

# MERCUSYS®

**MW150US** N150 Wireless Nano USB Adapter

**MW300UM** N300 Wireless Mini USB Adapter



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## **CE Mark Warning**



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.

## **RF Exposure Information**

This device meets the EU requirements (1999/5/EC Article 3.1a) on the limitation of exposure of the general public to electromagnetic fields by way of health protection.

This device has been tested and meets the ICNIRP exposure guidelines and the European Standard EN 62209-2. SAR is measured with this device at a separation of 0.5 cm to the body, while transmitting at the highest certified output power level in all frequency bands of this device. Carry this device at least 0.5 cm away from your body to ensure exposure levels remain at or below the as-tested levels.

## **Safety Information**

- When product has power button, the power button is one of the way to shut off the product; when there is no power button, the only way to completely shut off power is to disconnect the product or the power adapter from the power source.
- Don't disassemble the product, or make repairs yourself. You run the risk of electric shock and voiding the limited warranty. If you need service, please contact us.
- Avoid water and wet locations.
- This USB Adapter can only be powered by computers that comply with Limited Power Source (LPS).

# Explanation of the symbols on the product label

Symbol	Explanation
	DC voltage
	<p>RECYCLING</p> <p>This product bears the selective sorting symbol for Waste electrical and electronic equipment (WEEE). This means that this product must be handled pursuant to European directive 2012/19/EU in order to be recycled or dismantled to minimize its impact on the environment.</p> <p>User has the choice to give his product to a competent recycling organization or to the retailer when he buys a new electrical or electronic equipment.</p>

## DECLARATION OF CONFORMITY

For the following equipment:

Product Description: **Wireless USB Adapter**

Model No.: **MW150US, MW300UM**

Trademark: **MERCUSYS**

We declare under our own responsibility that the above products satisfy all the technical regulations applicable to the product within the scope of Council Directives:

Directive 1999/5/EC, Directive 2014/30/EU, Directive 2014/35/EU, Directive 2011/65/EU

The above product is in conformity with the following standards or other normative documents:

**EN 300328 V1.9.1**

**EN 301489-1 V1.9.2 & EN 301489-17 V2.2.1**

**EN 55022: 2010+AC: 2011**

**EN 55024: 2010**

**EN 60950-1: 2006 + A11: 2009 + A1: 2010 + A12: 2011 +A2: 2013**

**EN 50566: 2013**

**EN 50581: 2012**

*The product carries the CE Mark:*



Person responsible for marking this declaration:

A handwritten signature in black ink, appearing to read 'Yang Hongliang', is written over a light gray rectangular background.

**Yang Hongliang**

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Date of issue:2016.04.08

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## Conventions

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The Adapter or MW150US/MW300UM, or device mentioned in this User Guide stands for MW150US/MW300UM Wireless USB Adapter without any explanations.

Parameters provided in the pictures are just references for setting up the product, which may differ from the actual situation.

You can set the parameters according to your demand.

**NOTE:**

The two devices of MW150US and MW300UM are sharing this User Guide. For simplicity, we will take MW300UM for example throughout this Guide.

# Chapter 1. Introduction

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## 1.1 Overview of the Product

The adapter is designed to provide a high-speed and unrivaled wireless performance for your notebook and PC. With a faster wireless connection, you can get a better Internet experience, such as downloading, gaming, video streaming and so on.

The adapter's auto-sensing capability allows high packet transfer rate for maximum throughput. It has good capability on anti-jamming; it can also interoperate with other wireless (802.11b/g/n) products. The adapter supports WEP, WPA and WPA2 encryption to prevent outside intrusion and protect your personal information from being exposed.

With unmatched wireless performance, reception, and security protection, the adapter is the best choice for easily adding or upgrading wireless connectivity.

## 1.2 Features

- IEEE802.11b, IEEE802.11g, IEEE802.11n standards
- Supports WPA/WPA2 data security, IEEE802.1x authentication, TKIP/AES encryption, WEP encryption
- Make use of IEEE 802.11n wireless technology to provide high data rate
- Supports automatically adjust to lower speeds due to distance or other operating limitations
- Provides USB interface
- Supports Ad-Hoc and Infrastructure modes
- Good capability on anti-jamming
- Supports roaming between access points when configured in Infrastructure mode
- Easy to configure and provides monitoring information
- MW150US supports Windows XP/7/8/8.1
- MW300UM supports Windows XP/7/8/8.1/10

# Chapter 2. Installation Guide

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## 2.1 Hardware Installation

Plug the Adapter directly to the USB port on your computer.

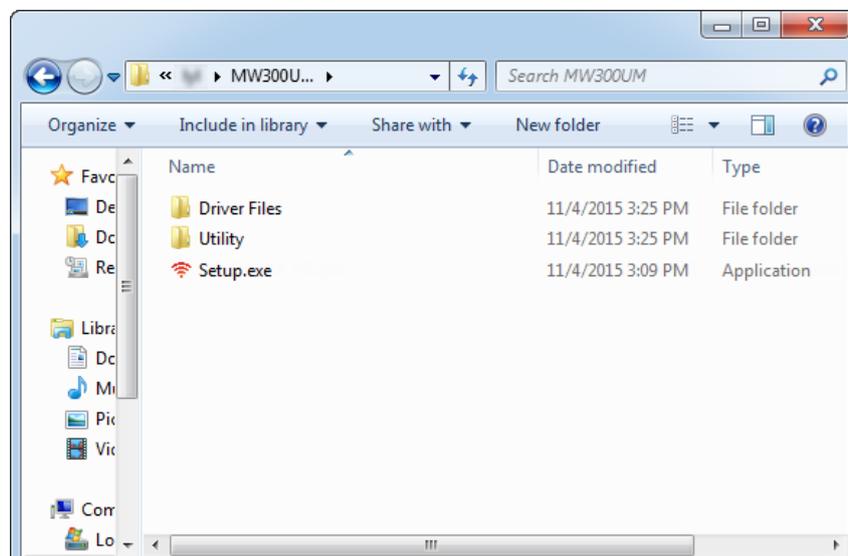
In Windows XP, a Found New Hardware Wizard window will appear when the adapter is detected. Please click **Cancel**.

## 2.2 Software Installation

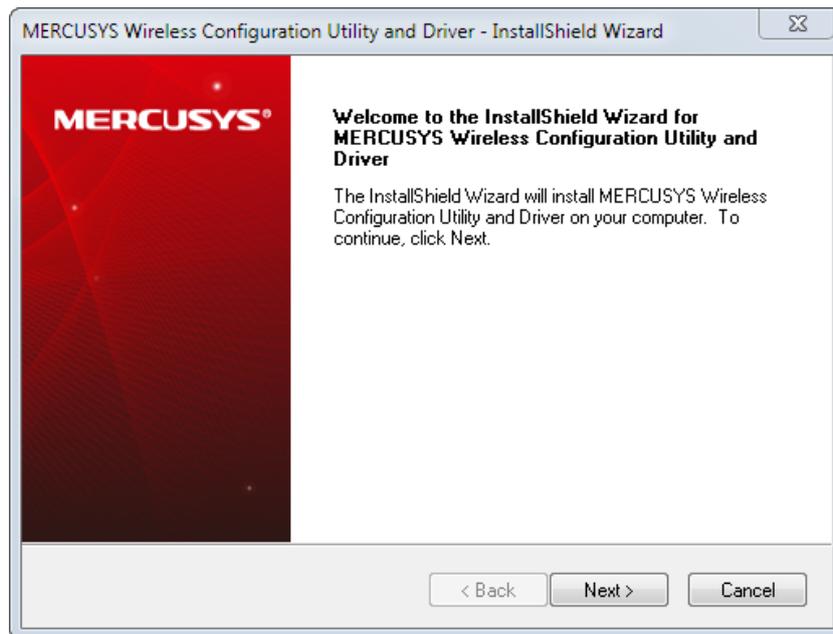
**NOTE:**

1. The following instructions take Windows 7 as an example. The steps may vary slightly for other versions of Windows.
2. For MW300UM, MERCUSYS Utility is not supported in Windows 10.

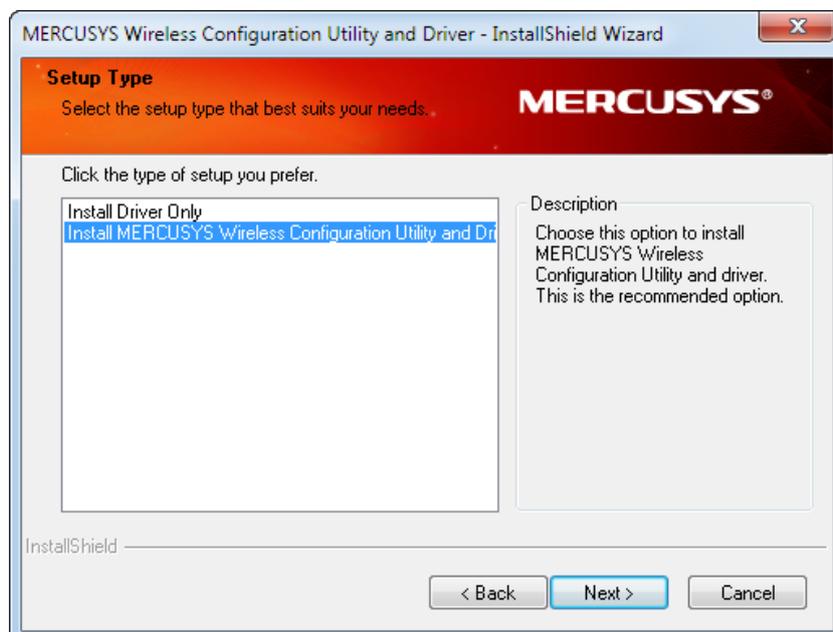
1. Insert the Resource CD into the CD-ROM drive. Open the CD from **Computer**, select the file folder according to your model and operating system. Then double-click **Setup.exe** to start the installation.



2. The InstallShield Wizard window will appear. Click **Next** to continue.



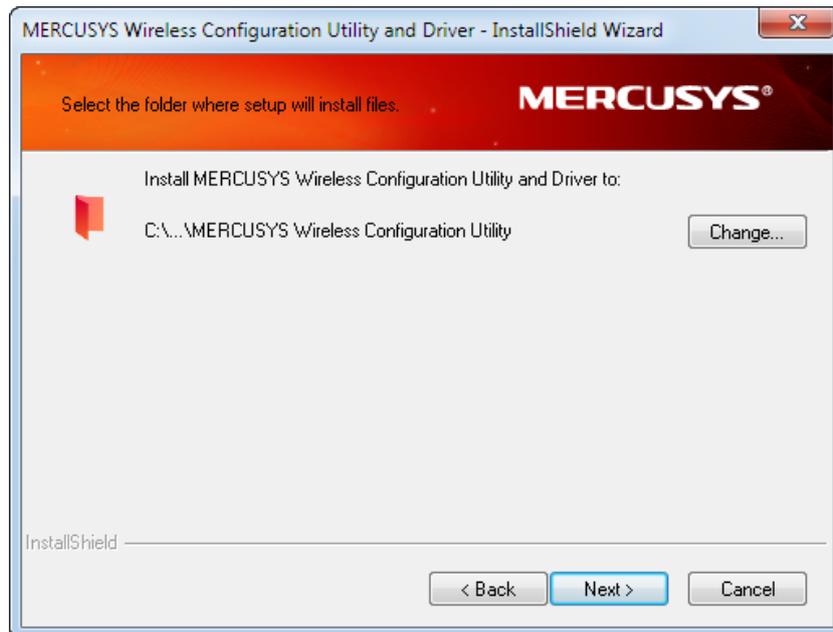
3. Select a setup type. It is recommended to select **Install MERCUSYS Wireless Configuration Utility and Driver**. Then click **Next**.



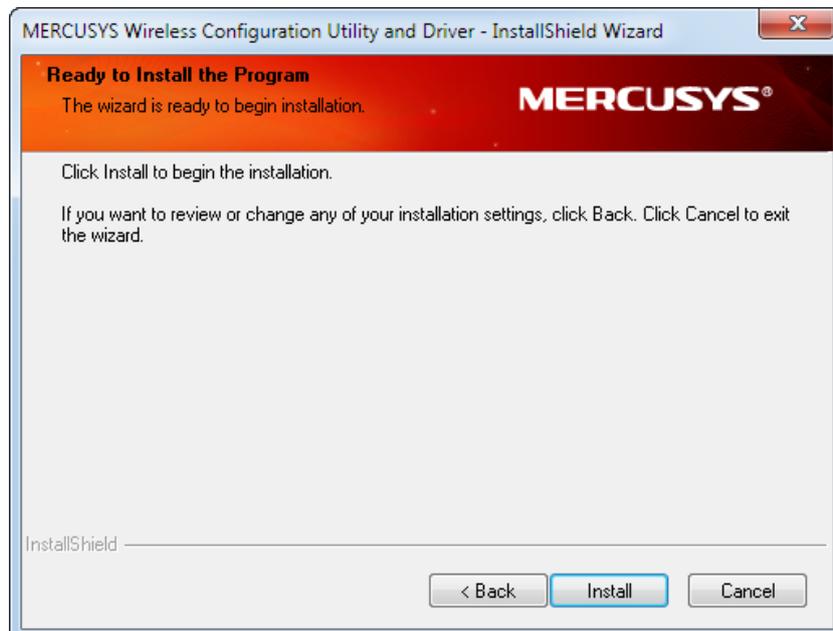
## Chapter 2 - Installation Guide

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4. Click **Change...** to specify the destination location or you can leave it default. Click **Next**.

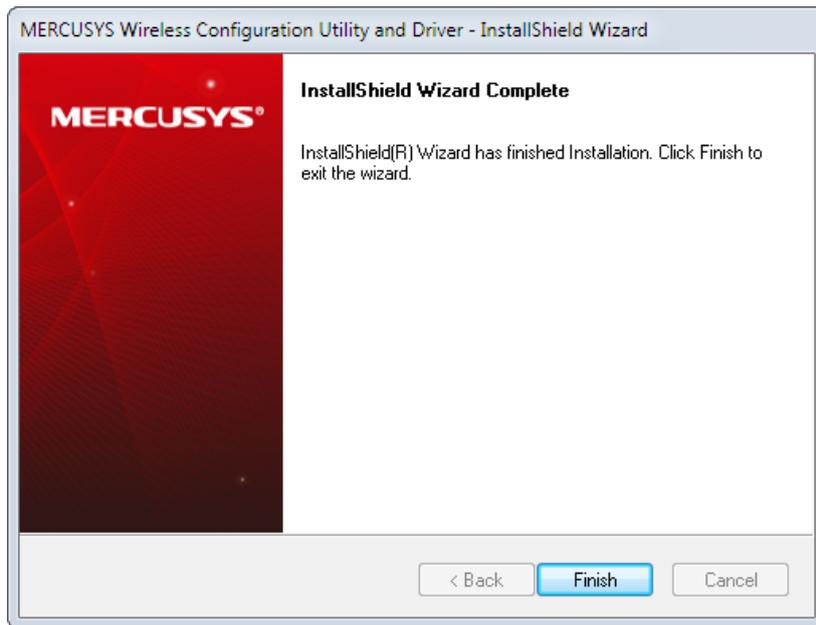


5. Click **Install** to install the driver and utility for your adapter.

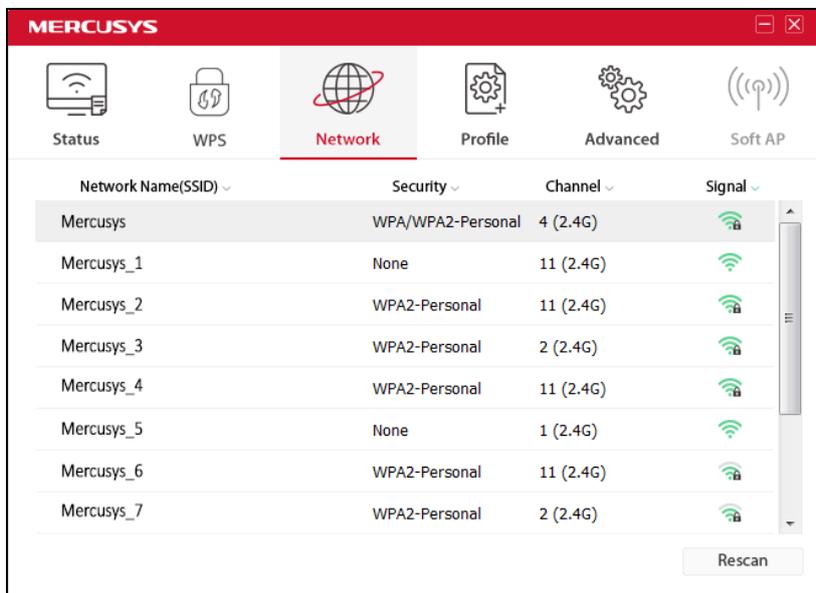


## Chapter 2 - Installation Guide

6. After a few minutes, the installation completes. Click **Finish** to complete the installation.



7. After installation, the MERCUSYS Utility automatically pops up and the icon  appears in your taskbar. To connect to a network, please refer to [Chapter 3 Connect to a Wireless Network](#).



## Chapter 3.

# Connect to a Wireless Network

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With both the hardware and software successfully installed into your computer, you can quickly connect to a wireless network using one of the following methods.

**NOTE:**

For MW300UM, MERCUSYS Utility is not supported in Windows 10. Please use Option 3: [Windows Wireless Utility](#) to connect to a wireless network.

- Option 1: [MERCUSYS Utility](#)

MERCUSYS Utility provides you an easy interface to connect to a network and to change any settings related to the wireless adapter.

- Option 2: [WPS \(Wi-Fi Protected Setup\)](#)

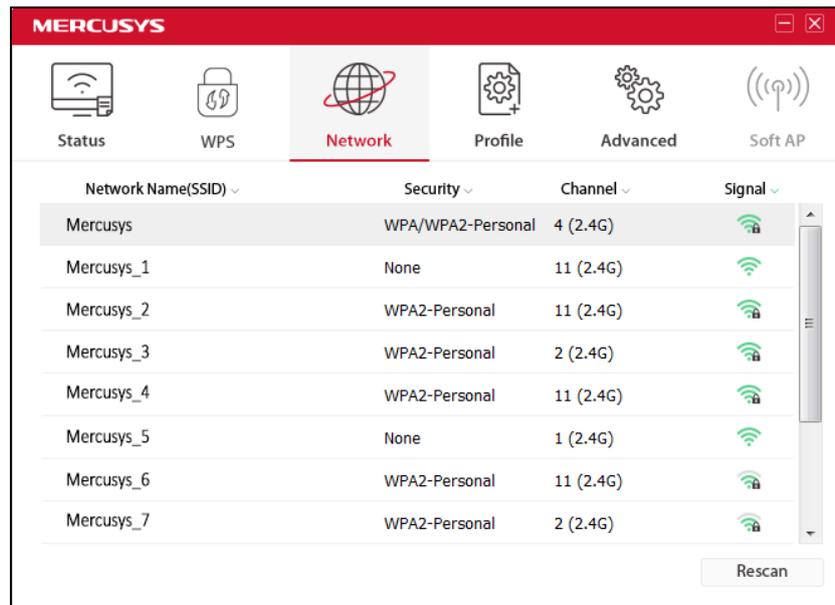
WPS (Wi-Fi Protected Setup) function allows you to add a new wireless device to an existing network quickly. Use this method if your wireless router or access point supports WPS.

- Option 3: [Windows Wireless Utility](#)

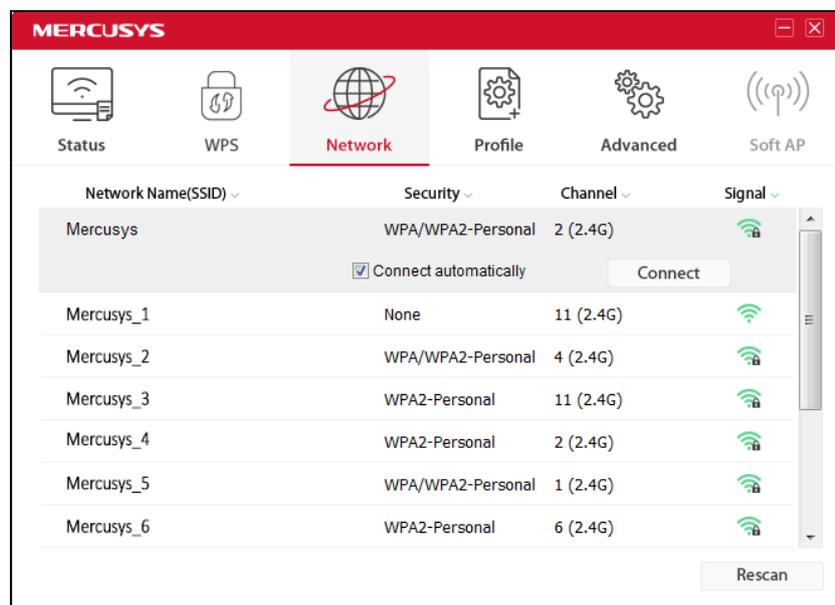
Windows users may use the built-in wireless utility to connect to a wireless network.

### 3.1 MERCUSYS Utility

1. Open MERCUSYS Utility . The Network screen displays.



2. Select the network you want to join from the list and click **Connect**. If you want the adapter to automatically connect your target network next time, select **Connect automatically**. Then enter your Wi-Fi password when prompted.



### 3.2 WPS (Wi-Fi Protected Setup)

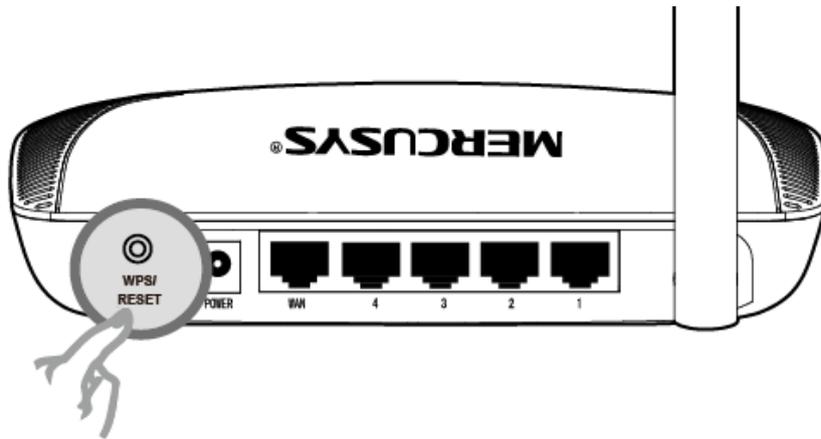
If your router supports WPS, you can establish a wireless connection between wireless adapter and router using either Push Button Configuration (PBC) method or PIN method. Please refer to [PBC](#) or [PIN](#) below.

#### ➤ PBC

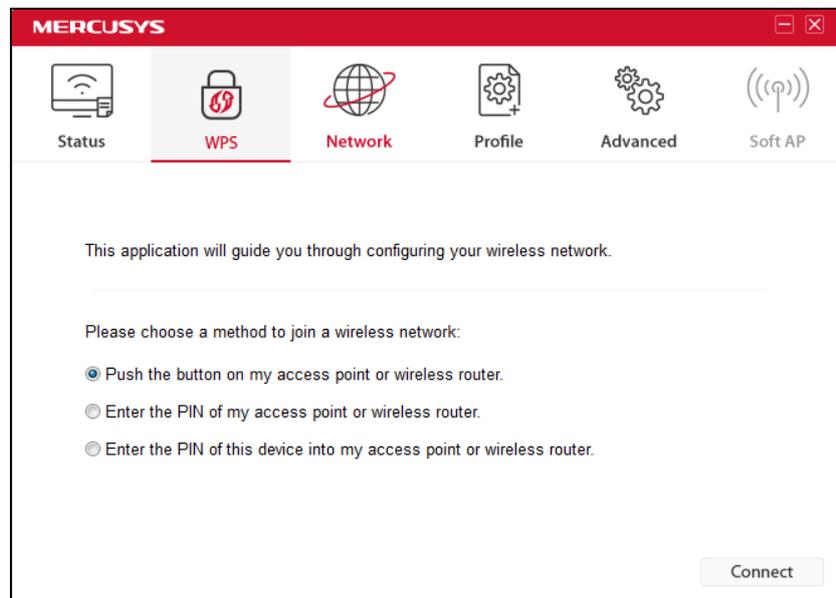
## Chapter 3 - Connect to a Wireless Network

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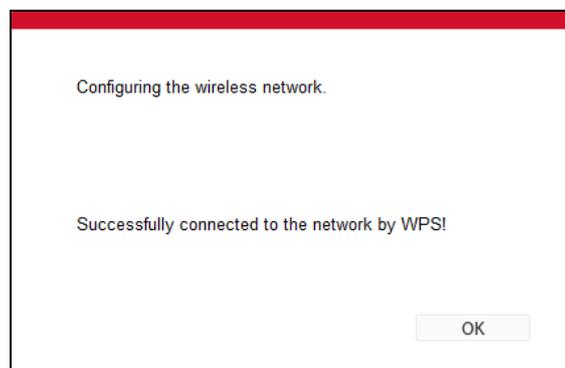
1. Press the WPS button on your router or AP.



2. Open MERCUSYS Utility and click **WPS** tab. Select **Push the button on my access point or wireless router** and then click **Connect**.



3. The following screen indicates successful connection by WPS. Click OK.



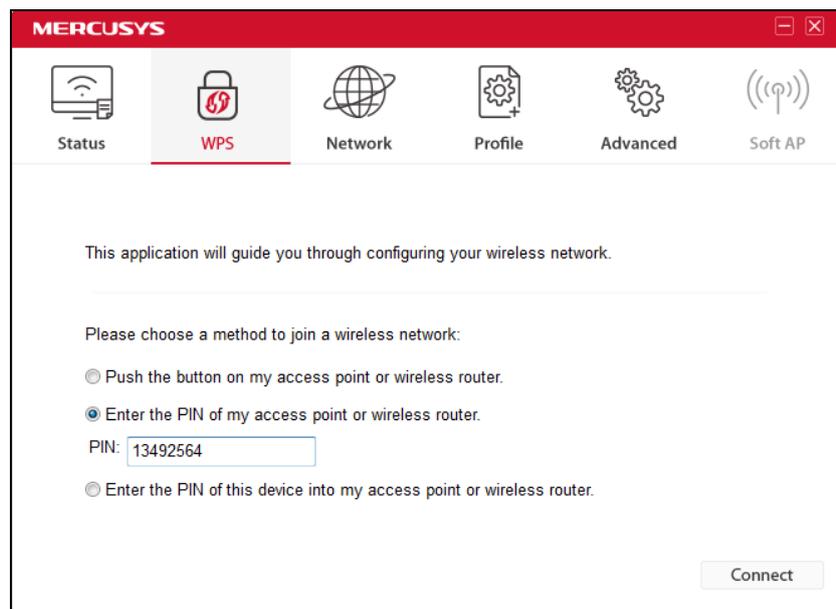
➤ **PIN**

### Option 1

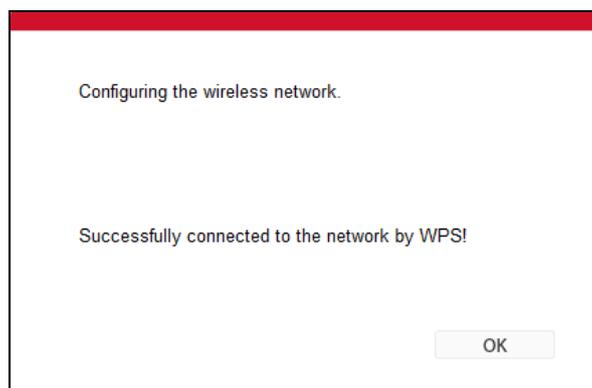
1. Open MERCUSYS Utility and click **WPS** tab. Select **Enter the PIN of my access point or wireless router**. Enter the PIN of your router or AP. Then click **Connect**.

#### **NOTE:**

The default PIN of your router or AP is printed on the product label of your router or AP. If you generated a new PIN for your router, please enter the new one.



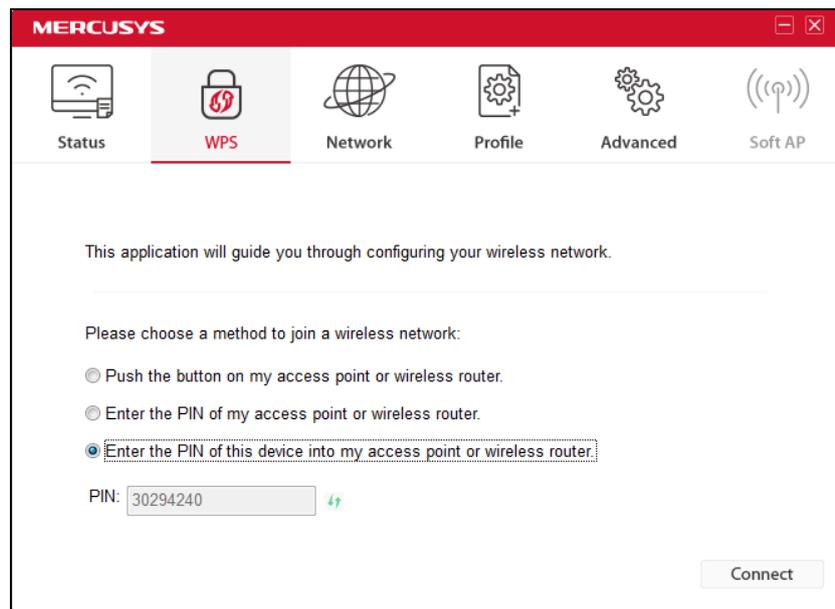
2. The following screen indicates successful connection by WPS. Click OK.



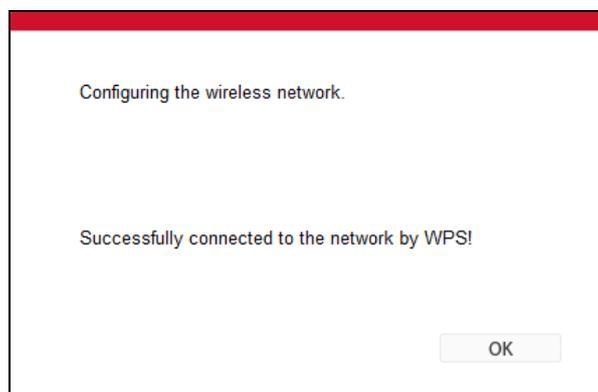
### Option 2

1. Open MERCUSYS Utility and click **WPS** tab. Select **Enter the PIN of this device into my access point or wireless router**. The screen displays the PIN of the adapter, which is

randomly generated. Then click **Connect**.



2. Log in to the Web Management page of your router or AP. Go to the **WPS** page, enter the PIN of the adapter in the corresponding field and click **Connect**.
3. The following screen indicates successful connection by WPS. Click **OK**.



### 3.3 Windows Wireless Utility

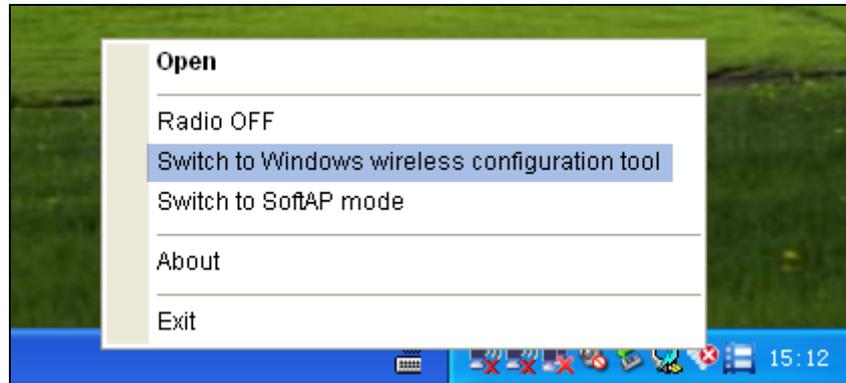
Follow the instructions in the appropriate section below to use your computer system's built-in wireless utility: [Windows 7/8/8.1/10](#), [Windows XP](#)

#### ➤ Windows 7/8/8.1/10

1. Click the wireless icon  or  on the taskbar. Select the wireless network you want to join and then click **Connect**. Enter your Wi-Fi password when prompted.
2. When **Connected** displays next to the network name (SSID) on the screen, it indicates a successful network connection.

➤ **Windows XP**

1. Right-click  (MERCUSYS Utility icon) on your taskbar. Select **Switch to Windows wireless configuration tool**.



Or you can open the MERCUSYS Utility, click **Advanced** in the tools section and then select **Use Windows wireless configuration tool**.

2. Right-click on the wireless computer icon in your taskbar (lower-right corner). Select **View Available Wireless Networks**.



3. Select the network you want to join and click **Connect**. Then enter your Wi-Fi password when prompted.

# Chapter 4. Management

MERCUSYS Utility provides users with an easy interface to change any settings related to the adapter. Double-click on the  icon on your desktop to start the utility.

[Status](#) - View the information of the current Wi-Fi network connection and of the adapter.

[Profile](#) - Save or manage various Wi-Fi network connection settings.

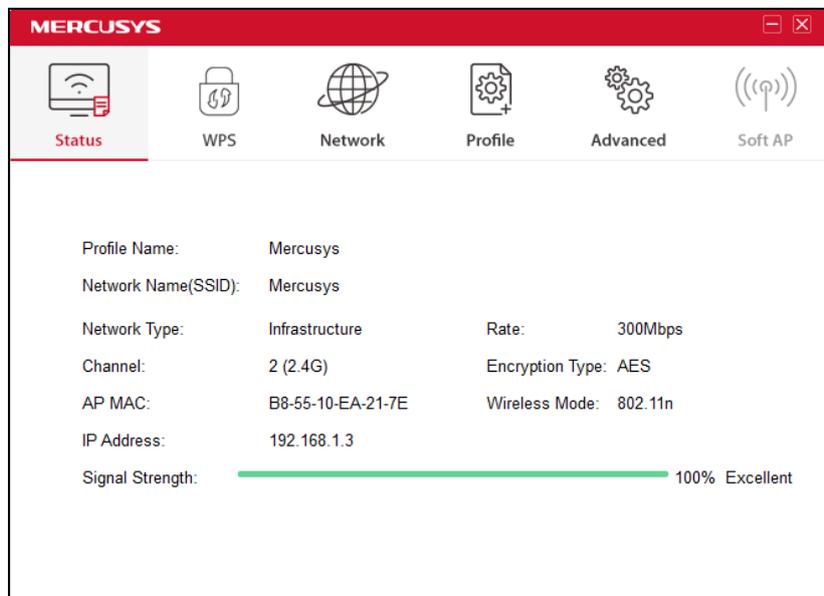
[Advanced](#) - Turn on or off the SoftAP mode and power saving mode, switch between MERCUSYS Utility and Windows Wireless Utility (for Windows XP only).

[SoftAP](#) - Configure the settings of the network shared by your adapter, and view the IP address of your adapter when it works on SoftAP mode.

[About](#) - View your adapter's Utility version and its Driver version.

## 4.1 Status

You can view the IP address and MAC address of the adapter, the signal strength of the Wi-Fi network, and other information of the network.

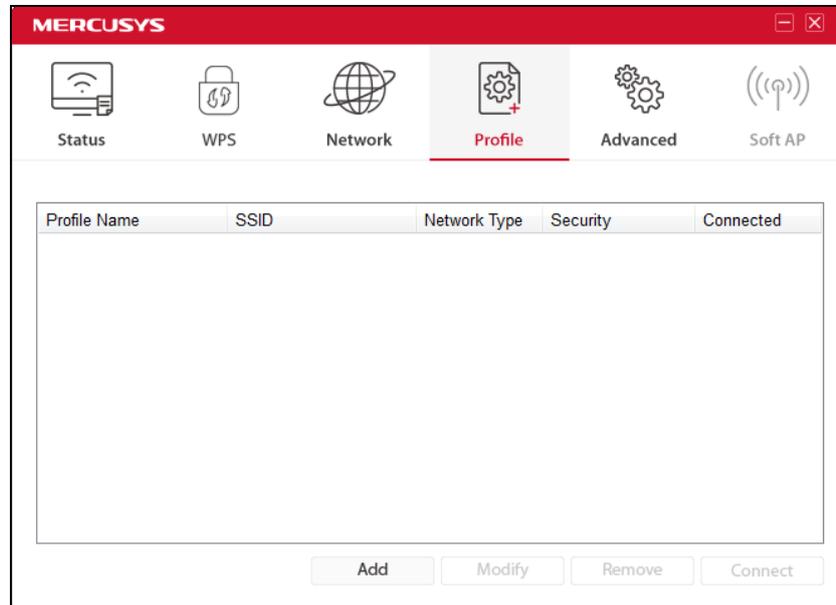


## 4.2 Profile

Your wireless networks may vary in different places like home, office or coffee shop. With

## Chapter 4 - Management

**Profile** management, you can easily save and manage various networks to be connected, saving you the trouble of having to repeat the same configurations. Click **Profile** in the tools section, the following page will appear. For more details, refer to the instructions below: [To add a new profile](#), [To join a Wi-Fi network](#), [To manage an existing profile](#).



➤ To add a new profile

1. Click **Add** on the bottom of the screen, and then a new window will appear.
2. Complete the settings as shown in the window, and click Save.

The screenshot shows the Profile configuration window with the following fields and options:

- Profile Name: office
- SSID: office1
- Network Type:  Infrastructure  ad hoc
- Security Type: WPA-PSK/WPA2-PSK
- Encryption Type: TKIP/AES
- Security Key: \*\*\*\*\*  Show characters
- Start this connection automatically.

Buttons: Save, Cancel

**Profile Name:** Enter a name for your profile (e.g. office1 and office2). Do not enter the profile

name that already exists.

**SSID:** Select the target network from the drop-down list.

**Network Type:** Select the network type. If you are connecting to a wireless router or access point, select **Infrastructure**. If you are connecting to another wireless client such as an adapter, select **ad-hoc**.

**Security Type:** Select the security type from the list. Four options are available: **WPA/WPA2**, **WPA-PSK/WPA2-PSK**, **WEP** and **None**. The security type should be the same as on your router or access point, otherwise, you will not be able to build a successful connection.

**Encryption Type:** From the drop-down menu, select the encryption type that is the same as on your router or access point.

**Security Key:** Enter the passphrase exactly as it is on your wireless router or access point. Click the **Show characters** box to see the passphrase. Unchecking it will hide it.

**Authentication:** Select a type of authentication, either certificate or password.

**Certificate:** If you select certificate as your Authentication, then you need to specify your certificate from the drop-down list here.

**Start this connection automatically:** check this box to automatically connect to this network next time.

### ➤ **To join a Wi-Fi network**

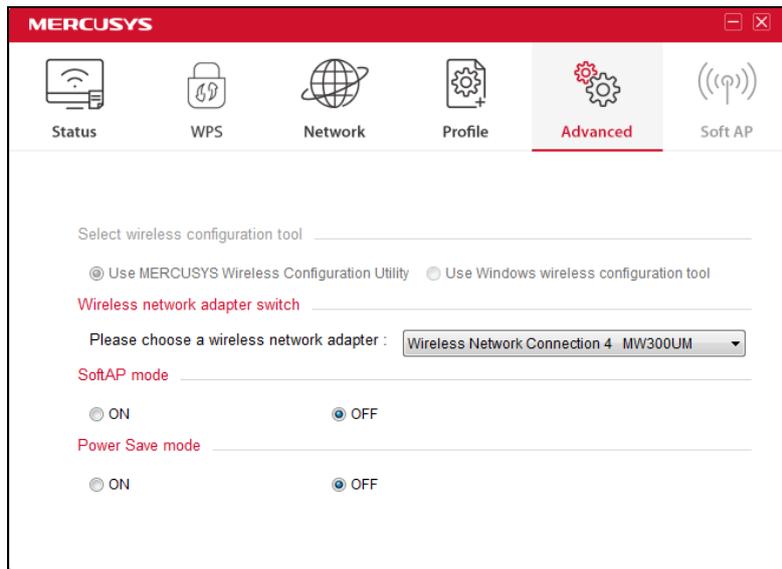
If you want to connect to a Wi-Fi network that is listed in the profile screen, just select the profile and then click **Connect**.

### ➤ **To manage an existing profile**

If you want to change the name or wireless settings of an existing profile, select the profile and click **Modify** on the Profile page, then you can edit the settings of this profile.

If you want to delete a profile that you no longer use, select it and then click **Remove**.

### 4.3 Advanced



**Select wireless configuration tool** - In Windows XP, you can either use MERCUSYS Utility or the Windows wireless configuration tool. While in other operating systems, since you can use both MERCUSYS Utility and Windows wireless configuration tool at the same time, this function is disabled.

**Wireless network adapter switch** - You can switch to another adapter installed in your computer. The adapters successfully installed in your computer will be listed in the drop-down menu if the adapters are supported by this utility.

**SoftAP mode** - Once enabled, the adapter will be able to work as an AP.

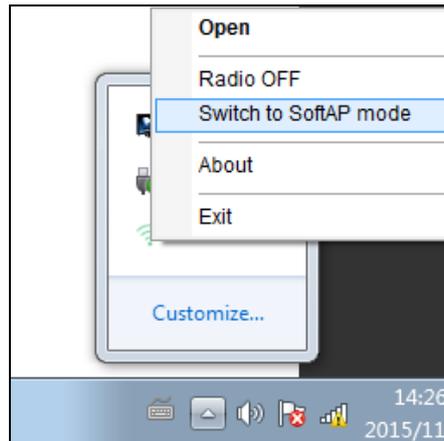
**Power Save mode** - Once enabled, the adapter will automatically reduce its power consumption when not being used. The default option is OFF.

### 4.4 SoftAP

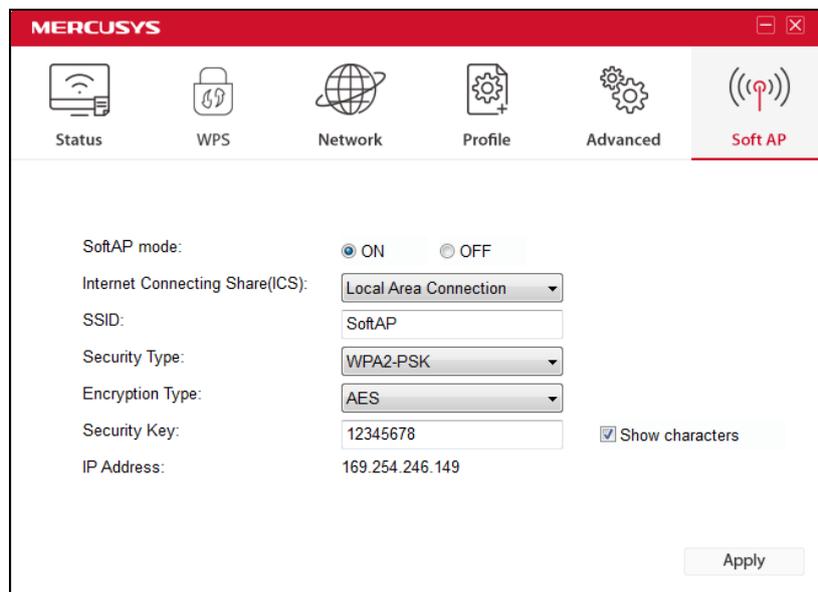
SoftAP is short for Software enabled Access Point.

When the adapter works in SoftAP mode, it allows the computer to create a wireless hotspot that other wireless devices nearby can use.

To switch to SoftAP mode, right-click on the utility icon  in the taskbar and select **Switch to SoftAP mode**.



After switching to SoftAP mode, the SoftAP icon appears in the utility. Click the **SoftAP** tab, and complete the settings, then click **Apply** for the settings to take effect.



**SoftAP mode:** Select to enable or disable the function.

**Internet Connecting Share (ICS):** Specify a connection through which devices connected to your AP can access the Internet.

**SSID:** Enter the name for your softAP (for example, Jone) so that others can know which AP is yours when trying to connect to it. The default name (SSID) is "SoftAP".

**Security Type:** The security type here is set to be WPA2-PSK which is based on 802.11i and uses Advanced Encryption Standard instead of TKIP. It was designed to improve the security features of WEP. WPA2-PSK uses a passphrase or key to authenticate your wireless connection. You needn't make any configuration here.

**Encryption Type:** The encryption type here is set to be AES.

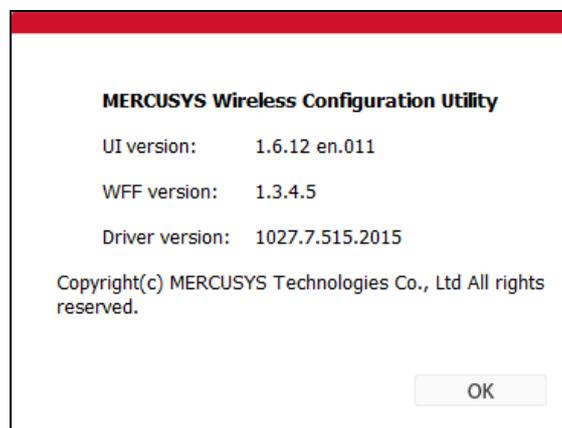
**Security Key:** Enter the Key in the field to make your AP security enabled. It is recommended that you specify another key instead of the default key 12345678. Only by entering the corresponding key can other computers establish a successful connection with your AP.

**IP Address:** Displays the IP address of the adapter when it works in SoftAP mode.

### 4.5 About

The About screen gives you information about the Driver and Utility versions of the adapter.

Right-click on the  icon in your taskbar and select **About** from the list.



## Chapter 5. Uninstall Software

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The software uninstallation steps vary a bit in different systems. Follow the appropriate instructions for your operating system: [Windows 10](#), [Windows 8/8.1](#), [Windows XP/7](#).

- **Windows 10**

Uninstall driver:

Go to **Start > All apps**, and find the **MERCUSYS** application. Click **Uninstall - 300Mbps Wireless USB Adapter Driver**, then follow the on-screen instructions to complete the uninstallation.

- **Windows 8/8.1**

Uninstall driver:

Go to **Start > Apps**, and find the **MERCUSYS** application. Click **Uninstall - 300Mbps Wireless USB Adapter Driver**, then follow the on-screen instructions to complete the uninstallation.

Uninstall utility:

Go to **Start > Apps**, and find the **MERCUSYS** application. Click **Uninstall - MURCUSYS Wireless Configuration Utility**, then follow the on-screen instructions to complete the uninstallation.

- **Windows XP/ 7**

Uninstall driver:

Go to **Start > All Programs > MERCUSYS > Uninstall - MERCUSYS MW300UM Driver**. Follow the on-screen instructions to complete the uninstallation.

Uninstall utility:

Go to **Start > All Programs > MERCUSYS > Uninstall - MERCUSYS Wireless Configuration Utility**. Follow the on-screen instructions to complete the uninstallation.

## Appendix A: Specifications

Normal	
Interface	USB 2.0 Interface
Standards	IEEE802.11b; IEEE802.11g; IEEE802.11n
Operating System	MW150US: Windows XP/7/8/8.1 MW300UM: Windows XP/7/8/8.1/10
Radio Data Rate	MW150US 11b: 1/2/5.5/11Mbps 11g: 6/9/12/18/24/36/48/54Mbps 11n: Up to 150Mbps MW300UM 11b: 1/2/5.5/11Mbps 11g: 6/9/12/18/24/36/48/54Mbps 11n: Up to 300Mbps
Modulation	11b: CCK,QPSK,BPSK; 11g: OFDM; 11n: QPSK, BPSK, 16-QAM, 64-QAM;
Media Access Protocol	CSMA/CA with ACK
Data Security	WPA/WPA2,WPA-PSK/WPA2-PSK
Frequency	2.4 ~ 2.4835GHz
Spread Spectrum	Direct Sequence Spread Spectrum (DSSS)
Safety & Emissions	FCC, CE

Environmental and Physical	
Operating Temperature	0°C~40°C (32°F~104°F)
Storage Temperature	-40°C~70°C (-40°F~158°F)
Working Humidity	10% - 90% RH, Non-condensing
Storage Humidity	5% - 90% RH, Non-condensing

## Appendix B: Glossary

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- **802.11b** - The 802.11b standard specifies a wireless product networking at 11 Mbps using direct-sequence spread-spectrum (DSSS) technology and operating in the unlicensed radio spectrum at 2.4GHz, and WEP encryption for security. 802.11b networks are also referred to as Wi-Fi networks.
- **802.11g** - specification for wireless networking at 54 Mbps using direct-sequence spread-spectrum (DSSS) technology, using OFDM modulation and operating in the unlicensed radio spectrum at 2.4GHz, and backward compatibility with IEEE 802.11b devices, and WEP encryption for security.
- **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)<sup>[3]</sup> 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 Network** - An ad-hoc network is a group of computers, each with a Wireless Adapter, connected as an independent 802.11 wireless LAN. Ad-hoc wireless computers operate on a peer-to-peer basis, communicating directly with each other without the use of an access point. Ad-hoc mode is also referred to as an Independent Basic Service Set (IBSS) or as peer-to-peer mode, and is useful at a departmental scale or SOHO operation.
- **DSSS - (Direct-Sequence Spread Spectrum)** - DSSS generates a redundant bit pattern for all data transmitted. This bit pattern is called a chip (or chipping code). Even if one or more bits in the chip are damaged during transmission, statistical techniques embedded in the receiver can recover the original data without the need of retransmission. To an unintended receiver, DSSS appears as low power wideband noise and is rejected (ignored) by most narrowband receivers. However, to an intended receiver (i.e. another wireless LAN endpoint), the DSSS signal is recognized as the only valid signal, and interference is inherently rejected (ignored).
- **FHSS - (Frequency Hopping Spread Spectrum)** - FHSS continuously changes (hops) the carrier frequency of a conventional carrier several times per second according to a pseudo-random set of channels. Because a fixed frequency is not used, and only the transmitter and receiver know the hop patterns, interception of FHSS is extremely difficult.
- **Infrastructure Network** - An infrastructure network is a group of computers or other devices, each with a Wireless Adapter, connected as an 802.11 wireless LAN. In infrastructure mode, the wireless devices communicate with each other and to a wired network by first going through an access point. An infrastructure wireless network connected to a wired network is referred to as a Basic Service Set (BSS). A set of two or more BSS in a single network is referred to as an Extended Service Set (ESS).

## Appendix B - Glossary

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Infrastructure mode is useful at a corporation scale, or when it is necessary to connect the wired and wireless networks.

- **Spread Spectrum** - Spread Spectrum technology is a wideband radio frequency technique developed by the military for use in reliable, secure, mission-critical communications systems. It is designed to trade off bandwidth efficiency for reliability, integrity, and security. In other words, more bandwidth is consumed than in the case of narrowband transmission, but the trade off produces a signal that is, in effect, louder and thus easier to detect, provided that the receiver knows the parameters of the spread-spectrum signal being broadcast. If a receiver is not tuned to the right frequency, a spread-spectrum signal looks like background noise. There are two main alternatives, Direct Sequence Spread Spectrum (DSSS) and Frequency Hopping Spread Spectrum (FHSS).
- **SSID** - A **S**ervice **S**et **I**dentification is a thirty-two character (maximum) alphanumeric key identifying a wireless local area network. For the wireless devices in a network to communicate with each other, all devices must be configured with the same SSID. This is typically the configuration parameter for a wireless PC card. It corresponds to the ESSID in the wireless Access Point and to the wireless network name. *See also* Wireless Network Name and ESSID.
- **WEP** - (**W**ired **E**quivalent **P**rivacy) - A data privacy mechanism based on a 64-bit or 128-bit or 152-bit shared key algorithm, as described in the IEEE 802.11 standard. To gain access to a WEP network, you must know the key. The key is a string of characters that you create. When using WEP, you must determine the level of encryption. The type of encryption determines the key length. 128-bit encryption requires a longer key than 64-bit encryption. Keys are defined by entering in a string in HEX (hexadecimal - using characters 0-9, A-F) or ASCII (American Standard Code for Information Interchange – alphanumeric characters) format. ASCII format is provided so you can enter a string that is easier to remember. The ASCII string is converted to HEX for use over the network. Four keys can be defined so that you can change keys easily.
- **Wi-Fi** - A trade name for the 802.11b wireless networking standard, given by the Wireless Ethernet Compatibility Alliance (WECA, see <http://www.wi-fi.net>), an industry standards group promoting interoperability among 802.11b devices.
- **WLAN** - (**W**ireless **L**ocal **A**rea **N**etwork) - A group of computers and associated devices communicate with each other wirelessly, which network serving users are limited in a local area.
- **WPA** - (**W**i-Fi **P**rotected **A**ccess) - A wireless security protocol use TKIP (Temporal Key Integrity Protocol) encryption, which can be used in conjunction with a RADIUS server.