



BLUETOOTH Frequently Asked Questions

Q: What is Bluetooth?

A: Bluetooth is the name for a short-range radio frequency (RF) technology that operates at 2.4 GHz and is capable of transmitting voice and data. The effective range of Bluetooth devices is 32 feet (10 meters). Bluetooth transfers data at the rate of 1 Mbps, which is from three to eight times the average speed of parallel and serial ports, respectively.

Q: What are the Bluetooth Classes?

A: The Class specifies the operative range of transmission and the Transmission Power.

Class	Power(mW)	Power (dBm)	Distance (mt)
1	100	20	100
2	2.5	4	10
3	1	0	1

Q: Why is the technology called Bluetooth?

A: The heart of the Bluetooth brand identity is the name, which refers to the Danish king Harald "Bluetooth" Blaataand who unified Denmark and Norway. In the beginning of the Bluetooth wireless technology era, Bluetooth was aimed at unifying the telecom and computing industries.

Q: How is Bluetooth used?

A: Bluetooth can be used to wirelessly synchronize and transfer data among devices. Bluetooth can be thought of as a cable replacement technology. It is popular for connection in Audio systems, Palmtop computers, Cellular phones and also to access a network or the Internet with a Laptop computer

Q: What is the Bluetooth EDR?

A: Enhanced Data Rate (EDR) is a method of extending the capacity and types of Bluetooth throughput, providing better support for multiple connections, and lowering power consumption. The Data rate is 3 Mbps for Version 2.0 + EDR versus 1 Mbps for the Version 1.2.



Q: What is A2DP?

A: Advanced Audio Distribution Profile (A2DP) describes how stereo quality audio can be streamed from a media source to a sink. The profile defines two roles of an audio source and sink. A typical usage scenario can be considered as the "Walkman" class of media player. The audio source would be the music player and the audio sink is the wireless headset. A2DP defines the protocols and procedures that realize distribution of audio content of high-quality in mono or stereo ACL channels.

Q: What is AVRCP?

A: Audio/Video Remote Control Profile (AVRCP). AVRCP is designed to provide a standard interface to control TVs, Hi-fi equipment, etc. This profile is used to allow a single remote control (or other device) to control all the A/V equipment that a user has access to. AVRCP defines how to control characteristics of streaming media. This includes pausing, stopping, and starting playback and volume control as well as other types of remote control operations.

Q: How secure is a Bluetooth network?

A: Bluetooth is extremely secure in that it employs several layers of data encryption and user authentication measures. Bluetooth devices use a combination of the Personal Identification Number (PIN) and a Bluetooth address to identify other Bluetooth devices. Data encryption (i.e. 128-bit) can be used to further enhance the degree of Bluetooth security. The transmission scheme (FHSS) provides another level of security in itself. Instead of transmitting over one frequency within the 2.4 GHz band, Bluetooth radios use a fast frequency-hopping spread spectrum (FHSS) technique, allowing only synchronized receivers to access the transmitted data.

Q: Will other RF (Radio Frequency) devices interfere with Bluetooth Devices?

A: No. Bluetooth radios operate on the unlicensed 2.4 GHz (Industrial, Scientific and Medical) frequency band that is shared among other devices (microwave ovens, cordless phones, garage door openers, etc.). Bluetooth radios switch frequencies at such a rapid pace (1,600 times per second) and the data packets are so small that interference from other RF sources is highly unlikely. Bluetooth is a robust communication system.



Q: Will Bluetooth and Wireless LAN (WLAN) interfere with each other?

A: No, both Bluetooth and WLAN can co-exist. Since Bluetooth devices use Frequency Hopping and most WLANs use Direct Sequence Spreading techniques they each appear as background noise to the other and should not cause any perceivable performance issues.

Q: What is the data throughput speed of a Bluetooth connection?

A: Bluetooth transfers data at a rate of 721 Kbps, which is from three to eight times the average speed of parallel and serial ports, respectively. This bandwidth is capable of transmitting voice, data, video and still images.

Q: What is the range of Bluetooth transmitter/receivers?

A: Bluetooth is designed for very low power use, and the transmission range will only be 10 m, about 30 ft. High-powered Bluetooth devices will enable ranges up to 100 m (300 ft). Considering the design philosophy behind Bluetooth, even the 10m range is adequate for the purposes Bluetooth is intended for. Later versions of the Bluetooth spec may allow longer ranges.

Q: What kind of encryption will be used for Bluetooth security?

A: The Bluetooth specification 1.0 describes the link encryption algorithm as a stream cipher using 4 LFSR (linear feedback shift registers). The sum of the width of the LFSRs is 128, and the spec says "the effective key length is selectable between 8 and 128 bits". This arrangement allows Bluetooth to be used in countries with regulations limiting encryption strength, and "facilitate a future upgrade path for the security without the need for a costly redesign of the algorithms and encryption hardware" according to the Bluetooth specification. Key generation and authentication seems to be using the 8-round SAFER+ encryption algorithm. The information available suggests that Bluetooth security will be adequate for most purposes; but users with higher security requirements will need to employ stronger algorithms to ensure the security of their data.



Q: Is Bluetooth practical for use with mobile devices?

A: Yes. One concern for mobile computing users is power consumption. Bluetooth radios are very low power, drawing as little as 0.3mA in standby mode and 30mA during sustained data transmissions. Bluetooth radios alternate among power-saving modes in which device activity is lowered to maximize the mobile power supply.

Q: What is Bluetooth Host?

A Bluetooth Host is a computing device, peripheral, cellular telephone, access point to PSTN network or LAN, etc. A Bluetooth Host attached to a Bluetooth Controller may communicate with other Bluetooth Hosts attached to their Bluetooth Controllers as well.

Q: Are different brands of Bluetooth products compatible?

A: Yes. They have to. The Bluetooth Logo Certification Program requires Bluetooth products to interoperate with products manufactured by other vendors; those products that don't interoperate will not be allowed to use the Bluetooth logo.

Q: Where can I find more information on Bluetooth?

A: The following web sites are useful Bluetooth resources:
[http:// www.bluetooth.com](http://www.bluetooth.com)
<http://www.oi-us.com>