

Operation Description

FCC ID : P270K3A

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.

Because the baseband processor (ACX100) be used the TI solution. The ACX100 proprietary application of PBCC™ (Packet Binary Convolutional Code) technology provides data rates up to 22Mbit/s. The ACX100 MAC architecture supports even higher data rates. So, the 802.11b should be asserted 802.11b+.