Tenda®

V1.0

User Guide

www.tenda.cn

150Mbps
Portable 3G Wireless Router

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Contents

Chapter 1 Introduction

1.1 Introduction

Thank you for purchasing this 150Mbps Portable 3G Wireless Router

3G150M is a 150Mbps Wireless Router which complies with the latest IEEE802.11n standard and is compatible with IEEE802.11b/g standards. It supports 3G network access and provides up to 150Mbps wireless receiving and sending rate, 3 times that of G-products. Besides, it provides four working modes.

3G Router Mode: It is the default mode. In this mode, the router can co-operate with USB 3G modem card via its USB
port. By simply configuring the network parameters, multi-computer can share the 3G network service. It is especially suitable for places where it is not convenient to establish fixed broadband and users who are in need of a mobile networking solution.

Wireless AP Mode: In this mode, it can be used as the converter between wired and wireless signals. For example, when the device is connected to the broadband interface in one room of a hotel with a network cable, multi-computer can share the Internet without configuration.

WISP mode: To amplify wireless signal and share the Internet with multi-computer, you only need to do some

simple configuration on this router. This mode applies to WLAN wireless Internet access provided by ISP.

Wireless Router Mode：Broadband access cable can be connected to RJ-45 port, and the device can be used as a wireless router for multi-computer to share the wireless network. This mode applies to various broadband environments, such as ADSL and cabled TV access and so on.

3G150M integrates 3G Router, Wireless Router, WISP and Wireless AP working modes for various wireless access applications. In addition, it provides "Mode" button – extremely convenient for working modes switching. This router can also be powered via the computer's USB port for you to establish the wireless network conveniently and flexibly.

In a word, the 3G150M is an exquisite and portable router which can apply to various wireless networks and is an ideal choice for businessmen and fashion followers to access the Internet wirelessly.

1.2 Product Features

- Supports IEEE 802.11n, IEEE 802.11g, IEEE 802.11b, IEEE 802.3, and IEEE 802.3u standards.
- Adopts the advanced 11N technology，designed with an internal high performance antenna, and with 150Mbps transmission rate, 3 times that of 54Mbps products.

- Supports 3G router, wireless AP, WISP and wireless router working modes.
- Supports 64/128-bit WEP, WPA, and WPA2 encryption methods and security modes, etc.
- Supports WPS wireless configuration and one WPS button encryption method.
- Provides one 10/100Mbps auto-negotiation Ethernet port for LAN/WAN usage.
- Supports xDSL/cable modem, broadband static and dynamic connection.
- Supports remote web management.
- Supports wireless roaming technology for highly efficient wireless connections.
- Supports hidden SSID function and MAC address-based access control.
- Provides system log for recording the router' running status.
- Supports IEEE802.11b/g/n auto negotiation/manual mode.
- Supports UPnP and DDNS.
- Supports LAN access control over Internet connection.
- Supports virtual server, and DMZ host.
- Internal firewall to prevent hacker attack.

1.3 Package Contents

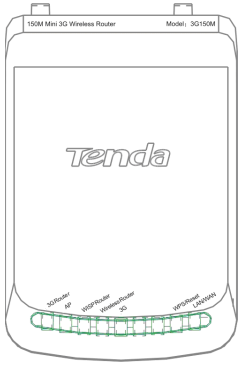
Please unpack the box and check the following items:

- One 150Mbps Portable 3G Wireless Router
- One Power Adapter
- One Quick Installation Guide
- One Software CD
- One Common USB Line
- One Y Type USB Line

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

1.4 LED Indicator and Port Description

1.4.1 Front Panel and LED Indicator Show



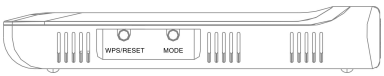
LED indicator description on the front panel: (from L to R)

- **3G Router**: Lighting up blue indicates the device is in 3G Router working mode.
- **AP**: Lighting up blue indicates the device is in wireless AP working mode.
- **WISP Router**: Lighting up blue indicates the device is in WISP Router working mode.
- **Wireless Router**: Lighting up blue indicates the device is in Wireless Router working mode.
- **3G**: Insert the 3G USB modem card. When the indicator Lights up, it indicates the device is well connected. Flashing indicates it is transmitting data packets.
- **WPS/Reset**: Press the button for one second, the

indicator will be flashing which means the device is negotiating with the Client in WPS mode.

- **LAN/WAN**: Lighting up blue indicates the Ethernet cable is well connected and flashing indicates it is receiving or sending data packets.

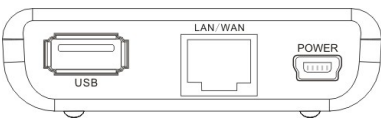
1.4.2 Side Panel Show



WPS/RESRT: Wi-Fi Protection Setup button and system reset button. Press it for 1 second, the WPS function will be enabled and WPS indicator will flash. Keep pressing this button for 7 seconds, the settings configured in this device will be deleted and it will restore the settings to factory default.

MODE: Press this button to change working modes and the corresponding mode indicator will light up blue.

1.4.3 Rear Panel Show



Rear panel port description： (From R to L)

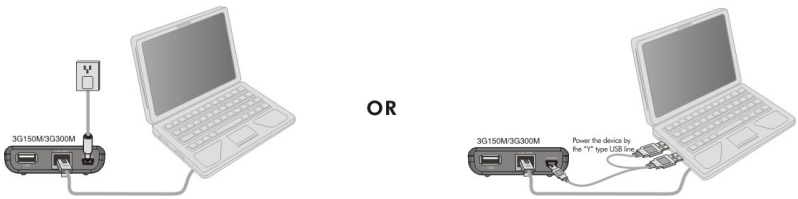
- **POWER:** Mini USB power port for power adapter connection or you can connect it to the PC' USB port with the included USB line.
- **LAN/WAN:** The 100Mbps LAN/WAN Ethernet port, in Wireless Router mode, it is used as a WAN access port to connect the DSL MODEM, superior equipment, etc. While in 3G Router, AP, and WISP mode, it is used as a LAN port to connect the PC, Ethernet Switch.
- **USB:** USB 2.0 port is for 3G USB Modem card connection, such as TD-SCDMA, WCDMA2000, and WCDMA, etc.

Chapter 2 Hardware Installation

2.1 How to Install the Router

If you want to configure the router, please follow the steps below to connect it to the computer. For better wireless performance, please put the device in the middle of wireless coverage area.

Please use the included power adapter to power the Router. (NOTE: Use of a different power adapter could cause damage and void the warranty of this product).

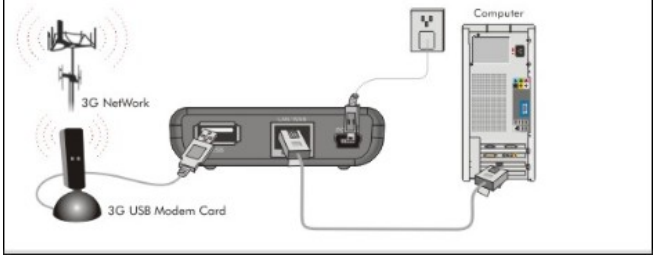


2.2 Network Connection Topology

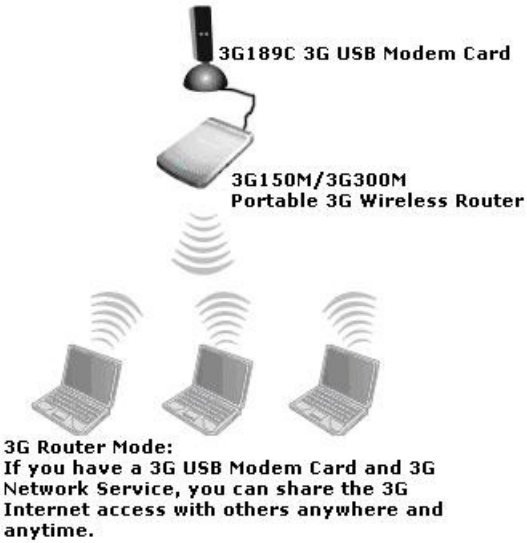
2.2.1 3G Router Mode

A. If you use a wired network adapter, please follow the diagram below to establish the connection.

A.If you have a 3G USB modem card (such as TD-SCDMA, CDMA2000, and WCDMA modem cards) and you need to share 3G signals to access the Internet, please connect the USB modem card to your router's USB port (the USB line is not a must).



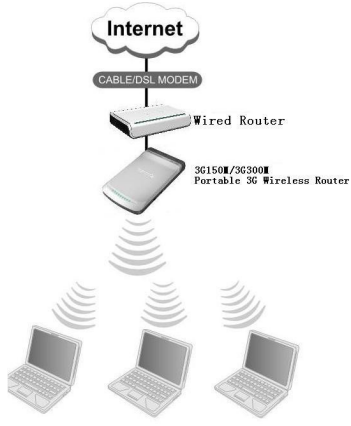
B. If you use a wireless network adapter, please follow the diagram below to establish the connection.



2.2.2 Wireless AP Mode

2 Wireless AP Mode

Connect a single Ethernet cable to the access point or let it pick up another wireless devices's transmission, and make a wireless connection available to all in range



2.2.3 WISP Mode

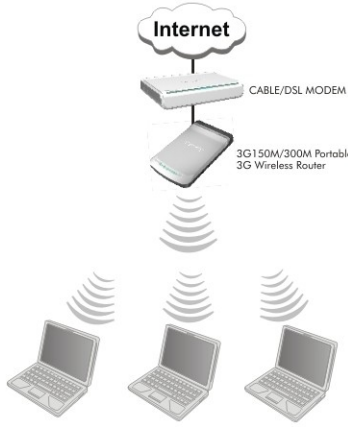
3. WISP Mode:

This is mainly used in hotspot access. Not only your computer can connect to the Internet via a router in WISP mode, but other Wi-Fi devices (PDA, PSP, Wi-Fi phone) can access the Internet without running up bills.

2.2.4 Wireless Router Mode

4. Wireless Router Mode:

Use this mode to form a wireless local network that has broadband access via an Ethernet cable.



Chapter 3
How to Log in to the Router

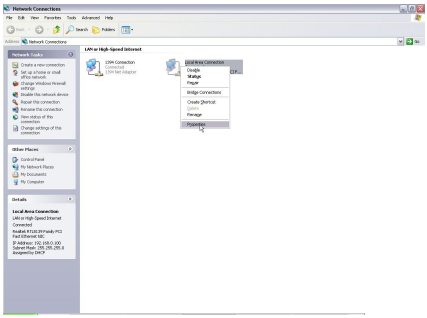
The chapter mainly presents how to enter the Router's Web page. In 3G Router, wireless AP, and WISP modes, you can configure the router by connecting it to the computer via network cable. In wireless router mode; you can only configure the router with wireless network adapter. The default web page login IP is: 192.168.0.1

3.1 Connect with wired network adapter.

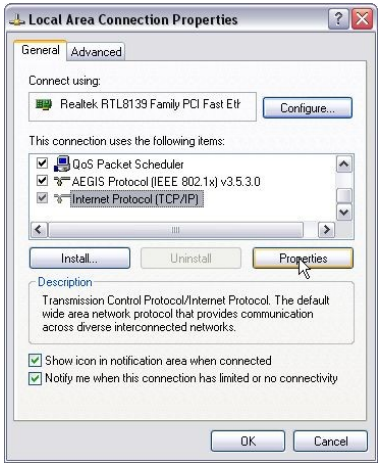
3.1.1. Configure the IP address of your computer's wired network adapter.

Right click "My Network Places" on your computer desktop and select "Properties".

3.1.2. Right click "Local Area Connection" or "Wireless Network Connection" and select "Properties".



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

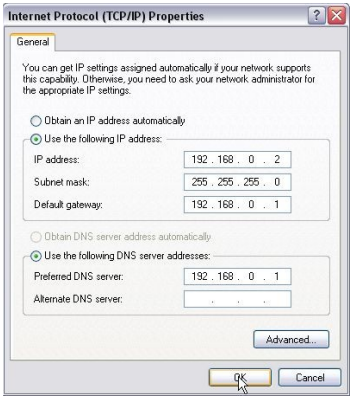


3.1.4. Select "Obtain an IP address automatically" or select

"Use the following IP address".

A. "Obtain an IP address automatically" as the following diagram:

B. "Use the following IP address"



Enter:

- **IP Address:** 192.168.0.XXX: (XXX is any number

from 2~254)

- **Subnet Mask:** 255.255.255.0

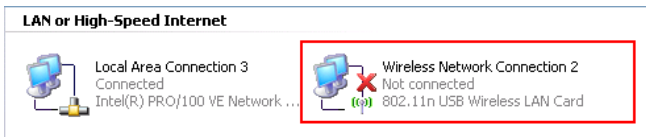
For example:

- **IP Address:** 192.168.0.2
- **Subnet Mask:** 255.255.255.0
- **DNS Server:** Input the DNS server address provided by your ISP. You can also use the Router as the DNS proxy server. Click "OK" to save the configurations.

3.2 Connect with wireless network adapter.

If you switch to Wireless Router mode, you can only access the Router's web interface by using a wireless network adapter. Then set the wireless connection as below.

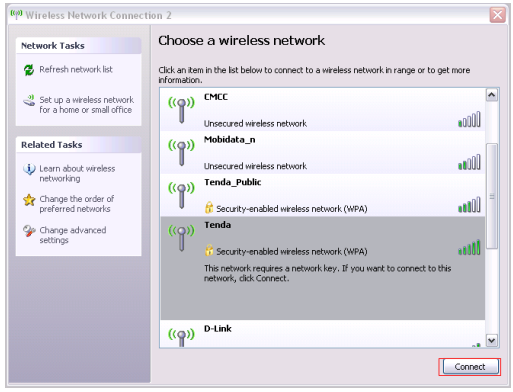
3.2.1 . Right click "My Network Places" on your computer desktop and select "Properties". As we can see from the picture below, the wireless connection is disconnected.



3.2.2 . Right click "Wireless Network Connection" and refer to chapter 3.1.3 and 3.1.4 for IP address configuration.

3.2.3 . Right click "Wireless Network Connection" and select "View Available Wireless Networks".

On the right of the interface it displays all the wireless signals scanned by the current network adapter, click "Refresh Network List", and the SSID entitled "Tenda" will appear.

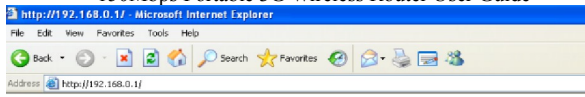


3.2.4. Select "Tenda" and click "Connect" or double-click "Tenda" to connect to this device.

3.3 Log in to the Web Interface.

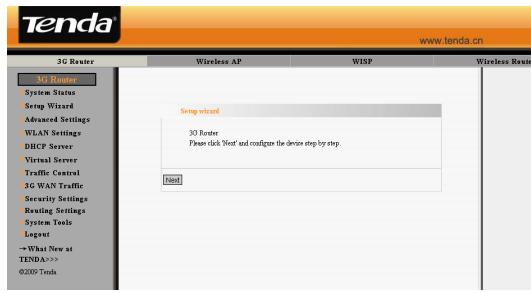
After finishing your computer's network adapter configuration, you can follow the steps below to log in to the Router's web interface.

3.3.1 Open a web browser such as Internet Explorer and enter IP address:http://192.168.0.1 and press "Enter".



3.3.2 Input "admin" in both User name and Password fields and click "OK".

3.3.3 If you enter the correct user name and password, you will come to homepage interface as is shown below.



Chapter 4 Setup Wizard

There are four working modes: 3G Router, Wireless AP, WISP, Wireless Router. This chapter describes the basic settings of different modes using Setup Wizard

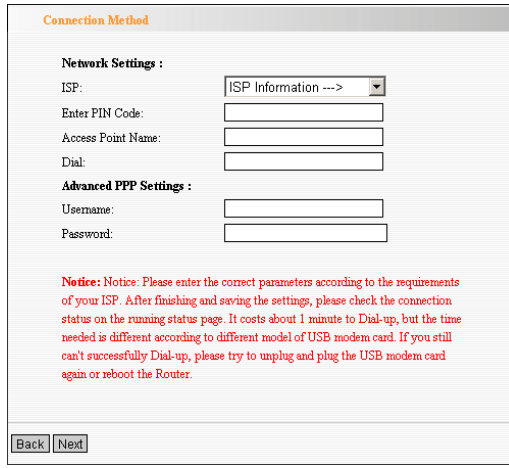
4.1 3G Router Mode

4.1.1 Log in to the Web interface

In "3G Router" mode, click "Setup Wizard" in the left column and then click "Next" to configure the connection

method.

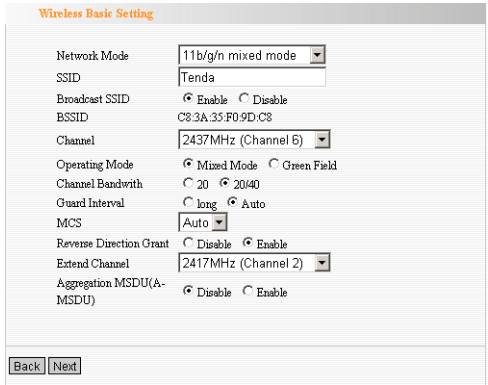
4.1.2 Configure the Connection Method



Select the Internet Service Provider (ISP) of your 3G modem card from the ISP list. If you don't find the 3G modem card you are using from the list, please select "OTHER" and input the correct parameters, if you are not sure about them, please inquire the technicians of your ISP. For parameters not provided by your ISP, just leave the corresponding fields blank.

If your 3G modem card can not be used via this router, please log in to our website to download the latest upgrade software to upgrade the device's software. After this, if you still have problem, please consult Tenda technical support.

4.1.3 Wireless Basic Settings

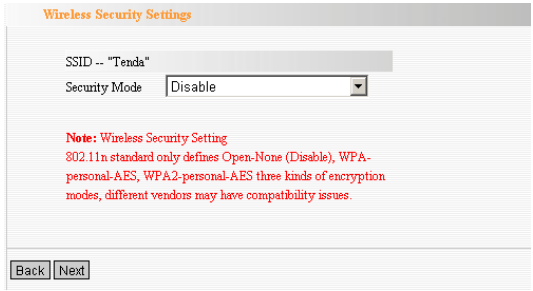


- **Network Mode**：Select one mode according to the using environment, and you are recommended to use the 11b/g/n mixed mode.
- **SSID**：SSID (Service Set Identifier) is the unique name of the wireless network. You can change it to other names.
- **Broadcast SSID:** Select "Enable" to enable the device's SSID to be visible by your wireless devices. The default is enabled.
- **Channel**：The wireless frequency used by wireless network. You are not recommended to use the same channel that used by other SSIDs for using the same or neighboring channels would cause mutual interference and reduce the router's transmission rate.

Please refer to chapter 6.1 wireless basic settings for

other settings.

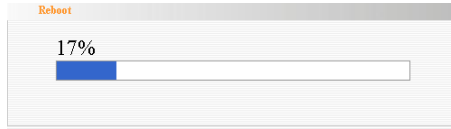
4.1.4 Wireless Security Settings



It is suggested that you choose WPA2-Personal for "Security Mode" and AES for "WPA Algorithms", you only need to input 8~63-bit Pass Phrase combined with numbers, letters and characters. Click "Next" to save the configuration. More details please refer to the following chapter.

Click "Apply" to save the settings.

The Router is rebooting to bring the configuration into effect, please DO NOT power off it.



4.2 Wireless AP Mode

In "Wireless AP" mode, click "Setup Wizard" in the left column and then click "Next". Please refer to chapter 4.1.3 to 4.1.5 for the setting methods

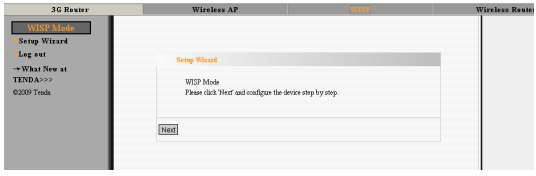
In this mode, as the converter between the wired and wireless signals, the router provides a central access point for wireless access and allows multi wireless client to access simultaneously (generally the computer with wireless network adapter).Connect the router to the broadband interface with one network cable, and multi-computer can share the wireless Internet without configuring the device ,but the computer's TCP /IP properties should be set as "Obtain an IP address automatically"(generally DHCP

function is supported by broadband router).

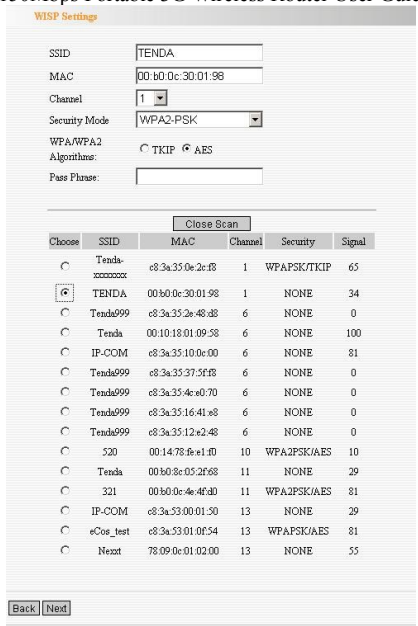
4.3 WISP Mode

If you are provided the wireless WAN access by your ISP to access the Internet, you should select WISP mode. Please follow the "Setup Wizard" to configure the device.

4.3.1 In WISP mode, click "Setup Wizard" in the left column and then click "Next".



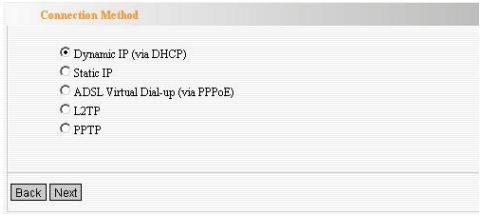
4.3.2 Click "Scan" to scan the wireless signals in WISP settings interface, and select the channel you want to use.



- **SSID**：SSID (Service Set Identifier) is the unique name of the wireless network. Enter the SSID of the WISP AP that needs to be connected to this device.
- **MAC Address:** Input the wireless MAC address of the wireless AP that needs to be connected to this device. Sometimes, MAC address is also named BSSID.
- **Channel**： Specify the effective channel (from 1 to 13\Auto) of the wireless network. The channel you select must be the same with that of the AP provided by your ISP.
- **Security Mode**: The security mode and pass phrase

you set should be the same as that of the AP. More details please refer to chapter 6.2.

4.3.3 Connection Method



In WISP mode, there are five access modes: Dynamic IP (via DHCP), Static IP, ADSL Virtual Dial-up (via PPPoE), L2TP and PPTP. The default mode is Dynamic IP. If your ISP provides you the Dynamic IP access mode, please select "Dynamic IP" and click "next". If you are provided the static IP access mode, please select "Static IP" and fill in the parameters provided by your ISP or network administrator and then click "Next". If you are provided the PPPoE access mode, please input the user name and password provided by your ISP and click "Next". In L2TP and PPTP modes, you need to input the IP address, user name, and password. Please refer to chapter 4.1.4 to 4.1.6 for further settings.

4.4 Wireless Router Mode

In wireless router mode, you can directly connect it to

broadband devices or home broadband cable such as DSL modem, and CABLE modem.

First, log in to the router's management interface as chapter 3 described. The configuration steps are as follows:

4.4.1 In Wireless Router" mode, select "Setup Wizard" in the left column and then click "Next".

4.4.2 Connection Method

Refer to chapter 4.3.3 for connection methods selection.

NOTE:

In this mode, the LAN/WAN port can only be used as a WAN port. After the settings takes effect, if you want to log

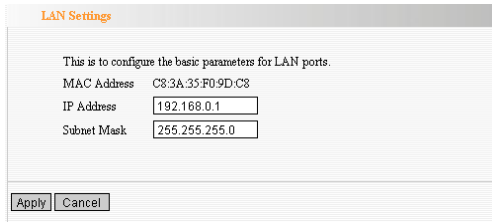
in to the Web interface, only the computer with wireless network adapter can access the wireless router (please refer to chapter 3.2 for the login method), and share the broadband service. When you finish the settings, you can set the computer's Internet Protocol (TCP/IP) as "Obtain an IP address automatically" (refer to appendix Ⅰ for setting method).

Chapter 5 Advanced Settings

5.1 LAN Settings

This section mainly describes how to configure the TCP/IP parameters of LAN port. Configuration interfaces vary in different modes.

5.1.1 In 3G Router mode, WISP mode, Wireless Router mode, please configure the LAN port parameters as the diagram below (NOTE: In wireless router mode, you can only configure the device by using the wireless access way).

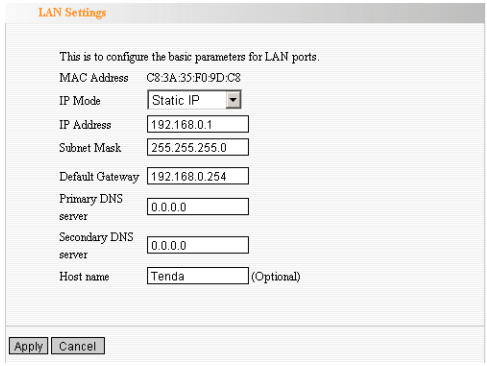


- **MAC Address:** It displays the router's LAN MAC address, which can not be changed.
- **IP Address:** The Router's LAN IP address (not your PC's IP address). The default value is 192.168.0.1.
- **Subnet Mask:** The Router's LAN subnet mask. The default value is 255.255.255.0.

NOTE:

If you change the IP, you need to use the new one to log in to the Web interface.

5.1.2 LAN Settings in Wireless AP Mode



- **MAC Address:** It displays the router's LAN MAC address, which can not be changed.
- **IP Mode:** You can select "Static IP" or "Dynamic IP". If you select Static IP, you need to input the parameters provided by your ISP. If you choose Dynamic IP, you should set the computer's Internet protocol as "Obtain an IP address and DNS sever automatically".
- **IP Address:** The device's LAN IP address (not your PC's IP address). The default value is 192.168.0.1.If you change it, you need to use the new IP to log in to the Web interface.
- **Subnet Mask:** The Router's LAN subnet mask. The default value is 255.255.255.0.

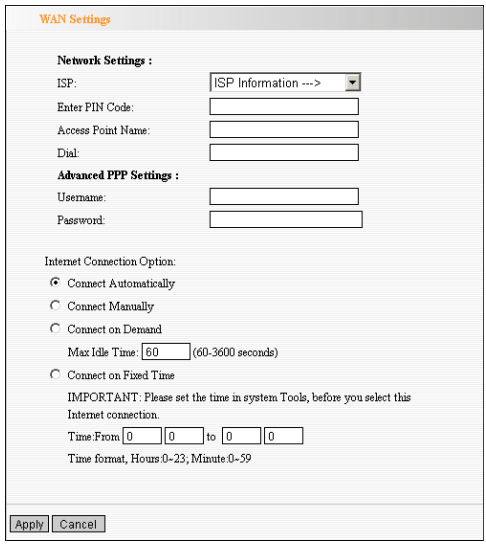
- **Default Gateway:** Input the Gateway provided by your ISP. If you are not sure, please inquire your ISP or network administrator.
- **Primary DNS Address:** Enter the necessary address provided by your ISP.
- **Secondary DNS Address:** Enter the second address if your ISP provides, and it is optional.
- **Host Name:** The device's wins name which you can use to visit the device.
-

NOTE:

Once you changed the IP address of the LAN port, you should use the new IP to enter the WEB management interface.

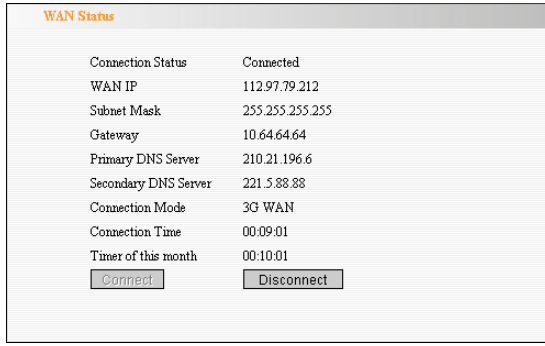
5.2 WAN Settings

5.2.1 3G WAN



Select the corresponding ISP to identify the 3G modem card and auto-match the 3G network parameters, which makes it convenient for 3G network users. If you don't find your ISP name in the list, please select "OTHER" and input the parameters provided by your ISP.

Click "System Status" to view the connection status between current 3G WAN port and your ISP. When it shows "connected", you can share the 3G network service.



Internet Connection Modes:

There are four Connection modes: Connect Automatically, Connect Manually, Connect on Demand, and Connect on Fixed Time. Please select according to your needs.

- **Connect Automatically:** Connect automatically to the Internet after rebooting the system or connection failure.
- **Connect Manually:** When the network is disconnected, users can connect it manually.
- **Connect on Demand:** Dial up automatically when there's data transmission.
- **Connect on Fixed Time:** Connect to the Internet during the time you specified automatically.

NOTE:

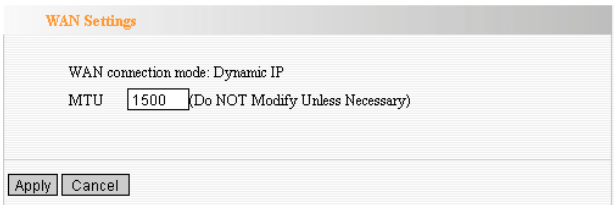
We recommend that you use the "Connect on demand" mode, in this mode the router will disconnect the 3G modem card connection when the computer is turned off or there's

no traffic being transferred, so even you forget to turn off the router, it won't waste the money in the UIM. For your convenience, the router will dial up automatically when the computer needs to have access to the Internet. When there's no traffic, you need to log out all programs that can be connected to the external network, such as, thunder, BT and so on.

5.2.2 WAN Settings in WISP Mode and Wireless Router Mode

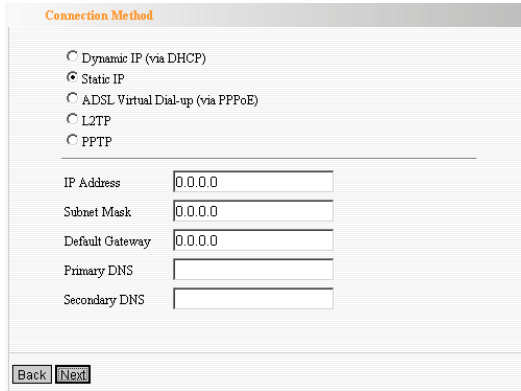
Depending on your access ways, there are five ways of WAN configuration.

A. Dynamic IP



- **MTU:** Maximum Transmission Unit. The default value is 1492. DO NOT modify it unless necessary. But if some specific websites or web application software can not be open or enabled, you can have a try to change the MTU value as 1450, 1400, etc.

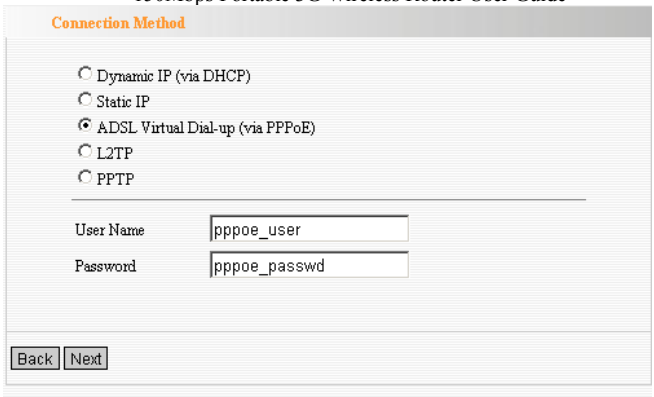
B. Static IP



If your connection mode is static IP, you can modify the parameters as is shown in the above diagram

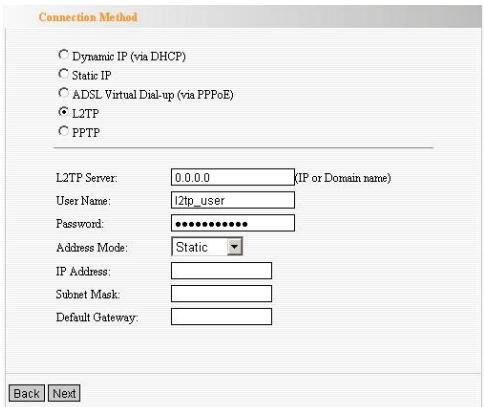
- **IP Address:** Enter the WAN IP address provided by your ISP. If you are not clear, please inquire your ISP.
- **Subnet Mask:** Enter the WAN Subnet Mask. The default value is 255.255.255.0.
- **Gateway:** Enter the WAN Gateway provided by your ISP.
- **Primary DNS Address:** Enter the necessary address provided by your ISP.
- **Secondary DNS Address:** Enter the second address if your ISP provides, and it is optional.

C. ADSL Virtual Dial-up (via PPPoE)



- **Connection Method:** It shows the current connection method.
- **User name:** Enter the user name provided by your ISP
- **Password:** Enter the password provided by your ISP.

D. L2TP



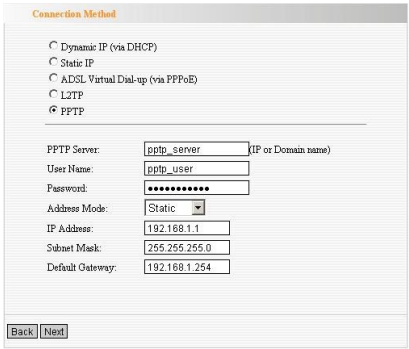
- **L2TP server:** The IP address or domain name of the destination server and it is used to specify the

destination address which needs for L2TP connection.

- **User name/Password:** Used to validate identity when connecting to the L2TP server.
- **Address Mode:** Set the router's IP address mode, you can select either "Dynamic" or "Static". If your ISP doesn't provide the IP address, please select "Dynamic".

All the above parameters are provided by ISP.

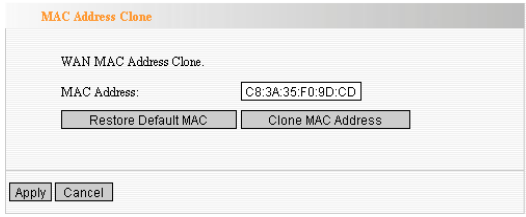
E. PPTP



For PPTP connection configuration, please refer to the L2TP connection method.

5.3 MAC Address Clone

This page is for the Router's WAN MAC address configuration (Only in Wireless Router mode)

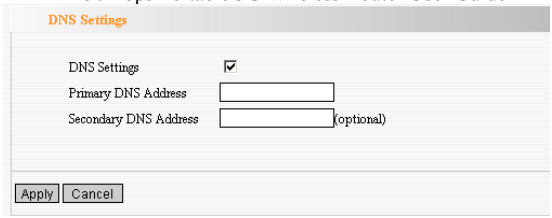


Some ISPs require user's MAC address to access their network. This feature copies the MAC address of your network device to the Router.

- **MAC Address:** It displays the router's WAN MAC address, which can be entered manually.
- **Clone MAC Address:** Copy the computer's MAC address to the router's WAN port as the router's WAN MAC address.
- **Restore Default MAC Address:** Restore the router's WAN port MAC address to the default.

5.4 DNS Settings

DNS is short for Domain Name System (or Service).The server that implements domain name service is called DNS server, which is used to respond to the domain name service inquiry.



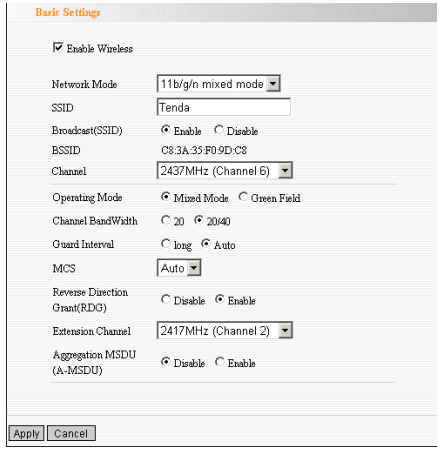
- **DNS settings:** Tick to enable the DNS server. The router's DNS address connected via WAN will adopt the manually added DNS address. Router's DHCP sever will answer the client's requests and distribute DNS address.
- **Primary DNS Address:** Enter the necessary address provided by your ISP.
- **Secondary DNS Address:** Enter the second address if your ISP provides, and it is optional.

NOTE:

After the settings are completed, reboot the device to activate the modified settings.

Chapter 6 WLAN Settings

6.1 Basic SettingS



- **Enable Wireless:** Tick to enable the Router's wireless features. If you don't want to use this feature, you can disable it and all functions related with wireless will be disabled.
- **Network Mode**：From this drop-down menu, you can select the wireless standards running on your network. The default is 11b/g/n mode.

  11b mode：Select it if you have only Wireless-B devices.

  11g mode：Select it if you have only Wireless-G devices.

  11b/g mixed mode: Select it if you have only

Wireless-B and Wireless-G devices.

11b/g/n mixed mode: Select it if you have Wireless-B, Wireless-G and Wireless-N devices.

- **SSID**：SSID (Service Set Identifier) is the unique name of the wireless network. Enter this SSID for wireless devices to have access to the router. You can either customize a network name or use the default.
- **Broadcast (SSID):** Select "Enable" to enable the router' SSID to be scanned by wireless devices. The default is enabled. If you disable it, the wireless devices must know the SSID for communication.
- **BSSID**： Basic Service Set Identifier of wireless network. In IEEE802.11, BSSID is the MAC address of wireless access point.
- **Channel:** The channel used by the current router. You can select other effective channels from the drop-down list. There are channels 1 to 13 for your options. When there are many wireless signals around, you can select a different channel to reduce interference.
- **Operating mode:** works in 11n mode only. Different wireless standards involve different frame formats in physical layer. Green Field mode can greatly improve the wireless transmission efficiency .However, if the device that is using 802.11n Greenfield mode does not adopt the same channel with that of 802.11b/g base station, device in 802.11b/g mode can not

communicate with the Greenfield connection point. On the contrary, there will be collision, errors and resending in the information transferring process between them. For common usage, we recommend that you use the Mixed Mode, which integrates traditional mode and Green Field mode.

- **Channel bandwidth:** Select the best channel bandwidth to enhance the wireless performance. When there are 11b/g and 11n wireless clients, please select the 802.11n mode of 20/40M frequency band; when there are only non-11n wireless clients, you can select 20M frequency band mode; when the wireless network mode is 11n mode, please select 20/40 frequency band to boost its throughput. After you finish the settings, click "Next" to enter the interface for wireless encryption settings.
- **Guard Interval:** Works in 11n mode only. 802.11b/g standards require there's an 800 ns interval between the information signs when sending them and this interval is called Guard Interval (GI).Different GIs determine whether there's interference affecting the transmission rate while sending the signal. We recommend that you use the default value.
- **MCS (Modulation Coding Scheme):** Works in 11n mode only. The physical rate relies on several elements such as modulation method, encoding rate, the amount of the three-dimensional flow, 40MHz

binding or not, thus, these elements which influence throughput combined will generate multiple physical rates for you choices. MCS can be interpreted as the complete combination of the elements which influence the rate. Each combination is uniquely marked with an integer.

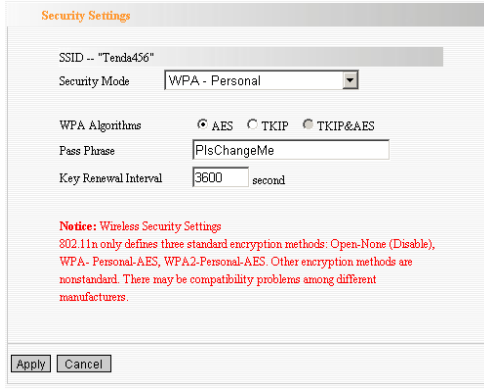
- **Extension Channel**：To figure out the network frequency range in 11n mode.
- **Aggregation MSDU:** Aggregates multi-MSDU to become a bigger load. The MSDU can be considered as an Ethernet Message. Usually when AP or wireless client receives the message (MSDU) from the protocol station, they would mark it with Ethernet Head, which is called A-MSDU Sub-frame. However, it needs to be converted to 802.11 message format before being sent out through RF port. And A-MSDU technology aims to aggregate several A-MSDU Sub-frames and send out by encapsulating them into an 802.11message.Thus, it reduces the occupied bits of PLCP Preamble, PLCP Header and 802.11MAC which are required to send an 802.11message.Besides, the amount of response frame is decreased and the message sending rate is improved.

6.2 Security Settings

This interface enables you to configure wireless encryption. This device supports WPA-Personal, WPA2-Personal, mixed WPA/WPA2-Personal, Mixed WEP, OPEN, and SHARED etc. It is suggested you encrypt the wireless network to avoid network stealing. Three commonest encryption methods are introduced here (you need to input password to connect to your wireless network adapter when you have encrypted the router, please refer to Appendix Ⅱ for configuration methods).

6.2.1 WPA-Personal

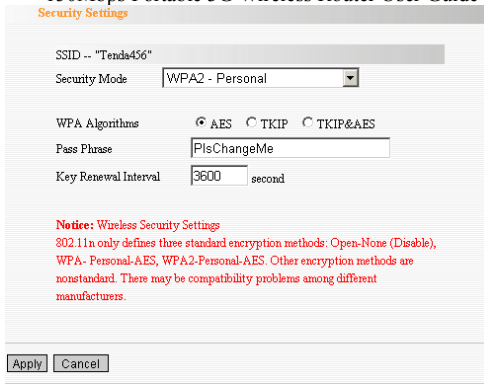
WPA is a standard and interoperable WLAN enhanced security solution which greatly strengthens the existing and future WLAN system data protection and access control ability. WPA originates from IEEE802.11i standard, and is compatible with it. WPA guarantees to protect WLAN users' data and only the authorized network users can have access to WLAN. The encryption Algorithms it adopts is better than WEP.



- **WPA Algorithms:** You can choose either AES (advanced encryption standard) mode or TKIP (temporary key integrity protocol) mode.
- **Pass Phrase:** Please enter the encryption character string. It consists of 8-63 ASCII characters.
- **Key Renewal Interval:** It refers to the valid period for the key.

6.2.2 WPA2-Personal

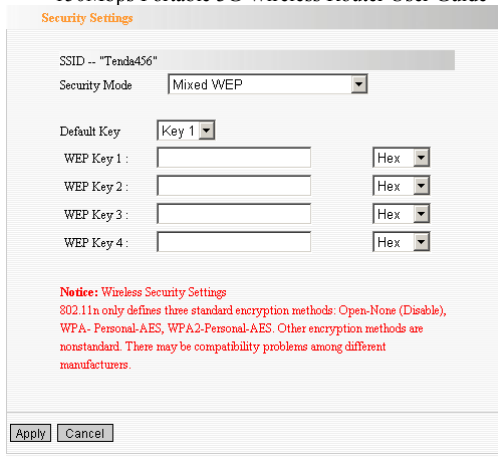
WPA2(Wi-Fi Protected Access version 2) provides better security than Wireless Equivalent Privacy (WEP) or Wi-Fi Protected Access (WPA) does. It does not only adopt TKIP encryption but also the new encryption mode----AES.



- **WPA Algorithms:** Select data encryption type. AES (advanced encryption standard), TKIP (temporary key integrity protocol) and TIKIP&AES are supported.
- **Pass Phrase:** Please enter the encryption characters string. The valid character is ASCII. It consists of 8-63 ASCII characters.
- **Key Renewal Interval:** It refers to the valid period for the key.

6.2.3 Mixed WEP

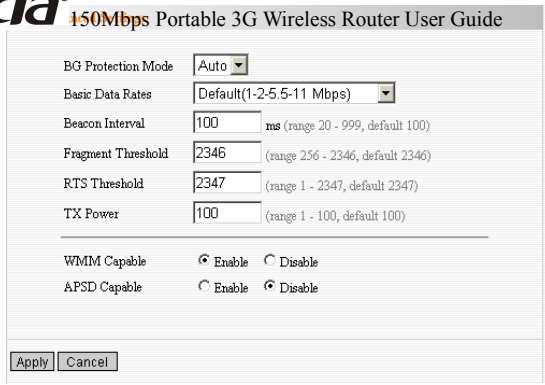
Wired equivalent protection (WEP) encrypts the data wirelessly transmitted between two devices to avoid unauthorized users' wire tapping or invasion. WEP security, based on RC4 data encryption technology, provides data confidentiality, integrity, and authentication for wireless network communication.



- **WEP Key:** It can be set as ASCII and Hex formats.
- **Key description:** Select ASCII code (5 or 13 ASCII, invalid characters such as / and "'are forbidden) or valid Hex characters (10 or 26 hex characters).
- **Default Key:** You can select one among the 4 preset keys.

6.3 Advanced Settings

This section introduces configuration of wireless advanced functions, which enables you to configure wireless parameters at length, including BG protection mode, basic data rates, Fragmentation threshold, RTS threshold, and WMM etc.



- **BG protection Mode: "**Auto" by default. It is good for relatively slow 11b/g wireless clients to connect 11n wireless network smoothly in a complicated wireless area.
- **Basic Data Rates:** You can select one suitable Basic Data Rate from the drop-down menu according to your need. The default value is (1-2-5.5.-11Mbps). It is recommended not to modify this value.
- **Beacon Interval:** Set the beacon interval for AP. Generally, the smaller the interval is, the faster wireless clients connect; the bigger it is, the higher efficiency wireless network data transmission will achieve. Default value is 100. It is recommended not to modify this value.
- **Fragment Threshold:** The fragmentation threshold defines the maximum transmission packet size in bytes. The packet will be fragmented if the wireless data

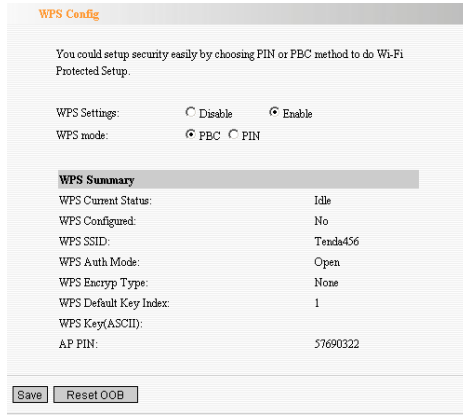
packet is bigger than the threshold setting. The default size is 2346 bytes. It is recommended not to modify this value.

- **RTS Threshold:** RTS is short for "Request to Send". When the packet size exceeds this threshold, enable CTS/RTS to reduce collision possibility. For the long-distance clients to access in interference involved environment, set a relatively smaller RTS value. It is recommended not to modify the default value in SOHO environment; otherwise it will affect AP performance.
- **TX Power:** Set the output power of wireless radio. The default value is 100.
- **WMM Capable:** It will enhance the data transfer performance of multimedia data when they're being transferred over wireless network. It is recommended to enable it if you are not familiar with WMM.
- **APSD Capable:** It is used for auto power saving service. The default is disabled.

6.4 WPS Settings

WPS (Wi-Fi Protected Setting) is an easy and quick way to establish the encrypted connection between the wireless network clients and the device. Users only need to enter PIN code or press WPS button on the side panel to configure it .In the "WLAN settings" menu, click "WPS settings" to enter

the configuration interface.



- **WPS Settings**：To enable or disable WPS function. The default is "disable".
- **WPS mode**：Provide two simple WPS ways: PBC (Push-Button Configuration) and PIN code.
- **PBC**：Select the PBC and click "save" or press the WPS /RESET button on the back panel of the device for about one second, at the same time enable client's WPS/PBC to establish connection.
- **Operation process:** Press the button for about one second and WPS indicator will be flashing for 2 minutes, which means the WPS is enabled. During the flashing time, you can enable the WPS/PBC of the wireless client for them to negotiate. Two minutes later, the WPS indicator will be off, which means the WPS connection is completed. Repeat the above steps to add more clients.

At present, the WPS supports up to 32 clients

- **PIN**：If this option is enabled, you need to enter a PIN code matching with the one in the wireless client.
- **WPS Summary:** It displays the current status of Wi-Fi protected setting, including authentication mode, encryption type, default key and other information.
- **WPS Current Status**： "Idle" means WPS is in idle state. "Start MSC process" means the process has been started and is waiting for being connected. Configured means the negotiation between server and clients is successful.
- **WPS Configured**： "Yes" means WPS feature is enabled and goes into effect. "No" means it doesn't takes effect. Usually when the AP-security has been enabled, it displays "No".
- **WPS SSID:** It displays the main SSID set by WPS. WPS only takes effect in main SSID
- **WPS Auth. Mode**：The authentication mode adopted by WPS, usually it is WPA/WPA2-Personal mode.
- **WPS Encryption Type**：The encryption type used by WPS, generally AES/TKIP.
- **WPS key**：The effective key automatically generated by AP.
- **AP PIN（KEY）**：The PIN code used by default.
- **Reset OOB**：Press this button, the WPS client will be in idle state, and WPS indicator will turn off. AP will not

respond to the WPS client's connection requests.

6.5 WDS Settings

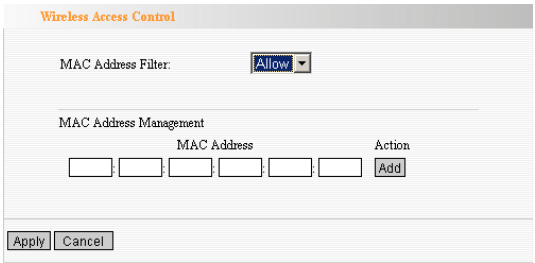
Wireless AP signal coverage has range limits. WDS is mainly used to repeat wireless signal, and enlarge its coverage. Please keep SSID, channel and encryption type of all AP respectively consistent.

This router supports three WDS modes: Lazy, Bridge, Repeater.

- **Lazy:** In this mode, the connected router must be in Bridge or Repeater mode and the MAC address of your router must be entered.
- **Bridge:** In this mode, the connected router must be in Lazy or Repeater mode. Manually add the MAC address of the connected router to AP MAC address list or scan to select.
- **Repeater:** In this mode, the connected router can be in Lazy, Bridge mode or single client. Manually add the MAC address of the connected router to AP MAC address list or scan to select.

6.6 Wireless Access Control

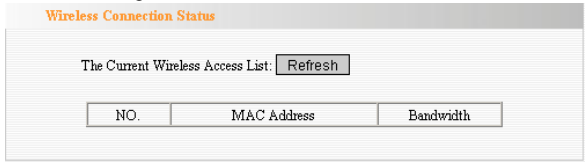
To secure your wireless LAN, the wireless access control is actually based on the MAC address management to allow or block the specific clients to access the wireless network.



- **MAC Address Filter**： "Allow": to only allow the clients in the list to access the wireless network. "Block": to only prevent the clients in the list from accessing the wireless network;
- **MAC Address Management**：Input the MAC addresses of the wireless clients you want to allow or block and click "Add".
- **MAC Address list**：Show the added MAC addresses. You can add or delete them.

6.7 Wireless Connection Status

This page displays wireless client's connection status, including MAC address, rate, etc.



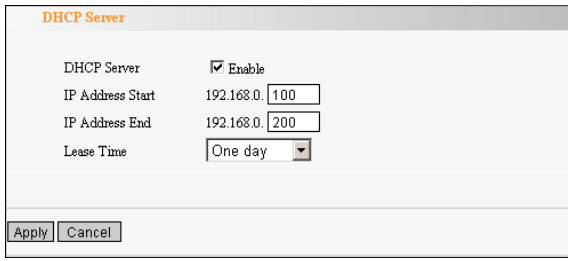
- **MAC Address**：Shows the wireless MAC addresses of the hosts connected to the Router.
- **Bandwidth**：Shows the channel bandwidth current connected host (the wireless client) used.

Chapter 7 DHCP Server

DHCP server is for the 3G Router, WISP and wireless Router modes.

7.1 DHCP Server

DHCP server is to configure TCP/IP parameters for all the computers in LAN. When you enable the router's DHCP server, the DHCP server will automatically configure the TCP/IP protocol for all the computers in LAN (including IP address, subnet mask, gateway and DNS etc).



➢ ➢

DHCP Server: Enable or disable DHCP server to automatically assign IP addresses.

- **IP Address Start:** Starting IP addresses automatically distributed by DHCP server.
- **IP Address End:** Ending IP addresses automatically distributed by DHCP server.
- **Lease Time:** The length of the IP address lease.

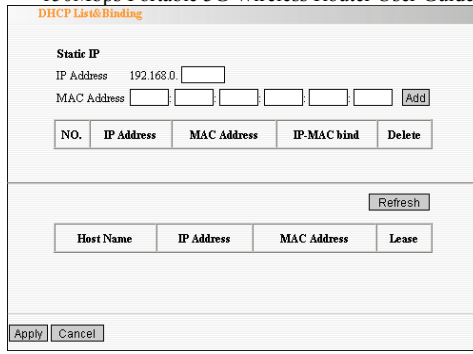
Configuring a proper lease time can improve the efficiency for DHCP server to reclaims the invalid IP addresses.

For example：

If the lease time is an hour, then DHCP server will reclaim the IP address every hour.

7.2 DHCP List and Binding

DHCP client list displays computers' IP address, MAC address, host name and other information which are assigned by the DHCP sever. You can manually enter the IP and MAC address and convert it to static allocation. According to the connected computer's MAC address, DHCP will assign the appropriate IP address. If you can not find the corresponding static binding entry, assign an IP from the DHCP pool to the computer. If the computer had been bound for the IP address and MAC and they do not correspond, then the computer will be unable to access Internet via the equipment. (Binding it prevents the client changing IP address and to evade the monitoring device)



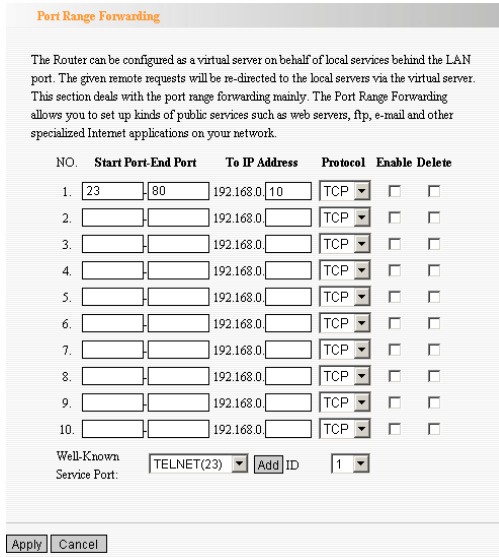
- **IP Address:** Enter the IP address which needs static binding.
- **MAC Address:** Enter the MAC address of the computer you want to bind.
- **Host name:** It displays **t**he name of the bound computer.
- **Lease Time:** The left time for the corresponding IP address lease.

Chapter 8 Virtual Server

Virtual Server feature is only for 3G Router, WISP, and Wireless Router modes.

8.1 Port Range Forwarding

This section deals with the port range forwarding mainly. The Port Range Forwarding allows you to set up kinds of public services such as web servers, ftp, e-mail and other specialized Internet applications on your network.



➢ **Start/End Port:** Service port range provided by the

mapped host in internal network.

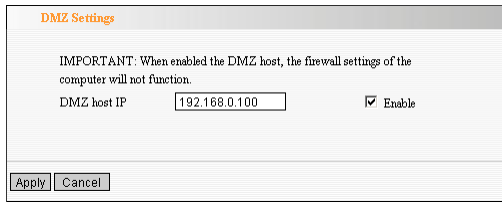
- **IP Address:** the IP address of the computer which is used as a server in LAN.
- **Protocol:** It includes TCP, UDP and Both. Select "Both" when you are not sure about which protocol to use.
- **Enable:** Only after you enable it, can the configured rules go into effect.
- **Delete:** Click to empty the parameters.
- **Well-Known Service Port**: In "Well-Known Service Port" there are commonly used protocol ports. Select one among them and a serial number for ID then click "Add" to add it to the list. You can also manually add the ports which are not included in the "Well-Known Service Port".
- **Add:** helps you to add the Well-Known Service Port to the item you are configuring.

For example:

The server at the IP address of 192.68.0.10 in LAN provides WEB service at the port of 80 and Telnet service at the port of 23. If you want the clients on the Internet to visit this server, please set the device as the diagram above.

NOTE: If you set the virtual server of the service port as 80, you must set the Remote Web management port on "Security Settings" menu at any value except 80, such as 8080. Otherwise, there will be a conflict to disable the virtual server.

8.2 DMZ Settings



- **DMZ Host IP:** Please enter **t**he IP address of the LAN computer which you want to set as the DMZ host.
- **Enable:** Click to enable/disable the DMZ host.

For example:

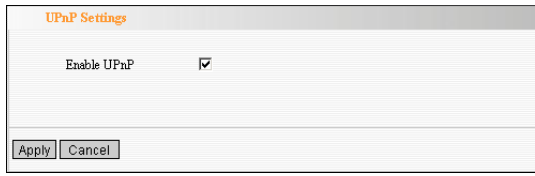
Set the LAN computer at the IP address of 192.168.0.100 as a DMZ Host to intercommunicate with another host on the Internet.

NOTE:

When the DMZ host is enabled, the computer is completely exposed to extranet, and the firewall settings of the DMZ host will not function.

8.3 UPNP Settings

UPnP (Universal Plug and Play), which goes into effect under Windows XP or Windows ME (NOTE: system needs to be integrated with or installed with Directx 9.0) or would also go into effect if you have installed application software that supports UPnP. With the UPnP function, hosts in LAN can request the router to process some special port switching so as to enable external hosts to visit the resources in the internal hosts.

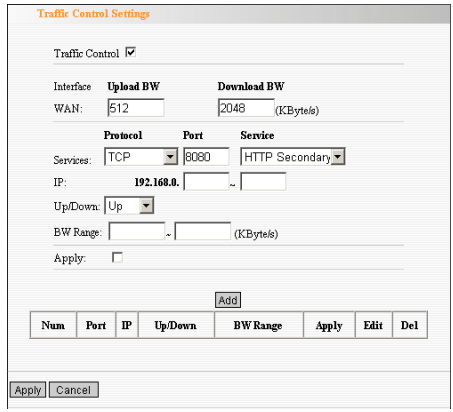


- **Enable UPnP:** Click to enable/disable the UPnP.

Chapter 9 Traffic Control

9.1 Traffic Control

Traffic Control is for communication traffic limit in the LAN and WAN. It can support limitation rules up to 20 entries and simultaneously control maximum of 254 PCs' traffic. In addition, IP address range configuration is supported.

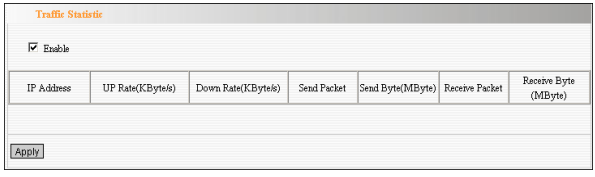


- **Traffic Control:** To enable or disable the internal IP traffic control. The default is disabled.
- **Interface:** Enter the actual uploading and downloading bandwidth in WAN port.
- **Service:** To select the service type for traffic control, such as HTTP service.
- **IP Address**：The range of IP addresses, it can be a single IP or IP range.
- **UP/Down:** To specify the traffic heading way for the selected IP addresses: uploading or downloading.

- **Bandwidth Range:** The Minimum/Maximum Uploading/downloading data traffic (KB/s) which can not exceed the WAN bandwidth limit.
- **Apply:** Check to enable the currently edited rule.
- **Add:** Click "add to list" button to add the current rule to the rule list.
- **Apply:** Click "Apply" to activate the current rule.
- **Cancel:** Click "Cancel" to drop all settings saved last time.

9.2 Traffic Statistics

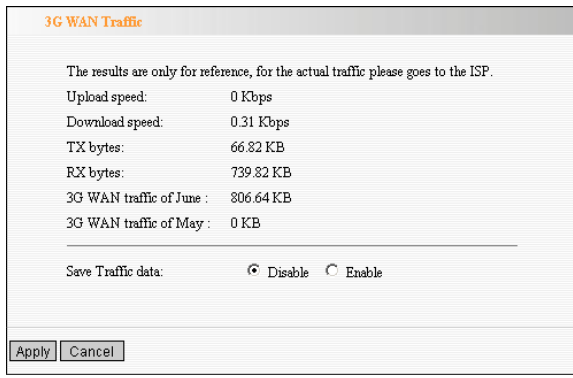
This function is to calculate the data traffic of the client that connected to this router and the speed of each client.



Chapter 10 3G WAN Traffic

10.1 3G WAN Traffic

In 3G WAN access mode, 3G WAN traffic statistic function is supported. Click "3G WAN traffic" to check the router's Internet traffic, transmission rate, transmission data volume and data traffic for the recent two months, and you will know how much traffic still can be used.

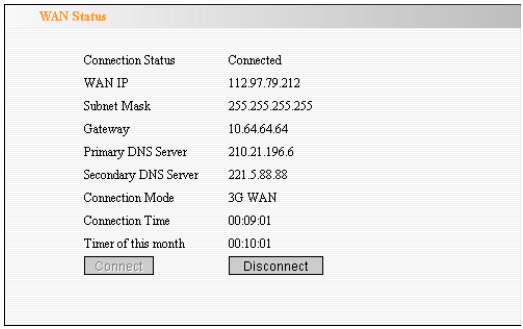


NOTE: this function is only for 3G WAN.

You can enable or disable “Save Traffic data” in 3G WAN Traffic. The default is disabled. Enable it and the system will save the 3G traffic data.

10.2 Connection Timer

In 3G WAN access mode, Connection Timer function is supported. Click "System Status" to know the WAN port connection time, Internet access time of this month and other information.



NOTE:

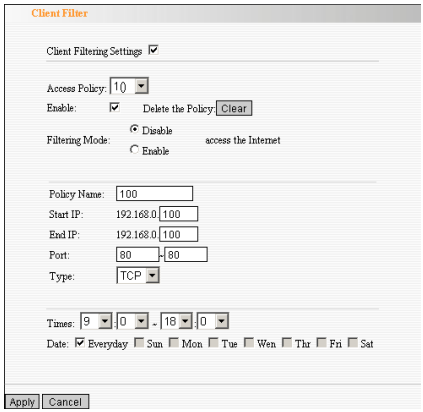
The statistics of 3G WAN Traffic and Connection Timer are for reference only, the actual statistics is subject to the ISP. (This router can only calculate the time or traffic flow when the 3G modem card access Internet via the device; however, it fails to do so when the 3G modem card is directly plugged into the computer).

Chapter 11 Security Settings

The security settings are for 3G Router, Wireless signal amplification and Wireless Router modes. The security settings of wireless access point (AP) mode please refer to Chapter 6.

11.1 Client Filter

To better manage the computers in LAN, you can control LAN computers' access to some ports on Internet by data packet filters function.



- **Client Filtering Setting:** Check to enable client filter.
- **Access Policy:** Select one number from the drop-down menu.
- **Enable:** Check to enable the access policy.
- **Filtering mode:** Select "Disable" to forbid the filtered hosts' corresponding ports to access the Internet at a specified time. Select "Enable" to permit the filtered

hosts' corresponding ports to access the Internet at a specified time.

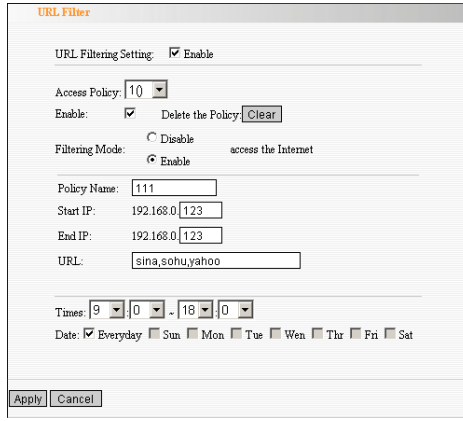
- **Start/End IP:** Enter the starting/ending IP address.
- **Port:** Enter the controlled TCP/UDP protocol port; and it can be a port range.
- **Type:** Select the protocol used by the controlled data packets (TCP/UDP/Both).
- **Time:** Select the time range of client filter rule.
- **Date:** select according to your needs.
- **Apply:** Select "Apply" to enable the settings.

For example:

If you forbid the computer at the IP address of 192.168.0.100 to access the Internet from 9：00 to 18：00 everyday without restrictions to other computers in LAN, you need to set the packet filtering list as the above diagram.

11.2 URL Filter

To better control the LAN computers' access to the websites; you can use URL filtering to permit or forbid their access to certain websites at a specified time.



- **URL Filtering Setting:** Check to enable URL filter.
- **Access Policy:** Select one number from the drop-down menu.
- **Enable:** Check to enable the access policy.
- **Filtering mode:** Select "Disable" to forbid the computer at the filtered IP address to access the Internet at a specified time. Select "Enable" to permit the computer at the filtered IP address to access the Internet at a specified time. Each rule only takes effect on the IP address of its own.
- **Start/End IP:** Enter the starting/ending IP address.
- **URL:** Specify the text strings or keywords needed to be filtered. If any part of the URL contains these strings or words, the web page will not be accessible and displayed.
- **Time:** Select the time range of client filter rule.

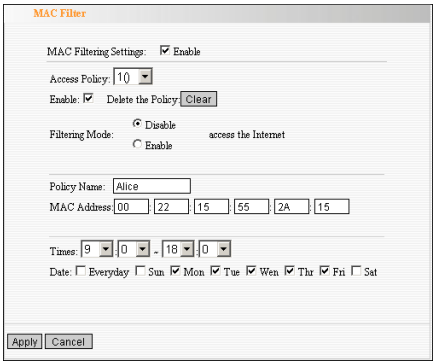
- **Date:** select according to your needs.
- **Apply:** Select "Apply" to enable the settings.

For example:

If you only permit the computer at the IP address of 192.168.0.123 to access the web sites containing strings such as "sina", "sohu", and "yahoo" from 9：00 to 18：00 everyday, you need to set the packet filtering list as the above diagram.

11.3 MAC Filter

In order to manage the computers in LAN better, you could control the computer's access to Internet by MAC Address Filter.



- **MAC Filtering Settings:** Check to enable MAC address filter.

- **Access Policy:** Select one number from the drop-down menu.
- **Enable:** Check to enable the access policy.
- **Filtering mode:** Select "Disable" to forbid the computer at the filtered MAC address to access the Internet at a specified time. Select "Enable" to permit the computer at the filtered MAC address to access the Internet at a specified time.
- **Policy Name:** Enter a name for the access policy selected.
- **MAC address:** add the computer's MAC address to the MAC address field.
- **Time:** Select the time range of client filter rule.
- **Date:** select according to your needs.
- **Apply:** Select "Apply" to enable the settings.

For example:

If you want to forbid the LAN computer (MAC address is 00:22:15:55:2A:15) to access the Internet during 9 : 00~18 : 00 from Monday to Friday without restriction to other time, you need to set the packet filtering list as the above diagram.

11.4 Prevent Network Attack

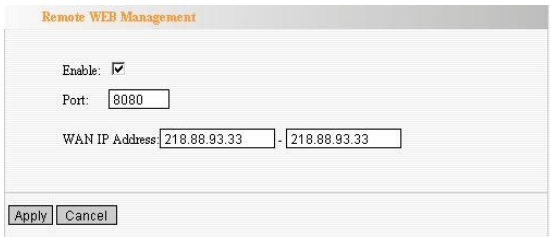
Check to enable the router's Network Attack Prevention function. Once detecting the device is attacked by some hosts, the router will limit its bandwidth automatically. The attacker's IP address can be found from the "System Log".

➢

Prevent Network Attack: Check to enable it for attack prevention.

11.5 Remote WEB Management

This section is to set the IP address and WEB management port of the computer that can implement remote WEB management.



- **Enable:** Check to enable remote web management.
- **Port:** The management port used by remote WEB management.
- **WAN IP Address Range:** Specify the range of the

WAN IP address for remote management.

NOTE:

1. If you want to login the device's Web-based interface via port 8080, you need to use the format of WAN IP address: port (for example *http : //220.135.211.56:8080*) to implement remote login.

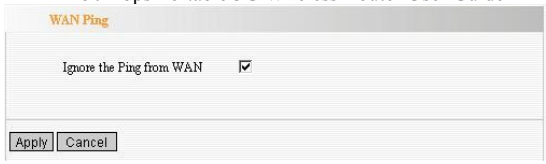
2. If your WAN IP address starts and ends with 0.0.0.0, it means all hosts in WAN can implement remote Web management. If you change the WAN IP address as 218.88.93.33-218.88.93.35, then only the computer with its IP address at this IP address range (for example, 218.88.93.33, 218.88.93.34 and 218.88.93.35)can implement remote Web management

For example:

If you permit the WAN computer with the IP address of 218.88.93.33 to access the management interface via port 8080, then you need to fill in the parameters as the above diagram.

11.6 WAN Ping

The ping test is to check the status of your Internet connection. When this function is enabled, the router will not respond to Ping request from WAN, but LAN computer can ping pass.

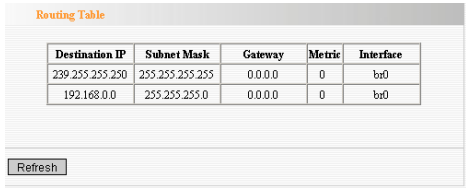


- **Ignore the Ping from WAN:**

  Check to ignore the ping request and give no reply.

Chapter 12 Routing Settings

This page displays the router's main routing table

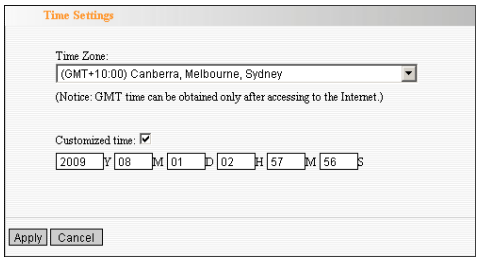


The main duty for a router is to look for a best path for every data packet, and transfer this data packet to a destination. So, it's essential for the router to choose the best path, i.e. routing arithmetic. In order to complete this work, the related data packets of various transfer paths, i.e. routing table, are saved in the router for options.

Chapter 13 System Tools

13.1 Time Settings

This section is to set the router's system time; you can either set the time by yourself or obtain the GMT time from the Internet.



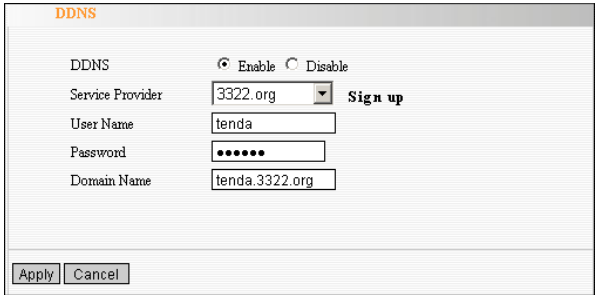
- **Time Zone:** Select your time zone from the drop-down menu.
- **Customized time:** Enter the time you customize.

NOTE:

When the Router is powered off, the time settings will be lost. When you next time access to the Internet, the Router will obtain GMT time automatically. And only when you have access to the Internet and obtain the GMT time, or set the time on this page first, the time in other features (e.g. security settings) can be activated.

13.2 DDNS

DDNS is short for Dynamic Domain Name Server, and it takes effect in 3G router, WISP and wireless router modes. It is to assign a fixed host and domain name to a dynamic Internet IP address, which is used to monitor hosting website, FTP server and so on behind the Router. If you want to activate this function, please select "Enable" and a DDNS service provider to sign up.



Main Functions:

Owing to ISP most times provides dynamic IP address, DDNS is used to capture the changeable IP address and match the fixed domain. Then users can have access to the Internet to communicate with others.

DDNS can help you establish virtual host in your home and company.

- **Service Provider:** Select one from the drop-down menu and click "Sign up" for registration.

- **User Name:** Enter the user name the same as the registration name.

- **Password:** Enter the password the same as the registration password.
- **Domain Name:** Enter the effective domain name which is optional.

For example:

Establish a Web server in the local host 192.168.0.10, and register in 3322.org as follows:

User name	tenda
Password	123456
Domain Name	3322.org

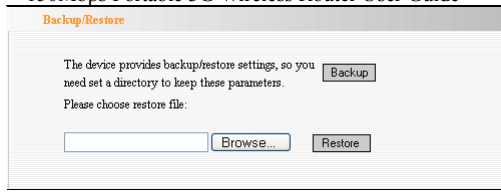
After mapping the port in the virtual server, setting the account information in DDNS server and entering http://tenda.3322.org in the address field, you can access the Web page.

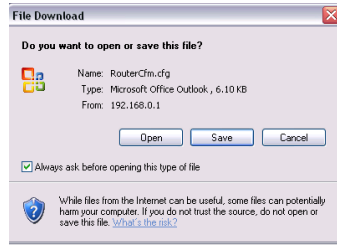
13.3 Backup/Restore Settings

On this page you can backup or restore the router's previous settings.

13.3.1 Backup Settings

Click "Backup" button to export the configuration files and select the path to save it.

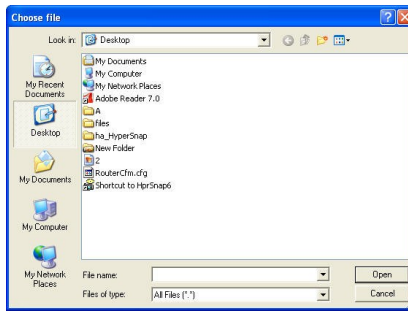




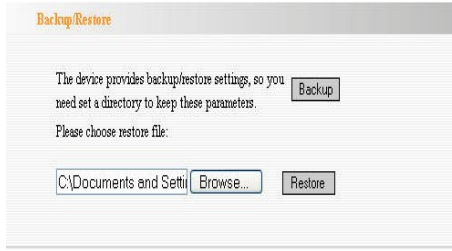
Click "Save" to save the configuration files.

13.3.2 Restore Settings

Click "Browse" button to select the backup files.

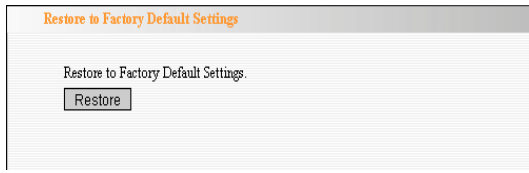


Click "Restore" button to restore the previous settings.



13.4 Restore to Factory Default Settings

This button is to restore all settings to the default values.



Factory Default Settings:

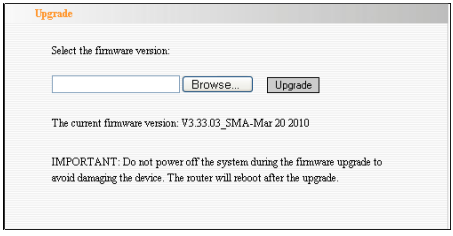
- **User Name:** admin
- **Password:** admin
- **IP Address:** 192.168.0.1
- **Subnet Mask:** 255.255.255.0

NOTE:

Click" Restore to Factory Default Settings", and the router will reboot automatically.

13.5 Firmware Upgrade

By upgrading the router's firmware, you'll get more stable firmware version and appreciated routing function. For upgrading files, you can download from www.tenda.cn.

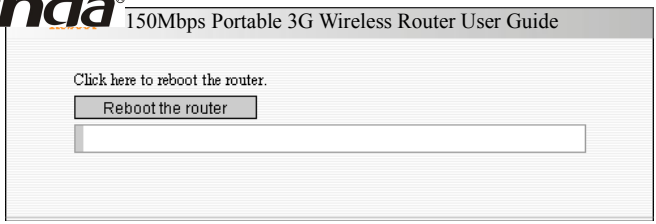


- **Browse:** click this button to select the upgrade file.
- **Upgrade:** click this button to start the upgrading process. After the upgrade is completed, the Router will reboot automatically.

NOTE: Do not disconnect the device during the upgrading process.

13.6 Reboot the Router

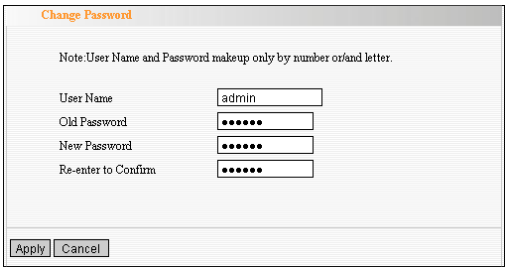
Rebooting the Router makes the settings configured go into effect or to set the Router again if setting failure happens.



Reboot the router: Click this button to reboot the device.

13.7 Change Password

This section is to change the default user name and password.



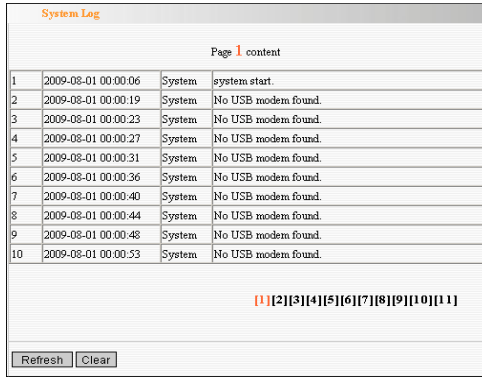
- **User Name:** Enter a new user name for the device.
- **Old Password:** Enter the old password.
- **New Password:** Enter a new password.
- **Re-enter to Confirm:** Re-enter to confirm the new password.

NOTE: It is highly recommended to change the password

to secure your network and the Router.

13.8 System Log

The section is to view the system log.



- **Refresh:** Click this button to update the log.
- **Clear:** Click this button to clear the log record.

13.9 Logout

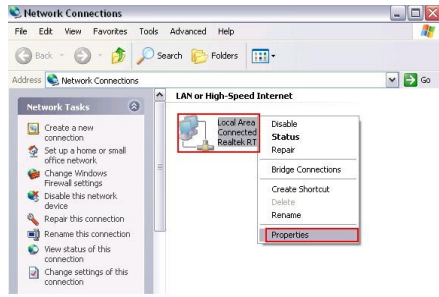
After you have finished the settings completely, in logout page click “Yes” to logout the web management page.

Appendix Ⅰ How to "Obtain an IP Automatically"

If you enable DHCP (default), you can get the IP address, Gateway, DNS automatically to access the internet. The setting steps are as follows.

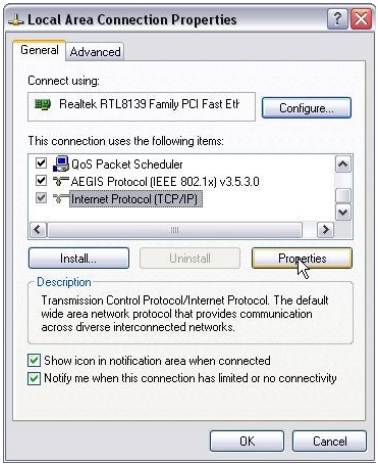
1. Right click "My Network Places" on your computer desktop and select "Properties".

2. Right click "Local Area Connection" or "Wireless Network Connection" and select "Properties".



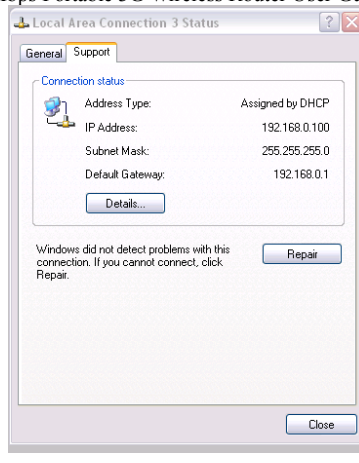
3. Select "Internet Protocol (TCP/IP)" and click

"Properties".



4. Select "Obtain an IP address automatically"

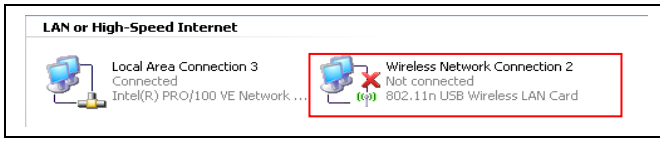
5. Select "Status" within "Local Area Connection " – click "support "dialog box, you can see whether you have got the IP.


Local Area Connection 3 Status
General
Support
Connection status
Address Type:
Assigned by DHCP
IP Address:
192.168.0.100
Subnet Mask:
255.255.255.0
Default Gateway:
192.168.0.1
Details...
Windows did not detect problems with this connection. If you cannot connect, click Repair.
Repair
Close

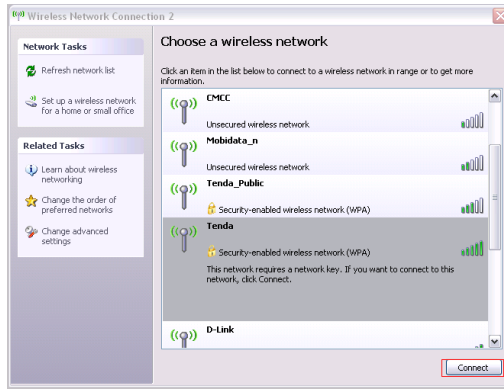
Appendix Ⅱ How to set the network adapter after device encrypted

When the device is encrypted, you need to enter password to connect to the wireless device to access the Internet. Set up a wireless network adapter as follows:

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

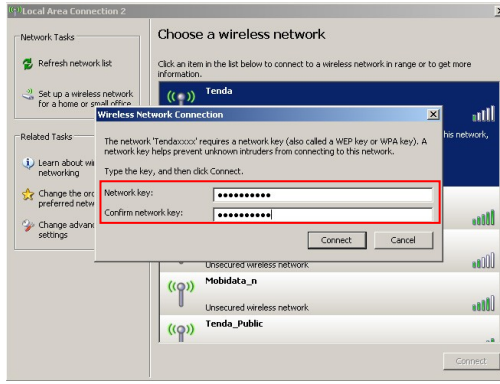


2. Right click "Wireless Network Connection" and select "View Available Wireless Networks". All detected wireless signals will be shown in the interface. Please select the SSID entitled "Tenda". If you don't find it, please click "Refresh Network List".

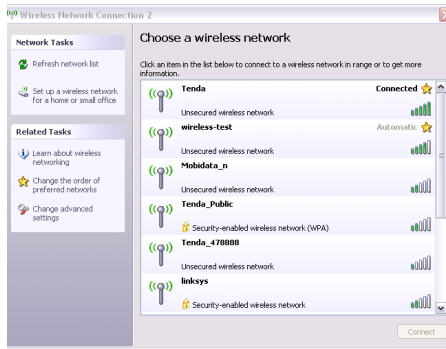


3. Select "Tenda" and click "Connect" or double-click "Tenda", input the "Network key" and "Confirm network key"

to connect to the Router



4. When the configuration is successfully completed, "Connected" will be shown in the interface as the following diagram.



Appendix III Glossary

3G

3G, the 3rd Generation, refers to the third digital communication technology. It can manage multi-media such as image, audio, and video streams etc. and provide different communication services such as web browse, telephone session, and electronic business etc.

TD-SCDMA

TD-SCDMA is short for Time Division - Synchronous CDMA, which is the 3G standard of mainland China. Integrating world-leading technologies such as intelligent wireless, synchronous CDMA and software wireless electricity, it has its unique advantages in its frequency spectrum utility, flexibility in operation supporting, frequency flexibility and cost. TD-SCDMA is one of the three 3G standards in the world.

CDMA2000

CDMA2000, also called CDMA Multi-Carrier, is one of the current three 3G standards in the world which was put forward by an American company. The system derives from narrow frequency CDMAOne digital standard. You can upgrade the original CDMAOne structure to 3G with cheap construction cost.

WCDMA

WCDMA (Wideband CDMA), also called CDMA Direct

Spread, is the broadband CDMA technology which was put forward by Europe. It is the standard of 3G technology which was developed from GSM network. The standard has put forward the evolved strategy. The system can be established on the present GSM network. The system provider can change into this system easily and it would be accepted widely in Asia. Thus, W-CDMA has a born advantage in market and is one of the three 3G standards in the world.

Channel

Channel is a virtual path between signal receiving and sending ends .The usable wireless frequency is divided into many segments by different standards and each frequency can modulate and transmit information separately, which equals to an independently-operated information channel.

If there are several APs coexisting in one area, you need to configure the channel for each AP to minimize the interference between neighboring APs. Generally, if 3 American- standard APs (i.e. adopts 11 channel) coexist in one area, you can set the channel respectively as 1, 6 and 11 to avoid interference

SSID

Service Set Identifier .An SSID is the network name shared by all devices in a wireless network. Your network's SSID should be unique to your network and identical for all

devices within the network. It is case-sensitive and must not exceed 20 characters (use any of the characters on the keyboard).Make sure this setting is the same for all devices in your wireless network.

WEP

Wired Equivalent Privacy (WEP) is the method for secure wireless data transmission. WEP adds data encryption to every single packet transmitted in the wireless network. The 40bit and 64bit encryption are the same because of out 64 bits, 40 bits are private. Conversely, 104 and 128 bit are the same. WEP uses a common KEY to encode the data. Therefore, all devices on a wireless network must use the same key and same type of encryption. There are 2 methods for entering the KEY; one is to enter a 16-bit HEX digit. Using this method, users must enter a 10-digit number (for 64-bit) or 26-digit number (for 128-bit) in the KEY field. Users must select the same key number for all devices. The other method is to enter a text and let the computer generate the WEP key for you. However, since each product use different method for key generation, it might not work for different products. Therefore, it is NOT recommended using.

WPA/WPA2

A security protocol for wireless networks that builds on the basic foundations of WEP. It secures wireless data

transmission by using a key similar to WEP, but the added strength of WPA is that the key changes dynamically. The changing key makes it much more difficult for a hacker to learn the key and gain access to the network.WPA2 is the second generation of WPA security and provides a stronger encryption mechanism through Advanced Encryption Standard (AES), which is a requirement for some government users.

Appendix Ⅳ Troubleshooting

In this part some questions and problems shown during the Router's usage and installation will be given suggesting answers. If your problems are not in the list, please log on to our website www.tenda.cn or send an E-mail to support@tenda.cn, and we will reply to you at the earliest.

1. Enter the IP address but can not visit the WEB management interface. What can I do?

Please make sure the cable is well connected and the corresponding indicator light up.

Make sure the device is not in Wireless Router mode. In this mode, you can visit the WEB interface only by Wireless network.

In the wireless access point (AP) mode, you must specify an IP for your computer (192.168.0.2 ~ 192.168.0.254) to access the device. Please click

"Start" - " Run "to enter "ping 192.168.0.1"to diagnose whether the device is connected. If it can ping pass, then check whether your browser enable a proxy server. If enabled please disable it. If you can not ping pass, you can hold down the "RESET" button for 7 seconds to restore the factory settings, and "ping192.168.0.1" again.

2. Forget the login password and can not enter the setting page. What can I do?

Press the "RESET" button for 7 seconds to restore the

Router to default settings.

3. The computer connected with the Router shows IP address conflict. What can I do?

Check if there are other DHCP servers in the LAN. If there are, please disable them.

The default IP address of the Router is 192.168.0.1, please make sure the address is not occupied by other devices. If there are two computers with the same IP addresses, please modify one.

4. My computer can not log in equipment; can not access the internet, and a yellow triangle with exclamation point symbols shows, how to deal with?

This problem is due to your network card is not assigned the IP address. If set your computer to automatically obtain IP, please ensure that the source of the router's DHCP is turned on. DHCP can automatically assign an IP address to your computer. If there is no DHCP, please set a static IP address and fill in gateways and DNS, otherwise you can not access Internet.

5. I can not use E-mail and access the Internet. What can I do?

It happens in ADSL connection and Dynamic IP users. And you need modify the default MTU value (1492). Please in the "WAN Setting" modify the MTU value with the recommended

value as 1450 or 1400.

6. How can I configure and access the Internet via Dynamic IP?

In Setup Wizard of the Web utility interface, select "Dynamic IP" connection type and click "Save" to activate it. As some ISPs bind the user computer's MAC address, you need to clone the Router's WAN MAC address to the bind21ing PC's MAC address. Select "MAC Address Clone" in "Advanced Setting" to input your computer's MAC address and click "Apply" to activate it.

7. How to share my computer's resource with other users in Internet?

If you want Internet users to access the internal server via the Router such as e-mail server, Web, FTP, you can configure the "Virtual Server" to come true.

Step 1: create your internal server, make sure the LAN users can access these servers and know related service port. For example, Web server's port is 80; FTP is 21; SMTP is 25 and POP3 is 110.

Step 2: in the Router's web click "Virtual Server" and select "Single Port Forwarding".

Step 3: input the external service port given by the Router, for example, 80.

Step 4: input the internal Web service port, for example, 80.

Step 5: Input the internal server's IP address. If your Web

server's IP address is 192.168.0.10, please input it.

Step 6: select the communication protocol used by your internal host: TCP, UDP, ICMP .

Step 7: click "Apply" to activate the settings.

The following table has listed the well-known application and service port:

Server	Protocol	Service Port
WEB Server	TCP	80
FTP Server	TCP	21
Telnet	TCP	23
NetMeeting	TCP	1503、1720
MSN Messenger	TCP/UDP	File Send:6891-6900(TCP) Voice:1863、6901(TCP) Voice:1863、5190(UDP)
PPTP VPN	TCP	1723
Iphone5.0	TCP	22555
SMTP	TCP	25
POP3	TCP	110

8. Why can't I use wireless WAN function to access the Internet?

a. Please make sure that the wireless adapter can access the Internet when connected to the computer, wireless signals scanned by the adapter are strong enough, and quality of signals is good enough. If it can scan too many wireless signals, we recommend you to use 11b/g mode for reducing interference.

b. Please make sure that the needed parameters such as SSID, MAC address etc. are correct. It is recommended to

use Auto Scan to finish the settings in the setup process.

c. Please make sure that IP address range obtained at WAN port are different as the one obtained at LAN port. If they are at the same range, you can modify the LAN IP address to solve the problem.

d. Please do not detach any antenna of the wireless Router when you are using the Router.

If you still have some problems, please contact our customer service or log on our website: http://www.tenda.cn

http://www.tenda.fi

http://www.microdata.fi

Technical Support

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Appendix V Complied 3G Modem Cards List

Brand	Model	Brand	Model
Tenda	3G189C	D-LINK	DWM_162U5
HUAWEI	EC169	D-LINK	DWM_162
HUAWEI	EC169 New	DCWL	390
HUAWEI	EC1260 China	Ruijie	EV2000
HUAWEI	EC1260 New	GXZG	GX100C
HUAWEI	EC1260 India	MACAO	CTM H21
HUAWEI	EC1261	WEWINS	U602D
HUAWEI	ET128	ChangHe	868
HUAWEI	E1750	HiNet	E220
HUAWEI	EC226	TURKCELL	E176G
HUAWEI	E1630 TMobile	Vodafone	E220
HUAWEI	E176G	Vodafone	K3520
HUAWEI	E176 Chile	Cricket	UM185C
HUAWEI	E180	Cricket	A600
HUAWEI	EC170 BT	T-Mobile	UMG181
HUAWEI	EC168C_Reliance	AT&T	USBConnect mercury
HUAWEI	EC168C_Tata	AT&T	GI0322
HUAWEI	MD-@ HSUPA	Sprint	USB 598
HUAWEI	E160E	Sprint	U150
HUAWEI	E1550	Sprint	U760
HUAWEI	EZ220 3G UK	Verizon	USB760
HUAWEI	BASE e.plus E169	Verizon	UMW190VW
Vtion	E1916	Verizon	UMW190

ZTE	MU351	Verizon	UMW175VW
ZTE	AC580	Ttec	WS 119
ZTE	AC581	Ttec	WS220
ZTE	AC581 New1	CCU	680
ZTE	AC581 New2	CCU	650
ZTE	AC560	Intertel leader	C810
ZTE	AC560-New	Sierra	USB306
ZTE	MF626 Chile	BeiFang Qingniao	EC805U
ZTE	MF626 TMobile	DTM	5731E
ZTE	AC2736	DeUnite	DU360
ZTE	AC2746	DeUnite	DU456
ZTE	AC8710	DeUnite	DU458
ZTE	MF637U	JinXunChi	EV169
ZTE	MU350	TIMESPOWER	WM2080A-110
ZTE	MF622	T-Linking	T-Linking
ZTE	MF627		CM810EV
ZTE	AC2726		MC727
ZTE	AC2726 Reliance		LKT 828
ZTE	AC8700 BSNL		Modem LC625
ZTE	AC8710 TATA		

ChangHong	CH600		
Datang	AirCard 901		

Remark:

1. The 3G modem cards in the above list are compatible with this 3G Router. Please confirm that the 3G modem card you purchased is in the compatibility list. Only the cards in the compatibility list can be supported by this Router.
2. We will keep updating the firmware to support the new 3G modem cards. If you find that our Router can not support your 3G modem card, please visit our official website www.tenda.cn to download new firmware.
3. Huawei EC226、EC122、E176G, Viton E1916, ZTE MU351 and GXZG LKT828 are added in V0.5.
4. You are recommended to use the extended USB line to connect your 3G modem card with the 3G Router for the best effect.

Appendix VI Regulatory Information

EU Declaration or Declaration of Conformity

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

FCC Statement

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

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

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

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

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

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

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with the minimum distance of 20 cm. Operation is subject to the following two conditions:

1) This device may not cause interference, and

2) This device must accept any interference, including interference that may cause undesired operation of the device.

Caution!

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