NETGEAR®

High Speed Cable Modem
Model CM1000
User Manual
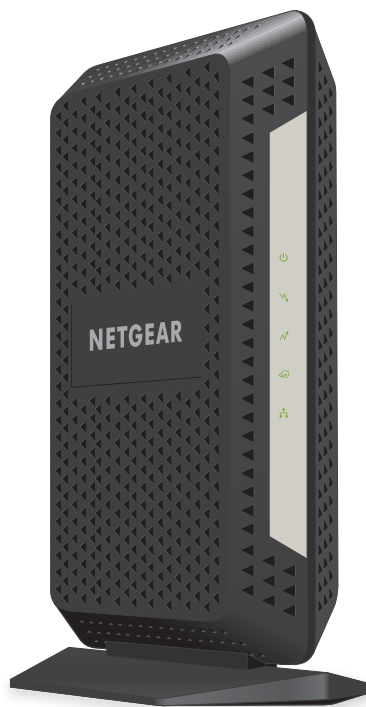
350 East Plumeria Drive
San Jose, CA 95134
USA

Support

Thank you for purchasing this NETGEAR product. You can visit *www.netgear.com/support* to register your product, get help, access the latest downloads and user manuals, and join our community. We recommend that you use only official NETGEAR support resources.

Conformity

For the current EU Declaration of Conformity, visit *http://kb.netgear.com/app/answers/detail/a_id/11621.*

Compliance

For regulatory compliance information, visit *http://www.netgear.com/about/regulatory*.

See the regulatory compliance document before connecting the power supply.

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Contents

Hardware and Internet Setup

1

The NETGEAR High Speed Cable Modem provides a connection to high-speed cable Internet with speeds up to 1 Gbps.[1] The cable modem is certified by all major cable Internet providers. A Gigabit Ethernet port provides fast access and downloads. The cable modem supports the assignment of IPv4 and IPv6 addresses by cable Internet providers.

This chapter covers the following topics:

- *Unpack Your Cable Modem*
- *Front Panel*
- *Product Label*
- *Back Panel*
- *Install and Activate Your Cable Modem*
- *Connect Your Cable Modem to a Router After Installation and Activation*

Note: For more information about the topics covered in this manual, visit the support website at *support.netgear.com*.

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1. *Maximum rate is derived from DOCSIS 3.1/DOCSIS 3.0 specifications, limited by Ethernet port and actual throughput varies depending on your Internet subscription with your provider.*

Unpack Your Cable Modem

Your package contains the following items.

Ethernet cable
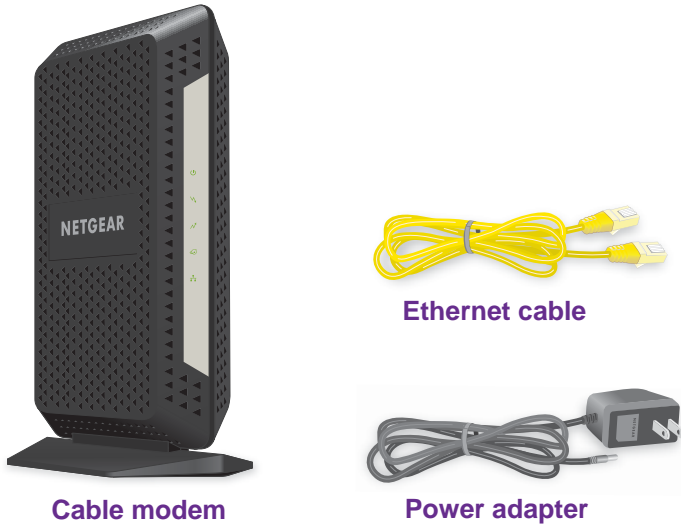
Cable modem   **Power adapter**

Figure 1. Package contents

Front Panel

The cable modem provides status LEDs on the front.

Power LED
Downstream LED
Upstream LED
Internet LED
Ethernet LED

Figure 2. Cable modem front view

You can use the LEDs to verify status and connections. The following table lists and describes each LED on the front panel of the cable modem.

Table 1. LED descriptions

LED	Icon	Description
Power	⏻	• **Green**. Power is supplied to the cable modem. • **Off**. No power is supplied to the cable modem. • **Red**. The cable modem is too warm and might overheat. For more information about this condition, see *Use LEDs to Troubleshoot* on page 23.
Downstream		• **Solid amber**. One downstream channel is locked. • **Solid green**. Two or more downstream channels are locked. • **Blinking green**. The cable modem is scanning for a downstream channel. • **Off**. No downstream channel is locked.
Upstream		• **Solid amber**. One upstream channel is locked. • **Solid green**. Two or more upstream channels are locked. • **Blinking green**. The cable modem is scanning for an upstream channel. • **Off**. No upstream channel is locked.
Internet		• **Solid green**. The cable modem is online. • **Blinking green**. The cable modem is synchronizing with the cable Internet provider's cable modem termination system (CMTS). • **Off**. The cable modem is offline.
Ethernet		• **Green**. A powered-on device is connected to the Ethernet port at 1000 Mbps. • **Amber**. A powered-on device is connected to the Ethernet port at 10/100 Mbps. • **Blinking green or amber**. The Ethernet port is processing traffic. • **Off**. No device is connected to the Ethernet port.

Product Label

The product label on the side of the cable modem displays the serial number and MAC address of the cable modem and login information, including the default IP address, default user name, and default password.
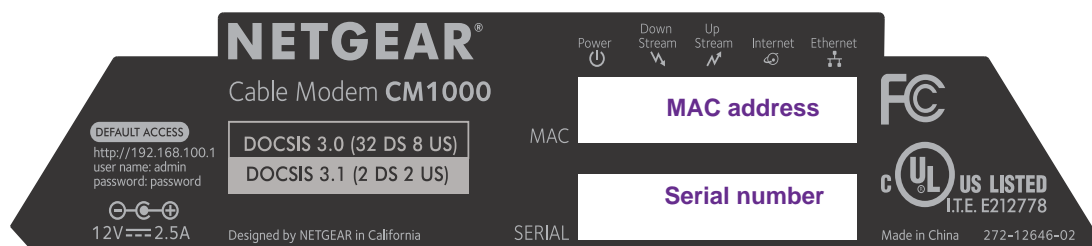

Figure 3. Product label

Back Panel

The back panel provides the connections and button shown the following figure.
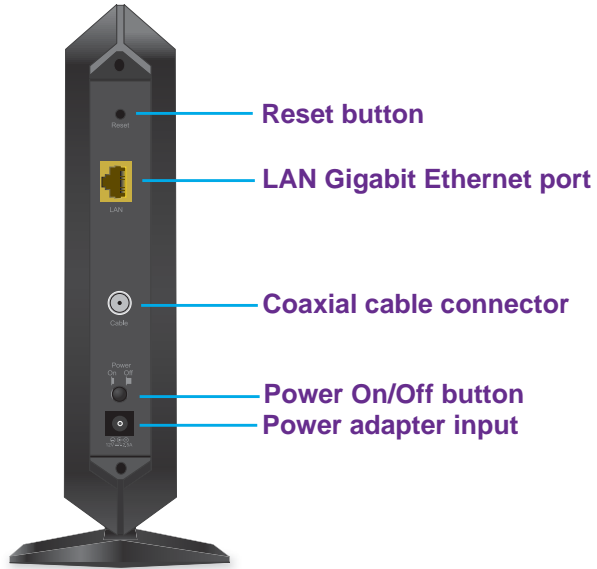

Figure 4. Cable modem back panel

Install and Activate Your Cable Modem

The cable modem provides a connection between your cable Internet provider's network and your computer, router, or WiFi router.

Install Your Cable Modem and Connect It to a Computer

During the installation and activation, you must connect the cable modem directly to a computer. After installation and activation, you can connect the cable modem to a router (see *Connect Your Cable Modem to a Router After Installation and Activation* on page 10).
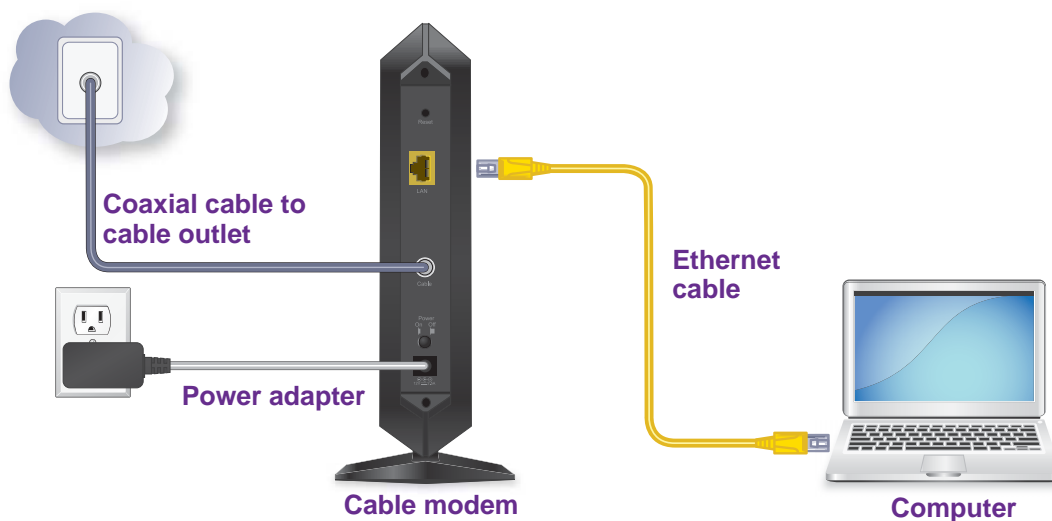

Figure 5. Connect the cable modem directly to a computer

> **Note:** Before you connect your cable modem and contact your cable Internet provider, collect your cable account number, account phone number, and login information (your email address or user name and password).

➢ **To install your cable modem and connect it directly to a computer:**

1. Turn off existing modems and routers.

   If you are replacing a modem that is currently connected in your home, unplug the modem and plug the new cable modem into the same outlet.

2. Connect a coaxial cable.

   Use the coaxial cable that is provided by Comcast XFINITY to connect the cable port on the cable modem to a cable wall outlet. Make sure that the cable is tightly connected.

3. Connect the power adapter provided in the package to the cable modem and plug the power adapter into an electrical outlet.

When the startup procedure is completed, the Power LED lights green.

4. Wait for the cable modem to come online.

    It takes at least 10 minutes for the cable modem to come online on the network. During this time, the LED behavior is as follows:

    - The Downstream LED lights amber when one downstream channel is locked.

    - The Downstream LED lights green when more than one downstream channel is locked.

    - The Upstream LED lights amber when one upstream channel is locked.

    - The Upstream LED lights green when more than one upstream channel is locked.

    - After the cable modem registers with your cable Internet provider, the Internet LED lights green.

5. Turn off the computer to which you intend to connect the cable modem.

6. Use the Ethernet cable provided in the package to connect the LAN port on the cable modem to an Ethernet port on the computer.

7. Turn on the computer.

Even though an Internet connection is established, Internet service is available only after you set it up with your cable Internet provider.

For information about how to activate your Internet service, see *Activate Your Internet Service With Comcast XFINITY* on page 9.

Activate Your Internet Service With Comcast XFINITY

Set up Internet service by using Comcast XFINITY's self-activation process. If you are unable to self-activate your cable modem, call Comcast XFINITY customer service. After you complete the setup, perform a speed test.

Before you start the self-activation process, make sure to collect your account number, account phone number, and login information (your email address or user name and password).

➢ **To activate your Internet connection with Comcast XFINITY's self-activation process:**

1. Close all web browsers.

2. Launch a web browser.

    You are redirected to the XFINITY self-activation page. If you are not redirected to the XFINITY self-activation page, visit *comcast.com/activate*.

3. Provide your XFINITY credentials and complete the self-activation process.

    This process might take up to 15 minutes, during which the cable modem reboots a few times.

4. If you are unable to activate your cable modem using the XFINITY self-activation process, call Comcast XFINITY customer service at 1-800-XFINITY (1-800-934-6489).

   a. When asked, provide your account information and provide the cable modem's model number and MAC address, which are on the product label on the cable modem.

      For more information, see *Product Label* on page 6.

   b. Wait for Comcast XFINITY to confirm that your cable modem is active.

   c. If you do not get an Internet connection with the cable modem, ask Comcast XFINITY to look for your cable modem online, and do one of the following depending on what Comcast XFINITY tells you about your cable modem:

      • If the cable modem is not visible, Comcast XFINITY can give you instructions to verify why the cable modem does not connect with your high-speed Internet service.

      • If the cable modem is visible to Comcast XFINITY, reboot the cable modem. Check your online status again.

Perform a Speed Test

To determine the Internet speed, visit the *speedtest.xfinity.com/* and perform a speed test.

If your actual speed is lower than your subscribed speed, contact Comcast XFINITY.

Connect Your Cable Modem to a Router After Installation and Activation

After you install the cable modem and activate your Internet service, you can disconnect the computer and connect a router to the cable modem.
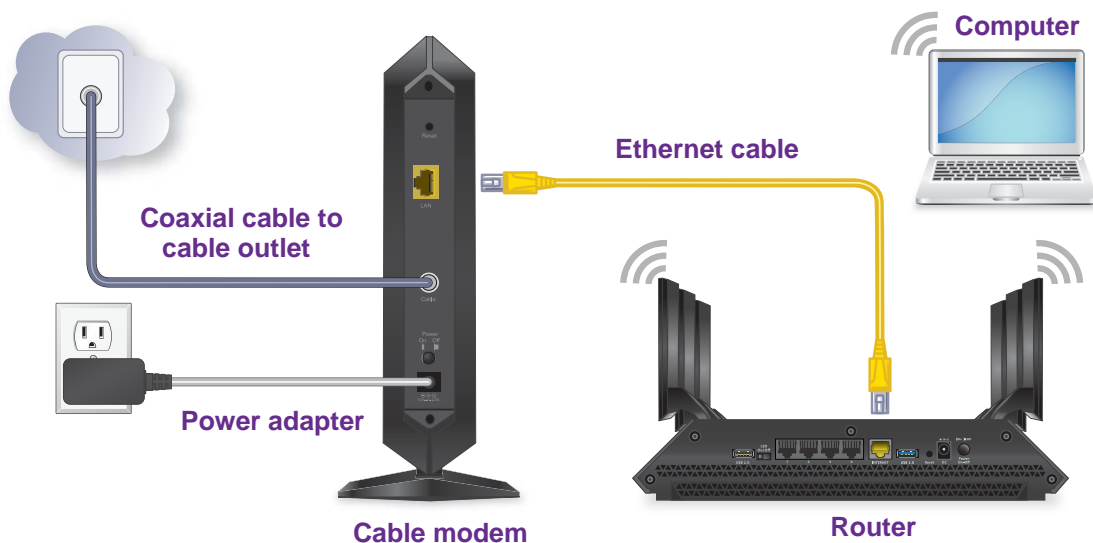

Computer

Ethernet cable

Coaxial cable to cable outlet

Power adapter

Cable modem

Router

Figure 6. Connect the cable modem to a router

➢ **To connect your cable modem to a router after installation and activation:**

1. Reboot the cable modem by unplugging the power cable from the cable modem and plugging it back in.

   Note: Do not disconnect the cable modem from the cable outlet.

   When the startup procedure is complete, the Power LED lights green.

   Wait for the Internet LED to stop blinking and light solid green.

2. Use an Ethernet cable to connect the Ethernet port on the cable modem to the WAN or Internet port on the router.

3. Power on the router.

   Wait until the router is ready.

4. Connect a WiFi-enabled computer to the router over a WiFi connection or with an Ethernet cable to a LAN port on the router.

Manage and Monitor

2

After you set up the cable modem, you do not need to log in to the cable modem for normal operation. However, you *can* log in to the cable modem to change a very limited number of settings and monitor the cable modem. In the unlikely situation that you experience problems with the cable connection and cannot get an Internet connection, technical support might ask you to log in to the router.

This chapter contains the following sections:

- *Log In to the Cable Modem*
- *View Cable Modem Initialization*
- *View Cable Modem Status*
- *View and Clear Event Logs*
- *Change the admin Password*
- *Reboot the Cable Modem*
- *Reset the Cable Modem to Factory Default Settings*
- *Change the Cable Connection Starting Frequency*

Log In to the Cable Modem

After you set up the cable modem, you do not need to log in to the cable modem for normal operation.

To log in to the cable modem, you must use a web browser such as Microsoft Internet Explorer 5.0 or later, Firefox Mozilla 2.0 or later, Safari 1.4 or later, or Google Chrome 11.0 or later.

➢ **To log in to the cable modem:**

1. Launch a web browser from a computer that is attached with an Ethernet cable to the cable modem or from a WiFi-enabled computer that is connected to a WiFi router that is attached with an Ethernet cable to the cable modem.

2. Enter **http://192.168.100.1**.

   A login window opens.

3. Enter the cable modem user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home page displays.

View Cable Modem Initialization

You can track the initialization procedure of the cable modem and get details about the downstream and upstream cable channels. The time is displayed after the cable modem is initialized.

The cable modem automatically goes through the following steps in the provisioning process:

1. Scans and locks the downstream frequency and then ranges the upstream channels.

2. Obtains a WAN IP address for the cable modem.

3. Connects to the Internet.

➢ **To view the status of the cable modem initialization:**

1. Launch a web browser from a computer that is attached with an Ethernet cable to the cable modem or from a WiFi-enabled computer that is connected to a WiFi router that is attached with an Ethernet cable to the cable modem.

2. Enter **http://192.168.100.1**.

   A login window opens.

3. Enter the cable modem user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **Cable Connection**.

The Startup Procedure section displays the initialization progress. The Downstream Bonded Channels section displays the status of each downstream channel.

5. To see the Upstream Bonded Channels section and system time, scroll down.

View Cable Modem Status

You can view some basic information about the cable modem.

➢ **To view cable modem status:**

1. Launch a web browser from a computer that is attached with an Ethernet cable to the cable modem or from a WiFi-enabled computer that is connected to a WiFi router that is attached with an Ethernet cable to the cable modem.
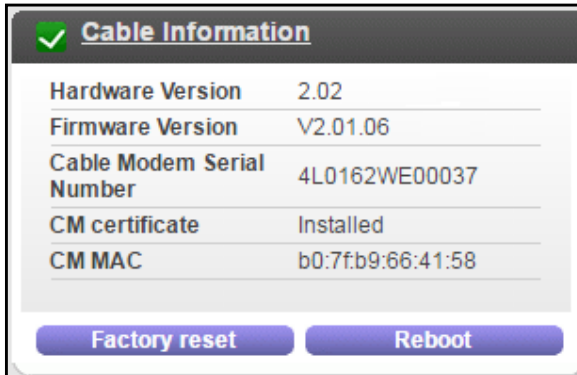
2. Enter **http://192.168.100.1**.

A login window opens.

3. Enter the cable modem user name and password.

The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

The BASIC Home page displays.

4. Select **ADVANCED**.

The Cable Information page displays the following:

- **Hardware Version.** The version of the cable modem hardware.
- **Firmware Version**. The version of the cable modem firmware.
- **Cable Modem Serial Number**. The serial number of the cable modem.
- **CM Certificate**. The status of the cable modem certificate. If Not installed displays as the status, contact your cable Internet provider.
- **CM MAC**. The MAC address of the cable modem.

For information about using the **Reboot** button, see *Reboot the Cable Modem* on page 17.

For information about using the **Factory reset** button, see *Reset the Cable Modem to Factory Default Settings* on page 18.

View and Clear Event Logs

Event logs capture important cable modem events.

➢ **To view and clear the event logs:**

1. Launch a web browser from a computer that is attached with an Ethernet cable to the cable modem or from a WiFi-enabled computer that is connected to a WiFi router that is attached with an Ethernet cable to the cable modem.

2. Enter **http://192.168.100.1**.
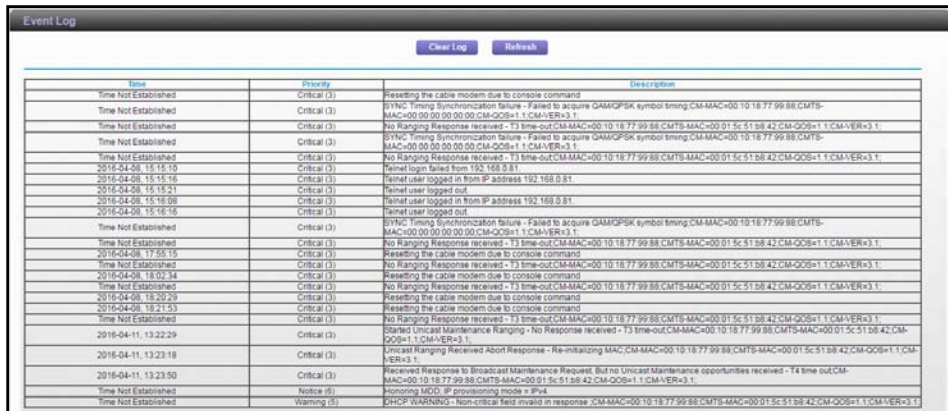
   A login window opens.

3. Enter the cable modem user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Administration > Event Log**.

The Event Log page shows the following information:

- **Time**. The time the event log entry was recorded.

  The correct time displays only after the cable modem successfully connects to the cable Internet provider's network.

- **Priority**. The severity of the event log entry.

- **Description**. A description of the event log entry.

5. To refresh the log page, click the **Refresh** button.

6. To clear the log entries, click the **Clear Log** button.

Change the admin Password

You can change the default password that is used to log in to the cable modem with the user name admin.

➢ **To change the password for the user name admin:**

1. Launch a web browser from a computer that is attached with an Ethernet cable to the cable modem or from a WiFi-enabled computer that is connected to a WiFi router that is attached with an Ethernet cable to the cable modem.

2. Enter **http://192.168.100.1**.

   A login window opens.

3. Enter the cable modem user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Administration > Set Password**.

Manage and Monitor

16

5. Type the old password.
6. Type the new password in the **Set Password** field.
7. Type the new password in the **Repeat New Password** field.
8. Click the **Apply** button.

   Your change takes effect.

Reboot the Cable Modem

Rebooting the cable modem disconnects all computers from the cable modem's local area network (LAN). After the cable modem is finished booting and reestablishes a connection with the cable Internet provider's network, the devices reconnect to the cable modem's LAN.

➢ **To reboot the cable modem:**

1. Launch a web browser from a computer that is attached with an Ethernet cable to the cable modem or from a WiFi-enabled computer that is connected to a WiFi router that is attached with an Ethernet cable to the cable modem.
2. Enter **http://192.168.100.1**.

   A login window opens.
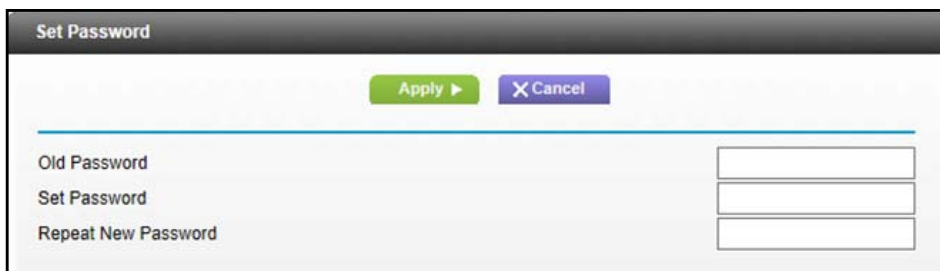3. Enter the cable modem user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home page displays.
4. Select **ADVANCED**.

   The ADVANCED Home page displays the Cable Information pane.
5. Click the **Reboot** button.

   A confirmation message displays.
6. Click the **OK** button.

   The cable modem reboots.

Reset the Cable Modem to Factory Default Settings

To reset the cable modem to factory default settings, you can use either the **Reset** button on the back panel of the cable modem or the **Factory reset** software button. However, if you changed the default password to access the cable modem and lost the password, you must use the **Reset** button on the back panel.

After you reset the cable modem to factory default settings, the user name is admin, the password is password. The LAN IP address is always 192.168.100.1. You cannot change this LAN IP address.

Use the Reset Button on the Back Panel

⚠️ **CAUTION:**

This process erases all settings that you configured in the cable modem.

➢ **To reset the cable modem to factory default settings:**

1. Power on the cable modem.
2. On the back of the cable modem, locate the **Reset** button.
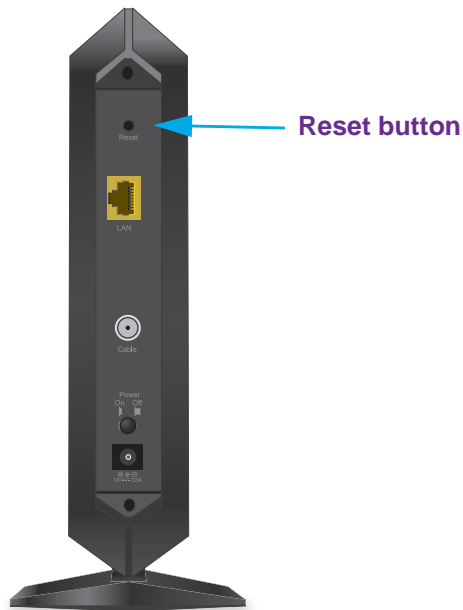
Reset button

3. Using a straightened paper clip, press and hold the **Reset** button for about seven seconds until all LEDs blink.
4. Release the **Reset** button.

   The configuration is reset to factory default settings. When the reset is complete, the cable modem reboots. This process takes about one minute.

WARNING:

To avoid the risk of corrupting the firmware, do not interrupt the reset. For example, if you are connected to the web management interface, do not close the browser, click a link, or load a new page. Do not turn off the cable modem.

Use the Factory reset Software Button

CAUTION:

This process erases all settings that you configured in the cable modem.

➢ **To erase the settings:**

1. Launch a web browser from a computer that is attached with an Ethernet cable to the cable modem or from a WiFi-enabled computer that is connected to a WiFi router that is attached with an Ethernet cable to the cable modem.

2. Enter **http://192.168.100.1**.

   A login window opens.

3. Enter the cable modem user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED**.

   The Cable Information pane displays.

5. Click the **Factory reset** button.

   A confirmation message displays.

6. Click the **OK** button.

   The configuration is reset to factory default settings. When the reset is complete, the cable modem reboots. This process takes about one minute.

WARNING:

To avoid the risk of corrupting the firmware, do not interrupt the reset. For example, do not close the browser, click a link, or load a new page. Do not turn off the cable modem.

Change the Cable Connection Starting Frequency

The starting frequency for the cable connection is automatically generated. For most Internet connections, you do not need to change this information.

⚠️ **WARNING:**

Do not change the starting frequency unless your cable Internet provider instructs you to do so. Changing the starting frequency incorrectly causes serious connection and Internet problems.

➢ **To change the starting frequency:**

1. Launch a web browser from a computer that is attached with an Ethernet cable to the cable modem or from a WiFi-enabled computer that is connected to a WiFi router that is attached with an Ethernet cable to the cable modem.

2. Enter **http://192.168.100.1**.

   A login window opens.

3. Enter the cable modem user name and password.

   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **Cable Connection**.

Frequency start Value
This field below allows you to modify the frequency the cable modem start with its scan during initialization and registration. Enter the new start frequency and restart the cable modem for it to take effect.

Starting Frequency | 645000000 |

Startup Procedure

Procedure	Status	Comment
Acquire Downstream Channel	645000000 Hz	Locked
Connectivity State	OK	Operational
Boot State	OK	Operational
Security	Disabled	Disabled
IP Provisiong Mode	Honor MDD	IPv4 only

Downstream Bonded Channels

Channel	Lock Status	Modulation	Channel ID	Frequency	Power	SNR	Correctables	Uncorrectables
1	Locked	QAM256	16	645000000 Hz	0.5 dBmV	47.5 dB	0	0
2	Locked	QAM256	9	603000000 Hz	-0.4 dBmV	47.6 dB	0	0
3	Locked	QAM256	10	609000000 Hz	0.5 dBmV	48.0 dB	0	0
4	Locked	QAM256	11	615000000 Hz	-0.4 dBmV	47.4 dB	0	0
5	Locked	QAM256	12	621000000 Hz	0.0 dBmV	47.4 dB	0	0
6	Locked	QAM256	13	627000000 Hz	1.6 dBmV	47.9 dB	0	0
7	Locked	QAM256	14	633000000 Hz	0.0 dBmV	47.2 dB	0	0
8	Locked	QAM256	15	639000000 Hz	-0.6 dBmV	46.9 dB	0	0

5. In the **Starting Frequency** field, type a number as instructed by your cable Internet provider.

⚠️ **WARNING:**

Do not change the starting frequency unless your cable Internet provider instructs you to do so. Changing the starting frequency incorrectly causes serious connection and Internet problems.

6. Click the **Apply** button.

   Your change takes effect.

Troubleshooting

3

This chapter provides information about troubleshooting your cable modem.

The chapter includes the following sections:

- *Use LEDs to Troubleshoot*
- *Cannot Log In to the Cable Modem*
- *Troubleshoot the Cable Internet Connection*

Note: NETGEAR provides helpful articles and documentation at *support.netgear.com*.

Use LEDs to Troubleshoot

The following table provides help when you are using the LEDs for troubleshooting.

Table 2. Troubleshooting with LEDs

LED Behavior	Action
All LEDs are off when the cable modem is plugged in.	• Make sure that the power cord is properly connected to your cable modem and that the power supply adapter is properly connected to a functioning power outlet. • Check that you are using the 12 VDC, 2.5A power adapter from NETGEAR for this product. • If the error persists, a hardware problem occurred. Contact technical support.
All LEDs stay on.	• Clear the configuration of the cable modem to its factory defaults. • If the error persists, a hardware problem occurred. Contact technical support.
The Ethernet LED is off and a powered-on device is connected to an Ethernet LAN port.	• Make sure that the Ethernet cable connections are secure at the cable modem and at the computer, router, or WiFi router. • Make sure that power is turned on to the connected hub or computer. • Be sure that you are using the correct cable.
The Internet LED is off and the cable modem is connected to the cable wall jack.	• Make sure that the coaxial cable connections are secure at the cable modem and at the wall jack. • Make sure that your cable Internet provider provisioned your cable Internet service. Your provider can verify that the signal quality is good enough for cable modem service. • Remove any extra splitters that you installed on your cable line. Run a "home run" back to the point where the cable enters your home.
The Power LED lights red.	The cable modem is too warm and might overheat. Do the following: 1. Disconnect the power adapter. 2. Wait a couple of minutes to let the cable modem cool down. 3. Make sure that the cable modem is placed in a vertical position. 4. Make sure that the cable modem is placed in a location with good ventilation. 5. Reconnect the power adapter.

Cannot Log In to the Cable Modem

If you cannot access the cable modem from computer that is connected to the cable modem or to a router that is connected the cable modem, check the following:

- If your computer is connected to the cable modem with an Ethernet cable, check the connection.

- Make sure that your computer's IP address is on the same subnet as the cable modem. The IP address of your computer must be in the range of 192.168.100.2 to 192.168.100.254.

- Make sure that Java, JavaScript, or ActiveX is enabled in your browser. If you are using Internet Explorer, click the **Refresh** button to make sure that the Java applet is loaded.

- Try quitting the browser and launching it again.

- Make sure that you are using the correct login information. The cable modem user name **admin** is lowercase (Caps Lock is off). The default password is **password**.

If the cable modem does not save changes you made, do the following:

- When entering configuration settings, be sure to click the **Apply** button before moving to another page, or your changes are lost.

- Click the **Refresh** or **Reload** button in the web browser. The changes occurred, but the web browser might be caching the old configuration.

Troubleshoot the Cable Internet Connection

If your cable modem cannot access the Internet but the Internet LED lights green, make sure that the cable MAC address or device MAC address of your cable modem is registered with your cable Internet provider (see *Install and Activate Your Cable Modem* on page 8).

Technical Specifications

A

The following table lists the technical specifications for the cable modem.

Table 3. Technical specifications

Feature	Specification
Power adapter	• Input: 110–120V, 47–60 Hz • Output: 12 VDC, 2.5A
Physical specifications	• Dimensions: 5.90 x 8.77 x 3.43 in. (149.76 x 222.68 x 87 mm) • Weight: 0.84 lb (380 g)
Environmental	• Operating temperature: 32° to 104°F (0° to 40°C) • Operating humidity: 90% maximum relative humidity, noncondensing
Interface	• Local: 10/100/1000 RJ-45 Gigabit Ethernet port • Internet: Coaxial cable connector DOCSIS 3.1; backward compatible with DOCSIS 3.0
Memory	• 128 MB Flash • 256 MB RAM
Channels	• 2 OFDM and 32 SC-QAM bonded downstream • 2 OFDMA and 8 SC-QAM bonded upstream
Certifications	• CableLabs DOCSIS certified for U.S. cable Internet services • FCC/UL