

(referring to Block Diagram)

The Link is designed to be attached to the RS-232 serial port of a personal computer ("PC"), and its purpose is to receive and transmit data via a 915 MHz radio link to a control and display unit worn on a person's wrist ("Wrist unit"). It is part of the FitSense Technology model FS-1 system.

The entire Link circuit is built on a single printed circuit board and is connected to a PC serial port through an attached cable terminated with a DB-9 female connector. The unit is powered from the RS-232 RTS and DTR lines from the PC, through the linear Voltage Regulator. A battery of two AA cells and a switched-capacitor type DC-DC converter IC will turn on and power the Link if the Voltage Regulator output is insufficient. An RS-232 Transceiver IC converts the serial signal levels between the RS-232 standard and the Link's 3.3 volt signal levels.

The UART circuit is a microprocessor programmed to operate as a UART and buffer for the RS-232 serial data to and from the PC. It communicates directly with the main Microprocessor. The Microprocessor interprets and formats the serial data stream from both the PC and the 915 MHz Transceiver. The bit stream is formatted to conform to the FS-1 network protocol and applied to the transmitter input of the 915 MHz Transceiver. The Microprocessor also receives data from the 915 MHz Transceiver through a receive bit stream. In addition, the Microprocessor monitors the battery and operates a blue LED status indicator.

The 915 MHz Transceiver is a RF Monolithics TR1000, with its necessary passive parts. It is a SAW-based device using an ASH (Amplifier Sequenced Hybrid) receiver with no local oscillator. The Transceiver operates in A1 mode (OOK), with a transmission data rate of approximately 9600 Bauds. The antenna is printed on the Link's circuit board that contains the Transceiver and other circuits. There are no adjustable parts in the Link, and no tune-up procedure.