The development of wireless technologies is increasing in line with the high demand for digital communications services. To realize the above conditions, the MIMO technology is needed. MIMO smart antenna technology is called because of its ability to increase the capacity and quality of the transmission to the nature and diversification of its penjamakan. In addition, the use of modulation techniques are also very important in the process of seesis is intended to test the performance of QPSK modulation and 16-QAM to interference that can occur during penstransmisian. The steps are performed in simulation testing digital modulation PSK and 16-QAM include process inputs, process demux, serial to parallel, bit to symbol mapping, the process of the transmission channel, demapping process, the parallel to serial, the symbol detection process, the process of multiplexing, and output data. The parameters used to test the simulation BER and Eb/N0. Simulation results show that the modulation QPSK BER values smaller than 16-QAM modulation. It was shown at the time ni Eb / No value-6dB, BER theoretical value for 16-QAM modulation at 0.0811 and 0.0530 for QPSK modulation. While the simulation, the value of BER for 16QAM modulation at 0.3545 and the value of BER for QPSK modulation at 0.2936. This happens because each symbol in the 16-QAM modulation represents 4 bits while QPSK modulation symbol 1 represent 2 bits. The smaller the BER value, the better the quality system.

Keywords: MIMO, Spatial Multiplexing, modulation QPSK, 16-QAM modulation, BER.