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**About This Manual (V1.2)**

This manual is designed to assist users in using the router. Information in this document has been carefully checked for accuracy; however, no guarantee is given as to the correctness of the contents. The information contained in this document is subject to change without notice. Should you have any inquiries, please feel free to contact our support via E-mail, FaxLine or phone . For latest product info and features, please visit our website .

 **Copyright Declarations**

Copyright 2002 All rights reserved. This publication contains information that is protected by copyright. No part may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language without written permission from the copyright holders.

 **Trademarks**

Microsoft is a registered trademark of Microsoft Corp. Windows, Windows 95, 98, Me, NT, 2000 and XP are trademarks of Microsoft Corp. Other trademarks and registered trademarks of products referred to in this manual are the properties of their respective owners.

 **How To Become A Registered Owner**

Web registration is preferred. Alternatively, fill in the registration card and mail it to the address found on the reverse side of the card. Registered owners will receive future product and update information.

 **Safety Instructions**

- Read the installation guide thoroughly before you set up the router.
- The router is a complicated electronic unit that may be repaired only by authorized and qualified personnel. Do not try to open or repair the router yourself.
- Do not place the router in a damp or humid place, e.g. a bathroom.
- The router should be used in a sheltered area, within a temperature range of +5 to +40 Celsius.
- Do not expose the router to direct sunlight or other heat sources. The housing and electronic components may be damaged by direct sunlight or heat sources.
- Keep the packaging out of reach of children.
- When you to dispose of the router, please follow local regulations on conservation of the environment.

## **Warranty**

We warrant to the original end user (purchaser) that the router will be free from any defects in workmanship or materials for a period of three (3) years from the date of purchase from the dealer. Please keep your purchase receipt in a safe place as it serves as proof of date of purchase.

During the warranty period, and upon proof of purchase, should the product have indications of failure due to faulty workmanship and/or materials, we will, at our discretion, repair or replace the defective products or components, without charge for either parts or labor, to whatever extent we deem necessary to re-store the product to proper operating condition. Any replacement will consist of a new or re-manufactured functionally equivalent product of equal value, and will be offered solely at our discretion. This warranty will not apply if the product is modified, misused, tampered with, damaged by an act of God, or subjected to abnormal working conditions.

The warranty does not cover the bundled or licensed software of other vendors. Defects which do not significantly affect the usability of the product will not be covered by the warranty. We reserve the right to revise the manual and online documentation and to make changes from time to time in the contents hereof without obligation to notify any person of such revision or changes.

## **European Community Declarations**

Hereby, we declare that the router is in compliance with the essential requirements and other relevant provisions of R&TTE Directive 99/5/EC.

# 1

## Getting Started

### □ Introduction

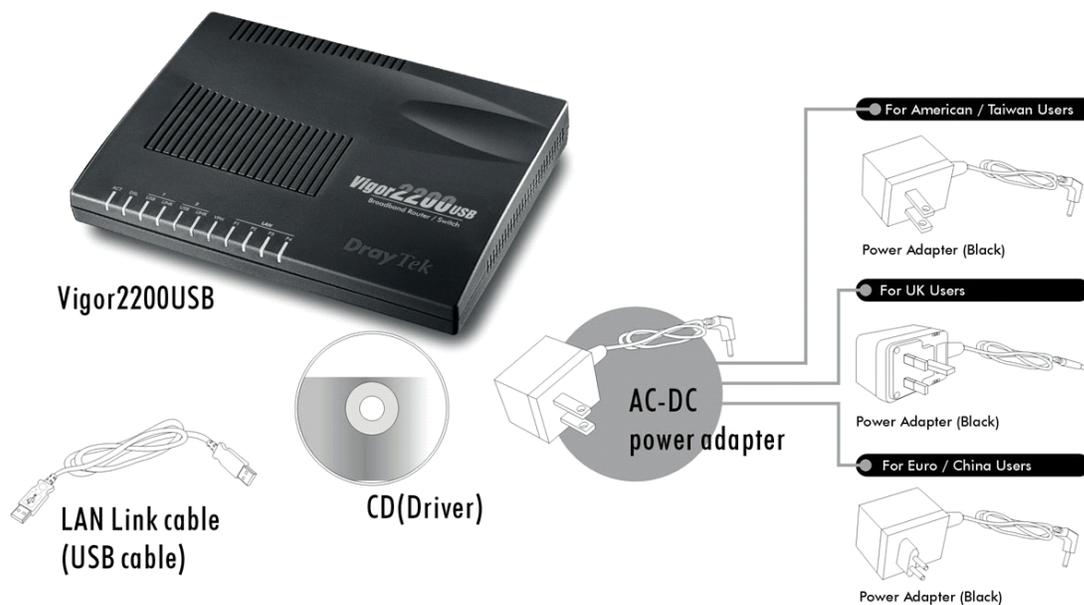
The router provides multiple users with efficient and reliable access over a DSL line to the Internet and corporate LAN for using e-mail, sharing documents, Web surfing, file transfers, etc.

The broadband access protocol for the USB port supports PPPoE, PPPoA. These protocols comply with USB-based DSL Modem standards.

### □ Unpacking Your Router

Your router package should contain the items listed below. If any item is missing or damaged, contact your dealer or our Customer Service Department immediately.

- One Quick Start User Guide with warranty/registration card
- One CD-ROM includes detailed User Manual in electronic form, latest released firmware, and utilities
- One AC/DC power adapter (black)
- One Ethernet LAN cable (blue) for connection to a computer or hub

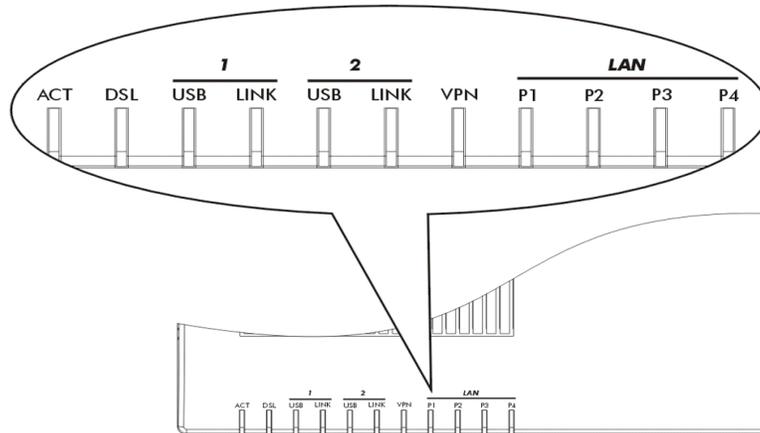


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## □ LED Indicators & Rear Panel Description

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### LED Indicators



There are eleven LEDs on the front panel; ACT, DSL, USB, LNK, USB, LNK, VPN, P1, P2, P3 and P4.

#### **ACT** (Activity)

Blinks when power is supplied to the router and the router is running normally.

#### **DSL**

ON when the DSL modem is active.

#### **USB1 Group:**

- **USB** ON when the DSL modem is ready. Blinking when there is data transferring between the router and the DSL modem.
- **LNK** ON when the PPP connection of the DSL modem is active.

#### **USB2 Group:**

- **USB** ON when the DSL modem is ready. Blinking when there is data transferring between the router and the DSL modem.
- **LNK** ON when the PPP connection of the DSL modem is active.

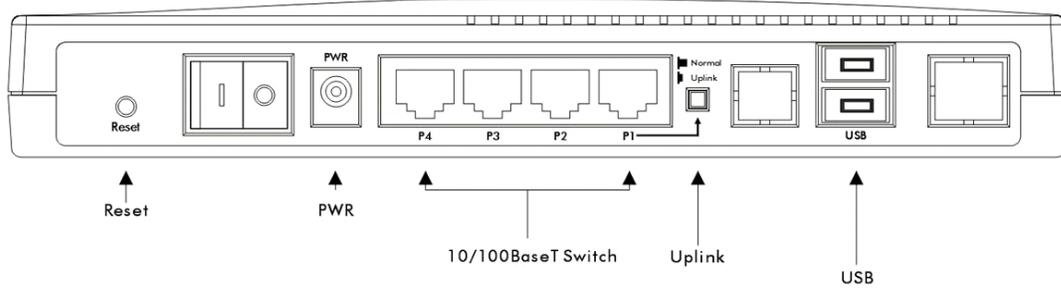
#### **VPN**

ON when the VPN function is active.

#### **P1, P2, P3, P4 (LAN)**

ON when a network card or hub is connected.

## Rear Panel Description



The router has a reset button, a power jack, four 10/100Base-T RJ-45 switch ports, an Uplink button, and 2 USB ports on the rear panel:

### Reset

For firmware upgrades: Press and hold the button, then power ON. The ACT and DSL LEDs will blink simultaneously. To restore default settings: While the device is running, press the button and hold for more than five seconds. When the ACT LED begins to blink rapidly, release the Reset button. The router will restart with the default configuration.

### PWR

Only the supplied power adapter should be connected to the power jack.

### P1, P2, P3, P4

These are 10/100Base-T Ethernet Switch ports. Connect your PCs to these ports.

### Uplink

For connecting to another hub/switch, press the Uplink button and connect the other hub/switch to the P1 port.

### USB

The DSL USB modem should be connected to one of these USB ports. For an interoperable USB DSL modem list, contact DrayTek or your dealer.

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## □ Detailed Features

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### USB Function

- Two USB ports supported
- PPPoE/PPPoA and LLC/VcMux type supported
- Easy Tool guides you through the 'USB DSL modem' firmware installation. In a few clicks you will be up and running Vigor2200USB
- DSL modem support :
  1. DrayTek dslVigor
  2. Alcatel Speed Touch USB
  3. DynaMite USB modem
  4. ECI USB modem
  5. Fujitsu USB modem
  6. Aztech DSL100U USB modem
  7. Asus DSL USB modem
  8. Prolink ADSL modem
  9. Actiontec Home DSL modem
  10. Efficient Networks Speed Stream 4060
  11. Westell wire speed
  12. ZyXEL Prestige 630
  13. Intel PРо/DSL 3220
  14. Intel PРо/DSL 3240
  15. Voyage DSL USB modem
  16. GlobeSpan DSL USB modem



### **IP Routing Protocol :**

- RIP version II

### **Firewall built-in :**

- IP-based Packet filtering with web-based configuration
- IP Antispoofing

### **Network Features :**

- VPN(Virtual Private Network): The router supports to establish a private network of computers that partially connected over the internet. The IPSec protocol is used for VPN.
- DDNS(Dynamic DNS) function for posting WAN IP address to DDNS providers.
- Call Scheduler function to activate/deactivate WAN connection by time schedules.
- Built-in four-port 10/100 Base-TX Ethernet Switch with four RJ-45 connectors.
- ARP, IP, ICMP, TCP, UDP
- Dynamic Host Configuration Protocol (DHCP) Server: This server provides an easy-to-configure function for your local IP network. It automatically assigns IP network configurations to local PCs, such as IP address, IP netmask, gateway IP address, and Domain Name Server etc.
- Network Address Translation (NAT): NAT allows multiple SOHO users to concurrently connect to an Internet Service Provider (ISP) using a single Internet access account.
- DMZ (De-Militarized Zone) supported.
- Firmware Upgrade (TFTP) Server: Using this server and the Firmware Upgrade Utility software, you may easily upgrade to the latest firmware whenever enhanced features are added.
- Web (HTTP) Server: A Web browser is the most common tool used to surf the Internet. You may use Microsoft's Internet Explorer or a Netscape browser etc, to configure the router as easily as surfing a website.

- **Domain Name Server (DNS) Proxy:** The DNS proxy maintains a DNS cache, including a mapping table of domain names and IP addresses. The proxy also remembers DNS query packets sent through the router and saves them into its own DNS cache. For enhanced speed, when a DNS query packet enters the router, the proxy searches its local DNS cache. If matched, the router sends an answer to the host that sent the DNS query packet. Only unmatched DNS queries require querying a WAN Domain Name Server.
- **Telnet Terminal Server:** The Telnet User Interface (TUI) is an efficient method of configuring and managing routers. It utilizes a traditional command-line user interface and is mainly for advanced configuration, management, and troubleshooting.
- **Built-in Flash ROM:** The Flash ROM memory saves the router firmware and configurations, even after power down.
- **Point-to-Point Protocol over Ethernet (PPPoE) Client Support:** The router has a built-in PPPoE client for establishing a DSL link connection with the ISP. There is no need to install a further PPPoE driver on your computers.
- **Firewall:** In addition to the built-in NAT mechanism, the router features another powerful firewall to protect your local network, or to deny specified local users access to unauthorized network services.

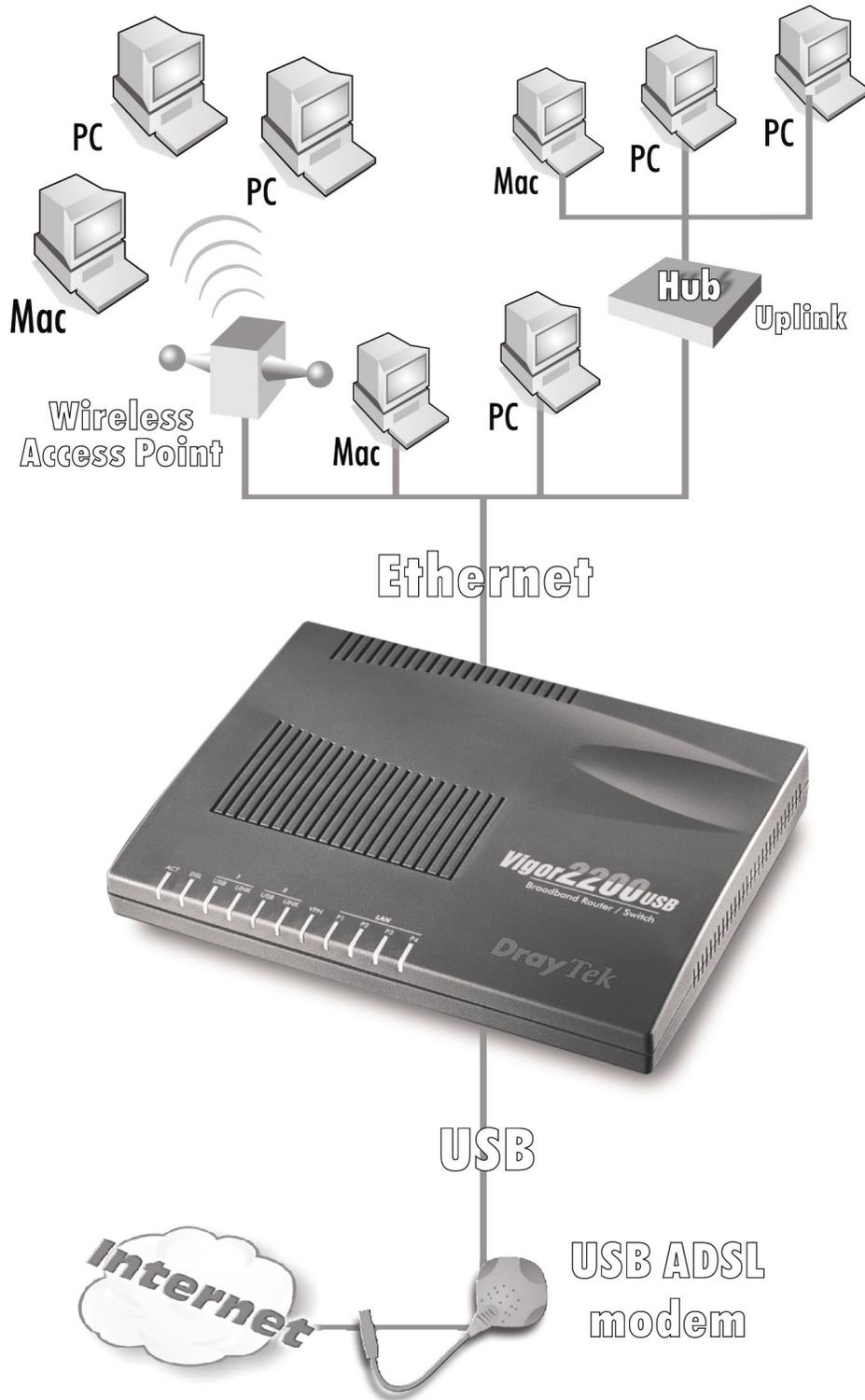
**\*\* Please refer to detailed manual on CD.**

## **Configuration and Management :**

- Web-based User Interface (WUI) Ease-of-use configuration via generic Web browser System status monitor System administrator password support
- Telnet-based teletype user interface(TUI) Text-based command line System administrator password support
- Smart Start Wizard running on Windows and Mac OS platform
- Diagnosis tools
- SNMP based network management

# 2

## Insatllation



The following steps describes how to install and configure the router with your USB ADSL modem. Please follow the instructions closely, step-by-step:

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## Preparation

---

Do not connect the USB modem to the router yet.

1. Connect the router to the PSU(Power supply unit) and an Ethernet cable between a PC and any one of the router's four Ethernet sockets.
2. If the PC is set to obtain IP address automatically (recommended), reboot the PC and ensure that it has obtained an IP address from the router (you can use Windows *winipcfg.exe* or *ipconfig.exe* to check). You can use windows *ping.exe* to check that your PC can see the router successfully (ping 192.168.1.1).
3. Insert the supplied DrayTek CD into your PC, and install the Router Tools.

## Upload ADSL modem firmware into router

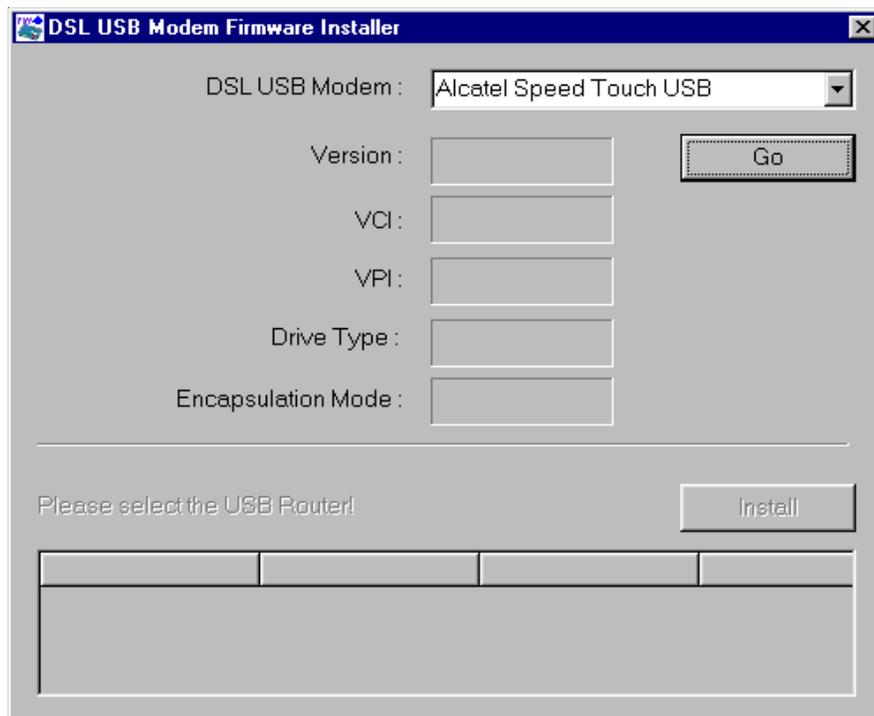
The USB modem is designed in such a way that its own firmware is loaded from the host device (PC or Vigor2200USB) every time it is initialised or restarted.

You must upload the modem firmware into the Vigor2200USB's memory so that it is available to the modem. This only ever needs to be done once; the firmware is then stored in the Vigor2200USB's non-volatile memory.

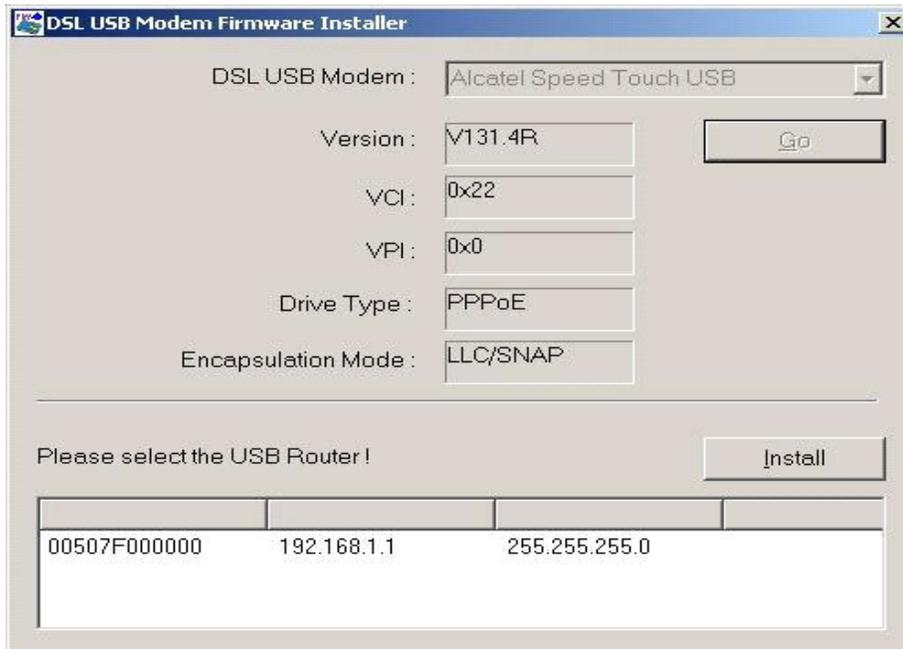
From your Windows Start Button, run the USB Modem Firmware utility :



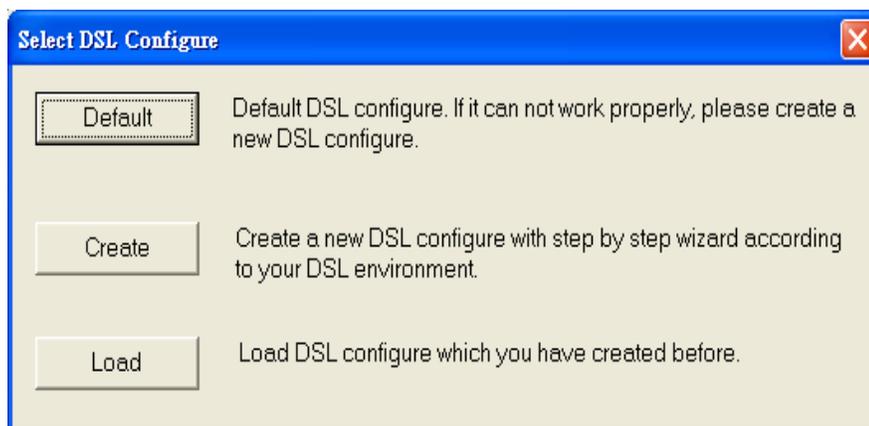
Firstly, the utility will detect your modem type. If you have more than one USB modem installed, you may need to select it in the list :



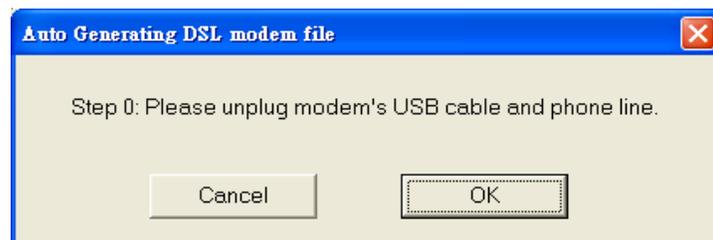
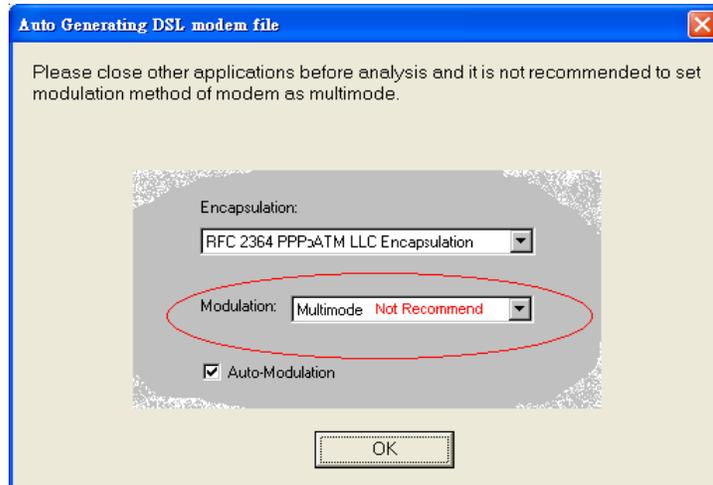
After the correct modem is selected, click **Go** and you should see some information relating to ATM settings, firmware version and the IP address of the router :



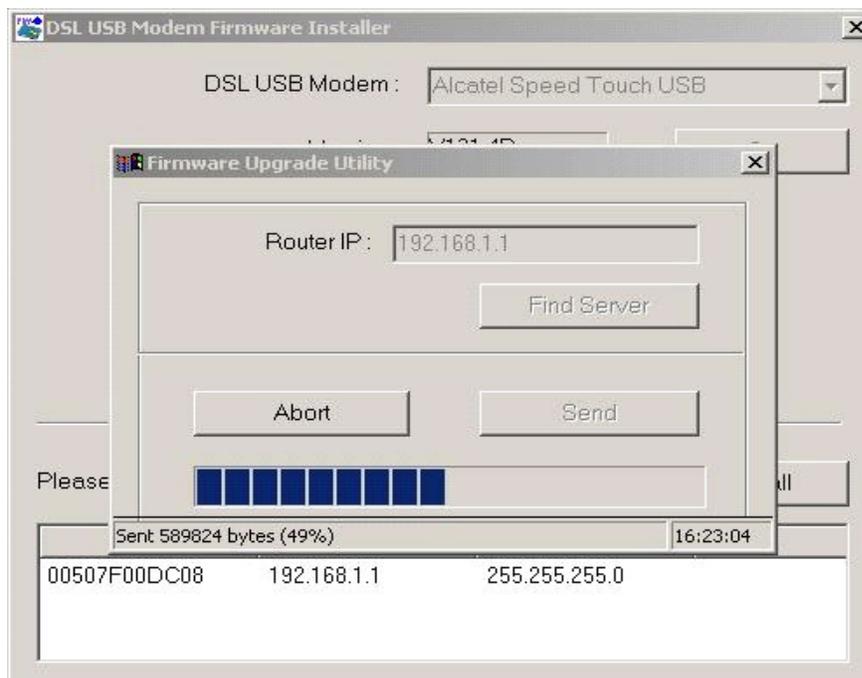
If the DSL USB modem is using GlabalSpan chipset (for example: ECI USB modem, Fujitsu USB modem ...), it will provide 3 methods for generating DSL configure which will be installed to router later. You can choose **Default** to get default setting if you have any. Once you want to create new setting according to your DSL environment(recommanded), you can click **Create**. Or, you can load the previous setting by clicking **Load**.



If you select **Create**, please follow the step by step as below.



After analyzing, press **Install** and the Modem firmware will be uploaded to the router :



## Step 2

### Configure your DSL setting details

Where as your log-in name and password was previously stored on your PC (in Dial-up networking), these details now need to be stored in the router so that it can automatically log into your ISP when required.

Open you web browser (e.g. MSIE or Netscape) and enter the router's IP address into the address bar ( <http://192.168.1.1> ). The router will ask for a username and password. There is none by default, so just click **OK**.



Enter Network Password

Please type your user name and password.

Site: 192.168.1.1

Realm: Login to the Router Web Configurator

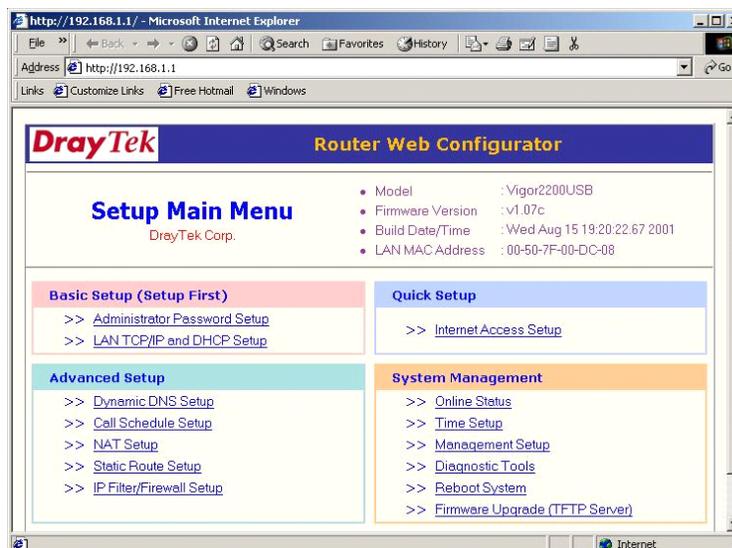
User Name:

Password:

Save this password in your password list

OK Cancel

Once past the password prompt, you will now see the router's main menu :



http://192.168.1.1 - Microsoft Internet Explorer

Address <http://192.168.1.1>

Links [Customize Links](#) [Free Hotmail](#) [Windows](#)

**DrayTek Router Web Configurator**

**Setup Main Menu**  
DrayTek Corp.

- Model : Vigor2200USB
- Firmware Version : v1.07c
- Build Date/Time : Wed Aug 15 19:20:22.67 2001
- LAN MAC Address : 00-50-7F-00-DC-08

**Basic Setup (Setup First)**

- >> [Administrator Password Setup](#)
- >> [LAN TCP/IP and DHCP Setup](#)

**Quick Setup**

- >> [Internet Access Setup](#)

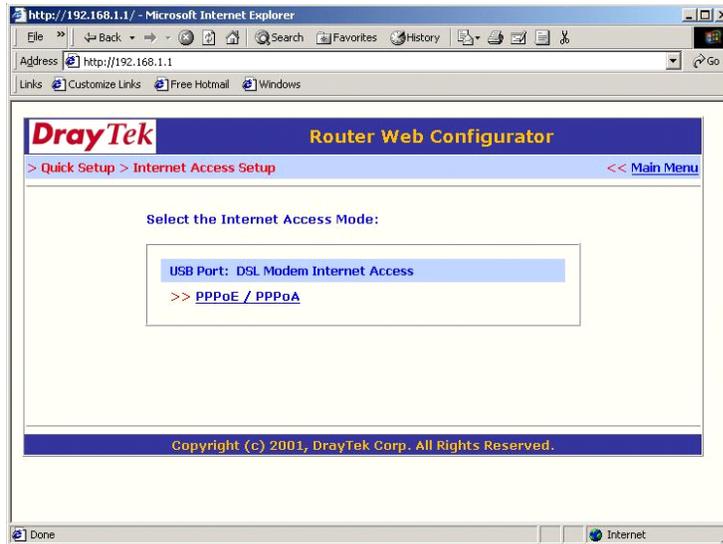
**Advanced Setup**

- >> [Dynamic DNS Setup](#)
- >> [Call Schedule Setup](#)
- >> [NAT Setup](#)
- >> [Static Route Setup](#)
- >> [IP Filter/Firewall Setup](#)

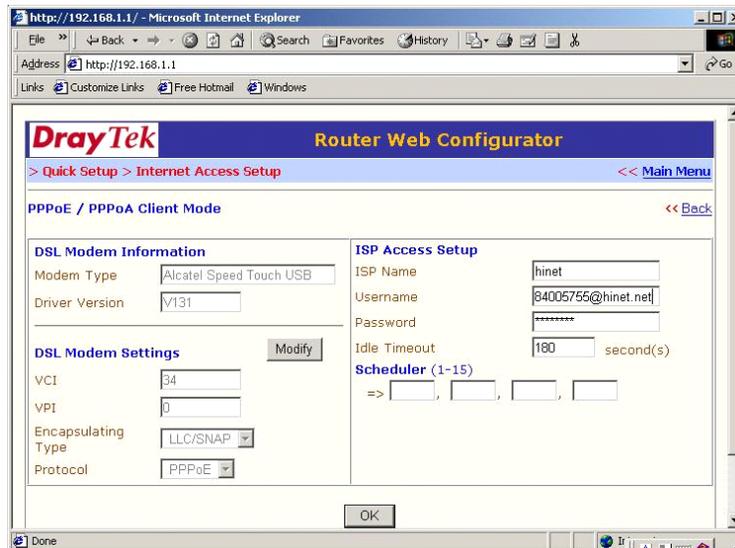
**System Management**

- >> [Online Status](#)
- >> [Time Setup](#)
- >> [Management Setup](#)
- >> [Diagnostic Tools](#)
- >> [Reboot System](#)
- >> [Firmware Upgrade \(TFTP Server\)](#)

Click on 'Internet Access Setup' on the top right-hand menu.



Click **PPPoE/PPPoA** :



Enter ISP's Name(optional) and your allocated username and password according to the information provided by your ISP. Then click **OK**.

**Connect the USB ADSL modem to your Vigor2200USB**

Connect your USB ADSL modem to either of the USB ports on the rear panel of the router. After the firmware successfully is downloaded from the router to the modem, the USB LED on the front panel should light. This procedure will take few seconds to complete.

Connect the your ADSL line to your modem. The modem should start to handshake with the central site modem and once it has connected, the DSL LED on the front of the modem should light. This will take about 10-15 seconds to complete.

From your web browser, access the Internet type in a web address. This will trigger the router to log-in to your ISP. Once the router has successfully logged in, the LNK LED will light on the front of the router. You now access to Internet from any PC. The router will stay connected to the ISP indefinitely. If you would prefer that it ends the connection after a fixed period of inactivity, you can select that in the ISP options.

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## **□ Tips for Mac/Linux/other OS users**

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Vigor2200USB router provides the 'USB ADSL modem firmware download tool' for Windows version. For Mac/Linux/other OS users, please download the USB ADSL modem firmware from a PC, with Windows OS, which has 'USB ADSL modem installed'. If the ADSL setting (VCI/VPI/Encapsulating Type/Protocol) is not same as your environment, you can modify them via the web configuration functions of Vigor2200USB router.

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## Further help

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Please refer to the detailed manual on the supplied DrayTek CD. If you have further questions, please contact your own DrayTek dealer.

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## Troubleshooting

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- (1) Download Utility shows “*Can ’t Analyze USB modem*” :  
Make sure that the drivers for your USB ADSL modem are installed on your PC correctly.
- (2) Download Utility shows “*Version not Supported*” :  
The version of your USB ADSL modem driver is not supported by the download utility.  
Please contact [support@draytek.com.tw](mailto:support@draytek.com.tw) for this issue and further support .
- (3) Download Utility shows “*TFTP Server In Router Is Not Available*” :  
The IP domain is not same as router, please re-get IP address from DHCP server of the router and try again.
- (4) USB LED does not light up after connecting the modem:  
Check if the modem firmware is correct installed into the router; from the router’s ISP setup screen, it will show the modem firmware version.
- (5) DSL LED does not light :  
Check if the phone line is connected properly and confirm that the line is in working condition by connecting the modem to your PC and testing it.
- (6) LINK LED does not light when trying to access the Internet.  
Make sure you have correctly configured your ISP’s ‘Username’ and ‘Password’ as described in the previous section.

# 3

## Router Firmware Upgrade

Before upgrading your router firmware, you need to install the **Router Tools**. The **Firmware Upgrade Utility** is included in the tools. The following steps will guide you through an upgrade. Note that the examples below use a Windows OS.

### Step 1

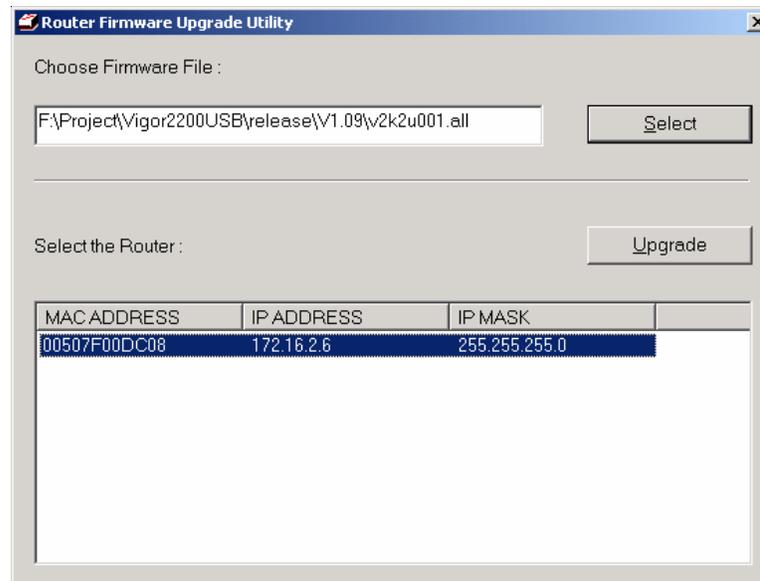
Download the latest firmware from DrayTek's web site or FTP site.

DrayTek web site : [www.draytek.com.tw](http://www.draytek.com.tw)  
(or local DrayTek's web site)

FTP site : [ftp.draytek.com.tw](ftp://ftp.draytek.com.tw) / [ftp.draytek.com](ftp://ftp.draytek.com)

### Step 2

Click 'Start > Programs > Router Tools > Router Firmware Upgrade Utility' to launch the **Firmware Upgrade Utility**.



Click the '**Browse**' button to local the new firmware file. The program will search for any Vigor routers on your LAN and display them by IP. Select the 'IP address' of the router to upgrade, then press '**Upgrade**'. Enter the router's password when asked (or press '**OK**' if there is no password). The upgrade will start and the status will be shown on the progress bar. Once the upgrade has completed, wait approximately 30 seconds and the router will be ready (ACT will resume flashing normally).

# 4

## Router Application

Establish Web & FTP server via router

Step

1

### Enable Router to Accept Accessing From Internet

Check 'Allow management from the Internet'.

'System Management >> Management Setup'

#### Management Access Control

- Allow management from the Internet
- Disable PING from the Internet

Step

2

### make the router always on line

Setting 'Idle Timeout' as -1, it will force router to connect to internet when the line is drop.

'Quick Setup >> Internet Access Setup >> PPPoE/PPPoA'

#### ISP Access Setup

ISP Name   
Username   
Password   
Idle Timeout  second(s)

#### Scheduler (1-15)

=>  ,  ,  ,

**Step 3**

**get dynamic DNS service**

The router supports the following DDNS servers. You can register an account and hostnames from the servers. For example, you can register one from <http://www.dyndns.org>.

**‘Advanced Setup >> Dynamic DNS Setup >> Dynamic DNS Account Setup’**

The screenshot shows the 'Dynamic DNS Account Setup' page. At the top left is 'Index : 1' and at the top right is '<< Back'. The main content area has a yellow background and contains the following fields and options:

- Enable Dynamic DNS Account
- Server: A dropdown menu is open, showing a list of servers: ath.cx, dnsalias.com, dnsalias.net, dnsalias.org, dslreports.com, **dyndns.org** (highlighted), homeip.net, itacs.to, merseine.nu, mine.nu, and shacknet.nu.
- Host Name: An empty text input field.
- User Name: An empty text input field.
- Password: An empty text input field.
- Wildcards
- Backup MX
- Mail Extender: An empty text input field.

After getting an account and a hostname, please input the texts and do not forget to enable it.

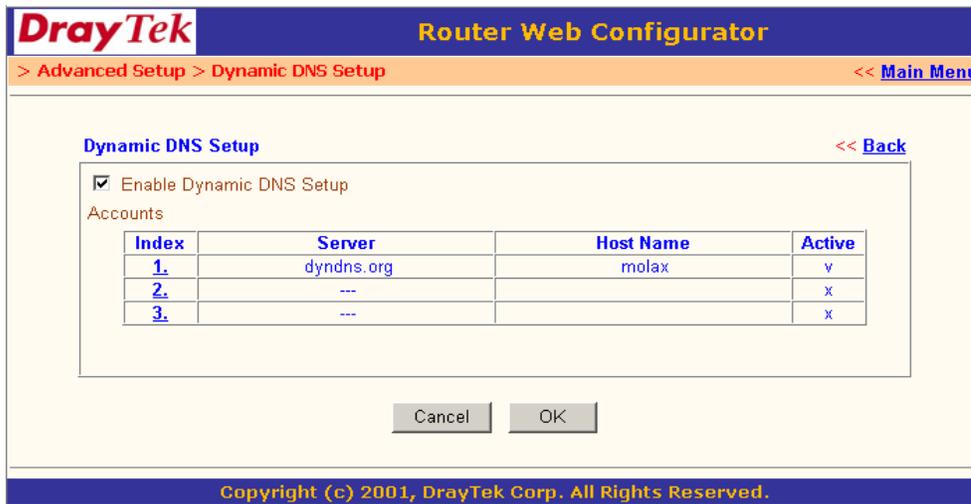
**‘Advanced Setup >> Dynamic DNS Setup >> Dynamic DNS Account Setup’**

The screenshot shows the 'Dynamic DNS Account Setup' page with the following fields filled out:

- Enable Dynamic DNS Account
- Server: A dropdown menu showing 'dyndns.org'.
- Host Name: 'molax'
- User Name: 'molax'
- Password: '\*\*\*\*\*'
- Wildcards
- Backup MX
- Mail Extender: An empty text input field.

You need also check 'Enable Dynamic DNS Setup'

'Advanced Setup >> Dynamic DNS Setup'



For this example, you can ping the domain name to make sure it works.

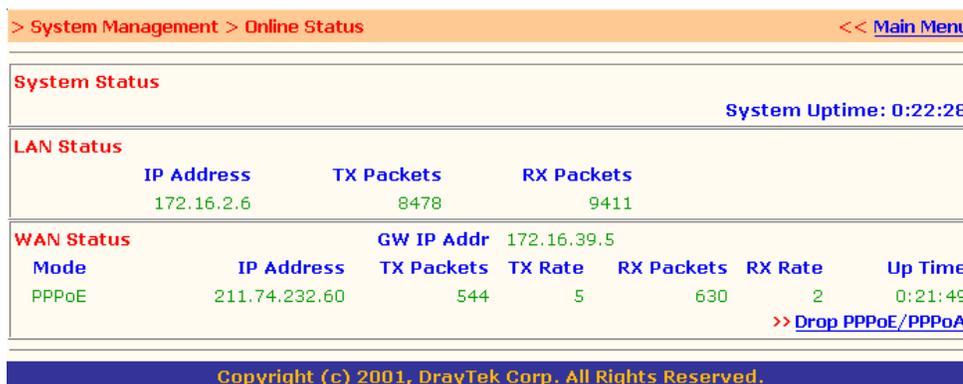
```
C:\>ping molax.dyndns.org

Pinging molax.dyndns.org [211.74.232.60] with 32 bytes of data:

Reply from 211.74.232.60: bytes=32 time<10ms TTL=255
```

You also need to check if the IP of your domain name is same as router's IP address.

'System Management >> Online Status'



**Step 4****Installing Web/FTP server**

There are many free Web servers and FTP servers. For example, 'AN HTTPD' is a simple free Web server for Win95/98/NT/2000. And 'Apache Web Server' is a quite famous free Web server for unix system. 'TYPSoft FTP Server' is a free FTP server for Win95/98/NT/2000. You can find them in internet. Get the servers and install them in the indicated PC.

**Step 5****Redirect accessing port from router to the indicated PC**

Following is the well known ports list. It is a quite important information to do port redirection.

**'Advanced Setup >> NAT Setup >> View Well-Known Ports List'**

Well-Known Ports List <span style="float: right;"><a href="#">&lt;&lt; Back</a></span>		
Service/Application	Protocol	Port Number
File Transfer Protocol (FTP)	TCP	21
SSH Remote Login Protocol (ex. pcAnyWhere)	UDP	22
Telnet	TCP	23
Simple Mail Transfer Protocol (SMTP)	TCP	25
Domain Name Server (DNS)	UDP	53
WWW Server (HTTP)	TCP	80
Post Office Protocol ver.3 (POP3)	TCP	110
Network News Transfer Protocol (NNTP)	TCP	119
Point-to-Point Tunneling Protocol (PPTP)	TCP	1723
pcANYWHEREdata	TCP	5631
pcANYWHEREstat	UDP	5632
WinVNC	TCP	5900

It is better to use fixed IP for indicated PC. The default gateway is 192.168.1.1 and the dynamic IP assigned is from 192.168.1.10. So you can choose the IP between 192.168.1.2 and 192.168.1.9 as the fixed IP address of the indicated PC.

**'Basic Setup >> Ethernet TCP/IP and DHCP Setup'**

LAN IP Network Configuration	DHCP Server Configuration
For NAT Usage	Activate : <input checked="" type="radio"/> Yes <input type="radio"/> No
1st IP Address : <input type="text" value="192.168.1.1"/>	Start IP Address : <input type="text" value="192.168.1.10"/>
1st Subnet Mask : <input type="text" value="255.255.255.0"/>	IP Pool Counts : <input type="text" value="50"/>
For IP Routing Usage : <input type="radio"/> Enable <input checked="" type="radio"/> Disable	Gateway IP Address : <input type="text" value="192.168.1.1"/>
2nd IP Address : <input type="text" value="192.168.2.1"/>	DNS Server IP Address
2nd Subnet Mask : <input type="text" value="255.255.255.0"/>	Primary IP Address : <input type="text"/>
RIP Protocol Control : <input type="text" value="Disable"/>	Secondary IP Address : <input type="text"/>

According the ports list, you can redirect the service port to the indicated PC's port.

**‘Advanced Setup >> NAT Setup >> Configure Port Redirection Table’**

Now you can provide your Web/FTP server in internet for others. The illustration is as below.

