

11N Mini Broadband Router

BR081n

User Manual



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FCC Caution

1. The device complies with Part 15 of the FCC rules. Operation is subject to the following conditions:
 - (1) This device may not cause harmful interference, and
 - (2) this device must accept any interference received, including interference that may cause undesired operation.
2. **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.
3. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
4. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

FCC statement in User's Manual (for class B)

Federal Communications Commission (FCC) Statement

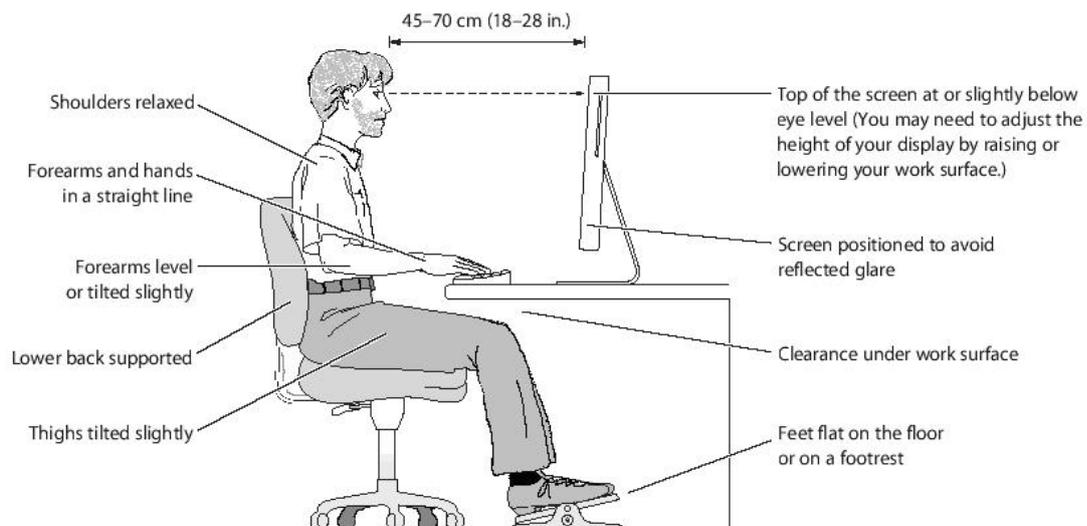
This Equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, users and can radiate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

- Reorient or relocate the receiving antenna.
- Increase the separation 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.

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 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

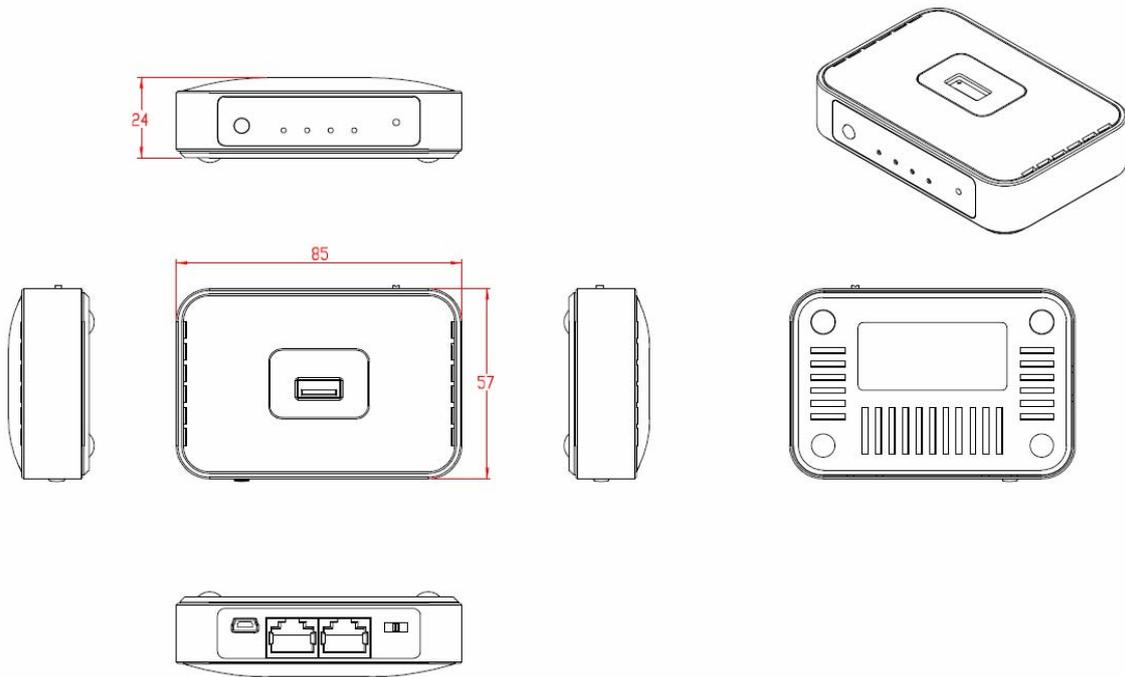
- **Small in size but huge in functionality;** the world No.1 Mobile Router for traveler
- **Three modes to be switched;** Router, AP and WiFi AP
- **WPS button** provides not only an easy and secured wireless network but also a WDS repeater in one push
- **Multiple APs Supported:** adds or limits the 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~40°C (32°F~104°F) Storage Temp. -20°C~70°C (-14°F~158°F) Operating Humidity 10% to 85% Non-Condensing Storage Humidity 5% to 90% Non-Condensing
	Peak Gain of the Antenna	1.27dBi @ 2.45GHz
	Transmitted Power (Typical)	802.11b: 18±3dBm @ normal temp. range 802.11g: 17±3dBm @ normal temp. range 802.11n (20MHz/40MHz): 16±3dBm @ normal temp. range
	Receive Sensitivity (Typical)	11Mbps : TYP. -83dBm @ 8% PER 54Mbps: TYP. -70dBm @ 10% PER 11n (20MHz): TYP. -64dBm @ 10% PER 11n (40MHz): TYP. -61dBm @ 10% PER
Application	Dimension	88mm (L) x 58mm (W) x 24mm (H)
	Power	Power Adapter DC5V/1A 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

LED Indicator	Status	
	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 Reddish Orange: WPS enabled

1.3 System Requirements

To begin with 11N Mini Broadband 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

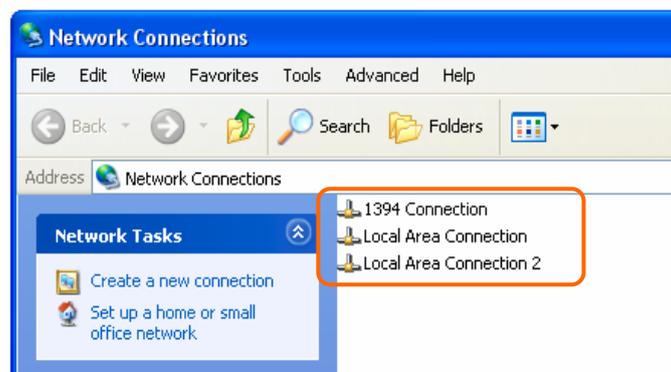
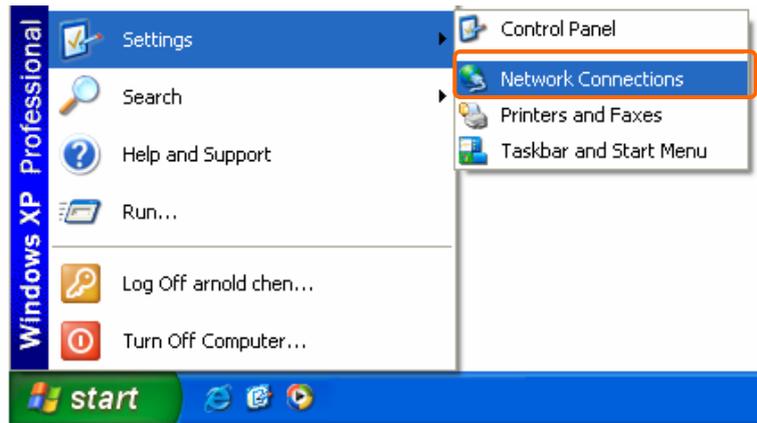
- ◇ WAN Type auto-detection :
 - ◆ When using Ethernet auto-connection:
 - Auto-detection mode only applies on PPPoE, DHCP, PPTP and L2TP.
 - Router will detect WAN type and load the settings from last time or display corresponding page for user to input information.
 - If there is no setting from user,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

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

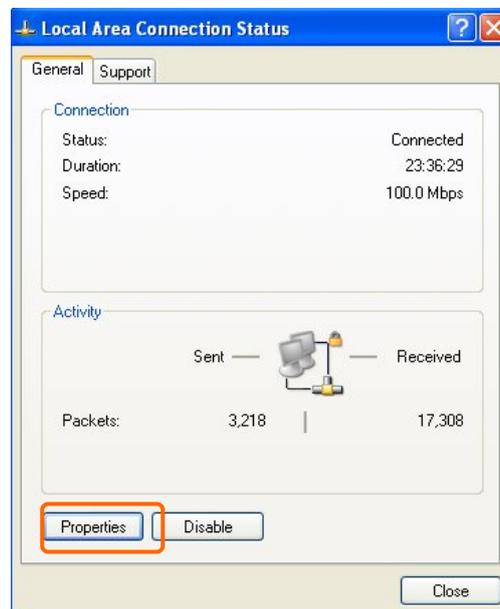
1.5 Get Your IP Automatically & Manually

After 11N Mini Broadband 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.

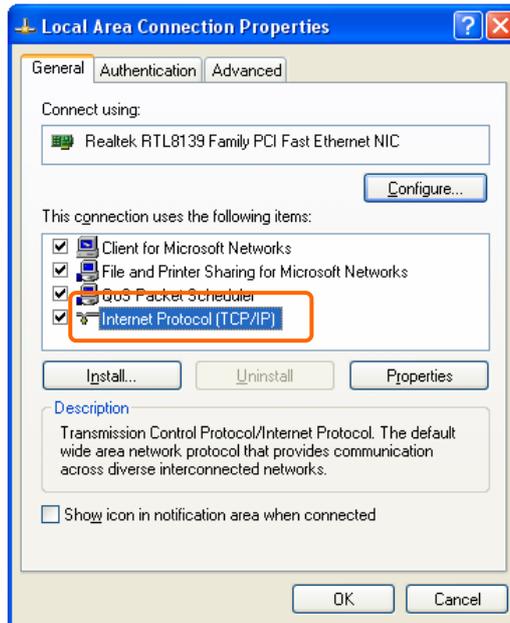
Step 1. Go to **Start>Settings> Network Connections** and then select **Local Area Connection**.



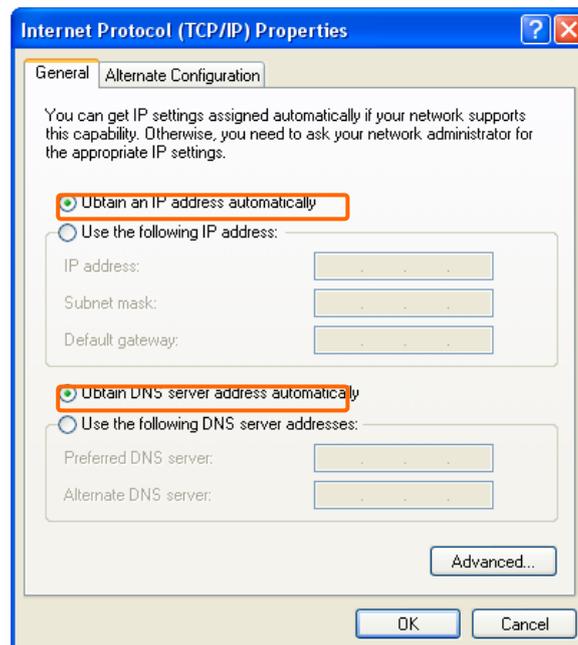
Step 2. Click on Properties



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 Broadband 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 Broadband Router should be noted:

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

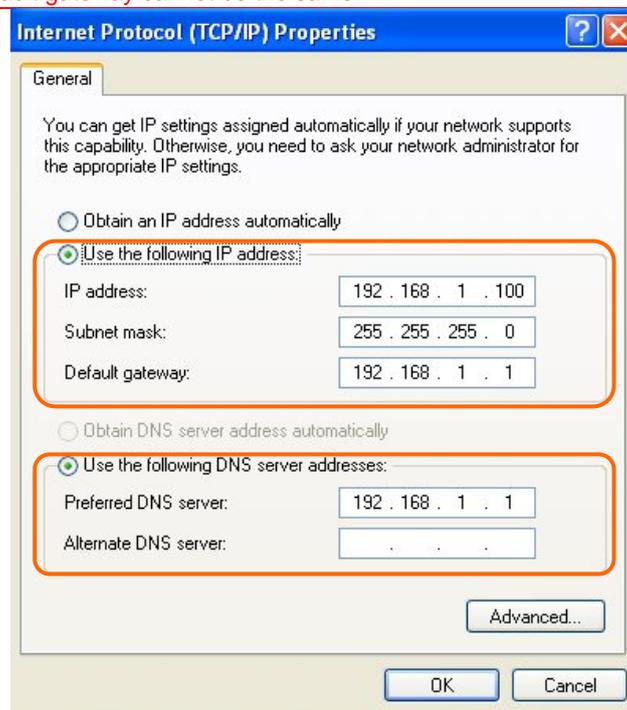
- Default Gateway: 192.168.1.1

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 Broadband Router in Router Mode)
- DNS: 192.168.1.1 (use 11N Mini Broadband 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".

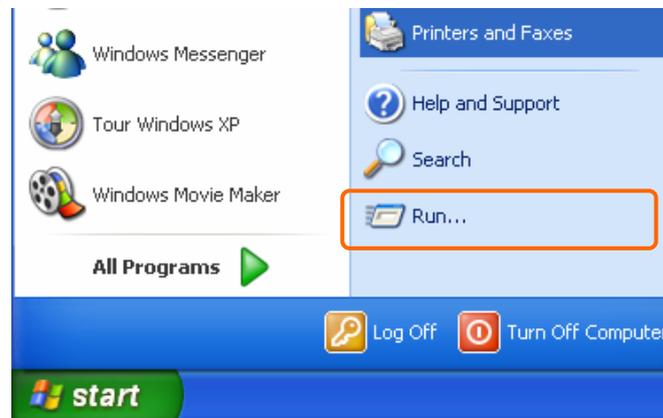
1.5.2 Testing with Internet Browser

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.

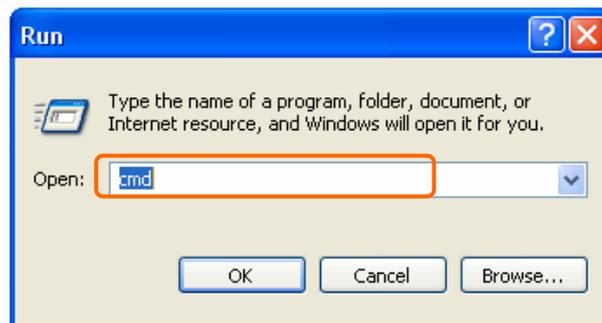


1.5.2.1 Testing with DOS (Windows XP Platform)

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.

```
Ethernet adapter:  
  
Connection-specific DNS Suffix . :  
IP Address . . . . . : 192.168.1.100  
Subnet Mask . . . . . : 255.255.255.0  
Default Gateway . . . . . : 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.

```
C:\Documents and Settings\chou1>ping 192.168.1.1  
  
Pinging 192.168.1.1 with 32 bytes of data:  
  
Reply from 192.168.1.1: bytes=32 time=2ms TTL=64  
Reply from 192.168.1.1: bytes=32 time=1ms TTL=64  
Reply from 192.168.1.1: bytes=32 time=1ms TTL=64  
Reply from 192.168.1.1: bytes=32 time=1ms TTL=64  
  
Ping statistics for 192.168.1.1:  
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
    Approximate round trip times in milli-seconds:  
        Minimum = 1ms, Maximum = 2ms, Average = 1ms
```

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

```
C:\Documents and Settings\chou1>ping 192.168.1.1  
  
Pinging 192.168.1.1 with 32 bytes of data:  
  
Request timed out.  
Request timed out.  
Request timed out.  
Request timed out.  
  
Ping statistics for 192.168.1.1:  
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),  
    Approximate round trip times in milli-seconds:  
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Chapter 2 Hardware Installation

2.1 Diagram of Connecting Hardware to 11N Mini Broadband Router

11N Mini Broadband 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 Broadband Router 's 3-way configuration slide switch.

Warning: Before sliding the switch modes, please power-off the router firstly. Moreover, please stay over 10 seconds between power-off / power-on condition.

2.1.1 Hardware Connection and Application for Router Mode

When 11N Mini Broadband 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.

Hardware Connection and Application for AP Mode

Under AP Mode, it supports 2 LAN ports as Bridge, and user can connect to 11N Mini Broadband Router via LAN port. The administrator can set up quickly, including LAN Setup, Wireless Setup, Time Server Setup, and Password Setup.

2.1.2 Hardware Connection and Application for Wi-Fi AP Mode

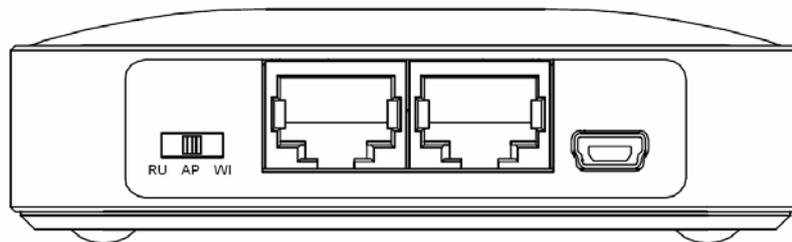
As WiFi AP Mode, 11N Mini Broadband Router will be a bridge and supports a wireless LAN. The administrator can set up quickly, including LAN Setup, Wireless Setup, Time Server Setup, and Password Setup.

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 11N Mini Broadband Router is ON.



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



11N Broadband Router

Router

Username :

Password :

Login

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 :

Change Password

New Password:

Device Name

Device Name:

Wireless Setup

SSID:

Encryption:

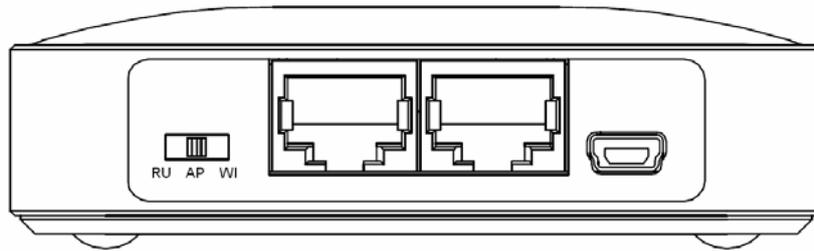
- **Time Zone Select:** Select your time zone from the Time Zone drop-down list.
- **Change Password:** For changing password, please fill the password information into the blank.
- **Device Name:** Name your device here. The default is **11N_Mini_Router**.

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

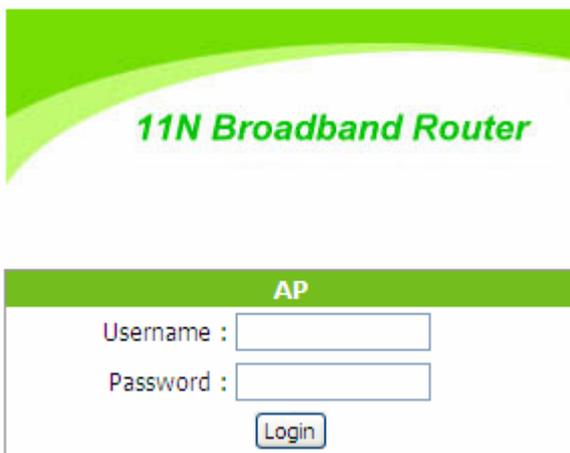
- **WAN Interface Setup:** Select the WAN Interface from the drop-down list.
- **WAN Type Setup:** Please choose the access type.
- **Wireless Setup:** Fill in the ESSID if it is blank, and your prefer Encryption type. The default is **11N_Mini_Router**.
- **Finished:** Click **finished** button to complete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

Change Password

New Password:

Device Name

Device Name:

Wireless Setup

SSID:

Encryption:

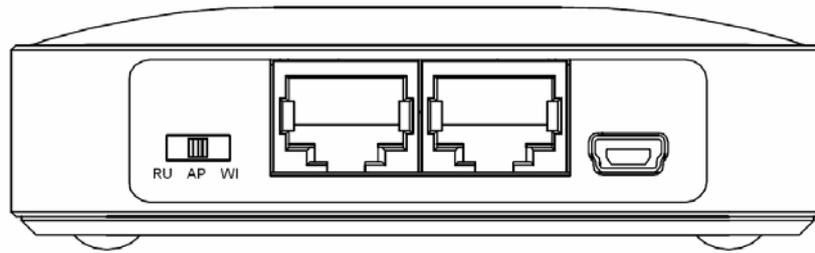
- **Time Zone Select:** Select your time zone from the **Time Zone** drop-down list.
- **Change Password:** For changing password, please fill the password information into the blank.
- **Device Name:** Name your device here. The default is **11N_Mini_Router**.

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.

The login page for the 11N Broadband Router. It has a green header with the text "11N Broadband Router". Below the header is a white box with a green title bar that says "WiFi AP". Inside this box, there are two input fields: "Username :" and "Password :". Below the password field is a "Login" button.

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

Change Password

New Password:

Device Name

Device Name:

Wireless Site Survey Setting

SSID	BSSID	Channel	Type	Encrypt	Signal	Select
<input type="button" value="Refresh"/>						
Encryption:	<input type="text" value="None"/>					

Extended Wireless Setup

Extended SSID:

Encryption:

- **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.

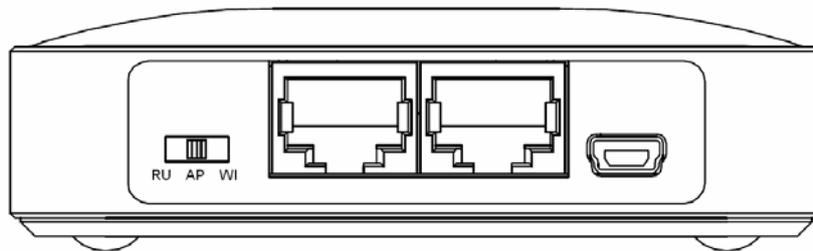
Chapter 4 Basic Setup

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.

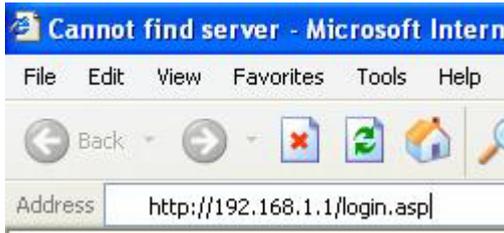


Note: 1. Before sliding the switch modes, please power-off the router firstly. Moreover, please stay over 10 seconds between power-off / power-on condition.
2. Switching the mode while power is on will make the router crush, and cause the hardware damage and information lost.

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.

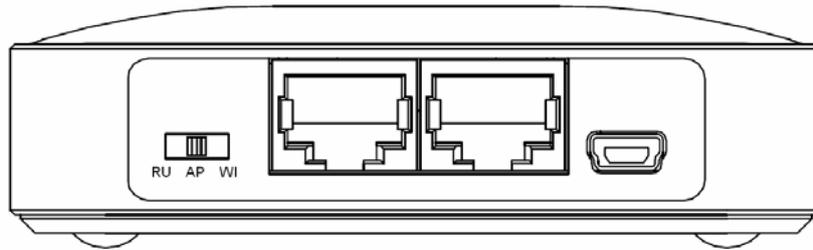


4.2 AP Mode

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



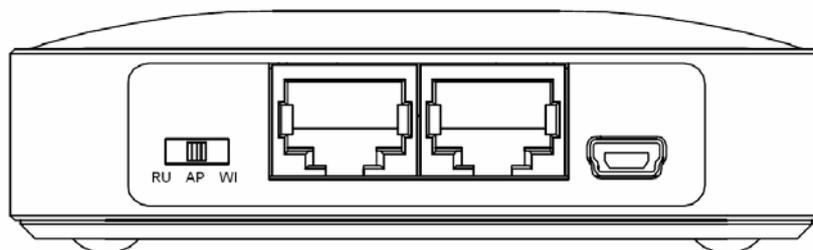
Note: 1. Before sliding the switch modes, please power-off the router firstly. Moreover, please stay over 10 seconds between power-off / power-on condition.
2. Switching the mode while power is on will make the router crush, and cause the hardware damage and information lost.

4.3 WiFi AP Mode

As WiFi AP Mode, 11N Mini Broadband Router will be a bridge and support a wireless LAN. NAT function is disabled under WiFi AP mode. The 11N Mini Broadband Router connects the upper level device wirelessly and gets its assigned IP address. If not, the 11N Mini 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 10 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 Broadband Router . It is useful if you connect several computers behind 11N Mini Broadband Router to share the same connection to Internet.

5.1.1 WAN

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



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:

Operator:

User Name:

Password:

Attain DNS Automatically

Set DNS Manually

DNS 1:

DNS 2:

DNS 3:

Clone MAC Address:

Enable IGMP Proxy

Enable Ping Access on WAN

Enable Web Server Access on WAN

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:

WAN Access Type:

Host Name:

MTU Size: (1400-1492 bytes)

Attain DNS Automatically
 Set DNS Manually

DNS 1:

DNS 2:

DNS 3:

Clone MAC Address:

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

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:

WAN Access Type:

Host Name:

MTU Size: (1400-1492 bytes)

Attain DNS Automatically

Set DNS Manually

DNS 1:

DNS 2:

DNS 3:

Clone MAC Address:

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:

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

Encryption:

WAN Access Type:

Host Name:

MTU Size: (1400-1492 bytes)

Attain DNS Automatically
 Set DNS Manually

DNS 1:

DNS 2:

DNS 3:

Clone MAC Address:

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

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:	<input type="text" value="Ethernet Port"/>
WAN Access Type:	<input type="text" value="Static IP"/>
IP Address:	<input type="text" value="172.1.1.1"/>
Subnet Mask:	<input type="text" value="255.255.255.0"/>
Default Gateway:	<input type="text" value="172.1.1.254"/>
MTU Size:	<input type="text" value="1500"/> (1400-1500 bytes)
DNS 1:	<input type="text"/>
DNS 2:	<input type="text"/>
DNS 3:	<input type="text"/>
Clone MAC Address:	<input type="text" value="000000000000"/>
<input checked="" type="checkbox"/> Enable IGMP Proxy	
<input type="checkbox"/> Enable Ping Access on WAN	
<input type="checkbox"/> 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:

WAN Access Type:

Host Name:

MTU Size: (1400-1492 bytes)

Attain DNS Automatically
 Set DNS Manually

DNS 1:

DNS 2:

DNS 3:

Clone MAC Address:

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 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.

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:

WAN Access Type:

User Name:

Password:

Service Name:

Connection Type:

Idle Time: (1-1000 minutes)

MTU Size: (1360-1492 bytes)

Attain DNS Automatically
 Set DNS Manually

DNS 1:

DNS 2:

DNS 3:

Clone MAC Address:

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:

WAN Access Type:

Address Mode: Dynamic Static

Server IP Address:

User Name:

Password:

MTU Size: (1400-1460 bytes)

Attain DNS Automatically
 Set DNS Manually

DNS 1:

DNS 2:

DNS 3:

Clone MAC Address:

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:

WAN Access Type:

Address Mode: Dynamic Static

Server IP Address/Host Name:

User Name:

Password:

MTU Size: (1400-1460 bytes)

Attain DNS Automatically
 Set DNS Manually

DNS 1:

DNS 2:

DNS 3:

Clone MAC Address:

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 if there is 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:	<input type="text" value="11N_Broadband_Rou"/>
IP Address:	<input type="text" value="192.168.1.1"/>
Subnet Mask:	<input type="text" value="255.255.255.0"/>
Default Gateway:	<input type="text" value="0.0.0.0"/>
DHCP:	<input type="text" value="Server"/> <input type="button" value="v"/>
DHCP Client Range:	<input type="text" value="192.168.1.100"/> - <input type="text" value="192.168.1.200"/> <input type="button" value="Show Client"/>
Static DHCP:	<input type="text" value="Disabled"/> <input type="button" value="v"/> <input type="button" value="Set Static DHCP"/>
802.1d Spanning Tree:	<input type="text" value="Disabled"/> <input type="button" value="v"/>
Clone MAC Address:	<input type="text" value="000000000000"/>

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 : << dyndns ▾

Domain Name :

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](#)*

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, ChangelIP, Eurodns, OVH, NO-IP, ODS, Regfish embedded in 11N Mini Broadband 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 Broadband Router enables fastest 300 Mbps IEEE802.11g wireless transmissions and keeps compatibility with existing IEEE 802.11n devices. 11N Mini 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.

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 ▼

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:

Enable Mac Clone (Single Ethernet Client)

Enable Universal Repeater Mode (Acting as AP and client simultaneously)

SSID of Extended Interface: ESSID_11N_Broadband_Router

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	<input checked="" type="checkbox"/>	2.4 GHz (B+G+N) ▼	MultipleAP_1	Auto ▼	Enabled ▼	Enabled ▼	LAN+WAN ▼	Show
AP2	<input checked="" type="checkbox"/>	2.4 GHz (B+G+N) ▼	MultipleAP_2	Auto ▼	Enabled ▼	Enabled ▼	LAN+WAN ▼	Show
AP3	<input checked="" type="checkbox"/>	2.4 GHz (B+G+N) ▼	MultipleAP_3	Auto ▼	Enabled ▼	Enabled ▼	LAN+WAN ▼	Show
AP4	<input checked="" type="checkbox"/>	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 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 11N Mini 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

Channel Number: 9

Broadcast SSID: Disabled

WMM: Disabled

Data Rate: Auto

Associated Clients: Show Active Clients

Enable Mac Clone (Single Ethernet Client)

Enable Universal Repeater Mode (Acting as AP and client simultaneously)

SSID of Extended Interface: ESSID_11N_Broadband_Router

Note: If you want to change the setting for Mode and SSID, you must go to EasyConfig page to disable EasyConfig first.

Apply Changes **Reset**

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.



Channel Number	11
Encryption	Disabled
MAC Address	00:ab:ab:c4:56:78
Associated Clients	0
WirelessRepeater Interface Configuration	
Mode	Infrastructure Client
ESSID	ESSID_11N_Broadband_Router
Encryption	Disabled
MAC Address	00:00:00:00:00:00
State	Scanning
LAN Configuration	
Attain IP Protocol	Fixed IP

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:	<input type="text" value="2346"/>	(256-2346)
RTS Threshold:	<input type="text" value="2347"/>	(0-2347)
Beacon Interval:	<input type="text" value="100"/>	(20-1024 ms)
Preamble Type:	<input checked="" type="radio"/> Long Preamble <input type="radio"/> Short Preamble	
IAPP:	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled	
Protection:	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	
Aggregation:	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled	
Short GI:	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled	
RF Output Power:	<input checked="" type="radio"/> 100% <input type="radio"/> 70% <input type="radio"/> 50% <input type="radio"/> 35% <input type="radio"/> 15%	

Apply Changes

Reset

1. Fragment Threshold

To identify the maximum length of packet, the overflow packet length will be fragmented. 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.

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:

Encryption:
802.1x Authentication:

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 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”.

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:

Encryption:
802.1x Authentication:
Authentication: Open System Shared Key Auto
Key Length:
Key Format:
Encryption Key:

► 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:

Encryption:

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

WPA Cipher Suite: TKIP AES

Pre-Shared key Format:

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:

MAC Address: Comment:

Current Access Control List:

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

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

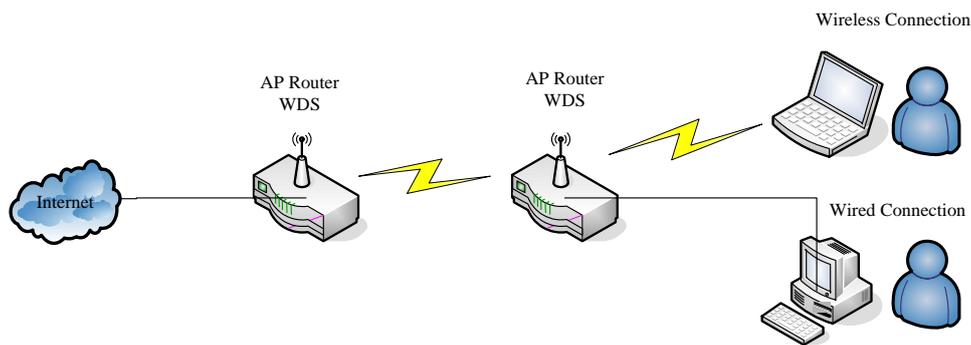
In this list, all the MAC info you input will be displayed.

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.

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:

Comment:

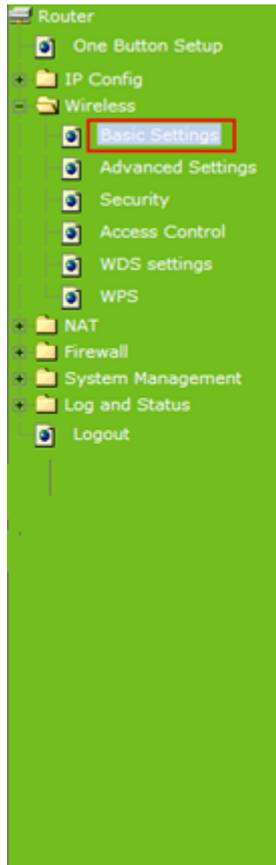
Current WDS AP List:

MAC Address	Tr Rate (Mbps)	Comment	Select
-------------	----------------	---------	--------

Step 1. Check the MAC address and Channel number of the device you want to setup WDS with 11N Mini Broadband 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 Broadband Router . Select **AP+WDS** mode, and then select the Channel Number. Click **Apply Changes** to save the setting data.



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+WDS ▾ 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 simultaneously)

SSID of Extended Interface: ESSID_11N_Broadband_Router

Apply Change Reset

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.

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: 000e68ff05c8

Data Rate: Auto ▾

Comment:

Apply Changes Reset Set Security Show Statistics

Current WDS AP List:

MAC Address	Tx Rate (Mbps)	Comment	Select
Delete Selected Delete All Reset			

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:

Comment:

Current WDS AP List:

MAC Address	Tx Rate (Mbps)	Comment	Select
00:0e:68:ff:05:c8	Auto		<input type="checkbox"/>

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:

IP Address:

Subnet Mask:

Default Gateway:

DHCP:

DHCP Client Range: -

Static DHCP:

802.1d Spanning Tree:

Clone MAC Address:

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.

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:

Input the MAC address here.

Data Rate:

Comment:

Apply Changes

Reset

Set Security

Show Statistics

Current WDS AP List:

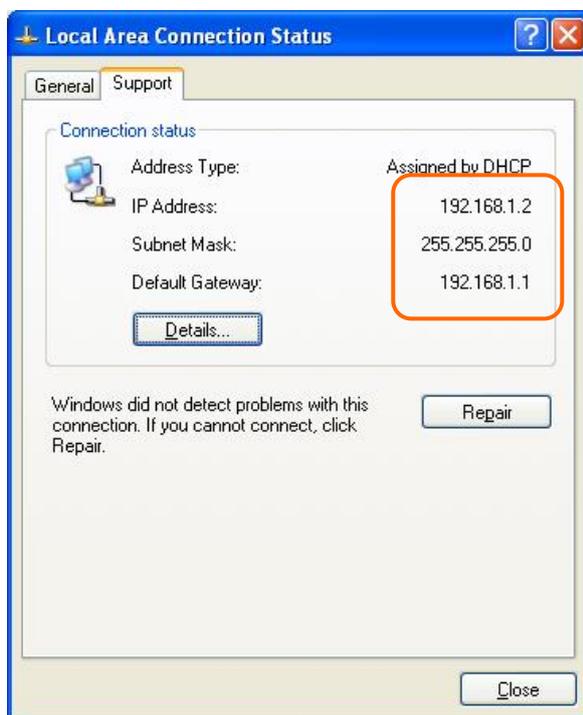
MAC Address	Tx Rate (Mbps)	Comment	Select
-------------	----------------	---------	--------

Delete Selected

Delete All

Reset

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 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.

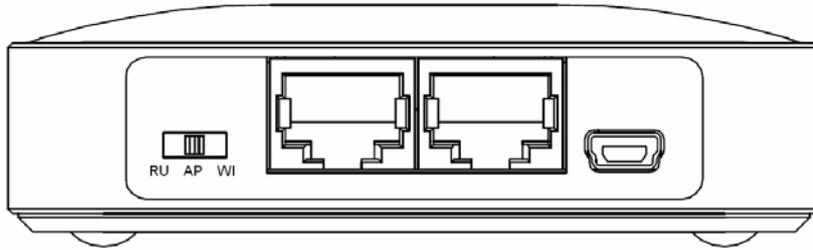
WPS can be enabled by 2 methods:

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 11N Mini Broadband Router or click **Start PBC** from menu “**Wi-Fi Protected Setup**”, and waiting for the WPS wireless card setting.



or

Wi-Fi Protected Setup

This page allows you to change the setting for WPS (Wi-Fi Protected Setup). Using this feature could let your wireless client automatically synchronize its setting and connect to the Access Point in a minute without any hassle.

Disable WPS

WPS Status: Configured UnConfigured

Self-PIN Number: 18864540

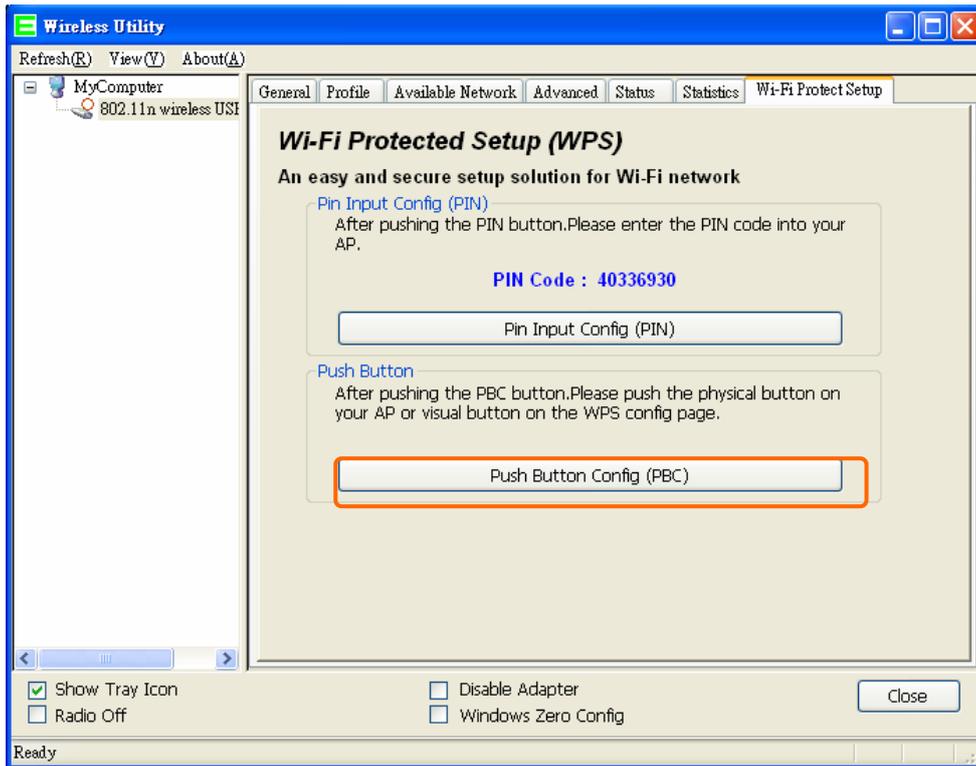
Push Button Configuration:

Current Key Info:

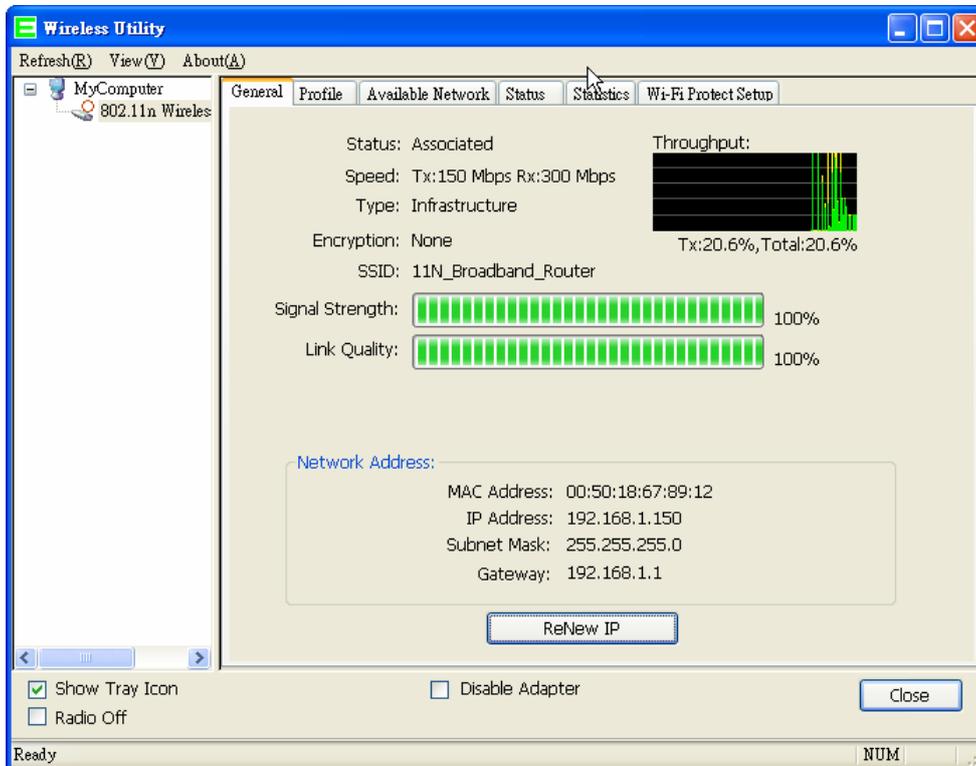
Authentication	Encryption	Key
Open	None	N/A

Client PIN Number:

- (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 Broadband Router , input the PIN number from the wireless card then click **Start PIN**.

Wi-Fi Protected Setup

This page allows you to change the setting for WPS (Wi-Fi Protected Setup). Using this feature could let your wireless client automatically synchronize its setting and connect to the Access Point in a minute without any hassle.

Disable WPS

WPS Status: Configured UnConfigured

Self-PIN Number: 18864540

Push Button Configuration:

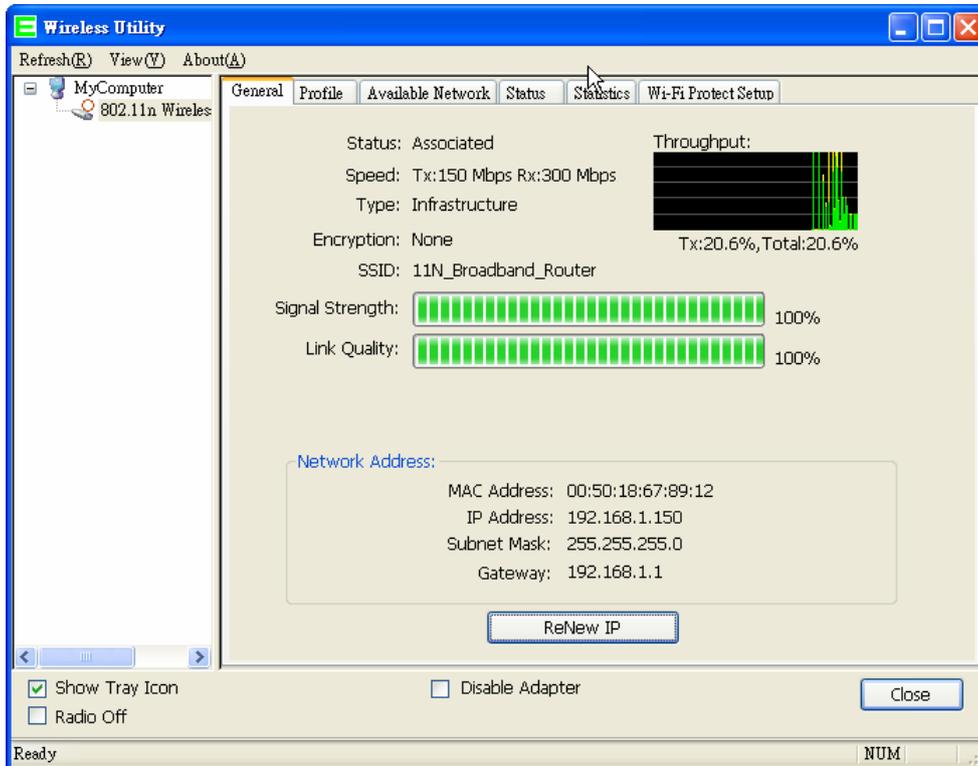
Current Key Info:

Authentication	Encryption	Key
Open	None	N/A

Client PIN Number:

Enter the PIN Code you got from the wireless card.

- (3.) Back to “Wireless Utility” and press the “Start PIN” button to complete the auto-pairing 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:

Public Port Range: - Private Port:

Comment:

Current Port Forwarding Table:

Local IP Address	Protocol	Public Port Range	Private Port	Comment	Select
<input type="button" value="Delete Selected"/> <input type="button" value="Delete All"/> <input type="button" value="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

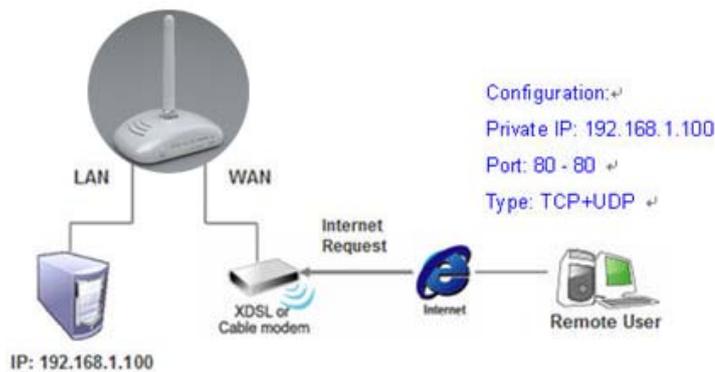
Click **Delete Selected** will delete the selected item. Click **Delete All** will delete all items in this table.

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.

Port 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 Port Filtering

Port Range: - Protocol: Comment:

Current Filter Table:

Port Range	Protocol	Comment	Select
------------	----------	---------	--------

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.

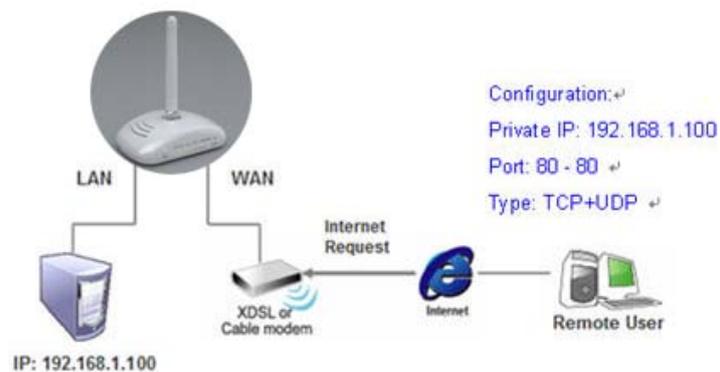
8. Reset

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

Local IP Address: Protocol: Comment:

Current Filter Table:

Local IP Address	Protocol	Comment	Select
------------------	----------	---------	--------

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 Broadband 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:

Current Filter Table:

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

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.

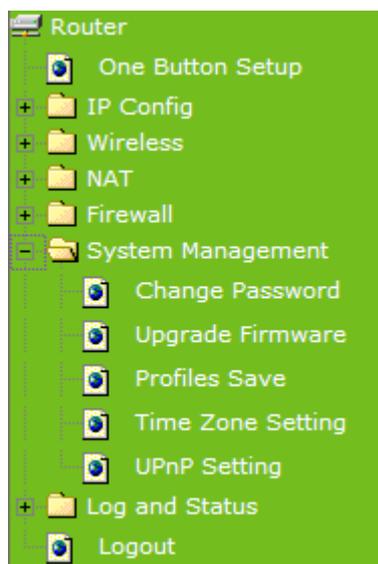
6. Reset

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 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.

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:

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 10 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 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.

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:

1. Update Firmware

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

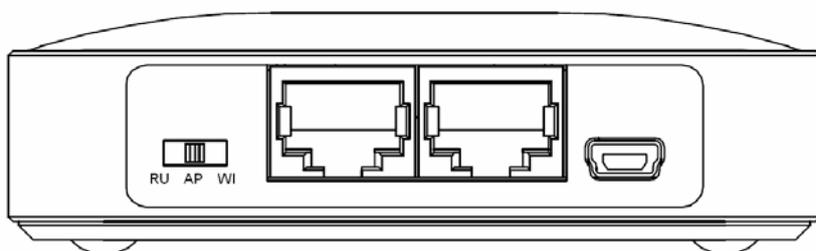
2. Upload & Reset:

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 10 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 Broadband Router to default setting by this function.

Save/Reload Settings

This page allows you save current settings to a file or reload the settings from the file which was saved previously. Besides, you could reset the current configuration to factory default.

Save Settings to File:

Load Settings from File:

Reset Settings to Default:

1. Save Settings To File

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

Save/Reload Settings

This page allows you save current settings to a file or reload the settings from the file which was saved previously. Besides, you could reset the current configuration to factory default.

Save Settings to File:

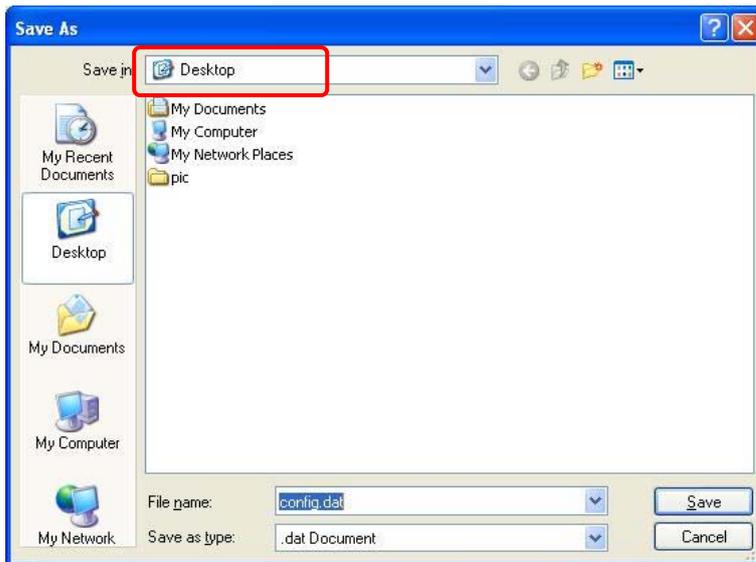
Load Settings from File:

Reset Settings to Default:

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

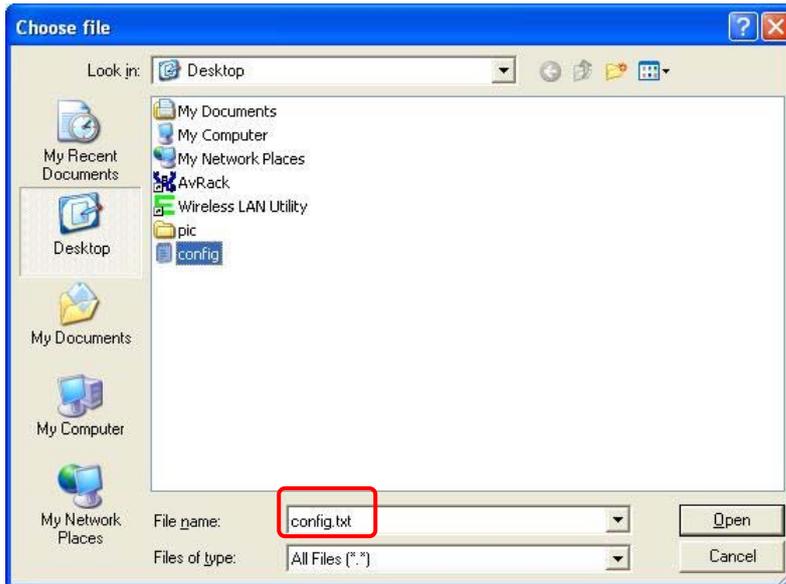
Step 1. Click on “**Browse...**” button for searching the saving configuration from hard drive, and then click on Upload button to load all the settings into the router.

Profiles Save

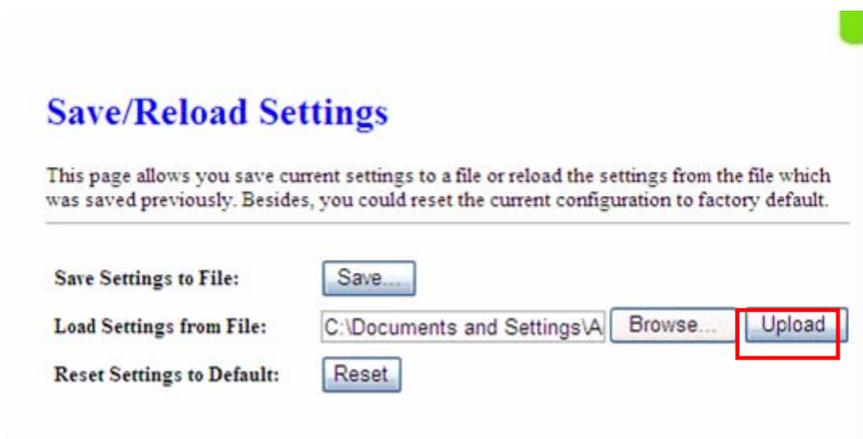
This page allows you save current settings to a file or reload the settings from the file which was saved previously. Besides, you could reset the current configuration to factory default.

Save Settings to File:	<input type="button" value="Save..."/>
Load Settings from File:	<input type="text"/> <input type="button" value="Browse..."/> <input type="button" value="Upload"/>
Reset Settings to Default:	<input type="button" value="Reset"/>

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.



Change setting successfully!

System is configuring, after 64 seconds system will return to the previous page.

3. Reset Setting to Default

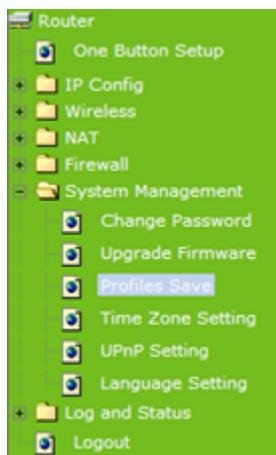
After you have tried other methods for troubleshooting your network, you may choose to restore 11N Mini Broadband Router to the factory default settings.

Save/Reload Settings

This page allows you save current settings to a file or reload the settings from the file which was saved previously. Besides, you could reset the current configuration to factory default.



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



Change setting successfully!

System is configuring, after 64 seconds system will return to the previous page.

5.5.4 Time Zone Setting

The System time is the time used by 11N Mini 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.

Time Zone Setting

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

Current Time : Yr Mon Day Hr Mn Sec

Time Zone Select :

Enable NTP client update

Automatically Adjust Daylight Saving

NTP server : (Manual IP Setting)

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.

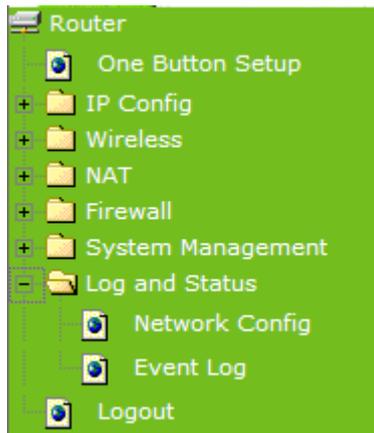
Enable/Disable UPnP: Enabled Disabled

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

11N Mini 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.

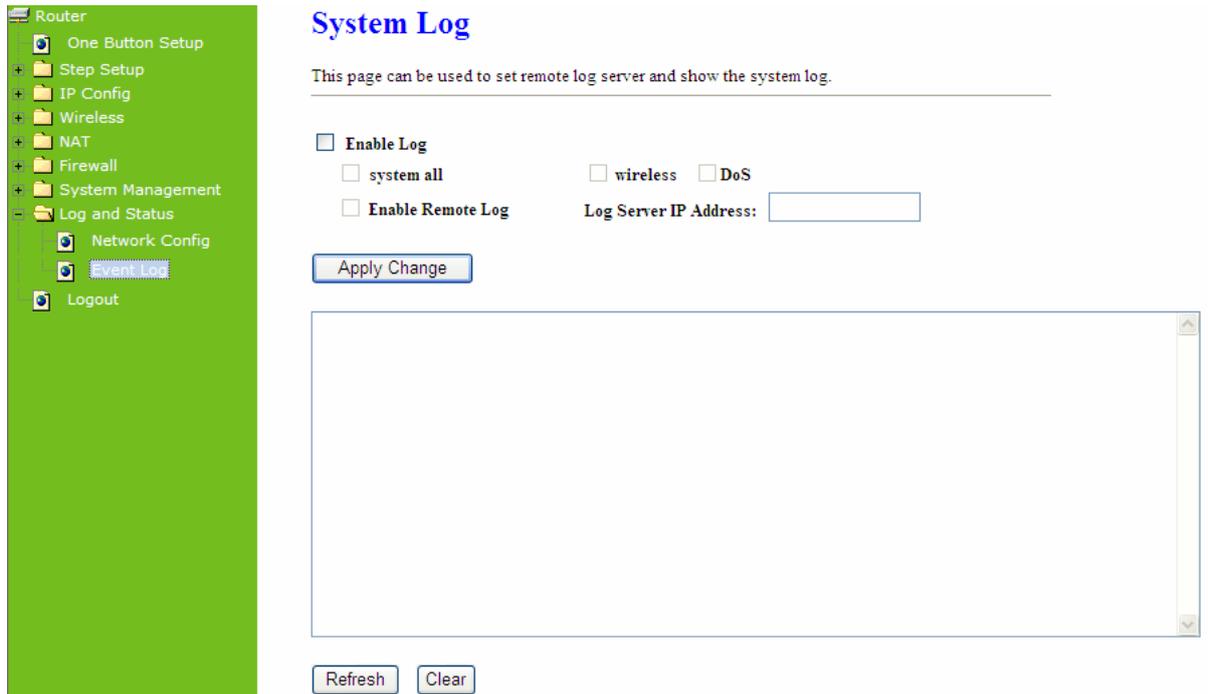
Network Config

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

System	
Uptime	0day:2h:39m:19s
Firmware Version	Ver0.0.2
WirelessConfiguration	
Mode	AP
Band	2.4 GHz (B+G+N)
SSID	11N_Broadband_Router
Channel Number	11
Encryption	Disabled
MAC Address	00:ab:ab:c4:56:78
Associated Clients	1
WirelessRepeater Interface Configuration	
Mode	Infrastructure Client
ESSID	ESSID_11N_Broadband_Router
Encryption	Disabled
MAC Address	00:00:00:00:00:00
State	Scanning
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:ab:ab:c4:56:78

5.6.2 Event Log

11N Mini 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.

Enable Log
 system all **wireless** **DoS**
 Enable Remote Log **Log Server IP Address:**

Apply Changes

```

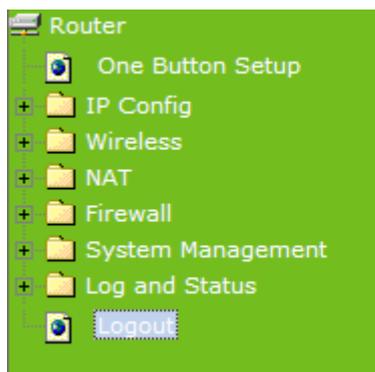
Conntrack
Oday 00:00:17 PPTP netfilter connection tracking: registered
Oday 00:00:17 PPTP netfilter NAT helper: registered
Oday 00:00:17 ip_tables: (C) 2000-2002 Netfilter core team
Oday 00:00:17 NET4: Unix domain sockets 1.0/SMP for Linux NET4.0.
Oday 00:00:17 NET4: Ethernet Bridge 008 for NET4.0
Oday 00:00:17 VFS: Mounted root (squashfs filesystem) readonly.
Oday 00:00:17 Freeing unused kernel memory: 64k freed
Oday 00:00:17 mount /proc file system ok!
Oday 00:00:17 mount /var file system ok!
Oday 00:00:17 device eth0 entered promiscuous mode
Oday 00:00:17 device wlan0 entered promiscuous mode
Oday 00:00:17 TPT: unreasonable target TSSI 0
Oday 00:00:17 br0: port 2(wlan0) entering listening state
Oday 00:00:17 br0: port 1(eth0) entering listening state
Oday 00:00:17 br0: port 2(wlan0) entering listening state

```

Refresh **Clear**

5.7 Logout

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



Router

- One Button Setup
- + IP Config
- + Wireless
- + NAT
- + Firewall
- + System Management
- + Log and Status
- Logout**

Logout

This page is used to logout.

Do you want to logout ?

Apply Change

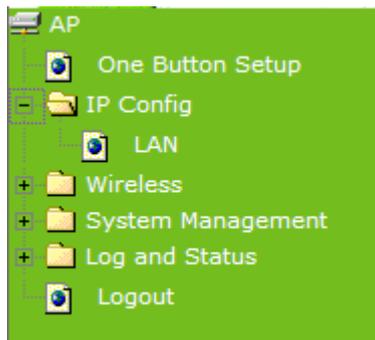
Chapter 6 Advance Configuration for AP Mode

6.1 IP Configuration

This function allows you to add routing rules into 11N Mini Broadband 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:	<input type="text" value="11N_Broadband_Rou"/>
IP Address:	<input type="text" value="192.168.1.254"/>
Subnet Mask:	<input type="text" value="255.255.255.0"/>
Default Gateway:	<input type="text" value="0.0.0.0"/>
DHCP:	<input type="text" value="Client"/> <input type="button" value="v"/>
DHCP Client Range:	<input type="text" value="192.168.1.100"/> - <input type="text" value="192.168.1.200"/> <input type="button" value="Show Client"/>
Static DHCP:	<input type="text" value="Disabled"/> <input type="button" value="v"/> <input type="button" value="Set Static DHCP"/>
802.1d Spanning Tree:	<input type="text" value="Disabled"/> <input type="button" value="v"/>
Clone MAC Address:	<input type="text" value="000000000000"/>

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:

Mode:

Network Type:

SSID:

Channel Width:

Control Sideband:

Channel Number:

Broadcast SSID:

WMM:

Data Rate:

Associated Clients:

Enable Mac Clone (Single Ethernet Client)

Enable Universal Repeater Mode (Acting as AP and client simultaneously)

SSID of Extended Interface:

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	<input type="checkbox"/>	2.4 GHz (B+G+N) ▾	MultipleAP_1	Auto ▾	Enabled ▾	Enabled ▾	LAN+WAN ▾	Show
AP2	<input type="checkbox"/>	2.4 GHz (B+G+N) ▾	MultipleAP_2	Auto ▾	Enabled ▾	Enabled ▾	LAN+WAN ▾	Show
AP3	<input type="checkbox"/>	2.4 GHz (B+G+N) ▾	MultipleAP_3	Auto ▾	Enabled ▾	Enabled ▾	LAN+WAN ▾	Show
AP4	<input type="checkbox"/>	2.4 GHz (B+G+N) ▾	MultipleAP_4	Auto ▾	Enabled ▾	Enabled ▾	LAN+WAN ▾	Show

Apply Changes 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.

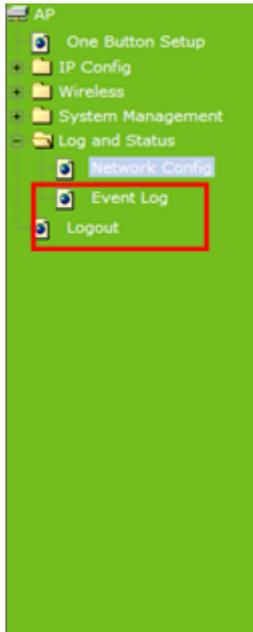
13. Enable Universal Repeater Mode (Acting as AP and Client simultaneously)

Enable **Universal Repeater Mode**, 11N Mini 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 11N Mini 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.



Network Config

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

System	
Uptime	0day:0h:8m:7s
Firmware Version	Ver0.0.2
WirelessConfiguration	
Mode	AP
Band	2.4 GHz (B+G+N)
SSID	11N_Broadband_Router
Channel Number	11
Encryption	Disabled
MAC Address	00:ab:ab:c4:56:78
Associated Clients	0
WirelessRepeater Interface Configuration	
Mode	Infrastructure Client
ESSID	ESSID_11N_Broadband_Router
Encryption	Disabled
MAC Address	00:00:00:00:00:00
State	Scanning

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

Channel Number:

Broadcast SSID:

WMM:

Data Rate:

Associated Clients:

Enable Mac Clone (Single Ethernet Client)

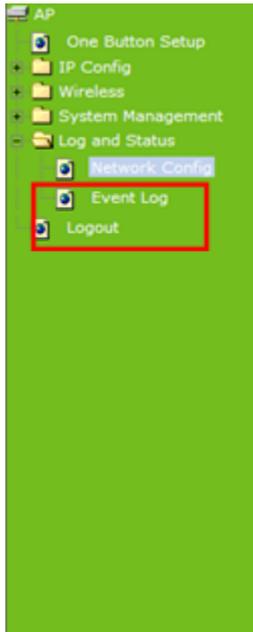
Enable Universal Repeater Mode (Acting as AP and client simultaneously)

SSID of Extended Interface:

Note: If you want to change the setting for Mode and SSID, you must go to EasyConfig page to disable EasyConfig first.

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.



Network Config

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

System	
Uptime	0day:0h:8m:7s
Firmware Version	Ver0.0.2
WirelessConfiguration	
Mode	AP
Band	2.4 GHz (B+G+N)
SSID	11N_Broadband_Router
Channel Number	11
Encryption	Disabled
MAC Address	00:ab:ab:c4:56:78
Associated Clients	0
WirelessRepeater Interface Configuration	
Mode	Infrastructure Client
ESSID	ESSID_11N_Broadband_Router
Encryption	Disabled
MAC Address	00:00:00:00:00:00
State	Scanning

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.

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:	<input type="text" value="2346"/>	(256-2346)
RTS Threshold:	<input type="text" value="2347"/>	(0-2347)
Beacon Interval:	<input type="text" value="100"/>	(20-1024 ms)
Preamble Type:	<input checked="" type="radio"/> Long Preamble <input type="radio"/> Short Preamble	
IAPP:	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled	
Protection:	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	
Aggregation:	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled	
Short GI:	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled	
RF Output Power:	<input checked="" type="radio"/> 100% <input type="radio"/> 70% <input type="radio"/> 50% <input type="radio"/> 35% <input type="radio"/> 15%	

1. Fragment Threshold

To identify the maximum length of packet, the overflow packet length will be fragmented. 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.

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:

Encryption:

802.1x Authentication:

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 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”.

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:

Encryption:

802.1x Authentication:

Authentication: Open System Shared Key Auto

Key Length:

Key Format:

Encryption Key:

► 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.

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:

Encryption:

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

WPA Cipher Suite: TKIP AES

RADIUS Server IP Address:

RADIUS Server Port:

RADIUS Server Password:

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.