

ABSTRACT

IEEE 802.11n is a Wifi standard with SISO-OFDM system which is able to transmit data up to 150Mbps. IEEE 802.11n uses 5 Ghz carrier frequency and has wider bandwidth than others Wifi standard. However, the transmission process of data with high capacity is very vulnerable to factors that cause error during transmission such as white noise and multipath fading.

A modulation format with the addition of FEC technique required to produce a system that can transmit data effectively and is able to suppress the quantity of the BER as a result of the large data delivery and fast. FEC type that will be used in this final assignment is the LDPC code. The decoding method, iteration of the decoding, and coderate that used in the LDPC coding can affect the value of BER is obtained. Encoding method used is Lower Triangular Shaped Based and decoding method used is Bit Flipping.

From the simulation that have been conducted, showed that the performance of the system using LDPC code with coderate $1/2$, $2/3$, and $3/4$ resulted in better performance than uncoded. On the target BER of 10^{-4} with SNR value that is generated by LDPC $1/2$ is 18.515 dB, LDPC $2/3$ = 22.78 dB, and LDPC $3/4$ = 23.24 dB. However the value of SNR from uncoded is 23.622 dB. And from the three of that coderate, coderate $1/2$ that produce the best system performance. The number of iteration decoding 10 times is better than 20 times and 30 times.

Keyword : Wifi, LDPC, BER, coderate.