

ABSTRACT

This report presents implementation of MIMO MC-CDMA system configuration in two scheme, scheme-1 and scheme-2, where both schemes are different at the connection between MC-CDMA rakes and STBC MIMO 2x2 rakes. MIMO MC-CDMA system in both schemes consists of baseband processing subsystem, MC-CDMA subsystem, MIMO 2x2 with STBC encoder subsystem and channel estimation by STBC decoder. System simulation was done by Matlab 7.0 in AWGN channel condition and fading channel condition Rayleigh distributed i.i.d, either in flat fading or frequency selective fading, by assumption that channel has quasi static fading characteristic. Channel coefficient is generated by Jakes method. Simulation results show that MIMO MC-CDMA system scheme-2 is better than scheme-1 either in AWGN channel condition or in fading channel condition, and number of rakes that gives best performance of the system is two rakes, in other words best performance of the system is given by two value as the result of number of subcarrier division by number of SPR in MC-CDMA subsystem in fading condition, it matches the number of transmit antennas and receive antennas.

Keyword : Subcarrier, SPR, rake, MC-CDMA, MIMO, STBC, quasi static.