

Investigation on methods of reducing high peak-to-average power ratio in MIMO-OFDM

ABSTRACT

In recent year, the demand on high data rates wireless communications has significantly increases. To achieve a high capacity of data and spectral efficiency in wireless communication system, the multiple-input multiple-output orthogonal frequency division multiplexing (MIMO-OFDM) is the key technology to meet the requirement. By having the benefit of resisting the effect of multipath fading and supporting ultra-high data rates, the MIMO-OFDM technology is the perfect candidate for the fourth generation (4G) or long-term evolution (LTE) system. However, the major disadvantage of this system is having a high peak-to-average power ratio (PAPR) due to the large number of subcarriers. Hence, it cannot be realized in many practical applications. There are many PAPR reduction techniques proposed by the previous researchers such as coding, phase-rotation, and clipping method. However, in this paper, the focus is on the performance investigation of phase rotation technique with partial transmit sequence (PTS) and selective mapping (SLM). The performance of both reduction method will be evaluated by comparing to the original PAPR value of OFDM.