

Radio Signals

Radio Signals are the keys, which make WiFi networking possible. These radio signals transmitted from WiFi antennas are picked up by WiFi receivers, such as computers and cell phones that are equipped with WiFi cards. Whenever, a computer receives any of the signals within the range of a WiFi network, which is usually 300 — 500 feet for antennas, the WiFi card reads the signals and thus creates an internet connection between the user and the network without the use of a cord.

Access points, consisting of antennas and routers, are the main source that transmit and receive radio waves. Antennas work stronger and have a longer radio transmission with a radius of 300-500 feet, which are used in public areas while the weaker yet effective router is more suitable for homes with a radio transmission of 100-150 feet.

WiFi Cards

You can think of WiFi cards as being invisible cords that connect your computer to the antenna for a direct connection to the internet.

WiFi cards can be **external** or **internal**. If a WiFi card is not installed in your computer, then you may purchase a USB antenna attachment and have it externally connect to your USB port, or have an antenna-equipped expansion card installed directly to the computer *asshowninthefiguregivenabove*. For laptops, this card will be a PCMCIA card which you insert to the PCMCIA slot on the laptop.

WiFi Hotspots

A WiFi hotspot is created by installing an access point to an internet connection. The access point transmits a wireless signal over a short distance. It typically covers around 300 feet. When a WiFi enabled device such as a Pocket PC encounters a hotspot, the device can then connect to that network wirelessly.

Most hotspots are located in places that are readily accessible to the public such as airports, coffee shops, hotels, book stores, and campus environments. 802.11b is the most common specification for hotspots worldwide. The 802.11g standard is backwards compatible with .11b but .11a uses a different frequency range and requires separate hardware such as an a, a/g, or a/b/g adapter. The largest public WiFi networks are provided by private internet service providers *ISPs*; they charge a fee to the users who want to access the internet.

Hotspots are increasingly developing around the world. In fact, T-Mobile USA controls more than 4,100 hotspots located in public locations such as Starbucks, Borders, Kinko's, and the airline clubs of Delta, United, and US Airways. Even select McDonald's restaurants now feature WiFi hotspot access.

Any notebook computer with integrated wireless, a wireless adapter attached to the motherboard by the manufacturer, or a wireless adapter such as a PCMCIA card can access a wireless network. Furthermore, all Pocket PCs or Palm units with Compact Flash, SD I/O support, or built-in WiFi, can access hotspots.

Some Hotspots require WEP key to connect, which is considered as private and secure. As for open connections, anyone with a WiFi card can have access to that hotspot. So in order to have internet access under WEP, the user must input the WEP key code.