

Mobile Broadband Modem MBM621 User Manual



NETGEAR®

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Product and Publication Details

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About This Manual

The *NETGEAR® Mobile Broadband Modem MBM621 User Manual* describes how to install, configure and troubleshoot the Mobile Broadband Modem MBM621. The information in this manual is intended for readers with intermediate computer and Internet skills.

Conventions, Formats and Scope

The conventions, formats, and scope of this manual are described in the following paragraphs:

- **Typographical Conventions.** This manual uses the following typographical conventions:

<i>Italics</i>	Emphasis, books, CDs, URL names
Bold	User input

- **Formats.** This manual uses the following formats to highlight special messages:

	Note: This format is used to highlight information of importance or special interest.
---	--

	Tip: This format is used to highlight a procedure that will save time or resources.
---	--

- **Scope.** This manual is written for the Mobile Broadband Modem according to these specifications:

Product Version	Mobile Broadband Modem MBM621
Manual Publication Date	November 2007

For more information about network, Internet, firewall, and VPN technologies, see the links to the NETGEAR website in [Appendix B, “Related Documents”](#)..



Note: Product updates are available on the NETGEAR, Inc. website at <http://kbserver.netgear.com>.

How to Use This Manual

The HTML version of this manual includes the following:

- Buttons,  and , for browsing forwards or backwards through the manual one page at a time
- A  button that displays the table of contents and an  button. Double-click on a link in the table of contents or index to navigate directly to where the topic is described in the manual.
- A  button to access the full NETGEAR, Inc. online knowledge base for the product model.
- Links to PDF versions of the full manual and individual chapters.

How to Print this Manual

To print this manual you can choose one of the following several options, according to your needs.

- **Printing a Page in the HTML View.**

Each page in the HTML version of the manual is dedicated to a major topic. Use the *Print* button on the browser toolbar to print the page contents.

- **Printing a Chapter.**

Use the *PDF of This Chapter* link at the top left of any page.

- Click the *PDF of This Chapter* link at the top left of any page in the chapter you want to print. The PDF version of the chapter you were viewing opens in a browser window.
- Your computer must have the free Adobe Acrobat reader installed in order to view and print PDF files. The Acrobat reader is available on the Adobe website at <http://www.adobe.com>.

- Click the print icon in the upper left of the window.



Tip: If your printer supports printing two pages on a single sheet of paper, you can save paper and printer ink by selecting this feature.

- **Printing the Full Manual.**

Use the *Complete PDF Manual* link at the top left of any page.

- Click the Complete PDF Manual link at the top left of any page in the manual. The PDF version of the complete manual opens in a browser window.
- Click the print icon in the upper left of the window.



Tip: If your printer supports printing two pages on a single sheet of paper, you can save paper and printer ink by selecting this feature.

Chapter 1 Installation

The Mobile Broadband Modem MBM621 connects your computer or router to a broadband Internet service.

Package Contents

The product package should contain the following items:

- Mobile Broadband Modem MBM621
- SIM card slot cover
- AC power adapter (varies by region)
- Category 5 (Cat 5) Ethernet cable
- Two plastic feet that can be used to stand the Mobile Broadband Modem on end
- *Resource CD*
- *Mobile Broadband Modem MBM621 Installation Guide*
- Warranty and Support Information cards

If any of the parts are incorrect, missing, or damaged, contact your NETGEAR dealer. Keep the carton, including the original packing materials, in case you need to return the product for repair.

Requirements

Before installation, make sure that these requirements are met.

- You must have an account for wireless broadband service, and you must be located in an area with wireless broadband coverage. Check with your Internet Service Provider (ISP) if you are not sure.
- You need an activated SIM card from your ISP.
- You must have a computer with an available Ethernet port to connect to the modem.
- Your computer must be configured with DHCP.
- For installation with a router, first install the modem to work with a computer. Then follow the instructions that came with the router to connect the router to the modem.

Front View

The front view of the modem is shown below:

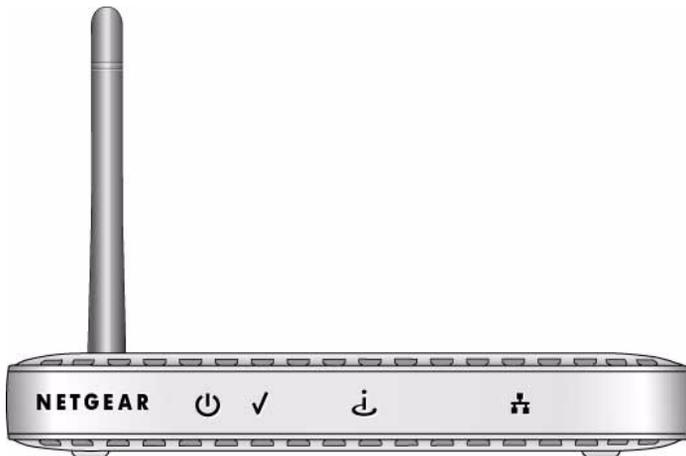


Figure 1-1

Understanding the LEDs

The following table explains how to interpret the lights on the front of the modem.

LED	Activity
 Power	<ul style="list-style-type: none"> • Green: The modem is on and operating normally. • Off: Power is not supplied to the modem.
 Status	<ul style="list-style-type: none"> • Amber: Power-on self-test is in progress. If this light remains on it indicates that the test failed. • Off: Normal operation after power-on self-test.
 Internet	<ul style="list-style-type: none"> • Blue: Excellent signal. • Green: Good signal. • Amber: Weak signal. • Blinking: Data is being transmitted or received on the Internet port. • Off: No Internet connection. This can occur if you are outside of the coverage area, if the SIM card is not installed in the modem, or if the SIM card has not been activated.
 Ethernet	<ul style="list-style-type: none"> • Green: The Ethernet port is operating at 100 Mbps. • Amber: The Ethernet port is operating at 10 Mbps. • Blink: Data is being transmitted or received on the Ethernet port. • Off: No device is connected to the Ethernet port.

Rear View

The rear panel of the modem has connectors, a slot for the SIM card, and a reset button.

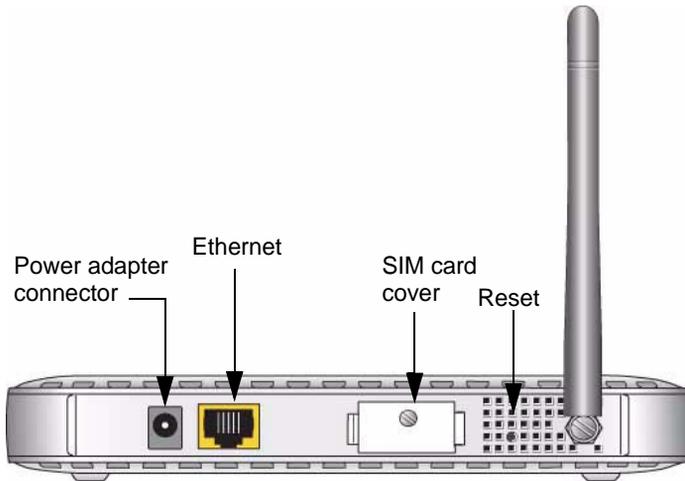


Figure 1-2

Modem Label

The label on the bottom of the modem includes important information such as the MAC address.

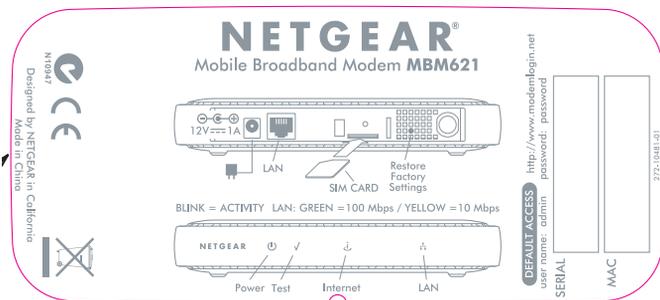


Figure 1-3

Installation



Note: If you will be using a router, first install the modem to work with a computer. Then install the router.

Follow these instructions to install the modem.

Install the SIM Card and Connect the Modem to a Computer

To connect the Modem:

1. Turn off your computer.
2. Insert your activated SIM card into the slot on the rear of the modem.
3. Attach the cover to protect the SIM card.

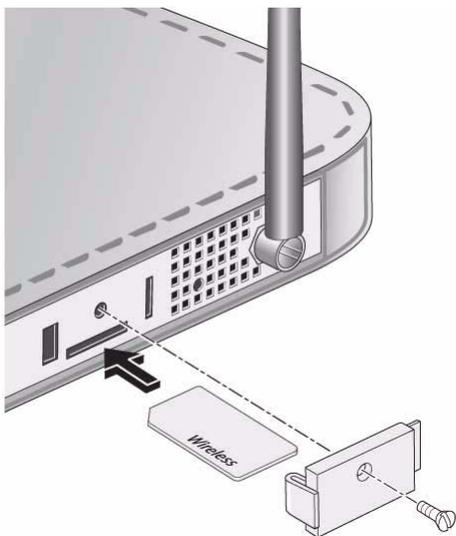


Figure 1-4

4. Connect the Ethernet cable that came with your modem to an Ethernet local area network (LAN) port on your computer, and to the Ethernet port on the modem.

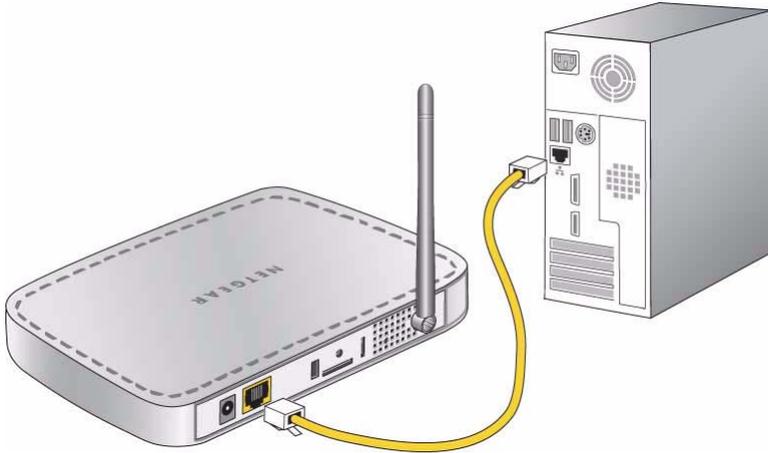


Figure 1-5

Power On the Modem and Computer

Follow these steps:

1. Plug in the power adapter to your modem.

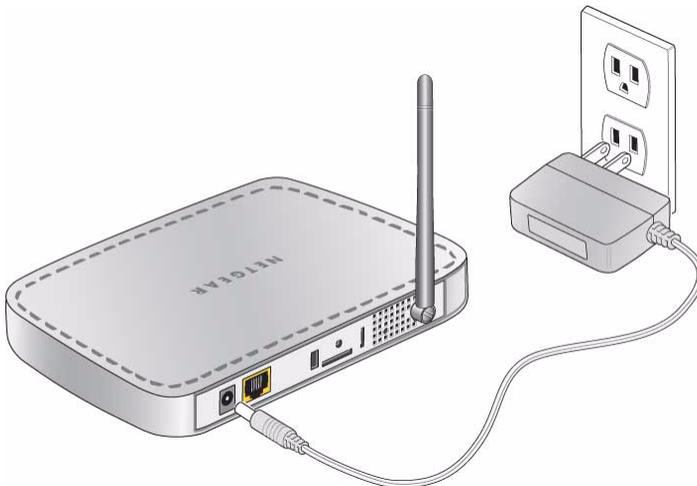


Figure 1-6

2. Verify the following:

-  The Power light is lit after applying power to the modem.
-  The Status light comes on briefly and then goes off.
-  The Internet light comes on.

For more information about LEDs, see [“Understanding the LEDs” on page 1-2](#).

3. Attach the feet to the modem, and adjust the antenna so that it is pointed up at a 90 degree angle for best performance.



Figure 1-7

4. Turn on your computer, let the operating system boot up, and log in as needed.

The  Ethernet (LAN) light on the modem lights up.

Log In to the Modem and Connect to the Internet



Note: Your computer must be configured for DHCP. For more information about this topic, see the link to the online document, [“Preparing a Computer for Network Access” in Appendix B.](#)

1. Turn on your computer, let the operating system boot up completely, and log in as needed.
The Ethernet light on the modem lights up.
2. On your computer, open an Internet browser.
3. Connect to the modem by typing **http://modemlogin.net** or the IP address on the label at the bottom of the modem in the address field of your browser.

A login window opens:



Figure 1-8

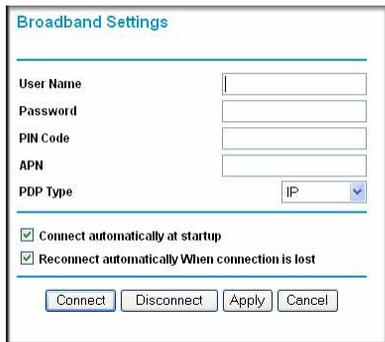
4. Enter **admin** for the user name and **password** for the password, both in lower case letters.

The Broadband Settings screen opens.

- If your modem is programmed by your ISP with broadband settings, the settings are displayed on this screen. Click **Connect** and the modem connects to the Internet.
- If your modem is not programmed then you must enter the settings, click **Apply** to save your settings, and then click **Connect**. See the following section, [“Broadband Settings”](#).

Broadband Settings

The Broadband Settings screen is shown below:



Broadband Settings

User Name

Password

PIN Code

APN

PDP Type

Connect automatically at startup

Reconnect automatically When connection is lost

Figure 1-9

In order for the modem to connect to the Internet, the Broadband settings must be entered correctly. The settings are explained below:

- **User Name.** The user name for the broadband Internet service account. This is not admin, which is the modem user name.
- **Password.** The password for the broadband Internet service account.
- **PIN Code.** The PIN code for the SIM card.
- **APN.** The ISP network name.
- **PDP Type.** Type of packet data protocol.
- **Connection check boxes.** These settings determine whether or not the modem connects at startup or reconnects when an Internet connection is lost.

If you are not sure what to enter for these settings, contact your ISP.

Chapter 2 Settings and Maintenance

Basic Settings

You can use the Basic Settings screen to view or change your Internet IP address settings, your domain name server (DNS) address, and MAC address.

1. Log in to the modem at its default LAN address of **http://modemlogin.net** with its default user name of **admin**, and default password of **password**, or using whatever user name, password, and LAN address you have chosen for the modem.
2. On the main menu, select Basic Settings:

The screenshot shows a web interface for 'Basic Settings'. It is divided into three main sections:

- Internet IP Address:** Has two radio buttons: 'Get Dynamically From ISP' (selected) and 'Use Static IP Address'. Below is an input field for 'IP Address' with four boxes for digits.
- Domain Name Server (DNS) Address:** Has two radio buttons: 'Get Automatically From ISP' (selected) and 'Use These DNS Servers'. Below are input fields for 'Primary DNS' and 'Secondary DNS', each with four boxes for digits.
- Router MAC Address:** Has three radio buttons: 'Use Default Address' (selected), 'Use Computer MAC Address', and 'Use This MAC Address'. Below the third option is an input field containing the MAC address '00:90:96:12:33:55'.

At the bottom of the form are three buttons: 'Apply', 'Cancel', and 'Test'.

Figure 2-1

The Basic Settings are explained below in the following table.

Table 2-1. Basic Settings

Setting	Description
Internet IP Address	<ul style="list-style-type: none">• Get Dynamically from ISP. Your ISP uses DHCP to assign your IP address. Your ISP automatically assigns these addresses.• Use Static IP Address. Enter the IP address that your ISP assigned. Also enter the IP subnet mask and the gateway IP address. The gateway is the ISP's modem to which your modem will connect.

Table 2-1. Basic Settings (continued)

Setting	Description
Domain Name Server (DNS) Address	<p>The DNS server is used to look up site addresses based on their names.</p> <ul style="list-style-type: none">• Get Automatically from ISP. Your ISP uses DHCP to assign your DNS servers. Your ISP automatically assigns this address.• Use These DNS Servers. If you know that your ISP does not automatically transmit DNS addresses to the modem during login, select this option, and enter the IP address of your ISP's primary DNS server. If a secondary DNS server address is available, enter it also.
Router MAC Address	<p>The Ethernet MAC address that will be used by the modem on the Internet port. Some ISPs register the Ethernet MAC address of the network interface card in your computer when your account is first opened. They will then accept traffic only from the MAC address of that computer. This feature allows your modem to masquerade as that computer by "cloning" its MAC address.</p> <ul style="list-style-type: none">• Use Default Address. Use the default MAC address.• Use Computer MAC Address. The modem will capture and use the MAC address of the computer that you are now using. You must be using the one computer that is allowed by the ISP.• Use This MAC Address. Enter the MAC address that you want to use.

Maintenance

The selections available on the Maintenance menu are Modem Status, Attached Devices, Backup Settings, Set Password, and Modem Upgrade.

Modem Status

Use the Modem Status screen to view the settings and statistics for the Mobile Broadband Modem.

The screenshot shows the 'Modem Status' screen with the following sections and data:

- Firmware Version:** V1.0.0RC1_1.0.1NA
- HSDPA Section:**
 - Modem Identity: Expedite EU730 (HW REV [0:44])
 - Modem SW version: 15.8-15.8-14 [2006-04-10 11:32:52]
 - Modem driver version: 1.0.4
 - IMSI: 310410109312151
 - IMEI: 010803000799895
 - Operator: not connected
 - Network mode: not connected
- WAN Port Section:**
 - Connection Status: connecting
 - IP Address: 0.0.0.0
 - WAN_protocol: PPP
 - IP Subnet Mask: 0.0.0.0
 - Gateway Ip Address: 0.0.0.0
 - Domain Name Server: 0.0.0.0

Buttons: Connection Status, Refresh
- LAN Port Section:**
 - MAC Address: 00:90:96:12:33:55
 - IP Address: 192.168.2.1
 - DHCP: ON
 - IP Subnet Mask: 255.255.255.0

Button: Show Statistics

Figure 2-2

The Modem Status screen fields are explained in the following table.

Table 2-2. Modem Status Screen

Settings and Statistics		Description
Firmware Version		The firmware version of the modem. If you upgrade the firmware this will change.
HSDPA	Modem Identity	The type of wireless module used.
	Modem SW Version	The software version of the modem.
	Modem Driver Version	The driver version for the wireless module.
	IMSI	International Mobile Subscriber Identity. This is retrieved from the SIM card.
	IMEI	International Mobile Equipment Identity. This is the unique number assigned to this modem.
	Operator	The network operator that the modem is currently connected to.
	Network Mode	The type of service the modem is currently connected to.

Table 2-2. Modem Status Screen (continued)

Settings and Statistics		Description
WAN Port	Connection Status	The status of the Internet connection.
	IP Address	The IP address of your modem, as seen from the Internet. If the modem is not connected to the Internet, this will be blank or 0.0.0.0
	WAN Protocol	The current connection protocol being used.
	IP Subnet Mask	The subnet mask associated with the Internet IP address Domain Name Server.
	Gateway IP Address	This must be a router on the same LAN segment as your modem.
	Domain Name Server (DNS)	The DNS server IP addresses used by the modem. These addresses are usually obtained dynamically from the ISP.
Connection Status and Refresh buttons		
LAN Port	MAC Address	The MAC address of the modem as seen from the LAN.
	IP Address	The LAN IP address of the modem.
	DHCP	Indicates if the modem is acting as a DHCP server for devices on your LAN.
	IP Subnet Mask	The subnet mask associated with the
Show Statistics button		

Attached Devices

View a list of devices attached to the Mobile Broadband Modem.



Figure 2-3

For each device, the table shows the IP address, device name if available, and the Ethernet MAC address. Note that if the modem is rebooted, the table data is lost until the modem rediscovers the devices. To force the modem to look for attached devices, click Refresh.

Backup Settings

The configuration settings of the Mobile Broadband Modem are stored in a configuration file in the modem. This file can be backed up to your computer, restored, or reverted to factory default settings.

1. Log in to the modem at its default LAN address of **http://modemlogin.net** with its default user name of **admin**, and default password of **password**, or using whatever user name, password, and LAN address you have chosen for the modem.
2. On the main menu, select Backup Settings under the Maintenance heading.

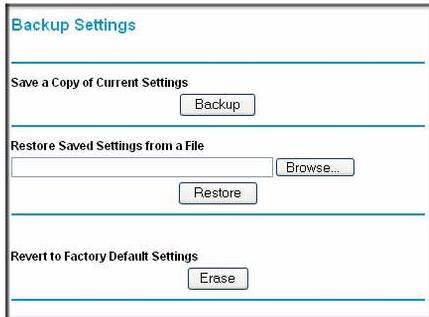


Figure 2-4

Backing Up the Configuration to a File

To back up the Mobile Broadband Modem configuration:

1. On the Backup Settings screen, click Backup.
A copy of the current settings is saved in a .cfg file.
2. Save the .cfg file on a computer on your network.

Restoring the Configuration from a File

To restore the configuration:

1. Specify the file in the Restore Saved Settings from a File field. You can enter the full path to the cfg file on your network, or click Browse to locate the file.
2. Click Restore to upload the file to the modem.
3. The modem reboots.

Erasing the Configuration

You can return the modem to its factory default settings by using the Erase feature. The factory default settings are shown in [“Factory Default Settings” in Appendix A](#).

1. On the Backup Settings screen, click Erase.
2. The modem reboots.



Note: To restore the factory default configuration settings without knowing the login password or IP address, use the reset button on the rear panel of the modem.

Using the Reset Button

To restore the factory default configuration settings when you do not know the administration password or IP address, you must use the reset button on the rear panel of the modem.

1. Press and hold the reset button until the Status LED turns on.

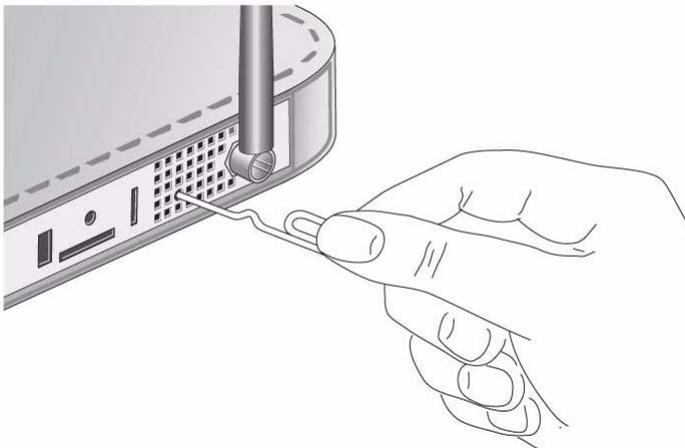


Figure 2-5

2. Release the reset button, and wait for the modem to reboot.

The factory default settings are shown in [“Factory Default Settings” in Appendix A](#).

Setting the Password

NETGEAR recommends that you change the default password to a more secure password. The ideal password should contain no dictionary words from any language, and should be a mixture of both upper-case and lower-case letters, numbers, and symbols. Your password can be up to 30 characters.

To change the administrator password:

1. Log in to the modem at its default LAN address of **http://modemlogin.net** with its default user name of **admin**, and default password of **password**, or using whatever user name, password, and LAN address you have chosen for the modem.
2. From the main menu, select Set Password.

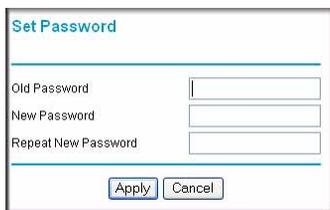


Figure 2-6

3. Enter the old password, enter the new password, and then repeat the new password.
4. Click **Apply** to save your changes.



Note: If you want to continue configuring modem after changing the password, you must log in again. If you have backed up the modem settings previously, you should do a new backup so that the saved settings file includes the new password.

Upgrading the Modem Firmware

The software of the Mobile Broadband Modem is stored in FLASH memory, and can be upgraded as new software is released by NETGEAR.

Upgrade files can be downloaded from the NETGEAR website. If the upgrade file is compressed (.zip file), you must first extract the binary (.chk) file before uploading it to the modem.

To upgrade the modem firmware:

NETGEAR recommends that you back up your configuration before doing a firmware upgrade. After the upgrade is complete, you might need to restore your configuration settings.

1. Download and unzip the new software file from NETGEAR.

The Web browser that you use to upload new firmware into the modem must support HTTP uploads. NETGEAR recommends using Microsoft Internet Explorer 5.0 or later, or Netscape Navigator 4.7 or later.

2. Log in to the modem at its default LAN address of **http://modemlogin.net** with its default user name of **admin**, default password of **password**, or using whatever user name, password and LAN address you have chosen for the modem.
3. On the main menu, select Modem Upgrade.

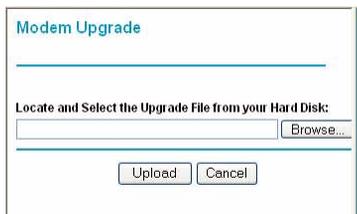


Figure 2-7

4. Click Browse to locate the binary (.chk) upgrade file, and then click Upload.

	<p>Warning: When uploading software, do not interrupt the Web browser by closing the window, clicking a link, or loading a new page. If the browser is interrupted, it might corrupt the software. When the upload is complete, your modem restarts. The upgrade process typically takes about one minute. In some cases, you might need to clear the configuration and reconfigure the modem after upgrading.</p>
---	---

Chapter 3 Advanced Settings

Advanced Settings include Port Forwarding, Port Triggering, WAN Setup, LAN IP Setup, Static Routes, and Remote Management.

Port Forwarding

With port forwarding, you can make local computers or servers available to the Internet for different services. For example, FTP uses TCP ports 20 and 21. The selections on this screen are:

- **Active Forwarding Rules:** This table displays a list of ports that are currently forwarded.
- **Choose Predefined Service:** Select a predefined service from the pull-down menu.
- **Add Custom Rules:** You can set up a custom service that is not in the list of predefined services.
- To access the local computer from the Internet, you must use the WAN address of your modem, which can be found on the Basic Settings screen or the Modem Status screen.

Because the modem or your router uses Network Address Translation (NAT), your network presents only one IP address to the Internet, and outside users cannot directly address any of your local computers. However, by defining an inbound rule you can make a local server (for example, a web server or game server) visible and available to the Internet. The rule tells the modem to direct inbound traffic for a particular service to one local server based on the destination port number. This is known as Port Forwarding.



Note: Some residential broadband ISP accounts do not allow you to run any server processes (such as a Web or FTP server) from your location. Your ISP may periodically check for servers and may suspend your account if it discovers any active services at your location. If you are unsure, refer to the Acceptable Use Policy of your ISP.

Considerations for Port Forwarding

- If the IP address of the local server PC is assigned by DHCP, it may change when the PC is rebooted. To avoid this, you can assign a static IP address to your server outside the range that is assigned by DHCP, but in the same subnet as the rest of your LAN. By default, the IP addresses in the range of 192.168.0.2 through 192.168.0.9 are reserved for this.
- Local PCs must access the local server using the PCs' local LAN address (192.168.0.XXX, by default). Attempts by local PCs to access the server using the external WAN IP address will fail.

Remember that allowing inbound services opens holes in your firewall. Only enable those ports that are necessary for your network. The following are two application examples of inbound rules.

Setting Up Port Forwarding

To Set Up Port Forwarding:

1. Click Port Forwarding/Port Triggering.
2. Select Port Forwarding.

The figure consists of two screenshots from a web-based configuration interface.

The left screenshot, titled "Port Forwarding / Port Triggering", shows a section "Please select the service type" with two radio buttons: "Port Forwarding" (selected) and "Port Triggering". Below this is a table with columns for "#", "Service Name", "Start Port", "End Port", and "Server IP Address". There are buttons for "Edit Service", "Delete Service", and "Add Custom Service".

The right screenshot, titled "Ports - Custom Services", shows a form for configuring a custom service. It includes fields for "Service Name", "Service Type" (a dropdown menu set to "TCP/UDP"), "Starting Port" (with a range of 1-65534), "Ending Port" (with a range of 1-65534), and "Server IP Address" (with a range of 192.168.0.0-255). There are "Apply" and "Cancel" buttons at the bottom.

Figure 3-1

3. You can select a service from the drop-down Service Name list, or you can add a custom service.

When it is added, the service is shown in the table on this screen.

Port Triggering

Port triggering opens an incoming port temporarily, and does not require the server on the Internet to track your IP address. Port triggering monitors outbound traffic from your LAN to the Internet. When the modem detects traffic on the specified port, it triggers the incoming port, and directs the incoming traffic to the triggering computer.

Figure 3-2

Setting Up Port Triggering

To Set Up Port Triggering:

1. Click Port Forwarding/Port Triggering.
2. Select Port Forwarding

WAN Setup

To view or change settings on the WAN Setup screen:

1. Log in to the modem at its default LAN address of **http://modemlogin.net** with its default user name of **admin**, and default password of **password**, or using whatever user name, password, and LAN address you have chosen for the modem.

From the main menu, select WAN Setup. The WAN Setup screen appears:

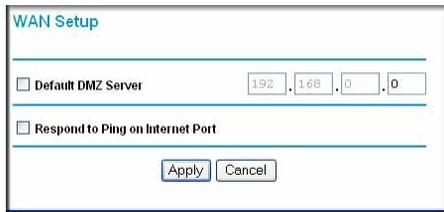


Figure 3-3

2. Two options can be set in this screen:
 - **Default DMZ Server.** The Default DMZ Server feature is helpful when you use some online games and videoconferencing applications that are incompatible with NAT. Note that this feature reduces the effectiveness of the firewall. For more information, see
 - **Respond to Pink on Internet Port.** If you want the modem to respond to a ping from the Internet, select this check box. This should be used only as a diagnostic tool, since it allows your modem to be discovered. Do not select this check box unless you have a specific reason to do so.

Setting Up a Default DMZ Server

The Default DMZ Server feature is helpful when you are using some online games and videoconferencing applications that are incompatible with NAT.

Usually a firewall discards incoming traffic from the Internet unless it is a response to a local computer or a service that is configured in the Ports screen. Instead of discarding this traffic, you can forward it to a computer on your network. This computer is the default DMZ server.

To assign a computer or server to be a default DMZ server:

1. From the WAN Setup screen, select the Default DMZ Server check box.
2. Type the IP address for that server.
3. Click **Apply** to save your changes.

LAN IP Setup

You can use the LAN IP Setup screen to view or change the settings for LAN IP services such as TCP/IP. To view or change the LAN IP settings:



Warning: If you change the LAN IP address of the modem while connected through the browser, you or anyone else using the modem will be disconnected. You must then open a new connection to the new IP address and log in again. Others using the modem will have to restart their computers and connect to the modem again.

1. Log in to the modem at its default LAN address of **http://modemlogin.net** with its default user name of **admin**, and default password of **password**, or using whatever user name, password, and LAN address you have chosen for the modem.
2. From the main menu, select LAN IP Setup under the Advanced heading. The LAN IP Setup screen appears:

LAN IP Setup

LAN TCP/IP Setup

IP Address: 192 . 168 . 2 . 1

IP Subnet Mask: 255 . 255 . 255 . 0

Use Modem as DHCP Server

Starting IP Address: 192 . 168 . 2 . 2

Ending IP Address: 192 . 168 . 2 . 254

Address Reservation

#	IP Address	Device Name	Mac Address

Add Edit Delete

Apply Cancel

Figure 3-4

The following table explains the settings on the LAN IP Setup screen.

Table 3-1. LAN IP Setup Screen Settings

Settings	Description
LAN TCP/IP Settings	The LAN IP address of the modem.
	<ul style="list-style-type: none"> • The LAN IP address of the modem. • IP Subnet Mask. The LAN Subnet Mask of the modem. Combined with the IP address, the IP Subnet Mask allows a device to know which other addresses are local to it, and which must be reached through a gateway or modem.
Use Modem as DHCP Server	A Dynamic Host Configuration Protocol (DHCP) server assigns IP, DNS server, and default gateway addresses to all computers connected to the modem's LAN. See the following section.
Address Reservation	Specify a reserved IP address for a computer on the LAN, so that it always receives the same IP address when it access the modem's DHCP server. See " Reserved IP Addresses ".

Setting up the Modem as a DHCP Server

A Dynamic Host Configuration Protocol (DHCP) server assigns IP, DNS server, and default gateway addresses to all computers connected to the modem's LAN. IP addresses are assigned to the attached PCs from a range of addresses specified in this screen. Each address is tested before it is assigned to avoid duplicate addresses on the LAN.

For an explanation of DHCP and help with assigning IP addresses, see the link to the online document in "[Internet Networking and TCP/IP Addressing](#)" in [Appendix B](#).

To set up the modem as a DCHP server:

1. On the LAN IP screen, select the Use router as DHCP server check box.
2. Specify the range of IP addresses to be assigned by filling in the Starting IP Address field and Ending IP Address field.

These addresses should be part of the same IP address subnet as the router's LAN IP address. Using the default addressing scheme, you should define a range between 192.168.1.2 and 192.168.1.100, although you might want to save part of the range for devices with fixed addresses.

3. Click **Apply** to save your settings.

The modem delivers the following parameters to any LAN device that requests DHCP:

- An IP address from the range you have defined.
- Subnet mask.
- Gateway IP address is the router's LAN IP address.
- Primary DNS server, if you entered a primary DNS address in the Basic Settings screen; otherwise, the router's LAN IP address.
- Secondary DNS server, if you entered a secondary DNS address in the Basic Settings screen.
- WINS server, short for *Windows Internet Naming Service Server*, determines the IP address associated with a particular Windows computer. A WINS server records and reports a list of names and IP addresses of Windows PCs on its local network. If you connect to a remote network that contains a WINS server, enter the server's IP address here. This allows your PCs to browse the network using the Network Neighborhood feature of Windows.

Reserved IP Addresses

When you specify a reserved IP address for a computer on the LAN, that computer always receive the same IP address when it access the router's DHCP server. Reserved IP addresses should be assigned to servers that require permanent IP settings.

To reserve an IP address:

1. In the Address Reservation section on the LAN IP Setup screen, click Add.
2. In the IP Address field, type the IP address to assign to the computer or server. Choose an IP address from the router's LAN subnet, such as 10.1.1.x.
3. Type the MAC address of the computer or server.



Tip: If the computer is already present on your network, you can copy its MAC address from the Attached Devices screen and paste it here.

4. Click **Apply** to enter the reserved address into the table.



Note: The reserved address will not be assigned until the next time the computer contacts the router's DHCP server. You can reboot the computer, or access its IP configuration, to force a DHCP release and renew.

To edit or delete a reserved address entry:

1. In the Address Reservation table on the LAN IP Setup screen, select the radio button next to the reserved address you want to edit or delete.
2. Click Edit or Delete.

Static Routes

Static routes provide additional routing information to your router. Under normal circumstances, the router has adequate routing information after it has been configured for Internet access, and you do not need to configure additional static routes. You must configure static routes only for unusual cases such as multiple routers or multiple IP subnets located on your network.

You can add static routes, and view or change existing static routes from the Static Routes screen.

To add or edit a static route:

1. Log in to the modem at its default LAN address of **http://modemlogin.net** with its default user name of **admin**, and default password of **password**, or using whatever user name, password, and LAN address you have chosen for the modem.
2. On the main menu, select Static Routes under the Advanced Heading. The Static Routes screen appears:



Figure 3-5

Existing static routes are shown in the Static Routes table.

3. Click Add or Edit, and then enter the settings for the static route.
 - **Route Name.** This is for identification purposes only.
 - **Private.** If you want to limit access to the LAN only, then select this check box. The static route will not be reported in RIP.
 - **Active.** You must select this check box to make this route effective.
 - **Destination IP Address.** The IP address of the final destination.
 - **IP Subnet Mask.** If the destination is a single host, type 255.255.255.255.

- **Gateway IP Address.** This must be a router on the same LAN segment as your modem.
 - **Metric Value.** Type a number between 2 and 15. This represents the number of routers between your network and the destination. Usually, a setting of 2 or 3 works, but if this is a direct connection, set it to 2.
4. Click **Apply** and the static route is added or updated on the table on the Static Routes screen.

Remote Management

Using the Remote Management screen, you can allow a user or users on the Internet to configure, upgrade and check the status of your Mobile Broadband Modem.



Tip: Be sure to change the modem's default password to a very secure password. The ideal password should contain no dictionary words from any language, and should be a mixture of letters (both upper-case and lower-case), numbers, and symbols. Your password can be up to 30 characters.

To configure remote management:

1. Log in to the modem at its default LAN address of **http://modemlogin.net** with its default user name of **admin**, and default password of **password**, or using whatever user name, password, and LAN address you have chosen for the modem.
2. On the main menu, select Remote Management under the Advanced heading. The Remote Management screen appears:

Figure 3-6

3. Select the Turn Remote Management On check box.
4. Specify which external addresses will be allowed to access the modem's remote management.

For security, restrict access to as few external IP addresses as practical. Select one of these options:

- **Only This Computer.** Allow access from a single IP address on the Internet. Enter the IP address that will be allowed access.
 - **IP Address Range.** Allow access from a range of IP addresses on the Internet. Enter a beginning and ending IP address to define the allowed range.
 - **Everyone.** Allow access from any IP address on the Internet.
5. Type the port number that will be used for accessing the management interface.

Web browser access normally uses the standard HTTP service port 80. For greater security, you can change the remote management Web interface to a custom port by entering that number in the field provided. Choose a number between 1024 and 65535, but do not use the number of any common service port. The default is 8080, which is a common alternate for HTTP.

6. Click **Apply** for your changes to take effect.

When accessing your modem from the Internet, you will type your modem's WAN IP address in your browser's Address (in IE) or Location (in Netscape) field, followed by a colon (:) and the custom port number. For example, if your external address is 134.177.0.123 and you use port number 8080, enter in your browser:

http://134.177.0.123:8080



Note: In this case, the http:// must be included in the address.

Appendix A

Technical Specifications and Factory Default Settings

This appendix lists the technical specifications and factory default settings for the modem.

Technical Specifications

Network Protocol and Standards Compatibility

Data and Routing Protocols: TCP/IP, RIP-1, RIP-2, DHCP, RFC 1483 Bridged or Routed Ethernet

Power Adapter

North America: 120V, 60 Hz, input
United Kingdom, Australia: 240V, 50 Hz, input
Europe: 230V, 50 Hz, input
Japan: 100V, 50/60 Hz, input
All regions (output): 12V DC @ 1.0A

Physical Specifications

Dimensions: 1 in x 6.75 in x 4.5 in (25 x 172 x 114 mm)
Weight: 0.7 lbs. (0.3 kg)

Environmental Specifications

Operating temperature: 32° to 104° F (0° to 40° C)
Operating humidity: 90% maximum relative humidity, noncondensing

Interface Specifications

LAN: 10BASE-T or 100BASE-Tx, RJ-45
WAN: Internal wireless broadband

Factory Default Settings

The factory default settings are shown below:

Feature	Default Behavior
Login	
	User login URL http://www.modemlogin.net or http://www.modemlogin.com
	User name (case sensitive) admin
	Login password (case sensitive) password
Broadband Settings	
	Connect automatically at startup Enabled
	Reconnect automatically Enabled
Local Network (LAN)	
	LAN IP 192.168.2.1
	Subnet mask 255.255.255.0
	DHCP server Enabled
	DHCP starting IP address 192.168.2.2
	DHCP ending IP address 192.168.2.254
	DMZ Enabled or disabled

Appendix B

Related Documents

This appendix provides links to reference documents you can use to gain a more complete understanding of the technologies used in your NETGEAR product.

Document	Link
Windows XP and Vista Wireless Configuration Utilities	http://documentation.netgear.com/reference/enu/winzerocfg/index.htm
Internet Networking and TCP/IP Addressing	http://documentation.netgear.com/reference/enu/tcpip/index.htm
Wireless Communications	http://documentation.netgear.com/reference/enu/wireless/index.htm
Preparing a Computer for Network Access	http://documentation.netgear.com/reference/enu/wsdhcp/index.htm
Virtual Private Networking (VPN)	http://documentation.netgear.com/reference/enu/vpn/index.htm
Glossary	http://documentation.netgear.com/reference/enu/glossary/index.htm

