

# **An Introduction to Bluetooth**

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## **Introduction**

Bluetooth, the new technology named after the 10th Century Danish King Harold Bluetooth, is a hot topic among wireless developers. It was designed to allow low bandwidth wireless connections to become so simple to use that they seamlessly integrate into your daily life. Bluetooth is a proposed Radio Frequency (RF) specification for short-range, point-to-multipoint voice and data transfer. Bluetooth can transmit through solid, non-metal objects. Its nominal link range is from 10 cm to 10 m, but can be extended to 100 m by increasing the transmit power. It is based on a low-cost, short-range radio link, and facilitates ad hoc connections for stationary and mobile communication environments.

A simple example of a Bluetooth application is updating the phone directory of your mobile phone. Today, you would have to either manually enter the names and phone numbers of all your contacts or use a cable or IR link between your phone and your PC and start an application to synchronize the contact information. With Bluetooth, this could all happen automatically and without any user involvement as soon as the phone comes within range of the PC! Of course, you can easily see this expanding to include your calendar, to do list, memos, email, etc.. This is just one of many exciting applications for this new technology! Can you imagine walking into a store and having all the sale items automatically available on your cell phone or PDA? It is a definite possibility with Bluetooth.

The Bluetooth specification is an open specification that is governed by the Bluetooth Special Interest Group (SIG). The Bluetooth SIG is lead by its five founding companies and four new member companies who were added in late 1999. These nine companies form the *Promoter Group* of the Bluetooth SIG.

**Promoter Group of the Bluetooth Special Interest Group**

<b>Founding Companies</b>	<b>New Members</b>
Ericsson	3Com Corporation
IBM Corporation	Lucent Technologies
Intel Corporation	Microsoft Corporation
Nokia	Motorola Inc.
Toshiba Corporation	

More than 1200 additional companies are members of the Bluetooth SIG. The magnitude of industry involvement should ensure that Bluetooth becomes a widely adopted technology. The first Bluetooth products should begin to appear in the beginning of 2001.

**The actual definition of Bluetooth given by The Bluetooth group:**

"What will Bluetooth wireless technology deliver to end users? It will enable users to connect a wide range of computing and telecommunications devices easily and simply, without the need to buy, carry, or connect cables. It delivers opportunities for rapid ad hoc connections, and the possibility of automatic, unconscious, connections between devices. It will virtually eliminate the need to purchase additional or proprietary cabling to connect individual devices. Because Bluetooth wireless technology can be used for a variety of purposes, it will also potentially replace multiple cable connections via a single radio link. It creates the possibility of using mobile data in a different way, for different applications such as "Surfing on the sofa", "The instant postcard", "Three in one phone" and many others. It will allow them to think about what they are working on, rather than how to make their technology work."

**Bluetooth Characteristics**

Bluetooth characteristics include:

- Operates in the 2.4 GHz Industrial-Scientific-Medical (ISM) bands.
- Uses Frequency Hop spread spectrum, which divides the frequency band into a number of hop channels. During a connection, radio transceivers hop from one channel to another in a pseudo-random fashion.
- Supports up to 8 devices in a piconet (two or more Bluetooth units sharing a channel).

- Built-in security.
- Non line-of-sight transmission through walls and briefcases.
- Omni-directional.
- Supports both synchronous and asynchronous services; easy integration of TCP/IP for networking.
- Regulated by governments worldwide.

## **Applications**

Bluetooth will enable users to connect to a wide range of computing and telecommunications devices without the need to buy, carry, or connect cables. It delivers opportunities for rapid, ad hoc connections, and in the future, possibly for automatic, unconscious, connections between devices. Bluetooth's power-efficient radio technology can be used in many of the same devices that use IR

- Phones and pagers
- Modems
- LAN access devices
- Headsets
- Notebook, desktop, and handheld computers

## **Conclusion**

As you can see, the Bluetooth specification is definitely real and is being widely adopted by industry leaders. After two years bluetooth devices may replace most of the things in day to day life. Some of the Bluetooth devices is on the way to come into market. The future is Bluetooth technology. This article is a collection of materials through internet. More information can be available in the URL <https://www.engpaper.com>

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