Title:	Performance Comparison Between Traditional and Gray-mapped 16-QAM Scheme with OFDM in Both AWGN and Rayleigh Fading Channel
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Abstract:

Orthogonal Frequency Division Multiplexing (OFDM) using M-ary Quadrature Amplitude Modulation (QAM) is a very common approach in multicarrier communication. With the increasing demand of multimedia communication, the concept of OFDM was introduced. In this paper, we have shown a comparative analysis between the traditional binary mapped 16-QAM and gray mapped 16-QAM scheme with OFDM in both AWGN and Rayleigh fading channel. We have chosen the parameters SER vs SNR for binary mapping and BER vs SNR for Gray mapping for the performance analysis as these two are the most important parameter for any wireless communications. The selection of 16-QAM scheme was made to reduce the complexity of higher order QAM constellations which are more susceptible to noise.