

## **Theory of Operation**

The EUT (AirHub 100) is a wireless transceiver operating in the 2.4 GHz ISM band. It is comprised of two PWA's; a digital "motherboard", which contains a CPU, memory, power supply, and Ethernet circuitry, and a radio card. The two PWA's connect together via a mini-PCI type connector. The EUT is powered by either a AC/DC wall adapter or via one of its RJ-45 connector ports (i.e. Power over Ethernet). The EUT has two permanently attached dipole antennas. The peak gain of the antenna is 2 dBi. Under normal conditions, the user should position the AirHub so that it is a minimum of 20 cm from his/her body. This and other notices are listed in the users manual.

The EUT employs DSSS technology and transmits/receives under a half-duplex scheme. The transceiver operates from 2412 MHz to 2462 MHz according to the IEEE 802.11b specification. The data rates supported are 1 Mbit (DBPSK), 2 Mbit (DQPSK), 5.5 Mbit (CCK), and 11 Mbit (CCK). The symbol rates are 1, 1, 1.375, and 1.375 MHz respectively. The 1 and 2 Mbit modes use an 11 chip Barker sequence for spreading. For CCK modulation, the spreading code length is 8 and is based on complementary codes. The CCK chipping rate is 11 Mchip/s.