Tenda





Tenda F303 Manual





Chapter 1 Product Overview

1.1 Package Contents

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

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

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

1.2 Getting to know your router

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

Front Panel

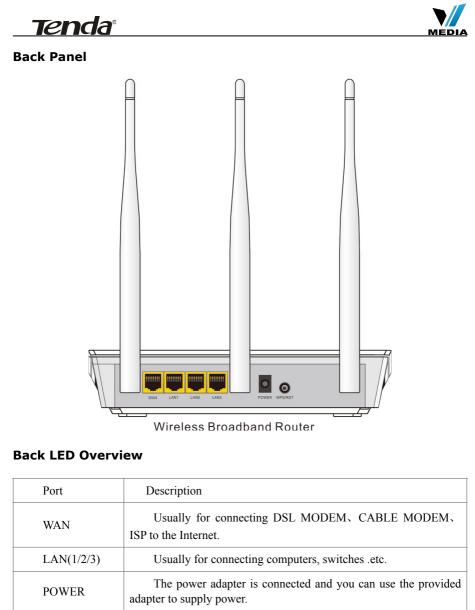


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Front Pannel

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



	When you press this button for 7 seconds, files set by the router
WPS/ RESET	will be deleted and restored to default factory settings; for 1 second, WPS will be enabled and the WPS LED will be blinking accordingly.

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1.3 Position your Router

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

- Near the center of the area where your computers and other devices operate, and preferably within line of sight to your wireless devices.
- So it is accessible to an AC power outlet and near Ethernet cables for wired computers.
- In an elevated location such as a high shelf, keeping the number of walls and ceilings between the router and your other devices to a minimum.
- Away from electrical devices that are potential sources of interference. Equipment that might cause interference includes ceiling fans, home security systems, microwaves, PCs, the base of a cordless phone, or a 2.4-GHz cordless phone.

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



2.1 Preparation

Before connecting Ethernet cables, please verify the following items:

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

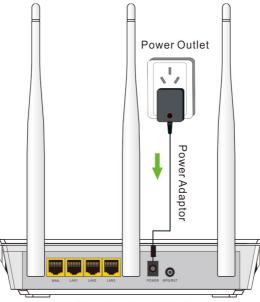
2.2 Physical installation

1. Connect one end of the included power adapter to the device and plug the other end into a wall outlet nearby.(Using a power adapter with a



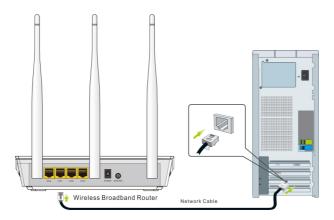


different voltage rating than the one included with the device will cause damage to the device.)

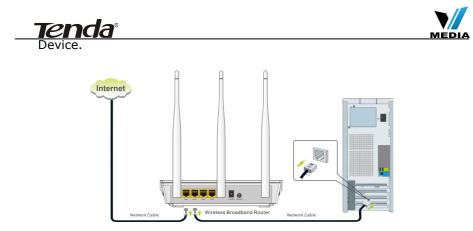


Wireless Broadband Router

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



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

2.3 Internet Connection Setup

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

2.3.1 Use Standard TCP/IP Properties for DHCP

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

2.3.2 Log in to Web Manager

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

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



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🗿 Tenda 11N Wireless Ro	uter Login Screen - Microsoft Internet Explorer	
<u>File Edit View Favorites</u>	<u>T</u> ools <u>H</u> elp	
Address 💰 http://192.168.0.1	/login.asp	
Tenda	2	
	Login	
	Default: admin Password:	
	OK 🔓	el

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

Tenda	
Internet Connection Setup Internet Connection Type	O PPPuE O DHCP For other connection types, click " <u>Advanced</u> "
Wireless Security Setup Security Key	Default: 12345678
0	K Cancel

2.3.3 Quick Internet Connection Setup

Two 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	COSS.
Internet Connection Setup Internet Connection Type	O PPPoE O DHCP For other connection types, click " <u>Advanced</u> "
Wireless Security Setup Security Key	Default: 12345678
3	K Cancel

2.3.4 Verify Internet Connection Settings

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

1. If you find "**Connected**" and a WAN IP address displayed there (as shown below), you have got a wired internet access now.

Tenda	Home Advanc	ed Wirel	ess QoS	Application
Status	WAN Status			
Status	Connection Status	Connected		
MAC Clone	Internet Connection Type	DHCP		
	WAN IP	192.168.10	0.10	
WAN Speed	Subnet Mask	255.255.25	55.0	
WAN Medium Type	Gateway	192.168.10	0.1	
LAN Settings	DNS Server	100.100.10	00.100	
DNS Setting	Alternate DNS Server			
DHCP Server	Connection Time	00:01:33		
DHCP Client List		Release	Refresh	

2. If connection status displays "Disconnected" and there is no WAN IP address displayed (as seen below), connection between the Internetenabled 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	dvanced	Wireless	QoS	Application
Status	WAN Status				
Internet Connection Setup	Connection Status	Disconnecte			
MAC Clone	Internet Connection Type	PPPoE	a		
WAN Speed	WAN IP Subnet Mask				
WAN Medium Type	Gateway				
LAN Settings	DNS Server Alternate DNS Server				
DNS Setting	Connection Time	00:00:00			
DHCP Server	Diagnose Connection Status	Please check	k hardware conne	ction of the W	/AN port.
DHCP Client List		Connect	Disconnect		

- 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 A	dvanced	Wireless	QoS	Applications
Status	WAN Status				
	Connection Status	Connectin	a		
MAC Clone	Internet Connection Type	PPPoE			
WAN Speed	WAN IP				
inan speca	Subnet Mask				
WAN Medium Type	Gateway				
LAN Settings	DNS Server				
-	Alternate DNS Server				
DNS Setting	Connection Time	00:00:00			
DHCP Server	Diagnose Connection Status			iternet Serv	ice Provider(ISF
DHCP Client List		please cor Connect	Disconnect		

∕∆Note:

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

- 1). You have connected to Internet successfully.
- 2). You might have entered a wrong user name and/or a wrong password. Please contact your ISP for the correct user name and password and enter them again.



3). Ethernet cable is not connected or not properly connected to the WAN port on the device. Please reconnect it properly.

4). No response is received from your ISP. Please verify that you can access Internet when you directly connect your PC to an Internetenabled modem. If not, contact your local ISP for help.

2.3.5 Wireless Settings Wireless Basic Settings

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

Tenda			
	Home	Advanced Wireless	QoS Applications
Wireless Basic Settings	Wireless Basic Setti	ngs	
Wireless Security	Enable Wireless	V	
Access Control	Primary SSID	Tenda_home	(1)
Wireless Connection Status	Secondary SSID		
	Wireless Working Mode	Wireless Access Point(AP)	C WDS Bridge Mode
	Network Mode	11b/g/n mixed mode	•
	SSID Broadcast		
	AP Isolation	C Enable	
	Channel	2437MHz (Channel 6)	1 2
	Channel Bandwidth	C 20 € 20/40	
	Extension Channel	2417MHz (Channel 2)	•
	WMM Capable	€ Enable	
	APSD Capable	C Enable	
		OK 3 Cancel	

Wireless Security Settings

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



Tenda			6		
	Home	Advanced	Wireless	QoS	Applicatio
Wireless Basic Settings	Wireless Security Se	tup			
Wireless Security	Select SSID	Tenda_DDF0E	8	•	
Access Control	Security Mode	WPA - PSK(Rei	commended)		2
Wireless Connection Status	WPA Algorithms	AES(Recommission)	nended) C	TKIP (TKIP&AES
	Security Key	•••••			3
		Default: 123450	578		
		To configure a v		key, disable	the WPS below!
	WPS Settings	O Disable	C Enable		
					Reset OOB

2.3.6 Connect to Device Wirelessly

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

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

1) Click Start and select Control Panel.



2) Click Network Connections.





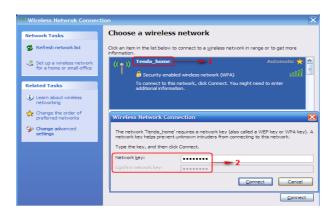
<u>Tenda</u>

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

LAN or High-Speed In	ternet
Local Area Connection Wirele Networ Connect	Disa <u>b</u> le <u>V</u> iew Available Wireless Networks

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





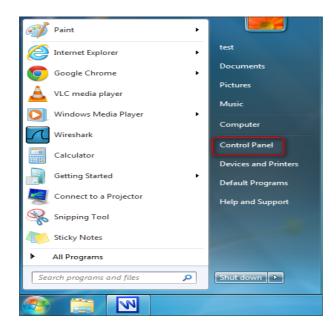
5) You can access Internet via the device when "**Connected**" appears next to the wireless network name you selected.

(9) Wireless Netwrok Connect	ion	×
Network Tasks	Choose a wireless network	
🛃 Refresh network list	Click an item in the list below to connect to a wireless network in r	ange or to get more
Set up a wireless network for a home or small office	((p)) Tenda_home	Connected 👷 🛆
	Security-enabled wireless network (WPA)	- 100
Related Tasks	((Q)) [est0111	
(i) Learn about wireless	Unsecured wireless network	
networking	((Q)) TEST 5G SSID 4	
Change the order of preferred networks	Unsecured wireless network	
Section 2010 Secti	((Q)) W1800R_DLNA	
settings	Unsecured wireless network	•0000
	((Q)) Andy_5G	
	🖁 Security-enabled wireless network (WPA)	
	((Q)) Tenda_5_00008C	
	Unsecured wireless network	• EOO 💌
		Disconnect

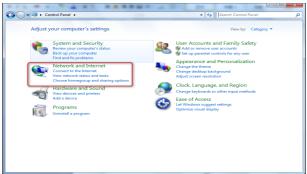
- 2. If you are using Windows 7 OS, do as follows:
- 1) Click Start and select Control Panel.

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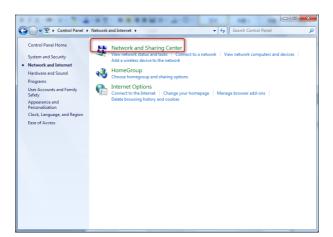


2) Click Network and Internet.



3) Click Network and Sharing Center.





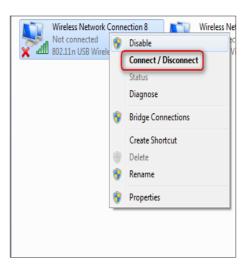
4) Click Change adapter settings.

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Control Panel Home	Network and Internet Network and Sharing Center + Search Control Panel
Manage wireless networks Change adapter settings Change advanced sharing settings	View your basic network information and set up connections
-	View your active networks Connect to a network You are currently not connected to any networks.
	Change your networking settings
	Set up a new connection or network Set up a new connection or network Set up a viertex, howshard, dia-lung, allor, or VPN connection; or set up a router or access point. Connect to a network Connect or accentect to a vierdess, wired, dial-up, or VPN network connection. Connect or accentect to a vierdess, wired, dial-up, or VPN network connection. Connect or accentect to a vierdess, wired, dial-up, or VPN network connection. Connect or accentect to a vierdess, wired, dial-up, or VPN network connection. Connect or accentect to a vierdess, wired, dial-up, or VPN network connection. Connect or accentect to a vierdess, wired, dial-up, or VPN network connection. Connect or accentect to a vierdess, wired, dial-up, or VPN network connection. Connect or accentect to a vierdess, wired, dial-up, or VPN network connection. Connect or accentect to a vierdess, wired, dial-up, or VPN network connection. Connect or accentect to a vierdess, wired, dial-up, or VPN network connection. Connect or accentect to a vierdess, wired, dial-up, or VPN network connection. Connect or accentect to a vierdess, wired, dial-up, or VPN network connection. Connect or accentect to a vierdess, wired, dial-up, or VPN network connection. Connect or accentect to a vierdess, wired, dial-up, or yet to vierdeshooting information.
See also	
See also HomeGroup	

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





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

AirLink0000c8	lite	*
N6	liter	
test_kiss	1000	=
Tenda_home	llee	L
Connect automatically	Connect	
test_xhh_N300	llee	
W45AP_For_TEST	Dee	
Andy_5G	Dee	
Tenda_000058	Sall	
IPCOM_Guest_000165	Sall.	
Tenda_0000B0	Sail.	-
Open Network and Sha	aring Center	

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

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Connect to a Netw	vork	X
Type the netwo	rk security key	
Security key:	•••••	
	Hide characters	
		OK Cancel

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

Currently connected to: Tenda_home Internet access		49	1 II
Wireless Network Conne	ection	~	
Tenda_home	Connected	liter	
AirLink0000c8		1000	
Broadcom2.4g		llee	
W45AP_For_TEST		llee	
N6		llee	
test_xhh_N300		llee	
Andy_5G		llee	
test_kiss			-
Open Network and	d Sharing Cen	ter	



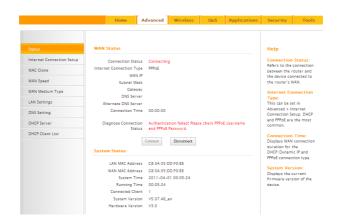


3.1 Status

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

Tend a'				
	Home Advar	nced Wire	eless QoS	Applications
	WAN Status			
Internet Connection Setup	Connection Status	Connected		
MAC Clone	Internet Connection Type	DHCP		
WAN Speed	WAN IP	192.168.1	0.10	
marspeca	Subnet Mask	255.255.2	55.0	
WAN Medium Type	Gateway	192.168.1	0.1	
LAN Settings	DNS Server	100.100.1	00.100	
	Alternate DNS Server			
DNS Settings	Connection Time	00:01:33		
DHCP Server				
DHCP Client List		Release	Refresh	

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



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

3.2 Internet Connection Setup

3.2.1 PPPoE

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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 Ad	lvanced	Wireless	QoS	Applications
Status	Internet Connection S	etup			
	Internet Connection Type	PPPoE		•	
MAC Clone		07550000			
WAN Speed	PPPoE Username	07553320	3873@163,go		
WAN Medium Type	MTU	1492			
LAN Settings			lt value is 1492. D	lo not modify i	t unless
DNS Setting		required b	y your ISP.)		
DHCP Server	Service Name	(Only enter	this information if	instructed by	ISP)
DHCP Client List	Server Name	()			
	Server Name	(Only enter	this information if	instructed by	ISP.)
	Select the corresponding conn	ection mode	according to your	situation.	
			t automatically: Co rnet after rebootin failure.		

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



3.2.2 Static IP

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

Tenda					
	Home Ad	lvanced	Wireless	QoS	Applications
Status	Internet Connection S	etup			
	Internet Connection Type	Static IP		•	
MAC Clone	IP Address				
WAN Speed	IP Address Subnet Mask	192.168.1			
WAN Medium Type	Gateway	255.255.2			
LAN Settings	DNS Server	192.108.1			
DNS Setting	Alternate DNS Server				(Optional)
DHCP Server	MTU	1500			
DHCP Client List			lt value is 1500. E y your ISP.)	Do not modify	it unless
		OK	Cancel		

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

3.2.3 DHCP

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



Tenda					
	Home A	dvanced	Wireless	Q05	Application
Status	Internet Connection 5	ietup			
	Internet Connection Type	DHCP		•	
MAC Clone	мти				
VAN Speed	MIU	1500 (The defau	lt value is 1500. [o not modify	it unless
WAN Medium Type		required b	y your ISP.)		
LAN Settings					
DNS Setting		OK	Cancel		
DHCP Server					
DHCP Client List					

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

3.2.4 PPTP

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

For example:

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



Tenda					
	Home	Advanced	Wireless	QoS	Applic
Status	Internet Connection	Setup			
	Internet Connection Typ	PPTP		•	
MAC Clone					
WAN Speed	PPTP Server Addres	202.100.1	92.134		
LAN Settings	Usernam	PPAP			
-	Passwor				
DNS Settings	MT	1402			
DHCP Server	Address Mod	e Dynamic		-	
DHCP Client List	IP Addres	s 0.0.0.0			
	Subnet Mas	k 0.0.0.0			
	Gatewa	v 0.0.0.0			

- 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.

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- 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.
- Address Mode: Select "Dynamic" if you don't get any IP info from your ISP, otherwise select "Static". Consult your ISP if you are not clear.
- 7. **IP Address**: Enter the IP address provided by your ISP. Consult your ISP if you are not clear.
- 8. Subnet mask: Enter the subnet mask provided by your ISP.
- 9. **Gateway**: Enter the WAN Gateway provided by your ISP. Consult your ISP if you are not clear.

3.2.5 L2TP

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

For Example:

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



	Home A	dvanced	Wireless	QoS	Applic
Status	Internet Connection S	ietup			
	Internet Connection Type	L2TP		•	
MAC Clone					
WAN Speed	L2TP Server Address	202.100.1			
LAN Settings	Username	I2tp_userr			
-	Password	•••••	••••		
DNS Settings	MTU	1452			
DHCP Server	Address Mode	Dynamic		•	
DHCP Client List	IP Address	0.0.0			
	Subnet Mask	0.0.0.0			
	Gateway	0.0.0.0			

- 1. **Internet connection Type:** Displays the current Internet connection type.
- 2. L2TP Server Address: Enter the IP address of a L2TP server.
- 3. User Name: Enter your L2TP username.
- 4. **Password:** Enter the password.

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- 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.

▲ 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.





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

Tenda'	Home	Advanced	Wireless	QoS	Application
Status	MAC Clone				
nternet Connection Setup	MAC Address	C8:3A:35:DD:	F0:E8		
MAC Clone					
/AN Speed	Restore	Default MAC	Clone MAC A	ddress	
AN Settings		OK	Cancel		
NS Settings					
HCP Server					
OHCP Client List					

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

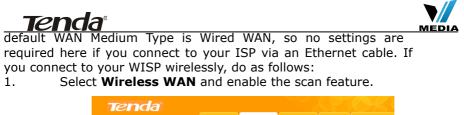
3.4 WAN Speed

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

Tenda						
	Home Advanced	Wireless	QoS	Applications		
Status	Choose The WAN Speed					
Internet Connection Setup						
MAC Clone	AUTO 10M HALF-duplex					
	O 10M FULL-duplex					
	C 100M HALF-duplex					
LAN Settings	C 100M FULL-duplex					
DNS Settings		0				
DHCP Server	OK	Cancel				
DHCP Client List						

3.5 WAN Medium Type

The device supports two WAN medium types: wired and wireless. Select Wired WAN if you need to connect to your ISP via an Ethernet cable or select Wireless WAN if you directly connect to your WISP wirelessly. The



ienda		Advanced Wireless QoS Applications			
	Home	Advanced	Wireless	QoS	Applications
Status	WAN Medium Type				
Internet Connection Setup	WAN Medium Type	O Wired WAN	Wireless	s WAN	> 1
MAC Clone	Complete below settings t	o connect to WISP	AP.		
WAN Speed	SSID	Tenda_123730			
WAN Medium Type	Channel	Auto Select		-	
LAN Settings	Security Mode	Disable		-	
DNS Settings		Ope	in Scan	2	
DHCP Server		OK	Cancel		
DHCP Client List					

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

Tenda						
		Home	Advanced	Wireless	QoS	Applicat
Status	WAN Me	dium Type				
Internet Connection Setup	WAN P	Aedium Type	O Wired WAN	Wireless	WAN	
MAC Clone			o connect to WISP A	.P.		
WAN Speed	SSID Tenda_123730					
WAN Medium Type		Channel	Auto Select			
LAN Settings	s	ecurity Mode	Disable		•	
DNS Settings			Close	Scan	4	
DHCP Server	Select	SSID	MAC Address	Channel	Security	Signal Strength
DHCP Client List		Tenda_office	C8:3A:35:AA:AA:BA	6	wep/wpa	76
	0	The page at 19	2.168.0.1 says:	×	wep/wpa	62
	0	Are you sure to c	onnect to this AP?		none	42
	0		3 🗕 ок	Cancel	none	59
	0	L	-		wep/wpa	24
	0	Nexxt_123545	C8:3A:35:88:12:1E	6	none	61
	0	test8888	C8:3A:35:44:38:00	6	wep/wpa	67

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

Te	nda [®] Tenda			
		Home	Advanced Wireless QoS Applications	
	Status	WAN Medium Type		
	Internet Connection Setup	WAN Medium Type	C Wired WAN 💿 Wireless WAN	
	MAC Clone	Complete below settings	o connect to WISP AP.	
	WAN Speed	SSID	Tenda_office	
		Channel	6	
	LAN Settings	Security Mode	WPA-PSK 🗾 📂 5	
	DNS Settings	WPA Algorithms		
	DHCP Server	Key	•••••	
	DHCP Client List	6	Open Scan	

- 1. **WAN Medium Type**: Select the WAN medium type you are going to use.
- 2. **Open Scan (or Scan)**: Click to search for available wireless networks in the area and select the one you wish to connect.
- 3. **SSID**: The wireless network name of the uplink wireless device.
- 4. **Channel:** The channel used by the uplink wireless device.
- 5. **Security Mode:** The security mode used by the uplink wireless device.
- 6. **WPA Algorithms (or Cipher Type):** The WPA Algorithm (or Cipher Type) used by the uplink wireless device.
- 7. **Key (or Security Key)**: The security key used by the uplink wireless device.
- 8. **OK**: Click this button and the router will restart to save your settings.

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

For example:

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

nda [®] Tenda	
	Home Advanced Wireless QoS Applications
	WAN Medium Type
Status Internet Connection Setup	· · · · · · · · · · · · · · · · · · ·
MAC Clone	WAN Medium Type C Wired WAN Vireless WAN
	Complete below settings to connect to WISP AP.
WAN Speed	SSID Myhome
WAN Medium Type	Channel 11 - 3
LAN Settings	Security Mode WPA2-PSK
DNS Settings	WPA Algorithms 💿 AES O TKIP O TKIP&AES 📥 🕇
DHCP Server	Key ******
	Open Scan

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

_	Home	Advanced	Wireless	QoS	Applications	Security	Tools
Status	Internet Connection S	šetup				Неір	
	Internet Connection Type	DHCP		~		DHCP:DHCP or	
MAC Clone	MTU					is a connection allows the route	r to
WAN Speed	MIO	1000	t value is 1500. D	o not modify i	t unless	automatically as information from	
WAN Medium Type		required by	your ISP.)			your existing ne equipment for h	
LAN Settings						access. No conf	igurations
DNS Setting		OK	Cancel			are needed if thi selected.	is option is
DHCP Server						Contact your ISP	
						you are not sure which internet of	

3.6 LAN Settings

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

Tenda [®]				(P		MEDI
	Home	Advanced	Wireless	QoS	Applications	
Status	LAN Settings					
Internet Connection Setup	This page is used to set th	a baric natwor	c parameters for I	AN		
MAC Clone	LAN MAC Address	C8:3A:35:DD		0.0		
WAN Speed	IP Address	192.168.0.1				
WAN Medium Type	Subnet Mask	255.255.255	0			
LAN Settings						
DNS Settings		OK	Cancel			
DHCP Server						
DHCP Client List						

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

3.7 DNS Settings

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

Tenda					
	Home	Advanced	Wireless	QoS	Application
Status	DNS Settings				
Internet Connection Setup	Enable Manual DNS	N			
MAC Clone	Assignment				
WAN Speed	Primary DNS Address	8.8.8.8			tional)
WAN Medium Type	Alternate DNS Address Note: To activate new setti	8.8.4.4 ings, you must r	eboot the device.	(Up)	tional)
LAN Settings		OK	Cancel		
DNS Settings		OK	Cancer		
DHCP Server					
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 2 such addresses (optional).
- 4. **OK:** Click to save your settings.





∕∧Note:

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

3.8 DHCP

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

Tenda			0		K)K
	Home	Advanced	Wireless	QoS	Applications
Status	DHCP Server				
Internet Connection Setup	DHCP Server	Enable			
MAC Clone	IP Pool Start Address	192.168.0.	200		
WAN Speed	IP Pool End Address	192.168.0.	212		
WAN Medium Type	Lease Time	One day		-	
LAN Settings		OK	Cancel		
DNS Settings					
DHCP Server					
DHCP Client List					

3.9 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.

Tend a'								
		Home	Advanced	Wi	reless Qo	5 Applications		
Status	Static	Assignmen	t			3		
Internet Connection Setup	IP	IP Address 192.168.0. 123						
MAC Clone	MAC	MAC Address 00 : B0 : C2 : 03 : 5B : C5						
WAN Speed		-				-		
WAN Medium Type	NO.	IP Address		MAC Address 00:80:C2:03:58:C5		Delete		
LAN Settings		132.100.0.1	23	00.80.02	.03.38.03	Delete		
DNS Settings	DHCP	Client List						
DHCP Server						Refresh		
DHCP Client List								
	Host N	ame	IP Address	N	IAC Address	Lease Time		
	INVE-20	130520ND	192.168.0.1	00 C	8:9C:DC:54:90:77	00:00:30		

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

∕∧Note:

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



Tenda[®] Chapter 4 Wireless Settings

4.1 Wireless Basic Settings

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

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

	Home	Advanced	Wireless	QoS	Applica
Wireless Basic Settings	Wireless Basic Setti	ngs			
Wireless Security	Enable Wireless				
Access Control	Primary SSID	Tenda_home			-1
Wireless Connection Status	Secondary SSID				
	Wireless Working Mode	Wireless A	ccess Point(AP)	O WDS Bri	dge Mode
	Network Mode	11b/g/n mixe	d mode	•	
	SSID Broadcast	Enable	C Disable		
	AP Isolation	C Enable	O Disable	_	
	Channel	2437MHz (Ch	iannel 6)		2
	Channel Bandwidth	O 20	20/40		
	Extension Channel	2417MHz (Ch	iannel 2)	•	
	WMM Capable	Enable	C Disable		
	APSD Capable	C Enable	O Disable		

- 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.



ANote:

Tenda

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

Tenda	Home	Advanced	Wireless	QoS	Application
	Wireless Basic Setti	ngs			
Wireless Security	Enable Wireless	2			
Access Control	Primary SSID	Tenda_home			
Wireless Connection Status	Secondary SSID				
	Wireless Working Mode	Wireless Ac	cess Point(AP)	O WDS Bri	dge Mode
	Network Mode	11b/g/n mixed	mode	-	
	SSID Broadcast	Enable	C Disable		
	AP Isolation	C Enable	O Disable		
	Channel	2437MHz (Ch	annel 6)	•	
	Channel Bandwidth	C 20 6	20/40		
	Extension Channel	2417MHz (Ch	annel 2)	•	
	WMM Capable	Enable	C Disable		
	APSD Capable	C Enable	O Disable		
		OK	Cancel		

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

Tenda			<u> </u>		CK.
	Home	Advanced	Wireless	QoS	Applications
	Wireless Basic Setti	ngs			
Wireless Security	Enable Wireless				
Access Control	Primary SSID	Tenda_home			
Wireless Connection Status	Secondary SSID	Tenda_home	1		— 1
	Wireless Working Mode	Wireless A	ccess Point(AP)	O WDS Bri	idge Mode
	Network Mode	11b/g/n mixed	i mode	-	
	SSID Broadcast	Enable	C Disable		
	AP Isolation	C Enable	Oisable		
	Channel	2437MHz (Ch	annel 6)	-	
	Channel Bandwidth	C 20	20/40		
	Extension Channel	2417MHz (Ch	annel 2)	-	
	WMM Capable	Enable Enable	C Disable		
	APSD Capable	C Enable	Oisable		
	2 -	ок	Cancel		

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

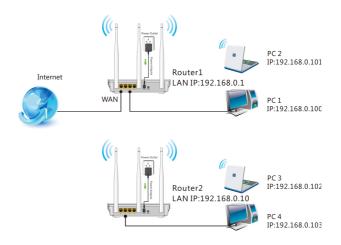
4.1.2 WDS Bridge Mode

WDS Bridge Mode: wireless distribution system (WDS) is a system enabling the wireless interconnection of access points in an IEEE 802.11





network. It allows a wireless network to be expanded using multiple access points without the traditional requirement for a wired backbone to link them. Note: The Access Points you select MUST support WDS.



For example:

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

Before you get started:

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

Tenda	Home	Advanced	Wireless	QoS	Applicatio
Wireless Basic Settings	Wireless Security Security	etup			
Wireless Security	Select SSID	Tenda_DDF0		-	
Access Control	Security Mode	WPA - PSK(R	ecommended)	-	
Wireless Connection Status	WPA Algorithms	AES Recon	imended) C	TKIP	TKIP&AES
	Security Key	Default: 1234	678		
	WPS Settings	To configure a Disable	wireless security O Enable	key, disable ti	he WPS below! Reset OOB
		OK	Cancel		

2. Verify that DHCP server is enabled on Router 1.

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3. Set the LAN IP address of Router 2 to a different address yet on the same net segment as Router 1.

As shown below:

Router 1: LAN IP: 192.168.0.1; Subnet Mask: 255.255.255.0;

Router 2:

LAN IP: 192.168.0.10; Subnet Mask: 255.255.255.0;

Tenda	Home	Wireless	QoS	Applications
Status	LAN Settings			
Internet Connection Setup	This page is used to set the basic networ	rk parameters for LA	N.	
MAC Clone	LAN MAC Address C8:3A:35:AA	:AA:BA		
WAN Speed	IP Address 192.168.0.10	,		
LAN Settings	Subnet Mask 255.255.255	.0		
DNS Settings				
DHCP Server	ок	Cancel		

Then do as follows:

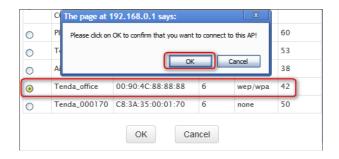
- 1. Configure Router 2:
- 1) Wireless Working Mode: Select WDS Bridge Mode.
- 2) Click **Open Scan** (or **Scan**) to search for Router 1.

	Ноте	Advanced	Wireless	QoS	Application
Wireless Basic Settings	Wireless Basic Sett	ings			
Wireless Security	Enable Wireless	V			
Access Control	Primary SSID	Tenda_home			
Wireless Connection Status	Secondary SSID	Tenda_home	1		
	Wireless Working Mode	C Wireless A	ccess Point(AP)	🐨 WDS Bri	dae Mode
	Network Mode	11b/g/n mixe	d mode	¥	
	SSID Broadcast	Enable	C Disable		
	AP Isolation	C Enable	C Disable		
	Channel	2437MHz (Ch	iannel 6)	-	
	Channel Bandwidth	C 20	20/40		
	Extension Channel	2417MHz (CP	iannel 2)	-	
	WMM Capable	Enable	C Disable		
	APSD Capable	C Enable	Oisable		
	Wireless Working M	lode: WDS(R	epeater mode	9	
	AP MAC Address				
	AP MAC Address				
	Note: SSID and channel w you select MUST also sup compatibility with your se	port WDS. WEP is			
		Oper	n Scan		
		OK	Cancel		



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

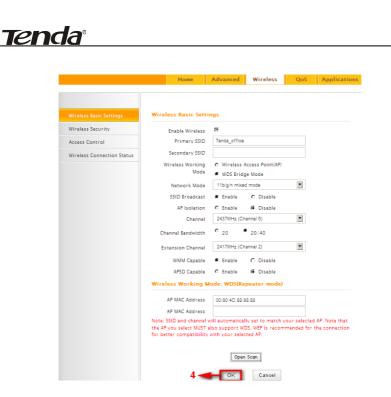
<u>Tenda</u>



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.

Tenda					
	Home	Advanced	Wireless	QoS	Applications
Wireless Basic Settings	Wireless Basic Sett	ings			
Wireless Security	Enable Wireless	E			
Access Control	Primary SSID	Tenda_office			
Wireless Connection Status	Secondary SSID				
	Wireless Working Mode	 Wireless / WDS Bridg 	Access Point(AP) ge Mode		
	Network Mode	11b/g/n mixe	d mode	-	
	SSID Broadcast	Enable	C Disable		
	AP Isolation	_	Disable		
	Channel	2437MHz (CF	nannel 6)		
	Channel Bandwidth	° 20	20/40		
	Extension Channel	2417MHz (Ch	nannel 2)	•	
	WMM Capable	Enable	O Disable		
	APSD Capable	C Enable	Oisable		
	Wireless Working N	lode: WDS(Re	peater mode)		
	AP MAC Address	00:90:4C:88:	88:88		
	AP MAC Address			_	
	Note: SSID and channel that the AP you select N connection for better c	IUST also suppo	rt WDS. WEP is r	ecommended	
		Close :	Scan		

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 S	ietup			
Wireless Security 1	Select SSID	Tenda_DDF0	E8	•	
Access Control	Security Mode	WPA - PSK(R	ecommended)	-	> 3
Wireless Connection Status	WPA Algorithms	AES(Recomplete)	nmended)	- ZKIP (TKIP&AES
	Security Key	Default: 1234	5678	5	
			wireless security	key, disable t	he WPS below!
	WPS Settings	Oisable	C Enable		Reset OOB
	6 📹	— ок	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					OK
	Home	Advanced	Wireless	QoS	Applications
Status	DHCP Server	1			
Internet Connection Setup	DHCP Server		-3		
MAC Clone	IP Pool Start Address	\square	200		
WAN Speed	IP Pool End Address	192.168.0. 2	212		
LAN Settings	Lease Time	Two days		*	
DNS Settings	4-	ок	Cancel		
DHCP Server					
DHCP Client List					

2. Configure Router 1:

Tenda

- 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.

	Home	Advanced	Wireless	QoS	Applications
Wireless Basic Settings	Wireless Basic Setti	ngs			
Wireless Security	Enable Wireless	T.			
Access Control	Primary SSID	Tenda_office			
Wireless Connection Status	Secondary SSID				
	Wireless Working Mode		Access Point(AP)		
		WDS Bridge		- 1	
	Network Mode	11b/g/n mixe		•	
	SSID Broadcast	Enable	O Disable		
	AP Isolation	C Enable	Oisable		
	Channel	2437MHz (Ch	annel 6)	-	
	Channel Bandwidth	° 20	20/40		
	Extension Channel	2417MHz (Ch	annel 2)	-	
	WMM Capable	Enable	O Disable		
	APSD Capable	C Enable	Oisable		
	Wireless Working M	lode: WDS(Re	peater mode)		
	AP MAC Address	C8:3A:35:12:	87:30	2	
	AP MAC Address		_		
	Note: SSID and channel w the AP you select MUST a for better compatibility	also support W	DS. WEP is recom		
		Open	Scan		
	3 🚤	ок	Cancel		



Tenda[®] 3. Configure PC3 and PC4:

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

Internet Protocol (TCP/IP) Prop	erties ? ×
General Alternate Configuration	
You can get IP settings assigned aut this capability. Otherwise, you need to the appropriate IP settings.	
⊙ <u>O</u> btain an IP address automatic	ally 🗕 🛌 1
Use the following IP address: -	
IP address:	
S <u>u</u> bnet mask:	
Default gateway:	
⊙ O <u>b</u> tain DNS server address auto	omatically
Use the following DNS server a	ddresses:
Preferred DNS server:	
<u>A</u> lternate DNS server:	
	Ad <u>v</u> anced
2 -	OK Cancel

2) When the two PCs get IP addresses,



📥 Local A	rea Connection Statu	is ?
General	Support	
Connec	tion status	
21	Address Type:	Assigned by DHCP
~ <u>4</u>	IP Address:	192.168.0.201
	Subnet Mask:	255.255.255.0
	Default Gateway:	192.168.0.1
	<u>D</u> etails	
	adid not detect problems wi on. If you cannot connect, a	
		Qiose

try below steps to verify the WDS connection:

<u>tenda</u>°

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.



	ft Windows XP [Version 5.1.2600 yright 1985-2001 Microsoft Corp	
C: \Docu	ments and Settings\Administrato	r)ping 192.168.0.1
Pinging	192.168.0.1 with 32 bytes of d	ata:
	rom 192.168.0.1: bytes=32 time=	
	rom 192.168.0.1: bytes=32 time< rom 192.168.0.1: bytes=32 time<	
Reply f	rom 192.168.0.1: bytes=32 time<	1ms TTL=64
	atistics for 192.168.0.1: kets: Sent = 4, Received = 4, L	aat = 0 (0% loop)
	mate round trip times in milli-	
	imum = Oms, Maximum = 4ms, Aver	

∕∧Note:

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

4.2 Wireless Security

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

- 1. Select the wireless network (SSID) you wish to encrypt.
- 2. Disable WPS. (WPS is enabled on the router by default. If you want to use other security modes, you must first disable the WPS.)
- 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.



Tenda	Home Advanced Wireless QoS Applica
Wireless Basic Settings	Wireless Security Setup
	Select SSID Tenda_DDF0E8
Access Control	Security Mode WPA - PSK(Recommended)
Wireless Connection Status	WPA Algorithms © AES(Recommended) C TKIP © TKIP&AES Security Key
	Security Key Default: 12345678

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:

Tenda

PBC: To use WPS-PBC, try two ways 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;
- Press the hardware WPS button on the router for about 1 second and then enable WPS/PBC on the client device within 2 minutes;

	Home	Advanced	Wireless	QoS	Applicatio
Wireless Basic Settings	Wireless Security Se	tup			
Wireless Security	Select SSID	Tenda_DDF0	E8	-	
Access Control	Security Mode	WPA - PSK(Re	ecommended)	*	
Wireless Connection Status	WPA Algorithms	AES(Recom	mended)	C TKIP	TKIP&AES
	Security Key	Default: 12345	678		
	WPS Settings	To configure a	wireless securit	y key, disabl	e the WPS below!
	WPS Mode		O PIN		Reset OOB



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					SOK.
	Home	Advanced	Wireless	QoS	Application
Wireless Basic Settings	Wireless Security S	etup			
	Select SSID	Tenda_DDF0	E8	_	- 1
Access Control	Security Mode	WPA - PSK(R	ecommended)	-	
Wireless Connection Status	WPA Algorithms	AES(Recon	nmended)	ткір 🦸	TKIP&AES
	Security Key	******			
		Default: 1234	5678		
		To configure a	wireless security	key, disable t	he WPS below!
	WPS Settings	O Disable	C Enable	2	
	WPS Mode	O PBC	PIN 657	71112	- 3
					Reset OOB
	4 -	- OK	Cancel		

∕∧Note:

- 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.



	Home	Advanced Wireless Q	oS Applica
Wireless Basic Settings	Wireless Security Se	tup	
	Select SSID	Tenda_DDF0E8	1
Access Control	Security Mode	WPA - PSK(Recommended)	-
Wireless Connection Status	WPA Algorithms	€ AES(Recommended) € TKIP	TKIP&AES
	Security Key	••••••• Default: 12345678	
		To configure a wireless security key, di	sable the WPS below
	WPS Settings	O Disable Enable 2	
	WPS Mode	© PBC O PIN	Reset O
		OK Cancel	

∕∆Note:

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

4.3 Wireless Access Control

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

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





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

- Step1. Select the wireless network (SSID) you wish to enable Access Control on.
- Step2. Select **Permit** from the corresponding drop-down menu.
- Step3. Enter the MAC address you wish to permit in the MAC address box and click **Add**.
- Step4. Click **OK** to save your settings. You can add more wireless MAC addresses you wish to allow.

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

Tenda			Ser 3	C K
	Home Advan	ced Wireless	QoS	Applications
Wireless Basic Settings Wireless Security Access Control	Access Control Select SSID	_DDF0E8		► 1
Wireless Connection Status	MAC Address Filter Permi	t		2
	MAC Address	E6	Opera Add	
	C8:3A:35:65:82:E6		Dele	te
	5	Cancel		

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

4.4 Wireless Client

Tenda'

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



Tenda								
	Home	Advanced Wireless	QoS	Applications	Security	Tools		
Wireless Basic Settings	Wireless Connection	on Status			Help			
Wireless Security	Select SSID	Tenda_DDF0E8			Here you can so wireless device			
Access Control	The currently connected	hosts list: Refresh			to the router.	s connected		
Wireless Connection Status					Bandwidth:Th			
	NO. MAC	Address	Bandwidth	h	frequency widtl connection. 401 for 802.11n sp	M is required		

<u>Tenda</u>

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



Tenda[®] Chapter 5 Bandwidth Control

5.1 Bandwidth Control

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

Tenda	Home Advanced Wireless QoS Applicatio
Bandwidth Control	Bandwidth Control
Traffic Statistics	Enable Bandwidth Control V Enable 1 IP Address 92.168.0. 100 v 100 2 Upload / Download Upload 3 2 Bandwidth Auge 128 120 Not v 4 Enable 2 120 Not v 4 Enable 6
	No. IP Range Destination Bandwidth Range Enable Edit Delete
	1 192.168.0.100~100 Upload 128~128 🗸 Edit Delete
	Cancel

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

For example:

If you are sharing a 4M broadband connection with a neighbor, who always



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

- 1. Check Enable.
- 2. Input "192.168.0.100" in both IP address boxes.
- Select Download.

Tenda

- 4. Enter "256" in both bandwidth range fields.
- 5. Check Enable.
- 6. Click Add To List
- 7. Click **OK**.

5.2 Traffic Statistics

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

Tenda	Н	ome	Advanced	Wirel	ess	QoS	Applicati
Bandwidth Control Traffic Statistics	Traffic Sta	itistics	Enable	Traffic Statisti	cs	-1	
	IP Address	Uplink Rate (K8vte/s)	Downlink Rate (KByte/s)	Sent Message	Sent Bytes MByte	Received Message	Received Bytes MByte

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

OK: Click to activate corresponding settings.

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

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

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

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

Sent Bytes: Displays the number of Bytes sent by a corresponding PC via the device since Statistics is enabled. The unit is MByte.

Received Message: Displays the number of packets received by a





Tenda[®] 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.



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.

		AN IP address.	he Internet to your r	outer's WAN po	ort will be for	rwarded to
NO.	Start Po	rt-End Port	LAN IP	Protocol	Enable	e Delete
1.	21	- 21	192.168.0 100	ТСР		
2.		-	192.168.0.	TCP	-	
3.		-	192.168.0.	TCP	~	
4.		-	192.168.0.	TCP	~	
5.		-	192.168.0.	TCP	~	
6.		-	192.168.0.	TCP		
7.		-	192.168.0.	TCP		
8.		-	192.168.0.	TCP	-	
9.		-	192.168.0.	TCP		
10.		-	192.168.0.	TCP	~	
Well-	-known se	ervice ports:	FTP(21)	Add to	ID 1	~

1. Start/End Port: Specify a range of ports between 1~65535 (for a



<u>Tenda</u>

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.

Note: If you include port 80 on this section, you must set the port for remote (web-based) management to a different number than 80, such as 8080, otherwise the virtual server feature may not take effect.

6.2 DMZ Host

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



Tenda	
	Home Advanced Wireless QoS Applications
Port Range Forwarding	DMZ Host
DMZ Host	NOTE: When the DMZ host is enabled, the firewall settings of the DMZ host will not
DDNS	function. DMZ Host IP Address 192.168.0.11
UPNP Settings	
Static Routing	Enable 2
Routing Table	3 de Cancel

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

∕∧Note:

Tenda

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

6.3 **DDNS**

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



	Home	Advanced	Wireless	QoS	Applicatio
				400	
Port Range Forwarding	DDNS				
DMZ Host	DDNS Service	Enable	C Disable		
	Service Provider	dyndns.org		- Sign	up.
UPNP Settings	Username	tenda			
Static Routing	Password	123456			
	Domain Name	tenda.dvndns	ora		

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

∕∧Note:

Tenda

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

6.4 **UPNP**

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



Tenda								
	Home	Advanced	Wireless	QoS	Applications	Security	Tools	
Port Range Forwarding	UPNP settings					Help		
DMZ Host	Enable UPn	P 🔽				UPnP(Universal		
DDNS						Play) allows Win systems to con		
		OK	Cancel			device for vario applications au		
Static Routing								
Routing Table								

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

6.5 Static Routing

Tenda

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.

Tenda								
	Home	Advanced	Wireless	QoS	Applications			
Port Range Forwarding	Static Routing							
DMZ Host								
DDNS	Destination Network	C Subnet Mask	Gateway					
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			
	4-	- ОК	Cancel					

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



Note:

- 1. Gateway must be on the same IP net segment as device's LAN/WAN IP address.
- 2. Subnet Mask must be entered 255.255.255.255 if destination IP address is a host.
- 3. Subnet Mask must be entered accordingly if destination IP address represents an IP network segment. It must correspond to the specified IP address. For example, for IP address of 10.0.0.0, you may enter a subnet mask of 255.0.0.0.

6.6 Routing Table

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

Tenda					SOK:
	Home	Advanced	Wireless	QoS	Applications
Port Range Forwarding	Routing Table				
DMZ Host	Destination IP	Subnet Mask	-		
DDNS			Gateway	Hops	Interface
	192.168.0.0	255.255.255.0	192.168.0.0	0	br0
UPNP Settings					
Static Routing	Refresh				

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.





7.1 URL Filter

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

Tenda					LY X
	Home	Advanced	Wireless	QoS	Applications
URL Filter Settings	URL Filter Settings				
MAC Address Filter Settings	Filter Mode	Forbid Only		•	
Client Filter Settings	Access Policy Policy Name(Optional) Start IP End IP URL Character String Time 8 8 9				6 7

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

Example:

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



Tenda						0	
	Home	Advanced	Wireless	QoS	Applications	Security	Tools
URL Filter Settings	URL Filter Settings					Help	
MAC Address Filter Settings	Filter Mode	Forbid Only				This section a	
Client Filter Settings	Access Policy	(t)				Control websit Select a policy -down menu (from the drop
	Policy Name(Optional)					describe it in	the
	Start IP	youtube				set the access	
						details includi address range	of devices,
	End IP	192.168.0. 2	54			time period, a days of the we	
	URL Character String	youtube				name can be full name(for e	
	Time	8 💌 0	• ~ 18 •	0 💌		www.google.o keyword(for e	om) or
	Day(s)	Mon	~ Fri 💌			google), but or	ly support one
	Enable	😰 Clear thi	s item: Clear			domain name	for one rule.
		OK	Cancel			Be sure to star Address of the want to filter i	

1. Filter Mode: Select Forbid Only.

Tenda

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

∕∧Note:

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

7.2 MAC Filter

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

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

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





MAC Address Filte	r Settings	General Support	Details 🔹 🤶
Filter Mode	Forbid Only	Network Connection Detail Property	Value
Access Policy		Physical Address IP Address Subnet Mask Default Gateway	00-0C-29-79-32-7A 192.168.0.201 255.255.255.0 192.168.0.1
Policy Name(Optional)	1	DHCP Server	192.168.0.1 2013-3-26 10:26:31
MAC Address	00 : 0C : 29 : 79 : 32 : 7A	Lease Expires DNS Servers	2013-3-28 10:26:31 8.8.8 10.0.0.254
Time		WINS Server	10.0.0.204
Day(s)	Sun 💌 ~ Sat 💌		
Enable	Clear this item: Clear		
	OK		Qose
			Qose

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

Tenda					
	Home	Advanced	Wireless	QoS	Applications
URL Filter Settings	MAC Address Filter	Settings			
MAC Address Filter Settings	Filter Mode	Permit Only			
Client Filter Settings	Access Policy			-	
	Policy Name(Optional)	(1)		-	
	MAC Address	00 00 25	79 32	: 7A	
	Time	0 - 0	• • • •		
	Day(s)	Mon	Fri	[]	
	Enable	Clear this i	tem: Clear		
		OK	Cancel		

For Example:

To allow a PC at the MAC address of 00:E4:A5:44:35:69 to access

Tenda



Internet from Monday to Friday.

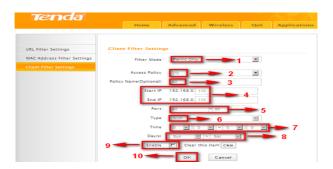
- 1. Filter Mode: Select Permit Only.
- 2. **Access Policy:** Select an access policy number, say, 1, from the drop-down list.
- 3. **Policy Name:** Briefly describe the current rule, say, **Permit only**, (It can only consist of numbers, letters, or underscore).
- 4. MAC Address: Enter 00:E4:A5:44:35:69.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

7.3 Client Filter

This section allows you to set the times specific clients can or cannot access the Internet via the devices' assigned IP addresses and service port.

Forbid Only (or **Deny/Forbid)**: Only PCs listed as Forbidden (or Denied) will be forbidden from accessing specified services; others are not restricted;

Permit Only (or **Permit/Allow)**: Only PCs listed as permitted (or allowed) will be permitted to access specified services; others will be forbidden.



- 1. Filter Mode: Select Permit Only.
- 2. Access Policy: Select an access policy number, say, 1, from the dropdown list.
- 3. Policy Name: Briefly describe the current rule, say, 80.



- 4. Start IP/End IP: Enter the same IP address, say, 110, or 2 different IP addresses, say, 110 and 120 in both boxes to specify a single PC or a range of PCs for the current rule to apply to.
- 5. Port: Specify TCP/UDP protocol port number (s), say, 80.
- 6. Type (or Protocol): Select Both.
- 7. Time: Specify a time period for a current rule to take effect. If the field is set to 0:00-0:00, the rule will be applied 24hrs/day.
- 8. Day(s): Specify a day or several days for a current rule to take effect.
- 9. Enable: Check/uncheck to enable/disable the feature.
- 10. OK: Click to activate your settings.

For example:

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

Tenda						
	Home	Advanced Wireless	QoS	Applications	Security	Tools
URL Filter Settings	Client Filter Setting	IS			Help	
MAC Address Filter Settings	Filter Mode	Forbid Only			This section a	
Client Filter Settings					set the times : can or cannot	
	Access Policy	(1)			Internet via th addresses. Se	
	Policy Name(Optional)	123			from the drop and briefly de	-down menu
	Start IP	192.168.0. 100			corresponding	field. You can
	End IP	192.168.0. 120			set the access permission in	detail
	Port	1 ~ 65535			including the t and specific d	
	Type	Both			week.	
	Time	0 . 0 . ~ 0			When Time is 0:0, the rule v	
	Day(s)	Sun 💌 ~ Sat 💽	1		24 hrs/day.	
	Enable	Clear this item: Clear				
		OK Cancel				

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





Chapter 8 Tools

8.1 Reboot

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

Tenda		
	Home Advanced Wireless QoS Applications	Security Tools
Reboot	Reboot The Router	Help
Restore To Factory Default		Rebooting the router will
Backup/Restore		activate any modified settings on the router. While
Syslog		the router is rebooting, all connections will be lost and
Remote Web Management		reconnected automatically later.

8.2. Restore to Factory Default Settings

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

Tenda					<u>ok</u> a	D	
	Home	Advanced	Wireless	QoS	Applications	Security	Tools
Reboot	Restore To Factor	y Default				Help	
Restore To Factory Default	Click this button to rest	ore all settings to fa	ctory default.			All settings will	be set back
Backup/Restore	Restore To Factor	y Default				to default.	
Syslog						Default Passy	
Remote Web Management						Default IP Ad 192.168.0.1	dress:

The factory default settings are listed below:

- > IP Address: 192.168.0.1
- Subnet mask: 255.255.255.0.

∕_Note:

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

8.3 Back/Restore

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





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

Tenda			
	Home Advanced Wireless QoS Applications	Security	Tools
Reboot	Backup/Restore	Help	
Restore To Factory Default	Here you can Backup your router's current configuration or restore your router with a	Backup:Click on	this buttor
Backup/Restore	saved configuration file.	to save a copy of router's configura	
Syslog	Click here to save a configuration file to your computer. Batloup	your computer.	
Remote Web Management		Restore:First dia	
Time Settings	Browse Restore	computer and sel	lect the

2. Click Save to save the configuration file.



To restore previous settings, do as follows:

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

Look (p: A My Documents My Recert Documents My Documents My Documents M	. 🔼
My Recet Documents Desktop	
My Computer	
	_
My Network File game: RouterCfm.cfg Qpen Places Files of type: All Files (*.*) Cancel	_

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



Tenda		
	Home Advanced Wireless QoS Applications Security To	ools
Reboot Restore To Factory Default	Backup/Restore Help Herv w can Backap war noter's commit configuration or motion was noter with a Beckup Citck on this b	outton
Backup/Restore Syslog	to save a corp of your saved configuration file. Click here to save a configuration file to your computer Click here to save a configuration file to your computer. Backup	to
Remote Web Management Time Settings	Restore First cick co "Brows" branes you computer and select of comfiguration file you w	ie .

8.4 Syslog

Tenda

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

	1 2011-04-01	L	ogs in page]	Here you can view the
Syslog	1 2011-04-01			history of the router's
Syslog Remote Web Management	1 2011-04-01			actions. After 150 entri
A	05:54:19	pppoe0	ppp0 send PADI	the previous logs will b cleared automatically.
-	2 2011-04-01 05:54:19	pppoe0	ppp0 receives PADO	
Time Settings Change Password	3 2011-04-01 05:54:19	pppoe0	ppp0 receives PADO	
Upgrade	4 2011-04-01 05:54:22	pppoe0	ppp0 send PADI	
	5 2011-04-01 05:54:22	pppoe0	ppp0 receives PADO	
	6 2011-04-01 05:54:22	pppoe0	ppp0 receives PADD	
	7 2011-04-01 05:54:27	pppo#0	ppp0 send PADI	
	8 2011-04-01 05:54:27	pppoe0	ppp0 receives PADO	
	9 2011-04-01 05:54:27	pppoe0	ppp0 receives PADO	
	10 2011-04-01 05:54:36	pppoe0	ppp0 send PADI	

8.5 Remote Web-based Management

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



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



- 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:

Tenda

- To access the device via port 8080, enter "http://x.x.x.x8080" where "x.x.x.x" represents the the device's Internet IP address and 8080 is the remote admin port. Assuming the device's Internet IP address is 220.135.211.56, then, simply replace the "x.x.x.x" with "220.135.211.56" (namely, http://220.135.211.56:8080).
- 2. Leaving the IP address field at "0.0.0.0" makes the device remotely accessible to all the PCs on Internet or other external networks; populating it with a specific IP address, say, 218.88.93.33, makes the device only remotely accessible to the PC at the specified IP address.

8.6 Time

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

Tenda						No AN	75 9	
	He	me	Advanced	Wireless	QoS	Applications	Security	Tools
Reboot Restore To Factory Default Eactup Restore Svilog Remote Web Management Time Settings Change Passord Upgrade	Note: System you select "Cu	Beijng, Cho time will n stomized '	Time" below.	ng, Unumqi unless there is a Hour 13 Mi Cancel			Help This page is u the router's s You can choo time manually GMT time froi Internet and to will automatic to NTP server synchronize t Note:Configu and date info- when the devi- disconnected	ystem time. se to set the y or get the m the the system cally connect to he time. ured time will be lost ce is

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

8.7 Login Password

This section allows you to change login password for accessing device's



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

∕∧Note:

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

8.8 Firmware Upgrade

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



- 1. Browse: Click to locate and select the firmware.
- 2. **Upgrade** (or **Update**): Click to update firmware. Device will restart automatically when update completes.



Tenda[®] ∆Note:

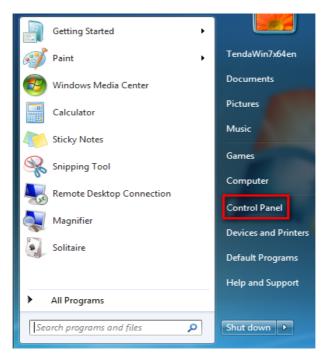
- 1. Before you upgrade the firmware, making sure you are having a correct firmware. A wrong firmware may damage the device.
- 2. Do NOT upgrade the firmware wirelessly or disconnect device from power supply while firmware update is in process. Note that you need to update the device's firmware via a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



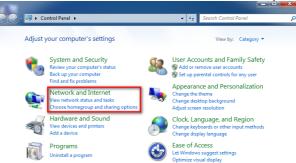


WIN7 OS Configuration

1. Click Start>Control Panel;



2. Enter Control Panel and click Network and Internet;



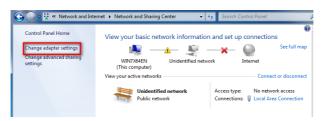
3. Click Network and Sharing Center;



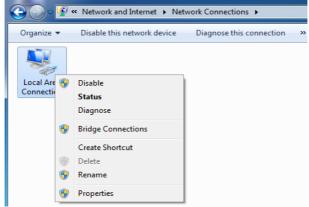




4. Click Change adapter settings;



5. Right click Local Area Connection and select Properties;



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





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

7. Select **Obtain an IP address automatically** and click **OK** to save the configurations.



Internet Protocol Version 4 (TCP/IPv4)	Properties ? X
General Alternate Configuration	
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.	
Obtain an IP address automatical	lly
O Use the following IP address:	
IP address:	
Subnet mask:	
Default gateway:	
Obtain DNS server address automatically	
OUse the following DNS server add	dresses:
Preferred DNS server:	
Alternate DNS server:	
Validate settings upon exit	Advanced
	OK Cancel

XP OS Configuration

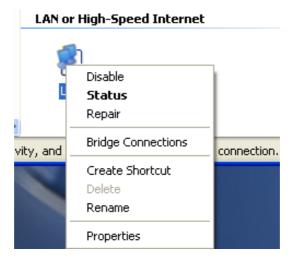
<u>Tenda</u>

1. Right click My Network Places and select Properties;





2. Right click Local and select Properties;



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



🕹 Local Properties 🛛 ? 🗙			
General Authentication Advanced			
Connect using:			
Intel(R) PR0/1000 MT Network Con Configure			
This connection uses the following items:			
Bugos Packet Scheduler Sch			
Internet Protocol (TCP/IP)			
Install Uninstall Properties			
Description			
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication			
across diverse interconnected networks.			
Show icon in notification area when connected			
Notify me when this connection has limited or no connectivity			
OK Cancel			

4. Select **Obtain an IP address automatically** and click **OK** to save the settings.





Internet Protocol (TCP/IP) Prope	erties 🛛 🖓 🔀			
General Alternate Configuration				
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.				
Obtain an IP address automatically				
OUse the following IP address: —				
IP address:				
Subnet mask:				
Default gateway;				
⊙ Obtain DNS server address auto	matically			
O Use the following DNS server addresses:				
Preferred DNS server:				
Alternate DNS server:				
	Advanced			
	OK Cancel			





Appendix 2 Glossary

Channel

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

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

SSID

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

WPA/WPA2

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

IEEE 802.1X Authentication

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



involves three parties: a 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

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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 humanfriendly computer hostnames into IP addresses.



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

DMZ

with wireless STAs.

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



Appendix 3 FAQs

Tenda[®]

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. We will be more than happy to help you out as soon as possible.

- **1.** Q: I entered the device's LAN IP address in the web browser but cannot access the utility. What should I do?
- Check whether device is functioning correctly. The SYS LED should blink a few seconds after device is powered up. If it does not light up, then some internal faults may have occurred.
- 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.
- 3) Run the "ping 192.168.0.1" command. If you get replies from 192.168.0.1, open your browser and verify that Proxy server is disabled. In case that ping fails, press and hold the "RESET" button on your device for 7 seconds to restore factory default settings, and then run "ping192.168.0.1" again.
- 4) Contact our technical support for help if the problem still exists after you tried all the above.

2. Q: What should I do if I forget the login password to my device?

- A: Reset your device by pressing the Reset button for over 7 seconds. Note: All settings will be deleted and restored to factory defaults once you pressed the Reset button.
- **3.** Q: My computer shows an IP address conflict error after having connected to the device. What should I do?
- 1) Check if there are other DHCP servers present in your LAN. If there are other DHCP servers except your router, disable them immediately.
- 2) The default IP address of the device is 192.168.0.1; make sure this address is not used by another PC or device. In case that two computers or devices share the same IP addresses, change either to a different address.
- 4. Q: I cannot access Internet and send/receive emails; what should I do?
- This problem mainly happens to users who use the PPPoE or Dynamic IP 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.

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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 email server, Web, FTP, via the device, use the "Virtual Server" feature. To do so, follow steps below:

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

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

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

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

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

Step 6: Click Enable and save your settings.

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

Server	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





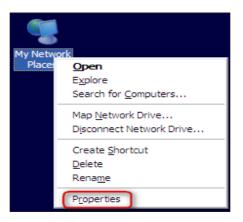
POP3	ТСР	110
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Tenda Appendix 4 Remove Wireless Network from Your PC

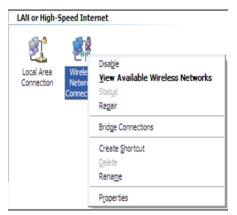
If you change wireless settings on your wireless device, you must remove them accordingly your PC; otherwise, you may not be able to wirelessly connect to the device. Below describes how to do remove a wireless network from your PC.

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.



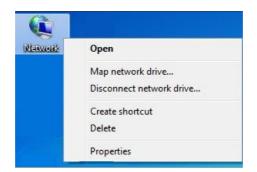
Local Area Connection 2 Properties	? 🛿
General Wireless Networks Advanced	
Use Windows to configure my wireless netw	ork settings
Available networks:	
To connect to, disconnect from, or find out m about wireless networks in range, click the bu	
	ireless Networks
Automatically connect to available networks i below: Tenda_home (Automatic)	Move <u>up</u> Move <u>down</u>
Add Remove Properti Leam about <u>setting up wireless network</u> configuration.	es Ad <u>v</u> anced
	Cancel

If you are using Windows 7, do as follows:

1.

<u>tenda</u>

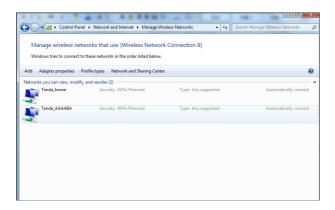
Click **Network** from your desktop and select **Properties**.



Select Manage Wireless Networks.



3. Click the wireless connection and select Remove network.



Tenda[®] 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

<u>Tenda</u>



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