User Manual must provide user information:

Instruction Manual
Federal Communication Commission Interference Statement

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

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

FCC Caution: To assure continued compliance, (example – use only shielded interface cables when connecting to computer or peripheral devices). Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

UT-300R

Ethernet ADSL MODEM

USER MANUAL

CONTENTS

CHAPTER 1 OVERVIEW

1.1 ABOUT ADSL

ADSL MODEM is a broadband Internet access device which utilizes the high frequency segment of the phone line to transmit high-speed data without interfering with the voice transmission. The frequency of ADSL signal is higher than that of voice, so voice and ADSL signal can coexist in one line by using a splitter to insulate each from the other. ADSL data transfer on the asymmetry way.   The upload speed is up to 1Mbps and download speed is up to 8 Mbps. It is an ideal device for broadband access.

1.2 DEVICE INTRODUCTION
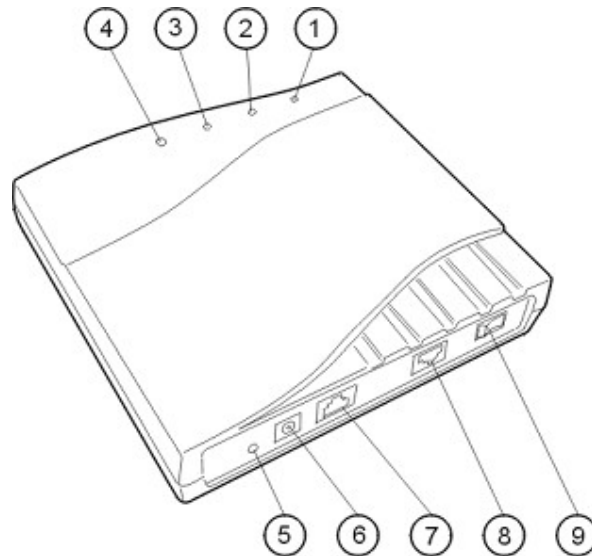

Figure 1.1

1. Power Indicator   2. Link Indicator   3. PC Indicator   4. Data Indicator   5. Reset Key
6. Power Interface   7. Ethernet Interface   8. Line Interface   9. Power Switch

Interface introduction:

1. POWER Indictor(red): A steady red light means the power connection works properly.

2. Link Indicator (yellow): Shows ADSL cable status. Flashing means being connected and steady light means the modem is in good connection.

3. PC Indicator (green): Indicates status of connection to the PC network card. Steady light means connection is good. It will flash during the data transfer time.

4. Data Indicator (green): Flashing means the Modem is transmitting or receiving data.

5. Reset Key: Reset default configuration.

6. Power Interface: 11V DC, 700mA. $\oplus\!-\!\bigodot\!-\!\ominus$

7. Ethernet Interface: To be connected to a PC or a HUB by a CAT 5 twisted parallel cable. A straight-through network cable should be used when it is connected to a PC network card and a crossover cable should be used for UP LINK interface of HUB.

8. Line Interface: To be connected to a telephone.

9. Power switch: To turn on or off the power.

1.3 PROTOCOLS

ADSL Modem supports the following protocols:

1. PPPoA   PPP over ATM   LLC encapsulation or VCMUX encapsulation   (RFC2364)
2. PPPoE   (PPP over Ethernet) LLC encapsulation or VCMUX encapsulation   (RFC2516)
3. 1483 bridge   1483 Bridged IP over ATM   LLC encapsulation or VCMUX encapsulation   (RFC1483)
4. 1483 routing   1483 Routing IP over ATM   LLC encapsulation or VCMUX encapsulation (RFC1483)
5. Classical IP over ATM   (RFC1577)

1.4 FEATURES

1. Supports ANSI T1.413 ISSUE 2, ITU G.992.1 (G.DMT) and ITU G.992.2 (G.LITE).
2. Web-based configuration and monitoring.
3. Supports up to 8 PVCs.
4. Routing function.
5. NAPT   DHCP function.
6. Maximum upstream transmission rates of 1Mbps
7. Maximum downstream transmission rates of 8 Mbps
8. Software upgradeable.
9. Transmission distance up to 5 km.
10. ATM management function.

CHAPTER 2 HARDWARE INSTALLATION AND SOFTWARE CONFIGURATION

2.1 SYSTEM REQUIREMENT

A computer with a network card with Ethernet interface.

2.2 HARDWARE INSTALLATION
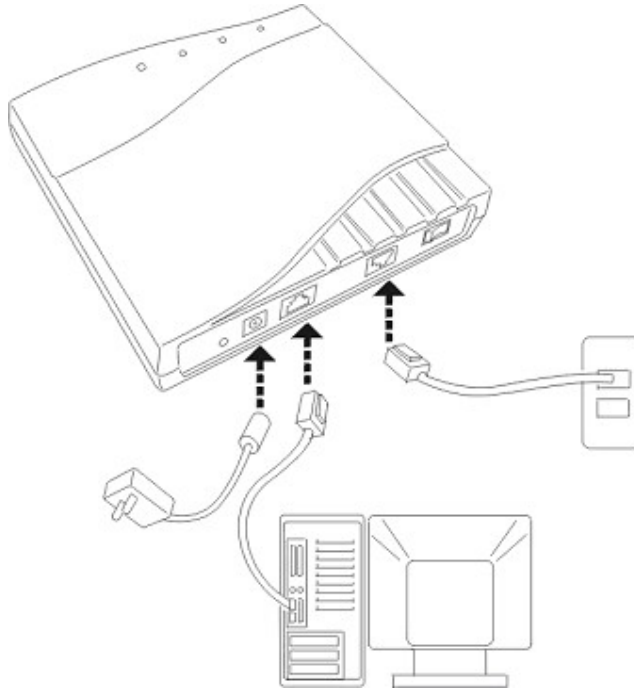
2.2.1 HARDWARE CONNECTION

Figure 2.1

To go online and make phone calls simultaneously, please refer to Appendix B: SPLITTER CONNECTION.

2.2.2 INSTALLATION STEPS

1. Connect line port **8** of the ADSL MODEM to telephone jack with the telephone cord that comes with the modem.
2. Connect Ethernet port**7** of the ADSL MODEM to 10/100BASE-T port of the computer using the network cable that comes with the modem.
3. Plug in the power cord, and turn on the power **9.**

2.3 SOFTWARE CONFIGURATION

2.3.1 PREPARATION BEFORE SOFTWARE INSTALLATION

Before the installation, please confirm information below or consult with the ADSL service provider. Table 2.1 shows all the information needed to configure for different protocols.

Table 2.1

Protocol	Virtual Dial Mode		Private Line Mode		
	PPPOE	PPPOA	1483 Bridged	1483 Routed	1577 Private Line
Necessary Information	VPI	VPI	VPI	VPI	VPI
	VCI	VCI	VCI	VCI	VCI
	User name	User name		IP address/Sub mask	IP address/Sub mask
	Password	Password		Gateway	Gateway

2.3.2 COMPUTER CONFIGURATION

The default factory-set IP Address for the ADSL MODEM is: 192.168.1.1. The Subnet Mask is: 255.255.255.0. Users can configure ADSL MODEM through an Internet browser. ADSL MODEM can be used as a gateway and DNS server and users need to set the computer's TCP/IP protocol as follow:

1. Set the computer at same Internet segment with ADSL MODEM so as to enter ADSL MODEM configuration page through a browser.
2. Set the computer's gateway's IP address the same as the ADSL Modem's.
3. Set the computer's DNS server's IP address the same as the ADSL Modem's or that of an effective DNS server.

If the user has any question regarding the computer's TCP/IP protocol, please refer to **APPENDIX C: TCP/IP PROTOCOL CONFIGURATION**.

2.3.3 ADSL MODEM CONFIGURATION

Open the browser; input **http://192.168.1.1** in the address column. Press "Enter" key then the entry dialog box will pop up as Figure 2.2, Input username: **admin,** and password: **dare** (Note that this is capital sensitive), then press "Enter". The ADSL MODEM configuration page will be shown.
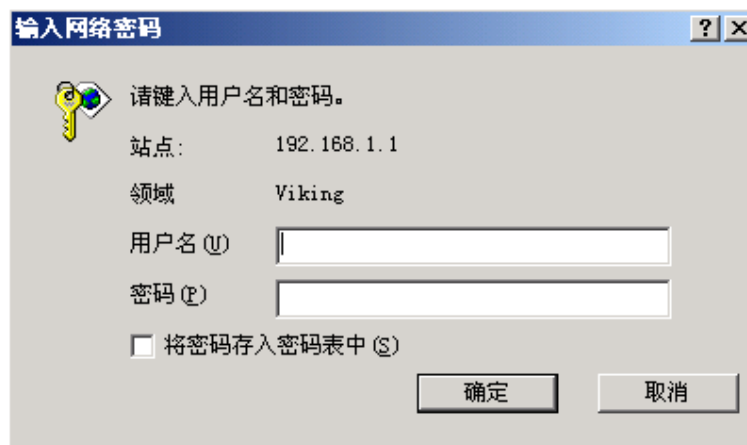

Figure 2.2

2.3.4 ADSL MODEM WORK MODE CONFIGURATION

1. For different protocols, the users need to set ADSL Modem accordingly as listed below:

Table 2.2

PPPoE	ATM VCC	Protocol	Use DNS	User Name	Password
	√	PPPoE	Enable	√	√
PPPoA	√	PPPoA	Enable	√	√

1483 Bridged	Lower interface	Default route
	√	Disable

1483 Routed	Lower interface	IP Address	Sub mask	Gateway Address
	√	√	√	√

1577	Lower interface	IP Address	Sub mask	IPoA Mode	Gateway Address
Private Line	√	√	√	1577	√

Note: √ means configure according to ADSL service provider's instructed value.

PPPoE can also be realized via third party dialup software.

User Manual Reference Chapter	PPPoE	PPPoA	1483 Bridged	1483 Routed	1577 Private Line
	3.4	3.4	3.2	3.3	3.3

2. After getting through every page for parameters set-up, click "Submit" to save the value in ADSL MODEM

3. Click the "**Commit & reboot**" on "**Admin**" Tab to enter the saving configuration page as Figure 2.3. Click "**Commit**"button to save the setting. Click "**Reboot**" button to reboot the ADSL MODEM. The ADSL MODEM will work on the new parameters.

Figure 2.3

2.3.5 ADSL MODEM SOFTWARE INTRODUCTION

The same toolbar will appear on different pages, for example"LAN config"is on the page"LAN"and"Routing". You can modify on either page.

1. Home

The page shows the complete configuration. You can click any item to enter the detail configuration page.

2. LAN

You can set the IP address and subnet mask, configure the modem as DHCP server, or add DHCP pool on the page.

3. WAN

You can check the ADSL's working status and parameters, add/edit or delete ATM lower interface, add/edit or delete PPP EOA and IPOA protocol.

4. Bridging

You can add/delete bridging interface on the page. You can also open and close the bridged mode, set LAN, check DSL parameters, add/delete ATM interface and EOA interface.

5. Routing

You can find the routing table on this page. Other functions could be done on other pages previously described.

6.   Services

    You can configure the NAT, RIP, firewall and DNS or check it on this page.

7.   Admin

    You can modify user's password, save modified configuration, reboot ADSL MODEM, update software, and check alarm and port settings information and diagnostics on this page

    Usually you will be able to complete most of the settings needed on the pages of Home, LAN, WAN, Admin.

CHAPTER 3 PROTOCOL CONFIGURATION

3.1 HIERARCHY OF PROTOCOLS

The hierarchy of protocols interface is shown in Figure 3.1.
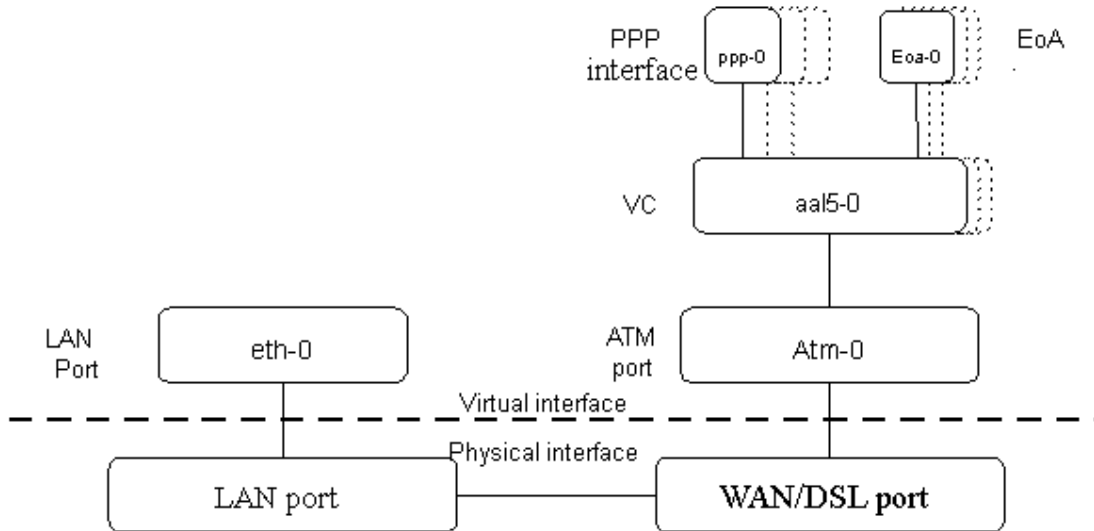
Figure 3.1

Both PPP and EOA module are build on ATM level interface. If you want to setup PPP, EOA or IPOA modules you must ensure you have an ATM interface first. Please configure protocol modules as stated below:

1. Setup LAN module **Eth-0**;
2. Setup ATM module. The user can click the "Add", "Edit" or "Delete" button of ATM VCC toolbar in the page "WAN" to create, edit or delete ATM modules;
3. Setup PPP, EOA or IPOA modules, the user can click the "Add", "Edit" or "Delete" button of PPP, EOA or IPOA toolbars in the page of WAN to create, edit or delete different protocol modules.

3.2 RFC1483 BRIDGE CONFIGURATION

1. ATM VCC Configuration

− The user can edit, create and delete ATM VCC level module. The factory-set configuration has 7 ATM VCCs. Here we will add one more ATM PVC module: **aal5-7** (VPI=0, VCI=33) as an example, and use this PVC to setup a RFC1483 Bridge.

− Click the **ATM VCC** label in Page "WAN", then click "Add" button in the ATM VCC toolbar, the pop up Window is shown as Figure 3.2.

− Type number "0" in *VPI* item and "33" in the *VCI* item, then click "Submit" button. The result window is shown as Figure 3.3.
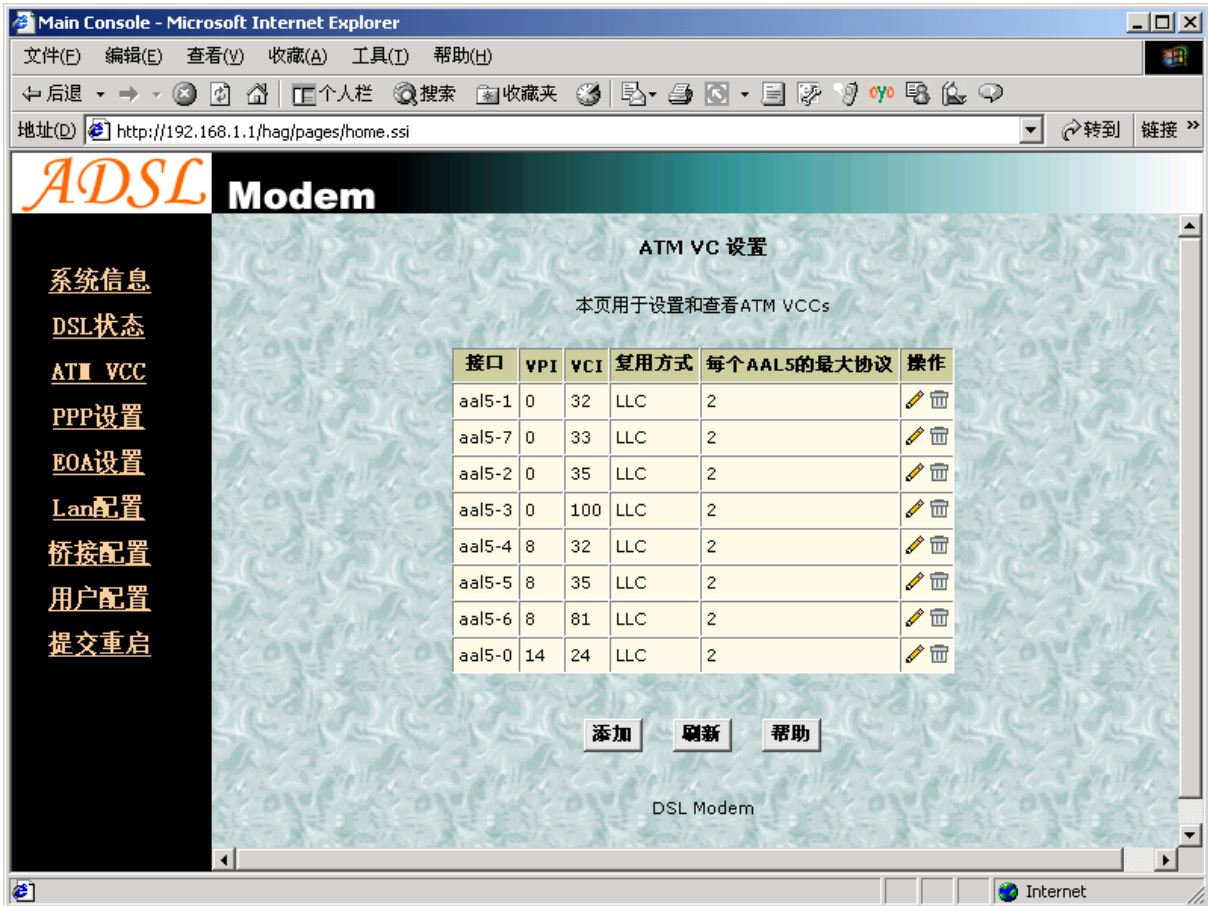
Figure 3.2

Figure 3.3

2. EOA Configuration

Click **EOA** label. The factory –set configuration has 7 EOAs. Here we add one more new EOA : **eoa-7** as an example.

- Click "Add" button, the pop up Window is shown as Figure 3.4.
- Choose **aal5-7** option for *Lower interface*; **Disable** option for *Default Route*. Don't change other items.
- Click "Submit" button, the result window is shown as Figure 3.5.

Figure 3.4

Figure 3.5

3. Click "Bridging" Page -> choose **eoa-7** option for *interface name* -> click "Add" button -> click "Submit" button.

4. Click **Commit & Reboot** label in the page Admin, shown as in Figure 2.3. Click "Commit" button to save. When it shows "Changes Committed Successfully..." click "Reboot" button or turn off then turn on the ADSL MODEM.   The MODEM will work on the new parameters.

3.3 STATIC ROUTING CONFIGURATION

(RFC1483 routing)

a)   ATM VCC configuration

Use one of the factory default ATM VCCs for example: **aal5-7** (VPI=0, VCI=33)

b)   EOA configuration

  –   Only one PPP can be accepted by the MODEM as default router.   So confirm there are no PPPs in the "PPP" of Page "WAN".

  –   Click **EOA** label. The factory default configuration sets 6 EOAs (RFC1483 bridge). Add **eoa-**7 for example.

  –   Click "Add" button, the pop up window is shown as Figure 3.4

  –   Choose **aal5-7** for *Lower Interface* option

- Choose **enable** for *Default Route* option
- Fill the IP address, IP subnet mask and gateway IP address items with the parameters provided by DSL ISP. Here we will use "202.117.118.25", "255.255.255.0" and "202.96.199.133" as examples.
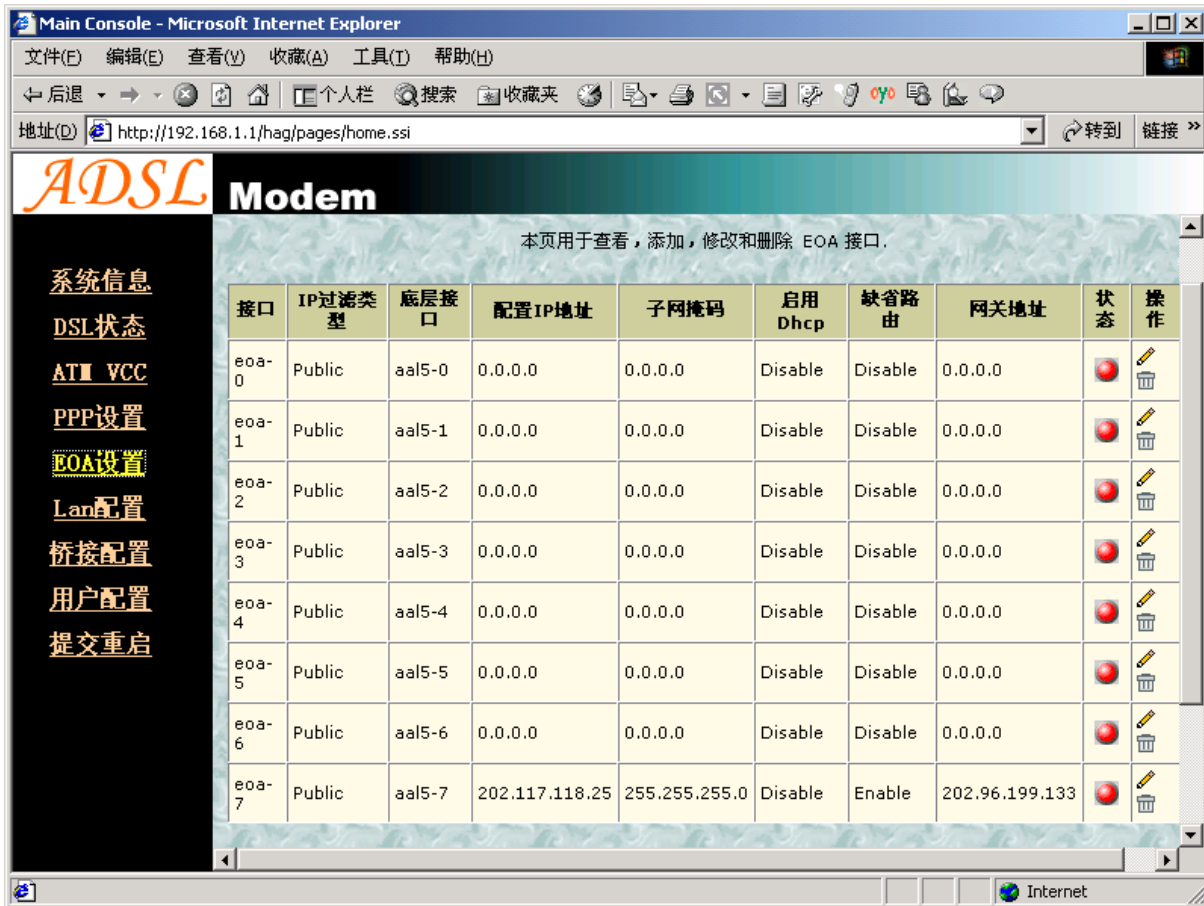- Don't change other options, click "Submit" button, and the result window is shown as Figure 3.7

Figure 3.6

c) Click **Commit & Reboot** label in Page Admin to access **save configuration** tools page, shown as Figure 2.3. Click "Commit" button. Wait till this message "Changes Committed Successfully..." appears. Click "Reboot" button or turn off and on power of the ADSL MODEM. The MODEM will work on the new parameters.

3.4 PPPOA AND PPPOE CONFIGURATION

There are two methods for PPPOE configuration: 1483 bridge + third-party dialup software; Internal virtual Dialup function in the MODEM.

1483 bridge + third-party dialup software

- Setup RFC1483 Bridge.
- Install third party dialup software such as **Enternet300, WinPoet** or **RasPPPoE.** For more detail consult with the DSL ISP.
- Use the installed software to dial up.

Internal virtual Dialup function in the MODEM

1. ATM VCC configuration

   Use one of the factory set ATM VCCs for example: **aal5-0** (VPI=14, VCI=24)

2. PPP configuration

   – Click "**PPP"** label on the Page "WAN".

   – Click "Add" button, the pop up window is shown as Figure 3.7.

   – Choose aal5-0 for the *Lower Interface* option.

   – Choose Enable for *DNS* option.

   – Fill in the User Name and Password provided by the DSL ISP.

   – Do not change other options. Click "Submit" button, the result window is shown as Figure 3.8.

3. Click "**Commit & Reboot**" in Page "Admin" to access **Save configuration** tools page, shown as Figure 2.3. Click "Commit" button and wait till the message "Changes Committed Successfully..." appears. Click "Reboot" button or turn off and on the power of the ADSL MODEM. The MODEM will work on the new parameters.

Figure 3.7

Figure 3.8

CHAPTER 4 OTHER FUNCTIONS AND CONFIGURATION

4.1 STATUS Checking

The working status of ADSL Modem can be monitored by some pages.

1   System Information

As shown in Figure 4.1, the information of hardware version, software version, DSL link status, link speed, LAN interface and WAN interface can be viewed on this page.

Figure 4.1

2   DSL Information

As shown in Figure 4.2, the line status of ADSL, duration, connection speed, signal noise ratio, power and the line attenuation can be viewed on the Routing menu and DSL parameter page.
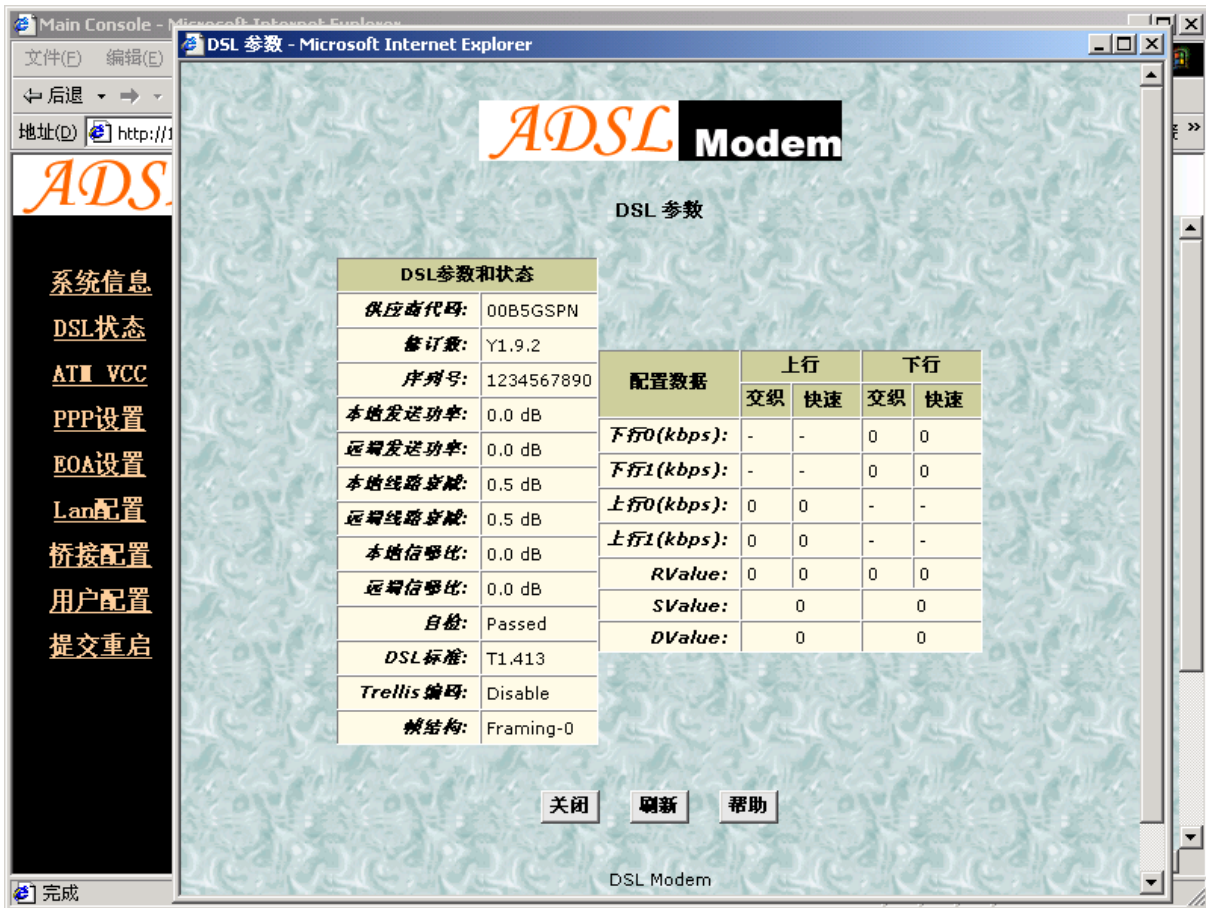
Figure 4.2

4.2 CONFIGURATION OF MODEM'S IP ADDRESS AND PASSWORD

1. CONFIGURATION OF 'S IP ADDRESS

As a network device, ADSL Modem has its own IP address and MAC address. The factory sets the at a default IP address of **192.168.1.1** and subnet mask of **255.255.255.0**. The user can configure these addresses through the **LAN configuration** tab on page **LAN.**

**2. Configuration of administrator's password and user's password**

When logging on the setting page of , the system requires user name and password to verify for permission. The default administrator's account is **"admin"** and the default password for this account is **"dare"**. The user, through the user configuration tab on page Admin, can change the passwords. (Attention: please remember the password after changing otherwise you will not be able to change configuration after saving.)

CHAPTER 5 RESET TO DEFAULT SETTING

If you are experiencing difficulty logging on to the configuration page (For example: you forget the password), you can reset the ADSL MODEM to the default configuration   Then you will be able to log on with the default username and password.

Method:

Turn on the ADSL MODEM, put a pin into the eyelet, and press it quickly three times.
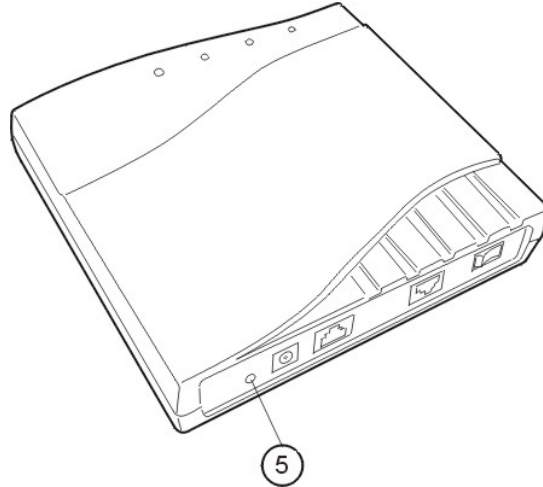
CHAPTER 6 SPECIFICATION

6.1 Power supply

- Exterior power adapter
- Input: 110VAC, 60Hz
- Output: 11VDC   700mA.
- Polarity $\oplus$—$\bigodot$—$\ominus$

6.2 Dimension

- 140mm Length x130mm Width x32mm   Height

6.3 Weight

- Weight: about 200 gram

6.4 Standards

- EMI/Immunity: FCC Part 15 Class B, CE Mark (EN55022 Class B/EN50082)
- Safety Standard: UL   EN60950
- Communication: FCC   Part 68, CYR21
- Electromagnetic: in accordance with FCC, ETSI and CISPR standard

6.5 Environment Requirements

- Temperature: 5   40   (41F   104F)
- Relative humidity:0%   95%
- Electromagnetic disturbance   FCC PART15&68

APPENDIX A. TROUBLESHOOTING

| Phenomena	Solution
The indicator of power supply is not on	1. Make sure the connection of power supply is good. 2. Make sure the switch of power supply is turned on. 3. Make sure the output of power supply is correct.
The indicator of PC is not on	1. Check the connection between the cable and the network card. 2. Make sure that the correct cable is used. 3. Make sure the cable works fine by pinging the host IP address.
Can not access Internet or remote networks	1. Make sure the problems listed above are eliminated. 2. Make sure the software configuration of the ADSL Modem is correct. 3. Make sure you have restarted the ADSL Modem after configuration change. 4. Check IP connection using ping command. 5. Make sure the DNS of the computer is correct.
Can't access some web server	1. The MTU of operating system might be too large. 2. Some operating systems might need to be patched.
Can not log on to the configuration page	1. Make sure the PC indicator is on. 2. Make sure the configuration of TCP/IP is correct. 3. Make sure the data indicator of Modem is on when using Ping command. 4. Make sure the user name and password is correct. 5. Reset the device.

APPENDIX B. SPLITTER CONNECTION

1. **Splitter**
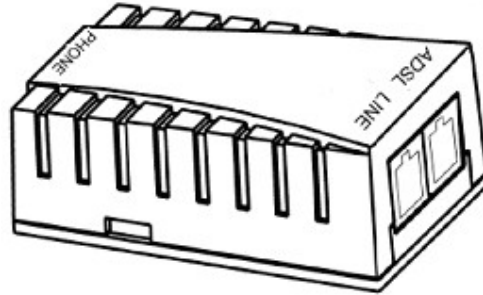
2. **Connection**

Firstly, use a telephone cord to connect the LINE port of the splitter and the RJ-11 port (the phone jack) on the wall. Then use another telephone cord to connect the ADSL port of the splitter and the LINE port of the ADSL Modem. Finally, use another telephone cord to connect the telephone set and the PHONE port of the splitter.
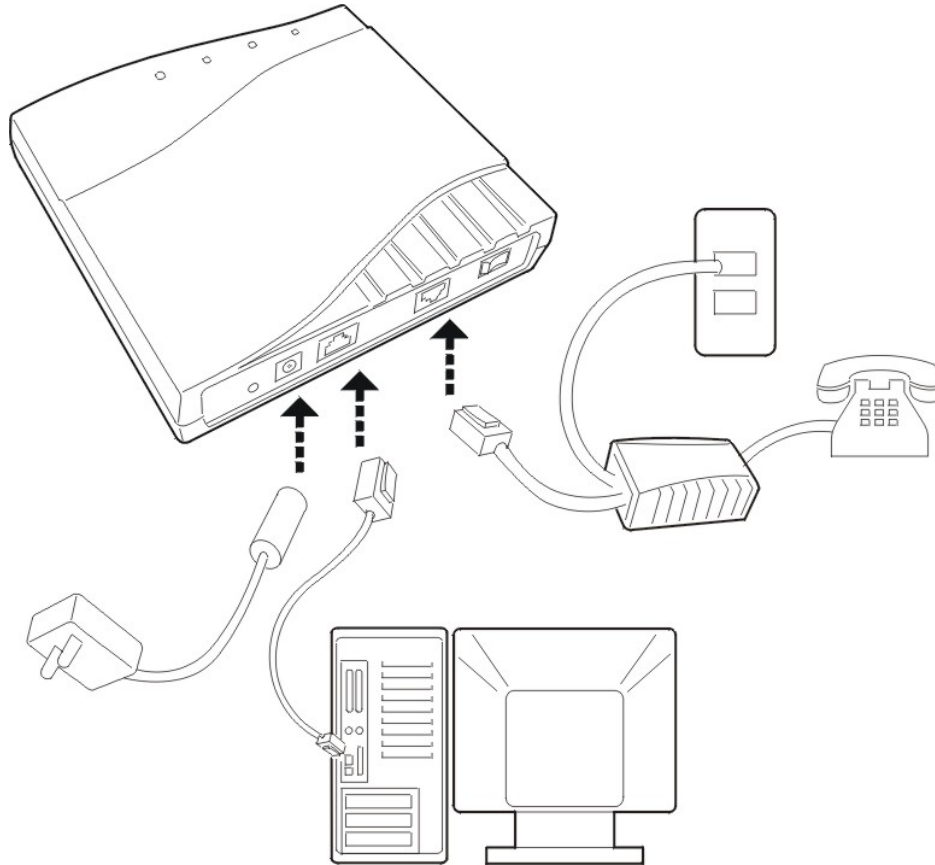
APPENDIX C. CONFIGURATION OF TCP/IP PROTOCOL

Here we will explain the configuration which using Windows 2000 operation system as an example. For other operation systems the process is similar.

1. Right click on the "**Local Area Connection**", click "**Properties**" on the pop up menu, as shown in Figure C.1.
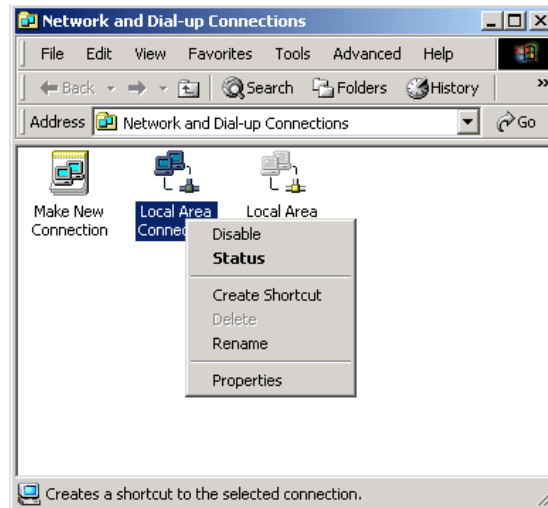
Figure C.1

2. The dialog box of networks is shown in Figure C.2. On the "**General**" property page select "**Internet Protocol(TCP/IP)**" and then click the "**Properties**" button.
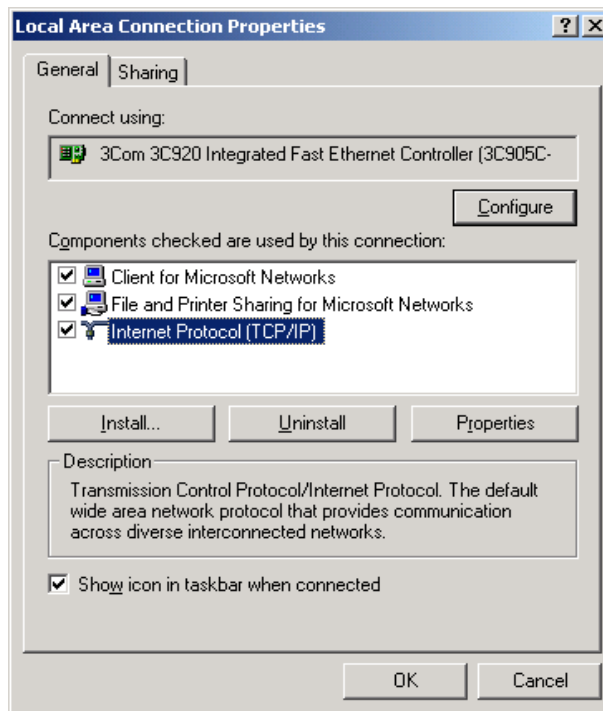

Figure C.2

3. The "**Internet Protocol (TCP/IP) properties**" pop up window is shown as Figure C.3. Select "**Use the following IP address**". Input the following IP address: 192.168.1.11 and subnet mask: 255.255.255.0 (These addresses and subnet mask are similar with the factory default setting. The user can set different IP addresse and subnet mask whenever necessary). Select "Gateway", input the default IP address of the gateway: 192.168.1.1 and IP address of Preferred DNS server: 202.96.209.133 (you can use your ISP's address), IP address of Alternate DNS server: 202.96.209.5(you can use your ISP's address). The result is shown in Figure C.3.
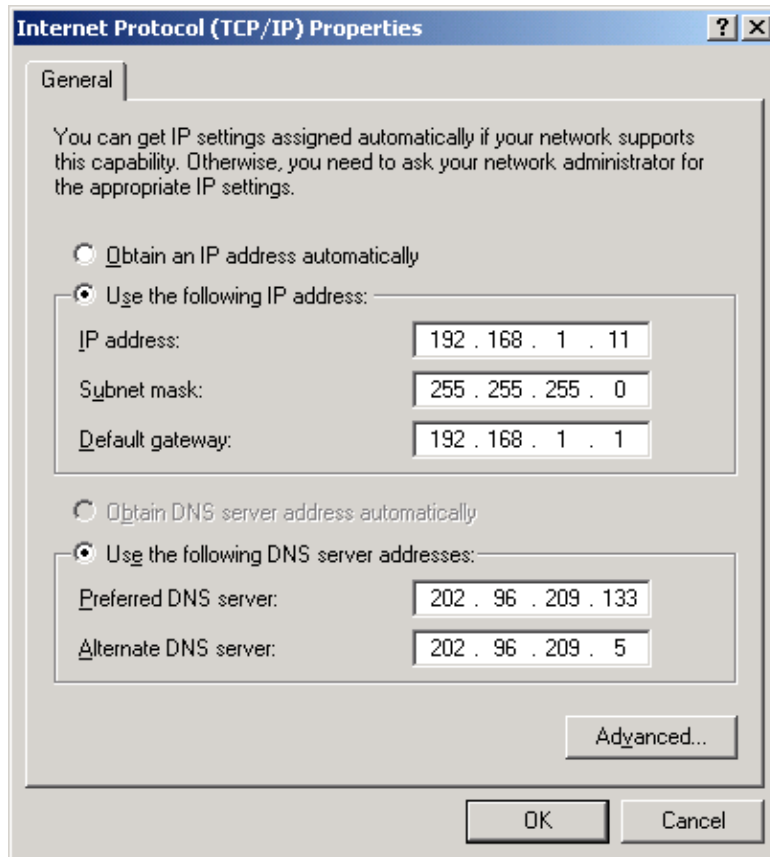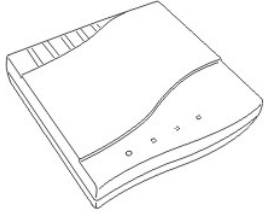

Figure C.3

4. Click "OK" button to return to the "**Local Area Connection Property**" dialog box.

5. Click "OK" button to close the Network property dialog box.

APPENDIX D. SHIPPING LIST

Make sure the following items are included in the box. If any one of them is missing, please contact the vendor immediately.
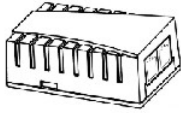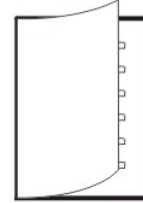
ADSL MODEM
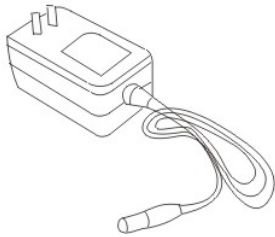
**Warranty
Certificate**

**Cable Cat5
RJ45**

Splitter

**Telephone Line
(RJ-11)**

User Manual

Power Adapter

Please use the factory recommended power supply.