

User Guide



Wireless N PCI-E Adapter User Guide

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About this User Guide

This user guide applies to W311E (150Mbps) and W322E (300Mbps). The W311E is used as an example throughout this user guide for illustration.

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Chapter 1 Product Overview

This Tenda Wireless N PCI-E adapter delivers enhanced wireless performance over a standard PCI interface for your PCI Express-enabled desktop computer. Based on wireless n technology, this adapter delivers faster wireless speed and 3x farther range than wireless G. Plus, it comes with Wi-Fi Protected Setup[™] (WPS) for easy connection to a wireless network. Once connected, you can share a high-speed Internet connection, photos, files, music, videos, printers, and storage.

1.1 Package Contents (For references only)



W322E





English

1.2 LED Overview

The adapter comes with a status LED, which displays :

A solid green light while identified and functioning properly;

1.3 Key Features

- > Automatically sense network and adjust transmission rate;
- > 20/40M bandwidth auto-select;
- Up to 150 Mbps(W311E)/300Mbps(W322E) wireless speed over 2.4Ghz;
- Comes with 2 operating modes: Infrastructure and Ad-Hoc;
- > Access secure networks using WEP, WPA or WPA2;
- Wi-Fi Protected Setup™ (WPS) for easy connection to a wireless network;
- > Compatible with Windows XP, Vista, Windows7, Windows8 and more;

1.4 Applications

The Tenda adapter delivers powerful, fast and reliable wireless access to your desktop or notebook computer. It is ideal for use by or in:

a). ancient buildings, places rented or for temporary use where wiring is such a big mess, a huge cost or hard to reach;

b). business or individual always in need of network topology changes;

c). business or individual who wants to have a wireless network established fast and simple without the mess of wiring.

Note : This PCI-E adapter can only be installed in a PCI-E slot on a desktop.

1.5 Before Getting Started

1. Before installing and using this product, please peruse the entire user guide.

2. Also, if you have previously installed a different manufacturer's adapter or

a different model Tenda adapter, make sure the software and driver are uninstalled before installing the new software. Some utilities may cause a conflict with the new software.

1.6 Maintenance

Observe the following to ensure the product continuously stays in good condition.

1. Keep the device in a dry and well ventilated environment

2. DO NOT expose the device to corrosive substances (such as acid and alkali, etc)

3. DO NOT expose the device to sun shine or other heat sources;

4. If you run into a problem that you cannot solve, go to www.tendacn.com to find a solution or email your problem to: support@tenda.com.cn or support02@tenda.com.cn.

Chapter 2 Installation Guide

The CD that comes in the package includes both driver and software, which can be installed automatically. This section will walk you through the installation process.

Software install and operation instructions are illustrated in Windows® XP. If you have a different operating system, the screenshots on your computer will look similar to the following examples.

2.1 Hardware Install

1. Turn off your computer and open the case.



2. Insert the NIC into an available PCI-E slot.



3. Fix the NIC with screws and cover the case.



4. Connect the NIC to your existing network using a Cat5 or Cat5e Ethernet cable.

2.2 Software Install

1. If the Found New Hardware Wizard appears, click Cancel and then use the quick install CD to install the driver and software.



Insert the Tenda Driver CD in your PC's CD-ROM drive. If the CD Autorun function does not automatically start on your computer, double click **Tenda.exe**.
 When the autorun screen appears, click **Run**.



3. Click **Next** to continue.

Vireless Utility - InstallShield Wizard Velcome to the InstallShield Wizard for Wireless Utility The InstallShield Wizard will install Wireless Utility on your computer. To continue, click Next.	
InstallShield	< Back Cancel

4. Check I accept the terms of the license agreement and then click Next.



5. You can either install the standalone driver without Tenda adapter utility or install both driver and Tenda adapter utility.

Setup Type Select the setup type that best	t suits your needs.	
	Select Configuration Tool.	
	 Install driver only Install driver and WLAN Config Tool 	
InstallShield	< <u>B</u> ack <u>N</u> ext > Can	icel

Tenda

Note: If you wish to use Windows system built-in wireless utility, you can select the first installation mode; however, if you want to use advanced features like WPS, you must also install the Tenda adapter utility.

6. Click Install to install the driver.



7. Wait till the driver is completely auto-installed and then click **Finish** to exit.

Wireless Utility - InstallShield Wiz	ard
	InstallShield Wizard Complete
	The InstallShield Wizard has successfully installed Wireless Utility. Before you can use the program, you must restart your computer.
	 Yes, I want to restart my computer now. No, I will restart my computer later.
	Remove any disks from their drives, and then click Finish to complete setup.
InstallShield	< Back Finish Cancel

Chapter 3 Use System Built-in Wireless Utility

This section will walk you through the configuration process of connecting to a wireless network using your PC's OS built-in wireless utility.

To use Windows XP built-in wireless utility, you must first enable the **Wireless Zero Configuration** service (enabled by default).

3.1 Join a Wireless Network --Windows® XP

1. Right-click My Network Places from the desktop and select Properties.



2. As seen below, Wireless Network Connection displays Not Connected. Right click **Wireless Network Connection** and select **View Available Wireless Networks**.



3. The utility will display any available wireless networks in your area. If you don't see the network you wish to connect to, click the **Refresh** network list. Click on the network (SSID) you wish to connect to and click the **Connect** button or directly double click it. If you are prompted to provide a security key, simply enter it (case sensitive) exactly as it is on your wireless router or access point and then click **Connect**.

⁽⁽⁹⁾ Wireless Network Connecti	ion 6 🛛 🔀
Network Tasks	Choose a wireless network
nefresh network list	Click an item in the list below to connect to a wireless network in range or to get more information.
Set up a wireless network for a home or small office	(()) Tenda B Security-enabled wireless network (WPA)
Related Tasks	This network requires a network key. If you want to connect to this network, click Connect.
Learn about wireless networking	la de la constante de la const La constante de la constante de
Change the order of preferred networks	Wireless Network Connection
Change advanced settings	The network 'Tenda ' requires a network key (also called a WEP key or WPA key). A network key helps prevent unknown intruders from connecting to this network.
	Type the key, and then click Connect.
	Network key:
	Confirm network key:
	Connect Cancel
	Connect

Note: If the network you selected is not encrypted, you will not see this dialog box requesting a security key.

4. When this screen appears, you have successfully connected to your wireless network and can start surfing Internet.



3.2 Join a Wireless Network --Windows® 7

1. Click the wireless icon in your system tray (lower-right corner). The utility will display any available wireless networks in your area. Click on a network (SSID) and click the **Connect** button or directly double-click it. If you don't find the desired wireless network, click the refresh icon (upper-right corner) to update the list.



2. If you are prompted to provide a security key, simply enter it exactly as it is on your wireless router or access point and then click **OK**.

😰 Connect to a Net	work	×
Type the netwo	rk security key	
Security key:	••••••• Ide characters	
		OK Cancel
		EN 🔺 .@

3. When **Connected** appears next to the selected wireless network (SSID), you have successfully connected to it. To disconnect from it, view status, or change wireless properties, etc, simply right-click the SSID.

Currently connected Tenda No Internet a	1 (0.	6 ₇	~
Wireless Network Co	onnection 3	^	l
Tenda	Connected		=
	Disconnect]	
Tenda	3		
			-
Open Network	and Sharing Center		
This co	py or windows is not	gen	чц
	EN 🔺	.1	

3.3 Join a Wireless Network --Windows® 8

1. Click the wireless icon in your system tray (lower-right corner). The utility will display any available wireless networks in your area. Click on a network (SSID) and click the **Connect** button or directly double-click it.



2. If you are prompted to provide a security key, simply enter it exactly as it is on your wireless router or access point and then click **Next**.

Networks	
Tenda	atl
Enter the network securi	ity key
Next	Cancel

3. When **Connected** appears next to the selected wireless network (SSID), you have successfully connected to it.

Networks		
Wi-Fi		
Tenda	Connected	.atl
Tenda_F		all
Tenda_0		atl
Tenda_C		all

▲ Note:

If the wireless router or AP you connect to via the wireless adapter does not have Internet access, then you will get a Restricted status and a yellow exclamation mark will appear in the wireless icon in your system tray (lower-right corner).

Chapter 4 Tenda UI Guide

If you select install both driver and Tenda adapter utility, .then both of them will be installed on your PC. All features on the adapter can be configured and implemented through the Tenda adapter utility (abbreviated to UI).

To start the Tenda UI, select **Start-> Tenda-> Wireless Utility** or directly click **Wireless Utility** shortcut from your desktop.

4.1 Frequency Band Setup

This PCI-E wireless adapter operates on 2.4Ghz band only and may need to operate on different channels depending on your country.

Tena	Shenzhen Tenda Technology Co., Ltd http://www.tendacn.com
Band Settings Wireless Network Connection Status Network Profile WPS Settings Help	Band Settings Band: 2.4GHz Select your country Country: United States
V1.0.0.4	

4.2 Wireless Network

Wireless network displays all available wireless networks in the area and lets you see at a glance MAC address, channel, network mode, signal strength, authentication mode, encryption mode and/or WPS authentication of each AP. Also, you can select to connect to the desired wireless network.

Before connecting to a wireless network, click **Refresh** to update the available wireless network list, select a desired wireless network and then click

Connect.

				Ł	ttp://www.tenda	<u>cn.com</u>		
Band Settings	Wireless Net	twork					Refresh	
Wireless Network	Connect	SSID	Channel	Signal	Security Status	Band	802.11Mode	(
Connection Status		Tenda_Wireless000	11	att	Ê	2.4G	n	
onnection status		⁽⁾ Tenda_050834	11	all		2.4G	n	
etwork Profile		*** Tenda_00006E	10			2.4G	n	
		Tenda_0E0EB0	1	att		2.4G	n	
WPS Settings		*** Tenda_010001	1	att		2.4G	n	
5		*** Tenda_224488	1		E	2.4G	n	
Help		°°° tendacp	1			2.4G	n	
		°°° Tenda_01703D	1			2.4G	n	
		°°° Tenda	1	att		2.4G	n	
		⁽) ⁽⁾ Tenda_000294	1	att		2.4G	n	
		ໍໃຈ Tenda_w303r	3	all	°,	2.4G	n	
		°°° Tenda_130518	6	att	°.	2.4G	n	
		°°° Tenda_1CCCC0	8			2.4G	n	
		° 🚏 Tenda_000588	9	.11		2.4G	n	
	Wireless Con	nection						
		SSID:	Security M	lode:				
	MAC Address:		Cipher T				Connect	

To join an unsecured network, simply click **Connect**.

When joining a secured network, you will be prompted to provide a security key. Simply enter it exactly as it is on the wireless router or access point you wish to join and then click **Next**.

			2.5		Ŀ	ttp://www.tenda	<u>cn.com</u>		
Band Settings	Wireless Ne	twork						Refresh	
Vireless Network	Connect	SSID		Channel	Signal	Security Status	Band	802.11Mode	
Connection Status		000 Ter	nda 050834	11			2.4G	n	
onnection status			nda_525FFC	11	att		2.4G	n	
letwork Profile		°°° Ter	nda_Wireless000	11	.11	2	2.4G	n	
		°°° Ter	nda_010001	1	all		2.4G	n	
WPS Settings		°°° Ter	nda	1	all		2.4G	n	
Ŭ		°î° Ter	nda_224488	1	all	E	2.4G	n	
Help		°°° ten	ndacp	1	all		2.4G	n	
		°°° Ter	nda_130518	6	all	°.	2.4G	n	
		°°° Ter	nda_1CCCC0	8	all		2.4G	n	
		ିု Ter	nda_v587	10	all	°.	2.4G	n	
		°°° Ter	nda_00006E	10	all		2.4G	n	
		°°° Ter	nda_A0B1C2	9	all		2.4G	n	1
		°¶⁰ TD	_56987	10	all	Ê	2.4G	n	
		°°° WE	DS	11	all	°.	2.4G	n	_
	-	1		1	1	1	I	1	•
	Wireless Con	nnection							
		SSID: Te	nda_050834	Security M	ode: open			-	
			-85-11-05-08-34		ype: None			Connect	

Note: If you check "**Save wireless network**", then, after the adapter connects to the network, it automatically saves the network connection information to a profile.

For detailed illustrations of authentication and encryption modes, see below:

WEP: Support 10 or 26 Hex characters; 5 or 13 ASCII characters.

WPA-PSK: Support 8~63ASCII characters; 8~64Hex characters.

WPA2-PSK: Support 8~63 ASCII characters; 8~64 Hex characters.

 \triangle **Note:** Hex characters include numbers of 0~9 and letters of a~f.

ASCII characters include any alphanumeric characters.

4.3 Connection Status

If you have successfully joined a wireless network, you can view details of the connection and traffic statistics.

Tena	a		Shenzhen Teno <u>http://www.te</u>	a Technology Co., Ltd
Band Settings				
Wireless Network	Current connection status information			
Connection Status	SSID: Tenda_050834 Security Mode: open	Signal Strength:	80%	
Network Profile	Cipher Type: None	Rssi:	-65 dBm	
WPS Settings	Band: 2.4G	Channel:	11	
Help	Transmission Speed: 150.0 Mbps	MAC Address:	00-85-11-05-08-34	
	Wireless LAN status information			
	IP Address: 169.254.106.42	Subnet Mask:	255.255.0.0	
	Statistics			
	TX Packets: 42	TX Bytes:	3908	
	RX Packets: 0	RX Bytes:	0	
			Recount	
V1.0.0.4				

4.4 Network Profile

Also, you can manually add a profile on the **Network Profile** screen to connect to a specified wireless network. After the adapter joins the network, it automatically saves the network connection information to a profile, which can be used by adapter utility. The next time you launch adapter utility, it will automatically connect to the network you previously joined if there's no change in the network information. If you wish to join a hidden network (A hidden network does not broadcast its SSID), you must add a profile to manually connect to it.

Tend	a				Shenzhen Tenda Technology Co., Ltd http://www.tendacn.com	Î
Band Settings						
Wireless Network	Add	Edit	Delet	e	Connect	
Connection Status	Connect	Network Profile Name	SSID	Security Status	Network Type	
Network Profile	0	Tenda_050834	Tenda_050834		\$	
WPS Settings						
Help						
	Informatio	n of Connected Wireless I	Network			
	Network Pr	ofile Name:		Security Mode:		
	Network Na	ame (SSID):		Cipher Type:		
V1.0.0.4						

Add: Click to create a new wireless network profile;

Delete: Click to remove an existing profile;

Edit: Click to to edit a current profile;

An 802.11 wireless adapter (WNIC) can operate in two modes known as infrastructure mode and ad hoc mode:

Tend	a				Shenzhen Tenda Technology Co., Lt <u>http://www.tendacn.com</u>	- ×
Band Settings Wireless Network Connection Status Network Profile	Network Type: Profile Name: SSID:	Infrastructure -Connect to PROF1	o wireless AP Security Mode: Cipher Type:	open None	• • •	
WPS Settings Help		Back	Save			
V1.0.0.4						

Infrastructure: In an infrastructure mode network the wireless adapter needs a wireless access point or a wireless router for communication. All wireless nodes in an infrastructure mode network connect to an access point or a wireless router.

Ad-hoc: A wireless ad hoc network does not rely on a preexisting infrastructure, , such as routers in wired networks or access points in managed (infrastructure) wireless networks. It typically refers to any set of networks where all devices have equal status on a network and are free to associate with any other ad hoc network device in link range in peer to peer communication mode.

4.4.1 Profile Set Up for Infrastructure Mode

If you plan to connect your wireless adapter to an existing wireless AP or wireless router, please select the Infrastructure mode. Setting up infrastructure mode for wireless connectivity is not that hard, all we need is to follow below instructions.

a). Click Add and select Infrastructure from the appearing dialog box.

b). Specify a profile name and select the wireless network (SSID) you wish to join.

c). Specify the authentication mode and encryption mode, say, "WPA - PSK"

and "AES";

d) Enter the security key and click **Save**.

Tend	a				en Tenda Technology www.tendacn.com	- 🗙 Y Co., Ltd
Band Settings						
Wireless Network	Network Type:	Infrastructure -Connect to	wireless AP		•	
Connection Status	Profile Name:	PROF1	Security Mode:	open	•	
Network Profile	SSID:	tenda_050834 🔹	Cipher Type:	None	•	
WPS Settings						
Help						
		Back	Save			
V1.0.0.4						

Now, you may see the added profile in the list. You can edit or delete it. By clicking **Connect**, you will soon connect to the wireless network specified in the profile.

Tend	Shenzhen Tenda Technology Co., Ltd http://www.tendacn.com
Band Settings Wireless Network	Add Edit Delete Connect
Connection Status Network Profile	Connect Network Profile Name SSID Security Status Network Type PROF1 tenda_050834
WPS Settings Help	Connecting
	Information of Connected Wireless Network Network Profile Name: PROF1 Security Mode: open
	Network Name (SSID): tenda_050834 PROF1 her Type: none
V1.0.0.4	>

A Note:

If you wish to join a hidden network (wireless AP or wireless router that does not broadcast its SSID), you must add a profile to manually connect to it.

4.4.2 Profile Set Up for Ad Hoc Mode

By using ad hoc mode for communication, each PC must have a wireless adapter for sharing resources. Setting up the Ad Hoc is easy. Simply follow below instructions:

a). Configure a static IP address for each wireless adapter. All PCs on the Ad Hoc network must be configured with static IP addresses manually. For more information, see <u>Appendix 1</u>.

e) Enter an unused IP address and subnet mask.

For example: If you set your wireless adapter's IP address as 192.168.0.1, then you must set other adapters to IP addresses between 192.168.0.2-192.168.0.254.

b. To add Ad Hoc profile:

a). Click Add and specify a SSID (wireless network name), say, "Tenda";

- b). Select Ad Hoc as network type;
- c). Select WEP and specify a WEP key or select None.
- d). Select a channel.

Tend		×
Band Settings Wireless Network Connection Status Network Profile	Network Type: Ad hoc -Directly connect to PCs Profile Name: PROF2 SSID: Tenda_050834 Cipher Type: None	
WPS Settings Help	Channel: 1	
V1.0.0.4		

Click **Save** and you can see the network profile on the list.

Tend	a	6			Shenzhen Tenda Technology Co., Ltu <u>http://www.tendacn.com</u>	ł
Band Settings						
Wireless Network	Add	Edit	Delet	te	Connect	
Connection Status	Connect	Network Profile Name	SSID	Security Status	Network Type	
Network Profile		PROF2	Tenda_050834		4	
WPS Settings						
Help						
	Informatio	n of Connected Wireless N	letwork			
	Network Pr	ofile Name: pROF2		Security Mode:	open	
	Network Na	me (SSID): Tenda_05083	34	Cipher Type:	none	
V1.0.0.4						

- f) Search for the wireless network from devices on other nodes.
- g) Double-click it, enter a security key if required and then click **Connect**.

(1) Wireless Network Connect	ion 🔀
Network Tasks	Choose a wireless network
😴 Refresh network list	Click an item in the list below to connect to a wireless network in range or to get more information.
Set up a wireless network for a home or small office	((Q)) Tenda_5G_4BC730
	Unsecured wireless network
Related Tasks	((Q)) Tenda_5G_000058
Learn about wireless	Unsecured wireless network
networking	2. roct wanf weban.5
Change the c Wireless	Network Connection
	rk 'Tenda_050834 requires a network key (also called a WEP key or WPA key). A y helps prevent unknown intruders from connecting to this network.
Type the k	ey, and then click Connect.
Network <u>k</u> e	w: ••••••
C <u>o</u> nfirm ne	twork key:
	<u>C</u> onnect Cancel



When below screen appears, you have successfully connected to it.

^{((†))} Wireless Network Connect	on	
Network Tasks	Choose a wireless network	
🚭 Refresh network list	Click an item in the list below to connect to a <u>w</u> ireless network in range or to get more information.	e
Set up a wireless network for a home or small office	((o)) Tenda_050834 Connected	^ 🖈
	🖡 😚 Security-enabled wireless network (WPA)	00 🗄
Related Tasks	((@)) ^{tjw_jjj}	
(j) Learn about wireless	Unsecured wireless network	
networking	((@)) Tenda_00006E	
Change the order of preferred networks	Unsecured wireless network 00	
Section 2 Change advanced	((@)) PTCL-BB-IPT¥a	
settings	Unsecured wireless network	000
	((o)) ^{c2}	
	🖡 💡 🖗 Security-enabled wireless network (WPA2)	000
	((p)) Tenda_office	
	🖡 💡 😵 Security-enabled wireless network (WPA2)	00 🧹
	Cor	nnect

4.5 WPS Setup

If your wireless network supports WPS, you can use WPS to join a wireless network. WPS can easily and quickly create secure wireless connections. System automatically adds the network profile upon a successful WPS connection.

Tend	Shenzhen Tenda Technology Co., I http://www.tendacn.com	Ltd
Band Settings Wireless Network Connection Status Network Profile WPS Settings	select one of the following methods PBC Configuration mode PIN Configuration mode Automatically select a wireless network	
Help	If system fails to automatically select or join a WPS-capable wireless network, try joining one manually.	
V1.0.0.4	Back	Next

PBC Configuration Mode

To join a wireless network using WPS PBC from Tenda adapter UI:

1. Select WPS Settings-> PBC Configuration Mode.

Tend	Shenzhen Tenda Technology Co., Ltd http://www.tendacn.com	×
Band Settings Wireless Network	select one of the following methods	
Connection Status Network Profile	PBC Configuration mode PIN Configuration mode	
WPS Settings Help	Automatically select a wireless network If system fails to automatically select or join a WPS-capable wireless network, try joining one manually.	
V1.0.0.4	Back Next	

Tip:

 Automatically select a wireless: Automatically select a WPS-capable AP from searched results to join. This field is checked by default. If this field is left unchecked, you must manually select a WPS-capable AP to connect.

Tenda				enzhen Tenda Technology (t p://www.tendacn.com	Co., Ltd
Band Settings					
Wireless Network	Configuration Stage:			Result	
Connection Status	Initializing WPS proce	255		Success	
Network Profile		Network Select	ion	×	
WPS Settings		etwork you wish to join:		refresh	
Help	Only display th	e WPS-capable APs			
	Network Name	MAC Address	Band	WPS Version	
	Tenda_gvJjjAm	00:90:4C:0B:50:15		2	
			ОК	Cancel	

- b) If there are multiple WPS-capable APs, manually select a WPS-capable AP that you wish to join and leave the Automatically select a wireless network field unchecked.
- 2. Click **Next** and follow onscreen WPS instructions to enable WPS-PBC on the WPS-capable AP.

Tena	Shenzhen Tenda Technology Co., Ltd http://www.tendacn.com
Band Settings Wireless Network Connection Status Network Profile	PBC Configuration mode Press the PBC button on the WPS AP, and then click Next. Note If the WPS AP does not have a physical button to press, use your browser to open the settings web
WPS Settings Help	page for the WPS AP, and then follow the instructions that involve dicking a virtual button.
V1.0.0.4	Back Next

3. Then within 2 minutes, click Next to start WPS negotiation.

Negotiation Process:

Tenda				ihenzhen Tenda Technology Co., Lto Ittp://www.tendacn.com
Band Settings				
Wireless Network	Configuration Stage:			Result
Connection Status	Initializing WPS proce	255		Success
Network Profile		Network Select	tion	×
WPS Settings		etwork you wish to join:		refresh
Help	Only display th	e WPS-capable APs		
	Network Name	MAC Address	Band	WPS Version
	Tenda_gvJjjAm	00:90:4C:0B:50:15		2
			ОК	Cancel

Negotiation Completed Successfully:

Tenda		Shenzhen Tenda Technology Co., Ltd http://www.tendacn.com
Band Settings		
Wireless Network	Configuration Stage:	Result
Connection Status	Initializing WPS process	Success
Network Profile	Searching for WPS Access Point	Success
WPS Settings	Connecting to Access Point	Success
-	Negotiating Security	Success
Help	Creating network profile	Success
	Restoring network environment	Success
	Received message type: (M8) Sending message type: (DONE) WPS security negotiated. Created a wireless network profile. WPS security negotiated. Wireless network environment restored.	^ ~ >
V1.0.0.4		Back Next

4. Now, simply click **Next** and you will see the SSID of the wireless network you joined. The WPS-PBC connection is now completed.

Tena	Shenzhen Tenda Technology Co., Ltd http://www.tendacn.com
Band Settings Wireless Network Connection Status Network Profile	You are now connected to the WPS network.
WPS Settings Help	SSID (network name): Tenda_Wy1fmlxtuq
V1.0.0.4	Back Next

PIN Configuration Mode

To join a wireless network using WPS PIN from Tenda adapter UI:

1. Click WPS Settings-> PIN Configuration Mode.

Tena	Shenzhen Tenda Technology Co., Ltd http://www.tendacn.com	- ×
Band Settings Wireless Network Connection Status Network Profile WPS Settings	select one of the following methods PBC Configuration mode PIN Configuration mode Automatically select a wireless network	
Help	If system fails to automatically select or join a WPS-capable wireless network, try joining one manually.	
V1.0.0.4	Back Ne	xt

- 2. Click Next and you will find two available WPS-PIN modes:
- ✓ Enter a PIN into my Access Point or Registrar



Follow onscreen instructions to copy NIC's PIN to the wireless AP and enable WPS-PIN on the wireless AP.

For example: If you wish to connect to Tenda F1200, simply copy the PIN to Tenda F1200 and enable WPS-PIN on the Tenda F1200.

Tenda	Version Product	
	Home Status Network Wireless Advan	ced Security Tools
Basic	WPS	Helpful Hints
Guest Network	Band 2.4GHz	Wi-Fi Protected Setup (WPS)
Security	SSID Tenda_F1200	makes it easy for home users who know little of
Advanced	Device PIN 19505138	wireless security to establish a secure wireless home
Wireless Access Control	Enable WPS 💿 Disable 💿 Enable	network, as well as to add new devices to an existing
Wireless Extender	WPS Mode 💿 PBC 💿 PIN 40650395	network without entering long passphrases or
	Reset OOB Start PIN	configuring complicated
Wireless Connection Status		settings. Simply enter a PIN code or press the software
	Save Cancel	PBC button or hardware WPS button (if any) and a secure wireless connection is
		established.

✓ Enter the PIN from my Access Point

Tena	Shenzhen Tenda Technology Co., Ltd http://www.tendacn.com
Band Settings Wireless Network Connection Status Network Profile WPS Settings Help	PIN Configuration mode Enter a PIN into my Access Point or Registrar Enter the PIN from my Access Point PIN: Settings Type the unique 8-digit PIN code that has been assigned to the WPS AP. The PIN code is usually printed on a label or sticker that is attached to the case of the WPS AP.
V1 0.0 4	If this is not the case, use your browser to open the settings web page for the WPS AP and look for the PIN code there.
V1.0.0.4	Back Next

First, enable the WPS-PIN on the wireless AP you wish to join, say, Tenda F1200.

Tend a		Version VI.0.0.2 (7514) Product Name Wireless AC1200 Dual Ba			Dual Band Router			
	Home	Status	Network	Wireless	Advanced	Security	Tools	
Basic Guest Network	WPS					Helpful Hir		
Security Advanced	Band SSID Device PIN	2.4GHz Tenda_F1200 19505138		•		Wi-Fi Protected Setup (WPS) makes it easy for home users who know little of wireless security to establish a secure wireless home network, as well as to add new devices to an existing network without entering long passphrases or		
Wireless Access Control Wireless Extender	Enable WPS WPS Mode	 Disable PBC PIN 		3				
WPS Wireless Connection Status		Reset OOB	Start PI	N		configuring cor settings. Simpl code or press PBC button or	nplicated y enter a PIN the software	
		Save	Cancel			button (if any) wireless conne established.		

Second, enter the wireless AP's PIN.
Tend	Shenzhen Tenda Technology Co., Ltd http://www.tendacn.com
Band Settings Wireless Network	PIN Configuration mode
Connection Status	 Enter a PIN into my Access Point or Registrar Enter the PIN from my Access Point
Network Profile WPS Settings	PIN: 19505138 Settings
Help	Type the unique 8-digit PIN code that has been assigned to the WPS AP. The PIN code is usually printed on a label or sticker that is attached to the case of the WPS AP.
	If this is not the case, use your browser to open the settings web page for the WPS AP and look for the PIN code there.
V1.0.0.4	Back Next

Also, you can customize the SSID and security settings.

And then click **Next** to start WPS-PIN negotiation.

Negotiation Completed:

Tenc	la [:]	Shenzhen Tenda Technology Co., Ltd
Band Settings		
Wireless Network	Configuration Stage:	Result
Connection Status	Initializing WPS process	Success
Network Profile	Searching for WPS Access Point	Success
WPS Settings	Connecting to Access Point	Success
-	Negotiating Security	Success
Help	Creating network profile	Success
	Restoring network environment	Success
	Received message type: (M8) Sending message type: (DONE) WPS security negotiated. Created a wireless network profile. WPS security negotiated. Wireless network environment restored.	* *
V1.0.0.4		Back Next

Now, simply click Next and you will see the SSID of the wireless network you joined. The WPS-PIN connection is now completed.

Tena	Shenzhen Tenda Technology Co., Ltd http://www.tendacn.com	<
Band Settings Wireless Network Connection Status	You are now connected to the WPS network.	
Network Profile WPS Settings Help	SSID (network name): Tenda_F1200	
V1.0.0.4	Back Next	

Click **Finish** and you can view the connection status.

Tena	la /				Shenzhen Tenda Technology Co., Ltd
					<u>http://www.tendacn.com</u>
Band Settings	Current connection sta	h			
Wireless Network					
Connection Status	SSID:	Tenda_F1200			
connection status	Security Mode:	WPA2-PSK	Signal Strength:	100%	
Network Profile	Cipher Type:	AES	Rssi:	-33 dBm	
WPS Settings	Band:	2.4G	Channel:	8	
Help	Transmission Speed:	81.0 Mbps	MAC Address:	c8-3a-35	i-12-5a-38
rieih	Wireless LAN status inf	ormation			
	IP Address: 192.10	68.60.101	Subnet Mask:	255.255.25	55.0
	Statistics				
	TX Packets: 1072		TX Bytes:	127128	
	RX Packets: 1040		RX Bytes:	413270	
					Recount
V1.0.0.4					

4.6 Help

Click the **Help** button to display help.

Chapter 5 Appendix

Appendix 1 TCP/IP Settings

If you are using Windows XP, do as follows:

1. Click Start > Control Panel > Network and Internet Connections > Network Connections.



2. Right-click on the Local Area Connection and select Properties.



Tenda

3. Select Internet Protocol (TCP/IP) and click Properties.



4. Select "Use the following IP address".

IP address: Enter 192.168.0.xxx where xxx can be any number between 2 and 253).

Subnet mask: Enter 255.255.255.0

Click OK twice to save your settings.

	automatically if your network supports d to ask your network administrator for
Obtain an IP address automa	tically
• Use the following IP address:	
<u>I</u> P address:	192.168.0.2
S <u>u</u> bnet mask:	255 . 255 . 255 . 0
<u>D</u> efault gateway:	
Obtain DNS server address a	utomatically
• Use the following DNS server	r addresses:
Preferred DNS server:	· · · · · · · ·
<u>A</u> temate DNS server:	
	Ad <u>v</u> anced
	OK Cancel

If you are using Windows 7, do as follows:

1. Click on Start > Control Panel > Network and Internet > Network and Sharing Center.





2. Click "Change adapter settings".

Control Panel +	Network and Internet Network and Sharing Center Vetwork and Internet Network and Sharing Center Vetwork and Internet Network and Sharing Center Vetwork and Internet Network and Sharing Center Vetwork and Internet Network and Sharing Center Vetwork and Internet Network and Sharing Center Vetwork and Internet Network and Sharing Center Vetwork and Internet Network and Sharing Center Vetwork and Internet Network and Sharing Center Vetwork and Internet Network and Sharing Center Vetwork and Internet Network and Internet Network and Internet Network and Internet Network and Sharing Center Vetwork and Internet Network and Internet Network and Internet Network and Sharing Center Vetwork and Internet Network and Sharing Center Vetwork and Internet Network and Sharing Center Vetwork and Internet Network and Internet Net
Control Panel Home	View your basic network information and set up connections
Change adapter settings	🚺 💐 🛶 🕼 See full map
Change advanced sharing settings	TENDA-PC Unidentified network Internet (This computer)
	View your active networks Connect or disconnect
	Unidentified network Access type: No Internet access Public network Connections: Unidentified network
	Change your networking settings
	Set up a new connection or network Set up a wireless, broadband, dial-up, ad hoc, or VPN connection; or set up a router or access point.
	Connect to a network Connect or reconnect to a wireless, wired, dial-up, or VPN network connection.
See also HomeGroup	Choose homegroup and sharing options Access files and printers located on other network computers, or change sharing settings.
Internet Options Windows Firewall	Troubleshoot problems Diagnose and repair network problems, or get troubleshooting information.

3. Right-click on the Local Area Connection and select Properties.



4. Select Internet Protocol Version 4 (TCP/IPv4) and click Properties or directly double-click on Internet Protocol Version 4 (TCP/IPv4).

📮 Local Area Connection Properties 📃 💌
Networking
Connect using:
Intel(R) PRO/1000 MT Network Connection
Configure
This connection uses the following items:
 Client for Microsoft Networks QoS Packet Scheduler File and Printer Sharing for Microsoft Networks Internet Protocol Version 6 (TCP/IPv6) Internet Protocol Version 4 (TCP/IPv4) Link-Layer Topology Discovery Mapper I/O Driver Link-Layer Topology Discovery Responder
Install Uninstall Properties
Description Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
OK Cancel



5. Select Use the following IP address.

Internet Protocol Version 4 (TCP/IPv4)	Properties 🔋 🕱
General	
You can get IP settings assigned auton this capability. Otherwise, you need to for the appropriate IP settings.	
Obtain an IP address automatical	y I
Output Description (ID) Use the following IP address:	
IP address:	192.168.0.10
Subnet mask:	255.255.255.0
Default gateway:	· · ·
Obtain DNS server address autom	natically
Ose the following DNS server add	resses:
Preferred DNS server:	
Alternate DNS server:	• * • •
Validate settings upon exit	Advanced
	OK Cancel

IP address: Enter 192.168.0.xxx where xxx can be any number between 2 and 253).

Subnet mask: Enter 255.255.255.0

Click **OK** twice to save your settings.

Appendix 2 Glossary

802.11ac: IEEE 802.11ac is a wireless computer networking standard of 802.11, currently under development, providing high-throughput wireless local area networks on the 5 GHz band. Theoretically, this specification will enable multi-station WLAN throughput of at least 1 gigabit per second and a maximum single link throughput of at least 500 megabits per second (500 Mbit/s).

802.11a: 802.11a is an amendment to the IEEE 802.11 specification that added a higher data rate of up to 54 Mbit/s using the 5 GHz band.

802.11b: 802.11b, is an amendment to the IEEE 802.11 wireless networking specification that extends throughput up to 11 Mbit/s using the same 2.4 GHz band.

802.11e: 802.11e is an approved amendment to the IEEE 802.11 standard that defines a set of Quality of Service enhancements for wireless LAN applications through modifications to the Media Access Control (MAC) layer. The standard is considered of critical importance for delay-sensitive applications, such as Voice over Wireless LAN and streaming multimedia.

802.11g: 802.11g is an amendment to the IEEE 802.11 specification that extended throughput to up to 54 Mbit/s using the same 2.4 GHz band as 802.11b.

802.11h: 802.11h, refers to the amendment added to the IEEE 802.11 standard for Spectrum and Transmit Power Management Extensions. It solves problems like interference with satellites and radar using the same 5 GHz frequency band. It was originally designed to address European regulations but is now applicable in many other countries.

802.11i: 802.11i, implemented as WPA2, is an amendment to the original IEEE 802.11.

802.11j: 802.11j is an amendment to the IEEE 802.11 standard designed specially for Japanese market.

802.11n: 802.11n is an amendment to the IEEE 802.11 standard, which improves network throughput over the two previous standards—802.11a and 802.11g—with a significant increase in the maximum net data rate. 802.11n standardized support for multiple-input multiple-output and frame aggregation, and security improvements, among other features.

IEEE 802.15: IEEE 802.15 is a working group of the IEEE 802 standards committee which specifies Wireless Personal Area Network (WPAN) standards. It includes seven task groups. Task group one is based on Bluetooth technology.

IEEE 802.16: IEEE 802.16 is a series of Wireless Broadband standards authored by the Institute of Electrical and Electronics Engineers (IEEE). Although the 802.16 family of standards is officially called Wireless MAN in IEEE, it has been commercialized under the name "WiMAX" (from "Worldwide Interoperability for Microwave Access") by the WiMAX Forum industry alliance. **802.16a:** 802.16a, also known as WiMAX, extends throughput up to 70Mbit/s transmission rate within the distance of 30 miles.

802.20: Delivers 1Mbit/s throughput for wireless MAN (Metropolitan area network).

IEEE 802.1X: IEEE 802.1X is an IEEE Standard for port-based Network Access Control (PNAC). It is part of the IEEE 802.1 group of networking protocols. It provides an authentication mechanism to devices wishing to attach to a LAN or WLAN.IEEE 802.1X defines the encapsulation of the Extensible Authentication Protocol (EAP) over IEEE 802 which is known as "EAP over LAN" or EAPOL.

WEP: Wired Equivalent Privacy (WEP) is a security algorithm for IEEE 802.11 wireless networks. Introduced as part of the original 802.11 standard, its intention was to provide data confidentiality comparable to that of a traditional wired network.

WPA: Wi-Fi Protected Access (WPA) and Wi-Fi Protected Access II (WPA2) are two security protocols and security certification programs developed by the Wi-Fi Alliance to secure wireless computer networks. The Alliance defined these in response to serious weaknesses researchers had found in the previous system, WEP (Wired Equivalent Privacy) and intended as an intermediate solution to WEP insecurities.

RSN: The Wi-Fi Alliance refers to their approved, interoperable implementation of the full 802.11i as WPA2, also called RSN (Robust Security Network). RSN, based on 802.1x, is introduced to supersede the security specification, WPA.

Appendix 3 Troubleshooting

Q1: How do I enable the WZC (Wireless Zero Configuration) service in Windows XP or enable WAC (WLAN AutoConfig) in Win dows 7/Win dows 8? Step1. From your desktop, right-click My Computer and select Manage.

Step2. Select Services and Applications -> Services.

Step3. Double-click Wireless Zero Configuration/ WLAN AutoConfig and then click Start on the appearing window or right click Wireless Zero Configuration/ WLAN AutoConfig and select Start from the pop-up list.

📮 Computer Management							
📃 File Action View Window H	elp						_82
← → 🔁 🖬 😭 🔂 😫							
System Tools	🍓 Services						
😨 🛐 Event Viewer	ution la constitución de	Name 🛆	Description	Status	Startup Type	Log On As	/
Shared Folders	Wireless Zero Configuration	Removable Storage	Description	Juatus	Manual	Local System	
Local Users and Groups My Performance Logs and Alert:	Stop the service	Routing and Remot	Offers rout		Disabled	Local System	
Performance Logs and Alert: Device Manager	Restart the service	Secondary Logon	Enables st	Started	Automatic	Local System	
E Storage		Security Accounts	Stores sec	Started	Automatic	Local System	
E B Removable Storage	Description:	Security Accounts	Monitors s	Started	Automatic	Local System	
Disk Defragmenter	Provides automatic configuration for the	Server	Supports fil	Started	Automatic	Local System	
Disk Management	802.11 adapters	Shell Hardware Det		Started	Automatic	Local System	
Services and Applications		Smart Card	Manages a	Started	Manual	Local System	
Services		SSDP Discovery Ser		Started	Manual Manual	Local Service	
		System Event Notifi		Started	Automatic	Local System	
🗉 🔯 Indexing Service		System Restore Se		Started	Automatic		
		Task Scheduler				Local System	
			Enables a	Started	Automatic	Local System	
		TCP/IP NetBIOS He		Started	Automatic	Local Service	
		Telephony	Provides T		Manual	Local System	
		🖏 Telnet	Enables a r		Disabled	Local System	
		Terminal Services	Allows mult	Started	Manual	Local System	
		Themes	Provides u	Started	Automatic	Local System	
		Uninterruptible Pow			Manual	Local Service	
		Universal Plug and			Manual	Local Service	
		Volume Shadow Copy			Manual	Local System	
		WebClient	Enables Wi	Started	Automatic	Local Service	
		🦓 Windows Audio	Manages a	Started	Automatic	Local System	
		Windows Firewall/I	Provides n	Started	Automatic	Local System	
		Windows Image Ac	Provides im		Manual	Local System	
		🐝 Windows Installer	Adds, modi		Manual	Local System	
		🐝 Windows Managem		Started	Automatic	Local System	
		Sindows Managem			Manual	Local System	
		🐝 Windows Time	Maintains d…	Started	Automatic	Local System	
		Wired AutoConfig	This servic		Manual	Local System	
		Wireless Zero Confi	Provides a	Started	Automatic	Local System	
		🐝 WMI Performance	Provides p		Manual	Local System	
		🍓 Workstation	Creates an	Started	Automatic	Local System	
	Extended Standard						
🛃 start	lanagement 🏠 W900U	W W900U UG-WPS	-en d				😵 🧿 🛃 🧐, 11:56 AM
		I III III III III III III III III III	Constant -				



£	Compu	iter Management			×
File Action View Help					
🗢 🄿 🞽 📰 🖬 🔒	2 📊 🕨 🗉 🕪				
Somputer Management (Local)	Services			Actions	
System Tools				Services	-
Image: Back Scheduler Image: Back Scheduler Image: Back Scheduler	WLAN AutoConfig	Name	Description ^	More Actions	•
 Event Viewer Shared Folders Shared Folders Local Users and Groups 	Start the service	Contraction Sevent Collector Windows Event Log	This service This service	WLAN AutoConfig	•
 Performance Device Manager Storage Disk Management Services and Applications Services WMI Control 	Description: The WLANSVC service provides the logic required to configure, discover, connect to, and disconnect from a wireless local area network (WLAN) as defined by IEE 802.11 standards. It also contains the logic to turn your computer into a software access point so that other devices or computers can connect to your computers can connect to your computer scan connect to your computer scan connect to your computer scan connect to your computer and the day wLAN adapter that can support this. Stopping or disabling the WLANSVC service will make all WLAN adapters on your computer inaccessible from the Windows networking UI. It is strongly recommended that you have the WLANSVC service running if your computer has a WLAN adapter.	 Windows Firewall Windows Font Cache Service Windows Image Acquisitio Windows Installer Windows Madia Player Net Windows Media Player Net Windows Modules Installer Windows Modules Installer Windows Search Windows Store Service (WS Windows Update Windows Update Windows Update Windows Update Windows Update Windows Config WAN AutoConfig WAN AutoConfig WAN AutoConfig 	Shares Win Enables inst Windows R Provides co Provides inf Maintains d Enables the	More Actions	•
< >	Extended Standard				

Enable WZC in Windows XP

Enable WLAN AutoConfig in Windows7

Q2: I followed instructions to install the driver but failed.

This can occur if you have already installed other manufacturer's adapter. Drivers of other manufacturer might cause a conflict with the new driver. Please first uninstall it and then check to make sure that oem.inf file is removed from C:\WINDOWS\inf.

Appendix 4 Safety and Emission Statement

CE

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. This device complies with EU 1999/5/EC.

NOTE:(1)The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment.(2) To avoid unnecessary radiation interference, it is recommended to use a shielded RJ45 cable



FCC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment.

Radiation Exposure Statement

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

NOTE:(1)The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment.(2) To avoid unnecessary radiation interference, it is recommended to use a shielded RJ45 cable

NCC Notice

經型式認證合格之低功率射頻電機,非經許可,公司、商號或使用者均不得擅

自變更頻率、加大功率或變更設計之特性及功能。

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