

NETGEAR®

N900 Wireless Dual Band USB Adapter (WNDA4100) User Manual



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N900 Wireless Dual Band USB Adapter (WDA4100)

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Thank you for choosing NETGEAR. To register your product, get the latest product updates, get support online, or for more information about the topics covered in this manual, visit the Support website at <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/app/answers/detail/a_id/984.

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Set up Your Wireless Adapter

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This chapter includes the following sections:

- *NETGEAR Genie Desktop Icon*
- *NETGEAR Genie Home*
- *Join a Wireless Network*

For help installing your wireless USB Adapter, see the installation guide that came in the package.

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

NETGEAR Genie Desktop Icon

When you install your adapter, the NETGEAR Genie icon appears in the Windows system tray and on the desktop. You can click this icon to open NETGEAR Genie to make changes or connect to a different wireless network. The color of the icon indicates the strength of your wireless connection from 0 (zero) to 5 bars.



Green: 3 to 5 bars



Yellow: 1 or 2 bars

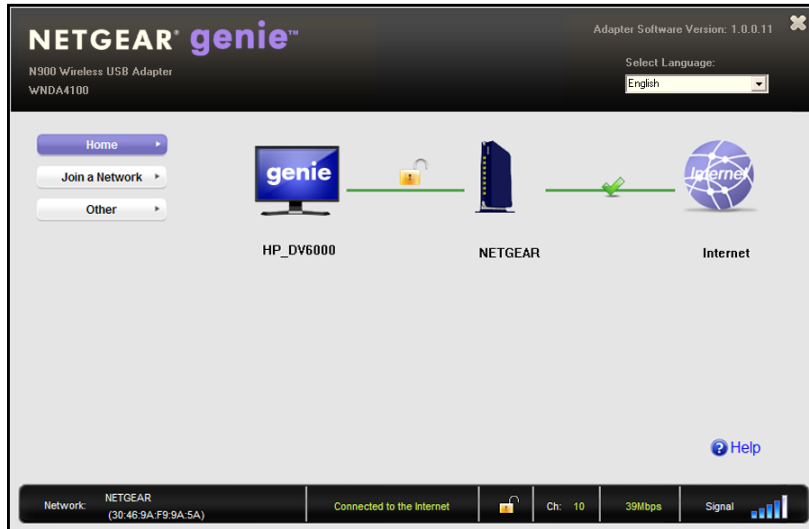


Red: 0 (zero) bars, indicating no connection

If you remove your adapter, NETGEAR Genie is not available, so the icon is not displayed. If you insert the adapter again, the icon returns.

NETGEAR Genie Home

When you launch NETGEAR Genie, the home screen displays.



This screen shows you at a glance if you are connected to a network, and if you have Internet access. The following options are available:

- **Select Language.** If more than one language is available, you can select a language from this drop-down list. NETGEAR Genie screens will be displayed in the language that you selected.
- **Home button.** The currently selected Home screen. You can click the Home button to return here from a different screen.
- **Join a Network button.** View a list of wireless networks and join a network.
- **Other button.** View more information or check for software updates.
- **Help.** Display the help.

Status Bar

The status bar is located at the bottom of the screen:

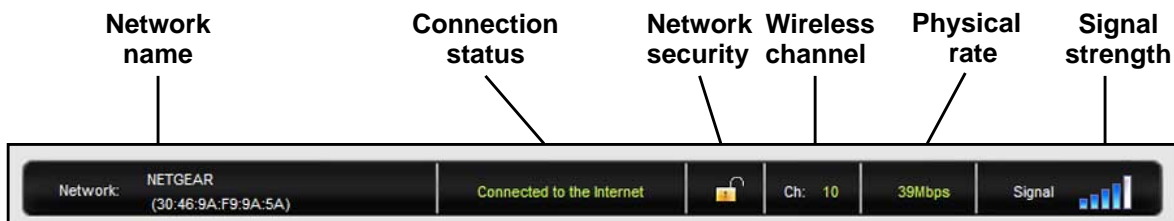


Figure 1. Status bar

Network name. The network name (SSID) of the wireless network that the adapter is currently connected to.

Connection status. This shows the status that is also shown in the diagram in the middle of this screen.

- Connected to the Internet
- Connected to the Router
- No Connection

Network security. The lock symbol shows whether or not the network you are connected to uses wireless security. An open lock indicates an open network without wireless security, such as one that you might use in a coffee shop.

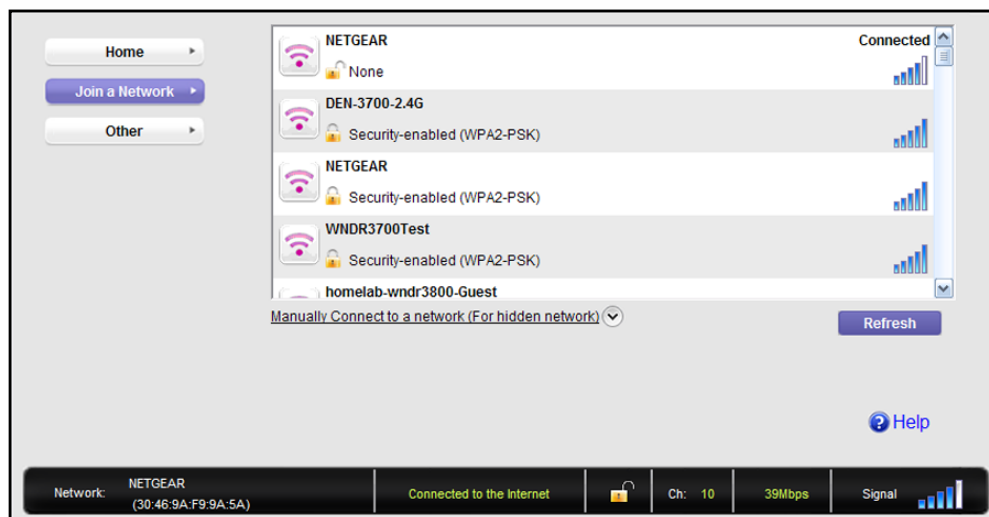
Wireless channel. The wireless channel of the network that the adapter is connected to.

Physical rate. The physical transmission rate for wireless communication.

Signal strength. The strength of the wireless signal. Three-to-five bars indicate a good signal. One or two bars indicate a weak signal.

Join a Wireless Network

In NETGEAR Genie, click the **Join a Network** button to display the following screen:



Network list. View the wireless networks in the area. Click a network to select it.

Manual Connect. Click this button to join a network without viewing it on the network list, or to connect to a hidden network. A hidden network does not broadcast its wireless network name (SSID).

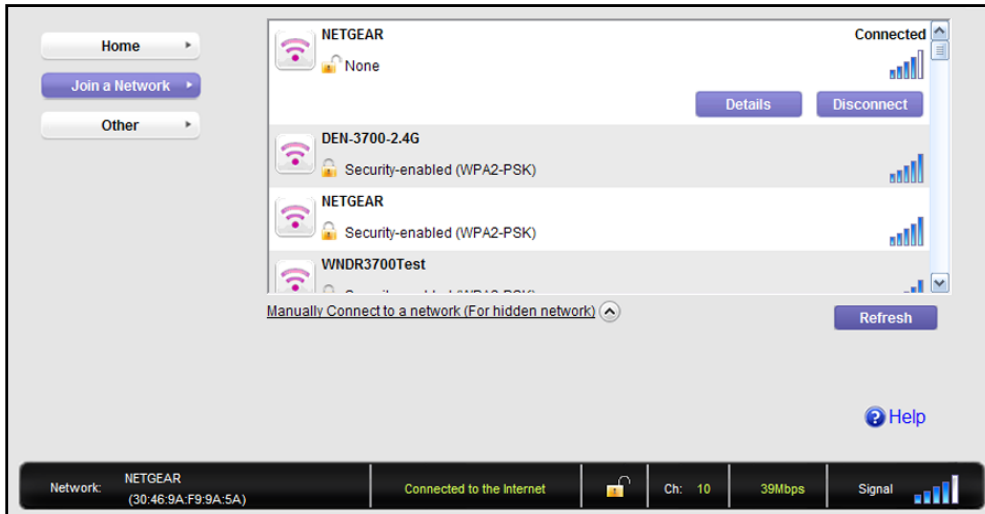
Refresh. Click this button to scan for available networks in the area.

Network Details

From the Join a Network screen, you can view more details about a specific network.

➤ **To view network details:**

1. In the Join a Network screen, click the network to select it



2. Click the **Details** button to display a screen similar to the one shown here.



The following information is displayed:

- **Network Name (SSID).** The name assigned to a wireless network. Note that, as a security measure, some wireless access points do not broadcast their SSIDs. In such cases, the network is hidden. The name (SSID) field is blank even though the rest of the information is displayed.
- **Channel.** The channel that the wireless network operates on. NETGEAR recommends that you choose a network that uses a channel that is different from that of neighboring networks.
- **Wireless Mode.** The wireless technology used for this router such as 11a, n, g, or b.

- **WPS Support.** Identifies whether the router or access point for this network supports WPS (Wi-Fi Protected Setup).
- **MAC Address.** The unique hardware address of the wireless device broadcasting this information. Typically, this is a wireless router, gateway, or access point.

Join a Network or Connect to a Different Network

You can use WPS to join a wireless network if your wireless network supports it, or you can join a wireless network from this NETGEAR Genie screen.

- **WPS.** Press and hold the **WPS** button on the side of the adapter for 3 seconds. Then within 2 minutes, press the **WPS** button on your wireless router or gateway. Your settings are saved in a profile with **-WPS** at the end.
- **NETGEAR Genie.** Click your wireless network to select it from the list, and then click **Connect**. If the network is secure, enter its password or network key.

After the adapter joins the network, it automatically saves the network connection information to a Windows profile. Windows profiles can be used by Genie and the Windows utility. The next time you launch NETGEAR Genie, it will automatically connect to the network you previously joined if there's no change in the network information.

➤ **To use WPS to join a wireless network:**

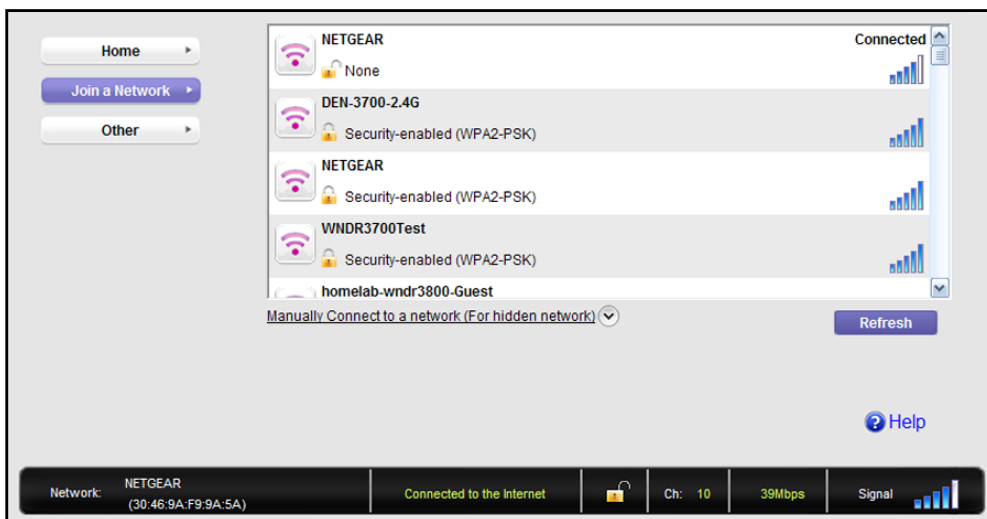
1. Press and hold the **WPS** button on the side of the adapter for 2 seconds.



2. Then within 2 minutes, press the **WPS** button on your wireless router or gateway
The adapter joins the network, which can take a few minutes. Your settings are saved in a profile.

➤ **To select and join a wireless network:**

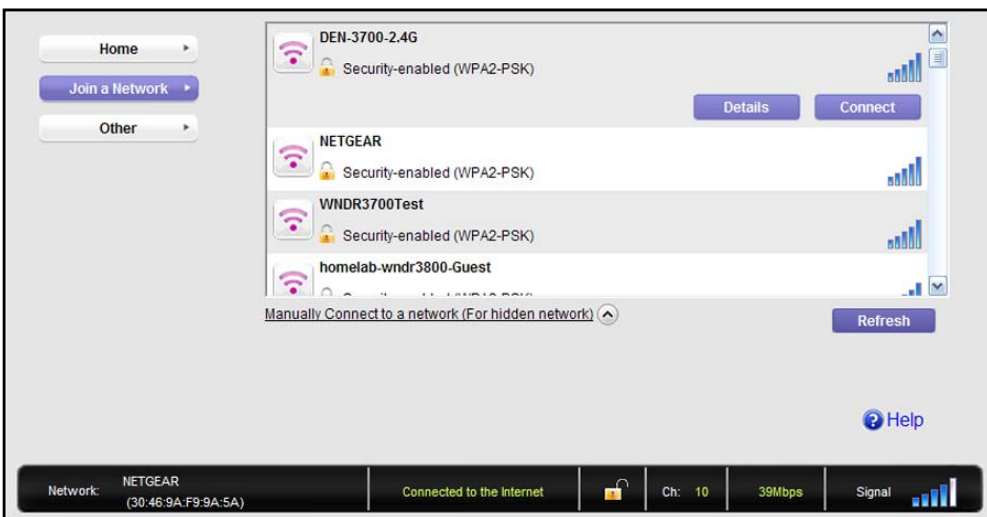
1. From NETGEAR Genie, click **Join a Network**.



2. Look for your network in the list on this screen. If you do not see your network, you might need to scroll down to view more networks.

If the network name is not displayed, that indicates a hidden network that does not broadcast its SSID. Use the manual method to connect to a hidden network. See [Join a Hidden Network](#) on page 10.

3. Click the network that you want to join.



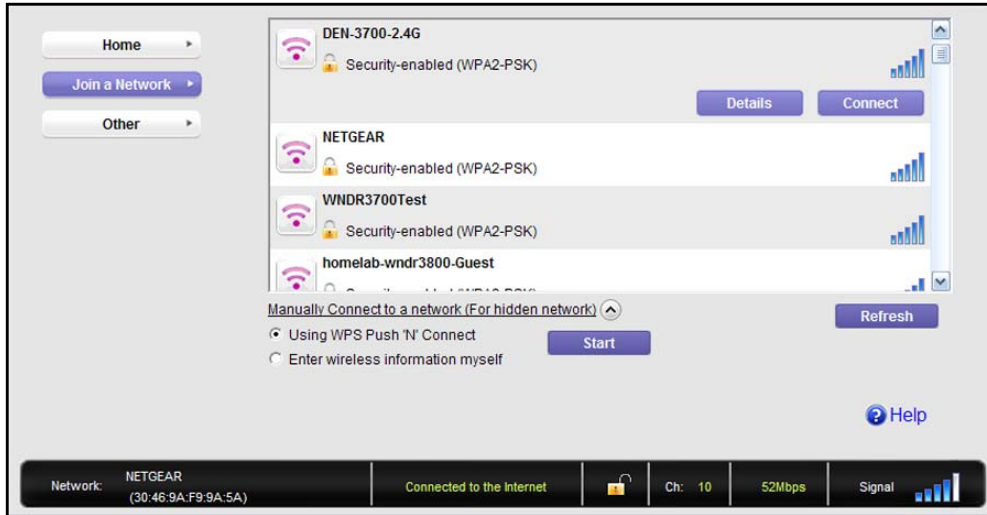
4. Click the **Connect** button.
5. If the wireless network is secure, enter the network password.

The adapter joins the wireless network. This could take a few minutes.

Join a Hidden Network

A hidden network does not broadcast its SSID.

1. From NETGEAR Genie, click **Join a Network**.
2. Click the **Manually Connect to a network (for hidden networks)** link.



You can use WPS to connect, or enter the wireless information yourself.

➤ **To manually connect using WPS:**

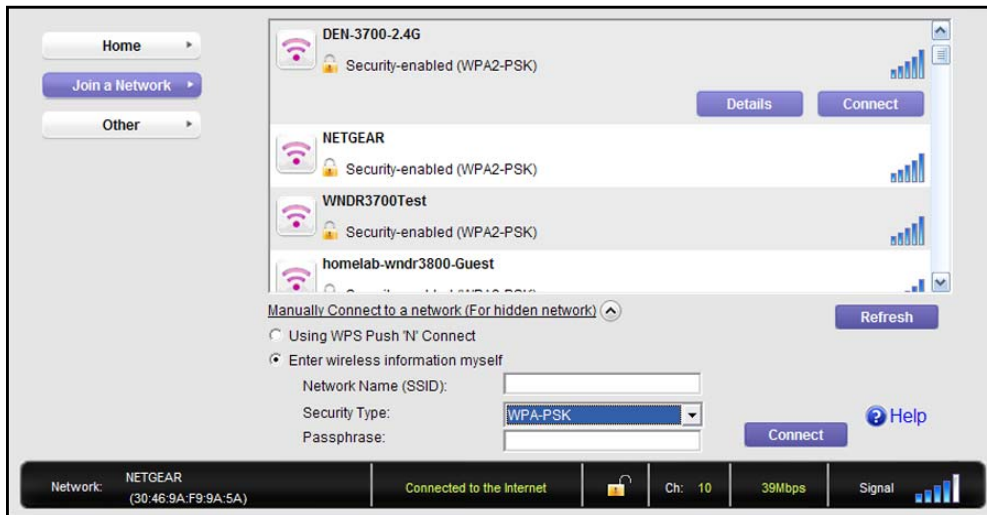
1. Click the **Start** button.

A dialog pop-up displays with WPS instructions telling you to press the WPS button both on the adapter and the router.

2. As explained in the pop-up screen, press the WPS button on your adapter. Then go to your wireless router, gateway, or access point and press its WPS button.

➤ **To manually connect without WPS:**

1. Select the **Enter wireless information myself** radio button.



There are four security types that can be displayed for the network: None, WEP, WPA-PSK, and WPA2-PSK.

- **None.** There is no password.
 - **WEP.** The password (key) is a 10 or 26 hexadecimal digit.
 - **WPA-PSK/WPA2-PSK.** The password (passphrase) is between 8 and 63 characters in length.
2. In the fields provided, type the network name (SSID), select the security type, and type the passphrase (password).

2. Maintenance

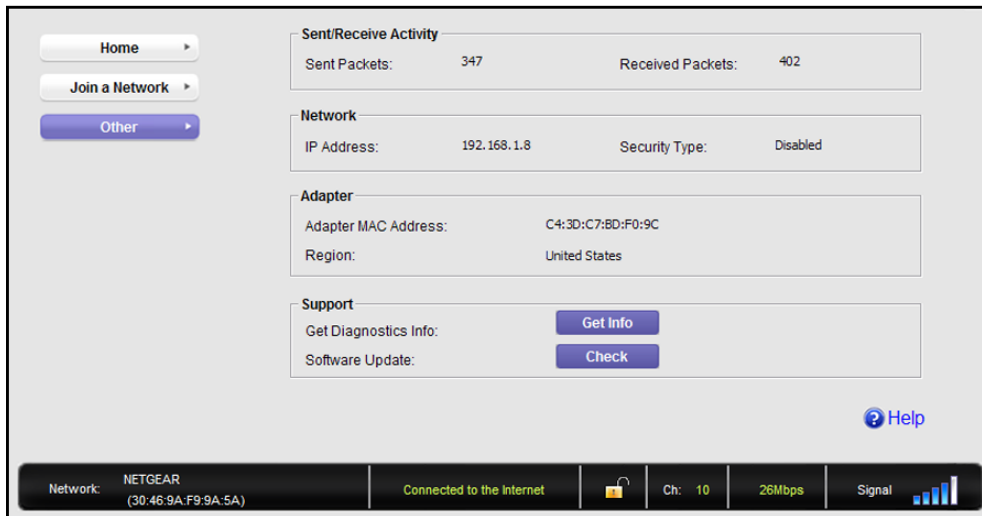
2

This chapter includes the following sections:

- *Other Screen*
- *Remove the Software*
- *Frequently Asked Questions (FAQs)*

Other Screen

In NETGEAR Genie, click the **Other** button to display the following screen:



Sent/Receive Activity

Sent Packets. Total number of packets sent while communicating with the wireless network.

Received Packets. Total number of packets received from wireless network communications.

Network

IP Address. The IP address assigned to this adapter. This can change if you disconnect from the network and rejoin it later.

Security Type. Wireless security used for the adapter to connect to the current wireless network.

Adapter

Adapter MAC Address. The Media Access Control (MAC) address of this adapter. The MAC address is a unique 48-bit hardware address assigned to each wireless device. As a security measure, some wireless networks restrict access based on a list of known MAC addresses. If you try to join such a network, you have to provide your adapter's MAC address (shown here) to the network administrator before you can connect.

Region. This is the region setting for the wireless adapter. Wireless channels in use depend on the country or region. Your wireless adapter automatically scans approved channels for your region when it checks to see which networks are available in your area. Governments regulate the channels used for wireless transmission. Operating the wireless adapter in a different region might violate local laws.

Support

Get Diagnostics Info. Click the **Get Info** button if support has directed you to do so. The Genie displays the system Information screen and starts collecting system information, IP information, client driver and profile information, and site survey information.

Software Update. You can check for software updates at the NETGEAR website. Click the **Check** button, and the Genie displays the Live Check screen and checks for available software upgrades. If new software is found, the adapter software is automatically updated.

Help. Click the **Help** button to display help.

Remove the Software

You can remove the wireless adapter software in several different ways:

- **Uninstall:** In Windows, select **Start > All Programs > NETGEAR WNDA4100 Genie > Uninstall NETGEAR WNDA4100 Software.**
- **Control Panel:** How you do this depends on your Windows operating system:
 - **Windows 7:** Select **Start > Control Panel > Programs and Features**, and then select **NETGEAR WNDA4100 Genie**. Click **Uninstall** and follow the screen prompts.
 - **Windows Vista:** Select **Start > Control Panel > Programs and Features**, and then select **NETGEAR WNDA4100 Genie**. Click **Uninstall/Change** from the top menu and follow the screen prompts.
 - **Windows XP:** Select **Start > Control Panel > Add or Remove Programs**, and then select **NETGEAR WNDA4100 Genie**.

Frequently Asked Questions (FAQs)

The wireless USB Adapter LED is not lit.


The wireless USB Adapter is not inserted securely in the USB port (or USB cable if used) or the WNDA4100 software is not installed.

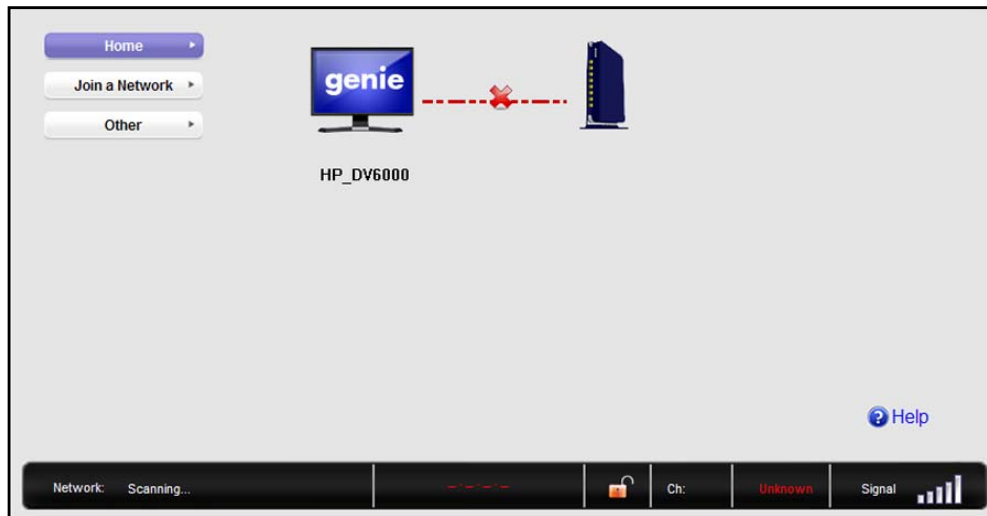
- Remove and reinsert the wireless USB Adapter.
- Check the Windows device manager to see if the wireless USB Adapter is recognized and enabled. Reinstall the WNDA4100 software, if necessary.
- Insert the wireless USB Adapter in a different USB port on your computer if one is available.

I do not see the icon.

Check to make sure that your wireless USB Adapter is inserted in the USB port. If it is removed, then the icon is not displayed. When you insert the wireless USB Adapter into the USB port, the icon returns to your desktop and the Windows system tray.


I cannot connect to a wireless network.

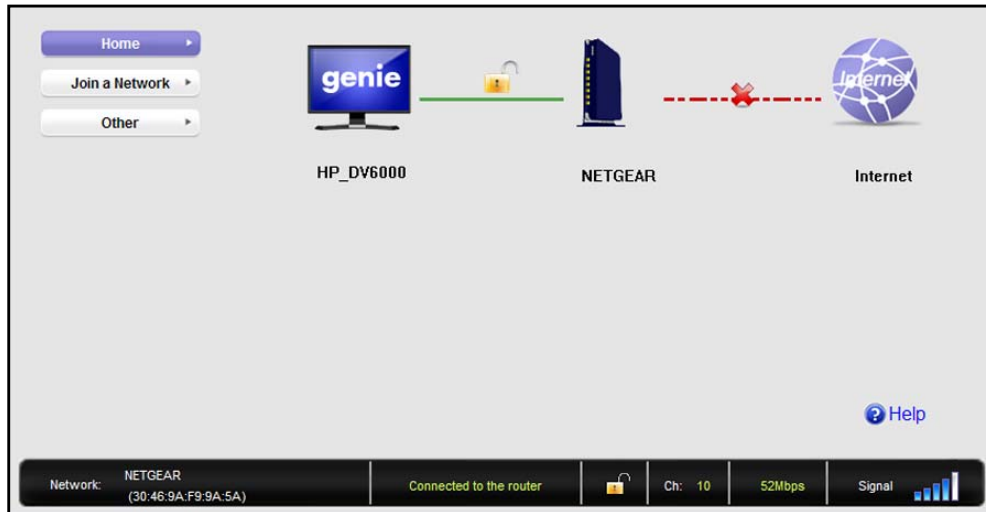
- Make sure that your wireless USB Adapter is inserted securely into the USB port on your computer or the USB cable if you are using it. The wireless USB Adapter LED should light up or blink (see [NETGEAR Genie Desktop Icon](#) on page 4 for details).
- Click the  icon to open NETGEAR Genie. The home screen shows the following screen if the adapter cannot connect to the network that you selected.



- If the network uses wireless security, you need to either know the wireless security settings or use Push 'N' Connect if the network supports WPS. Some networks also restrict use to only computers or wireless devices with known MAC addresses. If that is the case, on the NETGEAR Genie screen, click **Other** to find the MAC address for your wireless USB Adapter and provide it to the network administrator.

When I connect to the network I cannot access the Internet.

Click  to open NETGEAR Genie. The home screen shows the following screen if you are connected to a network, but cannot access the Internet:



Make sure that you are connected to the right network. If you are, then check to see if the router's Internet connection is working. If the router's Internet connection is not working, restart the modem, router, and computer.

When I connect to the network I cannot access shared resources such as printers.

- Check to make sure the router or access point is physically connected to the Ethernet network.
- Make sure that the IP addresses and the Windows networking settings are configured correctly.

Do the USB ports go into a sleep mode if there is no traffic?

The USB devices do if a USB setting called Selective Suspend is enabled, which it is by default. If this setting is enabled, and the connected USB devices go into Selective Suspend mode, the network disconnects. To prevent this from happening, you can disable Selective Suspend.

To do disable Selective Suspend mode, go to **Start > Control Panel > Hardware and Sound > Power Options > Edit Plan Settings > Change Advanced Power Settings > USB Settings**, and change the setting for Selective Suspend mode to Disabled.

How can I improve the speed of my wireless connection?

You can use the USB cable and adapter that came in the package to position the wireless USB Adapter for better wireless communication.


The connection speed can vary depending on the type of USB port on your computer, the capacity of the router or access point for the wireless network, and the type of Internet connection. You can view the throughput in the status bar at the bottom of the Smart Wizard screen.

- If the throughput is 54 Mbps you could be connected to an 802.11g network, or the wireless-N network could be set with WPA (TKIP) security.

Wi-Fi regulations allow the wireless USB Adapter to connect only at up to 54 Mbps when WPA (TKIP) security mode is set on the router. For a faster connection, set the security for the router as WPA2 or WPA + WPA2 mixed wireless security. Then the wireless adapter can connect in 802.11n mode.

- If you do not have a USB 2.0 port on your computer, the throughput is limited to the 14 Mbps of the older USB 1.1 standard.

How can I view the IP address for the wireless USB Adapter?

Click the  icon to open NETGEAR Genie. Then click the **Other** button to view the IP address.

No IP address is assigned to the wireless USB Adapter.

This can occur if you upgraded your wireless USB Adapter software and did not reboot your computer. Either restart your computer, or connect to a different access point.

Supplemental Information



Technical Specifications

The following table provides technical specifications for the wireless USB Adapter.

Feature	Description
Antenna	3 integrated internal wireless antennas
Standards	802.11n, 802.11g, 802.11a, or 802.11b
Radio data rate	Auto Sensing
Frequency	2.4 GHz to 2.5 GHz CCK and OFDM Modulation; 5 GHz OFDM and MCS0-23, MCS32 coding scheme
Power	5V Bus powered
Emissions	FCC, CE
Bus interface	USB 2.0
Provided drivers	Microsoft Windows 7, Vista, and Windows XP (32/64-bit)
Operating environment	Operating temperature: 0 to 40° C
Encryption	WPA2-PSK [AES], WPA-PSK [TKIP], and 40-bit (also called 64-bit) and 128-bit WEP data encryption
Warranty	Limited 1-year warranty

Factory Default Settings

The following table lists the default settings of your wireless USB Adapter.

Default Settings	
Wireless communication	Enabled
Country/Region	United States (varies by region)
Operating mode	802.11n, 802.11g, 802.11a, or 802.11b
Data rate	Up to 450 Mbps

B Notification of Compliance



Maximum Wireless Signal Rate Derived from IEEE Standard 802.11 Specifications

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.

Safety and Regulatory Notices

FCC Statement

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 generates, 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 of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Operations in the 5.15-5.25 GHz band are restricted to indoor usage only.

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.

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

Radiation Exposure Statement:

The product complies with the FCC portable RF exposure limit set forth for an uncontrolled environment and is safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user's body or if the device can be set to a lower output power if such function is available.

The USB dongle transmitter is approved for use in typical laptop computers. To comply with FCC RF exposure requirements, it should not be used in other devices or certain laptop and tablet computer configurations where the USB connectors on the host computer are unable to provide or ensure the necessary operating configurations intended for the device and its users or bystanders to satisfy RF exposure compliance requirements.

Note: The country code selection is for non-US models only and is not available to all US models. Per FCC regulation, all Wi-Fi products marketed in the US must be fixed to US operation channels only.

FCC RF Radiation Exposure and SAR Statements

The WNDA4100 has been tested for body-worn Specific Absorption Rate (SAR) compliance. The FCC has established detailed SAR requirements and has established that these requirements have been met while installed in the host notebook computer.

For products available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible. 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. This device and its antenna(s) must not be co-located or operated in conjunction with any other antenna or transmitter. This device is going to be operated in a 5.15~5.25 GHz frequency range; it is restricted to an indoor environment only. Warning of high power radars as primary users of bands 5252~5350 MHz and 5650~5850 MHz that could cause interference and/or damage to the UNII device.

RF Exposure Information

The radio module has been evaluated under FCC Bulletin OET 65C (01-01) and found to be compliant to the requirements as set forth in CFR 47 Sections, 2.1093, and 15.247 (b) (4) addressing RF Exposure from radio frequency devices. This model meets the applicable government requirements for exposure to radio frequency waves.

Canadian Department of Communications Industry Canada (IC) Notice

This Class B digital apparatus complies with Canadian ICES-003 and RSS-210. Cet appareil numérique de la classe B est conforme à la norme NMB-003 et CNR-210 du Canada.

“To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.”

“Pour empêcher que cet appareil cause du brouillage au service faisant l'objet d'une licence, il doit être utilisé à l'intérieur et devrait être placé loin des fenêtres afin de fournir un écran de blindage maximal. Si le matériel (ou son antenne d'émission) est installé à l'extérieur, il doit faire l'objet d'une licence.”

Industry Canada Statement:

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.

Radiation Exposure Statement:

The product complies with the Canada portable RF exposure limit set forth for an uncontrolled environment and is safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user's body or the device can be set to a lower output power, if such function is available.

Caution:

- (i) The device when operated in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;
- (ii) The maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall comply with the e.i.r.p. limit; and
- (iii) The maximum antenna gain permitted for devices in the band 5725-5825 MHz shall comply with the e.i.r.p. limits specified for point-to-point and non point-to-point operation as appropriate.
- (iv) Users should also be advised that high-power radars are allocated as primary users (i.e., priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that 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.

Déclaration d'exposition aux radiations:

Le produit est conforme aux limites d'exposition pour les appareils portables RF pour les Etats-Unis et le Canada établies pour un environnement non contrôlé.

Le produit est sûr pour un fonctionnement tel que décrit dans ce manuel. La réduction aux expositions RF peut être augmentée si l'appareil peut être conservé aussi loin que possible du corps de l'utilisateur ou que le dispositif est réglé sur la puissance de sortie la plus faible si une telle fonction est disponible.

Avertissement:

Le guide d'utilisation des dispositifs pour réseaux locaux doit inclure des instructions précises sur les restrictions susmentionnées, notamment :

- (i) les dispositifs fonctionnant dans la bande 5 150-5 250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;
- (ii) le gain maximal d'antenne permis pour les dispositifs utilisant les bandes 5 250-5 350 MHz et 5 470-5 725 MHz doit se conformer à la limite de p.i.r.e.;
- (iii) le gain maximal d'antenne permis (pour les dispositifs utilisant la bande 5 725-5 825 MHz) doit se conformer à la limite de p.i.r.e. spécifiée pour l'exploitation point à point et non point à point, selon le cas.
- (iv) De plus, les utilisateurs devraient aussi être avisés que les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5 250-5 350 MHz et 5 650-5 850 MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.

Europe - EU Declaration of Conformity

A printed copy of the EU Declaration of Conformity certificate for this product is provided in the WNDA4100 product package.

<p>Ěesky [Czech]</p>	<p>NETGEAR, Inc. tímto prohlašuje, že tento N900 Wireless Dual Band USB Adapter (WNDA4100) je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.</p>
<p>Dansk [Danish]</p>	<p>Undertegnede NETGEAR, Inc. erklærer herved, at følgende udstyr N900 Wireless Dual Band USB Adapter (WNDA4100) overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.</p>

