ABSTRACT

OFDM is a digital modulation system multicarrier are widely used in the telecommunications system. Many advantages of this system, which can be through the multipath channel, can minimize the effect of symbol interference (ISI). It can not be separated from the method of splitting the information into sub-carriers, so that it becomes a small bandwidth that is transmitted in parallel and use of cyclic prefix, in addition to bandwidth efficiency is also used because of the orthogonal properties that allow for the occurrence of overlapping spectrum without interference.

But of all that there are weaknesses, the system is very sensitive to frequency offset, and frequency correlation caused by the delay spread and Doppler frequency. It will cause inter-channel interference that resulted in damage to the information carried, so that the data recovery at the receiver will experience an error. From the analysis results by using the channel model Frequency-Correlated Wideband Fading as a system of linear time-varying behavior, the result that the OFDM system will be damaged, with BER values above $10^{-2}$ for the effect above 110 Hz Doppler frequency as it passes through this channel.

Key word: OFDM, Frequency-correlated, wideband fading channel, stochastic sum-of-Sinusoids simulator, rayleigh fading channel
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