EXHIBIT C User Manual

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Environmental Requirements

- Operating Temperature: 0° C to 55° C with airflow
- Non-operating Temperature: -10° C to 85° C
- Operating Humidity: 10% to 90% non-condensing
- Non-operating storage humidity: 5% to 95% non-condensing

Power Requirements

- Input: 100-240V 0.3A 50-60Hz
- ◆ Output: +5V 1.4A

2345

Connector Pin-out

The ADSL modem card is equipped with a RJ-11 jack for connection to the ADSL data

Port. The center two pins, pins 3 and 4, are used for ADSL data. For the card to make a proper ADSL connection, the installed ADSL data port should also use pins 3 and 4 for data. If the ADSL data port installation uses pins 2 and 5 for data, then a wiring converter will be required. Do not alter or remove the wiring converter if present. Consult with your ADSL provider before attempting any wiring changes.

About This Manual

This manual provides a comprehensive user's guide and installation manual for Multi-mode ADSL Router. It has been organized in such a way to make it easy to follow by users worldwide. In the manual, there are many examples given in the commands, largely IP addresses and other values. Please realize that these are for example only and you must use the values provided by your ADSL service provider to achieve a connection. In order to ensure optimal comprehension, the following list provides brief descriptions of the formatting styles used throughout this manual.

<u>Commands</u>: Commands are always referred to by using the words "type" or "click" before them. These commands are always shown as bold-faced words. For example, click **Next**, click **OK**, or type: **command**.

<u>Names of Windows (Dialog Boxes)</u>: The names of the windows (also referred to as dialog boxes) that appear on the PC screen are always referred to in quotes. For example, the "Setup Complete" window.

<u>Names of Options in Windows</u>: The names of options to choose from inside the windows that appear on the PC screen are always referred to in italics. For example, choose the *Yes*, *I want to restart my computer now option from the window*.

NOTES: In some cases, preparatory or cautionary information is needed before proceeding onto the next step in an installation process. This kind of information is provided in the form of notes, which are always referred to in bold-faced and italicized letters. For example, **NOTE:** *To access the Control Panel Application, the driver must be running.*

Congratulations!

Your new ADSL router is a multi-functional piece of equipment. It conveniently interfaces with your computer system for configuration. The modem connects directly to your telephone line via a standard connector.

This guide is designed to walk you through installation of your ADSL Router in the easiest and quickest way possible. Please follow the instructions carefully in order to successfully install the Router.

System Requirements

- IBM PC/AT or compatible PC
- Pentium 100MHz or faster
- 32Mbytes system memory or more
- 30Mbytes available hard disk space or more
- 4X CD-ROM drive or better
- Windows 95, 98, 98SE, 98ME, 2000, NT4.0, Mac OS 8 and above, Unix, Linux
- Ethernet Network Interface Card (NIC) that supports TCP/IP

Product Features

- Ethernet interface
- Many popular router functions
- Five LED indicators
- Supports: ANSI T1.413 issue 2, G.992.1 (Full-Rate DMT), G.992.2 (G.Lite)
- Supported Protocols: Bridged RFC 1483, Routed RFC 1483, RFC 1577, RFC 2364
- ATM supports AAL5, AAL3/4 and AAL0. AATM Traffic shaping supports CBR and UBR

• Transparent Bridging features conformance to IEEE 802.1d and supports spanning tree protocol and bridge filters

• NAT functionality

Package Contents

- One (1) UAT Multi-Mode ADSL Router
- One (1) 5VDC Adapter
- One (1) RJ-11 ADSL cable
- One (1) standard Ethernet cable (straight connect)
- One (1) 9-pin to 9-pin RS-232 cable
- One (1) Installation CD include Installation driver & Guide

All packages have been carefully checked for completeness and functionality before shipping. If anything is missing or damaged, please contact the dealer/ service provider from whom the equipment was purchased.

Note: You must use the RJ-11 ADSL cable provided in the package to connect to the adaptor. UAT excludes itself from any liability for incidental, consequential, indirect, special, or punitive damages of any kind. UAT will not be liable for any legal issue related to EMI in this case.

Chapter 1 - Installing and Configuring your ADSL Router

The major functions of the ADSL Router are performed by using the Ethernet network interface. Your computer must have an Ethernet Network Interface Card (NIC) installed and set up with the TCP/IP protocol before beginning to use the router. The router also provides a serial console port for monitoring and configuring the router via the built-in command line interface. This will be covered largely in the rest of this manual.

Preparation

Before beginning the hardware installation, please gather the following materials for the setup you will be using.

You will need to know the Internet Protocol supported by your ADSL provider to successfully connect to the Internet. For future troubleshooting or reinstallation, it is important that you retain these details.

Setup 1 - Connecting directly to your PC

- ADSL service, provided by your ISP/NSP. Also have your connection information ready.
- Personal Computer running a supported operating system, with an Ethernet NIC installed.
- TCP/IP protocol installed for your NIC.
- Ethernet straight connect cable (included in package)
- Ethernet crossover adapter (included in package)
- RJ-11 ADSL cable (included in package)
- RS-232 serial cable (included in package)
- Power adapter (included in package)

Hardware Installation – Single PC Connection

Before configuring your ADSL router, you must complete the hardware installation using the following steps.

- 1. Be sure the power switch, marked **ON/OFF**, on the rear of the unit is depressed, in the OFF position.
- 2. Connect the power adaptor to power receptacle on the rear of the unit marked **PWR**, then plug the AC end into the wall electrical outlet.
- 3. You will now connect the Ethernet cable. Connect one end of the Ethernet straight connect cable to the Ethernet jack on the NIC in the back of your PC.
- 4. Then connect the cable to the rear marked **Ethernet** on the back of the router.
- 5. Connect one end of RJ-11 ADSL cable to the ADSL line jack, marked Line, on the rear of the router. Then connect the other end to the ADSL line outlet that your ADSL service provider has installed.
- 6. Connect the male (9-pin) end of the RS-232 serial cable to the connector marked **RS-232** on the rear of the router.
- 7. Then plug the other end of RS-232 cable into the serial port of your computer.
- 8. Turn the power on by pressing the power switch. The router will perform a self-test then will be ready for use.

Chapter 2 - Software Installation

Auto install Setup program:

Please insert the CD coming with your package into your computer's CD-ROM first. As a user-friendly interface, it will detect the OS and run the program automatically for the detected OS. Please follow the following procedures to complete the setup.

1. When the OS is auto detected, the system will pop up the following window automatically. Click on "Next" to continue.

Welcome	
	Welcome to the ADSL ROUTER setup program. It is strongly recommended that you exit all Windows programs before running Setup. Click Cancel to quit Setup and close any programs you have running. WARNING: This program is protected by copyright law and international treaties. Unauthorized reproduction or distribution of this program may result is severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law. Click Next to continue with the setup.
	Next > Cancel

2. Click on "Accept" to go on the setup procedure.



3. After filling in the Name and Company click on "Next" to continue.

ALVAL KOURT Settip	Please enter your user information below. You must complete these fields in order to continue with the setup.
	Neme: Company:
	«Back Next» Cancel

4. Click on "**O.K**" to continue.



5. Select the Location of "C:/Program Files/ADSL ROUTER" and click on "Next" to continue.

S State	Setup will install the software to the o the box below.	directory listed in
	To install to a different directory, eith path or click Browse to select anoth	er type in the new
	Install files to this location:	
	C.Program FilestADSL ROUTER	
		Browse
	Space required on drive:	5.5 MB
	Space available on selected drive:	4082 MB
MEN IN COM		
	« Back Next »	Cancel

6. Click on "Next" to add shortcut icons to the folder shown in the Window.

ADSL Router Setup	
	Setup will add shortcut icons to the folder indicated below. If you do not want to use the default folder, you can either type a new name, or select an existing folder from the list. Shortcut folder: NOSI ROUTER
	«Back Next» Cancel

7. Click on "Install" to go on the install procedure.

ADSL Router Setup	
	Setup now has enough information to start installing the software. If you would like to make any changes before continuing, click Back. To abort the installation, click Cancel When you are ready to start installing the software, click on the Install button.
	«Back Install Cancel

8. Click "Finish" to complete the installation procedure.

Finished	
	Setup is complete and your software is now installed. Thank you for choosing ADSL ROUTER. Make sure you register your software today. By registering your software with us, you will receive: • Notification of product updates and upgrades: • New product announcements. • Technical support options. Click Finish to end the Setup.
	«Back Finish Cancel

Chapter 3 - Quick Guide for ADSL Router Configuration Tool For installation in Windows 98/98se/2000

It is essential to configure your ADSL Router before connecting it to the Internet. Please follow this quick guide for configuration under each individual encapsulation mode.

After the software has been successfully installed, ADSL Router Configuration Utility can be opened from **Start Manu->Program->ADSL ROUTER->ADSL EXE.**



1. The green flashing text "please wait" indicating that the program is detecting the COM. port automatically. Please click on "Setup" to select the Protocol required when the green flashing text is gone.



1. ADSL Bridge Modem Parameter Configuration

1.1 In Figure 1

In bridge mode, the ADSL Router provides 2 encapsulation methods, "Bridged Ethernet Over ATM (RFC 1483)" & "Bridged PPP over Ethernet".

ADEL ROUTER Configuration Unlity			
Setup Option Justilletion guile About			
Endand Ethemet Over ATM (SEC1483) Bod ged FPP over Ethemet			
Rooted Ethernet Over ATM (RFC1483) Rooted Classical IP Over ATM (RFC1577) Rooted PTP Over ATM (RFC2364) Rooted PTP Over Ethernet (RFC2316) DRCF Serves	:		
Lose Configuration			
Ee			
ADDL ROUTER Configuration Unliky			
Setup Option Installation grade About	-		
Bodgel Etwart Over ATM (KPC1483) Bodgel FF7 over Ethernet			
Routed Ethernet Over ATM (RFC1483) Routed Chemical IP Over ATM (RFC1577) Routed FPP Over ATM (RFC2364) Routed FPP Over Ethernet (RFC2316) DBCP Serves	:		
Losd Configuration	,		
Est	11 y		
		Figure1.2	

1.2 In Figure 2

To enter either of the protocols, a configuration window with "**PVC Setup**", "**TFTP/Telnet**" and "**ADSL Standard**" tabs will display as the followings:

- 1. Enter the proper VPI, VCI numbers for connection.
- 2. Choose an encapsulation mode for the connection.

Note: The VPI and VCI numbers will be provided by your Internet Service Provider.



1.3 In Figure 3

1. The Default mode for TFTP/Telnet is set in "Disable TFTP/Telnet."

Note: Please refer to your Network Supervisor for the IP information if to enable "TFTP/Telnet" function.

PVC Setup] TFU	P,Teine	5	L	ADSL Stand	lard
• Disable TFTPyTe	Inct					
C Enable TFTP/Tel	net IP:		×	•		

1.4 In Figure 4

1. The default ADSL Standard setting is "Multi Mode"

Note: Please check with your Internet Service Provider for the actual setting.

2. Click Config Modem to activate your parameter settings

PVC Setup	TFTP,T	elnet	ADSL Standard	9
C ANSI	11.413 issue?			
C ITU G	.992.1 AnnexA	(G.DMT)		
C 11U G	.992.2 AnnexA	(G.Lite)		
Multi	Mode			
	BACK	Config Me	dem EXT	-

2. ADSL Router Parameter Configuration

In Router mode, the ADSL Router provides 5 encapsulation methods, "Routed Ethernet Over ATM (RFC 1483)", "Routed Classical Over ATM (RFC 1577)", "Routed PPP over ATM (RFC2364) " Routed PPP Over Ethernet (RFC2516) & "DHCP Server".



2.1 Routed Ethernet Over ATM (RFC1483) & Routed Classical Over ATM (RFC 1577)

2.1.1 In Figure 1

1. Enter the "Ethernet IP", "ADSL IP" and "NetMask" Addresses provided by your Internet Service Provider.

Note: If your Internet Service Provider does not provide the Ethernet IP address, please remember to click to enable the "NAT" function.

IP	ADS	L Standard	PVC	Setup	ROUTE	
ithernet IP		•	Net MASK	255,255	255.0	
ADSL IP	• •	•	Net MASK	255,255,	255.0	
IP NAT						

2.1.2 In Figure 2

1. The default mode for "ADSL Standard" set in "Multi Mode."

Note: Please check your Internet Service Provider for the actual setting.

← ANSI T1.413 issue2	
1 AMOR 11,413 (\$5902	C AND TI 413 (sure)
C ITU G.992.1 AnnexAIG.DMTI	C ITU G.992.1 AnnexAIG.DMT
C ITU G.992.2 AnnexA(G.Lite)	C ITU G.992.2 AnnexA(G.Lite)
🧟 Multi Mode	@ Multi Mode

2.1.3 In Figure 3

- 1. Enter the proper VPI, VCI numbers for connection.
- 2. Choose "LLC/SNNP" or "VCMUX" for connection.

Note: The VPI and VCI will be provided by your Internet Service Provider.

1P	ADSL Standard	PVC Setup	ROUTE	
	VPI:D VC	t <u>15</u>		

15

2.1.4 In Figure 4

1. Enter the Remote IP Address provided by your Internet Service Provider.

2.Click on "Config Modem" to activate the parameter settings.

ιp	ADSL Standard	tup	ROUTE		
Add a dela	ult route to remote gate	way.			
Re	mote IP Address	• •			
	BACK	Con	ig Mødem	EXIT	

2.2 Routed PPP Over ATM (RFC2364)

2.2.1 In Figure 1

Note: Please enter "Config PPPOA" for parameter settings for the first time before proceeding to "Enable PPPOA" or "Disable PPPOA"

b States laugence Lange Pront			
Bridged Ethemet Over ATM (RPC1483) Bridged PPF over Ethemet			
touted Ethernet Over & TM (RPC1483) touted Classical IP Over & TM (RPC1577	0		
Routed 777 Over ATM (RPC2)64)	•	Config 2770A	
Routed FFF Over Ethninet (RPC2516) DBCP Server	-	Eashie FFPOA Dunhie FFPOA	
oud Configuration			
Exit			

2.2.2 In Figure 2

1. Please enter the "Ethernet IP" and "NetMask" addresses provided by your Internet Service Provider.

Note: If the Internet Service Provider doesn't provide you the Ethernet IP, please click to enable "NAT" function.

IIP.	ADSL Standard	PVC Setup	User Name	7
Ethe	ernet IP	NET	MASK	
		255,255,255	. 0	
NAT				

2.2.3 In Figure 3

1. The default mode for "ADSL Standard" is set in "Multi Mode."

Note: Please check with your Internet Service Provider for the actual setting.

a and a and a contract of the second	PVC Setup	UserName
C ANSI T1.413 issuel	2	
C ITU G.992.1 Annexo	4G.DMTJ	
C ITU G.992.2 Annexo	A(G.Lite)	
@ Multi Mode		
BACK	xr	

2.2.4 In Figure 4

- 1. Enter the Proper VPI, VCI number for connection.
- 2. Select "LLC/SNAP" or "VCMUX" for the connection.

Note: The VPI and VCI will be provided by your Internet Service Provider.



2.2.5 In Figure 5

- 1. Enter the appropriate information for "Username" & "Password".
- 2. Select CHAP or PAP authentation
- 3. Click " Config Modem " the activate the parameter settings.

mame		9	
name			
sword			
Authentication	CHAP C PAP		

3.PPP OVER ETHERNET(RFC2516)

3.1 In Figure 1

Note: Please enter "Config PPPOE" for parameter settings for the first time before proceeding to "Enable PPPOA" or "Disable PPPOA".



3.2 In Figure 2

Enter the "Ethernet IP" & "NET Mask" IP addresses provided by your Internet provider.

Note: If your Internet Service Provider does not provide the Ethernet IP address, please remember to click to enable the "NAT" function.

IP	ADSL Standard	PVC Setup	User Name	-
Eth	ernet IP	NET	MASK	
12	3 A	255,255,255	5.0	
7 NAT				

3.3 In Figure 3

The default mode for "ADSL Standard" set in "Multi-mode".

Note: Please check with your Internet Service Provider for the Actual settings if necessary.



3.4 In Figure 4

1. Enter the Proper VPI, VCI number for connection.

2. Select "LLC/SNAP" or "VCMUX" for the connection.

Note: The VPI and VCI will be provided by your Internet Service Provider.

IP	ADSL Stendard	PVC Setup	User Name	
	VPI: D VCI:	13		
	© LLC/SNAP C	VCMUX		
	Incert Line	or 1		

3.5 In Figure 5

emane		100
sword		_
Authentication @ (CHAP C PAP	

4. DHCP Server

4.1 In Figure 1

Note: For technical concerns, it requires password for "Config DHCP Server."

Note: Please check with your network supervisor if you would like to set this function.

The state and the state and	-		
iniget Effected Over ATM (APC1483) Iniget FIP over Effectet			
Control Ethermet Over ATM (REC1483) Control Classical IP Over ATM (REC1577) Routed PPP Over ATM (REC2064) Routed PPP Over Ethermet (REC2516)			
BCP Server	•	Coudig the DBCP Server	
Lond Condiguation	'T	Duable the DiBCP Server	
Dat			

4.2 In Figure 2

1. Enter the Password.(The default Password is "adsl")

ОК
and the second se
Cancel

4.3 In Figure 3

1. Enter the appropriate Max. Lease Time.

case Time	Range	GateWay	Option	
	Time To the			
Max. Lease	anne 1 days	I o nours o min		
Max. Lease	time 1 days	Loundry Lound		

4.4 In Figure 4

1. Enter the appropriate IP addresses for "Range1", "Range 2", "Subnet", and "Netmask".

ease Time	I	Rang	IC .		iateW	ay		Option	
F Rangel	•				•	•			
F Range2	2	3	9		•	2			
Subact .	•		Ne	tmask ;	55,25	55 ,25	5.0		
			Back	i w					

4.5 In Figure 5

1. Enter the appropriate Gateway IP addresses.

ease Time	Range	GateWay	Option	
	164V			
	Detete	Remove All		
	-			
	Back	Next		

4.6 In Figure 6

1. Enter the appropriate IP addresses for "Subnet Mask", "Broadcast Address", and "DNS".

2. Click on "Config. Modem" to activate the parameter settings.



5. Option for ADSL Router Configuration Tool

5.1 Command Line

5.1.1 Figure 1

1. It requires Password to enter the Command Line Configuration Window.

ADSL ROUTER Configuration U	tility .	
up Option furtalletion grafe	About	
Connent Ine		
Lize Kate		
Reat AT		
Grana		

5.1.2 Figure 2

1.Please enter the default password "adsl" to get into the Configuration Window.

PASSWORD	×
Enter Password	ОК
	Cancel
	Figure 2

5.1.3 Figure 3

1. Enter the proper commands into the command line.

ADGE ROUTER Configuration Utility	
ap Options Justellation Oracle About	
	-
20-25-0-4-965	
C MARK OF COMPANY OF COMPANY	
A BAR Allower August P	
	-

5.2 Setup Password

5.2.1 Figure 1

1. If to change the password, please enter "Setup Password".

ATCL ROUTER Cooligention Utility	日間公
Proceedings of the construction of the constru	
	Figure 1

5.2.2 Figure 2

- 1. Enter the default Old Password "adsl".
- 2. Enter the new password.
- 3. Re-enter the new Password for confirmation.

Enter Old Password	
Enter New Password	
ReEnter New Password	
[]	2000

5.3 Line Rate

5.3.1 To check the current line rate, select " Line Rate" and an indicator as in Figure 2 will show the current line rate status.

ALCL ROOTER Configuration Wality	
Setup Option Janualeton Orade About	
Commend line	
Setup Perseant	
Reset All	
	() ()
ADEL KOUTER Configuration Utility	
ADDE ROUTER Configuration Unity Setup Options Limblishics Oracle About	
ADDR EXUTER Configuration Unity Strip Option Latalistics Unite About	
ADera ROUTER Configuentess Unity Semp Option Landlinion Guide About	
ADera ROUTER Configuentess Utility Settip Options Justillisten Guide About	
ADers ROUTER Configuration Utility Settip Option Lathilistics Guile About	
ADOR ROUTER Configuration Utility Setup Option (autolistics Oracle About	
ADOR ROUTER Configuration Utility Setup Option (autolistics Oracle About	
ADEL ROUTER Confuguration Unity Demp Option Localization Oracle About	
ADRI, ROUTER Configuration Unity Step Option Latalition Unite About	
ADEL ROUTER Configuration Unley Setup Option Ladalistics Unley About	

6 Reset all

6.1 Figure 1 & Figure 2

1. To re-set all the existing configurations, select "Reset all". Enter password "adsl" as show in Figure 2.



2. The indicator on the left will keep on running until the reset is totally completed.



Figure1

1

About

To get more information of the ADSL Configuration Utility, please select "About" to get the following window.

ADSL Cor D.1 Console or	Aguration Utility ode program
	OK
	Sellen Wolft

Click on System Info [s] a dialogue box of Micro Soft System Data will appear. The system information of your computer will show the system information of your computer.

Copyright & Regulatory Information

This manual and software described in it are copyrighted with all rights reserved. This manual may not be copied, in whole or in part, without written consent. All product names are trademarks and or registered trademarks of their respective companies.

FCC 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 or more of the following measure:

- Reorient or relocated the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into a different outlet circuit from than the receiver.
- Consult an experienced radio/TV technician for help.

CAUTION: Any changes of modifications not expressly approved by the grantee of this device could void the users authority to operate the equipment.