

# PHICOMM

## User Manual

150Mbps Wireless N USB Adapter

FWN-651ND

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All the photos and product specifications mentioned in this manual are for references only, as the upgrading of software and hardware, there will be changes. And if there are changes, PHICOMM is not responsible for informing in advance. If you want to know more information about our products, please visit our website at [www.phicomm.com](http://www.phicomm.com).

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# Chapter 1: Get to Know the Product

## Product Overview

Thank you for choosing PHICOMM 150Mbps Wireless N USB Adapter FWN-651ND.

FWN-651ND allows users to connect desktop computer or notebook to the internet anywhere in your house without the hassle of messy wires. Designed with high performance wireless N technology, the adapter is ideal for you to watch movies, transfer photos, and download music with the speed of up to 150Mbps. By adopting a detachable antenna, you could change to use any other antennas at your desire. And the antenna provides better signal and expands the wireless coverage, which enable you to enjoy internet from your couch, home office or the backyard with ease. Wi-Fi Protected Setup (WPS) button provides a quick and secure wireless connection at the push of a button.




## Main Features

- Detachable antenna ensures excellent wireless signal and speed
- Wireless speed up to 150Mbps, ideal for surfing, emailing, online gaming and even HD video streaming
- Gets your secure wireless network up and running in seconds by using the Resource CD
- Advanced wireless security WPA/WPA2 encryption standards get you up and running safely
- Easily setup a WPA2 encrypted secure connection at a push of the WPS button
- Supports Infrastructure and Ad-Hoc modes
- Supports Wi-Fi Direct
- Supports Soft AP
- Supports Windows 2000/XP/Vista/7
- Fully compatible with all IEEE 802.11b/g/n products

## Chapter 2: Install Driver & Utility

- **Note:** Please download the driver from our website [www.phicomm.com](http://www.phicomm.com) if your computer is not equipped with CD drive.
1. Fix the enclosed antenna onto the USB adapter, and then plug it into your computer. The window as below might be popped up. Click **Cancel**.





2. Insert the Resource CD into your computer, the Setup Wizard will pop up on the screen automatically. Or please click **My Computer > CD-ROM Drive** (  Autorun.exe).



3. Click **Install Driver & Utility** and follow the step-by-step instructions to finish the driver and utility installation.



After installing the driver and utility, a PHICOMM Wireless Utility icon  will appear on your taskbar, and a utility shortcut  will show on your desktop.

# Chapter 3: How to Use the Product


## Use under Client Mode

FWN-651ND is defaulted to working under Client mode as a wireless signal receiver, you can link your device to a wireless network by plugging the adapter into your network device.




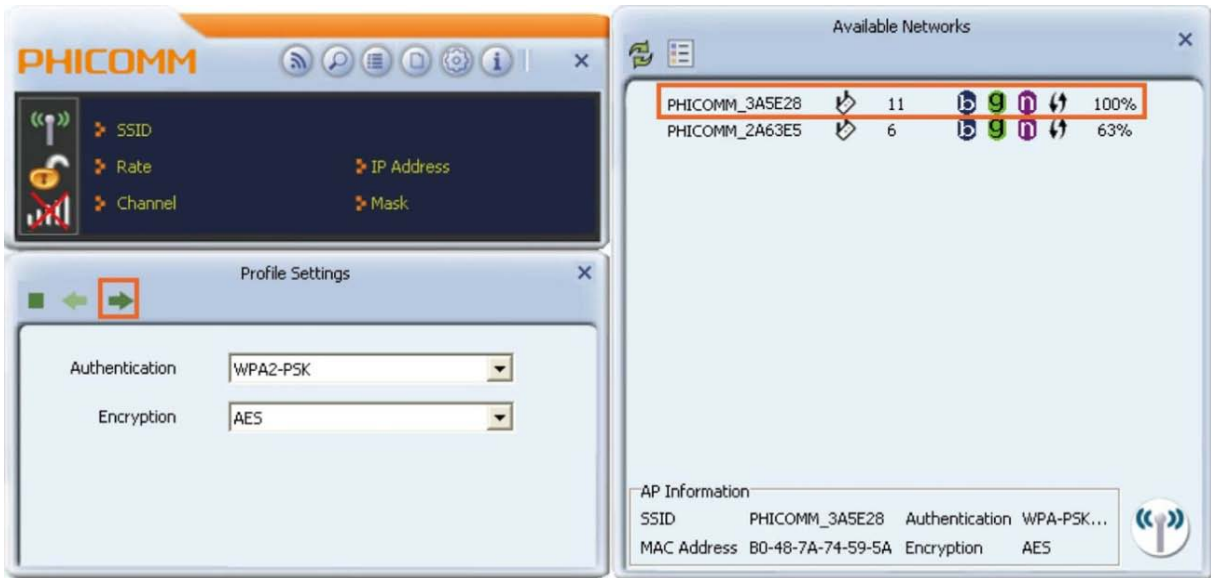
Under this mode, many functions can be realized such as network connecting, WPS, profile management and Wi-Fi direct connection etc.

## Connect to a Wireless Network

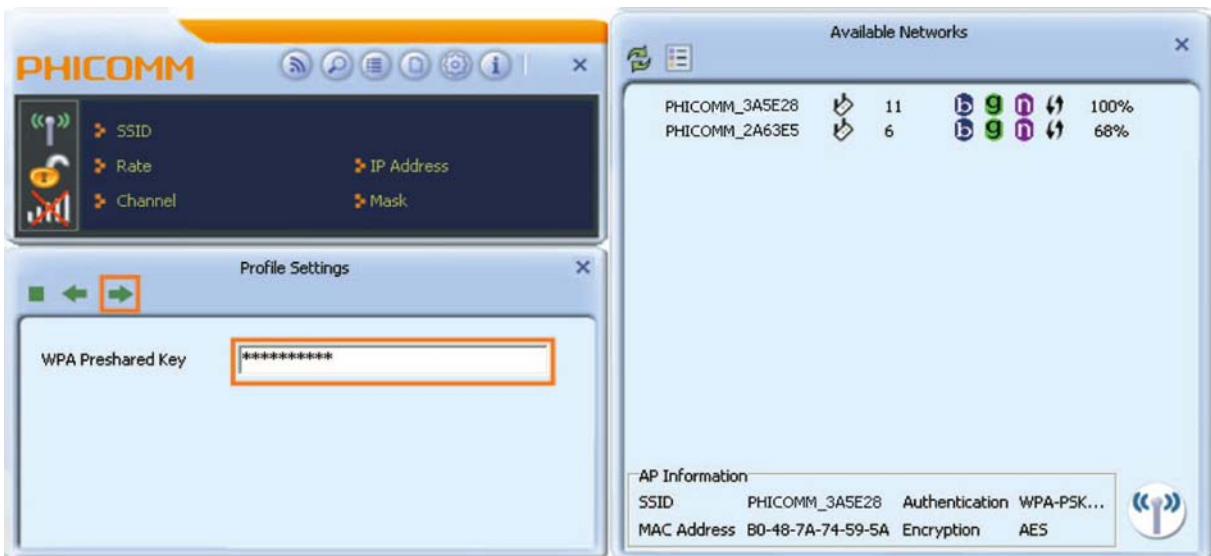
1. Double click the PHICOMM Wireless Utility icon  on your taskbar. The utility window will pop up.



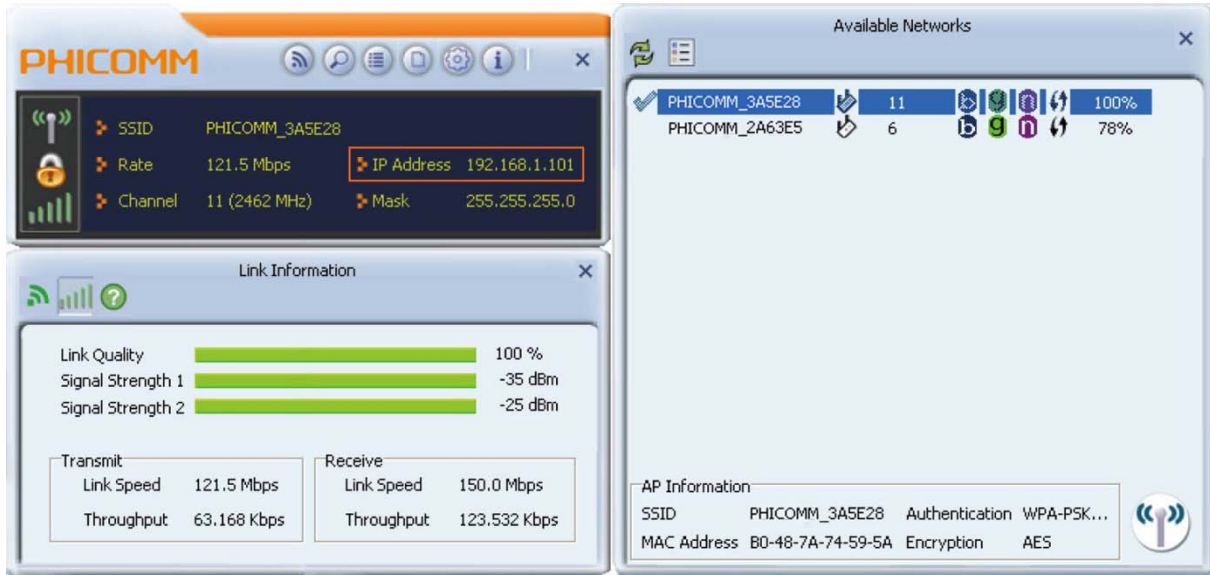
2. Double click the network that you would like to connect from the Available Networks Table on the right. Click the icon  to get into the next step.






3. Input the password of your wireless network, and then click the icon .



- Wait for a second till the following page appears. If the IP Address displays as 0.0.0.0, you are failed to connect to the network, please try again. If not, the wireless network connection is successful.



The PHICOMM Wireless Utility icon on the taskbar will display as . Green bars show the quality of wireless signal,  means no signal while  means full signal.

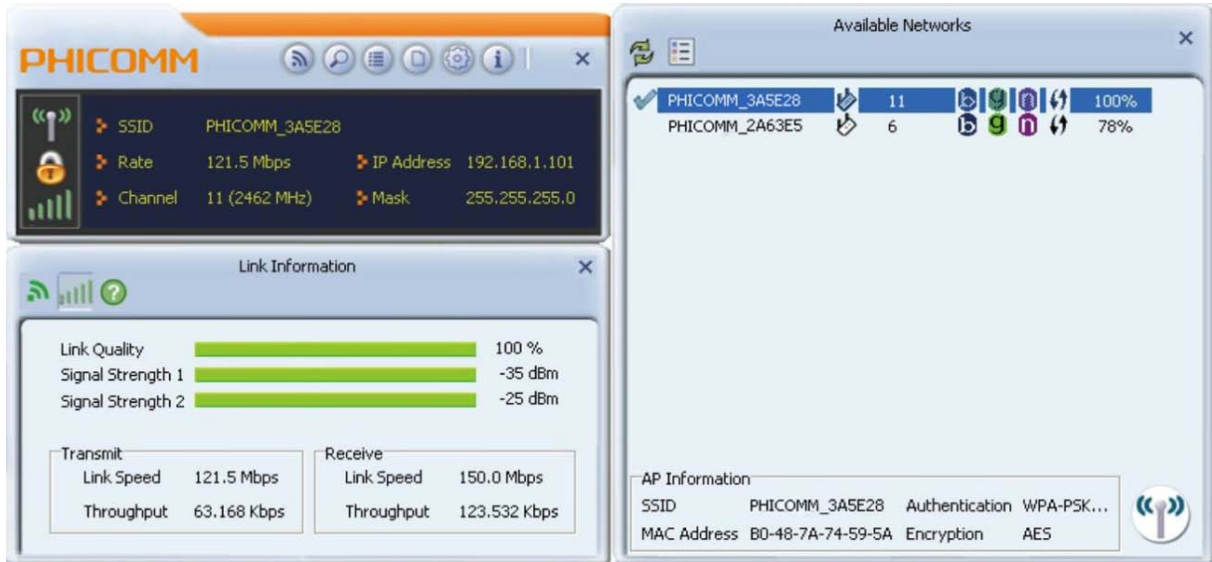
## Enable WPS Function

You can apply WPS in three ways:

- WPS Button (Recommended) - The device to which you are connecting must have a WPS button available on its panel.
- PBC - The device to which you are connecting must have a WPS button available on its panel or as part of its software interface.
- PIN Code - Use this method if the device to which you are connecting has no WPS button.

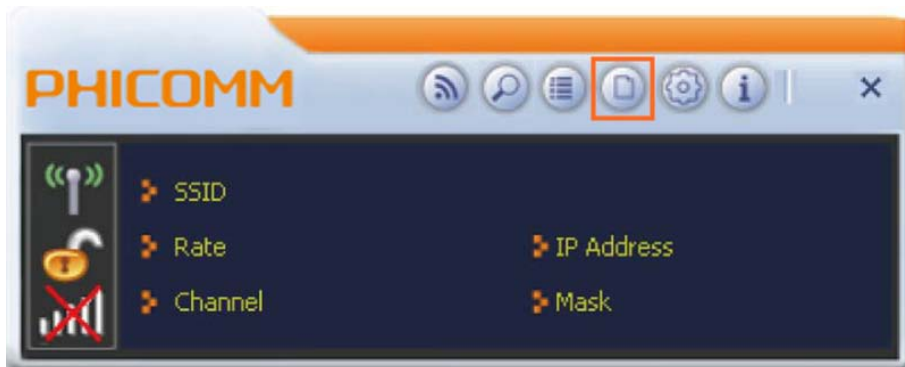
**A. Connect via the WPS button**


1. Push the WPS button on the front panel of the Wireless Router.
2. Within two minutes, press and hold the WPS button on the adapter for 2 to 3 seconds.
3. Wait for the adapter to connect to the Wireless Router.



**B. Connect via the PBC**

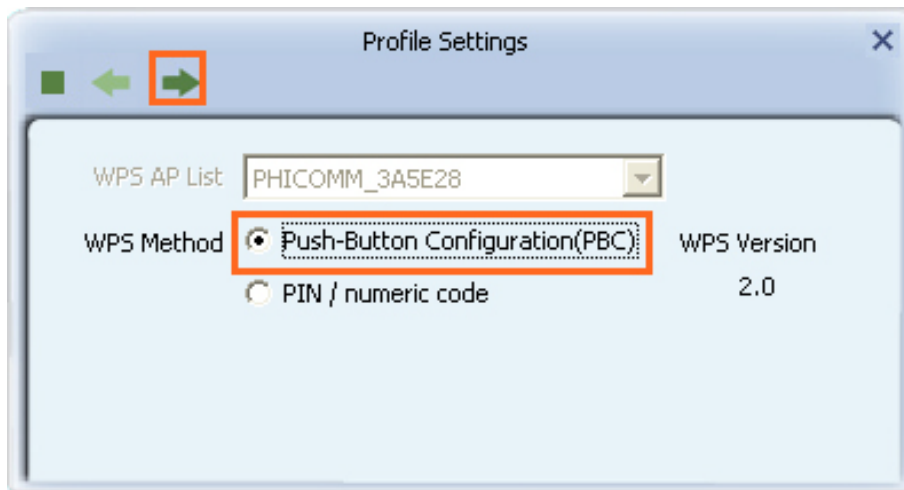
1. Click the Profile Settings button  on the PHICOMM Wireless Utility.



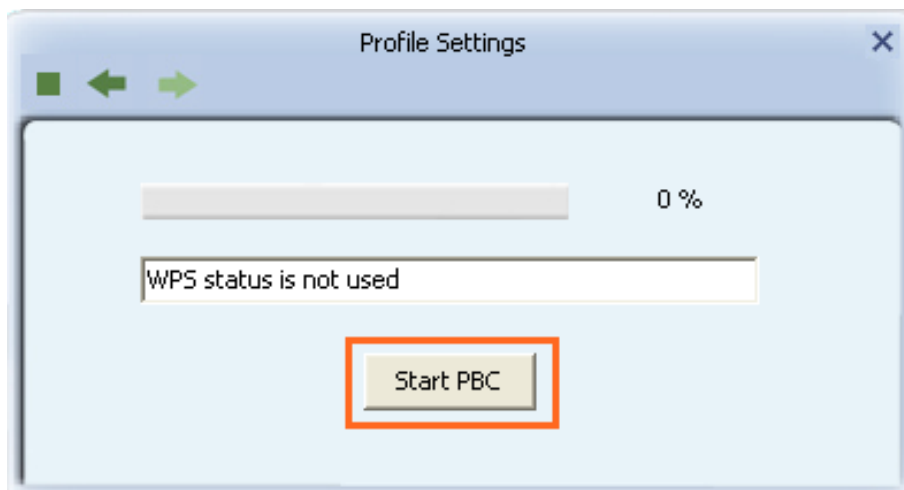
2. The Profile List screen displays. In this page, click the WPS button .



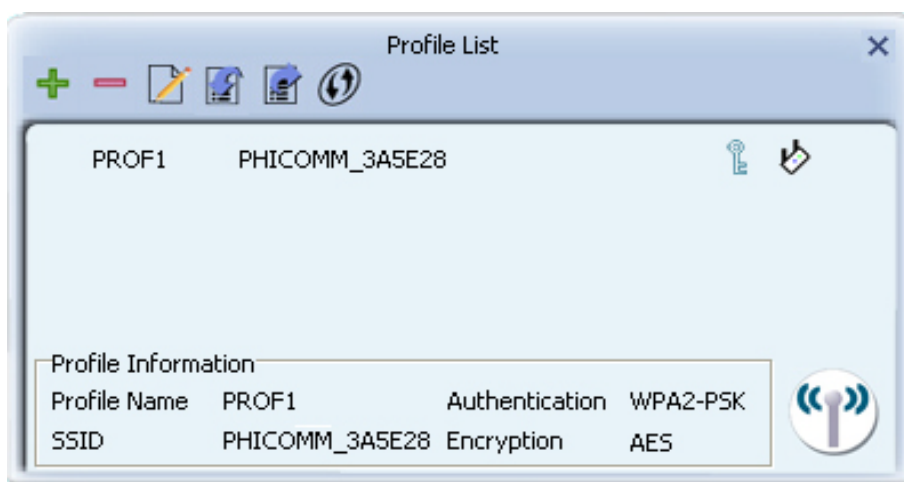
3. Select Push-Button Configuration (PBC). Click  to continue.



4. Click **Start PBC**. At the same time (within 120 seconds) click the WPS button on the device to which you are connecting.

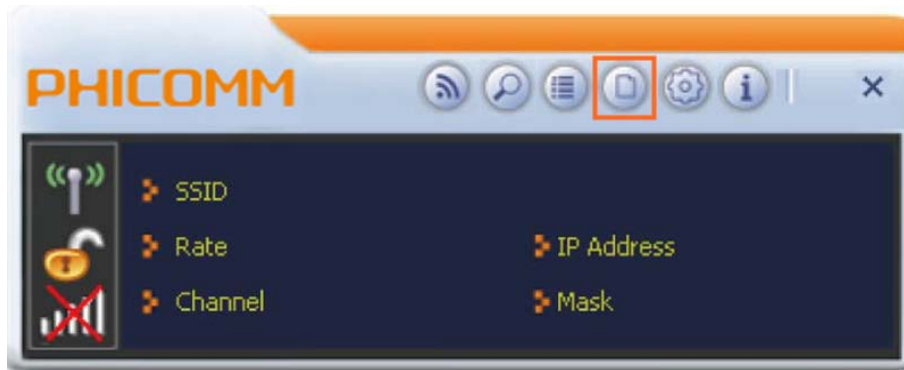



5. Once connected, your WPS profile appears in the Profile List.

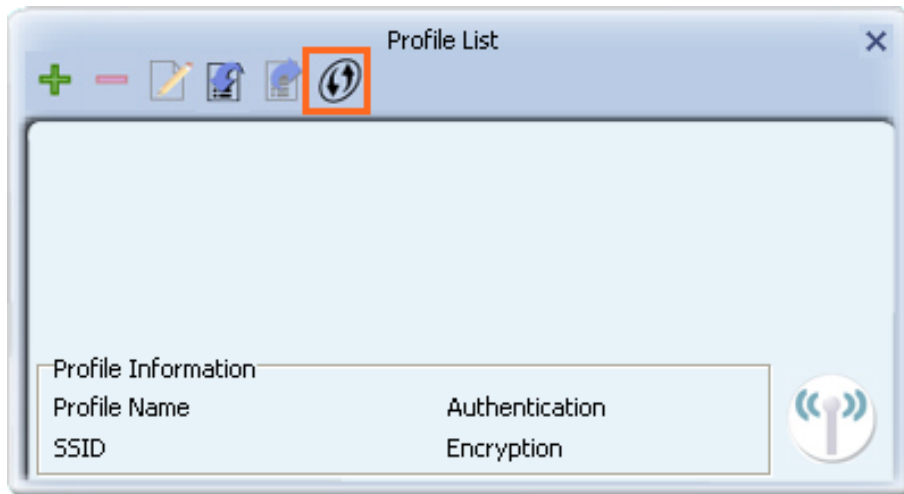



### C. Connect via the PIN code

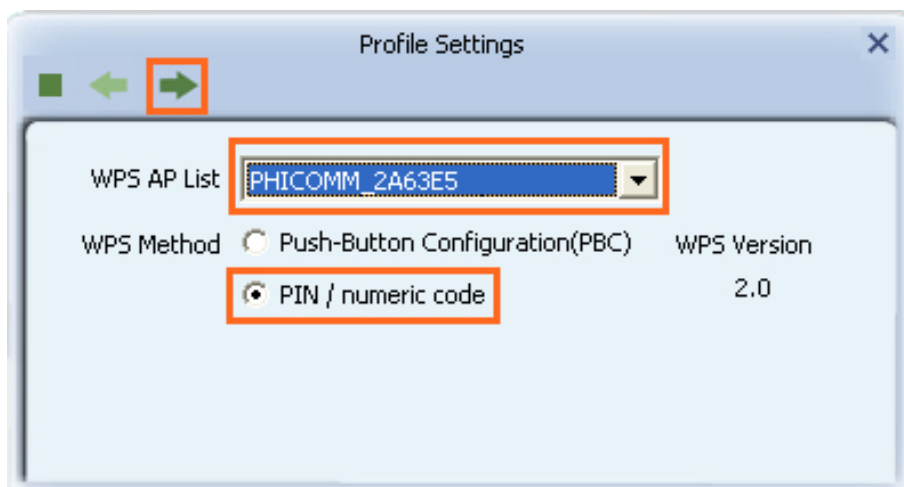
1. Click the Profile Settings button  in the PHICOMM Wireless Utility.




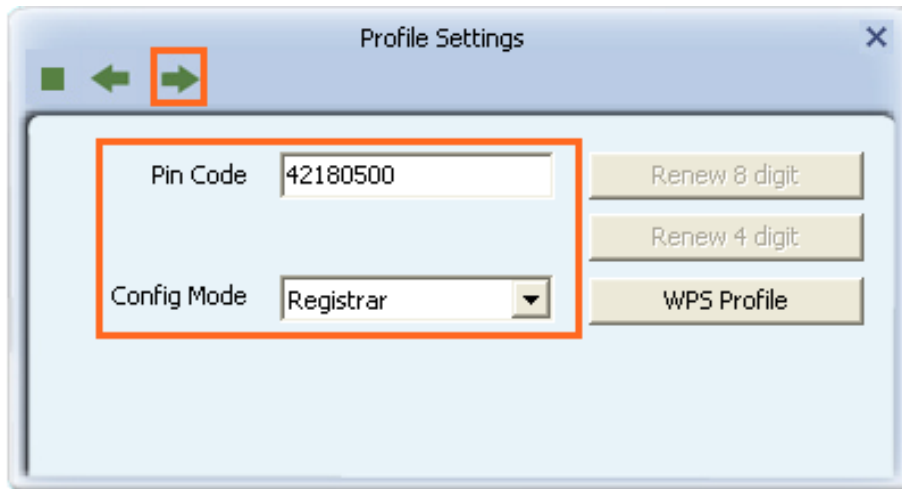
2. The Profile List screen displays. In this page, click the WPS button .



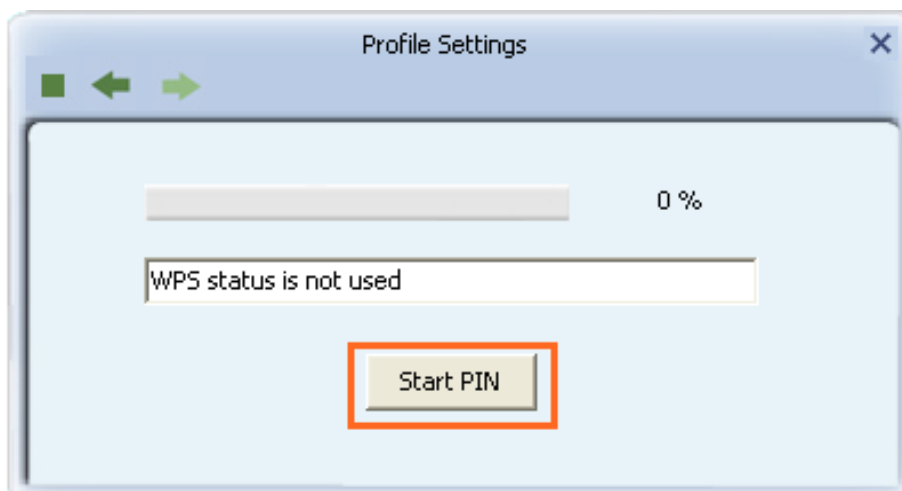
3. Select **PIN / numeric code**, in the WPS AP List field, select the name of the network to which you connecting. Click  to save your settings.



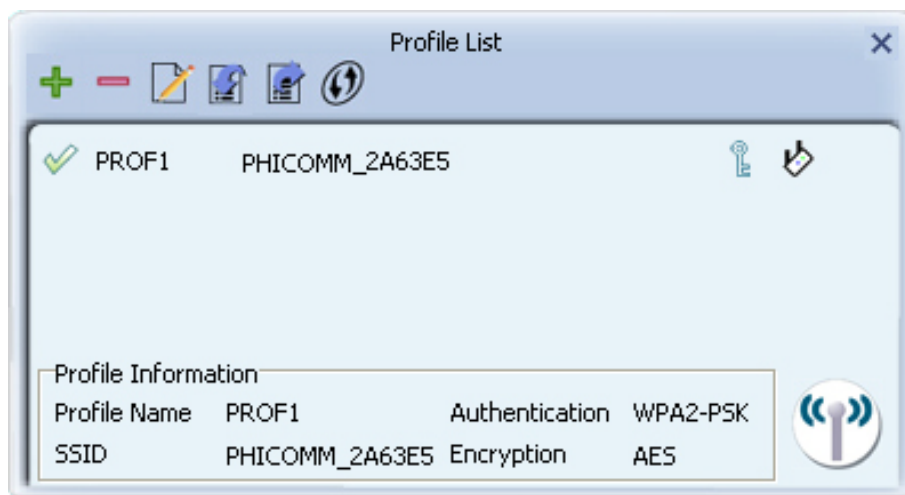
4. Select **Registrar** In the Config Mode field, input the PIN Code provided by the device to which you are connecting (Usually you can find the PIN code on the label of the device). And click  to save your settings.



5. Click **Start PIN**. And then (within two minutes) to activate the corresponding WPS PIN connection function on the device to which you are connecting.

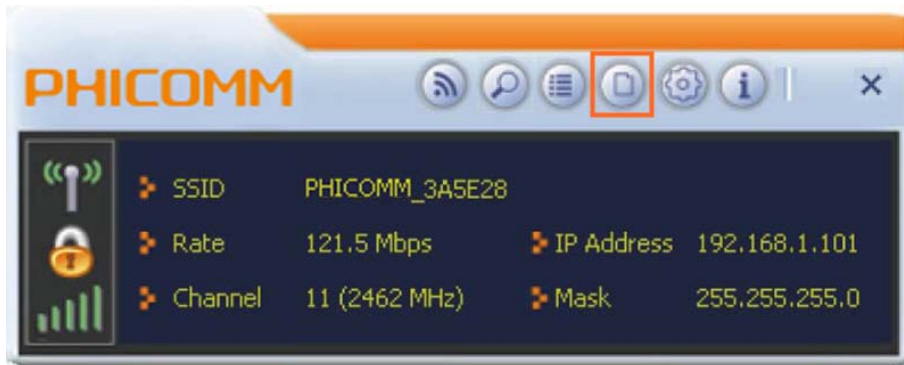


6. Once connected, your WPS profile appears in the Profile List.



## Manage Connection Profile

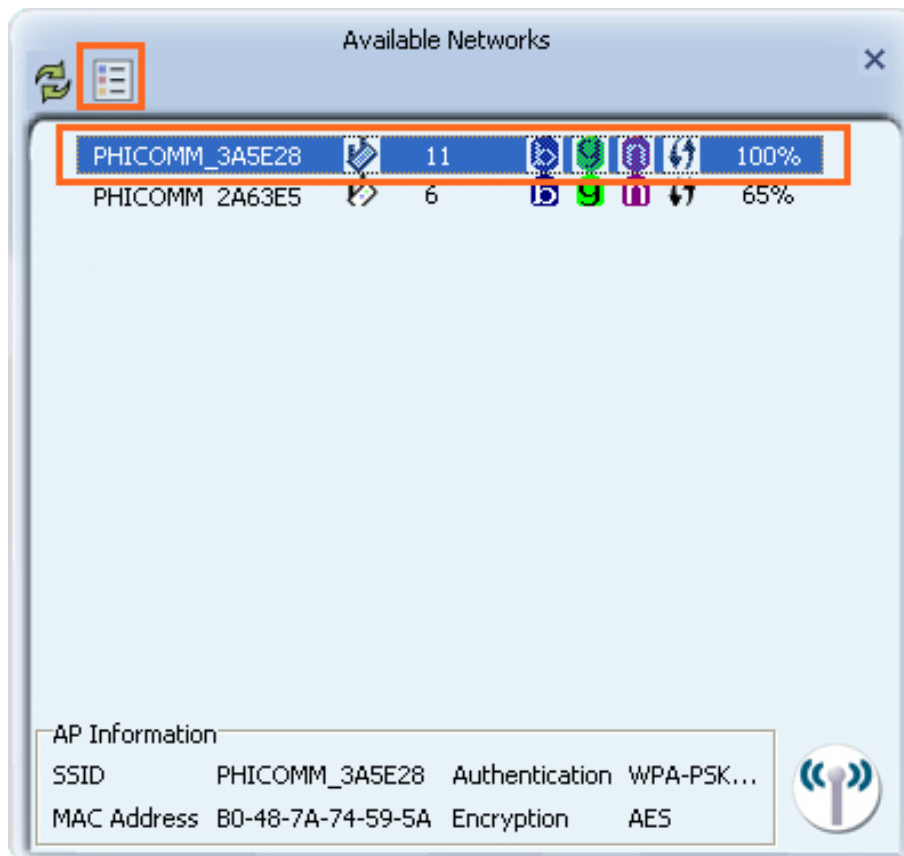
Click the Profile Settings button  to display the Profile List screen.




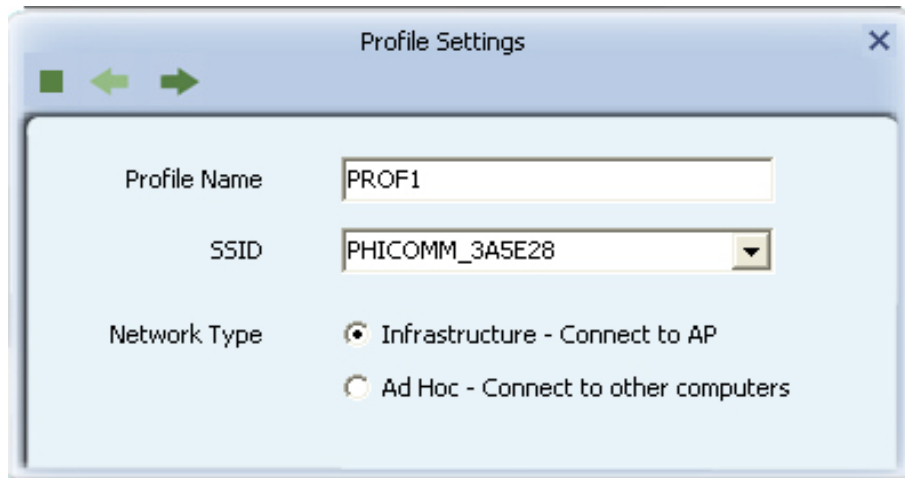
If you need to connect to different wireless access points at different time, like the access point of your home, office, cybercafé, or public wireless service, you can store the connection parameters (encryption, passphrase, security etc.) as a profile for every access point, so you don't have to input these parameters every time when you want to connect to a specific wireless access point.

### A. Add a new profile

1. Select a network from the Available Networks Table, and click the Add to Profile button



- Settings of the selected network will be automatically displayed. Click  to finish. If required, enter security settings such as the security key for your network.



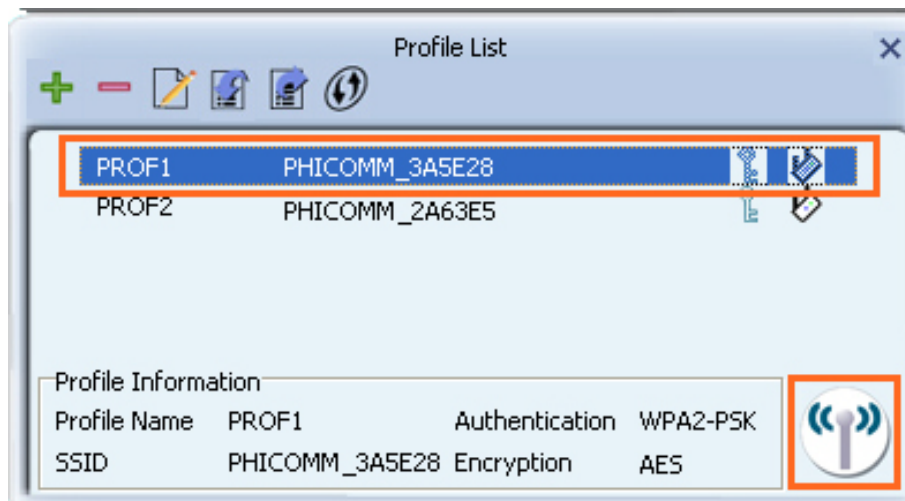
- After you have set up a profile, it appears in the Profile List.



## B. Use the profile to connect to network

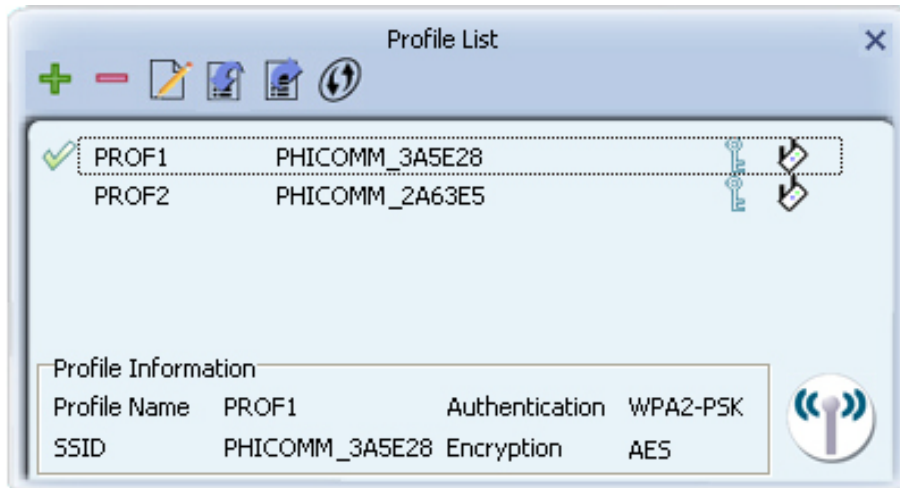
- In the Profile List, select the profile for the network to which you are connecting. Click the

Connect button .



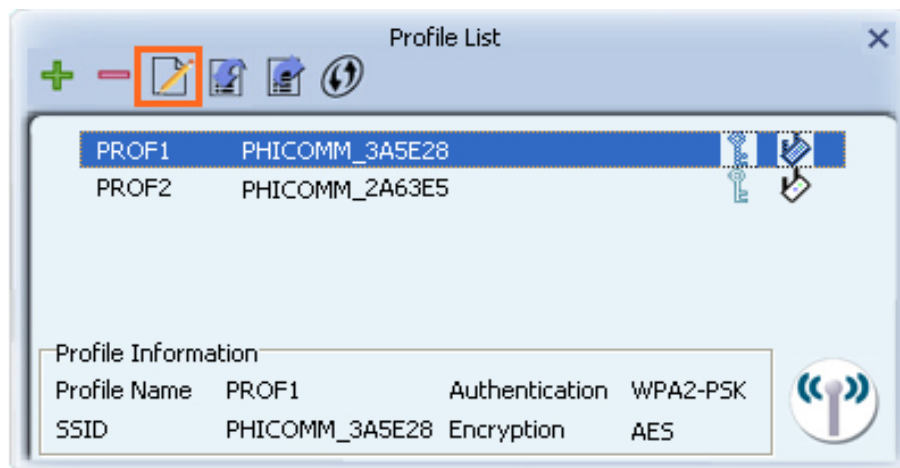


2. If the connection is successful, the tick icon  appears.

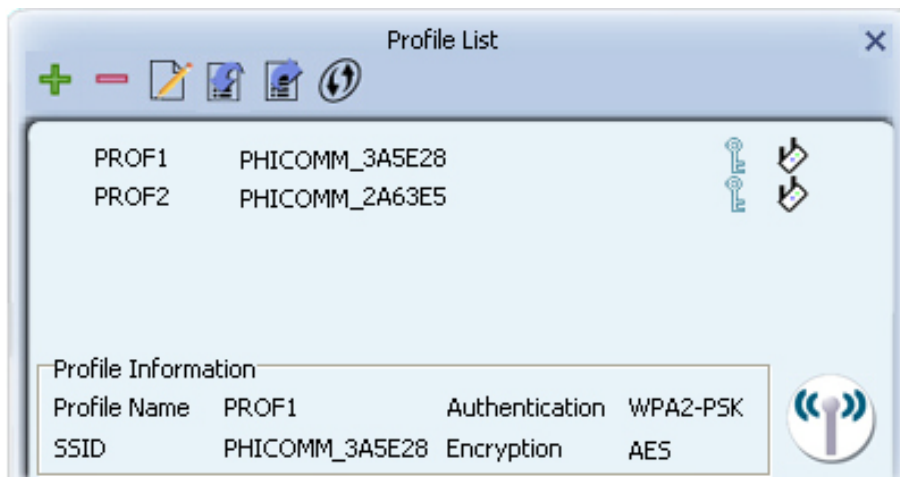


### C. Edit an existing profile

1. Select the profile which you want to edit from the Profile List, and click the Edit button

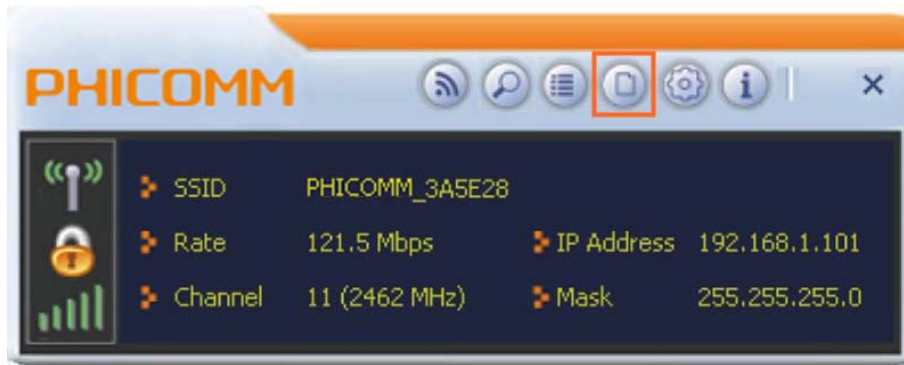



2. Follow the step-by-step instructions to edit the settings. After you have completed it, it appears in the Profile List.



#### D. Remove an existing profile

1. Click the Profile Settings button  to display the Profile List screen.



2. Select the profile which you want to remove from the Profile List, and click the Delete button  to remove it.



### Share Files between PCs

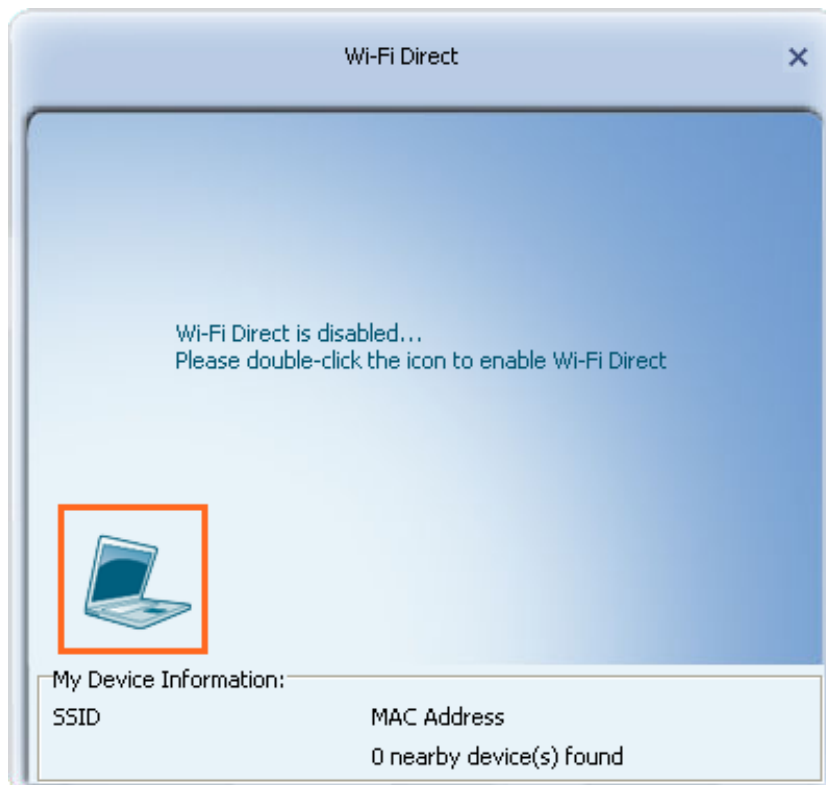
Our product also supports you to connect one computer or device with another using Wi-Fi direct connecting function. With this function, there is no need for an AP or wireless router. In comparison to alternatives such as Bluetooth, Wi-Fi Direct offers faster speeds (up to 250 Mbps depending on your network environment), with a greater range (up to 219 yards/ 200 meters) with stronger security (WPA2-PSK with AES encryption).


For instructions on making and accepting a Wi-Fi Direct connection using the PHICOMM Wireless Utility, follow the steps given below.

1. To access the Wi-Fi Direct screens, click the Wi-Fi Direct button  on the PHICOMM Wireless Utility.



2. The Wi-Fi Direct screen displays. To enable Wi-Fi Direct, double-click the notebook icon.

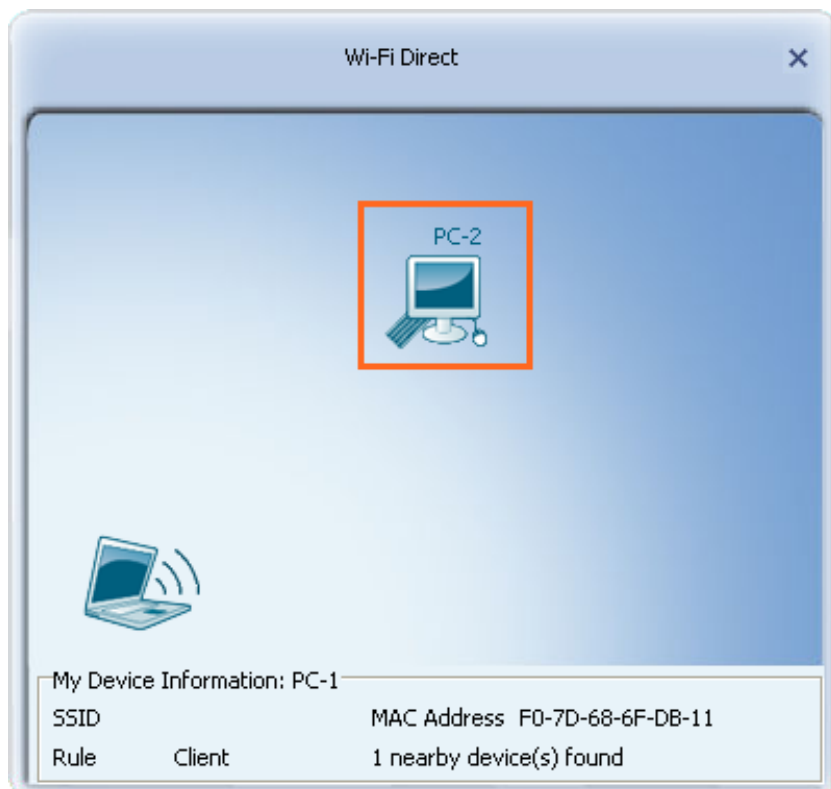


3. To identify your computer to other Wi-Fi Direct enabled devices, select Use My Computer name or type a name. Click  to save your settings.

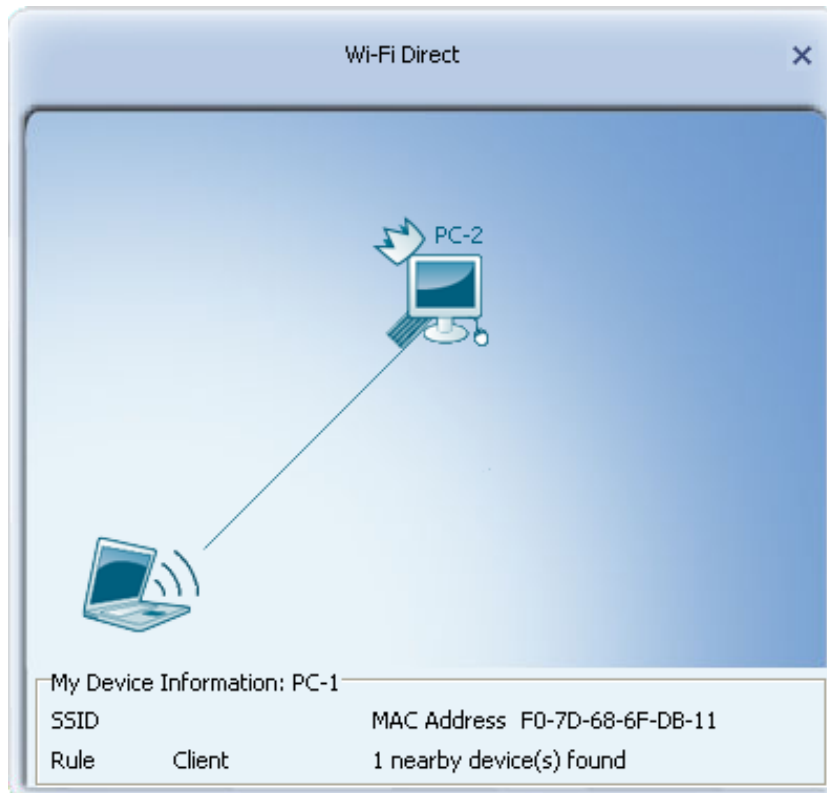


4. The following screen displays available Wi-Fi Direct enabled computers and devices. Right-click the notebook icon, select Scan to refresh and wait several seconds until all available devices are detected.

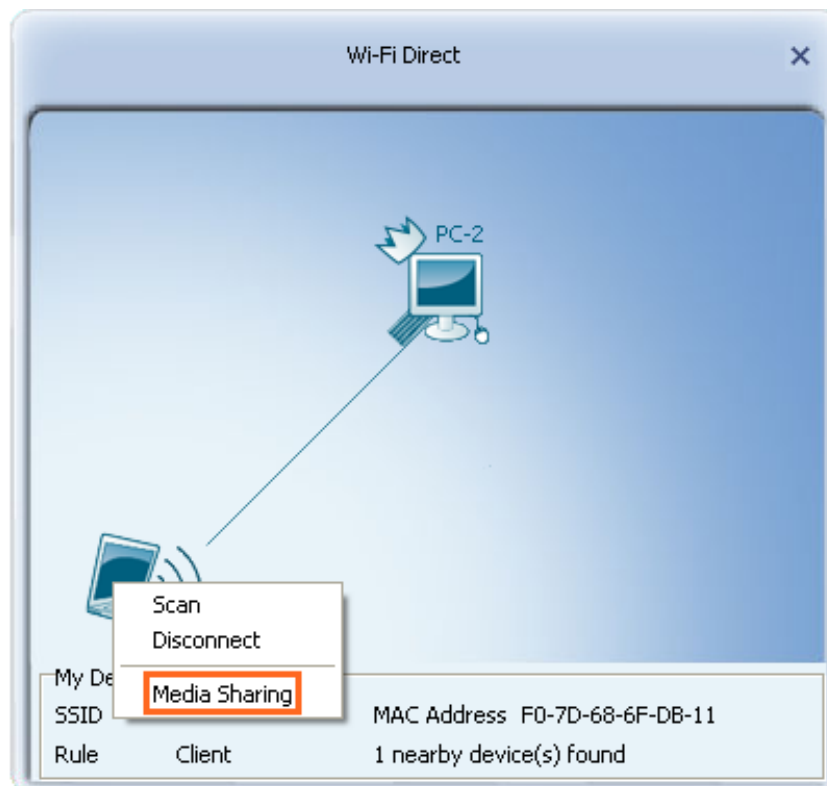
To connect to a computer or device, double-click its icon.




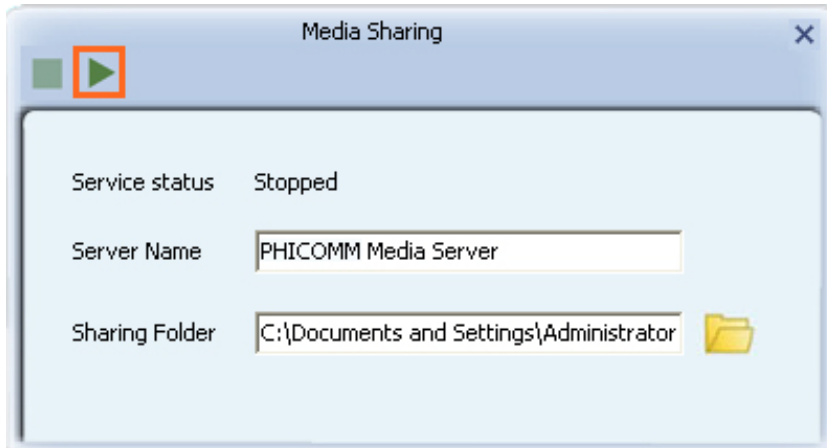
5. Select your connecting method and follow the step-by-step instructions. If your connection is successful, the connection details are shown on the screen that displays.



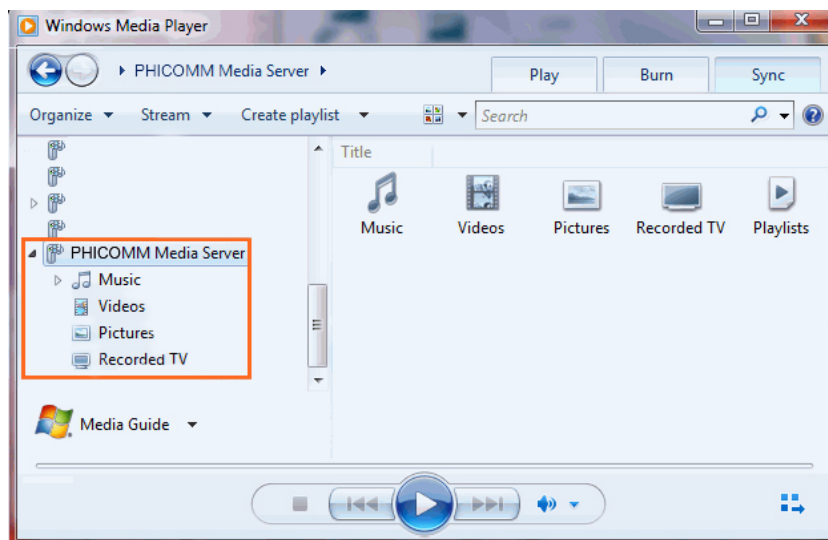
6. In the Wi-Fi Direct screen, right-click on the notebook icon and select **Media Sharing**.




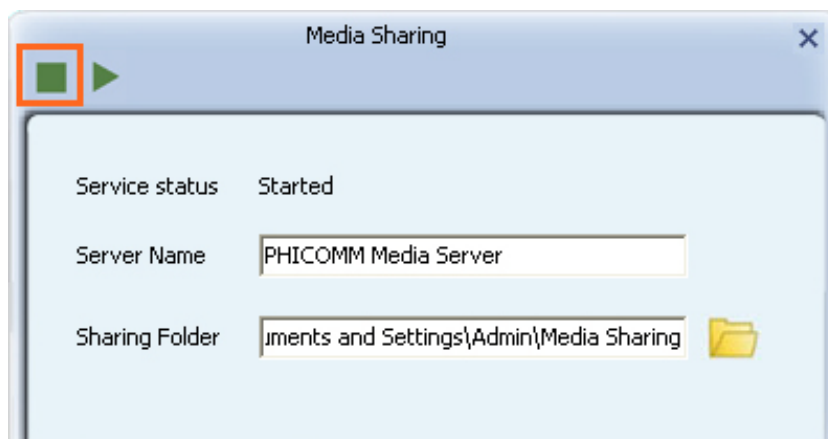
7. In the Media Sharing window, click  to enable the server and begin sharing media files located in the Media Sharing folder.



8. The files shared by the media server can now be accessed on the connecting computer. Use a media player on the connecting computer to locate the server and the media files, and view them or begin playback.



9. To finish sharing using the PHICOMM Media Server, in the Media Sharing window, press the stop button .



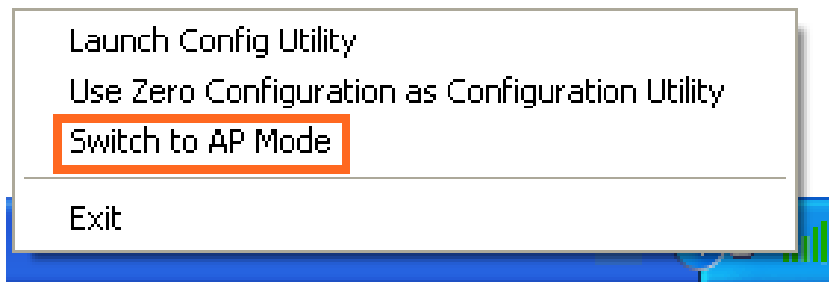
## Use under AP Mode

The device can also serve as an Access Point to transmit wireless signals and to create a wireless network, allowing other wireless devices to connect to internet by accessing its network.




## Set Up a Wireless Network

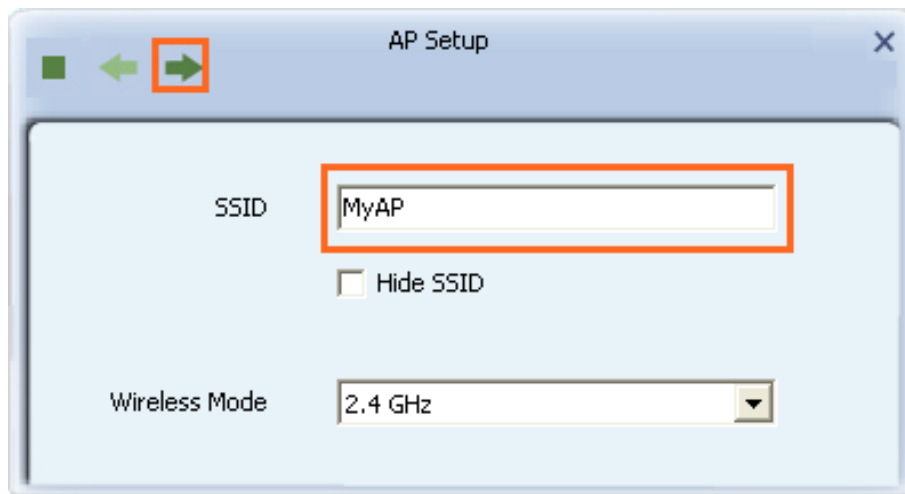
1. Right-click the PHICOMM Wireless Utility icon  on your taskbar, and then click Switch to AP Mode. The tray icon will turn from  to .




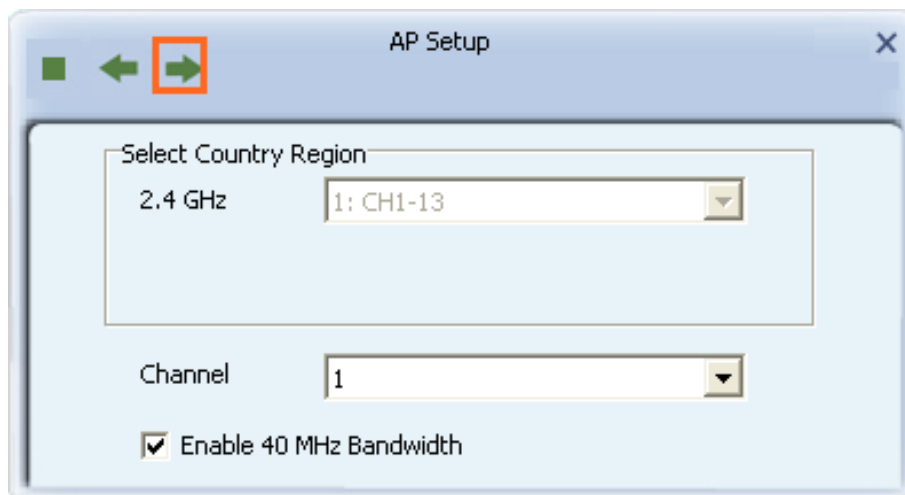
2. Click the AP Setup button  to begin setting up your AP.




3. Set the name of your network (SSID) using up to 32 ASCII characters. Click  to navigate to the next screen.

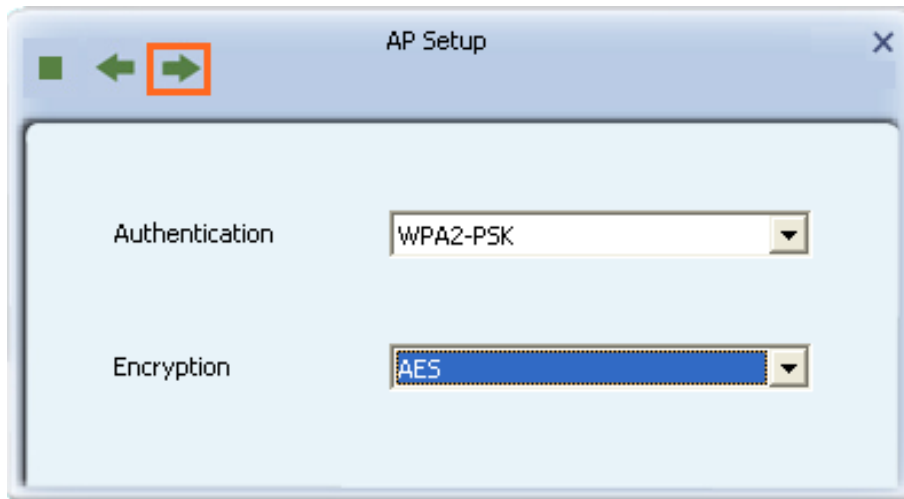


4. In the Select Country Region drop-down list, leave at the default settings for your region. Click .

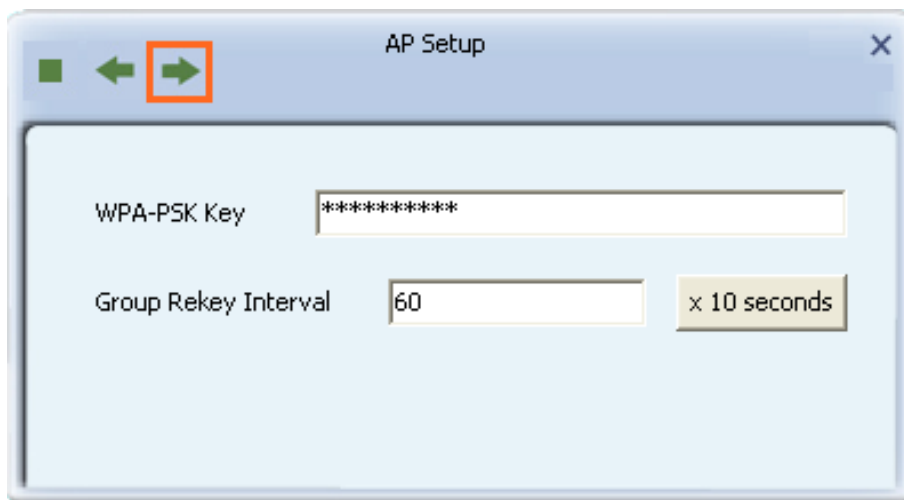


5. Set up wireless security for your network. Select the security method that supported by the devices using your network (e.g. WPA2-PSK AES). Click .



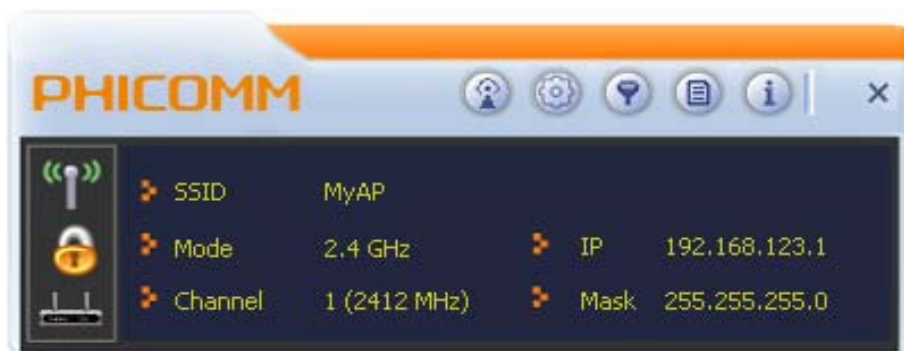


6. In the WPA-PSK Key field, type a security key, and click .



**Note:** Record your wireless security key safely for use when adding other computers or devices to your wireless network.

7. Once your AP is set up, the Utility displays the name of your network and your AP's IP address for use when adding computers and devices to your network.



You have completed setting up a wireless network. Other wireless-enabled computers and devices may now join your network using the same wireless settings as those you configured on your PHICOMM Wireless Utility.

# Chapter 4: Specification

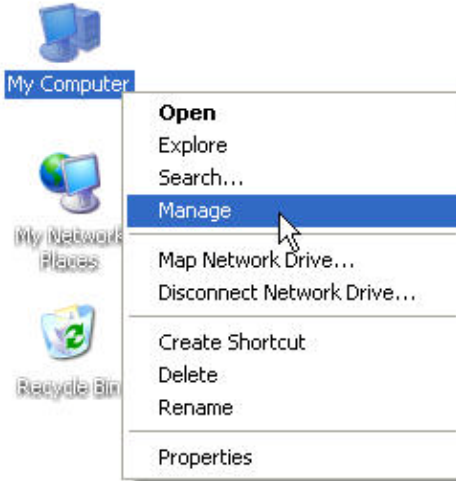
Product	
Standards	IEEE 802.11n, IEEE 802.11g, IEEE 802.11b, CSMA/CA with ACK
Interface	USB 2.0
Button	WPS Button
Data Rate	11n: 150Mbps 11g: 54Mbps 11b: 11Mbps
Frequency Range	2.4-2.4835GHz
Wireless Transmit Power	< 20dBm
Antenna	1 x 4dBi Detachable Omni-directional Antenna
Modulation Type	DBPSK, DQPSK, CCK, OFDM, 16-QAM, 64-QAM
Receive Sensitivity	150M: -68dBm@10% PER 108M: -68dBm@10% PER 54M: -68dBm@10% PER 11M: -85dBm@8% PER 6M: -88dBm@10% PER 1M: -90dBm@8% PER
Wireless Security	64/128-bit WEP, WPA/WPA2, WPA-PSK/WPA2-PSK (TKIP/AES)
System Requirements	Microsoft® Windows® 2000, XP, Vista and Windows 7
Others	
Operating Temperature	0°C~40°C (32°F~104°F)
Storage Temperature	-40°C~70°C (-40°F~158°F)
Relative Humidity	10%~90%, non-condensing
Storage Humidity	5%~95%, non-condensing
Dimensions (W x D x H)	73mm x 25mm x 10mm
Certifications	FCC, CE, RoHS
Package Contents	1 x Wireless N Adapter 1 x Resource CD 1 x Omni-directional Antenna 1 x USB Extension Cable 1 x Quick Installation Guide

\*All references to speed and range are for comparison purposes only. Product specifications, size, and shape are subject to change without notice, and actual product appearance may differ from that depicted herein.

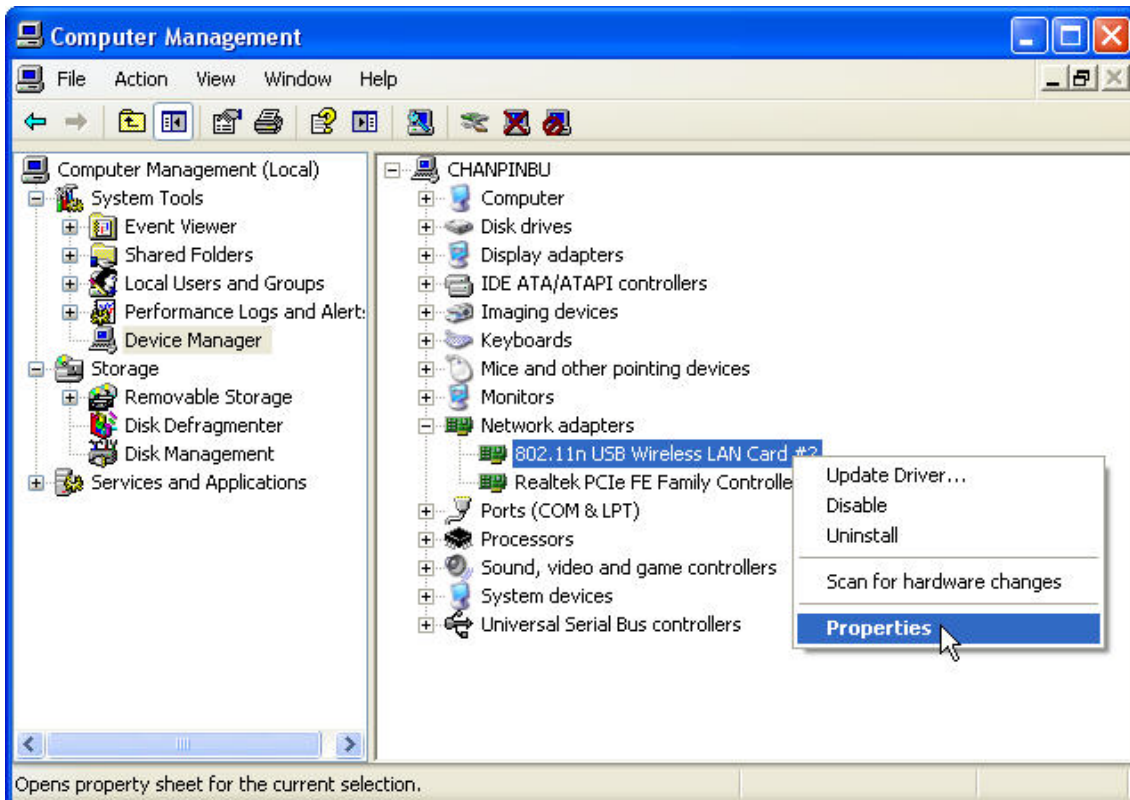
# Appendix A: Troubleshooting

## 1. How do I know if my adapter is installed properly?

Right click on **My Computer** icon on your desktop screen, and then choose **Manage**.



Expand **Network Adapters**.



Right-click on **802.11n USB Wireless LAN Card**, choose **Properties**.



Look under **Device Status** to check that the device is working properly.

**2. The computer does not recognize the wireless network Adapter.**

Make sure that the Wireless Network Adapter is properly seated in the computer's USB port. If Windows does not detect the hardware upon insertion of the adapter, make sure to completely remove drivers that were previously loaded.

**3. Cannot connect to any access points.**

- Verify that the wireless network adapter is in infrastructure mode.
- Verify that the SSID of your wireless network adapter is set to the same SSID of your access point.
- Verify that the encryption type is the same as that of an access point. If you enabled WEP encryption, you must also set the same WEP Keys on both sides.

**4. The network is slow /having problem when transferring large files.**

- Move closer to the place where access point is located.
- There could be too much people using the same radio channel. Ask the owner of the access point to change the channel number.

# Appendix B: Certification

## FCC 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 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.

### FCC Caution

- Changes or modifications to this unit 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.
- For product available in the USA market, only channel 1~11 can be operated. Selection of other channels is not possible.
- This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.
- This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.

## CE Mark Warning



Marking with the above symbol indicates compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

This is a class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

### National restrictions

This device is intended for home and office use in all EU countries (and other countries following the EU directive 1999/5/EC) without any limitation except for the countries mentioned below:

Country	Restriction	Reason/remark
Bulgaria	None	General authorization required for outdoor use and public service
France	Outdoor use limited to 10 mW e.i.r.p. within the band 2454-2483.5 MHz	Military Radiolocation use. Refarming of the 2.4 GHz band has been ongoing in recent years to allow current relaxed regulation. Full implementation planned 2012
Italy	None	If used outside of own premises, general authorization is required
Luxembourg	None	General authorization required for network and service supply(not for spectrum)
Norway	Implemented	This subsection does not apply for the geographical area within a radius of 20 km from the centre of Ny-Ålesund
Russian Federation	None	Only for indoor applications

**Note:** Please don't use the product outdoors in France.

# Appendix C: Glossary

**WLAN:** Wireless Local Area Network.

**802.11:** A family of specifications developed by the IEEE for WLAN technology.

**802.11a:** An extension to 802.11 WLAN standard that provides up to 54 Mbps transmission in the 5 GHz UNI radio band.

**802.11b:** An extension to 802.11 WLAN standard that provides up to 11 Mbps transmission in the 2.4 GHz ISM radio band. 802.11b uses DSSS modulation.

**802.11g:** An extension to 802.11 WLAN standard that provides up to 54 Mbps transmission in the 2.4 GHz ISM radio band. 802.11g uses OFDM modulation and is backwards compatible with 802.11b.

**802.11n:** 802.11n builds upon previous 802.11 standards by adding MIMO (multiple-input multiple-output). MIMO uses multiple transmitter and receiver antennas to allow for increased data throughput via spatial multiplexing and increased range by exploiting the spatial diversity, perhaps through coding schemes like Alamouti coding. The Enhanced Wireless Consortium (EWC) was formed to help accelerate the IEEE 802.11n development process and promote a technology specification for interoperability of next-generation wireless local area networking (WLAN) products.

**Ad-Hoc:** A group of computers each with wireless adapters, connected as an independent WLAN.

**AES:** Advanced Encryption Standard.

**SSID:** Service Set Identifier. A 32-character unique identifier attached to the header of packets sent over a WLAN that acts as a password when a mobile device tries to connect to the BSS.

**TCP/IP:** Transmission Control Protocol/Internet Protocol.

**TKIP:** Temporal Key Integrity Protocol.

**WEP:** Wired Equivalent Privacy. A security protocol for WLANs defined in the IEEE 802.11 standard.

**WPA:** Wi-Fi Protected Access.

**WPA2:** Wi-Fi Protected Access 2. The next generation of Wi-Fi security, based on the 802.11i standard.

**WPA2-PSK:** Wi-Fi Protected Access 2-Pre-shared Keys.

**WPA-PSK:** Wi-Fi Protected Access-Pre-shared Keys.

# PHICOMM

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