

## ABSTRACT

Orthogonal Frequency Division Multiplexing (OFDM) is a transmission technique that is widely used in current telecommunications technology because it allows the transmission of information with the bit-rate is very high and very low error and use bandwidth efficiently. Quadrature Amplitude Modulation (QAM) is a digital modulation technique used in OFDM. Order QAM are often used in communication systems is the order of 16, 64, and 256. So on this final project in observe how the great influence QAM orde with the parameters BER. Bit Error Rate (BER) is one of the parameters used in the performance of a system estimate channel characteristics. Performed for a variety of ways of communication between the sender and the receiver is going well. Ideally the information received by the receiver exactly matches the information sent by the sender. One way to be able to approach this is to perform channel estimation at the receiver. Among the information inserted in the pilot that will be used as a reference in performing channel estimation. By knowing the character of the canal, it can be made a recovery algorithm for data error smaller.

This paper assesing the influence from large orde of QAM in OFDM with channel estimation using linear interpolation so as to know the characteristics of transmission channels for data bits that can be obtained close to the original even though the data has been experiencing interruption in the transmission system and assess the influence of various conditions of speed users in the show with Doppler frequency.

The of this paper is suggests a major influence on the orde of QAM applicable to BER value obtained is the greater the orde is used then the greater the order used the greater the value of its SNR to achieve a certain BER value. In addition, the effect of channel estimation can help in minimizing the BER values seen that this method of pilot channel estimator has improved power to the system without channel estimator.

Keywords: OFDM, QAM, Linear Interpolation