

802.11b Wireless Devices

Access your network from a distance through a wireless connection



Wireless networks are inherently flexible, providing convenience and reduced dependence on costly network cabling. Since 1997, when the IEEE published the 802.11 standard for wireless LANs, many businesses and individuals have shown interest in wireless networks. However, the 1Mbps-to-2Mbps bandwidth limit prompted many interested parties to wait for wireless technology

to mature. In 1999, the IEEE amended the original 802.11 standard to include 5.5Mbps and 11Mbps speeds while maintaining backward compatibility with the original standard. This new standard, known as 802.11b, prompted wider adoption of wireless LAN solutions and created a large market for 802.11b-compliant hardware.

This issue's Buyer's Guide consists of products in two general categories: wireless NICs and wireless network infrastructure devices, which are generally known as access points (APs). The APs in this Buyer's Guide cover the spectrum of environments from the home office to the enterprise. WildPackets' AiroPeek packet analyzer for 802.11b wireless LANs is the only software-related product in this Buyer's Guide.

Before you choose an 802.11b solution, assess your performance requirements and expectations. Wall and ceiling composition and other potential obstructions can contribute to interference, which can degrade performance of wireless

networks. You should look at relationships between speed and range and the environmental factors that can affect these relationships.

Theoretically, the 802.11b standard provides for a maximum speed of 11Mbps, but basic communication overhead guarantees that you'll never realize that speed at the application level. Furthermore, the 802.11b standard operates at 2.4GHz, so it might compete with cordless phones, microwaves, and other wireless networking architectures, such as Bluetooth. When your network devices encounter a certain level of interference, the devices cut back their transmission rates to 5.5Mbps or lower, if necessary. When interference is too great, wireless devices won't work at all.

The distance you are from an AP also directly affects the speed at which you can transmit. When a vendor advertises a device's maximum range, understand that such a distance is possible only at lower speeds and in the absence of physical obstructions. The range over

which you can effectively transmit at 11Mbps might be only a fraction of the maximum range inside a building that has average interference. If you're considering a large implementation, start with a small pilot program to identify potential interference trouble spots.

Users who share an AP also share an Ethernet collision domain. The more wireless users that share the hub, the more performance suffers. The number of users an AP will support varies depending on the type of user. If a vendor claims its device can support 50 users, find out whether that number is practical or theoretical. You might need to invest in several APs to support your mobile user base.

Interoperability is another area you should investigate. Compliance with the 802.11b standard should ensure compatibility between different products, but the potential exists for incompatibilities between different hardware manufacturers' devices. The Wireless Ethernet Compatibility Alliance (WECA) sponsors a logo program known as Wi-Fi to promote adherence to the 802.11b standard. Products with the Wi-Fi logo have passed a series of lab tests that confirm adherence to 802.11b standards. I suggest that you purchase products with the Wi-Fi logo. As with any product purchase, be sure to do your homework ahead of time and choose the vendor that can satisfy your performance, reliability, and service requirements.

—Tom Iwanski

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Editor's Note: The Buyer's Guide summarizes vendor-submitted information. To find out about future Buyer's Guide topics or to learn how to include your product in an upcoming Buyer's Guide, go to <http://www.win2000mag.com/buyersguide>. To view previous Buyer's Guides on the Web, go to <http://www.win2000mag.net/channels/products>.

Contact Information	Product Name	Price	Description
3Com 408-326-5000 877-949-3266 http://www.3com.com	3Com AirConnect 11 Mbps Wireless LAN Access Point	\$895	AP that acts as a bridge between the wired Ethernet backbone and wireless clients; supports as many as 63 simultaneous users at distances as far as 300 feet; the PowerBASE-T module can supply APs with low-voltage DC power over a 10Base-T connection
	3Com AirConnect 11 Mbps Wireless LAN PC Card	\$179	Provides seamless connectivity to the network throughout the entire company when paired with any Wi-Fi-certified AP
	3Com AirConnect 11 Mbps Wireless LAN PCI Card	\$289	PCI card that provides flexible network access when paired with any Wi-Fi-certified AP
Askey Computer 909-596-5180 http://www.askey.com	Access Point	\$470	Functions as a wireless hub; serves as a wireless Ethernet bridge between a wired network and wireless devices; provides throughput as fast as 11Mbps when paired with any Wi-Fi-certified wireless LAN card
	Wireless LAN Card	\$150	An 802.11b-based and Wi-Fi-certified wireless LAN card that provides wireless connectivity at Ethernet speeds
Colubris Networks 450-680-1661 http://www.colubris.com	CN100	\$995	Wireless LAN router for residential and small office/home office (SOHO) markets; supports the 802.11b standard; features DHCP and Point-to-Point Protocol over Ethernet (PPPoE), 40/128-bit Wired Equivalent Privacy (WEP) and Network Address Translation (NAT) support, and a built-in firewall; dual-port Ethernet architecture supports LAN- and broadband-based Internet access
	CN1000	\$1495	Wireless LAN router for small and midsize enterprises; supports the 802.11b standard; features Remote Authentication Dial-In User Service (RADIUS), DHCP, and PPPoE, 40/128-bit WEP and NAT support, and a built-in firewall; has dual-port Ethernet architecture with support for LAN and broadband-based Internet access
	CN1050	\$1795	Wireless LAN router that targets any size enterprise; supports the 802.11b standard; features RADIUS, DHCP, and PPPoE support, 40/128-bit WEP and NAT support, a VPN client and server with hardware-assisted encryption, and a built-in firewall; has dual-port Ethernet architecture with support for LAN- and broadband-based Internet access
EMTAC Technology marketing@emtac.com.tw (886) (3) 563-1688 http://www.emtac.com	quantum Family Wireless LAN A2588	Contact vendor for pricing	AP with a transmission rate as fast as 11Mbps; supports the 802.11b standard; features 40-bit WEP
Enterasys Networks 603-332-9400 http://www.enterasys.com	RoamAbout	\$999	A family of 11Mbps, Wi-Fi-certified indoor and outdoor wireless LAN products for enterprise networks; provides remote power, remote management, 40-bit WEP and 128-bit RC4 security, and RADIUS-based client authentication
EUMITCOM TECHNOLOGY sales@eumitcom.com (886) (3) 578-5717 http://www.eumitcom.com	WA3001A	Contact vendor for pricing	Wireless mini AP with a radio frequency (RF) function and a 10Base-T Ethernet LAN connectivity interface; features wireless-client and wired-client protocol frame filtering and wireless-client protocol frame relay; supports roaming between APs on the same subnet

Contact Information	Product Name	Price	Description
EUMITCOM TECHNOLOGY continued	WL11000-1	Contact vendor for pricing	PC Card that supports transmission rates as fast as 11Mbps over Ethernet; installs on various devices that have a PC Card Type II slot; features automatic fallback capability
	WN3501A	Contact vendor for pricing	Wireless USB adapter that supports the 802.11b standard; installs on various devices that have a USB interface; automatic fallback capability lowers data rate in a noisy environment; features RC4 wireless data encryption
Linksys 949-261-1288 800-546-5797 http://www.linksys.com	EtherFast Wireless AP + Cable/DSL Router with 4-Port Switch	\$289	Wireless AP with a DSL router; features EtherFast 10/100 4-port switch, true routing functions, NAT firewall security, IP Security (IPSec) and PPTP, PPPoE support, mapping, logging, IP filtering and forwarding, a demilitarized zone (DMZ), and an 802.11b Wi-Fi-compatible 11Mbps built-in wireless AP; can range as far as 492 feet indoors and 1640 feet outdoors
	EtherFast Wireless AP + Cable/DSL Router with PrintServer	\$289	Wireless device with a DSL router, wireless AP capabilities, and a print server; has one WAN port, one LAN port, one parallel printer port, and a PC Card slot to house a wireless PC Card; features NAT firewall security, IPSec and PPTP support, PPPoE support, mapping, logging, IP forwarding and filtering, and a DMZ
	Instant Wireless Network Access Point	\$249	Wi-Fi-compliant AP with two high-powered dipole antennas that extend the operating range as far as 820 feet outdoors at 11Mbps; features advanced user authentication and 64-bit WEP encryption; offers a built-in roaming feature to cascade to other APs
	Instant Wireless Network PC Card	\$129	An 802.11b Wi-Fi-compliant PC Card with 128-bit WEP encryption; features a range as far as 164 feet indoors and 820 feet outdoors at 11Mbps; can range as far as 1640 feet at lower speeds
	Instant Wireless PCI Adapter	\$49	Works with the Instant Wireless Network PC Card; serves as a PCI reader to let you access LAN resources; 802.11b-compliant; features 128-bit WEP encryption
	Instant Wireless USB Network Adapter	\$149	Provides 11Mbps transmission for desktop and notebook PCs, network access, and Internet access; 802.11b-compliant; features 64-bit WEP encryption
Proxim 510-346-8000 800-613-495 http://www.farallon.com	SkyLINE 11Mb Wireless PC Card	\$169	PC Card Type II that supports PC notebooks and Apple Computer's PowerBooks; features an 11Mbps transmission rate; 802.11b-compliant
	NetLINE Wireless Broadband Gateway	\$399	Lets a LAN simultaneously share a cable or DSL modem Internet connection and a standard 10/100 local Ethernet connection through a wireless 802.11b connection; features firewall protection; provides VPN support
SMC Networks 949-707-2400 800-762-4968 http://www.smc.com	SMC2602W	\$153	Wireless PCI Card that connects your desktop PC with an existing Ethernet installation
	SMC2632W	\$120	Wireless LAN PC Card that connects your desktop PC with an existing Ethernet installation
	SMC2652W	\$246	Wireless AP for business and home users; features a maximum operating range of 1500 feet; acts as a bridge between the wired network and wireless clients
	SMC2655W	\$240	Wireless AP for business and home users; operates at a maximum range of 1800 feet; acts as a bridge between a wired network and wireless clients

Contact Information	Product Name	Price	Description
SMC Networks continued	SMC2662W	\$138	Wireless USB adapter for the networked SOHO environment; connects with an existing Ethernet installation to support mobile users within an operating range of as far as 1800 feet
	SMC2682W	\$420	11Mbps wireless bridge that connects two separate networks; connects to an Ethernet backbone through an RJ-45 connector; supports point-to-point and point-to-multipoint network configurations; provides seamless connectivity to existing Ethernet networks
	SMC7004AWBR	\$269	Barricade wireless broadband router for home and small-business users; features a three-port dual-speed switch, 11Mbps wireless AP, integrated firewall security, and a built-in print server
	SMC7004WBR	\$285	Barricade wireless broadband router for home and small-business users; combines with a three-port dual-speed switch; features an 11Mbps wireless AP, integrated firewall security, and a built-in print server
Symbol Technologies 631-738-2400 800-722-6234 http://www.symbol.com	Spectrum24 High Rate 11Mbps PCI Card	\$299	Designed for devices with a PCI interface; Plug and Play (PnP) product that connects to the Spectrum 24 network
	Spectrum24 High Rate 11Mbps Wireless LAN Access Point	\$999	Integrates algorithms for voice and data prioritization, multimedia transmissions, and uninterrupted voice Quality of Service (QoS); features an embedded HTTP server; supports SNMP
	Spectrum24 11Mbps High Rate Wireless LAN PC Card	\$199	Provides wireless network connectivity; integrated antenna supports transmit-and-receive antenna diversity for maximum range and throughput; power-management capabilities ensure low power consumption
WildPackets 925-937-7900 800-466-2447 http://www.wildpackets.com	AiroPeek	\$1995	Packet analyzer for 802.11b wireless LANs; supports TCP/IP, AppleTalk, NetBEUI, and IPX network protocols; isolates security problems; decodes 802.11b Wireless LAN (WLAN) protocols; can accurately identify signal strength, channel, and data rates to analyze wireless network performance
Zcomax Technologies 562-926-4588 http://www.zcomax.com	AirRunner Wireless	\$119 to \$979	Operates at 2.4GHz ISM band for 2Mbps to 11Mbps wireless LAN applications; features an XI-300 PC Card, XI-600 PCI adapter, XI-700 USB adapter, XI-800 Compact Flash Card, XI-1000/XI-1450/XI-3000 wireless AP, and XL-450 AP station adapter
Zoom Telephonics 617-423-1072 800-631-3116 http://www.zoom.com	ZoomAir AP11 Access Point	\$399	Independently powered; supports roaming between multiple access points; features 128-bit WEP security, a transmitter and receiver, and an omni-directional antenna; Wi-Fi-compatible
	ZoomAir PC Card with Internal Antenna	\$139	Features a built-in antenna for a range as far as 300 feet indoors and 750 feet outdoors, Sygate Technologies Internet sharing software, and 128-bit WEP encryption; Wi-Fi-compatible
	ZoomAir PC Card with PCI Adapter and External Antenna	\$199	Features a built-in antenna for a range as far as 300 feet indoors and 750 feet outdoors, Sygate Internet sharing software, and 128-bit WEP encryption; Wi-Fi-compatible; also features external antenna capability
	ZoomAir Wireless LAN-to-LAN Bridge Kit	\$1995	System with two bridge units that include transmitter and receivers, two directional antennas, two coaxial and two RJ-45 cables, and mounting hardware; Wi-Fi-compatible