

Wireless USB gadgets trickle into marketplace

By Stephen Shankland

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Wireless USB, a cable-free version of the ubiquitous device connection technology, is finally becoming a product and not just a promise.

Last week, Belkin announced a Wireless USB hub, and Lenovo debuted its T61p notebook, which will support Wireless USB as an option. This week, a raft of other PC and peripheral makers are expected to announce their products.

And not a moment too soon: [Wireless USB](#) (Universal Serial Bus) is arriving about a year later than [promised](#). And other wireless communication standards, [Bluetooth](#) and [802.11 Wi-Fi networking](#), are established already.

"It's time for Wireless USB to move from the PowerPoint slides to the real world," said iSuppli analyst Jagdish Rebelló.

If it lives up to its backers' hopes, it will spread in coming years to printers, hard drives, set-top boxes, cameras, digital music players and mobile phones. Several products, including PCs and hubs, are now in testing to receive the "Certified Wireless USB" logo, said Jeff Ravenscraft, president and chairman of the [USB Implementers Forum](#).

Chicken and egg

Like wired USB was more than a decade ago, Wireless USB is a classic example of a "chicken-and-egg" technology problem, where two parts of the industry depend on each other to make products useful. In the case of Wireless USB, the parties involved are, on the one hand, computer makers who must build Wireless USB support into their PCs and, on the other, device makers whose products are at the other end of those connections.

Wireless hub products could help jump-start the industry by bridging from the existing wired USB world to a wireless future, and Belkin competitors likely will announce their own products as soon as this week. Such systems typically have two components: a "dongle" that plugs into a PC's wired USB port and gives the computer Wireless USB abilities, and a hub with four wired USB ports for connecting current devices.

The dongle can communicate with future Wireless USB-enabled products and, of course, with the hub. And next-generation PCs with Wireless USB built-in will be able to communicate with the hub and whatever wired USB devices are plugged into it. Wireless USB has a maximum range of about 30 feet but isn't designed to penetrate walls.

Strong backers of Wireless USB include companies such as [Staccato Communications](#), [WiQuest Communications](#) and [Alereon](#).

iSuppli expects the market for Wireless USB radio-communication chipsets to grow from \$15 million in 2007 to \$2.6 billion in 2011. That growth matches the expected spread of the technology, from 1 million Wireless USB-enabled devices this year to 500 million in 2011.

Much of Wireless USB will work like today's USB, only without the cables. But Mike Krell, Alereon's director of communications and business development, likes to paint pictures of new possibilities as well. For example, a digital camera user could store photos to a separate portable hard drive with much more capacity than a flash memory card, or download them to a photo-printing kiosk without worrying about having the right cable or memory card support. The user could also display the pictures on a big-screen TV on the other side of a room.

"I want to put my camera on the coffee table and look at them on a 60-inch screen," Krell said, and not be tethered by a short cable.

Krell expects tier-one laptop makers to bring Wireless USB support to market this quarter, with the first peripherals--hard drives, laser printers and multifunction printers--arriving in the fourth quarter of the year. "Bleeding-edge" handheld devices such as cameras, phones and music players will probably be shown off in January at the Consumer Electronics Show. It should arrive in TVs and set-top boxes by the holiday 2008 season.

"2009 and 2010 will really be the ramp years," Krell said, predicting that Wireless USB eventually will grow as ubiquitous as today's wired USB.



Adoption rate

The spread of Wireless USB will depend in part on cost and educational issues.

Although Wireless USB will, to a certain extent, compete with Bluetooth--for example, in sharing images taken with a cell phone camera--next-generation Bluetooth 3.0 and Wireless USB are also allies. They both use the same underlying radio communication technology, called [ultra wideband, or UWB](#). That technology works by spreading low-power communication signals across a broad tract of the radio-frequency spectrum.

Because Wireless USB and Bluetooth 3.0 both use ultra wideband, device makers can use the same radios for either, aiding high-volume adoption. "Volume is going to drive cost down quickly," Ravencraft said.

Bluetooth is already established, but version 3.0 is expected to arrive in the market in about two years, Rebello said.

Ultra wideband has an inherent complication, though. Because of the breadth of ultra wideband's spectrum, the technology runs into different regulatory barriers in different countries. The United States, Japan, Europe and Korea have concluded which portions of spectrum ultra-wideband devices may use, and Canada and China are closing in on their requirements, Ravencraft said.

Another obstacle is education. Users must authorize connections by associating devices with PCs. One method is by plugging in a device with a USB cable, which triggers the computer to ask if the user wants to permit one-time or any future wireless connections. This method is useful for authenticating Wireless USB devices that lack a screen.

The second method, called "numeric compare," is useful for devices with screens. In it, the PC generates a number and sends it to the device wirelessly. The user checks to see if the numbers match, and if they do, the user can authorize that connection and, if desired, future connections.

But education also works in USB's favor. Much of the user experience, from beeping alerts and pop-up dialog boxes asking how to handle files, are identical going from conventional to Wireless USB. And life is easier for programmers, too, who can recycle the "driver" software that PCs need to communicate with various devices.

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People will learn about the workings of Wireless USB, though, Ravencraft predicted. The USB Implementers Forum is training sales staff at retailers such as Best Buy, is guaranteeing compatibility by permitting use of logos on certified products, and is working on advertising to help improve awareness, he said.

Lenovo expects the Wireless USB learning curve to be easy. "It should be plug-and-play," said Rajat Aggarwal, worldwide marketing manager for the company's T Series Thinkpad products. The company still is assessing how widely to support Wireless USB across its product lines, but it won't be as ubiquitous as 802.11 wireless networking, he said.

Soon the market will begin deciding how fast to adopt Wireless USB. USB allies are hoping to toot their horns a bit to get things started.

"We're really on the cusp of seeing our first end-user products certified," Ravencraft said. "We're going to make hay about it."

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