ABSTRACT

MC-CDMA system is a combination between CDMA system and multicarrier modulation technic. As problem in CDMA system, MC-CDMA system also have near far effect and fading problem which influence signal power. As one of the solution to face this problem, it is used power control that can predict attenuation value which is faced the next signal. This power control is called predictve power control.

In this final assignment, the comparison and analysis were done for the MC-CDMA system which didn't use power control and the MC-CDMA system which used power control. The algorithm of predictive power control which is used in this final assignment is novel predictive power control. This power control doesn't only use SIR (Signal to Interference Ratio) threshold as a reference in determining its command set but also use recently and previously SIR. Besides that, fixed step and multistep were used to determine the power control bit (PCB). The system was designed in propagation channel which has Rayleigh ditribution by looking to the user movement effect and noise value which faced by the signal. The allocation of transmitted power of this MC-CDMA system is different for each subcarrier.

The analysis result shows that the performance of MC-CDMA system which used predictive power control is better than the system which didn't use power control. Besides that, MC-CDMA system which used 3 bit multistep has better performance than the system which used 2 bit multistep or fixed step.