

Bit rate	Chip/Symbol rate	Bit/Symbol rate	Chip/Bit rate
1Mbit/sec	11	1 DBPSK	11
2Mbit/sec	11	2 DQPSK	5.5
5.5Mbit/sec	8	4 CCK	2
11Mbit/sec	8	8 CCK	1

1) For 1 and 2 Mbit/sec mode

The theoretical process gain is $10 \cdot \log(11) = 10\text{dB}$

2) For 5.5 and 11 Mbits/sec mode

The theoretical process gain is $10 \cdot \log(8) = 9\text{dB}$

The modulation of our system is compliant to IEEE 802.11b for all signaling rates.

For 5.5 and 11Mbits/sec mode, the modulation technique is CCK (Complementary Code Keying).

For this modulation technique the symbol length is 8 chips. However, the 8 chips are not a fixed spreading sequence as is the 1 and 2 Mbit/sec mode.

These 8 chips, applied in a QPSK modulation, use 256 unique patterns out of 65536 different possible patterns, whereby each pattern represents a specific data sequence (4 or 8 bits).

Due to the fact that only 256 code sequences out of the 65536 code sequences that are available are used, there is coding gain.

Therefore the processing gain of a CCK system consists of spreading gain and coding gain together.

As such system does meet the FCC requirement for a process gain of minimal 10dB.