NETGEAR®

Universal Dual Band WiFi Extender – Wallplug Edition

User Manual
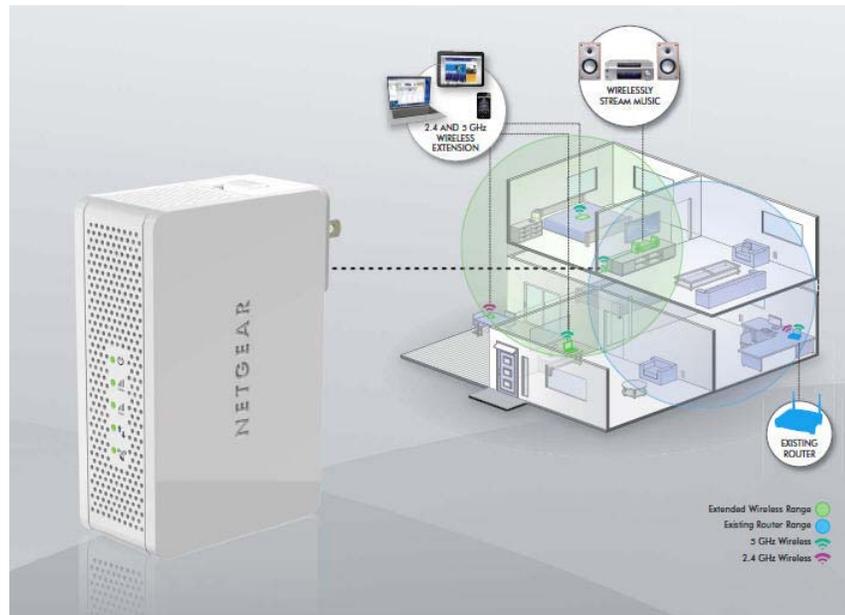
Support

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 web site. 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.

Trademarks

Contents

Appendix A   Supplementary Information

Appendix B   Notification of Compliance

Getting Started

1

This chapter covers the following topics:

- *How the Extender Works*
- *Hardware Features*
- *Install the Extender*
- *Position the Extender*
- *Extender Performance*
- *Music Playback*

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

How the Extender Works

The extender works like a bridge between a WiFi router and a computer or wireless device outside the wireless router's range. The extender has two main jobs:

1. The extender connects to a WiFi network.

   When the extender connects wirelessly to a network, it acts as a network client. This is similar to how a computer connects to a network.

2. The extender acts as an access point for computers.

   The extender has its own wireless network called NETGEAR_EXT that wireless computers can join. In its role as an access point, the extender performs tasks that wireless routers do, such as broadcasting its network name (SSID).

The extender needs to do each of these jobs so that both ends of the bridge are in place.

The extender is halfway between the router and the computer.
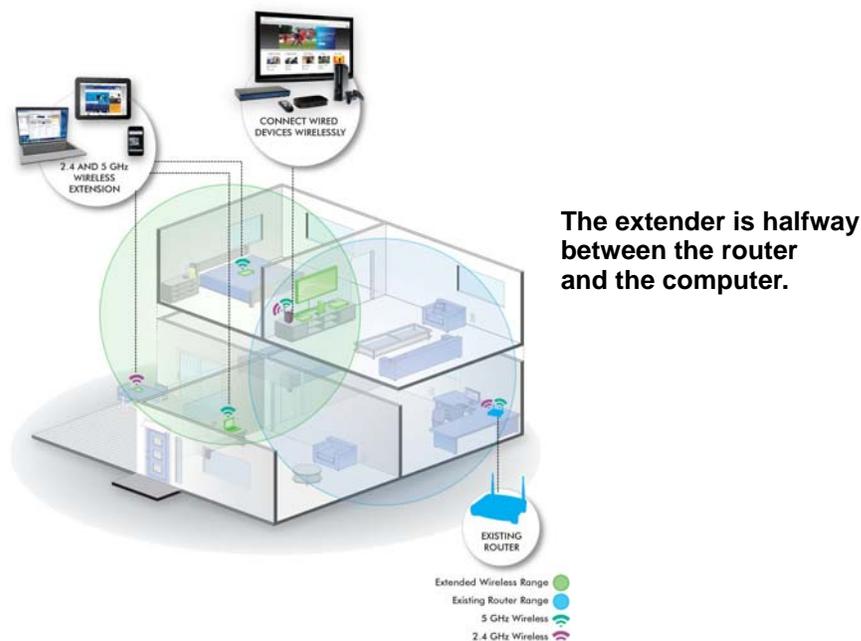
Figure 1. Range extender in a home

When to Use Your Extender

NETGEAR recommends that you connect to the extender only when your home network connection is poor. Because data traffic routed through the extender is inherently slower than traffic routed directly from the network, the computer should stay on the network if the connection is good enough. NETGEAR recommends that you connect through the extender network only when the computer is in a "dead zone" where connection from the network is very poor or non-existent.

The extender LEDs can help you tell if the extender is correctly set up and working as it should.

- The best performance is delivered when the Link Rate LED or and the Wireless Device to Extender LED are green.
- A workable performance is delivered when the Link Rate LED is amber and the Wireless Device to Extender LED is green.

Hardware Features

The following sections describe the hardware features of the extender.

Package Contents

Your box should contain the items shown in the following figure.

Figure 2. Package contents for the extender

LEDs

The LEDs show how the extender is working.

Power On/Off
Link Rate 2.4 GHz
Link Rate 5 GHz
Wireless Device to Extender
WPS
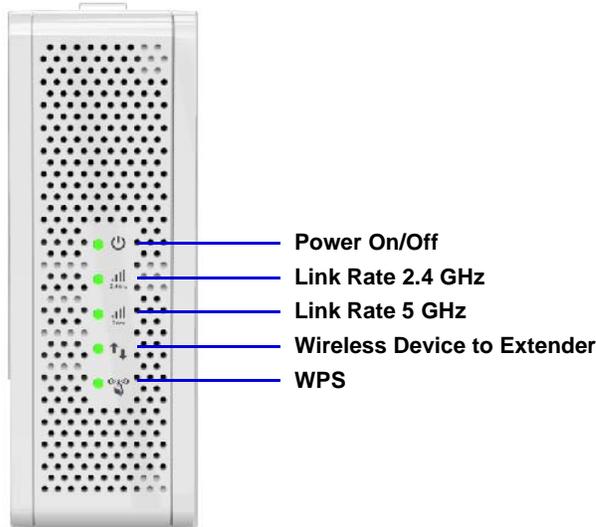
Figure 3. Extender front panel

The following table describes the LEDs.

Table 1. LED Description

LED	Description
Power	• **On**. Power is supplied to the extender. • **Off**. Power is not supplied to the extender.
Link Rate	Indicates a 2.4 GHz or 5 GHz wireless connection between the extender and a router. The LED turns on to indicate the type of connection: • **Green** is best. • **Amber** is good. • **Red** is poor. • Off. Not connected to router.
Wireless Device to Extender	This LED is solid green when the extender is connected to a wireless device.
WPS	This LED indicates a WPS wireless connection. • **Solid green**. There is wireless security (WPA or WPA2). • **Blinking green**. A WPS connection is in progress. • Off. No wireless security.

Buttons and Ports

The following figure shows the buttons and ports on the extender.
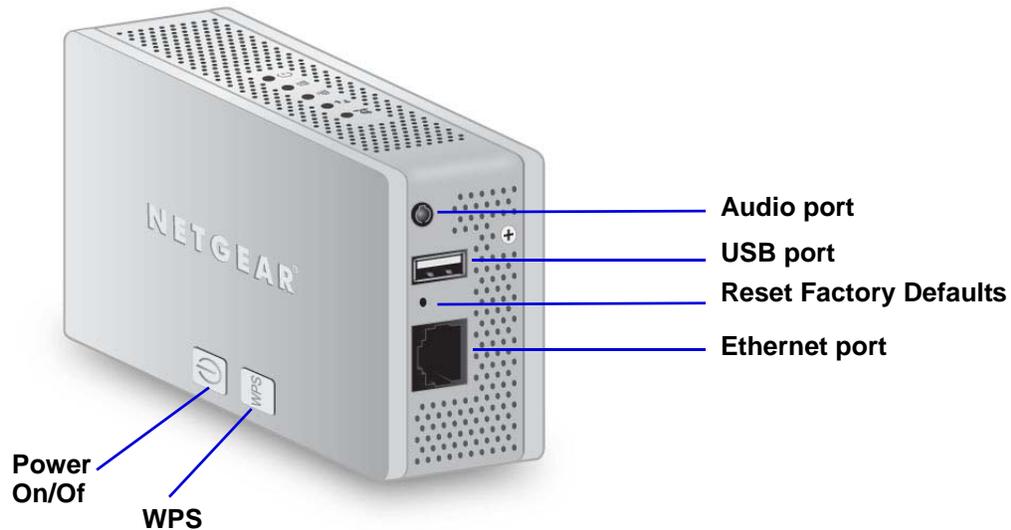
Figure 4. Extender side and bottom panels.

The Power On/Off button and WPS button are on the side panel.

- **Power On/Off button**. Use this button to turn on and off the extender.
- **WPS button**. Use this button to connect the extender to your existing WiFi network. For more information, see *Add a WPS Client to the Extender WiFi Network* on page 20.

The ports and Reset factory settings button are on the bottom panel.

- **Audio port**. Use the Audio port to connect the extender to your speaker.
- **USB port**. Use the USB port to connect the extender to a printer.
- **Reset factory settings button**. To reset the extender to its original factory settings, insert a paper clip into the reset hole and hold it until the Power LED flashes.
- **Ethernet port**. Use the Ethernet port on the extender to connect an Ethernet-enabled device wirelessly to your network.

Insert the AC Plug

You can use the AC plug to plug the extender directly into an outlet, or you can attach the stand and plug in the power adapter cord (see *Attach the Stand and Power Adapter Cord* on page 11).

Figure 5. If you want to plug the extender directly into an outlet, insert the AC plug.

➢ **To insert the AC plug:**

1   Slide the tab on the top of the AC plug into the open position.

2   Align the AC plug with the extender as shown.

3   Press firmly so that the AC plug is securely attached to the extender.

You can now plug the extender into an electrical outlet.

Attach the Stand and Power Adapter Cord

The extender comes with a stand and power adapter cord. You can attach them as shown if you do not want to plug the extender directly into an outlet.
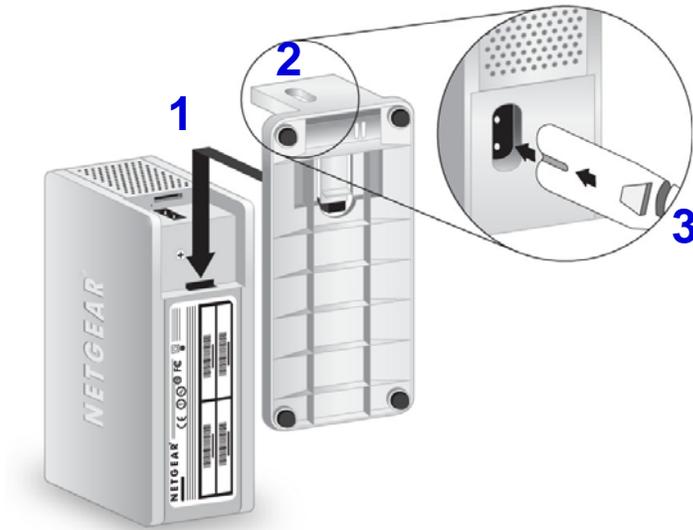
Figure 6. Attach the stand and the power adapter cord.

➢ **To attach the stand and power adapter cord:**

1 Slide the stand onto the extender as shown.

2 Turn the adapter so that you can see the side with the power adapter input.

3 Connect the power adapter cord to the extender.

You can now plug the other end of the power adapter cord into an electrical outlet.

Cable Equipment to the Ports

You can connect computers or other devices to the USB port and the Ethernet port on the extender,

⚠ **CAUTION:**

Do not connect the extender to a router using an Ethernet port. If you do so, the extender does not work because it is designed to use only a WiFi connection to the router.

➢ **To cable a computer to the extender:**

1. Locate the ports on the extender.

USB port

Ethernet port
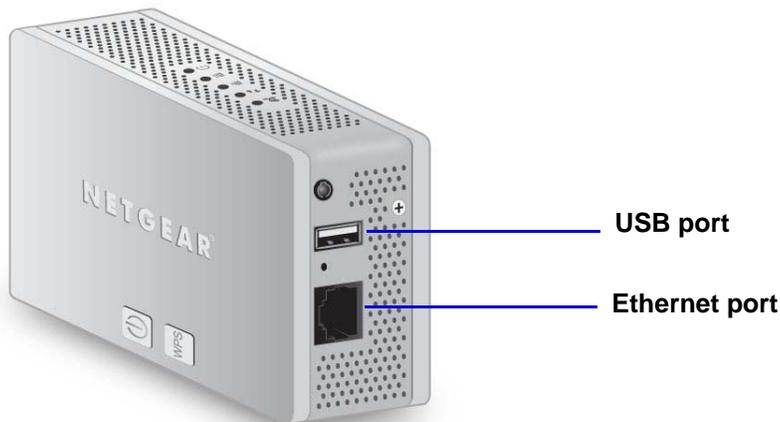
2. Use an Ethernet cable or USB cable to connect your computer the extender.

3. Plug in the AC adapter or attach the stand and power adapter cord to the extender, and then plug it into an electrical outlet.

If you want to log in to the extender, see *Log In to the Extender* on page 17.

➢ **To use the extender as a one-port WiFi adapter:**

1 Make sure that the extender is connected to your existing wireless WiFi network.

2 Plug the Ethernet cable from your Ethernet-enabled device (connected TV, Blu-ray player, gaming console) to the Ethernet port of the extender.

Install the Extender

➢ **To install the extender:**

1 Either connect the AC plug, or attach the stand and the power adapter cord.

2 Find a place to install the extender that is about halfway between the router and the computer or wireless device that is outside of the range of the router.

If you have to use a different location, see *Position the Extender* on page 14.

3 Power up the extender.

- If you connected the AC plug to the extender, plug it directly into an electrical outlet.
- If you attached the stand and power adapter, plug the power adapter into an electrical outlet.

4 Wait until the Power LED 🔵 turns green.

5 Use a computer or wireless device to connect to the extender. During installation, it might be easier to use a computer or device that is in the same room as the extender.

- For a wired connection, connect your computer or wireless device to the extender with an Ethernet cable.

- For a wireless connection, use a WiFi network manager to find and connect to **NETGEAR_EXT** (the SSID) wireless network.

> **Tip:** You can use any WiFi network manager utility on a computer or tablet to find and connect to the extender wireless network.

After the connection with the computer is established, the Wireless Device to Extender LED 🔵 turns green.

6 On your computer or wireless device, launch an Internet browser.

The browser displays the genie screen.
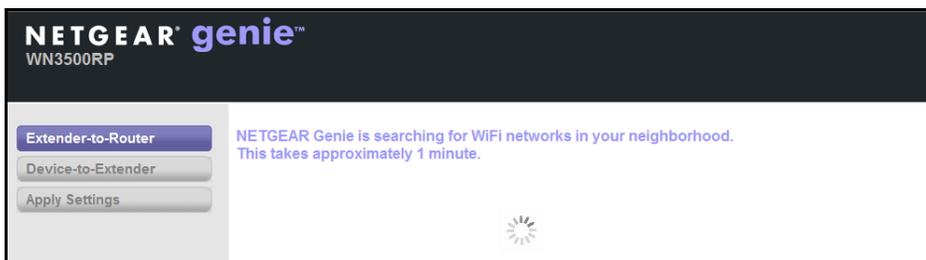
If you do not seethe genie screen, type **http://www.mywifiext.net** in the address field of your browser.

The genie scans for wireless networks in your area.

7 Follow the genie steps to set up the extender to work with your network and to set up your computer or wireless device to connect to the extender network.

These steps are explained in *Use NETGEAR genie After Installation* on page 18.

Position the Extender

The best connection is established when there is a clear line of sight between the extender and the router and between the extender and the computer or wireless device. If this straight path is blocked by a thick wall or other materials, move the extender to a different location half-way between the computer and the router.

If the Link Rate LED is green or amber and the Wireless Device to Extender LED is green, the extender is working as expected.

➢ **To place the extender and apply power:**

1   Place the extender an equal distance between your router and the wireless device located outside the range of your router.

2   Plug the extender into an electrical outlet, and wait 1 minute until the Power LED 🔘 turns green.

   • If you have to use a different location, move the extender closer to the device, but still within the wireless range of the router.

   • During installation, you can put the extender in the same room as the router. After you complete installation, you can move the extender to a location that is halfway between the router and your computer, and still displaying a green link rate.

➢ **To improve the Link Rate LED from red or amber to green:**

1   If the Link Rate LED is red, move the extender closer to the router or to a different spot where it provides a better line of sight.

2   As you move the extender, check the LEDs until you find a location where the Link Rate LED is green or amber, and the Wireless Device to Extender LED 🔃 is green.

3   You might have to unplug the extender as you move it to a different location. If you do, from the new location, power up the extender and continue to check the LEDs.

   Once the LEDs show that the extender is in a good location, open a browser and go to *http://www.mywifiext.net* to continue the setup process.

Extender Performance

The Link Rate LEDs indicate the performance of the [icon] 2.4 GHz or [icon] 5 GHz wireless connection from the extender to a router.

- The best performance is delivered when the Link Rate LED is green.

- A workable performance is delivered when the Link Rate LED is amber.

- A red Link Rate LED indicates a poor connection or no connection between the extender and the router.

- Make sure that your [icon] Wireless Device to Extender LED is green before you check the Link Rate LED for performance.

➢ **To improve extender performance:**

1 Move the extender closer to the router or to a different location with a better line of sight.

2 As you move the extender, check the Link Rate and the Wireless Device to Extender LEDs on the extender until you find a good location. These LEDs should remain solid green.

Music Playback

The extender supports the DLNA DMR function, which means you can stream your network music and play it back through the extender audio jack.

- Windows 7 users can use Windows Media Player (WMP) to play back music.

- Android phone, iPhone, or iPad users can download NETGEAR genie to play back music (go to **http://www.netgear.com/genie**).

- DLNA DMR supports mp3, wave. flac, and aac file formats.

- The 3.5 mm stereo port supports earphones and powered speakers.

Extender Network Settings 2

This chapter covers the following topics:

- *Log In to the Extender*
- *Add a WPS Client to the Extender WiFi Network*
- *Setup Menu*
- *Maintenance Settings*
- *Advanced Settings*
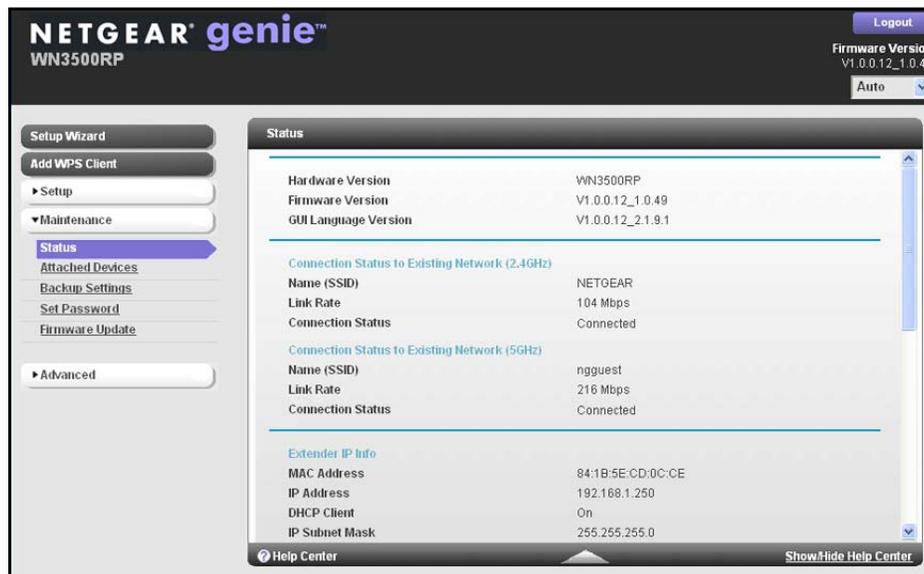
Log In to the Extender

You can log in to the extender to use NETGEAR genie or to use the menu selections to view or change the extender's settings.

➢ **To log in:**

1. Launch an Internet browser such as Mozilla Firefox or Microsoft Internet Explorer.

2. In the address field of your browser, enter **http://www.mywifiext.net**. You are prompted to enter a user name and password.

   If you do not see the log in prompt, make sure to include *http://* when you type **http://www.mywifiext.net** in your browser.

3. Type **admin** for the user name. The default password is **password**. NETGEAR recommends that you set a more secure password after you log in (see *Set the Password* on page 23).

   • If your extender has an Internet connection, the Firmware Upgrade screen displays (see *Upgrade the Firmware* on page 24), and the software checks for new firmware at the NETGEAR website.

   • The Status screen displays with the menu on the left. This screen shows what the current settings are for the extender.

If you have trouble connecting:

• If you connect an Ethernet cable to the extender, and launch your browser quickly, the computer might still need a couple of minutes to recognize the Ethernet LAN connection before you can connect.

• Make sure that your Ethernet cable is securely connected to the extender and the computer, and that the extender LAN LED is on. If the LED is not lit, reconnect the Ethernet cable, and relaunch your Internet browser.

Use NETGEAR genie After Installation

NETGEAR genie can help you set up your extender to connect to a wireless network. For information about more configuration options, see *Chapter 2, Extender Network Settings*.

The installation guide (included in the package) explains how to install your extender. During installation, when you launch your Internet browser, NETGEAR genie automatically displays.
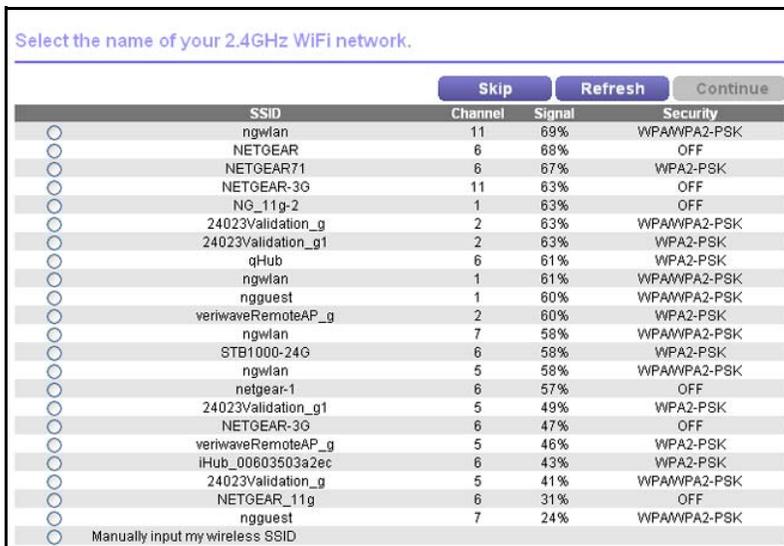
➢ **After installation, to use genie again:**

1. Log in to the extender.

> **Note:** Once you begin using genie, you have to complete all of its steps before you can exit.

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2. Select **Setup Wizard**.

    The software detects wireless networks in your area and displays a list:

	SSID	Channel	Signal	Security
○	ngwlan	11	69%	WPA/WPA2-PSK
○	NETGEAR	6	68%	OFF
○	NETGEAR71	6	67%	WPA2-PSK
○	NETGEAR-3G	11	63%	OFF
○	NG_11g-2	1	63%	OFF
○	24023Validation_g	2	63%	WPA/WPA2-PSK
○	24023Validation_g1	2	63%	WPA2-PSK
○	qHub	6	61%	WPA2-PSK
○	ngwlan	1	61%	WPA/WPA2-PSK
○	ngguest	1	60%	WPA/WPA2-PSK
○	veriwaveRemoteAP_g	2	60%	WPA2-PSK
○	ngwlan	7	58%	WPA/WPA2-PSK
○	STB1000-24G	6	58%	WPA2-PSK
○	ngwlan	5	58%	WPA/WPA2-PSK
○	netgear-1	6	57%	OFF
○	24023Validation_g1	5	49%	WPA2-PSK
○	NETGEAR-3G	6	47%	OFF
○	veriwaveRemoteAP_g	5	46%	WPA2-PSK
○	iHub_00603503a2ec	6	43%	WPA2-PSK
○	24023Validation_g	5	41%	WPA/WPA2-PSK
○	NETGEAR_11g	6	31%	OFF
○	ngguest	7	24%	WPA/WPA2-PSK
○	Manually input my wireless SSID			

    Select the name of your 2.4GHz WiFi network. — Skip | Refresh | Continue

3 Either select a network from the list, or select the **Manually input my wireless SSID** radio button and type the SSID.

If the network is secure, you are prompted to enter the passphrase (network password):

4. Enter the password for your wireless network and click **Continue**.

The genie sets up a WiFi connection from the extender to the router, which takes about 2 minutes. Then the following screen displays.

5. Review the settings, and make sure that they are correct. Then, click **Continue**.

The Device-to-Extender settings are applied, which takes about 2 minutes. Then the following screen displays..

6   Join the extender network with your wireless computer or device.

7. Select the check box.

8   Click **Continue**.

Add a WPS Client to the Extender WiFi Network

WPS (Wi-Fi Protected Setup) lets you join a secure WiFi network without typing its password. Instead, you use a WPS button or enter a PIN to connect. WPS supports WPA and WPA2 wireless security.

> **Note:** You *cannot* use the Push 'N' Connect WPS button on the extender to connect the extender to your wireless network. The WPS button on the extender can be used only to connect a computer to the extender.

➢ **To join the extender's network using WPS:**

1. Select **Add WPS Client**. The following screen displays:
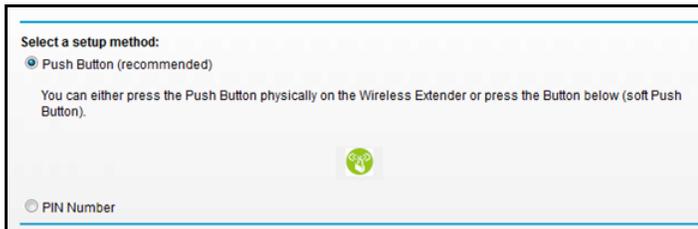
2. Select a radio button.
   - **Push Button (recommended)**. Either click the 🖐 button or press the 📶 **WPS** button on the front of the extender.
   - **PIN Number**. Select the radio button, and a PIN displays.

   The extender tries to find the wireless client (the computer) that is attempting to join the network. If you are using a WPS button, it tries for 2 minutes. If you are using a PIN, it tries for 4 minutes.

3. Go to your wireless computer. Use its WPS software to try to connect to the extender.

Setup Menu

Connect the Extender to an Existing Wireless Network

You can wirelessly connect the extender to your home network.

1. Select **Setup > Connect to an Existing Network**. The extender scans for wireless networks, and displays a list.
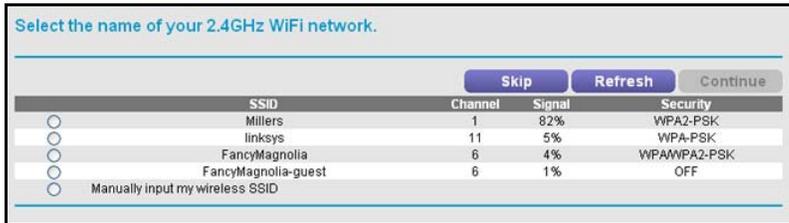
If your wireless network is not on the list, the extender might be too far away from the router. See *Positioning Your Extender* on page 7 for suggestions.

2. Select the radio button for your network, and click **Continue**.

If you selected the manual option, you are prompted to type the network name (SSID) and to enter the password to access it:

3. Enter your network's password or key, and click **Continue**.

The extender joins your wireless network.

Extender Wireless Settings

You can use the Wireless Settings screen to change the network name (SSID) for the extender's network and to set up wireless security. If you do not change these settings, the network name is NETGEAR_EXT, and the network is open (no wireless security is set up).

> **Note:** If you use a wireless computer to change the extender's wireless settings, you will be disconnected when you click Apply. To reconnect, you have to select the new network name that you created, and enter its password or wireless security key.

➢ **To change the wireless settings for the extender's network:**

1. Select **Setup > Wireless Settings** to display the following screen:

2. In the Name (SSID) field, you can type in a new name to customize your extender network. This will make it easier to identify your extender if more than one is operating in your neighborhood.

3. In the Security Options section of the screen, select the type of wireless security that you want to use on your network.

   • **None**. This is an open wireless network. Any wireless computer or device is allowed to join this network.

   • **WEP**. WEP is an older standard, and is less secure than WPA or WPA2. WEP uses encryption keys and data encryption for data security. You can select 64-bit or 128-bit encryption.

   • **WPA-PSK [TKIP]**. WPA is more secure than WEP. When using wireless computers or devices that support WPA, you can enter a passphrase to join the extender's wireless network.

   • **WPA2-PSK [AES]**. WPA2 is even more secure, but some older computers do not support this standard. When using wireless computers or devices that support WPA2, you can enter the passphrase to join the extender's wireless network.

   • **WPA-PSK [TKIP] + WPA2-PASK [AES]**. When using wireless computers or devices that support either WPA or WPA2, you can enter the passphrase to join the extender's wireless network.

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

5. Use your wireless computer to connect to the extender's network with its new settings. The Smart Wizard can guide you through this process.

Set Up WPA, WPA2, or WPA + WPA2

Both WPA and WPA2 provide strong data security. WPA with TKIP can be used on Windows systems with Service Pack 2 or later. WPA2 with AES is a hardware implementation; see your device documentation before implementing it.

➢ **To configure WPA or WPA2 in the extender:**

1. On the Wireless Setting screen, select the radio button for the WPA or WPA2 option of your choice.

2. The settings displayed on the screen depend on which security option you select.

3. For WPA-PSK or WPA2-PSK, enter the passphrase.

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

Set Up WEP

WEP is a legacy wireless security setting. NETGEAR recommends that you use a newer standard such as WPA2 or WPA unless you have older wireless equipment that supports only WEP.

➢ **To set up WEP:**

1. In the Wireless Settings screen, in the Security Options section, select the **WEP** radio button.

2. Select the authentication type: **Automatic**, **Open System**, or **Shared Key**. The default is Open System.

> **Note:** The authentication is separate from the data encryption. You can select authentication that requires a shared key, but still leaves data transmissions unencrypted. Security is stronger if you use both the Shared Key and WEP encryption settings.

3. Select the encryption strength setting:
   - **WEP 64-bit encryption**. Enter 10 hexadecimal digits (any combination of 0–9, a–f, or A–F).
   - **WEP 128-bit encryption**. Enter 26 hexadecimal digits (any combination of 0–9, a–f, or A–F).

4. Enter the encryption keys. You can manually or automatically program the four data encryption keys. These values have to be identical on all computers and access points in your network:
   - **Passphrase**. To use a passphrase to generate the keys, enter a passphrase, and click **Generate** to create the keys to access the extender network.

Note: Not all wireless computers support passphrase key generation. If your computer does not support the passphrase, then you will need to type the encryption key in order to join the wireless network.

- **Key 1–Key 4**. These values are *not* case-sensitive. You can manually enter the four data encryption keys. These values have to be identical on all computers and access points in your network. Enter ten hexadecimal digits (any combination of 0–9, a–f, or A–F).

5. Select which of the four keys will be the default.

   Data transmissions are always encrypted using the default key. The other keys can be used only to decrypt received data. The four entries are disabled if WPA-PSK or WPA authentication is selected.

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

Extender IP Address Setup

The IP Address Setup screen shows whether the extender is set to get its IP address dynamically from the router (this is the most common setting), or is set up with a static IP address.

➢ **To view or change the IP address settings:**

Select **Setup > IP Address Settings**.

The following information is displayed:

- **Get Dynamically IP Address From Router**. The wireless network router assigns an IP address when the extender connects to its wireless network. Most networks are set up so that the router automatically does this.
- **Use Static IP Address**. Specify a static IP address. This is not usually necessary. If you set this up, you should be technically experienced or have a technically experienced person help you.
    - **IP Address**. The static IP address.
    - **IP Subnet Mask**. The subnet mask associated with the IP address.

- **Gateway IP Address**. The IP address for the gateway.
- **Primary DNS**. The primary Domain Name Server (DNS).
- **Secondary DNS**. The secondary Domain Name Server (DNS).

Maintenance Settings

You can use the maintenance settings to view the extender status, view attached devices, back up and restore configuration settings, set the password, and update the firmware.

Status Screen

When you connect to http://www.mywifiext.net, after the automatic firmware check, the Status screen displays. You can also select **Status** from the menu to display this screen:

This screen shows the current settings and the status of your extender.

You can click **Show Statistics** to see device performance statistics such as the number of packets sent and number of packets received for each port. See *Show Statistics* on page 26.

The following fields are displayed in the Status screen:

- **Hardware Version**. The hardware version of the extender.
- **Firmware Version**. The current firmware version of the extender. If you upgrade the firmware, this field changes.
- **GUI Language Version**. The language version running on the extender. If you upgrade the firmware, this field changes.

Connection Status to Existing Network

- **Name (SSID)**. Your extender is set up to connect to this SSID, also called the wireless name.
- **Connection Status**. The status of your wireless connection (connected or disconnected).

- **Link Rate**. The actual transmission (Tx) and receive (Rx) link rate in the current wireless connection.

Extender IP Info

- **MAC Address**. The physical address of the extender, as seen from the local area network (LAN).
- **IP Address**. The IP address of the extender. The default is 192.168.1.250.
- **DHCP Server**. Identifies the network DHCP server on the wireless network.
- **IP Subnet Mask**. The IP subnet mask associated with the LAN IP address of the extender. The default is 255.255.255.0.
- **Gateway IP Address**. The IP address of the wireless network gateway.
- **Domain Name Server**. The IP address of the Domain Name Server (DNS) of the wireless network.

Extender Wireless Settings

- **Name (SSID)**. The name (SSID) of the wireless network.
- **Region**. The location where the extender is operating.
- **Channel**. The channel of the wireless network.
- **Wireless AP**. On or Off.
- **Broadcast Name**. On or Off.
- **Wi-Fi Protected Setup**. Configured.

Show Statistics

Scroll to the bottom of the Status screen, and click **Show Statistics**. The following screen displays:

Show Statistics

System Up Time 00:12:38

Port	Status	TxPkts	RxPkts	Collisions	Tx B/s	Rx B/s	Up Time
LAN1	100M/Full						00:12:08
LAN2	Link Down	16640	23002	0	9614	3361	--
LAN3	Link Down						--
LAN4	Link Down						--
WLAN 2.4G	300 Mbps	19848	11576	0	2977	2262	00:12:31
WLAN 5G	300 Mbps						

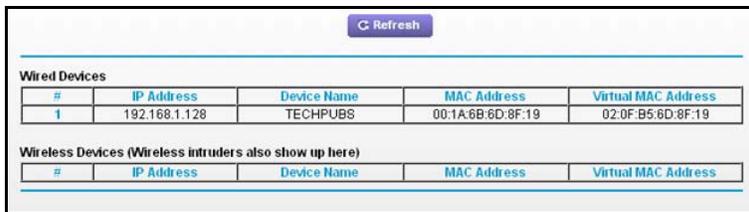Poll Interval : 5 (secs)   Set Interval   Stop

The screen shows statistics for the LAN (local), and wireless LAN (WLAN) ports. For each port, the screen displays the following:

- **Status**. The status of the port.

- **TxPkts**. The number of packets transmitted on this port since reset or manual clear.
- **RxPkts**. The number of packets transmitted on this port since reset or manual clear.
- **Collisions**. The number of collisions on this port since reset or manual clear.
- **Tx B/s**. The current line utilization—percentage of current bandwidth used on this port.
- **Rx B/s**. The average line utilization for this port.
- **Up Time**. The time elapsed since the last power cycle or reset.
- **Poll Interval**. Specify the poll interval frequency. If you change this value, click **Set Interval** so that your change takes effect.

Attached Devices

Select **Maintenance > Attached Devices** to display the following screen:

Back Up and Manage Extender Settings

You can save and retrieve a file containing your extender configuration settings. Once you have your extender working correctly, you should back up the information to have it available if something goes wrong. When you back up the settings, they are saved as a file on your computer. You can restore the device's settings from this file.

➢ **To back up settings:**

1   Select **Maintenance > Backup Settings** to display this screen.
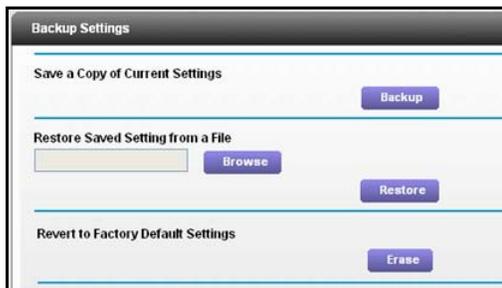
2   Click **Backup**. Your browser extracts the configuration file from the extender.

3.   If you do not have your browser set up to save downloaded files automatically, locate where you want to save the file.

4.   You can give the file a meaningful name at this time, such as internet_adapter.cfg.

➢ **To restore settings:**

1.   On the Backup Settings screen, click **Browse**.

2. Locate and select the previously saved backup file.

3. Click **Restore**.

A screen displays letting you know that the device has been successfully restored to the previous settings. The extender restarts, which takes about 1 minute.

> ⚠️ **CAUTION:**
>
> Do not try to go online, turn off the extender, shut down the computer, or do anything else to the extender until it finishes restarting!

4. Close the message window.

➢ **To erase settings:**

Under some circumstances (for example, if you have lost track of the changes that you made to the extender settings), you might want to erase the configuration. After an erase, the extender returns to its factory settings (see *Factory Settings* on page 30).

To erase the configuration, click the **Erase** button in the Backup Settings screen. The extender automatically shuts down and reboots with its factory settings.

> ⚠️ **CAUTION:**
>
> Do not try to go online, turn off the extender, shut down the computer, or do anything else to the extender until it finishes restarting!

Set the Password

The user name to access the extender is admin, and its default password is password. NETGEAR strongly recommends that you set a more secure password.

➢ **To set the password:**

1. Select **Maintenance > Set Password**. The following screen displays:

2. Type the old password, type the new password twice, and then click **Apply**.

Upgrade the Firmware

Unless you changed the settings in the Firmware Upgrade screen previously, the extender is set up to check for new firmware automatically at log in.

If you do not want to use the automatic firmware check, clear the **Check for New Version Upon Login** check box.

➢ **To check for firmware and upgrade if it is available:**

1. Select **Maintenance > Firmware Update**. The following screen displays:

2. Click **Check** to see if new firmware is available. If it is, follow the onscreen prompts to download it onto your computer.

3. In the Browse field, enter the path for the new firmware, or click **Browse** to locate and select the file.

4. Click **Upload** to install the new firmware on your extender.

⚠️ **CAUTION:**

Once you start the firmware upgrade, do not try to go online, turn off the extender, shut down the computer, or do anything else to the extender until it finishes restarting!

Advanced Settings

You can view or change advanced wireless settings, ReadySHARE printer settings, and FastLane™ technology settings.

Advanced Wireless Settings

The extender is already configured with the optimum settings. Do not alter these settings unless you have a specific reason to do so. Incorrect settings might disable the extender unexpectedly.

> ➤ **To view or change the advanced wireless settings:**

Select **Advanced > Wireless Settings**. The following screen displays:

You can view or configure the following settings:

- Advanced Wireless Settings
  - **Enable Wireless Access Point (2.4 GHz)**. Enable the extender to work as a wireless access point. If this check box is cleared, then computers or wireless devices cannot connect wirelessly to the extender.
  - **Enable SSID Broadcast (2.4 GHz)**. Enable the extender to broadcast its wireless network name (SSID). If this check box is cleared, then the wireless network is hidden. To join a hidden wireless network, you have to type the wireless name.
  - **Enable Wireless Access Point (5 GHz)**. Enable the extender to work as a wireless access point. If this check box is cleared, then computers or wireless devices cannot connect wirelessly to the extender.
  - **Enable SSID Broadcast (5 GHz)**. Enable the extender to broadcast its wireless network name (SSID). If this check box is cleared, then the wireless network is hidden. To join a hidden wireless network, you have to type the wireless name.
- WPS Settings
  - **Disable Device's PIN**. Selecting this check box disables the extender's PIN. The PIN can be used for a WPS wireless connection.
  - **Keep Existing Wireless Settings**. When this check box is selected, the settings in the Wireless Settings screen stay the same when WPS is used for a wireless connection.
- **Wireless Card Access List**. Specify a list of computers or wireless devices that are allowed to connect to the network. If you use an access list, then computers that are not on the list are not allowed to join the wireless network.

> ➤ **To set up a wireless card access list:**

1. On the Advanced Wireless Settings screen, click **Setup Access List**.

The following screen displays:

2. Select the **Turn Access Control On** check box.

3. Add the computers and wireless devices that you want to give access to the network.

   • Click the **Add** button for each device.

   • If you are not sure of the MAC address, check the product label.

   • Make sure to add the computer or wireless device that you are currently using.

4. Click **Apply** so that your changes take effect.

ReadySHARE Printer

ReadySHARE Printer lets you connect a USB printer to the extender's USB port, and access it wirelessly.

➢ **To enable ReadySHARE Printer:**

1 Connect the USB printer to the extender's USB port with a USB printer cable.

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 On each computer that will share the printer, download the NETGEAR USB Control Center utility. The NETGEAR USB utility has a Mac version and a Windows version, which you can access from the ReadySHARE Printer area of the page you access using this URL: *www.netgear.com/readyshare*.

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.

• When the status is Available, you can use the USB printer.

• Some firewall software, such as Comodo, blocks the ReadySHARE Print utility from accessing the USB printer. If you do not see the printer in the utility, you can disable the firewall temporarily to allow the utility to work.

If your printer supports scanning, make sure that the printer is in the Available state, and click the **Network Scanner** button. Clicking this button activates the Scanner window so you can use the printer for scanning.

FastLane Technology

FastLane Technology offers maximum WiFi performance. It provides high-speed WiFi with a dedicated band connecting the extender and the wireless device, and a second band connecting the extender and the router. It is ideal for HD gaming and HD video streaming.

➢ **To enable FastLane Technology:**

1   Select **Advanced > Operating Mode**.

2   Select the **FastLane Technology** radio button.

3   Review the two FastLane Technology options, and select the radio button for the WiFi band that most of your devices support.

4   Click **Apply**.

Troubleshooting

3

This chapter includes the following sections:

- *Frequently Asked Questions*
- *Connecting to http://www.mywifiext.net*
- *Joining WiFi Networks*

Frequently Asked Questions

1 NETGEAR genie keeps asking me for my wireless password, and I am sure I have entered the correct wireless password. What can I do?

It is likely that the extender is placed at the borderline of the range covered by the router. To resolve this, follow the instructions in *Positioning Your Extender* on page 8. If you are using WEP security, make sure that you are typing the wireless key in the correct field.

2 I connected to NETGEAR_EXT and launched a browser. Why am I unable to see NETGEAR genie?

First, make sure that your computer is set up to use DHCP (most are). Second, make sure that the Wireless Device to Extender LED is solid green and you have a valid IP address. Finally, relaunch the browser, and enter **www.mywifiext.net**.

3 Will the extender work if I connect it to the router with an Ethernet cable?

No. The extender is designed to connect wirelessly to the router.

4 I have enabled a wireless MAC filter (wireless access control – ACL) on my router. What should I do when installing the extender?

The wireless device MAC address is translated to another MAC address when the wireless device connects to the extender. If your router MAC filter is enabled, the wireless device will not be able to get the IP address from the extender. To allow this wireless device to access the Internet, you must add the translated MAC address into the router.

➢ **To get the translated MAC address:**

a Disable the MAC filter on your router.

b. Power on the extender and connect all of your wireless devices to the extender.

c. Make sure that the Link Rate LED remains lit.

d. Log in to your router and check the attached devices on the Attached Devices screen. Add any MAC addresses that begin with **02:0F:B5** into your router's MAC filter table.

5 My router security is WEP, and I entered the wrong passphrase or security key on the extender. I cannot access the extender any more. What can I do?

The extender cannot check to see if the WEP passphrase is correct. If you entered the wrong passphrase, your wireless device is not able to get the IP address from the extender. You must reset the extender to the factory defaults to get the IP address back.

6 I have completed the Installation Wizard, but my wireless devices cannot get the IP address from the extender. What should I do?

Make sure that the passphrase you entered on your wireless device is correct, and power cycle the extender and your router. If your device is still not able to get the IP address:

a Move the extender closer to your router, and move your wireless device closer to the extender.

b. Disable the wireless interface and enable it again to see if your wireless device can get the IP address.

c. If your router has a MAC filter (wireless access control), disable it and follow the FAQ to add the device's MAC address to your router.

Connecting to http://www.mywifiext.net

If you have trouble connecting, try to locate the source of the problem:

- For help with passwords, see *Log In to the Extender* on page 10.

- If your browser displays an error page, make sure that you include *http://* when you type this URL in the address field of your Internet browser. If you leave it out, you might not be able to connect.

- The extender LEDs can help you tell if the extender is correctly set up and working as it should.

  - The best performance is delivered when Link Rate LED or and the Wireless Device to Extender LED are green.

  - A workable performance is delivered when the Link Rate LED LED or is amber and the Wireless Device to Extender LED is green.

If you cannot get a wireless connection working, you can use an Ethernet cable to connect your computer to the extender. See *Connect a Computer to the Extender with an Ethernet Cable* on page 9.

Joining WiFi Networks

To join a WiFi network you have to know its network name (also called the SSID) so that you can select it. If the network is secure, you have to know the passphrase or wireless key. If the extender does not connect to the network that you selected, the following message displays:

Connection was not established to the selected network.

If this happens, it could be for one of these reasons:

- The network name, passphrase, or key might have been typed incorrectly. Click **Cancel**, use the Smart Wizard to select the network from the list, and retype the passphrase or key. This is case-sensitive. PASSWORD25 is not the same as Password25 or password25. See *Use NETGEAR Genie to Set Up the Extender* on page 11.

- If the Smart Wizard does not find your wireless network (it is not displayed in the Select Existing Network screen), check to see if your wireless network is still up and running. Make sure that the router is turned on. If possible, move the extender closer to the router and click **Try Again**.

- If the extender Link Rate LED is red, this indicates a poor wireless connection. The best connection is established when there is a clear line of sight between the extender and the router you are connecting to. Make sure that there are no physical obstacles between the extender and the router, and try to move the extender closer to the router.

If you use the Smart Wizard, and the extender cannot connect to the router or cannot get an IP address from the router, it displays the following message:

*You are not able to connect to the Internet. Click **Continue** to run through set up again to connect to your network.*

If you click **Continue**, the Smart Wizard starts again (see *Use NETGEAR Genie to Set Up the Extender* on page 11). If you click **Exit**, the Status screen displays with menu selections on the left (see *Log In to the Extender* on page 10).

Supplementary Information

A

Factory Settings

You can press and hold the **Restore Factory Settings** button on the rear panel for 7 seconds. The extender resets, and returns to its factory settings.

Factory Settings		
Smart Wizard		Enabled
Wireless	Wireless communication	Enabled
	Wireless network name (SSID)	NETGEAR_EXT
	Security	Disabled
	Transmission speed	Auto[1]
	Country/Region	United States (varies by region)
	Operating mode	802.11n, 802.11g, 802.11b
	Data rate	Up to 300 Mbps

1. Maximum wireless signal rate (IEEE Standard 802.11). Actual 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.

Technical Specifications

Technical specifications	
Network protocol and standards compatibility	Data and routing protocols: TCP/IP, DHCP server and client, DNS relay, TFTP client
Power adapter	• North America (input): 120V, 60 Hz, input • All regions (output): 12 V DC @ 1A output 12W maximum
Physical specifications	• Dimensions: 120 x 79 x 42 mm (4.72 x 3.11 x 1.65 inches) • Weight: 238 gm
Environmental	• Operating temperature: 32° to 140° F (0° to 40° C) • Operating humidity: 90% maximum relative humidity, noncondensing • Electromagnetic emissions: Meets requirements of: FCC Part 15 Class B.
Interface	• Local: 10/100BASE Tx, RJ-45 • 802.11n/g/b • USB 2.0 x 1, 3.5mm • Audio jack x1

Notification of Compliance

NETGEAR Dual Band - Wireless

B

Regulatory Compliance Information

This section includes user requirements for operating this product in accordance with National laws for usage of radio spectrum and operation of radio devices. Failure of the end-user to comply with the applicable requirements may result in unlawful operation and adverse action against the end-user by the applicable National regulatory authority.

Note: Note: This product's firmware limits operation to only the channels allowed in a particular Region or Country. Therefore, all options described in this user's guide may not be available in your version of the product.

Europe - EU Declaration of Conformity

Marking by the above symbol indicates compliance with the Essential Requirements of the R&TTE Directive of the European Union (1999/5/EC). This equipment meets the following conformance standards:

EN300 328 (2.4Ghz), EN301 489-17, EN301 893 (5Ghz), EN60950-1

For complete DoC please visit the NETGEAR EU Declarations of Conformity website at:

http://support.netgear.com/app/answers/detail/a_id/11621.

EDOC in Languages of the European Community

Language	Statement
Cesky [Czech]	*NETGEAR* Inc. tímto prohlašuje, že tento Radiolan je ve shode se základními požadavky a dalšími príslušnými ustanoveními smernice 1999/5/ES.
Dansk [Danish]	Undertegnede *NETGEAR Inc.* erklærer herved, at følgende udstyr Radiolan overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
Deutsch [German]	Hiermit erklärt *NETGEAR Inc.*, dass sich das Gerät Radiolan in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
Eesti [Estonian]	Käesolevaga kinnitab *NETGEAR Inc.* seadme Radiolan vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
English	Hereby, *NETGEAR Inc.*, declares that this Radiolan is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Español [Spanish]	Por medio de la presente *NETGEAR Inc.* declara que el Radiolan cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ *NETGEAR Inc.* ΔΗΛΩΝΕΙ ΟΤΙ Radiolan ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
Français [French]	Par la présente *NETGEAR Inc.* déclare que l'appareil Radiolan est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
Italiano [Italian]	Con la presente *NETGEAR Inc.* dichiara che questo Radiolan è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo *NETGEAR Inc.* deklarē, ka Radiolan atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo *NETGEAR Inc.* deklaruoja, kad šis Radiolan atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
Nederlands [Dutch]	Hierbij verklaart *NETGEAR Inc.* dat het toestel Radiolan in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
Malti [Maltese]	Hawnhekk, *NETGEAR Inc.*, jiddikjara li dan Radiolan jikkonforma mal-htigijiet essenzjali u ma provvedimenti ohrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
Magyar [Hungarian]	Alulírott, *NETGEAR Inc.* nyilatkozom, hogy a Radiolan megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak.
Polski [Polish]	Niniejszym NETGEAR Inc. oświadcza, że Radiolan jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
Português [Portuguese]	*NETGEAR Inc.* declara que este Radiolan está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
Slovensko [Slovenian]	NETGEAR Inc. izjavlja, da je ta Radiolan v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	*NETGEAR Inc.* týmto vyhlasuje, že Radiolan spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
Suomi [Finnish]	*NETGEAR Inc.* vakuuttaa täten että Radiolan tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Svenska [Swedish]	Härmed intygar *NETGEAR Inc.* att denna Radiolan står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

Íslenska [Icelandic]	Hér með lýsir *NETGEAR Inc.* yfir því að Radiolan er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 1999/5/EC.
Norsk [Norwegian]	*NETGEAR Inc.* erklærer herved at utstyret *Radiolan* er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EF.

This device is a 2.4 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies.

In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 - 2483.5 MHz. For detailed information the end-user should contact the national spectrum authority in France.

FCC Requirements for Operation in the United States

FCC Information to User

This product does not contain any user serviceable components and is to be used with approved antennas only. Any product changes or modifications will invalidate all applicable regulatory certifications and approvals.

FCC Guidelines for Human Exposure

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC Declaration of Conformity

We, NETGEAR, Inc., 350 East Plumeria Drive, San Jose, CA 95134, declare under our sole responsibility that the Universal Dual Band WiFi Extender – Desktop/Wallplug complies with Part 15 Subpart B of FCC CFR47 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.

FCC Caution

• Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
• 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.

- For product available in the USA market, only channel 1~11 can be operated. Selection of other channels is not possible.
- This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.

Canadian Department of Communications Radio Interference Regulations

This digital apparatus (Universal Dual Band WiFi Extender – Desktop/Wallplug) 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

Industry Canada

This device complies with RSS-210 of the Industry Canada 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.

IMPORTANT NOTE: Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Caution:

The device for the band 5150-5250 MHz is only for indoor usage to reduce po-tential for harmful interference to co-channel mobile satellite systems.

High power radars are allocated as primary users (meaning they have priority) of 5250-5350 MHz and 5650-5850 MHz and these radars could cause interference and/or damage to LE-LAN devices.

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

NOTE IMPORTANTE: Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

Avertissement:

Le dispositif fonctionnant dans la bande 5150-5250 MHz est réservé uniquement pour une utili-sation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux.

Les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5250-5350 MHz et 5650-5850 MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.

Interference Reduction Table

The following table shows the recommended minimum distance between NETGEAR equipment and household appliances to reduce interference (in feet and meters).

Household Appliance	Recommended Minimum Distance (in feet and meters)
Microwave ovens	30 feet / 9 meters
Baby Monitor - Analog	20 feet / 6 meters
Baby Monitor - Digital	40 feet / 12 meters
Cordless phone - Analog	20 feet / 6 meters
Cordless phone - Digital	30 feet / 9 meters
Bluetooth devices	20 feet / 6 meters
ZigBee	20 feet / 6 meters