Industrial 4G module

I-8213W-4G

Series User Manual

Version 1.1 September 2017

Service and usage information for

I-8213W-4GE
/I-8213W-4GC

Warranty

All products manufactured by ICP DAS are under warranty regarding defective materials for a period of one year, beginning from the date of delivery to the original purchaser.

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Email: service@icpdas.com

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1. Introduction

The I-8213W-4G series are industrial 4G LTE modules with GPS function that work on frequencies of FDD LTE B1/B3/B5/B7/B8/B20(I-8213W-4GE) or FDD LTE B1/B3/B8 and TDD LTE B38/B39/B40/B41(I-8213W-4GC). WCDMA 850/900/2100 MHz and GSM 850 MHz, EGSM 900 MHz, DCS 1800 MHz, PCS 1900 MHz .These modules utilize the 4G, 3G or GSM/GPRS network for convenient and inexpensive data transfer from remote instruments, meters, computers or control systems in either live data or packet data. I-8213W-4G has the integrated TCP/IP stack so that even simple controllers with serial communications ports can be connected to the modem without the need for special driver implementation. With the features of I-8213W-4G, the systems can be SMS, GPRS and 4G connection applications with our PAC series like WinPAC-8000, LinPAC-8000 or XP-8000.

2. Hardware Specifications

2.1. I-8213-4G Specifications

Models	I-8213W-4GE	I-8213W-4GC
4G System		
Frequency Band(FDD)	B1/B3/B5/B7/B8/B20	B1/B3/B8
Frequency Band(TDD)		B38/B39/B40/B41
3G System		
Frequency Band(WCDMA)	850/900/2100 MHz	900/2100 MHz
Frequency Band(TDSCDMA)		1900/2100 MHz
GSM/GPRS System		
Frequency Band	850/900/1800/1900 MHz	900/1800MHz
GPRS connectivity	GPRS class 12; GPRS station class B	
DATA	GSM max. 85.6kb/s UMTS max. 384kb/s DC-HSPA+ max. 42mb/s LTE-FDD max. 100mb/s	
Coding Schemes	CS 1, CS 2, CS 3, CS 4	
SMS		
SMS	MT, MO, CB, Text and PDU mode	
Comm. Interface		
USB	USB 2.0 (high speed)	
GPS Interface		
Support Channels	32	
Protocol Support	NMEA 0183	
LED Indicators		
Power	Red color	
GPRS	Yellow color	

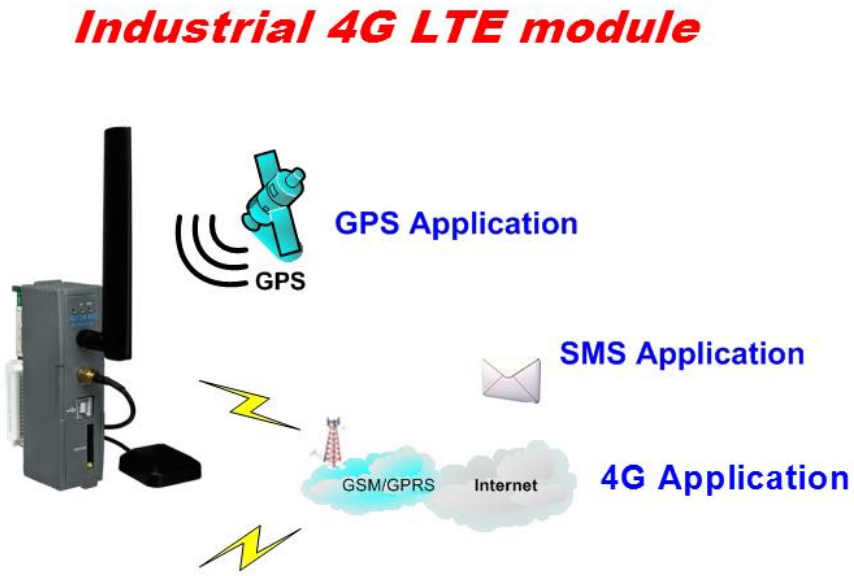
Power	
Frame Ground Protection	ESD, Surge, EFT, Hi-Pot
Power Consumption	Idle: 0.15 A @ 5 VDC; Data Link: 0.2 ~ 1.62 A (peak) @ 5 VDC
Mechanical	
Casing	Plastic
Dimensions (W x L x H)	30mm x 85mm x 114mm
Environment	
Operating Temperature	-25°C ~ +75 °C
Storage Temperature	-30°C ~ +80 °C
Humidity	5~95% RH, non-condensing

2.2. I-8213W-4G Features

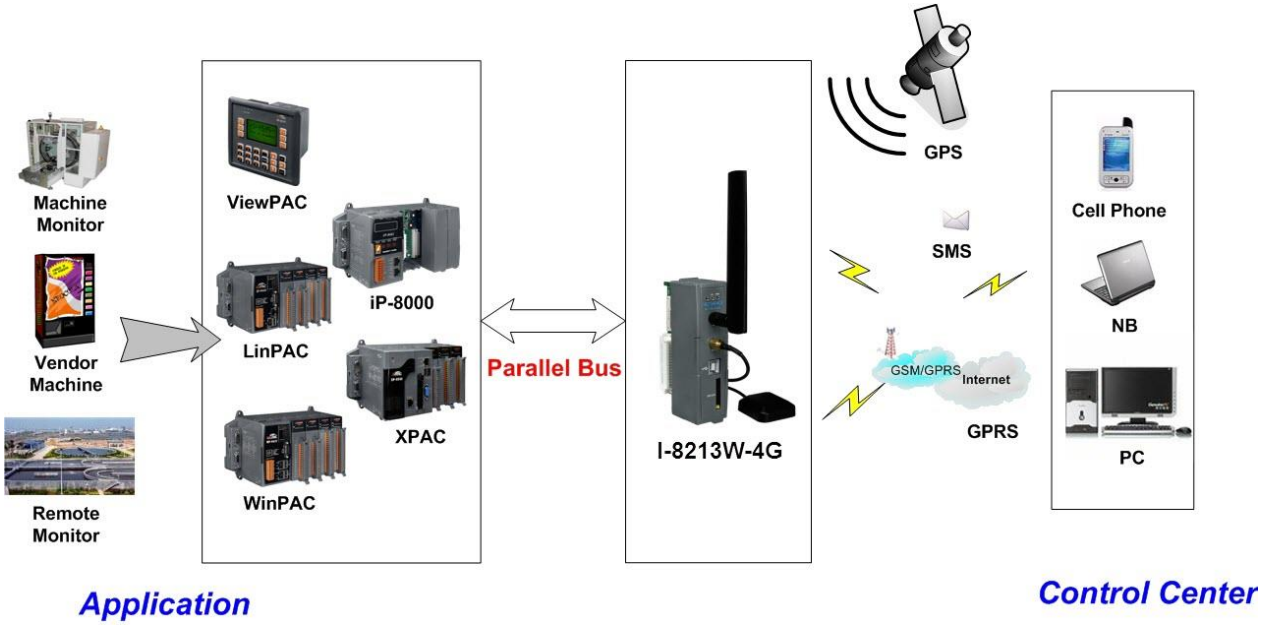
- Support FDD LTE B1/B3/B5/B7/B8/B20 and WCDMA 850/900/2100 MHz and GSM 850/900/1800/1900 MHz
- 4 KV ESD Protection
- Designed for FDD LTE, WCDMA, GPRS and SMS Applications
- Supports TCP Server, TCP Client, UDP Client Connection stack from 4G, 3G or GPRS
- Supports Standard AT Commands
- LED Indicators for Power and GSM Indication
- High Reliability in Harsh Environment
- Supports 32-channels GPS and NMEA v0183 v3.01
- PPS: 100 ms pulse output/sec for precise timekeeping and time measurement
- Supports XP-8000, WinPAC-8000, LinPAC-8000, ViewPAC

3. Application architecture

Application 1

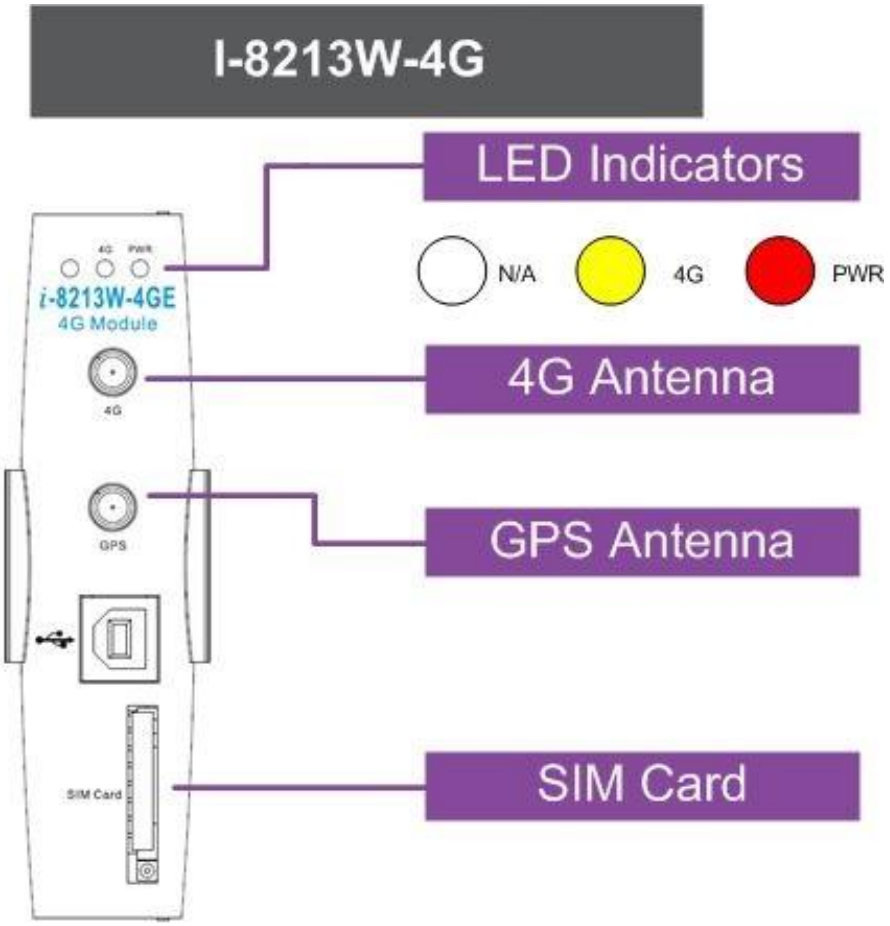


Application 2

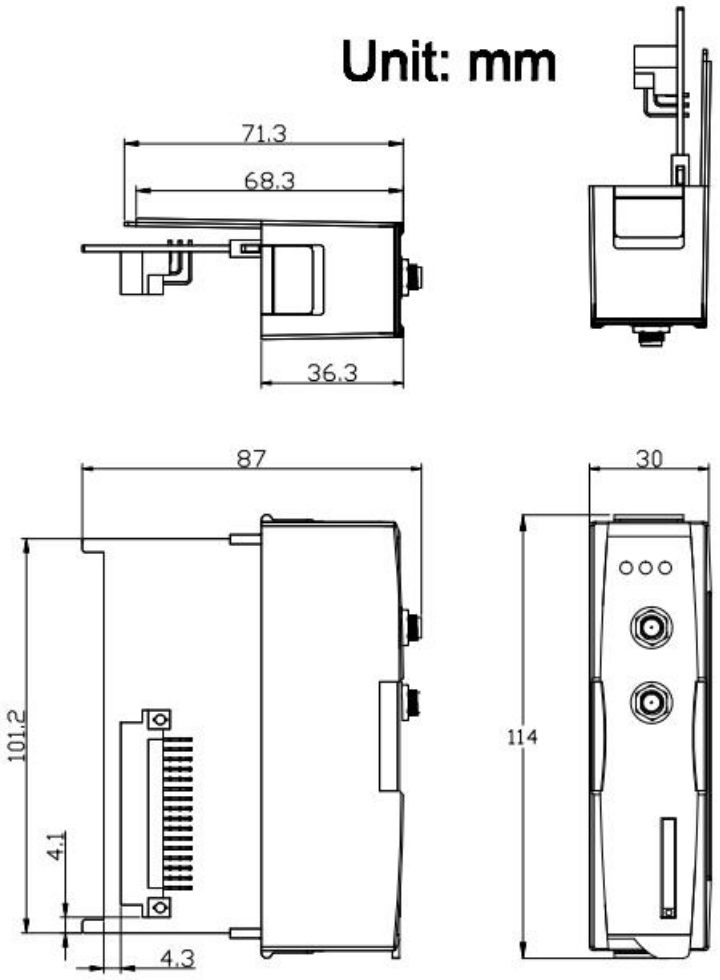


4. Hardware Appearance

Pin Assignments



4.1. Hardware Dimensions



4.2. LED indicators

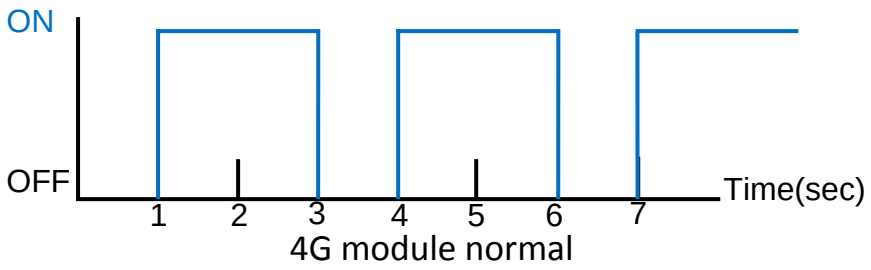
There are two LED indicators to help users to judge the various conditions of GTM-204M-4G. The description is as follows：

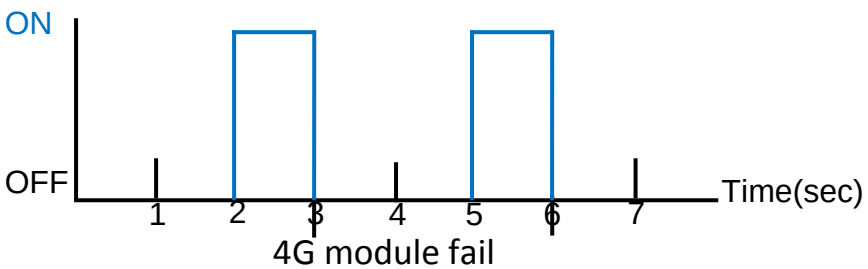
A. PWR(Red)：The PWR LED can indicate the status of Power module.

Power normal	Power fail
Always ON	Always OFF

B. 4G (Green)：The modem LED can indicate the status of GSM module.

4G module normal	4G module fail	Data transmission
ON 2 sec and OFF 1 sec	OFF or ON 1 sec and OFF 2 sec	Blinking per 0.2 sec

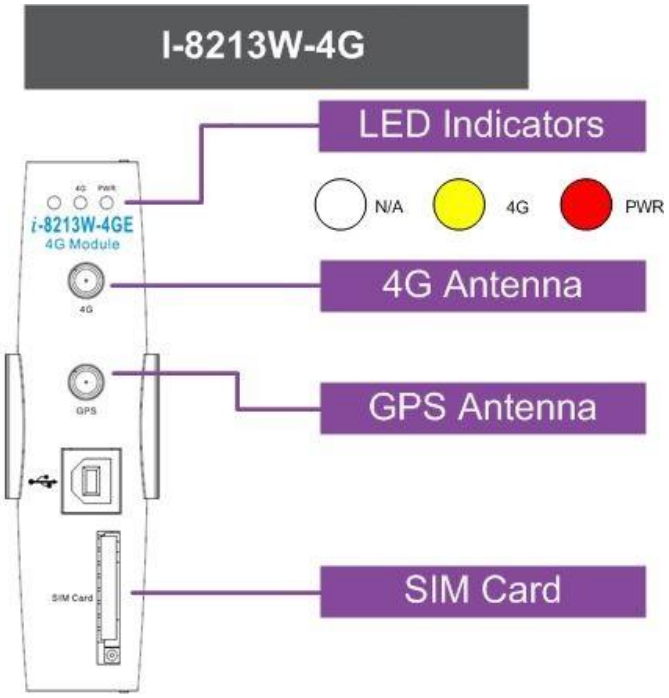




5. Hardware Installation

SIM card Installation

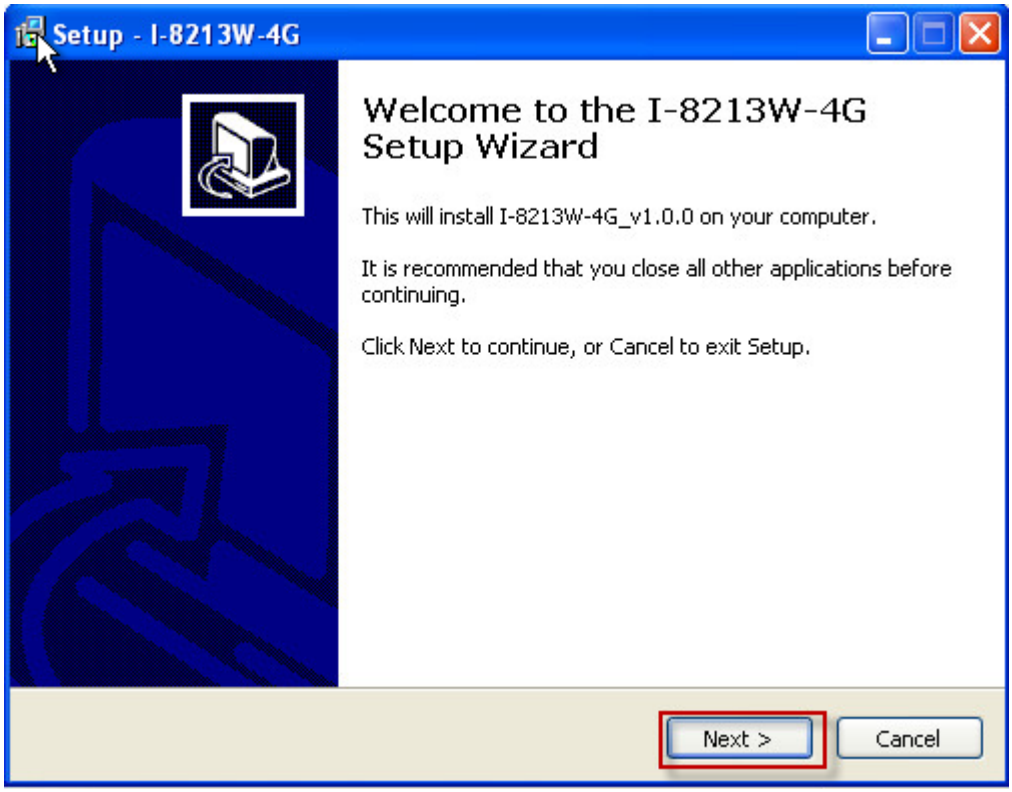
Antenna Installation



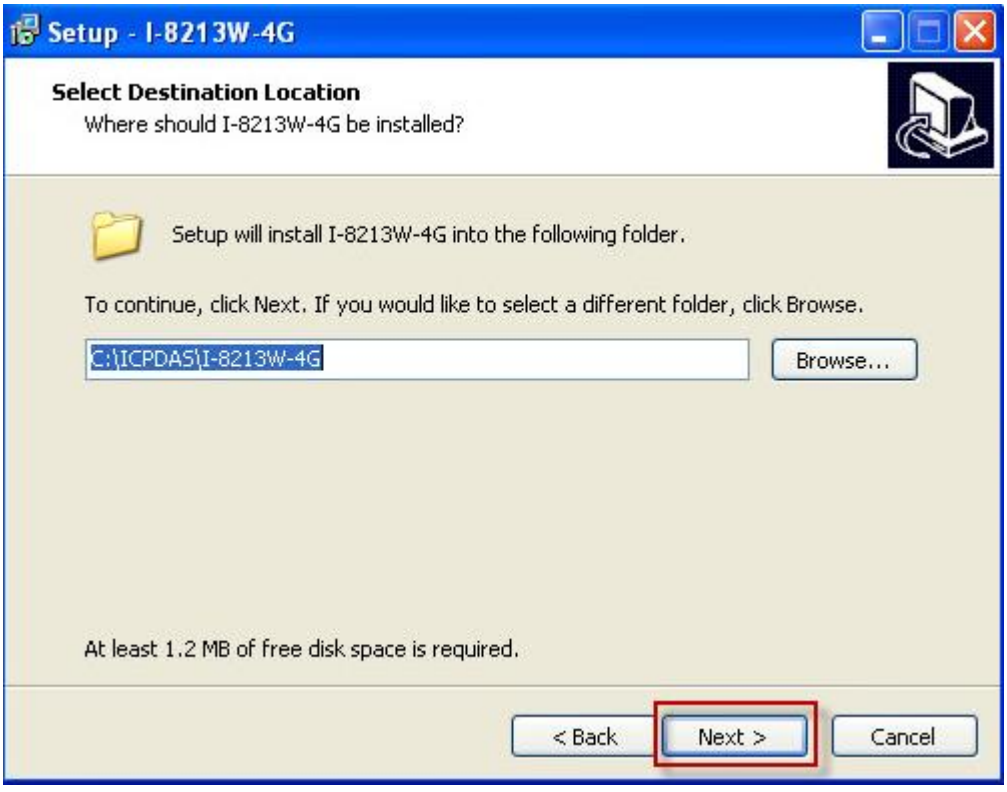
5.1. USB Driver Installation (Microsoft Windows XP)

Step 1：Double Click “I-8213W-4G USB driver V1.00.exe” to install the driver.

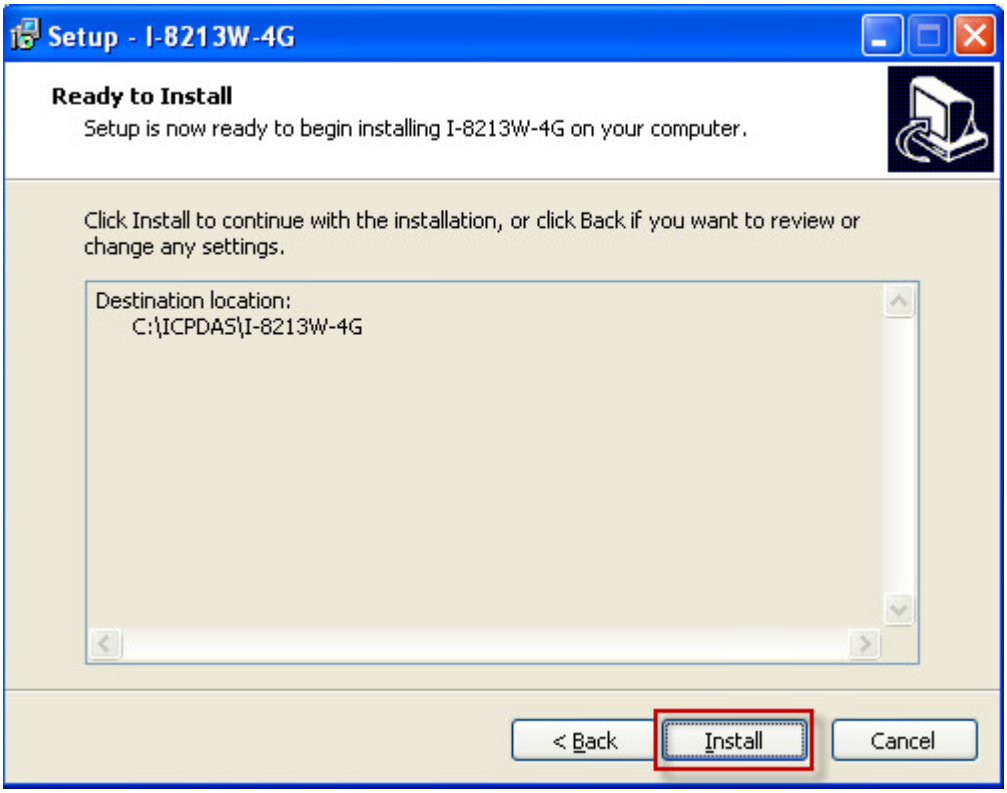
Step 2：Click “Next”.



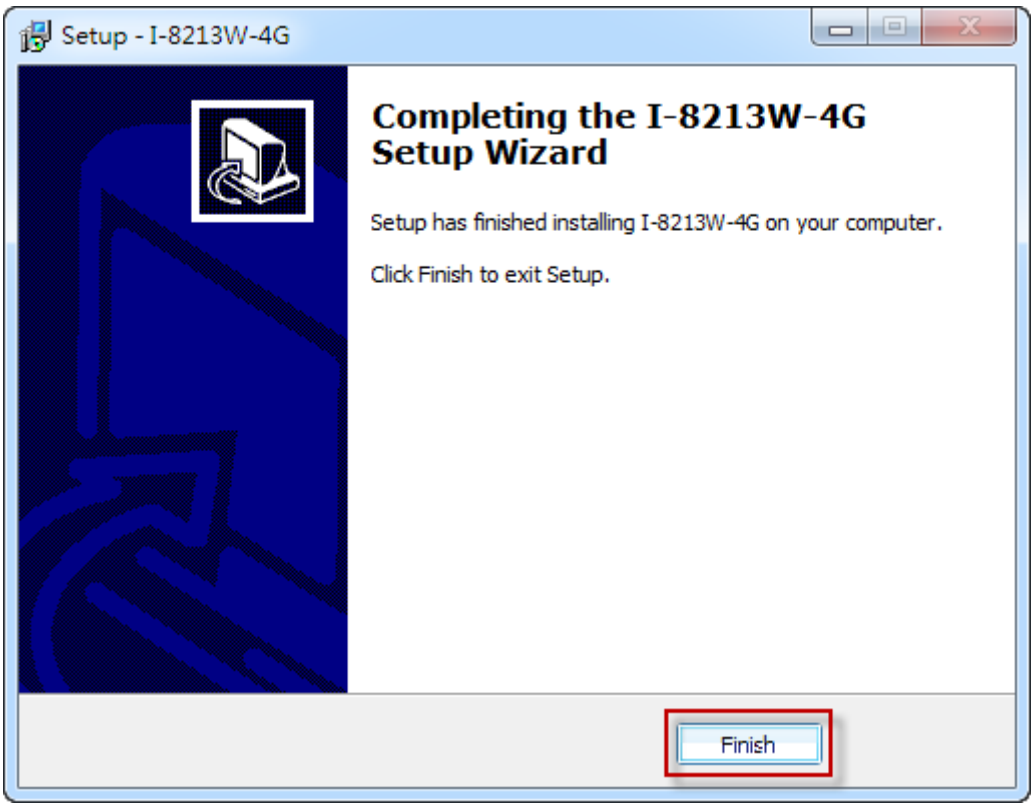
Step 3：Click “Next”



Step 4：Select “Install”

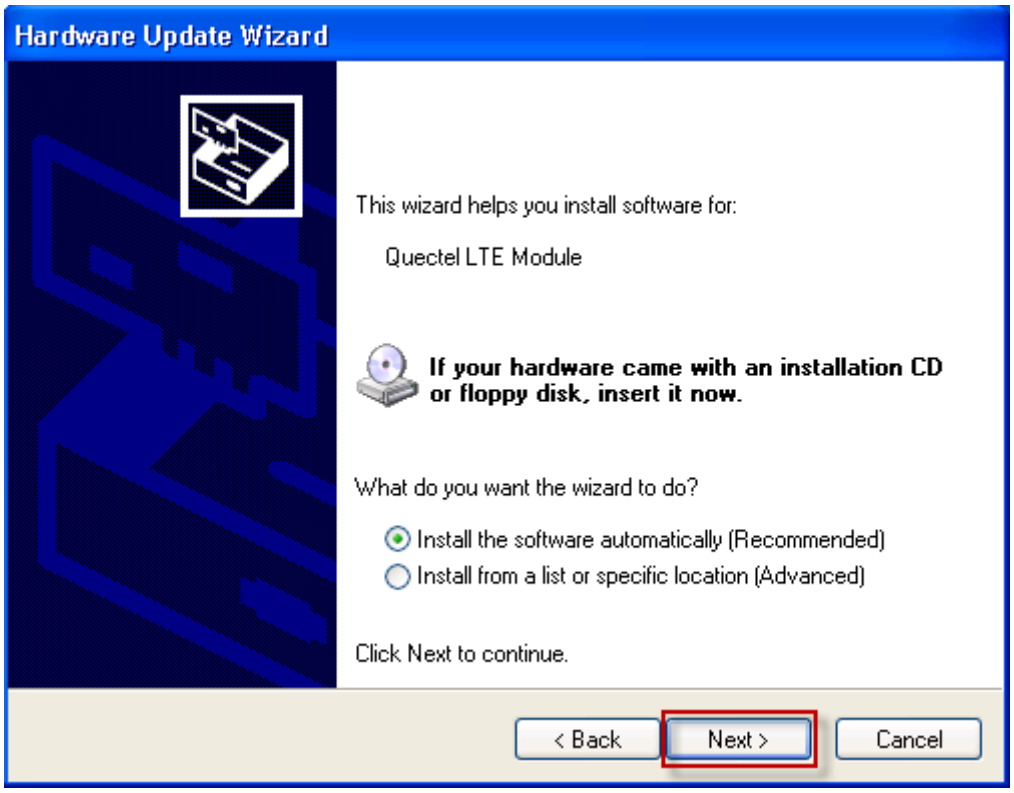


Step 5：Click “Finish”



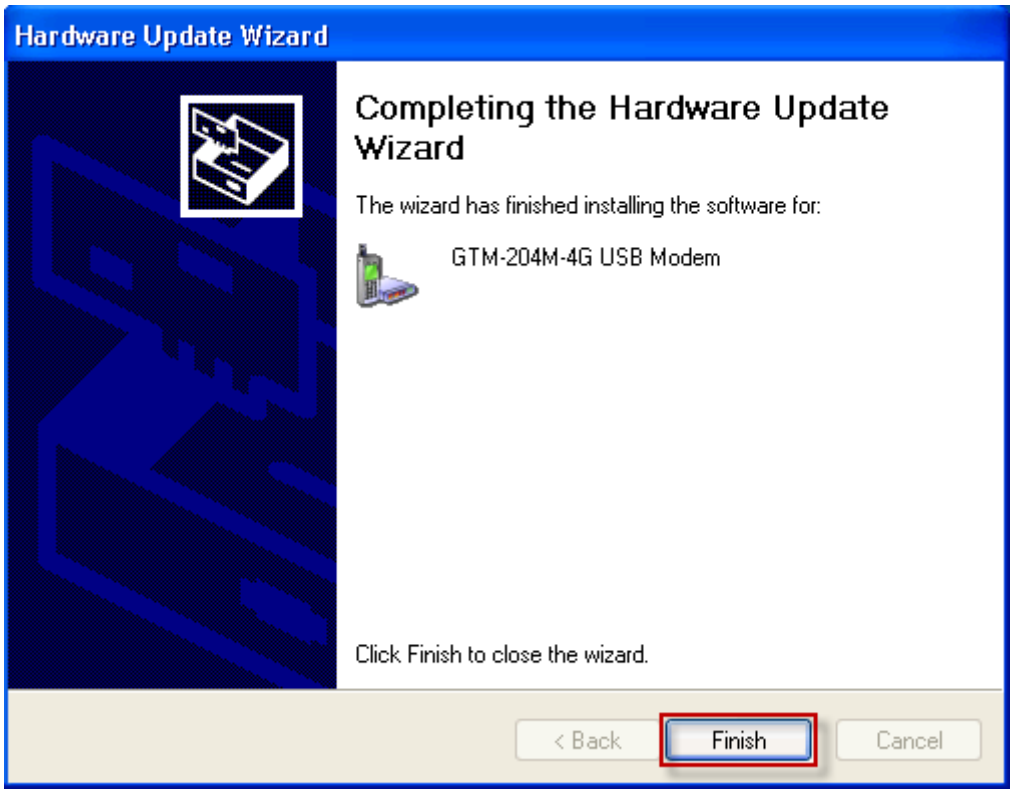
Step 6：Connect the USB of I-8213W-4G with the PC

Step 7：The “Found New Hardware Wizard” window for “Quectel LTE Module” will pop-out. Please click “Next”.

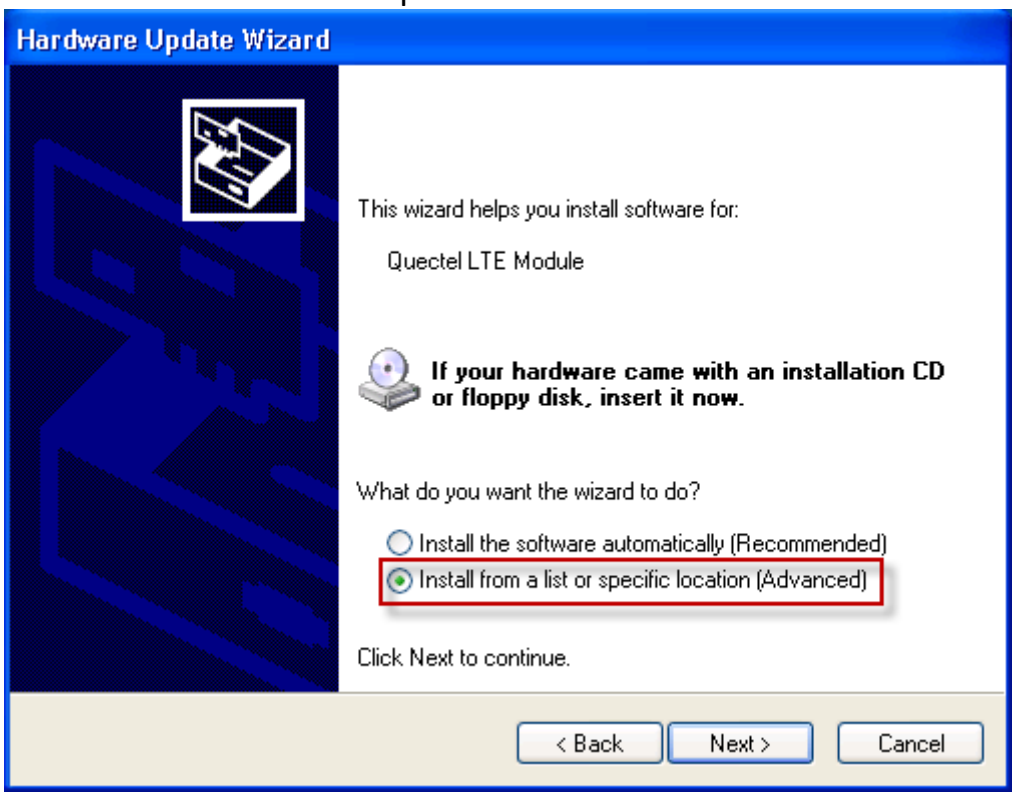


Step 7-1：Click “Continue Anyway”.

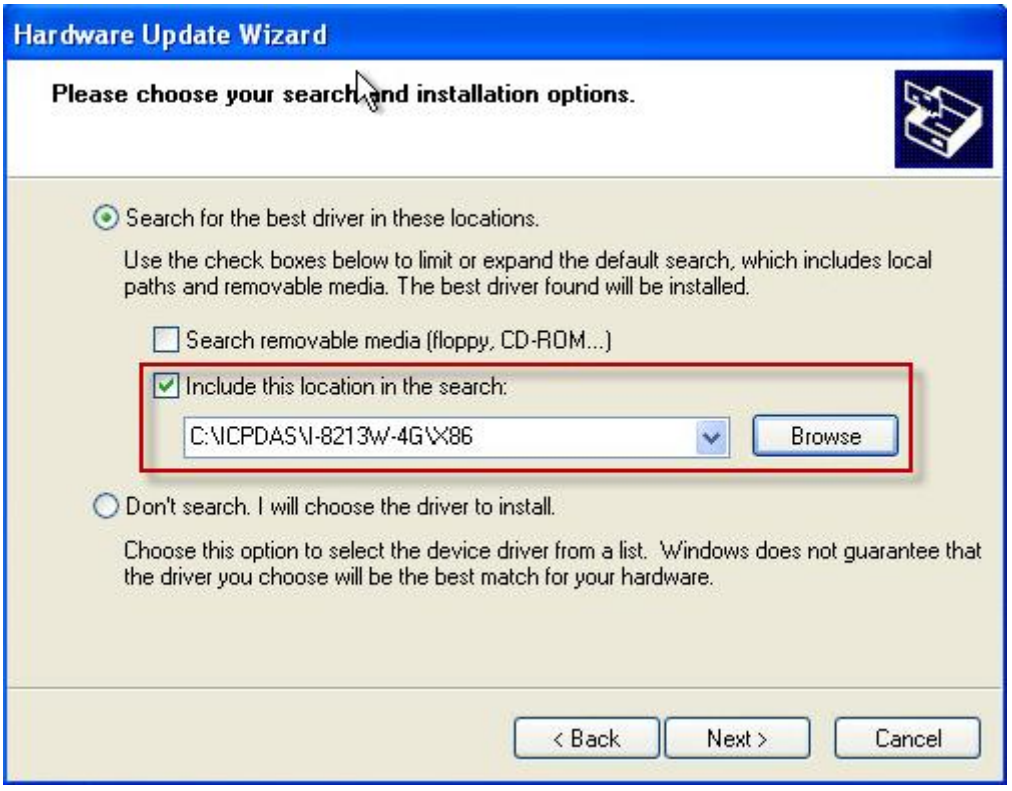
Step 7-2：Click “Finish” if you got a success message.



Step 7-3：Click “Back” if you got a fail message, and then choose “Install from a list or specific location” in all install steps.



Step 7-4：Click “Browse” to choose your installing folder, and Click “Next”.



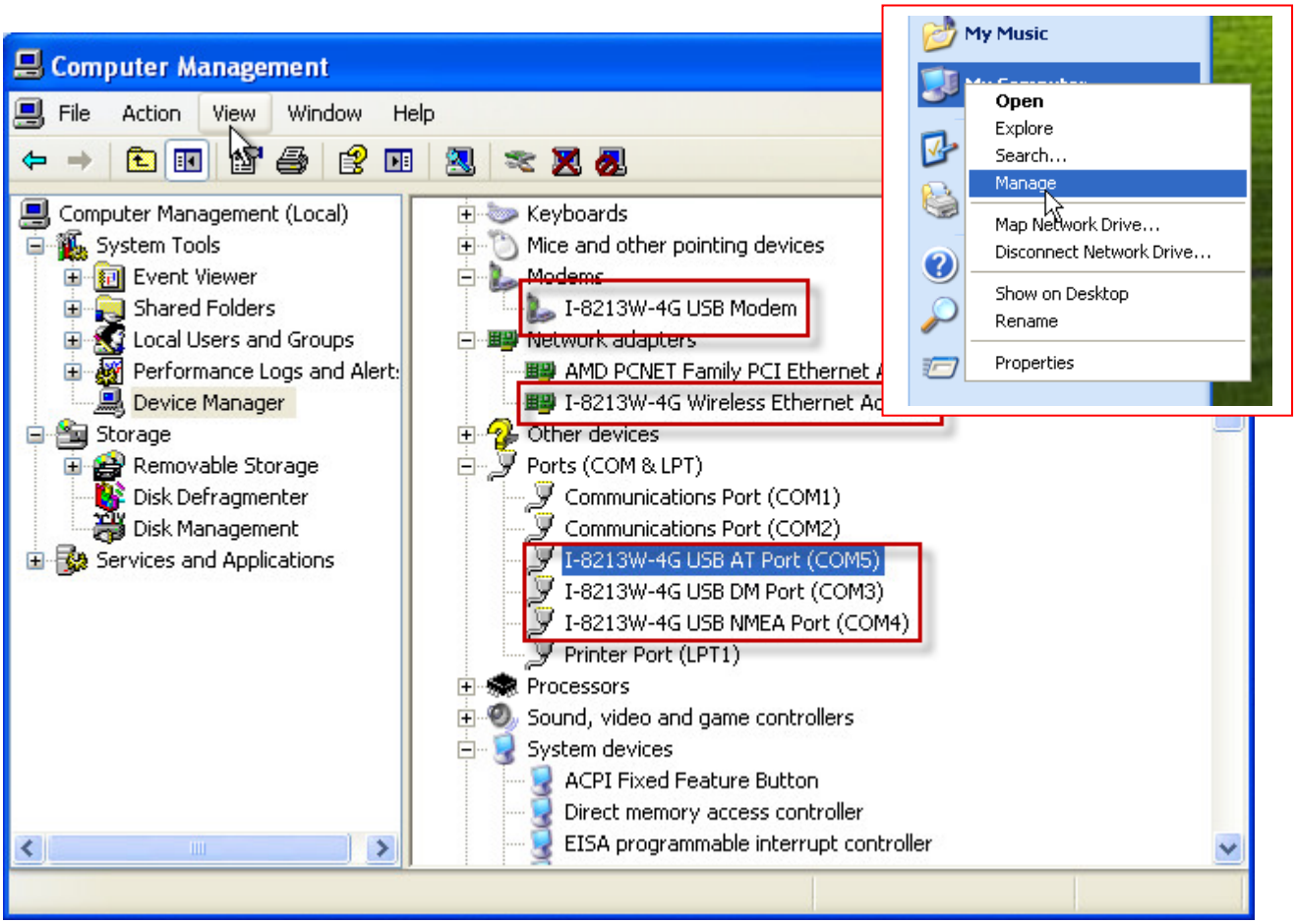
Step 8：The “Hardware Installation” window for “I-8213W-4G Wireless Ethernet Adapter” will pop-out. Please click “Continue Anyway”.

Step 9：The “Hardware Installation” window for “I-8213W-4G USB AT Port” will pop-out. Please click “Continue Anyway”.

Step 10：The “Hardware Installation” window for “I-8213W-4G USB NMEA Port” will pop-out. Please click “Continue Anyway”.

Step 11：The “Hardware Installation” window for “I-8213W-4G USB DM Port” will pop-out. Please click “Continue Anyway”.

Step 12：Finish the all install steps. Please open “Device manager”, and you will found new 8 items in your computer.
The “GTM-204M-4G USB Modem” is a Modem for dial-up to 4G/3G/GPRS Network.
The “GTM-204M-4G USB AT Port” is an “AT command port” for GSM library.



6. GPRS connection

6.1. XP-8000 (Windows Embedded Standard 2009)

- Hardware requirement
  1) I-8213W-4G
  2) CA-USB18 USB CABLE
  2) XP-8000

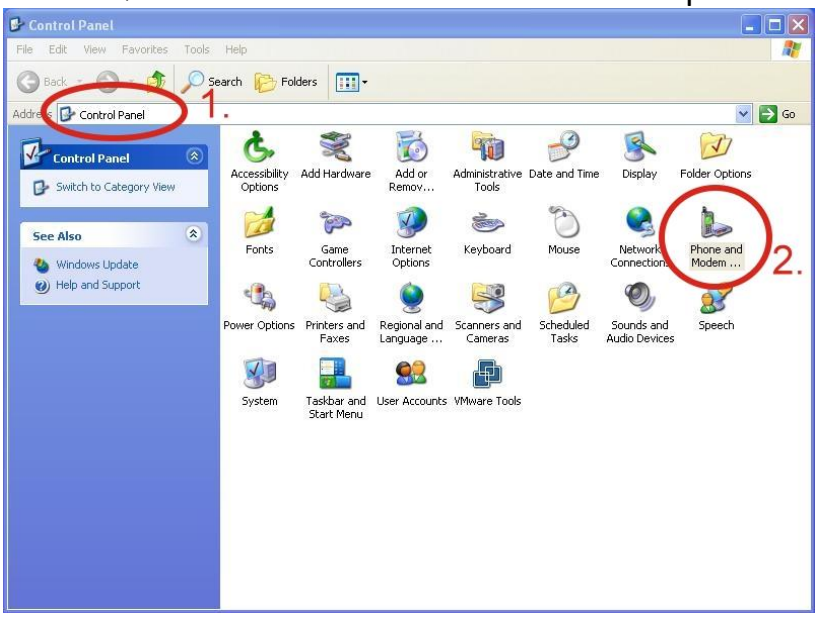
WinPAC-8000

CA-USB18

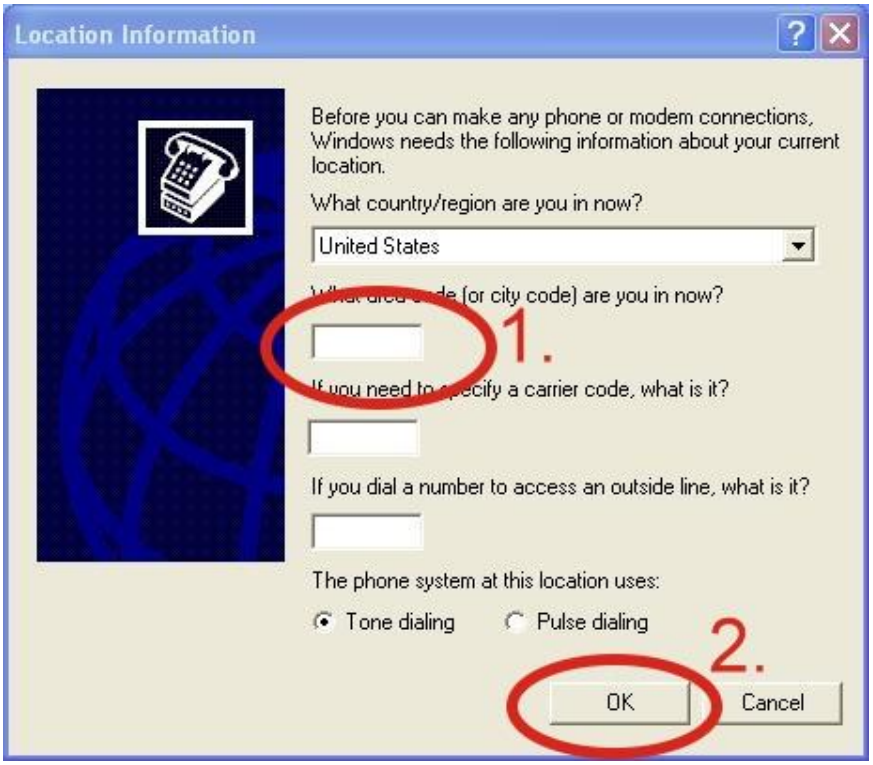
I-8213W-4G

➢ Create a new modem connection

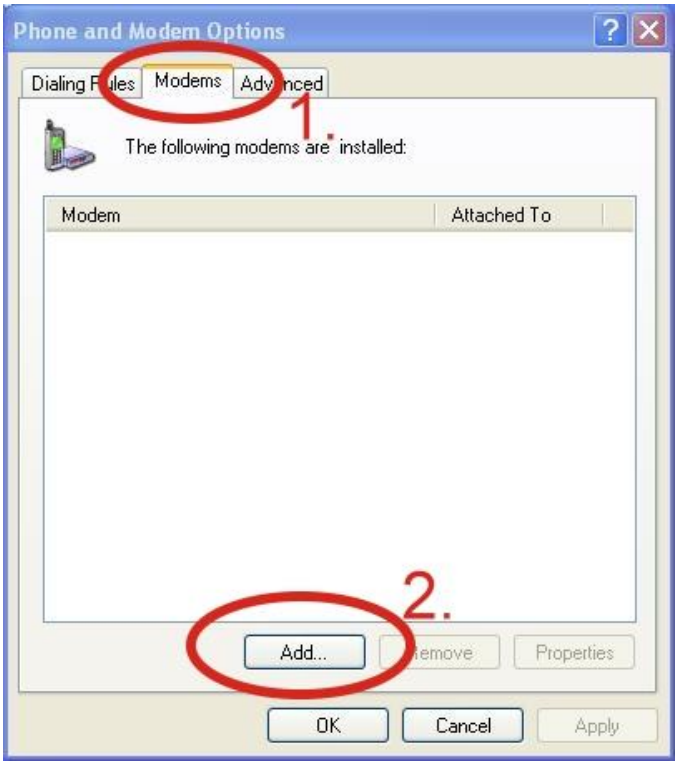
Step1. Control Panel → Double-click “Phone and Modem Options”



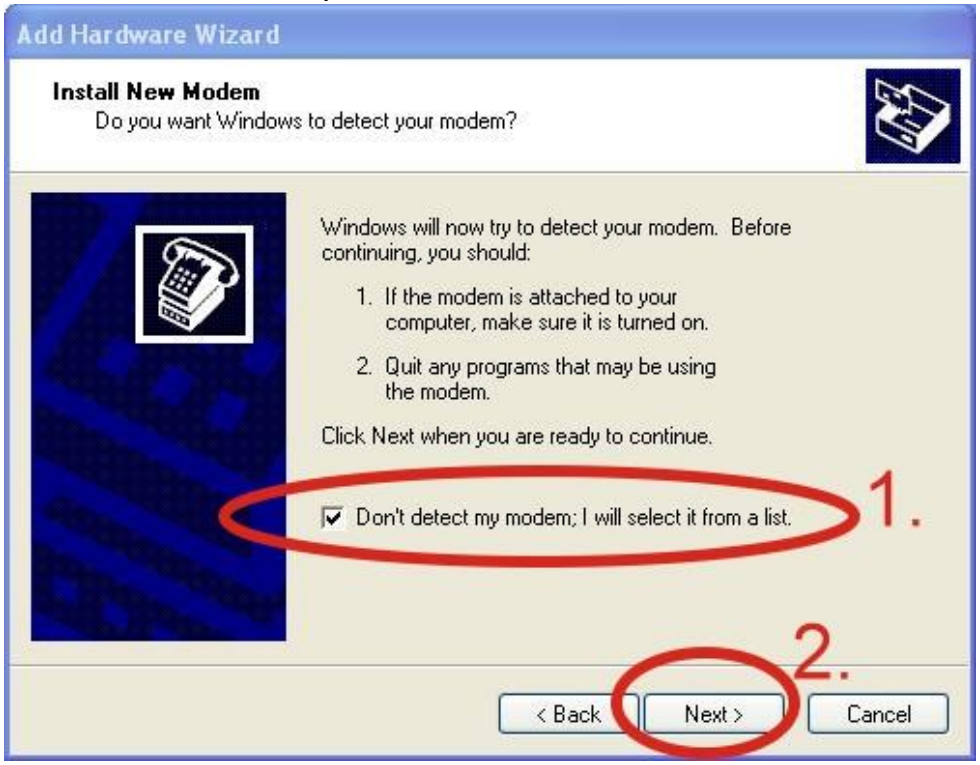
Step2. Set the area code for the first time → Click “OK”



Step3. Control Panel → Double-click “Phone and Modem Options” → Modem → Click “Add”

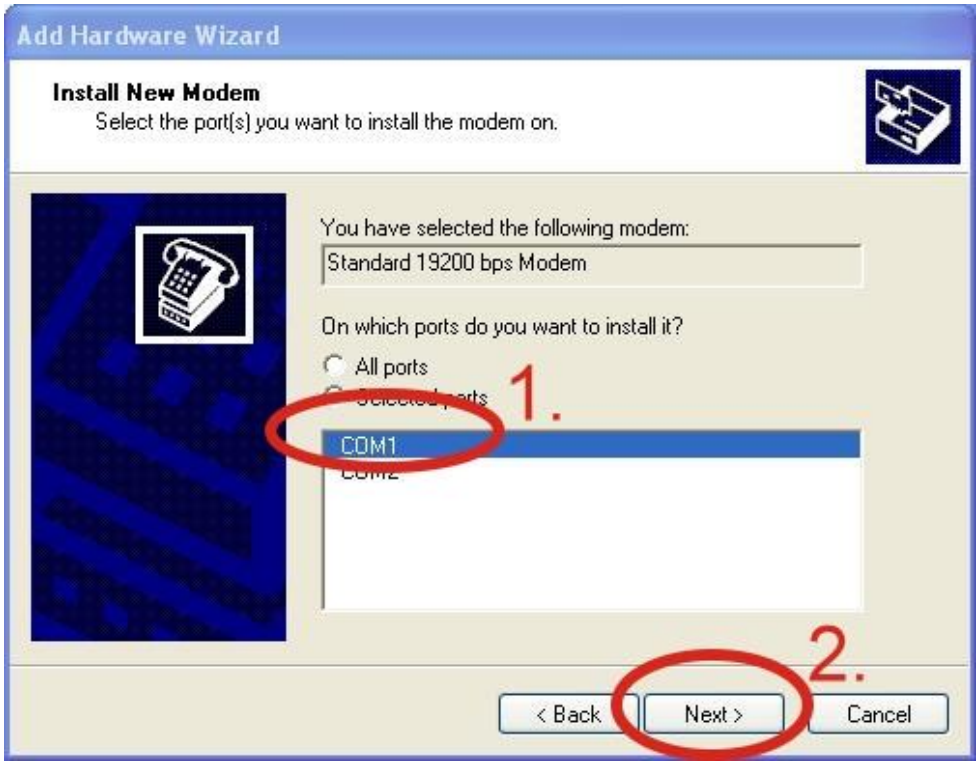


Step4. Select “Don’t detect my modem; I will select it from a list.” → Click “Next”



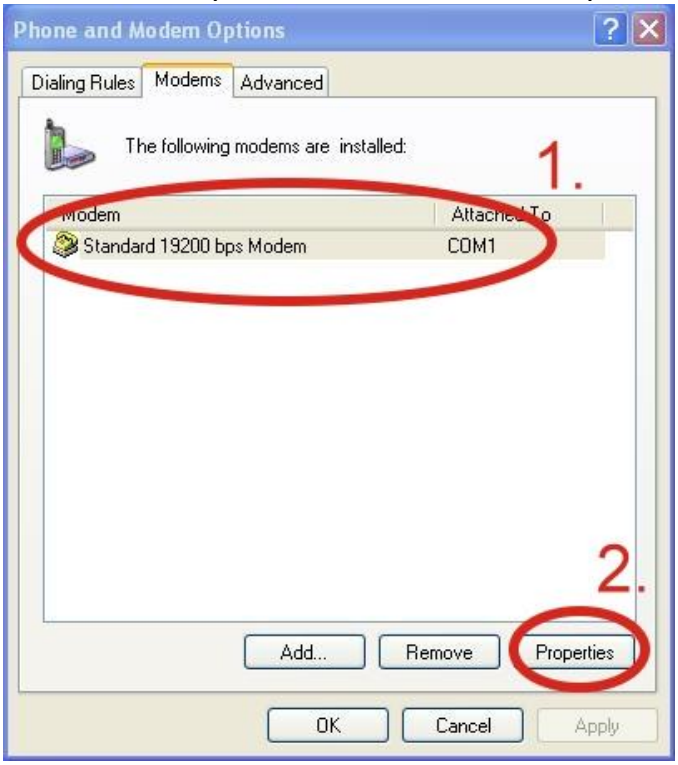
Step5. Select ”Standard Modem Types” → Select “Standard 19200 bps Modem” → Click “Next”

Step6. Select your COM Port(GTM-204M-4G USB Modem) to connect to the modem → Click “Next”

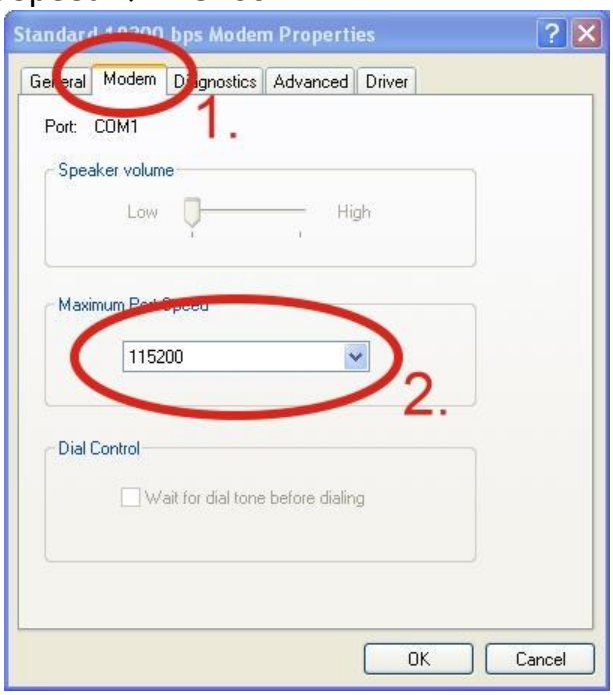


Step7. Click “Finish” to finish the install new modem.

Step8. Control Panel → Double-click “Phone and Modem Options” → Modem → Select “Standard 19200 bps Modem” → Click “Properties”



Step9. Control Panel → Double-click “Phone and Modem Options” → Modem → Select “Standard 19200 bps Modem” → Click “Properties” → Modem → Maximum Port Speed → 115200

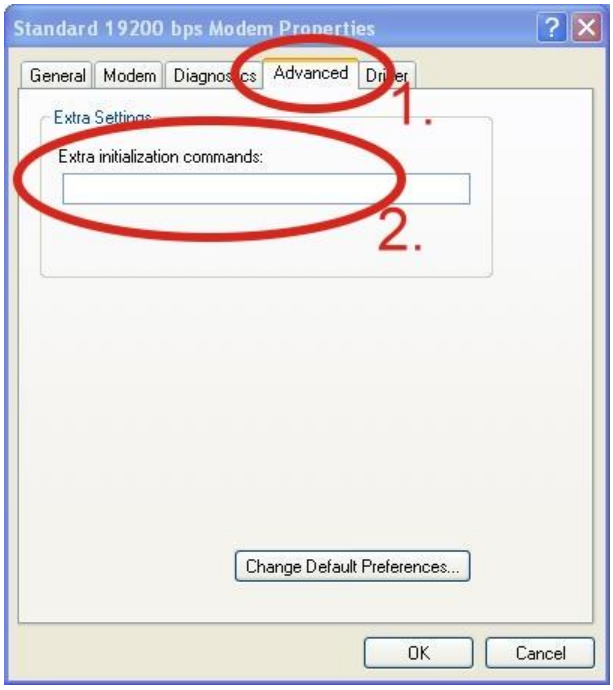


Step10. Advanced → Extra initialization commands:

Note: GPRS’s APN must be provided from your Telecom. CO., LTD.

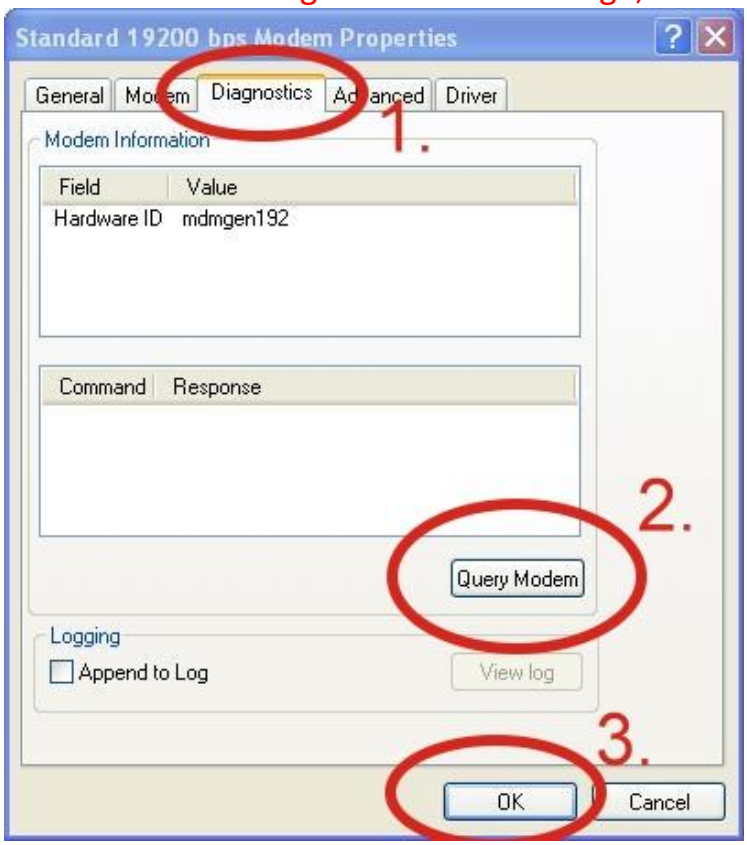
For example in Taiwan: AT+CGDCONT=1,”IP”,”INTERNET”

For example in China: AT+CGDCONT=1,”IP”,” CMNET”

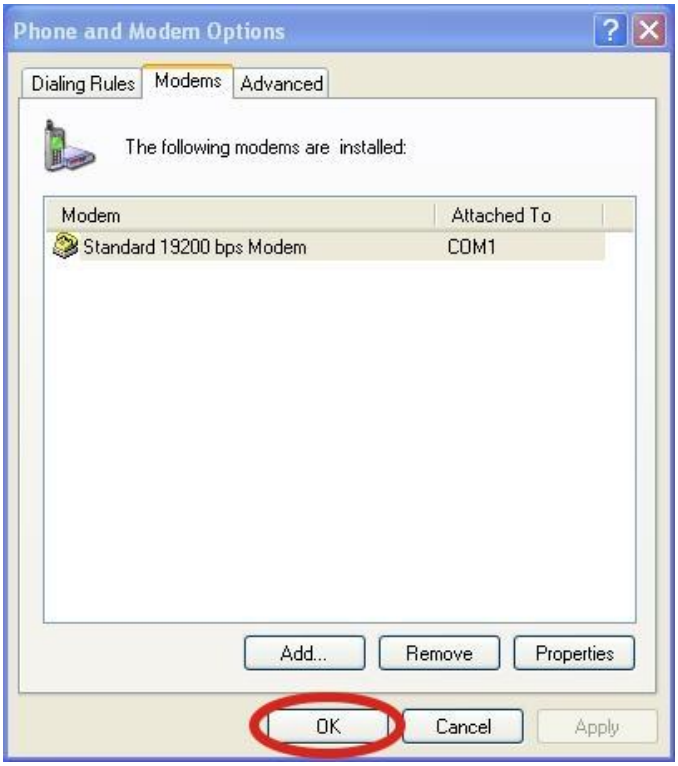


Step11. Diagnostics → Query Modem →Click “OK”

Note: If user queries the modem and gets an error message, Please try again.

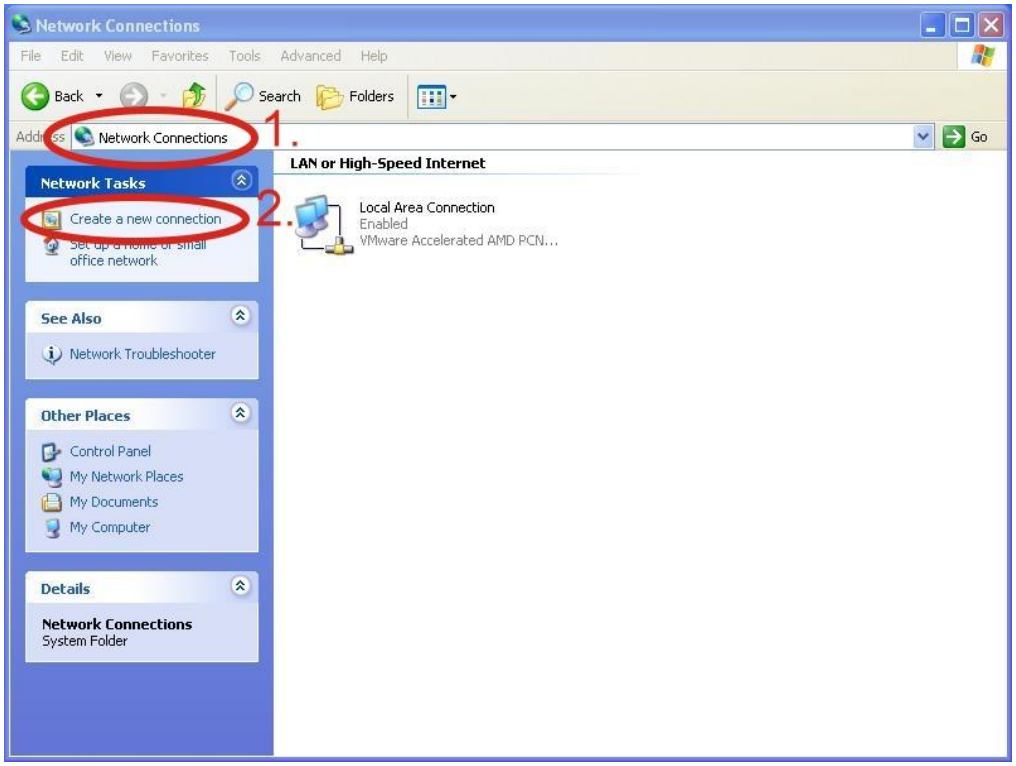


Step12. Click “OK”



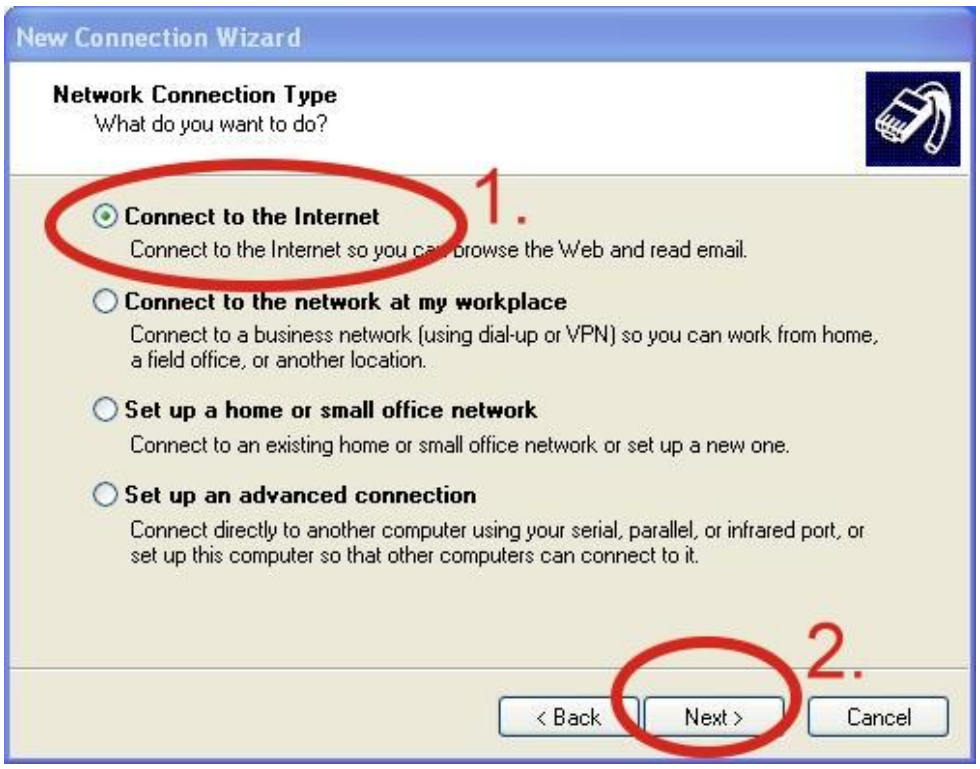
➢ Create a new dial-up and networking connection

Step1. Control Panel → Network Connections → Click “Create a new connection”

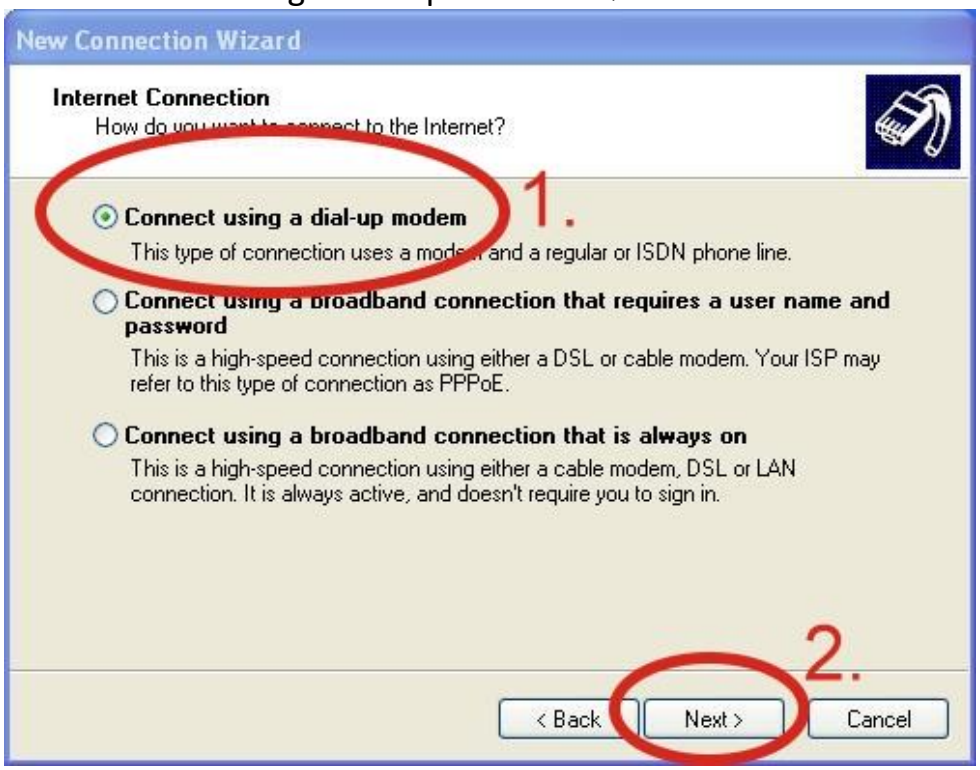


Step2. Click “Next”

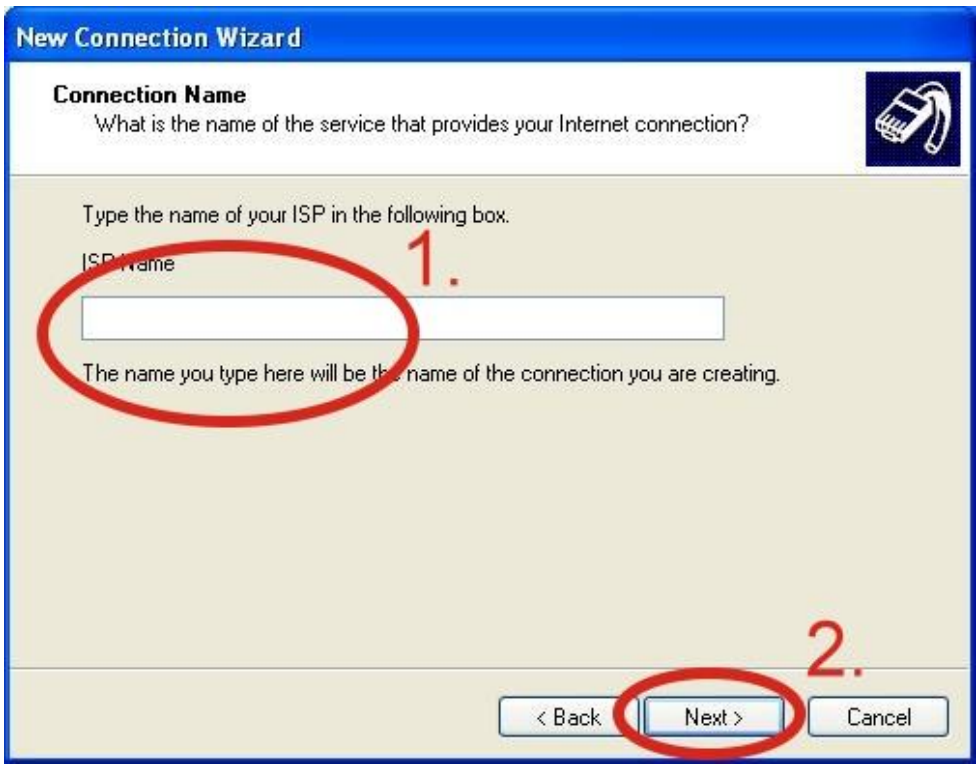
Step3. Select “Connect to the Internet” → Click “Next”



Step4. Select “Connect using a dial-up modem” → Click “Next”



Step5. ISP Name → Your GPRS's name → Click "Next"



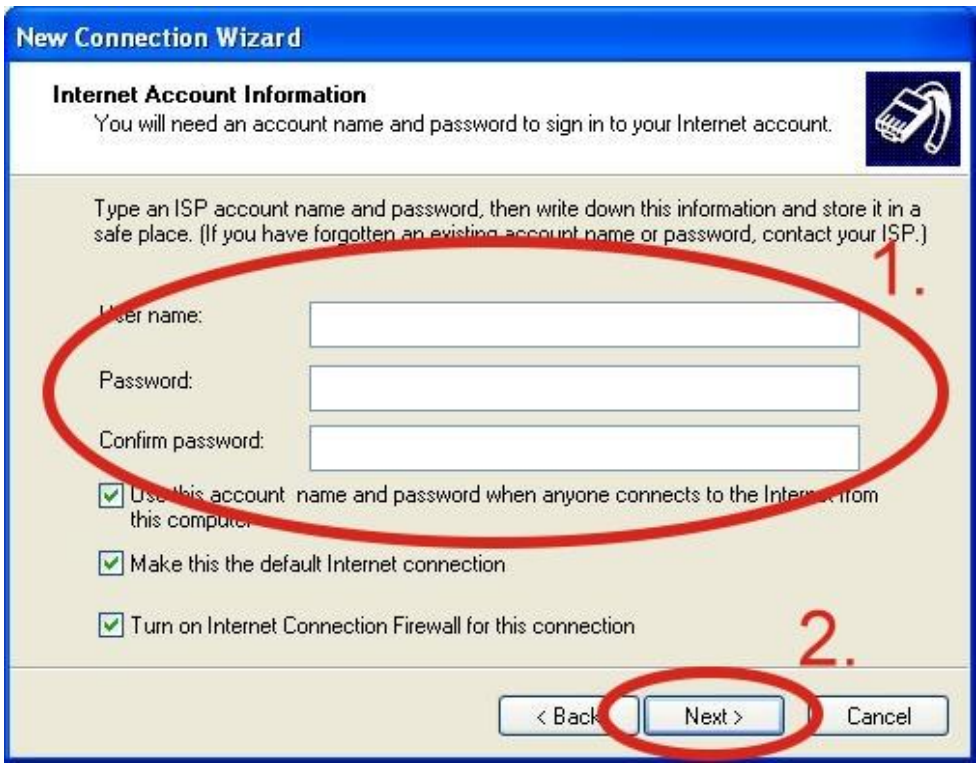
Step6. Phone Number: → Click "Next"

Note: Phone Number must be provided from your Telecom. CO., LTD.

For example in Taiwan: *99#

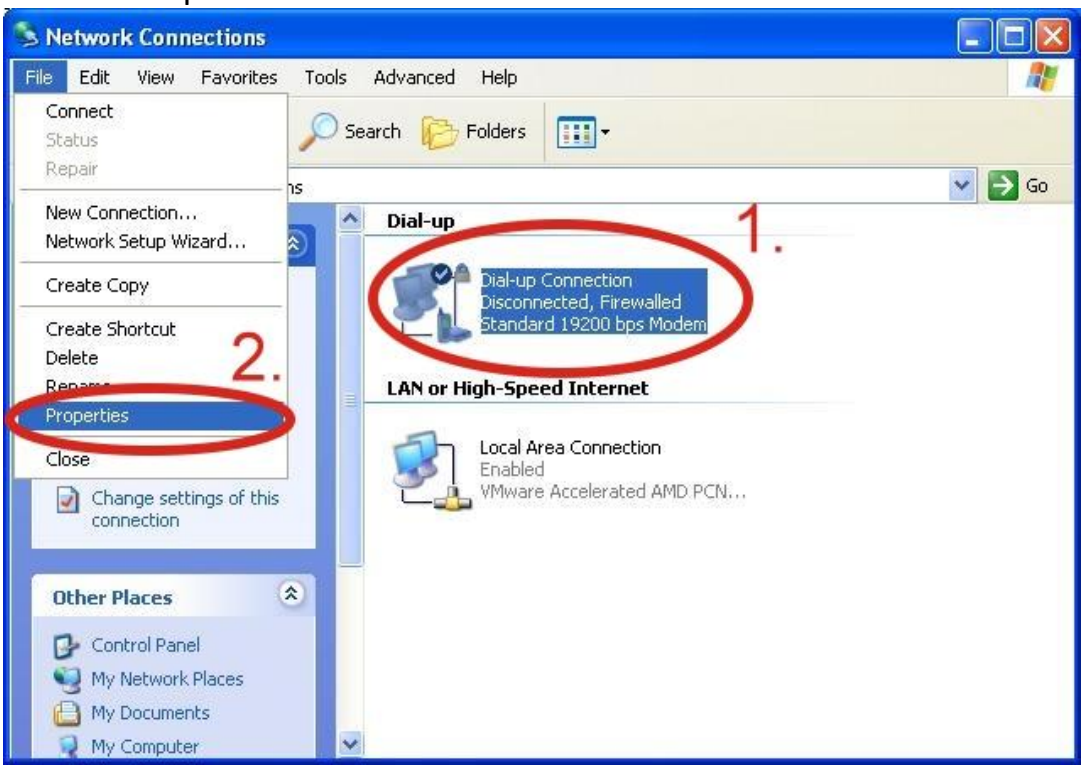
Step7. GPRS's User name and GPRS's Password → Click "Next"

Note: GPRS's User name and GPRS's Password must be provided from your Telecom. CO., LTD.



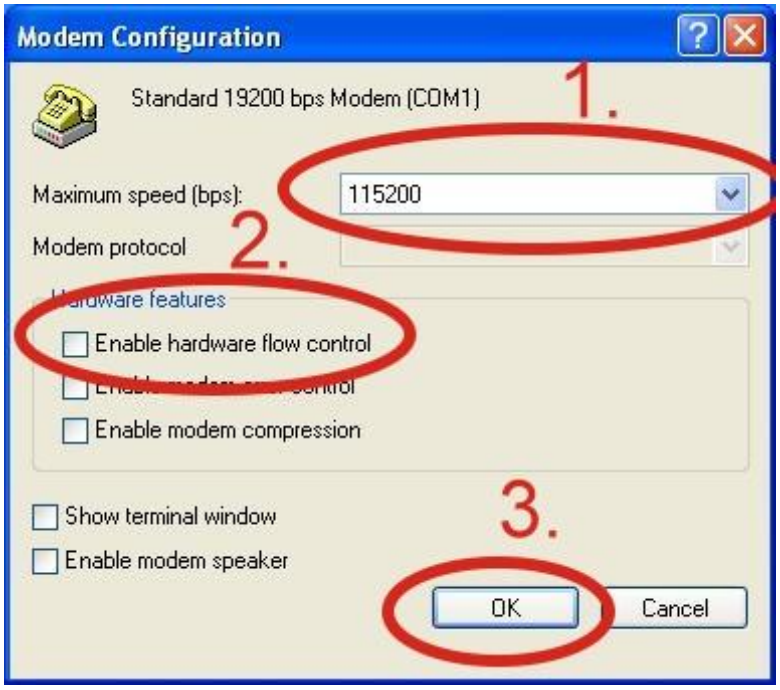
Step8. Click "Finish"

Step9. Control Panel → Network Connections → Click “Your GPRS’s name” → File → Properties



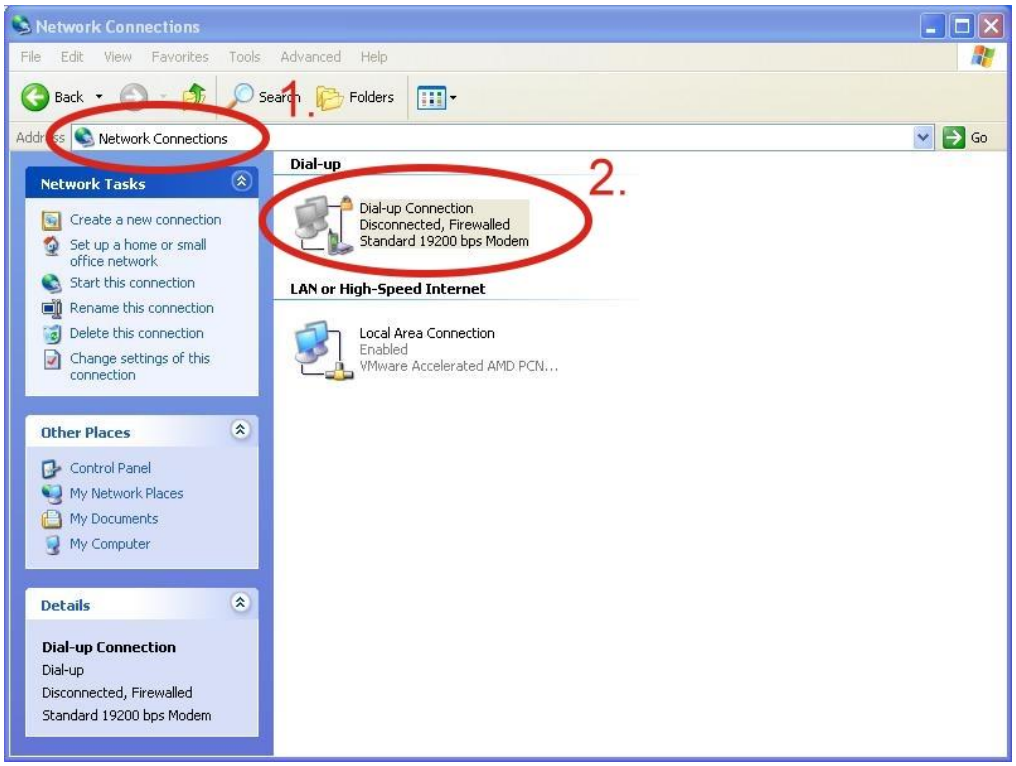
Step10. General → Select ”Standard 19200 bps Modem” → Click “Configure”

Step11. Maximum speed(bps) → Select ”115200” → do not select “Enable hardware flow control “ → Click “OK”



Step12. Click “OK”

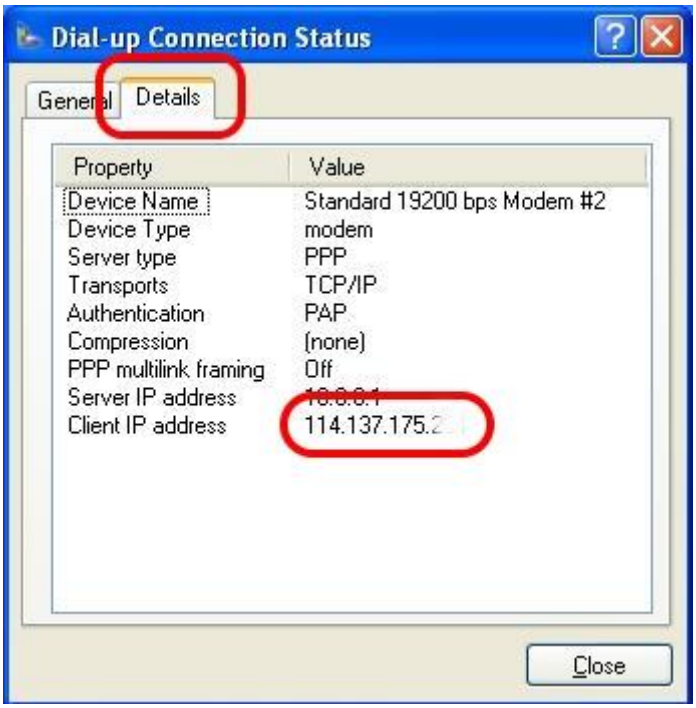
Step13. Control Panel → Network Connections → Double-Click “Your GPRS’s name”



Step14. Click “Dial”

Step15. If you connect to internet successfully, your toolbar have new logo

Step16. You can Double-Click the new logo → Click “Details” → Get your IP address

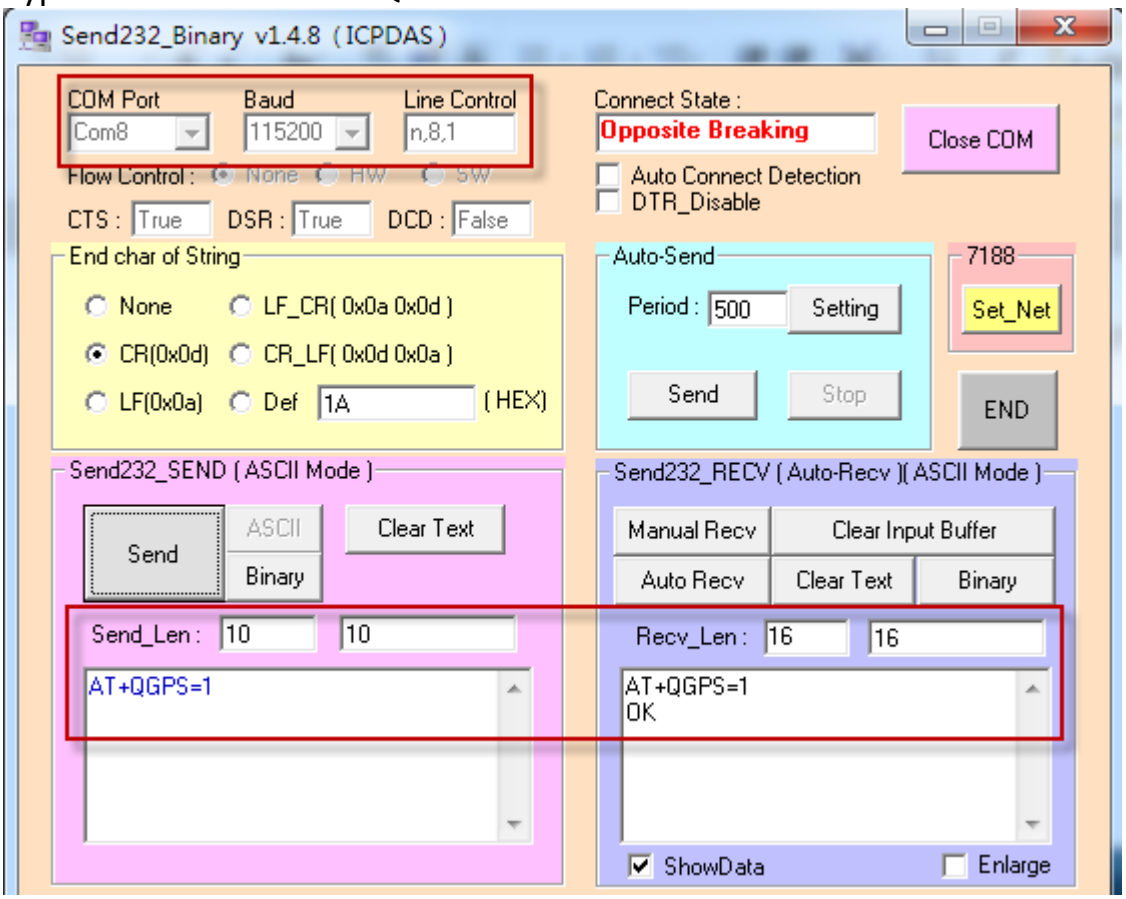


7. Quick test GPS

XP-8000 (Windows Embedded Standard 2009)

1. Copy the tested software (Send232.exe) to your XP-8000 from the CD
   Path: CD:\ gprs_gsm_modem\I-8213W-4G\Software\XP-8000\GPSTest
2. Execute the tested software and select your AT port number of your XP-8000.

3. Type the command: AT+QGPS=1



4. Re-open the port (NMEA) number, then you will get GPS data.

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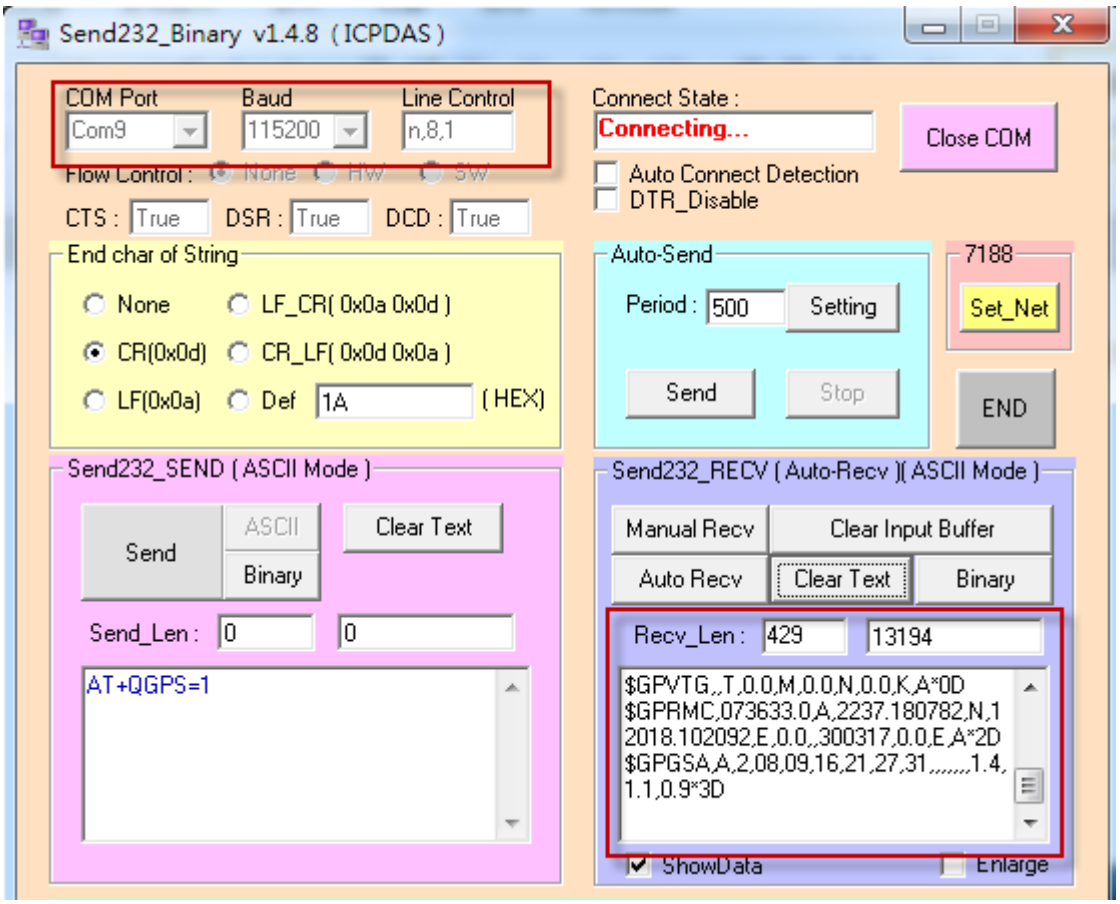

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Revised Note

Version	Editor	Date	Description
1.0	Eddie	2017-03-30	Release
1.1	Eddie	2017-09-05	Update Hardware Specifications

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