



Vigor2820 Series ADSL2/2+ Security Firewall 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.
- Do not stack the routers.
- 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.
- Do not deploy the cable for LAN connection outdoor to prevent electronic shock hazards.
- 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 two (2) 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.

Be a Registered Owner

Web registration is preferred. You can register your Vigor router via <http://www.draytek.com>.

Firmware & Tools Updates

Due to the continuous evolution of DrayTek 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: Vigor2820 Series Router

DrayTek Corp. declares that Vigor2820 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 2004/108/EC 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.

Regulatory Information

Federal Communication Commission Interference 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 use is encouraged to try to correct the interference by one 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.

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 may accept any interference received, including interference that may cause undesired operation.

Please visit www.draytek.com/about_us/Regulatory.php.



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1. Introduction

The Vigor2820 is an ADSL2+ router with 2nd Ethernet WAN. This 2nd WAN can connect to DSL/Cable modem or fiber media converter for policy-based load-balance, fail-over and BoD (Bandwidth on Demand); it also features advanced bandwidth control mechanism such as IP-layer QoS, NAT Session Limitation, Bandwidth Borrowed, etc., to allow easy, flexible, reliable access control and bandwidth management.

The SPI (Stateful Packet Inspection) firewall uses object-based design to make settings of firewall policies easy. The CSM (Content Security Management) feature allows more precise and efficient access control for URL/Web Content Filtering, IM (Instant Messenger) and P2P (Peer to Peer) applications.

With hardware-based implementation of the VPN protocols, the Vigor2820 supports up to 32 VPN tunnels using advanced protocols such as IPSec/PPTP/L2TP/L2TP over IPSec with AES/DES/3DES for encryption and MD5/SHA-1 for authentication.

Vigor2820 'n' models comply with 802.11n Draft-n standards. They support WEP/WPA/WPA2 encryption and MAC Address Control, Wireless LAN Isolation, and 802.1X authentication. The Wireless Rate Control function can adjust the data rate of each wireless station (client).

Vigor2820 'V' models provide twin analogue phone and one line port. 'S' models also support twin ISDN ports that one is fixed as ISDN S0 port for ISDN phone and the other is configurable for ISDN line and phone. It supports multiple SIP registrars with high flexible configuration and call handing options.

Definitions for ISDN Ports

Below shows the names that displayed on front panel of the device and the WEB UI of this device.

ISDN TE (Terminal Equipment) means an interface for transmitting analog signal through Internet between Switching and router. Such interface is also named with **ISDN S0 extern** in Germany.

ISDN NT (Network Terminator) is a port that used to connect general phone. Such interface is also named with **ISDN S0 intern** in Germany.

The **Phone S0** port on Vigor2820 series is fixed to connect phone forever and the LED on the connector will light orange always. However **ISDN/Phone S0** port on this device is configurable for connecting phone or accessing Internet according to the settings that you adjust on WEB UI (please refer to **VoIP>>Phone Setting** for detailed information).



Warning: When the orange LED lights (means ISDN NT mode), the ISDN port can be used to connect phone only. Wrong ISDN connection might cause severe damage on your device.

1.1 Panel Explanation

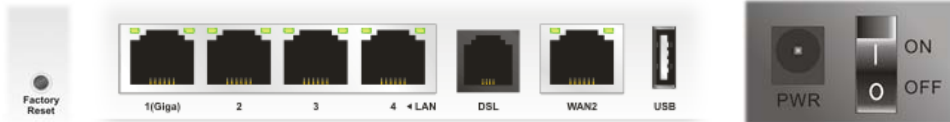
1.1.1 For Vigor2820



LED	Status	Explanation
ACT (Activity)	Blinking	The router is powered on and running normally.
	Off	The router is powered off.
USB	On	A USB device is connected and active.
	Blinking	The data is transmitting.
CSM	On	The profile of CSM (Content Security Management) for IM/P2P application is active. (It is enabled from Objects Setting >> CSM Profile).
CPA (Content Portal Authority)	On	The Web Content Filter is active. (It is enabled from Firewall >> Web Content Filter Setup)
DSL	On	The router is ready to access Internet through DSL link.
	Blinking	Slowly: The connection is ready. Quickly: The connection is tranning.
WAN2	On	The router is ready to access Internet through WAN connection.
	Blinking	It will blink while transmitting data.
DoS	On	The DoS/DDoS function is active.
	Blinking	It will blink while deleting an attack.
VPN	On	The VPN tunnel is active.
QoS	On	The QoS function is active.

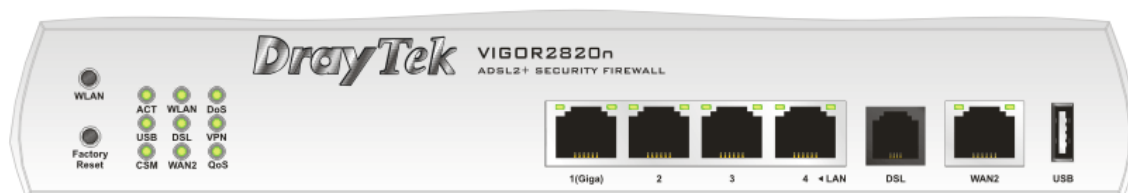
LED on Connector

LAN 1(Giga)	Left LED (Green)	On	The port is connected.
		Off	The port is disconnected.
		Blinking	The data is transmitting.
	Right LED (Green)	On	The port is connected with 1000Mbps.
		Off	The port is disconnected with 10/100Mbps.
		Blinking	The data is transmitting.
LAN 2/3/4	Left LED (Green)	On	The port is connected.
		Off	The port is disconnected.
		Blinking	The data is transmitting.
	Right LED (Green)	On	The port is connected with 100Mbps.
		Off	The port is disconnected with 10Mbps.
		Blinking	The data is transmitting.
WAN 2	Left LED (Green)	On	The port is connected.
		Off	The port is disconnected.
		Blinking	The data is transmitting.
	Right LED (Green)	On	The port is connected with 100Mbps.
		Off	The port is disconnected with 10Mbps.
		Blinking	The data is transmitting.



Interface	Description
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 you see the ACT LED begins to blink rapidly than usual, release the button. Then the router will restart with the factory default configuration.
LAN (1-4)	Connecters for local networked devices.
DSL	Connector for accessing the Internet through ADSL2/2+.
WAN 2	Connector for remote networked devices.
USB	Connector for a USB device (for 3G USB Modem or printer).
PWR	Connector for a power adapter.
ON/OFF	Power Switch.

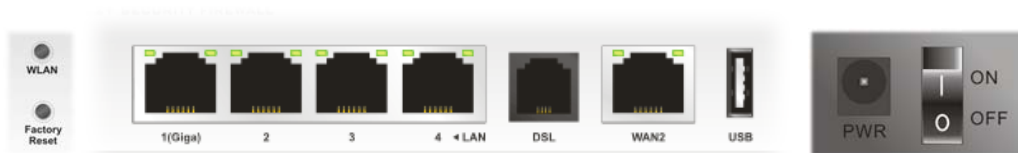
1.1.2 For Vigor2820n



LED	Status	Explanation
ACT (Activity)	Blinking	The router is powered on and running normally.
	Off	The router is powered off.
USB	On	A USB device is connected and active.
	Blinking	The data is transmitting.
CSM	On	The profile of CSM (Content Security Management) for IM/P2P application is active. (It is enabled from Objects Setting >> CSM Profile).
WLAN	On	Wireless access point is ready.
	Blinking	It will blink while wireless traffic goes through.
DSL	On	The router is ready to access Internet through DSL link.
	Blinking	Slowly: The connection is ready. Quickly: The connection is tranning.
WAN2	On	The router is ready to access Internet through WAN connection.
	Blinking	It will blink while transmitting data.
DoS	On	The DoS/DDoS function is active.
	Blinking	It will blink while deleting an attack.
VPN	On	The VPN tunnel is active.
QoS	On	The QoS function is active.

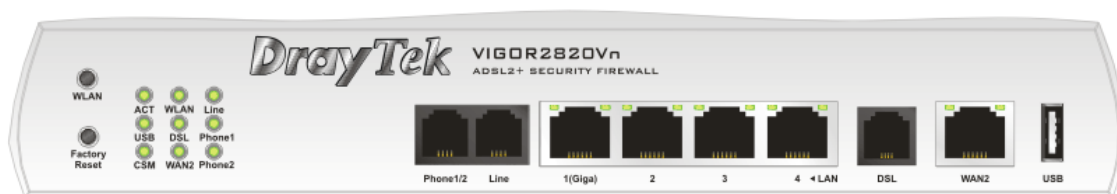
LED on Connector

LAN 1(Giga)	Left LED (Green)	On	The port is connected.
		Off	The port is disconnected.
		Blinking	The data is transmitting.
LAN 2/3/4	Right LED (Green)	On	The port is connected with 1000Mbps.
		Off	The port is disconnected with 10/100Mbps.
		Blinking	The data is transmitting.
LAN 2/3/4	Left LED (Green)	On	The port is connected.
		Off	The port is disconnected.
		Blinking	The data is transmitting.
LAN 2/3/4	Right LED (Green)	On	The port is connected with 100Mbps.
		Off	The port is disconnected with 10Mbps.
		Blinking	The data is transmitting.
WAN 2	Left LED (Green)	On	The port is connected.
		Off	The port is disconnected.
		Blinking	The data is transmitting.
WAN 2	Right LED (Green)	On	The port is connected with 100Mbps.
		Off	The port is disconnected with 10Mbps.



Interface	Description
WLAN	Push this button to enable (WLAN LED on) or disable (WLAN LED off) wireless connection.
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 you see the ACT LED begins to blink rapidly than usual, release the button. Then the router will restart with the factory default configuration.
LAN (1-4)	Connecters for local networked devices.
DSL	Connector for accessing the Internet through ADSL2/2+.
WAN 2	Connector for remote networked devices.
USB	Connector for a USB device (for 3G USB Modem or printer).
PWR	Connector for a power adapter.
ON/OFF	Power Switch.

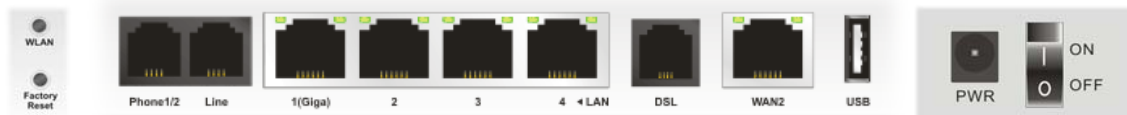
1.1.3 For Vigor2820Vn



LED	Status	Explanation	
ACT (Activity)	Blinking	The router is powered on and running normally.	
	Off	The router is powered off.	
USB	On	A USB device is connected and active.	
	Blinking	The data is transmitting.	
CSM	On	The profile of CSM (Content Security Management) for IM/P2P application is active. (It is enabled from Objects Setting >> CSM Profile).	
WLAN	On	Wireless access point is ready.	
	Blinking	It will blink while wireless traffic goes through.	
DSL	On	The router is ready to access Internet through DSL link.	
	Blinking	Slowly: The connection is ready. Quickly: The connection is tranning.	
WAN 2	Left LED (Green)	On	The port is connected.
		Off	The port is disconnected.
		Blinking	The data is transmitting.
	Right LED (Green)	On	The port is connected with 100Mbps.
		Off	The port is disconnected with 10Mbps.
		Blinking	The data is transmitting.
Line	On	Web Content Filter is disabled.	
	Off	Web Content Filter is enabled to filter web pages.	
Phone 1/2	On	The phone connected to this port is off-hook.	
	Off	The phone connected to this port is on-hook.	
	Blinking	A phone call comes.	

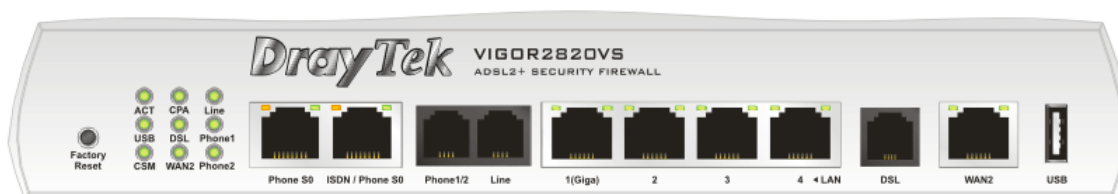
LED on Connector

LAN 1(Giga)	Left LED (Green)	On	The port is connected.
		Off	The port is disconnected.
		Blinking	The data is transmitting.
	Right LED (Green)	On	The port is connected with 1000Mbps.
		Off	The port is disconnected with 10/100Mbps.
		Blinking	The data is transmitting.
LAN 2/3/4	Left LED (Green)	On	The port is connected.
		Off	The port is disconnected.
		Blinking	The data is transmitting.
	Right LED (Green)	On	The port is connected with 100Mbps.
		Off	The port is disconnected with 10Mbps.
		Blinking	The data is transmitting.
WAN 2	Left LED (Green)	On	The port is connected.
		Off	The port is disconnected.
		Blinking	The data is transmitting.
	Right LED (Green)	On	The port is connected with 100Mbps.
		Off	The port is disconnected with 10Mbps.
		Blinking	The data is transmitting.



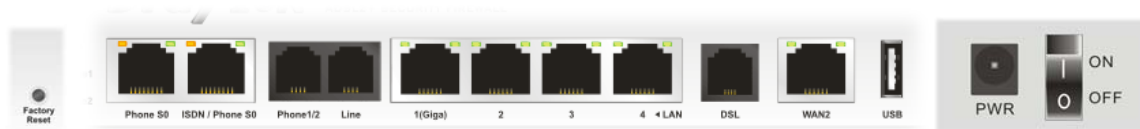
Interface	Description
WLAN	Push this button to enable (WLAN LED on) or disable (WLAN LED off) wireless connection.
Factory Reset	Restore the default settings. Usage: Turn on the router (ACT LED is blinking). Press the hole and keep for more than 5 seconds. When you see the ACT LED begins to blink rapidly than usual, release the button. Then the router will restart with the factory default configuration.
Phone 1/2	Connector for PSTN phone.
Line	Connector of analog phone for PSTN life line.
LAN (1-4)	Connectors for local networked devices.
DSL	Connector for accessing the Internet through ADSL2/2+.
WAN 2	Connector for remote networked devices.
USB	Connector for a USB device (for 3G USB Modem or printer).
PWR	Connector for a power adapter.
ON/OFF	Power Switch.

1.1.4 For Vigor2820VS



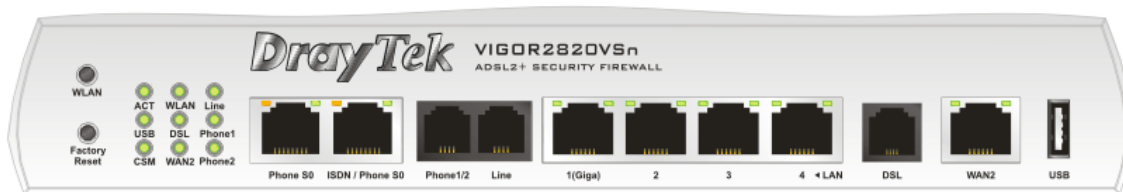
LED	Status	Explanation	
ACT (Activity)	Blinking	The router is powered on and running normally.	
	Off	The router is powered off.	
USB	On	A USB device is connected and active.	
	Blinking	The data is transmitting.	
CSM	On	The profile of CSM (Content Security Management) for IM/P2P application is active. (It is enabled from Objects Setting >> CSM Profile).	
CPA (Content Portal Authority)	On	The Web Content Filter is active. (It is enabled from Firewall >> Web Content Filter Setup)	
DSL	On	The router is ready to access Internet through DSL link.	
	Blinking	Slowly: The connection is ready. Quickly: The connection is tranning.	
WAN 2	On	The WAN1 or WAN2 connection is ready.	
	Blinking	It will blink while transmitting data.	
Line	On	Web Content Filter is disabled.	
	Off	Web Content Filter is enabled to filter web pages.	
Phone 1/2	On	The phone connected to this port is off-hook.	
	Off	The phone connected to this port is on-hook.	
	Blinking	A phone call comes.	
<i>LED on Connector</i>			
Phone S0	Left LED (Orange)	On	ISDN NT (ISDN S0 intern) mode is active and an ISDN phone adapter is connected.
		Blinking	ISDN NT (ISDN S0 intern) mode is active and an ISDN phone adapter is not connected.
	Right LED (Green)	On	A phone has been connected. If not, green LED will be off.
		Blinking	An ISDN phone is off-hook or a phone call comes.
ISDN/Phone S0	Left LED (Orange)	On	ISDN NT (ISDN S0 intern) mode is active configured from VoIP>>Phone Settings and an ISDN phone adapter is connected.
		Blinking	ISDN NT (ISDN S0 intern) mode configured from VoIP>>Phone Settings is active and an ISDN phone adapter is not connected.
		Off	It means ISDN TE mode is active which is configured from VoIP>>Phone Settings .
	Right LED (Green)	On	A phone adapter with phone set has been connected (ISDN S0 intern mode) or ISDN line has been connected (ISDN S0 extern mode). It will be off if there is nothing connected.
		Blinking	In ISDN NT (ISDN S0 intern) mode, it means an ISDN phone is off-hook or a phone call comes. In ISDN TE mode, it means data, fax or voice (phone call) is transmitting.

LAN 1(Giga)	Left LED (Green)	On	The port is connected.
		Off	The port is disconnected.
		Blinking	The data is transmitting.
	Right LED (Green)	On	The port is connected with 1000Mbps.
		Off	The port is disconnected with 10/100Mbps.
LAN 2/3/4	Left LED (Green)	On	The port is connected.
		Off	The port is disconnected.
		Blinking	The data is transmitting.
	Right LED (Green)	On	The port is connected with 100Mbps.
		Off	The port is disconnected with 10Mbps.
WAN 2	Left LED (Green)	On	The port is connected.
		Off	The port is disconnected.
		Blinking	The data is transmitting.
	Right LED (Green)	On	The port is connected with 100Mbps.
		Off	The port is disconnected with 10Mbps.



Interface	Description
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 you see the ACT LED begins to blink rapidly than usual, release the button. Then the router will restart with the factory default configuration.
Phone S0	Connector for ISDN phone(s) only via ISDN phone adapter. Do not connect any other device to such port or connect ISDN line, otherwise the router might be damaged.
ISDN/Phone S0	Connector for ISDN line or ISDN phone adapter in particular condition. Refer to section 2.2 for more details.
Phone (1/2)	Connector for PSTN phone.
Line	Connector of analog phone for PSTN life line.
LAN (1-4)	Connectors for local networked devices.
DSL	Connector for accessing the Internet through ADSL2/2+.
WAN 2	Connector for remote networked devices.
USB	Connector for a USB device (for 3G USB Modem or printer).
PWR	Connector for a power adapter.
ON/OFF	Power Switch.

1.1.5 For Vigor2820VSn

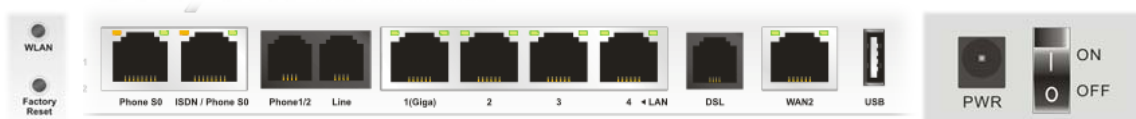


LED	Status	Explanation
ACT (Activity)	Blinking	The router is powered on and running normally.
	Off	The router is powered off.
USB	On	A USB device is connected and active.
	Blinking	The data is transmitting.
CSM	On	The profile of CSM (Content Security Management) for IM/P2P application is active. (It is enabled from Objects Setting >> CSM Profile).
WLAN	On	Wireless access point is ready.
	Blinking	It will blink while wireless traffic goes through.
DSL	On	The router is ready to access Internet through DSL link.
	Blinking	Slowly: The connection is ready. Quickly: The connection is tranning.
WAN 2	On	The WAN1 or WAN2 connection is ready.
	Blinking	It will blink while transmitting data.
Line	On	Web Content Filter is disabled.
	Off	Web Content Filter is enabled to filter web pages.
Phone 1/2	On	The phone connected to this port is off-hook.
	Off	The phone connected to this port is on-hook.
	Blinking	A phone call comes.

LED on Connector

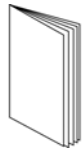
Phone S0	Left LED (Orange)	On	ISDN NT (ISDN S0 intern) mode is active and an ISDN phone adapter is connected.
		Blinking	ISDN NT (ISDN S0 intern) mode is active and an ISDN phone adapter is not connected.
	Right LED (Green)	On	A phone has been connected. If not, green LED will be off.
		Blinking	An ISDN phone is off-hook or a phone call comes.
ISDN/Phone S0	Left LED (Orange)	On	ISDN NT (ISDN S0 intern) mode is active configured from VoIP>>Phone Settings and an ISDN phone adapter is connected.
		Blinking	ISDN NT (ISDN S0 intern) mode configured from VoIP>>Phone Settings is active and an ISDN phone adapter is not connected.
		Off	It means ISDN TE mode is active which is configured from VoIP>>Phone Settings .
	Right LED (Green)	On	A phone adapter with phone set has been connected (ISDN S0 intern mode) or ISDN line has been connected (ISDN S0 extern mode). It will be off if there is nothing connected.
		Blinking	In ISDN NT (ISDN S0 intern) mode, it means an ISDN phone is off-hook or a phone call comes. In ISDN TE mode, it means data, fax or voice (phone call) is transmitting.
		Off	
LAN 1(Giga)	Left LED (Green)	On	The port is connected.
		Off	The port is disconnected.

		Blinking	The data is transmitting.
	Right LED (Green)	On	The port is connected with 1000Mbps.
		Off	The port is disconnected with 10/100Mbps.
LAN 2/3/4	Left LED (Green)	On	The port is connected.
		Off	The port is disconnected.
		Blinking	The data is transmitting.
	Right LED (Green)	On	The port is connected with 100Mbps.
		Off	The port is disconnected with 10Mbps.
WAN 2	Left LED (Green)	On	The port is connected.
		Off	The port is disconnected.
		Blinking	The data is transmitting.
	Right LED (Green)	On	The port is connected with 100Mbps.
		Off	The port is disconnected with 10Mbps.

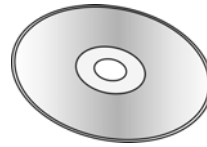


Interface	Description
WLAN	Push this button to enable (WLAN LED on) or disable (WLAN LED off) wireless connection.
Factory Reset	Restore the default settings. Usage: Turn on the router (ACT LED is blinking). Press the hole and keep for more than 5 seconds. When you see the ACT LED begins to blink rapidly than usual, release the button. Then the router will restart with the factory default configuration.
Phone S0	Connector for ISDN phone(s) only via ISDN phone adapter. Do not connect any other device to such port or connect ISDN line, otherwise the router might be damaged.
ISDN/Phone S0	Connector for ISDN line or ISDN phone adapter in particular condition. Refer to section 2.2 for more details.
Phone (1/2)	Connector for PSTN phone.
Line	Connector of analog phone for PSTN life line.
LAN (1-4)	Connectors for local networked devices.
DSL	Connector for accessing the Internet through ADSL2/2+.
WAN 2	Connector for remote networked devices.
USB	Connector for a USB device (for 3G USB Modem or printer).
PWR	Connector for a power adapter.
ON/OFF	Power Switch.

1.2 Package Content



1 Quick Start Guide



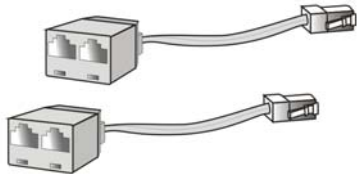
2 CD



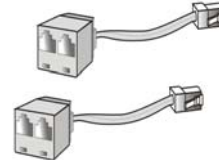
3 RJ-45 Cable (Ethernet)



4 RJ-45 to RJ-45 Cable for S models

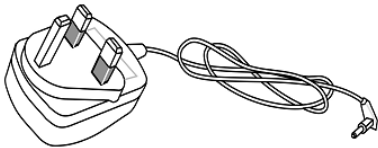


5 ISDN Phone Adapter (VS models)

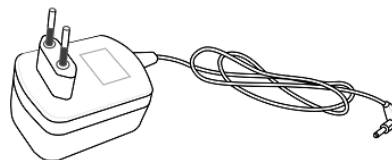


6 Analog Phone Adapter (V models)

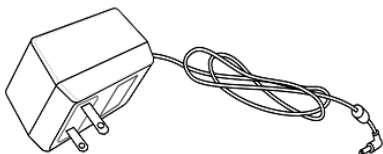
6 The type of the power adapter depends on the country that the router will be installed:



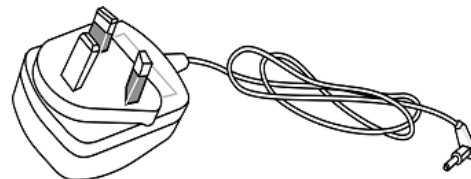
UK-type Power Adapter



EU-type Power Adapter



USA/Taiwan-type Power Adapter



AU/NZ-type Power Adapter

* The maximum power consumption is **17-23 Watt**.

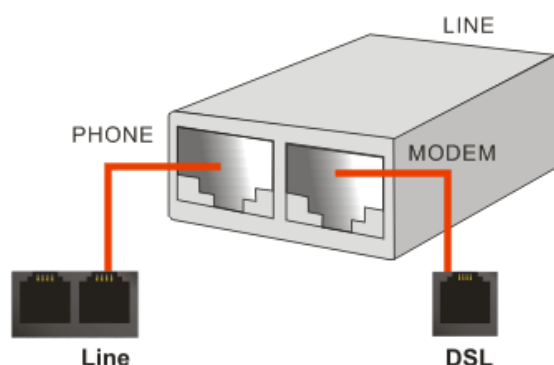
2. Installing Your Router

This section will guide you to install the router through hardware connection and configure the router's settings through web browser.

2.1 Hardware Installation

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

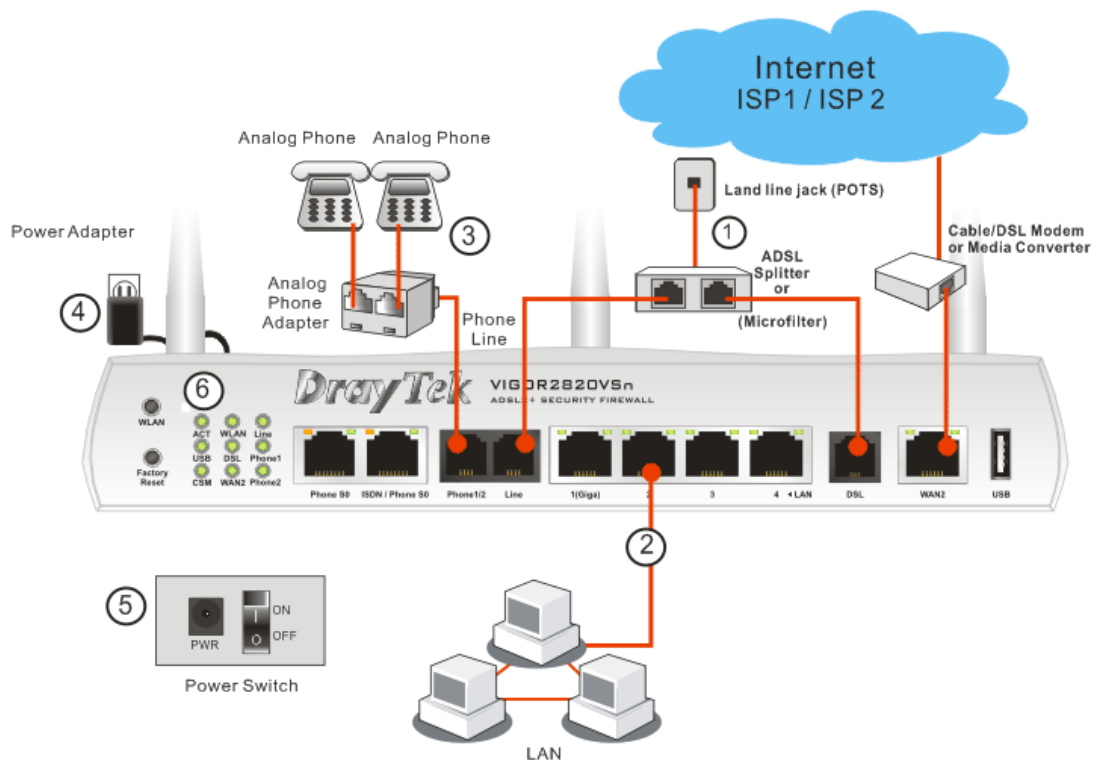
1. Connect the ADSL interface to the external ADSL splitter with an ADSL line cable for all models. For Vigor2820Vn/VS/VSn, also connect Line interface to external ADSL splitter.



For second WAN, connect the cable Modem/DSL Modem/Media Converter to WAN2 port of router with Ethernet cable (RJ-45).

2. Connect one end of an Ethernet cable (RJ-45) to one of the **LAN** ports of the router and the other end of the cable (RJ-45) into the Ethernet port on your computer.
3. Connect the telephone sets with phone lines (for using VoIP function). For the model without phone ports, skip this step.
4. Connect one end of the power adapter to the router's power port on the rear panel, and the other side into a wall outlet.
5. Power on the device by pressing down the power switch on the rear panel.
6. The system starts to initiate. After completing the system test, the **ACT LED** will light up and start blinking.

(For the detailed information of LED status, please refer to section 1.1.)

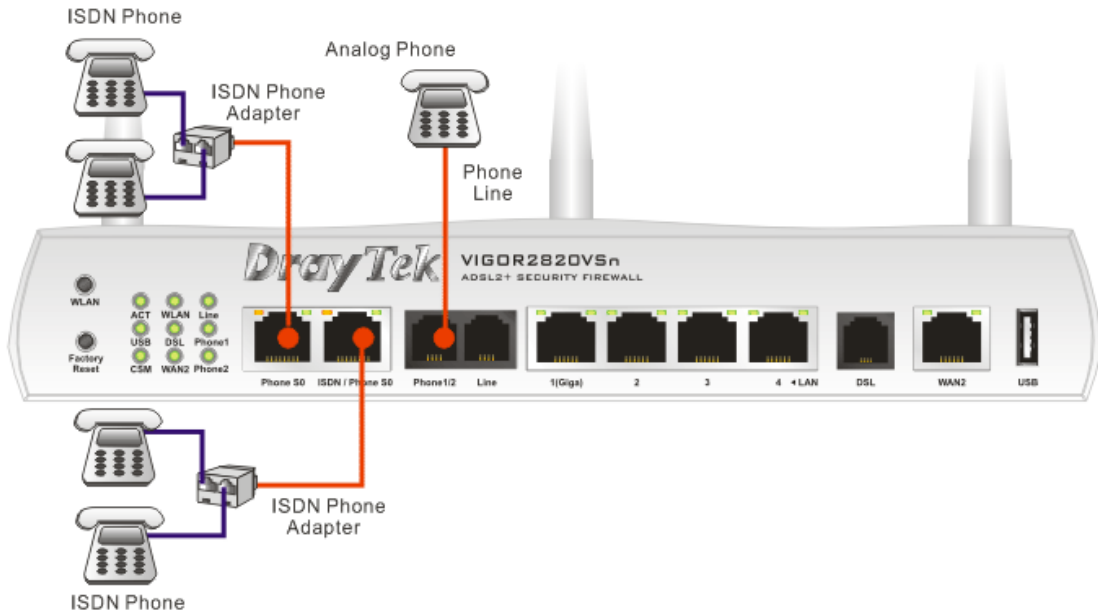


Caution: Each of the Phone ports can be connected to an analog phone only. Do not connect the phone ports to the telephone wall jack. Such connection might damage your router.

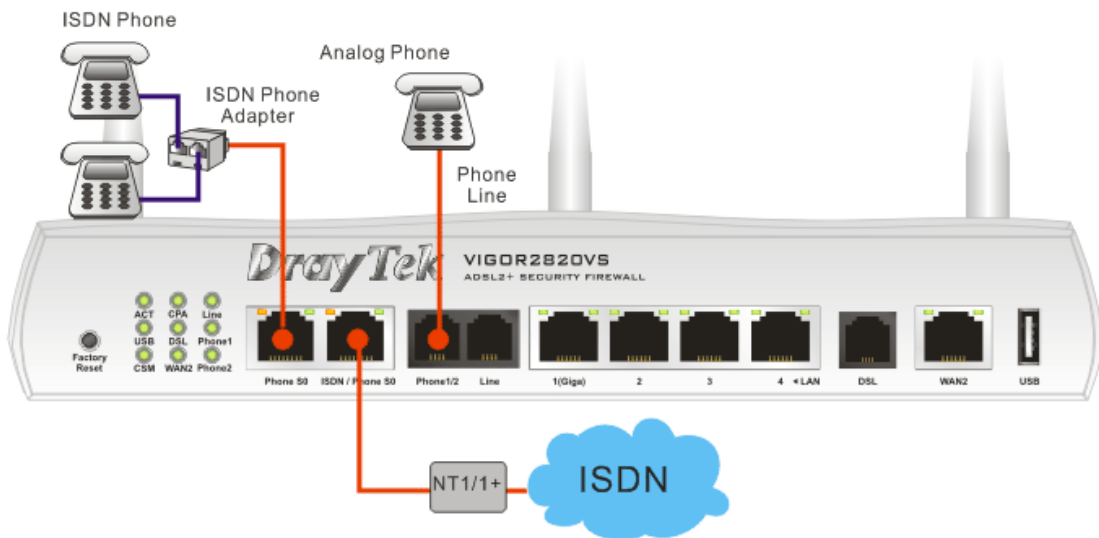
2.2 ISDN Phone Adapter Installation

Such information is provided for Vigor2820 S models (e.g., Vigor2820VS/VSn).

Phone S0 is always fixed to connect ISDN phone. However, ISDN /Phone S0 is configurable as NT or TE mode. When the user configures ISDN /Phone S0 as NT mode in **VoIP>> Phone Settings**, the **orange** LED will light on to indicate **ISDN-NT** is selected. And by using ISDN phone adapters (coming from the router package), the user can connect several phones to Vigor2820VS for communication. Refer to the following figure for reference.

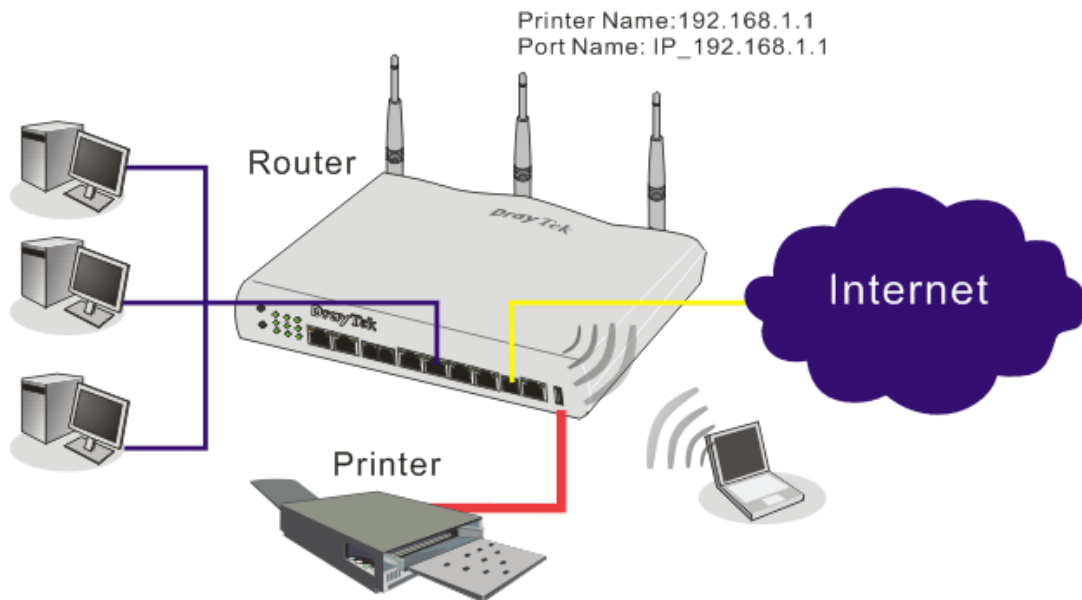


Yet, if the user configures ISDN / Phone S0 as TE Mode in **VoIP>> Phone Settings**, the **green** LED will light on to indicate **ISDN-TE** is selected. Then, the port is specified for ISDN line only. Refer to the following figure for reference.



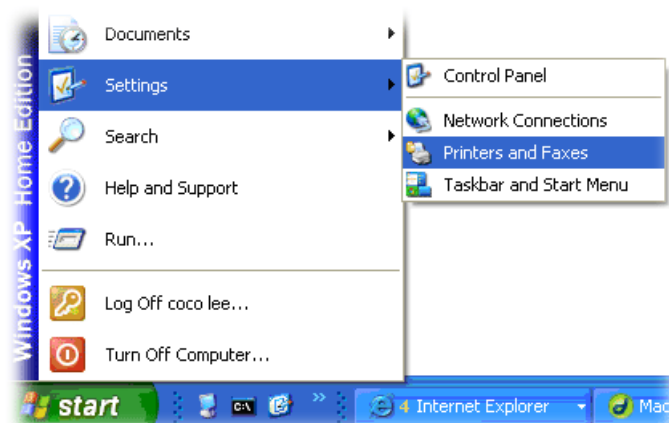
2.3 Printer Installation

You can install a printer onto the router for sharing printing. All the PCs connected this router can print documents via the router. The example provided here is made based on Windows XP/2000. For Windows 98/SE, please visit www.draytek.com.

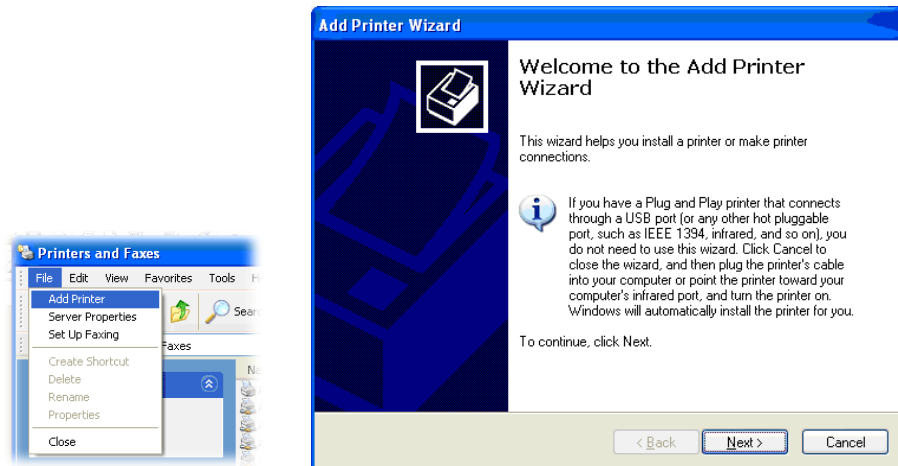


Before using it, please follow the steps below to configure settings for connected computers (or wireless clients).

1. Connect the printer with the router through USB/parallel port.
2. Open **Start->Settings-> Printer and Faxes**.



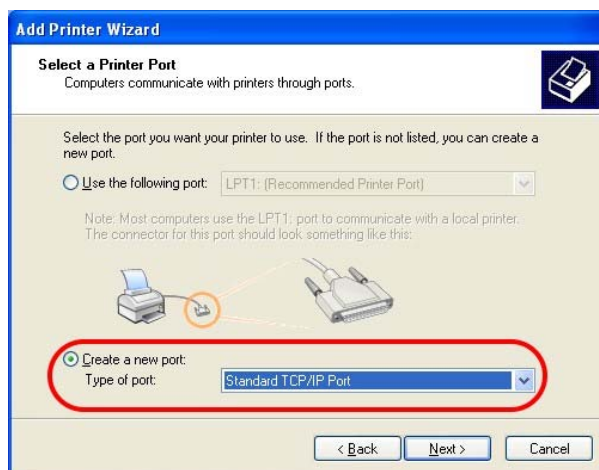
3. Open **File->Add a New Computer**. A welcome dialog will appear. Please click **Next**.



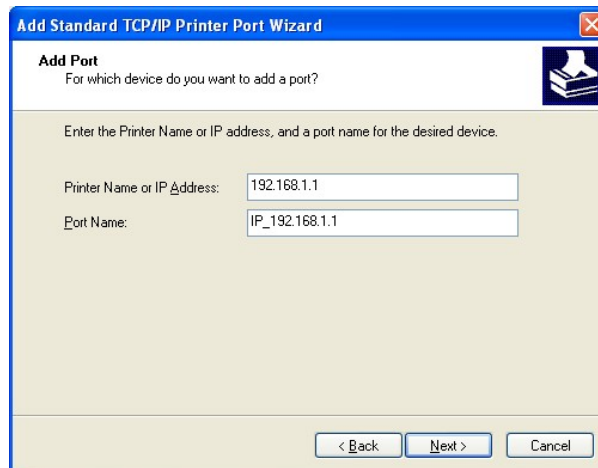
4. Click **Local printer attached to this computer** and click **Next**.



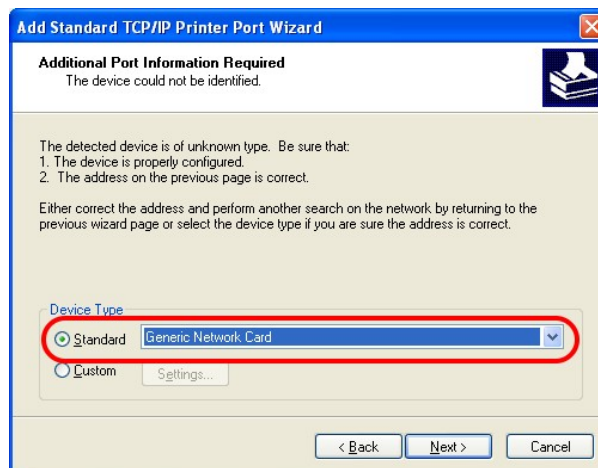
5. In this dialog, choose **Create a new port Type of port** and use the drop down list to select **Standard TCP/IP Port**. Click **Next**.



6. In the following dialog, type **192.168.1.1** (router's LAN IP) in the field of **Printer Name or IP Address** and type **IP_192.168.1.1** as the port name. Then, click **Next**.



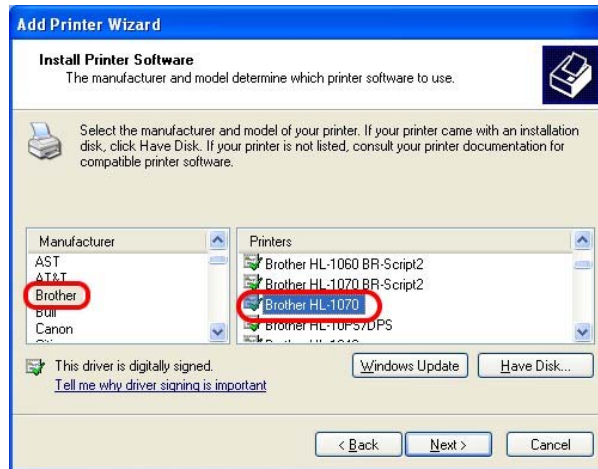
7. Click **Standard** and choose **Generic Network Card**.



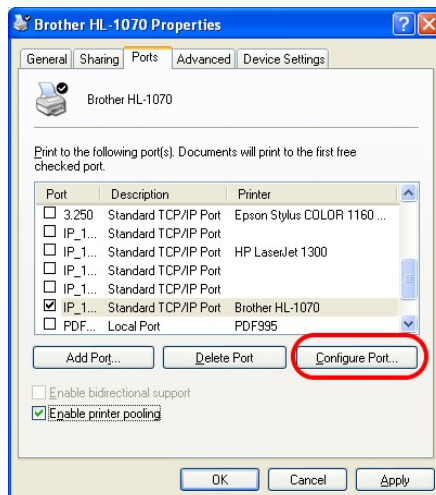
8. Then, in the following dialog, click **Finish**.



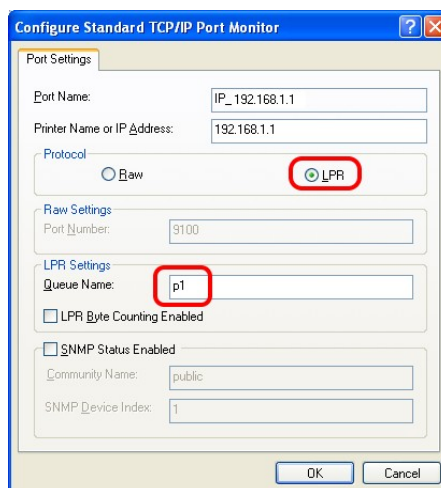
9. Now, your system will ask you to choose right name of the printer that you installed onto the router. Such step can make correct driver loaded onto your PC. When you finish the selection, click **Next**.



10. For the final stage, you need to go back to **Control Panel-> Printers** and edit the property of the new printer you have added.

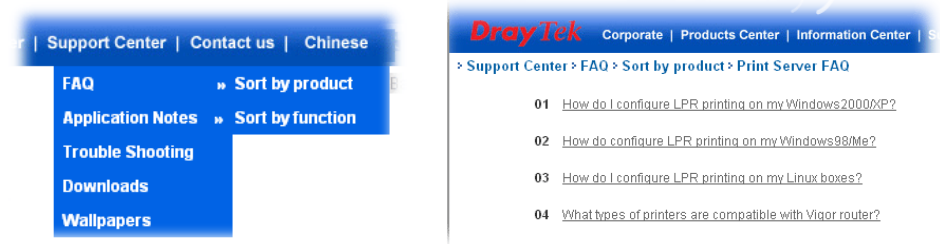


11. Select "**LPR**" on Protocol, type **p1** (number 1) as Queue Name. Then click **OK**. Next please refer to the red rectangle for choosing the correct protocol and UPR name.



The printer can be used for printing now. Most of the printers with different manufacturers are compatible with vigor router.

Note 1: Some printers with the fax/scanning or other additional functions are not supported. If you do not know whether your printer is supported or not, please visit www.draytek.com to find out the printer list. Open **Support Center->FAQ->Sort by product**; select the model of the router and click on it; find out the link of **Printer Server FAQ**; click the **What types of printers are compatible with Vigor router?** link.



Note 2: Vigor router supports printing request from computers via LAN ports but not WAN port.

3. Configuring Web Pages

To access Internet, please finish basic configuration after completing the hardware installation.

3.1 Basic Configuration

The **Quick Start Wizard** is designed for you to easily set up your router for Internet access. You can directly access the **Quick Start Wizard** via Web Configurator.

1. Make sure your PC connects to the router correctly.



Notice: You may either simply set up your computer to get IP dynamically from the router or set up the IP address of the computer to be the same subnet as **the default IP address of Vigor router 192.168.1.1**. For the detailed information, please refer to the later section - Trouble Shooting of the guide.

2. Open a web browser on your PC and type **http://192.168.1.1**. A pop-up window will open to ask for username and password. Do not type any word on the window and click **OK** for next screen.



Notice: If you fail to access to the web configuration, please go to “Trouble Shooting” for detecting and solving your problem.

3. Now, the **Main Screen** will pop up. Click **Quick Start Wizard**.

VIGOR 2820 SERIES
ADSL2+ SECURITY FIREWALL

DrayTek
www.draytek.com

Quick Start Wizard

System Status

Model Name : Vigor2820 series
Firmware Version : 3.1.0_RC2
Build Date/Time : Jul 12 2007 15:26:17
ADSL Firmware Version : 211801_A Annex A

LAN	
MAC Address	: 00-50-7F-00-00-00
1st IP Address	: 192.168.1.1
1st Subnet Mask	: 255.255.255.0
DHCP Server	: Yes
DNS	: 194.109.6.66

WAN 1	
Link Status	: Disconnected
MAC Address	: 00-50-7F-00-00-01
Connection	: PPPoE
IP Address	: ---
Default Gateway	: ---

WAN 2	
Link Status	: Connected
MAC Address	: 00-50-7F-00-00-02
Connection	: Static IP
IP Address	: 172.16.3.229
Default Gateway	: 172.16.3.4

Wireless LAN	
MAC Address	: 00-50-7F-00-00-00
Frequency Domain	: Europe
Firmware Version	: 1.2.0.0
SSID	: default

All Rights Reserved.

Note: The home page will change slightly in accordance with the router you have.

4. Enter the login password on the field of **New Password** and retype it on the field of **Retype New Password**. Then click **Next** to continue.

Quick Start Wizard

Enter login password

Please enter an alpha-numeric string as your **Password** (Max 23 characters).

New Password

Confirm Password

5. On the next page as shown below, please select the WAN interface (WAN 1 or WAN2) that you use. If DSL interface is used, please choose WAN1; if WAN2 interface is used, please choose WAN2. Choose **Auto negotiation** as the physical type for your router. Then click **Next** for next step.

Quick Start Wizard

WAN Interface

WAN Interface:

Display Name:

Physical Mode:

Physical Type:

6. On the next page as shown below, please select the appropriate Internet access type **according to the information from your ISP**. For example, you should select PPPoE mode if the ISP provides you PPPoE interface. Then click **Next** for next step.

Quick Start Wizard

Connect to Internet

WAN 1	
VPI	<input type="text" value="0"/> <input type="button" value="Auto detect"/>
VCI	<input type="text" value="33"/>
Protocol / Encapsulation	<input type="text" value="PPPoE LLC/SNAP"/>
Fixed IP	<input type="radio"/> Yes <input checked="" type="radio"/> No(Dynamic IP)
IP Address	<input type="text"/>
Subnet Mask	<input type="text"/>
Default Gateway	<input type="text"/>
Primary DNS	<input type="text"/>
Second DNS	<input type="text"/>

PPPoE LLC/SNAP

- PPPoE LLC/SNAP
- PPPoE VC MUX
- PPPoA LLC/SNAP
- PPPoA VC MUX
- 1483 Bridged IP LLC
- 1483 Routed IP LLC
- 1483 Bridged IP VC-Mux
- 1483 Routed IP VC-Mux (IPoA)
- 1483 Bridged IP (IPoE)

PPPoE/PPPoA: if you click PPPoE or PPPoA as the protocol, please manually enter the Username/Password provided by your ISP. Then click **Next**.

Quick Start Wizard

Set PPPoE / PPPoA

WAN 1	
User Name	<input type="text" value="84005756@hinet.net"/>
Password	<input type="password" value="••••••••"/>
Confirm Password	<input type="password" value="••••••••"/>

1483 Bridged IP /1483 Routed IP: if you choose 1483 Bridged IP / 1483 Routed IP as the protocol, you will get the following page. Please type in the IP address information originally provided by your ISP. Then click **Next** for next step.

Quick Start Wizard

Connect to Internet

WAN 1	
VPI	<input type="text" value="0"/> <input type="button" value="Auto detect"/>
VCI	<input type="text" value="33"/>
Protocol / Encapsulation	1483 Routed IP VC-Mux (IPoA) ▾
Fixed IP	<input type="radio"/> Yes <input checked="" type="radio"/> No(Dynamic IP)
IP Address	<input type="text"/>
Subnet Mask	<input type="text"/>
Default Gateway	<input type="text"/>
Primary DNS	<input type="text" value="168.95.1.1"/>
Second DNS	<input type="text" value="168.95.1.10"/>

7. Now you can see the following screen. It indicates that the setup is complete. Different types of connection modes will have different summary. Click **Finish** and then restart the router. Afterward, you will enjoy surfing on the Internet.

Quick Start Wizard

Please confirm your settings:

WAN Interface:	WAN1
Physical Mode:	ADSL
Physical Type:	Auto negotiation
VPI:	0
VCI:	33
Protocol / Encapsulation:	1483 Route VCMUX
Fixed IP:	No
Primary DNS:	168.95.1.1
Secondary DNS:	168.95.1.10

3.2 Wireless Configuration



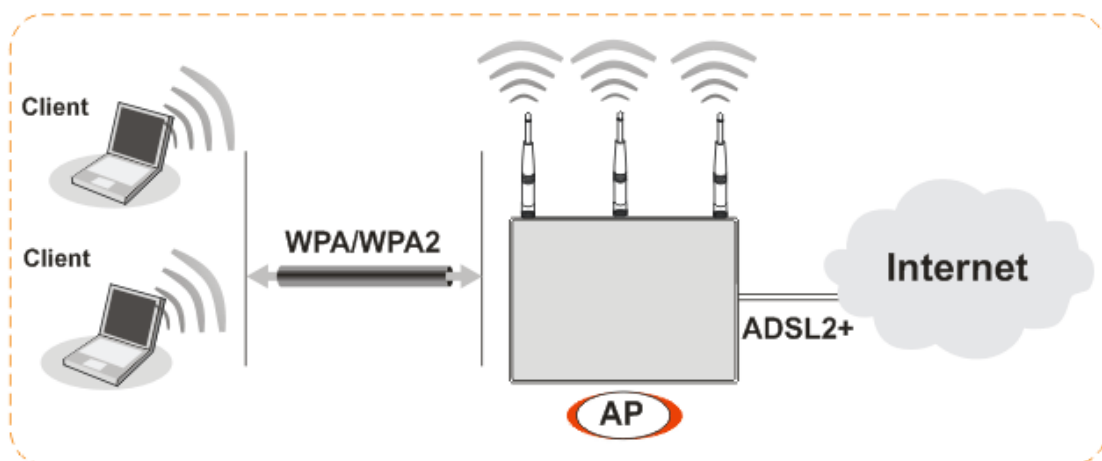
For the user of Vigor2820/2820VS, please skip this section.

For operating Vigor2820n/Vn/VSn well, it is necessary for you to set the wireless LAN settings for using wireless function. Please read the following section carefully for configuring the settings for this router.

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

3.2.1 Basic Wireless LAN Concept

In an Infrastructure Mode of wireless network, Vigor wireless router plays a role as an **Access Point (AP)** connecting to lots of wireless clients or Stations (STA). All the STAs (clients) will share the same Internet connection with other wired hosts via Vigor wireless router.



3.2.2 General Setup

1. On the **Wireless LAN** group, select **General Setup**. The following page will be shown as below.

Wireless LAN >> General Setup

General Setting (IEEE 802.11)

Enable Wireless LAN

Mode : Mixed(11b+11g+11n)

Index(1-15) in [Schedule](#) Setup: , , ,

	Enable	Hide SSID	SSID	Isolate	LAN	Member
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="default"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Hide SSID: Prevent SSID from being scanned.
Isolate Member: Wireless clients (stations) with the same SSID cannot access for each other.
Isolate LAN: Wireless clients (stations) with the same SSID cannot access wired PCs on LAN.

Channel: Channel 6, 2437MHz Long Preamble:

Long Preamble: necessary for some old 802.11 b devices only(lower performance)

Packet-OVERDRIVE™
 Tx Burst

Note: The same technology must also be supported in clients to boost WLAN performance.

Rate Control

	Enable	Upload	Download
SSID 1	<input type="checkbox"/>	<input type="text" value="30000"/> kbps	<input type="text" value="30000"/> kbps
SSID 2	<input type="checkbox"/>	<input type="text" value="30000"/> kbps	<input type="text" value="30000"/> kbps
SSID 3	<input type="checkbox"/>	<input type="text" value="30000"/> kbps	<input type="text" value="30000"/> kbps
SSID 4	<input type="checkbox"/>	<input type="text" value="30000"/> kbps	<input type="text" value="30000"/> kbps

Note: range 100~30,000 kbps

2. Check **Enable Wireless LAN** to enable the wireless function.
3. At present, the router can connect to 11b+11g, 11g Only, 11b Only, 11n Only and Mixed (11b+11g+11n) stations simultaneously. Simply choose Mix (11b+11g+11n) mode.
Note: You should also set **RADIUS Server** simultaneously if 11g Only, 11b Only or 11n Only mode is selected.
4. Type in the name of the **SSID**. The default name for SSID is **default**. We suggest you change it to a particular name for your necessity.
SSID (service set identifier) It is used to name the wireless LAN for this router, and it must have the same content in client PC/notebook wireless card(s). SSID can be any text numbers or various special characters.
5. The default channel is 6. You can change it to an appropriate one if the selected channel is under serious interference.

3.2.3 Security Settings

1. On the **Wireless LAN** group, select **Security Settings**.

Wireless LAN >> Security Settings

SSID 1 SSID 2 SSID 3 SSID 4

Mode: Disable

WPA:
 Encryption Mode: TKIP
 Pre-Shared Key(PSK): [*****]
 Type 8~63 ASCII character or 64 Hexadecimal digits leading by "0x", for example "cfigs01a2..." or "0x655abcd....".

WEP:
 Encryption Mode: 64-Bit
 Key 1 : [*****]
 Key 2 : [*****]
 Key 3 : [*****]
 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 "0x30313233343536373839414243".

OK Cancel

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

Mode:

Disable
 WEP
 WPA/PSK
 WPA2/PSK
 Mixed(WPA+WPA2)/PSK

- | | |
|-----------------------------|--|
| Disable | Turn off the encryption mechanism. For the security of your router, please select any one of the encryption mode here. |
| WEP | Accepts only WEP clients and the encryption key should be entered in WEP Key. |
| WPA/PSK | Accepts only WPA clients and the encryption key should be entered in PSK. |
| WPA2/PSK | Accepts only WPA2 clients and the encryption key should be entered in PSK. |
| Mixed (WPA+WPA2)/PSK | Accepts WPA and WPA2 clients simultaneously and the encryption key should be entered in PSK. |

3. For **WPA** encryption, type in 8~63 ASCII characters or 64 Hexadecimal digits leading by 0x, for example "0123456789ABCD...." or "0x321253abcde....." on the

field of **Pre-Shared Key (PSK)**. WPA encrypts each frame transmitted from the radio using the Pre-Shared Key (PSK) which entered from this panel.

4. As to **WEP** encryption, select 64-bit or 128-bit as the encryption mode. For 64bits WEP key, type in 5 ASCII characters or 10 hexadecimal digitals leading by 0x, for example, ABCDE or 0x4142434445. And for 128bits WEP key, type in 13 ASCII characters or 26 hexadecimal digits leading by 0x, for example, ABCDEFGHIJKLM or 0x4142434445464748494A4B4C4D. Only one WEP key can be selected and allows user to type in the characters.
5. Click **OK** to save settings.

Be aware that for the communication, all wireless devices must support the same encryption bit length and share the same key. If WEP mode is selected, only one of four preset keys can be selected at one time.

4. Trouble Shooting

This section will guide you to solve abnormal situations if you cannot access into the Internet after installing the router and finishing the web configuration. Please follow sections below to check your basic installation status stage by stage.

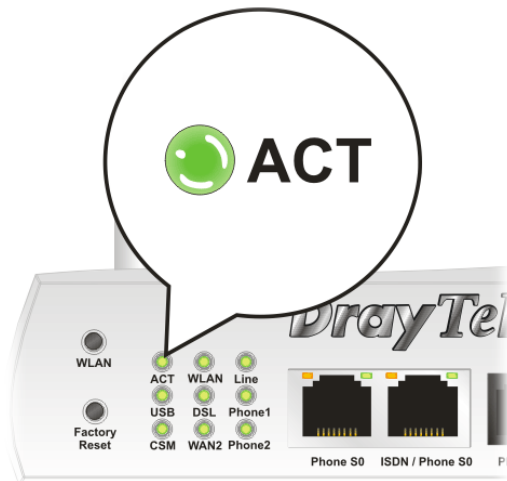
- Checking if the hardware status is OK or not.
- Checking if the network connection settings on your computer are OK or not.
- Pinging the router from your computer.
- Checking if the ISP settings are OK or not.
- Backing to factory default setting if necessary.

If all above stages are done and the router still cannot run normally, it is the time for you to contact your dealer for advanced help.

4.1 Checking If the Hardware Status Is OK or Not

Follow the steps below to verify the hardware status.

1. Check the power line and LAN cable connections. Refer to “**2.1 Hardware Installation**” for details.
2. Turn on the router. Make sure the **ACT LED** blink once per second and the correspondent **LAN LED** is bright.



3. If not, it means that there is something wrong with the hardware status. Simply back to “**2.1 Hardware Installation**” to execute the hardware installation again. And then, try again.

4.2 Checking If the Network Connection Settings on Your Computer Is OK or Not

Sometimes the link failure occurs due to the wrong network connection settings. After trying the above section, if the link is still failed, please do the steps listed below to make sure the network connection settings is OK.

For Windows

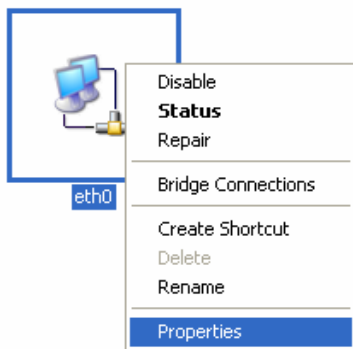


The example is based on Windows XP. As to the examples for other operation systems, please refer to the similar steps or find support notes in www.draytek.com.

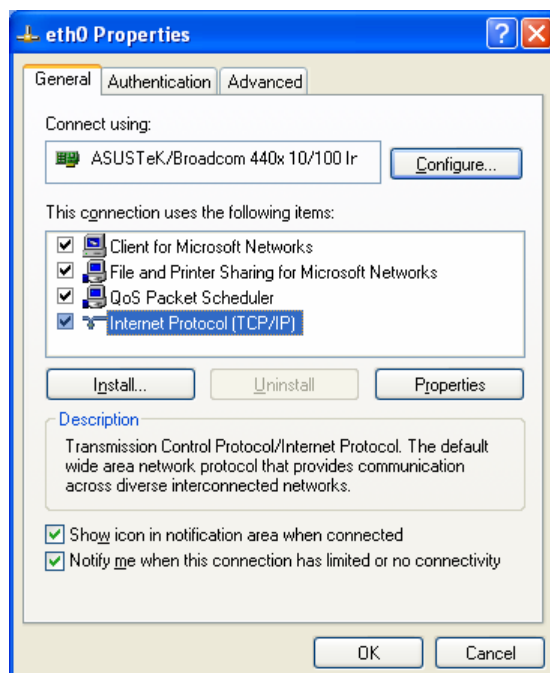
1. Go to **Control Panel** and then double-click on **Network Connections**.



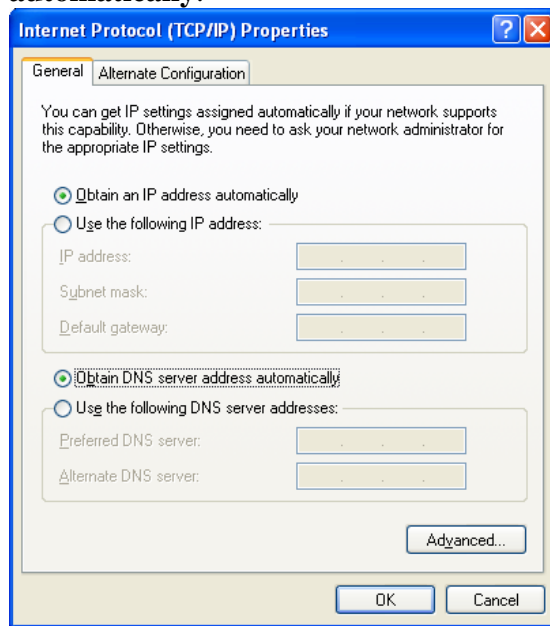
2. Right-click on **Local Area Connection** and click on **Properties**.



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

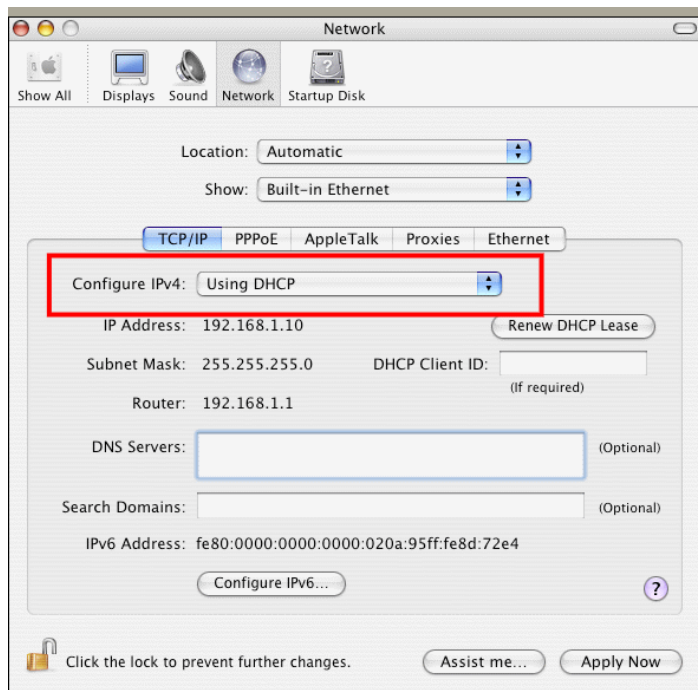


4. Select **Obtain an IP address automatically** and **Obtain DNS server address automatically**.



For MacOs

1. Double click on the current used MacOs on the desktop.
2. Open the **Application** folder and get into **Network**.
3. On the **Network** screen, select **Using DHCP** from the drop down list of Configure IPv4.



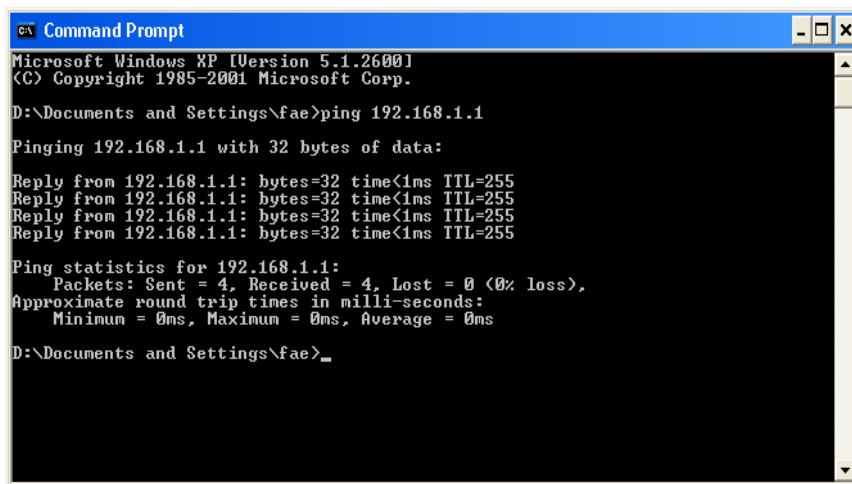
4.3 Pinging the Router from Your Computer

The default gateway IP address of the router is 192.168.1.1. For some reason, you might need to use “ping” command to check the link status of the router. **The most important thing is that the computer will receive a reply from 192.168.1.1.** If not, please check the IP address of your computer. We suggest you setting the network connection as **get IP automatically**. (Please refer to the section 4.2)

Please follow the steps below to ping the router correctly.

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). The DOS command dialog will appear.



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

3. Type **ping 192.168.1.1** and press [Enter]. If the link is OK, the line of “**Reply from 192.168.1.1:bytes=32 time<1ms TTL=255**” will appear.
4. If the line does not appear, please check the IP address setting of your computer.

For MacOs (Terminal)

1. Double click on the current used MacOs on the desktop.
2. Open the **Application** folder and get into **Utilities**.
3. Double click **Terminal**. The Terminal window will appear.
4. Type **ping 192.168.1.1** and press [Enter]. If the link is OK, the line of “**64 bytes from 192.168.1.1: icmp_seq=0 ttl=255 time=xxxx ms**” will appear.

```

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$ █

```

4.4 Checking If the ISP Settings are OK or Not

Open **WAN >> Internet Access** page and then check whether the ISP settings are set correctly. Click **WAN1** or **WAN2** link to review the settings that you configured previously.

[WAN >> Internet Access](#)

Internet Access

Index	Display Name	Physical Mode	Config Information
WAN1		ADSL	Channel: 1, VPI: 0, VCI: 33, Protocol: PPPoE/LLC/SNAP, Modulation: Multimode, Dynamic IP
WAN2		Ethernet	IP Address: 172.16.3.229, Subnet Mask: 255.255.0.0, Gateway IP: 172.16.3.4

For PPPoE Users

1. Check if the **Enable** option is selected.
2. Check if **Username** and **Password** are entered with correct values that you **got from** your **ISP**.

WAN >> Internet Access

WAN 1

PPPoE / PPPoA	MPoA (RFC1483/2684)
<input checked="" type="radio"/> Enable <input type="radio"/> Disable	
DSL Modem Settings	
Multi-PVC channel	Channel 1
VPI	0
VCI	33
Encapsulating Type	LLC/SNAP
Protocol	PPPoE
Modulation	Multimode
PPPoE Pass-through	
<input type="checkbox"/> For Wired LAN	
ISDN Dial Backup Setup	
Dial Backup Mode	None
ISP Access Setup	
Username	84005755@hinet.net
Password
PPP Authentication	PAP or CHAP
Idle Timeout	-1 second(s)
IP Address From ISP WAN IP Alias	
Fixed IP	<input type="radio"/> Yes <input checked="" type="radio"/> No (Dynamic IP)
Fixed IP Address	
<input checked="" type="radio"/> Default MAC Address	
<input type="radio"/> Specify a MAC Address	
MAC Address:	00 . 50 . 7F . 00 . 00 . 01
Index(1-15) in Schedule Setup:	
=>	<input type="text"/> , <input type="text"/> , <input type="text"/> , <input type="text"/>

OK Cancel

For MPoA Users

1. Check if the **Enable** option is selected.

WAN >> Internet Access

WAN 1

PPPoE / PPPoA MPoA (RFC1483/2684)

Enable Disable

WAN IP Network Settings WAN IP Alias

Obtain an IP address automatically

Router Name *

Domain Name *

* : Required for some ISPs

Specify an IP address

IP Address

Subnet Mask

Gateway IP Address

Default MAC Address

Specify a MAC Address

MAC Address:

DNS Server IP Address

Primary IP Address

Secondary IP Address

DSL Modem Settings

Multi-PVC channel

Encapsulation

VPI

VCI

Modulation

ISDN Dial Backup Setup

Dial Backup Mode

RIP Protocol

Enable RIP

Bridge Mode

Enable Bridge Mode

OK Cancel

2. Check if **DSL Modem Settings** is set appropriately.
3. Check if **IP Address, Subnet Mask** and **Gateway** are set correctly (must identify with the values from your ISP) if you choose **Specify an IP address**.

4.5 Backing to Factory Default Setting If Necessary

Sometimes, a wrong connection can be improved by returning to the default settings. Try to reset the router by software or hardware.



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

Software Reset

You can reset the router to factory default via Web page.

Go to **System Maintenance** and choose **Reboot System** on the web page. The following screen will appear. Choose **Using factory default configuration** and click **OK**. After few seconds, the router will return all the settings to the factory settings.

Reboot System

Do you want to reboot your router ?

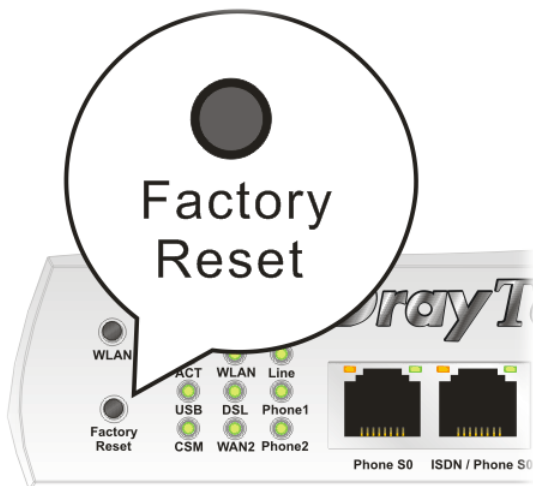
Using current configuration

Using factory default configuration

OK

Hardware Reset

While the router is running (ACT LED blinking), press the **RST** button and hold for more than 5 seconds. When you see the **ACT** LED blinks rapidly, please release the button. Then, the router will restart with the default configuration.



After restore the factory default setting, you can configure the settings for the router again to fit your personal request.

4.6 Contacting Your Dealer

If the router still cannot work correctly after trying many efforts, please contact your dealer for further help right away. For any questions, please feel free to send e-mail to support@draytek.com.

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