

ABSTRACT

In a cellular system, interference is a problem that has always been a big problem, this is because many factors can cause interference either from nature or from the technology itself. One of the cellular system on a CDMA network, CDMA signals will have many distractions to get to the recipient. Disorders include Inter Symbol Interference (ISI), Co-Channel Interference, Near far effects, and Multiple Access Interference and many other kinds of problems.

Multiuser detection is a multiuser receiver can see spreading waveform of the user and simultaneously to detect and demodulate the user signals. The main objective of multiuser detection is to detect all user information signals are transmitted simultaneously and simultaneously based on signals received in bad channel conditions.

At the this final assignment has analyzed the performance comparison of W-CDMA before and after adding multiuser detection (decorrelator and successive interference cancellation (SIC)). The results of this research indicate that the performance merging two DBSIC multiuser detection is much better than before adding DBSIC multiuser detection. To achieve BER 10^{-3} , W-CDMA system using DBSIC requires SNR only 2.5 dB. While W-CDMA systems that do not use multiuser detection techniques decorrelator base SIC, to achieve the same BER 10^{-3} requires a very large SNR. If viewed at the synchronous and asynchronous conditions, the DBSIC give maximum benefit at the asynchronous conditions. other than that as the number of users and increase user speed, so the system performance will be decrease