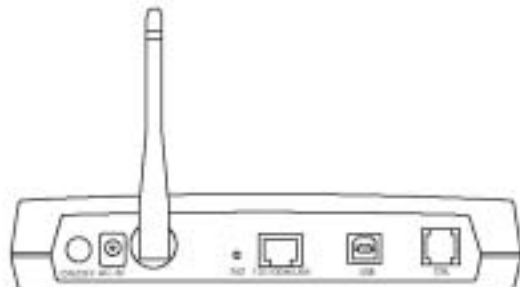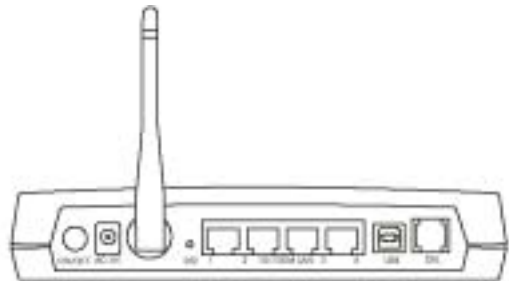# ADSL MODEM ROUTER
Single / 4 Port
&
Plus Wireless

Installation Guide

FEDERAL COMMUNICATIONS COMMISSION

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.

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. This equipment generates, uses and can radiated 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.

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

FCC Radiation Exposure Statement
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm (8 inches) during normal operation. Proposed RF exposure safety information to include in User's Manual.

Table of Contents

Chapter 1 check and prepare

Chapter 2 Introduction

Chapter 3 Installation

Chapter 4 Configuration Setting

Chapter 1 Check and Prepare

1.1 Package Checklist

One Ethernet ADSL Router

One Power Adapter

One RJ45 Cable

One USB Cable

One RJ11 phone cable

One CD driver for USB interface

One 2.4G Antenna (Wireless only)

One Installation Guide

1.2 Hardware Requirement

ADSL Line from your telephone company

LAN Card inside your PC or Uplink port on Switch HUB

IEEE 802.11b compliant PCMA Wireless LAN card (Wireless only)

1.3 Data Requirement

Please get the following data information from your ISP or phone company before setting up this ADSL Modem Router.

1.3.1 For Static IP address user:

IP address

Gateway Address

Subnet mask

DNS

VPI / VCI value

Encapsulation mode (example: RFC 1483,1577…etc.)

1.3.2 For Dynamic IP address (PPPoE/PPPoA) user:

VIP value

VCI value

Encapsulation mode (example: RFC 2516, 2364…etc.)

User name &Password

Chapter 2 Introduction

2.1.1 Features

The ADSL Router providing fast and reliable Internet access over the existing copper wires is an ideal solution for SOHO users. Using the existing phone lines to deliver data at rates up to 8Mbps-140 times faster than traditional analogue modem. Meanwhile, you can share a single IP account within your entire network to enjoy internet convenience at the same time. In order to bring the most convenience to users, this Wireless ADSL Modem router builds in three kind of interfaces: IEEE 802.11b wireless, USB and Ethernet . Taking advantage of wireless, you can setup an ADSL connection to Internet easily. Meanwhile, user-friendly web-based configuration and management tool via Ethernet allows easy configuration.

- Support RJ-45 Ethernet interface & USB interface
- Support IEEE802.11b for Wireless LAN
- ANSI T1.413 Issue 2, ITU G..DMT(G.992.1),ITU-T G..Lite(G..992.2)
- DHCP server & client
- NAT (Network Address Translation) function for Net Meeting, ICQ or CUseeMe...etc. Internet application programs
- PPPoE / PPPoA function
- Wireless data encryption 64/128 bit for security
- Support IP, PPP, Transparent bridging ..etc. multi-protocols
- Configuration ,management & firmware update via Web browser
- Two-level password protection for management
- Flash memory included for future firmware upgrade

2.1.2 ADSL Compliance

- ANSI T1.413 Issue 2
- ITU G..992.1 (G.. DMT)
- ITU G..992.2 (G.. Lite)
- ITU G..994.1 (G.. hs)

2.1.3 ATM Protocols and Encapsulations

- PPP over ATM VCMUX (RFC 2364)
- PPP over ATM LLCSNAP (RFC 2364)
- Bridged IP over ATM LLCSNAP (RFC 1483)
- Routed IP over ATM LLCSNAP (RFC 1483)
- Bridged IP over ATM VCMUX (RFC 1483)
- Routed IP over ATM VCMUX (RFC 1483)
- Classical IP over ATM (RFC 1577)
- PPP over Ethernet VCMUX (RFC 2516)
- PPP over Ethernet LLCSNAP (RFC 2516)
- 8 PVCs (simultaneous and encapsulation independent)
- VPI/VCI range 0-255, 0-65536
- Encapsulation hunting of up to 8 pre-defined VPI/VCI & encapsulation sets
- AAL5 UBR & CBR
- OAM F4/F5

2.1.4 Bridge/Router protocols

- IEEE 802.1D(self learning transparent bridge)
- 128 MAC Address support
- Static IP routing (configurable route table)
- RIPv2 (backward compatible with RIPv1)
- DHCP server (configurable and supports up to 32 addresses)
- DHCP relay agent
- DHCP client
- PPP auto reconnect and configurable timeouts
- PPP auto reconnect on WAN access

- PAP/CHAP
- 128 character support for PPPx username/passwords
- DNS proxy
- Port forwarding
- NAT
- NAPT
- ALG support (MSN Messenger 4.x, H.323 (Microsoft NetMeeting) , AOL Instant Messenger…ect.)
- Wild Card DMZ
- Virtual server
- VPN pass through (IPSec-ESP Tunnel mode, L2TP, PPTP)
- Bridge filtering
- ICMP
- IGMP
- MAC Address Spoofing
- PPP   Half   Bridge

2.1.5   Management

- HTTP client and server
- Password protection (2 levels)
- Configurable Web pages
- FTP server / client
- Telnet
- Local firmware upgrade via FTP or Web
- Remote firmware upgrade via FTP client
- Configuration of LAN, WAN, and ADSL
- Restore to Factory defaults via Web or Hardware
- 7 layer diagnostics with links to help pages
- System logging

2.2.1 Features

Using existing twisted-pair telephone lines, ADSL technology provides data rates more than 100 times as fast as traditional dial-up modem delivers, without an interruption in telephone service. With data transfer rates of up to 8 Mbps downstream and 1Mbps upstream, ADSL is the ideal solution for high-bandwidth application such as access to a corporate network, Internet access and video delivery.

This ADSL Modem Router using industry-standard discrete multimode (DMT) line-code technology supports the full range of ADSL standards. This solution is not limited by host pc processor speed, operation system or memory configuration and is fully compliant with the full-rate ADSL (T1.413 Issue 2 and G.dmt) and the splitter less G.lite (G.992.2)standard.

- Support dual interface-RJ-45 & USB interface
- ANSI T1.413 Issue 2, ITU G..DMT(G.992.1),ITU-T G..Lite(G..992.2)
- DHCP server & client: Automatically assign IP address to network users & automatically get IP address from DHCP server
- IP Sharing : sharing a single IP account within your entire network via NAT routing function
- NAT (Network Address Translation) function for Net Meeting, ICQ or CUseeMe…etc. Internet application programs
- PPPoE / PPPoA function
- Full ATM protovol support
- Support IP, PPP, Transparent bridging ..etc. multi-protocols
- Configuration ,management & firmware update via Web browser
- Two-level password protection for management

2.2.2 ADSL Compliance

- ANSI T1.413 Issue 2
- ITU G..992.1 (G.. DMT)
- ITU G..992.2 (G.. Lite)
- ITU G..994.1 (G.. hs)

2.2.3 ATM Protocols and Encapsulations

- PPP over ATM VCMUX (RFC 2364)
- PPP over ATM LLCSNAP (RFC 2364)
- Bridged IP over ATM LLCSNAP (RFC 1483)
- Routed IP over ATM LLCSNAP (RFC 1483)
- Bridged IP over ATM VCMUX (RFC 1483)
- Routed IP over ATM VCMUX (RFC 1483)
- Classical IP over ATM (RFC 1577)
- 8 PVCs (simultaneous and encapsulation independent)
- VPI/VCI range 0-255, 0-65536
- Support AAL5 and service class UBR & CBR
- OAM F4/F5   loop back

2.2.4 Bridge/Router protocols

- IEEE 802.1D(self learning transparent bridge)
- 128 MAC Address support
- Static IP routing (configurable route table)
- RIPv2 (backward compatible with RIPv1)
- DHCP server / client / relay agent
- PAP / CHAP
- 128 character support for PPPx username / password
- NAT / NAPT / DynamicNAPT
- ALG support (MSN Messenger 4.x, h.323(Microsoft NetMeeting),
- AOL Instant Messenger, Windows Media Player…etc.),CuSeeMe 5.00
- Virtual server and DMZ
- VPN pass through (IPSec-ESP Tunnel mode, L2TP,PPTP)
- ICMP / IGMP
- MAC address Spoofing
- PPP Half Bridge

2.2.5 Management

- HTTP client and server
- Password protection (2 levels)
- Configurable Web pages
- FTP server / client
- Telnet
- Local firmware upgrade via FTP or Web
- Remote firmware upgrade via FTP client
- Restore to Factory defaults via Web or Hardware
- System logging and diagnostics

2.6 LED   Indicators

2.6.1   ADSL Modem Router / Wireless

LED NAME	Description
PWR	On: ADSL modem is power on
RDY	Blink: ADSL modem is ready Off : ADSL modem is not ready or has malfunctioned.
ADSL	Blink: ADSL modem is ready to connect or the link is down. ON: the ADSL modem links to DSLAM successfully.
DATA	Blink: when data is sent or received..
LAN_LINK	ON: ADSL modem has a successful Ethernet connection.

2.6.2   4-port ADSL Modem Router / Wireless

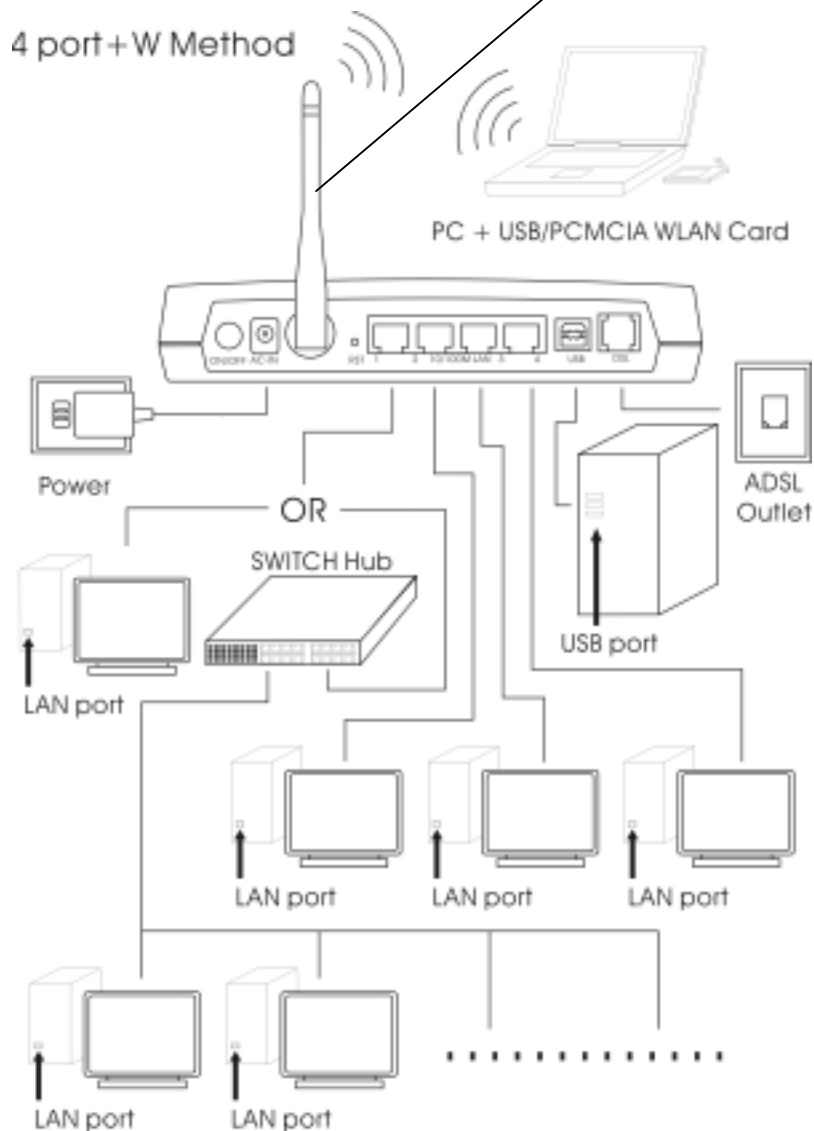| LED NAME	Description
READY	Blink: ADSL modem is ready. Off: ADSL modem is not ready or has malfunctioned. Always On: Please send back for repair.
ADSL	Blink: ADSL modem is ready to connect or the link is down. On : ADSL modem links to DSLAM successfully.
LAN 1-4	On : ADSL modem has a successful Ethernet connection

Chapter 3 Installation

3.1 Hardware Connection

Note: When plug-in in power cord, router starts working after around 15 seconds.

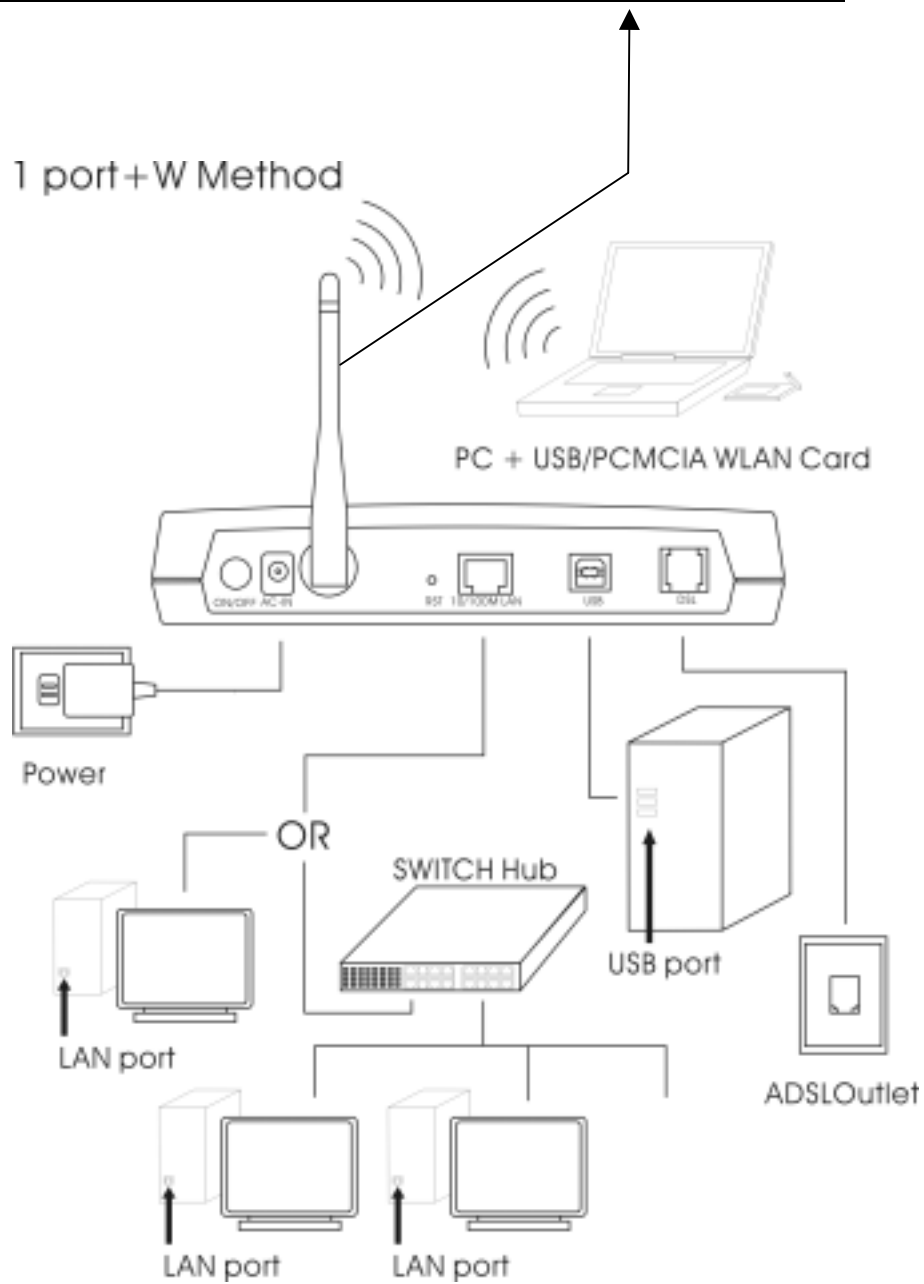**Note:** If you push the "Reset" button, all the parameter setting will revert back to factory default

Make sure the antenna is securely screwed onto the antenna connectors

3.1.1 4-Port Wireless ADSL Modem Router / Switch HUB

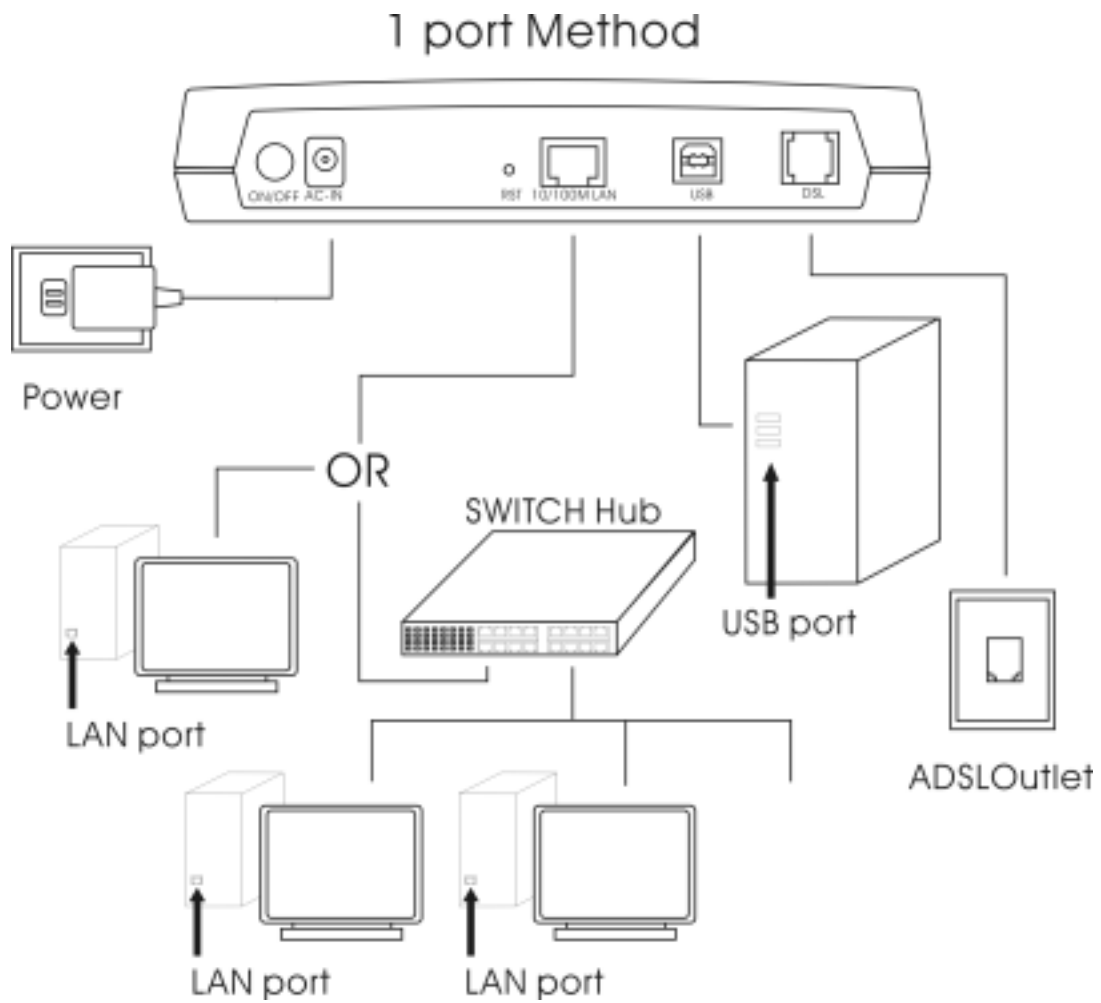## 3.1.2 Wireless ADSL Modem Router ／ Switch HUB

Make sure the antenna is securely screwed onto the antenna connectors

1 port+W Method

PC + USB/PCMCIA WLAN Card

Power

OR

SWITCH Hub

USB port

LAN port

LAN port   LAN port

ADSLOutlet

3.1.1 4-Port Wireless ADSL Modem Router without Switch HUB

1 port Method

Power

OR

LAN port

SWITCH Hub

USB port

LAN port   LAN port

ADSLOutlet

3.1.2 Wireless ADSL Modem Router without Switch HUB
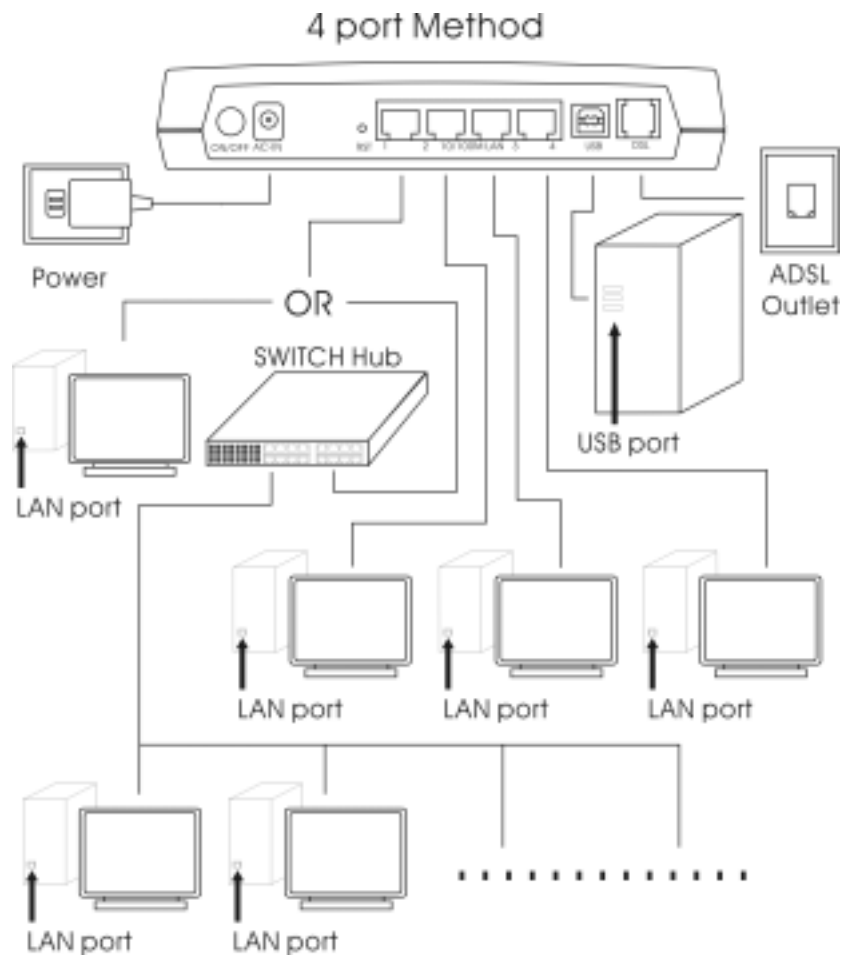
3.2 USB Installation

The ADSL Modem Router supports extra USB port for PC use and this USB port works together with Ethernet port at the same time.

If you don't intend to use USB port , please ignore this section,

1. Turn on your PC.
2. Insert the rectangular end of a USB cable into the USB port of your PC. Then, insert the square end of the USB cable into the USB port of the Modem Router.
3. PC will automatically detect this router as **"USB Net Card".**
4. Insert bundled **USB driver CD** into the proper drive and follow installation to install this router
   After successful installation, the router will be installed as **"USB Network Adaptor"** at Device Manager of Windows OS

Chapter 4 Configuration Setting

4.1 LAN Card Setting

When PC is on. Move cursor to "Network Neighborhood"
1. Push the right button of mouse, click "Properties"
2. Select the TCP/IP of your LAN card
3. Click "Properties"
4. Under IP address, select Obtain IP address automatically.
5. Under "DNS Configuration", select "Disable DNS"
6. Under "Gateway", please remove all installed gateway
7. Click "OK", system will ask you to reboot your PC.
8. Restart your PC

4.2 ADSL Modem Router Parameter Setting

1. Launch the Web browser.
2. Enter the LAN port default IP address **http://10.0.0.2 to access**
   this ADSL Modem
3. Enter of the username and password will be prompted.
   Enter the default **login User Name** and **Password.**
   (see Figure 1)
- The default login **User Name** of the administrator is

  admin , and the de fault login **Password** is **epicrouter.**

- The default login User Name of the non-administrator
  is user, and the default login **Password** is **Password.**

Note: The Non-administrator and Administrator password
can be changed at the Password Configuration page,
If you forget the changed password, please reset your
ADSL Modem Router by pushing reset button and all the
parameter settings will revert back to factory default.

Figure 1

4. After entering the user name and password, you will see the Homepage shown as below (SEE figure 2) . Please select the **Configuration** section to start setting up your ADSL Modem Router.

Note: Please refer Annex A (page 15) for ADSL Modem Router configuration.

Figure 2

5. Following is two example of setting for your reference. For further configuration, Please refer to the <u>User Guide. pdf</u>   inside the driver CD.
6.

4.2.1   PPPoE/PPPoA mode with DHCP function

1. Following is example of **"PPPoE/PPPoA mode with DHCP function"** (see figure 3)

    Go to the Configuration section, click <u>**WAN.**</u> Enter **VPI, VCI, User name, Password and ENCAPSULATION.**

Note: (<u>please get this data information form **your ISP or phone company**)</u>**.**

BRIDGE: select **Disable**, keep the other values unchanged and select **"SUBMIT", then clink** <u>**Save configuration**</u>

Figure 3.

4.2.2   Router mode for Static IP with DHCP

function

1. Following is example of **Router mode for Static IP with DHCP function** (see figure 4.)

   Go to the **Configuration** section, click <u>**WAN**</u> .Enter **Default Gateway, VPI, VCI, Static IP address, Subnet Mask value** (Note: <u>please get this data information from</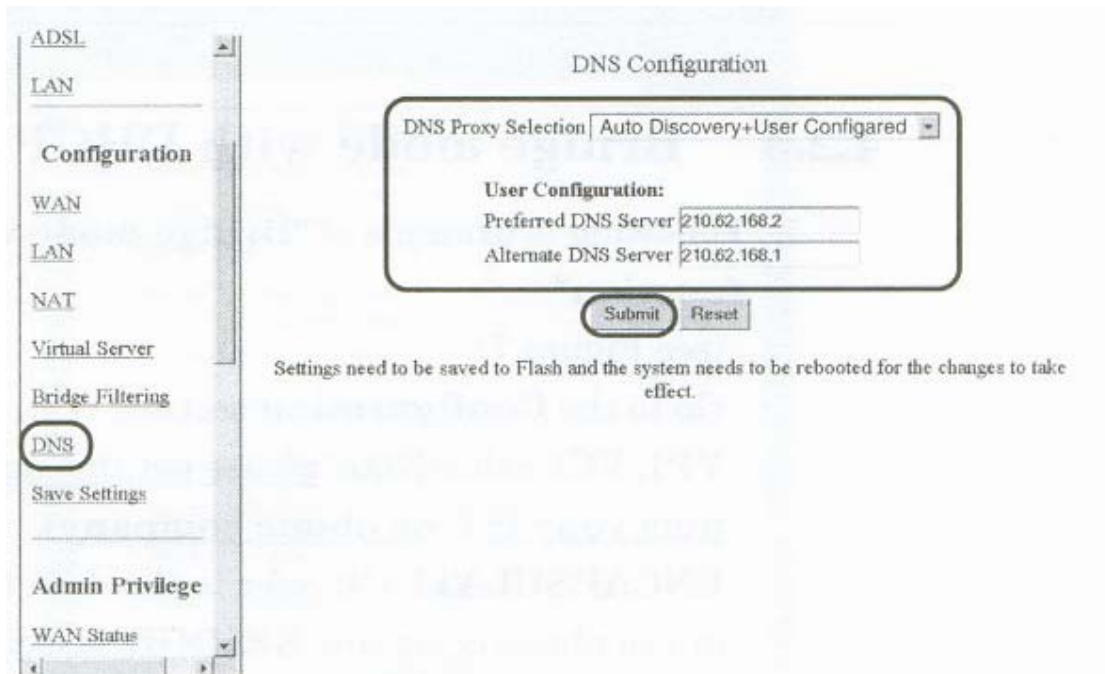u> <u>**your ISP or phone company**</u>). **ENCAPSULATION:** refer to the data from your ISP or the phone company; **BRIDGE:** select **Disabled**, keep the other setups unchanged and then select "**Submit".**
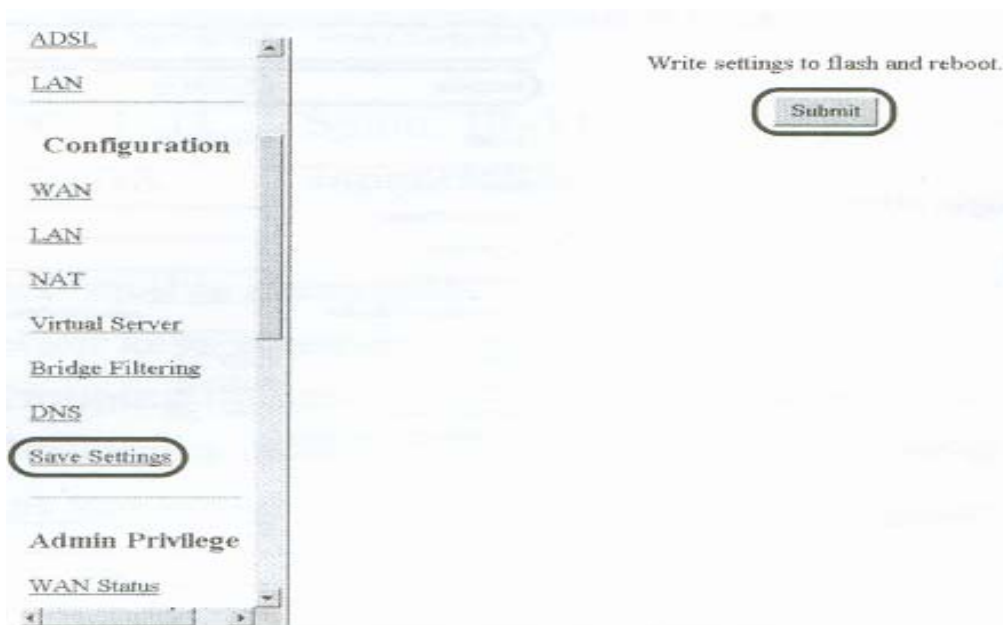
Figure 4
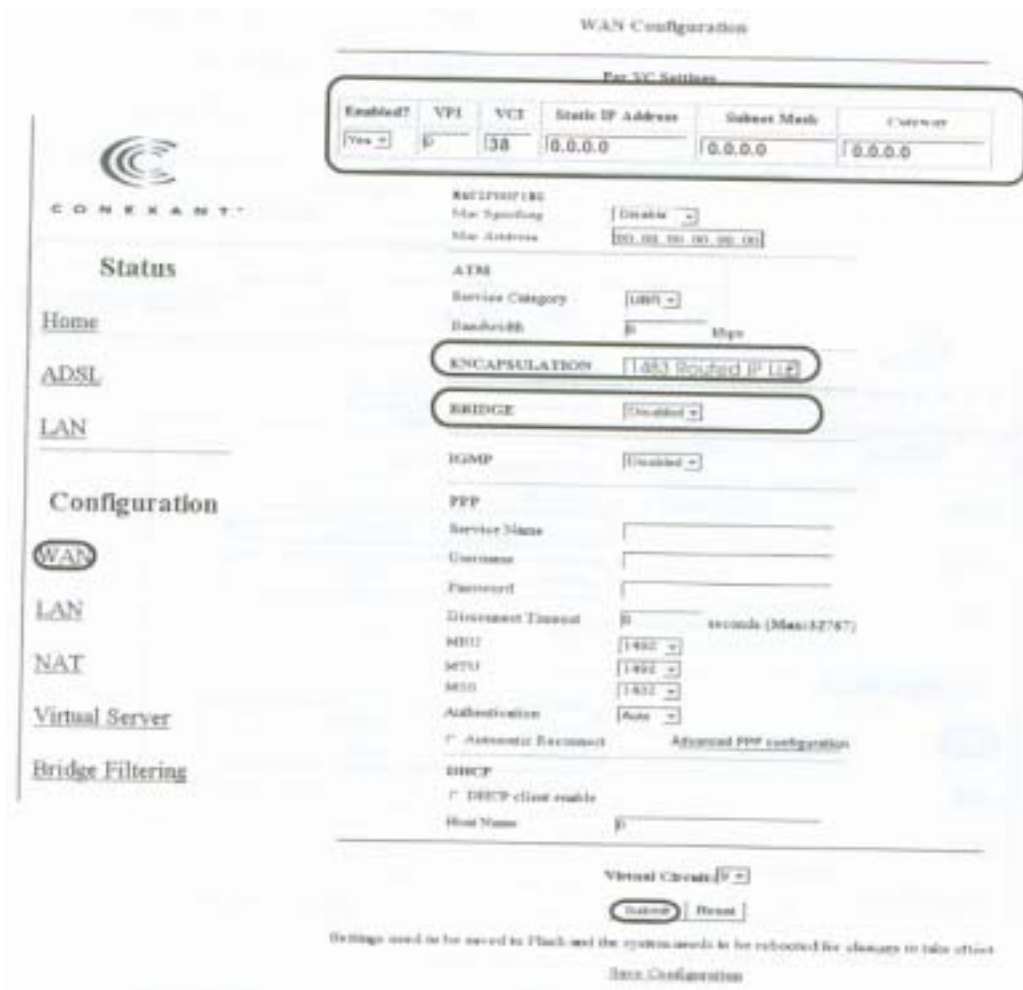
2.Please select <u>DNS</u>. Select**" Auto Discovery + User Configured"**
and enter the **Preferred DNS Server, Alternate DNS Server**,
then Click **"Submit".**

Figure 5

3. Click **Save Settings , "Submit".** This ADSL Modem Router will
save
these parameter settings and restart automatically.
It takes about **15** seconds.

Figure 6

4. Finished

> **Note:** The default IP address of this Router is **10.0.0.2.**
> If you forget the modified IP address, you can't
> access this device anymore and the only solution is
> to reset it by pushing reset button.

4.2.3   Bridge mode with DHCP function

1. Following is example of **"Bridge mode with DHCP function"**
   (see Figure 7).
   Go to the **Configuration** section, click <u>**WAN**</u>. Enter
   VPI, VCI value(Note: <u>please get this data information</u>
   <u>from **your ISP or phone company**</u>).
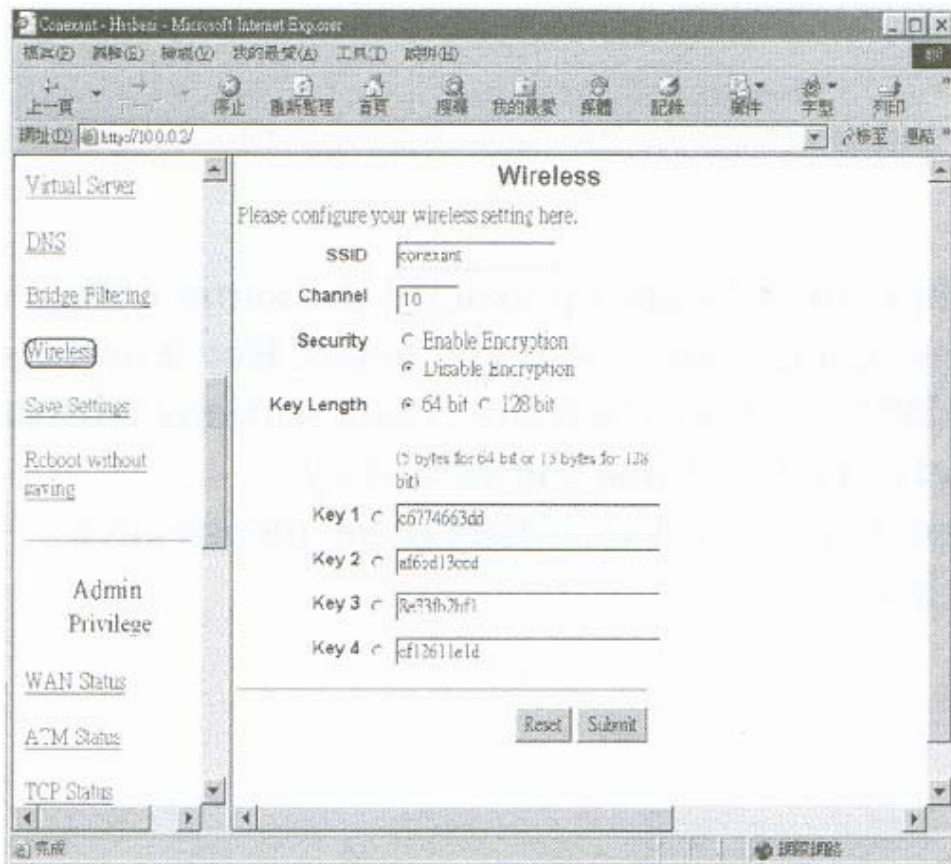   **ENCAPSULATION:** refer to the data from your ISP
   or the phone company; **BRIDGE:** select Enable, keep
   the   other setups unchanged and select
   "Submit ", then click   <u>**Save configuration.**</u>

Figure 7

2. Finished

4.3 wireless setup

SSID: The SSID is an unique ID given to this Wireless ADSL Modem. Whole wireless clients associating to this wireless LAN must have the same SSID. (e.g. default value is **conexant**)

Channel: Please select any of available channels as an operation **channel.** 1~11

Security: To select "enable encryption", it allows you to create 4 data encryption keys to secure your data transfer from eavesdropping by unauthorized wireless users. You can also enter WEP keys in Key 2, Key 3 and Key 4. WEP will use the key that you select.

- When **64 bit is selected**, type **5** bytes(alphanumeric characters) in the range of "a-z", "A-Z" and "0-9"(e.g. Honey).
- When **128 bit** is selected, type **13** bytes(alphanumeric characters) in the range of "a-z", "A-Z" and "0-9"(e.g. Mypassword123).

NOTE:

1) The WEP key must be set up exactly the same within entire this Wireless client stations. If you select Key 2 on this Wireless ADSL modem, then the client stations within this wireless network must use the same key.
2) After you modify any value of this page, please click "**Submit**" button.