



Powerline Music Extender XAU2511

User Manual



350 East Plumeria Drive
San Jose, CA 95134
USA

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202-10955-01
v1.0

Support

Thank you for choosing NETGEAR.

After installing your device, locate the serial number on the label of your product and use it to register your product at <https://my.netgear.com>. You must register your product before you can use NETGEAR telephone support.

NETGEAR recommends registering your product through the NETGEAR website. For product updates and web support, visit <http://support.netgear.com>.

Phone (US & Canada only): 1-888-NETGEAR.

Phone (Other Countries): Check the list of phone numbers at <http://support.netgear.com/general/contact/default.aspx>.

NETGEAR recommends that you use only the official NETGEAR support resources.

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Getting Started

1

This chapter describes your Powerline Music Extender XAU2511 and how your extender can fit into a home network. It also explains the security features and how to customize the encryption key for added security.

This chapter includes:

- *Hardware Features*
- *How the Music Extender Fits in Your Network*
- *Set Up the Powerline Network*
- *Powerline Network Security*
- *Use the Security Button to Set the Encryption Key*

For more information about the topics covered in this manual, visit the Support website at <http://support.netgear.com>.

Hardware Features

The package includes a Powerline Music Extender XAU2511, a USB to Audio cable, and an Ethernet cable. Products sold in some regions might include a resource CD.



Figure 1. Package contents

The following illustration shows the hardware features of the Music Extender:

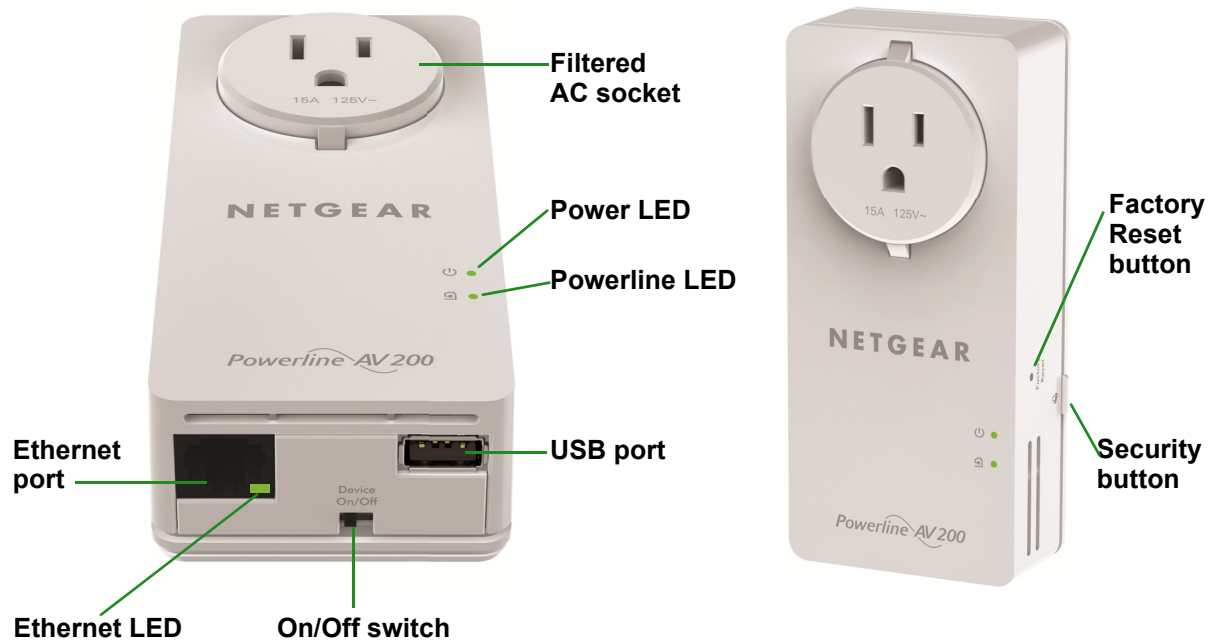


Figure 2. Powerline Music Extender XAU2511

LED and Feature Descriptions

Table 1. LED descriptions

Item	Description			
Power LED 	• Solid green. The electrical power is on. • Blinking green. The device is in the process of restarting or establishing security. • Off. There is no electrical power.			
Powerline LED 	• Solid. The device is connected to a Powerline network. • Off. The device has not found any other compatible Powerline devices using the same encryption key. The Pick A Plug feature lets you pick the electrical outlet with the strongest link rate, indicated by the color of the Powerline LED: <table><tr><td>Green. Link rate > 80 Mbps (Good)</td><td>Amber. Link rate > 50 and < 80 Mbps (Fair)</td><td>Red. Link rate < 50 Mbps (Poor)</td></tr></table>	Green. Link rate > 80 Mbps (Good)	Amber. Link rate > 50 and < 80 Mbps (Fair)	Red. Link rate < 50 Mbps (Poor)
Green. Link rate > 80 Mbps (Good)	Amber. Link rate > 50 and < 80 Mbps (Fair)	Red. Link rate < 50 Mbps (Poor)		
Ethernet LED 	• Solid green. The device has an active Ethernet connection. • Off. There is no Ethernet connection.			

Buttons and Switches

- **Factory Reset.** Press the **Factory Reset** button on the side of the Music Extender for 1 second, and then release it to return the Music Extender to its factory default settings.
- **Security.** If you set security on your other Powerline devices, after you plug your new Music Extender into the wall socket, press its **Security** button for 2 seconds. Then, press the **Security** button on any Powerline device in your existing network for 2 seconds. Both buttons must be pressed within 2 minutes.
- **On/Off.** Use the On/Off switch to turn the device on and off. When this switch is in the Off position, the filtered AC socket still has power.

Ethernet Port

The Powerline Music Extender XAU2511 uses an Ethernet port to convert a standard electrical wall outlet into a high-speed network connection. The high-speed network connection brings Internet connectivity to any device with an Ethernet port, such as a game console, Blu-ray™ player, smart TV, HD set-top box, network DVR, or computer. All devices on your home network that are plugged into a Powerline adapter or extender are interoperable.

USB Port

The Powerline Music Extender XAU2511 uses a USB port to connect your USB devices to your home network. Connected devices can use the ReadySHARE music and networking features. The ReadySHARE music features let you connect audio speakers to your network and play music wirelessly. The ReadySHARE networking features let you connect USB printers and USB hard drives to your home network so they can be accessed through WiFi.

Filtered AC Socket

The filtered AC socket can remove some electrical noise that might affect Powerline performance. Plugging the power plugs of nearby devices into the filtered AC socket improves performance.

Product Label

The product label shows unique details specific to your device. The product label is located on the back of the device. The label contains:

- Model number
- MAC address
- Serial number
- AirMusic name
- Device password

How the Music Extender Fits in Your Network

You can use one or more Music Extenders to extend your home network anywhere in your house using your electrical power lines.

A Powerline network consists of two or more compatible Powerline devices that communicate with each other. One of the Powerline devices is connected with an Ethernet cable to your router so that the Powerline network is linked to your local area network (LAN). That way each Powerline device can communicate with the router and use its Internet connection.

The following illustration shows an existing Powerline network with one Powerline device in Room 1, a second Powerline device in Room 2, and a Music Extender in Room 3:

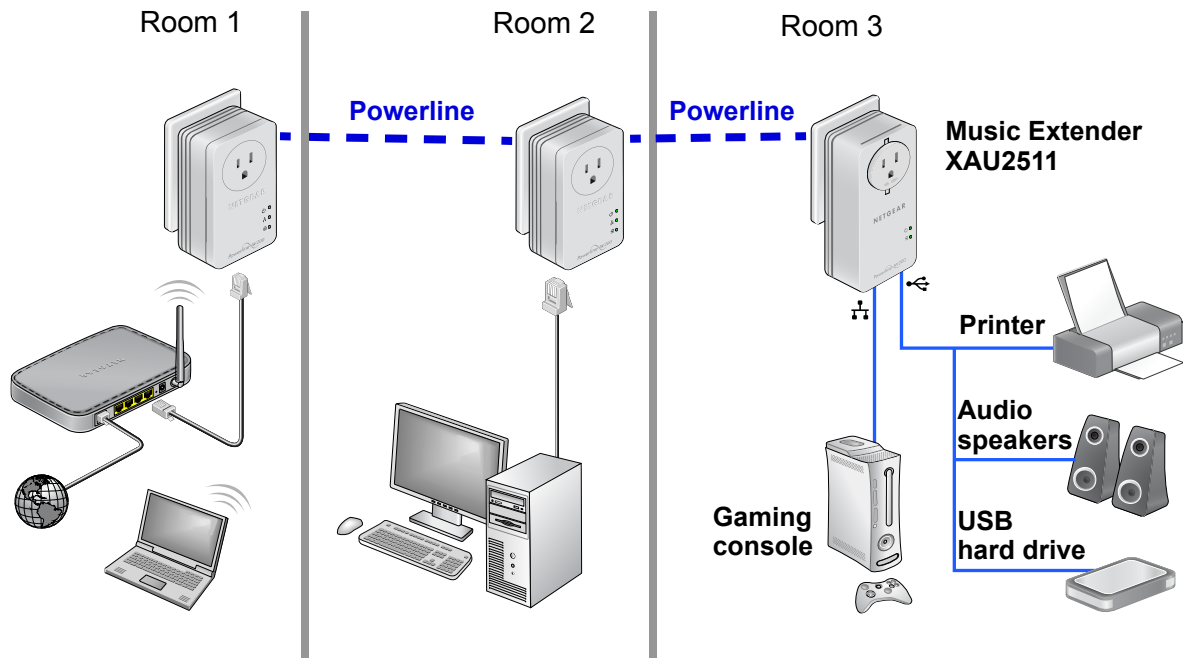
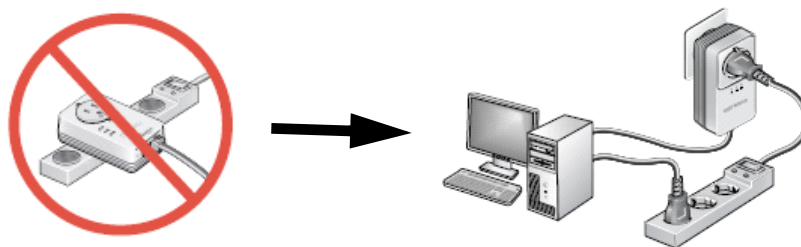


Figure 3. Music Extender connected to the Powerline network

To form a Powerline network, you need at least two compatible Powerline devices (including the Music Extender).

For best performance, plan the location of your Powerline devices:

- Use an electrical outlet that is not controlled by a wall switch to avoid someone unknowingly turning off the power to the outlet.
- Do not plug Powerline products into a power strip, extension cord, or surge protector as this might prevent them from working correctly or reduce the network performance.
- Powerline products must be plugged into a wall outlet. If you are using a power strip, plug the power strip into the filtered AC socket of the Music Extender.



Set Up the Powerline Network

You can set up a new Powerline network that includes the Music Extender, or you can add the Music Extender to an existing Powerline network.

Set Up a New Powerline Network

Different Powerline product models can share the network. All NETGEAR Powerline HomePlug AV products are compatible with the Powerline Music Extender XAU2511.

➤ **To set up a new Powerline network:**

1. Make sure that your WiFi router or gateway is connected to the Internet and that your Ethernet wired connections are working.
 - a. On a computer that is connected to your router or gateway using an Ethernet cable, open a web browser and navigate to a web page.
 - b. On a computer or device that is connected to your wireless network, open a web browser and navigate to a web page.

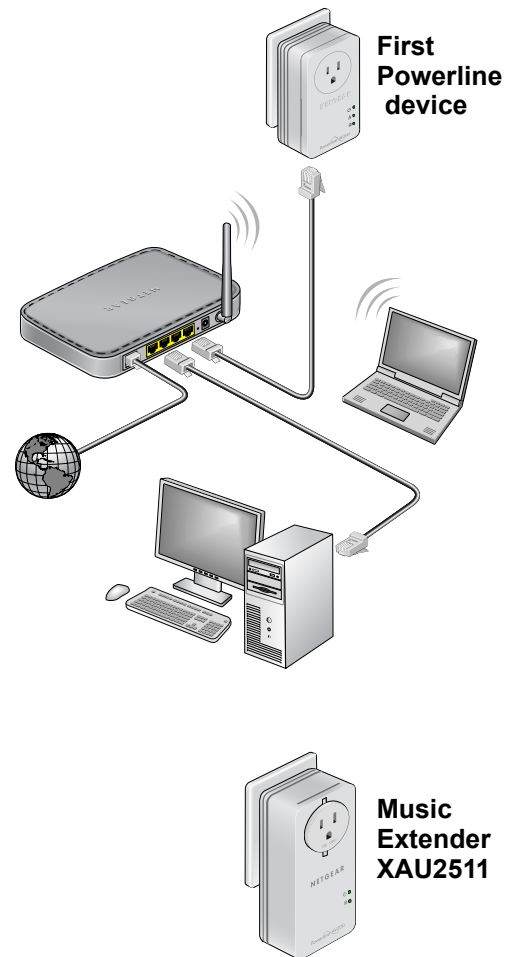
2. Plug the first Powerline device (sold separately) into a wall outlet near your router or gateway. Then, connect the device to the LAN port on your router or gateway using an Ethernet cable.

For more detailed instructions, see the installation guide that came in the package.

3. Plug the Music Extender into a wall outlet near the USB devices that you want to connect to the Music Extender.
4. Wait for each Powerline adapter or extender to be recognized by the Powerline network.

The Power and Powerline LEDs should turn on. This could take as little as 5 seconds, or up to 80 seconds. If the Powerline LEDs are green or amber, the devices are successfully connected. A red LED indicates a poor link rate. In this case, move the device to another electrical outlet with a better connection.

5. Set up security as explained in [Use the Security Button to Set the Encryption Key](#) on page 12.



Add the Music Extender to an Existing Powerline Network

If you have an existing Powerline network, make sure one of the Powerline devices is connected to your WiFi router or gateway so that the Powerline network is linked to your local area network (LAN) and WiFi network. Your existing Powerline network must have two or more compatible Powerline devices that communicate with each other.

➤ **To add the Music Extender to an existing Powerline network:**

1. Plug the Music Extender into a wall outlet near the USB devices that you want to connect to the Music Extender.
2. Wait for each Powerline adapter or extender to be recognized by the Powerline network.

The Power and Powerline LEDs should turn on. This could take as little as 5 seconds, or up to 80 seconds. If the Powerline LEDs are green or amber, the devices are successfully connected. A red LED indicates a poor link rate. In this case, move the device to another electrical outlet with a better connection.

3. Set up security as explained in [Use the Security Button to Set the Encryption Key](#) on page 12.

Powerline Network Security

A Powerline network consists of two or more compatible Powerline devices using the same network encryption key. Securing your network is crucial. By encrypting the information you send over the Powerline network, you help to keep it secure from hackers. If you do not set up security on your network, anyone nearby with a Powerline network can potentially use their connection to gain access to your network and information you send over the Internet. This is especially relevant in settings such as apartment buildings, office buildings, dorm rooms, and other more populated areas.

There are two ways to secure your Powerline network.

- Use the Security button located on the Powerline device to automatically generate a random encryption key. See [Use the Security Button to Set the Encryption Key](#) on page 12.
- Use NETGEAR genie to configure your Powerline network with an encryption key that you specify. See [Install NETGEAR genie](#) on page 27.

For information about using NETGEAR genie to configure Powerline security or to manage Powerline devices, see [Set the Powerline Encryption Key](#) on page 32.

To return the Music Extender to its factory default settings, press its **Reset** button for 1 second.

Use the Security Button to Set the Encryption Key

Note: A Powerline device can generate a private key only once. If you want to replace a private key, first reset the Powerline devices to their factory settings. To do this either press the **Reset** button for 1 second, then release, or use the NETGEAR genie factory defaults feature (see [Reset a Device to Factory Settings](#) on page 34).

You can use the Security button to change the default encryption key and set a private encryption key instead. The default encryption key is HomePlugAV.

➤ **To set the encryption key:**

1. Make sure that all of the Powerline devices that you want to configure are plugged in. Verify that the Power and Powerline LEDs on each device are lit solid green.



CAUTION:

Do not press the Security button on the Powerline device until the Power and Powerline LEDs on each Powerline device in your network are lit solid green. Pressing the Security button too soon can temporarily disable Powerline communication. If this should occur, reset the Powerline device to its factory default settings (press the **Reset** button for 1 second, then release).

2. Press the Powerline **Security** button on the first Powerline device for 2 seconds.
 - The Power LED starts blinking after you release the button.
 - The Powerline device automatically creates a new, randomly generated network encryption key that each other Powerline device on the network will use.

At this point, the other Powerline devices in your network cannot communicate with each other.

3. Within 2 minutes of pressing the Security button on the first Powerline device, press the **Security** button on the second Powerline device for 2 seconds. You need to press both Security buttons within 2 minutes.
 - The Power LED starts blinking after you release the button.
 - This process allows the second Powerline device to use the same network encryption key as the first device, so that they can communicate.



When the Power LEDs stop blinking and the Powerline LEDs are lit solid green, the two devices should be able to communicate.



Note: This process works for only one pair of Powerline devices at a time. If you have more than two Powerline devices, repeat this process for each additional Powerline device to be configured. The devices retain security settings even if they are unplugged.

Using ReadySHARE Features

2

The Powerline Music Extender XAU2511 provides ReadySHARE music and networking features using the NETGEAR USB Media Extender utility.

The ReadySHARE features let you:

- Play music wirelessly from your smartphone or tablet.
- Play music wirelessly from your computer.
- Connect USB storage devices to your home network.
- Connect USB printer and scanners to your home network.

This chapter includes:

- *Install the NETGEAR USB Media Extender Utility*
- *Use the USB to Audio Cable*
- *ReadySHARE AirMusic for Smartphones and Tablets*
- *ReadySHARE Music for Computers*
- *ReadySHARE USB Storage*
- *ReadyShare Printer*

Install the NETGEAR USB Media Extender Utility

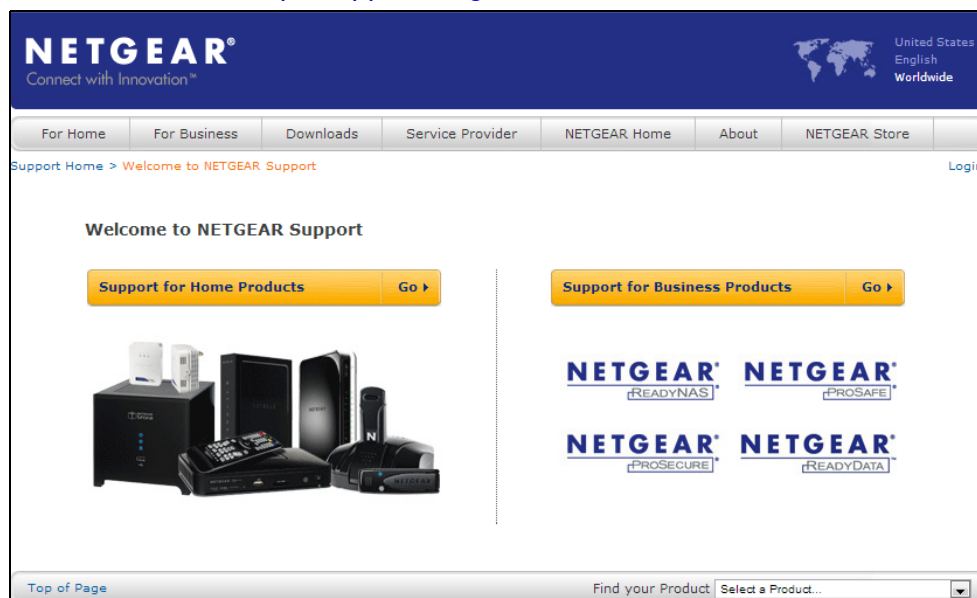
To use the ReadySHARE Music and networking features, you must install the NETGEAR USB Media Extender utility on your computer. This utility is provided on the resource CD that came with your Music Extender. If your Music Extender did not come with a resource CD, you can download the NETGEAR USB Media Extender utility from the NETGEAR website.

Download the NETGEAR USB Media Extender Utility

The NETGEAR USB Media Extender utility is a free download available from the NETGEAR website.

➤ **To download the NETGEAR USB Media Extender utility:**

1. From the computer that is connected to your Powerline network, launch an Internet browser, and visit <http://support.netgear.com>.



2. Click the **For Home** tab.
3. In the search box, type **xau2511** and press **Enter**.
4. From the downloads list, select the NETGEAR USB Media Extender utility.
5. Click the **Download** button to download the NETGEAR USB Media Extender utility to your computer.

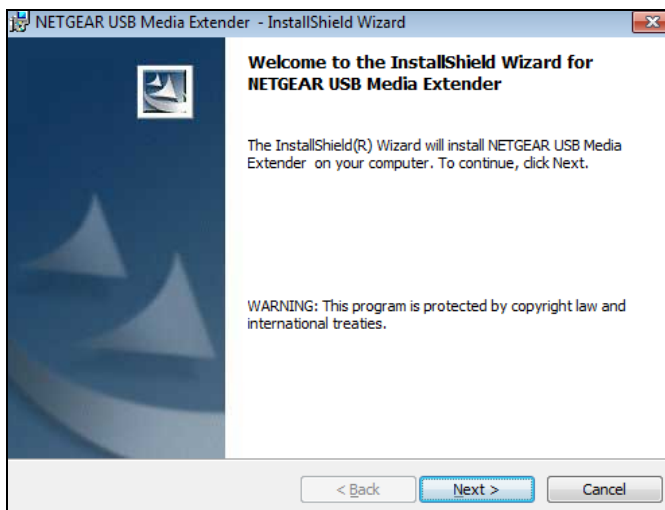
Install the NETGEAR USB Media Extender Utility

➤ To install the NETGEAR USB Media Extender utility:

1. Insert the resource CD into the computer that is connected to a Powerline device.

Note: If you do not have a resource CD, follow the instructions in [Download the NETGEAR USB Media Extender Utility](#) on page 15. Run the file that you downloaded.

2. Follow the onscreen instructions to install the NETGEAR USB Media Extender utility.



3. After you install the utility, select the language.



The NETGEAR USB Media Extender utility launches.

Use the USB to Audio Cable

You can connect a USB speaker directly into the Music Extender or use the provided USB to audio cable.

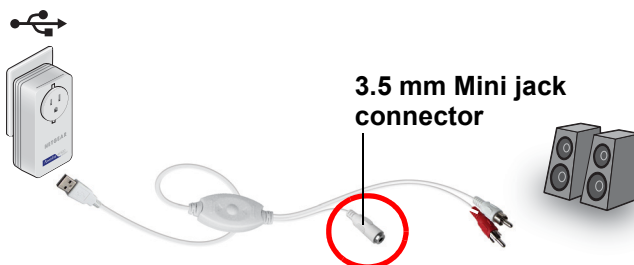


- **To connect your speakers to the Music Extender using the USB to audio cable:**

Use the two RCA connectors to connect a Hi-Fi audio system that has RCA stereo plugs.



Or use the 3.5 mm mini jack connector to connect a speaker that has a mini jack.

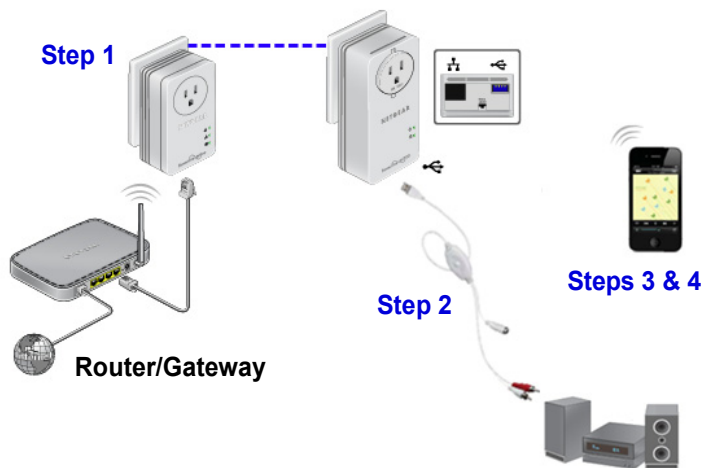


ReadySHARE AirMusic for Smartphones and Tablets

ReadySHARE AirMusic lets you play music wirelessly from your iPhone, iPad, iPod touch, or Android device. The music is played on audio speakers, such as USB speakers or a Hi-Fi stereo system. The Powerline Music Extender XAU2511 supports all types of stereo speakers because it comes with a USB to audio cable, which has both a mini jack connector and RCA connectors.

Set Up ReadySHARE AirMusic

ReadySHARE AirMusic is for smartphones and tablets. This setup procedure works only if you have a WiFi network at home that includes a WiFi router, gateway, or extender.



➤ **To set up ReadySHARE AirMusic:**

1. Plug the Music Extender into any electrical outlet in your home.
2. Connect the Music Extender to your stereo system with the USB to audio cable (see [Use the USB to Audio Cable](#) on page 17).
3. Select the WiFi router or gateway network SSID on your smartphone or tablet.
Make sure the Music Extender is connected to the WiFi network you select.
4. Select music on your smartphone or tablet and beam it to the speaker using the Airplay feature.

Use ReadySHARE AirMusic on iOS Devices

- To use AirMusic on iOS devices (such as an iPhone, iPad, or iPod):

1. Launch the music application.
2. Click the arrow on the right side of the screen.



3. Select **XAU2511-XX** in the devices list.



You should hear the Music Extender play music on the remote speaker.

Note: Each Music Extender device is shown in the format *XAU2511-xx*, where *xx* is a unique 2-digit number. You can identify the Music Extender by its AirMusic name, which is shown on the Music Extender product label.

Use ReadySHARE AirMusic on Android Devices

You can also play music on the Music Extender through specific Airplay-compatible applications running on an Android OS.

➤ **To use AirMusic on Android devices (such as a smartphone or tablet):**

1. Launch the Google Play app (previously Android Market).
2. Download a free Airplay application and launch it. NETGEAR recommends Twonky Mobile.
3. Select the music source.
4. Select a song and play it.
5. Once the music begins to play, press the **Beam** button and select **XAU2511-XX**.

Music plays on your remote speaker through the Music Extender.

Note: Each Music Extender device is shown in the format *XAU2511-xx*, where *xx* is a unique 2-digit number. You can identify the Music Extender by its AirMusic name, which is shown on the Music Extender product label.

Troubleshooting

- It takes between 30 seconds and 1 minute to detect the remote Music Extender the first time.
- While the Music Extender is connected to ReadySHARE Music on your computer, no other device (for example, a smartphone or tablet) can use the Music Extender in AirMusic mode. Make sure that the Music Extender is disconnected from ReadySHARE Music before using AirMusic mode. For more information about how to disconnect the Music Extender from ReadySHARE Music, see [Step 6](#) on page 22.

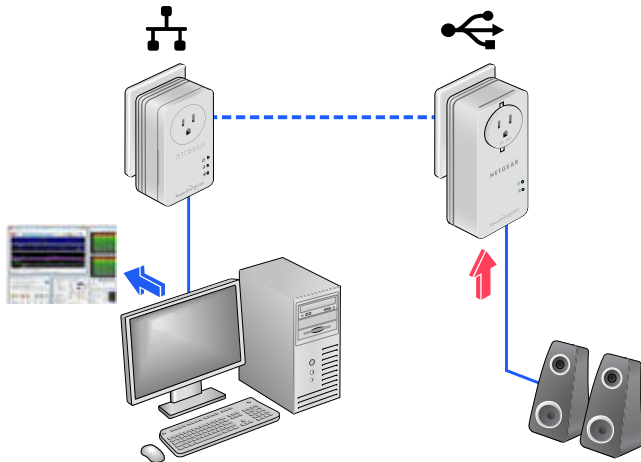
ReadySHARE Music for Computers

ReadySHARE Music lets you play music from your computer on a remote audio speaker, such as USB speakers or a Hi-Fi stereo system.

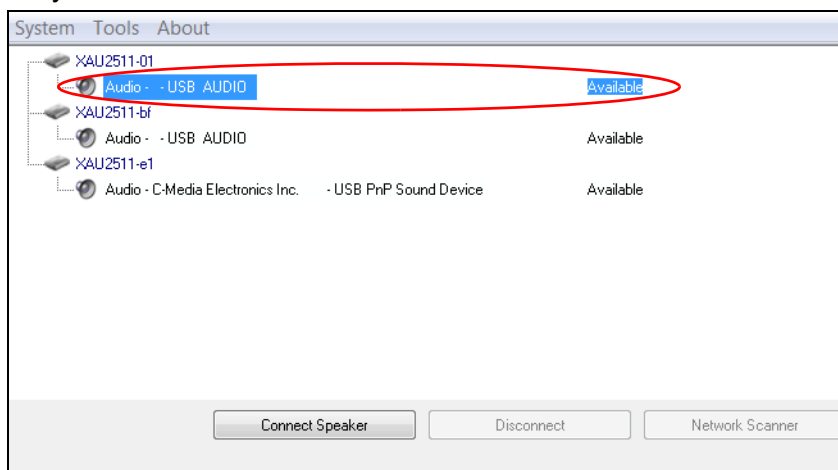
Set Up ReadySHARE Music

➤ To set up ReadySHARE Music on your computer for the first time:

1. Connect your speakers to the Music Extender (see [Use the USB to Audio Cable](#) on page 17).

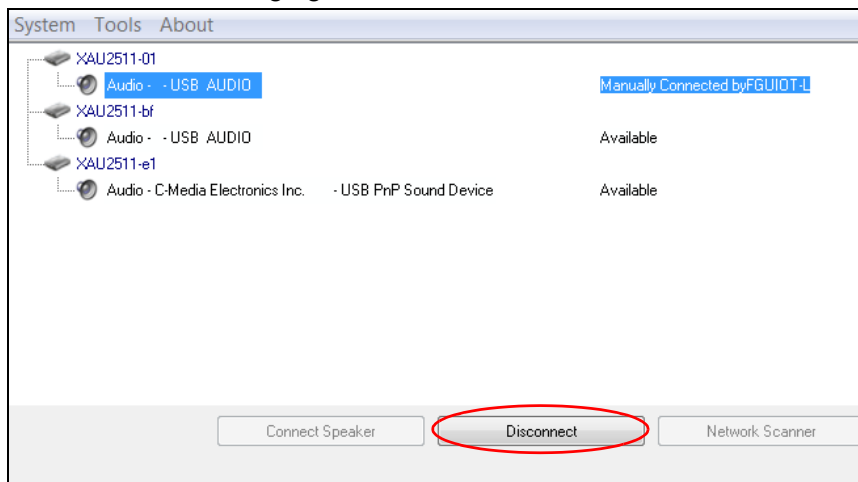


2. Install the NETGEAR USB Media Extender utility (see [Install the NETGEAR USB Media Extender Utility](#) on page 15).
3. Launch the utility. After 30 seconds, it finds and displays the remote Music Extender devices on your home network.



Note: Each Music Extender device is shown in the format *XAU2511-xx*, where *xx* is a unique 2-digit number. You can identify the Music Extender by its AirMusic name, which is shown on the Music Extender product label.

4. Select the Music Extender device to which you want to stream the music by selecting the line below the corresponding Music Extender device. See the figure in the previous step.
5. Click the **Connect Speaker** button. The music played on the computer is played on the remote audio system.
6. To stop playing the music on the Music Extender device, select the **Disconnect** button as shown in the following figure.



Use ReadySHARE Music After the First Installation

The NETGEAR USB Media Extender utility is always running in the background. To display the utility on the screen, click the icon on the Windows tray. To play music remotely, select the Music Extender device and connect to it.

Troubleshooting

- It takes between 30 seconds and 1 minute to detect the remote Music Extender the first time.
- If you press the Connect Speaker button and the music is not played remotely, press the **Disconnect** button and press the **Connect Speaker** button again.
- All of the music and Windows sounds that come from the computer are redirected and played remotely on the Music Extender. To play only the music without the Windows sounds, launch an Airplay application such as iTunes on your computer.

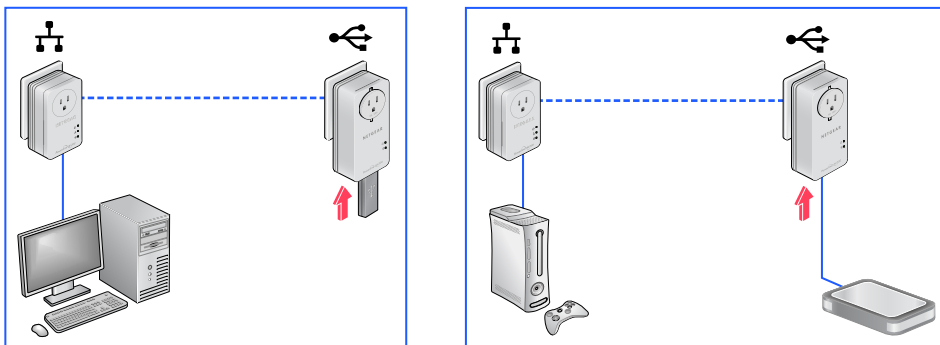
ReadySHARE USB Storage

ReadySHARE USB Storage lets you share the content on a hard disk or memory stick across your home network. All you do is connect the hard disk or memory stick to the Music Extender USB port.

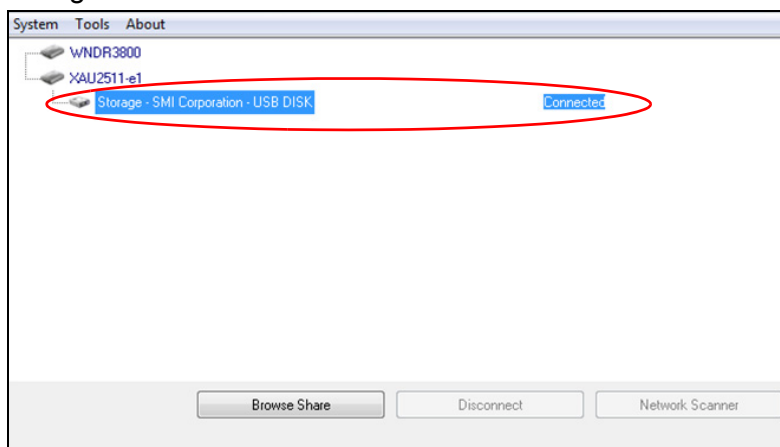
Set Up ReadySHARE USB Storage

➤ **To set up ReadySHARE USB Storage:**

1. Connect any storage device to the USB port of the Music Extender. For example, you could connect a USB hard drive or a USB stick.



2. Install the NETGEAR USB Media Extender utility (see [Install the NETGEAR USB Media Extender Utility](#) on page 15).
3. Launch the USB Media Extender utility. After a few seconds, the utility shows that the storage device is connected to the Music Extender.



4. Select the storage device and press the **Browse Share** button.

A window displays that lets you browse the remote storage device directories.

Troubleshooting

If you use a USB hub to connect different USB hard drives simultaneously, the power on the USB port of Music Extender might not be sufficient to power all the USB devices. You might need to power some hard disks with an external power supply.

ReadyShare Printer

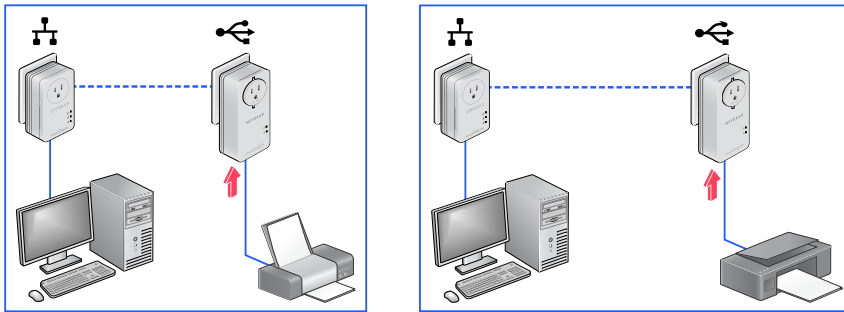
ReadySHARE Printer lets you place your USB printer anywhere in your house. When you connect the USB printer to the Music Extender USB port, the printer is shared among all computers on the home network.

Set Up ReadySHARE Printer

You can have multiple USB printers or scanners working simultaneously if each one is connected to a Music Extender.

➤ **To set up ReadySHARE Printer:**

1. Connect the USB printer, scanner, or fax machine to the USB port on the Music Extender.

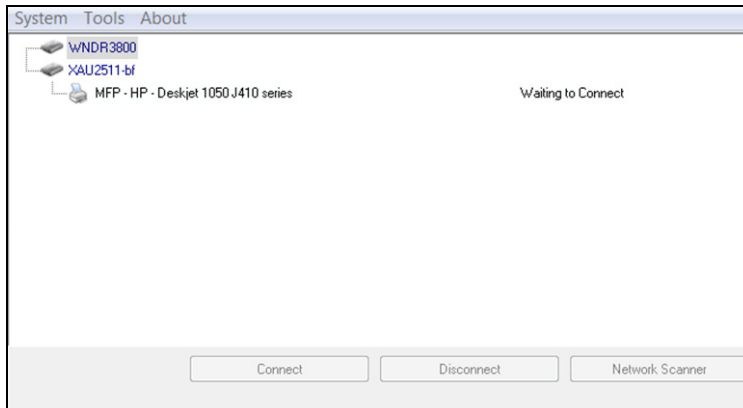


2. Install the USB printer driver software on each computer that will share the printer. If you do not have the printer driver, contact the printer manufacturer to find and download the most recent printer driver software.
3. Install the NETGEAR USB Media Extender utility on each computer that will share the printer. (See [Install the NETGEAR USB Media Extender Utility](#) on page 15.)

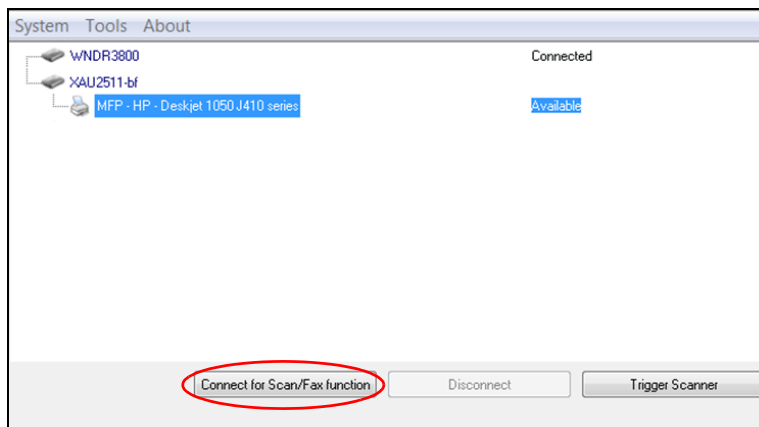
Note:

- You must install this utility before you can use the ReadySHARE Printer feature.
- For the ReadySHARE Printer feature to work, this utility must be run in the background.

4. Launch the USB Media Extender utility. After a few seconds, the utility shows that the Music Extender detected the printer (or scanner, or fax machine) and is waiting for the connection.



5. Click the printer or scanner device listing and click the **Connect for Scan/Fax function** button.



Your remote printer (or scanner, or fax machine) is now connected as if it were connected locally through the USB cable. To print or scan, open the application (such as Word or Excel), select the Print function, and select the printer.

Troubleshooting

If the remote printer or scanner is not detected, make sure that you have already installed the printer or scanner software on the computer where you want to print.

Using NETGEAR genie

3

This chapter explains how to install and use NETGEAR genie to manage your Powerline network. NETGEAR genie works with all Powerline products.

You can use NETGEAR genie to access a local Powerline device that is connected to your computer with an Ethernet cable and also to access other Powerline devices on the same network.

You can use NETGEAR genie to:

- Change the name of a Powerline device.
- Turn LEDs on or off.
- Set encryption keys.
- Restore a device to default configuration settings.
- Add a device to the Powerline network.
- Access the web genie.

This chapter includes:

- *Install NETGEAR genie*
- *Powerline Utility Screen*
- *View the Link Rate between Powerline Devices*
- *Change the Name of a Powerline Device*
- *Turn LEDs Off or On*
- *Set the Powerline Encryption Key*
- *Reset a Device to Factory Settings*
- *Add a Device to the Powerline Network*
- *Access NETGEAR Web genie*
- *Upgrade the Firmware*

Install NETGEAR genie

NETGEAR genie allows you to set your own unique Powerline network encryption key and manage devices on your Powerline network.

All devices on a Powerline network can be managed from one computer. If you add another Powerline device to a Powerline network, you can install NETGEAR genie on the computer connected locally to the new device, or open the genie on the computer originally used to set up the Powerline network encryption key. You can use any computer to manage the network, but this procedure assumes that you are working from the computer that is connected to a Powerline device.

Note: If you already have NETGEAR genie installed on your computer, you must reinstall the latest version to get support for Powerline products.

NETGEAR genie is a free download available from the NETGEAR website.

➤ **To install NETGEAR genie:**

1. Launch an Internet browser, and visit <http://support.netgear.com>.



2. Click the **For Home** tab.
3. In the search box, type **xau2511** and press **Enter**.
4. Select NETGEAR genie from the downloads list.
5. Click the **Download** button to download NETGEAR genie to your computer.
6. Run the file that you downloaded, and follow the NETGEAR genie setup prompts to install NETGEAR genie. Click **Finish** to complete the setup.

The NETGEAR genie shortcut icon displays on your desktop.



7. Launch NETGEAR genie in one of two ways:
 - Click this icon located on your desktop.
 - Select **Start > All Programs > NETGEAR genie**.

Powerline Utility Screen

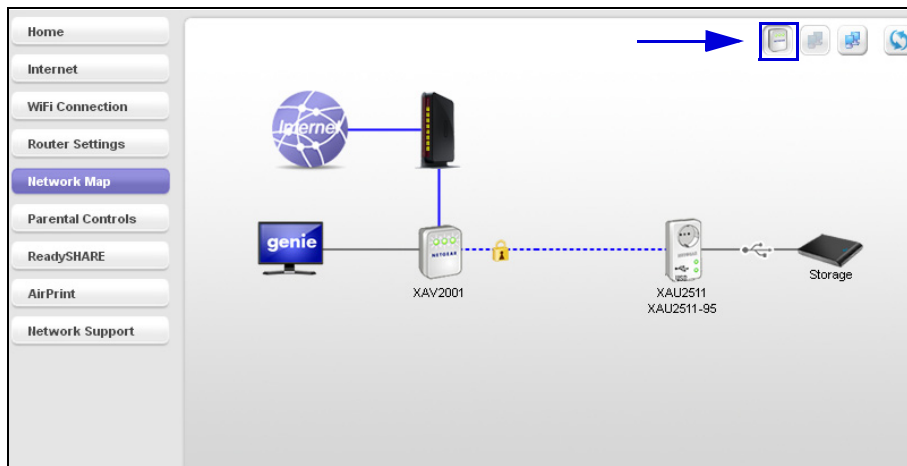
The Powerline Utility screen is where you view and manage your Powerline network.

➤ **To navigate to the Powerline Utility screen:**

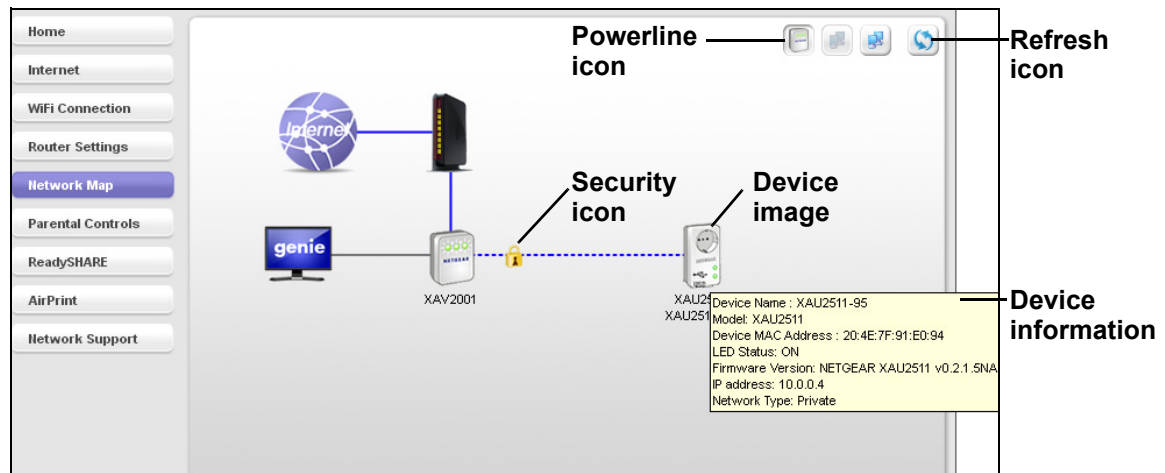
1. Launch NETGEAR genie.
2. From the NETGEAR genie Home screen, click **Network Map** on the dashboard or select it from the list of menu items on the left.



- On the Network Map screen, click the Powerline icon to view all the devices in your Powerline network. The Powerline Utility screen displays:



- Click the image of the device that you want to manage.
- If all devices are not shown, click the **Refresh** icon to update the screen.
- Move your mouse over the image of a device to view more information about it.



Security Icon

You can click the Security icon on the Powerline Utility screen to go to the Security screen.

- If the Powerline devices are secured using the default encryption key, the Security icon is unlocked.
- If the Powerline devices are secured using a private encryption key, the Security icon is locked.



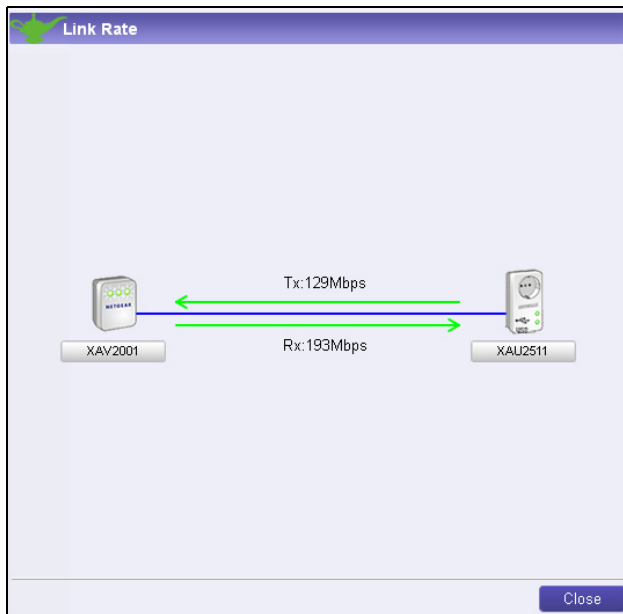
See [Set the Powerline Encryption Key](#) on page 32 for more information about how to set the encryption key on your Powerline devices.

View the Link Rate between Powerline Devices

- **To view the link rate between your Powerline devices:**

On the Powerline Utility screen, click the device whose link rate you want to view.

A pop-up screen displays.



- **Tx.** The rate at which the device is transmitting data.
- **Rx.** The rate at which the device is receiving data.

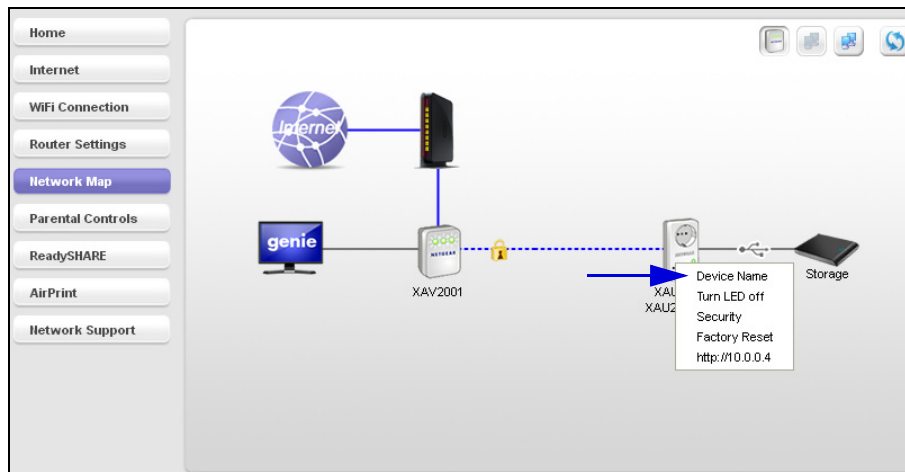
Change the Name of a Powerline Device

Powerline devices are identified by their model number and name. Any Powerline devices that are connected are detected by NETGEAR genie, and are shown on the Powerline Utility screen. If you did not name the Music Extender, its AirMusic name appears below its model number on the Powerline Utility screen.

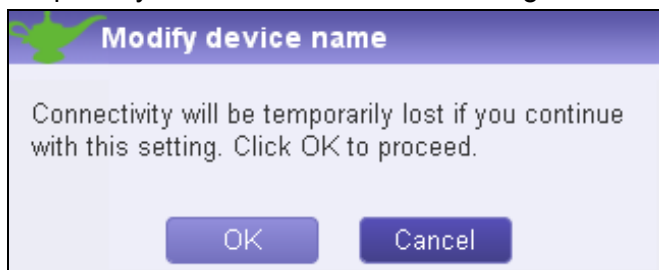
➤ **To name a Powerline device in your Powerline network:**

1. On the Powerline Utility screen, right-click the device you want to name.

A pop-up menu displays:



2. Select **Device Name**. A pop-up screen displays advising you that connectivity will be temporarily lost while the device is being renamed.



3. Click **OK**. The following screen displays:



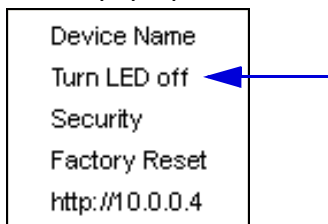
4. Enter a new name for the Powerline device, and click **OK**.

Turn LEDs Off or On

For each device in your Powerline network, you can turn the LEDs off or on.

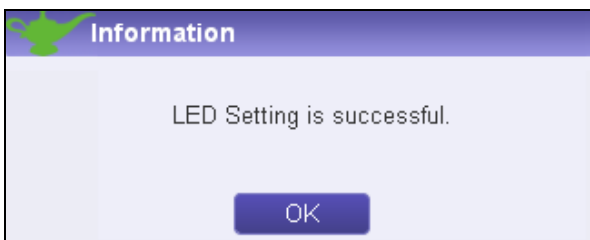
➤ **To turn the LEDs off or on:**

1. On the Powerline Utility screen, right-click the Powerline device icon.
2. On the pop-up menu, select either **Turn LED off** or **Turn LED on**.



A pop-up screen displays advising you that connectivity will be temporarily lost while the LEDs are being reset.

3. Click **OK**. The genie displays a message indicating that the operation was successful.



4. Click **OK**.

Set the Powerline Encryption Key

Powerline devices that share the same Powerline network have to use the same encryption key. The factory default encryption key is HomePlugAV.

In locations such as apartment buildings or office buildings, others might share the same electrical power lines that you use for your Powerline network. To protect your Powerline network from unwanted access, you can customize the encryption key for your Powerline devices. Make sure that you set up the same encryption key for all of your Powerline devices so that they can communicate with each other.

You use the Security screen in the NETGEAR genie Powerline Utility to set encryption keys. If you customize the encryption key and then forget what it is, you can return your Powerline devices to their factory default Powerline encryption key of HomePlugAV.

➤ **To set the encryption key:**

1. On the Powerline Utility screen, right-click the Powerline device icon or click the Security icon.

The Security screen displays.

Device Name	Model	MAC Address	Device Password
☒ un-named	XAV2001	E0:46:9A:4F:BB:D4	XXXX-XXXX-XXXX-XXXX
☒ XAU2511-95	XAU2511	20:4E:7F:91:E0:94	

Password is not required for local device(XAV2001, MAC E0:46:9A:4F:BB:D4)

Step2 Select an Encryption Key

☐ Create a new Encryption Key

☒ Use default Encryption Key HomePlugAV

Step3 Apply Changes

Apply Security to Selected Devices

Close

The top section of the Security screen shows information about each device that NETGEAR genie detects.

- **Device Name.** This lists the Powerline devices detected on the network after the genie completes a scan for devices. The device name is shown as un-named by default, but you can change it to a descriptive name such as Office or Master Bedroom (see [Change the Name of a Powerline Device](#) on page 31).
 - **Model.** This identifies the model number of the Powerline adapter.
 - **MAC Address.** The MAC address for the Powerline device. This information is on the product label, which might not be visible when the device is plugged in.
 - **Device Password.** To change settings for a remote Powerline device, you have to enter its password. The device password is on the product label.
2. Select the check box next to each device for which you want to set the encryption key.
 3. In Step 2 on your screen, select the option that you want:
 - **Create a new Encryption Key.** To set your own (private) network encryption key, type your network encryption key in the field.
 - **Use default Encryption Key.** When you select this option, the factory default encryption key automatically displays in the field. The default network encryption key is HomePlugAV.

Note: Before you can reset the encryption key for a remote device, you have to enter its password. The password is printed on the product label located on the back of the device.

4. Click the **Apply Security to Selected Devices** button.

When you are finished setting the encryption key, the genie displays a message indicating that the operation was successful.

5. Click **OK**.

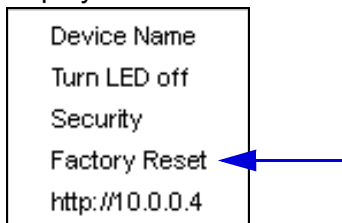
Reset a Device to Factory Settings

This option returns the network encryption key to its factory default of HomePlugAV.

Note: If you customized your network encryption key, the local Powerline device is disconnected from the network when you reset it to the factory defaults. To avoid this problem, reset all remote devices before you reset the local device.

➤ To reset a device to its factory settings:

1. On the Powerline Utility screen, right-click the Powerline device icon. The pop-up menu displays:



2. Select **Factory Reset**. A pop-up screen displays advising you that connectivity will be temporarily lost while the LEDs are being reset.
3. Click **OK**. A message displays asking you to confirm the reset.
4. Click **OK** to reset the device. A message indicates whether the operation succeeded.

Add a Device to the Powerline Network

If you are adding a device to a Powerline network, and the network encryption key has been left at its default setting, all you need to do is plug the new device into a power outlet.

If the network encryption key has been customized, there are two ways to set the security:

- You can use the Security button to add the new device to your network. See [Use the Security Button to Set the Encryption Key](#) on page 12.
- You can use the NETGEAR genie Powerline Utility to add the new device to the network, as described in the following procedure.

➤ To add a Powerline device to the Powerline network using NETGEAR genie:

1. Plug the Powerline device into an available AC power outlet.
2. Use the provided Ethernet cable to connect the Powerline device to an Ethernet port on the computer.
3. Start NETGEAR genie and navigate to the Powerline Utility screen.
4. Click the **Refresh** icon, and wait for the genie to detect the new device.
5. Right-click the device, and select **Security** from the menu.
6. Set the encryption key for the device (see [Set the Powerline Encryption Key](#) on page 32). Make sure that you enter the same encryption key that your other Powerline devices are using.

Verify that the devices in the Powerline network are in the device list by clicking the **Refresh** icon. It might take a minute or two to detect all devices in the network.

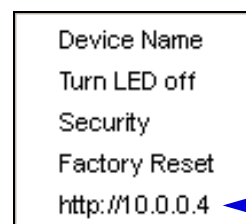


Access NETGEAR Web genie

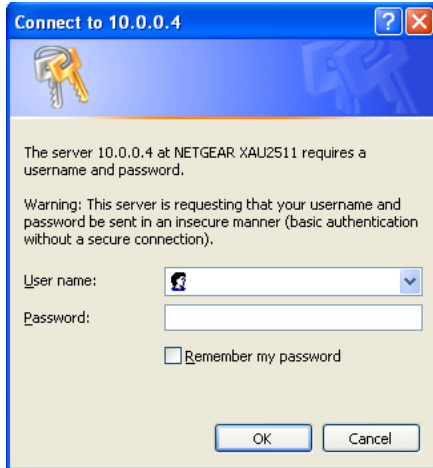
From the NETGEAR genie Powerline Utility screen, you can manage basic settings on your Powerline devices. To configure more advanced settings on individual Powerline devices, use NETGEAR web genie.

➤ To access the web genie for an individual Powerline device:

1. Launch NETGEAR genie from the computer that is connected to your Powerline network.
2. Navigate to the Powerline Utility screen, and right-click the device.
3. Select the IP address of the device from the menu.



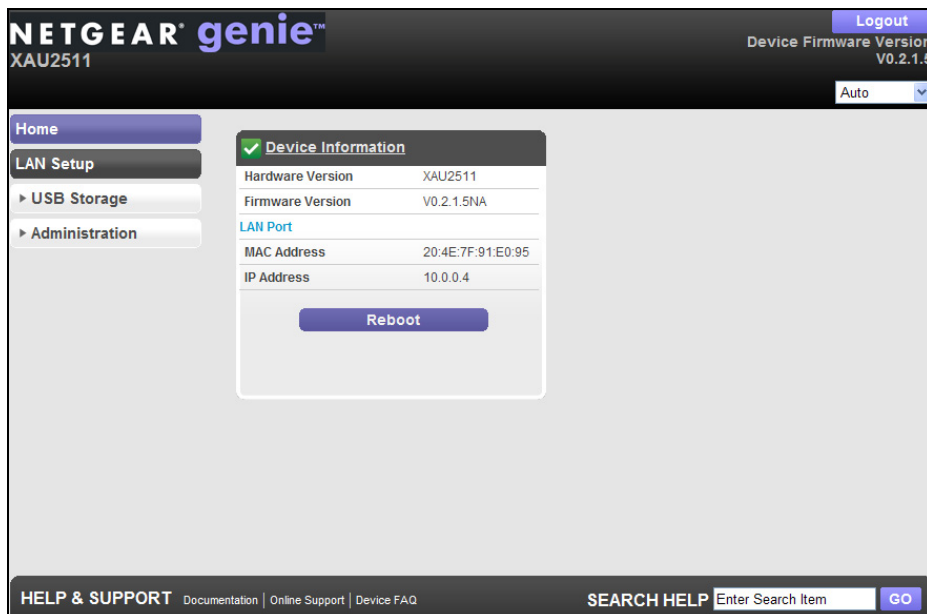
Your Internet browser launches and a login window displays:



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

Note: The web genie password is different from the device password printed on the product label.
The default web genie user name and password are **admin** and **password**. You can change the default password using the web genie.

The NETGEAR web genie for the device displays in your browser window.



You can use the web genie to reboot the device, configure LAN IP services and USB settings, back up your device configuration settings, upgrade your device firmware, and more.

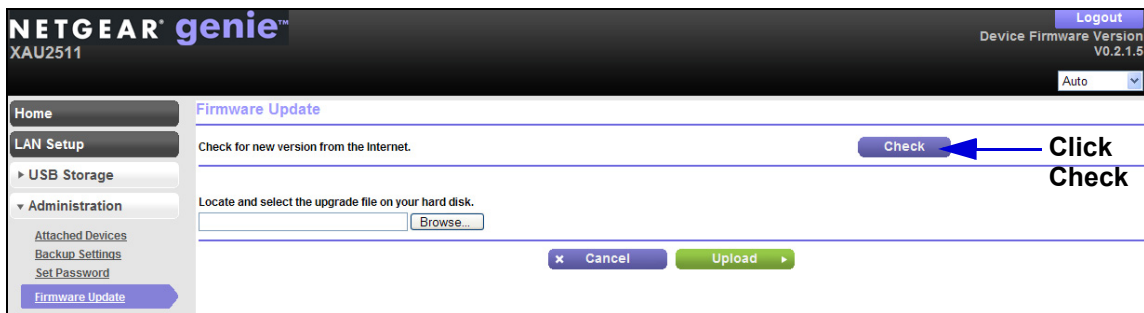
Upgrade the Firmware

You can use NETGEAR web genie to upgrade the firmware on your Music Extender.

➤ **To check for new firmware and update your Music Extender:**

1. Log in to the NETGEAR web genie for your Music Extender. See [Access NETGEAR Web genie](#) on page 35.
2. From the menu on the left, select **Administration > Firmware Upgrade**.

The following screen displays:



3. Click the **Check** button.
If new firmware is available, the Music Extender finds it.
4. Click **Yes** to update and locate the firmware you downloaded (the file ends in .img).



WARNING:

When uploading firmware to the Music Extender, *do not* interrupt the web browser by closing the window, clicking a link, or loading a new page. If the browser is interrupted, it could corrupt the firmware.

When the upload is complete, your Music Extender restarts. The upgrade process typically takes about 1 minute. Read the firmware release notes to determine whether you need to reconfigure the Music Extender after upgrading.

Troubleshooting

4

This chapter provides information to help you diagnose and solve problems you might encounter. If you do not find the solution here, check the NETGEAR support site at <http://support.netgear.com> for product and contact information.

This chapter includes:

- *Basic Functioning*
- *Troubleshooting Tips*
- *If You Do Not See All Your Devices with the NETGEAR genie*
- *If You Do Not See the Powerline Icon on Your Network Map*

Basic Functioning

After you plug in the Powerline device, the following sequence of events should occur:

1. The Power LED lights.
2. After approximately 10 seconds, verify the following:
 - The Power LED is solid green. The device is powered on.
 - If the device is connected to a Powerline network, the Powerline LED is lit.
 - If an Ethernet cable is plugged into the device, the Ethernet LED is lit.

Troubleshooting Tips

The Reset and Security buttons are located on the side panel of the Powerline device.

- Pressing the Reset button longer than 2 seconds does not reset the device.
- Pressing the Security button longer than 2 seconds does not activate security.

LEDs

The LEDs indicate activity and can be used for troubleshooting.

LEDs Are Off When the Powerline Device Is Plugged In

- First check to make sure that the electrical outlet has power.
- If power is supplied and the LEDs stay off, someone might have used NETGEAR genie to turn off the LEDs. Use NETGEAR genie to see if that is the case. If so, then use the genie to turn them back on.

Power LED Is Off

There is no electrical power.

- Make sure that power is supplied to the electrical outlet, and the Powerline device is not plugged into an extension cord, power strip, or surge protector.
- Press the **Reset** button on each Powerline device for 1 second to return the device to its factory default settings.

Powerline LED

- **Off.** The Powerline devices cannot find each other. Make sure that the Powerline devices are plugged into outlets with power, and that they use the same network encryption key.
 - Move the Powerline device to a location closer to the computer or devices.
 - If you have set up network security, make sure that all Powerline devices are using the same encryption key.
 - If the problem occurred after you changed the network encryption key, reset each device to its factory default settings. Then you can customize the encryption key.
- **Amber or red.** Move the Powerline device to another electrical outlet with a better connection.

Ethernet LED Is Off

There is no Ethernet connection.

- Make sure that:
 - Your router and modem are switched on.
 - The Powerline device's cable is securely connected to a router LAN port.
 - The computer connected directly to the router can access the Internet.
- Press the **Reset** button on each Powerline device for 1 second to return the device to its factory default settings.

If You Do Not See All Your Devices with the NETGEAR genie

If you click the Refresh icon on the NETGEAR genie Powerline Utility screen and do not see all the devices you expect, it could be that a Powerline device is set to use a different encryption key. If the encryption keys are different, do one of the following:

- Reset your Powerline devices to their factory settings and default encryption key. Then set the encryption for all of your Powerline devices.
- Connect your computer to each Powerline device and set up the network encryption key for one device at a time.

If You Do Not See the Powerline Icon on Your Network Map

If you navigate to the Network Map on NETGEAR genie and do not see the Powerline icon, it could be that your computer's antivirus software is blocking the Powerline communication protocol. Temporarily disable your antivirus software and relaunch NETGEAR genie.

Symantec Endpoint Protection

The antivirus software Symantec Endpoint Protection v11.0.5002.333 filters the NETGEAR Powerline Utility network traffic and prevents Powerline devices from appearing on the Network Map. To allow Powerline Utility network traffic to pass through the Symantec Endpoint Protection filter, you must add a firewall rule to the filter.

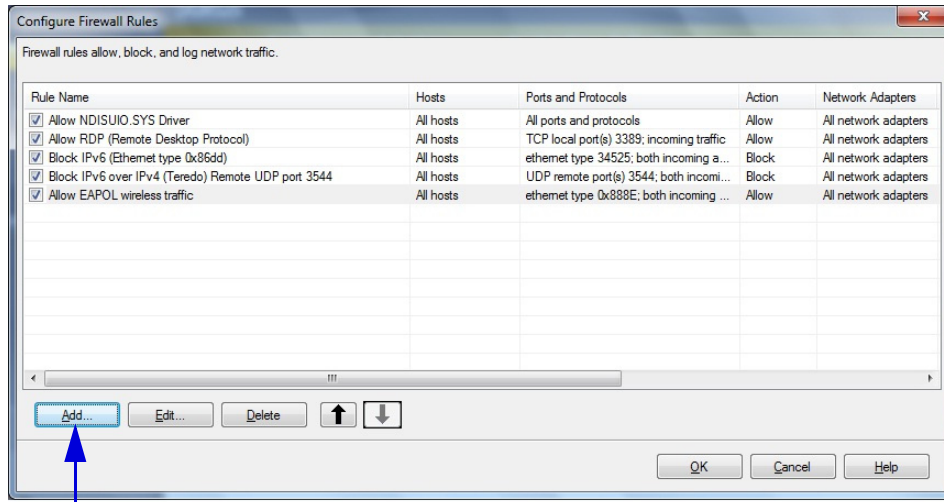
Note: Symantec Endpoint Protection v12.0.1001.95 does not have this issue.

➤ **To add a firewall rule for your Powerline devices:**

1. Open the Symantec Control Center, and click the **Options** button under Network Threat Protection.
2. Select **Configure Firewall Rules** from the menu.

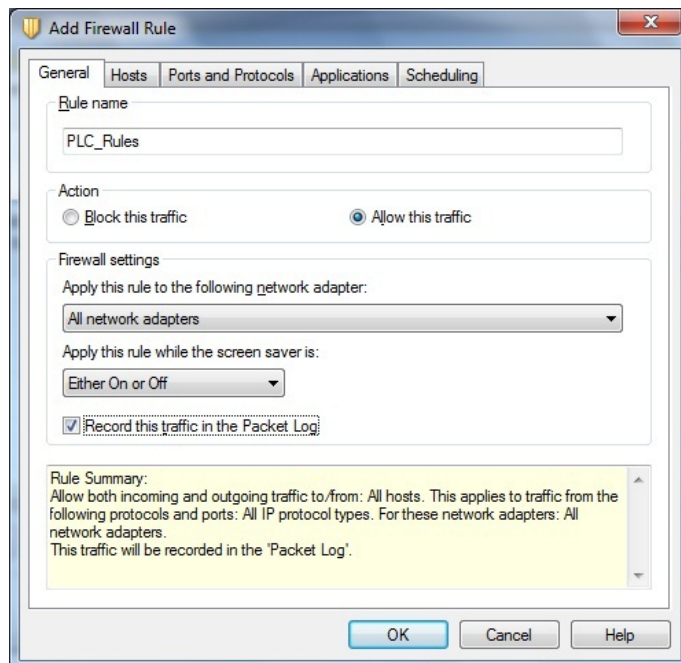


The following screen displays:



3. Click **Add** to add a firewall rule.

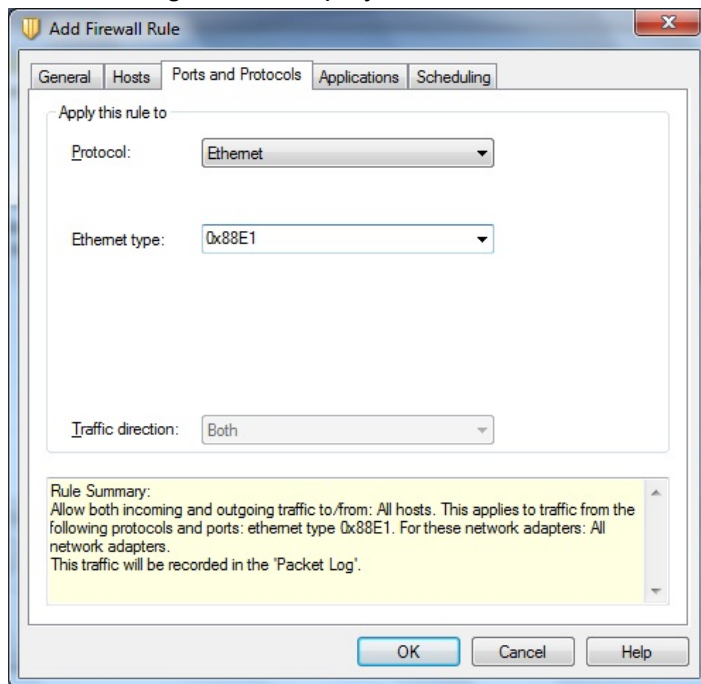
The following screen displays:



4. In the **General** tab, do the following:
 - a. Type a name for the firewall rule in the Rule name field.
 - b. Select the **Allow this traffic** radio button.
 - c. Configure the Firewall settings as shown or as you prefer.

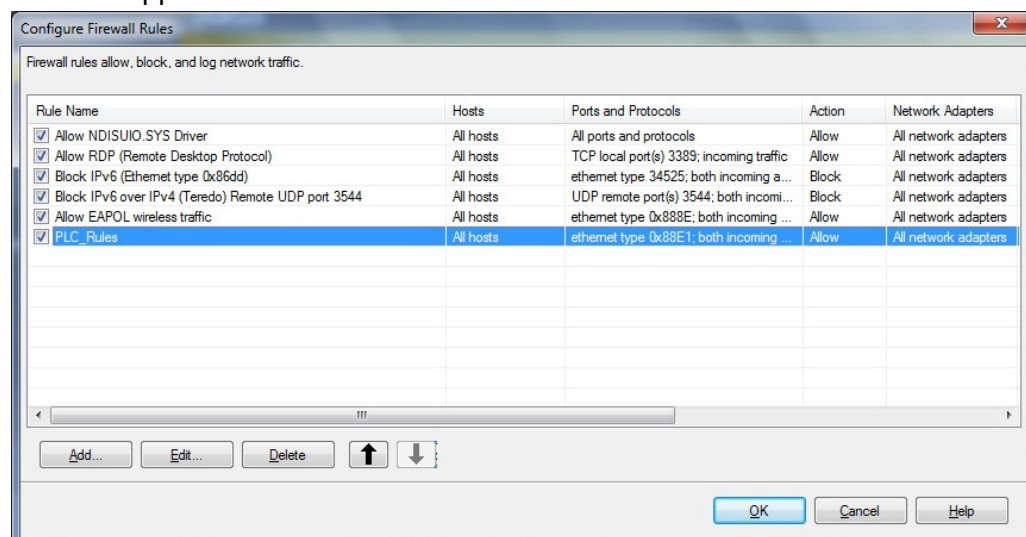
5. Click the **Ports and Protocols** tab.

The following screen displays:



- a. From the Protocol drop-down menu, select **Ethernet**.
- b. In the Ethernet type field, type **0x88E1**.
- c. Click **OK** to create the firewall rule for your Powerline devices.

The rule appears in the Firewall rules list.



6. Make sure the check box next to the rule is selected, and click **OK**.
7. Restart the computer and launch NETGEAR genie. The Powerline icon should now display on the Network Map screen.

Supplemental Information



This appendix provides technical specifications and safety information for the Powerline Music Extender XAU2511.

This appendix includes the following sections:

- *Technical Specifications*
- *Safety Information*

Technical Specifications

Feature	Specification
Data and routing protocols	IEEE 802.3 (10BASE-T), IEEE 802.3u (100BASE-T), IEEE 1901
AC input	100–240V~, 0.2A (max.)
Power consumption	9.6W (max.)
Dimensions	131 x 60 x 35 mm
Weight	0.245 kg (0.54 lb)
Socket ratings	Recommended use max. 10A
Operating temperature	0° to 40°C (32° to 104°F)
Operating humidity	10–90% maximum relative humidity, noncondensing
Storage humidity	5–95% maximum relative humidity, noncondensing
Security encryption type	128-bit AES
MAC addresses	64: number of nodes that can be added to a single network
Bandwidth	200 Mbps
Compatibility	Not HomePlug v1.0 or HomePlug v1.0 Turbo compatible
Data transfer rate	Up to 200 Mbps with real throughput greater than 80 Mbps
Frequency band	2–30 Mbps
Modulation type	OFDM symbol modulation
Electromagnetic emissions	FCC Part 15 Class B; CE-EMC Class B; 3-home FCC Certificate
Safety agency approvals	UL (UL 60950-1 2nd Edition); cUL (CSA C22.2 No. 60970-1-07 2nd Edition); TUV CB (IEC 60950-1:2005 +A1); TUV GS (EN 60950-1:2006+A11+A1+A12); CE LVD (EN 60950-1:2006+A11:2009+A1:2010+A12:2011)
USB	1 port: USB v2.0

Safety Information

Follow these safety guidelines to ensure your own personal safety and to help protect your system from potential damage.

- AC input: 100–240V~, 0.2A (max.)
- Operating temperature: 0–40 degrees C.
- Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate.
- Do not service any product except as explained in your system documentation.
- Opening or removing covers that are marked with the triangular symbol with a lightning bolt can expose you to electrical shock. Only a trained service technician should service components inside these compartments.
- Use the product only with approved equipment.
- Allow the product to cool before removing covers or touching internal components.
- To help avoid damaging your system, be sure that the voltage selection switch (if provided) on the power supply is set to match the power available at your location:
 - 110 volts (V), 60 hertz (Hz) in most of North and South America and some Far Eastern countries such as South Korea and Taiwan
 - 100V, 50 Hz in eastern Japan and 100V, 60 Hz in western Japan
 - 230V, 50 Hz in most of Europe, the Middle East, and the Far East
- The peripheral power cables are equipped with three-prong plugs to help ensure proper grounding. Do not use adapter plugs or remove the grounding prong from a cable.
- Observe extension cable and power strip ratings. Make sure that the total ampere rating of all products plugged into the extension cable or power strip does not exceed 80 percent of the ampere ratings limit for the extension cable or power strip.
- To help protect your system from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).
- For additional safety instructions, see [Appendix B, Notification of Compliance](#).

Notification of Compliance

NETGEAR Powerline Products



Safety Instructions and Precautions



WARNING:

Use the following safety guidelines to ensure your own personal safety and to help protect your product from potential damage. To reduce the risk of bodily injury, electrical shock, fire, and damage to the equipment, observe the following precautions.

- The socket-outlet shall be installed near the equipment and shall be easily accessible
- Observe and follow service markings.
- If any of the following conditions occur, unplug the product from the electrical outlet and replace the part or contact your service provider/retailer:
 - The power cable, extension cable, or plug is damaged.
 - An object has fallen into the product.
 - The product has been exposed to water.
 - The product has been dropped or damaged.
 - The product does not operate correctly when you follow the operating instructions.
- Keep your system away from radiators and heat sources. Also, do not block cooling vents.
- Do not spill food or liquids on your system components, and never operate the product in a wet environment.
- Do not push any objects into the openings of your system. Doing so can cause fire or electric shock by shorting out interior components.
- Operate the product only from the type of external power source indicated on the electrical ratings label.
- Also, be sure that attached devices are electrically rated to operate with the power available in your location.
- Use only approved power cables. If you have not been provided with a power cable for your system or for any AC powered option intended for your system, purchase a power cable that is approved for use in your country. The power cable must be rated for the product and for the voltage and current marked on the product's electrical ratings label.

The voltage and current rating of the cable should be greater than the ratings marked on the product.

- To help prevent electric shock, plug the system and peripheral power cables into properly grounded electrical outlets.
- Do not use adapter plugs. If you must use an extension cable, use a three-wire cable with properly grounded plugs.
- Observe extension cable and power strip ratings. Make sure that the total ampere rating of all products plugged into the extension cable or power strip does not exceed 80 percent of the ampere ratings limit for the extension cable or power strip.
- To help protect your system from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).
- Position system cables and power cables carefully; route cables so that they cannot be stepped on or tripped over. Be sure that nothing rests on any cables.
- Do not modify power cables or plugs.
- Always follow your local and national wiring rules.

Regulatory Compliance Information

FCC Requirements for Operation in the United States

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Declaration Of Conformity

We, NETGEAR, Inc., 350 East Plumeria Drive, San Jose, CA 95134, declare under our sole responsibility that the XAU2511 Powerline Music Extender (XAU2511) complies with Part 15 of FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

FCC Radio Frequency Interference Warnings & Instructions

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.

- Connect the equipment into an electrical outlet on a circuit different from that which the radio receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Modifications made to the product, unless expressly approved by NETGEAR, Inc., could void the user's right to operate the equipment.

European Union

The Powerline Music Extender XAU2511 complies with essential requirements of EU EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC as supported by applying the following test methods and standards:

- EN 55022: 2010
- EN 55024: 2010
- EN 60950-1: 2006+A11: 2009+A1:2010+A12: 2011
- EN 61000-3-2: 2006+A2: 2009
- EN 61000-3-3: 2008

Canadian Department of Communications Radio Interference Regulations

This digital apparatus (Powerline Music Extender XAU2511) does not exceed the Class B limits for radio-noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

This Class [B] digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe [B] est conforme à la norme NMB-003 du Canada

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