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# The First Bluetooth

EDITOR RATING: EXCELLENT 0 COMMENTS

an interesting glimpse into the future of the Bluetooth.



Bluetooth technology.

**COMMENTS** 



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BY LES FREED For over a year, member companies of the Bluetooth Consortium have

been telling us how the Bluetooth's fast, easy wireless connection capabilities will

is the first and only shipping Bluetooth product we've seen so far, and it provides

The Bluetooth (named for a tenth-century Danish king) is an ambitious wireless

communication specification developed by a consortium of companies including

Ericsson, IBM, Intel, Lucent, Microsoft, Motorola, Nokia, 3Com, and Toshiba. Over

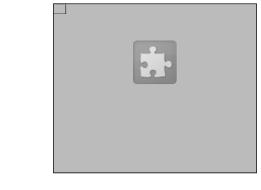
The Bluetooth defines a specification for a small-form-factor, low-cost radio link between portable PCs, wireless phones and portable devices such as PDAs, MP3

1,300 additional companies have signed up to develop products based on

players, and digi- tal cameras. The card is not computer-centric; it can be implemented in a wide range of devices from cordless phones to notebook

change the world of portable computing. The Toshiba Bluetooth PC Card (\$199 list)

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The Bluetooth uses microwave radio to transmit data over short distances--about 33 feet--at up to 721 Kbps. The Bluetooth isn't being touted as a replacement for high-speed wired connections like USB or IEEE 1394 but rather as a technology of convenience. If everything goes according to plan, Bluetooth devices will be able to recognize one another and create connections with no user intervention or cables.

computers to wire- less headsets. The Bluetooth is a juggling act of sorts; the balls in the air include performance, power consumption, hardware cost, and reliability.

Bluetooth devices can identify themselves to one another, and each device contains one or more profiles that tell the other devices what it is and what it can

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the earphone to talk on the phone or use your PC to connect to the Internet through the digital phone--without wires, setup, or effort.

Bluetooth is similar in some ways to the 802.11 wireless Ethernet standard. Both operate in the 2.4-GHz unlicensed radio band, and there has been some concern that Bluetooth and 802.11 may interfere with each other. Our initial testing proved otherwise; we used the Toshiba Bluetooth cards in the presence of several 802.11 wireless LANs with no apparent problems. As a matter of fact, we even installed the Toshiba Bluetooth PC Card and a Cisco Aironet 802.11 wireless card in the same Sony laptop and encountered no problems.

The Toshiba Bluetooth PC Card looks remarkably like an 802.11 wireless LAN card. A small plastic antenna protrudes out the PC Card slot, and a single LED indicates when the card is transmitting and receiving. Toshiba includes a complete suite of software (for Microsoft Windows 98 SE and Windows Me only) with the card. Driver installation is simple but time-consuming; it took us a total of 30 minutes and three re- boots to install the driver and application software from the two CD-ROMs.

The Toshiba Bluetooth Suite provides low-level hardware drivers and a Windows Explorer extension called Bluetooth Neighborhood. Similar to the Windows Network Neighborhood, the Bluetooth Neighborhood shows all of the Bluetooth devices within range, along with a list of services available from the remote devices.

To create a connection between two Bluetooth PCs, you drag a service icon onto the remote computer's icon. Services include LAN, dial-up networking, and faxing. If the remote computer provides the requested service, you're connected and ready to go. The Bluetooth Neighborhood also provides a quick-and-dirty filetransfer method: Users simply drag and drop files from one machine to another within the Bluetooth Neighborhood.

Another software package, called SPANworks, lets up to seven computers participate in an ad hoc network. SPANworks users can share files, conduct meetings, watch presentations, and chat using the keyboard. We were surprised that SPANworks doesn't include a voice chat feature, since most of us can talk a lot faster than we can type.

Toshiba's offering takes Bluetooth about as far as you can go in a PC-to-PC environment. Aside from the installation hassle, the card was installed and worked in several test PCs, including old and new IBM ThinkPads, a Toshiba Tecra, and a Sony VAIO. We didn't do any formal range testing, but our test PCs could communicate up to about 30 feet--exactly the range claimed by Toshiba.

We'll be watching closely to see how Toshiba's--and other vendors'--Bluetooth cards work in conjunction with other Bluetooth devices such as phones, printers, print servers, and LAN access points--as soon as we see some. At the recent Comdex show in Las Vegas, the Bluetooth pavilion was loaded up with member companies showing Bluetooth devices, but most of them gave us a noncommittal "next year" when pressed for a delivery date.

**ВАСК ТО ТОР** 

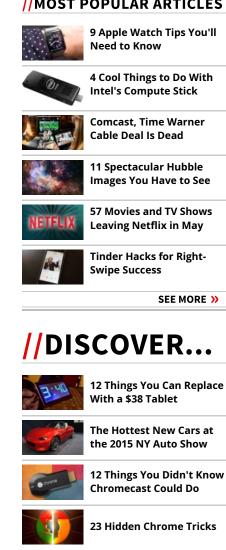
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## **BY LES FREED**

Les has been a contributing editor at PC Magazine since 1994 and a frequent contributor since 1990. Before joining PC Magazine, Les was founder and CEO of Crosstalk Communications, developers of the popular Crosstalk data...

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