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,

itteration 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.

ii