# 11n Mini Router

# BR080n

## User Manual

# Table of Contents

# 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.

# 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).
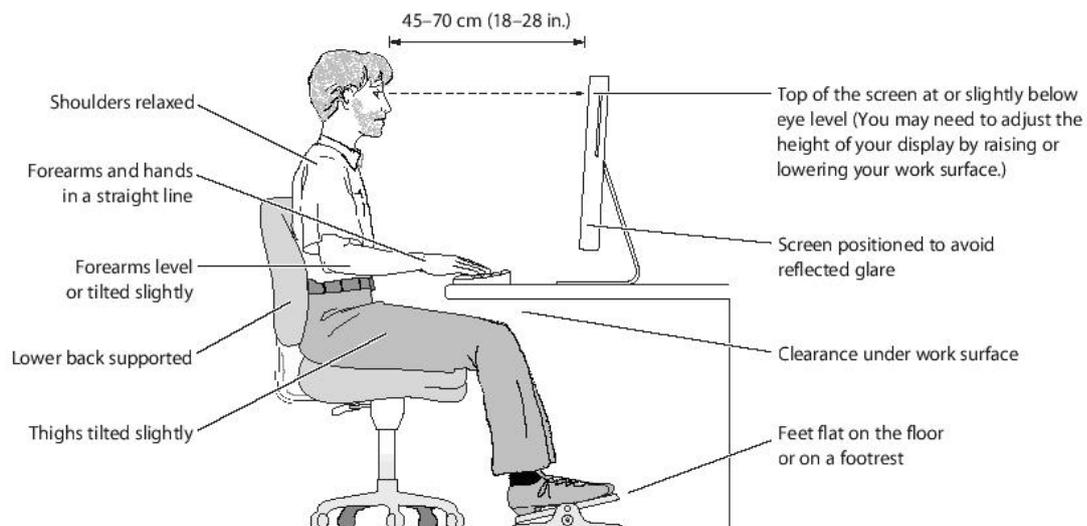


# CE Statement of Conformity

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 States relating to Electromagnetic Compatibility" (89/336/EEC; 92/31/EEC; 93/68/EEC)

# Chapter 1    Introduction

## 1.1    Overview

11N Mini 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**; the world No.1 Mobile Router for traveler

- **Three modes to be switched**; Router, AP and WiFi AP

- **WPS button** provides not only an easy and secured wireless network but also a WDS repeater in one push

- **Multiple APs Supported;** adds or limits the properties for classed SSID, increasing the flexibility and efficiency of the network.

## 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°C~45°C (32°F~113°F)<br>Storage Temp. -20°C~70°C (-14°F~158°F)<br>Operating Humidity 10% to 85% Non-Condensing<br>Storage Humidity 5% to 90% Non-Condensing |
| | Peak Gain of the Antenna | 2dBi @ 2.45GHz |
| **Application** | Dimension | 88mm (L) x 58mm (W) x 26.5mm (H) |
| | Power | Power Adapter DC5V/0.5A with mini-USB B type male connector |

Note: 1. Firmware Upgrade available through download.

### 1.2.1 Six Views of Product Appearance
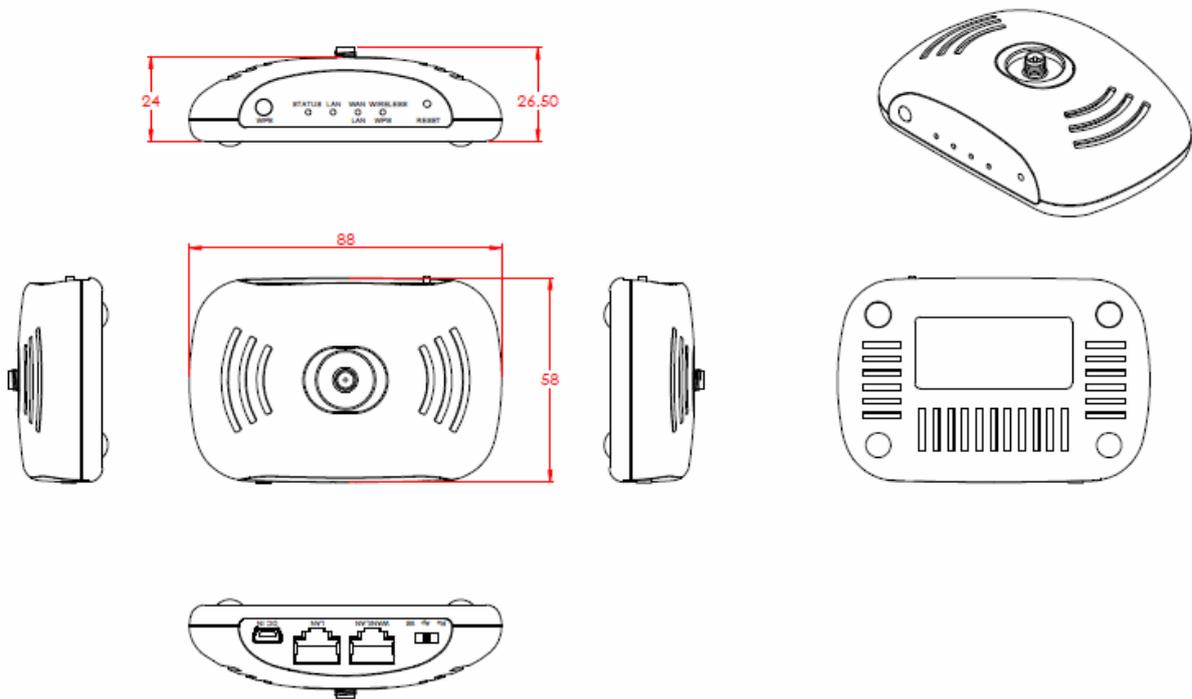


| Power Plug | Power Adapter DC5V/0.5A with mini-USB B type male connector |
|---|---|
| Operation Mode Switch | Router, AP, and WiFi AP operation modes |
| Reset Button | Press "**Reset**" button over 10 seconds. When status indicator turns from flashing to solid, the process is completed. All settings are back to default. |
| Ethernet Port | 2 RJ-45 Ethernet 10/100 Ports |

### 1.2.2 LED Indicator Status Description

| Status<br>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<br>Orange: WPS enabled |
| POWER | Operation OK | Power on |

## 1.3 System Requirements

To begin with 11N Mini Router, 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: Win2000 or WinXP / Linux.

## 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 & Manually

After 11N Mini Router connected with your computer, please make sure your IP is in the automatic IP position or you adjust it manually in order to activate the Internet network from home to Internet.  If you don't know how to enter the settings, please follow the steps as below.

**Step 1.** Go to **Start**>**Settings**> **Network Connections** and then select **Local Area Connection**.
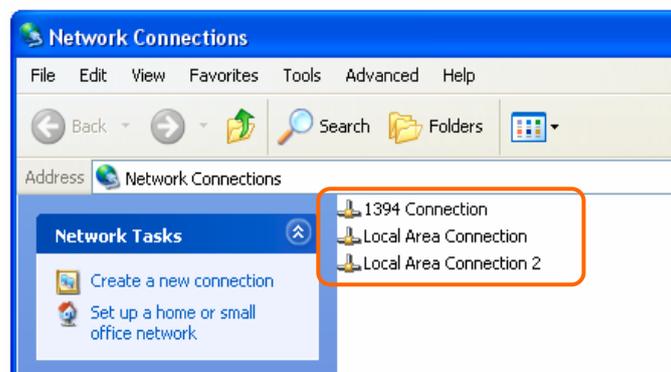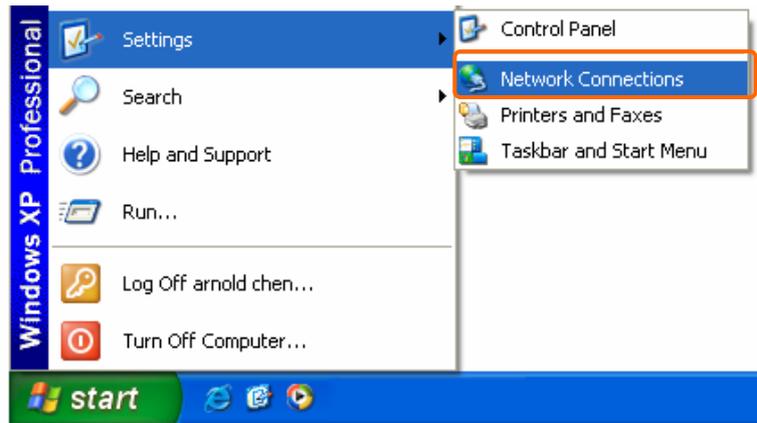
**Step 2.** Click on Properties
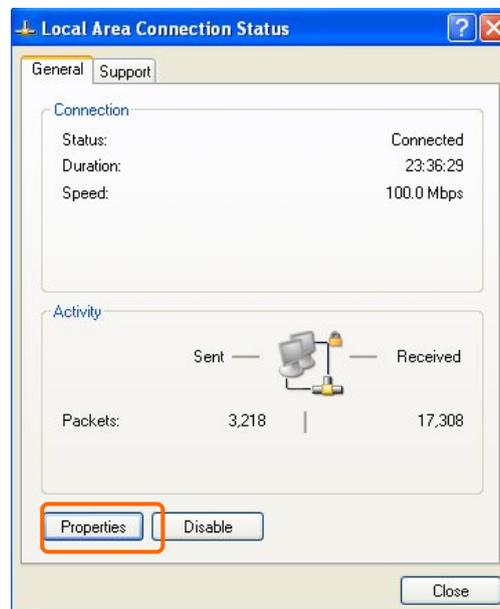


**Step 3.** Double click on Internet Protocol (TCP/IP).
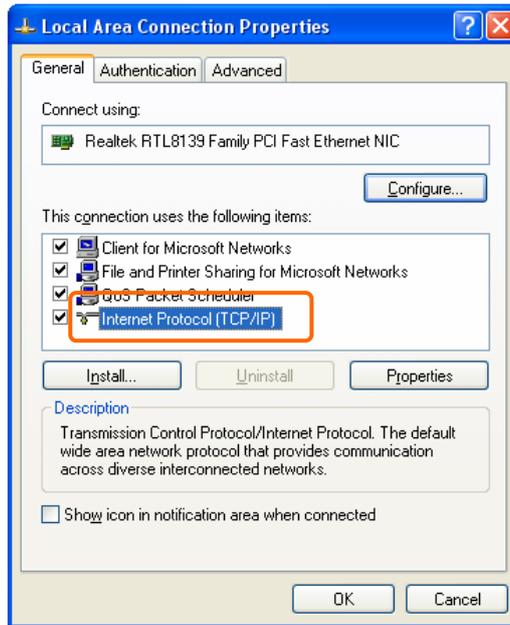
**Step 4-1.** For getting IP automatically if you are one of the users under 11N Mini Router, please skip **Use the following IP address** and then select **Obtain an IP address automatically** and **Obtain DNS server address automatically** and then click on **OK** button.
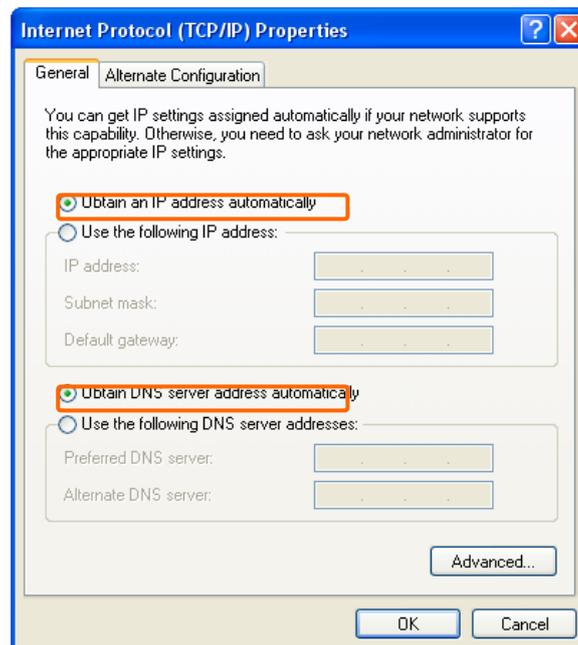


**Step 4-2.** For getting IP manually in order to specify a Virtual Server, such as Print Server, FTP Server and so on, please skip **Obtain an IP address automatically** and then select **Use the following IP address**. And the following default setting of 11N Mini Router should be noted:

- 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 11N Mini Router in Router Mode)
- DNS: 192.168.1.1 (use 11N Mini Router's IP address or on your own choice)

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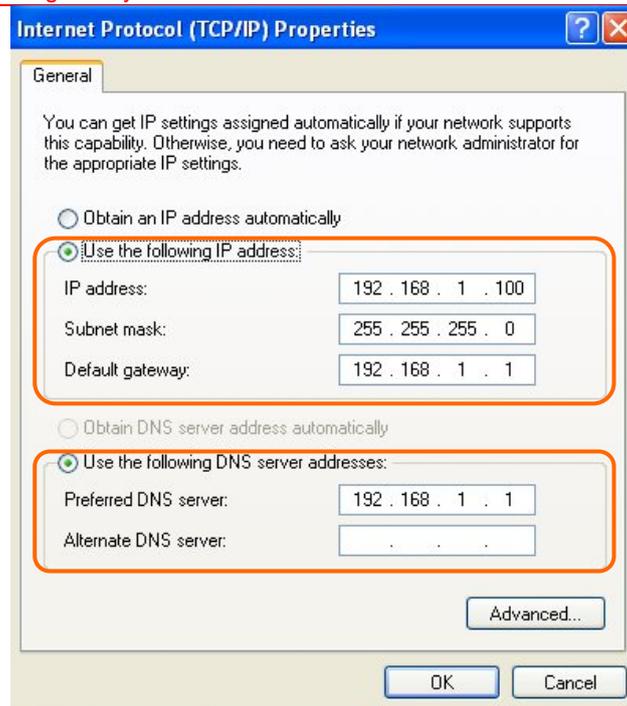


### 1.5.1 Network Testing

There are two ways to test your Network whether it can work on Internet or not. 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 you like, for example, http://www.yahoo.com in the web address blank and then press enter. If the website appears, that means your Internet is working under normal situation.

### 1.5.2.1 Testing with DOS (Windows XP Platform)

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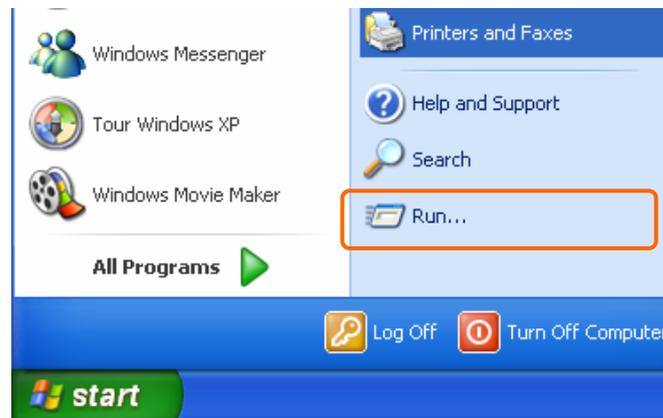


**Step 2.** Input **cmd** in the blank, and then click **OK** button. The Command Prompt window appears.
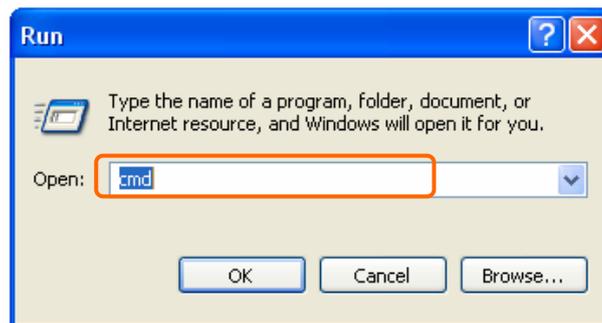


**Step 3.** Input **ipconfig** in the flashing area then press enter. You will get an IP Address 192.168.1.100, for example, and Default Gateway as 192.168.1.1.

**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 11N Mini Router

11N Mini Router is a portable and convenient wireless solution for the traveling businessmen delivering 802.11n wireless connectivity with a maximum wireless signal rate of up to 300Mbps. Use it in conference rooms, hotel rooms, or even at hotspots. The Wireless Pocket Router/AP might be small in size, but is huge in functionality, supporting multiple operation modes, including Access Point (AP) mode, Router mode, and WiFi AP mode. You can switch among these modes easily by using 11N Mini Router's 3-way configuration 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 11N Mini Router switches to Router Mode, there will be each WAN and LAN port existing, the administrator can do the Quick Setup including WAN Setup, LAN Setup, Wireless Setup, Time Server Setup, Password Setup, Firewall Setup, QoS Setup.
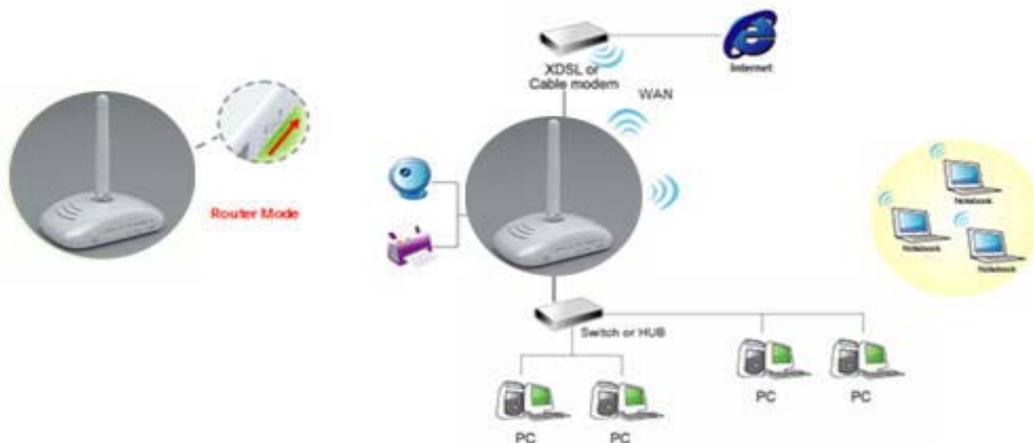
### 2.1.2 Hardware Connection and Application for AP Mode

Under AP Mode, it supports 2 LAN ports as Bridge, and user can connect to 11N Mini 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, 11N Mini 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.
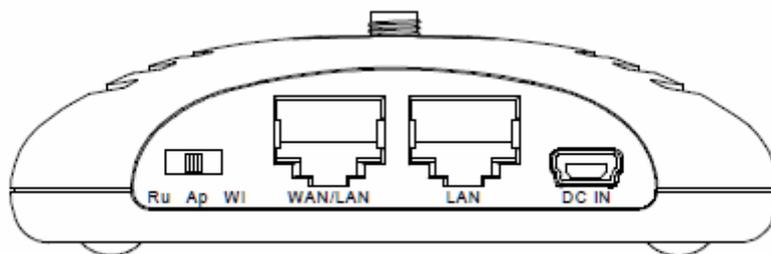


The default UPnP of 11N Mini Router is ON.

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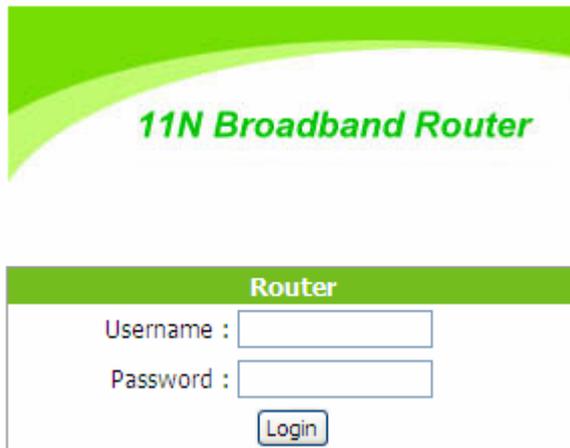


**Step 3.** Click **One Button Setup** on the left of the main menu under router mode.
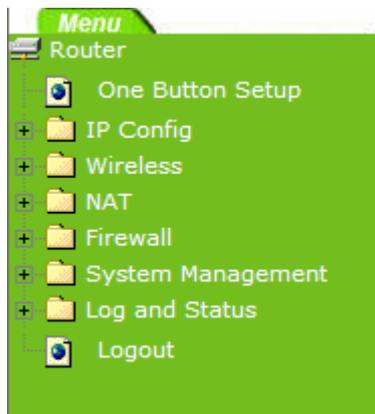
## One Button Setup

This page is used to configure all of the server router function for first time.

**Time Zone Select**

Time Zone Select :   (GMT+08:00)Taipei

**Change Password**

New Password:

**Device Name**

Device Name:   11N_Broadband_Router

**Wireless Setup**

SSID:   11N_Broadband_Router

Encryption:   None

Finish

- ■ **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.
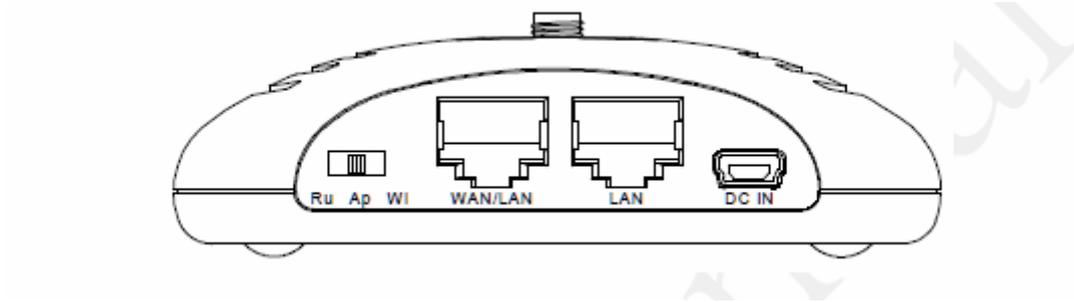


**Step 2.** Click the **Internet Gateway Device** to open the login page.
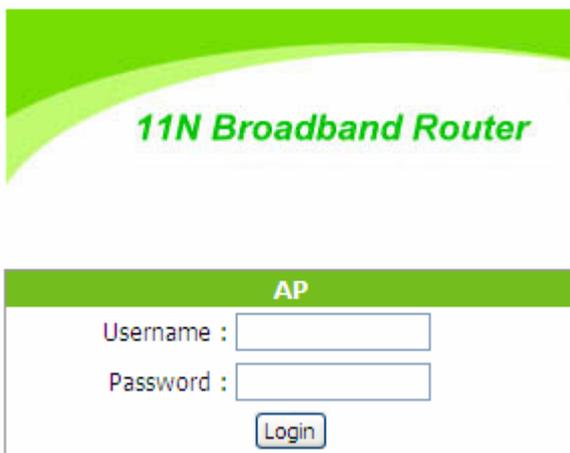


**Step 3.** Click One Button Setup on the left of the main menu under AP mode.

## One Button Setup

This page is used to configure all of the server router function for first time.

**Time Zone Select**

Time Zone Select :  (GMT+08:00)Taipei

**Change Password**

New Password:

**Device Name**

Device Name:  11N_Broadband_Router

**Wireless Setup**

SSID:  11N_Broadband_Router

Encryption:  None

Finish

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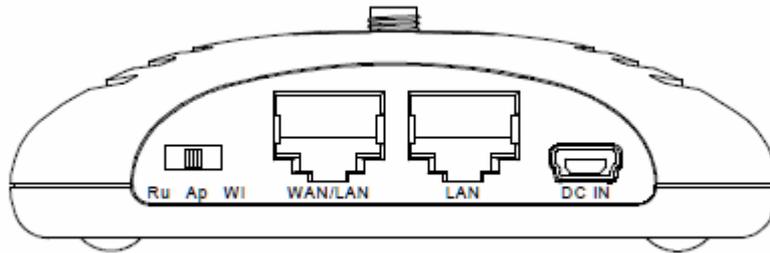
**Step 2.** Click the **Internet Gateway Device** to open the login page.



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



Version 1.0.15

## One Button Setup

This page is used to configure all of the server router function for first time.

**Time Zone Select**

Time Zone Select : (GMT+08:00)Taipei

**Change Password**

New Password:

**Device Name**

Device Name: 11N_Broadband_Router

**Wireless Site Survey Setting**

| SSID | BSSID | Channel | Type | Encrypt | Signal | Select |
|------|-------|---------|------|---------|--------|--------|

Refresh

Encryption: None

**Extended Wireless Setup**

Extended SSID: ESSID_11N_Broadband_Router

Encryption: None

Finish

- **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.

Version 1.0.15

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

Version 1.0.15

# 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.
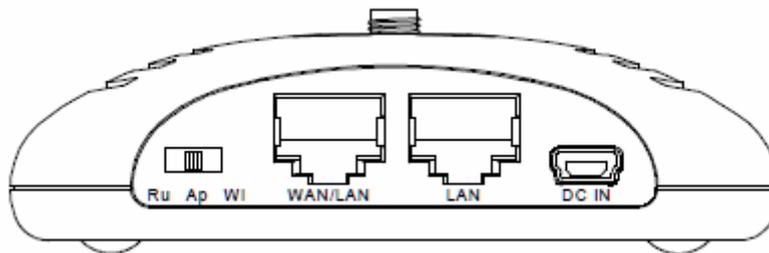


Note:  1. Before sliding the switch modes, please power-off the router firstly. Moreover, please stay over 5 seconds between power-off / power-on condition.
2. Switching the mode while power is on will make the router crush, and cause the hardware damage and information lost.

### 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".**



Version 1.0.15

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 11N Mini 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 11N Mini Router connects the upper level
device only through the Ethernet port and gets its assigned IP address. If not, the 11N Mini
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.
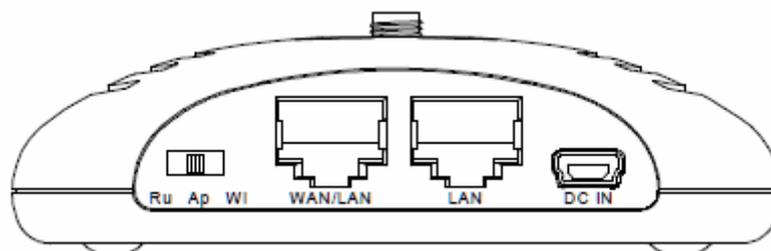


Note:　1. Before sliding the switch modes, please power-off the router firstly. Moreover, please stay over 5 seconds
between power-off / power-on condition.
2. Switching the mode while power is on will make the router crush, and cause the hardware damage and
information lost.

## 4.3  WiFi AP Mode

As WiFi AP Mode, 11N Mini Router will be a bridge and support a wireless LAN. NAT function is disabled under WiFi AP mode. The 11N Mini Router connects the upper level device wirelessly and gets its assigned IP address. If not, the 11N Mini 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.
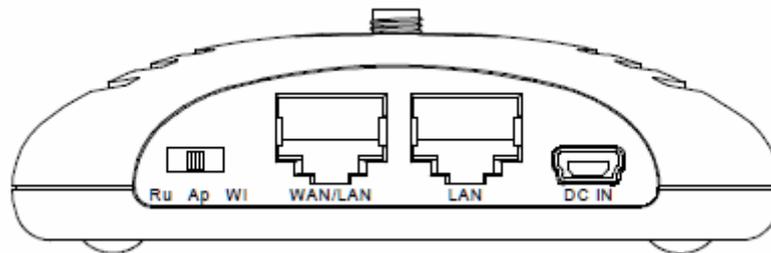


Note:  1. Before sliding the switch modes, please power-off the router firstly. Moreover, please stay over 5 seconds between power-off / power-on condition.
2. Switching the mode while power is on will make the router crush, and cause the hardware damage and information lost.

# 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 11N Mini Router to share the same connection to Internet.

### 5.1.1    WAN

Select **WAN** under the **IP Config** menu. 11N Mini 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**.

## 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:** | Ethernet Port ▾ |
| **WAN Access Type:** | DHCP Client ▾ |
| **Host Name:** | Realtek |
| **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**

### 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 |
|------|-------|---------|------|---------|--------|--------|

**Encryption:**    None ▼    [Refresh]

**WAN Access Type:**    DHCP Client ▼

**Host Name:**    Realtek

**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.

## 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: | Ethernet Port ⌄ |
| WAN Access Type: | Static IP ⌄ |
| IP Address: | 172.1.1.1 |
| Subnet Mask: | 255.255.255.0 |
| Default Gateway: | 172.1.1.254 |
| MTU Size: | 1500  (1400-1500 bytes) |
| DNS 1: | |
| DNS 2: | |
| DNS 3: | |
| Clone MAC Address: | 000000000000 |

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

**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.

## 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: | Ethernet Port |
| WAN Access Type: | DHCP Client |
| Host Name: | Realtek |
| 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

**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, 11N Mini 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.

## 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:** | Ethernet Port |
| **WAN Access Type:** | PPPoE |
| **User Name:** | |
| **Password:** | |
| **Service Name:** | |
| **Connection Type:** | Continuous    Connect   Disconnect |
| **Idle Time:** | 5 (1-1000 minutes) |
| **MTU Size:** | 1452 (1360-1492 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**

**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.

**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: | Ethernet Port |
| WAN Access Type: | PPTP |
| Address Mode: | ⦿ Dynamic ○ Static |
| Server IP Address: | |
| User Name: | |
| Password: | |
| MTU Size: | 1460 (1400-1460 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

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.

**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: | Ethernet Port ▾ |
| WAN Access Type: | L2TP ▾ |
| Address Mode: | ⊙ Dynamic  ○ Static |
| Server IP Address/Host Name: | |
| User Name: | |
| Password: | |
| MTU Size: | 1460  (1400-1460 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

**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.

## LAN Interface Setup

This page is used to configure the parameters for local area network which connects to the LAN port of your Access Point. Here you may change the setting for IP address, subnet mask, DHCP, etc..

| | |
|---|---|
| Device Name: | 11N_Broadband_Rou |
| IP Address: | 192.168.1.1 |
| Subnet Mask: | 255.255.255.0 |
| Default Gateway: | 0.0.0.0 |
| DHCP: | Server |
| DHCP Client Range: | 192.168.1.100 – 192.168.1.200 [Show Client] |
| Static DHCP: | Disabled [Set Static DHCP] |
| 802.1d Spanning Tree: | Disabled |
| Clone MAC Address: | 000000000000 |

[Apply Change] [Reset]

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.

# Dynamic DNS Setting

Dynamic DNS is a service, that provides you with a valid, unchanged, internet domain name (an URL) to go with that (possibly often changing) IP address.

☐ **Enable DDNS**

**Service Provider :** [0] [<<] [dyndns ▾]

**Domain Name :** [host.dyndns.org]

**User Name/Email:** [ ]

**Password/Key:** [ ]

*Note:*
*For TZO, you can have a 30 days free trial here or manage your TZO account in control panel*
*For DynDNS, you can create your DynDNS account here*

[Apply Change] [Reset]

**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

11N Mini Router enables fastest 300 Mbps IEEE802.11g wireless transmissions and keeps compatibility with existing IEEE 802.11n devices. 11N Mini 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.

# Wireless Basic Settings

This page is used to configure the parameters for wireless LAN clients which may connect to your Access Point. Here you may change wireless encryption settings as well as wireless network parameters.

☐ **Disable Wireless LAN Interface**

| | |
|---|---|
| **Band:** | 2.4 GHz (B+G+N) ▾ |
| **Mode:** | AP ▾   [Multiple AP] |
| **Network Type:** | Infrastructure ▾ |
| **SSID:** | 11N_Broadband_Router |
| **Channel Width:** | 40MHz ▾ |
| **Control Sideband:** | Upper ▾ |
| **Channel Number:** | 11 ▾ |
| **Broadcast SSID:** | Enabled ▾ |
| **WMM:** | Enabled ▾ |
| **Data Rate:** | Auto ▾ |
| **Associated Clients:** | [Show Active Clients] |

☐ **Enable Mac Clone (Single Ethernet Client)**

☐ **Enable Universal Repeater Mode (Acting as AP and client simultaneouly)**

**SSID of Extended Interface:** ESSID_11N_Broadband_Router

[Apply Change]  [Reset]

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.

## Multiple APs

This page shows and updates the wireless setting for multiple APs.

| No. | Enable | Band | SSID | Data Rate | Broadcast SSID | WMM | Access | Active Client List |
|-----|--------|------|------|-----------|----------------|-----|--------|--------------------|
| AP1 | ☑ | 2.4 GHz (B+G+N) | MultipleAP_1 | Auto | Enabled | Enabled | LAN+WAN | Show |
| AP2 | ☑ | 2.4 GHz (B+G+N) | MultipleAP_2 | Auto | Enabled | Enabled | LAN+WAN | Show |
| AP3 | ☑ | 2.4 GHz (B+G+N) | MultipleAP_3 | Auto | Enabled | Enabled | LAN+WAN | Show |
| AP4 | ☑ | 2.4 GHz (B+G+N) | MultipleAP_4 | Auto | Enabled | Enabled | LAN+WAN | Show |

Apply Change    Reset    Close

(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**, 11N Mini 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 11N Mini 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

**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.

## Wireless Advanced Settings

These settings are only for more technically advanced users who have a sufficient knowledge about wireless LAN. These settings should not be changed unless you know what effect the changes will have on your Access Point.

| | | |
|---|---|---|
| Fragment Threshold: | 2346 | (256-2346) |
| RTS Threshold: | 2347 | (0-2347) |
| Beacon Interval: | 100 | (20-1024 ms) |
| Preamble Type: | ⦿ Long Preamble ○ Short Preamble | |
| IAPP: | ⦿ Enabled ○ Disabled | |
| Protection: | ○ Enabled ⦿ Disabled | |
| Aggregation: | ⦿ Enabled ○ Disabled | |
| Short GI: | ⦿ Enabled ○ Disabled | |
| RF Output Power: | ⦿ 100% ○ 70% ○ 50% ○ 35% ○ 15% | |

[ Apply Changes ]   [ Reset ]

**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. 11N Mini 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.

## Wireless Security Setup

This page allows you setup the wireless security. Turn on WEP or WPA by using Encryption Keys could prevent any unauthorized access to your wireless network.

**Select SSID:** Root AP - 11N_Broadband_Router

[Apply Change]   [Reset]

**Encryption:** WPA

**Authentication Mode:** ○ Enterprise (RADIUS) ◉ Personal (Pre-Shared Key)

**WPA Cipher Suite:** ☐ TKIP ☐ AES

**Pre-Shared key Format:** Passphrase

**Pre-Shared Key:**

▶ **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.

**Wireless Access Control**

If you choose 'Allowed Listed', only those clients whose wireless MAC addresses are in the access control list will be able to connect to your Access Point. When 'Deny Listed' is selected, these wireless clients on the list will not be able to connect the Access Point.

Wireless Access Control Mode:   Disable ▼

MAC Address: [          ]   Comment: [            ]

[ Apply Changes ]   [ Reset ]

Current Access Control List:

| MAC Address | Comment | Select |
|---|---|---|

[ Delete Selected ]   [ Delete All ]   [ Reset ]

**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).
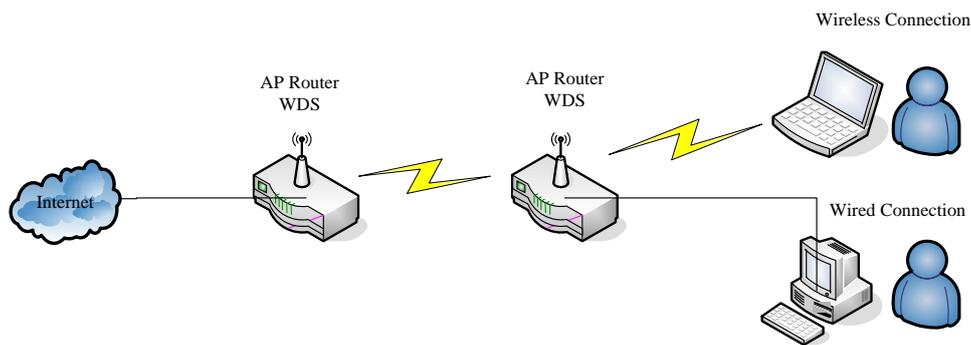


Please follow the instructions to setup WDS connections.



Version 1.0.15

**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** | 11N_Broadband_Router |
| **Channel Number** | 11 |
| **Encryption** | Disabled |
| **MAC Address** | 00:0e:68:ff:05:ae |
| **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** | 00:0e:68:ff:05:ae |

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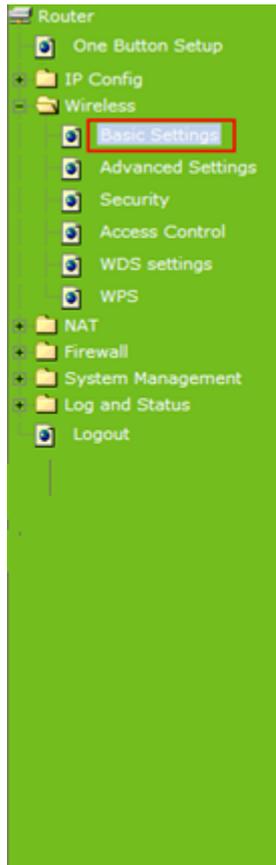
**Step 3.** Enter the WDS Settings page, select Enable WDS, and then input the MAC address of the paired device. Click **Apply Changes** to save the setting data.



**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.**

## WDS Settings

Wireless Distribution System uses wireless media to communicate with other APs, like the Ethernet does. To do this, you must set these APs in the same channel and set MAC address of other APs which you want to communicate with in the table and then enable the WDS.

---

☑ **Enable WDS**

**MAC Address:** [                    ]
**Data Rate:** [ Auto ▾ ]
**Comment:** [                    ]

[ Apply Changes ]  [ Reset ]    [ Set Security ]  [ Show Statistics ]

**Current WDS AP List:**

| MAC Address | Tx Rate (Mbps) | Comment | Select |
|---|---|---|---|
| 00:0e:68:ff:05:c8 | Auto | | ☐ |

[ Delete Selected ]  [ Delete All ]  [ Reset ]

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

## LAN Interface Setup

This page is used to configure the parameters for local area network which connects to the LAN port of your Access Point. Here you may change the setting for IP address, subnet mask, DHCP, etc..

---

**Device Name:** [ 11N_Broadband_Rou ]

**IP Address:** [ 192.168.1.1 ]

**Subnet Mask:** [ 255.255.255.0 ]

**Default Gateway:** [ 0.0.0.0 ]

**DHCP:** [ Server ▾ ]

**DHCP Client Range:** [ 192.168.1.100 ] – [ 192.168.1.200 ]  [ Show Client ]

**Static DHCP:** [ Disabled ▾ ]  [ Set Static DHCP ]

**802.1d Spanning Tree:** [ Disabled ▾ ]

**Clone MAC Address:** [ 000000000000 ]

[ Apply Change ]  [ Reset ]

**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

Version 1.0.15

**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.
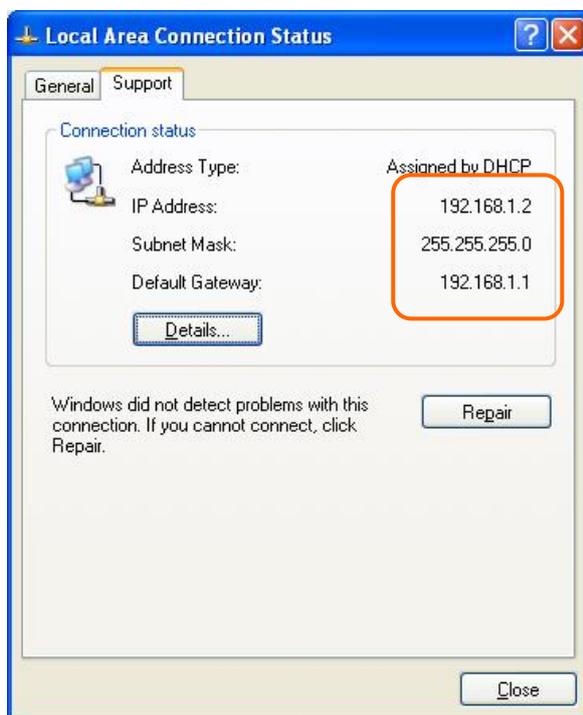


**Step 8.**    You can input http://192.168.9.9 in IE browser to enter the GUI page of the paired device and make sure the connection.

### 5.2.6 WPS

**Wi-Fi Protected Setup (WPS)** is an easy way to establish a secured wireless network between 11N Mini 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 11N Mini Router or click **Start PBC** from menu "**Wi-Fi Protected Setup**", and waiting for the WPS wireless card setting.



or



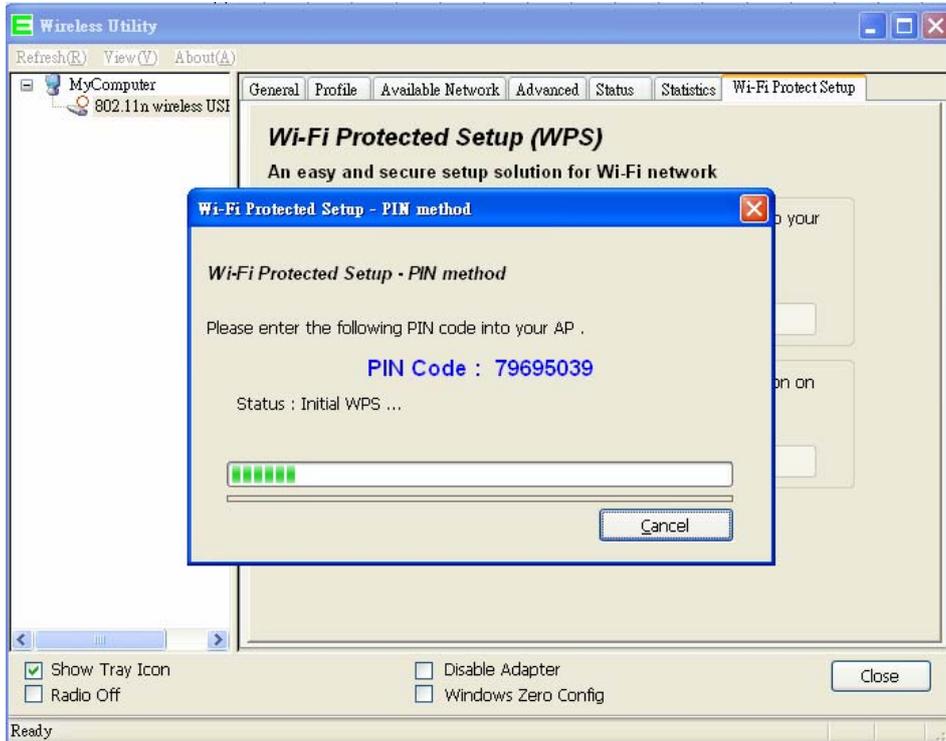(2.) Open the "**Wireless Utility**" of your wireless card, and click its "**PBC**" button, to start auto pairing.
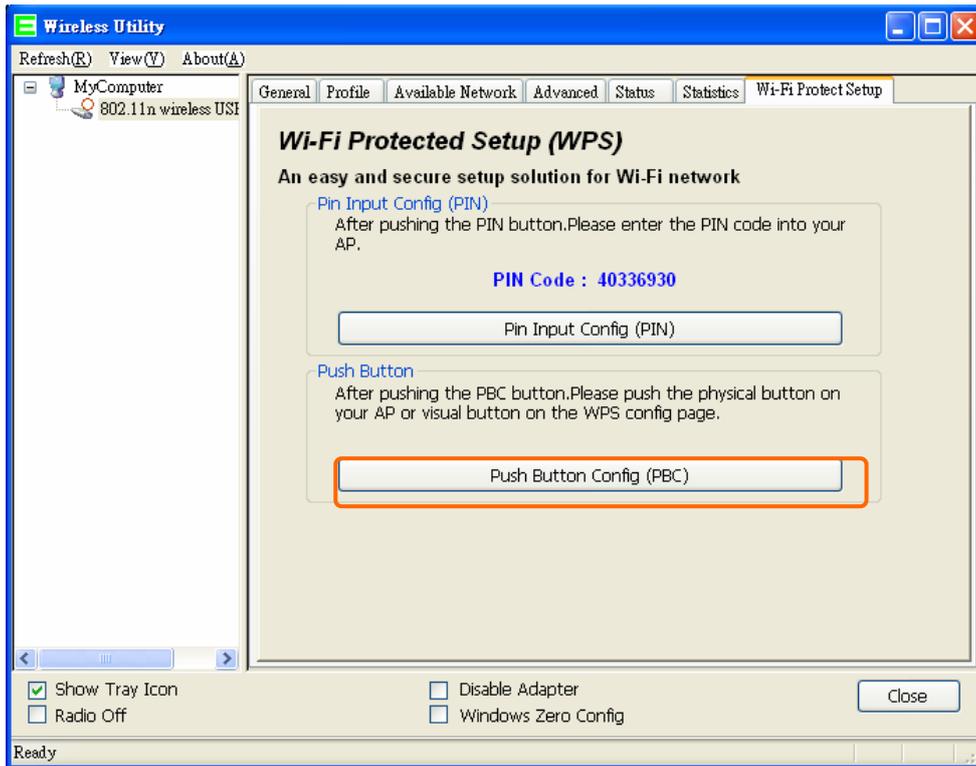
(3.)  While scanning is successful, the information of the wireless card appears in the windows below.
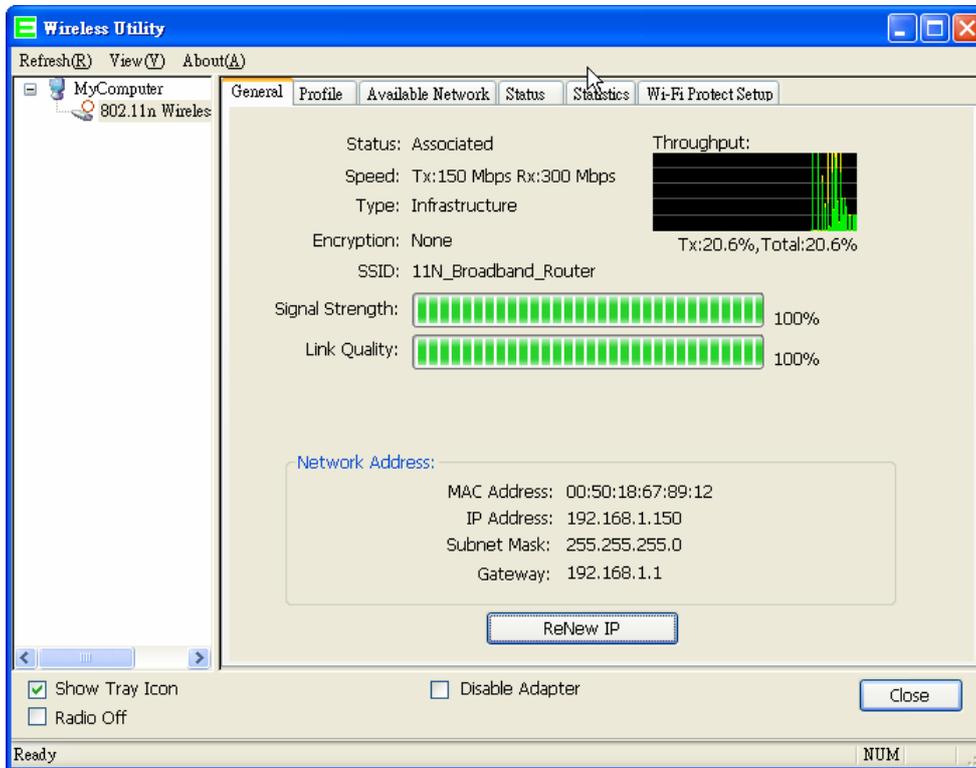
➤ **Start PIN:**

(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**.



Version 1.0.15

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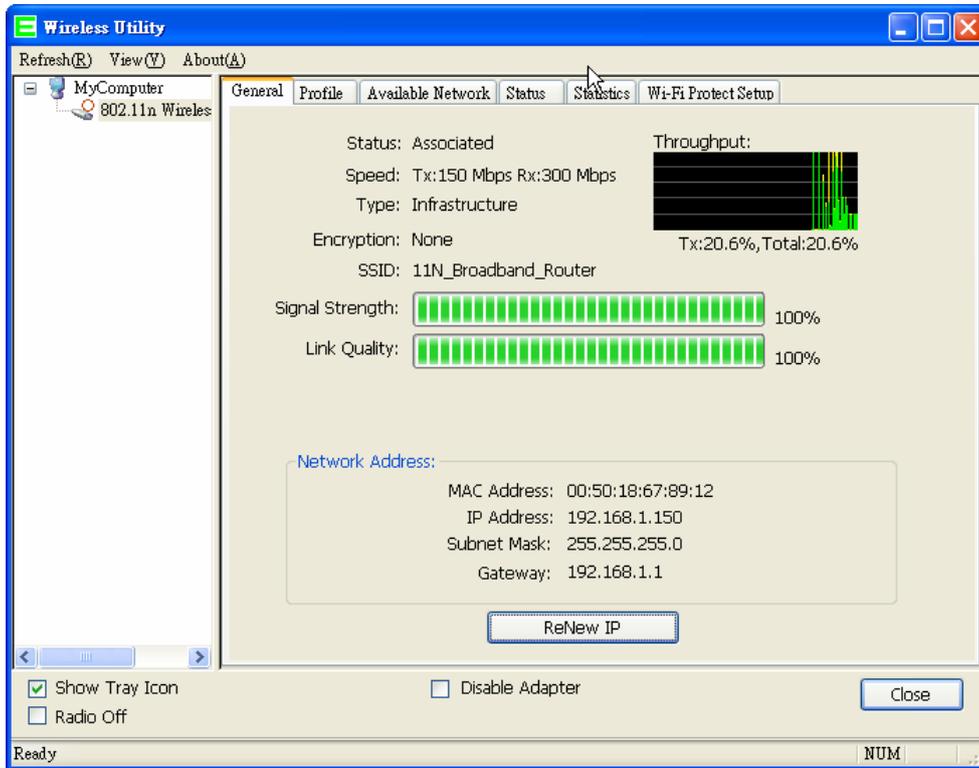


## 5.3    NAT

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.

# Port Forwarding

Entries in this table allow you to automatically redirect common network services to a specific machine behind the NAT firewall. These settings are only necessary if you wish to host some sort of server like a web server or mail server on the private local network behind your Gateway's NAT firewall.

☐ **Enable Port Forwarding**

Address : [            ]    Protocol: [Both ▼]

Public Port Range: [        ]-[        ]    Private Port: [        ]

Comment: [        ]

[ Apply Change ]    [ Reset ]

**Current Port Forwarding Table:**

| Local IP Address | Protocol | Public Port Range | Private Port | Comment | Select |
|---|---|---|---|---|---|

[ Delete Selected ]    [ Delete All ]    [ Reset ]

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.
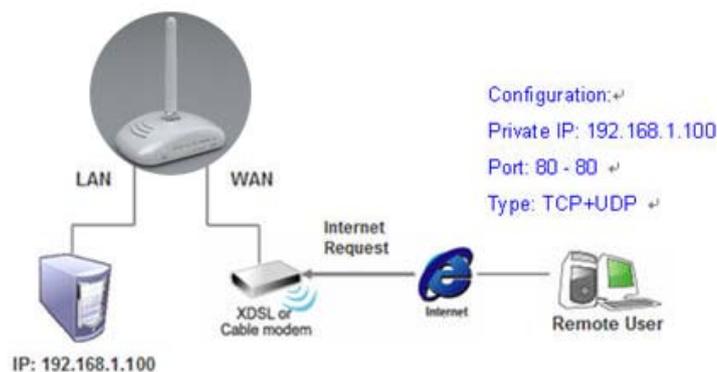
**8. Delete Selected & Delete All**

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.

# DMZ

A Demilitarized Zone is used to provide Internet services without sacrificing unauthorized access to its local private network. Typically, the DMZ host contains devices accessible to Internet traffic, such as Web (HTTP ) servers, FTP servers, SMTP (e-mail) servers and DNS servers.

☐ **Enable DMZ**

**DMZ Host IP Address:** [          ]

[ Apply Change ] [ Reset ]

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**

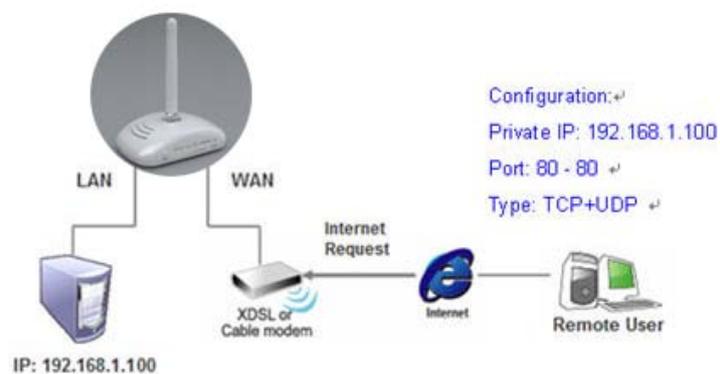Click **Delete Selected** will delete the selected item. Click **Delete All** will delete all items in this table.

**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.

# IP Filtering

Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

☐ **Enable IP Filtering**

Loal IP Address: [        ]    Protocol: [Both ▼]   Comment: [                    ]

[ Apply Change ]   [ Reset ]

**Current Filter Table:**

| Loal IP Address | Protocol | Comment | Select |
|---|---|---|---|

[ Delete Selected ]   [ Delete All ]   [ Reset ]

### 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

Version 1.0.15

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.

**MAC Filtering**

Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

☐ **Enable MAC Filtering**

MAC Address: [＿＿＿＿＿] Comment: [＿＿＿＿＿]

[Apply Change] [Reset]

**Current Filter Table:**

| MAC Address | Comment | Select |
| --- | --- | --- |

[Delete Selected] [Delete All] [Reset]

**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.

## URL Filtering

URL filter is used to deny LAN users from accessing the internet. Block those URLs which contain keywords listed below.

☐ **Enable URL Filtering**

**URL Address:** [＿＿＿＿＿＿＿＿＿＿＿＿]

[ Apply Change ]  [ Reset ]

**Current Filter Table:**

| URL Address | Select |
| --- | --- |

[ Delete Selected ]  [ Delete All ]  [ Reset ]

**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

11N Mini 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.
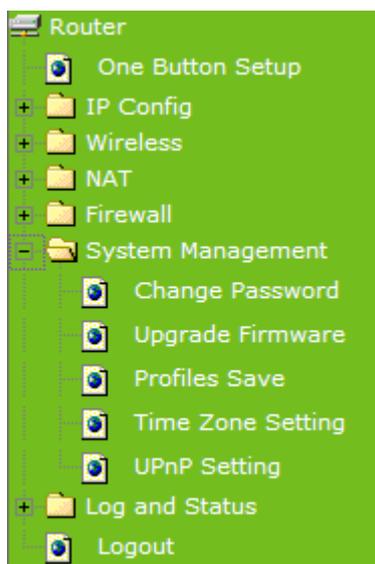


### 5.5.1    Change Password

Users can set or change their password in this section.

## Password configuration

This page is used to set the account to access the web server of Access Point. Empty user name and password will disable the protection.

User Name:        admin

New Password:     [          ]

Confirmed Password: [          ]

[Apply Change]   [Reset]

**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 11N Mini 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.

## Upgrade Firmware

This page allows you upgrade the Access Point firmware to new version. Please note,do not power off the device during the upload because it may crash the system.

Select File:     [          ]   [Browse...]

[Upload]   [Reset]

**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.
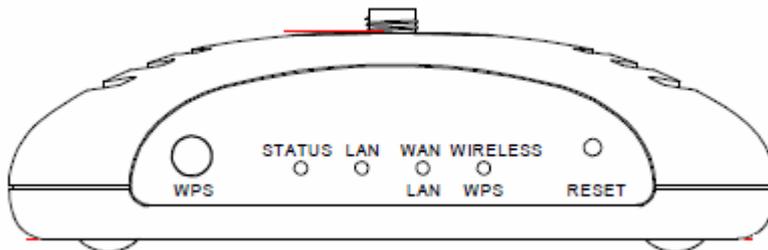


## 5.5.3 Save / Reload Settings

To back up the current configuration setting or load the backup data, also you can restore 11N Mini 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.
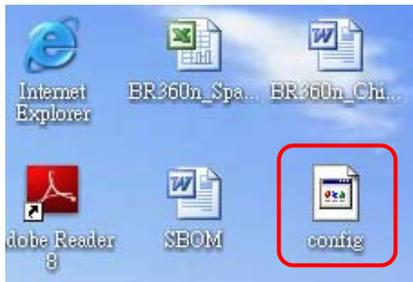


A pop window will show up and ask to save **config.dat** file.



**Step 2.** Please select the location, for example: the desktop.
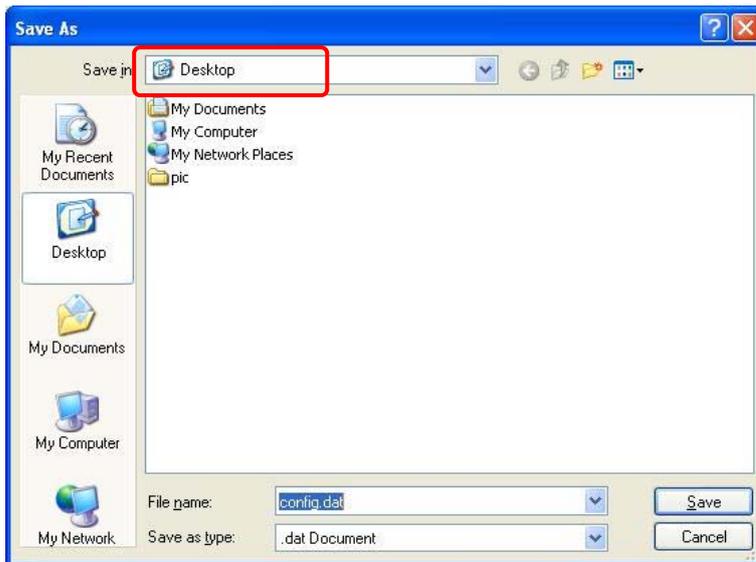
**Step 3.** The file you just saved will appear on the desktop.
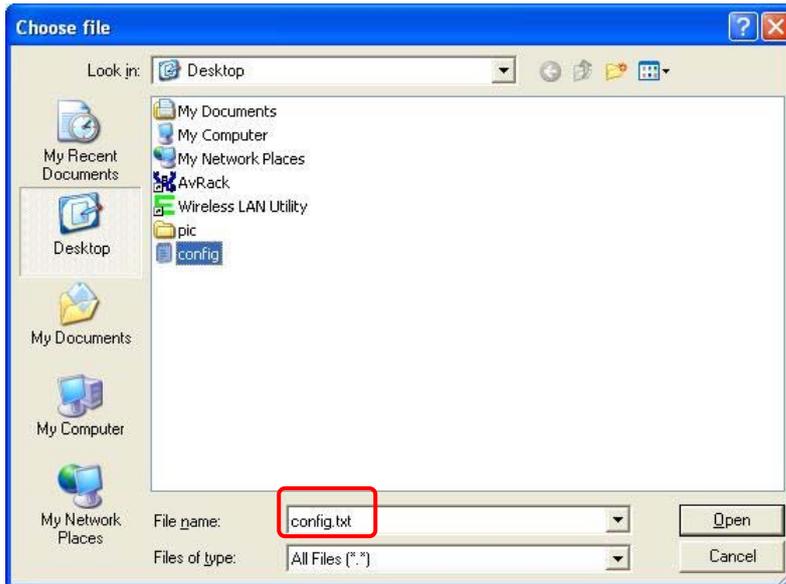


2.  **Load Settings From File**

**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.
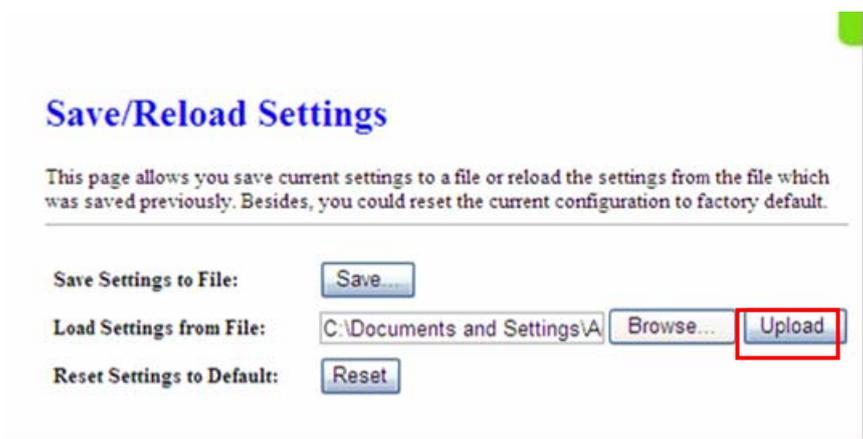


**Step 4.** When you see the screen below, the updating is completed. Please click OK to return to the main menu.
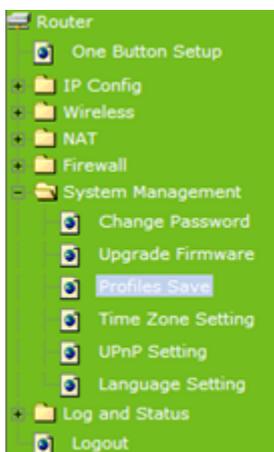
**3. Reset Setting to Default**

After you have tried other methods for troubleshooting your network, you may choose to restore 11N Mini 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 11N Mini 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.

## Time Zone Setting

You can maintain the system time by synchronizing with a public time server over the Internet.

Current Time : Yr 2000  Mon 1  Day 1  Hr 2  Mn 58  Sec 42

Time Zone Select : (GMT+08:00)Taipei

☑ Enable NTP client update

☐ Automatically Adjust Daylight Saving

NTP server : ⦿ 192.5.41.41 - North America

⦾ _____ ( Manual IP Setting)

[Apply Change]  [Reset]  [Refresh]

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.
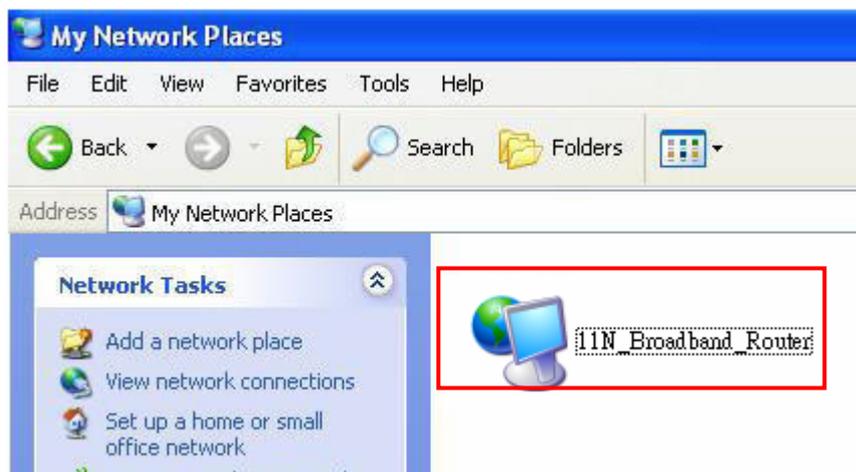
### 5.5.5 UPnP Setting

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.

## UPnP Setting

In this page,you can turn on or turn off the UPNP feature of your router.

Enable/Disable UPNP:    ⦿ Enabled    ◯ Disabled

[ Apply Changes ]    [ Reset ]

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

### My Network Places

File   Edit   View   Favorites   Tools   Help

Back ▾    ⬡ ▾    ⬆    Search    Folders    ▦ ▾

Address    My Network Places

**Network Tasks**

Add a network place
View network connections
Set up a home or small office network

11N_Broadband_Router

## 5.6 Log & Status

11N Mini Router provides the log list and connection status for user to check.
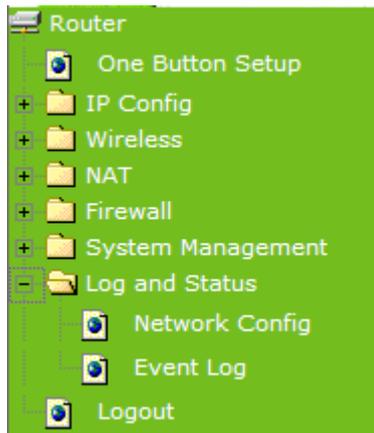


### 5.6.1 Network Config

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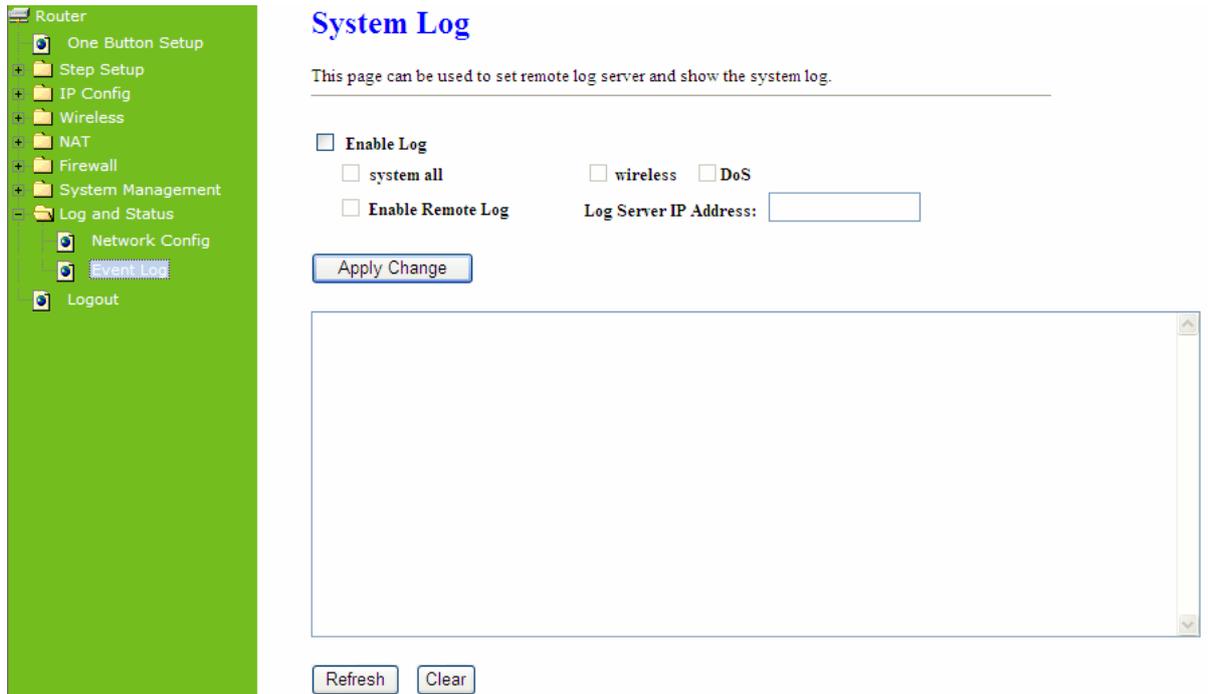


### 5.6.2 Event Log

11N Mini 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.
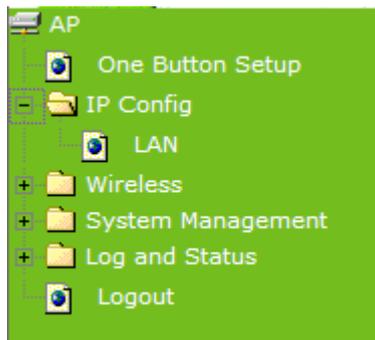


### 6.1.2 LAN Interface Setup



**LAN Interface Setup**

This page is used to configure the parameters for local area network which connects to the LAN port of your Access Point. Here you may change the setting for IP address, subnet mask, DHCP, etc..

| | |
|---|---|
| **Device Name:** | 11N_Broadband_Rou |
| **IP Address:** | 192.168.1.254 |
| **Subnet Mask:** | 255.255.255.0 |
| **Default Gateway:** | 0.0.0.0 |
| **DHCP:** | Client |
| **DHCP Client Range:** | 192.168.1.100 – 192.168.1.200    Show Client |
| **Static DHCP:** | Disabled    Set Static DHCP |
| **802.1d Spanning Tree:** | Disabled |
| **Clone MAC Address:** | 000000000000 |

Apply Change    Reset

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.

# Wireless Basic Settings

This page is used to configure the parameters for wireless LAN clients which may connect to your Access Point. Here you may change wireless encryption settings as well as wireless network parameters.

☐ **Disable Wireless LAN Interface**

| | |
|---|---|
| **Band:** | 2.4 GHz (B+G+N) ⌄ |
| **Mode:** | AP ⌄     [ Multiple AP ] |
| **Network Type:** | Infrastructure ⌄ |
| **SSID:** | 11N_Broadband_Router |
| **Channel Width:** | 40MHz ⌄ |
| **Control Sideband:** | Upper ⌄ |
| **Channel Number:** | 11 ⌄ |
| **Broadcast SSID:** | Enabled ⌄ |
| **WMM:** | Enabled ⌄ |
| **Data Rate:** | Auto ⌄ |
| **Associated Clients:** | [ Show Active Clients ] |

☐ **Enable Mac Clone (Single Ethernet Client)**

☐ **Enable Universal Repeater Mode (Acting as AP and client simultaneouly)**

**SSID of Extended Interface:** ESSID_11N_Broadband_Router

[ Apply Change ]   [ Reset ]

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**