Users Manual

SOLOMON

USB GPRS+WLAN Dongle

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Caution

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiated radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This EUT is incompliance with SAR for general population /uncontrolled exposure limits in ANSI/IEEE C95.1-1999 and had been tested in accordance with the measurement methods and procedures specified in OET Bulletin 65 Supplement C.

Users Manual

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Disclaimer

The information in this document is accurate at time of release. However, as Solomon Tech. Corp. is committed to continued research and development activities, these specifications may change from time to time. Contact your local representative should you require clarification on information contained in this document or to request of copy of the latest version of this document.

Users Manual

Be aware of aviation safety

Please do not use this device on the civilian airplanes, the aviation instruments on board maybe interfered by the RF power leads to failure.

Be aware of your surroundings

Please do not use this device when your are close to gas stations, fuel silos, chemical factories, or explosive materials.

Be aware of traffic safety

Please do not use this device when you are driving a vehicle.

Be aware of the RF power.

Keep your body at least 2 inches (5 cm) away from the antenna when in use.

Be aware of the medical device.

The transmitted RF power might interfere some of the medical devices such as a heart pacer, please do not use this device in hospitals.

Warnings

The device is a delicate instrument, please handle with care, it is prohibited to fall on the ground or bent to avoid damage to the device.

There are no parts to be maintained by the user, if the device seemed to be not functioning, please have it serviced by the qualified technician at the qualified service center. To avoid damage to the device, please do not take this device apart by yourself; the warranty is void once the seal is broken.

Do not let children play with this device.

When the device is not in use, please unplugged from the notebook PC and keep it at a cold dry place.

Do not take the antenna off the device to avoid poor reception.

Do not touch the antenna when in use to avoid poor reception.

The device is not waterproof, please do not use it in rain or damp surroundings.

Cautions when in use

- The device might suffer interference and cause poor reception when it close to a massive metal structure such as a metal furniture or inside of a steel structure of a building.
- To avoid RF interference, try not to use the device when it is close to a microwave oven or a TV.
- Please do not use the device when it has passed through dramatic temperature variations, the moisture inside the device may cause short circuits once powered on. Please wait until the moisture dries out before power on.
- The device is powered by the USB port from the computer, to avoid poor communication quality please do not power on the device when the computer is in low battery.
- It is always a nice tip to cut your large file into small packets for transmission.

SAR related issues

- The device is not a cellular phone, however please use it accordingly to the instructions.

Memo

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2. Installation & setting procedures

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Introduction

Users Manual

Thanks for using

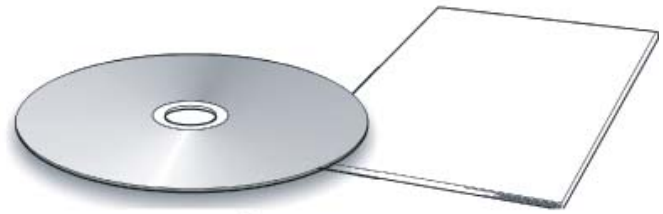
First of all, thanks for choosing the Solomon SCWi275u USB GPRS/WLAN dongle.

The one of a kind Solomon SCWi275u USB GPRS/WLAN dongle is light, small, no charging required and it is high-speed (64 Kbps maximum). Now your notebook PC can get on-line anywhere and everywhere! Just like you are using a physical phone line, the Solomon SCWi275u USB GPRS/WLAN dongle gets your notebook PC connected to the real Internet, you may send/receive emails and browsing the web pages just like at home or at the office when you are on a bus, in a taxi, on a train, or even in the subway (if GPRS service is available).

This Solomon SCWi275u USB GPRS/WLAN dongle installation guide will help you to understand the device and guide you through the installation procedures.

Package contents.

Please check the items in the package, if there is any short or damage in the package, please contact your local representative immediately.



Installation CD

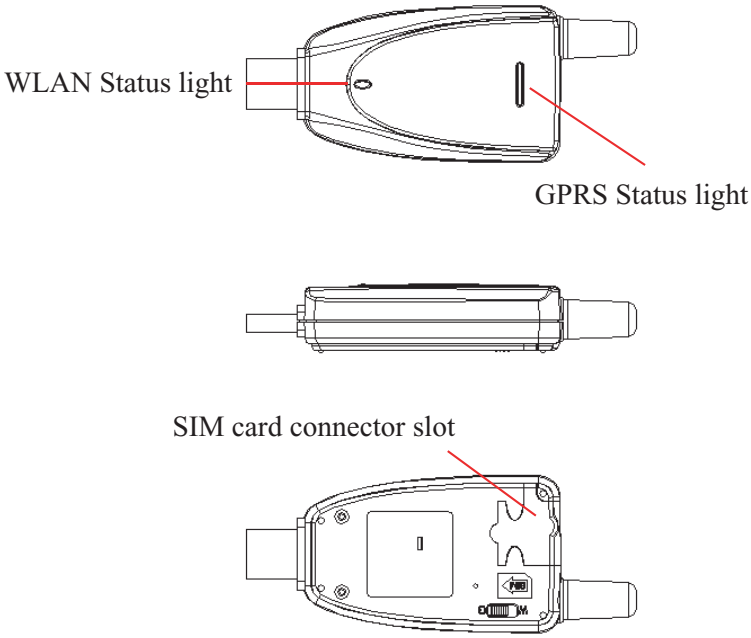
Easy Installation Guide

USB GPRS/WLAN Dongle

USB Extender Cord

Items	Quantity
USB GPRS/WLAN Dongle	1
USB Extender Cord	1
Installation CD	1
Easy Installation Guide	1

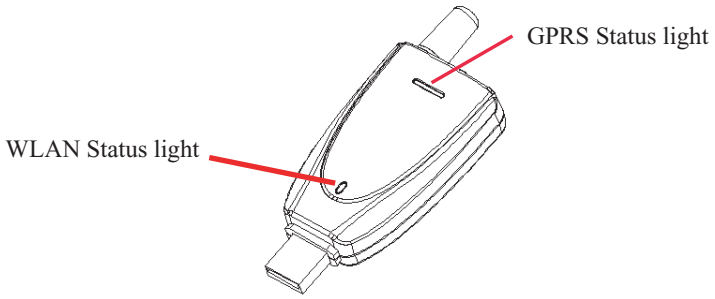
Exterior introduction



GPRS Status light

GPRS Status light indicates the connection status when it is powered on.

Items	Representing	Light
①	Error (Invalid SIM card or failed to connect to the network)	Red
②	Connected to the network	Blue
③	SIM lock(entered PIN code)	Purple
④	SIM block(entered PUK code)	Red and Blue flashes interactively
⑤	Search Network and registering	Full-colour
⑥	Connected to the WLAN	WLAN Status light on



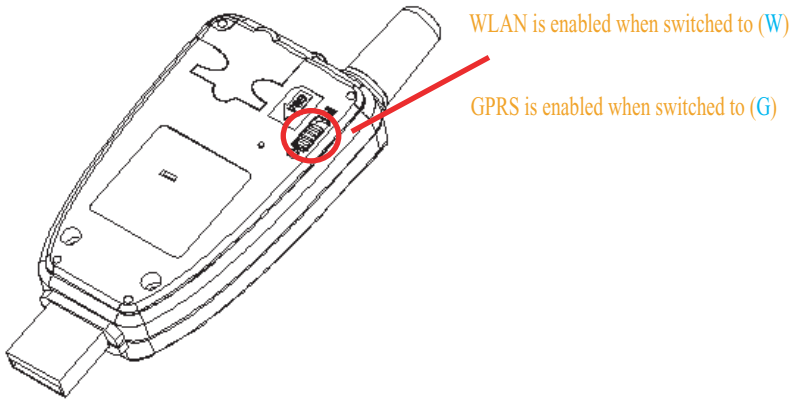
Note:

The normal lights-on sequence:

Blue light on → Red light on → White light on → Full-colour on → Blue light on

To switch in between GPRS and WLAN

There is a switch on the bottom side of the USB GPRS/WLAN dongle. GPRS is enabled when switched to G and WLAN is enabled when switched to W. You may observe the status by the indicate light on the front panel, upper 7 color LED is for GPRS and the lower single color LED is for WLAN.



Note:
USB GPRS/WLAN dongle's factory setting is set to (G).

GPRS modem Installation & setting procedures

SOLOMON 07

System requirements

Please make sure your computer's hardware and software meet the following requirements, please refer to your computer's users manual or contact your local representative for more information.

Software & hardware requirements

- A valid SIM card (GPRS service is granted)
- An USB port or a PCMCIA to USB converter card is available.
- IBM compatible Pentium II 400 MHz (or above) notebook or PC with a minimum of 64 MB RAM

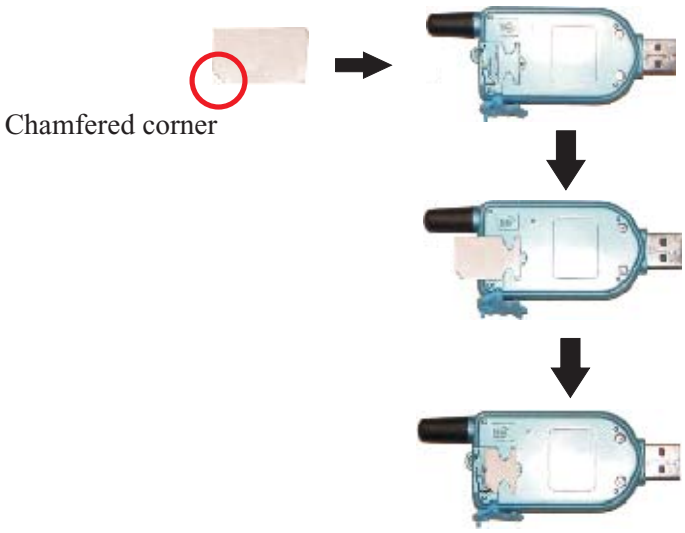
Network system requirements

Please make sure your local GSM network provides GPRS service and please apply the GPRS service from the network.

SIM card installation

Insert the SIM card

Insert the SIM card into the SIM card compartment with the chamfered corner to click into the housing.

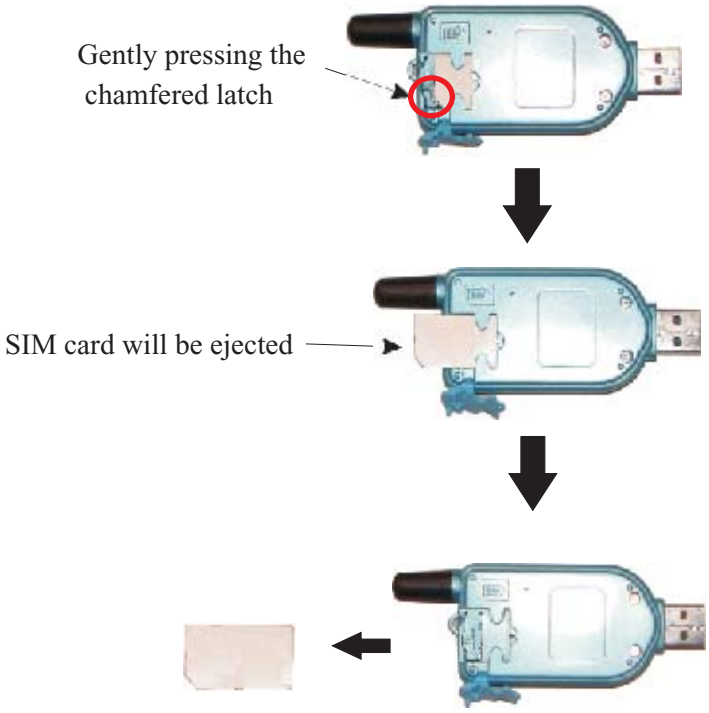


Note:

1. Please make sure the chamfered corner on the SIM card matche with the latch on the housing.
2. If the SIM card is inserted into the housing with incorrectly direction, the SIM card won't be able to click into the chamfered latch.

Remove the SIM card

Gently pressing the chamfered latch on the housing, the SIM card will be ejected from the housing automatically.

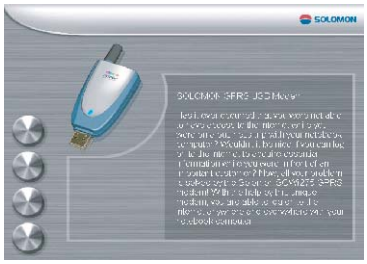


Please follow the following procedures to install the driver software.

- The Installation Wizard will automatically determine the type of operating system on your computer and choose the proper driver for the GPRS/WLAN Dongle.
- When the software installation is completed, plug the GPRS/WLAN Dongle into the USB port on your computer; the operatingsystem will automatically identify the GPRS/WLAN Dongle.
- Then you may configure the software settings, please refer to page 37.

Note: Do not plug the GPRS/WLAN Dongle into the computer prior to the software installation.

1. Put the installation disc into your CDROM on your computer.
2. The Installation Wizard shows up on the screen automatically.

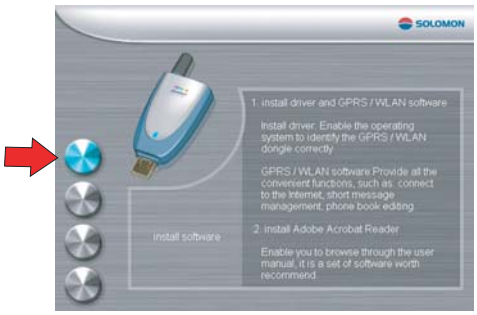


- install software: install the driver for the GPRS/WLAN Dongle.
- browse CD contents: browse the contents of the installation disc.
- contact us: you may check the button to visit our web site about SOLOMON Technology Corp..
- exit : close the window and thanks for using.

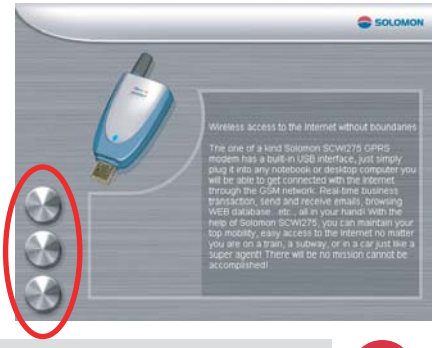
Install the software

Install the GPRS/WLAN Dongle driver software

1. Click on "install software".

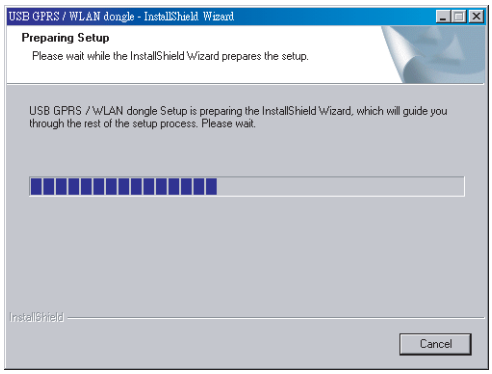


2. Install the software window. Click on left button.
   ① install driver② install Adobe Acrobat Reader
   ③ exit.

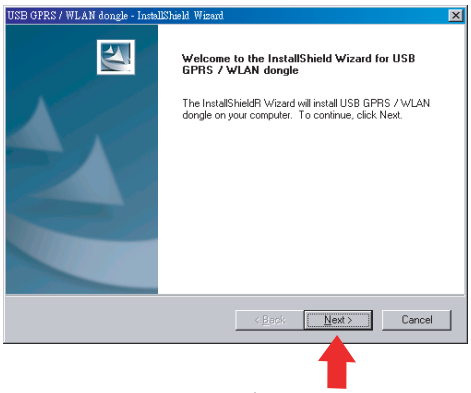


3.Install driver.

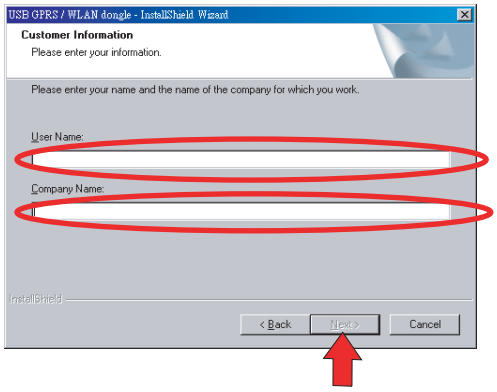
4. InstallShield Wizard is activated.



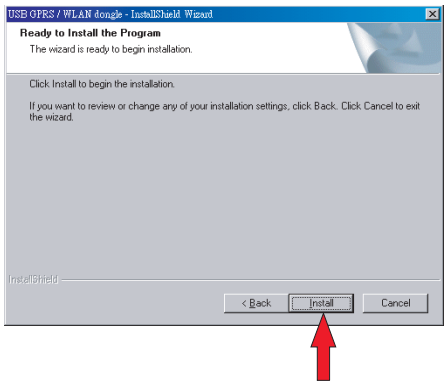
5."USB GPRS/WLAN dongle InstallShield Wizard" shows up, then click "Next".



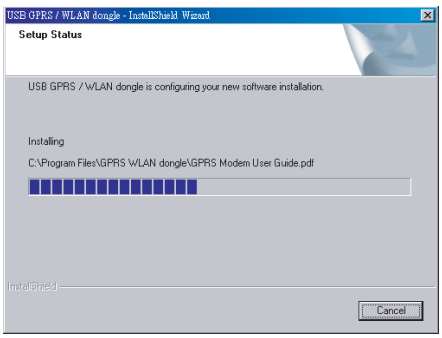
6. Please enter your name and company name on this page, then click "Next",



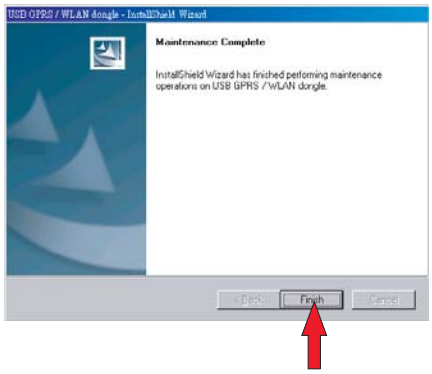
7. "Ready to Install the Program" shows up, then click on "Install".



8. Now you may witness the progress (percentage) of the installation.



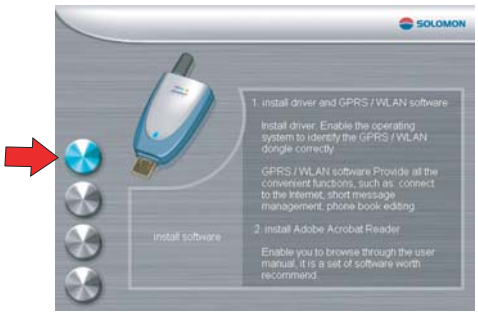
9. "InstallShield Wizard Complete" shows up, then click on "Finish".



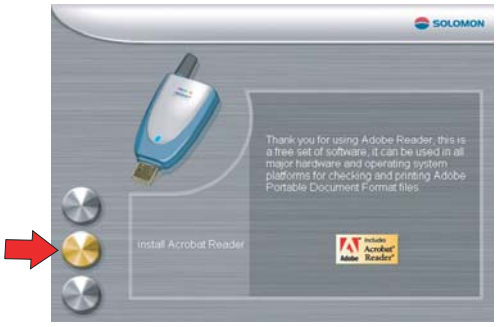
10. On your desktop, you may see a "GPRS Utility" icon and a "WLAN Monitor" icon.

Install Adobe Acrobat Reader

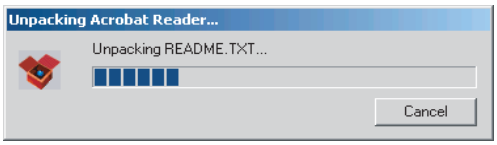
1. If you do not have a previously installed Adobe Acrobat Reader on your computer, then you may install the Adobe Acrobat Reader now. On the Installation Wizard, please click on "install Adobe Acrobat Reader".



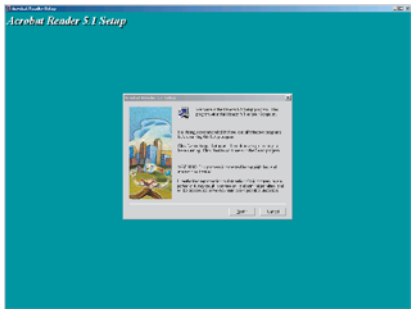
2."Twin dual band" shows up.



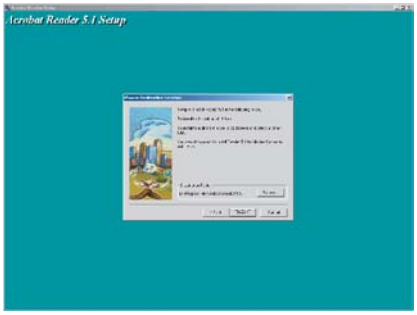
3. "Unpacking Acrobat Reader" shows up.



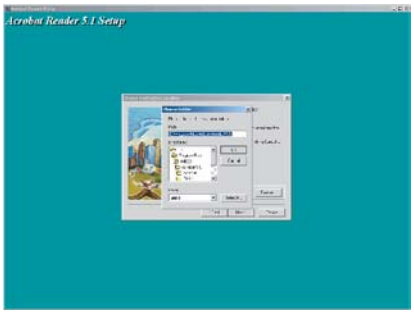
4. "Acrobat Reader 5.1 Installation" shows up, then click on "Next".



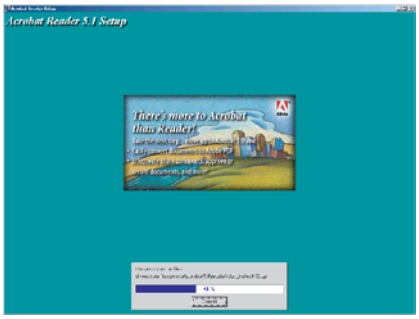
5. "Acrobat Reader 5.1 Installation path" shows up, you may click on "next" or choose "browse" to choose another path.



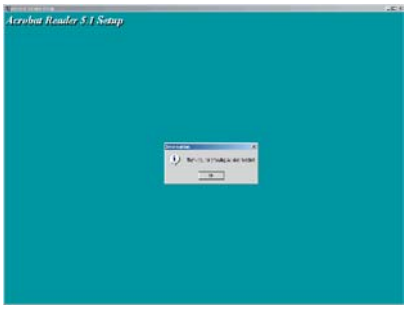
6. "Installation path and directory" shows up, then click on "Next".



7. Now you may witness the progress (percentage) of the installation.

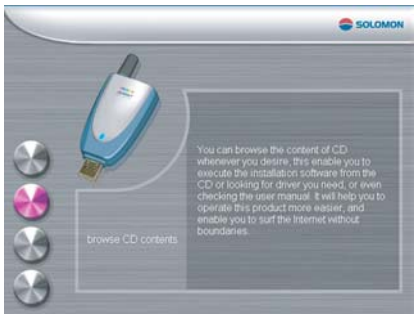


8. "Acrobat Reader 5.1 Installation Finished" shows up, then click on "Finish".

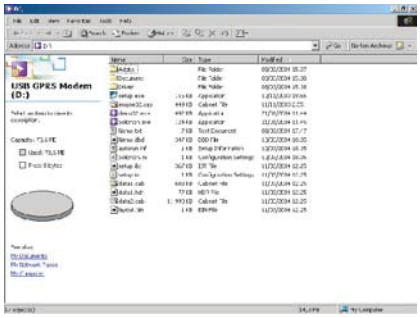


Browse CD contents.

1. Click on "browse CD contents" to look into the contents on the CD.



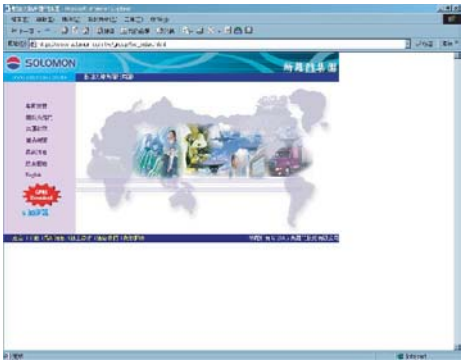
2. The contents will show up on the computer.



Contact us

1. Click on "contact us".

2. The browser will connect you to the Solomon WEB site (www.solomon.com.tw) if you are connected with the Internet.



Exit

1. Click on "Exit" again to exit the window and thank you for purchasing the Solomon's USB GPRS/WLAN Dongle.

To use USB GPRS/WLAN dongle

You may switch to WLAN when a Hot Spot (or Access Point) is nearby for greater speed to access the Internet; Hot Spots are basically indoors only and with a useable range of 20 meters (90 feet) in diameter, if you are outdoors and out of the Hot Spot coverage then it will be the best to switch to the GPRS network. GPRS can be used in moving vehicles, by the beach or in the mountains as long as there's GSM/GPRS network coverage.

◎To use GPRS to access the Internet

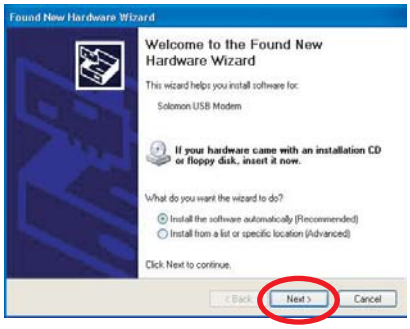
1. Set the switch on the back side of the GPRS/WLAN dongle to "G".

Set the switch to "G"

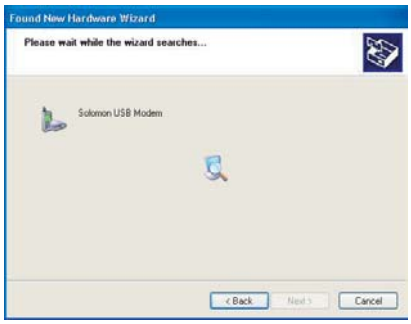
The 7-color LED will start blinking

To install the GPRS modem

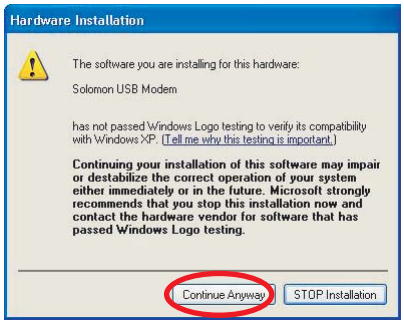
2. The "Found New Hardware Wizard" will show up on the screen, then click "Next".



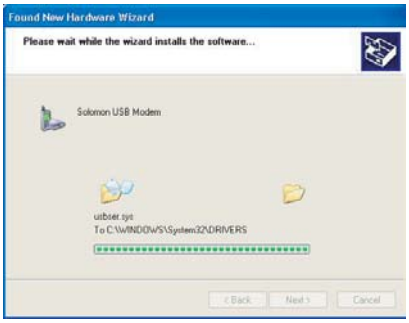
3. "Please wait while the wizard searches" shows up.



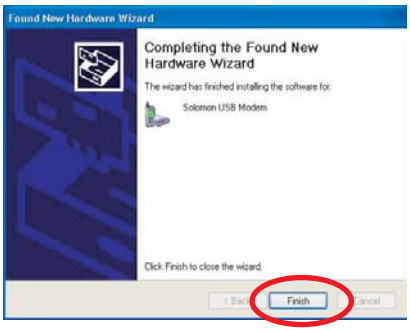
4. Computer has found the Solomon USB modem, click "Continue Anyway".



5. Computer is now installing the software for the Solomon USB modem.



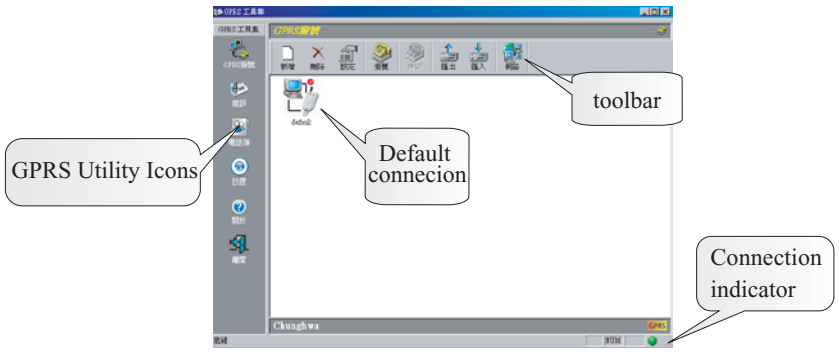
6. Click "Finish" to finish the installation.



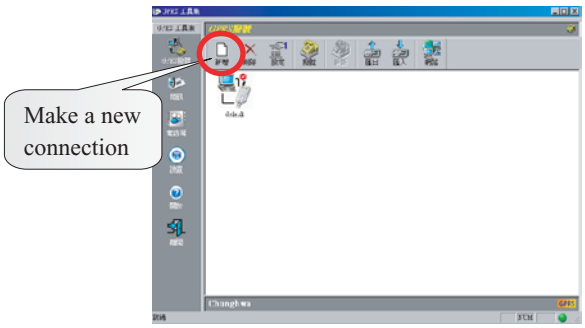
Setup the GPRS modem

1. Double click on the "GPRS Utility" icon on your desktop (your GPRS modem is already plugged into the USB port on your computer) to start the connection settings.

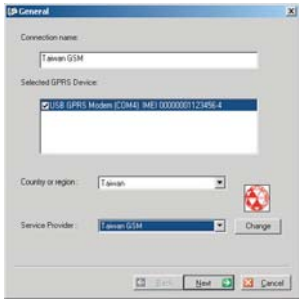
2. "GPRS Utility" will show up.



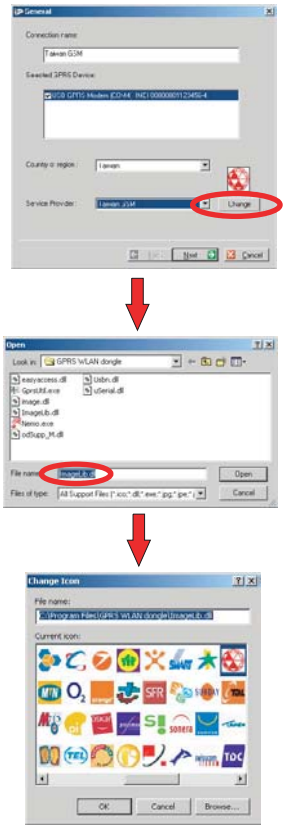
3. Pull down the Connection menu bar and choose "make a new connection" to establish the connection settings.



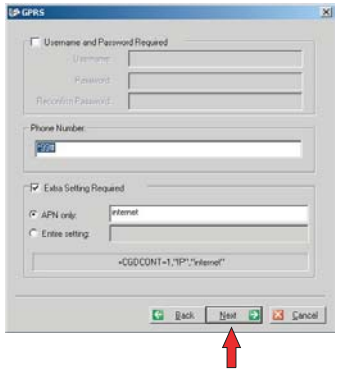
4. You may enter a new connection name as you wish, then click "Next".



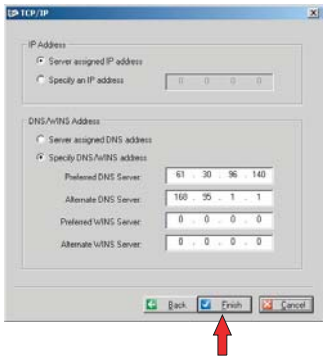
5. You can click the right side "Change" options, open ImageLib.dll to change icons, or by oneself set the icons of personalizing the favour to show.



6. GPRS dialog box window will show up on the screen, enter the user's name, password and phone number, select the "Extra Setting Required", enter the APN name then click on "Next".



7. TCP/IP dialog box window will show up on the screen, you may choose "Server assigned IP address" or "Specify an IP address" to enter an IP address. For DNS/Wins address you may choose "Server assigned DNS address" or "Specify DNS/Wins address" to enter an DNS address.



8. Here below is an example of how to setup the GPRS modem, please contact your local network for precise information.

User Name and Password:
enter the user name and password or leave it blank.

Phone number:
Enter the connection number such as *99#.

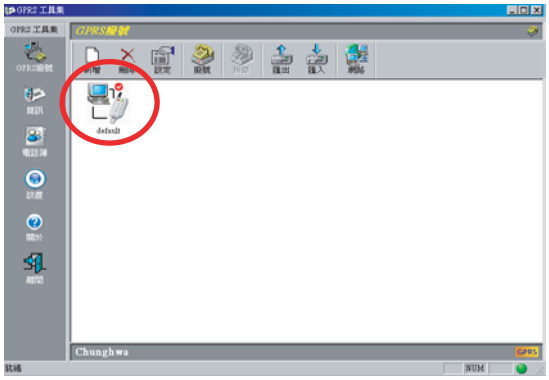
Extra settings:
enter the APN name such as "internet".

Entire setting:
You may choose to enter special AT commands streams such as at+cgdcont=1,"ip","internet".

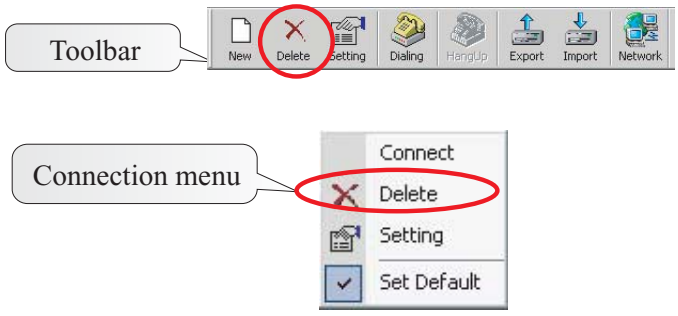
IP address:
You may enter an individual IP address if it is required by the network, or click on "Server Assigned IP Address" instead.

DNS Address:
You may enter an individual DNS address if it is required by the network, or click on "Server Assigned DNS Address" instead.

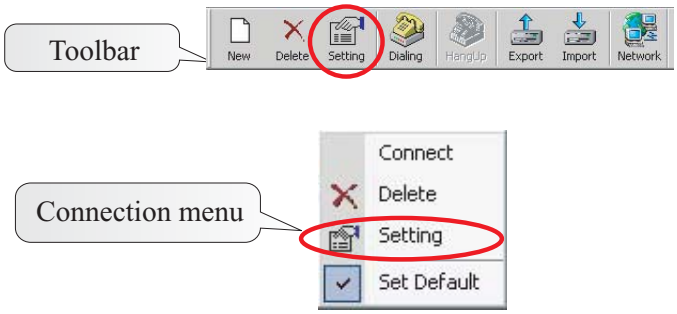
9. After the completion of the above procedures, the GPRS Manager will automatically generate an icon (Default Connection) for connection, you may create multiple connections if you have more than one SIM card for GPRS connection.



10.Should you wish to remove any of the connections just simply use the toolbar or select the connection menu to remove the undesired connection(s).

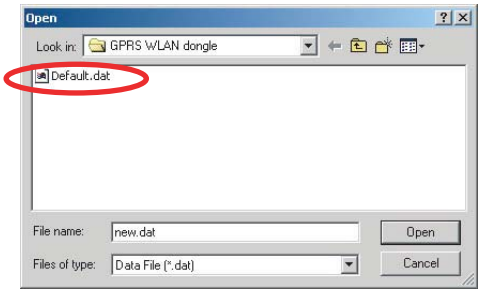


11. Click on properties you may choose the modify the settings of the connection.

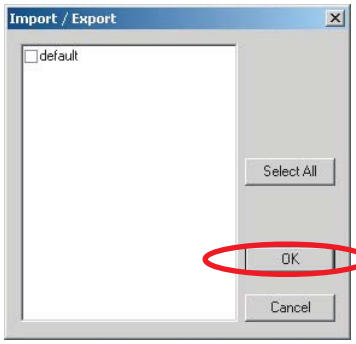


12. You may use "Import" in the toolbar to import a pre-restored connection file.

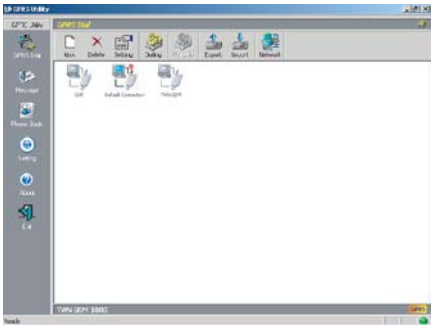
13. Click on "Import", you may choose a pre-restored file (.dat file).



14. You may click on the desired network from the dialog box then click on "ok".

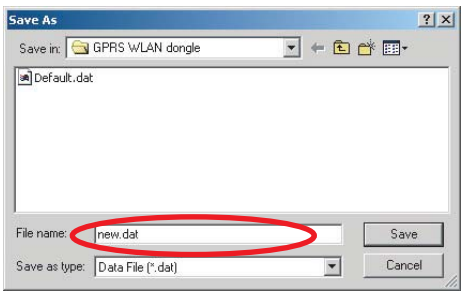


15. The GPRS Manager will automatically generate the connections for each network.

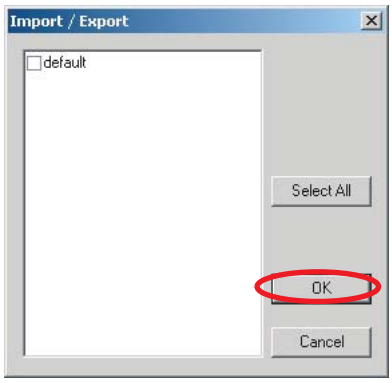


16. You may use "Export" in the toolbar to export an existing connection to a file.

17. Click on "Export", you may enter a name for the destination file (.dat file).



18. You may click on the desired network from the dialog box then click on "ok" to export.

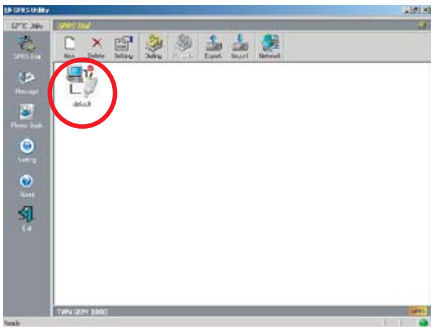


19. After the completion of the export, a popup window will indicate how many network records been exported.

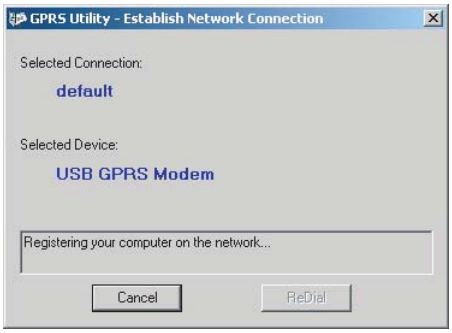
To use the GPRS modem

1. Double click on the "GPRS Utility" on your desktop to initiate the GPRS connection.

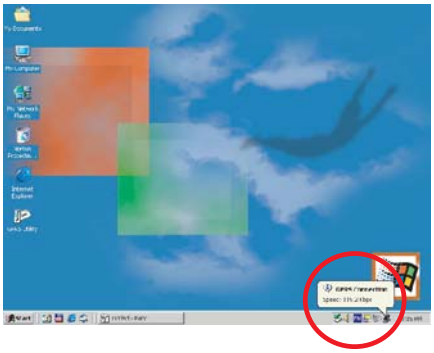
2. Double click on the connection in the "GPRS Utility" window to start dialing.



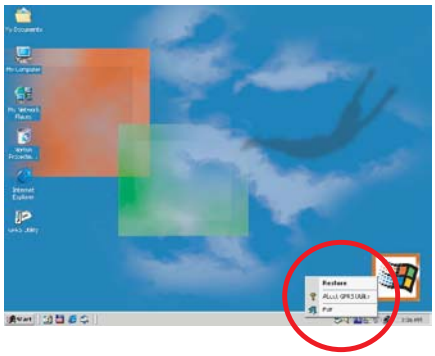
3. You may see the GPRS Utility start performing dialing to the network.



4. Once the connection is established, the modem connection icon will appear in the system tray.

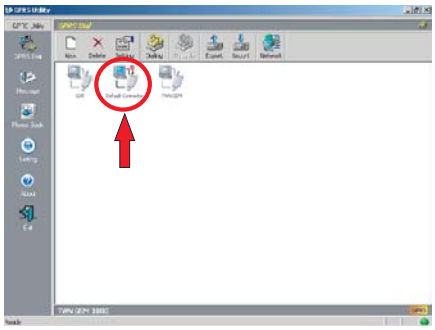


5. Click on the GPRS Utility icon in the system tray you may see a short menu bar.

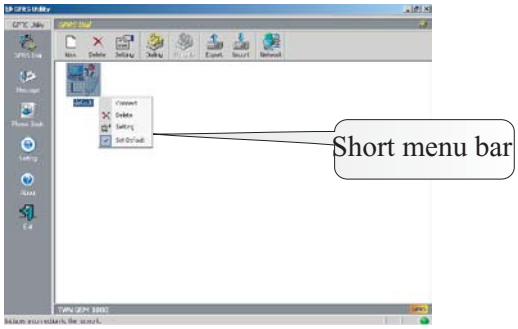


6. Select "Disconnect" in the short menu bar then click on Yes you may disconnect from the network.

7. Should you have multiple connections in the GPRS Manager window, the last dialed connection will be the default connection.

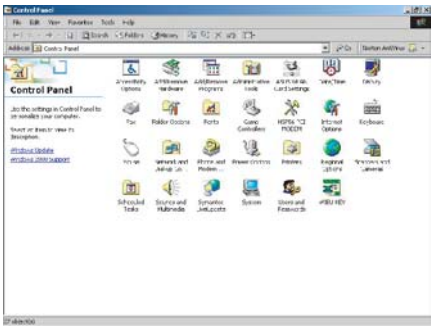


8. Right click on the connection in the GPRS Manager window you may modify the property of the connection.

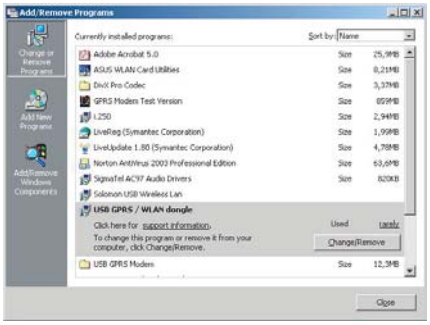


Remove the GPRS modem software

1. Go to add/remove programs in Control.

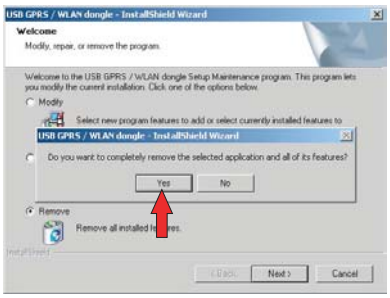


2. Select "USB GPRS/WLAN dongle" then click on Change/Remove.

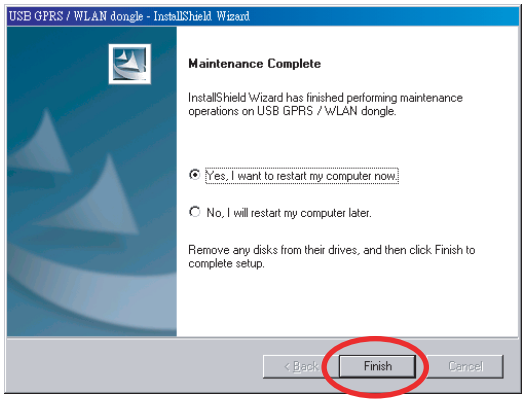


3. You will see the USB GPRS-WLAN dongle installation dialogue box, select "Remove", then click "Next".

4. A popup window shows "Do you wish to remove the program and its components"? Click on Yes, and then the software starts to remove the program.



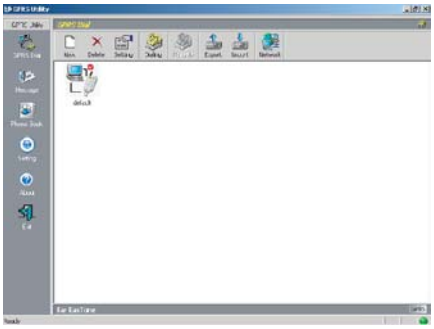
5. When the program is removed, a dialogue box will show up to indicate it has completed, then click on Finish to close the dialog box.



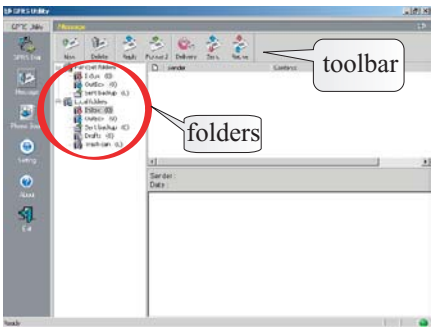
SMS Management

Send and Receive SMS

1. Click "Message" icon and the SMS functions will be initiated.



2. The SMS user interface.

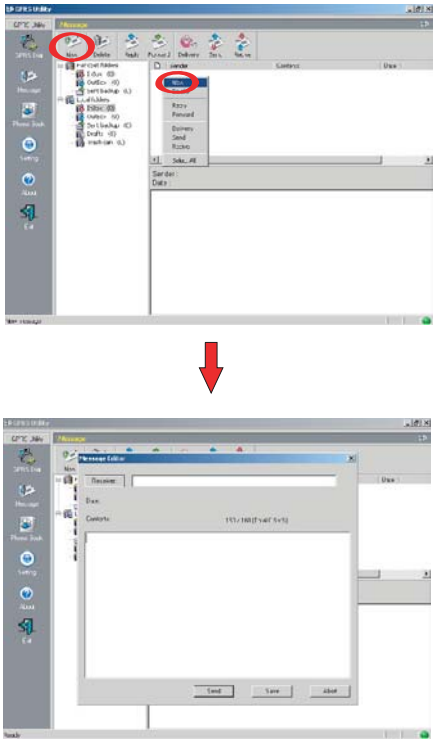


- Folders including: SIM card folders and Local folders; SIM card folders indicate the contents stored on the SIM card and the Local folders indicate the contents stored on the local PC.

SMS Management

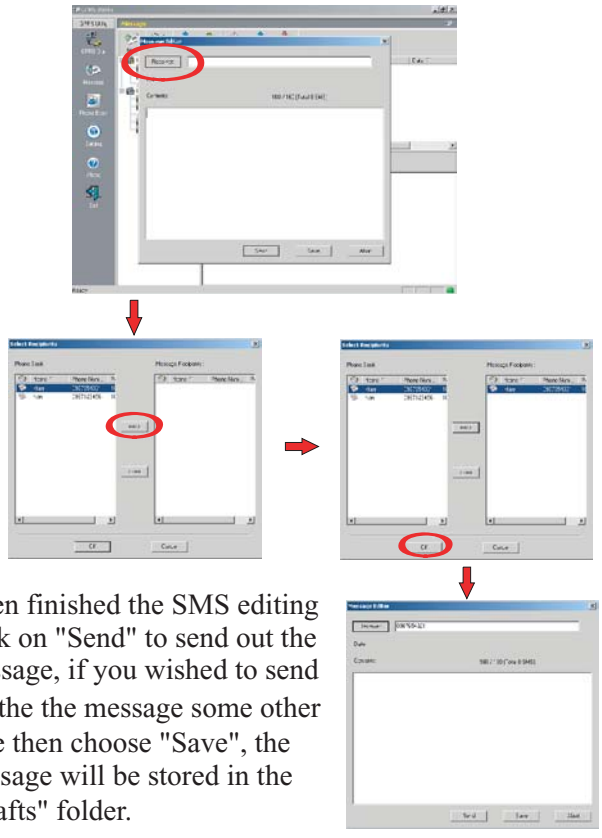
New SMS

1. Click on "New" in the toolbox or right mouse click on the empty folder content select "New", the Message Editor window will pop out.



SMS Management

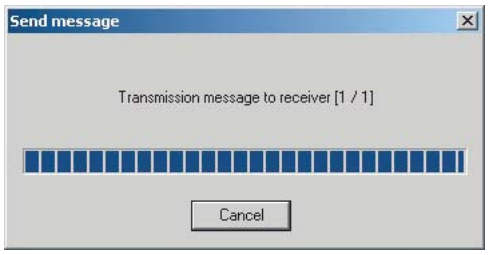
- 2. Click "Recipient" on the Message Editor window to select the recipient from the phonebook or type in the recipient's phone number, you may choose multiple recipients for the SMS service.

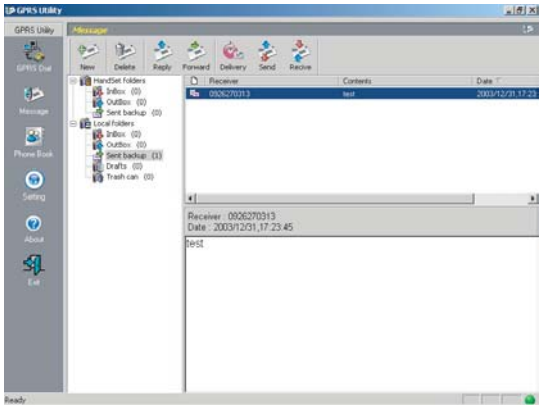


- When finished the SMS editing click on "Send" to send out the message, if you wished to send out the the message some other time then choose "Save", the message will be stored in the "Drafts" folder.

SMS Management

- 3. Send SMS progress window: Shows the progress of the SMS being sent to the network, a backup will be stored in the "Sent backup" folder under the Local folders.



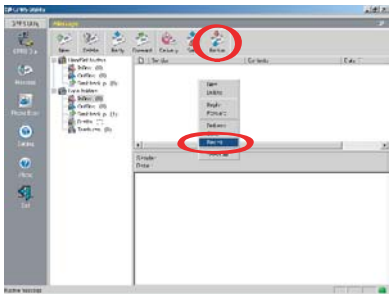


Sent backup window

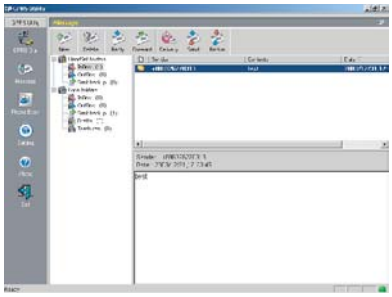
SMS Management

Receive SMS

1. Click on "Receive" in the toolbox or right mouse click on the empty folder content select "Receive", then it will start to receiving the SMS from the GPRS modem to the PC.



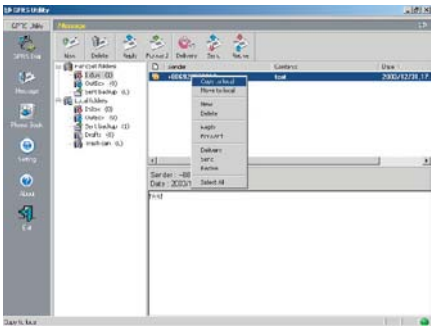
2. There are two modes for to receiving the SMS from the GPRS modem to the PC.
   ① Preview Mode: The messages are resided on the SIM card.
   ② Post Mode: The messages will be moved from the SIM card to the "Inbox" folder under the Local folders.



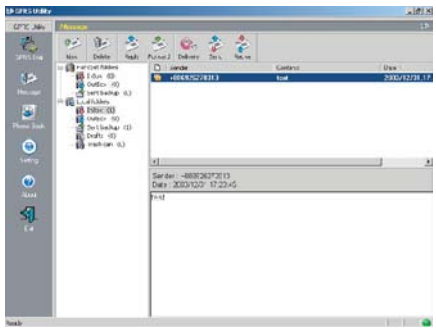
SMS Management

Duplicate or move the received SMS

1. If you right click on any of the received SMS, you may choose to copy or move to the Local PC.



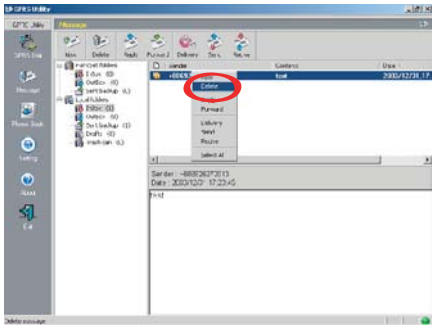
2. The selected SMS will get copied or moved to the "Inbox" folder under the Local folders.



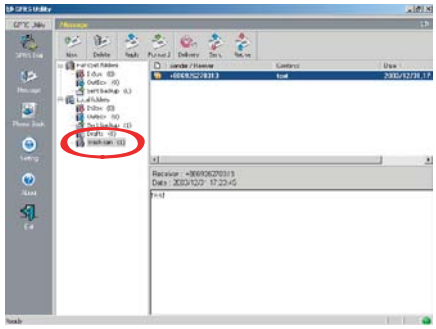
SMS Management

Delete SMS

1. Select the SMS you wished to delete then click on "Delete" in the toolbox to delete it or right mouse click to select "Delete" from the right mouse menu.



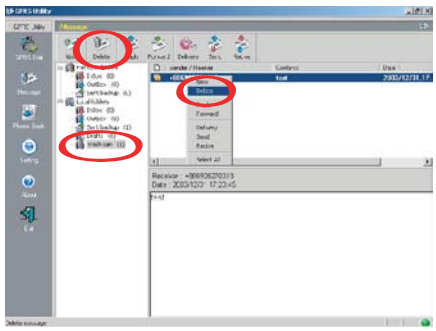
2. The deleted SMS will be moved to the "Trash can" folder under the Local folders.



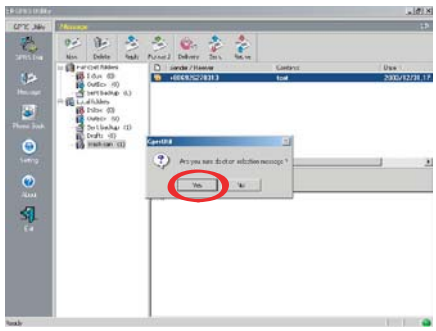
SMS Management

Delete SMS permanently

1. Select the SMS you wished to delete permanently in the "Trash can" folder then click on "Delete" in the toolbox to delete it permanently or right mouse click to select "Delete" from the right mouse menu.

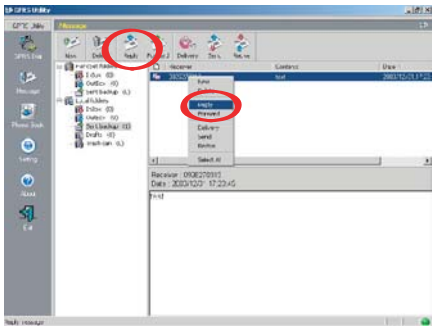


2. Click on (Y) in the pop up window to delete permanently.

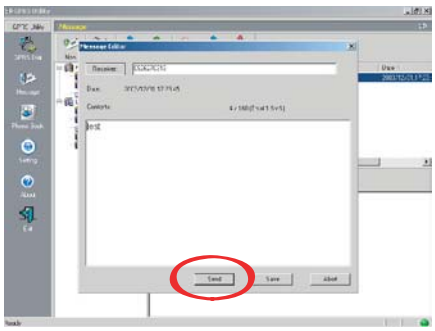


Reply an SMS

1. Select the SMS you wished to reply then click on "Reply" in the toolbox or right mouse click to select "Reply" from the right mouse menu.



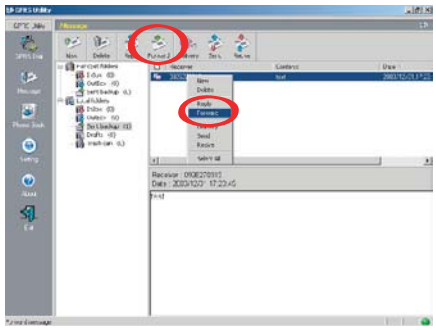
2. When finished the SMS editing click on "Send" to send out the mesage.



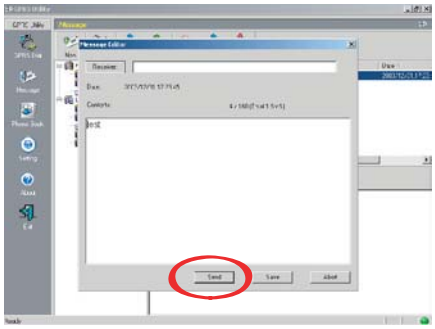
SMS Management

Forward an SMS

1. Select the SMS you wished to forward then click on "Forward" in the toolbox or right mouse click to select "Forward" from the right mouse menu.

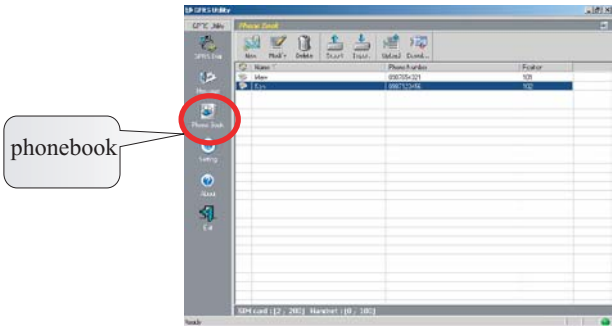


2. Select the "Recipient" and finish the SMS editing then click "Send" to send out the message.

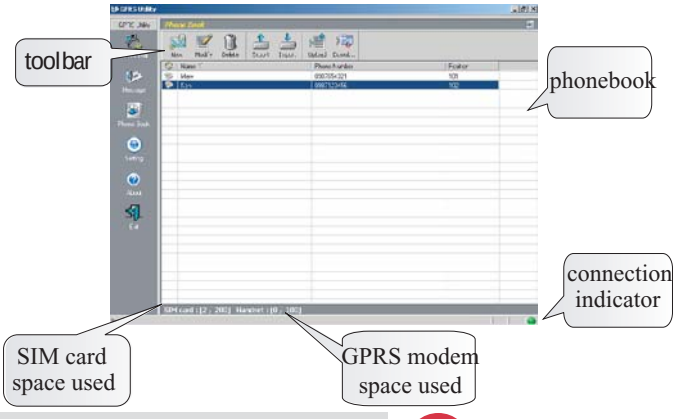


Phonebook Mangement

- Chick "Phonebook" icon and the phonebook contained the names and phone numbers both stored in the GPRS modem and SIM card will be displayed.



- The Phonebook user interface contains: Toolbox, Phonebook, SIM card space used, GPRS modem space used and Connection indicator.

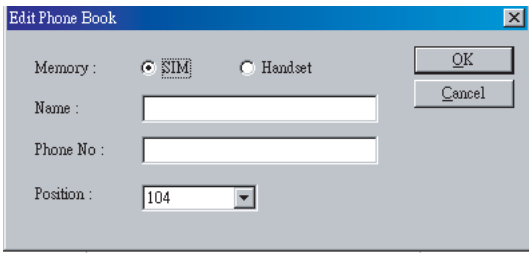


Phonebook management

- The Toolbar includes: New, Modify, Delete, Export,Import, Upload and download.

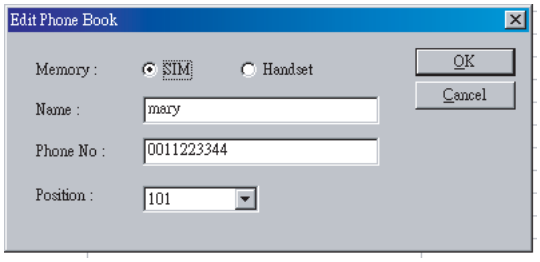
Add a New Contact

- Add a new contact: You may type in the name and phone number and choose to store in the GPRS modem or SIM card.



Edit the phonebook

- Select the contact you wished to modify and then click on Edit, you may modify the name and phone number.



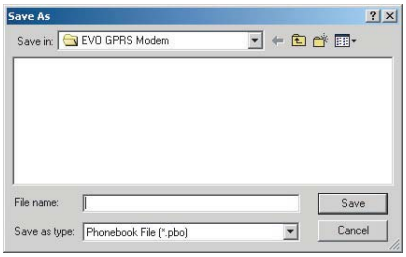
Phonebook Management

Delete the phonebook

- Select the contact you wished to delete and then click on Delete, you may delete the name and phone number.

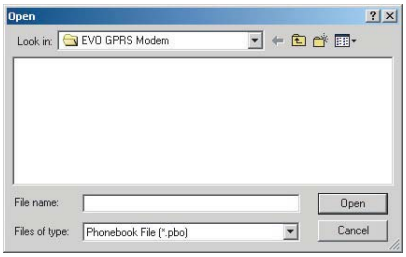
Export the phonebook

- You may choose to export the phonebook to the PC, enter the filename and a .pbo file will be generated on the PC.



Import the phonebook

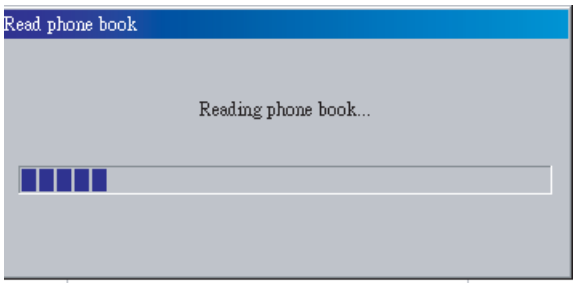
- You may choose to import the phonebook from the PC, click on the filename with the .pbo extension; the phonebook file will be imported from the PC.



Phonebook Management

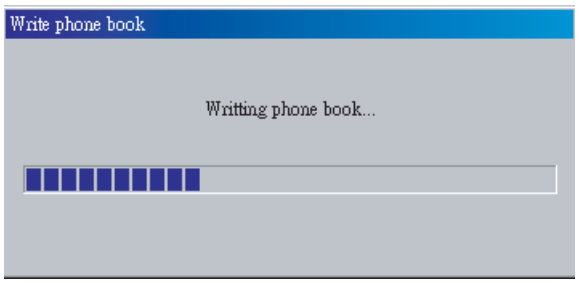
Upload

- You may upload the new or modified contact to the GPRS modem or SIM card.



Download

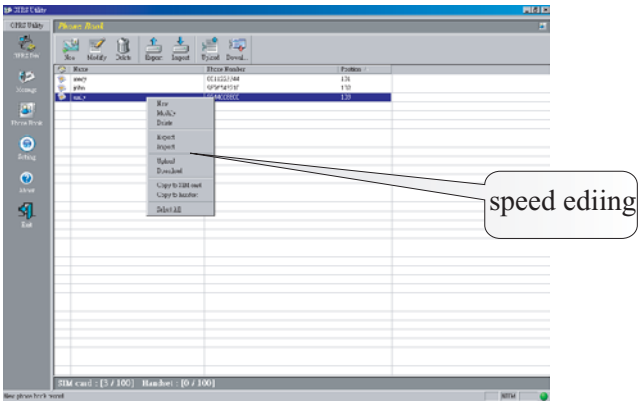
- You may download the phonebook from the GPRS modem or SIM card into the PC.



Phonebook Management

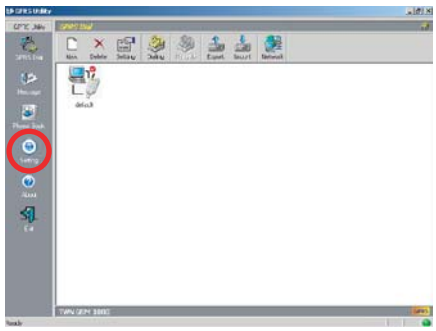
Speed editing

- All the above features can also be executed by the right mouse button menu.



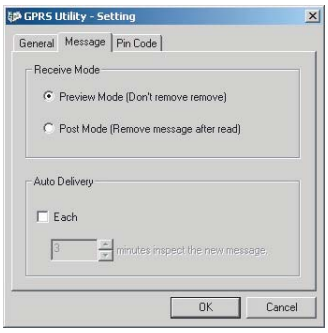
Setting

1. Click "Setting" icon and the setting contained the General, Mseeage and Pin code.

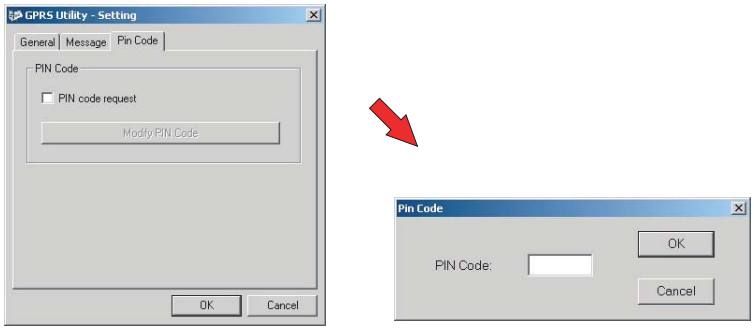


- General: contain English, Tradional Chinese or Simplified Chinese.

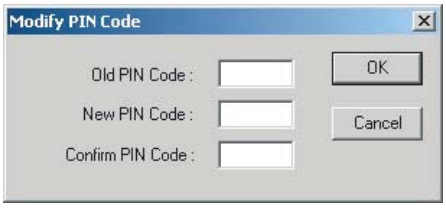
- Message: contained the Review mode and Post mode.



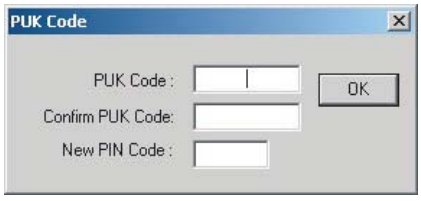
- Pin code: You have to enable the PIN code request first in order to enable the security service You will have to key in the original default PIN code or the modified PIN code. Please note that the SIM card will get locked if you entered the incorrect PIN code three times.



2. Change SIM PIN: The SIM PIN may be modified from its default, you need to enter the old SIM PIN twice then enter the new SIM PIN to complete the process, if the old SIM PIN is entered incorrectly for three times, the SIM card will get locked (you then may require the PUK code to unlock it).
   Please enable the PIN code request first in order to modify the PIN code.

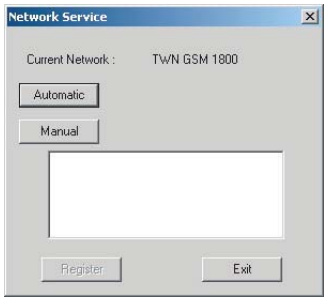


3. Enter the PUK code: When the SIM card is locked and you will need a PUK code string to unlock it. Please contact your network operator to acquire the PUK code. When the PUK is entered you need to give the SIM card a new PIN code release.



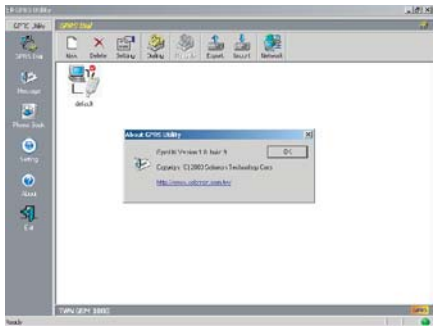
4. Network Service: You may manually select the best network when you are in roaming. Select the network you wished to log on and click onregister you will get switched onto the new network if your SIM card is valid for GPRS roaming.

Please note that the network search time and register time varies between different networks.



About

1. About: you may check the revision of the software release.



To use WLAN to access the Internet or other computers

The usage modes include Ad-Hoc mode and Infrastructure mode. Each usage mode will have its unique settings, please confirm your network environment mode first.

Ad-Hoc mode: no need to get connected through Access Point (AP), a pier to pier connection type of connection between computers.

Infrastructure mode: to make use Access Point (AP) to form a wireless network connection with the fixed LAN network.

◎To use WLAN to access the Internet

1. Set the switch on the back side of the GPRS/WLAN dongle to "W".

Set the switch to "W"

The LED will start blinking

Chapter 2

Installation Procedure

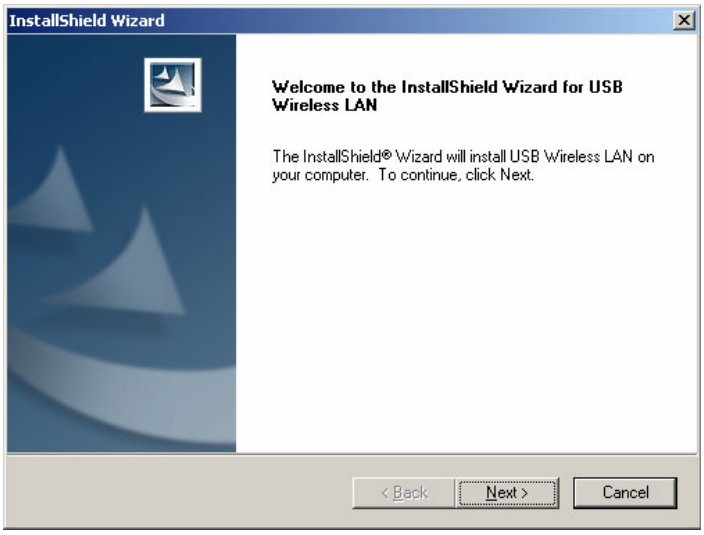
Before you proceed with the installation, it is important for you to know…

Note1: The following installation was operated under Windows 2000. (Procedures will be the same in Windows XP/Me/98.)

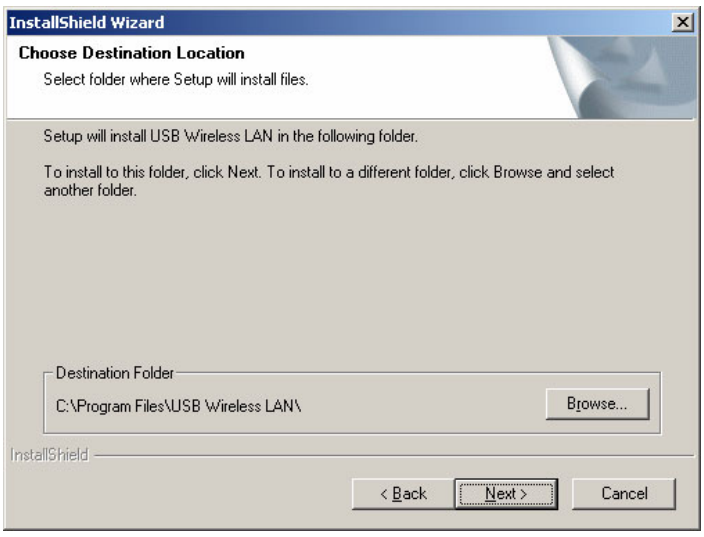
Note2: If you have installed the Wireless LAN USB Adapter driver & utility before, please uninstall the old version first.

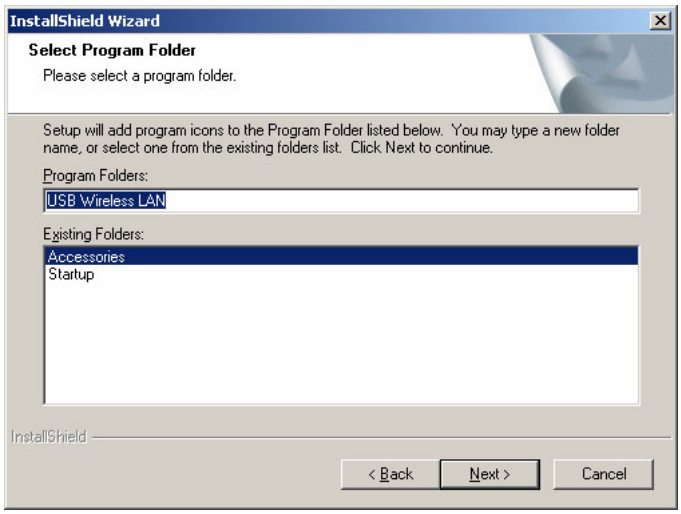
Note3: Be sure not to connect the Wireless LAN USB Adapter before the installation is finished.

A. Execute the ***"Setup.exe"*** program under the ***"Driver & Utility"*** folder. The InstallShield Wizard will check the operating system version first. Please follow the directions after it finishes checking.

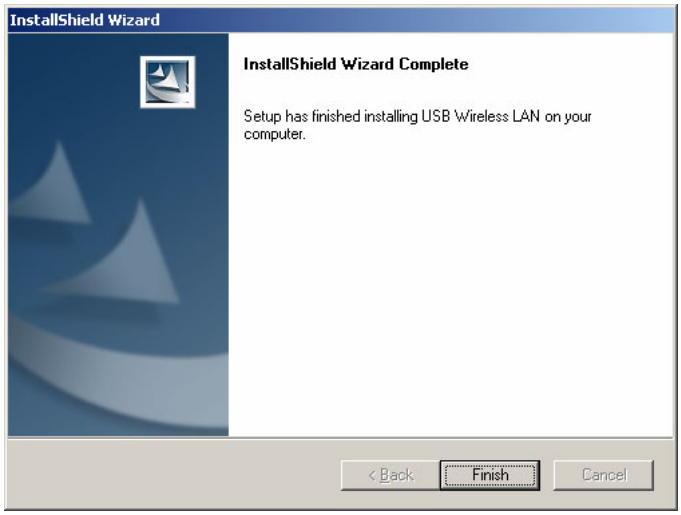


B. Click ***"Next"*** to install the driver. If you want to install this into a different folder, click ***"Browse"*** and select another folder. Then click ***"Next."***

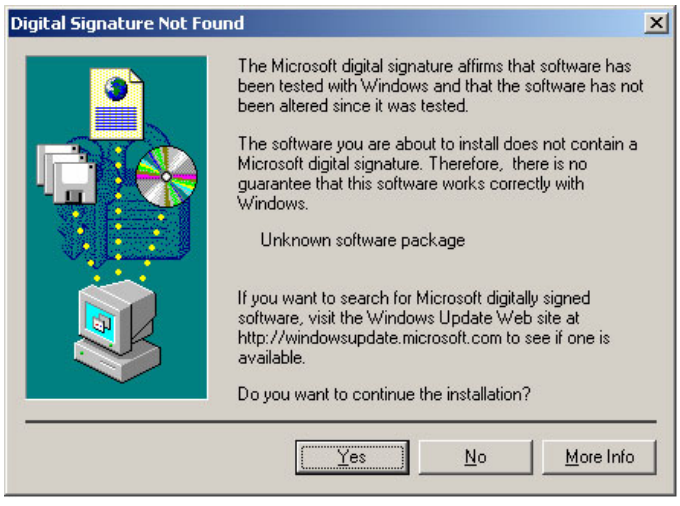




C. Click **"Next"** to begin copying the files to your hard disk.



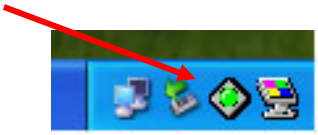
D. Click ***"Finish"*** to complete the installation.



E. You may see the driver doesn't have the Microsoft Digital Signature. This software is tested and works correctly with Windows. Select **"*Yes* ".**

F. Restart the computer and connect the Wireless LAN USB Adapter to your computer. Please wait for 2-3 minutes for the system to find the device. The Wireless LAN USB Adapter is now successfully installed.

Note: When you complete the installation, the Utility icon will appear on the system tray. If not, it means that the installation failed. Please uninstall the driver and repeat the process.



Chapter 3

Using the Configuration & Monitor Utility

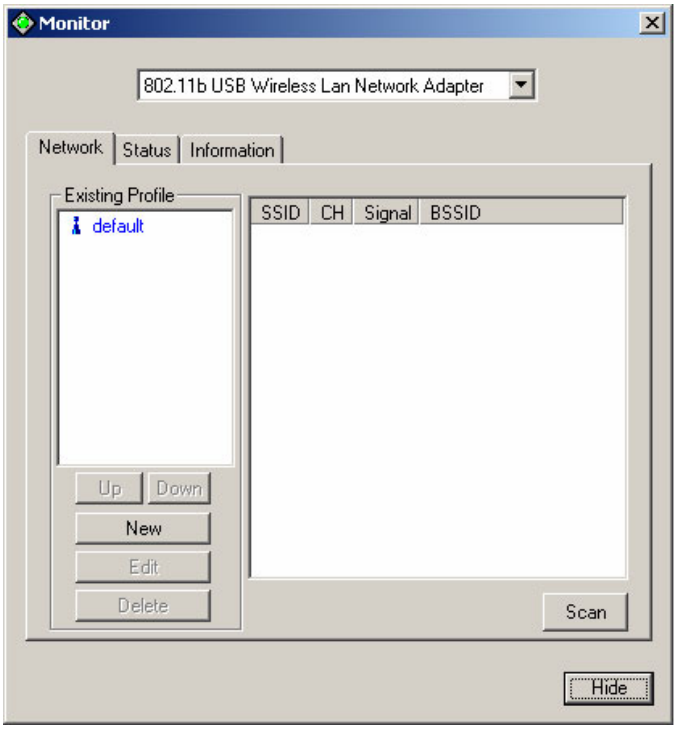
The Configuration Utility is a powerful application that helps you configure the Wireless LAN USB Adapter and monitor the statistics of the communication process. Double-click the icon on the system tray to view the configuration mode.

This utility can be used to change the following configuration parameters when the device is active.

Please continue to read the following instructions.

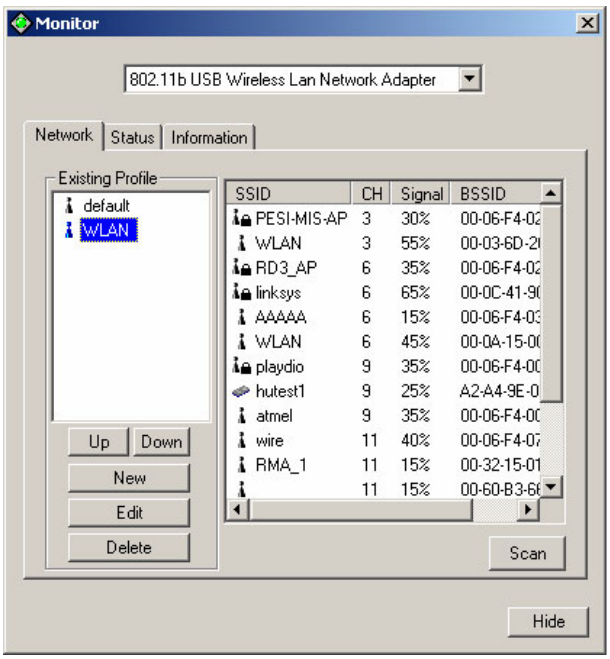
3.1 Using Utility

3.1.1 Network



The screen at right shows all the Access Points or Adapters nearby when operating in Ad-Hoc mode. Click ***"Scan"*** to collect the SSID and Channel information of all the wireless devices near by.

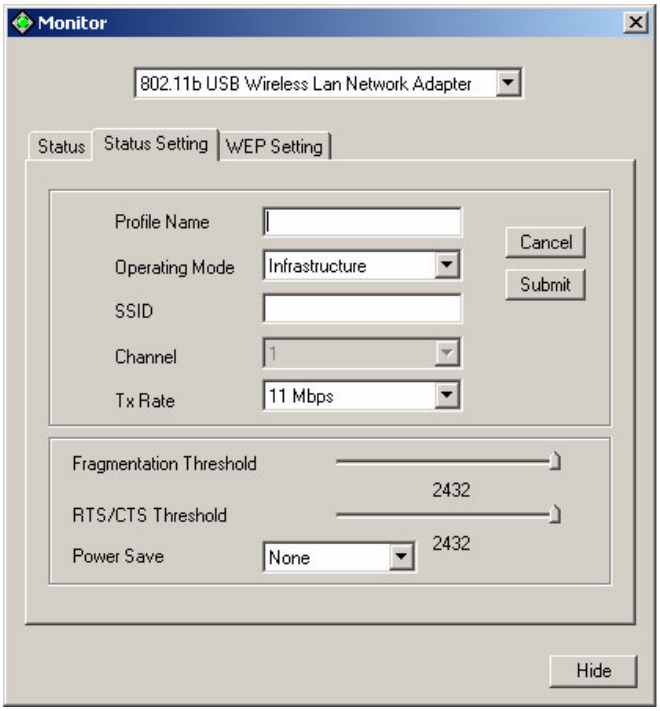
If you want to connect to any device on the list, double-click the item on the list, and the adapter will automatically connect to the selected device and create a profile at left windows automatically.



The left window shows you the available profiles that you have create.

- **UP:** Up the priority of the profile you select.
- **Down:** Down the priority of the profile you select.
- **New:** Create a new profile.
- **Edit:** edit the profile you select.
- **Delete:** delete the profile you select.

3.1.2 Status Setting



Click **"*New*"** in the Network page to set up the necessary parameters of the profile, and click "***Submit***" after the configuration has been changed.

- **Profile name:** Name the profile name
- **Operation mode:** Shows the following network modes
  - **Infrastructure –** This operation mode requires the presence of an 802.11 Access Point. All communication is done via the Access Point.
  - **Ad-Hoc –**This mode indicates the 802.11 peer-to-peer operation. All communication is done from client to client without the use of an Access Point.
- **Channel:** Shows the numbers of the radio channel used for the networking. Only Access Points and Ad-Hoc nodes create the BSSID. The parameters are not active in the infrastructure operation mode.
- **SSID:** Shows the SSID of the BSS that one is willing to join.
- **Tx Rate:** Shows the Data Transfer Rate. There are 1 Mbps, 2M bps, 5.5 Mbps, 11 Mbps, and auto mode. If you select **"auto mode"**, the device will choose the most suitable rate automatically.
- **Fragmentation Threshold:** The size at which packets will be fragmented. Choose a setting within a range of 256 to 2346 bytes.
- **RTS Threshold:** Minimum packet size to require an RTS (Request To Send). For packets smaller than this threshold, an RTS is not sent and the packet is transmitted directly to the WLAN. This is the option for the RTS Threshold activation.
- **Power Save:** Power save can reduce power consumption.
- **Signal Strength:** This bar shows the signal strength level. The higher the blue bar, the more radio signal been received by the Wireless LAN USB Adapter. This indicator

helps to find the most comfortable antenna/workstation position for quality network operation.

- **Link Quality:** The measured Signal Strength level gives the overall Link Quality and Connection Status.

MAC Address: The MAC Address of the Wireless LAN USB Adapter. Unique 48-bit, hard-coded Media Access Control address known as the station identifier.

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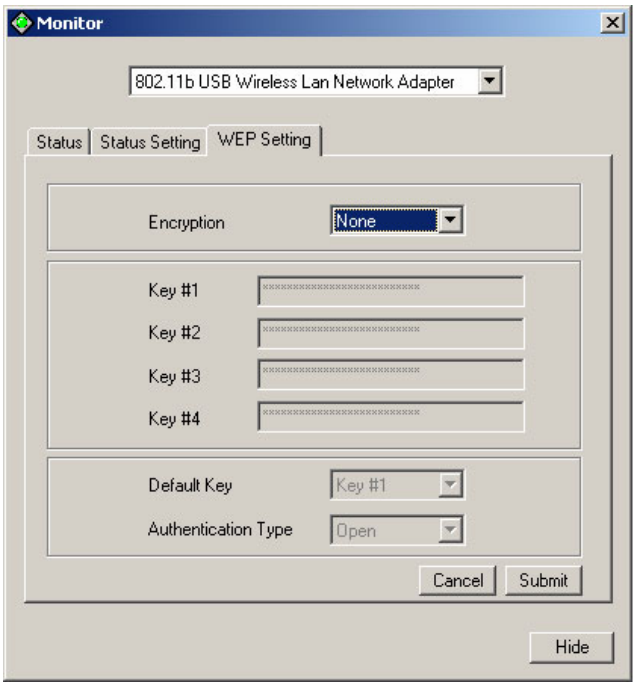
3.1.3 WEP Setting

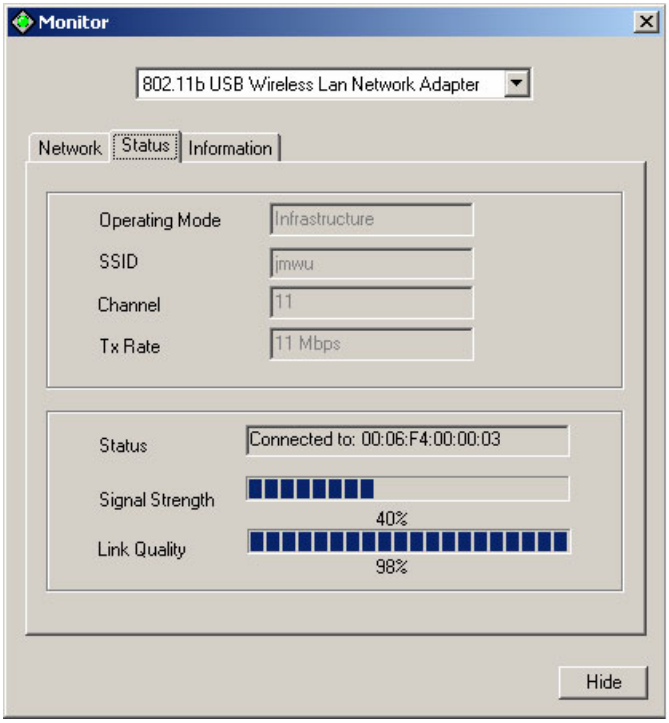


Additional security can be achieved by using the WEP (Wired Equivalent Privacy) encryption. WEP encrypts each frame transmitted from the radio, using one of the keys entered from this panel.

There are four 10 Hex digit encryption keys value available for the WEP. You can define the encryption key values of their own choice.

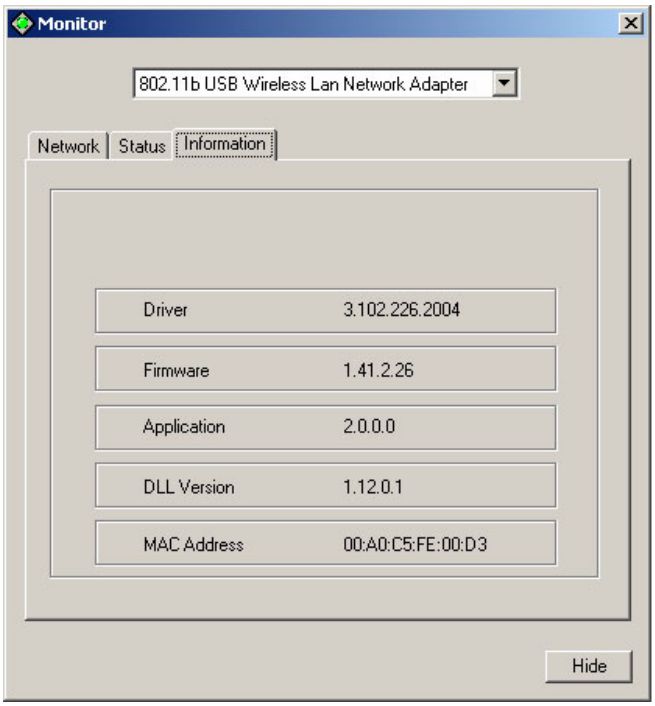
Enable the WEP (Wired Equivalent Privacy) option in order to activate WEP encryption for transmissions between the stations and the Access Point. WEP is an authentication algorithm, which protects authorized Wireless LAN users against eavesdropping.

3.1.4 Status



- **Signal Strength:** This bar shows the signal strength level. The higher the blue bar, the more radio signal been received by the Wireless LAN USB Adapter. This indicator helps to find the most comfortable antenna/workstation position for quality network operation.
- **Link Quality:** The measured Signal Strength level gives the overall Link Quality and Connection Status.
- **Status:** The MAC Address of the Wireless LAN USB Adapter. Unique 48-bit, hard-coded Media Access Control address known as the station identifier.

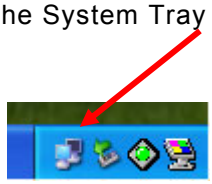
3.1.5 Information



It shows the current ***Driver, Firmware, Application, DLL Version and MAC Address*** of the device.

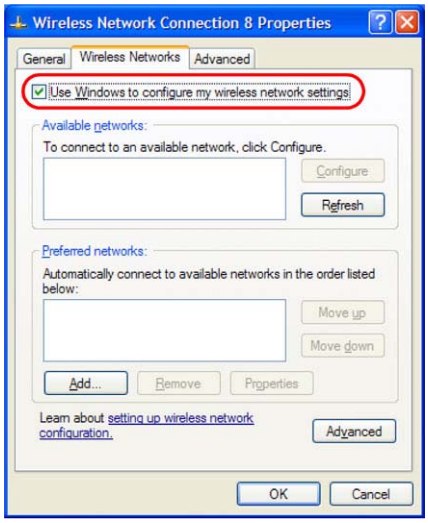
3.2 Configuration & Monitor Utility Under Windows XP

A. Click on the network icon in the System Tray Icon.



B. Next, click the “Properties” Button.

C. If you want to stop using the Windows XP built-in application, un-check the “Use Windows to configure my wireless network settings” option. When you uncheck that option you are able to use the Wireless LAN USB Adapter’s Configuration & Monitor Utility under Windows XP.



Note1: When you want to change back to the Windows XP built-in application, check the above option and you are able to use the built-in application of Windows XP.

Chapter 4

Technical Specification

- Standard: IEEE802.11b
- Frequency Band: 2.400 GHz ~2.4835GHz
- Data Rate: Up to 11Mbps
- Interface: Mini USB / USB V1.1
- Transmission Range: Outdoor: 100~300M, Indoor: 40~100M
- LED Indicators: Power, Link
- Power consumption: USB Bus Power Only
- Operating Temperature : 0℃ to 55℃
- Storage Temperature : -20℃ to 70℃
- Operating Humidity: 0% to 70% Non-Condensing
- Storage Humidity: 0% to 95% Non-condensing
- Data Encryption: 64 bit/128 bit WEP Encryption
- Software: Configuration Utility software
- USB Cable: 1M
- Compatibility: Windows 98/Me/2000/XP, Linux (Kernel 2.4.18-3)
- Certification: FCC, CE
- Dimensions: 95mm x 65mm x 13mm

Chapter 5

Troubleshooting

This section provides solutions to problems usually encountered during the installation and operation of this Wireless LAN USB Adapter. Read the description below to solve your problems.

✓ **If you encounter difficulty using / installing the Wireless LAN USB Adapter, this may be related to various causes:**

- Out-of range situation, which prevents the card from establishing a wireless connection with the network.
- Configuration mismatch, which prevents the card from establishing a wireless connection with the (correct) network.
- Absence of, or conflict of the Wireless LAN USB Adapter driver.
- A problem or conflict with the connector, which prevents the Wireless LAN USB Adapter from powering on.
- A conflict of the hardware with another device.

✓ **What does IEEE 802.11 feature support ?**

- CSMA/CA plus Acknowledge Protocol
- Multi-Channel Roaming
- Automatic Rate Selection
- RTS/CTS Feature
- Fragmentation
- Power Management

✓ **Can Wireless products support printer sharing ?**

Wireless products perform the same function as LAN products. Therefore, Wireless products can work with Netware, Windows NT/2000, or other LAN operating systems to support printer or file sharing.

✓ **Would the information be intercepted while transmitting on air ?**

WLAN features two-fold protection in security. On the hardware side, as with Direct Sequence Spread Spectrum technology, it has the inherent security feature of scrambling. On the software side, WLAN series offer the encryption function (WEP) to enhance security and Access Control. Users can set it up depending upon their needs.

✓ **What is DSSS ? What is FHSS ? And what are their differences ?**

Frequency-hopping spread-spectrum (FHSS) uses a narrowband carrier that changes frequency in a pattern that is known to both transmitter and receiver. Properly synchronized, the net effect is to maintain a single logical channel. To an unintended receiver, FHSS appears to be short-duration impulse noise. Direct-sequence spread-spectrum (DSSS) generates a redundant bit pattern for each bit to be transmitted. This bit pattern is called a chip (or chipping code). The longer the chip is, the greater the probability that the original data can be recovered. Even if one or more bits in the chip are damaged during transmission, statistical techniques embedded in the radio can recover the original data without-the need for retransmission. To an unintended receiver, DSSS appears as low power wideband noise and is rejected (ignored) by most narrowband receivers.

Chapter 6

Glossary

A

Ad-Hoc Mode - A client setting that provides independent peer-to-peer connectivity in a wireless LAN. An alterative setup is where PCs communicate with each other through an access point. An Ad-hoc integrated wireless LAN is a group of computers, each has a Wireless LAN adapter, Connected as an independent wireless LAN. Ad hoc wireless LAN is applicable at a departmental scale for a branch or SOHO operation.

B

Bandwidth - The transmission capacity of a given facility, in terms of how much data the facility can transmit in a fixed amount of time; expressed in bits per second (bps).

Bit - A binary digit. The value (0 or 1) used in the binary numbering system. Also, the smallest form of data.

BSSID - A specific Ad hoc LAN is called a Basic Service Set (BSS). Computers in a BSS must be configured with the same BSS ID.

D

Default Gateway - The routing device used to forward all traffic that is not addressed to a station within the local subnet.

DHCP server and client - DHCP stands for Dynamic Host Configuration Protocol. This protocol is designed to automatically load parameters for the TCP/IP network, including the IP address, host name, domain name, net-mask, default gateway, and name server address. The machine that provides this service is called the DHCP server, and its client computers are called DHCP clients. If client computers support DHCP, a TCP/IP configuration is not needed on each client computer.

Domain - A sub-network comprised of a group of clients and servers under the control of one security database. Dividing LANs into domains improves performance and security.

Driver - A workstation or server software module that provides an interface between a network interface card and the upper-layer protocol software running in the computer; it is designed for a specific NIC, and is installed during the initial installation of a network-compatible client or server operating system.

DSSS (Direct-Sequencing Spread-Spectrum) - DSSS operate over the radio airwaves in the unlicensed ISM band (industrial, scientific, medical). DSSS uses a radio transmitter to spread data packets over a fixed range of frequency band.

E

Encryption - A security method that applies a specific algorithm to data in order to alter the data's appearance and prevent other devices from reading the information.

Ethernet - The most widely used LAN access method, which is defined by the IEEE 802.3 standard. Ethernet is normally a shared media LAN meaning all devices on the network segment share total bandwidth. Ethernet networks operate at 10Mbp using CSMA/CD to run over 10Base T cables.

F

Firmware - Program that is inserted into programmable read-only memory (programmable read-only memory), thus becoming a permanent part of a computing device.

Fragmentation Threshold Value - Indicates how much of the network resources is devoted to recovering packet errors. The value should remain at its default setting of 2,432. If you experience high packet error rates, you can decrease this value but it will likely decrease overall network performance. Only minor modifications of this value are recommended.

Fragmentation - Breaking a packet into smaller units when transmitting over a network medium that cannot support the original size of the packet.

I

IEEE - The Institute of Electrical and Electronics Engineers

IEEE 802.11b standard - The IEEE 802.11b Wireless LAN standards subcommittee formulating standards for the industry. The objective is to enable wireless LAN hardware from different manufacturers to communicate.

Infrastructure Mode - A client setting providing connectivity to an Access Point. As compared to Ad-Hoc Mode where PCs communicate directly with each other clients set in infrastructure Mode all pass data through a central Access Point. The Access Point not only mediates Wireless network traffic in the immediate neighborhood but also pro-vides communication with the wired network. An integrated wireless and wireless and wired LAN is called an Infrastructure configuration. Infrastructure is applicable to enterprise scale for wireless access to central database, or wireless application for mobile workers.

IP Address - An IP address is a 32-bit number that identifies each sender & receiver of information that is sent across the Internet. An IP address has two parts: the identifier of a particular network on the Internet and one identifier of a particular device (which can be a server or a workstation within that network).

ISM band - The FCC and their counterparts outside of the U.S. have set aside bandwidth for unlicensed use in the ISM (Industrial, Scientific and Medical) band. Spectrum in the vicinity of 2.4 GHz, in particular, is being made available worldwide. This presents a truly revolutionary opportunity to place convenient high-speed wireless capabilities in the hands of users around the globe.

L

LAN - A local area network (LAN) is a group of computers and associated devices that share a common communications line and typically share the resources of a single processor or server within a small geographic area (for example, within an office building).

M

MAC Address - 12-digit hexadecimal number that identifies a networking product on the network.

Mbps (Meg**a**bits per second) - One million bits per second; unit of measurement for data transmission.

N

Network - A system that transmits any combination of voice, video and/or data between users.

Node - A network junction or connection point, typically a computer or work station.

O

Open System - Is when the sender and the recipient do not share a secret key. Each party generates its own key-pair and asks the receiver to accept the (usually randomly) generated key. Once accepted, this key is used for a short time only; then a new key is generated and agreed upon.

P

Packet - A unit of data routed between an origin and a destination in a network.

PCMCIA - Personal Computer Memory Card International Association

Plug and Play - The ability of a computer system to configure expansion boards and other devices automatically without requiring the user to turn off the system during installation.

R

Roaming - The ability to use a wireless device and be able to move from one access point's range to another without losing the connection.

RTS/CTS Threshold Value - Should remain at its default setting of 2,347. A preamble is a signal used to synchronize the transmission timing between two or more systems. A series of transmission pulses is sent before the data to indicate that “someone is about transmit data.” This ensures that systems receiving the information correctly when the data transmission starts.

S

Shared Key - Is when both the sender and recipient share a secret key. Both units use this key for an extended length of time, sometimes indefinitely. Any eavesdropper that discovers the key may decipher all packets until the key is changed.

Signal Strength - The signal level indicates the strength of the signal as received at the wireless network interface.

SNMP (Simple Network Management Protocol) - A standard network protocol that can be used to manage networks locally, or worldwide via the Internet.

Spread Spectrum - Spread Spectrum technology is a wideband radio frequency technique developed by the military for use in reliable, secure, mission-critical communication systems. It is designed to trade off bandwidth efficiency for reliability, integrity, and security. In other words, more bandwidth is consumed than in the case of narrowband transmission**,** but the trade off produces a signal that is, in effect, louder and thus easier to detect, provided that the receiver knows the parameters of the spread-spectrum signal being broadcast. If a receiver is not tuned to the right frequency, a spread –spectrum signal looks like background noise. There are two main alternatives, Direct Sequence Spread Spectrum (DSSS) and Frequency Hopping Spread Spectrum (FHSS).

SSID (Service Set Identifier) - Is the unique name shared among all points in a wireless network. The SSID must be identical for all points in the network. It is case sensitive and must not exceed 32 characters.

Static IP Address - A permanent IP address that is assigned to a node in an IP or a TCP/IP network.

Subnet - A subnet is a logical sub-division of a Local Area Network that has been divided by means of routers or gateways. A subnet may include multiple LAN segments. Each subnet is identified by the Subnet Mask.

T

TCP/IP (Transmission Control Protocol/Internet Protocol) - The basic communication language or protocol of the Internet. It can also be used as a communications protocol in a private network (either an intranet or an extranet). When you are set up with direct access to the Internet, your computer is provided with a copy of the TCP/IP program just as every other computer that you may send messages to or get information from also has a copy of TCP/IP.

W

WEP (Wired Equivalent Privacy) - A data privacy mechanism based on a 40 bit shared key algorithm, as described in the IEEE 802 .11 standard. The optional cryptographic confidentiality algorithm specified by IEEE 802.11 used to provide data confidentiality that is subjectively equivalent to the confidentiality of a wired LAN medium that does not employ cryptographic techniques to enhance privacy.

Windows workgroup - A Windows workgroup can consist of either wireless or wired network connections or a combination of the two. Usually a Windows workgroup consists of members who are related because of a shared function, e.g. members of the same department. For a Windows workgroup it is not relevant where the workgroup participants are located, since the members of a Windows workgroup are identified by their workgroup name only.

Appendix :

1. Operation Mode: The usage modes include Ad-Hoc mode and Infrastructure mode (please refer to WLAN network mode)

2. Channel: ISM band, the numbers of channels vary in different countries, channel allocations are controlled by AP in the Infrastructure mode, Ad-Hoc and be set as manual control

3. SSID: All WLAN Dongles need to use the same SSID in the Ad-Hoc mode, all WLAN Dongles will adapted to AP's SSID in the Infrastructure mode

4. Tx Rate: You may manually set the Tx rate to be 1, 2, 5, 11 Mbps or Auto, default is set as Auto

5. International Roaming: Default is set to "Disable"

6. Radio: You many manually turn the radio on/off

7. Encryption: Tow types of encryptions are provided WEP and TKIP, you may also choose in between 64 or 128 bit encryption codes, and you can set to none

8. Preamble: The preamble type can be set as long, short or auto for the PLCP within the physical layer, default is Auto

9. Tx Power Level: You may adjust the transmission power level from 5~100 dBm

10. Fragmentation Threshold: You may choose to divide frame in Tx, it is more efficient if the frame is divided because only the failed frames need to be re-transmitted. It is suitable to be used when the S/N ratio is low

11. RTS/CTS Threshold: When the frame is smaller than the RTS/CTS Threshold, when WLAN dongle will transmit the frame is idled channels, if not, WLAN dongle will transmit the frame with the standard 802.11b protocol, this will include RTS and CTS frames and headers, it will take longer time to identify each other's signaling, but it can avoid collisions

12. Power Saving: This can be set into power save mode, default is off

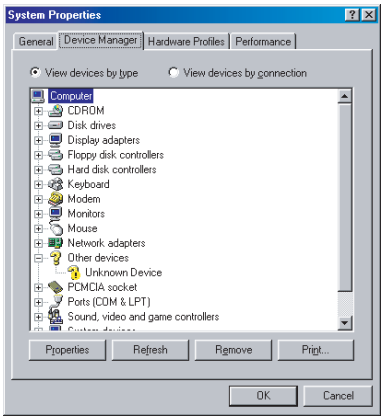
Frequently asked Q & A

GPRS modem installation failure:

1. Please make sure you have properly installed the USB GPRS software, if not, please re-install the software.

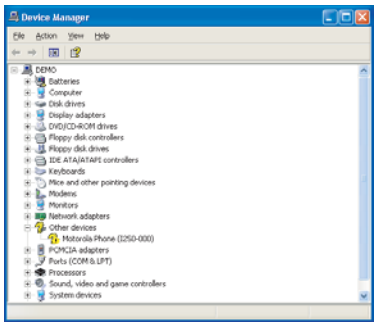
2. Did you plug the GPRS modem into the computer USB port prior to the USB GPRS software installation? If yes, please remove the device from Windows Hardware Manager.

   <Windows 98 SE>
   Remove the Device with the question mark manually in the Hardware Manager.



<Windows ME/XP/2000>

Remove the Device with the question mark manually from Other Devices in the Windows Hardware Manager



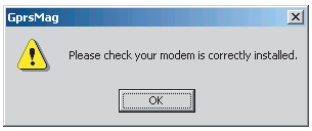
Once you have removed all the devices from the Windows Hardware Manager, please remove the GPRS modem from your computer first, and then re-install the program.

Note: The Solomon GPRS Modem is using Motorola GPRS chipset, it is quite all right to see "Motorola Phone (I250-000)" during the installation.

3. If you are using a PCMCIA (or other form) to USB conversion card and the computer failed to detect the GPRS modem, please check the hardware first.
4. Please make sure the GPRS modem is plugged into the USB port completely.

Could not open the GPRS manager:

Please make sure your GPRS modem is plugged into the USB port on your computer.



Could not establish GPRS connection:

1. Please make sure your network has granted your GPRS service
2. Have you entered all the parameters during the software installation?
3. Please check② light is lit on your GPRS modem, if not, you are probably in a RF dead zone or in an area your GPRS roaming service is not permitted. If① light is lit on your GPRS modem, your SIM card is probably inserted incorrectly or damaged.

GPRS connection is slow and unstable:

1. Please disconnect from the network and re-connect, the network might re-assign you to a better sector in the network.
2. If the connection is still slow it indicates the base-stations near you is having heavy traffic, try to re-connect later or move to a different location (move to a nearby window might help).

Interference during connection

1. Try to stay away from microwave stove, stereo, or TV, which might interfere the RF connection.
2. If you are in a spot where there is a fading dip, you might have poor communication; make use of the USB extender cord in the package to adjust a better antenna angle will definitely help!

Q & A

1. **The speaker on my computer is making strange noise or my computer is functioning improperly?**
   Answer: The USB GPRS modem is using the GSM cellular phone network, the maximum transmitting power could reach 2 watts, if your notebook or PC is not properly designed for EMI protection, the speaker and the computer might function improperly, it is not the USB GPRS modem's fault.
2. **I did not move my PC, but get disconnected from the network?**
   Answer:
   1) could be the base-stations near you is having heavy traffic.
   2) the network is dynamically re-allocating all the mobile handsets in its sectors, if your GPRS modem is being allocated to a sector which has lower signal you might get disconnected, just re-connect.

3. **Is the RF power of the GPRS modem hazardous to human body?**
   Answer: The GPRS modem is plugged into your computer, not like the mobile phone is attached to one's head, the influence of the GPRS modem on human body is much lighter than mobile phones.
4. **Can I use the GPRS modem to dial a speech phone call?**
   Answer: Negative, it is data only, however, the Internet application of speech can be achieved.
5. **May I use the GPRS modem abroad?**
   Answer: Yes, but please make sure your GPRS roaming is activated on your SIM card and the overseas country is offering the adequate frequencies for your GPRS modem.
6. **Am I logging on to the real Internet or just WAP?**
   Answer: Yes, the real Internet, not WAP.
7. **I have SIM pin on my SIM card; do I need to remove the SIM pin first?**
   Answer: Yes, please remove the SIM pin first.
8. **Why my GPRS modem gets hot when in use?**
   Answer: The GPRS modem transmit 2 watts in 900 MHz band and 1 watt in 1800 MHz band when in full power, it is normal to be a little hot when it communicates with the Internet.

RF Exposure Information (SAR)

This device meets the government's requirements for exposure to radio waves. This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government.

The exposure standard employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6W/kg. Tests for SAR are conducted using standard operating positions accepted by the FCC with the EUT transmitting at the specified power level in different channels.

The highest SAR value for the device as reported to the FCC is 0.189 W/kg for GSM850 and 1.25 W/kg for PCS 1900 when placed next to the body.

The FCC has granted an Equipment Authorization for this device with all reported SAR levels evaluated as in compliance with the FCC RF exposure guidelines. SAR information on this device is on file with the FCC and can be found under the Display Grant section of http://www.fcc.gov/oet/fccid after searching on FCC ID: NIT-SCWI375U.