Industrial Tri-band 3G Modem
GTM-201-3GWA Series

User Manual

Warranty

All products manufactured by ICP DAS are warranted against defective materials for a period of one year from the date of delivery to the original purchaser.

Warning

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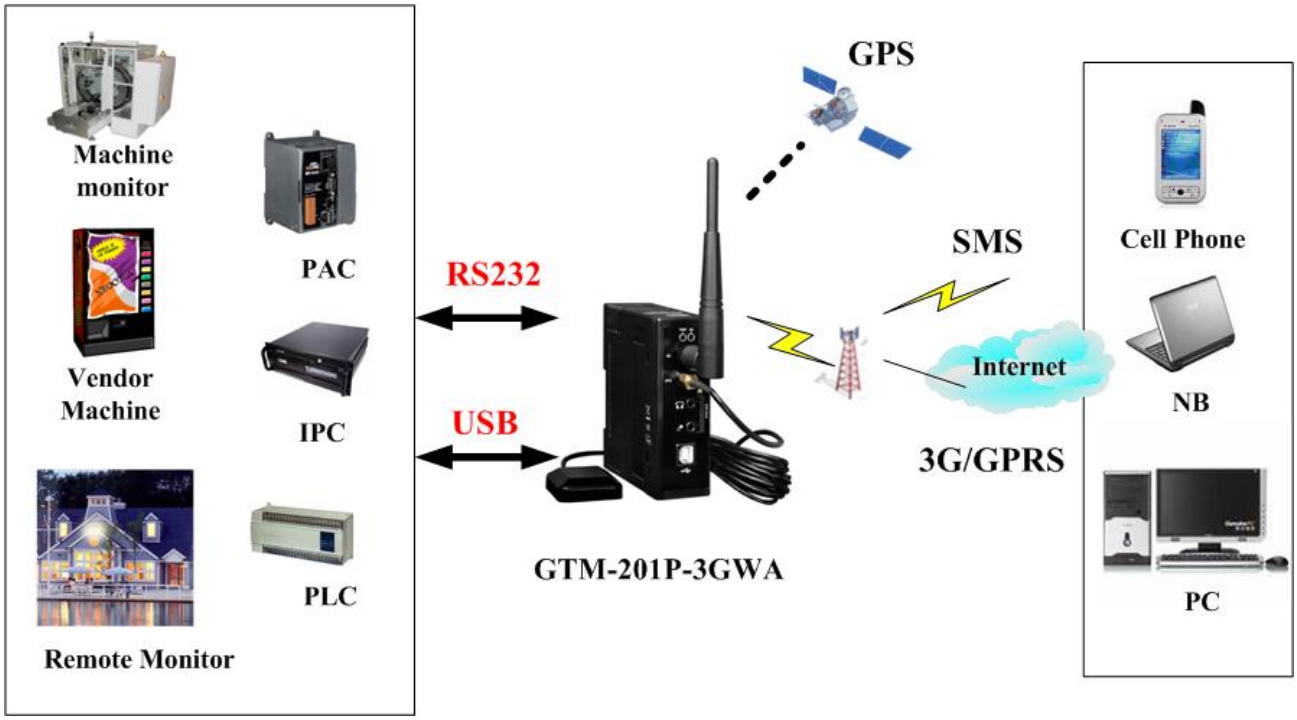
Chapter 1 Introduction

The GTM-201-3GWA is a industrial Tri-band 3G and Quad-band GSM modem with RS-232 and USB interfaces that work at frequencies of UMTS 2100 / 1900 / 850 MHz and GSM 850 / 900 / 1800 / 1900 MHz. The modems utilize the 3G or GPRS network to transfer data. The features of GTM-201-3GWA allows a variety of PLC and PC applications to take advantage of SMS, 3G and GPRS connectivity. The voice interface allows the modem to be also applied to alarm systems with sounds.



Chapter 2 Hardware Specifications

2.1 GTM-201-3GWA Series

	
GTM-201-3GWA	**GTM-201P-3GWA**

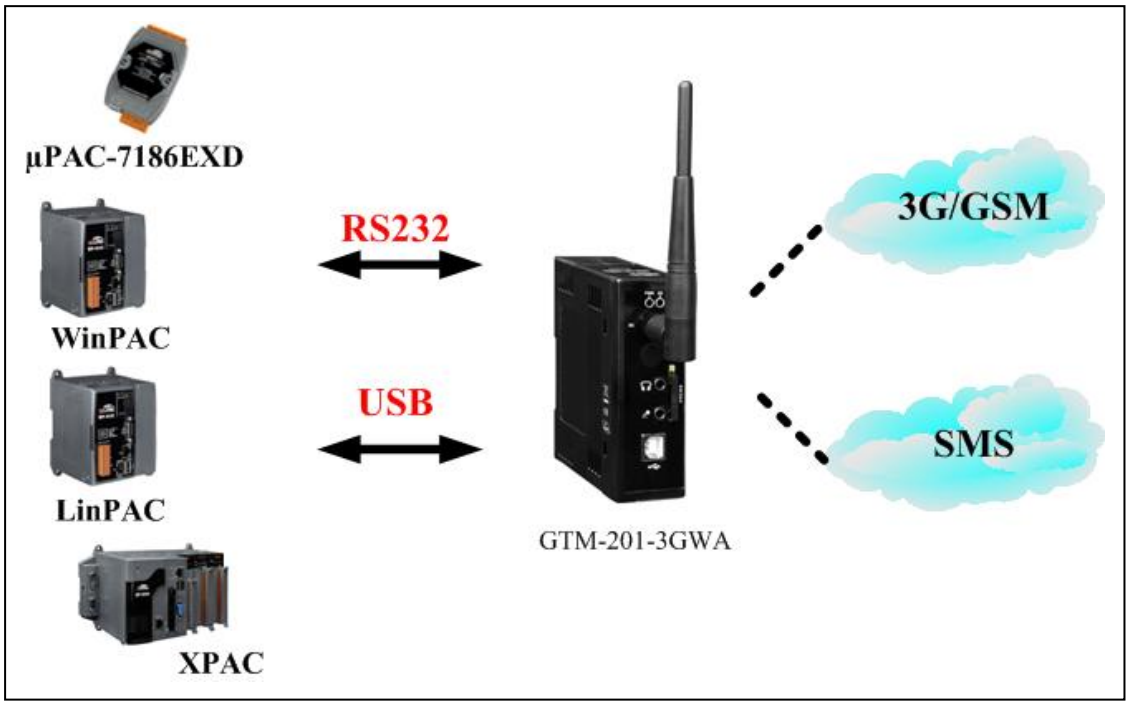
2.2 GTM-201-3GWA Specifications

Item	GTM-201-3GWA	GTM-201P-3GWA
3G System		
Frequency Band	UMTS : 2100/1900/850 MHz	
Data Transmission	UMTS / HSDPA / HSUPA Downlink transfer: Max. 7.2Mbps; Uplink transfer: Max 5.76Mbps	
GSM / GPRS System		
Frequency Band	GSM : 850/900/1800/1900 MHz	
GPRS connectivity	GPRS class 12/10; GPRS station class B	
DATA GPRS	Downlink transfer: Max. 85.6 kbps; Uplink transfer: Max 42.8kbps	
CSD	Up to 14.4 kbps	
Coding Schemes	CS 1, CS 2, CS 3, CS 4	
SMS		
SMS	MT, MO, CB, Text and PDU mode	
GPS System		
Support Channels	-	32
Protocol Support	-	NMEA 0183
Comm. Interface		
COM ports	TxD,RxD,GND	
COM Port Baud Rate	9600 bps ~ 115200 bps	
USB	USB 2.0 (high speed)	
USB Driver support	Windows 98 / 2000 / XP / Vista / 7 LinPAC (Linux kernel 2.6)	
LED Indicators		
Power	Red	
3G/GSM	Green	
Power		
Protection	Power reverse polarity protection	
Frame Ground Protection	ESD, Surge, EFT, Hi-Pot	
Required Supply Voltage	+10 V_{DC} ~ +30 V_{DC}	
Power Consumption	Idle: 25 mA @ 24 V_{DC} ; Data Link: 100 ~ 400 mA (peak) @ 24 V_{DC}	
Connection	8-Pin 3.5 mm Removable Terminal Block	
Reset Input		
Input Type	Isolated, 3750 V_{rms}	
On Voltage Level	+3.5 V_{DC} ~ +30V_{DC}	
Off Voltage Level	+1 V_{DC} max.	
Input Impedance	3 kΩ , 0.25W	
Mechanical		
Casing	Plastic	
Flammability	UL 94V-0 materials	
Dimensions (W x L x H)	33 mm x 87 mm x 107 mm	
Installation	DIN-Rail	
Environment		
Operation Temp.	-25℃ to 75℃	
Storage Temp	-40℃ to 80℃	
Humidity	5~95% non-condensing	

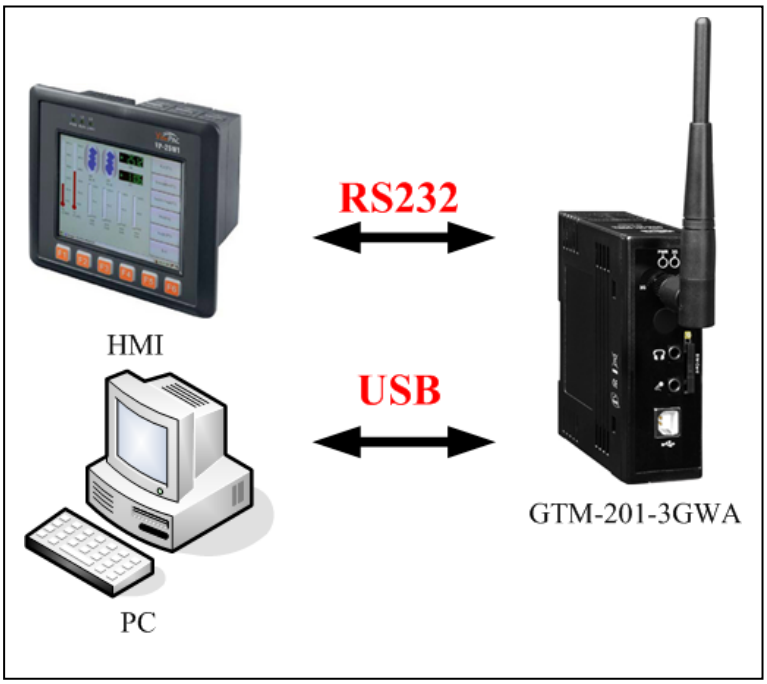
Note1: The default baud rate is 115200 bps.

Chapter 3 Application architecture

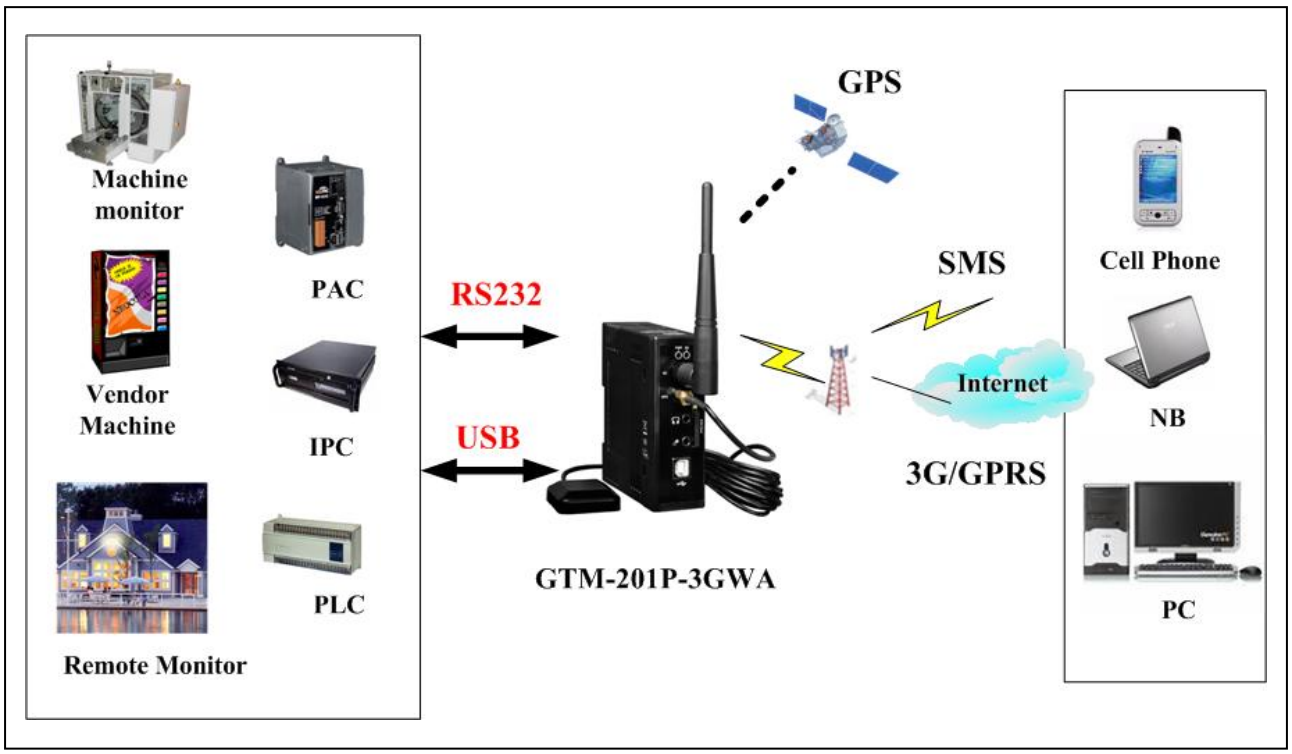
3.1 Application 1



3.2 Application 2

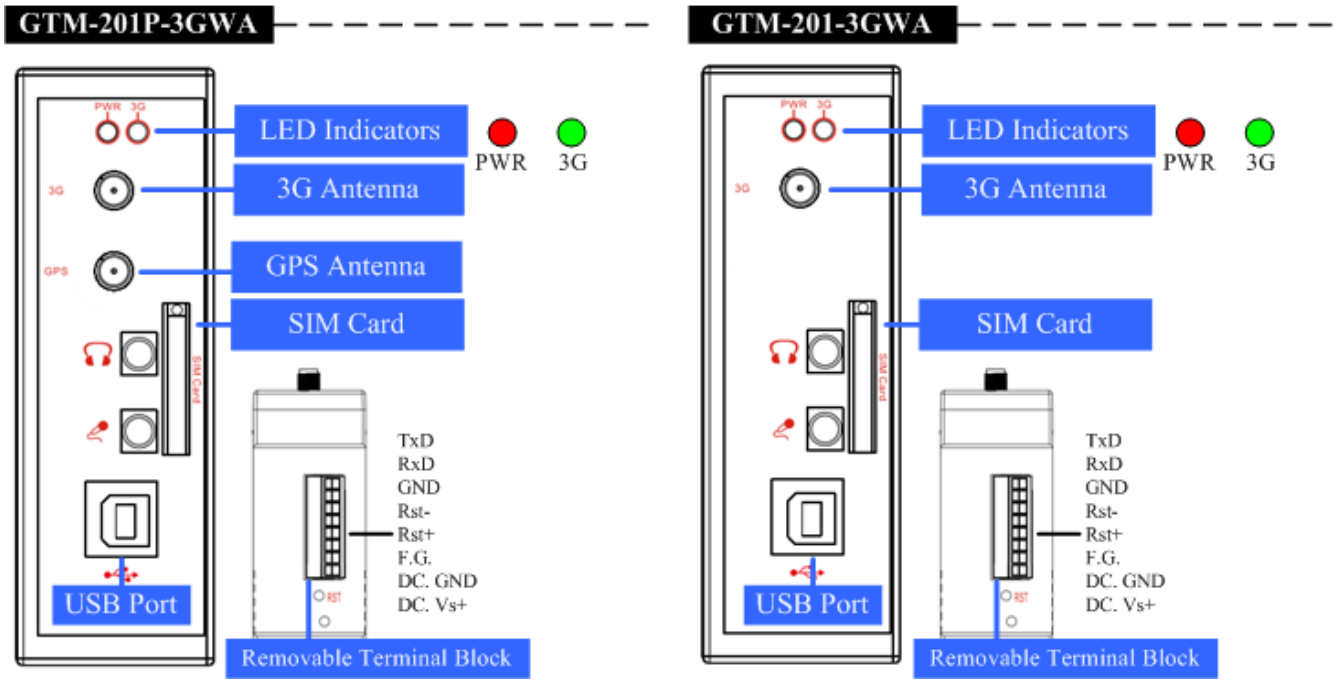


3.3 Application 3

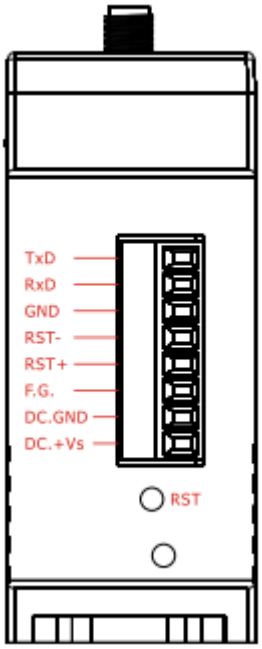


Chapter 4 Hardware Appearance

4.1 View of the GTM-201-3GWA Panel



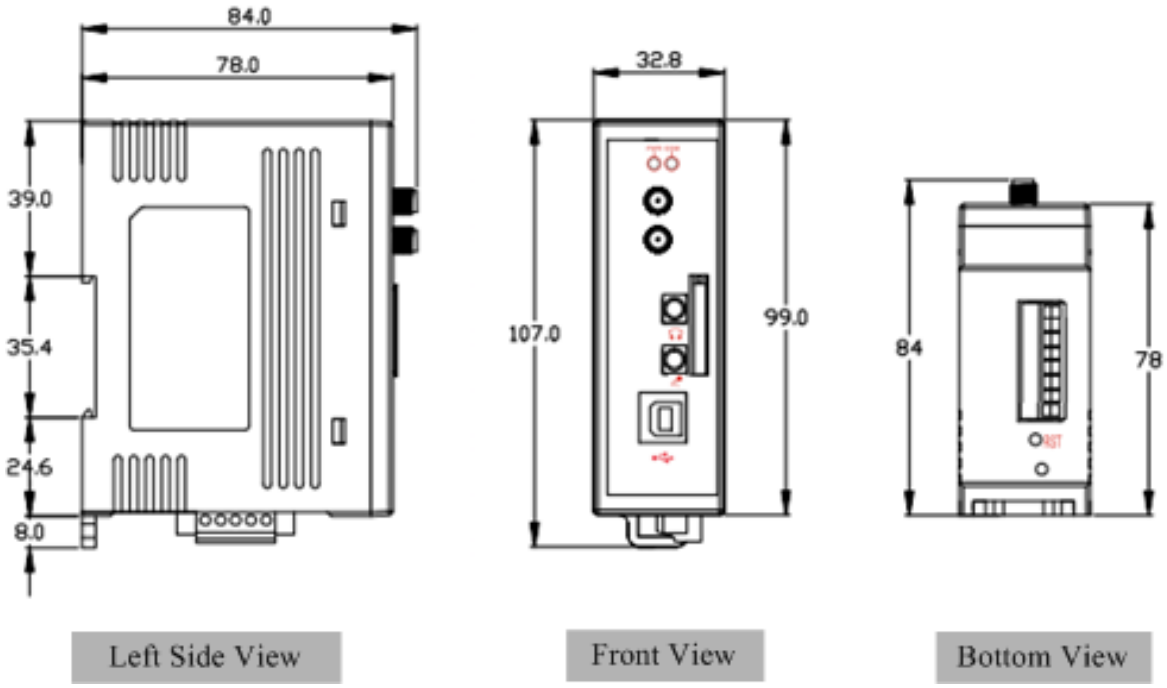
4.2 Pin Assignments



RS-232	TxD
	RxD
	GND
RESET	RST-
	RST+
Frame Ground	F.G.
Power Input: +10 ~ 30V_{DC}	DC.GND
	DC.+VS

4.3 Hardware Dimensions

➢ GTM-201-3GWA / GTM-201P-3GWA



Unit : mm

4.4 LED indicators

There are two LED indicators to help users to judge the various conditions of GTM-201-3GWA. The description is as follows：

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

Power normal	Power fail
Always on	Always off

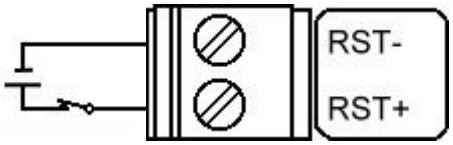
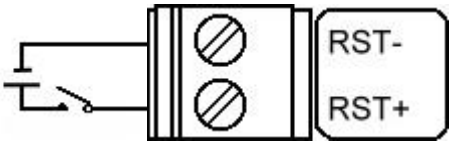
3G (Green)：The modem LED can indicate the status of GSM module.

Modem normal	Modem fail	Data transmit
Blanking (800 ms)	Off On	Blanking(200 ms)

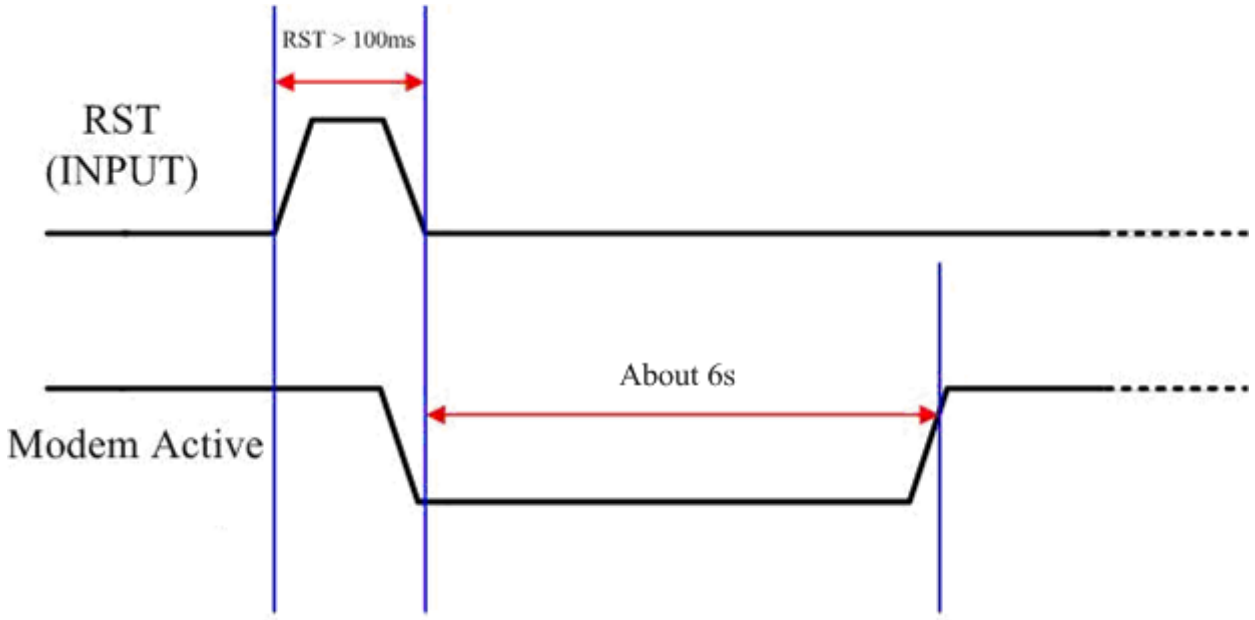
Chapter 5 Hardware Wire Connection

5.1 Reset Wire Connection

➢ Reset Wire Connection

Input Type	Reset State ON	Reset State OFF
Reset Input		

Reset Input	
ON Voltage Level	+3.5 V_{DC} ~ +30 V_{DC}
OFF Voltage Level	+1 V_{DC} max.



Timing of restarting the modem

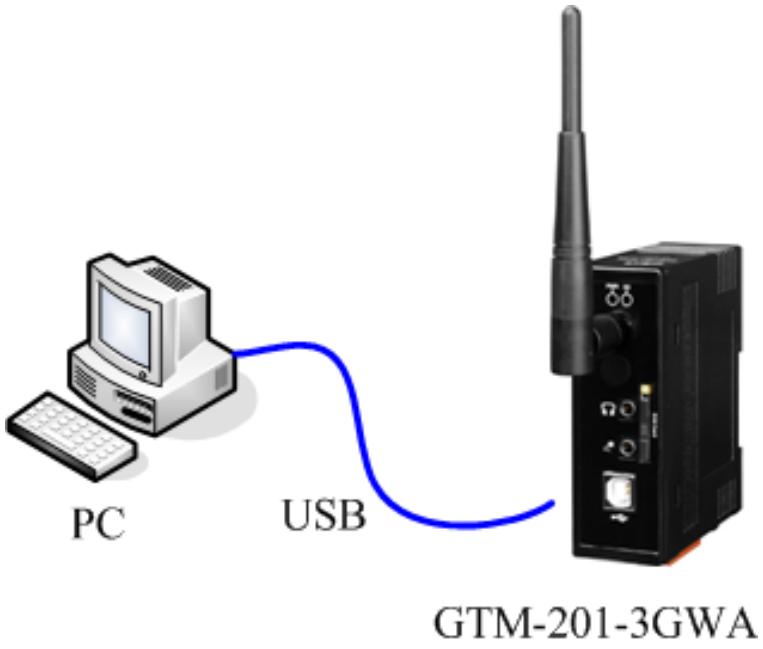
5.2 3G/GPS Installation

➢ SIM card Installation

➢ 3G/GPS Antenna Installation

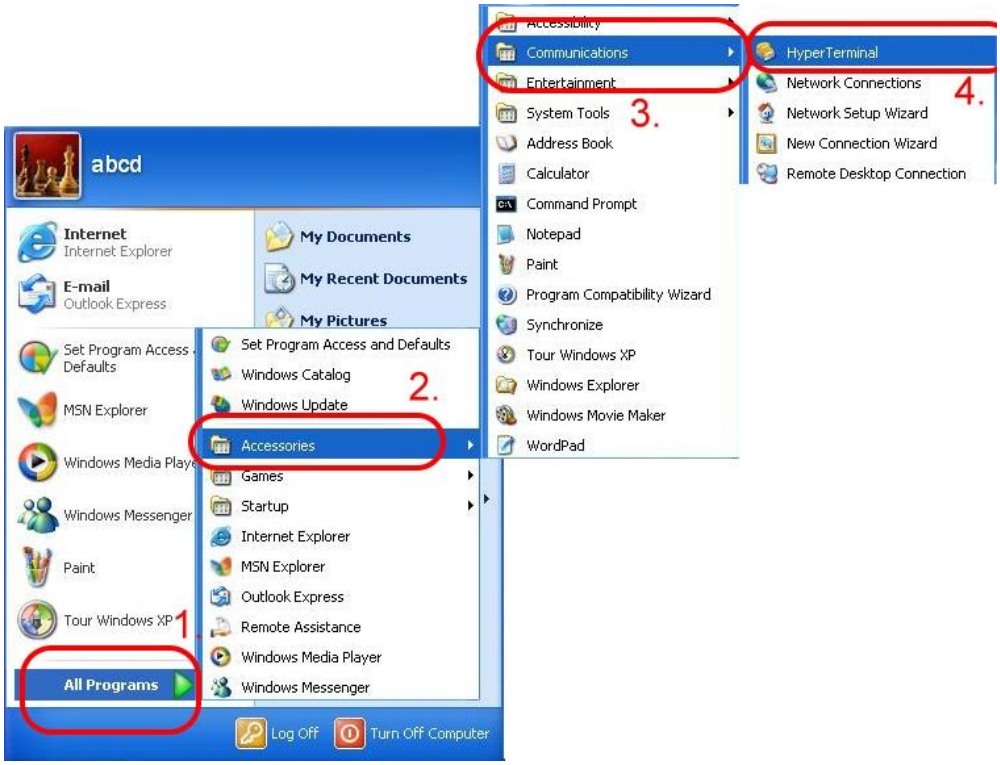
5.3 Quick Test

- **Hardware installation :**



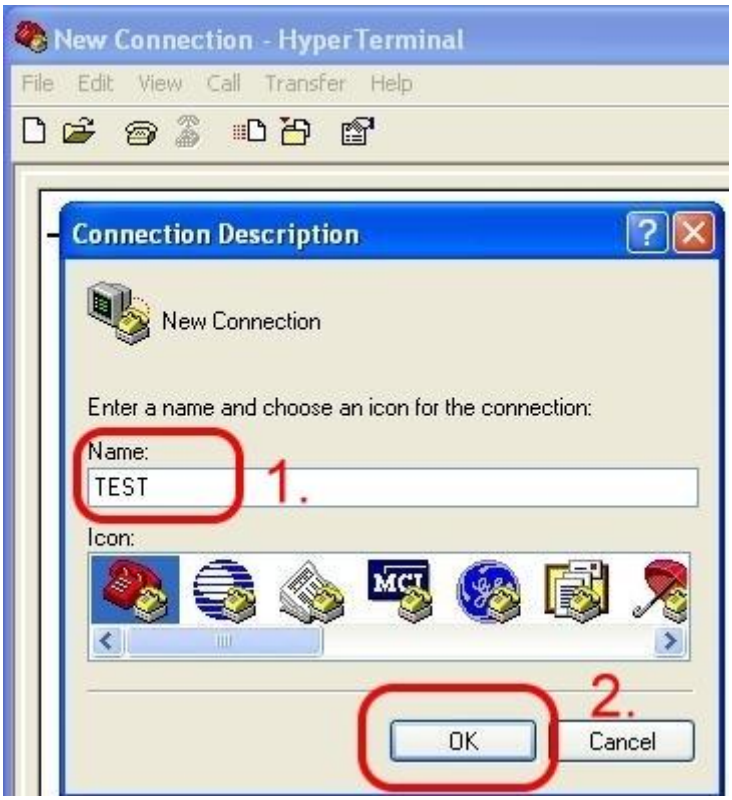
➢ Software Installation: (Hyper Terminal)

Step1. Start → All Programs → Accessories → Communications → Hyper Terminal



Step2. If these is a pop-up form that “Default Telent Program?”, please select “Yes”

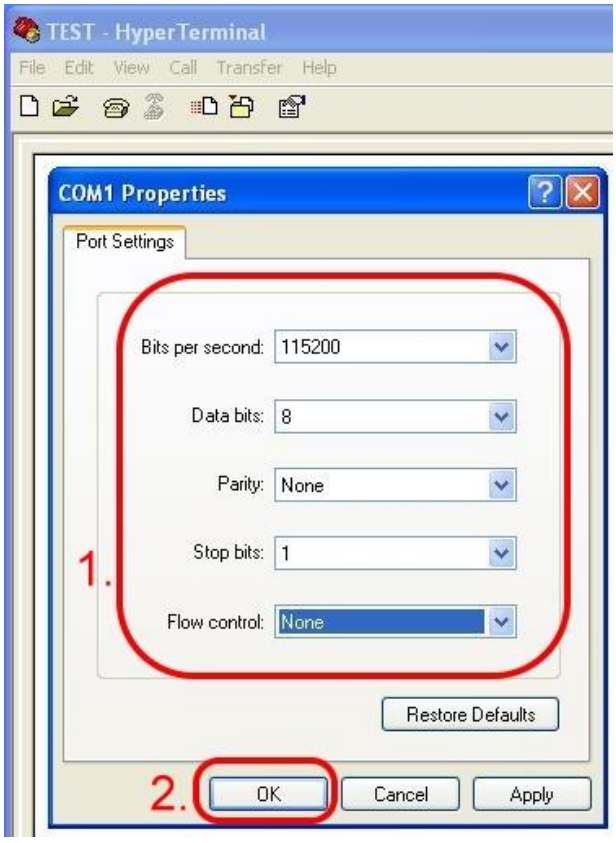
Step3. Input new connection name → Click “OK”



Step4. Select your PC serial port → Click “OK”

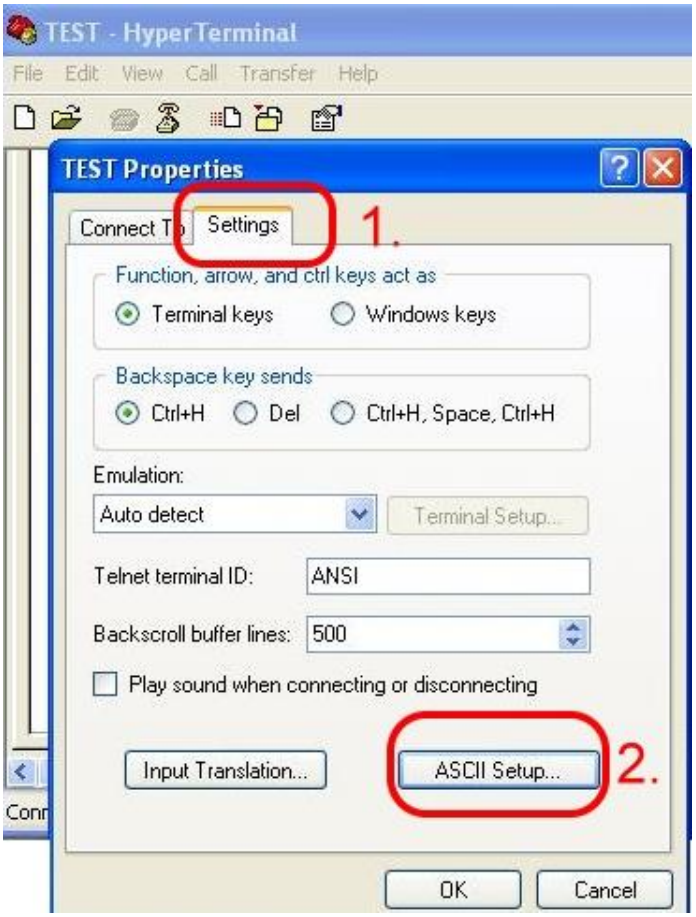
Step5. Please refer to the following settings

Bits per second	115200
Data bits	8
Parity	None
Stop bits	1
Flow control	None **(Note)**

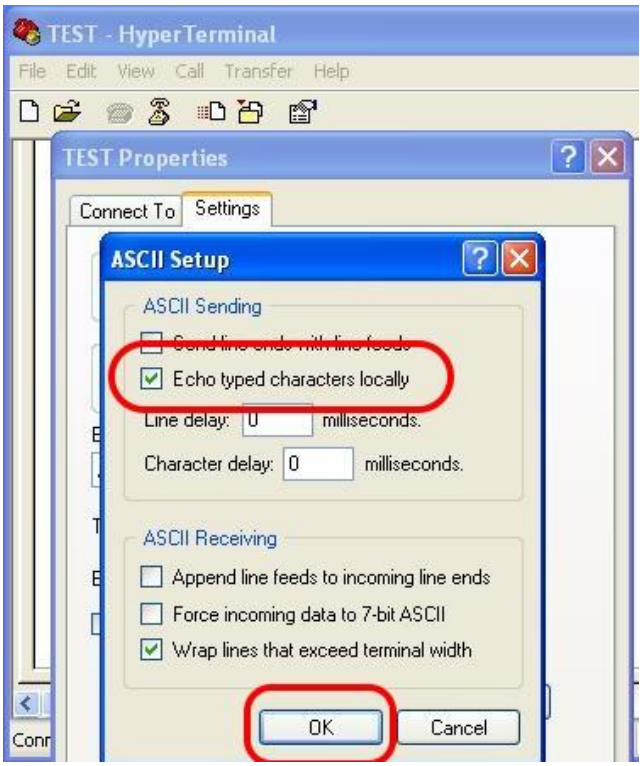


Step6. File → Properties

Step7. Settings → Click “ASCII Setup…”



Step8. Select “Echo typed character locally” → OK



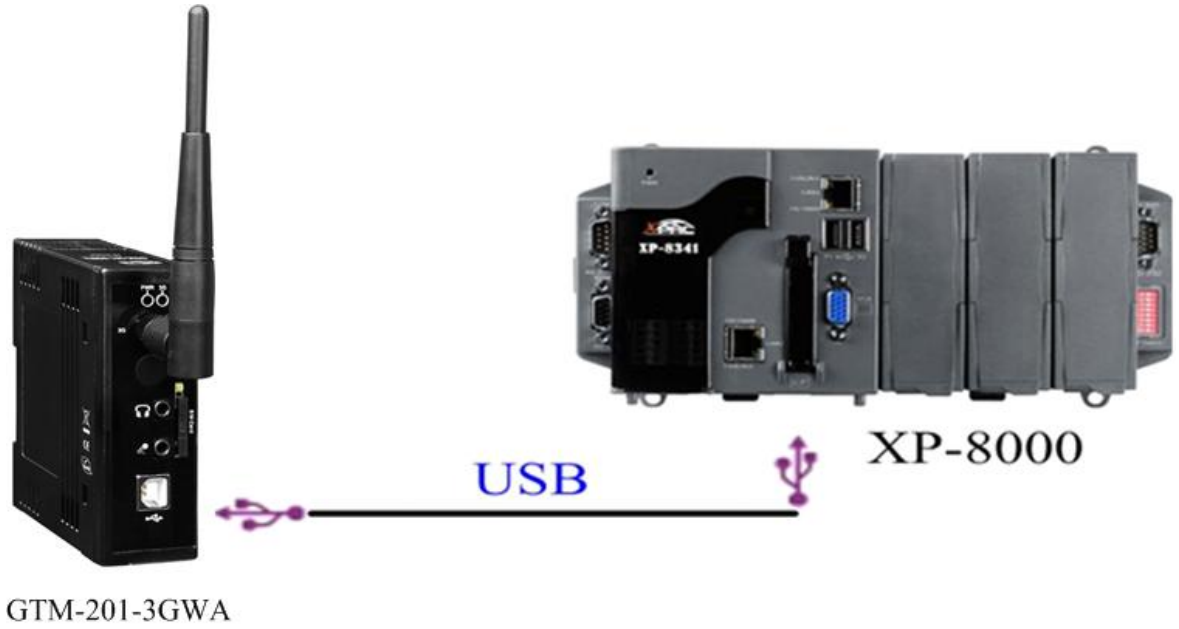
Step9. Input “AT” and press “Enter”, then you will receive “AT OK”

Chapter 6 GPRS connection

6.1 XPAC – 8000 (Microsoft Windows XP)

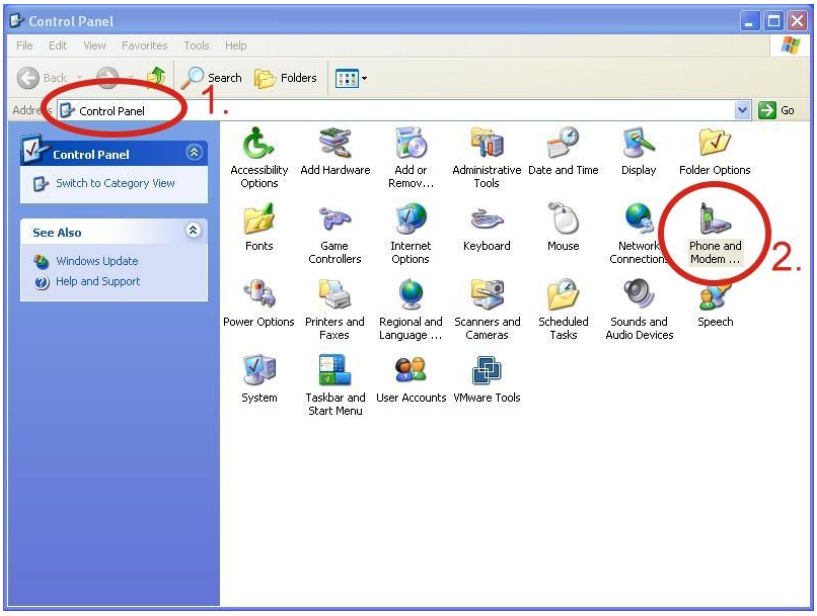
6.1.1.1 GTM-201-3GWA Hardware requirement

1) GTM-201-3GWA (Please install USB driver first)
2) XPAC-8000
3) USB Cable

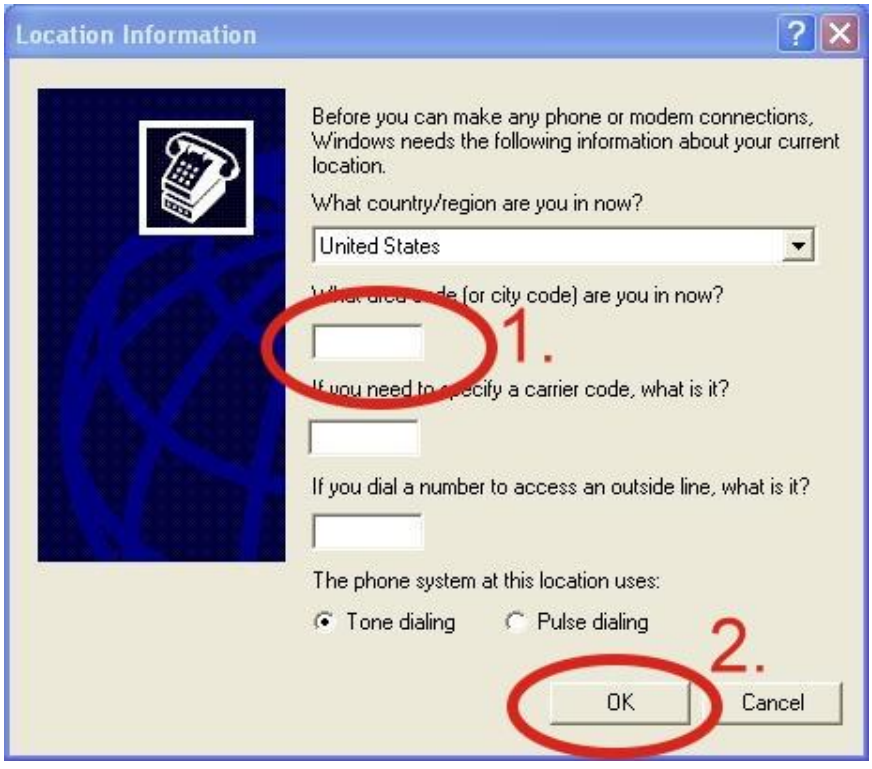


6.1.2.1 Create a new modem connection

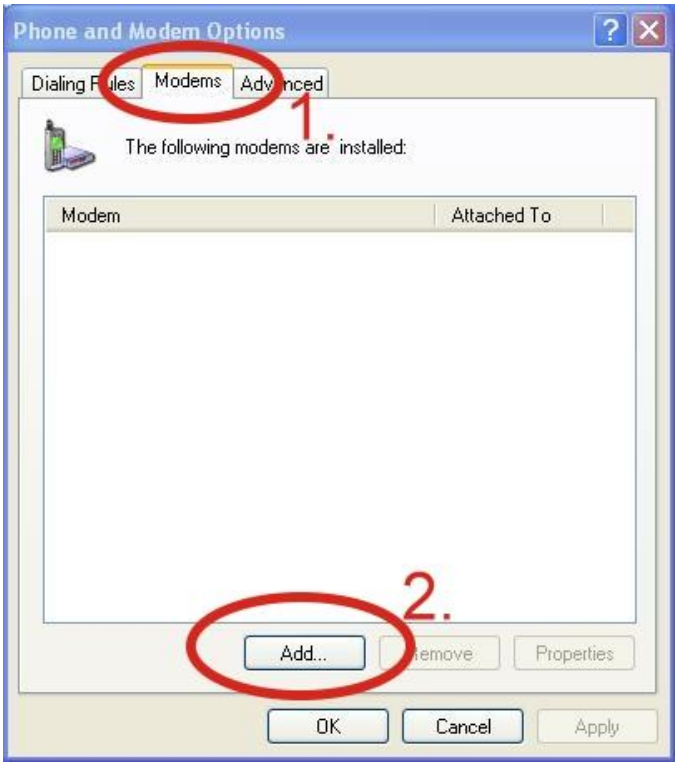
Step1. Control Panel → Double-click “Phone and Modem Options”



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



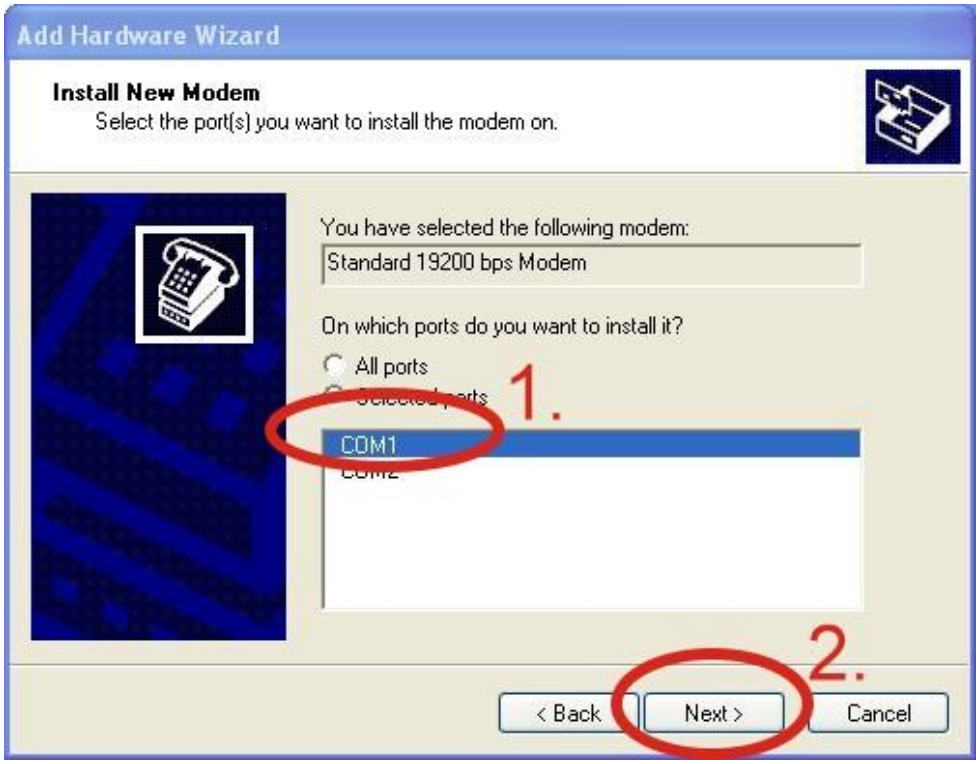
Step3. Control Panel → Double-click “Phone and Modem Options” → Modem → Click “Add”



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

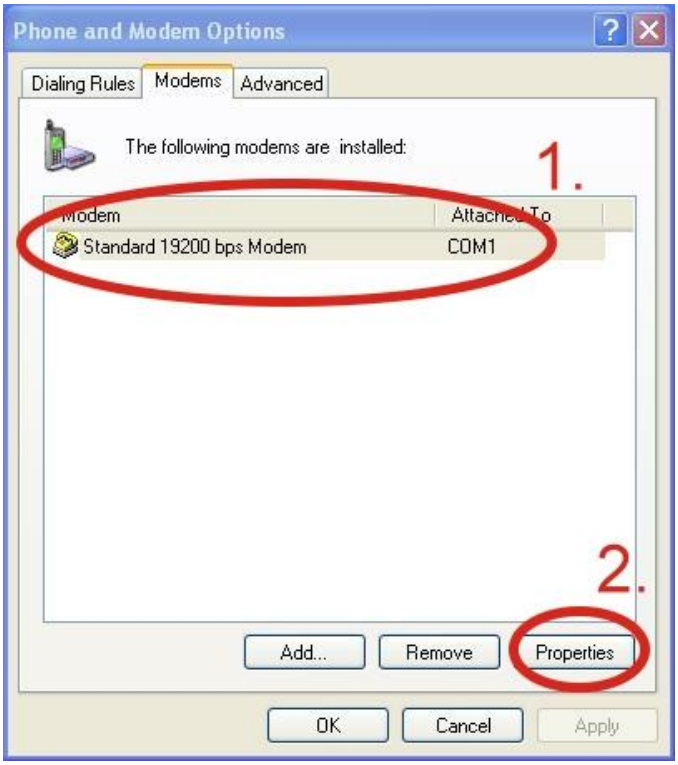
Step5. Select ”Standard Modem Types” → Select “Standard 19200 bps Modem” → Click “Next”

Step6. Select your COM Port to connect to the modem → Click “Next”

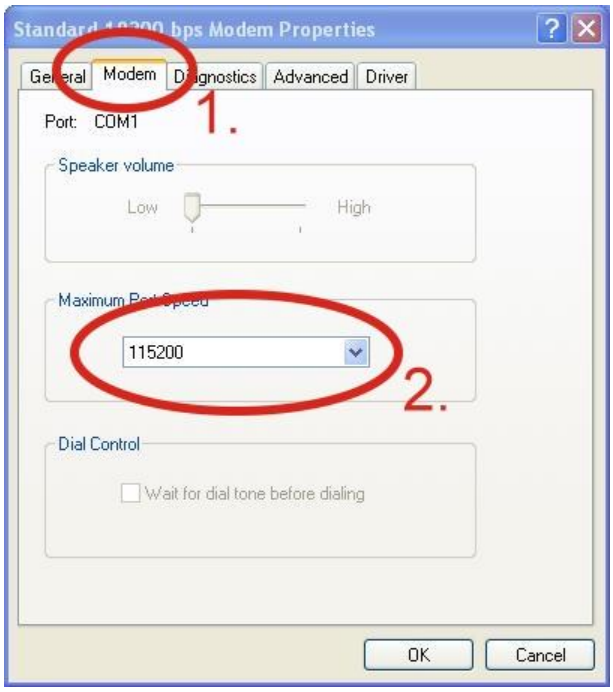


Step7. Click “Finish” to finish the install new modem.

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

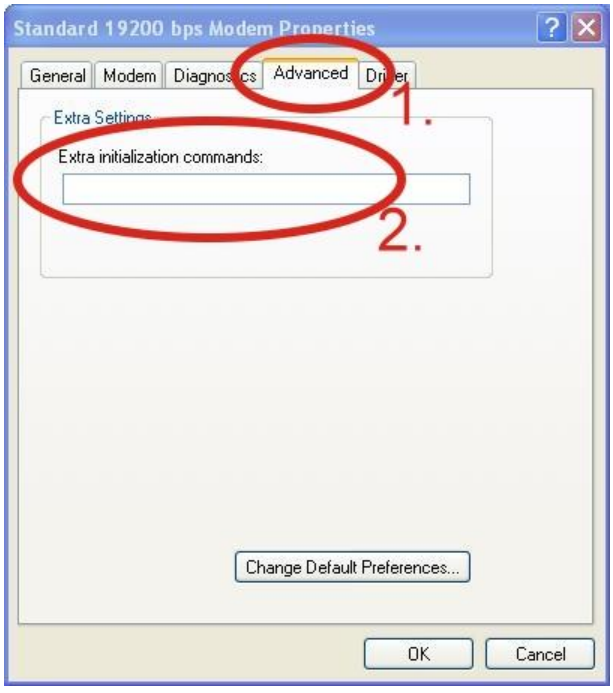


Step10. Advanced → Extra initialization commands:

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

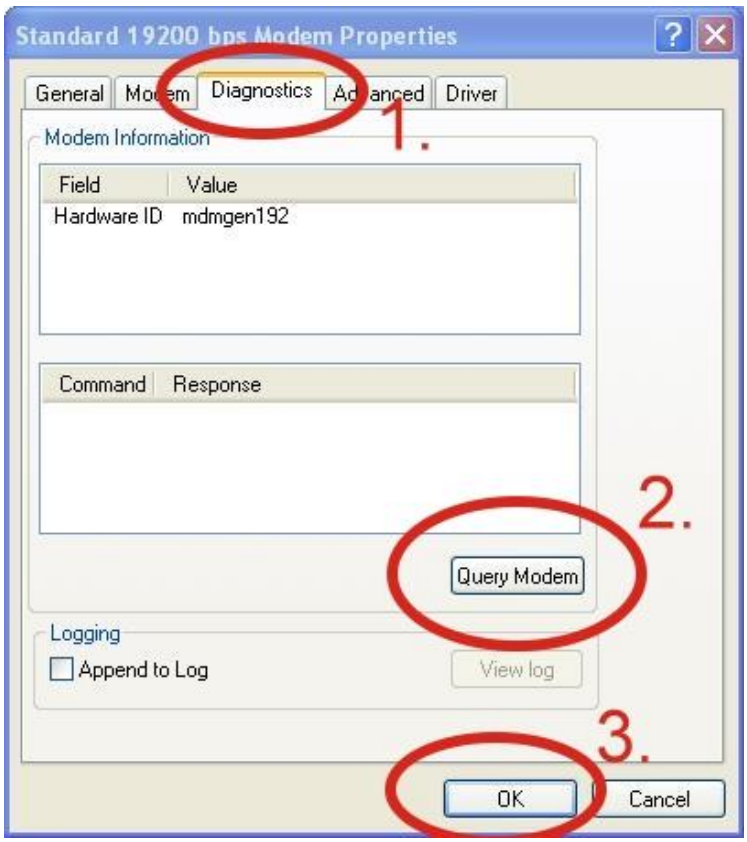
For example in Taiwan: AT+CGDCONT=1,”IP”,”INTERNET”

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

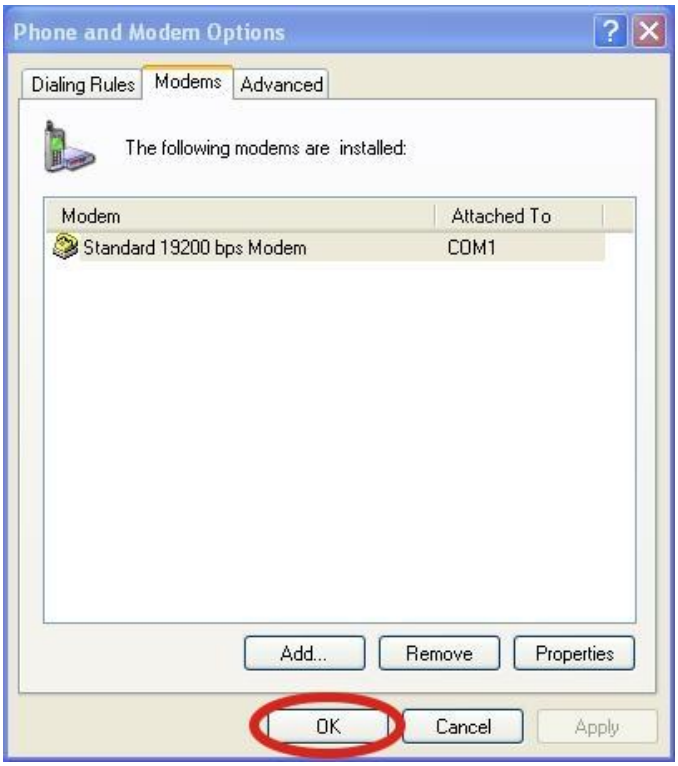


Step11. Diagnostics → Query Modem →Click “OK”

Note: If user queries modem that gets a Error, Please try again.

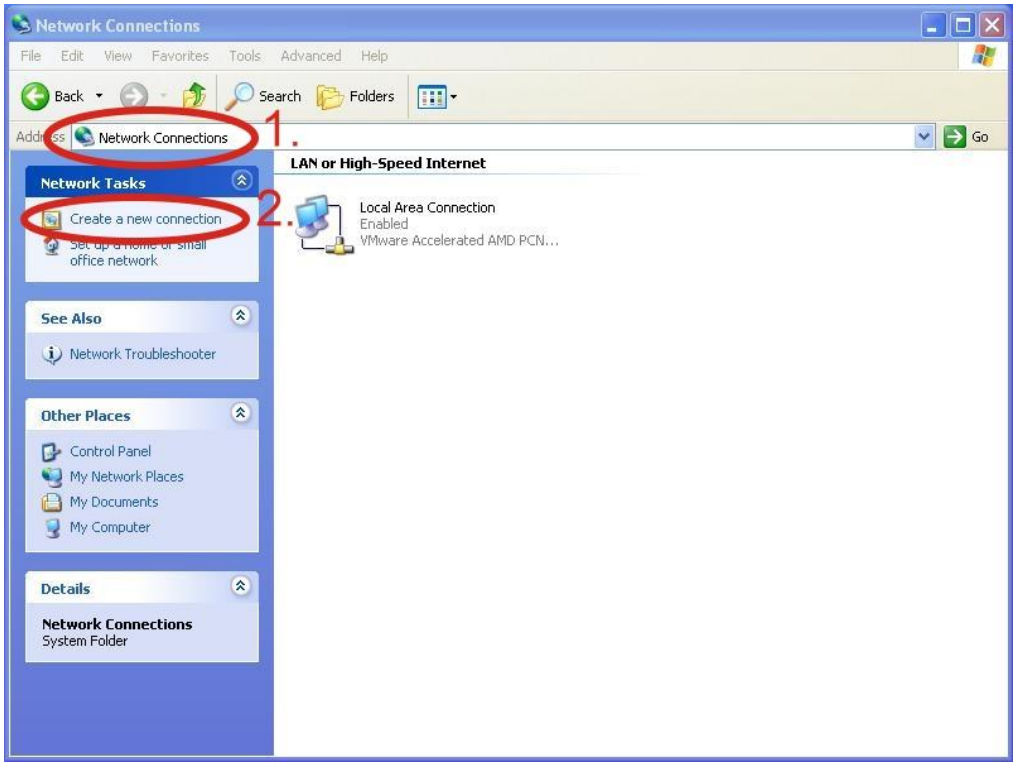


Step12. Click “OK”



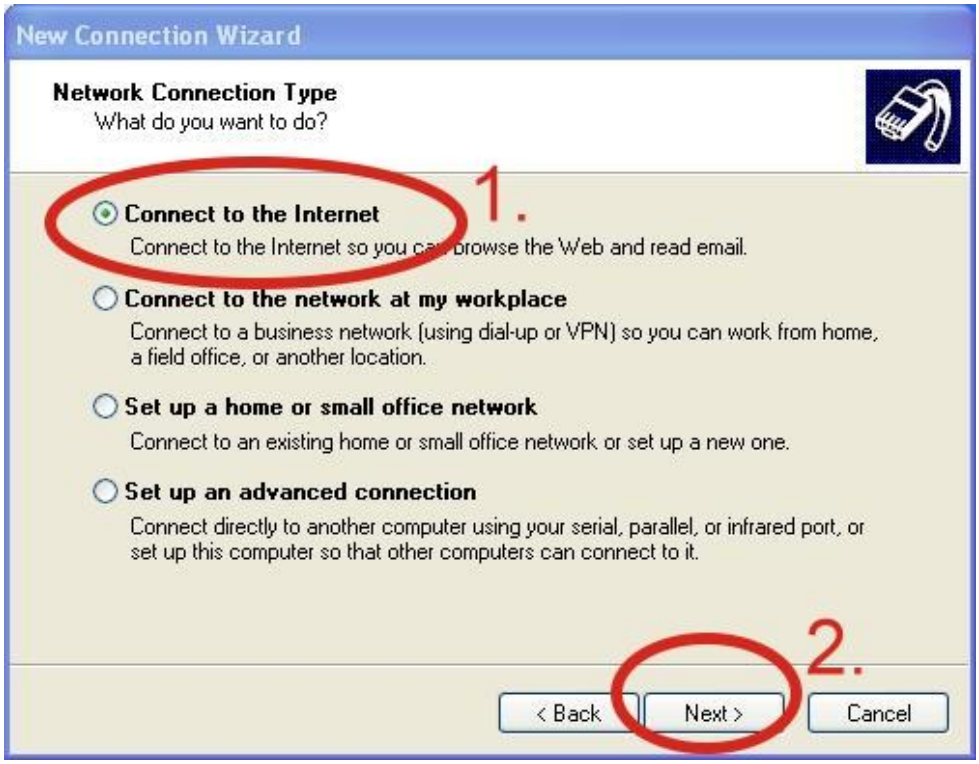
6.1.2.2 Create a new dial-up and networking connection

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

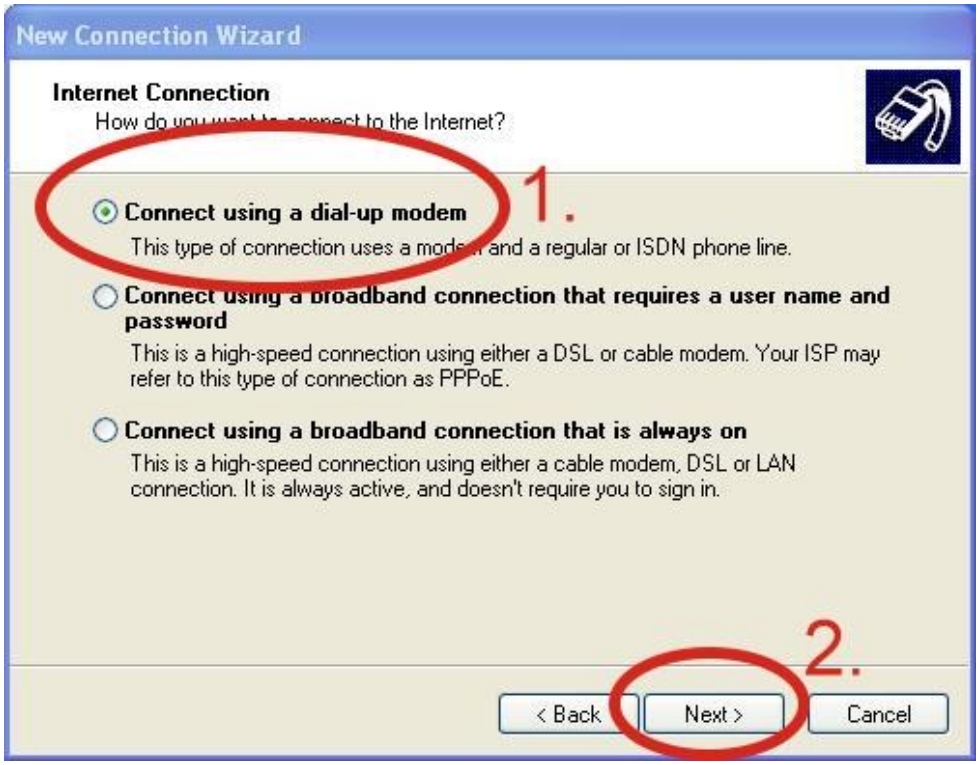


Step2. Click “Next”

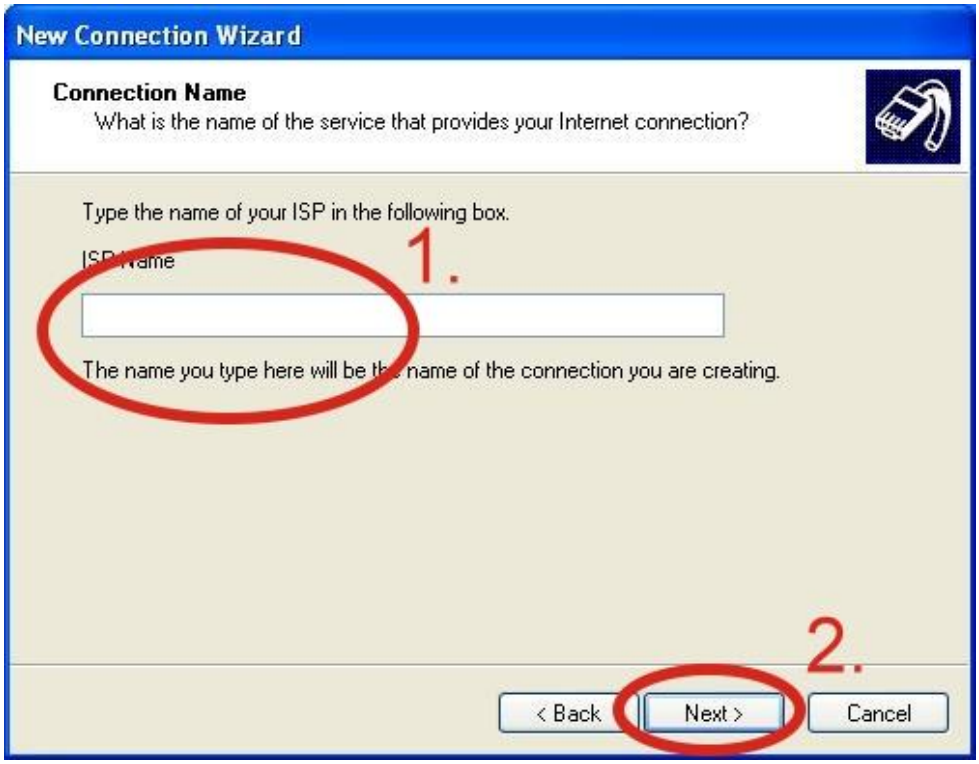
Step3. Select “Connect to the Internet” → Click “Next”



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



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



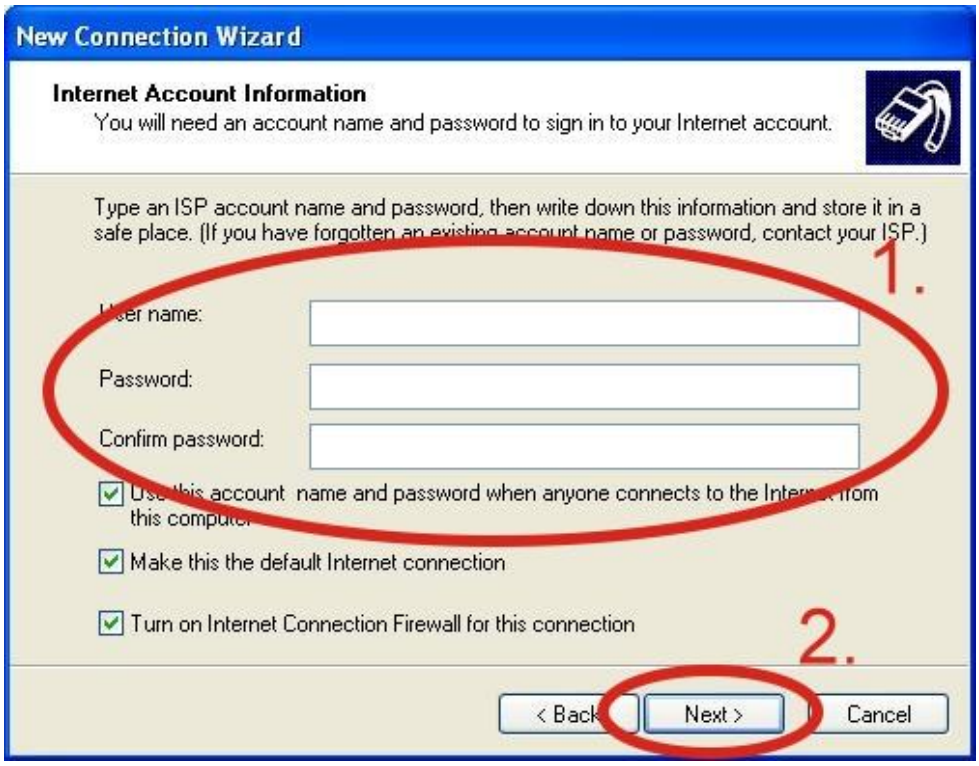
Step6. Phone Number: → Click "Next"

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

For example in Taiwan: *99***1#

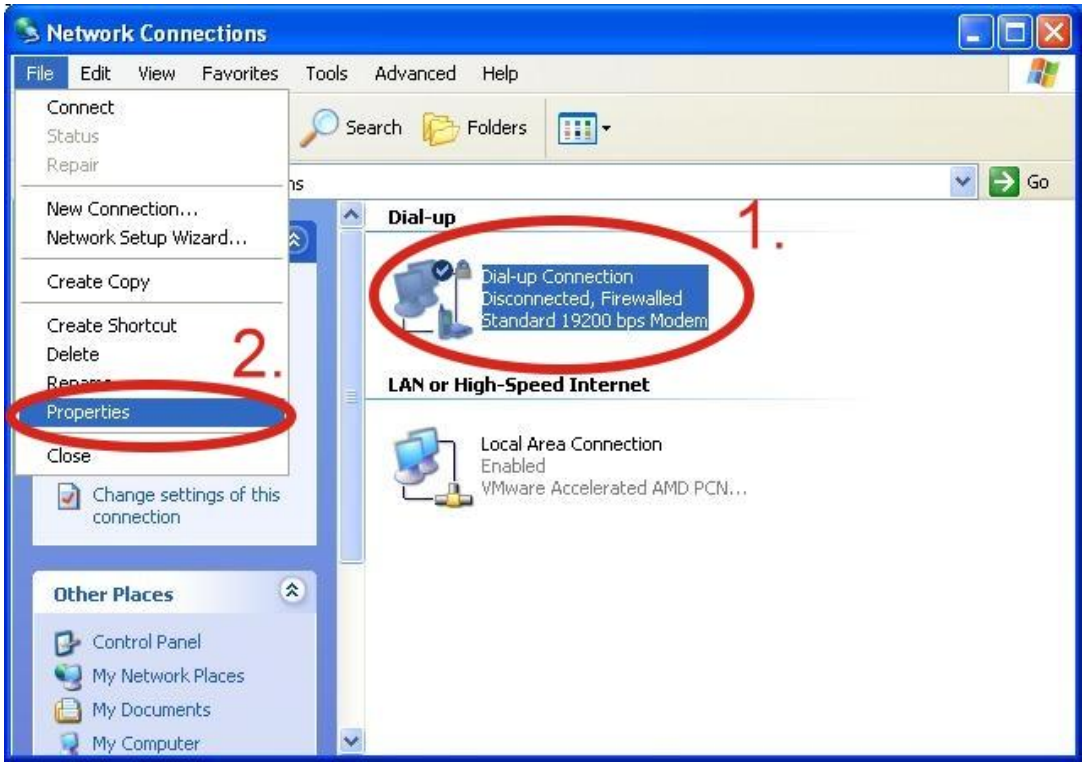
Step7. GPRS's User name and GPRS's Password → Click "Next"

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



Step8. Click "Finish"

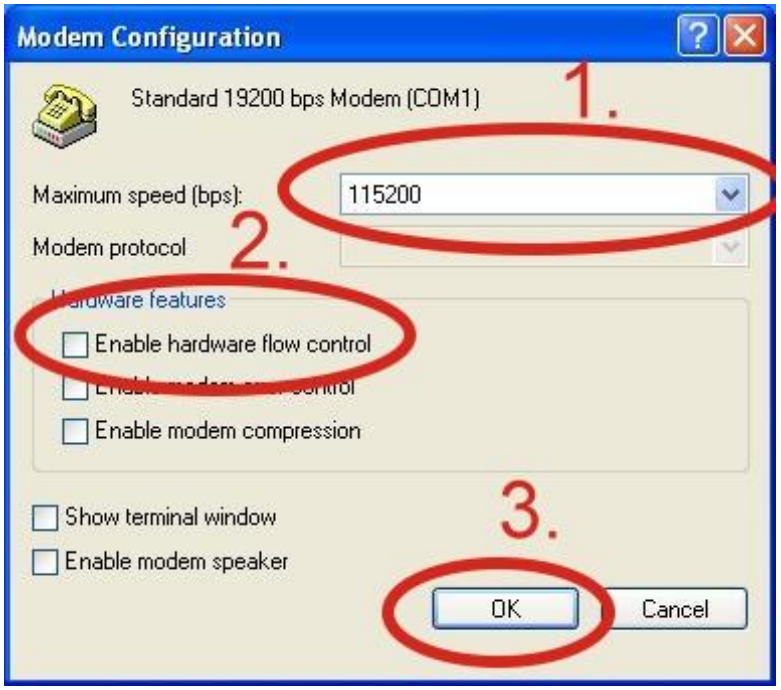
Step9. Control Panel → Network Connections → Click “Your GPRS’s name” → File → Properties



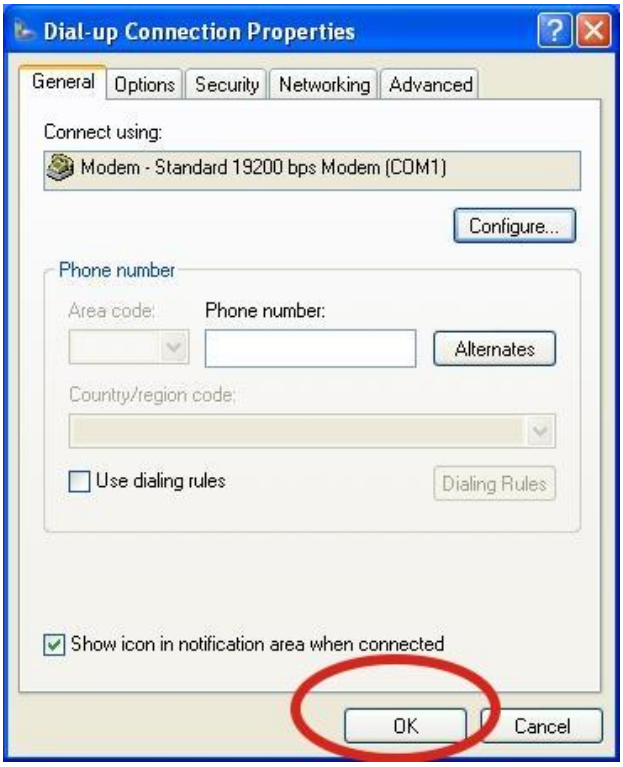
Step10. General → Select”Standard 19200 bps Modem” → Click “Configure”

Step11. Maximum speed(bps) → Select ”115200” → disable “Enable hardware flow control “**(Note)** → Click “OK”

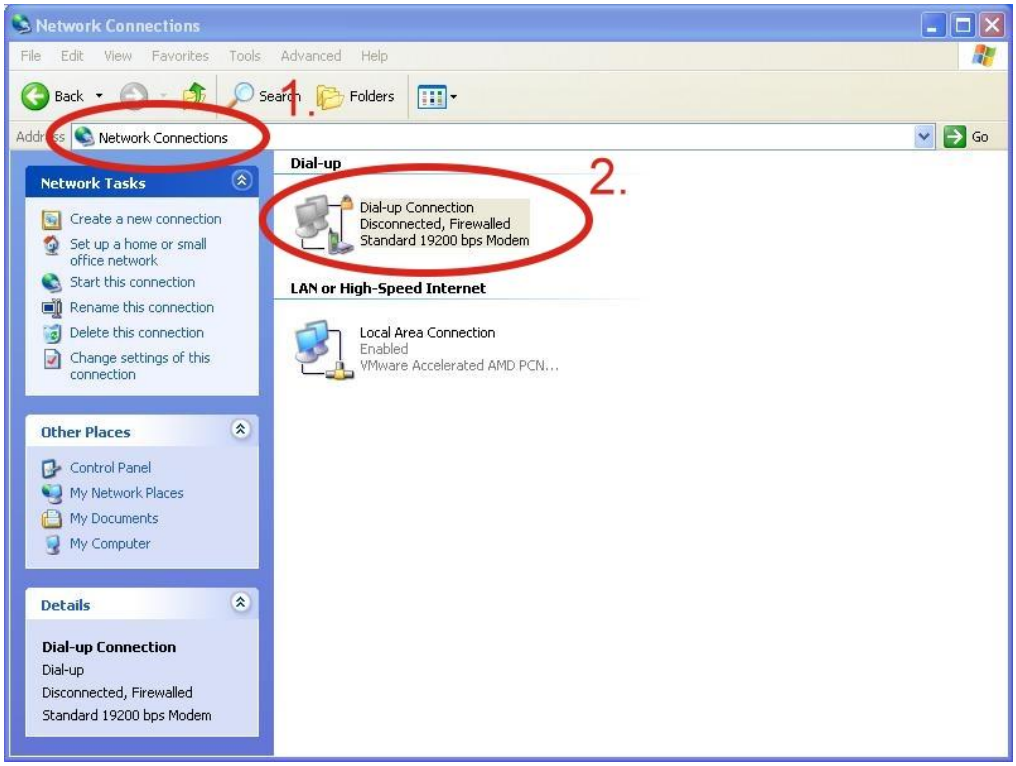
Note： Please don’t select “Enable hardware flow control”



Step12. Click “OK”



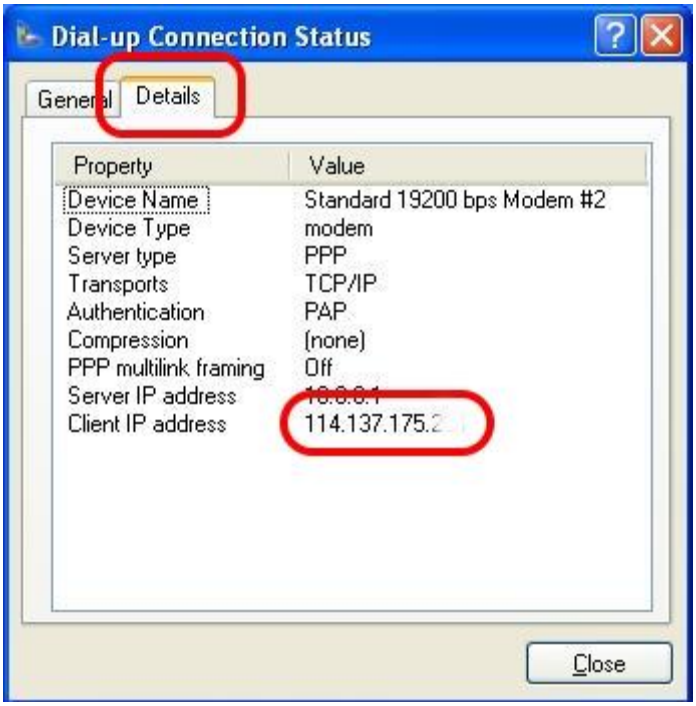
Step13. Control Panel → Network Connections → Double-Click “Your GPRS’s name”



Step14. Click “Dial”

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

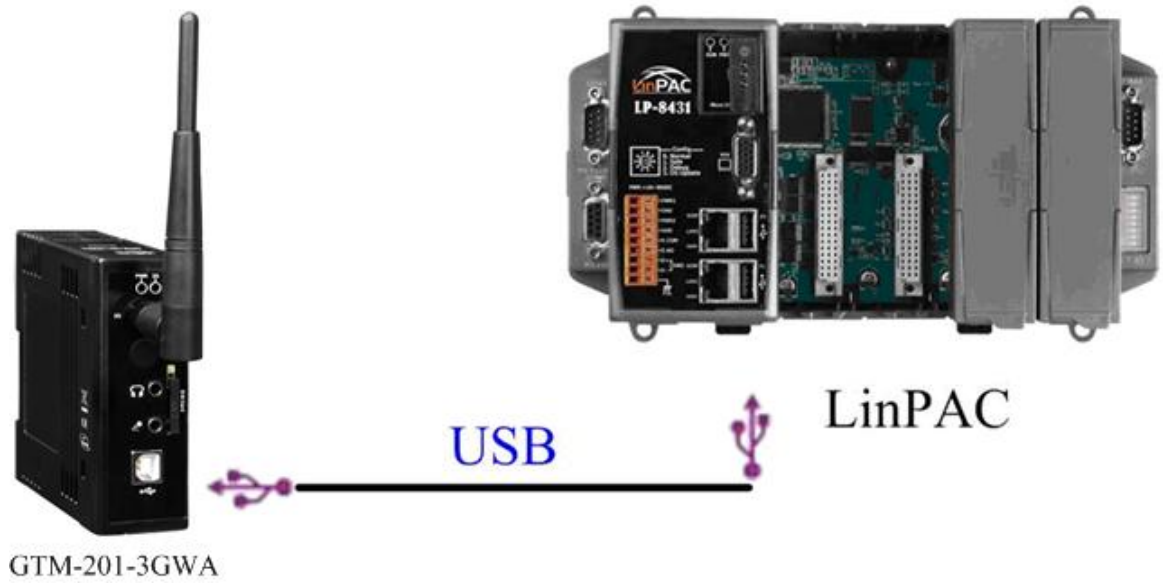
Step16. You can Double-Click the new logo → Click “Details” → Get your IP address



6.2 LinPAC – 8000 (Linux)

6.2.1.1 GTM-201-3GWA Hardware requirement

1) GTM-201-3GWA
2) LinPAC-8000
3) USB Cable



6.2.2.1 How to dial-up

Step1. Download the last version OS, and update it.

LinPAC-8x4x: ftp://ftp.icpdas.com/pub/cd/linpac/napdos/lp-8x4x/os_image/

LinPAC-5x3x: ftp://ftp.icpdas.com/pub/cd/linpac/napdos/lp-5000/lp-5x3x/OS_image/

LinPAC-5x4x: ftp://ftp.icpdas.com/pub/cd/linpac/napdos/lp-5000/lp-5x3x/OS_image/

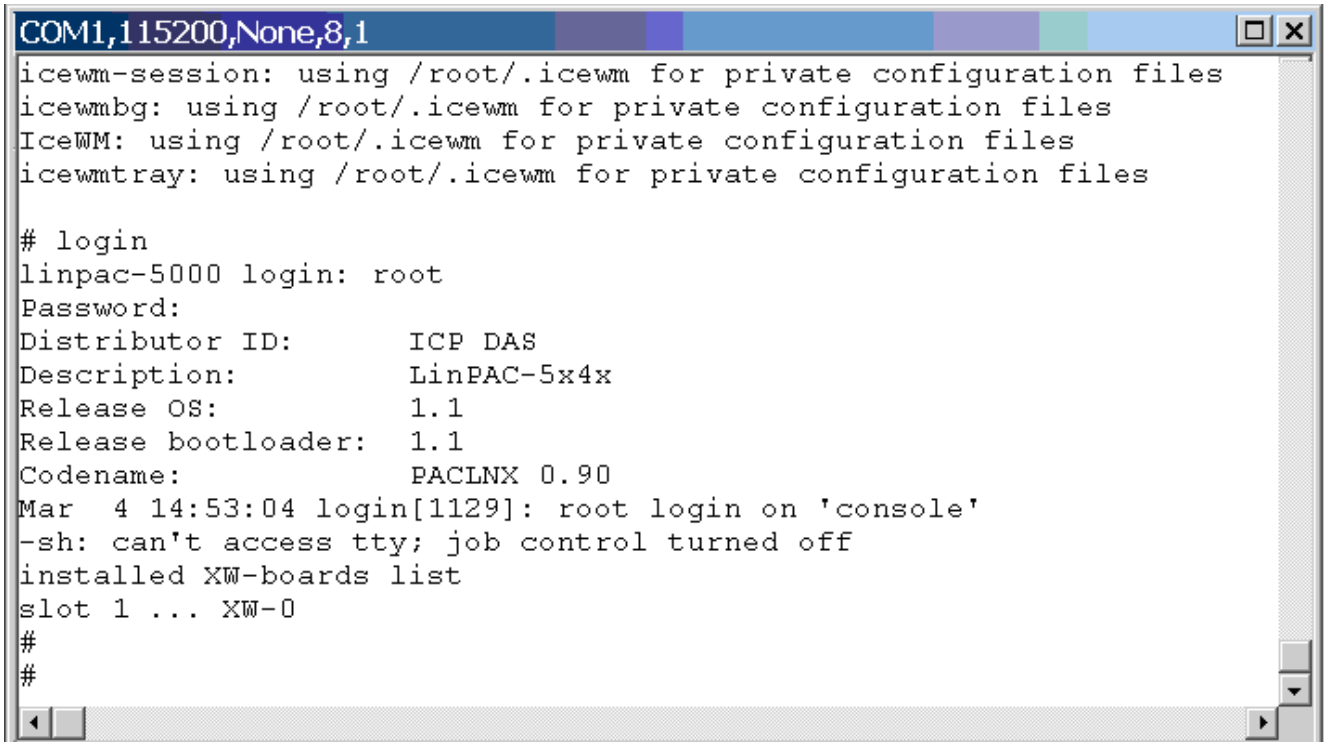
PDS-8x2: ftp://ftp.icpdas.com/pub/cd/linpac/napdos/pds-8x2/os_image/

Step2. Connect the COM1 port of Linpac with the COM port of the pc.

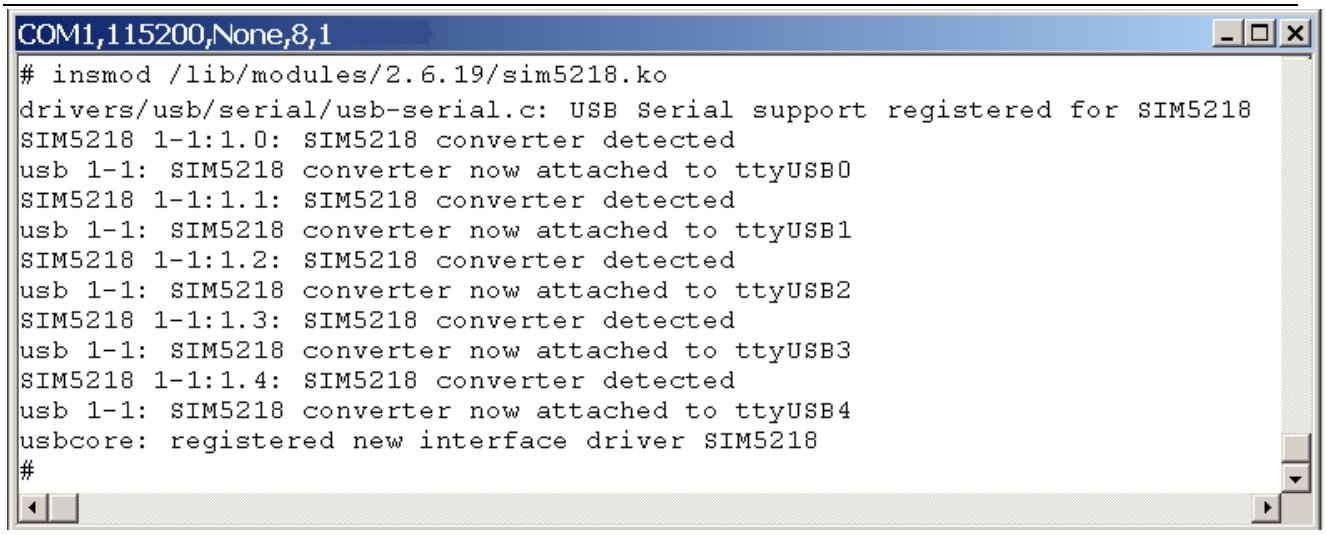
Step3. Open HyperTerminal in 115200/8/n/1

Step4. Power on Linpac (please don't connect the ethernet)

Step5. Login in root, and input "login" (default username = root, password = root).

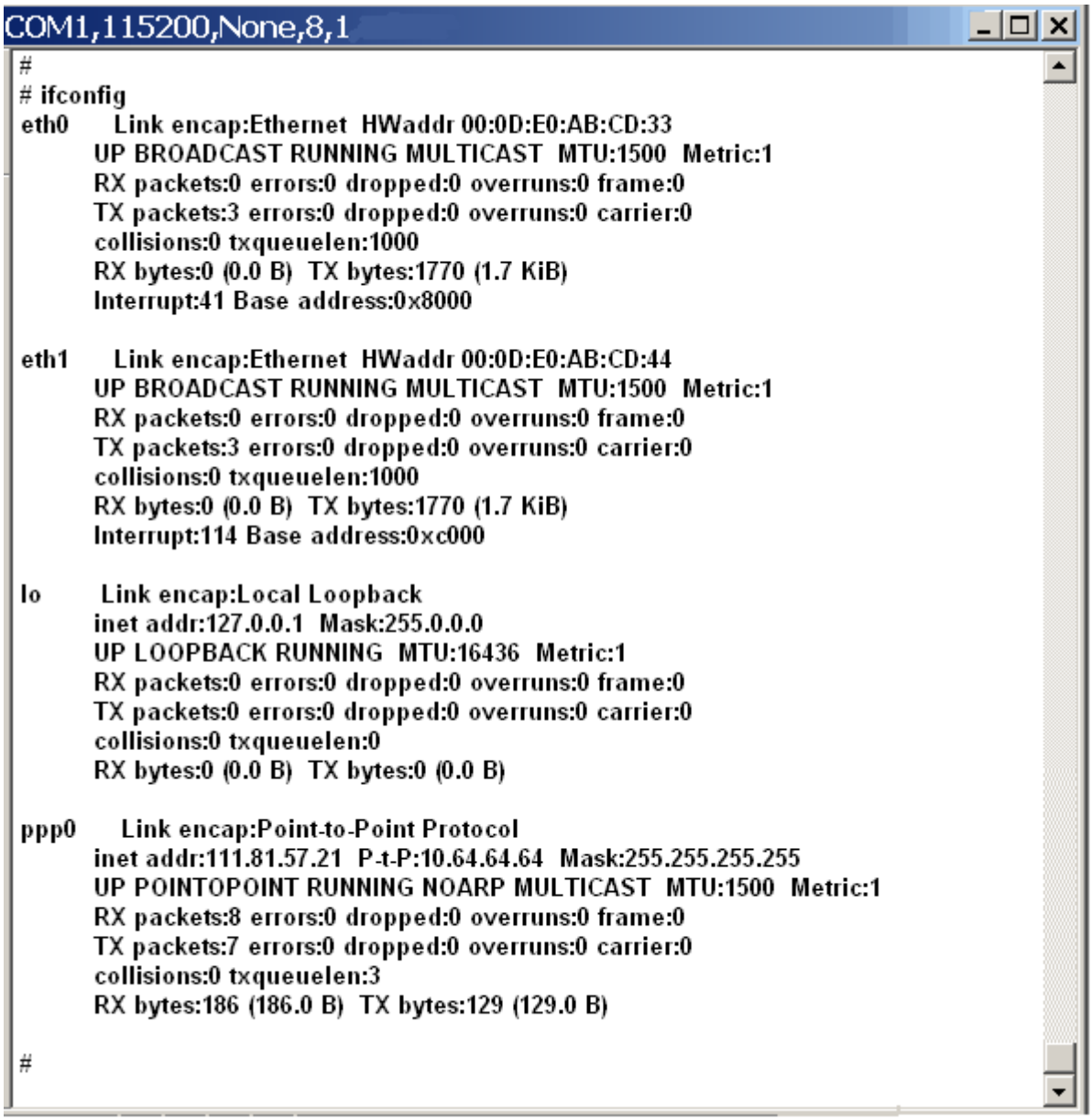


Step6. Install driver by the command: insmod /lib/modules/2.6.19/sim5218.ko



Step7. Dial-up: pppd call 3g &

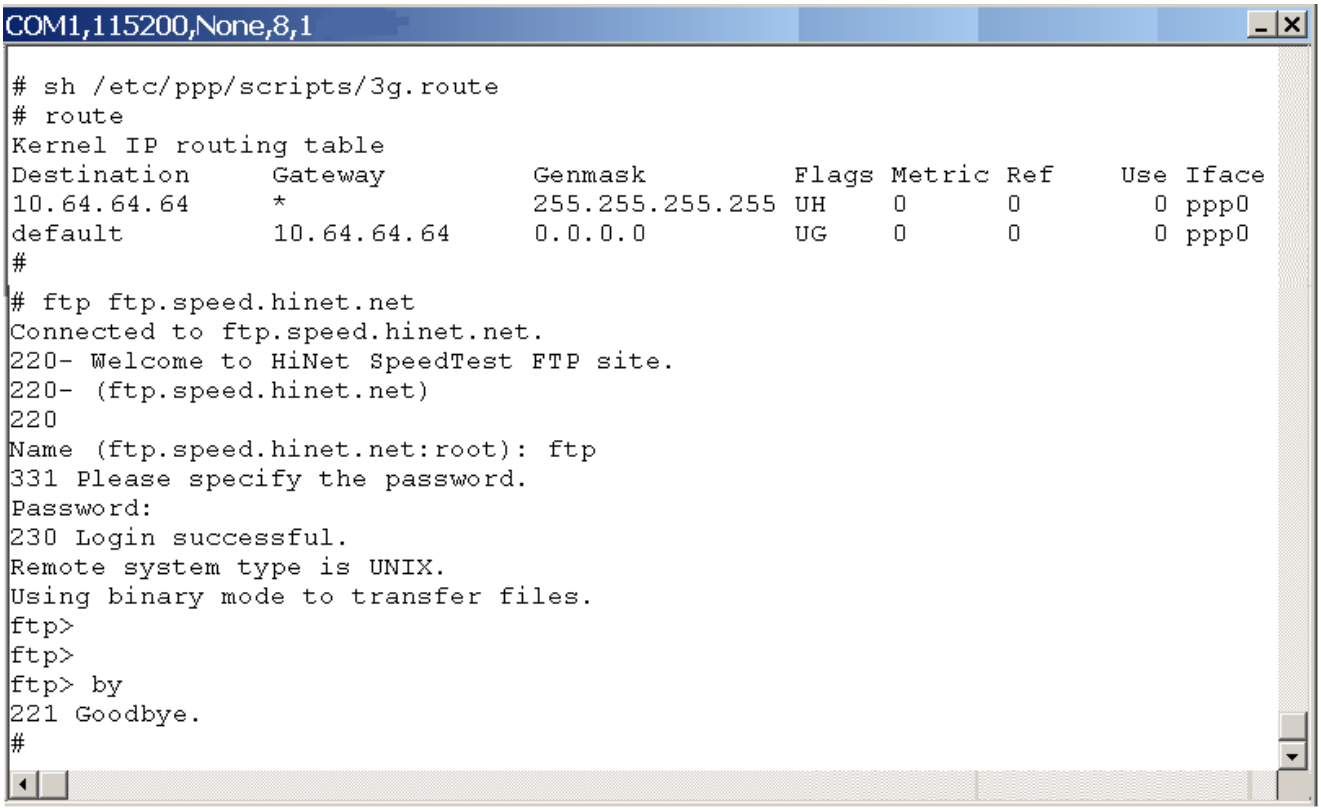
Step8. check the status of ppp : ifconfig



Step9. setting route: sh /etc/ppp/scripts/3g.route

Step10. check router's setting: route

Step11. test 3G/GPRS network: ftp ftp.speed .hinet.net



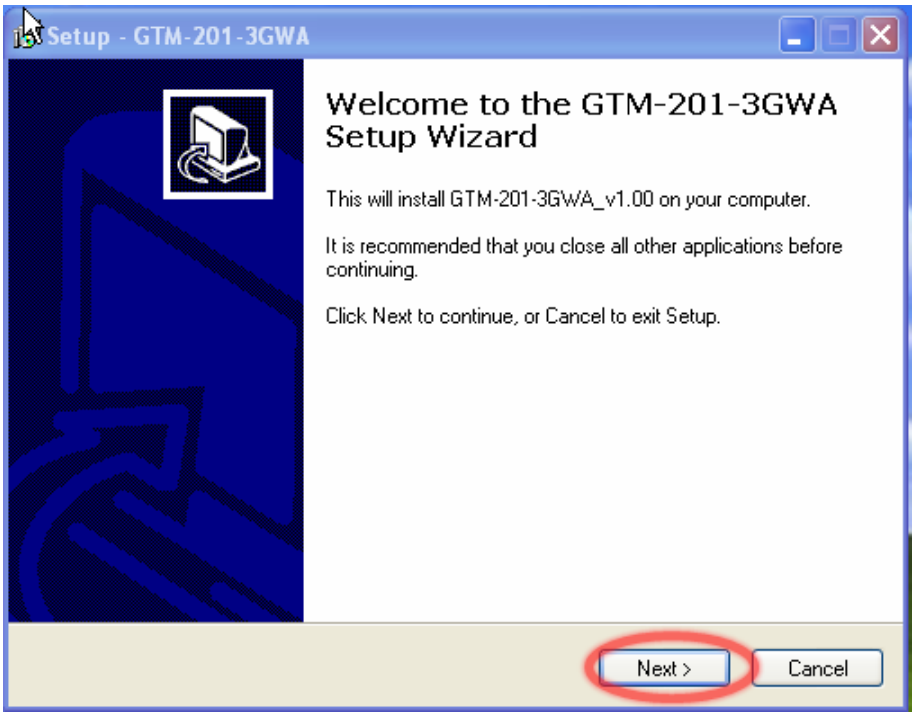
Chapter 7 USB driver installation

7.1 XPAC – 8000 (Microsoft Windows XP)

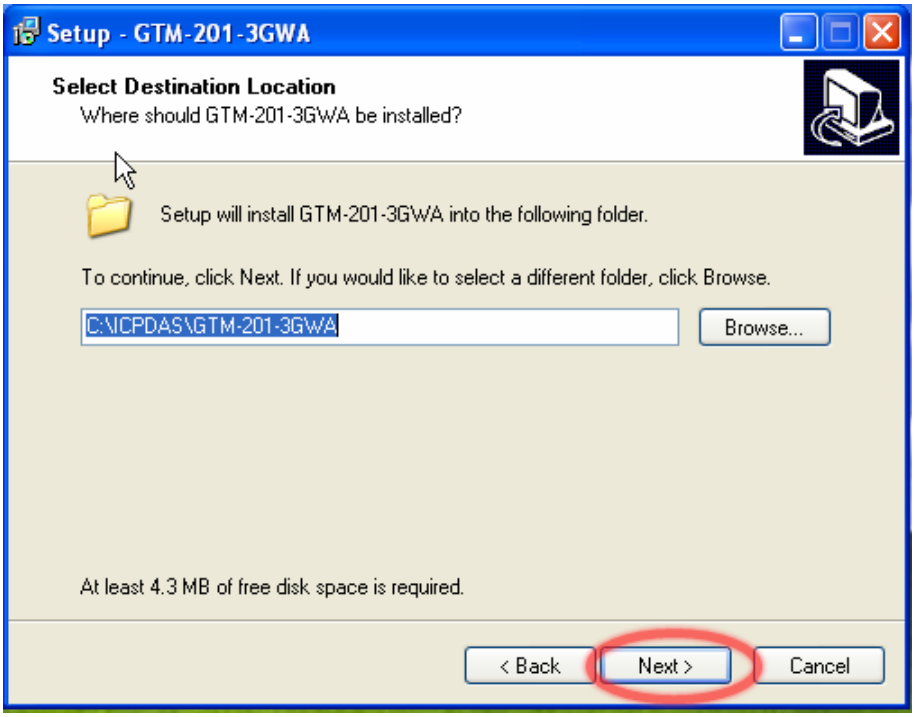
7.1.1 Install USB driver

Step1. Double Click GTM-201-3GWA driver “GTM-201-3GWA.exe” to install the driver.

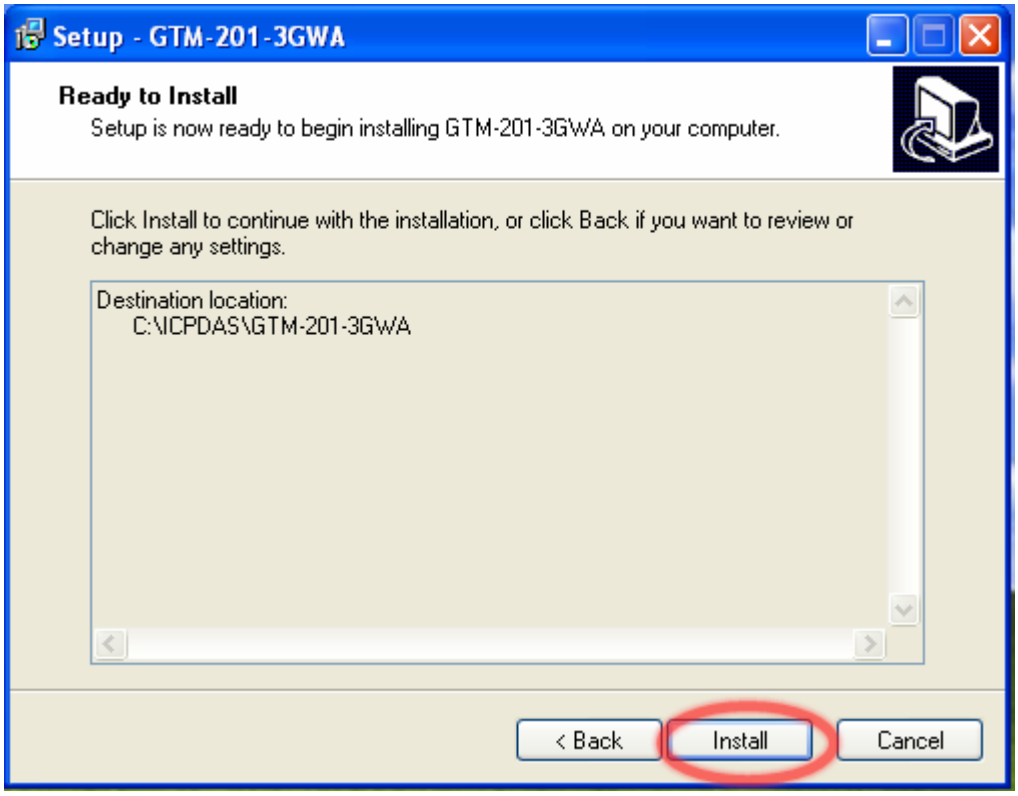
Step2. Click “Next”.



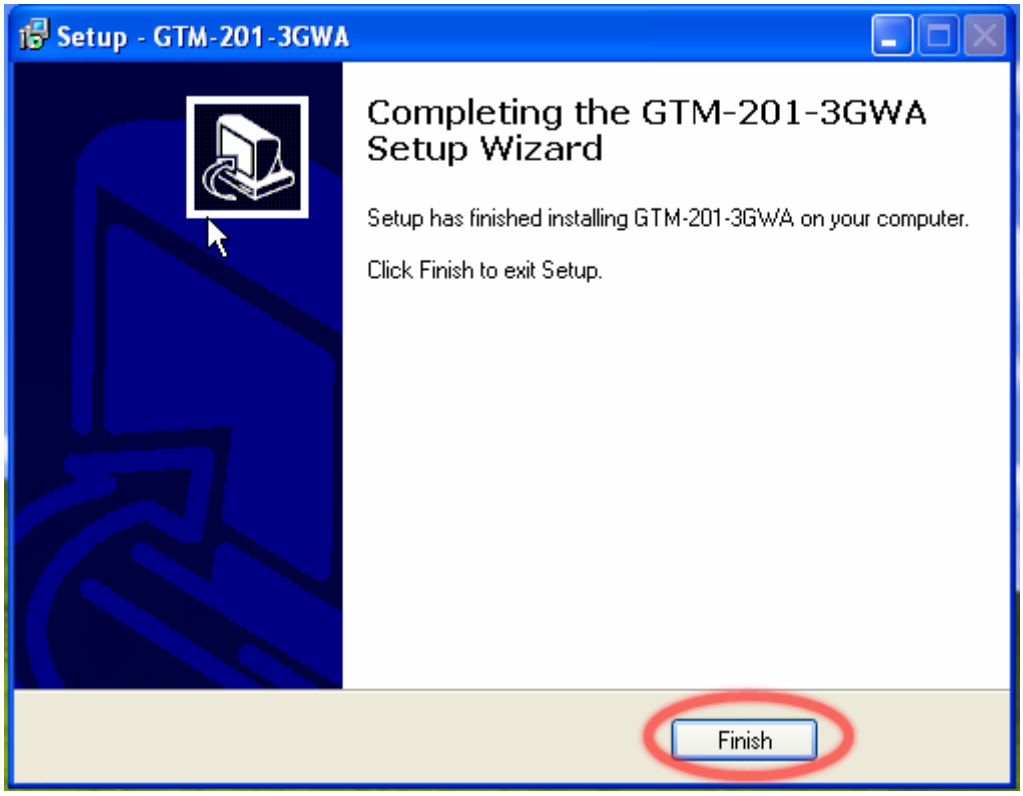
Step3. Click “Next”



Step4. Select “Install”

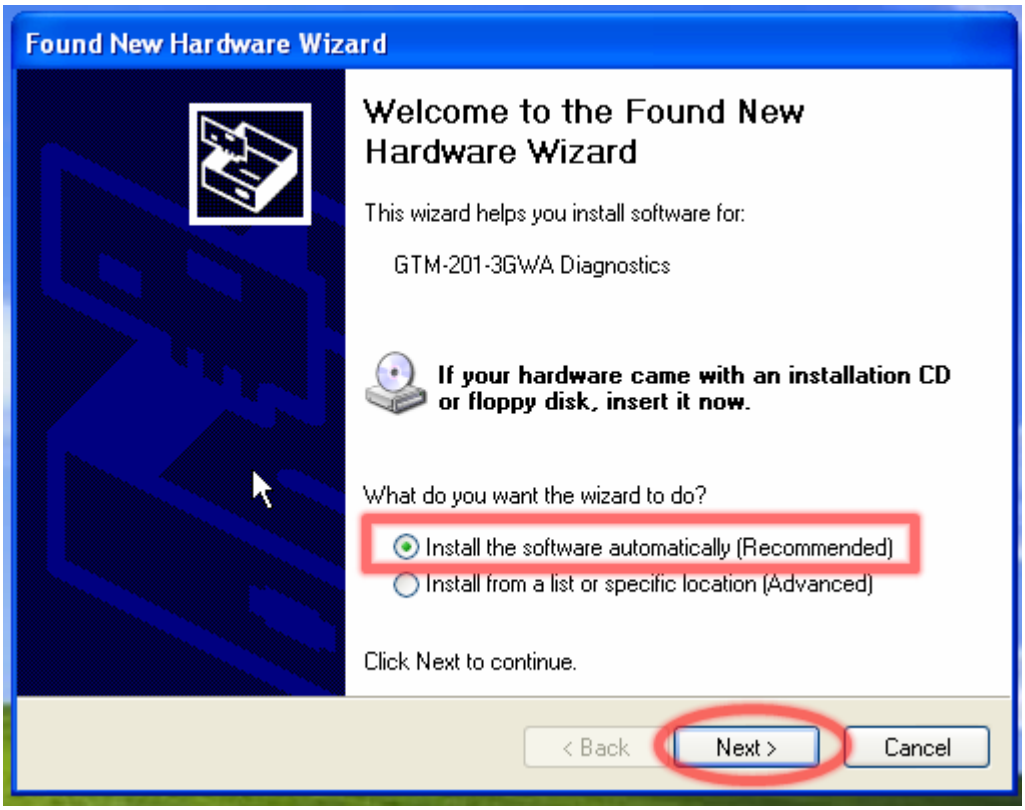


Step5. Click “Finish”

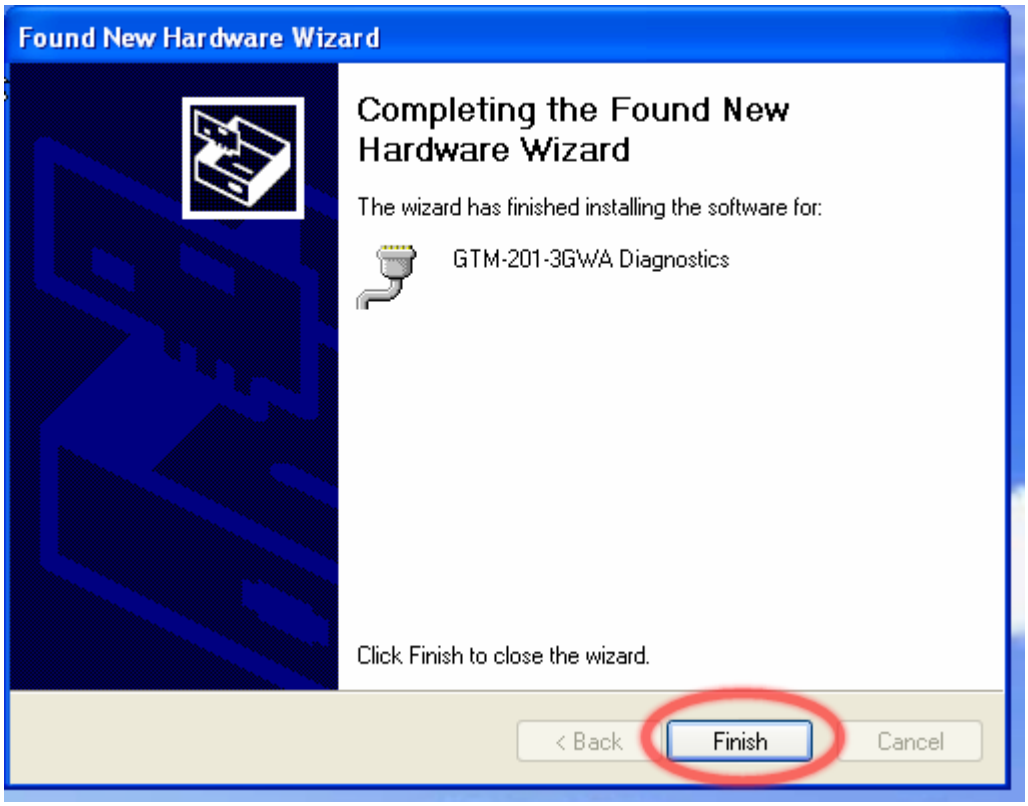


Step6. Connect the USB of GTM-201-3GWA with the PC

Step7. The “Found New Hardware Wizard” window for “GTM-201-3GWA Diagnostics” will pop-out. Please click “Next”.

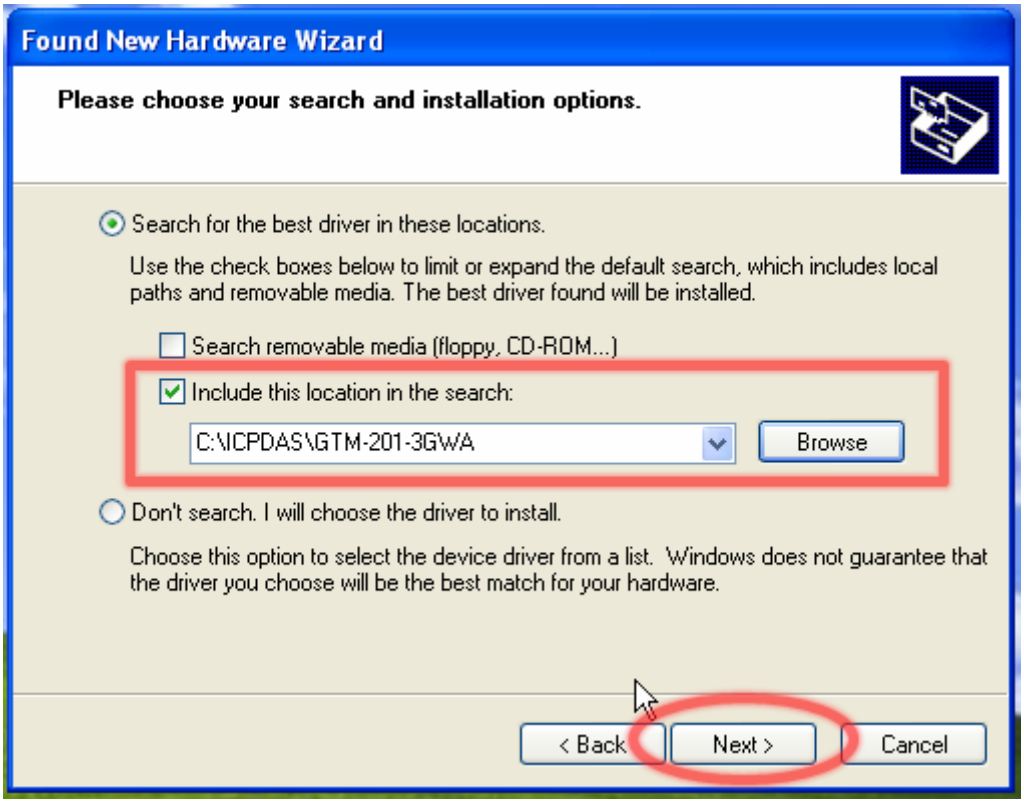


Step7-1. Click “Finish” if you got a success message.

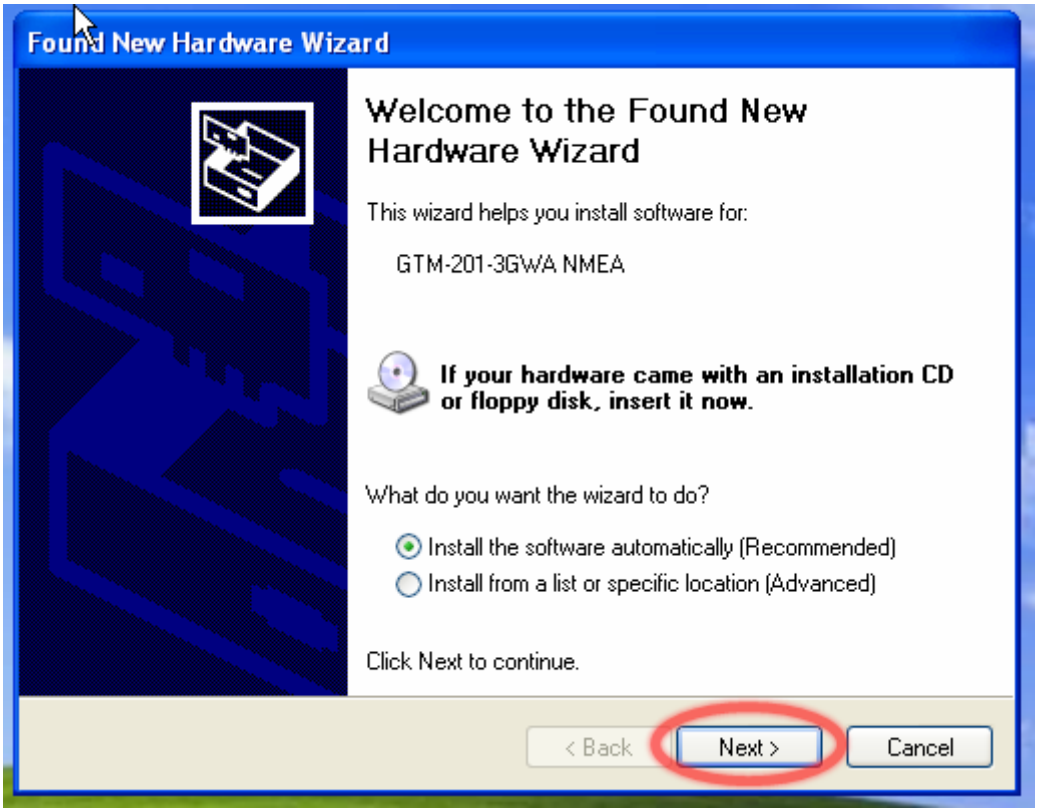


Step7-2. Click “Back” if you got a fail message, and then choose “Install from a list or specific location” in all install steps.

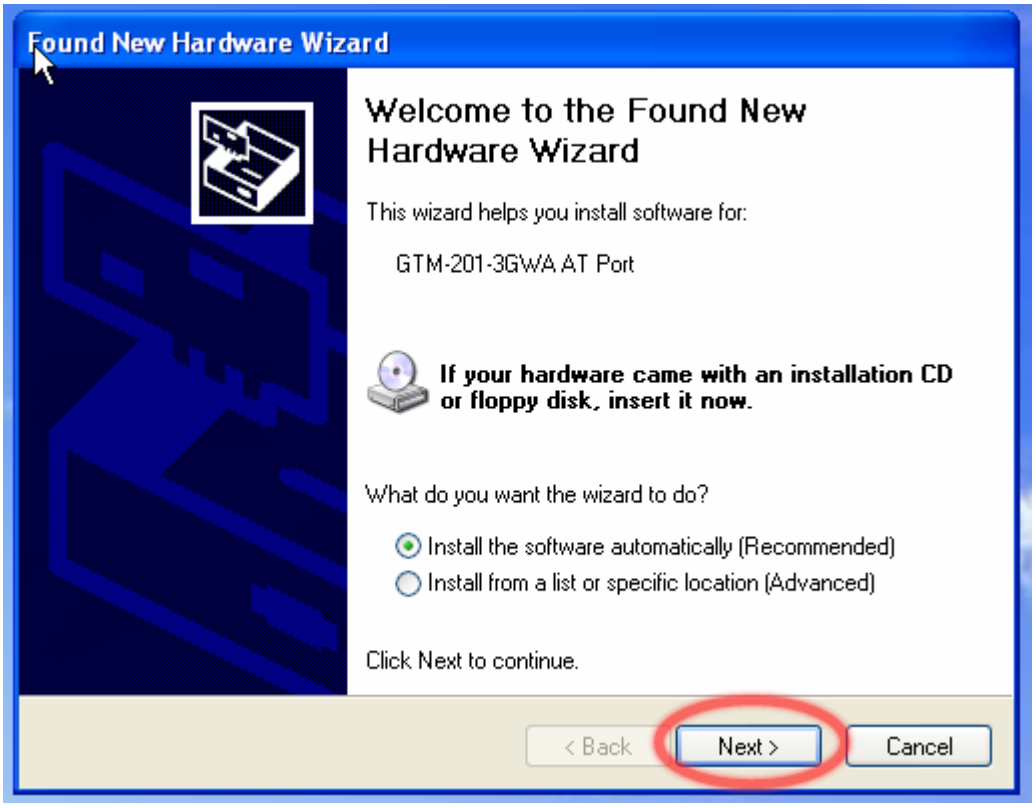
Step7-3. Click “Browse” to choose your installing folder, and Click “Next”.



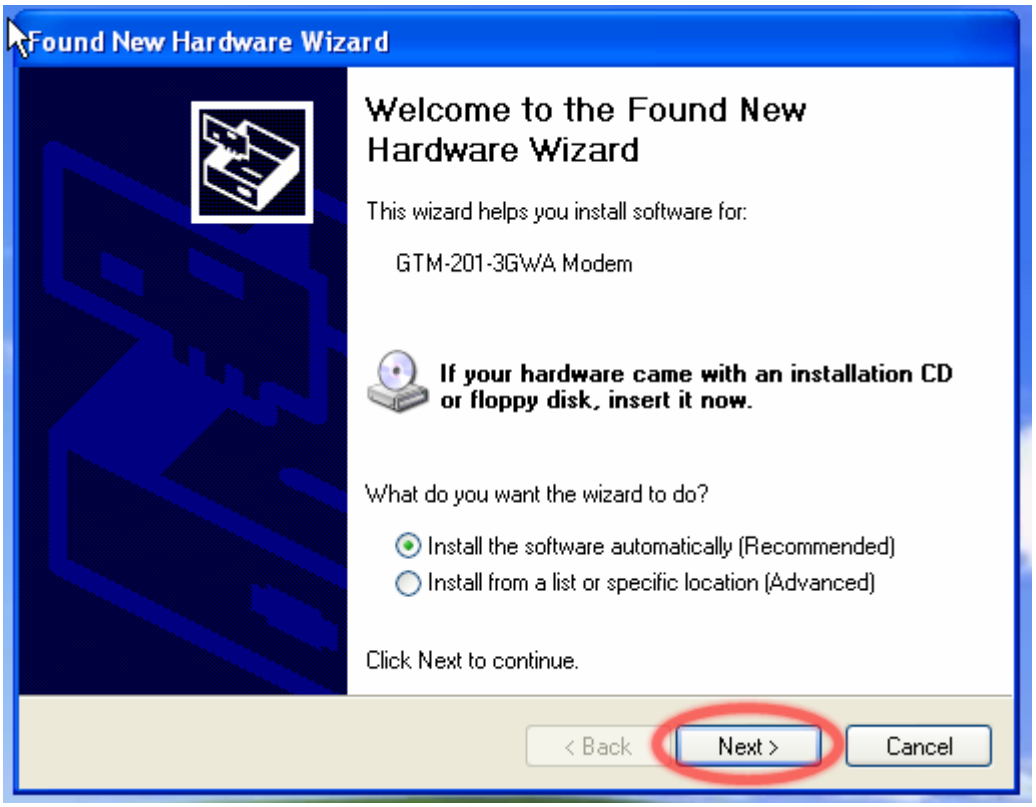
Step8. The “Found New Hardware Wizard” window for “GTM-201-3GWA NMEA” will pop-out. Please click “Next”.



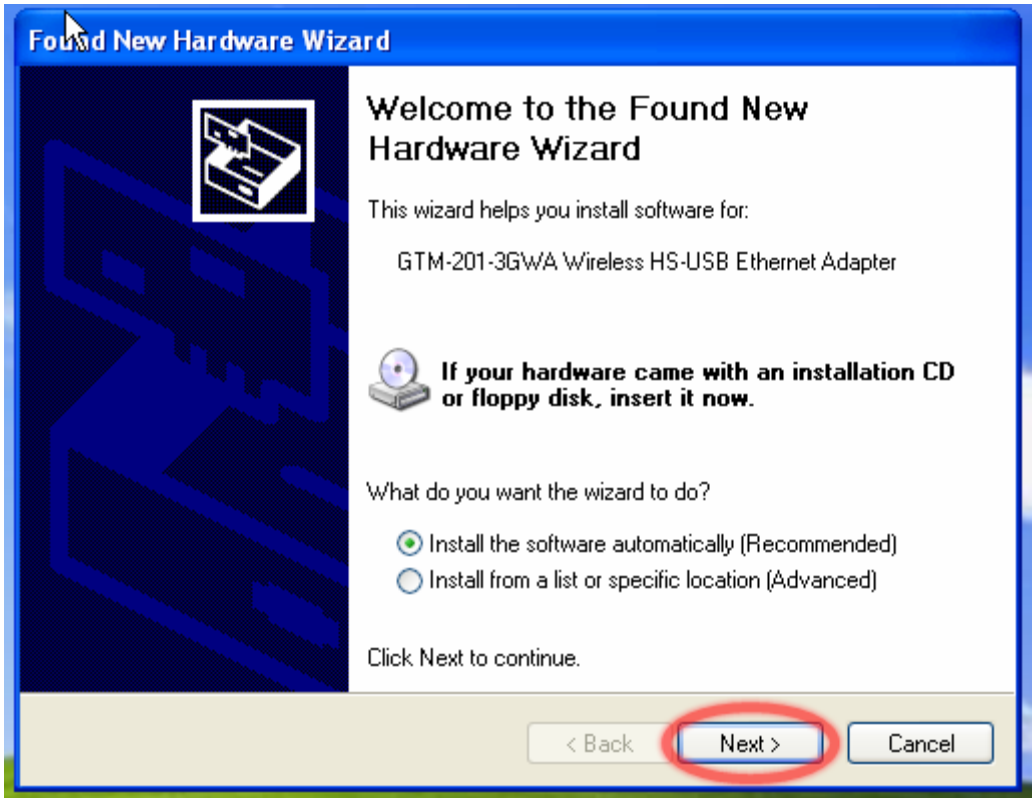
Step9. The “Found New Hardware Wizard” window for “GTM-201-3GWA AT Port” will pop-out. Please click “Next”.



Step10. The “Found New Hardware Wizard” window for “GTM-201-3GWA Modem” will pop-out. Please click “Next”.



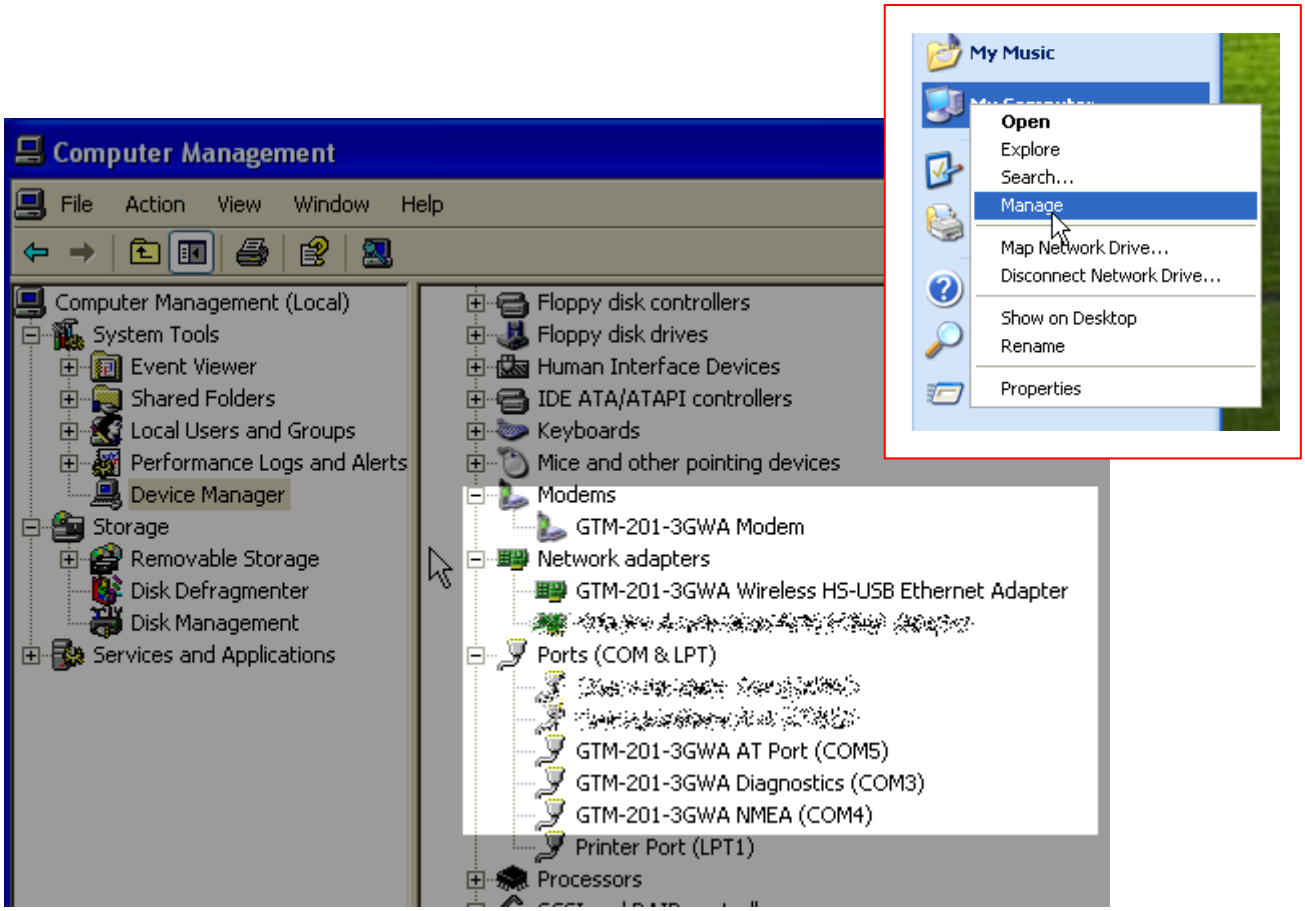
Step11. The “Found New Hardware Wizard” window for “GTM-201-3GWA Wireless HS-USB Ethernet Adapter” will pop-out. Please click “Next”.



Step12. Finish the all install steps. Please open “Device manager”, and you will found new 5 items in your computer.

The “GTM-201-3GWA AT Port” is a “AT command port” for GSM library.

The “GTM-201-3GWA Modem” is a Modem for dial-up to 3G/GPRS Network.



7.2 LinPAC – 8000 (Linux)

Please refer to chapter 6.2

Revised Note:

Version	By	Date	Description
1.00	Malo	2011/04/18	Release