

What Is Bluetooth?

Cables are one of the most annoying aspects of using modern technology. We have all experienced the irritation of being tangled in cables connecting a TV, DVD (digital video/versatile disk), computer or printer. However, Bluetooth® technology is designed to rescue us by being a cable-replacement technology.

Bluetooth is a technical industry standard that makes communication between wireless devices—such as a keyless car entry fob, a wireless-enabled laptop or desktop computer, and computer peripherals like a mouse or a printer—possible. A single Bluetooth-enabled wireless device is capable of many applications, including making phone calls, synchronizing data with desktop computers, sending and receiving faxes, and printing documents.^{1,2}

Today, a device in someone's ear may be a hearing aid, it may be part of a personal cell phone, or it may be both a hearing aid and a Bluetooth-enabled device.² For example, a person may be wearing an ELI (Ear-Level Instrument) DirX manufactured by Starkey Laboratories.³ Starkey Laboratories is a pioneer among Bluetooth hearing aid gear.^{2,3}

The ELI DirX is one of the smallest audio Bluetooth devices on the market, with dimensions of 27 mm x 16 mm x 11 mm and a weight of 5.2 grams. Three pins connect it to any behind-the-ear hearing aid that uses a Europlug standard direct audio input (DAI) connector.³ Because of the nature of the digital transmission of the signal between the devices (like a hearing aid and telephone), it is not subject to the same sources of interference as other types of wireless transmission, such as analog FM or analog inductive transmission.³ Because the cell phone is not placed against the head and hearing aid, like in conventional cell phone operation, acoustical feedback with the hearing aids is eliminated.

The ELI DirX module is easy to use. It has its own power source and does not drain the power from the wearer's hearing aid. When the cell phone rings, it rings through the hearing aid itself using the ELI DirX module rather than from the phone. To answer the cell phone, the user presses a button on the ELI DirX module. A microphone on the bottom of the ELI DirX receives the wearer's voice. If the caller hangs up, ELI DirX disconnects automatically. If, however, the wearer wishes to hang up, he or she simply presses the ELI DirX module button.³



FREE AT LAST: Bluetooth technology makes communication easier and cable-free.

Hearing aids that use a telecoil but do not have DAI capability use an alternative coupling system for the ELI DirX module. For alternative coupling, the module attaches to an Adapted Neck Loop through a specialized ELI DirX connector. This alternative inductive coupling is especially important for the large number of wearers of custom hearing aids with telecoils, which are not compatible with the Europlug connector.³

Bluetooth also is being used to help hearing-impaired listeners with applications other than hearing-aid-to-cell-phone connection. For example, wireless computer CD/DVD audio and VOIP communications connections are made with the user's personal hearing aid. Ultimately, any audio signal—television, stereo, MP3 player, or live conversation through a microphone—can be routed to a Bluetooth transmitter and received by a Bluetooth receiver attached to a person's hearing aid.

For people who are not hearing impaired but need hands-free communication, a Bluetooth system is being made for compatible mobile phones. Extremely small and lightweight, it connects directly to a custom earpiece for clear, hands-free telephone communication. Additionally, Bluetooth use is growing. In 2005 there were 852 products listed that used Bluetooth technology, an increase from 447 in 2003 and 591 in 2004.⁴ Last November, the Bluetooth Special Interest Group announced that sales of Bluetooth products had reached the 1 billion mark, an amazing milestone for such a young technology.

REFERENCES

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