

Staying Connected on the Go

Written by Brian Tankersley for *The Progressive Accountant*

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While most of us have a cell phone, many of us have not looked into using a cellular modem, or "air card" to connect a laptop or other mobile device to the internet. The performance and pricing of these devices has improved substantially over the last five years, and in some areas, the speed rivals that of broadband connections such as DSL.

I was reminded of the gains mobile connectivity has made in the last few years last Friday when I took a conference call in my car using my cell phone, netbook, and my EVDO modem using Microsoft LiveMeeting. When this important meeting ended, I was able to walk out and take my place with the coaches and other parents on the T-ball field without missing the action. (Go team!)

While the devices, carriers, and plans vary widely depending on your location, wireless broadband makes sense for many knowledge workers, and can offer the flexibility needed for mobile professionals to succeed in their personal and professional lives.

Carrier Networks and Coverage

One of the biggest challenges for those new to mobile broadband are the numerous acronyms which describe the data services offered by the major carriers. Some of these include:

- EVDO (Evolution, Data Only)- This is the high speed data service used on the Sprint and Verizon cellular networks. There are two versions of this standard currently deployed, Rev 0 (average 700 kbps down, 100K up), and Rev. A (average 1.2 mbps down, 300K up). These networks generally offer high speed coverage in more places, and use the older 1xRTT network (50-70kbps) in the few locations where EVDO service is not available.
- UMTS/HSDPA (Universal Mobile Telecommunications System) - AT&T has adopted the UMTS standard for its latest high speed data offerings. While this network has the potential to go faster than the EVDO networks of Sprint and Verizon in practice it is often slower.
- EDGE - T-Mobile, AT&T, and US Cellular, among others, operate EDGE networks in the United States. While EDGE services generally offer slower connections than the networks mentioned above, the coverage is also available in many places where EVDO and UMTS have not been deployed.
- Wi-MAX - Currently only available from Sprint in Baltimore and Portland, Oregon, Wi-MAX has the potential for much faster data throughput, and is so fast, it has been considered as a replacement for wired data connections to fixed locations (e.g. cable and DSL) by some carriers. Sprint's rollout of this technology has been plagued with delays and technical issues, and it is uncertain when (or if) a national Wi-MAX network will be available. Users are further constrained by the limited selection of handsets and data cards which use this new standard.

Devices

Just as cellular telephones are available in a variety of shapes and sizes, wireless data devices are also available using many different interfaces. These include:

- Integrated - This is a card which is installed or integrated directly on the system board of a laptop or other device by a manufacturer or computer technician. While these devices offer the convenience of being integrated into the internal workings of a laptop or PDA, they generally cannot be moved to another device without disassembling your computer. Since selecting and installing a device which is compatible with a laptop is challenging and could void your warranty, users should either purchase these devices when they order a new computer, or leave these devices to factory-trained IT personnel.
- CardBus - Cardbus is the most commonly used standard besides USB for expanding the capabilities of a notebook computer, and is still in use by most corporate IT departments and computer manufacturers. These devices are frequently referred to as "PCMCIA" devices since they have the same form factor as these legacy devices. Cardbus interfaces are generally not available on desktop computers.
- USB - Devices using USB, or Universal Serial Bus, have been available for some time, and are a very popular way to add mobile broadband to any device.
- ExpressCard - A relatively new hardware standard, these devices are available on many new laptops (including notebooks from Apple). Two different formats are available (Express Card/34 and Express Card/54).

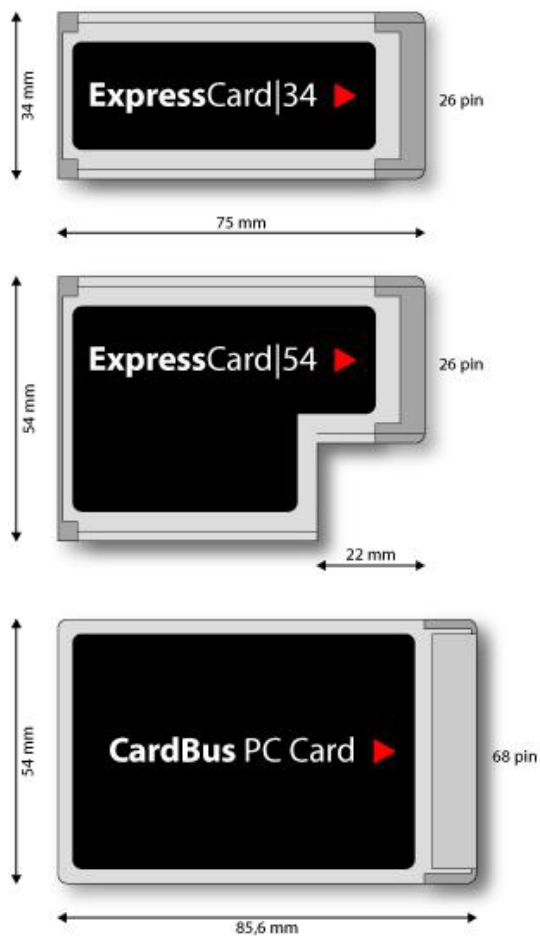


Figure 1 - Form Factor Comparison of Express Card and Cardbus Devices
(from <http://upload.wikimedia.org/wikipedia/commons/7/77/PCCard-ExpressCard.png>)

While many laptops are coming bundled with integrated wireless devices for connecting to cellular data networks, most of the devices require a subscription to a specific carrier's data network and a service

contract. When purchasing a device, you should carefully review the terms of the related data plan paying special attention to the vendors' definition of "unlimited".

Plans and Pricing

Just as wireless companies offer a range of cellular phone plans to meet the needs of different users, there are a variety of data plans available to meet the needs of different users. Unlike the old dialup internet services such as AOL or Earthlink, mobile broadband users do not need a separate internet service provider to get online - metered access to the internet is included with most plans.

Some key items to consider include:

- How much data will you use? - Most carriers offer a "limited" plan for \$30 or so a month (with metered service and high overage rates if you exceed the small usage allowance), and an "unlimited" plan with a maximum transfer allowances of 5GB/month for \$50-\$70 per month. Users should be careful to avoid downloading particularly large files (e.g. music and movies) using cellular networks, as you can easily exceed your monthly data allowances in a single day.
- Where will you use the service? - Just as carriers charge for "roaming" outside of a voice plan's normal coverage area, roaming data services can be extremely expensive. During a trip to Canada last year, I turned on my Sprint wireless card for five minutes to check my e-mail, and the roaming charges added up to \$45. Mobile workers will want to be careful that they do not accidentally incur huge fees when visiting new locations.
- Do you have other services with the data carrier? - Most communications companies will offer favorable discounts to existing customers when they add a wireless data plan to their "bundle" of services, so you may want to inquire about which discounts might be available to you when you speak to your provider.

There are many factors to be considered when selecting a cellular data provider. While many people would like to be told which network they should use for data, this simply doesn't make sense. All of my colleagues at K2 Enterprises have a cellular modem of some type from one of the major carriers, and the speed and availability of cellular data varies widely across the country. During a recent team meeting in rural Georgia, the location seemed to have better coverage on one network, but the same device had problems in a meeting in New York. Regardless of the device, carrier, or plan you select, mobile broadband can give you more flexibility to meet your professional and personal responsibilities when outside the office and help you achieve a more healthy balance between work and family.



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Brian Tankersley is a consultant based in Knoxville, Tennessee. Brian is a frequent speaker at continuing education courses on auditing and technology for K2 Enterprises, and is a senior faculty member with Becker Professional Review. Brian writes and publishes a nationally recognized blog on accounting and technology (www.cpatechblog.com) and frequently posts articles to the K2 blog on AccountingWeb.com.