عنوان مقاله:

PAPR Reduction in OFDM UOWC System employing Repetitive Clipping and Filtering (RCF) method

محل انتشار:

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خلاصه مقاله:

kground and Objectives: High peak-to-average power ratio (PAPR) in Orthogonal Frequency Division Multiplexing (OFDM)-based Underwater Optical Wireless Communication (UOWC) systems is one of the most important reasons for out-of-band power and in-band distortion leading to the declination of system performance. Therefore, different approaches have been suggested and implemented for decreasing high PAPR of OFDM signals in UOWC systems that is the main aim of this paper.Methods: In this research, the performance of an OFDM-based UOWC system is investigated by employing Repetitive Clipping and Filtering (RCF) technique in clear open ocean water. The Monte Carlo Modeling of Light (MCML) approach with the Henyey Greenstein (HG) model of the scattering phase function is used to simulate the UOWC channel. Results: First, the CCDF performance of the suggested system with RCF method for different CR values is investigated. Also, the proposed system performance is examined in terms of bit error rate (BER) and error vector magnitude (EVM) at two different depths for link lengths of ۱m and ۵ m.Conclusion: The results showed that the system performance is limited by increasing the link length, the number of subcarriers, and depth. Also, it is shown that the RCF method significantly leads to reduction of the PAPR in the DCO-OFDM .UWOC system and enhance BER performance up to ۱۰ dB

کلمات کلیدی:

OFDM, UOWC, PAPR, RCF method