ABSTRACT

Technology that can minimize multipath fading is MIMO. MIMO (Multiple Input Multiple Output) can take advantage of the presence of multipath to create a number equivalent channels that seems to separate from one another. OFDM is used in MIMO systems to optimize the use of the frequency spectrum by utilizing the guard channels in every subfrequency to be inserted subfrequency additional orthogonal to the previous subfrequeny so it does not interference with each other. Reliable coding MIMO techniques are also needed to improve performance. One technique is introduced by Alamouti Space Time Block Coding with rate = 1 to the transmitting antenna is not greater than 2.

In this final project used several parameters including the coding MIMO technique with Quasi Orthogonal rate = 1 to the transmitting antenna 8 pieces. The research parameters be modified there are modulation, subcarrier number, and coding techniques. The modulation used are BPSK, QPSK and 16QAM. Number of subcarriers used are 16, 64 and 128 subcarrier.Technique coding used are QOSTBC and QOSFBC.

From the simulation results when used parameter modulation is BPSK, QPSK and 16 QAM at QOSFBC systems, systems with a value of BER vs Eb / No is the smallest system with BPSK modulation that is when Eb / No = 16 value BER = $6{,}00x10^{-6}$, while QPSK at Eb / No = 16 has a value of BER = $9{,}00x10^{-5}$dan and 16QAM BER = $3x10^{-4}$. When used subcarrier parameter that is 16, 64, and 128 subcarrier on QOSFBC system, a system with subcarrier number 128 has best value of BER vs Eb / No is $9{,}00x10^{-5}$. When used parameter coding techniques, the best results are QOSFBC coding techniques with a value of BER = $9x10^{-5}$ when Eb / No = 16. MIMO-OFDM system is a system with the best QOSFBC technique using 16QAM modulation technique, where the value of the current BER Eb / No = 16 is $3x10^{-4}$.

Keywords: MIMO-OFDM, QPSK, Quasi Orthogonal