ABSTRACT

At growth of communications of wireless demand to provide the high-speed data service (high data rate) and wide bandwidth progressively mount. One of technique to realize the system of communications wireless which wide high data rate and bandwidth are by using modulation of multi carrier OFDM, where at OFDM effect of channel frequency selective fading will be felt flat fading by every sub carriers. To support this system is use MIMO system (Multiple Input Multiple Output) that is using some antenna transmitters and antenna receivers used to overcome the problem of multi path fading.

High attainment rate transmission with the good mainstay and performance very wanted, for that reason channel estimation needed at system MIMO-OFDM so that information of concerning channel condition at area between transmitters and receiver can be known.

To overcome this problem is needed a method channel estimation which can forecast the channel condition during communications process in accurate figure. A lot of algorithms of adaptive filter which can be used at estimation of channel MIMO-OFDM. One of them is algorithm Recursive Least Squares (RLS). In algorithm of adaptive filter there are two especial process, first process the filtering, that is process to yield the output filter and estimate the error by comparing output filter by responds desire and secondly process the adaptive, that is process providing mechanism for the doormat of parameter used by adaptive, pursuant to estimation error. On this final assignment, it has been made research adaptive channel estimation in MIMO-OFDM 2x2 and 2x4 systems with Recursive Least Squares (RLS) method.

Result of simulation indicate that the optimum value forgetting factor is 0, 9, minimum pilot required is 10 pilot, SNR minimum required is 30dB.

Key words: MIMO, OFDM, RLS.