802.11b WLAN USB Adapter with 128MB Flash Disk

Model

KU8-M

User's Guide

Version: 1.0 — Sept. 2003

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Regulatory Information

Federal Communication Commission Interference Statement

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 radiate 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 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.

FCC Caution: To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices) any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
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.

IMPORTANT NOTE:
FCC Radiation Exposure Statement:

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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1. Welcome

Thank you for purchasing our 802.11b WLAN USB Adapter with 128MB Flash Disk, and welcome to Wireless LAN–the easy way to wireless networking.

This user's guide introduces to you the 802.11b WLAN USB Adapter with 128MB Flash Disk and describes the most common configurations, which will help you connect to your network easily.

Please read this manual to get familiar with the IEEE802.11b Wireless LAN. This manual contains detailed instructions in operation of this product. Please keep this manual for future reference.

As this product is designed to run under Microsoft Windows, it is recommended that to be installed by people who are familiar with the installation procedures for network operating systems under Microsoft Windows.

1.1 Kit Contents

The 802.11b WLAN USB Adapter with 128MB Flash Disk kit should include the following items: One 802.11b WLAN USB Adapter with 128MB Flash Disk, one CD and one Quick Start Guide.

a. One 802.11b WLAN USB Adapter with 128MB Flash Disk

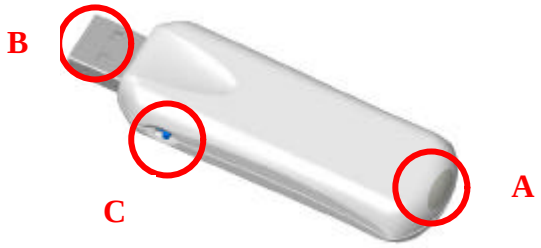
b. One Software CD including:

1. Driver for support Windows 98SE
2. User Manual PDF File

c. Quick Start Guide

If any of the items mentioned above are damaged or missing, please contact your distributor.

1.2 Product Features



A. Status LED

	LED1 (Blue)	**LED2 (Green)**
Off	Power Off.	Power off or in Standby / Power saving
Blinking	The USB adapter is Powered on and searching for AP before connecting	The memory disk is in Read / Write processing (busy state)
Steady Blue	Wireless connection is linked.	N/A

B. USB Connector

C. Switch

- **On**: The radio (wireless function) is on.
- **Off**: The radio (wireless function) is off.

802.11b WLAN USB Adapter with 128MB Flash Disk features:

1. High-speed wireless connection, up to 11 Mbps
2. IEEE802.11b (DSSS) standard for 2.4 GHz Wireless LAN
3. Plug-and-Play
4. Solid design with an integrated antenna
5. Full mobility and seamless cell-to-cell roaming
6. Automatic scale back at per packet level
7. Dual mode Application (Memory & WLAN)
8. Pen Driver mode only (radio off)
9. Radio ON/Off Switch
10. Supports security & Boot up function

802.11b WLAN USB Adapter with 128MB Flash Disk supports:

1. Automatic load balancing for optimized bandwidth
2. Advanced power management
3. No driver required for Windows 2000 / ME / XP
4. Support Windows 98 / 98SE with device driver

1.3 Wireless Networking Scenarios

As our 802.11b WLAN USB Adapter with 128MB Flash Disk is interoperable and compatible with other IEEE 802.11b compliant products from other manufacturers, it offers you the most freedom to establish your ideal wireless network. Therefore, after installing 802.11b WLAN USB Adapter with 128MB Flash Disk, you can connect your computer to:

a. A Peer-to-Peer Workgroup of IEEE802.11b compliant wireless devices.
b. A LAN (Local Area Network) constructed by Access Point(s) or other IEEE802.11b compliant systems.
c. Share your Internet access by using just one connection, share printers and other peripheral devices, share data and image files between networked PCs, play multi-player games, and use other network enabled sharing resources.

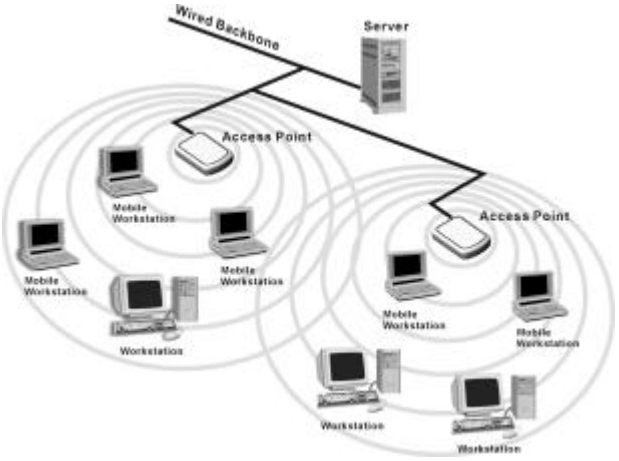
A. Peer-to-Peer Networking:

An Ad Hoc Network could be easily set up with some PCs and this 802.11b WLAN USB Adapter with 128MB Flash Disk or our other WLAN devices. Therefore, it is very suitable to build a network for temporary use, such as for demonstration in exhibition, for new sales point/branch use and alike.

B. Cooperate LAN (Local Area Networking):

With some 802.11b WLAN USB Adapter with 128MB Flash Disks and Access Points, it is easy to construct a LAN with access to Internet for enterprise use. The construction is quite easy that the 802.11b WLAN USB Adapter with 128MB Flash Disk and Access Point will automatically work at the most suitable frequency when Access Point is set within the proper range.

In addition, commonly manufacturers will bundle the Site-Survey tool for users to check the communication quality.



1.4 Advantages for Using Wireless Network

802.11b WLAN USB Adapter with 128MB Flash Disk can wirelessly transmit and receive data, minimizing the need for wired connections, at a speed of up to eleven megabit per second. With the 802.11b WLAN USB Adapter with 128MB Flash Disk you can locate your PC wherever you want without wires and cables.

The 802.11b WLAN USB Adapter with 128MB Flash Disk provides LAN users with an access to real-time information anywhere in their organization. The mobility provides effectiveness and efficiency, which are not available under wired networks.

The 802.11b WLAN USB Adapter with 128MB Flash Disk configuration is easy to switch between peer-to-peer networks, suitable for a small number of users, and full infrastructure networks of thousands of users that allow roaming around a broad area.

Therefore, you may see many advantages for adopting Wireless Networking as follows:

- *Less Space Limits*: The 802.11b WLAN USB Adapter with 128MB Flash Disk provides access to network services without wires; therefore, it gives you more freedom to allocate and style your living and working space. In addition, in some areas where is hard or expensive to connect to wired networks, such as historic buildings, classrooms or mobile connectivity, then you can count on wireless networking.
- *Flexible Workgroups and Lower Cost*: For workspaces that are frequently reconfigured for temporarily use such as demo in exhibitions, wireless networking is easy to set up of lower total cost—and all equipments are recyclable. You do not have to remove the old wires and then build up the new ones again and again.
- *Networked Conference Rooms*: Users can access the network as they move from a meeting to another, getting the access to information/data and the ability to communicate decisions while "on the go".
- *Ad Hoc Networking*: On site consulting and small workgroups may increase productivity with quick network setup and collaboration software.
- *Branch office Networking*: With an Access Point to bridge between the LAN and Internet, wireless networking provides an easy to install, use and maintain network for a remote or sales office.
- *Campus-Wide Network Mobility:* The roaming capabilities allow enterprise to set up easy to use wireless networks that cover the entire campus transparently.

2. As Flash Disk

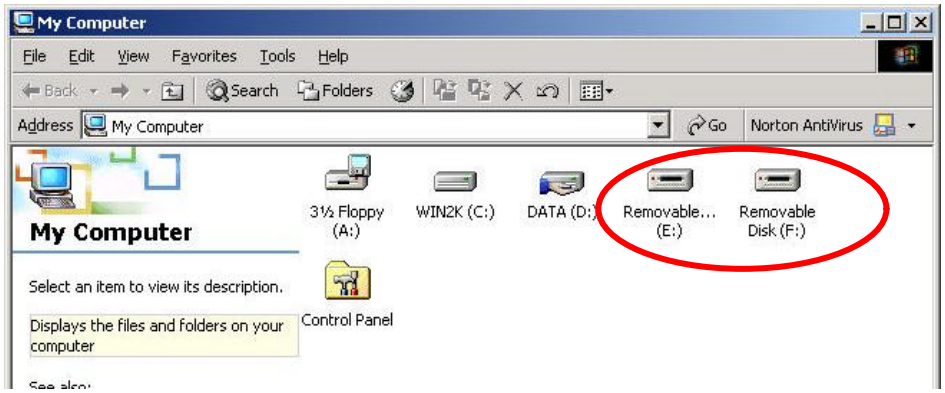
2.1 Installation

1. Insert the 802.11b WLAN USB Adapter with 128MB Flash Disk into the USB port of your PC/Notebook.

2. It automatically detects the hardware.

3. Click **Cancel**.

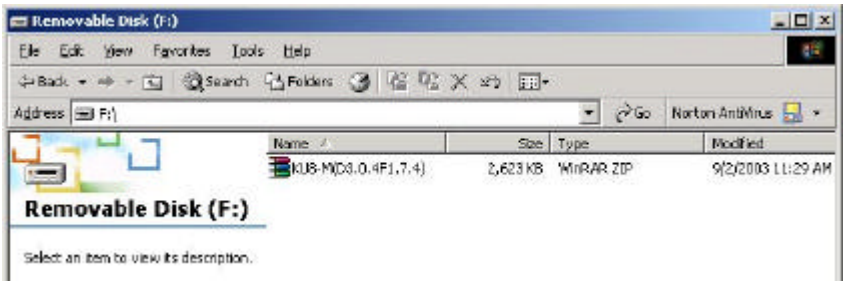
4. Double click **My Computer** in your desktop.



You may see now 2 removable Disks above:

Disk (E:): Free memory for your usage.

Disk (F:): Packaged with a Zip file of 802.11b WLAN USB Adapter Driver.



Note! For Window 98/98SE, user should install hardware driver attached in the CD firstly, and then can detect the USB Adapter.

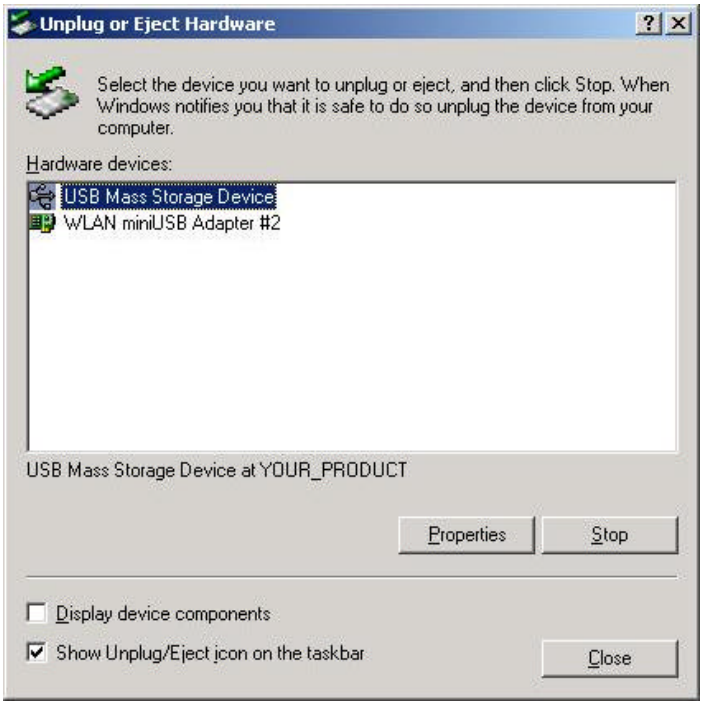
Note! The WLAN function of this adapter don' t support in **Linux** and **Mac** environment so you should switch "off" the radio to disable WLAN while you are using the USB adapter as flash disk.

2.2 Unplug the USB Adapter

You can remove the device after you finished the action with the device. However, in Windows XP/ME and Windows 2000, please follow the safe removal procedure. You can find a safe removal icon in your computer's notification area.

1. Double click the **safe removal icon**.

2. The "Unplug or Eject Hardware" window will pop up. You can select the device you want to remove. Then, click the **Stop** button.



3. You can unplug the device from the USB port of your computer.

3. As Wireless Networking

This section will lead you through the installation of 802.11b WLAN USB Adapter with 128MB Flash Disk and IEEE802.11b WLAN software in detail. People who are familiar with the installation and settings of wireless device may refer to quick start guide to establish a network in a snap.

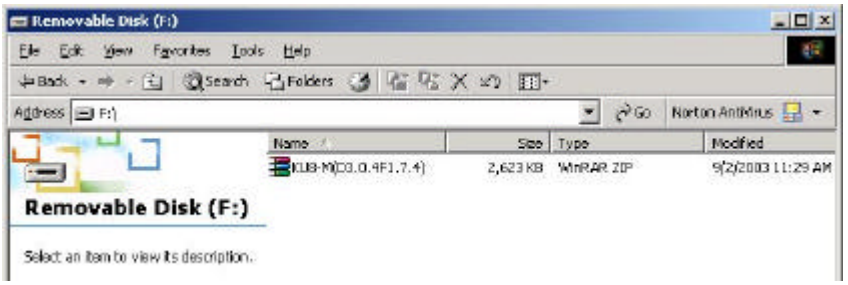
To establish your wireless network connection, the following steps should be executed:

1. Install the WLAN driver embedded in the 802.11b WLAN USB Adapter with 128MB Flash Disk.
2. Install the required network protocols to communicate with your network. Mostly, you will need to set the TCP / IP protocol.

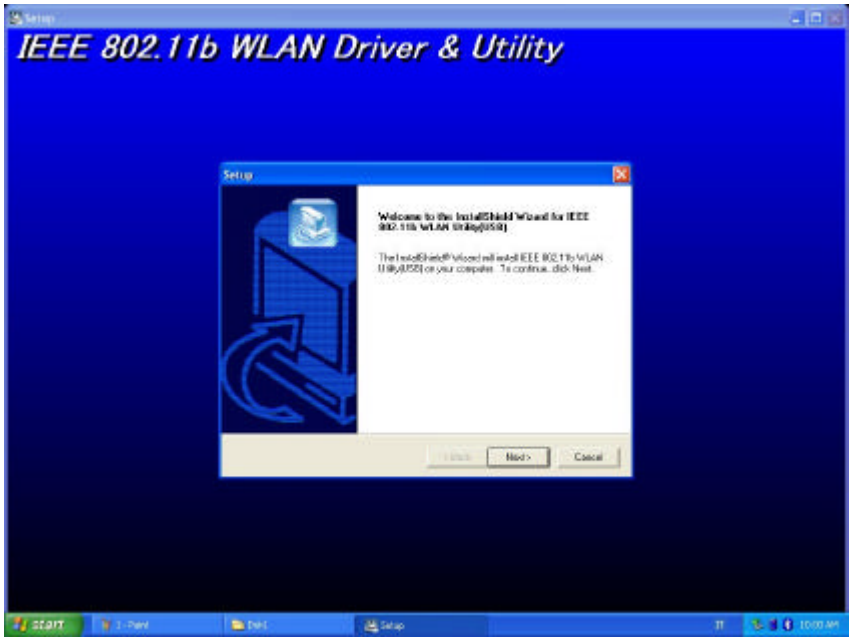
The product is designed to operate under Windows 98SE, ME, 2000, XP and Windows CE (subject to availability). The installation procedure is about the same. Please follow up the installation wizard provided by your system to install the software.

3.1 Install the IEEE802.11b WLAN Driver / Utility

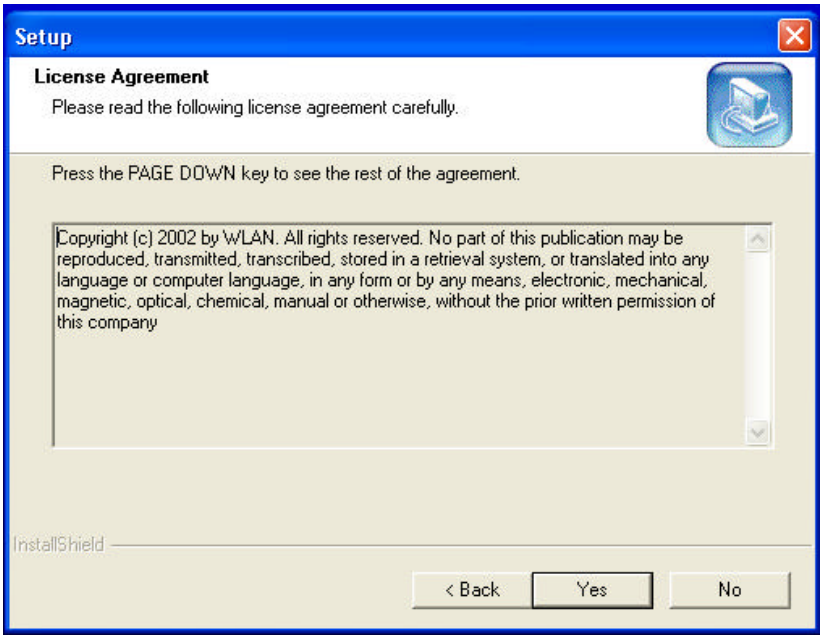
1. Insert the 802.11b WLAN USB Adapter with 128MB Flash Disk into the USB port of the PC. Search the removable disk that packaged with a Zip file (KU8-M) –the 802.11b WLAN driver. Unzip **KU8-M** and double click file **setup.exe**.



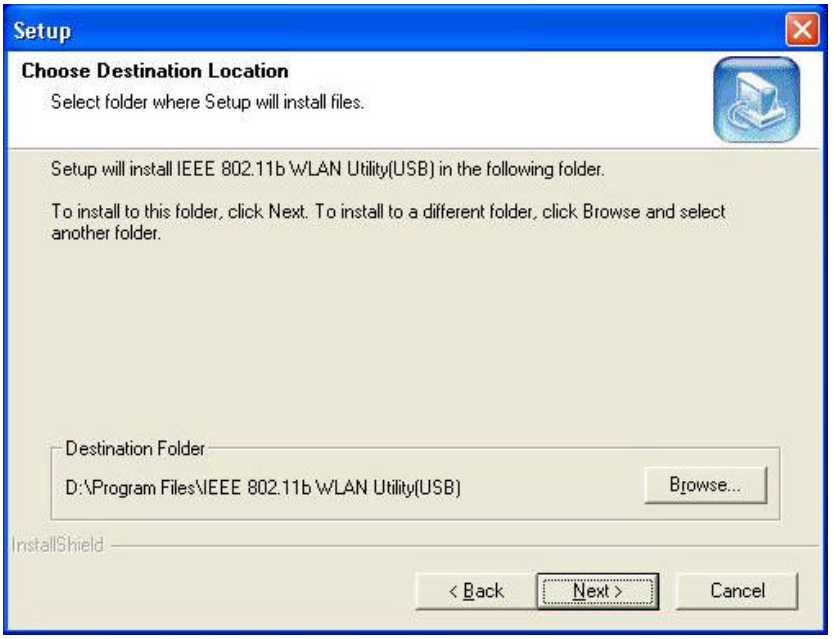
2. **Click "Next".** Select "Install IEEE802.11b WLAN Driver and Utility" and then click "Next" to go on the installation.



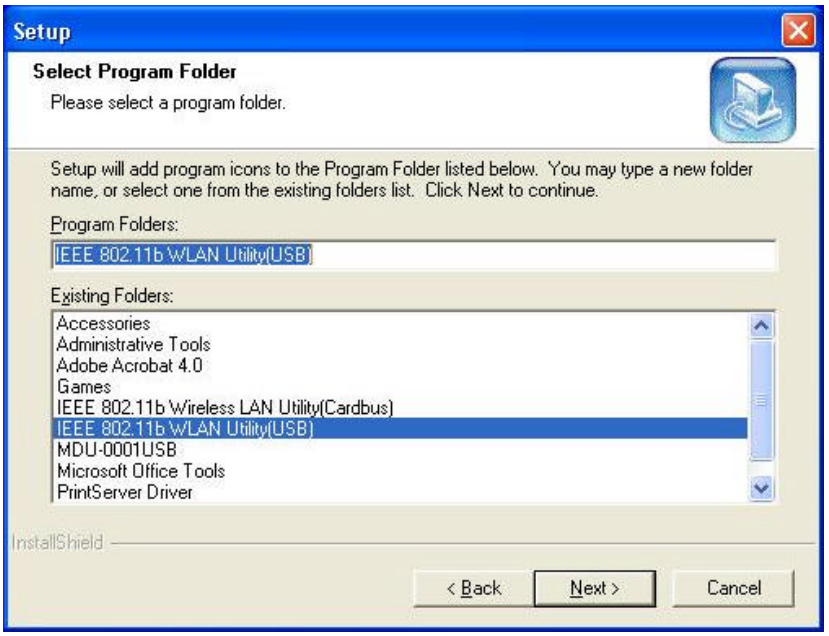
3. **Click "Yes".**



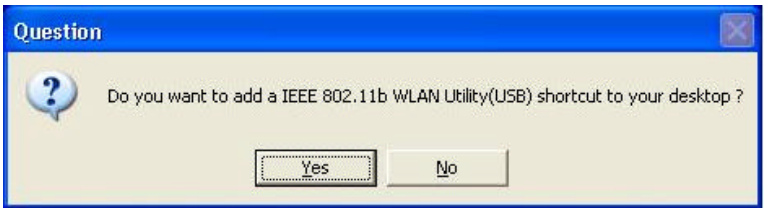
4. **Read the destination folder and click "Next".** The default destination folder is displayed in the setup dialog box. Click "Next" to go on to Step 7. You may change the default folder by clicking "Browse" to select the destination folder you prefer (go on to Step 6). Click " Next" to go to the next screen.



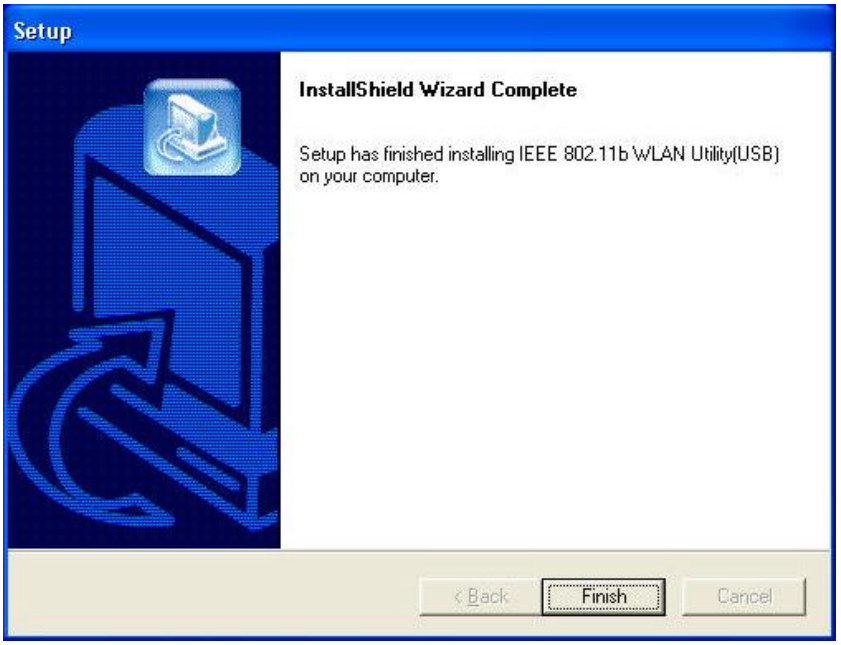
5. **Click "Next".**



6. **Click "Yes".** You are asked whether to add an IEEE802.11b WLAN Utility shortcut to your desktop. Click "Yes" to create one.



7. **Click "Finish".** The installation is complete.



3.1.1 Additional Setup Processes

During software installation procedure, each operating system may prompt different specific options. Mostly, you will be asked to add some necessary protocols and to edit some networking settings.

1. **Windows 98SE:** The system may request the original Windows CD during the installation process. Please check with the network administrator for the values of the settings. When the installation is finished, you'll have to restart your computer.

2. **Windows Me:** Please check with the network administrator for the values of the settings. Please restart your computer when the installation is finished.

3. **Windows 2000:** Please check with the network administrator for the values of the settings. Select "Install the software automatically" when the window with this option appears, and then click "Next" to continue installation.

4. **Windows XP:** Select "Install the software automatically" when the window with this option appears, and then click "Next" to continue installation. Note that before using the IEEE802.11b WLAN Utility, please disable the Windows XP Zero-Configuration first.

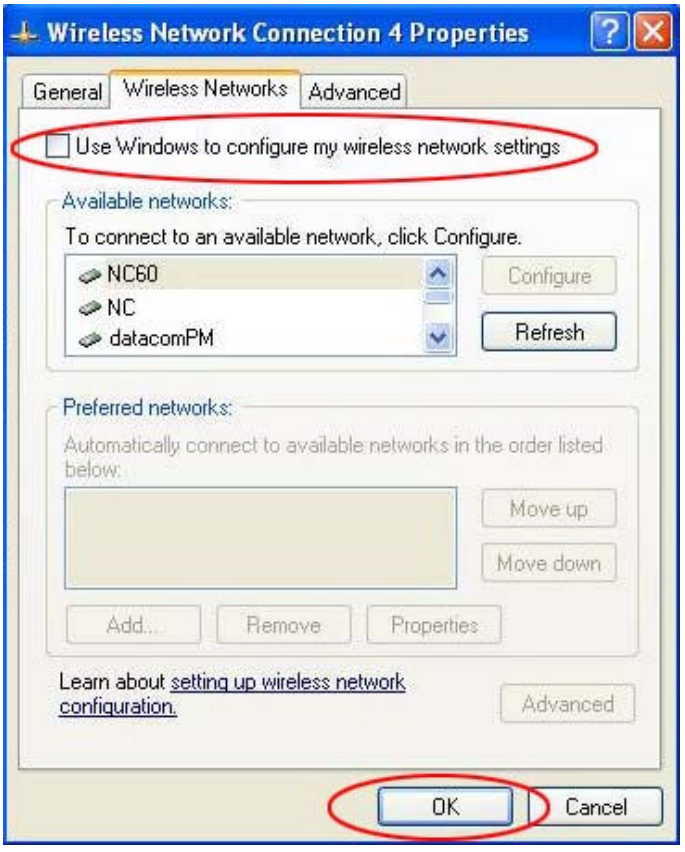
3.1.2 Disable Windows XP Zero-Configuration

In Windows XP, it is recommended that you use the IEEE 802.11b WLAN Utility. Right after the installation, before opening the Utility, please follow the steps below to disable the Windows XP Zero Configuration:

1. Go to “Control Panel” and double click “Network Connections”.

2. Right-click “Wireless Network Connection” of 802.11b WLAN USB Adapter with 128MB Flash Disk, and select “Properties”.

3. Select “Wireless Networks” tab, and uncheck the check box of “Use Windows to configure my wireless network settings”, and then click “OK”.



3.2 Verifying the Driver/Utility

1. Windows 98SE/Me:

Step 1. Right-click "My Computer" icon on the desktop and choose "Properties".

Step 2. Select "Device Manager" tab and open "Network adapters". You should see your 802.11b WLAN USB Adapter with 128MB Flash Disk in the list. Highlight it and click "Properties" button.

Step 3. From the "Device status", you should see the line "This device is working properly". If, instead, you see error messages displayed, please remove this Adapter (highlight this Adapter and click "Remove" button). Restart your PC and go through the installation process again.

2. WINDOWS 2000:

Step 1. Right-click "My Computer" icon on the desktop and choose "Properties".

Step 2. Select "Hardware" tab and click "Device Manager". Open "Network adapters". You should see your 802.11b WLAN USB Adapter with 128MB Flash Disk in the list. Right-click this Adapter and choose "Properties".

Step 3. From the "Device status", you should see the line "This device is working properly". If, instead, you see error messages displayed, please uninstall this Adapter (right-click this Adapter from the "Network adapters" list and choose "Uninstall"). Restart your PC and go through the installation process again.

3. WINDOWS XP:

Step 1. Click "Start>Control Panel> System".

Step 2. Select "Hardware" tab, and click "Device Manager". Open "Network adapters". You should see your 802.11b WLAN USB Adapter with 128MB Flash Disk in the list. Right-click this Adapter and choose "Properties".

Step 3. From the "Device status", you should see the line "This device is working properly". If, instead, you see error messages displayed, please uninstall this Adapter (right-click this Adapter from the "Network adapters" list and choose "Uninstall"). Restart your PC and go through the installation process again.

3.3 IEEE802.11b WLAN Utility

802.11b WLAN USB Adapter with 128MB Flash Disk has its own management software, named IEEE802.11b WLAN Utility, and users can control all functions provided with it. The Utility icon appears in the Windows System Tray after clicking the IEEE802.11b WLAN Utility shortcut on your desktop. The Utility includes six tabs: LAN Status, Setting, Site Survey, Link Information, Diagnostic and About.

The definition of the color of the Utility icon is as follows:

Connected (Green)

Low quality (Yellow)

Disconnected (Red)

In Ad Hoc mode, in one workgroup, the Channel and SSID of each station must be the same—therefore they can communicate with each other within the local LAN properly. Moreover, all connected computers should have the same net ID and subnet ID.

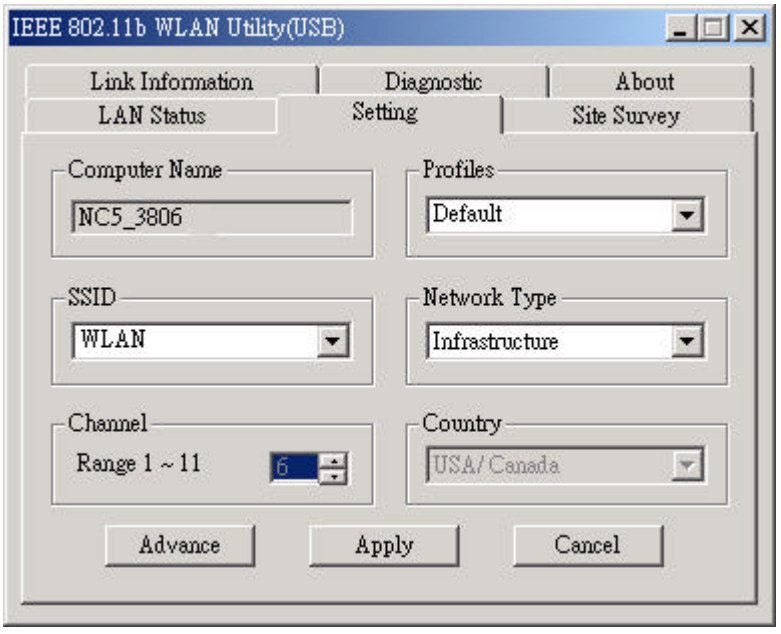
To open IEEE802.11b WLAN Utility, you may double click the status icon in the Windows System Tray.

3.4 Basic Setting for Infrastructure Mode

To connect with an Access Point, please follow the process below:

1. Select the "Setting" tab
2. Select "Infrastructure" for Network Type
3. Select or enter the correct SSID
4. Press the "Apply" button.

- **SSID** is the group name that will be shared by every member of your wireless network .You will only be able to connect with an Access Point (AP), which has the same SSID. Note that the SSID will be case sensitivity.
- **Channel** is not active in Infrastructure Mode.
- **Profiles** allows you to save five sets of default settings. After entering the values of the settings (SSID, Network Type, Channel etc.), set a name in the Profiles field. Click "Apply" button.



3.5 Basic Setting for 802.11Ad Hoc Mode

If you have more computers and only want to place them in a local area network, or you want to communicate directly without using an Access Point or any connection to a wired network, then you can select the "802.11 Ad Hoc" mode on your WLAN Utility.

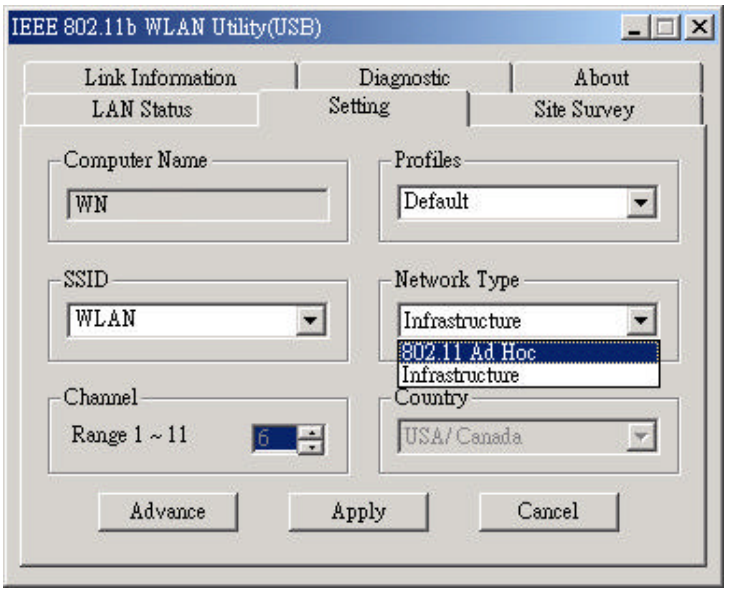
"802.11 Ad Hoc" is the official standard set by IEEE Organization.

A. 802.11 Ad Hoc

Please follow the procedures below to set the "802.11 Ad Hoc":

1. Select "Setting" tab.
2. Select "802.11 Ad Hoc" for Network Type.
3. Type in the SSID and set a channel, which you want to use in your 802.11 Wireless LAN.
4. Press the "Apply" button.

- Every member of your peer-to-peer network must set to the same channel and SSID, which is case sensitive.



You must select a SSID if you use the 802.11 Ad hoc.

If you have trouble connecting other brands' IEEE 802.11b devices using the "802.11 Ad Hoc" mode, please try "Ad Hoc" mode. The next section shows you the basic setting of the "Ad Hoc" mode.

3.6 Advanced Settings

Click the "Advance" button in the Setting page to edit the advanced settings for your 802.11b WLAN USB Adapter with 128MB Flash Disk.

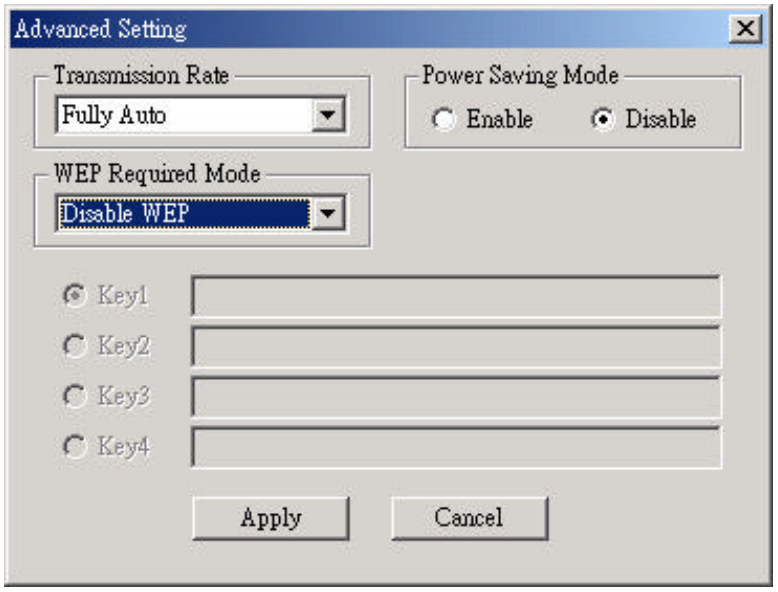
Regarding the transmission rate, there are four options:

A. Fully Auto (Default)
B. Fixed 11Mbps
C. Fixed 5.5Mbps
D. Auto 1 or 2 Mbps

You may select and change transmission rate by clicking the pull-down button.

If you enable the "Power Saving" mode, the 802.11b WLAN USB Adapter with 128MB Flash Disk can work with low power consumption but the throughput may slow down.

Note! *Power Saving Mode is useless in Ad Hoc mode.*



3.7 Encryption Function

You may enhance the security of your network by enabling the "Encryption" function. The WEP Required Mode enables you to define the encryption keys that your 802.11b WLAN USB Adapter with 128MB Flash Disk should use.

Caution:

If you wish to enable the "Encryption" function, you must enable this function for all computers of your network, and the WEP key needs to be the same for all IEEE802.11b stations.

Follow the steps below to set your WEP Required Mode:

(1) Select one mode from the drop down menu of WEP required Mode and set the WEP key. Four modes are available:

A. Manual 64 bits (ASCII)

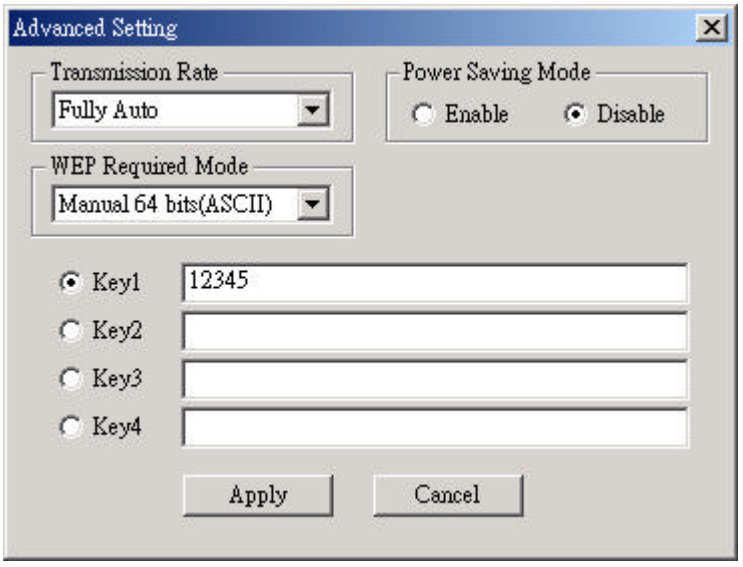
B. Manual 128 bits (ASCII)

C. Manual 64 bits

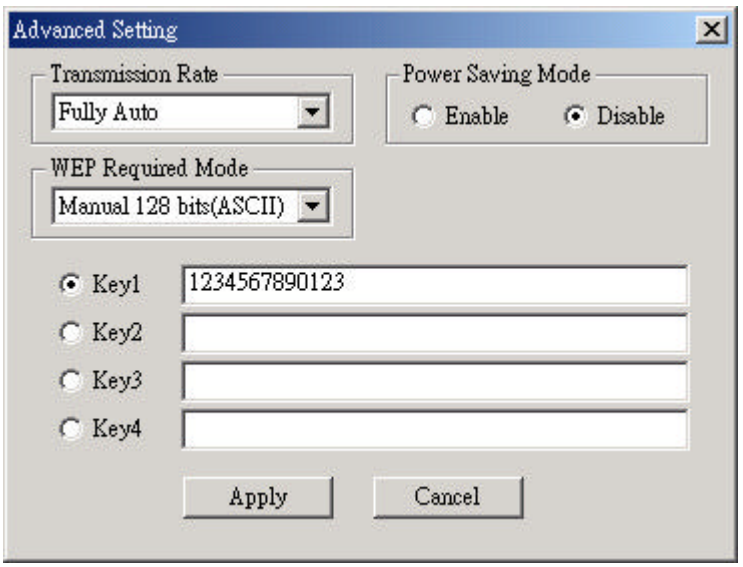
D. Manual 128 bits

(2) Press "Apply" button when finish the WEP setting.

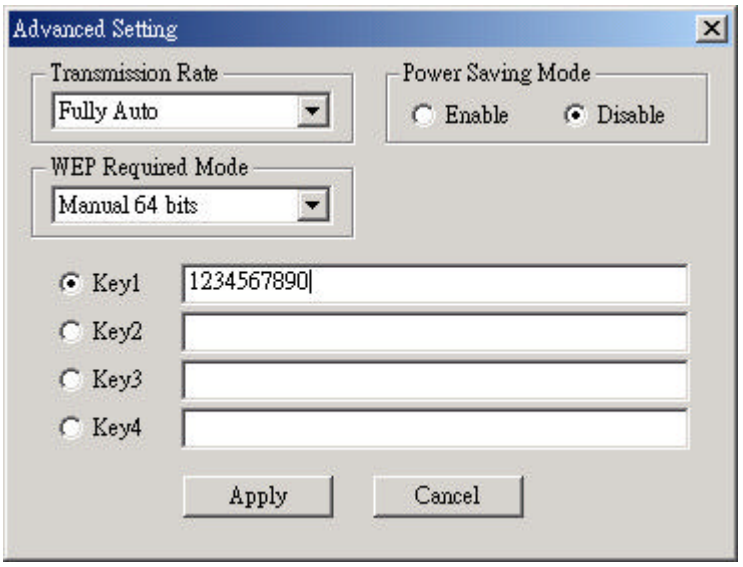
a. Select "Manual 64 bits (ASCII)" and enter a 5-digit WEP Key.



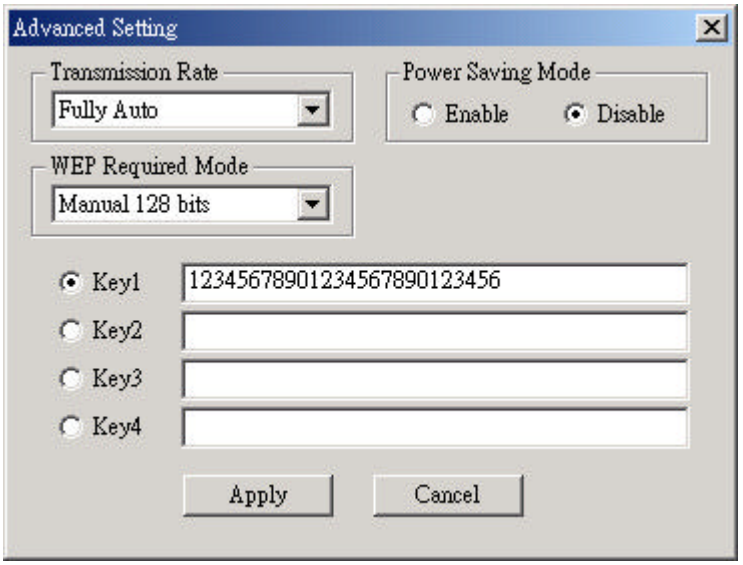
b. Select “Manual 128 bits (ASCII)” and enter a 13-digit WEP Key.



c. Select “Manual 64 bits” and enter a 10-digit WEP Key.



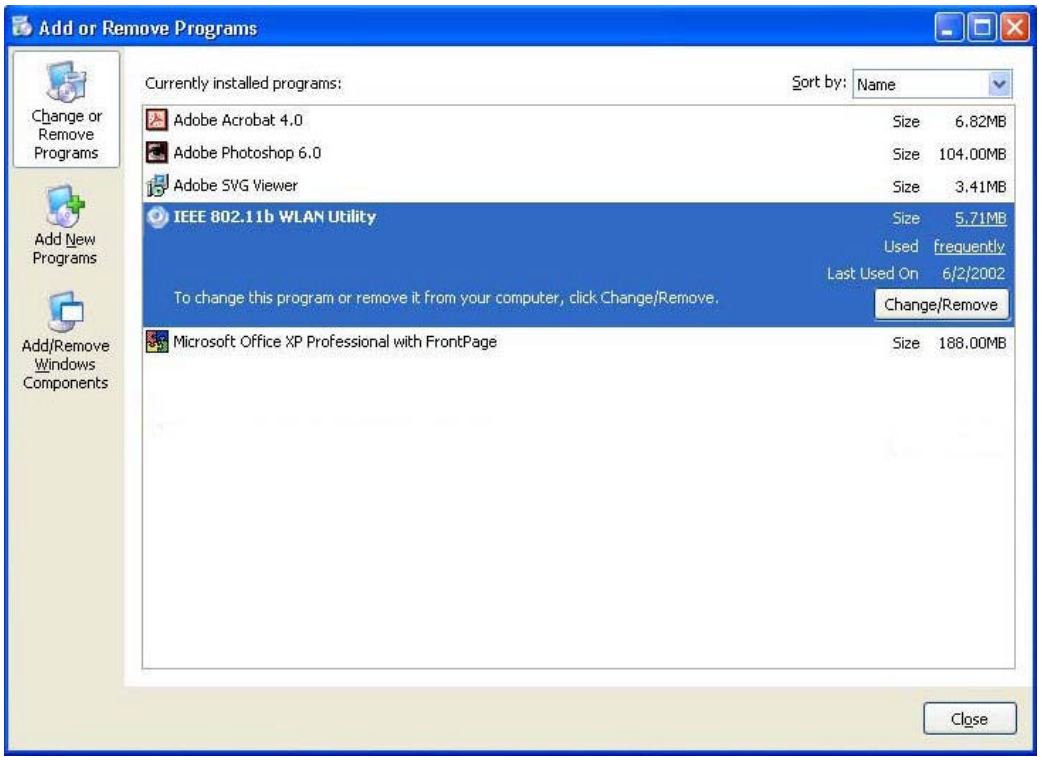
d. Select “Manual 128 bits” and enter a 26-digit WEP Key.



3.8 Uninstall the IEEE802.11b WLAN Utility / Driver

1. Make sure the **Utility is closed**.

2. **Open Control Panel,** and then **click <u>Add or Remove Programs > IEEE802.11bWLAN Utility > Remove</u>**



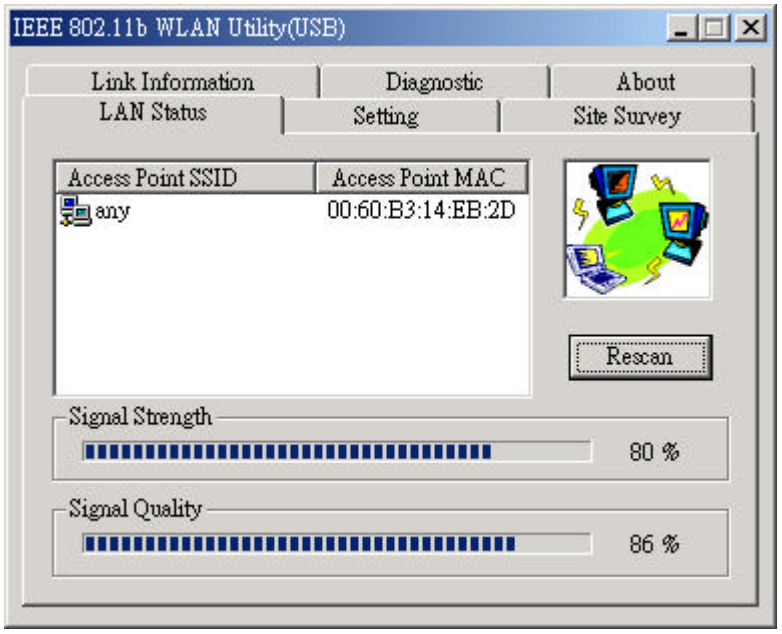
3. **Follow the uninstall wizard** to complete the uninstallation.

4. **Click "Finish"** when uninstallation is completed.

4. Using the Utility

4.1 LAN Status Tab

If you want to know the connecting status in Infrastructure Mode or 802.11 Ad Hoc Mode, choose LAN Status tab in IEEE802.11b WLAN Utility window.



1. Infrastructure Mode:

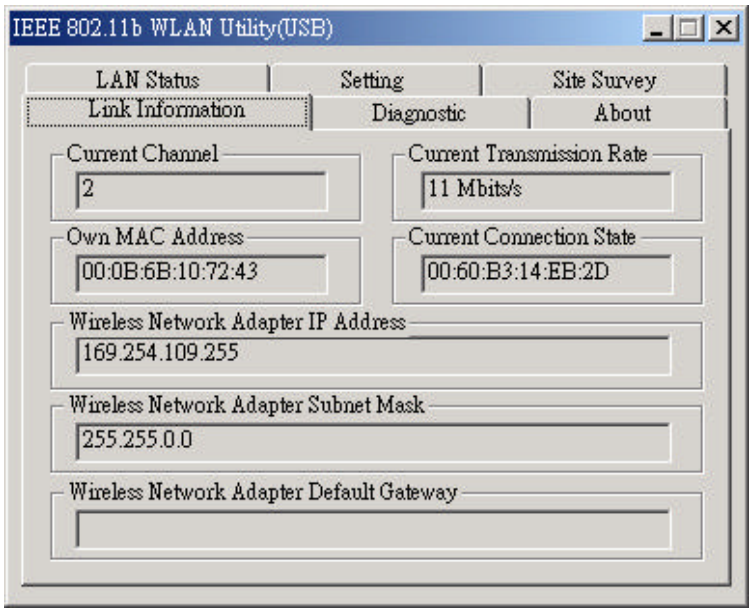
- The SSID and MAC of the access Point, which your computer connects to, will appear in the screen if you choose the Infrastructure Mode.
- Double click the Access Point SSID (under the Infrastructure Mode) to access to the Microsoft Network Neighborhood folder to find other on-line computers.
- You can see the status of the Link Quality and Signal Strength under the LAN status page.

2. 802.11 Ad Hoc Mode:

- The station Name and MAC address of your station will appear if you choose the 802.11 Ad Hoc Mode.
- Double click the right name to display the content of your computer or double click Network Neighbors to access to the Microsoft Network Neighborhood folder to find other on-line computers.
- Click “Rescan” to find current available computers in the network.

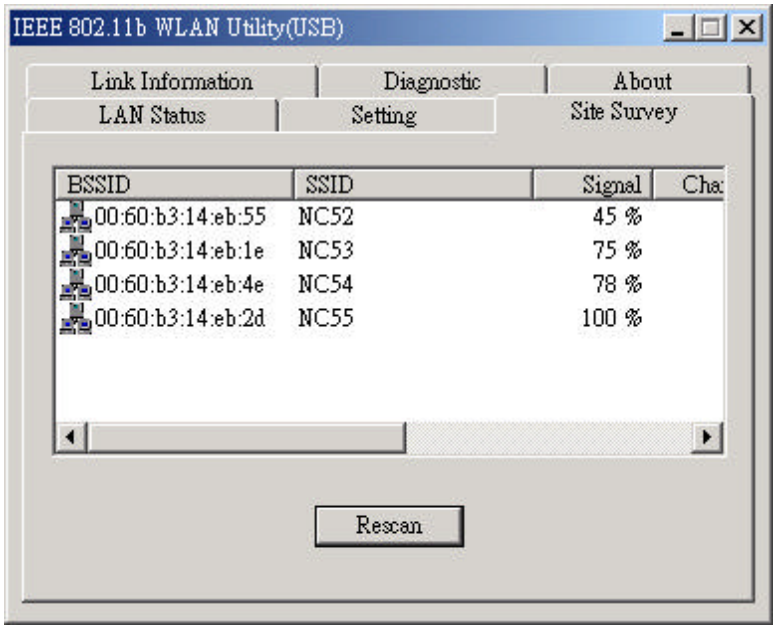
4.2 Link Information Tab

The Link Information tab shows information of Current Channel, Current Transmission Rate, Own MAC Address, Current Connection State, Wireless Network Adapter IP Address, Wireless Network Adapter Subnet Mask, and Wireless Network Adapter Default Gateway.



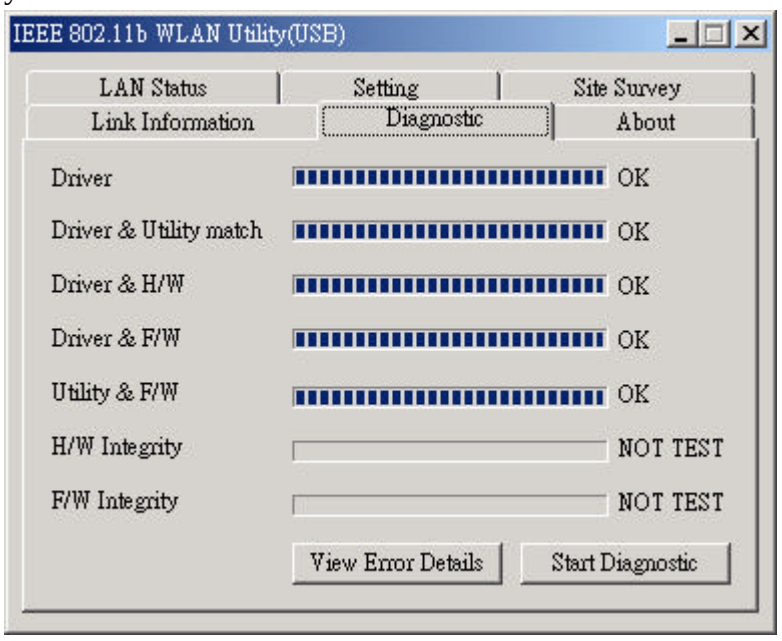
4.3 Site Survey Tab

This tab gives you all the information of each Access Point within the communication range, so that you can select the Access Point with the strongest signal for better performance.



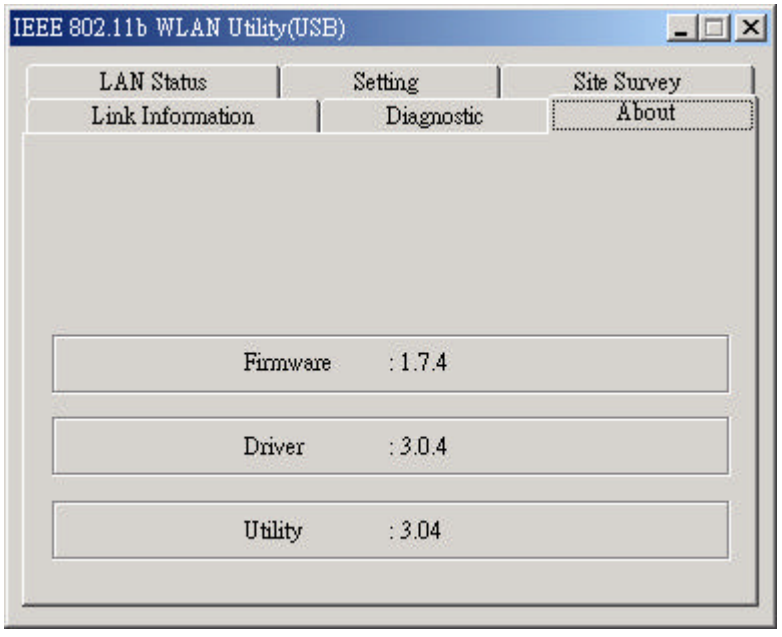
4.4 Diagnostic Tab

Click “Start Diagnostic” button to check errors in hardware, firmware, and software of your 802.11b WLAN USB Adapter with 128MB Flash Disk. In case of any errors occur, please click “View Error details” button and print it out to present to your dealer or distributor.



4.5 About Tab

This tab provides you the version information of Firmware, Driver and Utility.



5. Network Application

This section consists of the network applications of 802.11b WLAN USB Adapter with 128MB Flash Disk, including:

b. To Survey the network neighborhood
c. To Share Your Folder with Your Network Member(s)
d. To Share Your Printer with Your Network Member(s)
e. To Access the Shared Folder(s)/File(s) of Your Network Members(s)
f. To Use the Shared Printer(s) of Your Network Member(s)

In fact, the network applications of 802.11b WLAN USB Adapter with 128MB Flash Disk are the same as they are in a wired network environment. You may refer to the following 3 examples of Surveying the Network Neighborhood, File Sharing and Using the Shared Folder.

5.1 Surveying the Network Neighborhood

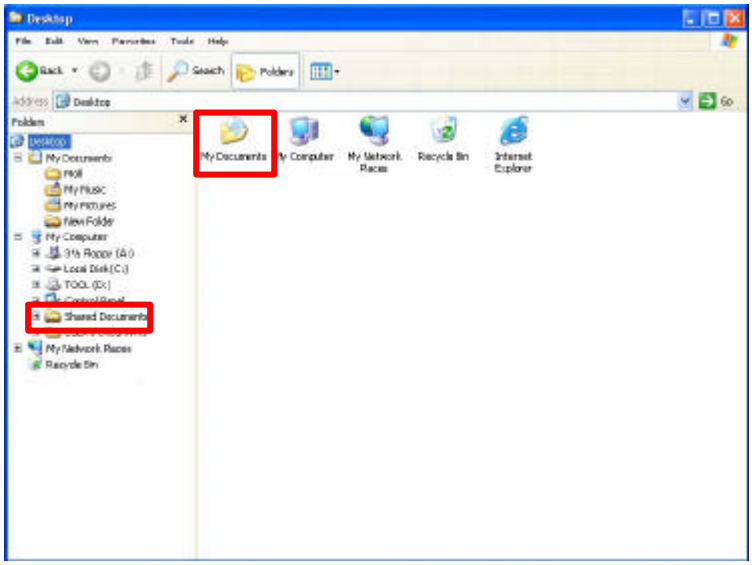
When multiple base stations are up and running in your wireless network, you can use the procedure described below to display the other computers:

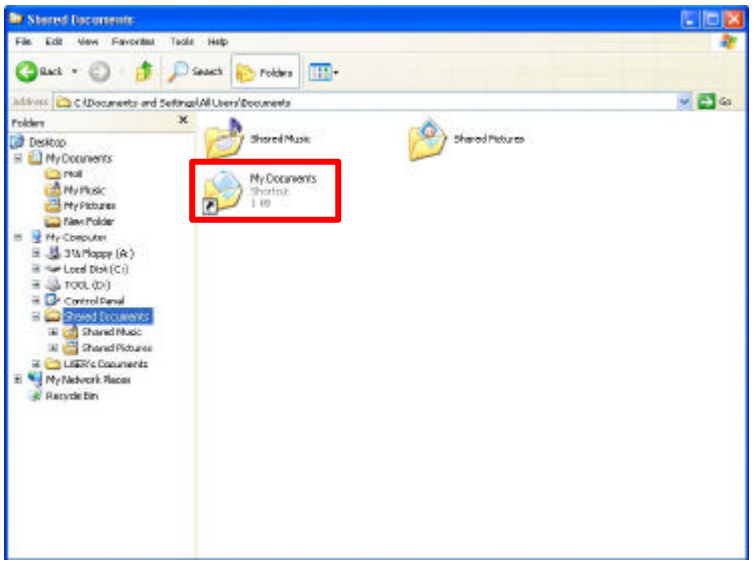
1. **Double-click My Network Places** to display all stations in your Microsoft Windows Network Group.
2. To display other workgroups in the network environment, **double-click Entire Network**.
3. If there is a **second network operating system** running in your network environment (for example a Novell NetWare network), the "Entire Network" window will also display available servers running under the second network operating system. If you click on these servers, you may be asked to **enter your user name and password** that applies to the other network operating system. If you cannot find it, verify whether the other wireless computers are:
   - Powered up and logged on to the network.
   - Configured to operate with identical Microsoft Network settings concerning:
     - Networking Protocol.
     - Wireless Network Name.

To enable the sharing of **Internet access**, you should set your IEEE802.11b WLAN mode as **"Infrastructure"** and connect to the access point.

5.2 File Sharing

802.11b WLAN USB Adapter with 128MB Flash Disk allows the sharing of files between computers that are logged onto the same wireless network. If you want to share your folder “My Documents” with other computers of the wireless network, please **highlight the folder “My Documents” and drag it to Shared Documents folder**.





Sharing files in the IEEE802.11b wireless network will be like sharing files on a wired LAN.

5.3 Using the Shared Folder

If you would like to access a shared folder stored in other stations of same network, please follow the process below:

1. Double-click the "My Network Places" icon, and then double-click the computer where the shared folder is located.
2. Double-click the folder you want to connect to.
3. Now you may open the needed file(s).

Note! *If a password is required, the Windows will prompt a password column to you. Then you need to enter the password that had been assigned to this shared folder.*

6. Product Specifications

Host Interface	➢ USB 1.1 ➢ Compatible with USB specification revision 1.1 ➢ A true "Plug & Play" connection supports hot swapping function. ➢ Get power directly from USB port ➢ No external power or batteries required
Dimension	➢ 26.0(W) * 80.2(L) * 12.0(H) mm w/o cap ➢ 26.0(W) * 87.5(L) * 14.1(H) mm w/ cap
Weight	Approx. 25 g (w/ cap)
WLAN Frequency Range	➢ 2.412 ~ 2.462 GHz ,
Modulation technique	DSSS (Direct Sequence Spread Spectrum) with BPSK (1Mbps), QPSK (2Mbps), and CCK (5.5Mbps) and 11Mbps
WLAN Channels support	US: 11 (1~11)
Power consumption	➢ Transmission mode: 205mA (typical) ➢ Receives mode: 190mA (typical) ➢ Idle mode: 173mA (typical) ➢ Power saving idle mode: 30mA (typical)
WLAN Operation range	➢ Indoor: 35~100 meter up @ 11 Mbps ➢ Outdoor: 300 meter up @ 11 Mbps
RF Receiver Sensitivity	@PER<0.08 ➢ 11Mbps < -82dBm ➢ 5.5Mbps < -86dBm ➢ 2Mbps < -88dBm ➢ 1Mbps < -90dBm
Operation system	➢ No driver CD required for Windows 2000 / ME / XP ➢ Support Windows 98 / 98SE with CD driver
Wireless Security	➢ 64-bit, 128-bit WEP encryption
WLAN Transmission data rate	➢ 11Mbps, 5.5Mbps, 2Mbps, 1Mbps, auto-rate
Operation temperature range	➢ 0oC ~ 55oC
Storage temperature range	➢ -20oC ~ 65oC
WLAN LED	➢ Blue indicator for WLAN

	- Off: Power Off - Blinking: Power On and search Access Point - On : Connect with AP or AdHoc connection ➢ Green indicator for Storage - Off : Power off / Standby / Power Saving - Blinking : Read/Write process
Antenna	➢ Two Embedded Diversity Ceramic Antenna
Memory Size	➢ Capacity 128MB
Memory Type	➢ NAND Flash