



iTegno 38XX GPRS Modem

Diagnostic Tool User Guide

(For hardware version P3 and later)

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Document History

Revision	Date	Document History	Associated Hardware Version
1.0	8 Oct 2008	Initial Release	P3

GENERAL NOTE

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1 INTRODUCTION

iTegno 38XX GPRS Modem Diagnostic Tool Software is designed to test the requirements of iTegno 38XX GPRS modem. There are various tests in this tool, including Communication test, SIM Detection, Registration, Signal Strength, CSD Connection, Exchange Data test and GPRS Test. The Diagnostic Tool software will enable iTegno 38XX modem users to identify the problems and generate a log analysis.

This manual provides an overview of the operation of iTegno 38XX GPRS Modem Diagnostic Tool Software.

1.1 Abbreviations

The following abbreviations are used in this document.

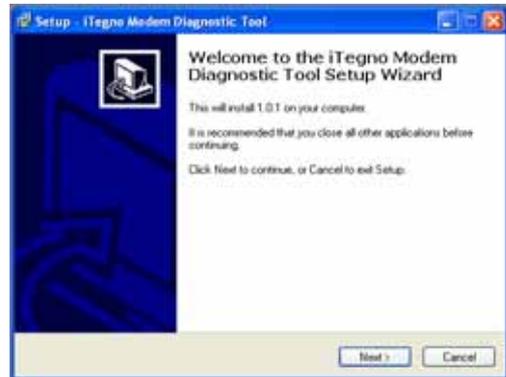
Abbreviation	Description
CSD	Circuit Switched Dataline
GPRS	General Packet Radio Services
GSM	Global System for Mobile Communications
SMS	Short Message Service
DCD	Data Carrier Detect
DTR	Data Terminal Ready
DUT	Device Under Test (The modem to be tested)
SIM	Subscriber Identity Module
PC	Personal Computer
APN	Access Point Name
OS	Operating System

2 INSTALLATION

This section provides a step-by-step installation guide for setting up the Diagnostic Tool Software.

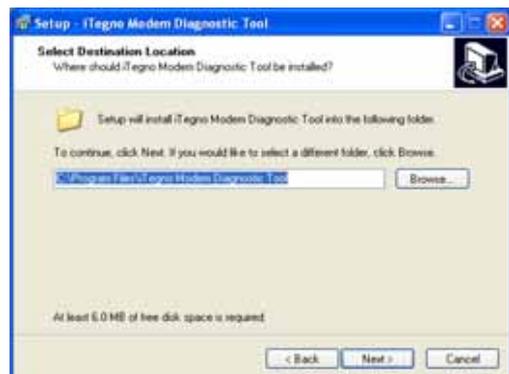
Step 1

Run the setup file (setup.exe). The Diagnostic Tool setup wizard will appear. Click **Next** to continue.



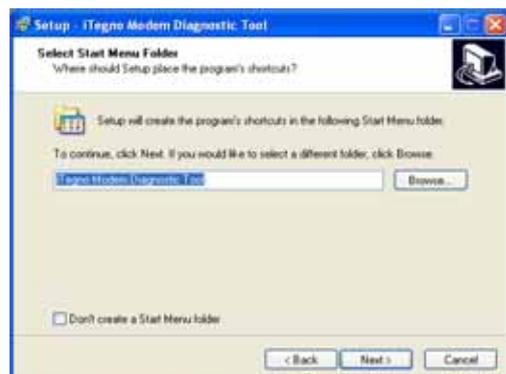
Step 2

Select an installation folder and click **Next** to continue. (It is recommended to use the default folder name).



Step 3

Rename the shortcut folder if needed and click **Next** to continue. (It is suggested to use the default folder name).



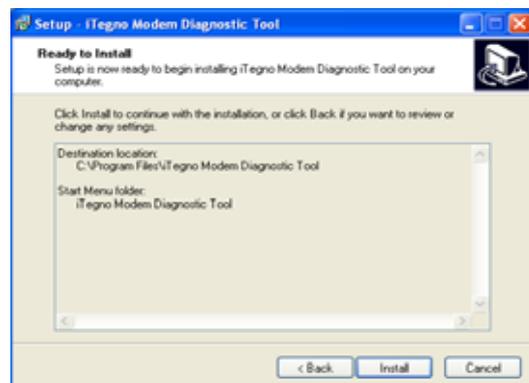
Step 4

Check **Create a desktop icon** and/or **Create a Quick Launch icon** if needed. Click **Next** to proceed.



Step 5

Select **Install** to install the Diagnostic Tool software.



Step 6

After you have finished installing the software, click **Finish**. The Diagnostic Tool Software is now ready for use.



3 TEST SCOPES

The Diagnostic Tool Software can perform the following tests:

Test	Purpose
Check Modem	To verify a valid iWOW Modem is being connected.
SIM Detection	To test SIM interface to the modem. (Note, a valid SIM card must be used)
Registration	To test modem registration to the GSM network.
Signal Strength	To test modem signal reception.
Short Message	To test modem sending and receiving of SMS. (1 SMS is being sent)
CSD	To test CSD connection. (A cooperating modem is needed)
Data Transfer	To test data transfer in CSD.
GPRS	To test GPRS connection and to ping to a server.
Modem Settings	To extract additional modem settings.

3.1 Error Codes

The following table list the possible errors reported by the Diagnostic Tool Software:

Error Code	Description
0010	Failure to communicate with the modem
0020	SIM Card error
0031	Failure to register to the network
0032	Weak signal
0041	Failure to send SMS
0042	Failure to receive SMS
0051	DCD≠0
0052	Failed to receive incoming CSD call
0053	Failed to answer CSD
0054	DCD≠1
0055	Failure to send/receive data in CSD
0056	DCD≠0 after call is disconnected
0057	Failure to detect DTR
0061	Failure to dial to GPRS
0062	Failure to ping to both user-defined address and www.itegno.com
0063	Failure to ping to user defined address only (pinging www.itegno.com is successful)
0070	Unable to save settings

4 TESTING THE MODEM

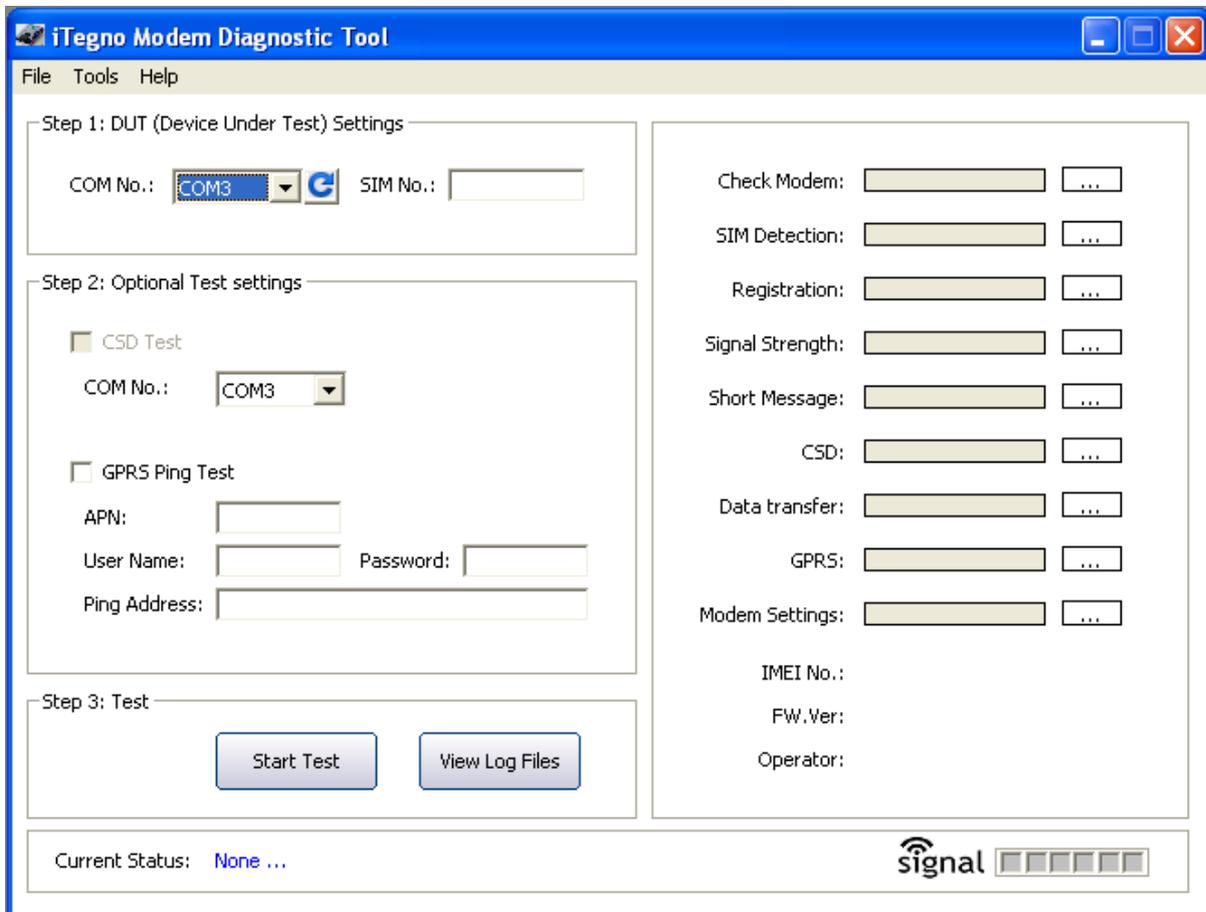


Figure: iTegno 38XX Modem Diagnostic Tool Software Main Screen

To test your modem with the Diagnostic Tool Software:

Step 1

Connect the DUT (the modem which is to be tested) to the computer.

Step 2

Start up the Diagnostic Tool software.

Step 3

Apply the required settings in the Diagnostic Tool Software Main Screen (as shown above) - **Step 1: Device Under Test (DUT) Settings**.



Step 1: DUT (Device Under Test) Settings

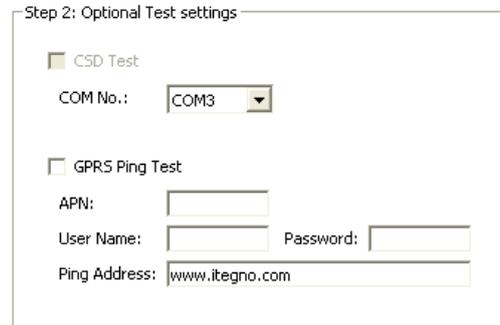
COM No.:  SIM No.:

Select the COM port that the DUT is connected to. To refresh COM port list, click .
Enter the SIM card number used in the DUT.

Step 4

Select optional tests in **Step 2: Optional Test Settings**. You can enable optional tests in this group. The available options include:

- CSD test
- GPRS Ping test



Step 2: Optional Test settings

CSD Test
COM No.:

GPRS Ping Test
APN:
User Name: Password:
Ping Address:

CSD Test

For CSD test, a cooperating modem is needed. Connect the cooperating modem into another COM port of the PC and enter the COM Port into “COM No.”.

GPRS Ping Test

For GPRS ping test, fill up the GPRS APN parameters and a ping target.

A GPRS dial-up connection has to be created before running the test. Please refer to **Section 7: Preparing for GPRS Test Option** for more information on the setup procedure.

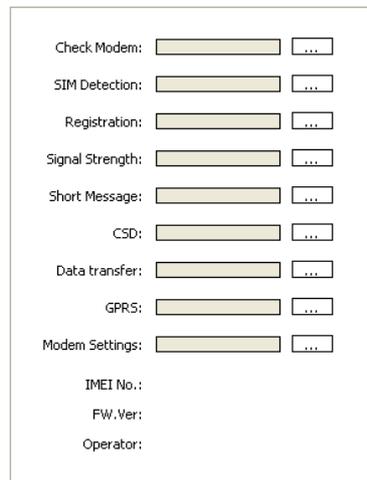
(Note: You will only need to do this once in your computer; you may skip this step if it has already been created)

Step 5

Start the test in **Step 3: Test**.



To start the test, click on the **Start Test** button. The test progress will be displayed in the right panel (as shown below):



The final test result and error codes, if any, will be displayed on the status bar.

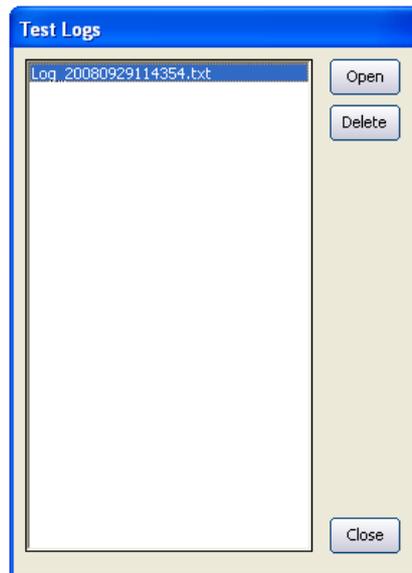


A test log file will be created and the test result is displayed in a pop up panel (as shown below) after the test.



5 LOG FILES

To view previous log files, select **File > View Log File** from the menu. A **Test Logs** panel will be displayed. Select the desired log file and click **Open** to view the test log.



Log files are named in the following format:

Log_YYYYMMDDhhssmm.txt

where:

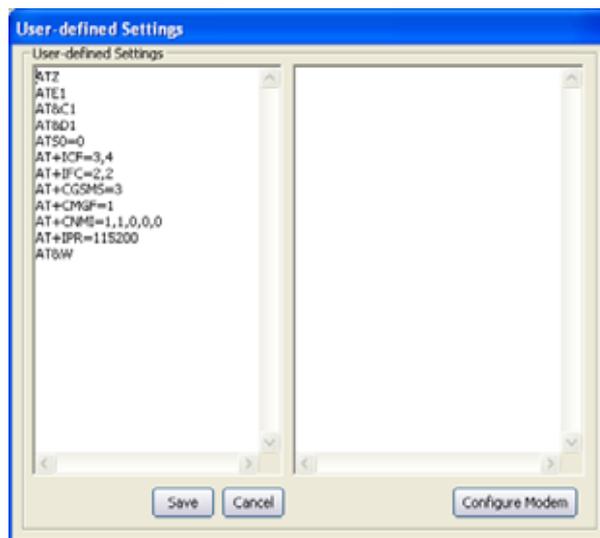
yyyy = 4 digit year
mm = 2 digit month
dd = 2 digit day
hh = 2 digit hours
mm = 2 digit minutes
ss = 2 digit seconds

The Log Files are filed in the **Diagnostic Tool Program Folder> \ application \ LogTst** folder.

6 APPLYING USER SETTINGS INTO THE MODEM

User-defined settings can be configured onto the modem using the Diagnostic Tool Software.

To open the **User-defined Settings** Panel, select **Tools > User-defined settings** from the main menu. The User-defined Settings panel will be displayed as shown below.



Edit your desired settings (AT Commands) into the left panel.

Click **Save** to save the modifications.

To configure the modem with the displayed User-defined settings:

1. Connect Modem to the PC.
2. Click on <Configure Modem> to start configuring your settings into the modem.

Note:

Please ensure that the COM port settings are set correctly in the main screen.

7 PREPARING FOR GPRS TEST OPTION

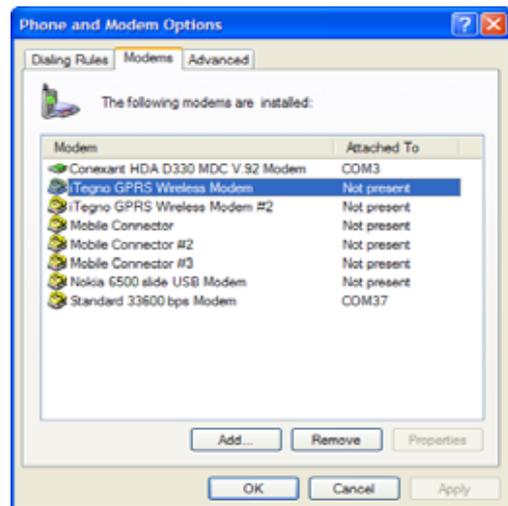
For GPRS test option, a GPRS Connection has to be created in your Windows Operating System before performing the GPRS test in the Diagnostic Tool software. You will only need to create it once and you can reuse the connection for future tests.

Step 1

From the Windows task bar, select **Start > Programs > Control Panel > Phone and modem options**.

Step 2

Select “Modems” tab. Click **Add** to proceed.



Step 3

Please ensure that “Don’t detect modem, I will select it from a list” is checked. Click **Next** to continue

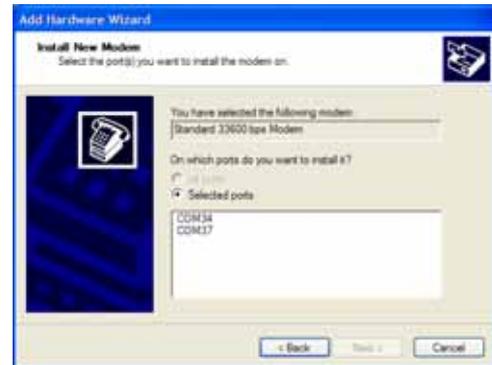
Step 4

Select **Standard 33600 bps modem** and click **Next** to continue.



Step 5

Select COM the COM port number that the DUT is connected. In the last screen, click Finish to complete the set up for your serial modem.



Step 6

To ensure that the correct communication parameter has been set-up, click on its **Properties**. Ensure the parameters are correct as below:

- Port Speed/Baud Rate: 115200
- Data Bits: 8
- Parity: None
- Stop Bit: 1
- Flow Control: Hardware

Step 7

You have created a Modem Port in your Windows Operating System. The next step is to create a GPRS Dial-up Connection and name it "iwowGPRS".

Step 8

From the Windows task bar, go to **Control Panel > Network Connection** and run the **New Connection Wizard**. A setup wizard will be displayed.

Click **Next** to continue.



Step 9

Select **Connect to the Internet** and click **Next** to continue.

Step 10

Select **Set up my connection manually**.

Click **Next** to continue.



Step 11

Select **Connect using a dial-up modem**.

Click **Next** to continue.



Step 12

Enter ***99***1#** for the phone number. This is a fixed GPRS connection dialling number for the module. Click **Next** to continue.



Step 13

Enter User name and Password if applicable. Uncheck on all options and click **Next** to continue.



Step 14

Click **Finish** to complete the wizard.



8 TROUBLESHOOTING

This chapter provides some troubleshooting guidelines on Non-True defects based on the Error Codes reported by the Diagnostic Tool Software.

Please perform the necessary troubleshooting activities to isolate all possible Non-True defects before contacting iWOW Technical Support Engineer for further technical assistance.

8.1 Failure to Communicate with the Modem (Error Code: 0010)

Possible Causes	Troubleshooting
Invalid iWOW Product	<ul style="list-style-type: none"> Diagnostic Tool Software will only work with iWOW products. Please ensure that iWOW modem is used for the test.
Modem not detected	<ul style="list-style-type: none"> The modem is not to be detected by the Diagnostic Tool software Ensure that the USB cable/ Serial cable/ RJ-45 adapter is not faulty Ensure that the modem is powered up properly Ensure that the modem is connected to the COM port specified in the Diagnostic Tool software

8.2 SIM Card Error (Error Code: 0020)

Possible Causes	Troubleshooting
SIM PIN/ PUK locked	<ul style="list-style-type: none"> Test the SIM card with a mobile phone. If you are prompted to enter a SIM PIN or PUK, your SIM card is locked. Unlock the SIM with your mobile phone. Insert the SIM card back to the modem and re-test the modem. Contact your network service provider for assistance if you have lost your SIM PIN or PUK code.
Faulty SIM card	<ul style="list-style-type: none"> Ensure that the SIM card is properly inserted into the modem Test the SIM card with a mobile phone; if the phone cannot register to the network or cannot detect the SIM card, replace it with a valid SIM card to test the modem

8.3 Failure to Register to the Network (Error Code: 0031)

Possible Causes	Troubleshooting
Invalid SIM card	<ul style="list-style-type: none">• Test the SIM card with a mobile phone. If the phone cannot register to the network, replace it with another valid SIM card to test the modem.

8.4 Weak Signal (Error Code: 0032)

Possible Causes	Troubleshooting
Faulty external GSM antenna	<ul style="list-style-type: none">• If the modem needs an external antenna, test and verify that the external antenna is functional• Use another antenna to test the modem or test the external antenna with another modem• Ensure that the external antenna is properly plugged into the modem
Weak signal location	<ul style="list-style-type: none">• The location where you conduct the modem testing may be having a very weak signal reception. Try to test the modem in another location, or place the external antenna, if any, in another location with a better reception

8.5 Failure to Send/Received Short Message (Error Codes: 0041 and 0042)

Possible Causes	Troubleshooting
Invalid service	<ul style="list-style-type: none">• Insert the SIM card into a mobile phone. Try sending and receiving SMS with the mobile phone. If the sending/ receipt of SMS in the mobile phone is unsuccessful, replace the SIM card or contact your network operator to enable your SMS service

8.6 DCD≠0 (Error Code: 0051)

Possible Causes	Troubleshooting
Faulty serial cable	<ul style="list-style-type: none">• Replace the external serial cable and test the modem again

8.7 Unable to Receive Incoming Data Call (Error Code: 0052)

Possible Causes	Troubleshooting
Wrong SIM number	<ul style="list-style-type: none">• Ensure that the SIM card number entered in the Diagnostic Tool software is correct
Faulty SIM card	<ul style="list-style-type: none">• Contact your network operator and confirm that both SIM cards in the modem and the cooperating device are enabled with data call service
Faulty cooperating device	<ul style="list-style-type: none">• Replace the cooperating device

8.8 DCD≠1 (Error Code: 0054)

Possible Causes	Troubleshooting
Faulty serial cable	<ul style="list-style-type: none">• Replace the external serial cable and test the modem again

8.9 Failure in Dialling to GPRS Network (Error Code: 0061)

Possible Causes	Troubleshooting
Invalid connection profile in Windows OS	<ul style="list-style-type: none">• The connection setup must be manually created before testing the GPRS function.
Invalid APN, user name and password	<ul style="list-style-type: none">• Ensure that the given APN, user name and password are correct• Contact your network operator for more details

8.10 Failure to Ping to User-Defined Address Only (Error Code: 0063)

This is not considered a True Modem defect as pinging to www.iTegno.com is successful.

Please ensure that the given Ping address (in the Diagnostic Tool Software) is a valid server with the Ping protocol enabled.

9 SUPPORT/ CONTACT US

For online support (FAQs and drivers download), please visit www.iTegno.com.

For technical support, please contact our distributors/resellers or email us at developers@iTegno.com.

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