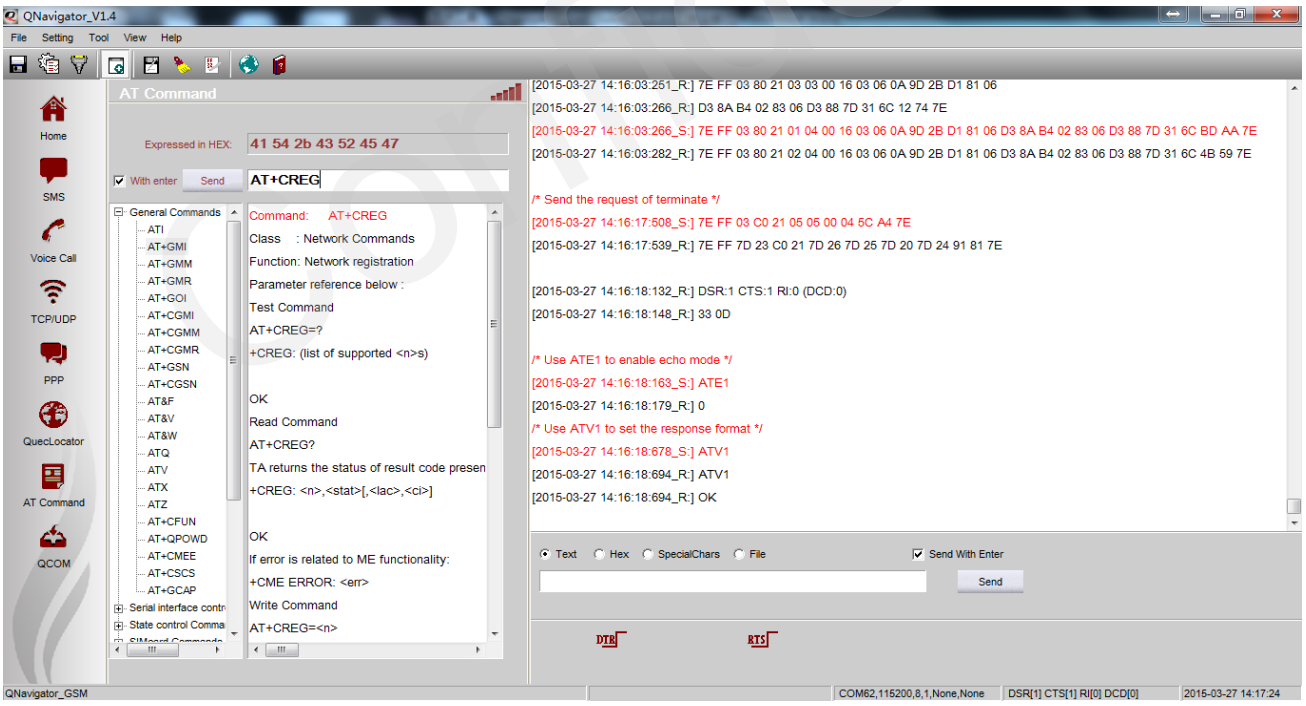

Figure 28: AT Command-3

At this time, if the UART is successfully opened, you can click the ***Send*** button and all information about this command will be displayed, as shown below:

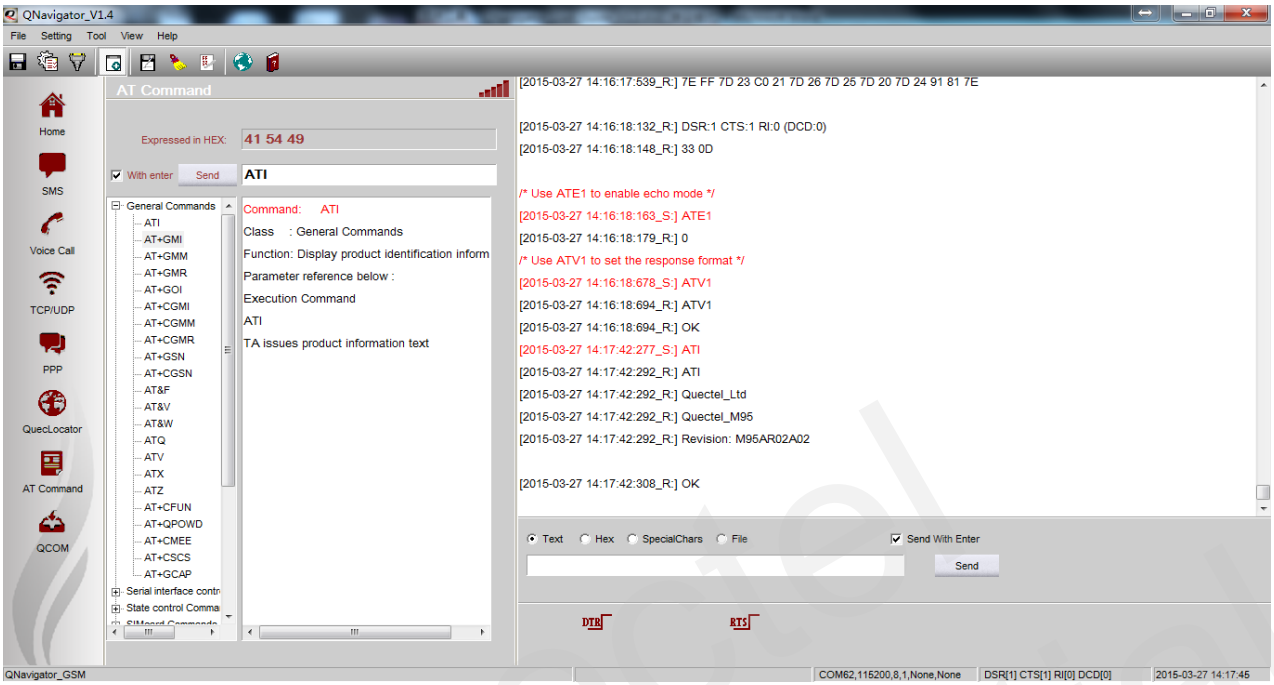

Figure 29: AT Command-4

4.7. QuecLocator

QuecLocator allows Quectel wireless modules to provide positioning service to the cell base stations nearby the position you want to fix. You can get the current position and show it in the map, before that, you must set an APN and activate the PDP environment by clicking ***PDP ACT*** button. The demonstration of getting position is shown as below:

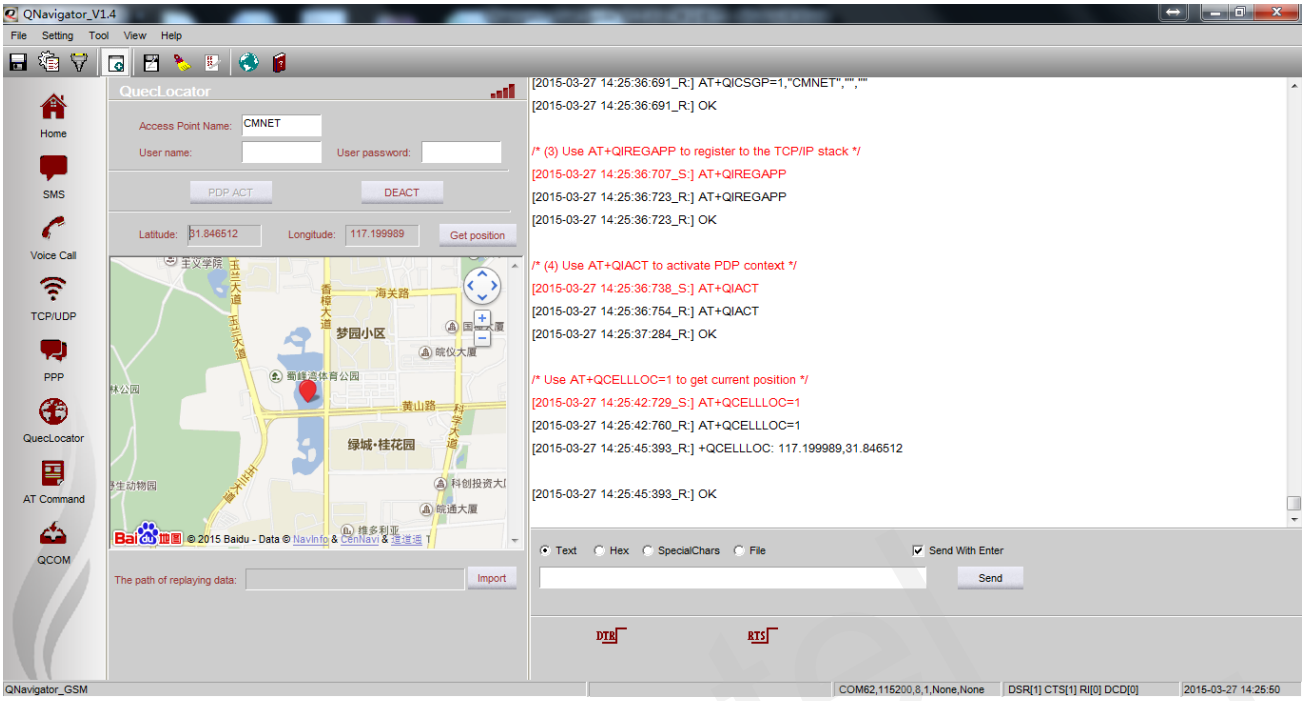

Figure 30: Show in Map

4.8. QCOM

AT command's pressure testing can be performed under the QCOM test page, as shown below:

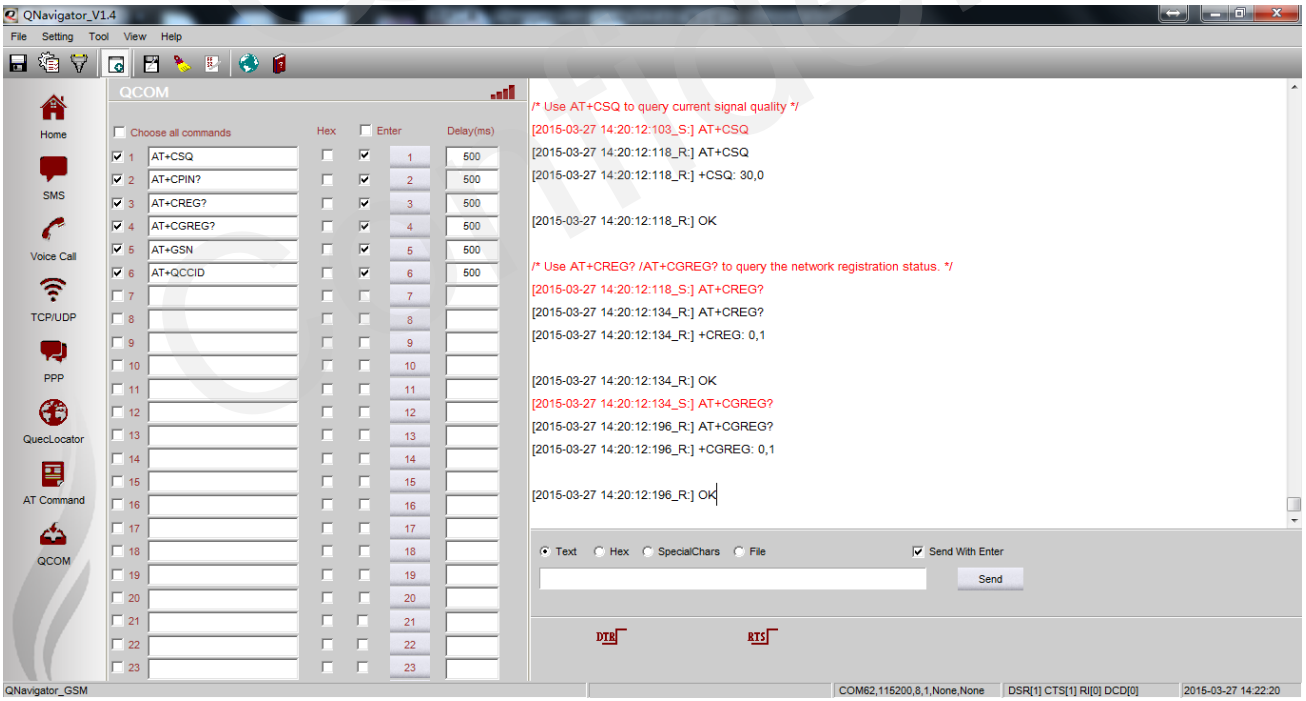

Figure 31: QCOM Test Page

5 Brief Introduction of Each Function (UMTS/HSPA)

QNavigator has eight functions: Home, SMS, Voice Call, TCP/UDP, PPP, AT Command, GNSS, and QCOM. Click the menu to switch to the appropriate page.

5.1. Home Page

It will automatically go to Home page after running the software, shown as below:

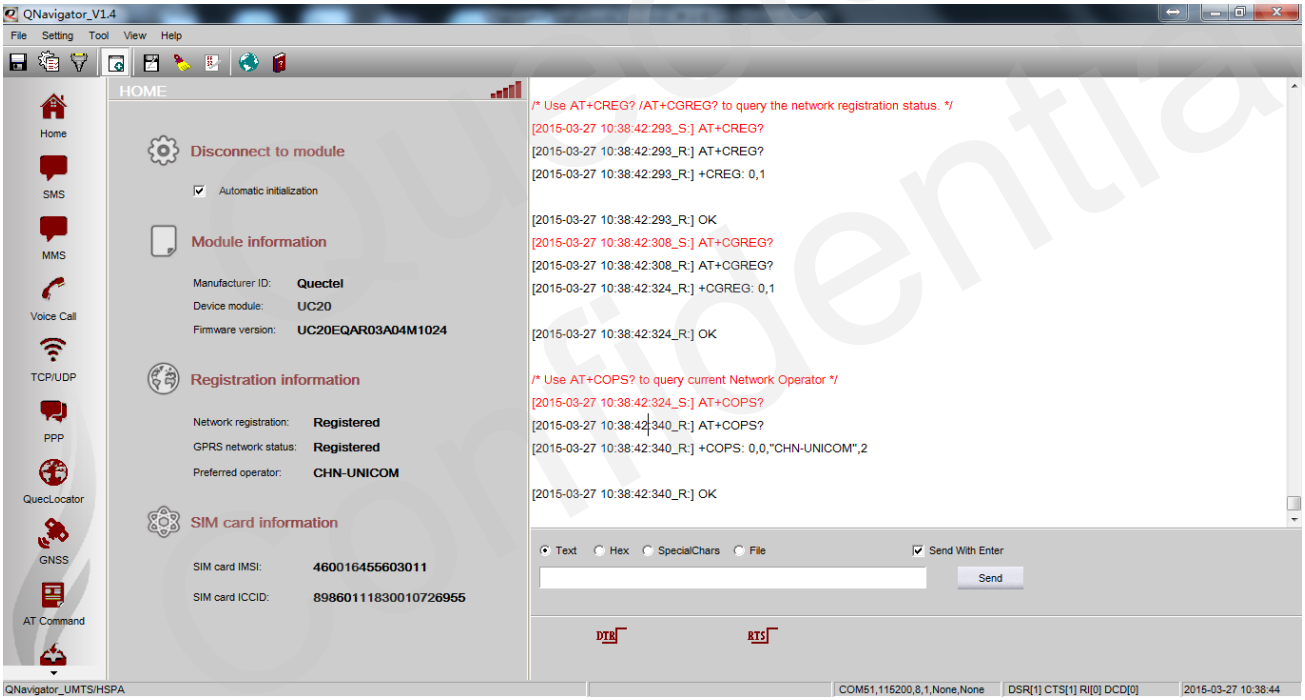

Figure 32: Home Page

Module can be connected by clicking the ***Connect to module*** button. It will go to initialization progress. ***Automatic initialization*** option is selected by default.

NOTE

Module initialization process includes querying the baud rate, version number, SIM card status, signal quality, Network registration status and Network operator.

5.2. SMS

SMS function is used to test SMS messages which has been sent and received under various modes, as well as read, and delete SMS messages in the SIM card.

The program will automatically check the network status to ensure SMS function works normally. SMS function can be executed once the module has been connected with PC successfully. Then you will enter into the SMS function interface shown as below:

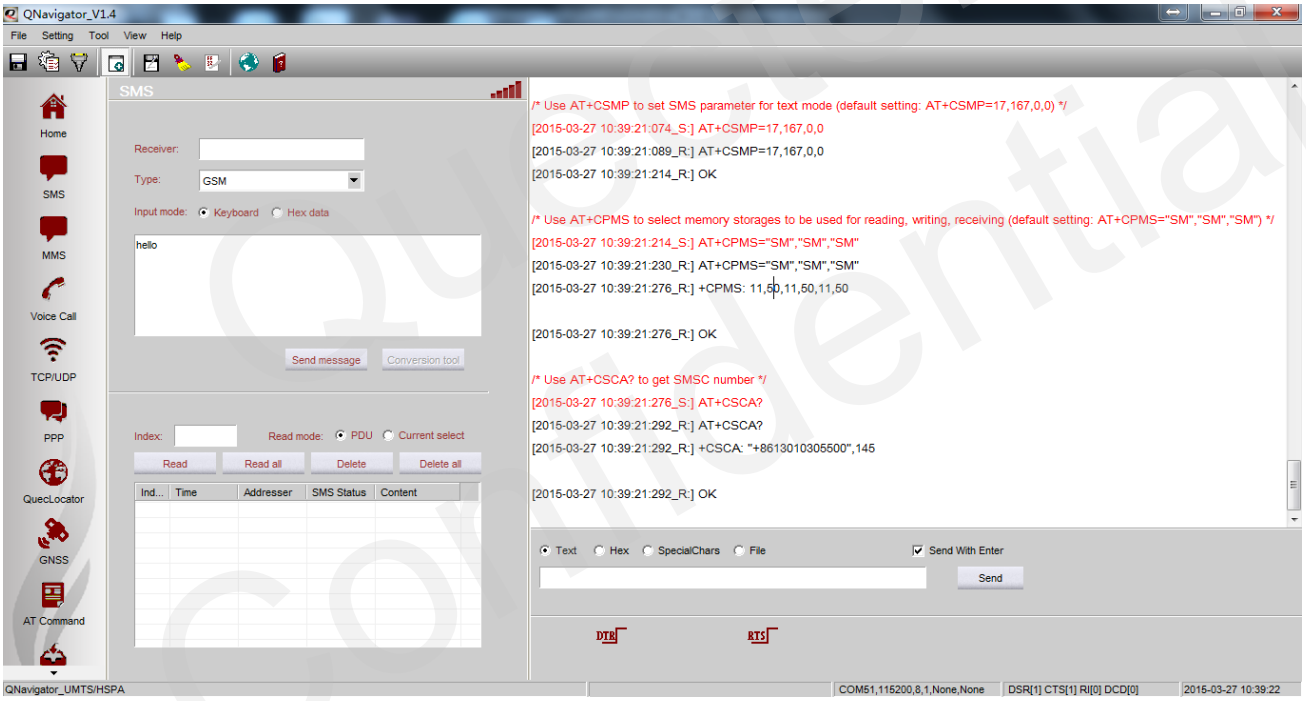

Figure 33: Switch View

If the network status is abnormal, ***Send message*** button will be unavailable. You should check the network status, the SMS settings or the CSCA number.

To read all SMS message, click ***Read all*** button, see the figure below:

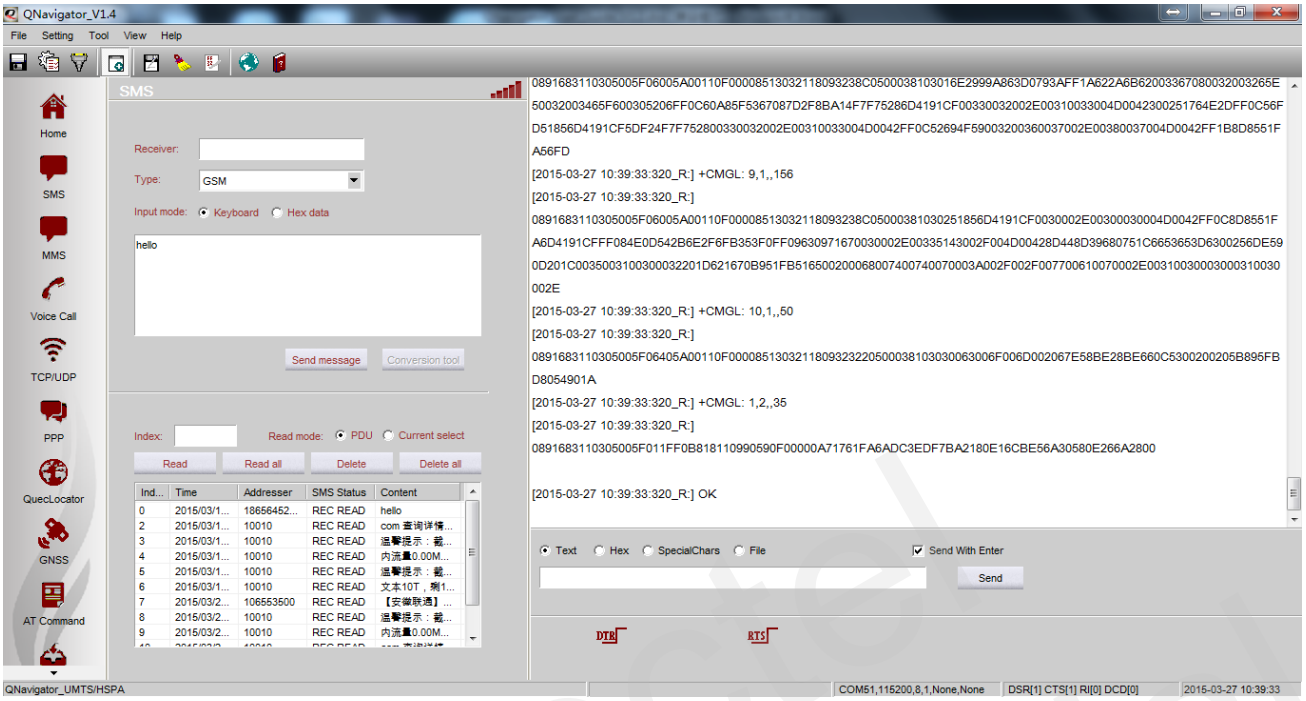

Figure 34: SMS-Read All

The data area displays the corresponding comments of each operation step.

Table 5: Functions of SMS

Read a Message	Select an existing SMS in the list or input the index of a message, then click ***Read*** button
Read all Message	Read all messages (click ***Read all*** button)
Delete a Message	Select an existing SMS in the list or input the index of a message, then click ***Delete*** button
Delete all Message	Delete all messages (click ***Delete all*** button)

There are two read modes: PDU (default) and Current Select. You can choose any mode you want by selecting the corresponding option. The current selected mode depends on the type of selected mode.

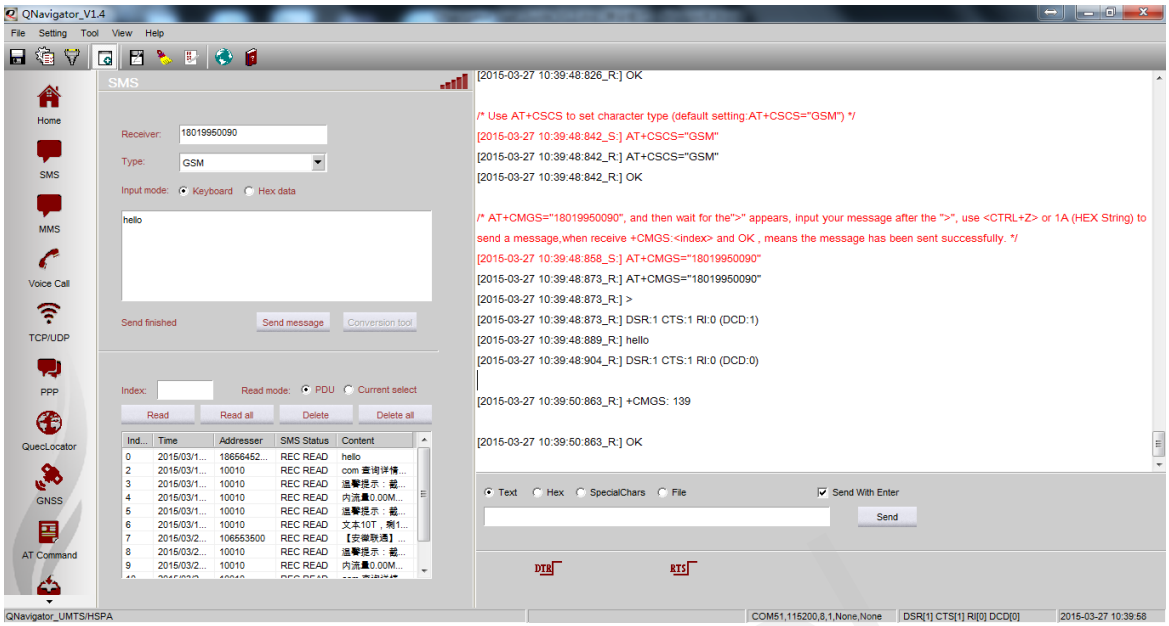

Figure 35: SMS-Send Message

The display area on the right side shows the steps of sending message.

5.3. Voice Call

Call function is used to dial or answer a call, and set related audio parameters, as shown below.

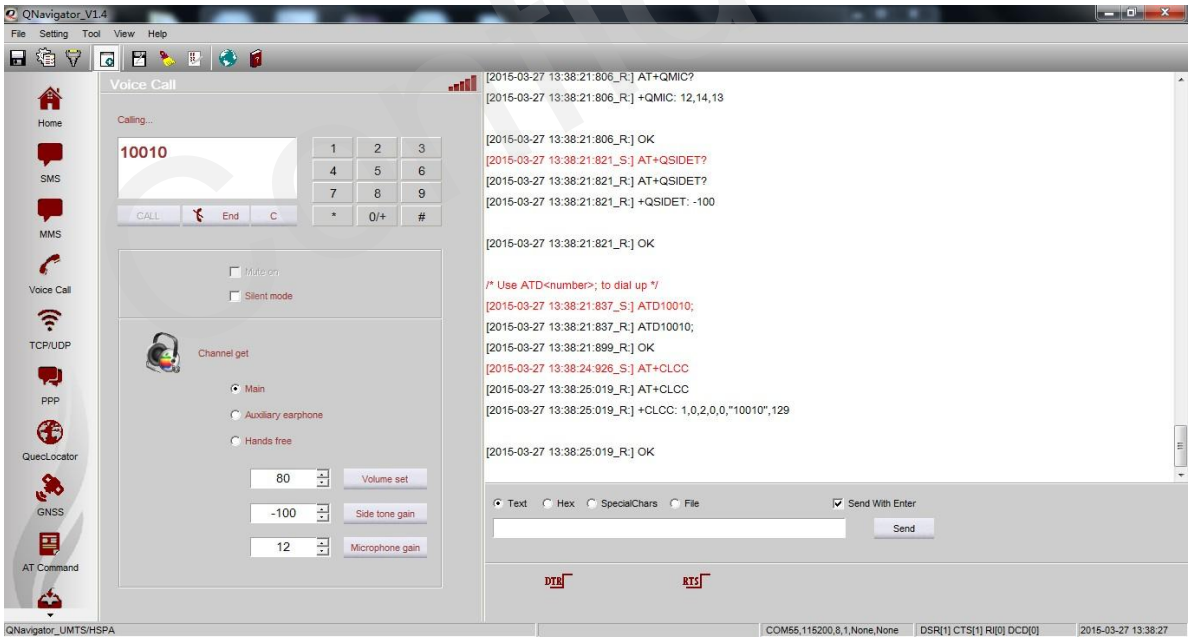

Figure 36: MO Call

Take calling China UNICOM's customer service phone 10010 as an example. You can input the phone number by keyboard or click the number button, and then click the ***CALL*** button to start a call. The talk time will be displayed at the top area of the phone number. The data area shows the operation process of AT commands. (It will auto send "AT+CLCC" command to check the call status). If you want to dial extension number, you only need to continuously click the number button.

At the end of the call, the program will automatically end operation process, and you can also use ***OVER*** button to hang up the call.

When a call comes in, ***RING*** message will be displayed in the data area and the button ***CALL*** and ***OVER*** will automatically change to ***Answer*** and ***Decline***, you can answer the phone by clicking the button of ***Answer***, as shown below:

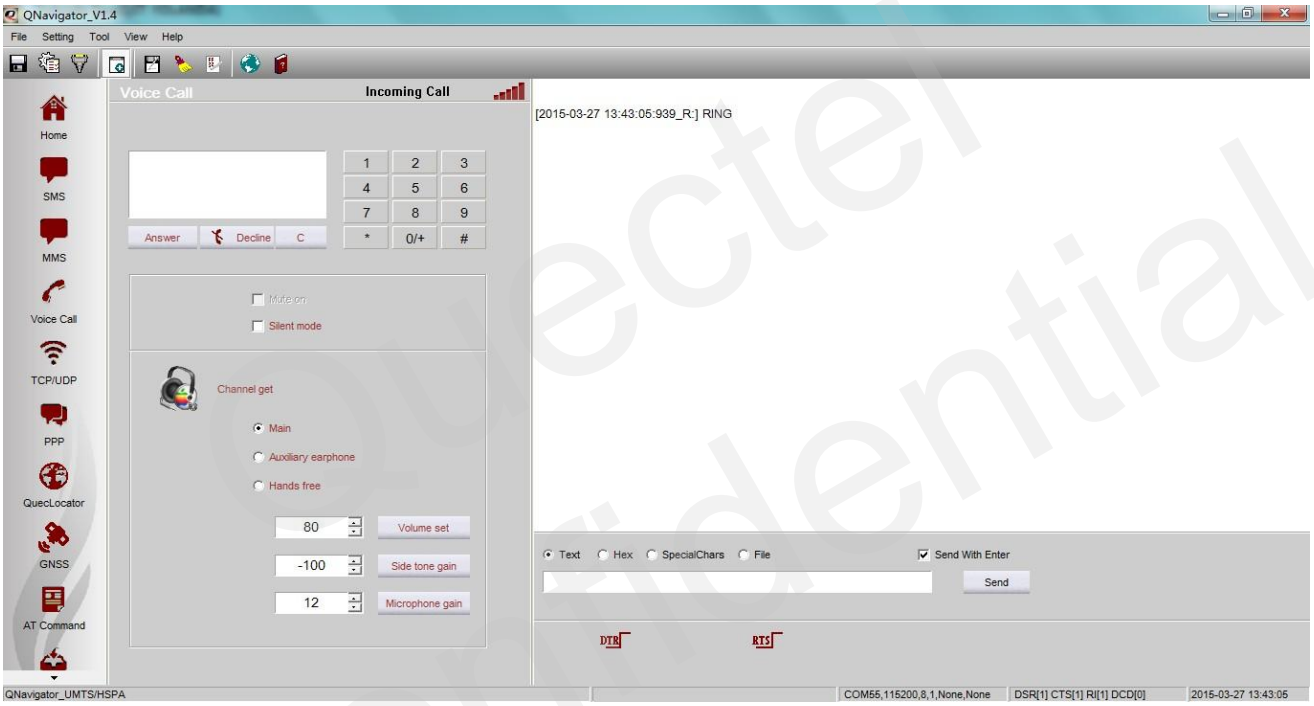

Figure 37: MT Call

5.4. TCP/UDP

TCP/UDP function is used to establish connections between TCP and UDP. After being connected successfully, data can be transferred between server and module, as shown below:

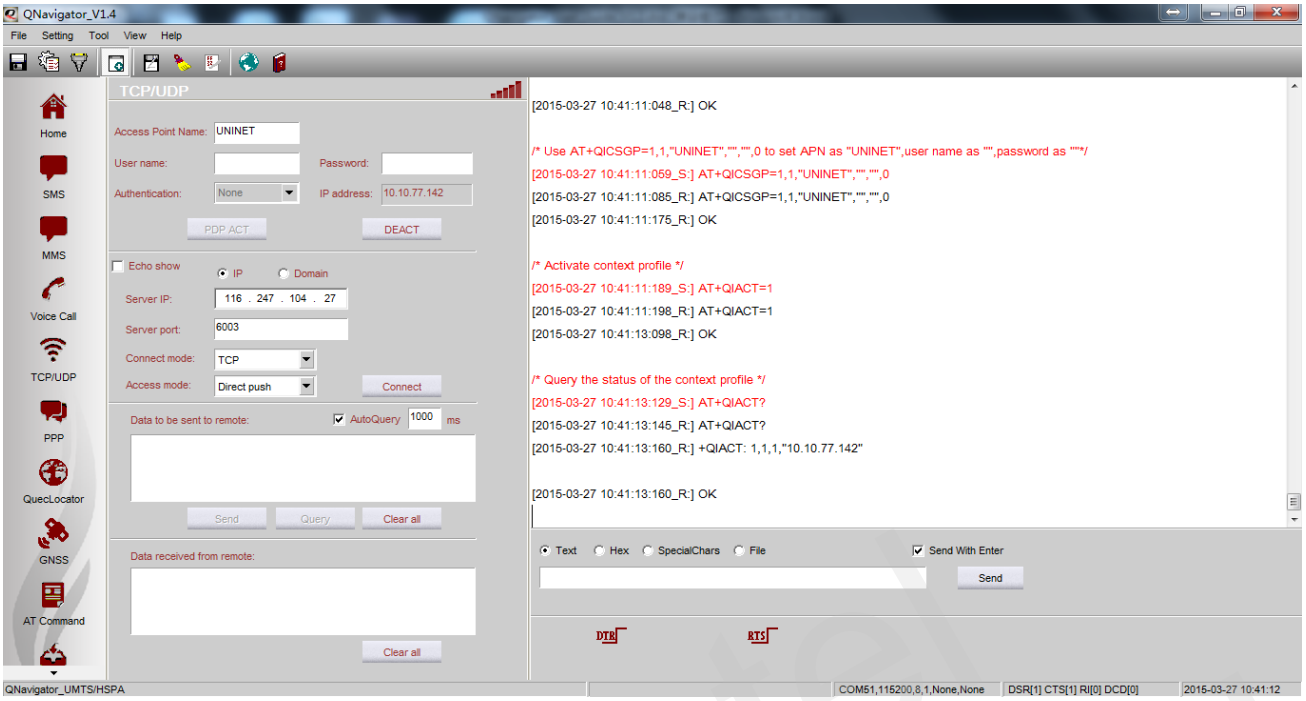

Figure 38: TCP/UDP-PDP ACT

Step 1: Activate the PDP (click the ***PDP ACT*** button).
Step 2: Click the ***Connect*** button after activating PDP successfully.
Step 3: Send data to server by clicking the ***Send*** button.

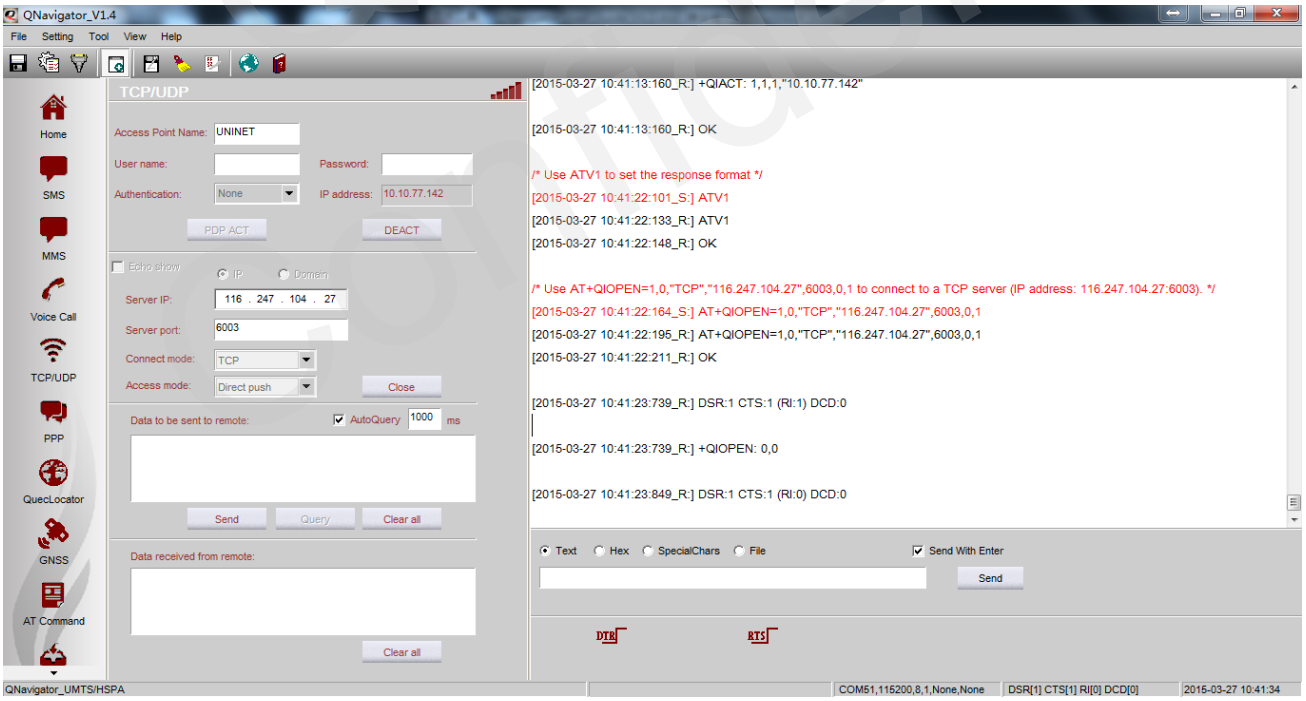

Figure 39: TCP/UDP-Connect

The detailed operation after connection is shown as below:

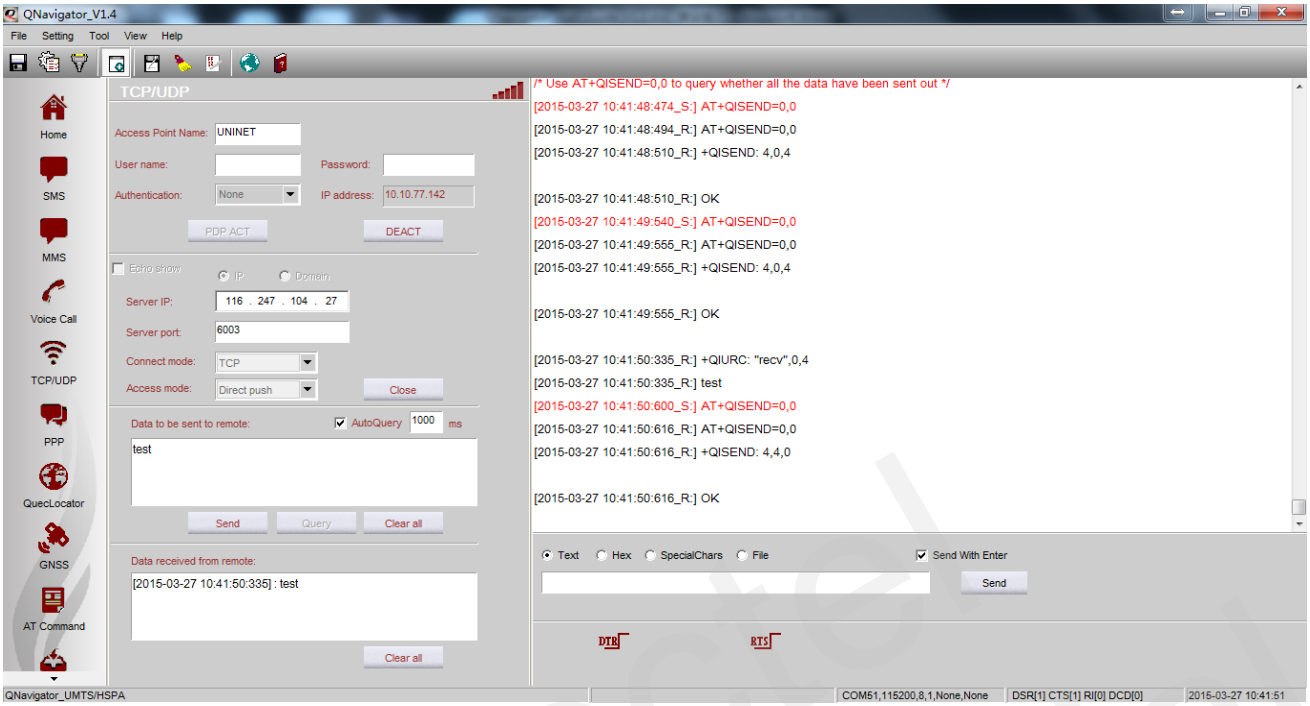

Figure 40: TCP/UDP-Send

It is not allowed to switch to another page or exit the program without clicking ***DEACT***.

5.5. PPP

PPP test page provides a PPP dial-up test as shown below:

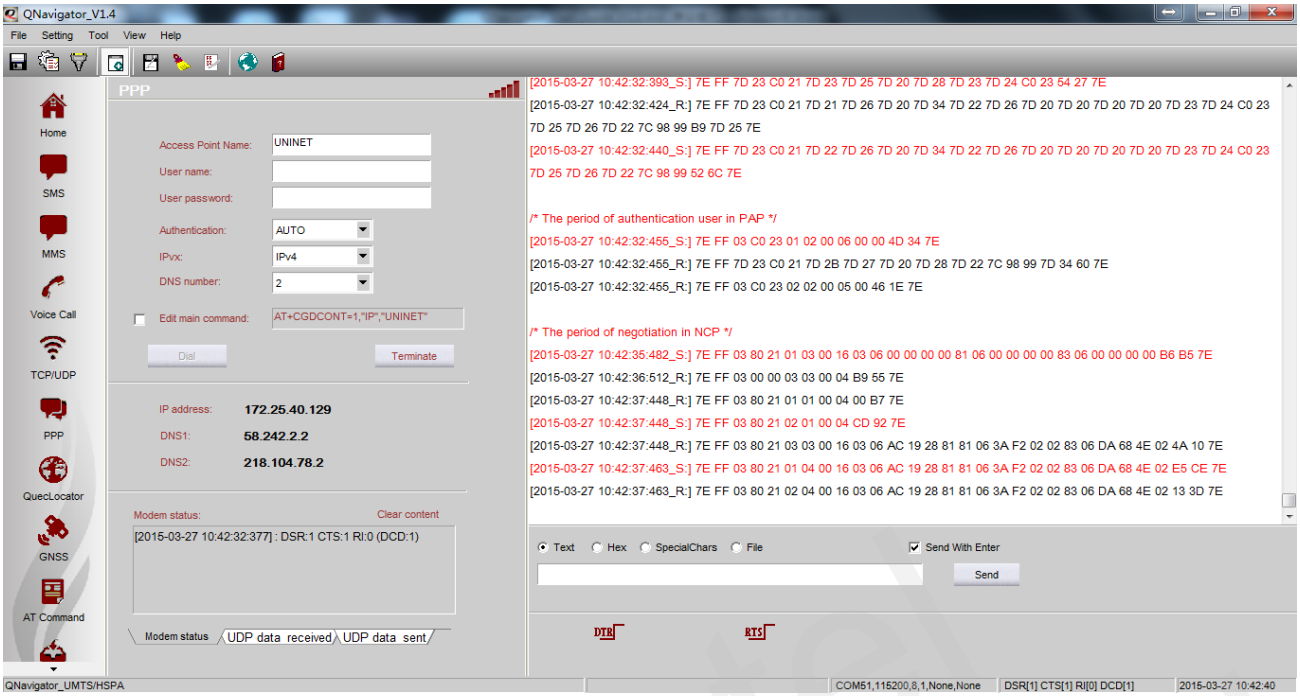

Figure 41: PPP-DIAL

About the number of negotiated DNS, you can choose it from 0 to 2. Click the ***DIAL*** button to dial. Negotiated IP address and DNS will be displayed after successful Dial-up. In the process of PPP dialing, click the ***Stop*** button can cancel the PPP dialing. After PPP dial is succeeded, click the ***Terminate*** button to disconnect the dial, as shown below:

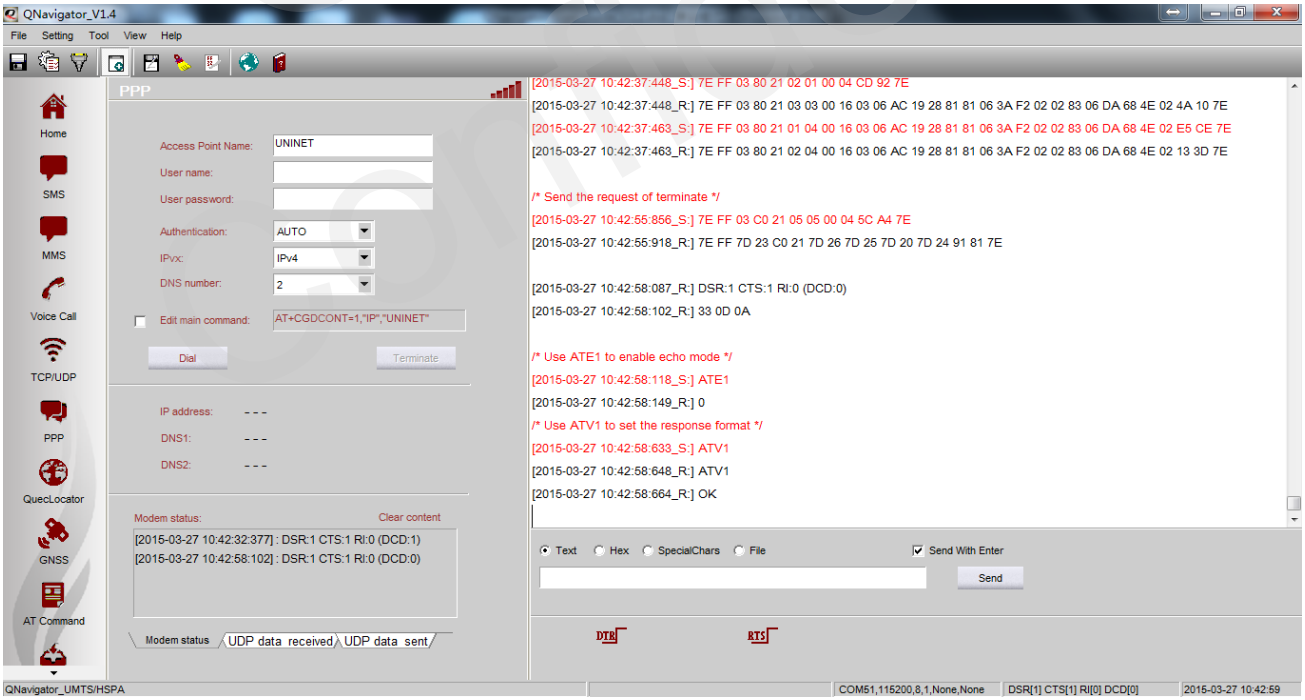

Figure 42: PPP-Terminate

After PPP dial is succeeded, you cannot go to other pages until you terminate the PPP dialing.

5.6. AT Command

AT Command function provides AT commands for user to query, test, and learn, as shown below.

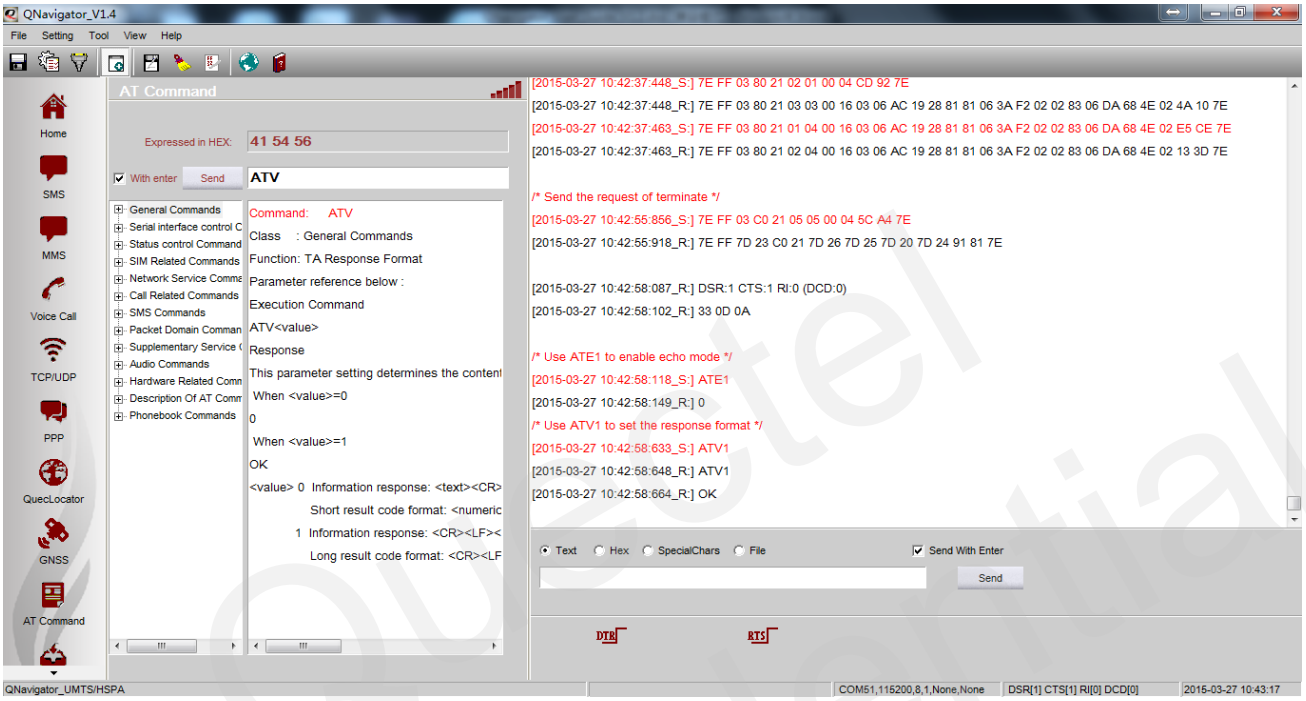

Figure 43: AT Command-1

Input the keywords in the Send column to query AT commands. The results including the keywords will be displayed. You can drag the dividing strip to see the complete details of these AT commands, as shown below:

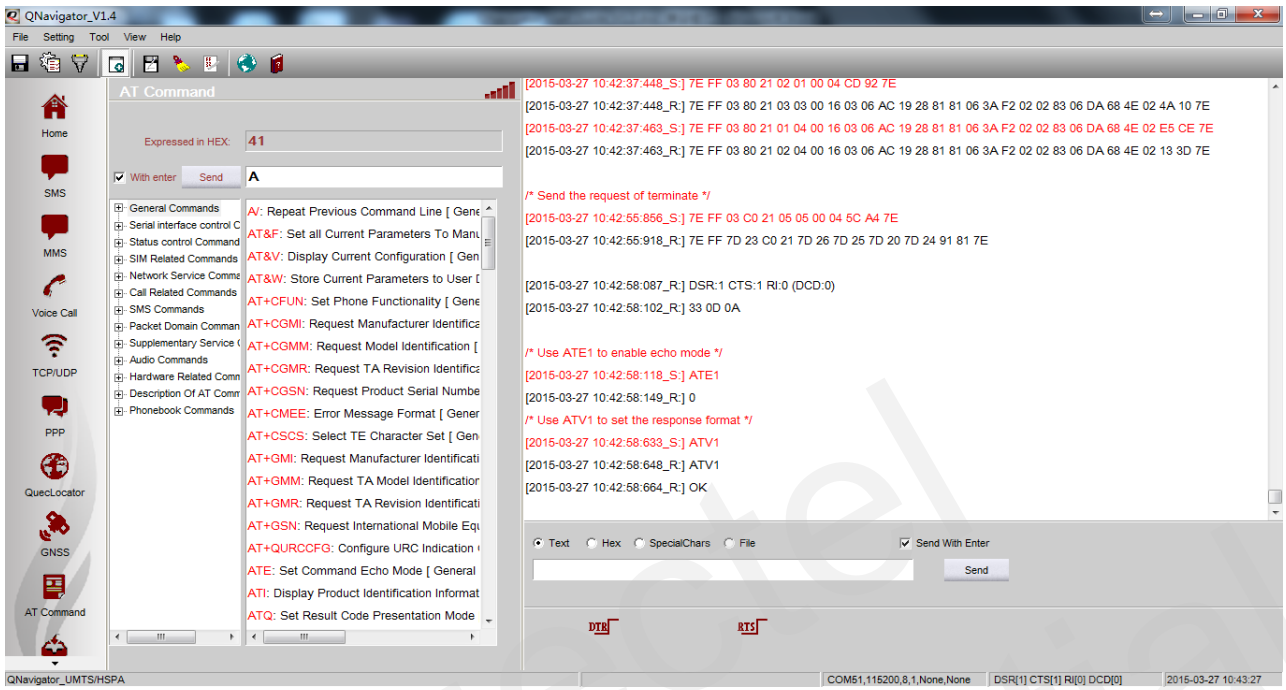

Figure 44: AT Command-2

If the query returns only one result, all the information will be displayed, as shown below:

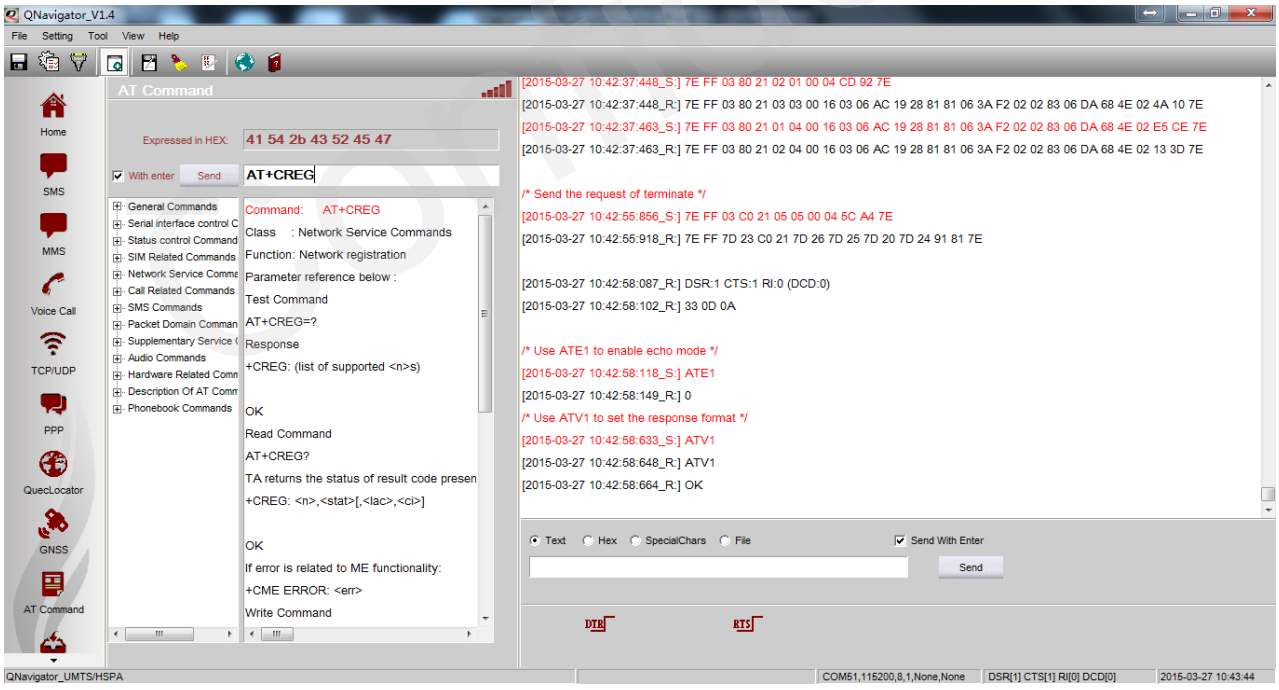

Figure 45: AT Command-3

At this time, if the UART is successfully opened, you can click the ***Send*** button and all information about this command will be displayed, as shown below:

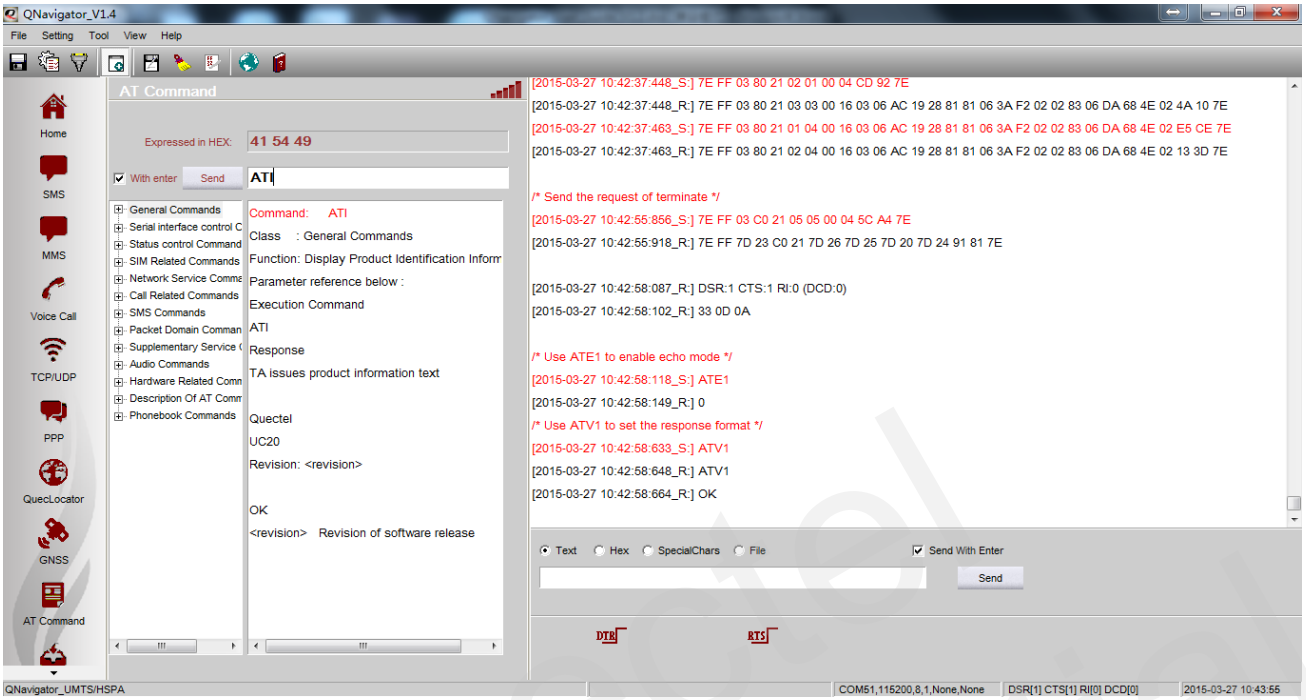

Figure 46: AT Command-4

5.7. GNSS

GNSS provides a graphical presentation of satellite positioning information retrieved from the module.

Open USB NMEA port (NMEA port is the default port, you can change the port by AT+QGPSCFG="OUTPUT" command) first. Choose the port number, and then click "Connect". The module will not report the location information automatically after the NMEA port is opened. You must send "AT+QGPS=1" command on the AT port. If you have selected the "Auto start/stop GNSS" here, "AT+QGPS=1" will be sent automatically from the AT port which is connected to the HOME page after clicking "Connect".

When the module has reported the location information, the system will automatically parse and classify the location result, and demonstrate them graphically. The module will only report the GPS location information by default. You can send AT+QGPSCFG="GLONASSENABLE" on the AT port to let the module report GPS and GLONASS location information simultaneously. The main interface shows the current location of the module, such as latitude and longitude and so on. You can query the map location, satellite azimuth and elevation angle, histogram of satellite signal and original NMEA data and so on by switching the tabs on the bottom, shown as below:

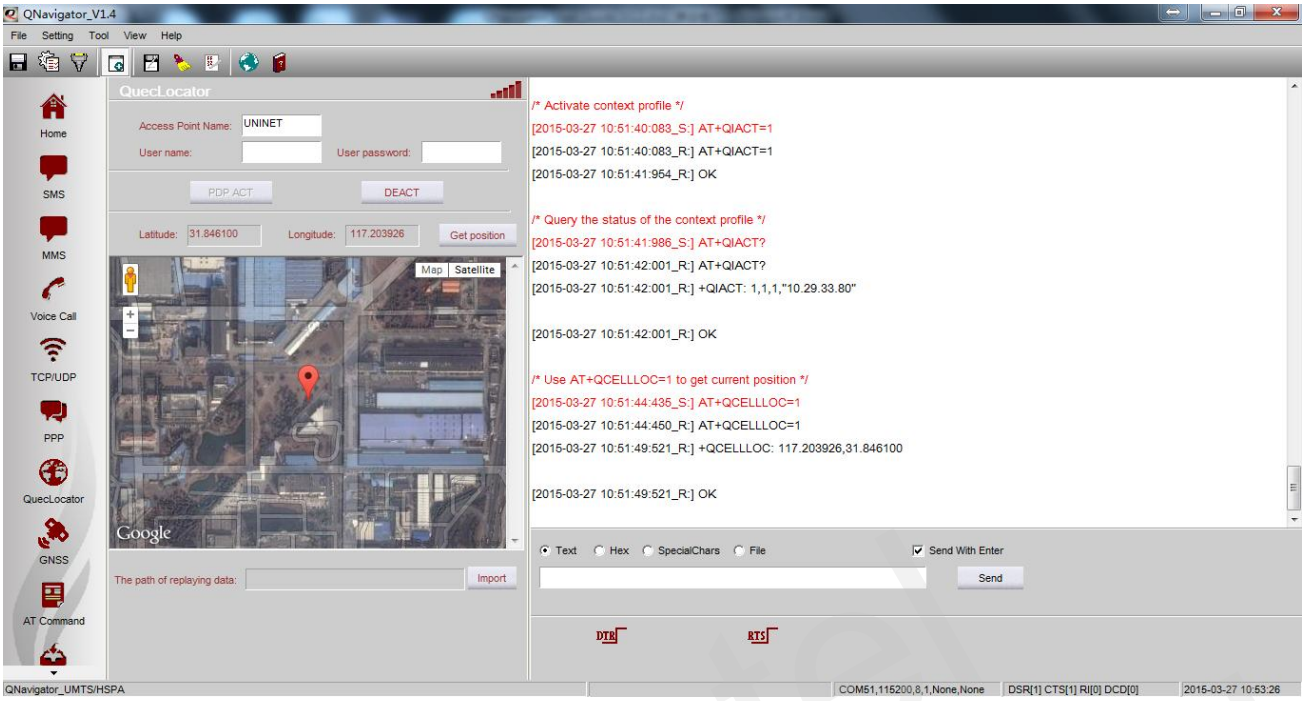

Figure 47: Show in Satellite Map

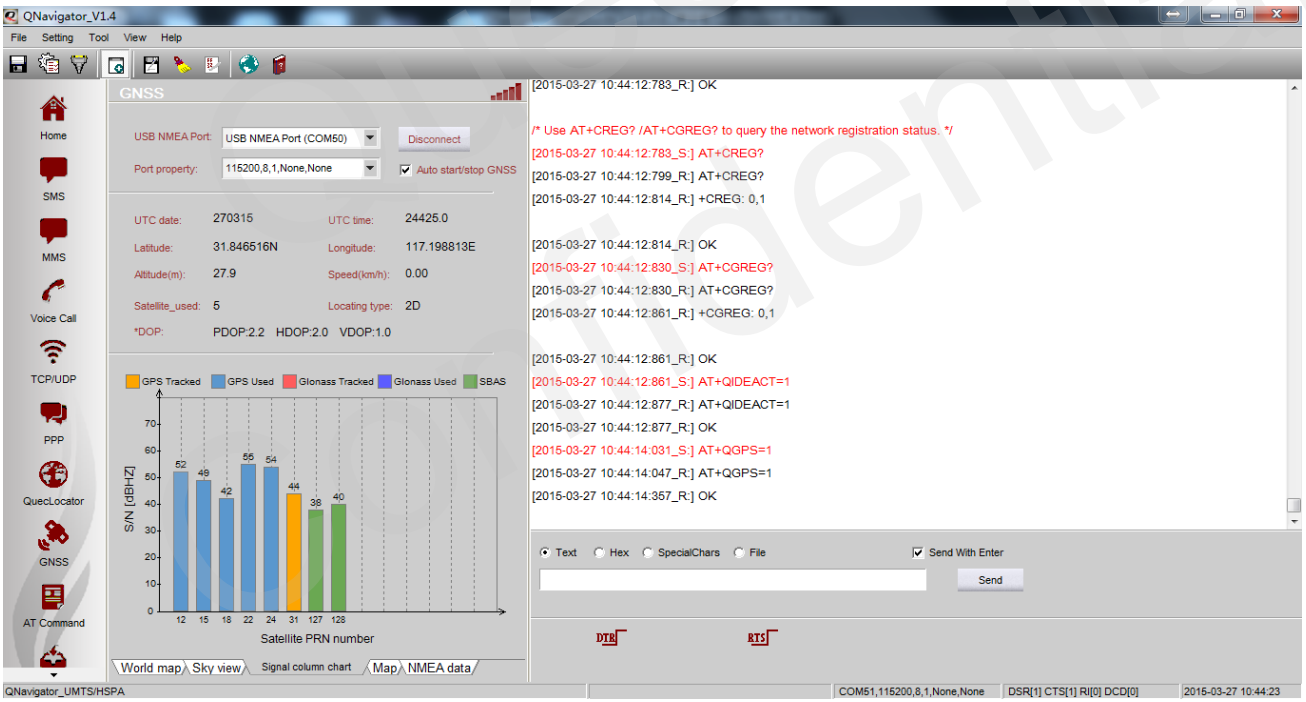

Figure 48: Satellite Signal State

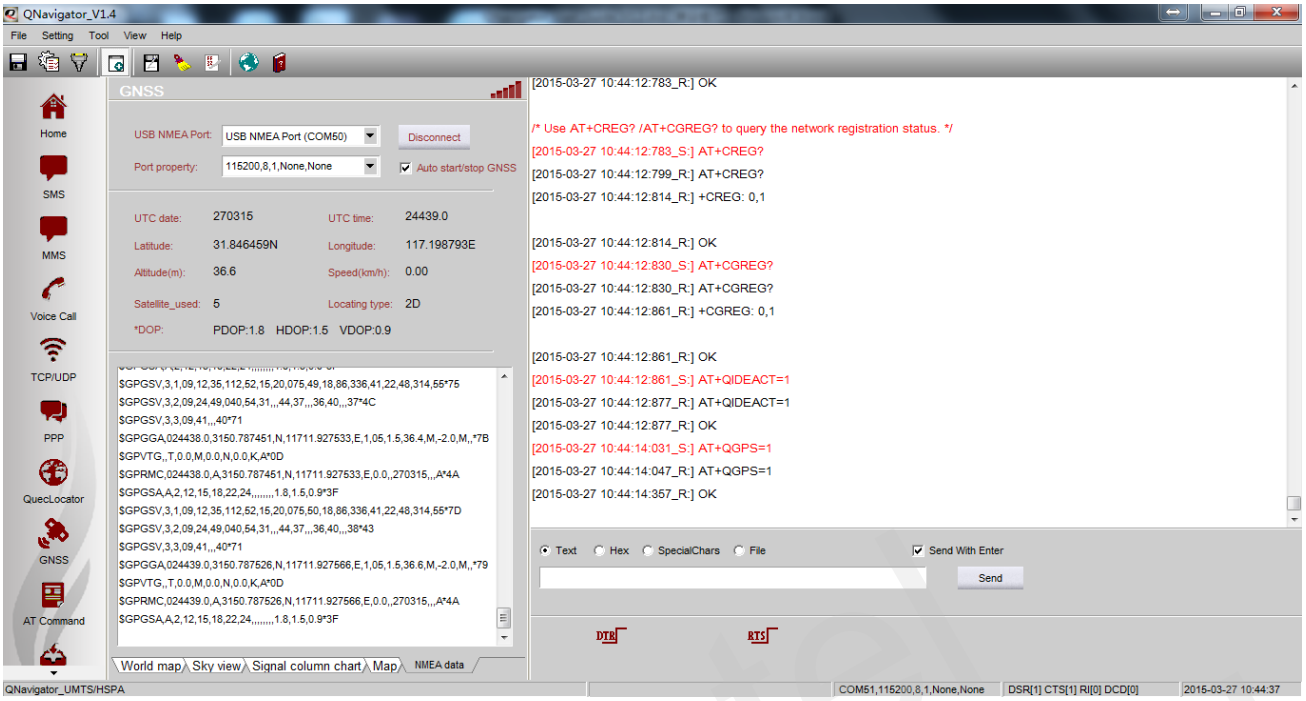

Figure 49: Show NMEA Data

5.8. QCOM

AT command's pressure testing can be performed under the QCOM test page, as shown below:

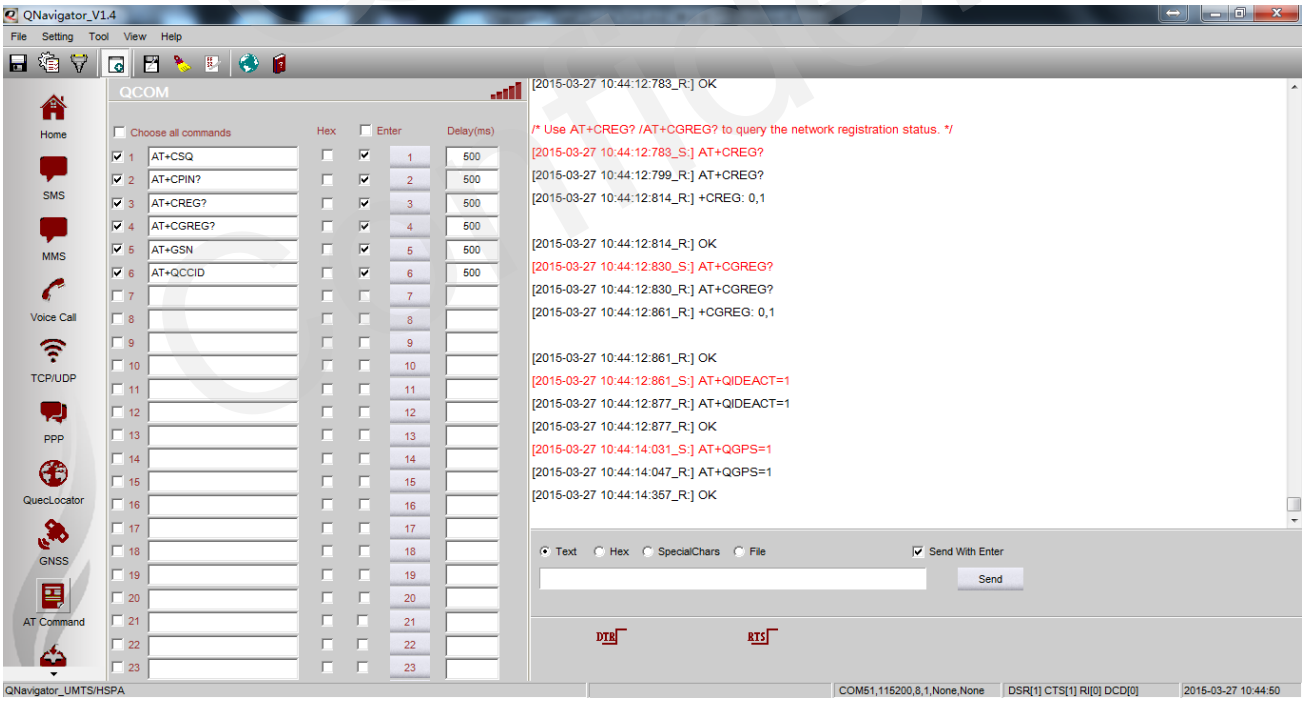

Figure 50: QCOM Page

6 Auxiliary Tools

6.1. Manually Send Data to UART

In the process of pressure testing, click , you can send AT command manually, as shown below:

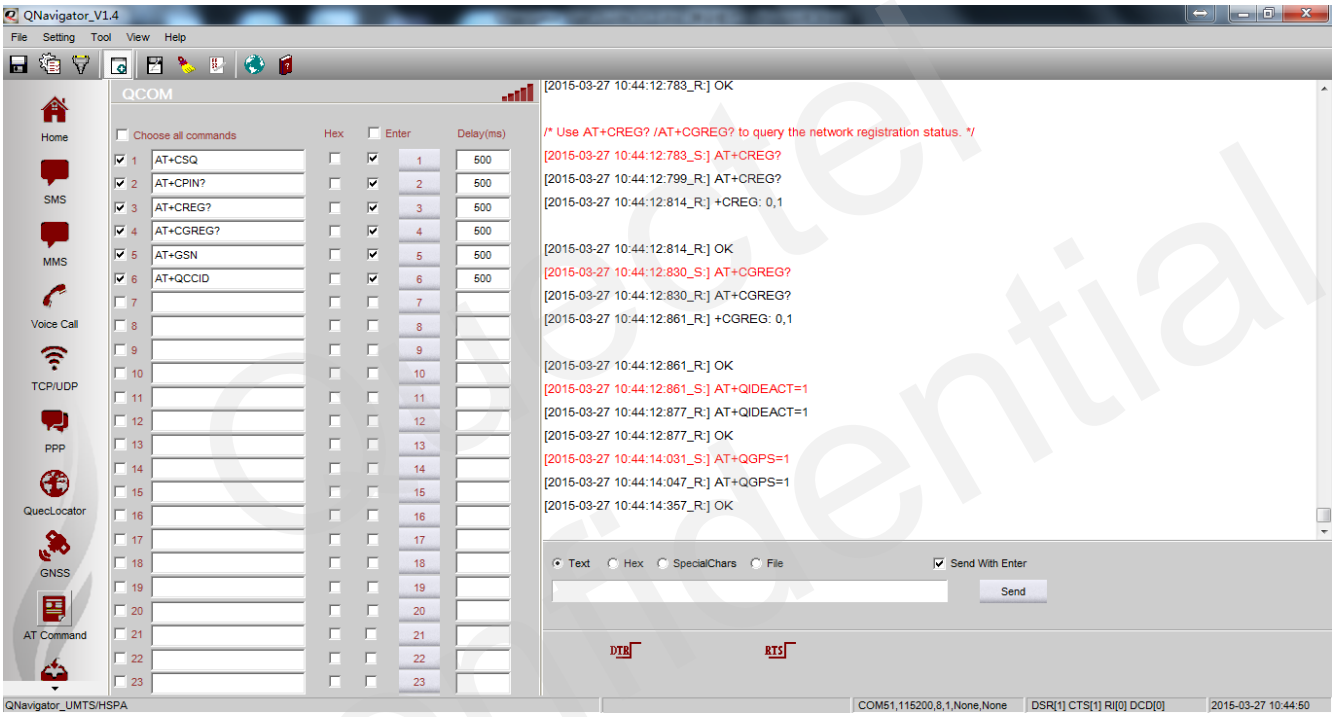

Figure 51: Hand Control

AT commands can be sent in Text and Hex mode. Enter an AT command in the text box which is on the right of ***Content***. When you double-click this text box, a dialog box would pop up, in which the same AT commands are shown in a list, you can add a new command in the list, or modify or delete a selected command, also you can copy a command to text box of the parent window by double-clicking the corresponding row in the list. The AT commands dialog box is shown as below:

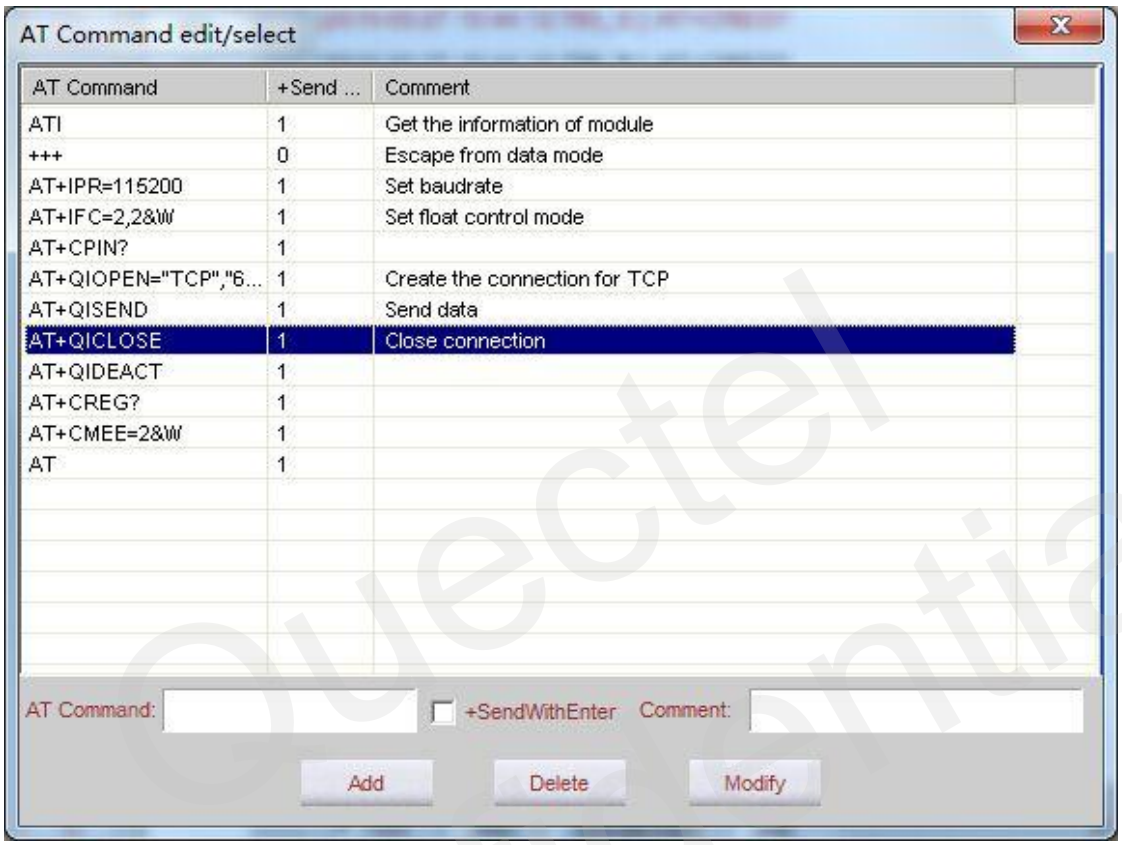

Figure 52: Hand Control-AT Command Edit/Select

Special character can be sent in ***SpecialChars*** page and the file operation can be executed in ***File*** page.

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