

RTC Connect Training Aid

Working with Modem Debug and Setup

In this training aid you will learn how to debug and setup a modem.

Objectives:

1. Connect Modem to PC via the Y cable.
2. Validate the programming of a modem.
3. Setup the programming of a modem.
4. Determine modem signal power.

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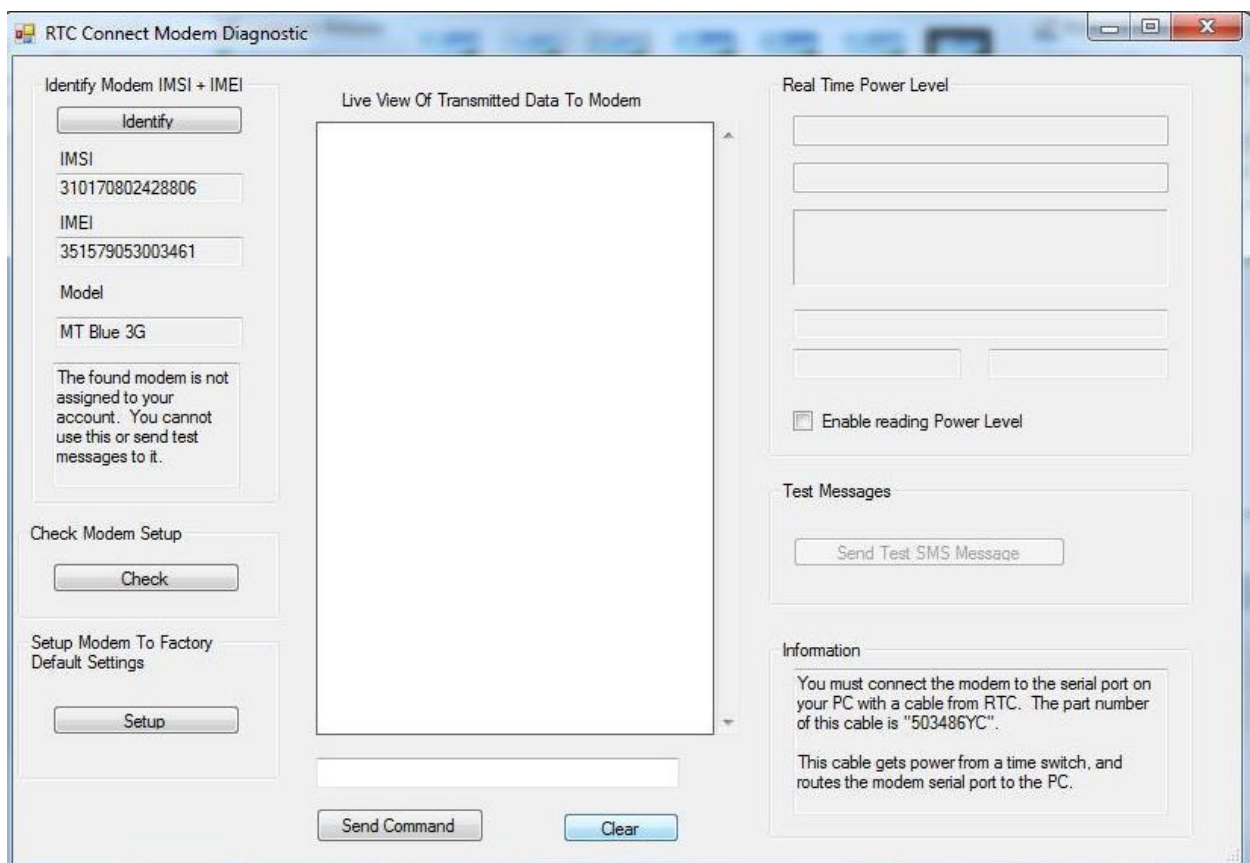
OBJECTIVE 1

When you connect the modem to the Y cable there are three connections to be made. The Y cable part number is 503486YC.

- 1) One connection to the PC. This is a female connector on the Y cable.
- 2) One connection to the modem. This is a female connector on the Y cable.
- 3) One connection to the timeswitch. This is the male connector on the Y cable.

You must setup the com port in the utilities section of RTC Connect. You must select a com port that your computer is using. For help on this see the helpfile on the web at <http://www.rtc solar.com/dloads/pdf/procedures/Procedure USB Identify.pdf>.

When you right click any item in the tree then you see the modem diagnostic option. Click it and you will see the following.



If the modem is connected you will see the screen above. The IMSI number and IMEI are filled in. Also the type of modem is shown in the Model area.

The IMSI number is how the modem is allocated to a location. This number is assigned on the SIMCARD

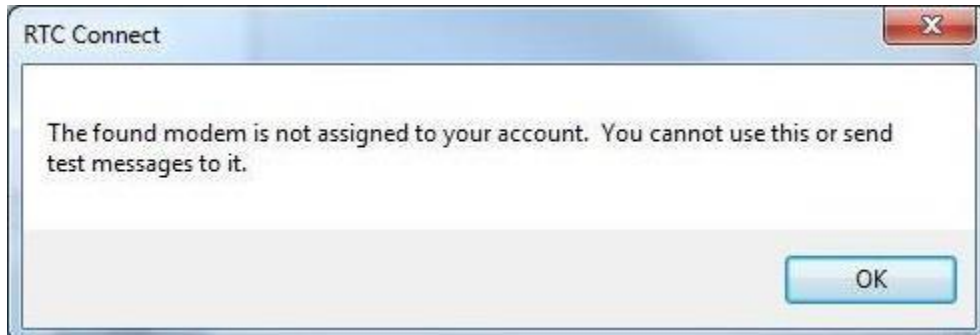
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in the modem.

The IMEI number is the serial number of the modem itself.

If the modem is assigned to a location RTC Connect will tell you the location it is assigned to.

If the modem you connect is not assigned to your account you will see the following.



The modem is now connected properly to your Computer.

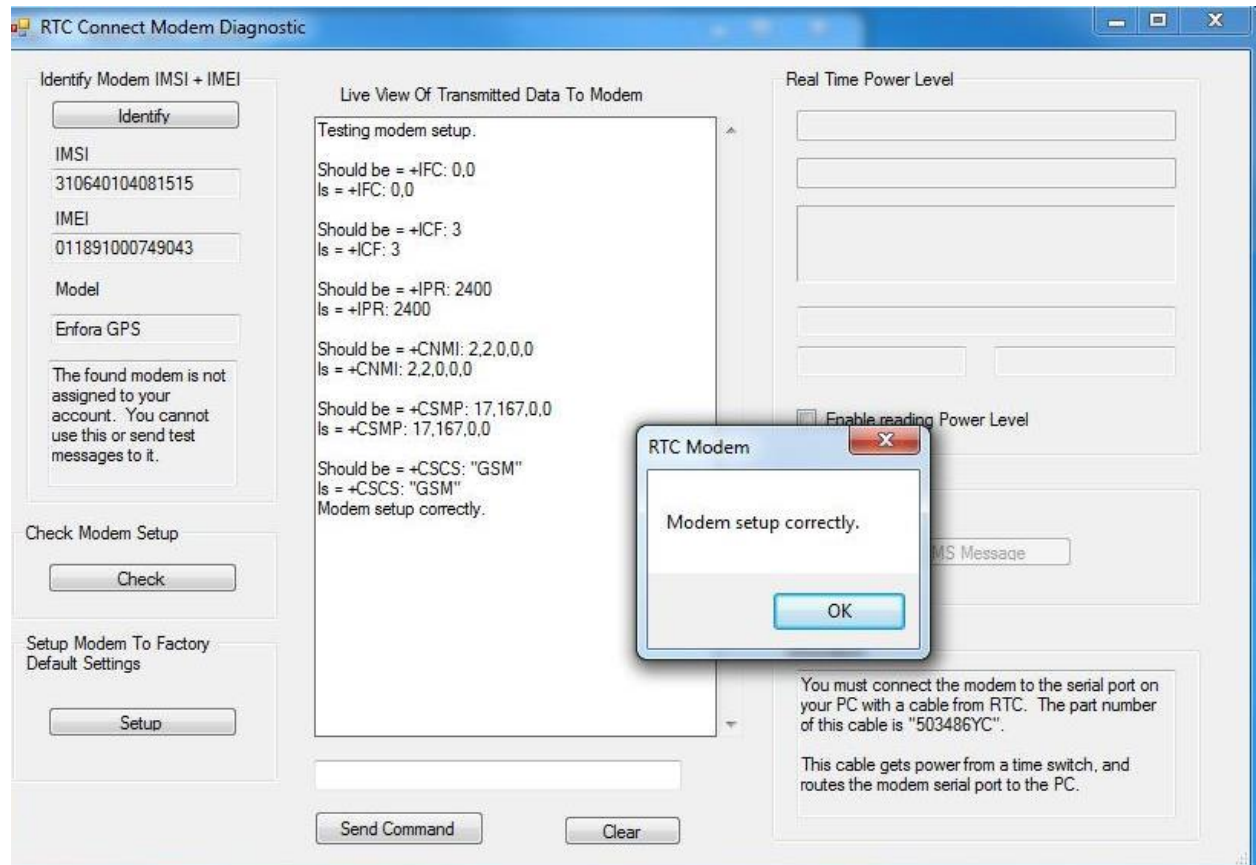
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OBJECTIVE 2

The objective here is to check the setup of the modem. The modem comes from the factory properly setup. This step is used to eliminate the possibility of the modem being altered in the field and allows you to restore the factory setup.

It is very important that you identify the modem before doing this step. There are several modem configurations in the software and the identify command prepares the correct one for the modem attached.

Simply click the buttons labelled 'Check' to test the modem. The result will be displayed.



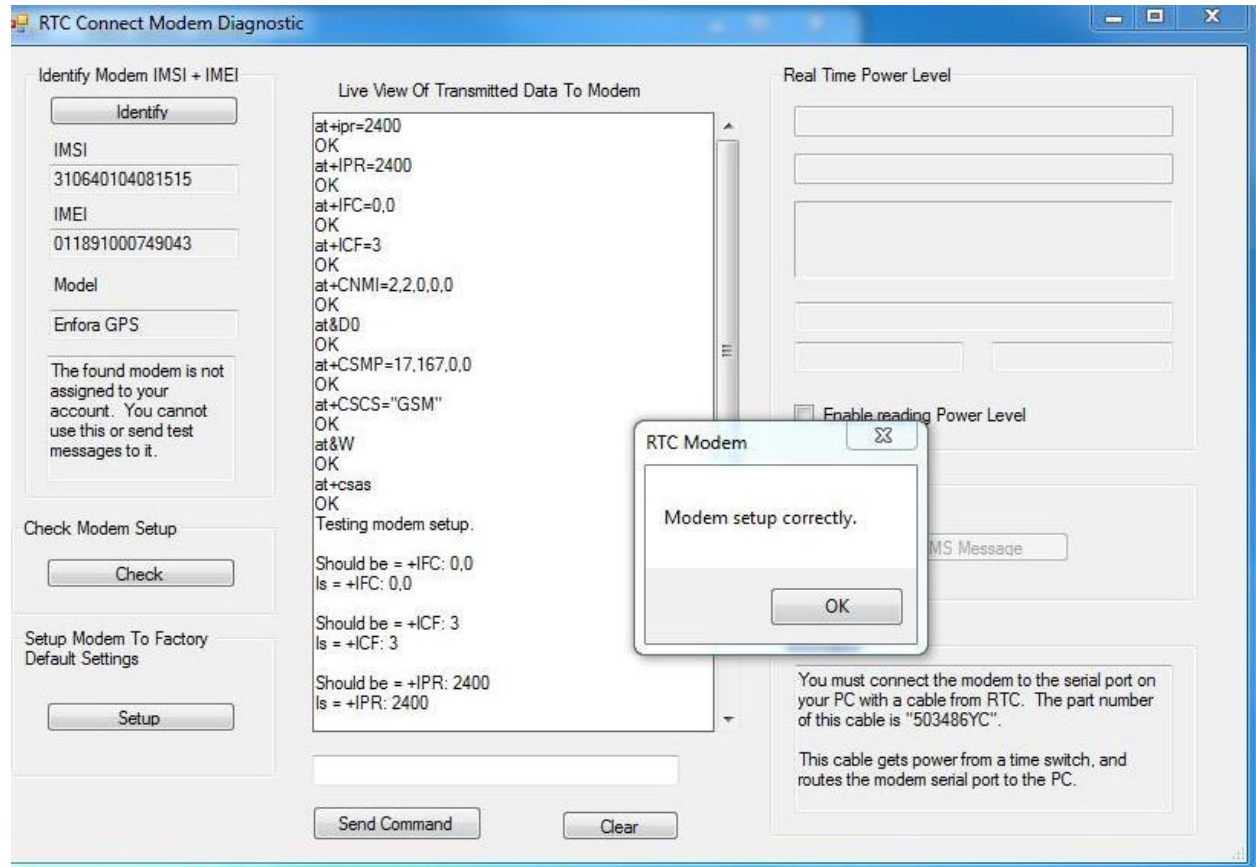
Note the message box telling you the modem was setup correctly. If the modem is not setup correctly you can correct this with objective 3 below.

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OBJECTIVE 3

The objective here is to setup the modem to the factory configuration. It is very important that you identify the modem before doing this step. There are several modem configurations in the software and the identify command prepares the correct one for the modem attached.

To setup the modem you simply click setup. The result will be shown. If the modem cannot be setup it should be returned to the RTC.



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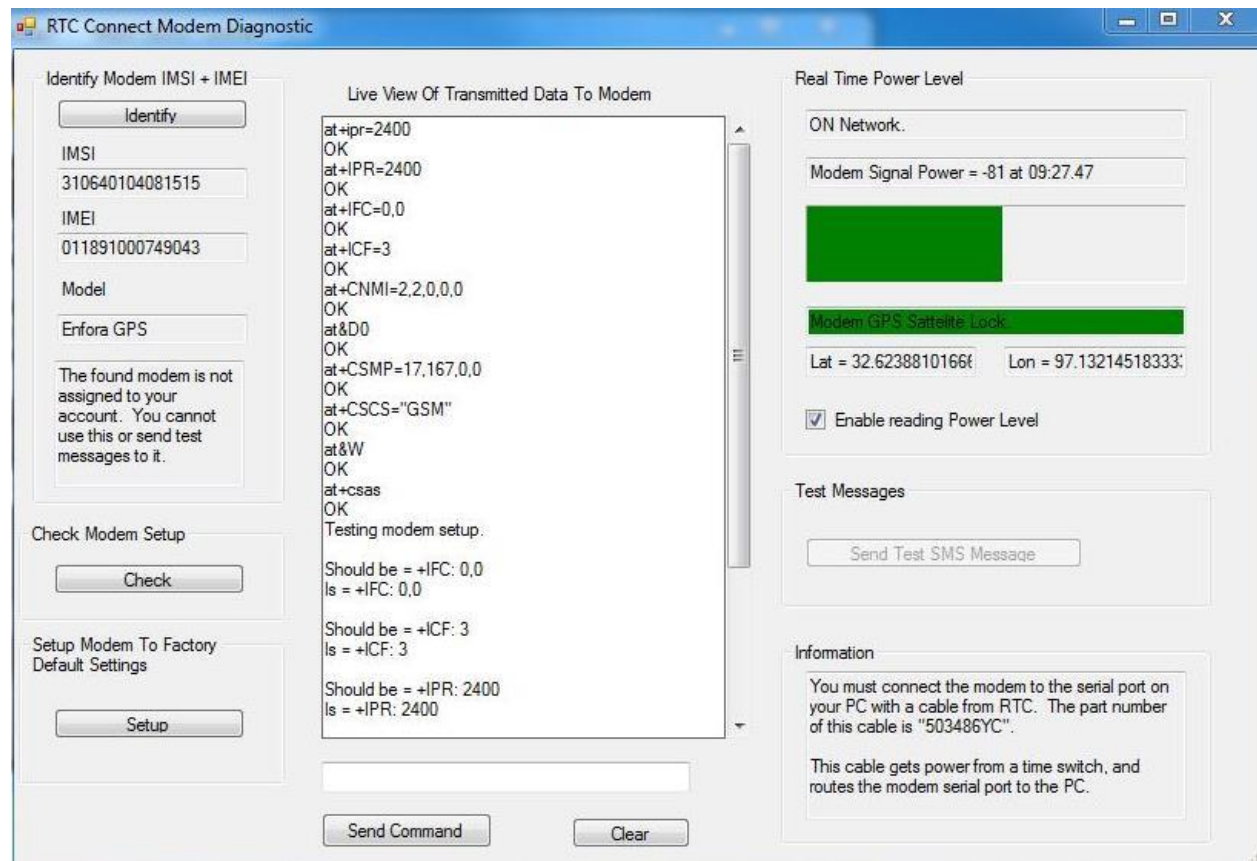
OBJECTIVE 4

The objective here is to determine the signal power of the modem, the modem network status, and the GPS coordinates if the modem has GPS.

Signal power in modems is very similar to radio signal power. The modem power is measured in decibels and is display as a number from -105 to – 45. The levels closer to -45 are better power than the levels closer to -105.

The minimum signal level to operate is in the -95 range. Although the modem can work at -100 the reliability of this level is suspect, it will occasionally work and occasionally fail.

To measure the signal power you need only check the box labeled 'Enable reading power level'.



Notice in this sample the message is displayed 'ON Network'. This modem is currently registered on the network. If this message is not displayed the modem cannot work.

This modem has signal power at -81. This signal power is very good and the modem will likely work just fine. Moving the antenna around may make this number change. To determine the best location of an antenna you can run this screen while moving the antenna around.

This modem has GPS. So the GPS signal appears. This particular modem has a good GPS lock at this

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time. If it did not, it would display such.

Conclusion

At this point you have learned how to test and setup a modem.