Socket Bluetooth Card

Theory of Operation

Bluetooth is an open standard developed by four OEM's (Ericsson, Nokia, IBM, and Toshiba) and one semiconductor company (Intel). The standard aims to define a globally accepted short distance (10m/30ft) radio communication protocol using a part of the radio frequency that is unlicensed (i.e. free to use) in most parts of the world. Bluetooth's key characteristic is that enabled devices can detect and communicate with other enabled devices within range – all without conscious user intervention.

The Socket Bluetooth Card is a small Compact Flash size card that plugs into any standard CF+ socket on Pocket PCs, PDAs, etc. It contains an interface that meets of the standards for a Compact Flash card. The card operates like an I/O device to the host processor. It also contains a radio transmitter and receiver that meets the requirements defined in the standards published by the BlueTooth Special Interest Group.

The combination of the Compact Flash interface, radio, along with associated BlueTooth software stack, and application software provides a convenient way for the host platform to wirelessly interact with various devices such as mobile phones, printers, etc.

The radio part of the Socket card is specified in the BlueTooth open standard. It operates in the frequency band of 2402 to 2480 Mhz at a radiated power level of .001 watt. It radiates using Gaussian Frequency shift keying and uses frequency hopping spread spectrum on 79 equally spaced channels. All channels are 1 Mhz apart and hop through the channels using a pseudo-random hopping sequence. The device hops from channel to channel at a rate of 1600 hops per second. The radio is completely controlled by the associated software stack and application program. The stack controls the hopping sequence, and protocols for establishing a connection with other BlueTooth devices in the near vicinity.

RF energy is radiated from the card through an antenna that is completely contained within the card with no ability to attach an external antenna.

The current BlueTooth specification version 1.1 is available to anyone at no cost from the BlueTooth SIG, Inc. website at http://www.bluetooth.com/ . The specification is in two sections, the CORE specification and the Profile specification. Both sections together are approximately 1500 pages.