CHAPTER 7

CONCLUSION AND FUTURE SCOPE

In this chapter, a conclusion is drawn on the contributions and concise simulation results obtained for the PAPR reduction in OFDM systems. It also throws a few problems in the focused area for further research exploration.

In chapter 3, different types of turbo codes were applied to reduce the peak powers effectively in OFDM signals. From that the HCCC shows a better reduction when compared to other turbo types. The application of turbo codes in OFDM signals not only reduce the high peak powers but also it has a better error correction capability when compared to other codes. The work can be extended by applying other types of interleavers such as diagonal, odd even, pseudo random, helical and cyclic shift interleavers.

In chapter 4 the QCLDPC codes are applied to reduce the PAPR effectively. The required memory size for storing the parity check matrices in QCLDPC codes can be reduced by the utilization of circulant matrix. The advantages of QCLDPC code is that there is no need to store the full ‘H’ matrix since tail bits are not required for coding scheme, thus provides additional bits for data transmission. The application of QCLDPC performs well in both PAPR and complexity reduction. Further the work can be extended by increasing the coding and spreading rates with different modulating schemes.
In chapter 5 we have analyzed the encoding mechanism of Huffman and adaptive Huffman codes using QAM and PSK modulation schemes. The adaptive Huffman codes with QAM mapping shows a good result in the study. The application of adaptive Huffman codes results in minimizing path length, fast in implementation, efficient memory, bandwidth saving and fast compression ratio. Further the work can be improved by applying Fallar, Gallager, Knuth (FGK) algorithm for constructing adaptive Huffman codes in OFDM systems.

The encoding of hadamard and companding transform was proposed in chapter 6. The results states that hadamard combined with companding transform performs well when compared to hadamard transform. Furthermore, the proposed transform is simple to implement and has no limitations on the system parameters such as number of subcarriers, modulation order, or constellation type. Further the work can be extended by applying various signal transforms and codes in OFDM systems.