

ABSTRACT

Development of information technology encourages the increased use of data communications at communication satellite. Solutions the problems is to use Ku-Band frequency. But the use of Ku-Band frequency has several disadvantages including the problem of propagation especially propagation that caused by rain attenuation. Rain attenuation is one of the problem that must be considered when using satellite communication. Rain attenuation analysis was performed using two rain attenuation prediction models, there are the ITU-R P.618-5 model and the Simple Attenuation Model (SAM) model on the Ku-Band frequency using the Telkom 3S Satellite for uplink and downlink directions. This study aims to determine how the signal quality on the Bogor-Jakarta link is based on the use of the appropriate rain attenuation model, in order to achieve optimal conditions, the link budget calculation is performed in each model by considering the BER value in accordance with PT.Telkom standards. Based on the results of research analysis states that the Simple Attenuation Model (SAM) is a rain attenuation model that is suitable for use in the Bogor-Jakarta link because it produces the most optimal C/N values and Eb/No and BER values that meet the standards. This is intended with a C/N value of 13,789 dB, Eb/No value of 11,570 dB with a BER value of $7,994 \times 10^{-7}$ which is close to PT. Telkom is 1×10^{-7} so the quality of the received signal is good.

Keywords: *Rain Attenuation, ITU-R P.618-5 , Simple Attenuation Model (SAM), Ku-Band, and Bit Error Rate (BER).*