Abstract

We introduce DCT SLM orthogonal frequency coded division multiplexing (OFCDM) scheme for reduction of peak to average power ratio. There is a time for high-speed data transmission in mobile communications. OFCDM is very promising technique for 4G standard like LTE (Long Term Evolution) and WIMAX (Worldwide Inter-operability for Microwave Access) but also has some issues like frequency-offset and PAPR (peak-to-average power ratio). High
peak-to-average power ratio (PAPR) of the transmitted signal originates from the superposition of many independent subcarriers. In this paper, a Discrete Cosine Transform based modified selective mapping technique is proposed to reduce the PAPR of the transmitted signal. This method combines Discrete Cosine Transform (DCT) with modified Selective Level Mapping (SLM), the variant of SLM make use of the standard array of linear block codes. The proposed method can be realized in two ways- scheme 1 and 2. In scheme1 DCT is used before the IFFT block in Modified SLM and in scheme 2 DCT is used after the Modified SLM block. Simulation results shows that Scheme 1 is having better reduction performance than the scheme 2. Due to PAPR reduction ICI and ISI both reduces drastically.

References


- Syed M. Zafi S. Shah, Umrani A. W., MemonAftab A. , "PMEPR Reduction for OFCDM using SLM and PTS&qu"; 2012 IEEE
- Imran Baig and Prof. VarunJeoti. "DCT Precoded SLM Technique for PAPR Reduction in OFDM System") 2010 IEEE
- ArunGangwar, ManushreeBhardwaj, "An Overview: Peak to Average Power Ratio in OFDM system & its Effect") (ILCCTS) Vol 01- No. 2. Issue: 02 September 2012
- Radheshyam Patel, ChiragPrajpati, Vishal Naik, Prof. T. P. Dave, "PAPR Reduction Techniques in OFDM system") (IJCAST) – Vol 2 Issue 1, Jan-Feb 2014

Index Terms

Computer Science

Wireless Communications
Keywords
Dct   Dct Slm   Modified Slm   Papr   Slm