Wireless LAN USB Stick

AWU2000b

User Manual

AIN

15.19 (FCC DoC Labeling)

AIN AWU2000b Wireless LAN USB Stick

Tested to Comply
With FCC Standard

FOR HOME OR OFFICE USE

15.21

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

Caution Statement of the FCC Radio Frequency Exposure

This Wireless LAN radio device has been evaluated under FCC Bulletin OET 65C and found compliant to the requirements as set forth in CFR 47 Sections 2.1091, 2.1093, and 15.247(b)(4) addressing RF Exposure from radio frequency devices. The radiation output power of this Wireless LAN device is far below the FCC radio frequency exposure limits. Nevertheless, this device shall be used in such a manner that the potential for human contact during normal operation—as a mobile or portable device but use in a body-worn way is strictly prohibit.

Prohibition of co-location

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

15.105 Federal Communications Commission (FCC) Requirements, Part 15

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 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.

Regulatory information / Disclaimers

Installation and use of this Wireless LAN device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications (including the antennas) made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment. The manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device, or the substitution of the connecting cables and equipment other than manufacturer specified. It is the responsibility of the user to correct any interference caused by such unauthorized modification, substitution or attachment. Manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines.

Content

1. Product Introduction……..2

2. AWU2000b Installation……..4

3. Software Installation……...6

4. Ad-Hoc (Peer-to-Peer) Mode Setup……..11

Application 1: Access the Internet without an AP

Application 2: Data sharing between computers

5. Technical Support……..20

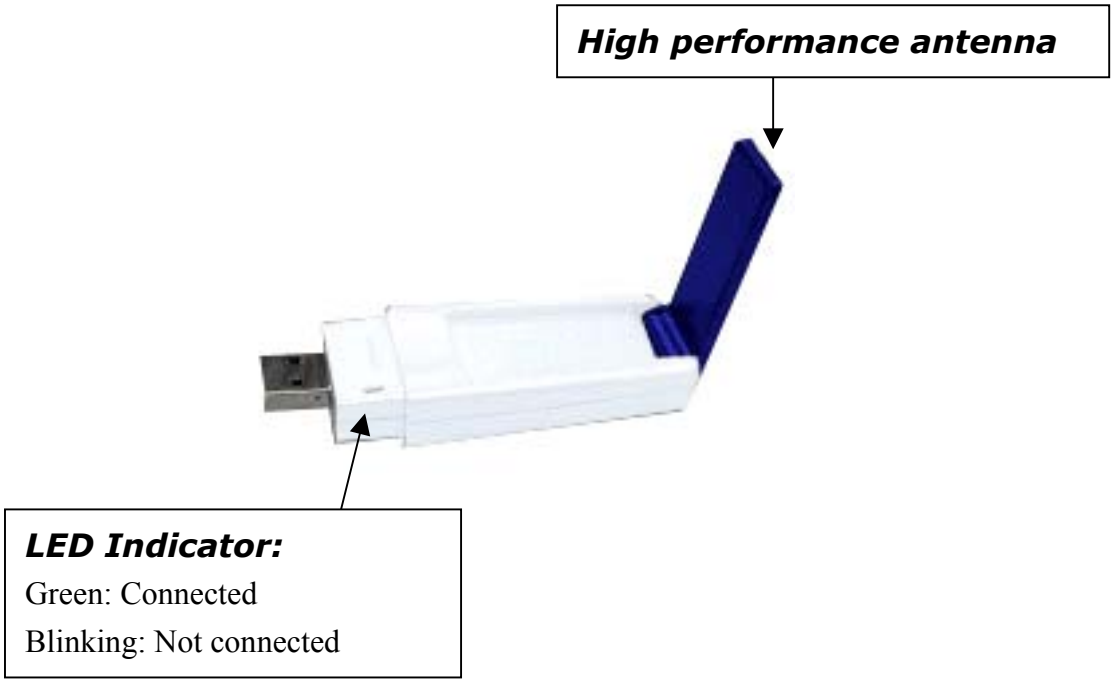
1. Product Introduction

Thank you for using AIN's WLAN product. This installation guide will help you install AWU2000b and connect to the Internet quick & easy.

■ Package Contents

1. AWU2000b WLAN USB STICK
2. Quick Installation Guide
3. Manual & Driver CD Disc
4. USB cable (Optional)

■ Form Factor



■ System Requirements

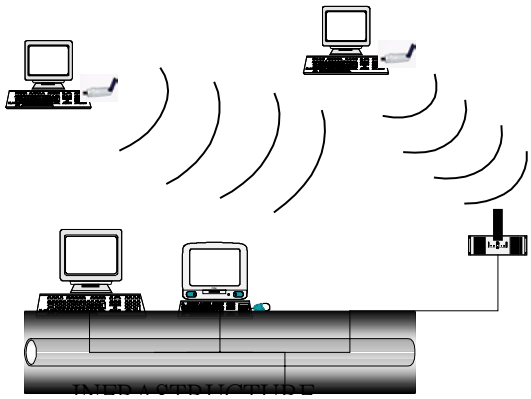
1. Desktop/ Laptop with USB port and CD-ROM driver
2. Operating System: Linux/ Mac OS X/ Windows 98 SE/ME/2000/XP

Applied Environments

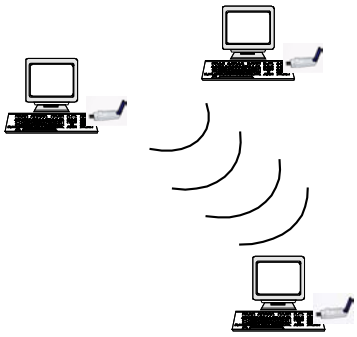
There are two application modes for this WLAN card, the “Ad-Hoc mode” and the “Infrastructure mode”. (For further explain, please refer to the “WLAN Application Modes” below) Different modes require different settings. Please check the environment first.

Infrastructure mode: Via “Access Point” (AP) to connect to the Internet. This mode further gives wireless access to Internet or data sharing under a previously wired environment.

Ad-Hoc mode: Connecting to other computer with WLAN card. This mode does not need AP to connect to each other.



Infrastructure mode



Ad-Hoc mode

WLAN Application Modes

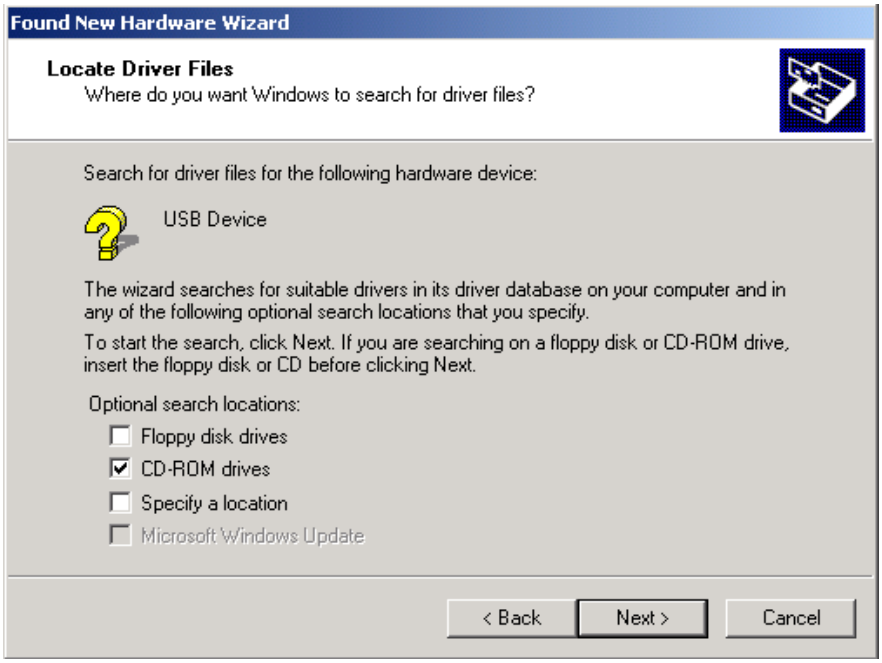
Ad-Hoc Mode	Ad-Hoc mode is a Peer-to-Peer mode. Without an AP, computers can also connect to each other by AWU2000b USB stick. With this mode, computers are able to share data or connect to the Internet if one of them is already connected to.
Infrastructure Mode	Infrastructure mode including an AP, unlike Ad-Hoc mode, enabling users to best utilizes the frequency bandwidth of the AP. This mode enables users to integrate wired and wireless infrastructures. Through APs, wireless users are able to access wired resources, for example: Internet, database, and printers.
Advantages	Comparing to Ad-Hoc mode, Infrastructure mode has the following advantages: ✓ **Longer distance:** Through AP, the wireless access distance is longer. ✓ **Roaming:** The wireless devices can move within the AP support area. ✓ **Integration of wired and wireless environment.**

2. AWU2000b Installation

Note: The screens showed below are from Windows 2000. For other Windows system, the steps are the same, but the screens shown will be a little different.

1. After plugging AWU2000b, the USB stick, into your PC, it will automatically find and alert a New USB Device. Click "Next" to continue.
2. You'll see the following screen. Please choose the default item (with "Recommended") and click "Next".

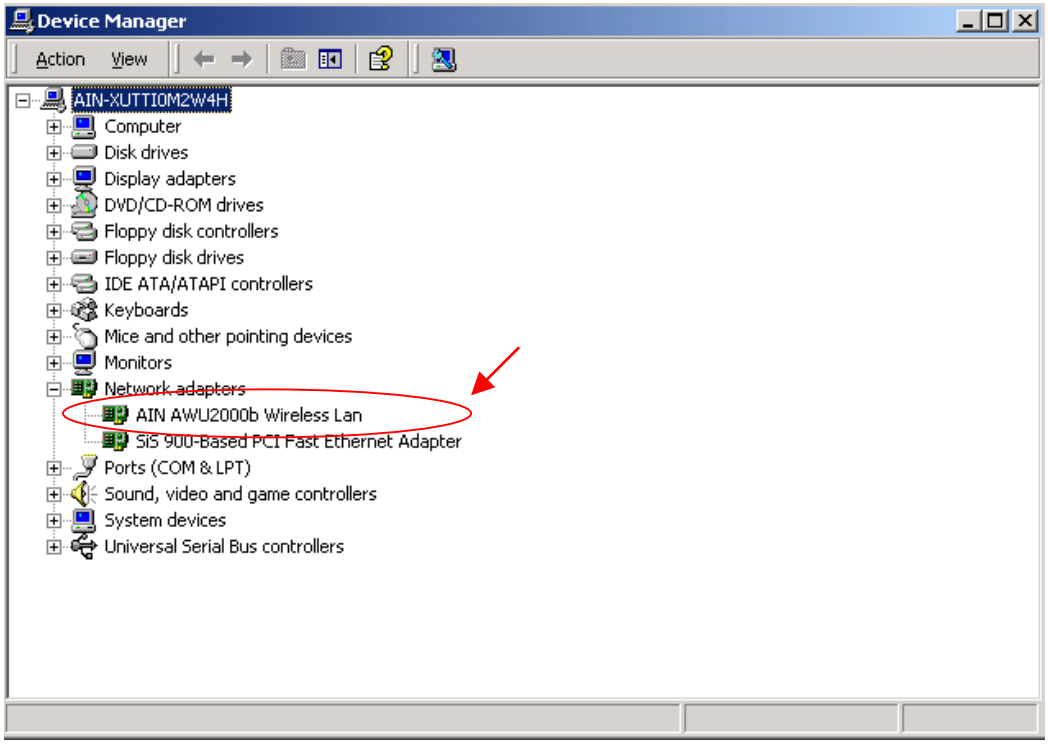
3. Please choose "CD ROM", and insert the "Manual & Driver CD-ROM", then click "Next".



3. Your PC will recognize the device of “AIN AWU2000b WIRELESS LAN”, and click “Next” to install driver.
4. Finally, click the “Finish” to leave this dialogue window.
5. After installation, please check whether the installation is success.

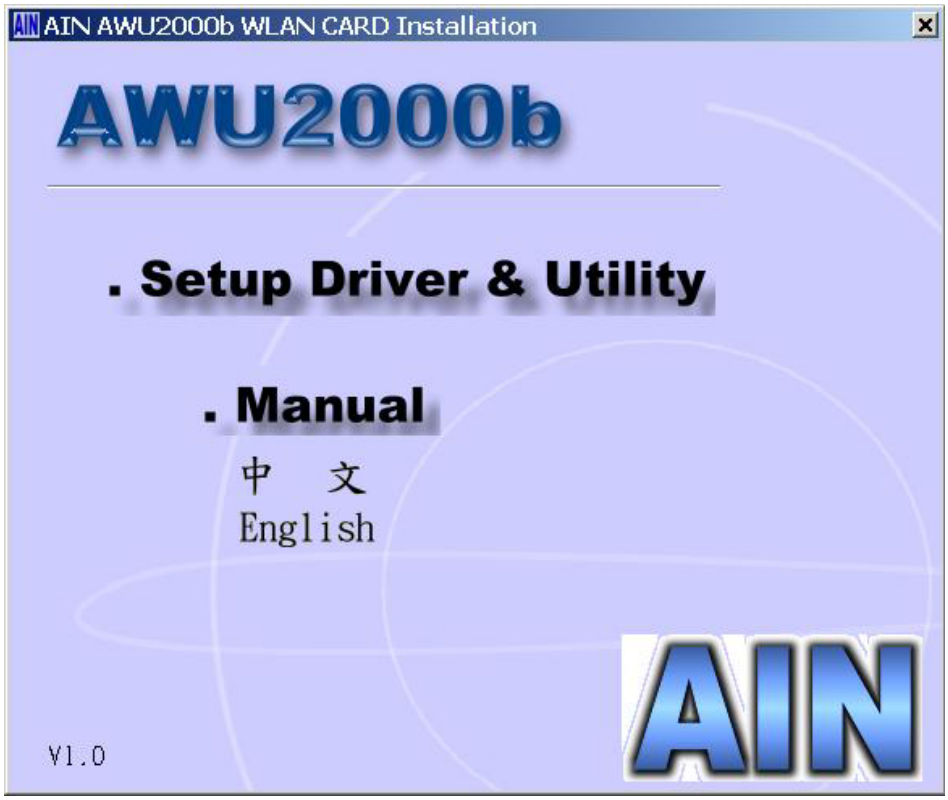
➔Start→**Setting**→Control Panel

Double click “System”→click “Hardware”→Device manager→Network Adapters. If the install is success, it should include “**AIN AWU2000b Wireless LAN” item.**



3. Software Installation

1. Insert the "Manual & Driver CD-ROM" into the CD-ROM driver of your PC, and you'll see the software installation window as shown below.



2. Click "Setup Driver & Utility", and choose the "default" item through the installation process.

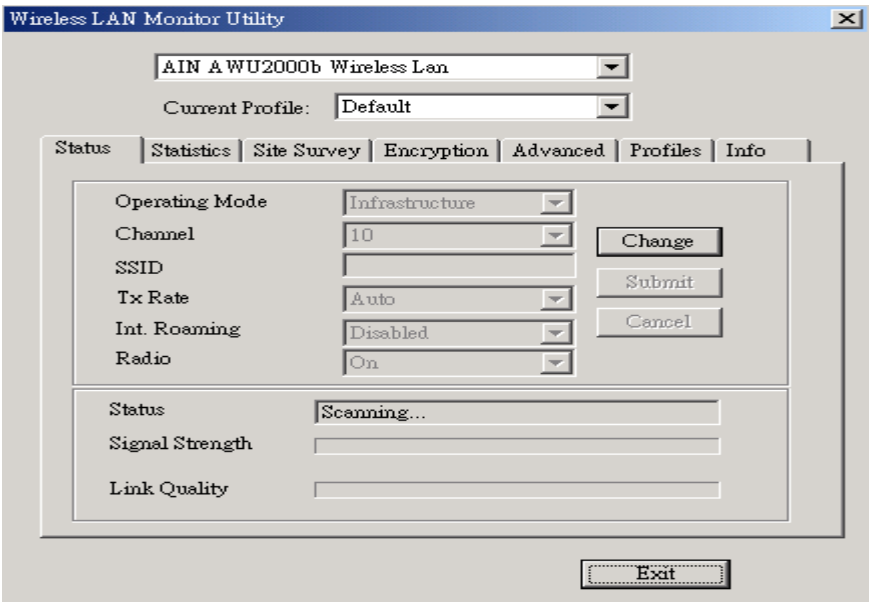
3. After successful installation, you'll see the new icon appear in the Icon Tray.

4. The software will automatically search for available APs for connecting to the Internet.

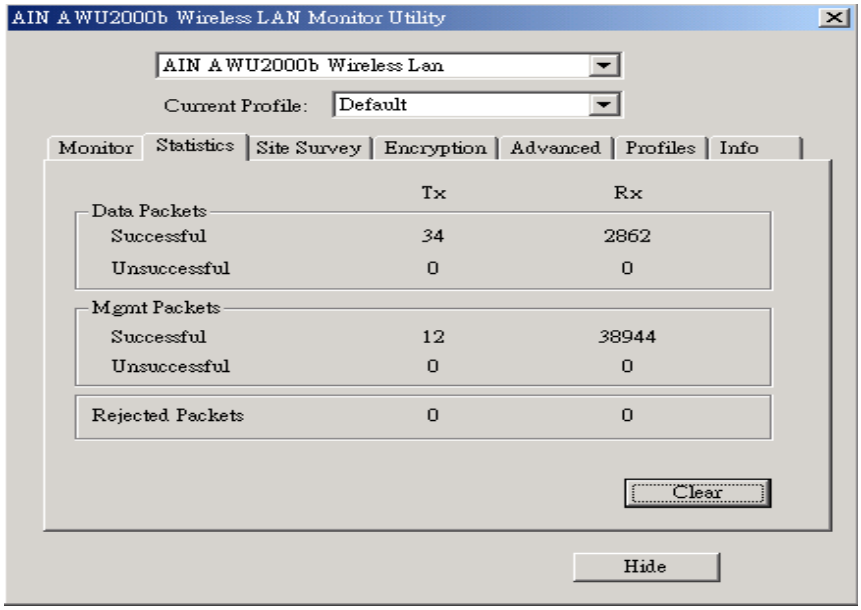
5. If the installation fell, the Icon appeared is in red color.

Software Utility

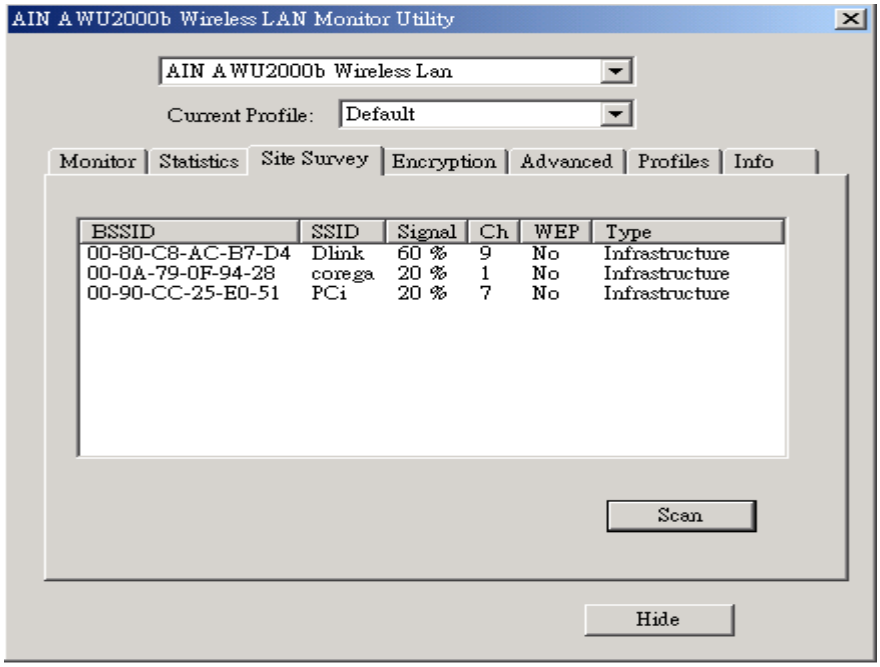
1. Click the icon and the software utility window shows up.
2. Status window allows you to change Operation Mode, Channel, SSID, Tx Rate, Int Romaing, and Radio. It also shows the connecting signal and quality for you to adjust related infrastructures and configurations.



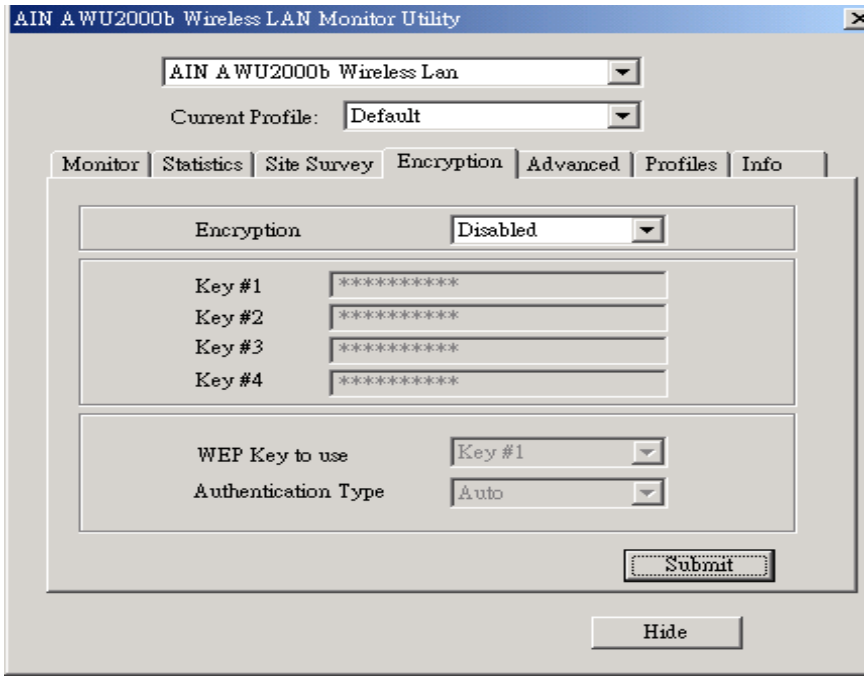
3. Statistics window: It shows the real time transmitting and receiving status.



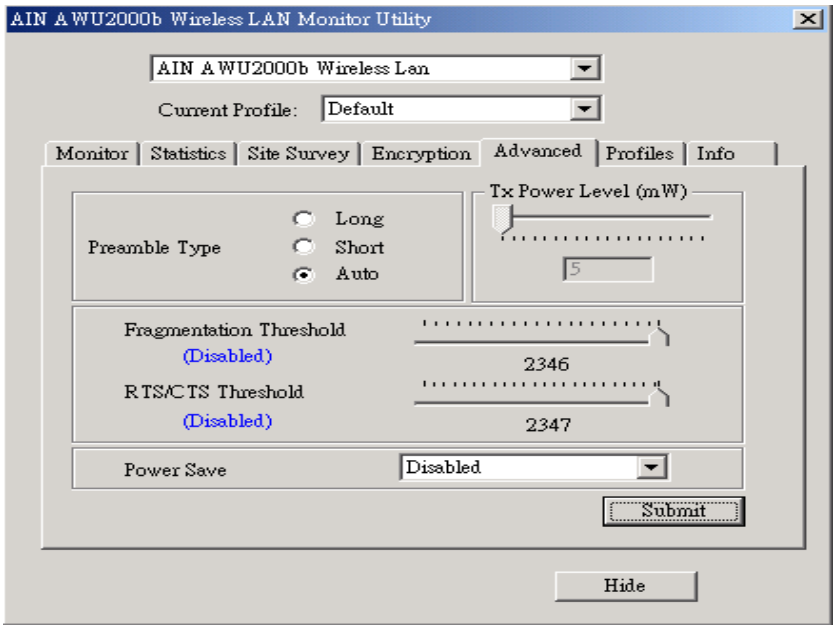
4. Site Survey window: Click "**Scan**" to search all available WLAN devices and their status in current environment. Double click the device you want to connect.



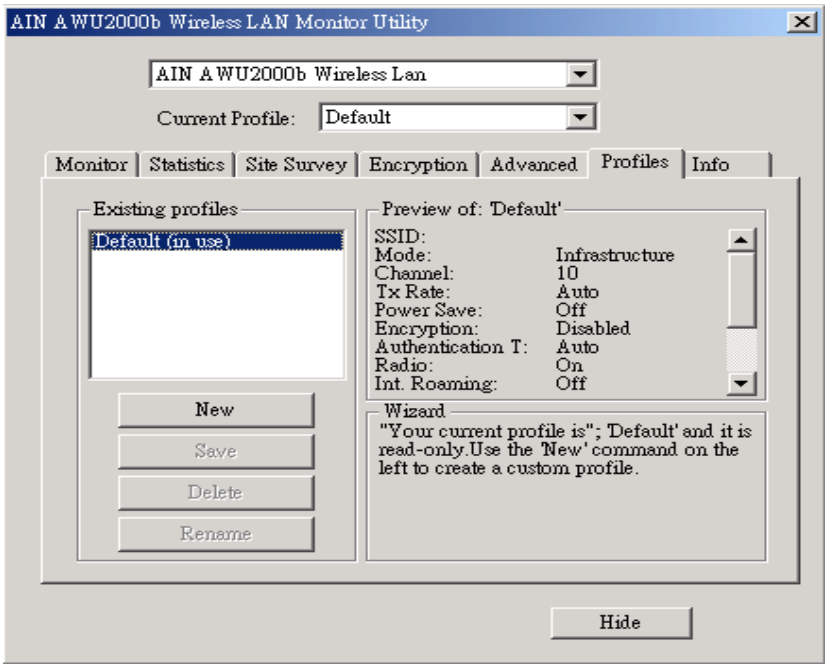
5. Encryption window: AWU2000b is able to provide 64/128Bit encryption.



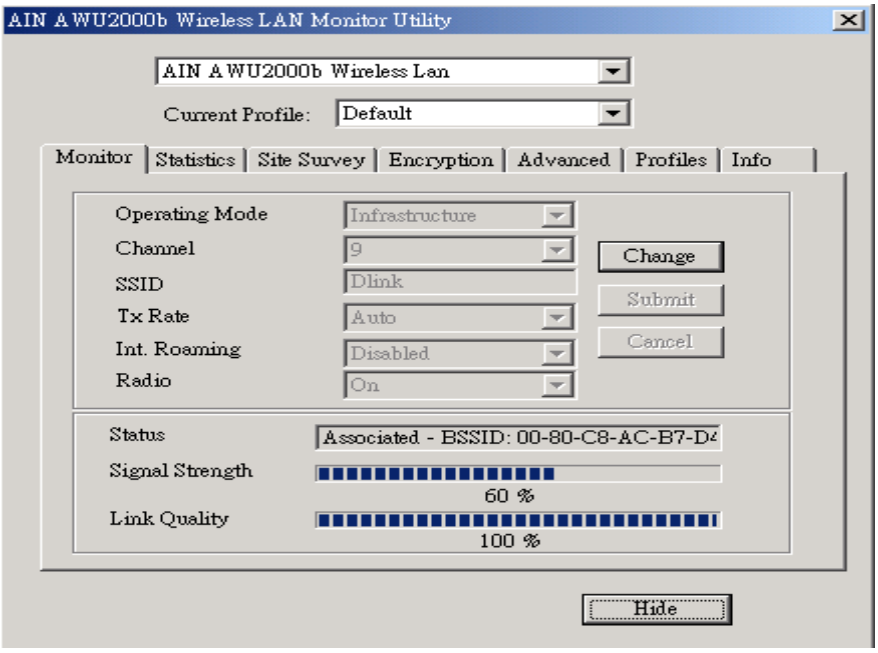
6. Advanced window: It provides you to adjust PREAMBLE, Fragmentation Threshold, RTS/CTS Threshold, and Power Save function.



7. Profiles window: It provides customers to change settings and save them in the configuration file.



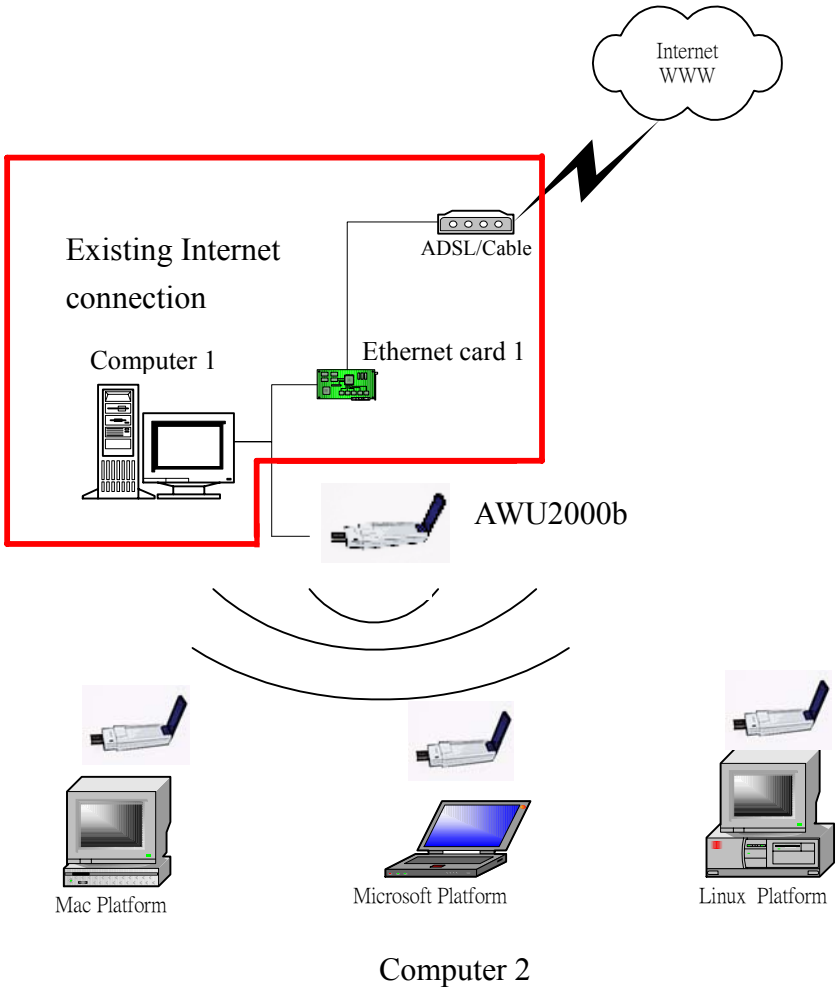
8. Info window: It shows the latest software version and MAC address.



4. Ad-Hoc (Peer to Peer) Mode Setup

❑ Application 1：Access the Internet without an AP

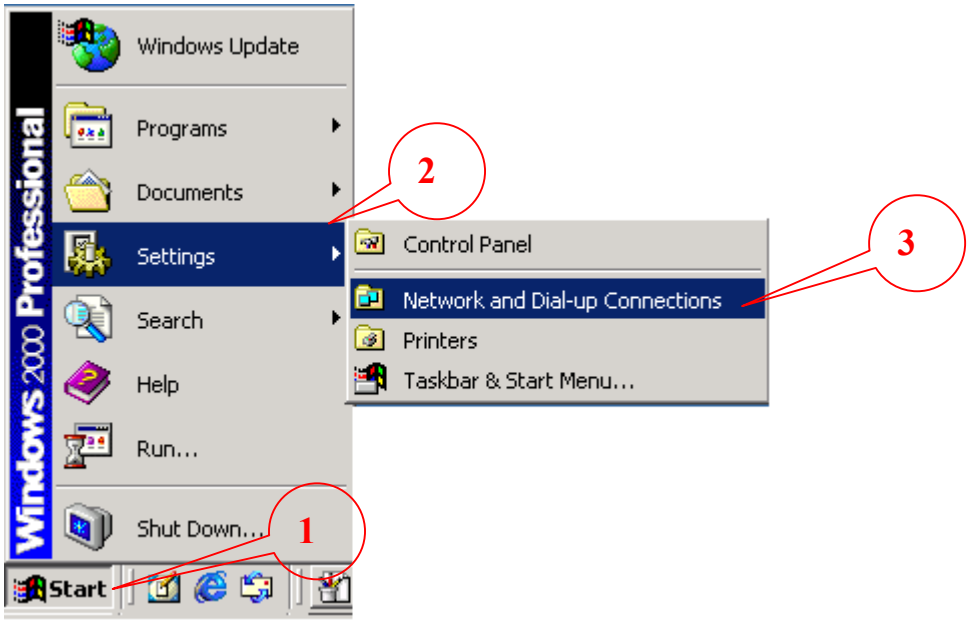
With existing Internet connection, another computer can access the Internet by using Peer to Peer mode of AWU2000b.



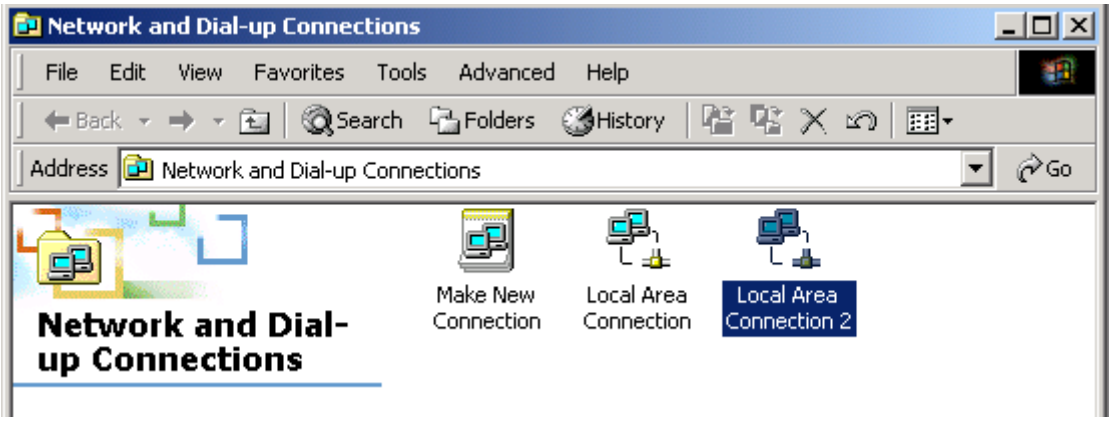
Setup Steps

1. Check the current environment and install WLAN cards
   A. Check whether “computer 1” connects to the Internet.
   B. Install AWU2000b in “computer 1”, and “computer 2”.

2. “Computer 1” Setup
   A. Click “Start” (1) -> Settings (2) -> Click Network and Dial-up Connections (3)

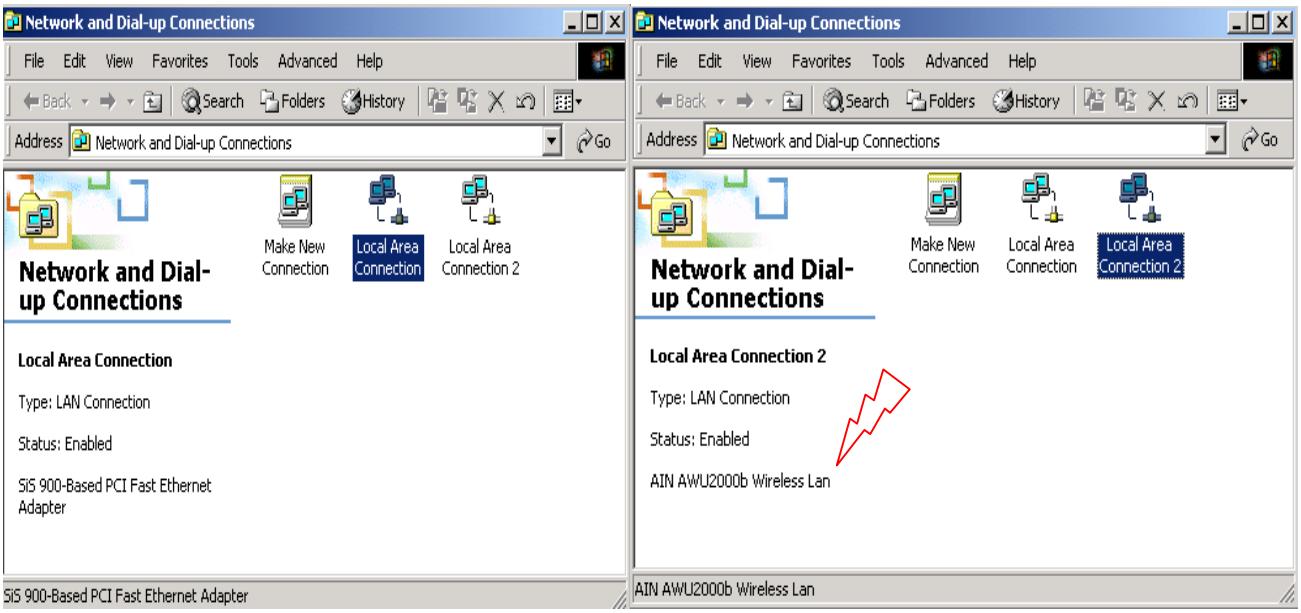


   B. Under Network and Dial-up Connections, there are two Connection icons; one is the original Ethernet card, another is the new AWU2000b WLAN card.



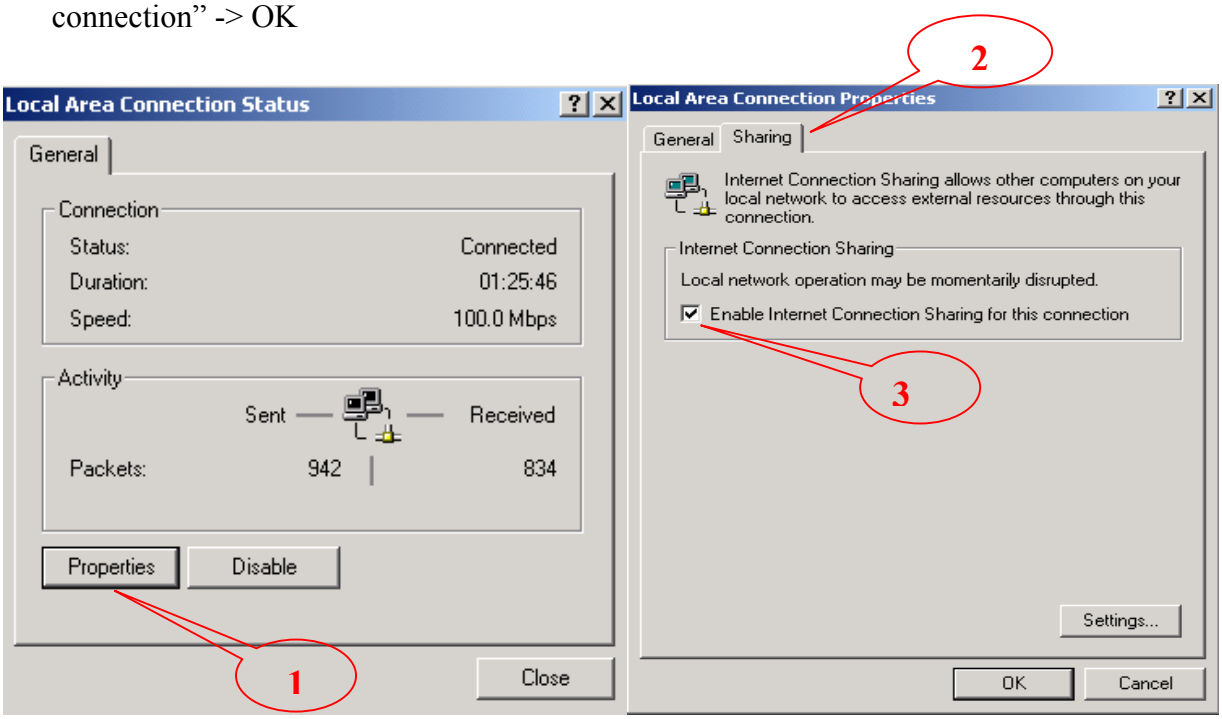
C. **Check the status of the Connection icon**. Click the Connection icon, and you can see the device name and status under Network Connections. The name of AWU2000b is **"AIN AWU2000b Wireless LAN"**, and another one is the original connected device, "Ethernet card 1".

PS: (If you have more than 2 connecting devices, please un-plug the Ethernet line and the disappear Connection icon is the original connected device.)



D. Double click the original connected device, and enter into the following window.

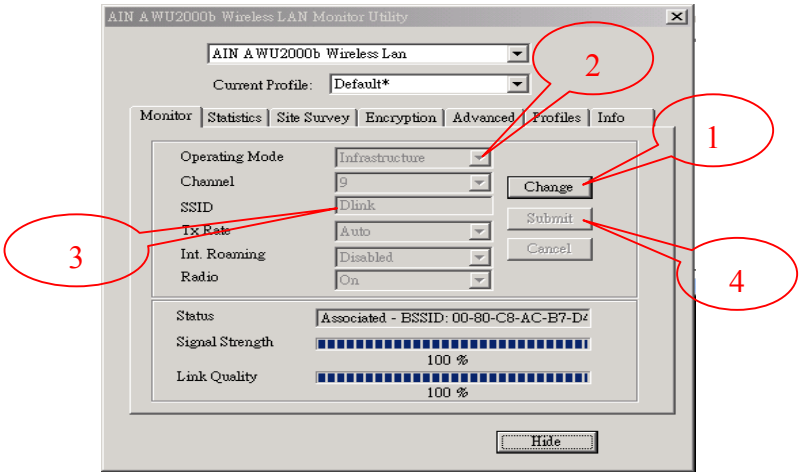
Click Properties (1) -> Sharing (2) -> Check "Enable Internet Connection Sharing for this connection" -> OK



E. After finishing, the following window shows up. Please choose “Yes”, and the computer will set your IP address in 192.168.0.1.

F. Double click the AIN icon in Icon Tray, and enter into the “Software and Utility window”.

Software and Utility window:



G. Change to the “Ad-Hoc” mode

I. Under “Monitor window”, click **“Change”** (1) to modify the Operation Mode to “Ad-hoc” mode (2).

II. Change the SSID name to “AIN” (3), and then click “Submit” (4) to save this change. After setting, this WLAN card could be the Gateway for other WLAN devices.

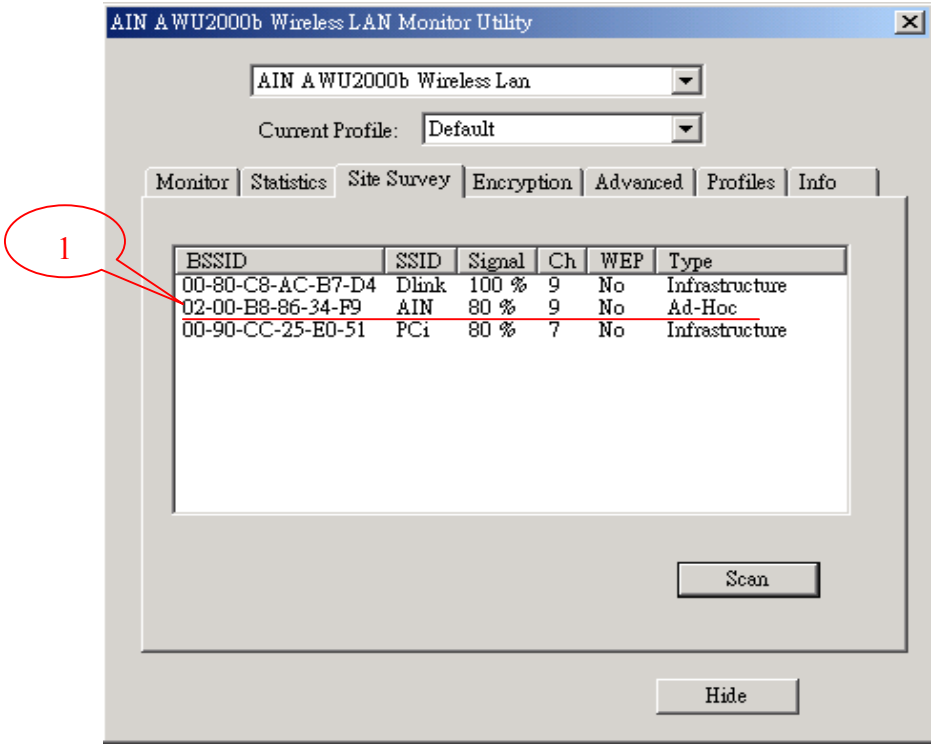
III. Reset your computer.

3. “Computer 2” Setup

A. Double click the AIN icon in the Icon tray.

B. Under Site survey window, you will see all available connecting instruments. Double click the item (1) with SSID named “AIN”.

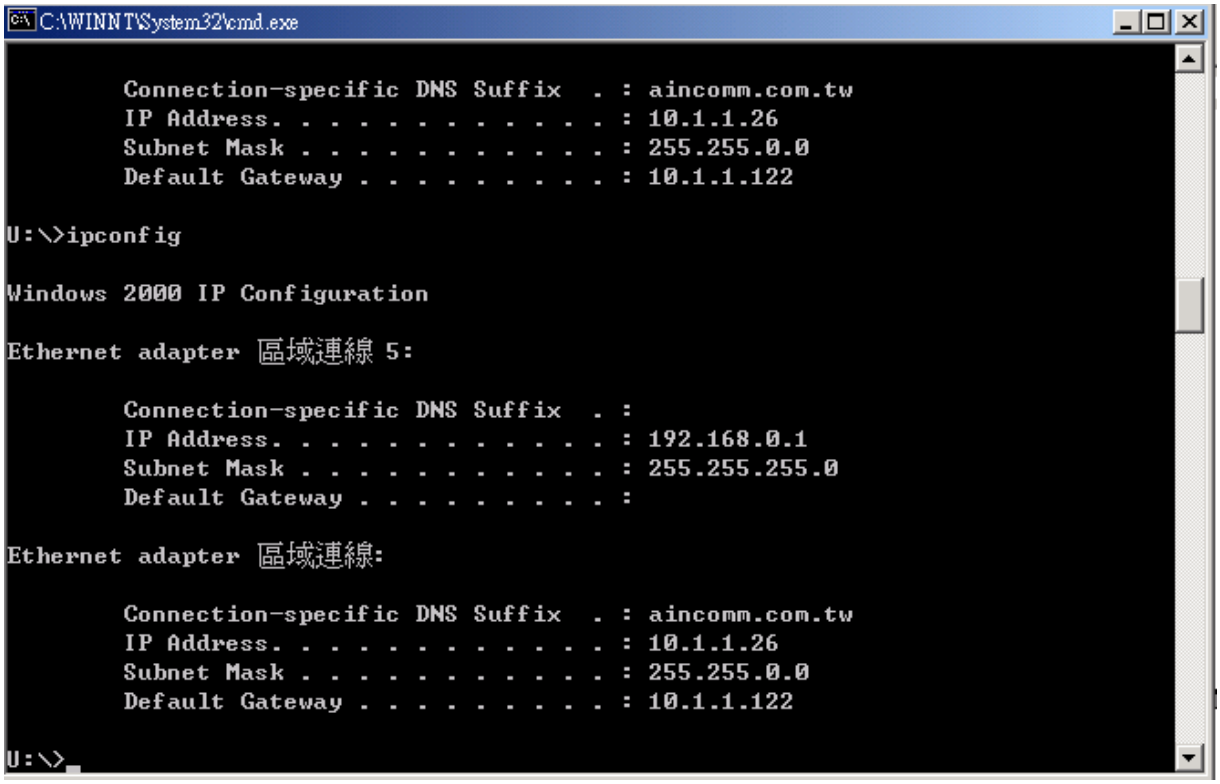
C. Rest computer 2.



Check whether the Setup is success

Computer 1:

1. Enter into DOS MODE, and type “IPCONFIG”.
   (Start -> Run -> Type cmd or command) (in Windows 98/me OS System)



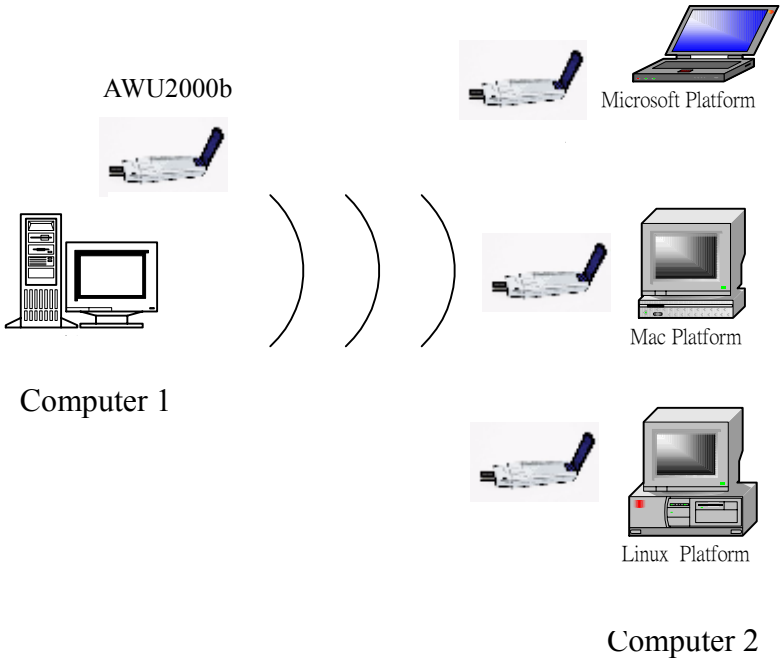
2. Check whether the IP address is 192.168.0.1, and the Subnet Mask is 255.255.255.0 (as shown above)

Computer 2:

1. IP address does not need to setup. The DEFAULT GATEWAY is 192.168.0.1.
2. Please follow the steps of “computer 1” to check whether the IP address is 192.168.0.1

❑ Application：Data sharing between computers

When user does not want to have Ethernet line or want to share resources (including data and printers), using WLAN is the lowest cost solution!



Setup Steps:

1. Check computer 1 & computer 2 already install AWU2000b。
2. In computer 1:
   - ✓ Double click the AIN icon in Icon Tray, and enter into the "Software and Utility window".
   - ✓ Under "Monitor window", click **"Change"** to modify the Operation Mode to "Ad-hoc" mode.
   - ✓ Change the SSID name to "AIN", and then click "Submit" to save this change. After setting, this WLAN card could be the Gateway for other WLAN devices. Please reset the computer.
3. In computer 2:
   - ✓ Double click the AIN icon in the Icon tray.
   - ✓ Under Site survey window, you will see all available connecting instruments. Double click the item with SSID named "AIN".
   - ✓ Rest computer 2.
4. After setting, computers are able to share data and resources with each other.
   (Data sharing method please refer to related OS system operating manual)

PS: If you log in a Domain in computer 1, please DO NOT long in that Domain when using computer 2. However, if you need to use the resources in "computer 1" from "computer 2", you need to know the password for log in that Domain in "computer 1".

Appendix

1. Operation Mode:
   AWU2000b has two modes, '**Infrastructure**' and '**Ad-Hoc**'. The default setting is "Infrastructure". (Please refer to the Product Introduction)

2. Channel:
   The channel setting should follow the regulation of the local government. For '**Infrastructure**' mode, the channel does not need to be set. It will automatically change to the same channel as AP's. In 'Ad-Hoc' mode, users can change the channel to match the connected computer.

3. SSID:
   When STA (WLAN card) is in Ad-Hoc mode, all connecting STA should have the same SSID. When STA is in Infrastructure mode, the SSID will change to the same as AP's SSID.
   Important: Capital and non-capital are different words in SSID setting.

4. Tx Rate:
   It determine STA's transmitting rate. There are 5 rated to choose, 1, 2, 5.5, 11Mbps, and Auto. The default setting is "Auto".

5. Int. Roaming: Its default setting is '**Disable**', and does not need to be adjusted.

6. Radio:
   The default setting is '**ON**'. It means to stop the STA's RF function. If your WLAN card is embedded, you can stop its function by turning the Radio "ON".

7. Encryption:
   AWU2000b provides 64/128bits encryption. Choose "disable", if you do not need this function.
   When using Encryption, there are two configurations to setting:
   - Choose from encryption key 1~4 to encrypt.
     - ✓ For 64bits encryption:
       Using letters & numbers: 5 digits ("a-z","A-Z","0-9")
       Hexadecimal: 10 digits ("a-f","A-F","0-9")
     - ✓ For 128bits encryption:
       Using letters & numbers: 13 digits ("a-z","A-Z","0-9")
       Hexadecimal: 26 digits ("a-f","A-F","0-9")
   - Choose the Authentication type from open system, share key, and auto type. The default setting is '**auto**'.

8. PREAMBLE:

   This function determines the PREAMBLE TYPE that physical layer's PLCP will use. There are three modes to choose: LONG, SHORT, and AUTO. The default setting is AUTO, and the system will automatically choose the optimized mode.

9. Tx Power Level (mW): Does not open to change.

10. Fragmentation Threshold:

    This configuration determines whether needs to fragment the Frame during transmit. When fragment, if the transmit fell, computer only resent the fell frame instead of the whole file again. When the frequency band used is not clear, i.e. The S/N ratio is low, transmit is easier to fell. Under this situation, fragmentation is a good way to increase efficiency.

11. RTS/CTS:

    When frame smaller than the RTS Threshold value, the STA will automatically transmit the frame if the channel is available. If the channel is used, STA will follow the 802.11b regulation that would ask the receiving device whether to send the frame. This will take more time for devices to check with each other, but it also prevents the loss of frames.

12. Power Save:

    Determine whether to use power saving mode. The default setting is '**Disable**'.

5. Technical support

The software version of AWU2000b is under the info window of "software and utility". Users can get the latest software version from the reseller or AIN's website at http://www.aincomm.com.tw. If you have any further problem, please contact with us.

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