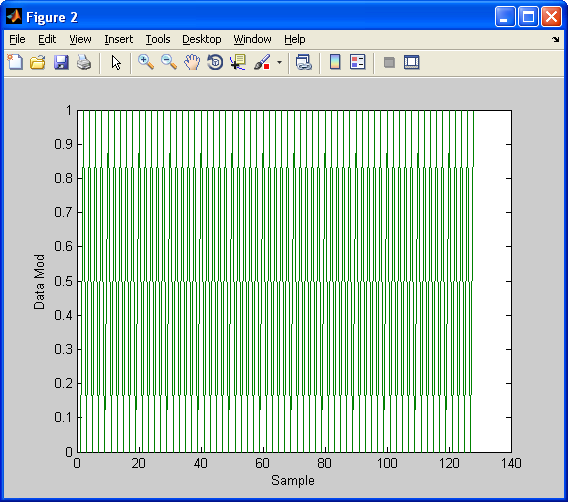
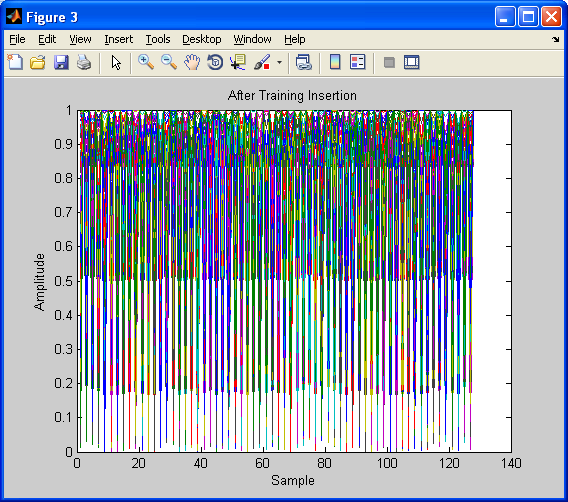


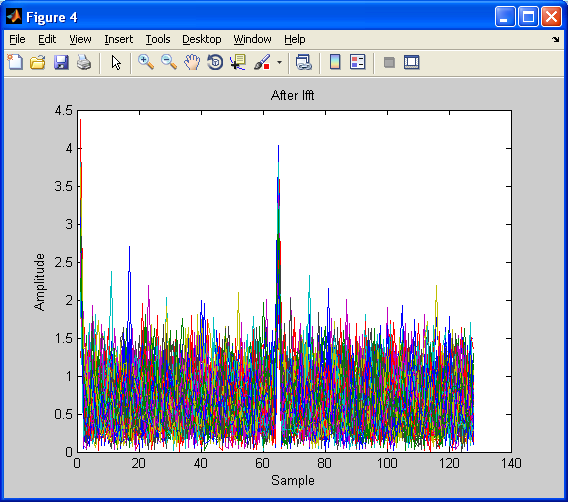
Generate Random binary data



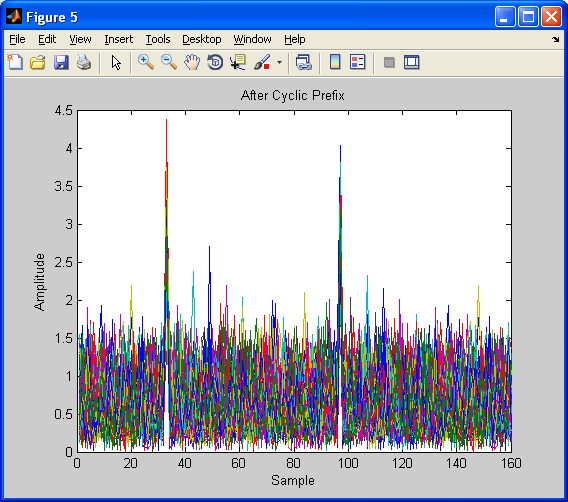
After QAM Modulation



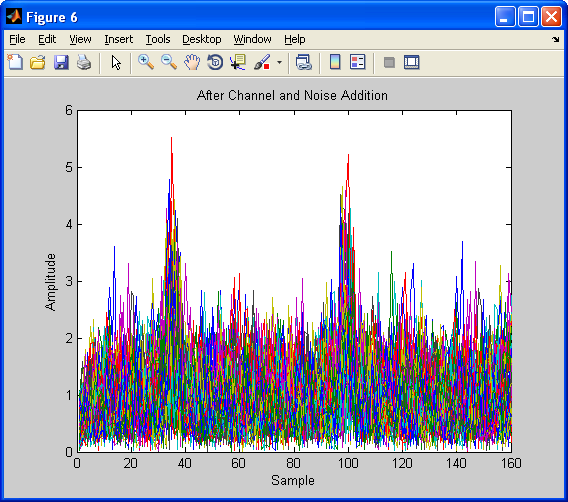
After Random training Data Insertion



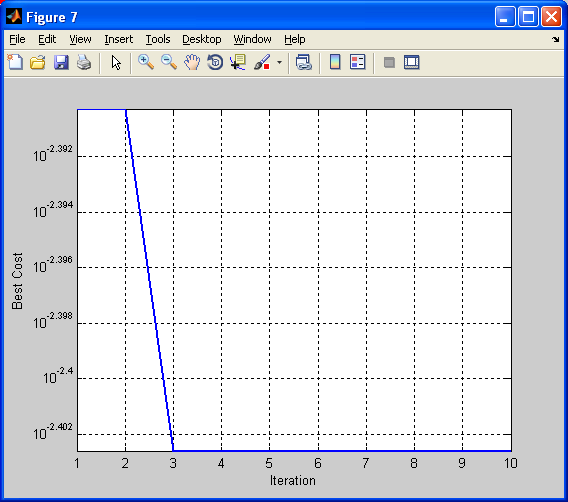
After IFFT in OFDM Tx



Cyclic prefix add

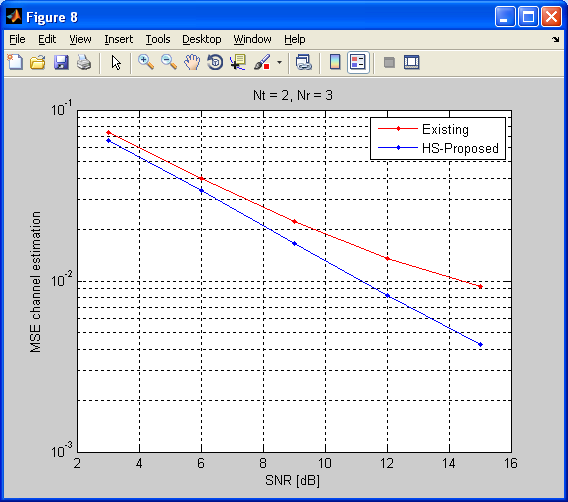


Channel Noise and Fading add to Tx Data



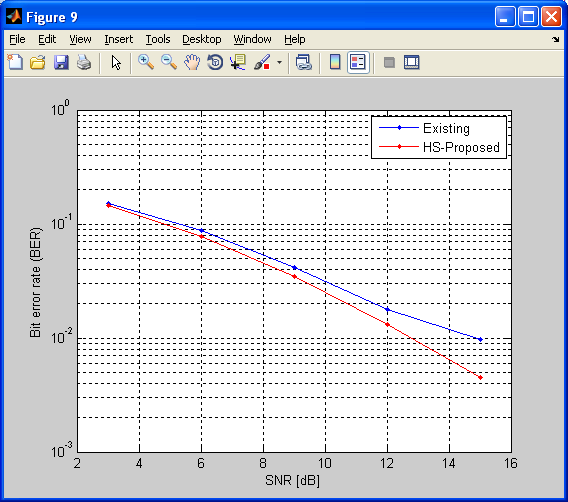
Harmony Search

Optimization algorithm used for identify optimal training Sequence



MSE decrease when SNR increase

Compare to existing method proposed method have low MSE



BER decrease when SNR increase

Compare to existing method proposed method have low BER