ABSTRACT

Nowadays wireless communication desires high data-rate to meet up raising customer's demands, in voice, data, and video transmission. One of the most suitable solutions to meet that condition with high spectral efficiency is High-Speed Download Packet Access (HSDPA).

HSDPA is one of 3G telephony standards (Wideband-CDMA) published by 3GPP (3rd Generation Partnership Project). Fast retransmission Hybrid Automatic Repeat reQuest (HARQ), which has ability to retransmit fault data during transmission, present to overcome problems in HSDPA's signal propagation. Besides that, Adaptive Modulation and Coding (AMC) is applied to improve performance of HSDPA's system. AMC grants the system an ability to switch modulation scheme based on radio channel conditions. This Final Assignment investigates the usage of Adaptive Modulation and Coding on HSDPA with fixed threshold algorithm.

Applied Adaptive Modulation and Coding method on HSDPA enhances system's performance and efficiency which optimizes transmission signal's quality. For BER target 10^{-4}, AMC method gives improvement around 0.3 dB to 11 dB depends on its user velocity. When channel condition is in easy circumstance, HSDPA system can achive its peak rate which is 3.6 Mbps.

Key words: HSDPA, Adaptive Modulation and Coding, Threshold Method Algoritm