Networks with Innovation

KW55193 Wireless Router
User Manual

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Introduction

Thank you for choosing our product. The KW55193 Wireless Router uses Broadcom's CPE solution that fully complies with IEEE802.11b/g/n standards. It will provide your SOHO with convenient Internet.

1.1 Main Features

1.1.1 Wireless

- Fully IEEE 802.11b & IEEE 802.11g&IEEE 802.11n compatible.
- Wireless data rate up to 150 Mbps
- Operating in the unlicensed 2.4 GHz ISM band
- Supports 64/128 bits WEP, WPA, WPA2, WPA/WPA2-PSK, 802.1x

1.1.2 Network Protocol and Features

- Ethernet to ADSL Self-Learning Transparent Bridging
- Internet Control Message Protocol (ICMP)
- IP Static Routing
- Routing Information Protocol (RIP, RIPv2)
- Network Address Translation (NAT)
- Virtual Server, Port Forwarding
- Dynamic Host Configuration Protocol (DHCP)
- DDNS
- Simple Network Time Protocol (SNTP)
- VPN pass-through (IPSec/PPTP/L2TP)
- Parent control

1.1.3 Firewall

- Built-in NAT
- MAC Filtering
- Packet Filtering
- Stateful Packet Inspection (SPI)

- Denial of Service Prevention (DoS)
- DMZ

1.1.4 Management Support

- Web Based GUI
- Upgrade or update via FTP/HTTP
- Command Line Interface via Telnet
- Diagnostic Test
- Firmware upgrade-able for future feature enhancement

1.1.5 Operating System Support

- WINDOWS 98/SE/ME/2000/XP/VISTA/7
- Macintosh
- LINUX

1.1.6 Environmental

- Operating humidity: 10%-90% non-condensing
- Non-operating storage humidity: 5%-95% non-condensing

1.2 Packet Contents

The packet contents are as the following:

- ROUTER x 1
- Power Adapter x 1
- CD x 1

1.3 System Requirements

- Broadband Internet Access Service (DSL/Cable/Ethernet)
- One DSL/Cable Modem that has an RJ45 connector (which is not necessary if the Router is connected directly to the Ethernet)
- PCs with a working Ethernet Adapter and an Ethernet cable with RJ45 connectors
- TCP/IP protocol on each PC
- Web browser, such as Microsoft Internet Explorer, Mozilla Firefox or Apple Safari

1.4 Factory Defaults

The device is configured with the following factory defaults:

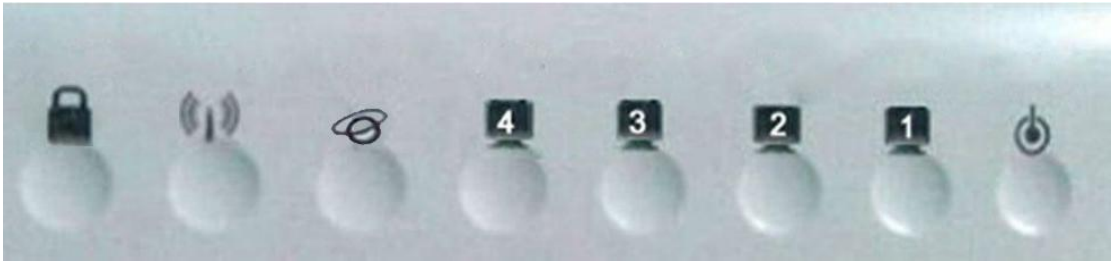
- IP Address: 192.168.1.1
- Subnet Mask: 255.255.255.0

1.5 Warnings and Cautions

- never use the product near water.
- To prevent dangerous overloading of the power circuit, be careful about the designed maximum power load ratings. Not to follow the rating guideline could result in a dangerous situation.
- Please note that telephone line on modem must adopt the primary line that directly outputs from junction box. Do not connect Router to extension phone. In addition, if your house developer divides a telephone line to multi sockets inside the wall of house, please only use the telephone that has connected with the splitter of ADSL Router when you access the Internet. Under the above condition, if you also install telephone with anti-cheat-dial device, please pull out this kind of telephone, otherwise ADSL Router may occur frequently off-line.

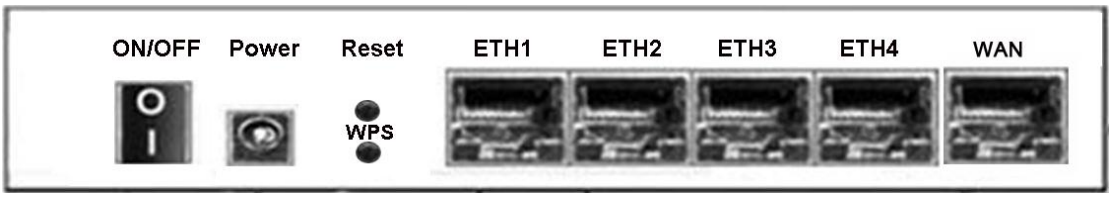
2 Hardware Description

Front Panel



LED	Color	Function
	Green	On: Power on Off: No power
	Green	On: LAN link established and active via LAN port Blinking: ADSL data activity occurs Off: No LAN link via LAN port
	Green	On: The wireless module is ready and idle Blinking: Data transmitting or receiving over WLAN Off: The wireless function is off
	Green	On: The WAN port has detected a link with an attached device Blinking: Data is being transmitted or received by the WAN port Off: No WAN link via the WAN port
	Green	On: WPS connection is established Blinking: Trying to establish a WPS connection Off: WPS function is off or no WPS connection

Rear panel

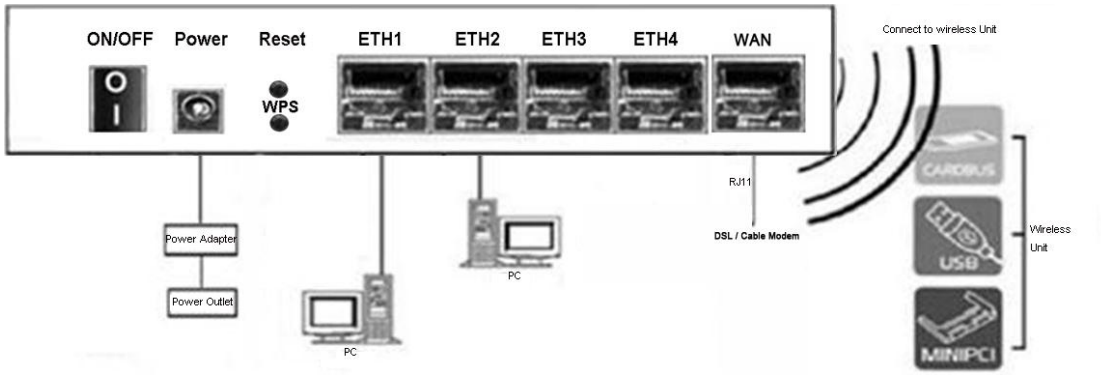


Port	Function
WAN	Connect the device to a cable or DSL modem
ETH1,2,3,4	Connect the device to your PC's Ethernet port, or to the uplink port on your hub/switch, using a RJ-45 cable
RESET	System reset or reset to factory defaults
WPS	A convenient way for WPS set.
ON/OFF	Switch it on or off
POWER	Connect to the supplied power adapter

3 Hardware Installation

This chapter shows you how to connect Router. Meanwhile, it introduces the appropriate environment for the Router and installation instructions.

1. Using an Ethernet Cable to connect the WAN port of the ROUTER to a cable or DSL modem.
2. Using an Ethernet Cable to connect the LAN port of the ROUTER to your LAN or a PC with network card installed.
3. Connect the power cable to the PWR connector on ROUTER, then plug in the power adapter to the AC power outlet, and then press the on-off button.



4 Local PC Configuration in Windows 95, 98, ME, XP,7

1. In the Windows task bar, click the “Start” button, point to “Settings”, and then click “Control Panel”.
2. Double-click the “Network” icon.
3. On the “Configuration” tab, select the TCP/IP network associated with your network card and then click “Properties”.
4. In the “TCP/IP Properties” dialog box, click the “IP Address” tab. Set the IP address as 192.168.1.x (x can be a decimal number from 2 to 254.) like 192.168.1.2, and the subnet mask as 255.255.255.0.
5. On the “Gateway” tab, set a new gateway as 192.168.1.1, and then click “Add”.
6. Configure the “DNS” tab if necessary. For information on the IP address of the DNS server, please consult with your ISP.
7. Click “OK” twice to confirm and save your changes.
8. You will be prompted to restart Windows. Click “Yes”.

5 Configuring the Router

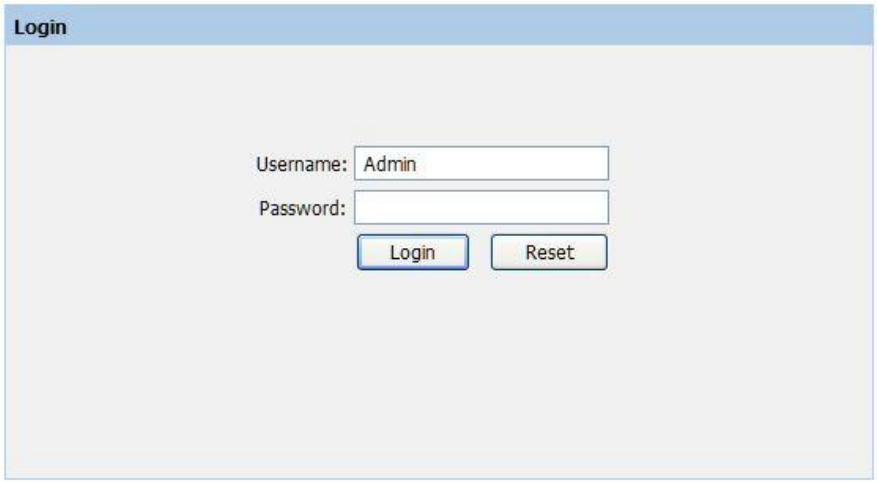
5.1 Web-based Management Guide

In order to use the web-based management software, it will be necessary to use a computer that occupies the same subnet as the Router. The simplest way to do this for many users will be to use DHCP server that is enabled by default on the Router.

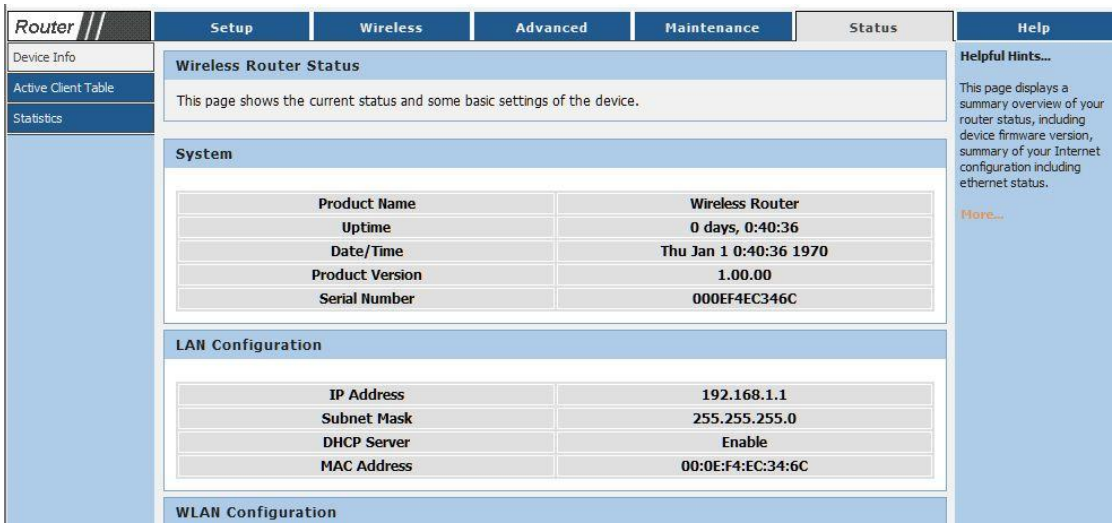
5.1.1 Login

Launch a web browser, such as Internet Explorer, and then use http://192.168.1.1 to log on to the setting pages. Enter username "Admin"

Then click "Login" button login.

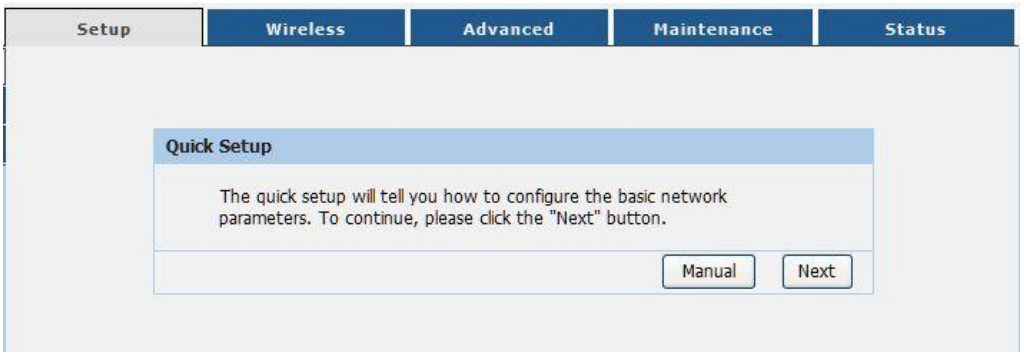


After log on ,you will see the following screen :

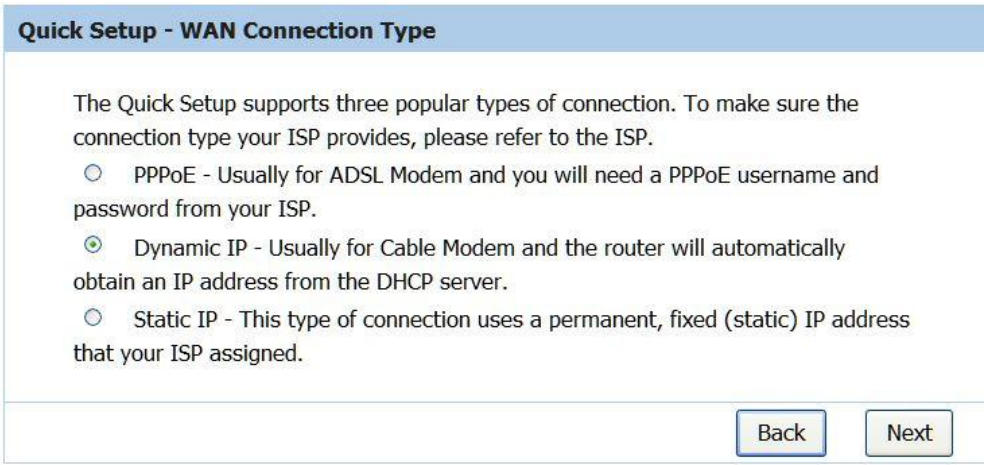


3.2 Quick Installation Guide

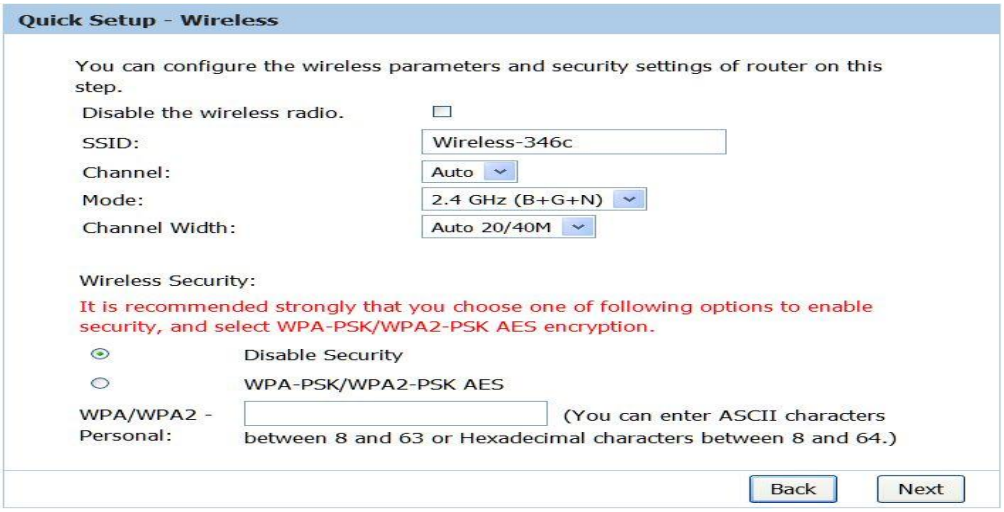
After successfully log in, you can click "**Setup**" configure your router, we can select "**Manual**" or "**Next**" button setup KW55193,Next will guide us for a basic setting step by step,and the Manual will guide us to home page for more detailed setup.here we Choose next enter quick setup mode to quickly configure your Router.



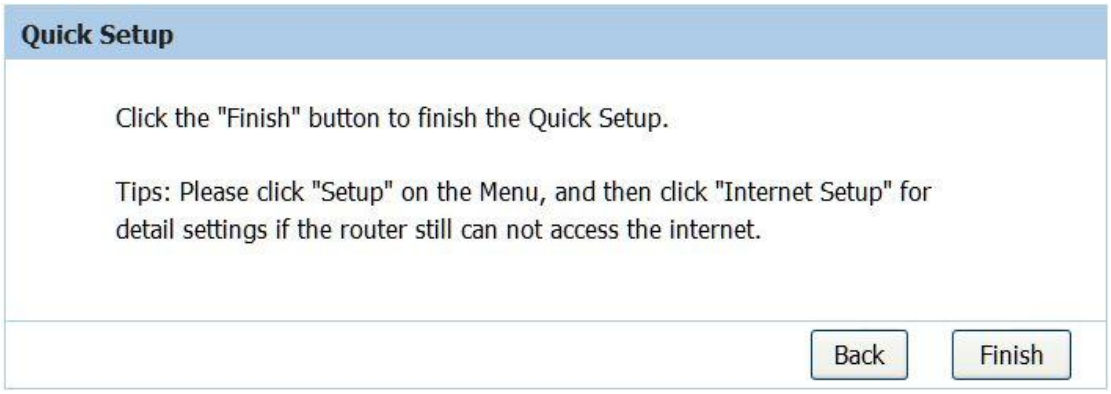
Then WAN Connection Type page will appear, shown as bellow. The Router provides three popular ways PPPoE ,Dynamic IP, Static IP to connect to the Internet. If you are sure of what kind of connection type your ISP provides, you can select the very type and click Next to go on configuring.



After finishing WAN Connection Type selection, Click "**Next"** to continue. Configure the basic parameters for wireless network in the following screen as shown:



Enter the SSID what you want to use, and configure the security settings of your wireless network. then click **Next**.



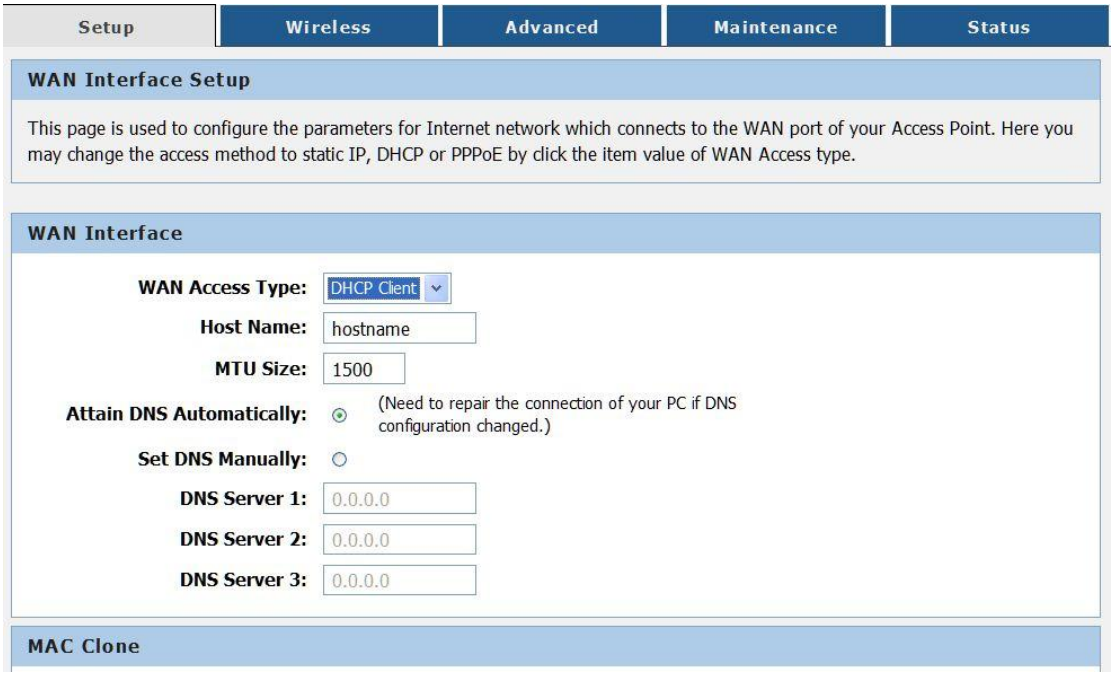
Click Finish to save you settings.

5.1.2 Network (WANSettings)

KW55193 supports three types WAN connection.they are DHCP,Static IP,PPPOE, Select any of them you will be able to configure the corresponding connection of WAN. Choose menu "**Setup →Internet Setup**", you can configure the IP WAN parameters

5.1.3 DHCP

If your ISP provides the DHCP service, please choose **Dynamic IP** type, and the Router will automatically get IP parameters from your ISP. You can see the page as follows . This page displays the WAN IP parameters assigned dynamically by your ISP, including IP address, Subnet Mask, Default Gateway,



Host Name - This option specifies the Host Name of the Router.

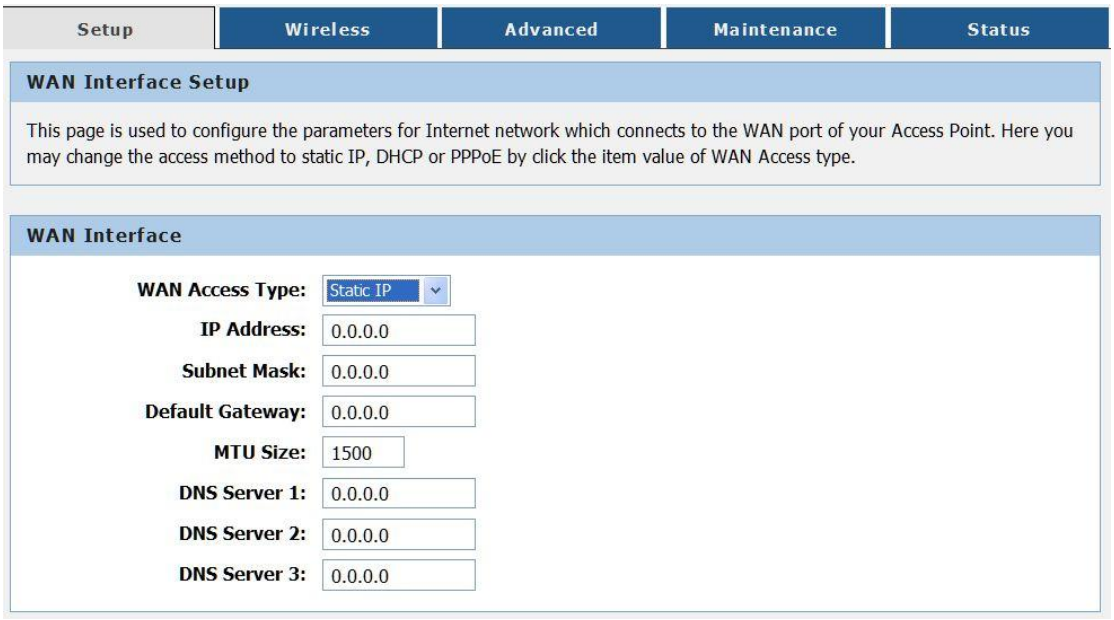
Domain Name - If your ISP gives you one or two DNS addresses,enter the addresses into the correct fields. Otherwise, the DNS servers will be assigned dynamically from your ISP.

MTU Size - The normal **MTU** (Maximum Transmission Unit) value for most Ethernet networks is 1500 Bytes. It is not recommended that you change the default **MTU Size** unless required by your ISP.

Click the **Apply Changes** button to save your settings.

5.1.4 Static IP

If your ISP provides a static or fixed IP Address, Subnet Mask, Gateway and DNS setting, select **Static IP**. The Static IP settings page will appear.



IP Address: Enter the IP address in dotted-decimal notation provided by your ISP.

Subnet Mask: Enter the subnet Mask in dotted-decimal notation provided by your ISP, usually is 255.255.255.0.

Default Gateway:(Optional) Enter the gateway IP ddress in dotted-decimal notation provided by your ISP.

Host Name - This option specifies the Host Name of the Router.

Domain Name - If your ISP gives you one or two DNS addresses,enter the addresses into the correct fields. Otherwise, the DNS servers will be assigned dynamically from your ISP.

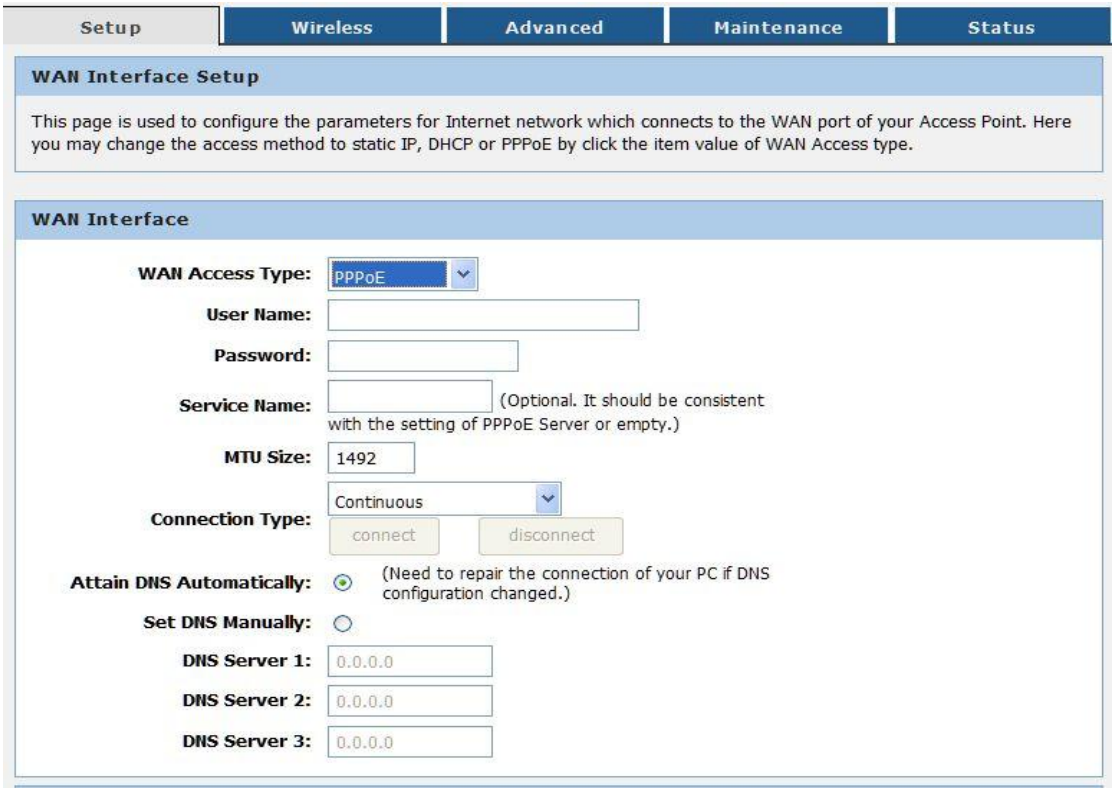
MTU Size : The normal MTU (Maximum Transmission Unit) value for most Ethernet networks is 1500 Bytes. It is not recommended that you change the default MTU Size unless required by your ISP.

DNS1/DNS2(Optional) /DNS3(Optional) : Enter one or two DNS addresses in dotted-decimal notation provided by your ISP.

Click the **Apply Changes** button to save your settings.

5.1.5 PPPOE

If your ISP provides a PPPoE connection, select **PPPoE** option. And you should enter the following parameters.



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

Connection Type:there are three connection ways,as following:

Continuous: Conncted all the time

Connect on Demand :In this mode, the Internet connection can be terminated automatically after a specified inactivity period (**Max Idle Time**) and be re-established when you attempt to access the Internet again. If you want your Internet connection keeps active all the time, please enter “0” in the **Max Idle Time** field. Otherwise, enter the number of minutes you want to have elapsed before your Internet access disconnects.

Manually - You can click the Connect/Disconnect button to connect/disconnect immediately. This mode also supports the Max Idle Time function as Connect on Demand mode. The Internet connection can be disconnected automatically after a specified inactivity period and re-established when you attempt to access the Internet again. Click the Connect button to connect immediately. Click the Disconnect button to disconnect immediately.

Server Name - This option specifies the Server Name of the Router.

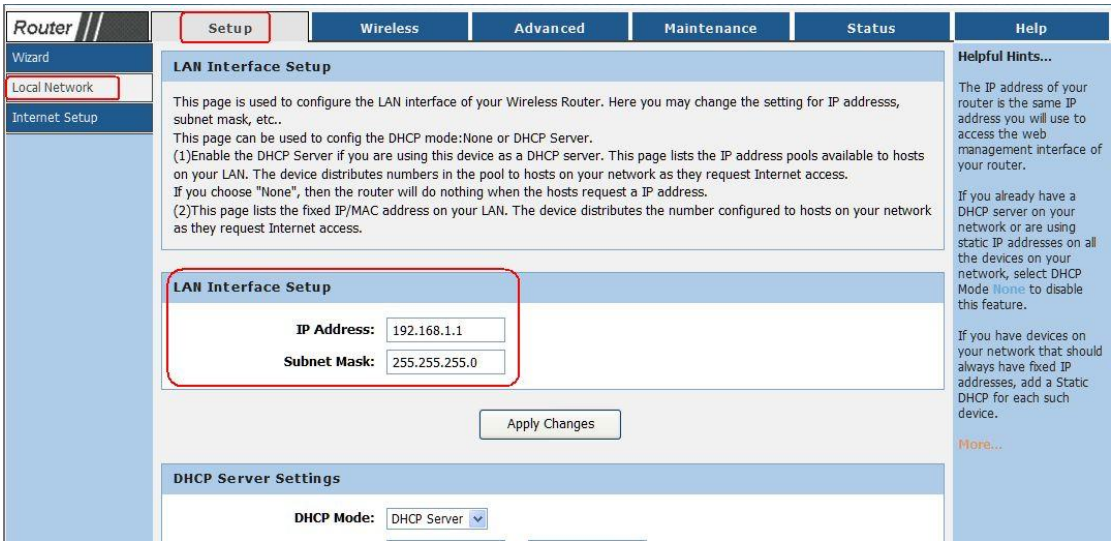
Domain Server - If your ISP gives you one or two DNS addresses,enter the addresses into the correct fields. Otherwise, the DNS servers will be assigned dynamically from your ISP.

MTU Size - The normal **MTU** (Maximum Transmission Unit) value for most Ethernet networks is 1500 Bytes. It is not recommended that you change the default **MTU Size** unless required by your ISP.

Click the **Apply Changes** button to save your settings.

5.1.6 LAN Settings

Choose menu "**Setup → Local Network**", you can configure the IP parameters of the LAN on the screen as below.



IP Address:Enter the IP address of your Router or reset it in dotted-decimal notation (factory default: 192.168.0.1).

Subnet Mask:An address code that determines the size of the network. Normally use 255.255.255.0 as the subnet mask.

Click the **Apply Changes** button to save your settings.

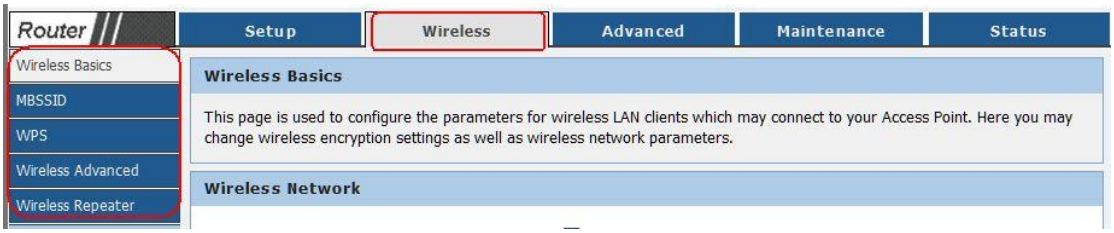
☞ **Note:**

1) If you change the IP Address of LAN, you must use the new IP Address to log in the Router.

2) If the new LAN IP Address you set is not in the same subnet, the IP Address pool of the DHCP server will change accordingly at the same time，while the Virtual Server and DMZ Host will not take effect until they are re-configured.

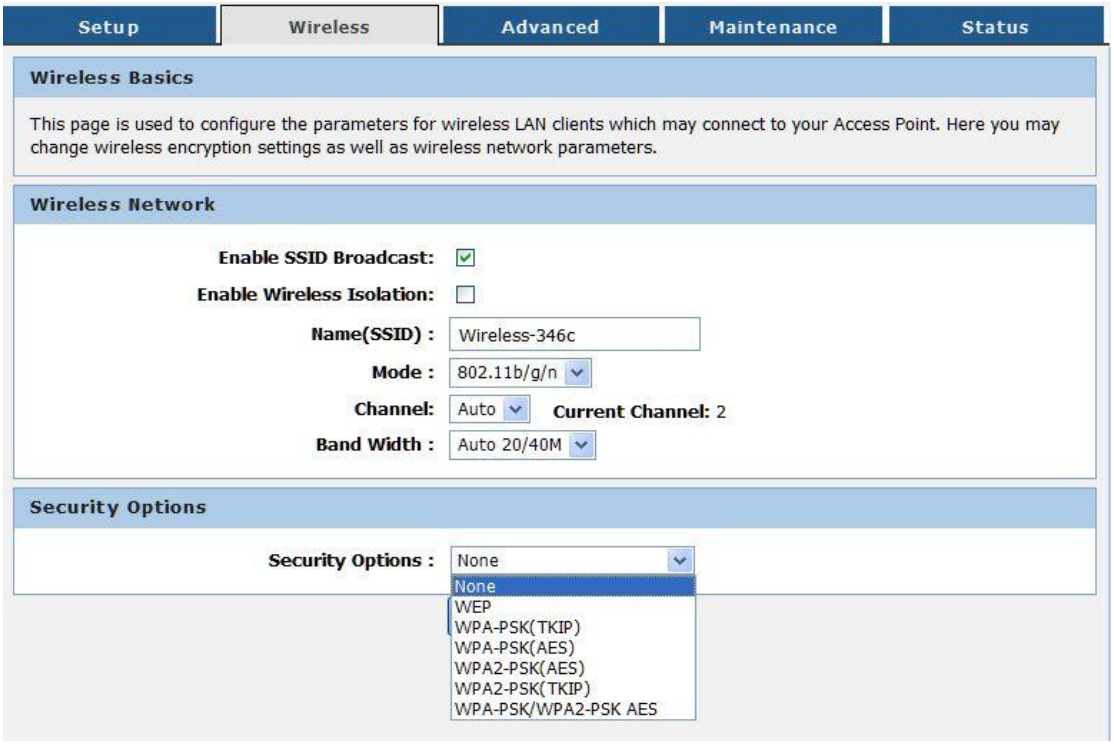
5.2 Wireless Settings

There are five submenus under the Wireless menu (shown as bellow): **Wireless Basic MBSSID ,WPS, Wireless Advanced, Wireless Repeater**. Click any of them, and you will be able to configure the corresponding function.



5.2.1 Basic Wireless Settings

Choose menu "**Wireless→Wireless Basics**", you can configure the basic settings for the wireless network on this page.



Name（SSID）： Also called the SSID. Enter a value of up to 32 characters. The same name must be assigned to all wireless devices in your network .

Band Width : Select the channel width from the drop-down list. The default setting is 40MHz in Both Bands, which can adjust the channel width for your clients automatically.

Channel: This field determines which operating frequency will be used. The default channel is set to Auto, so the AP will choose the best channel automatically. It is not necessary to change the wireless channel unless you notice interference problems with another nearby access point.

SSID Broadcast: When wireless clients survey the local area for wireless networks to associate with, they will detect the SSID broadcast by the Router. If you select the Enable SSID Broadcast checkbox, the Wireless Router will broadcast its name (SSID) on the air.

Security Option: You can configure the security settings of your wireless network. There are six wireless security modes supported by the Router: WEP,802.1X,WPA, WPA2-PSK, WPA2, WPA2-PSK. Different item leads different web page settings. Please read the following information carefully:

Done : If you do not want to use wireless security, check this radio button. But it's strongly recommended to choose one of the following modes to enable security.

WEP open and **WEP shared** —WEP is an encryption scheme that is used to protect user's wireless data communications. WEP uses a combination of 64-bit keys or 128-bit keys to provide access control to user's network and encryption security for every data transmission. To decode a data transmission, each wireless client on the network must use an identical 64-bit or 128-bit key. WEP is an older wireless encryption method that is not as hard to break as the more-recent WPA.

802.1x — In 802.1x (also known as RADIUS), a separate machine called an authentication server receives a user ID and password. It grants or denies access based on whether the ID and password match any entries in its account list. User can optionally enable WEP encryption with this option. Because it requires a separate machine acting as the authentication server, 802.1x is most often used in business environments.

WPA — WPA is a more recent encryption method that addresses many of the weaknesses in WEP. Any client capable of WPA encryption should use it instead of WEP.

WPA (PSK) — This is WPA encryption combined with a *pre-shared key (PSK)*, which is a text string known only to the gateway and authorized wireless clients. The gateway rejects the login if the client's PSK does not match.

WPA2 — WPA2 is a more advanced encryption method than WPA. Because it is a more recent standard, some of user's wireless devices might not be able to use it.

WPA2 (PSK) — This option uses WPA2 with a pre-shared key.

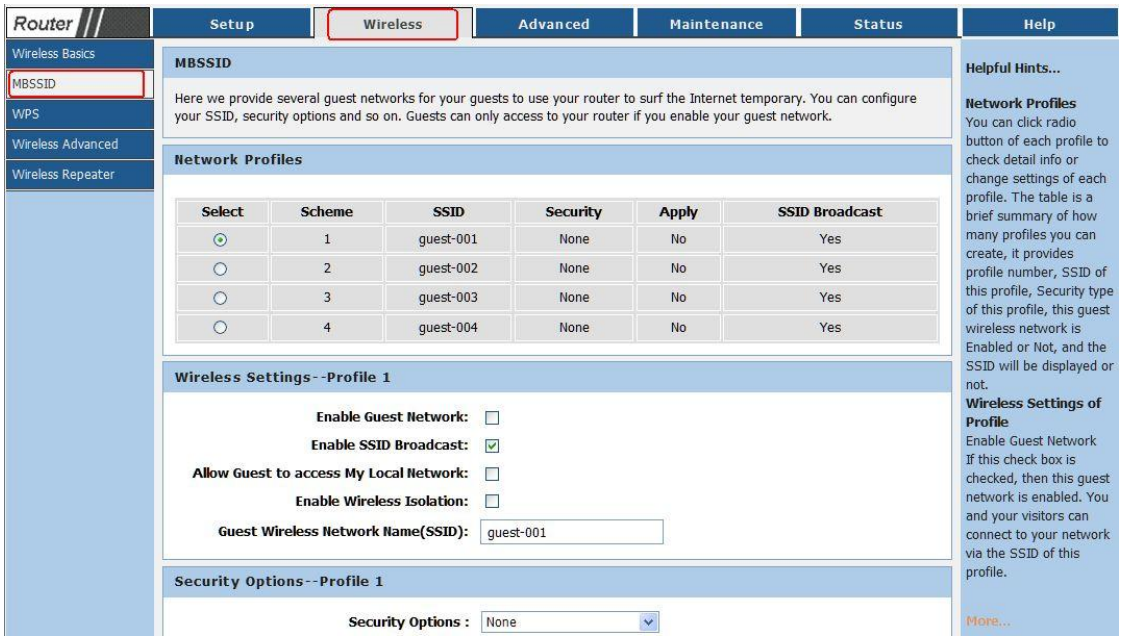
WPA2 and WPA — This option supports WPA2/WPA encryption for devices capable of one or the other standard. The gateway automatically detects whether a particular device can use WPA2 or WPA.

WPA2 AND WPA (PSK) — This has WPA2 or WPA encryption based on client abilities, as well as a pre-shared key.

Click the **Apply Changes** button to save your settings.

5.2.3 MBSSID

Choose menu "**Wireless→MBSSID**", you can configure the Guest Network Wireless Settings on the page as shown:



Enable Guest Network :You can on or off MBSSID function

Total Guest Allowed: You can configure the number of guest

Enable SSID Broadcast:Enable or Disable the SSID Broadcast

Allow Gust to access My Local Netword:If enabled, guests can communicate with hosts.

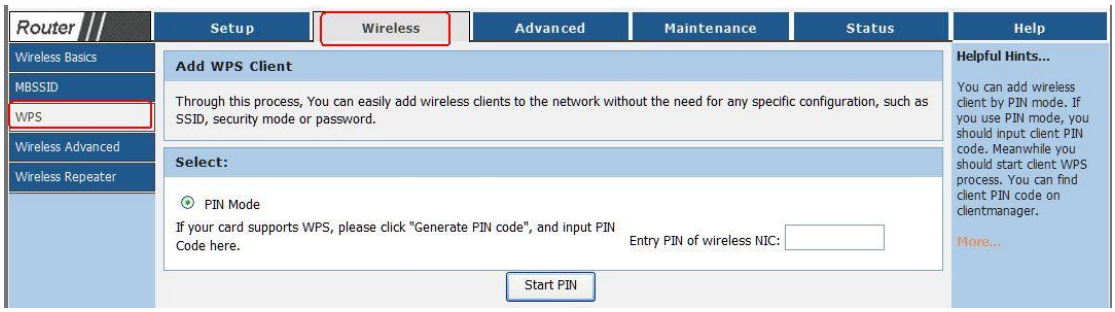
Security Option: Can set password for guest network

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

5.2.3 WPS

Choose menu "**Wireless→WPS**", you can configure the WPS Settings on the page as shown:

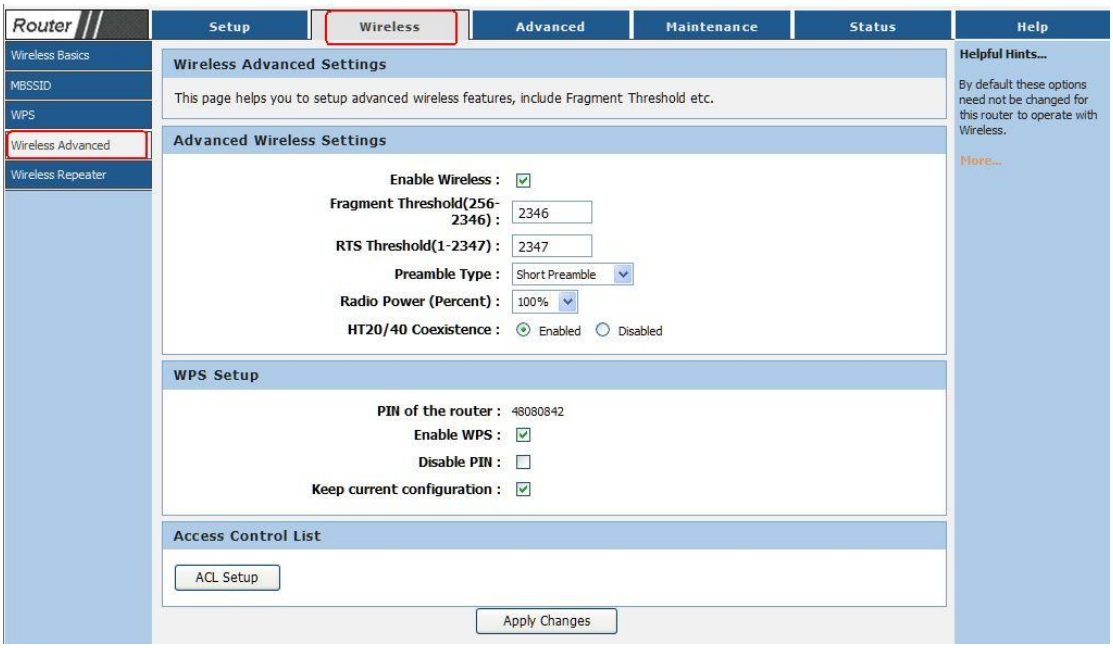
WE can enter PIN code in the area of PIN then click **Start Pin** enabled the WPS function.



Click the **Apply Changes** button to save your settings.

5.2.4 Wireless Advanced

Choose menu "**Wireless → Wireless Advanced**", you can configure the wireless advanced Settings on the page as shown:



Enabled Wireless: Enabled or Disabled wireless function

Fragmentation Threshold - This value is the maximum size determining whether packets will be fragmented. Setting the Fragmentation Threshold too low may result in poor network performance because of excessive packets. 2346 is the default setting and is recommended.

RTS Threshold : Here you can specify the RTS (Request to Send) Threshold. If the packet is larger than the specified RTS Threshold size, the Router will send RTS frames to a particular receiving station and negotiate the sending of a data frame. The default value is 2346.

Radio Power :can guarantee the packets with high-priority messages being transmitted preferentially. It is strongly recommended.

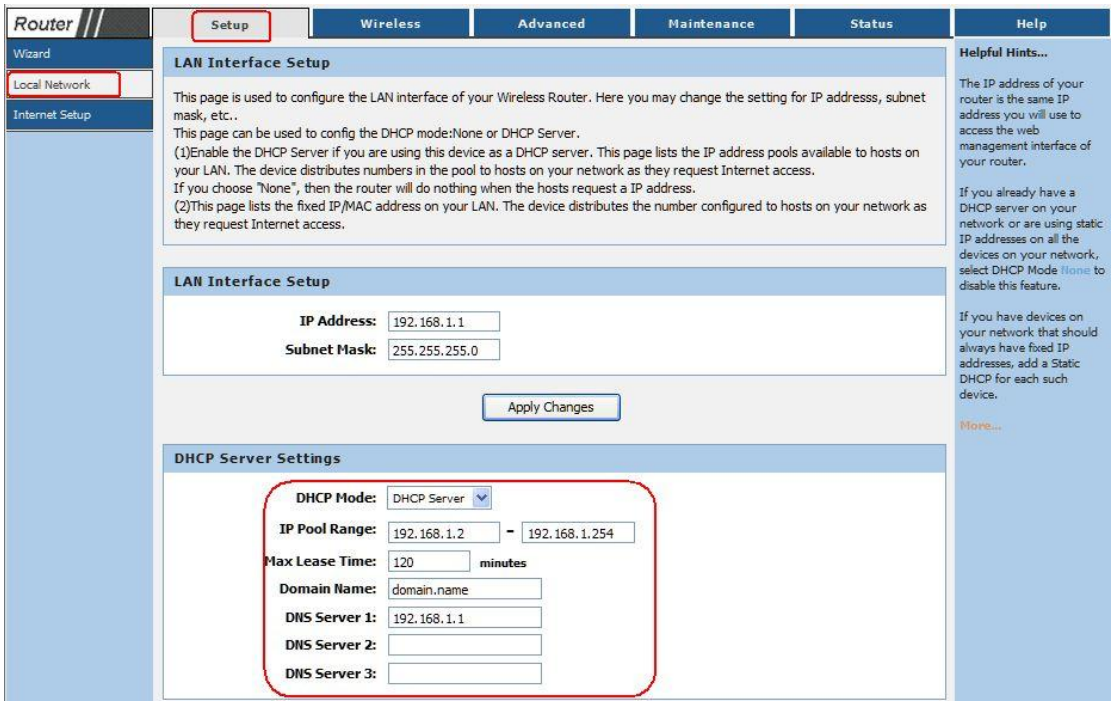
Enable WPS: Enable or disable WPS function

Enable PIN: Enable or disable PIN function

Click the **Apply Changes** button to save your settings.

5.3 DHCP Settings

Choose menu "**Setup→Local Network→DHCP Server Settings**", you can configure the DHCP Server on the page as shown bellow.The Router is set up by default as a DHCP (Dynamic Host Configuration Protocol) server, which provides the TCP/IP configuration for all the PC(s) that are connected to the Router on the LAN.



DHCP Server: Enable or Disable the DHCP server. If you disable the Server, you must have another DHCP server within your network or else you must configure the computer manually.

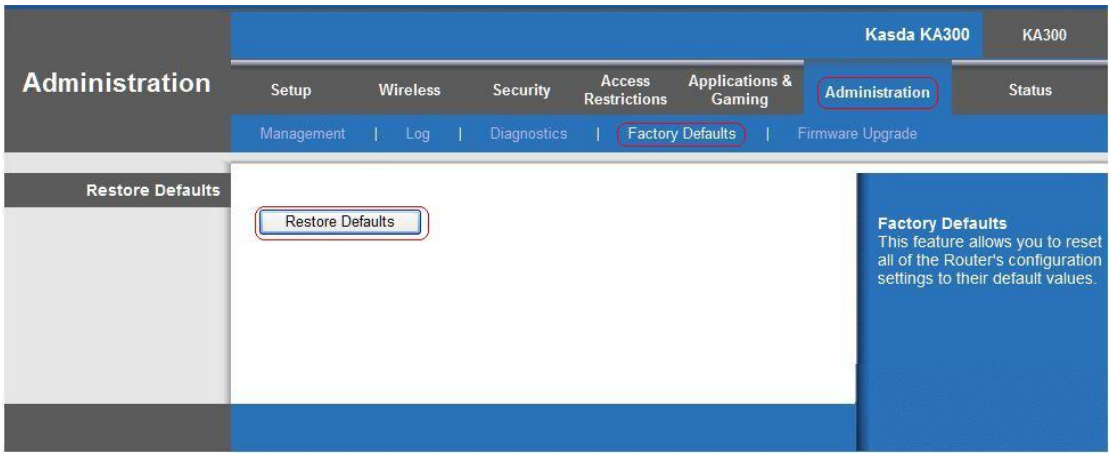
IP Poor Range: Specify an IP address for the DHCP Server to start with when assigning IP addresses. 192.168.1.2 is the default start address. **And** Specify an IP address for the DHCP Server to end with when assigning IP addresses. 192.168.1.254 is the default end address.

Max Lease Time: The Address Lease Time is the amount of time a network user will be allowed connection to the Router with their current dynamic IP Address. Enter the amount of time in minutes and the user will be "leased" this dynamic IP Address. After the time is up, the user will be automatically assigned a new dynamic IP address.

Click the **Apply Changes** button to save your settings.

5.4 Factory Default

Choose menu "Administration→ Factory Defaults", and then and you can restore the configurations of the Router to factory defaults on the following screen



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

- The default **User Name**: Admin
- The default **Subnet Mask**: 255.255.255.0

Note:

All changed settings will be lost when defaults are restored.

Appendix: Frequent Asked Questions

Q: None of the LEDs are on when user power on the ADSL router?
A: Please make sure what user use is the power adaptor attached with the ADSL router package，and check the connection between the AC power and ADSL router.

Q: DSL LED does not turn on after connect telephone line?
A: Please make sure what user use is the standard telephone line (as attached with the package), make sure the line is connected correctly and check whether there is poor contact at each interface. Wait for 30 seconds to allow the ADSL router establishes connection with user ADSL operator.

Q: DSL LED is in the circulation of slow-flashing and fast-flashing after connect telephone line?
A: This situation means the ADSL router is in the status of failing to establish connection with Central Office. Please check carefully and confirm whether the ADSL router has been installed correctly.

Q: LAN LED does not turn on after connect Ethernet cable?
A: Please make sure Ethernet cable is connected hub/PC and ADSL router correctly. Then please make sure the PC/hub have been power on.

Please make sure that user use parallel network cable to connect UpLink port of hub, or use parallel network cable to connect PC. If connect normal port of hub (not UpLink port), user must use cross-cable. Please make sure that user's network cables meet the networking requirements above.

Q: PC cannot access the Router?
A: Please make sure that all devices communicating with the device must use the same channel (and use the same SSID). Otherwise user's PC will not find the wireless Router.

Q: PC cannot access the Internet?
A: First check whether PC can ping the interface Ethernet IP address of this product successfully (default value is 192.168.1.1) by using ping application. If ping application fails, please check the connection of Ethernet cable and check whether the states of LEDs are in gear.

If the PC uses private IP address that is set manually (non-registered legal IP address), please check:

1. Whether IP address of the PC gateway is legal IP address. Otherwise please use the right gateway, or set the PC to Obtain an IP address automatically.
2. Please confirm the validity of DNS server appointed to the PC with ADSL operator. Otherwise please use the right DNS, or set the PC to Obtain an IP address automatically.
3. Please make sure user have set the NAT rules and convert private IP address to legal IP address. IP address range of the PC that user specify should meet the setting range in NAT rules.
4. Central Office equipment may have problem.
5. The country or the wireless network type user selected is wrong.

Q: PC cannot browse Internet web page?

A: Please make sure DNS server appointed to the PC is correct. User can use ping application program to test whether the PC can connect to the DNS server of the ADSL operator.

Q: Initialization of the PVC connection failed?

A: Be sure that cable is connected properly from the DSL port to the wall jack. The DSL LED on the front panel of the ADSL router should be on. Check that user's VPI, VCI, type of encapsulation and type of multiplexing setting are the same as what user collected from user's service provider, Re-configure ADSL router and reboot it. If user still can not work it out, user may need to verify these variables with the service provider.

If the cause is not above given，please contact user's local service provider!