AW-NB101

IEEE 802.11b/g/n

Combo slim module

User’s Manual

I. Introduction

i. Overview

Azurewave AW-NB101 combo wireless slim module is a highly integrated wireless local area network (WLAN) solution to let users enjoy the digital content through the latest wireless technology without using extra cables and cords. It provides easy-to-use, high performance, cost effective and low power solution. Moreover, AW-NB101 enables compatible high-speed wireless connectivity within home, business and public access wireless networks.

Compliant with the IEEE 802.11b/g/n standard, AW-NB101 uses Direct Sequence Spread Spectrum (DSSS), Orthogonal Frequency Division Multiplexing (OFDM), BPSK, QPSK, CCK and QAM baseband modulation technologies. When you are using AW-NB101, a high level of integration and full implementation of the power management functions specified in the IEEE 802.11 standard can minimize system power requirements.

The AW-NB101 802.11b/g/n Wireless Combo Slim Module provides up to 128-bit level of WEP security to your wireless data transfers. It is able to run in the operating systems of Windows XP/Vista in either Infrastructure mode or Ad-Hoc mode. Comparing to previous wireless technology, AW-NB101 got great improvements on speed and range. The wireless range increased up to two times wider and coverage area reduced the situation of dead spots. "Multiple In, Multiple Out" (MIMO) technology uses signal reflections to increase the range and maintain wireless connections up to five times farther; therefore, with MIMO, AW-NB101 is able to double the data rate up to 300Mbps.

ii. Features

- **slim module**
- **Compliant with IEEE802.11 b/g/n standard**
- **2 Antenna to support 1(Transmit) × 1 (Receive) technology and Bluetooth**
- **Antenna WLAN RX diversity**
- **High speed wireless connection up to 150 Mbps**
- **Low power consumption and high performance**
- **Enhanced wireless security**
- **Fully qualified Bluetooth 4.0 and BT 3.0HS**
- **Enhanced Data Rate(EDR) compliant for both 2Mbps and 3Mbps supported**
- **Fully speed operation with Piconet and Scatternet support**

iii. Product Review

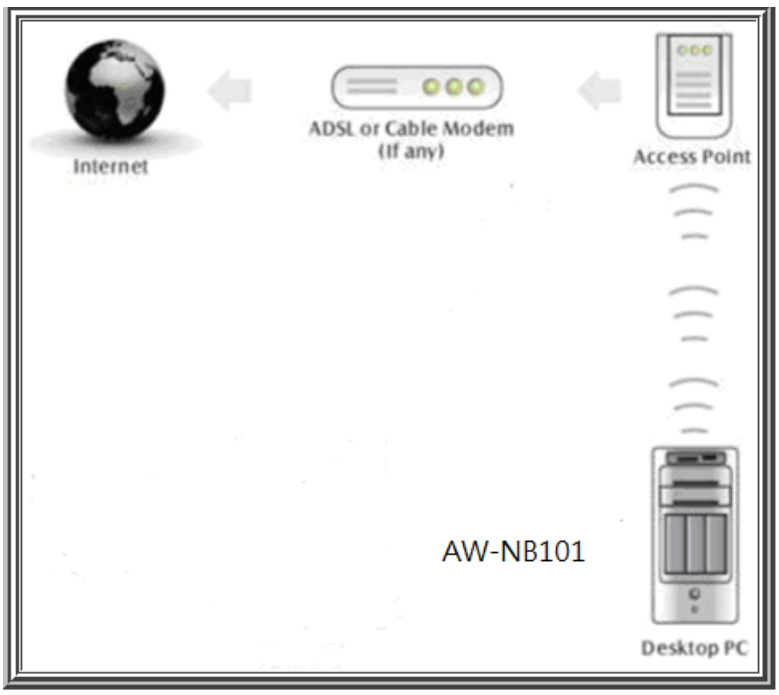
When the USB wireless module is transmitting data through connection, LED indicator will blink.

1. Connection Mode

◎Infrastructure Mode

Infrastructure mode needs an access point to establish the network, which can provide wireless accesses within valid range for users to communicate with others or transmit data with a wired network. There are several benefits of Infrastructure networking:

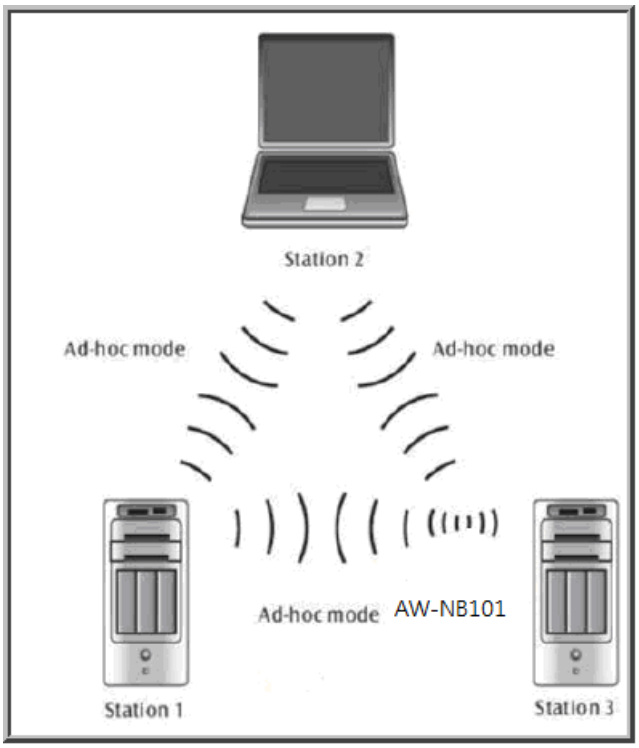
√ Roaming: a wireless LAN enabled computer can physically move from the operating range of one access point to the other without losing connection. There is a quick association made between new access point and wireless device as the computer traverses from the coverage of one access point to another.
√ Range Extension: each wireless LAN enabled computer within the range of access point can communicate with other wireless LAN enabled computers within the effective range from the access point.
√ Wired to wireless LAN connection: the access point will establish a bridge between wireless LAN and other wired counterparts.



Infrastructure Mode

◎Ad-hoc Mode

The difference between Ad-hoc mode and Infrastructure mode is that Ad-hoc mode does not need the access point or router. When you use this mode, your computer will act as a server within the valid range and connect directly to others in the same LAN workgroup.



Ad-hoc Mode

It is recommended to choose this mode when there is no access point showed on your wireless network.

II. Installation

i. System Requirements

Before you install AW-NB101, please make sure your system meets the following requirements.

*Desktop or Laptop with USB 1.1/2.0 port
*Minimum of 64MB system memory
*Operating system: XP/Vista/Windows 7
*An optical drive/CD-ROM for utilities and driver installation

ii. Hardware Installation

1. Find an available USB 1.1/2.0 port on your desktop or laptop.
2. Plug AW-NB101 Wireless PCI-E Module into USB port of desktop or laptop.

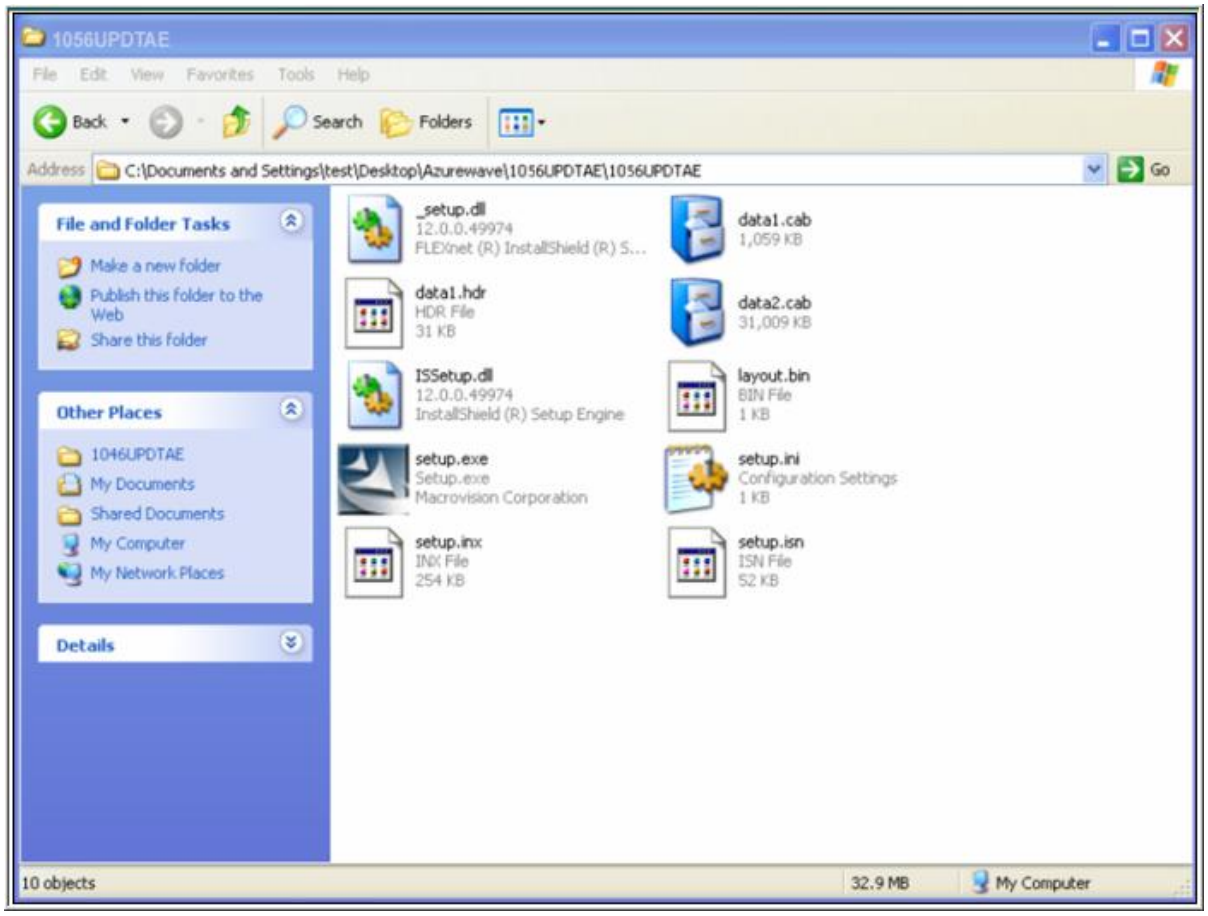
iii. Operation Range

The operating range of AW-NB101 varies from the working environment. However, this device made improvement on speed and range, which also reduced dead spots in coverage area.
AW-NB101 is two times wider than previous wireless products.
By default, this USB wireless adapter will automatically adjust the data rate. The transmission speed may vary according to the environment. The closer the wireless stations are the better the signal and transmission speed they will receive.

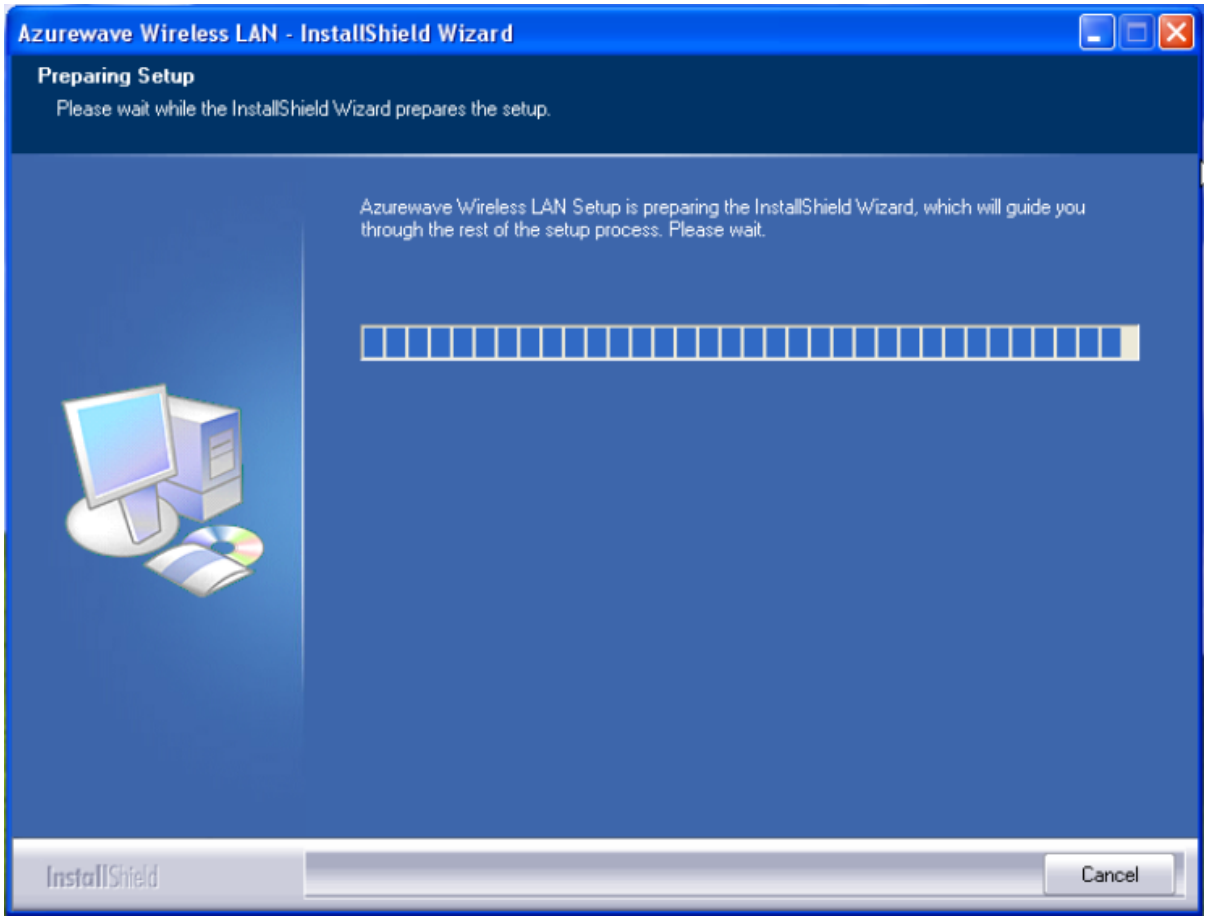
iv. Setup: Windows XP OS

If your computer is running a Windows operating system, it will automatically detect the AW-NB101 after the system boots up and displays a “Found New Hardware Wizard” window. Please click [Cancel] and proceed with the following steps.

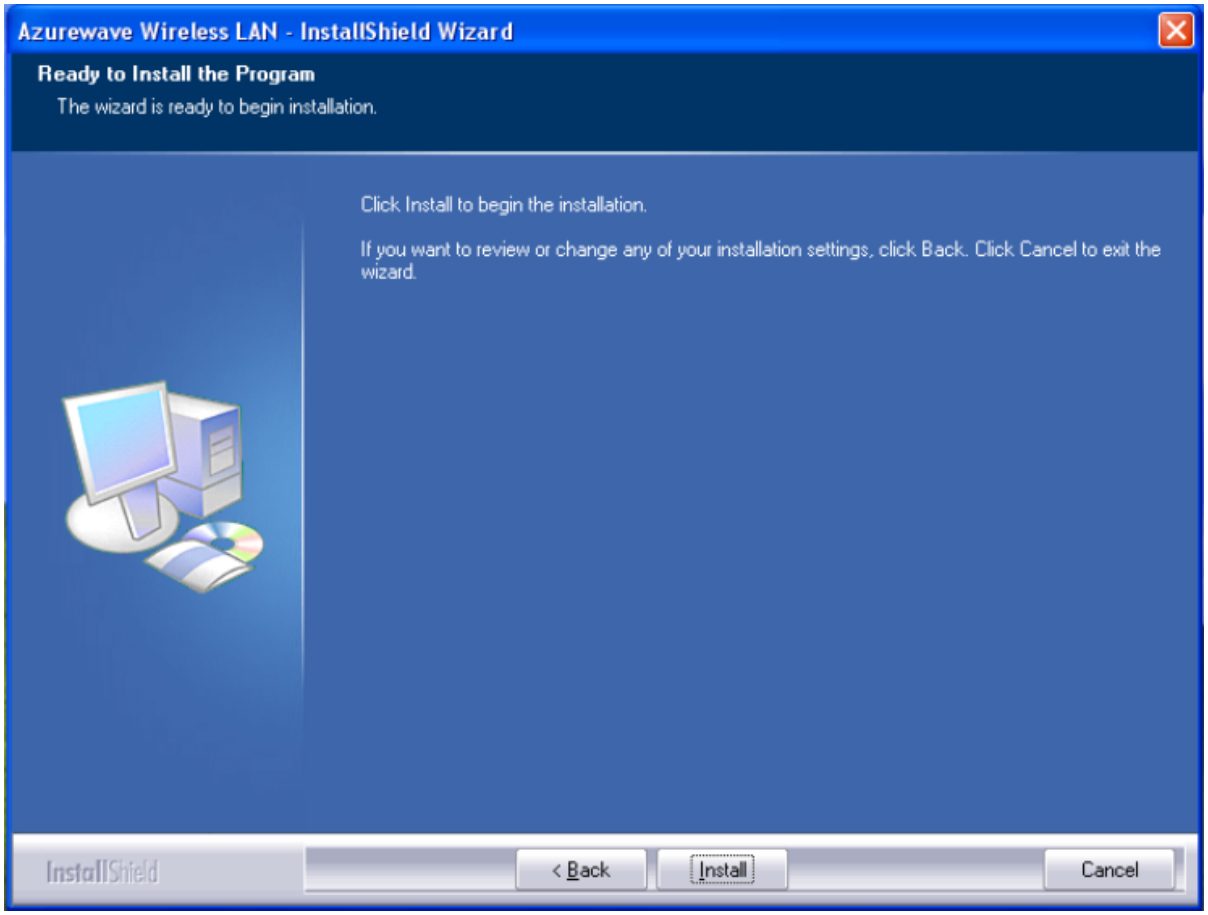
1. Find out the Driver, and launch the Setup Wizard



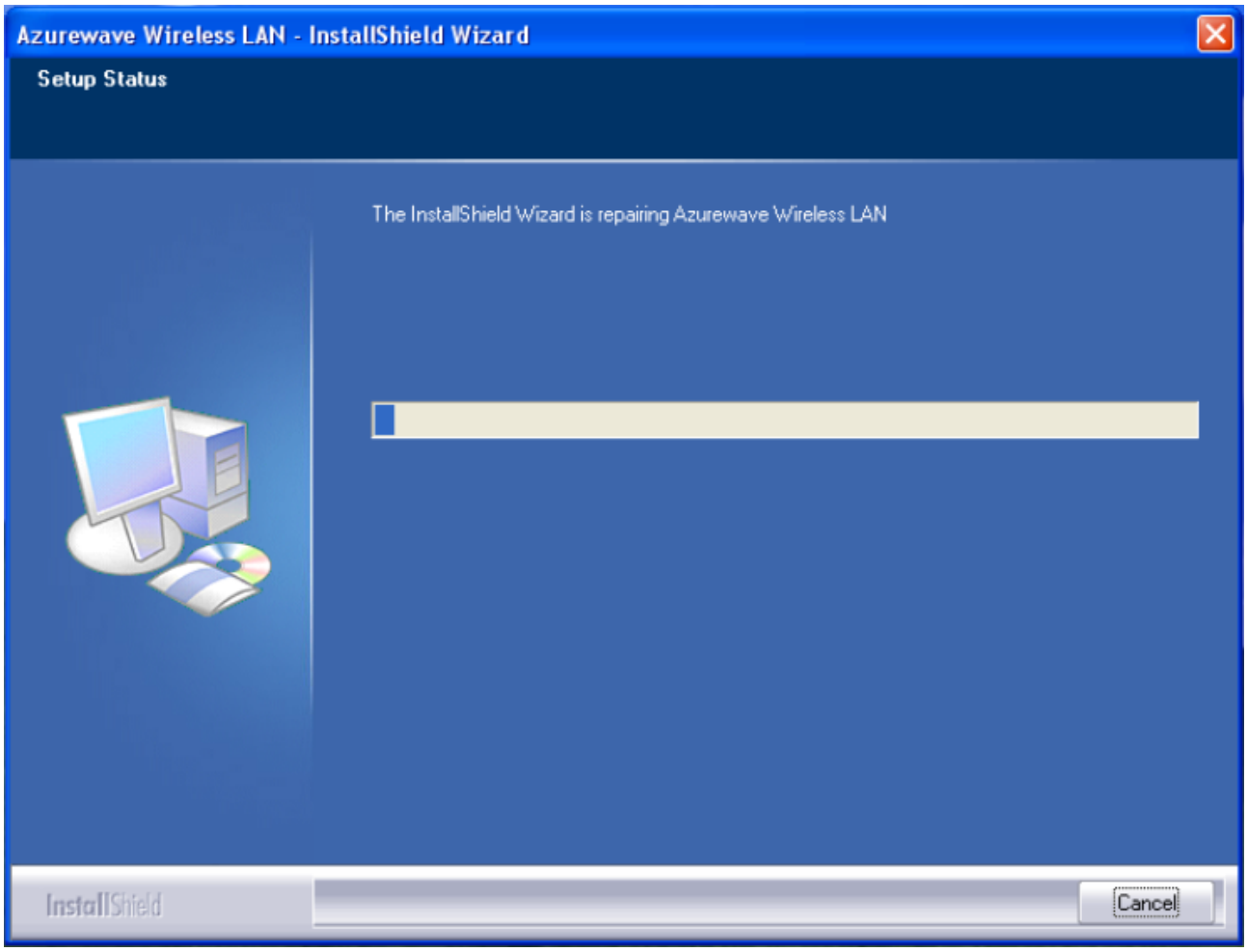
2. Please wait few seconds for wizard to prepare installation



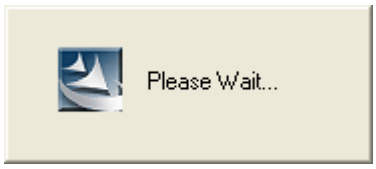
3. Please select click [Install] to proceed



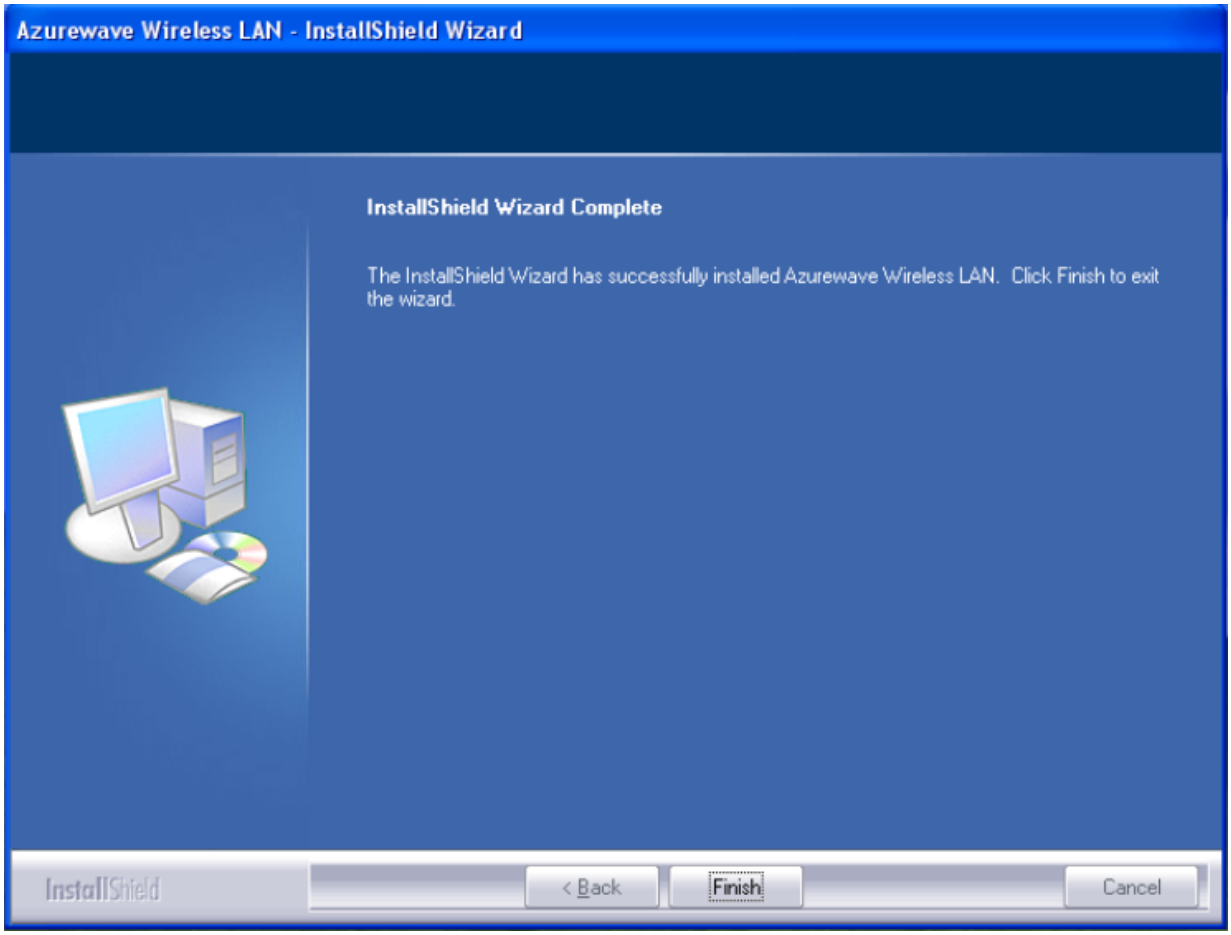
4. The Wizard is running installation



5. Please wait few seconds for Wizard to setup



6. When it is completed, please click [Finish]

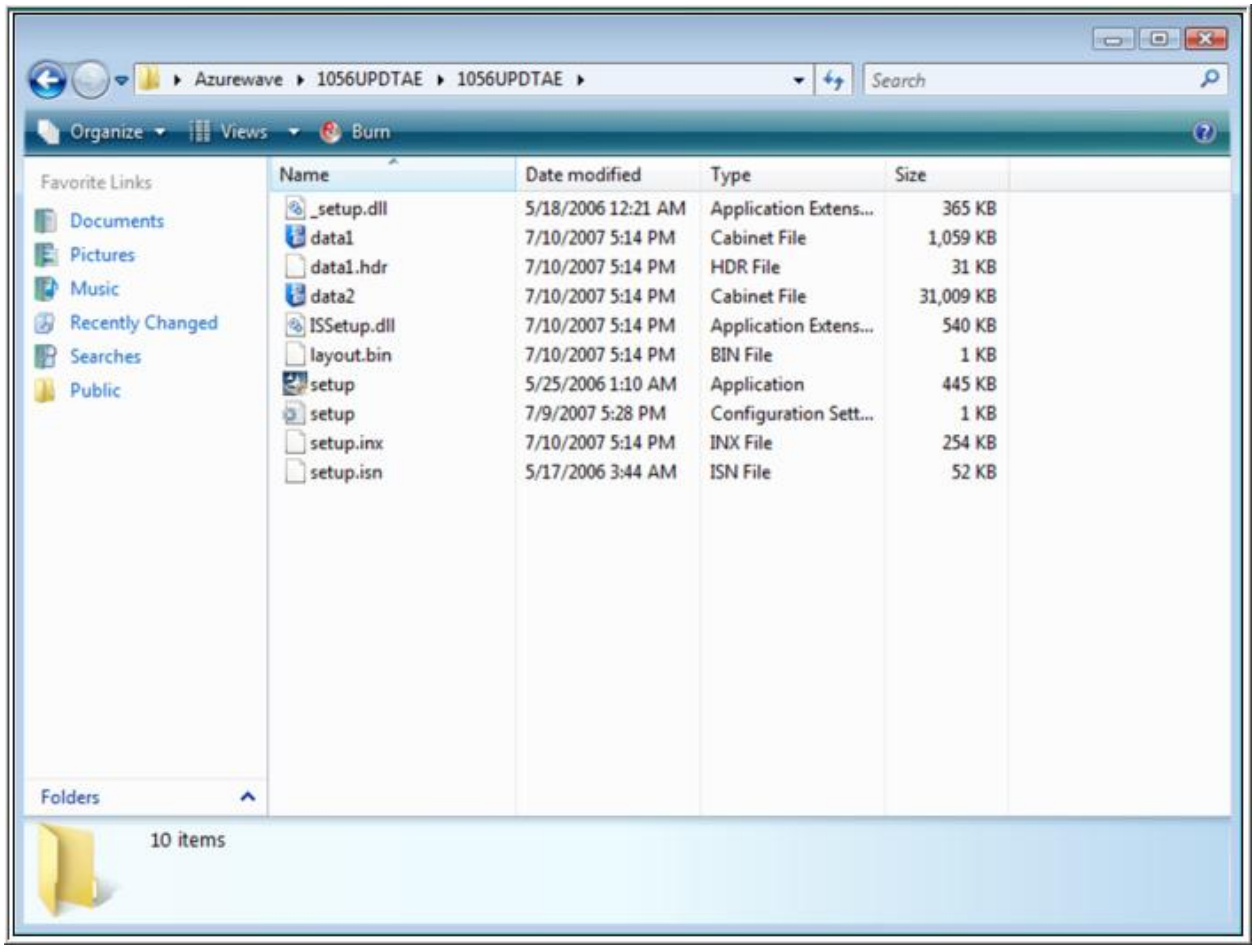


9. When the process is finished, the system will show a message of “Found New Hardware”

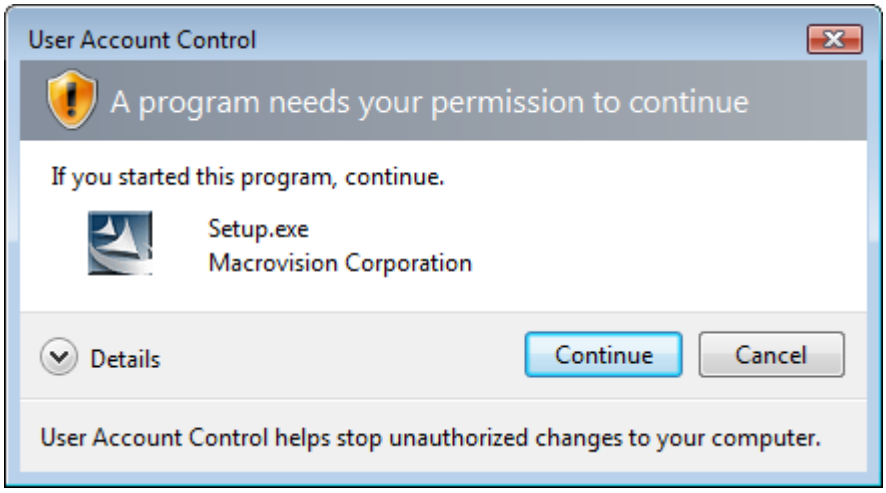
v. Setup: Windows Vista OS

Please follow the steps to complete installation.

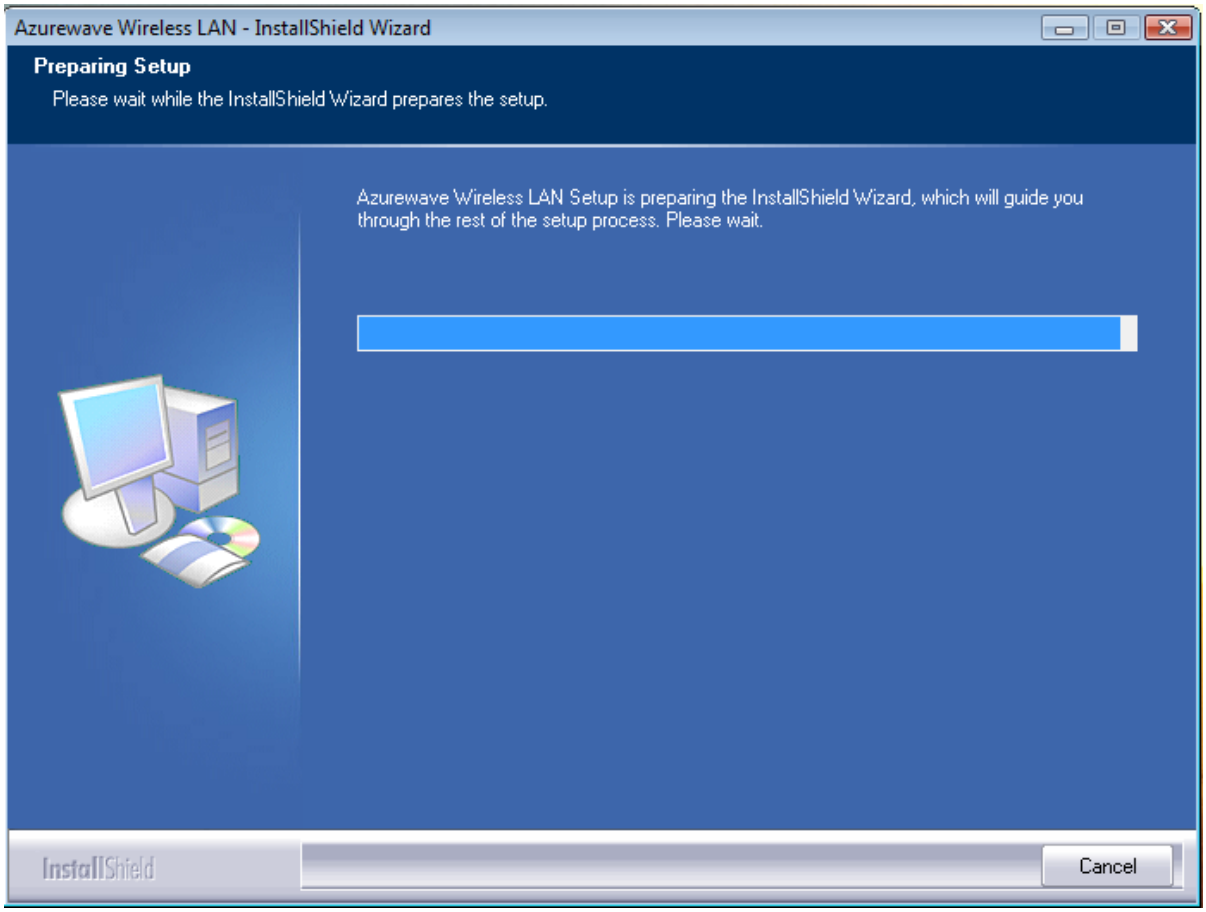
1. Launch the setup driver



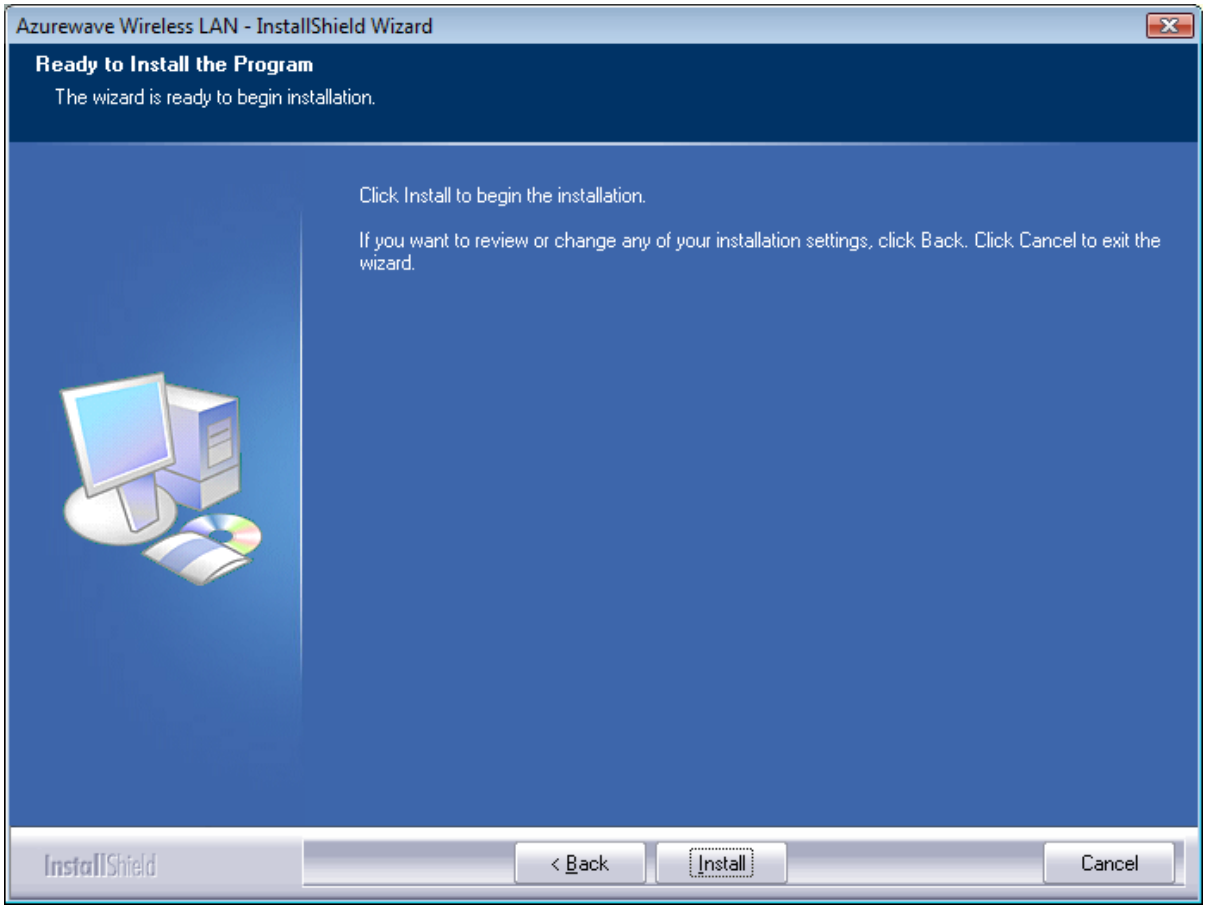
2. When you see the permission dialogue box, please click [Continue]



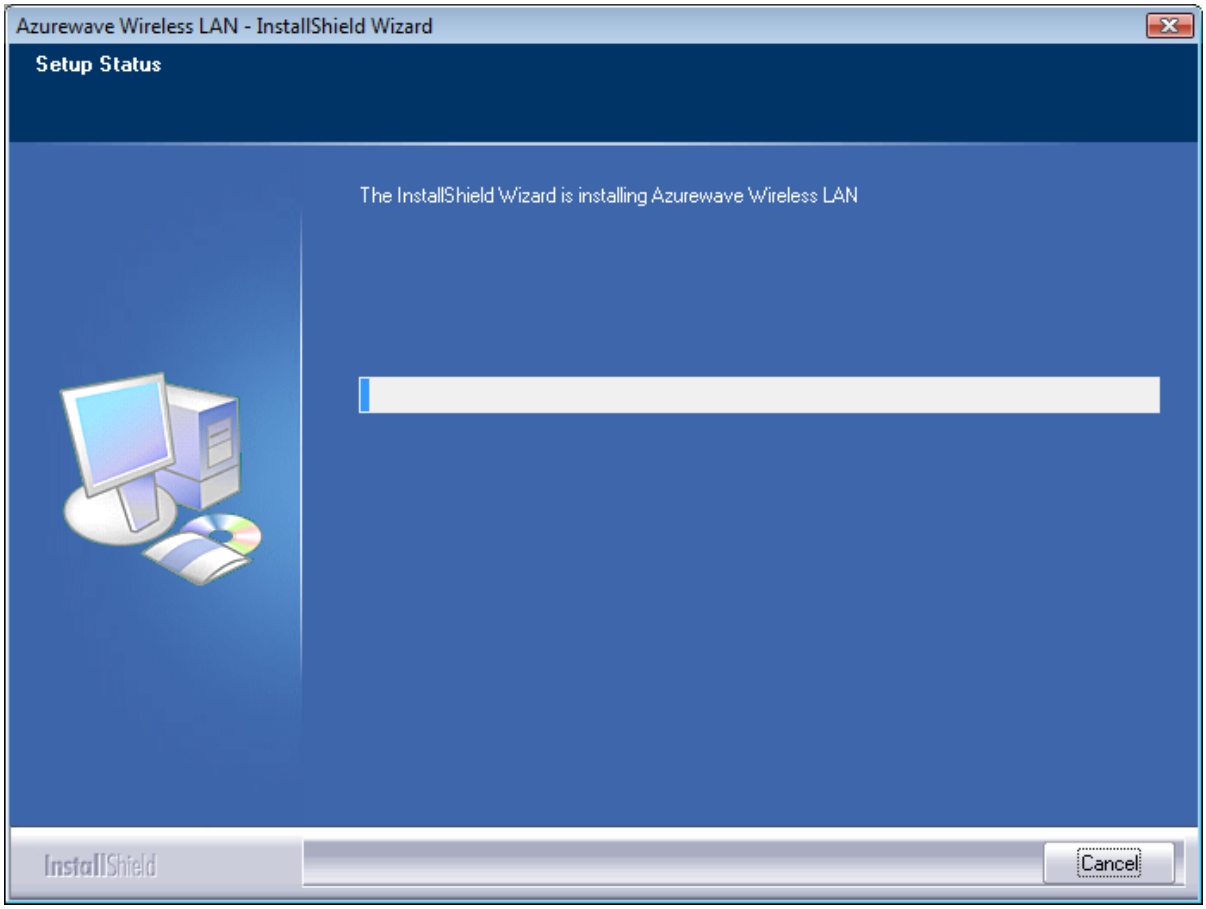
3. Now the Wizard is preparing installation



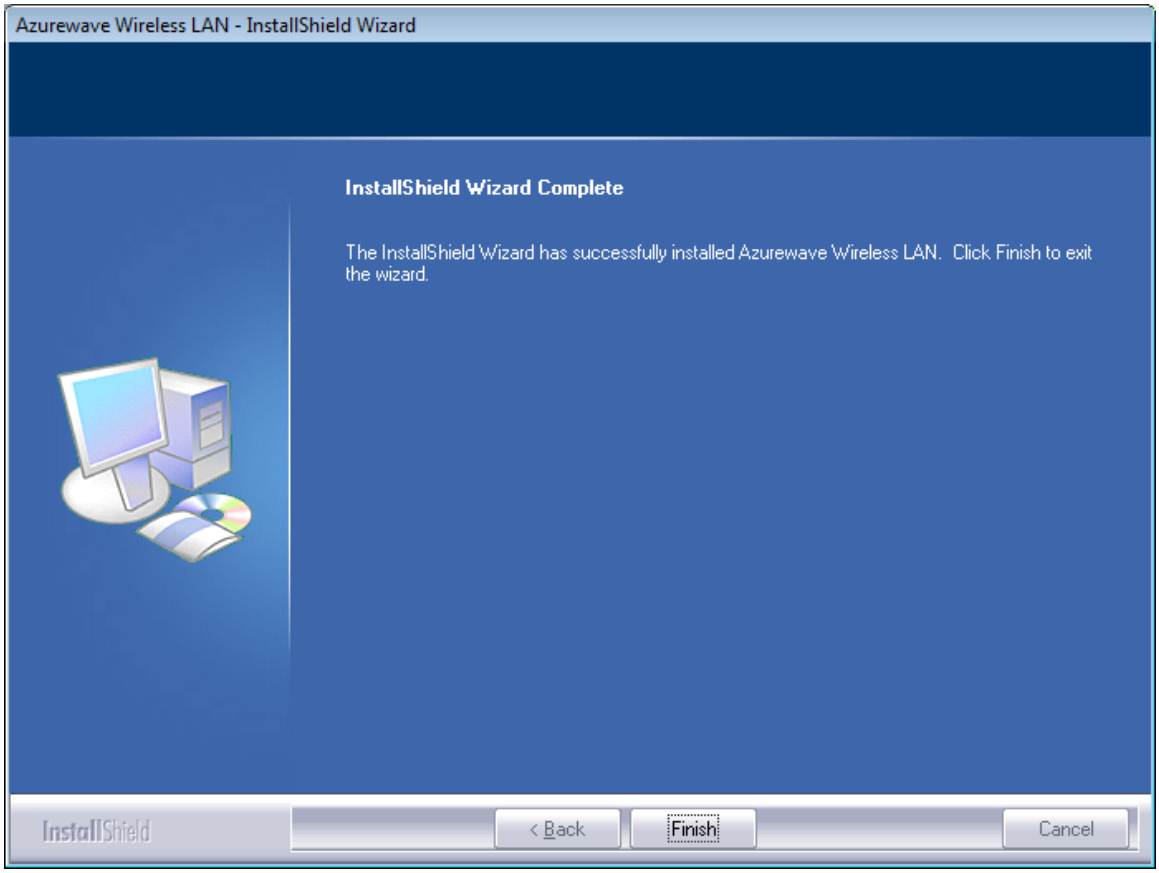
4. Please click [Install] to proceed



5. The system is process installation



8. When the setup is completed, please click [Finish]

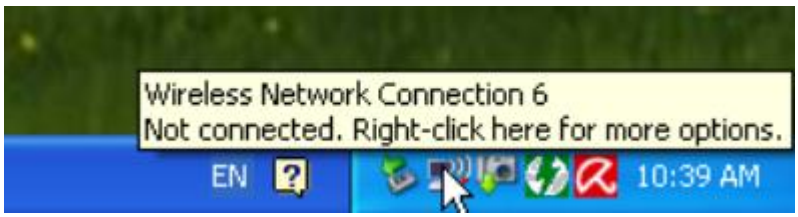

Azurewave Wireless LAN - InstallShield Wizard
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed Azurewave Wireless LAN. Click Finish to exit the wizard.
InstallShield
< Back
Finish
Cancel

III. Network Connection

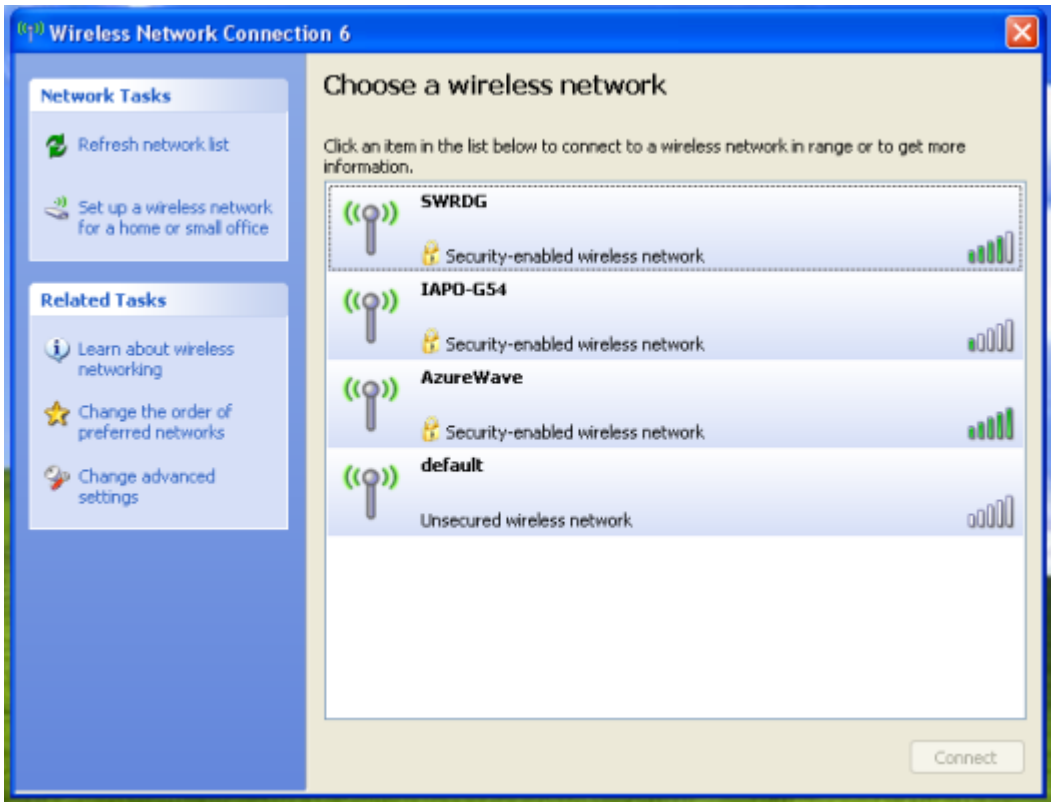
i. For Windows XP OS

Please see the following steps to setup network connection for Windows XP.

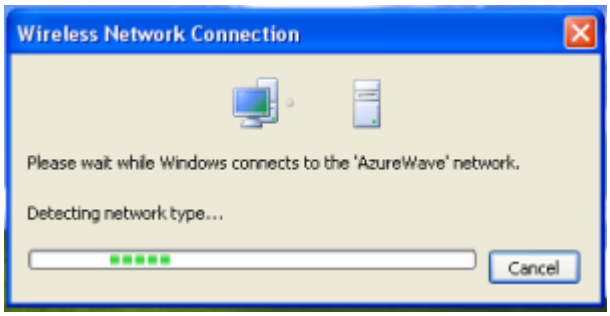
1. Find the network icon on the desktop shortcut and right-click on it. Choose “View Available Wireless networks”



2. You will see several options, please select one and click [Connect]

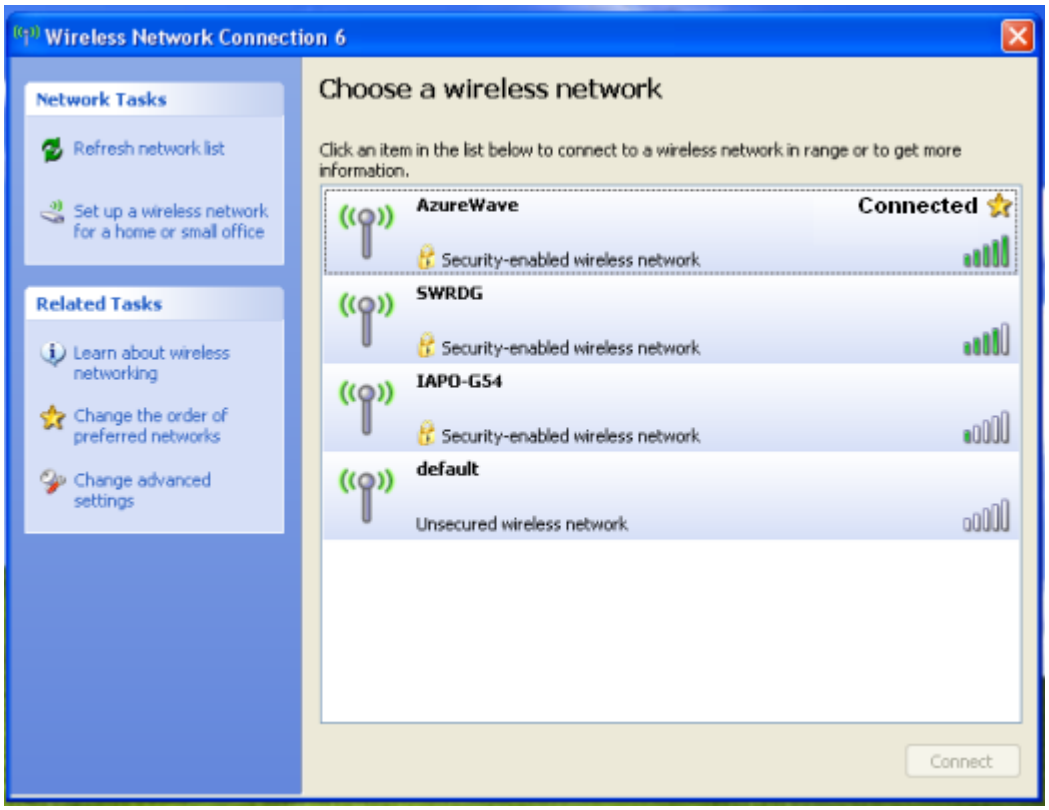


3. Please wait for few seconds to let system connecting to selected wireless network



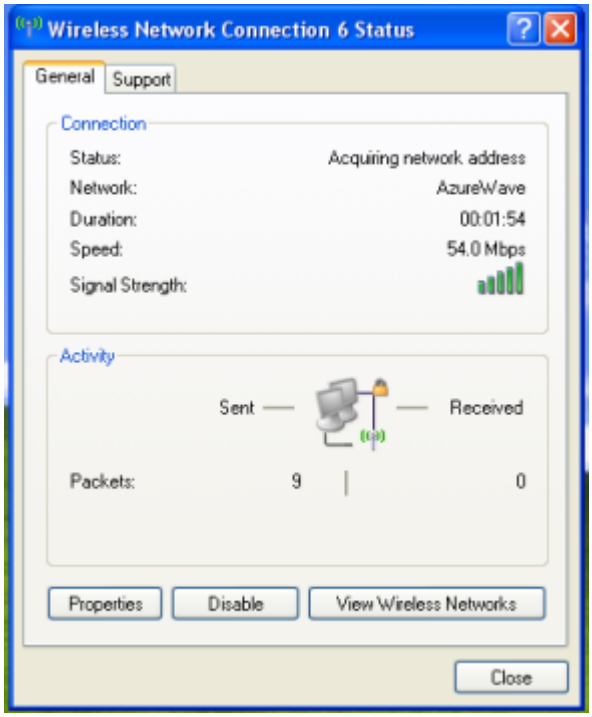
4. You may need to type the network key when it is required

5. Now the selected wireless network is connected



6. You can check the connection status by clicking [Status] in the pop-up dialogue

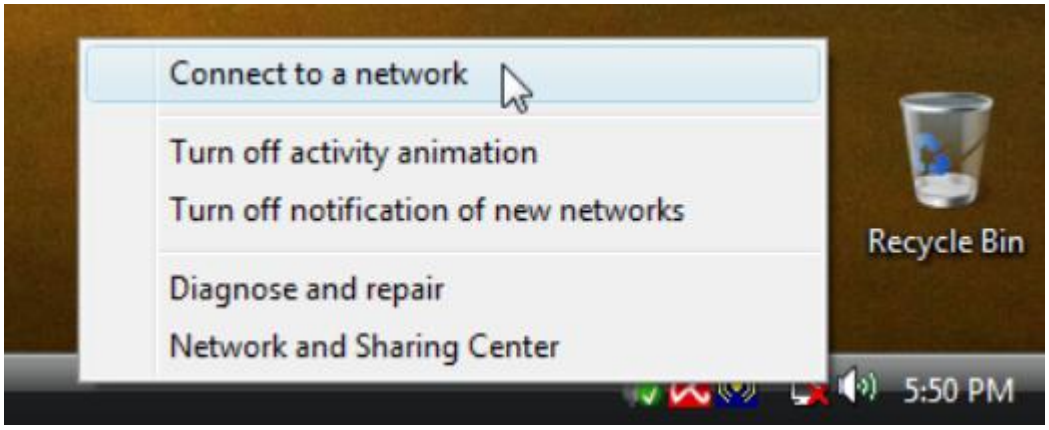
7. Here is the wireless network connection status



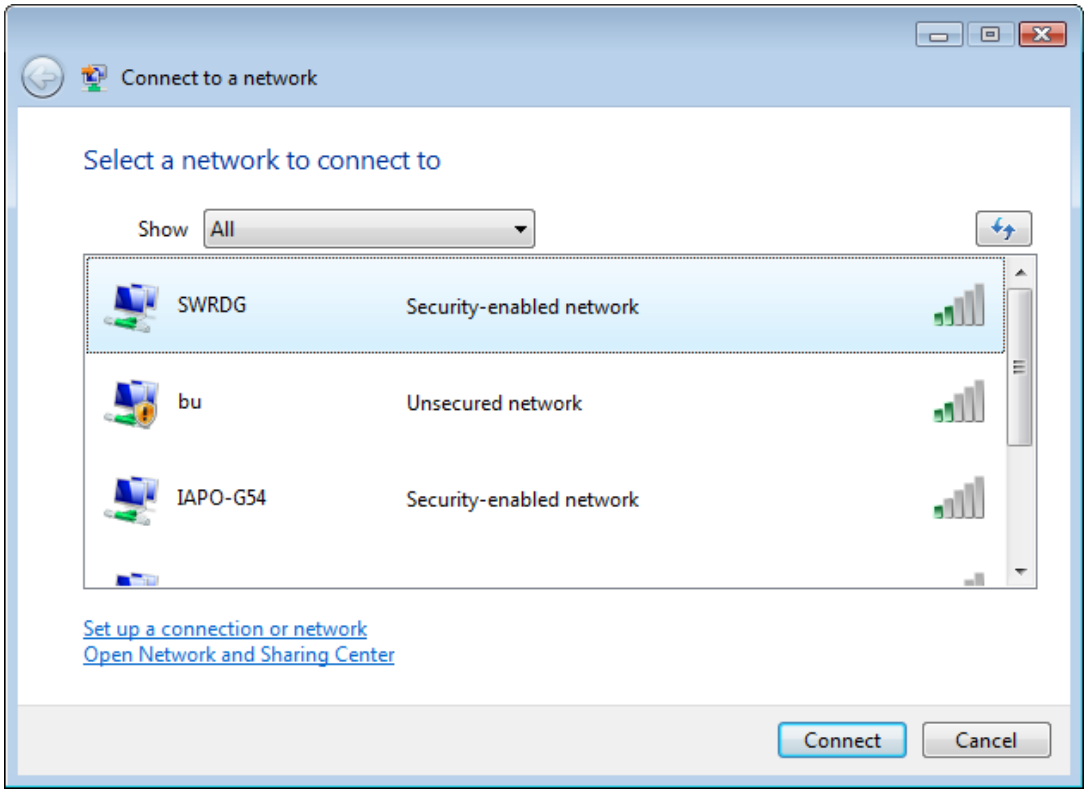
ii. For Windows Vista OS

Following are the instructions to setup wireless connection for Windows Vista.

1. Right-click on the network icon located on desktop shortcut. When you see the dialogue, please click [Connect to a network]

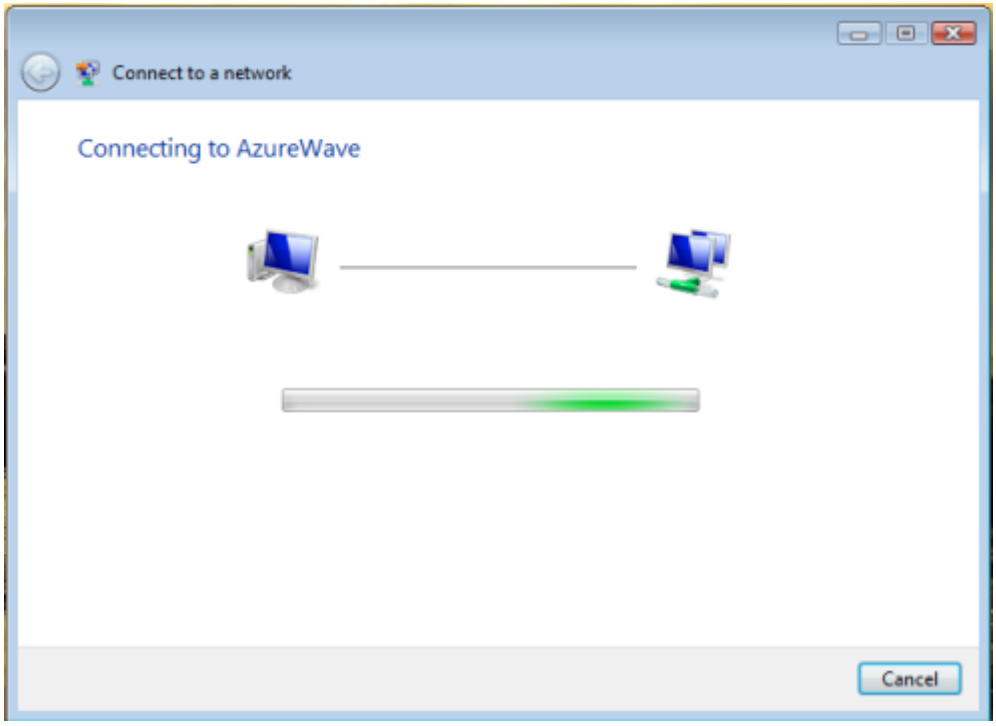


2. Choose wireless network within your range and click [Connect]

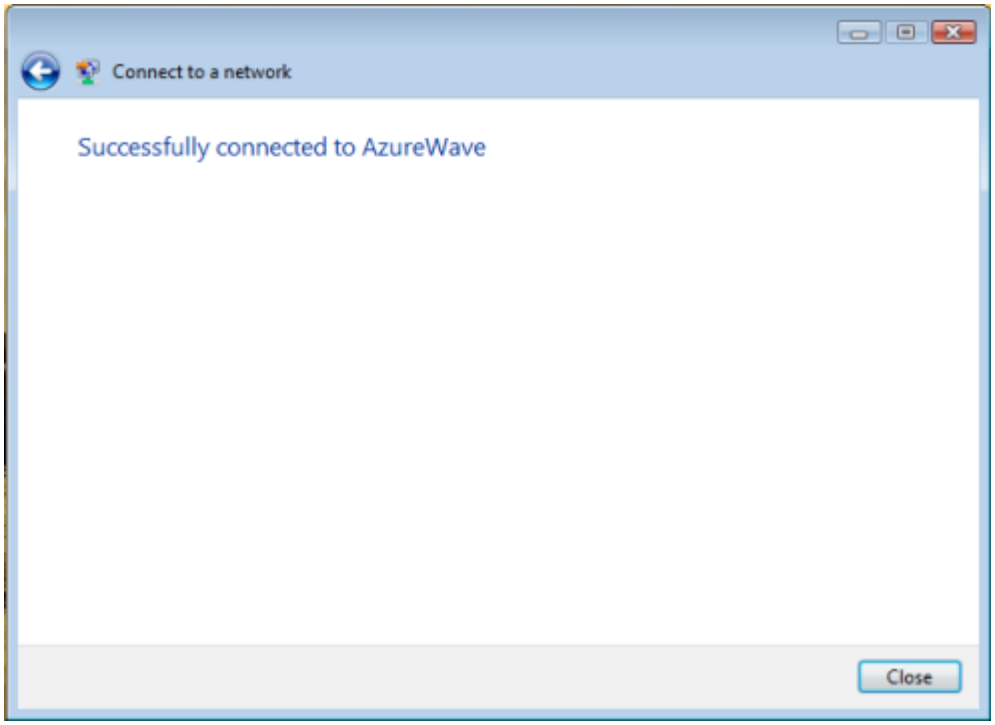


* If selected network is not secure, please choose [Connect anyway]

3. You may need to wait for few seconds when Windows connects to wireless network

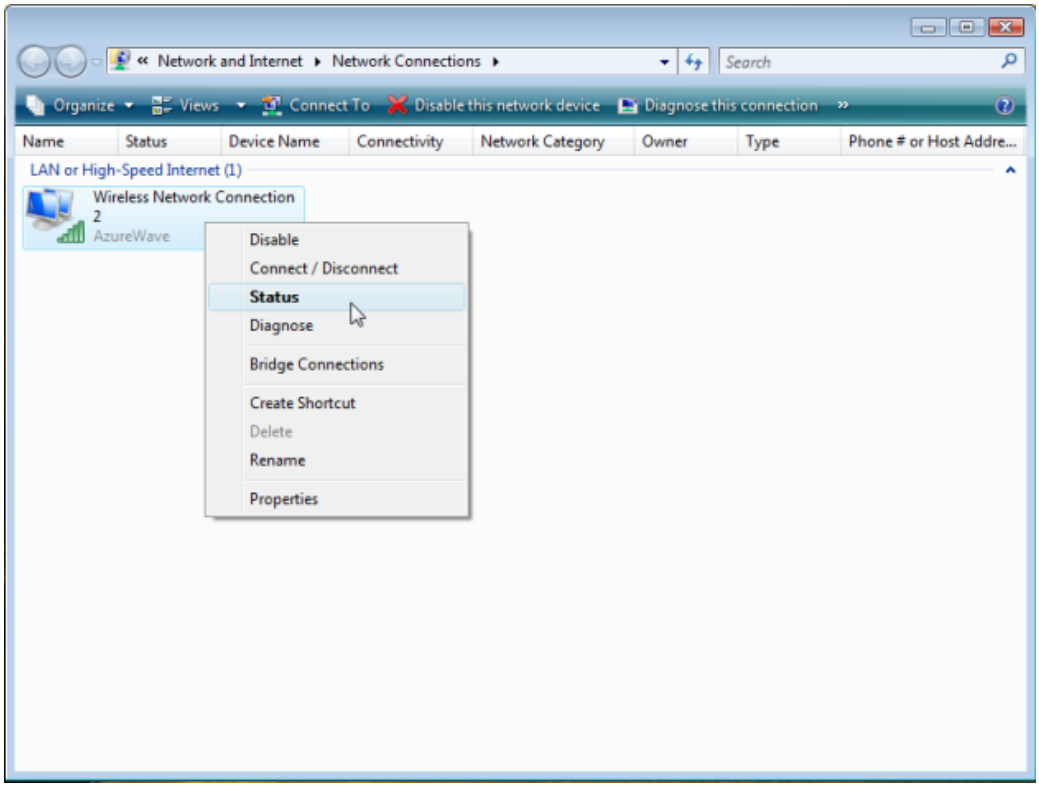


4. Now the selected wireless network is connected

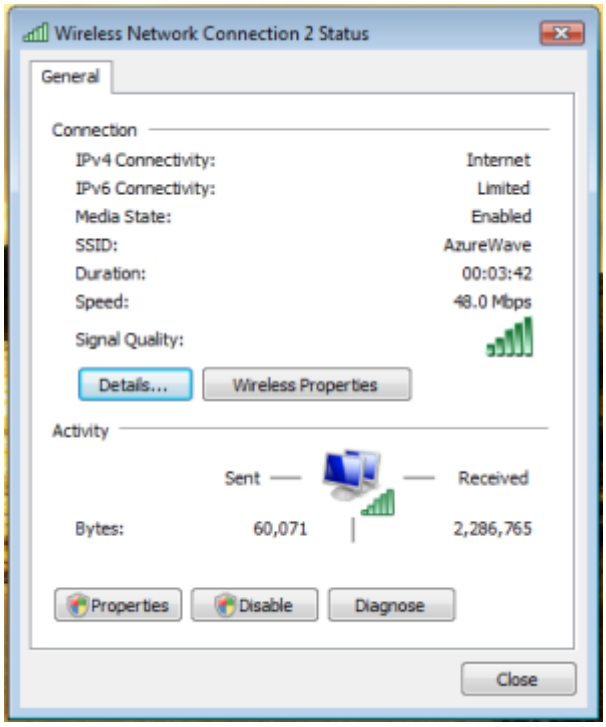


5. If you want to see the connection status, please right-click on the network you choose and select

[Status]



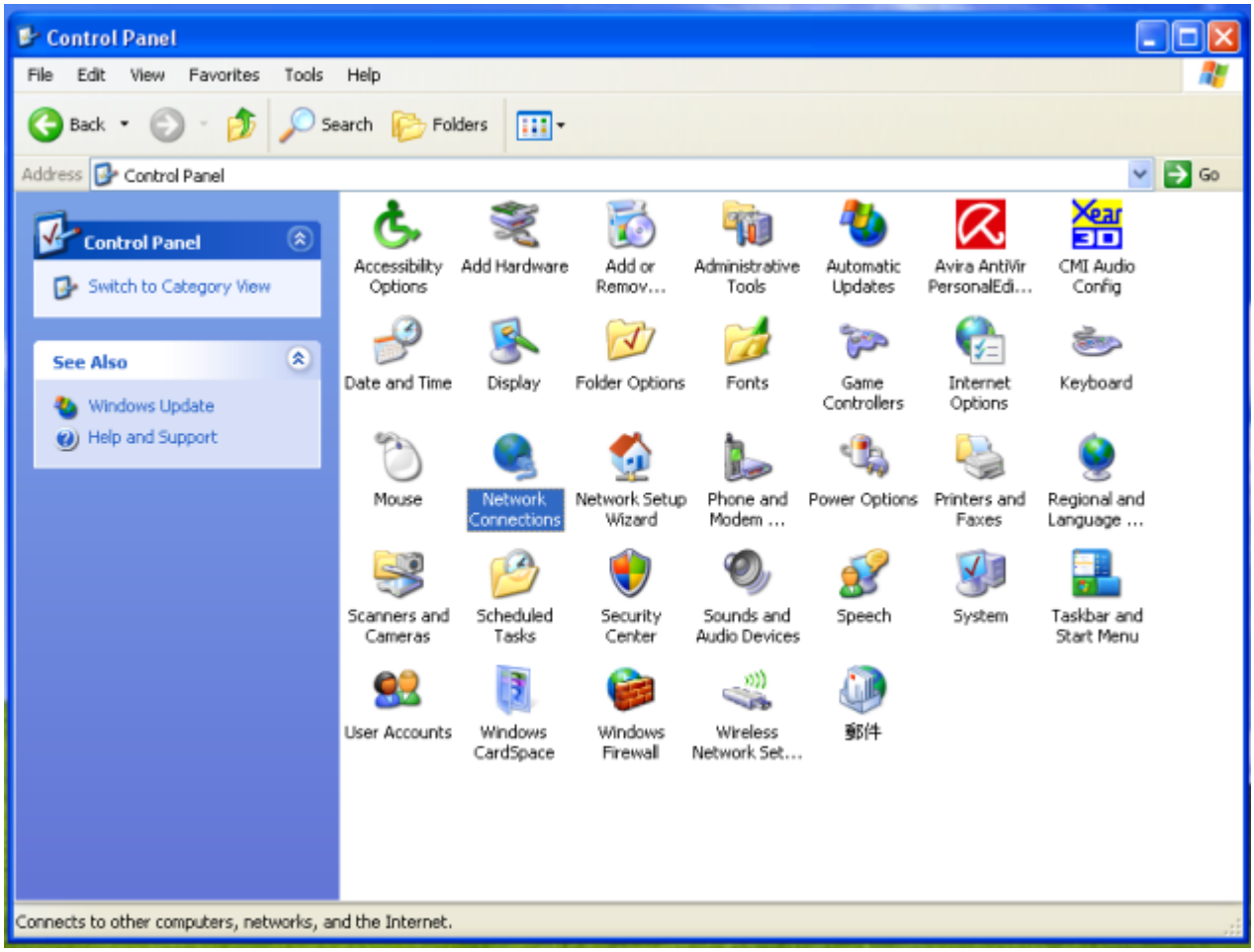
6. This is the information of network status


Wireless Network Connection 2 Status
General
Connection
IPv4 Connectivity:
Internet
IPv6 Connectivity:
Limited
Media State:
Enabled
SSID:
AzureWave
Duration:
00:03:42
Speed:
48.0 Mbps
Signal Quality:
Details...
Wireless Properties
Activity
Sent
Received
Bytes:
60,071
2,286,765
Properties
Disable
Diagnose
Close

IV. Setup for Ad-hoc Mode

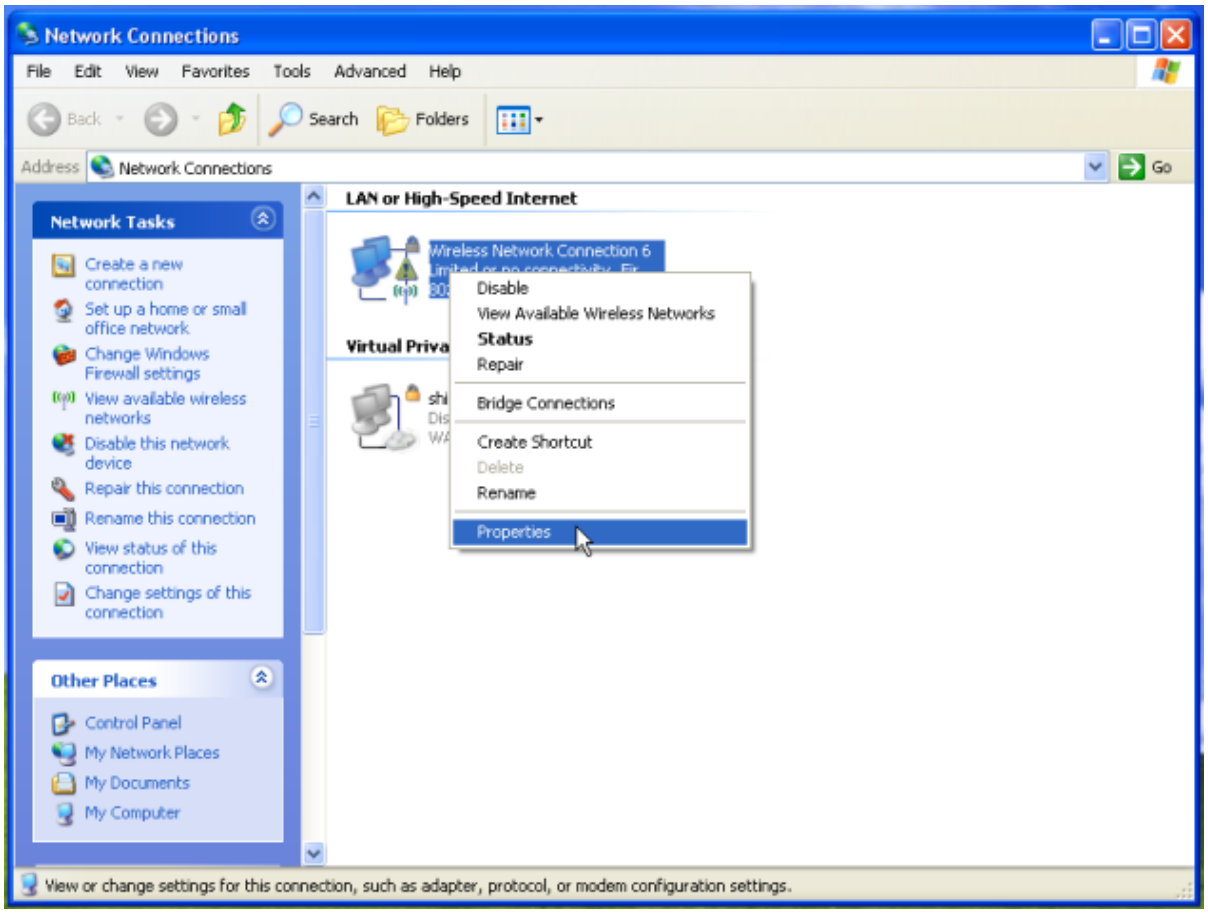
i. For Windows XP OS

If you want to choose Ad-hoc mode, please right-click network icon on desktop shortcut and choose “Open Network Connections”, or go to [Control Panel] and double-click “Network Connection” icon.

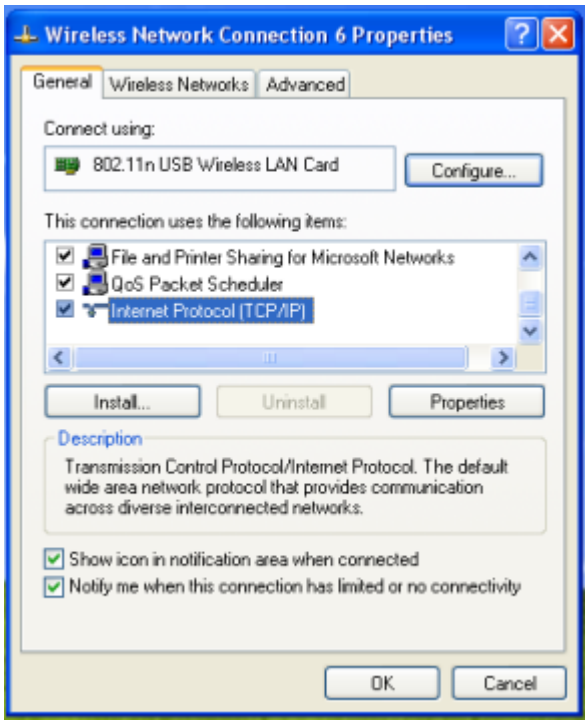


When you see the “Network Connections” screen, please follow the steps below to setup Ad-hoc mode.

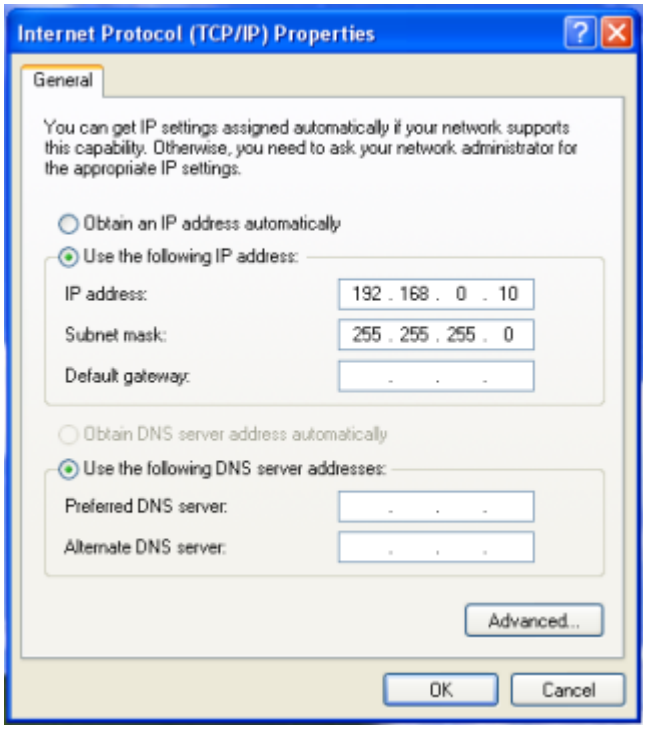
1. Double-click “Wireless Network USB Adapter” icon to enter its properties



2. Click "General” tab and double-click the “Internet Protocol (TCP/IP)” item

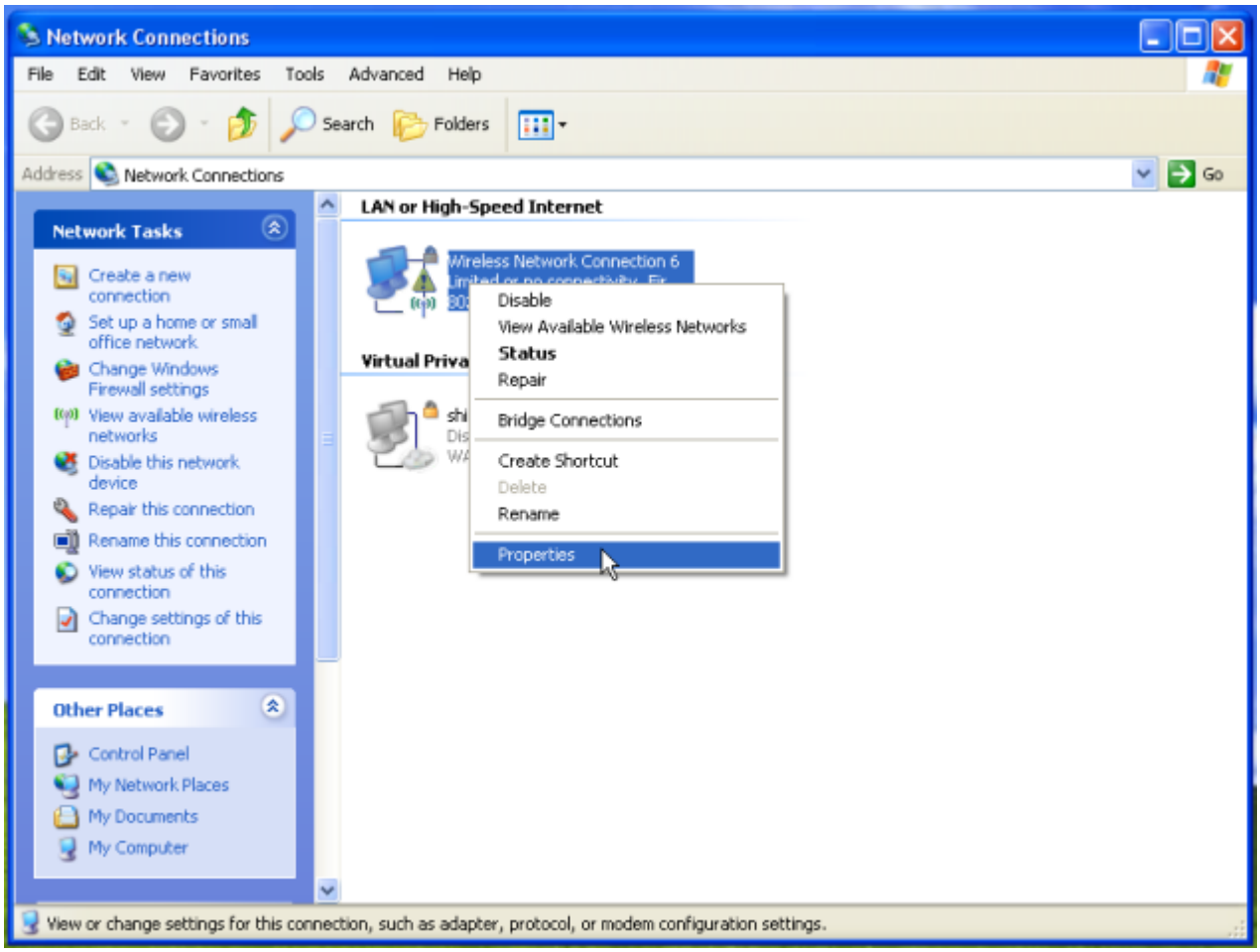


3. Choose “Use the following IP address:” and type the IP address; then click [OK]

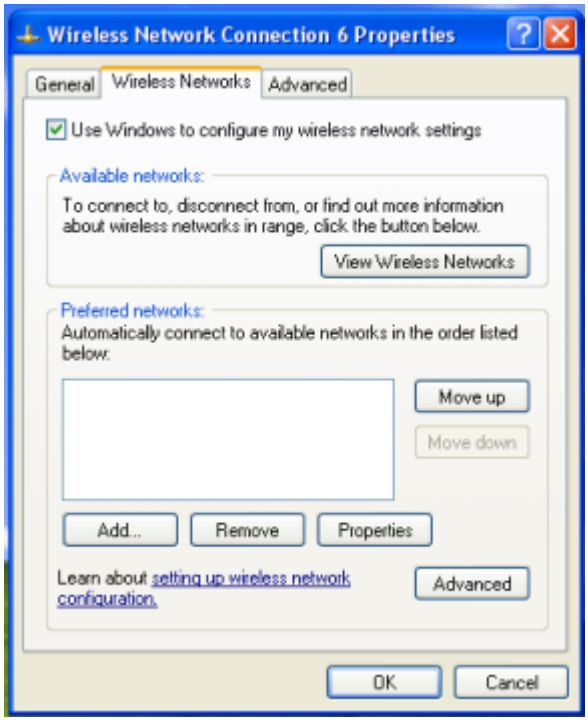


*Note: the IP address of the other wireless card should be set with the same subnet mask

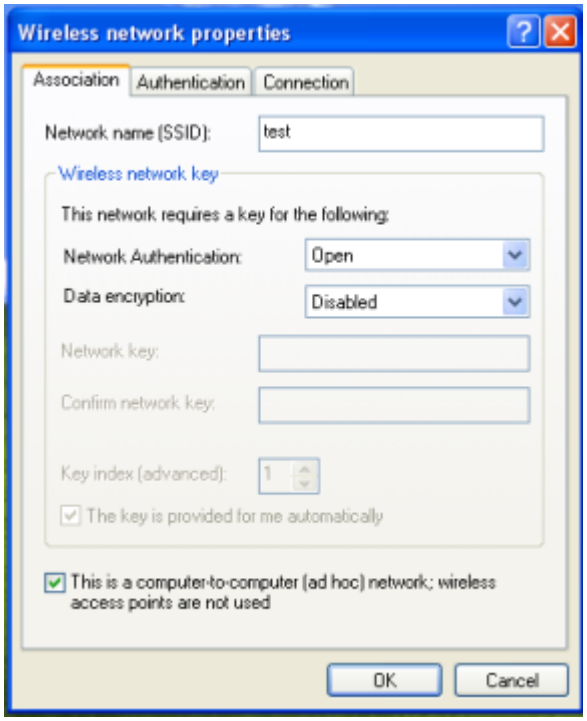
4. Right-click the “Wireless Network Connection” icon and choose “properties”



5. Select “Wireless Network” tab and choose [Add]

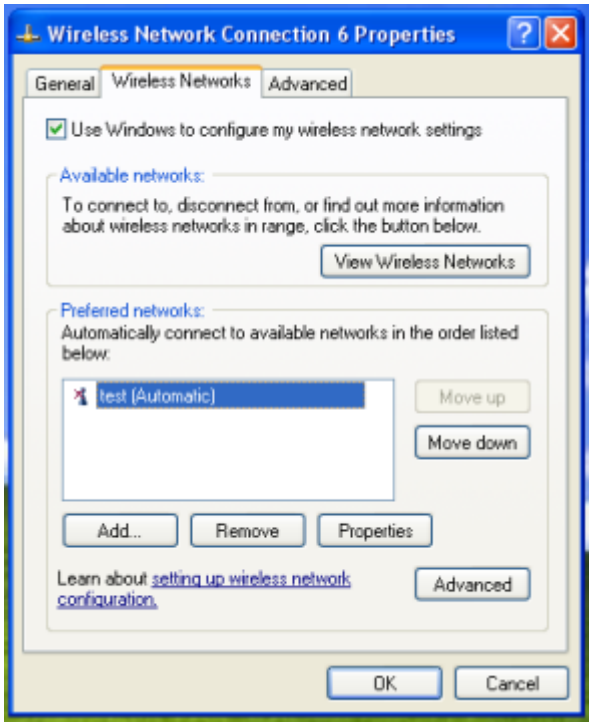


6. Type “Network name (SSID)” and choose “Data encryption” if you want to protect the network security



7. When you see the dialogue showing your network is unsecured, please click [Continue Anyway]

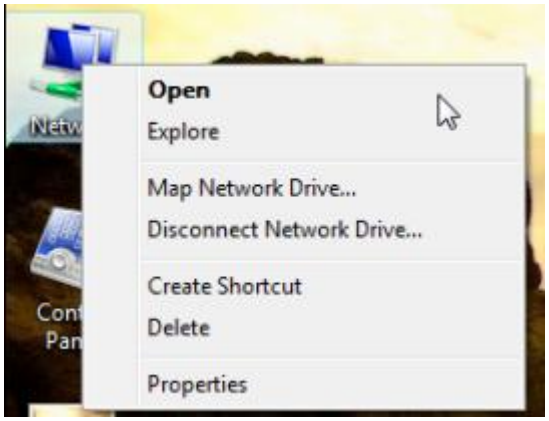
8. Now your network is in Ad-hoc mode

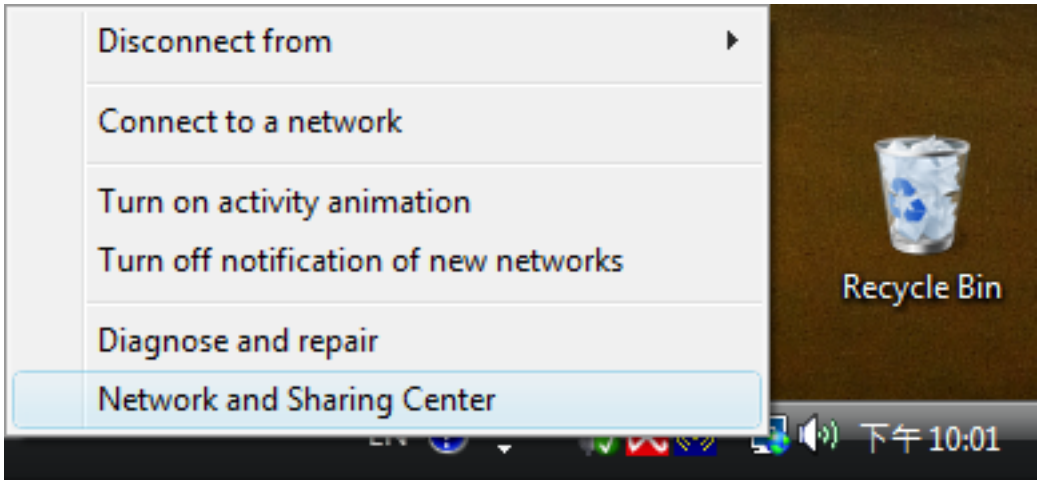


ii. For Windows Vista OS

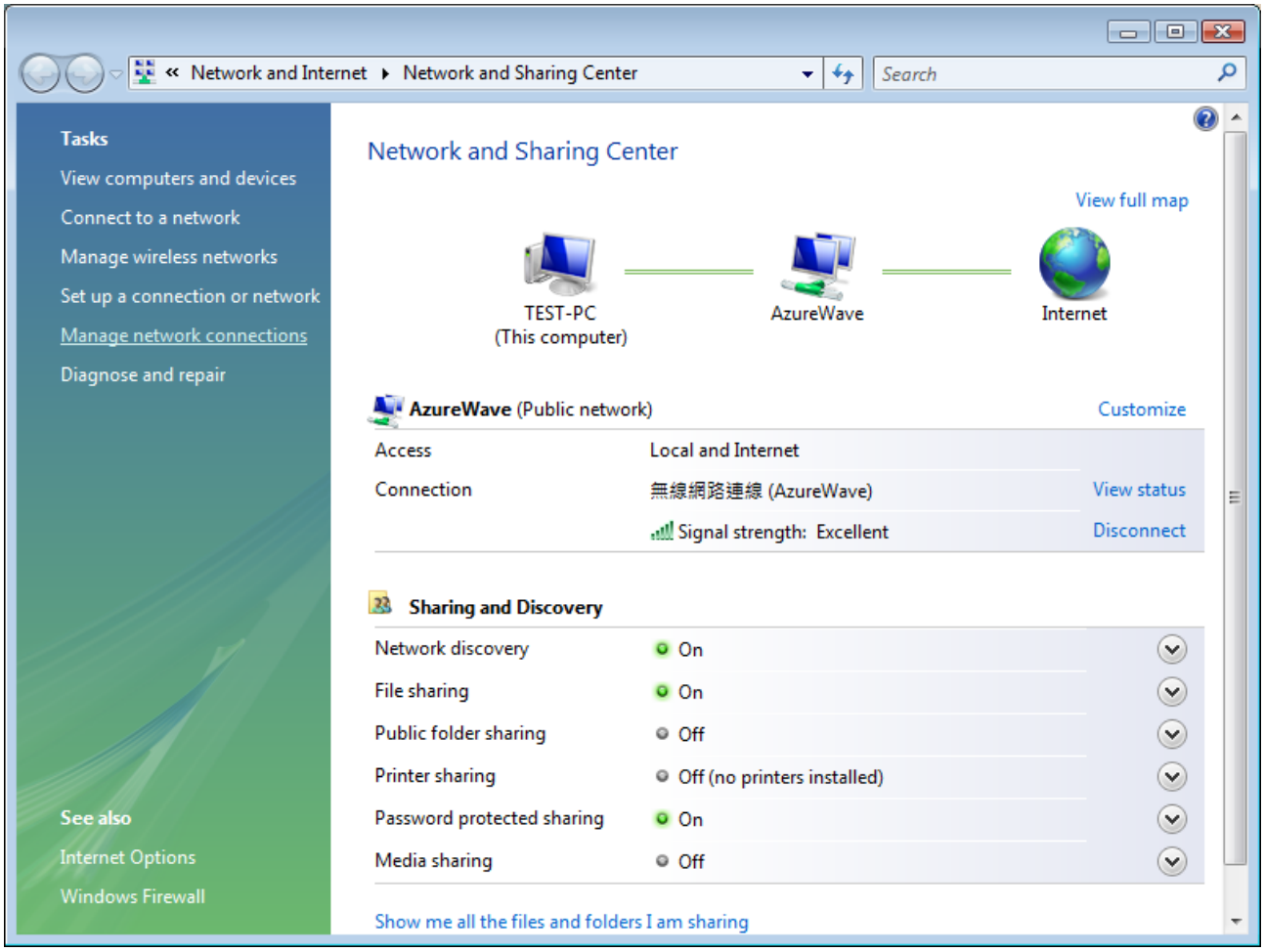
Please follow the steps to setup Ad-hoc mode for Windows Vista.

1. Right-click the Network neighbor to choose “properties,” or you can right-click network icon on desktop shortcut and choose “Network and Sharing Center”

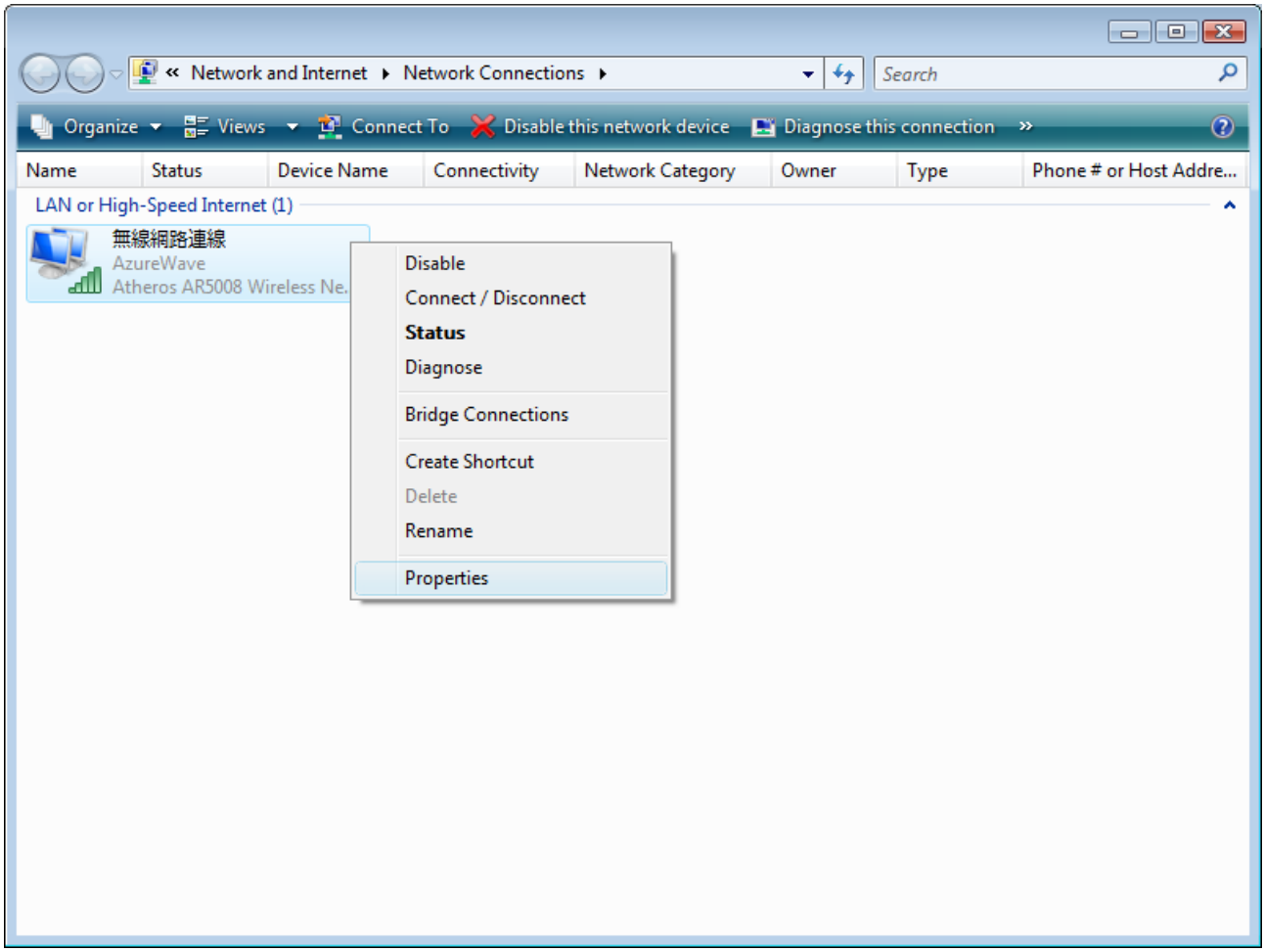




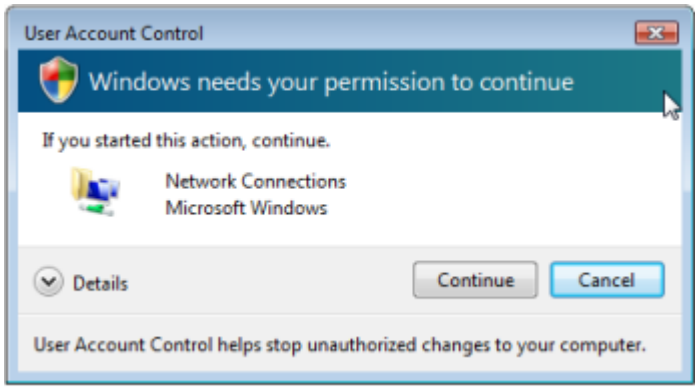
2. When you see the “Network and Sharing Center” windows, please select “Manage network connection” bar



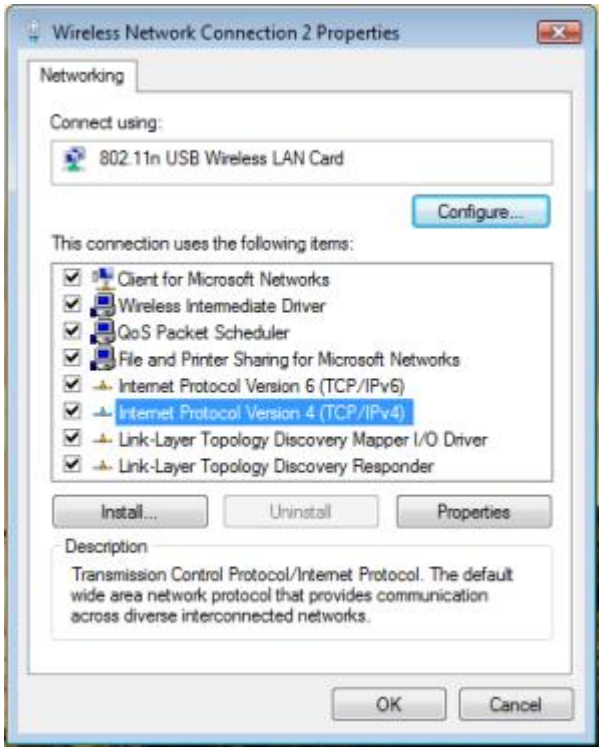
3. Right-click the connected network icon and choose “Properties”



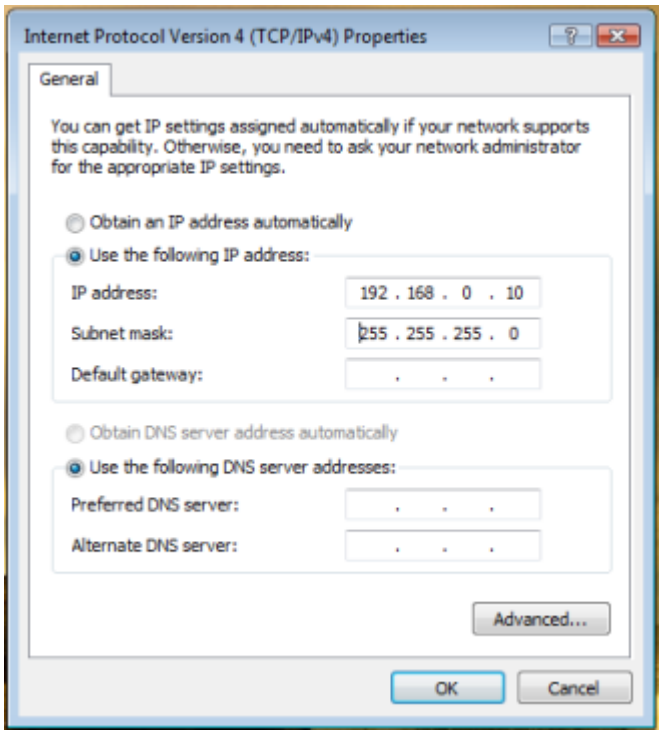
4. When you see the warning message, please click [Continue]



5. Choose “Networking” tab and double-click the “Internet Protocol Version 4 (TCP/IPv4)” item

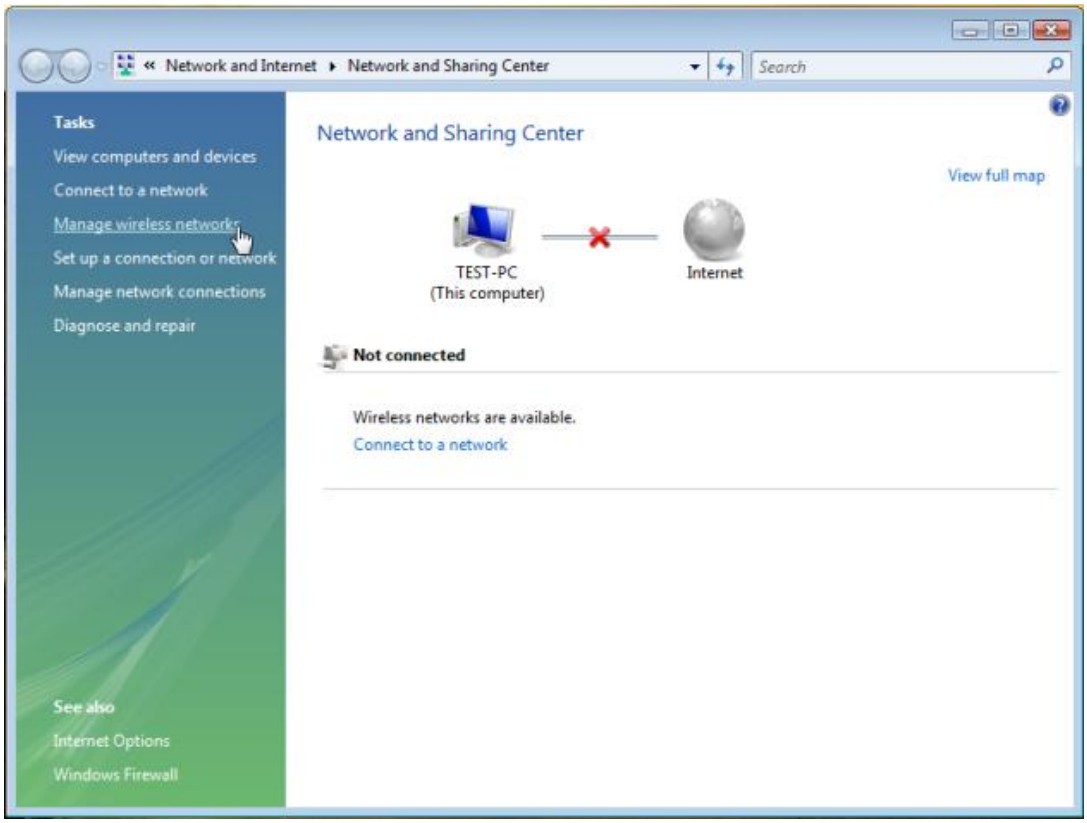


6. Choose “Use the following IP address:” and type the IP address; then click [OK]

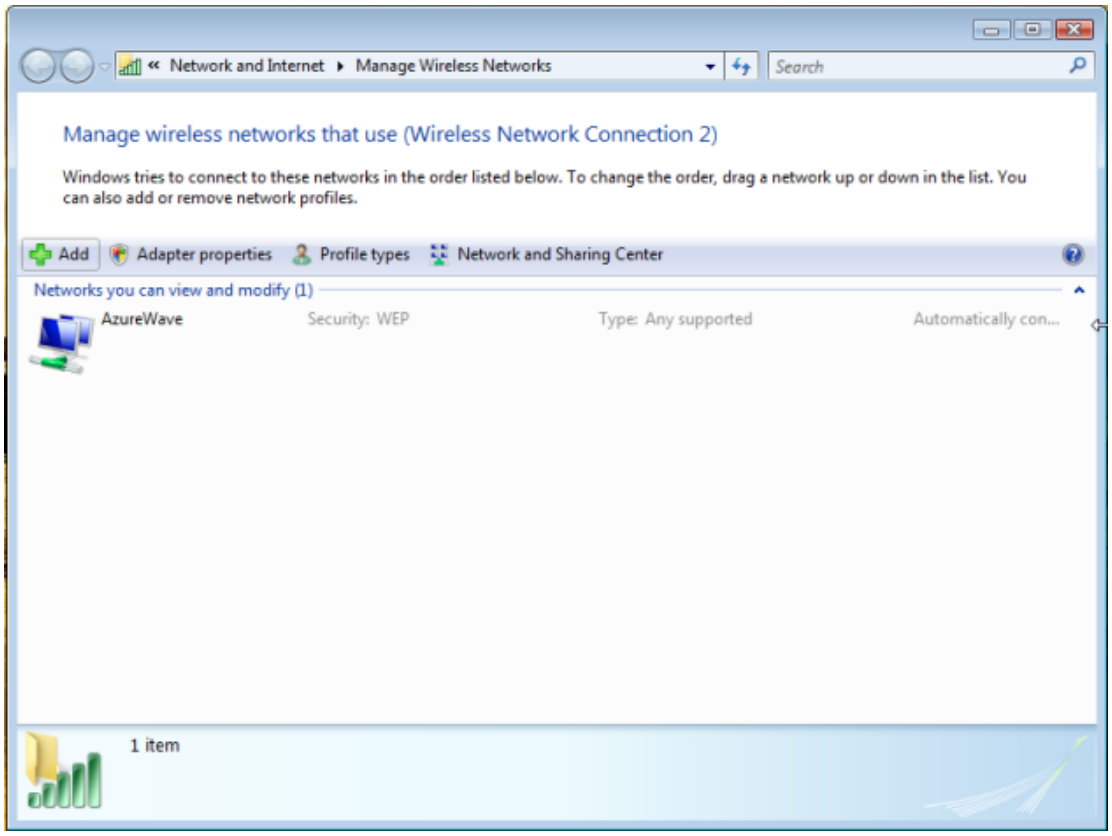


*Note: the IP address of the other wireless card should be set with the same subnet mask

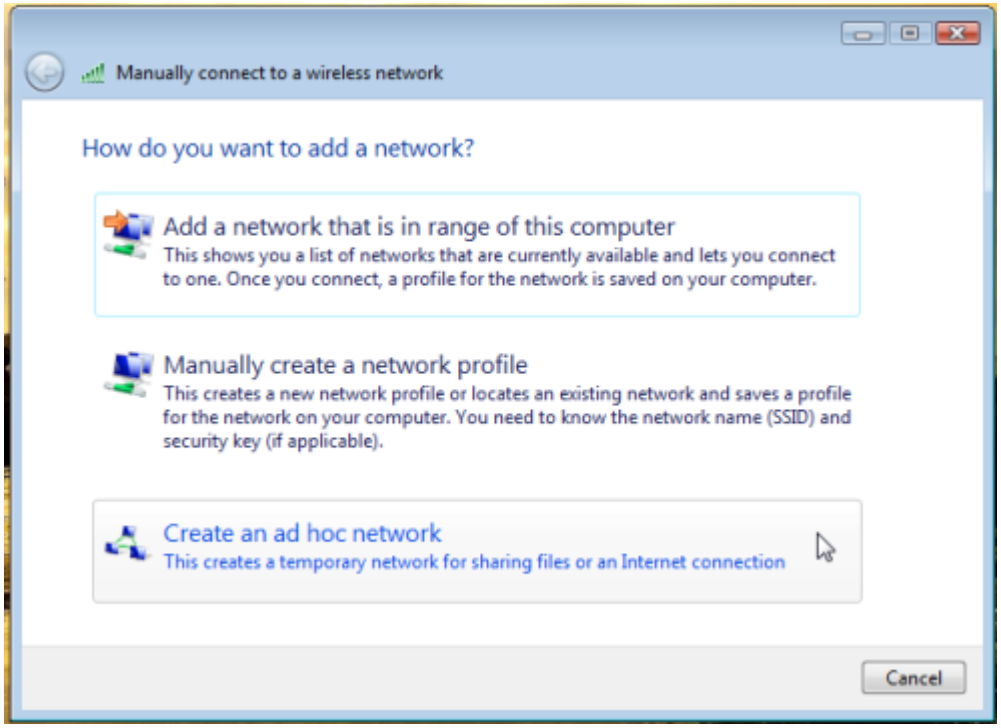
7. Choose “Manage wireless networks” bar



8. Select [Add]

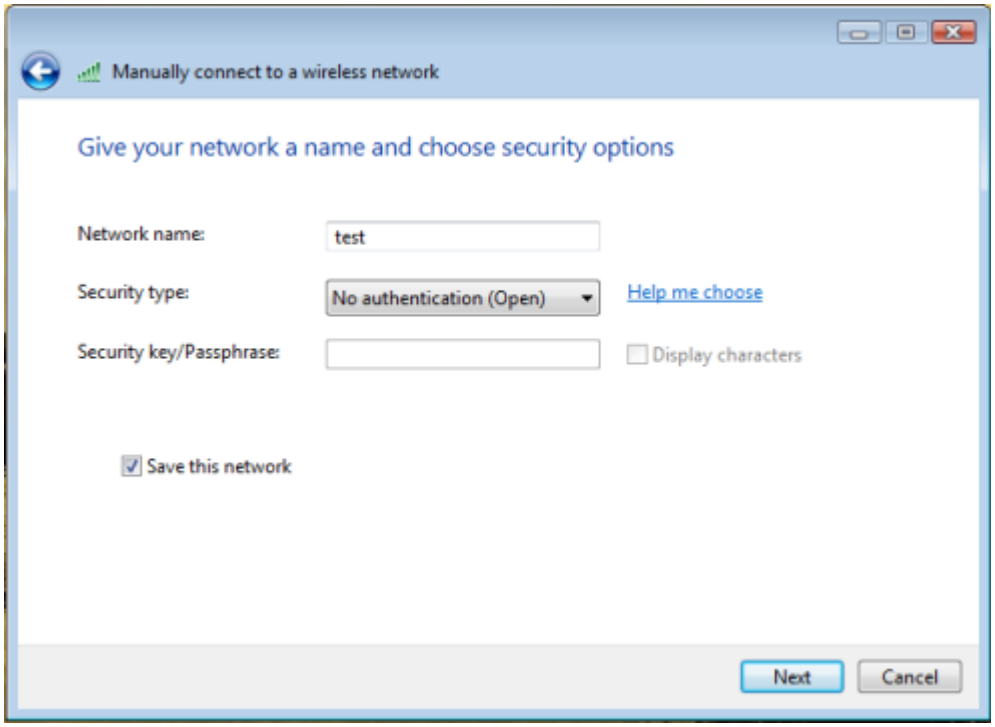


9. Choose “Create ad-hoc network”

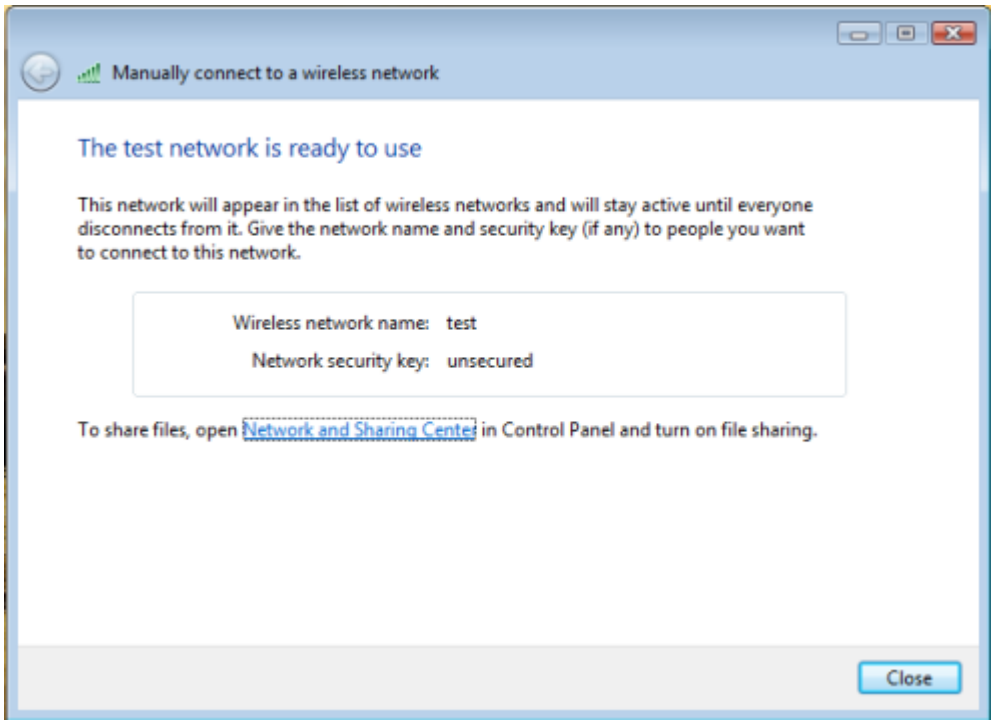


10. Please click [Next]

11. Enter “Network name” and if you want to protect the network security, please choose in “security type”; then click [Next]



12. Now your network is in Ad-hoc mode



Federal Communication Commission Interference Statement

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 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: Any changes or modifications not expressly approved by the party responsible for

compliance could void the user's authority to operate this equipment.

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

Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This device is intended only for OEM integrators under the following conditions:

1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed

IMPORTANT NOTE: In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: “Contains FCC ID: TLZ-NB101”. The grantee's FCC ID can be used only when all FCC compliance requirements are met.

Manual Information To the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user’s manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

For Taiwan 警語：

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

Note: 1. 本模組於取得認證後將依規定於模組本體標示審驗合格標籤 2. 系統廠商應於平台上標示「本產品內含射頻模組:CCXXXXYYyyyZzW」字樣

Japanese Notice

本装置は、第二種情報装置（住宅地域またはその隣接した地域において使用されるべき情報装置）で住宅地域での電波障害防止を目的とした情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）基準に適合しております。
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Industry Canada statement:

This device complies with RSS-210 of the Industry Canada 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.

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

This device is intended only for OEM integrators under the following conditions: (For module device use)

1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

Cet appareil est conçu uniquement pour les intégrateurs OEM dans les conditions suivantes: (Pour utilisation de dispositif module)

1) L'antenne doit être installée de telle sorte qu'une distance de 20 cm est respectée entre l'antenne et les utilisateurs, et
2) Le module émetteur peut ne pas être coïmplanté avec un autre émetteur ou antenne.

Tant que les 2 conditions ci-dessus sont remplies, des essais supplémentaires sur l'émetteur ne seront pas nécessaires. Toutefois, l'intégrateur OEM est toujours responsable des essais sur son produit final pour toutes exigences de conformité supplémentaires requis pour ce module installé.

IMPORTANT NOTE:

In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the Canada authorization is no longer considered valid and the IC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate Canada authorization.

NOTE IMPORTANTE:

Dans le cas où ces conditions ne peuvent être satisfaites (par exemple pour certaines configurations d'ordinateur portable ou de certaines co-localisation avec un autre émetteur), l'autorisation du Canada n'est plus considéré comme valide et l'ID IC ne peut pas être utilisé sur le produit final. Dans ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'une autorisation distincte au Canada.

Manual Information To the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.
The end user manual shall include all required regulatory information/warning as show in this manual.

Manuel d'information à l'utilisateur final

L'intégrateur OEM doit être conscient de ne pas fournir des informations à l'utilisateur final quant à la façon d'installer ou de supprimer ce module RF dans le manuel de l'utilisateur du produit final qui intègre ce module.
Le manuel de l'utilisateur final doit inclure toutes les informations réglementaires requises et avertissements comme indiqué dans ce manuel.