



SUMMARY

This project attempts to design, fine-tune, implement, and analyze a novel Peak-to-Average-Power-Ratio (PAPR) reducing system for Orthogonal Frequency Division Multiplexed (OFDM) signals, which keeps complexity within limits while trying to approach the efficiency of the theoretically optimal approaches (that dismiss the practicality of the associated computational complexity) by tone reservation techniques. This will lead us to the modern field of Compressive Sensing, and then branch off to advanced compressed estimation techniques to enhance the basic algorithm by designing different clipping techniques at the transmitter, enhancing support detectability by different allocations of null carriers, implementing a Maximum a Posteriori (MAP) rule operating on a reduced search space at the receiver, and pursuing Bayesian estimation techniques for joint support and amplitude estimation at the final stage such as Bayesian Matching Pursuit.