

PHICOMM

User Manual

150Mbps Wireless N USB Adapter

FWN-650N

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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.

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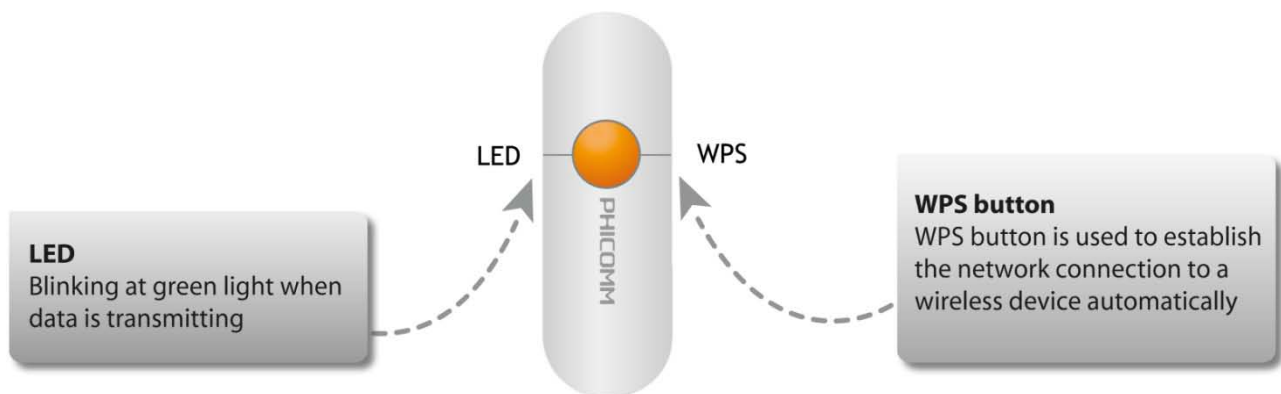
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Chapter 1: Introduction

Product Overview

Thank you for choosing FWN-650N wireless N USB adapter.

FWN-650N allows users to connect desktop or notebook computer to the internet anywhere in your house without the hassle of messy wires. Designed with high performance wireless N technology for better signal and coverage, the adapter is ideal for you to watch movies, transfer photos, and download music 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


- USB 2.0 portable design
- Wireless N speed up to 150Mbps, ideal for internet surfing, on-line gaming
- Quick wireless security setup by simply pressing the WPS button
- Supports dual-operating mode: Station mode and Access Point mode
- Supports WEP encryption, as well as WPA/WPA2 and WPA-PSK/WPA2-PSK encryptions
- Supports Windows 7/Vista/XP/2000
- Backward compatible with 802.11b/g product
- Setup wizard simplifies installation

Chapter 2: Installation

Driver Installation

Note:



- DO NOT plug the USB Adapter into your computer before installing the driver from CD-ROM.
- Please download the driver from our website www.phicomm.com if your computer is not equipped with CD driver.

- 1) Insert the enclosed CD into your computer, the Setup Wizard will pop up on the screen automatically. Or please click **My computer – CD-ROM drive** ( Autorun.exe).



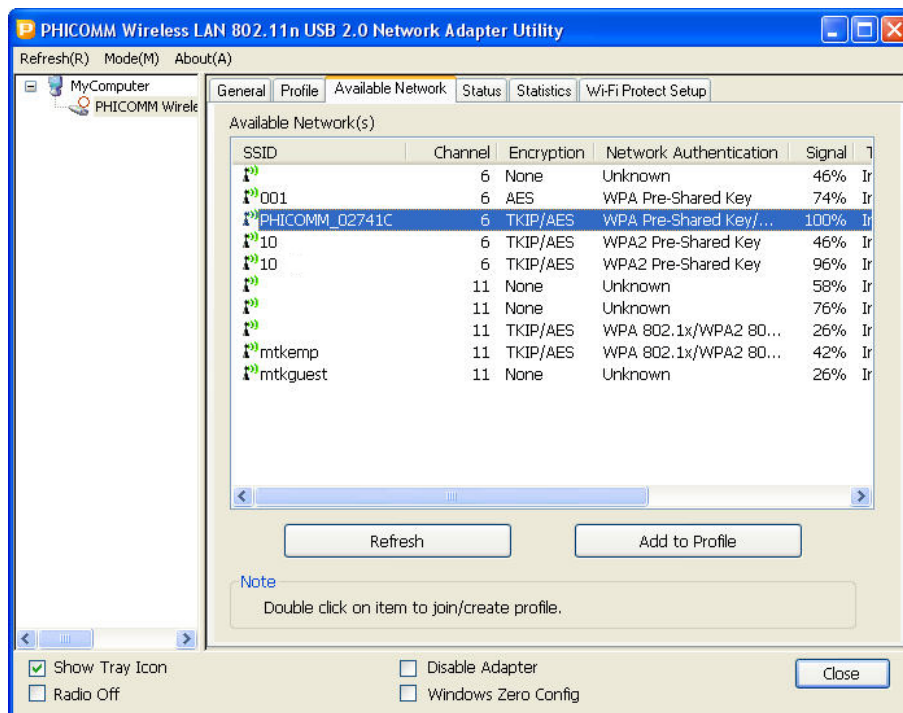
- 2) Click **Install Driver** and follow the step-by-step instructions to finish the driver installation.



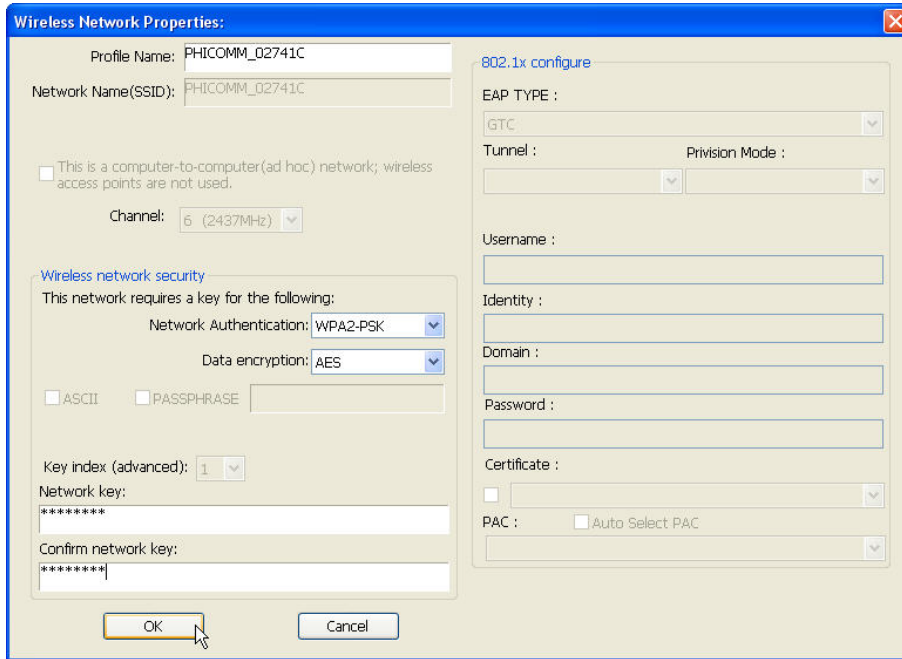
- 3) The computer will reboot automatically at the end of installation, it is time to plug the wireless adapter into your computer. A wireless icon  will appear in your taskbar, and an adapter shortcut  will show in your desktop.

Network Connection

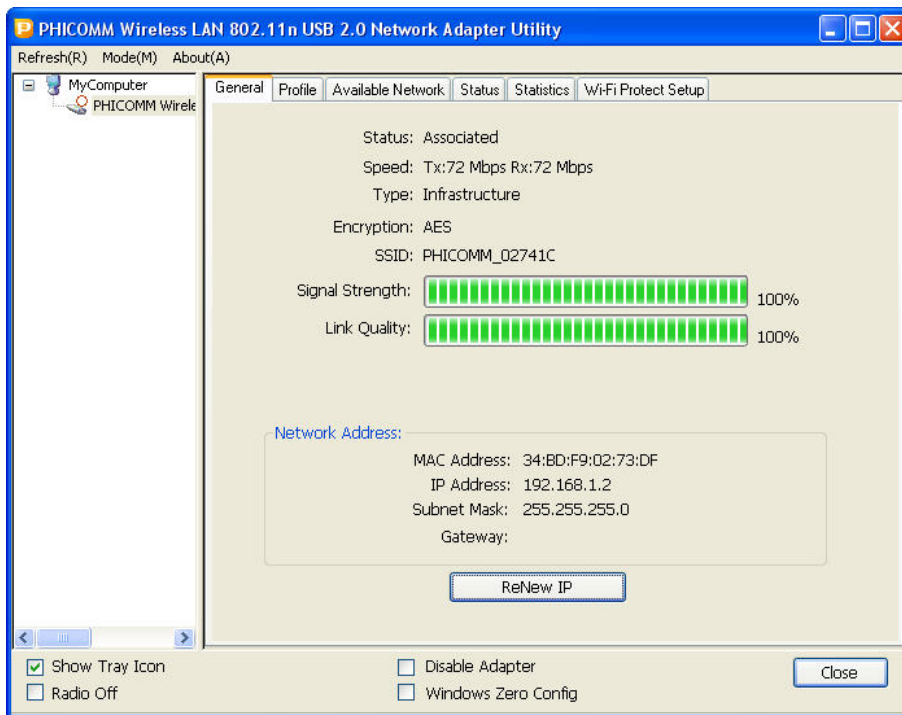
- 1) Double click the adapter shortcut, a utility page will pop up. Click **Available Network**, the available networks are listed in the table, choose the network that you would like to connect, and click **Add to Profile**.



2) Input the Network Key of your wireless network, click **OK**.





3) Wait a few minutes till the wireless network connection succeed, the following page will appear. Click **Close** to complete the configuration.



4) The wireless icon in the taskbar will display as follow:



Green bars show the quality of wireless signal,  means no signal while  means full signal.

Chapter 3: Configuration

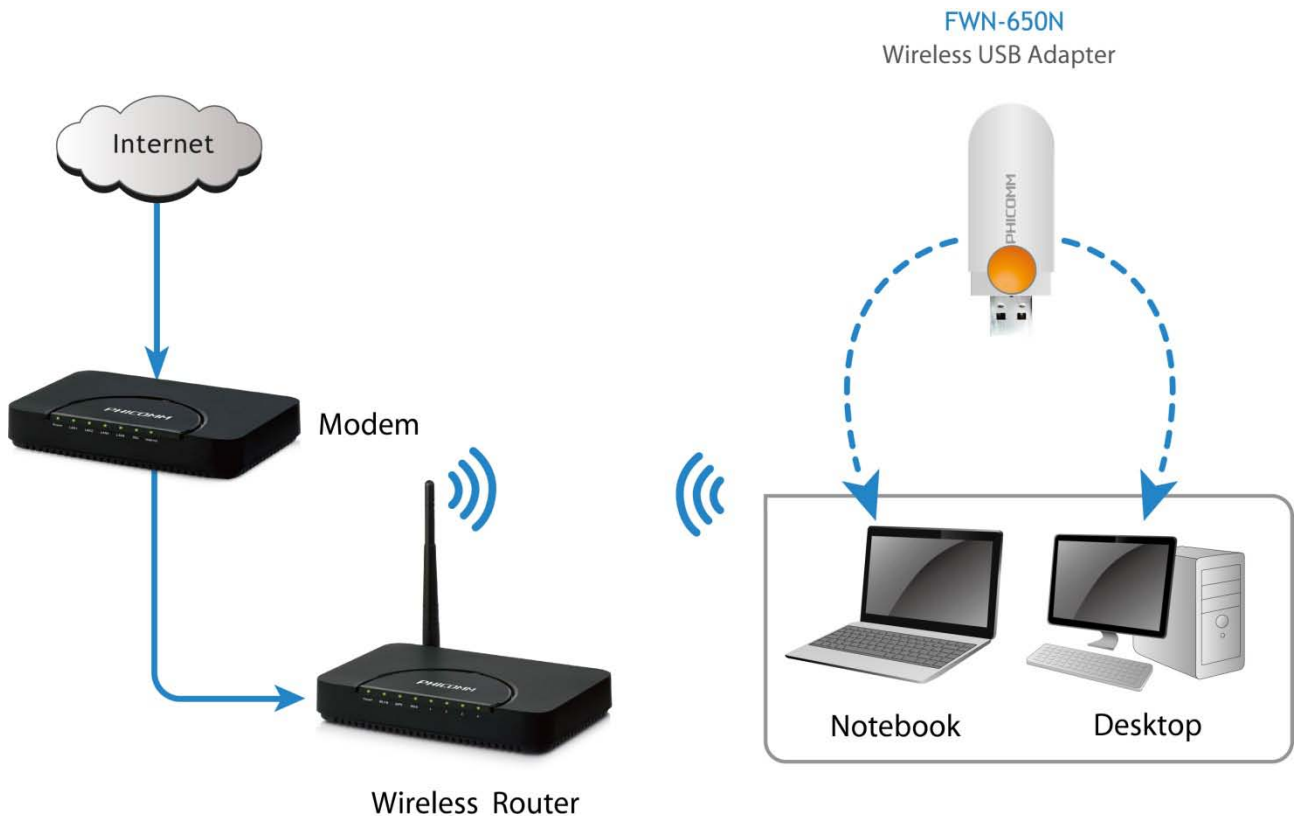
The Phicomm Adapter Utility is used to configure the Adapter. The Utility lets you search for available wireless networks, establish or terminate a connection with a wireless network, and save a wireless network's settings.

There are two client utility applications in FWN-650N: Station mode and Access Point mode.

Note: In this utility interface, Station Mode is the default access way. You can click **Mode** on the top menu to change the mode.

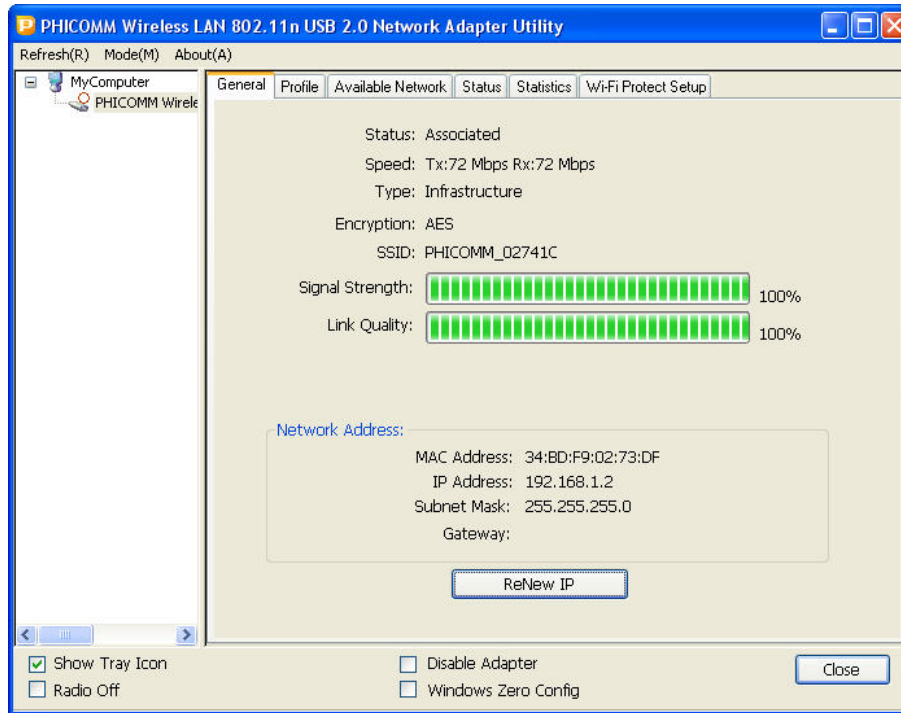
Station Mode

FWN-650N serves as a wireless device to receive wireless signals so as to access the Internet. Here is a sample network topology for your reference.




General

In the General tab, it displays general information of the being-used wireless network, including status, speed, authentication type, encryption type, SSID, signal strength and quality, network address.



Renew IP: Click to renew the general information of the being-used wireless network.

Show Tray Icon: Select this option,  will display on the taskbar; otherwise, no icon will be shown.

Disable Adapter: Select this option, the adapter cannot be used anymore.

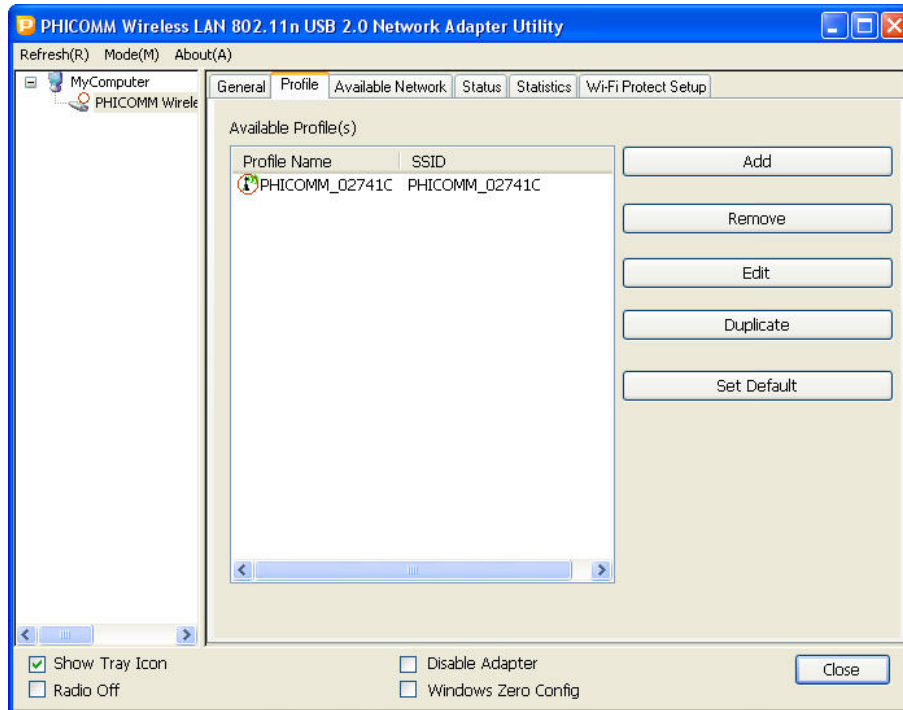
Radio Off: Select this option, no wireless signal can be received by the adapter.

Window Zero Config: Select this option, you can also configure wireless network connection by Windows XP built-in configuration utility.

Close: Click to close the adapter utility window.

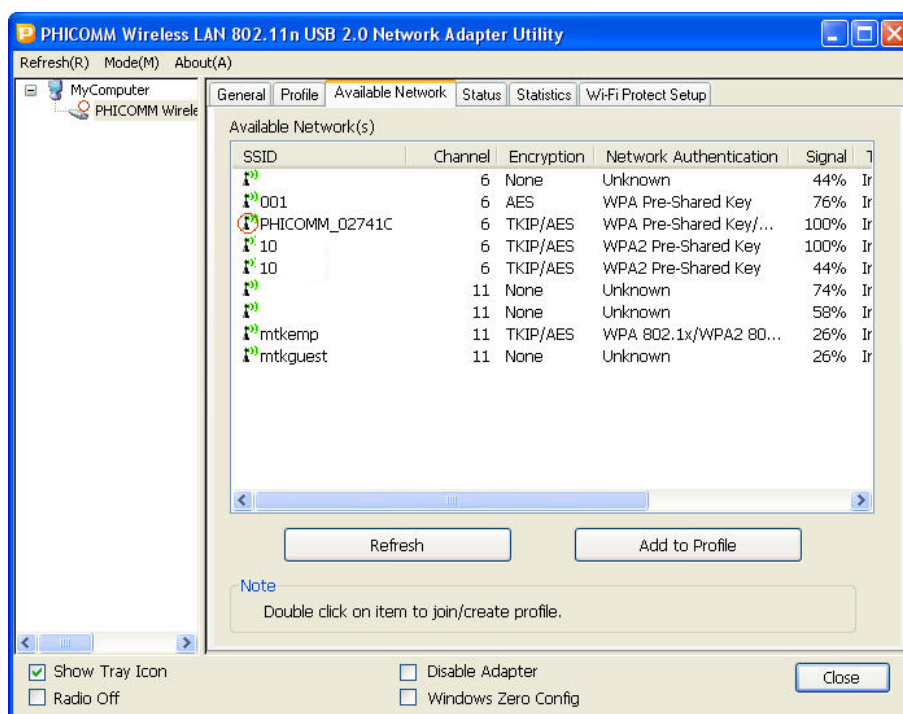
Profile

Profile tab shows the profile of different networks that you have added or used. You could select any of them and operate as add, remove, edit, duplicate and set default.



Available Network

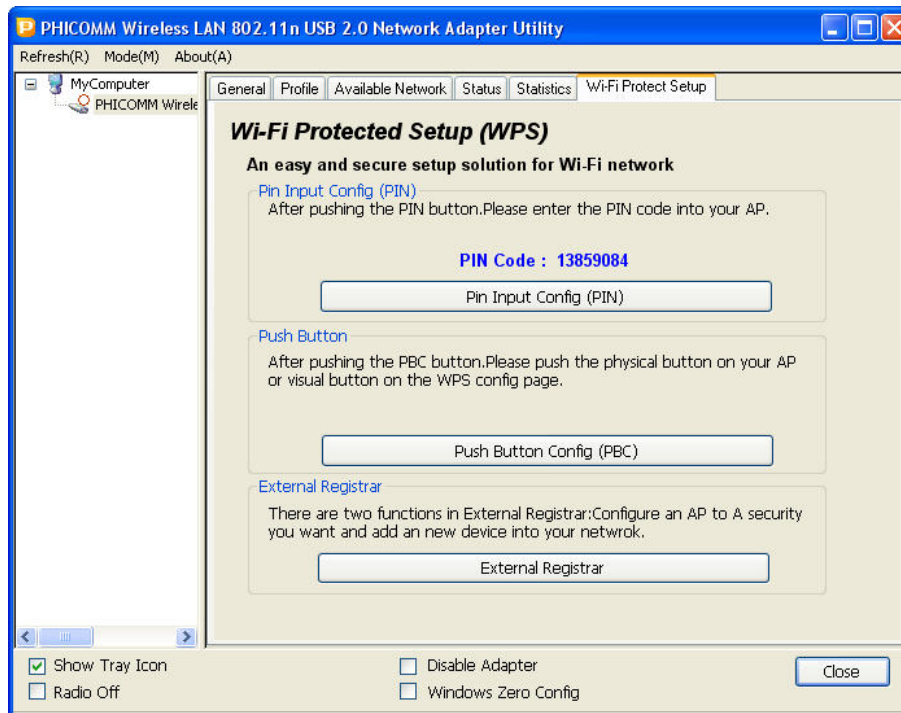
The Available Network is used to scan available wireless networks around, providing the information such as network name (SSID), channel, encryption type, authentication, signal strength etc. of each network for your reference.



Wi-Fi Protected Setup

There are three ways to connect to a wireless network by WPS function:

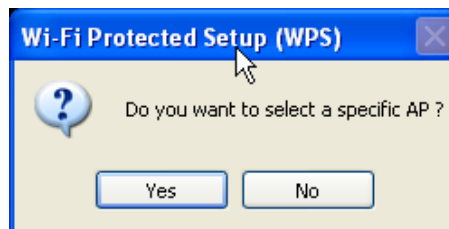
Note: Wi-Fi Protected Setup is enabled only with WPS-compliant devices.



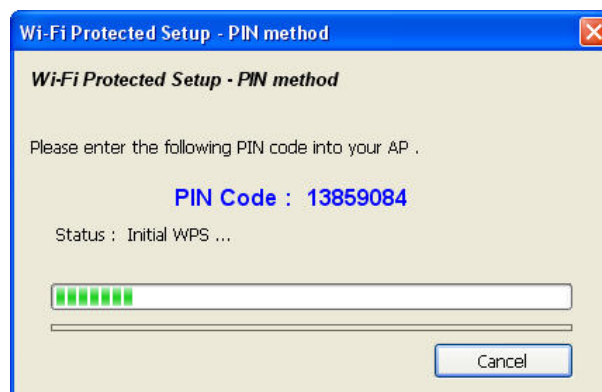
PIN Input Config (PIN)

It is a method to connect to the network by inputting PIN (Personal Identification Number) code which was shown in the page into your router's utility page. Operation as below:

- 1) Click PIN Input Config (PIN) button, the following page will pop up, click No.



- 2) WPS will be initiated as window below.



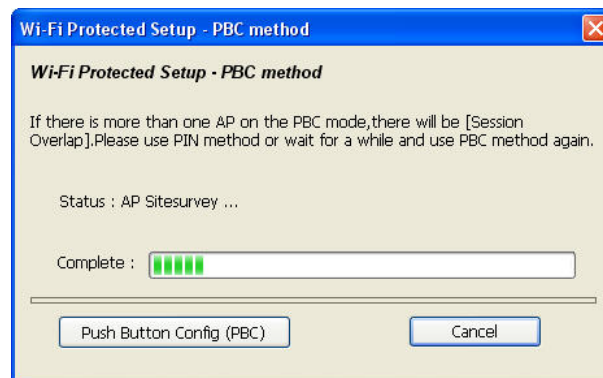
- 3) Access the web-based utility of the router (refer to the router’s documentation for instructions), and input PIN Code (e.g. 92596061), click **Save**.

- 4) Wait two minutes, the adapter will connect to the router automatically. The WPS-PIN method configuration is complete.

Push Button Config (PBC)

It is a method to connect to the network by pressing WPS button on the wireless device. Operation as follow:

- 1) Click **Push Button Config (PBC)** button, WPS will be initiated as window below.



- 2) Press the **WPS** button on the wireless device until the WPS LED lights up.
- 3) Wait two minutes, the adapter will connect to the wireless device automatically. The WPS-PBC method configuration is complete.

Note: If your router does not have this button, click **Cancel** and refer to **PIN Input Config (PIN)**.

External Registrar

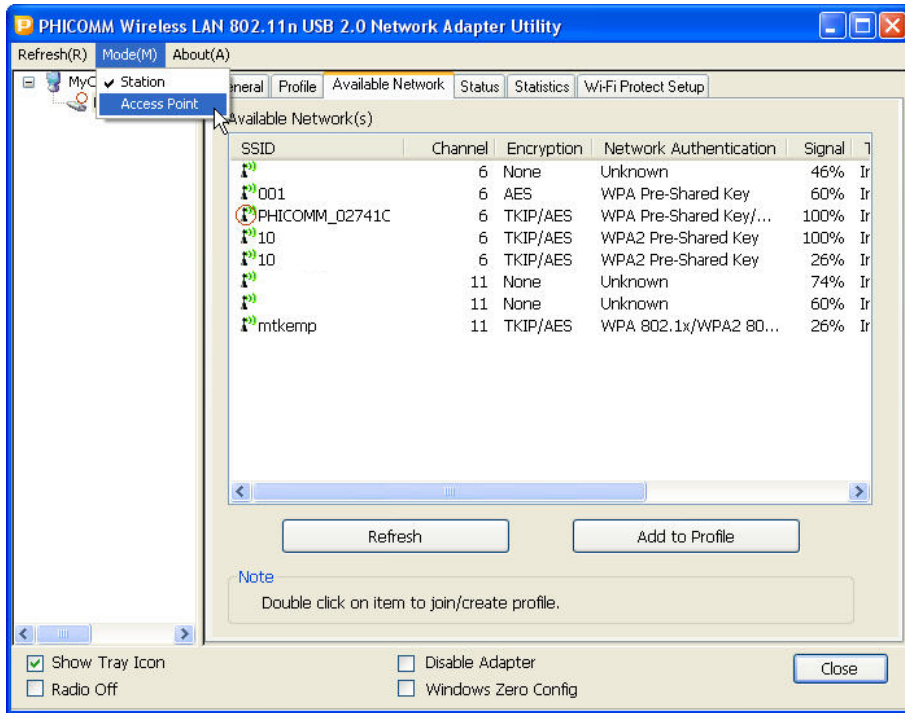
It is a method to connect to the network by inputting PIN (Personal Identification Number) code of your router into the adapter utility page. Operation as below:

- 1) Click **External Registrar** button.
- 2) Follow the instruction to complete the configuration.

Access Point Mode

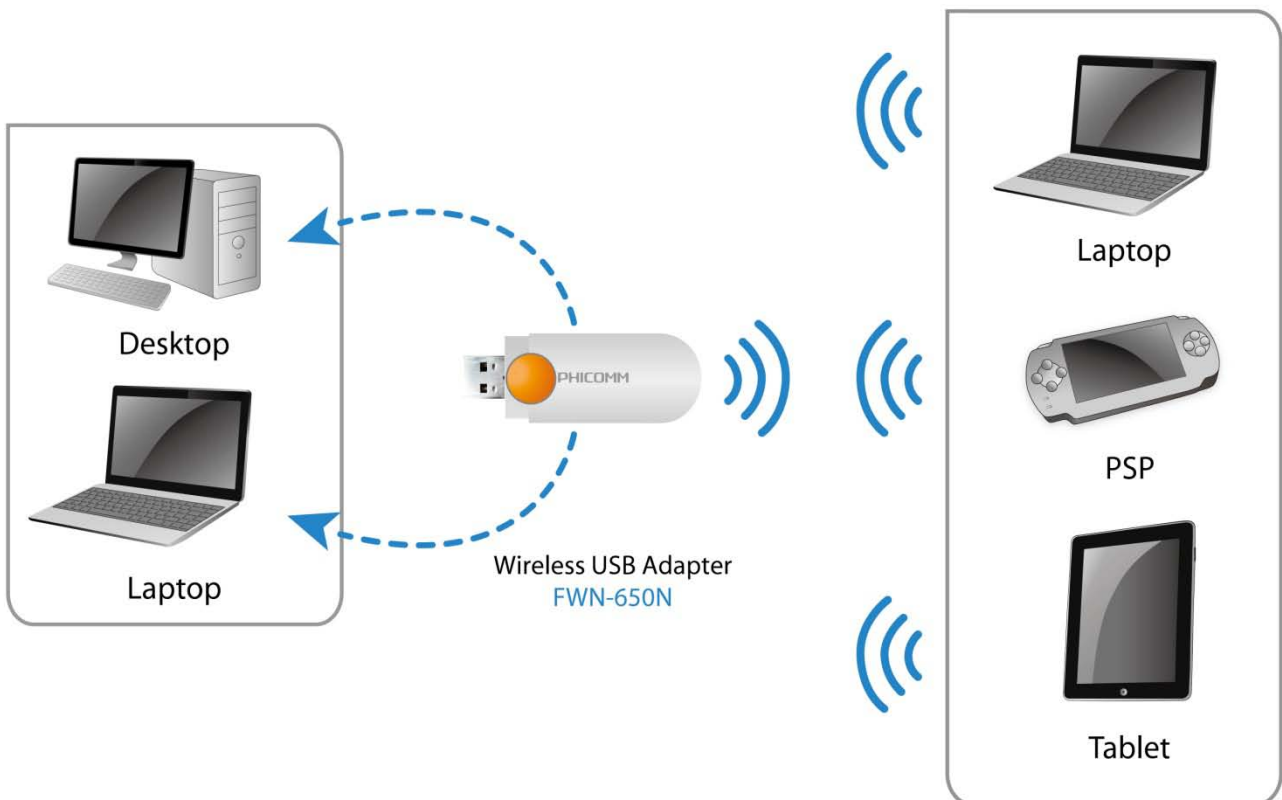
The device can also serve as an access point to transmit wireless signals and to create a wireless network, allowing other wireless devices to connect to internet by accessing its network.

Click Mode – Access Point.



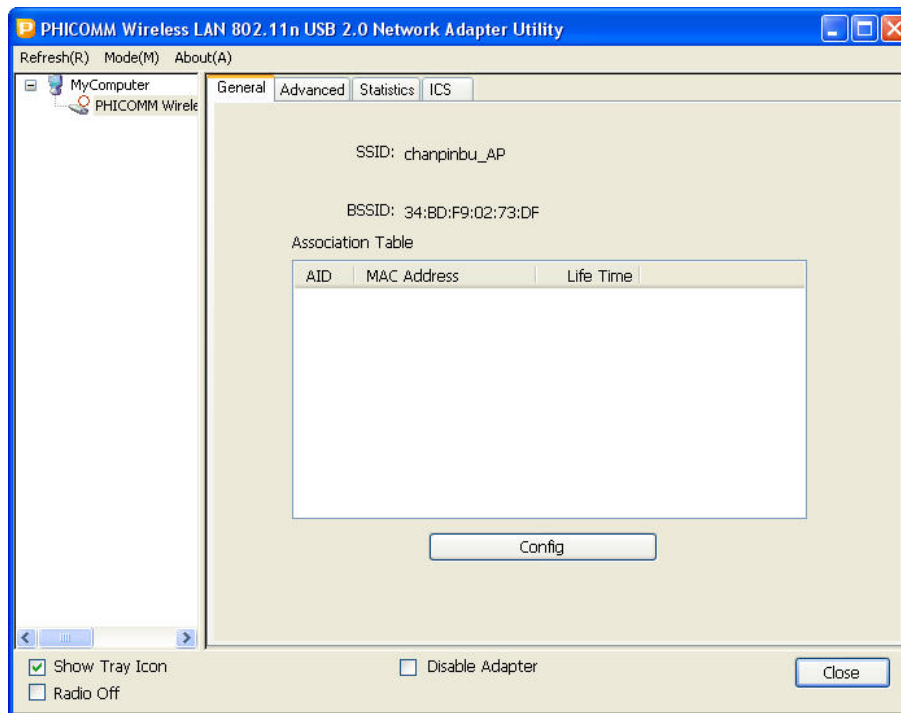
The tray icon will turn from  to .

AP Mode Topology



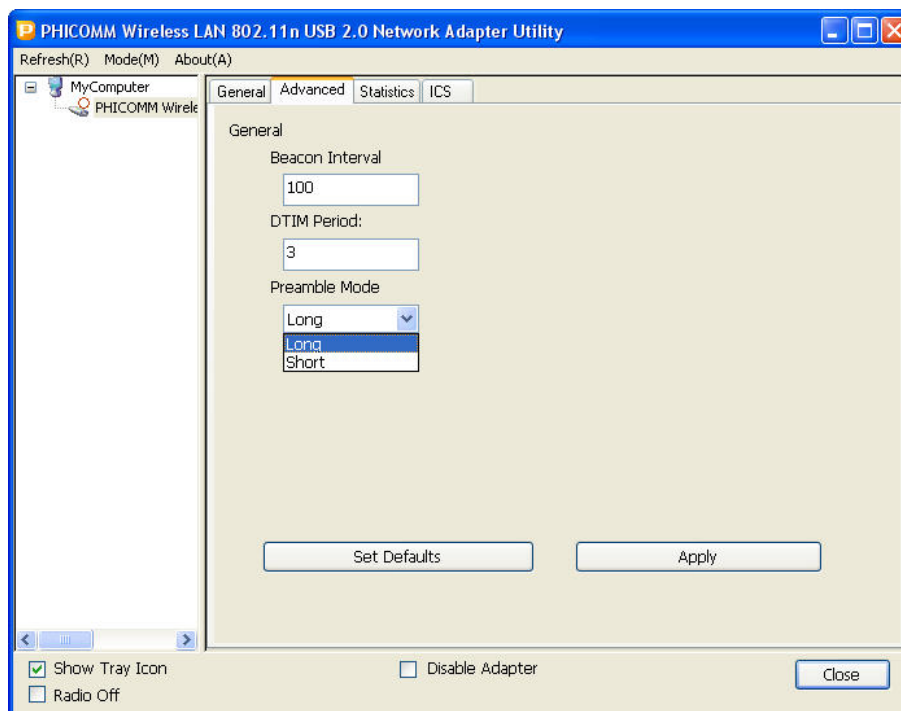
General

Click **Config** to set its AP information such as network name (SSID), network key, channel, authentication type and encryption type. Click **OK** to save the settings.



Advanced

In this page, you could do the advanced settings such as beacon interval, DTIM period and preamble mode.



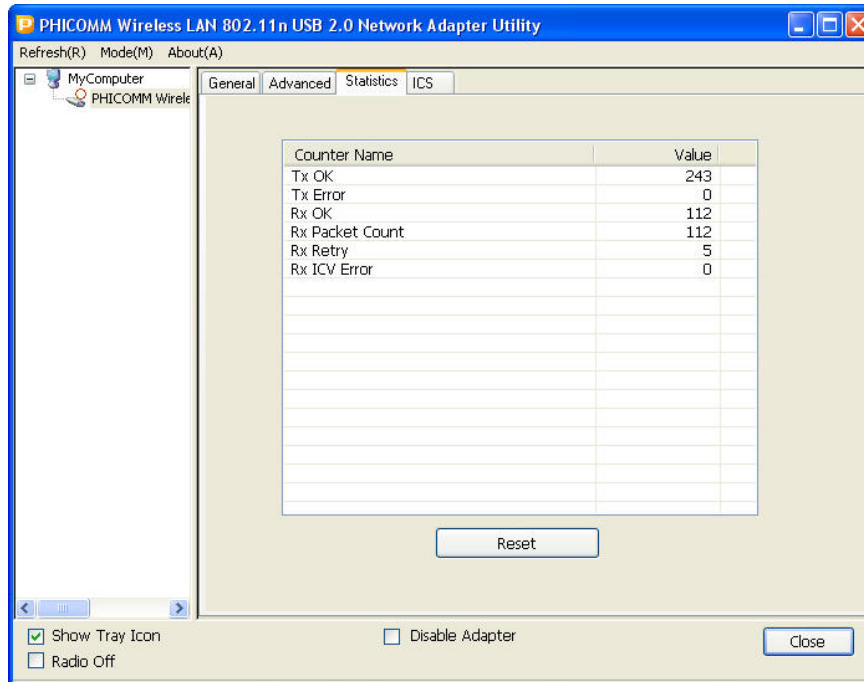
Set Defaults: Click to restore to the factory default setting.

Apply: Click to save your own setting.

Note: DO NOT change this unless you have special requirements.

Statistics

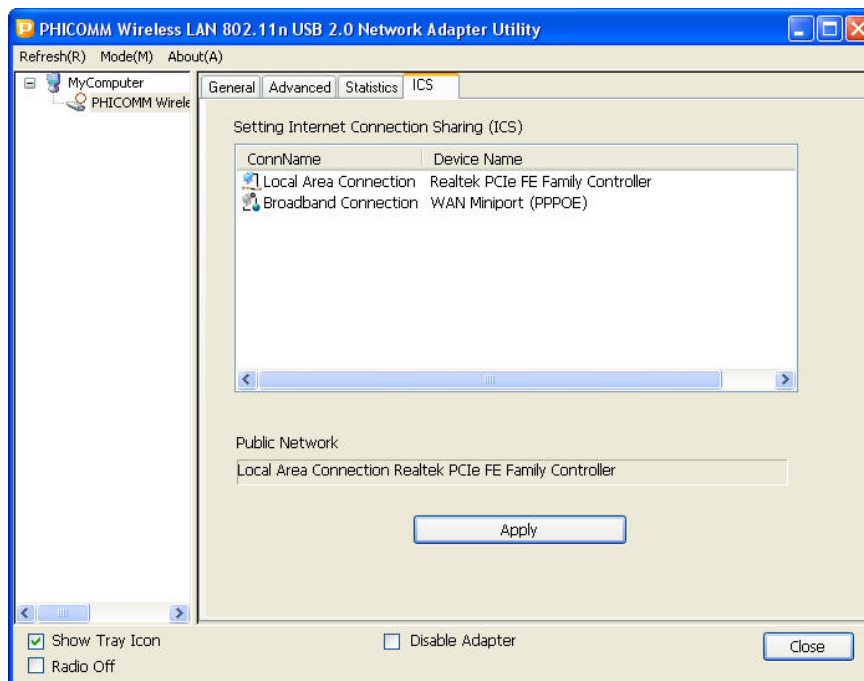
Statistics summarize receiving (R) and transmitting (T) statistical information of the adapter.



Reset: click to renew the statistics.

ICS (Internet Connection Sharing)

Choose one of the connections and click **Apply** to apply the connection.



Chapter 4: Specification

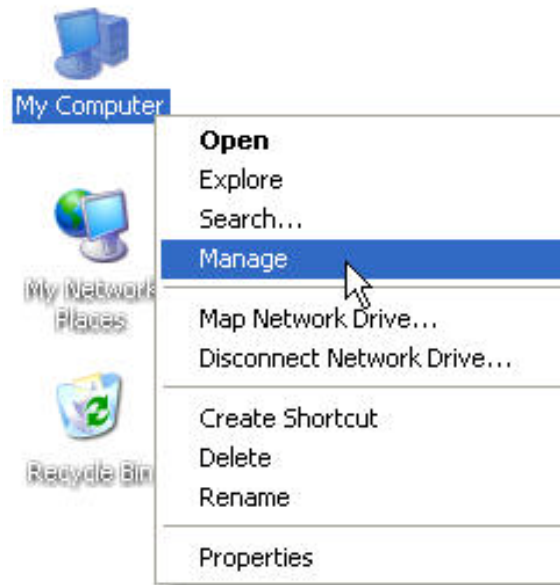
Product	
Standards	IEEE 802.11n, IEEE 802.11g, IEEE 802.11b, CSMA/CA with ACK
Interface	USB 2.0
Data Rate	11n: 150Mbps 11g: 54Mbps 11b: 11Mbps
Frequency Range	2.4-2.4835GHz
Wireless Transmit Power	<20dBm
Modulation Type	DBPSK, DQPSK, CCK, OFDM, 16-QAM, 64-QAM
Receive Sensitivity	150M: -68dBm@10% PER 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)	70mm x 24mm x 10mm
Certifications	CE, FCC, RoHS
Package Contents	1× Wireless N USB Adapter 1× Resource CD 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.

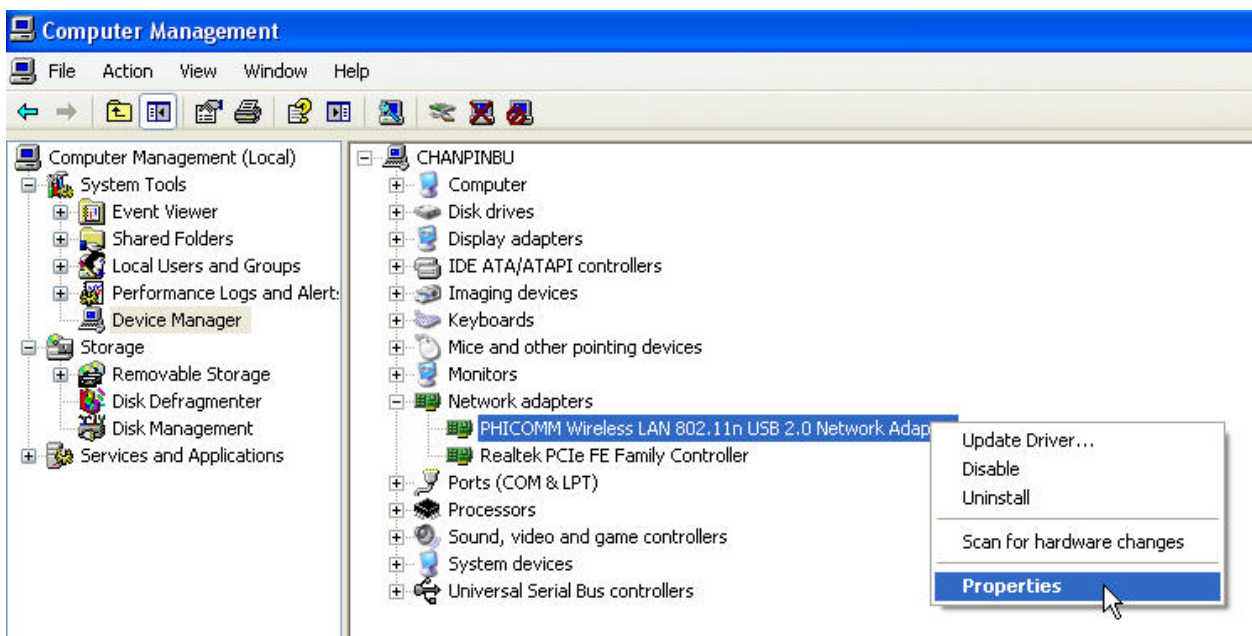
Appendix A: Troubleshooting

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

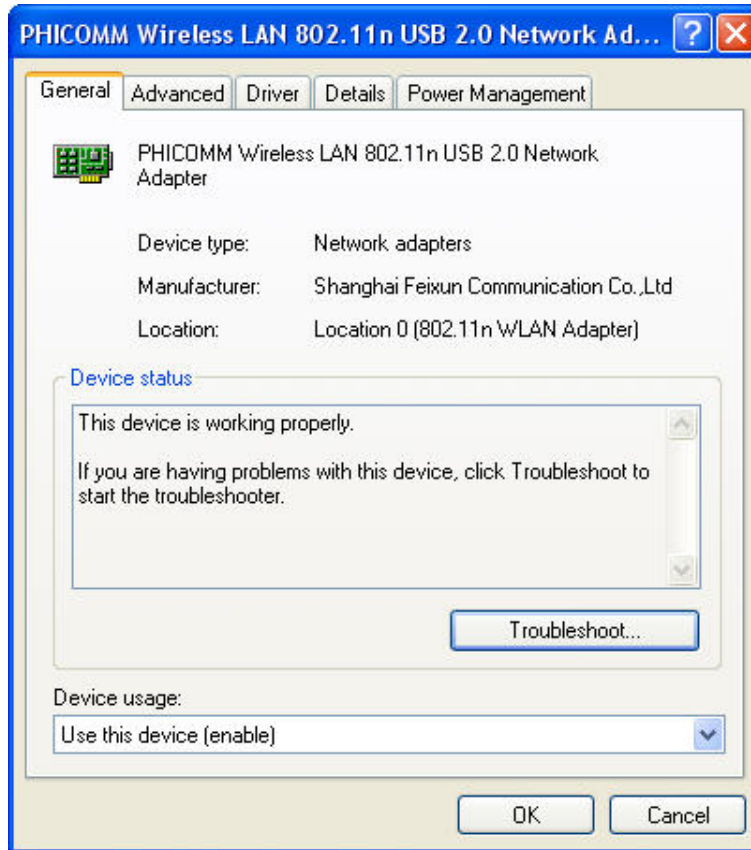
Right click on **My Computer** icon on your desktop screen, and then choose **Manage**.



Expand **Network Adapters**, you can see **PHICOMM Wireless LAN802.11n USB 2.0 Network Adapter**, right click on it, and 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.

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