Operation Description

FCC ID : PY3ME103

The EUT is use IEEE 802.11b DSSS (Direct Sequence Spread Spectrum) technical.

IEEE 802.11b data is encoded using DSSS (direct-sequence spread-spectrum) technology. DSSS works by taking a data stream of zeros and ones and modulating it with a second pattern, the chipping sequence. In 802.11, that sequence is known as the Barker code, which is an 11-bit sequence (10110111000) that has certain mathematical properties making it ideal for modulating radio waves. The basic data stream is exclusive OR'd with the Barker code to generate a series of data objects called chips. Each bit is "encoded" by the 11-bit Barker code, and each group of 11 chips encodes one bit of data.

The wireless radio generates a 2.4-GHz carrier wave (2.4 to 2.483 GHz) and modulates that wave using a variety of techniques. For 1-Mbps transmission, BPSK (Binary Phase Shift Keying) is used (one phase shift for each bit). To accomplish 2-Mbps transmission, QPSK (Quadrature Phase Shift Keying) is used. QPSK uses four rotations (0, 90, 180 and 270 degrees) to encode 2 bits of information in the same space as BPSK encodes 1.

CCK (Complementary Code Keying) to achieve 11 Mbps, it used a series of codes called Complementary Sequences. Because there are 64 unique code words that can be used to encode the signal, up to 6 bits can be represented by any one particular code word (instead of the 1 bit represented by a Barker symbol). The CCK coding is applied for increasing the data rate, the bit rates are 1,2,5.5.11 Mbps, the symbol rates are 1,1,1.375,1.375Mbps, the chip rates are always 11Mbps.