NETGEAR®

DSL Modem Internet Gateway
with 4-port 10/100 Mbps switch **DG814**

Installation Guide

Technical Support

YOU MUST REGISTER TO OBTAIN TECHNICAL SUPPORT. PLEASE RETAIN PROOF OF PURCHASE AND THE WARRANTY INFORMATION.

To register your product, get product support or obtain product information and product documentation, go to http://www.NETGEAR.com/register.

You'll find technical support information at http://www.NETGEAR.com/ through the Customer Service area. If you want to contact technical support by telephone, see the support information card for the correct telephone number for your country.

Technical support is available 24 hours a day, 7 days a week.

NETGEAR, INC.
E-mail: support@NETGEAR.com
www.NETGEAR.com

Introduction

DSL Modem Internet Gateway DG814

Thank you for purchasing a NETGEAR DG814 DSL Modem Internet Gateway. With this gateway you can have secure Internet access through its high-speed ADSL modem and share this modem with several computers.

This installation guide shows you how to connect the gateway and configure it and your computers for secure Internet access. Setup is easy—follow the instructions in this guide and your system will be up and running quickly.

With Auto Uplink™ on each network port, you don't have to worry about which type of Ethernet cable you use when you connect your computers, servers or other network devices to the gateway. Each network port automatically configures itself correctly when you plug in the cable.

If you have problems, there is a troubleshooting section on pages 11 and 12 to help you. You can get more detailed troubleshooting information from the *Reference Manual* on the CD, online at www.NETGEAR.com, or by phone. There's a short glossary available on page 13 if you have questions about terminology and a more extensive glossary in the *Reference Manual*.

Installation Overview

Estimated time: 15 to 30 minutes

1. Gather the configuration information you have for your Internet account from your Internet Service Provider (ISP).

2. Connect the gateway to one computer.

3. Configure that computer to work with the gateway and restart the computer and gateway.

4. Configure the gateway and go online to test the connection.

5. Connect other computers, configure them and restart each. (optional)

6. Configure for content filtering or port forwarding. (optional)

On the *DG814 Resource* CD, you'll find the *DG814 Installation Assistant,* which supplements the instructions in this installation guide by animating the step-by-step procedures given here. For more detailed information about installation, troubleshooting and configuration procedures, see the *Reference Manual* on the CD.
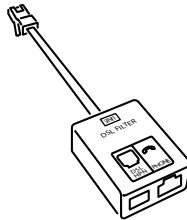
What's in the Box

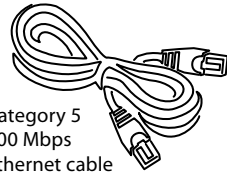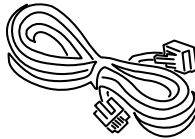

DSL Modem Internet
Gateway DG814
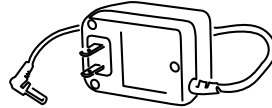
Power adapter

DG814 DSL Modem Internet
Gateway Resource CD, installation
guide, support information card &
warranty/registration card

Category 5
100 Mbps
Ethernet cable

Micro Filter

Phone Cable

When you open the box, verify that you received everything.

The package includes:

- DG814 DSL Modem Internet Gateway
- AC power adapter
- Microfilter splitter (depending on the country of purchase)
- Category 5 Ethernet straight-through cable
- Phone cable
- *DG814 Resource* CD, including a full *Reference Manual* and *Installation Assistant*
- *DG814 Installation Guide* (this document)
- Warranty and registration card
- Support information card

1 Gather Configuration Information from Your Internet Service Provider

Before installing the DG814 gateway, you should have active DSL service and an Internet account with an Internet Service Provider (ISP).

For each computer that you want to connect to the gateway, you must have

- An available RJ-45 Ethernet port (or adapter) — either built-in or from a network interface card (NIC) installed in the computer.

  Note: If you have a built-in modem or a modem card, the telephone jack for the modem looks very similar to an RJ-45 Ethernet port, but the RJ-45 port is larger.

- TCP/IP networking installed.
- Windows® computers: Client for Microsoft® Networks software installed.

  Note: TCP/IP and Client for Microsoft Networks is installed on most Windows computers. If you have viewed Web sites with a browser, you are ready to go. Please see the *Reference Manual* on the CD if you need help installing either on a Windows computer.

- A Category 5 (Cat 5) Ethernet patch cable.

  Note: There is one cable in the box with the gateway.

Connection information

Later in the setup process you'll configure the gateway to work with your network and, at that time, you'll need to know the type of account you have with your ISP and specific account information.

The next page includes blanks for you to fill in and refer to later.

  Note: Your ISP should have provided you with a summary sheet of all the information needed to connect your computer to the Internet. If you cannot locate the information, you'll have to contact your ISP.

Host and Domain Names

Some ISPs use a specific host or domain name—like CCA7324-A or home. If you haven't been given specific information about host or domain names then use the following examples as a guide:

- If your main e-mail account with your ISP is aaa@yyy.com, then use aaa as your host name. (Your ISP might call this your account, user, host, computer or system name.)

- If your ISP's mail server is mail.xxx.yyy.com, then use xxx.yyy.com as the domain name.

  Account name: _____

  Domain name: _____

Login Name

If your ISP requires a login name and password (possibly because you have a PPPoE or PPPoA account), fill in the following:

  Login name: _____ (may be your full e-mail address)

  Password: _____

  Service name: _____ (if required by your ISP)

  Note: The login name could be called a user name or account name by your ISP. The login name is case sensitive. You must type it *exactly* as given by your ISP. For example, c_jones is a different login name than C_Jones or cjones.

Fixed (or static) IP address

If you have a static IP address through your ISP, fill in the following information:

  Internet IP address: _____ . _____ . _____ . _____   **Note:** For example, a
                                                          valid IP address could
  Subnet mask: _____ . _____ . _____ . _____   be 169.254.141.148.

  Gateway IP address: _____ . _____ . _____ . _____

DNS server address information

If you were given specific Domain Name System (DNS) server addresses, fill in the following:

  DNS Server IP address(es): _____ . _____ . _____ . _____

                             _____ . _____ . _____ . _____

2 Install the Gateway

After unpacking the box and locating the configuration information, you can install the gateway.

DG814 DSL Modem Internet Gateway

Note: You do not have to power down any equipment to do this, but if you need to move your computers (perhaps to get to ports in the back), you may want to shut down the computers before moving them.
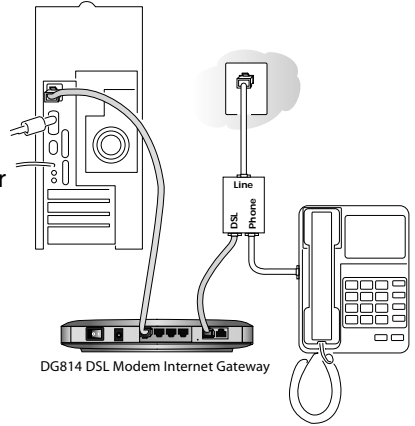
1. Connect the microfilter splitter into the telephone wall jack.
2. Connect a phone cord between the **DSL** port and one of the smaller connector ports on the gateway.
3. Use an Ethernet cable to connect the computer to one of the four numbered Ethernet ports on the gateway.
4. To use a telephone with this wall jack, connect a phone cord into the **Phone** port.
5. Connect the power adapter into the back of the gateway and then plug the adapter into a power source (such as a wall socket or power strip).

Note: If you want to connect other computers into the gateway, **don't** connect them now. Do that after you know that the gateway setup works with one computer.

4. Turn the gateway's power on.

Note: If you don't want to connect a telephone at the wall jack, you may connect the gateway directly to the wall jack with a phone cord. You can connect a telephone to the gateway by placing a microfilter between the gateway and the telephone's cord.

Check the setup

- The **Test** light turns on for a few seconds and then goes off.

  Note: If the **Test** light stays on or blinks, go to *Troubleshooting* on page 11.

- The **Power** and **Internet** lights should be lit.

- The number of the port with the computer (if powered up) should be lit and may blink to show network activity.

  Note: If the connection is a 100 Mbps connection, the number is green. If it is a 10 Mbps connection, the number is yellow. If either the **Power**, **Internet** or port number light isn't lit, go to *Troubleshooting* on page 11.

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3 Configure the Computer to Work with the Gateway and Restart the Network

Next, you configure the computer to interact with the gateway. To do this, you configure the TCP/IP settings on the computer and then restart the network. How you do this depends on your computer.

Windows Operating System

Normally, you leave the TCP/IP setup parameters at their factory default settings unless you have a specific reason to change them. You should verify that the computer is set to 'obtain an IP address automatically' in the *Network* control panel.

Windows 98 or Me

1. Choose **Settings>Control Panel** from the **Start** menu.

2. Double-click the **Network** icon.

3. Click the **Configuration** tab.

4. In the list of installed network components, select the TCP/IP entry for the computer's Ethernet adapter or NIC.

5. Click **Properties**.

6. Click the **IP Address** tab.

7. If not selected, select **Obtain an IP address automatically.**

8. Click the **Gateway** tab.

9. Select and remove any IP Gateway addresses that are listed.

10. Click **OK** and click **OK** again to close the *Network* control panel.

11. Go to *Restarting the Network* on the next page.

Windows 2000 or XP

1. Right-click **My Network Place** and choose **Properties**.

2. Double-click **Local Area Network Connection** and click **Properties.**

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

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

5. Click **OK** twice and click **Close.**

6. Go to *Restarting the Network*.

Windows 98/Me
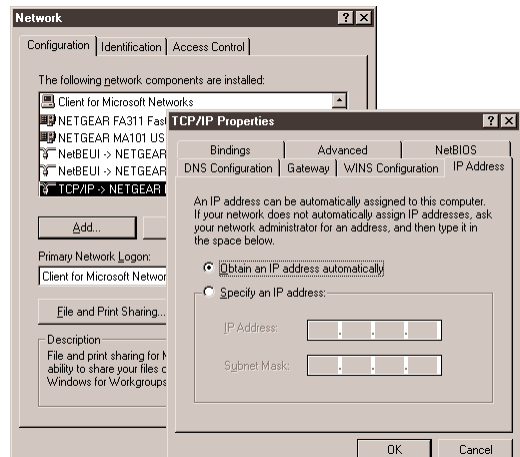
Macintosh Operating System

Mac OS® 8.6 or 9.x
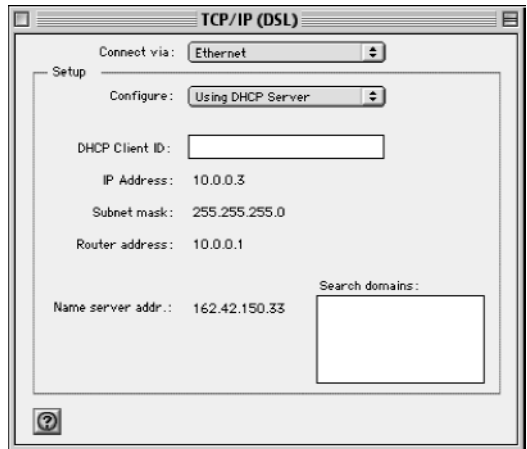
1. Choose **Control Panels >TCP/IP** from the **Apple (🍎)** menu.

2. If not already selected, select **Ethernet** in the *Connect via* list.

3. Select **Using DHCP Server** in the *Configure* list.

4. Click the close box.

5. Click **Save**.

6. Go to *Restarting the Network*.

Mac OS X

1. Choose **System Preferences** from the **Apple** menu.

2. Double-click **Network**.

3. If not already selected, select **Built-in Ethernet** in the *Configure* list.

4. If not already selected, select **Using DHCP** in the **TCP/IP** tab.

5. Click **Save**.

6. Go to *Restarting the Network*.

Mac OS 8.6/9.x

Linux® or UNIX® Operating System

If you're installing the gateway with a Linux-based or UNIX-based computer, see your system documentation to set up TCP/IP networking to obtain IP addresses automatically using DHCP.

Restarting the Network

Once you've set up your computer to work with the gateway, you must reset the network for the devices to be able to communicate.

1. Turn the the gateway off, wait 15 seconds, and then power it up again.

2. Wait until the **Test** light stops blinking. (10 seconds)

3. Restart the computer that is connected to the gateway.

   Note: If the **Test** light stays lit, go to *Troubleshooting* on page 11.

4 Configure the Gateway and Test the Connection

Now you configure the gateway to work with your ISP. You'll need the information you filled in on page 4. You configure your gateway using Internet browser software such as Microsoft® Internet Explorer 5.0 or Netscape Navigator® 4.7 or later. You can either use the *Smart Wizard* or configure the gateway yourself.

1. Start a browser on the computer connected to the gateway.

2. In the **Address** or **Location** box, type http://192.168.0.1 and press **Enter** or **Return**.

   Note: You may want to bookmark this address in your browser for handy access in the future.

3. In the **User Name** box, type admin

4. In the **Password** box, type password

5. Click **OK**.

   The gateway's *Setup Wizard* page appears.

6. To have the *Setup Wizard* automatically configure the router, click **Yes**, click **Next** and follow the instructions on screen.

   To configure it yourself, click **No**, then click **Next** and continue with the steps listed here.

7. Fill in the form on the *Basic Settings* page. (Refer to page 4 where you filled in the information previously.)

   Note: Helpful information appears on the right side of the page to assist you as you fill in the form. You may also find pertinent information in the *NETGEAR Router ISP Guide*.

8. Click **Apply** to have your information sent to the router.

Test the Connection

1. Click the **Test** button on the *Basic Settings* page.
   This should open a new browser window and take you to NETGEAR's Web site (www.NETGEAR.com).

   Note: If NETGEAR'S Web site doesn't appear, go to *Troubleshooting* on page 11.

2. Close the browser window showing NETGEAR's success page.

3. Click the **Logout** button on the left navigation area.

   Note: If you get asked about closing the browser window, click **Yes**.

5 Connect and Configure Other Computers (optional)

Now that you have one computer set up to access the Internet through the gateway, you can connect other computers so they can share access.

1. For each computer, connect a Category 5 Ethernet cable between it and one of the remaining numbered Ethernet ports on the gateway.

2. Check to make sure that the associated port number light is lit. The light flashes when data is being transferred over the connection.

Note: If the numbered light isn't lit, go to *Troubleshooting* on page 11.

3. Go back to **Installation Step 3** (pages 6 and 7) and go through the sequence of steps applicable for each computer.

4. Restart each computer.

5. Test each computer's connection by going to NETGEAR's Web site (www.NETGEAR.com) from each computer.

Note: If you have more than 4 computers to connect to this gateway, you must connect them to a hub or switch (such as the NETGEAR 5-port or 8-port Fast Ethernet Switch) and then connect the hub or switch to the gateway. By using hubs or switches, you may connect up to 253 computers to the gateway.

6 Optional Configurations

Content Filtering

After you have successfully set up the gateway for Internet access, you can configure it to filter out inappropriate Web pages.

1. Start your browser and open the *Settings* pages by going to http://192.168.0.1.

2. To block keywords or Internet domains, click **Block Sites** under the **Content Filtering** heading.

3. Select the **Turn Keyword Blocking On** check box.

```
Type keyword or domain name here.

 Add Keyword
```

4. Type a keyword or domain name to block in the box and click **Add Keyword**. (For example, you may want to block sites with the word "sex" in the address.)

5. Continue adding names and keywords until you are finished.

6. Click **Apply** to save your changes.

> **Note:** For more information about content filtering and reporting features, see the *Reference Manual* on the *Model DG814 Resource* CD.

Internet Services and Gaming

To have a Web server, e-mail server or other server on your network accessible from the Internet, to play Internet-enabled games, or to use Internet communication features (such as chat), you'll have to allow access to those computers *from* the Internet. You do this by configuring the **Port Forwarding** feature of the gateway using the *Settings* pages.

1. Start your browser and open the *Settings* pages by going to http://192.168.0.1.

2. Click **Port Forwarding.**

3. Configure each computer as needed. (Read the *Help* pane for specific information.)

4. Click **Apply**.

> **Note:** For more information about port forwarding, click the **Port Forwarding Help** link on the index page for the *Model DG814 Resource* CD.

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Troubleshooting

No lights are lit on the gateway

The gateway has no power.

- Make sure the power adapter is properly connected to the gateway.
- Make sure the power adapter is properly connected to a functioning power outlet. If it's in a power strip, make sure the power strip is turned on.
- Make sure the power switch in the back is in the **On** position.

Test light remains lit

After you plug in the power adapter and turn on the gateway, the **Test** light should turn on and then, after approximately 10 seconds, turn off.

- If the **Test** light does not turn off, turn off the gateway and then turn it on again. Contact NETGEAR if this doesn't solve the problem.

The Internet light doesn't light up

The **Power** light and at least one numbered light is lit, but the **Internet** light isn't lit.

- You may not have active DSL service yet. Contact your provider to verify activation.

There is no numbered light lit for a connected device

There's a hardware connection problem.

- Make sure the cable connectors are securely plugged in at the gateway and the device.
- Make sure the connected device is turned on.

I cannot get onto the Internet with a computer

You may not have restarted the computer or the network to have TCP/IP changes take effect.

- Restart the computer.
- Turn off the gateway, and then restart the network. See *Restarting the Network* on page 7.

Your computer may not recognize any addresses.

- If you typed in addresses of one or two DNS servers when you configured the gateway, restart your computer. Open the gateway's *Settings* pages and verify that the DNS addresses appear. See instructions on page 8 to view the gateway's *Basic Settings* page.

Your computer may not have the correct TCP/IP settings to recognize the gateway.

- Restart the computer and check that you have TCP/IP set up properly.

11

For Windows, the **Network Properties** should have **Obtain an IP address automatically** selected (see page 6). For Macintosh computers, the **TCP/IP** (or **Network**) control panel should be set to **Using DHCP Server** (see page 7).

• You may also verify that the gateway's local IP address is 192.168.0.1. The computer's IP address should be between 192.168.0.2 and 192.168.0.254.

Your gateway might not be able to obtain a IP address from the ISP.

1. Start your browser, type the address for an external site (like www.NETGEAR.com), and press **Enter** (Windows) or **Return** (Macintosh).

2. Go to the gateway's *Settings* pages by going to http://192.168.0.1.

3. In the **User ID** box type admin, in the **Password** box type password, and click **OK**.

4. Under the *Maintenance* heading, click **Gateway Status**.

5. Check that an IP address is shown for the WAN Port.
   If you see 0.0.0.0, contact your ISP to get current configuration information.

Resetting TCP/IP Properties (Windows)

If you're on a Windows computer and are still having problems, you may try the following procedure before contacting technical support.

Windows 98/Me

1. Click the **Start** button and then click **Run**.

2. Type **winipcfg** and then click **OK**.

3. Select your Ethernet adapter.

Windows 2000

1. Click the **Start** button and then click **Run**.

2. Type **CMD** and click **OK**.

3. Type **ipconfig/all**.

Windows XP

1. Open **My Network Places**.

2. Click **View network connections** (*Network Tasks*).

3. Click your enabled LAN connection.

For any Windows computer, if you are using the recommended default TCP/IP settings, they should be:

• **IP Address**: between 192.168.0.2 and 192.168.0.254

• **Subnet Mask**: 255.255.255.0

• **Default Gateway**: 192.168.0.1

Windows 98/Me

4. Click **More Info** and verify that the **DNS Servers** box displays 192.168.0.1.

5. Click **Release All** and then **Renew All**.

6. Verify that you got a valid address and click **OK**.

Windows 2000

4. Type **ipconfig/release.**

5. Type **ipconfig/renew**.

6. Verify that you got a valid address and close the window.

Windows XP

4. Click **Repair this connection** (*Network Tasks)*.

5. Verify that you got a valid address and close the window.

Note: For Windows XP, you'll find the TCP/IP information in the *Details* area.

Glossary of Terms

You'll find a more extensive glossary in the *Reference Manual* on the *DG814 Resource CD*.

Category 5 (CAT5): A twisted pair cable that meets specified requirements for high-speed networking.

Domain Name System (DNS) server: A server that matches URLs (such as www.netgear.com) to numeric IP addresses.

IP Address: A 4-part number uniquely defining each host on the Internet. Usually written in dotted-decimal notation with separating periods (for example, 134.177.244.57).

ISP: Internet service provider.

Local Area Network (LAN): A communications network within a limited area, such as one building.

PPP: Point-to-Point Protocol, the standard Internet protocol for dial-up connections.

PPP over Ethernet (PPPoE): A protocol for connecting remote hosts to the Internet over an always-on connection by simulating a dial-up connection.

TCP/IP: Transfer Control Protocol (TCP) with Internet Protocol (IP). The main internetworking protocol used in the Internet.

Wide Area Network (WAN): A long distance link used to extend or connect remotely located local area networks (for example, connecting your home computer to the Internet).

Gateway System Requirements

To use the gateway in your network you must have:

- ADSL service
- An account with an ISP
- Ethernet network card (NIC) or built-in networking for each computer
- Network software (Windows, Mac OS, Linux or UNIX)
- Internet Explorer 5.0 or later; Netscape Navigator 4.7 or later

Gateway Specifications

Routing Protocols:	TCP/IP, RIP-1, RIP-2, DHCP, NAT, PPTP, PPPoE, PPPoA, IPSec, L2TP
Dimensions:	W: 175 mm (6.89") D: 118 mm (4.65") H: 28 mm (1.10")
Weight:	0.3 kg (0.661 lbs.)
Microprocessor:	ARM7, 50MHz
Memory:	1 MB Flash, 8 MB SDRAM
LAN:	10BASE-T or 100BASE-TX
WAN:	ADSL, RJ-11
Power Adapter:	18 V AC, 0.4 A with localized plug for North America, Japan, UK, Europe or Australia

Environmental Specifications

Operating temperature:	0 to 40°C (32˚ to 104˚F)
Operating humidity:	90% maximum relative humidity, noncondensing
Electromagnetic Emissions:	FCC Part 15 Class B
	VCCI Class B
	EN 55 022 (CISPR 22), Class B Interface Specifications

Voluntary Control Council for Interference (VCCI) Statement

This equipment is in the second category (information equipment to be used in residential areas) and conforms to the standards set by the Voluntary Control Council for Interference by Data Processing Equipment and Electronic Office Machines that are aimed at preventing radio interference in residential areas.

EN 55 022 Declaration of Conformance

This is to certify that the NETGEAR Model DG814 DSL Modem Internet Gateway is shielded against the generation of radio interference in accordance with the application of Council Directive 89/336/EEC, Article 4a. Conformity is declared by the application of EN 55 022 Class B (CISPR 22).

Federal Communications Commission (FCC) Compliance Notice: Radio Frequency Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following 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.

Canadian Department of Communications Radio Interference Regulations

This digital apparatus (NETGEAR Model DG814 DSL Modem Internet Gateway) does not exceed the Class B limits for radio-noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

Règlement sur le brouillage radioélectrique du ministère des Communications

Cet appareil numérique (NETGEAR Model DG814 DSL Modem Internet Gateway) respecte les limites de bruits radioélectriques visant les appareils numériques de classe B prescrites dans le Règlement sur le brouillage radioélectrique du ministère des Communications du Canada.

Statement of Conditions

In the interest of improving internal design, operational function, and/or reliability, NETGEAR reserves the right to make changes to the products described in this document without notice.

NETGEAR does not assume any liability that may occur due to the use or application of the product(s) or circuit layout(s) described herein.

Certificate of the Manufacturer/Importer

It is hereby certified that the NETGEAR Model DG814 DSL Modem Internet Gateway has been suppressed in accordance with the conditions set out in the BMPT-AmtsblVfg 243/1991 and Vfg 46/1992. The operation of some equipment (for example, test transmitters) in accordance with the regulations may, however, be subject to certain restrictions. Please refer to the notes in the operating instructions.

Federal Office for Telecommunications Approvals has been notified of the placing of this equipment on the market and has been granted the right to test the series for compliance with the regulations.

Bestätigung des Herstellers/Importeurs

Es wird hiermit bestätigt, daß das Model DG814 DSL Modem Internet Gateway gemäß der im BMPT-AmtsblVfg 243/1991 und Vfg 46/1992 aufgeführten Bestimmungen entstört ist. Das vorschriftsmäßige Betreiben einiger Geräte (z.B. Testsender) kann jedoch gewissen Beschränkungen unterliegen. Lesen Sie dazu bitte die Anmerkungen in der Betriebsanleitung.

Das Bundesamt für Zulassungen in der Telekommunikation wurde davon unterrichtet, daß dieses Gerät auf den Markt gebracht wurde und es ist berechtigt, die Serie auf die Erfüllung der Vorschriften hin zu überprüfen.