DB101

USB ADSL MODEM

USER'S MANUAL

V3.0

DARE TECHNOLOGIES CO., LTD.

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CONTENTS

1. OVERVIEW

1.1 ABOUT ADSL

An ADSL MODEM is a broadband access device, which utilizes the high frequency segment of a phone line to transmit high-speed data without interfering with the voice transmission. The frequency of the ADSL signal is higher than that of voice, so the voice and ADSL signal can coexist in one line by using a Splitter to insulate the two. ADSL data transfer adapts asymmetry model. It has an upstream maximum transmission rate of 1 Mbps and downstream maximum transmission rates of 8 Mbps. This ability makes ADSL an ideal device for broadband access.
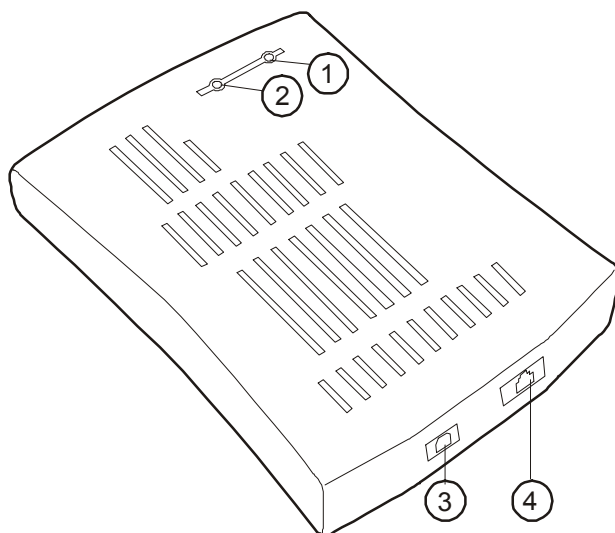
1.2 DEVICE INTRODUCTION

Figure 1

POWER indicator
LINK indicator
USB port
LINE port

1.3 PROTOCOL AND DRIVER

1. PPP over ATM (PPPoA) VCMUX   (RFC2364)
2. PPP over ATM (PPPoA) LLC   (RFC2364)
3. PPP over Ethernet (PPPoE) LLCSNAP (RFC2516)
4. PPP over Ethernet (PPPoE) VCMUX   (RFC2516)

5.   Bridged IP over ATM LLCSNAP   (RFC1483)
6.   Routed IP over ATM LLCSNAP   (RFC1483)
7.   Bridged IP over ATM VCMUX   (RFC1483)
8.   Routed IP over ATM VCMUX   (RFC1483)
9.   Classical IP over ATM   (RFC1577)

Driver Types and OS Supported

Table 1

Driver Type	Protocol	OS
LAN	RFC 1483 RFC 1577	Windows® Me Windows® 98 Windows® 98 SE Windows® 2000 Windows® XP
WAN	RFC 2364 RFC 2516	Windows® Me Windows® 98 Windows® 98 SE Windows® 2000 Windows® XP

1.4 CHARACTERISTICS

- USB v1.1 Compatible.
- Utilizes USB BUS power; no additional power supply required.
- Supports Hot-plug / Hot-swap
- Supports Plug & Play
- Supports ATM WAN Miniport, NDIS 5.0, and NDIS 4.0 Miniport.
- Supports ANSI T1.413 ISSUE 2 and G.992.1 (G.DMT), G.992.2 (G.LITE).
- Software upgradeable.
- Provides configuration and monitoring programs.
- Upstream maximum transmission rates of 1 Mbps
- Downstream maximum transmission rates of 8 Mbps
- Maximum transmission distance of 5 km.

2. USB ADSL MODEM INSTALLATION AND SOFTWARE CONFIGURATION

2.1 SYSTEM REQUIREMENTS

2.1.1 HARDWARE

- Pentium® MMX 233(or higher)
- Minimum of 32MB memory.
- Minimum 10MB free disk space.
- CD-ROM
- USB port

2.1.2 SOFTWARE

- Windows® Me
- Windows® 98
- Windows® 98 SE
- Windows® 2000
- Windows® XP

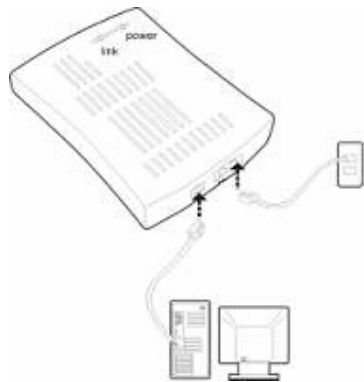## 2.2 HARDWARE INSTALLATION

2.2.1 CONNECTION

Figure 2.2.1

2.2.2 PROCEDURES

1. While your computer is On, plug one end of telephone line to the USB ADSL MODEM LINE port   as shown in Figure 1 .   Then plug the other end of the telephone line to the telephone socket on the wall. NOTE If you use ADSL MODEM and telephone simultaneously, please refer to Appendix C.

2. Plug one end of the USB cable as shown here to an available USB port on your PC.

3   Plug the other end of the USB cable as shown here [image] to the ADSL USB port as shown by interface   in Figure 1 Section 1.

After you complete the above steps, your PC will indicate, "Found new hardware and installing driver". Please refer to section 2.3 for more details.

2.3 DRIVER INSTALLATION

2.3.1 Microsoft Windows® 98

Confirm the information below before installation. If you have any questions please consult your local ADSL service provider.   The table below shows the information needed for configurations for different protocols.

Table 2

PROTOCOL	VIRTUAL DIAL-UP MODE		PRIVATE LINE MODE		
	PPPoE	PPPoA	1483 BRIDGE CONNECT	1483 ROUTING	1577 PRIVATE LINE
NECESSARY INFORMATION	VPI	VPI	VPI	VPI	VPI
	VCI	VCI	VCI	VCI	VCI
	LLC/VCMUX	LLC/VCMUX	LLC/VCMUX	LLC/VCMUX	LLC/VCMUX
	USER NAME	USER NAME		IP ADDRESS/MASK	IP ADDRESS/MASK
	PASSWORD	PASSWORD		GATEWAY	GATEWAY
Manual Section	5.2	5.2	5.3	5.3	5.3

Driver under WAN folder is for PPPoE and PPPoA

Driver under LAN folder is for 1483 bridge connecting, 1483 routing and 1577 private line.

NOTE   Please close all running programs before installing the driver.   Windows®98 installation CD will be required for driver installation.

The following shows the steps for WAN driver installation. LAN driver installation is similar to this.

1.   Once the new hardware is detected as shown in the dialog box below, Click "**Next**" button. As shown figure 2.3.1.1.
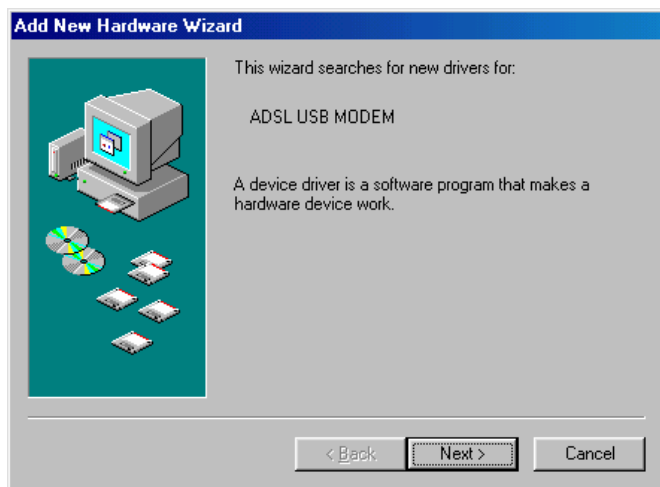

Figure **2.3.1.1**

2. A new dialog box will ask which searching method should be chosen. Select default method and click "**Next**" button. As shown figure 2.3.1.2.

Figure 2.3.1.2

3. A new box will pop up for selection of the location of the driver. If the location is incorrect please click "**Browse**" and select the right location, then click "**Next**" button. As shown figure 2.3.1.3.

Figure 2.3.1.3

4.   A box will appear indicating the driver has been found, click "**Next**" button. As shown figure 2.3.1. 4

Figure 2.3.1.4

5. A message box will show the installation is complete. Click "**Finish**" button. As shown figure 2.3.1.5.

Figure 2.3.1.5

6. A new icon will be appear in the taskbar on the lower right corner of the screen.

2.3.2 Microsoft Windows® 2000

NOTE: Please close all running programs before installing the driver. The installation process is similar with that for Win98, but a digital signature box will appear as shown below.

1. "**Digital signature not found**" dialog box will appear to indicate the software has no signature, click "**Yes**" button. As shown figure 2.3.2.1
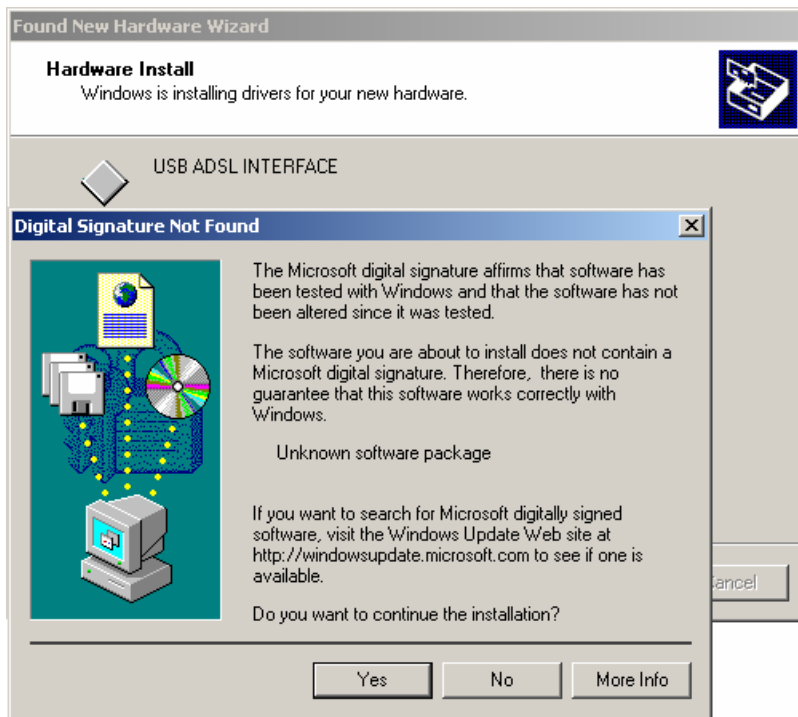

Figure 2.3.2.1

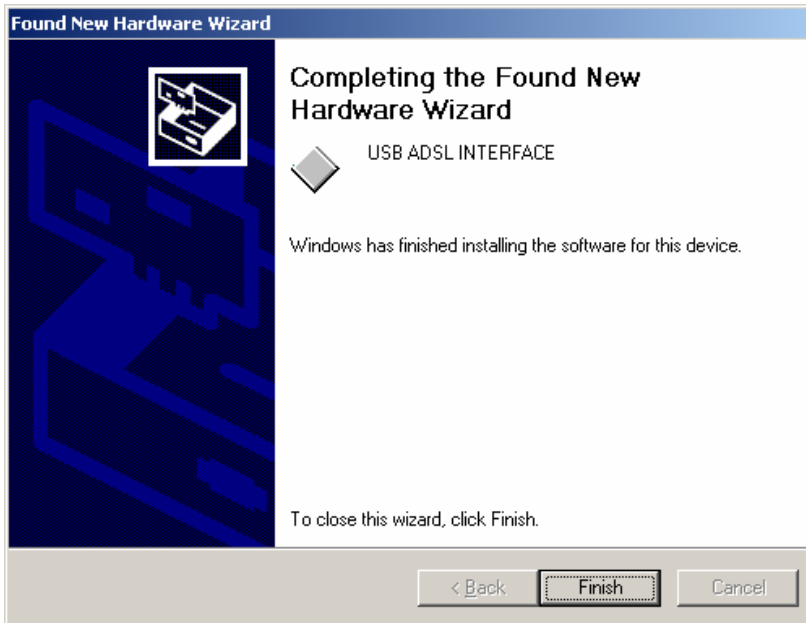2. A message box will indicate the installation is finished. Click "**Finish**".

Figure 2.3.2.2

3. "**Digital signature not found**" dialog box will appear again, click "**Yes**" to continue.
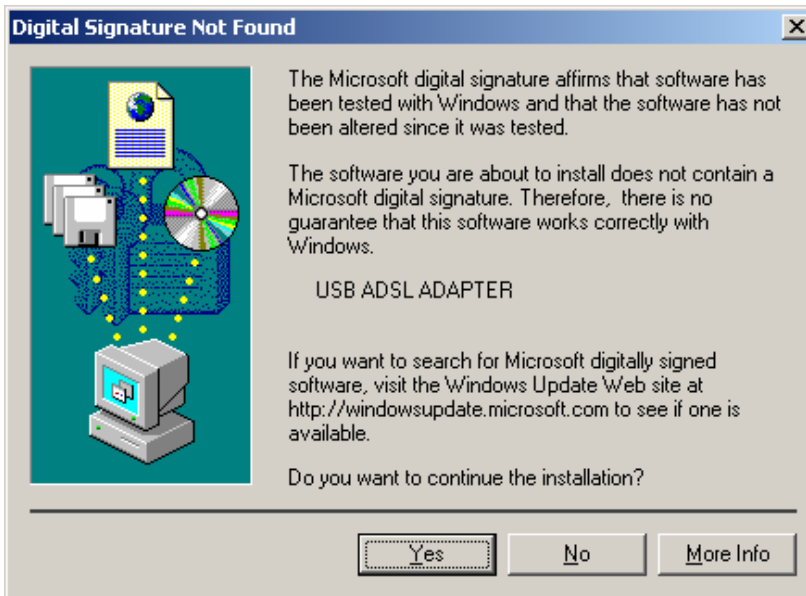

Figure 2.3.2.3

4. A new icon will appear in the taskbar at the lower right corner of the screen.

3. CUSTOMER CONFIGURATION

1. Double click "**USB ADSL**" icon in the Control Panel. As shown figure 3.1
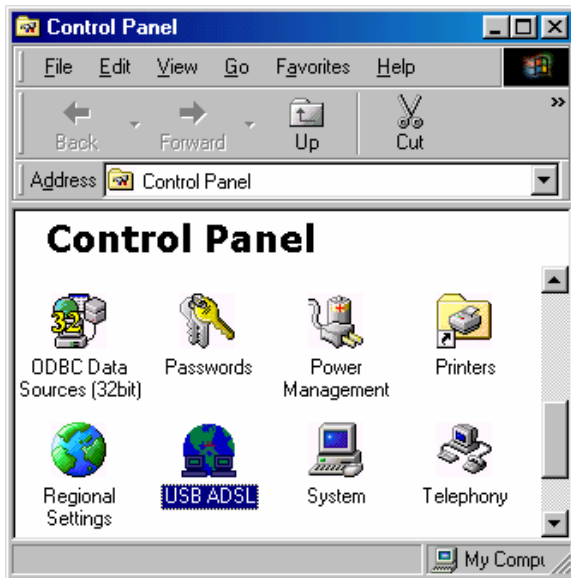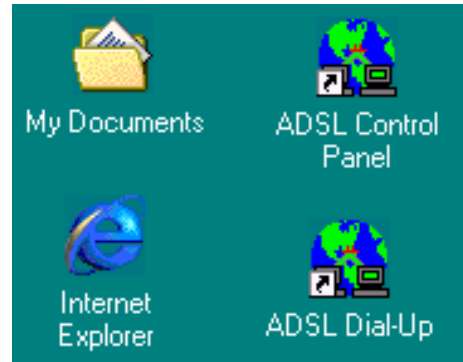

| Figure 3.1 | Figures 3.2 |

Or double click "ADSL CONTROL PANEL" icon on the desktop. As shown figure 3.2

2. A dialog box will appear as shown below. As shown figure 3.3
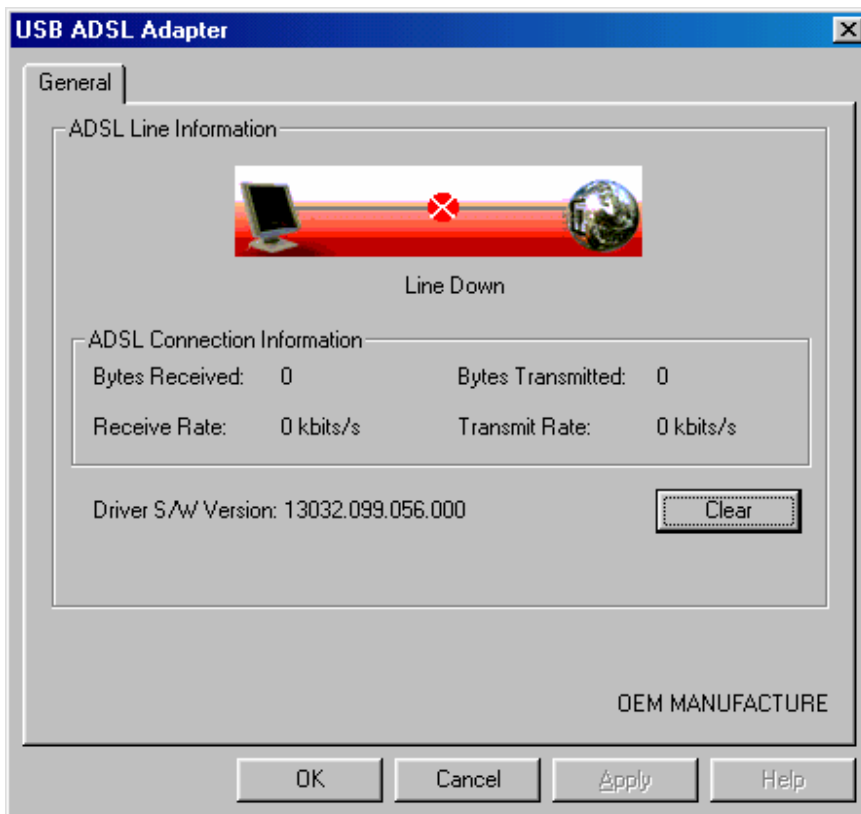

Figure 3.3

3. Press ALT+C and a control box will appear.   The default parameters as shown below:

    - The value of VPI and VCI are set to the value of VPI=0 & VCI=32.
    - The Encapsulation mode is the default value "PPP over Ethernet LLCSNAP (RFC2516)".
    - The maxim cell speed is 1500. (Recommend not modifying).
    - The maxim message package length is line rate. (Recommend not modifying).
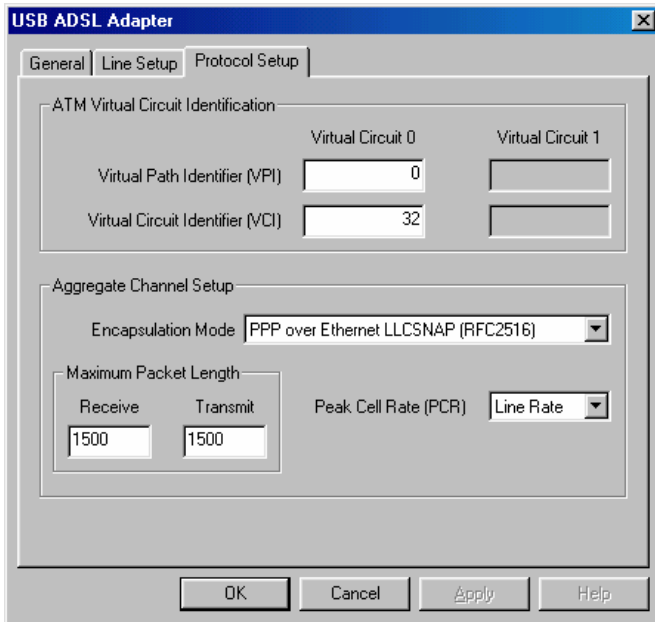

Figure 3.4

4. If dial-up mode is PPPoA, then "PPP   over ATM VCMUX(RFC2364) or PPP over ATM LLC (RFC2364) "should be selected in the "Encapsulation mode" box. As shown figure 3.5.
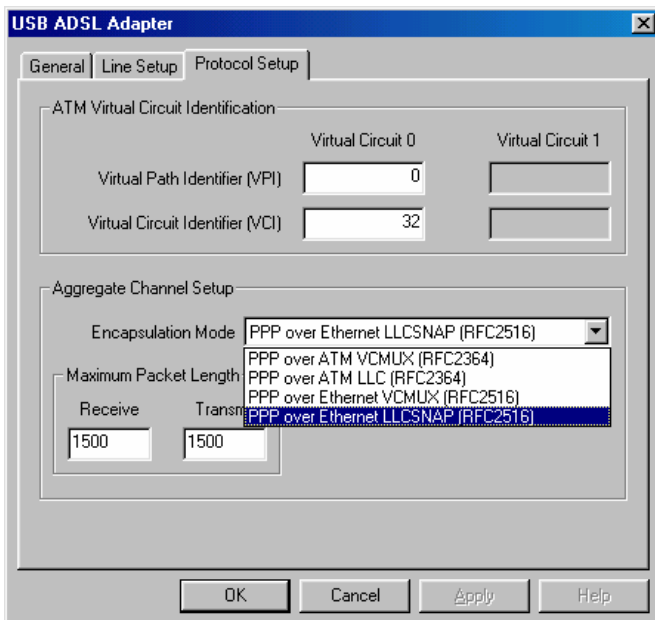

Figure 3.5

5 Click "OK" button to finish the installation.

4. UNINSTALLATION

METHOD 1:

1. Click "**Start**" → "**Settings**" → "**Control Panel**".Then double click "Add/Remove Program" icon in the Control Panel window.
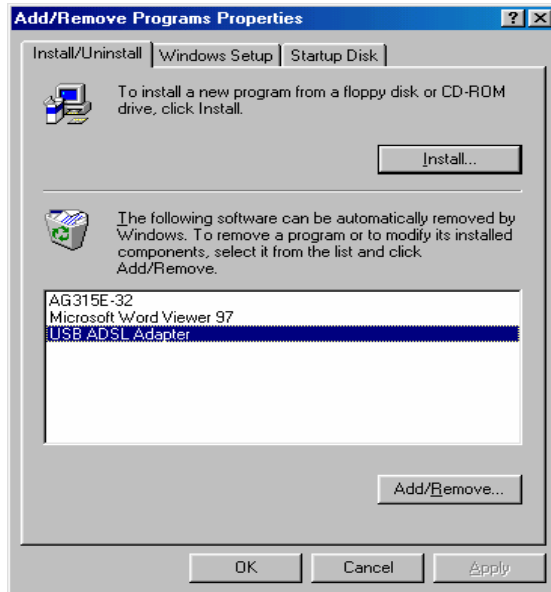
| Figure 4.1 | Figure 4.2 |

2. Select "**USB ADSL Adapter**" in the display dialog box and then click "**Add/Remove**" button. As shown figure 4.2

METHOD 2

1 Click "**Start**" → "**Program**s" → "**USB ADSL**" → "**Uninstall ADSL**". As shown figure 4.3.

Figure 4.3

2. For either method it will ask you to click"**Ye**s"to confirm deletion. As shown figure 4.4.

Figure 4.4

3 Click "**Yes**" to restart the computer. As shown figure 4.5.

Figure 4.5

5 CONNECTION SETUP

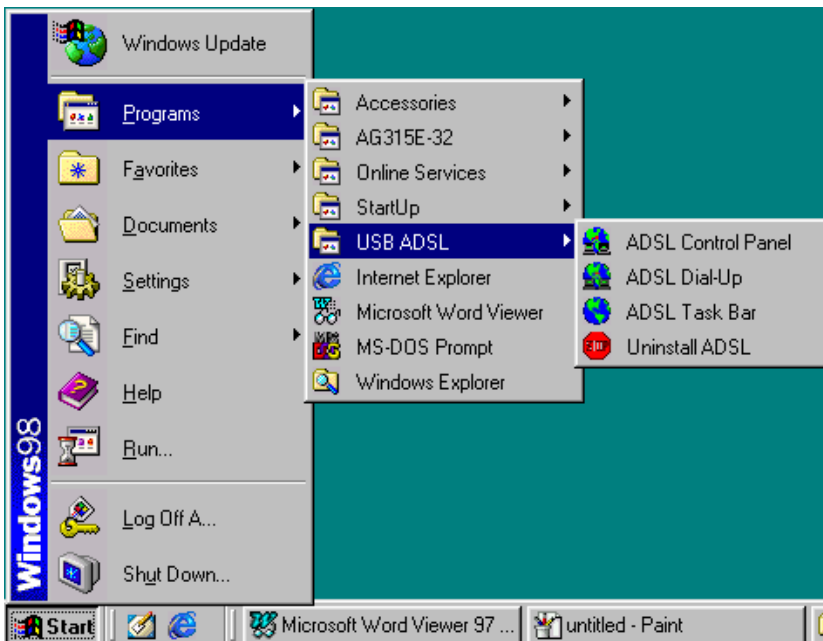There are different kinds of connection: Physical Layer Connection, PPP Dial-Up Connection and Private Connection. They will be introduced individually in this section.

5.1 PHYSICAL LAYER CONNECTION

1. The Physical Layer Connection will automatically run after the telephone line is connected.   The taskbar shall be shown as below if the connection is good.

2. To check if the connection is OK, double click "ADSL CONTROL PANEL" on the desktop. If the following box pop up, then the connection is fine.

Figure 5.1.1

3. To disconnect or reconnect, double click the icon or in the taskbar.   A dialog box will appear as figure 5.1.2. Click the "**Stop ADSL**" button to stop ADSL connection.
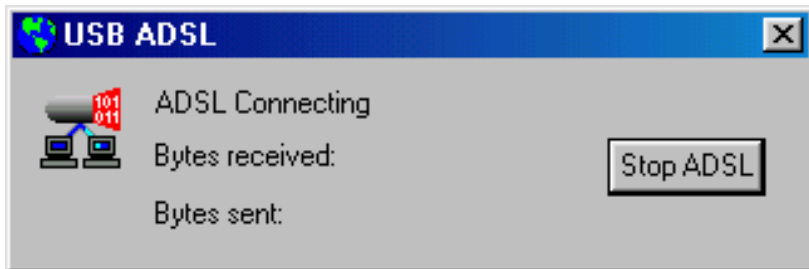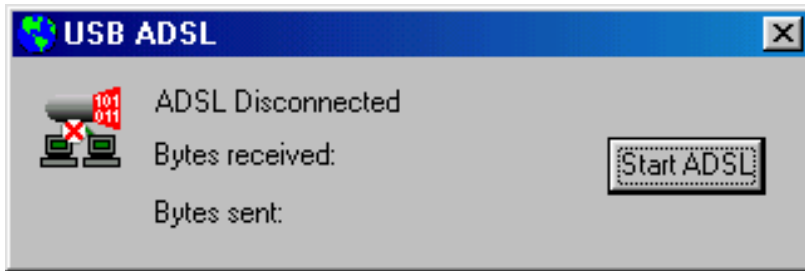

Figure 5.1.2

Figure 5.1.3

Or click the "Start ADSL" button to reconnect ADSL.

4　You may now install PPP Dial-up connection after finishing the steps stated above for physical layer connection.

5.2 DIAL-UP CONNECTION

Microsoft *Windows*® 98 v1.0 and v2.0

Before dialing, confirm the value of VPI, VCI and Encapsulation mode according to Chapter 3.

1　Double click the "ADSL dial -up" icon on the desktop
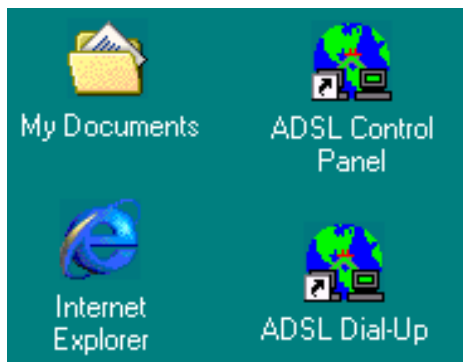
Figure 5.2.1　　　　　　　　　　　　**Figure 5.2.2**

2　Input username and password and click the "connect" button to connect.

The procedure below is designed for connection properties modifications only.　You may skip this if no changes are needed.

3　Right click "ADSL Dial up" icon and select "properties".

Figure 5.2.3

Items can be modified are listed in the dialog box
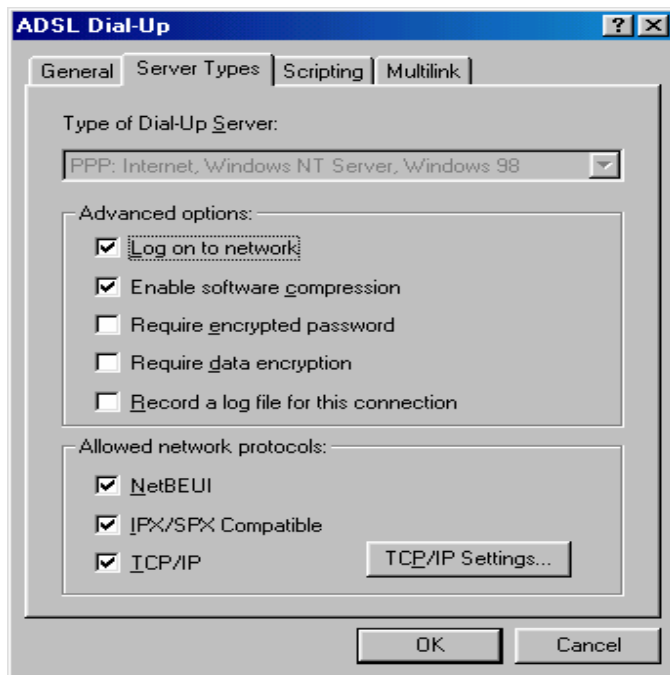
Figure 5.2.4

4　Click the "OK" button to exit.

Windows® 2000

The configuration process is similar to Win98.

5.3 Private Line Connection

Microsoft　Windows® 98

1　Install the LAN driver.

2　Set values for VPI, VCI and Encapsulation mode.

Figure 5.3.1

3　Double click the "Network" icon in "Control Panel".

4　Choose the "Configuration" page, select "TCP/IP → USB ADSL Adapter" and click "Properties". As shown in figure 5.3.2.

Figure 5.3.2

Figure 5.3.3

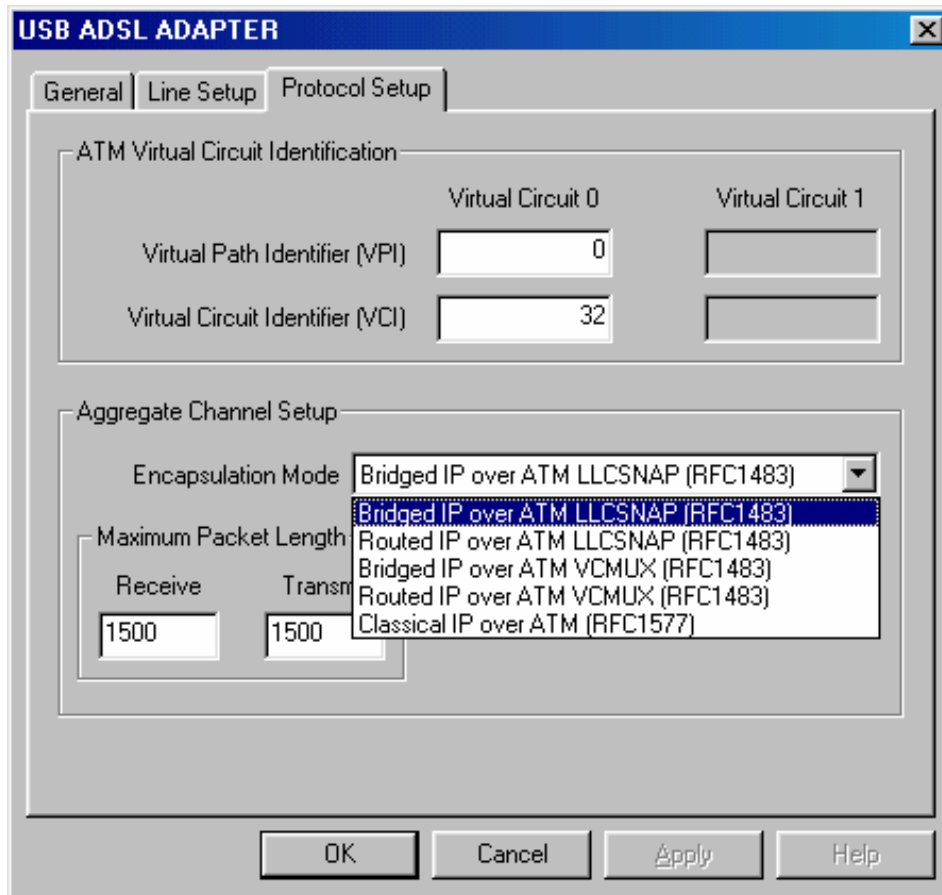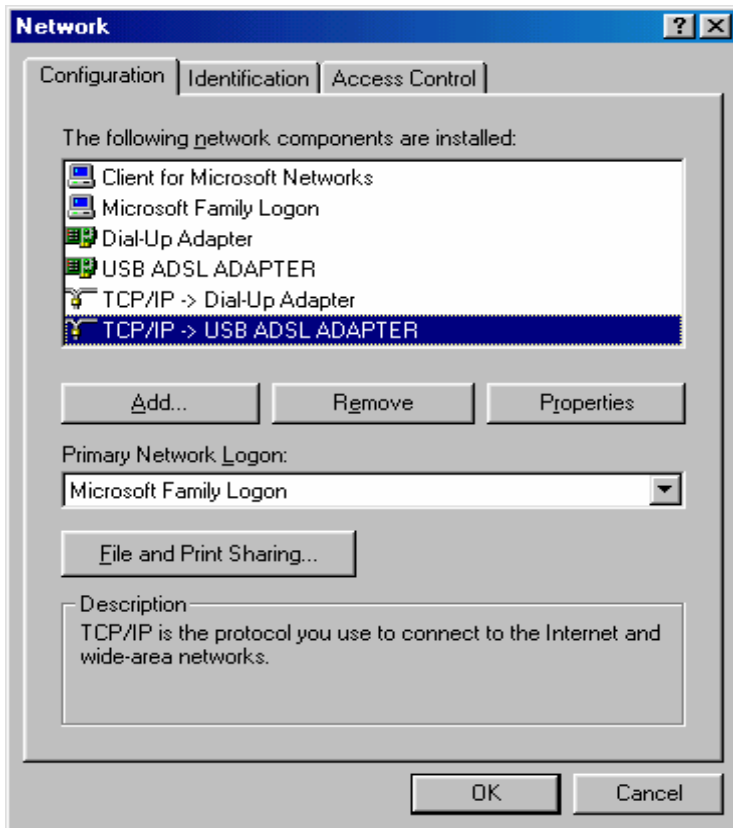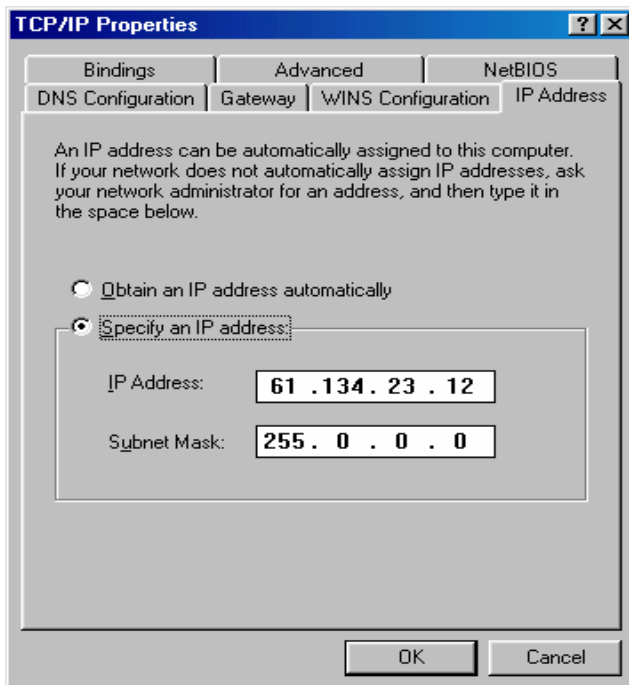5   In the "TCP/IP Properties" dialog box select the "IP Address" page. Select the "Specify an IP address" radial box and input the correct IP address and subnet mask (you will need to contact your service provider to get the correct value of the IP address and subnet mask). Or Select the "obtain IP address automatically" to skip the step 6.

6   Input the correct IP address of DNS configuration and the Gateway property page.

7   Click "OK" button to exit the "TCP/IP Property" dialog box.

8   Click "OK" button in the pop-up "Networks" dialog box to finish the configuration of TCP/IP.

9   After modifying the property of TCP/IP, the system reminds the user to restart (Note: You don't need to restart for Windows®2000). Click the "OK" button to restart the computer immediately in order to make the new settings valid.

Windows® 2000

The configuration process is similar to Win98.

6. PPPoE CONFIGURATION

1 **Method one:**
   - Follow the "Driver Installation" procedures to install "WAN Driver" and set values for VPI, VCI and Encapsulation mode (see Chapter 3)
   - Follow the "Connection Setup" procedures to install "Dial-up".

2 **Method two:**
   - Install LAN driver and set VPI, VCI and Encapsulation mode.
   - Install "Third party dial-up software", for example, Enternet300, WinPoet, RasPPPoE, etc.
   - Use third party dial-up software to connect to the Internet.

7. SPECIFICATION

7.1 POWER SUPPLY

- Uses USB bus for power. No power supply is needed.
- Power consumption ≤ 2.5W

7.2 DIMENSION

138mm   Length   x 104mm   Width   x 13mm   Height

7.3 WEIGHT

300g

7.4 CERTIFICATIONS

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

7.5 OPERATING ENVIRONMENT

- Working temperature: -5 °C to 45 °C
- Working humidity: relative humidity from 10% to 90%
- EMI   FCC PART15&68

APPENDIX A: GLOSSARY

ATU-C   ADSL Transceiver Unit, Central Office End

ATU-R   ADSL Transceiver Unit, Remote Terminal End

FEXT   Far-end Cross Talk

HDSL   High-rate Digital Subscriber Line

POTS   Plain Old Telephone Service

PSTN   Public Switched Telephone Network

WINS   Windows® Internet Name Server

ADSL   Asymmetric Digital Subscriber Line

OAM   Operations, Administration And Maintenance

QAM   Quadrature Amplitude Modulation

DMT   Discrete Multitone

DSL   Digital Subscriber Line

FEC   Forward Error Correction

ATM   Asynchronous Transfer Mode

WAN   Wide Area Network

PRD   Pseudo-random Downstream

PRU   Pseudo-random Upstream

USB   Universal Serial Bus

LAN   Local Area Network

PVC   Permanent Virtual Circuit

SVC   Switched Virtual Circuit

PPP   Point to Point protocol

DNS   Domain Name Server

VPI   Virtual Path ID

VCI   Virtual Circuit ID

DSL   Digital Subscriber Line

IP   Internet Protocol

CO   Central Office

EC   Echo Canceling

APPENDIX B: Troubleshooting

Phenomena	Suggested Solution
Power supply light is off.	Make sure the USB connection is tight.
Power supply light is on, but Link light is blinking.	• Check to see if the modulate and demodulate modes have been correctly selected • Make sure the phone line is connected to the modem.
Cannot establish connection when dialing.	• Make sure the correct driver has been installed • Make sure the VCI and VPI is configured correctly. • Make sure the protocols selected are correct. • Make sure you use the correct username and password. • For Windows 2000 or Windows XP, de-select the "Use LCP Extension" and "Use Software Compression" in the dial up property page • For Windows 98 de-select the options of "Log on network", keep only "TCP/IP".
Cannot install drivers	• Confirm USB port is functioning properly. • Confirm there is sufficient disk space and memory. • Confirm the operating system supports USB. • Check if viruses infect system.
Cannot uninstall driver	• Check if processes have been correctly followed according to the manual
Cannot reinstall	• Make sure you follow the instruction to uninstall the drivers. • In the device manager window, delete the driver for USB.
Cannot connect to the Internet	• Make sure the dial-up connection has been correctly established. • Re-configure "ADSL dial-up properties", de-select "use IP pointer compress". • If your computer has an Ethernet card, disable it when using third party dial-up software.
The icon disappears in system tray.	• Reinstall ADSL driver after normal boot up • Reboot the computer

APPENDIX C: SPLITTER CONNECTION
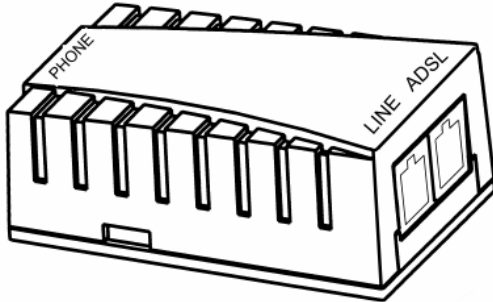
Splitter

- Use a telephone cord to connect the LINE port of the splitter with the telephone RJ-11 port on the wall.
- Use another telephone cord to connect the ADSL port on the Splitter with the Line port on the ADSL Modem.
- Use yet another telephone cord to connect the telephone with the Phone port of the Splitter.
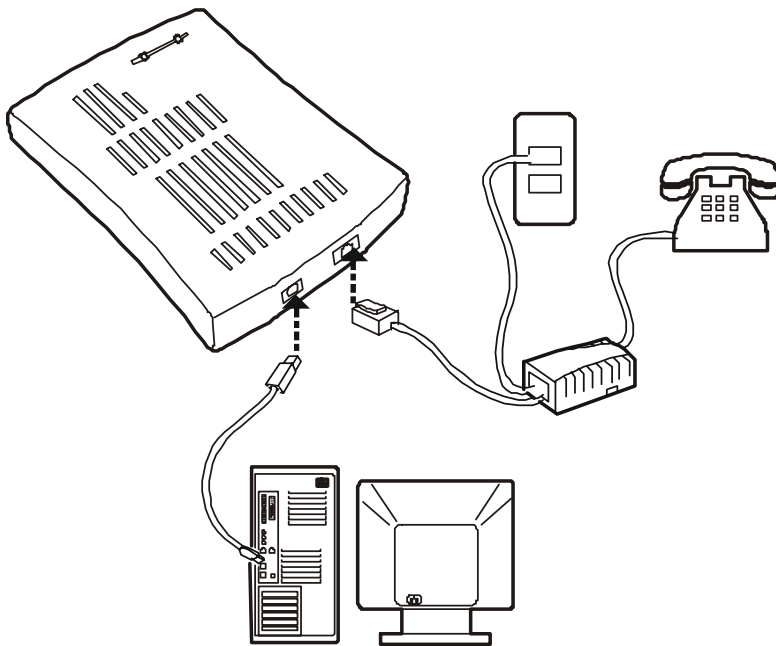

Figure 1

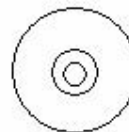# APPENDIX D: SHIPPING LIST

ADSL MODEM

Telephone Line
(RJ-11)

USB Cable

Splitter

Installation
Manual

Installation CD

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