



## Frequently Asked Questions

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# Intel® Wireless Gateway

Version 2.2

The latest version of this document can be obtained at  
Intel® Wireless Gateway Support Site  
<http://support.intel.com/support>



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## Frequently Asked Questions

### **What is the *default* IP address and IP subnet mask of the Intel® Wireless Gateway (IWG)? Why does the IWG have this unique IP address?**

The default IP address is 192.0.2.1 and the subnet mask is 255.255.255.0. This IP address was selected by Intel® to provide uniformity with other Intel devices.

### **How do I change the IP address of the IWG? How do I change the range of addresses provided by the built-in DHCP server?**

Go to the IWG's web user interface and, select the SETUP WIZARD – then FUNCTION SETTINGS (left channel bar) – then, in the enter the IP address of the Intel® Wireless Gateway section, enter the desired IP address and IP subnet mask. Save & Restart. This new IP address will be the beginning digits of the address range that the DHCP server will provide to workstations.

### **I use a Virtual Private Network (VPN) workstation that is configured to recognize a local IP address range from 192.168.x.1, and thus, this VPN workstation does not recognize the default IP address and DHCP range provided by the default IP address of 192.0.2.1 as “local”. What should I do?**

Change the IP address of the IWG to 192.168.1.1. If you make this change, the IWG's built-in DHCP server will provide workstations with addresses beginning at 192.168.1.x.

### **How do I change the MAC address on the IWG? I need the IWG to appear as an existing Ethernet adapter or XYZ device to my ISP.**

Go to the IWG's web user interface, select the SETUP WIZARD Select ADDITIONAL ISP SETTINGS (left channel bar) In the section *if your ISP requires you to input wan Ethernet MAC address*, click the check box and enter the desired MAC address. Save & Restart.



**I am installing the IWG on an existing LAN which already contains a DHCP server. How do I disable the built-in DHCP server function on the IWG?**

Go to the IWG's web user interface, select ADVANCED SETTINGS. Go to DHCP SERVER SETTINGS (left channel bar). Then, uncheck the box for *Enable DHCP Server Functions*. Save & Restart.

**I don't know the IP address of the IWG, or I have completely messed something up in the configuration, and I now cannot find the IP address. How do I reset the IWG to its original if I cannot access the user interface?**

First, make sure the IWG has power (power on) Then, use a paper clip or similar object to press and hold the recessed reset button which is located on the back of the unit. Hold this reset button for five seconds and then release the button. Wait for approximately 60 seconds and the unit will have reset. The status light will flash during the reset. **WARNING!!** – If you reset the IWG to its original settings, *all previous changes* to the configuration of the unit will be reset.

**A red X appears on the device status screen item. The red X indicates that I have a bad LAN, WAN, or Wireless connection. I made the connection but the red X still appears. What should I do?**

Press the refresh button on your browser to update the screen.

**Where do I obtain firmware upgrades and how do I install them?**

1. Download the firmware update from the [www.Intel.com/support](http://www.Intel.com/support).
2. After downloading the firmware update, double-click on the downloaded file to install the firmware on your local hard drive. By default, the firmware will unpack to c:\Intel\_IWG\firmware.
3. From the IWG's Web UI, select **System Tools**.
4. Select **Upgrade Firmware** on the left side of the browser screen.
5. Locate the downloaded firmware file, and then double-click file named **Wi686**. The firmware file is displayed in the Firmware Upgrade file box.
6. Click **Start**. The firmware update process begins and takes a few minutes. The status light flashes and the unit restarts. The Device Information tab should then reflect the new firmware version number.



## **Does the IWG support multi-channel roaming? How do I configure the IWG for multi-channel roaming?**

Yes, the IWG supports multi-channel roaming. There is no specific configuration for multi-channel roaming. – the roaming functionality is activated (by default). If the user connects several IWGs, only one unit should provide exclusive Internet access, gateway, and DHCP functions. The other IWG's should be configured as access points by setting them to AP Only mode. Remember to select the "clear" channels of 1, 6, and 11. See the Wireless LAN section of [www.Intel.com/support](http://www.Intel.com/support) for additional information on how to install multiple IWGs and how to provide wireless coverage to larger areas.

## **What is the practical range of the product?**

The range of each Intel® Wireless Gateway micro cell varies with physical environment, objects and interference in the coverage area. The rated range is 1500' (feet) for line of site, open area, optimal conditions, and minimal throughput. Realistically, in a common home/office/business environment, each Intel® Wireless Gateway micro cell, maintaining optimal throughput, will have approximately a 150' to 250' range.

The range of the system is virtually unlimited in practicality. By design, the range of the system is extended via multiple Access Points or Intel® Wireless Gateways. The APs or Gateways are arranged into an overlapping micro cell coverage arrangement, similar to the overlap of the cellular telephone system. The overlap in the wireless LAN environment allows for virtually unlimited range via roaming, maximum throughput, redundancy, minimized interference issues, and increased communications reliability.

## **When I enter the default address into the browser, the web user interface does not appear. What should I do?**

- Check your browser's (Internet Explorer, Netscape Navigator, etc.) communication's proxy server settings. Suggestion: Remove or set to "automatically detect".
- Remove or disable all firewall software on your workstation.
- Remove all dialup settings in your browser.
- Do not enter "www" with the URL. Simply enter the IP address only: 192.0.2.1 (do not enter www.192...)
- Ensure your workstation is set for DHCP. This setting will allow you to get an address automatically from a DHCP server.
- If you use a static or manually assigned IP address on your workstation, the workstation must have an IP address on the same subnet as the Intel Wireless Gateway.
- If the factory default address of the Intel® Wireless Gateway has been changed from 192.0.2.1 to another address, then you must use the other address
- If you use a DHCP server to provide an IP address to the Intel Wireless Gateway, determine which address the DHCP server provided to the IWG.



- Reset the Intel Wireless Gateway to factory default settings by pressing the reset button on the back panel. Or, – use the Manager software application from a wired workstation to configure the Intel Wireless Gateway.

**The Device View indicates good connections to the Cable or xDSL modem, but when I enter a URL, I either get a timeout error or I still cannot access the Internet. Why?**

- If the workstations are configured properly, but you still cannot get access, ensure the Intel Wireless Gateway is powered on and properly connected.
- Make sure the other workstations work OK – are you having a problem with all workstations or just one.
- Make sure your ISP settings are correct, especially if your ISP requires host name or password information. Consult your ISP's technical support documentation or help desk to get authentication information.
- Check your ISP's IP settings to find the correct IP address, Subnet mask, Default Gateway, and DNS entries.
- Run *wiipcfg* or *ipconfig* to check your workstations IP settings. .
- Check to see if your workstation can "ping", or communicate with, the Intel Wireless Gateway. At the command prompt type *ping 192.0.2.1* (or other address if changed from default). You should see successful reply messages. If you do not receive a successful reply message, check your IP settings or check your connection to the Intel Wireless Gateway.
- Check to make sure that you have a Wireless LAN adapter installed into your workstation or workstation.
- If the workstations and the Intel Wireless Gateway are connected and configured properly, check that your Cable/xDSL modem is working properly. Consult your ISP's technical support.

**My wired workstations work fine, but my wireless workstations cannot access the Intel Wireless Gateway.**

- Ensure that your wireless LAN network adapter and TCP/IP are installed correctly.
- Ensure the SSID (network name), WEP mode and WEP keys in the Intel Wireless Gateway match those in your wireless workstation network adapter's software configurations.
- Ensure the workstation network adapter IP settings are configured properly. Obtain an address automatically via a DHCP server or obtain address via proper static IP information for address, subnet mask, default gateway, and DNS.



### **My wireless workstations work fine, but my wired workstations don't work?**

- Ensure the network adapter and TCP/IP are installed correctly.
- Ensure the cables are connected correctly. If you are directly connecting one wired workstation directly to the LAN port on the Intel Wireless Gateway, you **MUST** use the included red crossover Ethernet cable. If you are connecting, via a hub or switch, one or more wired workstations to the LAN port of the Intel Wireless Gateway, you typically will not use the red crossover cable. Refer to the documentation of the hub or switch
- Ensure the workstation network adapter IP settings are configured properly. Obtain an address automatically via a DHCP server or obtain address via proper static IP information for address, subnet mask, default gateway, and DNS.

### **Three of my seven wired and wireless workstations work fine. Why do some of my workstations connect and some of my workstations cannot connect?**

- Ensure the workstation network adapter IP settings are configured properly. Obtain an address automatically via a DHCP server or obtain address via proper static IP information for address, subnet mask, default gateway, and DNS.
- Ensure the network adapter and TCP/IP are installed correctly.

### **Can I upgrade the Intel Wireless Gateway with firmware from other routers or access points?**

No, you can only use firmware designed specifically for the Intel Wireless Gateway. Firmware upgrades for this product are available at [www.intel.com/support](http://www.intel.com/support).

### **Where can I obtain additional support regarding the Intel Wireless Gateway?**

See the Wireless Ethernet LAN support site at [www.intel.com/support](http://www.intel.com/support).

### **Does the Intel Wireless Gateway support ICQ send file?**

Yes. In ICQ software preferences, enable "I am behind a firewall or proxy" and set the timeout to 60 seconds or more.





### **Does the Intel Wireless Gateway support Internet Games?**

The Intel Wireless Gateway supports some, not all, game software. If you are having difficulties, refer to the software vendor's documentation or the software vendor's technical support phone or website, as the software vendor may be aware of settings or configurations which will enable your game to be played via a NAT server.

### **Can multiple gamers (several people playing one game) on the LAN play simultaneously with just the one public IP address provided by the NAT?**

It depends on the game software. Refer the software vendor's documentation or the software vendor's technical support line/website.

### **I am having trouble with FTP downloads (they take too long, etc). What can I do?**

Try different FTP software – some FTP software do not work well with NAT.

### **Will the Intel Wireless Gateway operate in a Macintosh environment?**

Yes, but the Gateway's web-based utility is usually only usable or viewable by Internet Explorer or Netscape Navigator 4.0 or higher. Intel does not provide customer support for Macintosh.

### **Will the Intel Wireless Gateway work with PPTP or VPN workstation software? How about IPsec?**

Yes, the Intel Wireless Gateway supports PPTP, VPN workstation, and IPsec.

### **Does the Intel Wireless Gateway replace a cable/xDSL modem?**

No, the Gateway works in conjunction with your existing cable/XDSL modem; it does not replace a cable/xDSL modem.

### **Can I use an internal WORKSTATION cable/xDSL modem?**

No, you cannot use an internal modem to connect to the IWG - an external modem with an Ethernet connection is required.



## **Which cable/xDSL modems are compatible?**

Virtually all cable or xDSL modems that support Ethernet are compatible.

## **For Internet access, can I use the Intel Wireless Gateway with a dial-up modem?**

Refer to [www.intel.com/support](http://www.intel.com/support) to learn how to configure a workstation's Microsoft's Internet Connection Sharing feature with the Intel Wireless Gateway.

## **What IEEE 802.11b features are supported?**

The Intel Wireless Gateway is Wi-Fi Certified ([www.wi-fi.org](http://www.wi-fi.org)).

- CSMA.CA protocol
- Automatic rate selection and scaling
- RTS/CTS
- Fragmentation
- Power Management
- Multi-channel Roaming

## **Will the Intel Wireless Gateway interoperate with other vendors' wireless LAN adapters?**

Yes, the Intel Wireless Gateway should work with any wireless LAN adapter that is both Wi-Fi certified and IEEE 802.11b compliant. .

## **What is IEEE 802.11b and Wi-Fi?**

IEEE 802.11b is a workstation industry standard detailing how a wireless LAN operates. Wi-Fi is a term that has come to mean 802.11b; however, "Wi-Fi certified" is a certification provided by WECA (Wireless Ethernet Compatibly Alliance). The alliance ensures that wireless devices operate in accordance with IEEE 802.11b standards and interoperate with other vendors' products. Intel and many other companies are members of WECA.



## **What is the ISM frequency band?**

ISM stands for Industrial, Scientific, and Medical band. The band is a frequency space at approximately 2.4Ghz. This band is available worldwide. The Intel Wireless Gateway operates in the ISM band.

## **Where can I obtain information about international telecommunication certifications of the Intel Wireless Gateway?**

Refer to the support web site at [www.intel.com/support](http://www.intel.com/support).

## **IP addressing recommendations**

If there is not an existing network with a DHCP server, utilize the built-in DHCP server to automatically assign IP addresses and other configuration information to the wireless and wired workstations. The default address range of the network will be from 192.0.2.10 to 192.0.2.100, with the Intel Wireless Gateway having a default address of 192.0.2.1. If another address range is desired, the base address of the Intel Wireless Gateway can be changed, which will change the workstation address range accordingly.

In an existing network that already has a DHCP server, the built-in DHCP server should be disabled. The Intel Wireless Gateway can be configured with a static IP address or to automatically obtain an address from a DHCP server, as well as act as a relay agent for the workstations so the workstations also automatically obtain an IP address. Note that the user may want to place each Intel Wireless Gateway with an address reservation in the DHCP server to ensure they always maintain the same address. This provides easier access and maintenance via the built-in web server.

If it is not desired to utilize DHCP, one can of course manually assign the IP addresses in both the Intel Wireless Gateway and the workstation.

## **My Wireless LAN connections worked last month. Now, they don't. Do I have coverage problems?**

What's changed in your physical environment? Have new walls been built? Have metal storage cabinets or fish tanks been introduced into the coverage area? Have other obstructions or reflectors moved or been introduced? It may be necessary to relocate or add additional Intel Wireless Gateways. Perform a site survey to determine the best area to place your product. Please refer to the wireless Ethernet LAN section at [www.intel.com/support](http://www.intel.com/support).



## **Will the wireless LAN signal travel through walls?**

Yes, the signal will travel through many barriers including glass, cement, wood and brick.

## **What devices will cause interference?**

The Intel Wireless Gateway and workstation adapters operate in the unlicensed 2.4 Ghz band. Other items operating in this frequency range that can potentially cause interference are microwave ovens and 2.4 Ghz portable phones (not PCS or analog cell phones). PCS or analog cell phones do not operate at 2.4Ghz, so there is no interference issue with these products. Proper Intel Wireless Gateway placement, determined by an informal or formal site survey, usually eliminates interference problems created by other 2.4Ghz devices.

## **What is the difference between Bluetooth and 802.11b?**

Bluetooth is a 1 Mbps technology designed for the interconnection of devices that are in close proximity to one another: PDAs or handhelds to workstations; notebooks to printers; and phones to headsets. The 802.11b products are a full Local Area Network (LAN) connectivity solution, designed to provide network transmissions at Ethernet data rates.

## **What is the real speed throughput?**

802.11b data transmission provides is an 11 Mbps data rate. Actual throughput, however, will be less, just as 10 Mbps cabled Ethernet does not always provide 10 Mbps actual performance. Transmission speeds vary with files size, number of users, or distance from the Access Point. Properly designed, a system can provide Ethernet like performance for users. As signal strength becomes reduced, automatic data rate reductions from 11 Mbps to 5.5, 2, or 1 Mbps will occur in order to maintain the connection.

## **What if I roam to another subnet across a router?**

You may want to consider implementing a Virtual LAN (VLAN) and place all Intel Wireless Gateways located on the same VLAN.

## **What optional antenna and other accessories are available?**

The Intel Wireless Gateway does not have the capability to accommodate optional antennas. If you need advanced capabilities, including increased coverage with optional antennas, consider the Intel PRO/Wireless LAN Access Point.



## **Is this a shared or switched technology?**

The wireless access point of the Intel Wireless Gateway is similar to a hub, which is a shared medium.

## **How can I manage the Intel Wireless Gateway?**

The Intel Wireless Gateway can be managed via a number of methods: Telnet, console port, or the built-in web server via a browser. Please refer to your Intel Wireless Gateway documentation CD-ROM or the support web site for more details.

## **How do I place access points for optimal coverage?**

Each Intel Wireless Gateway will support up to approximately a 150' to 200' radius, depending on obstacles and interference. For smaller installations, experiment to find good/proper placement of the Intel Wireless Gateway - to ensure optimal coverage or for installations with several Intel Wireless Gateways, perform a site survey to determine the where and how many Intel Wireless Gateways to install. See the Intel Wireless Gateway support site at [www.Intel.com/support](http://www.Intel.com/support) for more details.

## **I cannot get my wireless LAN workstation to commuLAN adapterate with my Intel Wireless Gateway?**

The SSID (network name) numbers for the Intel Wireless Gateway and the wireless LAN workstations' adapter must match, and the WEP encryption options on both the Gateway and the adapter must be the same (enabled/disabled). If enabled, the encryption keys on the Intel Wireless Gateway must match the encryption keys on the adapter.

## **When I get out of physical range from my Intel Wireless Gateway, what happens?**

As the user moves from one area to another roaming supports automatic "hand off" of workstations (or workstations) from one Intel Wireless Gateway to another Intel Wireless Gateway. This roaming capability ensures that the connection from one Intel Wireless Gateway to another Intel Wireless Gateway is not dropped. If a user roams beyond the reach of an Intel Wireless Gateway, the network is suspended; however, the network connection will resume once the user returns to the range of the nearest Intel Wireless Gateway.



### **Does the Intel Wireless Gateway have a power saving option?**

Yes, the Power Save Protocol (PSP) is supported to provide excellent throughput while minimizing power consumption. The PSP is enabled in the wireless workstation.

### **What is the physical connection to the wired network?**

Each Intel Wireless Gateway has a 10/100 Ethernet connection; this connection allows communication with a 10 Mbps, 100Mbps, or 10/100 Mbps hub or switch.

### **What are the communication parameters and the cable type for the console serial interface?**

The communication parameters are 115200, none, 8, 1. The cable for the Intel Wireless Gateway is a DB9F-DB9F null wired.

### **Are there any known health issues caused by RF transmission?**

There is no conclusive evidence, to date, that radio waves from the 2.4 Ghz range pose any health issue. Although wireless LAN devices operate at the same frequency as microwave ovens, wireless access points and adapters at 2.4Ghz emit a power signal of 100mW, less than other 2.4Ghz products (such as microwave ovens or cordless phones).

### **Can I purchase a notebook workstation that has an integrated wireless LAN adapter? Will these workstations work/interoperate with the Intel® Wireless Gateway? Do other vendors' wireless adapters work with the Intel Wireless Gateway?**

Yes, several workstation manufacturers offer integrated 802.11b wireless adapters. Additionally there are several manufacturers of Wi-Fi 802.11b wireless LAN adapters. If the adapter is Wi-Fi certified, the adapter should interoperate with the Intel Wireless Gateway.

### **Does the Intel Wireless Gateway support the bridging of two or more Ethernet LANS?**

No, this advanced function is not available in the Intel Wireless Gateway. However, bridging is a feature offered in other Intel PRO/Wireless LAN Access Point products.



### **Does the Intel Wireless Gateway support repeating?**

No, this advanced function is not available in the Intel Wireless Gateway. However, repeating is a feature offered in other Intel PRO/Wireless LAN Access Point.

### **How many wireless LAN users can the Intel Wireless Gateway support? What about maximum wired users? And, how many total users can access the Internet at the same time?**

The built-in DHCP server can provide IP addresses for up to 252 workstations. There can be 16 wireless LAN workstations supported simultaneously on each Gateway and there can be 64 workstations simultaneously accessing the Internet via the built-in NAT router.

### **Can the Gateway attach to a hub, switch, or router?**

Yes, the Intel Wireless Gateway can attach to a hub, switch or router via the Gateway's 10/100 Ethernet port on the back of the unit. This port provides flexibility for a wide variety of network configurations and connections.

### **How can I reset the Intel Wireless Gateway if I cannot gain access via Telnet, web server, or cable connection?**

To reset the Intel Wireless Gateway, remove power from the Intel Wireless Gateway, wait a few seconds and reapply power.

### **Where can I find the MAC address of the Access Point?**

The system diagnostic summary screen displays the MAC address and the device display. Both the WAN and the LAN port have unique MAC addresses.

### **What is difference between 40 and 64 bit WEP encryption?**

There is no difference between 40 and 64-bit WEP; different manufacturers use different nomenclature. The Intel Wireless Gateway will interoperate with adapters that have 40, 64, or 128-bit settings. If your adapter has the option for 40-bit only, choose 64-bit on the Intel Wireless Gateway.