

ABSTRACT

Performance Analysis of OFDM Based Packet Transmission System With QAM Modulation And TFL-CDMA

Nowdays, design of a mobile communications systems are mainly affected by *frequency and time selective radio channel* due to *multipath propagation* and *Doppler shifts*. An OFDM (*Orthogonal Frequency Division Multiplexing*) based system that is with fixed order QAM (*Quadratur Amplitude Modulation*) schemes and TFL-CDMA (*Time-Frequency Localized CDMA*) chip mappang technique will be described and studied in this thesis. With this technique, there is hope that the system might be can solve the major problem in mobile communication system.

OFDM technique can remove ISI (*inter-symbol-interference*) that comes from *delay difference of multipath channels* by inserting a *guard interval* into each OFDM symbol. TFL-CDMA can overcome the *multipath effect* due to *diversity* and *user separation* from the placing *codeword-chips* in a rectangular block over a *time-frequency-bin*. QAM scheme can effectively improve the performance when transmission over a *flat fading channel*, especially an *adaptive* QAM scheme can gain the best *orthogonal time-frequency resource utilization* by using *channel prediction* and *feedback* of this information to the scheduler.

In this thesis, systems had been simulated by MATLAB 7.0 program to analyze performance of the system due to solve problem of *radio channel effects*. From simulation resuls, it is found that the systems outperform in *spectral efficiency*, otherwisie in PER (*Packet Error Rate*), and *throughput*, the systems have a bad results.