

Abstract

OFDM can provide high data rate and withstand from channel equalization, but it has some weaknesses in the system of PAPR (PARR system). Many techniques had been proposed to reduce PAPR, such as clipping and windowing, but it had distortion. To overcome this problem, this thesis used LDPC as PAPR reductor. Using LDPC, there is no signal distortion because of signal clip as a result of cutting of the signal produced by OFDM; and there is no additional block system which made it complex.

In this thesis, LDPC codeword was generated using lower triangular shaped based method. LDPC codeword which had dominant bit '0' was used to manage the constellation diagram. The impact of channel coding to the PAPR had been simulated, comparing among the LDPC, Convolutional Code and non channel coding. In addition, the arrangements of constellation diagram using gray code and non gray code by placing the dominant bit '0' symbol in the inner of constellation were carried out.

The results of the experiments showed that the value of PARR from LDPC code with code gray was higher than the convolutional code with code gray. The LDPC code has PAPR value of 12,751 dB and the convolutional code has 12,551 dB. For mapper without code gray, LDPC code with non-code gray has PAPR value of 12,231 dB and the convolutional non-code gray has 14,255 dB.

Keywords : OFDM, LDPC, PAPR