BC66&BC66-NA
PPP Application Note

LPWA Module Series

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Our aim is to provide customers with timely and comprehensive service. For any assistance, please contact our company headquarters:

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About the Document

History

Revision	Date	Author	Description
1.0	2019-06-26	Jacobi RAO	Initial

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1 Introduction

This document gives a brief introduction of how to use the PPP function on BC66-TE-B/BC66-NA-TE-B, mainly including the steps/methods of the port setting, PDN activation mode and port setting, and PC configuration for PPP dial-up.

This document is applicable to the following Quectel LPWA modules.

● BC66
● BC66-NA

NOTE

This document introduces PPP dial-up operations based on BC66-TE-B/BC66-NA-TE-B. If customer devices are used instead of the TE-B, please make sure the interfaces/functions listed in *Table 1* are also available on customer devices. Otherwise, please contact Quectel Technical Supports for matters needing attention.

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2 Preparation and Settings

2.1. Preparation

1. Connect the BC66-TE-B/BC66-NA-TE-B to PC. Both USB interface and USB-UART interface should be connected.
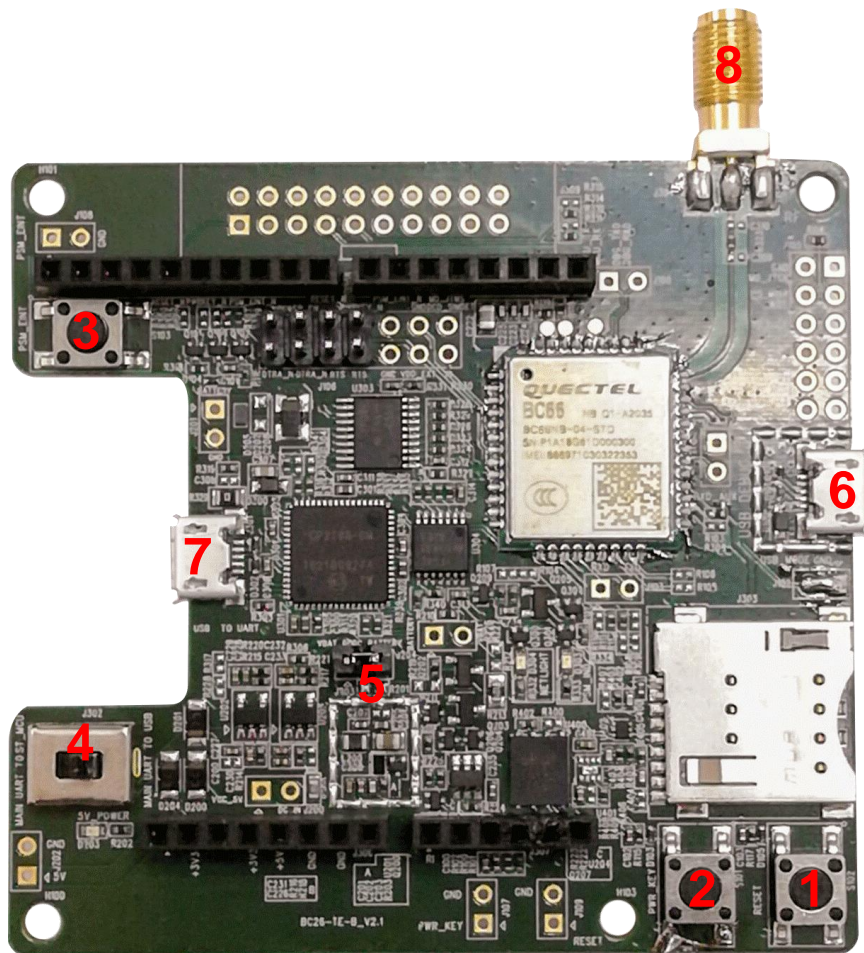

Figure 1: BC66-TE-B

Table 1: Key Interfaces of BC66-TE-B

SN	Interface	Description
1	Reset Button	Reset the module
2	PWRKEY Button	Turn on the module
3	PSM Wakeup Button	Wake up the module from Deep Sleep
4	UART Switch	Used to select the communication object of main UART: "MAIN UART TO USB" or "MAIN UART TO MCU" Make sure the switch is switched to "MAIN UART TO USB"
5	Jumper	During PPP dial-up application, please make sure the plug-in jumper is connected
6	USB Interface	Simulated two interfaces: Modem port for GKI tracing and Debug port for HSL tracing
7	USB-UART Interface	Simulated four interfaces: ● interface 0 for AT interaction ● interface 1 for HSL tracing ● interface 2 for GKI tracing ● interface 3 is reserved
8	Antenna Interface	RF SMA connector for connection with an external antenna

NOTES

1. BC66-NA-TE-B has the same interface designs with BC66-TE-B. For more details of TE-B interfaces, please refer to *document [1]* or *document [2]*.
2. Before connecting the TE-B to PC, please install the UART&USB driver first. For more details, please refer to *document [3]*.
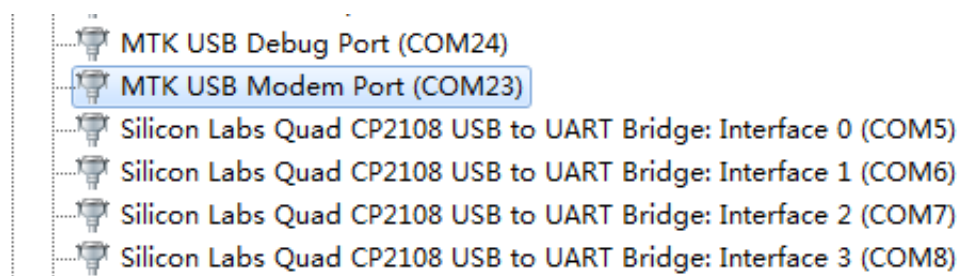

Figure 2: UART Ports in Device Management

3. Use **AT+CGATT?** to check whether the module can successfully register to EPS network.

AT+CGATT?
+CGATT: 1

OK   //Successfully registered to the EPS network

2.2. PDN Activation/Port Settings

2.2.1. PDN Activation Setting

Auto PDN activation is enabled by default. Before PPP dial-up connection establishment, please disable it with **AT+QCFG="autopdn",0** when powering on the module. The command takes effect after reboot.

NOTES

1. Please use **AT+QCFG="autopdn",1** to enable auto PDN activation after PPP testing for normal module control.
2. **AT+QCFG** is supported in BC66NBR01A07/BC66NADAR01A01 or later versions. For more details of this command, please refer to *document [4]*.

2.2.2. Port Setting

AT+EPORT=1,connl,4 is used to configure USB modem port as the AT port. It will take effect after reboot. **AT+EPORT=0** can be used to check whether the previous command is executed successfully.

AT+EPORT=0   //Query the current setting
+EPORT: uls=2
+EPORT: connl=4
+EPORT: emmi=1

OK

NOTE

If customer devices are used instead of Quectel BC66-TE-B/BC66-NA-TE-B and the USB port is not designed, then please skip the port setting illustrated above. Otherwise, customer devices may crash.

2.2.3. Reboot the Module

Reboot the module to make the settings above take effect.

3 PPP Dial-up Operation

3.1. Modem Configuration

3.1.1. Add a New Modem

If no **Standard 56000 bps Modem** has been installed, a new standard modem needs to be created.

1. Click "**Start**" → "**Control Panel**" → "**Phone and Modem**", as shown in the following figure.
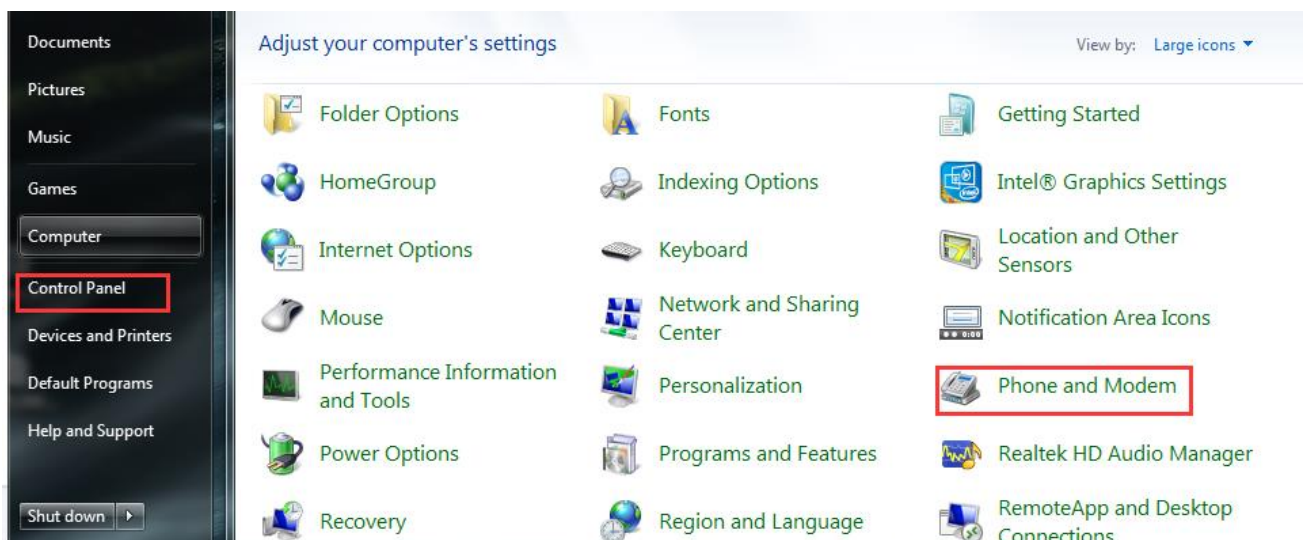

Figure 3: Phone and Modem Options Icon in Control Panel

2. Double click "**Phone and Modem**", and select "**Modems**" → "**Add…**", as shown in the following figure.
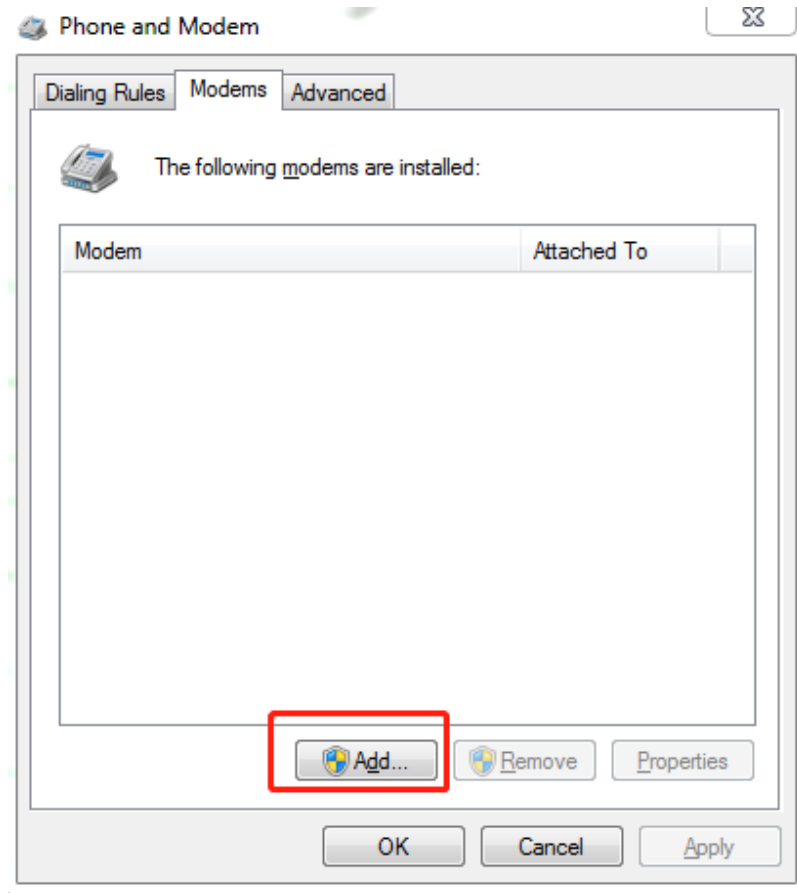

Figure 4: Add Modem

3. Check the item "**Don't detect my modem; I will select it from a list.**" and click "**Next**" to add a new modem.
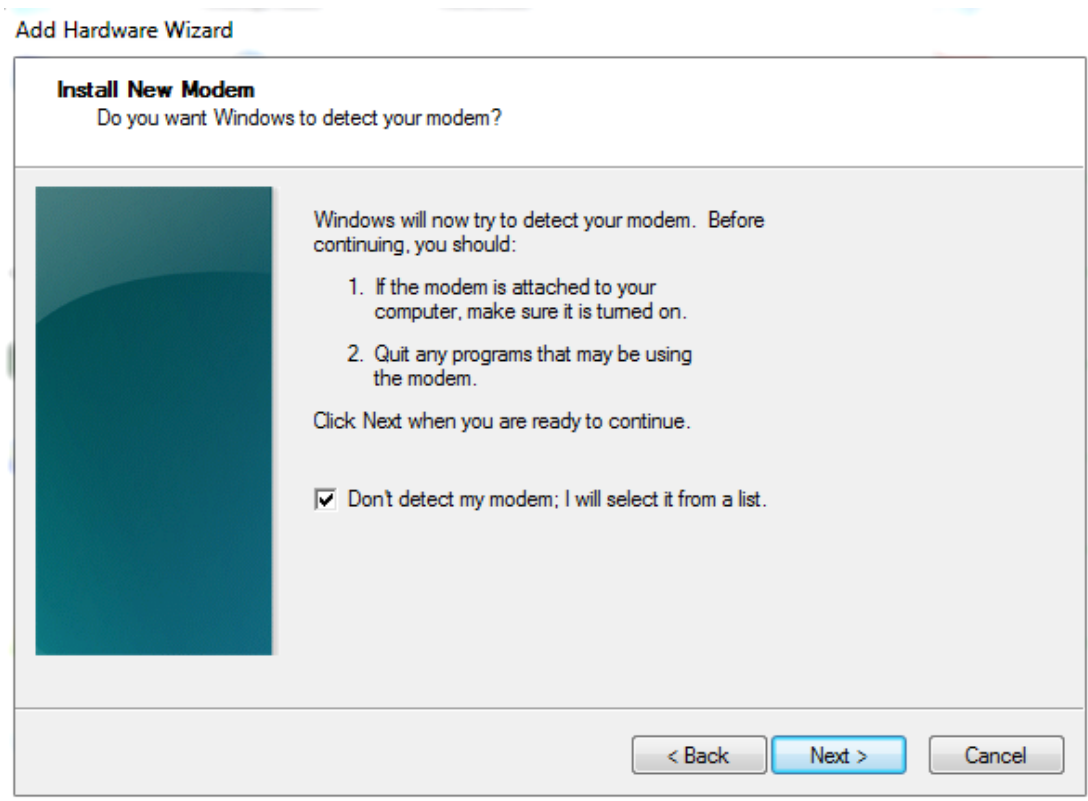

Figure 5: Install New Modem

4. Install the new modem according to the instructions on the screen: select "**Standard 56000 bps Modem**" and a port ("**COM23**", AT port) which will be installed; click "**Next**" button, until the configuration is finished. Refer to the following three figures for details.
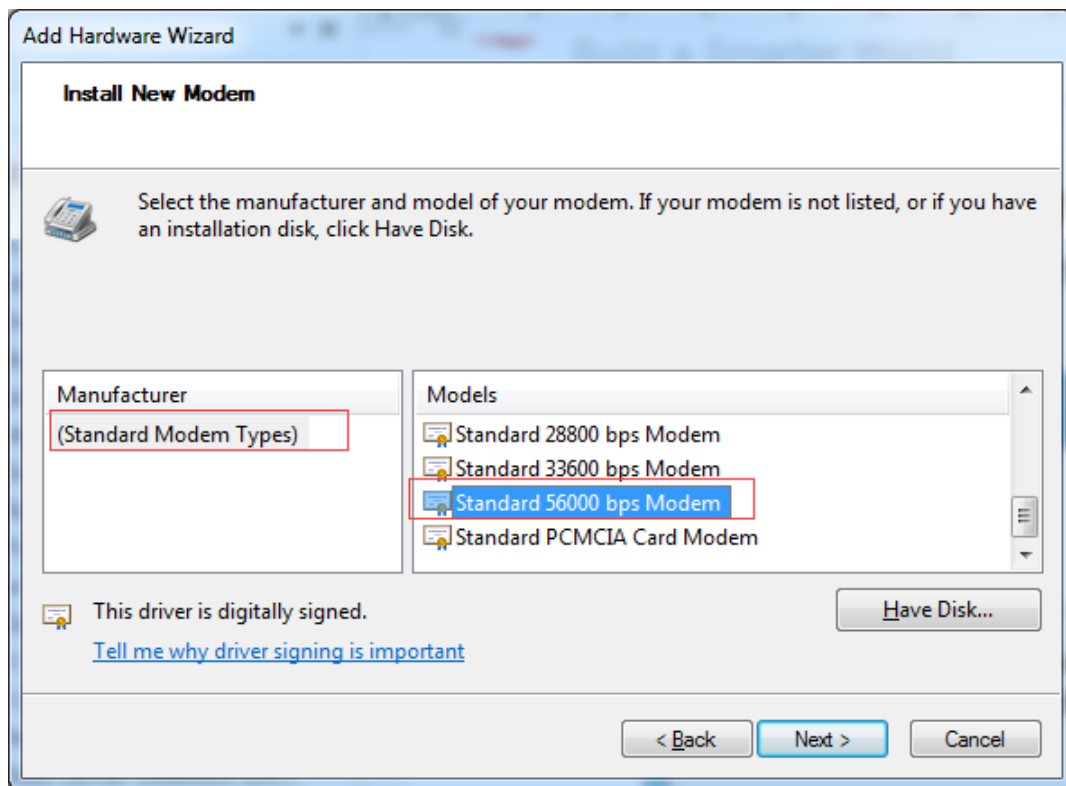

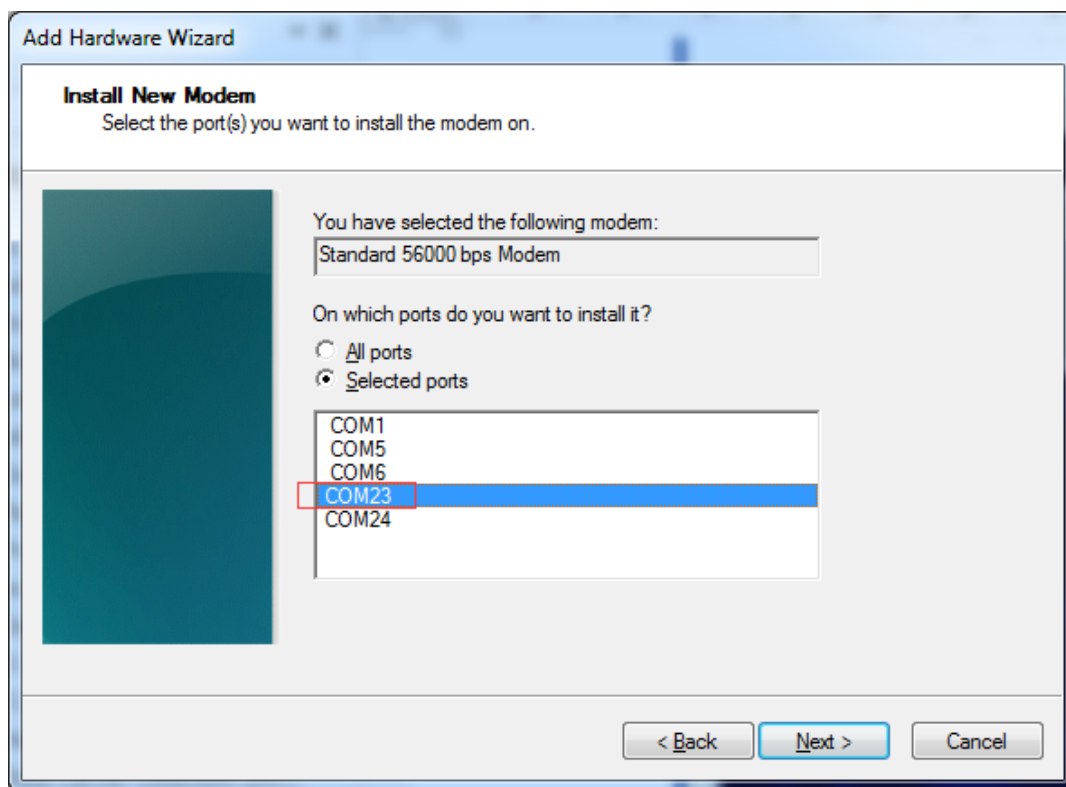**Figure 6: Select Model of the Modem**
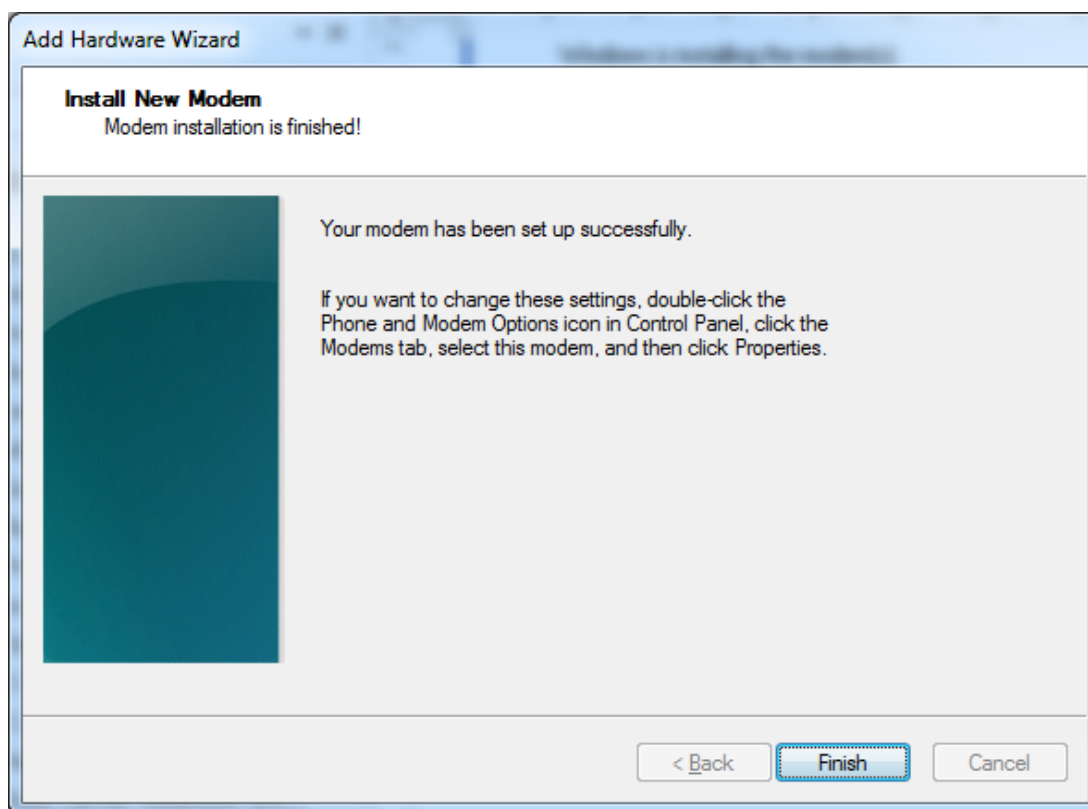
Figure 7: Select a Port to Install the Modem on

Figure 8: Modem Set up Successfully

3.1.2. Configure the Modem Driver

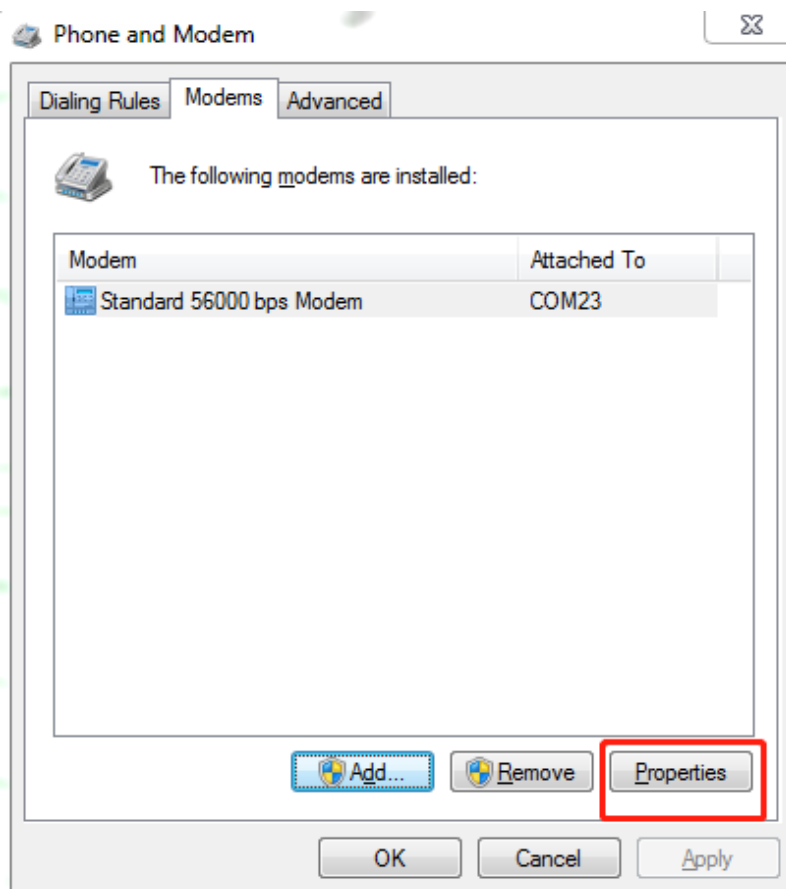1. Select the "**Standard 56000 bps Modem**" which has been installed; click "**Properties**" button.

Figure 9: Set Modem Properties

2. Click "**Modem**" to turn off "**Speaker volume**", select "**115200**" (default value) for "**Maximum Port Speed**" and uncheck "**Wait for dial tone before dialling**" in "**Dial Control**" field.
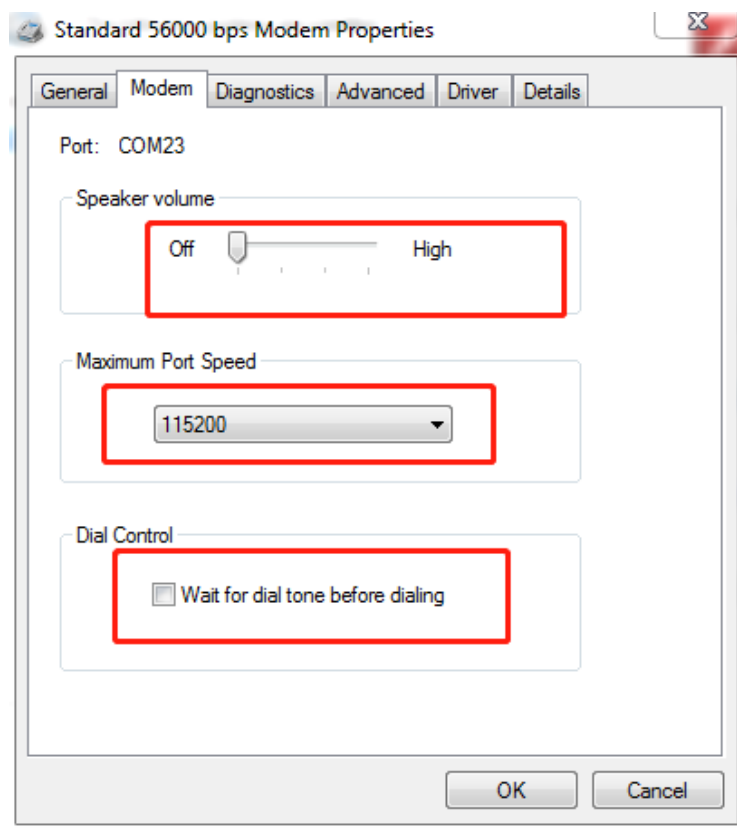
Figure 10: Set Modem

For Window 10 or later operating systems, please click "**Change settings**" in the "**General**" tab first as shown below, and then make the above changes in "**Modem**" tab.
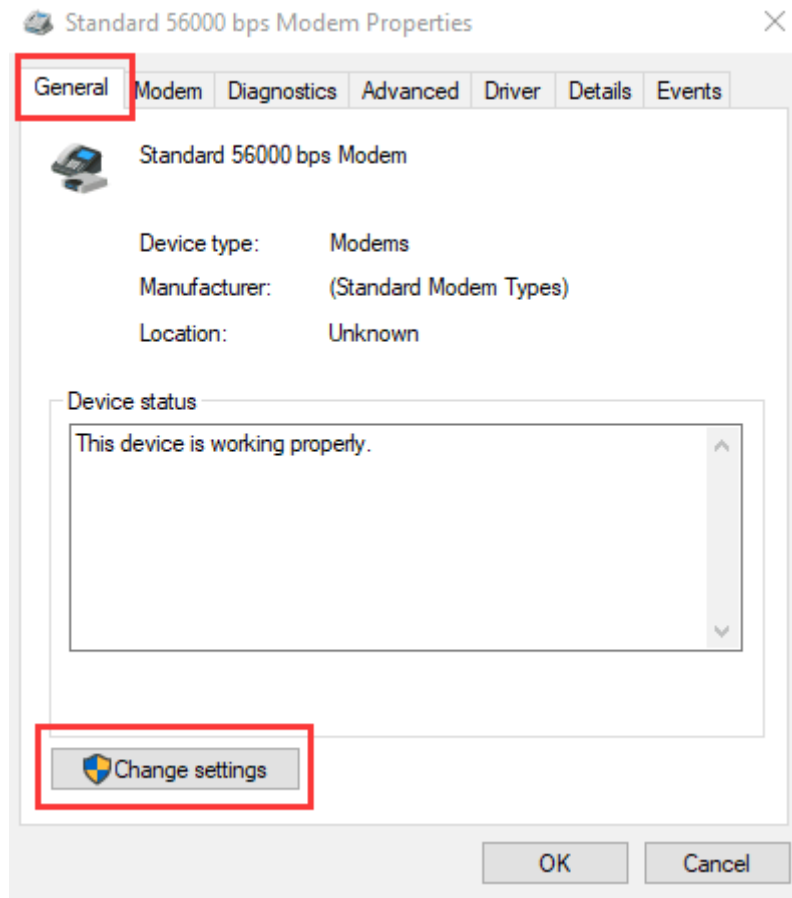

Figure 11: Change Settings in Window 10 or Later OS

3. Click "**Advanced**" to configure "**Extra Settings**"; and then input **AT+CGDCONT=1,"IP","CTNB"** command; click "**Change Default Preference …**", select "**None**" for "**Flow control**", then click "**OK**", as illustrated below.
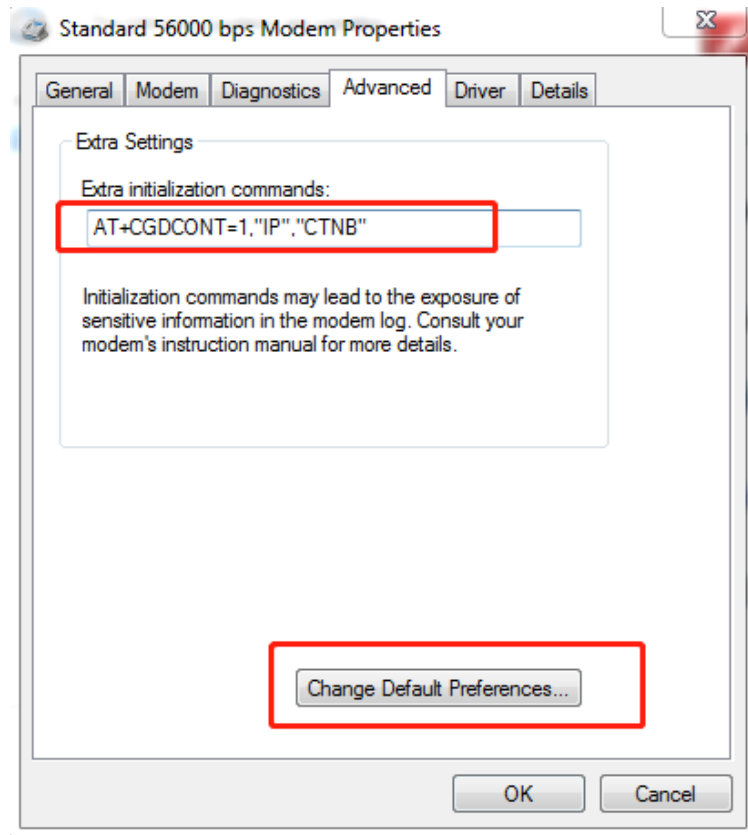

Figure 12: Set APN

NOTE

In the example above, the setting predefines a PDP context where PDP context ID=1, PDP type=IP and APN=CTNB. CTNB is the APN for the network provider China Telecom and it should be replaced with the value provided by customers' actual network provider. For more details of **AT+CGDCONT**, please refer to *document [4]*.
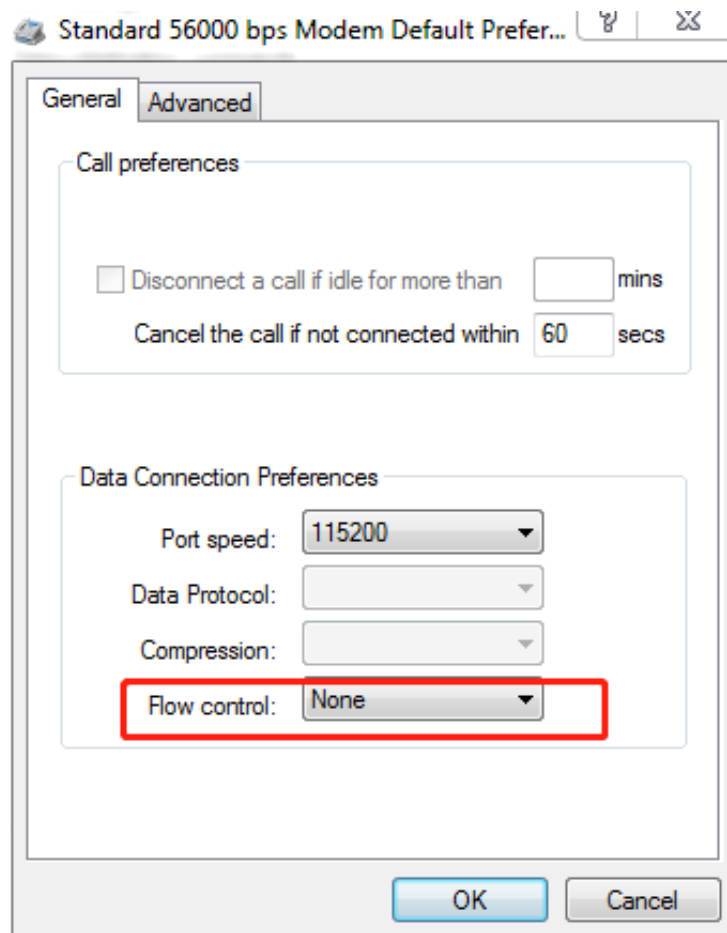

Figure 13: Change Modem Default Preferences

3.2. Dial-up Network Configuration

3.2.1. Create a New Connection

1. Open "**Control Panel**" and double click "**Network and Sharing Center**", and then click "**Set up a new connection or network**", as illustrated below.
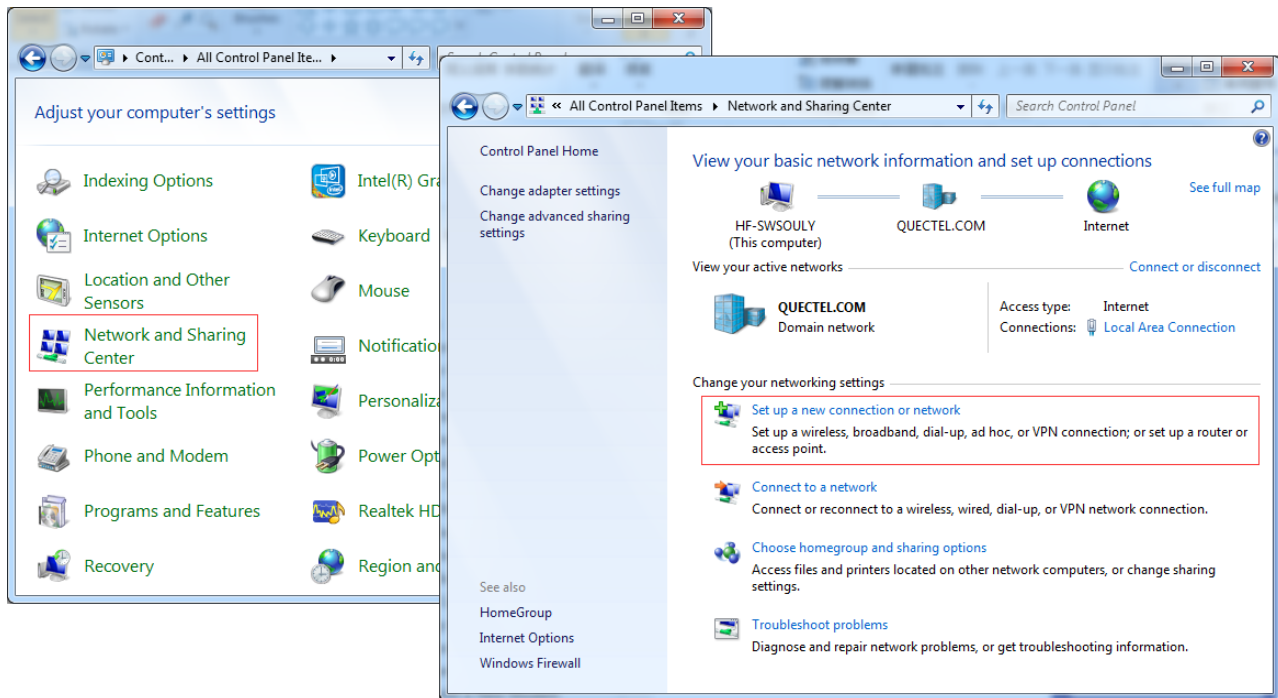

Figure 14: Set up a New Connection or Network

3.2.2.   Configure the Connection
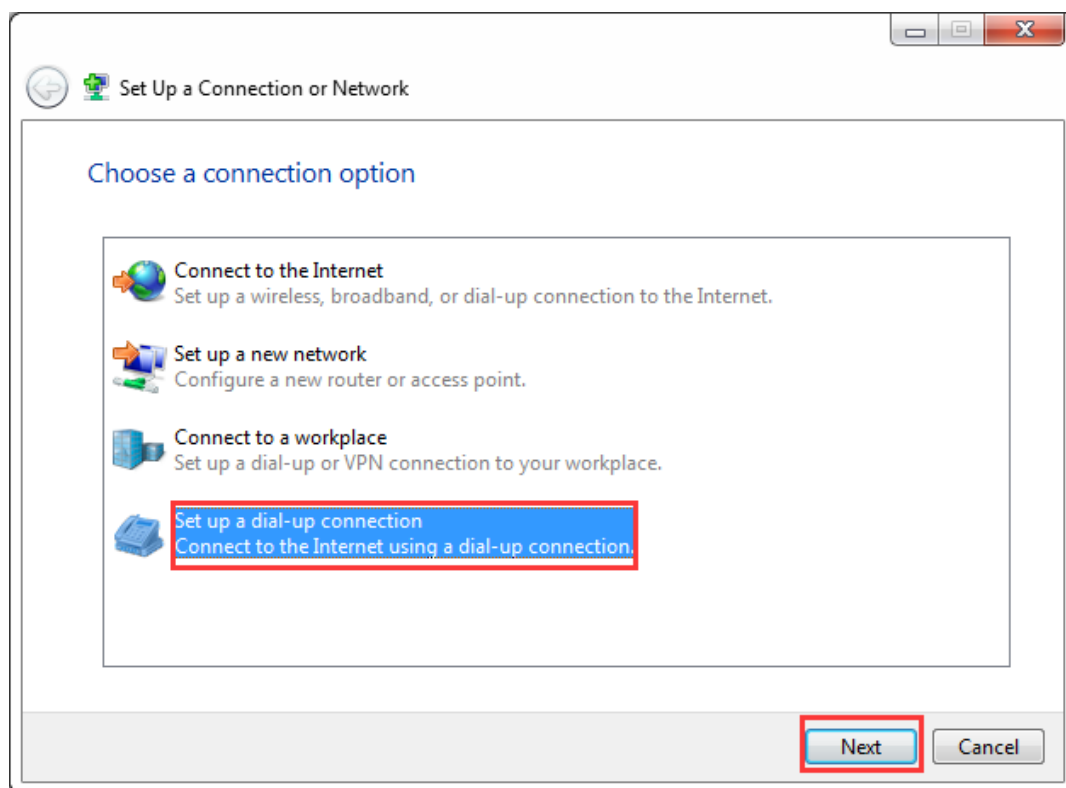
1.   Select "**Set up a dial-up connection**".

Figure 15: Set up a Dial-up Connection

2. Fill "**Dial-up phone number**" with string "***99#**", "**Connection name**" with a proper name ("**MT2625 TE-B**" as an example in this document), and then click "**Connect**".
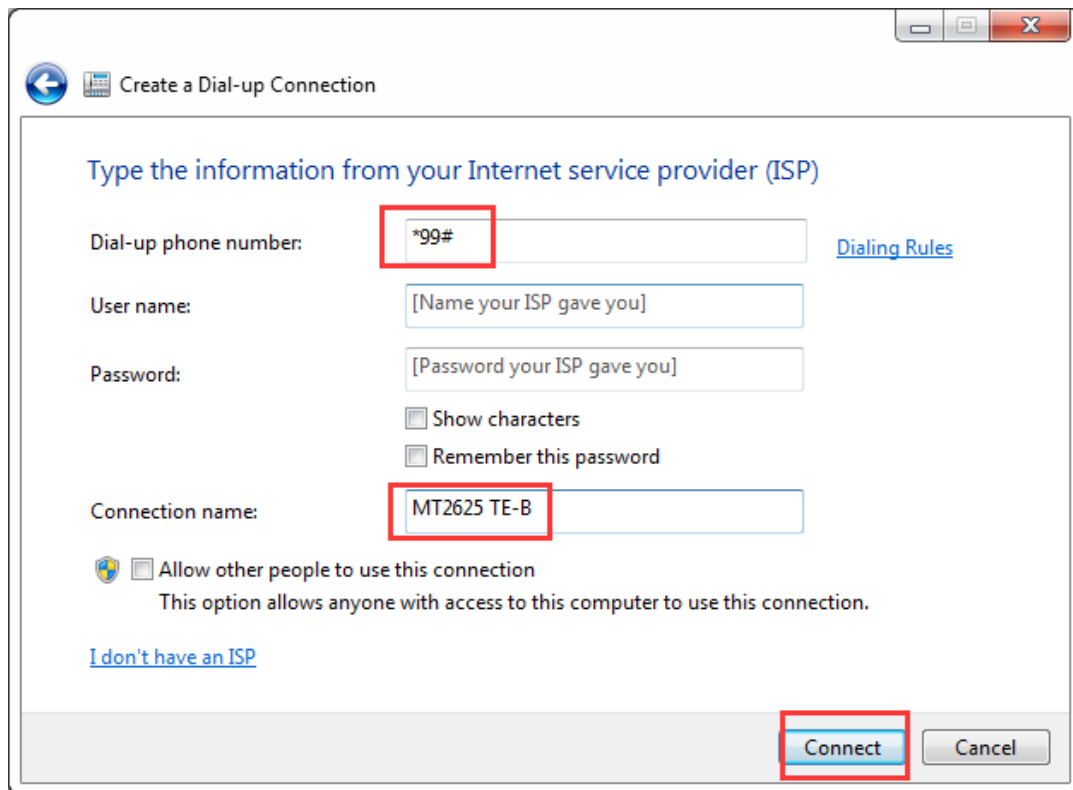

Figure 16: Type the Information for Creating a Dial-up Connection

3. If all above settings are correct, then please skip this step. Otherwise please click "**Set up the connection anyway**", as illustrated below.
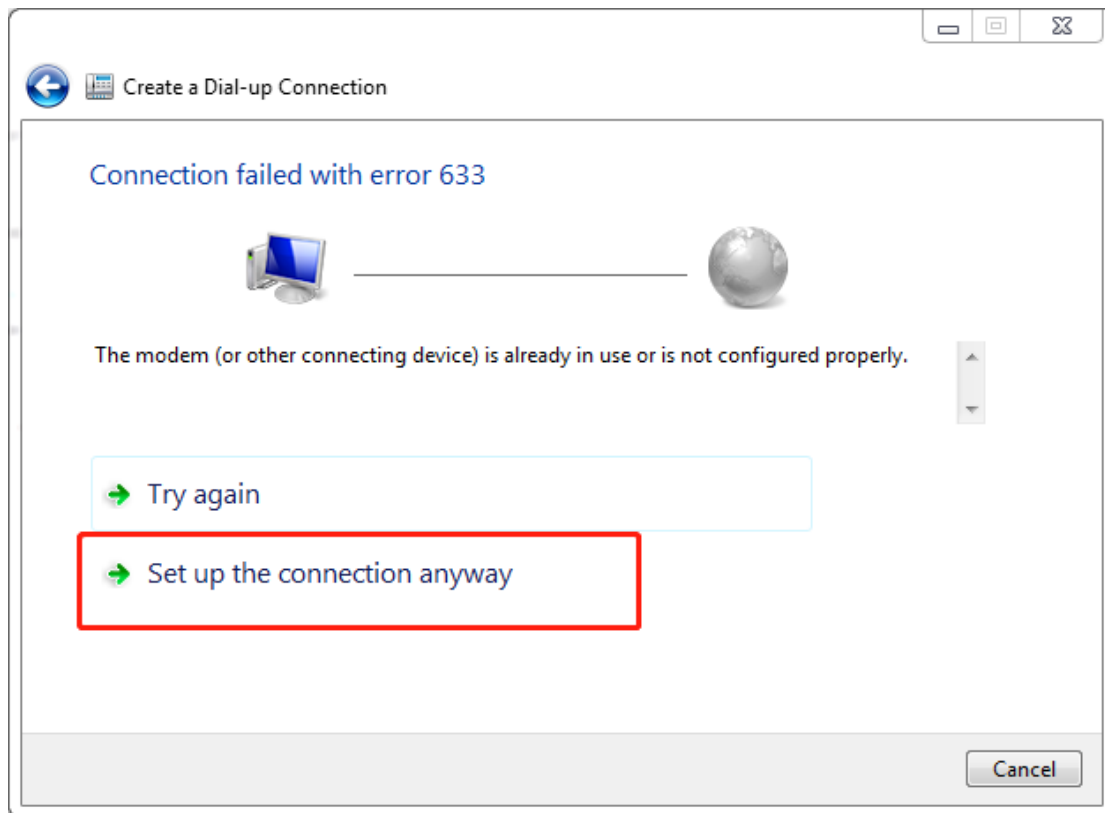

Figure 17: Configure the Connection

3.2.3. Configure the Dial-up Tool

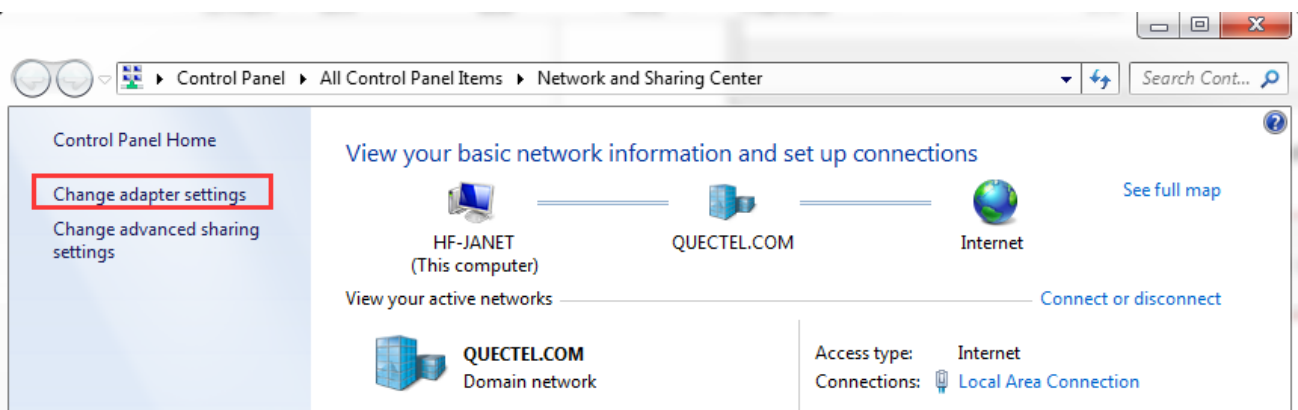1. Go to "**Change adapter settings**" in "**Network and Sharing Center**".

Figure 18: Change Adapter Settings
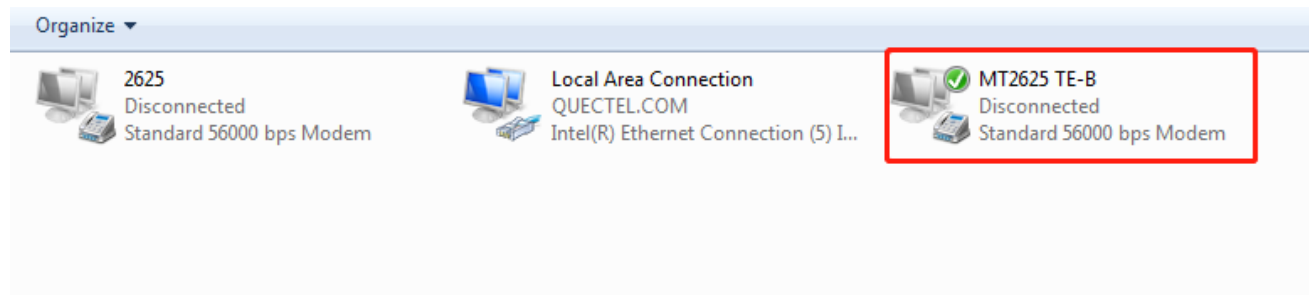
2. Find the newly created connection. And double click it.

Figure 19: Double Click the Newly Created Connection

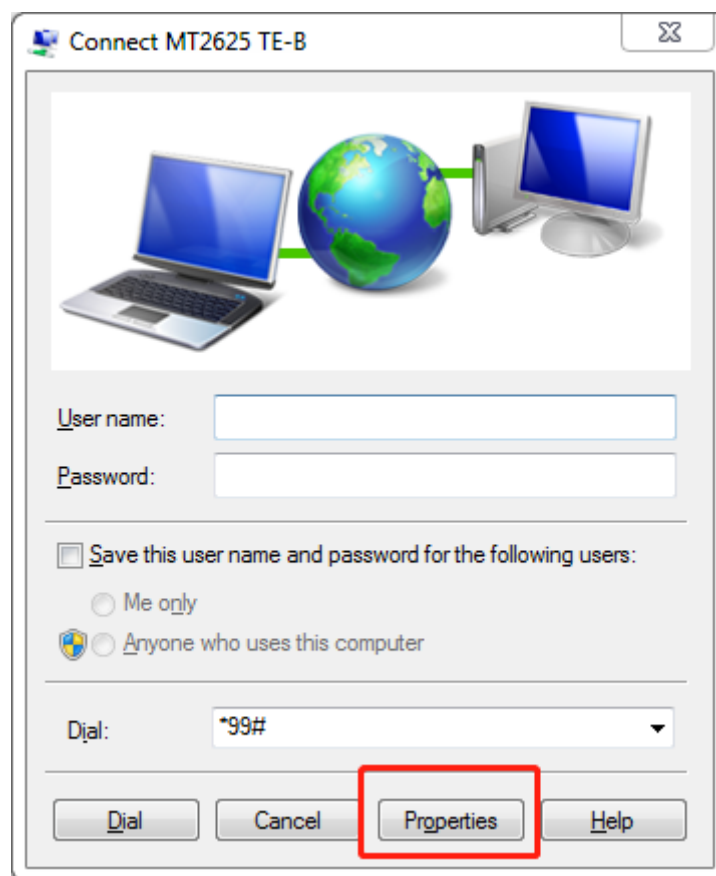3. Click "**Properties**" button from the popup window.

Figure 20: Properties Settings

4. Go to "**General**" tab and click "**Configure...**", select "**115200**" as "**Maximum speed (bps)**"; uncheck all items in "**Hardware features**"; uncheck "**Enable modem speaker**".
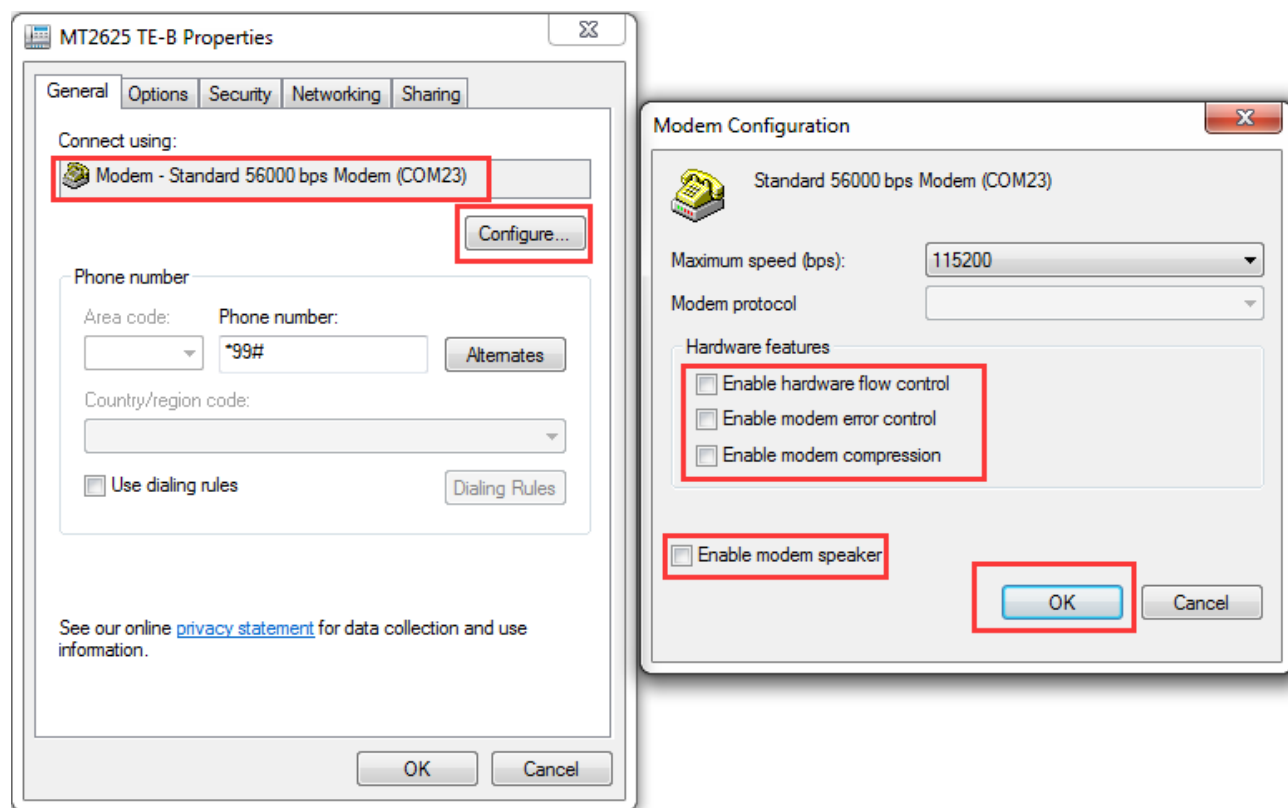

Figure 21: General Settings

5. Go to "**Options**" tab and click "**PPP Settings…**", uncheck all items in the pop-up box of PPP settings.

Figure 22: Options Settings
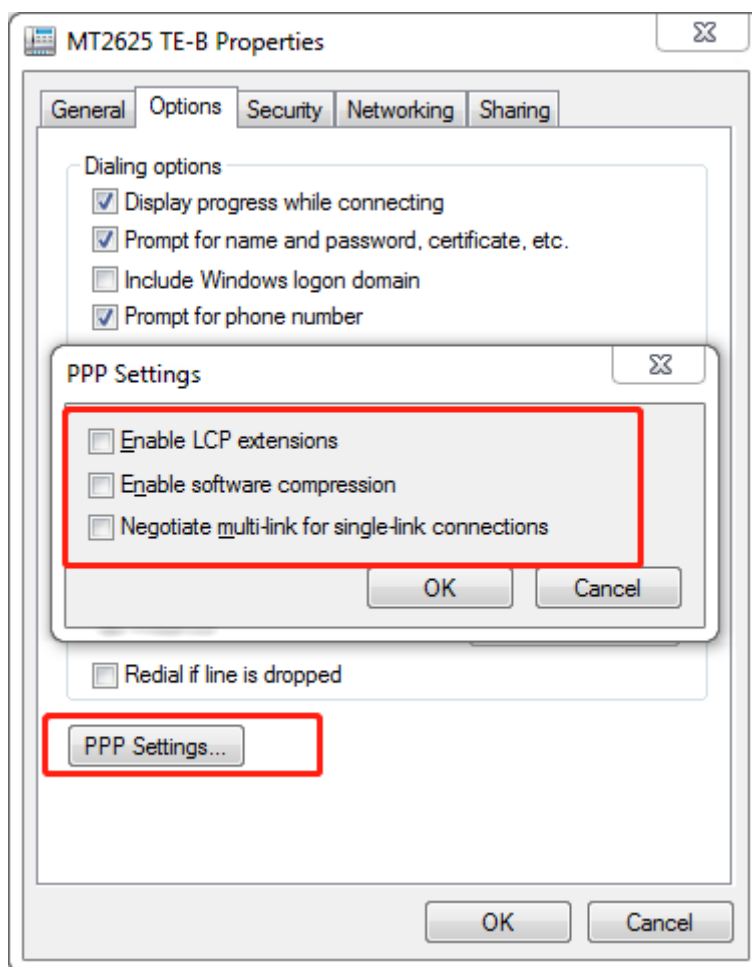
6. Go to "**Security**" tab, uncheck the item of CHAP and MS-CHAP v2 in "**Allow these protocols**".
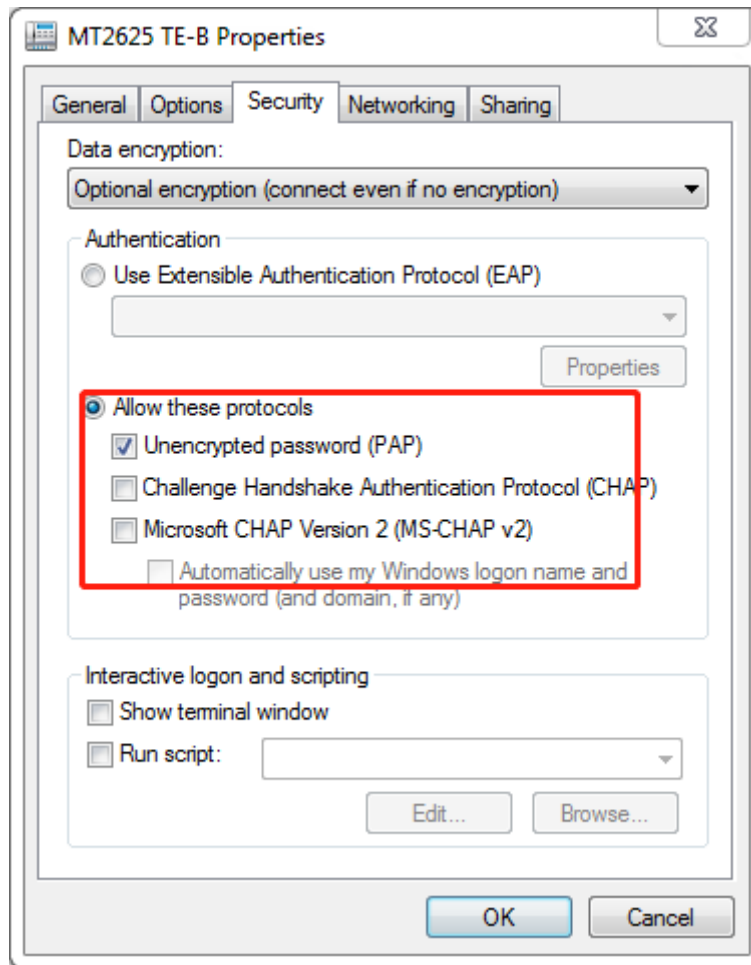
Figure 23: Security Settings

7. Go to "**Networking**" tab, uncheck the item "**Internet Protocol Version 6 (TCP/IPv6)**". Click "**OK**"
    button to finish the configuration. Refer to the following figure for details.
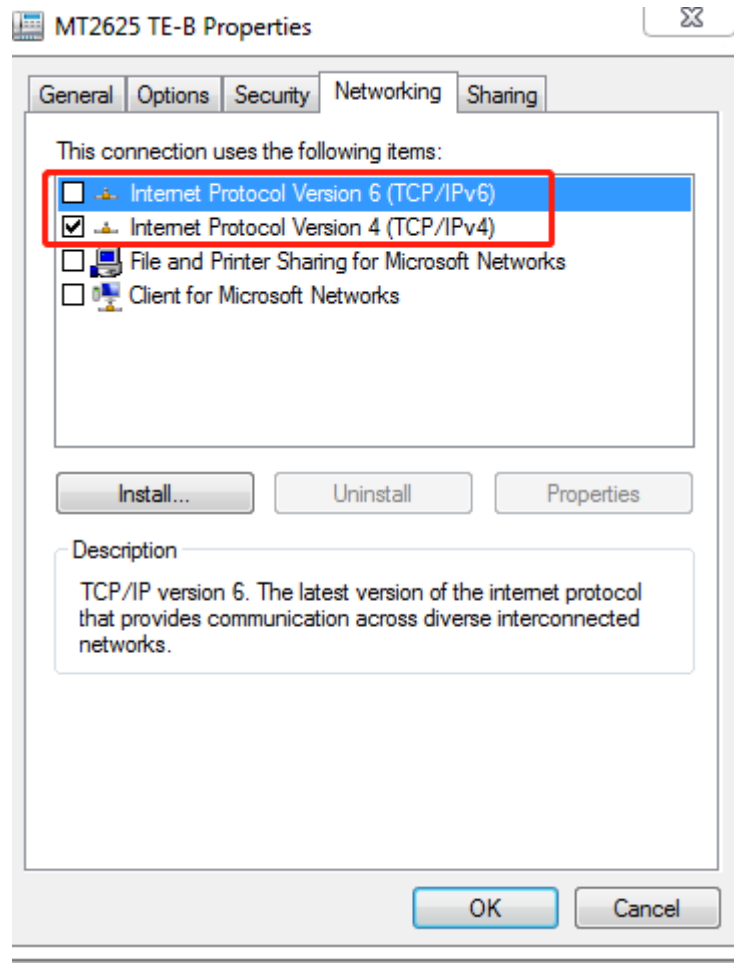

Figure 24: Networking Settings

3.3. Establish the Dial-up Connection

Repeat **step 1** and **step 2** in *Chapter 3.2.3* to find the newly created connection ("**MT2625 TE-B**"). Double click "**MT2625 TE-B**" and then click "**Dial**" to establish the dial-up connection. Please refer to the following figure for details.
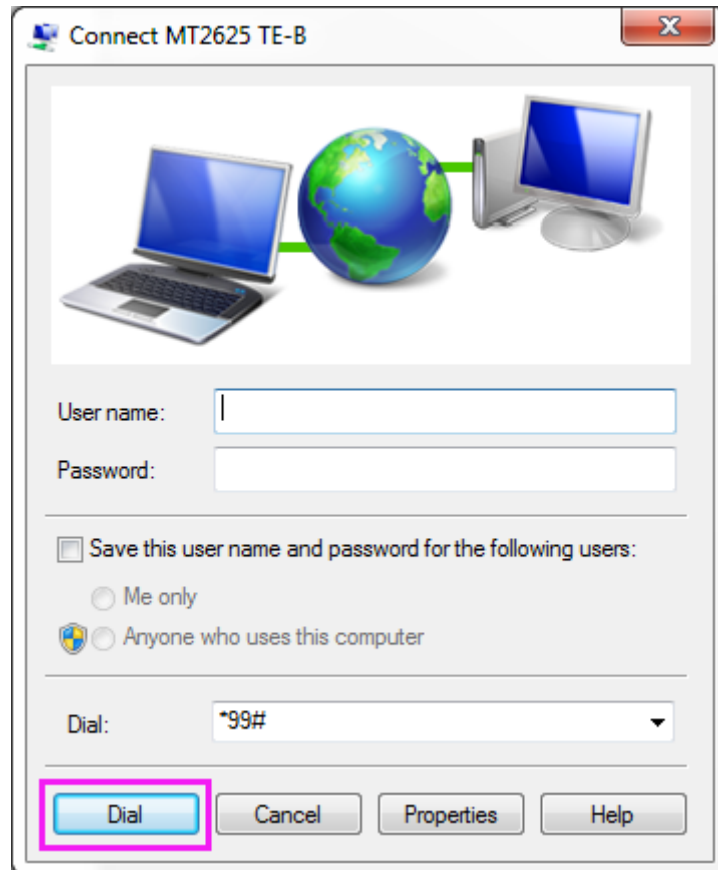

Figure 25: Establish the Dial-up Connection

4 Appendix A References

Table 2: Related Documents

SN	Document Name	Remark
[1]	Quectel_BC66-TE-B_User_Guide	BC66-TE-B user guide
[2]	Quectel_BC66-NA-TE-B_User_Guide	BC66-NA-TE-B user guide
[3]	Quectel_BC66&BC66-NA_Logging_Guide	BC66/BC66-NA logging guide
[4]	Quectel_BC66&BC66-NA_AT_Commands_Manual	BC66/BC66-NA AT commands manual

Table 3: Terms and Abbreviations

Abbreviation	Description
APN	Access Point Name
EPS	Evolved Packet System
IP	Internet Protocol
PC	Personal Computer
PDN	Public Data Network
PDP	Packet Data Protocol
PPP	Point-to-Point Protocol. The Point-to-Point Protocol is designed for simple links which transport packets between two ports. These links provide full-duplex simultaneous bi-directional operation, and are assumed to deliver packets in order. It is intended that PPP provides a common solution for easy connection of a wide variety of hosts, bridges and routers.
UART	Universal Asynchronous Receiver Transmitter
USB	Universal Serial Bus