

# **User Guide**

www.tendacn.com

Wireless N301 Easy Setup Router Wireless N150 Easy Setup Router N301 N150

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# **Chapter 1 Product Overview**

# **1** Package Contents

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

(1)Wireless Broadband Router

(2)Power Adapter

(3)Quick Install Guide

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

# 2 LEDs and Ports

This part describes this device's hardware features. The topics include: 1) Wireless Router's front and back panels 2) LED designations

### \* Front Panel







#### Front LED Overview:

LED	Status	Description	
SYS	Blinking	Indicates system is functioning properly	
WLAN	Solid	Wireless is enabled	
WLAN	Blinking	Transferring data	
1/2/3	Solid	LAN port connected correctly	
1/2/3	Blinking	LAN port is transferring data	
WAN	Solid	WAN port connected correctly	
	Blinking	WAN port is transferring data	

### Back Panel

PWR WAN 3/2/1 WPGRET	PWR WAAL \$ 211 WPBRET
N301	N150

#### Back LED Overview:

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

# **Chapter 2 Installation and Quick Setup Guide**

# **1** Physical Installation

# 1.1 Preparation

Before connecting network lines, please verify the following items:

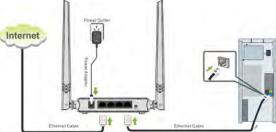
Wireless Router       Used with the provided power supply         PC       Installed with IE8 or other better web browsers.         Ethenet Cable       Used for linking the PC to the router         Broadband Service       Provided by ISP	Item
Ethenet Cable       Used for linking the PC to the router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

### **1.2 Physical installation**

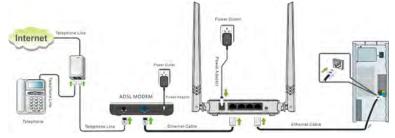
1. Connect one end of the included power adapter to the device and plug the other end into a wall outlet nearby.(Using a power adapter with a different voltage rating than the one included with the device will cause damage to the device)



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. If it is connected to the telephone line, please link the telephone line to the MODEM and connect the MODEM to the WAN port on the device.



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

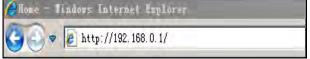
# 2 Internet Connection Setup

### 2.1 Log in to Web Manager

1. Launch a web browser, such as IE Web browser;



2. In the address bar, input 192.168.0.1 and press Enter;



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

<b>(</b> )1	Tenda	11N W	/ireless R	outer Lo	gin Scree	en - Microsoft Internet Explorer	
Ele	Edit	View	Favorites	<u>T</u> ools	Help		
Add	ess 🦉	http://	192, 168.0.	1/login.asp			
	7	e	nd	a			
				Lo	gin		
						Default: admin Password:	
						OK Cancel	

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

enda	
Internet Connection Setup Internet Connection Type	C PPPE @ DHCP For other correction types, click " <u>Advanced</u> "
Wireless Security Setup Security Key	Default: (2343678
	OK Cancel

5. If you fail to log in to it, please refer to Appendix 3 FAQs.

### 2.2 Internet Connection Setup

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.

Tenda			
Internet Connection		O PPPoL Orice	-1 dvanced*
Wireless Security	Setup		
Secu	rity Key		
_	-	Default: 12343678	
3-	-	K Cancel	

#### 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.

		_	
Internet	Connection Setup	-1	
Int	ernet Connection Type	O PPPoE O DHCP	
	PPPoE Username	075502462880@163.gd	
	PPPOE Password		-2
		For other connection types, click "	itvanced"
wind	ass Security Setup-		
	Security Key		
		Default: 12345678	_

# **∆**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 1.2: Internet Connection Setup.

# **3 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.

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 Advanced Witeless QoS Applications
Scenix .	WAN Status
Internet Connection Setup	
MAC Clone	Connection Status Connected Internet Connection Type DHCP
WAN Speed	WAN IP 192 166 10.10 Subnet Mask 255 255 255 0
LAN Settings	Gateway 102 168 10.1 DNS Server 100 100 100 100
DNS Settings	Alternate DNS Server Connection Time 00:01:33
OHCP Server	Release Release
DHCP Client List	

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.

	Home Advance	wireless.	Qu5	Application
Status	WAN Status			
Internet Connection Setup	Connection Status	Disconnected		
MAC Clone	Internet Connection Type	DHCP		
WAN Speed	WAN IP			
LAN Settings	Subnet Mask			
DNS Settings	Gateway			
DHCP Server	DNS Server			
DHCP Client List	Alternate DNS Server			
	Connection Time	00:00:00		
	Disgnose Connection Status	Please check hardware		100 M 100

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.

Tenda'				
	Home Advance	ed Wireless	QoS	Applications
Status.	WAN STATUS			
Internet Connection Setup	Connection Status	Connecting		
MAC Clone	Internet Connection Type	DHCP		
WAN Speed	WAN IP			
LAN Settings	Subnet Mask			
DNS Settings	Gateway			
DHCP Server	DNS Server			
DHCP Client List	Atternate DNS Server			
	Connection Time	00:00:00		
	Diagnose Connection Status	Please check hardware	connection of th	e WAN port

# **∆**Note:

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

- 1). You have connected to Internet successfully.
- 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.

# 4 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.

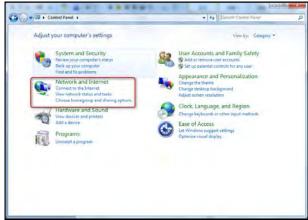
### **WIN7** Operation

1. If you are using Windows 7 OS, do as follows:

1) Click **Start** and select **Control Panel**.



2) Click Network and Internet.



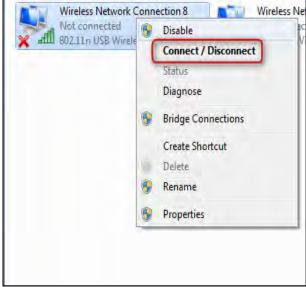
3) Click Network and Sharing Center.



4) Click Change adapter settings.

Control Panel Home	View your basic network information and set up connections
Manage wrefes networks Change sdeptir (etting) Change advanced sharing settings	TEST-PC     T
See allow HomeGroup	Cennet or reconnect to a wireles, wirel, dai up, or VPN network connection.  Choose transports and thing geton: Access files and printers located on other network computers, or change sheing settings.  Table Standards polytems Degress and repair network problems, or get traublesheating information.

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



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



7) Enter the security key and click OK.

Connect to a Net	work	X
Type the netwo	ork security key	
Security key:		
	V Hide characters	
		OK Cancel

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

Tenda_home Internet access			111
Wireless Network Con	nection	^	
Tenda_home	Connected	Iter	
AirLink0000c8		lite	
Broadcom2.4g		lin.	
W45AP_For_TEST		line,	
N6		lite	
test_xhh_N300		Ille	
Andy_5G		lite	
test_kiss		-11	
test_xhh_N300 Andy_5G		lice lice lice	

#### Windows XP Operation

2. If you are using Windows XP OS, do as follows:

1) Click Start and select Control Panel.



2) Click Network Connections.



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



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

(a) Wireless Netwrok Connec	tion
Network Tasks	Choose a wireless network
🛃 Refresh network list	Click an item in the list below to connect to a wireless network in range or to get more information.
Set up a wireless network for a home or small office	(( )) Tenda_home Automatic 🗙 Automatic 🗙
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
Change advanced settings	The network Tenda_home' requires a network key (also called a WEP key or WPA key). A network key helps prevent unknown intruders from connecting to this network.
	Type the key, and then click Connect.
	Network (sey:
	ConnectCancel
	<u>C</u> onnect

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



# **Chapter 3 Advanced Settings**

# 1 Advanced

### 1.1 Status

Here you can see at a glance the operating status of the device. If WAN port displays **Disconnected**, please refer to <u>3 Verify Internet Connection Settings</u>.

	Nome Advar	nced W	ireless	QoS	Applicatio
Status	WAN Status				
Internet Connection Setup	Connection Status	Connected			
MAC Clone	Internet Connection Type	DHCP			
WAN Speed	WAN I				
LAN Settings	Subnet Mas				
DNS Settings	Gatewa				
DHCP Server	DNS Serve				
DHCP Client List	Alternate DNS Serve				
	Connection Time	00:00:00			
	Diagnose Connection Statu		eck hardwar	e connection o	of the WAN port.
	System Status	Releas	e Ref	resh	
	LAN MAC Addres	C8:34:35	00:00:90		
	WAN MAC Addres	C8:9C:DC	:54:90:77		
	System Time	2011-04	-01 08:18:3	4	
	Running Time	08:18:34			
	Connected Clien	1			
	System Version	V\$.07.54	.en		
	Hardware Version	V1.0			

#### **1.2 Internet Connection Setup**

### 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.

Tenda				
	Home Advance	ed Wireless	Qa5	Application
Status	Internet Connection S	etup		
Internet Connection Setup	Internet Connection Type	PPPOE	-	
MAC Clone	PPPoE Username	Enter unormanne provo		
WAN Speed	PPPoE Password			
LAN Settings	MTU	1492		
DNS Settings	MIG	(The default value is 14	92. Do not modif	y it unless
DHCP Server		required by your ISP.)		
DHCP Client List	Service Name			
		Only enter this information	tion if instructed i	by ISP.)
	Server Name			
		(Only enter this informa	ition if instructed I	by ISP.)
	Select the corresponding con-	nection mode according t	o your situation	
		Connect automatica Internet after rebooting failure		

### 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.

	0		
Status	Internet Connection Se	etup	
Internet Connection Setup	2 Internet Connection Type	Static IP	<u> </u>
MAC Clone	(P Address	192.168.100.90	•
WAN Speed	Subnet Mask	256 255 255 0	3
LAN Setzings	Galeway	192 168 100 1	
DNS Settings			
DHCP Server	DNS Server	172.10.100.205	0
DHCP Client List	Alternate DNS Server	8888	(Optional)
	MTU	1500	
		(The default value is 1500. I required by your (SP.)	De not mobily is unless

- 1. Click Advanced.
- 2. Click Internet Connection Setup.
- 3. Internet connection Type: Select Static IP.

- 4. IP Address: Enter the IP address provided by your ISP. Consult your ISP if you are not clear. Consult your ISP if you are not clear.
- 5. Subnet mask: Enter the subnet mask provided by your ISP.
- 6. Gateway: Enter the WAN Gateway provided by your ISP.
- 7. DNS Server: Enter the DNS address provided by your ISP.
- 8. OK: Click it to save all your settings.

# 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 Advance	Wireless	QoS	Applications
Status	Internet Connection 3			
	Internet Connection Type	DHCP	1	-
MAC Clone	MTU.	1500		
WAN Speed			is 1500. Do not mor	dify is unless
LAN Settings		required by your I	SP-3	
ONS Settings		OK (	ancet	
DHCP Server			- de le col	
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.

# РРТР

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 Advance	Wireless	Qo5	Application
Status	Internet Connection S	etup		
Internet Connection Setup	Internet Connection Type	PPTP		
MAC Clone	PPTP Server Address			
WAN Speed	Username			
LAN Settings				
DNS Settings	Password			
DHCP Server	МТЦ	1452		
DHCP Client List	Address Mude	Dynamic		
	IP Address	0,0,0,0		
	Subnet Mask	0000		
	Gateway			

- 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.

#### 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.

	Home Advance	Wireless	Qo5 Applicati	on
Status	Internet Connection Se	etup		
Instant Connection Septe	Internet Connection Type	L2TP		
MAC Clone	L2TP Server Address			
WAN Speed	Usernàmie			
LAN Settings				
DNS Settings	Password			
DHCP Server	ATTL	1452		
DHCP Client List	Address Mode	Dynamic		
	IF Address	0.0.00		
	Submet Mask			
	Gateway	0.000		

- a) Internet connection Type: Displays the current Internet connection type.
- b) L2TP Server Address: Enter the IP address of a L2TP server.
- c) User Name: Enter your L2TP username.
- d) Password: Enter the password.
- e) 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.
- f) 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.
- g) **IP Address:** Enter the IP address provided by your ISP. Consult your ISP if you are not clear.
- h) Subnet mask: Enter the subnet mask provided by your ISP.
- i) **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.

### **PPPoE Dual Access**

PPPoE dual access only supported in special Area e.g.Russia.

	Home	Advanced	Wireless	QuS	Applicatio
Status	Internet Conne	ction Setu	ip .		
Internet Connection Setup	Internet Connecti	on Type	PPPoE Dual Access		]
MAC Clone	PPPoE Us	ername	Enter usemarne provid	ad pyr ISP	
WAN Speed	PPPoE Pa	ssword	Entel pasavoro provida	ed by AISP	
LAN Settings		MTU	1492		
DNS Settings			The default value is 1		odify it unless
DHCP Server		1	equired by your ISP.)		
DHCP Client List	Servio	e Name	Only enter this inform	mation if instru	cted by ISP.)
	Serve	r Name			
		0	Only enter this inform	mation if instru	cted by ISP.)
	Addre	ss Mode	Dynamic		
	IP)	Address			
	Subn	et Mask			
		мти	1500		
			The default value is T equired by your ISP.)		odify it unless

- 1. Internet connection Type: Displays the current Internet connection type.
- 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 value unless necessary.
- 5. Service Name: Description of PPPoE connection. Leave blank unless otherwise required.
- 6. Server Name: Description of server. Leave blank unless otherwise required.
- 7. 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.
- 8. **IP Address:** Enter the IP address provided by your ISP. Consult your ISP if you are not clear.
- 9. Subnet mask: Enter the subnet mask provided by your ISP.

#### 1.3 MAC Clone

Some Internet service providers (ISPs) require end-user's MAC address to access their network. This feature copies the MAC address of your network device to the router.

Tenda						
	Home	Advanced	Wire	fess	QoS	Applications
Status	MAC Clone					
Internet Connection Setup	MÁC	Address C690	DC 54 90	17		
MAC Classic		Restore Def	- mining	Pres	e MAC Address	
WAN Speed		Ucover Dee	No INTO-	çiği	ie moo nouices	
LAN Settings			OK	Cance	8	
DNS Sectings						
DHCP Server						
DHCP Client List						

- 1. MAC Address: Configure 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.

# 1.4 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.

	Home Advanced	Wireless	QoS	Application
Status	Choose The WAN Speed			
Internet Connection Setup	# AUTO			
MAC Clone	C TOM HALF-duplex			
WAN Speed	C 10M FULL-dublex			
LAN Settings	C 100M HALF-duplex			
DNS Settings	line in			
DHCP Server	OK	Cancel		
DHCP Client List				

### 1.5 LAN Settings

Click Advanced > LAN Settings to enter the screen below:

Tenda					
	Home	dvanced	Wireless	QoS	Applications
Status	LAN Settings				
Internet Connection Setup	This page is used to	set the base	network garamete	rs for LAN.	
MAC Clune	LAN MAC Add	ress C8 3A	35 00 00 90		
WAN Speed	IP Add	ress 192.1	58.0.1		
LAN Seminor	Taionet &	task 255.2	55 255 0	2	
ONS Settings					
DHCP Server			OK Car	ncel	
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.

**Note** : If the default IP address is changed, you must enter the new IP address to log in.

### **1.6 DNS Settings**

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

Tenda		
	Home Advanced Wireless C	205 Applications
	0	
Status	DNS Settings	
Internet Connection Setup	Enable Manual DNS	
MAC Clane	aseithumane	
WAN Speed	Frimary DNS Address 172:16:100:206	
LAN Settings	Alternate DNS Address 8.8.8.8	(Optional)
DNG Section()	Note: To activate new settings, you must rebeat the device.	
DHCP Server	G OK Cancel	
DHCP Client 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 such addresses (optional).

4. OK: Click to save your settings.

# ∕∆<sub>Note:</sub>

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

### 1.7 DHCP Server

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).

Tenda	Home Adva	nced	Wireless	QuS	Applications
Status	DHCP Server				
Internet Connection Setup	DHCP Server	Enable			
MAC Clone	IP Pool Start Address	192 168.0	100		
WAN Speed	IP Pool End Address	192.168.0	150		
LAN Settings	Lease Time	One day		•	
DNS Settings		child day		-	
DHCP Server		0	Canci	el	
DHCP Client List					

### 1.8 DHCP Client List

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 Adv	anced Wire	less QoS	Applicati
Status	Static Assignment			
Internet Connextion Setup		2 168 0 123	-	
MAC Clané	MAC Address	B0 C2 03	_	10
WAN Speed		0		
LAN Settings	NO. IF Address	MAC A	idress	Delete
DNS Semings	1 192.168.0.13	00 80 0	2.03.58.05	Delete
DHCP Server	DHCP Chept List			
Diet D'Cheng Linz	Refresh			
	Host Name	IP Address	MAC Address	Lease Time
	INVE-20130520ND	192.168.0.101	C8.9C/DC:54:90:77	00:00:24

- 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.

# **2** Wireless Settings

#### 2.1 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. For example, select 2437MHz (channel 6) and leave other options unchanged and then click **OK**.

Tenda	Home Adva	nced Wireless	QoS	Applications
Wireless Basic Settings Wireless Security Access Control Wireless Extender Wireless Connection Status	Home Adva Wireless Basic Settr Enable Wireless Network Mode Primary 5510 Secondary 5510 SSID Broadcast All Isolation Channel Bandwidth Extension Channel WMM Capable		able	Applications           ①           ②
	APSD Capable	C Enable @ Dis	able	

- 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.

### 2.2 Wireless Security

#### Wireless Security Setup

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.)
- 3. 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.
- 4. Click OK to complete your settings.

	Home	Advanced	Wireless	QaS	Application
Wireless Basic Settings	Wireless Se	curity Setup			
Wireless Security	Se	lect SSID Tend	s_000090		0
Access Control	Secur	ity Mode WPA	- PSK(Recommende	-	-
Wireless Extender	WPA AI	porithms . AE	S(Recommended)	C TKIP	TKIP&AES
Wireless Connection Status					0
		Defaul	t: 12345578		
		To con below Settings Ø Di	_		sable the WPS
	<b>W</b> L				Reset 008
		a	OK Cano		

# **△Note** :

You can also select other security modes as you need.

### 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 the way below:

Press the hardware WPS button on the router for about 1 second and then enable

WPS/PBC on the client device within 2 minutes;

Tenda	Home Advanced Wire	eless QoS Applicatio
Wireless Basic Settings	Wrieless Security Secup	
Winnless Sussensi	Select 550 Tenda_000090	0
Access Control	Security Mode WPa - P3k Req	conmiended)
Wireless Extender	WPA Algorithms @ AES(Recomm	rended) of THUP of THUPBARS
Wireless Connection Status	Security Key Default 123455	
		indexs security key, disable the WPS below P Enable  P N
		Reset 00B
		Cancel

**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;

Tenda	Home Advanced Wireless QoS Application
Wireless Basic Settings	Wireless Security Setup
Wirelass Sourry	Select SSID Tenda_000090
Access Control	Security Mode VIPA - PSk(Recommended)
Wireless Extender	WPA Algorithms @ AES(Recommended) @ TKIP @ TKIP&AES
Wireless Connection Status	Security Key Defum: 12343678
	To configure a windess security key, classifie the WPS below: WPT Settings C Disable C Inable 2
	WP5 Mode C Pac PIN
	AF FIN Code 47497728
	Reset OOR

# **△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.

Tenda			
	Home Advar	iced Wireless	QoS Applications
Wireless Rasic Settings	Wireless Security Se	and b	
Warney ( Second)	Sefect SSID	Tenda_000090	- O
Access Control	Security Mode	WPA - PSK(Recommended)	2
Wireless Extender	WPA, Algorithms	@ AES(Recommended)	C THE C THEALS
Wireless Connection Status	Turning Key	******	
		Default 12345678	
		To configure a pireless secu	ity key, disable the WPS below
	WPS Settings	C Disable C Enable	0
	WPS Made	PBC C PIN	
	AP PIN Code	47497726	
			3 Reset ODB
		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.

# 2.3 Wireless Extender

# WISP Mode

If your router acquires Internet access from a wireless Access Point, please select WISP mode. Specific steps are as follows:

1. Click Wireless>Wireless Extender, select WISP mode and click Open Scan.



_		wireless	005 Applicate	ans.
Wireless Basic Semings	Wireless Extender			
Wireless Security	Extender Mode	WISP Mode	- 3	
Access Control	SSID			
Worsse Fallender 🛛 🕘	Channel	Acto select	2	
Wireless Connection Status	Security Mode	Disable	1	
		Open Scan	<b>D</b>	
		OK G	ancel	

2. Click **Open Scan**, select the AP you wish to connect, such as Tenda-000248, and click **OK**.

	tion	ne Adver	need	Wireless	945	As	10111 III III III
Wireless Basic Settings	Words	si Extender					
Wireless Security		Extender Mode	WISP M	0.00	3	-1	
Access Control		The page of	192:168.0	A says:		1	
Minute) Calendar		Mease deb 0	K to confirm t	o connect to selected	LAPI -		
Wireless Connection Status		3		ox	Cance		
		-		Close Scan			
	Select	SSID		MAC Address	Channel	Security	Signal Strength
	æ	Tends_000248	C8.1	A-35-00-02-48	10	none	54
	с	Tends_000062	00.9	0 4C 88 68 12	9	web/wpa	51

**3.** View and note down the wireless security settings: security mode, cipher type, security key.

Tenda	Hor	ne Adva	ncert	Wireless	QoS	- 81	optication
Wireless Desic Settings	Wirels	os Estender					
Wireless Security		Extender Mode	WidP Med	+	- 3	-	
Access Control		180	Tenda_00	0248			
Warenza Enternaler		Channiel	4			-1	
Wireless Connection Status		Security Mode	WPAPSK		(2		
		WFA Algorithms	@ AL5	C THE C	TKIPBALS		
		Sedamta Key			_		
				Close Scan			
	Select	5510	м	AC Address	Channel	Security	Signal Streogth
	e	Tenda_000248	C8.34	35 00 02 48	10	none	54

4. Click Close Scan and OK.

	Home Advar	wireless	Q05	Application
Wireless Basic Settings	Wireless Extender			
Wireless Security	Extender Mode	WISP Mode	1	
Access Control	SSID	Tenda_000248		
Windows Expension	Channel	۵.	H	
Wireless Connection Status	Security Mode	WPA-PSK	3	
	WPA Algorithms	C ALS C TRUP	C TRIPARES	
	Security Key			
		Open Scar		

5. Save the settings and the router will reboot automatically.

Wireless Basic Settings	Wireless Extender			
Nireless Security	Extender Mode	WISP Mode		
Access Control	SSID	Tenda_000248		
	Channel	6		
Nireless Connection Status		The page at 192.168.0.1		1.8
	Security Mode WPA Algorithms	Please click OK to save the se automatically.	ttings and the router	will reboot
	Security Key		OK	Cancel

6. Internet Connection Setup: Click Advanced>Internet Connection Setup, select Internet Connection Setup, such as DHCP, and click OK.

Tenda					
	Home	Advanced	Wireless	QoS	Applications
Status	Internet Conne	ction Set	up.		
Insurnes Connection Secure	Internet Connects	on Type	DHCP	-	-
MAC Clone			1500		
WAN Speed		0	the default value is 15	00 Do not mo	dity in unless
LAN Settings			equired by your ISP.)		
ONS Settings			OK Canc	et.	
DHCP Server			CH CAR		
DHCP Client List					

7. Click Advanced>Status and the connection status displays Connected.

Tenda				
	Home Advance	ed Wireless	QuS	Applications
Trease	WAN Status			
Internet Connection Setup	Connéction Status	Connected		
MAC Clone	Internet Connection Type	DHCP		
WAN Speed	WAN IF	92 168.0 102		
LAN Settings	Subnet Mash	255.255.255.0		
DNS Settings	Gateway	192 168.0.1		
DHCP Server	DNS Server	192 168 0 1		
DHEP Client List	Alsormate DNS Server			
	Connection Time	00.02-43		
		Release	Retrest	

# **△Note** :

- **1.** When the settings finished, remember to enter **Internet Connection Setup** to set up Internet connection.
- **2.** Verify that the SSID, channel, and security mode on the page match those of the added wireless network. If not, manually correct them.
- **3.** For the normal wireless connection between two routers, do not change this router's SSID settings, including SSID, channel, security mode and security key.

## **Universal Repeater Mode**

In this mode, the router will relay data to an associated root AP and AP function is enabled meanwhile. The wireless repeater relays signal between its stations and the root AP for greater wireless range. Steps are shown as below:

1. Click Wireless>Wireless Extender, select Universal Repeater in the

extender mode and click Open Scan.

	Home A	lvanced	Wireless	QāS	Applications
Wireless Basic Settings	Wireless Extend	er			
Wireless Security	Extender Mo	de Univer	sa) Repeater	1	
Access Control	5	90		_	
Wirelies) Extender	Ehan	nel Autos	elect		
Wireless Connection Status	Security Mo			1	
			Open Scan		

2. Click **Open Scan**, select the AP you wish to connect, such as Tenda-15058C, and click **OK**.

	minine Advanced Wireless Qos Applica	t)OD
Wireless Basic Seminge Wireless Security	Wirelinss Extender Eutenter Made Universal Reputer	
Access Control	The page at 192.168.0.1 says:	6
Manfront Date Street		
	Disage did on OF to confirm that you want to connect to this AD	
Wordess Commission Status	Please click on OK to confirm that you want to connect to this AP	
Contract of the local division of the local		-
Second States and States	OK Cancel Select 3500 MAC Address Channel Security Sig	-

**3.** View and note down the wireless security settings: security mode, cipher type, security key, etc., which should be in accordance with the upper device.

	HO	Advar	nced	Wireless	Qus	Ap	plication
Wireless Rasic Settings	Wirele	ns farender					
Wireless Security		Extender Mode	Unive	rsal Repeater	2	1	
Access Control		5510	Tenda	_15058C			
Wennets formation		Charmel	2			E	
Wireless Connection Status		Security Mode	WPA-	PSK			
		WPA Algorithms	C AL	стія с	TKIPAAEL		
		Security Key			_		
				Close Scan		-	
	Select	SSID		MAC Address	Channel	Security	Signal Strength
	*	Tenda_15058C		C8.3A 35 15:05 8C	2	webrivpa	31
	c	UK_TEST		C8:34:04:01 55:76	8	none	34

4. Click Close Scan and OK.

	Home Advar	wireless	005	Application
Wireless Basic Settings	Wirefess Extender			
Wireless Security	Extender Mode	Universal Repeater		
Access Control	\$310	Tenda_15058C		
Workers Commen-	Champel	0		
Wireless Connection Status	Security Mode	WPA-PSK	-	
	WPA Algorithms	C ALS C THE	C TRIPAALS	
	Security Kay			
		Open Scan	1	

5. Save the settings and the router will restart automatically.

Wireless Extender			
Eastender Mode	Universal Repeater	2	
SSID	Tenda_15058C		
Channel	2	2	
Security Mode WPA Algorithms			c will reboot
Security Key	Open Scan	OK	Cancel
	SSID Channel Security Mode WPA Algorithms Security Key	SSID Tenda_15059C Channel 2 Security Mode WPA Algorithms Security Key Open Scan	SSID Tenas_150500 Channel 2 Security Mode WPA Algorithms Security Key CC

#### 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:

 View and note down the wireless security settings: security mode, cipher type, security key, etc. on Router 1; Click Status>LAN Settings and check the IP address.

Tenda					
	Home A	dvanced	Wireless	Qos	Applications
Status	LAN Settings				
Internet Connection Setup	This page is used to	set the basic r	etwork parameters	for LAN.	
MAC Clone	LAN MAC Add	CS:34	\$5:00:00:90		
WAN Speed	IP Addr	ress 192.16	8.0.1		
LAN Settings	Lubret M	lask 255.24	55 255 0	1	
DN3-Settings			count motors		
DHCP Server			OK Canc	et	
DHCP Client List					

2.Click Wireless>Wireless Basic Settings to check router one's wireless basic settings.

Tenda	Home Adva	nced Wireless	QoS Applica	tiom
Winniem Jasse Settings	Wireless Basic Setti	ngs		
Wireless Security	Enable Wireless	9		
Access Control	Network Made	11bip/n mixed mode	-	
Wireless Extender	Primary 551D	Tanda_178503		
Wireless Connection Status	Secondary SSID	Tenda_000000		
	SSID Broadcast	@ Enable C Disable		
	AP Isolation	C Enable @ Disable		
	Channel	Channel 6(2437MHz)	2	
	Channel Eandwidth	C 20 C 20/40		
	Extension Channel	Channel 10(2457MHz)	-	
	WMM Capable	@ Enable C Disable		
	AP5D Capable	C Enable @ Disable		

3.Click Wireless>Wireless Security to check router one's wireless security settings.

	Home Adva	Wireless	Qo5	Application
Wireless Basic Settings	Wireless Security 5	etuğ		
Window Secondy	Select SSID	Tenda_178ED8		
Access Control	Sesurity Mode	WPA2 - PSK	-	
Wireless Extender	WPA Algorithms	@ AES C TKIP	C TRIPAASS	
Wireless Connection Status	Земати Кеу			
	WPS Settings	To configure a wireless © Disable C Enal		e the WPS below

4. Verify that DHCP server is enabled on Router 1: Click Advanced>DHCP Server.

Tenda					
	Home Ad	vanced	Wireless	Q05	Applications.
Statura	DHCP Server				
Internet Connection Setup	DHCP Serve	Er Fr En	able		
MAC Clone	IP Pool Start Addres	192.14	68.0 100		
WAN Speed	IP Pool End Addres	19716	58 0 150		
LAN Settings		100		-	
DNS Settings	Lease Tim	Gine a	daj	2	
(04) P Second			OK Can	cel	
DHCP Client List					

5.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;

#### Then do as follows:

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

_		- Analyse I		
Wireless Basic Settings	Wireless Extender			
Wireless Security	Extender Mode	WDS Bridge	-	
Access Control	55iD			
Wireless Essentiles	Channel	Auto select		
Wireless Connection Status	AP MAC Address		-	
	AP MAC Address	and a second	-	
	Security Mode	Disable Open Scan	1	

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

	Home Advanced Wireless	Qu5	Application
Wireless Basic Settings	Wireless Extender		-
Wireless Security	Extender Mode WDS Bridge	2	
Access Control	The page at 192.168.0.1 says:		X
	Please click on OK to confirm that you wan	t to connect to	this API
	Please click on OK to confirm that you wan		this API
	_		
Wreless Connection Status	Security Mode Disable Close Scan	K Ca	
	Security Mode Disable Cross Scan Select SSID	K Ca	channel Secu

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.

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

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

	Home Advanced Wireless QoS Application
Wireless Basic Settings	Wireless Security Setup
Windexs Steamy-	Select SSID Tenda_178ED6
Access Control	Security Mode WPA2 - PSK
Wireless Extender	WPA Algorithms C AES C TKIP C TKIPBAES
Wireless Connection Status	Security Key
	Defaurt 12145678
	To configure a wireless security key, disable the WPS below!
	WPS lettings C Disable C Enable
	OK Cancel

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 Qo5 Applica	nons
Status	DHCP Server	
Internet Connection Setup	DHCP Server	
MAC Clone	IP Pool Sourt Address 192-168.0. 100	
WAN Speed	# Pool End Address 192 168.0. 150	
LAN Settings	Lease Time One day	
DNS Settings		
	OK Cancel	
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 Basic Settings	Wireless Extender		
Wireless Security	Extender Mode	WDS Bridge	2
Access Control	SSID		
Wireless Enertier	Channel	Auto select	2
Wireless Connection Status	AF MAC Address	C8.3A 35.12 37:30	
	AP MAC Address		
	Security Mode	WPA-PSK.	
	WPA Algorithms	G AES C TKIP C	TKIP&AES
	Security Key		

#### 2.4 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.



Tenda						
	Home	Advance	d Win	eless	QoS	Applications
Wireless Basic Settings	Access Contro	4				
Wireless Security	Select	550 1	enda_178ED	8	-	
	MAC Address	Filter D	isable		2	
Wireless Extender						
Wireless Connection Status			OK	Canc	ei	

3.To permit a wireless device to connect to your wireless network, select Permit, 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.

**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:

Wreless Basic Settings Access Control Wreless Security Select SSID Tends_178ED0	
Wireless Security Select SSID Tenda_1706D9	
	0
Acars Convert MAC Address Filter Forbid	10
Nireless Extender MAC Address	
C8 3A 35 65 82 6E	Add 4

Step1. Select an SSID, say, Tenda\_178ED8.

Step2. Select **Forbid** 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.

#### **2.5 Wireless Client**

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

Tenda					
	Home Adv	anced	Wireless	Qo5	Applications
Wireless Basic Settings	Wireless Connecti	ian Statu	5		
Wireless Security	Select SSIC	Tenda	_179ED0	-	
Access Control	The currently connected	hosts list	Refresh		
Wireless Extender					
WHITE CONTERNA SAMAS	NO. MAC	Address		Sandy	vidth

 $\triangle$ Note: The bandwidth here refers to the channel bandwidth instead of wireless connection rate.

# **3 Bandwidth Control**

#### 3.1 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.

Tenda		
	Home Advanced Wireless Qo5 Applic	ations
Sendometh Donese	Bandwidth Control	
Traffic Statistics	Enable Bandwidth Control	
	IF Address 92.168.0. 100 - 100	
	Upload/Download	
	Bandwidth Range 128 - 128 (3) 1)	
	Enable P 5	
	Add To List (6)	
		Delete
	1 192.168.0.100~100 Upload 128~128 Edit	Delet
	OK Cancel	

- 1. Enable Bandwidth Control: Check or uncheck the box to Enable or disable the bandwidth control feature.
- 2. **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.
- 3. Upload/Download: Select to control bandwidth over data upload or download.
- 4. **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.).
- 5. **Enable:** Check to enable current rule. (When disabled, corresponding entry will not take effect though existing in fact.)
- 6. Add to List: Click to add current rule to the rule list.

7. **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.

#### 3.2 Traffic Statistics

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

Tenda	Home	Advan	iced N	Wireless	Qa	s A	pplication
Bandwidth Control	Traffic Sta Enable Traff		Enable				
	IP Address	Uplink Rate (KBvte/s)	Downlink Rate (KByte/s)	Sent Message	Sent Bytes MByte	Received Message	Received Bytes MByte
			OF	Car	ncel		

- 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.
- 2. 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.

## **4** Special Applications

#### 4.1 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.

	Home	Advance	d Wireless	QoS	Ар	plication
Port Range Forwarding	Port range	e forwarding is use	ful for web server	s, ftp servers, e-	mail serve	irs,
DMZ Host		d other specialized varding, the comm				
DDNS		AN port will be for				
UPNP Settings	NO. Star	t Port-End Port	LAN IP	Protocol	Enable	Delet
Static Routing	1. 21	- 21	192,168.0. 10	TCP -		п
Routing Table	2.	0	192.1	TO 3	0	п
	3.	4	192.168.0.	тср		п
	4.	-	192,168.0.	TCP		п
	5.	4	192.168.0.	TCP		п
	6.	-	192.168.0.	TCP		г
	7.	H	192.168.0.	TCP	1 .	г
	8.	-	192.168.0.	TCR		г
	9.	+	192.168.0.	TCP		п
	10.	H	192.168.0.	тср		Е
	Well-know	wn service ports:	FTP(21)	Add to ID	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: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.

	Home	Advance	Wireless	QoS	Applica	tion
Port Range Forwarding			ful for web server: I Internet applicat			
DDNS			unication request: warded to the spe			
UPNP Settings	NO. Start	Port-End Port	LAN IP	Protocol	Enable Dele	t
Static Routing	1. 21	- 21	192.168.0. 10	TCP 💌	-	
Routing Table	2.	H	192:168.0.	TCP 💌	n p	
	3.	+	192.168.0.	TCP 👻		
	4.	Н	192.168.0.	ТСР		
	5.	+	192.168.0.	TCP 💌	n n	
	6.	-	192.168.0.	TCP 👱		
	7.	-	192.168.0.	TCP 💌		
	8.	-	192.168.0.	TCP	п п	
	9.	-	192.168.0.	TCP .		
	10.	Н	192.168.0.	TCP 💌	E E	
	Mart I and	n service ports:	FTP(21)	Add to ID	i 🖬	

**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.

## 4.2 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.

Tenda	
	Home Advanced Wireless QoS Applications
Port Range Forwarding	DMZ Host
DM2 Hose	NOTE: When the DMZ host is enabled, the firewall settings of the DMZ host will not
DDNS	DMZ Host IP Address 192 158.0.100
UPNP Settings	🔽 Enable
Static Routing	
Routing Table	OK Cancer

**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.

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

**OK:** Click to enable your settings.

## **Mote:**

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

## 4.3 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.)

Tenda					
	Home	Advanced	Wireless	Q05	Applications
Port Range Forwarding	DONS				
DMZ Host	DDNS S	ervice 🕞 🐔 En	able C Disable		
(DIDNS)	Service Pro	wider dynde	ns.org	-	Sign up
UPINP Settings	User	name tenda		-	
Static Routing					
Routing Table	(as)	word 1234	56	_	
	Domain )	Varnie Benda	dyndns.org		
			DK Cant	ėl	

**DDNS Service:** Select to enable/disable the DDNS feature.

**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.)

User Name: Enter the registered user name.

Password: Enter the registered password.

Domain Name: Enter the domain name you register, say, tenda.dyndns.org.

OK: Click to activate your settings.

## **∆**Note:

This feature is usually used together with virtual server and is disabled by default. 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.

#### 4.4 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				
	Home Advance	d Wireless	Qo5	Applications
Port Range Forwarding	UPNP Settings			
DMZ Host	Enable UPw#	1		
DONS	and a second second			
UPNP Semigar		OK C	ancel	
Static Routing				
Routing Table				

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

## 4.5 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.

	Home Adv	anced Wire	less Qo5	Application
Port Range Forwarding	Statte Routing			
DMZ Host	Destination Network	Subnet Mask	Gateway	
DDNS	IP Address	_		-
UPNP Settings	192 168 88.0	255 255 255.0	192 168 10 2	Add
Routing Table	192.168.88.0	255.255.255.0	192.168.10.2	Delete

- **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: Specif 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.

## 4.6 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	Application		
Rea Barra Presiden	Routing Tabl						
Port Range Forwarding	souring rapi	e					
DMZ Host	Destination IP	Subnet Mas	k Gateway	Hops	Interface		
DDNS	192.168.0.0	255 255 25	5.0 192.168	0.0 0	br0		
UPNP Settings	Refresh						
Static Routing	Refresh						
Rawing Table							

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.

# **5** Security

#### 5.1 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.

RL Fants (setting)	Ditt. Filter Settings		
AC Address Filter Settings	Filter Mode	Forbid Only	<u> </u>
lient Filter Settings	Access Policy	(1)	-0
	Policy Name(Opponal)	baidu	
	Start IP	192,158.0. 192	
	End IP	192 168.0. 192	(3)
	URL Character String	baidu	
	Time	0 • 0 • • n •	0 - 0
	Day(s)	Sun 🕐 * Sat 👱	]@

- 1. Filter Mode: Select a proper filter mode, say, 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, baidu, (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, baidu.
- 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:

- 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, baidu, (It can only consist of numbers, letters, or underscore).
- 4. Start IP/End IP: Enter 2-254.
- 5. URL Character String: Enter baidu.
- 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.

## 5.2 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.

	Home Advanced Wijeless QoS Applica	tran
URL Filter Settings	MAC Address Filter Settings	
NAC Address Filter Settings	Filter Mode Forbid Only	
Client Filter Settings	Access Policy (1)	
	Folicy Name(Optional)	
	MAC Address 44 37 66 47 37 36	
	Day(s) Sun 🔄 - Sat	
	Enable 😿 Clear this bern Clear	
	OK Cancel	

- 1. Filter Mode: Select a proper filter mode, say, 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 (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.

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

	Home Adva	nced Wireless	Q05	Application
URL Filter Settings	MAC Address Filter	Settings		
	Filter Mode	Permit Only	-	
Client Filter Settings	Access Policy	(3)	2	
	Policy Name(Optional)	1		
	MAC Address	00 E4 A5 44	35 69	
	Time	0 • 0 • - 0		-
	Diay(s)	Mon 💌 - Fn	-	
	Enable	E Clear this item Cle	ar	
		OK Cance	el	

## 5.3 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**: Only PCs listed as Forbidden will be forbidden from accessing specified services; others are not restricted;

**Permit Only**: Only PCs listed as permitted will be permitted to access specified services; others will be forbidden.

Tenda			and the second				
	Hime	Adjuncted	Merelan	Quis	Applications	Security	Tanks
VRL fitter Settings	Class Hitar	Settings				-	
MAC Address Filter Settings	Tile	Vote Fam	1.9%)y	2	D	This section a	
Close (1914) and and you	*****	Maller (s)			0	stients can dr access the int	sannot
	19012 04-02	relana: 10		_	0	sectors in and stanites in and Salect a Policy	man
		14111	2.0 115	-	-	arop-down m	teru and
		Brd (7 192.)	68.D) 110		3	corresponder	ig field. You
		Part 82	- 10		0	restriction or in datali inclu	
		7104			ເຄ	time period. I days of the we	
		DH4 8.1			10	inhan Time Is	
		1990 E.A	A + 34	10		2:0. Un rules applies 24 fir	
	0	Enable 19	Clear this item	Clear			
		n	OH Can	44			

Filter Mode: Select Permit Only.

Access Policy: Select an access policy number, say, 1, from the drop-down list.

Policy Name: Briefly describe the current rule, say, 80.

**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.

Port: Specify TCP/UDP protocol port number (s), say, 80.

Type: Select Both.

**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.

Day(s): Specify a day or several days for a current rule to take effect.

Enable: Check/uncheck to enable/disable the feature.

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:

Tenda					1.1	
	Home Advi	inced wireline	0.05	Applications	Security	Tools
URL Rimer Seittings	Chand follow Setting					
MAE Address Filter Settings	Tiller Mode	Forbie Dety			This section al	
Classed Dillor Statilling;	Access Policy	W.	2		clients can or access the inte	Lamnot
	Philip Rame Optional	121			daviers 12 and Select a Fulicy	*5345.
	The P	192.168.0 100			drop-down me	nu std
	End IF	192.168.0 (20			corresponding	fuit You
	Pars.	1 - 09533			restriction or in detail inclus	
	Tiza.	Ser.			time period, an days of the way	
	Time.	· · ·		Ū.	When Time is 1	
	Tray(a)	200 B + 200	•		0.0. the rule is applied 24 h/s	
	English	P Dear this item	Citar			
		OK Can	el :			

- **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.

# 6 Tools

#### 6.1 Reboot

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

Tenda		
	Home Advanced Mileless 1000 Application	Security Tools
	Reform The Rouser	Help
Reptore To Factory Default	Click the justice to religit the spates:	Enbooring the router will
Sectors Restore	Reboot The Router	activate any modified instruction the couler. While
System		the numer is retaining. All connections will be last and
Revenue Reiz Management		reconnected automatically later
Time Settings		
Change Password		
Mopula		

## 6.2 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.

Tenda		E
	Home Advanced Wireless Ons Application	w Security Tools
Reboot	Restore To Factory Default	sector
Reserve For Factory Verlage	Dick this button to sensore all settings to factory default	At settings will be set back
Tackin Restore	Restore To Pactory Default	to default
Seving		Default Farrentd Admin
Remote Web Managamere		Delpain IF Address. 192 168 0 1
Time Settings		Gelauft heimes Mask
Change Fassword		253-255-255.0
Upprade		

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.

#### 6.3 Backup/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.

Tenda							
	Home	Advanced	Wireless	Qa5	Applications	Security	Tools
Raboot Restore To Factory Default Exclup (Restore Syslog	Backup/Restore Here you can Backup y with a saved configura Click here to save a co	tion file.			your router	Help Backup:Click button to save your router's configurations computer.	a copy of
Remote Web Management Time Settings	E.	5.R	Restore			Restore First "Browse" to bro computer and	owse your
Change Password Upgrade						configuration want to upload router. Then c 'Restore' butto upload your se apply the setti	file you I to your lick on the to to election and

2.Click OK to save the configuration file.

File Down	load 🛛 🔀
Do you wa	ant to save this file?
	Name: RouterCfm.cfg Type: Unknown File Type, 11.3 KB From: 192.168.0.1 Save Cancel 45
(?) +	While files from the Internet can be useful, some files can potentially nam your computer. If you do not trust the source, do not save this ile. <u>What's the risk?</u>

#### 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 in:	My Docume	ents	J G	o 📂 🖽 -	
My Recent Documents Desktop My Documents My Computer	RouterCfm.	-fg]			
My Network	File <u>n</u> ame:	RouterCfm.cfg		•	<u>O</u> pen
Places	Files of type:	All Files (*.*)		-	Cancel

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

_	Home: Advanced	Wireless	Clos	Applications	Security	Tools
Rebut	Bankup/Servicere				THE TOP	
Restring To Fattory Default	Here you can Backup your route	'E correct configuration	or or realized you	e rolei olti a	Birthep Click at	
termination of the local division of the loc	saved carifiguration file. Click Sere to Law a Konfiguration	Ne to your compute	+ Backup		to save a copy o router's configur	
Seslag					visit tompular	
Reissig Beb Management	Brow	rse- Restore			Broase' to broa	
Time Settings					somputer and an configuration for	elect the
Change Passworth					uphied to your t	outer. The
Upg/sd+					alies on the 'lies in spload your	
					and apply the se in that file	ettings pair

## 6.4 Syslog

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

Tenda				
	(tamé Advanced) Wireless 595 Applications	Security Tool		
Retroit	Sedag	Help		
Restore To Factory Default	Logs in page	Hele you can use the		
Berkap Restore	1 2011-04-01 00.00.00 maan Systems attent	bittery of the resider's actions. After 110 entries.		
since 1		the previous logs will be cleared automatically		
Revente Web Management				
Time Settings	Retreat			
Charge Passernit				
Upprade				

## 6.5 Remote Web Management

The Remote management allows the device to be configured and managed

remotely from the Internet via a web browser.

Tenda	Home Advanted Winsteat CaS	Applications Security Tools
Robust Nestere To Factory Default Sockar Robust Charles Constant Charles Passent Charles Passent United Passent	Content of the second of the s	Applications Security Tools Firstp This percent and a security Firstp This percent allows research to an analy the termination of a manage th totact meaning. Meet This is the management parts the percent built the cases the advection of the advection of defaults are management to the advection of the advection

- 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.

# **∆**Note:

- 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.

## 6.6 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.

Tenda				
	Home Advanced Wireless Qos Applications	Security	Tools	
Reliant	(www.Settings	itetp		
Restore To Factory Default	Time Zone	This page is as		
Berkup Remove	(GMT+0810) Beeing, Chongang, Hong Kong, Unamp	rauter's system sain shorse to 3		
lysing	Select Testomicad Time" Delaw	menually or per		
Remine Web Management	Contempted Tens 2013 Veak 6 Month 21 Day 18 Haar 57 Mende 35 Second	the system will	Automatically	
Tree Desease		connect to NTP synchronize the		
Change Password	OK Carrent	Home Configure	the set ( be	
Upg-sale		date only will be the device is di-		

# **∆**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.

## 6.7 Login Password

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

Tenda	Home Advanced Wrieless On's Applications	Saturny Tools
Rebour	Champe Ressanted	Help
Reissore To Fainory Default	Administrator Login Credentals	The section allows you to
Rackup Restore	Personnel must be alphy-moment	change the topic password. Device's default password (
System.	ters Passent	"admin" ill is advitable to charge il for better becurto
Campra Well Management	Electron New Parsonthi	Otherwise, anyone er your
Time Settings	Contain land Latitum	hetaork may access this unlity to view or charge you
Oleman Reconst.	OK Cancel	settings
lograde	Carden Participation	Old Passanet Leist der
		old dessourt. If you use the device for the first time, the
		developed is admin by

- 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.

## 6.8 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	Tunne Adjanced Wretest Cits Applications	Security Tools
Reboot Remore To Pactury Default Bankan Restme Inning Remore Reb Management Tame Settings Obagae Fasaward	Be supplied to their subset, and by the feature best to the feature terms of the terms of the term feature Beneric Beneric B	HELP. The lasses formatic are to found at sews introduct for found at sews introduct for the server to follow the serverments carefully. Once you have downloaded to formatic and should fit by the comparison of the top man

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 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 American- standard 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 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 2 Verify the WDS Connection**

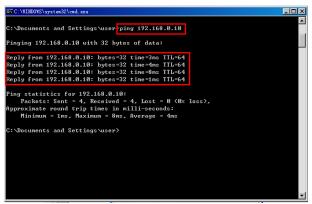


#### **Configure PC2:**

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



Input ping 192.168.0.1 and press Enter.



#### **Configure PC3 and PC4:**

1. Set PC3 and PC4 to Obtain an IP address automatically.

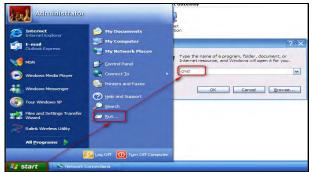
nternet Protocol (TCP/IP) Pro	perties ? 🗙
General Alternate Configuration	
You can get IP settings assigned au this capability. Otherwise, you need the appropriate IP settings.	tomatically if your network supports to ask your network administrator for
() Obtain an IP address automatic	cally 🗾 🐂 1
Use the following IP address:	
IP address	
S <u>u</u> bnet mask:	
Default gateway:	
③ O <u>b</u> tain DNS server address au	tomatically
O Use the following DNS server a	addresses:
Preferred DNS server:	
Alternate DNS server:	
	Ad <u>v</u> anced
2-	OK. Cancel

2. When the two PCs get IP addresses,

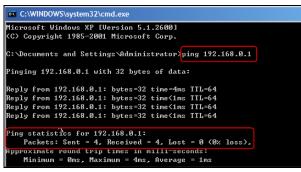
Local Area Connection Stat	us 🛛 ? 🔀
General Support	
Connection status	
Address Type:	Assigned by DHCP
IP Address:	192.168.0.201
Subnet Mask:	255.255.255.0
Default Gateway:	192.168.0.1
Details	ht
Windows did not detect problems connection. If you cannot connect Repair.	
	Close

try below steps to verify the WDS connection:

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



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



# ∕∆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.

# **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: support@tenda.com.cn or support02@tenda.com.cn. 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?

**a**.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.

**b**.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.

**c**. 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.

**d**. 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?

a.Check if there are other DHCP servers present in your LAN. If there are other DHCP servers except your router, disable them immediately.
b.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

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/Int Port on some products) fields, say, 80-80.

Step 5: 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 6: Select a proper protocol type: TCP, UDP, or Both depending on which protocol(s) your internal host is using.

Step 7: Click Enable and save your settings.

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

Server	Protocol	Service Port	
Web Server	ТСР	80	
FTP Server	ТСР	21	
Telnet	ТСР	23	
Net Meeting	ТСР	1503、1720	
MSN Messenger	TCP/UDP	File Send:6891-6900(TCP) Voice:1863, 6901(TCP) Voice:1863, 5190(UDP)	
PPTP VPN	ТСР	1723	
Iphone5.0	ТСР	22555	
SMTP	ТСР	25	
POP3	ТСР	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: 1.Right click "My Network Places" and select "Properties".



2.Click "Wireless Network Connection" and then select "Properties".

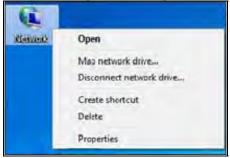


3.Click "Wireless Networks", select the item under "Preferred networks" and then click the Remove button.

neral Wireless Networks Advanced	
Use Windows to configure my wireless	network settings
Available networks:	
To connect to, disconnect from, or find o about wireless networks in range, click th	
Viet	w Wireless Networks
Automatically connect to available netwo below: I Tenda home (Automatic)	Move yp
	Move <u>d</u> own
Add Remove Pro	Move down

#### 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".

Add	Adapter properties	Profile types	Network and Sharing Center		0	
Netwo	rks you can view, mo	dify, and reorder	(2)			
1	Tenda_home	Sec	aity: WPA-Perzonal	Type: Any supported	Autometically connect	
1	Tenda_AAAABA	Sec	arby: WPA-Personal	Type: Any supported	Automatically connect	

# **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

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.