

Vigor2200V/VG Quick Start Guide

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Safety Instructions and Approval

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 package out of reach of children.
- When you want 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 restore 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**

Hereby, we declare that the router is in compliance with the essential requirements and other relevant provisions of R&TTE Directive 99/5/EC. The Vigor2200VG is designed for the WLAN 2.4Ghz network throughout EC region, Switzerland, and the restrictions of France.

**Be a
Registered
Owner**

Web registration is preferred. You can register your Vigor router via <http://www.draytek.com/>. Alternatively, fill in the registration card and mail it to the address found on the reverse side of the card.

**Firmware &
Tools Updates**

Due to the continuous evolution of DrayTek ADSL & Router technology, all routers will be regularly upgraded. Please consult the DrayTek web site for more information on newest firmware, tools and documents.

<http://www.draytek.com/>



European Community Declarations

Manufacturer: DrayTek Corp.

Address: No. 26, Fu Shing Road, HuKou County, HsinChu
Industrial Park, Hsin-Chu, Taiwan 303

Product: Vigor2200V and Vigor2200VG Series Residential
Broadband VoIP Routers

DrayTek Corp. declares that Vigor2200V series of routers are in compliance with the following essential requirements and other relevant provisions of R&TTE Directive 1999/5/EEC.

The product conforms to the requirements of Electro-Magnetic Compatibility (EMC) Directive 89/336/EEC by complying with the requirements set forth in EN55022/Class B and EN55024/Class B.

The product conforms to the requirements of Low Voltage (LVD) Directive 73/23/EEC by complying with the requirements set forth in EN60950.

The Vigor2200VG is designed for the WLAN 2.4GHz network throughout EC region, Switzerland, and the restrictions of France.

Commission (FCC) Interference Statement

The Vigor2200V and Vigor2200VG have been tested and found to comply with the limits for a Class B digital device, pursuant to 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. Class B 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 not 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 the receiving antenna.
- Increase the separate between the equipment and the 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.

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1. Introduction of Benefits



- **Easy Internet-Sharing of your broadband* connection**
- **Robust Firewall to help protect your network from external attacks**
- **Comprehensive VPN facilities to provide cost-effective and secure methods for deployment of linked branch offices and teleworkers.**
- **Making regular phone calls over your broadband connection by simply plugging in your phone.**
- **QoS-assured VoIP facilities to deliver superior quality.**
- **Automatic failover for your Public Switched Telephone Network (PSTN) during power cuts.**
- **802.11g Compliant Wireless LAN access with security features (Vigor2200VG only).**

1.1 Brief Overview

The Vigor2200V series broadband router/Firewall with VoIP phone ports, an Internet access solution for your LAN, which provides you with the shared web surfing and countless value-added features, such as full VPN facility, Firewall / Security, VoIP, and 802.11g Wireless LAN (up to 54Mbps for Vigor2200VG only). These are all in a reliable one-box solution.

Model comparison chart:

	Vigor 2200V	Vigor2200VG
Broadband Router	*	*
VoIP	*	*
Wireless AP	-	*

What does "PSTN life line" perform on Vigor2200V and Vigor2200VG series?

The Vigor2200V series has a "Line" port on the rear panel for connecting to a PSTN (regular analogue) line. The Loop Through option can be used to set an alternate telephone number for your contact on the PSTN, which the Vigor2200V series will dial instead of the SIP account if you lose ADSL access or power to the Vigor2200V series. Hence, the PSTN line can act as a lifeline (backup mechanism) for VoIP calls. The lifeline mechanism is activated automatically but can also be manually configured.

1.2 Highlights

VoIP (Voice over IP)

- ◆ Connect a regular telephone to make and receive voice calls using your existing broadband connection, leaving your regular line free
- ◆ Make and receive calls using your regular phone line (POTS) or via VoIP using the same telephone handset
- ◆ Auto-Fallback - Phone switches to PSTN during power cut SIP, RTP/RTCP protocols compliance

WAN/Internet

- ◆ One 10/100M Base-TX port with a RJ-45 connector
- ◆ Quick Start Wizard for Internet access DHCP client for cable service
- ◆ Static IP address assignment for fixed IP networks
- ◆ PPPoE client

Firewall Facilities

- ◆ SPI (Stateful Packet Inspection) tracks packets and denies unsolicited incoming data
- ◆ Selectable DoS/DDoS protection
- ◆ Flexible URL content filtering
- ◆ User-configurable packet filtering
- ◆ NAT/PAT:
Virtual server via port redirection or open ports
DMZ host
- ◆ Supports ALGs (Application Layer Gateways) for applications

E-mail Detection

LED flashes to indicate E-mail is waiting on your mail server (POP3)

LAN

- ◆ 4-port 10/100M Base-TX Ethernet switch
- ◆ DHCP server for IP assignment (up to 253 users)

- ◆ DNS cache and proxy

Virtual Private Network (VPN)

- ◆ Supports VPN pass-through
- ◆ Up to 8 simultaneous VPN tunnels
- ◆ Dial-in or dial-out, LAN-to-LAN or Teleworker-to-LAN
- ◆ Protocol support for PPTP, IPSec, L2TP, L2TP over IPSec
- ◆ Encryption support for AES, MPPE, and hardware-based DES/3DES encryption
- ◆ Authentication support for MD5 and SHA-1
- ◆ IKE key management
- ◆ Interoperable with other leading 3rd party vendor VPN devices or software

Wireless Access Point (Vigor2200VG only)

- ◆ Supports 802.11g (54Mbps data rate)
- ◆ Backward compatible with 802.11b
- ◆ Station List
- ◆ Wireless security:
64/128 bits WEP wireless encryption
WPA/PSK encryption
Client MAC-address locking
SSID stealth

Application Support

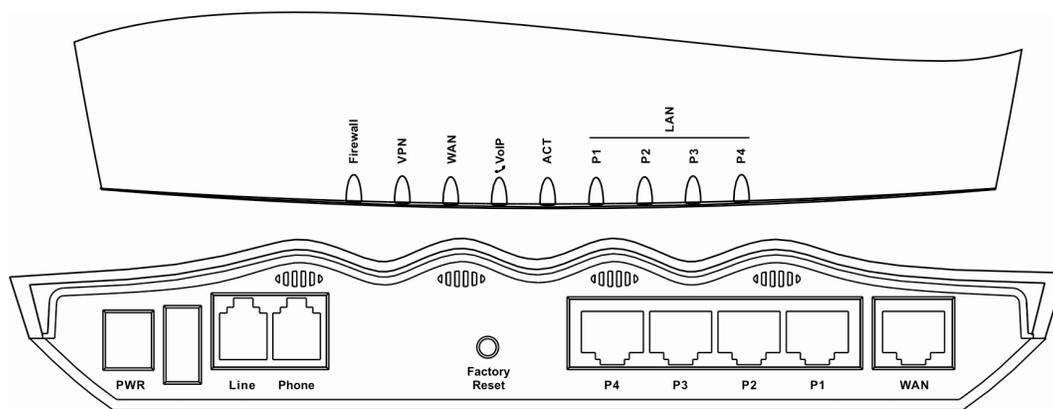
- ◆ Supports VPN pass-through
- ◆ MSN Messenger V6.2, online gaming, and other multimedia applications
- ◆ UPnP protocol enables router control and enhances access for UPnP -ready multimedia applications

Router Management

- ◆ Web-based User Interface
- ◆ Command Line Interface (Telnet)
- ◆ Telnet Remote Access Support
- ◆ Built-in Diagnostic Function
- ◆ Syslog Monitoring

1.3 Front Panel LEDs and Rear Panel Interfaces

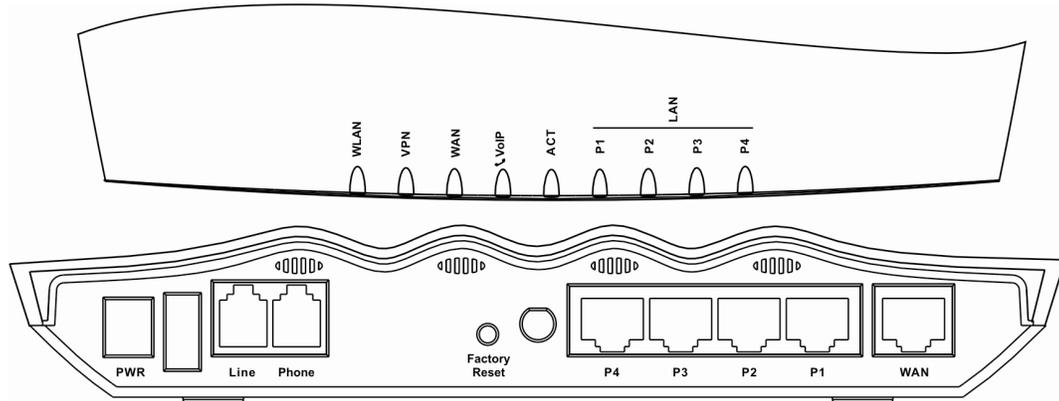
1.3.1 Vigor2200V



LED	Status	Explanation
Firewall	on	The firewall function is active.
	blinking	When encountering DoS attacks.
VPN	on	The VPN function is active.
WAN	orange	A normal 10Mbps connection is through its corresponding port.
	green	A normal 100Mbps connection is through its corresponding port.
	blinking	Ethernet packets are transmitting.
VoIP	green	Solid light when the handset of phone is picked up (off hooked).
		Blinking per 2 seconds when phone is connected through VoIP.
	orange	Solid light when phone call is via PSTN life line.
ACT (Activity)	on	The router is powered on and running properly.
	orange	A normal 10Mbps connection is through its corresponding port.
LAN (P1, P2, P3, P4)	green	A normal 100Mbps connection is through its corresponding port.
	blinking	Ethernet packets are transmitting.

Interface	Description
PWR	Connect the included power adapter to the power outlet.
Line	Connect to the analog phone line for PSTN life line.
Phone	Connect to the analog phone for VoIP communication.
WAN	Connect the Cable/ADSL modem to access the Internet.
Factory Reset	Restore the default settings. Usage: Turn on the router (ACT LED is blinking), press the hole and keep for more than 5 seconds. When the ACT LED begins to blink rapidly, release the button. Then the router will restart with the factory default configuration.
P1, P2, P3, P4	Connect to the local network devices.

1.3.2 Vigor2200VG



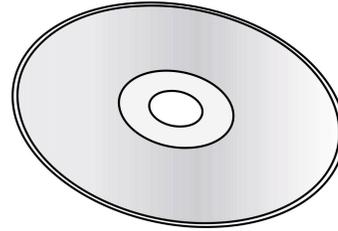
LED	Status	Explanation
WLAN	on	The Wireless LAN function is active.
	blinking	Data packets are transmitted over Wireless LAN.
VPN	on	The VPN function is active.
WAN	orange	A normal 10Mbps connection is through its corresponding port.
	green	A normal 100Mbps connection is through its corresponding port.
	blinking	Ethernet packets are transmitting.
VoIP	green	Solid light when the handset of phone is picked up (off hooked).
		Blinking per 2 seconds when phone is connected through VoIP.
	orange	Solid light when phone call is via PSTN life line.
ACT (Activity)	on	The router is powered on and running properly.
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Interface	Description
PWR	Connect the included power adapter to the power outlet.
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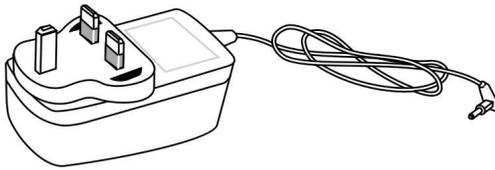
1.4 Package Contains



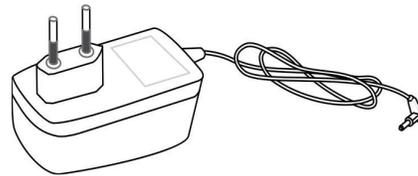
Quick Start Guide



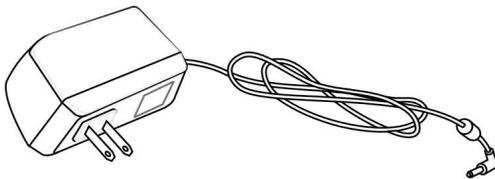
CD



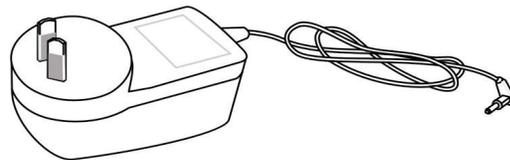
UK-type power adapter



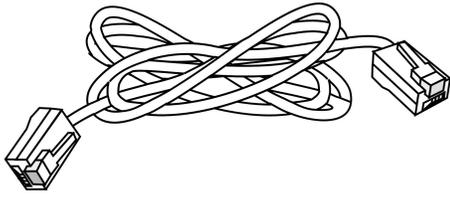
EU-type power adapter



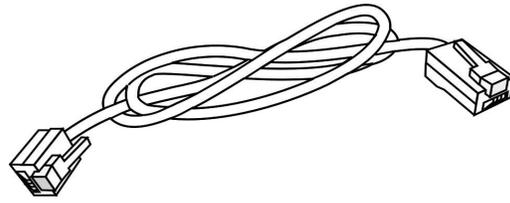
USA/Taiwan-type power adapter



AU/NZ-type power adapter



RJ-45 (Ethernet)



RJ-11 to RJ-11



Antenna for V220VG

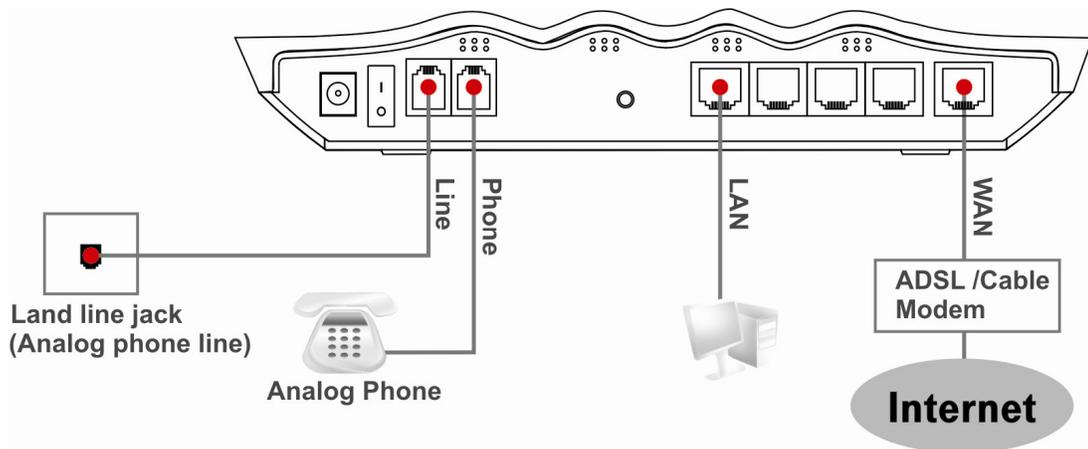
2. Quick Install Your Vigor2200V/VG Router

2.1 Hardware Installation

Before starting to configure the router, you have to connect your devices correctly.

1. Connect the WAN interface to the external Cable/ADSL modem with a RJ-45 cable.
2. Connect one port of 4-port switch to your computer with a RJ-45 cable.
3. Connect the attached power adapter to the power port.
4. Check the ACT and WAN, LAN LEDs to assure network connections.
(Regarding the detailed LED status explanation, please refer to section 1.3)

Connection scenario is shown as below:



⚠ Caution The FXS port can be connected to an analog phone only. Do not connect the FXS port to the telephone wall jack. This connection might damage your router.

2.2 Configure Your Router via Quick Start Wizard

Introduction

The Quick Start Wizard is designed for you to easily set up your broadband Internet access. We already integrated Quick Start Wizard into the Web Configurator of Vigor2200V/VG series. You can directly access the Quick Start Wizard via Web Configurator.

You can also find the **Ez Configurator** from the router tool of firmware CD enclosed with the package. As considering the convenience, we suggest you to set up the Internet access via Quick Start Wizard built-in within the web configurator.

Configure Your Router via Quick Start Wizard

- Step 1.** Open the web browser on a PC which is connected to the router and then link to the gateway IP address of the router (the default setting is **192.168.1.1**). Once your link (**http://192.168.1.1**) is successful, a pop-up window will open to ask for username and password. Leave the default null value and press **OK** to continue.



If you fail to access to the web configuration, please refer to “Trouble Shooting” guide.

Step 2. The **Main Menu** will pop out after completing previous step.



Step 3. Now Quick Start Wizard is switched on. Enter login password. Then click **Next** to continue.

Steps	Enter login password
1. Enter login password 2. Select Time Zone 3. Connect to the Internet 4. Summary	There is no default password. For security, please choose a set of number or character (maximum 23 characters) as your password and enter it into the Password box. New Password <input data-bbox="963 1052 1219 1083" type="text"/> Retype New Password <input data-bbox="963 1129 1219 1161" type="text"/>

Step 4. Select the appropriate TIME ZONE for your location.

Select Time Zone

Select the appropriate time zone for your location.

(GMT+03:00) Moscow, St. Petersburg

Step 5 Select the appropriate Internet connection type to your ISP.

Connect to the Internet

Select one of the following Internet Access type provided by your ISP. If you are not sure which one you should choose, please contact your ISP to get these information in detail.

- PPPoE
- PPTP
- Static IP
- DHCP

In terms of several Internet connection type, please follow procedures as below:

**PPPoE
users**

Enter your user name and password provided by your ISP.

Connect to the Internet

Enter the user name and password provided by your ISP.

User Name	<input type="text"/>
Password	<input type="text"/>
Retype Password	<input type="text"/>
Connection Type	
<input type="radio"/> Always On	
<input checked="" type="radio"/> Dial On Demand	
Idle Timeout	<input type="text" value="180"/>

Dial on Demand : The router will ONLY connect to your ISP on demand. By “on demand”, it means when any LAN user attempt to send data onto the Internet. When there is no data traffic, the router will close the connection to the ISP because there is no demand.

Idle timeout: This is the time setting If there being no Internet traffic for a period, for example 10 minutes.

Always On: The router will keep a permanent connection to the ISP automatically.

**PPTP
users**

Enter your user name and password provided by your ISP.

Connect to the Internet

Enter the user name, password, WAN IP configurations and PPTP server IP provided by your ISP.

User Name

Password

Retype Password

WAN IP Configurations

Obtain an IP address automatically

Specify an IP address

IP Address . . .

Subnet Mask 255 . 255 . 255 . 0

PPTP Server IP . . .

Obtain an IP address automatically: Set the WAN interface as a DHCP client that will ask for the IP network settings from the DHCP server or PPTP-enabled DSL modem.

Specify an IP address: If you are not sure whether there are any DHCP services on the WAN interface, you can manually assign an IP address to the interface. Note that the IP Address and Subnet Mask should be assigned within the same network as the PPTP-enabled DSL modem.

**Static
IP**

Enter the static (fixed or permanent) IP address that your ISP offers to you.

Connect to the Internet

Enter the Static IP configuration provided by your ISP.

WAN IP 172 . 16 . 2 . 84

Subnet Mask 255 . 255 . 255 . 0

Gateway 172 . 16 . 2 . 5

Primary DNS . . .

Secondary DNS . . . (optional)

WAN IP address: this is the IP address assigned by your ISP for your router. You shall specify the IP address of the router here. e.g. 172.16.2.84

Subnet Mask: an address code that determines the size of the network; this is the subnet mask of the router, when seen by external users on the Internet (including your ISP). The subnet mask is provided by your ISP. e.g. 255.255.255.0

Gateway IP Address: an IP address forwards Internet traffic from your local area network (LAN) . e.g. 172.16.2.5

DNS Server IP address: you must specify DNS server IP address here if your ISP has the said address. If you do not specify it, the router will automatically apply default DNS Server IP address: 194.109.6.66 to this field.

DHCP

Some Cable ISPs require user to provide or specify MAC address for access authentication purpose. You can either manually enter the MAC address in the MAC Address fields or clone from your network adapter.

Connect to the Internet

If your ISP require you to enter a specific host name or specific MAC address, please enter it in. The **Clone MAC Address** button is used to copy the MAC address of your Ethernet adapter to the Vigor2100V.

Host Name (optional)

MAC - - - - - (optional)

Step 6 Review the summary of settings.

Summary

Please find your settings :

Internet Access : DHCP

Time Zone : (GMT) Greenwich Mean Time : Dublin

Click **Back** to modify changes if necessary. Otherwise, click **Finish** to save the current settings and restart the Vigor2200V.

We also have the **Ez Configurator** in the product CD. Once if you already followed the previous section 2.2 Configure your Router via Quick Start Wizard and were able access the Internet successfully, you will NOT need to use **Ez Configurator** from the CD configure your Vigor Router again.

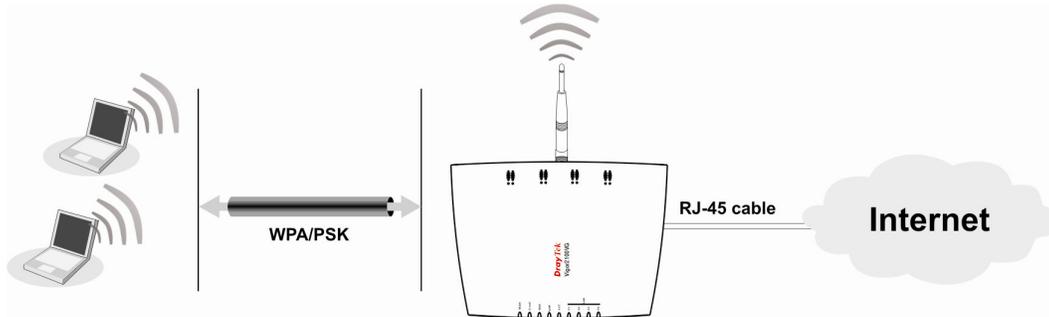
Vigor2200V/VG series apply efficient codecs designed to make the best use of available bandwidth. Vigor2200V/VG also equips with **automatic QoS assurance**. QoS Assurance assists to assign higher priority to voice traffic via Internet for better talking/hearing enjoyment. To achieve that, you will always have the required inbound and outbound bandwidth that is prioritized exclusively for Voice traffic over Internet. Your data will arrive a little bit later in a tolerable manner.



On the bottom of Web Configurator window, you can find messages showing the system interaction with you.

- **“Ready”** indicates the system is ready for you to input settings.
- **“Settings Saved”** means your settings are saved once you click “Finish” or “OK” button.

3. Wireless LAN Settings



This section will guide you to operate the capabilities of Wireless LAN instantly on the router. Please follow the menu tree of the **Wireless LAN** configuration below to set up wireless function.

Wireless LAN >> **General Settings**
Security
Access Control
Station List

The Frequency Domain is set as Europe and the MAC address is shown as above.

(The default value of Frequency Domain was set by factory depends on the reselling region.)

3.1 General Settings

Click **General Settings** to configure the Service Set Identifier (SSID) and wireless channel.

Enable Wireless LAN

Mode :

Scheduler (1-15) , , ,

SSID :

Channel :

Hide SSID

Long Preamble

SSID :
wireless LAN Service Set ID.

Hide SSID :
the scanning tool can't read the SSID when sniffing radio.

Channel :
select the frequency channel of wireless LAN.

Long Preamble:
enable this only when meeting connectivity problems for some old 802.11b devices; otherwise, it reduces the performance.

- 1. Enable Wireless LAN:**
Check the box to enable wireless function.
- 2. Mode:**
Select an appropriate wireless mode.
 - ♦ **Mixed (11b+11g):** The radio can support both IEEE802.11b and IEEE802.11g protocols simultaneously.
 - ♦ **11g-only:** The radio only supports IEEE802.11g protocol.
 - ♦ **11b-only:** The radio only supports IEEE802.11b protocol.
- 3. Scheduler:**
Set the wireless LAN to work at some time interval only. You may choose up to 4 out of 15 schedules that should be defined under **Advanced Setup > Call Schedule Setup**. Please refer to the User's Guide in the product CD.
- 4. SSID and Channel:**

The default SSID is "default". We suggest you change it to a particular name. In this case, SSID was changed to "DrayTek".

- ♦ **SSID (Service Set Identifier):** It is used to name the wireless LAN, and must have the same content in client PC/notebook wireless card(s). SSID can be any text numbers or various special characters.
- ♦ **Channel:** A wireless channel for the router. The default channel is 6. You can change it to more appropriate one if the selected channel is under serious interference.

5. **Hide SSID:**

Check it to prevent from wireless sniffing and make it harder for unauthorized clients to join your wireless LAN.

6. Click **OK** to save settings.

3.2 Security

Click **Security** to configure the security options.

Mode:	WEP Only <input type="button" value="v"/>
WPA:	
Encryption Mode:	TKIP
Pre-Shared Key(PSK)	*****
Type 8~63 ASCII character or 64 Hexadecimal digits leading by "0x", for example "cfgs01a2..." or "0x655abcd....".	
WEP:	
Encryption Mode:	64-Bit <input type="button" value="v"/>
Use	WEP Key
<input checked="" type="radio"/> Key 1 :	*****
<input type="radio"/> Key 2 :	*****
<input type="radio"/> Key 3 :	*****
<input type="radio"/> Key 4 :	*****
For 64 bit WEP key	
Type 5 ASCII character or 10 Hexadecimal digits leading by "0x", for example "AB312" or "0x4142333132".	
For 128 bit WEP key	
Type 13 ASCII character or 26 Hexadecimal digits leading by "0x", for example "0123456789abc" or	

1. **Mode:**

Select an appropriate encryption to improve the security and privacy of your wireless data packets.

- ◆ **Disable:** Turn off the encryption mechanism.
- ◆ **WEP Only:** Accepts only WEP clients and the encryption key should be entered in WEP Key.
- ◆ **WEP or WPA/PSK:** Accepts WEP and WPA clients simultaneously and the encryption key should be entered in WEP Key and PSK respectively.
- ◆ **WPA/PSK Only:** Accepts only WPA clients and the encryption key should be entered in PSK.

2. **WPA Encryption:**

The WPA encrypts each frame transmitted from the radio using the pre-shared key (PSK) which entered from this panel.

Pre-Shared Key (PSK): Either 8~63 ASCII characters or 64 Hexadecimal digits leading by 0x can be entered. For example "0123456789ABCD...." or "0x321253abcde.....".

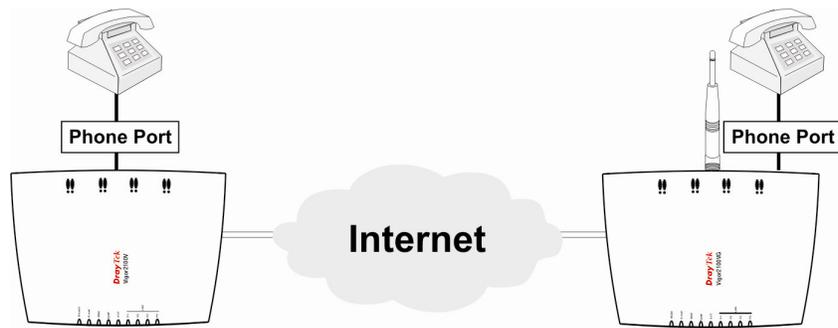
3. **WEP Encryption:**

- ◆ **64-Bit:** For 64bits WEP key, either 5 ASCII characters or 10 hexadecimal digitals leading by 0x can be entered. For example, ABCDE or 0x4142434445.
- ◆ **128-Bit:** For 128bits WEP key, either 13 ASCII characters or 26 hexadecimal digits leading by 0x can be entered. For example, ABCDEFGHIJKLM or 0x4142434445464748494A4B4C4D.

NOTE: 128 bits WEP is most secure, but has more encryption/decryption overhead. Note that all wireless devices must support the same WEP encryption bit size and have the same key. Four keys can be entered here, but only one key can be selected at a time. The keys can be entered in ASCII or Hexadecimal. Click the circle under **Use** next to the key you wish to use.

4. Click **OK** to save settings.

4. VoIP Settings



Caution The FXS port can be connected to an analog phone only. Do not connect the FXS port to the telephone wall jack. This connection might damage your router.

The following is the menu tree of the **VoIP** configuration.

```
VoIP >> DialPlan
          SIP Related Function
          CODEC / RTP / DTMF
          Voice Call Status
          QoS
```

4.1 DialPlan Setup

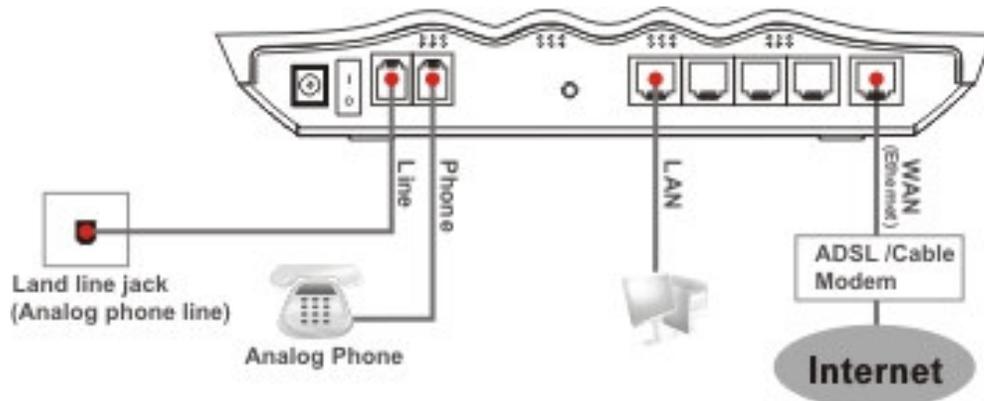
The Vigor2100V/VG series have one FXS port (the “Phone” port on the rear panel) to which you connect a conventional (analogue) phone, either corded or wireless (DECT). You can set the registered SIP address of your VoIP contacts into the DialPlan of the Vigor2100V/VG series to make calling them quick and easy. There are 60 entries in the DialPlan for you to store all your friends and family members SIP address.

There are examples of two-DialPlan-index shown below:

DialPlan Configuration

Index	Phone number	Display Name	SIP URL	Loop through	Backup Phone Number	Status
<u>1.</u>	12	Dolly	63065@fwd.pulver.com	None	34392034	v
<u>2.</u>	234	Kathy	393910@draytel.org	PSTN	4632413	v
<u>3.</u>				None		x
<u>4.</u>				None		x

The hardware connection of Vigor2100V series:



Example 1:

If Dolly gives you her SIP URL as **sip:63065@fwd.pulver.com**, then you can enter the number just as the figure below. You can apply easy-to-search Display Name and Phone Number to settings.

Index No. 1

<input checked="" type="checkbox"/> Enable	
Phone Number	: 12
Display Name	: Dolly
SIP URL	: 63065 @ fwd.pulver.com
Loop through	: None
Backup Phone Number	: 34392034

Example 2:

If Kelly gives you her SIP URL as **sip:kelly@203.69.175.19** and **PSTN number is 5972727** then you can enter the DialPlan as:

Phone Number: (any number you like)
Display Name: Kelly
SIP URL: Kelly@203.69.175.19
Loop through: PSTN
Backup phone number: 5972727

Index No. 2

<input checked="" type="checkbox"/> Enable	
Phone Number	: 234
Display Name	: Kathy
SIP URL	: 393910 @ draytel.org
Loop through	: PSTN <input checked="" type="checkbox"/>
Backup Phone Number	: 4632413

Example 3:

If Kelly gives you her IP address 203.69.175.19 only, and it is not in your DialPlan, you still can press keypad on the phone to dial as **#203*69*175*19#**

The detail explanation of the index window:

Enable	Tick this to enable this entry.
Phone Number	The number you want to dial from your handset to call this contact. This can be any number you choose, using digits 0-9 and*
Display Name	This field contains a name or a number that easily let you identify the person who you wan to call. It can also be the name for SIP display.
SIP URL Address	Enter the SIP address of your contact (e.g. 393910@draytel.org)
Loop Through	<p>The Vigor2200V/VG series have a “Line” port on the rear panel for connecting to a PSTN (regular analogue) line. The Loop Through option can be used to set an alternate telephone number for your contact on the PSTN, which the Vigor2200V/VG series will dial instead of the SIP account if you lose broadband access or power to the Vigor2200V/VG series.</p> <p>Hence, the PSTN line can act as a lifeline (backup mechanism) for VoIP calls. The default is VoIP mode. The lifeline mechanism is activated automatically if you specify “PSTN” as Loop Through and enter Backup Phone Number.</p>
Backup Phone Number	The alternate PSTN number to dial if “PSTN” is set in Loop Through entry.



To manually dial the backup number **via PSTN** enter “#0” on your telephone handset, and then dial a PSTN phone number. If you are worried that the automatic loop through might over charge your PSTN phone number, we recommend you not to enter your PSTN phone number into the “Backup Phone Number” entry. That way you can only run loop through by manually dialing a PSTN number.

4.2 SIP Related Function Setup

Once you are registered with a SIP Server (e.g. **DrayTEL**) set your SIP username and password in the appropriate boxes (detailed explanation below). In the Registrar box enter the entire domain of the SIP server – everything after the @ sign of your SIP address. Click **OK** and your router will log onto the SIP server.

SIP

SIP Port	:	<input type="text" value="5060"/>	
Registrar	:	<input type="text" value="draytel.org"/>	
Proxy	:	<input type="text" value="draytel.org"/>	<input type="button" value="Duplicate"/>
Domain/Realm	:	<input type="text" value="draytel.org"/>	<input type="button" value="Duplicate"/>
<input checked="" type="checkbox"/> Stun Server	:	<input type="text"/>	

Ports Setting

Port 1			
<input checked="" type="checkbox"/> Use Registrar			
Display Name	:	<input type="text" value="Tina"/>	
Account Name	:	<input type="text" value="899999"/>	
Authorization User	:	<input type="text" value="899999"/>	<input type="button" value="Duplicate"/>
Password	:	<input type="password" value="••••••"/>	
Expiry Time	:	<input type="text" value="2 hours"/>	<input type="button" value="v"/>

In the “**VoIP Call Status**” you will find an “R” indicating you have registered with your SIP server.

VoIP >> VoIP Call Status

VoIP Call Status

Channel Volume:

Refresh Seconds:

Channel Status	Codec	PeerID	Connect Time	Tx Pkts	Rx Pkts	Rx Losts	Rx Jitter (ms)	In Calls	Out Calls	Volume Gain
1 (R)	ACTIVE 729A/B	470091 <470091@fwd.pulve(40	3798	4039	186	11	2	0	5

(R) : Means you have registered your SIP server

The detail explanation of the SIP and Port settings window:

SIP Port	The port number used to send/receive SIP message for building a session. The default value is 5060 and this must match with the peer Registrar when making VoIP calls.
Registrar	Enter the domain name (or IP address) of your registered SIP Registrar server.
Proxy	You can enter domain name or IP address of SIP proxy server. If this setting value is the same as Registrar, please press "Duplicate".
Domain/Realm	You can enter domain name or IP address of SIP URL. e.g., if SIP URL is sip:63065@fwd.pulver.com , then this field contains fwd.pulver.com . If this setting value is the same as Registrar, please press "Duplicate".
Stun Server	This setting defines whether the Vigor2200V/VG NAT traversal mechanism is enabled (by checking checkbox) or not. If activated, please also specify IP address of STUN server. Under this mode, VoIP communication from Vigor2200V/VG can pass through with the specified STUN server behind firewall/NAT.
Use Registrar	With the Registrar domain entered above, check this box to let the Vigor2200V/VG use the SIP Registrar.
Display Name	This field contains a name or a number which easily let you identify the person who you wan to call. It can also be the name for SIP display.
Account Name	Enter your SIP username (the first part of your SIP address before the @ sign)
Authorization User	This field contains a name or a number. It is also the name for SIP Authorization. If this setting value is the same as Display Name, please press "Duplicate".
Password	Your SIP URL address as provided when you registered with a SIP service.
Expire Time	The time duration that your SIP registrar server keeps your registration record. Before the time expires the Vigor will issue another register message to registrar server again.

4.3 Calling Scenario

4.3.1 Peer-to-Peer Calling example

Arnor and Paulin each have a Vigor2500V router, here are their settings in order to call each other.

Arnor's IP address: **214.61.172.53**
Paulin's IP address: **203.69.175.24**

A. Arnor's settings

A-1. DialPlan index 1

Phone Number: **1234**
(any number you like)
Name: **paulin**
IP Address / Domain: **203.69.175.24**

A-2. SIP Related Function

SIP Port: **5060(default)**
Registrar: **(leave blank)**
Port 1:
Use Registrar: **(leave blank)**
Name: **arnor**
Password: **(leave blank)**
Expiry Time: **(use default value)**

A-3. CODEC/RTP/DTMF

(use default value)

B. Paulin's settings

B-1. DialPlan index 1

Phone Number: **123**
(any number you like)
Name: **arnor**
IP Address / Domain: **214.61.172.53**

B-2. SIP Related Function

SIP Port: **5060(default)**
Registrar: **(leave blank)**
Port 1:
Use Registrar: **(leave blank)**
Name: **paulin**
Password: **(leave blank)**
Expiry Time: **(use default value)**

B-3. CODEC/RTP/DTMF

(use default value)

C. Now, when Arnor wants to call Paulin, he picks up the phone and dials **1234#**.

D. When Paulin wants to call Arnor, she picks up the phone and dials **123#**

4.3.2 Calling via SIP Sever

Below are the settings for John and David to call each other using their DrayTEL registered SIP accounts, as neither Vigor user have a fixed public IP address.

John's SIP url: **john@draytel.org**
David's SIP url: **david@draytel.org**

A. John's settings

A-1. DialPlan index 1

Phone Number: **2536**
(any number you like)
Name: **david**
IP Address / Domain: **draytel.org**

A-2. SIP Related Function

SIP Port: **5060**
Registrar: **draytel.org**

Port 1:
Use Registrar: **(checked)**
Name: **john**
Password: *********
(enter John's registrar password)
Expiry Time: **(use default value)**

A-3. CODEC/RTP/DTMF

(use default value)

B. David's settings

B-1. DialPlan index 1

Phone Number: **8989**
(any number you like)
Name: **john**
IP Address / Domain: **draytel.org**

B-2. SIP Related Function

SIP Port: **5090**
Registrar: **draytel.org**

Port 1:
Use Registrar: **(checked)**
Name: **david**
Password: *********
(enter David's registrar password)
Expiry Time: **(use default value)**

B-3. CODEC/RTP/DTMF

(use default value)

C. Now, when John wants to call David, he picks up the phone and dials **2536#**.

D. When David wants to call John, he picks up the phone and dials **8989#**

5. Trouble Shooting

This section will guide you to solve abnormal situations. Please follow the below steps to check your basic installation.

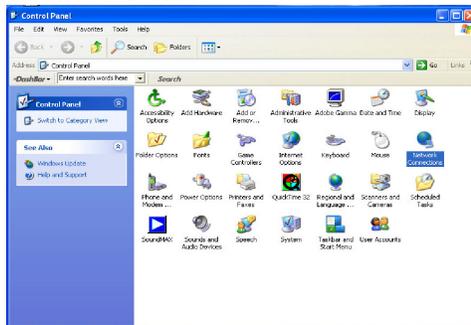
Step 1. Is the Hardware Status OK?

1. Check the power line and WLAN/LAN cable connections. Refer to the Quick Installation Guide “2.1 Hardware Installation” section for details.
2. Turn on the router, check if the **ACT LED** blink once per second and the correspondent **LAN LED** is bright.

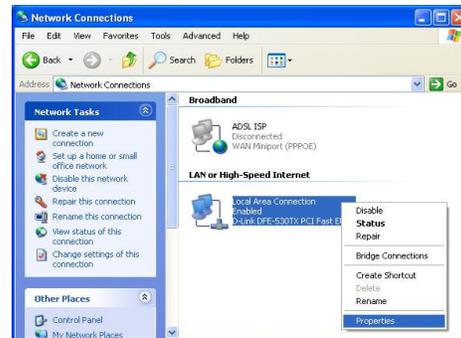
Step 2. Are the Network Connection Settings on Your PC OK?

The following example is based on Windows XP case. Regarding to the examples of other OSs, please refer to the similar steps or find support notes in www.draytek.com.

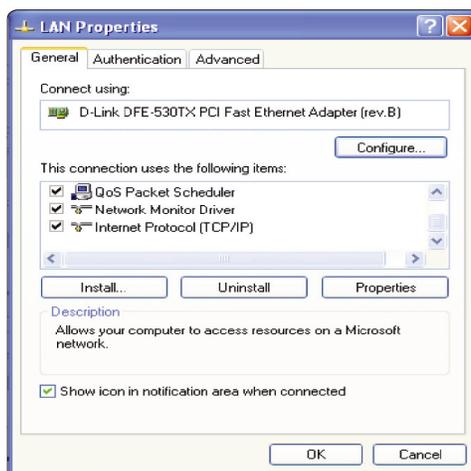
1. Go to **Control Panel** and then double-click on **Network Connections**.



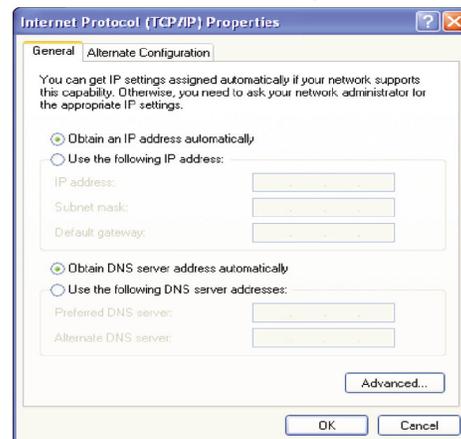
2. Right-click on **Local Area Connection** and click on **Properties**.



3. Select on **Internet Protocol (TCP/IP)** and then click **Properties**.



4. Select **Obtain an IP address automatically** and **Obtain DNS server address automatically**.

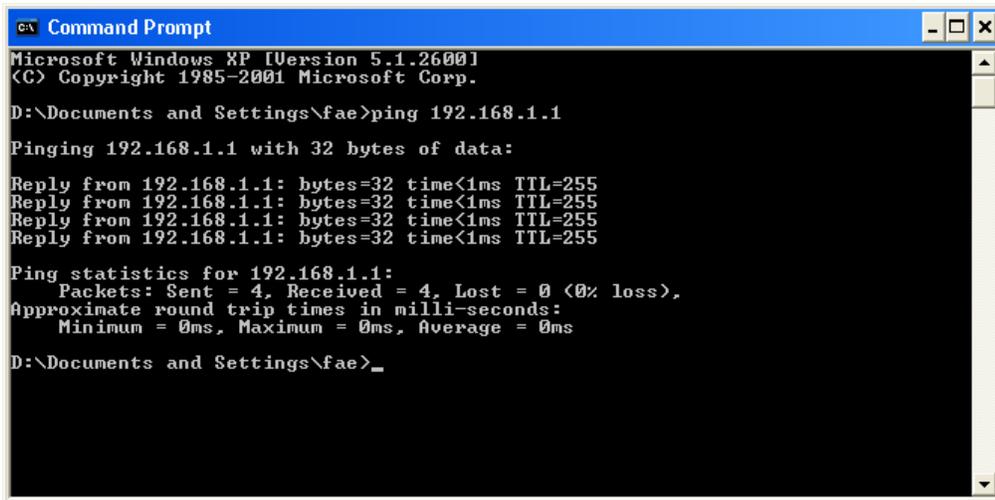


Step 3 Can You Ping the Router from PC?

The default gateway IP address of the router is 192.168.1.1. Please check that if you can ping the router correctly.

A. For Windows

1. Open the Command Prompt window (from start menu> Run)
2. Type **command** (for Windows 95/98/ME) or **cmd** (for Windows NT/ 2000/XP).
3. Type **ping 192.168.1.1** and press [Enter]



```

C:\ Command Prompt
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

D:\Documents and Settings\fae>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

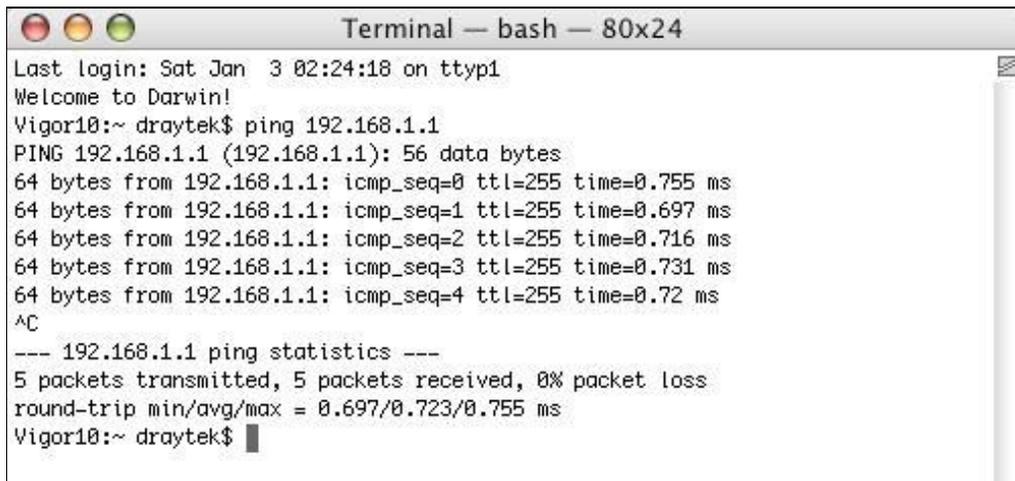
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

D:\Documents and Settings\fae>_

```

B. For Mac (Terminal)



```

Terminal — bash — 80x24
Last login: Sat Jan 3 02:24:18 on ttty1
Welcome to Darwin!
Vigor10:~ draytek$ ping 192.168.1.1
PING 192.168.1.1 (192.168.1.1): 56 data bytes
64 bytes from 192.168.1.1: icmp_seq=0 ttl=255 time=0.755 ms
64 bytes from 192.168.1.1: icmp_seq=1 ttl=255 time=0.697 ms
64 bytes from 192.168.1.1: icmp_seq=2 ttl=255 time=0.716 ms
64 bytes from 192.168.1.1: icmp_seq=3 ttl=255 time=0.731 ms
64 bytes from 192.168.1.1: icmp_seq=4 ttl=255 time=0.72 ms
^C
--- 192.168.1.1 ping statistics ---
5 packets transmitted, 5 packets received, 0% packet loss
round-trip min/avg/max = 0.697/0.723/0.755 ms
Vigor10:~ draytek$ █

```

The important thing is that the computer receives a reply from 192.168.1.1. If not, please check the IP address of your PC. We suggest you set the network connection as get IP automatically. (Please refer to the Step 2)

Step 4 Are the ISP Settings OK?

1. Go to the web configuration GUI and check your ISP settings.
2. Click **Internet Access Setup** items on the left frame of GUI.

A. For PPPoE Users

1. Check that whether the **Enable** option is selected.
2. Check that whether the **Username** and **Password** are entered with correct value given by your ISP.

The screenshot shows the 'PPPoE Client Mode' configuration window. It is divided into several sections:

- PPPoE Setup:** Includes 'PPPoE Link' with 'Enable' selected and 'Disable' unselected.
- ISP Access Setup:** Includes 'ISP Name' (ISP Service), 'Username' (draytek), and 'Password' (masked with dots).
- Scheduler (1-15):** Includes a field for scheduling with '=>' and four empty boxes.
- PPP/MP Setup:** Includes 'PPP Authentication' (PAP or CHAP), 'Always On' checked, and 'Idle Timeout' (-1 second(s)).
- IP Address Assignment Method (IPCP):** Includes 'Fixed IP' with 'No (Dynamic IP)' selected and an empty 'Fixed IP Address' field.
- WAN physical type:** Includes 'Auto negotiation' selected.

An 'OK' button is located at the bottom center of the window.

B. For Static or Dynamic Users

1. Check that whether the **Enable** option is selected.
2. Check that whether WAN IP Network Settings is set appropriately or not. You need to enter "**Specify an IP address**", **IP Address**, **Subnet Mask**, and **Gateway IP Address** with the correct value.

The screenshot shows the 'Static or Dynamic IP (DHCP Client)' configuration window. It is divided into several sections:

- Access Control:** Includes 'Broadband Access' with 'Disable' selected and 'Enable' unselected.
- Keep WAN Connection:** Includes 'Enable PING to keep alive' unselected, 'PING to the IP' (0.0.0.0), and 'PING Interval' (0 minute(s)).
- WAN physical type:** Includes 'Auto negotiation' selected.
- WAN IP Network Settings:** Includes 'Obtain an IP address automatically' unselected, 'Router Name' and 'Domain Name' (both with asterisks), 'Default MAC Address' selected, 'Specify a MAC Address' unselected, 'MAC Address' (00 . 50 . 7F : 00 . 00 . 01), and 'Specify an IP address' selected. Below this, there are fields for 'IP Address' (0.0.0.0), 'Subnet Mask' (0.0.0.0), and 'Gateway IP Address'.

An 'OK' button is located at the bottom center of the window.

C. For PPTP Users

1. Check that whether the **Enable** option is selected.
2. Check that whether **PPTP Server**, **Username**, **Password** is entered the correct value given by your ISP.
3. Check that whether LAN2/WAN IP Network Settings is set appropriately or not. You need to enter "**Specify an IP address**", **IP Address** and **Subnet Mask** with the correct value.

PPTP Client Mode

PPTP Setup
PPTP Link Enable Disable
PPTP Server

ISP Access Setup
ISP Name
Username
Password
Scheduler (1-15)
=> , , ,

PPP Setup
PPP Authentication
 Always On
Idle Timeout second(s)

IP Address Assignment Method (IPCP)
Fixed IP Yes No (Dynamic IP)
Fixed IP Address

LAN2/WAN IP Network Settings
 Obtain an IP address automatically
 Specify an IP address
IP Address
Subnet Mask

WAN physical type

OK

If the router settings are correct at all, and the router still does not connect, please contact your ISP technical support representative to help you for configuration.

Step 5. Back to Factory Default Setting

Warning: After pressing the "factory default setting", you will lose all settings you did before. Make sure you have recorded all useful settings. The password of factory default is null.

A Software Reset

You can also reset router to factory default via Web configurator.

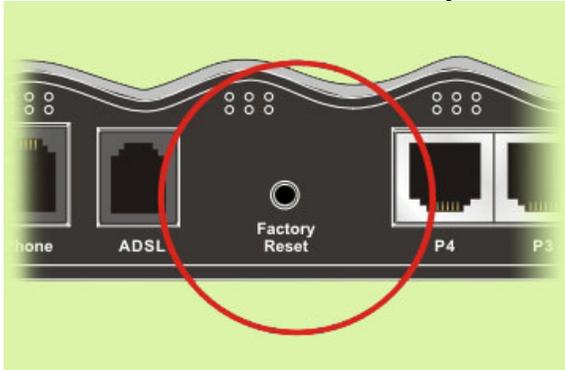
Reboot System

Do You want to reboot your router ?

Using current configuration
 Using factory default configuration

B Hardware Reset

While the router is running (ACT LED blinking), press the button and hold for more than 5 seconds. The ACT LED begins to blink rapidly, then release the button. The router will restart with the factory default configuration.



After restore the factory default setting, please repeat Step 1 to Step 4 to reinstall the router. Configure the router according to your recorded settings.

If the router does not work correctly, please contact your dealer for help. For any further questions, please send e-mail to support@draytek.com