TP-LINK®

User Guide

TL-WA7510N

5GHz 150Mbps Indoor/ Outdoor Wireless Access Point

Rev: 1.0.0

1910010534

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http://www.tp-link.com

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.

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

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

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

FCC RF Radiation Exposure Statement

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

"To comply with FCC RF exposure compliance requirements, this grant is applicable to only Mobile Configurations. The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter."

CE Mark Warning

CE1588 (!)

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.

Industry Canada Statement:

This device complies with RSS-210 of the Industry Canada 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.

IMPORTANT NOTE:

Radiation Exposure Statement:

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

Ce dispositif est conforme à la norme CNR-210 d’Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes:

(1) Le dispositif ne doit pas produire de brouillage préjudiciable, et

(2) Ce dispositif doit accepter tout brouillage reçu,y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

NOTE IMPORTANTE:

Déclaration d’exposition aux radiations:

Cet équipement est conforme aux limites d’exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

Korea Warning Statements:

당해 무선설비는 운용중 전파혼신 가능성이 있음.

NCC Notice:

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

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

TP-LINK® TP-LINK TECHNOLOGIES CO., LTD

DECLARATION OF CONFORMITY

For the following equipment:
Product Description: **5GHz 150Mbps Indoor/ Outdoor Wireless Access Point**

Model No.: **TL-WA7510N**

Trademark: **TP-LINK**

We declare under our own responsibility that the above products satisfy all the technical regulations applicable to the product within the scope of Council Directives:
Directives 1999/5/EC, Directives 2004/108/EC, Directives 2006/95/EC, Directives 1999/519/EC, Directives 2011/65/EU
The above product is in conformity with the following standards or other normative documents
ETSI EN 300 328 V1.7.1: 2006
ETSI EN 301 489-1 V1.8.1:2008& ETSI EN 301 489-17 V2.1.1:2009
EN 55022:2006 +A1:2007
EN 55024:1998+A1:2001+A2:2003
EN 61000-3-2:2006+A1:2009+A2:2009
EN 61000-3-3:2008
EN60950-1:2006+A11:2009+A1:2010
EN62311:2008

The product carries the CE Mark:

CE1588 (!)

Person is responsible for marking this declaration:

Yang Hongliang
Product Manager of International Business

Date of issue: 2012

CONTENTS

Package Contents

The following items should be found in your package:

- One TL-WA7510N 5GHz 150Mbps Indoor/ Outdoor Wireless Access Point
- One Power Injector
- Ethernet Cable
- One Power Adapter for TL-WA7510N 5GHz 150Mbps Indoor/ Outdoor Wireless Access Point
- Mounting Kits
- Quick Installation Guide
- One Resource CD for TL-WA7510N 5GHz 150Mbps Indoor/ Outdoor Wireless Access Point, including:
  - This User Guide
  - Other helpful information

☞ **Note:**

Make sure that the package contains the above items. If any of the listed items is damaged or missing, please contact with your distributor.

Use only power supplies listed in this user manual.

Chapter 1 Introduction

1.1 Product Overview

The TL-WA7510N 5GHz 150Mbps Indoor/ Outdoor Wireless Access Point allows you to connect your network with other wireless devices wirelessly, sharing Internet Access, files and fun, easily and securely. The high power design will also help you build a more stable link or cover more area.

The TL-WA7510N 5GHz 150Mbps Indoor/ Outdoor Wireless Access Point provides three operation modes for multi-users to access the Internet: Standard AP, AP Router and AP Client Router. In Standard AP mode, it can work in various modes, such as Access Point/Multi-SSID/Client/Repeater/Universal Repeater/ Bridge with AP. In AP Router mode, it can access the Internet via an ADSL/Cable Modem, while sharing data wirelessly. In AP Client Router mode, it works as a WISP CPE and can access the Internet wirelessly via your WISP.

With the most attentive wireless security, the TL-WA7510N 5GHz 150Mbps Indoor/ Outdoor Wireless Access Point provides multiple protection measures. It can be set to turn off wireless network name (SSID) broadcast so that only stations that have the SSID can be connected. The AP provides wireless LAN 64/128/152-bit WEP encryption security, and WPA/WPA2 and WPA-PSK/WPA2-PSK authentication, as well as TKIP/AES encryption security. It also supports VPN pass-through for sensitive data secure transmission.

The TL-WA7510N 5GHz 150Mbps Indoor/ Outdoor Wireless Access Point complies with the IEEE 802.11a, IEEE 802.11n standards so that the data transmission rate is up to 150 Mbps.

1.2 Conventions

The AP, TL-WA7510N, or Device mentioned in this User guide stands for TL-WA7510N 5GHz 150Mbps Indoor/ Outdoor Wireless Access Point without any explanations.

Parameters provided in the pictures are just references for setting up the product, which may differ from the actual situation. You can set the parameters according to your demand.

1.3 Main Features

- Complies with IEEE 802.11a, IEEE 802.11n, IEEE 802.3, IEEE 802.3u, IEEE 802.1x, IEEE 802.3x, IEEE 802.11i, IEEE 802.11e
- Wireless Data transfer rates up to 150 Mbps
- Supports Standard AP, AP Router and AP Client Router operation mode
- High output transmit power and receive sensitivity optimized
- Supports AP Client Router Mode for WISP CPE
- Supports passive power over Ethernet

- Supports Wireless Distribution System (WDS)
- Supports Antenna Alignment
- Provides throughput monitor indicating the current wireless throughput
- Supports Layer 2 User Isolation
- Supports Ping Watch Dog
- Supports link speed test
- Supports Remote Management
- Output transmit power adjustable
- Supports PPPoE, Dynamic IP, Static IP, L2TP, PPTP and BigPond Cable Internet Access (BigPond Cable Internet Access is only available in AP Router mode.)
- Built-in NAT and DHCP server supporting static IP address distributing
- Supports UPnP, Dynamic DNS, Static Routing, VPN Pass-through
- Supports Virtual Server, Special Application and DMZ host
- Built-in firewall supporting IP address filtering, Domain Name filtering, and MAC address filtering
- Provides WLAN ACL (Access Control List)
- Supports configuration backup/restore and firmware upgrade
- Supports Web management

1.4 Panel Layout

1.4.1 The Rear Panel

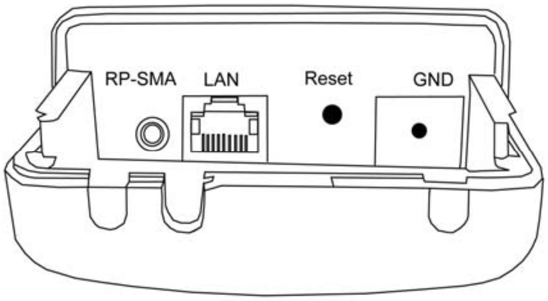


Figure 1-1 Rear Panel sketch

View from left to right, the parts are explained below.

- **RP-SMA:** This is where you can connect an outside antenna. For this AP, the antenna is built inside, and usually there is no necessity to connect an outside one.

- **LAN:** This port is used to connect to the POE port of the provided Power Injector.
- **Reset:**

  There are two ways to reset the AP's factory defaults:

  - Use the **Factory Defaults** function on **System Tools** -> **Factory Defaults** page in the AP's Web-based Utility.
  - Use the Factory Default Reset button: Press and hold the **Reset** button until **Wireless Signal Strength** LEDs flash, and then the AP will reboot.

☞ **Note:**

Ensure the AP is powered on before it restarts completely.

1.4.2 The Front Panel

TL-WA7510N consists of several LED indicators, which is designed to indicate connections and wireless signal.

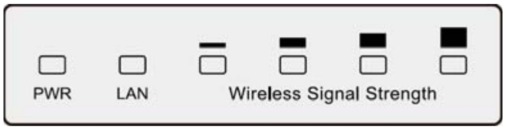


Figure 1-2 Front Panel sketch

View from left to right, the details are explained below.

Name	Status	Indication	
PWR	Off	No Power	
	On	Power on	
LAN	Off	There is no device linked to the corresponding port	
	On	There is a device linked to the corresponding port but no activity	
	Flashing	There is an active device linked to the corresponding port	
Wireless Signal Strength	Off	There is no remote wireless signal	Client or Repeater mode
	On	Indicates the wireless signal strength of a remote AP	

Table 1-1 the LED Description

Chapter 2 Connecting the Device

2.1 System Requirements

- Each PC in the LAN needs a working Ethernet Adapter and an Ethernet cable with RJ45 connectors.
- TCP/IP protocol must be installed on each PC.
- Web browser, such as Microsoft Internet Explorer 5.0 or later, Netscape Navigator 6.0 or later.
- If the device is configured to AP client router mode, you also need:

  Wireless Internet Access Service (WISP).
- If the device is configured to AP router mode, you also need:

  Broadband Internet Access Service (DSL/Cable/Ethernet).
- One DSL/Cable Modem that has an RJ45 connector (you do not need it if you connect the router to the Ethernet.).

2.2 Installation Environment Requirements

- Operating temperature: -30℃~70℃
- Operating Humidity: 10%~90% RH, Non-condensing

2.3 Connecting the Device

To connect the AP, please follow the steps below:

1. Power off your PC, Cable/DSL Modem, and the AP.
2. Locate an optimum location for the AP. The best place is usually at the center of your wireless network. The place must accord with the Installation Environment Requirements.
3. Adjust the direction of the antenna. Normally, upright is a good direction.

After finishing the steps above, please choose the operation mode you need and carry out the corresponding steps. There are three operation mode supported by this AP: **Standard AP**, **AP Router**, and **AP Client Router**.

2.3.1 Standard AP Mode

In this mode, the device enables multi-users to access, and provides several wireless modes, including Access Point, Multi-SSID, Client, Repeater, Universal Repeater, and Bridge with AP. These six modes are illustrated as below:

- **Access Point**

This operation mode allows wireless stations to access.

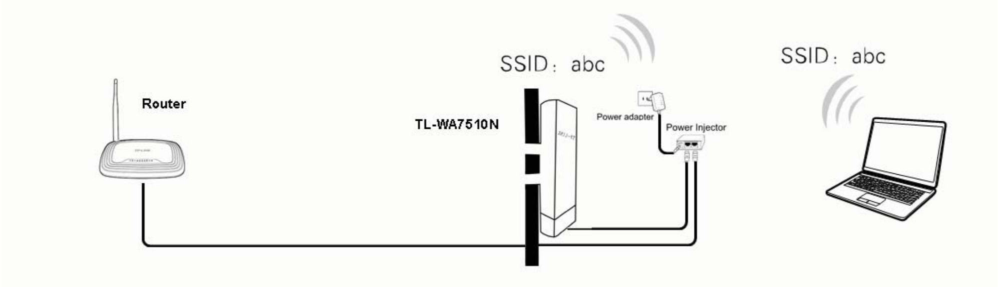


Figure 2-1 Hardware Installation of the TL-WA7510N in Access Point mode

1. Connect the LAN port of TL-WA7510N to the POE port of the Power Injector with an Ethernet cable.
2. Connect the LAN port of the Power Injector to the wired network port with an Ethernet cable.
3. Plug one end of the Power Adapter into the DC jack on the Power Injector, and the other end in the electrical wall socket.
4. Power on the notebook(s) and other connected devices (such as the Router).

- **Multi-SSID**

In this mode, AP can support up to 4 SSID.

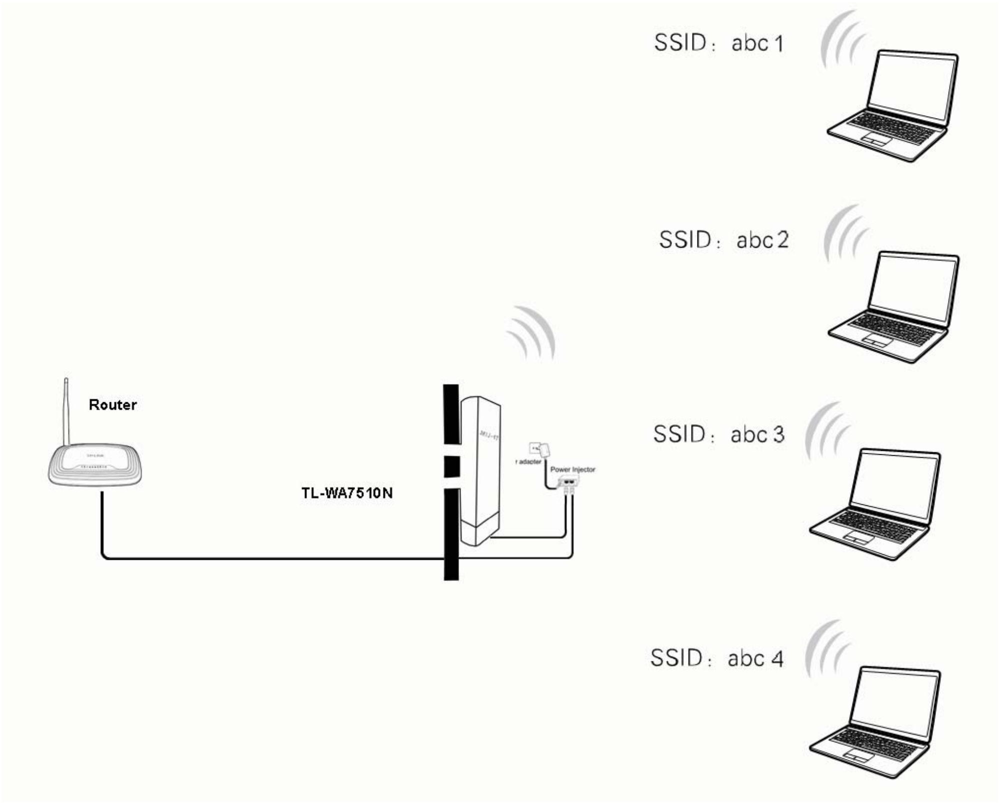


Figure 2-2 Hardware Installation of the TL-WA7510N in Multi-SSID mode

1. Connect the LAN port of TL-WA7510N to the POE port of the Power Injector with an Ethernet cable.
2. Connect the LAN port of the Power Injector to the wired network port with an Ethernet cable.
3. Plug one end of the Power Adapter into the DC jack on the Power Injector, and the other end in the electrical wall socket.
4. Power on the notebooks and other connected devices (such as the Router).

- **Client**

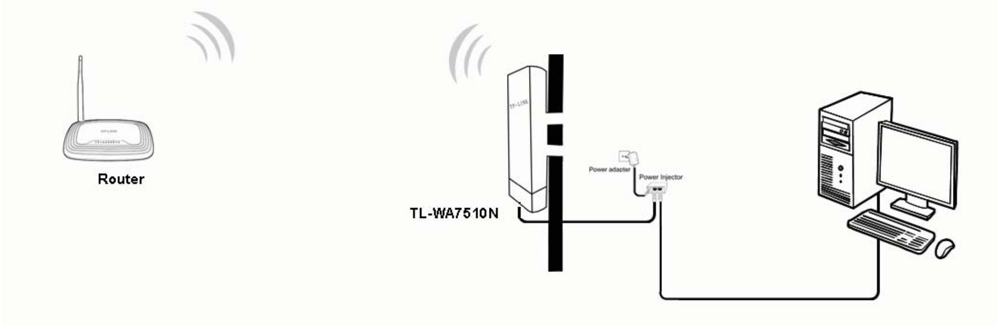


Figure 2-3 Hardware Installation of the TL-WA7510N in Client mode

1. Connect the LAN port of TL-WA7510N to the POE port of the Power Injector with an Ethernet cable.
2. Connect the PC to the LAN port of the Power Injector with an Ethernet cable.
3. Plug one end of the Power Adapter into the DC jack on the Power Injector, and the other end in electrical wall socket.
4. Power on the PC(s) and other connected devices (such as the Router).

➢ **Repeater and Universal Repeater**

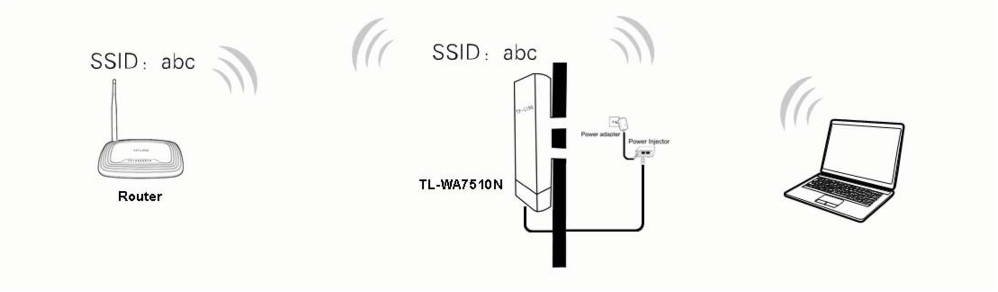


Figure 2-4 Hardware Installation of the TL-WA7510N in (Universal) Repeater mode

1. Connect the LAN port of TL-WA7510N to the POE port of the Power Injector with an Ethernet cable.
2. Plug one end of the Power Adapter into the DC jack on the Power Injector, and the other end in electrical wall socket.
3. Power on the PC(s) and other connected devices (such as the Router).

☞ **Note:**

Both Repeater and Universal Repeater modes allow the AP with its own BSS to relay data to a root AP. The wireless repeater relays signal between its stations and the root AP for greater wireless range. However, in Repeater mode, the WDS associated is enabled, while in Universal Repeater mode, the WDS associated is disabled.

➢ **Bridge with AP**

Two Devices are needed in this mode.

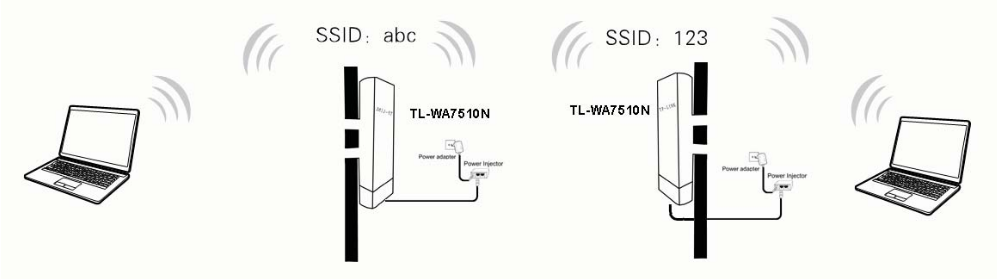


Figure 2-5 Hardware Installation of the TL-WA7510N in Standard AP -- Bridge mode

1. Connect the LAN port of TL-WA7510N to the POE port of the Power Injector with an Ethernet cable.
2. Plug one end of the Power Adapter into the DC jack on the Power Injector, and the other end in electrical wall socket.
3. Power on the PC(s).

☞ **Note:**

It is recommended that you connect a PC/notebook to the LAN port of the Device with an Ethernet cable, and then login the Device from the PC/notebook to set the Device in Bridge with AP mode.

2.3.2 AP Router Mode

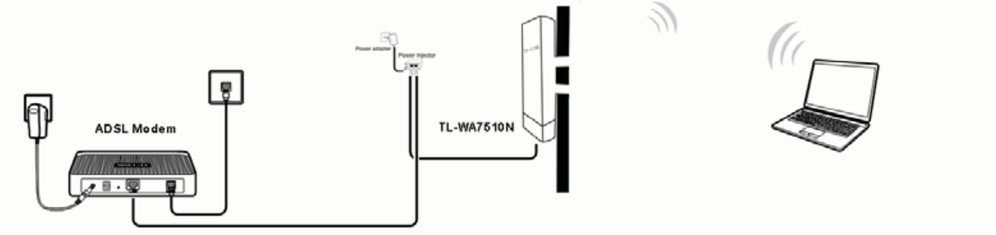


Figure 2-6 Hardware Installation of the TL-WA7510N in AP Router mode

1. Connect the LAN port of TL-WA7510N to the POE port of the Power Injector with an Ethernet cable.
2. Connect the DSL/Cable Modem to the LAN port of the Power Injector with an Ethernet cable.
3. Plug one end of the Power Adapter into the DC jack on the Power Injector, and the other end in electrical wall socket.
4. Power on the PC(s) and other connected devices (such as the ADSL modem).

☞ **Note:**

In this mode, the LAN port of the Power Injector (connected to the LAN port of the Device) works as the WAN port.

2.3.3 AP Client Router Mode

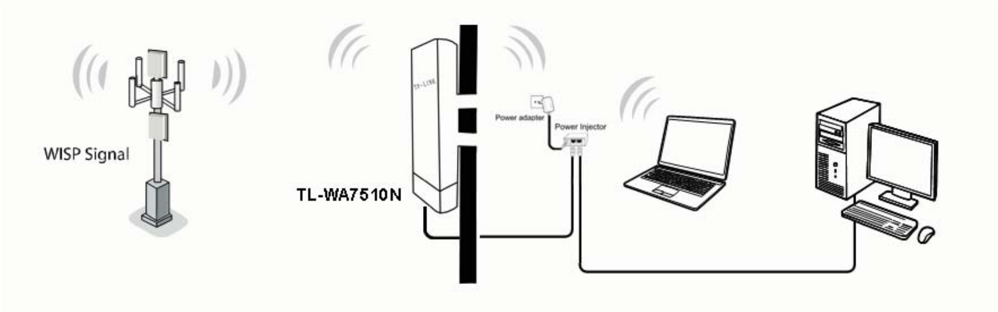


Figure 2-7 Hardware Installation of the TL-WA7510N in AP Client Router mode

1. Connect the LAN port of TL-WA7510N to the POE port of the Power Injector with an Ethernet cable.
2. Connect the PC to the LAN port of the Power Injector with an Ethernet cable.
3. Plug one end of the Power Adapter into the DC jack on the Power Injector, and the other end in electrical wall socket.
4. Power on the PC(s) and notebook(s).

Chapter 3 Quick Installation Guide

3.1 Configuring the PC

This chapter will guide you to configure your PC to communicate with the AP. The wireless adapter-equipped computers in your network must be in the same IP Address range without overlapping with each other. Manually configure the **IP address** as 192.168.1.* (* is any number within 1 to 253), and the **Subnet mask** as 255.255.255.0 for your PC following the instructions below.

Connect the local PCs to the LAN ports on the AP and configure the IP address manually for your PCs.

1. Click **Start** (in the lower left corner of the screen), right-click **My Network Connections** and choose **Properties**.

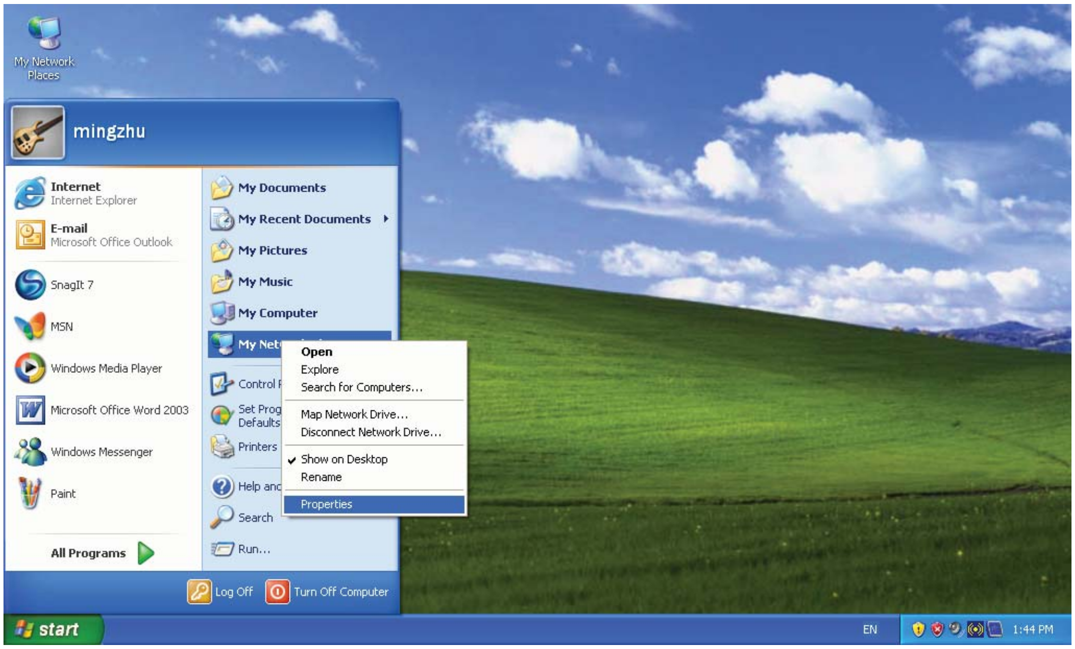


Figure 3-1

2. On the **My Network Connections** window shown as Figure 3-2 below, right-click **LAN (Local Area Connection)** and choose **Properties**.

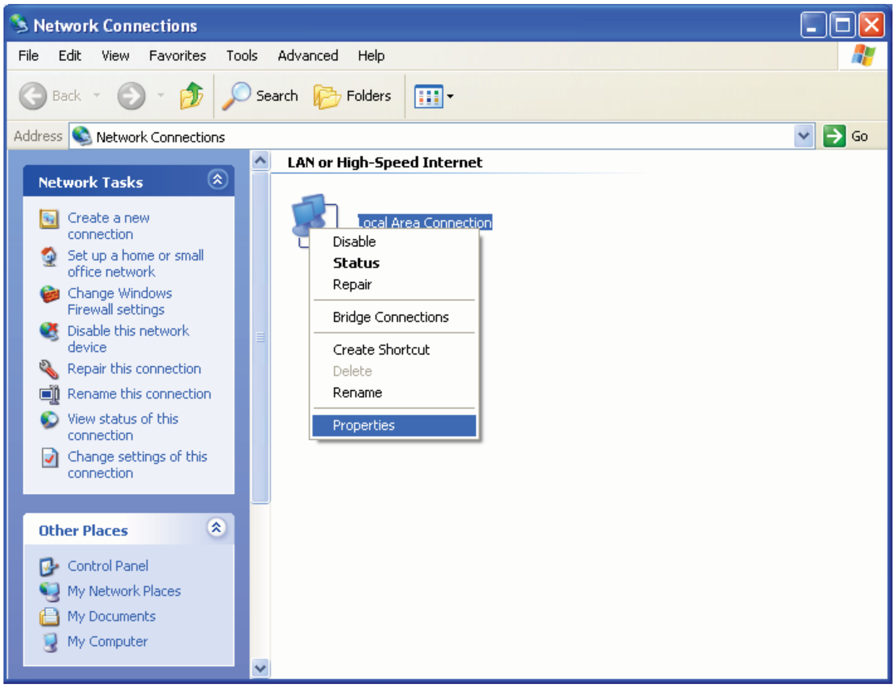
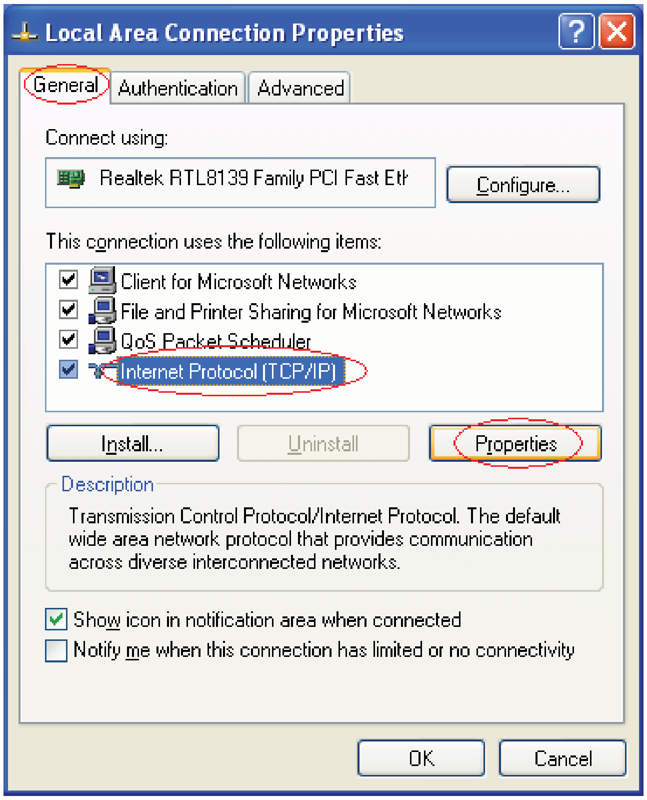


Figure 3-2

3. In the General tab of Internet Protocol (TCP/IP) Properties window, highlight Internet Protocol (TCP/IP) and click Properties.



Connect using:

Realtek RTL8139 Family PCI Fast Eth

This connection uses the following items:

☑ Client for Microsoft Networks
☑ File and Printer Sharing for Microsoft Networks
☑ QoS Packet Scheduler
☑ Internet Protocol (TCP/IP)

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

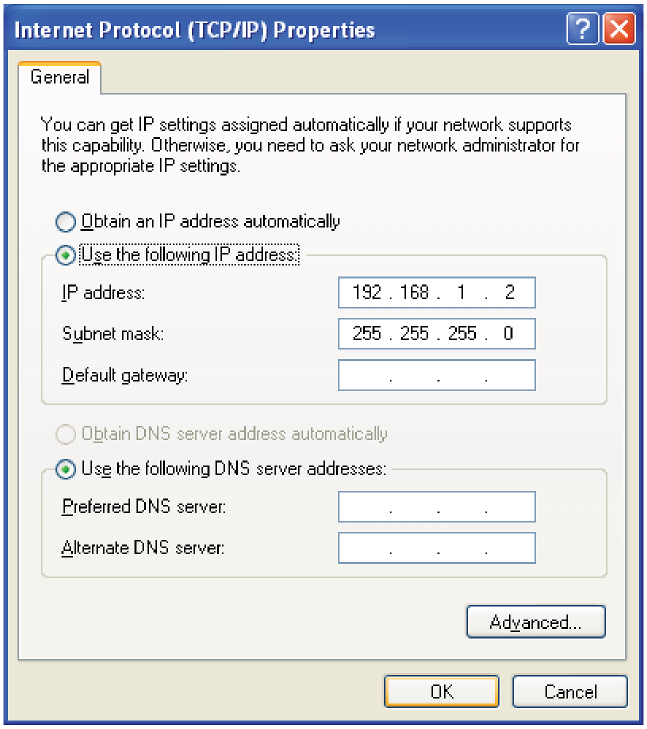
Figure 3-3

4. Configure the IP address manually.

   1) Select **Use the following IP address**.

   2) Enter 192.168.1.* (* is any integer between 1 to 253) into the **IP address** filed, 255.255.255.0 into the **Subnet mask** filed.

   3) Click **OK** to keep your settings.



Internet Protocol (TCP/IP) Properties

General

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

● Use the following IP address:

IP address: 192 . 168 . 1 . 2

Subnet mask: 255 . 255 . 255 . 0

Default gateway: . . .

○ Obtain DNS server address automatically

● Use the following DNS server addresses:

Preferred DNS server: . . .

Alternate DNS server: . . .

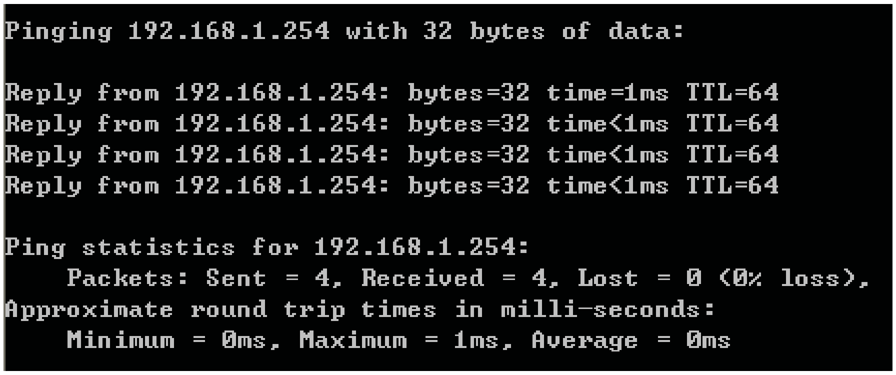
Figure 3-4

5. Verify the network connection between your PC and the AP via the Ping command. The following example is in Windows XP Operating System.

   1) Click **Start > Run** tab. Enter **cmd** in the filed and click **OK**.

   2) Type *ping 192.168.1.254* on the screen that displays and then press **Enter**.

   3) If the result displayed is similar to that shown in Figure 3-5 below, the connection between your PC and the AP has been successfully established.



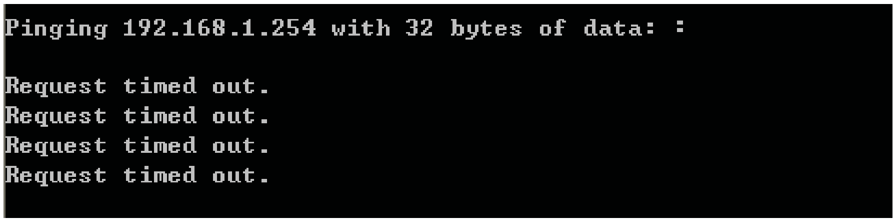
```
Pinging 192.168.1.254 with 32 bytes of data:

Reply from 192.168.1.254: bytes=32 time=1ms TTL=64
Reply from 192.168.1.254: bytes=32 time<1ms TTL=64
Reply from 192.168.1.254: bytes=32 time<1ms TTL=64
Reply from 192.168.1.254: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.1.254:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

Figure 3-5

If the result displayed is similar to that shown in Figure 3-6 below, it means that your PC has not connected to the AP.



```
Pinging 192.168.1.254 with 32 bytes of data: :

Request timed out.
Request timed out.
Request timed out.
Request timed out.
```

Figure 3-6

Please check following these steps:

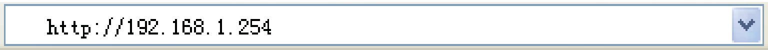
a) Check to see if your PC and the AP are right connected. The LED of LAN port which you link to on the device and the LED on your PC's adapter should be lit up.

b) Make sure the TCP/IP for your PC is right configured. If the AP's IP address is 192.168.1.254, your PC's IP address must be within the range of 192.168.1.1 ~ 192.168.1.253.

3.2 Quick Setup

The TL-WA7510N is easy to configure and manage with. To access the configuration utility, open a web-browser and type in the default address http://192.168.1.254 in the address field of the browser.

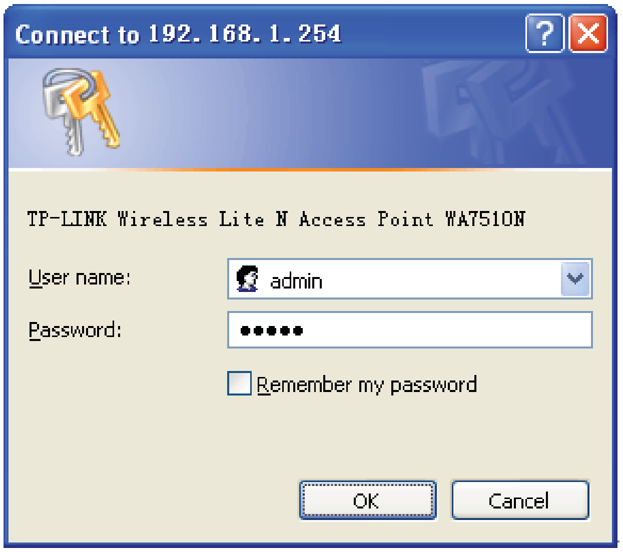
1. Open your web browser. Type in the default address http://192.168.1.254 in the address field of web browser and then press **Enter**.



http://192.168.1.254

Figure 3-7 Login to the AP

Enter **admin** for the User Name and Password (both in lower case letters) in Figure 3-8 below. Then click **OK** or press Enter.



Connect to 192.168.1.254

TP-LINK Wireless Lite N Access Point WA7510N

User name: admin

Password: ●●●●●

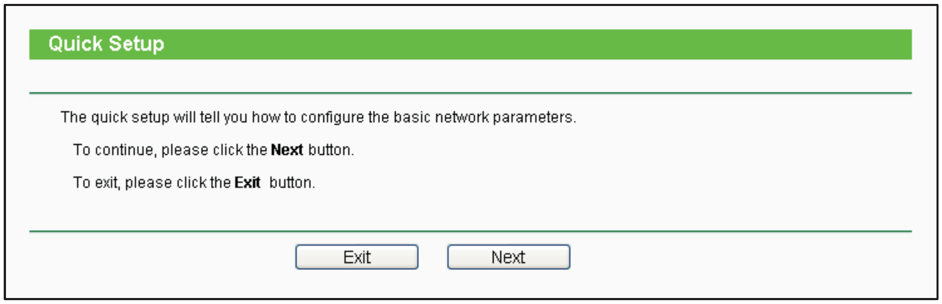
□ Remember my password

Figure 3-8 Login Windows

☞ **Note:**

If the above screen does not prompt, it means that your web-browser has been set to a proxy. Go to **Tools menu>Internet Options>Connections>LAN Settings**, in the screen that appears, cancel the **Using Proxy** checkbox, and click **OK** to finish it.

2. After a successful login, you can click the **Quick Setup** menu to quickly configure your Device.



Quick Setup

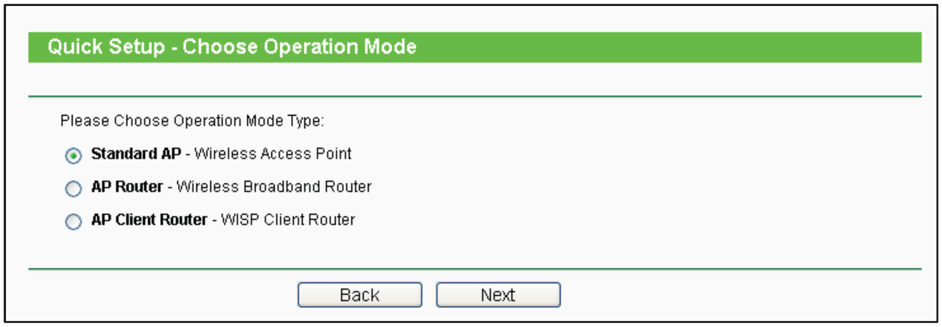
The quick setup will tell you how to configure the basic network parameters.

To continue, please click the **Next** button.

To exit, please click the **Exit** button.

Figure 3-9 Quick Setup

3. Click **Next**, and then **Choose Operation mode** page will appear as shown in Figure 3-10 .



Quick Setup - Choose Operation Mode

Please Choose Operation Mode Type:

● **Standard AP** - Wireless Access Point

○ **AP Router** - Wireless Broadband Router

○ **AP Client Router** - WISP Client Router

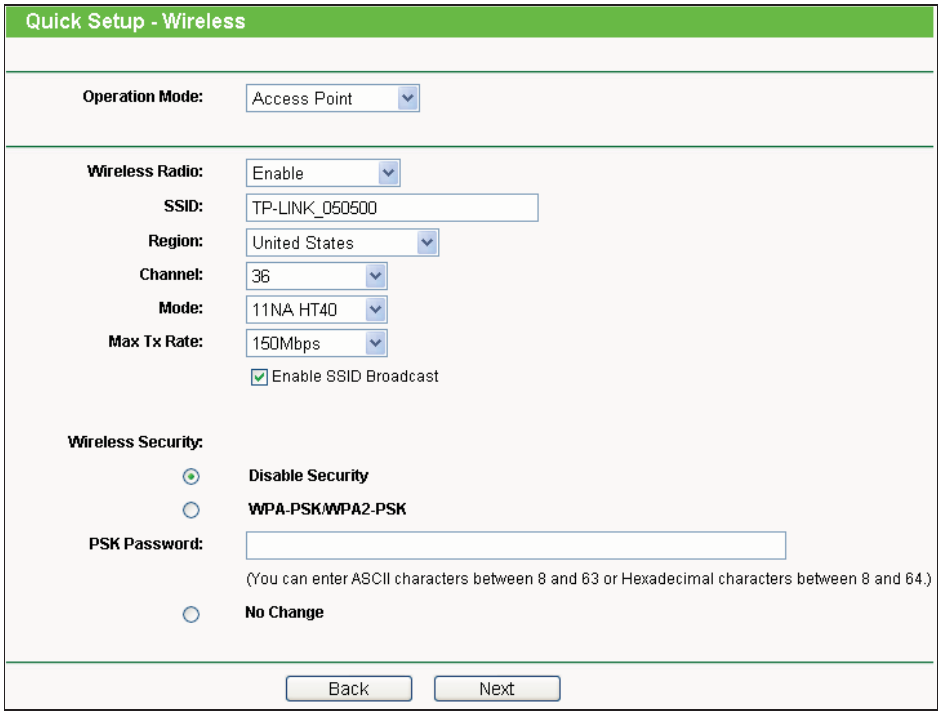
Figure 3-10 Choose Operation Mode

- **Standard AP**: In this mode, the device enables multi-users to access, and provides several wireless modes. such as AP, Client, Repeater and so on
- **AP Router**: In this mode, the device enables multi-users to share Internet via ADSL/Cable Modem. The wireless port share the same IP to ISP through Ethernet WAN port. The Wireless port acts the same as a LAN port while in AP Router mode.
- **AP Client Router**: In this mode, the device enables multi-users to share Internet from WISP. The LAN port devices share the same IP from WISP through Wireless port. While connecting to WISP, the Wireless port works as a WAN port in AP Client Router mode. The Ethernet port acts as a LAN port.

3.2.1 Standard AP Mode

When you choose **Standard AP Mode** on **Operation Mode** page in Figure 3-10, take the following steps:

1. Click **Next** in Figure 3-10, and then **Wireless** page will appear as shown in Figure 3-11.



Quick Setup - Wireless

Operation Mode: Access Point

Wireless Radio: Enable

SSID: TP-LINK_050500

Region: United States

Channel: 36

Mode: 11NA HT40

Max Tx Rate: 150Mbps

☑ Enable SSID Broadcast

Wireless Security:

● Disable Security

○ WPA-PSK/WPA2-PSK

PSK Password:

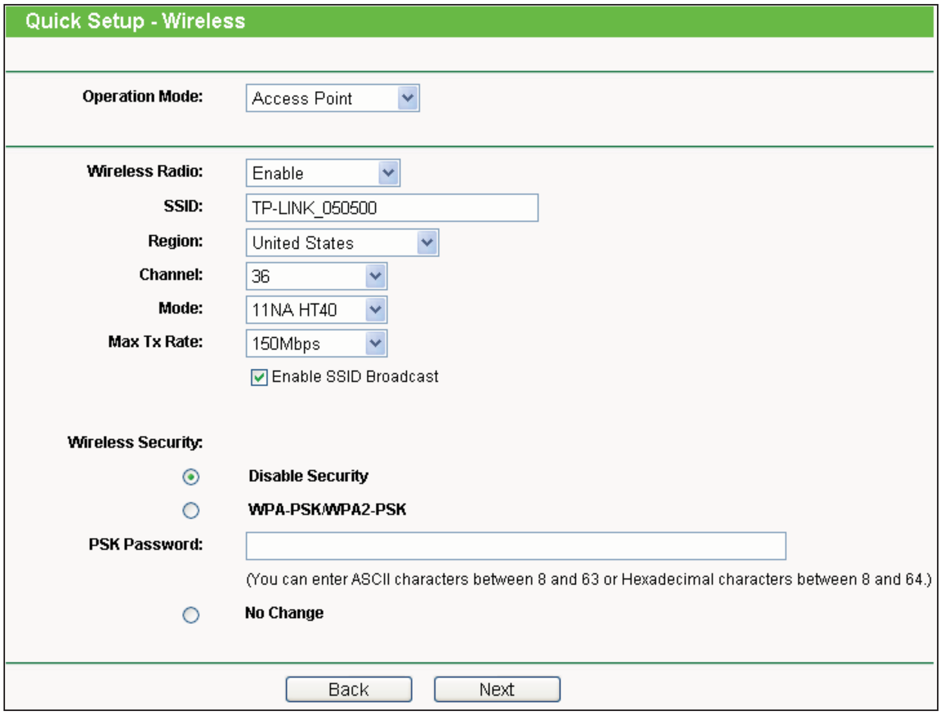
(You can enter ASCII characters between 8 and 63 or Hexadecimal characters between 8 and 64.)

○ No Change

Figure 3-11

- **Operation Mode -** Several Operation Modes are supported, including: **Access Point, Multi-SSID, Client, Repeater, Universal Repeater, and Bridge with AP**. The available setting options are different in various operation modes.

1) **Access Point –** This operation mode allows wireless stations to access.



Quick Setup - Wireless

Operation Mode: Access Point

Wireless Radio: Enable

SSID: TP-LINK_050500

Region: United States

Channel: 36

Mode: 11NA HT40

Max Tx Rate: 150Mbps

☑ Enable SSID Broadcast

Wireless Security:

● Disable Security

○ WPA-PSK/WPA2-PSK

PSK Password:

(You can enter ASCII characters between 8 and 63 or Hexadecimal characters between 8 and 64.)

○ No Change

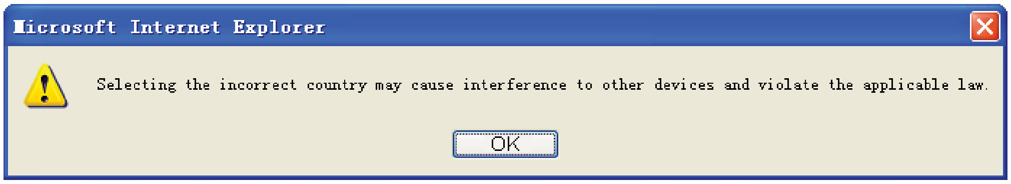
Figure 3-12

- **Wireless Radio**- Enable or disable the wireless radio.

- **SSID**- Enter a string of up to 32 characters. The same Name (SSID) must be assigned to all wireless devices in your network. The default SSID is set to be **TP-LINK _xxxxxx** (xxxxxx indicates the last unique six characters of each AP's MAC address), which can ensure your wireless network security. But it is recommended strongly that you change your networks name (SSID) to a different value. This value is case-sensitive. For example, **MYSSID** is NOT the same as **MySsid**.

- **Region**- Select your region from the pull-down list. This field specifies the region where the wireless function of the Device can be used. It may be illegal to use the wireless function of the Device in a region other than one of those specified in this filed. If your country or region is not listed, please contact your local government agency for assistance.

- When you select your local region from the pull-down list, click the **Save** button, then the Note Dialog appears. Click **OK**.



Microsoft Internet Explorer

Selecting the incorrect country may cause interference to other devices and violate the applicable law.

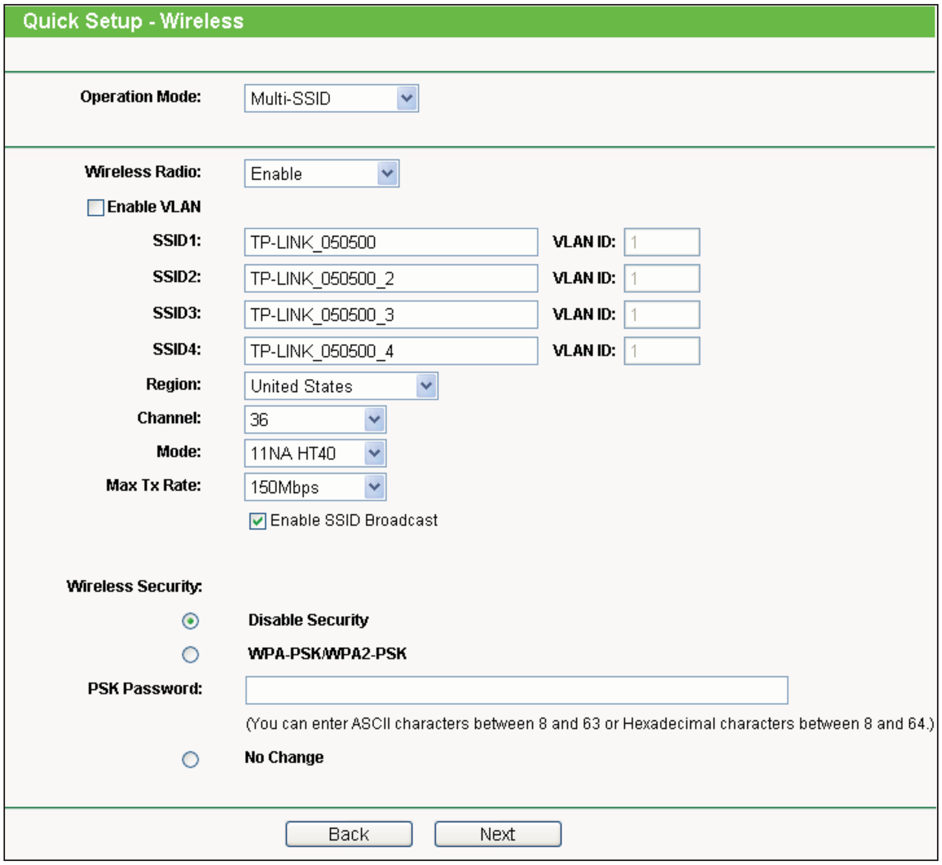
Note Dialog

- **Channel**- This field determines which operating frequency will be used. It is not necessary to change the wireless channel unless you notice interference problems with another nearby access point. If you select auto, then the AP will select the best channel automatically.
- **Mode**- This field determines the wireless mode which the AP works on.
- **Max Tx Rate** - You can limit the maximum tx rate of the AP through this field.

You can select one of the following security options:

- **Disable Security**- The wireless security function can be enabled or disabled. If disabled, the wireless stations will be able to connect the AP without encryption. It is recommended strongly that you choose one of the following options to enable security.
- **WPA-PSK/WPA2-PSK**- Select WPA based on pre-shared passphrase.
- **PSK Password**- You can enter **ASCII** or **Hexadecimal** characters.
  For **ASCII**, the length should be between 8 and 63 characters.
  For **Hexadecimal**, the length should be between 8 and 64 characters.
  Please note that the key is case sensitive.
- **Not Change**- If you chose this option, wireless security configuration will not change.

2) **Multi-SSID –** AP can support up to 4 SSIDs.



Quick Setup - Wireless

Operation Mode: Multi-SSID

Wireless Radio: Enable

□ Enable VLAN

SSID1: TP-LINK_050500 VLAN ID: 1

SSID2: TP-LINK_050500_2 VLAN ID: 1

SSID3: TP-LINK_050500_3 VLAN ID: 1

SSID4: TP-LINK_050500_4 VLAN ID: 1

Region: United States

Channel: 36

Mode: 11NA HT40

Max Tx Rate: 150Mbps

☑ Enable SSID Broadcast

Wireless Security:

● Disable Security

○ WPA-PSK/WPA2-PSK

PSK Password:

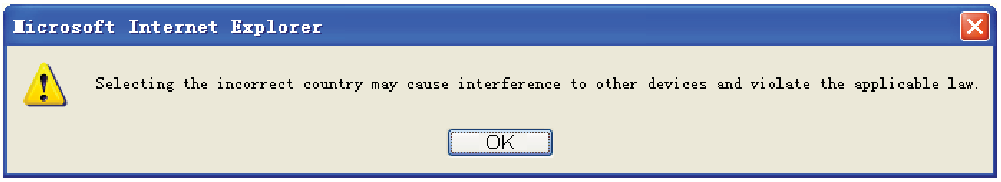
(You can enter ASCII characters between 8 and 63 or Hexadecimal characters between 8 and 64.)

○ No Change

Figure 3-13

- **Wireless Radio**- The wireless radio of the AP can be enabled or disabled to allow or deny wireless stations to access. If enabled, the wireless stations will be able to access the AP; otherwise, wireless stations will not be able to access the AP.
- **Enable VLAN**- Check this box to enable the VLAN function. The AP supports up to 4 VLANs. All wireless PCs in the VLANs are able to access this AP. The AP can also work with an IEEE 802.1Q Tag VLAN supporting Switch. If this Switch enables the Tag VLAN function, besides all wireless PCs, only the PCs in the VLAN same with SSID1 are able to access the AP. If a PC is directly connected to the LAN port of the AP, please make sure that its adapter supports Tag function, or this PC will not be able to access the AP.
- **SSID**- Enter a value of up to 32 characters. The same Name (SSID) must be assigned to all wireless devices in your network. In Multi-SSID operation mode, enter SSID for each BSS in the field "SSID1" ~ "SSID4".
- **VLAN ID**- The ID of a VLAN. Only in the same VLAN can a wireless PC and a wired PC communicate with each other. The value can be between 1 and 4095. If the VLAN function is enabled, when AP forwards packets, the packets out from the LAN port will be added with an IEEE 802.1Q VLAN Tag, whose VLAN ID is just the ID of the VLAN where the sender belongs.
- **Region**- Select your region from the pull-down list. This field specifies the region where the wireless function of the AP can be used. It may be illegal to use the wireless function of the AP in a region other than one of those specified in this filed. If your country or region is not listed, please contact your local government agency for assistance.

  When you select your local region from the pull-down list, click the **Save** button, then the Note Dialog appears. Click **OK**.



Selecting the incorrect country may cause interference to other devices and violate the applicable law.

Note Dialog

- **Channel**- This field determines which operating frequency will be used. It is not necessary to change the wireless channel unless you notice interference problems with another nearby access point.
- **Mode**-This field determines the wireless mode which the AP works on.
- **Max Tx Rate**- You can limit the maximum tx rate of the AP through this field.
- **Enable SSID Broadcast**- If you select the **Enable SSID Broadcast** checkbox, the AP will broadcast its name (SSID) on the air.

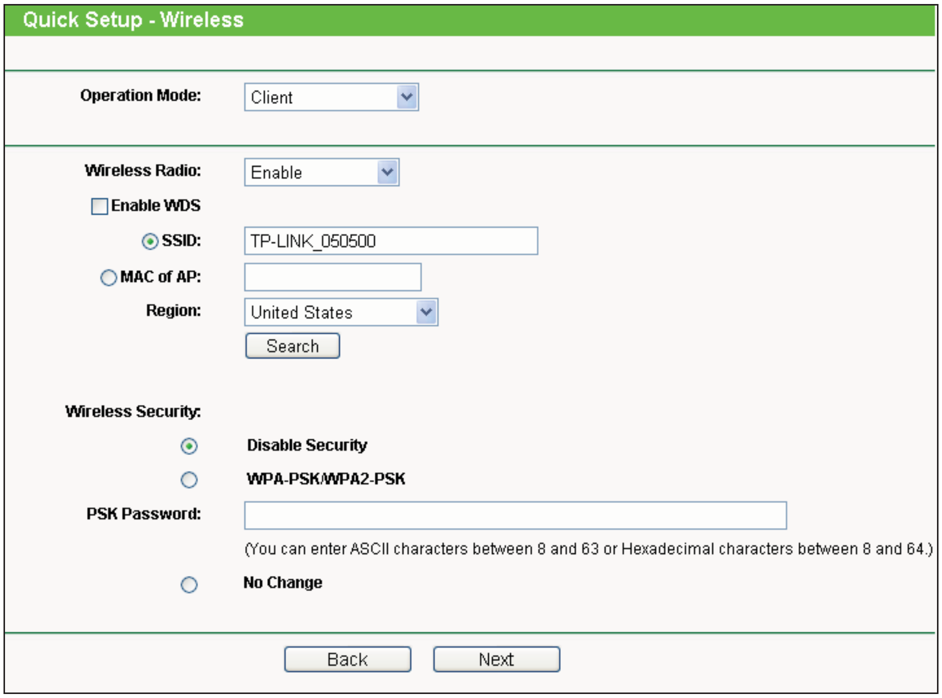
You can select one of the following security options:

- **Disable Security**- The wireless security function can be enabled or disabled. If disabled, the wireless stations will be able to connect the AP without encryption. It is recommended strongly that you choose one of the following options to enable security.
- **WPA-PSK/WPA2-PSK**- Select WPA based on pre-shared passphrase.

- **PSK Password**- You can enter **ASCII** or **Hexadecimal** characters.
  For **ASCII**, the length should be between 8 and 63 characters.
  For **Hexadecimal**, the length should be between 8 and 64 characters.
  Please note that the key is case sensitive.

- **Not Change**- If you chose this option, wireless security configuration will not change.

3) **Client –** The device will act as a wireless station to enable wired host(s) to access AP.



Quick Setup - Wireless

Operation Mode: Client

Wireless Radio: Enable

□ Enable WDS

● SSID: TP-LINK_050500

○ MAC of AP:

Region: United States

Wireless Security:

● Disable Security

○ WPA-PSK/WPA2-PSK

PSK Password:

(You can enter ASCII characters between 8 and 63 or Hexadecimal characters between 8 and 64.)

○ No Change

Figure 3-14

- **Wireless Radio**- The wireless radio of the AP can be enabled or disabled to allow or deny wireless stations to access. If enabled, the wireless stations will be able to access the AP; otherwise, wireless stations will not be able to access the AP.

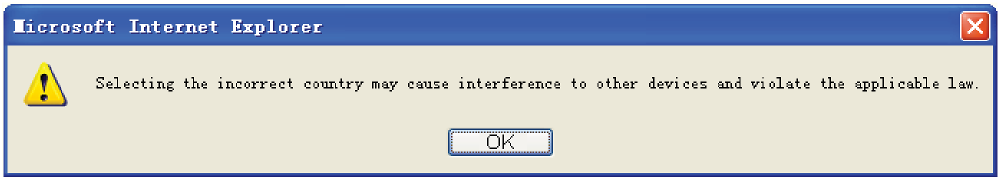
- **Enable WDS-** The AP client can connect to AP with WDS enabled or disabled. If WDS is enabled, all traffic from wired networks will be forwarded in the format of WDS frames consisting of four address fields. If WDS is disabled, three address frames are used. If your AP supports WDS well, please enable this option.

- **SSID**- Enter the SSID of AP that you want to access. If you select the radio button before **SSID**, the AP client will connect to AP according to SSID.

- **MAC of AP**- Enter the MAC address of AP that you want to access. If you select the radio button before **MAC of AP**, the AP client will connect to AP according to MAC address.

- **Region**- Select your region from the pull-down list. This field specifies the region where the wireless function of the AP can be used. It may be illegal to use the wireless function of the AP in a region other than one of those specified in this filed. If your country or region is not listed, please contact your local government agency for assistance.

- When you select your local region from the pull-down list, click the **Save** button, then the Note Dialog appears. Click **OK**.



Microsoft Internet Explorer

Selecting the incorrect country may cause interference to other devices and violate the applicable law.

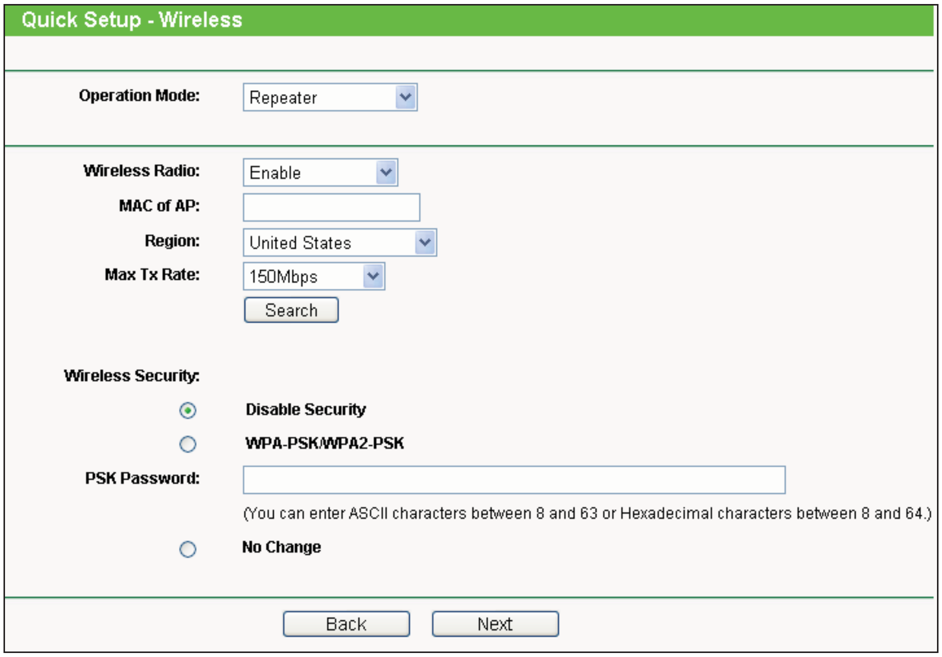
Note Dialog

You can select one of the following security options:

- **Disable Security**- The wireless security function can be enabled or disabled. If disabled, the wireless stations will be able to connect the AP without encryption. It is recommended strongly that you choose one of the following options to enable security.
- **WPA-PSK/WPA2-PSK**- Select WPA based on pre-shared passphrase.
- **PSK Password**- You can enter **ASCII** or **Hexadecimal** characters.
  For **ASCII**, the length should be between 8 and 63 characters.
  For **Hexadecimal**, the length should be between 8 and 64 characters.
  Please note that the key is case sensitive.
- **Not Change**- If you chose this option, wireless security configuration will not change.

4) Repeater

In Repeater mode, the AP with WDS enabled will relay data to an associated root AP. AP function is enabled meanwhile. The wireless repeater relays signal between its stations and the root AP for greater wireless range. Please input the MAC address of root AP in the field "MAC of AP".



Quick Setup - Wireless

Operation Mode: Repeater

Wireless Radio: Enable

MAC of AP:

Region: United States

Max Tx Rate: 150Mbps

Wireless Security:

● Disable Security

○ WPA-PSK/WPA2-PSK

PSK Password:

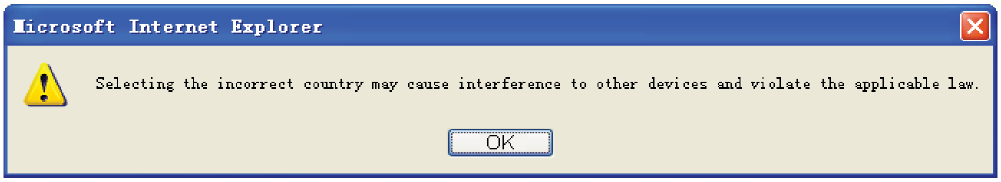
(You can enter ASCII characters between 8 and 63 or Hexadecimal characters between 8 and 64.)

○ No Change

Figure 3-15

- **Wireless Radio**- The wireless radio of the AP can be enabled or disabled to allow or deny wireless stations to access. If enabled, the wireless stations will be able to access the AP; otherwise, wireless stations will not be able to access the AP.
- **MAC of AP**- Enter the MAC address of AP that you want to access. If you select the radio button before **MAC of AP**, the AP client will connect to AP according to MAC address.
- **Region**- Select your region from the pull-down list. This field specifies the region where the wireless function of the AP can be used. It may be illegal to use the wireless function of the AP in a region other than one of those specified in this filed. If your country or region is not listed, please contact your local government agency for assistance.

  When you select your local region from the pull-down list, click the **Save** button, then the Note Dialog appears. Click **OK**.



Microsoft Internet Explorer

Selecting the incorrect country may cause interference to other devices and violate the applicable law.

Note Dialog

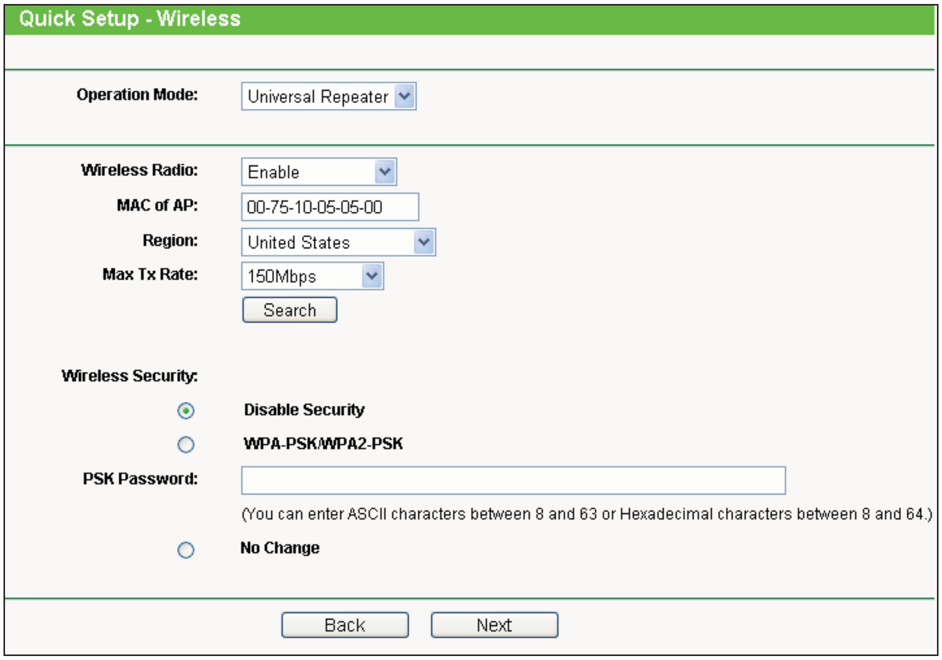
- **Max Tx Rate**- You can limit the maximum tx rate of the AP through this field.

You can select one of the following security options:

- **Disable Security**- The wireless security function can be enabled or disabled. If disabled, the wireless stations will be able to connect the AP without encryption. It is recommended strongly that you choose one of the following options to enable security.
- **WPA-PSK/WPA2-PSK**- Select WPA based on pre-shared passphrase.
- **PSK Password**- You can enter **ASCII** or **Hexadecimal** characters.
  For **ASCII**, the length should be between 8 and 63 characters.
  For **Hexadecimal**, the length should be between 8 and 64 characters.
  Please note that the key is case sensitive.
- **Not Change**- If you chose this option, wireless security configuration will not change.

5) Universal Repeater

In Universal Repeater mode, the AP with WDS disabled will relay data to an associated root AP. AP function is enabled meanwhile. The wireless repeater relays signal between its stations and the root AP for greater wireless range. Please input the MAC address of root AP in the field "MAC of AP".



Quick Setup - Wireless

Operation Mode: Universal Repeater

Wireless Radio: Enable

MAC of AP: 00-75-10-05-05-00

Region: United States

Max Tx Rate: 150Mbps

Wireless Security:

● Disable Security

○ WPA-PSK/WPA2-PSK

PSK Password:

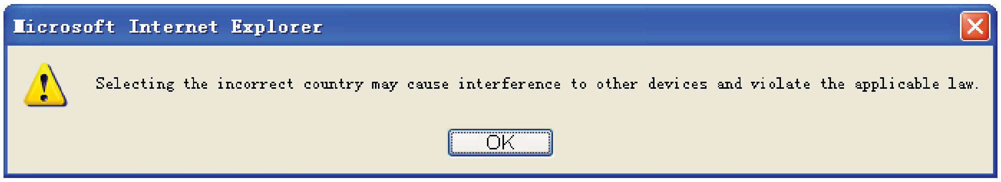
(You can enter ASCII characters between 8 and 63 or Hexadecimal characters between 8 and 64.)

○ No Change

Figure 3-16

- **Wireless Radio**- The wireless radio of the AP can be enabled or disabled to allow or deny wireless stations to access. If enabled, the wireless stations will be able to access the AP; otherwise, wireless stations will not be able to access the AP.
- **MAC of AP**- Enter the MAC address of AP that you want to access. If you select the radio button before **MAC of AP**, the AP client will connect to AP according to MAC address.
- **Region**- Select your region from the pull-down list. This field specifies the region where the wireless function of the AP can be used. It may be illegal to use the wireless function of the AP in a region other than one of those specified in this filed. If your country or region is not listed, please contact your local government agency for assistance.

  When you select your local region from the pull-down list, click the **Save** button, then the Note Dialog appears. Click **OK**.



Microsoft Internet Explorer

Selecting the incorrect country may cause interference to other devices and violate the applicable law.

Note Dialog

- **Max Tx Rate**- You can limit the maximum tx rate of the AP through this field.

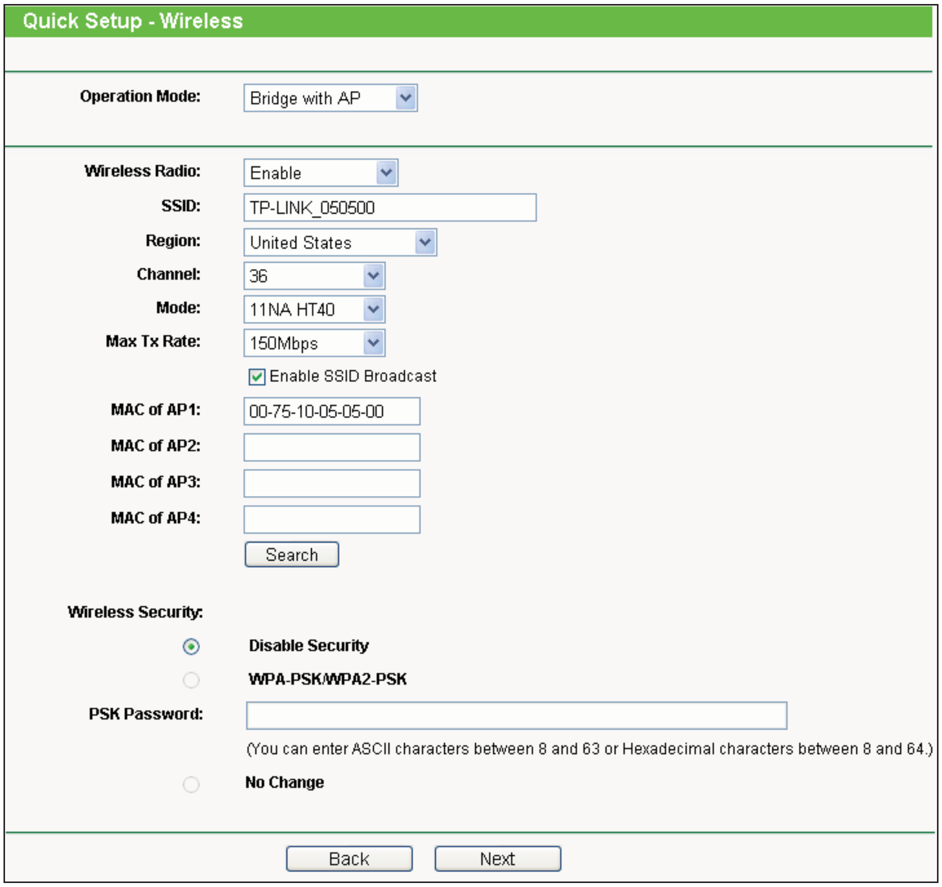
You can select one of the following security options:

- **Disable Security**- The wireless security function can be enabled or disabled. If disabled, the wireless stations will be able to connect the AP without encryption. It is recommended strongly that you choose one of the following options to enable security.
- **WPA-PSK/WPA2-PSK**- Select WPA based on pre-shared passphrase.

- **PSK Password**- You can enter **ASCII** or **Hexadecimal** characters.
  For **ASCII**, the length should be between 8 and 63 characters.
  For **Hexadecimal**, the length should be between 8 and 64 characters.
  Please note that the key is case sensitive.
- **Not Change**- If you chose this option, wireless security configuration will not change.

6) Bridge with AP

This operation mode bridges the AP and up to 4 APs also in bridge mode to connect two or more wired LANs. Please input the MAC address of other APs in the field "MAC of AP1" to "MAC of AP4". AP function will also start up.



Quick Setup - Wireless

Operation Mode: Bridge with AP

Wireless Radio: Enable

SSID: TP-LINK_050500

Region: United States

Channel: 36

Mode: 11NA HT40

Max Tx Rate: 150Mbps

☑ Enable SSID Broadcast

MAC of AP1: 00-75-10-05-05-00

MAC of AP2:

MAC of AP3:

MAC of AP4:

Search

Wireless Security:

● Disable Security

○ WPA-PSK/WPA2-PSK

PSK Password:

(You can enter ASCII characters between 8 and 63 or Hexadecimal characters between 8 and 64.)

○ No Change

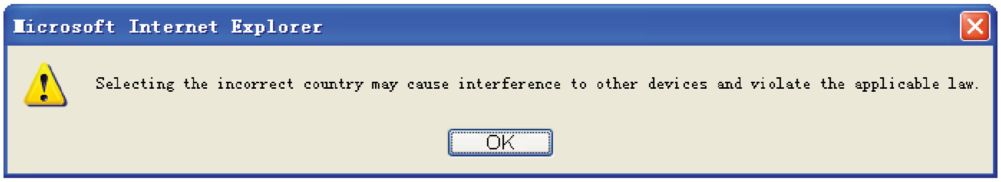
Back Next

Figure 3-17

- **Wireless Radio**- The wireless radio of the AP can be enabled or disabled to allow or deny wireless stations to access. If enabled, the wireless stations will be able to access the AP; otherwise, wireless stations will not be able to access the AP.
- **SSID**- Enter the SSID of AP that you want to access. If you select the radio button before **SSID**, the AP client will connect to AP according to SSID.
- **Region**- Select your region from the pull-down list. This field specifies the region where the wireless function of the AP can be used. It may be illegal to use the wireless function of the

AP in a region other than one of those specified in this filed. If your country or region is not listed, please contact your local government agency for assistance.

- When you select your local region from the pull-down list, click the **Save** button, then the Note Dialog appears. Click **OK**.



Microsoft Internet Explorer

Selecting the incorrect country may cause interference to other devices and violate the applicable law.

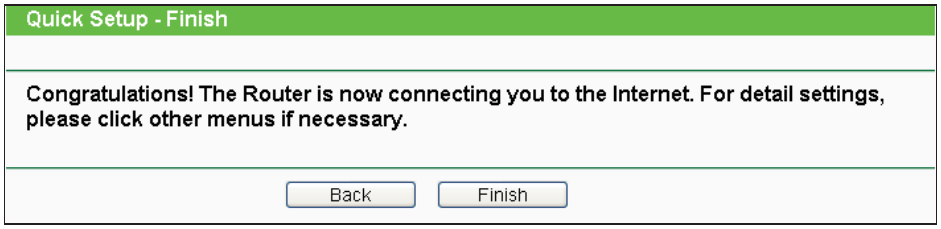
Note Dialog

- **Channel**- This field determines which operating frequency will be used. It is not necessary to change the wireless channel unless you notice interference problems with another nearby access point.
- **Mode**-This field determines the wireless mode which the AP works on.
- **Max Tx Rate**- You can limit the maximum tx rate of the AP through this field.
- **Enable SSID Broadcast**- If you select the **Enable SSID Broadcast** checkbox, the AP will broadcast its name (SSID) on the air.
- **MAC of AP**- Enter the MAC address of AP that you want to access. If you select the radio button before **MAC of AP**, the AP client will connect to AP according to MAC address.

You can select one of the following security options:

- **Disable Security**- The wireless security function can be enabled or disabled. If disabled, the wireless stations will be able to connect the AP without encryption. It is recommended strongly that you choose one of the following options to enable security.
- **WPA-PSK/WPA2-PSK**- Select WPA based on pre-shared passphrase.
- **PSK Password**- You can enter **ASCII** or **Hexadecimal** characters.
  For **ASCII**, the length should be between 8 and 63 characters.
  For **Hexadecimal**, the length should be between 8 and 64 characters.
  Please note that the key is case sensitive.
- **Not Change**- If you chose this option, wireless security configuration will not change.

2. Click **Finish** button in Figure 3-18 to complete the **Quick Setup**.



Quick Setup - Finish

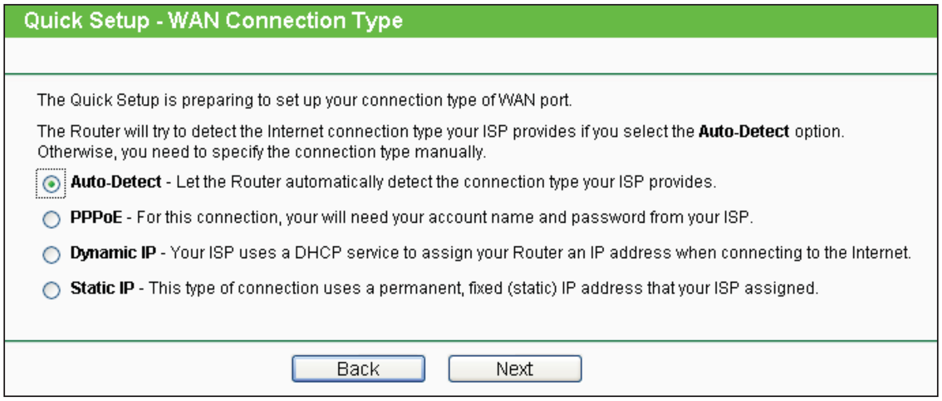
Congratulations! The Router is now connecting you to the Internet. For detail settings, please click other menus if necessary.

Figure 3-18

3.2.2 AP Router Mode

When you choose **AP Router Mode** on **Operation Mode** page in Figure 3-10, take the following steps:

1. Click **Next** in Figure 3-10, and then **WAN Connection Type** page will appear as shown in Figure 3-19.



Quick Setup - WAN Connection Type

The Quick Setup is preparing to set up your connection type of WAN port.

The Router will try to detect the Internet connection type your ISP provides if you select the **Auto-Detect** option. Otherwise, you need to specify the connection type manually.

● **Auto-Detect** - Let the Router automatically detect the connection type your ISP provides.

○ **PPPoE** - For this connection, your will need your account name and password from your ISP.

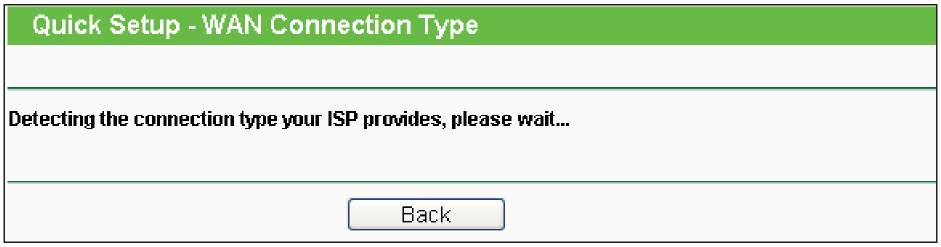
○ **Dynamic IP** - Your ISP uses a DHCP service to assign your Router an IP address when connecting to the Internet.

○ **Static IP** - This type of connection uses a permanent, fixed (static) IP address that your ISP assigned.

Figure 3-19

- **Auto Detect** - If you don't know the connection type your ISP provides, use this option to allow the Quick Setup to search your Internet connection for servers as well as protocols, and to determine your ISP configuration. Make sure the cable is securely plugged into the WAN port before detection. The appropriate configuration page will be displayed when an active Internet service is successfully detected by the Device.

  If you choose **Auto Detect** in Figure 3-19 and then click **Next**, Figure 3-20 will appear.



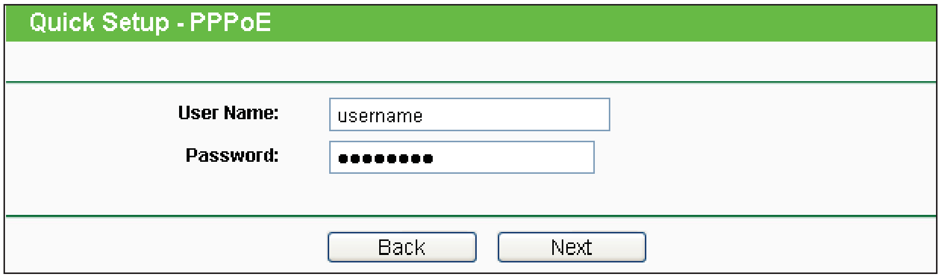
Quick Setup - WAN Connection Type

Detecting the connection type your ISP provides, please wait...

Figure 3-20

- **PPPoE** - If you have applied ADSL to realize Dial-up service, you should choose this type. In this condition, you should fill in both the User Name and Password that your ISP provides.

1) If you choose **PPPoE** in Figure 3-19 and then click **Next**, Figure 3-21 will appear.



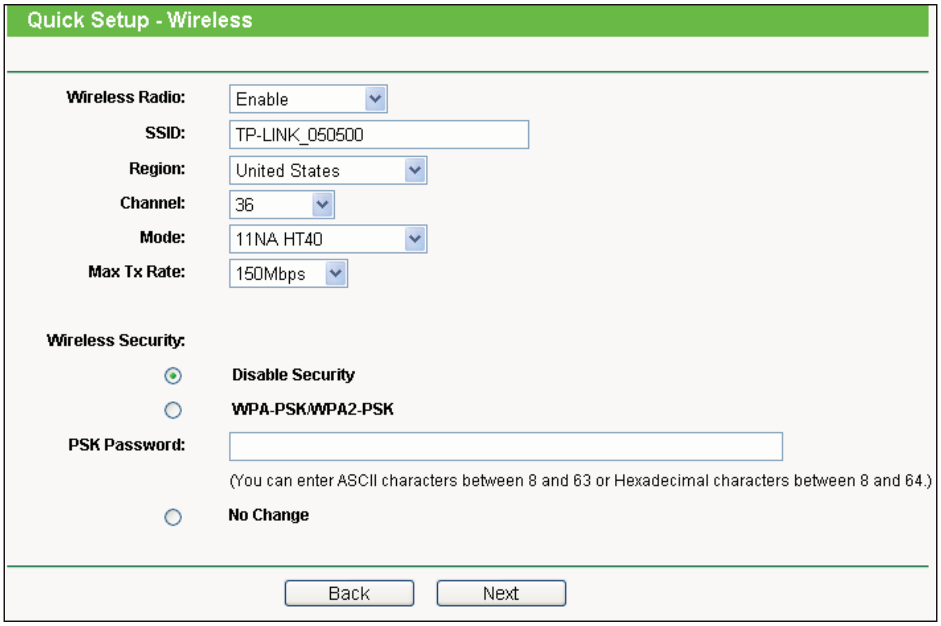
Quick Setup - PPPoE

User Name: username

Password: ●●●●●●●●●

Figure 3-21

2) Enter the **User Name** and **Password** provided by your ISP and then click **Next**, Figure 3-22 will appear.



Quick Setup - Wireless

Wireless Radio: Enable

SSID: TP-LINK_050500

Region: United States

Channel: 36

Mode: 11NA HT40

Max Tx Rate: 150Mbps

Wireless Security:

◉ Disable Security

○ WPA-PSK/WPA2-PSK

PSK Password:

(You can enter ASCII characters between 8 and 63 or Hexadecimal characters between 8 and 64.)

○ No Change

Figure 3-22

- **Wireless Radio**- Enable or disable the wireless radio.
- **SSID**- Enter a string of up to 32 characters. The same Name (SSID) must be assigned to all wireless devices in your network. The default SSID is set to be **TP-LINK_xxxxxx** (xxxxxx indicates the last unique six characters of each Device's MAC address), which can ensure your wireless network security. But it is recommended strongly that you change your networks name (SSID) to a different value. This value is case-sensitive. For example, **MYSSID** is NOT the same as **MySsid**.
- **Region**- Select your region from the pull-down list. This field specifies the region where the wireless function of the Device can be used. It may be illegal to use the wireless function of the Device in a region other than one of those specified in this filed. If your country or region is not listed, please contact your local government agency for assistance.
- **Channel**- This field determines which operating frequency will be used. It is not necessary to change the wireless channel unless you notice interference problems with another nearby access point. If you select auto, then the Device will select the best channel automatically.

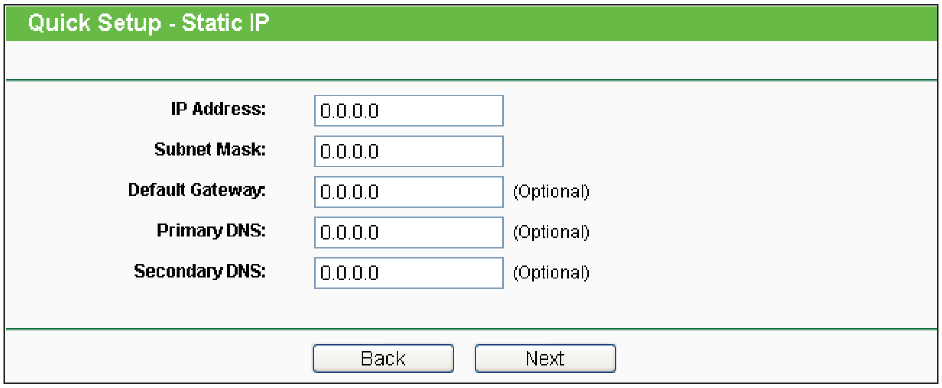
- **Mode**- This field determines the wireless mode which the Device works on.
- **Max Tx Rate**- You can limit the maximum tx rate of the Device through this field. You can select one of security options listed as the below items.
- **Disable Security**- The wireless security function can be enabled or disabled. If disabled, the wireless stations will be able to connect the Device without encryption. It is recommended strongly that you choose one of the following options to enable security.
- **WPA-PSK/WPA2-PSK**- Select WPA based on pre-shared passphrase.
- **PSK Password**- You can enter **ASCII** or **Hexadecimal** characters.
  For **ASCII**, the length should be between 8 and 63 characters.
  For **Hexadecimal**, the length should be between 8 and 64 characters.
  Please note that the key is case sensitive.
- **Not Change**- If you chose this option, wireless security configuration will not change.

➢ **Dynamic IP**- When the Device connects to a DHCP server, or the ISP supplies you with DHCP connection, please choose this type. The Device will get the IP address automatically from the DHCP server or the ISP if you choose the Dynamic IP type.

If you choose **Dynamic IP** in Figure 3-19 and then click **Next**, Figure 3-22 will appear.

➢ **Static IP** - In this type, you should manually fill in the **IP address**, **Subnet Mask**, **Default Gateway**, and **DNS** IP address, which are specified by your ISP.

1) If you choose **Static IP** in Figure 3-19 and then click **Next**, Figure 3-23 will appear.


Quick Setup - Static IP

IP Address:	0.0.0.0	
Subnet Mask:	0.0.0.0	
Default Gateway:	0.0.0.0	(Optional)
Primary DNS:	0.0.0.0	(Optional)
Secondary DNS:	0.0.0.0	(Optional)

Figure 3-23

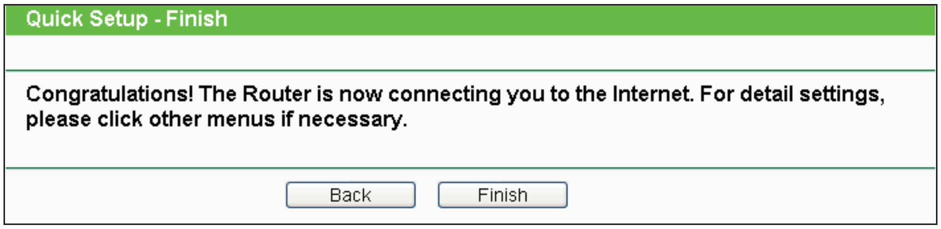
- **IP Address**- This is WAN IP address as seen by external users on the Internet (including your ISP). Enter the IP address in the field.
- **Subnet Mask**- It is used for the WAN IP address, which is usually 255.255.255.0.
- **Default Gateway**- Enter the default gateway in the blank if required.
- **Primary DNS**- Enter the DNS IP address in the blank if required.
- **Secondary DNS**- If your ISP provides another DNS IP address, enter it in this field.

☞ **Note:**

The IP parameters should have been provided by your ISP.

2) After you have entered the above necessary parameters and then click **Next**, Figure 3-22 will then appear.

2. When you finish the wireless setting in Figure 3-22 and click **Next**, then Figure 3-24 will appear, where you can click **Finish** button to complete the **Quick Setup**.



Quick Setup - Finish

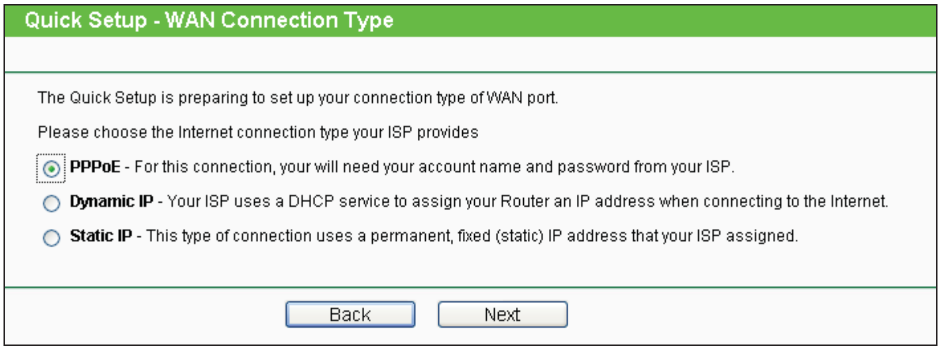
Congratulations! The Router is now connecting you to the Internet. For detail settings, please click other menus if necessary.

Figure 3-24

3.2.3 AP Client Router Mode

When you choose **AP Client Router Mode** on **Operation Mode** page in Figure 3-10, take the following steps:

1. Click **Next** in Figure 3-10, and then **WAN Connection Type** page will appear as shown in Figure 3-25.



Quick Setup - WAN Connection Type

The Quick Setup is preparing to set up your connection type of WAN port.

Please choose the Internet connection type your ISP provides

● **PPPoE** - For this connection, your will need your account name and password from your ISP.

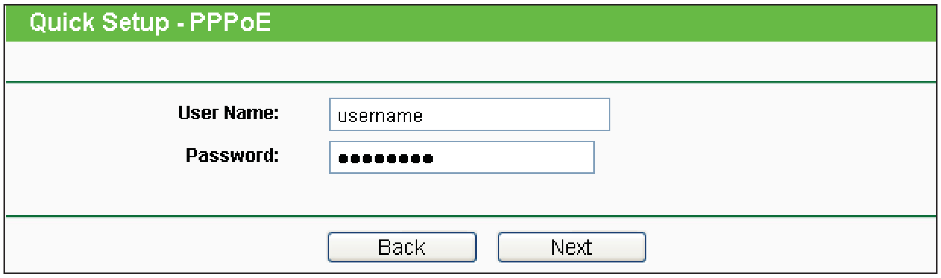
○ **Dynamic IP** - Your ISP uses a DHCP service to assign your Router an IP address when connecting to the Internet.

○ **Static IP** - This type of connection uses a permanent, fixed (static) IP address that your ISP assigned.

Figure 3-25

- **PPPoE** - If you have applied ADSL to realize Dial-up service, you should choose this type. In this condition, you should fill in both the User Name and Password that your ISP supplies.

  1) If you choose **PPPoE** in Figure 3-25 and then click **Next**, Figure 3-26 will appear.



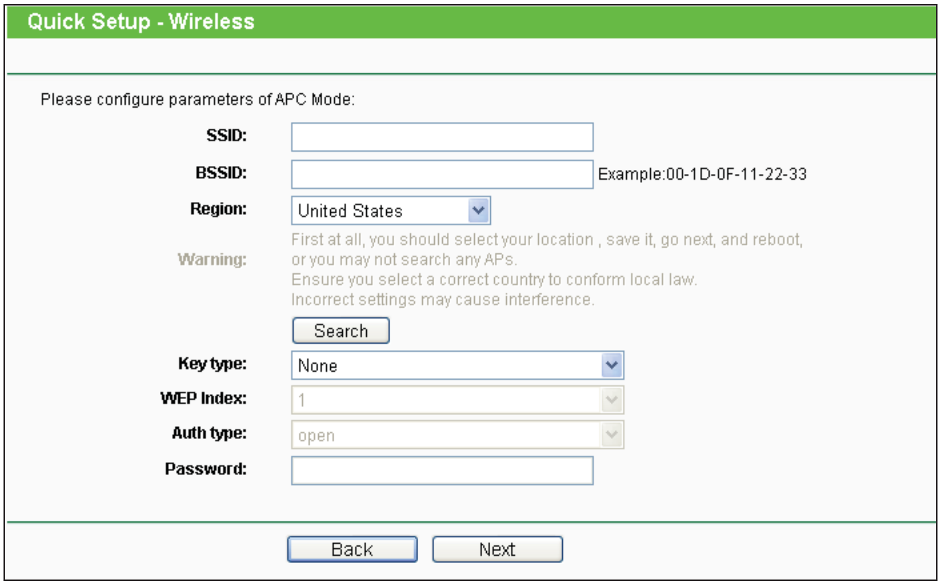
Quick Setup - PPPoE

User Name: username

Password: ●●●●●●●●●

Figure 3-26

2) Enter the **User Name** and **Password** provided by your ISP, then click **Next**, Figure 3-27 will appear.



Quick Setup - Wireless

Please configure parameters of APC Mode:

SSID:

BSSID: Example:00-1D-0F-11-22-33

Region: United States

Warning: First at all, you should select your location , save it, go next, and reboot, or you may not search any APs. Ensure you select a correct country to conform local law. Incorrect settings may cause interference.

Key type: None

WEP Index: 1

Auth type: open

Password:

Figure 3-27

- **SSID -** The SSID of the AP your Device is going to connect to as a client. You can also use the search function to select the SSID to join.
- **BSSID -** The BSSID of the AP your Device is going to connect to as a client. You can also use the search function to select the BSSID to join.
- **Region -** Select your region from the pull-down list. This field specifies the region where the wireless function of the Device can be used. It may be illegal to use the wireless function of the Device in a region other than one of those specified in this filed. If your country or region is not listed, please contact your local government agency for assistance.
- **Search -** Click this button, you can search the AP which runs in the current channel.
- **Key type -** This option should be chosen according to the AP's security configuration. It is recommended that the security type is the same as your AP's security type.
- **WEP Index -** This option should be chosen if the key type is WEP (ASCII) or WEP (HEX).It indicates the index of the WEP key.
- **Auth Type -** This option should be chosen if the key type is WEP (ASCII) or WEP (HEX).It indicates the authorization type of the Root AP.

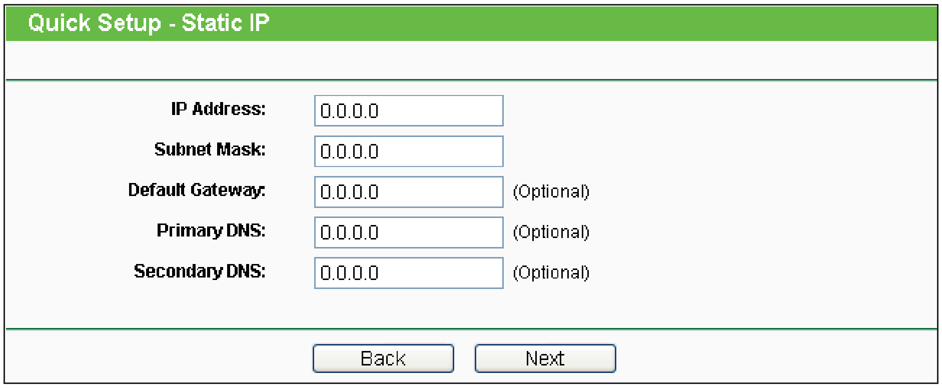
- **Password -** If the AP your Device is going to connect needs password, you need to fill the password in this blank.

➢ **Dynamic IP**- When the Device connects to a DHCP server, or the ISP supplies you with DHCP connection, please choose this type. The Device will get the IP address automatically from the DHCP server or the WISP if you choose the Dynamic IP type.

If you choose **Dynamic IP** in Figure 3-25 and then click **Next**, the wireless setting page as in Figure 3-27 will appear.

➢ **Static IP** - In this type, you should manually fill in the **IP address**, **Subnet Mask**, **Default Gateway**, and **DNS** IP address, which are specified by your ISP.

1) If you choose **Static IP** in Figure 3-25 and then click **Next**, Figure 3-28 will appear.



Quick Setup - Static IP

IP Address:	0.0.0.0	
Subnet Mask:	0.0.0.0	
Default Gateway:	0.0.0.0	(Optional)
Primary DNS:	0.0.0.0	(Optional)
Secondary DNS:	0.0.0.0	(Optional)

Figure 3-28

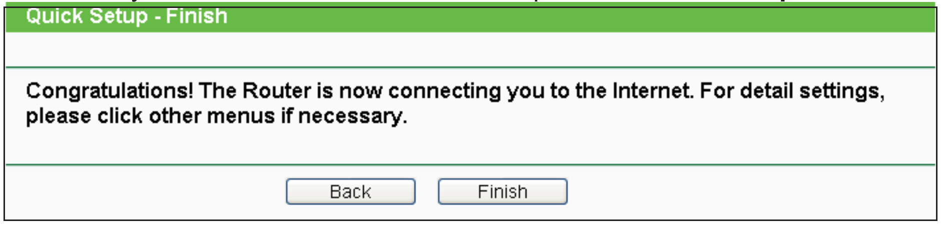
- **IP Address**- This is WAN IP address as seen by external users on the Internet (including your ISP). Enter the IP address into the field.
- **Subnet Mask**- It is used for the WAN IP address, which is usually 255.255.255.0.
- **Default Gateway**- Enter the default gateway in the blank if required.
- **Primary DNS**- Enter the DNS IP address in the blank if required.
- **Secondary DNS**- If your WISP provides another DNS IP address, enter it in this field.

☞ **Note:**

The IP parameters should have been provided by your WISP.

2) After you have entered the above necessary parameters and then click **Next**, the wireless setting page as in Figure 3-27 will then appear.

2. When you finish the wireless setting in Figure 3-27 and click **Next**, then Figure 3-29 will appear, where you can click **Finish** button to complete the **Quick Setup**.



Quick Setup - Finish

Congratulations! The Router is now connecting you to the Internet. For detail settings, please click other menus if necessary.

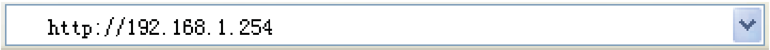
Figure 3-29

Chapter 4 Configuring Standard AP Mode

This chapter will show each Web page's key functions and the configuration way under Standard AP Mode.

4.1 Login

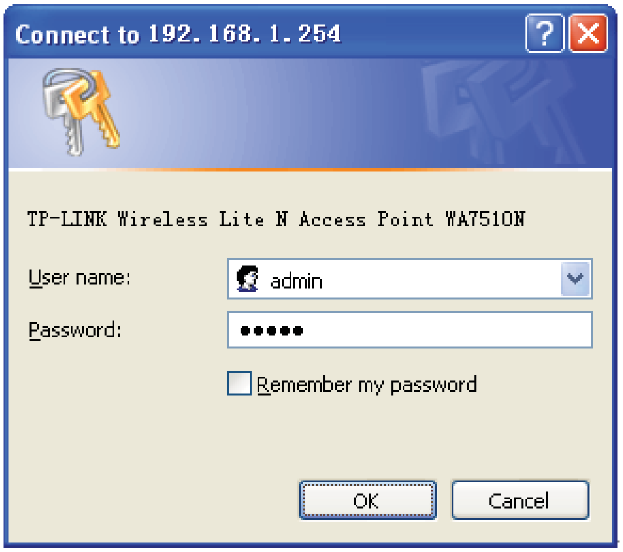
Open your web browser. Type in the default address http://192.168.1.254 in the address field of web browser and then press **Enter**.



http://192.168.1.254

Figure 4-1 Login to the AP

Enter **admin** for the User Name and Password (both in lower case letters) in Figure 4-2 below. Then click **OK** or press Enter.



Connect to 192.168.1.254

TP-LINK Wireless Lite N Access Point WA7510N

User name: admin

Password: •••••

□ Remember my password

Figure 4-2 Login Windows

☞ **Note:**

If the above screen does not prompt, it means that your web-browser has been set to a proxy. Go to **Tools menu>Internet Options>Connections>LAN Settings**, in the screen that appears, cancel the **Using Proxy** checkbox, and click **OK** to finish it.

After a successful login, you can configure and manage the Device. There are eight main menus on the leftmost column of the web-based management page as in Figure 4-3: **Status**, **Quick Setup**, **QSS**, **Operation Mode**, **Network**, **Wireless**, **DHCP** and **System Tools**. Sub-menus will be available after clicking one of the main menus. On the right of the web-based management page lays the detailed explanations and instructions for the corresponding page.

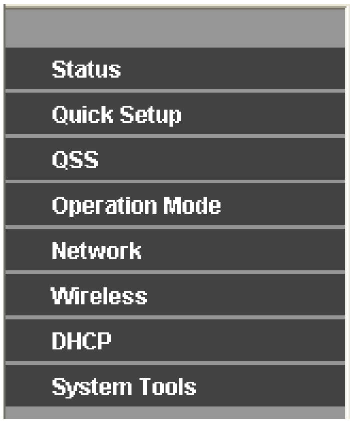
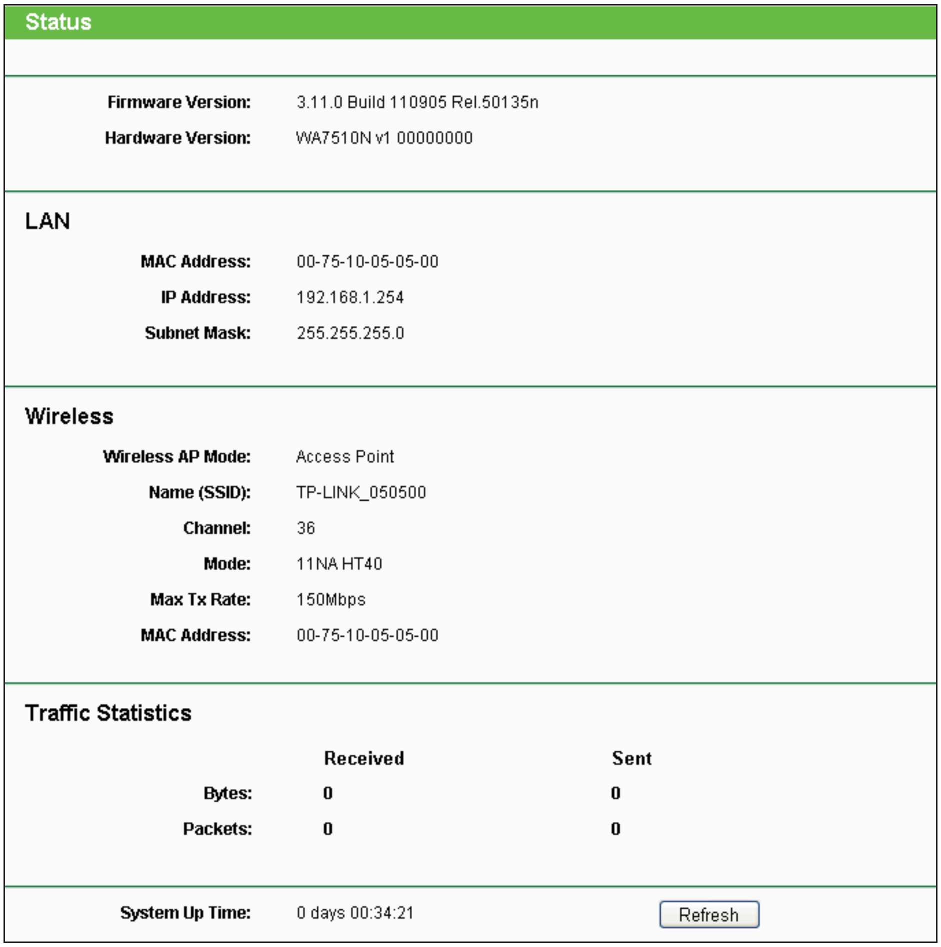


Figure 4-3 the main menu

4.2 Status

Selecting **Status** will enable you to view the AP's current status and configuration, all of which are read-only.



Status

Firmware Version:	3.11.0 Build 110905 Rel.50135n
Hardware Version:	WA7510N v1 00000000

LAN

MAC Address:	00-75-10-05-05-00
IP Address:	192.168.1.254
Subnet Mask:	255.255.255.0

Wireless

Wireless AP Mode:	Access Point
Name (SSID):	TP-LINK_050500
Channel:	36
Mode:	11NA HT40
Max Tx Rate:	150Mbps
MAC Address:	00-75-10-05-05-00

Traffic Statistics

	Received	Sent
Bytes:	0	0
Packets:	0	0

System Up Time: 0 days 00:34:21

Figure 4-4 Status

- **Firmware Version -** The current firmware version of the AP.
- **Hardware Version -** The current hardware version of the AP.
- **LAN -** The following is the information of wired LAN. You can configure them in the **Network** page.
  - **MAC Address -** The physical address of the system, as seen from the LAN.
  - **IP Address -** The IP address of the wired LAN.
  - **Subnet Mask -** The subnet mask associated with IP address.
- **Wireless** - These are the current settings or information for wireless. You can configure them in the **Wireless -> Wireless Settings** page.
  - **Wireless AP Mode -** The current wireless AP mode which the AP works on.
  - **Name (SSID) -** The SSID of the AP.
  - **Channel -** The current wireless channel in use.
  - **Mode -** The current wireless mode which the AP works on.
  - **Max Tx Rate -** The maximum tx rate.
  - **MAC Address -** The physical address of the AP, as seen from the WLAN.
- **Traffic Statistics** - The system traffic statistics.
  - **Sent (Bytes) -** Traffic that counted in bytes has been sent out from WLAN.
  - **Sent (Packets) -** Traffic that counted in packets has been sent out from WLAN.
  - **Received (Bytes) -** Traffic that counted in bytes has been received from WLAN.
  - **Received (Packets) -** Traffic that counted in packets has been received from WLAN.
- **System Up Time** - The length of the time since the AP was last powered on or reset.

Click the **Refresh** button to get the latest status and settings of the AP.

4.3 Quick Setup

Please refer to Section 3.2 Quick Setup – 3.2.1 Standard AP Mode for more details.

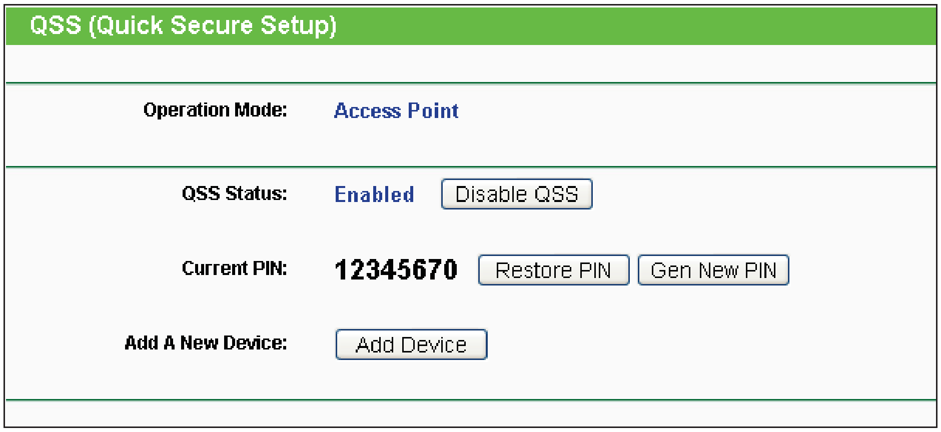
4.4 QSS

QSS (**Quick Secure Setup**) can help you to quickly and securely connect to a network. This section will guide you to add a new wireless device to an existing network quickly by function.

☞ **Note:**

The **QSS** function is only available when the Operation Mode is set to Access Point and Multi-SSID. Here we take the Access Point mode for example.

Select menu **QSS**, you will see the next screen as shown in Figure 4-5.



QSS (Quick Secure Setup)

Operation Mode: Access Point

QSS Status: Enabled

Current PIN: 12345670

Add A New Device:

Figure 4-5 QSS

- **QSS Status** - Enable or disable the QSS function here.
- **Current PIN** - The current value of the Device's PIN displayed here. The default PIN of the Device can be found in the label or User Guide.
- **Restore PIN** - Restore the PIN of the Device to its default.
- **Gen New PIN** - Click this button, and then you can get a new random value for the Device's PIN. You can ensure the network security by generating a new PIN.
- **Add A New Device** - You can add the new device to the existing network manually by clicking **Add Device** button.

☞ **Note:**

The **QSS** function cannot be configured if the Wireless Function of the Device is disabled. Please make sure the Wireless Function is enabled before configuring the **QSS.**

- **To add a new device:**

1. If the new device supports Wi-Fi Protected Setup and is equipped with a configuration button, you can add it to the network by pressing the configuration button on the device.
2. If the new device supports Wi-Fi Protected Setup and the connection way using PIN, you can add it to the network by entering the Device's PIN.

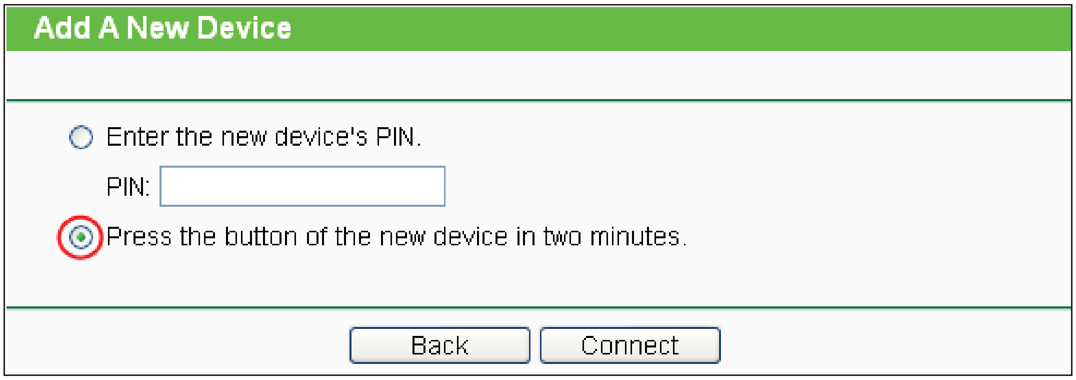
☞ **Note:**

To build a successful connection by QSS, you should also do the corresponding configuration on a wireless adapter for QSS function meanwhile.

For the configuration of the new device, here takes the Wireless Adapter of our company for example.

I. By PBC

Step 1: Keep the default QSS Status as **Enabled** and click the **Add device** button in Figure 4-5, and then the following screen will appear.



Add A New Device

○ Enter the new device's PIN.

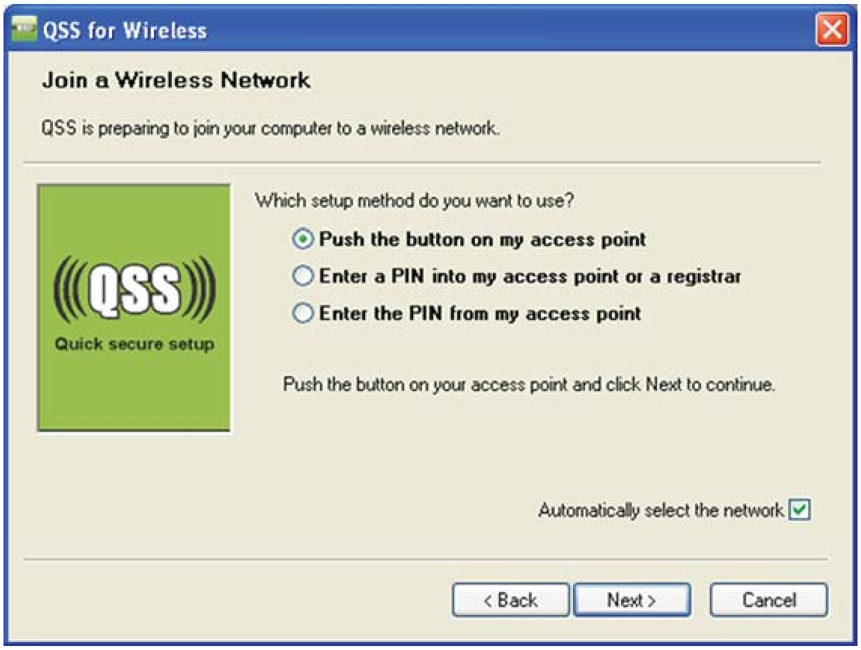
PIN:

● Press the button of the new device in two minutes.

Figure 4-6 Add A New Device

Step 2: Choose "**Press the button of the new device in two minutes**" and click **Connect**.

Step 3: Configure the wireless adapter for QSS function by choosing "**Push the button on my access point**" in the QSS configuration utility as below, and then click **Next**.



QSS for Wireless

Join a Wireless Network

QSS is preparing to join your computer to a wireless network.

Which setup method do you want to use?

● Push the button on my access point

○ Enter a PIN into my access point or a registrar

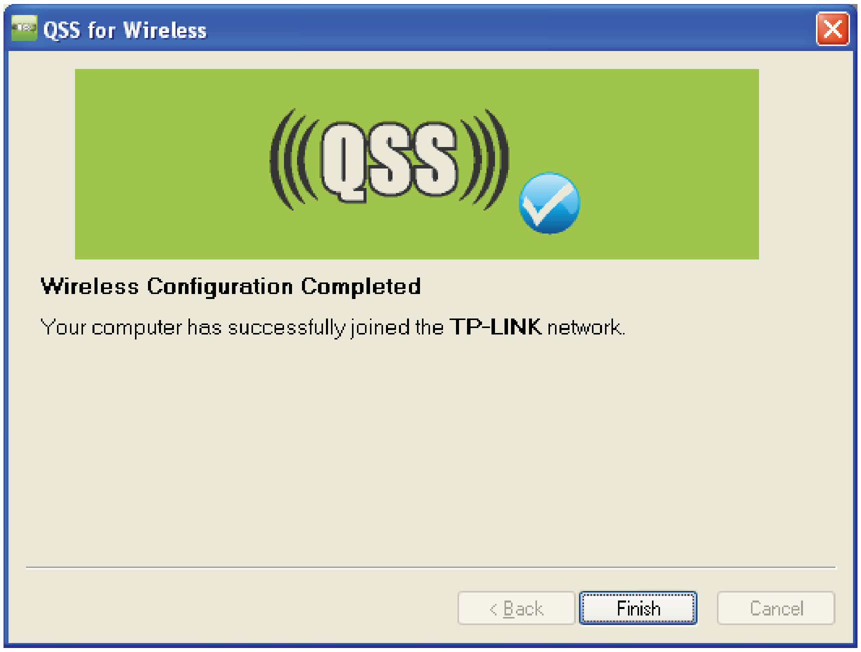
○ Enter the PIN from my access point

Push the button on your access point and click Next to continue.

Automatically select the network ☑

Figure 4-7 The QSS Configuration Screen of Wireless Adapter

Step 4: Wait for a while until the next screen appears. Click **Finish** to complete the QSS configuration.



QSS for Wireless

Wireless Configuration Completed

Your computer has successfully joined the **TP-LINK** network.

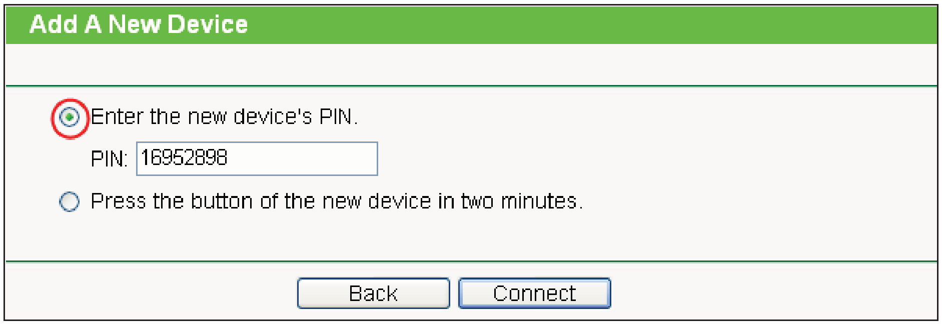
Figure 4-8 The QSS Configuration Screen of Wireless Adapter

II. By PIN

If the device supports Wi-Fi Protected Setup and the PIN method, you can add it to the network by PIN in the following two methods.

Method One: Enter the PIN into my AP

Step 1: Keep the default QSS Status as **Enabled** and click the **Add device** button in Figure 4-5, and then the following screen will appear.



Add A New Device

● Enter the new device's PIN.

PIN: 16952898

○ Press the button of the new device in two minutes.

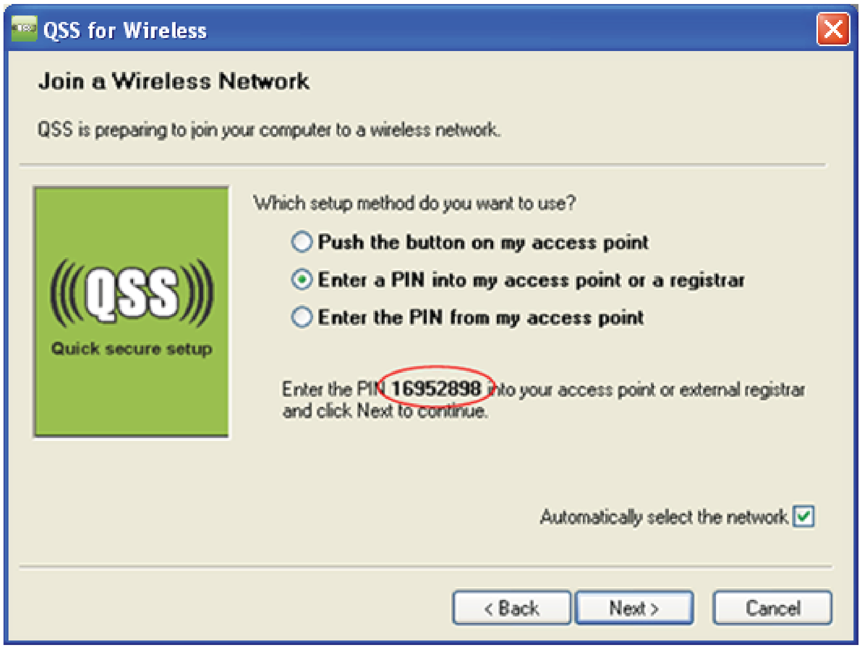
Figure 4-9 Add A New Device

Step 2: Choose “**Enter the new device's PIN**” and enter the PIN code（take 16952898 for example）of the wireless adapter in the field after **PIN** as shown in the figure above. Then click **Connect.**

☞ **Note:**

The PIN code of the adapter is always displayed on the QSS configuration screen as shown in Figure 4-10.

Step 3: Configure the wireless adapter for QSS function by choosing "**Enter a PIN into my access point or a registrar**" in the configuration utility of the QSS as below, and click **Next**.



QSS for Wireless

Join a Wireless Network

QSS is preparing to join your computer to a wireless network.

Which setup method do you want to use?

○ Push the button on my access point

● Enter a PIN into my access point or a registrar

○ Enter the PIN from my access point

Enter the PIN 16952898 into your access point or external registrar and click Next to continue.

Automatically select the network ☑

Figure 4-10 The QSS Configuration Screen of Wireless Adapter

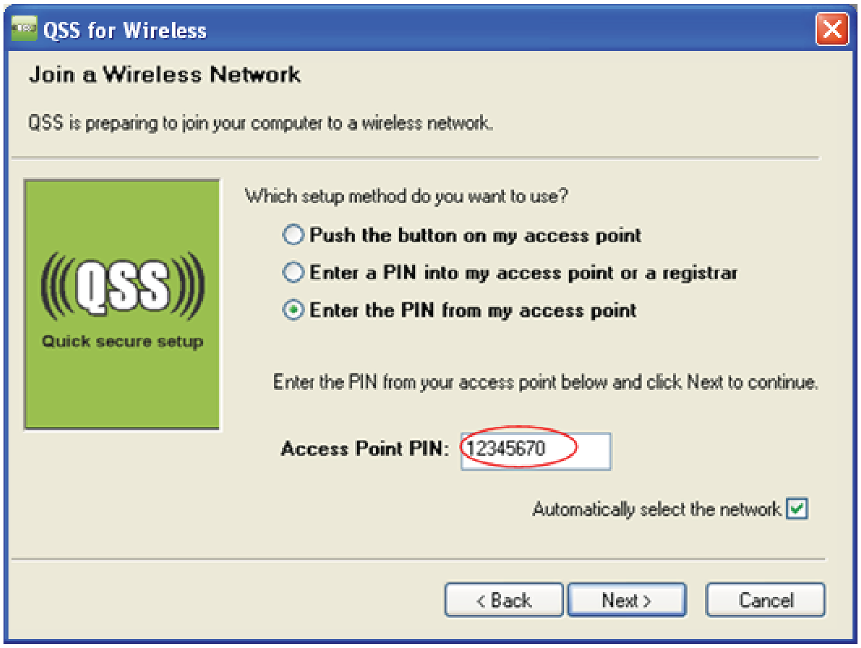
☞ **Note:**

In this example, the default PIN code of this adapter is 16952898 as the above figure shown.

Method Two: Enter the PIN from my AP

Step 1: Get the Current PIN code of the AP in Figure 4-11 (Each AP has its unique PIN code. Here takes the default PIN code 12345670 of this AP for example).

Step 2: Configure the wireless adapter for QSS function by choosing "**Enter a PIN from my access point**" in the configuration utility of the QSS as below, and enter the PIN code of the AP into the field after "**Access Point PIN**". Then click **Next**.



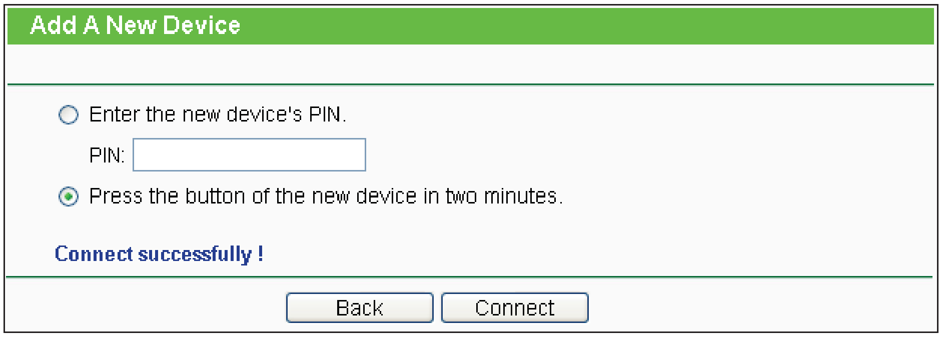
QSS for Wireless
Join a Wireless Network
QSS is preparing to join your computer to a wireless network.
QSS
Quick secure setup
Which setup method do you want to use?
○ Push the button on my access point
○ Enter a PIN into my access point or a registrar
● Enter the PIN from my access point
Enter the PIN from your access point below and click Next to continue.
Access Point PIN: 12345670
Automatically select the network ☑
< Back
Next >
Cancel

Figure 4-11 The QSS Configuration Screen of Wireless Adapter

☞ **Note:**

The default PIN code of the AP can be found in its label or the QSS configuration screen as in Figure 4-5.

You will see the following screen when the new device has successfully connected to the network.



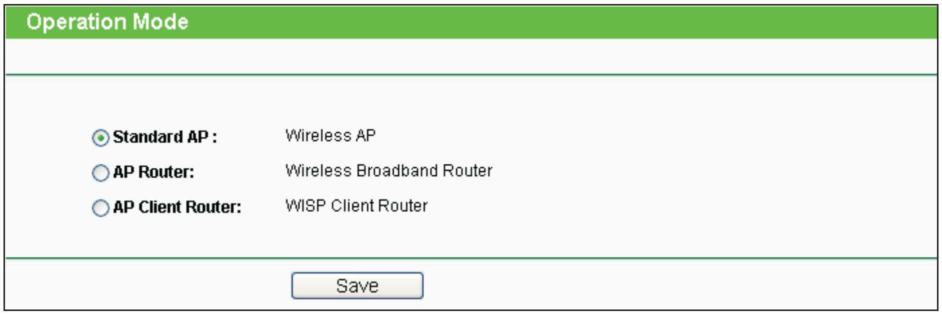
Add A New Device
○ Enter the new device's PIN.
PIN:
● Press the button of the new device in two minutes.
Connect successfully !
Back
Connect

Figure 4-12

☞ **Note:**

The QSS function cannot be configured if the Wireless function of the AP is disabled. Please make sure the Wireless function is enabled before configuring the QSS.

4.5 Operation Mode



Operation Mode

● Standard AP : Wireless AP

○ AP Router: Wireless Broadband Router

○ AP Client Router: WISP Client Router

Figure 4-13

- **Standard AP**: In this mode, the device enables multi-users to access, and provides several wireless modes, such as AP, Client, Repeater and so on.
- **AP Router**: In this mode, the device enables multi-users to share Internet via ADSL/Cable Modem. The wireless port share the same IP to ISP through Ethernet WAN port. The Wireless port acts the same as a LAN port while at AP Router mode.
- **AP Client Router**: In this mode, the device enables multi-users to share Internet from WISP. The LAN port devices share the same IP from WISP through Wireless port. While connecting to WISP, the Wireless port works as a WAN port at AP Client Router mode. The Ethernet port acts as a LAN port.

Be sure to click the **Save** button to save your settings on this page.

☞ **Note:**

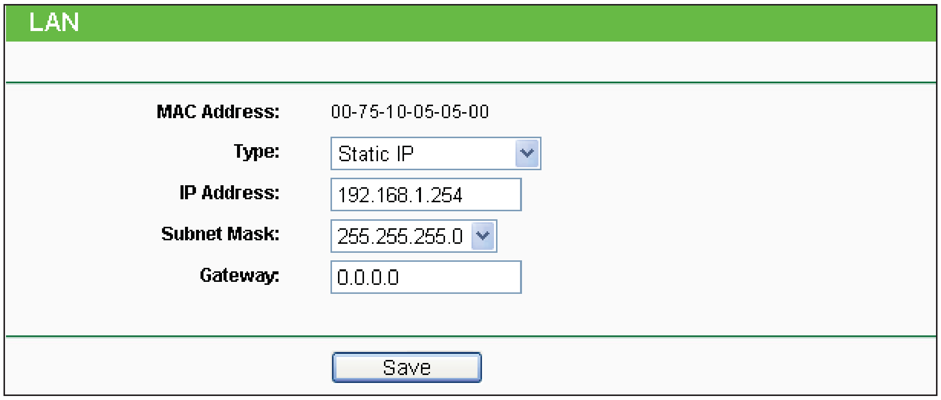
The Device will reboot automatically after you click the **Save** button.

4.6 Network

The **Network** option allows you to customize your local network manually by changing the default settings of the AP.

Figure 4-14 The Network menu

Selecting **Network > LAN** will enable you to configure the IP parameters of LAN on the following page.



MAC Address: 00-75-10-05-05-00

Type: Static IP

IP Address: 192.168.1.254

Subnet Mask: 255.255.255.0

Gateway: 0.0.0.0

Figure 4-15 LAN

- **MAC Address**- The physical address of the LAN ports, as seen from the LAN. The value can not be changed.
- **Type**- Choosing dynamic IP to get IP address from DHCP server, or choosing static IP to configure IP address manually.
- **IP Address**- Enter the IP address of your system in dotted-decimal notation (factory default: 192.168.1.254).
- **Subnet Mask**- It is an address code that determines the size of the network. Normally 255.255.255.0 is used as the subnet mask.
- **Gateway**- The gateway should be in the same subnet as your IP address.

☞ **Note:**

1. If you change the IP address, you must use the new IP address to login the system.
2. If you select the type of dynamic IP, the DHCP server in this device will not start up.
3. If the new IP address you set is not in the same subnet, the IP Address pool in the DHCP server will not take effect, until they are re-configured.
4. The device will reboot automatically after you click the **Save** button.

Click the **Save** button to save your settings.

☞ **Note:**

When you choose the Dynamic IP mode, the DHCP Server function will be disabled.

4.7 Wireless

The **Wireless** option improves functionality and performance for wireless network. It can help you make the AP an ideal solution for your wireless network. There are eight submenus under the Wireless menu (shown in Figure 4-16): **Wireless Settings**, **Wireless Security**, **Wireless MAC**

Filtering, **Wireless Advanced**, **Antenna Alignment, Distance Settings, Throughput Monitor** and **Wireless Statistics**.

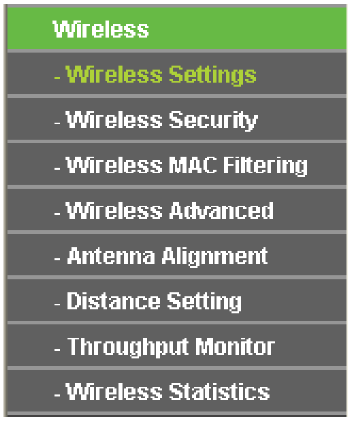


Figure 4-16 Wireless menu

Click any of them, and you will be able to configure the corresponding function. The detailed explanations for each submenu are provided below.

4.7.1 Wireless Settings

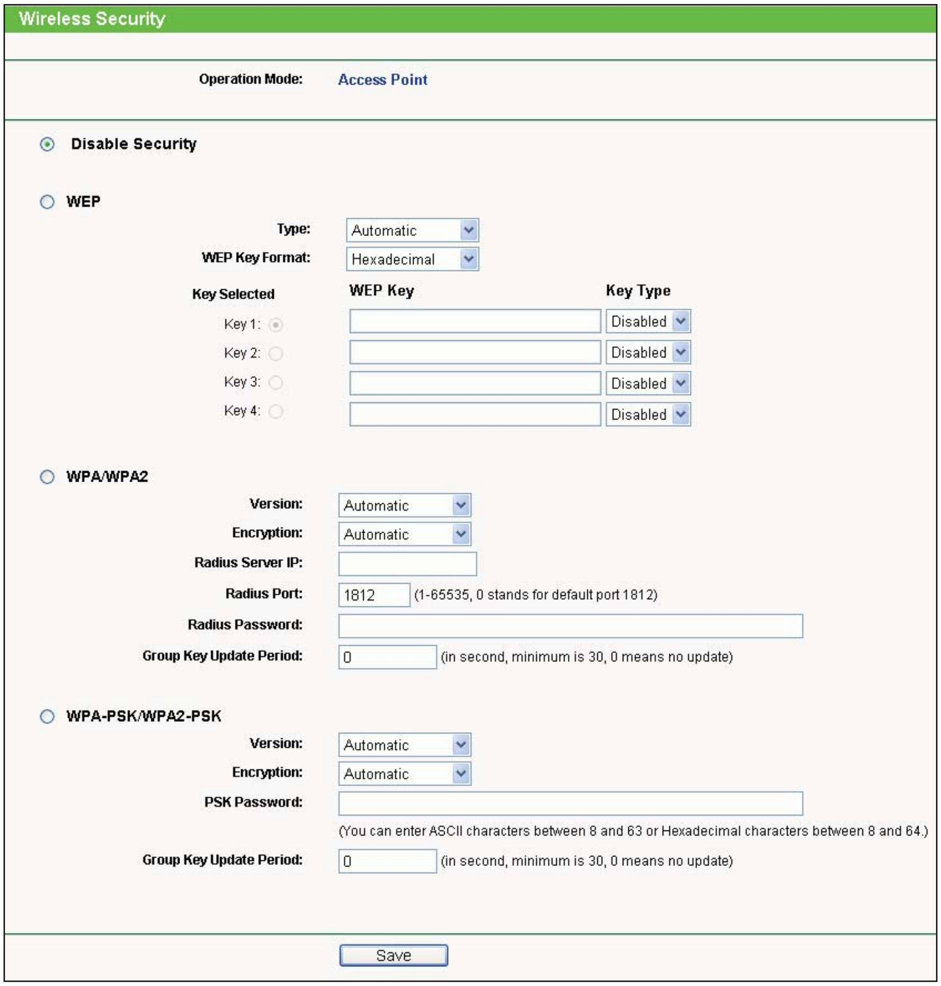
Selecting **Wireless > Wireless Settings** will enable you to configure the basic settings for your wireless network. The setting page allows you to configure the wireless mode for your device. Six operation modes are supported here, including Access Point, Multi-SSID, Client, Repeater, Universal Repeater and Bridge with AP.

Please refer to Section 3.2 Quick Setup – 3.2.1 Standard AP Mode for more details.

4.7.2 Wireless Security

Selecting **Wireless > Wireless Security** will enable you to configure wireless security for your wireless network to protect your data from intruders. The AP provides three security types: WEP, WPA/WPA2 and WPA-PSK/WPA2-PSK. Wireless security can be set on the following screen shown as Figure 4-17. The security options are different for different operation mode.

1) Access Point



Wireless Security

Operation Mode: Access Point

● Disable Security

○ WEP

Type: Automatic

WEP Key Format: Hexadecimal

Key Selected	WEP Key	Key Type
Key 1: ●		Disabled
Key 2: ○		Disabled
Key 3: ○		Disabled
Key 4: ○		Disabled

○ WPA/WPA2

Version: Automatic

Encryption: Automatic

Radius Server IP:

Radius Port: 1812 (1-65535, 0 stands for default port 1812)

Radius Password:

Group Key Update Period: 0 (in second, minimum is 30, 0 means no update)

○ WPA-PSK/WPA2-PSK

Version: Automatic

Encryption: Automatic

PSK Password:

(You can enter ASCII characters between 8 and 63 or Hexadecimal characters between 8 and 64.)

Group Key Update Period: 0 (in second, minimum is 30, 0 means no update)

Figure 4-17 Wireless Security - Access Point

- **Operation Mode -** Shows the current operation mode.
- **Disable Security -** The wireless security function can be enabled or disabled. If disabled, the wireless stations will be able to connect the AP without encryption. It is recommended strongly that you choose one of the following options to enable security.
- **WEP -** Select 802.11 WEP security.
- **WPA-PSK -** Select WPA based on pre-shared passphrase.
- **WPA -** Select WPA based on Radius Server.

Each security option has its own settings as described follows:

- **WEP**

- **Type - You can select one of following types:**

Automatic - Select Shared Key or Open System authentication type automatically based on the wireless station's capability and request.

Shared Key - Select 802.11 Shared Key authentications.

Open System - Select 802.11 Open System authentication.

- **WEP Key Format -** You can select ASCII or Hexadecimal format. ASCII Format stands for any combination of keyboard characters in the specified length. Hexadecimal format stands for any combination of hexadecimal digits (0-9, a-f, A-F) in the specified length.
- **WEP Key settings -** Select which of the four keys will be used and enter the matching WEP key information for your network in the selected key radio button. These values must be identical on all wireless stations in your network.
- **Key Type -** You can select the WEP key length (64-bit, or 128-bit, or 152-bit.) for encryption. "Disabled" means this WEP key entry is invalid.

For 64-bit encryption - You can enter 10 hexadecimal digits (any combination of 0-9, a-f, A-F, and null key is not permitted) or 5 ASCII characters.

For 128-bit encryption - You can enter 26 hexadecimal digits (any combination of 0-9, a-f, A-F, and null key is not permitted) or 13 ASCII characters.

For 152-bit encryption - You can enter 32 hexadecimal digits (any combination of 0-9, a-f, A-F, and null key is not permitted) or 16 ASCII characters.

☞ **Note:**

If you do not set the key, the wireless security function is still disabled even if you have selected Shared Key as Authentication Type.

➢ **WPA/WPA2**

- **Version -** You can select one of following versions:

Automatic - Select WPA or WPA2 automatically based on the wireless station's capability and request.

WPA - Wi-Fi Protected Access.

WPA2 - WPA version 2.

- **Encryption -** You can select either Automatic, or TKIP or AES.
- **Radius Server IP -** Enter the IP address of the Radius Server.
- **Radius Port -** Enter the port that radius service uses.
- **Radius Password -** Enter the password for the Radius Server.
- **Group Key Update Period -** Specify the group key update interval in seconds. The value can be either 0 or at least 30. Enter 0 to disable the update.

- **WPA-PSK/WPA2-PSK**

- **Version -** You can select one of following versions:

  Automatic - Select WPA-PSK or WPA2-PSK automatically based on the wireless station's capability and request.

  WPA-PSK - Pre-shared key of WPA.

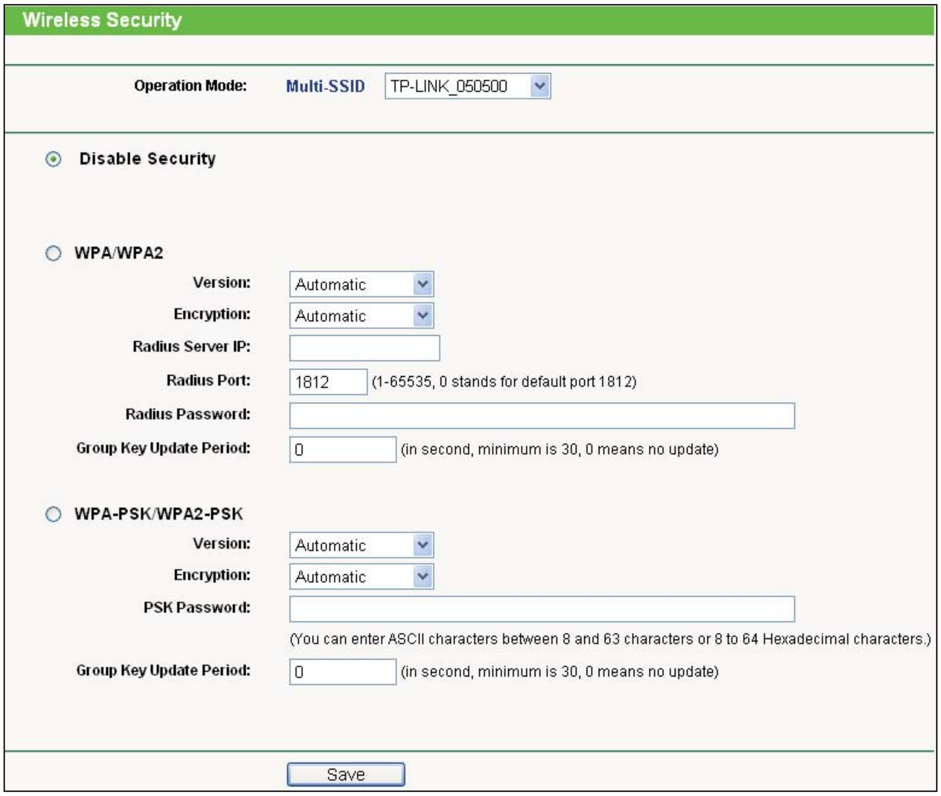
  WPA2-PSK - Pre-shared key of WPA2.

- **Encryption -** You can select either Automatic, or TKIP or AES.

- **PSK Password -** You can enter ASCII or Hexadecimal characters. For Hexadecimal, the length should be between 8 and 64 characters; for ASCII, the length should be between 8 and 63 characters.

- **Group Key Update Period -** Specify the group key update interval in seconds. The value can be either 0 or at least 30. Enter 0 to disable the update.

2) Multi-SSID



Wireless Security

Operation Mode: Multi-SSID TP-LINK_050500

◉ Disable Security

○ WPA/WPA2

Version: Automatic

Encryption: Automatic

Radius Server IP:

Radius Port: 1812 (1-65535, 0 stands for default port 1812)

Radius Password:

Group Key Update Period: 0 (in second, minimum is 30, 0 means no update)

○ WPA-PSK/WPA2-PSK

Version: Automatic

Encryption: Automatic

PSK Password:

(You can enter ASCII characters between 8 and 63 characters or 8 to 64 Hexadecimal characters.)

Group Key Update Period: 0 (in second, minimum is 30, 0 means no update)

Figure 4-18 Wireless Security – Multi-SSID

- **Operation Mode -** Shows the current operation mode. You can choose one of the 4 SSID from the pull-down list.

➢ **Disable Security -** Check this box radio button to disable wireless security. If disabled, the wireless stations will be able to connect this device without encryption. It is strongly recommended that you choose one of the security types to enable security.

➢ **WPA/WPA2 -** Select WPA/WPA2 based on Radius Server.

- **Version -** You can select one of following versions.

  Automatic - Select **WPA** or **WPA2** automatically based on the wireless station's capability and request.

  WPA - Wi-Fi Protected Access.

  WPA2 - WPA version 2.

- **Encryption** - You can select **Automatic**, **TKIP** or **AES**.
- **Radius Server IP** - Enter the IP address of the Radius Server.
- **Radius Port** - Enter the port used by radius service.
- **Radius Password** - Enter the password for the Radius Server.
- **Group Key Update Period** - Specify the group key update interval in seconds. The value can be either 0 or at least 30. Enter 0 to disable the update.

☞ **Note:**

This security option will become unavailable, if the **Enable VLAN** box in Figure 3-13 is checked.

➢ **WPA-PSK/ WPA2-PSK -** Select WPA based on pre-shared key.

- **Version** - You can select one of following versions.

  Automatic - Select **WPA-PSK** or **WPA2-PSK** automatically based on the wireless station's capability and request.

  WPA-PSK - Pre-shared key of WPA.

  WPA2-PSK - Pre-shared key of WPA2.

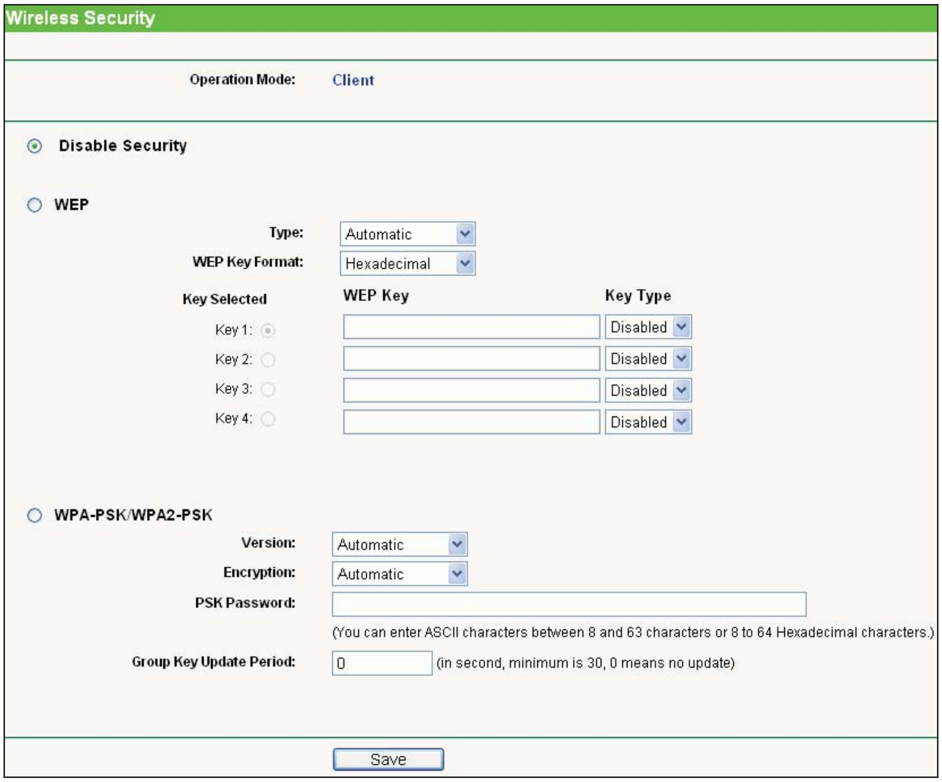
- **Encryption** - When you select **WPA-PSK** or **WPA2-PSK** for **Authentication Type**, you can select **Automatic**, **TKIP** or **AES** as **Encryption**.
- **PSK Passphrase** - Enter a passphrase here.
- **Group Key Update Period** - Specify the group key update interval in seconds. The value can be either 0 or at least 30. Enter 0 to disable the update.

Be sure to click the **Save** button to save your settings on this page.

☞ **Note:**

You will be reminded to reboot the device after clicking the **Save** button.

3) Client



Wireless Security

Operation Mode: Client

● Disable Security

○ WEP

Type: Automatic

WEP Key Format: Hexadecimal

Key Selected	WEP Key	Key Type
Key 1: ●		Disabled
Key 2: ○		Disabled
Key 3: ○		Disabled
Key 4: ○		Disabled

○ WPA-PSK/WPA2-PSK

Version: Automatic

Encryption: Automatic

PSK Password:

(You can enter ASCII characters between 8 and 63 characters or 8 to 64 Hexadecimal characters.)

Group Key Update Period: 0 (in second, minimum is 30, 0 means no update)

Figure 4-19 Wireless Security – Client

- **Operation Mode -** Shows the current operation mode.
- **Disable Security -** Check this box radio button to disable wireless security. If disabled, the wireless stations will be able to connect this device without encryption. It is strongly recommended that you choose one of the security types to enable security.
- **WEP -** Select 802.11 WEP security.

- **Type** - You can select one of following types.

  Automatic - Select **Shared Key** or **Open System** authentication type automatically based on the wireless station's capability and request.

  Shared Key - Select 802.11 **Shared Key** authentication type.

  Open System - Select 802.11 **Open System** authentication.

- **WEP Key Format** - You can select **ASCII** or **Hexadecimal** format. ASCII format stands for any combination of keyboard characters in the specified length. Hexadecimal format stands for any combination of hexadecimal digits (0-9, a-f, A-F) in the specified length.
- **WEP Key** - Select which of the four keys will be used and enter the matching WEP key information for your network in the selected key radio button. These values must be identical on all wireless stations in your network.
- **Key Type** - You can select the WEP key length (**64-bit**, or **128-bit**, or **152-bit**.) for encryption. "Disabled" means this WEP key entry is invalid.

For **64-bit** encryption **-** You can enter 10 hexadecimal digits (any combination of 0-9, a-f, A-F, zero key is not permitted) or 5 ASCII characters.

For **128-bit** encryption **-** You can enter 26 hexadecimal digits (any combination of 0-9, a-f, A-F, zero key is not permitted) or 13 ASCII characters.

For **152-bit** encryption **-** You can enter 32 hexadecimal digits (any combination of 0-9, a-f, A-F, zero key is not permitted) or 16 ASCII characters.

☞ **Note:**

If you do not set the key, the wireless security function is still disabled even if you have selected Shared Key as Authentication Type.

➢ **WPA-PSK/ WPA2-PSK -** Select WPA based on pre-shared key.

- **Version** - You can select one of following versions.

  Automatic - Select **WPA-PSK** or **WPA2-PSK** automatically based on the wireless station's capability and request.

  WPA-PSK - Pre-shared key of WPA.

  WPA2-PSK - Pre-shared key of WPA2.

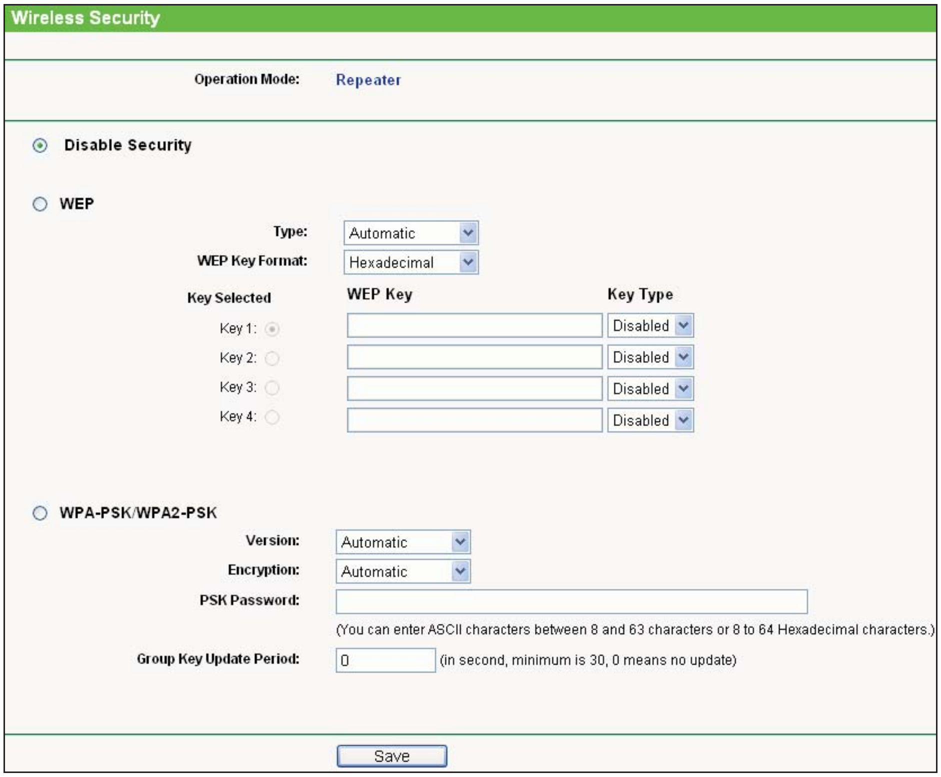
- **Encryption** - When you select **WPA-PSK** or **WPA2-PSK** for **Authentication Type**, you can select **Automatic**, **TKIP** or **AES** as **Encryption**.
- **PSK Passphrase** - Enter a passphrase here.
- **Group Key Update Period** - Specify the group key update interval in seconds. The value can be either 0 or at least 30. Enter 0 to disable the update.

Be sure to click the **Save** button to save your settings on this page.

☞ **Note:**

You will be reminded to reboot the device after clicking the **Save** button.

4) **Repeater**



Wireless Security

Operation Mode: Repeater

● Disable Security

○ WEP

Type: Automatic

WEP Key Format: Hexadecimal

Key Selected	WEP Key	Key Type
Key 1: ●		Disabled
Key 2: ○		Disabled
Key 3: ○		Disabled
Key 4: ○		Disabled

○ WPA-PSK/WPA2-PSK

Version: Automatic

Encryption: Automatic

PSK Password:

(You can enter ASCII characters between 8 and 63 characters or 8 to 64 Hexadecimal characters.)

Group Key Update Period: 0 (in second, minimum is 30, 0 means no update)

Figure 4-20 Wireless Security – Repeater

- **Operation Mode -** Shows the current operation mode.
- **Disable Security -** Check this box radio button to disable wireless security. If disabled, the wireless stations will be able to connect this device without encryption. It is strongly recommended that you choose one of the security types to enable security.
- **WEP -** Select 802.11 WEP security.

- **Type** - You can select one of following types.

  Automatic - Select **Shared Key** or **Open System** authentication type automatically based on the wireless station's capability and request.

  Shared Key - Select 802.11 **Shared Key** authentication type.

  Open System - Select 802.11 Open System authentication.

- **WEP Key Format** - You can select **ASCII** or **Hexadecimal** format. ASCII format stands for any combination of keyboard characters in the specified length. Hexadecimal format stands for any combination of hexadecimal digits (0-9, a-f, A-F) in the specified length.
- **WEP Key** - Select which of the four keys will be used and enter the matching WEP key information for your network in the selected key radio button. These values must be identical on all wireless stations in your network.
- **Key Type** - You can select the WEP key length (**64-bit**, or **128-bit**, or **152-bit**.) for encryption. "Disabled" means this WEP key entry is invalid.

For **64-bit** encryption **-** You can enter 10 hexadecimal digits (any combination of 0-9, a-f, A-F, zero key is not permitted) or 5 ASCII characters.

For **128-bit** encryption **-** You can enter 26 hexadecimal digits (any combination of 0-9, a-f, A-F, zero key is not permitted) or 13 ASCII characters.

For **152-bit** encryption **-** You can enter 32 hexadecimal digits (any combination of 0-9, a-f, A-F, zero key is not permitted) or 16 ASCII characters.

☞ **Note:**

If you do not set the key, the wireless security function is still disabled even if you have selected Shared Key as Authentication Type.

➢ **WPA-PSK/ WPA2-PSK -** Select WPA based on pre-shared key.

- **Version** - You can select one of following versions.

  Automatic - Select **WPA-PSK** or **WPA2-PSK** automatically based on the wireless station's capability and request.

  WPA-PSK - Pre-shared key of WPA.

  WPA2-PSK - Pre-shared key of WPA2.

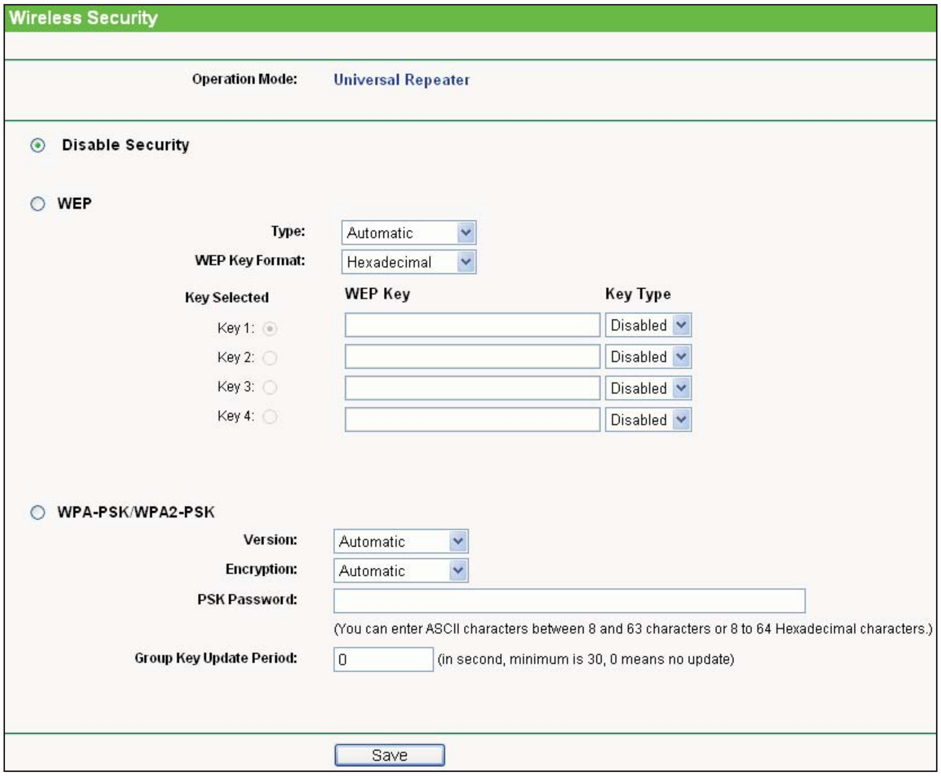
- **Encryption** - When you select **WPA-PSK** or **WPA2-PSK** for **Authentication Type**, you can select **Automatic**, **TKIP** or **AES** as **Encryption**.
- **PSK Passphrase** - Enter a passphrase here.
- **Group Key Update Period** - Specify the group key update interval in seconds. The value can be either 0 or at least 30. Enter 0 to disable the update.

Be sure to click the **Save** button to save your settings on this page.

☞ **Note:**

You will be reminded to reboot the device after clicking the **Save** button.

5) Universal Repeater



Wireless Security

Operation Mode: Universal Repeater

● Disable Security

○ WEP

Type: Automatic

WEP Key Format: Hexadecimal

Key Selected	WEP Key	Key Type
Key 1: ●		Disabled
Key 2: ○		Disabled
Key 3: ○		Disabled
Key 4: ○		Disabled

○ WPA-PSK/WPA2-PSK

Version: Automatic

Encryption: Automatic

PSK Password:

(You can enter ASCII characters between 8 and 63 characters or 8 to 64 Hexadecimal characters.)

Group Key Update Period: 0 (in second, minimum is 30, 0 means no update)

Figure 4-21 Wireless Security – Universal Repeater

- **Operation Mode -** Shows the current operation mode.
- **Disable Security -** Check this box radio button to disable wireless security. If disabled, the wireless stations will be able to connect this device without encryption. It is strongly recommended that you choose one of the security types to enable security.
- **WEP -** Select 802.11 WEP security.

- **Type** - You can select one of following types.

  Automatic - Select **Shared Key** or **Open System** authentication type automatically based on the wireless station's capability and request.

  Shared Key - Select 802.11 **Shared Key** authentication type.

  Open System - Select 802.11 Open System authentication.

- **WEP Key Format** - You can select **ASCII** or **Hexadecimal** format. ASCII format stands for any combination of keyboard characters in the specified length. Hexadecimal format stands for any combination of hexadecimal digits (0-9, a-f, A-F) in the specified length.
- **WEP Key** - Select which of the four keys will be used and enter the matching WEP key information for your network in the selected key radio button. These values must be identical on all wireless stations in your network.

- **Key Type** - You can select the WEP key length (**64-bit**, or **128-bit**, or **152-bit**.) for encryption. "Disabled" means this WEP key entry is invalid.

  For **64-bit** encryption **-** You can enter 10 hexadecimal digits (any combination of 0-9, a-f, A-F, zero key is not permitted) or 5 ASCII characters.

  For **128-bit** encryption **-** You can enter 26 hexadecimal digits (any combination of 0-9, a-f, A-F, zero key is not permitted) or 13 ASCII characters.

  For **152-bit** encryption **-** You can enter 32 hexadecimal digits (any combination of 0-9, a-f, A-F, zero key is not permitted) or 16 ASCII characters.

☞ **Note:**

If you do not set the key, the wireless security function is still disabled even if you have selected Shared Key as Authentication Type.

➢ **WPA-PSK/ WPA2-PSK -** Select WPA based on pre-shared key.

- **Version** - You can select one of following versions.

  Automatic - Select **WPA-PSK** or **WPA2-PSK** automatically based on the wireless station's capability and request.

  WPA-PSK - Pre-shared key of WPA.

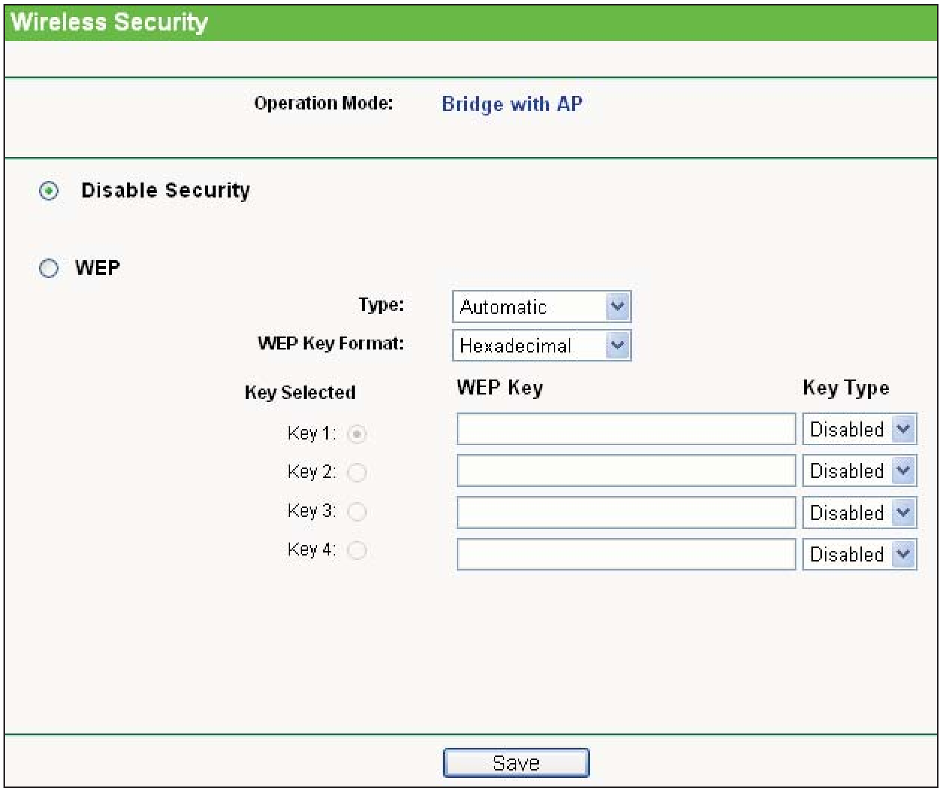
  WPA2-PSK - Pre-shared key of WPA2.

- **Encryption** - When you select **WPA-PSK** or **WPA2-PSK** for **Authentication Type**, you can select **Automatic**, **TKIP** or **AES** as **Encryption**.
- **PSK Passphrase** - Enter a passphrase here.
- **Group Key Update Period** - Specify the group key update interval in seconds. The value can be either 0 or at least 30. Enter 0 to disable the update.

Be sure to click the **Save** button to save your settings on this page.

☞ **Note:**

You will be reminded to reboot the device after clicking the **Save** button.



Wireless Security

Operation Mode: Bridge with AP

● Disable Security

○ WEP

Type: Automatic

WEP Key Format: Hexadecimal

Key Selected	WEP Key	Key Type
Key 1: ●		Disabled
Key 2: ○		Disabled
Key 3: ○		Disabled
Key 4: ○		Disabled

Figure 4-22 Wireless Security – Bridge with AP

- **Operation Mode -** Shows the current operation mode.
- **Disable Security -** Check this box radio button to disable wireless security. If disabled, the wireless stations will be able to connect this device without encryption. It is strongly recommended that you choose one of the security types to enable security.
- **WEP -** Select 802.11 WEP security.

- **Type** - You can select one of following types.

  Automatic - Select **Shared Key** or **Open System** authentication type automatically based on the wireless station's capability and request.

  Shared Key - Select 802.11 **Shared Key** authentication type.

  Open System - Select 802.11 Open System authentication.

- **WEP Key Format** - You can select **ASCII** or **Hexadecimal** format. ASCII format stands for any combination of keyboard characters in the specified length. Hexadecimal format stands for any combination of hexadecimal digits (0-9, a-f, A-F) in the specified length.
- **WEP Key** - Select which of the four keys will be used and enter the matching WEP key information for your network in the selected key radio button. These values must be identical on all wireless stations in your network.
- **Key Type** - You can select the WEP key length (**64-bit**, or **128-bit**, or **152-bit**.) for encryption. "Disabled" means this WEP key entry is invalid.

For **64-bit** encryption **-** You can enter 10 hexadecimal digits (any combination of 0-9, a-f, A-F, zero key is not permitted) or 5 ASCII characters.

For **128-bit** encryption **-** You can enter 26 hexadecimal digits (any combination of 0-9, a-f, A-F, zero key is not permitted) or 13 ASCII characters.

For **152-bit** encryption **-** You can enter 32 hexadecimal digits (any combination of 0-9, a-f, A-F, zero key is not permitted) or 16 ASCII characters.

☞ **Note:**

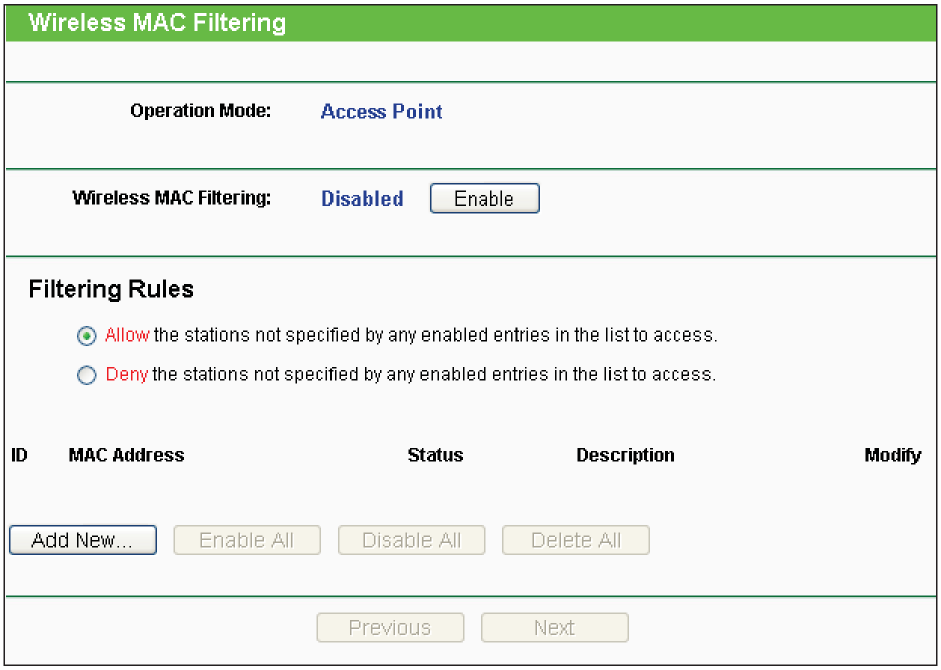
1. If you do not set the key, the wireless security function is still disabled even if you have selected Shared Key as Authentication Type.
2. You will be reminded to reboot the device after clicking the **Save** button.

4.7.3 Wireless MAC Filtering

Selecting **Wireless > Wireless MAC Filtering** will allow you to set up some filtering rules to control wireless stations accessing the device, which depend on the station's MAC address on the following screen as shown in Figure 4-23. As the configuration is the same in each operation mode, here we just take the Access Point for example.

☞ **Note:**

This function is not available when the operation is set to Client.



Wireless MAC Filtering

Operation Mode: Access Point

Wireless MAC Filtering: Disabled

Filtering Rules

● Allow the stations not specified by any enabled entries in the list to access.

○ Deny the stations not specified by any enabled entries in the list to access.

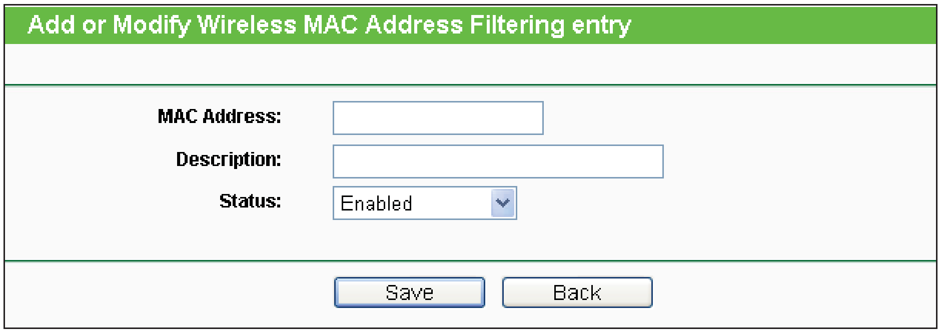
ID	MAC Address	Status	Description	Modify

Figure 4-23 Wireless MAC address Filtering

➢ **Operation Mode -** Shows the current operation mode.

- **Wireless MAC Filtering -** Click the **Enable** button to enable the Wireless MAC Address Filtering. The default setting is disabled.

- To Add a Wireless MAC Address filtering entry, click the **Add New…** button. The "**Add or Modify Wireless MAC Address Filtering entry**" page will appear, shown in Figure 4-24.



Add or Modify Wireless MAC Address Filtering entry

MAC Address:

Description:

Status: Enabled

Figure 4-24 Add or Modify Wireless MAC Address Filtering entry

- **MAC Address -** Enter the wireless station's MAC address that you want to control.

- **Description -** Give a simple description of the wireless station.

- **Status -** Select a status for this entry, either **Enabled** or **Disabled**.

- To set up an entry, click **Enable**, and follow these instructions:

1. First, you must decide whether the unspecified wireless stations can or cannot access the AP;
2. If you desire that the unspecified wireless stations can access the AP, please select the radio button **Allow the stations not specified by any enabled entries in the list to access**;
3. Otherwise, select the radio button **Deny the stations not specified by any enabled entries in the list to access**.

- To Add a Wireless MAC Address filtering entry, clicking the **Add New...** button, and following these instructions:

1. Enter the appropriate MAC Address into the **MAC Address** field. The format of the MAC Address is XX-XX-XX-XX-XX-XX (X is any hexadecimal digit). For example, 00-0A-EB-B0-00-0B.
2. Enter a simple description of the wireless station in the **Description** field. For example, Wireless station A.
3. **Status** - Select **Enabled** or **Disabled** for this entry on the **Status** pull-down list.
4. Click the **Save** button to save this entry.

- To add another entries, repeat steps 1~4.

➢ To modify or delete an existing entry:

1. Click the **Modify** in the entry you want to modify. If you want to delete the entry, click the **Delete**.
2. Modify the information.
3. Click the **Save** button.

Click the **Enable All** button to make all the Entries enabled.

Click the **Disable All** button to make all the Entries disabled.

Click the **Delete All** button to delete all the entries.

Click the **Next** button to go to the next page.

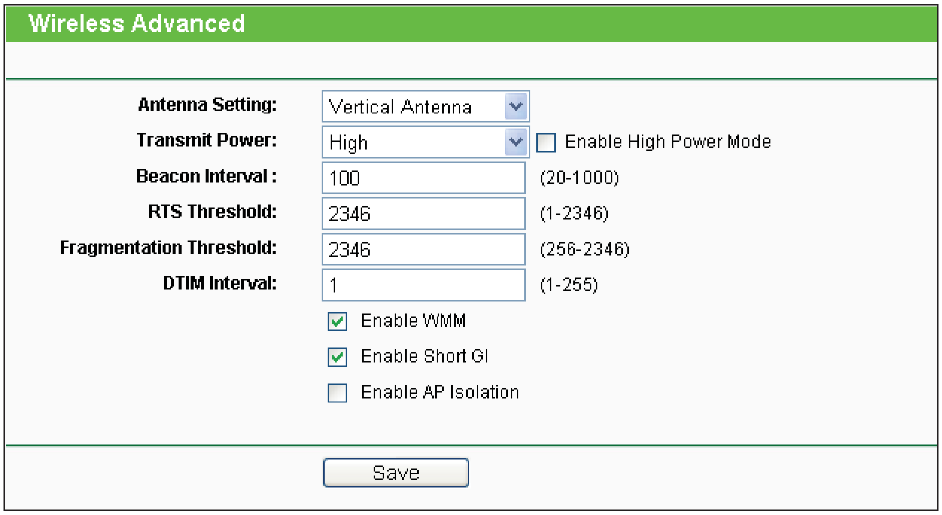
Click the **Previous** button to return to the previous page.

☞ **Note:**

1. If you enable the function and select the **Deny the stations not specified by any enabled entries in the list to access** for Filtering Rules, there will be not any enable entries in the list; thus, no wireless stations can access the AP.
2. Only in Standard AP mode, the current operation mode is shown at the top. Besides, if Multi-SSID, a sub mode of Standard AP, is selected, you can choose one of the 4 SSIDs from the pull-down list.

4.7.4 Wireless Advanced

Selecting **Wireless > Wireless Advanced** will allow you to do some advanced settings for the device in the following screen as shown in Figure 4-25. As the configuration for each operation mode is almost the same, we take Access Point mode for example here.



Wireless Advanced

Antenna Setting:	Vertical Antenna	
Transmit Power:	High	□ Enable High Power Mode
Beacon Interval :	100	(20-1000)
RTS Threshold:	2346	(1-2346)
Fragmentation Threshold:	2346	(256-2346)
DTIM Interval:	1	(1-255)
	☑ Enable WMM	
	☑ Enable Short GI	
	□ Enable AP Isolation	

Figure 4-25 Wireless Advanced

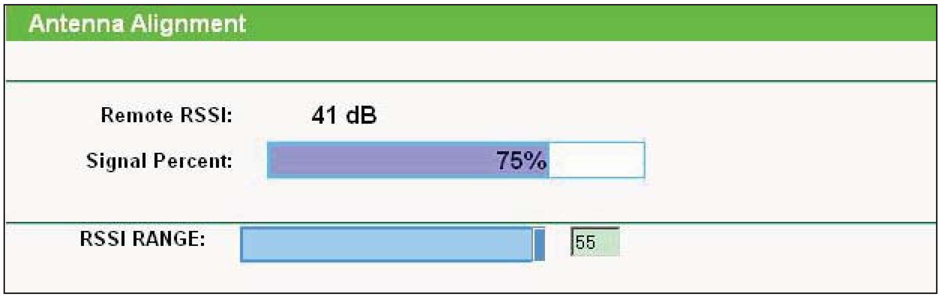
- **Antenna Settings -** The polarization of an antenna. You can select Vertical Antenna, Horizontal Antenna or External Antenna.
- **Transmit Power -** Here you can specify the transmit power of the Device. You can select High, Middle or Low whichever you would like. High is the default setting and is recommended.
- **Beacon Interval -** The beacons are the packets sent by the Device to synchronize a wireless network. Beacon Interval value determines the time interval of the beacons. You can specify a value between 20-1000 milliseconds. The default value is 100.
- **RTS Threshold -** Here you can specify the RTS (Request to Send) Threshold. If the packet is larger than the specified RTS Threshold size, the Device will send RTS frames to a particular receiving station and negotiate the sending of a data frame. The default value is 2346.
- **Fragmentation Threshold** - This value is the maximum size determining whether packets will be fragmented. Setting the Fragmentation Threshold too low may result in poor network performance since excessive packets. 2346 is the default setting and is recommended.
- **DTIM Interval -** This value determines the interval of the Delivery Traffic Indication Message (DTIM). You can specify the value between 1-255 Beacon Intervals. The default value is 1, which indicates the DTIM Interval is the same as Beacon Interval.
- **Enable WMM -** WMM function can guarantee the packets with high-priority messages being transmitted preferentially. It is strongly recommended enabled.
- **Enable Short GI -** This function is recommended, for it will increase the data capacity by reducing the guard interval time.
- **Enable AP Isolation -** Isolate all connected wireless stations so that wireless stations cannot access each other through WLAN. This function will be disabled if WDS/Bridge is enabled.

☞ **Note:**

If you are not familiar with the setting items in this page, it's strongly recommended to keep the provided default values; otherwise it may result in lower wireless network performance.

4.7.5 Antenna Alignment

Selecting **Wireless > Antenna Alignment** will shows how remote AP's signal strength changes while changing the antenna's direction.



Antenna Alignment

Remote RSSI: 41 dB

Signal Percent: 75%

RSSI RANGE: 55

Figure 4-26 Antenna Alignment

- **Remote AP RSSI**- Remote AP's signal strength value.
- **Signal percent**- The ratio of RSSI to RSSI RANGE in percentage.
- **RSSI RANGE**- You can drag the Slider to set or input the RSSI RANGE value.

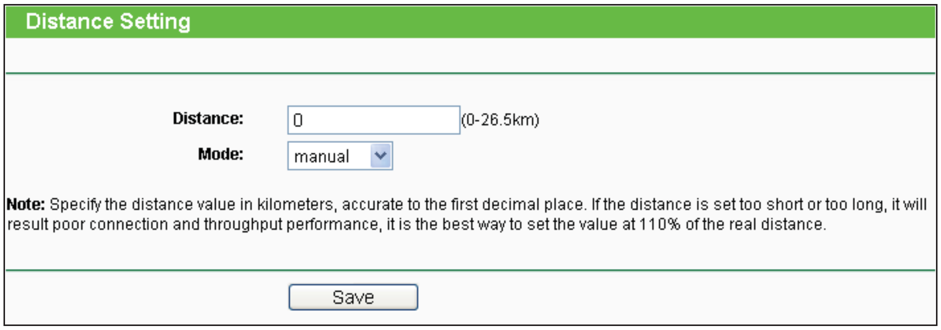
☞ **Note:**

It only works after you have established connection to remote AP in client mode.

4.7.6 Distance Settings

Selecting **Wireless > Distance Settings** will adjust the wireless range in outdoor conditions. This is a critical feature required for stabilizing outdoor links.

Enter the distance of your wireless link and the software will optimize the frame ACK timeout value automatically.



Distance Setting

Distance: 0 (0-26.5km)

Mode: manual

Note: Specify the distance value in kilometers, accurate to the first decimal place. If the distance is set too short or too long, it will result poor connection and throughput performance, it is the best way to set the value at 110% of the real distance.

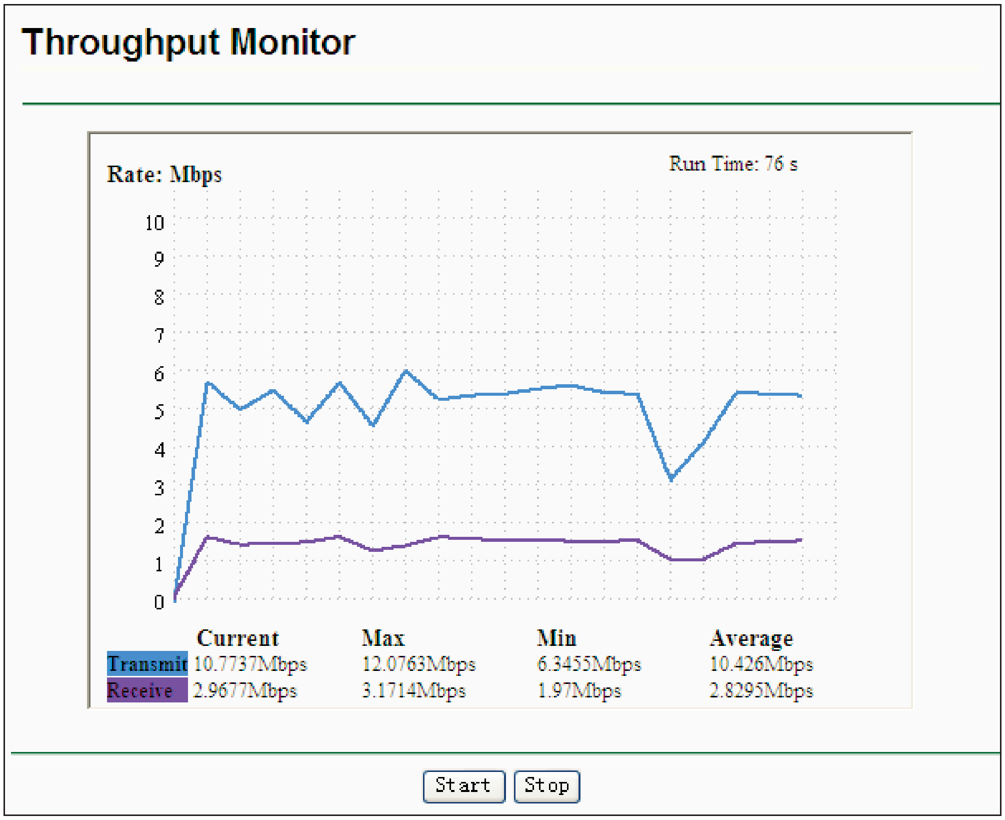
Figure 4-27 Distance Setting

☞ **Note:**

One hundred-meter is the smallest unit of this setting.

4.7.7 Throughput Monitor

Selecting **Wireless > Throughput Monitor** will help to watch wireless throughput information in the following screen shown in Figure 4-28.



Throughput Monitor

	Current	Max	Min	Average
Transmit	10.7737Mbps	12.0763Mbps	6.3455Mbps	10.426Mbps
Receive	2.9677Mbps	3.1714Mbps	1.97Mbps	2.8295Mbps

Figure 4-28 Throughput Monitor

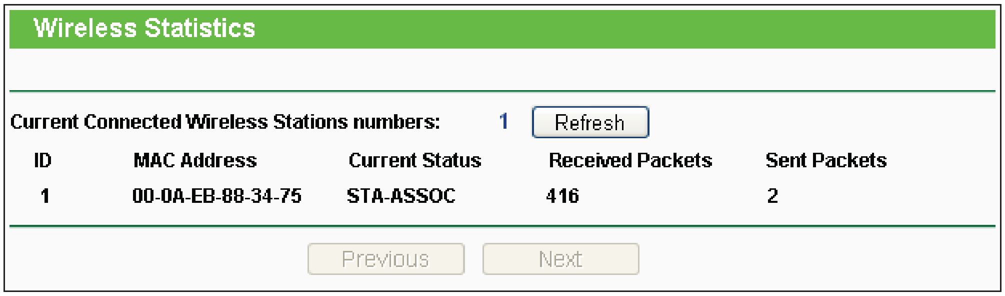
- **Rate -** The Throughput unit.
- **Run Time -** How long this function is running.
- **Transmit -** Wireless transmit rate information.
- **Receive -** Wireless receive rate information.

Click the **Start** button to start wireless throughput monitor.

Click the **Stop** button to stop wireless throughput monitor.

4.7.8 Wireless Statistics

Selecting **Wireless > Wireless Statistics** will allow you to see the the MAC Address, Current Status, Received Packets and Sent Packets for each connected wireless station as shown in Figure 4-29.



Current Connected Wireless Stations numbers: 1

ID	MAC Address	Current Status	Received Packets	Sent Packets
1	00-0A-EB-88-34-75	STA-ASSOC	416	2

Figure 4-29 Wireless Statistics

- **MAC Address -** the connected wireless station's MAC address.
- **Current Status -** the connected wireless station's running status, one of STA-AUTH / STA-ASSOC / STA-JOINED / WPA / WPA-PSK / WPA2 / WPA2-PSK / AP-UP / AP-DOWN / Disconnected.
- **Received Packets -** packets received by the station.
- **Sent Packets -** packets sent by the station.
- **Belong To -** the SSID that station belong to.

You cannot change any of the values on this page. To update this page and to show the current connected wireless stations, click on the **Refresh** button.

If the numbers of connected wireless stations go beyond one page, click the **Next** button to go to the next page and click the **Previous** button to return to the previous page.

☞ **Note:**

This page will be refreshed automatically every 5 seconds.

4.8 DHCP

The DHCP (Dynamic Host Configuration Protocol) Server will automatically assign dynamic IP addresses to the computers on the network. This protocol simplifies network management and allows new wireless devices to receive IP addresses automatically without the need to manually assign new IP addresses.

There are three submenus under the DHCP menu (shown as Figure 4-30): **DHCP Settings**, **DHCP Clients List** and **Address Reservation**. Clicking any of them will enable you to configure the corresponding function. The detailed explanations for each submenu are provided below.

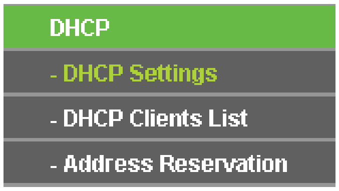
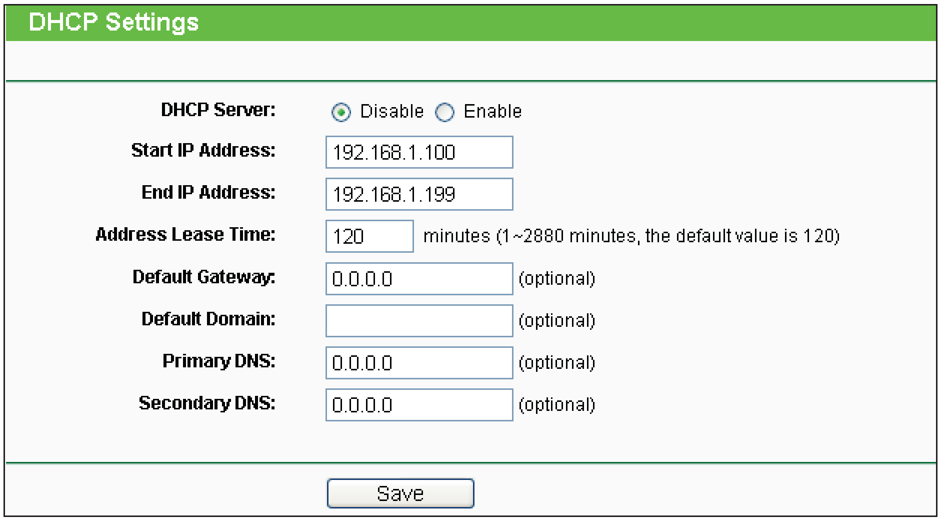


Figure 4-30 The DHCP menu

4.8.1 DHCP Settings

Selecting **DHCP > DHCP Settings** will enable you to set up the AP as a DHCP server, which provides the TCP/IP configuration for all the PCs that are connected to the system on the LAN. The DHCP Server is Disable by default, and can be configured on the page (shown as Figure 4-31):



DHCP Settings

DHCP Server:	● Disable ○ Enable
Start IP Address:	192.168.1.100
End IP Address:	192.168.1.199
Address Lease Time:	120 minutes (1~2880 minutes, the default value is 120)
Default Gateway:	0.0.0.0 (optional)
Default Domain:	(optional)
Primary DNS:	0.0.0.0 (optional)
Secondary DNS:	0.0.0.0 (optional)

Figure 4-31 DHCP Settings

- **DHCP Server - Enable** or **Disable** the server. If you disable the Server, you must have another DHCP server within your network or else you must configure the IP address of the computer manually.
- **Start IP Address -**This field specifies the first address in the IP Address pool. 192.168.1.100 is the default start IP address.
- **End IP Address -** This field specifies the last address in the IP Address pool. 192.168.1.199 is the default end IP address.
- **Address Lease Time –** It is the length of time a network user will be allowed to keep connecting to the device with the current DHCP Address. Enter the amount of time (in minutes), and then the DHCP address will be "leased". The time range is 1~2880 minutes. The default value is 120 minutes.
- **Default Gateway -** (Optional) Input the IP Address of the gateway.
- **Default Domain -** (Optional) Input the domain name of your network.
- **Primary DNS -** (Optional) Input the DNS IP address provided by your ISP or consult your ISP.

- **Secondary DNS -** (Optional) You can input the IP Address of another DNS server if your ISP provides two DNS servers.

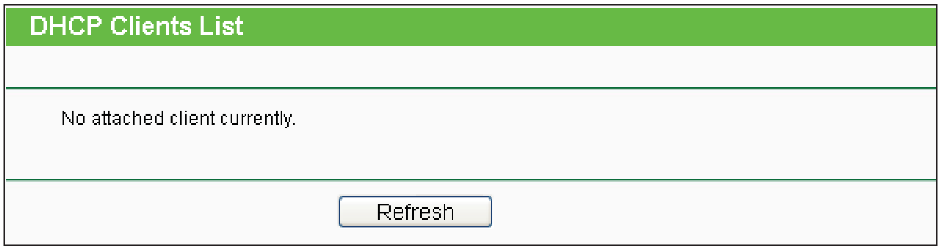
☞ **Note:**

1. When the device is working on Dynamic IP mode, the DHCP Server function will be disabled.
2. To use the DHCP server function of the device, you should configure all computers in the LAN as "**Obtain an IP Address automatically**" mode. This function will take effect until the device reboots.

Click **Save** to save the changes.

4.8.2 DHCP Clients List

Selecting **DHCP > DHCP Clients List** will enable you to view the Client Name, MAC Address, Assigned IP and Lease Time of each DHCP Client connected to the device (Figure 4-32).



DHCP Clients List

No attached client currently.

Figure 4-32 DHCP Clients List

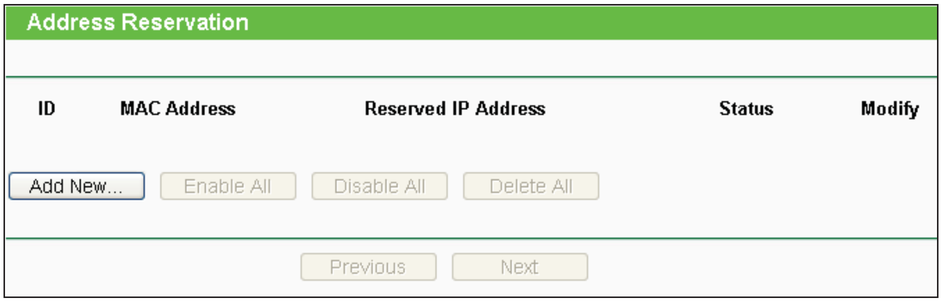
- **Client Name -** The name of the DHCP client.
- **MAC Address -** The MAC address of the DHCP client.
- **Assigned IP -** The IP address that the device has allocated to the DHCP client.
- **Lease Time -** The time of the DHCP client leased.

You cannot change any of the values on this page.

To update this page and to show the current connected devices, click on the **Refresh** button.

4.8.3 Address Reservation

Selecting **DHCP > Address Reservation** will enable you to specify a reserved IP address for a PC on the LAN, so the PC will always obtain the same IP address each time when it accesses the AP. Reserved IP addresses should be assigned to servers that require permanent IP settings. The screen below is used for address reservation (shown in Figure 4-33).



Address Reservation

ID	MAC Address	Reserved IP Address	Status	Modify

Figure 4-33 Address Reservation

- **MAC Address -** The MAC Address of the PC that you want to reserve an IP address for.
- **Reserved IP Address -** The IP address that the device reserved.
- **Status -** It shows whether the entry is enabled or not.
- **Modify -** To modify or delete an existing entry.

- To Reserve IP Addresses, you can follow these steps:

1. Click the **Add New...** button to add a new Address Reservation entry.
2. Enter the MAC Address (the format for the MAC Address is XX-XX-XX-XX-XX-XX.) and the IP address in dotted-decimal notation of the computer you wish to add.
3. Click the **Save** button.

- To modify a Reserved IP Address, you can follow these steps:

1. Select the reserved address entry as you desired, **modify** it. If you wish to delete the entry, click the **Delete** link of the entry.
2. Click the **Save** button.

Click the **Add New...** button to add a new Address Reservation entry.

Click the **Enable All** button to enable all the entries in the table.

Click the **Disable All** button to disable all the entries in the table.

Click the **Delete All** button to delete all the entries in the table.

Click the **Next** button to go to the next page, or click the **Previous** button return to the previous page.

☞ **Note:**

The changes will not take effect until the device reboots.

4.9 System Tools

The **System Tools** option helps you to optimize the configuration of your device.

There are ten submenus under the **System Tools** menu (shown as Figure 4-34): **SNMP**, **Diagnostic**, **Ping Watch Dog**, **Speed Test**, **Firmware Upgrade**, **Factory Defaults**, **Backup & Restore**, **Reboot**, **Password**, and **System Log.** Click any of them, and you will be able to configure the corresponding function. The detailed explanations for each submenu are provided below.

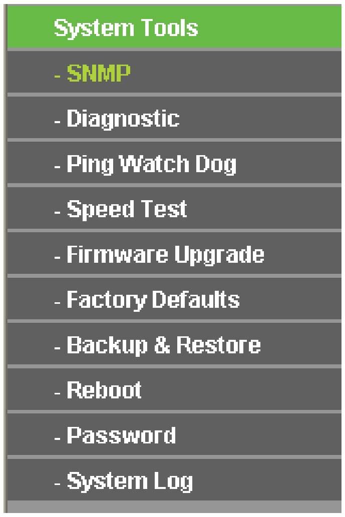
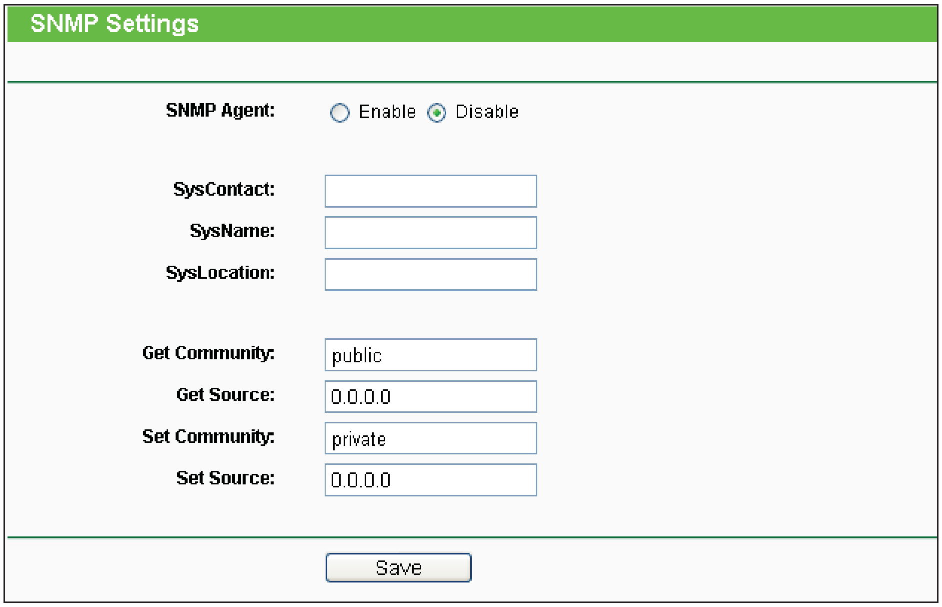


Figure 4-34 The System Tools menu

4.9.1 SNMP

Selecting **System Tools > SNMP** will allow you to configure some parameters (as shown in Figure 4-35), so that you can use this SNMP (Simple Network Management Protocol) function allowing the network management station to retrieve statistics and status from the SNMP agent in this device.



SNMP Settings

SNMP Agent:	○ Enable ● Disable
SysContact:	
SysName:	
SysLocation:	
Get Community:	public
Get Source:	0.0.0.0
Set Community:	private
Set Source:	0.0.0.0

Figure 4-35 SNMP Settings

- **SNMP Agent -** Choose **Enable** to open this function if you want to have remote control through SNMPv1/v2 agent with MIB-II. Choose **Disable** to close this function.
- **SysContact -** The textual identification of the contact person for this managed node.
- **SysName -** An administratively-assigned name for this managed node.
- **SysLocation -** The physical location of this node.

☞ **Note:**

Specifying one of these values via the Device's Web-Based Utility makes the corresponding object read-only. If there isn't such a config setting, then the write request will succeed (assuming suitable access control settings), but the new value would be forgotten the next time the agent was restarted.

- **Get Community -** Enter the community name that allows Read-Only access to the Device's SNMP information. The community name can be considered a group password. The default setting is **public**.
- **Get Source -** Defines the IP address or subnet for management systems that can read information from this 'get' community device.
- **Set Community -** Enter the community name that allows Read/Write access to the Device's SNMP information. The community name can be considered a group password. The default setting is **private**.
- **Set Source -** Defines the IP address or subnet for management systems that can control this 'set' community device.

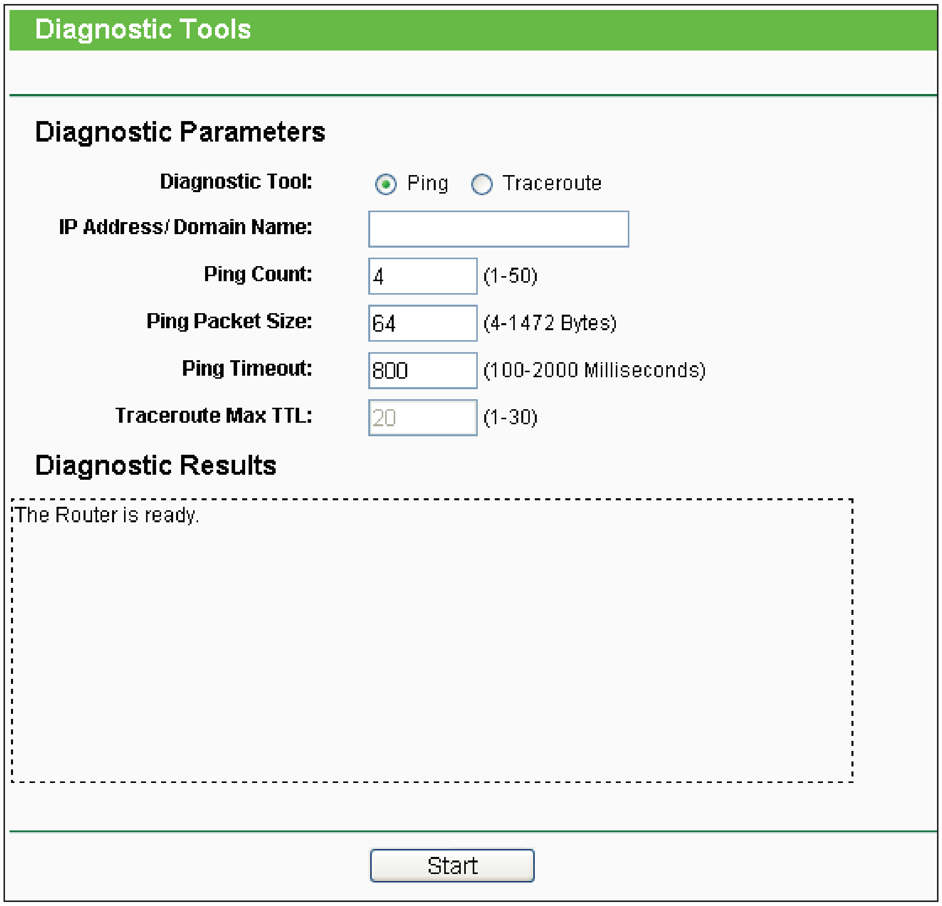
☞ **Note:**

A restricted source can be a specific IP address (e.g. 10.10.10.1), or a subnet - represented as IP/BITS (e.g. 10.10.10.0/24). If an IP Address of 0.0.0.0 is specified, the agent will accept all requests under the corresponding community name.

Click the **Save** button to save your settings.

4.9.2 Diagnostic

Selecting **System Tools > Diagnostic** allows you to check the connections of your network components on the screen shown in Figure 4-36.



Diagnostic Tools

Diagnostic Parameters

Diagnostic Tool:	● Ping ○ Traceroute
IP Address/ Domain Name:	
Ping Count:	4 (1-50)
Ping Packet Size:	64 (4-1472 Bytes)
Ping Timeout:	800 (100-2000 Milliseconds)
Traceroute Max TTL:	20 (1-30)

Diagnostic Results

The Router is ready.

Figure 4-36 Diagnostic Tool

- **Diagnostic Tool -** Click the radio button to select one diagnostic tool:

- **Ping -** This diagnostic tool troubleshoots connectivity, reachability, and name resolution to a given host or gateway.

- **Traceroute -** This diagnostic tool tests the performance of a connection.

☞ **Note:**

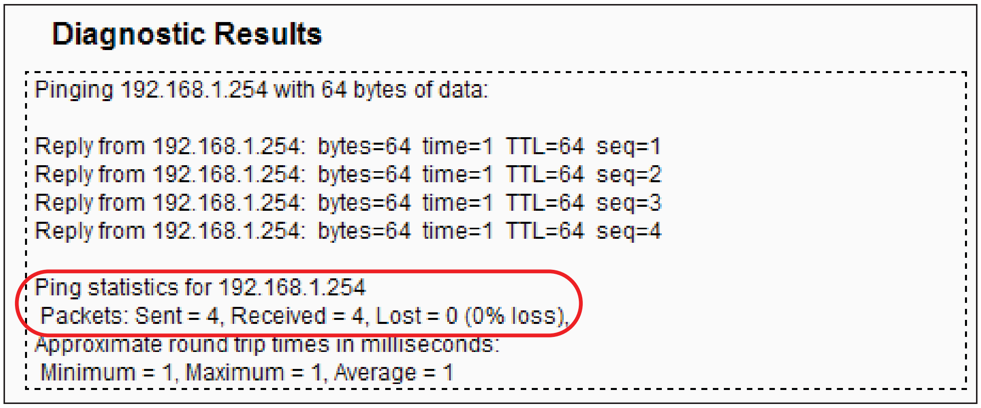
You can use ping/traceroute to test both numeric IP address or domain name. If pinging/tracerouting the IP address is successful, but pinging/tracerouting the domain name is not, you might have a name resolution problem. In this case, ensure that the domain name you are specifying can be resolved by using Domain Name System (DNS) queries.

- **IP Address/ Domain Name** - Enter the IP Address or Domain Name of the PC whose connection you wish to diagnose.
- **Ping Count** - Specifies the number of Echo Request messages sent. The default is 4.
- **Ping Packet Size** - Specifies the number of data bytes to be sent. The default is 64.
- **Ping Timeout** - Time to wait for a response, in milliseconds. The default is 800.
- **Traceroute Max TTL** - Set the maximum number of hops (max TTL to be reached) in the path to search for the target (destination). The default is 20.

Click the **Start** button to start the diagnostic procedure.

The **Diagnostic Results** page displays the result of diagnosis.

If the result is similar to the following screen, the connectivity of the Internet is fine.



Diagnostic Results

```
Pinging 192.168.1.254 with 64 bytes of data:

Reply from 192.168.1.254:  bytes=64  time=1  TTL=64  seq=1
Reply from 192.168.1.254:  bytes=64  time=1  TTL=64  seq=2
Reply from 192.168.1.254:  bytes=64  time=1  TTL=64  seq=3
Reply from 192.168.1.254:  bytes=64  time=1  TTL=64  seq=4

Ping statistics for 192.168.1.254
 Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milliseconds:
 Minimum = 1, Maximum = 1, Average = 1
```

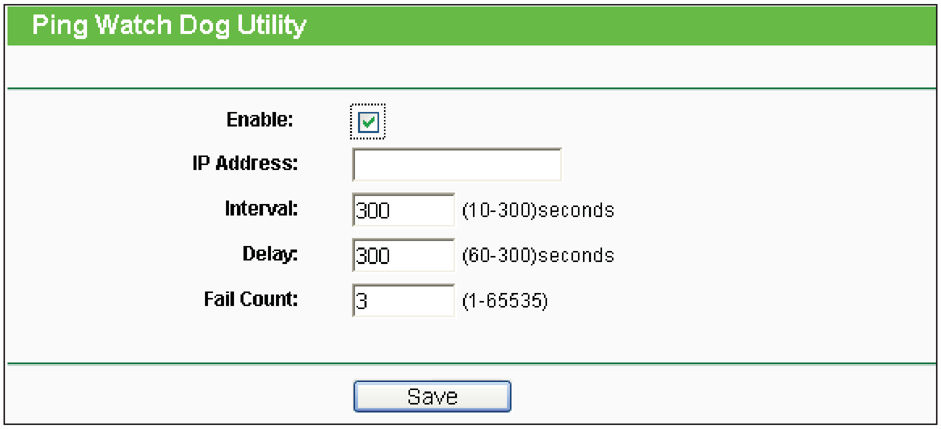
Figure 4-37 Diagnostic Results

☞ **Note:**

1. Only one user can use the diagnostic tools at one time.
2. "Ping Count", "Ping Packet Size" and "Ping Timeout" are Ping Parameters, and "Traceroute Max TTL" is Traceroute Parameter.

4.9.3 Ping Watch Dog

Selecting **System Tools > Ping Watch Dog** allows you to continuously monitor the particular connection between the device and a remote host. It makes this device continuously ping a user defined IP address (it can be the Internet gateway for example.). If it is unable to ping under the user defined constraints, this device will automatically reboot.



Enable: ☑

IP Address:

Interval: 300 (10-300)seconds

Delay: 300 (60-300)seconds

Fail Count: 3 (1-65535)

Figure 4-38 Ping Watch Dog Utility

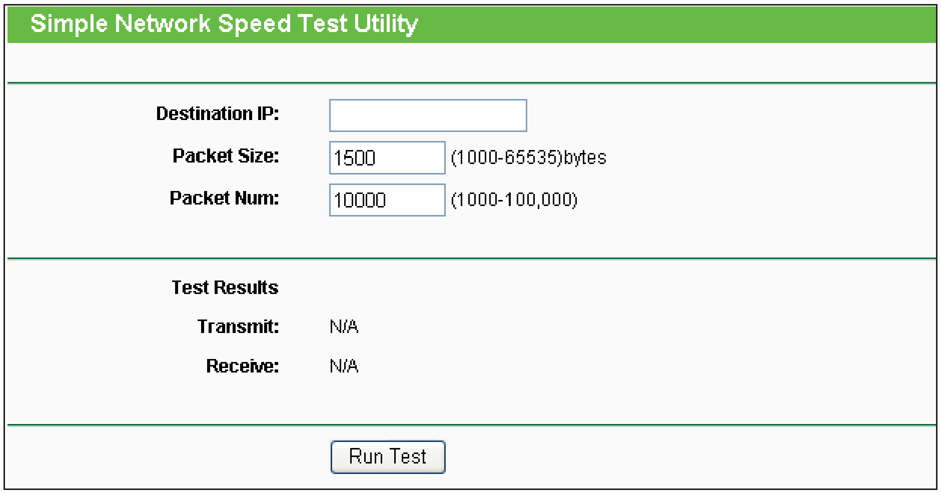
- **Enable -** Turn on/off Ping Watch Dog.
- **IP Address -** The IP address of the target host where the Ping Watch Dog Utility is sending ping packets.
- **Interval -** Time internal between two ping packets which are sent out continuously.
- **Delay -** Time delay before first ping packet is sent out when the device is restarted.
- **Fail Count –** It is the upper limit of the ping packet the device can drop continuously. If this value is overrun, the device will restart automatically.

Be sure to click the **Save** button to make your settings in operation.

4.9.4 Speed Test

Selecting **System Tools > Speed Test** helps to test the connection speed to and from any reachable IP address on current network, especially when we are building wireless network between devices which are far away from each other.

It should be used for the preliminary throughput estimation between two network devices.



Simple Network Speed Test Utility

Destination IP:	
Packet Size:	1500 (1000-65535)bytes
Packet Num:	10000 (1000-100,000)
Test Results	
Transmit:	N/A
Receive:	N/A

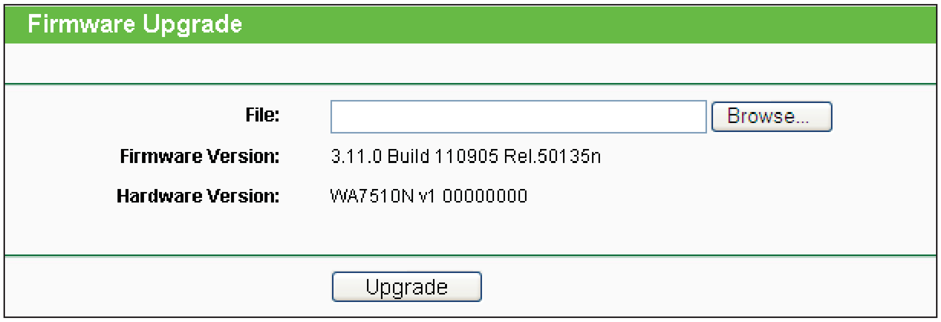
Figure 4-39 Speed Test Utility

- **Destination IP-**The Remote device's IP address
- **Transmit -** Estimate the outgoing throughput (Tx).
- **Receive -** Estimate the ingoing throughput (Rx).

Be sure to click the **Run Test** button to start a new test after you fill enough information. You can also stop a running test by click **Stop Test** button at any time.

4.9.5 Firmware Upgrade

Selecting **System Tools > Firmware Upgrade** allows you to upgrade the latest version of firmware for the device on the screen shown in Figure 4-40.



Firmware Upgrade

File:	
Firmware Version:	3.11.0 Build 110905 Rel.50135n
Hardware Version:	WA7510N v1 00000000

Figure 4-40 Firmware Upgrade

- **Firmware Version -** Displays the current firmware version.
- **Hardware Version** - It displays the current hardware version.
- To upgrade the Device's firmware, follow these instructions:

1. Download a most recent firmware upgrade file from our website (www.tp-link.com).

2. Enter or select the path name where you save the downloaded file on the computer into the **File Name** blank.

3. Click the **Upgrade** button.

4. The Device will reboot while the upgrading has been finished.

☞ **Note:**

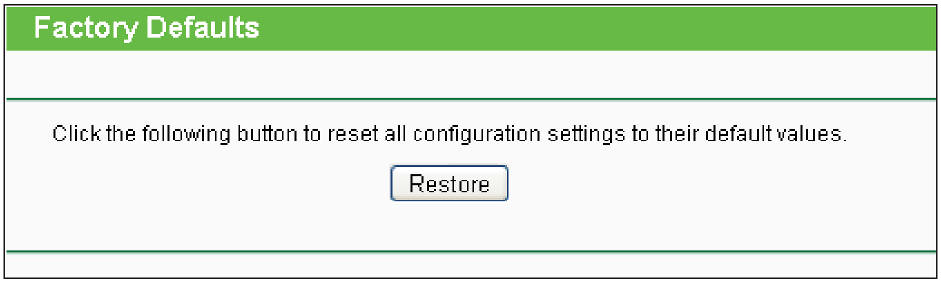
1. The firmware version must correspond to the hardware.

2. The upgrade process takes a few moments and the Device restarts automatically when the upgrade is complete.

3. It is important to keep power applied during the entire process. Loss of power during the upgrade could damage the Device.

4.9.6 Factory Defaults

Selecting **System Tools > Factory Default** allows you to restore the factory default settings for the device on the screen shown in Figure 4-41.



Factory Defaults

Click the following button to reset all configuration settings to their default values.

Figure 4-41 Restore Factory Defaults

Click the **Restore** button to reset all configuration settings to their default values.

- Default User Name **- admin**.
- Default Password **- admin**.
- Default IP Address **- 192.168.1.254**.
- Default Subnet Mask **- 255.255.255.0**.

☞ **Note:**

All changed settings will be lost when defaults are restored.

4.9.7 Backup & Restore

Selecting **System Tools > Backup & Restore** allows you to save all configuration settings to your local computer as a file or restore the device's configuration on the screen shown in Figure 4-42.

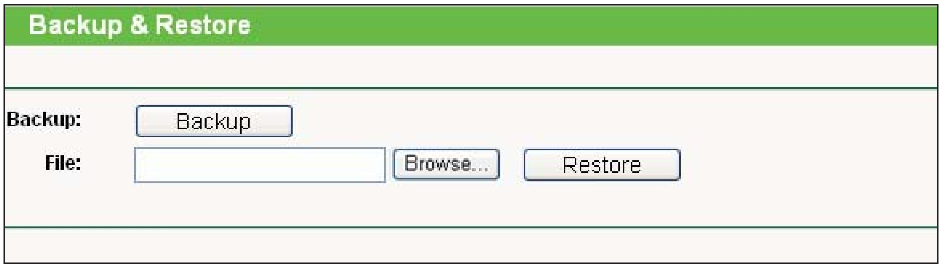


Figure 4-42 Save or Restore the Configuration

Click **Backup** to save all configuration settings to your local computer as a file.

➢ To restore the device's configuration, follow these instructions:

1. Click **Browse…** to find the configuration file which you want to restore.
2. Click **Restore** to update the configuration with the file whose path is the one you have input or selected in the blank.

☞ **Note:**

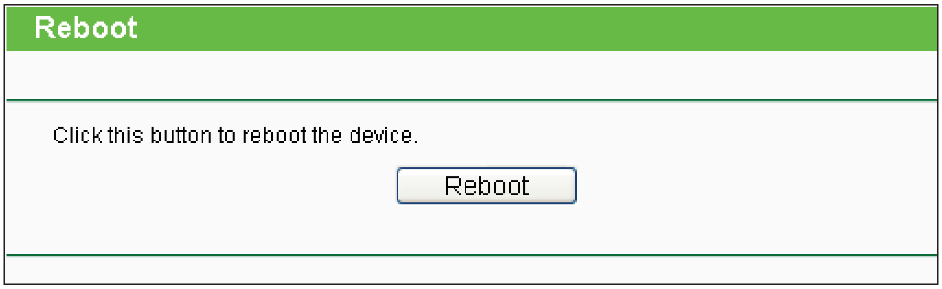
The current configuration will be covered with the uploading configuration file. Wrong process will lead the device unmanaged.

The restoring process lasts for 20 seconds and the AP will restart automatically then.

Keep the power of the AP on during the process, in case of any damage.

4.9.8 Reboot

Selecting **System Tools > Reboot** allows you to reboot the device on the screen as shown in Figure 4-43.



Click this button to reboot the device.

Figure 4-43 Reboot the device

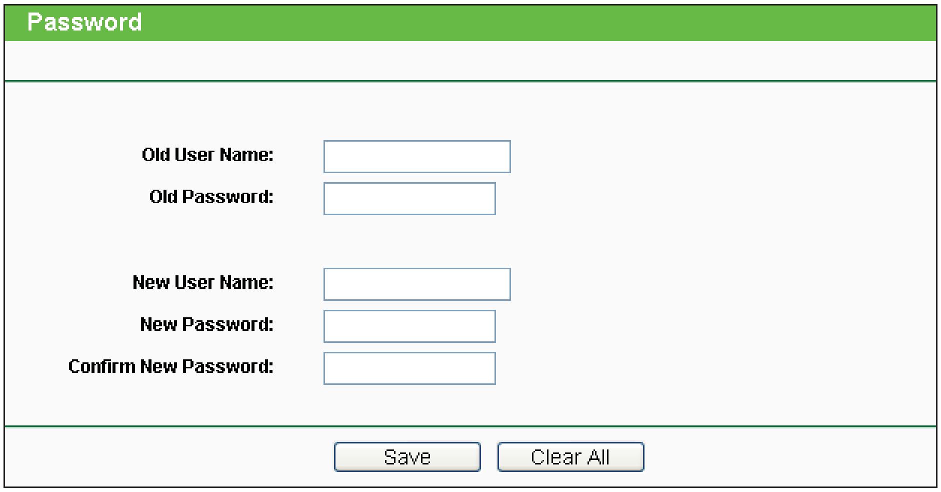
Click the **Reboot** button to reboot the Device.

➢ Some settings of the Device will take effect only after rebooting, including:

- Change the LAN IP Address (system will reboot automatically.).
- Change the DHCP Settings.
- Change the Wireless configurations.
- Change the Web Management Port.
- Upgrade the firmware of the Device (system will reboot automatically.).
- Restore the Device's settings to the factory defaults (system will reboot automatically.).
- Update the configuration with the file (system will reboot automatically.).

4.9.9 Password

Selecting **System Tools > Password** allows you to change the factory default user name and password of the device on the screen shown in Figure 4-44.



Password

Old User Name:

Old Password:

New User Name:

New Password:

Confirm New Password:

Figure 4-44 Password

It is strongly recommended that you change the factory default user name and password of the AP. All users who try to access the AP's web-based utility will be prompted for the AP's user name and password.

☞ **Note:**

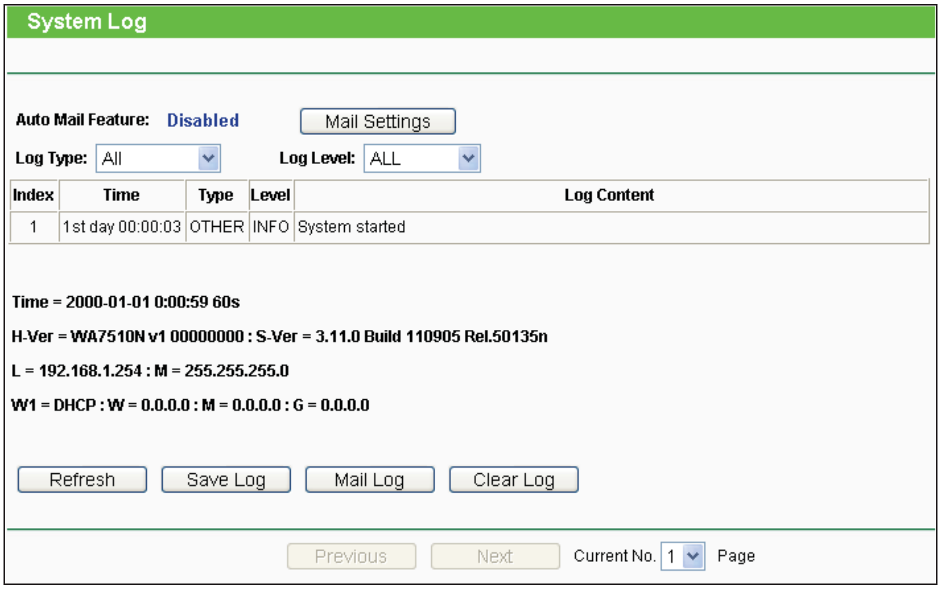
The new user name and password must not exceed 14 characters in length and must not include any spaces. Enter the new Password twice to confirm it.

Click the **Save** button when finished.

Click the **Clear All** button to clear all.

4.9.10 System Log

Selecting **System Tools > System Log** allows you to query the Logs of the device on the screen shown in Figure 4-45.



System Log

Auto Mail Feature: Disabled

Log Type: All   Log Level: ALL

Index	Time	Type	Level	Log Content
1	1st day 00:00:03	OTHER	INFO	System started

```
Time = 2000-01-01 0:00:59 60s
H-Ver = WA7510N v1 00000000 : S-Ver = 3.11.0 Build 110905 Rel.50135n
L = 192.168.1.254 : M = 255.255.255.0
W1 = DHCP : W = 0.0.0.0 : M = 0.0.0.0 : G = 0.0.0.0
```

Current No. 1 Page

Figure 4-45 System Log

- **Auto Mail Feature -** Indicates whether auto mail feature is enabled or not.
- **Mail Settings -** Set the receiving and sending mailbox address, server address, validation information as well as the timetable for Auto Mail Feature.
- **Log Type -** By selecting the log type, only logs of this type will be shown.
- **Log Level -** By selecting the log level, only logs of this level will be shown.
- **Refresh -** Refresh the page to show the latest log list.
- **Save Log -** Click to save all the logs in a txt file.
- **Mail Log -** Click to send an email of current logs manually according to the address and validation information set in Mail Settings. The result will be shown in the later log soon.
- **Clear Log -** All the logs will be deleted from the Device permanently, not just from the page.

Click the **Next** button to go to the next page, or click the **Previous** button return to the previous page.

Chapter 5 Configuring AP Router & AP Client Router Mode

This chapter will show each Web page's key functions and the configuration way in AP Router mode as well as AP Client Router mode.

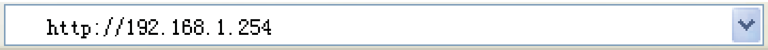
☞ **Note:**

The setting Web pages of these two modes are mostly the same, with only three differences:

1. In AP Router Mode, there is one more WAN connection type, **Big Pond Cable**, than that in AP Client Router Mode.（See Section 5.6.2）
2. In AP Client Router Mode, there is one more submenu under Wireless main menu, **Antenna Alignment**, than that in AP Router Mode, as shown in Figure 5-24 & Figure 5-25. (See Section 5.7)
3. The **Wireless Settings** page in AP Router mode and that in AP Client Router mode are something different, as shown in Figure 5-26 & Figure 5-27. (See Section 5.7.1)

5.1 Login

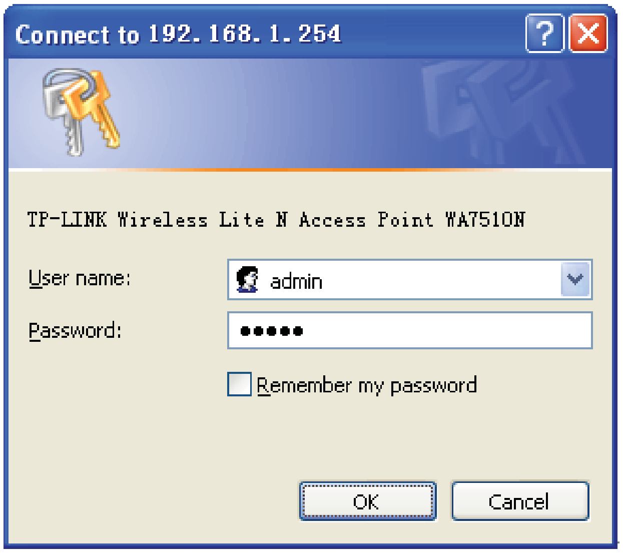
Open your web browser. Type in the default address http://192.168.1.254 in the address field of web browser and then press **Enter**.



http://192.168.1.254

Figure 5-1 Login to the Device

Enter **admin** for the User Name and Password (both in lower case letters) in Figure 5-2 below. Then click **OK** or press Enter.



Connect to 192.168.1.254

TP-LINK Wireless Lite N Access Point WA7510N

User name: admin

Password: ●●●●●

□ Remember my password

Figure 5-2 Login Windows

☞ **Note:**

If the above screen does not prompt, it means that your web-browser has been set to a proxy. Go to **Tools menu>Internet Options>Connections>LAN Settings**, in the screen that appears, cancel the **Using Proxy** checkbox, and click **OK** to finish it.

After a successful login, you can configure and manage the device. There are sixteen main menus on the leftmost column of the web-based management page as in Figure 5-3: **Status**, **Quick Setup**, **QSS**, **Operation Mode**, **Network**, **Wireless**, **DHCP, Forwarding, Security, Parental Control, Access Control, Static Routing, Bandwidth Control, IP & MAC Binding, Dynamic DNS** and **System Tools**. Submenus will be available after clicking one of the main menus. On the right of the web-based management page lays the detailed explanations and instructions for the corresponding page.

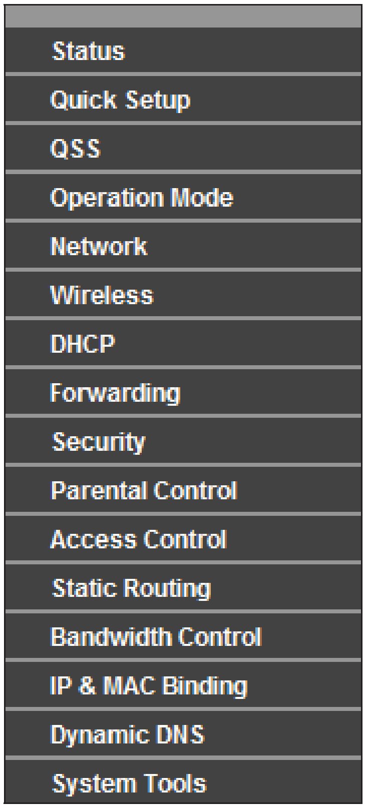
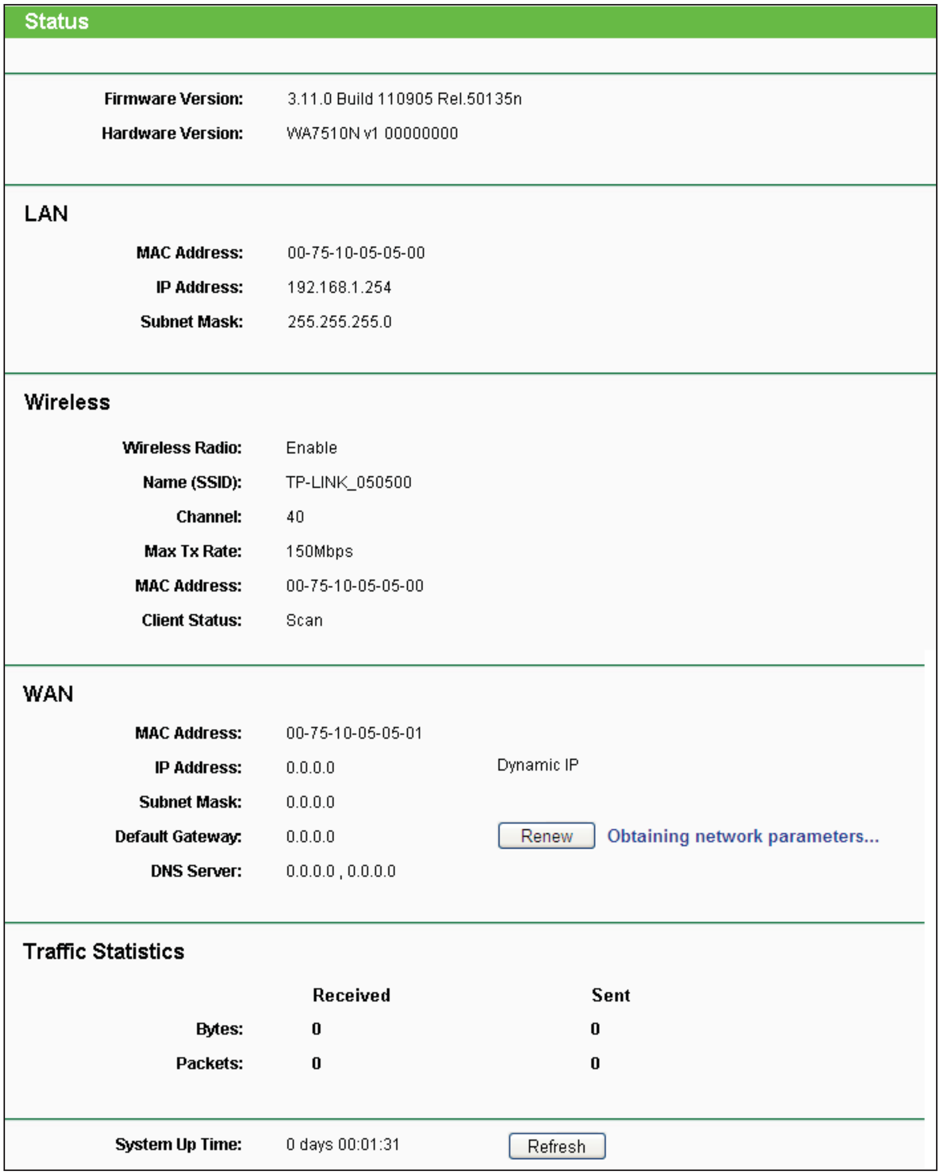


Figure 5-3 the Main Menu

5.2 Status

The **Status** page displays the Device's current status and configuration, all information which is read-only.



Status

Firmware Version: 3.11.0 Build 110905 Rel.50135n

Hardware Version: WA7510N v1 00000000

LAN

MAC Address: 00-75-10-05-05-00

IP Address: 192.168.1.254

Subnet Mask: 255.255.255.0

Wireless

Wireless Radio: Enable

Name (SSID): TP-LINK_050500

Channel: 40

Max Tx Rate: 150Mbps

MAC Address: 00-75-10-05-05-00

Client Status: Scan

WAN

MAC Address: 00-75-10-05-05-01

IP Address: 0.0.0.0 Dynamic IP

Subnet Mask: 0.0.0.0

Default Gateway: 0.0.0.0 Obtaining network parameters...

DNS Server: 0.0.0.0 , 0.0.0.0

Traffic Statistics

	Received	Sent
Bytes:	0	0
Packets:	0	0

System Up Time: 0 days 00:01:31

Figure 5-4 Status

- **LAN** - The following parameters apply to the LAN port of the Device. You can configure them in the **Network -> LAN** page.
  - **MAC Address**- The physical address of the Device, as seen from the LAN.
  - **IP Address**- The LAN IP address of the Device.
  - **Subnet Mask** - The subnet mask associated with LAN IP address.
- **Wireless** - These are the current settings or information for Wireless. You can configure them in the **Wireless -> Wireless Settings** page.
  - **Wireless Radio**- Indicates whether the wireless radio feature of the Device is enabled or disabled.
  - **Name (SSID)** - The SSID of the Device.

- **Channel** - The current wireless channel in use.
- **Mode** - The current wireless mode which the Device works on.
- **Max Tx Rate** - The maximum tx rate.
- **MAC Address** - The physical address of the Device, as seen from the WLAN.
- **Client Status** - The status of client.

  Init: Connection is down; Scan: Try to find the AP; Auth: Try to authenticate; ASSOC: Try to associate; Run: Associated successfully.

- **WAN** - The following parameters apply to the WAN ports of the Device. You can configure them in the **Network -> WAN** page.
  - **MAC Address**- The physical address of the WAN port, as seen from the Internet.
  - **IP Address** - The current WAN (Internet) IP Address. This field will be blank or 0.0.0.0 if the IP Address is assigned dynamically and there is no connection to Internet.
  - **Subnet Mask** - The subnet mask associated with the WAN IP Address.
  - **Default Gateway** - The Gateway currently used by the Device is shown here. When you use **Dynamic IP** as the connection Internet type, the **Renew** button will be displayed here. Click the **Renew** button to obtain new IP parameters dynamically from the ISP. And if you have got an IP address, **Release** button will be displayed here. Click the **Release** button to release the IP address the Device has obtained from the ISP.
  - **DNS Server** - The DNS (Domain Name System) Server IP addresses currently used by the Device. Multiple DNS IP settings are common. Usually, the first available DNS Server is used.
  - **Online Time** - The time that you are online. When you use **PPPoE** as WAN connection type, the online time is displayed here. Click the **Connect** or **Disconnect** button to connect to or disconnect from Internet.
- **Secondary Connection** - Besides PPPoE, if you use an extra connection type to connect to a local area network provided by ISP, then parameters of this secondary connection will be shown in this area.
- **Traffic Statistics** - The Device's traffic statistics.
  - **Sent (Bytes)** - Traffic that counted in bytes has been sent out from the WAN port.
  - **Sent (Packets)** - Traffic that counted in packets has been sent out from WAN port.
  - **Received (Bytes)** - Traffic that counted in bytes has been received from the WAN port.
  - **Received (Packets)** - Traffic that counted in packets has been received from the WAN port.
- **System Up Time** - The length of the time since the Device was last powered on or reset.

Click the **Refresh** button to get the latest status and settings of the Device.

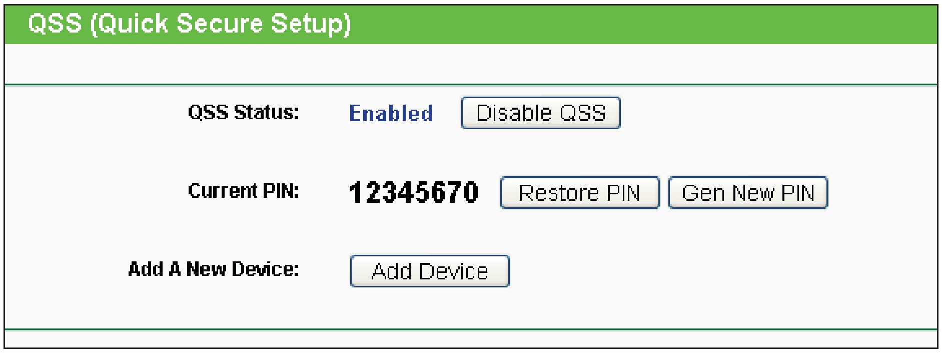
5.3 Quick Setup

Please refer to Section 3.2 Quick Setup – 3.2.2 AP Router Mode or Section 3.2 Quick Setup – 3.2.3 AP Client Router Mode for more details.

5.4 QSS

This section will guide you to add a new wireless device to an existing network quickly by **QSS (Quick Secure Setup)** function.

Select menu **QSS,** then you will see the next screen (shown in Figure 5-5).



QSS (Quick Secure Setup)

QSS Status: Enabled

Current PIN: 12345670

Figure 5-5 QSS

- **QSS Status** - Enable or disable the QSS function here.
- **Current PIN** - The current value of the Device's PIN displayed here. The default PIN of the Device can be found in the label or User Guide.
- **Restore PIN** - Restore the PIN of the Device to its default.
- **Gen New PIN** - Click this button, and then you can get a new random value for the Device's PIN. You can ensure the network security by generating a new PIN.
- **Add A New Device** - You can add the new device to the existing network manually by clicking **Add Device** button.

☞ **Note:**

The **QSS** function cannot be configured if the Wireless Function of the Device is disabled. Please make sure the Wireless Function is enabled before configuring the **QSS**.

- **To add a new device:**

1. If the new device supports Wi-Fi Protected Setup and is equipped with a configuration button, you can add it to the network by pressing the configuration button on the device.
2. If the new device supports Wi-Fi Protected Setup and the connection way using PIN, you can add it to the network by entering the Device's PIN.

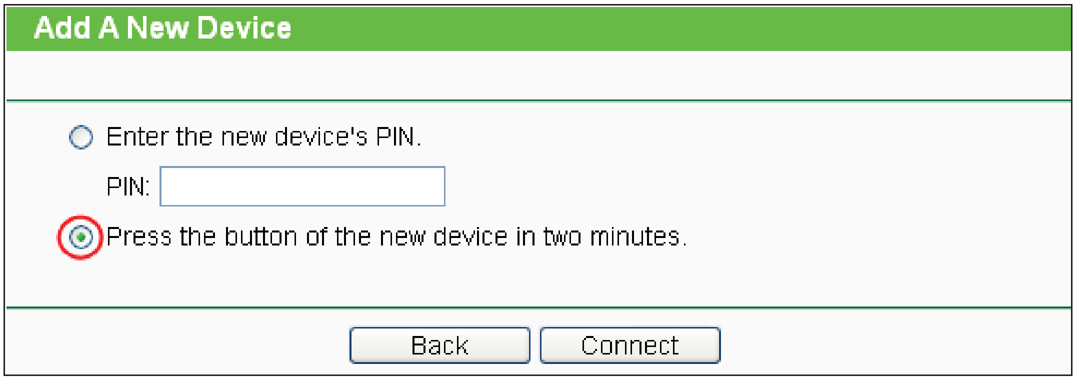
☞ **Note:**

To build a successful connection by QSS, you should also do the corresponding configuration on a wireless adapter for QSS function meanwhile.

For the configuration of the new device, here takes the Wireless Adapter of our company for example.

I. By PBC

Step 1: Keep the default QSS Status as **Enabled** and click the **Add device** button in Figure 5-5, and then the following screen will appear.



Add A New Device

○ Enter the new device's PIN.

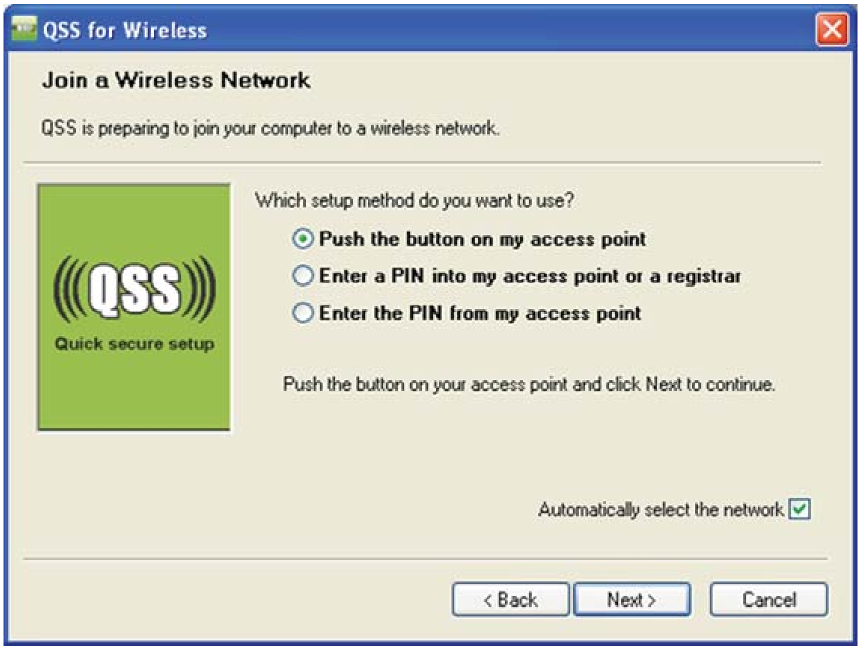
PIN:

● Press the button of the new device in two minutes.

Figure 5-6 Add A New Device

Step 2: Choose “**Press the button of the new device in two minutes**” and click **Connect**.

Step 3: Configure the wireless adapter for QSS function by choosing “**Push the button on my access point**” in the QSS configuration utility as below, and then click **Next**.



Join a Wireless Network

QSS is preparing to join your computer to a wireless network.

Which setup method do you want to use?

● Push the button on my access point

○ Enter a PIN into my access point or a registrar

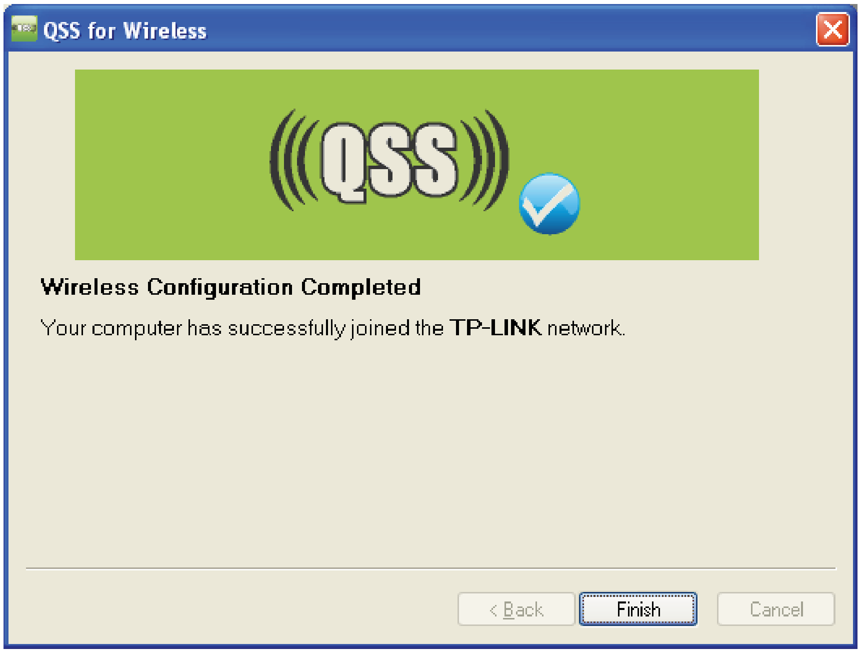
○ Enter the PIN from my access point

Push the button on your access point and click Next to continue.

Automatically select the network ☑

Figure 5-7 The QSS Configuration Screen of Wireless Adapter

Step 4: Wait for a while until the next screen appears. Click **Finish** to complete the QSS configuration.



Wireless Configuration Completed

Your computer has successfully joined the TP-LINK network.

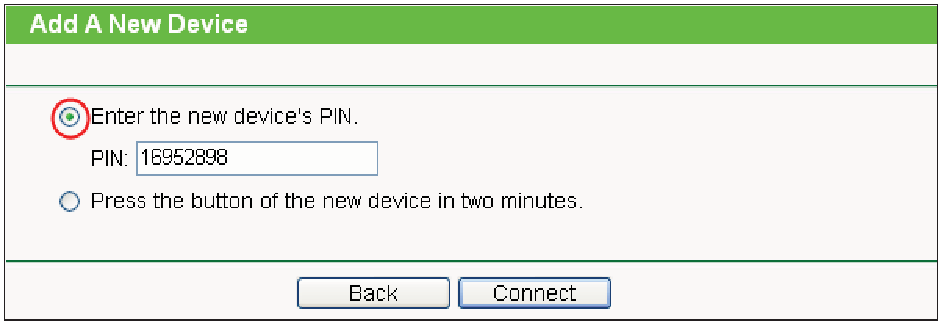
Figure 5-8 The QSS Configuration Screen of Wireless Adapter

II. By PIN

If the device supports Wi-Fi Protected Setup and the PIN method, you can add it to the network by PIN in the following two methods.

Method One: Enter the PIN into my AP

Step 1: Keep the default QSS Status as **Enabled** and click the **Add device** button in Figure 5-5, and then the following screen will appear.



Add A New Device

● Enter the new device's PIN.

PIN: 16952898

○ Press the button of the new device in two minutes.

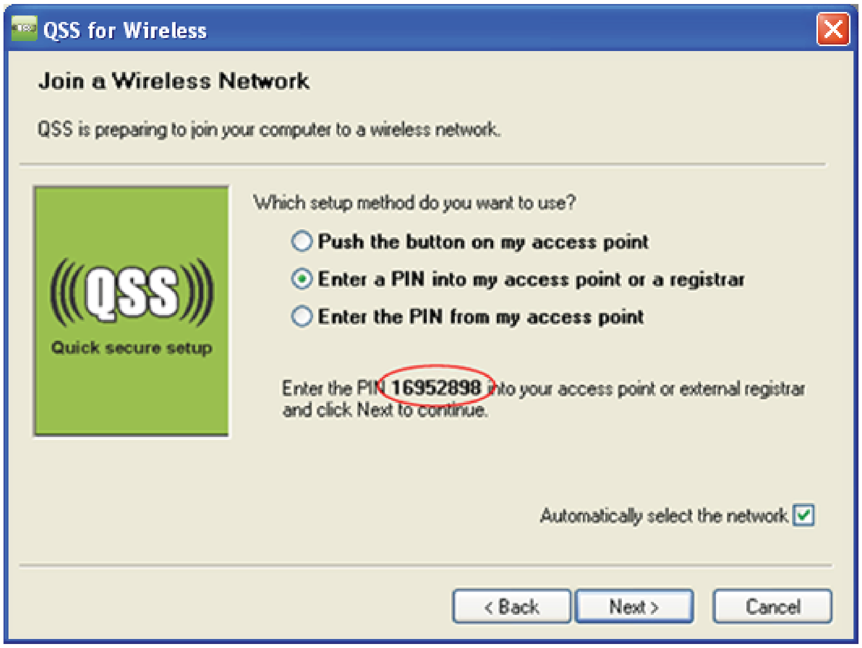
Figure 5-9 Add A New Device

Step 2: Choose "**Enter the new device's PIN**" and enter the PIN code （take 16952898 for example） of the wireless adapter in the field after **PIN** as shown in the figure above. Then click **Connect.**

☞ **Note:**

The PIN code of the adapter is always displayed on the QSS configuration screen as shown in Figure 5-10.

Step 3: Configure the wireless adapter for QSS function by choosing "**Enter a PIN into my access point or a registrar**" in the configuration utility of the QSS as below, and click **Next**.



QSS for Wireless

Join a Wireless Network

QSS is preparing to join your computer to a wireless network.

Which setup method do you want to use?

○ Push the button on my access point

● Enter a PIN into my access point or a registrar

○ Enter the PIN from my access point

Enter the PIN 16952898 into your access point or external registrar and click Next to continue.

Automatically select the network ☑

Figure 5-10 The QSS Configuration Screen of Wireless Adapter

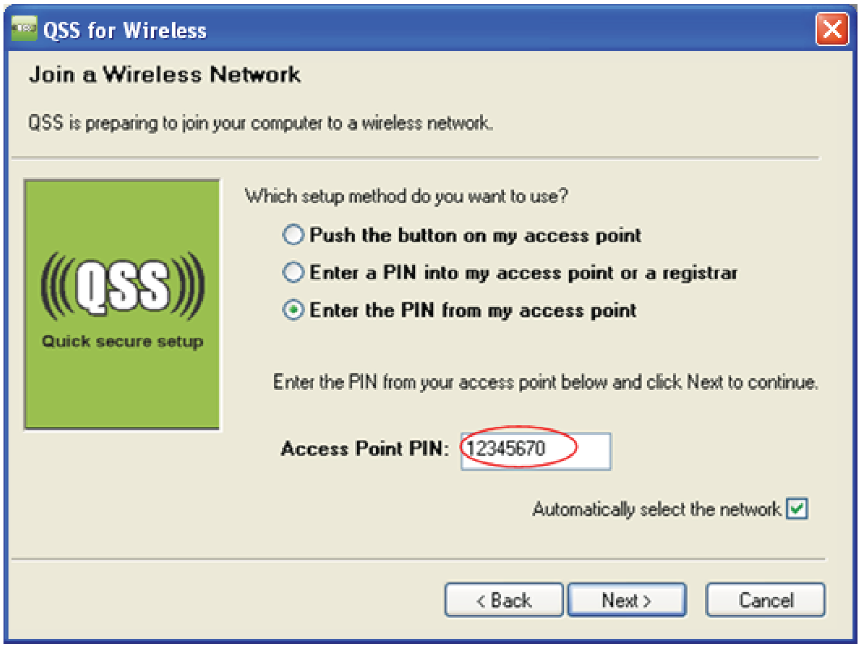
☞ **Note:**

In this example, the default PIN code of this adapter is 16952898 as the above figure shown.

Method Two: Enter the PIN from my AP.

Step 1: Get the Current PIN code of the AP in Figure 5-5 (each AP has its unique PIN code. Here takes the default PIN code 12345670 of this AP for example).

Step 2: Configure the wireless adapter for QSS function by choosing "**Enter a PIN from my access point**" in the configuration utility of the QSS as below, and enter the PIN code of the AP into the field after "**Access Point PIN**". Then click **Next**.



QSS for Wireless

Join a Wireless Network

QSS is preparing to join your computer to a wireless network.

Which setup method do you want to use?

○ Push the button on my access point

○ Enter a PIN into my access point or a registrar

● Enter the PIN from my access point

Enter the PIN from your access point below and click Next to continue.

Access Point PIN: 12345670

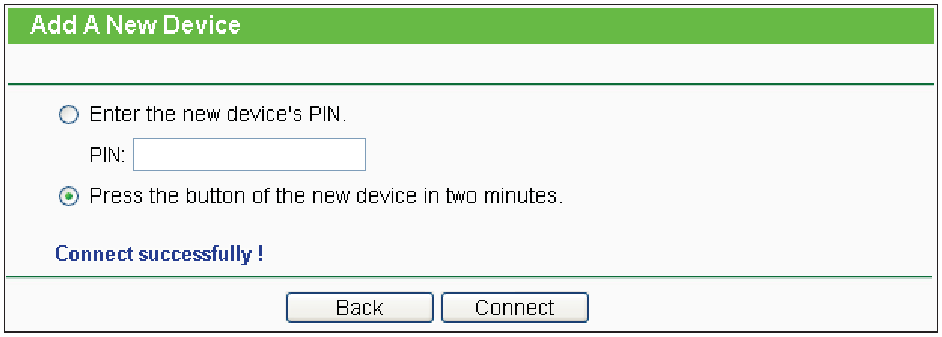
Automatically select the network ☑

Figure 5-11 The QSS Configuration Screen of Wireless Adapter

☞ **Note:**

The default PIN code of the AP can be found in its label or the QSS configuration screen as in Figure 5-5.

You will see the following screen when the new device has successfully connected to the network.



Add A New Device

○ Enter the new device's PIN.

PIN:

● Press the button of the new device in two minutes.

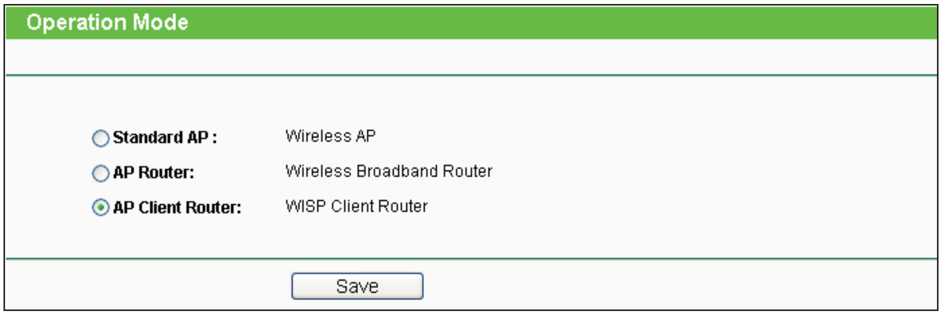
Connect successfully !

Figure 5-12

☞ **Note:**

The QSS function cannot be configured if the Wireless function of the AP is disabled. Please make sure the Wireless function is enabled before configuring the QSS.

5.5 Operation Mode



Operation Mode

○ Standard AP : Wireless AP

○ AP Router: Wireless Broadband Router

● AP Client Router: WISP Client Router

Figure 5-13

- **Standard AP**: In this mode, the device enables multi-users to accessing, and provides several wireless modes. Such as AP, Client, Repeater and so on.

- **AP Router**: In this mode, the device enables multi-users to share Internet via ADSL/Cable Modem. The wireless port share the same IP to ISP through Ethernet WAN port. The Wireless port acts the same as a LAN port while at AP Router mode.

- **AP Client Router**: In this mode, the device enables multi-users to share Internet from WISP. The LAN port devices share the same IP from WISP through Wireless port. While connecting to WISP, the Wireless port works as a WAN port at AP Client Router mode. The Ethernet port acts as a LAN port.

Be sure to click the **Save** button to save your settings on this page.

☞ **Note:**

The Device will reboot automatically after you click the **Save** button.

5.6 Network

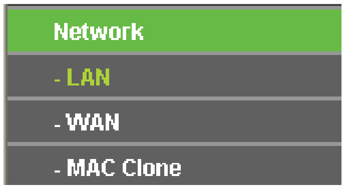
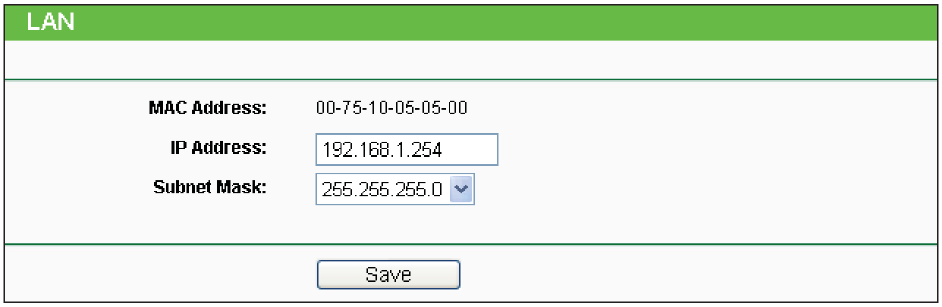


Figure 5-14 the Network Menu

There are three submenus under the Network menu (shown in Figure 5-14): **LAN, WAN** and **MAC Clone.** Click any of them, and you will be able to configure the corresponding function.

5.6.1 LAN

Choose menu “**Network** > **LAN**”, and then you can configure the IP parameters of the LAN on the screen as below.



MAC Address: 00-75-10-05-05-00

IP Address: 192.168.1.254

Subnet Mask: 255.255.255.0

Figure 5-15 LAN

- **MAC Address** - The physical address of the LAN ports, as seen from the LAN. The value can not be changed.
- **IP Address** - Enter the IP address of your Device in dotted-decimal notation (factory default 192.168.1.254).
- **Subnet Mask** - An address code that determines the size of the network. Usually it is 255.255.255.0.

☞ **Note:**

1. If you change the LAN IP address, you must use the new IP address to login to the Device.
2. If the new LAN IP address you set is not in the same subnet with the previous one, the IP Address pool in the DHCP server will be configured automatically, but the Virtual Server and DMZ Host will not take effect until they are re-configured.

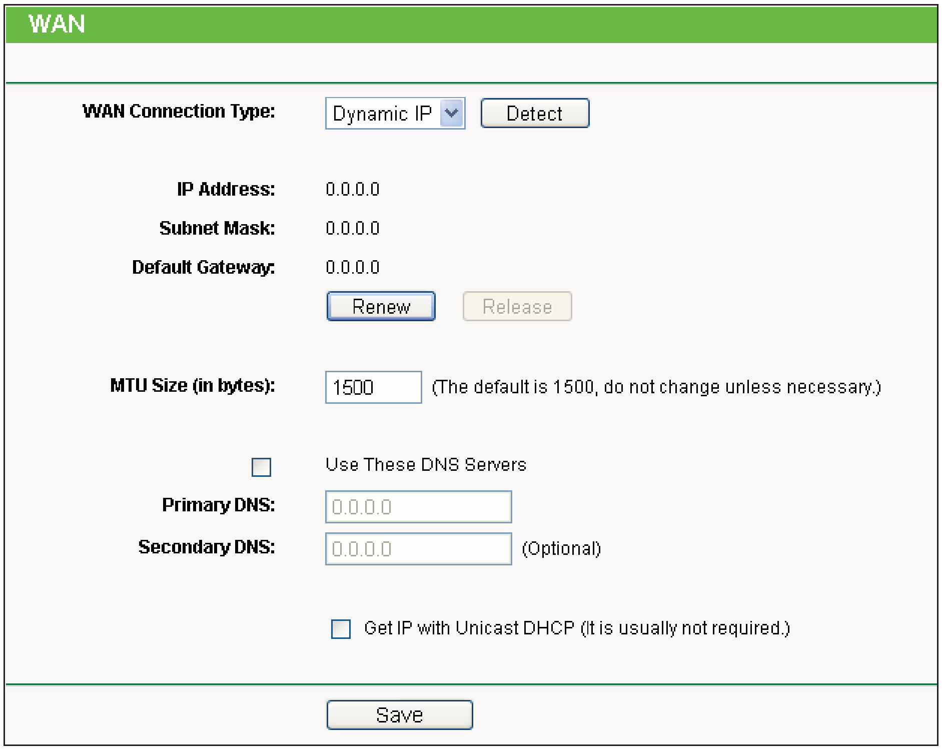
5.6.2 WAN

Choose menu “**Network** > **WAN**”, and then you can configure the IP parameters of the WAN on the screen below.

☞ **Note:**

There are five WAN connection types in AP Client Router mode: Dynamic IP, Static IP, PPPoE, L2TP, and PPTP; while there is one more type in AP Router mode, **BigPond Cable**.

1. If your ISP is running a DHCP server, select the **Dynamic IP** option. Then the Device will automatically get IP parameters from your ISP. You can see the page as follow (Figure 5-16).


WAN

WAN Connection Type: Dynamic IP

IP Address: 0.0.0.0

Subnet Mask: 0.0.0.0

Default Gateway: 0.0.0.0

MTU Size (in bytes): 1500 (The default is 1500, do not change unless necessary.)

□ Use These DNS Servers

Primary DNS: 0.0.0.0

Secondary DNS: 0.0.0.0 (Optional)

□ Get IP with Unicast DHCP (It is usually not required.)

Figure 5-16 WAN – Dynamic IP

This page displays the WAN IP parameters assigned dynamically by your ISP, including IP address, Subnet Mask, Default Gateway, etc.

- **IP Address -** The IP address assigned by your ISP dynamically.
- **Subnet Mask -** The subnet mask assigned by your ISP dynamically.
- **Default Gateway -** The default gateway assigned dynamically by your ISP.
- **MTU Size (in bytes) -** The normal MTU (Maximum Transmission Unit) value for most Ethernet networks is 1500 Bytes. For some ISPs you need to modify the MTU. But this is rarely required, and should not be done unless you are sure it is necessary for your ISP connection.

If your ISP gives you one or two DNS IP addresses, select **Use These DNS Servers** and enter the **Primary DNS** and **Secondary DNS** into the correct fields. Otherwise, the DNS servers will be assigned from ISP dynamically.

- **Primary DNS -** Enter the DNS IP address in dotted-decimal notation provided by your ISP.
- **Secondary DNS -** Enter another DNS IP address in dotted-decimal notation provided by your ISP.

Click the **Renew** button to renew the IP parameters from your ISP.

Click the **Release** button to release the IP parameters.

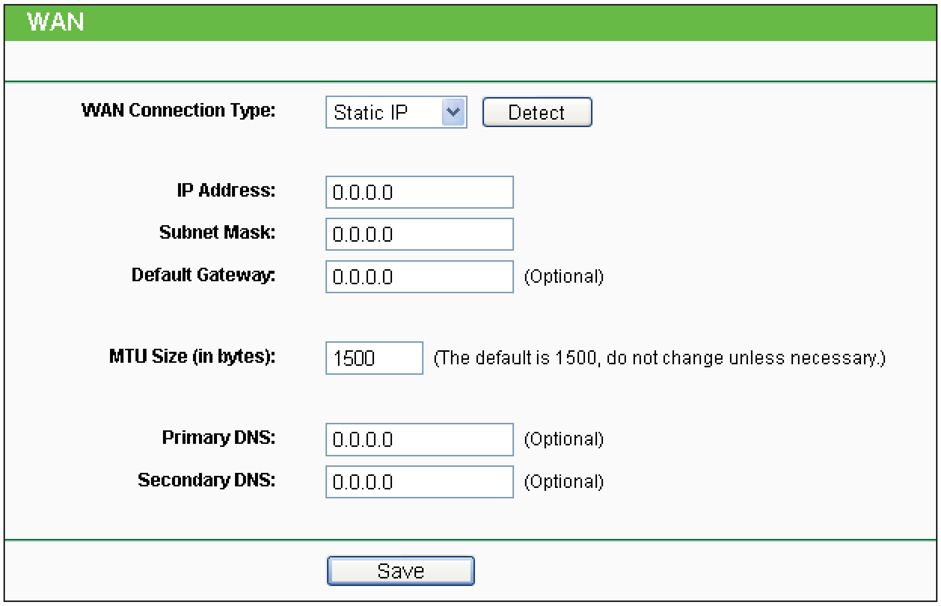
☞ **Note:**

If you get Address not found error when you access a Web site, it is likely that your DNS servers are set up improperly. You should contact your ISP to get DNS server addresses.

- **Get IP with Unicast DHCP -** A few ISPs' DHCP servers do not support the broadcast applications. If you can't get the IP Address normally, you can choose Unicast. You generally need not to check this option.

Click the **Save** button to save your settings.

2. If your ISP provides a static or fixed IP Address, Subnet Mask, Gateway and DNS setting, select the **Static IP** option. The **Static IP** settings page will appear as shown in Figure 5-17.



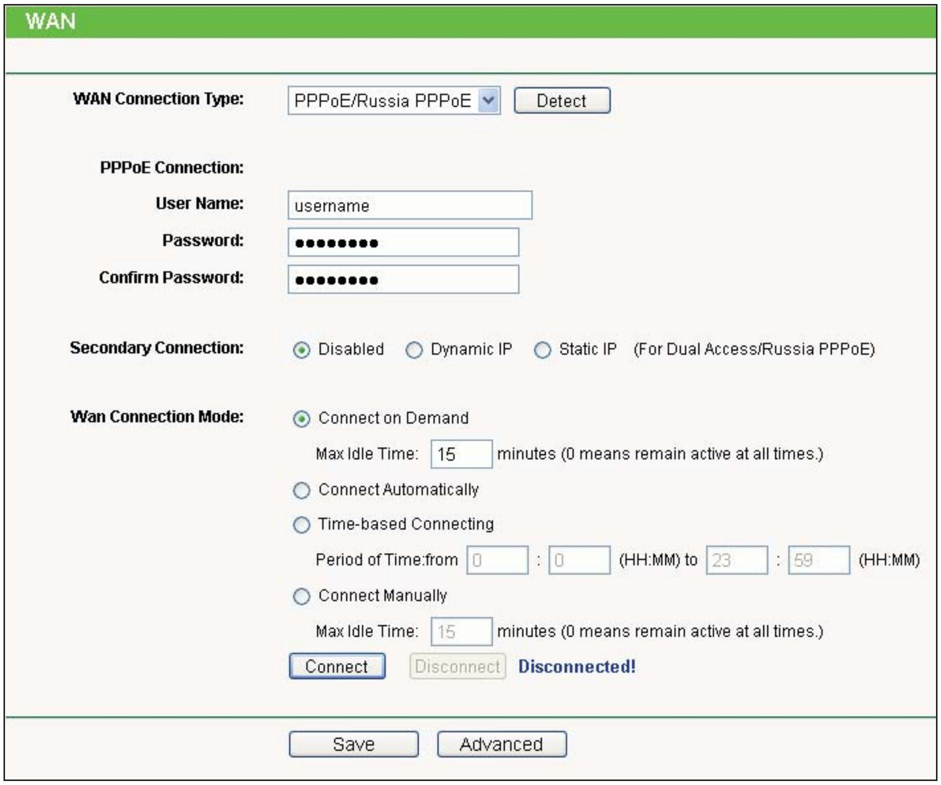
WAN

WAN Connection Type:	Static IP ▾ Detect
IP Address:	0.0.0.0
Subnet Mask:	0.0.0.0
Default Gateway:	0.0.0.0 (Optional)
MTU Size (in bytes):	1500 (The default is 1500, do not change unless necessary.)
Primary DNS:	0.0.0.0 (Optional)
Secondary DNS:	0.0.0.0 (Optional)

Figure 5-17 WAN - Static IP

Click the **Save** button to save your settings.

3. If your ISP provides a PPPoE connection, select **PPPoE/Russia PPPoE** option. Then you should enter the following parameters (Figure 5-18):



WAN

WAN Connection Type: PPPoE/Russia PPPoE

PPPoE Connection:

User Name: username

Password: ●●●●●●●●

Confirm Password: ●●●●●●●●

Secondary Connection: ◉ Disabled ○ Dynamic IP ○ Static IP (For Dual Access/Russia PPPoE)

Wan Connection Mode: ◉ Connect on Demand

Max Idle Time: 15 minutes (0 means remain active at all times.)

○ Connect Automatically

○ Time-based Connecting

Period of Time:from 0 : 0 (HH:MM) to 23 : 59 (HH:MM)

○ Connect Manually

Max Idle Time: 15 minutes (0 means remain active at all times.)

Disconnected!

Figure 5-18 WAN – PPPoE/Russia PPPoE

- **PPPoE Connection**

  - **User Name/Password -** Enter the User Name and Password provided by your ISP. These fields are case-sensitive.

- **Secondary Connection -** It's available only for PPPoE Connection. If your ISP provides an extra Connection type such as Dynamic/Static IP to connect to a local area network, then you can check the radio button of Dynamic/Static IP to activate this secondary connection.

  - **Disabled -** The Secondary Connection is disabled by default, so there is PPPoE connection only. This is recommended.

  - **Dynamic IP -** Use dynamic IP address to connect to the local area network provided by ISP.

  - **Static IP -** Use static IP address to connect to the local area network provided by ISP.

- **WAN Connection Mode**

  - **Connect on Demand -** You can configure the Device to disconnect your Internet connection after a specified period of the Internet connectivity (**Max Idle Time**). If your Internet connection has been terminated due to inactivity, **Connect on Demand** enables the Device to automatically re-establish your connection when you attempt to access the Internet again. If you wish to activate **Connect on Demand**, put a check mark in the circle. If you want your Internet connection to remain active all the time, enter **0** in the **Max Idle Time** field.

☞ **Note:**

Sometimes the connection cannot be disconnected although you specify a time to **Max Idle Time** (0~99 mins) because some applications visit the Internet continually in the background.

- **Connect Automatically -** Connect automatically after the Device is disconnected. To use this option, click the radio button.
- **Time-based Connecting -** You can configure the Device to make it connect or disconnect based on time. Enter the start time in HH-MM for connecting and end time in HH-MM for disconnecting in the **Period of Time** fields.
- **Connect Manually -** You can configure the Device to make it connect or disconnect manually. After a specified period of inactivity (**Max Idle Time**), the Device will disconnect your Internet connection, and not be able to re-establish your connection automatically as soon as you attempt to access the Internet again. To use this option, click the radio button. If you want your Internet connection to remain active all the times, enter 0 in the **Max Idle Time** field. Otherwise, enter the number in minutes that you wish to have the Internet connecting last unless a new link is requested.

☞ **Note:**

1. Sometimes the connection cannot be disconnected although you specify a **Max Idle Time** (0~99 mins) because some applications visit the Internet continually in the background.
2. Only when you have set the system time on **System Tools -> Time Settings** page, the **Time-based Connecting** function can take effect.

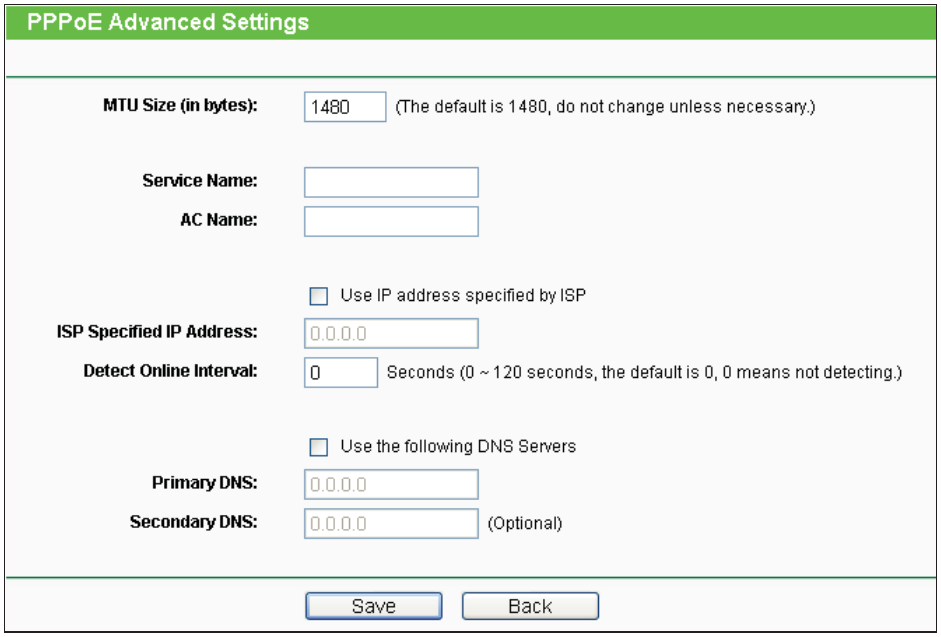
Click the **Connect** button to connect immediately.

Click the **Disconnect** button to disconnect immediately.

Click the **Advanced** button to set up the advanced options.

Click the **Save** button to save your settings.

➢ If you want to do some advanced configurations, please click the **Advanced** button, and then the page shown in Figure 5-19 will appear.



PPPoE Advanced Settings

MTU Size (in bytes): 1480 (The default is 1480, do not change unless necessary.)

Service Name:

AC Name:

□ Use IP address specified by ISP

ISP Specified IP Address: 0.0.0.0

Detect Online Interval: 0 Seconds (0 ~ 120 seconds, the default is 0, 0 means not detecting.)

□ Use the following DNS Servers

Primary DNS: 0.0.0.0

Secondary DNS: 0.0.0.0 (Optional)

Figure 5-19 PPPoE Advanced Settings

- **MTU Size -** The default MTU (Maximum Transmission Unit) size is 1480 bytes, which is usually fine. For some ISPs, you need modify the MTU. This should not be done unless you are sure it is necessary for your ISP.
- **Service Name/AC Name -** They should not be done unless you are sure it is necessary for your ISP.
- **ISP Specified IP Address** - If you know that your ISP does not automatically transmit IP address to the Device during login, click **"Use the IP Address specified by ISP"** checkbutton and enter the IP address in dotted-decimal notation, which is provided by your ISP.
- **Detect Online Interval** - The default value is 0. You can input the value between 0 and 120. The Device will detect Access Concentrator online every interval seconds. If the value is 0, it means not detecting.
- **Use the following DNS Servers** - If your ISP specifies a DNS server IP address for you, click the checkbox, and fill the **Primary DNS** and **Secondary DNS** blanks below. The **Secondary DNS** is optional. Otherwise, the DNS servers will be assigned dynamically from ISP.
- **Primary DNS** - (Optional) Enter the DNS IP address in dotted-decimal notation provided by your ISP.
- **Secondary DNS** - (Optional) Enter another DNS IP address in dotted-decimal notation provided by your ISP.

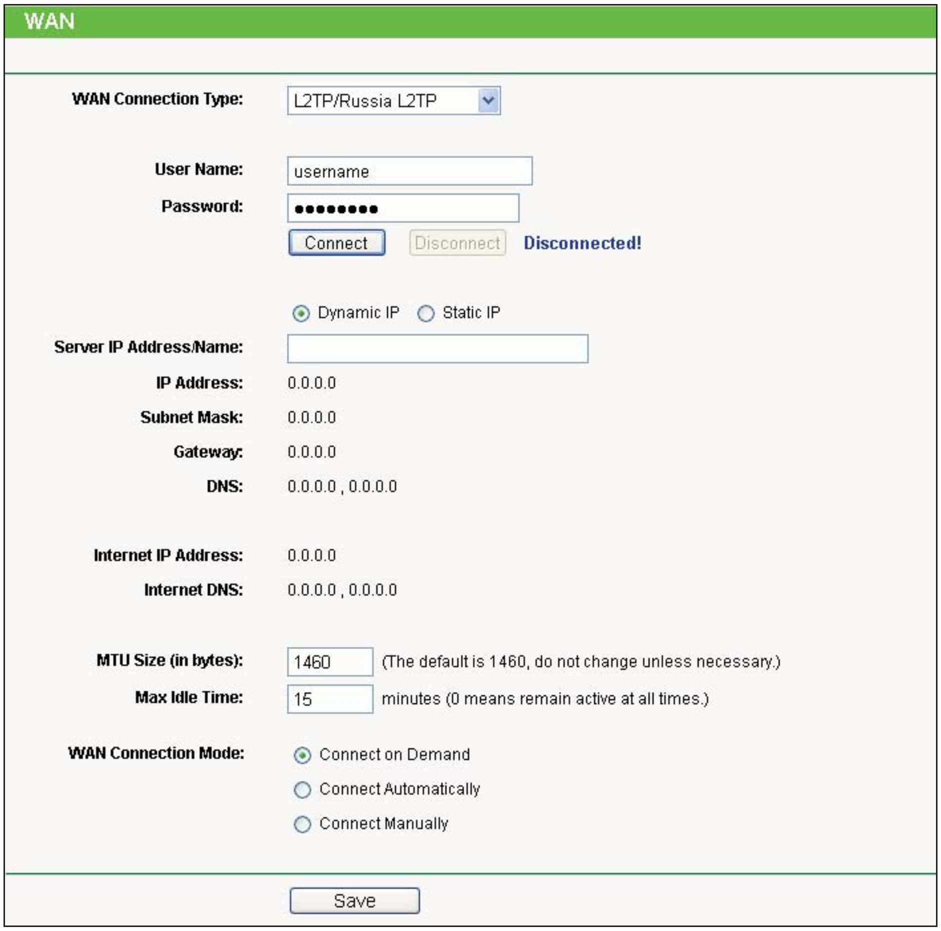
☞ **Note:**

The new advanced PPPoE parameters will not take effect until you dial-up again.

Click the **Save** button to save your settings.

Click the **Back** button when finished.

4. If your ISP provides L2TP connection, please select **L2TP/Russia L2TP** option. Then you should enter the following parameters in Figure 5-20.



WAN

WAN Connection Type: L2TP/Russia L2TP

User Name: username

Password: ●●●●●●●●●

Disconnected!

● Dynamic IP ○ Static IP

Server IP Address/Name:

IP Address: 0.0.0.0

Subnet Mask: 0.0.0.0

Gateway: 0.0.0.0

DNS: 0.0.0.0 , 0.0.0.0

Internet IP Address: 0.0.0.0

Internet DNS: 0.0.0.0 , 0.0.0.0

MTU Size (in bytes): 1460 (The default is 1460, do not change unless necessary.)

Max Idle Time: 15 minutes (0 means remain active at all times.)

WAN Connection Mode:
● Connect on Demand
○ Connect Automatically
○ Connect Manually

Figure 5-20 WAN – L2TP/Russia L2TP

- **User Name/Password -** Enter the User Name and Password provided by your ISP. These fields are case-sensitive.
- **Dynamic IP/ Static IP -** Choose either one as you are given by your ISP. Click the **Connect** button to connect immediately. Click the **Disconnect** button to disconnect immediately.
- **Connect on Demand -** You can configure the Device to disconnect from your Internet connection after a specified period of inactivity (**Max Idle Time**). If your Internet connection has been terminated due to inactivity, **Connect on Demand** enables the Device to automatically re-establish your connection as soon as you attempt to access the Internet again. If you wish to activate **Connect on Demand**, check the radio button. If you want your Internet connection to remain active at all time, enter 0 in the **Max Idle Time** field. Otherwise, enter the number of minutes you want to have elapsed before your Internet connection terminates.
- **Connect Automatically -** Connect automatically after the Device is disconnected. To use this option, check the radio button.