

Wireless Modems

Use carrier networks for wide-area wireless connectivity



Wireless modems let mobile users wirelessly connect to the Internet and to private networks over a large geographical area. You might not be familiar with wireless WANs because this branch of the wireless market hasn't garnered a lot of attention lately. So, let me start by positioning wireless WANs in the marketplace. Three generally accepted types of wireless networks exist: Personal Area Networks (PANs), LANs, and WANs.

PANs rely on Bluetooth technology to provide short-range wireless connectivity between devices and peripherals. A PAN user can connect from a range as far as 100 meters and at speeds as fast as 1Mbps.

LANs rely on 802.11 specifications to provide short-range wireless connectivity as well as higher speeds, roaming capability, and access to wired networks. The specifications committees have attracted much attention by revising flavors of 802.11 to enable bandwidths as high as 53Mbps.

WANs are for users who need a wireless leash that's longer than 100 meters. Because wireless WANs use the wireless networks of commercial carriers (e.g., Sprint, Verizon, and AT&T), a wireless modem-equipped laptop or PDA can connect from anywhere that you have digital coverage.

The field of wireless-modem vendors is small and became even smaller after Metricom announced that it was shutting down its Ricochet wireless data network. The

news was especially disappointing for Metricom's customers, who had become accustomed to 128Kbps Internet access, even though the coverage was spotty. At the time of this writing, the remaining alternatives are 19.2Kbps on Cellular Digital Packet Data (CDPD) networks and 14.4Kbps on Code Division Multiple Access (CDMA) networks. Two devices designed for Advanced Mobile Phone Service (AMPS) networks exist, but neither vendor chose to participate in this Buyer's Guide.

One future option will be General Packet Radio Service (GPRS), which has just begun its deployment in the United States. GPRS uses packet-based data transfer overlaid on circuit-switched networks. The big advantage of GPRS is a 53.6Kbps data rate and wide international availability. Cingular Wireless, Sprocket, and VoiceStream Wireless are testing GPRS, and Novatel Wireless is poised to release its Merlin G100 GPRS wireless modem.

Regardless of bandwidth, your primary consideration when you purchase a wireless modem should be security. Although CDMA technology is more resistant to eavesdropping than CDPD is, neither technology provides end-to-end security. To achieve such security, you need to consider a high-quality VPN solution.

Coverage is likely your next concern. In this regard, choosing a wireless modem is similar to choosing a cell phone. Examine coverage maps to ensure that you'll have connectivity where you need it. The Sierra Wireless AirCard 510, the only CDMA modem in this Buyer's Guide, gives you some of the best coverage in North American cities.

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However, the AirCard 510 works on only Sprint PCS and Bell Mobility digital networks and can't roam. Although roaming isn't as much of a concern on CDPD networks, you still need to see whether CDPD coverage meets your wireless connectivity needs. The <http://www.wirelessdata.org/maps/maps/4q99us.gif> Web site shows you CDPD coverage in the United States.

You'll probably choose a service and modem based on the portable device that you use. In this area, each vendor offers something

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unique. Novatel Wireless provides standard CDPD PC Cards and a range of CDPD modems designed for PDAs. Enfora provides a standard CDPD PC Card and the market's only CompactFlash (CF) wireless modem. Although Sierra Wireless's product line focuses on PC Cards, this company is the only vendor to offer modems for both CDPD and CDMA

networks. Make sure that the wireless modem you choose has drivers for your portable device.

Final items for you to consider include technical support availability, the features of the included connectivity software, and the details that make your mobile computing needs unique. For example, if you need maximum battery life from

your mobile device, scrutinize the power-saving features that the vendor offers. If you're frequently in areas that have weak signals, consider a power booster. Even with relatively few vendors in the wireless modem field, you have many options to meet your needs.

—Tom Iwanski

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Contact Information	Product Name	Price	Description
Enfora 972-633-4400 http://www.enfora.com	PocketSpider	\$349	Interfaces with PDAs' CF slot; lets you access mission-critical data from the corporate network
	Spider II	\$329	A Type II PC Card that operates with devices that run Windows 2000, Windows NT, Windows CE, Windows 9x, or Mac OSs; provides 19.2Kbps throughput; features data-encryption and error-correction capabilities for file transfers and messaging
Novatel Wireless 858-320-8800 888-888-9231 http://www.novatelwireless.com	Merlin CDPD	\$299	Wireless PC Card modem for Windows or Mac laptops and handheld PCs (H/PCs)
	Merlin G100	\$299	Credit card-sized PC Card modem; provides wireless data communications at speeds as fast as 53.6Kbps in GPRS coverage areas; provides circuit-switched data as fast as 14.4Kbps in Global System for Mobile Communications (GSM) coverage areas
	Minstrel 540	\$369	Enables secure two-way wireless access to email and the Internet; is compatible with Hewlett-Packard's (HP's) Jornada's bundled Pocket Inbox and Pocket Explorer applications
	Minstrel m500	\$369	Provides two-way wireless access to email, the Internet, and corporate databases; slides into the Palm m500 and Palm m505 handhelds and locks into the Palm Universal Connector
	Minstrel S	\$369	Based on Handspring's Springboard technology; snaps into the Visor's expansion slot and provides nationwide wireless WAN access; supports Palm OS enterprise productivity and synchronization programs; bundles with POP3 email and HTML Web-browsing software; features 2MB of flash memory
	Minstrel V	\$369	Provides native Internet connectivity, email access, and a link to mission-critical data
Sierra Wireless 604-231-1100 http://www.sierrawireless.com	AirCard 300	\$499	Wireless WAN card for notebooks and handheld devices; uses CDPD technology to provide wireless Internet access; switches between H/PCs running the Windows CE, Pocket PC, or Microsoft's H/PCs 2000 OS and notebooks running NT, Windows Me, or Win9x
	AirCard 510	\$399	A 14.4Kbps modem that works at 56Kbps with compression from BlueKite; connects a user's laptop directly to the Internet, intranet, corporate email, and other corporate applications without the need for a wireless phone or landline connection; works with Win2K, NT, Windows CE 3.0 Handheld PC, Win9x, and Pocket PC; features an internal antenna; usable anywhere in the United States with Sprint PCS coverage