

Republic of Iraq
Ministry of Higher Education and
Scientific Research
University of Babylon
College of Information Technology
Department of Information
Networks



Multiple Techniques for Reduction of Peak to Average Power Ratio in OFDMA System

A Project

*Submitted to the University of Babylon / College of information
technology / Department of Information Networks in Partial
Fulfillment of the Requirements of the bachelor's degree in
Information Networks*

Prepared by

Tariq Ghalib Hakem

Supervised by

Dr. Rasim Azeez Kadhim

Abstract

Peak-to-Average Power Ratio (PAPR) reduction techniques, including Partial Transmit Sequence (PTS) and clipping, play a vital role in mitigating signal distortions and improving the efficiency of Orthogonal Frequency Division Multiple Access (OFDMA) systems. This study investigates the efficacy of PTS and clipping methods in reducing PAPR and enhancing the performance of OFDMA-based wireless communication systems. PTS operates by transmitting multiple signal versions with different phase sequences, selecting the one with the lowest PAPR at the receiver. In contrast, clipping limits signal peaks to reduce amplitude fluctuations. This abstract reviews the trade-offs between PAPR reduction efficiency, computational complexity, and signal quality associated with each method. This research focuses on optimizing and refining these techniques, exploring hybrid approaches, and conducting comprehensive performance evaluations to validate their effectiveness in real-world OFDMA deployments. By advancing PAPR reduction methods, it can enhance the spectral efficiency and reliability of OFDMA systems, driving improvements in wireless communication performance across various applications and environments.