

User Guide

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W311M/W311Ma
Mini 11N Wireless USB Adapter

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Chapter 1 Introduction

W311M / W311Ma is a 11N wireless USB network adapter with up to 150Mbps wireless transmission rate. It complies with the latest IEEE802.11n standard, and is compatible with 802.11b/g wireless devices. With mini and exquisite design, it is easy to carry along. It supports WPS encryption method to quickly implement wireless encryption and secure network; supports WMM to better smooth video and sound; supports Windows 7, Vista, Windows XP, Windows 2000, MAC OS, Linux operation systems etc.

In conclusion, W311M / W311Ma is a high-performance and cost-effective 11N wireless USB network adapter with good signal, long transmission range etc.

1.1 Package Contents

One Wireless USB network adapter

One Software CD (includes user guide)

1.2 LED Indicator Description

There is one status indicator on the side of this wireless network adapter. It always remains ON when working correctly and flashes when transferring data.

1.3 Product Features

- Supports 150Mbps receiving and sending rate
- Complies with IEEE 802.11n and is compatible with IEEE 802.11b/g standards
- Provides USB2.0 port
- Supports 20MHz/40MHz frequency width
- Detects network and changes the transmission rate automatically
- Provides two work modes: Infrastructure and Ad-Hoc
- Supports 64/128-bit WEP encryption, and WPA, WPA2 encryption methods
- Provides WPS encryption button to easily implement wireless encryption and secure network
- Compatible with Windows 7, Vista, Windows XP, Windows 2000, MAC OS, Linux systems, etc.
- Supports WMM to better smooth your sound and video

1.4 Product Usage

W311M/W311Ma Wireless USB Adapter offers fast, reliable and cost-effective solution for wireless access. It is best used in the following circumstances:

1. Enables staff members who require greater mobility in the office to have access to wireless networks anywhere inside their company.
2. Enables wireless communication for companies or places which are not suitable for wired LAN installation because of budget or building environment restrictions, such as historical buildings, rentals, or places for short-term usage.
3. Suits businesses or individual who often changes network topology.
4. Suits company or individual who would like to avoid using expensive cables or renting lines etc.

1.5 Before Installation

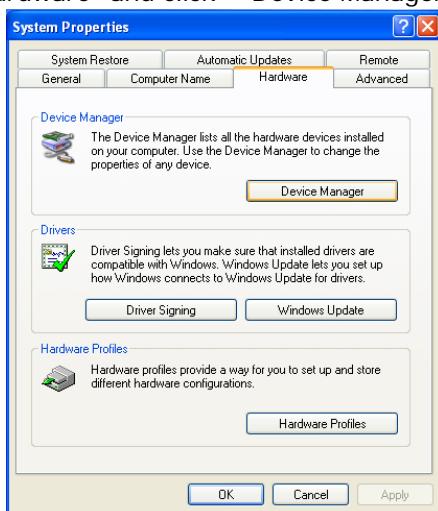
1. Please peruse this user guide before you install and use the product.
2. Please close or uninstall the configuration programs of other manufacturers' before you install the configuration programs of W311M/W311Ma to avoid possible UI

collision.

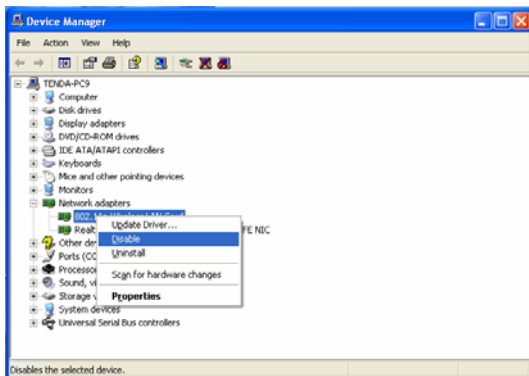
3. In order to avoid possible network collision between this Tenda network adapter and those of other manufactures, we recommend you to first disable the network of other manufacturer when installainga drive.

1.6 Disable other manufacturer's wireless network adapter

1. Right click "My Computer" and select "Properties". Then select "Hardware" and click "Device Manager"



2. Select the wireless network adapter you want to disable then right click and select "Disable"



1.7 Product Maintenance

1. Please keep the product away from water and humid environment to guarantee its normal performance
2. Protect it against other nocuous substances (such as acid and_alkali etc).
3. Please don't keep the product directly exposed to the sun or other object emitting great heat.
4. Please contact Tenda customer service if any problems occur.

Chapter 2 Installation Guide

This chapter will assist you in installing network adapter software packet by using the included CD. The software packet program has integrated driver and configuration software. So when you are installing driver the configuration software will be automatically installed as well.

Windows XP is used as an example to explain the installation steps. Installation in other operation systems, please refer to their corresponding prompts.

1. Please insert the Wireless USB Adapter into the USB port of your computer.



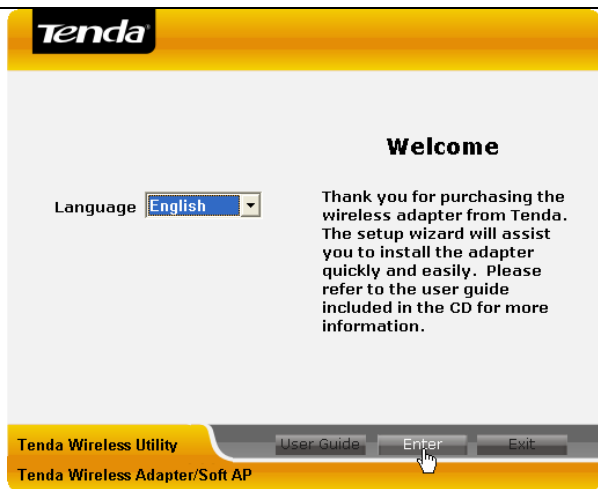
Or



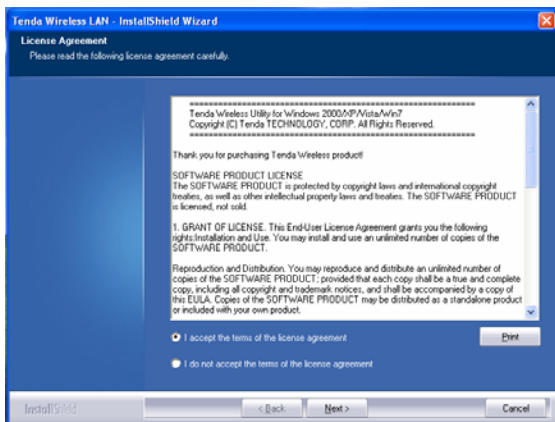
2. System will pop up a "Found New Hardware" dialogue box. We recommend you to select "Cancel" and use the attached quick installation CD to easily install driver and configuration software.



3. Insert the included CD into the CD drive of your computer to auto-run the program. (If it doesn't auto-run, please double click "Tenda.exe" in the CD,). When the welcome screen appears click "Run" button.

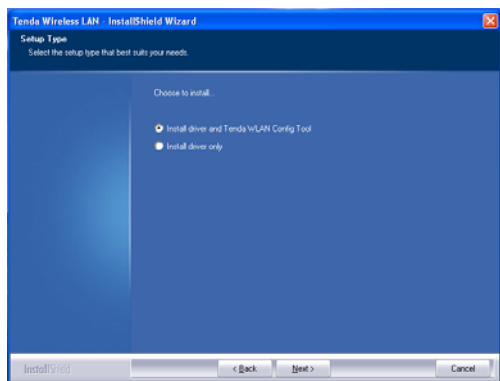


4. Tick "I accept the terms of the license agreement" and click "Next".

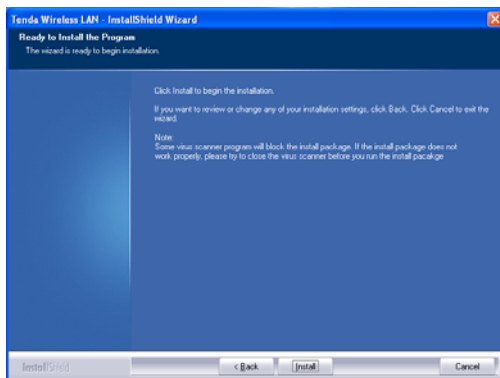


5. There are two installation methods: one is to install

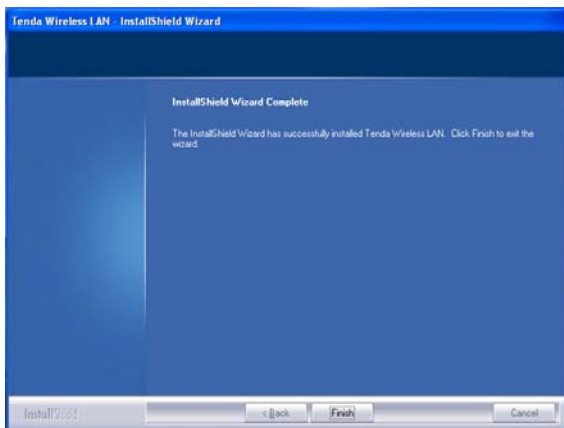
driver and Tenda WLAN Config Tool. The other is to install driver only . We recommend you to use the default installation method.



6. Click “Install” to install the driver and configuration software.



7. Click “Finish” to finish the driver and configuration software.

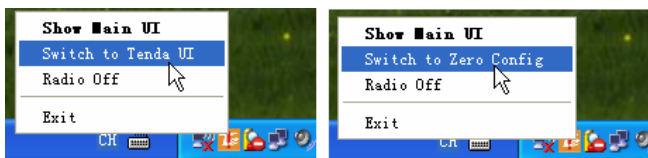


Chapter 3 Client Utility Interface

This wireless USB network adapter uses Tenda client utility interface (In the following text it is abbreviated to UI). All functions can be configured via this software.

Select “Start”—“All Programs”—“Tenda Wireless”—“Tenda Wireless Utility”, or click the “Tenda Wireless Utility” shortcut on your PC’s desktop to start UI.

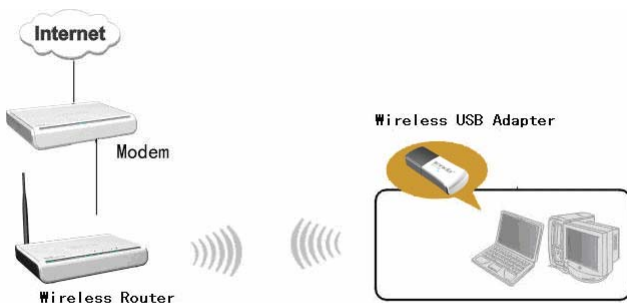
Click Tenda UI on the right-down corner on the desktop to switch Tenda UI and Zero config, and to exit UI etc.

**Note:**

1. Under Windows 7 and VISTA, there is no switch function between Tenda UI and Zero config.
 2. Operation on Tenda UI becomes impossible when wireless is disabled or it is switched to Zero config.
 3. Under Windows 2000 system, you need to use Tenda UI to conduct wireless configuration.
 4. Under Windows XP or Windows 2003 system, if you want to use the system internally attached wireless configuration program to configure the network adapter, please first disable Tenda UI or switch UI to Zero config.
 5. Client application program is "Station Mode" (Client Mode) by default.
 6. Tenda UI users must be managers, some operations may be inaccessible to other ordinary users due to their given restricted rights.
- Client UI enables configuration of two modes Station mode (Client Mode) and AP mode (soft AP Mode).

3.1 Station mode (Client Mode)

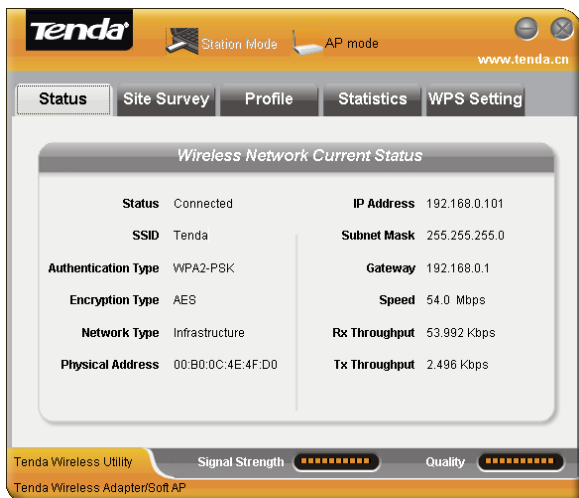
Station mode (Client Mode) Overview



This wireless network adapter is a common solution for client signal reception.

3.1.1 Network Status

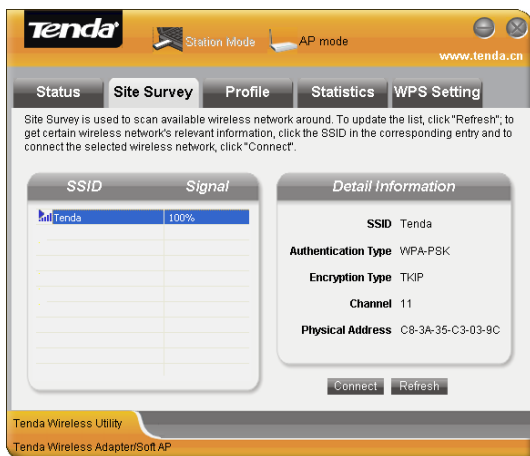
The Network Status window displays status information regarding the wireless network as the picture below:



3.1.2 Site Survey

The Site Survey interface displays the available wireless networks in the area. When you select a wireless network name the detailed information of this selected wireless network will be displayed.

Before you connect wireless network, please click “Refresh” to update the wireless network list and select the one you want to connect, then click “Connect” button. When connecting wireless network, a dialogue box will pop up. For the un-encrypted network, directly confirm instead of changing the configuration, however for the encrypted wireless network, configuration of key is needed.

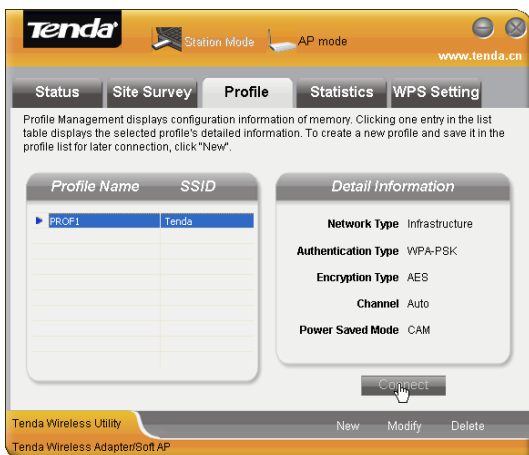


Note: Station Mode support channel 1-11.

3.1.3 Profile Management

This window saves the general wireless network parameters and profiles, which helps the wireless

adapter to quickly connect to the wireless network you want. Clicking a entry in the list displays the detailed information of the selected profile. To connect to wireless network, click “Connect” or double click wireless network name.



Modify: To modify Site Status and Security Setting of the existing profiles.

Delete: To delete the existing profiles.

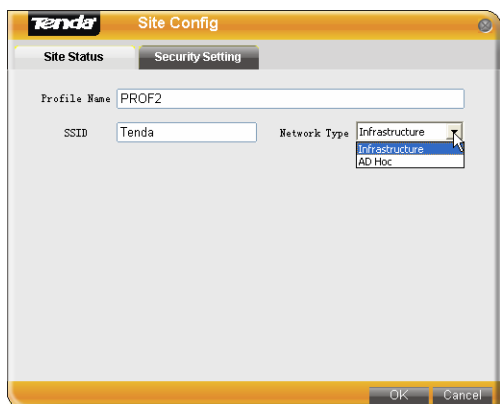
New: To create a new profile and configure the site status and security setting.

1. Create a new configuration file

1) Click “New” to create a new file.



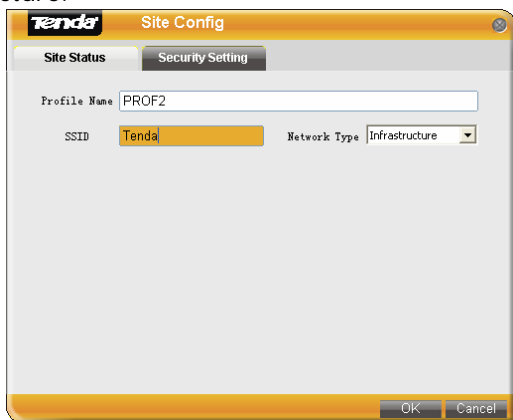
2) Configure "Site Status" in the appearing dialogue box. There are Infrastructure and Ad-Hoc two network types and the default is Infrastructure as the below picture shows.



Infrastructure is a application mode which integrates the wired and wireless LAN architectures. What makes it different from Ad-Hoc is that the computer installed with the wireless network adapter has to fulfill wireless communication via AP or wireless router. It has “wireless AP + wireless network adapter” mode and “wireless router + wireless network adapter” mode.

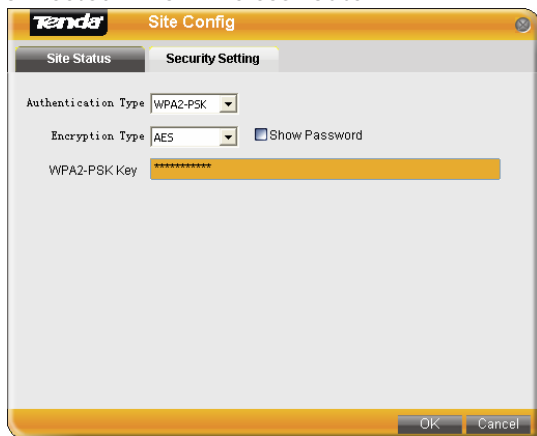
Ad-Hoc is a special wireless mobile network application mode. All nodes in the network are all equal.

When you are using wireless network adapter to connect AP or wireless router, please select Infrastructure.



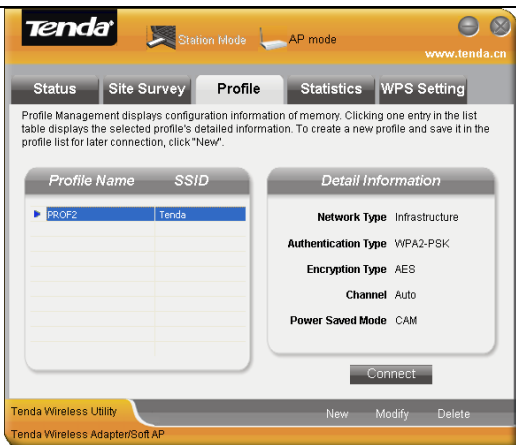
3) Security Setting: enables you to configure authentication type, encryption type, and key. The relevant configurations here must be the same as those

of the connected AP or wireless router.

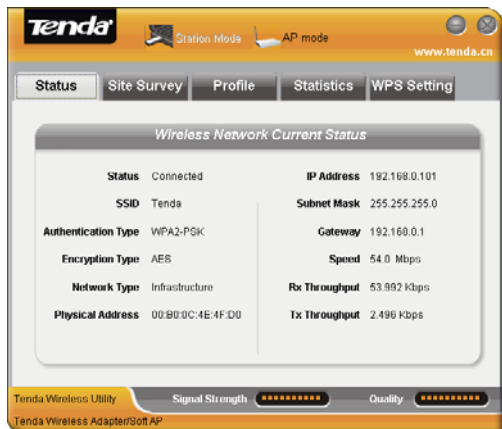


Note: If the wireless router or AP you want to connect closes SSID broadcast function, the wireless network adapter will not be able to scan this wireless network SSID. However, you can create the corresponding configuration file to connect.

4) Finish the above, the added wireless network information will be shown in the profile name list. Select the profile name and click "Connect" or double click profile name to connect the wireless network device.



5) After successful connection, click "Status" to view the connection status as the picture below.

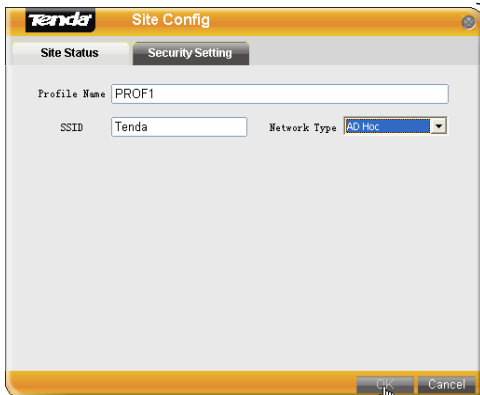


2. Ad-Hoc connection

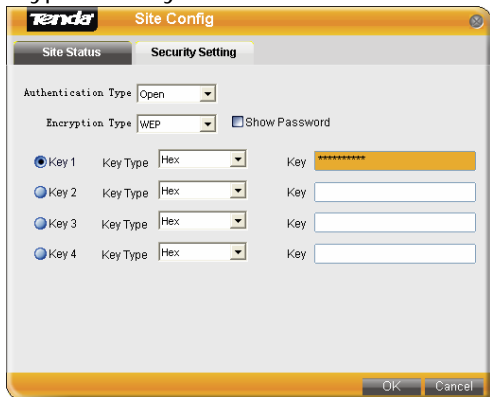
- 1) Set the IP address of the wireless network adapter you want to connect at the same net segment.
- 2) Click "New".



- 3) Configure Site Status: Input SSID to identify the wireless network and select Ad-Hoc for network type.



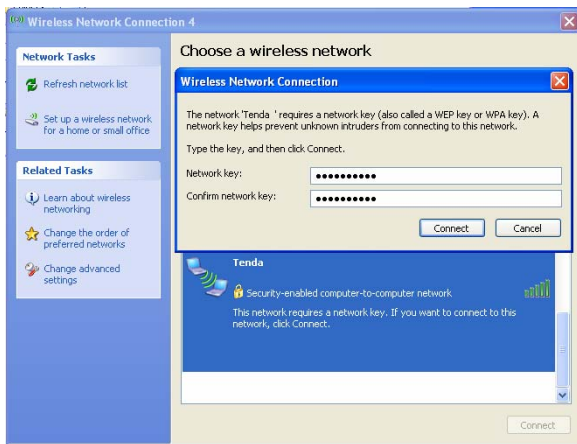
4) Security Setting: Configures authentication, encryption type and key. Click OK.



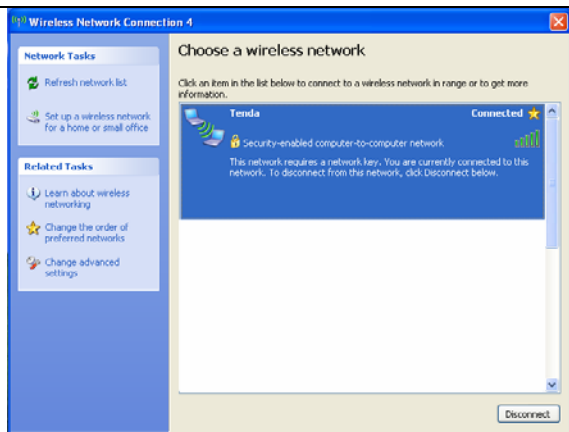
5) The added wireless network information will be shown in the profile list. Select the profile name and click "Connect" or double click the profile name.



6) Search wireless network in devices of other nodes. Double click the wireless network you want to connect and it will prompt you to input a key. After that, click "Connect".

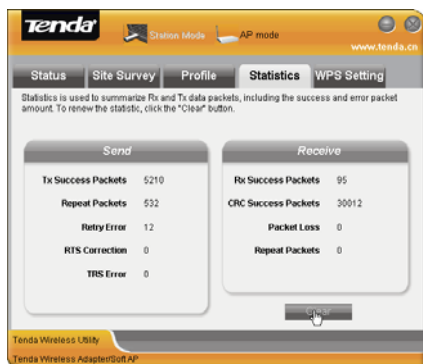


7) It shows as the picture below after successful connection.



3.1.4 Statistics

Statistics is used to calculate the total Rx and Tx data packets, including the successful and error packet amount.

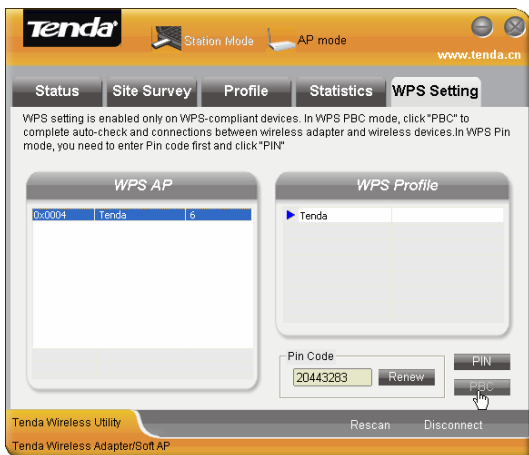


Clear: click this button to delete the existing statistics

and restart new statistics.

3.1.5 WPS Setting

WPS setting is enabled only on WPS-compliant wireless devices. It helps you to quickly configure the wireless network security.



Refresh: To update the Pin code.

Rescan: To rescan the WPS-enabled wireless network in the area.

Disconnect: To disconnect from a connected wireless network.

PIN: Click this button for PIN mode connection.

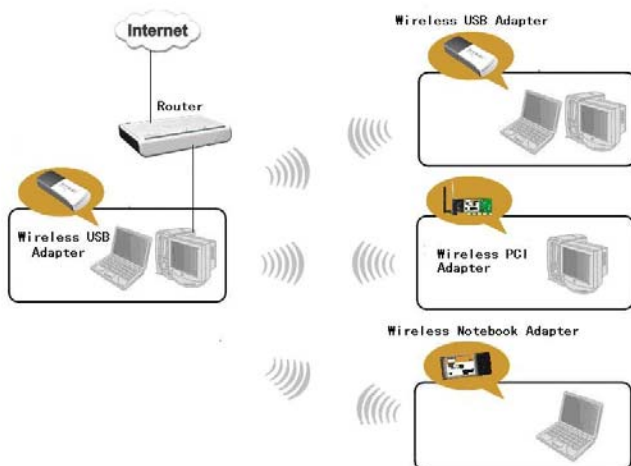
PBC: Click this button for PBC mode connection.

Please refer to appendix 3 for detailed configuration steps for PIN and PBC.

3.2 AP Mode

AP Mode Overview

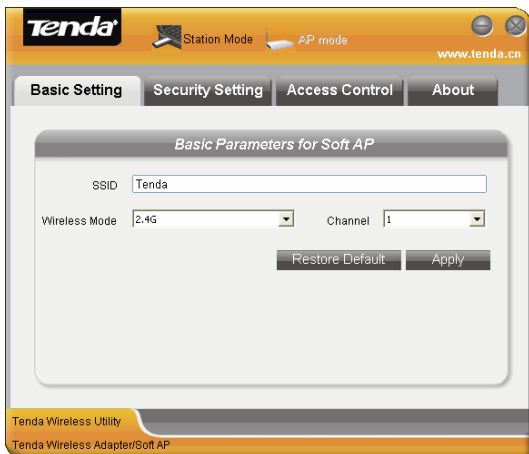
Wireless network adapter can also serve as an access point to transmit wireless signals and create a wireless network, allowing other wireless clients to access the network.



Click the AP Mode on configuration interface to enter the AP Mode.

3.2.1 Basic Setting

The Network Status window displays status information regarding the wireless network adapter's working status, including SSID, Authentication type, Encryption Type, IP address, subnet mask, gateway, and so on.



SSID: Service Set Identifier to identify different networks.

Channel: 1~13 channels provided.

Restore Default: to restore the set parameters to factory default settings.

Apply: to make the configurations effective.

3.2.2 Security Setting

This window is used to configure the wireless network's security authentication information.



WEP: Supports 10/26 bits Hex characters and 5/13 ASCII.

WPA-PSK : Supports 8-63-bit ASCII and 8-64 Hex characters.

WPA2-PSK: Supports 8-63-bit ASCII and 8-64 Hex characters.

WPA-PSK/WPA2-PSK: Supports 8-63-bit ASCII and 8-64 hex characters.

 **Note:**

The Hex characters include numbers 0~9 and letters a-f. ASCII characters include any Arabic digitals/letters and characters.

1. Configure AP Mode

1) First input the SSID which is easy to be identified by you in the basic settings and keep other information unchanged.

2) Select “WPA-PSK” in the drop-down menu of authentication type under security setting. Choose “AES” as encryption type, input a key and click “Apply”.



3) Other clients can have the following picture after their scanned usable wireless networks are successfully connected.



3.2.3 Access Control

Access Control is based on the MAC address to allow or prohibit a specified client's access to this wireless network.



Filter Policy:

Disabled: To disable the filter function.

All Permitted: To permit all hosts whose MAC addresses are included in the list to access the wireless network, other hosts whose MAC addresses have not been added to the list will be prohibited by default.

All Blocked: To prohibit all hosts whose MAC addresses are included in the list from accessing the wireless network, other hosts whose MAC addresses have not been added to the list will be permitted by default.

MAC Address: To input the client's MAC address you

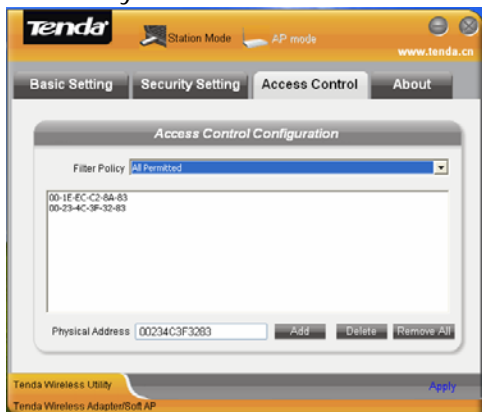
want to filter in the physical address field.

Add: To add the entered client MAC address to the list.

Delete: To delete an existing MAC address in the list.

Remove All: To delete all clients' MAC address in the list.

1. Add the MAC address of the client's wireless network adapter to the list and select "All Permitted" in filter policy. Computers whose MAC addresses are not added to the list will be refused by default.



2. Select "All Blocked" in filter policy then only host computers whose MAC address are included in the list can not be connected to this AP wireless network.

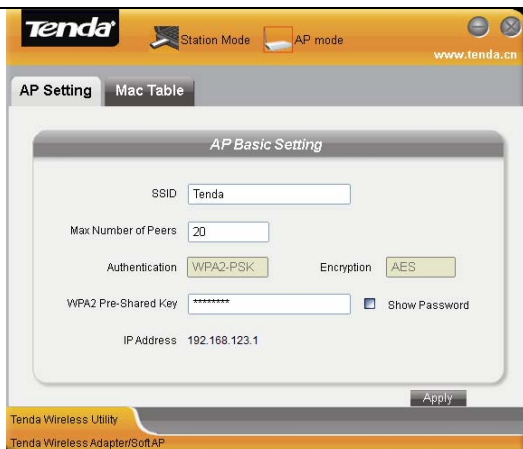
3.2.4 About

This interface displays the parameters regarding the software as the picture below:

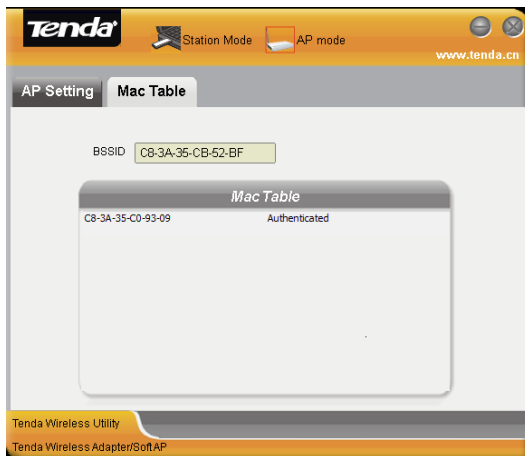


3.2.5 AP Mode under Windows 7

1. There is only AP setting and MAC table when it is switched to AP mode under Windows 7 system.
2. You can change SSID in AP setting option and control the number of the connected clients by modifying the max number of peers. AP mode only has the defaulted WPA2-AES encryption method which can not be modified.



3. **MAC Table:** Displays all the connected clients' MAC addresses.



Chapter 4 Use the System Internal Wireless Configuration Program

This chapter explains how to use the system internal configuration program to connect wireless network for users who don't install Tenda configuration program.

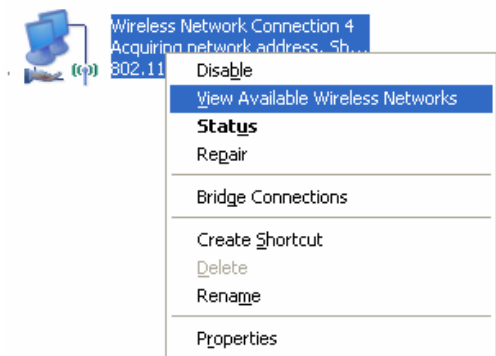
You must enable Windows Wireless Zero Configuration (It is enabled by default) when using the system internal wireless configuration program.

4.1 Wireless Network Connection under Windows XP

1. Right click "My Network Places" on the desktop and select "Properties".

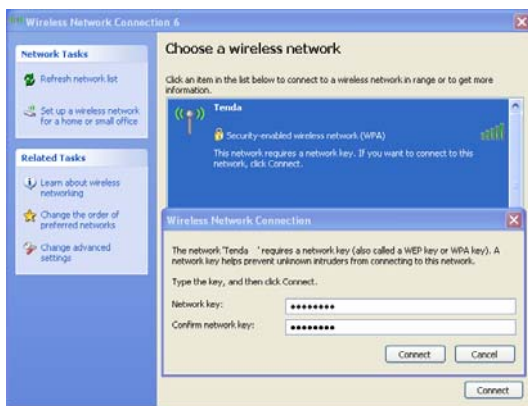


2. Open network connection and you will see “Wireless Network Connection Not connected”. Right click “Wireless Network Connection” and select “View Available Wireless Networks” as the picture below.



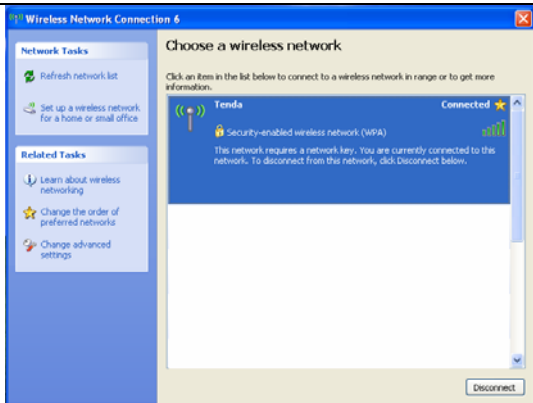
3. On the right of the interface displays the currently scanned wireless networks. If the one you want to connect has not been scanned, click “Refresh Network List” to update the network list.

Select the wireless network you want to connect, and click “Connect” or double click this wireless network. Input a key in the key dialogue box (the key input is case-sensitive) then click “Connect”.

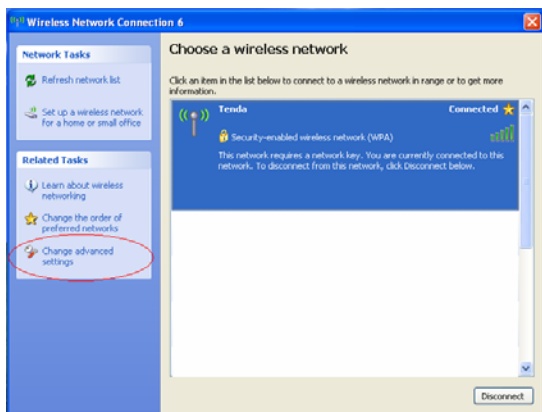


Note: If the wireless device to connect is not encrypted, the key dialogue box will not pop up.

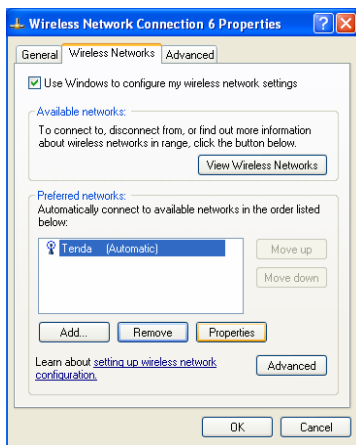
4. When it shows “Connected” as the picture below, you can enjoy wireless access to Internet.



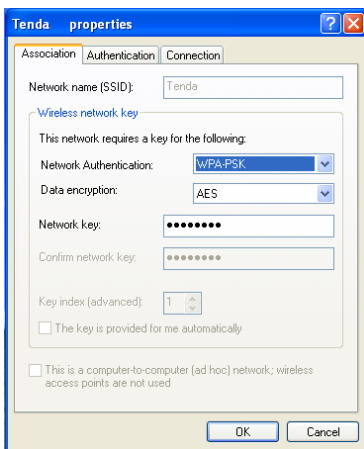
5. You can change wireless network key by changing advanced settings.



6. Select "Wireless Network" and choose the wireless network whose configuration you want to change, and then click "Properties".

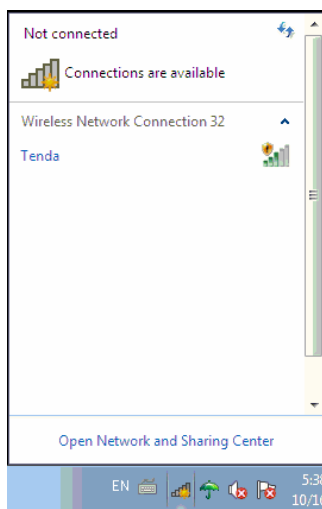


7. Change the key in the appearing dialogue box.

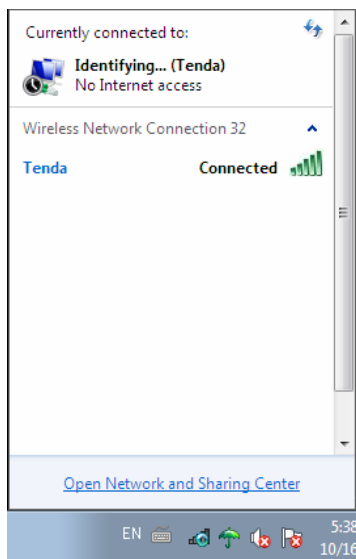


4.2 Wireless Network Connection under Windows 7

1. Right click wireless connection on the right-down corner on the desktop to view available wireless networks as the picture below:



2. Select the wireless network you want to connect and click "Connect" or double click this wireless network. If you can not find the specified wireless network, click refresh icon on the right-up corner to update the list.



APPENDIXES

Appendix 1: Acronyms and Terms

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 standards 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.
- WEP** Wired Equivalent Privacy. A security protocol for WLANs defined in the IEEE 802.11 standard.
- WPA** Wireless Protected Access , adopts rotating keys.
- ICS** Microsoft Internet Connection Sharing enables multi-computer to share access to Internet via one PC.

Appendix 2: Product Specification

Standard	IEEE802.11g, IEEE802.11b, IEEE802.11n
Port	USB2.0
Frequency Range	2.412~2.472GHz
Transmission Rate	Max 150Mbps
Transmission Power	Max 18dBm
Modulation Method	OFDM, CCK
Working Temper.	0°C~45°C
Storage Temper.	-40°C~70°C
Working Humidity	10%~95%RH non-condensing

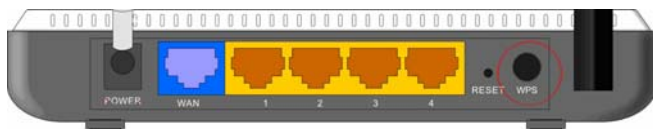
Appendix 3: How to Set WPS

WPS setting supports PBC and PIN code modes. The setting steps of the two modes will be introduced in detail. The following illustrations take Tenda W311R Wireless Router for example.

1. Wireless Connection in PBC Mode

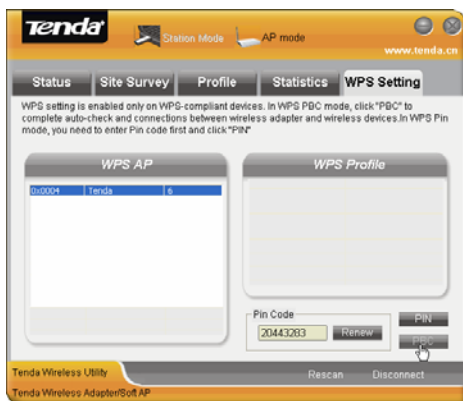
There are usually two ways of enabling PBC on Wireless router (please refer to the user guide of your wireless router).

1.1 Use WPS button on the router

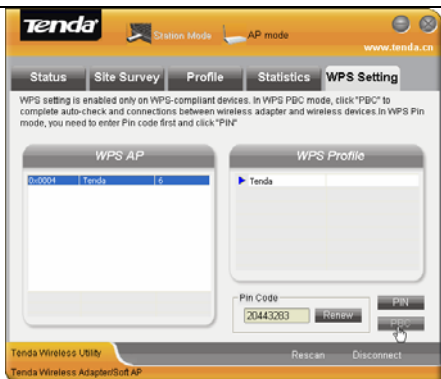


Keep pressing the WPS button on the Router's panel if your wireless router supports WPS (such as Tenda W311R). The WPS indicator will keep flashing (for about 2 minutes). It indicates that the WPS function is enabled on the router. There are 2 ways to use wireless adapter for PBC connection:

- 1) When router has enabled WPS and network adapter UI is correctly running, switch it to Station Mode and press WPS button on the side of the adapter to connect.
- 2) Scan the router SSID in the WPS configuration interface on the UI of the adapter and click "PBC" button to connect.



The successful connection is shown as the picture:



2. Wireless Connections in PIN Mode

2.1 Start Tenda wireless client program to enter the WPS configuration interface. The PIN code list displays the existing PIN of the network adapter. Copy or directly input this Pin Code to the PIN code field of the router (Please refer to the users' guide of your wireless router). Take Tenda W311R as an example. First enter its WPS configuration interface. Enable WPS settings and select PIN for WPS mode then click "Save" button. Now the WPS indicator of the Router will start flashing. It indicates that WPS function is enabled.

WPS Config

You could setup security easily by choosing PIN or PBC method to do Wi-Fi Protected Setup.

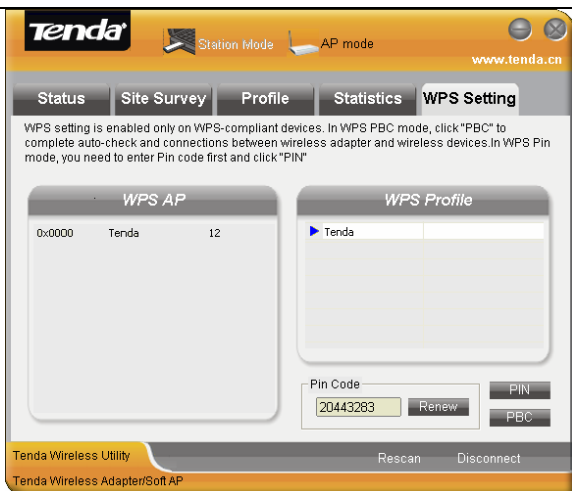
WPS Settings: Disable Enable

WPS mode: PBC PIN

WPS Summary

WPS Current Status:	Idle
WPS Configured:	No
WPS SSID:	Tenda
WPS Auth Mode:	Open
WPS Encryp. Type:	None
WPS Default Key Index:	1
WPS Key(ASCII):	
AP PIN:	01536645

Click the “Rescan” to display the SSID of the connected devices that have enabled WPS function. Select Tenda and click PIN button. When the connection is successfully established this wireless SSID will be added to configuration file list as the picture below:



Appendix 4 :FAQ

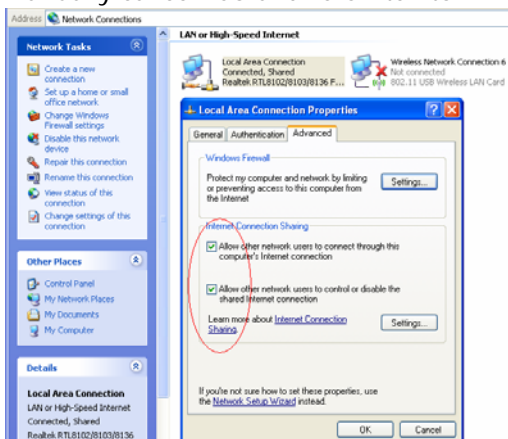
Q1: Microsoft ICS service is pending.

A1: If ICS service can not be enabled after a long time, please re-switch the Station Mode to AP Mode. Restart the computer if this does not work.

Q2: ICS is already bound by another network device.

A2: Microsoft ICS service can only combine one group of WAN and LAN. This message indicates ICS may have been enabled by other network adapters.

Please manually cancel ICS and re-switch to AP mode.



Manually enable or cancel ISC.

Q3: Failed to enable ICS.

A3: Microsoft ICS service can only combine one group of WAN and LAN. This message indicates ICS may have been enabled by other network adapters.

1. Please manually cancel or restart and cancel ICS, then re-switch to AP mode.

2. This dialogue box appears because virtual wi-fi miniport adapter can only be used by one wireless network at a time. Please disable other non- Tenda wireless network adapter and re-switch to AP mode.

Q4: Client can not obtain IP when connected to soft AP of the wireless network adapter.

A4: Manually set a IP address at the same net segment as that of AP and the gateway at the IP address of AP. And communication can be achieved.

Q5: Some function buttons on UI become grey and can not be used.

A5: This is because you have switched to Zero config mode, please right click the Tenda UI ON the right-down corner of your desktop. Operations can be done after you have switched to Tenda UI.

Q6: Under Windows 2000 system, IP address can not be obtained when it is switched to AP Mode.

A6: Under Windows 2000 system, you have to manually configure share and then switch to AP. And an IP address of 192.168.0.1 will be obtained.

Appendix 5 :Statment

Eu Declaration or Declaration of Conformity

Hereby, SHENZHEN TENDA TECHNOLOGY CO.,LTD, declares that this Wireless Broadband Router is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

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.

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example- use only shielded interface cables when connecting to computer or peripheral devices).

"The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter."

FCC 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 the minimum distance

of 20 cm. Operation is subject to the following two conditions:

- 1) This device may not cause interference and
- 2) This device must accept any interference, including interference that may cause undesired operation of the

device.

Caution!

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user authority to operate the equipment.

If you still have some problems, please contact our customer service or log on our website:

<http://www.tenda.cn>

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