ABSTRACT

In wireless communication, especially in mobile to mobile communication, the channel has an important role to determine the quality of the received signal. Channel conditions can change at any time because the transmitter and receiver are moving in a multipath fading environment. This condition causes a Doppler effect which is can cause a decrease in the bit error rate (BER) on the receiver. For this reason, the Filter Bank Multicarrier- Offset Quadrature Amplitudo Modulation (FBMC-OQAM) is used to overcome the decrease in BER at the receiver. In this study, the FBMC-OQAM multicarrier system is combined with a Correlated Double Ring (CDR) channel using three modulation scenarios, there are 4-QAM, 16-QAM and 64-QAM. Each modulation scenario is simulated with three different moving speeds of the transmitter and receiver. Simulations were carried out with SNR values from 0 dB to 10 dB with the result that the BER value is better in line with the increasing the SNR value. When the SNR value = 0 dB, at a speed of 150 m/s for 4-QAM modulation produces a BER 0.1766 dB, 16-QAM modulation produces a BER 0.2305 dB and 64-QAM modulation produces a BER 0.3543 dB. The average BER value for 4-QAM modulation resulted in 45.2575% better than 16-QAM modulation and 71.2747% better than 64-QAM modulation.

Keywords: ***Mobile to mobile, Multipath Fading, Doppler Effect,*** **FBMC-OQAM*****, Bit Error Rate*** **(BER)**