Computational Complexity Reduction of OFDM Signals by PTS with Alternate Optimized Recursive Phase Weighting (AO-RPW) Method

International Journal of Computer Applications
© 2014 by IJCA Journal

Volume 85 - Number 9
Year of Publication: 2014

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Abstract

Partial transmit sequences (PTS) is one of the most attractive schemes to reduce the peak-to-average power ratio (PAPR) in orthogonal frequency division multiplexing (OFDM) systems. However, the Optimal PTS (OPTS) scheme requires an exhaustive searching over all combinations of allowed phase factors. Consequently, the computational complexity increases exponentially with the number of the subblocks. Recursive phase weighting (RPW) technique is a novel method whose aim is to reduce computational complexity and achieve the same performance in PAPR reduction as compared to O-PTS. In this paper we have proposed a novel technique named as Alternate optimized Recursive phase weighting (AO-RPW) method. Theoretical analysis and simulation results show that, compared with O-PTS and PTS employing RPW, PTS with AO-RPW method reduces the computational complexity but at the cost of loss of performance for PAPR reduction.

References

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**Index Terms**

Computer Science

Signal Processing

**Keywords**

Complimentary cumulative distribution function (CCDF) Partial Transmit Sequence

(PTS) Peak-to-average power ratio (PAPR)

Peak-to-average