An Enhanced Partial Transmit Sequence Based on Combining Hadamard Matrix and Partitioning Schemes in OFDM Systems

The partial transmit sequence (PTS) considered as one of the efficient approaches to restrain the high peak to average-power ratio (PAPR) in orthogonal frequency division multiplexing (OFDM) frameworks. PTS relied on partitioning the input data block and rotate them with a set of the phase vectors. In this study, a novel technique is suggested to improve the PAPR reduction performance in the PTS technique by combining Hadamard matrix and the popular kinds of the partitioning schemes interleaving scheme (IL-PTS), adjacent scheme (AdPTS), and pseudo-random scheme (PR-PTS). The new approach employed Hadamard matrix to change some of the subcarrier phases of the partitioning scheme in the frequency-domain. The simulation results demonstrated that the new method improved the PAPR diminishment performance better than that of the PR-PTS and Ad-PTS. However, the proposed method achieved the same PAPR performance compared with the IL-PTS scheme.