

**PERFORMANCE COMPARISON OF PARTITIONING PTS BASED PAPR
REDUCTION OF OFDM SYSTEMS UNDER DIFFERENT MODULATIONS
TECHNIQUES**

**Zeyid T. Ibraheem , Md. Mijanur Rahman , S. N. Yaakob ,
Mohammad Shahrazel Razalli, Sameer A. Dawood and Kawakib K.
Ahmed**

Abstract:

Partial Transmit Sequence (PTS) technique is widely employed to mitigate the peak-to-average-power ratio (PAPR) in orthogonal frequency division multiplexing (OFDM) systems without any distortion. The crucial step in any PTS system is partitioning of the OFDM frame into disjoint sub-blocks. Adjacent partitioning (AP) is a rather simple partitioning scheme achieving attractive PAPR reduction performance in trade-off between cost and performance. In this paper, Finite Radon Transform (FRAT) is implemented as a modulation technique for data mapping and a comparative analysis of the performance of FRAT is carried out against that of ordinary data mapping techniques such as phase shift keying (PSK) and quadrature amplitude modulation (QAM). The research objective is to find the most appropriate modulation scheme for OFDM system with PTS scheme. In order to perform the comparative analysis, the FRAT as well as PSK and QAM modulation techniques was implemented for the purpose of data mapping. Another dimension for comparative analysis was PTS partition length variability. Adjacent PTS scheme was implemented for both fixed length and variable length partitioning for the aforesaid modulation techniques. The results obtained for all the scenarios were investigated. These modulation schemes were also tested for the case of interleaved PTS scheme. Simulation results with different partitioning scenarios showed that the ordinary mapping for any types of techniques (PSK or QAM) had better PAPR reduction performance compared with FRAT.