

## ABSTRACT

Along with the growth of era, wireless communication system claimed to provide high data rate service with reliable Quality of Service (Minimum BER and Minimum SNR). The availability of high data rate service make communication provider able to provide services such as sending data, video streaming, video conference, or other services which need real time access.

MC-CDMA system is a combining technique, which combine multi carrier variant access with OFDM (Orthogonal Frequency Division Multiplexing). The MC-CDMA usage is because of the single carrier CDMA inability to solve the selective fading frequency. The usages of Multi Carrier modulation make frequency selective fading into flat fading so that the analyses becoming easier than in selective fading. Besides of the ability in handling the multipath fading, Multi Carrier can also make bandwidth more efficient.

Channel coding technique is a technique which protecting info bit from noises. Channel coding make the bit transfer error in receiver lessen than without channel coding. There are some channel coding in this time, one of them is LDPC code.

LDPC is one of the most suitable techniques for MC-CDMA system. It is said that LDPC code is more suitable in MC-CDMA because there is a fourier transform. In MC-CDMA, fourier transform has a function as an orthogonal maker. In LDPC fourier transform has a function to lessen the complexity in decoding process. LDPC code define as a sparse parity check matrix and hopefully by sending high bit rate data the probability of bit error is lessen. Called as Low Density Parity Check (LDPC) is because of the numbers of 0 bits is more than 1 bit.

The Examination simulation is done using Mat Lab 7.1. The examination is done to search the best code rate, the most optimum iteration, and examination in Rayleigh channel. Examination that has been done in above is including with comparing single coding and multilevel coding. The Examination is covering with validating LDPC and MC-CDMA before both are joining the system.