

# User Guide

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#### **Chapter 1 Product Overview**

#### **1.1 Package Contents**

Unpack the box and verify the package contains the following items:

- Wireless Broadband Router
- Power Adapter
- Installation Guide
- Resource CD(including User Guide, Quick Install Guide, and setup wizard)
- Ethernet Cable

If any of the above items is incorrect, missing, or damaged, please contact your Tenda reseller for immediate replacement.

#### 1.2 Getting to know your router

Before you cable your router, take a moment to become familiar with the front and back panels and the label. Pay particular attention to the LEDs on the front panel.

#### Front Panel



Front LED Overview



LED	Status	Description				
Power	Solid	Indicates a proper connection to the power supply				
	Off	Indicates an improper connection to the power adapter				
SYS	Blinking	Indicates system is functioning properly				
	Solid	WPS is enabled				
WPS	Blinking	Device is performing WPS authentication on a client device				
	Off	WPS is disabled or WPS negotiation is finished				
	Solid	Wireless is enabled				
WIFI	Blinking	Transferring data				
	Off	Wireless is disabled				
	Solid	LAN port connected correctly				
LAN (1/2/3)	Blinking	LAN port is transferring data				
	Off LAN port connected incorrectly					
	Solid	WAN port connected correctly				
WAN	Blinking	WAN port is transferring data				
	Off	WAN port connected incorrectly				

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#### Back Panel



#### Back LED Overview

Port	Description	
WAN	Usually for connecting DSL MODEM, CABLE MODEM, ISP to	
WAIN	the Internet.	
LAN(1/2/3)	Usually for connecting computers, switches .etc.	
POWER	The power adapter is connected and you can use the provided	
TOWER	adapter to supply power.	
	When you press this button for 7 seconds, files set by the router	
WPS/ RESET	will be deleted and restored to default factory settings; for 1 second,	
	WPS will be enabled and the WPS LED will be blinking accordingly.	

**1.3 Position your Router** The router lets you access your network from virtually anywhere within the

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operating range of your wireless network. However, the operating distance or range of your wireless connection can vary significantly depending on the physical placement of your router. For example, the thickness and number of walls the wireless signal passes through can limit the range. For best results, place your router:

• Near the center of the area where your computers and other devices operate, and preferably within line of sight to your wireless devices.

• So it is accessible to an AC power outlet and near Ethernet cables for wired computers.

• In an elevated location such as a high shelf, keeping the number of walls and ceilings between the router and your other devices to a minimum.

• Away from electrical devices that are potential sources of interference. Equipment that might cause interference includes ceiling fans, home security systems, microwaves, PCs, the base of a cordless phone, or a 2.4-GHz cordless phone.

• Away from any large metal surfaces, such as a solid metal door or aluminum studs. Large expanses of other materials such as glass, insulated walls, fish tanks, mirrors, brick, and concrete can also affect your wireless signal.



## Chapter 2 Installation and Quick Setup Guide

#### 2.1 Preparation

Before connecting Ethernet cables, please verify the following items:

Item	Description			
Wireless Router	Used with the provided power supply			
PC	Installed with IE8 or other better web browsers.			
Ethenet Cable	Used for linking the PC to the router			
Broadband Service	Provided by ISP			
Internet Connection Setup	<ul> <li>If you connect to the Internet using a broadband connection that requires a username and a password provided by your ISP, please select PPPoE;</li> <li>If your ISP provides all the needed information: IP address, subnet mask, gateway address, and DNS address(es), please select Static IP;</li> <li>If you can access Internet as soon as your computer directly connects to an Internet-enabled ADSL/Cable modem, please select DHCP;</li> <li>If your ISP uses a PPTP connection, please select PPTP;</li> <li>If your ISP uses an L2TP connection, please select L2TP</li> </ul>			

#### 2.2 Physical installation

1. Connect one end of the included power adapter to the device and plug the other end into a wall outlet nearby. (Using a power adapter with a different voltage rating than the one included with the device will cause damage to the device.)



2. Connect one of the LAN ports on the Device to the NIC port on your PC using an Ethernet cable.





3. Connect the Ethernet cable from Internet side to the WAN port on the Device.



4. When connected, log in to Web manager to set up Internet connection.

#### 2.3 Internet Connection Setup

Before you start the setup process, get your ISP information and make sure the computers and devices in the network have the settings described here.

#### 2.3.1 Use Standard TCP/IP Properties for DHCP

If you set up your computer to use a static IP address, change the settings so that it uses Dynamic Host Configuration Protocol (DHCP). If you are not clear about this configuration, please refer to <u>Appendix 1: How to Configure IP</u>.

#### 2.3.2 Log in to Web Manager

1. 1). Launch a web browser; in the address bar, input 192.168.0.1 and press **Enter**;

2). Enter **admin** in the password field on the appearing login window and then click **OK**.





Elle Fort Aless L	orites Tools Help
Address 🕘 http://192	.68.0. 1/login.asp
Ten	da
	210
	Login
	Default: admin
	Delaurt, autim
	Password:

2. Now you may access the device's home page for quickly setting up Internet connection and wireless security.

O FFTal O DHCP
For other connection types, click " <u>Advanced</u> "
Default: 12345678
DK Cancel

#### 2.3.3 Quick Internet Connection Setup

2 common Internet connection types are available on the home page: PPPoE and DHCP.

**DHCP:** Select DHCP (Dynamic IP) if you can access Internet as soon as your computer directly connects to an Internet-enabled ADSL/Cable modem; configure a security key (8-63 characters) to secure your wireless network and then click **OK**.



Internet Connection Setup	O PPPot O DHCP	-1
	For other connection types, click	Advanced
Wireless Security Setup		_
Security Key		-= 2

**PPPoE:** Select PPPoE (Point to Point Protocol over Ethernet) if you used to connect to the Internet using a broadband connection that requires a username and a password. Enter the user name and password provided by your ISP; configure a security key to secure your wireless network and then click **OK**.

renda		
Internet	Connection Setup	
Inte	PPPoE Username 075502462880@163.gd	
	PPPDE Password	-2
	For other connection types, a	nek "Advanced"
wirele	ssi Security Setup	
	Default: 12345678	
	_4	
	OK Cancel	

#### <sup>▲</sup>Note:

- 1. DHCP is the default Internet connection type;
- 2. If you are not sure about your PPPoE username and password, contact your Internet service provider (ISP) for help. For other Internet connection types, please go to section 3.2: Internet Connection Setup.

#### 2.3.4 Verify Internet Connection Settings

System automatically skips to the status page when you finish all needed settings on the home page. Here you can see the system status and WAN connection status of the device.

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1. If you find "Connected" and a WAN IP address displayed there (as



shown below), you have got a wired internet access now.

Tenda				
	Home Advanc	ed Wirele	ess QoS	Applications
Status	WAN Status			
Internet Connection Setup	Connection Status	Connected		
MAC Clone	Internet Connection Type	DHCP		
WAN Sheed	WAN IP	192.168.10	10	
	Subnet Mask	255.255.25	5.0	
WAN Medium Type	Gateway	192.168.10	0.1	
LAN Settings	DNS Server	100.100.10	0.100	
DNS Setting	Alternate DNS Server			
DHCP Server	Connection Time	00:01:33		
DHCP Client List		Release	Refresh v	

2. If connection status displays "Disconnected" and there is no WAN IP address displayed (as seen below), connection between the Internet-enabled modem and your device may have failed. Please double check or re-connect all involved devices and cables properly and then refresh the page. If nothing is wrong, "Connecting" or "Connected" will be displayed.

Tenda	
tiome Advanced wirele	Qo5 Application
Stetus WAN Status	
Uncomer Connection Setup	
MAC Clone Internet Connection Type PPPoE	
WAN Speed Subnet Mask	
WAN Medium Type Gateway	
LAN Settings DNS Server	
DNS Setting Connection Time 00:00:00	
DHCP Server Diagnose Connection Status Please theck hardware	connection of the WAN port
DHCP Client List Disconnect Disconnect	et l

- 3. If "**Connecting**" is displayed and no WAN IP address is seen, try refreshing the page five times. And if it still displays "**Connecting**" try steps below:
- 1). Contact your ISP for assistance if you are using the DHCP connection type.
- 2). Read the connection diagnostic info on WAN status.



	Home	dvanced	Wireless	QuS	Applications
Status	WAN Status				
	Connection Status	Connecting			
MAC Clone	Internet Connection Type	PPPoE			
	WAN IP				
www.sheed	Subnet Mask				
WAN Medium Type	Gateway				
LAN Settings	DNS Server				
DNS Setting	Alternate DNS Server Connection Time	00:00:00			
DHCP Server	Diagnose Connection Status	No respons	e from your In	ternet Serv	ice Provider(ISP)
DHCP Client List		Connect	Disconnect		

#### **∆**Note:

Below diagnostic info will be displayed on particular occasions for your reference:

- 1). You have connected to Internet successfully.
- 2). You might have entered a wrong user name and/or a wrong password. Please contact your ISP for the correct user name and password and enter them again.
- 3). Ethernet cable is not connected or not properly connected to the WAN port on the device. Please reconnect it properly.
- 4). No response is received from your ISP. Please verify that you can access Internet when you directly connect your PC to an Internet-enabled modem. If not, contact your local ISP for help.

#### 2.3.5 Wireless Settings Wireless Basic Settings

If you want to create a WLAN for sharing Internet connection, simply click Wireless-> Wireless Basic Settings. Change the SSID, you can name it whatever you like. Select 2437MHz (channel 6) and leave other options unchanged and then click OK.



Tenda	Home	Advanced Wireless	QoS Application
Workersy Series Settings:	wireless have been	mas	
Wireless Security	Enable Wireless	R	
Access Control	Primary SSID	Tenda_home	0
Wireless Connection Status	Secondary SSD		
	Wireless Working Mode	Wireless Access Faint(AP)	C WDS Bridge Mode
	Network Mode	11bigin mixed mode	2
	SSID Broadcast	@ Enable C Disable	
	AP Isolation	C Enable @ Disable	_
	Channel	2437MHz (Channel 6)	<u> </u>
	Channel Sandwidth	C 20 @ 20/40	
	Extension Channel	2417MHz (Channel 2)	3
	WMM Capable	& Enable C Disable	
	APSD Capable	C Enable @ Disable	
		OK 3 Cancel	

#### Wireless Security Settings

If you want to encrypt your wireless network, click **Wireless Security**, disable WPS, specify a security key of down to 8 characters, and then click OK.



#### 2.3.6 Connect to Device Wirelessly

Having finished above settings, you can search the device's wireless network (SSID) from your wireless devices (notebook, iPad, iPhone, etc) and enter a security key to connect to it wirelessly.

- 1. If you are using Windows XP OS, do as follows:
- 1) Click Start and select Control Panel.

4	2
н	/
٠	_

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Administrator	
Internet Explorer         Internet Explorer         Image: E-mail Outlook Express         MSN         Image: MS	<ul> <li>Hy Documents</li> <li>Hy Computer</li> <li>My Network Places</li> <li>Control Panel</li> <li>Control Panel</li> <li>Control Panel</li> <li>Control Panel</li> <li>Printers and Faxes</li> <li>Help and Support</li> <li>Search</li> <li>Rum</li> </ul>
	🚪 Log Off 🛛 Tym Off Computer
🛃 start 📃 🗖 🚺	

2) Click Network Connections.



3) Right click Wireless Network Connection and then select View Available Wireless Networks.



100	10
Local Area	Disa <u>b</u> le
Connection Ne	twn Yiew Available Wireless Networks
Cor	Repair
	Bridge Connections
	Create Shortcut
	Delete
	Rena <u>m</u> e
	Properties

4) Select the desired wireless network, click **Connect**, enter the security key and then click **OK**.

<sup>a)</sup> Wireless Netwrok Connec	tion	×
Network Tasks	Choose a wireless network	
S 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.	(( • )) Tenda home • Automatic *	< II
Related Tasks	To connect to this network, dick Connect. You might need to enter additional information.	
Learn about wireless networking		
Change the order of preferred networks	Wireless Network Connection	
Settings	The network Tends_home' requires a network key (also called a WEP key or WPA ke network key helps prevent unknown intruders from connecting to this network.	y). A
	Type the key, and then click Connect.	
	Network key:	
	Confirm network key.	
	Connect	
	Conne	ct

5) You can access Internet via the device when "**Connected**" appears next to the wireless network name you selected.





- 2. If you are using Windows 7 OS, do as follows:
- 1) Click Start and select Control Panel.



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2) Click Network and Internet.





3) Click Network and Sharing Center.



4) Click Change adapter settings.

Control Panel Home	View your basic network information and set up connections	*
Manage wireless networks Change edlapter settings Change edlapter settings settings	1 See full - TEST-PC (This computed)	nagi
and the second s	View your active networks You are currently not connected to any networks.	are .
	Change your networking settings	
	Set up a new connection on nations? Set up a wireless, lineadband, dial-up, all hot, or VPN connection; or set up a router or access po	et.
	Contract the a meteory Connect or reconnect to a wireless, wired, dial-up, or VPN network connection.	
	Course humegroup and sharing splarm Access files and printers located on other network computers, or change sharing sattings.	
	Troubled-ant publicme Diagnois and repair network problems, or get troubleshooting information.	
Non-amo		
Internet Optione Windows Freedall		



5) Select a desired wireless connection and click **Connect/Disconnect**.



6) Select the wireless network you wish to connect and click Connect.

[	AirLink0000c8	Iter	*
	N6	liter	
	test_kiss	Ilter	
	Tenda_home	liter	
	Connect automatically	<u>Connect</u>	
	test_xhh_N300	Ilter	
	W45AP_For_TEST	litter	
	Andy_5G	Ilter	
	Tenda_000058	Sal	
	IPCOM_Guest_000165	311	
1	Tenda_000080	201	-
	Open Network and Sh	aring Center	

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7) Enter the security key and click **OK**.



Connect to a Net	work	<b>X</b>
Type the netwo	ork security key	
Security key:		
	Hide characters	
		OK Cancel

8) You can access Internet via the device when "**Connected**" appears next to the wireless network name you selected.

Currently connected to: Tenda_home Internet access		+3	2
Wireless Network Conne	ction	^	-
Tenda_home	Connected	liter.	
AirLink0000c8		in.	
Broadcom2.4g		line.	
W45AP_For_TEST		1000	
N6		littee	
test_xhh_N300		Inc	
Andy_5G		Ilter	
test_kiss		1000	
Open Network and	Sharing Cen	ter	



#### **Chapter 3 Advanced Settings**

#### 3.1 Status

Here you can see at a glance the operating status of the device.

	Home Advar	nced Wire	less QoS	Applications
Seams	WAN STATUS			
Internet Connection Setup				
merner connection setup	Connection Status	Connected		
MAC Clone	Internet Connection Type	DHCP		
WAN Speed	WAN IP	192.168.10	0.10	
in or append	Subnet Mask	255.255.25	55.0	
WAN Medium Type	Gateway	192 168.10	0.1	
LAN Sertions	DNS Server	100.100.10	00.100	
and a sump.	Alternate DNS Server			
DNS Settings	Connection Time	00:01:33		
DHCP Server				
		Release	Refresh	

- 1. **Connection Status:** Displays WAN connection status: Disconnected, Connecting or Connected.
- 2. **Disconnected**: Indicates that the Ethernet cable from your ISP side is not correctly connected to device's WAN port or the router is not logically connected to your ISP.
- 3. **Connecting:** Indicates that the WAN port is correctly connected and is requesting an IP address from your ISP.
- 4. Connected: Indicates that the router has been connected to your ISP.
- 5. Internet Connection Type: Displays current Internet connection type.
- 6. WAN IP: Displays the WAN IP address.
- 7. Subnet Mask: Displays WAN subnet mask provided by your ISP.
- 8. Gateway: Displays WAN gateway address.
- 9. **DNS Server:** Displays the preferred WAN DNS address.
- 10. Alternate DNS Server: Displays the alternate WAN DNS address if any.
- 11. **Connection Time:** Time duration since the device has been successfully connected to ISP.







- 1. LAN MAC Address: Displays device's LAN MAC address.
- 2. WAN MAC Address: Displays device's WAN MAC address.
- 3. **System Time:** Displays device's system time either customized or obtained from Internet.
- 4. Up Time: Displays device's uptime.
- 5. **Connected Client(s):** Displays the number of connected network devices (which obtain IP addresses from device DHCP server).
- 6. Firmware Version: Displays Device's current firmware version.
- 7. Hardware Version: Displays Device's current hardware version.

#### 3.2 Internet Connection Setup

#### 3.2.1 PPPoE

Select PPPoE (Point to Point Protocol over Ethernet) if you used to connect to the Internet using a broadband connection that requires a username and a password and enter the user name and password provided by your ISP.



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#### Wireless N300 Easy Setup Router



- 1. Internet connection Type: Select PPPoE.
- 2. PPPoE User Name: Enter the User Name provided by your ISP.
- 3. PPPoE Password: Enter the password provided by your ISP.
- 4. **MTU:** Maximum Transmission Unit. DO NOT change it from the factory default of 1492 unless necessary. You may need to change it for optimal performance with some specific websites or application software that cannot be opened or enabled; in this case, try 1450, 1400, etc.
- 5. **Service Name:** Description of PPPoE connection. Leave blank unless otherwise required.
- 6. Server Name: Description of server. Leave blank unless otherwise required.
- 7. **Connect Automatically**: Connect automatically to the Internet after rebooting the system or connection failure.
- **Connect Manually:** Require the user to manually connect to the Internet before each session.
- **Connect On Demand:** Re-establish connection to the Internet only when there is data transmission.
- **Connect During Specified Time Period:** Only connect to Internet during a specified time period.
- 8. OK: Click it to save all your settings.

#### 3.2.2 Static IP

Select **Static IP** if your ISP provides all the needed info. You will need to enter the provided IP address, subnet mask, gateway address, and DNS



address(es) in corresponding fields.

Tenda	Home A	dvanced Wireless	Qo5 Applications
Stanus	Internet Connection !	Seriop	
	Internet Connection Type	Static IP	
MAC Clone	-	Frank som som som	
WAN Speed	IP Address	192.168.10.10	
WAN Medium Type	Gateway	400-400-400-0	
LAN Settings	DNS Server	100.100 100.100	
DNS Setting	Alternate DNS Server		(Optional)
DHCP Server	MTU	1500	
DHCP Client List		(The default value is 1 500, D required by your ISP.) OK Cancel	o not modify it unless

- 1. Internet connection Type: Select Static IP.
- 2. **IP Address:** Enter the IP address provided by your ISP. Consult your ISP if you are not clear.
- 3. Subnet mask: Enter the subnet mask provided by your ISP.
- 4. Gateway: Enter the WAN Gateway provided by your ISP. Consult your ISP if you are not clear.
- 5. DNS Server: Enter the DNS address provided by your ISP.
- 6. **Alternate DNS Server:** Enter the other DNS address if your ISP provides 2 such addresses (optional).
- 7. OK: Click it to save all your settings.

#### 3.2.3 DHCP

Select **DHCP** (Dynamic IP) if you can access Internet as soon as your computer directly connects to an Internet-enabled ADSL/Cable modem.





Tenda	Home Ad	ivanced	Wireless	Qus	Application
Status	internet Connection 5	etup			
	Internet Connection Type	DHCP		-	
MAC Clone				_	
WAN Speed	MID	1500 The default	t value is 1500. D	a not modify is	unless
WAN Medium Type		required by	your ISP )		
LAN Settings					
DNS Setting		OK	Cancel		
DHCP Server					
DHCP Client List					

- 1. Internet connection Type: Select DHCP.
- 2. **MTU:** Maximum Transmission Unit. DO NOT change it from the factory default of 1500 unless instructed by your ISP. You may need to change it for optimal performance with some specific websites or application software that cannot be opened or enabled; in this case, try 1450, 1400, etc.
- 3. **OK:** Click it to save your settings.

#### 3.2.4 PPTP

PPTP: Select PPTP (Point-to-Point-Tunneling Protocol) if your ISP uses a PPTP connection. The PPTP allows you to connect a router to a VPN server.

#### For example :

A corporate branch and headquarter can use this connection type to implement mutual and secure access to each other's resources.

	Home Ad	lvanced Wi	refess QoS	Applicatio
Status	Internet Connection 5	erup		
lösternet Connection Service	Internet Connection Type	PPTP		
MAC Clone	Contraction of the local division of the loc			
WAN Speed	PPTP Server Address	202.100.192.134		
LAN Settings	Password	000		
DNS Settings	MTU	1452		
DHCP Server	Address Mode	Dinamic	-1	
DHCP Client List	IP Address	0.0.0.0		
	Subret Mask	0000		
	Gateway	0.0.0.0		

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- 1. **Internet connection Type**: Displays the current Internet connection type.
- 2. **PPTP Server Address**: Enter the IP address of a PPTP server.
- 3. **User Name**: Enter your PPTP User Name.
- 4. **Password**: Enter the password.
- 5. **MTU:** Maximum Transmission Unit. DO NOT change it from the factory default of 1492 unless instructed by your ISP. You may need to change it for optimal performance with some specific websites or application software that cannot be opened or enabled; in this case, try 1450, 1400, etc.
- 6. **Address Mode**: Select "Dynamic" if you don't get any IP info from your ISP, otherwise select "Static". Consult your ISP if you are not clear.
- 7. **IP Address**: Enter the IP address provided by your ISP. Consult your ISP if you are not clear.
- 8. Subnet mask: Enter the subnet mask provided by your ISP.
- 9. **Gateway**: Enter the WAN Gateway provided by your ISP. Consult your ISP if you are not clear.

#### 3.2.5 L2TP

Select L2TP (Layer 2 Tunneling Protocol) if your ISP uses an L2TP connection. The L2TP connects your router to a L2TP server.

#### For Example :

A corporate branch and headquarter can use this connection type to implement mutual and secure access to each other's resources.



1. Internet connection Type: Displays the current Internet connection

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type.

- 2. L2TP Server Address: Enter the IP address of a L2TP server.
- 3. User Name: Enter your L2TP username.
- 4. **Password:** Enter the password.
- 5. **MTU:** Maximum Transmission Unit. DO NOT change it from the factory default of 1492 unless instructed by your ISP. You may need to change it for optimal performance with some specific websites or application software that cannot be opened or enabled; in this case, try 1450, 1400, etc.
- 6. **Address Mode:** Select "Dynamic" if you don't get any IP info from your ISP, otherwise select "Static". Consult your ISP if you are not clear.
- 7. **IP Address:** Enter the IP address provided by your ISP. Consult your ISP if you are not clear.
- 8. Subnet mask: Enter the subnet mask provided by your ISP.
- 9. **Gateway:** Enter the WAN Gateway provided by your ISP. Consult your ISP if you are not clear.

<sup>⊥</sup> Note:

- 1. PPPOE, PPTP and L2TP cannot be used simultaneously!
- 2. For PPTP and L2TP Internet connections, only Static IP or Dynamic IP is available.
- 3. Note that PPTP and L2TP may not be available on some products.

#### 3.3 MAC Clone

This section allows you to configure Device's WAN MAC address.

Tenda					
	Home	Advanced	Wireless	QoS	Applications
Stetus	MAC Clone				
Internet Connection Setup	MAC Address	C8:34:35:00 P	0.E8		
MAC Onte		that mark 1	L ACCOUNTS 12		
WAN Speed	restore	Cierand WAC	CIONS MAC AD	Ness	
LAN Settings		OK	Cancel		
DNS Settings					
DHCP Server					
DHCP Client List					

1. MAC Address: Config device's WAN MAC address.



- 2. **Clone MAC Address:** Click to copy your PC's MAC address to the device as a new WAN MAC address.
- 3. Restore Default MAC: Reset device's WAN MAC to factory default.

#### 3.4 WAN Speed

Here you can set the speed and duplex mode for WAN port. It is advisable to keep the default **Auto** setting to get the best speed.

Tenda					
	Home	Advanced	Wireless.	Quis	Applications
Status	Choose The WAN S	peed			
Internet Connection Setup	@ AUTO				
MAC Clone	C 10M HALF-de	aples			
WAN Sored	C TOM FULL-du	olex			
LAN Settings	C 100M FULL-d	luplex			
DNS Settings		10000	Farmer		
OHCP Server		OK	Cancel		
DHCP Client List					

#### 3.5 WAN Medium Type

The device supports two WAN medium types: wired and wireless. Select Wired WAN if you need to connect to your ISP via an Ethernet cable or select Wireless WAN if you directly connect to your WISP wirelessly. The default WAN Medium Type is Wired WAN, so no settings are required here if you connect to your ISP via an Ethernet cable. If you connect to your WISP wirelessly, do as follows:

1. Select Wireless WAN and enable the scan feature.

	Home	Advanced	Wireless	Oos	Applicatio
Sceture	WAN Medium Type				
Internet Connection Setup	WAN Medium Type	C Wired WAN	@ Wireless	WAN	- 1
MAC Clone	Commiste heliow settings	to connect to WISP	AP	_	
WAN Speed	\$90	Tenda_123730			
White-Mindourne Types-	Channel	Auto Select		1	
LAN Settings	Security Mode	Disable		-	
DNS Settings		Ope	n Scan	2	
DHCP Server		OK	Cancel		
DHCP Client List					





2. Select the wireless network you wish to connect, say, **Tenda\_office**, and click **OK**. Then close scan.

Saaus Internet Connection Setup MAC Clene WAN Speed WAN Speed UNN Medium Type C Wined WAN @ Wiveless WAN Connected below settings to connect to WEP AF Connected below settings to connect to WEP AF Channel Auto Steles Channel Seture S		tiome	Advanced w	indess - Q05	Application
Internet: Connection Setup       MAC, Clone       WAN Medium Type     © Wired WAN       WAN Speed       WAN Speed       SSD     Tonda, 1/2/200       Channel     Auto Select       Stations     Security Mode       Discher     Discher       Select     SSID       MAC, Address     Channel       Select     SSID       MAC, Address     Channel       Select     SSID       Wan Medium Type     Channel	Status	WAN Medium Type			
MAC Cishe: WAN Speed AAAA Mortham Type LAN Sentings DNS Settings DHCP Client Lis: Channel Settings to connect to MSP 4.P Status Settings DHCP Client Lis: Channel Settings DHCP Client Lis: Channel Settings Channel Settings Settings Channel Settings Settings Settings Settings Channel Settings Settings Settings Settings Channel Settings Setting	Internet Connection Setup	WAN Medium Type	C Wired WAN	Wireless WAN	
WAN Speed     SSID     Tends_122730       NAN Michanni Type     Auto Sarideut     Image: Channel       LAN Sentings     Security Mode     Disable       DNS Settings     Discrete     Security Mode       DHCP Channel List     Security Mode     Disable       OHCP Channel List     Security Mode     Disable       OHCP Channel List     Security Mode     Disable       OHCP Channel List     Security Mode     Security Mode       OHCP Channel List     Security Mode     Security Mode       OHCP Channel List     Tends_office     Ck ListS AdvAd Ba     sequeration of the program to the APT       OHCP Channel List     Tends_office     Ck ListS AdvAd Ba     sequeration of the program to the APT     Imone       OHCP Channel List     Tends_office     Ck ListS AdvAd Ba     sequeration of the program to the APT     Imone       OHCP Channel List     Tends_office     Ck ListS AdvAd Ba     sequeration of the program to the APT     Imone       OHCP Channel List     Tends_office     Ck ListS AdvAd Ba     sequeration of the program to the APT     Imone       OHCP Channel List     Tends_office     Ck ListS AdvAd Ba     sequeration of the APT     Imone       OHCP Channel List     Tends_office     Ck ListS AdvAd Ba     sequeration of the APT     Imone       OHCP Channel List	MAC Clone	Complete below settings to	o connect to WISP AP		
NAM Mortuane Typer Laky, Settings Laky, Settings DNS Settings DHCP Client List DHCP Client	WAN Speed	SSID	Tenda_123730		
LAN Settings DNS Settings DHCP Chert List DHCP Chert L	WAN Medium Type	Channel	Auto Select	•	
DNS Settings DHCP Server DHCP Chert List CHI Dig CP Server DHCP Chert List CHI Dig CP Server DHCP Chert List CHI Dig CP Server CHI Dig CP	LAN Settings	Security Mode	Disable	-	
DHCP Server Select SSID MAC Address Channel Serviry Signal Strength DHCP Client List C Tends office Cit ListSt AdvAALB & reprint 78 File populat 372/166.05 Sigst File populat 372/166.05	DNS Settings		Close Scar	-4	
DHCP Client List Strength Child page 2, 1922/166.05 Says Are you are to constant to an opt Are you are you are to cons	DHCP Server	Select SSID	MAC Address	Channel Security	Signal
If the page at 192.116.0.5 target         wep: regio         62           Are you are to connect to the APT         wep: regio         62           3         0         contail         13           Nexcit.1221545         CE:1A/35/8E1221E         6         Anter         61	DHCP Client List	Tenda office	CELASSAGARA 6	WED WOR	Strength
Are you save to investe to its are         money         money         and         42           O         3         0         its are         money         and         58           O         NextXL121545         CE1:XA13:88112:16         6         nome         61		C The page at 192	2.168.0.1 says:	wep/wpa	62
O         3         ∞         Cond         55           0         NexxL123545         CE1A/35/8E12/16         6         none         61		O Are you sure to to	orment to this APT.	tione	42
Next123545         CE324/35/8E12/1E         6         none         61		0	3- 0	Careel noné	59
O Nexxt_123545 C8:3A:35:88:12:16 6 none 67		0		wep/wpa	24
		O Nexxt_123545	C8:3A:35:88:12:1E 6	none	61

- 3. 1). Verify that SSID and channel on this page are exactly the same as they are on the uplink wireless network you just selected.
  - 2). Configure the same security mode, security key, cipher type (or WPA Algorithm) as they are on the uplink wireless network you just selected. Click **OK**.



- 1. **WAN Medium Type**: Select the WAN medium type you are going to use.
- 2. **Open Scan (or Scan)**: Click to search for available wireless networks in the area and select the one you wish to connect.

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3. **SSID**: The wireless network name of the uplink wireless device.

- 4. **Channel:** The channel used by the uplink wireless device.
- 5. Security Mode: The security mode used by the uplink wireless device.
- 6. **WPA Algorithms (or Cipher Type):** The WPA Algorithm (or Cipher Type) used by the uplink wireless device.
- 7. **Key (or Security Key)**: The security key used by the uplink wireless device.
- 8. OK: Click this button and the router will restart to save your settings.

**Note:** If you change the device's LAN IP address, you must use the new one to log on to the web-based configuration utility.

#### For example:

If SSID, security mode, cipher type (WPA Algorithm), security key and channel your WISP AP are respectively **Myhome**, **WPA2-PSK**, **AES**, **Tenda\_router** and **11**, then simply enter them in corresponding fields as seen below.



Or you can use the Open Scan (or Scan) option to have the SSID and channel of the uplink wireless device automatically copied to this page. When you finish all these settings, go to **Advanced**-> **Internet Connection Setup** and select a proper Internet connection type (If your ISP is using a DHCP connection, simply select **DHCP**).



	Hume: A	dvanced Witeless	Ons Applica	tinni Security Tools
Status	Internet Connection 5	etup		Help
NAC Cline MAN Speed MAN Medium Type LAN Sentrop DHCP Senter DHCP Senter	internet Connection Type	Dec2P 1500 The Jarfaulty value or (1500 required by value (27.) On: Cancel	8. Do not modify it unitera	Particle Decide or Development of a conversion hyperial and a conversion hyperial in a conversion of the sound to interaction from your off or evolve executing networking explorement for interacting explorement for interacting are needed of this section high of constant access of the high of the sound of the sound of the Material Constant access of the sound solution between to be higher to solution

#### 3.6 LAN Settings

Click Advanced -> LAN Settings to enter the screen below.

Tenda	Home	Advanced Wireless QoS	Applications
Stanus	IAN Settings		
Internet Connection Setup	This page is used to set th	e basic network parameters for LAN.	
MAE Clone	LAN MAE Address	C8 34 35 DD F0 E8	
WAN Speed	IP Address	192.168.0.1	
WAN Medium Type	Subnet Mask	255 255 255 0	
LAN Settien (			
DNS Settings		OK Cancel	
DHCP Server			
DHCP Client List			

- 1. LAN MAC Address: Displays device's LAN MAC address, which is NOT changeable.
- 2. **IP Address**: Device's LAN IP address. The default is 192.168.0.1. You can change it according to your need.
- 3. Subnet Mask: Device's LAN subnet mask, 255.255.255.0 by default.
- 4. **OK:** Click to save your settings.

#### 3.7 DNS Settings

DNS is short for Domain Name System or Domain Name Service.

	Home	Advanced	Wireless	QaS	Application
Status	DNS Settings				
Internet Connection Setup	Enable Manual DNS	F			
MAC Clone	Assignment				
WAN Speed	Primary DNS Address	8888		10-0	and the second
WAN Medium Type	Alternate UNS Address Note: To activate new sett	tinos, you must n	boot the device	Topoc	AT ALL ALL ALL ALL ALL ALL ALL ALL ALL A
LAN Settings		Levi	1 minut		
UNSSemmery		UK.	Cancel		
DHCP Server					
DHCP Clean List					

- 1. Enable Manual DNS Assignment: Check to activate DNS settings.
- 2. **Primary DNS Server** : Enter the primary DNS address provided by your IPS.
- 3. Alternate DNS Server : Enter the other DNS address if your ISP provides 2 such addresses (optional).
- 4. **OK:** Click to save your settings.

## ∕∆Note:

Tenda

- 1. Web pages are not able to open if DNS server addresses are entered incorrectly.
- 2. Do remember to restart the device to activate new settings when you finish all settings.

#### 3.8 DHCP

The Dynamic Host Configuration Protocol (DHCP) is an automatic configuration protocol used on IP networks. If you enable the built-in DHCP server on the device, it will automatically configure the TCP/IP settings for all your LAN computers (including IP address, subnet mask, gateway and DNS etc), eliminating the need of manual intervention. Just be sure to set all computers on your LAN to be DHCP clients by selecting "**Obtain an IP Address Automatically**" respectively on each such PC. When turned on, these PCs will automatically load IP information from the DHCP server. (This feature is enabled by default. Do NOT disable it unless necessary)

			Wireless	s N3(	00 Easy S
Tenda	Home	Advanced	Witeless	Q05	Applications
Status	DHCP Server				
Internet Connection Setup	DHCP Server	Enable			
MAC Clone	IP Pool Start Address	192 168.0	200		
WAN Speed	IP Pool End Address	192 168 0	212		
WAN Medium Type	Lease Time	One day		-	
LAN Settings		Ołc	Cancel		
DNS Settings		- Children			
DHCP Server					
DHCP Client List					

#### 3.9 DHCP Client List

P

DHCP Client List displays information of devices that have obtained IP addresses from the device's DHCP Server. If you would like some devices on your network to always get the same IP addresses, you can manually add a static DHCP reservation entry for each such device.

	Home	Advanced	d Wireles	Q05	Application
Status	Static Assignment				3
Internet Connection Setup	IP Address	2 168.0 123		-	
MAC Clone	MAC Address 00	B0 C2	03 5E	cs2	Add
WAN Speed				_	
WAN Medium Type	NO. IP Address	23	MAC Address	-	Delete
LAN Settings	192.100.0.1		00.00.02.02.00		Ceste
DNS Settings	DHCP Chem List				
DHCP Server					Retresh
Out P Given Lice					
	Host Name	IP Address	MAC A	Idress	Lease Time
	INVE-20130520ND	192,168.0.	100 C8.9C1	C 54:90:77	00:00:30

- 1. IP Address: Enter the IP address for static DHCP reservation.
- 2. **MAC Address:** Enter the MAC address of a computer to always receive the same IP address (the IP you just specified).
- 3. Add: Click to add the entry to the MAC address reservation list.
- 4. **OK:** Click to save your settings.



#### **∆**Note:

If the IP address you have reserved for your PC is currently used by another client, then you will not be able to obtain a new IP address from the device's DHCP server, instead, you must manually specify a different IP address for your PC to access Internet.


## **Chapter 4 Wireless Settings**

#### 4.1 Wireless Basic Settings

Here you can expand your wireless coverage with the following modes: Wireless AP (default mode) and WDS.

- 1. Wireless Access Point (AP): Select this mode if you want to convert an existing wired network to a wireless network so as to extend Internet access to wireless clients.
- 2. **WDS Bridge Mode:** wireless distribution system (WDS) is a system enabling the wireless interconnection of access points in an IEEE 802.11 network. It allows a wireless network to be expanded using multiple access points without the traditional requirement for a wired backbone to link them. Select this mode if you want to extend an existing wireless network. The two modes are described as below:
- 4.1.1 Wireless AP Mode

Tenda	Home Advanced Wireless QoS Appli	cati
Wrenest Black Sattings	Wireless Basic Settings	
Wineless Security	Enable Wireless	
Access Control	Primary SSID Tenda_home	
Wireless Connection Status	Secondary SSID	
	Wireless Working Mode @ Wireless Access Point(AP) C WDS Bridge Mode	
	Network Mode 11bigin müsed mode	
	SSID Broadcast @ Enable C Disable	
	AP isolation C Enable C Disable	
	Channel 2437MHz (Channel 6)	
	Channel Sandwidth 20 * 20/40	
	Extension Channel 2417//Hz (Channel 2)	
	WMM Capable @ Enable @ Disable	
	APSD Capable C Enable @ Disable	
	3 CK Cancel	

- 1. **SSID:** This is the public name of your wireless network. The default is Tenda\_XXXXXX. XXXXXX is the last six characters in the device's MAC address. It is recommended that you change it for better security and identification.
- 2. **Channel:** Select a channel that is the least used by neighboring networks from the drop-down list or **Auto**. Channels 1, 6 and 11 are recommended.

3. **OK**: Click to save your settings.

# <sup>∧</sup>Note:

- 1. It is advisable to keep other items unchanged from factory default settings. For more details of other features, see Appendix 1.
- 2. The device supports two SSIDs: primary SSID and secondary SSID. The secondary SSID is optional, left blank and disabled by default.



3. To enable the secondary SSID, simply specify a SSID in the field and click **OK**.



4. Instructions to configure the primary SSID also apply to the secondary SSID. The primary SSID is used below to illustrate all wireless related features.



#### 4.1.2 WDS Bridge Mode

WDS Bridge Mode: wireless distribution system (WDS) is a system enabling the wireless interconnection of access points in an IEEE 802.11 network. It allows a wireless network to be expanded using multiple access points without the traditional requirement for a wired backbone to link them. Note: The Access Points you select MUST support WDS.



#### For example:

As seen in the figure above, PC1 and PC2 access Internet via a wireless connection to Router 1. While PC3 and PC4 are too far to directly connect to Router 1 for Internet access. Now you can use the WDS bridge feature to let PC3 and PC4 access Internet.

Before you get started:

1. View and note down the wireless security settings: security mode, cipher type, security key, etc. on Router 1.





#### Wireless N300 Easy Setup Router

Tenda	Home	Advanced	Wireless	QoS	Applications
Wireless Basic Settings	Wireless Security Se	төр			
	Select SSID	Tenda_DDF0	ea	-	
Access Control	Security Mode	WPA - PSKIR	ecommended)	-	
Wireless Connection Status	WPA Algorithms	ALS Recom	miended) C	TKIP (	THIPAAES
	Security Key	Default 1234	1678		
		To configure a	wreless security a	ey, disable ti	he WPS below
	Mild Sections	Disable	( inable		Passet Q00
		OK	Cancel		

- 2. Verify that DHCP server is enabled on Router 1.
- 3. Set the LAN IP address of Router 2 to a different address yet on the same net segment as Router 1.

#### As shown below:

Router 1:

LAN IP: 192.168.0.1; Subnet Mask: 255.255.255.0; Router 2: LAN IP: 192.168.0.10;

Subnet Mask: 255.255.255.0;

	Home	Advanced	Witeless	QUS	Application
	/				
Status	LAwsenings				
Internet Connection Setup	This page is used to se	t the basic network	parameters for U	AN.	
MAC Clone	LAN MAC Addres	CS-3A-35-AA	AA-BA		
WAN Speed	IP Addres	192 168 0 10			
AN Settion	Subnet Mas	255 255 255 1			
SNS Settings		-	_		
Pulled a local		OK	Cancel		

Then do as follows:

- 1. Configure Router 2:
- 1) Wireless Working Mode: Select WDS Bridge Mode.
- 2) Click Open Scan (or Scan) to search for Router 1.



3) Select the wireless network to connect and click OK.

	Pl	Please click on	OK to confirm that you wan	to connec	t to this AP!	60
	T		(			53
	Ai	_			Cancel	38
	Ter	nda_office	00:90:4C:88:88:88	6	wep/wpa	42
-	Te	nda_000170	C8:3A:35:00:01:70	6	none	50

**4)** Verify that the SSID, channel, and AP MAC address on the page match those of the added wireless network. If not, manually correct them.



## Wireless N300 Easy Setup Router

ici icid	Home	Advanced	Wireless	QoS	Applicat
Wireless Basic Settings	Wireless Basic Setti	ngs			3
Wireless Security	Enable Wireless	F			
Access Control	Primary SSID	Tenda_office			
Wireless Connection Status	Secondary SSID				
	Wireless Working Mode	<ul> <li>Wireless A</li> <li>WDS Bridg</li> </ul>	ccess Point(AP) e Mode		
	Network Mode	11b/g/n mixed	mode		
	SSID Broadcast	Enable	C Disable		
	AP Isolation	C Enable	Disable	_	
	Channel	2437MHz (Cha	annei 6)		
	Channel Bandwidth	e 20 •	20/40		
	Extension Channel	2417MHz (Cha	annel 2)		
	WMM Capable	· Enable	C Disable		
	APSD Capable	C Enable	Disable		
	Wireless Working M	lode: WDS(Rej	peater mode)		
	AP MAC Address	00:90:4C:88:8	8:88		
	AP MAC Address Note: SSID and channel v that the AP you select M connection for better co	will automaticall UST also suppor ompatibility with	ly set to match yo rt WDS, WEP is red n your selected Al	our selected commended	AP. Note I for the
		Laura a			

5) Close Scan and click OK to save your settings.

	Home	Advanced	Wireless	005	Applicat
Wireless Basic Settings	Wireless Basic Settings				
Wireless Security	Enable Wireless	R			
Access Control	Primary SSID	Tenda_office			
Wireless Connection Status	Secondary SSID				
	Wireless Working Mode	Access Point(AP) ge Mode			
	Network Mode	11b/g/n mixe	d mode		
	SSID Broadcast	# Enable	C Disable		
	AP Isolation	C Enable	Oisable		
	Channel	2437MHz (Ch	nannel 6)		
	Channel Bandwidth	e 20	20/40		
	Extension Channel	.2417MHz (Ch	tannel 2)	•	
	WMM Capable	# Enable	C Disable		
	APSD Capable	C Enable	Oisable		
	Wireless Working L	lode: WDS(Re	epeater mode)		
	AP MAC Address	00:90:4C:88:8	88:88		
	AP MAC Address				
	Note: SSID and channel the AP you select MUST for better compatibility	will automatical also support W with your selec	lly set to match y DS, WEP is recomm cted AP,	our selected mended for	AP. Note that the connection
		Oper	) Scan		
	4 -	OK	Cancel		

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6) Go to Wireless Security page and set the wireless security settings exactly as they are on the link partner (Router 1).



7) Go to DHCP Server to disable the DHCP on Router 2. Now you have finished all settings on Router 2 required for WDS.

Tenda					
	Home	Advanced	Wireless	QnS	Applications
Status	DHCP Server	1			
Internet Connection Setup	DHCP Server	Inable	-3		
MAC Clone	IP Pool Start Address	192,168.0.	200		
WAN Speed	IF Pool End Address	192,168.0,	212		
LAN Settings	Lease Time	Two days.		1	
DNS Settings	4	OK	Cancel		
D425			Carreer		
DHCP Client List					

- 2. Configure Router 1:
- 1) Go to wireless section on Router 1 and specify **WDS** (or **WDS Bridge**) as its wireless working mode.
- 2) Manually enter Router 2's MAC address (Also, you can use the **Scan** option as mentioned above) and click **OK** to finish your settings.





## Wireless N300 Easy Setup Router

	Home	Advanced	Wireless	Qus	Applications
Wireless Basic Settings	Wireless Basic Sett	ings			
Wireless Security	Enable Wireless	<b>F</b>			
Access Control	Primary SSID	Tenda_office			
Wireless Connection Status	Secondary SSID				
	Wireless Working	C Wireless A	Access Point(AP)		
	Mode	WDS Bridg	ge Mode	-1	
	Network Mode	11b/g/n mixe	d mode	-	
	SSID Broadcast	# Enable	C Disable		
	AP Isolation	C Enable	Disable		
	Channel	2437MHz (Ch	annel 8)	*	
	Channel Bandwidth	c 20	20/40		
	Extension Channel	2417MHz (Ch	annel 2)	•	
	WMM Capable	# Enable	C Disable		
	APSD Capable	C Enable	Disable		
	Wireless Working A	Aode: WDS(Re	peater mode)		
	AP MAC Address	C8:3A:35:12:	87:30	2	
	AP MAC Address				
	Note: SSID and channel the AP you select MUST for better compatibility	will automatical also support WI with your selec	ly set to match y DS. WEP is recom- ited AP.	our selected mended for	AP. Note that the connection
		Open	Scan		
	3 🚤	ок	Cancel		

- 3. Configure PC3 and PC4:
- 1) Set PC3 and PC4 to Obtain an IP address automatically.



eral Alternate Configuratio	n .
capability. Otherwise, you appropriate IP settings.	need to ask your network administrator for
Obtain an IP address aut	omatically
Use the following IP addr	ress:
IP address	
S <u>u</u> bnet mask:	
<u>D</u> efault gateway:	
Obtain DNS server addre	ess automatically
Use the following DNS se	erver addresses:
Preferred DNS server:	
Alternate DNS server:	
	Advanced

2) When the two PCs get IP addresses,

Tenda

### Wireless N300 Easy Setup Router

Local Area Connection State	ıs 🤶 🔀
General Support	
Connection status	
Address Type:	Assigned by DHCP
IP Address:	192.168.0.201
Subnet Mask:	255.255.255.0
Default Gateway:	192,168.0.1
Details	45
Windows did not detect problems w connection. If you cannot connect, Repair.	vith this Regain
	Giose

try below steps to verify the WDS connection:

Click **Start**-> **Run** on PC3, input **cmd** on the appearing window and then click **OK**.

Administrator		C Gateway
Enternet     Sender     Enternet     Sender     Sender     Sender     Sender     Sender     Machene Medder Palyer     Windown Medder Palyer     Windown Medder Palyer     Windown Medder Palyer     Text Windown St      Sender     Sender	Phy Decaments     Phy Computer     Phy Retwork Places     Phy Retwork Places     Connect Jo     Connect Jo     Phyters and Paxes     Search     Burn	Type the name of a grogram, folder, document, or Internet resource, and Yindows will open it for you.
Start Network C	onnections	

Input **ping 192.168.0.1** and press **Enter**. If you get a screen as seen below, you have successfully implemented WDS.



C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.
C:\Documents and Settings\Administrator>ping 192.168.0.1
Pinging 192.168.0.1 with 32 bytes of data:
Reply from 192.168.0.1: bytes=32 time=4ms TTL=64
Reply from 192.168.0.1: bytes=32 time<1ms TTL=64
Reply from 192.168.0.1: bytes=32 time<1ms TTL=64
Reply from 192.168.0.1: bytes=32 time<1ms TTL=64
Ping statistics for 192.168.0.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = Ums, Maximum = 4ms, Average = 1ms

# **≜Note**:

- 1. WDS feature can only be implemented between 2 WDS-capable wireless devices. Plus, SSID, channel, security settings and security key must be exactly the same on both such devices.
- 2. To ensure a proper wireless connection, do not change any settings on the two devices after WDS is successfully implemented.

## 4.2 Wireless Security

This section allows you to secure your wireless network and block unauthorized accesses and malicious packet sniffing. To encrypt your wireless network, do as follows:

- 1. Select the wireless network (SSID) you wish to encrypt.
- 2. Disable WPS. (WPS is enabled on the router by default. If you want to use other security modes, you must first disable the WPS.)
- Select a proper security mode and cipher type (also known as WPA Algorithm or WPA Encryption Type). WPA-PSK and AES are recommended by system default. (5 security modes are available for your selection. Among them, WPA-PSK outstands with greater compatibility and security. For more information of other security modes, see appendix 2) Specify a security key that includes at least 8 characters.

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4. Click **OK** to complete your settings.



#### Wireless N300 Easy Setup Router

	Home	Advanced	Wireless	Qu5	Application
Wireless Basic Settings	wireless Security Se	sup.			
Winden: Security	Select SSID	Tendà_DDFo	E8	-	-1
Access Control	Security Mode	WPA - PSKOR	commended)		
Wireless Connection Status	WPA Algorithms	AESIRecom	mended) C	TKIP C	TKIPSAES
	Security Key	Default 12345	678		- 3
	2 WPS Settings	To configure a C Disable	C Enable	iey, disable i	the WPS below

#### WPS

Wi-Fi Protected Setup makes it easy for home users who know little of wireless security to establish a home network, as well as to add new devices to an existing network without entering long passphrases or configuring complicated settings. Simply enter a PIN code or press the software PBC button or hardware WPS button (if any) and a secure wireless connection is established.

#### **Operation Instructions:**

**PBC:** To use WPS-PBC, try two ways below:

- 1) Press the hardware WPS button on the router for about 1 second and then enable WPS/PBC on the client device within 2 minutes;
- 2) Press the hardware WPS button on the router for about 1 second and then enable WPS/PBC on the client device within 2 minutes;

	Home	Advanced	Wireless	QuS	Application
Wireless Basic Settings	WINNESS SOCULTRY SE	etup-			
WARRANT Second	Select SSID	Terida_DDF08	10	-	-1
Access Control	Security Mode	WPA PENRO	cammimded)	-	
Wireless Connection Status	WPA Algorithma	@ AES(Recom	mended) C	TRIP	C THUPBAES
	Security Key-	Default 12345	078		
	WPS Settings	To configure a l	C   Enable	2	the WPS below!
	WPS Mode	(* PBC (	T PIN		Anset COD

PIN: On the wireless security page, enable WPS, select PIN and enter the



8-digit PIN code from network adapter; then, within 2 minutes, enable **WPS/PIN** on the client device;

	Home	Advanced	Wireless	Qa5	Application
Wireless Basic Settings	Wireless Security Se	aup			
Wireley, Secure	Select SSID	Tends_DDF0	EO	-	-1
Access Control	Security Mode	WFA-PSK(R	scommended)	5	
Wireless Connection Status	WPA Algorithms		imendedi	C THIP	TRIPARES
	Security Key				
		Default 1234	9675		
		To configure a	wireless securit	key, disabl	e the WPS below
	WPS Settings	C Disable	(* Enable	2	
	WPS Mode	C PBC	C PIN 55	771112	3
					Reset COB

# **∕**∧Note:

- 1. With WPS successfully enabled, the WPS LED on the router keeps blinking for about 2 minutes, and during this time, you can enable WPS on a wireless adapter; if the adapter successfully joins the wireless network, the WPS LED will display a solid light. Repeat steps above if you want to add more wireless adapters to the router.
- 2. **Reset OOB:** Clicking this button will reset SSID to factory default and disable security mode.
- 3. Existing wireless settings will still be maintained by default after a successful WPS connection. Namely security settings and SSID on the router will still be the same. If you want to generate a random wireless key via WPS, click **Reset OOB** and then follow WPS setup instructions above.

#### Wireless N300 Easy Setup Router

	Home	Advanced	Wireless	Q05	Application
Wireless Rasic Settings	Wireless Security Se	eup.			
	Select SSID.	Tenda_DD#0	E8		-1
Access Control	Security Mode	WPA-P2NR	ecommended)	-	
Wireless Connection Status	WPA Algorithms	@ AESURecom	minided) C	TKIP	C TRIPARS
	Security stea				
		Default: 12.34	20/h		
		To configure a	wireless security (	key, discolu	e the WPS below
	WPS Settings	C Disable	e Enable	2	
	WPS Mode	AF PBC	C' PIN	3 -	Reset COR
		OK	Cancel		

# **∕**∧Note:

- 1. To use the WPS security, the wireless client must be also WPS-capable.
- 2. Before you press the hardware WPS button on the device for WPS/PBC connection, making sure the WPS feature has been enabled on the device.

# 4.3 Wireless Access Control

The Access Control feature allows you to specify a list of devices to Permit or Forbid a connection to your wireless network via the devices' MAC addresses. All other devices not listed as Permitted will be Forbidden and vice versa.

- 1. Select the wireless network (SSID) you wish to enable Access Control on.
- 2. MAC Address Filter: Select Permit or Forbid from the drop-down list.



3. To permit a wireless device to connect to your wireless network, select Permit (or Allow), enter its MAC address, click **Add** and then **OK**. Then only this device listed as "Permitted" will be able to connect to your





wireless network; all other wireless devices will forbidden.

Step1. Select the wireless network (SSID) you wish to enable Access Control on.

- Step2. Select **Permit** from the corresponding drop-down menu.
- Step3. Enter the MAC address you wish to permit in the MAC address box and click **Add**.
- Step4. Click **OK** to save your settings. You can add more wireless MAC addresses you wish to allow.

**Example:** To forbid the PC at the MAC address of C8: 3A: 35: 65: 82: E6 from connecting to your wireless network, do as follows:



- Step1. Select an SSID, say, Tenda\_home.
- Step2. Select Forbid (or Deny) from the corresponding drop-down menu.
- Step3. Enter C8: 3A: 35: 65: 82: E6 in the MAC address box and click Add.
- Step4. Click **OK** to save your settings. You can add more wireless MAC addresses you wish to forbid.

## 4.4 Wireless Client

Here you can see a list of wireless devices connected to the router, including their MAC addresses and bandwidth

Tenda			
	Home Advanced Wireles	ss Q65 Applina	tions becauty tools.
Wireless Resit Serrings	Winniess Connection Status		thelp
Wyeiese Security Access Contail	Select SSD Tends_DDF9EB		Here you can see a list of wrelets desces connected to the router
Mattery proverses (Mag.)	NO. MAC Address	Eindeidh	Summerchilds The chartel Programsy width of each consection. #OM is required for 802 11# speeds.



▲Note: The bandwidth here refers to the channel bandwidth instead of wireless connection rate.



# **Chapter 5 Bandwidth Control**

## 5.1 Bandwidth Control

Use this section to manage bandwidth allocation to devices on your LAN. If there are multiple PCs behind your router competing for limited bandwidth resource, then you can use this feature to specify a reasonable amount of bandwidth for each such PC, so that no one will be over stuffed or starved to death.



- 1. Enable Bandwidth Control: Check or uncheck the box to
- 2. Enable or disable the bandwidth control feature.
- 3. **IP Address:** Specify the same IP address (say, 100, 100) or two different IP addresses (say, 100, 110) in both boxes to specify a single IP address or an IP range to which the current bandwidth control rule will apply.
- 4. Upload/Download: Select to control bandwidth over data upload or download.
- Bandwidth Range: Specify an upload/download bandwidth range limit on specified PC(s). The unit is KByte/s. 1M=128KByte/s. Note that maximum upload/download bandwidth should not exceed your router's WAN bandwidth limit. (Consult your ISP if you are not clear.).
- 6. **Enable:** Check to enable current rule. (When disabled, corresponding entry will not take effect though existing in fact.)
- 7. Add to List: Click to add current rule to the rule list.
- 8. OK: Click to activate your settings.

For example:

If you are sharing a 4M broadband connection with a neighbor, who always exhausts the bandwidth resource downloading data, this feature will help. Simply specify half of the 4M bandwidth for your neighbor's PC (say, 192.168.0.100) and you will no longer need to struggle for bandwidth and your neighbor will only get up to 2M bandwidth. To do so, follow instructions below:

- 1. Check Enable.
- 2. Input "192.168.0.100" in both IP address boxes.
- 3. Select Download.
- 4. Enter "256" in both bandwidth range fields.
- 5. Check Enable.
- 6. Click Add To List
- 7. Click **OK**.

## **5.2 Traffic Statistics**

Traffic Statistics allows you to see at a glance how much traffic each device in your network is using.

Tenda	- 10	ome	Advanted	Wire	ess.	QoS	Applican
Sandwidth Control	Traffic Sta	HENRY					
Control Statistics-			F Enable	Traffic Statisti	ć1 -	1	
	IP Address	Uplink Rate (KByte/s)	Downlink Rate (KByte/s)	Sent Message	Sent Eytes MDyte	Received Message	Received Sytes Möyte

**Enable Traffic Statistics:** Check/uncheck the box to enable/disable the Traffic Statistics feature. To see at a glance how much traffic each device in your network is using, enable this option. However usually, disabling it may boost your network performance. This option is disabled by default. However, once enabled the page refreshes every five minutes.

OK: Click to activate corresponding settings.

**IP Address**: Displays IP addresses of PCs connected to the device.

**Uplink Rate**: Displays the upload speed (KByte/s) of a corresponding PC. **Downlink Rate**: Displays the download speed (KByte/s) of a corresponding PC.

**Sent Message:** Displays the number of packets sent by a corresponding PC via the device since Statistics is enabled.

Sent Bytes: Displays the number of Bytes sent by a corresponding PC via



the device since Statistics is enabled. The unit is MByte. **Received Message**: Displays the number of packets received by a corresponding PC via the device since Statistics is enabled. **Received Bytes**: Displays the number of Bytes received by a corresponding PC via the device since Statistics is enabled. The unit is MByte.

# **Chapter 6 Special Applications**

## 6.1 Port Range Forwarding



Port range forwarding is useful for web servers, ftp servers, e-mail servers, gaming and other specialized Internet applications. When you enable port forwarding, the communication requests from the Internet to your router's WAN port will be forwarded to the specified LAN IP address. As seen in the figure above, to let PC3 access service ports on PC1, you must first configure port forwarding settings on the router to which PC1 is uplinked.

he sp	pecified LAN IP address	1 2	1	3	4	
NO.	Start Port-End Port	LAN IP	Protocol	1	Enable	Delete
1.	21 - 21	192.168.0 10	0 ТСР	~		
2.	-	192.168.0.	TCP	~		
3.	r.	192.168.0.	TCP	*		
4.	Н	192.168.0.	TCP	۷		
5.	-	192.168.0.	TCP	~		
6.	-	192.168.0.	TCP	~		
7_	-	192.168.0.	TCP	*		
8.	-	192.168.0.	TCP	*		
9.	-	192.168.0.	TCP	~		
10.	H	192.168.0.	TCP	~		
Well-	-known service ports:	FTP(21)	Add to	ID	1	~

1. Start/End Port: Specify a range of ports between 1~65535 (for a single port, enter the port number in both Start and End fields, say, 21

for FTP). Contact corresponding service provider if you don't know the port number of the service to use.

- 2. **LAN IP:** Specify the internal host's IP address. Be sure to statically assign the host's IP address to make this function constant.
- 3. **Protocol:** Specify the protocol required for the service utilizing the port(s).
- 4. Enable: Check to enable current settings.
- 5. **OK:** Click to activate your settings.

Now, your friends only need to enter ftp://xxx.xxx.xxx.xxx:21 in their browsers to access your FTP server xxx.xxx.xxx is the router's WAN IP address. Assuming it is 172.16.102.89, and then your friends need to enter ftp://172.16.102.89 : 21 in their browsers.

#### For example:

You want to share some large files with your friends who are not in your LAN; however it is not convenient to transfer such large files across network. Then, you can set up your own PC as a FTP server and use the Port (Range) Forwarding feature to let your friends access these files. Assuming that the static IP address of the FTP server (Namely, your PC) is 192.168.0.10, you want your friends to access this FTP server through default port of 21 using the TCP protocol, then do as follows:

- 1. Start/End Port: Enter 21 in both Start Port and End Port fields.
- 2. LAN IP: Enter 192.168.0.10
- 3. Protocol: Select TCP.
- 4. Enable: Check to enable current settings.
- 5. **OK:** Click to activate your settings.
- Note: If you include port 80 on this section, you must set the port for remote (web-based) management to a different number than 80, such as 8080, otherwise the virtual server feature may not take effect.

### 6.2 DMZ Host

The DMZ (De-Militarized Zone) function disables the firewall on the router for one device for a special purpose service such as Internet gaming or video conferencing. Enabling DMZ host may expose your local network to potential attacks. So it is advisable to use it with caution.



#### Wireless N300 Easy Setup Router

Tenda	Home Advanced Wireless QoS Appli	ations
Port Range Forwarding	DM2 Host	
1342 Heat	NOTE: When the DMZ host is enabled, the firewall settings of the DMZ host will not	
DDNS	DMZ Hoss IP Address 192 188.0.11	
UPNP Settings		
Static Routing	Enable 2	
Routing Table	3 CK Cancel	

- 1. **DMZ Host IP Address:** The IP Address of the device for which the router's firewall will be disabled. Be sure to statically set the IP Address of that device for this function to be consistent.
- 2. Enable: Check/uncheck to enable/disable the DMZ host feature.
- 3. **OK:** Click to enable your settings.

# <sup>™</sup>Note:

Once enabled, the DMZ host loses protection from device's firewall and becomes vulnerable to attacks.

## 6.3 **DDNS**

Dynamic DNS or DDNS is a term used for the updating in real time of Internet Domain Name System (DNS) name servers. Dynamic DNS or DDNS is a term used for the updating in real time of Internet Domain Name System (DNS) name servers. We use a numeric IP address allocated by Internet Service Provider (ISP) to connect to Internet; the address may either be stable ("static"), or may change from one session on the Internet to the next ("dynamic"). However, a numeric address is inconvenient to remember; an address which changes unpredictably makes connection impossible. The DDNS provider allocates a static host name to the user; whenever the user is allocated a new IP address this is communicated to the DDNS provider by software running on a computer or network device at that address; the provider distributes the association between the host name and the address to the Internet's DNS servers so that they may resolve DNS queries. Thus, uninterrupted access to devices and services whose numeric IP address may change is maintained. (You need to have an account with one of the Service Providers in the drop-down menu first.)



#### Wireless N300 Easy Setup Router

	Home	Advanced	Wireless	Qa	Applicat
Port Range Forwarding	EIGNIS				
DMZ Host	DDNS Service	( Enable	C Disable		
	Service Provider	djindna org		*	Sign up
UPNP Settings	Usernanie	tenda			
Static Routing	Password	123459			
Rounny Table	Domain Neme	Rentlà dyndrin.	eral		
		OK	Cancel		

- 1. DDNS Service: Select to enable/disable the DDNS feature.
- 2. **Service Provider:** Select your DDNS service provider from the drop-down menu. (Here you can see a list of available service providers. Note that service providers not listed here are not available for use.)
- 3. User Name: Enter the registered user name.
- 4. **Password:** Enter the registered password.
- 5. **Domain Name:** Enter the domain name you register, say, tenda.dyndns.org.
- 6. **OK:** Click to activate your settings.

### ANote:

This feature is usually used together with virtual server. Configure necessary settings on port forwarding interface and enter the information provided by your DDNS service provider on the DDNS screen. Others can access your web server by simply entering http://tenda.dyndns.org in their browser address bar.

## 6.4 UPNP

The Universal Plug and Play (UPnP) feature allows network devices, such as computers from Internet, to access resources on local host or devices as needed. UPnP-enabled devices can be discovered automatically by the UPnP service application on the LAN. This feature is enabled by default. No settings are required.

Tenda							
	Rome	Advanced	Wireless	005	Applications	Security	TBOIL
Part Kange Forwarding	Another semandis					Helpi	
DMZ Hast	Enable UPoP	10				UPoP(Linversal)	Rep.ard
DONS						systems to coef	quire the
OTHER Section 1		ON	Cancel			applications aut	unuterally.
Insie Rausing							
Routing Table							



**Enable UPnP:** Check/uncheck to enable/disable the UPnP feature. **OK:** Click to complete your settings.

## 6.5 Static Routing

When there are several routers in the network, you may want to set up static routing. Static routing determines the path of the data in your network. You can use this feature to allow users on different IP domains to access the Internet via this device. It is not recommended to use this setting unless you are familiar with static routing. In most cases, dynamic routing is recommended, because this feature allows the router to detect the physical changes of the network layout automatically. If you want to use static routing, make sure the router's DHCP function is disabled.



- 1. **Destination Network IP Address**: Specify a single IP address, say, 172.17.0.100, or an IP net segment, .say, 192.168.88.0.
- 2. **Subnet Mask**: Specify a Subnet Mask that corresponds to the specified destination IP.
- 3. Gateway: Specify the IP address for next hop.
- 4. **OK:** Click to activate your settings.

#### △ Note:

- 1. Gateway must be on the same IP net segment as device's LAN/WAN IP address.
- 2. Subnet Mask must be entered 255.255.255.255 if destination IP address is a host.
- 3. Subnet Mask must be entered accordingly if destination IP address represents an IP network segment. It must correspond to the specified IP address. For example, for IP address of 10.0.0.0, you may enter a



subnet mask of 255.0.0.0.

#### 6.6 Routing Table

This page displays the device core routing table which lists destination IP, subnet mask, gateway, hop count and interface.

Tenda					
	Home	Advanced	Wireless	Q05	Applications
Port Range Forwarding	Routing Table				
DMZ Host	Destination IP	Submar Mark	Catemay	Hont	Interface
DDNS	19216800	355 355 355 0	192 168 0.0	nops	hell
UPNP Settings	192.100.010		194 199.00	0	alo.
Static Rouning	Refresh				
Rossing Talate					

The principal task for a router is to look for an optimal transfer path for each data packet passing through it, and transfer it to the specified destination. To complete this work, the router stores and maintains related data of various transfer paths, i.e. establishing a routing table, for future route selection.





# **Chapter 7 Security**

## 7.1 URL Filter

To better control LAN PCs, you can use the URL filter functionality to allow or disallow such PCs to access certain websites within a specified time range.



- 1. Filter Mode: Select a proper filter mode, say, Forbid Only (or Forbid/Deny).
- 2. Access Policy: Select an access policy number, say, 1, from the drop-down list.
- 3. **Policy Name**: Briefly describe the current rule, say, youtube, (It can only consist of numbers, letters, or underscore).
- 4. **Start IP/End IP**: Enter the same IP address or 2 different IP addresses in both boxes to specify a single PC or a range of PCs for the current rule to apply to.
- 5. **URL Character String:** Enter the domain name you wish to filter out, say, youtube.
- 6. **Time:** Specify a time period for a current rule to take effect. If the field is set to 0:00-0:00, the rule will be applied 24hrs/day.
- 7. **Day(s):** Select a day or several days for a current rule to take effect. If Sun-Sat is selected, the rule will apply 7days/week.
- 8. Enable: Check/uncheck to enable/disable the feature.
- 9. OK: Click to activate your settings.

#### Example:

If you want to disallow all computers on your LAN to access youtube.com from 8:00 to 18:00 during working days: Monday- Friday, then do as follows:

#### Wireless N300 Easy Setup Router

Tenda	Home	Advanced   Workess	она Арріканови	Security Train
All Parts (remain)	URL Filter Solution			Hertp.
MAC Address Filter Semings	Filter Mode	Fortika Drak		This section ables you in
Class Film: Settings	Arrest Policy	-		Select a milicy from the sitiat
	Tylica NameiOpennial)	jouture		describe e in the corresponding field. You can
	Start IF	192,168.0. 2		details including the iP
	End IP	192.168.0 254		time period, and specific
	URL Character String	(man)		same can be entered the
	Time	4	4	www.googit.com) or
	Day(s)	thei - Pa		pingle), but only support on
	Enable	2 Clear this item : One		domaie same for une rule.
		OK Cancel		Be sure to statically assign 8 Address of the devices you want to little in the DHCP

- 1. Filter Mode: Select Forbid Only.
- 2. Access Policy: Select an access policy number, say, 1, from the drop-down list.
- 3. **Policy Name:** Briefly describe the current rule, say, youtube, (It can only consist of numbers, letters, or underscore).
- 4. Start IP/End IP: Enter 2-254.
- 5. URL Character String: Enter youtube.
- 6. Time: Select 8:00-18:00.Day(s): Select Monday to Friday.
- 7. Enable: Check the Enable box.
- 8. OK: Click to save your settings.

### **∆Note**:

Each rule can only include one domain name. Simply add more rules accordingly, if you want to filter multiple domain names.

#### 7.2 MAC Filter

This section allows you to set the times specific clients can or cannot access the Internet via the devices' MAC Addresses.

**Forbid Only**: Specify a list of devices to **Forbid** access to Internet. All other devices not listed as **Forbidden** will be permitted.

**Permit Only:** Specify a list of devices to **Permit** access to Internet. All other devices not listed as **Permitted** will be forbidden.

## Wireless N300 Easy Setup Router



- 1. Filter Mode: Select a proper filter mode, say, Forbid Only (or Forbid/Deny).
- 2. Access Policy: Select an access policy number, say, 1, from the drop-down list.
- 3. **Policy Name:** Briefly describe the current rule (It can only consist of numbers, letters, or underscore).
- 4. **MAC Address:** Specify a MAC address for a corresponding MAC filter rule to apply to.
- 5. **Time:** Specify a time period for a current rule to take effect. If the field is set to 0:00-0:00, the rule will be applied 24hrs/day.
- 6. **Day(s):** Select a day or several days for a current rule to take effect. If Sun-Sat is selected, the rule will apply 7days/week.
- 7. Enable: Check/uncheck to enable/disable the feature.
- 8. **OK:** Click to activate your settings.



#### For Example:

To allow a PC at the MAC address of 00:E4:A5:44:35:69 to access Internet from Monday to Friday.

- 1. Filter Mode: Select Permit Only.
- 2. Access Policy: Select an access policy number, say, 1, from the drop-down list.
- 3. **Policy Name:** Briefly describe the current rule, say, **Permit only**, (It can only consist of numbers, letters, or underscore).
- 4. MAC Address: Enter 00:E4:A5:44:35:69.
- 5. Time: Select 0 for all fields to apply the rule 24hrs/day.
- 6. Day(s): Select Monday to Friday.
- 7. Enable: Check the Enable box.
- 8. OK: Click to save your settings.

#### 7.3 Client Filter

This section allows you to set the times specific clients can or cannot access the Internet via the devices' assigned IP addresses and service port. **Forbid Only (**or **Deny/Forbid)**: Only PCs listed as Forbidden (or Denied) will be forbidden from accessing specified services; others are not restricted; **Permit Only (**or **Permit/Allow)**: Only PCs listed as permitted (or allowed) will be permitted to access specified services; others will be forbidden.



- 1. Filter Mode: Select Permit Only.
- 2. Access Policy: Select an access policy number, say, 1, from the drop-down list.
- 3. Policy Name: Briefly describe the current rule, say, 80.
- 4. Start IP/End IP: Enter the same IP address, say, 110, or 2 different IP addresses, say, 110 and 120 in both boxes to specify a single PC or a range of PCs for the current rule to apply to.

- 5. Port: Specify TCP/UDP protocol port number (s), say, 80.
- 6. Type (or Protocol): Select Both.
- 7. Time: Specify a time period for a current rule to take effect. If the field is set to 0:00-0:00, the rule will be applied 24hrs/day.
- 8. Day(s): Specify a day or several days for a current rule to take effect.
- 9. Enable: Check/uncheck to enable/disable the feature.
- 10. OK: Click to activate your settings.

#### For example:

If you want to prohibit PCs within the IP address range of 192.168.0.100--192.168.0.120 from accessing Internet, do as follows:



- 1. Filter Mode: Select Forbid Only.
- 2. Access Policy: Select an access policy number, say, 1, from the drop-down list.
- 3. Policy Name: Briefly describe the current rule, say, 123.
- 4. Start IP: Enter 100.
- 5. End IP: Enter 120.
- 6. Port: Enter 1-65535 to forbid all Internet services and applications.
- 7. Type (or Protocol): Select Both.
- 8. Time: Select 0 for all fields to apply the rule 24hrs/day.
- 9. Day(s): Select Sun-Sat to apply the rule 7days/week.
- 10. Enable: Check the Enable box.
- 11. OK: Click to activate your settings.



# **Chapter 8 Tools**

### 8.1 Reboot

Reboot the device to activate your settings. WAN connection will be disconnected during reboot.

Tenda		104.4
	Home Advanced Writeless Code	Applications Lacorty Tools
Arried	Rebail The Rauter	Help
Restore To Factory Default	Click the button to redoon the source	Rebooting the rainer will
Berkup Restore	Reboot The Router	activate any modified settings on the router While
Systep	1	the reater is relation, all connections will be its and
Remote Web Manapariem		reconnected automatically faster

## 8.2. Restore to Factory Default Settings

Click the **Restore to Factory Default** button to reset device to factory default settings. You need to reconfigure the device for Internet access as well as many other settings including wireless settings.



The factory default settings are listed below:

- IP Address: 192.168.0.1
- Subnet mask: 255.255.255.0.

# **∆**Note:

To activate your settings, you need to reboot the device after you reset it.

### 8.3 Back/Restore

**Backup:** Once you have configured the device the way you want it, you can save these settings to a configuration file on your local hard drive that can later be imported to your device in case that the device is restored to factory default settings. To do so, follow below instructions:



1. Click the **Backup** button and specify a directory to save settings on your local hardware.



2. Click Save to save the configuration file.



#### To restore previous settings, do as follows:

Click the **Browse** button to locate and select a configuration file that is saved previously to your local hard drive.

Choose file					2 🔀
Look p: My Recent Documents Desktop My Documente My Documente My Computer	My Docum	nts fg]	0 0	P	
My Network Places	File name:	RouterCfm.cfg All Files (*.*)		•	Qpen Cancel

Click the **Restore** button to reset your device to previous settings.

^	A
n	4
-	•



lening	tumo Advented Musclett (05) Application	sectiony	Tools
Rebox Resone To Fectory Default	End Styp: Excellence Here you can Backary your resear's context configuration or restory your restor with a sound configuration for.	Halp Backer Cick	er this buttor of some
Sering Review Web Management. Tour betrage	Disk bere to save a participation the st your parentary	Provident States	tink or. and plant adjust the

# 8.4 Syslog

Here you can view the history of the device's actions. After 150 entries, the earliest logs will clear automatically.

	Abusan	Advantid Winiam D	in Application meanity Tools
Report	system		- steel
Restore To Fectors Default		Lugs in sage	Here Stou Car, view. Ite.
Bathup Kertore			ALIGHT MINT 120 ANTH
( International Contraction of the International Contractional Contr	1 23.54/13	annual and seed PADI	the previous logs will be theared extremely ally
Латтоте Нео Уахарителя	2 2011-04-01	DODNE popol (ecalves 8400)	
Tirrs Saturga	99.94(1)		
Durge Assessed	28(84)14	Doborn Doon receives Lenon	
Upprata	+ 2011-04-01 05:54-25	papara asso sensi MCI	
	5. 2011-04-01 25:54:22	appoint appoint requires FADO	
	8 2211-04-21 25:54:22	pppint applications FIDD	
	7 2011-04+01 05:54:27	pppoxid sppd send NACr	
	\$ 2011104-01 \$\$(\$4.27	memory apply receives \$400	
	9 2011+04+01 09:54-27	DODONO DODO PROMINES FACIO	
	10 7311-04+01 28 64 86	334040 9090 send PADI	
		Rebaty Clear	2012/12/12/12/12

## 8.5 Remote Web-based Management

The Remote management allows the device to be configured and managed remotely from the Internet via a web browser.

	Home	Advanced	Wireless	Q05	Applications	Security	Toels
Reboot Restore To Factory Default Eachup Restore Systog Remote Welt Manuperment	Remote Web Man	Agement P Enable	1 2 3			Help This section all network admin manage the ro remotely. Ports: This is th management p open to outsid	lows listrator t uter he ort to be e access.
Time Settings	4 -	OK	Cancel			The default set 8080.	ting is
Upgrads						IP Address P specify the IP a remote management V address is set the device beck	ere you ca ddress for then IP to 0.0.0.0, pmes

65

1. Enable: Check/uncheck to enable/disable the DMZ host feature.

- 2. **Port:** This is the management port to be open to outside access. The default setting is 8080. Do NOT change it unless instructed by your ISP.
- 3. **IP Address:** Here you can specify the IP Address Range for remote management (When set to 0.0.0.0, the device becomes remotely accessible to all the PCs on Internet or other external networks).
- 4. **OK:** Click to activate your settings.

# ANote:

- To access the device via port 8080, enter "http://x.x.x.x:8080" where "x.x.x.x" represents the the device's Internet IP address and 8080 is the remote admin port. Assuming the device's Internet IP address is 220.135.211.56, then, simply replace the "x.x.x.x" with "220.135.211.56" (namely, http://220.135.211.56:8080).
- 2. Leaving the IP address field at "0.0.0.0" makes the device remotely accessible to all the PCs on Internet or other external networks; populating it with a specific IP address, say, 218.88.93.33, makes the device only remotely accessible to the PC at the specified IP address.

# 8.6 Time

This page is used to set the router's system time. You can choose to set the time manually or get the GMT time from the Internet and the system will automatically connect to NTP server to synchronize the time.



# ∕∆Note:

Configured time and date info will be lost when the device gets disconnected from power supply. However, it will be updated automatically when the device reconnects to Internet. To activate time-based features (e.g. firewall), the time and date info shall be set correctly first, either manually or automatically.

# 8.7 Login Password

This section allows you to change login password for accessing device's Web-based interface for better security.

Tenda			
	Home Advanced Wireless QoS Applications	Security	Tools
Reboot	Change Password	Help	
Restore To Factory Default	Administrator Login Credentials	This section allow	is you to
Backup Restore	Password must be alpha-numeric.	change the login password.	
Syslog	New Password	Device's default p	browers
Remote Web Management	Confirm New	is "admin". It is ad to change it for b	ivisable etter
Time Settings	Password	security. Otherwis anyone in your ne	tê. Itwork
Chaoge Password	OK Cancel	may access this u view or change yo	tility to
Upgrade		settings.	

- 1. **New Password:** Enter a new password, say, 12345 (Note that the password can only be alphanumeric).
- 2. Confirm New Password: Re-enter the new password for confirmation.
- 3. **OK:** Click to activate your settings.

# **∆**Note:

For security purpose, it is highly recommended that you change Device's default login password.

# 8.8 Firmware Upgrade

Firmware upgrade is released periodically to improve the functionality of your device and also to add new features. If you run into a problem with a specific feature of the device, log on to our website (www.tendacn.com) to download the latest firmware to update your device.

Tenda		
	Hume Advanced Wootess Oro Applications	<u>Security</u> То
Keburt	Upprinte	tiesp
Rastore To Factory Debuilt Sackup Restore Systep Reveise Web Management	By cogniting the name indexes, you'll get mee features. Name of the formance time. BOONSEL Upgramm Connent System Venzion. VII 37 SA, san. Radioshing Data jue 17. 2011 Name Op and Space of the indexe dational the cognitive and you can inde so a computer than a public point one of the LAD sector of the singular and you can inde so a computer than a public point one of the LAD sector of the singular and you can inde so a computer than a public point one of the LAD sector of the singular and points the cognitive to account the singular to account	The lensis formare can found at uses tendares de sare to follow the manufactors carefully Once you have downion
Time Settings Charge Fastering	daniging the router. The instea will reliable associationly when the suggrade.	the formupre file from a website and saved it to computer, sick on "Bro to select the like. Their or "Upgrade" to start th process and reboot the reader.



1. **Browse:** Click to locate and select the firmware.

2. **Upgrade (or Update)**: Click to update firmware. Device will restart automatically when update completes.

## **∆**Note:

- 1. Before you upgrade the firmware, making sure you are having a correct firmware. A wrong firmware may damage the device.
- 2. Do NOT upgrade the firmware wirelessly or disconnect device from power supply while firmware update is in process. Note that you need to update the device's firmware via a wired connection.


## Appendix 1 How to Configure IP

## WIN7 OS Configuration

1. Click Start>Control Panel;



2. Enter Control Panel and click Network and Internet;







3. Click Network and Sharing Center;



4. Click Change adapter settings;

Control Panel Home	View your basic network inform	ation and set up connections
Change adapter settings Change advanced sharing settings	WIN7X64EN Unidentified (This computer)	network Internet
	View your active networks	Connect or disconnect
	Unidentified network Public network	Access type: No network access Connections: S Local Area Connection

5. Right click Local Area Connection and select Properties;



6. Select Internet Protocol Version 4(TCP/IPv4) and click Properties;



e	nianos - Disable this naturals device Diannass this consection
	Local Area Connection Properties
	Networking
	Connect using:
	Intel(R) PRO/1000 MT Network Connection
	This connection uses the following items:
	Install Uninstall Properties Description Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.

7. Select  $\ensuremath{\textbf{Obtain}}$  an  $\ensuremath{\textbf{IP}}$  address automatically and click  $\ensuremath{\textbf{OK}}$  to save the configurations.

Wireless N300 Easy Setup Router

General	Alternate Configuration				
You car this cap for the	n get IP settings assigned au pability. Otherwise, you need appropriate IP settings.	itomatically if d to ask your	your r netwo	etwork sup rk administ	oports rator
() Ol	otain an IP address automati	ically			
OUs	se the following IP address:				
.TP ad	ddress:				
Subr	iet mask:				
Defa	ult gateway:			т.	
() Ot	otain DNS server address au	tomatically			
Us	se the following DNS server a	addresses:			
Prefe	erred DNS server:		h.	w.	
Alter	nate DNS server:		4	<i>i</i> .	
v	alidate settings upon exit			Advan	ced

## **XP OS Configuration**

Tenda

1. Right click My Network Places and select Properties;





2. Right click Local and select Properties;

LAN	r High-Speed Internel	
C	Disable Status Repair	
vity, and	Bridge Connections	connection
	Create Shortcut Delete	
	Rename	
	Properties	

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



Addrendedd	on Advanced	
Connect using:		
Intel(R) PRO/1	000 MT Network Con	Configure
This connection uses	the following items:	
QoS Packet QoS Packet PPP over Et Transformet Protect	Scheduler hernet Protocol ocol (TCP/IP)	
4	dill	2
Install	Uninstall	Properties
Description		
Transmission Contr wide area network across diverse inte	ol Protocol/Internet Proto protocol that provides co rconnected networks.	ocol. The default ommunication
Show icon in notif	ication area when conne	cted
Notify me when th	is connection has limited	or no connectivity

4. Select **Obtain an IP address automatically** and click  $\mathbf{OK}$  to save the settings.



## Wireless N300 Easy Setup Router

eneral	Alternate Configuratio	n
/ou car his cap or the	n get IP settings assigne ability. Otherwise, you appropriate IP settings.	d automatically if your network supports need to ask your network administrator
⊙ Oł	otain an IP address auto	matically
OUs	e the following IP addre	iss:
JP ac	idress.	
Subr	et mask:	
Defa	ult gateway:	
⊙ ot	otain DNS server addres	s automatically
OUs	e the following DNS ser	ver addresses:
Prefe	erred DNS server	
Alter	nate DNS server:	
		Advanced



## Appendix 2 Glossary

## Channel

A communication channel, also known as channel, refers either to a physical transmission medium such as a wire or to a logical connection over a multiplexed medium such as a radio channel. It is used to transfer an information signal, such as a digital bit stream, from one or more transmitters to one or more receivers. If there is only one AP in the range, select any channel you like. The default is **Auto**.

If there are several APs coexisting in the same area, it is advisable that you select a different channel for each AP to operate on, minimizing the interference between neighboring APs. For example, if 3 Americanstandard APs coexist in one area, you can set their channels respectively to 1, 6 and 11 to avoid mutual interference.

#### SSID

Service set identifier (SSID) is used to identify a particular 802.11 wireless LAN. It is the name of a specific wireless network. To let your wireless network adapter roam among different APs, you must set all APs' SSID to the same name.

## WPA/WPA2

The WPA protocol implements the majority of the IEEE 802.11i standard. It enhances data encryption through the Temporal Key Integrity Protocol (TKIP) which is a 128-bit per-packet key, meaning that it dynamically generates a new key for each packet. WPA also includes a message integrity check feature to prevent data packets from being hampered with. Only authorized network users can access the wireless network. The later WPA2 protocol features compliance with the full IEEE 802.11i standard and uses Advanced Encryption Standard (AES) in addition to TKIP encryption protocol to guarantee better security than that provided by WEP or WPA. Currently, WPA is supported by Windows XP SP1.

#### **IEEE 802.1X Authentication**

IEEE 802.1X Authentication 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 EAP over LAN or EAPOL. 802.1X authentication involves three parties: a

## Tenda

supplicant, an authenticator, and an authentication server. The supplicant is a client device (such as a laptop) that wishes to attach to the LAN/WLAN - though the term 'supplicant' is also used interchangeably to refer to the software running on the client that provides credentials to the authenticator. The authenticator is a network device, such as an Ethernet switch or wireless access point; and the authentication server is typically a host running software supporting the RADIUS and EAP protocols. The authenticator acts like a security guard to a protected network. The supplicant (i.e. client device) is not allowed access through the authenticator to the protected side of the network until the supplicant's identity has been validated and authorized. With 802.1X port-based authentication, the supplicant provides credentials, such as user name / password or digital certificate, to the authenticator, and the authenticator forwards the credentials to the authentication server for verification. If the authentication server determines the credentials are valid, the supplicant (client device) is allowed to access resources located on the protected side of the network.

## PPPOE

The Point-to-Point Protocol over Ethernet (PPPoE) is a network protocol for encapsulating PPP frames inside Ethernet frames. Integrated PPP protocol implements authentication, encryption, and compression functions that traditional Ethernet cannot provide and can also be used in the cable modem and digital subscriber line (DSL) and Ethernet that provide access service to the users. Essentially, it is a protocol that allows to establish a point-to-point tunnel between two Ethernet interfaces within an Ethernet broadcast domain.

## DNS

The Domain Name System (DNS) is a hierarchical distributed naming system for computers, services, or any resource connected to the Internet or a private network. It associates various information with domain names assigned to each of the participating entities. A Domain Name Service resolves queries for these names into IP addresses for the purpose of locating computer services and devices worldwide. An often-used analogy to explain the Domain Name System is that it serves as the phone book for the Internet by translating human-friendly computer hostnames into IP addresses.

## WDS

A wireless distribution system (WDS) is a system enabling the wireless interconnection of access points in an IEEE 802.11 network. It allows a wireless network to be expanded using multiple access points without the traditional requirement for a wired backbone to link them. All base stations in a wireless distribution system must be configured to use the same radio channel, method of encryption (none, WEP, or WPA) and the same encryption keys. They may be configured to different service set identifiers. WDS also requires every base station to be configured to forward to others in the system. WDS may also be considered a repeater mode because it appears to bridge and accept wireless clients at the same time (unlike traditional bridging).WDS may be incompatible between different products (even occasionally from the same vendor) since it is not certified by the Wi-Fi Alliance. WDS may provide two modes of wireless AP-to-AP connectivity:

Wireless bridging, in which WDS APs communicate only with each other and don't allow wireless clients or stations (STA) to access them.

Wireless repeating, in which APs communicate with each other and with wireless STAs.

#### DMZ

In computer security, a DMZ (sometimes referred to as a perimeter networking) is a physical or logical subnetwork that contains and exposes an organization's external-facing services to a larger untrusted network, usually the Internet. The purpose of a DMZ is to add an additional layer of security to an organization's local area network (LAN); an external attacker only has access to equipment in the DMZ, rather than any other part of the network. Hosts in the DMZ have limited connectivity to specific hosts in the internal network, although communication with other hosts in the DMZ and to the external network is allowed. This allows hosts in the DMZ to provide services to both the internal and external network, while an intervening firewall controls the traffic between the DMZ servers and the internal network clients. Any services such as Web servers, Mail servers, FTP servers and VoIP servers, etc. that are being provided to users on the external network can be placed in the DMZ.

## Appendix 3 FAQs

This section provides solutions to problems that may occur during installation and operation of the device. Read the following if you are running into problems. If your problem is not covered here, please feel free to go to www.tendacn.com to find a solution or email your problems to: <a href="mailto:support@tenda.com.cn">support@tenda.com.cn</a> or <a href="mailto:support@tenda.com.cn">support@tenda.com.cn</a>. We will be more than happy to help you out as soon as possible.

- 1. Q: I entered the device's LAN IP address in the web browser but cannot access the utility. What should I do?
- Check whether device is functioning correctly. The SYS LED should blink a few seconds after device is powered up. If it does not light up, then some internal faults may have occurred.
- 2) Verify physical connectivity by checking whether a corresponding port's link LED lights up. If not, try a different cable. Note that an illuminated light does NOT ALWAYS indicate successful connectivity.
- Run the "ping 192.168.0.1" command. If you get replies from 192.168.0.1, open your browser and verify that Proxy server is disabled. In case that ping fails, press and hold the "RESET" button on your device for 7 seconds to restore factory default settings, and then run "ping192.168.0.1" again.
- 4) Contact our technical support for help if the problem still exists after you tried all the above.
- 2. Q: What should I do if I forget the login password to my device?
- A: Reset your device by pressing the Reset button for over 7 seconds. Note: All settings will be deleted and restored to factory defaults once you pressed the Reset button.
- 3. Q: My computer shows an IP address conflict error after having connected to the device. What should I do?
- 1) Check if there are other DHCP servers present in your LAN. If there are other DHCP servers except your router, disable them immediately.
- 2) The default IP address of the device is 192.168.0.1; make sure this address is not used by another PC or device. In case that two computers or devices share the same IP addresses, change either to a different address.
- 4. Q: I cannot access Internet and send/receive emails; what should I do?

This problem mainly happens to users who use the PPPoE or Dynamic IP

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Internet connection type. You need to change the MTU size (1492 by default). In this case, go to "WAN Settings" to change the MTU value from default 1480 to 1450 or 1400, etc.

# 5. Q: How do I share resources on my computer with users on Internet through the device?

To let Internet users access internal servers on your LAN such as e-mail server, Web, FTP, via the device, use the "Virtual Server" feature. To do so, follow steps below:

Step 1: Create your internal server, make sure the LAN users can access these servers and you need to know related service ports, for example, port number for Web server is 80; FTP is 21; SMTP is 25 and POP3 is 110.

Step 2: Enter Port Forwarding (also called Port Range Forwarding on some products) screen from device web UI.

Step 3: Complete the Start Port (also called External/Ext Port on some products) and End Port (also known as Internal Port on some products) fields, say, 80-80.

Step 4: Input the internal server's IP address. For example, assuming that your Web server's IP address is 192.168. 0.10, then simply input it.

Step 5: Select a proper protocol type: TCP, UDP, or Both depending on which protocol(s) your internal host is using.

Step 6: Click Enable and save your settings.

For your reference, we collected a list of some well-known service ports as follows:

Server	Protoco I	Service Port
Web Server	ТСР	80
FTP Server	ТСР	21
Telnet	ТСР	23
Net Meeting	ТСР	1503、1720
MSN Messenger	TCP/UD P	File Send: 6891-6900(TCP) Voice: 1863, 6901(TCP) Voice: 1863, 5190(UDP)
PPTP VPN	ТСР	1723
Iphone5.0	ТСР	22555
SMTP	TCP	25
POP3	TCP	110

# Appendix 4 Remove Wireless Network from Your PC

If you change wireless settings on your wireless device, you must remove them accordingly your PC; otherwise, you may not be able to wirelessly connect to the device. Below describes how to do remove a wireless network from your PC.

## If you are using Windows XP, do as follows:

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1. Right click My Network Places and select Properties.



2. Click Wireless Network Connection and then select Properties.

2		
Local Area	Wirele	Disable View Available Wireless Networks
Connection	Connec	Status
		Repair
		Bridge Connections
		Create Shortcut
		Delete
		Rename
	- 1	Properties

3. Click Wireless Networks, select the item under Preferred networks



and then click the **Remove** button.

	Wireless Networks	Advanced	
Use	Windows to configu	re my wireless net	work settings
Avail	able networks:		
To ca abou	onnect to, disconnec t wireless networks ir	t from, or find out n range, click the l	more information button below.
		View V	Vireless Networks
Prefe Autor belov	rred networks: natically connect to a r:	available networks	s in the order listed
i	Tenda_home (Autom	atic)	Move <u>up</u>
			Move <u>d</u> own
	Add <u>R</u> em	ove Prope	rties
	about setting up win	eless network	Advanced

If you are using Windows 7, do as follows:

1. Click **Network** from your desktop and select **Properties**.



2. Select Manage Wireless Networks.







3. Click the wireless connection and select Remove network.

dd ,	Adapter properties	Profile types	Network and Sharing Center		
twork	S you can view, moo Tenda_home	lify, and reorder Secu	(2) Ry: WPA-Personal	Type: Any supported	Automutically connect
2					
Ū.	Tenda_AAAABA	Secu	nty: WPA-Personal	Type: Any supported	Automistically connoc
•					



## Appendix 5 Safety and Emission Statement

### **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.

#### **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

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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

### IC RSS warning

This device complies with Industry Canada licence-exempt RSS standard (s). 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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that, the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

The device meets the exemption from the routine evaluation limits in section 2.5 of RSS 102 and compliance with RSS-102 RF exposure, users can obtain Canadian information on RF exposure and compliance. Le dispositif rencontre l'exemption des limites courantes d'évaluation dans la section 2.5 de RSS 102 et la conformité à l'exposition de RSS-102 rf, utilisateurs peut obtenir l'information canadienne sur l'exposition et la

conformité de rf.

Cet émetteur ne doit pas être Co-placé ou ne fonctionnant en même temps qu'aucune autre antenne ou émetteur.

This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body. Cet équipement devrait être installé et actionné avec une distance minimum de 20 centimètres entre le radiateur et votre corps.

#### IC Radiation Exposure Statement:

This equipment complies with IC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

IC Déclaration sur la radioexposition:

Cet équipement est conforme aux limites d'exposition aux rayonnements RF IC énoncées pour un environnement non contrôlé. Cet émetteur ne doit pas être co-localisées ou opérant en conjonction avec une autre antenne ou transmetteur.

This radio transmitter (IC: 9034A-W303RV3) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device. Antenna listed as below:

Ant.	Brand	S/N	Antenna Type	Connector	Gain (dBi)	Note
0	Tenda	321A0000001	Dipole	N/A	5.24	TX/RX
1	Tenda	321A0000001	Dipole	N/A	5.24	TX/RX
2	Tenda	321A0000001	Dipole	N/A	5.24	RX

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Manufacturer: SHENZHEN TENDA TECHNOLOGY CO., LTD.