



## Wireless Networking Tutorial

### Wireless Networking Terms

**802.11a:** An IEEE standard for wireless Ethernet networking that operates in the 5 GHz radio band (ISM frequency band) and uses the IP protocol. Maximum transmission speed is 54Mbps and approximate wireless range is 25-75 feet indoors.

**802.11b:** An IEEE standard for wireless Ethernet networking that operates in the 2.4 GHz radio band (ISM frequency band) and uses the IP protocol. Maximum transmission speed is 11Mbps and approximate wireless range is 100-200 feet indoors.

**802.11g:** An IEEE standard for wireless Ethernet networking that operates in the 2.4 GHz radio band (ISM frequency band) and uses the IP protocol. Maximum transmission speed is 54Mbps and approximate wireless range is 100-200 feet indoors.

**Access Point:** A wireless Access Point is used to connect PC's with wireless adapter cards to a wired Ethernet network. Access points can support several or all of the three most popular IEEE WLAN standards including 802.11a, 802.11b and 802.11g. Sometimes people may refer to an Access Point as a Wireless Hub.

**Adapter:** A wireless adapter or NIC (Network Interface Card) that is used to connect to a laptop

or PC to a wireless LAN (Local Area Network).

**Ad-hoc:** An Ad-hoc wireless network is made up of a group of PC's and/or laptops connected as an independent wireless LAN.

**Encryption:** Encryption is used to hide or mask the data being sent through wireless transmissions. There are several popular and widely used encryption methods used today including WEP (Wired Equivalent Privacy, and WPA (Wi-Fi Protected Access).

**Hot Spot:** A wireless Hot Spot is a public area where wireless laptops can connect to WLAN and receive Internet access. Recently many coffee shops and airports have added this capability for their customer's convenience.

**Infrastructure:** A Wireless Infrastructure is comprised of both wired and wireless LAN's. Typically this type of configuration is found in SOHS and Enterprise environments where there are many user groups or divisions requiring access to shared resources.

**ISM Band:** The ISM (Industrial, Scientific and Medical) band, which is controlled by the FCC in the US, generally requires licensing for various spectrum use. To accommodate wireless LAN's, the FCC has set aside bandwidth for unlicensed use

including the 2.4GHz spectrum where many WLAN products operate.

**Roaming:** The ability to use a wireless device and be able to move from one access point's range to another without losing the connection.

**Router:** A wireless router is a protocol dependent device that is used to connect sub networks or different independent WLAN's together. Routers provide security as they can be configured to only allow certain users access to different services such as the Internet and file servers when connecting a WLAN to the Internet a router is required.

**SOHO (Small Office/Home Office):** Is a widely used acronym which defines applications or products used in homes or in small offices.

**SSID:** The SSID is the unique name shared among all devices on the same wireless network

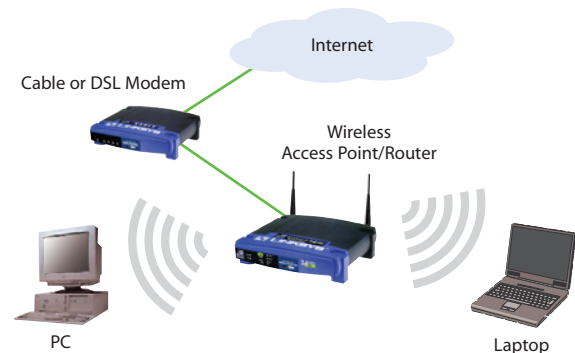
**WI-FI:** Wi-Fi stands for Wireless Fidelity and is used to define any of the IEEE 802.11 wireless standards. The term Wi-Fi was created by the Wireless Ethernet Compatibility Alliance (WECA). Products certified as Wi-Fi compliant are interoperable with each other even if they are made by different manufacturers.

### What is a Wireless Network?

A wireless network is very similar to the wired network in that all the same pieces are still required, a wireless NIC, Access Point (similar to a wired network Ethernet Switch) and a wireless router. The only thing that's missing is the cables.

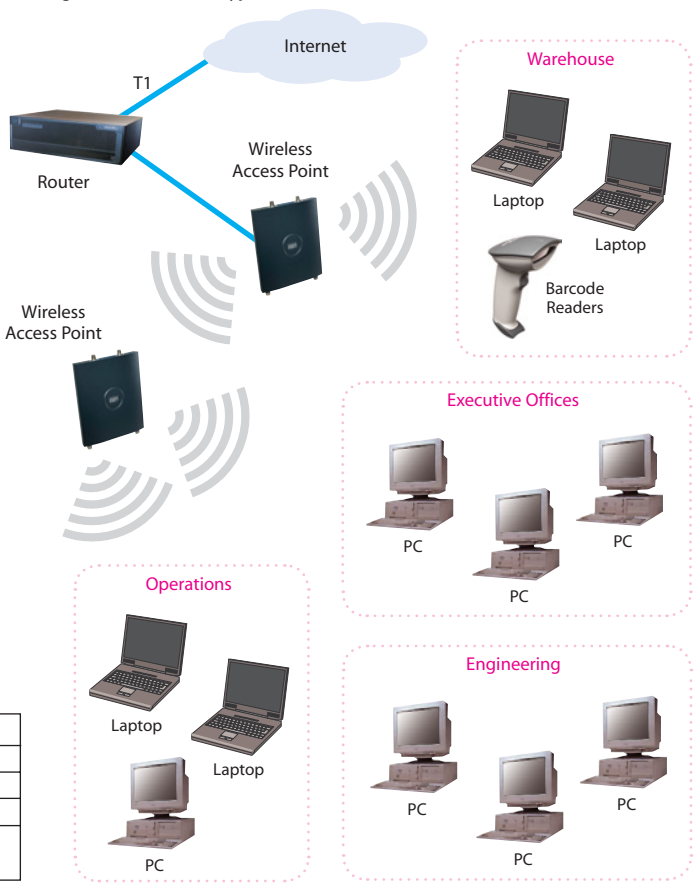
First you will need to determine if your desktop or Laptop PC already has a wireless NIC built in. Again, check your users guide to confirm this. Once your wireless NIC is installed you will need to configure the SSID (service set identifier) on each of the PC's to use the same name. Also, you need to make sure all the wireless NICs are configured to be on the same channel and set levels of encryption if desired. Your wireless access point or router should come with detailed explanation of how to configure the SSID and security features such as encryption and access lists. Many of today's wireless routers come with the access point functionality built right in.

The diagram below shows a simple wireless network set up.



	802.11a	802.11b	802.11g
Speed	Up to 54 Mbps	Up to 11 Mbps	Up to 54 Mbps
Frequency	5 Ghz	2.4 Ghz	2.4 Ghz
Indoor Range	25-75 feet	100-200 feet	100-200 feet
Compatibility	Incompatible with 801.11b and 802.11g	Compatible with 802.11g	Compatible with 802.11b

The diagram below shows a typical business wireless LAN.



Item #	Description	List Price
<b>Planet 802.11n Wireless Broadband Router</b>		
	The WNRT-625 is a broadband router integrated with an 802.11n Access Point. The IEEE 802.11n standard uses the 2.4GHz frequency band, the same as IEEE 802.11b; but it provides almost five times the throughput rate of 802.11b. With the latest integrated Super G technology, maximum data rates of 108Mbps are realized. The WNRT-625 is also backward compatible and interoperable with IEEE 802.11b compliant wireless devices. This router supports 64/128bit WEP encryption as well as WPA (Wi-Fi Protected Access) and 802.1x authentication. The router features a built-in 4-port 10/100 Ethernet switch as well as virtual server, DMZ and natural firewall functions.	
WNRT-625	Planet 802.11n Wireless Broadband Router	95.00
<b>Planet 802.11g Wireless Ethernet 54Mb Access Point</b>		
	The WLAN-WAP4033 is a cost effective IEEE 802.11g wireless access point. IEEE 802.11g technology uses the 2.4GHz frequency band, the same as IEEE 802.11b, but provides almost five times the data throughput rate than 802.11b. You can use this access point to establish a wireless LAN connection that enables multiple PCs to access the wireless LAN easily. The WLAN-WAP4033 supports WPA, WPA2 64/128-bit WEP (Wired Equivalent Privacy) Encryption and MAC address filtering capabilities providing comprehensive wireless network security preventing unauthorized wireless stations from accessing your wireless network. This product provides a user-friendly interface and allows configuration from a web browser.	
WLAN-WAP4033	Planet 802.11g Wireless Ethernet 54Mb Access Point	69.00
<b>Planet 802.11a/b/g Outdoor MESH Access Points</b>		
	The MAP-2000 and MAP-2000R outdoor access points support IEEE 802.11a/b/g standards and provide a highly scalable mesh network. All mesh nodes can operate at 2.4GHz for long range and better penetration, or at 5GHz to minimize frequency interference. Both models are encased in an IP-66 protection housing and are designed for outdoor installation. The detachable antennas design allows users to use multiple antenna styles for various deployment requirements. Enhanced with the advanced MDOLSR (Modified Dynamic Optimal Link State Routing) protocol, data is always transferred on the optimal path. The MAP-2000 offers a WAN interface for Internet connection and the MAP-2000R provides a LAN interface for dedicated Relay usage. Security features include AES backhaul link, WPA2 level client access, SSL for web management, and MAC filtering. The MAP-2000 and MAP-2000R also include MAP Management System software. This software is built around the SNMP protocol and can be installed in a PC. This software can locate and monitor all Mesh APs in the same network.	
<a href="#">MAP-2000</a>	Planet 802.11 a/b/g Outdoor MESH Gateway Access Point	995.00
<a href="#">MAP-2000R</a>	Planet 802.11 a/b/g Outdoor MESH Relay Access Point	995.00
<b>Planet 802.11a/b/g Indoor MESH Access Point</b>		
	The MAP-2100 indoor access point supports IEEE 802.11a/b/g standards and provides a highly scalable mesh network. All mesh nodes can operate at 2.4GHz for long range and better penetration, or at 5GHz to minimize frequency interference. The detachable antennas design allows users to choose multiple antenna styles for various deployment requirements. Enhanced with the advanced MDOLSR (Modified Dynamic Optimal Link State Routing) protocol, data is always transferred on the optimal path. The MAP-2100 offers a WAN interface for the Internet connection and a LAN interface for Ethernet connectivity. Security features include AES backhaul link, WPA2 level client access, SSL for web management, and MAC filtering. The MAP-2100 also includes MAP Management System software. This software is built around the SNMP protocol and can be installed in a PC. This software can locate and monitor all Mesh APs in the same network.	
<a href="#">MAP-2100</a>	Planet 802.11 a/b/g Indoor MESH Access Point	429.00
<b>Planet Wireless G 54Mbps PC Cardbus Adapter</b>		
	The Planet IEEE 802.11g wireless adapter can operate in either Ad-Hoc mode (Point to Point/Point to Multipoint without an Access Point) or in Infrastructure mode (Point to Point/Point to Multipoint with an Access Point). With almost five times the data rate of traditional 802.11b products, these adapters are suitable for high bandwidth multimedia applications. The WLAN-NIC3560 operates in the 2.4GHz unlicensed ISM band and is compliant with both the 802.11b and 802.11g standards. This dual-standard support allows for greater flexibility of deployment and use. Support for both 64/128-bit WEP (Wired Equivalent Privacy) and Wi-Fi Protected Access (WPA) for securing wireless network connections is included. Windows 98SE/ME/2000/XP/Server 2003 are supported.	
<a href="#">WLAN-NIC3560</a>	Planet Wireless G 54Mbps PCMCIA Adapter	35.00
<b>Planet Wireless G 54Mbps PCI Adapter</b>		
	The WLAN-NIC8310 is an IEEE 802.11g wireless PCI card that supports data rates up to 54Mbps. This PCI adapter can operate in either Ad-Hoc mode (Point to Point/Point to Multipoint without an Access Point) or Infrastructure mode (Point to Point/Point to Multipoint with an Access Point). The WLAN-NIC8310 features a detachable dipole antenna that can be replaced with optional external antenna to obtain better signal quality and greater connection distances. Security features include support for both 64/128-bit WEP (Wired Equivalent Privacy) and Wi-Fi Protected Access (WPA). Windows 98SE/ME/2000/XP/Server 2003 are supported.	
<a href="#">WLAN-NIC8310</a>	Planet Wireless G 54Mbps PCI Adapter	39.00
<b>Planet 151 Series 802.3af Power Over Ethernet Injector and Splitters</b>		
	The POE-PT151 is an IEEE 802.3af Power over Ethernet Injector that provides DC 48V over Ethernet Cat5 cables. The POE-PT151 IEEE 802.3af Power over Ethernet Injector inserts DC Voltage onto a Cat.5 cable, allowing the cable between the Injector (POE-PT151) and Splitter (POE-PT151S-5V/9V/12V) to transfer data and power simultaneously. The maximum distance between the Injector and Splitter is 100 meters. Each Splitter ships with two power cables with 2.0mm and 2.5mm female power connectors.	
<a href="#">POE-PT151</a>	Planet 802.3af Power over Ethernet Injector	39.00
<a href="#">POE-PT151S-5V</a>	Planet 802.3af Power over Ethernet Splitter, 5V 2A	29.00
<a href="#">POE-PT151S-9V</a>	Planet 802.3af Power over Ethernet Splitter, 9V 1.3A	29.00
<a href="#">POE-PT151S-12V</a>	Planet 802.3af Power over Ethernet Splitter, 12V	29.00
<b>Planet 12 and 24 Port 802.3af Power Over Ethernet Injector Hubs</b>		
	The Planet POE-PT1200 and POE-PT2400 are 12-port and 24-port IEEE802.3af Power over Ethernet injector hubs that comply with IEEE802.3, IEEE802.3u and IEEE802.3af standards. Equipped with 12 or 24 10/100BASE-TX Fast Ethernet ports, the products support full 48VDC power for any remote IEEE802.3af powered device such as Wireless LAN Access Point's, IP phone's, and LAN Cameras. These hubs feature Web and Console management interfaces to allow administrators easy management access. The hubs can auto detect the power status on each port and show messages on both the Web and Console management interface.	
<a href="#">POE-PT1200</a>	Planet 12 Port 802.3af Power over Ethernet Injector Hub	259.00
<a href="#">POE-PT2400</a>	Planet 24 Port 802.3af Power over Ethernet Injector Hub	399.00



**Same day shipping**

Orders placed before 4:00 EST ship the same day.

