SAPIDO

Wireless 3 in 1

Light N+ Broadband Router

RB-1602

User Manual V 1.0

FCC Statement

Federal Communication Commission Interference 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 of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution

1. The device complies with Part 15 of the FCC rules. Operation is subject to the following conditions:

2. This device may not cause harmful interference, and this device must accept any interference received, including interference that may cause undesired operation.

3. FCC RF Radiation Exposure Statement: The equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

4. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

5. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

IMPORTANT NOTE
FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance20cm between the radiator & your body.

CE Mark Warning

This is a class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

National Restrictions

Frequency range - 2400.0 - 2483.5 MHz

Country	Country	Reason/remark
Bulgaria	none	General authorization required for outdoor use and public service.
France	Outdoor use limited to 10 mW e.i.r.p. within the band 2454-2483.5 MHz	Military Radiolocation use. Refarming of the 2.4 GHz band has been ongoing in recent years to allow current relaxed regulation. Full implementation planned 2012.
Italy	none	If used outside of own premises, general authorization is required.
Luxembourg	none	General authorization required for network and service supply (not for spectrum).
Norway	Implemented	This subsection does not apply for the geographical area within a radius of 20 km from the centre of Ny-Ålesund.
Russian Federation	none	Only for indoor applications.

Note: Please don't use the product outdoors in France

CE Statement of Conformity

Our product has been tested in typical configuration by Ecom Sertech Corp and was found to comply with the essential requirement of "Council Directive on the Approximation of the Laws of the Member Sates relating to Electromagnetic Compatibility" (89/336/EEC; 92/31/EEC; 93/68/EEC). The Declaration of Conformity can be found at the Sapido regional website. www.sapidotech.de

CE Information of Disposal

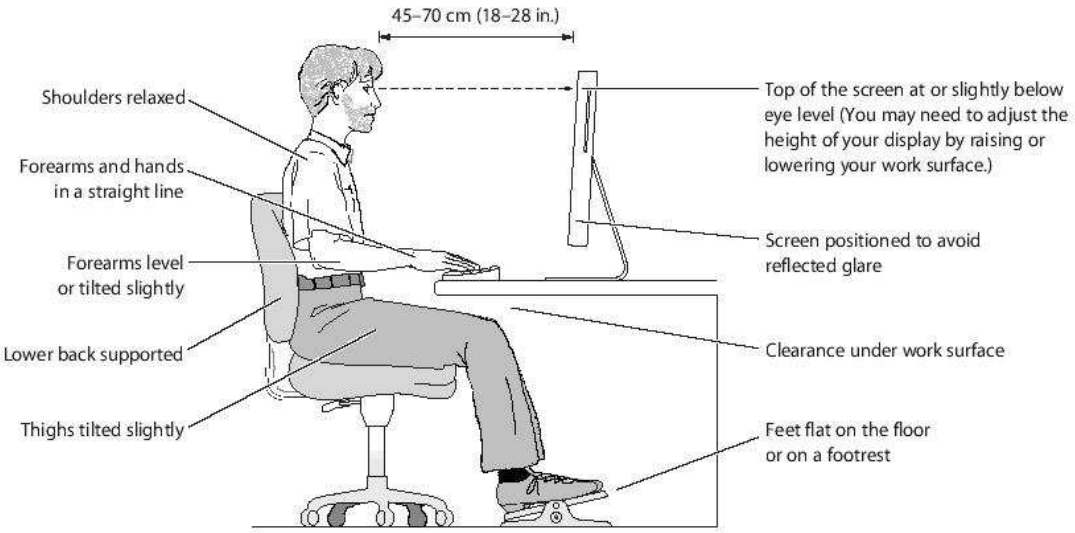
The electric and electronic equipment or unit which is labeled with crossed-out wheeled bin may not be disposed of with household waste. This mark is based on European Directive 2002/96/EC (for Waste Electric and Electronic Equipment=WEEE).

Please take it to the designated collection facilities. We will ensure the proper recycling, reuse and other forms of recovery of WEEE. WEEE has the potential effects on the environment and human health as a result of the presence of hazardous substances. You can contribute to eliminate these effects by your cooperation.

Safe Seating Gestures

You should follow the manufacturer's instructions for adjusting the backrest to fit your body properly.

- An adjustable chair that provides firm, comfortable support is best.
- Adjust the height of the chair so your thighs are horizontal and your feet flat on the floor.
    - The back of the chair should support your lower back (lumbar region).



Copyright Statement

Warranty

One-Year Warranty is provided for consumer products. This warranty is subject to the conditions and limitations set forth herein. ("We") warrants and tests the Product to be free from defects in material and workmanship and to conform to published specifications. During the warranty period, should the Product fail under normal use in the recommended environment due to improper workmanship or materials, we will repair the Product or replace it with a comparable one. This warranty is for a specific period of time from the date of purchase. Proof of date of purchase is required. We will inspect the Product and make the decision regarding repair or replacement. We reserve the right to provide a functionally equivalent refurbished replacement Product.
This warranty does not apply to Product failure due to：

1. accident, abuse, and mishandling
2. any software against product manual
3. improper installation
4. any unfitted replacement
5. over allowable environment
6. alteration
7. improper usage
8. wires or parts oxidized

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Chapter 1 Introduction

1.1 Overview

SAPIDO Light N+ Broadband Router might be small in size, but is huge in functionality. It supports multiple operation modes, including Access Point (AP) mode, Router mode, and WiFi AP mode. You can switch among these modes easily by using its 3-way configuration switch.

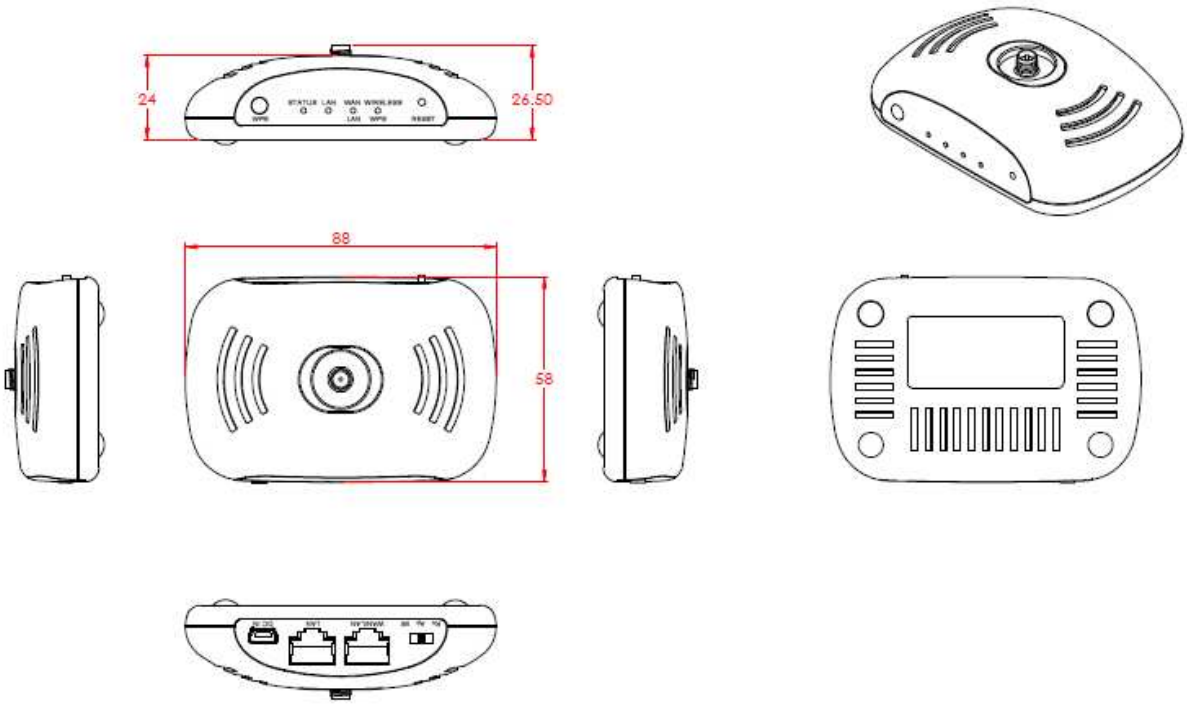
Features

- **Small in size but huge in functionality**
- **Three modes to be switched**; Router, AP and WiFi AP
- **WPS button** one press to complete the connection and encryption.
- **Multiple APs Supported**

1.2 Specifications

Interface	WAN Port	1 x 10/100 Mbps RJ45, with auto MDI/MDIX
	LAN Port	1 x 10/100 Mbps RJ45, with auto MDI/MDIX
	Wireless	Built-in Mini PCI
	Slide Switch	Router / AP / WiFi AP mode exchange function.
Function	Web-Base	Windows IE / Linux Firefox / MAC Safari
	WAN Protocol	PPPoE / PPTP / Static IP/ Dynamic IP/ L2TP
	WLAN	WDS / WEP Key / WPA / WPA-PSK / WPA2 / WPA2-PSK / MAC Access Control /Hidden SSID
	Routing	UPnP / DHCP / DNS / WINS / DDNS
	NAT	Virtual Server / Virtual DMZ
	Firewall	MAC Filter / URL Filter / SPI / DoS Protection / IP Packet Filter
Others	Operation Requirement	Operating Temp. 0℃~45℃ (32℉~113℉) Storage Temp. -20℃~70℃ (-14℉~158℉) Operating Humidity 10% to 85% Non-Condensing Storage Humidity 5% to 90% Non-Condensing
Application	Dimension	88mm (L) x 58mm (W) x 26.5mm (H)
	Power	Power Adapter DC5V/0.5A with mini-USB B type male connector

1.2.1 Six Views of Product Appearance



Power Plug	Power Adapter DC5V/0.5A with mini-USB B type male connector

Operation Mode Switch	Router, AP, and WiFi AP operation modes
Reset Button	Press "**Reset**" button over 10 seconds. When status indicator turns from flashing to solid, the process is completed. All settings are back to default.
Ethernet Port	2 RJ-45 Ethernet 10/100 Ports

1.2.2 LED Indicator Status Description

Status / LED Indicator	Solid	Flashing
STATUS	Operation OK	Green: Reset / Firmware updates in progress
LAN	RJ-45 Plugged in	Transmitting Data
WAN	RJ-45 Plugged in	Transmitting Data
WIRELESS & WPS	Operation OK	Green: Transmitting Data Orange: WPS enabled
POWER	Operation OK	Power on

1.3 System Requirements

To begin with RB-1602, you must have the following minimum system requirements. If your system can't correspond to the following requirements, you might get some unknown troubles on your system.

- XDSL/Cable Modem and broadband Internet Account.
- One Ethernet (10 BASE-T or 10/100 BASE-TX) network interface card.
- CP/IP and at least one web browser software installed (E.g.: Internet Explorer 5.0, Netscape Navigator 7.x, Apple Safari 2.03 or higher version).
- At lease one 802.11g (54Mbps) or one 802.11b (11Mbps) wireless adapter for wireless mobile clients.
- Recommended OS: Windows / Linux/ Mac.

1.4 WAN Network Plug and Play

✧ WAN Type auto-detection：

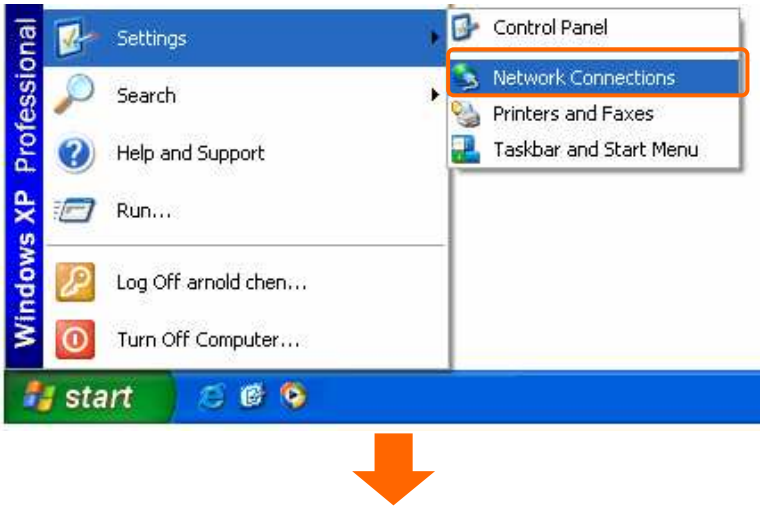
◆ When using Ethernet auto-connection:

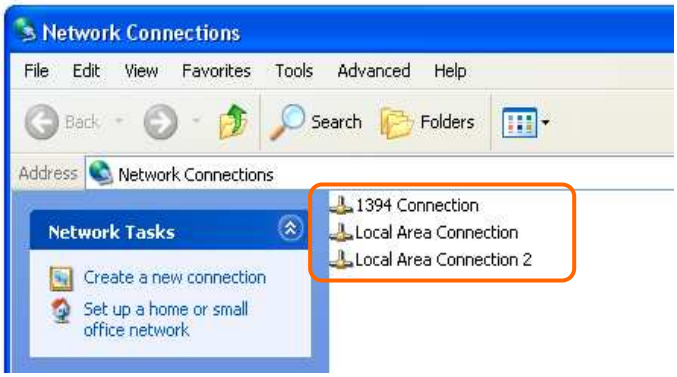
- ➢ Auto-detection mode only applies on PPPoE, DHCP, PPTP and L2TP.
- ➢ Router will detect WAN type and load the settings from last time or display corresponding page for user to input information.
- ➢ If there is no setting from user, the router will load the default settings.

If there is no setting from user, it will detect ISP and load corresponding settings.

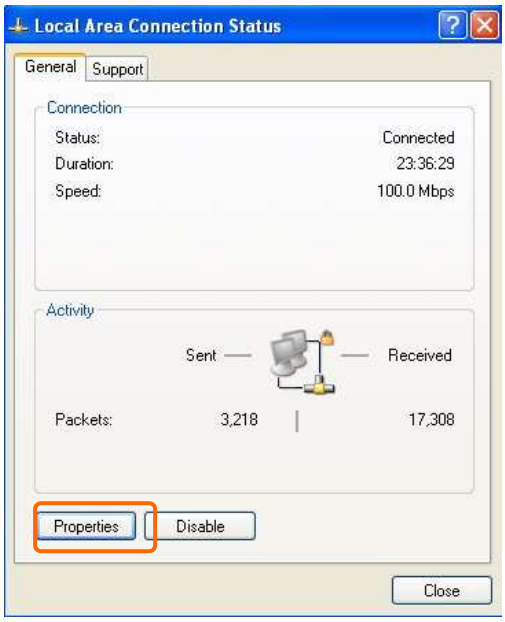
1.5 Get Your IP Automatically or Setup IP Manually

Step 1. Go to **Start**>**Settings**> **Network Connections** and then select **Local Area Connection**.

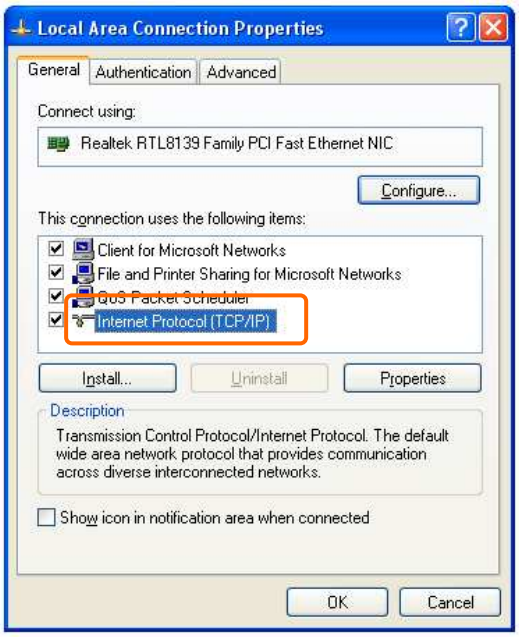




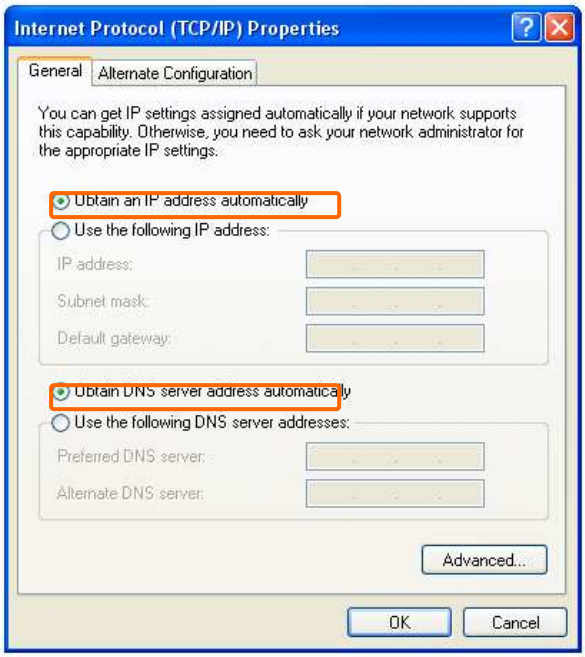
Step 2. Click on Properties



Step 3. Double click on Internet Protocol (TCP/IP).



Step 4-1. Select **Obtain an IP address automatically** and **Obtain DNS server address automatically** and then click on **OK**.



Step 4-2. To setup IP manually, please select **Use the following IP address**. And the following default setting of SAPIDO Light N+ Broadband Router:

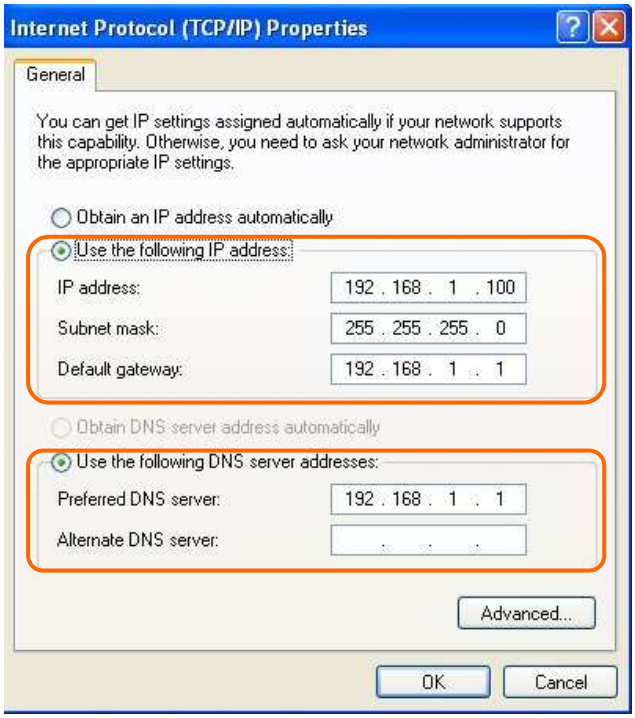
- IP Address: 192.168.1.10 (as your Print Server for example)
- Subnet Mask: 255.255.255.0
- Default Gateway: 192.168.1.1

Note: If you configure your computer's IP Address manually, it needs to be on the same network segment.

For example:

- IP Address: 192.168.1.xxx (xxx can be any number between 2 and 253, but it can't be repeated, we use 100 to be the example.)
- Subnet Mask: 255.255.255.0
- Gateway: 192.168.1.1 (this is the IP address of SAPIDO Light N+ Broadband Router in Router Mode)
- DNS: 192.168.1.1 (use N+ Broadband Router's IP address or make on your own one)

Note: IP address and Default gateway cannot be the same.



1.5.1 Network Testing

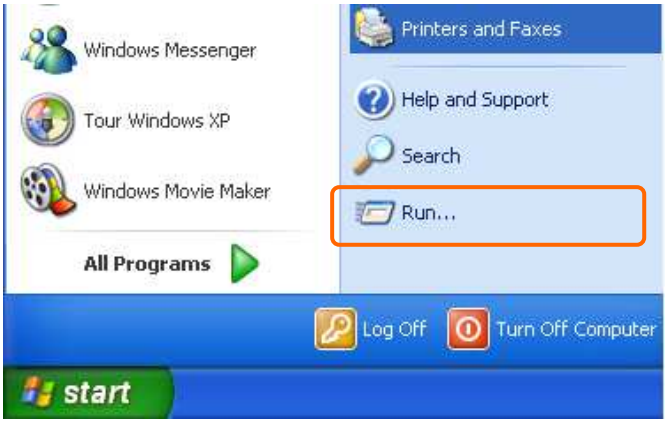
There are two ways to test your Network status on Internet. They are “Testing with Internet Browser” and “Testing with Dos”.

1.5.2 Testing with Internet Browser

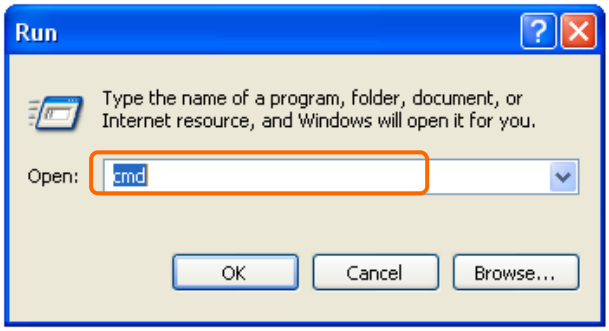
Open an Internet Browser, such as Internet Explore or Netscape. Input a valid web address, for example, http://www.yahoo.com in the web address blank and then press enter. If the website appears, that means your Internet works regularly.

1.5.2.1 Testing with DOS (Windows XP Platform)

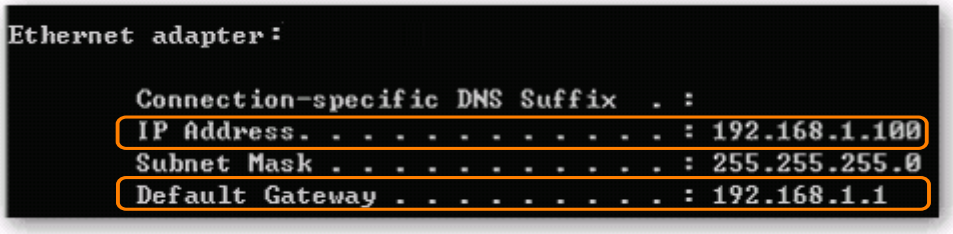
Step 1. Go to **start** -> **Run**.



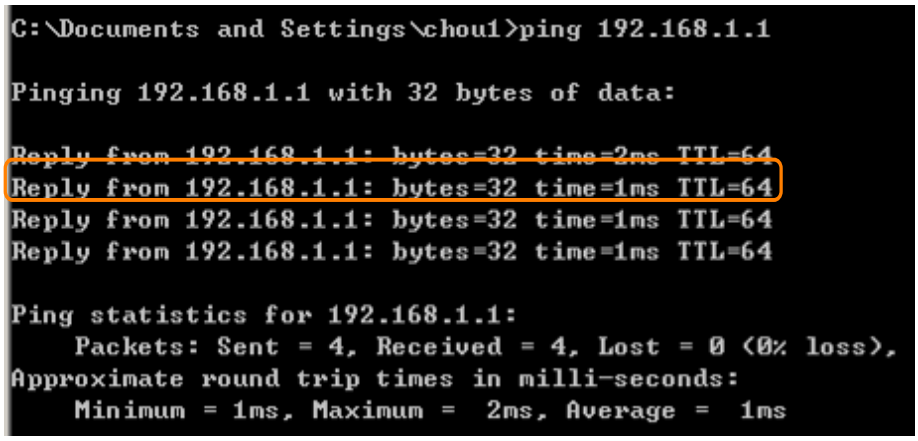
Step 2. Input **cmd** in the blank, and then click **OK**. The Command Prompt window appears.



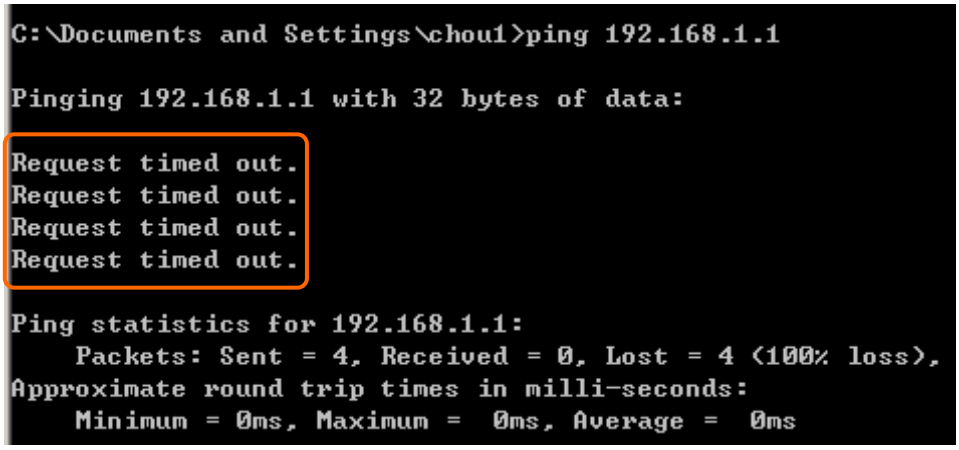
Step 3. Input **ipconfig** in the flashing area then press enter. You will get an IP Address 192.168.1.100, for example, and Default Gateway equally.



Step 4. Ping a legal WAN Address such as 192.168.1.1. If Internet works, it will show **Reply from 192.168.1.1: bytes = 32 time = 3ms TTL =64,** for example.



If it can't work, it will show **Request timed out**.



Chapter 2 Hardware Installation

2.1 Diagram of Connecting Hardware to SAPIDO Light N+ Broadband Router

SAPIDO Light N+ Broadband Router supports multiple operation modes, including Access Point (AP) mode, Router mode, and WiFi AP mode. You can switch among these modes easily by using slide switch.

Warning: Before sliding the switch modes, please power-off the router firstly. Moreover, please stay over 5 seconds between power-off / power-on condition.

2.1.1 Hardware Connection and Application for Router Mode

When switching SAPIDO Light N+ Broadband Router to Router Mode, there will be one WAN port and one LAN port, the administrator can do the Quick Setup including WAN Setup, LAN Setup, Wireless Setup, Time Server Setup, Password Setup, Firewall Setup, QoS Setup.

2.1.2 Hardware Connection and Application for AP Mode

Under AP Mode, it supports 2 LAN ports as Bridge, and user can connect to SAPIDO Light N+ Broadband Router via LAN port. The administrator can set up quickly, including LAN Setup, Wireless Setup, Time Server Setup, and Password Setup.

2.1.3 Hardware Connection and Application for Wi-Fi AP Mode

As WiFi AP Mode, SAPIDO Light N+ Broadband Router will be a bridge and supports a wireless LAN. The administrator can set up quickly, including LAN Setup, Wireless Setup, Time Server Setup, and Password Setup.

Chapter 3 One Button Setup

The advanced One Button Setup provides users a simple way to set up the complicated network. Instead of numbers of IPs to be memorized, you just need to fill in some necessary information and then enjoy the secured internet by clicking the "**Finished**" button.

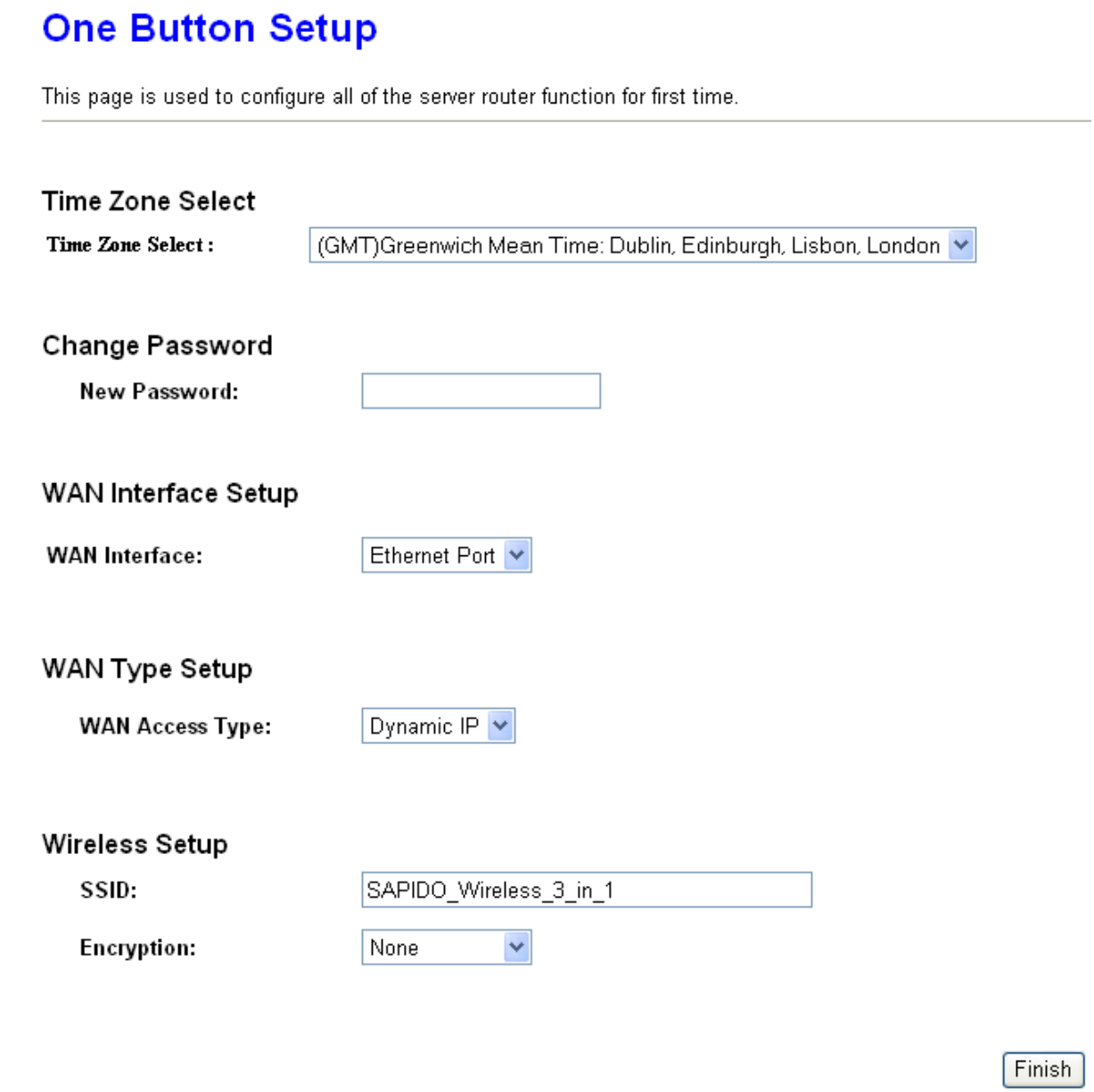
3.1 One Button Setup configuration for Router Mode

Step 1. Please switch to Router mode and plug in power.

The default UPnP of SAPIDO Light N+ Broadband Router is ON.

Step 2. Click the **Internet Gateway Device** to open the login page.

Step 3. Click **One Button Setup** on the left of the main menu under router mode.



- **Time Zone Select:** Select your time zone from the Time Zone drop-down list.
- **Change Password:** For changing password, please fill the password information into the blank.
- **Device Name:** Name your device here. The default is **11N_Mini_Router**.

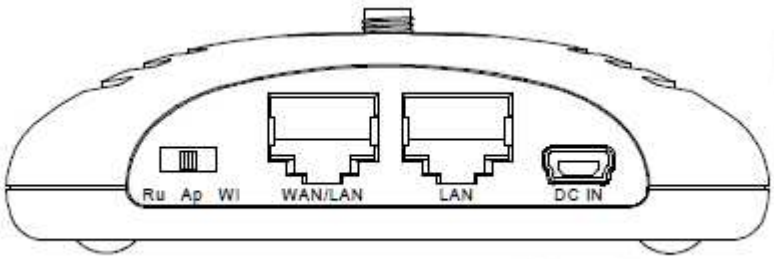
Note: System will automatically copy the last 6 numbers of this device's MAC address after your device name.

- **WAN Interface Setup:** Select the WAN Interface from the drop-down list.
- **WAN Type Setup:** Please choose the access type.
- **Wireless Setup:** Fill in the ESSID if it is blank, and your prefer Encryption type. The default is **11N_Mini_Router.**

- **Finished:** Click **finished** button to complete the setting.

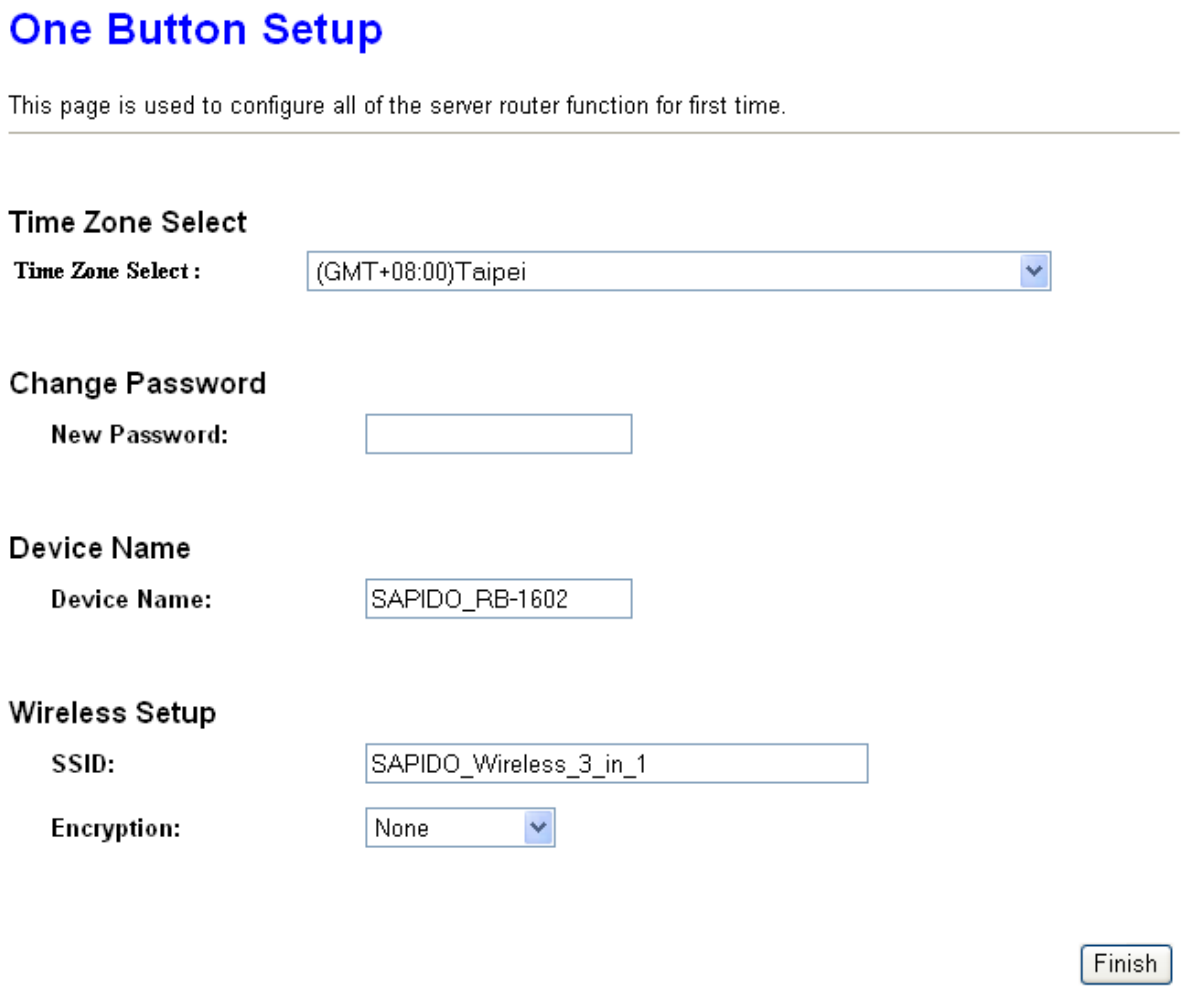
3.2 One Button Setup configuration for AP Mode

Step 1. Please switch to AP mode and plug in power.



Step 2. Click the **Internet Gateway Device** to open the login page.

Step 3. Click One Button Setup on the left of the main menu under AP mode.



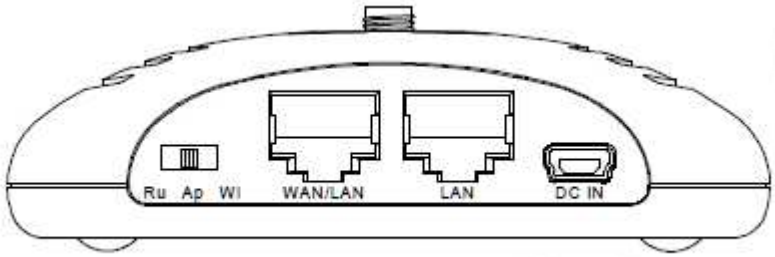
- **Time Zone Select:** Select your time zone from the **Time Zone** drop-down list.
- **Change Password:** For changing password, please fill the password information into the blank.
- **Device Name:** Name your device here. The default is **11N_Mini_Router**.

Note: System will automatically copy the last 6 numbers of this device's MAC address after your device name.

- **Wireless Setup:** Define the SSID, and Encryption type.
- **Finished:** Please click **finished** button to complete the setting.

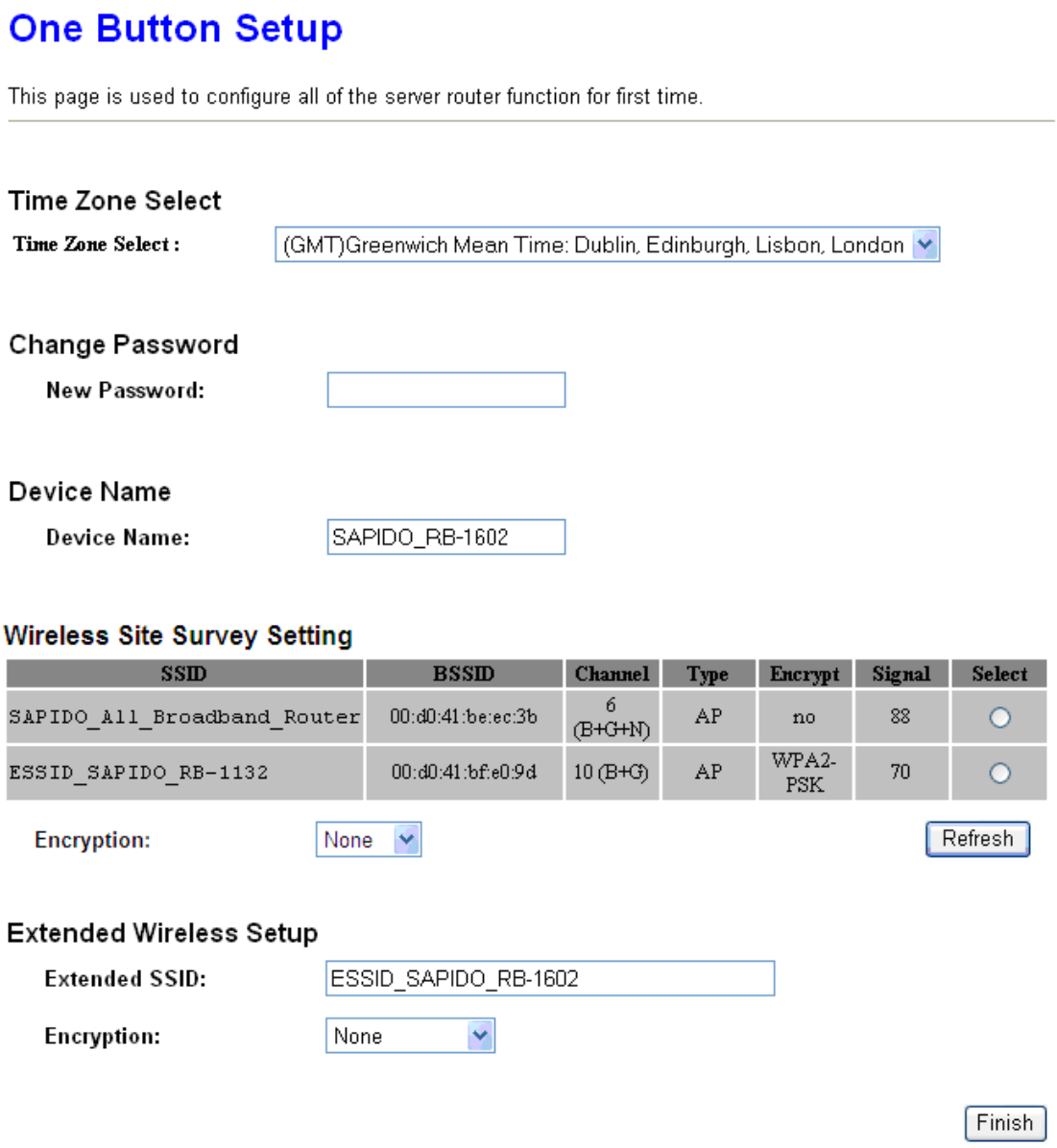
3.3 One Button Setup configuration for WiFi AP Mode

Step 1. Please switch to WiFi AP mode and plug in power.



Step 2. Click the **Internet Gateway Device** to open the login page.

Step 3. Click One Button Setup on the left of the main menu under WiFi AP mode.



- **Time Zone Select:** Select your time zone from the **Time Zone** drop-down list.
- **Change Password:** For changing password, please fill the password information into the blank.
- **Device Name:** Name your device here. The default is **11N_Mini_Router**.

Note: System will automatically copy the last 6 numbers of this device's MAC address after your device name.

- **Wireless Site Survey Setting:** Select the preferred AP for connection, and the encryption type.
- **Extended Wireless Setup:** Define the ESSID, and Encryption type.
- **Finished:** Please click **finished** button to complete the setting.

Note: One Button Setup is not completed unless users finish all settings and click **Finished** button.

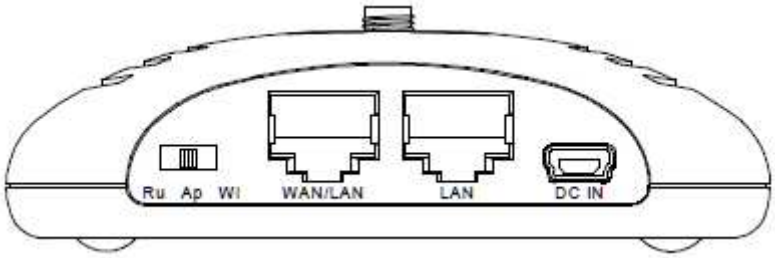
Chapter 4 Basic Setup

4.1 Router Mode

Under Router Mode, the 11n Mobile Router provides a Router/AP function. User can get IP address assigned by ISP wired or wirelessly. It also supports NAT and DHCP functions that enable multiple computers to share an Internet connection at the same time.

4.1.1 Switch to Router Mode

Switch to AP mode and plug in power.

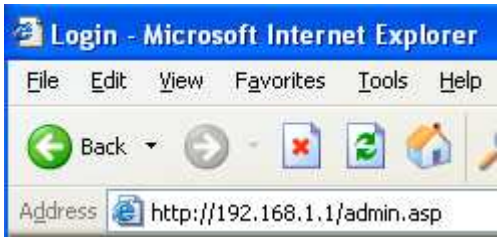


Note: 1. Before sliding the switch modes, please power-off the router firstly. Moreover, please stay over 5 seconds between power-off / power-on condition.
2. Switching the mode while power is on will make the router crush, and cause the hardware damage and information lost.

4.1.2 Administrator Setup Instruction

Make sure to switch the mode into Router Mode, then open a Microsoft Internet Explorer, Mozilla Firefox or Apple Safari browser, and enter http://192.168.1.1 (Default Gateway) into browser's blank.

Note: If the homepage doesn't appear, please check if the TCP/IP configuration is obtaining IP address automatically or not. If you don't know how to do it, please refer to **"1.5 Get your IP Automatically & Manually".**



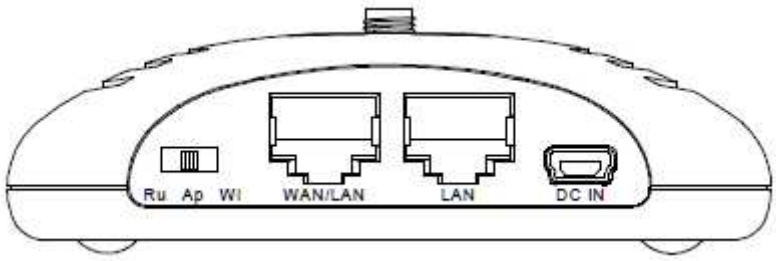
The default values for User Name and Password are **admin** (all in lowercase letters). Click **Login** to enter.

4.2 AP Mode

Under AP Mode, the SAPIDO Light N+ Broadband Router supports 2 LAN ports as Bridge, and user can connect to this Router via LAN port and provide the lower level wired or wireless internet connections. NAT function is disabled under AP mode. The SAPIDO Light N+ Broadband Router connects the upper level device only through the Ethernet port and gets its assigned IP address. If not, the SAPIDO Light N+ Broadband Router will use the default IP or assigned by the user.

4.2.1 Switch to AP Mode

Switch to AP mode and plug in power.



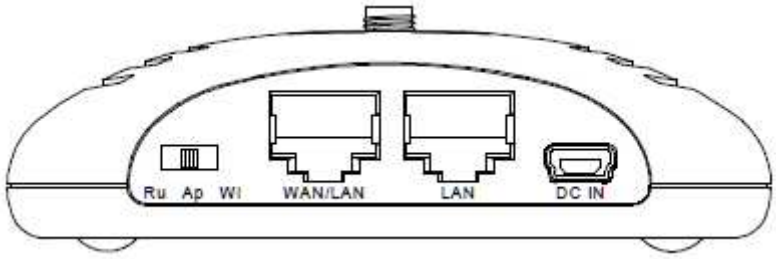
Note: 1. Before sliding the switch modes, please power-off the router firstly. Moreover, please stay over 5 seconds between power-off / power-on condition.
2. Switching the mode while power is on will make the router crush, and cause the hardware damage and information lost.

4.3 WiFi AP Mode

As WiFi AP Mode, SAPIDO Light N+ Broadband Router will be a bridge and support a wireless LAN. NAT function is disabled under WiFi AP mode. The SAPIDO Light N+ Broadband Router connects the upper level device wirelessly and gets its assigned IP address. If not, the SAPIDO Light N+ Broadband Router will use the default IP or assigned by the user.

4.3.1 Switch to WiFi AP Mode

Switch to WiFi AP mode and plug in power.



Note: 1. Before sliding the switch modes, please power-off the router firstly. Moreover, please stay over 5 seconds between power-off / power-on condition.
2. Switching the mode while power is on will make the router crush, and cause the hardware damage and information lost.

Chapter 5 Advanced Configuration for Router Mode

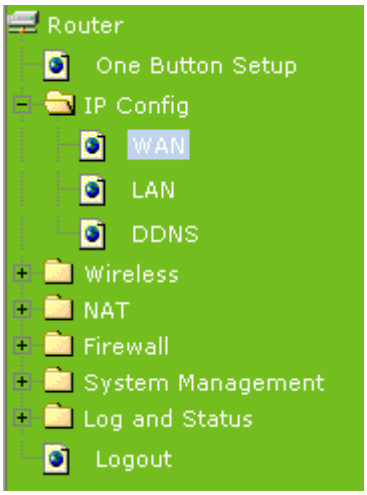
5.1 IP Configuration

This function allows you to add routing rules into 11N Mini Router. It is useful if you connect several computers behind SAPIDO Light N+ Broadband Router to share the same connection to Internet.

5.1.1 WAN

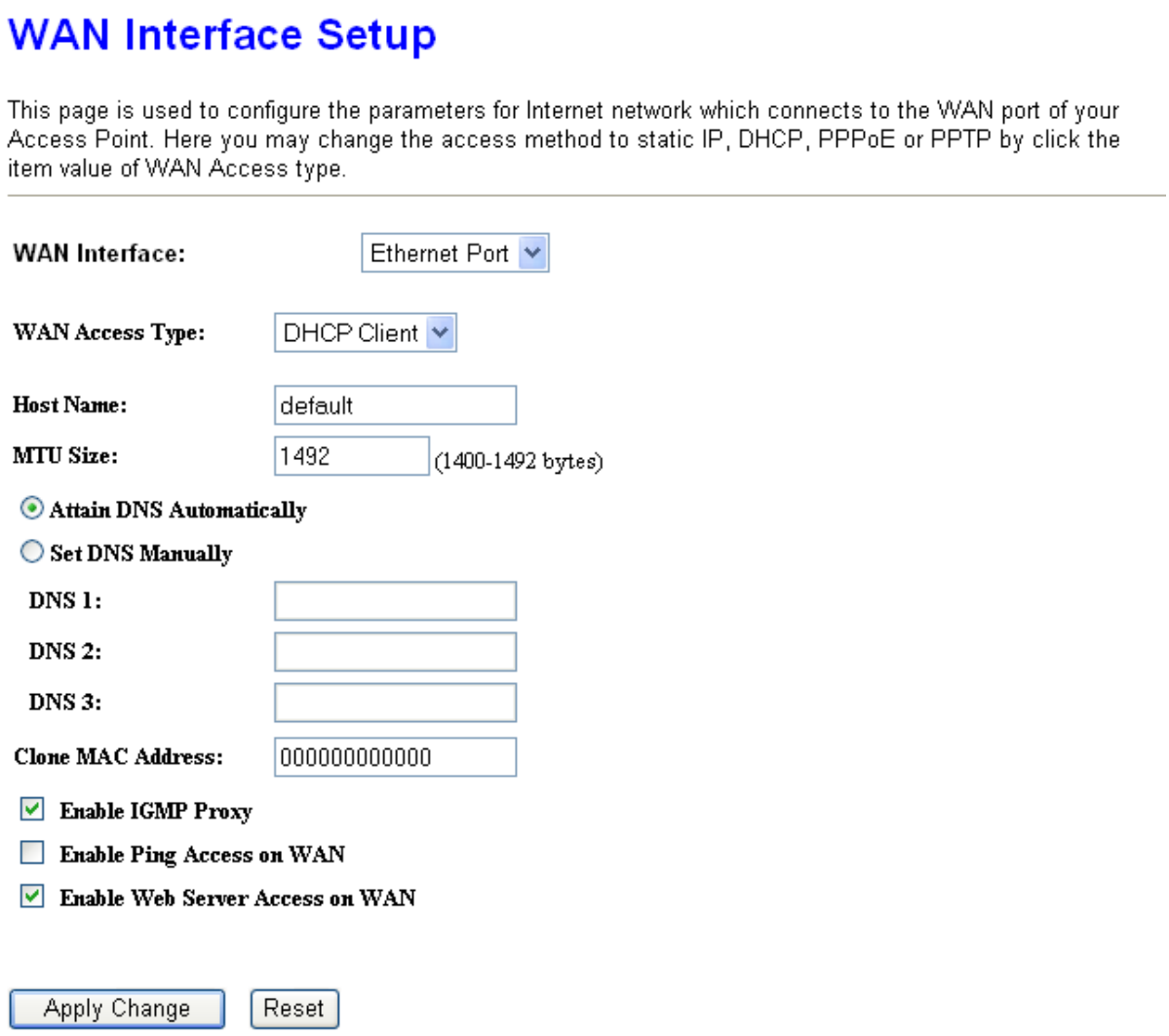
Select **WAN** under the **IP Config** menu. SAPIDO Light N+ Broadband Router supports 3 interfaces and 4 access types. Follow the instructions below for each to set up accordingly.

Choose your WAN Interface and WAN type, and click **Next,** its associated settings will show up.



5.1.1.1 WAN Interface– Ethernet Port

If you are using an Ethernet cable to connect the Internet, please select **Ethernet port**.



5.1.1.2 WAN Interface– Wireless

If you are connecting the internet via wireless, please select **Wireless** and its associated settings will show up underneath at the same time.

You can see a list of available Wireless networks. Select you preferred one to connect and the Encryption type form the drop-down list.

WAN Interface Setup

This page is used to configure the parameters for Internet network which connects to the WAN port of your Access Point. Here you may change the access method to static IP, DHCP, PPPoE or PPTP by click the item value of WAN Access type.

WAN Interface: Wireless

SSID	BSSID	Channel	Type	Encrypt	Signal	Select
SAPIDO_All_Broadband_Router	00:d0:41:be:ec:3b	6 (B+G+N)	AP	no	88	○
ESSID_SAPIDO_RB-1132	00:d0:41:bf:e0:9d	10 (B+G)	AP	WPA2-PSK	70	○

Encryption: None Refresh

WAN Access Type: DHCP Client

Host Name: default

MTU Size: 1492 (1400-1492 bytes)

- ◉ **Attain DNS Automatically**
- ○ **Set DNS Manually**

DNS 1:

DNS 2:

DNS 3:

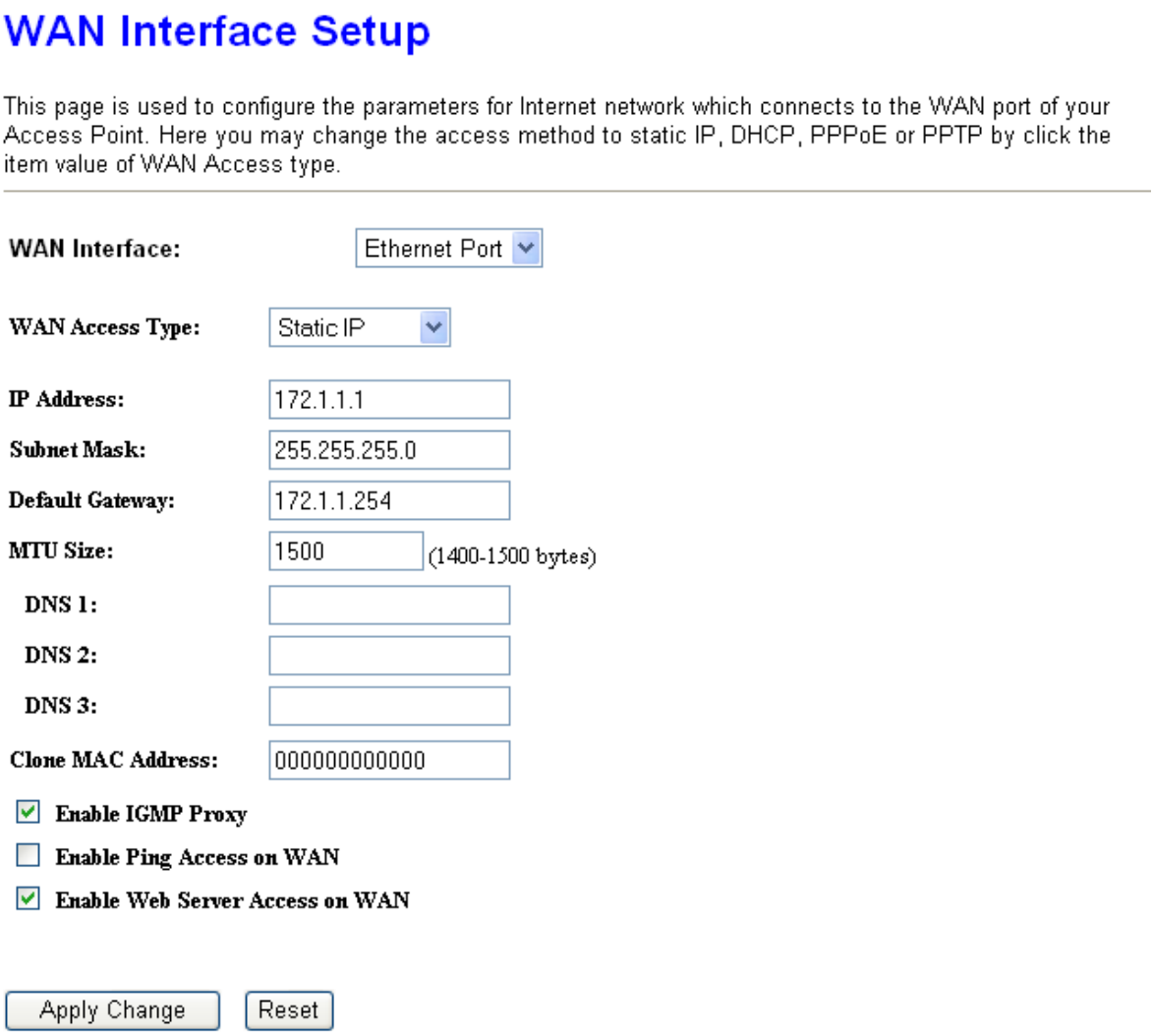
Clone MAC Address: 000000000000

- ☑ **Enable IGMP Proxy**
- ☐ **Enable Ping Access on WAN**
- ☑ **Enable Web Server Access on WAN**

Apply Change Reset

5.1.1.3 WAN Access Type – Static IP

If you applied for a **Static IP** connection type from ISP, please follow the steps to set up your WAN connection.



1. IP Address

Input your IP Address supplied by ISP. If you don't know, please check with your ISP.

2. Subnet Mask

Input Subnet Mask, normally it is **255.255.255.0**.

3. Default Gateway

Input ISP Default Gateway Address. If you don't know, please check with your ISP.

4. MTU Size

MTU stands for Maximum Transmission Unit. For Static IP connection, the default MTU

should be provided by computer operating systems (OS). Advanced users can set the MTU manually for increasing the internet performance. The largest number allowed by Ethernet at the network layer is 1500 byte

5. DNS

If ISP provides you DNS information, please select **Attain DNS automatically,** otherwise select **Set DNS Manually** and input the DNS information into the blank.

6. Clone MAC Address

Copy the MAC address from the device you had registered to your ISP if your ISP asks for the specific MAC Address.

7. Enable IGMP Proxy

The **Internet Group Management Protocol (IGMP)** is a communication protocol used to manage the membership of Internet Protocol multicast groups. IGMP is used by IP hosts and adjacent multicast routers to establish multicast group memberships. You can choose to enable **IGMP Proxy** to provide service.

8. Enable Ping Access on WAN

Select **Enable Ping Access on WAN**, will make WAN IP address response to any ping request from Internet users. It is a common way for hacker to ping public WAN IP address, to see is there any WAN IP address available.

9. Enable Web Server Access on WAN

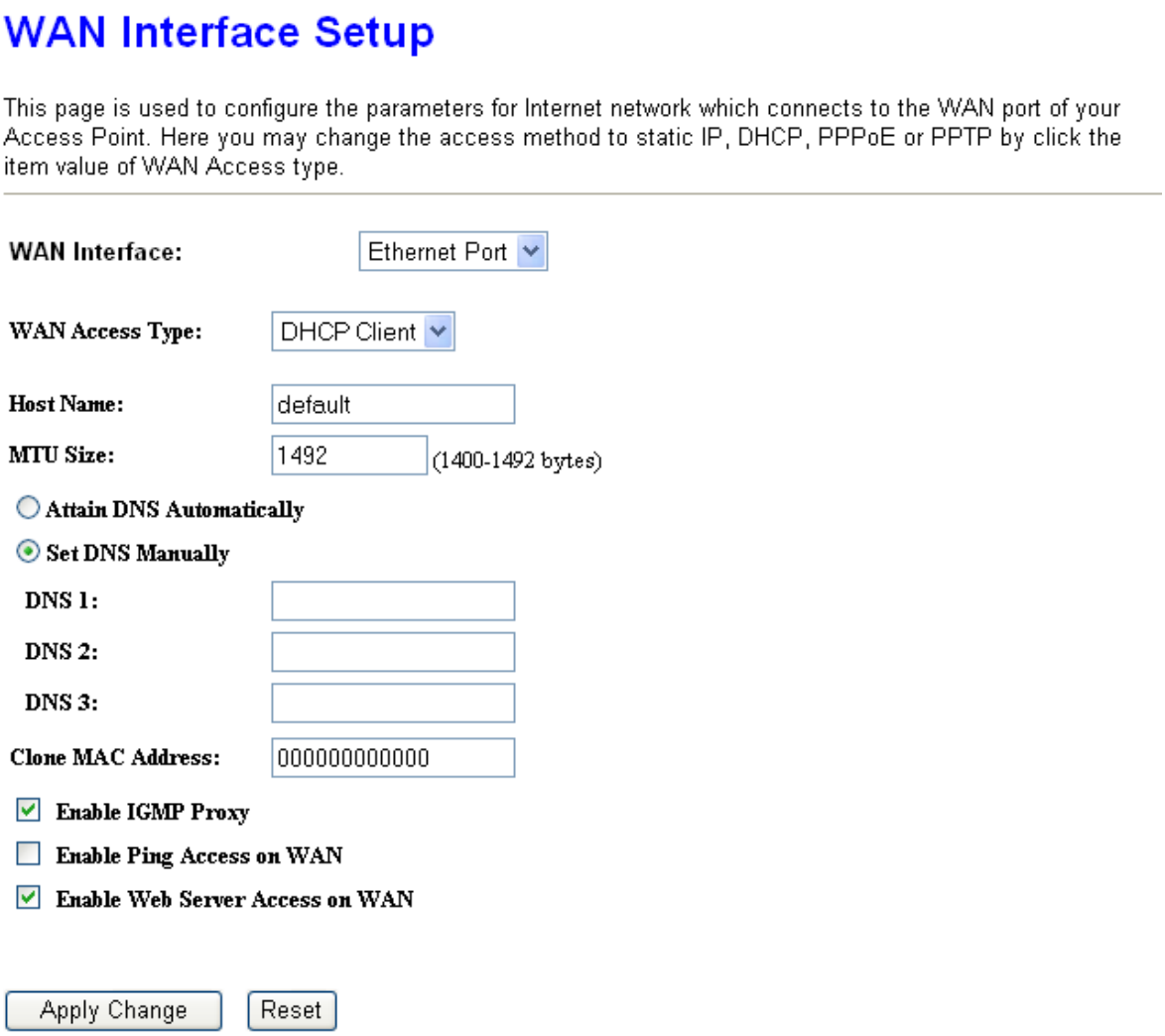
This option is to enable Web Server Access function on WAN.

10. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on Reset to clear all the input data.

5.1.1.4 WAN Access Type – Dynamic IP

If your WAN access type is **Dynamic IP**, please complete the settings as following instructions.



1. Host Name

The host name is optional; but if your ISP requires you to input a specific host name, please put it in, for example, SAPIDO Light N+ Broadband Router applied from ISP. Generally, Cable Modem will provide the hostname information.

2. MTU Size

MTU stands for Maximum Transmission Unit. For Static IP connection, the default MTU should be provided by computer operating systems (OS). Advanced users can set the MTU manually for increasing the internet performance. The largest number is 1492 byte

3. DNS

If ISP provides you DNS information, please select **Attain DNS automatically,** otherwise select **Set DNS Manually** and input the DNS information into the blank.

4. Clone MAC Address

Copy the MAC address from the device you had registered to your ISP if your ISP asks for the specific MAC Address.

5. Enable IGMP Proxy

The **Internet Group Management Protocol (IGMP)** is a communication protocol used to manage the membership of Internet Protocol multicast groups. IGMP is used by IP hosts and adjacent multicast routers to establish multicast group memberships. You can choose to enable **IGMP Proxy** to provide service.

6. Enable Ping Access on WAN

Select **Enable Ping Access on WAN**, will make WAN IP address response to any ping request from Internet users. It is a common way for hacker to ping public WAN IP address, to see is there any WAN IP address available.

7. Enable Web Server Access on WAN

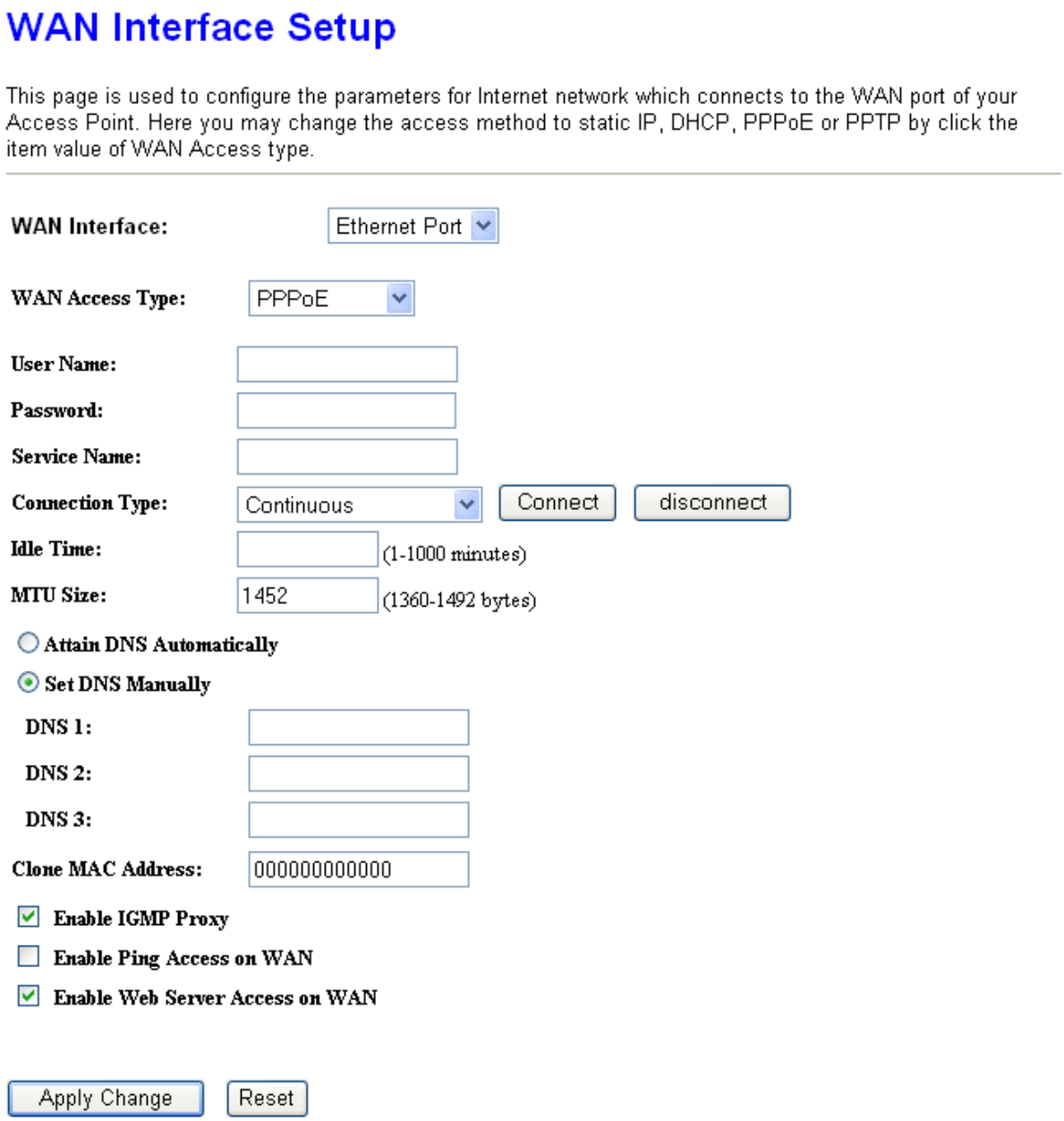
This option is to enable Web Server Access function on WAN.

8. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

5.1.1.5 WAN Access Type – PPPoE

If you applied for a **PPPoE** connection type from ISP, please follow the steps to set up your WAN connection.



1. User Name

Input your user name supplied by ISP. If you don't know, please check with your ISP.

2. Password

Input your Password supplied by ISP.

3. Service Name

Input the service name supplied by ISP.

4. Connection Type

It has three types: **Continuous, Connect on Demand,** and **Manual.**

5. Idle Time

It is the time of inactivity before disconnecting your PPPoE session. Enter an Idle Time (in minutes) to define a maximum period of time for which the Internet connect is maintained during inactivity. If the connection is inactive for longer than the defined Idle Time, then the connection will be dropped. Either set this to zero or enable Auto-reconnect to disable this feature.

6. MTU Size

MTU stands for Maximum Transmission Unit. For PPPoE connection, the default MTU should be provided by computer operating systems (OS). Advanced users can set the MTU manually for increasing the internet performance. The largest number allowed by Ethernet at the network layer is 1492 byte

7. DNS

If ISP provides you DNS information, please select **Attain DNS automatically,** otherwise select **Set DNS Manually** and input the DNS information into the blank.

8. Clone MAC Address

Copy the MAC address from the device you had registered to your ISP if your ISP asks for the specific MAC Address.

9. Enable IGMP Proxy

The **Internet Group Management Protocol (IGMP)** is a communications protocol used to manage the membership of Internet Protocol multicast groups. IGMP is used by IP hosts and adjacent multicast routers to establish multicast group memberships. You can choose to enable **IGMP Proxy** to provide service.

10. Enable Ping Access on WAN

Select **Enable Ping Access on WAN**, will make WAN IP address response to any ping request from Internet users. It is a common way for hacker to ping public WAN IP address, to see is there any WAN IP address available.

11. Enable Web Server Access on WAN

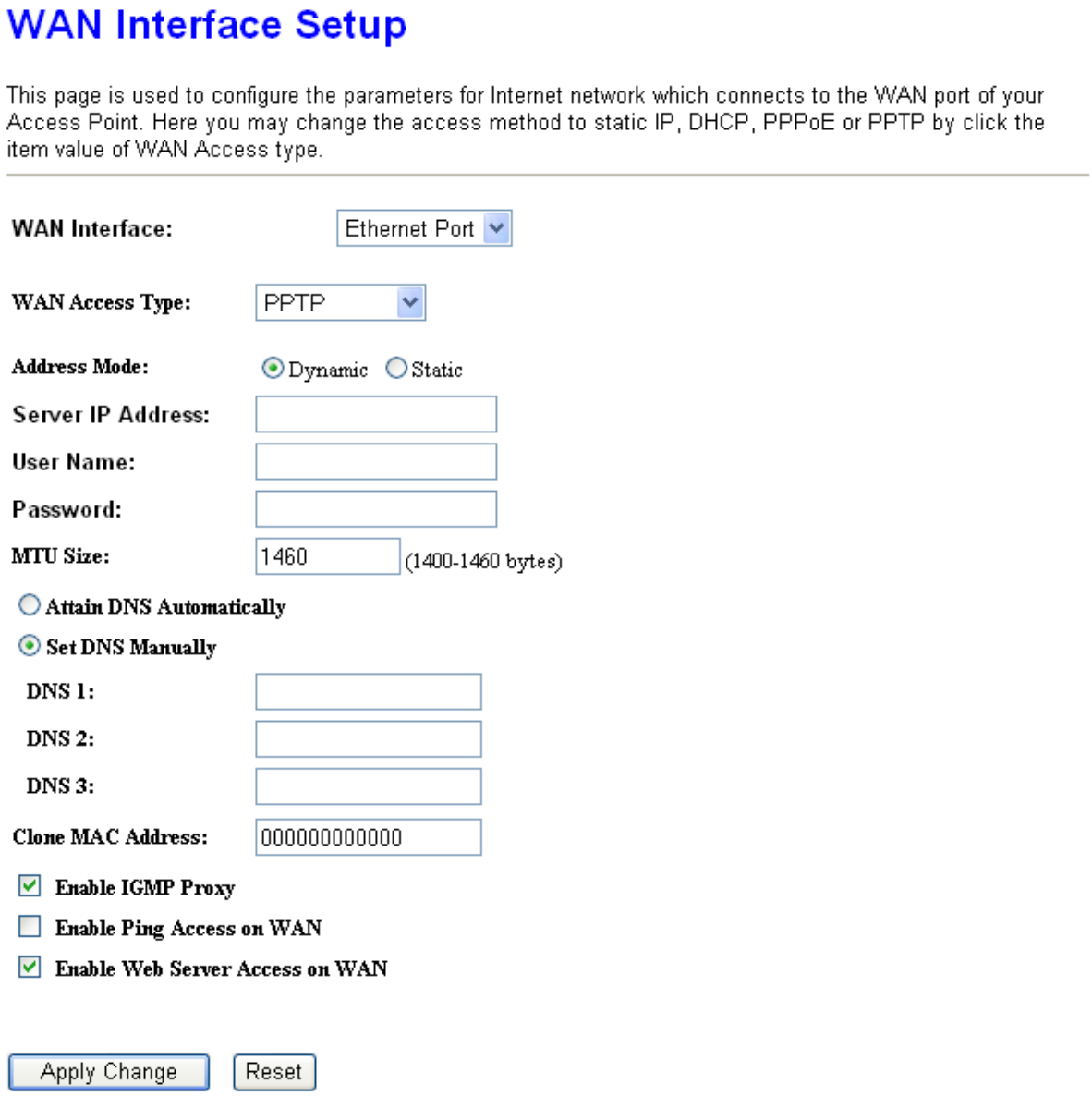
This option is to enable **Web Server Access** function on WAN.

12. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

5.1.1.6 WAN Access Type – PPTP

If you have applied for a **PPTP** connection type from ISP, please follow the steps to set up your WAN connection.



1. IP Address

Input your IP Address supplied by ISP. If you don't know, please check with your ISP.

2. Subnet Mask

Input Subnet Mask, normally it is **255.255.255.0.**

3. Server IP Address

Input your Server IP Address supplied by ISP. If you don't know, please check with your ISP.

4. User Name

Input the PPTP Account supplied by ISP, for example. If you don't know, please check with your ISP.

5. Password

Input the Password supplied by ISP.

6. MTU Size

MTU stands for Maximum Transmission Unit. For PPPoE connection, the default MTU should be provided by computer operating systems (OS). Advanced users can set the MTU manually for increasing the internet performance. The largest number allowed is 1460 byte

7. Request MPPE Encryption

Microsoft Point-to-Point Encryption (MPPE) encrypts data in Point-to-Point Protocol (PPP)-based dial-up connections or Point-to-Point Tunneling Protocol (PPTP) virtual private network (VPN) connections. 128-bit key (strong), 56-bit key, and 40-bit key (standard) MPPE encryption schemes are supported. MPPE provides data security for the PPTP connection that is between the VPN client and the VPN server.

8. DNS

If ISP provides you DNS information, please select **Attain DNS automatically**, otherwise select **Set DNS Manually** and input the DNS information into the blank.

9. Clone MAC Address

Copy the MAC address from the device you had registered to your ISP if your ISP asks for the specific MAC Address.

10. Enable IGMP Proxy

The **Internet Group Management Protocol (IGMP)** is a communications protocol used to manage the membership of Internet Protocol multicast groups. IGMP is used by IP hosts and adjacent multicast routers to establish multicast group memberships. You can choose to enable **IGMP Proxy** to provide service.

11. Enable Ping Access on WAN

Select **Enable Ping Access on WAN**, will make WAN IP address response to any ping request from Internet users. It is a common way for hacker to ping public WAN IP address, to see is there any WAN IP address available.

12. Enable Web Server Access on WAN

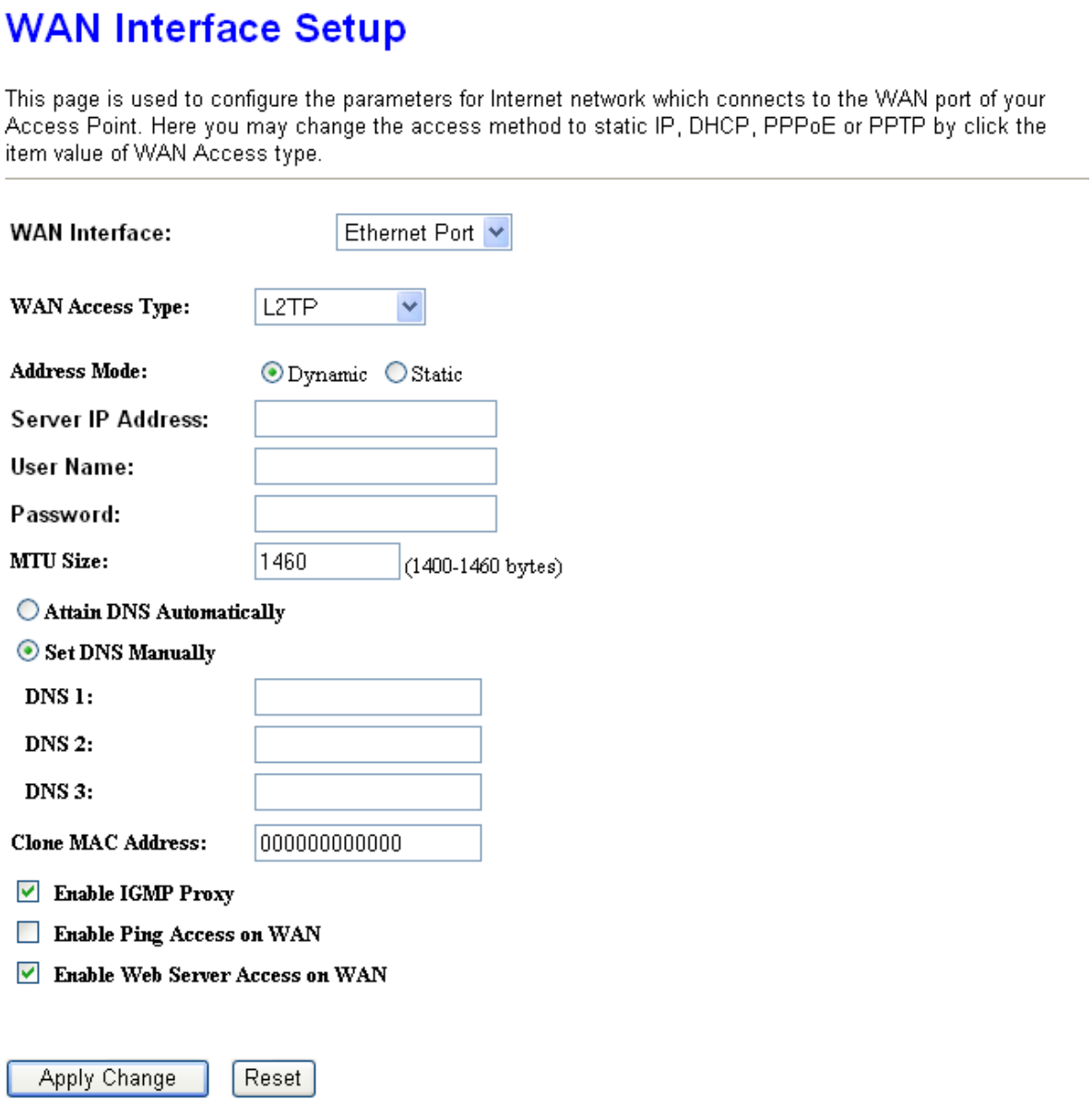
This option is to enable Web Server Access function on WAN.

13. Apply Changes & Reset

Click on Apply Changes to save the setting data. Or you may click on Reset to clear all the input data.

5.1.1.7 WAN Access Type – L2TP

If you have applied for a **L2TP** connection type from ISP, please follow the steps to set up your WAN connection.



1. Server IP Address

Input your Server IP Address supplied by ISP. If you don't know, please check with your ISP.

2. User Name

Input the L2TP Account.

3. Password

Input the Password.

4. MTU Size

MTU stands for Maximum Transmission Unit. For PPPoE connection, the default MTU should be provided by computer operating systems (OS). Advanced users can set the MTU manually for increasing the internet performance. The largest number allowed is 1460 byte

5. DNS

If ISP provides you DNS information, please select **Attain DNS automatically**, otherwise select **Set DNS Manually** and input the DNS information into the blank.

6. Clone MAC Address

Copy the MAC address from the device you had registered to your ISP if your ISP asks for the specific MAC Address.

7. Enable IGMP Proxy

The **Internet Group Management Protocol (IGMP)** is a communications protocol used to manage the membership of Internet Protocol multicast groups. IGMP is used by IP hosts and adjacent multicast routers to establish multicast group memberships. You can choose to enable **IGMP Proxy** to provide service.

8. Enable Ping Access on WAN

Select **Enable Ping Access on WAN**, will make WAN IP address response to any ping request from Internet users. It is a common way for hacker to ping public WAN IP address, to see is there any WAN IP address available.

9. Enable Web Server Access on WAN

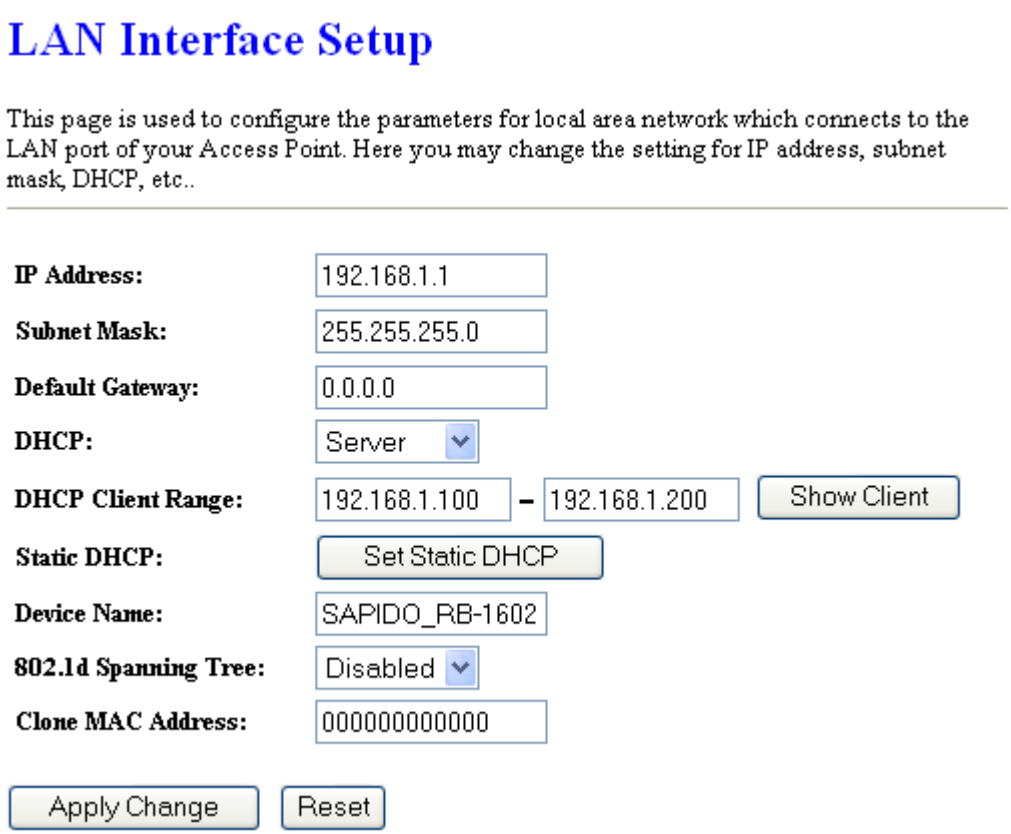
This option is to enable Web Server Access function on WAN.

10. Apply Changes & Reset

Click on Apply Changes to save the setting data. Or you may click on Reset to clear all the input data.

5.1.2 LAN Interface Setup

Use this page to set up the local IP address and subnet mask for your router. Please select **LAN Interface Setup** under the **IP Config** menu and follow the instructions below to enter the LAN setting page to configure the settings you want.



1. IP Address

The default value of LAN IP address is **192.168.1.1** for this router.

2. Subnet Mask

Input Subnet Mask, normally it is **255.255.255.0**.

3. Default Gateway

Input ISP Default Gateway Address. If you don't know, please check with your ISP.

4. DHCP

Enable or disable DHCP services. The DHCP server will automatically allocate an unused IP address from the IP address pool to the requesting computer if enabled.

5. DHCP Client Range

Define the DHCP client range and then the DHCP server will assign an IP to the requesting computer from this range. The **Show Client** will display every assigned IP address, MAC address, and expired time. The default range is 192.168.1.100 - 192.168.1.200.

6. 802.1d Spanning Tree

IEEE 802.1d Spanning Tree Protocol (STP) is a link layer network protocol that ensures a loop-free topology for any bridged LAN. The main purpose of STP is to ensure that you do not create loops when you have redundant paths in your network. Loops are deadly to a network.

7. Clone MAC Address

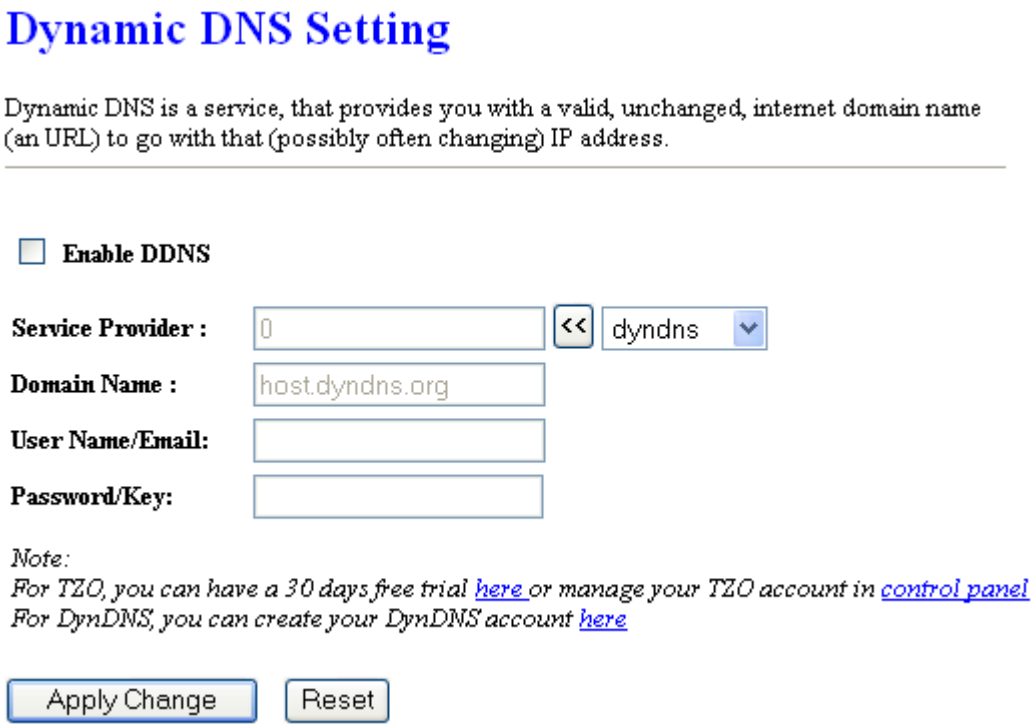
Copy the MAC address from the device you had registered to your ISP if your ISP asks for the specific MAC Address.

8. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

5.1.3 Dynamic DNS Setting

Dynamic DNS allows you to make an assumed name as a dynamic IP address to a static hostname. Please configure the dynamic DNS below. Please select DDNS under the IP Config menu, and follow the instructions below to enter the DDNS setting page to configure the settings you want.



1. Enable / Disable DDNS

Select enable to use DDNS function. Each time your IP address to WAN is changed, and the information will be updated to DDNS service provider automatically.

2. Service Provider

Choose correct Service Provider from drop-down list, here including DynDNS, TZO, ChangeIP, Eurodns, OVH, NO-IP, ODS, Regfish embedded in 11N Mini Router.

3. Domain Name

This field represents the host name you register to Dynamic-DNS service and expect to export to the world.

4. User Name /Email

User name is used as an identity to login Dynamic-DNS service.

5. Password /Key

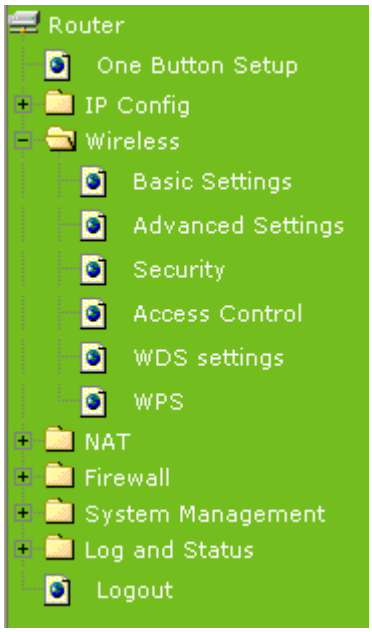
Password is applied to login Dynamic-DNS service.

6. Apply & Cancel

Click on **Apply** button to continue. Click on **Cancel** button to clear the setting on this page.

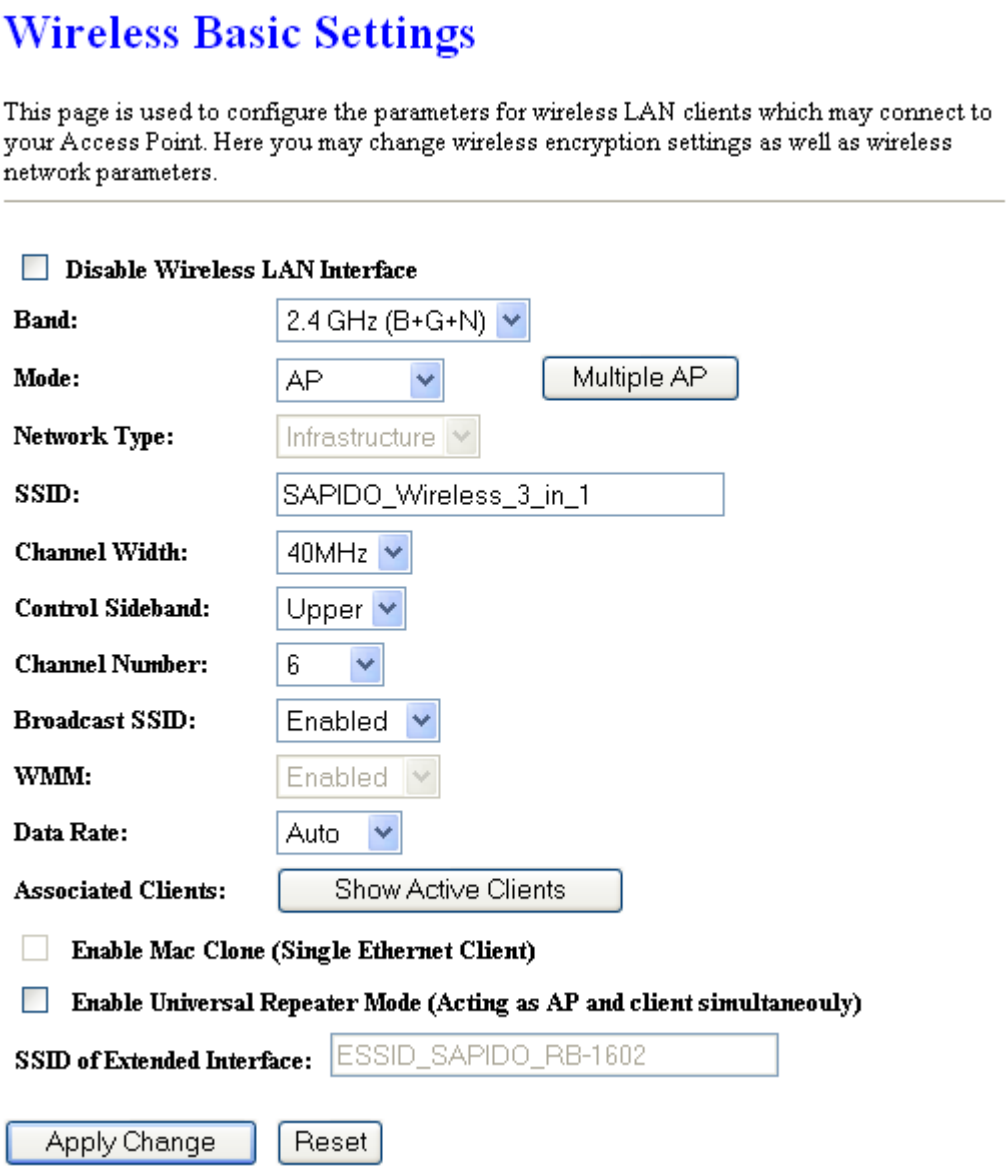
5.2 Wireless Setup

SAPIDO Light N+ Broadband Router enables fastest 300 Mbps IEEE802.11g wireless transmissions and keeps compatibility with existing IEEE 802.11n devices. SAPIDO Light N+ Broadband Router complies with IEEE 802.11b/g standard. Please select **Wireless** under the main menu.



5.2.1 Wireless Basic Settings

Follow the instructions to configure the **Wireless** settings.



1. Disable Wireless LAN Interface

Select **Disable Wireless LAN Interface** to turn off the wireless function.

2. Band

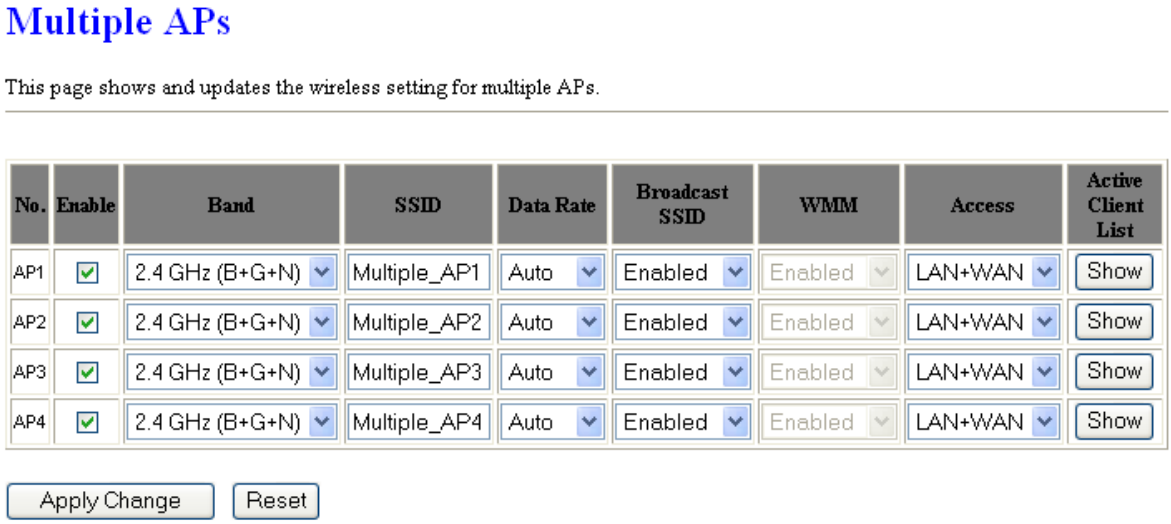
This field indicates the 802.11x interface mode. For example, "**2.4GHz(G)**" prevents the 802.11b clients from accessing the router. "**2.4GHz(B+G)**" allows both 802.11b and 802.11g clients to access the router. There are 6 options, 2.4 GHz (B/G/N/B+G/G+N/B+G+N) from the drop down list.

3. Mode

Select **AP, WDS,** or **AP+WDS** to allow or disallow the wireless operation.

- **Multiple APs**

Click Multiple APs to set up 4 different SSIDs to deploy a shared WLAN. Users can add or limit the properties for each SSID, increasing the flexibility and efficiency of the network.



(1.) **Enable:** check it for enable or not.

(2.) **Band:** select the frequency from the drop down list.

(3.) **SSID:** please enter different SSID in each class.

(4.) **Data Rate:** please select the data transmission rate.

(5.) **Access:** defined the access type.

a. LAN+WAN: the client can access to the Internet and connect to 11N Mobile router's GUI to setup.

b. WAN: the client can only access to the Internet.

(6.) **Active Client List:** display the properties of the client which is connecting successfully.

(7.) **Apply Changes:** Please click **Apply Changes** to initiate or click **Reset** to cancel.

4. Network Type：

Please select "**Infrastructure**" or "**Ad hoc**." The default is "**Infrastructure**." The selection is disabled when wireless mode is selected to AP.

5. SSID：

Please input your wireless network name. Default is “11N_Mini_Router”.

6. Channel Width

Please select “**20MHZ**” or “**40MHZ**” channel width to change the transmission channels.

7. ControlSideband

Setting the Sideband "**Upper**" or "**lower.**”

8. Channel Number

Please select your wireless network channel. There are Auto, 2~11.

9. Broadcast SSID

Enable or disable the SSID broadcast function. Disable this feature can provide more security of your WLAN.

10. Data Rate

Rate at which data can be communicated (bps); auto, 1M, 2M, 5.5M, 11M, 6M, 9M, 12M, 18M, 24M, 36M, 48M or 54M to be selected from the drop-down list.

11. Associated Clients

Check the WiFi ISP connectors and the connecting status.

12. Enable Mac Clone (Single Ethernet Client)

Copy the MAC Address for identity of some ISPs.

13. Enable Universal Repeater Mode (Acting as AP and Client simultaneously)

Enable **Universal Repeater Mode**, SAPIDO Light N+ Broadband Router will act as a wireless AP and AP client at the same time, and able to link to another AP.. It uses AP client function to connect to a Root AP (any AP) and uses AP function to service all wireless stations within its coverage. All the stations within the coverage of SAPIDO Light N+ Broadband Router can be bridged to the Root AP. It can help user to extend the coverage of wireless network.

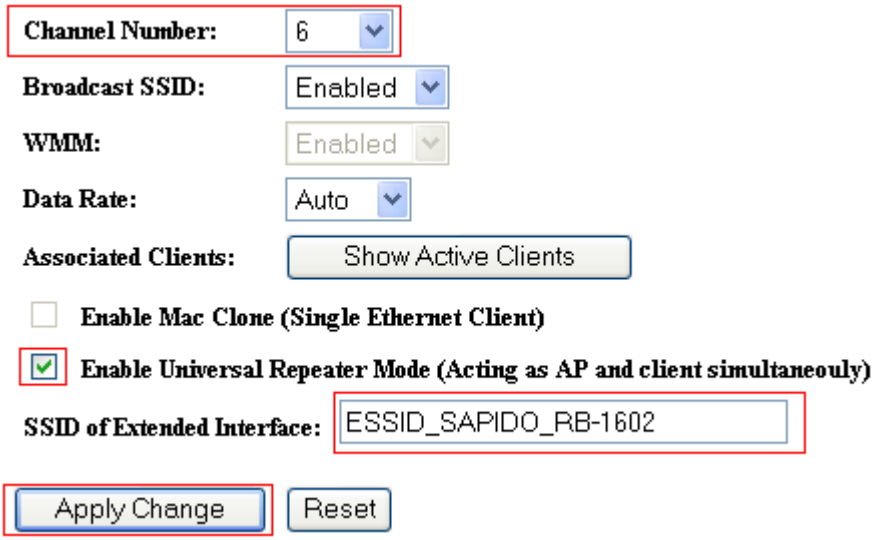
- **How to Enable URM (Universal Repeater Mode)**

  User could enable URM in wireless basic setting page as shown in following figures.

  Step 1. Get back to menu “**Network Config**” and write down the SSID, channel and

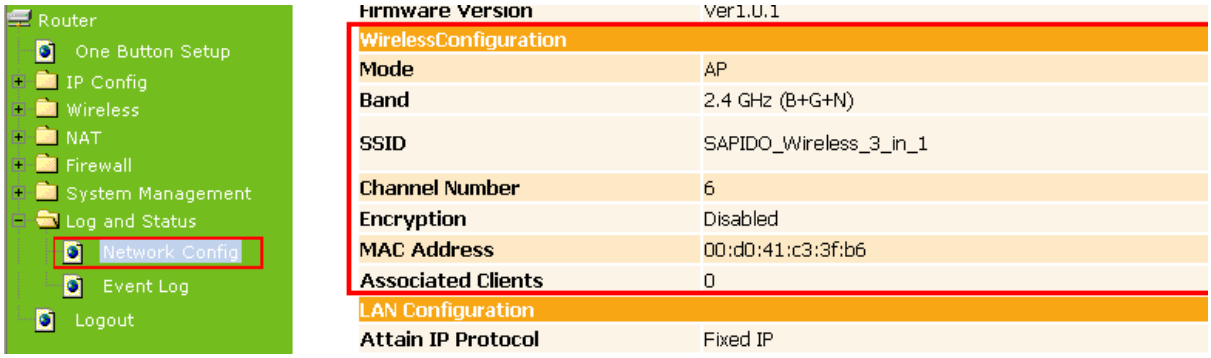
security.

Step 2. Setting the same SSID, channel and security you got form “Network Config” and Click on **Apply Changes** to save the setting



Note: The DHCP server should be disabled under menu “**LAN Interface Setup**” and then the URM could be enabled.

Step 3. Check the AP connectors and the Wireless connecting status.



14. SSID of Extended Interface

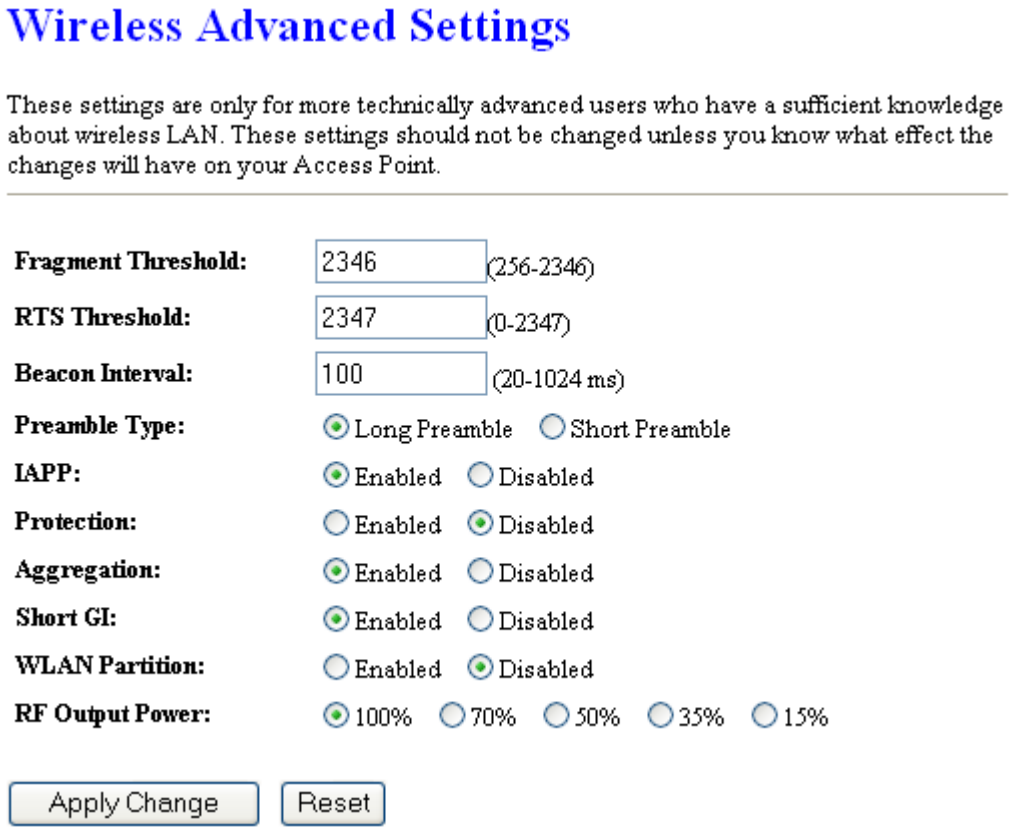
When mode is set to “AP” and Universal Repeater Mode is enabled, user should input SSID of another AP (the upper level device) in the field of **SSID of Extended Interface**.

15. Apply Changes & Reset

Click on “**Apply Changes**” to save the setting data. Or you may click on “**Reset**” to clear all the input data.

5.2.2 Wireless Advanced Settings

Please follow the instructions to configure the **Wireless** settings.



1. Fragment Threshold

To identify the maximum length of packet, the overflow packet length wil be fragmentized. The allowed range is 256-2364, and default length is 2346 bytes.

2. RTS Threshold

This value should remain at its default setting of 2347. The range is 0~2347. Should you encounter inconsistent data flow, only minor modifications are recommended. If a network packet is smaller than the present RTS threshold size, the RTS/CTS mechanism will not be enabled. The router sends Request to Send (RTS) frames to a particular receiving station and negotiates the sending of a data frame. After receiving an RTS, the wireless station responds with a Clear to Send (CTS) frame to acknowledge the right to begin transmission. Fill the range from 0 to 2347 into this blank.

3. Beacon Interval

Beacons are packets sent by an access point to synchronize a wireless network. Specify a beacon interval value. The allowed setting range is 20-1024 ms.

4. Preamble Type

The preamble (also called “a header”) is a section of data at the head of a packet that contains information that wireless devices need when they send and receive packets. Short preambles improve throughput performance, but some wireless devices require long preambles. Select the suitable preamble as short or long preamble.

5. IAPP

Inter Access Point Protocol. Allow seamless roaming between Access Points in your wireless network. Coupled with superior RF performance

6. Protection

Select to enable the wireless protection or not.

7. Aggregation

Data aggregation can reduce the amount of data routed through the network, and increasing throughput.

8. Short GI

Enabling the Short Guard Interval increases the wireless transmission.

9. RF Output Power

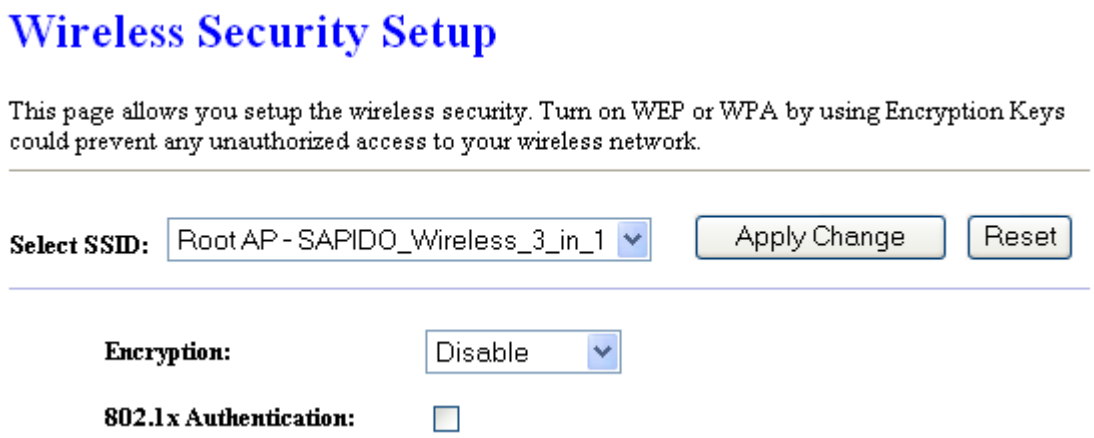
User can adjust the RF output power to get the best wireless connection. There are 5 power types available: 100%, 70%, 50%, 35%, and 15%.

10. Apply Changes & Reset

Click on “Apply Changes” to save the setting data. Or you may click on “Reset” to clear all the input data.

5.2.3 Wireless Security Setup

4 encryption types can be selected here, please follow the instructions below for each.



1. Encryption – WEP

Enabling WEP can protect your data from eavesdroppers. If you do not need this feature, select "**None**" to skip the following setting. SAPIDO Light N+ Broadband Router supports both 64-bit and 128-bit encryption using the Wired Equivalent Privacy (WEP) algorithm. Select the type of encryption you want to use (64 or 128 bit) and configure one to four WEP Keys. The "1280bit" method is more secure than the "64-bit".

- **802.1x Authentication**

  Enable 802.1x Authentication so that a wireless node must be authenticated before it can gain access to other LAN resources.

Key Length: For 64bits WEP key, either 5 ASCII characters or 10 hexadecimal digitals leading by 0x can be entered. For 128bits WEP key, either 13 ASCII characters or 26 hexadecimal digits leading by 0x can be entered.

Note: 128 bits WEP is most secure, but has more encryption/decryption overhead. Note that all wireless devices must support the same WEP encryption bit size and have the same key. Four keys can be entered here, but only one key can be selected at a time. The keys can be entered in ASCII or Hexadecimal. Select the item from drop-down list you wish to use.

Encryption Key: At most four keys can be set. A WEP key is either 10 or 26 hexadecimal digits (0~9, a~f, and A~F) based on whether you select 64 bit or 128 bit in the WEP drop-down list.

2. Encryption – WPA (WPA, WPA2 & WPA2 Mixed)

The WPA, WPA2 & WPA2 Mixed encrypt each frame transmitted from the radio using the pre-shared key (PSK) which entered from this panel or a key got dynamically through 802.1x.

- **WPA Authentication Mode**

  Enterprise (RADIUS): Please input the port, IP address, and password of authentication RADIUS Server.

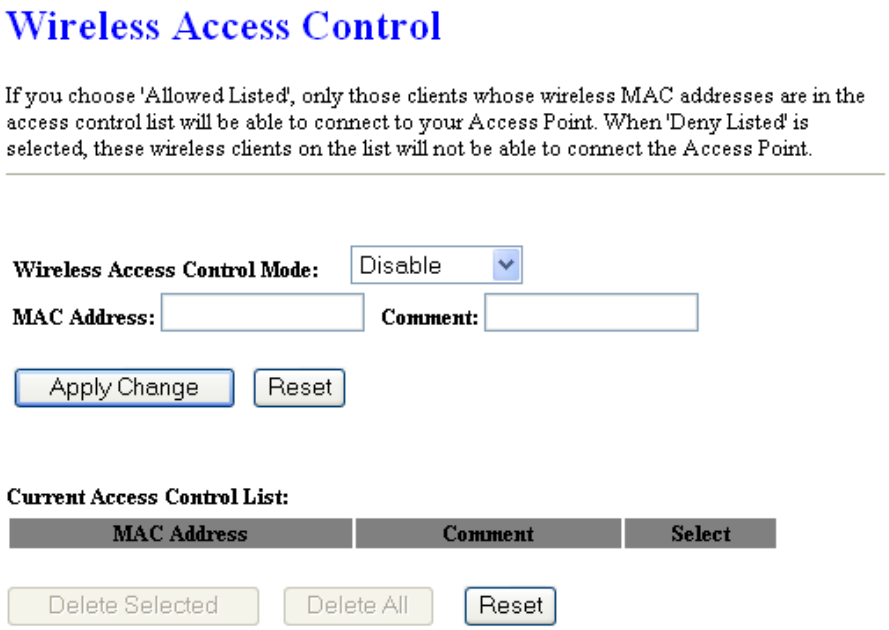
  Personal (Pre-Shared Key): Pre-Shared Key type is coding in ASCII, and the length is between 8 to 63 characters. If the coding is in Hex, the key length is 64 characters.

3. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

5.2.4 Wireless Access Control

With the MAC address, you may allow or disallow the access to your AP.



1. Wireless Access Control Mode

"**Allowed Listed**" means only the MAC address listed on the allowed list can access to your wireless network.

"Deny Listed" means the listed MAC Address are not allowed to link to your wireless network.

"**Disable**" for function disuse.

2. MAC Address

Please input the allowed or denied MAC address, for example, 001122334455.

3. Comment

You may input the comments for the set MAC Address.

4. Apply Changes & Reset

Click on "Apply Change" to save the setting data. Or you may click on "Reset" to clear all the input data.

5. Current Access Control List

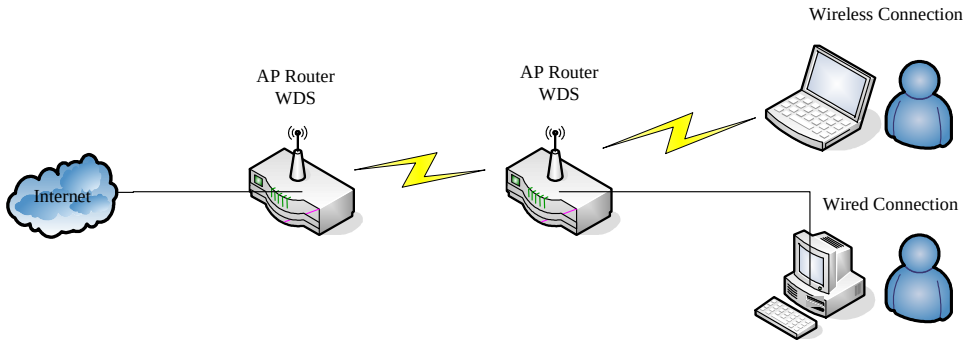
In this list, all the MAC info you input will be displayed.

6. Delete Selected and Delete All

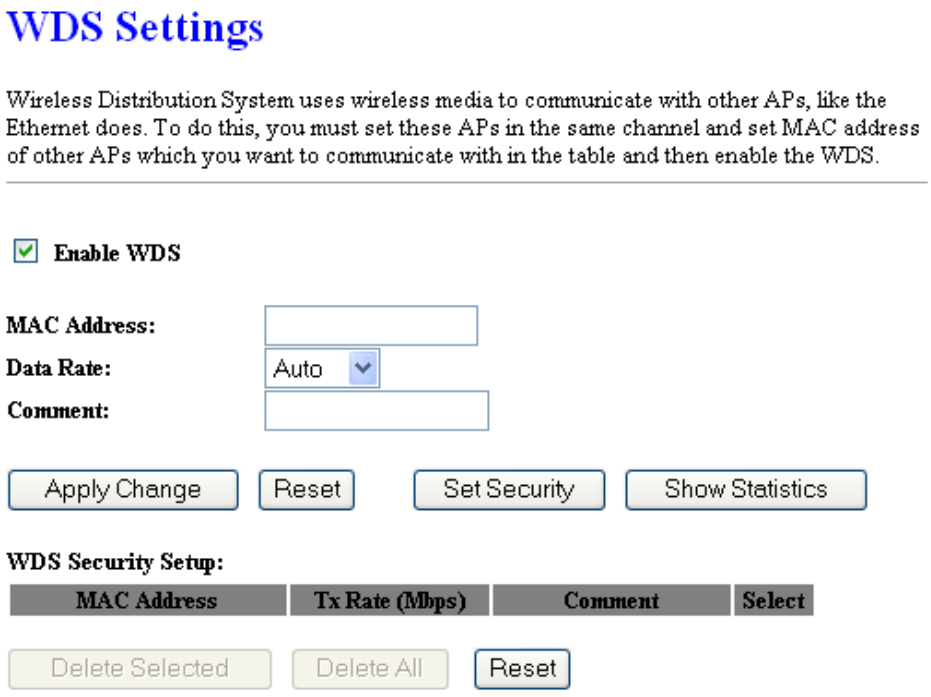
Click on “**Delete Selected**” to erase the selected MAC address. Click on “**Delete All**” to erase all the entered MAC Address.

5.2.5 WDS Settings

WDS (Wireless Distribution System) is a Wireless Access Point mode that enables wireless bridging in which only WDS APs communicate with each other (without allowing for wireless clients or stations to access them), and/or wireless repeating in which APs communicate both with each other and with wireless stations (at the expense of half the throughput).



Please follow the instructions to setup WDS connections.

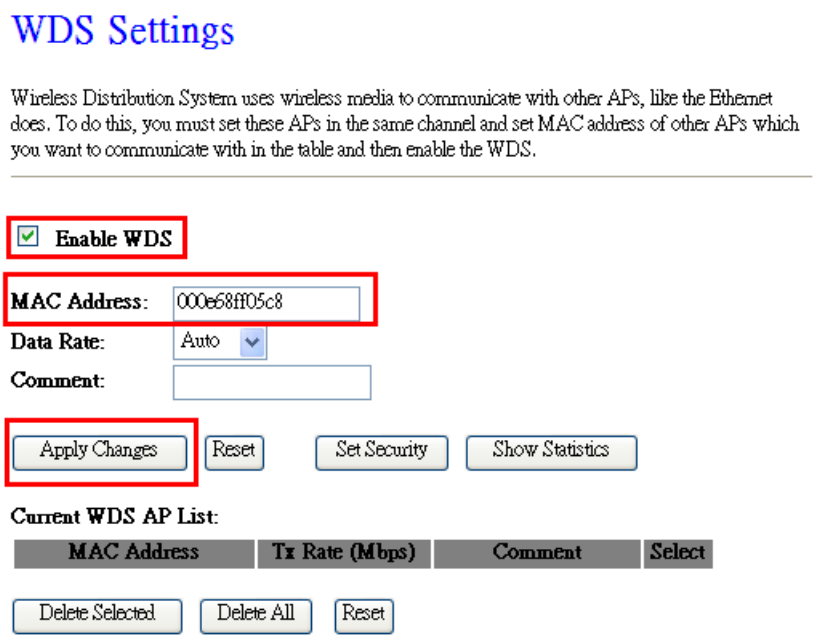


Step 1. Check the MAC address and Channel number of the device you want to setup WDS with 11N Mini Router.

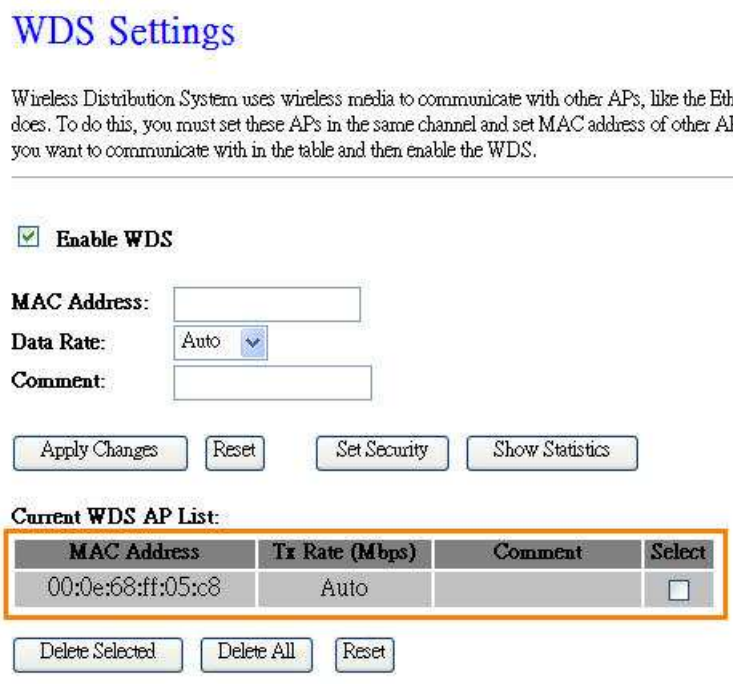
WirelessConfiguration	
Mode	AP+WDS
Band	2.4 GHz (B+G+N)
SSID	SAPIDO_Wireless_3_in_1
Channel Number	6
Encryption	Disabled(AP), Disabled(WDS)
MAC Address	00:d0:41:c3:3f:b6
Associated Clients	0
LAN Configuration	
Attain IP Protocol	Fixed IP
IP Address	192.168.1.1
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.1
DHCP Server	Enabled
MAC Address	00:d0:41:c3:3f:b6

Step 2. Get back to the menu "**Wireless Basic Settings**" of 11N Mini Router. Select **AP+WDS** mode, and then select the Channel Number. Click **Apply Changes** to save the setting data.

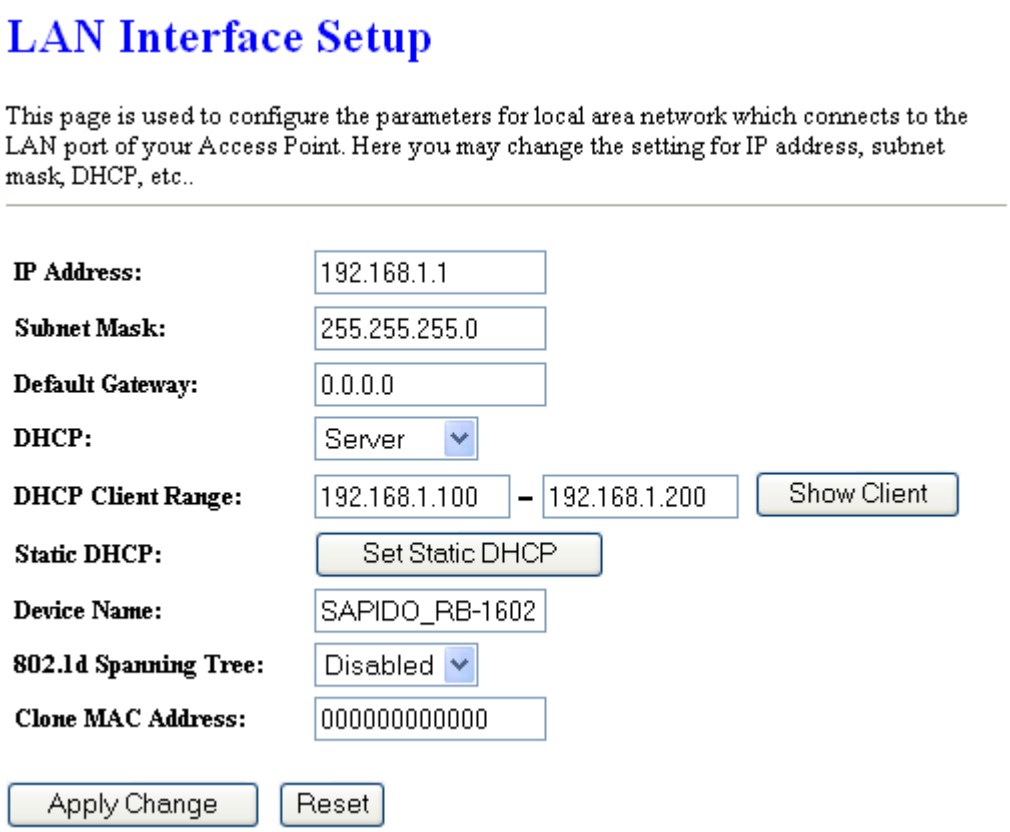
Step 3. Enter the WDS Settings page, select Enable WDS, and then input the MAC address of the paired device. Click **Apply Changes** to save the setting data.



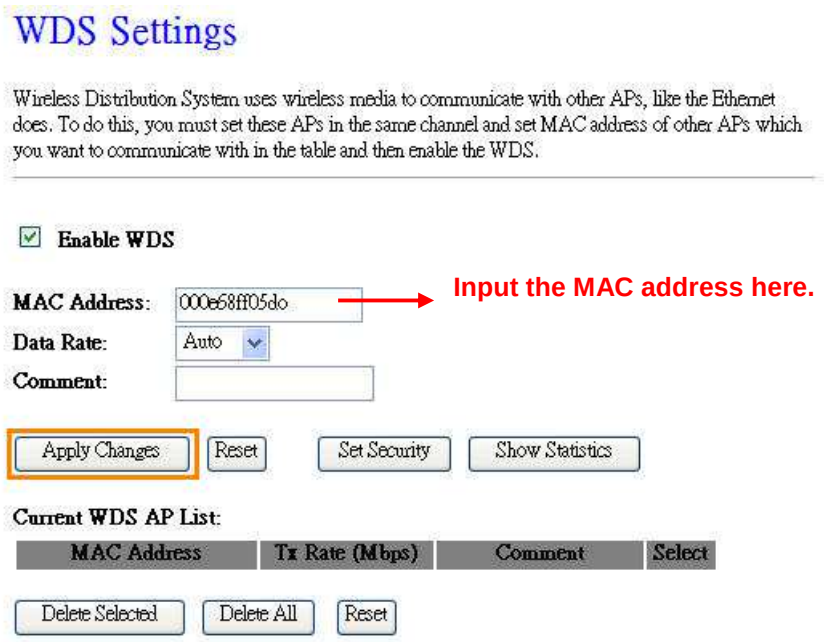
Step 4. When the time counts down to 0, you will see the MAC address of the paired device displaying on **Current WDS AP List.**



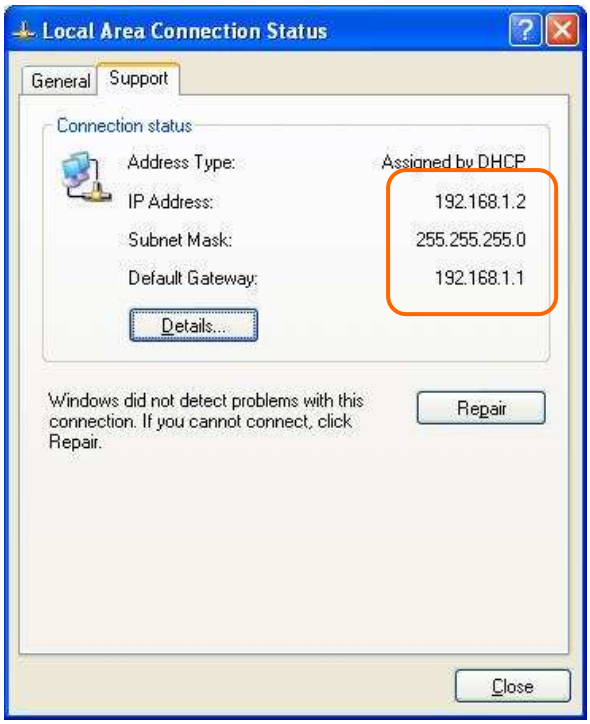
Step 5. Head back to LAN Interface, disable DHCP option, and then click Apply Changes to save the setting data.



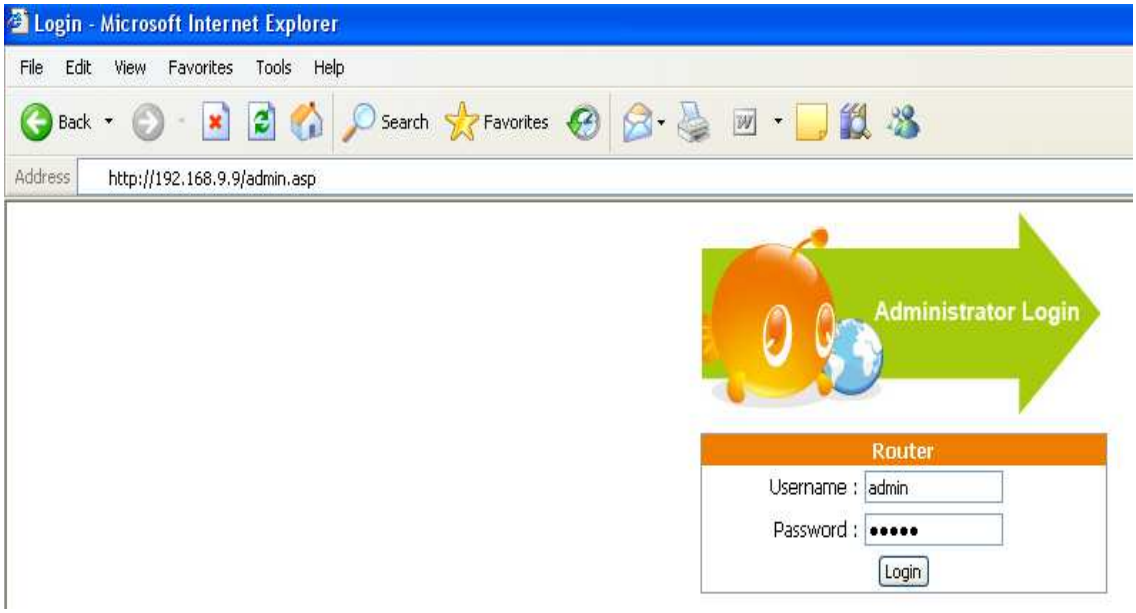
Step 6. Doing the same way to setup the MAC address in the paired device. Launch the UT to the menu "**WDS settings**" of the paired device, and input router's MAC address. Click **Apply Changes** to save the setting data.



Step 7. After initiating the paired device, please check Local Area Connections. Click Supports to check out the IP address which is assigned by the paired device.



Step 8. You can input http://192.168.9.9 in IE browser to enter the GUI page of the paired device and make sure the connection.



5.2.6 WPS

Wi-Fi Protected Setup (WPS) is an easy way to establish a secured wireless network between SAPIDO Light N+ Broadband Router and wireless card. Users do not need to manually entering a creative, yet predictable security key on both Wi-Fi devices to prevent unwanted access to their wireless network. With WPS, it can automatically configure a wireless network with a network name (SSID) and strong WPA data encryption and authentication.

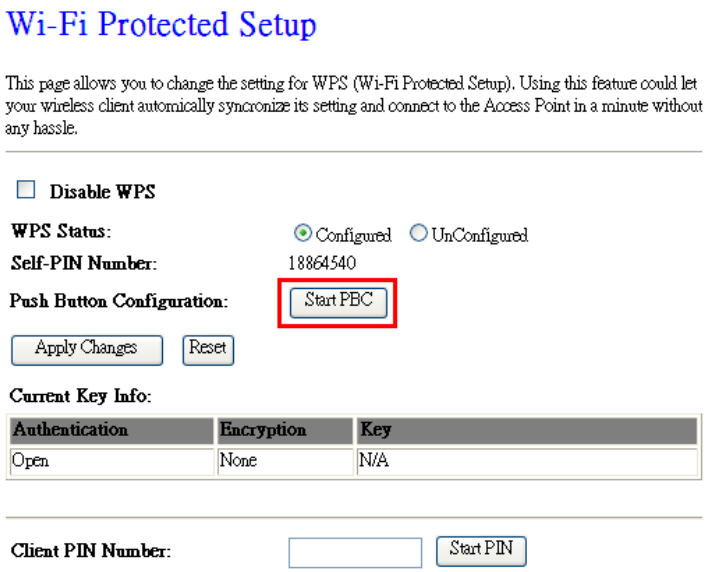
WPS can be enabled by 2 methods:

1. **PBC (Push button configuration) Method,** in which the user simply has to push a button, either an actual or a virtual one, on both WPS devices to connect.
2. **PIN (Personal Identification Number) Method,** in which a PIN has to be taken either from a sticker label or from the web interface of the WPS device. This PIN will then be entered in the AP or client WPS device to connect.

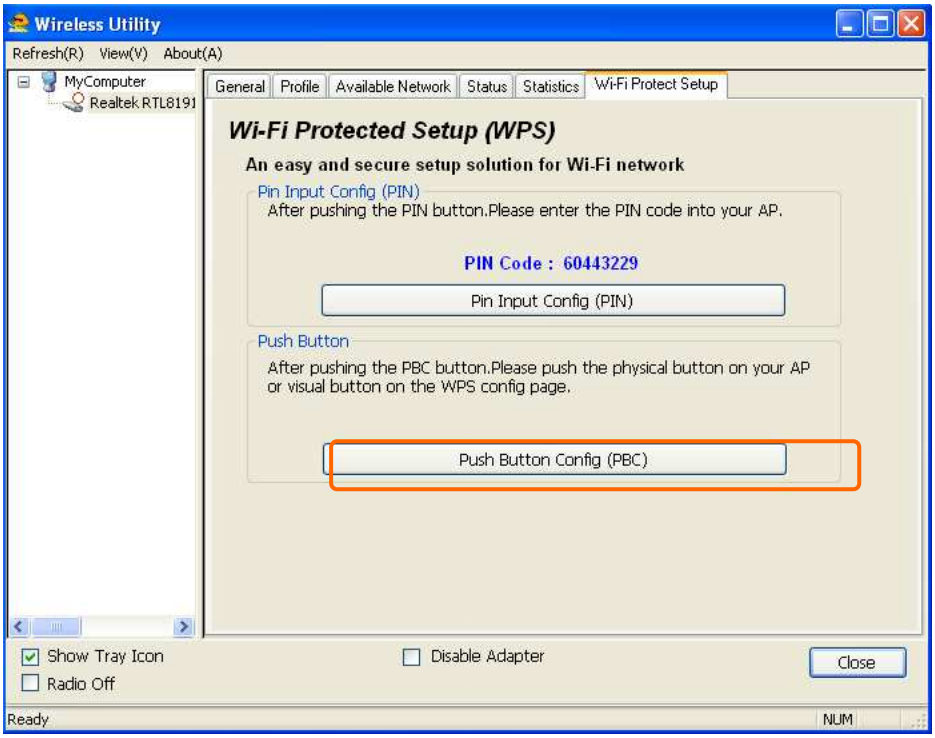
Please follow instructions below to enable the WPS function.

- **Start PBC:**

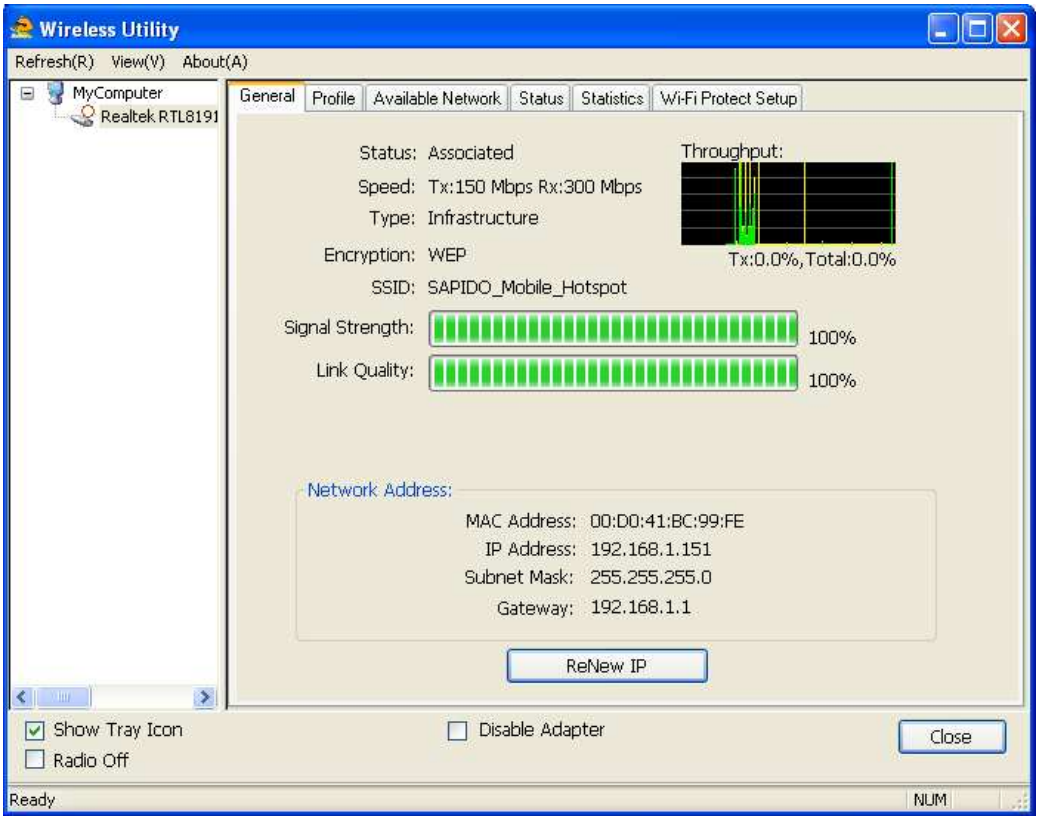
(1.) Press the **WPS button** from SAPIDO Light N+ Broadband Router or click **Start PBC** from menu "**Wi-Fi Protected Setup**", and waiting for the WPS wireless card setting.



(2.) Open the “**Wireless Utility**” of your wireless card, and click its “**PBC**” button, to start auto pairing.

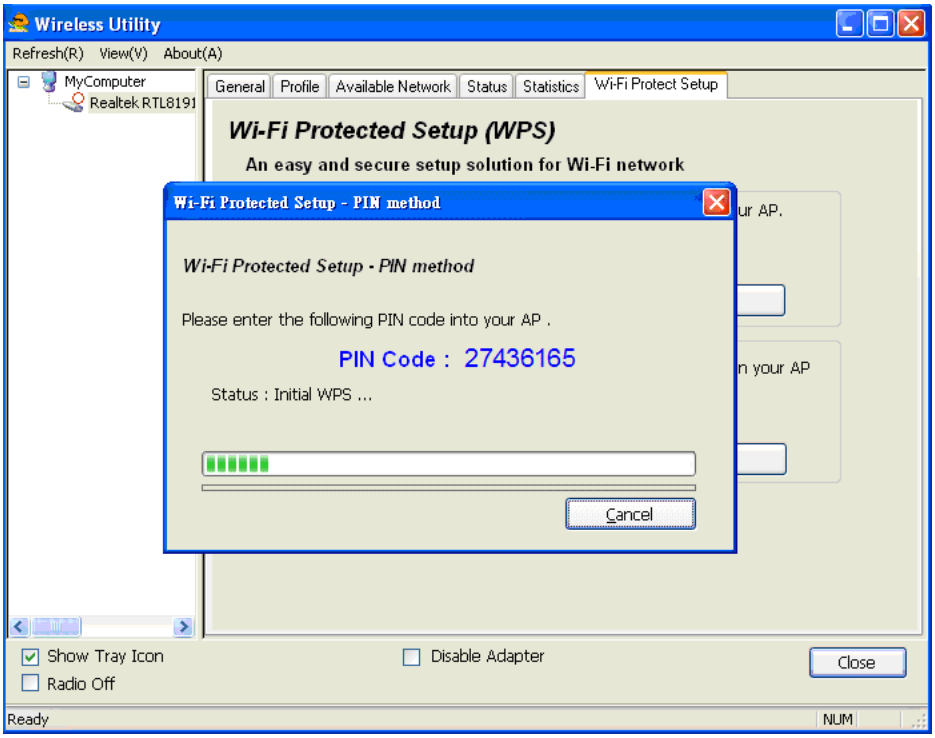


(3.) While scanning is successful, the information of the wireless card appears in the windows below.

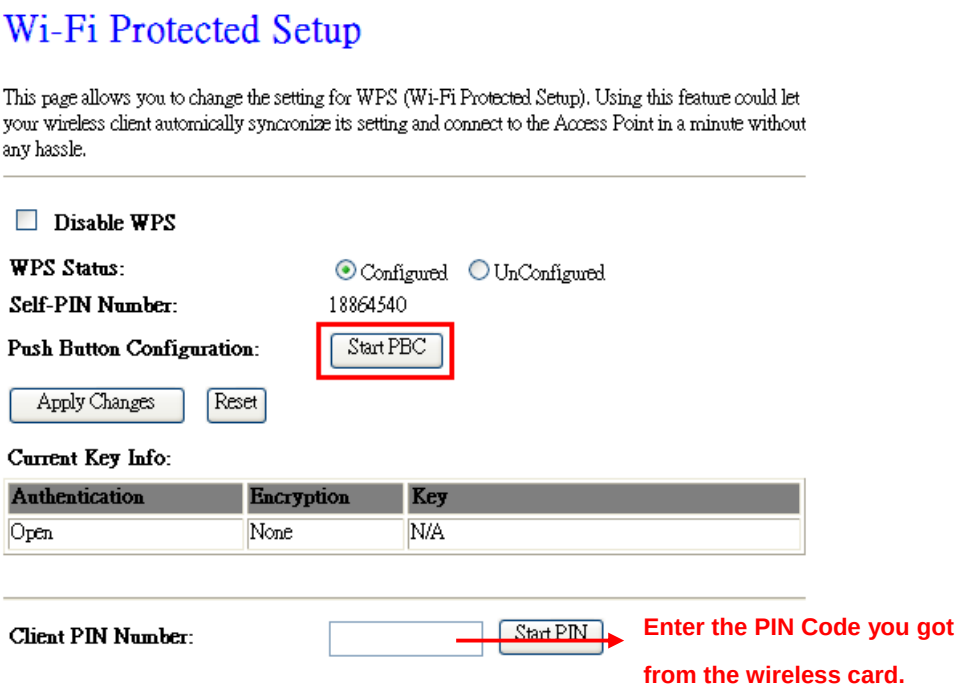


- **Start PIN:**

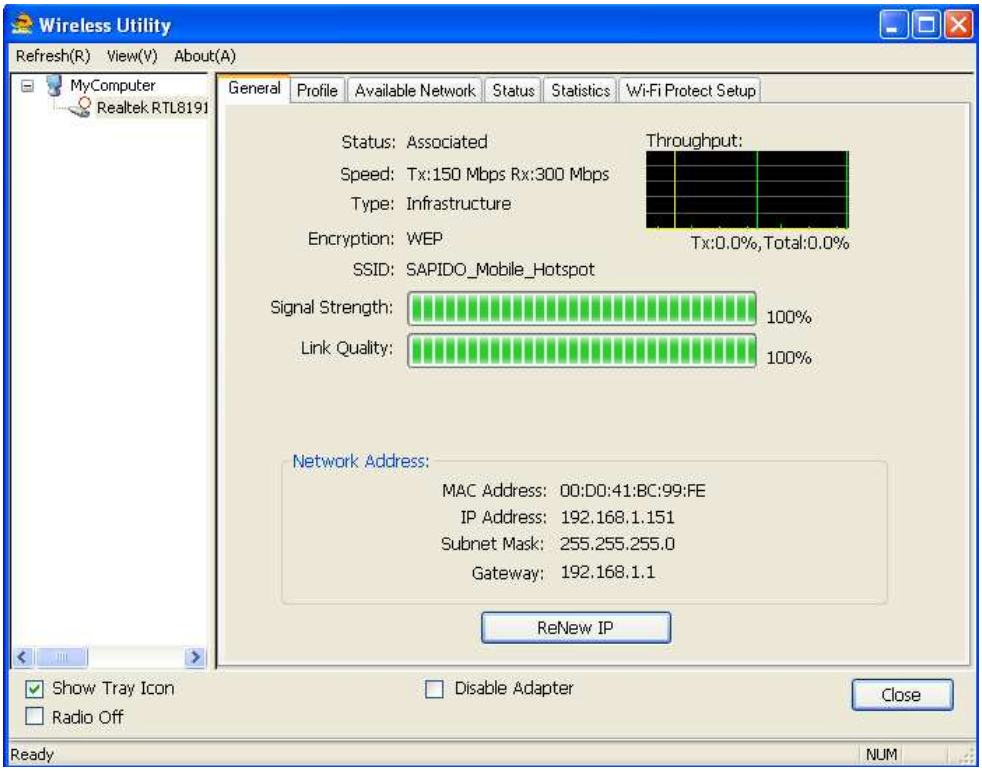
(1.) Open the "**Wireless Utility**" of your wireless card. Follow its PIN instruction to get a new PIN number. Write it down.



(2.) Open menu "**Wi-Fi Protected Setup**" of 11N Mini Router, input the PIN number from the wireless card then click **Start PIN**.



(3.) Back to **"Wireless Utility"** and press the **"Start PIN"** button to complete the auto-paring process.

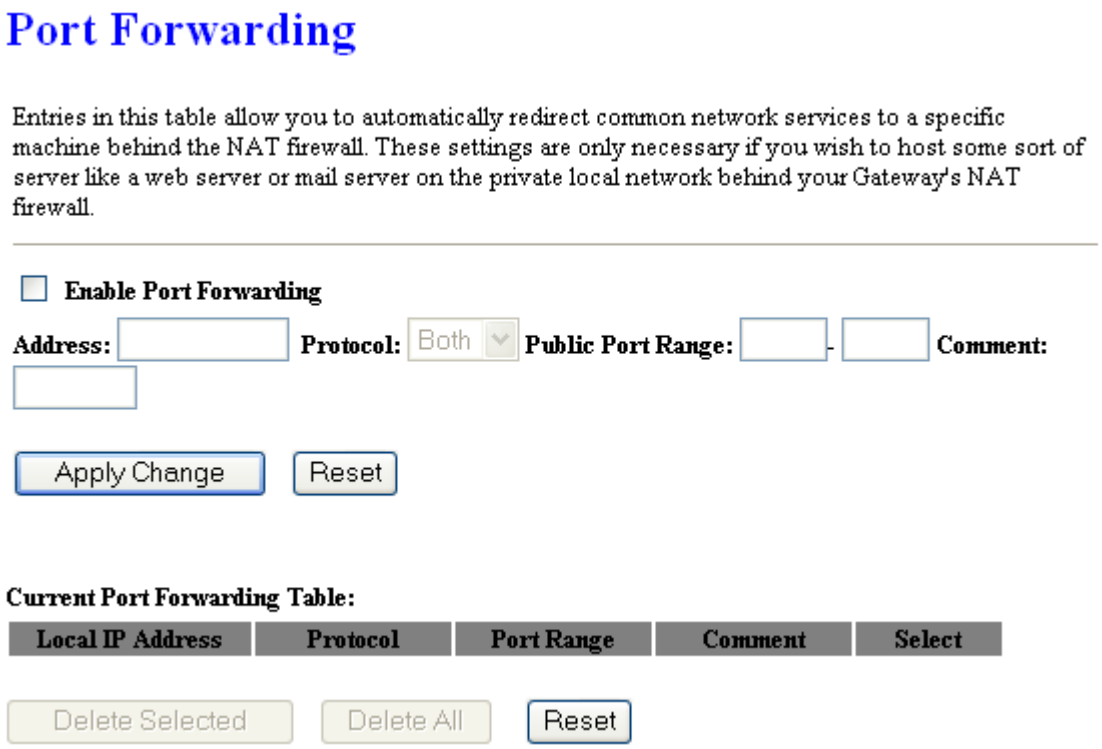


5.3 NAT

NAT is a method of mapping one or more IP addresses and/or services ports into different specified services, where NAT stands for Network Address Translation. It allows the internal IP addresses of many computers on a Local Area Network (LAN) to be translated to one public address, saving users' cost. It also plays a security role by obscuring the true IP addresses of important machines from potential hackers on the Internet. For convenience, we called a router having the NAT facility as a NAT-enabled router.

5.3.1 Visual Server

To offer services, like WWW, FTP, provided by a server in your local network accessible for outside users, you should specify a local IP address to the server. Then, add the IP address and network protocol type, port number, and name of the service in the following list. Based on the list, the gateway will forward service request from outside users to the corresponding local server.



1. Enable Port Forwarding

Enable Port Forwarding to allow an external user to reach a port within a private LAN.

2. IP Address

Specify the private IP address of the internal host offering the service.

3. Protocol

Specify the transport layer protocol (TCP or UDP).

4. Port Range

Enter the Start and End ports in the range you'd like to forward. If you're just forwarding 1 port, set them both equal. For example 80-80 or 20-22。

5. Comment

You can add comments for this port forwarding rule.

6. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

7. Current Port Forwarding Table

It will display all port forwarding regulation you made.

8. Delete Selected & Delete All

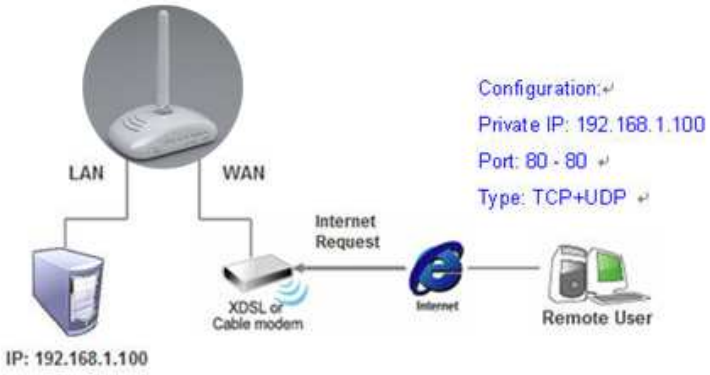
Click **Delete Selected** will delete the selected item. Click **Delete All** will delete all items in this table.

9. Reset

You can click **Reset** to cancel.

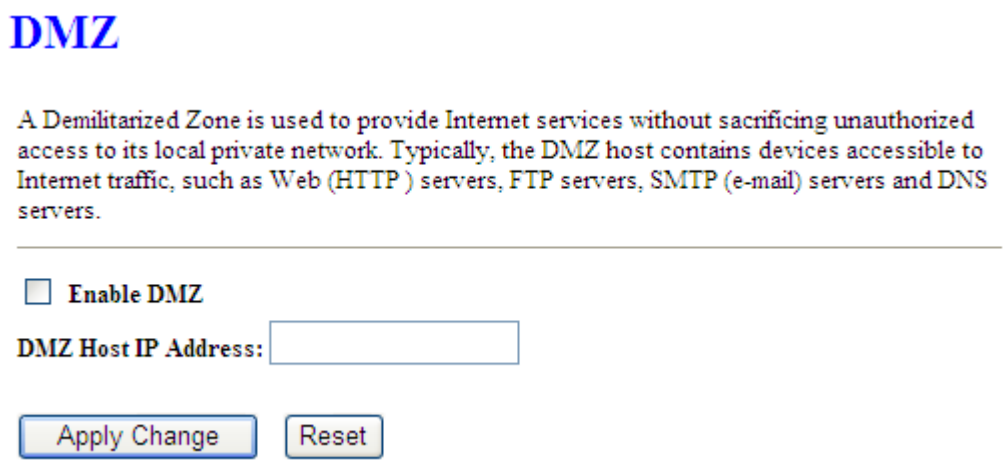
- **Port Forwarding**

  The following figure shows the ip forwarding configuration of your web on a local area network. The web server is located on 192.168.1.100, forwarding port is 80, and type is TCP+UDP.



5.3.2 Visual DMZ

Virtual DMZ allows you to expose one computer to Internet, so that all inbound packets will be redirected to the computer you set. It is useful while you run some applications that use uncertain incoming ports. Please use it carefully.



1. Enable DMZ

Check **Enable** to apply Virtual DMZ for the Router.

2. DMZ Host IP Address

This field stands for the destination IP address that you like to redirect the matched packet to.

3. Apply Changes & Reset

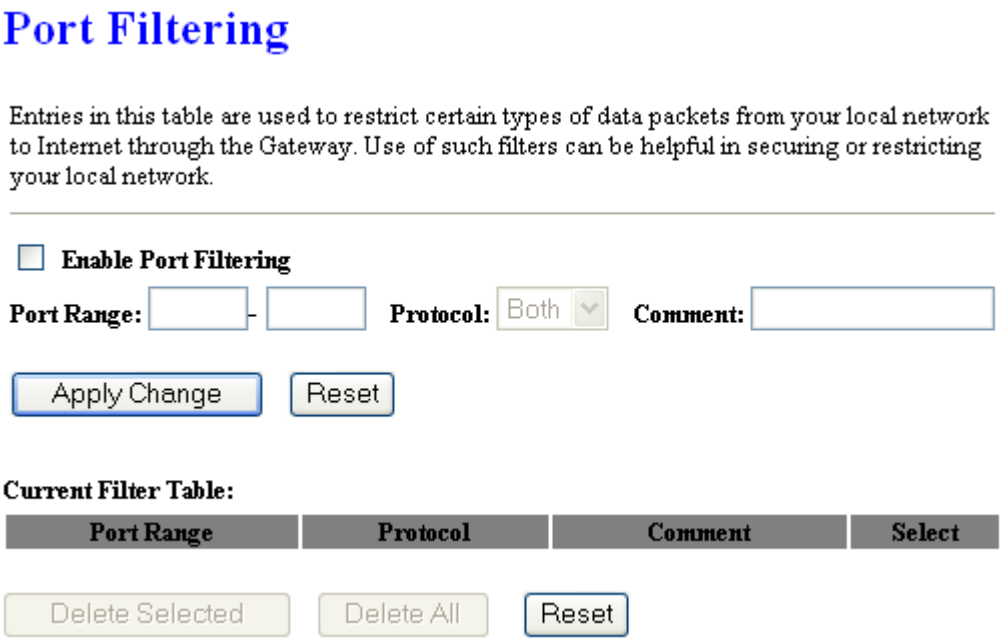
Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

5.4 Firewall

The Firewall function helps to protect your local network against attacks from outside. It also provides a way of restricting users on the local network from accessing the Internet. Additionally, it can filter out specific packets to trigger the router to place an outgoing connection.

5.4.1 Port Filtering

This function allows users to filter and manage specific ports; to limit the use of certain applications to transmit through a specific port. Port filtering helps users to improve the security of your network.



1. Enable Port Filtering

Check **Enable Port Filtering** to start the service.

2. Port Range

Enter the Start and End ports in the range you'd like them to be filtered.

3. Protocol

Please select the protocol type of the port.

4. Comment

You can add comments for this Port Filtering rule.

5. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

6. Current Filter Table

It will display all ports that are filtering now.

7. Delete Selected & Delete All

Click **Delete Selected** will delete the selected item. Click **Delete All** will delete all items in this table.

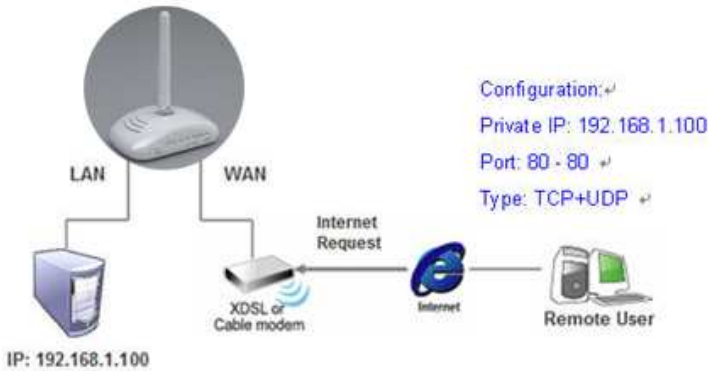
8. Reset

You can click **Reset** to cancel.

- **Port Filtering**

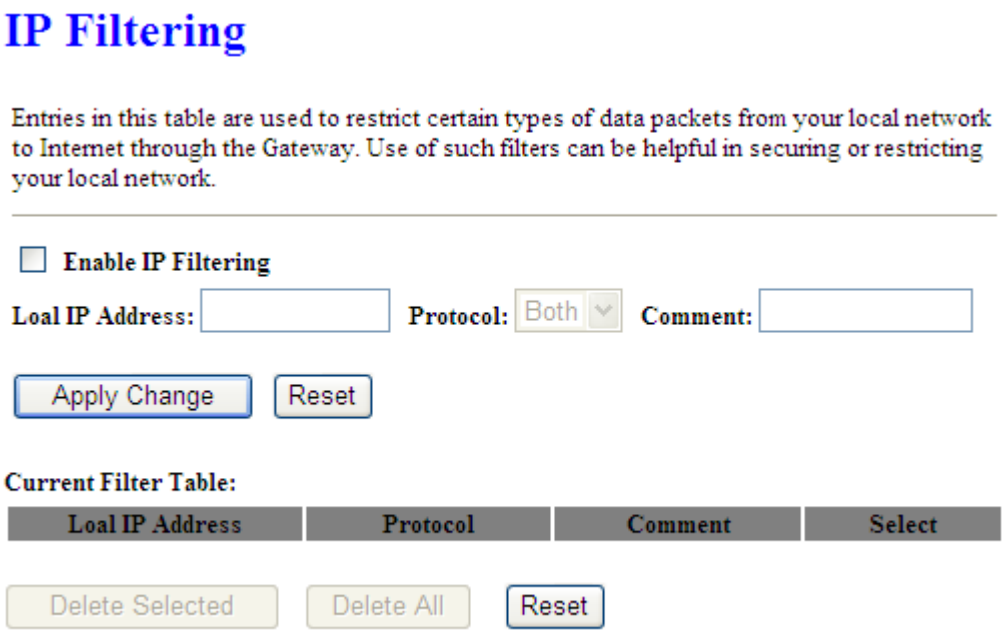
  The following figure shows a user limits some applications to use the 80 port.

  *All clients inside the local area network can't open the 80 port through this router.



5.4.2 IP Filtering

Use IP Filter to deny LAN IP addresses from accessing the Internet. You can deny specific port numbers or all ports for the specific IP address.



1. Enable IP Filtering

Check enable or disable to apply IP Filter function.

2. Local IP Address

Please enter the IP address that needs to be filtered.

3. Protocol

Please select the protocol type of the IP address.

4. Comment

You can add comments for this regulation.

5. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

6. Current Filter Table

It will display all IP addresses that are filtering now.

7. Delete Selected & Delete All

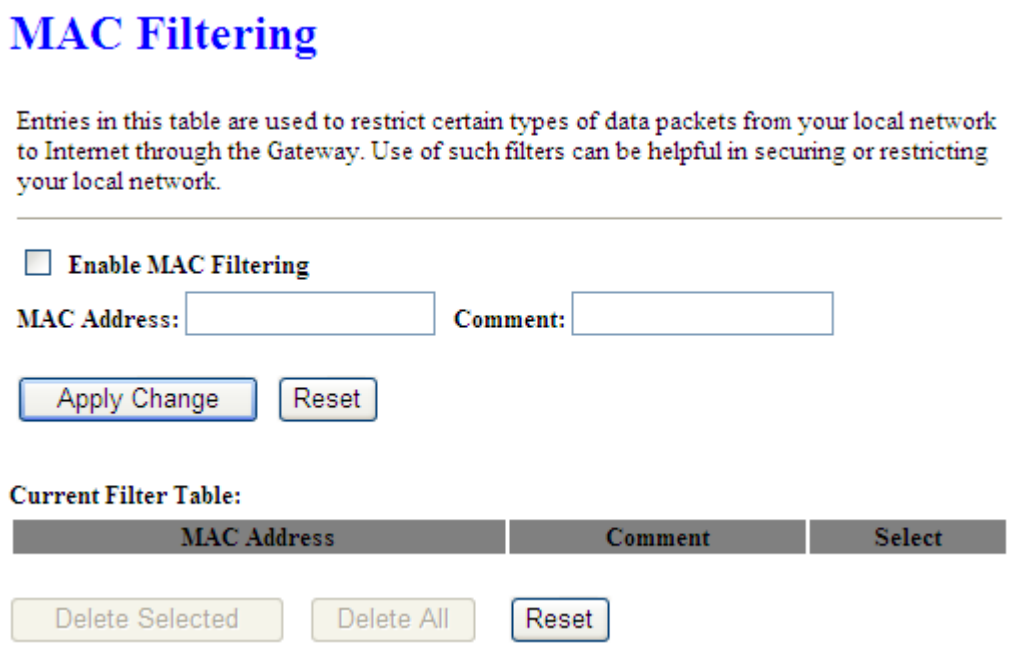
Click **Delete Selected** will delete the selected item. Click **Delete All** will delete all items in this table.

8. Reset

You can click **Reset** to cancel.

5.4.3 MAC Filtering

Use MAC filters to deny LAN computers by their MAC addresses from accessing the Internet. You can manually add a MAC address that is currently connected to 11N Mini Router.



1. Enable MAC Filtering

Check enable or disable to apply MAC Filter function.

2. MAC Address

Enter the MAC address manually that you want to filter.

3. Comment

You can add comments for this MAC Filtering rule.

4. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

5. Current Filter Table

It will display all MAC addresses that are filtering now.

6. Delete Selected & Delete All

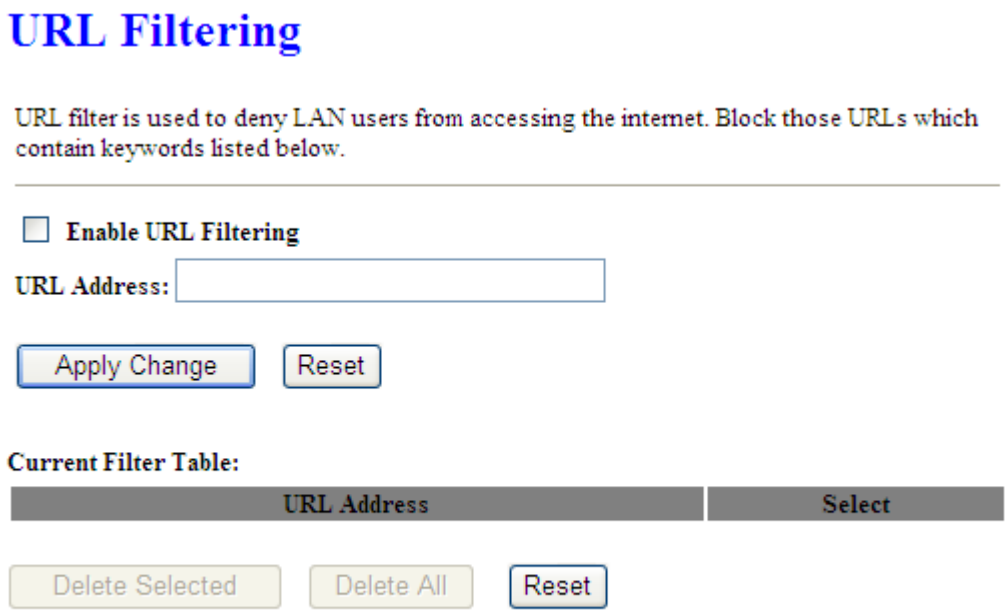
Click **Delete Selected** will delete the selected item. Click **Delete All** will delete all items in this table.

7. Reset

You can click **Reset** to cancel.

5.4.4 URL Filtering

Keyword based URL (Uniform Resource Locator) filtering allows you to define one or more keywords that should not appear in URL's. Any URL containing one or more of these keywords will be blocked. This is a policy independent feature i.e. it cannot be associated to ACL rules. This feature can be independently enabled / disabled, but works only if firewall is enabled.



1. Enable URL Filtering

Check enable or disable to apply URL filter function.

2. URL Address

Enter the URL address into this blank to apply filter blocking, example: “www.yahoo.com.

3. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

4. Current Filter table

Shows all filtered URL information.

5. Delete Selected & Delete All

Click **Delete Selected** will delete the selected item. Click **Delete All** will delete all items in this table.

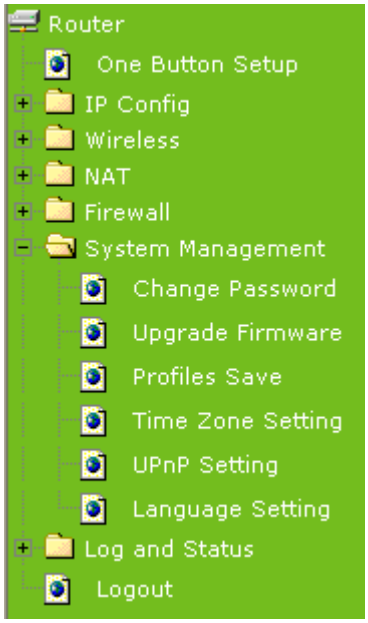
6. Reset

You can click **Reset** to cancel.

Note: URL Filtering cannot work when the Visual Server is enabled. Please disable Visual Server before activate filter.

5.5 System Management

SAPIDO Light N+ Broadband Router provides system management including password changing, firmware upgrade, time setting, user's account setting and other detail settings. Following is detail explanation for each.



5.5.1 Change Password

Users can set or change their password in this section.

1. New Password

Enter the new password you want to change.

2. New Password (Confirm)

Enter the new password again for confirming.

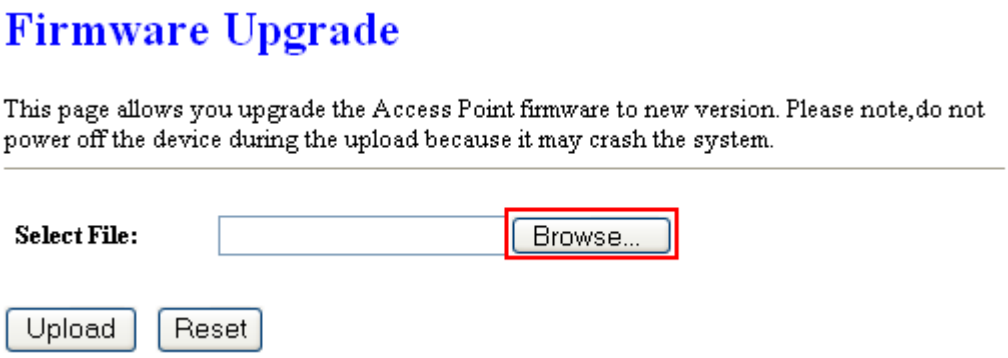
3. Apply & Cancel

Click **Apply** to continue or **Cancel** to clear the settings on this page.

Note: 1. Only the password can be changed, the user name for administrator is **admin** and not to be changed.
2. If you forget administrator's password, please reset 11N WLAN Mobile Server Router to default setting by pressing the "**Reset**" button on the rear panel over 5 seconds. And the password will return to **admin**.

5.5.2 Upgrade Firmware

There is certain risk while upgrading firmware. Upgrading firmware is not recommended unless the significant faulty is found. You can upgrade the firmware of SAPIDO Light N+ Broadband Router on this page. Make sure the firmware you want to use is on the local hard drive of the computer. Click **Upgrade Firmware** to proceed.



1. Update Firmware

Click on **Browse…** button to search your local hard drive and locate the firmware to be used for update.

2. Upload & Reset:

Click **Upload** to upgrade the firmware or **Reset** to restore to factory default Settings

Note: 1. To prevent the firmware upgrading interrupted by other wireless signals and caused failure. We recommend using wired connection to do the upgrading.
2. Before upgrading the firmware, please remove any USB device which connected with this router.
3. The firmware upgrade will not remove your previous settings.

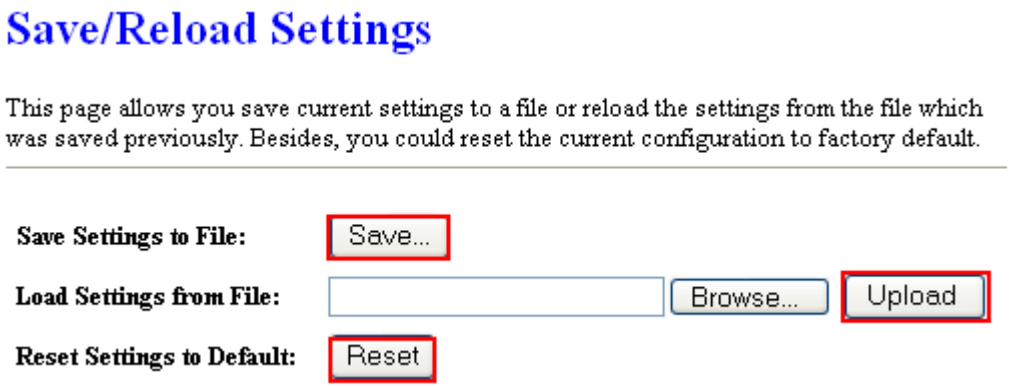
- **Reset button:**

On the back of this router, there is a reset button. If you can not login the administrator page

by forgetting your password; or the router has problem you can't solve. You can push the reset button for 5 seconds with a stick. The router will reboot and all settings will be restored to factory default settings. If the problem still exists, you can visit our web site to see if there is any firmware for download to solve the problem.

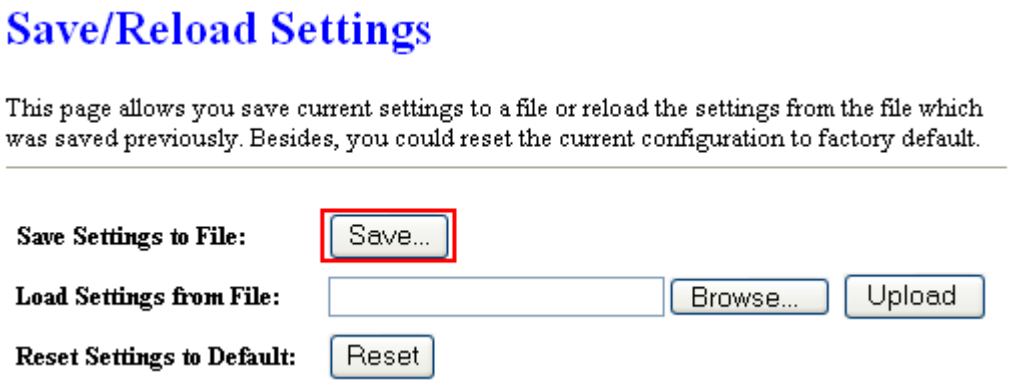
5.5.3 Save / Reload Settings

To back up the current configuration setting or load the backup data, also you can restore SAPIDO Light N+ Broadband Router to default setting by this function.



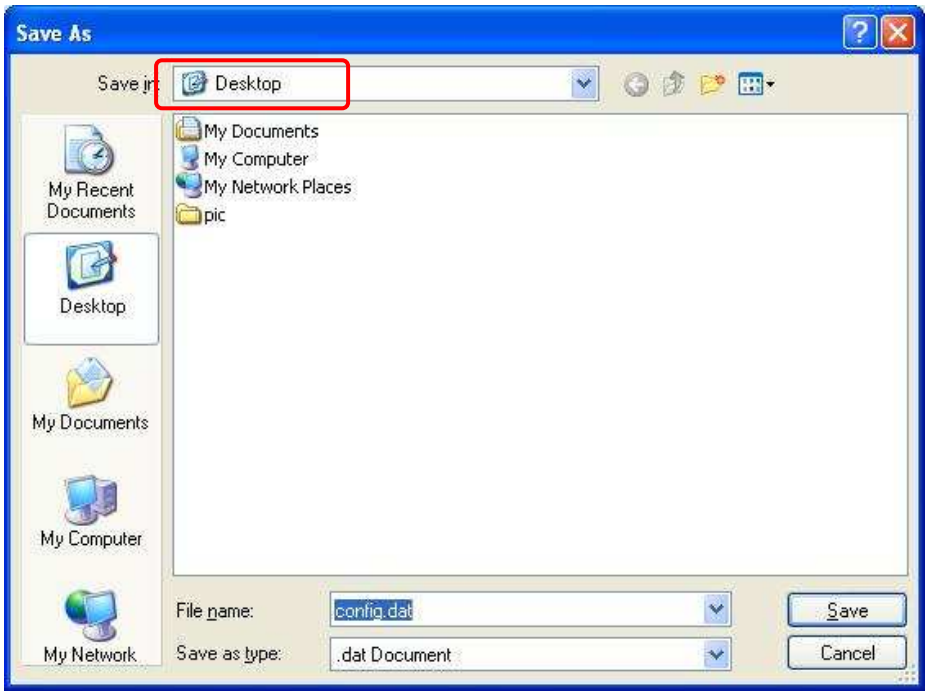
1. Save Settings To File

Step 1. Click on **Save** button for saving the configuration setting into assigned location.

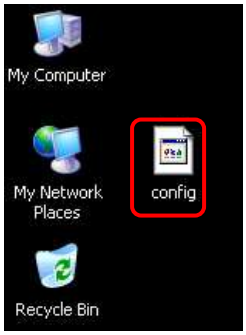


A pop window will show up and ask to save **config.dat** file.

Step 2. Please select the location, for example: the desktop.

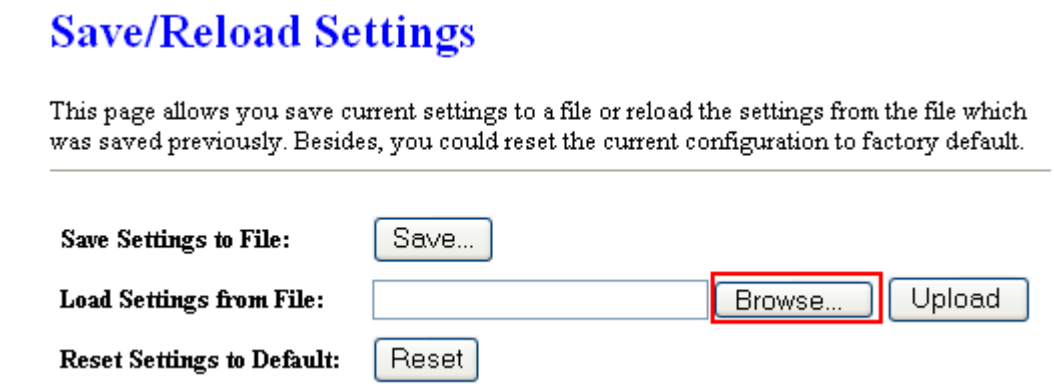


Step 3. The file you just saved will appear on the desktop.

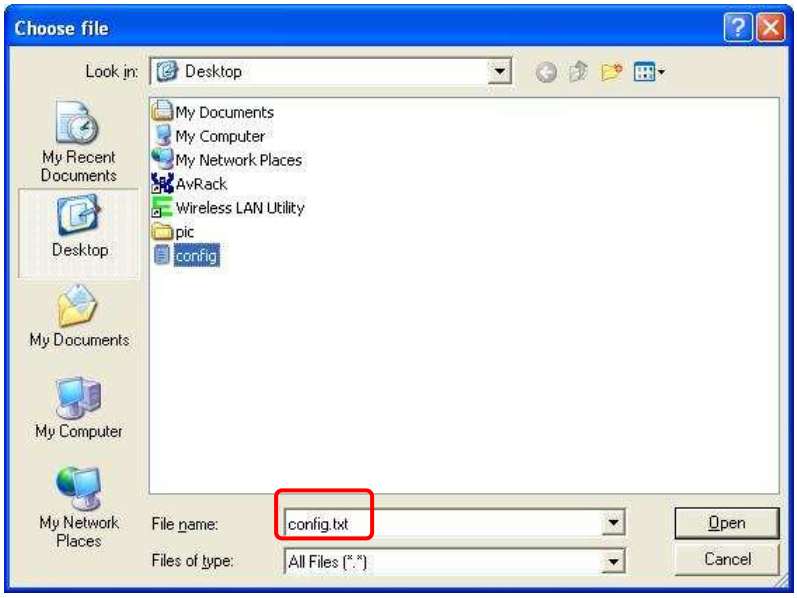


2. Load Settings From File

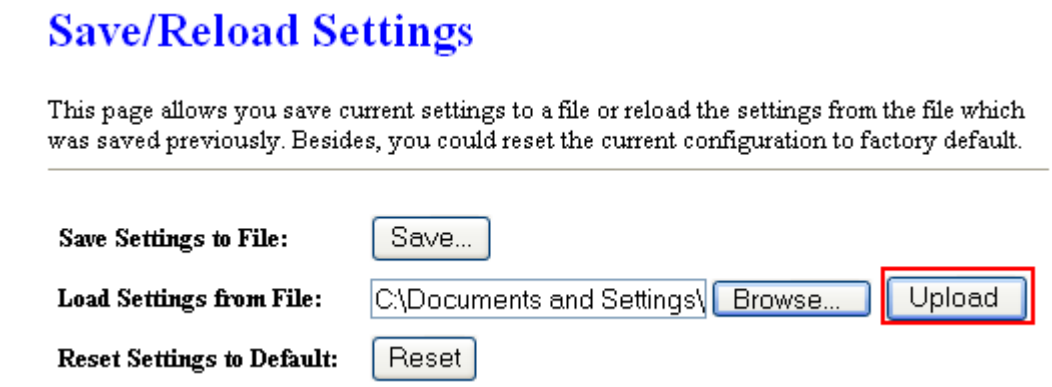
Step 1. Click on "**Browse…**" button for searching the saving configuration from hard drive, and then click on Upload button to load all the settings into the router.



Step 2. Select the **config.dat** file.



Step 3. Click **Upload** to retrieve.

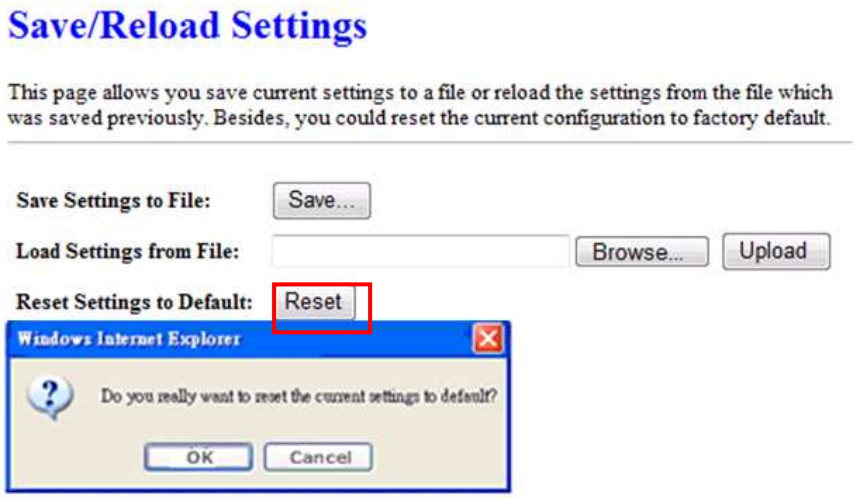


Step 4. When you see the screen below, the updating is completed. Please click OK to

return to the main menu.

3. Reset Setting to Default

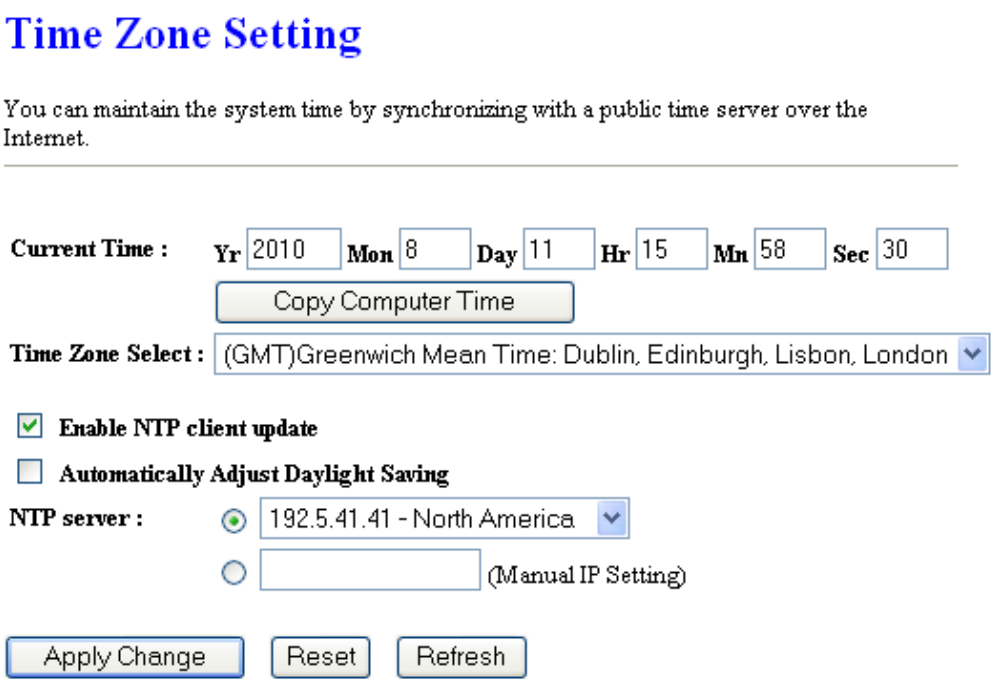
After you have tried other methods for troubleshooting your network, you may choose to restore SAPIDO Light N+ Broadband Router to the factory default settings.



When you see the screen below, the resetting is completed. Please click **OK** and return to the main menu.

5.5.4 Time Zone Setting

The System time is the time used by SAPIDO Light N+ Broadband Router for scheduling services. You can manually set the time or connect to a NTP (Network Time Protocol) server. If a NTP server is set, you will only need to set the time zone. If you manually set the time, you may also set Daylight Saving dates and the system time will automatically adjust on those dates.



1. Current Time

Users can input the time manually.

2. Time Zone Select

Select your time zone location from the drop-down list.

3. Enable NTP client update

Check to enable NTP client update.

4. Automatically Adjust Daylight Saving

If you are in daylight saving time area, please enable this item.

5. NTP server

Please select the NTP server from the pull-down list, or you can enter the NTP server IP address manually.

6. Apply Changes & Reset & Refresh

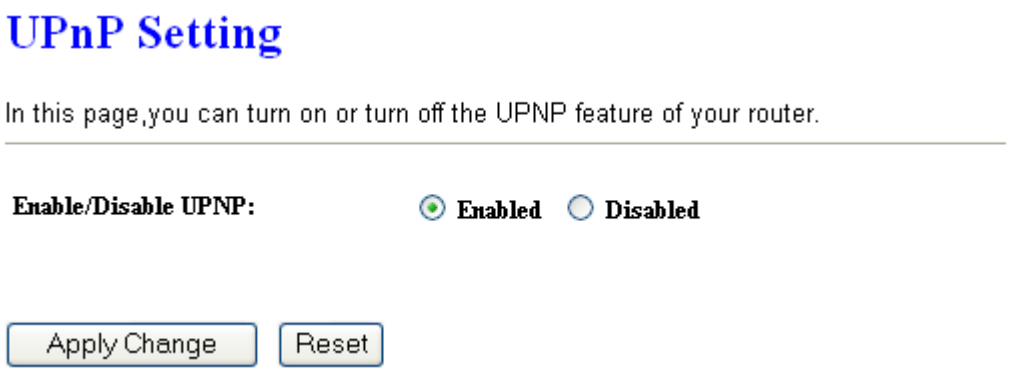
Please click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data. Or you may click on **Refresh** to update the system time on the screen.

7. NTP Server Type & Default NTP Server

Choose **"General Time Server" and select** the NTP Server from the drop-down list or choose "Customized Time Server" and enter the server by manual.

5.5.5 UPnP Setting

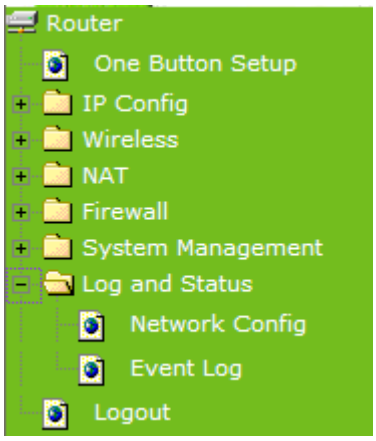
UPnP (Univsersal Plug and Play) allows users to connect their UPnP-enabled Mini Router, printer server and other devices right to the network with zero-configuration, meaning easier setup for installing the device on the network. The automatic discovery feature enables the device to obtain an IP address, present and describe itself to other devices and PCs on the network without having to install drivers, but to configure and use those devices.



After enabling UPNP, click **My Network Places,** and user can open the web GUI by just clicking on the **Internet Gateway Device** icon.

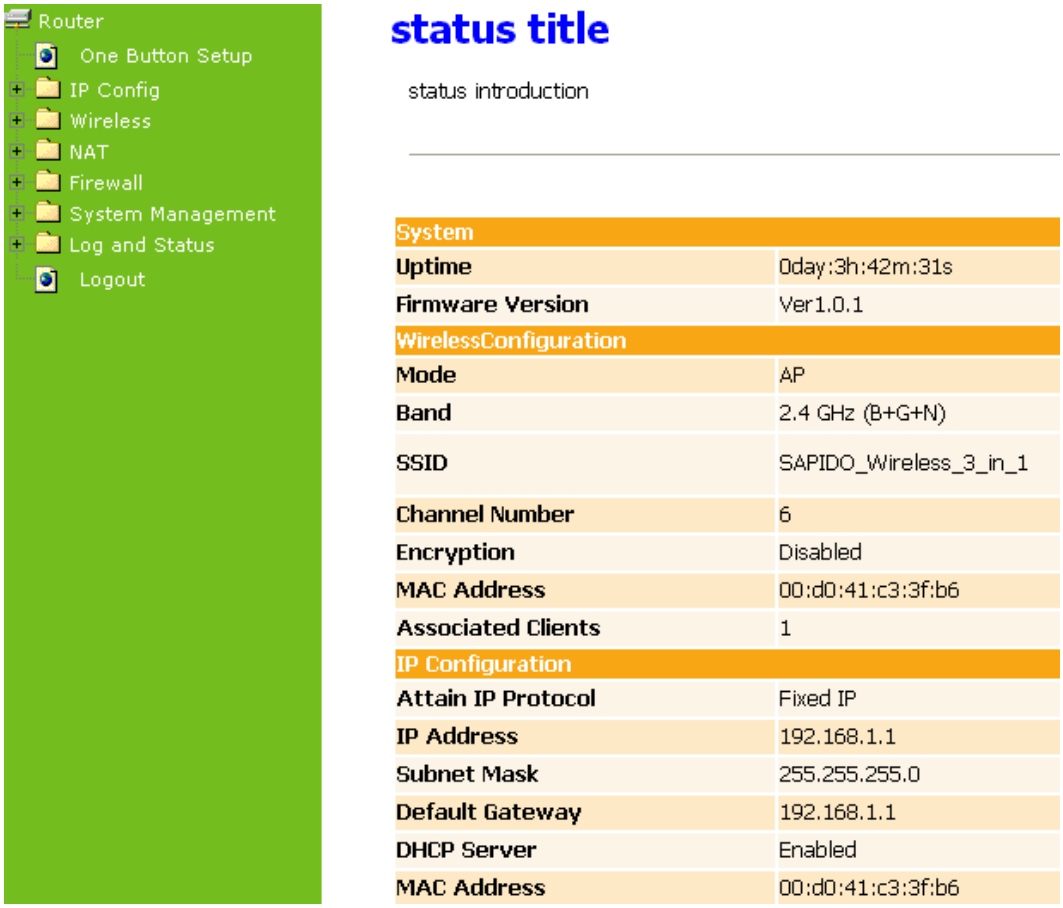
5.6 Log & Status

SAPIDO Light N+ Broadband Router provides the log list and connection status for user to check.



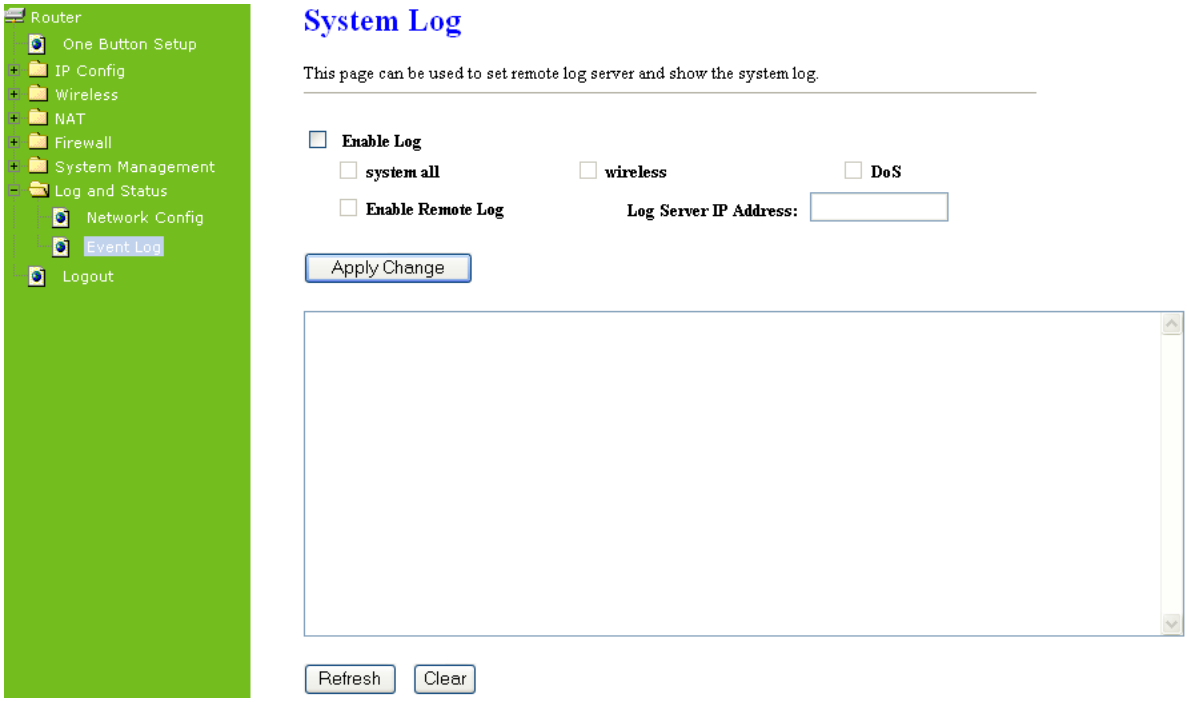
5.6.1 Network Config

Network Configuration shows the firmware version and the connection status of LAN, WAN and Wireless.



5.6.2 Event Log

SAPIDO Light N+ Broadband Router provides system logs for review.



1. Enable Log

Select Enable Log to record the system log

2. system all, wireless & DoS

Select **Wireless, DoS** or **system all** to record

3. Enable Remote Log

You may choose to enable the remote event log or not.

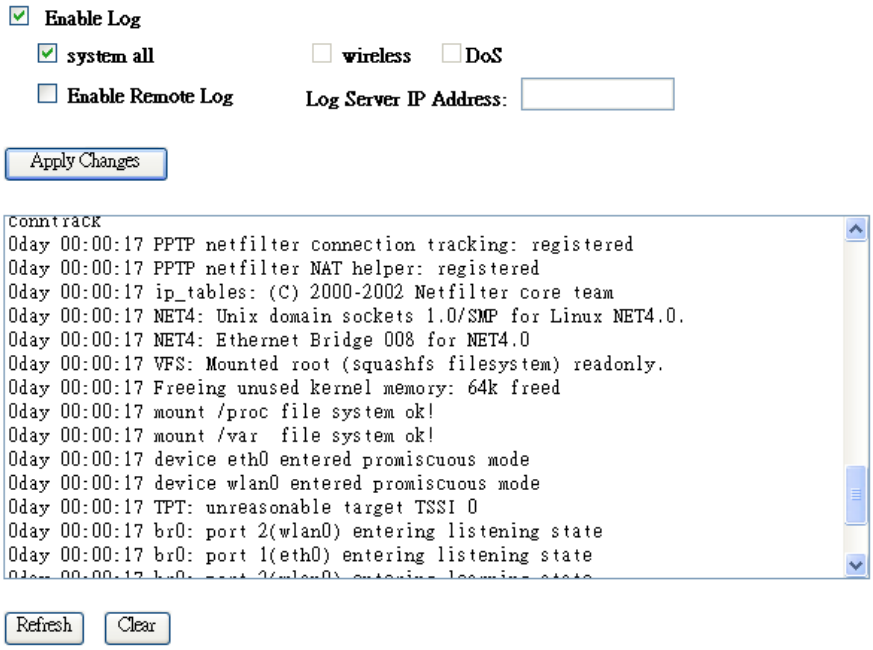
4. Log Server IP Address

Please input the log server IP Address.

5. Apply Changes & Refresh & Clear

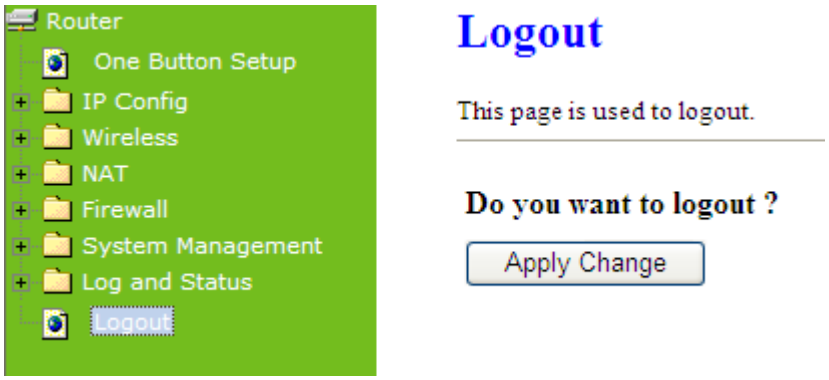
Click on **Apply Changes** to save the setting data. Click on **Refresh** to renew the system time, or on **Clear** to clear all the record.

- After clicking **Apply Changes** to record the event log, it will be shown as the example below.



5.7 Logout

Click **Logout** on the bottom menu to exit and go back to GUI login home page.



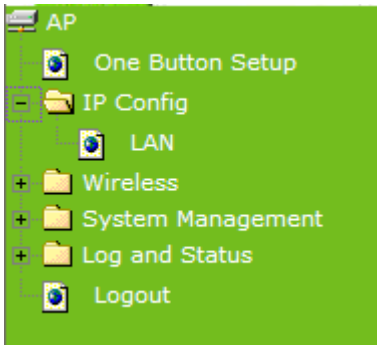
Chapter 6 Advance Configuration for AP Mode

6.1 IP Configuration

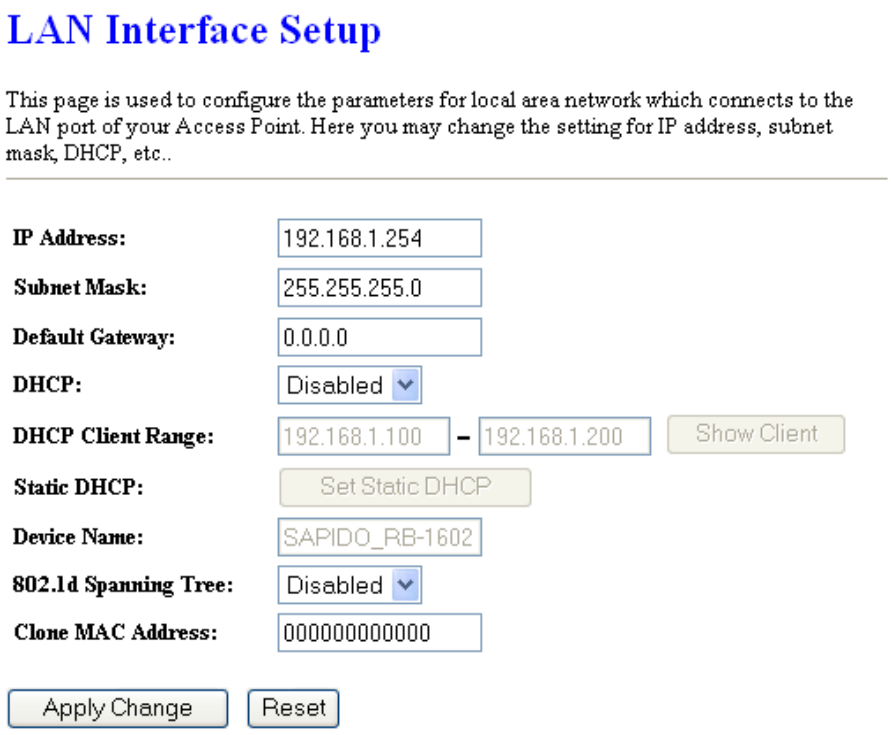
This function allows you to add routing rules into 11N Mini Router, including LAN and Site Survey.

6.1.1 LAN Setup

Use this page to set up the local IP address and subnet mask for your router. Please select **LAN** under the **IP Config** menu and follow the instructions below to enter the LAN setting page to configure the settings you want.



6.1.2 LAN Interface Setup



1. IP Address

The default value of LAN IP address is **192.168.1.254** for this router.

2. Subnet Mask

Input Subnet Mask, normally it is **255.255.255.0**.

3. Default Gateway

Input ISP Default Gateway Address. If you don't know, please check with your ISP.

4. DHCP

Enable or disable DHCP services. The DHCP server will automatically allocate an unused IP address from the IP address pool to the requesting computer if enabled.

5. DHCP Client Range

Define the DHCP client range and then the DHCP server will assign an IP to the requesting computer from this range. The **Show Client** will display every assigned IP address, MAC address, and expired time. The default range is 192.168.1.100 - 192.168.1.200.

6. 802.1d Spanning Tree

IEEE 802.1d Spanning Tree Protocol (STP) is a link layer network protocol that ensures a loop-free topology for any bridged LAN. The main purpose of STP is to ensure that you do not create loops when you have redundant paths in your network. Loops are deadly to a network.

7. Clone MAC Address

Copy the MAC address from the device you had registered to your ISP if your ISP asks for the specific MAC Address.

8. Apply Changes & Reset

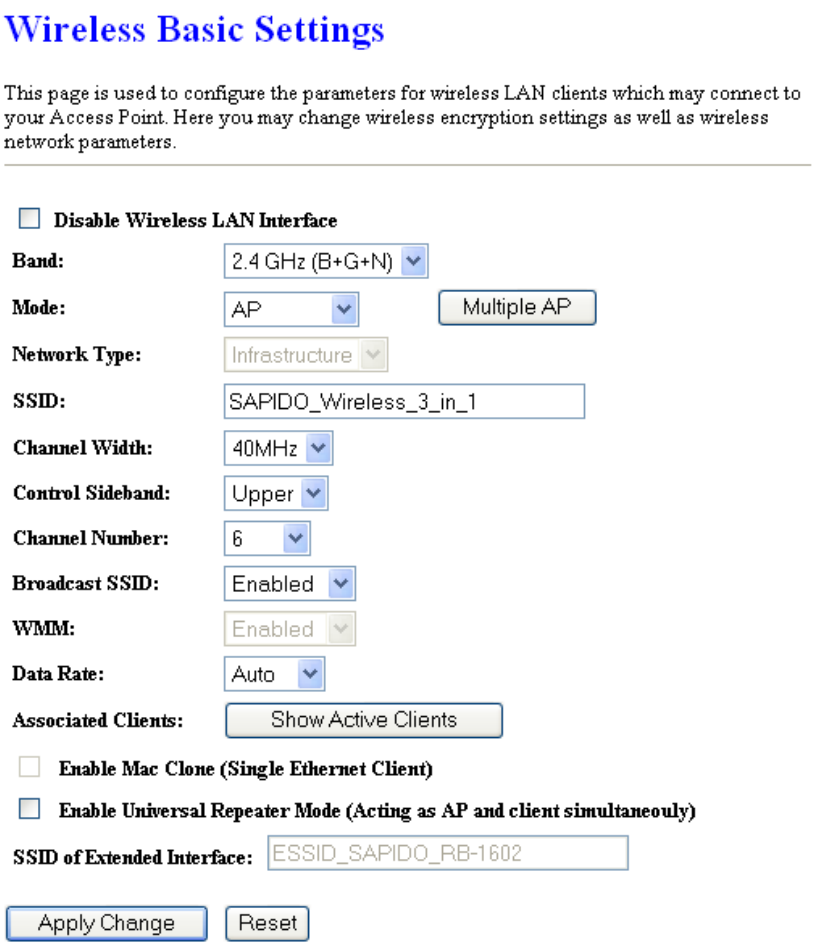
Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

6.2 Wireless Setup

Please select **Wireless** under the main menu.

6.2.1 Wireless Basic Settings

Follow the instructions to configure the **Wireless** settings.



1. Disable Wireless LAN Interface

Select **Disable Wireless LAN Interface** to turn off the wireless function.

2. Band

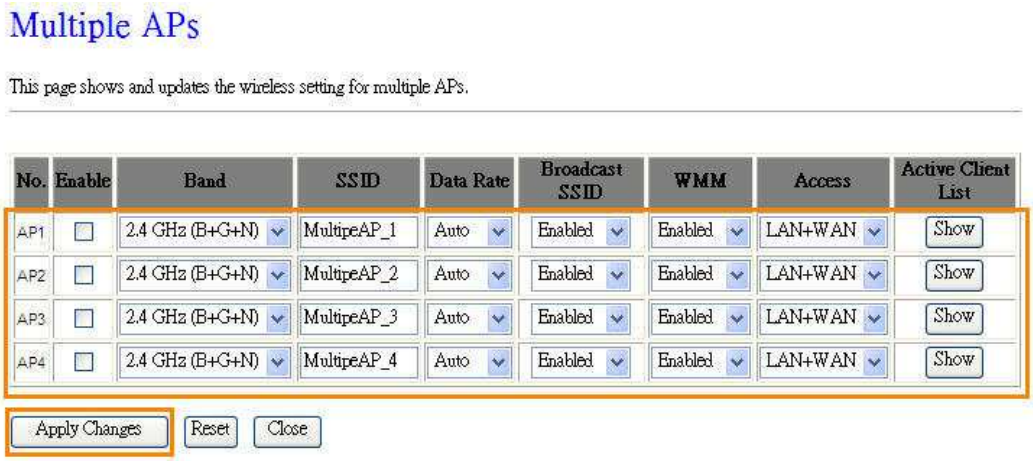
This field indicates the 802.11x interface mode. For example, "**2.4GHz(G)**" prevents the 802.11b clients from accessing the router. "**2.4GHz(B+G)**" allows both 802.11b and 802.11g clients to access the router. There are 6 options, 2.4 GHz (B/G/N/B+G/G+N/B+G+N) from the drop down list.

3. Mode

Select **AP, WDS,** or **AP+WDS** to allow or disallow the wireless operation.

- **Multiple APs**

Click Multiple APs to set up 4 different SSIDs to deploy a shared WLAN. Users can add or limit the properties for each SSID, increasing the flexibility and efficiency of the network.



(1.) **Enable:** check it for enable or not.

(2.) **Band**: select the frequency from the drop down list.

(3.) **SSID:** please enter different SSID in each class.

(4.) **Data Rate:** please select the data transmission rate.

(5.) **Access:** defined the access type.

a. LAN+WAN: the client can access to the Internet and connect to 11N Mobile Router's GUI to setup.

b. WAN: the client can only access to the Internet.

(6.) **Active Client List:** display the properties of the client which is connecting successfully.

(7.) **Apply Changes:** Please click **Apply Changes** to initiate or click **Reset** to cancel.

4. Network Type：

Please select “**Infrastructure**” or “**Ad hoc**.” The default is “**Infrastructure**.” The selection is disabled when wireless mode is selected to AP.

5. SSID：

Please input your wireless network name. Default is “11N_Mini_Router”.

6. Channel Width

Please select “**20MHZ**” or “**40MHZ**” channel width to change the transmission channels.

7. ControlSideband

Setting the Sideband "**Upper**" or "**Lower.**”

8. Channel Number

Please select your wireless network channel. There are Auto, 2~11.

9. Broadcast SSID

Enable or disable the SSID broadcast function. Disable this feature can provide more security of your WLAN.

10. Data Rate

Rate at which data can be communicated (bps); auto, 1M, 2M, 5.5M, 11M, 6M, 9M, 12M, 18M, 24M, 36M, 48M or 54M to be selected from the drop-down list.

11. Associated Clients

Check the WiFi ISP connectors and the connecting status.

12. Enable Mac Clone (Single Ethernet Client)

Copy the MAC Address for identity of some ISPs.

13. Enable Universal Repeater Mode (Acting as AP and Client simultaneously)

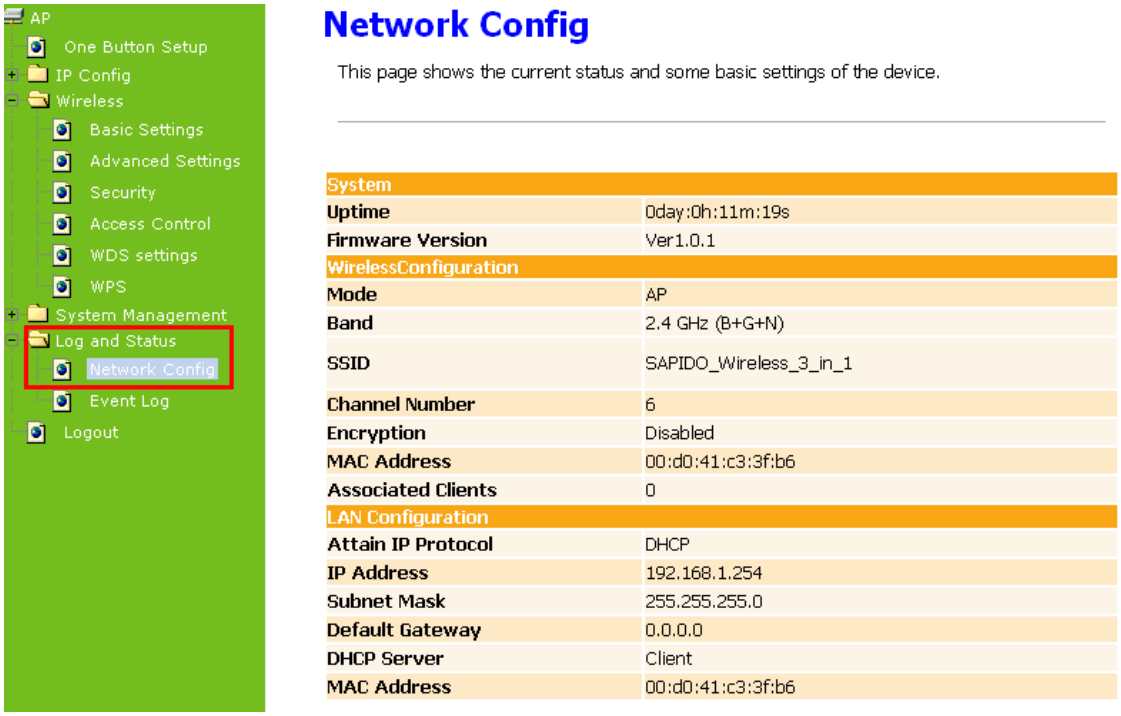
Enable **Universal Repeater Mode**, SAPIDO Light N+ Broadband Router will act as a wireless AP and AP client at the same time, and able to link to another AP.. It uses AP client function to connect to a Root AP (any AP) and uses AP function to service all wireless

stations within its coverage. All the stations within the coverage of SAPIDO Light N+ Broadband Router can be bridged to the Root AP. It can help user to extend the coverage of wireless network.

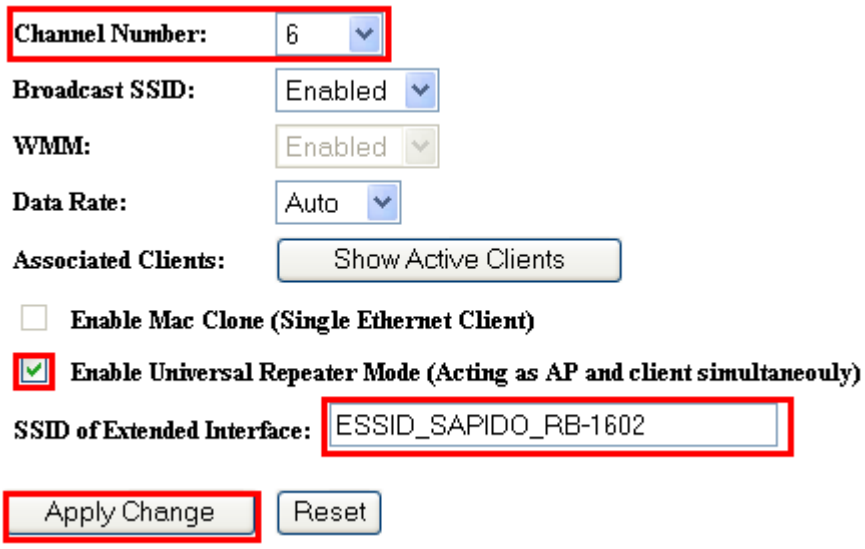
- **How to Enable URM (Universal Repeater Mode)**

User could enable URM in wireless basic setting page as shown in following figures.

Step 1. Get back to menu "**Network Config**" and write down the SSID, channel and security.

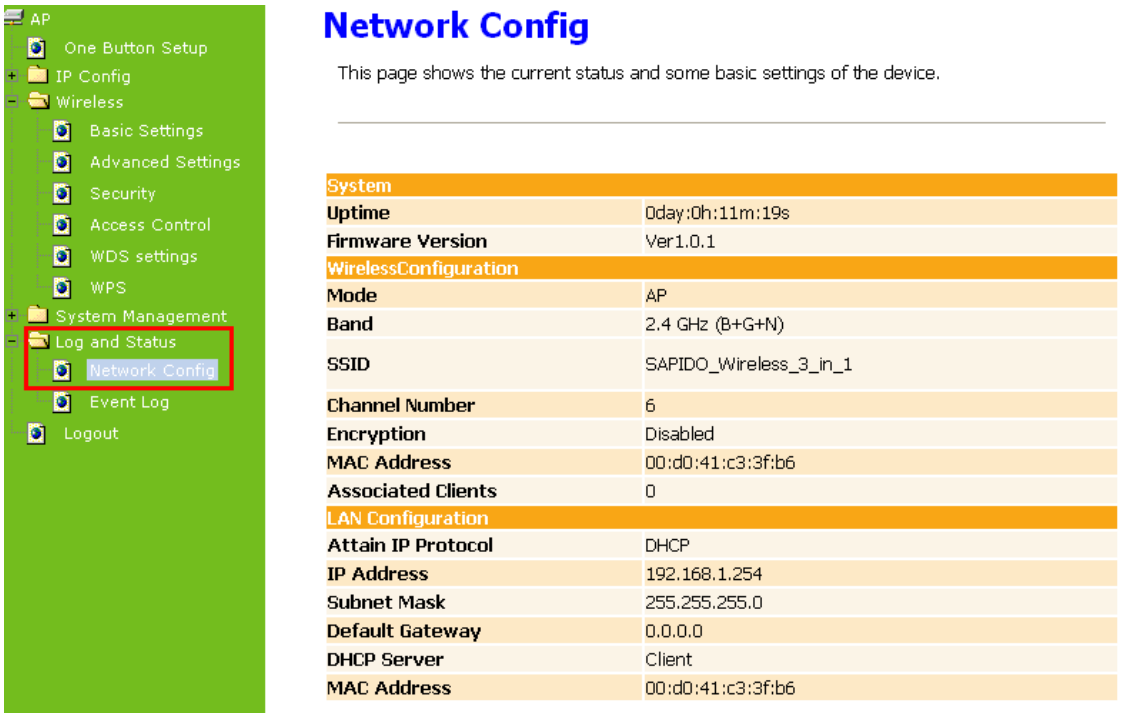


Step 2. Setting the same SSID, channel and security you got form "Network Config" and Click on **Apply Changes** to save the setting



Note: The DHCP server should be disabled under menu "**LAN Interface Setup**" and then the URM could be enabled.

Step 3. Check the AP connectors and the Wireless connecting status.



14. SSID of Extended Interface

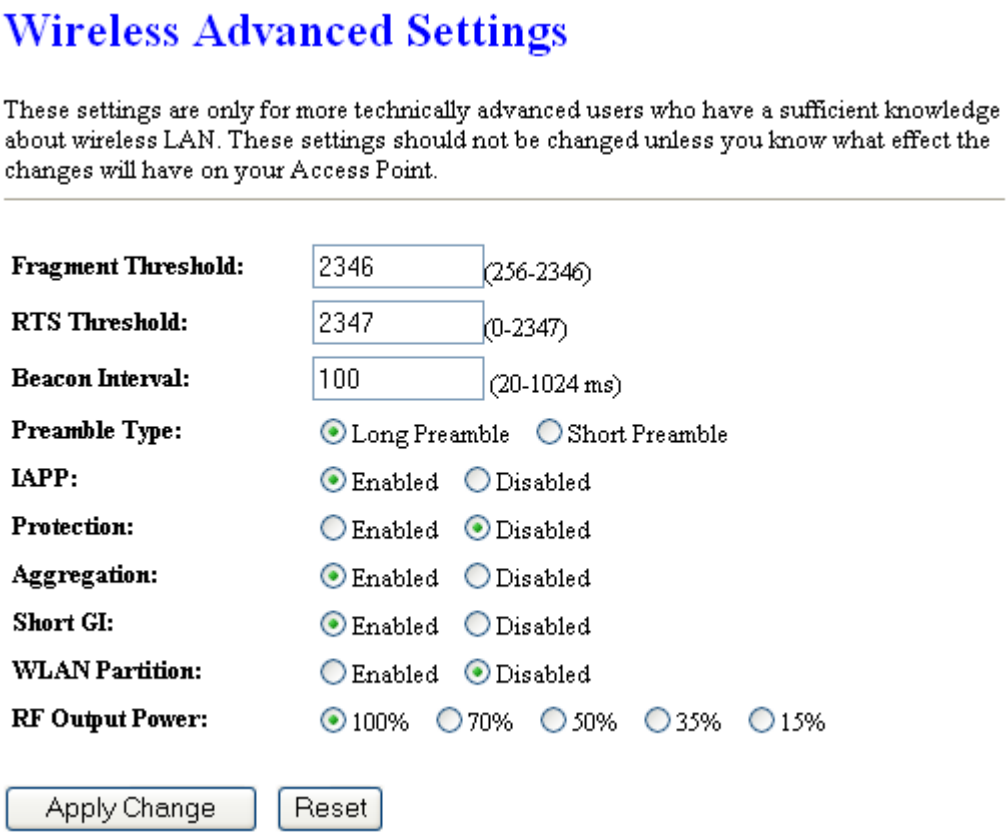
When mode is set to "AP" and Universal Repeater Mode is enabled, user should input SSID of another AP (the upper level device) in the field of **SSID of Extended Interface**.

15. Apply Changes & Reset

Click on "**Apply Changes**" to save the setting data. Or you may click on "**Reset**" to clear all the input data.

6.2.2 Wireless Advanced Settings

Please follow the instructions to configure the **Wireless** settings.



1. Fragment Threshold

To identify the maximum length of packet, the overflow packet length wil be fragmentized. The allowed range is 256-2364, and default length is 2346 bytes.

2. RTS Threshold

This value should remain at its default setting of 2347. The range is 0~2347. Should you encounter inconsistent data flow, only minor modifications are recommended. If a network packet is smaller than the present RTS threshold size, the RTS/CTS mechanism will not be enabled. The router sends Request to Send (RTS) frames to a particular receiving station and negotiates the sending of a data frame. After receiving an RTS, the wireless station responds with a Clear to Send (CTS) frame to acknowledge the right to begin transmission. Fill the range from 0 to 2347 into this blank.

3. Beacon Interval

Beacons are packets sent by an access point to synchronize a wireless network. Specify a beacon interval value. The allowed setting range is 20-1024 ms.

4. Preamble Type

The preamble (also called “a header”) is a section of data at the head of a packet that contains information that wireless devices need when they send and receive packets. Short preambles improve throughput performance, but some wireless devices require long preambles. Select the suitable preamble as short or long preamble.

5. IAPP

Inter Access Point Protocol. Allow seamless roaming between Access Points in your wireless network. Coupled with superior RF performance

6. Protection

Select to enable the wireless protection or not.

7. Aggregation

Data aggregation can reduce the amount of data routed through the network, and increasing throughput.

8. Short GI

Enabling the Short Guard Interval increases the wireless transmission.

9. RF Output Power

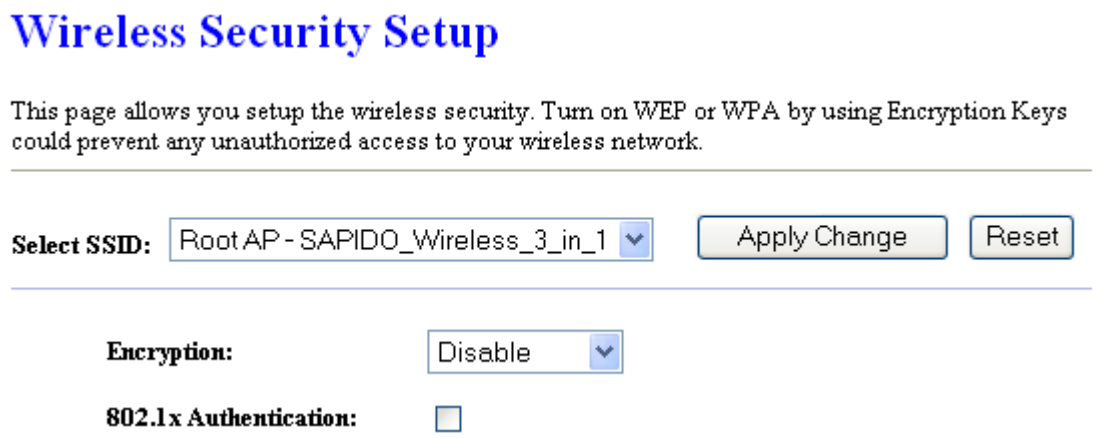
User can adjust the RF output power to get the best wireless connection. There are 5 power types available: 100%, 70%, 50%, 35%, and 15%.

10. Apply Changes & Reset

Click on “Apply Changes” to save the setting data. Or you may click on “Reset” to clear all the input data.

6.2.3 Wireless Security Setup

4 encryption types can be selected here, please follow the instructions below for each.



1. Encryption – WEP

Enabling WEP can protect your data from eavesdroppers. If you do not need this feature, select "**None**" to skip the following setting. SAPIDO Light N+ Broadband Router supports both 64-bit and 128-bit encryption using the Wired Equivalent Privacy (WEP) algorithm. Select the type of encryption you want to use (64 or 128 bit) and configure one to four WEP Keys. The "1280bit" method is more secure than the "64-bit".

- **Use 802.1x Authentication**

  Enable 802.1x Authentication so that a wireless node must be authenticated before it can gain access to other LAN resources.

Key Length: For 64bits WEP key, either 5 ASCII characters or 10 hexadecimal digitals leading by 0x can be entered. For 128bits WEP key, either 13 ASCII characters or 26 hexadecimal digits leading by 0x can be entered.

Note: 128 bits WEP is most secure, but has more encryption/decryption overhead. Note that all wireless devices must support the same WEP encryption bit size and have the same key. Four keys can be entered here, but only one key can be selected at a time. The keys can be entered in ASCII or Hexadecimal. Select the item from drop-down list you wish to use.

Encryption Key: At most four keys can be set. A WEP key is either 10 or 26 hexadecimal digits (0~9, a~f, and A~F) based on whether you select 64 bit or 128 bit in the WEP drop-down list.

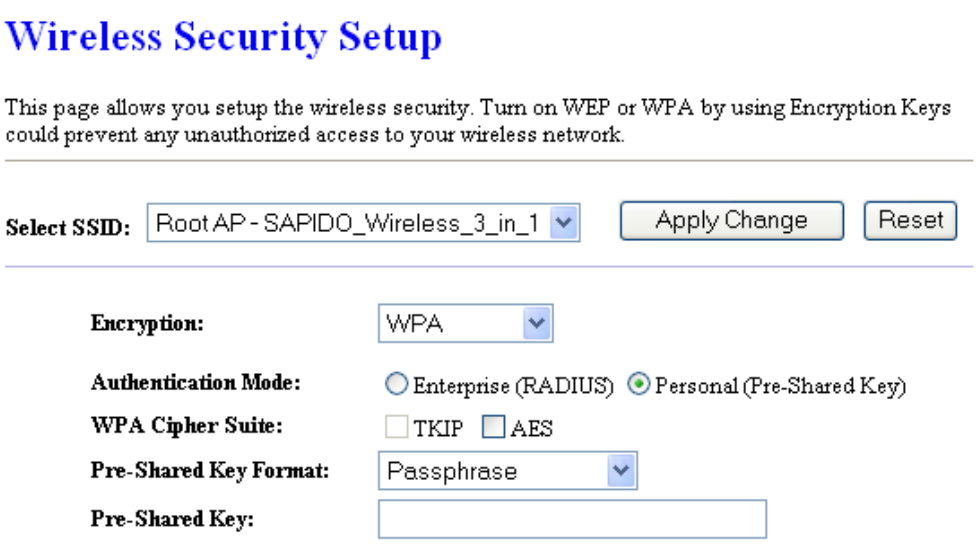
2. Encryption – WPA (WPA, WPA2 & WPA2 Mixed)

The WPA, WPA2 & WPA2 Mixed encrypt each frame transmitted from the radio using the pre-shared key (PSK) which entered from this panel or a key got dynamically through 802.1x.

- **WPA Authentication Mode**

Enterprise (RADIUS): Please input the port, IP address, and password of authentication RADIUS Server.

Personal (Pre-Shared Key): Pre-Shared Key type is coding in ASCII, and the length is between 8 to 63 characters. If the coding is in Hex, the key length is 64 characters.

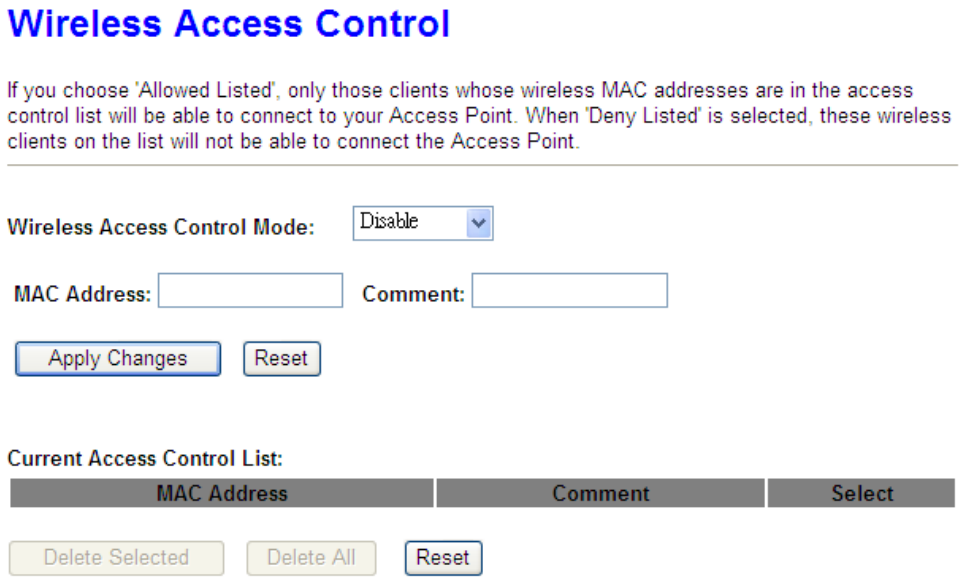


3. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

6.2.4 Wireless Access Control

With the MAC address, you may allow or disallow the access to your AP.



1. Wireless Access Control Mode

"**Allowed Listed**" means only the MAC address listed on the allowed list can access to your wireless network.

"Deny Listed" means the listed MAC Address are not allowed to link to your wireless network.

"**Disable**" for function disuse.

2. MAC Address

Please input the allowed or denied MAC address, for example, 001122334455.

3. Comment

You may input the comments for the set MAC Address.

4. Apply Changes & Reset

Click on "Apply Change" to save the setting data. Or you may click on "Reset" to clear all the input data.

5. Current Access Control List

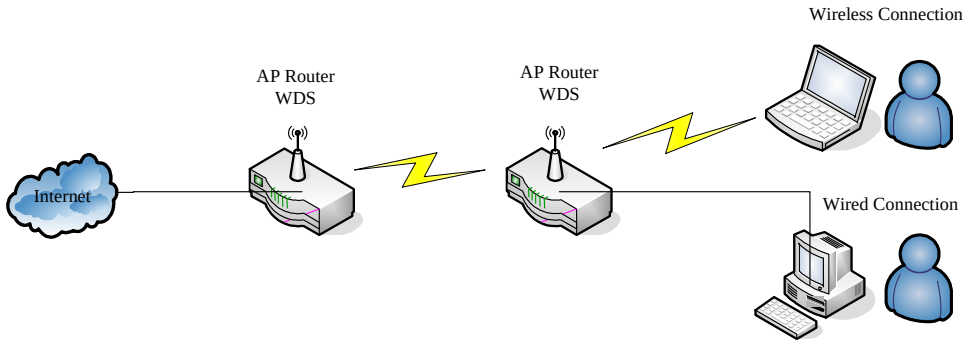
In this list, all the MAC info you input will be displayed.

6. Delete Selected and Delete All

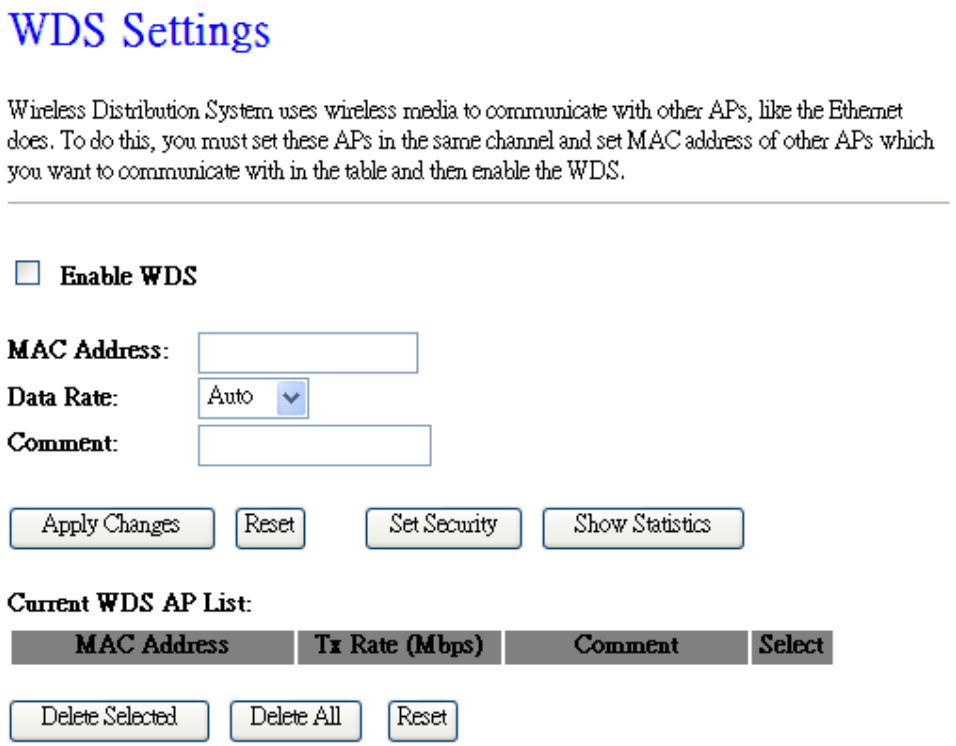
Click on “**Delete Selected**” to erase the selected MAC address. Click on “**Delete All**” to erase all the entered MAC Address.

6.2.5 WDS Settings

WDS (Wireless Distribution System) is a Wireless Access Point mode that enables wireless bridging in which only WDS APs communicate with each other (without allowing for wireless clients or stations to access them), and/or wireless repeating in which APs communicate both with each other and with wireless stations (at the expense of half the throughput).



Please follow the instructions to setup WDS connections.

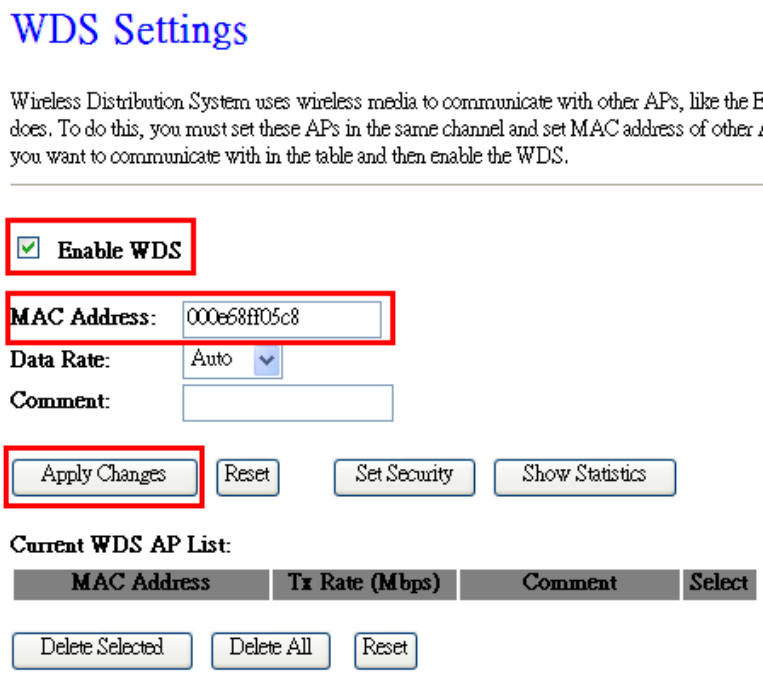


Step 1. Check the MAC address and Channel number of the device you want to setup WDS with 11N Mini Router.

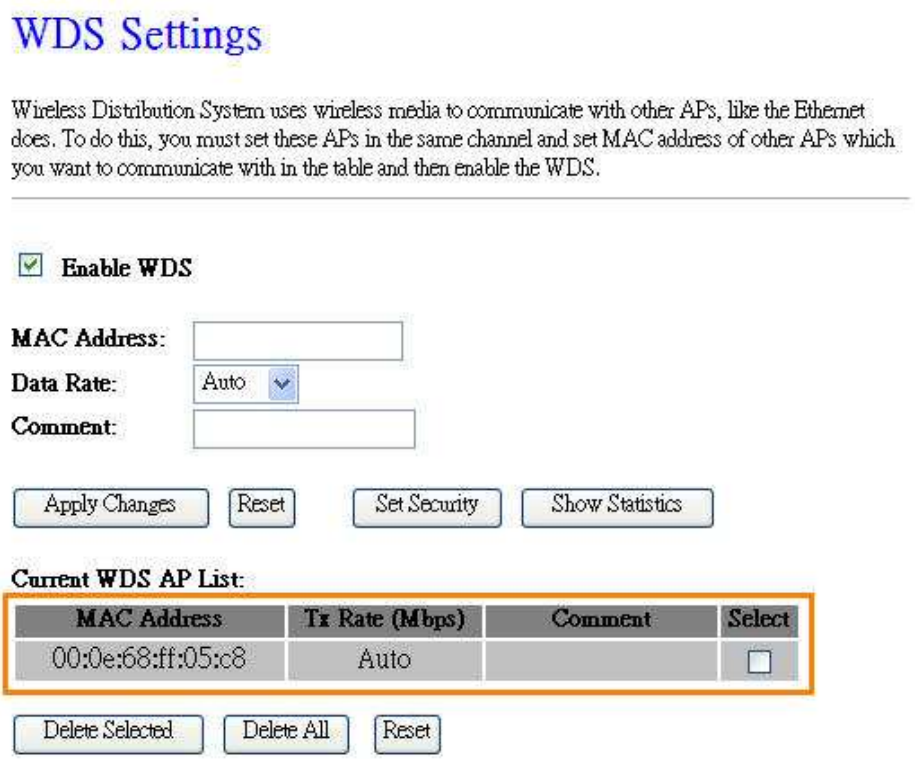
WirelessConfiguration	
Mode	AP
Band	2.4 GHz (B+G+N)
SSID	SAPIDO_Wireless_3_in_1
Channel Number	6
Encryption	Disabled
MAC Address	00:d0:41:c3:3f:b6
Associated Clients	0
LAN Configuration	
Attain IP Protocol	DHCP
IP Address	192.168.1.254
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
DHCP Server	Client
MAC Address	00:d0:41:c3:3f:b6

Step 2. Get back to the menu "**Wireless Basic Settings**" of 11N Mini Router. Select **AP+WDS** mode, and then select the Channel Number. Click **Apply Changes** to save the setting data.

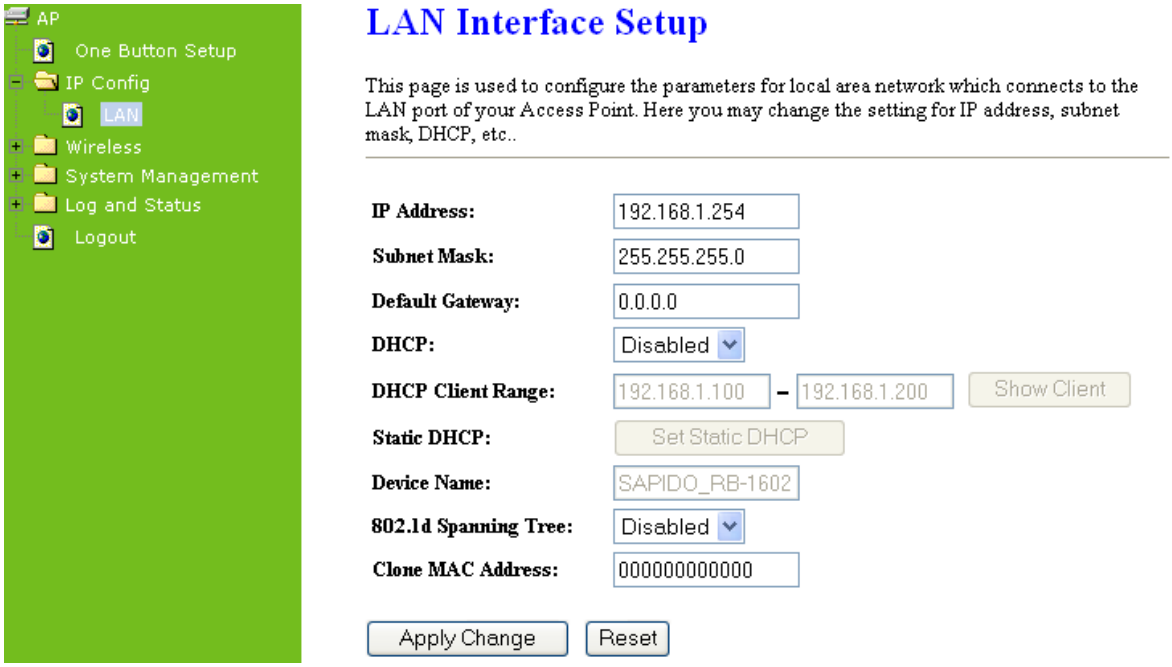
Step 3. Enter the WDS Settings page, select **Enable WDS**, and then input the **MAC address** of the paired device. Click **Apply Changes** to save the setting data.



Step 4. When the time counts down to 0, you will see the MAC address of the paired device displaying on **Current WDS AP List.**

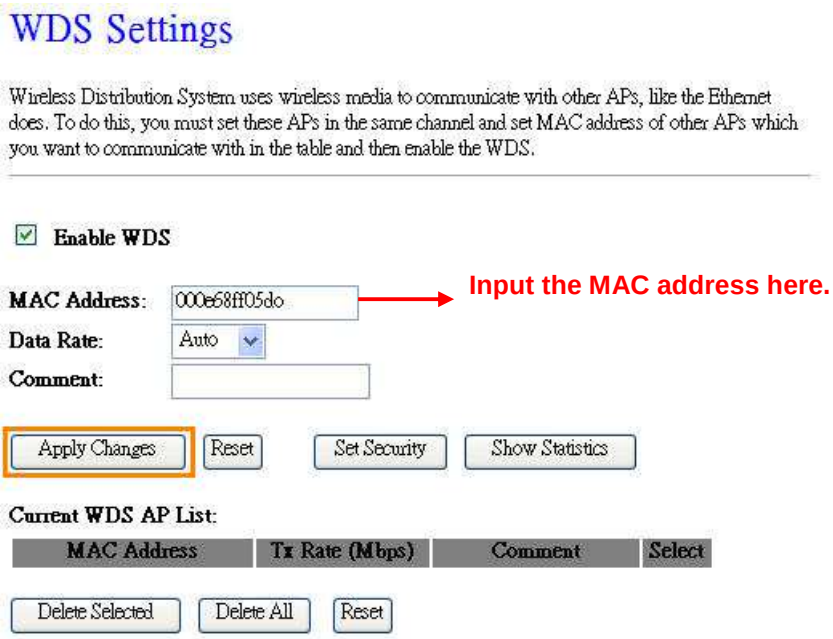


Step 5. Head back to LAN Interface, disable DHCP option, and then click **Apply Changes** to save the setting data.

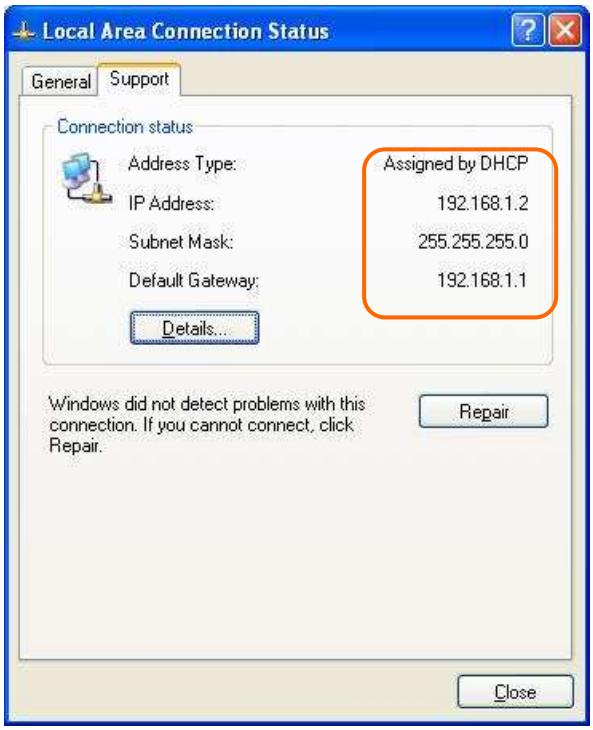


Step 6. Doing the same way to setup the MAC address in the paired device. Launch the

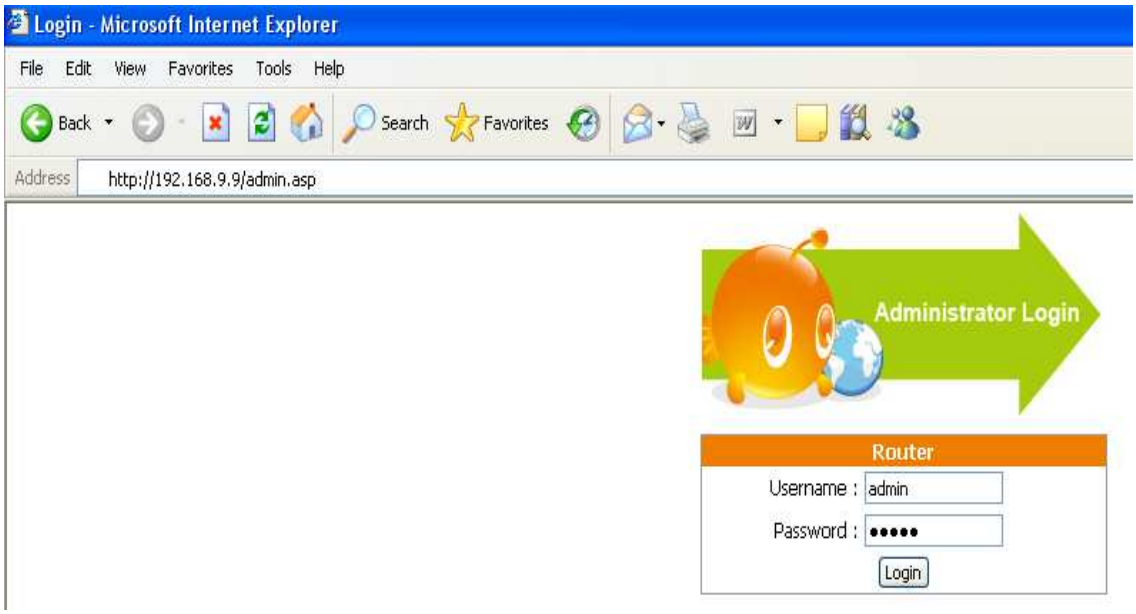
UT to the menu “**WDS settings**” of the paired device, and input router’s MAC address. Click **Apply Changes** to save the setting data.



Step 7. After initiating the paired device, please check Local Area Connections. Click Supports to check out the IP address which is assigned by the paired device.



Step 8. You can input http://192.168.9.9 in IE browser to enter the GUI page of the paired device and make sure the connection.



6.2.6 WPS

Wi-Fi Protected Setup (WPS) is an easy way to establish a secured wireless network between SAPIDO Light N+ Broadband Router and wireless card. Users do not need to manually entering a creative, yet predictable security key on both Wi-Fi devices to prevent unwanted access to their wireless network. With WPS, it can automatically configure a wireless network with a network name (SSID) and strong WPA data encryption and authentication.

WPS can be enabled by 2 methods:

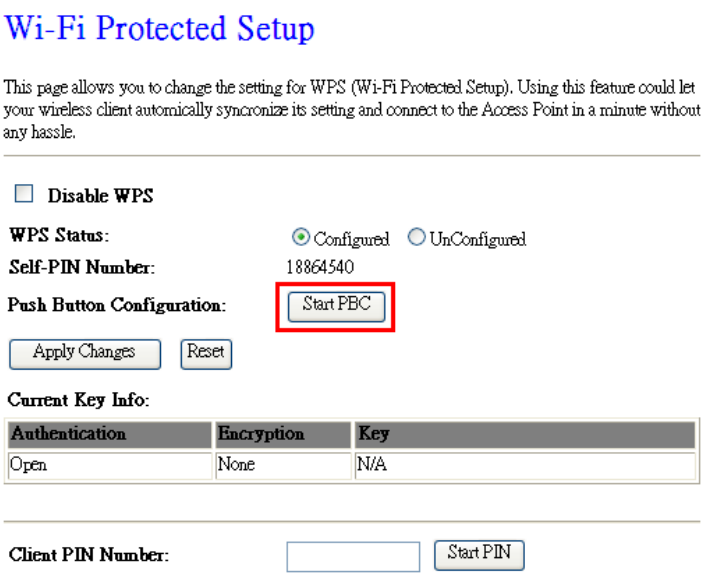
1. **PBC (Push button configuration) Method,** in which the user simply has to push a button, either an actual or a virtual one, on both WPS devices to connect.
2. **PIN (Personal Identification Number) Method,** in which a PIN has to be taken either from a sticker label or from the web interface of the WPS device. This PIN will then be entered in the AP or client WPS device to connect.

Please follow instructions below to enable the WPS function.

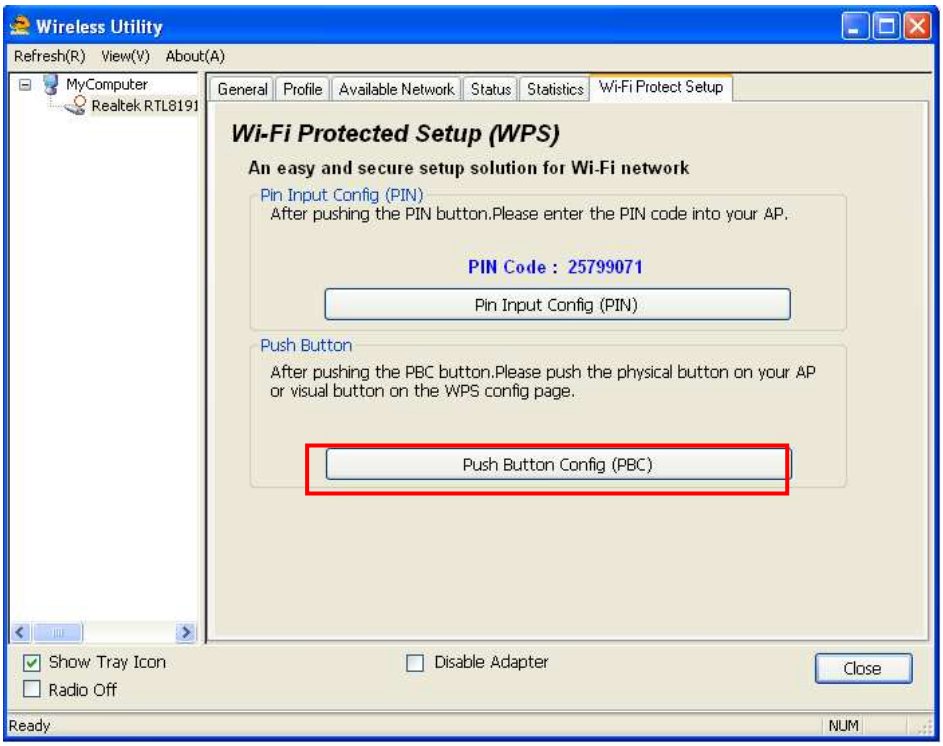
- **Start PBC:**

(1.) Press the **WPS button** from SAPIDO Light N+ Broadband Router or click **Start PBC** from menu "**Wi-Fi Protected Setup**", and waiting for the WPS wireless card setting.

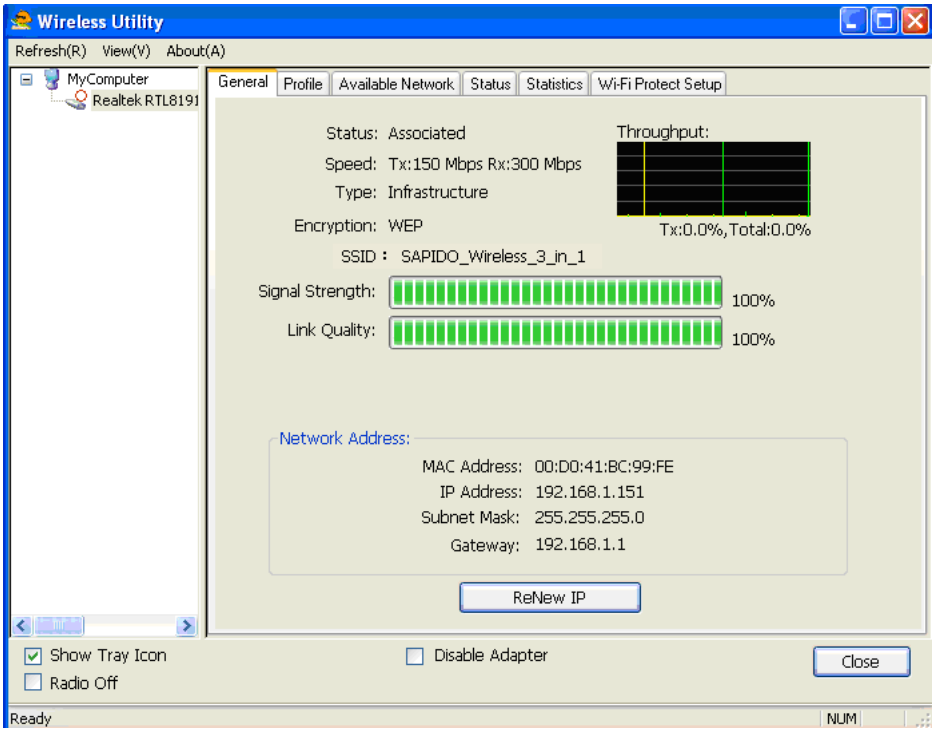
or



(2.) Open the **"Wireless Utility"** of your wireless card, and click its **"PBC"** button, to start auto pairing.

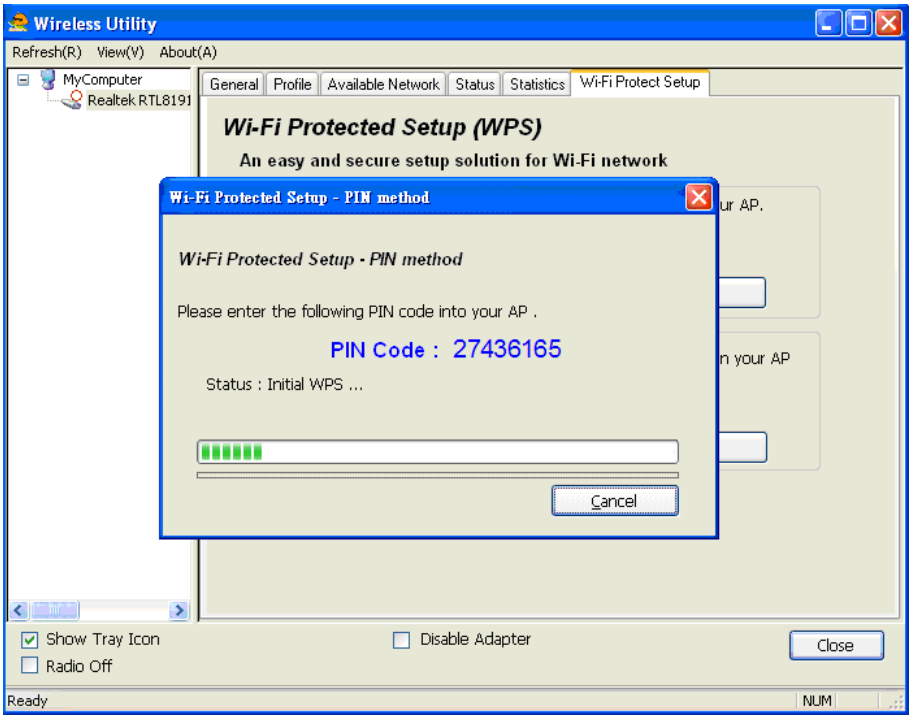


(3.) While scanning is successful, the information of the wireless card appears in the windows below.

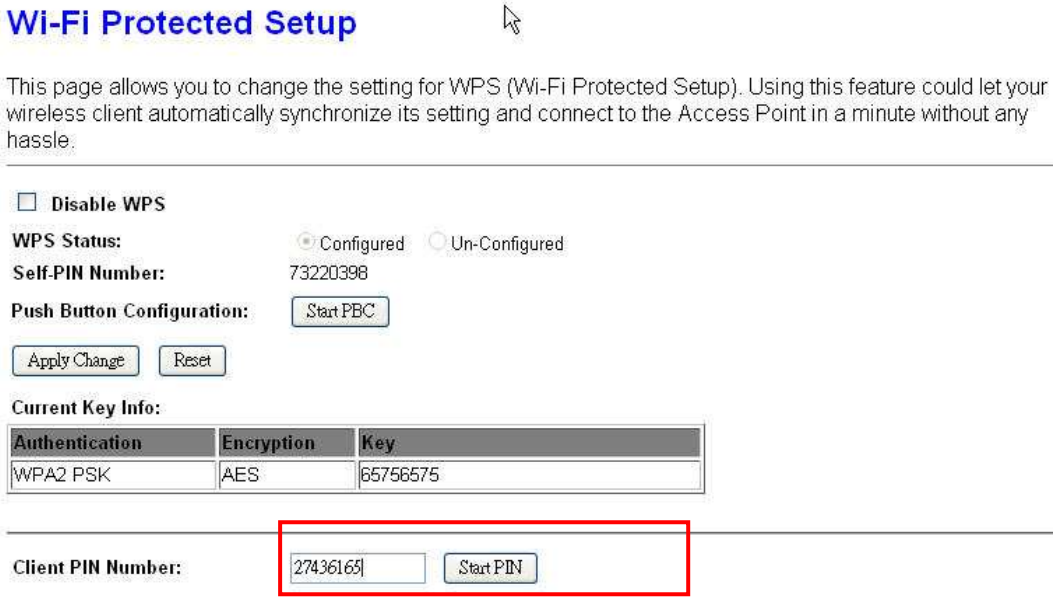


► **Start PIN:**

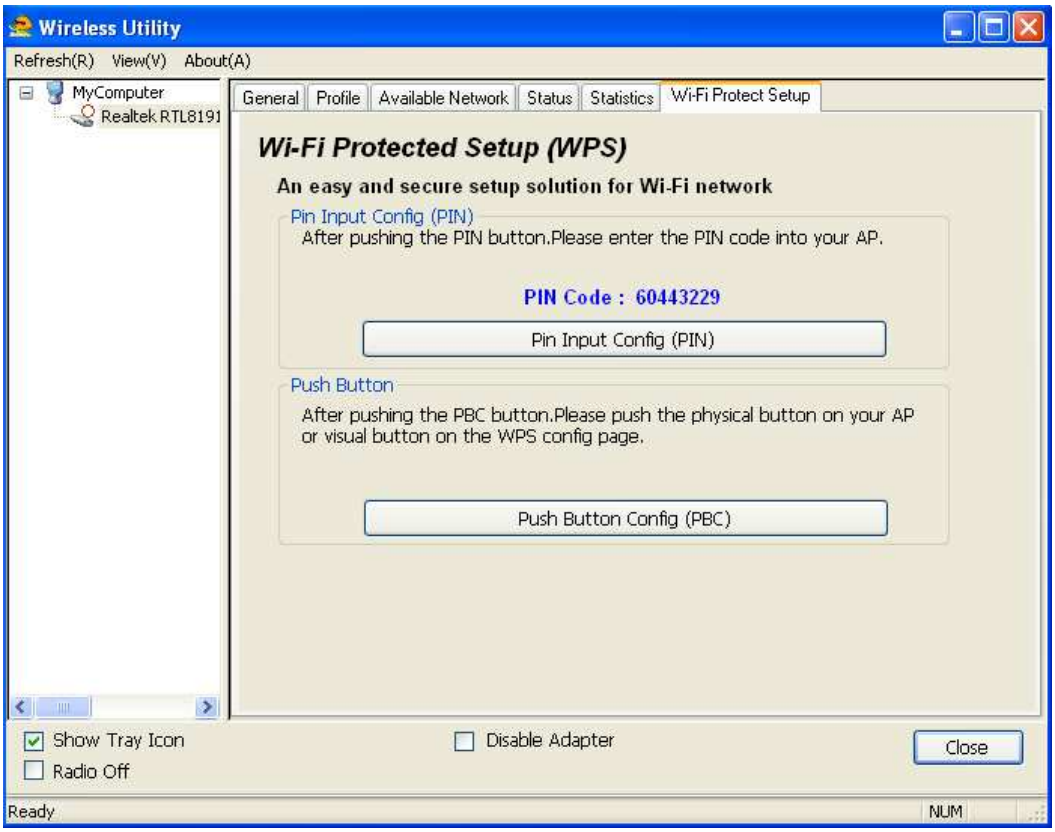
(1.) Open the **"Wireless Utility"** of your wireless card. Follow its PIN instruction to get a new PIN number. Write it down.



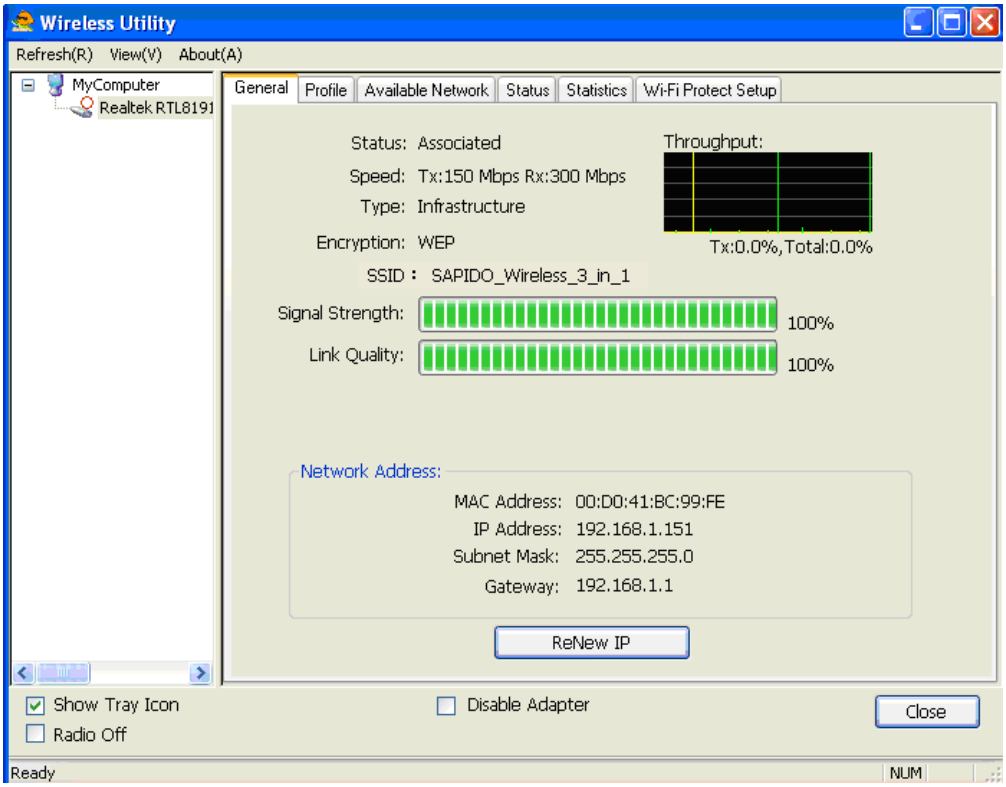
(2.) Open menu **"Wi-Fi Protected Setup"** of 11N Mini Router, input the PIN number from the wireless card then click **Start PIN**.



(3.) Back to **"Wireless Utility"** and press the **"Start PIN"** button to complete the auto-paring process.



(4.) When you can see the IP information below, the connection is established



6.3 System Management

SAPIDO Light N+ Broadband Router provides system management including password changing, firmware upgrade, time setting, user's account setting and other detail settings. Following is detail explanation for each.

6.3.1 Change Password

Users can set or change their password in this section.

1. New Password

Enter the new password you want to change.

2. New Password (Confirm)

Enter the new password again for confirming.

3. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

Note: 1. Only the password can be changed, the user name for administrator is **admin** and not to be changed.
2. If you forget administrator's password, please reset 11N WLAN Mobile Server Router to default setting by pressing the "**Reset**" button on the rear panel over 5 seconds. And the password will return to **admin**.

6.3.2 Upgrade Firmware

There is certain risk while upgrading firmware. Upgrading firmware is not recommended unless the significant faulty is found. You can upgrade the firmware of SAPIDO Light N+ Broadband Router on this page. Make sure the firmware you want to use is on the local hard drive of the computer. Click **Upgrade Firmware** to proceed.

1. Update Firmware

Click on **Browse…** button to search your local hard drive and locate the firmware to be used for update.

2. Upload & Reset:

Click **Upload** to upgrade the firmware or **Reset** to restore to factory default Settings

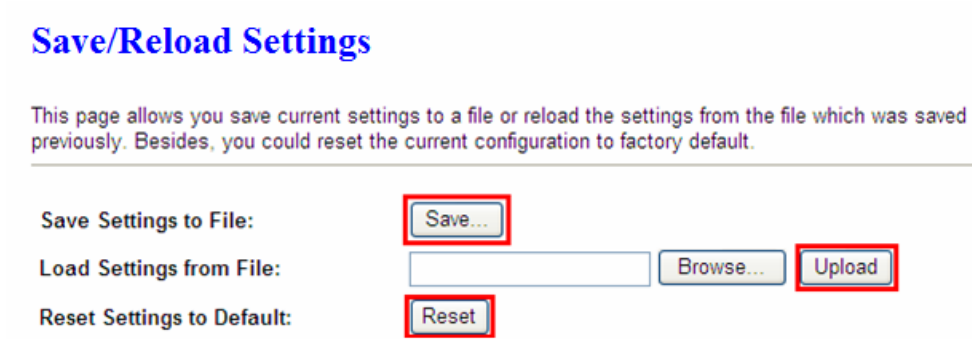
Note: 1. To prevent the firmware upgrading interrupted by other wireless signals and caused failure. We recommend using wired connection to do the upgrading.
2. Before upgrading the firmware, please remove any USB device which connected with this router.
3. The firmware upgrade will not remove your previous settings.

- **Reset button:**

On the back of this router, there is a reset button. If you can not login the administrator page by forgetting your password; or the router has problem you can't solve. You can push the reset button for 5 seconds with a stick. The router will reboot and all settings will be restored to factory default settings. If the problem still exists, you can visit our web site to see if there is any firmware for download to solve the problem.

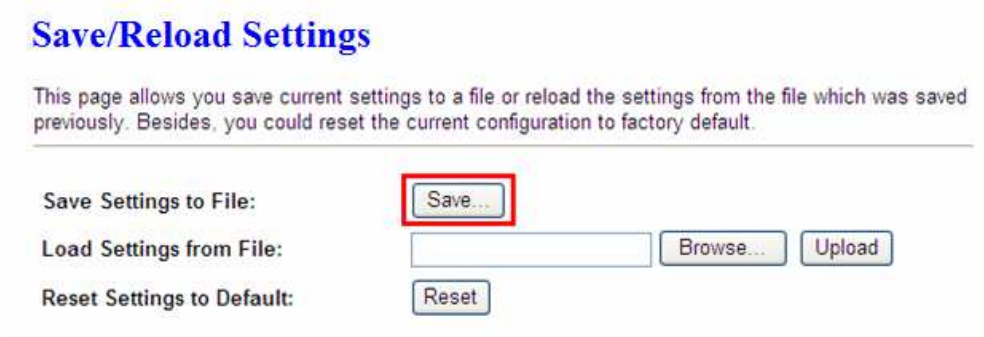
6.3.3 Save / Reload Settings

To back up the current configuration setting or load the backup data, also you can restore SAPIDO Light N+ Broadband Router to default setting by this function.

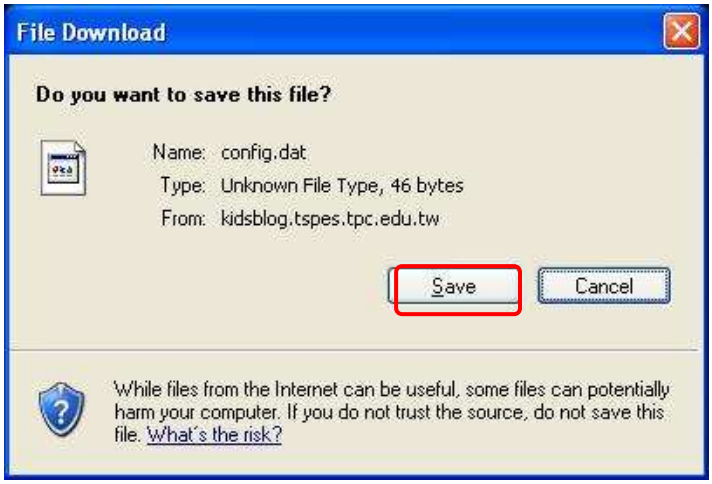


1. Save Settings To File

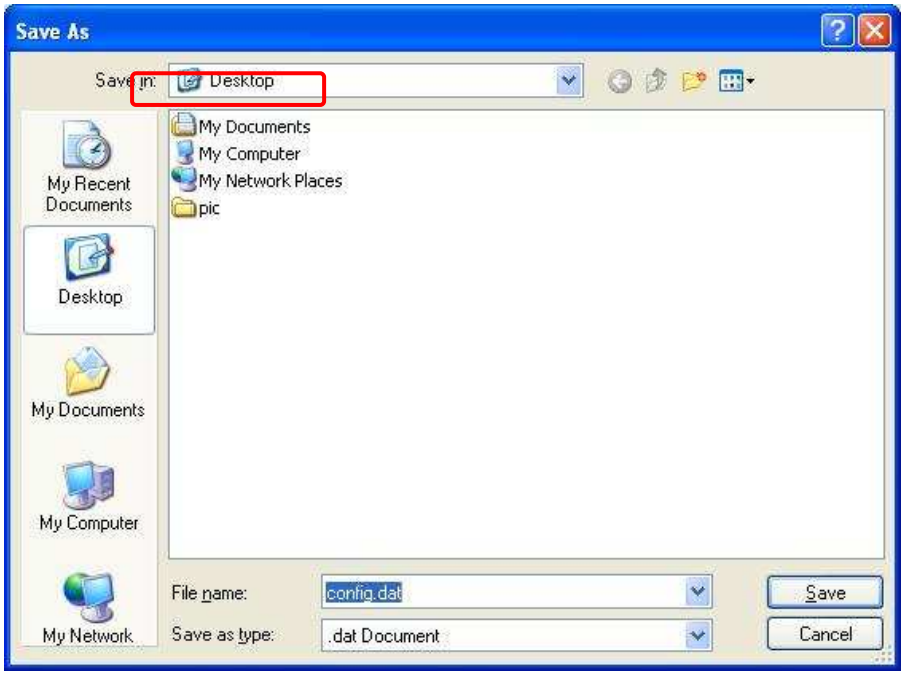
Step 1. Click on **Save** button for saving the configuration setting into assigned location.



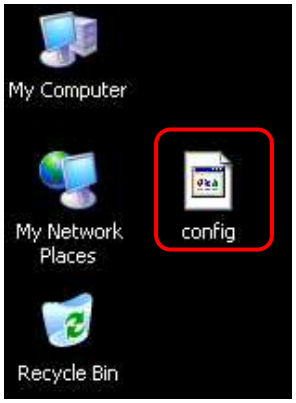
A pop window will show up and ask to save config.dat file.



Step 2. Please select the location, for example: the desktop.

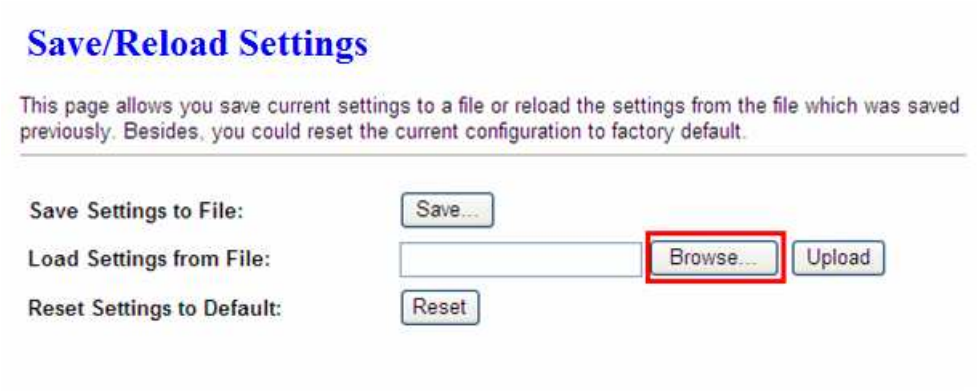


Step 3. The file you just saved will appear on the desktop.

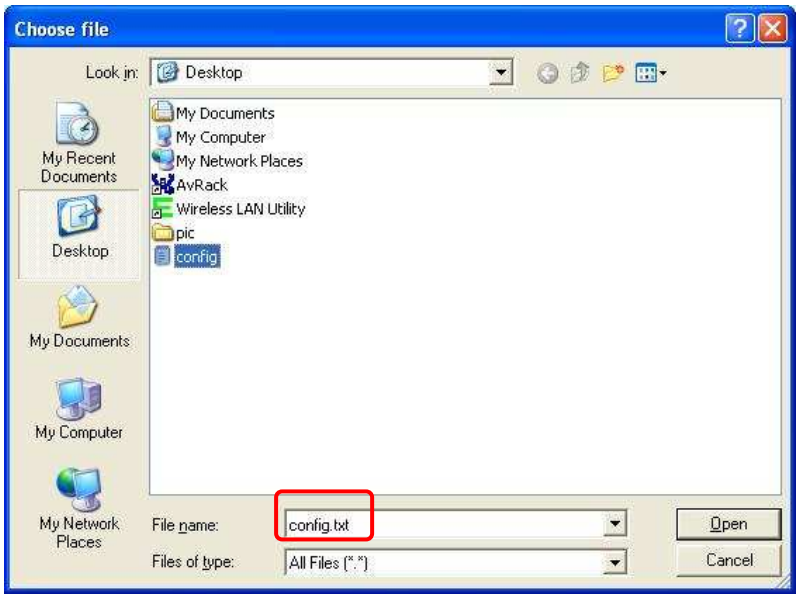


2. Load Settings From File

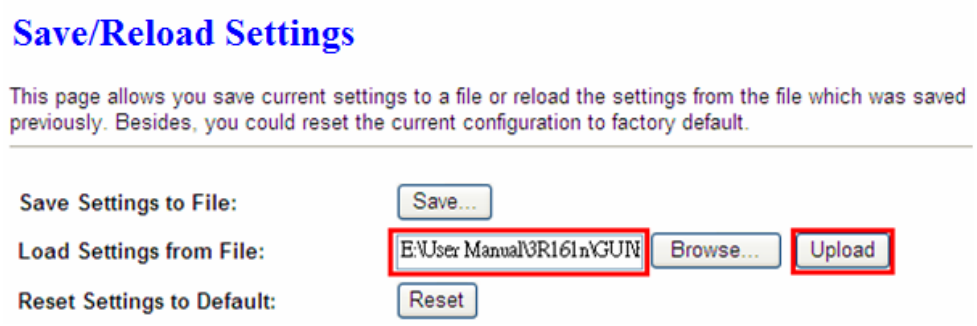
Step 1. Click on "**Browse…**" button for searching the saving configuration from hard drive, and then click on Upload button to load all the settings into the router.



Step 2. Select the **config.dat** file.



Step 3. Click **Upload** to retrieve.



Step 4. When you see the screen below, the updating is completed. Please click **OK** to return to the main menu.

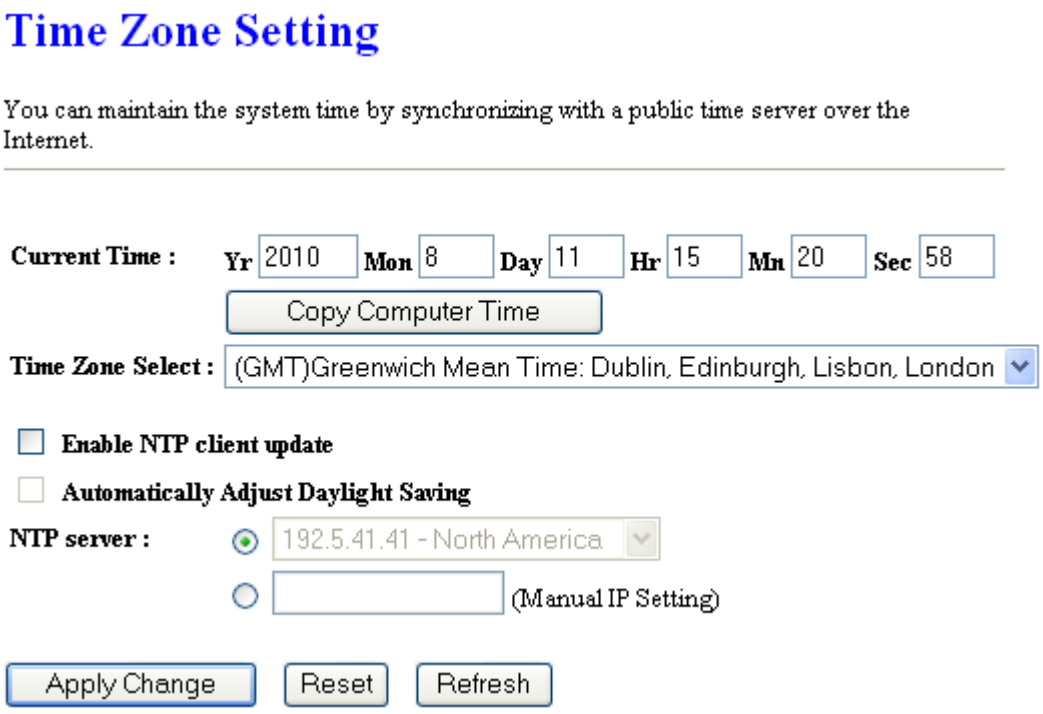
3. Reset Setting to Default

After you have tried other methods for troubleshooting your network, you may choose to restore SAPIDO Light N+ Broadband Router to the factory default settings.

When you see the screen below, the resetting is completed. Please click **OK** and return to the main menu.

6.3.4 Time Zone Setting

The System time is the time used by SAPIDO Light N+ Broadband Router for scheduling services. You can manually set the time or connect to a NTP (Network Time Protocol) server. If a NTP server is set, you will only need to set the time zone. If you manually set the time, you may also set Daylight Saving dates and the system time will automatically adjust on those dates.



1. Current Time

Users can input the time manually.

2. Time Zone Select

Select your time zone location from the drop-down list.

3. Enable NTP client update

Check to enable NTP client update.

4. Automatically Adjust Daylight Saving

If you are in daylight saving time area, please enable this item.

5. NTP server

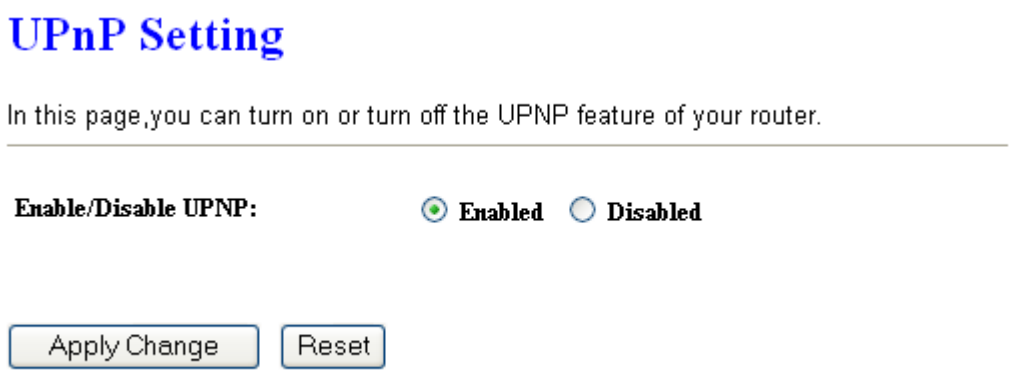
Please select the NTP server from the pull-down list, or you can enter the NTP server IP address manually.

6. Apply Changes & Reset & Refresh

Please click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data. Or you may click on **Refresh** to update the system time on the screen.

6.3.5 UPnP Setting

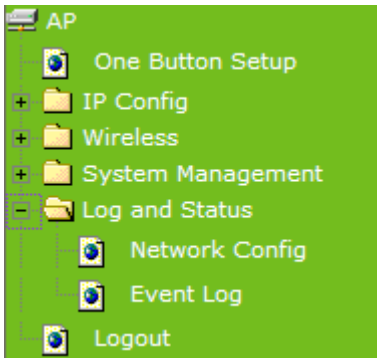
UPnP (Univsersal Plug and Play) allows users to connect their UPnP-enabled Mini Router, printer server and other devices right to the network with zero-configuration, meaning easier setup for installing the device on the network. The automatic discovery feature enables the device to obtain an IP address, present and describe itself to other devices and PCs on the network without having to install drivers, but to configure and use those devices.



After enabling UPNP, click **My Network Places,** and user can open the web GUI by just clicking on the **Internet Gateway Device** icon.

6.4 Log & Status

SAPIDO Light N+ Broadband Router provides the log list and connection status for user to check.



6.4.1 Network Config

Network Configuration shows the firmware version and the connection status of LAN, WAN and Wireless.

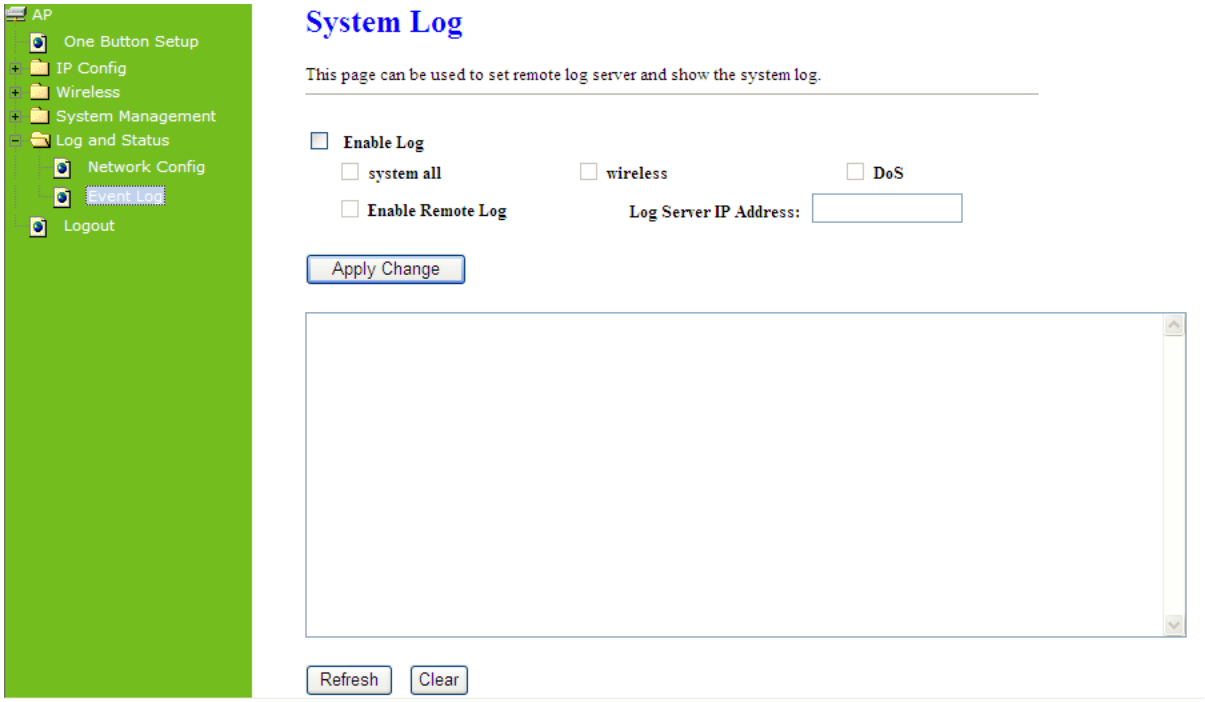
status title

status introduction

System	
Uptime	0day:0h:4m:15s
Firmware Version	Ver1.0.1
WirelessConfiguration	
Mode	AP
Band	2.4 GHz (B+G+N)
SSID	SAPIDO_Wireless_3_in_1
Channel Number	6
Encryption	Disabled
MAC Address	00:d0:41:c3:3f:b6
Associated Clients	1
IP Configuration	
Attain IP Protocol	DHCP
IP Address	192.168.1.254
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
DHCP Server	Client
MAC Address	00:d0:41:c3:3f:b6

6.4.2 Event Log

SAPIDO Light N+ Broadband Router provides system logs for review.



1. Enable Log

Select Enable Log to record the system log

2. system all, wireless & DoS

Select **Wireless, DoS** or **system all** to record

3. Enable Remote Log

You may choose to enable the remote event log or not.

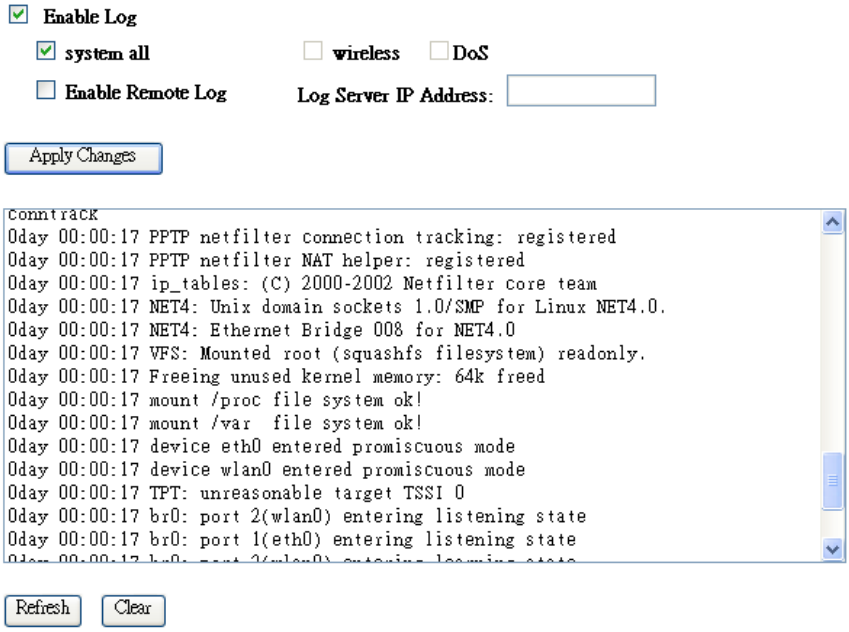
4. Log Server IP Address

Please input the log server IP Address.

5. Apply Changes & Refresh & Clear

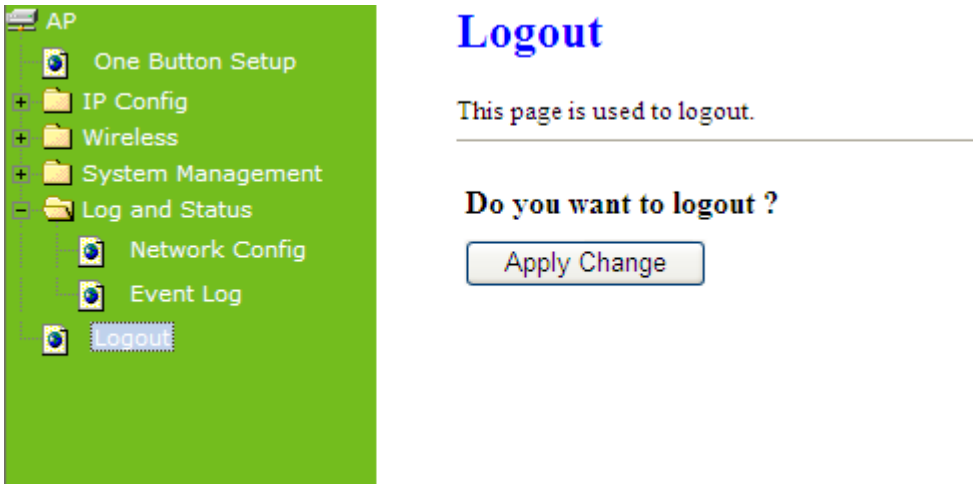
Click on **Apply Changes** to save the setting data. Click on **Refresh** to renew the system time, or on **Clear** to clear all the record.

- After clicking **Apply Changes** to record the event log, it will be shown as the example below.



6.5 Logout

Click **Logout** on the bottom menu to exit and go back to GUI login home page.



Chapter 7 Advance Configuration for WiFi AP Mode

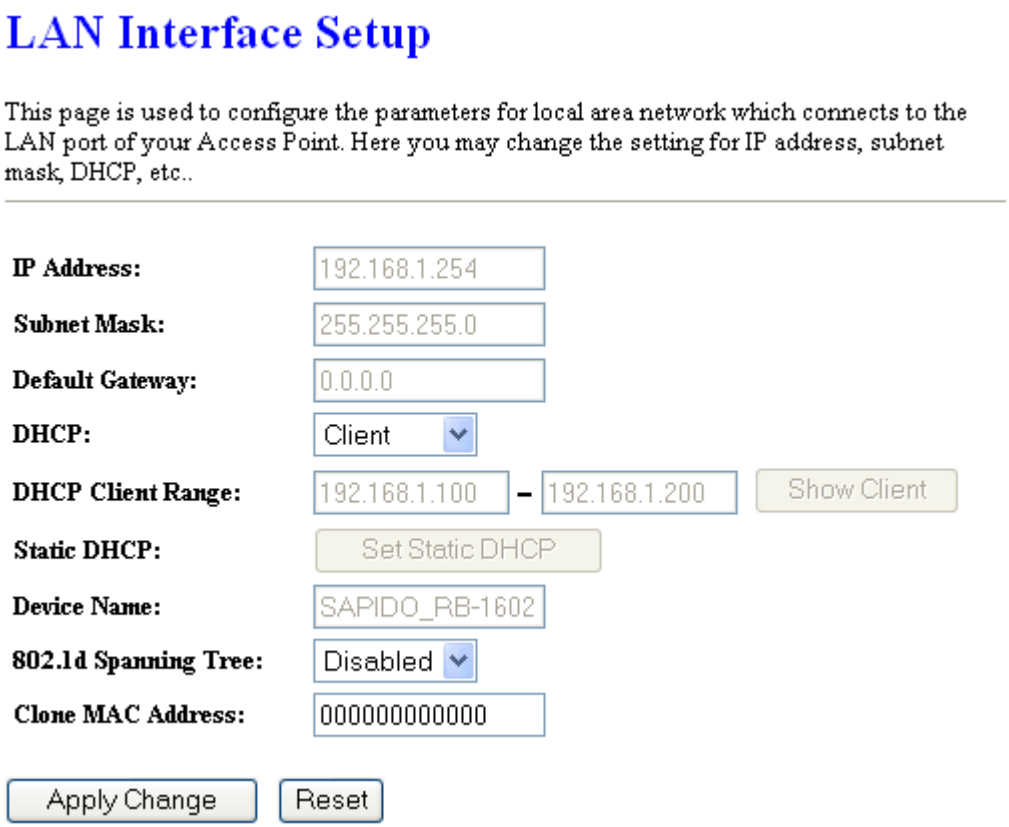
7.1 IP Configuration

This function allows you to add routing rules into 11N Mini Router, including LAN.

7.1.1 LAN Setup

Use this page to set up the local IP address and subnet mask for your router. Please select **LAN** under the **IP Config** menu and follow the instructions below to enter the LAN setting page to configure the settings you want.

7.1.2 LAN Interface Setup



1. IP Address

The default value of LAN IP address is **192.168.1.254** for this router.

2. Subnet Mask

Input Subnet Mask, normally it is **255.255.255.0**.

3. Default Gateway

Input ISP Default Gateway Address. If you don't know, please check with your ISP.

4. DHCP

Enable or disable DHCP services. The DHCP server will automatically allocate an unused IP address from the IP address pool to the requesting computer if enabled.

5. DHCP Client Range

Define the DHCP client range and then the DHCP server will assign an IP to the requesting computer from this range. The **Show Client** will display every assigned IP address, MAC address, and expired time. The default range is 192.168.1.100 - 192.168.1.200.

6. 802.1d Spanning Tree

IEEE 802.1d Spanning Tree Protocol (STP) is a link layer network protocol that ensures a loop-free topology for any bridged LAN. The main purpose of STP is to ensure that you do not create loops when you have redundant paths in your network. Loops are deadly to a network.

7. Clone MAC Address

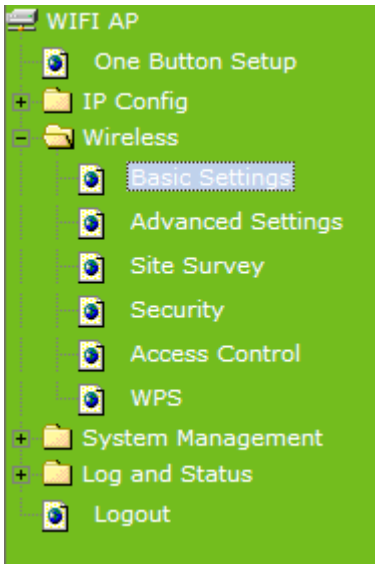
Copy the MAC address from the device you had registered to your ISP if your ISP asks for the specific MAC Address.

8. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

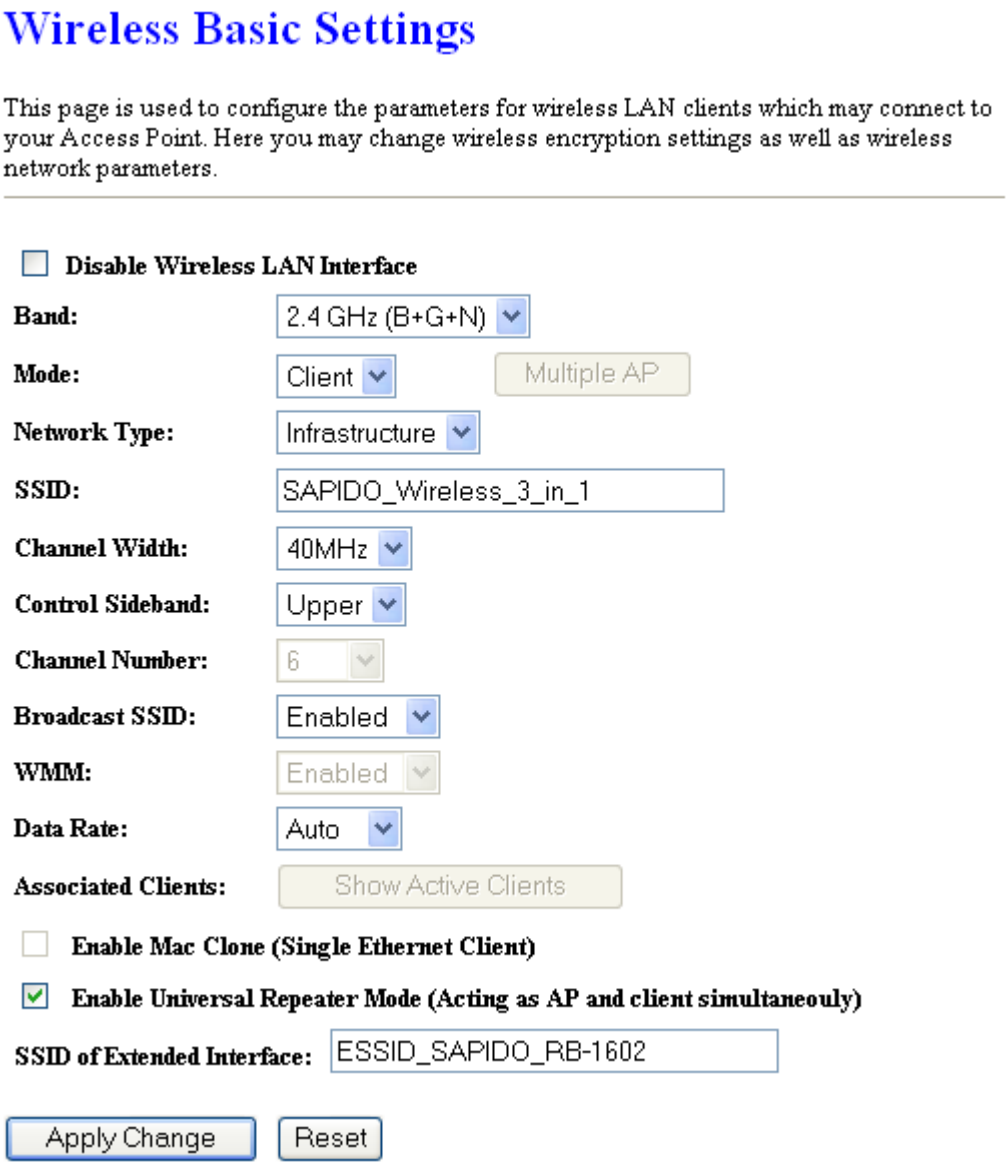
7.2 Wireless Setup

Please select **Wireless** under the main menu.



7.2.1 Wireless Basic Settings

Follow the instructions to configure the **Wireless** settings.



1. Disable Wireless LAN Interface

Select **Disable Wireless LAN Interface** to turn off the wireless function.

2. Band

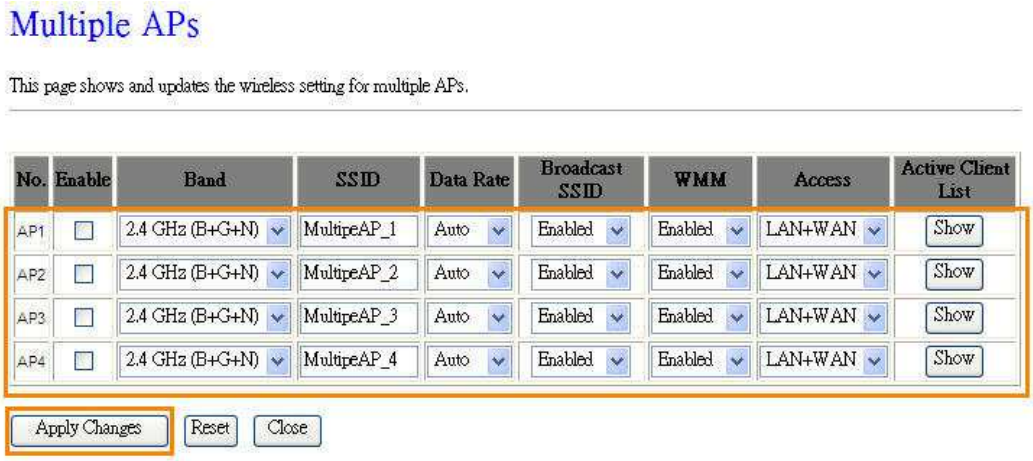
This field indicates the 802.11x interface mode. For example, "**2.4GHz(G)**" prevents the 802.11b clients from accessing the router. "**2.4GHz(B+G)**" allows both 802.11b and 802.11g clients to access the router. There are 6 options, 2.4 GHz (B/G/N/B+G/G+N/B+G+N) from the drop down list.

3. Mode

Select **AP, WDS,** or **AP+WDS** to allow or disallow the wireless operation.

- **Multiple APs**

Click Multiple APs to set up 4 different SSIDs to deploy a shared WLAN. Users can add or limit the properties for each SSID, increasing the flexibility and efficiency of the network.



(1.) **Enable:** check it for enable or not.

(2.) **Band:** select the frequency from the drop down list.

(3.) **SSID:** please enter different SSID in each class.

(4.) **Data Rate:** please select the data transmission rate.

(5.) **Access:** defined the access type.

a. LAN+WAN: the client can access to the Internet and connect to 11N Mobile router's GUI to setup.

b. WAN: the client can only access to the Internet.

(6.) **Active Client List:** display the properties of the client which is connecting successfully.

(7.) **Apply Changes:** Please click **Apply Changes** to initiate or click **Reset** to clear all the input data.

4. Network Type：

Please select "**Infrastructure**" or "**Ad hoc**." The default is "**Infrastructure**." The selection is disabled when wireless mode is selected to AP.

5. SSID：

Please input your wireless network name. Default is “11N_Mini_Router”.

6. Channel Width

Please select “**20MHZ**” or “**40MHZ**” channel width to change the transmission channels.

7. ControlSideband

Setting the Sideband "**Upper**" or "**lower.**”

8. Channel Number

Please select your wireless network channel. There are Auto, 2~11.

9. Broadcast SSID

Enable or disable the SSID broadcast function. Disable this feature can provide more security of your WLAN.

10. Data Rate

Rate at which data can be communicated (bps); auto, 1M, 2M, 5.5M, 11M, 6M, 9M, 12M, 18M, 24M, 36M, 48M or 54M to be selected from the drop-down list.

11. Associated Clients

Check the WiFi ISP connectors and the connecting status.

12. Enable Mac Clone (Single Ethernet Client)

Copy the MAC Address for identity of some ISPs.

13. Enable Universal Repeater Mode (Acting as AP and Client simultaneously)

Enable **Universal Repeater Mode**, SAPIDO Light N+ Broadband Router will act as a wireless AP and AP client at the same time, and able to link to another AP.. It uses AP client function to connect to a Root AP (any AP) and uses AP function to service all wireless stations within its coverage. All the stations within the coverage of SAPIDO Light N+ Broadband Router can be bridged to the Root AP. It can help user to extend the coverage of wireless network.

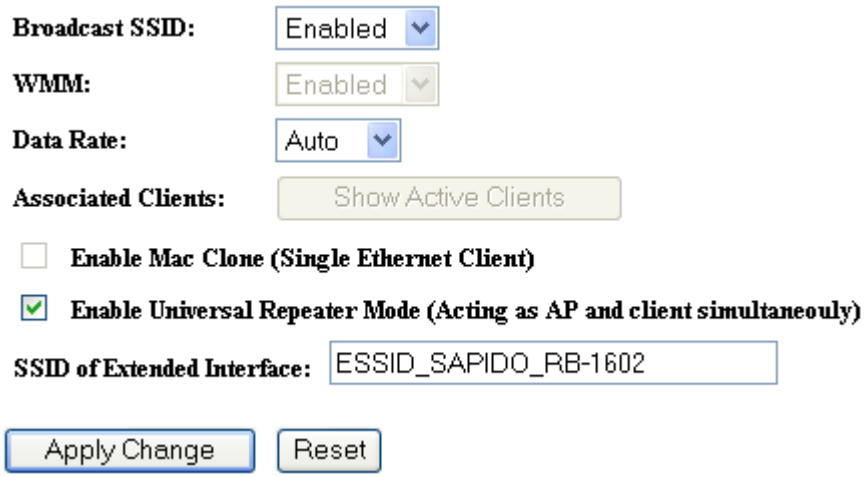
After checking **Enable Universal Repeater Mode**, please input the ESSID. The default is **ESSID_Mobile_Router**.

- **How to Enable URM (Universal Repeater Mode)**

User could enable URM in wireless basic setting page as shown in following figures.

Step 1. Get back to menu "**Network Config**" and write down the SSID, channel and security.

Step 2. Setting the same SSID, channel and security you got form "Network Config" and Click on **Apply Changes** to save the setting



Note: The DHCP server should be disabled under menu "**LAN Interface Setup**" and then the URM could be enabled.

Step 3. Check the AP connectors and the Wireless connecting status.

System	
Uptime	0day:0h:4m:18s
Firmware Version	Ver1.0.1
WirelessConfiguration	
Mode	Infrastructure Client
Band	2.4 GHz (B+G+N)
SSID	SAPIDO-1F-Fax_Router
Channel Number	8
Encryption	WPA
MAC Address	00:d0:41:b5:48:b8
State	Connected
WirelessRepeater Interface Configuration	
Mode	AP
ESSID	ESSID_SAPIDO_RB-1602
Encryption	WPA
MAC Address	00:d0:41:c3:3f:b6
Associated Clients	0

14. SSID of Extended Interface

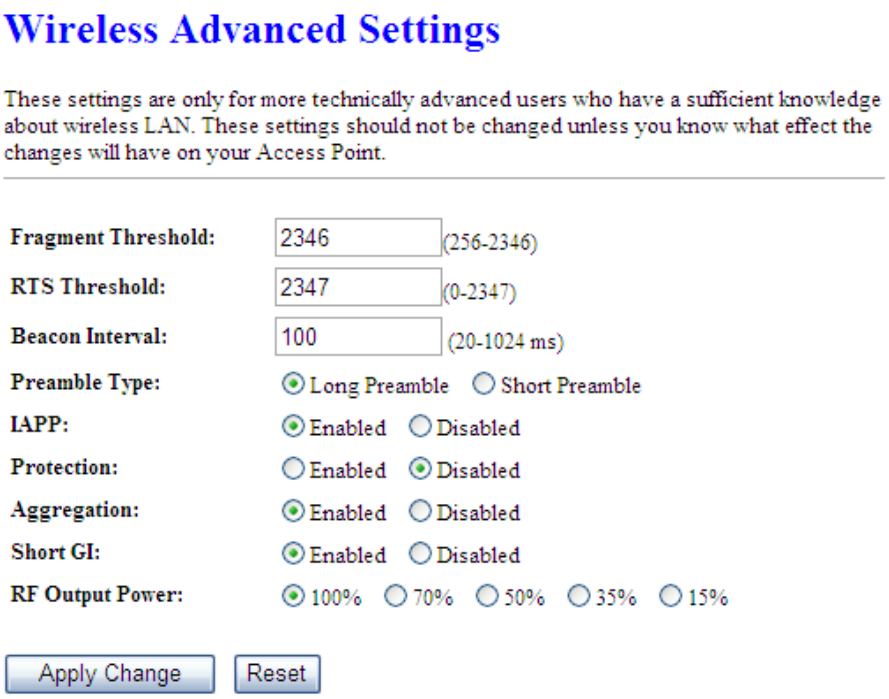
When mode is set to “AP” and Universal Repeater Mode is enabled, user should input SSID of another AP (the upper level device) in the field of **SSID of Extended Interface**.

15. Apply Changes & Reset

Click on “**Apply Changes**” to save the setting data. Or you may click on “**Reset**” to clear all the input data.

7.2.2 Wireless Advanced Settings

Please follow the instructions to configure the **Wireless** settings.



1. Fragment Threshold

To identify the maximum length of packet, the overflow packet length wil be fragmentized. The allowed range is 256-2364, and default length is 2346 bytes.

2. RTS Threshold

This value should remain at its default setting of 2347. The range is 0~2347. Should you encounter inconsistent data flow, only minor modifications are recommended. If a network packet is smaller than the present RTS threshold size, the RTS/CTS mechanism will not be enabled. The router sends Request to Send (RTS) frames to a particular receiving station and negotiates the sending of a data frame. After receiving an RTS, the wireless station

responds with a Clear to Send (CTS) frame to acknowledge the right to begin transmission. Fill the range from 0 to 2347 into this blank.

3. Beacon Interval

Beacons are packets sent by an access point to synchronize a wireless network. Specify a beacon interval value. The allowed setting range is 20-1024 ms.

4. Preamble Type

The preamble (also called “a header”) is a section of data at the head of a packet that contains information that wireless devices need when they send and receive packets. Short preambles improve throughput performance, but some wireless devices require long preambles. Select the suitable preamble as short or long preamble.

5. IAPP

Inter Access Point Protocol. Allow seamless roaming between Access Points in your wireless network. Coupled with superior RF performance

6. Protection

Select to enable the wireless protection or not.

7. Aggregation

Data aggregation can reduce the amount of data routed through the network, and increasing throughput.

8. Short GI

Enabling the Short Guard Interval increases the wireless transmission.

9. RF Output Power

User can adjust the RF output power to get the best wireless connection. There are 5 power types available: 100%, 70%, 50%, 35%, and 15%.

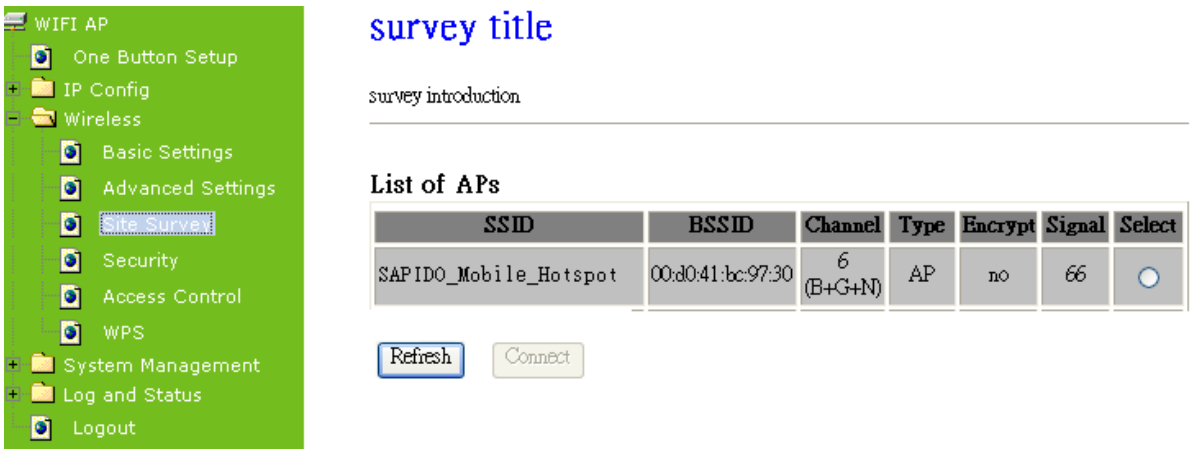
10. Apply Changes & Reset

Click on “**Apply Changes**” to save the setting data. Or you may click on “**Reset**” to clear all the input data.

7.2.3 Wireless Site Survey

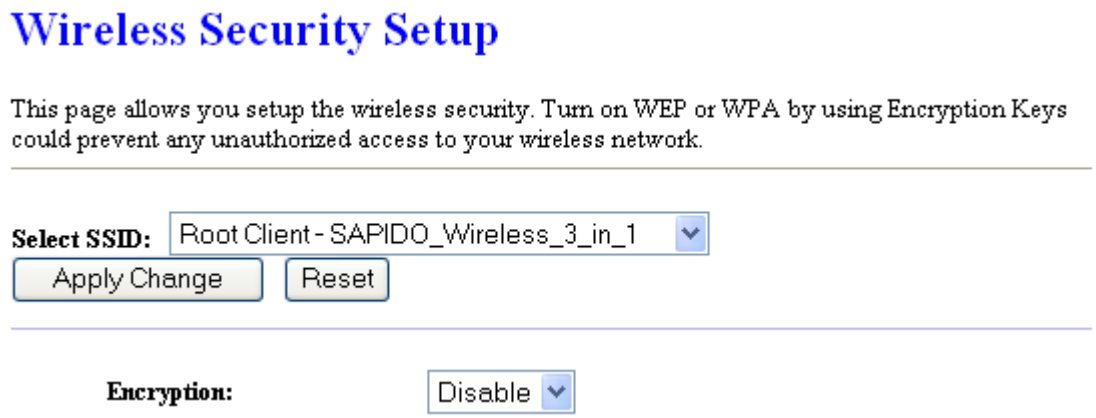
This function provides users to search existing wireless APs or wireless base stations from ISP. You can connect to a wireless AP manually in WiFi AP mode. The designed AP will appear on SSID column in Wireless Basic Setup page.

Please click on **Refresh** to refresh the list. Click **Connect** after select an existing AP to connect.



7.2.4 Wireless Security Setup

4 encryption types can be selected here, please follow the instructions below for each.



1. Encryption – WEP

Enabling WEP can protect your data from eavesdroppers. If you do not need this feature, select "**None**" to skip the following setting. SAPIDO Light N+ Broadband Router supports both 64-bit and 128-bit encryption using the Wired Equivalent Privacy (WEP) algorithm. Select the type of encryption you want to use (64 or 128 bit) and configure one to four WEP Keys. The "1280bit" method is more secure than the "64-bit".

Key Length: For 64bits WEP key, either 5 ASCII characters or 10 hexadecimal digitals leading by 0x can be entered. For 128bits WEP key, either 13 ASCII characters or 26 hexadecimal digits leading by 0x can be entered.

Note: 128 bits WEP is most secure, but has more encryption/decryption overhead. Note that all wireless devices must support the same WEP encryption bit size and have the same key. Four keys can be entered here, but only one key can be selected at a time. The keys can be entered in ASCII or Hexadecimal. Select the item from drop-down list you wish to use.

Encryption Key: At most four keys can be set. A WEP key is either 10 or 26 hexadecimal digits (0~9, a~f, and A~F) based on whether you select 64 bit or 128 bit in the WEP drop-down list.

2. Encryption – WPA (WPA, WPA2 & WPA2 Mixed)

The WPA, WPA2 & WPA2 Mixed encrypt each frame transmitted from the radio using the pre-shared key (PSK) which entered from this panel or a key got dynamically through 802.1x.

- **WPA Authentication Mode**

  Enterprise (RADIUS): Please input the port, IP address, and password of authentication RADIUS Server.

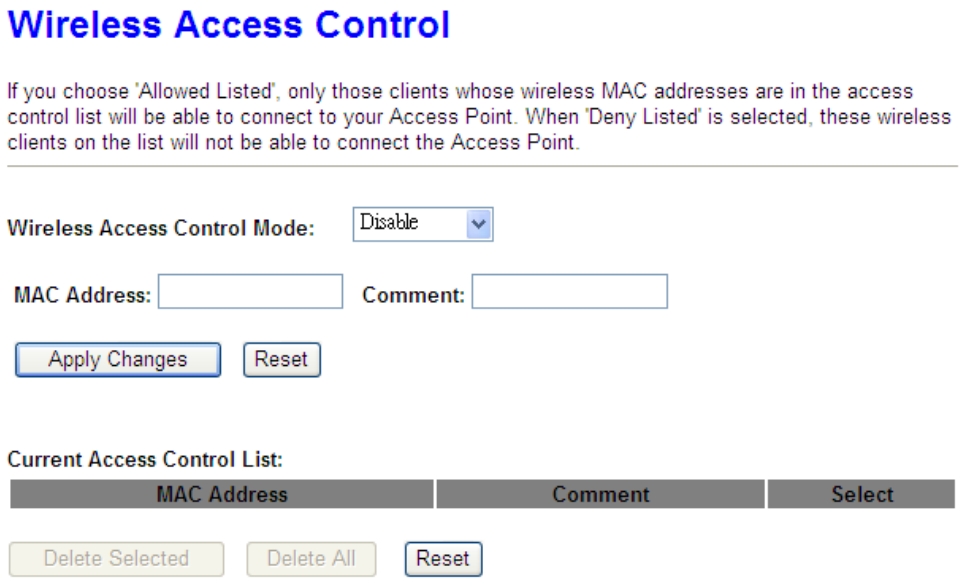
Personal (Pre-Shared Key): Pre-Shared Key type is coding in ASCII, and the length is between 8 to 63 characters. If the coding is in Hex, the key length is 64 characters.

3. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

7.2.5 Wireless Access Control

With the MAC address, you may allow or disallow the access to your AP.



1. Wireless Access Control Mode

"**Allowed Listed**" means only the MAC address listed on the allowed list can access to your wireless network.

"Deny Listed" means the listed MAC Address are not allowed to linkto your wireless network.

"**Disable**" for function disuse.

2. MAC Address

Please input the allowed or denied MAC address, for example, 001122334455.

3. Comment

You may input the comments for the set MAC Address.

4. Apply Changes & Reset

Click on "**Apply Change**" to save the setting data. Or you may click on "**Reset**" to clear all the input data.

5. Current Access Control List

In this list, all the MAC info you input will be displayed.

6. Delete Selected and Delete All

Click on “**Delete Selected**” to erase the selected MAC address. Click on “**Delete All**” to erase all the entered MAC Address.

7.2.6 WPS

Wi-Fi Protected Setup (WPS) is an easy way to establish a secured wireless network between SAPIDO Light N+ Broadband Router and wireless card. Users do not need to manually entering a creative, yet predictable security key on both Wi-Fi devices to prevent unwanted access to their wireless network. With WPS, it can automatically configure a wireless network with a network name (SSID) and strong WPA data encryption and authentication.

WPS can be enabled by 2 methods:

1. **PBC (Push button configuration) Method,** in which the user simply has to push a button, either an actual or a virtual one, on both WPS devices to connect.
2. **PIN (Personal Identification Number) Method,** in which a PIN has to be taken either from a sticker label or from the web interface of the WPS device. This PIN will then be entered in the AP or client WPS device to connect.

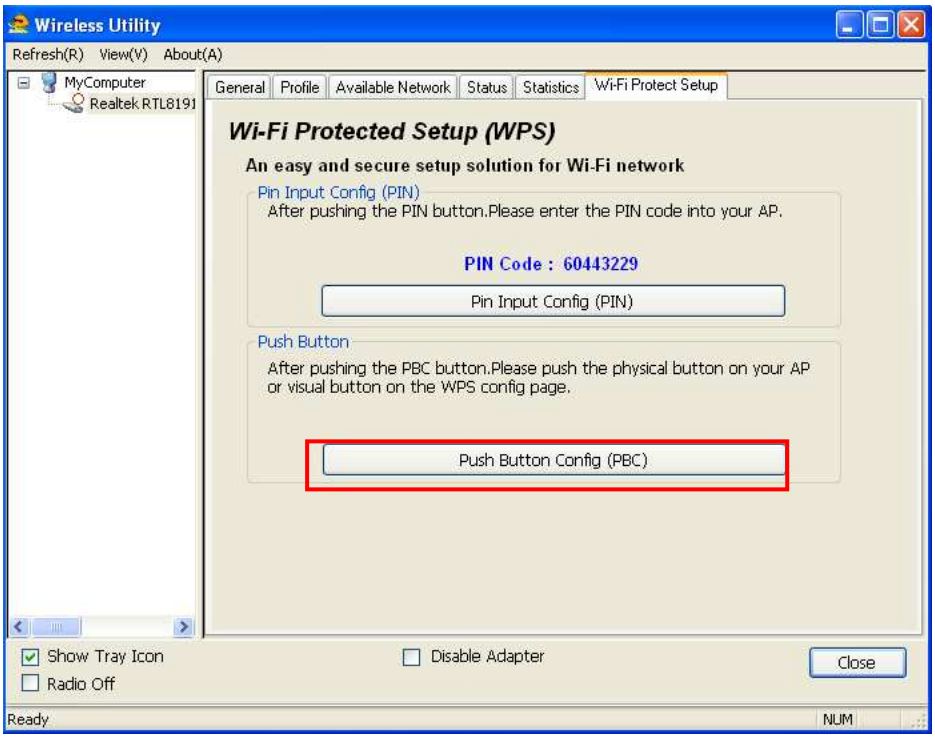
Please follow instructions below to enable the WPS function.

- **Start PBC:**

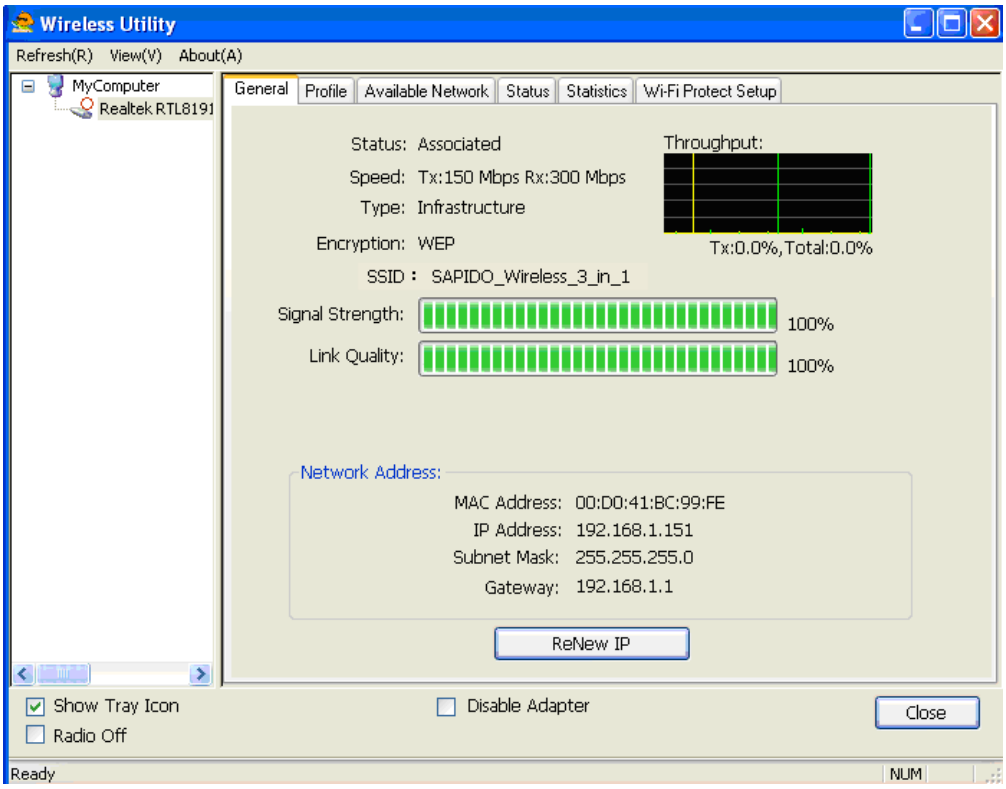
(1.) Press the **WPS button** from SAPIDO Light N+ Broadband Router or click **Start PBC** from menu “**Wi-Fi Protected Setup**”, and waiting for the WPS wireless card setting.

or

(2.) Open the "**Wireless Utility**" of your wireless card, and click its "**PBC**" button, to start auto pairing.

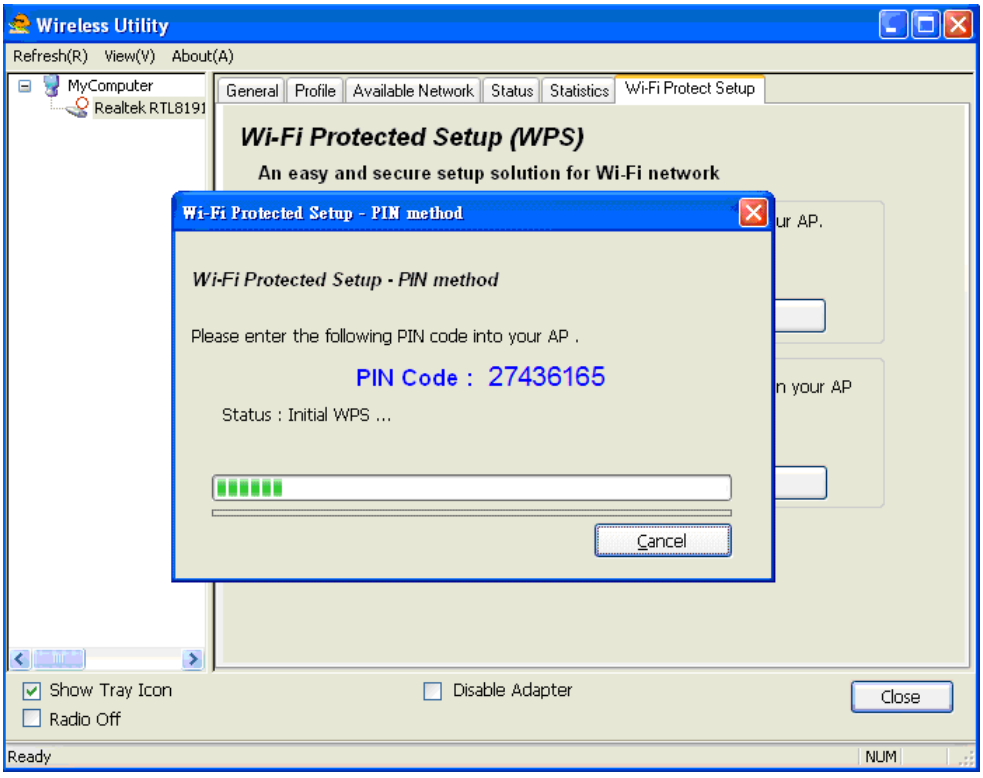


(3.) While scanning is successful, the information of the wireless card appears in the windows below.

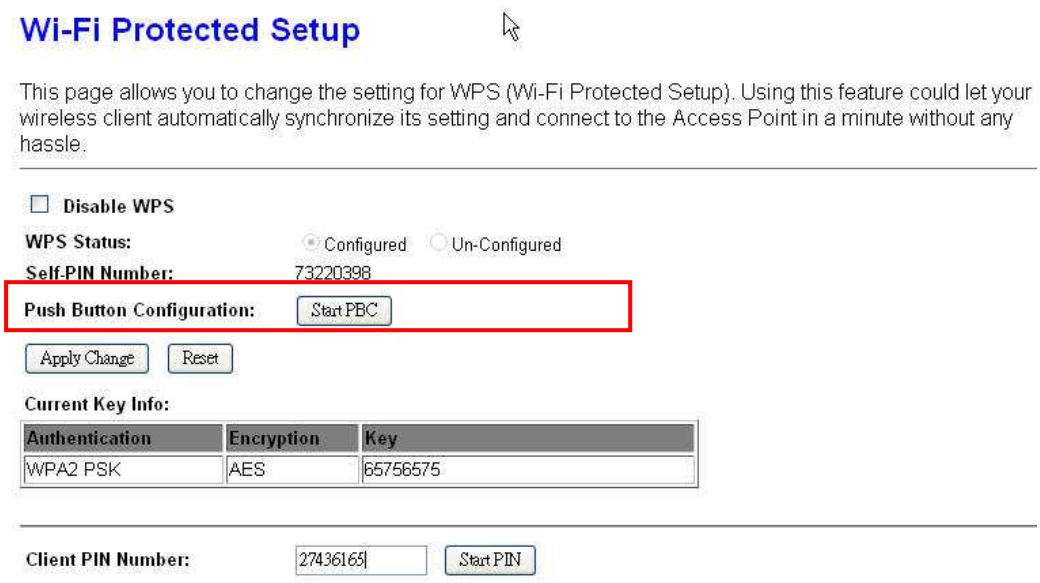


- **Start PIN:**

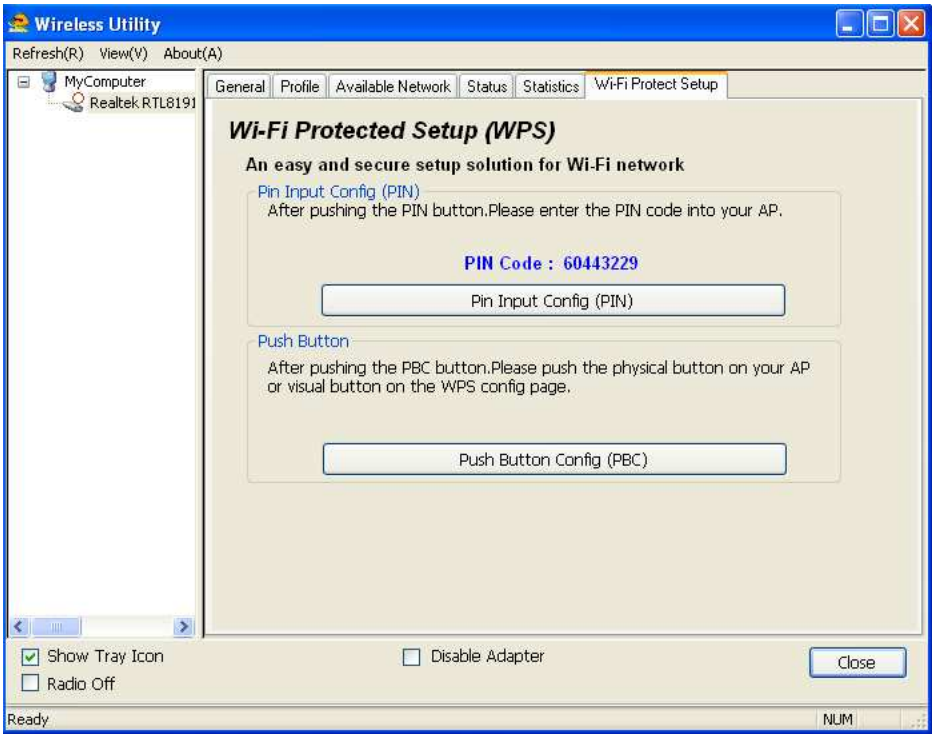
(1.) Open the “Wireless Utility” of your wireless card. Follow its PIN instruction to get a new PIN number. Write it down.



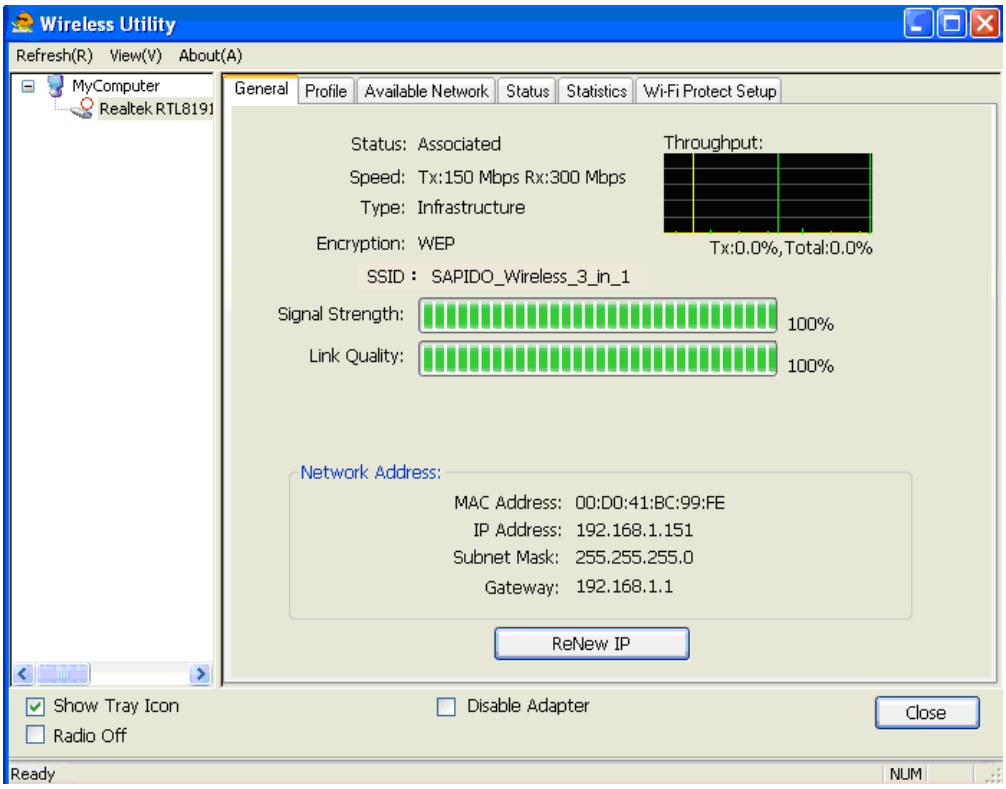
(2.) Open menu "**Wi-Fi Protected Setup**" of 11N Mini Router, input the PIN number from the wireless card then click **Start PIN**.



(3.) Back to **"Wireless Utility"** and press the **"Start PIN"** button to complete the auto-paring process.

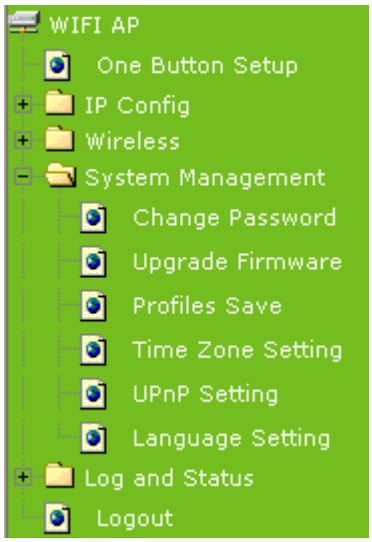


(4.) When you can see the IP information below, the connection is established



7.3 System Management

SAPIDO Light N+ Broadband Router provides system management including password changing, firmware upgrade, time setting, user's account setting and other detail settings. Following is detail explanation for each.



7.3.1 Change Password

Users can set or change their password in this section.

1. New Password

Enter the new password you want to change.

2. New Password (Confirm)

Enter the new password again for confirming.

3. Apply Change & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

Note: 1. Only the password can be changed, the user name for administrator is **admin** and not to be changed.
2. If you forget administrator's password, please reset 11N WLAN Mobile Server Router to default setting by pressing the "**Reset**" button on the rear panel over 5 seconds. And the password will return to **admin**.

7.3.2 Upgrade Firmware

There is certain risk while upgrading firmware. Upgrading firmware is not recommended unless the significant faulty is found. You can upgrade the firmware of SAPIDO Light N+ Broadband Router on this page. Make sure the firmware you want to use is on the local hard drive of the computer. Click **Upgrade Firmware** to proceed.

1. Update Firmware

Click on **Browse…** button to search your local hard drive and locate the firmware to be used for update.

2. Upload & Reset:

Click **Upload** to upgrade the firmware or **Reset** to restore to factory default Settings

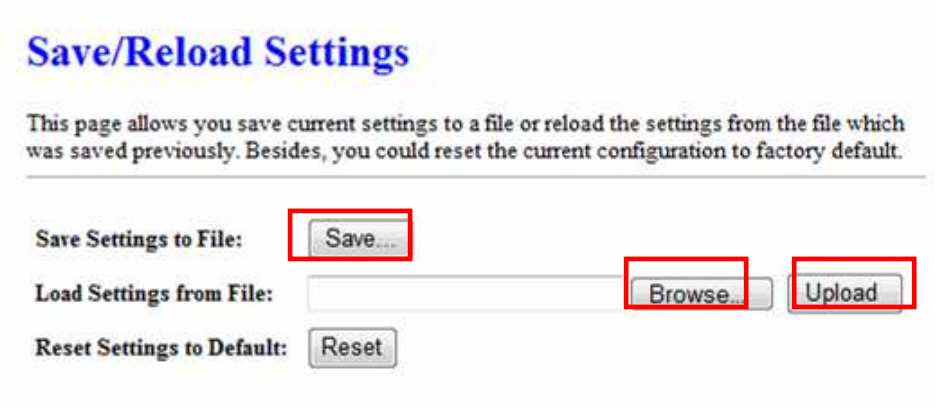
Note: 1. To prevent the firmware upgrading interrupted by other wireless signals and caused failure. We recommend using wired connection to do the upgrading.
2. Before upgrading the firmware, please remove any USB device which connected with this router.
3. The firmware upgrade will not remove your previous settings.

■ Reset button:

On the back of this router, there is a reset button. If you can not login the administrator page by forgetting your password; or the router has problem you can't solve. You can push the reset button for 5 seconds with a stick. The router will reboot and all settings will be restored to factory default settings. If the problem still exists, you can visit our web site to see if there is any firmware for download to solve the problem.

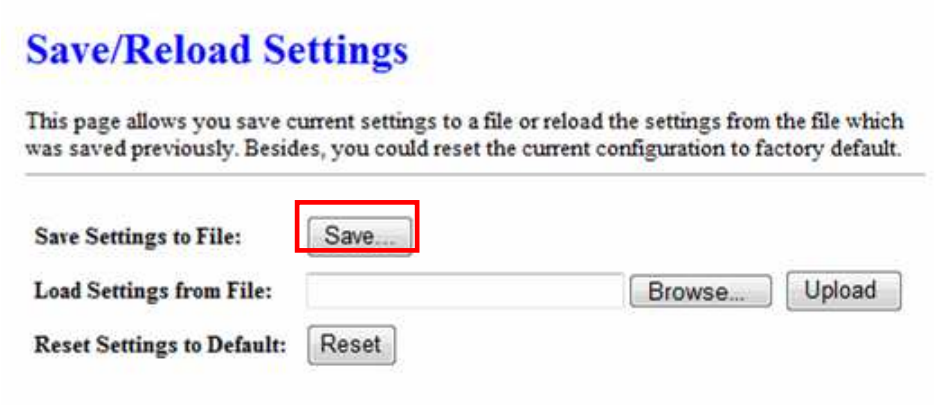
7.3.3 Save / Reload Settings

To back up the current configuration setting or load the backup data, also you can restore SAPIDO Light N+ Broadband Router to default setting by this function.



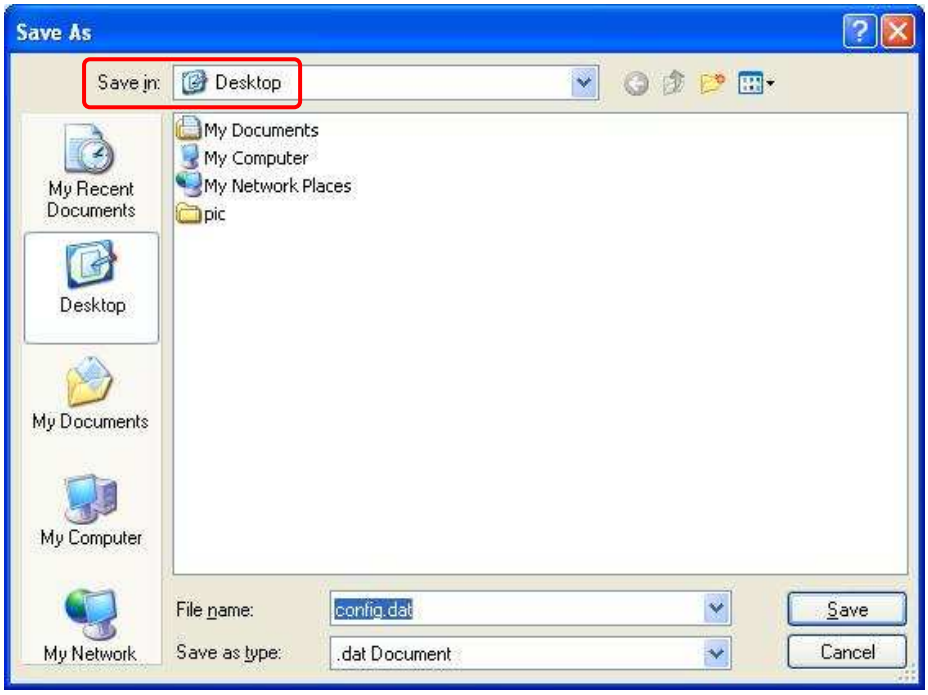
1. Save Settings To File

Step 1. Click on **Save** button for saving the configuration setting into assigned location.

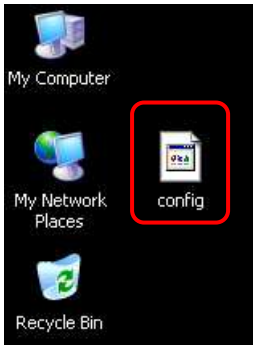


A pop window will show up and ask to save **config.dat** file.

Step 2. Please select the location, for example: the desktop.

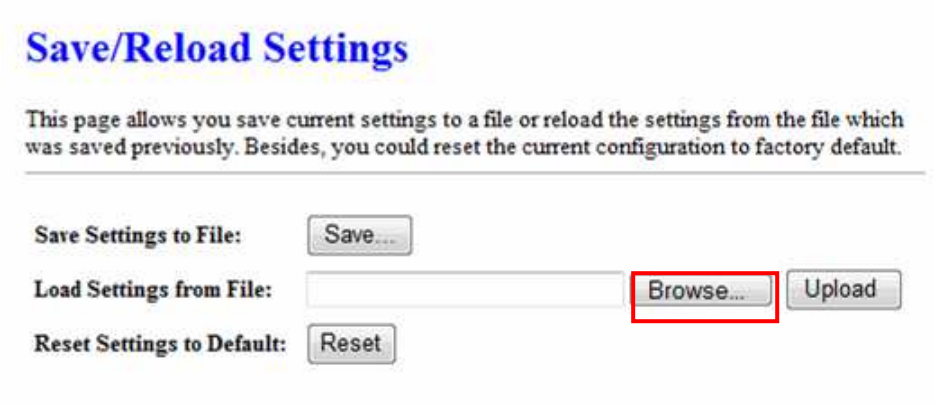


Step 3. The file you just saved will appear on the desktop.

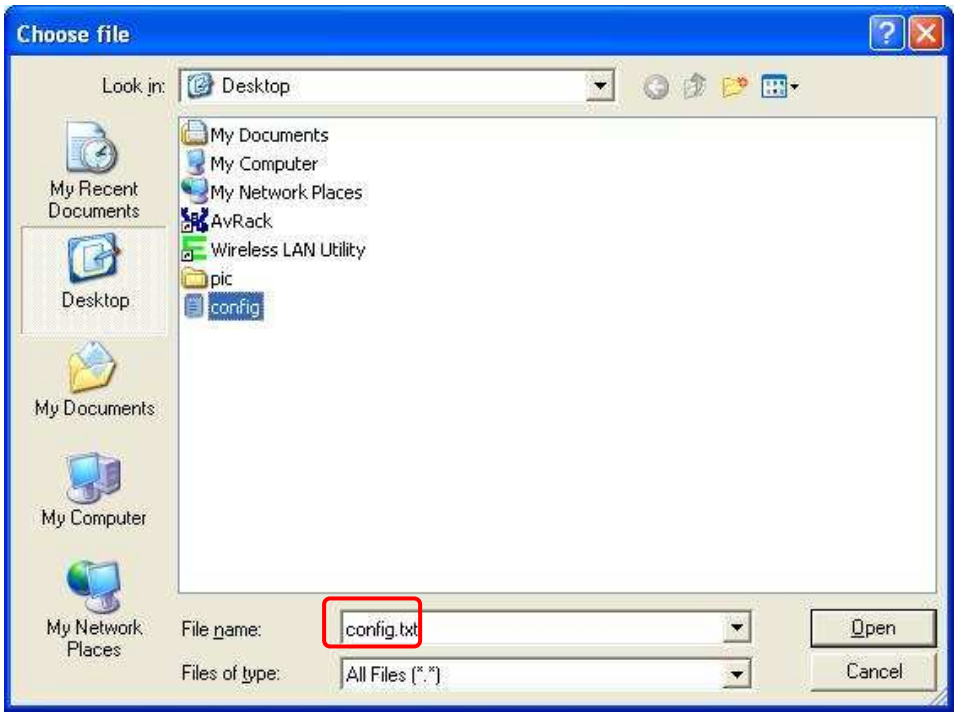


2. Load Settings From File

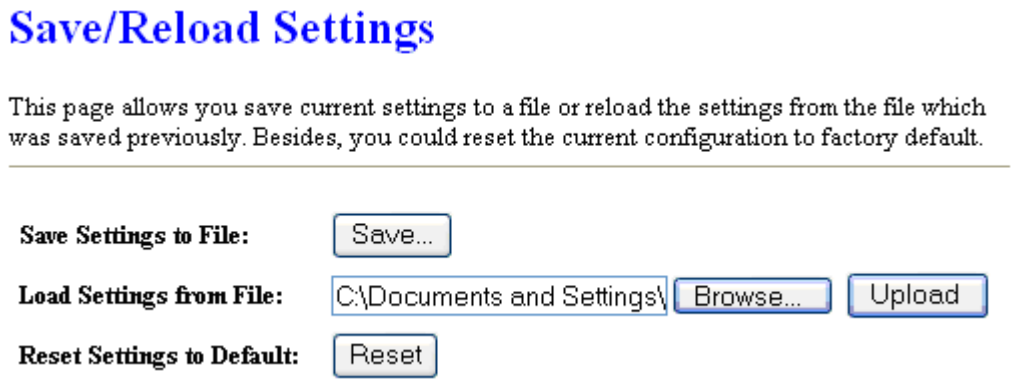
Step 1. Click on "**Browse…**" button for searching the saving configuration from hard drive, and then click on Upload button to load all the settings into the router.



Step 2. Select the **config.dat** file.



Step 3. Click **Upload** to retrieve.



Step 4. When you see the screen below, the updating is completed. Please click **OK** to return to the main menu.

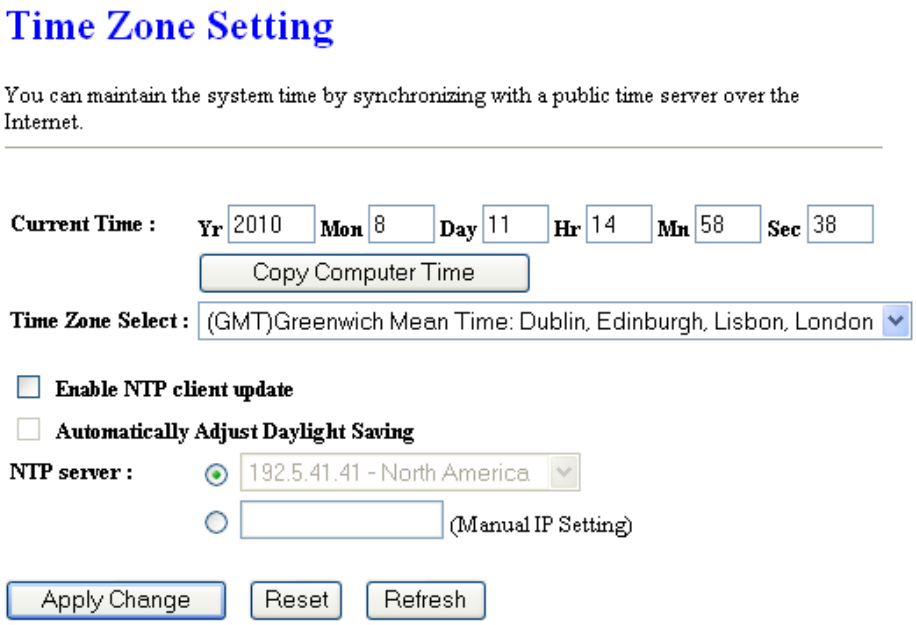
3. Reset Setting to Default

After you have tried other methods for troubleshooting your network, you may choose to restore SAPIDO Light N+ Broadband Router to the factory default settings.

When you see the screen below, the resetting is completed. Please click **OK** and return to the main menu.

7.3.4 Time Zone Setting

The System time is the time used by SAPIDO Light N+ Broadband Router for scheduling services. You can manually set the time or connect to a NTP (Network Time Protocol) server. If a NTP server is set, you will only need to set the time zone. If you manually set the time, you may also set Daylight Saving dates and the system time will automatically adjust on those dates.



1. Current Time

Users can input the time manually.

2. Time Zone Select

Select your time zone location from the drop-down list.

3. Enable NTP client update

Check to enable NTP client update.

4. Automatically Adjust Daylight Saving

If you are in daylight saving time area, please enable this item.

5. NTP server

Please select the NTP server from the pull-down list, or you can enter the NTP server IP address manually.

6. Apply Changes & Reset & Refresh

Please click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data. Or you may click on **Refresh** to update the system time on the screen.

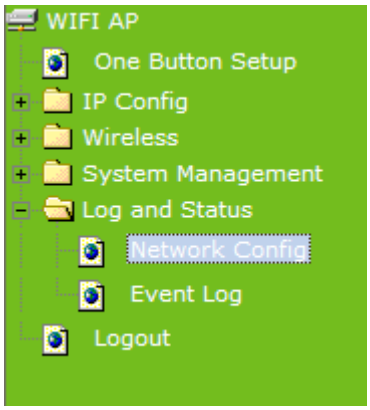
7.3.5 UPnP Setting

UPnP (Univsersal Plug and Play) allows users to connect their UPnP-enabled Mini Router, printer server and other devices right to the network with zero-configuration, meaning easier setup for installing the device on the network. The automatic discovery feature enables the device to obtain an IP address, present and describe itself to other devices and PCs on the network without having to install drivers, but to configure and use those devices.

After enabling UPNP, click **My Network Places,** and user can open the web GUI by just clicking on the **Internet Gateway Device** icon.

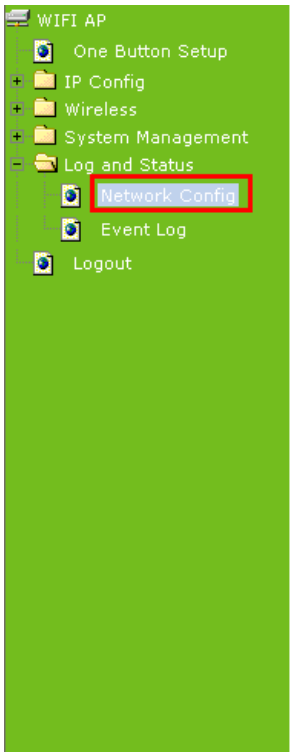
7.4 Log & Status

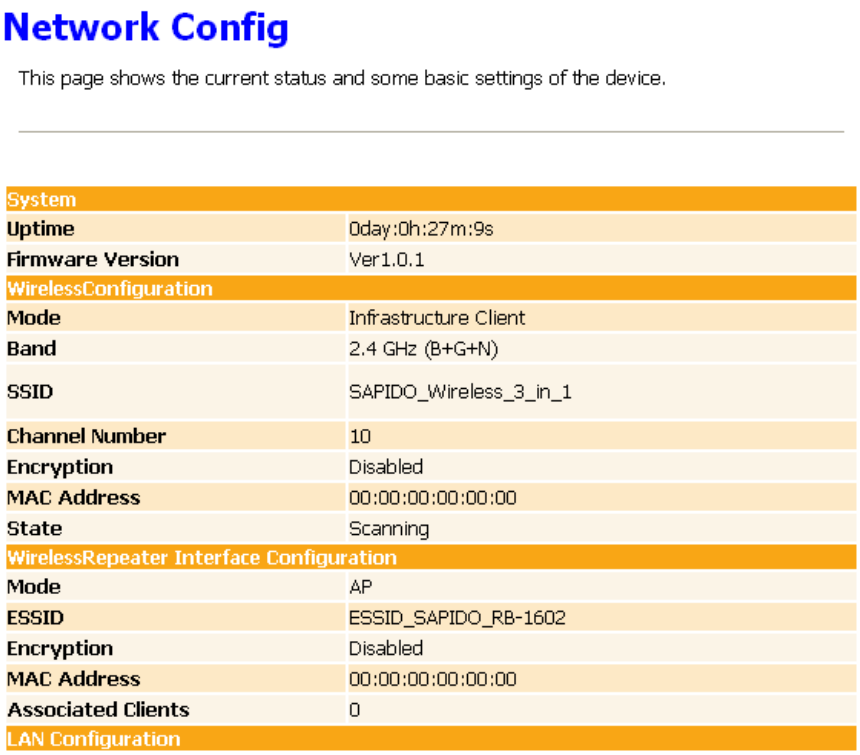
SAPIDO Light N+ Broadband Router provides the log list and connection status for user to check.



7.4.1 Network Config

Network Configuration shows the firmware version and the connection status of LAN, WAN and Wireless.





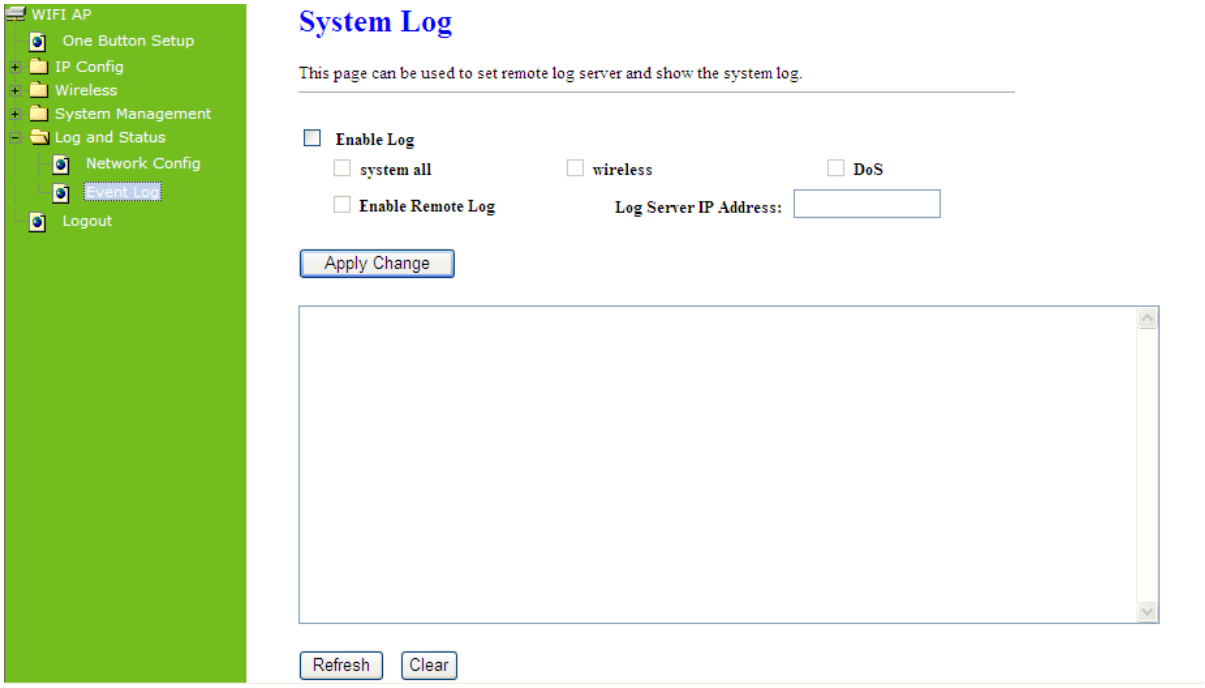
Network Config

This page shows the current status and some basic settings of the device.

System	
Uptime	0day:0h:27m:9s
Firmware Version	Ver1.0.1
WirelessConfiguration	
Mode	Infrastructure Client
Band	2.4 GHz (B+G+N)
SSID	SAPIDO_Wireless_3_in_1
Channel Number	10
Encryption	Disabled
MAC Address	00:00:00:00:00:00
State	Scanning
WirelessRepeater Interface Configuration	
Mode	AP
ESSID	ESSID_SAPIDO_RB-1602
Encryption	Disabled
MAC Address	00:00:00:00:00:00
Associated Clients	0
LAN Configuration	

7.4.2 Event Log

SAPIDO Light N+ Broadband Router provides system logs for review.



1. Enable Log

Select Enable Log to record the system log

2. system all, wireless & DoS

Select **Wireless, DoS** or **system all** to record

3. Enable Remote Log

You may choose to enable the remote event log or not.

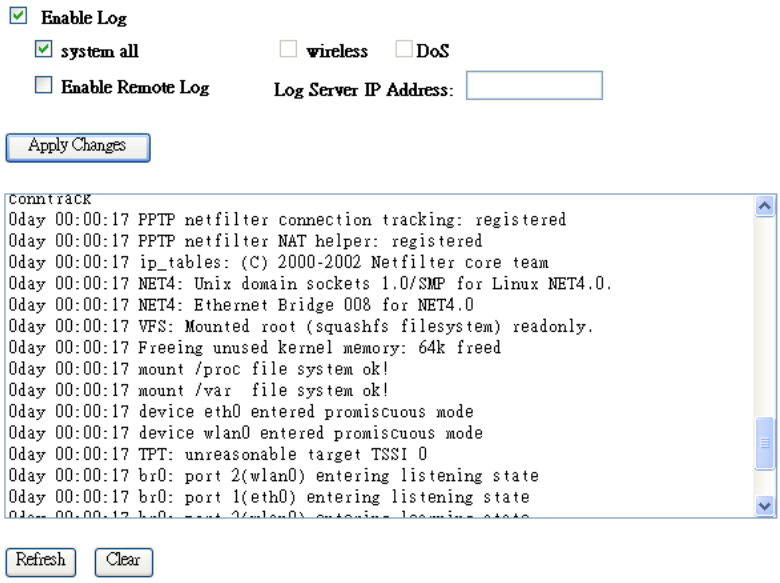
4. Log Server IP Address

Please input the log server IP Address.

5. Apply Changes & Refresh & Clear

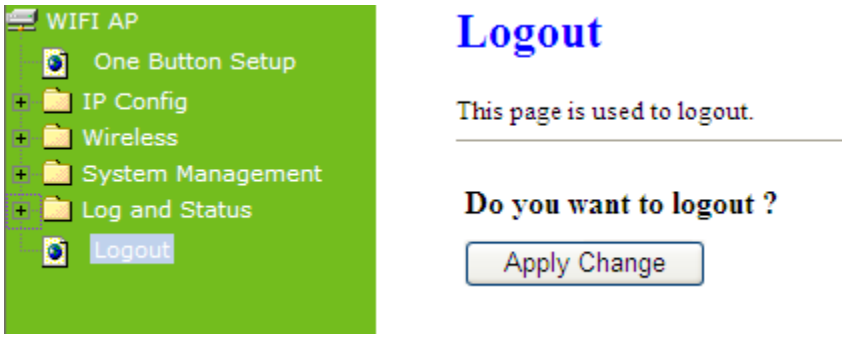
Click on **Apply Changes** to save the setting data. Click on **Refresh** to renew the system time, or on **Clear** to clear all the record.

- After clicking **Apply Changes** to record the event log, it will be shown as the example below.



7.5 Logout

Click **Logout** on the bottom menu to exit and go back to GUI login home page.



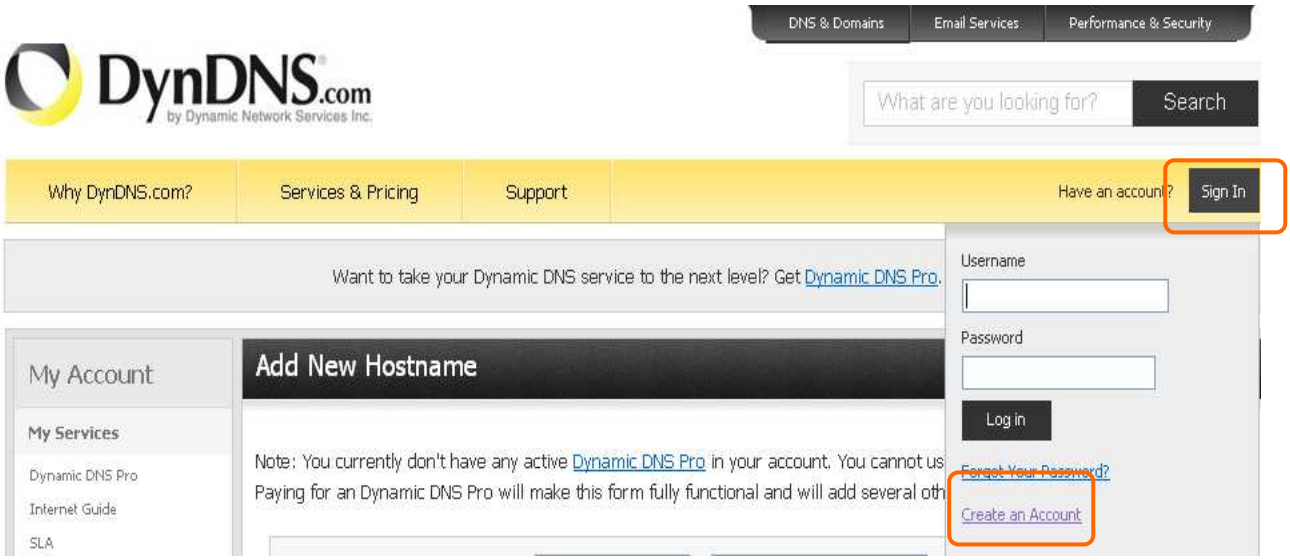
Chapter 8 DDNS Service Application

DDNS is a service changes the dynamic IP to the static IP. The settings of DDNS can solve the problem of being given the different IP by router every time. After setting the Router, your host name would correspond to your dynamic IP. Moreover, via the host name application, it could be easier for you to use FTP, Webcam and Printer remotely.

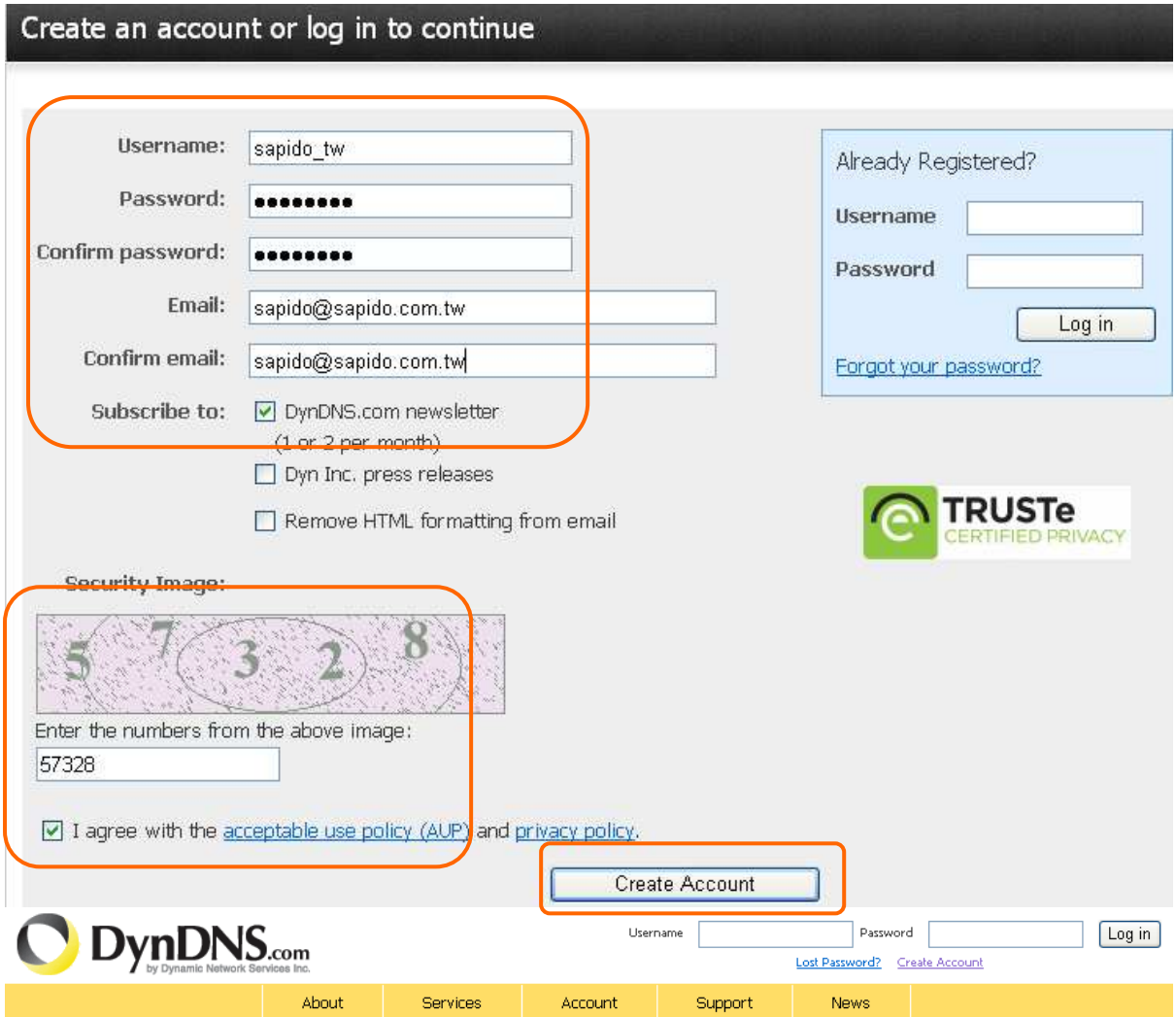
Dynamic DNS allows you to make an assumed name as a dynamic IP address to a static host name. Please configure the dynamic DNS below. Please select **Dynamic DNS** under the **IP Config** folder, and follow the instructions below to enter the **Dynamic DNS** page to configure the settings you want.

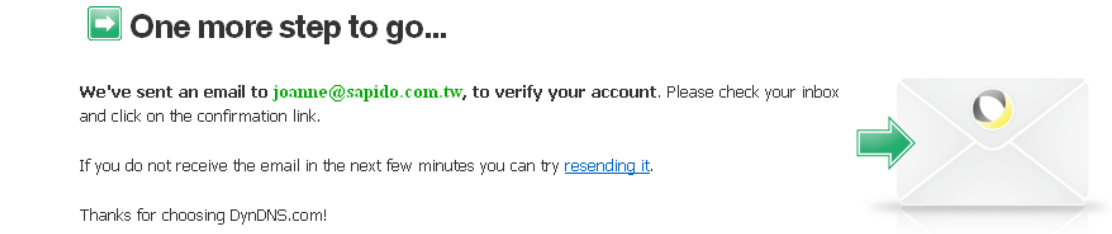
If you don't have a DDNS account, please follow the steps to complete your DDNS with Dynamic IP settings.

Step 1. First access the Internet and fill http://www.dyndns.com/ into the address field of your web browser, then click **Create Account**.



Step 2. Fill in the form as required, and then click on **Create Account** button.





Step 3. When you got this account created message, close it, and check your mailbox. You would get a mail from DynDNS website.

Step 4. Click on the indicated address within your mail to confirm.

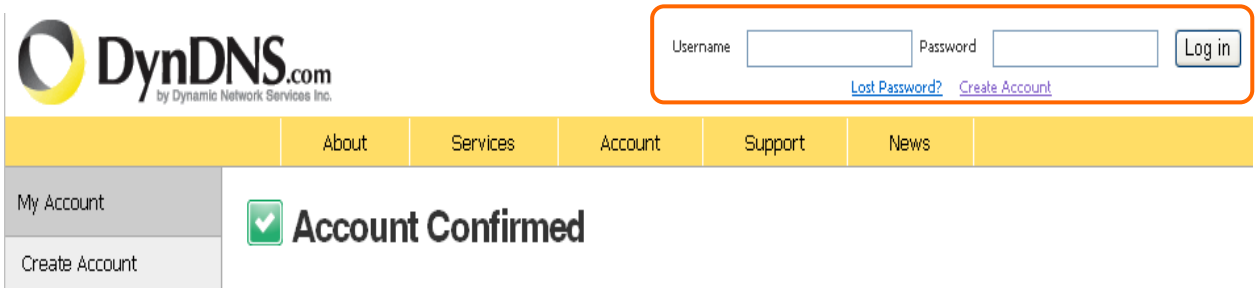
Your DynDNS.com Account ' sapido ' has been created. You need to visit the confirmation address below within 48 hours to complete the account creation process:

https://www.dyndns.com/account/confirm/BDJZJYlWzdYnrQBVEP1bcQ

Our basic service offerings are free, but they are supported by our paid services. See http://www.dyndns.com/services/ for a full listing of all of our available services.

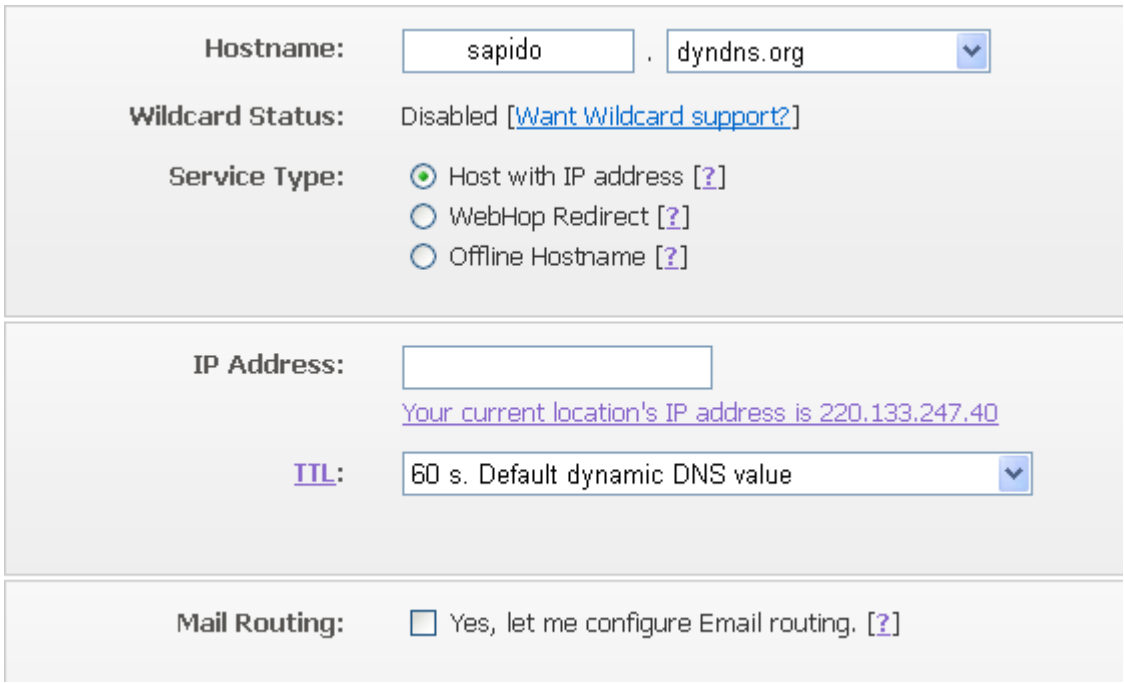
If you did not sign up for this account, this will be the only communication you will receive. All non-confirmed accounts are automatically deleted after 48 hours, and no addresses are kept on file. We apologize for any inconvenience this correspondence may have caused, and we assure you that it was only sent at the request of someone visiting our site requesting an account.

Step 5. Click on **login.**

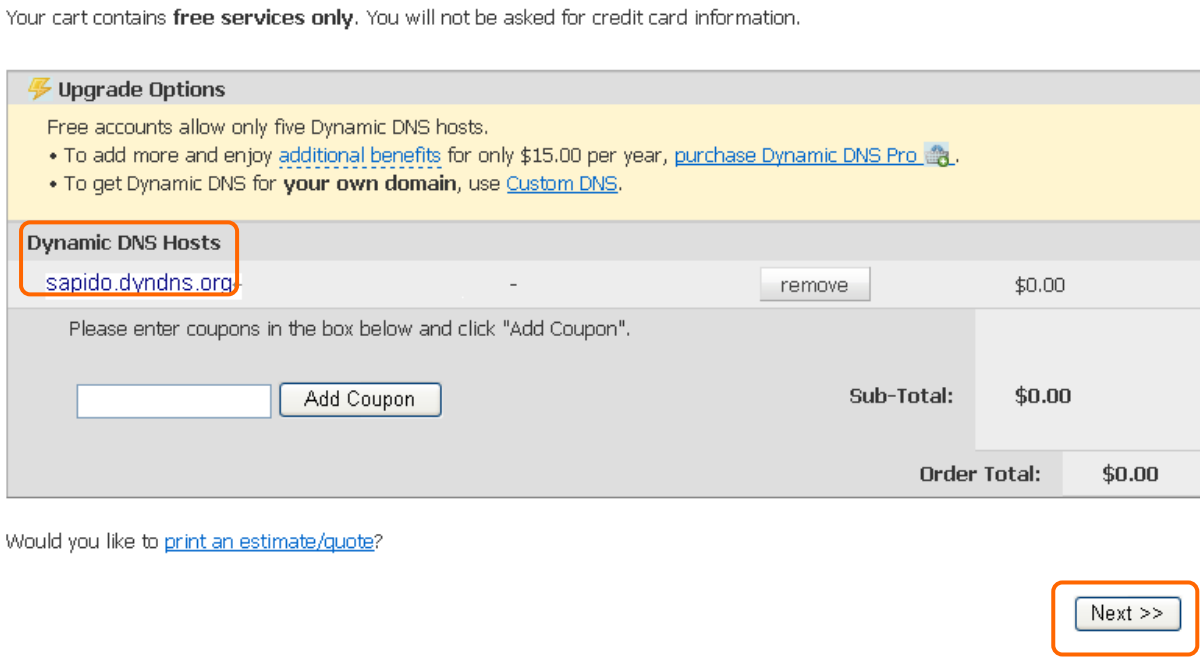


Step 6. Click **Add New Hostname**.

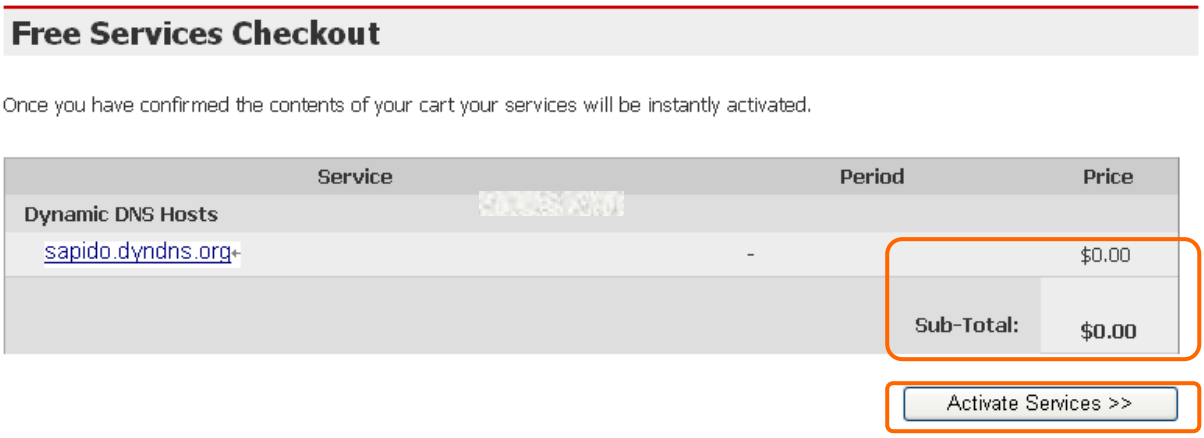
Step 7. Put in your favorite hostname and service type, and then click **Create Host** after finished.



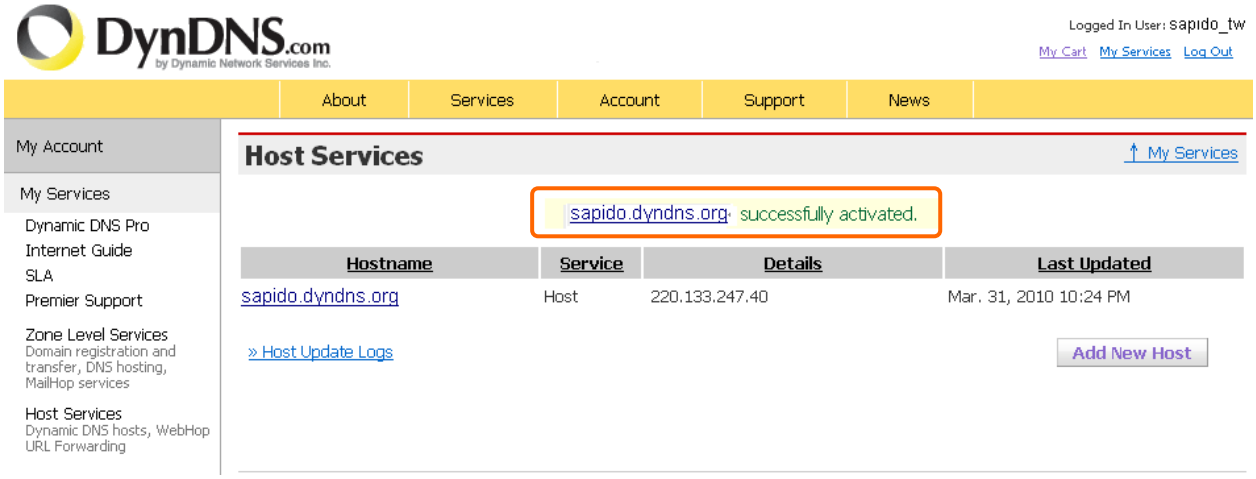
Step 8. Your hostname has been created when you see the following page.



Step 9. Click "**Activate Service**"



Step 10. Filish



Q & A

8.1 Installation

1. Q: Where is the XDSL Router installed on the network?

A: In a typical environment, the Router is installed between the XDSL line and the LAN. Plug the XDSL Router into the XDSL line on the wall and Ethernet port on the Hub (switch or computer).

2. Q: Why does the throughput seem slow?

A: To achieve maximum throughput, verify that your cable doesn't exceed 100 meter. If you have to do so, we advise you to purchase a bridge to place it in the middle of the route in order to keep the quality of transmitting signal. Out of this condition you would better test something else.

- Verify network traffic does not exceed 37% of bandwidth.
- Check to see that the network does not exceed 10 broadcast messages per second.
- Verify network topology and configuration.

8.2 LED

1. Why doesn't SAPIDO Light N+ Broadband Router power up?

A: Check if the output voltage is suitable, or check if the power supply is out of order.

2. The Internet browser still cannot find or connect to SAPIDO Light N+ Broadband Router after verifying the IP address and LAN cable, the changes cannot be made, or password is lost.

A: In case SAPIDO Light N+ Broadband Router is inaccessible; you can try to restore its factory default settings. Please press the "Reset" button and keep it pressed for over 7 seconds and the light of STATUS will vanish. The LEDs will flash again when reset is successful.

3. Why does SAPIDO Light N+ Broadband Router shut down unexpectedly?

A: Re-plug your power adapter. Then, check the STATUS indicator; if it is off, the internal flash memory is damaged. For more help, please contact with your provider.

8.3 IP Address

1. Q: What is the default IP address of the router for LAN port?

A: The default IP address is 192.168.1.1 with subnet mask 255.255.255.0

2. Q: I don't know my WAN IP.

A: There are two ways to know.

Way 1: Check with your Internet Service Provider.

Way 2: Check the setting screen of 11N Mini Router. Click on **Status & Log** item to select **Network Configuration** on the Main Menu. WAN IP is shown on the WAN interface.

3. How can I check whether I have static WAN IP Address?

A: Consult your ISP to confirm the information, or check Network Configuration in 11N Mini Router's Main Menu.

4. Will the Router allow me to use my own public IPs and Domain, or do I have to use the IPs provided by the Router?

A: Yes, the Router mode allows for customization of your public IPs and Domain.

8.4 OS Setting

1. Why can't my computer work online after connecting to 11N Mini Router?

A: It's possible that your Internet protocol (TCP/IP) was set to use the following IP address. Please do as the following steps. (Windows 2000 & XP) **Start**＞**Settings**＞ **Network and Dial-up Connections**＞double click on **Internet Protocol(TCP/IP)**＞ select **obtain IP address automatically**＞ Click on **OK** button. Then, open Internet browser for testing. If you still can't go online, please test something else below.

- Verify network configuration by ensuring that there are no duplicate IP addresses.
- Power down the device in question and ping the assigned IP address of the device. Ensure no other device responds to that address.
- Check that the cables and connectors or use another LAN cable.

2. Q: Why can't I connect to the router's configuration utility?

A: Possible Solution 1: Make sure that your Ethernet connect properly and securely. Make sure that you've plugged in the power cord.

Possible Solution 2: Make sure that your PC is using an IP address within the range of 192.168.1.2 to 192.168.1.254. Make sure that the address of the subnet mask is 255.255.255.0. If necessary, the Default Gateway data should be at 192.168.1.1. To verify these settings, perform the following steps:

Windows 95, 98, or My Users:

1. Click on Windows **Start** > click on **Run** > input **winipcfg** > click on **OK** button.
2. Check the IP Address, Subnet Mask, Default Gateway data. Is this data correct? If the data isn't correct, click on **Release All**. Then click on **Renew All**.

Windows NT, 2000, or XP Users:

1. Click on Windows **Start** > click on **Run** > input **cmd** > click on **OK** button.
2. At the DOS prompt, type ipconfig/all.
3. Check the IP Address, Subnet Mask, Default Gateway data. Is this data correct? If the data isn't correct. Please input **ipconfig/release** > press **Enter** > input **ipconfig/renew** > press **Enter**.

Possible Solution 3: Verify the connection setting of your Web browser and verify that the HTTP Proxy feature of your Web browser is disabled. Make these verifications so that your Web browser can read configuration pages inside your router. Launch your Web browser. **Internet Explorer Users:**

1. Click on **Tools** > **Internet Options** > **Connections tab**.
2. Select **never dial a connection**, click on **Apply** button, and then click on **OK** button.
3. Click on **Tools** and then click on **Internet Options**.
4. Click on **Connections** and then click on **LAN Settings**.
5. Make sure none of the check boxes are selected and click on **OK** button.
6. Click on OK button.

Netscape Navigator Users:

1. Click on **Edit** > **Preferences** > double-click **Advanced** in the Category window.
2. Click on **Proxies** > select **Direct connection to the Internet** > click on **OK** button.
3. Click on **Edit again** and then click on **Preferences**.

4. Under category, double-click on **Advanced** and then click on **Proxies**.
5. Select **Direct connection to the Internet** and click on **OK** button.
6. Click on **OK** button.

3. Q: Web page hangs, corrupt downloads, or nothing but junk characters is being displayed on the screen. What do I need to do?

A: Force your NIC to 10Mbps or half duplex mode, and turn off the "Auto-negotiate" feature of your NIC as a temporary measure. (Please look at the Network Control Panel, in your Ethernet Adapter's Advanced Properties tab.)

4. Q: Why can't I connect to the Web Configuration?

A: you can remove the proxy server settings in your web browser.

8.5 SAPIDO Light N+ Broadband Router Setup

1. Q: Why does 11N Mini Router's setup page shut down unexpectedly?

A: If one of the pages appears incompletely in 11N Mini Router's setup pages, please click on Logout item on the Main Menu before shutting it down. Don't keep it working. Then, close Internet browser and open it again for going back to the previous page.

2. Q: Why can't my USB devices and LAN ports work properly after setting the DHCP?

A: There are two rules over here.

Rule1: After connecting USB devices, please reboot your Router.

Rule2: Before finishing the DHCP setup, please don't connect any computer to LAN ports, because the conflict of having the same IP may occur and cause some computers a lot of trouble.

※Notice: Make sure that you always click on the Apply button after configuring each setting. And in order to let other LAN ports work properly, please reboot your PC.

3. Q: I don't know how to configure DHCP.

A: DHCP is commonly used in the large local network. It allows you to manage and distribute IP addresses from 2 to 254 throughout your local network via 11N Mini Router. Without DHCP, you would have to configure each computer separately. It's very troublesome. Please Open **Internet browser** > Input **192.168.1.1 in the**

website blank field > Select **DHCP Server under** the **IP Config Menu**. For more information, please refer to 3.3.2 (Router Mode) or 4.3.1 (AP Mode).

4. Q: How do I upgrade the firmware of 11N Mini Router?

A: Periodically, a new Flash Code is available for SAPIDO Light N+ Broadband Router on your product supplier's website. Ideally, you should update 11N Mini Router's Flash Code using **Firmware Upgrade** on the **System Management** menu of SAPIDO Light N+ Broadband Router Settings.

5. Q: My **11n Mobile Server Router** cannot connect to the ISP?

A: There are three possible solutions.

1. Check the Cable/XDSL modem is power on.
2. Check the Cable/XDSL link light is on to verify a good physical connection.
3. Check the WAN port LED to verify if the Cable/XDSL modem is connected to the router:

If your ISP Login method is following, please make sure the username and password are correct or not.

If your ISP is using dynamic IP addressing (DHCP) then the DHCP protocol does not have the authentication feature. Some Cable service providers often use the following to determine user's identification.

6. Q: Why is that I can ping to outside hosts, but cannot access Internet websites?

A: Check the DNS server settings on your PC. You should get the DNS servers settings from your ISP. If your PC is running a DHCP client, remove any DNS IP address setting. As the router assign the DNS settings to the DHCP-client-enabled PC.

7. Q: SAPIDO Light N+ Broadband Router couldn't save the setting after click on Apply button?

A: SAPIDO Light N+ Broadband Router will start to run after the setting finished applying, but the setting isn't written into memory. Here we suggest if you want to make sure the setting would be written into memory, please reboot the device via **Rebo**ot under **System Management** directory**.**

8.6 Wireless LAN

1. Q: Why couldn’t my wireless notebook work on-line after checking?

A: Generally, Wireless networks can sometimes be very complicated to set up, particularly if you're dealing with encryption and products from different vendors. Any number of variables can keep your workstations from talking to each other. Let's go over some of more common ones.

For starters, verify that your router and your workstation are using the same SSID descriptions. SSID acts as a password when a mobile device tries to connect to the wireless network. The SSID also differentiates one WLAN from another, so all access points and all devices attempting to connect to a specific WLAN must use the same SSID. A workstation will not be permitted to connect to the network unless it can provide this unique identifier. This is similar to the function of your network's Workgroup or Domain name.

When you're experiencing conductivity problems, it is always best to keep things simple. So next you are going to do is that, please disable any WEP encryption you might have configured.

Successful implementation of encryption also includes the use of a shared key. A HEX key is the most common, but other formats are also used. This key identifies the workstation to the router as a trusted member of this network. Different manufacturers can implement this key technology in ways that might prevent them from working correctly with another vendor's products. So pay attention to detail is going to be the key to a successful installation.

Next make sure the router and the NIC are configured to use the same communications channel. There are normally 11 of them, and the default channel can also vary from vendor to vendor. You might also want to confirm that the router has DHCP services enabled and an address pool configured. If not, the NIC won't be able to pick up an IP address. I have run across a few access points that offer DHCP services but do not assign all of the needed IP information to the NIC. As a result, I was able to connect to the network, but could not browse the web. The point is, don't assume anything. Verify for yourself that all of the required settings are being received by the workstation.

Finally, you might want to keep the system you're trying to configure in the same room as the router, at least during the initial configuration, in order to minimize potential interference from concrete walls or steel beams.

2. Q: My PC can't locate the Wireless Access Point.

A: Check the following:

- Your PC is set to Infrastructure Mode. (Access Points are always in Infrastructure Mode.)
- The SSID on your PC and the Wireless Access Point are the same. Remember that the SSID is case-sensitive. So, for example "Workgroup" does NOT match "workgroup".
- Both your PC and the Wireless Access Point must have the same setting for WEP. The default setting for the Wireless Router is disabled, so your wireless station should also have WEP disabled.
- If WEP is enabled on the Wireless Router, your PC must have WEP enabled, and the key must match.
- If the Wireless Router's Wireless screen is set to Allow LAN access to selected Wireless Stations only, then each of your Wireless stations must have been selected, or access will be blocked.
- To see if radio interference is causing a problem, see if connection is possible when close to the Wireless Access Point. Remember that the connection range can be as little as 100 feet in poor environments.

3. Q: Wireless connection speed is very slow.

A: The wireless system will connect at highest possible speed, depending on the distance and the environment. To obtain the highest possible connection speed, you can experiment with following:

- Access Point location: Try adjusting the location and orientation of the Access Point.
- Wireless Channel: If interference is the problem, changing to another channel may show a marked improvement.
- Radio Interference: Other devices may be causing interference. You can experiment by switching other devices off, and see if this helps. Any "noisy" devices should be shielded or relocated.
- RF Shielding: Your environment may tend to block transmission between the wireless stations. This will mean high access speed is only possible when close to the Access Point.

4. Q: Some applications do not run properly when using the Wireless Router.

A: The Wireless Router processes the data passing through it, so it is not transparent. Use the Special Application feature to allow the use of Internet applications which do not function correctly. If this does solve the problem, you can use the DMZ function. This should work with almost every application, but:

- It is a security risk, since the firewall is disabled.
- Only one (1) PC can use this feature.

5. Q: I can't connect to the Wireless Router to configure it.

A: Check the following:

- The Wireless Router is properly installed, LAN connections are OK, and it is powered ON.
- Make sure that your PC and the Wireless Router are on the same network segment.
- If your PC is set to "Obtain an IP Address automatically" (DHCP client), restart it.
- If your PC uses a Fixed (Static) IP address, make sure that it is using an IP Address within the range 192.168.1.129 to 192.168.1.253 and thus compatible with the Wireless Router's default IP Address of 192.168.1.254. Also, the Network Mask should be set to 255.255.255.0 to match the Wireless Router. In Windows, you can check these settings by using Control Panel ~ Network to check the Properties for the TCP/IP protocol.

6. Q: The WinXP wireless interface couldn't communicate the WEP with 11N Mini Router's wireless interface.

A: The default WEP of WinXP is **Authentication Open System - WEP**, but the WEP of SAPIDO Light N+ Broadband Router is only for **Shared Key - WEP**, it caused both sides couldn't communicate. Please select the WEP of WinXP from Authentication Open System to **Pre-shared Key - WEP**, and then the WEP wireless interface between WinXP and SAPIDO Light N+ Broadband Router would be communicated.

8.7 Support

1. Q: Why can't the NTFS hard disk be used with 11N Mini Router?

A: SAPIDO Light N+ Broadband Router doesn't support the NTFS hard disk. It only supports EXT3 and FAT32 file systems.

2. Q: What is the maximum number of IP addresses that the XDSL Router will support?

A: The Router will support to 253 IP addresses with NAT mode.

3. Q: Is the Router cross-platform compatible?

A: Any platform that supports Ethernet and TCP/IP is compatible with the Router.

8.8 Others

1. Q: Why can't I receive corrupted FTP downloads?

A: If you are experiencing corrupted files when you download a file with your FTP client, try using another FTP program.

2. Q: Why does the router dial out for PPPoE mode very often?

A: Normally some of game, music or anti-virus program will send out packets that trigger the router to dial out, you can close these programs. Or you can set the idle time to 0, then control to dial out manually.

3. Q: What can I do if there is already a DHCP server in LAN?

A: If there are two DHCP servers existing on the same network, it may cause conflict and generate trouble. In this situation, we suggest to disable DHCP server in router and configure your PC manually.

Chapter 9 Appendices

9.1 Operating Systems

1. Microsoft：Windows 2000, XP, Vista 32bit and the following related versions.
2. Apple：Mac OS X 10.4.7, Leopard and the following related versions.
3. Linux：Redhat 9, Fedora 6 & 7, Ubuntu 7.04 and the following related versions.

9.2 Browsers

1. Internet Explorer ver. 6 and 7 and the following related versions.
2. FireFox ver. 2.0.0.11 and the following related versions.3.
3. Safari ver. 3.04 and the following related versions.

9.3 Communications Regulation Information

Should any consumers need to learn more information, services and supports, please contact the supplier of your product directly.