

NETGEAR®

User Manual

Nighthawk® 2.5 Gbps Ultra-High Speed
Cable Telephony Modem for Xfinity® Internet
& Voice

Model CM2050V

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NETGEAR, Inc.

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Support

Thank you for purchasing this NETGEAR product.

You can visit <https://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.

Contact your Internet service provider for technical support.

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Compliance

For regulatory compliance information, visit <https://www.netgear.com/about/regulatory>. See the regulatory compliance document before connecting the power supply.

Note to CATV system Installer- This reminder is provided to call the CATV systems installer's attention to Section 820-93 of the National Electrical Code which provide guidelines for proper grounding and in particular, specify that Coaxial cable shield shall connected to the grounding system of the building, as close to the point of cable entry as practical

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Hardware Setup

This chapter covers the following topics:

- [Front Panel and LEDs](#)
- [Rear Panel](#)
- [Label](#)
- [System Requirements](#)
- [Install and Activate Your Cable Modem](#)

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

Note: An uninterruptible power supply (UPS) can be purchased separately for continued service during power outages. For a list of supported UPS models, visit netgear.com/support/product/CM2050V.

Front Panel and LEDs

The cable modem provides status LEDs on the front.






Figure 1. Front panel

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

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Table 1. LED descriptions

LED	Icon	Description
Power		<ul style="list-style-type: none"> • Solid white. Power is supplied to the cable modem. • Off. No power is supplied to the cable modem. • Solid red. The cable modem is too warm and might overheat. For more information about this condition, see Use the LEDs to Troubleshoot on page 26.
Downstream		<ul style="list-style-type: none"> • Solid amber. One downstream channel is locked. • Solid white. Two or more downstream channels are locked. • Blinking white. The cable modem is scanning for a downstream channel or the cable modem is in partial service mode. • Off. No downstream channel is locked.
Upstream		<ul style="list-style-type: none"> • Solid amber. One upstream channel is locked. • Solid white. Two or more upstream channels are locked. • Blinking white. The cable modem is scanning for an upstream channel. • Off. No upstream channel is locked.
Online		<ul style="list-style-type: none"> • Solid white. The cable modem is online. • Blinking white. The cable modem is synchronizing with the cable provider's cable modem termination system (CMTS). • Off. The cable modem is offline.
Multi Gig Port		<ul style="list-style-type: none"> • Solid white. A 2.5 Gbps connection is established. • Blinking blue. The port is sending or receiving traffic at 2.5 Gbps. • Solid white. A 1 Gbps connection is established. • Blinking white. The port is sending or receiving traffic at 1 Gbps. • Solid amber. A 100 Mbps connection is established. • Blinking amber. The port is sending or receiving traffic at 100 Mbps.
Tel 1 and 2		

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Table 1. LED descriptions (Continued)

- **Solid white.** The Tel 1 or 2 port is online.
 - **Blinking white.** The Tel 1 or 2 port is processing a call or the phone is off-hook.
 - **Off.** The Tel 1 or 2 port is not in use.
-

Rear Panel

The connections and button on the rear panel are shown in the following figure.



Figure 2. Rear panel

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Viewed from top to bottom, the back panel contains the following components:

- **Reset button.** Pressing the **Reset** button resets your cable modem. If the **Reset** button is pressed for at least seven seconds, the Power LED blinks white and your cable modem returns to its factory settings.
- **Ethernet port.** For installation and activation, connect a computer to the Ethernet port. After you install your cable modem and activate your Internet service, you can disconnect your computer and connect a router to the Ethernet port.
- **Tel 1 and 2 ports.** Connect your phone line to the Tel 1 port.

Note: The Tel 2 port works only for a two-phone-line subscription.

- **Coaxial cable port.** Connect the cable port to a cable wall outlet.
- **DC power connector.** Connect the power adapter that came in the product package to the DC power connector.

Label

The cable modem label shows the login information, MAC address, and serial number.

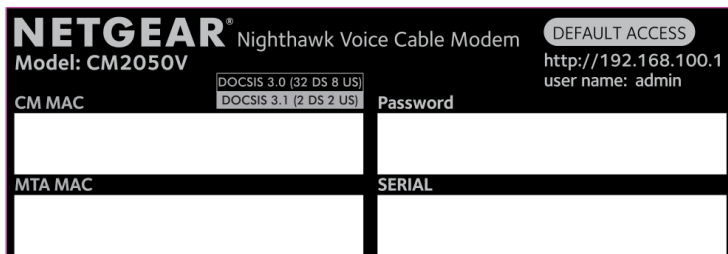


Figure 3. Cable modem label

System Requirements

You need the following to install your cable modem:

- Compatible operating system:
 - Windows 10
 - Windows 8
 - Windows 7

- Windows Vista
 - Windows XP
 - Windows 2000
 - Mac OS
 - Other operating systems running a TCP/IP network
- Compatible web browser:
 - Microsoft Internet Explorer 5.0 or later
 - Firefox 2.0 or later
 - Safari 1.4 or later
 - Google Chrome 11.0 or later
 - Xfinity cable broadband Internet service

Note: An uninterruptible power supply (UPS) can be purchased separately for continued service during power outages. For a list of supported UPS models, visit netgear.com/support/product/CM2050V.

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.

Set Up the Hardware

To set up your cable modem:

1. Collect your Xfinity account information.
Collect your Xfinity account information, such as your account mobile phone number, user name, password, and account number.
2. Turn off and disconnect 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.
3. Connect a coaxial cable.
Use a coaxial cable to connect the cable port on your cable modem to a cable wall outlet.

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Make sure that the cable is tightly connected.

4. (Optional) Connect a phone.

Connect your phone to the Tel 1 port on the rear panel of the cable modem using the phone cable.

Note: The Tel 2 port works only for a two-phone-line subscription.

5. Connect the power adapter.

Connect the power adapter to your cable modem and plug the power adapter into an electrical outlet.

When the startup is complete, the Power LED lights white.

6. Wait for the Online LED to light solid white.

This process might take up to 10 minutes.

Note: When the Online LED lights, your cable modem is not connected to the Internet yet. You must activate your cable modem with your cable Internet provider.

7. Connect a computer to your cable modem.

Use the Ethernet cable that is provided in the package to connect a computer to the Ethernet port on your cable modem .

8. Activate your Internet service.

For information about how to activate your Internet service, see [Activate Your Internet Service With Xfinity](#) on page 13.

Note: After you install and activate the cable modem, you can disconnect the computer and connect a router to the cable modem. For more information, see [Connect Your Cable Modem to a Router After Installation and Activation](#) on page 14.

9. Dial a number to place a test call.

Note: To make calls, you need a voice service subscription with Xfinity.

Activate Your Internet Service With Xfinity

Before you start the self-activation process, collect the following information:

- Personal information associated with your Xfinity account (you need one of the following):
 - Mobile phone number
 - Xfinity user name and password
- Xfinity account number
- Cable modem model number, which is CM2050V
- Cable modem serial number
- Cable modem MAC address
- Cable modem MTA MAC address

Your cable modem's serial number and MAC address are on the cable modem label.

Note: If you have Xfinity Voice, ask Xfinity to register the phone lines.

To activate your Xfinity Internet service:

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 xfinity.com/activate.
3. Provide your Xfinity credentials and complete the self-activation process.

This process might take up to 10 minutes, during which the cable modem reboots twice.

Note: If you're unable to activate your Xfinity Internet service using the self-activation page, call Xfinity customer service at 1-800-XFINITY (1-800-934-6489).

Perform a Speed Test

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

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

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

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

Wait for the Online LED to stop blinking and light solid white.

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

3. Power on your router.

4. Wait until your router is ready.

5. Connect a computer to your router.

For more information about how to set up your router, see the documentation that came with your router.

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Monitor Voice Telephone Lines

This chapter includes the following sections:

- [View Voice Status](#)
- [View the MTA Call List](#)
- [View the EMTA Event Log](#)

View Voice Status

The cable modem functions as a multimedia terminal adaptor (MTA), allowing the cable modem to provide voice services. You can view some basic MTA voice information.

To view the MTA voice status:

1. Launch a web browser from a computer that is connected to your cable modem.
2. Enter **http://192.168.100.1**.
A login window opens.
3. Enter the admin user name and password.
The user name is **admin**. The default password is printed on the product label. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **Voice**.
The Voice Status page displays the following information:
 - **MTA Provision Status**. This is the current MTA provision state.
 - **MTA MAC Address**. This is the MAC address of the MTA interface.
 - **MTA Telephony Line 1 and Line 2 Status**. These are the hook states of line 1 and line 2.
 - **MTA Line 1 and Line 2 HD Audio Status**. These are the MTA HD audio states of line 1 and line 2 during codec negotiation. If the lines are enabled, it means that each line is capable of using the G.722 codec.
5. To refresh the Voice Status page, click the **Refresh** button.

View the MTA Call List

You can view the multimedia terminal adapter (MTA) call list for your cable modem. You can also view the codec used for the last call and some of the previous calls.

To view or refresh the MTA call list:

1. Launch a web browser from a computer that is connected to your cable modem.
2. Enter **http://192.168.100.1**.
A login window opens.
3. Enter the admin user name and password.

The user name is **admin**. The default password is printed on the product label. The user name and password are case-sensitive.

The BASIC Home page displays.

4. Select **MTA Call List**.

The MTA Call List page displays.

5. To see the most recent entries, click the **Refresh** button.

View the EMTA Event Log

You can view the embedded multimedia terminal adapter (EMTA) event log for your cable modem.

To view the EMTA event log:

1. Launch a web browser from a computer that is connected to your cable modem.

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

A login window opens.

3. Enter the admin user name and password.

The user name is **admin**. The default password is printed on the product label. The user name and password are case-sensitive.

The BASIC Home page displays.

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

The MTA Event Log page displays the EMTA event log.

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

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Manage Your Network

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.

This chapter includes the following sections:

- [Log in to the cable modem](#)
- [Change the admin password](#)
- [View cable modem initialization](#)
- [View cable modem status](#)
- [View and clear event logs](#)
- [Specify the cable connection starting frequency](#)
- [Reboot the cable modem](#)
- [Reset the cable modem to factory default settings](#)

Log in to the cable modem

To log in to the cable modem:

1. Connect a computer to your cable modem.

You can connect a computer to your cable modem using the following methods:

- Connect a computer to your cable modem using an Ethernet connection.
- Connect a WiFi router to your cable modem using an Ethernet connection, and then connect a computer to your router using a WiFi or Ethernet connection.

2. Launch a web browser.

3. Enter **http://192.168.100.1**.

A login window opens.

4. Enter the admin user name and password.

The user name is **admin**. The default password is printed on the product label. The user name and password are case-sensitive.

The BASIC Home page displays.

Change the admin password

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

Note: Be sure to change the password for the user name admin to a secure password. The ideal password contains no dictionary words from any language and contains uppercase and lowercase letters, numbers, and symbols. It must be at least 6 and up to 32 characters.

To set the password for the user name admin:

1. Launch a web browser from a computer that is connected to your cable modem.

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

A login window opens.

3. Enter the admin user name and password.

The user name is **admin**. The default password is printed on the product label. The user name and password are case-sensitive.

The BASIC Home page displays.

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

The Set Password page displays.

5. Type the old password, and type the new password twice.

6. Click the **Apply** button.

Your settings are saved.

View cable modem initialization

You can track the initialization procedure of the cable modem and get details about the downstream and upstream cable channel. 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 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 connected to your cable modem.

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

A login window opens.

3. Enter the admin user name and password.

The user name is **admin**. The default password is printed on the product label. The user name and password are case-sensitive.

The BASIC Home page displays.

4. Select **Cable Connection**.

The Cable Connection page displays.

The Startup Procedure section displays the initialization progress. The page also displays the status of all downstream and upstream channels. (You must scroll down to view all the channels.) The number of downstream and upstream channels that are locked depends on the number of channels that your Internet provider uses.

View cable modem status

To view cable modem status and usage information:

1. Launch a web browser from a computer that is connected to your cable modem.
2. Enter **http://192.168.100.1**.
A login window opens.
3. Enter the admin user name and password.
The user name is **admin**. The default password is printed on the product label. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Click the **ADVANCED** tab.
The ADVANCED Home page displays information about your cable modem.

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 connected to your cable modem.
 2. Enter **http://192.168.100.1**.
A login window opens.
 3. Enter the admin user name and password.
The user name is **admin**. The default password is printed on the product label. The user name and password are case-sensitive.
The BASIC Home page displays.
 4. Select **ADVANCED > Administration > Event Log**.
The Event Log page displays the following information:
 - **Time**. The time the event was recorded.
 - **Priority**. The severity for this event.
 - **Description**. A description of this event.
 5. To refresh the page, click the **Refresh** button.
 6. To clear the log entries, click the **Clear Log** button.
-

Specify the cable connection starting frequency

The starting frequency is automatically generated. For most Internet connections, you do not need to specify this information. If you must enter a starting frequency, contact your Internet provider.

To change the starting frequency:

1. Launch a web browser from a computer that is connected to your cable modem.
2. Enter **http://192.168.100.1**.
A login window opens.
3. Enter the admin user name and password.
The user name is **admin**. The default password is printed on the product label. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Select **Cable Connection**.
The Cable Connection page displays the status of all downstream and upstream channels.
5. In the **Starting Frequency** field, type a number as instructed by your cable Internet provider.
6. Click the **Apply** button.
Your settings are saved.

Reboot the cable modem

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

To reboot the cable modem:

1. Launch a web browser from a computer that is connected to your cable modem.
2. Enter **http://192.168.100.1**.
A login window opens.

3. Enter the admin user name and password.
The user name is **admin**. The default password is printed on the product label. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Click the **ADVANCED** tab.
The ADVANCED Home page displays.
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 that you use 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 password is printed on the product label. 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 using the Reset button:

1. On the back of the cable modem, locate the **Reset** button.
2. Using a straightened paper clip, press and hold the **Reset** button until the cable modem reboots itself.

The configuration is reset to factory default settings. This process takes about one minute.

Use the factory reset software button

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

To reset the cable modem to factory default settings using the Factory reset software button:

1. Launch a web browser from a computer that is connected to your cable modem.
2. Enter **http://192.168.100.1**.
A login window opens.
3. Enter the admin user name and password.
The user name is **admin**. The default password is printed on the product label. The user name and password are case-sensitive.
The BASIC Home page displays.
4. Click the **ADVANCED** tab.
The ADVANCED Home page 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.

4

Troubleshooting

This chapter provides information about troubleshooting your cable modem.

The chapter includes the following sections:

- [Use the LEDs to Troubleshoot](#)
- [Cannot log in to the cable modem](#)
- [Troubleshoot the Cable Internet Connection](#)
- [Troubleshoot Voice Connectivity](#)

Use the LEDs to Troubleshoot

The following table provides help when you are using your cable modem's LEDs for troubleshooting.

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Table 2. Troubleshooting your cable modem's LEDs

LED Behavior	Action
All LEDs are off when the cable modem is plugged in.	<ul style="list-style-type: none">• Make sure that the power cord is securely connected to your cable modem and that the power supply adapter is securely connected to a functioning power outlet.• Make sure 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.	<ul style="list-style-type: none">• Reset 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 for a port with an Ethernet connection.	<ul style="list-style-type: none">• 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 Online LED is off and the cable modem is connected to the cable wall jack.	<ul style="list-style-type: none">• Make sure that the coaxial cable connections are secure at the cable modem and at the wall jack.• Make sure that your Internet service provider provisioned your cable Internet service. Your ISP can verify that the signal quality is good enough for cable modem service.• Remove any excessive splitters that you installed on your cable line.
The Power LED lights red.	<p>The cable modem is too warm and might overheat. Do the following:</p> <ol style="list-style-type: none">1. Disconnect the power adapter.2. Wait a few 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 your cable modem from a computer that is connected to your cable modem or to a router that is connected your cable modem, check the following:

- If your computer is connected to your cable modem with an Ethernet cable, check the connection.
- 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. Your cable modem user name **admin** is lowercase (Caps Lock is off).
- 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.

If your 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. It is possible that the changes occurred, but the web browser is caching the old configuration.

Troubleshoot the Cable Internet Connection

If your cable modem cannot access the Internet but the Online LED lights white, make sure that the cable MAC address or device MAC address of your cable modem is registered with Xfinity.

Troubleshoot Voice Connectivity

The following table includes tips for troubleshooting voice connectivity.

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Table 3. Quick tips for troubleshooting voice connectivity

Problem	Possible Solution
No dial tone	<ul style="list-style-type: none">• If you use a cordless phone, check that the base of your phone is turned on and receiving power and that the cordless phone battery is not low.• Check that the phone cable connections are secure at the cable modem and at base of your phone, and that the cable modem is turned on and receiving power.
No ringing for incoming calls	<ul style="list-style-type: none">• Check that call forwarding is not enabled.• If you use a cordless phone, check that the ringer is not turned off.
No caller ID name	It is possible that the calling party blocked its caller ID. If this is true, you might be able to program your phone to recognize an incoming number and associate a name with that number.

5

Supplemental Information

This appendix covers the following topics:

- [Factory Settings](#)
- [Technical Specifications](#)

Factory Settings

The following table shows the factory default settings for the cable modem.

Table 4. Factory default settings

Feature		Default Setting
Cable modem login	User login URL	http://192.168.100.1
	User name (case-sensitive)	admin
	Login password (case-sensitive)	printed on product label
Internet connection	Cable modem MAC address	Use default hardware address
	Port speed	AutoSensing

Technical Specifications

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

Nighthawk CM2050V 2.5 Gbps Ultra-High Speed Cable Telephony Modem

Table 5. Technical specifications

Feature	Specification
Power adapter	<ul style="list-style-type: none">• Input: 110-120V, 47-60 Hz• Output: 12 VDC, 2.5A
Physical specifications	<ul style="list-style-type: none">• Dimensions (W x D x H): 6.8 x 3.7 x 8.2 in. (172 x 94 x 208 mm)• Weight: 1.09 lb (493 g)
Environmental	<ul style="list-style-type: none">• Operating temperature: 32° to 104°F (0° to 40°C)• Operating humidity: 90% maximum relative humidity, noncondensing
Interface	<ul style="list-style-type: none">• Local: One 2.5 Gbps RJ-45 Gigabit Ethernet port• Voice: Two bridged RJ-11 phone ports• Internet: Coaxial cable connector, DOCSIS 3.1; backward-compatible with DOCSIS 3.0
Channels	<ul style="list-style-type: none">• 2 OFDM and 32 SC-QAM bonded downstream• 2 OFDMA and 8 SC-QAM bonded upstream
Certifications	<ul style="list-style-type: none">• CableLabs certified for U.S. cable Internet services• FCC/UL