

ABSTRACT

The requirements of high spectrum efficiency, high performance, high data rate and new services have motivated the evolution in wireless cellular technology. One of them is multi-carrier spread spectrum (MC-SS) method which is the combination between spread spectrum and multi-carrier transmission (OFDM). On the other hand, in the CDMA based multiple accesses where several users occupy the same time slot and frequency, there are high potential MAI occurs.

Therefore, some methods are developed to minimize MAI problems. One of those is the multi user detection (MUD) method. There are various kind of MUD method which depends on the desired system complexity and performance. MMSE dan SIC detectors are of the suboptimum MUD which MMSE is employed to suppress interference and SIC is sensitive to ther receive signal power distribution.

In this final assignment, the performance of MMSE-SIC for MC-CDMA system has been simulated and analyzed. The simulation result indicate that the MMSE-SIC provide the improvement of MC-CDMA system performance. This is indicated by the 5 dB improvement of SNR assuming 5 active users with 3 km/h user's velocity.

Key words : MC-CDMA, MMSE, SIC, MMSE-SIC