Wireless ADSL Router

User Manual

Contents

1 Introduction

The Router is a highly ADSL2+ Integrated Access Device and can support ADSL link with downstream up to 24 Mbps and upstream up to 1 Mbps. It is designed to provide a simple and cost-effective ADSL Internet connection for a private Ethernet or 802.11g/802.11b wireless network. The Router combines high-speed ADSL Internet connection, IP routing for the LAN and wireless connectivity in one package. It is usually preferred to provide high access performance applications for the individual users, the SOHOs, and the small enterprises.

Network and Router management is done through the web-based management interface that can be accessed through the local Ethernet using any web browser. You may also enable remote management to enable configuration of the Router via the WAN interface.

1.1 Application

- Home gateway
- SOHOs
- Small enterprises
- TV over IP (IPTV)
- Higher data rate broadband sharing
- Shared broadband internet access
- Audio and video streaming and transfer
- PC file and application sharing
- Network and online gaming

1.2 Environment Requirements

- Operating temperature: 0ºC~45ºC
- Storage temperature: -10ºC~55ºC

- Operating humidity: 10%~95%, non-condensing
- Storage humidity: 5%~95%, non-condensing
- Power adapter input: 100V~240V AC, 50/60Hz
- Power adapter output: 12V DC, 0.8A

1.3 System Requirements

Recommended system requirements are as follows:

- Pentium 233 MHZ or above
- Memory: 64 Mbps or above
- 10M Base-T Ethernet or above
- Windows 9x, Windows 2000, Windows XP, Windows ME, Windows NT
- Ethernet network interface card

1.4 Safety Cautions

Follow the announcements below to protect the device from risks and damage caused by fire and electric power.

- Use volume labels to mark the type of power.
- Use the power adapter that is packed within the device package.
- Pay attention to the power load of the outlet or prolonged lines. An overburden power outlet or damaged lines and plugs may cause electric shock or fire accident. Check the power cords regularly. If you find any damage, replace it at once.
- Proper space left for heat radiation is necessary to avoid any damage caused by overheating to the device. The holes are designed for heat radiation to ensure that the device works normally. Do not cover these heat radiant holes.
- Do not put this device close to a place where a heat source exits or high temperature occurs. Avoid the device from direct sunshine.
- Do not put this device close to a place where is over damp or watery. Do not spill any fluid on this device.
- Do not connect this device to any PC or electronic product, unless our customer engineer or your broadband provider

instructs you to do this, because any wrong connection may cause any power or fire risk.

- Do not place this device on an unstable surface or support.

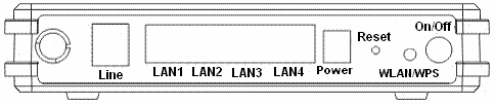
1.5 LED Status Description

1.5.1 Front Panel

Indicator	Status	Description
Power	Off	The power is off.
	Green	The power is on and the device operates normally.
	Red	The power is self-testing.
		The device enters the console mode of the boot loader.
		The self-testing of the power fails if the LED is always red.
	Blink Red	Upgrading software.
ADSL	Off	No signal is detected.
	Slow Blink Green	The DSL line is transferring.
	Fast Blink Green	The DSL line is training.
	Green	The DSL line connection is established.
Internet	Off	No PPPoA or PPPoE connection
	Green	The PPPoA or PPPoE connection is established. The users can access the Internet.
	Red	Device attempts to become IP connected but fails (no DHCP response, no PPPoE response, PPPoE authentication failed, no IP address from IPCP, etc.)
LAN1/2/3/4	Off	No Ethernet signal is detected.
	Blink Green	The user data is passing through Ethernet port.
	Green	Ethernet interface is ready to work
WLAN	Off	No radio signal is detected.

Indicator	Status	Description
	Blink Green	The user data is passing through WLAN port.
	Green	WLAN interface is ready to work.

1.5.2 Rear Panel



Interface	Description
	Wireless antenna.
Line	RJ-11 port, using the telephone line to connect the modem with the ADSL cable or splitter.
LAN 1~4	RJ-45 port, connect the modem to a PC or other network device.
Power	Power supplied port, plug in for power adapter that the power input is 12V DC, 1 A.
Reset	To restore the factory default, keep the device powered on and push a needle into the hole. Press down the button about 3 seconds and then release.
WLAN/WPS	● Press the button silently less than 1s to enable WLAN function. ● Press the button for more than 5s to enable to enable WPS function. ● If you press the button between 1s and 5s, no function takes effective.
On/Off	Power switch.

2 Hardware Installation

2.1 Choosing the Best Location for Wireless Operation

- Keep the numbers of walls and ceilings to the minimum:

  The signal emitted from wireless LAN devices can penetrate through ceilings and walls. However, each wall or ceiling can reduce the range of wireless LAN devices from 1 ~ 30 miters. Position your wireless devices so that the number of walls or ceilings obstructing the signal path is minimized.
- Consider the direct line between access points and workstations:

  A wall that is 0.5 meters thick, at a 45-degree angle appears to be almost 1 meter thick. At a 2-degree angle, it appears over 14 meters thick. Be careful to position access points and client adapters so the signal can travel straight through (90º angle) a wall or ceiling for better reception.
- Building materials make difference:

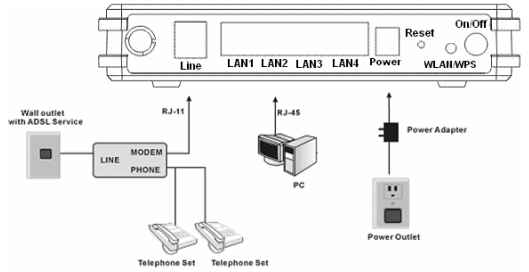
  Buildings constructed using metal framing or doors can reduce effective range of the device. If possible, position wireless devices so that their signals can pass through drywall or open doorways. Avoid positioning them in the way that their signal must pass through metallic materials. Poured concrete walls are reinforced with steel while cinderblock walls generally have little or no structural steel.
- Position the antenna for best reception:

  Play around with the antenna position to see if signal strength improves. Some adapters or access points allow you to judge the strength of the signal.
- Keep your product away (at least 1~2 meters) from electrical devices:
- Keep wireless devices away from electrical devices that generate RF noise such as microwave ovens, monitors, electric motors, etc.

2.2 Connecting the ADSL Router

- See the following figure. Connect the Line port of the DSL Router with a telephone cable.
- Connect the LAN port of the DSL Router to the network card of the PC via an Ethernet cable.
- Plug one end of the power adapter to the wall outlet and connect the other end to the PWR port of the DSL Router.

The following figure displays the connection of the DSL Router, PC, and telephones.



3 Introduction to Web Configuration

3.1 Logging In to the Modem

Step 1 Open a Web browser on your computer.

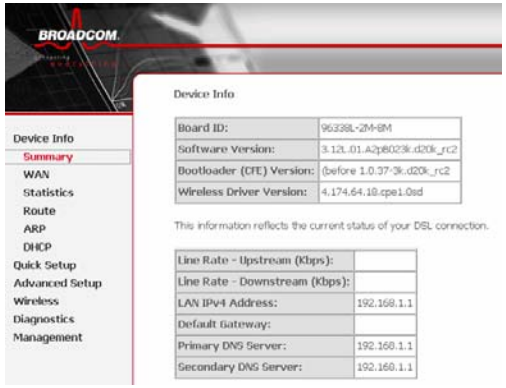
Step 2 Enter **http://192.168.1.1** (DSL router default IP address) in the address bar. The login page appears.

Step 3 Enter a user name and the password. The default username and password of the super user are **admin** and **admin**. The username and password of the common user are **user** and **user**. You need not enter the username and password again if you select the option **Remember my password**. It is

recommended to change these default values after logging in to the DSL router for the first time.

Step 4 Click **OK** to log in or click **Cancel** to exit the login page.

3.2 Summary of Device Information



- **Default Gateway**: In the bridging mode there is no gateway. In other modes, it is the address of the uplink equipment, for example, PPPoE/PPPoA.
- **DNS Server**: In the PPPoE / PPPoA mode, it is obtained from the uplink equipment. In the bridging mode, there is no DNS Server address and you can manually enter the information.

3.3 Advanced Setup

Choose **Advanced Setup** > **WAN**, and the following page appears.

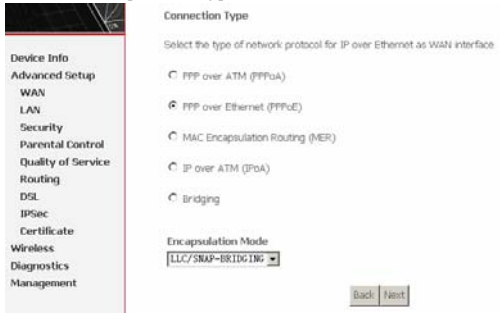
3.3.1 Configuring PPPoE

Step 1 Click **Add** and the following page appears. In this page, you can modify VPI/VCI, service categories, and QoS.

- **VPI**: Virtual path between two points in an ATM network. Its valid value range is from 0 to 255.
- **VCI**: Virtual channel between two points in an ATM network. Its valid value range is from 32 to 65535 (1 to 31 are reserved for known protocols).
- **Service Category**: UBR Without PCR/UBR With PCR/CBR/Non Realtime VBR/Realtime VBR.
- Enable Quality Of Service: Enable or disable QoS.

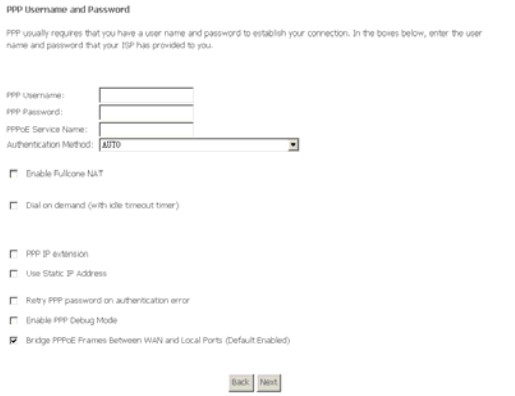
After proper modifications, click **Next** and the following page appears.

Step 2 In this page, you can modify the Internet connection type and encapsulation type.



Change the connection type of PVC 0/35 to PPP over Ethernet (PPPoE) and set the Encapsulation Mode to LLC/SNAP-BRIDGING (according to the uplink equipment). Click **Next** and the following page appears.

Step 3 In this page, you can modify the PPP user name, PPP password, authentication method.



PPP Username: The correct user name that your ISP provides to you.

PPP Password: The correct password that your ISP provides to you.

PPPoE Service Name: If your ISP provides it to you, please enter it. If not, do not enter any information.

Authentication Method: The value can be AUTO, PAP, CHAP, or MSCHAP. Usually, you can select AUTO.

Dial on demand (with idle timeout timer): If this function is enabled, you need to enter the idle timeout time. Within the preset minutes, if the modem does not detect the flow of the user continuously, the modem automatically stops the PPPOE connection. Once it detects the flow (like access to a webpage), the modem restarts the PPPOE dialup.

If this function is disabled, the modem performs PPPOE dial-up all the time. The PPPOE connnection does not stop, unless the modem is powered off and DSLAM or uplink equipment is abnormal.

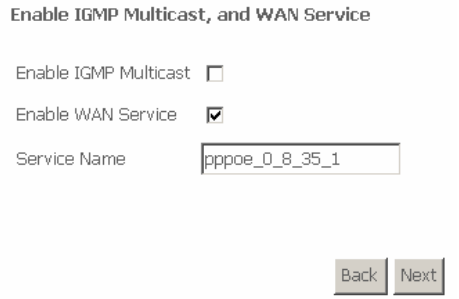
PPP IP extension: If this function is enabled, the WAN IP address obtained by the modem through built-in dial-up can be directly assigned to the PC being attached to the modem (at this time, the modem connects to only one PC). From the aspect of the PC user, the PC dials up to obtain an IP addres. But actually, the dial-up is done by the modem.

If this function is disabled, the modem itself obtains the WAN IP address.

Use Static IP Address: If this function is disabled, the modem obtains an IP address assigned by an uplink equipment such as BAS, through PPPoE dial-up.If this function is enabled, the modem uses this IP address as the WAN IP address.

After entering the PPP user name and password, click **Next** and the following page appears.

In this page, you can modify the service name, and enable or disable the IGMP multicast and WAN service.

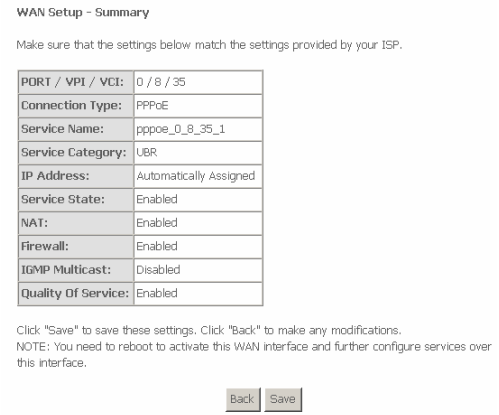


Enable IGMP Multicast: IGMP proxy. For example, if you wish that the PPPoE mode supports IPTV, enable this function.

Enable WAN Service: Enable it, unless you do not want to active the PVC.

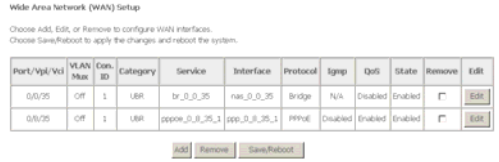
Click **Nex**t and the following page appears.

This page shows all the configuration. You can view the default values of NAT enable and Firewall enable.



To save the settings, click **Save**. To make any modifications, click **Back**. After you click **Save**, the following page appears.

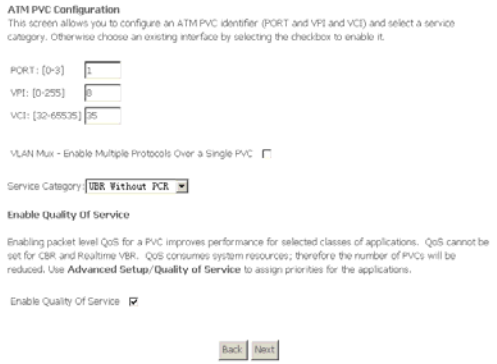
Note: *You need to reboot the modem to activate this WAN interface and further configure services in this interface.*



3.3.2 Bridge Configuration

This section describes the procedure for adding PVC 0/35 (IPoA mode).

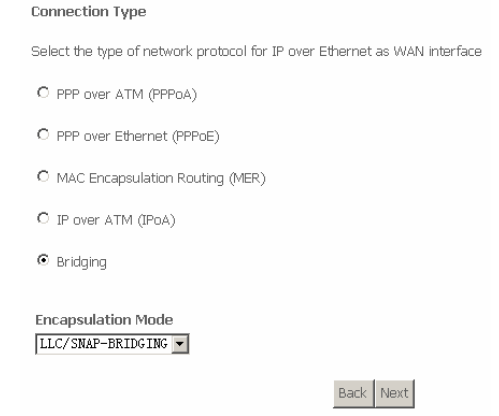
Click **Add,** and the following page appears. In this page, you can modify VPI/VCIs, service categories, and QoS.



In this example, PVC 0/35 is to be modified and the default values of service category remain. In actual applications, you can modify them as required.

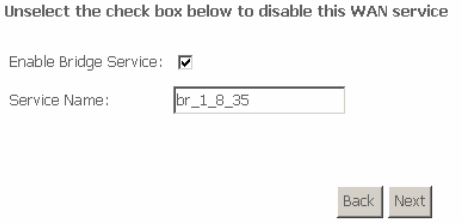
After proper modifications, click **Next** and the following page appears.

In this page, you can modify the Internet connection type and encapsulation type.



Click **Next** and the following page appears.

In this page, you can modify the service name.



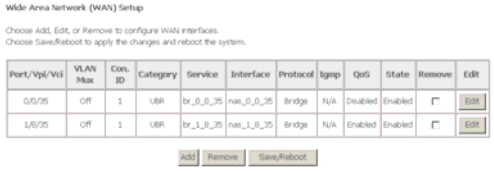
Enable Bridge Service: Enable it, unless you do not want to active the PVC.

Click **Next** and the following page appears.

This page shows all the configuration.

To save the settings, click **Save**. To make any modifications, click **Back**. After you click **Save**, the following page appears.

Note: *You need to reboot the modem to activate this WAN interface and further configure services in this interface.*



3.3.3 Wireless – Basic

- **Enable Wireless**: If you want to make wireless be available, you have to check this box first. Otherwise, the Hide Access Point SSID, Country, Enable Wireless Guest Network, and Guest SSID box will not be displayed.
- **Hide Access Point**: Check this box if you want to hide any

access point for your router, so a station cannot obtain the SSID through passive scanning.

- **SSID**: The SSID (Service Set Identification) is the unique name shared among all devices in a wireless network. The SSID must be identical for all devices in the wireless network.
- **Country**: The channel will adjust according to nations to adapt to each nation's frequency provision.
- **Guest SSID**: The SSID (Service Set Identification) is the unique name shared among all devices in a guest wireless network. The SSID must be identical for all devices in the guest wireless network.

3.3.4 Wireless – Security

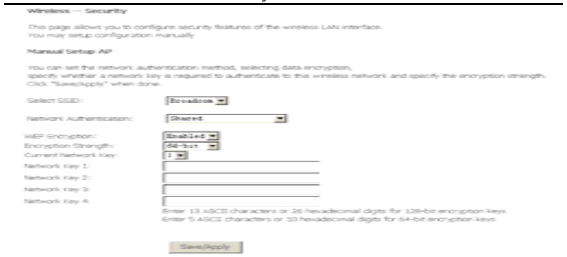
- Select SSID: Select the wireless LAN of SSID to configure security features.
- No Encryption: Please refer to below for details of configuration
- Network Authentication: Select the authentication mode for the selected wireless LAN of SSID to be open.
- WEP Encryption: Disable WEP Encryption.

The data is not encrypted when it is transferred from the device to the client station. This is the default option.

64-bit WEP

- Network Authentication: Select the authentication mode for the selected wireless LAN of SSID to be open or shared.
- WEP Encryption: Enable WEP Encryption.
- Encryption Strength: click the desired Data Security level to be 64-bit.
- Current Network Key: Select one of network key that you set on the Key boxes as default one.
- Network Key 1 to 4: Enter 5 ASCII characters or 10 hexadecimal digits for 64-bit encryption keys to fill out WEP keys box. The system allows you to type in 4 kinds of the WEP key.

Click **Save/Apply** to save the wireless security options and make the modification effect.



128-bit WEP

- Encryption Strength: Click the desired Data Security level to be 128-bit.
- Current Network Key: Select one of network key that you set on the Key boxes as default one.
- Network Key 1 to 4: Enter 13 ASCII characters or 26 hexadecimal digits for 128-bit encryption keys to fill out WEP keys box. The system allows you to type in 4 kinds of the WEP key.

The authentication modes are as follows: 802.1X, WPA, WPA-PSK,WPA2, WPA2 –PSK, Mixed WPA2/WPA, Mixed WPA2/WPA –PSK.

After proper configuration, click **Save/Apply** to save the wireless security options and make the modification effect.

3.4 Management

3.4.1 Settings

3.4.1.1 Settings Backup

Click **Backup Settings** to back up the DSL router configuration.

3.4.1.2 Settings Update

Click **Browser** and select the correct update configure settings file. Then, click **Update Settings** to update the modem settings.

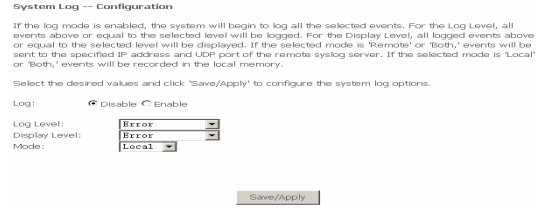
3.4.1.3 Settings Restore Default

Click **Restore Default Settings** to restore DSL router settings to the factory defaults.

3.4.2 System Log

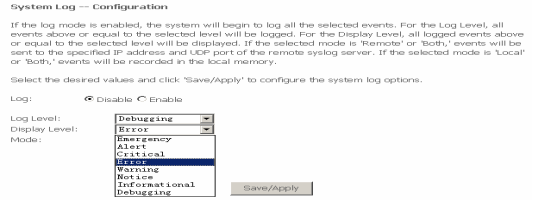
Click **System Log** to show the following interface. The system log dialog allows you to view the system log and configure the system log options.

Click **Configure System Log** to show the following interface. You can enable or disable the system log and then select the log level, display level and mode, and click **Apply** to end your configurations.

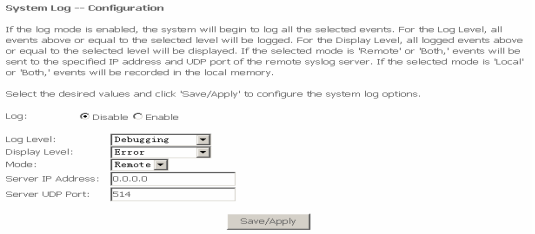


Both the log level and display level have eight choices. The default log level is **Debugging** and the default display level is **Error**.

The mode options are **Local**, **Remote**, and **Both**. The default is **Local**.

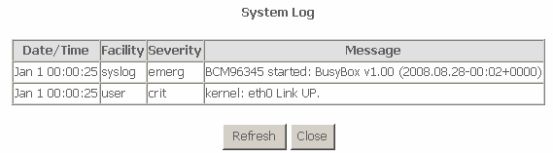


If you select **Remote** or **Both**, all events are transmitted to the specified UDP port of the specified log server.



After operations under **Configure System Log**, click **View System Log** to query the system logs. In this example, the **View System Log** is the default.

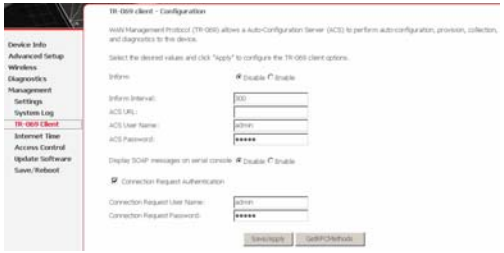
***Note**: The log and display of the system events are above the set level. If you intend to record all information, you need to set the levels as Debugging.*



Click **Refresh** to refresh the system event logs or click **Close** to exit from this interface.

3.4.3 TR-069 Client

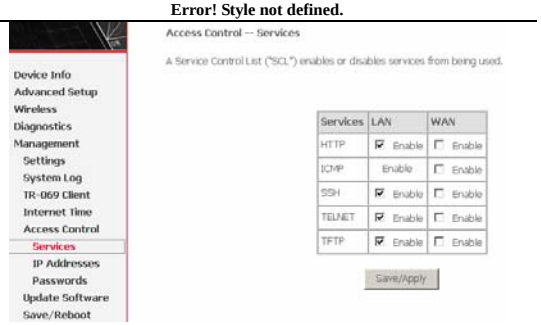
Select the desired values and click **Save/Apply** to configure the TR-069 client options.



3.4.4 Access Control

3.4.4.1 Access Control – Services

Click **Access Control** > **Services** to show the following interface. In the interface, you can enable or disable HTTP, ICMP, SSH, TELNET and TFTP services. And the LAN side and WAN side can have different configurations.



***Note**: If the connection is PPPoE PVC, you can view the information of WAN side.*

3.4.4.2 Access Control – Passwords

Click **Access Control** > **Passwords** to show the following interface. In the interface, you can modify the accounts passwords.

3.4.5 Update Software

Click **Update Firmware** to show the following interface. In this interface, you can update the modem firmware. Click **Browse** to find the right version file and click **Update Firmware** to update.

***Note**: Do not turn off your modem during firmware updates. When the update is finished, the modem reboots automatically. Do not turn off your modem either before the reboot is over. You must guarantee the update software is right and accurate. It is strictly forbidden to use other software for updates.*

After update software, it is suggested to restore the modem to the factory defaults and configure it again.

3.4.6 Save/Reboot

Click **Save/Reboot** to show the following interface. Click **Save/Reboot** to save and reboot the router.

4 Q&A

(1) **Q**: Why all LED indicators are off?

A:

- Check the connection between the power adaptor and the power socket.
- Check the power switch is on or not.

(2) **Q**: Why LAN LED is not lighting?

A:

- Check the connection between the ADSL modem and your computer, hub, or switch.
- Check the running status of your PC, hub, or switch, and ensure that they are working normally.

(3) **Q**: Why ADSL LED is not lighting?

A: Check the connection between the ADSL "Line" port and the wall jack.

(4) **Q**: Why cannot visit Internet with ADSL LED is on?

A: Ensure that the following information is correctly entered.

- VPI/VCI
- Username/password.

(5) **Q**: Why cannot open the Modem Web configuration page?

A: Follow below steps to check the communication between the computer and modem.

- Choose **Start** > **Run** from the desktop, and ping ***192.168.1.1*** (the IP address of the modem).
- If the modem cannot be reached, please check following configuration:
  - Type of the network cable
  - Connection between the modem and computer
  - TCP/IP configuration of you computer

(6) **Q**: How to load the default setting after incorrect configuration?

A:

- To restore the factory default, keep the device powered on and push a needle into the hole. Press down the button about one second and then release.
- The default IP address and subnet mask of the modem are *192.168.1.1* and *255.255.255.0* respectively.
- The Username and password are **admin** and **admin** respectively.

FCC Caution:

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

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Radiation Exposure Statement:

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

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

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC

Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.