ABSTRACT

Power Line Communication (PLC) is data transmission system by exploiting power cable as transmission media. Elementary principle of this technology is injecting data signals into electricity channel at intermediate frequency 1 - 30 MHz[4]. In practice, PLC is confronted with constraints that are complicated enough. This thing is caused because PLC takes place directly at network where most of electrical equipment of household is operated; as a result level noise at network will become height. Of course this thing will influence quality of delivery of voice and data, so that it required a method or technique that is capable to give solution of this problem.

To overcome the frequency selective fading in PLC channel, OFDM (Orthogonal Frequency Division Multiplexing) is used. The using of OFDM will make frequency selective fading change into flat fading, so the process for overcoming the fading effect is easier. Beside the ability to overcome multipath fading, it also makes the use of bandwidth more efficient. The channel coding technique is needed to overcome random error which resulted by multipath fading and to overcome. This final project analyzes performance LDPC on OFDM for powerline communication.

The analyzes at this final task is about the compare number of bit ‘1’ effect, the effect of variant of code rate value, and number of decoding iteration. The simulation result showed that LDPC Coded OFDM system with a few number of bit ‘1’ gives coding gain 6,9 dB, with small coderate gives coding gain 11,1 dB, and with more iteration of decoding gives coding gain 7,3 dB.