DB101 USB ADSL MODEM

USER'S MANUAL

V3.0

DARE TECHNOLOGIES CO., LTD.

http://www.dare-tech.com

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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



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

- 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 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

	VIRTUAL DIAL-UP MODE		PRIVATE LINE MODE		
PROTOCOL	PPPoE	PPPoA	1483 BRIDGE	1483 ROUTING	1577 PRIVATE
			CONNECT		LINE
	VPI	VPI	VPI	VPI	VPI
	VCI	VCI	VCI	VCI	VCI
NECESSARY	LLC/VCMUX	LLC/VCMUX	LLC/VCMUX	LLC/VCMUX	LLC/VCMUX
INFORMATION	USER NAME	USER NAME		IP	IP
				ADDRESS/MASK	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.

Add New Hardware Wiz	ard
	What do you want Windows to do? Search for the best driver for your device. Recommended). Display a list of all the drivers in a specific location, so you can select the driver you want.
	< <u>B</u> ack Next> Cancel

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.

Add New Hardware Wiz	ard
	Windows will search for new drivers in its driver database on your hard drive, and in any of the following selected locations. Click Next to start the search.
	< Back Next > Cancel

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

Add New Hardware Wi	zard
Add New Hardware Wit	Windows driver file search for the device: USB ADSL Interface Windows is now ready to install the best driver for this
N	device. Llick Back to select a different driver, or click Next to continue. Location of driver:
	E:\wan(e)\CxtCboou.inf
	< <u>B</u> ack Next> Cancel

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.

Add New Hardware Wiza	ard
	USB ADSL Interface
	Windows has finished installing the software that your new hardware device requires.
	< Back Finish Cancel

Figure 2.3.1.5

6. A new icon is 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".

Found New Hardware Wizard	
	Completing the Found New Hardware Wizard USB ADSL INTERFACE Windows has finished installing the software for this device.
	< <u>B</u> ack Finish Cancel

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

	2	*	2
	l	_ine Down	
-ADSL Connection	Information		
Bytes Received:	0	Bytes Transmitted:	0
Receive Rate:	0 kbits/s	Transmit Rate:	0 kbits/s
Driver S/W Versio	n: 13032.099.05	6.000	Clear

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).

USB ADSL Adapter		×
General Line Setup Protocol Setu	IP	
ATM Virtual Circuit Identification-		
	Virtual Circuit 0	Virtual Circuit 1
Virtual Path Identifier (VPI)	0	
Virtual Circuit Identifier (VCI)	32	
Aggregate Channel Setup Encapsulation Mode PPP	over Ethernet LLCSNAP (R	FC2516)
Receive Transmit	Peak Cell Rate (PCR)	Line Rate 💌
ОК	Cancel <u>Ap</u>	ply Help

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.

USB ADSL Adapter	×
General Line Setup Protocol Setup	
ATM Virtual Circuit Identification	
Virtual Circuit 0 Virtual Circuit 1	
Virtual Path Identifier (VPI) 0	1
Virtual Circuit Identifier (VCI) 32	1
Aggregate Channel Setup Encapsulation Mode PPP over Ethernet LLCSNAP (RFC2516) PPP over ATM VCMUX (RFC2364) PPP over ATM LLC (RFC2364) PPP over ATM LLC (RFC2364) PPP over Ethernet VCMUX (RFC2516) 1500 1500 1500	
OK Cancel Apply Help	,

Figure 3.5

5 Click "OK" button to finish the installation.

4. UNINSTALLATION

METHOD 1:

 Click "Start" → "Settings" → "Control Panel". Then double click "Add/Remove Program" icon in the Control Panel window.



Figure 4.1

Figure 4.2

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" \rightarrow "Programs" \rightarrow "USB ADSL" \rightarrow "Uninstall ADSL". As shown figure 4.3.



Figure 4.3

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



Figure 4.4

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

🚮 USB /	ADSL Adapter Uninstaller 🛛 🔀		
?	The following components have been successfully removed: USB ADSL Adapter Do you want to restart your computer now?		
	Yes <u>N</u> o		

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.

USB /	ADSL Adapter			×
Gen	eral			
/	ADSL Line Informatio	n		
	1	2 681	ADSL HER	
r	ADSL Connection	Information		
	Bytes Received:	0	Bytes Transmitted:	0
	Receive Rate:	0 kbits/s	Transmit Rate:	0 kbits/s
	Driver SAW Versio	r: 13032.099.05	6.000	Clear
			OE	EM MANUFACTURE
		ОК	Cancel	ly Help

Figure 5.1.1



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



💙 USB	ADSL		×
2	ADSL Disconnected Bytes received: Bytes sent:	Start ADSL	

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

		🛃 Connect To
		ADSL Dial-Up
1 2000		User name: adsl
		Password:
My Documents	ADSL Control	
	Panei	Phone number: 0000000
	(2)	Dialing from: Dial Properties
Internet Explorer	ADSL Dial-Up	Connect Cancel

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

ADSL Dial-Up ? 🗙
General Server Types Scripting Multilink
Type of Dial-Up <u>S</u> erver:
PPP: Internet, Windows NT Server, Windows 98
Advanced options:
Log on to network
Enable software compression
Require encrypted password
Require data encryption
<u><u><u>R</u>ecord a log file for this connection</u></u>
Allowed network protocols:
✓ NetBEUI
IPX/SPX Compatible
ICP/IP ICP/
OK Cancel

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.

USB ADSL ADAPTER	×
General Line Setup Protocol Setup	
ATM Virtual Circuit Identification	-
Virtual Circuit 0 Virtual Circuit 1	
Virtual Path Identifier (VPI)	
Virtual Circuit Identifier (VCI) 32	
Aggregate Channel Setup	
Encapsulation Mode Bridged IP over ATM LLCSNAP (RFC1483)	
Bridged IP over ATM LLCSNAP (RFC1483) Maximum Packet Length Routed IP over ATM LLCSNAP (RFC1483)	
Bridged IP over ATM VCMUX (BFC1483)	
1500 [1500 Classical IP over ATM (RFC1577)	
	-
UK Cancel Apply Help	

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.

Network
Configuration Identification Access Control
The following sectored as sectored as a factored
I he rollowing hetwork components are installed:
Client for Microsoft Networks
Microsoft Family Logon
Add Remove Properties
Primary Network Logon:
Microsoft Family Logon
<u>F</u> ile and Print Sharing
Description TCP/IP is the protocol you use to connect to the Internet and wide-area networks.
OK Cancel

Figure 5.3.2

TCP/IP Properties				? ×
Bindings DNS Configuration	Adv Gateway	anced WINS Confi	No guration	etBIOS
An IP address can If your network doe your network admir the space below.	An IP address can be automatically assigned to this computer. If your network does not automatically assign IP addresses, ask your network administrator for an address, and then type it in the space below.			
○ <u>O</u> btain an IP ● <u>Specify an IP</u>	address auto	omatically		
<u>I</u> P Address:	61	.134.23	. 12	
S <u>u</u> bnet Masl	c 255	. 0 . 0	. 0	
		OK		Cancel

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 ≤ 2.5 W

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



- 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 HODEN



Telephone Line (RJ-11)



Splitter



Installation Tanual



USB Cable



Installation CD

DARE TECHNOLOGIES CO., LTD.

Add: 12250 El Camino Real, #350 San Diego, CA 92130 USA China Company: 22F, Shanghai Information Building, NO. 1555, Kongjiang Road, Shanghai, China, 200092 Tel: (858) 755 8822 Fax: (858) 755 8896 <u>www.dareglobal.com</u> <u>www.dare-tech.com</u>